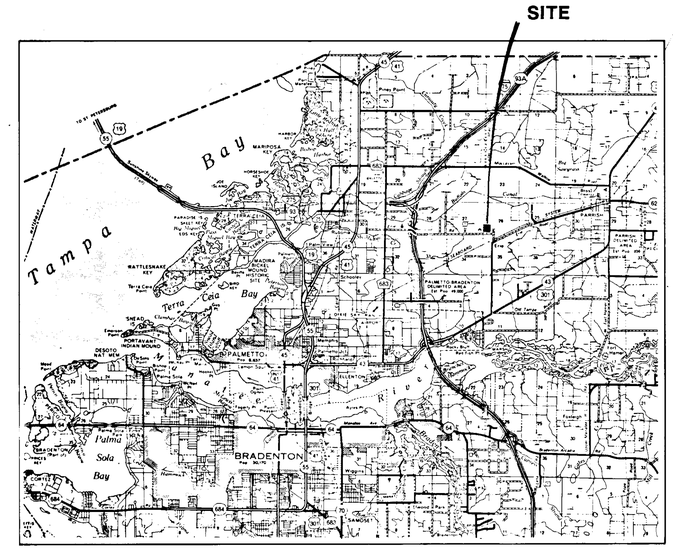
GENERAL NOTES

1. THERE ARE NO EXISTING EASEMENTS IN THE AREA OF THE PROPOSED BUILDING.
2. EXISTING LAND USE IS GOLF COURSE MAINTENANCE FACILITY.
3. THERE ARE NO EXISTING D.E.R. WETLANDS IN THE AREA OF THE PROPOSED MAINTENANCE FACILITY BUILDING.
4. THERE ARE NO FOUNDATIONS, MOUNDS OR MIDDEN AREAS OF HISTORIC ORIGIN ON THIS SITE.
5. THERE ARE NO ADDITIONAL DRIVES, PARKING, PUBLIC OR PRIVATE STREETS PROPOSED FOR THIS SITE.
6. THE STORMWATER FACILITY FOR THIS SITE HAS BEEN CONSTRUCTED IN ACCORDANCE WITH S.W.F.W.M.D. APPROVED PERMIT.
7. PROPOSED GROSS FLOOR AREA IS 4,860 S.F.
8. THE PROPOSED BUILDING TO BE ONE STORY, 15 FEET HIGH.
9. FLOOR AREA RATIO IS APPROXIMATELY 0.01.
10. NO EROSION OR SEDIMENTATION CONTROLS WILL BE REQUIRED FOR THE CONSTRUCTION OF THE PROPOSED BUILDING. ALL AREAS DISTURBED DURING THE CONSTRUCTION WILL BE GRASSED.
11. CONSTRUCTION OF THE PROPOSED BUILDING IS SCHEDULED TO BEGIN IMMEDIATELY UPON RECEIPT OF THE FINAL SITE PLAN APPROVAL.
12. THE PROJECT HAS BEEN DESIGNED TO ASSURE ALL APPLICABLE PERMITS CAN BE OBTAINED.
13. THE PROJECT IS LOCATED WITHIN THE FLOOD ZONE "C".
14. THERE ARE NO TREES WITHIN THE AREA OF THE PROPOSED BUILDING. THEREFORE, A TREE SURVEY WILL NOT BE REQUIRED.
15. EMPLOYEE PARKING IS PROVIDED AT THE GOLF COURSE CLUBHOUSE FACILITY. NO ADDITIONAL PARKING IS REQUIRED AT THE PROPOSED MAINTENANCE BUILDING.
16. THE PROPOSED BUILDING IS LOCATED WITHIN THE EXISTING GOLF COURSE, THEREFORE NO SCREENING OR LANDSCAPING IS REQUIRED.
17. THERE ARE NO EXISTING WATER COURSES OR DRAINAGE WAYS ON THE SITE. THE EXISTING DITCHES AND LAKES ARE SHOWN ON SHEET 2 OF 3.

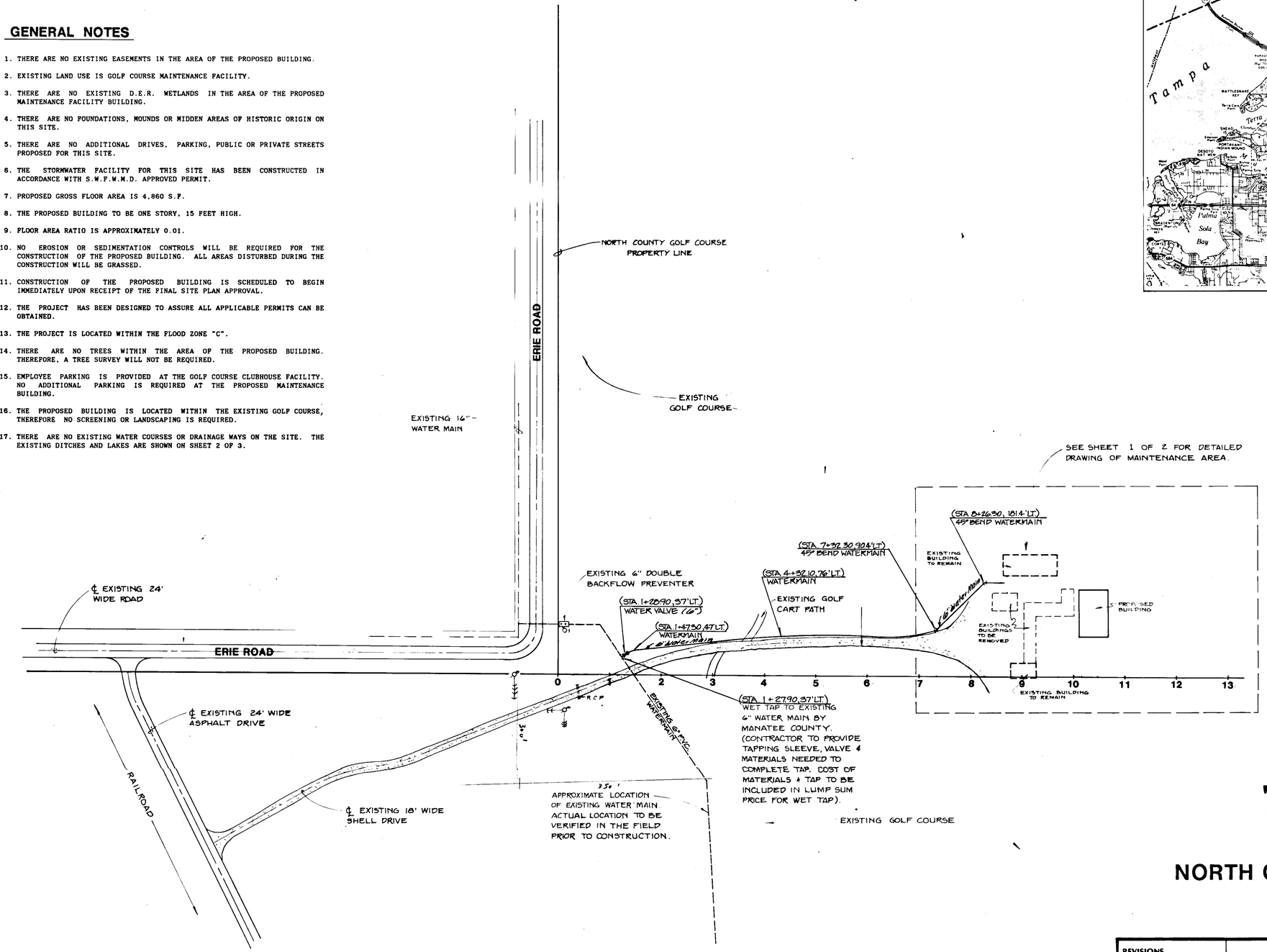


LOCATION MAP

0 2 4

SCALE IN MILES

N



N

0 50 100 200

SCALE IN FEET

(RECORD DRAWING INFORMATION IS SHOWN IN PARENTHESES AND IS STATIONED AND OFFSET FROM STREET CENTERLINE.)

FINAL SITE PLAN

APPROVED: _____ DATE _____ FILE NUMBER

Planning & Development: _____
Utilities: _____
Transportation Division: _____
Pollution Control: _____
Health Department: _____
Fire District: _____

ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.

_____ OWNER/AGENT

"RECORD DRAWING" FINAL SITE PLAN

FOR

NORTH COUNTY MAINTENANCE BUILDING

SEC. 26&27 TWP. 33S., RGE. 18E.
MANATEE COUNTY, FLORIDA

REVISIONS
10-09-90 ADDED RECORD DRAWING INFORMATION.

LOMBARDO & SKIPPER, INC.
Consulting Engineers, Surveyors & Planners
P.O. Box 188 • 825-4th Street West • Palmetto, Florida 34221 • (813) 722-4561 - 748-0600

PROJECT ENGINEER
ROBERT J. LOMBARDO
20528
P.E. REG. NO.

DESIGN RJL DATE 11/27/89
DRAWN S.L.G. SCALE 1" = 100'
APPR. RJL JOB NO. 3439.6

SHEET NO. 1/2

EXISTING GOLF COURSE

℄ EXISTING DITCH

EXISTING LAKE
WATER EL.= 27.5

(STA. 10+11.50, 179.5' LT.)
PROPOSED FIRE FLOW DOUBLE BACKFLOW PREVENTER (BY BUILDING CONTRACTOR)

GOLF COURSE SERVICE VEHICLE PARKING & STORAGE AREA.

EXISTING METAL BUILDING TO REMAIN

PROPOSED DRAINFIELD (BY OTHERS)

PROPOSED SEPTIC TANK LOCATION (BY OTHERS)

(STA. 8+26.30, 181.4' LT.)
45° BEND WATERMAIN

46'

54'

(6" Water Main)

55.8

20'

1-6" GATE VALVE
1-1" SERVICE
(STA. 10+07.00, 172.7' LT.) 1-HYDRANT ASSEMBLY

(STA. 10+05.50, 178.2' LT.)
WATER SERVICE

PROPOSED BUILDING
F.F. ELEV. = 37.00

EXISTING CONCRETE SLAB TO REMAIN

EXISTING WOOD FRAME BUILDING TO BE REMOVED

EXISTING POLE BARN TO BE REMOVED

56.1

90'

EXISTING GOLF COURSE

(STA. 7+32.30, 90.4' LT.)
45° BEND WATERMAIN

(6" Water Main)

10'x10' CONCRETE DUMPSTER PAD SCREENED WITH A 6' HIGH DECORATIVE FENCE WITH ACCESS GATE.

36.0

35.8

36.4

36.7

EXISTING SHELL DRIVE

36.4

36.5

EXISTING CONCRETE-BLOCK BUILDING TO REMAIN

EXISTING COVERED FUEL STORAGE AREA TO REMAIN

7 EXISTING GOLF COURSE 8 9 10 11

EXISTING SHELL DRIVE

℄ EXISTING DITCH

N

0 10 20 40
SCALE IN FEET

"RECORD DRAWING"
FINAL SITE PLAN DETAIL

FOR

NORTH COUNTY MAINTENANCE BUILDING

SEC. 26&27, TWP. 33S., RGE. 18E.,
MANATEE COUNTY, FLORIDA

(RECORD DRAWING INFORMATION IS SHOWN IN PARENTHESES AND IS STATIONED AND OFFSET FROM STREET CENTERLINE.)

REVISIONS
1/9/90 ADD NOTE VEHICLE PARKING & STORAGE
10-05-90 RECORD DRAWING INFORMATION (REVISE DWG)

LOMBARDO & SKIPPER, INC.
Consulting Engineers, Surveyors & Planners
P.O. Box 188 • 825-4th Street West • Palmetto, Florida 34221 • (813) 722-4561 - 748-0600

PROJECT ENGINEER
ROBERT J. LOMBARDO
20528
P.E. REG. NO.

DESIGN [illegible] DATE 11/27/89
DRAWN S.L.G. SCALE 1" = 20'
APPR. [illegible] JOB NO. 3439.6

SHEET NO. 2/2

MANATEE COUNTY

PUBLIC WORKS DEPARTMENT

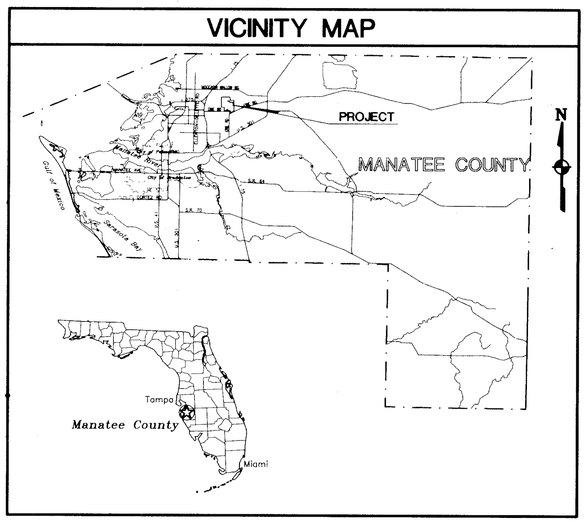
UTILITIES DIVISION

NORTH REGIONAL SERVICE AREA

NORTH REGIONAL WWTP

EFFLUENT TRANSFER PUMP STATIONS AND STORAGE POND IMPROVEMENTS

VICINITY MAP



MANATEE COUNTY PROJECT No. 8705

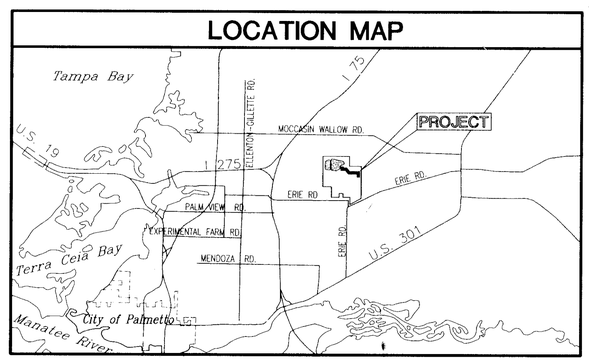
SECS. 22, 23, 26 & 27, TWP. 33S., RGE 18E.

MANATEE COUNTY, FLORIDA

AUGUST 1997

RECORD DRAWINGS

LOCATION MAP



Kimley-Horn and Associates, Inc.

Engineering Planning and Environmental Consultants

6404 Manatee Avenue West, Ste. N ■ Bradenton, Florida. 34209 ■ (941) 794-5450 ■ Fax (941) 795-1065

KHA FILE NO. 049500.11

08-36

1712.001

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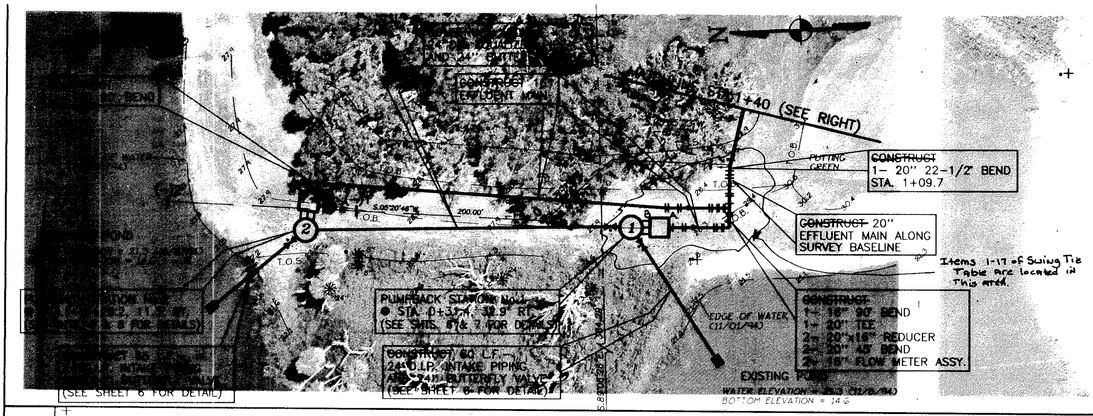
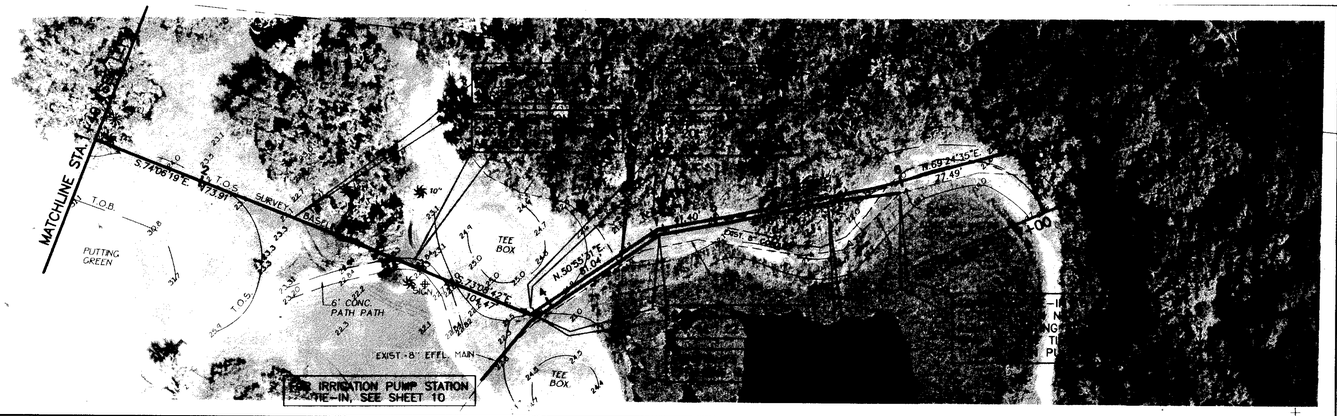
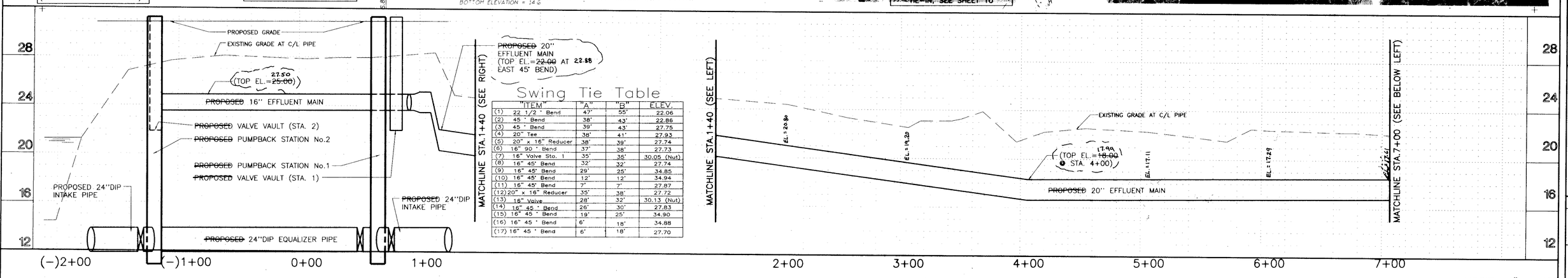




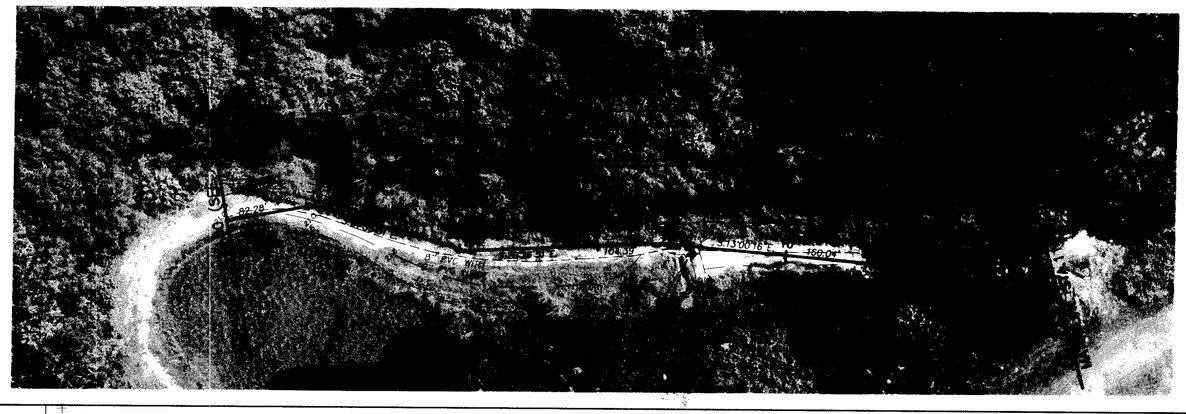


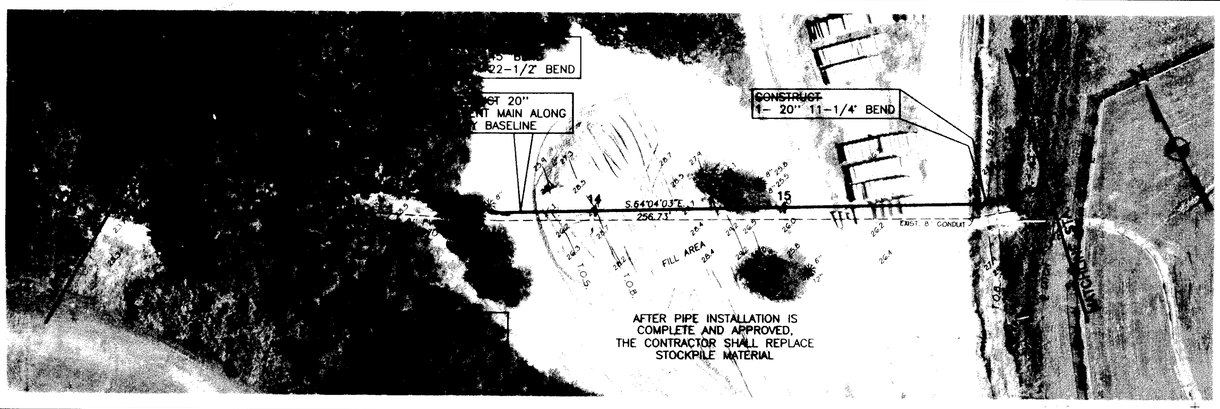
Swing Tie Table

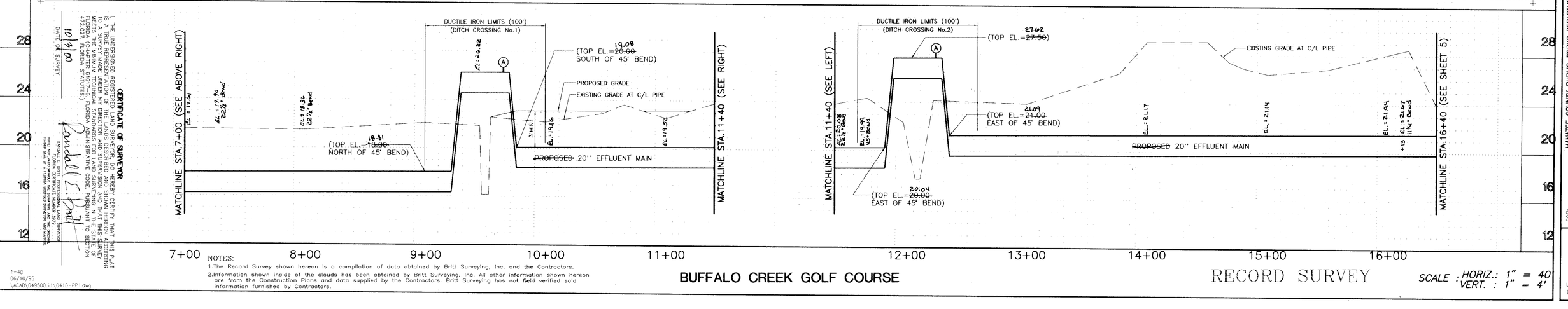
"ITEM"	"A"	"B"	ELEV.
(1) 22 1/2 ° Bend	47'	55'	22.06
(2) 45 ° Bend	38'	43'	22.86
(3) 45 ° Bend	39'	43'	27.75
(4) 20" Tee	38'	41'	27.93
(5) 20" x 16" Reducer	38'	39'	27.74
(6) 16" 90 ° Bend	37'	38'	27.73
(7) 16" Valve Sto. 1	35'	35'	30.05 (Nut)
(8) 16" 45° Bend	32'	32'	27.74
(9) 16" 45° Bend	29'	25'	34.85
(10) 16" 45° Bend	12'	12'	34.94
(11) 16" 45° Bend	7'	7'	27.87
(12) 20" x 16" Reducer	35'	38'	27.72
(13) 16" Valve	28'	32'	30.13 (Nut)
(14) 16" 45 ° Bend	26'	30'	27.83
(15) 16" 45 ° Bend	19'	25'	34.90
(16) 16" 45 ° Bend	6'	18'	34.88
(17) 16" 45 ° Bend	6'	18'	27.70

BUFFALO CREEK GOLF COURSE

SCALE : HORIZ.: 1" = 40'
VERT. : 1" = 4'







CERTIFICATE OF SURVEYOR

I, THE UNDERSIGNED REGISTERED LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS PLAT IS A TRUE AND CORRECT REPRESENTATION OF THE LANDS HEREIN DESCRIBED AS SHOWN TO A SURVEY MADE UNDER MY DIRECTION AND SUPERVISION AND THAT THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS FOR LAND SURVEYING IN THE STATE OF FLORIDA AS SET FORTH BY THE FLORIDA ADMINISTRATIVE CODE PURSUANT TO SECTION 472.027, (FLORIDA STATUTES).

10/9/00
DATE OF SURVEY

Randall E. Britt

RANDALL E. BRITT, PROFESSIONAL LAND SURVEYOR
FLORIDA CERTIFICATE NO. 4567
NOTE: NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

NOTES:
1. The Record Survey shown hereon is a compilation of data obtained by Britt Surveying, Inc. and the Contractors.
2. Information shown inside of the clouds has been obtained by Britt Surveying, Inc. All other information shown hereon are from the Construction Plans and data supplied by the Contractors. Britt Surveying has not field verified said information furnished by Contractors.

1=40
06/10/96
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BUFFALO CREEK GOLF COURSE

RECORD SURVEY

SCALE : HORIZ.: 1" = 40'
VERT. : 1" = 4'

Larson Engineering
A division of Kinley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
6414 Manatee Avenue West, Ste. N ■ Bradenton, Florida 34209 ■ (813) 794-5450 ■ Fax (813) 795-1065

Project No.: 049500.11
SCALE:
Checked By: KS
Drawn By: MWH
Date:
Design By: MWH
Ref.:
CADD File:

Manatee County
Public Works
Department

NO.	REVISION	BY	DATE

FOR:
TITLE: **EFFLUENT TRANSFER PUMP STATIONS**
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: PLAN & PROFILE - STA. (-)2+00 to STA. 16+40

JEFF STREITMATTER III, P.E.
FLA. CERT. NO. 46711
DATE:

4

Larson Engineering, Inc.
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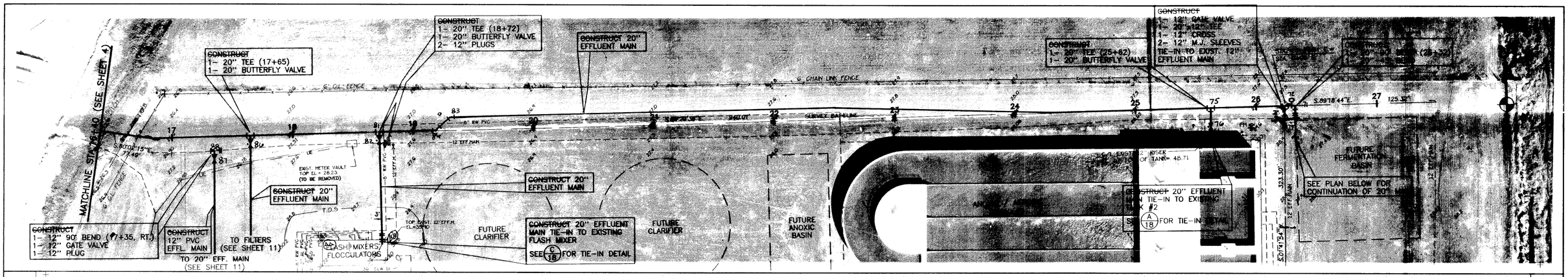
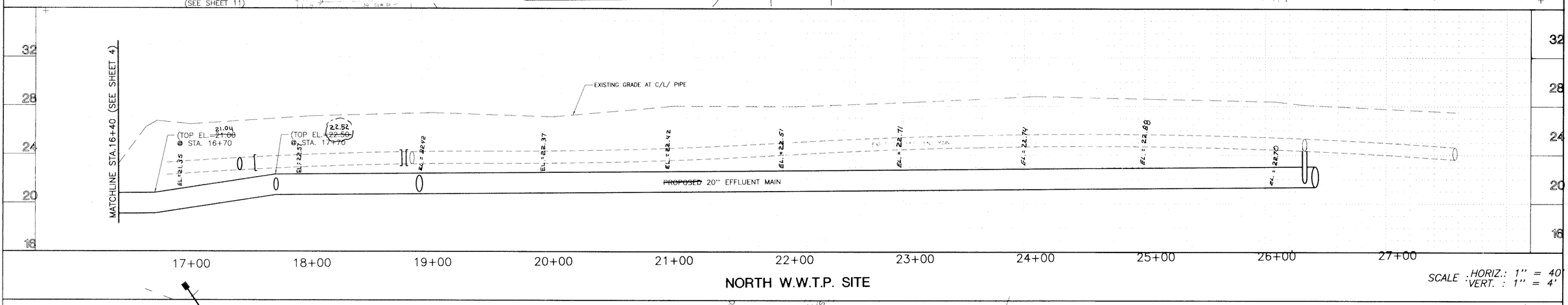
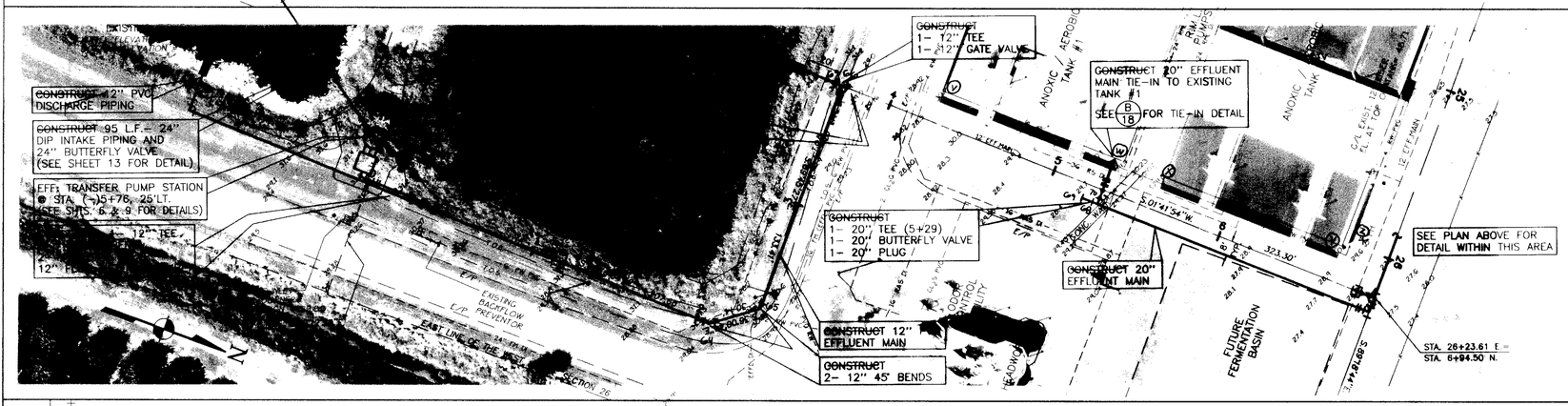
1713.002







Swing Tie Table

ELEV.	ITEM	V	W	X	Y	Z
28.98	(64) 12" 45° Bend	185'	251'			
28.91	(65) 12" 45°Bend	160'	221'			
28.96	(66) 12" Tee	57'	165'			
	(67) 12" G.V.	63'	172'			
25.76	(68) 20" Tee		28'	39'		
25.76	(69) 20" Plug		28'	39'		
	(70) 20" Butterfly Valve		23'	36'		
22.80	(71) 20" 90° Bend				40'	41'
22.80	(72) 20" x 12" Tee				34'	33'
	(73) 12" G.V.				13'	31'
	(74) 12" Cross				27'	29'
22.61	(75) 12" Tee				48'	37'
22.68	(76) 20" Butterfly Valve				42'	3'

ITEM	AA	BB	ELEV.
(81) 20" Tee	101'	89'	22.47
(82) 20" Butterfly Valve	97'	86'	
(83) 20" 45° Bend	141'	111'	22.45
(84) 20" 45° Bend	126'	96'	22.45
(85) 20" Tee	105'	143'	22.47
(86) 20" Butterfly Valve	104'	142'	22.55
(87) 12" G.V.	112'	159'	
(88) 12" 90° Bend	117'	162'	

NOTES:
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CERTIFICATE OF SURVEYOR

I, THE UNDERSIGNED REGISTERED LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS PLAT IS A TRUE REPRESENTATION OF THE LANDS DESCRIBED AND SHOWN HEREON ACCORDING TO A SURVEY MADE UNDER MY DIRECTION AND SUPERVISION AND THAT THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS FOR LAND SURVEYING IN THE STATE OF FLORIDA (CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.)

10/3/00
DATE OF SURVEY

Randall E. Britt
RANDALL E. BRITT, PROFESSIONAL LAND SURVEYOR
FLORIDA CERTIFICATE NUMBER 3979
NOTE: NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

NORTH W.W.T.P. SITE **RECORD SURVEY**

SCALE : HORIZ.: 1" = 40'
VERT. : 1" = 4'

Larson Engineering
A division of Kinley-Horn and Associates, Inc.
Engineering, Planning and Environmental Consultants
5404 Manatee Avenue West, Ste. N ■ Bradenton, Florida 34209 ■ (813) 794-5450 ■ Fax (813) 795-1065

Design By: MWM | Drawn By: | Checked By: | Project No. 0478000.11
CADD File: 0410-TP2 | Ref: | Date: MAY | SCALE: AS SHOWN

Manatee County
Public Works
Department

BY | DATE | REVISION | NO.

JEFF STREDNANSKY III, P.E.
FLA. CERT. NO. 46711
DATE:

MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: **EFFLUENT TRANSFER PUMP STATIONS**
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: PLAN & PROFILE - STA. 16+40 to STA. 27+00
AND STA. 0+00 to STA. 7+00

5

Larson Engineering, Inc.

1713 003

SCALE: 1" = 10'

Swing-Tie Table

ITEM	C	D	ELEV.
(22) 12" 90° Bend	9	17'	27.42
(23) 12" Valve	6'	16.5'	28.96 (Nut)
(24) 12" 90° Bend	20.5	25'	27.16
(25) 12" 90° Bend	21'	22.3'	27.06

CONSTRUCT INTAKE STRUCTURE (SEE SHEET 14 FOR DETAIL)
EXISTING POND
WATER ELEVATION = 21.3 (11/8/94)
BOTTOM ELEVATION = 14.6

EDGE OF WATER (11/01/94)

PROPOSED 24" D.I.P. INTAKE PIPING

PUMPBACK STATION No.1 @ STA. 0+31.4, 32.9' RT. (SEE SHEET 7 FOR DETAILS)

PROPOSED 16" FLOW METER ASSEMBLIES

PROPOSED 16" EFFLUENT MAIN

PROPOSED FENCE SEE SHEET NO. 14

PROPOSED 20" EFFLUENT MAIN

PROPOSED T.O.B. (EL. 31.0)

PROPOSED 24" DIP EQUALIZER PIPE

LIMITS OF SHELL

PROPOSED CONTROL PANEL

PROPOSED 16" EFFLUENT MAIN

CONSTRUCT 43 L.F. – 2" PVC DRAIN LINE @ 1.16% (E.INV.EL.= 25.0)

CONSTRUCT 34 L.F. – 2" PVC DRAIN LINE @ 1.47% (E.INV.EL.= 25.0)

SEE SHEET 4 FOR CONTINUATION OF 20" MAIN

PUMPBACK STATION No.2 @ STA.(–)1+26.2, 11.3' RT. (SEE SHEET 8 FOR DETAILS)

PROPOSED 24" D.I.P. INTAKE PIPING

Top Structure EL.=15.40
INV. EL.: 12.00

CONSTRUCT INTAKE STRUCTURE (SEE SHEET 14 FOR DETAIL)
EXISTING POND
WATER ELEVATION = 21.3 (11/8/94)
BOTTOM ELEVATION = 14.6

PROPOSED CONTROL PANEL

Swing Tie Table

ITEM	E	F	ELEV.
(18) 12" 90° Bend	10.3'	19'	27.42
(19) 12" Valve	9.3'	17'	28.96 (Nut)
(20) 12" 90° Bend	22'	26'	27.40
(21) 12" 90° Bend	22.3'	22'	27.40

EFFLUENT PUMPBACK STATIONS No. 1 & 2 - SITE PLAN

SCALE: 1" = 10'

(SEE SHEET 12 FOR POND MODIFICATIONS)

CONSTRUCT INTAKE STRUCTURE (SEE SHEET 13 FOR DETAIL)

PROPOSED BOB

EXISTING POND
WATER ELEVATION = 24.1 (11/29/94)
BOTTOM ELEVATION = 16.3

EFFLUENT TRANSFER PUMP STATION @ STA. (–)0+05.8, 25' LT. (SEE SHEET 9 FOR DETAILS)

PROPOSED T.O.B.

FILL AREA

CONSTRUCT DISCHARGE STRUCTURE
Top of Structure EL.= 27.88
INV. Floor EL.= 23.82

PROPOSED 24" D.I.P. INTAKE PIPING

PROPOSED 12" PVC DISCHARGE PIPING

PROPOSED CONTROL PANEL

PROPOSED 12" FLOW METER ASSEMBLY

PROPOSED 10' WIDE 6" STABILIZED SHELL ACCESS DRIVE

GRATE INLET
N.W. CORNER
ELEVATION = 29.33'

NOT CONSTRUCTED

(SEE SHEET 12 FOR POND MODIFICATIONS)

CONSTRUCT INTAKE STRUCTURE (SEE SHEET 15 FOR DETAIL)

PROPOSED REJECT POND

PROPOSED BOB

EXISTING POND
WATER ELEVATION = 24.1 (11/29/94)
BOTTOM ELEVATION = 15.4

PROPOSED 12" EFFLUENT MAIN

EDGE OF WATER (11/01/94)

SEE SHEET 4 FOR CONTINUATION OF 12" MAIN

Swing Tie Table

ITEM	A	B	ELEV.
(22) 20" Valve	28.1'	30.8'	15.03
(23) 12" 90° Bend	4.8'	6.6'	33.81
(24) 12" 45° Bend	14.6'	3.7'	34.10
(25) 12" G.V.	40'	29'	30.90
(26) 12" 45° Bend	30'	19.5'	28.01
(27) 12" G.V.	44'	32.8'	30.73 (Top Nut)
(28) 12" G.V.	56.1'	45'	30.88 (Top Nut)
(90) 12" Tee	50'	39'	28.87
(91) 12" 90° Bend	50'	39'	28.79
(92) 12" 90° Bend	100'	111'	26.83

NOTES:
1. The Record Survey shown hereon is a compilation of data obtained by Britt Surveying, Inc. and the Contractors.
2. Information shown inside of the clouds has been obtained by Britt Surveying, Inc. All other information shown hereon are from the Construction Plans and data supplied by the Contractors. Britt Surveying has not field verified said information furnished by Contractors.

EFFLUENT TRANSFER PUMP STATION - SITE PLAN

RECORD SURVEY

CERTIFICATE OF SURVEYOR

I, THE UNDERSIGNED REGISTERED LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS PLAT IS A TRUE REPRESENTATION OF THE LANDS DESCRIBED AND SHOWN HEREON ACCORDING TO A SURVEY MADE UNDER MY DIRECTION AND SUPERVISION AND THAT THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.)

Randall E. Britt
RANDALL E. BRITT PROFESSIONAL LAND SURVEYOR
FLORIDA CERTIFICATE NO. 4711 STATE OF FLORIDA

10/31/96
DATE OF SURVEY

NOTE: NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

Larson Engineering
A division of Kimley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
6404 Manatee Avenue West, Ste. N. ■ Bradenton, Florida 34209 ■ (941) 794-1450 ■ Fax (941) 795-1065
Design By: MWH | Drawn By: MWH/MJT | Ref.: | Project No.: 04P900.11
CADD File: 0410-SP | Date: 6/96 | Checked By: RS | SCALE: 1" = 10'

Manatee County Public Works Department

NO.	REVISION	BY	DATE

JEFF STREITMATTER III P.E.
FLA. CERT. NO. 46711
DATE:

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: EFFLUENT TRANSFER PUMP STATIONS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: PUMP STATION SITE PLANS

Kimley-Horn & Associates © 1995

1713.004

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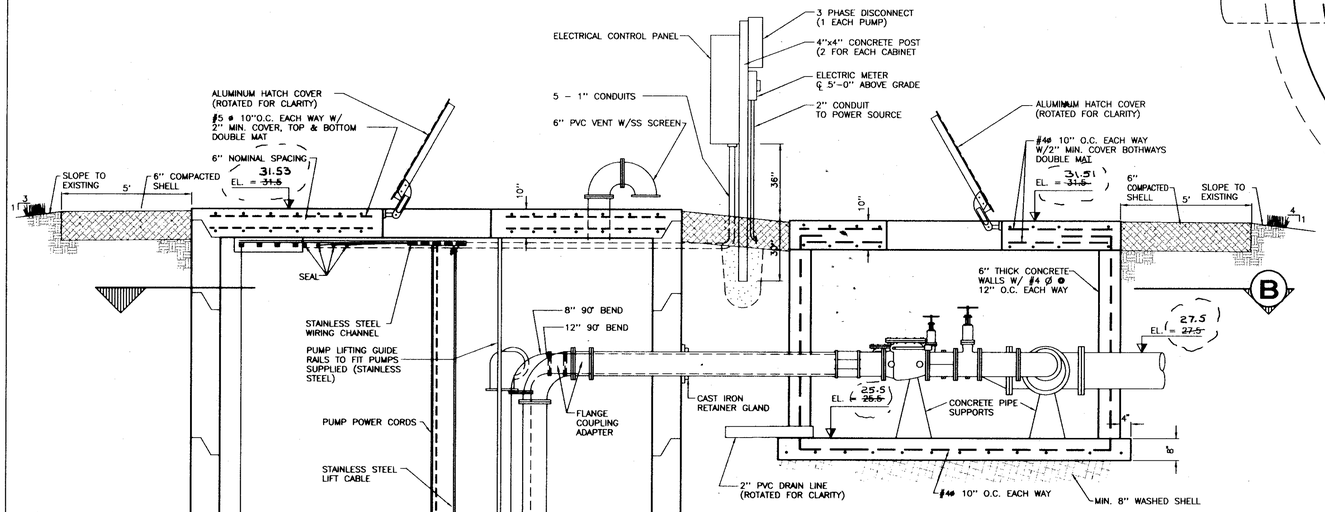
08/20/96
1=10

EFFLUENT PUMPBACK STATION "1" - PUMP DATA

NUMBER OF PUMPS	1	NUMBER OF PUMPS	1
TYPE OF DRIVE	CONSTANT SPD.	TYPE OF DRIVE	CONSTANT SPD.
DESIGN CAPACITY PER PUMP, G.P.M.	2400	DESIGN CAPACITY PER PUMP, G.P.M.	1200
TOTAL DYNAMIC HEAD, FEET	67	TOTAL DYNAMIC HEAD, FEET	70
MIN. EFF. AT DESIGN CAPACITY, %	75	MIN. EFF. AT DESIGN CAPACITY, %	75
DESIGN SPEED, MAX. R.P.M.	1150	DESIGN SPEED, MAX. R.P.M.	1750
MAX. HORSEPOWER PER PUMP, H.P.	60	MAX. HORSEPOWER PER PUMP, H.P.	30
MIN. SHUT-OFF HEAD, FT.	105	MIN. SHUT-OFF HEAD, FT.	105
MIN. SIZE SOLIDS, IN.	4	MIN. SIZE SOLIDS, IN.	3.5
MIN. DISCHARGE SIZE, IN.	8	MIN. DISCHARGE SIZE, IN.	6
SECONDARY CAPACITY PER PUMP, G.P.M.	3000	SECONDARY CAPACITY PER PUMP, G.P.M.	1800
SECONDARY HEAD, FT.	55	SECONDARY HEAD, FT.	52
VOLTAGE / PHASE	480/3ø	VOLTAGE / PHASE	480/3ø
HYDROMATIC PUMP MODEL	S8L	HYDROMATIC PUMP MODEL	S6A

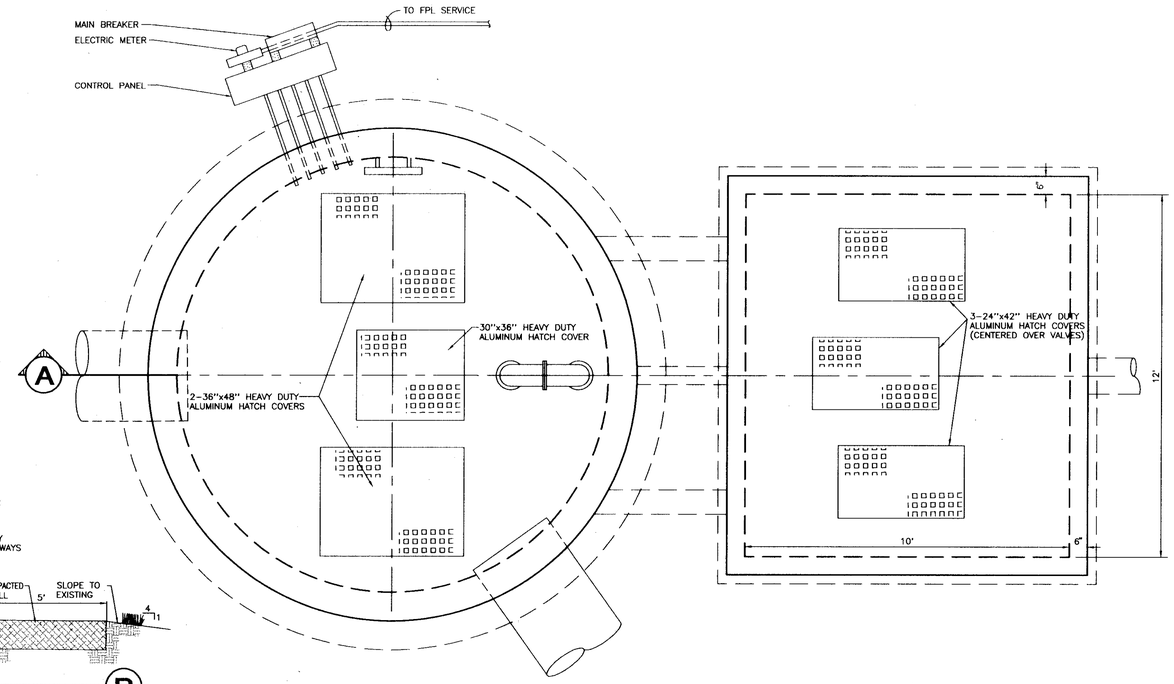
DESIGN CAPACITY OF PUMPBACK STATION "1"

	CAPACITY
1 PUMP	1200 GPM
1 PUMP	2400 GPM
1 PUMP (FUTURE)	2400 GPM
INITIAL CAPACITY	3600 GPM
FUTURE CAPACITY	6000 GPM



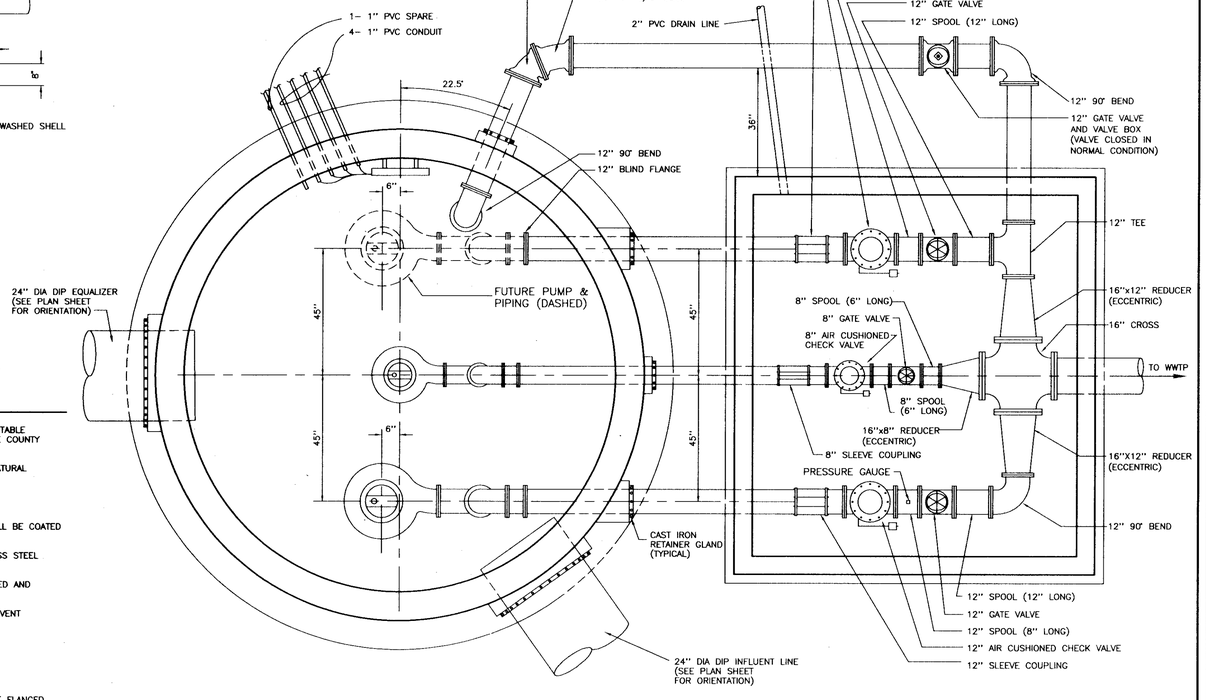
SECTION A

N.T.S.



PLAN VIEW

N.T.S.



SECTION B

N.T.S.

GENERAL NOTES

1. ACCESS COVERS SHALL BE EQUIPPED WITH LOCKING DEVICE SUITABLE FOR PADLOCKS. PADLOCKS SHALL BE FURNISHED BY MANATEE COUNTY PUBLIC WORKS DEPARTMENT.
2. GROUND SHALL BE SLOPED 4:1 AWAY FROM SHELL AREA TO NATURAL GROUND ELEVATION IN ALL DIRECTIONS.
3. ALL PIPING IN WETWELL AND VALVE VAULT SHALL BE FLANGED. BURIED FITTINGS SHALL BE RESTRAINED JOINT.
4. INSIDE & OUTSIDE SURFACES OF WETWELL & VALVE VAULT SHALL BE COATED WITH 8 MIL MINIMUM COAL-TAR EPOXY.
5. ALL METAL APPURTENANCES INSIDE WETWELL SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED. (TYPE 304)
6. SHOP DRAWINGS FOR PRECAST STRUCTURES SHALL BE SUBMITTED AND APPROVED PRIOR TO CONSTRUCTION.
7. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT FLOATATION DURING CONSTRUCTION.
8. BASE AND FIRST WALL SECTION SHALL BE MONOLITHIC.
9. ALL BOLTS AND HARDWARE SHALL BE 316 STAINLESS STEEL.
10. COAT D.I.P. IN WETWELL PER NOTE 4.
11. ALL PIPING AND FITTINGS IN WETWELL & VALVE VAULT SHALL BE FLANGED D.I.P., CLASS 53.

CERTIFICATE OF SURVEYOR

I, THE UNDERSIGNED REGISTERED LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS PLAT IS A TRUE REPRESENTATION OF THE LANDS DESCRIBED AND SHOWN HEREON ACCORDING TO A SURVEY MADE UNDER MY DIRECTION AND SUPERVISION AND THAT THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS FOR LAND SURVEYING IN THE STATE OF FLORIDA (CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.)

10/3/00
DATE OF SURVEY

Randall E. Britt
RANDALL E. BRITT, PROFESSIONAL LAND SURVEYOR
FLORIDA CERTIFICATE NUMBER 3979
NOTE: NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

NOTES:
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RECORD SURVEY

Larson Engineering
A division of Kimley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
6424 Manatee Avenue West, Ste. N ■ Bradenton, Florida 34209 ■ (941) 794-5450 ■ Fax (941) 795-1065

Project No.: 049500.11 | SCALE: AS SHOWN | Date: 6/1996 | Checked By: R.S. | Drawn By: KAT/MWM | Ref.: | CADD File: 0410PBS | Design By: RLL/MWM

Manatee County Public Works Department

NO.	REVISION	DATE	BY

X _____ JEFF STREITMATTER III, P.E. FLA. CERT. NO. 46711 DATE:

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT

TITLE: **EFFLUENT TRANSFER PUMP STATIONS** SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA

DESC.: EFFLUENT PUMPBACK STATION "1" DETAILS

7

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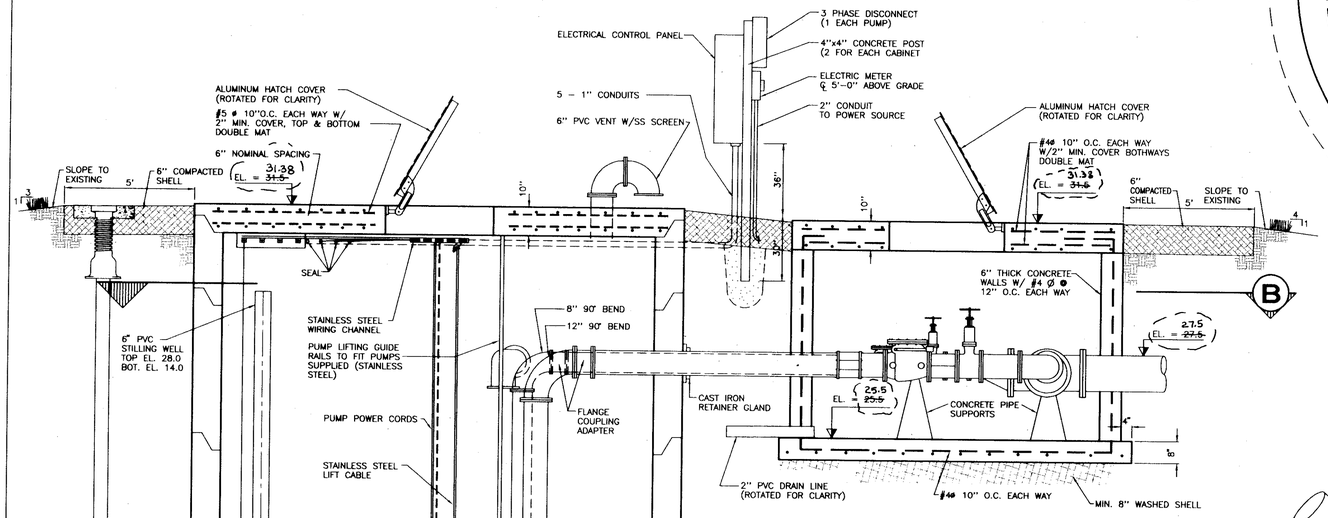
EFFLUENT PUMPBACK STATION "2" - PUMP DATA

NUMBER OF PUMPS	1	NUMBER OF PUMPS	1
TYPE OF DRIVE	CONSTANT SPD.	TYPE OF DRIVE	CONSTANT SPD.
DESIGN CAPACITY PER PUMP, G.P.M.	2400	DESIGN CAPACITY PER PUMP, G.P.M.	1200
TOTAL DYNAMIC HEAD, FEET	67	TOTAL DYNAMIC HEAD, FEET	70
MIN. EFF. AT DESIGN CAPACITY, %	75	MIN. EFF. AT DESIGN CAPACITY, %	75
DESIGN SPEED, MAX. R.P.M.	1150	DESIGN SPEED, MAX. R.P.M.	1750
MAX. HORSEPOWER PER PUMP, H.P.	60	MAX. HORSEPOWER PER PUMP, H.P.	30
MIN. SHUT-OFF HEAD, FT.	105	MIN. SHUT-OFF HEAD, FT.	105
MIN. SIZE SOLIDS, IN.	4	MIN. SIZE SOLIDS, IN.	3.5
MIN. DISCHARGE SIZE, IN.	8	MIN. DISCHARGE SIZE, IN.	6
SECONDARY CAPACITY PER PUMP, G.P.M.	3000	SECONDARY CAPACITY PER PUMP, G.P.M.	1800
SECONDARY HEAD, FT.	55	SECONDARY HEAD, FT.	52
VOLTAGE / PHASE	480/3ø	VOLTAGE / PHASE	480/3ø
HYDROMATIC PUMP MODEL	S8L	HYDROMATIC PUMP MODEL	S6A

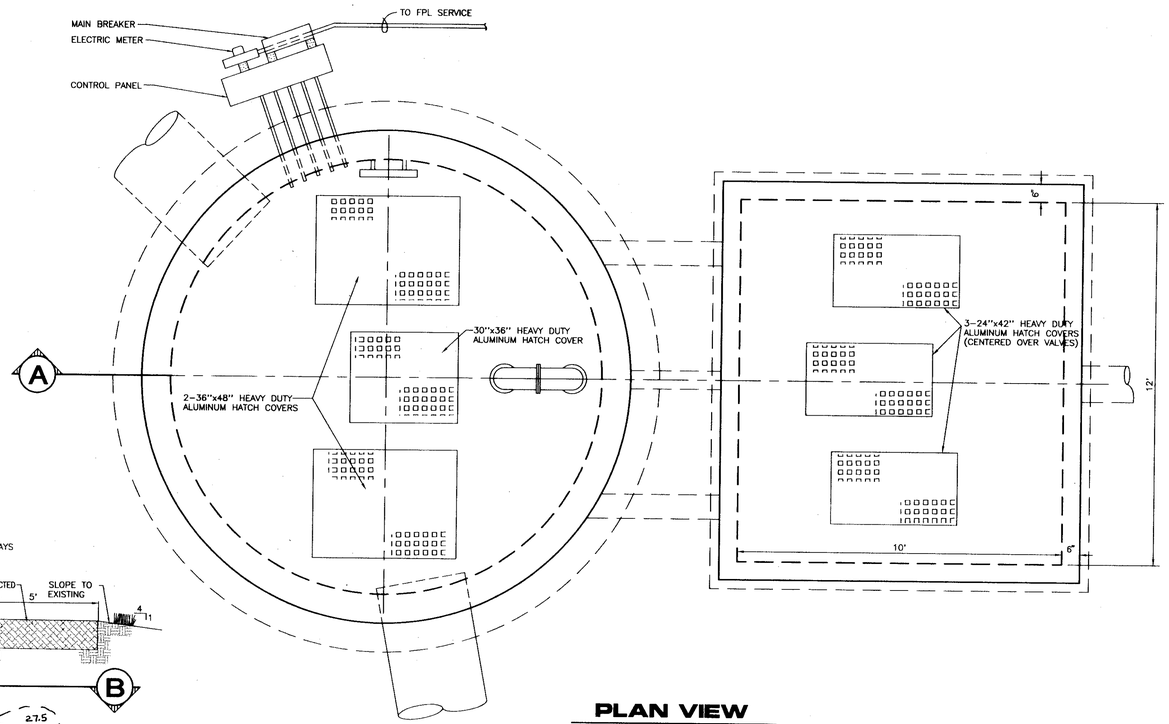
DESIGN CAPACITY OF PUMPBACK STATION "1"

	CAPACITY
1 PUMP	1200 GPM
1 PUMP	2400 GPM
1 PUMP (FUTURE)	2400 GPM
INITIAL CAPACITY	3600 GPM
FUTURE CAPACITY	6000 GPM



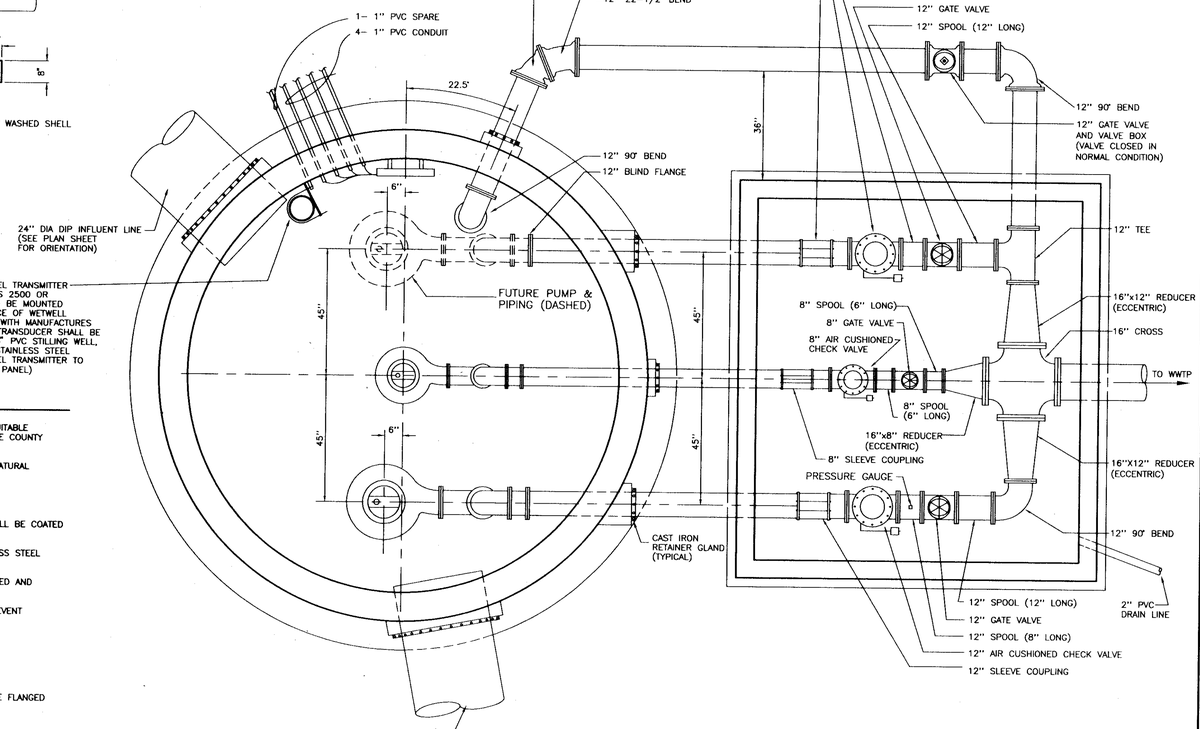
SECTION A

N.T.S.



PLAN VIEW

N.T.S.



SECTION B

N.T.S.

GENERAL NOTES

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10/3/00
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Randall E. Britt
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RECORD SURVEY

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Engineering, Planning and Environmental Consultants
6424 Manatee Avenue West, Ste. N ■ Bradenton, Florida 34209 ■ (941) 794-6450 ■ Fax (941) 795-1065

Design By: RLL/MWH | Drawn By: KAT/MWH | Checked By: RJS | Project No: 049500.11
CADD File: 041CPBS | Ref: | Date: 6/96 | SCALE: AS SHOWN

Manatee County Public Works Department

NO.	REVISION	DATE	BY

JEFF STREITMATTER III P.E.
FLA. CERT. NO. 46711
DATE:

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: EFFLUENT TRANSFER PUMP STATIONS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: EFFLUENT PUMPBACK STATION "2" DETAILS

8

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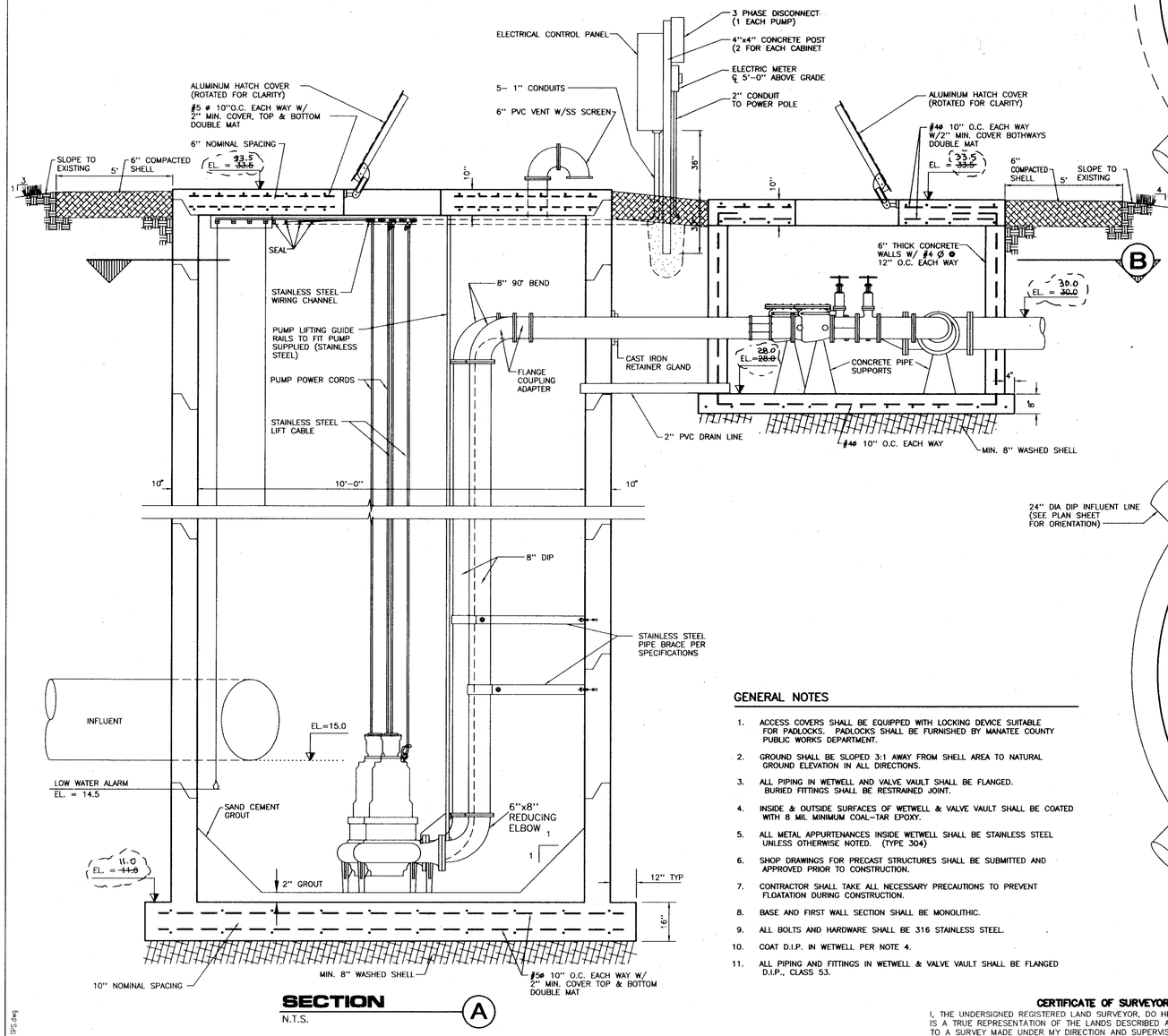
06/07/96

EFFLUENT TRANSFER PUMP STATION - PUMP DATA

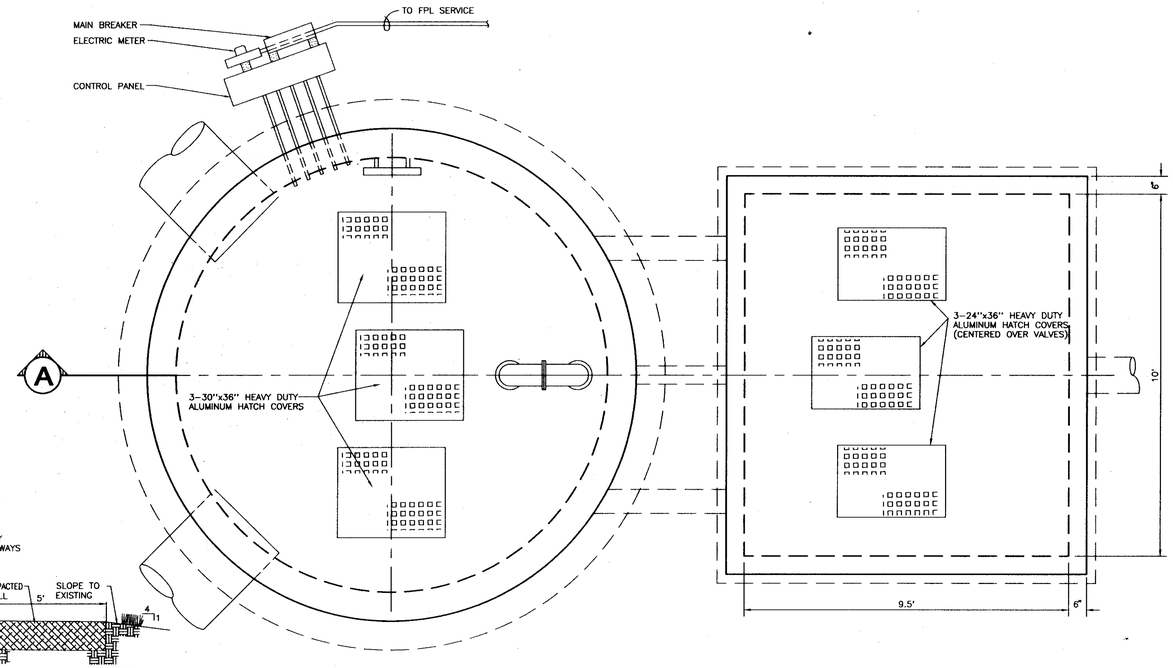
NUMBER OF PUMPS	2
TYPE OF DRIVE	CONSTANT SPD.
DESIGN CAPACITY PER PUMP, G.P.M.	1200
TOTAL DYNAMIC HEAD, FEET	72
MIN. EFF. AT DESIGN CAPACITY, %	75
DESIGN SPEED, MAX. R.P.M.	1750
MAX. HORSEPOWER PER PUMP, H.P.	30
MIN. SHUT-OFF HEAD, FT.	105
MIN. SIZE SOLIDS, IN.	3.5
MIN. DISCHARGE SIZE, IN.	6
SECONDARY CAPACITY PER PUMP, G.P.M.	1800
SECONDARY HEAD, FT.	52
VOLTAGE / PHASE	480/3ø
HYDROMATIC PUMP MODEL	S6A

DESIGN CAPACITY OF PROPOSED EFFLUENT TRANSFER PUMP STATION

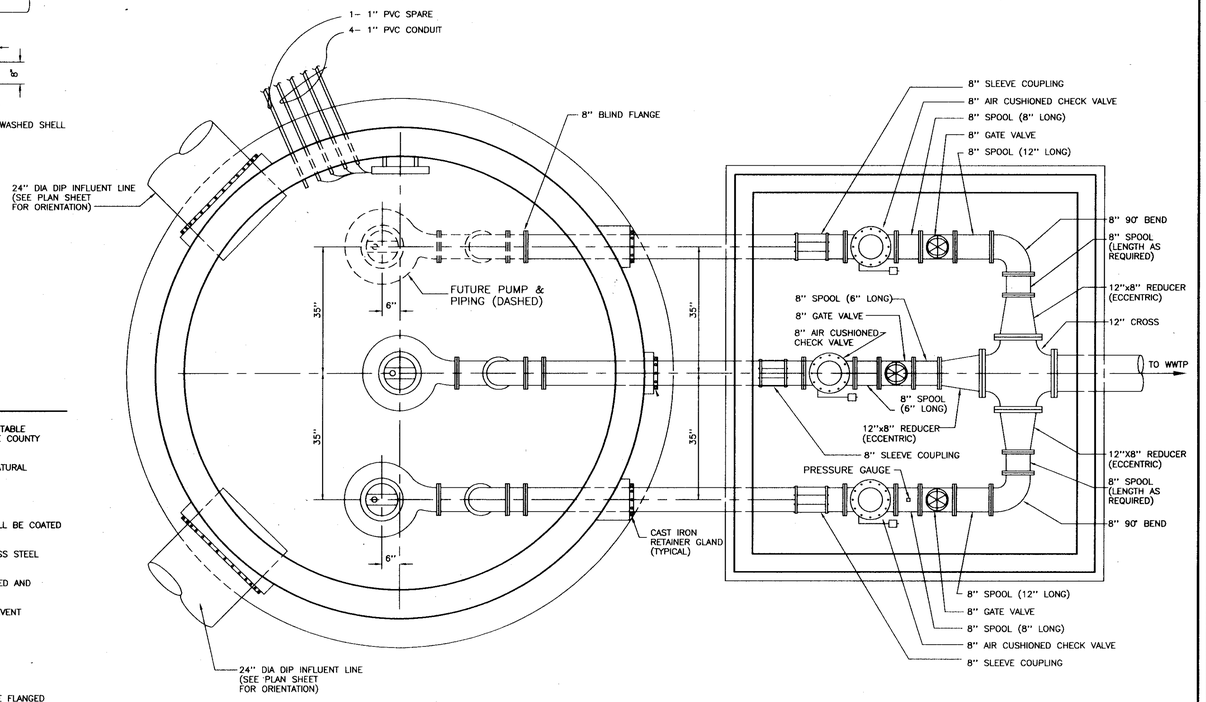
	CAPACITY
2 PUMPS	1200 GPM
1 PUMP (FUTURE)	1200 GPM
INITIAL CAPACITY	2400 GPM
FUTURE CAPACITY	3600 GPM



SECTION A
N.T.S.



PLAN VIEW
N.T.S.



SECTION B
N.T.S.

GENERAL NOTES

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6404 Manatee Avenue West, Ste. N ■ Bradenton, Florida 34209 ■ (941) 794-5450 ■ Fax (941) 795-1065
Design By: RLL/MWM | Drawn By: KAT/MWM | Checked By: RS | Project No.: 049500.011
CADD File: C410-TPS | Ref.: | Date: 6/98 | SCALE: AS SHOWN

Manatee County Public Works Department

NO.	REVISION	DATE	BY

X JEFF STREITMATTER III, P.E. FLA. CERT. NO. 46711 DATE:

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: EFFLUENT TRANSFER PUMP STATIONS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: EFFLUENT TRANSFER PUMP STATION DETAILS

Kinley-Horn & Associates
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RECORD SURVEY

N

~~CONSTRUCT~~ 2–20"x20" TEE
3–20" BUTTERFLY VALVE
1–20" 90° BEND

~~CONSTRUCT~~ FILTER PAD AND PIPING FOR FUTURE FILTERS (SEE DETAIL SHEET 17)
2–20" BUTTERFLY VALVES
6–20"x20"x10" TEES
6–10" BLIND FLANGES
1–20" PLUG W/ THRUST BLOCK
3–20" 90° BENDS W/ THRUST BLOCKS

~~CONSTRUCT~~ 1–20" 45° BEND
1–20"x20"x20" TEE (ROTATED 45°)

~~CONSTRUCT~~ 20" EFFLUENT MAIN

~~CONSTRUCT~~ 12" EFFLUENT MAIN

FOR CONTINUATION TO 20" EFFLUENT MAIN (SEE SHEET 5)

FOR CONTINUATION TO 12" EFFLUENT MAIN (SEE SHEET 5)

~~CONSTRUCT~~ 20" EFFLUENT MAIN

~~CONSTRUCT~~ 20" EFFLUENT MAIN TIE–INS TO EXISTING AUTOMATIC BACKWASH FILTERS
SEE (D 18) FOR TIE–IN DETAIL

FUTURE FINAL CLARIFIER #4

FUTURE FINAL CLARIFIER #3

FUTURE SECOND ANOXIC BASIN

ANOXIC / AEROBIC TANK #2

ANOXIC / AEROBIC TANK #1

FLASH MIXERS FLOCCULATORS

AUTOMATIC BACKWASH FILTERS

FUTURE AUTOMATIC BACKWASH FILTERS

FINAL CLARIFIER #2

FINAL CLARIFIER #1

RAS / WAS PUMP STA.

R.M.L. PUMPS

HEADWORKS

ODOR CONTROL FACILITY

~~CONSTRUCT~~ TIE–IN TO EXIST. 36" FW. W/ 36"x20" TAPPING SLEEVE
1–20" TAPPING VALVE
1–20" 90° BEND

CHLORINE BUILDING

PLANT DRAIN P.S.

DEWATERING BUILDING

FUTURE CHLORINE CONTACT CHAMBER

DISTRIBUTION METERING FACILITY

CONTROL BUILDING

BLOWER BUILDING

CHLORINE CONTACT CHAMBER

EFFLUENT PUMP STATION

REUSE WATER PUMP STATION

ELECTRICAL BUILDING

FILTERS

RECYCLE PUMPING FACILITY

DAF THICKNER #1

DAF THICKNER #2
INV. EL. @ 22.98
BEND = ~~23.0~~

INV. EL. @ ~~27.38~~
BEND = ~~27.6~~

EFFLUENT STORAGE TANK #1

EFFLUENT STORAGE TANK #2
INV. EL. @ BEND = 28.5

~~CONSTRUCT~~ SIDEWALK RESTORATION AS REQUIRED

~~CONSTRUCT~~ TIE–IN TO EXISTING 20" EFFLUENT MAIN
1–20"TEE, M.J.
1–20"x12" REDUCER, M.J.
1–12" R.S. GATE VALVE, M.J.
1–12" PRESSURE REDUCING BACKFLOW & METER ASSEMBLY (SEE SHEET 10 FOR DETAIL)

BENCH MARK
SQ. CUT IN TOP OF HEADWALL
EL. = 27.78

~~CONSTRUCT~~ 18" DRAIN LINE @ 0.50% SLOPE
(SEE SHEET 12 FOR STORAGE POND MODIFICATIONS)

~~CONSTRUCT~~ 2–18" 45° BENDS

~~CONSTRUCT~~ 2–12" 45° BENDS, M.J.

~~CONSTRUCT~~
2–12" 45° BENDS
2–18"x12" REDUCERS, M.J.
1–18" CROSS, M.J.
2–18" 45° BENDS, M.J.

~~CONSTRUCT~~ 12" OVERFLOW LINE TIE–IN TO EXISTING STORAGE TANKS 1 & 2
SEE (E 18) FOR TIE–IN DETAIL

CONSTRUCT TIE–IN TO EXISTING EFFLUENT PIPING
3–18" TEES, M.J.
2–18" SLEEVES, M.J.
4–18" BUTTERFLY VALVES, M.J.
3–18" 45° BENDS, M.J.

SEE SHEET 5 FOR DETAIL IN THIS AREA

Swing Tie Table

ITEM	A	B	C	D	E	F	G	H	I	J	K	L	ELEV.
(29) 20" 90° Bend	55'	79'											25.49
(30) 20" 22 ½° Bend			20.5'	9'									25.95
(31) 20" 90° Bend			26'	13'									23.31
(32) 20" 45° Bend									60'	44'			23.25
(33) 20" 45° Bend									57'	45'			27.76
(34) 20" 45° Bend					23'	35.5'							27.45
(35) 20" 45° Bend					26'	36'							30.36
(36) 20" Tee					28'	38'							30.80
(37) 20" 45° Bend					29'	38'							30.36
(38) 20" 45° Bend					33'	33'							27.74
(39) 20" 45° Bend					43'	45'							27.94
(40) 20" 45° Bend						30.5'	30'						27.95
(41) 20" 90° Bend											21'	4'	29.39
(42) 20" Tee									53'	47'			24.86

~~PROPOSED~~ REJECT POND
EXISTING EFFLUENT STORAGE POND

(SEE SHEET 12 FOR STORAGE POND MODIFICATIONS)

Swing Tie Table

ITEM	M	N	O	P	Q	R	ELEV.
(43) 20" 45° Bend	45'	56'					22.59
(44) 20" 45° Bend	38'	51'					27.92
(45) 20° 90° Bend	48'	45'	/	/	/	/	22.80
(46) 20° 90° Bend	22'	27'	/	/	/	/	28.70
(47) 20° 90° Bend	39'	22'	/	/	/	/	23.10
(48) 20" 90° Bend			36'	4'			28.20
(49) 20" 90° Bend					4'	33'	28.17
(50) 20" 90° Bend	33'		8'				28.19
~~(77) 20" Valve~~							
~~(48) 20" 90° Bend~~							
~~(49) 20" 90° Bend~~							
~~(50) 20" 90° Bend~~							

~~EXISTING~~ EFFLUENT STORAGE POND

Swing Tie Table

ITEM	A	BB	CC	DD	ELEV.
(91) 12" 45°	31'	54'			23.86
(92) 12" 45°	49'	75'			23.70
(93) 12" 22 1/2°	52'	75'			23.80
(94) 22 1/2°	61'	80'			25.59
(95) 12"W. 45° Bend			75'	137'	26.35
(96) 45° East			110'	100'	25.85
(97) 10"45°			106'	104'	25.45
(98) 12" X 10" Red.			97'	113'	27.32
(99) 12" G.V.			112'	96'	27.32
(100) 20" x 12" Tee			74'	138'	25.85
(101) 10" x 12"Red.			96'	5'	28.81

EXISTING EFFLUENT STORAGE POND

Swing Tie Table

ITEM	M	N	Q	ELEV.
(74) 20" Butterfly Valve	67'		4'	
(75) 20" Butterfly Valve	59'		47'	
(76) 20" Butterfly Valve	18'	37'		28.17
(77) 20" Butterfly Valve	22'	47'		28.11
(78) 20" Butterfly Valve	26'	49'		28.22
(79) 20" x 20" Tee	25'	41'		28.07
(80) 20" x 20" Tee	29'	44'		28.05

Swing Tie Table

ITEM	S	T	U	ELEV.
(51) Bottom 6" 90°	2'	97'		30.39
(52) 6" 90° inline	4'	96'		30.39
(53) 18" x 6" Tee	28'	69'		30.25
(54) 12" 90° Bend	29'	72'		30.20
(55) 18" 90° Bend	30'	68'		30.09
(56) 45° East	56'	39'		29.90
(57) 45° West	63'	34'		29.84
(58) 18" x 12" Tee	72'	26'		29.70
(59) 12" 90°	72'	29'		29.69
(60) 18" x 6" Tee	96'	5'		29.61
(61) 6" 90°	96'	1'		29.61
(62) 18" 45° Top		69'	145'	
(63) 18" 45° Bottom		79'	147'	

LEGEND

- EXISTING PLANT PIPING (≥ 8" DIA.)
- EXISTING PLANT PIPING (≤ 6" DIA.)
- PROPOSED PLANT PIPING

NOTES:
1. The Record Survey shown hereon is a compilation of data obtained by Britt Surveying, Inc. and the Contractors. Britt Surveying, Inc. and the Contractors are not responsible for any information furnished by Contractors.
2. Information from the Construction Plans and data supplied by the Contractors, Britt Surveying has not field verified said data.

CERTIFICATE OF SURVEYOR
THE UNDERSIGNED REGISTERED LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS PLAT IS A TRUE AND CORRECT REPRESENTATION OF THE SURVEY PERFORMED BY ME AND THAT THIS SURVEY IS TO A SURVEY MADE UNDER MY DIRECTION AND SUPERVISION AND THAT THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS FOR LAND SURVEYING IN THE STATE OF FLORIDA PURSUANT TO CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

10/31/00
DATE OF SURVEY

Randall C. Britt
REGISTERED LAND SURVEYOR
FLORIDA CERTIFICATE NUMBER 3579
NOTHING HEREON IS VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

Larson Engineering
A division of Kinley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
6404 Manatee Avenue West, Ste. N ■ Bradenton, Florida 34209 ■ (941) 794-3450 ■ Fax (941) 795-1385
Design By: RLL/MWM | Drawn By: KAT | Checked By: RS | Project No.: 04R0011
CADD File: 04100S1 | Ref.: | Date: 12/96 | SCALE: 1"=40'

Manatee County Public Works Department

NO.	REVISION	DATE	BY

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: EFFLUENT TRANSFER PUMP STATIONS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: TREATMENT PLANT PIPING MODIFICATIONS

X
JEFF STREITMATTER III P.E.
FLA. CERT. NO. 46711
DATE:

11
Kinley-Horn & Associates
© 1995

1713.008

H:\04S500.11\CADD\041001 Thu Sep 04 15:10:22 1997 WKM

ACAD\04S500.11\04001.dwg
07/29/95
1"=40'

RECORD SURVEY

SCALE: 1" = 40'

PROPOSED 12" DISCHARGE STRUCTURE

24" F.M. DIP

EXISTING ASPHALT ACCESS ROAD

GRATE INLET

6" P.W. PVC. S.J.

EXISTING T.O.B.

32.1 T.O.B.

HEADWORKS

PROPOSED 24" INTAKE STRUCTURE

INV. EL.= 23.82

(SEE SHEET 5 FOR CONTINUATION)

PROPOSED 12" DISCHARGE STRUCTURE

PROPOSED T.O.B.

PROPOSED B.O.B.

EXISTING T.O.B.

EXISTING B.O.B.

PROPOSED 24" INTAKE STRUCTURE

PROPOSED EFFLUENT TRANSFER STATION (SEE SHEETS 5 & 6)

INV. EL.= 23.82

PRE EXISTING T.O.B.

PROPOSED T.O.B.

EXISTING B.O.B.

PROPOSED B.O.B.

REMOVE EXISTING SEPARATOR BERM AND MATCH PROPOSED POND BOTTOM ELEVATIONS

EXISTING T.O.B.

EXISTING B.O.B.

EXISTING EFFLUENT STORAGE POND

EXISTING EFFLUENT STORAGE POND

EXISTING EFFLUENT STORAGE POND

(SEE SHEET 2 FOR OVERALL SIZE OF ON-SITE EFFLUENT STORAGE POND)

ANOXIC / AEROBIC TANK #1

6" P.W. PVC. S.W.

8" SAN. SEWER

6" R.W. PVC. S.W.

20" EFF. DIP. R.J.

6" P.W. PVC. S.J.

PROPOSED REJECT POND

EXISTING EFFLUENT STORAGE POND

EXISTING EFFLUENT STORAGE POND

REGRADE EXISTING SLOPES IN ACCORDANCE WITH SECTIONS, STORAGE POND TOP OF BANK SHALL BE RAISED TO EL.=32.0. STORAGE POND BOTTOM SHALL BE EXCAVATED TO EL.=17.0.

CONSTRUCT OVERFLOW STRUCTURE BETWEEN PONDS AT EL.= ~~29.25~~ 28.2 (SEE DETAIL SHEET 13)

CONSTRUCT MITERED END SECTION 22.52 INV. EL. = ~~22.50~~

CLEAR EXISTING SIDESLOPES OF ALL UNDESIRABLE VEGETATION AND REGRADE TO ASSURE 4:1 (HORIZONTAL : VERTICAL) SLOPE FROM TOP OF BANK AROUND PERIMETER OF PONDS (TYPICAL)

ALL BANKS TO BE SODDED TO NORMAL WATER ELEVATION

FINAL CLARIFIER #1

M.E.S. (INV.) 22.09

EXIST. HEADWALL

8" SAN. SEWER

6" P.W. PVC.

6" G.W.

EXISTING PAVEMENT

6" R.W. PVC. S.W.

18" EFFL. MAIN

EXIST. 30CY OVERFLOW

CONTROL BUILDING

ELECTRICAL BUILDING

DAF THICKNER #2

EFFLUENT STORAGE TANK #2

PROPOSED 18" DRAIN LINE

CONSTRUCT PAVEMENT RESTORATION AS REQUIRED FOR PROPOSED DRAIN LINE

(SEE SHEET 11 FOR CONTINUATION)

PROPOSED T.O.B.

PRE EXISTING T.O.B.

EXISTING T.O.B.

PROPOSED T.O.B.

PROPOSED B.O.B.

EXISTING B.O.B.

4:1

100'

38'

15'

CERTIFICATE OF SURVEYOR

I, THE UNDERSIGNED REGISTERED LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS PLAT IS A TRUE REPRESENTATION OF THE LANDS DESCRIBED AND SHOWN HEREON ACCORDING TO A SURVEY MADE UNDER MY DIRECTION AND SUPERVISION AND THAT THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS FOR LAND SURVEYING IN THE STATE OF FLORIDA (CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.)

10/3/00
DATE OF SURVEY

Randall E. Britt

RANDALL E. BRITT, PROFESSIONAL LAND SURVEYOR
FLORIDA CERTIFICATE NUMBER 3679
NOTE: NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

NOTES:
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2. Information shown inside of the clouds has been obtained by Britt Surveying, Inc. All other information shown hereon are from the Construction Plans and data supplied by the Contractors. Britt Surveying has not field verified said information furnished by Contractors.

Larson Engineering
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Engineering, Planning, and Environmental Consultants
8404 Manatee Avenue West, Ste. N. ■ Bradenton, Florida 34209 ■ (941) 794-5450 ■ Fax (941) 795-1955

Design By: RLL/MWM | Drawn By: KAT | Checked By: RS
CADD File: C41POND2 | Ref: | Date: 6/96
Project No.: 045500.11 | SCALE: 1"=40'

Manatee County Public Works Department

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: **EFFLUENT TRANSFER PUMP STATIONS**
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: **ON-SITE STORAGE POND MODIFICATIONS**

NO. | REVISION | DATE | BY

X JEFF STREITMATTER III P.E.
FLA. CERT. NO. 46711
DATE:

12

Kelley-Horn & Associates
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045500.11\C41POND2.dwg
07/16/96
1=40

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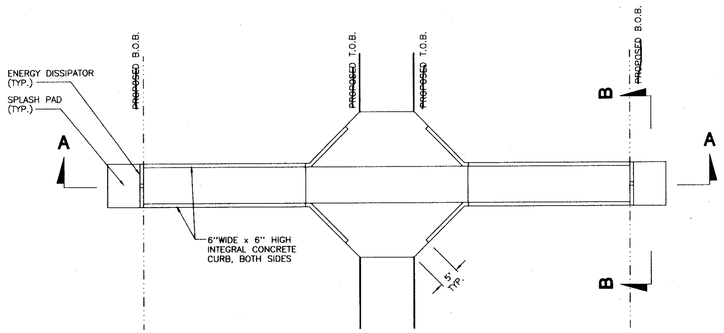
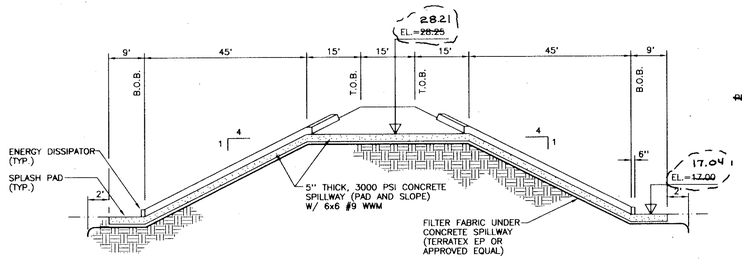
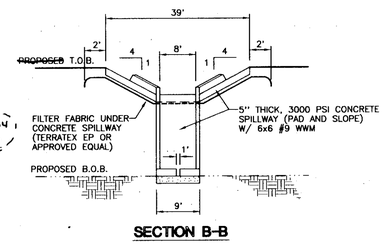
1712.009



PLAN



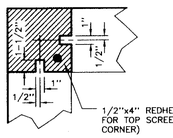
SECTION A-A



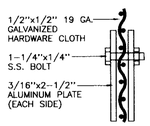
SECTION B-B

ON-SITE POND OVERFLOW STRUCTURE

N.T.S.



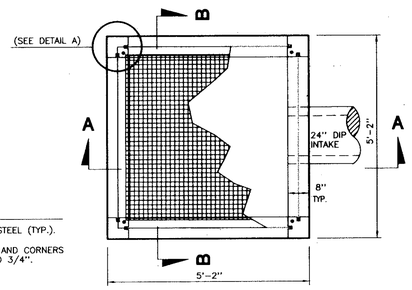
DETAIL A



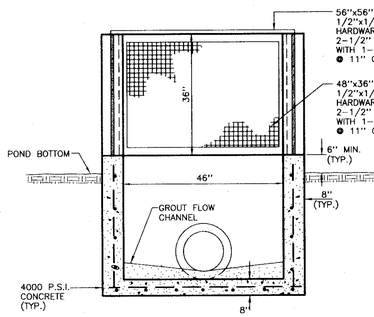
DETAIL B

NOTES :

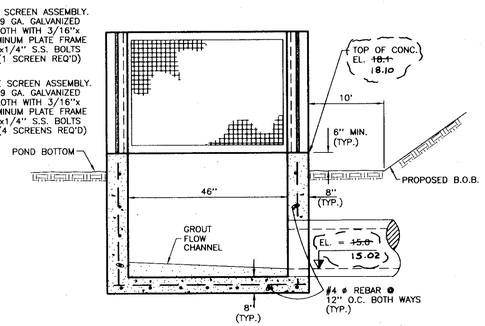
1. 2" MIN. COVER ALL STEEL (TYP.).
2. ALL EXPOSED EDGES AND CORNERS SHALL BE CHAMFERED 3/4".



PLAN



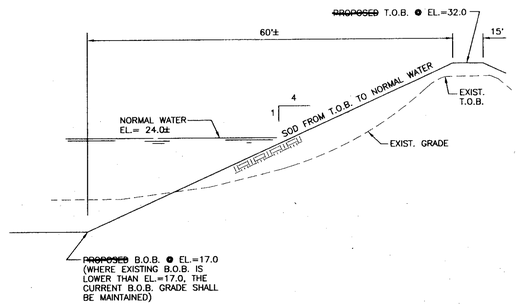
SECTION B-B



SECTION A-A

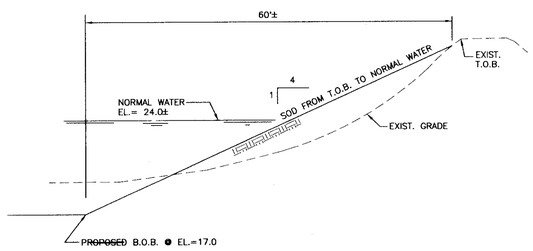
ON-SITE POND INTAKE STRUCTURE

N.T.S.



ON-SITE POND SECTION (B/12)

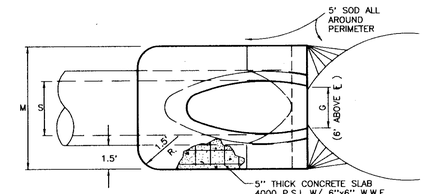
N.T.S.



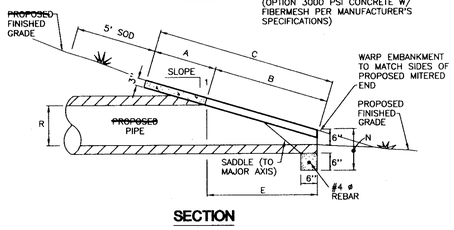
ON-SITE POND SECTION (C/12)

N.T.S.

MITERED END SCHEDULE									
SLOPE	R	S	A	B	C	E	G	M	N
4:1	18	18	2.36	5.12	7.48	5.03	1.41	4.92	1.21



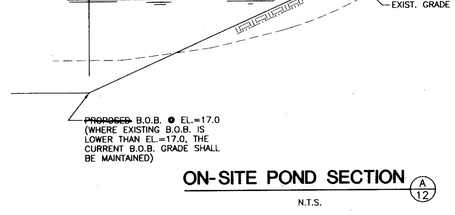
PLAN



SECTION

MITERED END SECTION DETAIL

N.T.S.



ON-SITE POND SECTION (A/12)

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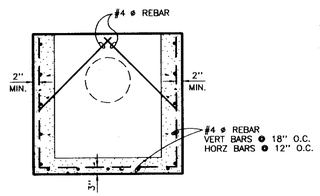
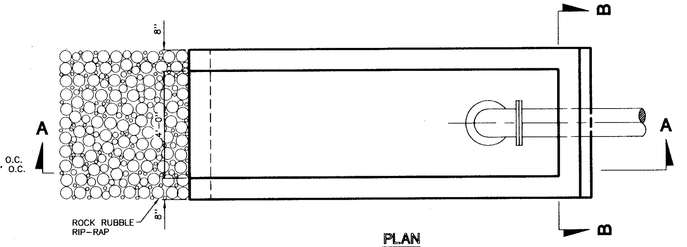


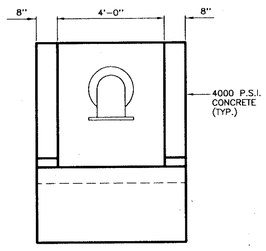
REINFORCING SECTION B-B



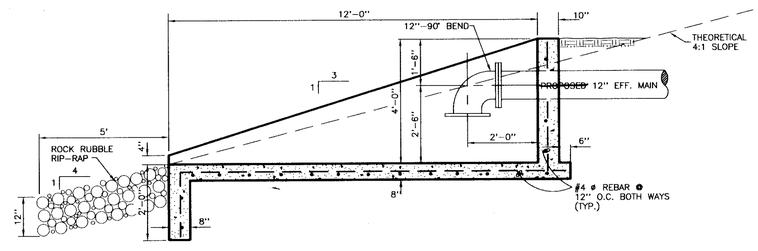
PLAN

NOTES :

1. 2" MIN. COVER ALL STEEL (TYP.).
2. ALL EXPOSED EDGES AND CORNERS SHALL BE CHAMFERED 3/4".



END VIEW



SECTION A-A

NOTES:

1. The Record Survey shown hereon is a compilation of data obtained by Britt Surveying, Inc. and the Contractors.
2. Information shown inside of the clouds has been obtained by Britt Surveying, Inc. All other information shown hereon are from the Construction Plans and data supplied by the Contractors. Britt Surveying has not field verified said information furnished by Contractors.

ON-SITE POND DISCHARGE PIPE STRUCTURE

N.T.S.

RECORD SURVEY

CERTIFICATE OF SURVEYOR

I, THE UNDERSIGNED REGISTERED LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS PLAT IS A TRUE REPRESENTATION OF THE LANDS DESCRIBED AND SHOWN HEREON ACCORDING TO A SURVEY MADE UNDER MY DIRECTION AND SUPERVISION AND THAT THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS FOR LAND SURVEYING IN THE STATE OF FLORIDA (CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.)

10/3/00
DATE OF SURVEY

Randall E. Britt

RANDALL E. BRITT, PROFESSIONAL LAND SURVEYOR
FLORIDA CERTIFICATE NUMBER 3979
NOTE: NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

Larson Engineering
A division of Kinkley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
6404 Manatee Avenue West, Ste. N ■ Bradenton, Florida 34209 ■ (941) 794-5450 ■ Fax (941) 795-1065
Design By: MWH | Drawn By: KAT | Checked By: RFS | Project No.: 049500.11
CADD File: 04100E13 | Ref.: - | Date: 6/-/96 | SCALE: AS SHOWN

Manatee County Public Works Department

NO.	REVISION	DATE	BY

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: **EFFLUENT TRANSFER PUMP STATIONS**
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: **ON-SITE STORAGE POND MODIFICATION DETAILS**

X JEFF SIRETMATTER III, P.E. FLA. CERT. NO.: 46711 DATE:

13

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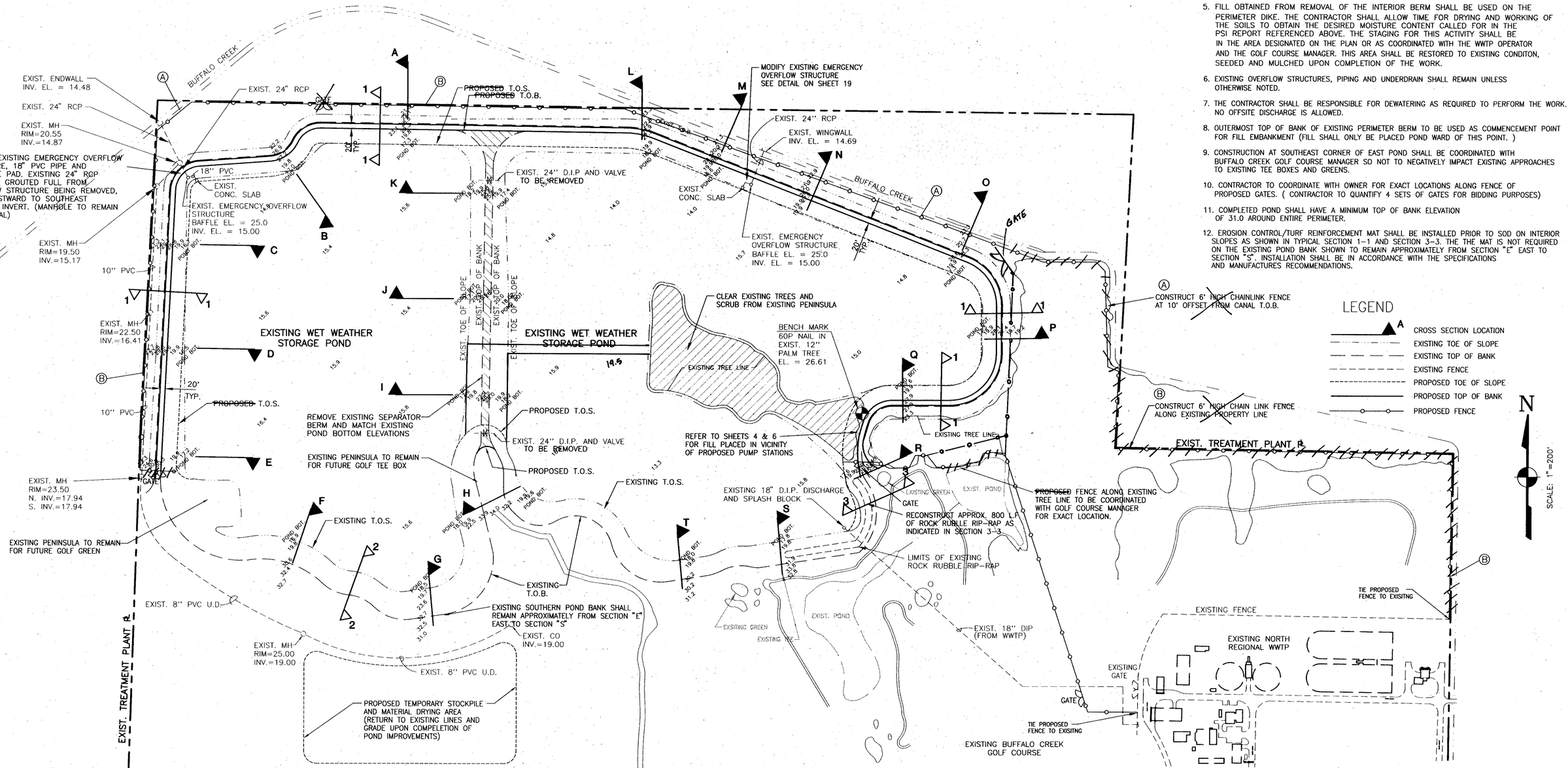
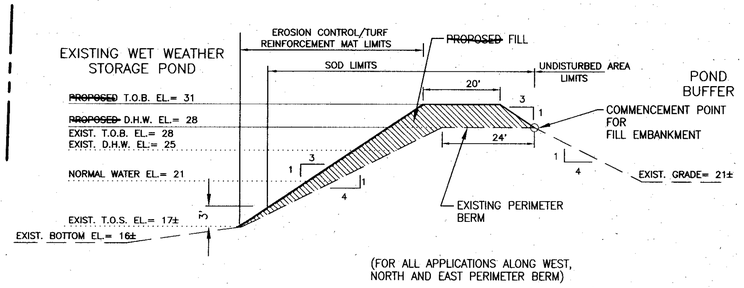
\\ecad\049500.11\cadd\04100e13.dwg 07/29/96 1=20

1713.010

NOTES:

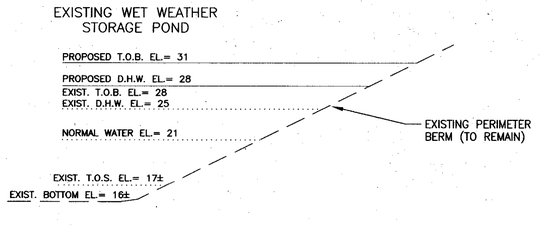
1. CONTRACTOR SHALL COMPACT ALL BERMS TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM STANDARD PROCTOR DRY DENSITY.
2. THE CONTRACTOR SHALL ADHERE TO THE GUIDELINES FOR DIKE CONSTRUCTION AS SET FORTH IN THE PSI REPORT DATED AUGUST 29, 1996 (PROJECT NO. 387-55103) TO OBTAIN THE REQUIRED COMPACTION.
3. ALL DISTURBED AREAS SHALL BE RESTORED AND SODDED, UNLESS OTHERWISE NOTED.
4. THE PERIMETER DIKE SHALL BE SODDED TO THE T.O.S. AS SHOWN IN THE TYPICAL SECTION.
5. FILL OBTAINED FROM REMOVAL OF THE INTERIOR BERM SHALL BE USED ON THE PERIMETER DIKE. THE CONTRACTOR SHALL ALLOW TIME FOR DRYING AND WORKING OF THE SOILS TO OBTAIN THE DESIRED MOISTURE CONTENT CALLED FOR IN THE PSI REPORT REFERENCED ABOVE. THE STAGING FOR THIS ACTIVITY SHALL BE IN THE AREA DESIGNATED ON THE PLAN OR AS COORDINATED WITH THE WWTP OPERATOR AND THE GOLF COURSE MANAGER. THIS AREA SHALL BE RESTORED TO EXISTING CONDITON, SEEDED AND MULCHED UPON COMPLETION OF THE WORK.
6. EXISTING OVERFLOW STRUCTURES, PIPING AND UNDERDRAIN SHALL REMAIN UNLESS OTHERWISE NOTED.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AS REQUIRED TO PERFORM THE WORK. NO OFFSITE DISCHARGE IS ALLOWED.
8. OUTERMOST TOP OF BANK OF EXISTING PERIMETER BERM TO BE USED AS COMMENCEMENT POINT FOR FILL EMBANKMENT (FILL SHALL ONLY BE PLACED POND WARD OF THIS POINT.)
9. CONSTRUCTION AT SOUTHEAST CORNER OF EAST POND SHALL BE COORDINATED WITH BUFFALO CREEK GOLF COURSE MANAGER SO NOT TO NEGATIVELY IMPACT EXISTING APPROACHES TO EXISTING TEE BOXES AND GREENS.
10. CONTRACTOR TO COORDINATE WITH OWNER FOR EXACT LOCATIONS ALONG FENCE OF PROPOSED GATES. (CONTRACTOR TO QUANTIFY 4 SETS OF GATES FOR BIDDING PURPOSES)
11. COMPLETED POND SHALL HAVE A MINIMUM TOP OF BANK ELEVATION OF 31.0 AROUND ENTIRE PERIMETER.
12. EROSION CONTROL/TURF REINFORCEMENT MAT SHALL BE INSTALLED PRIOR TO SOD ON INTERIOR SLOPES AS SHOWN IN TYPICAL SECTION 1-1 AND SECTION 3-3. THE THE MAT IS NOT REQUIRED ON THE EXISTING POND BANK SHOWN TO REMAIN APPROXIMATELY FROM SECTION "E" EAST TO SECTION "S". INSTALLATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND MANUFACTURES RECOMMENDATIONS.





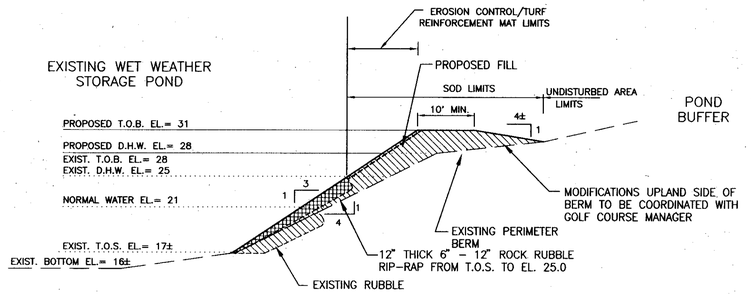
TYPICAL SECTION 1 - 1

N.T.S.



TYPICAL SECTION 2 - 2

N.T.S.



TYPICAL SECTION 3 - 3

N.T.S.

Larson Engineering
A division of Kinley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
6404 Manatee Avenue West, Ste. K ■ Bradenton, Florida 34209 ■ (941) 794-5450 ■ Fax (941) 795-1085

Design By: RLL/WWM	Drawn By: KAT	Checked By: RLL/WWM	Project No.: 049500.11
CADD File: 041POND1	Ref.:	Date: 10/27/95	SCALE: 1"=200'

Manatee County Public Works Department

NO.	REVISION	DATE	BY

JEFF STRIETMATTER, P.E.
FLA. CERT. NO. 46711
DATE:

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: **EFFLUENT TRANSFER & STORAGE IMPROVEMENTS**
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: **WET WEATHER STORAGE POND MODIFICATIONS**

14

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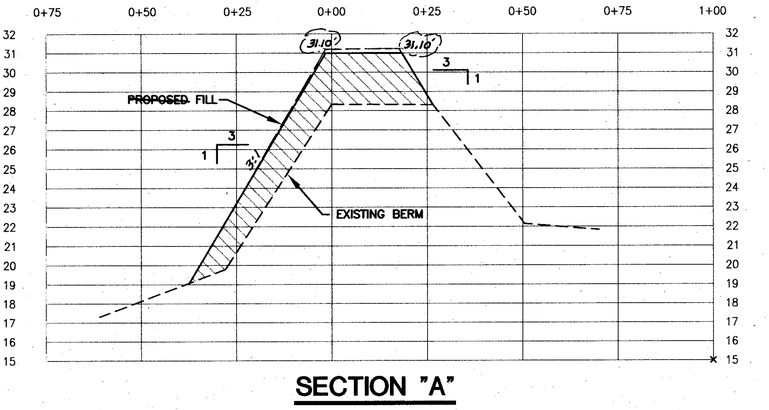
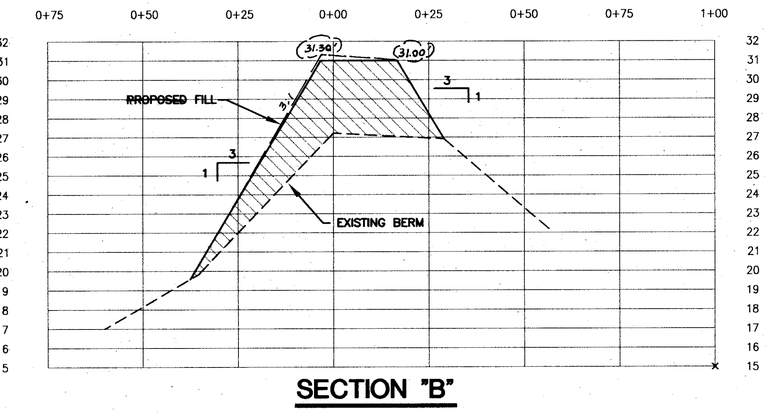
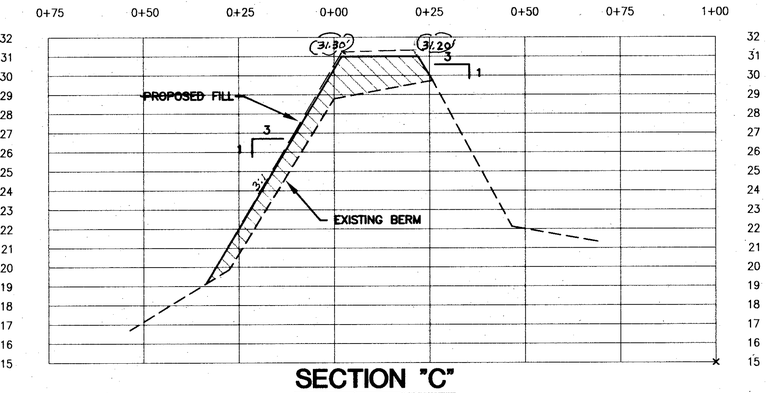


SECTION "A"



SECTION "B"



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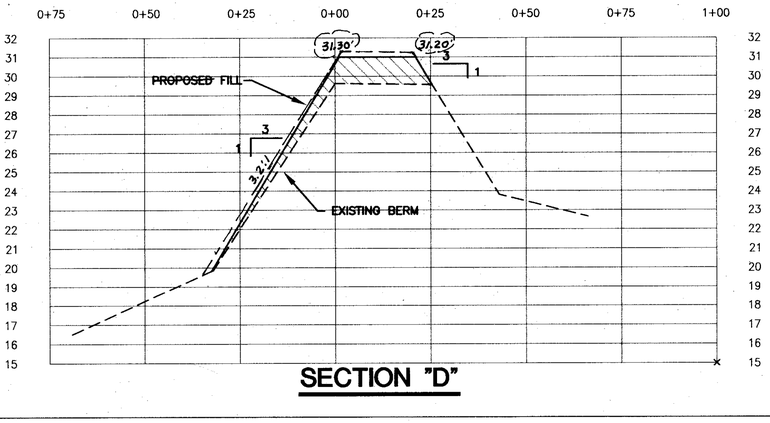

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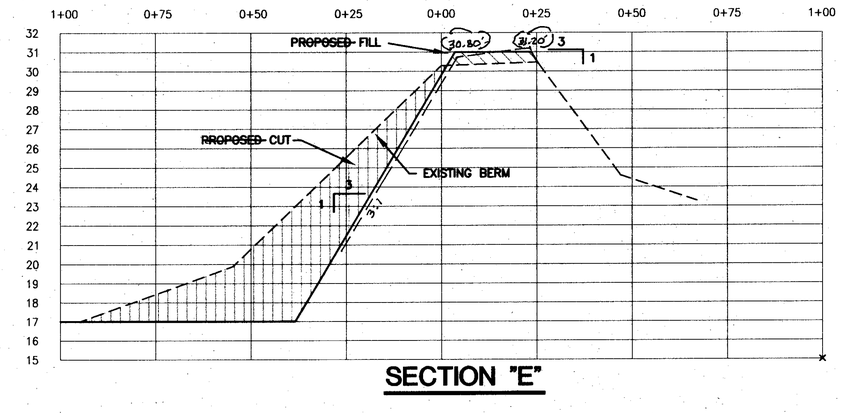

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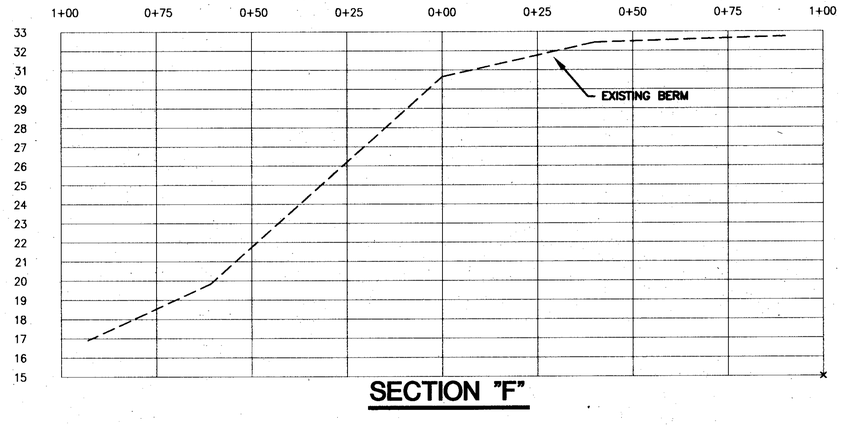

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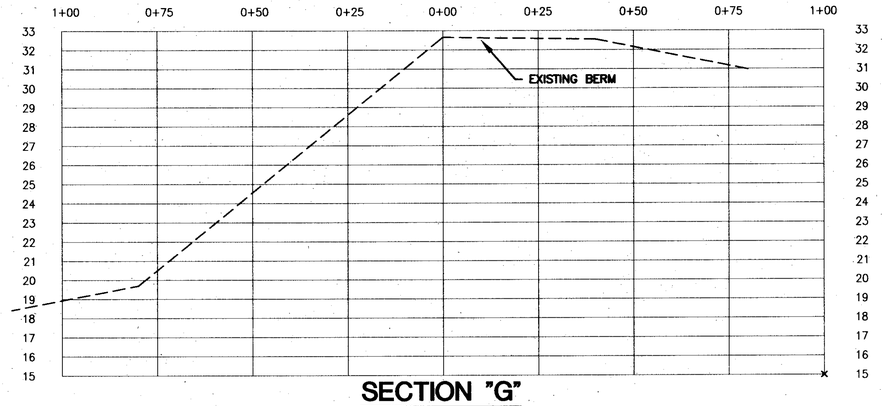

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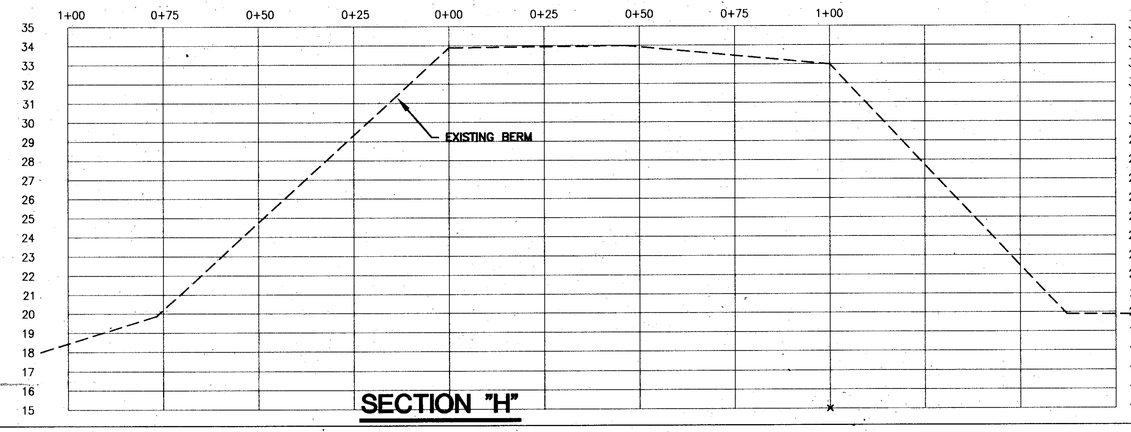

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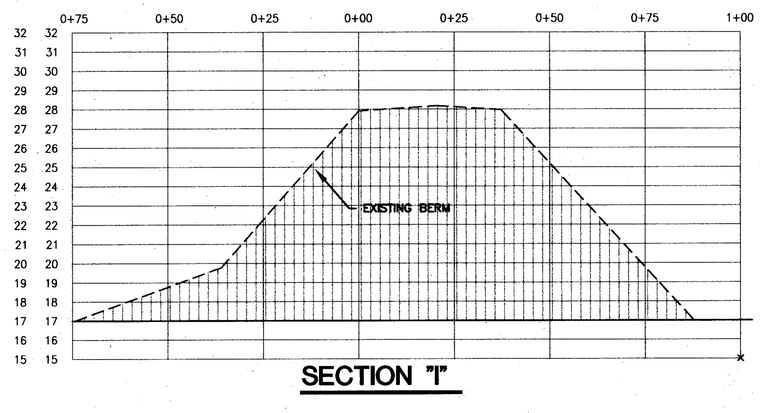

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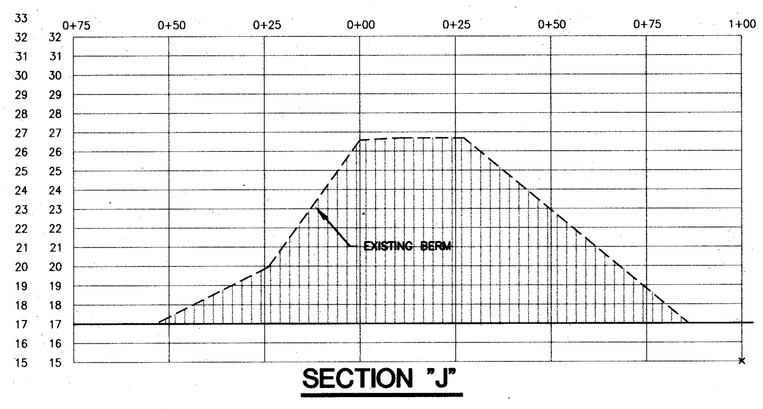

SECTION "J"

SCALE:
HORIZ. 1" = 20'
VERT. 1" = 4'

LEGEND

PROPOSED CUT

PROPOSED FILL

NOTES:
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CERTIFICATE OF SURVEYOR

I, THE UNDERSIGNED REGISTERED LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS PLAT IS A TRUE REPRESENTATION OF THE LAND DESCRIBED HEREON, SHOWN HEREON WORKING TO A SURVEY MADE UNDER MY DIRECTION AND SUPERVISION AND THAT SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS FOR LAND SURVEYING IN THE STATE OF FLORIDA (CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.)

10/31/00
DATE OF SURVEY

RANDALL E. BRITT, PROFESSIONAL LAND SURVEYOR
FLORIDA CERTIFICATE NO. 5247 STATE OF FLORIDA
NOTE: NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

RECORD SURVEY

Larson Engineering
A division of Kinley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
6404 Manatee Avenue West, Ste. N ■ Bradenton, Florida 34209 ■ (941) 794-5450 Fax (941) 795-1065

Project No.: 049500.111
SCALE: AS SHOWN
Checked By: JS Date: 8/97
Drawn By: WKM Ref.:
Design By: JS CADD File: 041POND1

Manatee County Public Works Department

NO.	REVISION	DATE	BY

JEFF STREITMATTER III, P.E.
FLA. CERT. NO. 46711
DATE:

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: EFFLUENT TRANSFER & STORAGE IMPROVEMENTS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: WET WEATHER STORAGE POND SECTIONS

15

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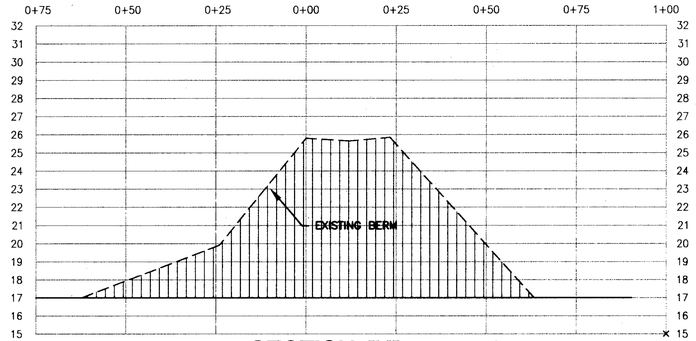
1712.012



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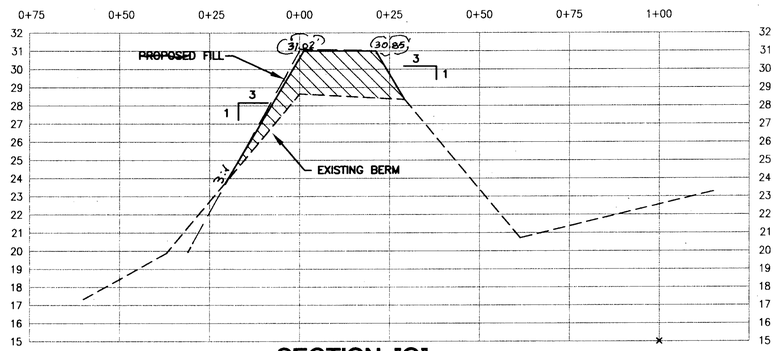


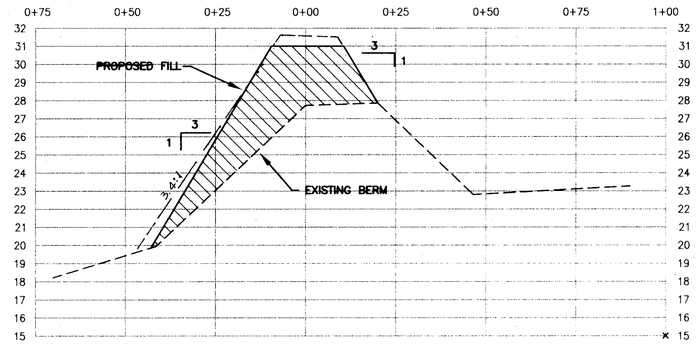
SECTION "O"

SCALE:
HORIZ. 1" = 20'
VERT. 1" = 4'

LEGEND

PROPOSED CUT

PROPOSED FILL



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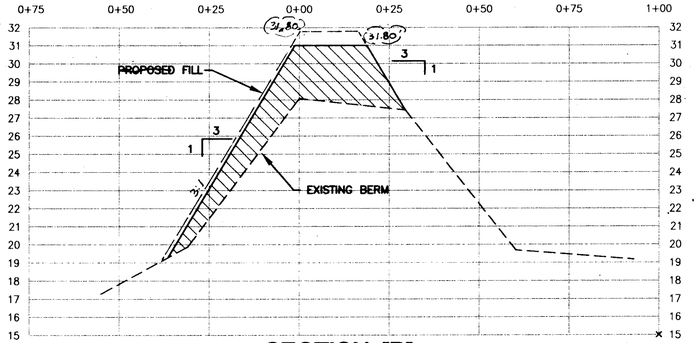

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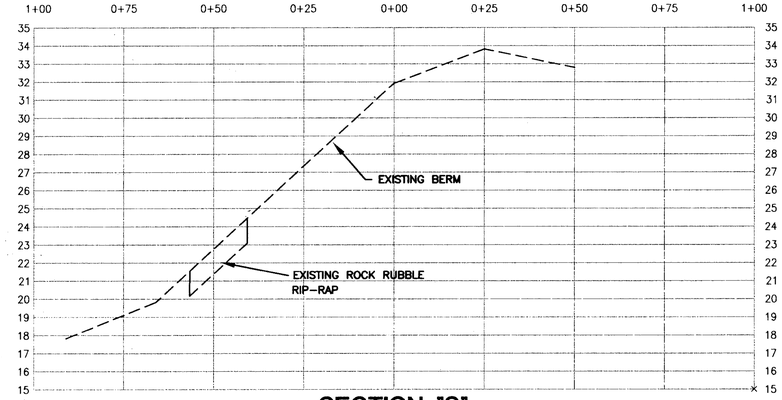

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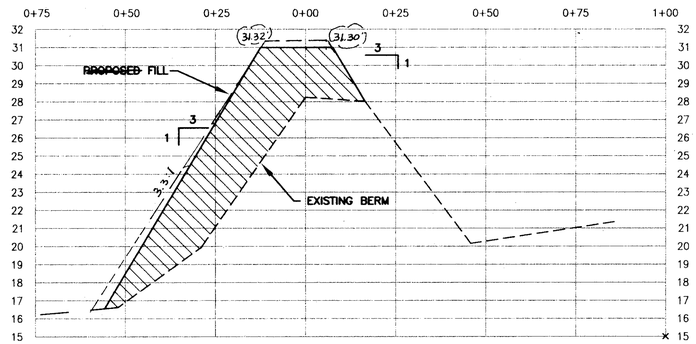

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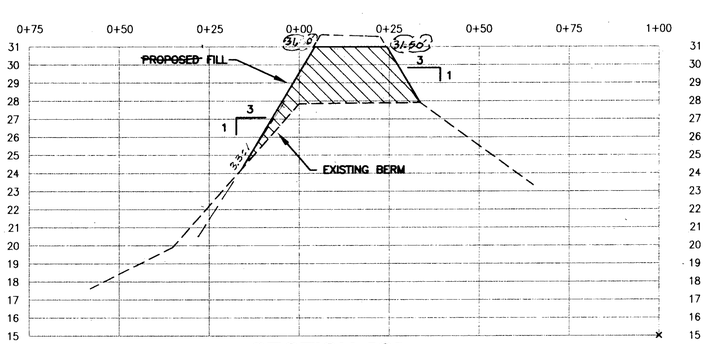

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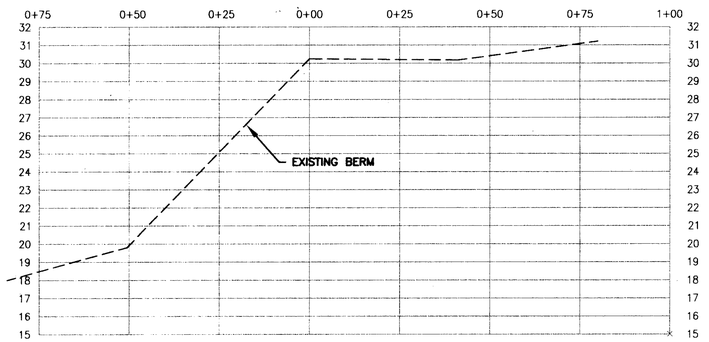

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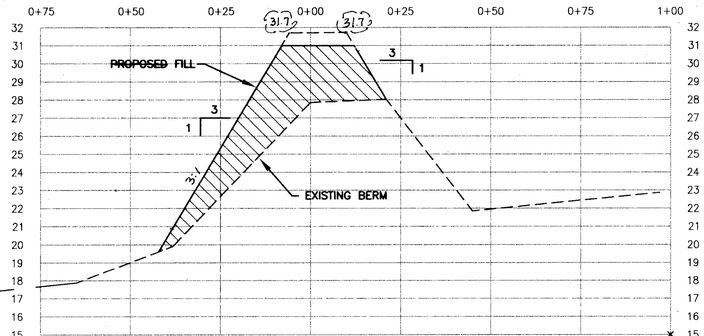

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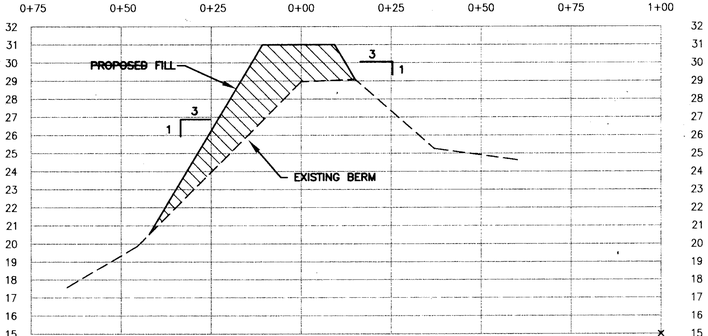

SECTION "R"

NOTES:
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10/3/00
DATE OF SURVEY

Randall E. Britt
RANDALL E. BRITT, PROFESSIONAL LAND SURVEYOR
FLORIDA CERTIFICATE NUMBER 3179
NOTE: NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

RECORD SURVEY

Larson Engineering
A division of Kimley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
6404 Manatee Avenue West, Ste. N ■ Bradenton, Florida 34209 ■ (941) 794-5450 Fax (941) 795-1065

Project No.: 049500.11
Checked By: JS
Date: 8/97
SCALE: AS SHOWN
Drawn By: WKM
Ref.:
Design By: JS
CADD File: 041POND1

Manatee County Public Works Department

NO.	REVISION	DATE	BY

JEFF STREITMATTER III, P.E.
FLA. CERT. NO. 46711
DATE:

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: EFFLUENT TRANSFER & STORAGE IMPROVEMENTS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: WET WEATHER STORAGE POND SECTIONS

16

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H:\049500.11\CADD\041SECT Wed Sep 03 08:15:24 1997 WKM

1712.013

UTILITY CONTACTS

MANATEE COUNTY – PUBLIC WORKS DEPT.
JESSE DAVIS
CALLER SERVICE 25010
BRADENTON, FLORIDA 34206
(941) 792-8811

FLORIDA POWER AND LIGHT
GREG COKER
5657 SOUTH McINTOSH ROAD
SARASOTA, FLORIDA 34233
(941) 379-7396

GENERAL TELEPHONE CO.
GARY CARTER – ENGINEER GOVERNMENT PROJECTS
1660 RINGLING BOULEVARD
SARASOTA, FLORIDA 34230-2929
(941) 952-5704

PEACE RIVER ELECTRIC COOPERATIVE, INC.
P.O. BOX 540
ELLENTON, FLORIDA 34222
(941) 722-2729

SUNSHINE STATE ONE CALL OF FLORIDA
1-800-432-4770

NORTH COUNTY WASTEWATER TREATMENT PLANT
CHRIS WEST – CHIEF OPERATOR
(941) 795-3424

LEGEND

EXISTING FACILITIES

5'x'N	SPOT ELEVATIONS (PAVED)
5'x'	SPOT ELEVATIONS (UNPAVED)
30" EFFL	EFFLUENT MAIN
18" RCP	STORM DRAINAGE SYSTEM
OHE	OVERHEAD ELECTRIC CABLE
	SWALE
GTE	TELEPHONE CABLE
	BENCHMARK
	FIRE HYDRANT
	VALVE
	UTILITY POLE
T.O.B.	TOP OF BANK
T.O.S.	TOE OF SLOPE
E/P	EDGE OF PAVEMENT

PROPOSED FACILITIES

5'x'	FINISHED GRADE (UNPAVED)
18	BASELINE (WITH STATIONING)
	EFFLUENT MAIN
	PLUG
	GATE VALVE
	BUTTERFLY VALVE
A	AIR RELEASE ASSEMBLY

ABBREVIATIONS LEGEND

PROCESS FLUID

AL	ALUM SOLUTION
CL_2G	CHLORINE (GAS)
CL_2S	CHLORINE SOLUTION
CLW	CLARIFIED WATER (CLARIFIER EFF.)
D	DRAIN
EFFL	EFFLUENT
F.M.	FORCE MAIN
ML	MIXED LIQUOR
P	POLYMER
P.W.	POTABLE WATER
R.A.S.	RETURN ACTIVATED SLUDGE
RW	PLANT WATER REUSE WATER
R.M.L.	RECIRCULATED MIXED LIQUOR
RS	RAW SEWAGE
SC	SCUM LINE
SL	SAMPLE LINE
TS	THICKENED SLUDGE
W.A.S.	WASTE ACTIVATED SLUDGE
WBW	WASTE BACKWASH WATER
WW	WASTE WATER

PIPE MATERIALS

DIP	DUCTILE IRON PIPE
PVC	POLYVINYL CHLORIDE PIPE

PIPE JOINT TYPES

R.J.	RESTRAINED JOINT
S.J.	SLIP JOINT
S.W.	SOLVENT WELD

INDEX

SHT. NO.	DESCRIPTION
	COVER
1	INDEX & GENERAL NOTES
2	OVERALL ALIGNMENT PLAN
3	PROJECT CONTROL PLAN
4	PLAN & PROFILE – STA. (–)2+00 to STA. 16+40
5	PLAN & PROFILE – STA. 16+40 to STA. 27+00 AND STA. 0+00 to 7+00
6	PUMP STATION SITE PLANS
7	EFFLUENT PUMPBACK STATION '1' DETAILS
8	EFFLUENT PUMPBACK STATION '2' DETAILS
9	EFFLUENT TRANSFER PUMP STATION DETAILS
10	METER AND IRRIGATION PUMP STATION DETAILS
11	TREATMENT PLANT PIPING MODIFICATIONS
12	ON-SITE STORAGE POND MODIFICATIONS
13	ON-SITE STORAGE POND MODIFICATION DETAILS
14	WET WEATHER STORAGE POND MODIFICATIONS
15	WET WEATHER STORAGE POND SECTIONS
16	WET WEATHER STORAGE POND SECTIONS
17	CONSTRUCTION DETAILS
18	CONSTRUCTION DETAILS
19	CONSTRUCTION DETAILS
E1R	ELECTRICAL SITE PLAN
E2R	PUMP STATION ELECTRICAL PLANS
E3R	PUMP CONTROL SCHEMATICS & NOTES

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING STRUCTURES, UTILITIES AND SERVICES PRIOR TO EXCAVATION AND CONSTRUCTION.
2. CONTRACTOR SHALL INSTALL THE PROPOSED EFFLUENT MAIN AT THE ELEVATION AND LOCATION SHOWN ON THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND POWER LINES.
4. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS SHOWN ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.
5. ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS OTHERWISE NOTED.
6. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, STORM DRAINS, UTILITIES, AND OTHER FACILITIES TO REMAIN AND SHALL REPAIR ANY DAMAGES DUE TO HIS CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER.
7. THE CONTRACTOR SHALL CONSTRUCT SILT SCREENS, HAY BALES OR OTHER APPROVED DEVICES PRIOR TO CONSTRUCTION TO PREVENT ADVERSE OFF-SITE IMPACT OF STORMWATER QUALITY AND QUANTITY
8. ALL EXISTING FENCES DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED AND REINSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST.
9. ENGINEERING DESIGN BASED ON SURVEY BY DARRELL E. GERKEN, P.L.S., DATED 11-1-94, (JOB# 94-10-05M)
10. MINIMUM COVER SHALL BE THREE FEET OVER TOP OF PIPE.
11. CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA FOR UTILITY LOCATIONS PRIOR TO CONSTRUCTION. (IN ACCORDANCE WITH THE UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT.)
12. ALL CONSTRUCTION SHALL CONFORM TO MANATEE COUNTY PUBLIC WORKS DEPARTMENT STANDARDS.
13. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT PRIOR TO CONSTRUCTION.
14. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH MANATEE COUNTY WASTEWATER TREATMENT PLANT PERSONNEL SO NOT TO NEGATIVELY IMPACT THE TREATMENT PLANT OPERATION.
15. CONTRACTOR SHALL COORDINATE HIS WORK WITHIN BUFFALO CREEK GOLF COURSE WITH THE GOLF COURSE MANAGER.
16. ALL PIPES INSTALLED BELOW GROUND SHALL USE MECHANICAL JOINT (M.J.) FITTINGS, ALL PIPES INSTALLED ABOVE GROUND SHALL USE FLANGED JOINT (F.J.) FITTINGS.
17. CONTRACTORS ACCESS TO THE PROPOSED PUMPBACK STATIONS SHALL BE MADE FROM ERIE ROAD TO THE WET WEATHER STORAGE PONDS AND AROUND THE NORTH BERM.
18. ALL PRESSURE PIPES SHALL MAINTAIN A MINIMUM VERTICAL SEPERATION OF 12" WHERE PIPES CROSS.

NOT A RECORD DRAWING

Larson Engineering
A division of Kimley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
840A Manatee Avenue West, Ste. N ■ Bradenton, Florida 34209 ■ (941) 794-5454 ■ Fax (941) 795-1065
Design By: MWM | Drawn By: MWM | Checked By: RS | Project No.: 04PEOC.11
CADD File: C410-NDX | Ref.: | Date: 6/96 | SCALE: AS SHOWN

Manatee County Public Works Department

NO. | REVISION | BY | DATE

JEFF STREITMATTER III, P.E.
FLA. CERT. NO. 45711
DATE:

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: EFFLUENT TRANSFER PUMP STATIONS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: INDEX AND GENERAL NOTES

1

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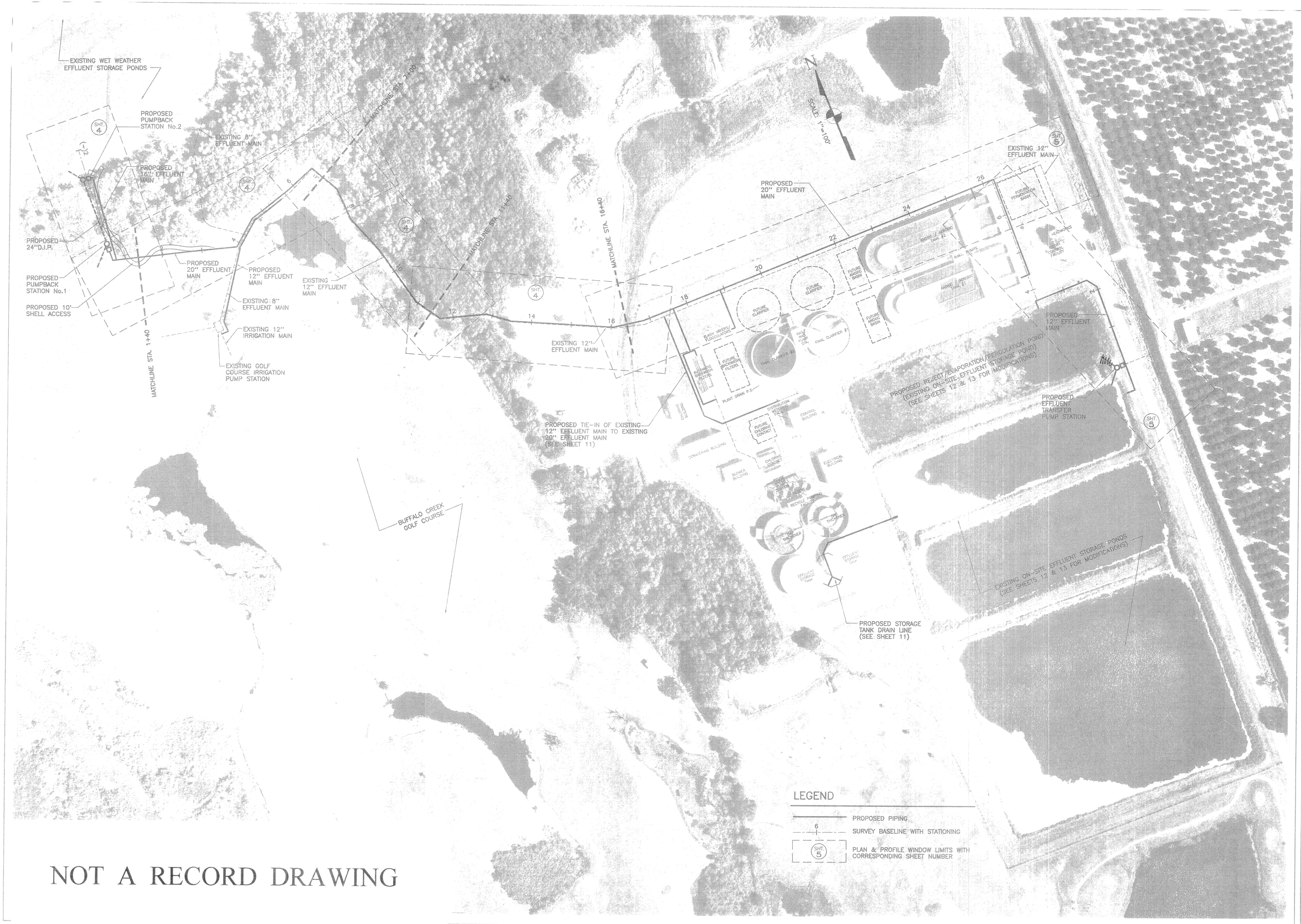

NOT A RECORD DRAWING

HAMRICK

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A division of Kimley-Horn and Associates

Manatee County Public Works Department

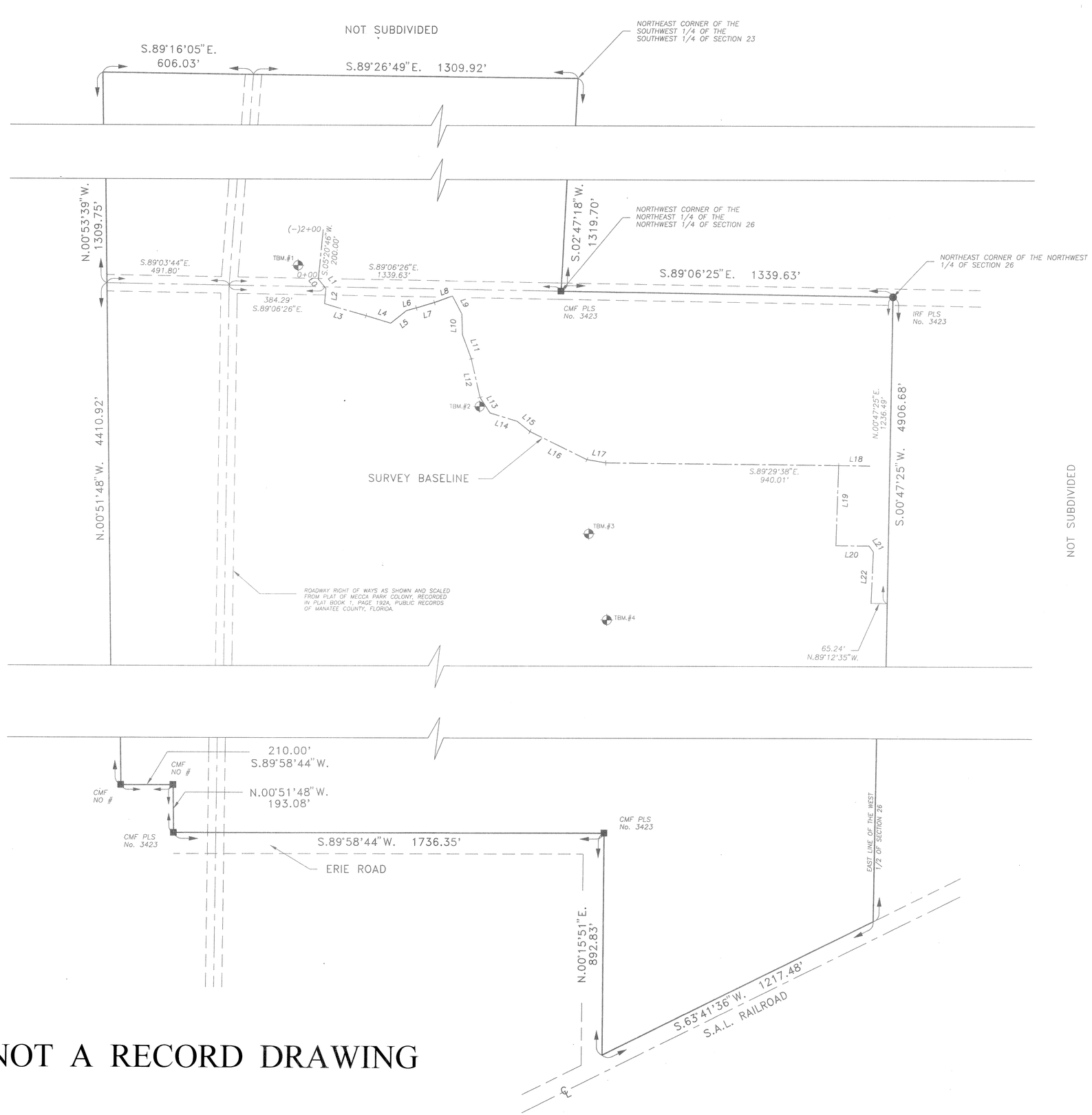
MANATEE COUNTY PUBLIC WORKS DEPARTMENT

EFFLUENT TRANSFER PUMP STATIONS

SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA

OVERALL ALIGNMENT PLAN

2



N

SCALE: 1"=200'

PROJECT BENCHMARKS

TBM.#1
RAILROAD SPIKE IN EXISTING 40" OAK TREE NEAR EXISTING PONDS
EL.= 25.48

TBM.#2
NAIL SET IN EXISTING 24" OAK TREE
EL.= 26.27

TBM.#3
SOUTHWEST CORNER OF CONCRETE LIGHT POLE BASE NEAR GATE IN FENCE ALONG WEST SIDE OF PLANT
EL.= 29.08

TBM.#4
RAILROAD SPIKE IN EXISTING OAK TREE (PLANT BM.)
EL.= 33.07

LINE TABLE

Line	Bearing	Distance
L0	S.39°39'14"E.	39.27'
L1	S.39°39'14"E.	47.98'
L2	S.05°05'23"W.	61.63'
L3	S.74°06'19"E.	173.91'
L4	S.73°08'42"E.	104.47'
L5	N.50°55'31"E.	81.04'
L6	N.74°36'18"E.	41.40'
L7	N.73°32'53"E.	76.08'
L8	N.69°24'35"E.	77.49'
L9	S.27°59'02"E.	82.28'
L10	S.01°55'01"E.	83.46'
L11	S.20°26'51"E.	104.39'
L12	S.13°00'16"E.	160.04'
L13	S.33°00'32"E.	73.95'
L14	S.72°46'11"E.	116.35'
L15	S.51°42'06"E.	64.92'
L16	S.64°04'03"E.	256.73'
L17	S.80°02'15"E.	77.49'
L18	S.89°18'44"E.	125.32'
L19	S.01°41'54"W.	323.30'
L20	S.89°45'27"E.	133.41'
L21	S.36°00'44"E.	30.14'
L22	S.02°16'04"W.	207.66'

LEGEND

- ■ CMF = 4"x4" CONC. MONUMENT FOUND
- □ CMS = 4"x4" CONC. MONUMENT SET NO. 1747
- ○ IRS = 5/8" IRON ROD SET NO. 1747
- ● IRF = 5/8" IRON ROD FOUND
- ● FIP = FOUND IRON PIPE
- △ P.K. = P.K. NAIL SET
- ▲ P.K. = P.K. NAIL FOUND
- PCP = PERMANENT CONTROL POINT
- PRM = PERMANENT REFERENCE MONUMENT
- (R) = RADIAL LINE
- (NR) = NONRADIAL LINE
- (F) = FIELD MEASUREMENT
- (P) = RECORD PLAT INFORMATION
- PC = POINT OF CURVATURE
- PT = POINT OF TANGENCY
- PRC = POINT OF REVERSE CURVE
- PCC = POINT OF COMPOUND CURVE
- PI = POINT OF INTERSECTION

NOT A RECORD DRAWING

Larson Engineering
A division of Kimley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
6404 Manatee Avenue West, Ste N ■ Bradenton, Florida 34209 ■ (941) 794-1450 ■ Fax (941) 795-1065
Design By: DEG | Drawn By: MWR | Checked By: RES | Project No: 041950.111
CADD File: 041DCIRL | Ref: | Date: 6/96 | SCALE: 1"=200'

Manatee County Public Works Department

NO. | DATE | REVISION

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: EFFLUENT TRANSFER PUMP STATIONS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
DESC: PROJECT CONTROL PLAN

Kimley-Horn & Associates
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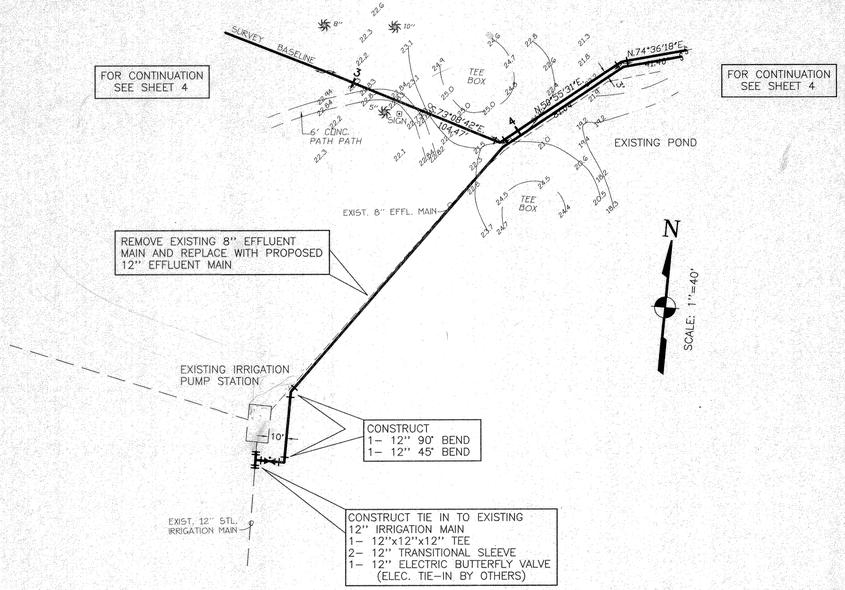
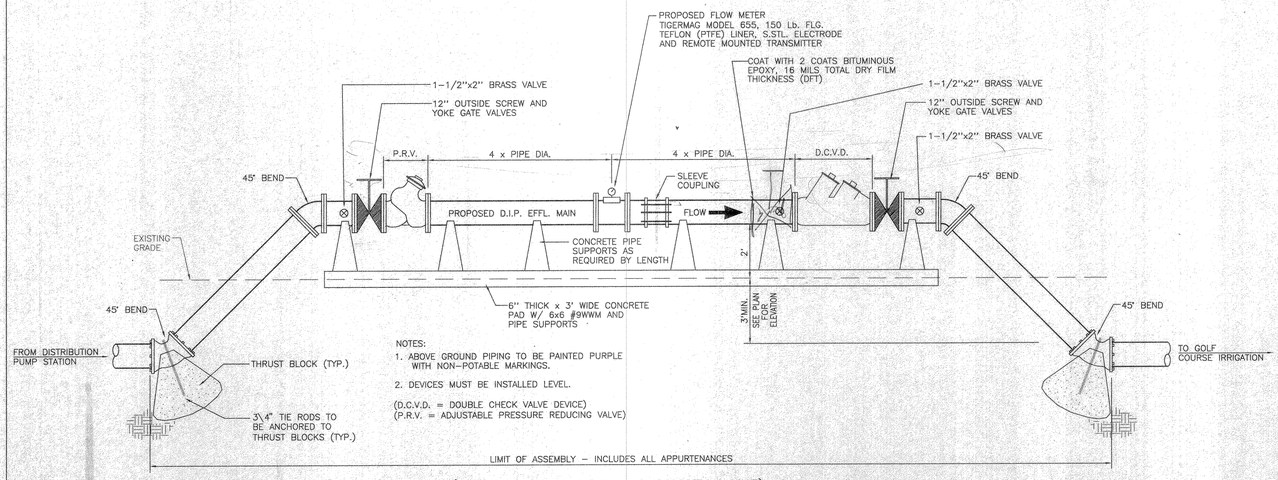


IRRIGATION PUMP STATION TIE-IN

1"=40'



NOTES:
1. ABOVE GROUND PIPING TO BE PAINTED PURPLE WITH NON-POTABLE MARKINGS.
2. DEVICES MUST BE INSTALLED LEVEL.

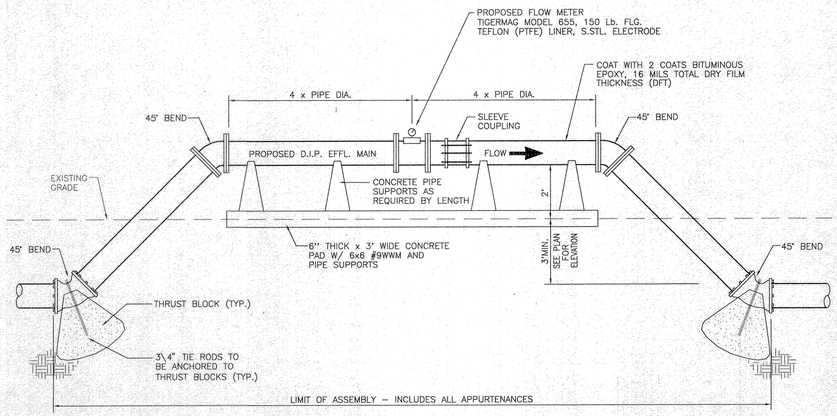
(D.C.V.D. = DOUBLE CHECK VALVE DEVICE)
(P.R.V. = ADJUSTABLE PRESSURE REDUCING VALVE)

(FOR USE ON GOLF COURSE IRRIGATION LINE)

PRESSURE REDUCING BACKFLOW ASSEMBLY WITH METER

N.T.S.

ASSEMBLIES REQUIRES	
LOCATION	SIZE (INCHES)
PLANT SITE	12"



(FOR USE AT PROPOSED PUMP STATIONS)

FLOW METER ASSEMBLY DETAIL

N.T.S.

ASSEMBLIES REQUIRES	
LOCATION	SIZE (INCHES)
PUMPBACK STATION NO.1	16"
PUMPBACK STATION NO.2	16"
TRANSFER PUMP STATION	12"

Larson Engineering
A division of Kinley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
6404 Manatee Avenue West, Ste. N ■ Bradenton, Florida 34209 ■ (941) 794-5450 ■ Fax (941) 795-1065
Design By: BLL/MWM | Drawn By: KAT | Checked By: RS | Project No.: 049500.111
CADD File: CH10-HV | Ref.: | Date: 6/96 | SCALE: AS SHOWN

Manatee County Public Works Department

NO.	REVISION	BY	DATE

X JEFF STREITMATTER III, P.E. FLA. CERT. NO. 46711 DATE:

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT

TITLE: **EFFLUENT TRANSFER PUMP STATIONS**
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA

DESIGN: METER AND IRRIGATION PUMP STATION DETAILS

10

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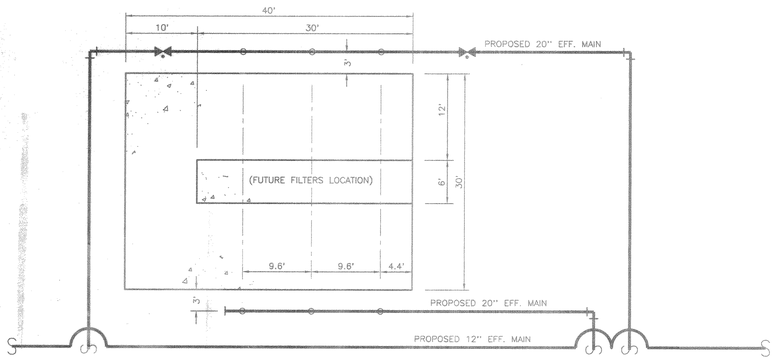

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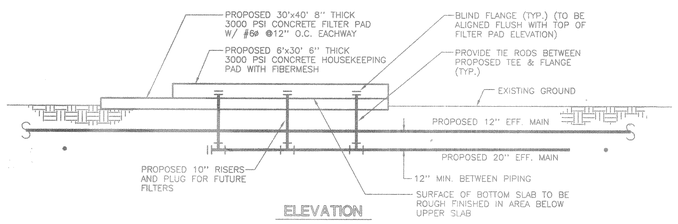
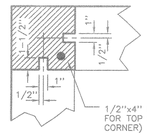


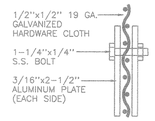
ELEVATION

FILTER PAD AND PIPING DETAIL

N.T.S.



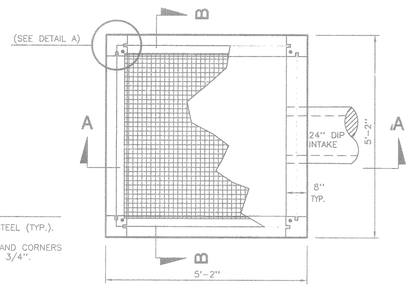
DETAIL A



DETAIL B

NOTES :

1. 2" MIN. COVER ALL STEEL (TYP.).
2. ALL EXPOSED EDGES AND CORNERS SHALL BE CHAMFERED 3/4".



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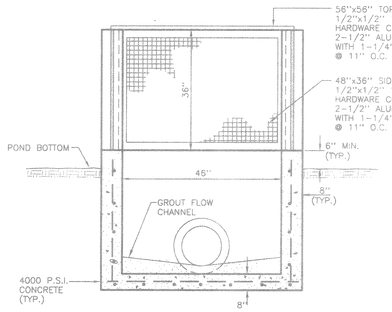
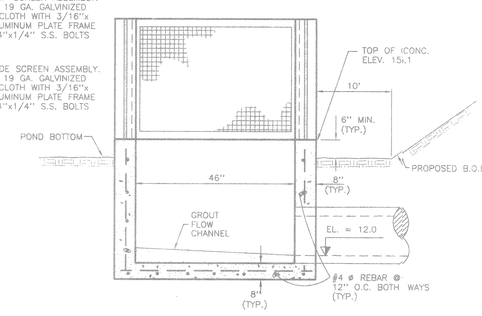


SECTION B-B



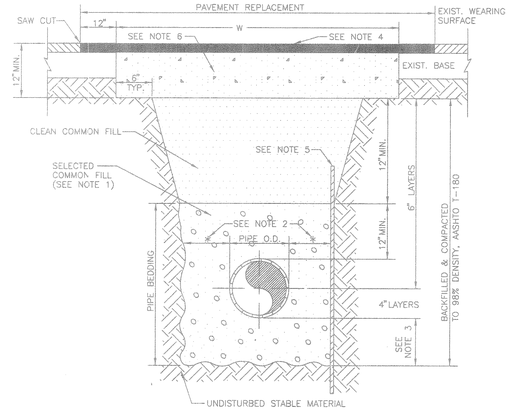
SECTION A-A

WET WEATHER POND INTAKE STRUCTURE

N.T.S.

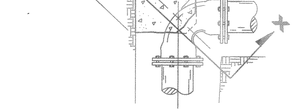
NOTES:

1.) USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
3.) 4" MAX. FOR PIPE 15" DIAMETER AND LESS; 6" MAX. FOR PIPE DIAMETER 18" TO 36" AND 9" MAX. FOR PIPE DIAMETER 42" AND OVER.
4.) WEARING SURFACE TO BE SAME TYPE & THICKNESS (1 1/2" MIN.) AS EXISTING PAVEMENT.
5.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE.
6.) BASE MATERIAL SHALL BE D.O.T. NO. 57, LIMEROCK, SHELL OR APPROVED EQUAL.
7.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES, EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.
8.) TEMPORARY PATCHES WILL BE MAINTAINED SO AS TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIME. PERMANENT PATCH TO BE MADE AS SOON AS POSSIBLE.

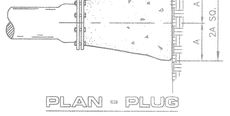


PAVEMENT RESTORATION DETAIL

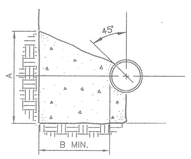
N.T.S.



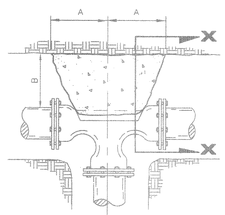
PLAN - BEND



PLAN - PLUG



SECTION X-X



PLAN - TEE

NOTES:

1. 5 MIL. VISQUEEN SHALL BE PLACED AROUND ALL METAL SURFACES IN CONTACT W/ CONCRETE PRIOR TO POURING THRUST BLOCKS.
2. CONCRETE FOR THRUST BLOCKS SHALL HAVE COMP. STRENGTH OF 3000 P.S.I. @ 28 DAYS.
3. THRUST BLOCKS TO BE SET AGAINST FIRM UNDISTURBED SOIL.

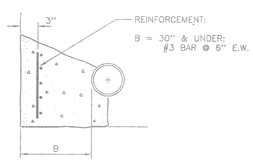
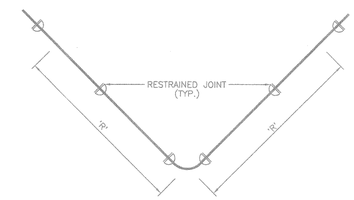


TABLE OF DIMENSIONS (inches)

SIZE	90° BENDS		45° BENDS		22-1/2° BENDS		11-1/4° BENDS		TEES		PLUGS	
	A	B	A	B	A	B	A	B	A	B	A	B
6"	12"	6"	9"	6"	6"	6"	6"	6"	12"	6"	12"	6"
8"	15"	6"	12"	6"	9"	6"	6"	6"	12"	6"	12"	12"
12"	24"	12"	18"	12"	12"	6"	9"	8"	18"	6"	18"	12"
16"	30"	18"	24"	12"	18"	12"	12"	6"	27"	12"	27"	18"
20"	40"	20"	30"	18"	22"	18"	22"	18"	48"	24"	48"	24"

THRUST BLOCKS

N.T.S.



NOTES:

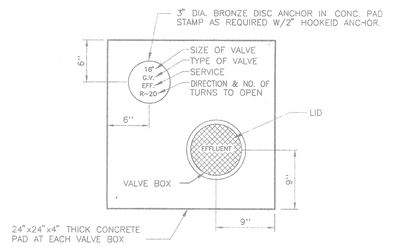
1. ALL RESTRAINED JOINT PIPE SHALL BE RESTRAINED TO THE NEXT JOINT AFTER DISTANCE "R".
2. NO SEPARATE PAYMENT WILL BE MADE FOR RESTRAINED JOINT.
3. FOR PLUGS USE THE 'R' VALUE FOR 90° BENDS.
4. THE MAIN LINE SHALL BE RESTRAINED AT ALL TEES AT A DISTANCE OF ONE FULL JOINT OF PIPE (20' MIN.) TO EACH SIDE OF AND INCLUDING THE TEE. THE BRANCH OUT OF THE TEE SHALL BE RESTRAINED THE SAME DISTANCE AS A 90° BEND SHOWN ON TABLE BELOW.
5. ALL IN-LINE VALVES AND ADJACENT MAIN LINE SHALL BE RESTRAINED A DISTANCE OF ONE FULL JOINT OF PIPE (20' MIN.) EACH SIDE OF VALVE.

TABLE OF DIMENSIONS

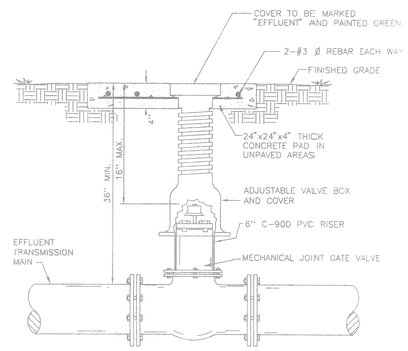
SIZE	'R' FOR 11 1/4° BENDS	'R' FOR 22 1/2° BENDS	'R' FOR 45° BENDS	'R' FOR 90° BENDS
6"	8'	8'	11'	35'
8"	8'	8'	17'	56'
12"	8'	8'	30'	101'
16"	8'	12'	45'	154'
20"	8'	16'	61	209'

RESTRAINED JOINT

N.T.S.



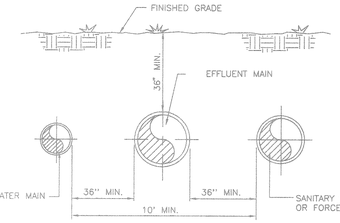
PLAN



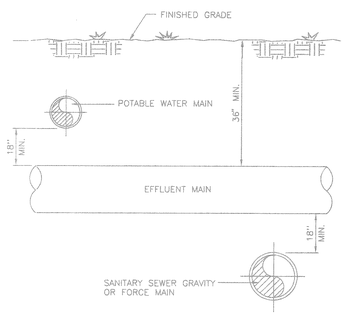
SECTION

VALVE BOX & PAD

N.T.S.



SECTION 2



SECTION 1

NOTE: EFFLUENT MAINS SHALL BE CONSTRUCTED WITH A MINIMUM OF 36" SEPARATION FROM POTABLE WATER, RAW WATER, SANITARY GRAVITY AND SANITARY FORCE MAINS. EFFLUENT MAINS SHALL CROSS UNDER WATER MAINS AND ABOVE SANITARY LINES (WHERE POSSIBLE) WITH A MINIMUM OF 18" CLEARANCE EACH. WHERE MINIMUM CLEARANCE CANNOT BE MAINTAINED THE PIPES SHALL BE CONCRETE ENCASED.

EFFLUENT MAIN CLEARANCES

N.T.S.

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Larson Engineering
A division of Kimley-Horn and Associates, Inc.

Manatee County Public Works Department

NO. REVISION DATE

FOR THE EFFLUENT TRANSFER PUMP STATIONS
MANATEE COUNTY PUBLIC WORKS DEPARTMENT
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA

CONSTRUCTION DETAILS

17

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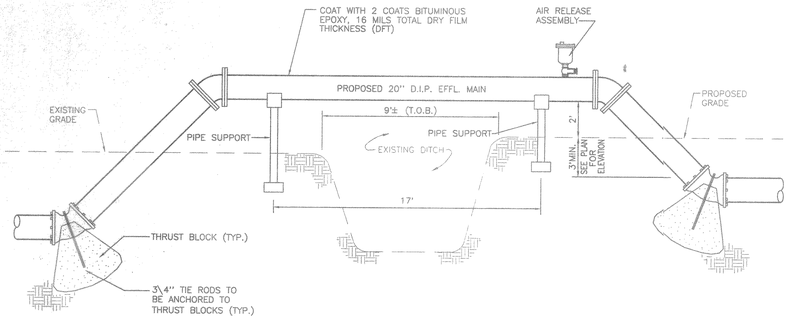

DITCH CROSSING #1 - STA. 9+50

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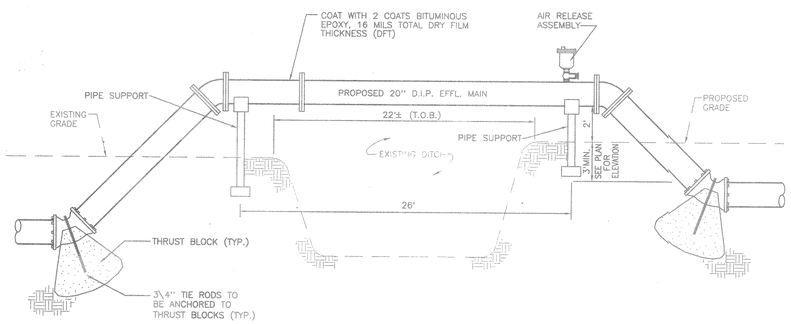

DITCH CROSSING #2 - STA. 12+09

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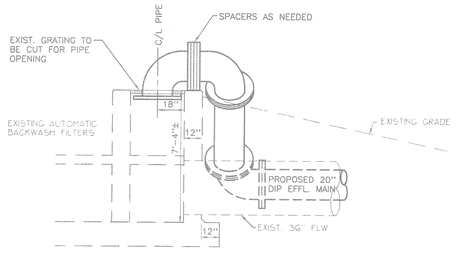

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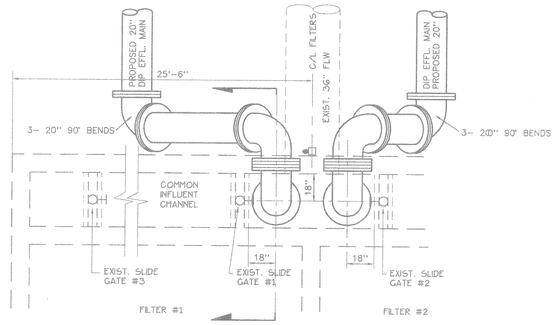
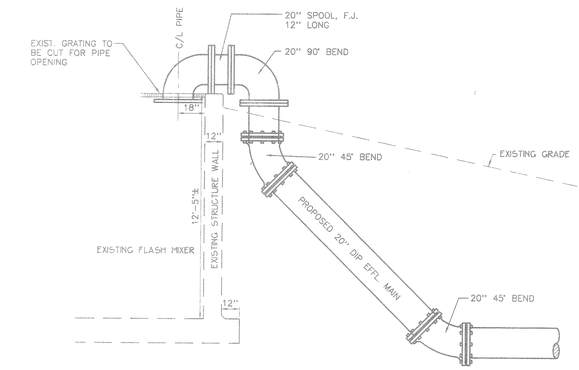


PLAN

TIE-IN TO AUTOMATIC BACKWASH FILTERS

D / 11

N.T.S.



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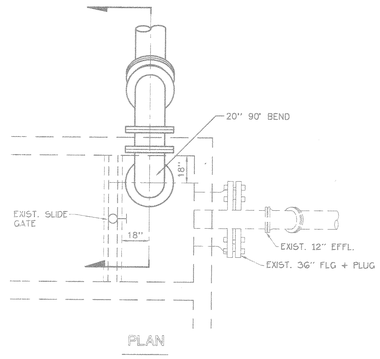
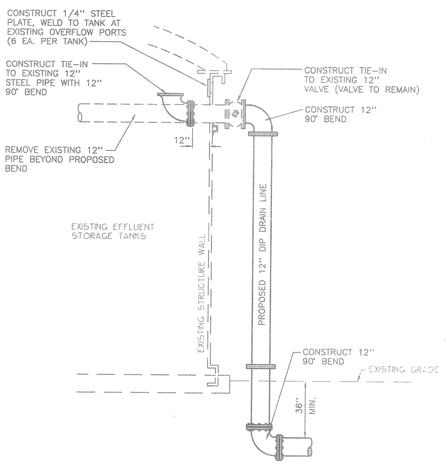


PLAN

TIE-IN TO FLASH MIXERS

C / 5

N.T.S.



STORAGE TANKS #1 & #2 OVERFLOW

E / 11

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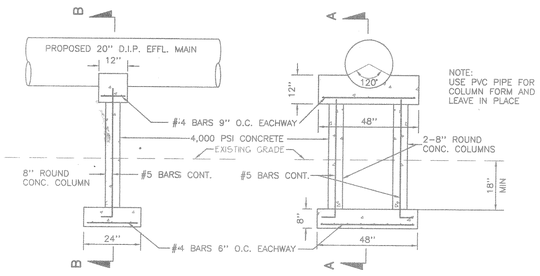

SECTION A-A SECTION B-B

PIPE SUPPORT DETAIL

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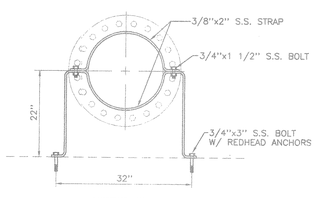

OFFSET PIPE CLAMP DETAIL

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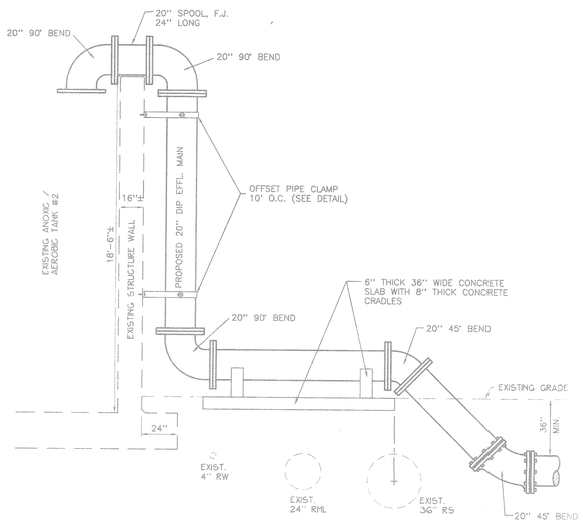
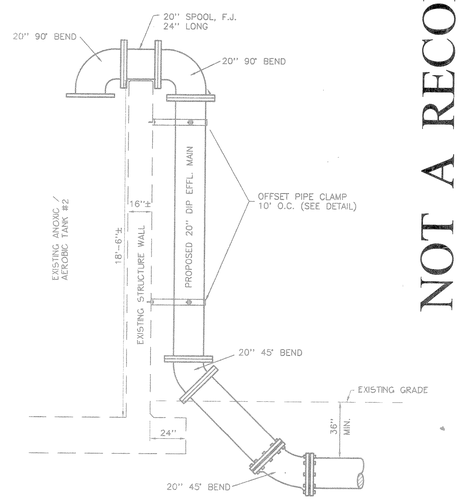


TIE-IN TO ANOXIC / AEROBIC TANK #2

B / 5

N.T.S.



TIE-IN TO ANOXIC / AEROBIC TANK #1

A / 5

N.T.S.

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Engineering, Planning, and Environmental Consultants
4444 Manatee Avenue, Suite 104, Bradenton, Florida 34209 (941) 794-7456 Fax (941) 794-7549

Manatee County Public Works Department

NO.	REVISION	DATE	BY

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TITLE: EFFLUENT TRANSFER PUMP STATIONS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
CONSTRUCTION DETAILS

DESIGNED: KTH SHEETMETER III, P.E. LIC. NO. 46414
DRAWN:
CHECKED:
APPROVED:
DATE:
SCALE: AS NOTED
JOB NO.

18

Kimley-Horn & Assoc. 1998

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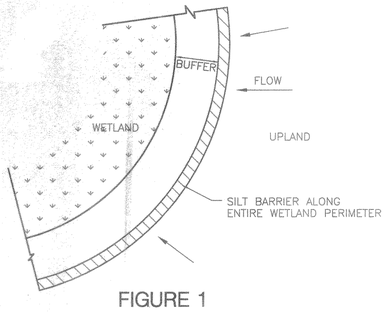
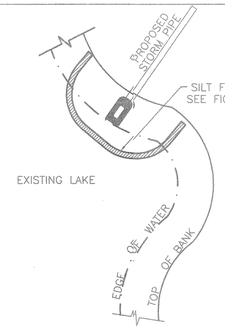


FIGURE 1

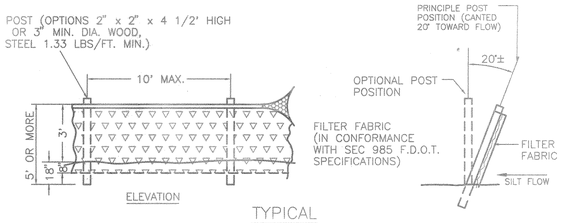


WHERE A DAM IS REQUIRED WITHIN EXISTING LAKE FOR CONSTRUCTION OF STORM PIPE, SILT FENCE SHALL BE PLACED BEYOND THE DAM.

SILT BARRIER AT CONNECTION OF STORM PIPE TO EXISTING LAKE

N.T.S.

FIGURE 9



TYPICAL SILT FENCE

N.T.S.

FIGURE 2

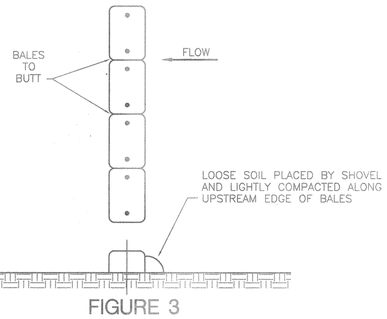
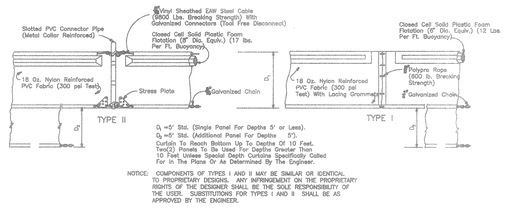


FIGURE 3

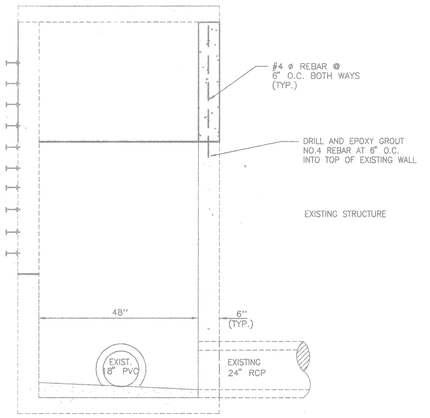


FLOATING TURBIDITY BARRIERS

FIGURE 4

BEST MANAGEMENT PRACTICES NOTES

1. BEST MANAGEMENT PRACTICES DETAILS (FIGURES 1, 2, 3, 4 AND 9) SHALL BE IUTILIZED AS NECESSARY TO PREVENT ADVERSE STORMWATER OR EFFLUEINT DISCHARGE FROM LEAVING THE SITE DURING CONSTRUCTION.
2. HAY BAILS OR SILT FENCE SHALL BE USED AT TOE OF SLOPE (EXTERIOR FACE) OF WET WEATHER STORAGE POND PERIMETER BERM AND AROUND ENTIRE STOCKPILE AREA.



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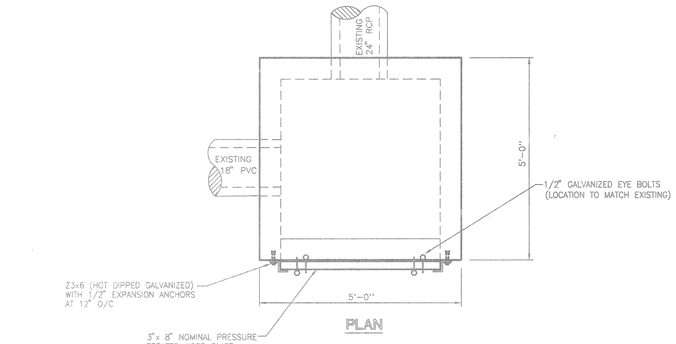
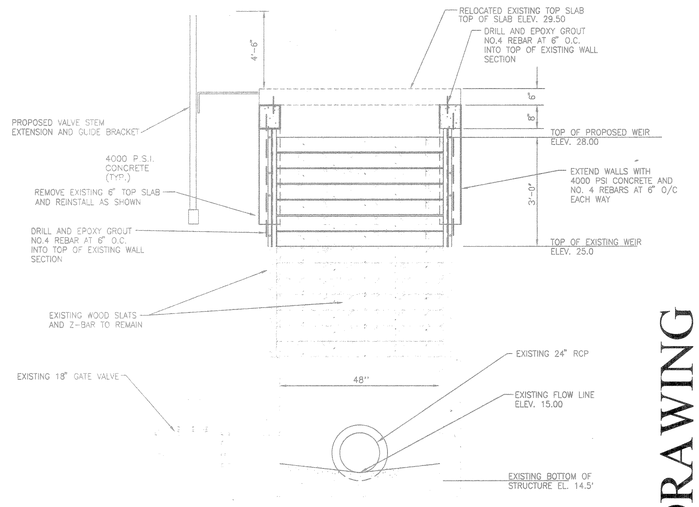


PLAN



EXISTING BAFFLED OUTFALL CONTROL STRUCTURE DETAIL TO BE MODIFIED

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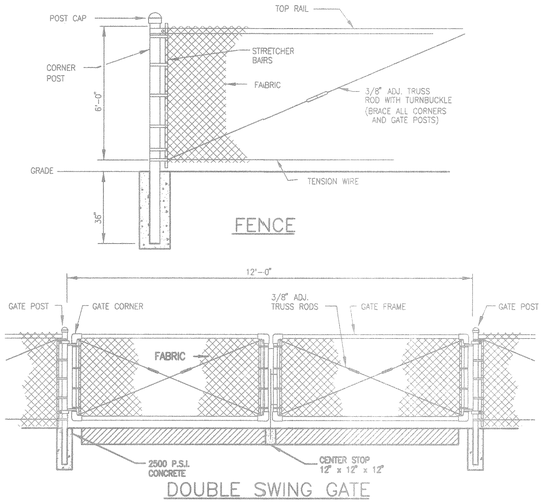
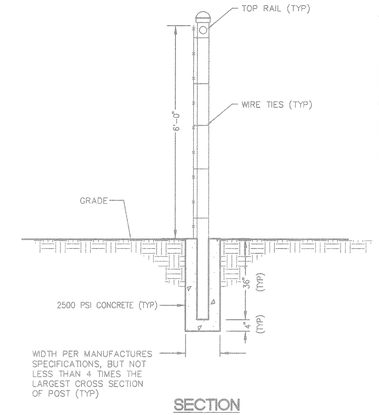


DOUBLE SWING GATE

FENCE DETAIL



SECTION

NOT TO SCALE

NOT A RECORD DRAWING

Larson Engineering
A division of Kinley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
1414 Manatee Avenue West, Bar N. ■ Bradenton, Florida 34209 ■ (941)
Manatee County Public Works Department

NO.	REVISION	DATE	BY

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT

TITLE: EFFLUENT TRANSFER PUMP STATIONS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA

CONSTRUCTION DETAILS

"FF STREITMATTER III P.E. LICENSE NO. 44411"

19

Kinley-Horn & Assoc., Inc.
© 1997

H:\049500_11\CAD\049500-11\DETAILS\DET5 Thu Sep 04 16:08:16 1997 WKM
\\CAD\049500-11\DETAILS\DET5.dwg
9/22/97
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NOTES:

1) EXISTING MOTOR CONTROL CENTERS MCC-1A AND MCC-2A ARE SERVED FROM EXISTING MCC-1 AND MCC-2 RESPECTIVELY. MCC-1A AND MCC-2A ARE TIED TOGETHER AND A KIRK KEY INTERLOCK SYSTEM IS UTILIZED SUCH THAT BOTH 1A AND 2A CAN BE FED FROM EITHER MCC-1 OR MCC-2. MCC-1A AND MCC-2A ARE EACH SERVED BY A 3" CONDUIT W/ 3 #4/0 & 1 #2G. RE-PULL 3 #500KCM & 1 #1G IN EXISTING 3" CONDUITS. PULL ONE CONDUIT AT A TIME TO ALLOW CONTINUOUS ENERGIZATION OF MCC-1A AND MCC-2A. REPLACE EXISTING 200A FUSIES IN MCC-1 AND MCC-2 WITH 400A WESTINGHOUSE BREAKERS. CONDUIT ROUTING SHOWN IS APPROXIMATE. FIELD VERIFY PULL BOX LOCATIONS.

2) PROVIDE CONDUIT AND WIRE FROM CONTROL BUILDING TO NEW FLOW METER LOCATION. COORDINATE EXACT LOCATION WITH CIVIL ENGINEER. ROUTE (1) 3/4" C WITH 2 #12, 1 #12G FOR FLOW METER PQWER (120V) AND (1) 3/4" C WITH 4 #14 FOR FLOW METER DATA CABLES. PROVIDE POWER FROM POWER PANEL IN CONTROL ROOM. TERMINATE DATA CONDUIT IN CONTROL CABINET IN CONTROL ROOM. DATA SHALL BE RECORDED ON NEW PEN CHART RECORDER WHICH WILL ALSO RECORD DATA FROM THE THREE PUMP STATIONS. (SEE SHEET E3R FOR RECORDER INFORMATION).

NOT A RECORD DRAWING

Larson Engineering
A division of Kinley-Horn and Associates Inc

Manatee County
Public Works
Department

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

EFFLUENT TRANSFER PUMP STATIONS

SEC. 22,23,26 & 27, TWP 33S., RGE 18E. MANATEE COUNTY, FLORIDA

ELECTRICAL SITE PLAN

E1R

KINLEY ENGINEERING INC.
MECHANICAL & ELECTRICAL CONSULTING ENGINEERS
6002 33rd St. W. Bradenton, FL 34209
PHONE (941) 746-6588

DESIGNED LAS | DRAWN LAS | CHECKED
DATE 10-96 | SCALE AS NOTED | DATE 9-5-97

REVISIONS
1
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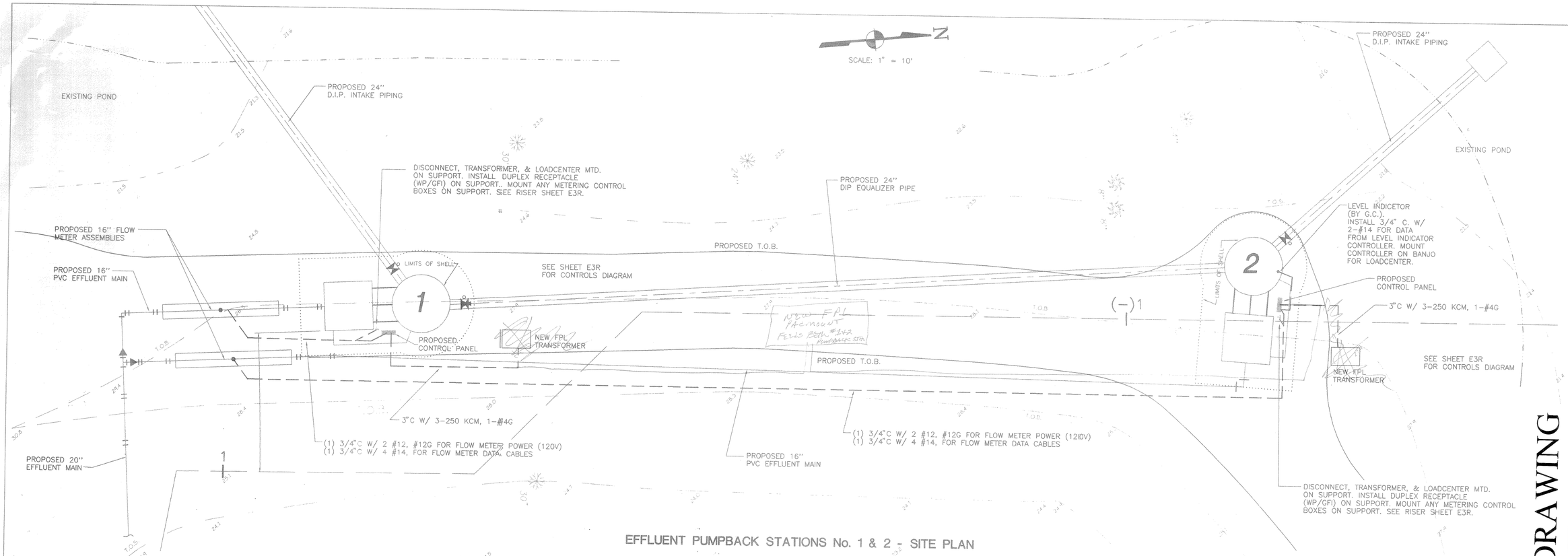
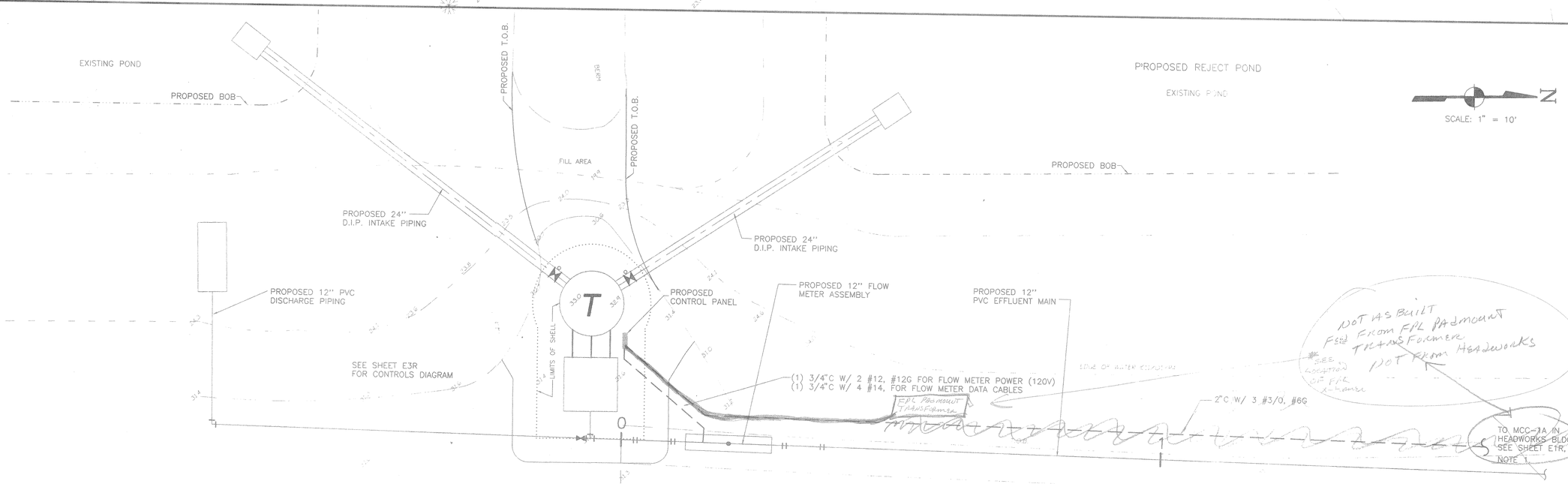
6

HANBRICK



EFFLUENT PUMPBACK STATIONS No. 1 & 2 - SITE PLAN



EFFLUENT TRANSFER PUMP STATION - SITE PLAN

NOT A RECORD DRAWING

Larson Engineering
A division of Kimley-Horn and Associates, Inc.
Manatee County Public Works Department

FORNEY ENGINEERING INC.
MECHANICAL & ELECTRICAL CONSULTING ENGINEERS
602 Third St. East Bradenton, Fl 34208
PHONE (941) 748-5884

DESIGNED L.N.S. DRAWN L.N.S. CHECKED
JOB NO. 95-601 SCALE AS NOTED DATE 5-29-96

REVISIONS
1
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3
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6

FOR: MANATEE COUNTY PUBLIC WORKS DEPARTMENT
EFFLUENT TRANSFER PUMP STATIONS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA
PUMP STATION ELECTRICAL PLANS

E2R

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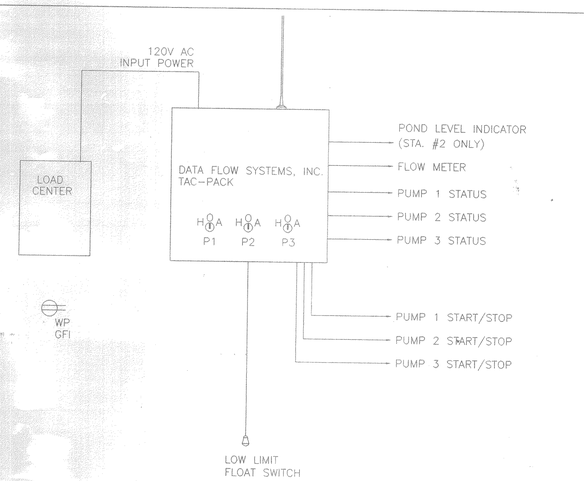
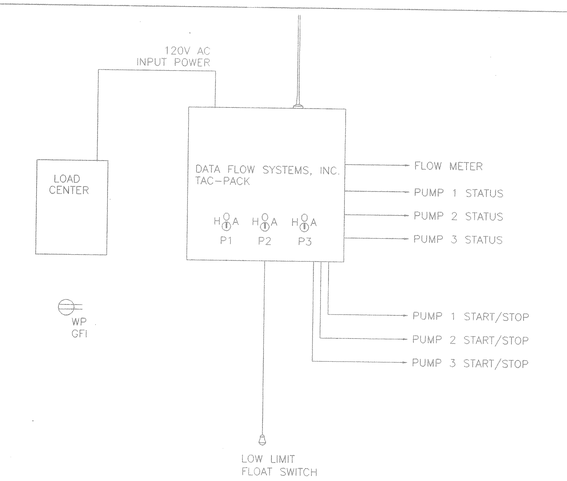
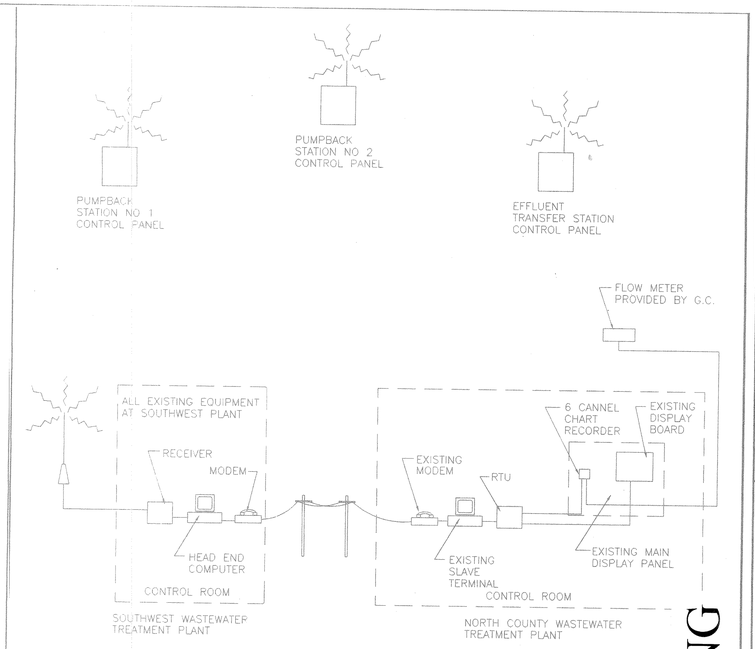


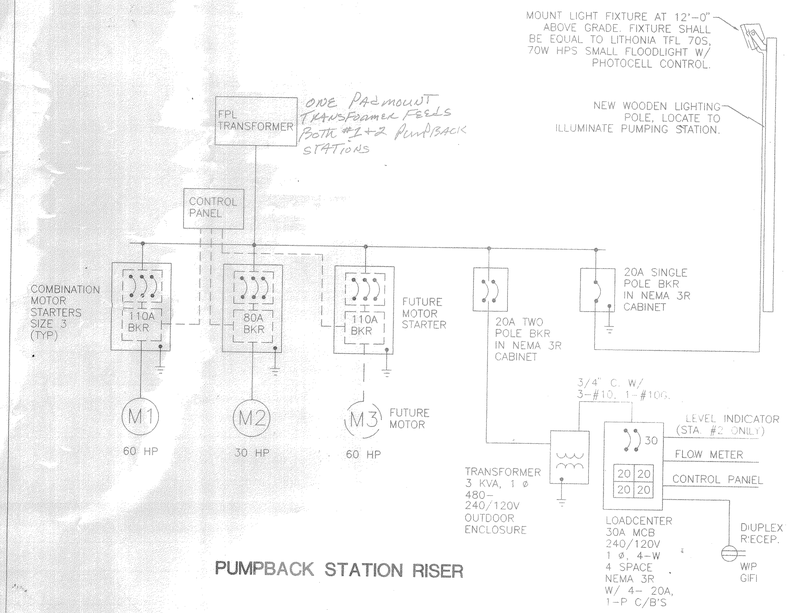
CONTROL PANEL DIAGRAM



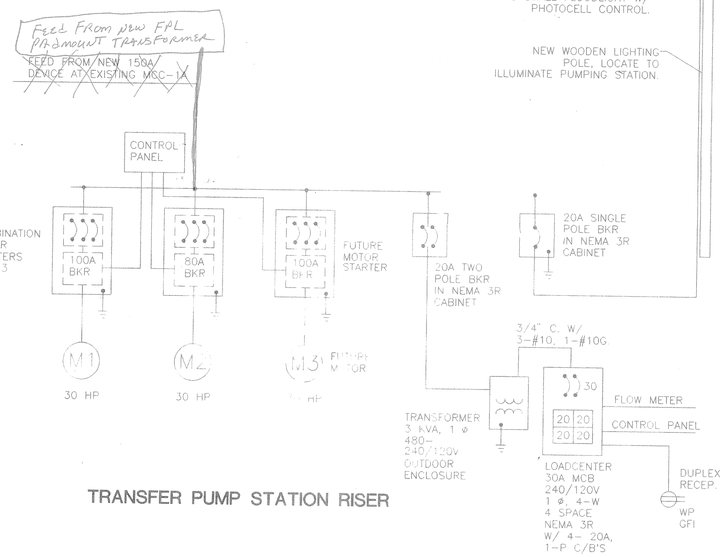
CONTROL PANEL DIAGRAM



TRANSMISSION DIAGRAM



PUMPBACK STATION RISER



TRANSFER PUMP STATION RISER

SEQUENCE OF OPERATION

THE PUMPBACK STATIONS SHALL EACH CONSIST OF (1) 60 HP PUMP, (1) 30 HP PUMP AND (1) 60 HP PUMP IN THE FUTURE. POWER AND CONTROLS ARE TO BE PROVIDED AS IF ALL PUMPS ARE TO BE INSTALLED AT THE PRESENT TIME EXCEPT FOR COMBINATION MOTOR STARTERS FOR THE FUTURE PUMPS.

OPERATION OF THE PUMPS SHALL BE CONTROLLED BY A CONTROL PANEL AS MANUFACTURED BY DATA FLOW SYSTEMS, INC. MODEL TAC-PACK OR EQUAL. EACH PUMP SHALL BE ABLE TO BE CONTROLLED LOCALLY BY THE CONTROL PANEL OR REMOTELY AT THE PRESENT OPERATOR INTERFACES.

LOCAL OPERATION SHALL BE MANUALLY CONTROLLED BY HOA SWITCHES FOR EACH PUMP OR BY MANUAL OPERATOR INPUT AT THE PRESENT HEAD END AT THE SOUTHWEST WASTEWATER TREATMENT PLANT OR BY MANUAL OPERATOR INPUT AT THE SLAVE TERMINAL IN THE NORTH COUNTY CONTROL ROOM.

A FLOAT SWITCH SHALL BE INCLUDED TO INDICATE LOW LEVEL ALARM LOCALLY AT THE CONTROL PANEL AND AT BOTH REMOTE OPERATOR STATIONS. LOW LEVEL ALARM SHALL BE CAPABLE OF PUMP(S) SHUTDOWN.

THE CONTROL PANEL SHALL HAVE FAIL SAFE HOA SWITCHES TO ALLOW MANUAL OPERATION OF PUMPS IN THE EVENT OF A CONTROL PANEL FAILURE. EACH PUMP SHALL HAVE ITS OWN HOA SWITCH. THE CONTROL PANEL SHALL ALSO MONITOR AND REPORT DATA FROM A FLOW METER AT EACH STATION. THE PANEL SHALL REPORT THE STATUS OF THE INDIVIDUAL PUMPS TO THE HEAD END AND INDICATE BY ALARM ANY PUMP FAILURES AT THE HEAD END AS WELL AS LOCALLY AT THE CONTROL PANEL. THE CONTROL PANEL SHALL ALLOW REMOTE STARTING AND STOPPING OF THE INDIVIDUAL PUMPS VIA THE EXISTING TACII RADIO TELEMETRY SYSTEM. THE EXISTING SYSTEM SHALL BE EXPANDED TO ACCOMODATE THE ADDITION OF THESE PUMPING STATIONS.

REMOTE STARTING AND STOPPING OF PUMPS SHALL BE ALLOWED ONLY WHEN HOA SWITCHES ARE IN THE AUTOMATIC POSITION.

THE CONTROL PANEL AT STATION #2 SHALL HAVE PROVISIONS FOR A POND LEVEL INDICATOR TO RECEIVE AND TRANSMIT POND LEVEL INFORMATION.

PUMPBACK STATIONS 1 & 2 DIAGRAMS

SEQUENCE OF OPERATION

THE TRANSFER STATION SHALL CONSIST OF (2) 30 HP PUMPS AND (1) 30 HP PUMP IN THE FUTURE. POWER AND CONTROLS ARE TO BE PROVIDED AS IF ALL PUMPS ARE TO BE INSTALLED AT THE PRESENT TIME EXCEPT FOR COMBINATION MOTOR STARTERS FOR THE FUTURE PUMP.

OPERATION OF THE PUMPS SHALL BE CONTROLLED BY A CONTROL PANEL AS MANUFACTURED BY DATA FLOW SYSTEMS, INC. MODEL TAC-PACK OR EQUAL. EACH PUMP SHALL BE ABLE TO BE CONTROLLED LOCALLY BY THE CONTROL PANEL OR REMOTELY AT THE PRESENT OPERATOR INTERFACES.

LOCAL OPERATION SHALL BE MANUALLY CONTROLLED BY HOA SWITCHES FOR EACH PUMP OR BY MANUAL OPERATOR INPUT AT THE PRESENT HEAD END AT THE SOUTHWEST WASTEWATER TREATMENT PLANT OR BY MANUAL OPERATOR INPUT AT THE SLAVE TERMINAL IN THE NORTH COUNTY CONTROL ROOM.

A FLOAT SWITCH SHALL BE INCLUDED TO INDICATE LOW LEVEL ALARM LOCALLY AT THE CONTROL PANEL AND AT BOTH REMOTE OPERATOR STATIONS. LOW LEVEL ALARM SHALL BE CAPABLE OF PUMP(S) SHUTDOWN.

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REMOTE STARTING AND STOPPING OF PUMPS SHALL BE ALLOWED ONLY WHEN HOA SWITCHES ARE IN THE AUTOMATIC POSITION.

TRANSFER PUMP STATIONS DIAGRAMS

CONTROL ROOM EQUIPMENT

CONTROL ROOM RTU FOR OPERATION OF CHART RECORDERS

(1) RTU204 ENCLOSURE
(1) MODULAR BACKPLANE (MBP001)
(1) RADIO INTERFACE MODULE/RADIO (RIM005)
(1) POWER SUPPLY MODULE (PSM002)
(1) ANALOG CONTROL MODULE (ACM001)
(3) SPARE MODULE POSITIONS
(1) BATTERY BACKUP
(1) LOCAL AREA ANTENNA

PUMPING STATION EQUIPMENT

EACH SITE TO INCLUDE:
(1) DFS TAC PACK (PUMP CONTROL UNIT W/ BACKPACK RADIO)
(1) BATTERY BACKUP
(1) COMPLETE DIRECTIONAL ANTENNA SUBSYSTEM INCLUDING:
  (1) CUSHCRAFT PLC451ON YAGI ANTENNA
  (1) ANTENNA TOWER/MAST
  (1) COAXIAL CABLE W/ CONNECTORS
(1) GROUND ROD W/ CONNECTOR

COMMUNICATION EQUIPMENT LISTING

THE EXISTING TELEMETRY SYSTEM HEAD END, LOCATED AT THE SOUTHWEST WASTEWATER TREATMENT PLANT, SHALL BE EXPANDED TO ACCOMODATE THE ADDITION OF THESE THREE NEW PUMPING STATIONS. PROVIDE EXPANSION MODULES AS NECESSARY TO ACCOMODATE THE STATIONS.

THE EXISTING CONTROL ROOM AT THE NORTH COUNTY TREATMENT PLANT SHALL BE UPDATED TO TRANSMIT AND RECEIVE DATA TO AND FROM THE THREE NEW PUMPING STATIONS. THE EQUIPMENT SHALL CONSIST OF THE ITEMS OUTLINED ABOVE IN THE COMMUNICATION EQUIPMENT LISTING. PROVIDE ONE 120V DEDICATED CIRCUIT TO POWER THE CONTROL ROOM RTU. THE MAIN CONTROL BOARD SHALL HAVE A NEW CHART (FLOW / LEVEL) RECORDER W/ FLOW TOTALIZER INSTALLED EQUAL TO HONEYWELL #DM106-2-B-0A-0-0-R-1-00000-00 SERIES DPR 100 STRIP CHART RECORDER W/ MATH-PAK, 6 CHANNEL. THE CHART RECORDER SHALL RECORD THE FLOWS AND TOTALIZE FROM THE THREE PUMPING STATIONS AND THE FLOW METER LOCATED NEAR THE CONTROL ROOM. ADDITIONALLY THE RECORDER SHALL RECORD THE POND LEVEL FROM THE DEVICE LOCATED AT PUMPING STATION #2.

THE ONE LINE DIAGRAM OF THE PLANT SHALL BE UPDATED TO INCLUDE THE THREE NEW PUMPING STATIONS. THE ONE LINE DIAGRAM SHALL ALSO INCLUDE ICONS DEPICTING EACH PUMP AS WELL AS FED/GREEN LEDS TO INDICATE PUMP STATUS. EXPANSION OF SYSTEM SHALL MATCH EXISTING FORMAT.

CONTROL ROOM WORK

NOT A RECORD DRAWING

Larson Engineering
A division of Kimley-Horn and Associates, Inc.

Manatee County Public Works Department

MANATEE COUNTY PUBLIC WORKS DEPARTMENT
EFFLUENT TRANSFER PUMP STATIONS
SEC. 22,23,26 & 27, TWP. 33S., RGE. 18E. MANATEE COUNTY, FLORIDA

PUMP CONTROL SCHEMATICS & NOTES

E3R

FORNEY ENGINEERING INC.
MECHANICAL & ELECTRICAL CONSULTING ENGINEERS
602 Third St. East Bradenton, Fl. 34208
PHONE (941) 748-5884

DESIGNED ___ DRAWN ___ CHECKED ___
JOB NO. 95-801 SCALE AS NOTED DATE 3-5-97

REVISIONS
1 8/13/96
2 9/25/97
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MANATEE COUNTY

PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL
WASTEWATER FACILITIES IMPROVEMENTS

E.P.A. NO. C-120540060 (STEP 3)
COUNTY BID NO. 86-108

NORTH SUBREGIONAL
WASTEWATER EFFLUENT
STORAGE FACILITIES

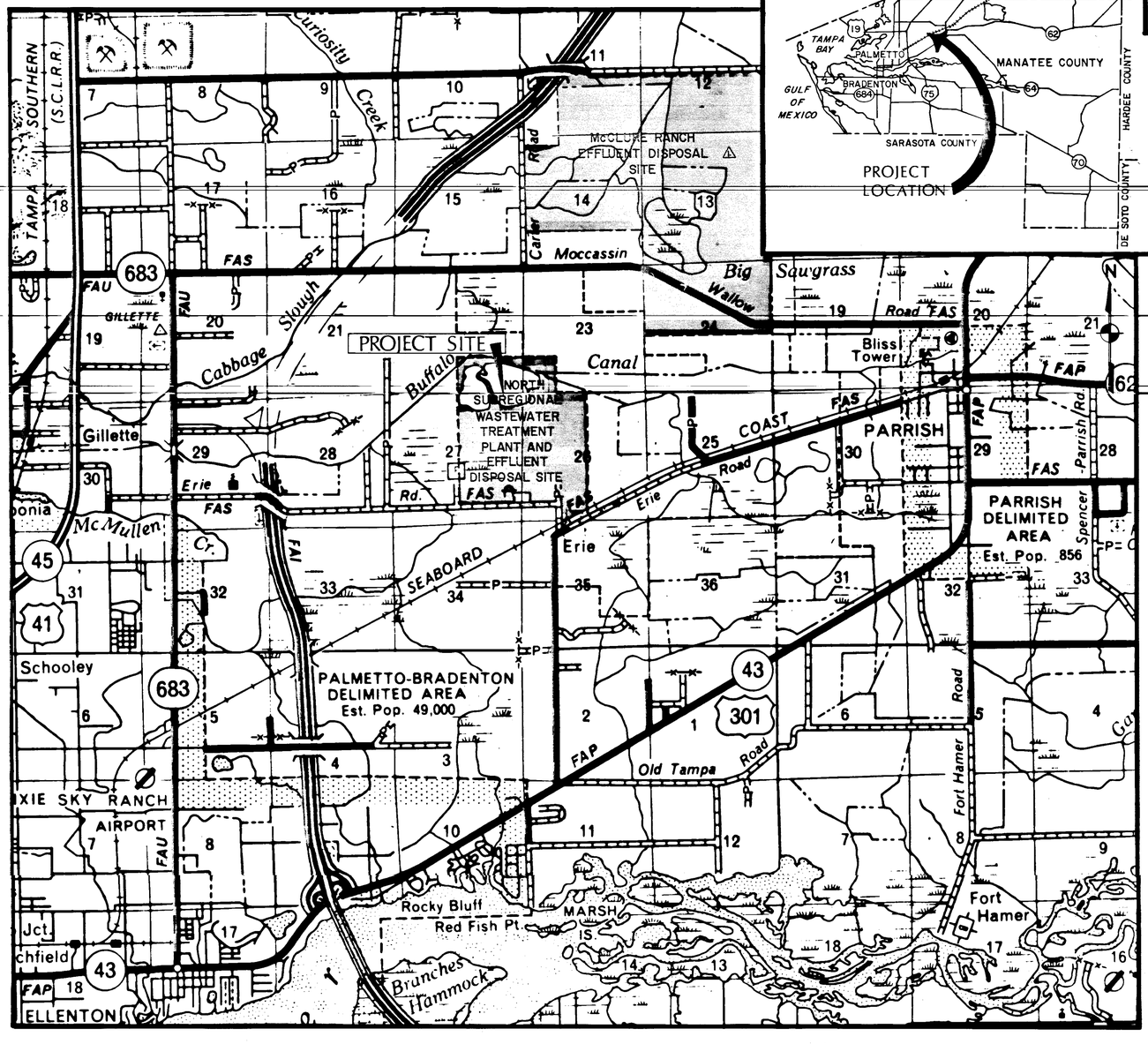
MANATEE COUNTY, FLORIDA

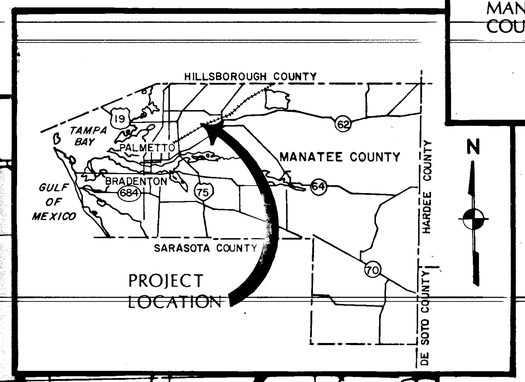
FEBRUARY 1986

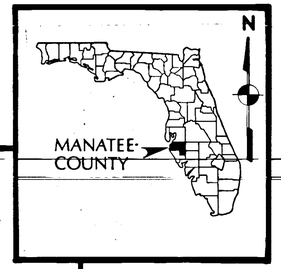
RECORD DRAWINGS

LARSON ENGINEERING, INC.
ENGINEERS • PLANNERS
6404 Manatee Avenue West, Suite N
Bradenton, Florida 33529

12-04







INDEX

SHEET NO.	TITLE
1	PROJECT LOCATION AND INDEX
2	AERIAL SCOPE OF NORTH SUBREGIONAL WASTEWATER FACILITIES
3	TOPOGRAPHIC SITE PLAN
4	AERIAL SITE PLAN
5	SOIL BORING PROFILES
6	POND EXCAVATION - EAST STOCKPILE PLAN
7	POND EXCAVATION - WEST STOCKPILE PLAN
8	CROSS SECTION - WET WEATHER STORAGE PONDS
9	DETAILS

LEGEND :

WASTEWATER EFFLUENT DISPOSAL AREA

PROJECT LOCATION AND INDEX

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT STORAGE FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. △ 5-14-86, K.A.T.
2.
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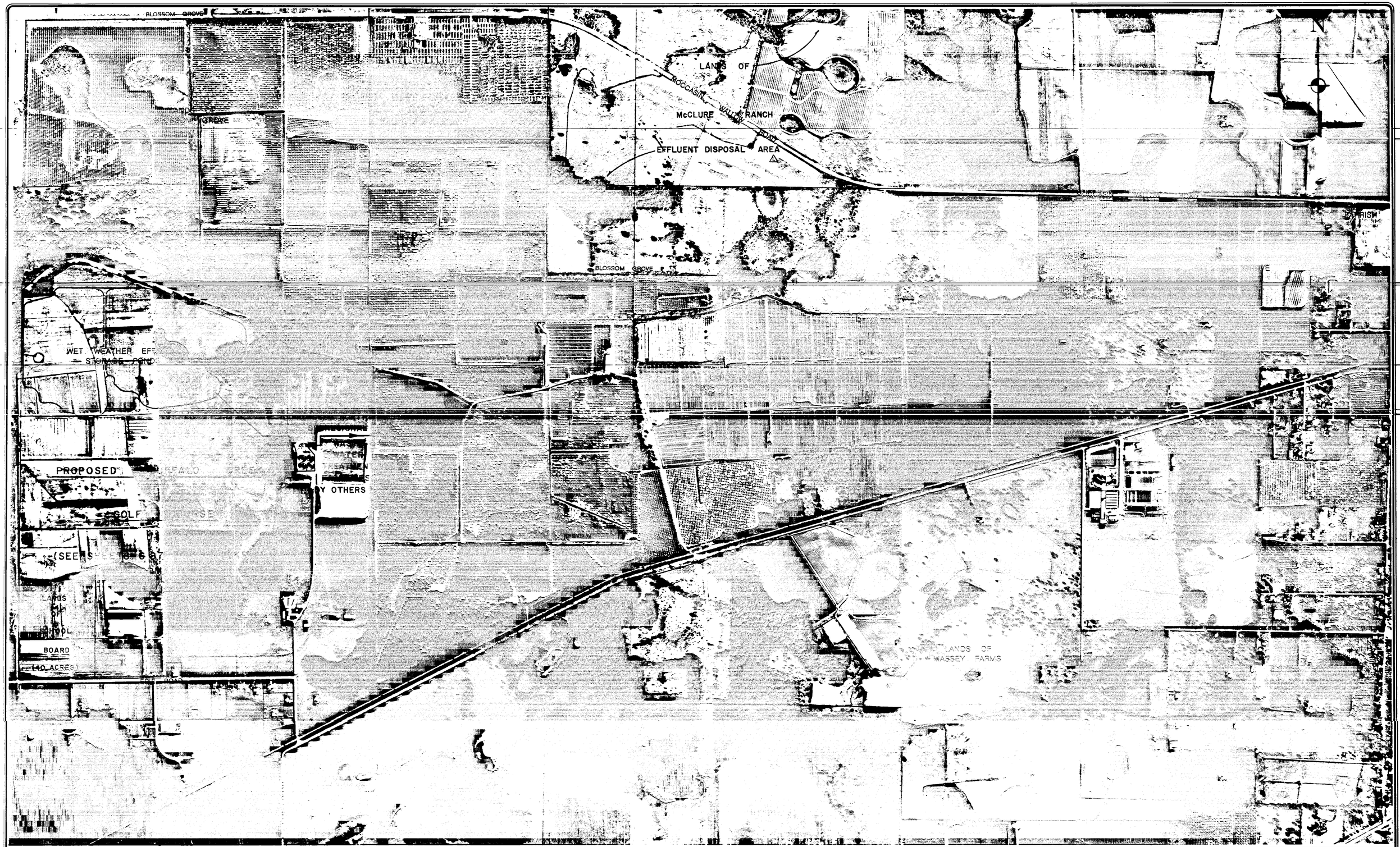
5.

Larson Engineering, Inc. T-6
ENGINEERS • PLANNERS
5404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED G.T.N. CHECKED [signature] DATE 2/7/86 SCALE 1" = 1/2 MILE
DRAWN D.K.F. FILE NO. 031-030-85 SHEET 1 OF 9

12-04 ISSUED FOR CONSTRUCTION 9-12-86



AERIAL SCOPE OF NORTH SUBREGIONAL WASTEWATER FACILITIES

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT STORAGE FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. 5-14-86, KAT
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Larson Engineering, Inc.
ENGINEERS • PLANNERS
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

T-62

DESIGNED G.T.N. CHECKED [illegible] DATE 2/7/86 SCALE 1" = 600'
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HAMRICK Aerial Surveys, Inc.

12-04 ISSUED FOR CONSTRUCTION 9-12-86

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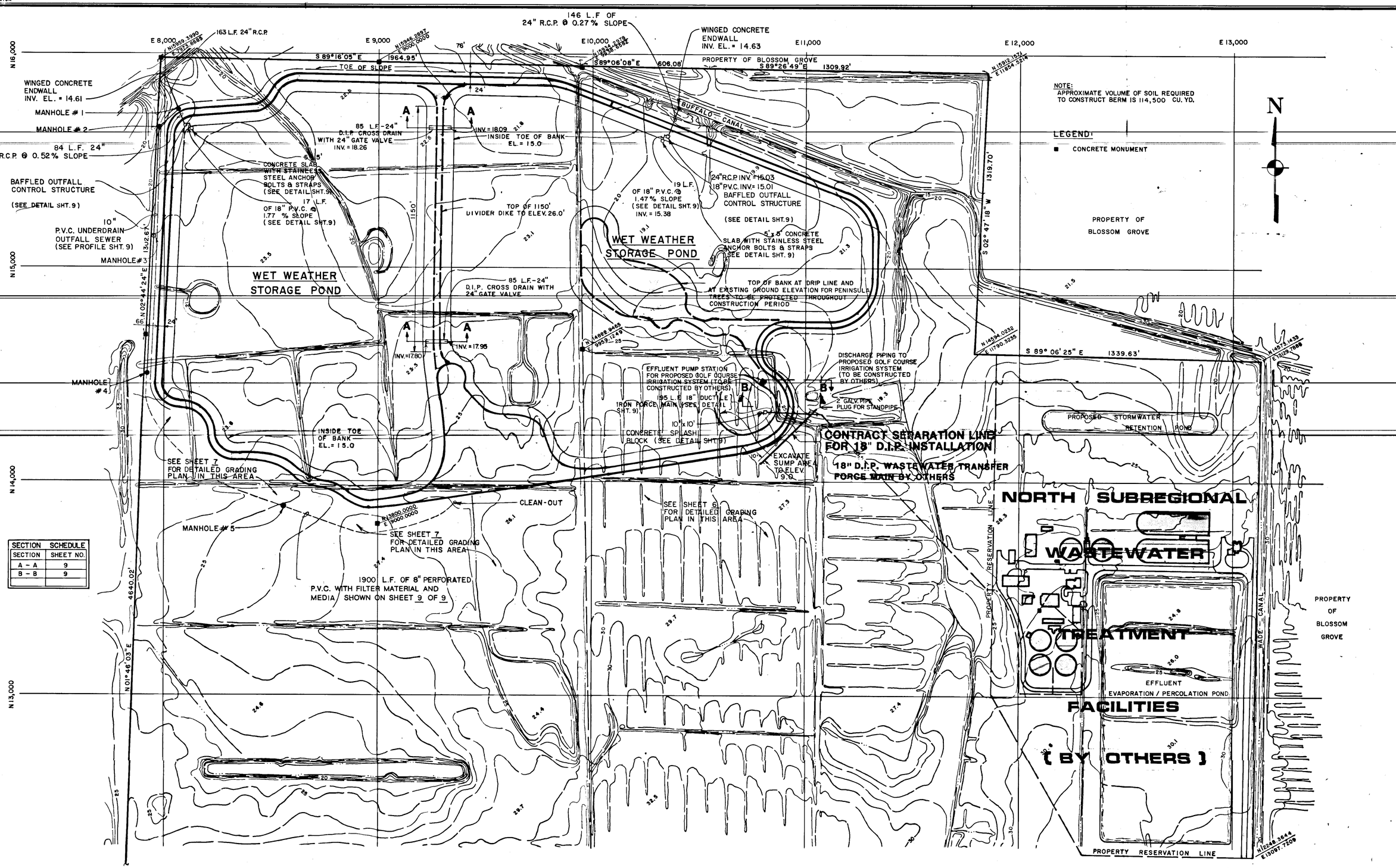

SECTION	SHEET NO.
A - A	9
B - B	9

RECORD DRAWING

NOTE: SEE SHEET 9 FOR CONSTRUCTION DETAILS AND SECTIONS A-A AND B-B

TOPOGRAPHIC SITE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT STORAGE FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. POND OUTFALL 5-13-86, KAT
2. RECORD DWG. 11-13-87 M.J.K.
3.
4.
5.

Larson Engineering, Inc.
ENGINEERS + PLANNERS
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

T-63

DESIGNED G.T.N. CHECKED DATE 2/7/86 SCALE 1" = 200'
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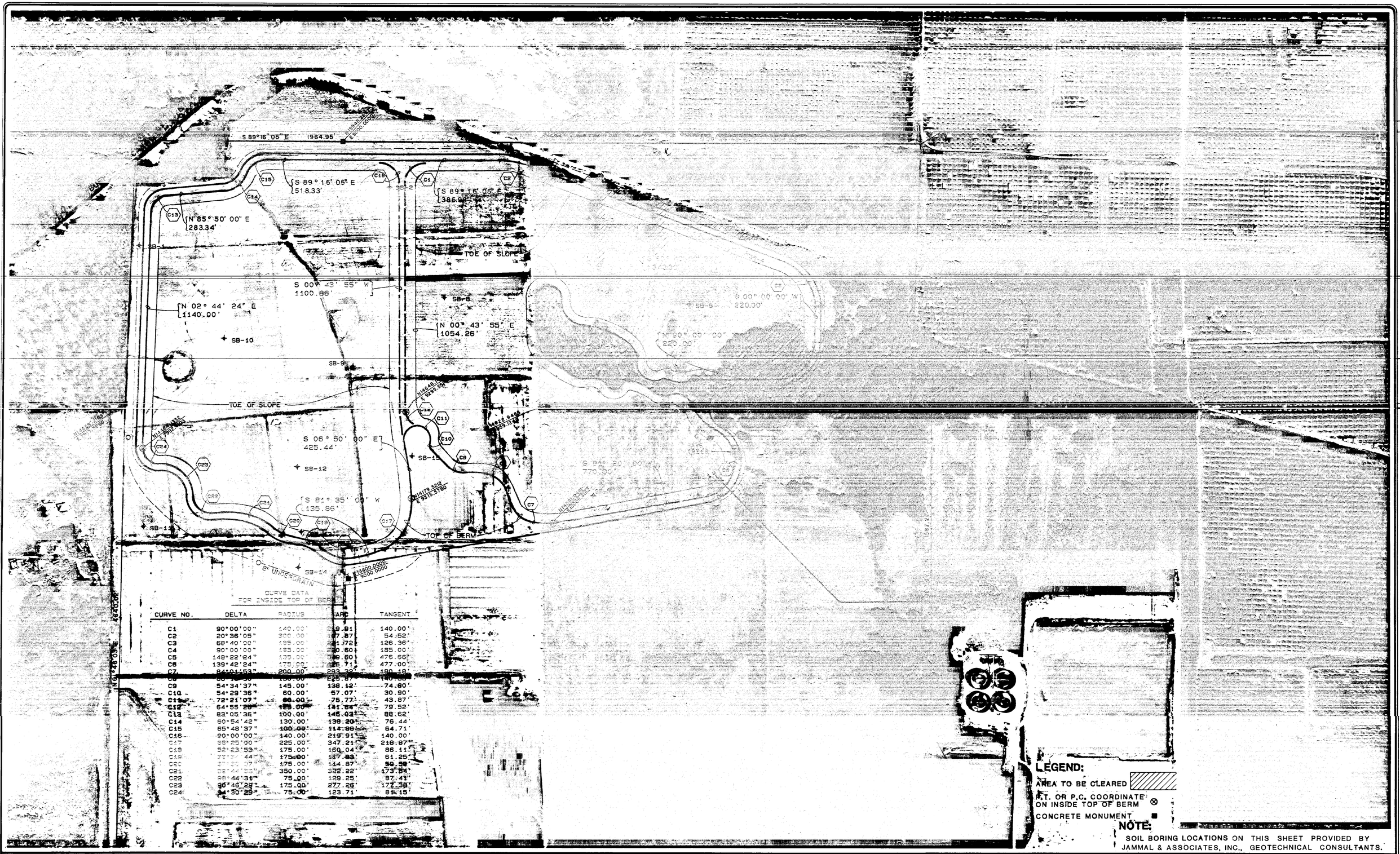


CURVE DATA
FOR INSIDE TOP OF BERM

CURVE NO.	DELTA	RADIUS	ARC	TANGENT
C1	90°00'00"	140.00'	219.91'	140.00'
C2	20°36'05"	300.00'	107.87'	54.52'
C3	68°40'00"	185.00'	221.72'	126.36'
C4	90°00'00"	185.00'	290.50'	185.00'
C5	148°22'24"	135.00'	349.60'	476.66'
C6	139°42'24"	175.00'	426.71'	477.00'
C7	84°01'53"	200.00'	293.32'	180.18'
C8				
C9	54°34'37"	145.00'	138.12'	74.80'
C10	54°29'36"	60.00'	57.07'	30.90'
C11	72°21'07"	60.00'	75.77'	43.87'
C12	64°55'28"	125.00'	141.64'	79.52'
C13	83°05'36"	100.00'	145.03'	88.62'
C14	60°54'42"	130.00'	138.20'	76.44'
C15	65°48'37"	100.00'	114.86'	64.71'
C16	90°00'00"	140.00'	219.91'	140.00'
C17	88°25'00"	225.00'	347.21'	218.87'
C18	52°23'53"	175.00'	160.04'	86.11'
C19	22°44'41"	175.00'	117.83'	61.25'
C20	47°30'07"	175.00'	144.87'	76.98'
C21	92°44'33"	350.00'	322.22'	173.64'
C22	98°44'31"	75.00'	129.25'	87.41'
C23	90°46'29"	175.00'	277.26'	177.38'
C24	94°30'29"	75.00'	123.71'	85.15'

LEGEND:
AREA TO BE CLEARED
P.T. OR P.C. COORDINATE ON INSIDE TOP OF BERM ⊗
CONCRETE MONUMENT ■

NOTE:
SOIL BORING LOCATIONS ON THIS SHEET PROVIDED BY JAMMAL & ASSOCIATES, INC., GEOTECHNICAL CONSULTANTS.

AERIAL SITE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT STORAGE FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. POND OUTFALL E-13-86, KAT
2.
3.
4.
5.

Larson Engineering, Inc.
ENGINEERS • PLANNERS
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

T-64

DESIGNED LWG/G.T.N. CHECKED [illegible] DATE 2/7/86 SCALE 1"= 200'
DRAWN O.M.M. FILE NO. 031-030-85 SHEET 4 OF 9

HAMRICK

12-04 ISSUED FOR CONSTRUCTION 9-12-86

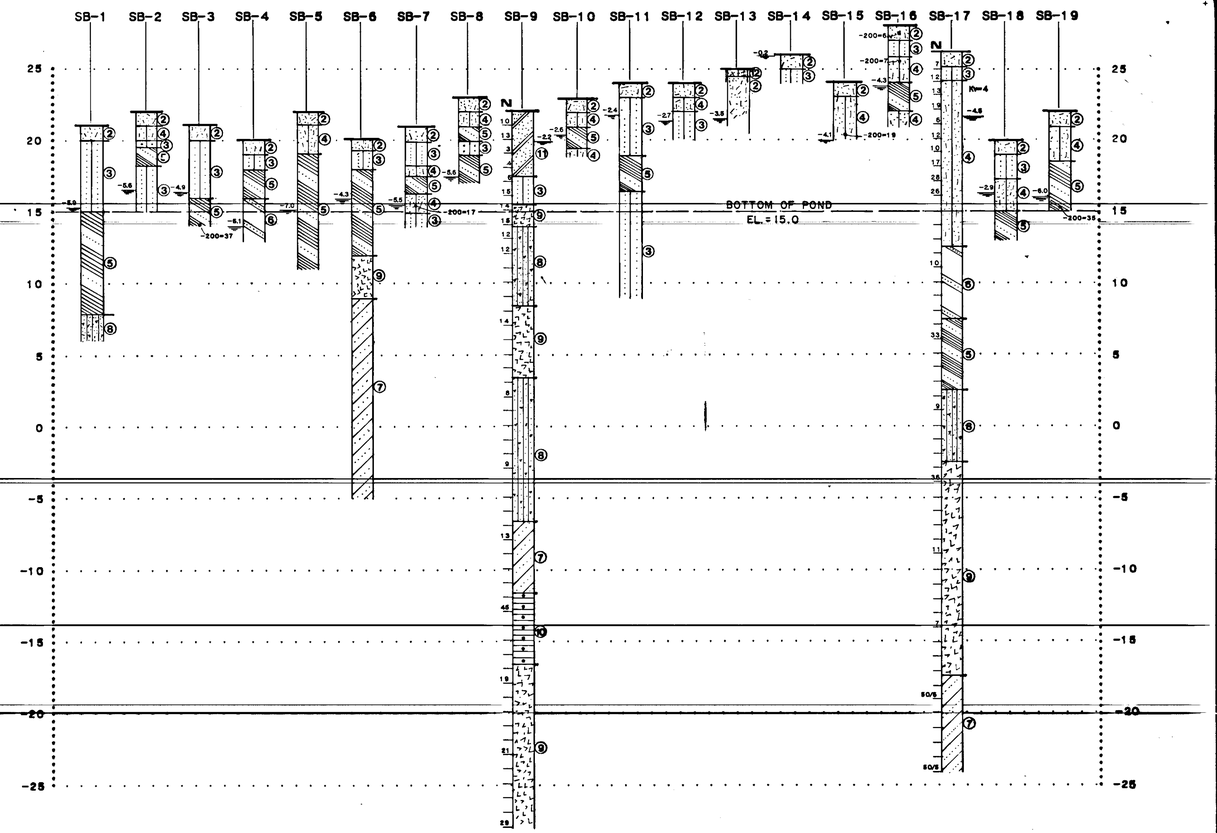
AF 39478A

NOTES

1) ONLY STRATAS 1,2,3,4 & 8 SHALL BE USED IN THE CONSTRUCTION OF THE GOLF COURSE FAIRWAYS.

2) TO THE MAXIMUM EXTENT POSSIBLE, BASED UPON AVAILABILITY, STRATAS 5,6,7 & 9 SHALL BE USED TO CONSTRUCT THE POND BERMS.

3) ALL EXCESS MATERIALS SHALL BE STOCKPILED AT A LOCATION DESIGNATED BY THE ENGINEER, WITHIN A HALF MILE HAUL DISTANCE.



LEGEND

① GRAY TO DARK GRAYISH-BROWN FINE SAND, TRACES OF SMALL ROOTS (FILL) (SP)

② GRAY TO DARK GRAY DARK FINE SAND TO SLIGHTLY SILTY FINE SAND, OCCASIONAL SMALL ROOTS (TOPSOIL) – VERY LOOSE TO LOOSE (SP) (SP-SM)

③ LIGHT BROWN TO GRAYISH BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, OCCASIONAL TRACES OF CLAYEY FINE SAND – LOOSE TO MEDIUM DENCE (SP) (SP-SM)

④ REDDISH-BROWN TO DARK REDDISH-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND,OCCASIONAL CEMEMTED SANDS – LOOSE TO MEDIUM DENSE (SP) (SP-SM)

⑤ GRAYISH-BROWN SLIGHTLY CLAYEY TO CLAYEY FINE SAND, TRACES OF ORANGE MOTTLING – LOOSE TO DENSE (SP- SC) (SC)

⑥ GRAYISH-BROWN SLIGHTLY CLAYEY TO CLAYEY FINE SAND WITH LIMESTONE FRAGMENTS, LITTLE SHELL FRAGMENTS, AND TRACES OF PHOSPHATES – LOOSE TO VERY DENSE (SP-SC) (SC)

⑦ LIGHT GREENISH-GRAY SLIGHTLY CLAYEY TO CLAYEY FINE SAND, TRACES OF PHOSPHATES AND OCCASIONAL SHELL FRAGMENTS – MEDIUM DENSE TO REFUSAL (SP-SC) (SC)

⑧ GREENISH-GRAY FINE SAND TO SLIGHTLY SILTY FINE SAND, TRACES OF PHOSPHATES – LOOSE TO VERY DENSE (SP) (SP-SM)

⑨ GREENISH-GRAY SANDY CLAY WITH PHOSPHATES – LOOSE TO VERY DENSE (CL)

⑩ GREENISH GRAY TO YELLOWISH BROWN CEMENTED SANDS AND CEMENTED SHELLS WITH GREENISH GRAY FINE SAND AND PHOSPHATES – DENSE TO REFUSAL (SP) (GW)

⑪ GRAYISH BROWN SANDY CLAY TO DARK GRAY SILTY CLAY (FILL) VERY LOOSE TO LOOSE (CL) (CH)

⑫ DARK REDDISH BROWN SANDY PEAT TO FIBROUS PEAT (PT)

▽ DEPTH TO GROUNDWATER LEVEL: OCTOBER 1984

N "N" VALUES IN BLOWS PER FOOT

(SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL COMMUNICATION

NOTE: INFORMATION ON THIS SHEET PROVIDED BY JAMMAL & ASSOCIATES, INC., GEOTECHNICAL CONSULTANTS.

SOIL BORING PROFILES

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT STORAGE FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1.
2.
3.
4.
5.

Larson Engineering, Inc.
ENGINEERS • PLANNERS
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

T-65

DESIGNED L.W.G. CHECKED [illegible] DATE 2/7/86 SCALE AS SHOWN
DRAWN D.K.F. FILE NO. 031-030-85 SHEET 5 OF 9

12-04 ISSUED FOR CONSTRUCTION 8-12-86

AF 39478A

N

NORTH SUBREGIONAL WASTEWATER
TREATMENT PLANT SITE

EAST WET WEATHER STORAGE POND

JURISDICTIONAL AREA

JURISDICTIONAL AREA

G.C. POND

E 10,600 C.Y.
C 5,600 C.Y.
B 4,800 C.Y.
D 8,500 C.Y.
A 15,400 C.Y.
M 11,000 C.Y.
N 10,000 C.Y.
O 12,300 C.Y.
L 18,900 C.Y.
F 47,000 C.Y.
J 12,700 C.Y.
I 5,300 C.Y.
H 6,100 C.Y.
G 15,400 C.Y.
K 19,200 C.Y.
Q 16,100 C.Y.
R 8,800 C.Y.
P 1,300 C.Y.
S 26,100 C.Y.
T 5,600 C.Y.
V 10,200 C.Y.
X 7,200 C.Y.
W 6,500 C.Y.
U 14,400 C.Y.
Y 40,800 C.Y.

(SEE SHEET 7 OF 9)

MATCH LINE

MATCH LINE

NOTES

1. CONTOURS WITH NUMBERS INDICATE SHAPE AND HEIGHT OF FILL REQUIRED ± 5' ABOVE EXISTING GROUND ELEVATION.
2. CONSTRUCTION STAKING TO BE PROVIDED BY OTHERS.
3. ALL GOLF COURSE (G.C.) PONDS SHOWN HEREON SHALL BE CONSTRUCTED BY OTHERS PRIOR TO THIS CONTRACT.

POND EXCAVATION
EAST STOCKPILE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER
EFFLUENT STORAGE FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

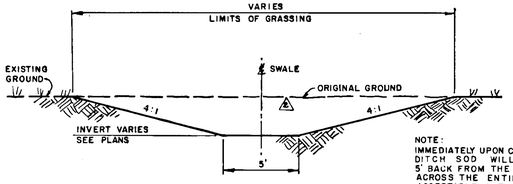
REVISIONS
1. ADDED "JURISDICTIONAL AREA", O.M.M. PONDS, & NOTE 3 9-29-86
2. ADDED ± 5 TO NOTE, O.M.M. 10-3-86
3.
4.
5.

LEI Larson Engineering, Inc. T-66
ENGINEERS - PLANNERS
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5480

DESIGNED L.W.G. CHECKED [illegible] DATE 8-11-86 SCALE 1" = 200'
DRAWN O.M.M. FILE NO. 031-030-86 SHEET 6 OF 9

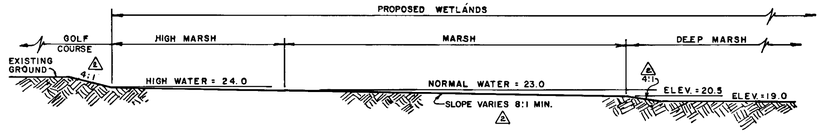
12-04 ISSUED FOR CONSTRUCTION 9-12-86

AF 39478A

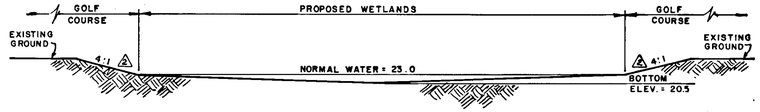


SECTION A-A

NOTE:
IMMEDIATELY UPON COMPLETION OF DRAINAGE DITCH SOD WILL BE PLACED FOR THE FIRST 5' BACK FROM THE EXIT OF THE DITCH & ACROSS THE ENTIRE WIDTH OF THE DITCH. ACCEPTABLE ANTI-SILTATION DEVICES (HAYBALES OR TURBIDITY SCREENS) WILL BE INSTALLED IN THE DITCH JUST UPSTREAM OF THE SOD & WILL BE MAINTAINED UNTIL THE DITCH SURFACES HAVE BEEN STABILIZED TO THE SATISFACTION OF THE ENGINEERING.

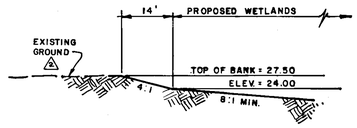


SECTION C-C

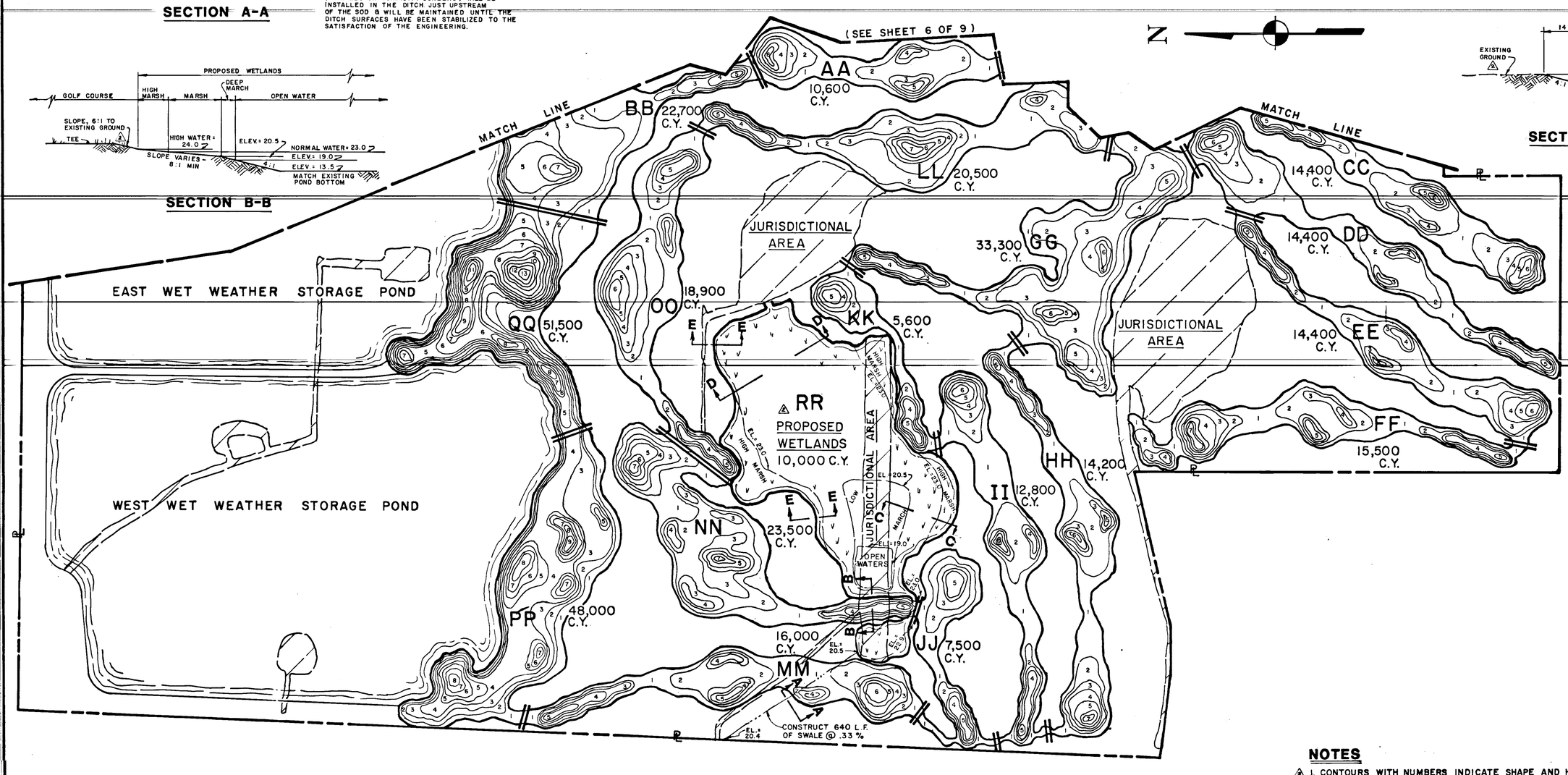


SECTION D-D

SECTION B-B



SECTION E-E



NOTES

1. CONTOURS WITH NUMBERS INDICATE SHAPE AND HEIGHT OF FILL REQUIRED ±5' ABOVE EXISTING GROUND ELEVATION, EXCEPT AS NOTED WITHIN AREA RR.
2. CONSTRUCTION STAKING TO BE PROVIDED BY OTHERS.
3. DESIGN ELEMENTS, INCLUDING SECTIONS A-A THRU E-E FOR PROPOSED WETLANDS PROVIDED BY R.J. LOMBARDO & ASSOCIATES, INC.

POND EXCAVATION
WEST STOCKPILE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT STORAGE FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

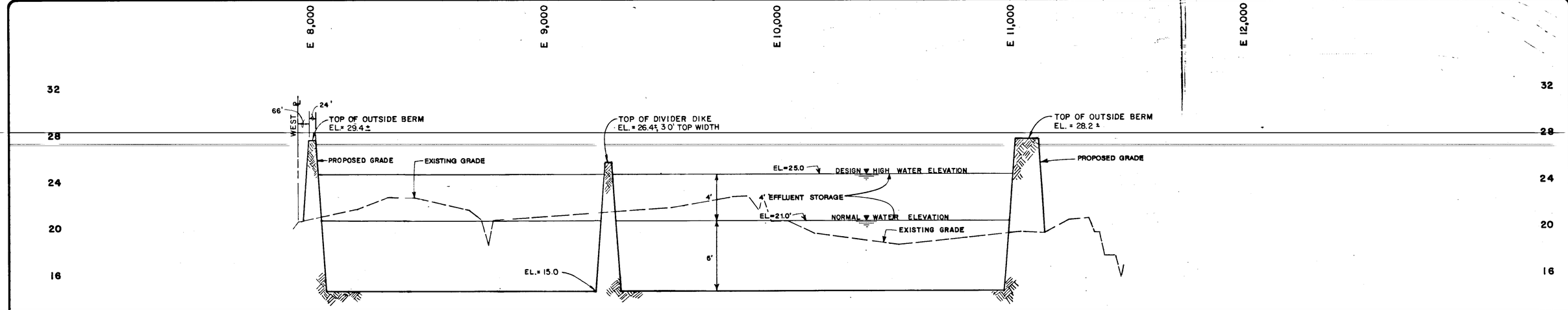
REVISIONS
1. ADDED "JURISDICTION AREA" O.M.M. PRO. WETLANDS & NOTE 3, 9-30-86
2. REV. SEC'S ADDED RR & ±5 O.M.M. 10-3-86
3.
4.
5.

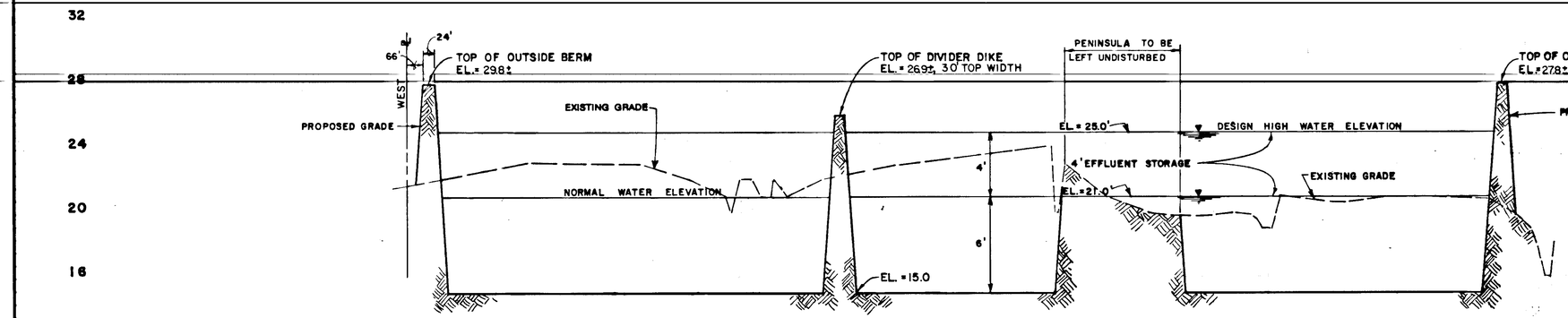
Larson Engineering, Inc.
ENGINEERS • PLANNERS
6404 Manatee Ave. W., Suite N
Bradenton, Florida 33529
(813) 794-5450

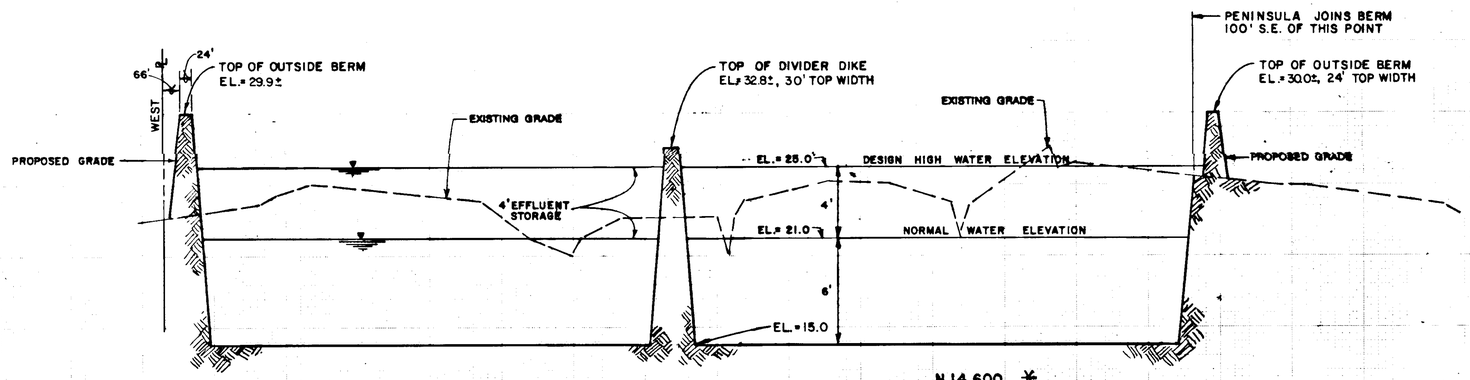
T-67

DESIGNED L.W.G. CHECKED [illegible] DATE 8-11-86 SCALE 1" = 200'
DRAWN O.M.M. FILE NO. 031-030-86 SHEET 7 OF 9

12-04 ISSUED FOR CONSTRUCTION 9-12-86







NOTES:

1. CONTRACTOR SHALL GRADE ALL:
   - A. EXTERIOR BERM SLOPES TO 4:1, EXCEPT WHERE GOLF COURSE STOCKPILE PLANS REQUIRE DIFFERENT GRADING.
   - B. ALL INTERIOR BERMS AND DIKES TO 4:1 SIDE SLOPE ABOVE EL.=20.0.
   - ⚠ C. ALL INTERIOR BERM AND DIKE SLOPES TO 10:1 BELOW EL.= 20.0 EXCEPT AS NOTED.
2. ⚠ CONTRACTOR SHALL COMPACT ALL BERMS AND DIKES TO 98% MODIFIED DENSITY.
3. ~~CONTRACTOR SHALL HYDROMULCH ALL INTERIOR BERM AND DIKE SLOPES ABOVE ELEV. 21.0~~
4. CONTRACTOR SHALL HYDROMULCH THE TOP OF ALL BERMS, ALL EXTERIOR BERM SLOPES, AND ALL DISTURBED AREAS CONTIGUOUS TO THE TOE OF THE EXTERIOR BERMS.
5. SEE SHEET 3 FOR CROSS-SECTION GRID LOCATIONS. *
6. ⚠ NO PAYMENT SHALL BE MADE FOR EXCAVATION BELOW EL. 15.0, EXCEPT IN THE SUMP AREA WHERE NO PAYMENT SHALL BE MADE FOR EXCAVATION BELOW EL. 9.0.
7. ⚠ CONSTRUCTION OF BERMS & DIKES SHALL BE TO THE MINIMUM HEIGHTS SHOWN HEREON.

⚠ NOTE : SEE SUPPLIMENTAL CROSS SECTION SHEETS FROM GERKEN, WOOD & ASSOCIATES INC. FOR RECORD DRAWING INFORMATION.

SCALE: HORIZ. 1" = 200'
VERT. 1" = 4'

RECORD DRAWING

CROSS SECTIONS- WET WEATHER STORAGE PONDS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT STORAGE FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. ⚠ 5-14-86 K.A.T. CHG. NOTES 1 & 2 D.W.H. 10-21-86
2. ⚠ MINOR NOTES 5 & 7
3. ⚠ RECORD DWG. M.J.K. 11-15-89
4.
5.

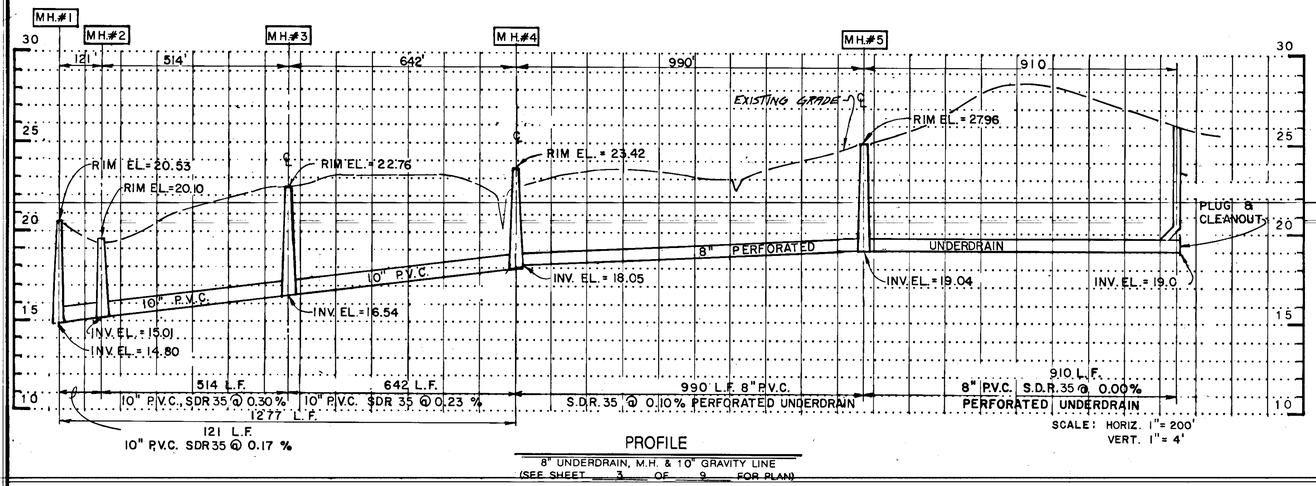
LEI Larson Engineering, Inc. T-69
ENGINEERS • PLANNERS
6404 Manatee Ave. W. Suite H, Bradenton, Florida 33529 (813) 794-5450

DESIGNED G.T.N. CHECKED [illegible] DATE 2/7/86 SCALE AS SHOWN
DRAWN D.K.F. / M.J.K. FILE NO. 031-030-89 SHEET 8 OF 9

12-04 ISSUED FOR CONSTRUCTION 9-12-89

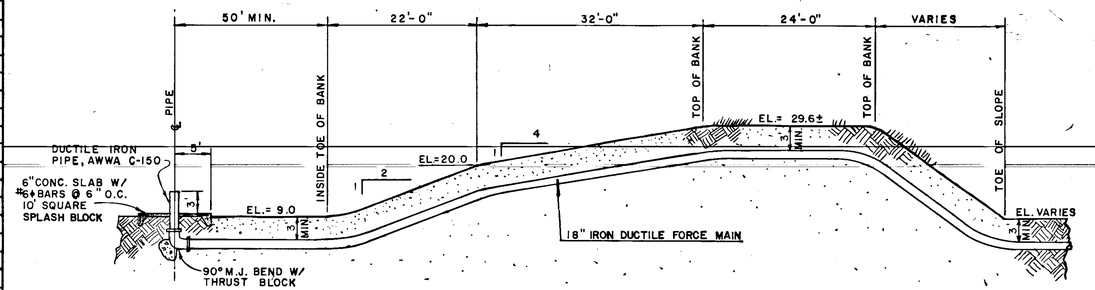
BRUNING 40-21 52736

AF 39478A



PROFILE

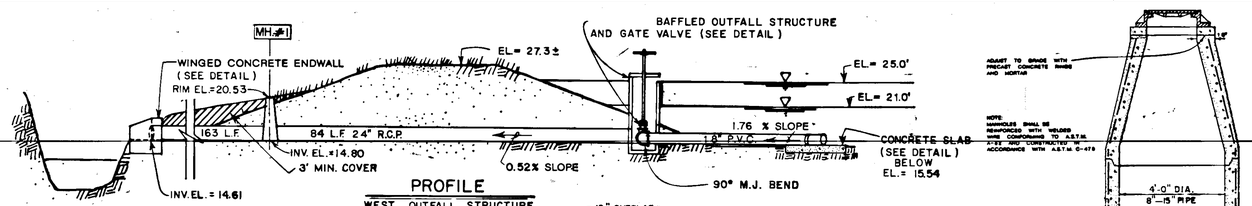
8" UNDERDRAIN, M.H. & 10" GRAVITY LINE
(SEE SHEET 3 OF 9 FOR PLAN)



SECTION B-B

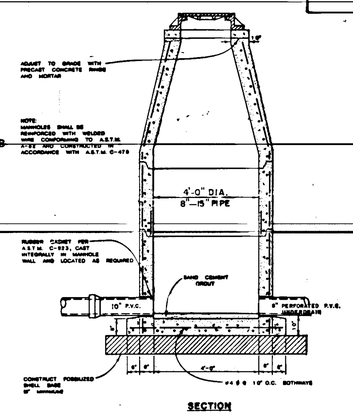
N.T.S.

NOTE: IN ALL CASES WHERE UNDERDRAIN, OUTFALL OR FORCE MAIN PIPE IS INSTALLED, A BROWN METALLIC TAPE SHALL BE PLACED I FOOT ABOVE THE CROWN OF PIPE ALONG ITS ENTIRE LENGTH.



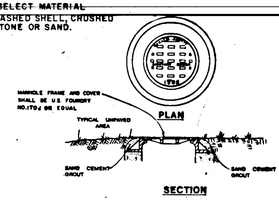
PROFILE

WEST OUTFALL STRUCTURE



UNDERDRAIN DETAIL

N.T.S.

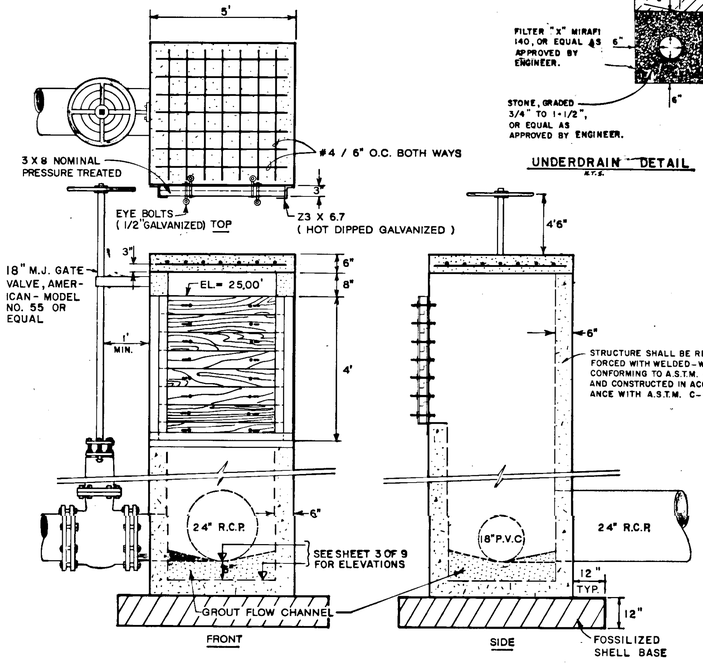


FRAME & COVER DETAIL

N.T.S.

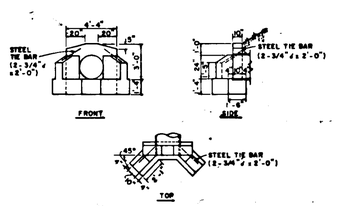
STANDARD PRECAST MANHOLE

N.T.S.



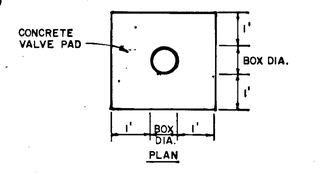
BAFFLED OUTFALL CONTROL STRUCTURE DETAIL

N.T.S.



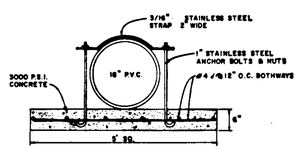
WINGED CONCRETE ENDWALL DETAIL

N.T.S.



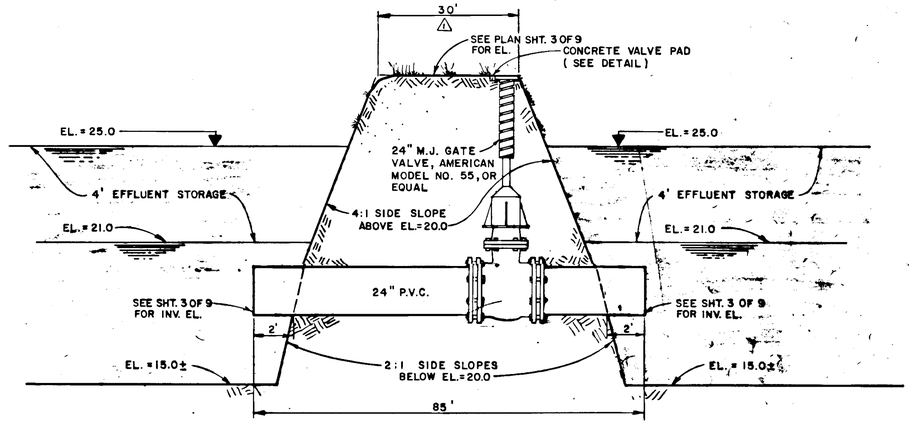
VALVE PAD DETAIL

N.T.S.



CONCRETE SLAB DETAIL

N.T.S.



SECTION A-A

N.T.S.

RECORD DRAWING

DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT STORAGE FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. IN SEC. A-A DIM. 30' WAS 24' 10-3-86 G.M.M.
2. RECORD DWG. 11-13-87 M.J.K.
3.
4.
5.

Larson Engineering, Inc. T-69
ENGINEERS • PLANNERS
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED L.W.S./G.T.N. CHECKED [illegible] DATE 2/7/86 SCALE AS SHOWN
DRAWN G.M.M./D.K.J. FILE NO. 031-030-85 SHEET 9 OF 9

12,004 ISSUED FOR CONSTRUCTION 9-12-86

MANATEE COUNTY

PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL
WASTEWATER FACILITIES IMPROVEMENTS

NORTH SUBREGIONAL

WASTEWATER EFFLUENT

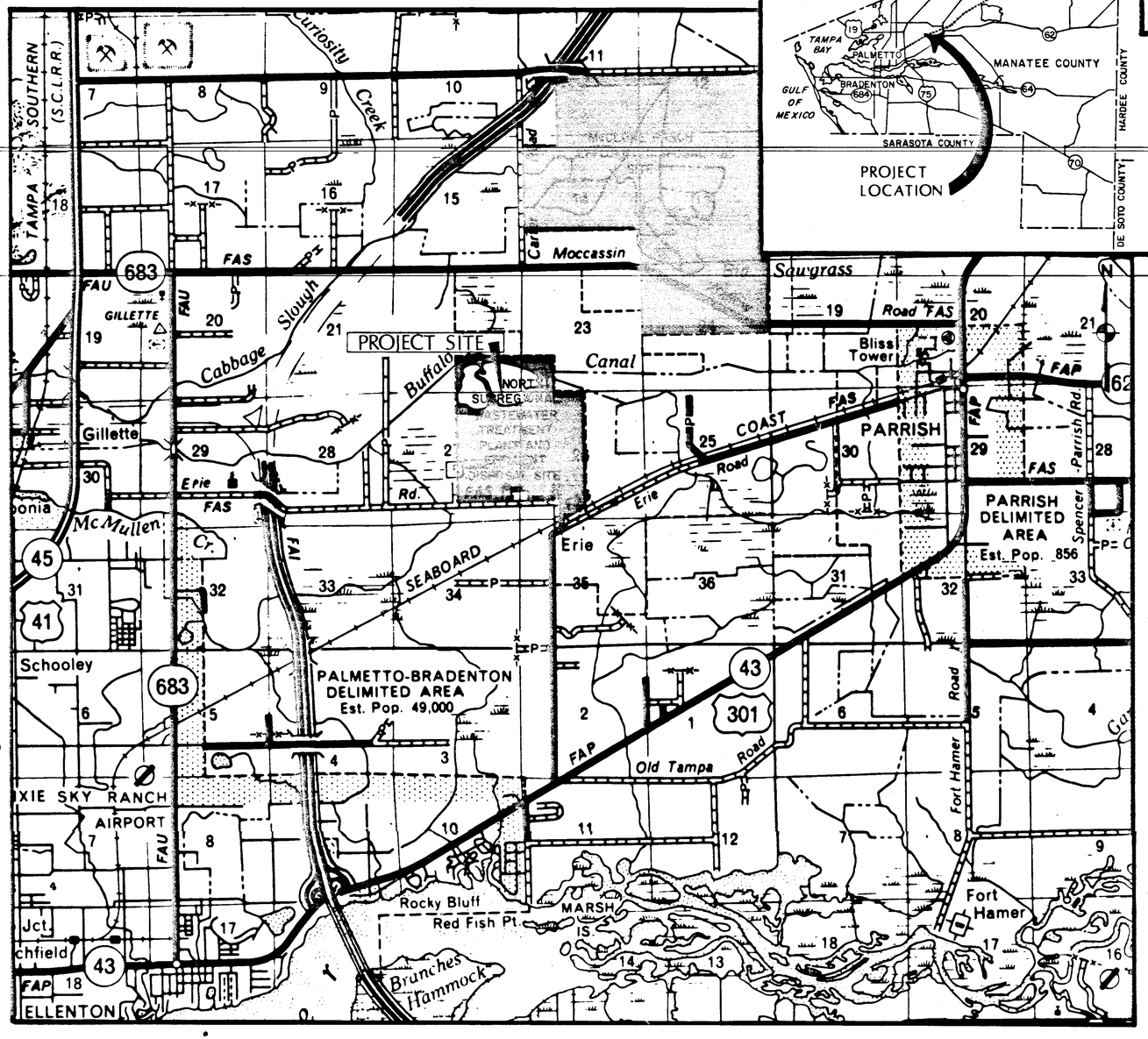
STORAGE FACILITIES

MANATEE COUNTY, FLORIDA

AUGUST 26, 1992

NORTH TREATMENT PLANT REUSE STORAGE

08-9 7-87



INDEX

SHEET NO.	TITLE
1	PROJECT LOCATION AND INDEX
2	AERIAL SCOPE OF NORTH SUBREGIONAL WASTEWATER FACILITIES
3	TOPOGRAPHIC SITE PLAN
4	SOIL BORING PROFILES
5	CROSS SECTION - WET WEATHER STORAGE PONDS

LEGEND :

WASTEWATER EFFLUENT DISPOSAL AREA

T-88

PROJECT LOCATION AND INDEX

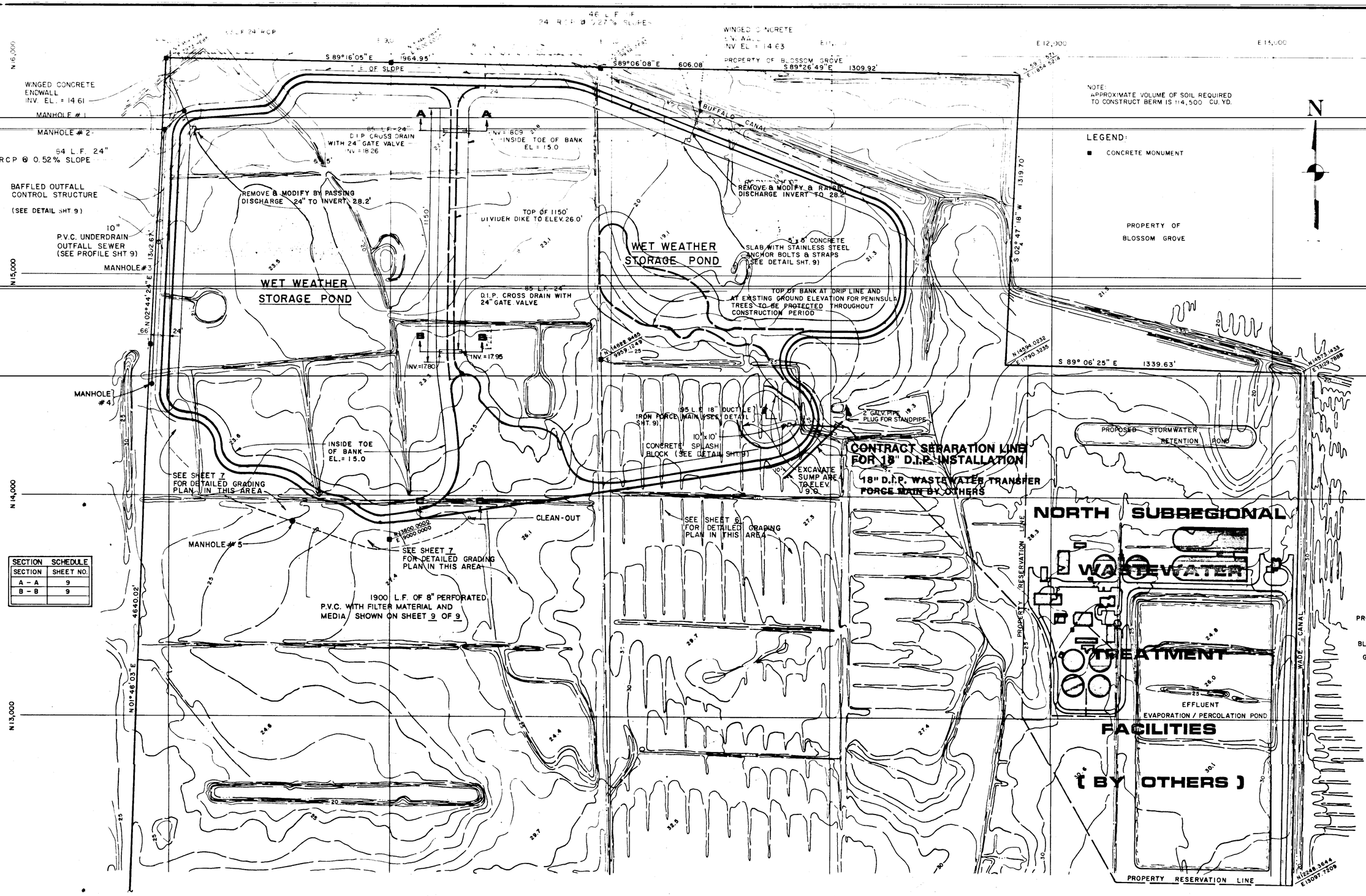
REVISIONS
1
2
3
4
5

	By	Date	Checked By	Date
Surveyed				
Plotted				
Alignment				
Right of Way				

VERTICAL SCALE — HORIZONTAL SCALE 1" = 1/2 MILE

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

08-09



SECTION SCHEDULE	
SECTION	SHEET NO.
A - A	9
B - B	9

TOPOGRAPHIC SITE PLAN

REVISIONS
1
2
3
4
5

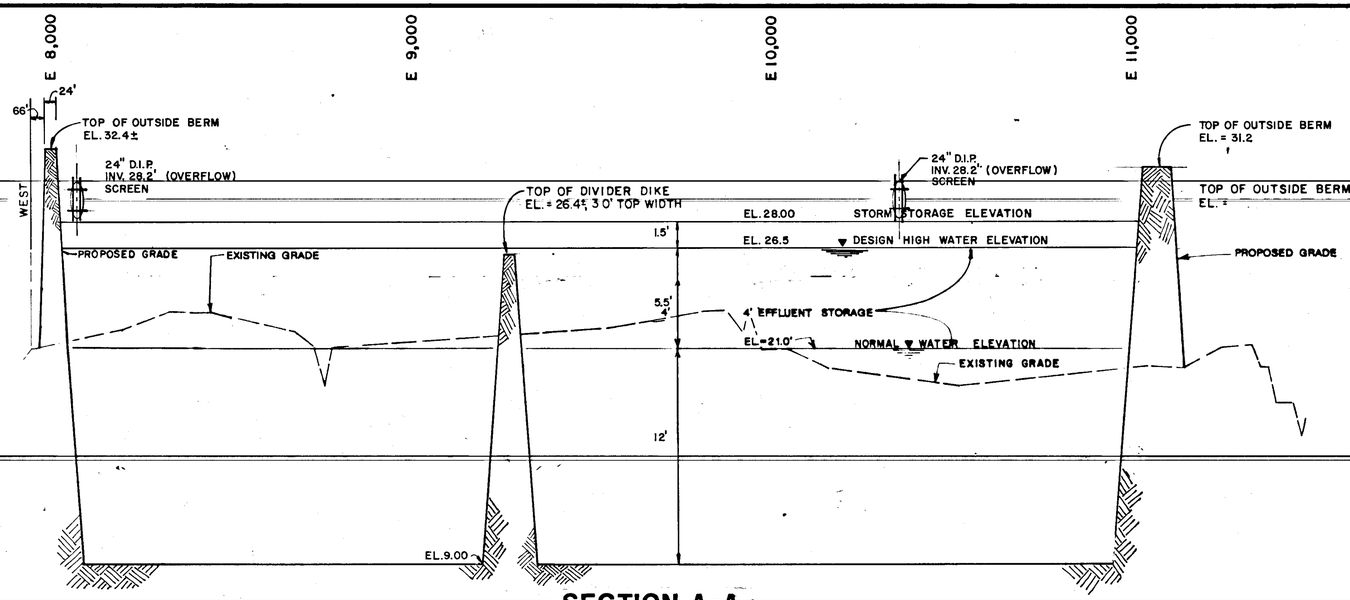
	By	Date	Checked By	Date
Surveyed				
Plotted				
Alignment				
Right of Way				

VERTICAL SCALE — HORIZONTAL SCALE 1" = 200'

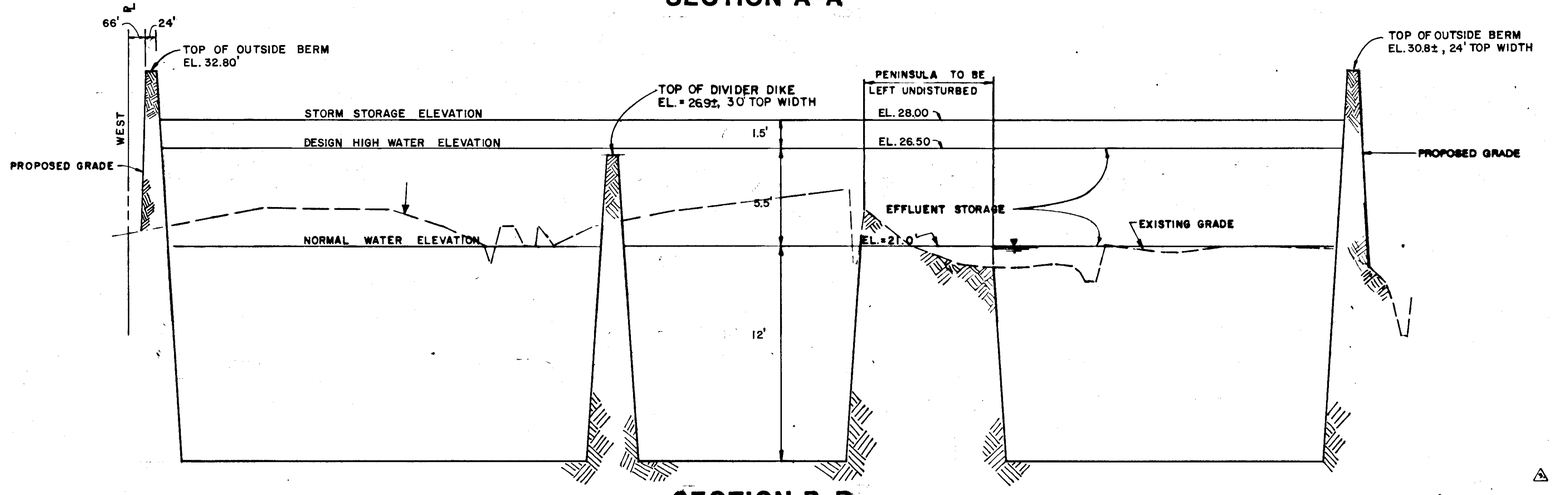
MANATEE COUNTY PUBLIC WORKS DEPARTMENT

T89

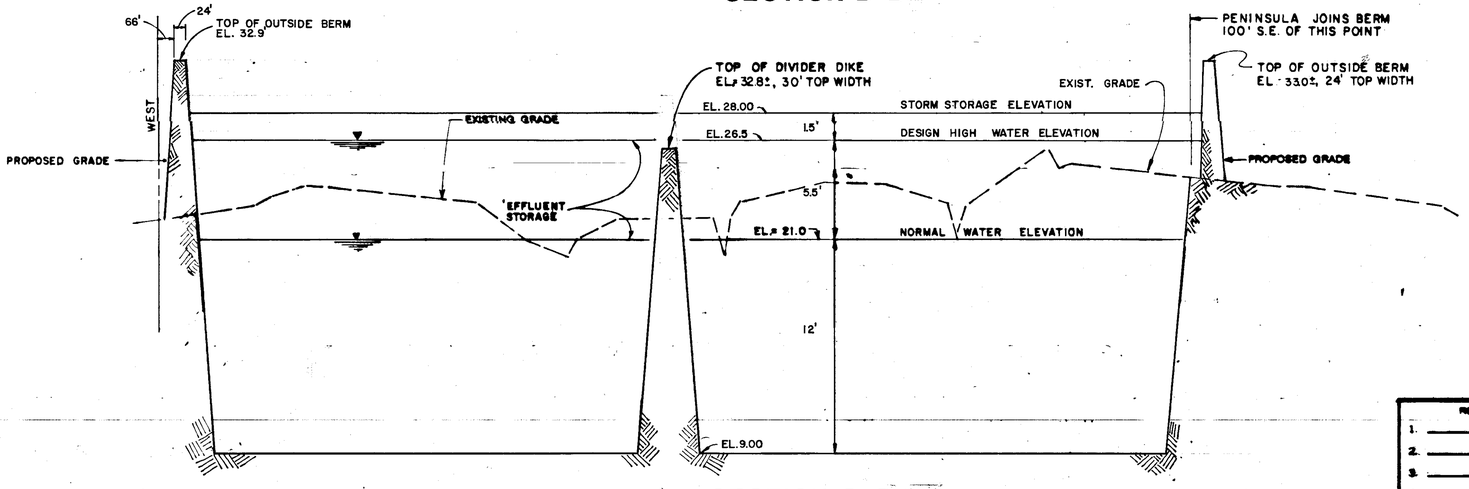
08-09



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

1. CONTRACTOR SHALL GRADE ALL:
   A. EXTERIOR BERM SLOPES TO 3:1, EXCEPT WHERE GOLF COURSE STOCKPILE PLANS REQUIRE DIFFERENT GRADING.
   B. ALL INTERIOR BERMS AND DIKES TO 4:1 SIDE SLOPE ABOVE EL.=20.0.
   ⚠ C. ALL INTERIOR BERM AND DIKE SLOPES TO 10:1 BELOW EL.=20.0 EXCEPT AS NOTED.
2. ⚠ CONTRACTOR SHALL COMPACT ALL BERMS AND DIKES TO 98% MODIFIED DENSITY.
3. CONTRACTOR SHALL HYDROMULCH ALL INTERIOR BERM AND DIKE SLOPES ABOVE ELEV. 21.0
4. CONTRACTOR SHALL HYDROMULCH THE TOP OF ALL BERMS, ALL EXTERIOR BERM SLOPES, AND ALL DISTURBED AREAS CONTIGUOUS TO THE TOE OF THE EXTERIOR BERMS.
5. SEE SHEET 3 FOR CROSS-SECTION GRID LOCATIONS. ✳
6. ⚠ NO PAYMENT SHALL BE MADE FOR EXCAVATION BELOW EL. 9.0.
7. ⚠ CONSTRUCTION OF BERMS & DIKES SHALL BE TO THE MINIMUM HEIGHTS SHOWN HEREON.

⚠ NOTE : SEE SUPPLIMENTAL CROSS SECTION SHEETS FROM GERKEN, WOOD & ASSOCIATES INC. FOR RECORD DRAWING INFORMATION.

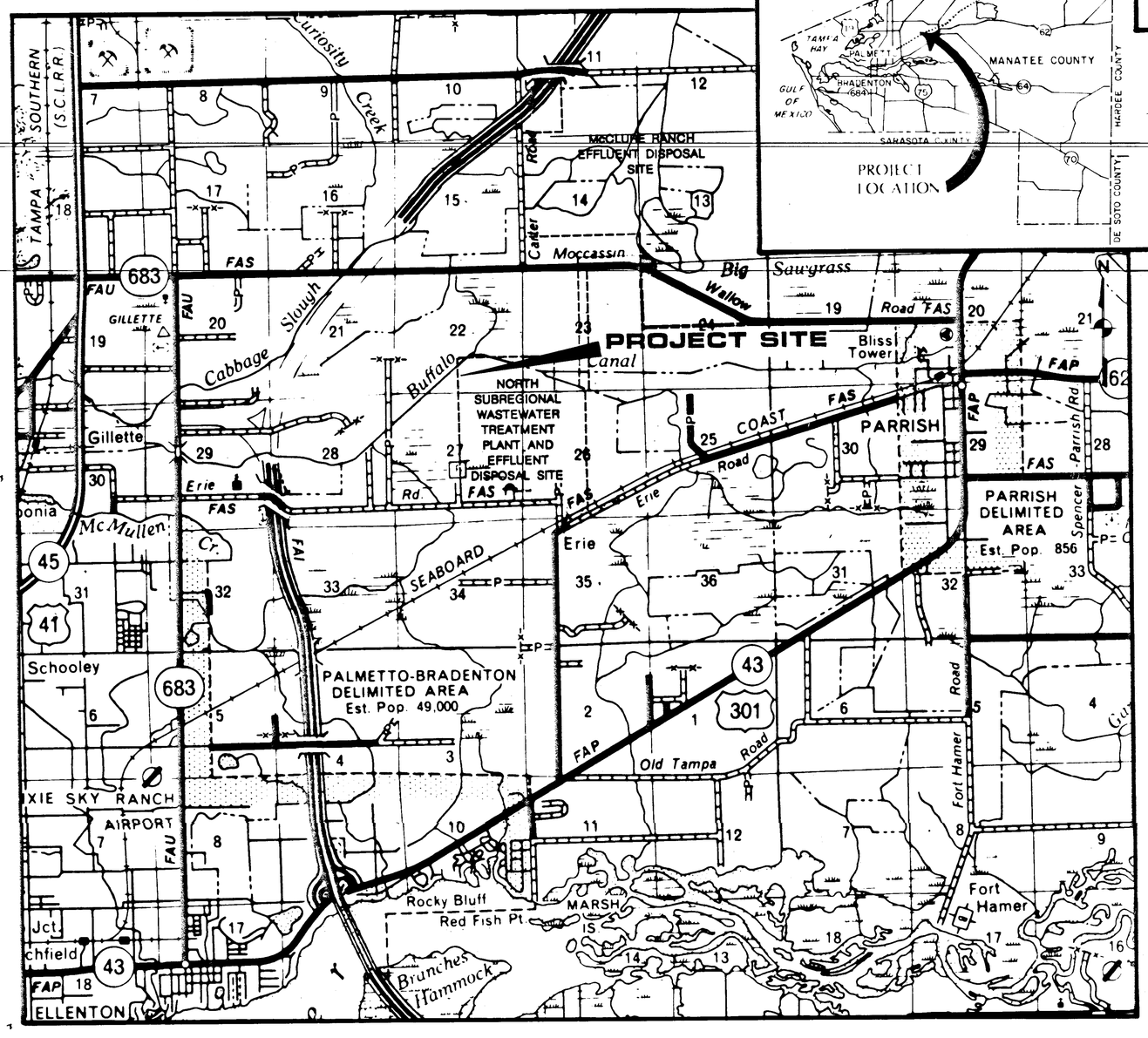
REVISIONS		By	Date	Checked By	Date
1.	Surveyed				
2.	Plotted				
3.	Alignment				
4.	Right of Way				
5.	VERTICAL SCALE 1" = 4'		HORIZONTAL SCALE 1" = 200'		

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

T 90

08-02

BRUNING 40-21 5276



INDEX

SHEET No.	TITLE
1	PROJECT LOCATION AND INDEX
2	MONITORING WELL PLAN FOR EFFLUENT STORAGE AND BUFFALO CREEK GOLF COURSE
3	SCHEMATIC PIPELINE PLAN
4	EFFLUENT TRANSMISSION MAINS EXITING WASTEWATER TREATMENT SITE
5	20" EFFLUENT TRANSMISSION FORCE MAIN M-1
6	DETAILS LIFT STATION

LEGEND :

- WASTEWATER EFFLUENT DISPOSAL AREA
- MONITORING WELL
- EFFLUENT TRANSMISSION MAINS (FM)
- VALVE
- EXISTING FEATURES
- BENCHMARK

T9L

PROJECT LOCATION AND INDEX

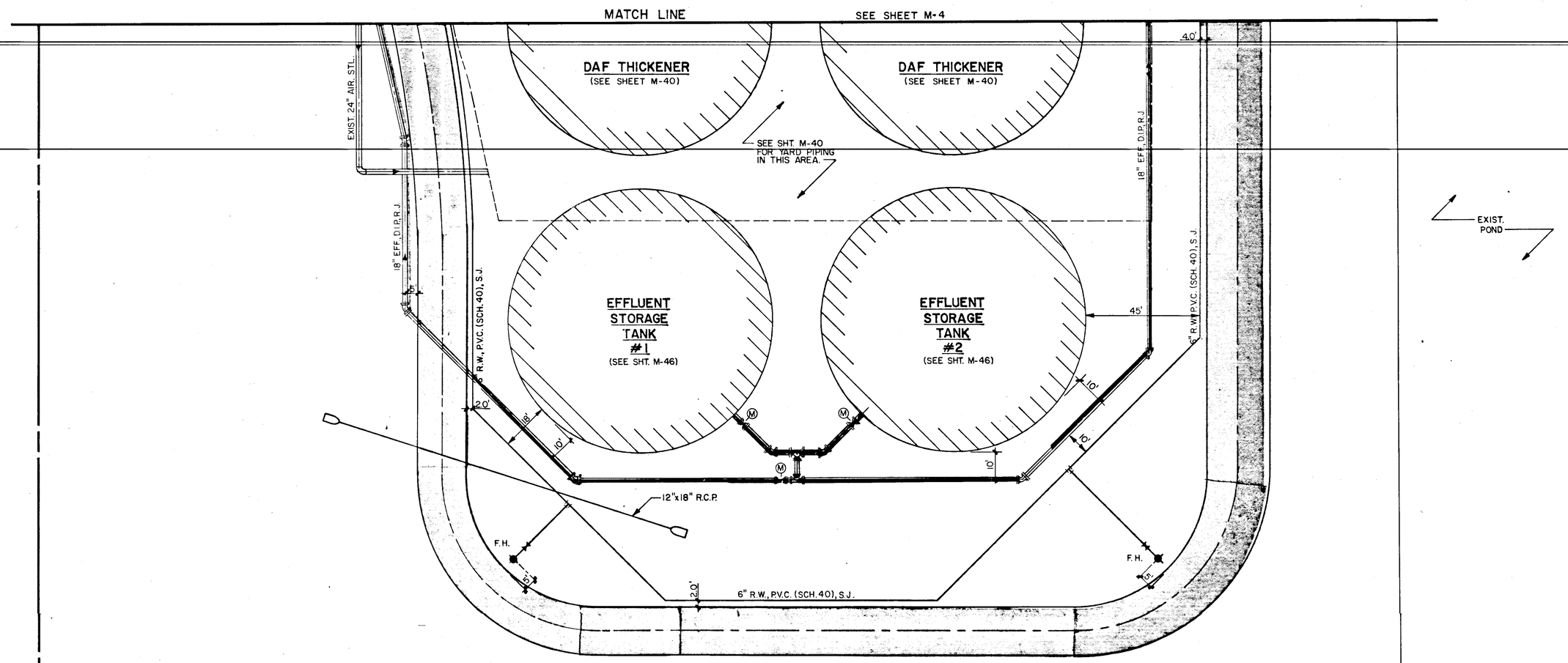
MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

REVISIONS					
1		By	Date	Checked By	Date
2	Surveyed				
3	Plotted				
4	Alignment				
5	Right of Way				
	VERTICAL SCALE		HORIZONTAL SCALE		

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

08-09



NEW YARD PIPING

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES

REVISIONS
1
2
3
4
5

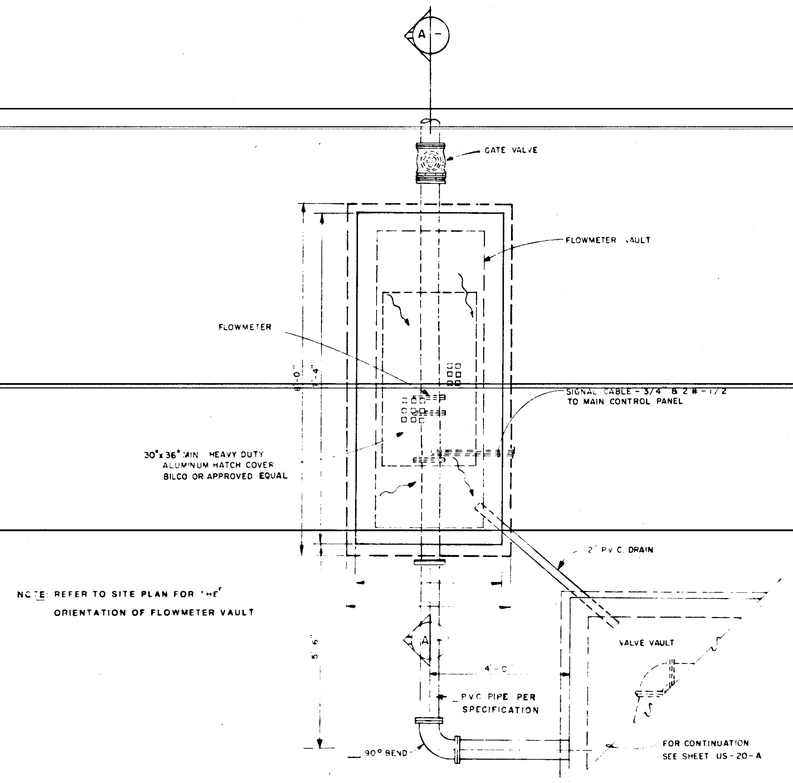
	By	Date	Checked By	Date
Surveyed				
Plotted				
Alignment				
Right of Way				

VERTICAL SCALE HORIZONTAL SCALE

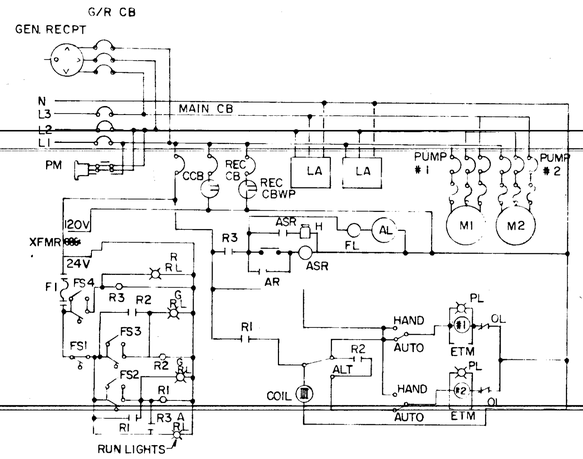
MANATEE COUNTY PUBLIC WORKS DEPARTMENT

T-92

08-09

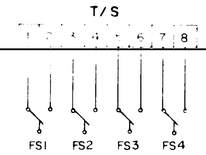


PLAN



CONTROL PANEL

ELECTRICAL SCHEMATIC

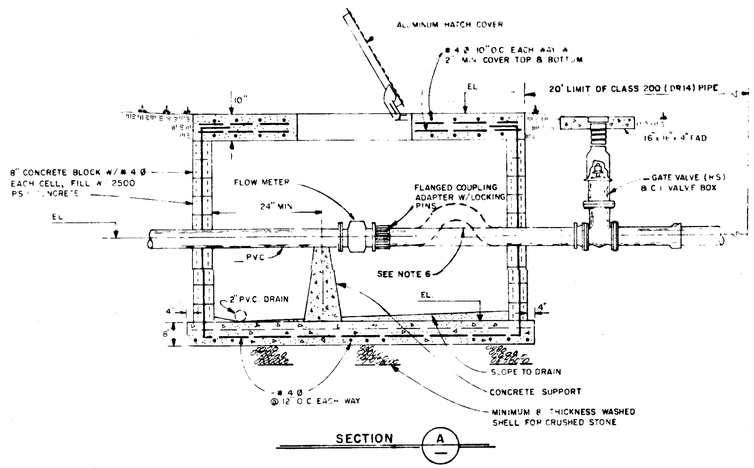


LEGEND

MAIN CB	MAIN CIRCUIT BREAKER
CCB	CONTROL CIRCUIT BREAKER
REC CB	RECEPTACLE CIRCUIT BREAKER
PM	PHASE MONITOR
LA	LIGHTNING ARRESTOR
XFMR	TRANSFORMER
F	FUSE
FS	FLOAT SWITCH
H	HORN
ASR	ALARM SILENCER
FL	FLASHER
AL	ALARM LIGHT
ALT	ALTERNATOR
ETM	ELAPSE TIME METER
OL	THERMAL OVERLOAD
T/S	TERMINAL STRIP
G/R	GENERATOR RECEPTACLE
REC CBWP	WEATHERPROOF RECEPTACLE CIRCUIT BREAKER
PL	PILOT LIGHT
RL	RUNNING LIGHTS
R	RELAYS
AR	ALARM RELAY

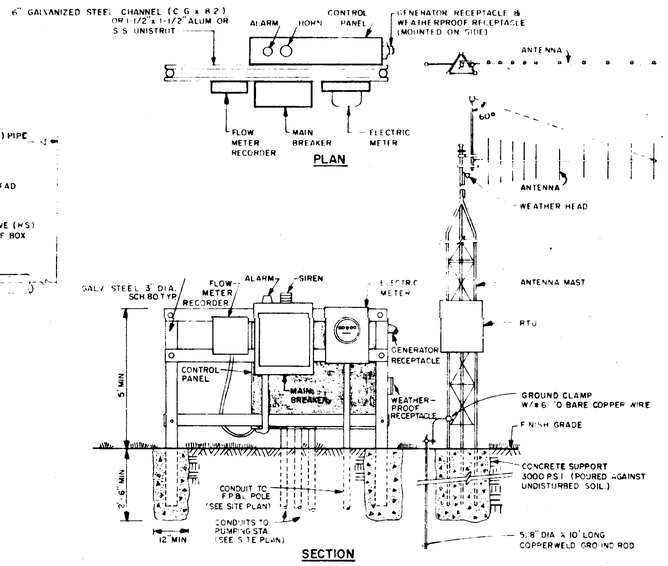
NOTE:

ALL EQUIPMENT FURNISHED FOR THE PUMP STATION SHALL CONFORM TO MANATEE COUNTY PUBLIC WORKS DEPT. STANDARDS



SECTION A

FLOW METER VAULT



SECTION

NOTE:

1. SEE THIS SHEET FOR ELECTRICAL DETAILS.
2. POWER TO BE SUPPLIED AS DIRECTED BY THE F. P. & L. COMPANY INCORPORATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PROVIDING TEMPORARY AND PERMANENT ELECTRICAL SERVICE.
3. ALL CONDUIT ENTERING THE CONTROL PANEL SHALL HAVE SEALING LOCKNUTS.
4. ALL PVC CONDUIT SHALL BE SCHEDULE 80.
5. CONTROL AND FLOW METER ENCLOSURE TO BE NEMA 4X WITH RAIN SHIELD.
6. FOR ELEVATED FLOW METER VAULTS AN INVERTED TRAP MAY BE REQUIRED TO PREVENT ENTRAPPED AIR AFFECTING METER PERFORMANCE.

TYPICAL SERVICE ENTRANCE STRUCTURE

NOTE: ALL FASTENERS AND OTHER HARDWARE SHALL BE TYPE 304 STAINLESS STEEL

MANATEE COUNTY
PUBLIC WORKS
DEPARTMENT

METER VAULT & ELECTRICAL DETAILS

	BY	DATE
SURVEYED		
DESIGNED		
DRAWN		
CHECKED		

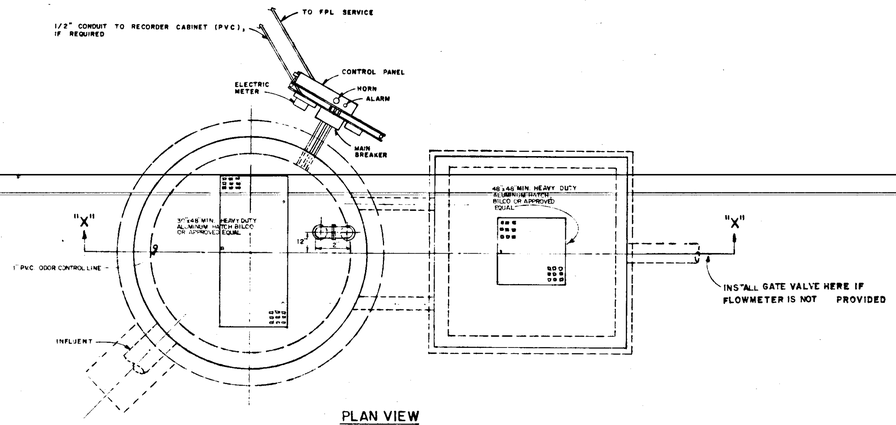
FILE NO.:

PROJECT NO.:

VERTICAL SCALE: N.T.S.
HORIZONTAL SCALE: N.T.S.

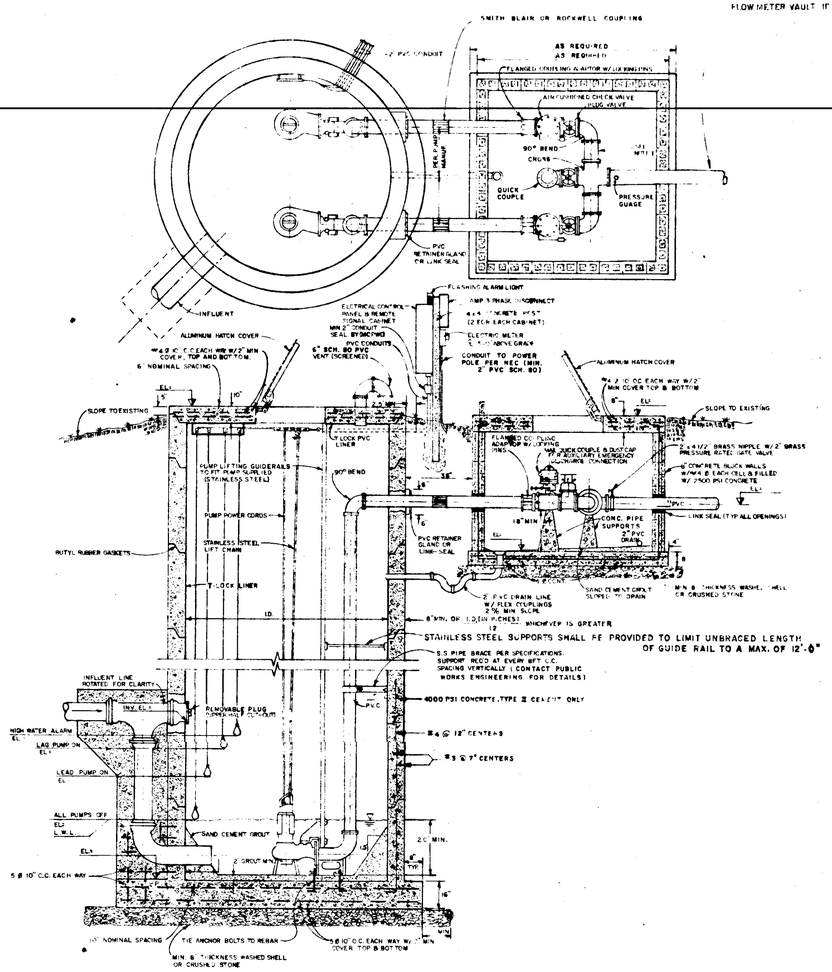
SEAL

T-93



PLAN VIEW

PUMP DATA AND DESIGN CHARACTERISTICS	
PUMP STATION NUMBER	1
NUMBER OF PUMPS	2
TYPE OF DRIVE	VERTICAL
DESIGN CAPACITY PER PUMP, G.P.M.	3500
TOTAL DYNAMIC HEAD, FT.	40
MIN. EFF. AT DESIGN CAPACITY, %	85%
DESIGN SPEED, MAX, R.P.M.	1150
MAX. HORSEPOWER PER PUMP, H.P.	50
MIN. SHUT OFF HEAD, FT.	-
MIN. SIZE SOLIDS, IN.	3"
MIN. DISCHARGE SIZE, IN.	6"
SECONDARY CAPACITY PER PUMP, G.P.M.	1200
SECONDARY HEAD, FT.	40
PUMP MANUF. & MODEL NUMBER	HYDROMATIC S8L 5000 M4-2
IMPELLER DIAMETER	-
PUMP R.P.M.	1150
ELECT. SVC.-VOLTAGE & PHASE	460/3
FORCE MAIN-LENGTH, DIAMETER & MATERIAL	12"- 750'
FORCE MAIN DISCHARGE ELEV. & HIGHEST EL.	-16'



SECTION X-X

NOTES:

1. THIS LENGTH OF PIPE MAY NOT BE REQUIRED.
2. ALL PLUG VALVES SHALL BE RESILIENT SEAT.
3. SEE PLAN SHEET FOR PROPER ORIENTATION.
4. ALL FITTINGS WITHIN WET WELL, VALVE VAULT AND METER VAULT, SHALL BE RESTRAINED JOINT.
5. METER PIT MAY BE IN-LINE DEPENDING ON SITE CONFIGURATION.
6. VAULT DIMENSION SHALL BE SET TO ALLOW 12" MIN. FROM OUTSIDE OF FLANGES TO WALLS.
7. MAGNETIC FLOW METER MAY BE PLACED IN VALVE VAULT (ENLARGE TO MEET MIN. CLEARANCE REQUIREMENTS).

GENERAL NOTES:

1. ACCESS COVERS SHALL BE EQUIPPED WITH LOCKING DEVICE SUITABLE FOR PADLOCKS IN COMPLIANCE WITH MCPWD STANDARDS. PADLOCKS SHALL BE FURNISHED BY MANATEE COUNTY PUBLIC WORKS DEPT.
2. A TEMPORARY TRASH BASKET WILL BE PROVIDED BY MANATEE COUNTY PUBLIC WORKS DEPARTMENT FOR INITIAL TESTING AND OPERATION.
3. GROUND SHALL BE SLOPED AWAY FROM SLAB TO NATURAL GROUND ELEVATION IN ALL DIRECTIONS. RESTORATION SHALL INCLUDE SODDING TO 20 FEET BEYOND CONCRETE STRUCTURES.
4. INSIDE OF VALVE VAULT AND FLOW METER VAULT SHALL BE COATED WITH 8 MIL MIN. COAL-TAR EPOXY.
5. ALL PIPING IN WET WELL, VALVE AND METER VAULTS SHALL BE RESTRAINED. BURIED FITTINGS SHALL BE RESTRAINED JOINT.
6. ALL PIPING SHALL BE COLOR CODED IN ACCORDANCE WITH MANATEE COUNTY PUBLIC WORKS DEPARTMENT STANDARDS. GREEN - RAW SEWAGE; BROWN - EFFLUENT; BLUE - POTABLE WATER.
7. ALL ANCHORS AND NOLES PROTRUDING THROUGH PVC WET WELL LINER SHALL BE THOROUGHLY SEALED WITH EPOXY.
8. OUTSIDE SURFACES OF WET WELL, VALVE AND METER VAULTS SHALL BE COATED WITH 2 COATS, 8 MIL MIN. DFT COAL-TAR EPOXY.
9. ALL METAL APPURTENANCES INCLUDING BOLTS, NUTS AND WASHERS INSIDE WET WELL SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED (TYPE 304).
10. ALL PIPING AND FITTINGS IN THE WET WELL SHALL BE AWWA C-900 (CLASS 200 DR 14 FOR PIPE, CLASS 150 FOR FITTINGS) AND SHALL HAVE RESTRAINED JOINTS.
11. VALVE AND METER VAULTS MAY BE PRECAST AT CONTRACTOR'S OPTION. SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED PRIOR TO CONSTRUCTION.
12. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT FLOTATION DURING CONSTRUCTION. ENGINEER SHALL SUBMIT FLOTATION CALCULATIONS TO MCPWD. ENGINEERING DIVISION AT PLAN REVIEW SUBMITTAL.
13. BASE AND FIRST WALL SECTION SHALL BE MONOLITHIC.
14. PVC RESTRAINTS SHALL BE AS MANUFACTURED BY EBBA IRON INC, UNI-FLANGE DIVISION OF NAPPCO, INC. OR APPROVED EQUAL.
15. THE PUMP STATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH MANATEE COUNTY PUBLIC WORKS DEPARTMENT STANDARDS.
16. PROVIDE POTABLE WATER SERVICE CONNECTION. 3/4" BRASS LOCKSHIELD AND LOOSE KEY HOSE BIB. PROVIDE WATTS 909 BACKFLOW PREVENTOR (OR APPROVED EQUAL). ALL SERVICE WATER PIPING TO BE TYPE "L" COPPER OR BRASS. 3/4" MIM. DIAMETER.
17. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL HAVE 2 COATS BITUMASTIC EPOXY, TOTAL 16 MILS DFT.
18. ELECTRICAL SERVICE SHALL BE 240 VOLT, 3 PHASE MINIMUM.
19. MAGNETIC FLOWMETER IS REQUIRED FOR ALL PUMP STATIONS WITH A CAPACITY OF 250 GPM & GREATER.
20. A WATER METER ASSEMBLY TO BE INSTALLED BY COUNTY AS PART OF WATER SERVICE CONNECTION, WITH FEES PAID BY OWNER.

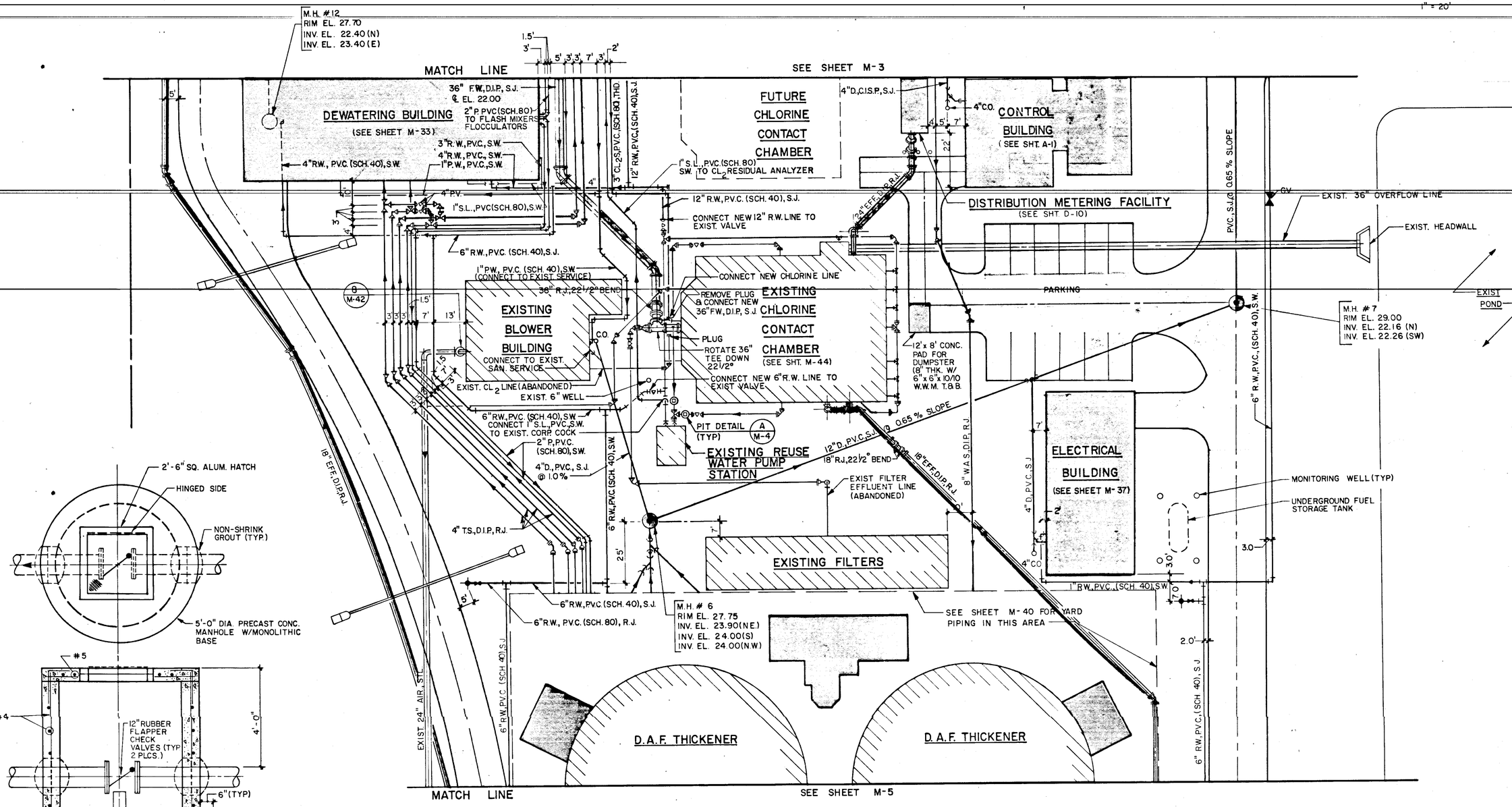
MANATEE COUNTY
PUBLIC WORKS
DEPARTMENT

NORTH TREATMENT PLANT REUSE STORAGE WET WELL & VALVE VAULT DETAILS

REVISION		DATE
	BY	DATE
SURVEYED		
DESIGNED		
DRAWN		
CHECKED		
FILE NO.:		

T-94

08-09



*NOTE:
ALL PIPE ≥ 30" DIA. IS P.C.C.P.

T-95

NEW YARD PIPING

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES

REVISIONS
1
2
3
4
5

	By	Date	Checked By	Date
Surveyed				
Plotted				
Alignment				
Right of Way				

VERTICAL SCALE HORIZONTAL SCALE

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

08-09

AF 31693A

N

0 10 20 30
1" = 20'

90° BEND
8" F.W., PVC. (SCH. 40), S.J.
18" ϕ
90° BEND
18" ϕ
18" BUTTERFLY VALVE
8" R.W., PVC. (SCH. 40), S.J.
CORE BORE FOR 18" ϕ LINK SEAL W/ GROUT
90° BEND
18" 45° BEND
18" ϕ

FUTURE FINAL CLARIFIER #4

FUTURE FINAL CLARIFIER #3

CLARIFIER FLOW SPLITTER BOX

FUTURE SECOND ANOXIC BASIN

SEE SHEET M-2

FLASH MIXERS / FLOCCULATORS
(SEE SHT. M-19)

36" FLW., D.I.P, S.J.

6' C.O.

2" CL_2 S, PVC (SCH. 80), S.W.

8" W.A.S., D.I.P, R.J.
6" S.C., D.I.P, R.J.

PLUG

PLUG

8" W.A.S., D.I.P, R.J.
6" S.C., D.I.P, R.J.

18" ϕ

36" M.L., D.I.P, S.J.

42" M.L., D.I.P, S.J.

4" R.W., P.V.C. (SCH. 40), S.W.

16" R.A.S., D.I.P, S.J.

42" M.L., D.I.P, S.J.

16" R.A.S., D.I.P, S.J.

36" M.L., D.I.P, S.J.

4" R.W., P.V.C. (SCH. 40), S.W.

36" C.L.W., D.I.P, S.J., ℄ EL. 22.50

6" D., D.I.P, S.J. @ 10% SLOPE

2" AL., PVC (SCH. 80), S.W.

2" P., PVC. (SCH. 80), S.W.

AUTOMATIC BACKWASH FILTERS
(SEE SHT. M-21)

FUTURE AUTOMATIC BACKWASH FILTERS

2" CL_2 S, PVC. (SCH 80), S.W.

8" R.W., PVC. (SCH. 40), S.J.

SLUDGE WET WELL

FINAL CLARIFIER #2
(SEE SHT. M-14)

RAS / WAS PUMP STA.
(SEE SHEET M-16)

FINAL CLARIFIER #1
(SEE SHT. M-14)

M.H. # 10 (OVERSIZE)
RIM. EL. = 28.33
INV. EL. = 20.33 (NE)
INV. EL. = 20.33 (S)
INV. EL. = 20.33 (W)
INV. EL. = 22.33 (NW)

M.H. # 9 (OVERSIZE)
RIM. EL. = 28.33
INV. EL. = 22.33 (NE)
INV. EL. = 20.33 (E)
INV. EL. = 20.33 (SW)

1" R.W., PVC. (SCH. 40), S.W.

20" x 16" WYE, ℄ EL. 25.00

2" CL_2 S, PVC. (SCH. 80), S.W.

3" R.W., PVC. (SCH. 40), S.W.

3" R.W., PVC. (SCH. 40), S.W.

SAMPLE PUMP FOR TURBIDIMETER

CHLORINE BUILDING
(SEE SHT M-30)

36" F.W., D.I.P, S.J. ℄ EL. 22.00

12" W.B.W., PVC, S.J. @ 0.64 % SLOPE

PLANT DRAIN P.S.
(SEE SHT. M-28)

18" D., D.I.P, S.J. @ 0.68% SLOPE

1" S.L., PVC, SW. TO CL_2 ANALYZER

1" S.L., PVC, SW. TO TURBIDIMETER

4" D., P.V.C., S.J.

8" D., P.V.C., S.J. @ 0.60% SLOPE

16" D., P.V.C., S.J. @ 0.50 % SLOPE

16" D., P.V.C., S.J. @ 0.60% SLOPE

6" R.W., PVC (SCH. 40), S.J.

30" C.L.W., D.I.P, S.J., ℄ EL. 22.50
PLUG W/ 2" TAP

12" D., P.V.C., S.J. @ 0.24% SLOPE

8" R.W., P.V.C. (SCH. 40) S.J.

EXIST. 16" M., P.V.C.

PLUG

18" B.V.

11/2" P.W., P.V.C., (SCH. 80), S.W.

8" R.W., P.V.C. (SCH. 40), S.J.

2" P.W., P.V.C. (SCH. 40), S.W.

4" D., C.I.S.P., S.J.

8" W.A.S., D.I.P, R.J.

3" CL_2 S, P.V.C. (SCH. 80), S.W.

16" D., P.V.C., S.J. @ 0.60% SLOPE

16" W.W., D.I.P, R.J.

6" R.W., P.V.C. (SCH. 80), R.J.

4" T.S., D.I.P., R.J.

25.0'

11/2" P.W., P.V.C., S.W.

4" D., P.V.C., S.J.

4' C.O.

DEWATERING BLDG. (SEE SHT. M-33)

FUTURE CHLORINE CONTACT CHAMBER

CONTROL BUILDING
(SEE SHT. A-1)

11/2" P.W., P.V.C., S.W.

6" P.W., P.V.C., S.J.

6" R.W., P.V.C. (SCH. 40), S.W.

12" D., P.V.C., S.J., @ 0.65 % SLOPE

PUMP BACK LIFT STATION #1
(SEE DETAIL LIFT STATION)

2" CL_2 S, P.V.C. (SCH. 80), S.W.

2" CL_2 G, P.V.C. (SCH. 80), S.W. TO HEADWORKS

8" R.W., P.V.C. (SCH. 40), S.J.

16" R.A.S., D.I.P, R.J.

20" EFF. D.I.P., R.J.

16" EFF. D.I.P. R.J.

MATCH LINE

MATCH LINE

SEE SHEET M-4

BACKFLOW PREVENTER
6 / D-9

M.H. # 13
RIM. EL. 28.07
INV. EL. 21.77 (E)
INV EL. 21.87 (S)

M.H # 14
RIM. EL. 28.45
INV. EL. 21.07 (N)
INV. EL. 20.56 (E)
INV. EL. 20.56 (W)

M.H. # 15
RIM. EL. 28.65
INV. EL. 19.27 (N)
INV. EL. 19.37 (E)
INV. EL. 20.20 (W)

M.H. # 11
RIM. EL. 29.00
INV. EL. 20[illegible]2 (N)
INV. EL. 20[illegible]3 (NE)
INV. EL. 20.83 (E)
INV. EL. 20.08 (W)

M H. # 8
RIM. EL. 29.00
INV. EL. 21.04 (E)
INV EL. 21.41 (S)
INV. EL. 21.04 (W)

NOTE:
ALL PIPE ≥ 30" DIA. IS P.C.C.P.

T-96

NEW YARD PIPING

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

REVISION
1
2
3
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5

	By	Date	Checked By	Date
Surveyed				
Plotted				
Alignment				
Right of Way				

VERTICAL SCALE

HORIZONTAL SCALE

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

08-09

MANATEE COUNTY

PUBLIC WORKS DEPARTMENT

NORTH SUBREGIONAL
WASTEWATER FACILITIES IMPROVEMENTS

E.P.A. NO. C-120540060 (STEP 3)

COUNTY BID NO. 87-24

NORTH SUBREGIONAL

WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

MANATEE COUNTY, FLORIDA

AUGUST 1987

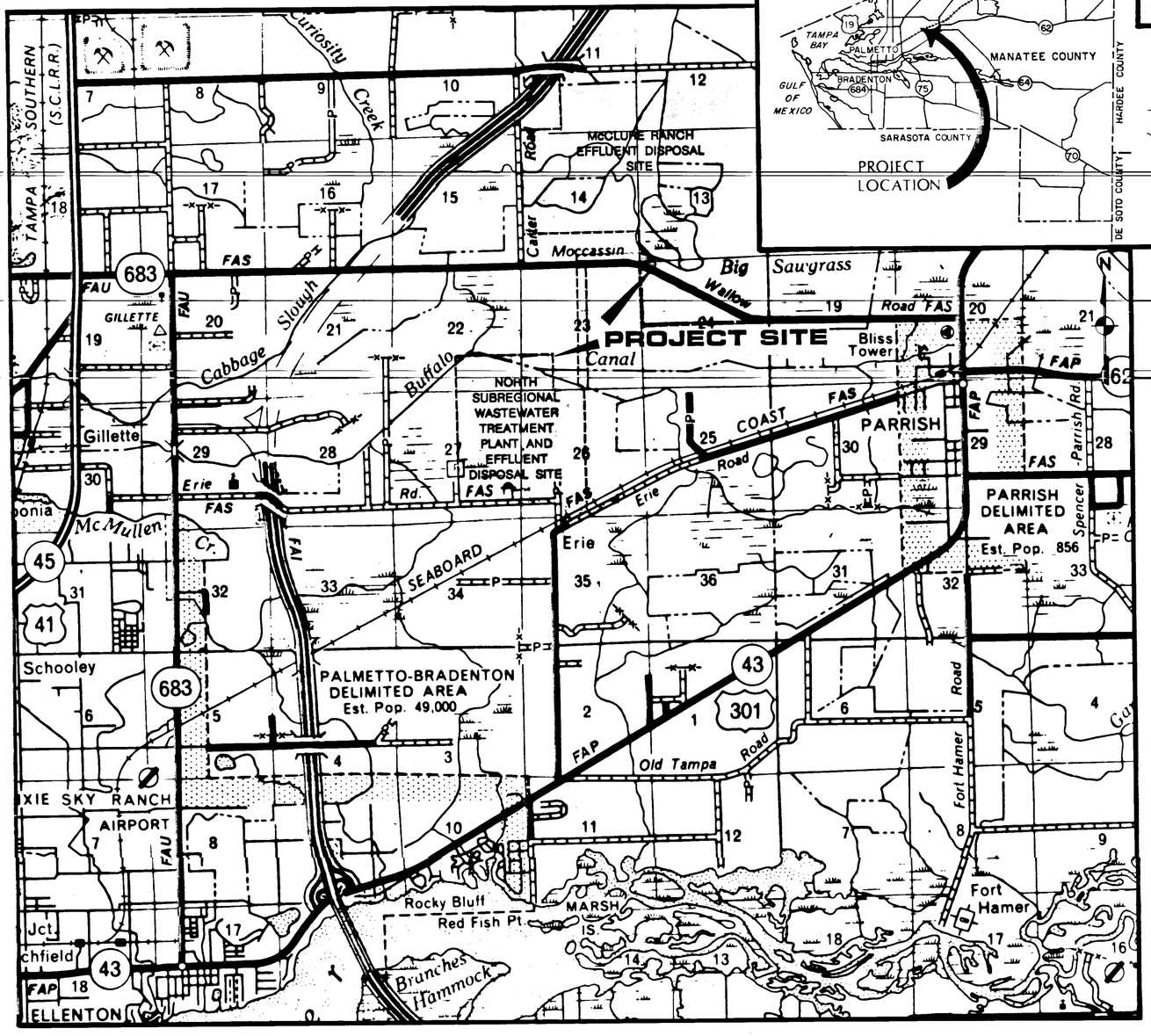
RECORD DRAWING

LARSON ENGINEERING, INC.
ENGINEERS + PLANNERS
6404 Manatee Avenue West, Suite N
Bradenton, Florida 33529

12-05

ISSUED FOR CONSTRUCTION 3-17-88

AF 39478A



INDEX

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2	MONITORING WELL AND AERIAL SITE PLAN FOR McCLURE RANCH
3	MONITORING WELL PLAN FOR EFFLUENT STORAGE AND BUFFALO CREEK GOLF COURSE
4	SCHEMATIC PIPELINE PLAN
5	EFFLUENT TRANSMISSION MAINS EXITING WASTEWATER TREATMENT SITE
6	20" EFFLUENT TRANSMISSION FORCE MAIN M-1
7	20", 18", 16", & 10" EFFLUENT TRANSMISSION FORCE MAINS; M-1 & M-2
8	16", 12", & 6" EFFLUENT TRANSMISSION FORCE MAINS; M-1 & M-4
9	10" EFFLUENT TRANSMISSION FORCE MAIN M-2
10	12" & 8" EFFLUENT TRANSMISSION FORCE MAINS; M-3 & M-5
11	FORCE MAIN DETAILS
12	DETAILS

LEGEND:

- WASTEWATER EFFLUENT DISPOSAL AREA
- MONITORING WELL
- EFFLUENT TRANSMISSION MAINS (FM)
- VALVE
- EXISTING FEATURES
- BENCHMARK

PROJECT LOCATION AND INDEX

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. Record Dwgs. 4-89 P.J.M.
2.
3.
4.
5.

Larson Engineering, Inc.
ENGINEERS • PLANNERS
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-6460

DESIGNED GTN. CHECKED KWS DATE AUG. '87 SCALE N.T.S.
DRAWN DCS FILE NO. 031-026-85 SHEET 1 OF 12

12-05 ISSUED FOR CONSTRUCTION 3-17-88

MONITORING WELL - 1

MONITORING WELL - 4

MONITORING WELL - 3

MONITORING WELL - 5

MONITORING WELL - 2

12" F.M.

8" F.M.

16" F.M.

18" F.M.

20" F.M.

CONTRACTOR SHALL INSTALL ... PORTION OF THE WORK ... JULY 1, 1986

McCLURE RANCH

McCLURE ROAD

WELL

CARTER ROAD

MOCCASIN WALLOW ROAD

LAKE

GROVE

MONITORING WELL CHARACTERISTICS

Well	Type	Depth	Conc. Base Elevation	Top of Casing
MW-1	Inground	35 feet	20.92	23.92
MW-2	Background	35 feet	20.75	23.75
MW-3	Downgradient	35 feet	20.30	23.34
MW-4	Downgradient	35 feet	20.68	23.68
MW-5	Downgradient	35 feet	20.52	23.52

NOTE: ALL MONITORING WELL LOCATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.

WET WEATHER EFFLUENT STORAGE POND

NORTH REGIONAL WASTEWATER TREATMENT FACILITIES

18" F.M.

MONITORING WELL AND AERIAL SITE PLAN

FOR Mc CLURE RANCH

MANATEE COUNTY UTILITIES DEPARTMENT

NORTH REGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

MANATEE COUNTY, FLORIDA

Larson Engineering, Inc.

ENGINEERS • PLANNERS

Bradenton, Florida 33529

941 794 5450

T72

ISSUED FOR CONSTRUCTION

MONITORING WELL CHARACTERISTICS

Well No.	Well Type	Location	Approximate Depth (Ft.)	Status	Coordinates	Top of Base Elevation	Top of Casing Elevation
MW-1	Background	100 feet from southern property boundary	30 ±	Proposed	N. 14[illegible] E. 12[illegible]	[illegible]7.10	28.93
MW-2	Intermediate	50 feet from wetted surface	30 ±	Proposed			33.09
MW-3	Compliance	100 feet from wetted surface	30 ±	Proposed			32.31
MW-4	Intermediate	50 feet from wetted surface	30 ±	Proposed			[illegible]42
MW-5	Compliance	100 feet from wetted surface	30 ±				[illegible]78
MW-6	Intermediate	50 feet from wetted surface	30 ±	Proposed			
MW-7	Compliance	100 feet from wetted surface	30 ±	Proposed	N. [illegible] E. [illegible]		
MW-8	Intermediate	50 feet from wetted surface	30 ±	Proposed	N. 1306.[illegible] E. [illegible]		
MW-9	Compliance	100 feet from wetted surface	30 ±	Proposed	[illegible]		
MW-10	Background	Within tree Hammock	30 ±	Proposed	N. [illegible] E. [illegible]		
MW-11	Background	100 feet from wetted surface	30 ±	Proposed	[illegible]		

MONITORING WELL PLAN
FOR
EFFLUENT STORAGE &
BUFFALO CREEK GOLF COURSE

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL WASTEWATER EFFLUENT
TRANSFER AND TRANSMISSION FACILITIES
E.P.A. NO. C-I 20540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. RECORD DWG. 4-89 R.I.M.
2.
3.
4.
5.

Larson Engineering, Inc. T-73
ENGINEERS • PLANNERS
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED A.R.A. CHECKED KWJ DATE AUG. '87 SCALE 1" = 600'
DRAWN D.K.F. FILE NO. 031-026-85 SHEET 3 OF 12

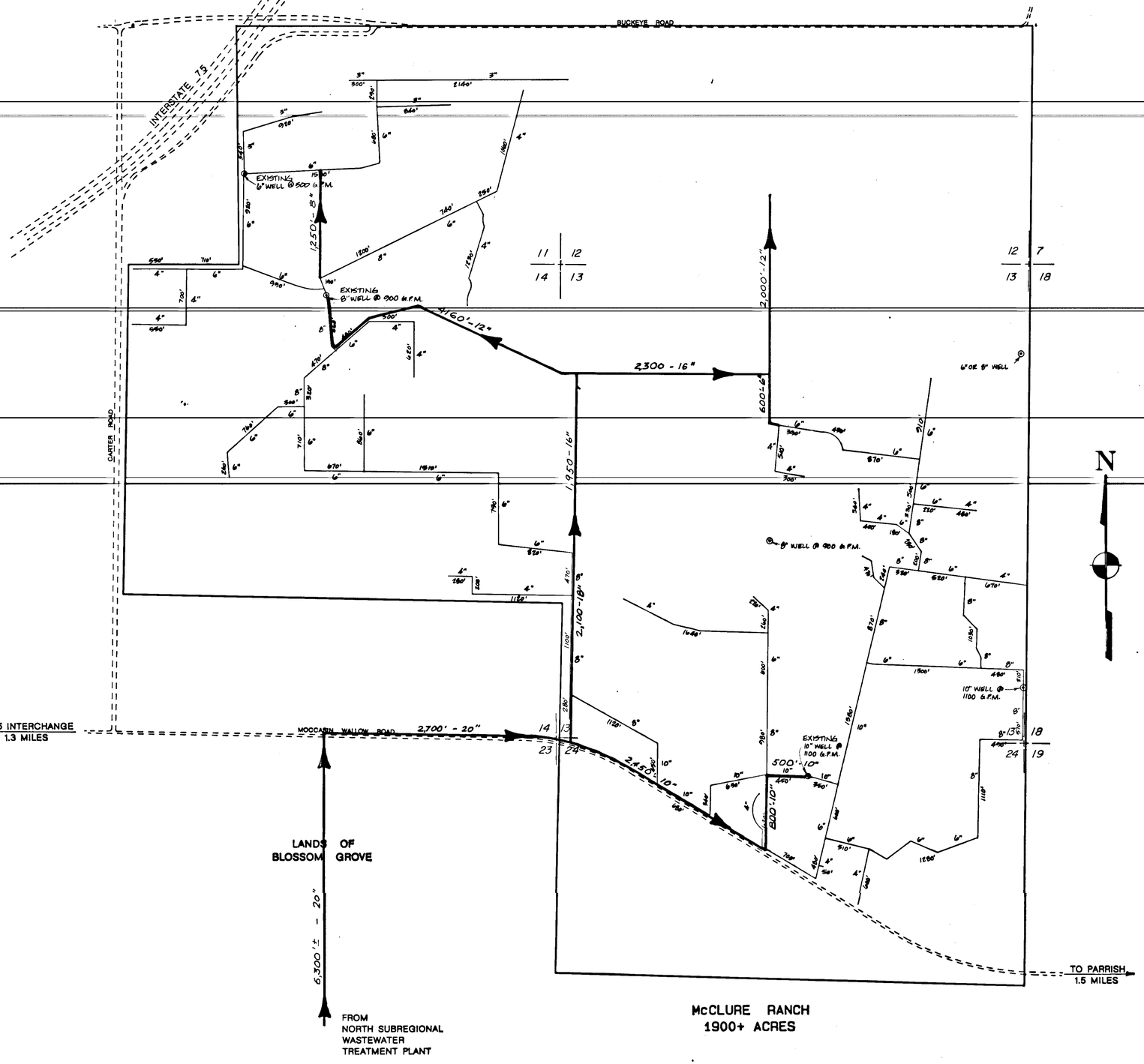
HAMRICK

12.05 ISSUED FOR CONSTRUCTION 3-17-88

AF 39478A

GENERAL NOTES

1. ALL RESTORATION WORK PERFORMED WITHIN RIGHTS-OF-WAY SHALL CONFORM TO MANATEE COUNTY HIGHWAY DEPARTMENT REQUIREMENTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING FIELD LOCATIONS OF ALL EXISTING UTILITIES AND SERVICES PRIOR TO EXCAVATION AND CONSTRUCTION.
3. ALL EXISTING PIPES AND STRUCTURES SHALL BE FULLY PROTECTED AND SUPPORTED WITHIN CONSTRUCTION AREAS.
4. THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION BEFORE COMMENCING THE WORK.
5. ELEVATIONS BASED ON MANATEE COUNTY DATUM.



SCHEMATIC PIPELINE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. RECORD DWG. 4-89 RJM
2.
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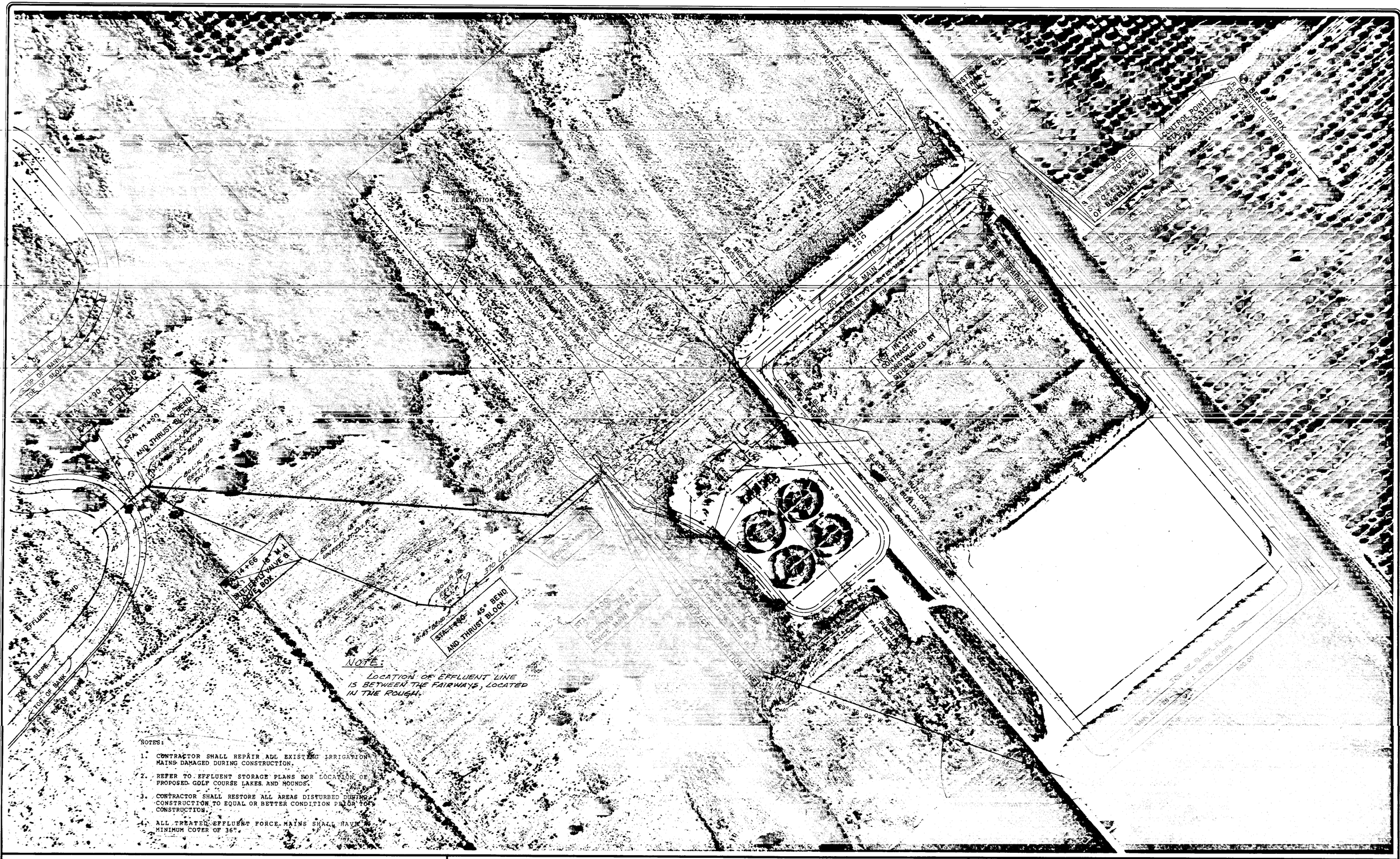
ENGINEERS • PLANNERS
6404 Manatee Ave W, Suite N
Bradenton, Florida 33529
(813) 794-5450

T-74

DESIGNED L.W.G. CHECKED KWS DATE AUG. '87 SCALE 1" = 600'
DRAWN KAT / M.W.M. FILE NO. 031-026-85 SHEET 4 OF 12

12-05 ISSUED FOR CONSTRUCTION 3-17-88


EFFLUENT POND
TOE OF SLOPE
TOP OF BANK
TOE OF SLOPE
PROPOSED RESERVATION
STA. 11+90
8" DIA. TEE
STA. 11+90
8" BEND AND THRUST BLOCK
EFFLUENT STORAGE POND
TOP OF BANK
TOE OF SLOPE
STA. 14+66
16" M.J. BUTTERFLY VALVE & VALVE BOX.
55'± L.F. 16" UNRESTRAINED D.I.P.
16" DIA. PLUG
370 L.F. 16" D.I.P.
16"-45° BEND
STA. 17+66
16"-45° BEND AND THRUST BLOCK
FUTURE
EFFLUENT TRANSMISSION MAIN FROM WASTEWATER TREATMENT PLANT
PLANT DRAINAGE SYSTEM
OPERATION BUILDING
PLANT ACCESS ROAD
EFFLUENT PUMP STATION
FUTURE
FINAL CLARIFIER
FUTURE
SECOND AND THIRD BASINS
FUTURE
EFFLUENT FORCE MAIN
FUTURE
EFFLUENT FORCE MAIN
EXISTING 16" EFFLUENT FORCE MAIN
20" FORCE MAIN
EXISTING 8"DIA. WATER MAIN
776.33'
N 89°36'05" W
857.86'
NOT IN THIS CONTRACT CONSTRUCTED BY OTHERS
EFFLUENT STORAGE POND
TOP OF BANK
TOE OF SLOPE
CONTROL BUILDING
ELECTRICAL BUILDING
CHLORINE CONTACT CHAMBERS
T.S. PUMPS
CONTROL POINT
ELEV. = 33.87'
20 FEET
BENCHMARK
PIPE IN POWER POLE
ELEV. = 33.87'
EFFLUENT STORAGE POND
TOP OF BANK
TOE OF SLOPE

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES (BY OTHERS)

WIDE CANAL BRIDGE

TOP BRIDGE RAIL

TOP BRIDGE RAIL

14.8'±

10.41'±

BUTTERFLY VALVE COVER

20" FORCE MAIN M-1

1-45° BEND STA. 11+40 25' W. OF BASELINE

30" BLIND FLANGE

CONSTRUCTION BASELINE

25' PERMANENT UTILITY & ACCESS EASEMENT

FORCE MAIN

BLOSSOM GROVE

BUFFALO CANAL BRIDGE

AIR RELEASE VALVE

BRIDGE RAILS

22.3'±

8.2'±

BUTTERFLY VALVE COVER

EXISTING GRADE

EXISTING BRIDGE

AIR RELEASE ASSEMBLY (A)

2.5'± TO OPERATING NUT

36" MIN.

20" FORCE MAIN

48" C.M.P.

18" MIN.

14" C.M.P.

NOTE: LOCATION OF EFFLUENT LINE IS 2'± OFF THE WEST EDGE OF SHELL ROADWAY.

MATCH LINE

SCALE: HORIZ. 1"=100'
VERT. 1"=4'

BENCHMARK #1
R/W SPIKE IN PWR. POLE
EL. 19.15

20" FORCE MAIN M-1

AIR RELEASE ASSY STA. 51+00

CONSTRUCTION CONTROL POINT STA. 51+98.04

CONSTRUCTION CONTROL POINT STA. 52+85.15

CONSTRUCTION CONTROL POINT STA. 62+08.07

24" C.M.P.

SCALE: HORIZ. 1"=100
VERT. 1"=4'

20" EFFLUENT TRANSMISSION FORCE MAIN M-I

BLOSSOM GROVE TO Mc CLURE RANCH

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. RECORD DWG. 4-89 RJM.
2.
3.
4.
5.

Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave. W. Suite N
Bradenton, Florida 33529
(813) 794-5450

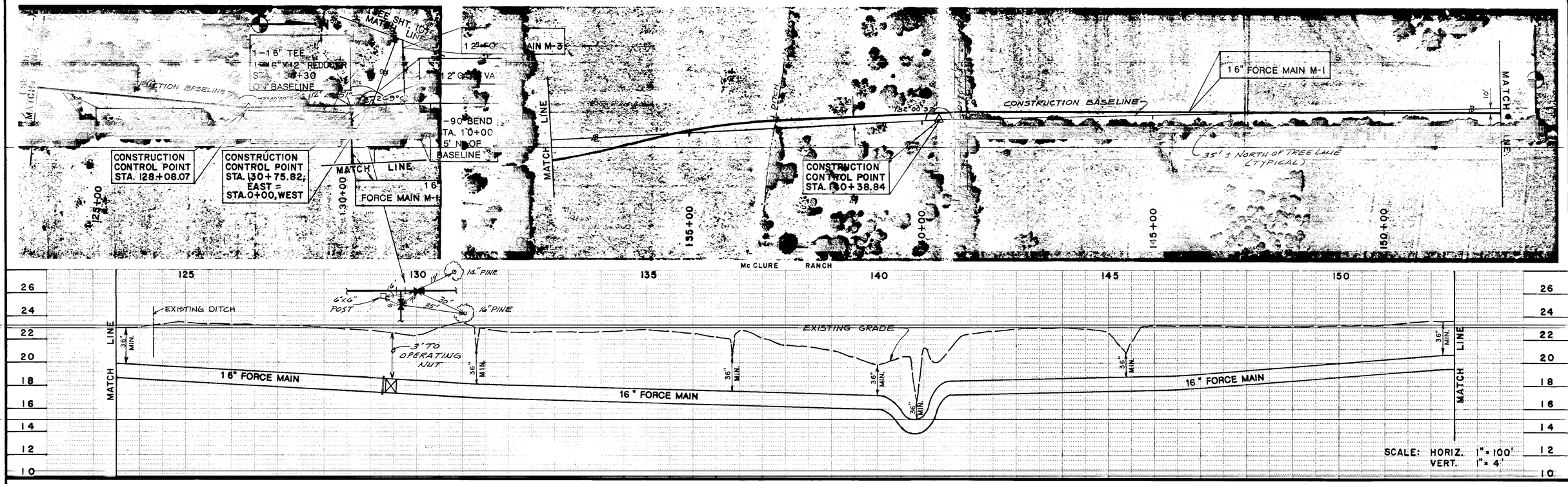
T-76

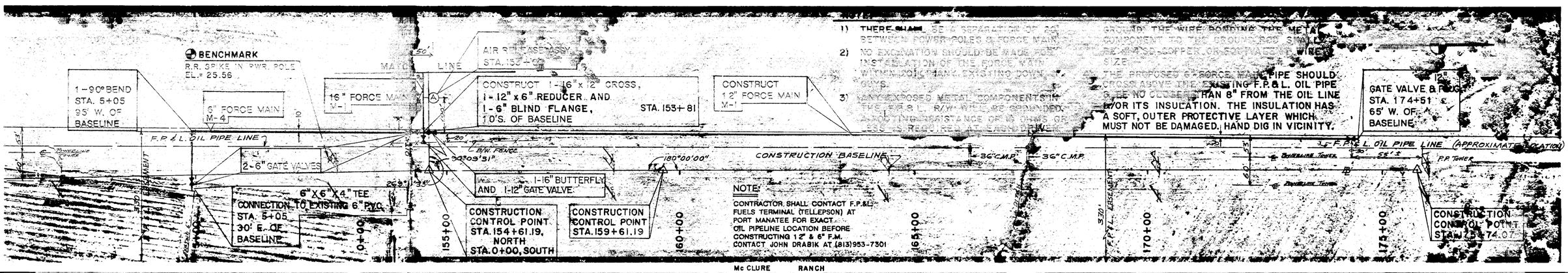
DESIGNED L.W.G./J.F.O. CHECKED [illegible] DATE AUG. '87 SCALE AS SHOWN
DRAWN O.M.M. - M.J.K. FILE NO. 031-026-85 SHEET 6 OF 12

HAMRICK

12-05

ISSUED FOR CONSTRUCTION 3-17-88





1) THERE SHALL BE A SEPARATION OF 36" BETWEEN POWER POLES & FORCE MAIN.

2) NO EXCAVATION SHOULD BE MADE FOR INSTALLATION OF THE FORCE MAIN WITHIN 20'(+) OF ANY EXISTING POWER POLE.

3) ANY EXPOSED METAL COMPONENTS IN THE F.P.&L. R/W WILL BE GROUNDED. GROUNDING RESISTANCE OF 25 OHMS OR LESS IS REQUIRED. EACH GROUND ROD SHALL BE CONNECTED TO THE WIRE BONDING THE METAL COMPONENT TO THE GROUND ROD SHALL BE #2 SOLID COPPER CONDUCTOR WIRE SIZE.

THE PROPOSED 6" FORCE MAIN PIPE SHOULD CROSS ABOVE THE EXISTING F.P.&L. OIL PIPE & BE NO CLOSER THAN 8" FROM THE OIL LINE OR ITS INSULATION. THE INSULATION HAS A SOFT, OUTER PROTECTIVE LAYER WHICH MUST NOT BE DAMAGED. HAND DIG IN VICINITY.

16", 12" & 6" EFFLUENT TRANSMISSION FORCE MAINS M-1 & M-4

Mc CLURE RANCH

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
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Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave W, Suite N
Bradenton, Florida 33529
(813) 794-5450

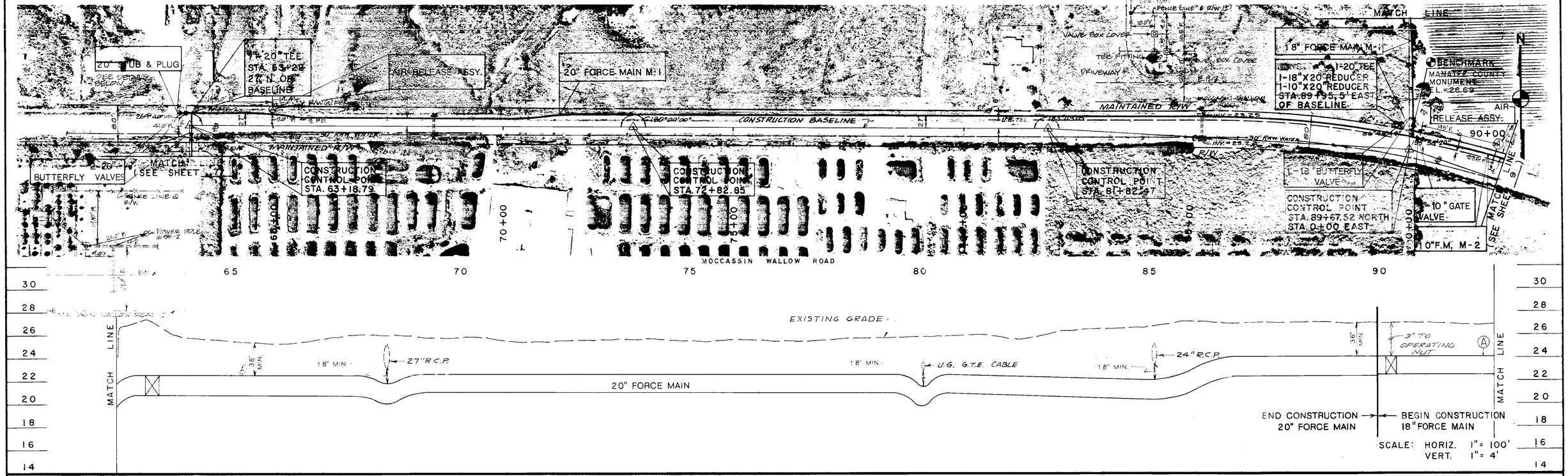
T-78

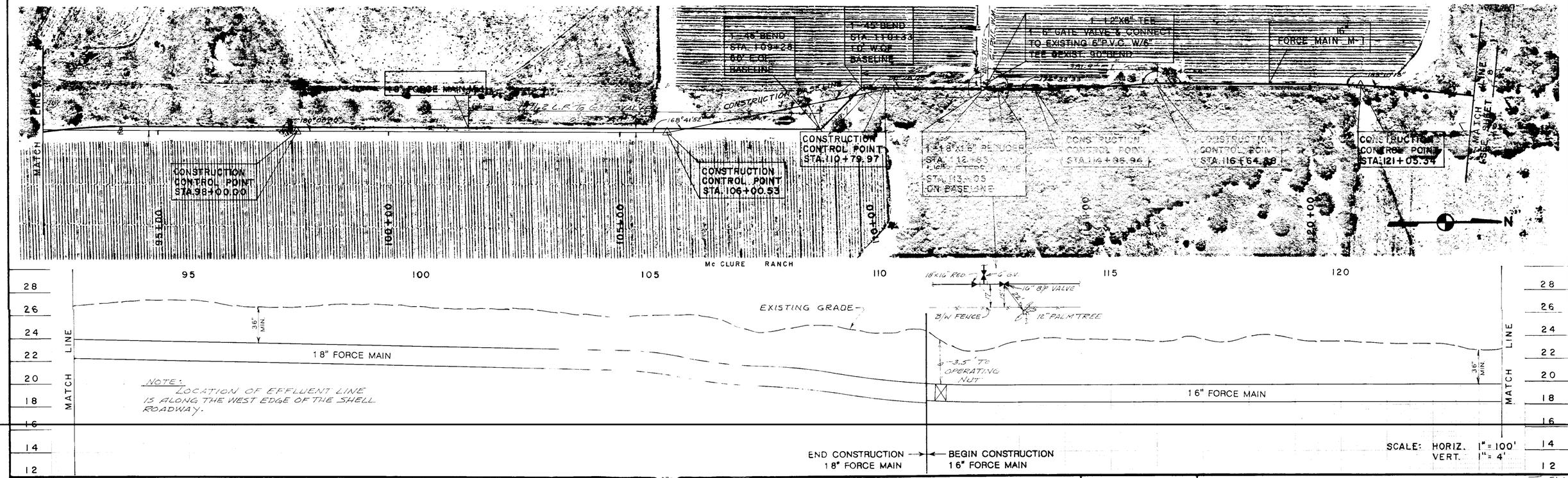
DESIGNED L.W.G./J.F.O. CHECKED DATE AUG. '87 SCALE AS SHOWN
DRAWN M.J.K. FILE NO. 031-028-85 SHEET 8 OF 12

HAMRICK

12-05

ISSUED FOR CONSTRUCTION 3-17-89





20", 18", 16" & 10" EFFLUENT TRANSMISSION FORCE MAINS M-1 & M-2

MOCCASIN WALLOW ROAD TO Mc CLURE RANCH

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

MANATEE COUNTY, FLORIDA

REVISIONS
RECORD DWG. 4-89 PJP

Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave W. Suite N
Bradenton, Florida 33529
(813) 794-5450

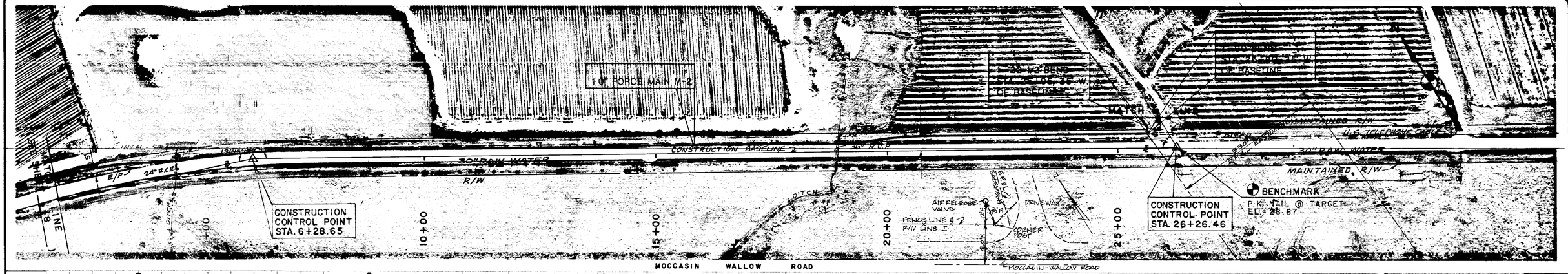
DESIGNED W.G./J.F.O. CHECKED DATE AUG. 87 SCALE AS SHOWN
DRAWN C.M.M.-M.J.K. FILE NO. 03-026-85 SHEET 7 OF 12

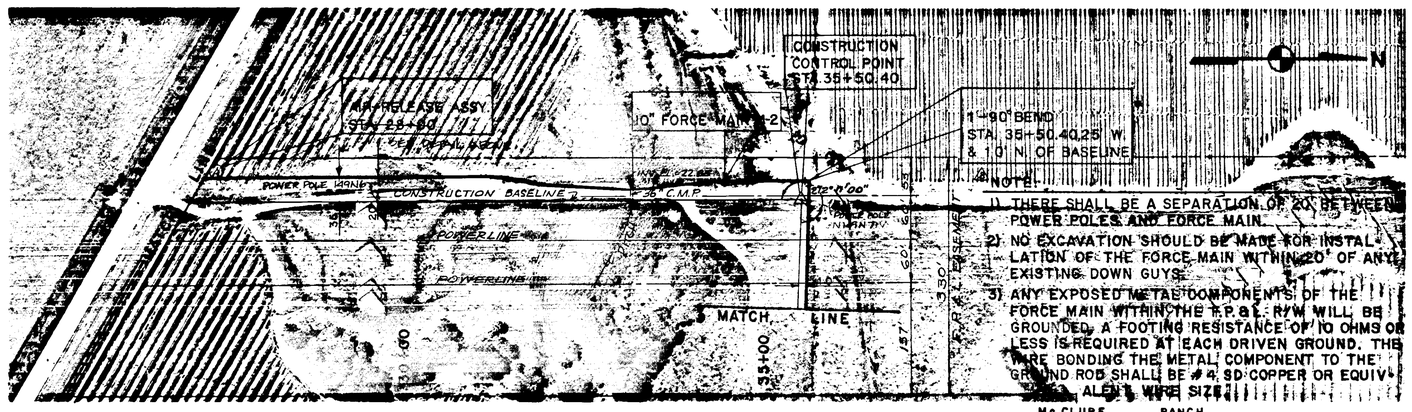
T-76

HAMRICK

2-05

ISSUED FOR CONSTRUCTION 3-17-88





10" EFFLUENT TRANSMISSION FORCE MAIN M-2

MOCCASIN WALLOW ROAD TO Mc CLURE RANCH

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. Record Drwg. 4-89 PJM
2.
3.
4.
5.

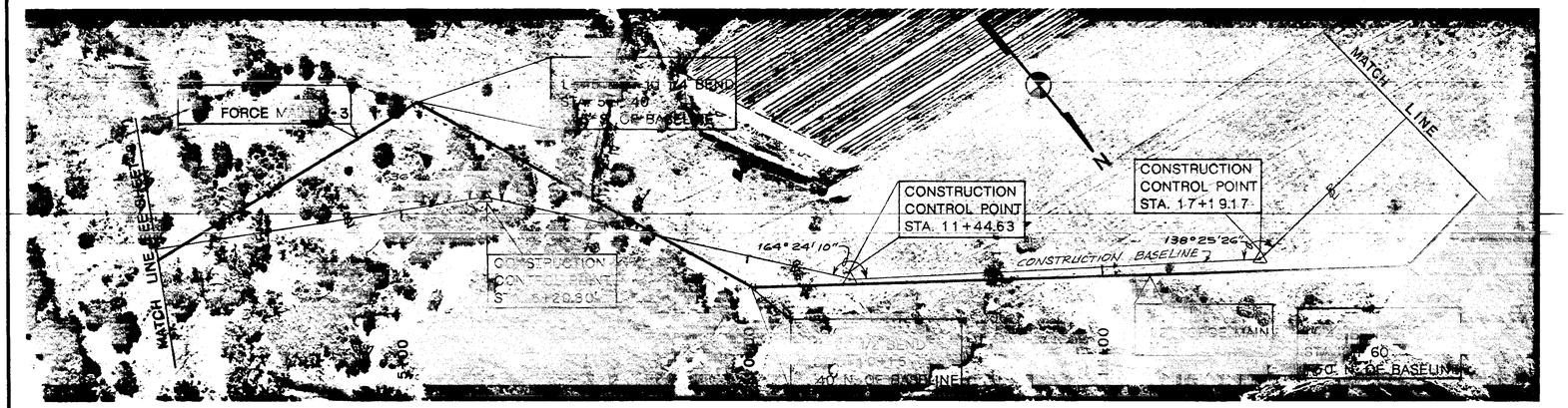
Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave. W. Suite N
Bradenton, Florida 33529
(813) 794-5450

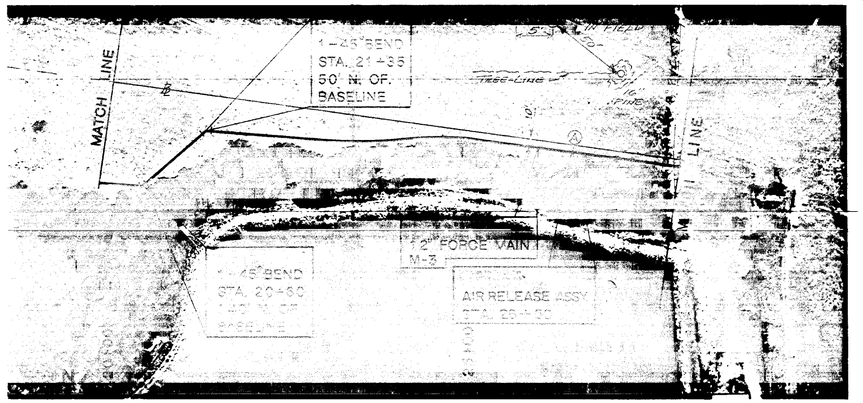
T-79

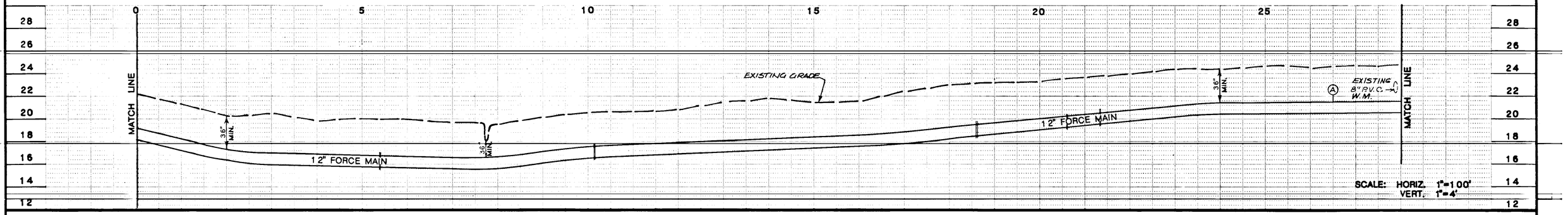
DESIGNED L.W.G./J.F.O. CHECKED [illegible] DATE AUG. '87 SCALE AS SHOWN
DRAWN O.M.M.-M.J.K. FILE NO. 031-026-85 SHEET 9 OF 12

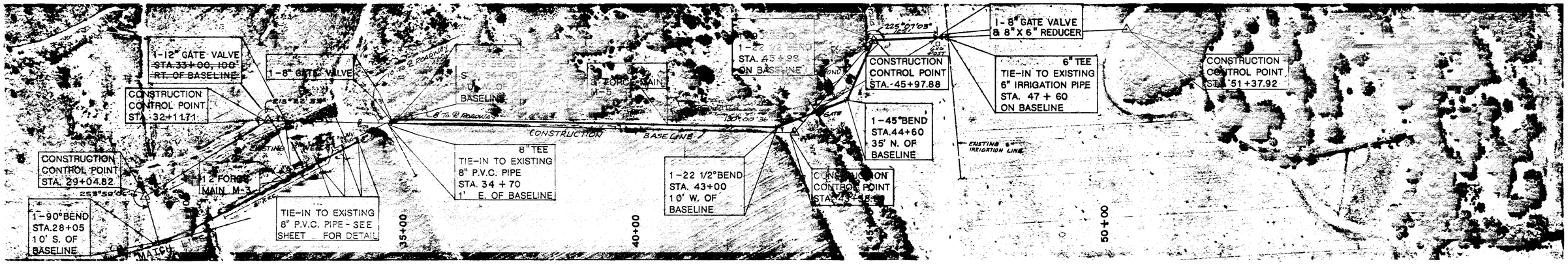
HAMRICK

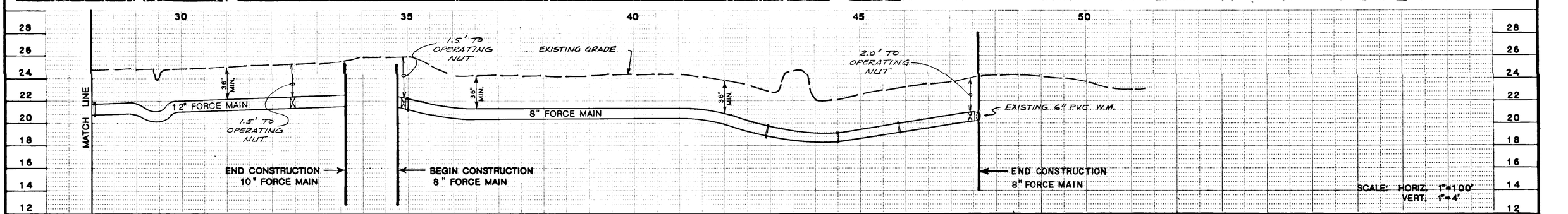
12-05 ISSUED FOR CONSTRUCTION 3-17-88











12" & 8" EFFLUENT TRANSMISSION FORCE MAINS M-3 & M-5

Mc CLURE RANCH

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. RECORD DWG. 4-89 PJM
2.
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4.
5.

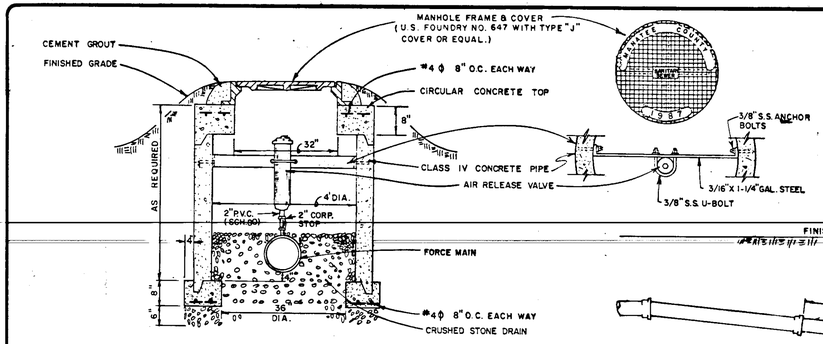
Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave. W. Suite N
Bradenton, Florida 33529
(813) 794-5450

T-80

DESIGNED L.W.G. / J.F.O. CHECKED DATE AUG '87 SCALE AS SHOWN
DRAWN M.J.K. FILE NO. 031-026-85 SHEET 10 OF 12

HAMRICK and Sons, Inc.

12-05 ISSUED FOR CONSTRUCTION 3-17-88

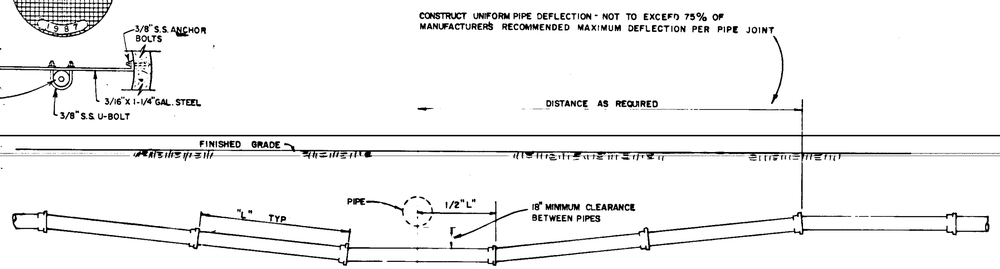


AIR RELEASE VALVE DETAIL

N.T.S.

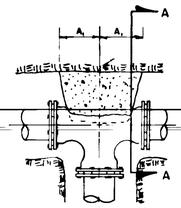
AIR RELEASE VALVE NOTES:

1. EXACT AIR RELEASE ENCLOSURE LOCATION SHALL BE AS DIRECTED BY THE ENGINEER.
2. PAINT INSIDE OF AIR RELEASE ENCLOSURE; 2 COATS COAL TAR EPOXY, 8 MIL'S DRY FILM THICKNESS, EACH COAT.
3. CONCRETE SHALL HAVE A MIN. COMPRESSIVE STRENGTH OF 4000 P.S.I.
4. PROVIDE DOUBLE STRAP TAPPING SADDLE FOR 2" TAP.

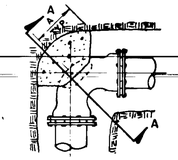


PIPE CROSSING DETAIL

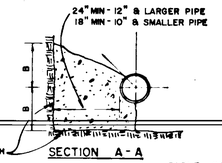
N.T.S.



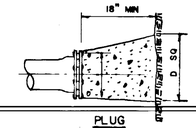
TEE



BEND



SECTION A-A



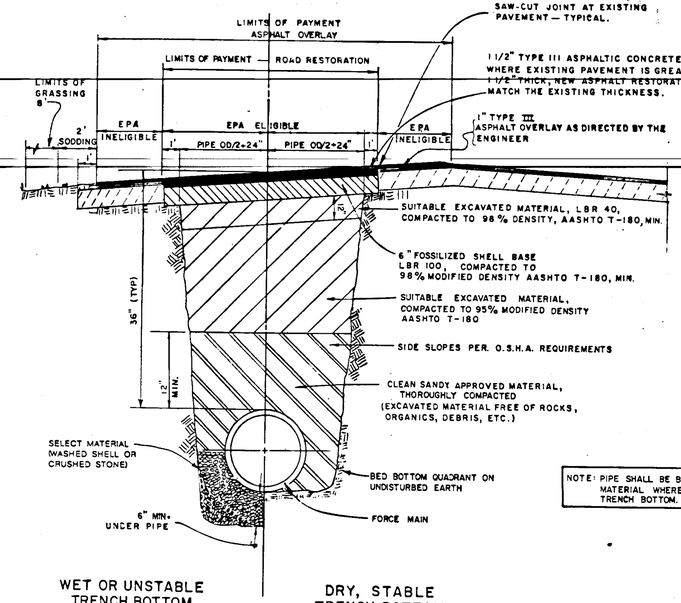
PLUG

TABLE OF DIMENSIONS

SIZE	90° BENDS		45° BENDS		22 1/2 BENDS		TEES		PLUGS	
	A	B	A	B	A	B	A,	B	C	D
4"	8"	10"	6"	8"	3"	8"	8"	8"	10"	15"
6"	8"	10"	6"	8"	3"	8"	8"	8"	10"	15"
8"	12"	12"	8"	10"	5"	9"	12"	12"	12"	20"
10"	16"	14"	10"	12"	6"	10"	11"	14"	14"	25"
12"	19"	16"	12"	14"	8"	11"	14"	16"	16"	30"
14"	23"	18"	14"	16"	10"	12"	16"	18"	18"	34"
16"	26"	20"	16"	18"	11"	13"	18"	20"	20"	38"
18"	32"	24"	20"	22"	14"	16"	22"	24"	24"	46"
20"	36"	28"	22"	24"	15"	18"	24"	28"	28"	52"

THRUST BLOCK DETAIL

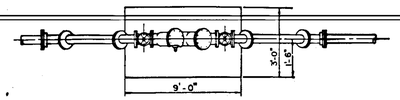
N.T.S.



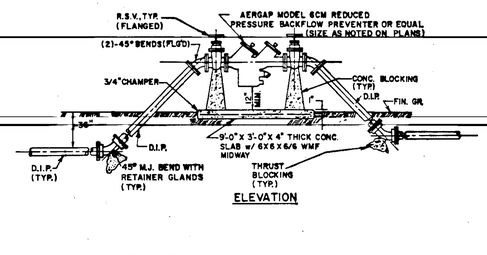
NOTE: PIPE SHALL BE BEDDED IN 6" MINIMUM SELECT MATERIAL WHERE ROCK IS ENCOUNTERED IN TRENCH BOTTOM.

FORCE MAIN TRENCH & PAVEMENT RESTORATION DETAIL

N.T.S.



PLAN



ELEVATION

BACKFLOW PREVENTER DETAIL

N.T.S.

NOTE: PIPING AND VALVES SHALL BE THE SAME DIAMETER AS THE REQUIRED BACKFLOW PREVENTER.
ALL EXPOSED PIPING AND VALVES SHALL BE COATED WITH TWO COATS AMERLOCK 400 OR APPROVED EQUAL.

GENERAL NOTES:

1. THRUST BLOCKS SHALL BE USED ON ALL HORIZONTAL BENDS AND AS DIRECTED BY THE ENGINEER.
2. RESTRAINED JOINTS SHALL BE USED ON ALL BENDS AND FITTINGS.
3. THRUST BLOCK AND RESTRAINED JOINTS SHALL BE USED ON ALL JACK AND BORE CROSSINGS, AND BRIDGE OR STREAM CROSSINGS.
4. 5 MIL VISQUEEN SHALL BE PLACED AROUND ALL METAL SURFACES IN CONTACT WITH CONCRETE PRIOR TO POURING THRUST BLOCKS.
5. CONCRETE FOR THRUST BLOCKS SHALL HAVE COMPRESSIVE STRENGTH OF 2500 PSI @ 28 DAYS.
6. THE LENGTH OF RESTRAINED PIPE ON EACH SIDE OF THE BEND SHALL BE NOT LESS THAN THE "R" DISTANCE GIVEN IN THE TABLE OF DIMENSIONS.
7. THE FIRST JOINT OF THE PIPE BEYOND THE DISTANCE "R" ESTABLISHED ABOVE SHALL BE RESTRAINED ALONG WITH ALL JOINTS WITHIN THE DISTANCE "R".
8. INTERNAL PRESSURE ≤ 75 PSI
9. ALL P.V.C. PIPE SHALL BE COLOR CODED IN ACCORDANCE WITH MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT STANDARDS. COLOR SHALL BE BROWN.
10. IDENTIFICATION TAPE SHALL BE LAID IN TRENCH, 1'-0" OVER TOP OF ALL DUCTILE IRON FORCE MAIN, IN ACCORDANCE WITH MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT STANDARDS.

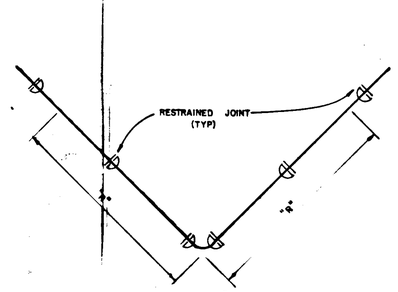
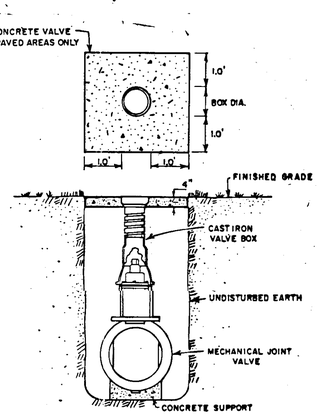


TABLE OF DIMENSIONS

PIPE DIAMETER	"R" FOR 11 1/4° BENDS	"R" FOR 22 1/2° BENDS	"R" FOR 45° BENDS	"R" FOR 90° BENDS
4"	8'	8'	10'	19'
6"	8'	8'	11'	35'
8"	8'	8'	17'	56'
10"	8'	8'	23'	77'
12"	8'	8'	30'	101'
14"	8'	10'	37'	127'
16"	8'	12'	45'	154'
18"	8'	14'	53'	181'
20"	8'	16'	61'	209'

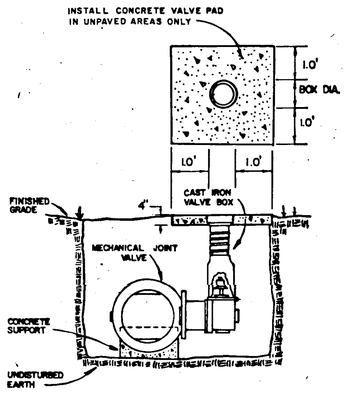
RESTRAINED JOINT DETAIL

N.T.S.



VERTICAL STEM VALVE DETAIL 4" - 12" DIAMETER

N.T.S.



BUTTERFLY VALVE DETAIL

N.T.S.

FORCE MAIN DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. Record Dwg. 4/89 PJM
2.
3.
4.
5.

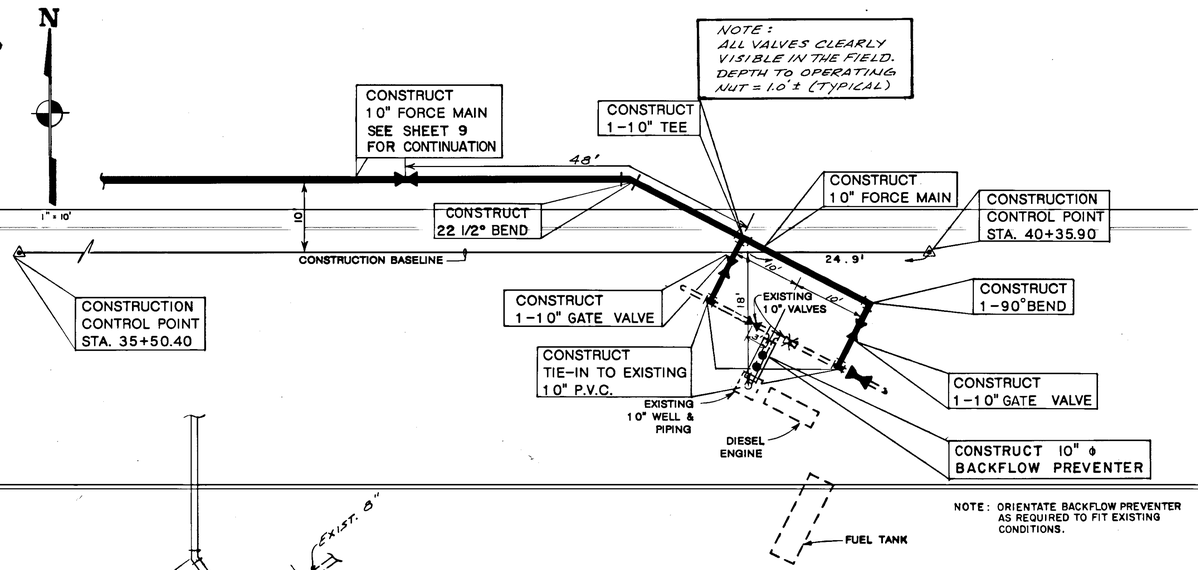
LEI Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave. W., Suite N
Bradenton, Florida 33529
(813) 794-5480

T-81

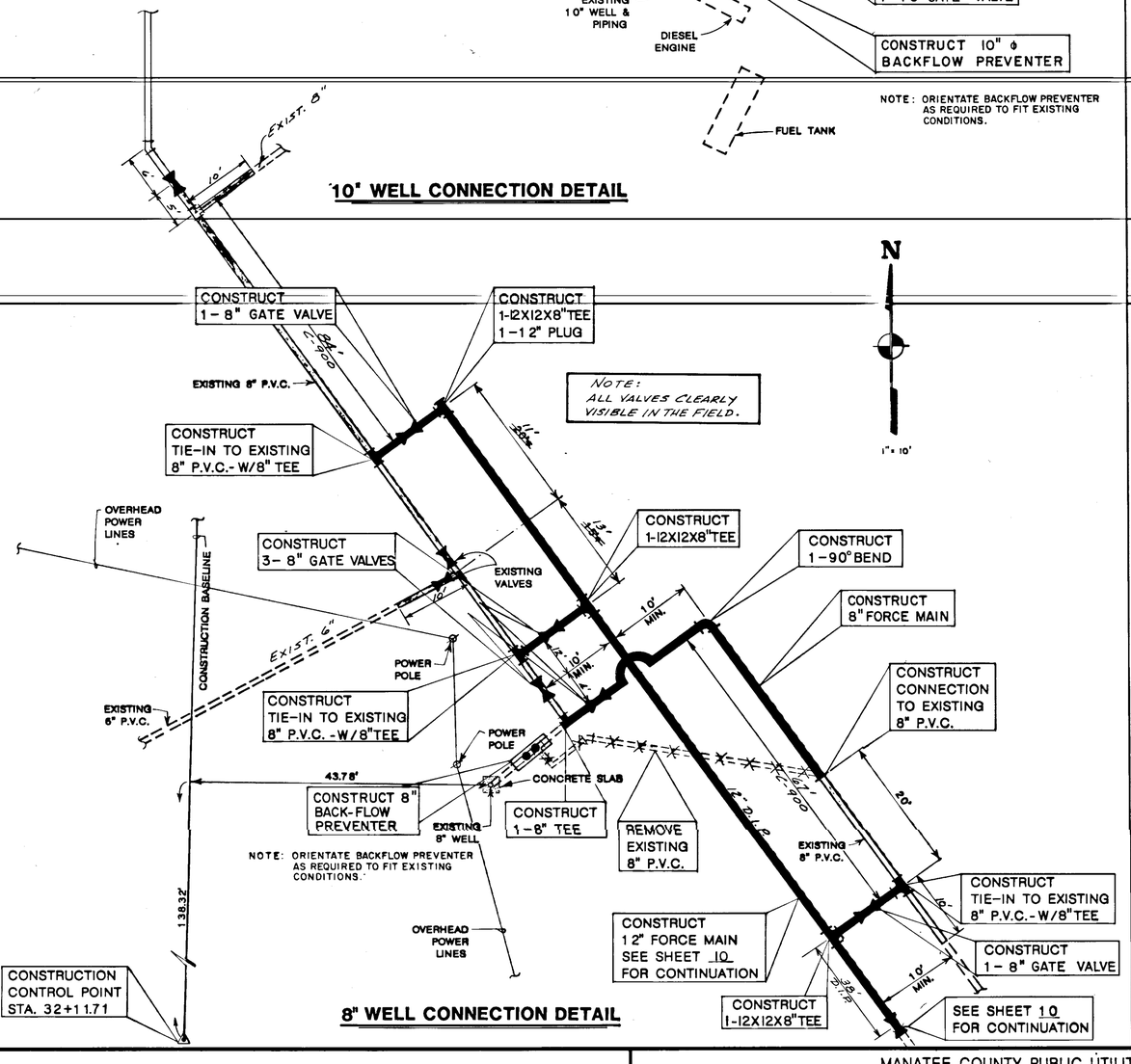
DESIGNED L.W.G. CHECKED KWP DATE AUG. '87 SCALE AS NOTED
DRAWN K.A.T. / M.W.M. FILE NO. 031-026-85 SHEET 11 OF 12

12-05 ISSUED FOR CONSTRUCTION

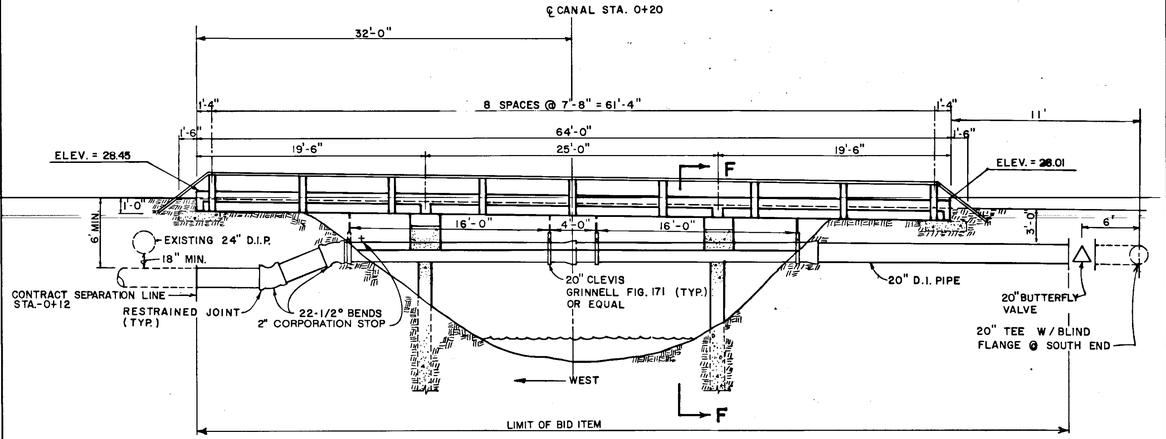
AF 31693A



10" WELL CONNECTION DETAIL

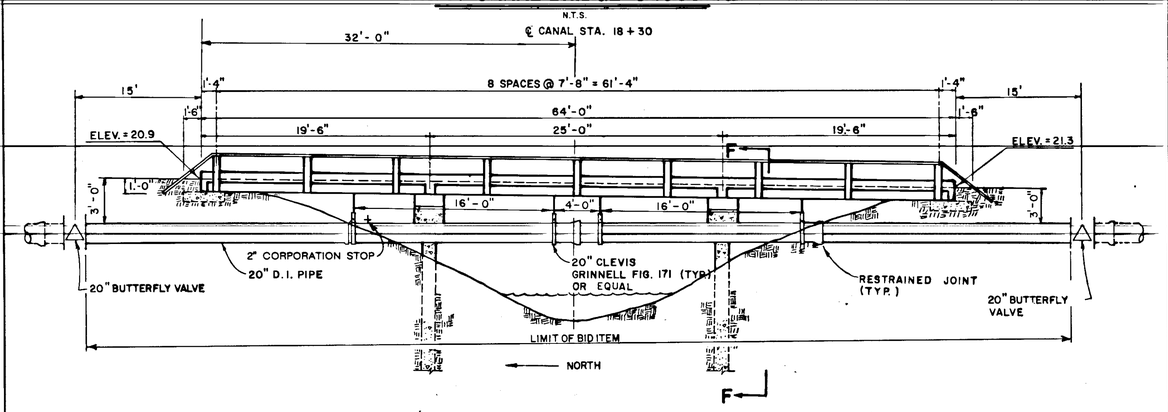


8" WELL CONNECTION DETAIL



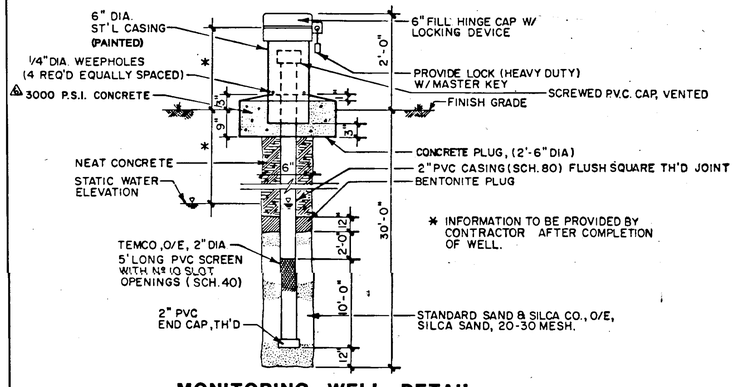
WADE CANAL BRIDGE CROSSING

N.T.S.

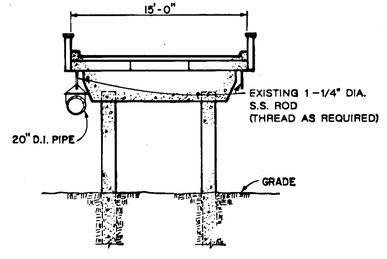


BUFFALO CANAL BRIDGE CROSSING

N.T.S.



MONITORING WELL DETAIL



SECTION F-F

N.T.S.

NOTE: ALL HARDWARE AND ACCESSORIES FOR PIPE SUPPORT SYSTEM SHALL BE TYPE 316 S.S.

DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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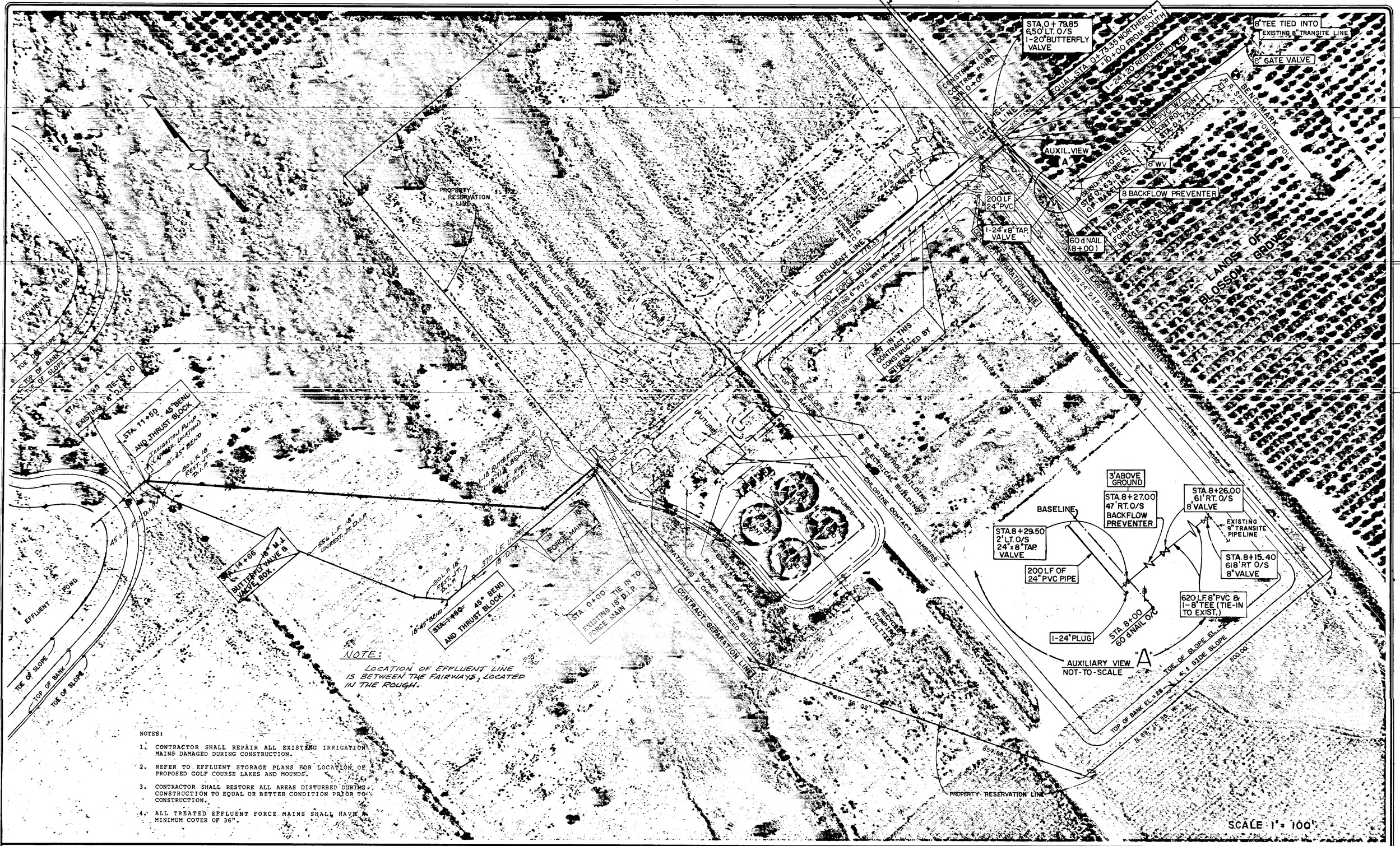
Consulting Engineers
6404 Manatee Ave W, Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED L.W.G. CHECKED [signature] DATE AUG. '87 SCALE AS SHOWN
DRAWN D.K.F. / M.J.K. FILE NO. 031-026-85 SHEET 12 OF 12

12-05 ISSUED FOR CONSTRUCTION 3-17-88



NOTES:

1. CONTRACTOR SHALL REPAIR ALL EXISTING IRRIGATION MAINS DAMAGED DURING CONSTRUCTION.
2. REFER TO EFFLUENT STORAGE PLANS FOR LOCATION OF PROPOSED GOLF COURSE LAKES AND MOUNDS.
3. CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED DURING CONSTRUCTION TO EQUAL OR BETTER CONDITION PRIOR TO CONSTRUCTION.
4. ALL TREATED EFFLUENT FORCE MAINS SHALL HAVE A MINIMUM COVER OF 36".

EFFLUENT TRANSMISSION MAINS EXITING WASTEWATER TREATMENT PLANT

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

MANATEE COUNTY, FLORIDA

REVISIONS

AS-BUILT 3-93

RECORD DRAWING SHOWING TRANSMISSION MAIN AND 8" BRANCH LINES TO BLOSSOM GROVES

PROJECT 410-8705-537, FIELD NOTES: BOOK 92-52 PAGES 55-59 (AND OTHER NOTES)

ADDED 8"20"& 24" LINES

DRAWING Nº 1

HAMRICK

8-13

T-169

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES (BY OTHERS)

WADE CANAL BRIDGE

TOP BRIDGE RAIL

EXIST. 20" LINE FROM PLANT

TOP OF VALVE = 27.36

24" FORCE MAIN

3/8" I.R.

BASELINE

20"x 24"x 20" TEE

EXIST. 20" FORCE MAIN M-1

C BUTTERFLY VALVE COVER

ROLLING TERRAIN

CONSTRUCTION BASELINE

(STA. 8+00) (50' RAD.)

157°51'23"

382.2'

20' PERMANENT UTILITY & ACCESS EASEMENT

STA. 8+27.0, 47'O/S RT. BACKFLOW PREVENTER 6' ABOVE GROUND, TOP W. ELEV. = 31.66

STA. 8+26.0 61' O/S RT VALVE TOP 'E' EL. = 31.57

CONSTRUCTION CONTROL POINT STA. 10+ 63.34 3/8" I.R

STA. 8+15.40, 618.0' O/S RT. WATER VALVE TOP V. ELEV. = 25.52

1-45° BEND STA. 11+40 25' W. OF BASELINE

STA. 8+29.50, 2.0' O/S LT W. VALVE TOP EL. 27.77

FORCE MAIN BRIDGE CROSSING SEE DETAIL SHEET

SEE AUXIL. VIEW B

1-20" x 8" TAP VALVE EL. 21.05

1-BACKFLOW PREVENTER - 3' ABOVE GROUND TOP EL. 23.70

1-8" WV TOP EL. 23.60

655 L.F. 8" PVC

CONSTRUCTION CONTROL POINT STA. 19+13.27 3/8" I.R.

STA. 18+49.15 643' RT. O/S 8" WV, TOP EL. VALVE = 20.06

1" = 100'

20" FORCE MAIN

CONSTRUCTION BASELINE

1-45° BEND STA. 12+82 BASELINE

CONSTRUCTION CONTROL POINT STA. 12+ 06.76 3/8" I.R

TIE INTO TRANSITE 20" x 8" TAP VALVE TO EXIST. 20" FM. TOP VALVE EL. = 21.05

EXIST. WV

EXISTING 20" FM

BLOSSOM GROVE

15+00

BUTTERFLY VALVE

AIR RELEASE VALVE

BRIDGE RAILS

BUFFALO CANAL BRIDGE

22.3' FF

24" BUTTERFLY VALVE COVER

10'

EQUALITY STA. 0+73.35 = STA. 10+00 FROM SOUTH

MATCH LINE

2.5' TO OPERATING NUT

STA. 18+75.15 28' RT. O/S BACKFLOW PREVENTER 3' ABOVE GD. TOP EL. 23.70

8" PVC

STA. 18+74.15 42' RT. O/S 8" WV EL. TOP = 23.60

AUXIL. VIEW 'B' (N.T.S.)

EXISTING GRADE

36" MIN.

20" FORCE MAIN

NOTE: LOCATION OF EFFLUENT LINE IS 2'± OFF WEST EDGE OF SHELL ROADWAY.

AIR RELEASE ASSEMBLY

48" C.M.P.

18" MIN.

EXISTING BRIDGE

14" C.M.P.

20" FORCE MAIN

NOTE: LOCATION OF EFFLUENT LINE IS 2'± OFF THE WEST EDGE OF SHELL ROADWAY.

SCALE: HORIZ. 1" = 100'
VERT. 1" = 4'

BENCHMARK: A.P. SPIKE IN PWR. POLE EL. = 18.43

CONSTRUCTION CONTROL POINT STA. 31+65.78 I.R. & C

20" FORCE MAIN M-1

CONSTRUCTION CONTROL POINT STA. 43+88.53

CONSTRUCTION CONTROL POINT STA. 45+89.86

CONSTRUCTION CONTROL POINT STA. 48+14.44

CONSTRUCTION CONTROL POINT STA. 51+51.48

CONSTRUCTION CONTROL POINT STA. 52+85.19

CONSTRUCTION CONTROL POINT STA. 55+38.04

CONSTRUCTION CONTROL POINT STA. 62+08.07

AIR RELEASE ASSY. STA. 61+00

20" FORCE MAIN M-1

36' PERMANENT UTILITY & ACCESS EASEMENT

45+00

50+00

55+00

60+00

BLOSSOM GROVE

NOTE: LOCATION OF EFFLUENT LINE IS 2'± OFF THE WEST EDGE OF SHELL ROADWAY.

EXISTING GRADE

36" MIN.

24" C.M.P.

18" MIN.

20" FORCE MAIN

48" C.M.P.

SCALE: HORIZ. 1" = 100
VERT. 1" = 4'

EFFLUENT TRANSMISSION FORCE MAINS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER EFFLUENT TRANSFER AND TRANSMISSION FACILITIES

MANATEE COUNTY, FLORIDA

REVISIONS
1.
2.
3.
4.
5. AS-BUILT 3-93

ADDED 8"FM

RECORD DRAWING SHOWING TRANSMISSION MAIN AND 8" BRANCH LINES TO BLOSSOM GROVES

PROJECT 410-8705-537
FIELD BOOK 92-52
PAGES 54-59

DRAWING Nº 2

HAMRICK and Sons, Inc.

08-13 T-T10

MANATEE COUNTY

PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL
WASTEWATER FACILITIES IMPROVEMENTS
E.P.A. NO. C-120540060 (STEP 3)

PHASE 1 SEGMENT B - PART B

CHLORINE CONTACT CHAMBER
AND
EFFLUENT PUMP STATION

RECEIVED
JUN 1 1984
Dept. of Environmental Regulation
Bureau of Wastewater Management

APPROVED
STATE OF FLORIDA
Dept. of Environmental Regulation
DATE APPROVED 5/31/84
BY Richard W. Smith
Department Representative

MAY 31 1984

MANATEE COUNTY, FLORIDA
MAY 1984

LARSON ENGINEERING, INC.
Consulting Engineers
6404 Manatee Avenue West, Suite N
Bradenton, Florida 33529

LEI

T214

12-10

AF 31693A

TAMPA BAY

TERRA CEIA BAY

MANATEE RIVER

CITY OF PALMETTO
(NOT INCLUDED IN SERVICE AREA)

PROJECT SITE

NORTH SUBREGIONAL WASTEWATER TREATMENT PLANT SITE

100 YEAR FLOOD BOUNDARY PER FEDERAL EMERGENCY MANAGEMENT AGENCY

N

U.S. 19
U.S. 41
U.S. 75
U.S. 275
U.S. 301
S.R. 680
RAILROAD
SEABOARD COASTLINE RAILROAD
ATLANTIC COASTLINE RAILROAD
EXPERIMENTAL FARM ROAD
MOCCASIN WALLOW ROAD
MENDOZA ROAD
MEMPHIS ROAD
OLD TAMPA
29 TH STREET
21 ST STREET
MANATEE COUNTY
PALMETTO

INDEX

SHEET	TITLE
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G-3	ABBREVIATIONS
G-4	SITE PLAN
M-1 - M-4	MECHANICAL PLAN AND SECTIONS
S1 - S10	STRUCTURAL PLANS AND SECTIONS
E1 - E2	ELECTRICAL PLAN AND DETAILS
D1 - D3	GENERAL DETAILS

LOCATION MAP AND INDEX

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I SEGMENT B - PART B

E.P.A. NO. 120540060

MANATEE COUNTY, FLORIDA

REVISIONS
1.
2.
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Larson Engineering, Inc.
Consulting Engineers

MAY 31 1984

T-215

DESIGNED RLL/HFW CHECKED DATE 5/31/84 SCALE 1" = 2000'
DRAWN OMM/MJK FILE NO. 031-011-84 SHEET G-1 OF G-4

12-10

AF 31693A

LEGEND
SYMBOLS, STRUCTURES & FEATURES

EXISTING	DESCRIPTION	PROPOSED
PIPE SIZE / PIPE MATERIAL / PROCESS FLUID (NOMENCLATURE) / PIPE JOINT TYPE — 36" D.I.P. R.A.S. M.J.	TYPICAL PIPE IDENTIFICATION	PIPE SIZE / PIPE MATERIAL / PROCESS FLUID (NOMENCLATURE) / PIPE JOINT TYPE — 36" D.I.P. R.A.S. M.J.
8" D.I.P. SAN. S. — MH	SANITARY SEWER AND MANHOLE	8" D.I.P. SAN. S. — MH
42" D.I.P. SAN. S. — MH	OVER 36" SIZE & TYPE	42" D.I.P. SAN. S. — MH
12" R.C.P. SAN. S. — MH	STORM SEWER / DRAIN AND MANHOLE	12" R.C.P. S.S. — MH
42" R.C.P. S.S. — MH	OVER 36" SIZE & TYPE	42" R.C.P. S.S. — MH
◎ MH	MANHOLE, WATER TIGHT	◉ MH
6" PVC F.M.	FORCE MAIN, SIZE & TYPE	6" PVC F.M.
6" D.I.P. W.M.	POTABLE WATER MAIN, SIZE & TYPE	6" D.I.P. W.M.
F	FIRE LINE	F
4" ST'L G.	GAS LINE AND DRIP, SIZE & TYPE	4" ST'L G.
12" 14 KVA E.	ELECTRIC CABLE/DUCT, SIZE & TYPE (BURIED)	12" 14 KVA E.
6, 4, 50 P. T.	TELEPHONE CABLE / DUCT, SIZE & TYPE (BURIED)	6, 4, 50 P. T.
T V	TELEVISION CABLE	T V
S	SIGNAL LINE	S
F.H.	FIRE HYDRANT ASSEMBLY (INCLUDES VALVE)	F.H.
Y.H. □ Y.H. BOX	YARD HYDRANT ASSEMBLY	Y.H.
90° BEND, CROSS, TEE, PLUG, WYE, VALVE, REDUCER, BLOW OFF	PIPING, VALVES AND FITTINGS	90° BEND, CROSS, TEE, PLUG, WYE, VALVE, REDUCER, BLOW OFF
12" P.V.C., R.S., M.J.	RAW SEWAGE LINE, SIZE, TYPE & JOINT	12" P.V.C., R.S., M.J.
8" D.I.P., R.A.S., M.J.	RETURN ACTIVATED SLUDGE, SIZE, TYPE & JOINT	8" D.I.P., R.A.S., M.J.
8" D.I.P., W.A.S., M.J.	WASTE ACTIVATED SLUDGE, SIZE, TYPE & JOINT	8" D.I.P., W.A.S., M.J.
6" PVC, E.W., M.J.	NON-POTABLE WATER LINE, SIZE, TYPE & JOINT E.W. = EFFLUENT WATER R.W. = REUSE WATER N.W. = NON-POTABLE WATER	6" PVC, E.W., M.J.
6" D.I.P., A.P., W.	AIR PIPING, SIZE, TYPE & JOINT	6" D.I.P., A.P., W.
6" PVC, O.C., P.O.	ODOR CONTROL LINE, SIZE, TYPE & JOINT	6" PVC, O.C., P.O.
4" PVC, CL_2, W.	CHLORINE LINE, SIZE, TYPE & JOINT	4" PVC, CL_2, W.
A	AIR RELEASE VALVE	A
C 1" H.B. T 1" H.B.	HOSE BIBB / CONNECTION, SIZE	C 1" H.B. T 1" H.B.
V	VALVE VAULT	V
W.M.	WATER METER	W.M.
E	ELECTRIC MANHOLE / VAULT	E
T T G.T.E.	TELEPHONE MANHOLE / VAULT & CABLE BOX	T T G.T.E.
T.B. 11 NO. OF B B.M. BORING	TEST BORING / B	T.B. 11 NO. OF B B.M. BORING
B.M.	BENCH MARK	B.M.
℄ ℄	LIMITED ACCESS RIGHT OF WAY (L.A. R/W)	℄ ℄
℄ ℄	RIGHT OF WAY (R/W)	℄ ℄
I.P. I.R. C.M.	PROPERTY LINE (℄) PROPERTY CORNERS: IRON PIPE, IRON ROD, CONCRETE MONUMENT	I.P. I.R.
6' CHAIN LINK	FENCE, SIZE & TYPE	6' CHAIN LINK
24' ASPH. PAV'T.	BUILDING / STRUCTURE	
C.B. C.B.	PAVEMENT, SIZE & TYPE	C.B. C.B.
S° S° P-#55	CATCH BASIN	S° S° P-#55
GUY WIRE 12" 24" OAK	CULVERT OR BRIDGE	4" OAK
52 52	RAILROAD TRACKS	52
92 x 5 92.5 x	SIGNS	92.5 x
	POLE, POWER POLE & COMBINATION POLE W/NO.	
	TREE, SIZE & TYPE	
	HEDGE	
	CONTOURS	
	SPOT ELEVATIONS	
	STORM WATER FLOW	
	STREAM (SMALL) / DITCH	
	SHORE LINE	
M.B.	MAILBOX	M.B.

LEGEND
VALVES, PIPES & FITTINGS

EXISTING & NEW SYMBOLS	DESRIPTION
NOTE NEW SYMBOLS SHALL BE HEAVIER IN LINE WEIGHT.	
	GATE VALVE (GV)
K	KNIFE GATE (KV)
	PINCH VALVE
	FLOW METER
	PLUG VALVE (PV)
	UNION (UN)
	BALL VALVE (BaV)
	DIAPHRAGM VALVE
	BUTTERFLY VALVE (BV)
	QUICK CONNECT COUPLING
	PRESSURE CONTROL VALVE
	NEEDLE VALVE
	VALVE WITH HOSE END
	BALL CHECK VALVE
	DOUBLE DISC CHECK VALVE
	CHECK VALVE (GENERAL) (CV)
	PRESSURE SAFETY VALVE
	GLOBE VALVE (Go V)
	3 WAY VALVE (GENERAL)
	4 WAY VALVE (GENERAL)
VALVE ACTUATORS	H = HYDRAULIC P = PNEUMATIC
	CYLINDER ACTUATOR
	DIAPHRAGM ACTUATOR
M	ELECTRIC MOTOR ACTUATOR
S	SOLENOID ACTUATOR
	PULSATION DAMPENER
	RUPTURE DISC
	Y-STRAINER
	REDUCER OR REDUCING BUSHING
	DIRECTION OF FLOW
	OPEN EQUIPMENT DRAIN
	FLEXIBLE CONNECTION
	FLEXIBLE COUPLING
	PLAIN END PIPE COUPLING
	SLUICE GATE, SLIDE GATE
	MIXER

PIPING SYMBOLS

- PUSH ON JOINT (PO)
- MECHANICAL JOINT (M.J.)
- RESTRAINED JOINT (R.J.)
- FLANGED JOINT (FLG.)
- WELDED JOINT (W)

LEGEND
PROCESS SYMBOLS

- MAIN PROCESS
- MINOR PIPING
- SONIC SIGNAL
- ES — ELECTRIC SIGNAL
- PNEUMATIC SIGNAL
- HYDRAULIC SIGNAL
- AS — AIR SUPPLY
- ES — ELECTRIC SUPPLY

T XX — M 4012 B-13 FV — PROCESS SYSTEM; FUNCTIONAL INDENTIFICATION PER ISA STANDARD S5.1

(XX) (XX) (X) (XX) — LOOP IDENTIFICATION; NUMBER SUFFIX IDENTIFICATION UNIT PROCESS ITEMS; LETTER SUFFIX FOR DUPLICATE ITEMS IN SAME LOOP; INSTRUMENTS LOOP NUMBER; UNIT PROCESS NUMBER

TAGGING SYSTEM FOR INSTRUMENTS AND CONTROL VALES

XX — HV XXX — PROCESS SYSTEM; HAND VALVE; VALVE NUMBER

TAGGING SYSTEM FOR PROCESS VALVES

3 / M-3 M-6 — SECTION DESIGNATION; SHEET ON WHICH SECTION IS DRAWN; SHEET ON WHICH SECTION IS CUT

3 / M-7 D-2 — DETAIL DESIGNATION; SHEET ON WHICH DETAIL IS CALLED; SHEET ON WHICH DETAIL IS DRAWN

SECTION TARGET

SECTION 3 / M-17 M-20 — SECTION DESIGNATION; SHEET ON WHICH SECTION IS DRAWN; SHEET ON WHICH SECTION IS CUT

SECTION TITLE TARGET

DETAIL 3 / M-5 D-2 — DETAIL DESIGNATION; SHEET ON WHICH DETAIL IS SHOWN; SHEET ON WHICH SECTION IS CUT

DETAIL TITLE TARGET

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

CHLORINE CONTACT CHAMBER AND EFFLUENT PUMP STATION

LEGEND & SYMBOLS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I SEGMENT B — PART B

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1.
2.
3.
4.
5.

LEI Larson Engineering, Inc. MAY 31 1984
Consulting Engineers
4900 Manatee Ave. W, Suite 201
Bradenton, Florida 33529
(813) 748-2436

DESIGNED ——— CHECKED ——— DATE 5/31/84 SCALE N/A
DRAWN ——— FILE NO. 031-011-84 SHEET G-2 OF G-4

12-10 T-216

AF 31693A

ABBREVIATIONS

PROCESS FLUID NOMENCLATURE

AL	ALUM SOLUTION
ALVT.	ALUM VENT
AS	ACTIVATED SILICA
ASPH.	ASPHALT
ASV.	ACTIVATED SILICA VENT
BA	BLOWER AIR
CAP	CORE AIR PURGE
CCW	CLOSED LOOP COOLING WATER
CCWF	CLOSED LOOP COOLING WATER FILL
CCWR	CLOSED LOOP COOLING WATER RETURN
CHW	CHEMICALLY CONDITIONED WATER (CLARIFIER INF.)
CL_2G	CHLORINE (GAS)
CL_2L	CHLORINE (LIQUID)
CL_2S	CHLORINE SOLUTION
CL_2V	CHLORINE VENT
CLW	CLARIFIED WATER (CLARIFIER EFF.)
CR	CORE RETURN
CS	CONDITIONED SLUDGE
CW	COLD WATER (POTABLE)
CWD	COLD WATER DRAIN
CWP	CORE WASH PURGE
D	DRAIN
DA	COMPRESSED DRIED AIR
DAL.	DISSOLVED ALUM
DAP	DIAPHRAGM AIR PURGE
DAV	DIAPHRAGM AIR VENT
DR.	DRIVE
DSS	DILUTED SODIUM SILICATE
EA	ENGINE STARTING COMPRESSED AIR
EV	EVAPORATOR VENT
F	FILTRATE
FAP	FILTRATE AIR PURGE
FDV	FLUORIDE DUST COLLECTOR VENT
FNW	FINISH WATER
FO	FUEL OIL
FOV	FUEL OIL VENT
FS	FLUORIDE SOLUTION
FV	FLUORIDE VENT
FW	FILTERED WATER
HPW	HOT PLANT WATER (PROTECTED)
L	DRY LIME
LS	LIME SLURRY
LV	LIME VENT
NW	RAW WATER (NON-POTABLE)
OA	OZONATED AIR
OG	OFF-GAS
OGE	OFF-GAS EXHAUST
ORW	OZONATED RAW WATER (RAPID MIX INF.)
OVF	OVER FLOW
OW	OZONATED WATER
PA	PURGE AIR (LIME SILOS)
PWD	PLANT WATER DRAIN
PWW	PLATE WASH WATER
RBA	REGENERATION BLOWER AIR
RBE	REGENERATION BLOWER EXHAUST
RW	PLANT WATER (PROTECTED) REUSE WATER
SL	SAMPLE LINE
SPW	SPRAY WATER
SSF	SODIUM SILICATE TANK FILL TANK
SSI	SODIUM SILICATE
SV	SODIUM SILICATE VENT
SW	SQUEEZE WATER
SWR	SQUEEZE WATER RETURN
TD	TANK DRAIN
TS	THICKENED SLUDGE
VA	VENT AIR
WBW	WASTE BACKWASH WATER
WS	WASTE SLUDGE
WW	WASTE WATER

PROCESS SYSTEMS

AL	ALUM SYSTEM
AS	ACTIVATED SILICA SYSTEM
BA	BLOWER AIR SYSTEM
CC	CLOSED LOOP COOLING SYSTEM
CH	CHLORINE SYSTEM
DA	COMPRESSED DRY AIR SYSTEM
DR	DESICCANT REGENERATION SYSTEM
EG	EMERGENCY GENERATION SYSTEM
FP	FILTER PRESS SYSTEM
FS	FLUORIDE SYSTEM
LS	LIME SYSTEM
NW	RAW WATER SYSTEM (NON POTABLE)
OA	OZONATED AIR SYSTEM
OG	OFF-GAS SYSTEM
OM	OZONE MONITORING SYSTEM
OW	OZONATED WATER SYSTEM
PR	PRETREATED WATER SYSTEM
RW	PLANT WATER SYSTEM (REUSE)
SL	SLUDGE-SYSTEM
SO	SODIUM SILICATE SYSTEM

GENERAL

AB	ANCHOR BOLTS
ADJ	ADJUSTABLE
ADPT	ADAPTER
A/C	AIR CONDITIONING UNIT
ALUM	ALUMINUM
∠	ANGLE
APPROX.	APPROXIMATELY
AR	ACID RESISTANT
@	AT
AUTO	AUTOMATIC
AUX	AUXILIARY
BFP	BACKFLOW PREVENTER
BLDG.	BUILDING
BLK	BLOCK
BM	BENCH MARK
BOT	BOTTOM
BTWN	BETWEEN
CAP	CAPACITY
CAT	CATALOG
CC	CENTER TO CENTER
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
℄	CENTERLINE
CL_2	CHLORINE
CLG	CEILING
CLR	CLEAR
CO	CLEAN OUT
COL.	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CPLG	COUPLING
CU	COPPER
CU. FT.	CUBIC FEET
CU. IN	CUBIC INCH
CW	COLD WATER
DHW	DESIGN HIGH WATER
DIA.	DIAMETER
DIAG.	DIAGONAL
DIFF.	DIFFUSER
DIM.	DIMENSION
DISCH	DISCHARGE
DN	DOWN
DWG	DRAWING
EA	EACH
ECC.	ECCENTRIC
ED	EQUIPMENT DRAIN (FLUSH TYPE)
EF	EACH FACE
EFF	EFFLUENT
EL	ELEVATION
ELEC	ELECTRIC
E.O.P.	EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EMERGENCY SHOWER
ET	ELAPSED TIME
EW	EACH WAY
EWU	EYE WASH UNIT
EX	EXHAUSTER
EXIST	EXISTING
EXP	EXSPANSION
FD	FLOOR DRAIN
FIG	FIGURE
FIN	FINISHED
FIN GR.	FINISHED GRADE
FLEX.	FLEXIBLE
FLR	FLOOR
FM	FORCE MAIN
FNDN	FOUNDATION
FT	FEET
FTG.	FOOTING
GA	GAUGE
GALV.	GALVANIZED
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GSKT	GASKET
GYP	GYPSUM
HB	HOSE BIBB
HP	HIGH POINT
HEX	HEXAGON
HGR	HANGER
H.O.A.	HAND-OFF-AUTOMATIC
HORIZ.	HORIZONTAL
HS	HIGH SERVICE
HW	HOT WATER (POTABLE)
HWA	HIGH WATER ALARM
H.W.L.	HIGH WATER LEVEL
I.D.	INSIDE DIAMETER
IN.	INCH
INFL.	INFLUENT
INS.	INSULATION
INST.	INSTRUMENTATION
INV.	INVERT
JAN.	JANITOR CLOSET
JCT.	JUNCTION
JT.	JOINT
K.U.	KITCHEN UNIT
KWY	KEYWAY
L	LENGTH
LAB.	LABORATORY
LAM	LAMINATED
LAV	LAVATORY
LB.,#	POUND
L.F.	LINEAL FEET
LG	LONG
L.P.	LOW POINT
LT	LIGHT
L.W.A.	LOW WATER ALARM
L.W.L.	LOW WATER LEVEL
MAT'L	MATERIAL
MAX.	MAXIMUM
M.C.C.	MOTOR CONTROL CENTER
MECH.	MECHANICAL
M.F.D.	MANUFACTURED
MFG	MANUFACTURING
MFR.	MANUFACTURER
M.G.D.	MILLION GALLONS PER DAY
MG/L	MILLIGRAMS PER LITER
MH	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MON.	MONUMENT
M.P.H.	MILES PER HOUR
MTD.	MOUNTED
M.W.L.	MEAN WATER LEVEL
NEC	NATIONAL ELECTRIC CODE
N.I.C.	NOT IN CONTRACT
NO.,#	NUMBER
NOM.	NOMINAL
N.O.S.	NATIONAL OCEANOGRAPHIC SERVICE
N.T.S.	NOT TO SCALE
O.D.	OUTSIDE DIAMETER
O/E	OR EQUAL
OPNG.	OPENING
OPP.	OPPOSITE
OPT.	OPTION
PAV'T	PAVEMENT
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
PL	PLATE
P.P.M.	PARTS PER MILLION
PRES.	PRESSURE
P.S.	PUMP STATION
P.S.F.	POUNDS PER SQUARE FOOT
P.T.	POINT OF TANGENCY
R.	RADIUS
R.A.S.	RETURN ACTIVATED SLUDGE
R.D.	ROOF DRAIN
REINF.	REINFORCING
REQ'D.	REQUIRED
RM.	ROOM
RD.	RD.
R.P.M.	REVOLUTIONS PER MINUTE
R.R.	RAILROAD
SAN.	SANITARY
S/W	SIDEWALK
SEC.	SECTION
SHT.	SHEET
SL.	SLUDGE
SLV.	SLEEVE
SPECS.	SPECIFICATIONS
SQ.	SQUARE
SQ. FT.	SQUARE FEET
SQ. IN.	SQUARE INCHES
S.S.	STAINLESS STEEL
STA.	STATION
ST'D.	STANDARD
STL.	STEEL
STRUCT.	STRUCTURAL
SYMM.	SYMMETRICAL
TAN.	TANGENT
T.B.	TOP OF BERM / BANK
T.B.B.	TOP AND BOTTOM
TECH.	TECHNICAL
TEL.	TELEPHONE
TEMP.	TEMPORARY
T.&G.	TONGUE & GROVE
THK.	THICK
TM.	TELEMETER
TRANS.	TRANSFER / TRANSFORMER
TV	TELEVISON
T.W.A.S.	THICKENED WASTE ACTIVATED SLUDGE
TYP.	TYPICAL
VAC.	VACUUM
VAR.	VARIOUS / VARIABLE
VB.	VACUUM BREAKER
VERT.	VERTICAL
VOL.	VOLUME
V.S.	VARIABLE SPEED
V.S.D.	VARIABLE SPEED DRIVE
VT.	VENT
V.T.R.	VENT THRU ROOF
W.A.S.	WASTE ACTIVATED SLUDGE
W/	WITH
W.C.	WATER CLOSET
W.H.	WATER HEATER
W.L.	WATER LEVEL
W.M.	WATER MAIN (POTABLE)
W/o.	WITHOUT
WPF.	WEATHERPROOF
WS	WATERSTOP
W.T.P.	WATER TREATMENT PLANT
W.W.M.	WELDED WIRE MESH
W.W.T.P.	WASTEWATER TREATMENT PLANT
YD.	YARD
YR.	YEAR

PIPE MATERIALS

A.C.P.	ABESTOS CEMENT PIPE
B.S.P.	BLACK STEEL PIPE
C.S.	CARBON STEEL
C.I.	CAST IRON
C.I.P.	CAST IRON PIPE
C.I.S.P.	CAST IRON SOIL PIPE
C.M.P.	CORRUGATED METAL PIPE
C.P.	CONCRETE PRESSURE PIPE
Cu. P.	COPPER PIPE
D.I.	DUCTILE IRON
D.I.P.	DUCTILE IRON PIPE
F.R.P.	FIBERGLASS REINFORCED PIPE
G.S.P.	GALVANIZED STEEL PIPE
M.R.P.P.	METAL REINFORCED PLASTIC PIPE
PE. P.	POLYETHYLENE PIPE
P.P.	POLYPROPYLENE
P.V.C.	POLYVINYL CHLORIDE
U.P.V.C.	UN-PLASTICIZED POLYVINYL CHLORIDE
R.C.P.	REINFORCED CONCRETE PIPE
S.J.	
(PO,B&S)	SLIP-ON JOINT (PUSH ON, BELL & SPIGOT)
STL	STEEL PIPE
S.S.	STAINLESS STEEL PIPE
V.C.P.,V.C.	VITRIFIED CLAY PIPE

VALVES, FITTINGS, & JOINTS

A.C.C.V.	AIR CUSHION CHECK VALVE
A.R.V.	AIR RELEASE VALVE
Ba. V.	BALL VALVE
B.C.V.	BALL CHECK VALVE
B.F.	BLIND FLANGE
B.O.	BURIED GEAR OPERATOR
B.V.	BUTTERFLY VALVE
C	COMPRESSION JOINT
C.V.	CHECK VALVE
E.O.	ELEVATED GEAR OPERATOR
E.V.A.	ELEVATED VALVE ACTUATOR
EX.J.	EXPANSION JOINT
F.B.	FLOOR BOX (BUSHING TYPE)
F.H.	FIRE HYDRANT
FLG.	FLANGED
F.A.C.	FLANGED ADAPTE COUPLING
F.S.	FLOOR STAND
Go. V.	GLOBE VALVE
G.V.	GATE VALVE
H.V.A.	HYDRAULIC VALVE ACTUATOR
L	LEAD JOINT
L.P.V.	LUBRICATED PLUG VALVE
M.J.	MECHANICAL JOINT
P.Ba.V.	PLASTIC BALL VALVE
PC.V.	PRESSURE CONTROL VALVE
P.E.	PLAIN END
P.R.V.	PRESSURE REDUCING VALVE
P.V.	PLUG VALVE
RED.	REDUCER
R.J.	RESTRAINED JOINT
S.	SOLDERED JOINT
S.C.V.	SILENT CHECK VALVE
S.V.	SOLENOID VALVE
THD.	THREADED
U	UNION
V.B.	VALVE BOX
V.C.	VICTAULIC COUPLING
V.C.(S)	VICTAULIC COUPLING (SHOULDERED ENDS)
W.	WELDED JOINT
W.P.	WELDED PIPE
W.S.	WALL SLEEVE

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners & management consultants
CDM

DESIGNED BY C.J.F.
DRAWN BY C.J.F.
CHECKED BY RDM
APPROVED BY RDM
DATE MAY, 1984

CHLORINE CONTACT CHAMBER AND EFFLUENT PUMP STATION

ABBREVIATIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL SEWER SYSTEM
PHASE I — SEGMENT B — PART B
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1.
2.
3.
4.
5.

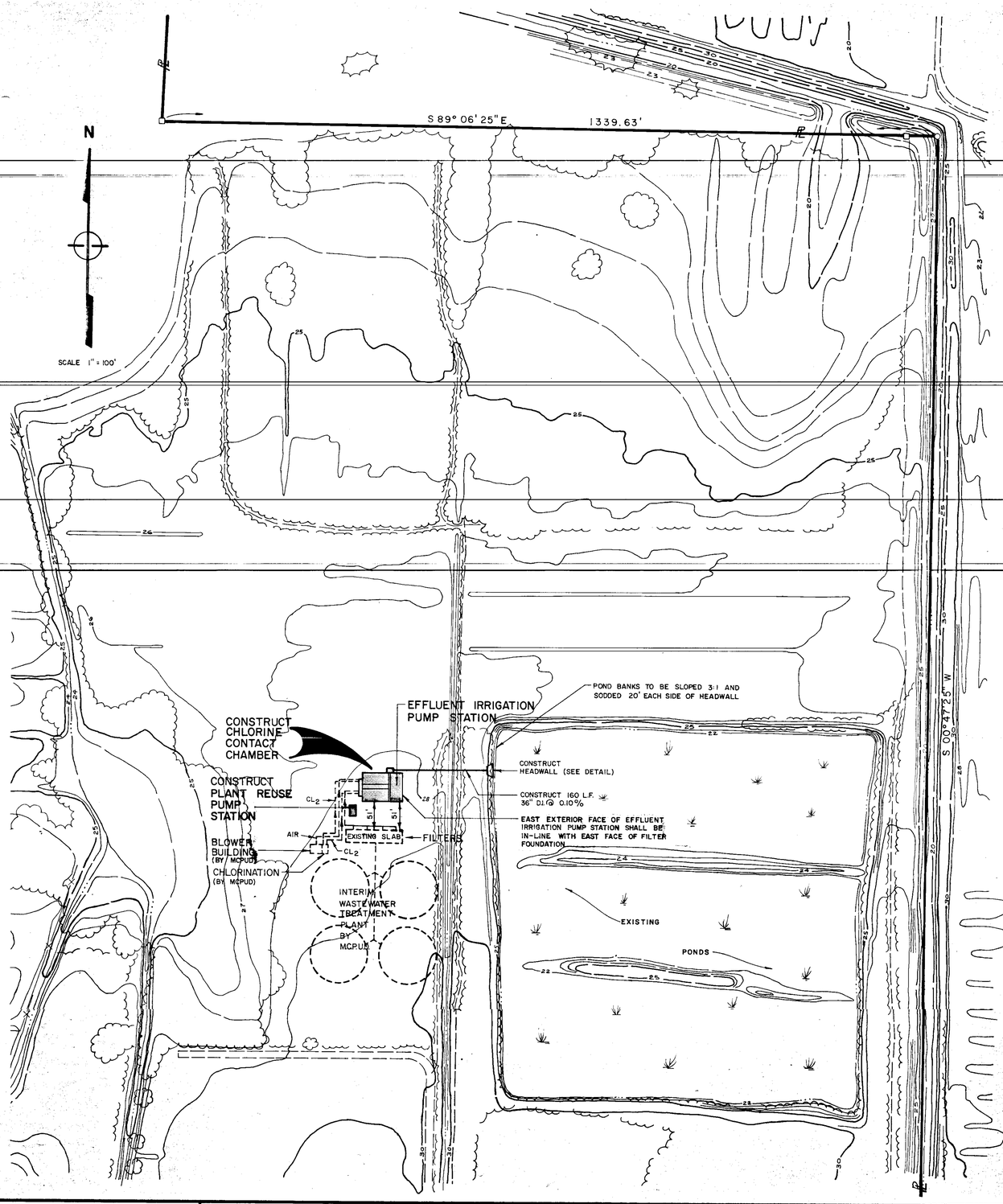
LEI Larson Engineering, Inc.
Consulting Engineers
4900 Manatee Ave. W, Suite 201
Bradenton, Florida 33529
(813) 748-2426

MAY 31 1984

DESIGNED ____ CHECKED ____ DATE 5/31/84 SCALE N/A
DRAWN ____ FILE NO. 031-011-84 SHEET G-3 OF G-4

12-10 T217

AF 31693A

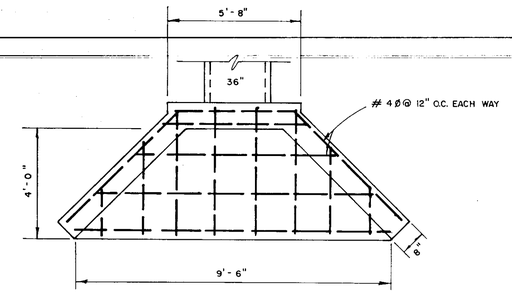


LEGEND

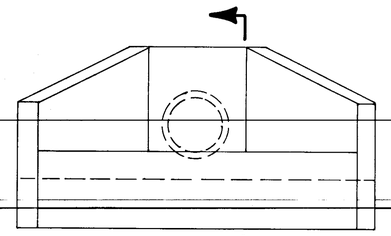
- EXISTING CONTOUR
- EXISTING OR INTERIM STRUCTURES
- PROPERTY LINE
- CONCRETE MONUMENT
- IRON PIPE

NOTES

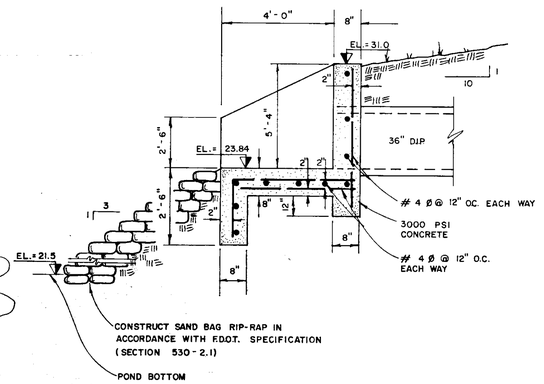
1. CONTRACTOR SHALL BACKFILL AROUND CHLORINE CONTACT CHAMBER AND SLOPE ALL AREAS TO DRAIN AWAY FROM STRUCTURE @ 1:10 SLOPE (MIN).
2. YARD PIPING TO BE CONSTRUCTED BY MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT EXCEPT AS SHOWN ON MECHANICAL DRAWING.
3. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE GRASSED UPON COMPLETION OF FINAL GRADING.



PLAN



FRONT



SECTION

HEADWALL DETAIL

N.T.S.

CHLORINE CANTACT CHAMBER AND EFFLUENT PUMP STATION

SITE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I – SEGMENT B – PART B

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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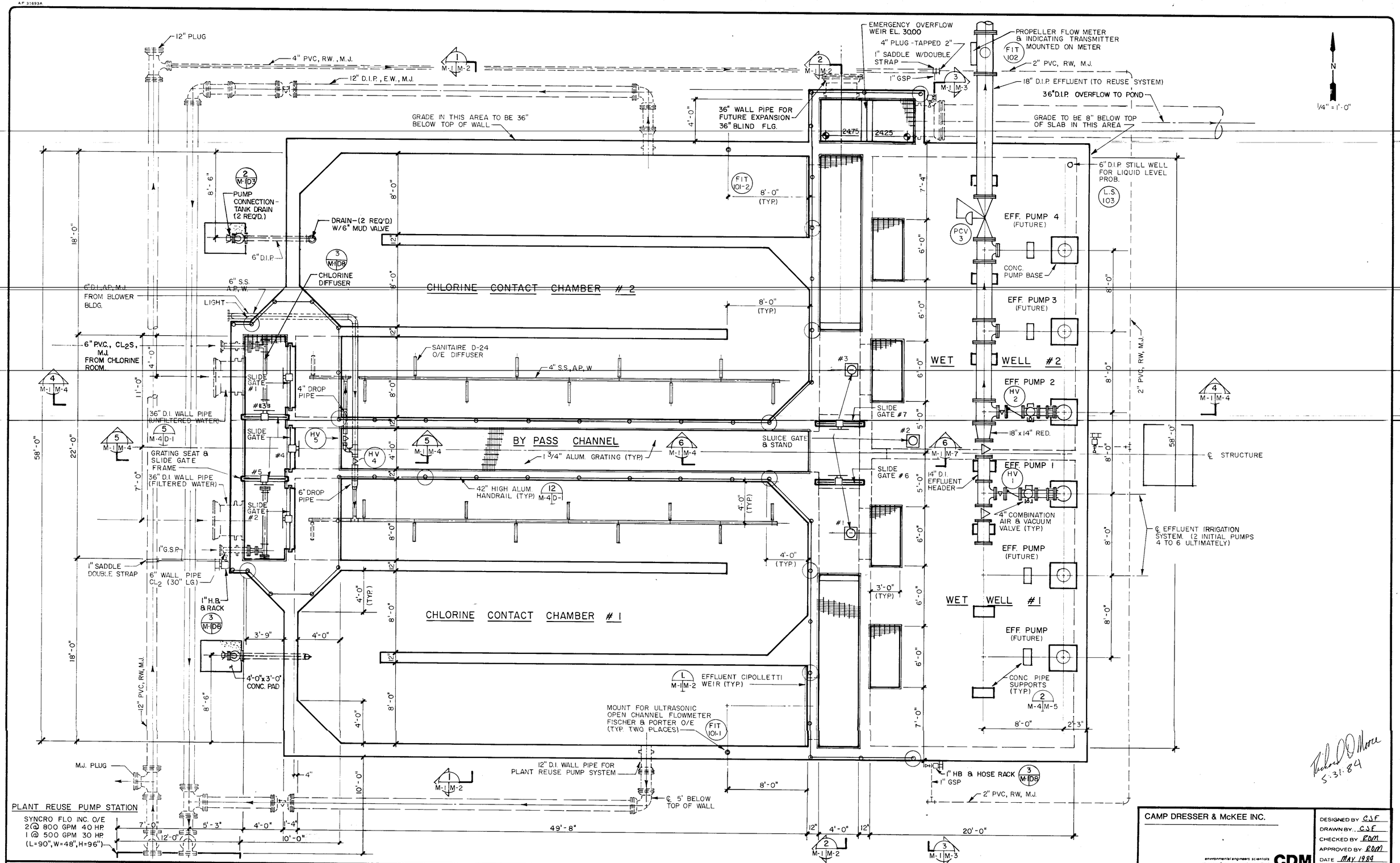
MAY 31 1984

DESIGNED RLL CHECKED DATE 5/31/84 SCALE AS NOTED
DRAWN M.W.M. FILE NO. 031-011-84 SHEET G-4 OF G-4

12-10 T-21

AF 31693A



Richard O. Moore 5.31.84

CAMP DRESSER & McKEE INC.
environmental engineers scientists planners & management consultants CDM

DESIGNED BY CSF
DRAWN BY CSF
CHECKED BY RDM
APPROVED BY RDM
DATE MAY 1984

CHLORINE CONTACT CHAMBER AND EFFLUENT PUMP STATION

PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I SEGMENT B – PART B

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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(813) 748-2426

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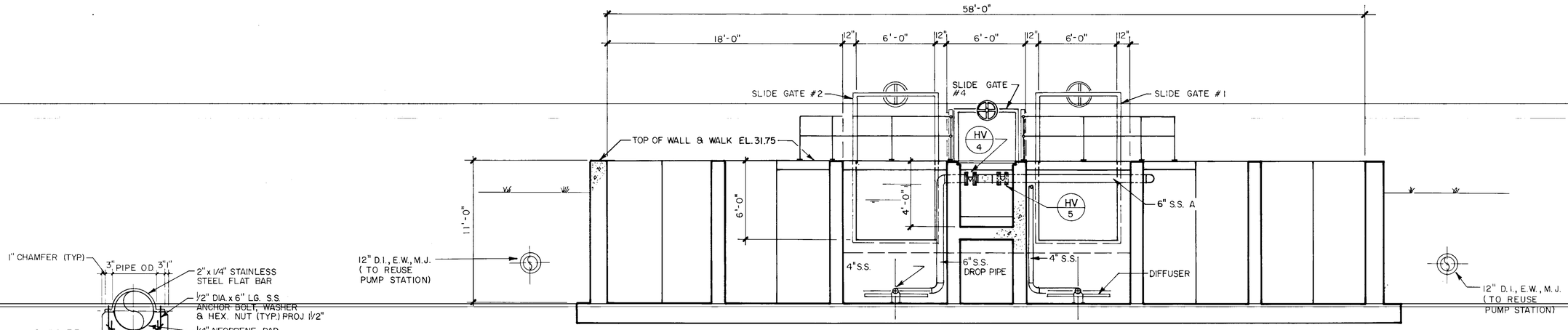
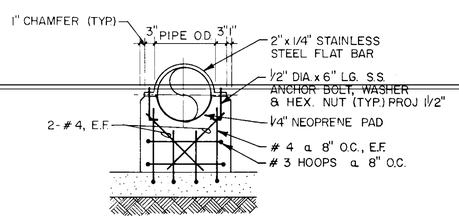
12-10 T-219

AF 31693A

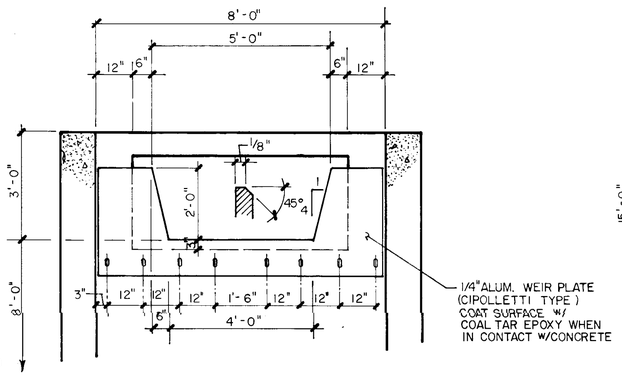


SECTION 1
1/4" = 1'-0"
M-1 | M-2

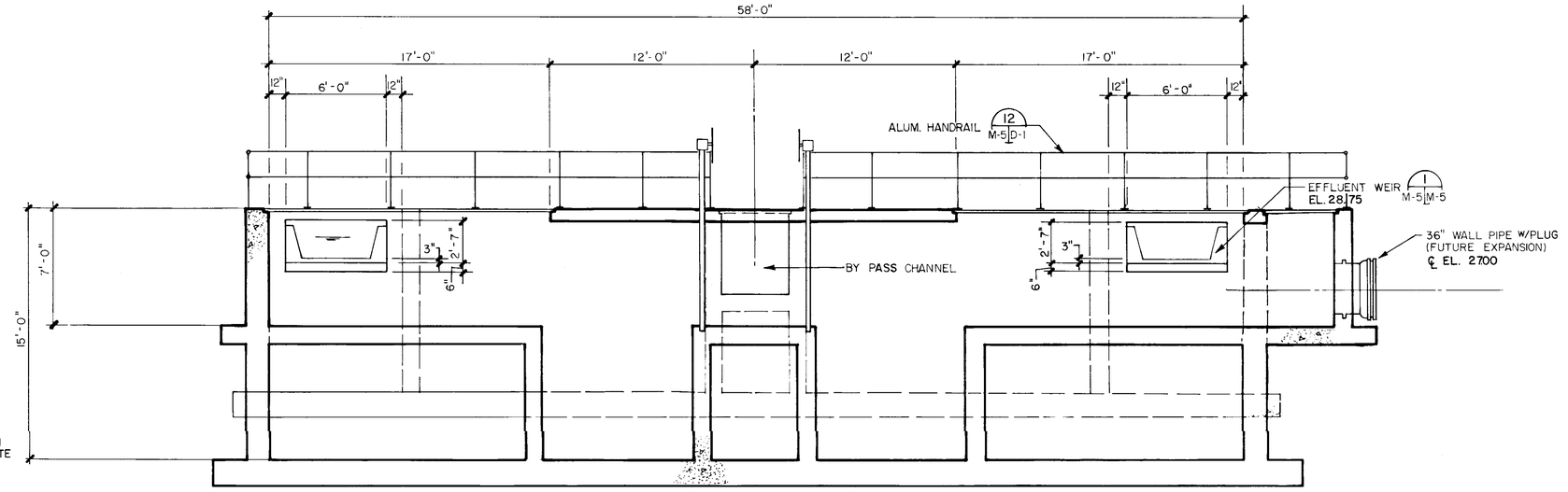


REACTION TYPE

PIPE SUPPORT DETAIL 2
VAR



EFFLUENT WEIR
DETAIL 1
1/2" = 1'-0"
M-2 | M-2



SECTION 2
1/4" = 1'-0"
M-1 | M-2

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners & management consultants
CDM

DESIGNED BY C.J.F.
DRAWN BY C.J.F.
CHECKED BY EDM
APPROVED BY EDM
DATE MAY 1984

CHLORINE CONTACT CHAMBER AND EFFLUENT PUMP STATION

SECTIONS & DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I SEGMENT B - PART B

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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4900 Manatee Ave W, Suite 201
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(813) 748-2426

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12-10 T-220

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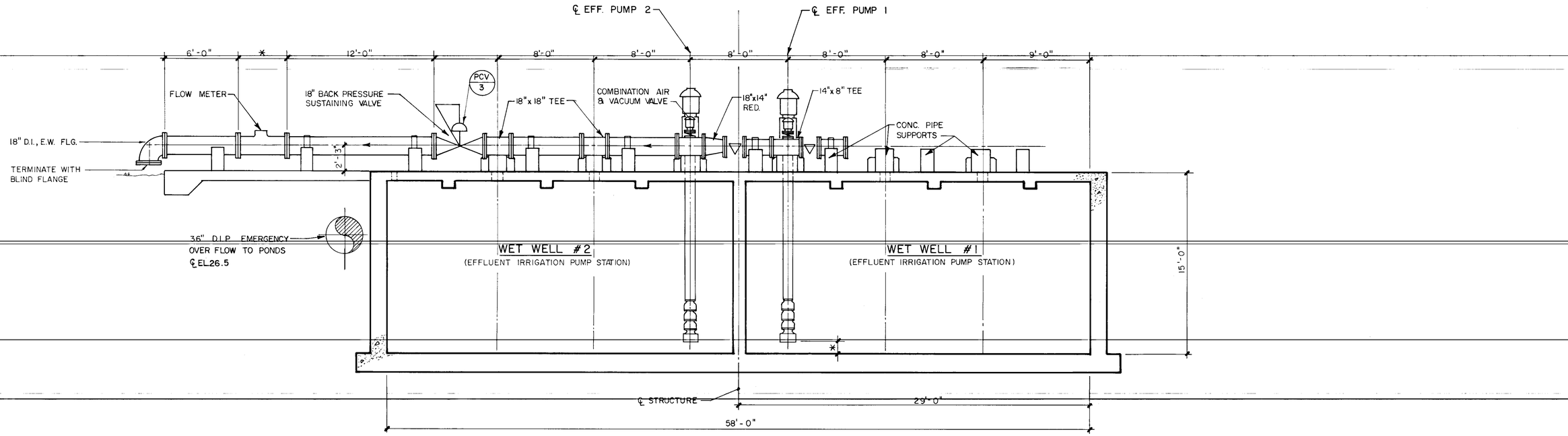
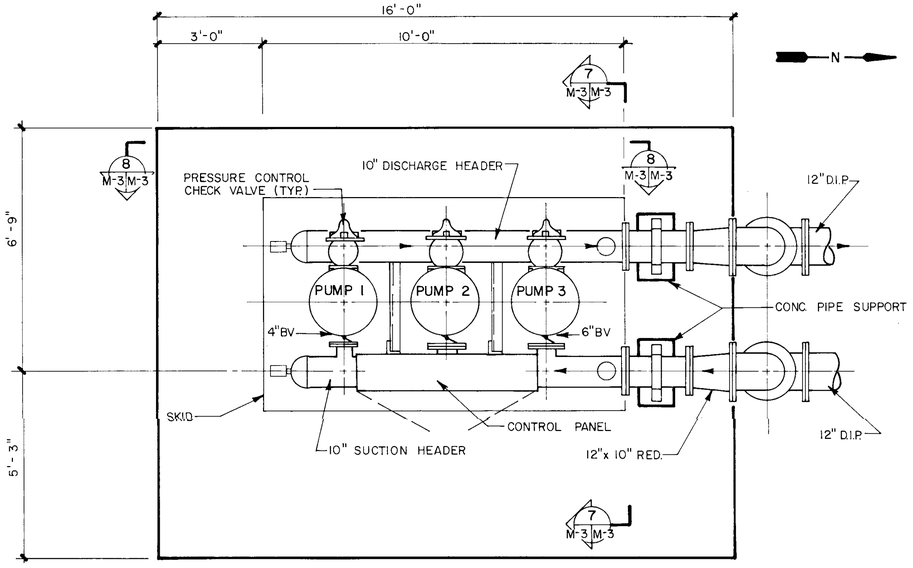
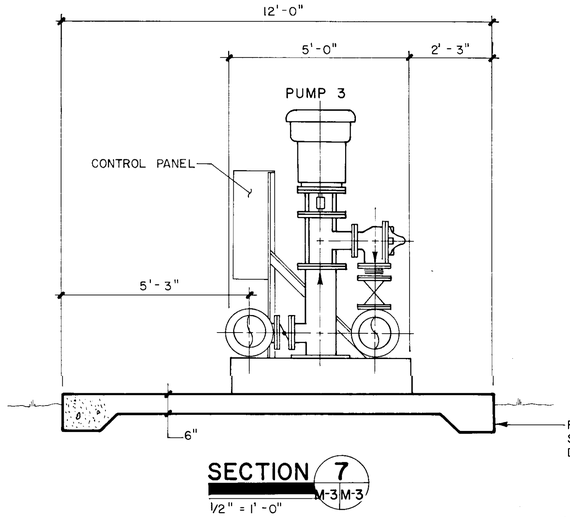


* TO SUIT MFR'S. EQUIP.

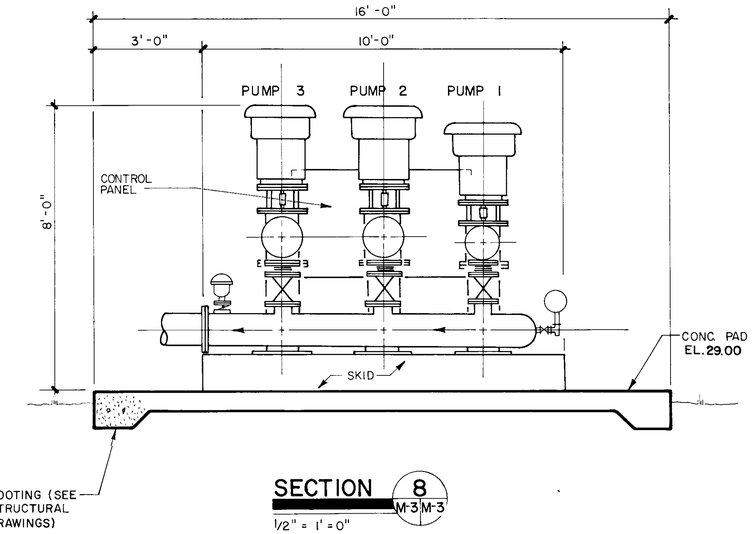


PLAN
1/2" = 1'-0"

SECTION 3 M-1 M-3
1/4" = 1'-0"



SECTION 7 M-3 M-3
1/2" = 1'-0"



SECTION 8 M-3 M-3
1/2" = 1'-0"

PLANT REUSE PUMP STATION

CAMP DRESSER & McKEE INC.
environmental engineers scientists planners & management consultants CDM

DESIGNED BY C.J.F.
DRAWN BY C.J.F.
CHECKED BY R.D.M.
APPROVED BY R.D.M.
DATE MAY 1984

CHLORINE CONTACT CHAMBER AND EFFLUENT PUMP STATION

SECTIONS & DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL SEWER SYSTEM
PHASE I SEGMENT B – PART B
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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(813) 748-2426

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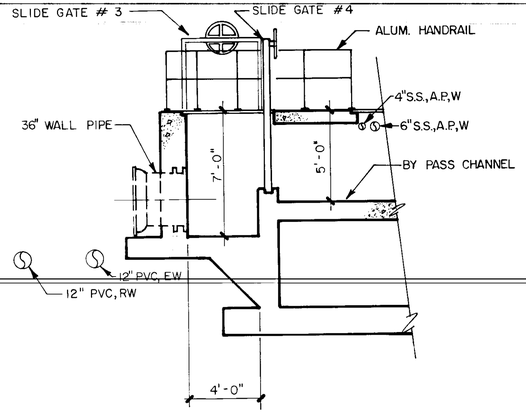
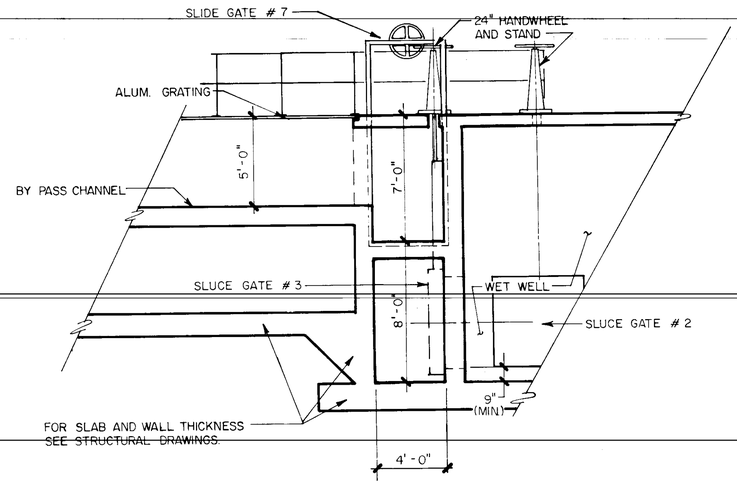
12-10 T-22

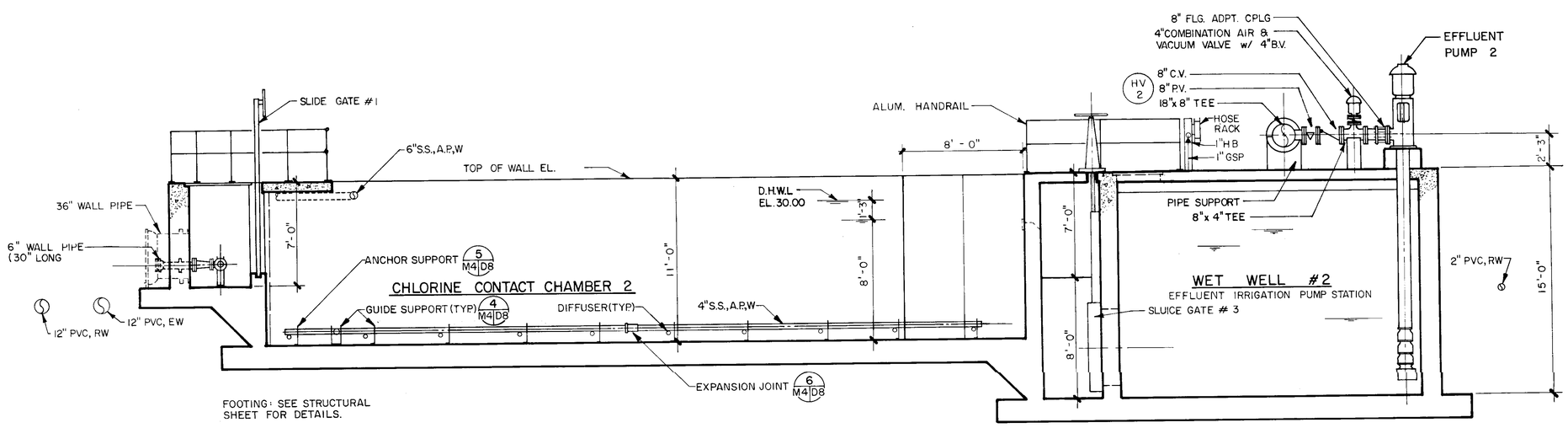
AF 31693A



SECTION 5
1/4" = 1'-0" M-1 | M-4



SECTION 6
1/4" = 1'-0" M-1 | M-4



SECTION 4
1/4" = 1'-0" M-1 | M-4

CAMP DRESSER & McKEE INC.
environmental engineers scientists planners & management consultants CDM

DESIGNED BY C.J.F.
DRAWN BY C.J.F.
CHECKED BY RDM
APPROVED BY RDM
DATE MAY 1984

CHLORINE CONTACT CHAMBER AND EFFLUENT PUMP STATION

SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I SEGMENT B – PART B

E.P.A. NO. C-120540060

MANATEE COUNTY, FLORIDA

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DRAWN ——— FILE NO. 031-011-84 SHEET M-4 OF M-4

12-10

T-223

GENERAL NOTES

CLARIFICATIONS IN CONFORMANCE WITH SPECIFICATIONS

DESIGN CRITERIA AND LOADING

- DESIGN CRITERIA:

  SANITARY STRUCTURES: ACI-350R-83 "CONCRETE SANITARY ENGINEERING STRUCTURES"

  OTHER STRUCTURES: ACI-318-83 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"

  LOCAL BUILDING CODE REQUIREMENTS

- DESIGN LIVE LOADS:

ROOFS	30 PSF
BUILDINGS:	
OFFICE AREAS	50 PSF
STAIRWAYS	100 PSF
STORAGE AREAS	250 PSF
PROCESS RELATED STRUCTURES:	
OFFICE AREAS	150 PSF
STAIRWAYS	150 PSF
PROCESS SLABS	200 PSF
STORAGE AREAS	300 PSF

- DESIGN 28-DAY CONCRETE STRENGTH:

COLUMNS AND BEAMS	4000 PSI
SLABS, WALLS, AND MATS	4000 PSI
WORKING SLABS	2500 PSI
C M U GROUT	2500 PSI

- REINFORCING STEEL: ASTM A615 - GRADE 60

GENERAL CONDITIONS

- ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, CIVIL, ELECTRICAL, HEATING AND VENTILATING, SHOP DRAWINGS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FACILITY. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING THE WORK.
- FOR ALL ITEMS EMBEDDED IN OR PASSED THROUGH CONCRETE THE CONTRACTOR SHALL INITIALLY REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, HEATING AND VENTILATION DRAWINGS FOR TYPE SIZE, LOCATION, AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.
- THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATION, AND OTHERS.
- SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE AS REQUIRED BY EQUIPMENT MANUFACTURERS.
- ANY EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURES.

CONCRETE

- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI-318-83 REQUIREMENTS.
- ALL CONCRETE SHALL BE AIR-ENTRAINED WITH 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. WORKING SLAB CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI.
- WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.
- ALL CONCRETE SURFACES EXPOSED TO AIR SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS CEMENT FINISHING IS COMPLETED OR FORMS ARE REMOVED.
- ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE A MINIMUM CHAMPER OF ONE INCH (1") UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATION OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWINGS.

REINFORCING STEEL

- REINFORCEMENT SHALL CONFORM TO ASTM A615 - GRADE 60 REQUIREMENTS.
- AN APPROXIMATELY ONE AND ONE-HALF INCH (1 1/2") THICK CONCRETE WORKING MAT SHALL BE PROVIDED BENEATH MATS, SLABS, AND FOUNDATIONS TO SUPPORT REINFORCEMENT ACCESSORIES AS USED IN ELEVATED INSTALLATIONS.
- ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI-315 REQUIREMENTS.
- REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:

CONCRETE CAST AGAINST WORKING SLAB	2"
CONCRETE CAST AGAINST EARTH	3"
FORMED SURFACES IN CONTACT WITH SOIL, SEWAGE, WATER, OR EXPOSED TO WEATHER	2"
FORMED SURFACES NOT EXPOSED TO WEATHER OR IN CONTACT WITH SOIL:	
SLAB WALLS AND JOISTS	3/4"
BEAMS AND COLUMNS	1 1/2"

- LAP ALL SPLICES 36 BAR DIAMETERS OR MINIMUM 1'-6" UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PREPARE DETAIL PLACEMENT DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI-315 REQUIREMENTS.

DRAWING LIST

S1 GENERAL NOTES

S2 TYPICAL DETAILS, 1 OF 2

S3 TYPICAL DETAILS, 2 OF 2

S4 CHLORINE CONTACT CHAMBER - FOUNDATION PLAN

S5 CHLORINE CONTACT CHAMBER - INTERMEDIATE PLAN

S6 CHLORINE CONTACT CHAMBER - PLAN AT TOP OF STRUCTURE

S7 CHLORINE CONTACT CHAMBER - SECTIONS

S8 CHLORINE CONTACT CHAMBER - SECTIONS

S9 CHLORINE CONTACT CHAMBER - SECTIONS

S10 CHLORINE CONTRACT CHAMBER - PLANT REUSE PUMP STATION

REINFORCED CONCRETE MASONRY UNITS

- DESIGN CRITERIA:

  DESIGN COMPRESSIVE STRENGTH OF MASONRY AT 28 DAYS - fm = 1500 psi

  ALLOWABLE COMPRESSIVE STRENGTH OF MASONRY (WITHOUT SPECIAL INSPECTION) - fm = 750 psi

  ALLOWABLE STEEL STRESS - fs = 20,000 psi

- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS AND:

  THE NATIONAL CONCRETE MASONRY ASSOCIATION "SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF LOAD BEARING STRUCTURES"

  ACI 351 "BUILDING CODE REQUIREMENTS FOR REINFORCED MASONRY STRUCTURES"

- MATERIALS:

  BLOCK: CONFORM TO ASTM C-90 - GRADE N, TYPE I TWO-CELL, 8"x8"x16"

  MORTAR: CONFORM TO ASTM C476, TYPE PM. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS - 2500 psi

  GROUT: CONFORM TO C476, COARSE GROUT. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS - 2500 psi

  STEEL: DUR-O-WAL OR EQUAL JOINT REINFORCEMENT AT EVERY THIRD COURSE (24" O.C.) BOND BEAM AND FILLED CELL REINFORCEMENT ASTM A615 - GRADE 60.

ABBREVIATIONS:

E.F.	EACH FACE	PSI	POUNDS PER SQUARE INCH
E.W.	EACH WAY	U.N.	UNLESS NOTED
F.F.	FAR FACE	TYP.	TYPICAL
N.F.	NEAR FACE	REINF.	REINFORCEMENT
O.C.	ON CENTER	C.J.	CONTROL JOINT
PLF	POUNDS PER LINEAL FOOT	CONST.J.	CONSTRUCTION JOINT
PSF	POUNDS PER SQUARE FOOT	E.J.	EXPANSION JOINT

BILGIN EREL REGISTERED FLORIDA ENGINEER NO. 24053 STATE OF 5/25/84

GENERAL NOTES

THIGPEN & TREON, INC.
CONSULTING STRUCTURAL ENGINEERS
A DIVISION OF GAI CONSULTANTS-SOUTHEAST, INC.
ORLANDO, FLORIDA
FLORIDA CERTIFICATES: FIRM #F-1013, PE #3470

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4900 Manatee Ave. W. Suite 201 Bradenton, Florida 33529 (813) 748-3426

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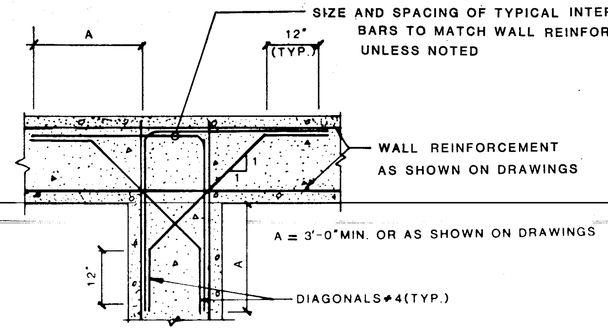
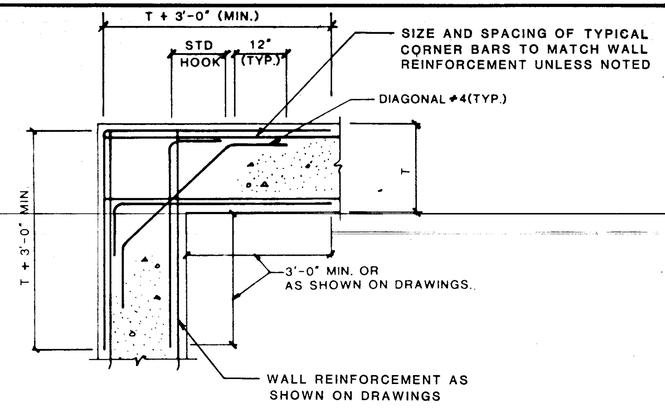
12-10 T-224



PLAN SECTION WALL INTERSECTION 1/S2

N.T.S.



PLAN SECTION WALL CORNER 2/S2

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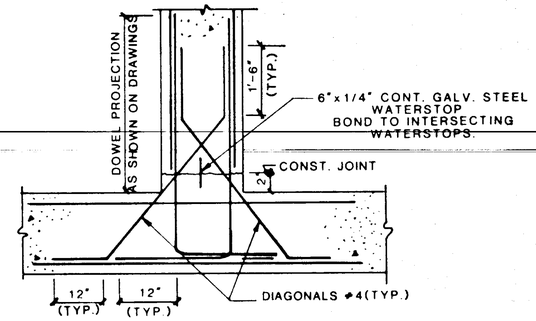

SECTION-WALL BASE CONSTRUCTION JOINT 3/S2

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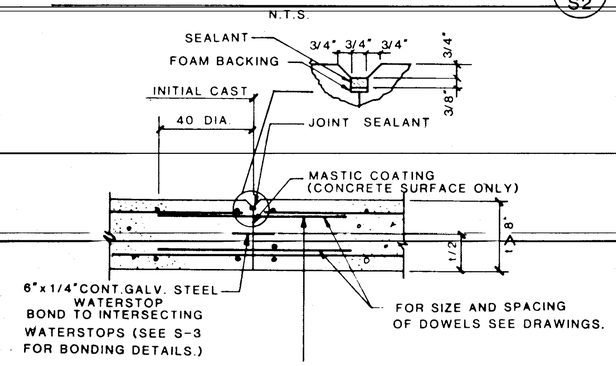

BASE SLAB CONTROL JOINT 4/S2

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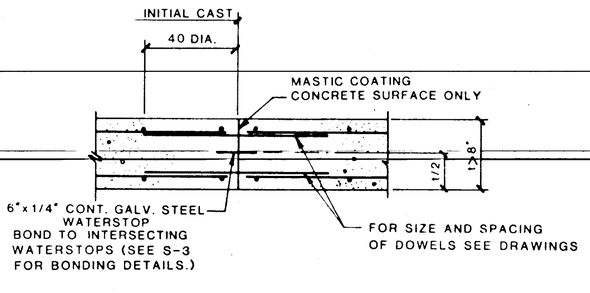

ELEVATED SLAB CONTROL JOINT 5/S2

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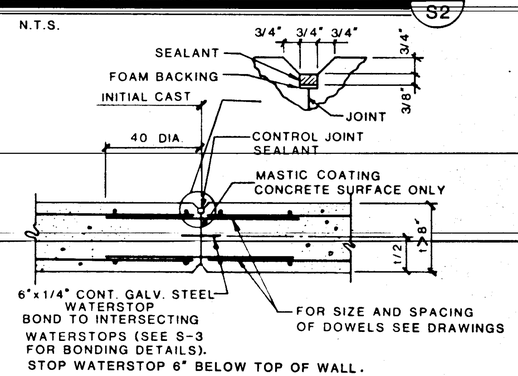

VERTICAL CONTROL JOINT 6/S2

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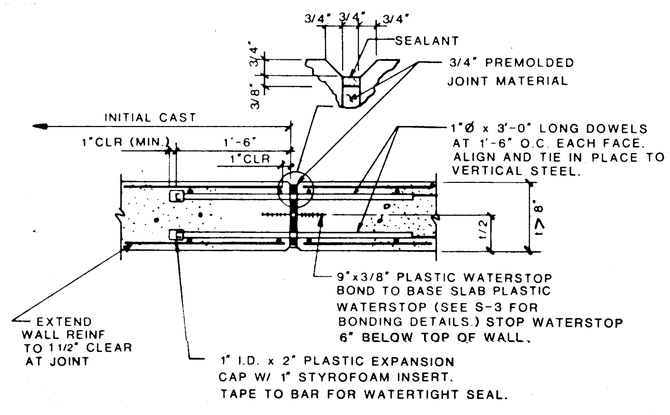

VERTICAL EXPANSION JOINT 7/S2

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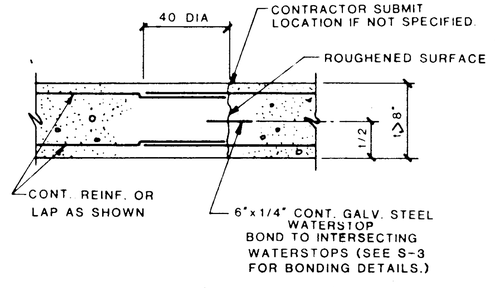

BASE/ELEVATED SLAB CONSTR JOINT 8/S2

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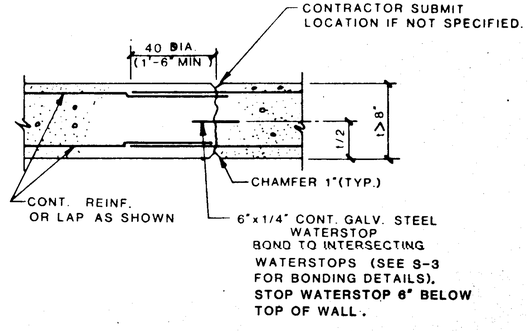

VERTICAL CONSTR JOINT 9/S2

N.T.S.

TYPICAL DETAILS
1 OF 2

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ORLANDO, FLORIDA
FLORIDA CERTIFICATES: FIRM #F-1013, PE #3470

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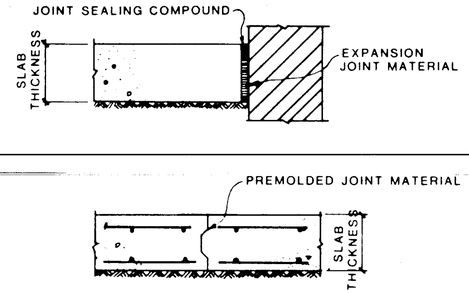
12-10 T-225



SLAB ON GRADE JOINTS — 10 / S3

(NON-WATER CONTAINMENT STRUCTURES)

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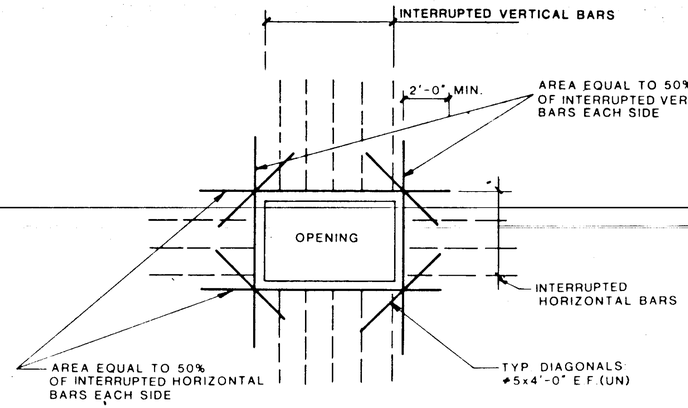

REINF. AT RECTANGULAR OPENINGS — 11 / S3

(FOR OPENINGS GREATER THAN 12")

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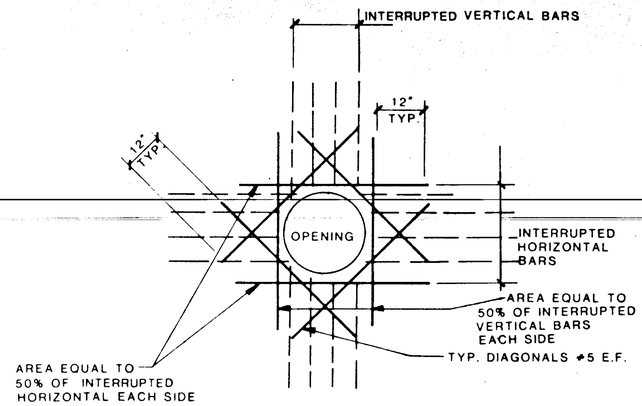

REINF. AT CIRCULAR OPENINGS — 12 / S3

(FOR OPENINGS GREATER THAN 12")

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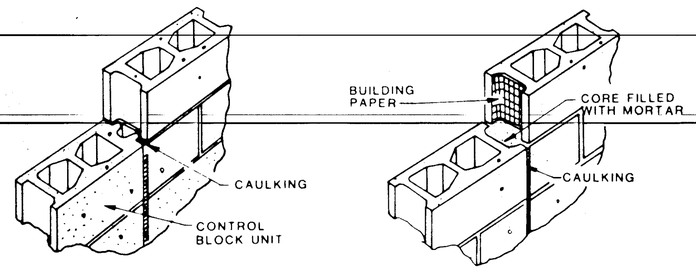

CMU CONTROL JOINT — 13 / S3

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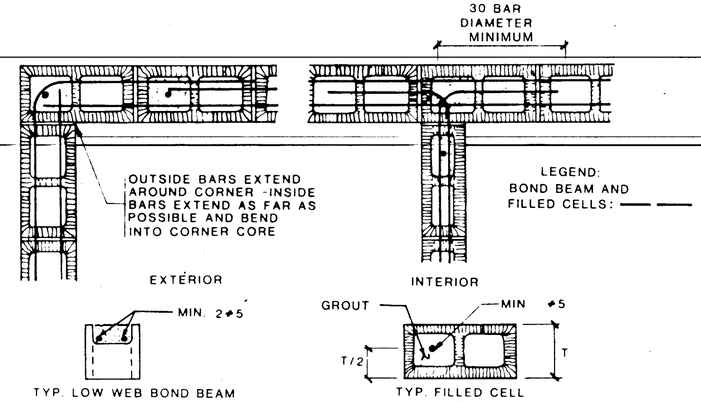

CMU BOND BEAM/FILLED CELL — 14 / S3

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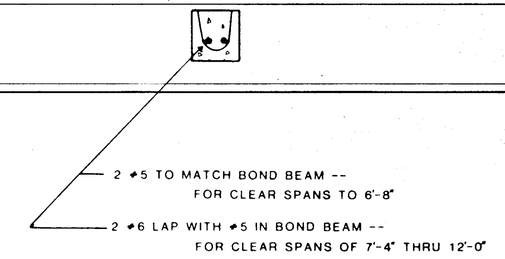

TYPICAL LINTEL DETAIL — 15 / S3

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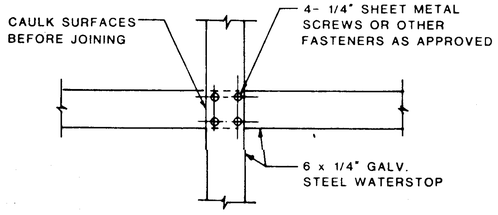

STEEL-STEEL WATERSTOP SPLICE — 16 / S3

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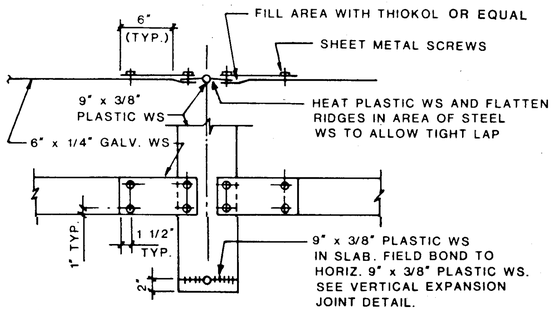

STEEL-PLASTIC WATERSTOP SPLICE — 17 / S3

N.T.S.

TYPICAL DETAILS
2 OF 2

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A DIVISION OF GAI CONSULTANTS-SOUTHEAST, INC.
ORLANDO FLORIDA
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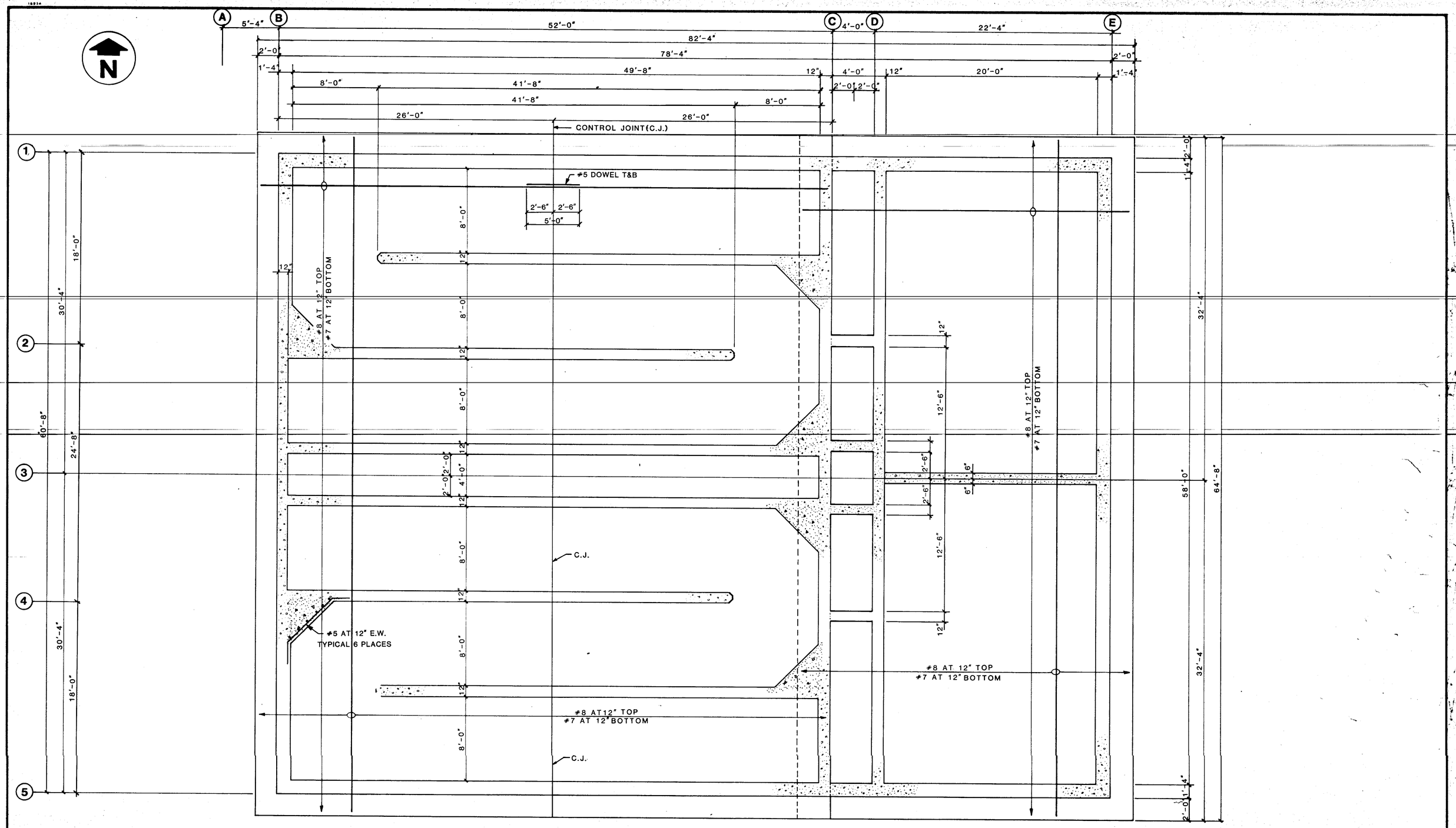
12-10 T-226



FOUNDATION PLAN

SCALE: 1/4"= 1'-0"

CHLORINE CONTACT CHAMBER FOUNDATION PLAN

THIGPEN & TREON, INC.
CONSULTING STRUCTURAL ENGINEERS
A DIVISION OF GAI CONSULTANTS-SOUTHEAST, INC.
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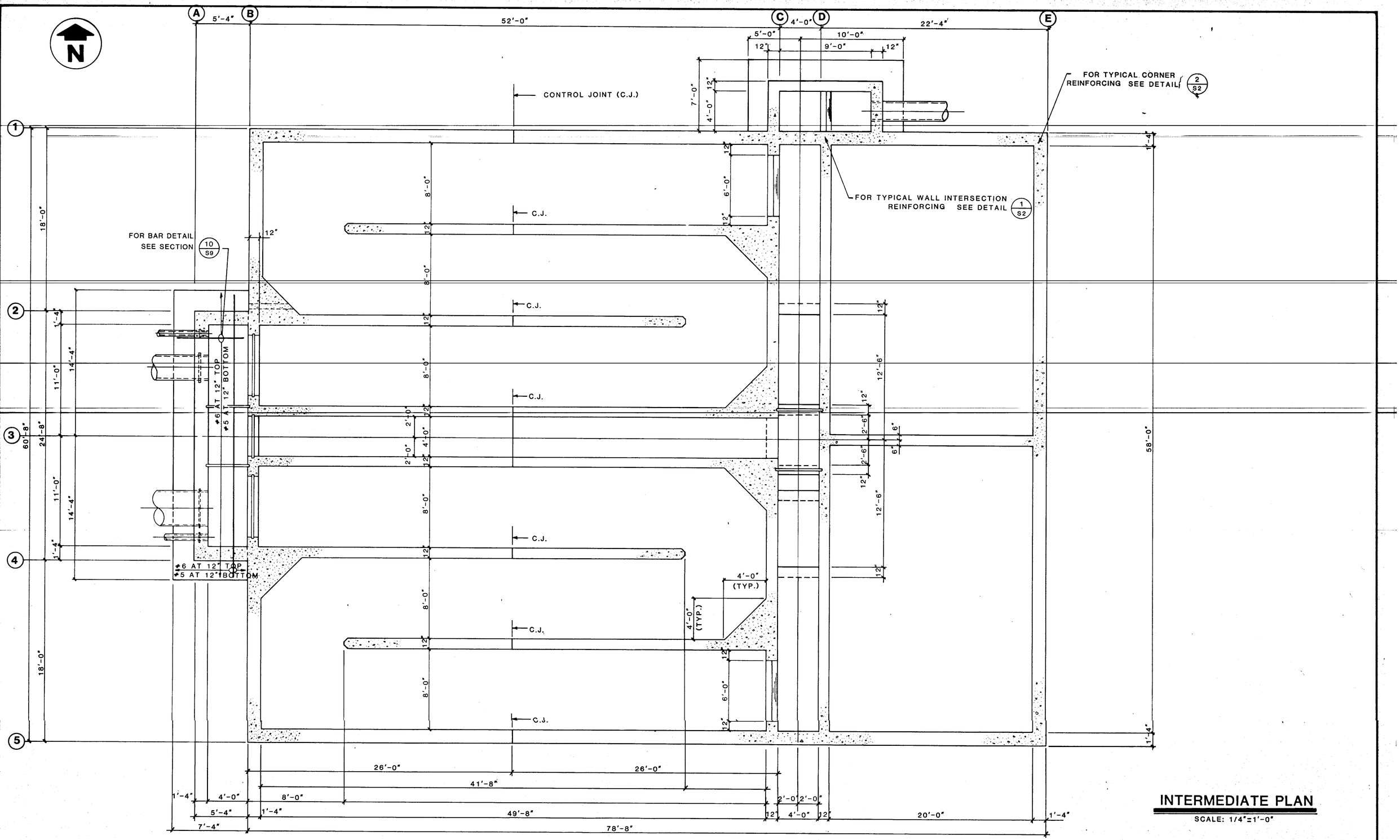
12-10 T-22



INTERMEDIATE PLAN

SCALE: 1/4"=1'-0"

CHLORINE CONTACT CHAMBER INTERMEDIATE PLAN

THIGPEN & TREON, INC.
CONSULTING STRUCTURAL ENGINEERS
A DIVISION OF GAI CONSULTANTS-SOUTHEAST, INC.
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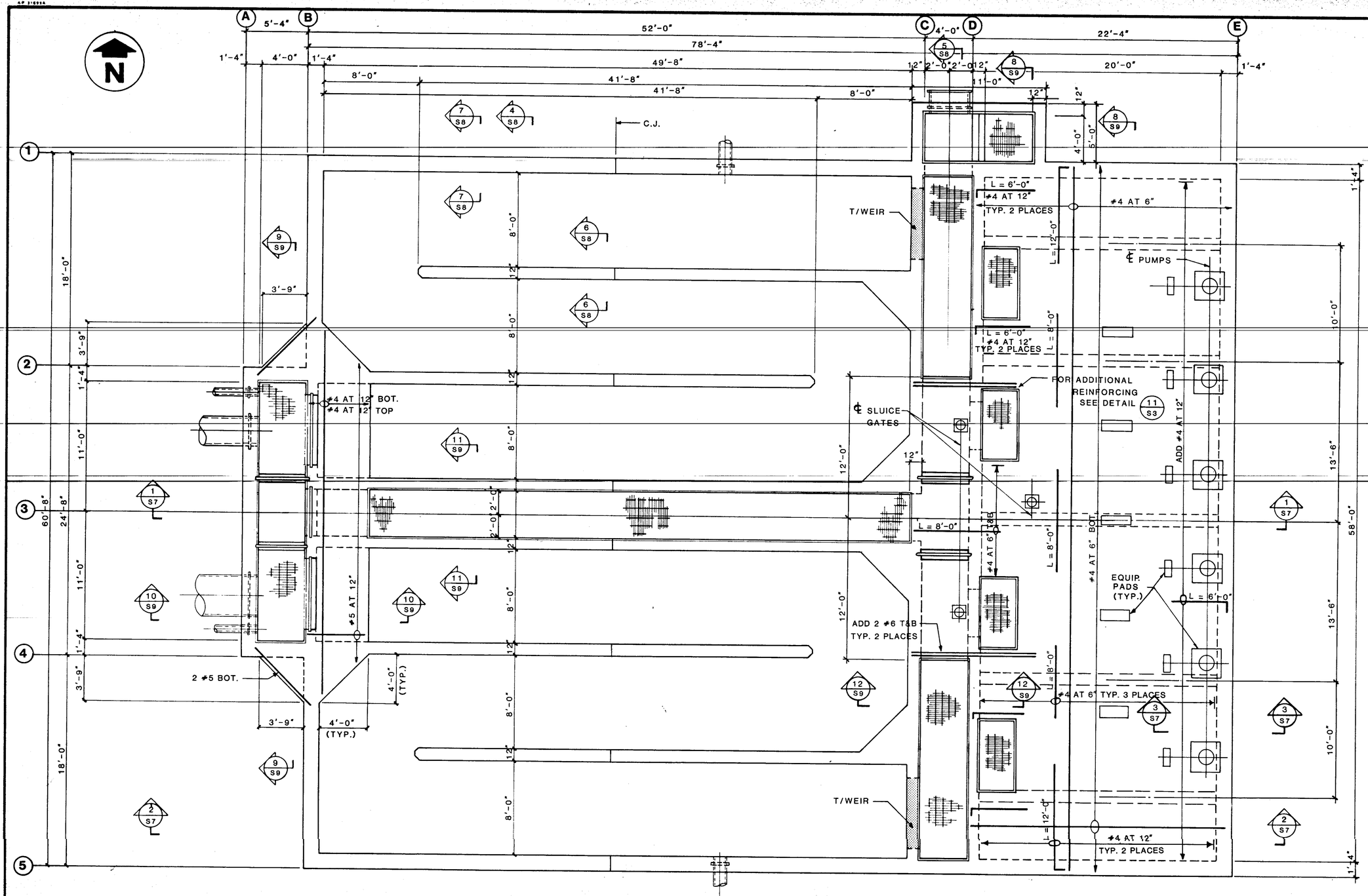

PLAN AT TOP OF STRUCTURE

SCALE: 1/4"= 1'-0"

CHLORINE CONTACT CHAMBER PLAN AT TOP OF STRUCTURE	THIGPEN & TREON, INC. CONSULTING STRUCTURAL ENGINEERS A DIVISION OF GAI CONSULTANTS-SOUTHEAST, INC. ORLANDO, FLORIDA FLORIDA CERTIFICATES: FIRM #F-1013, PE #3478	DRAWN MFS	CHECKED MA	ISSUED MAY 84	REVISED	DWG. NO. S6

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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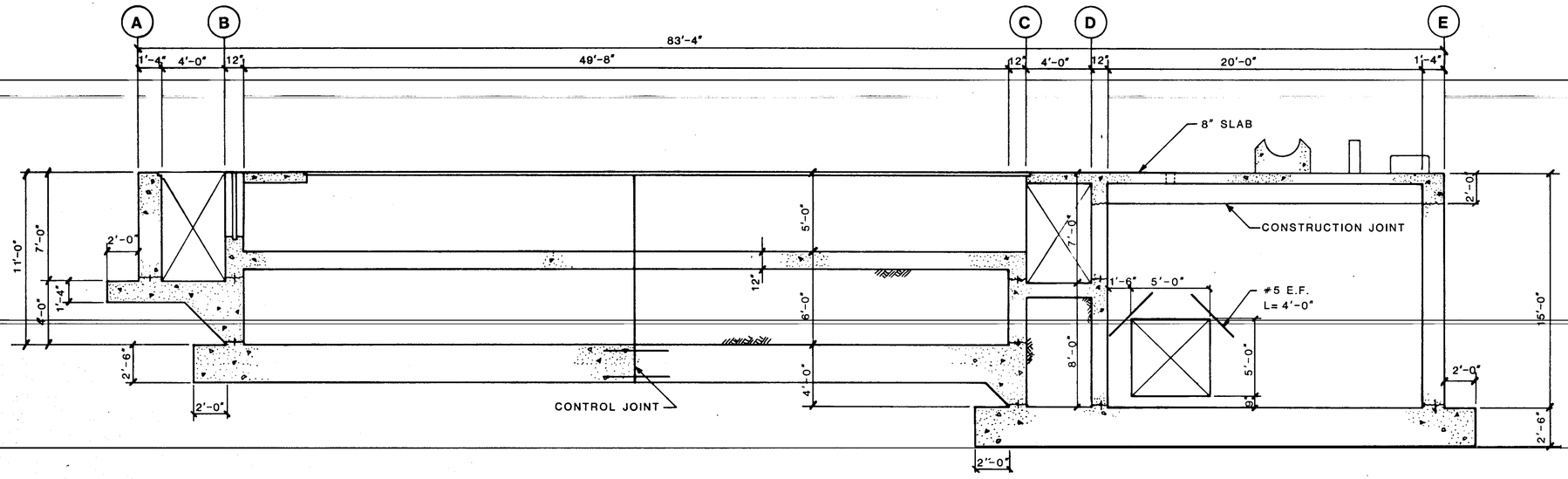
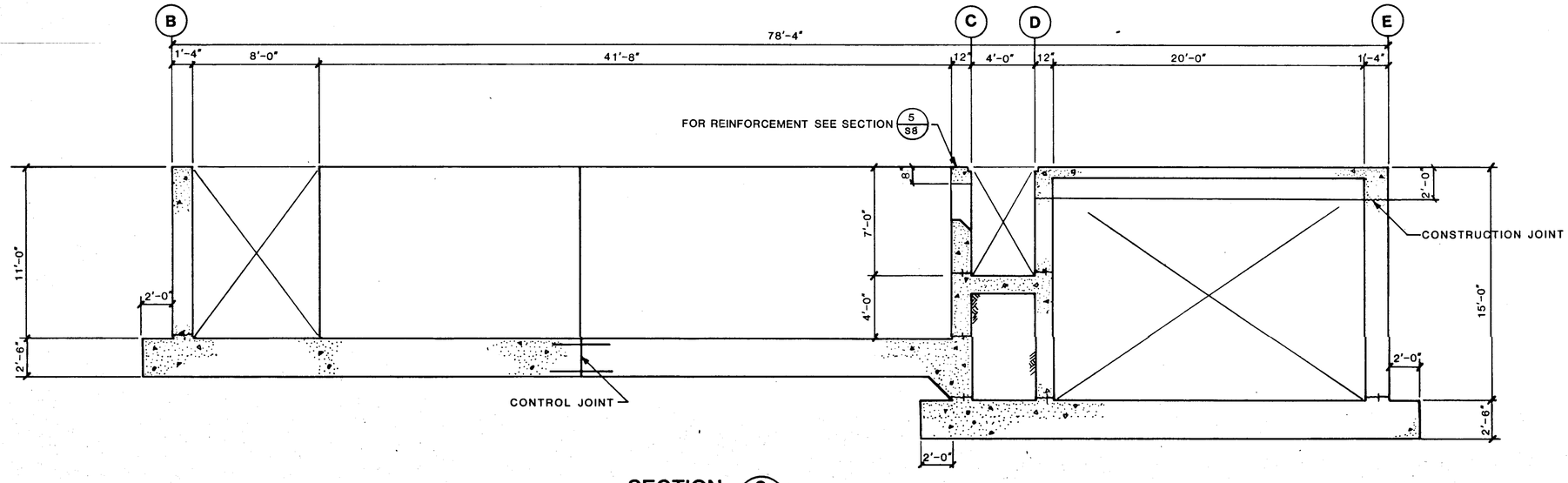


SECTION 1 / S6

SCALE: 1/4"=1'-0"



SECTION 2 / S6

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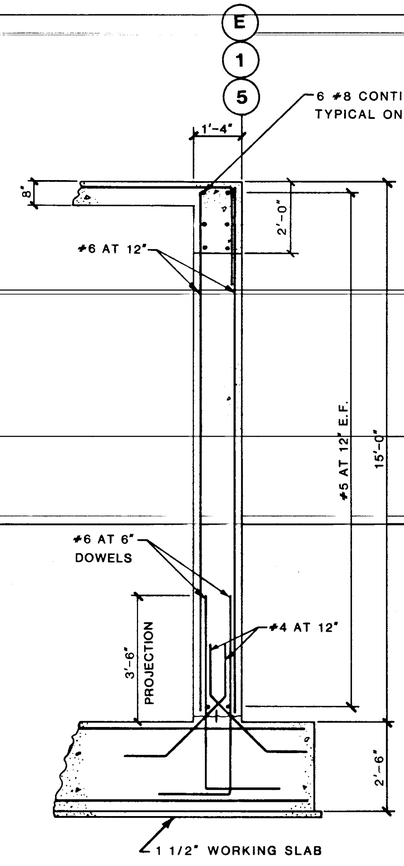

SECTION 3 / S6

SCALE: 1/2"=1'-0"

CHLORINE CONTACT CHAMBER SECTIONS

THIGPEN & TREON, INC.
CONSULTING STRUCTURAL ENGINEERS
A DIVISION OF GAI CONSULTANTS-SOUTHEAST, INC.
ORLANDO, FLORIDA
FLORIDA CERTIFICATES: FIRM #F-1013, PE #3478

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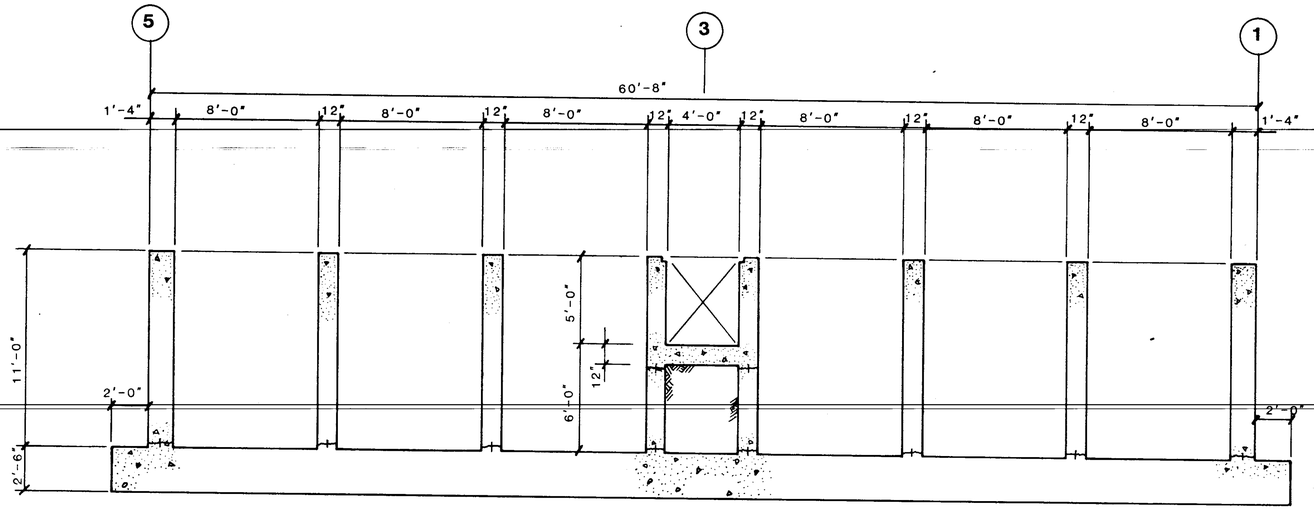
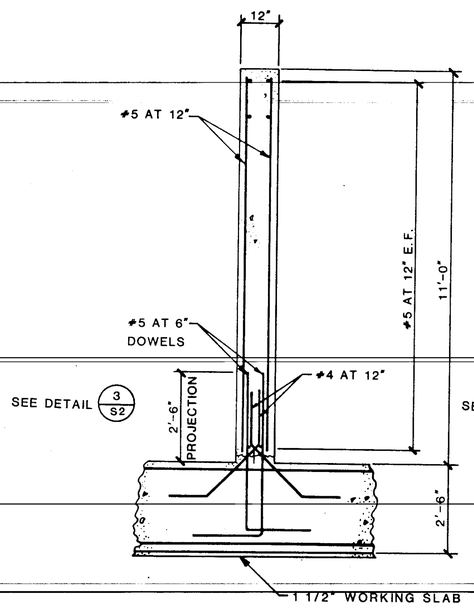
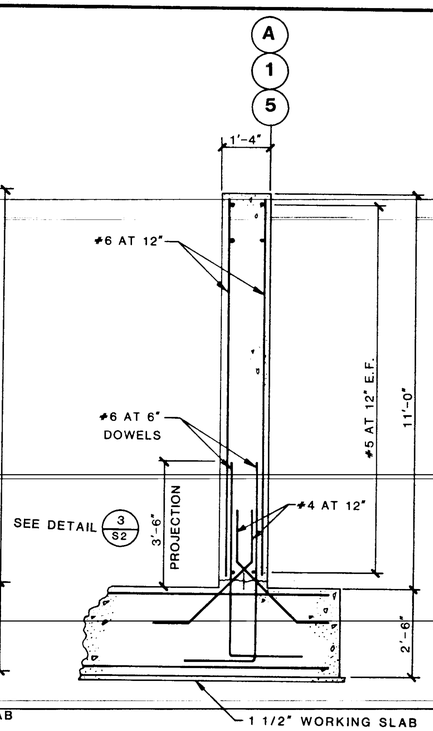


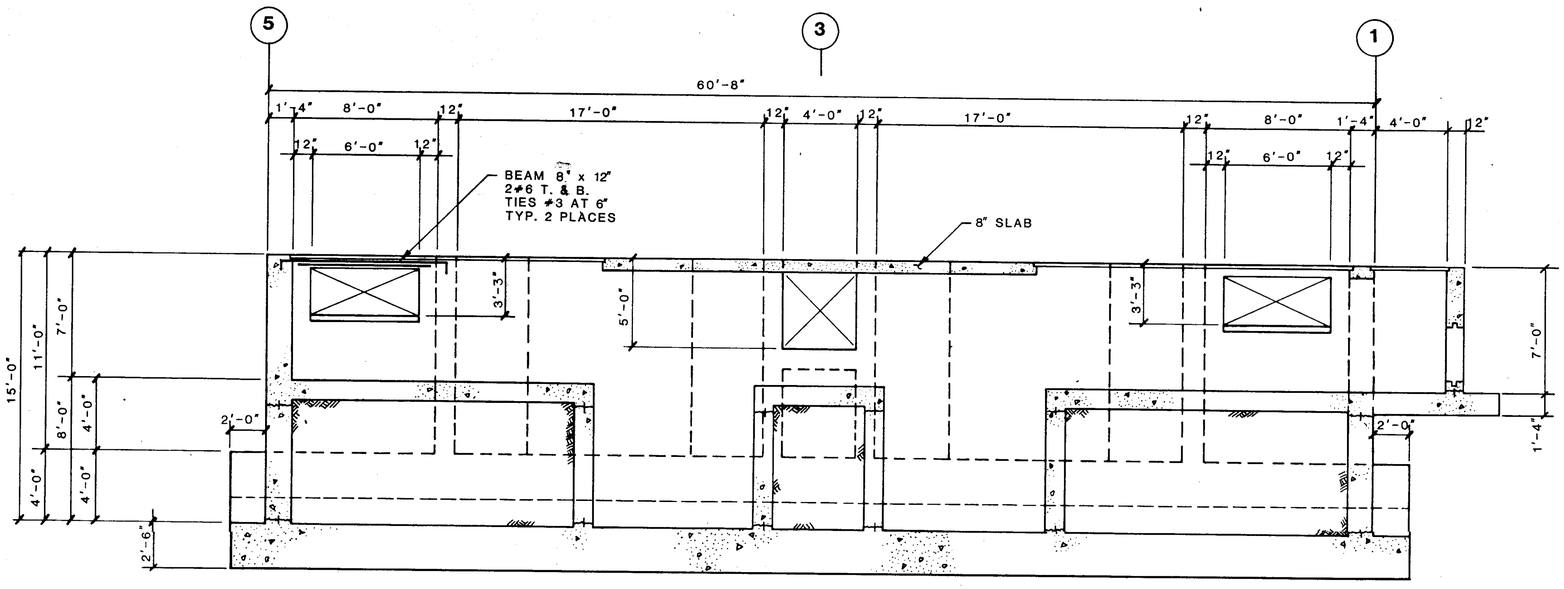
SECTION 4 / S6
SCALE: 1/4" = 1'-0"



SECTION 6 / S6
SCALE: 1/2" = 1'-0"



SECTION 7 / S6
SCALE: 1/2" = 1'-0"



SECTION 5 / S6
SCALE: 1/4" = 1'-0"

CHLORINE CONTACT CHAMBER

SECTIONS

THIGPEN & TREON, INC.
CONSULTING STRUCTURAL ENGINEERS
A DIVISION OF GAI CONSULTANTS-SOUTHEAST, INC.
ORLANDO, FLORIDA
FLORIDA CERTIFICATES: FIRM #F-1013, PE #3470

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MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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PHASE I — SEGMENT B — PART B
E.P.A. NO. C-120540060
MANATEE COUNTY, FLORIDA

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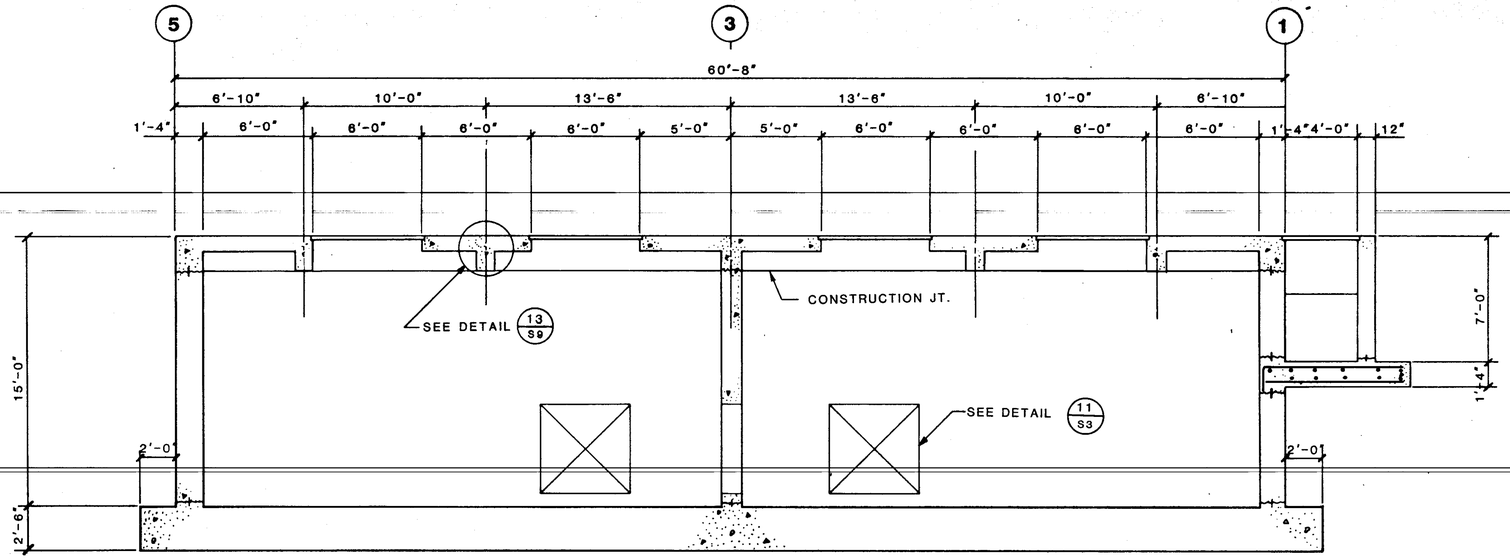
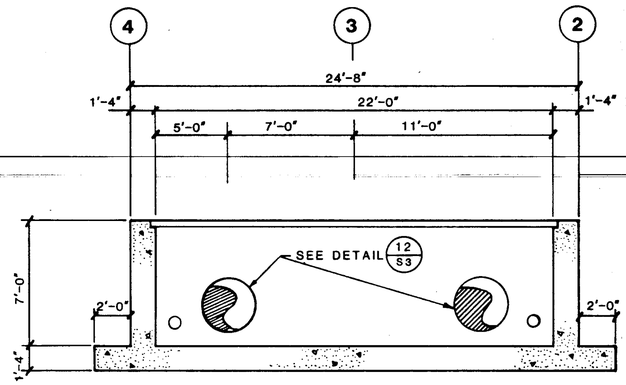
MAY 31 1984

DESIGNED ____ CHECKED ____ DATE 5/31/84 SCALE AS NOTED
DRAWN ____ FILE NO. 031-011-84 SHEET S-8 OF S-10

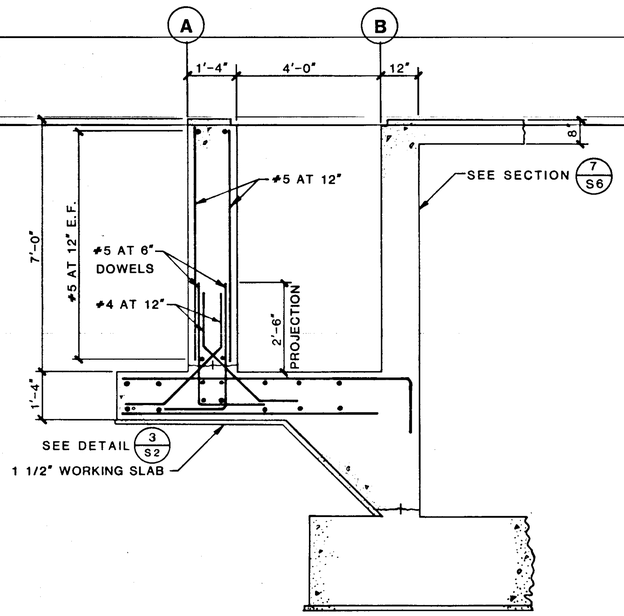
12-10 T-23



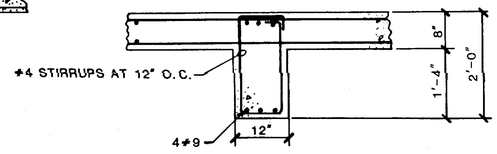


SECTION 9/S6
SCALE: 1/4" = 1'-0"

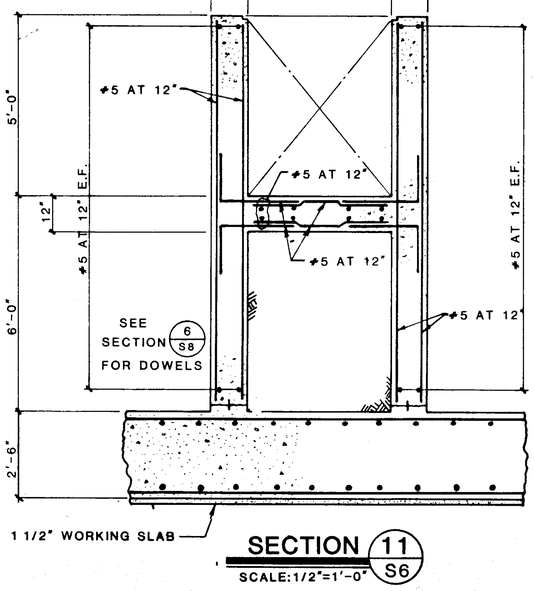
SECTION 8/S6
SCALE: 1/4" = 1'-0"



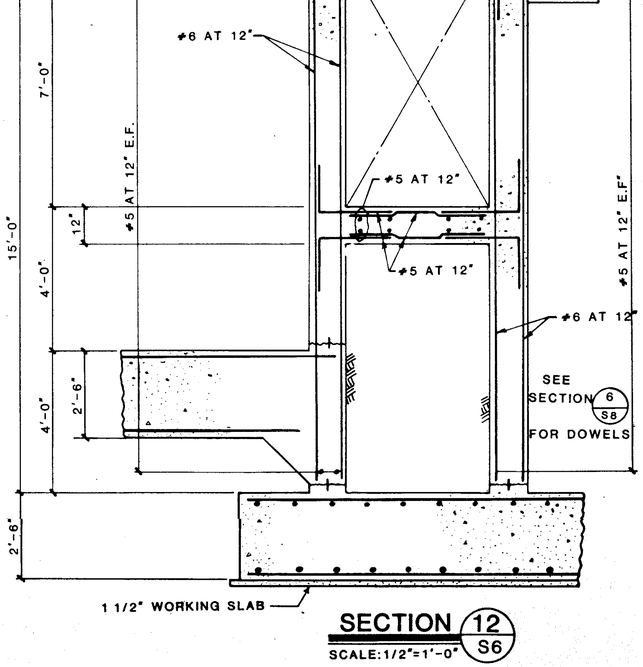
SECTION 10/S6
SCALE: 1/2" = 1'-0"



DETAIL 13/S9
SCALE: 3/4" = 1'-0"



SECTION 11/S6
SCALE: 1/2" = 1'-0"



SECTION 12/S6
SCALE: 1/2" = 1'-0"

CHLORINE CONTACT CHAMBER

SECTIONS

THIGPEN & TREON, INC.
CONSULTING STRUCTURAL ENGINEERS
A DIVISION OF GAI CONSULTANTS-SOUTHEAST, INC.
ORLANDO, FLORIDA
FLORIDA CERTIFICATES: FIRM #F-1013, PE #3470

DRAWN	CHECKED	ISSUED	REVISED	DWG. NO.
JAW MFS	MA	MAY 1984		S9

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL SEWER SYSTEM
PHASE I — SEGMENT B — PART B
E.P.A. NO. C-120540060
MANATEE COUNTY, FLORIDA

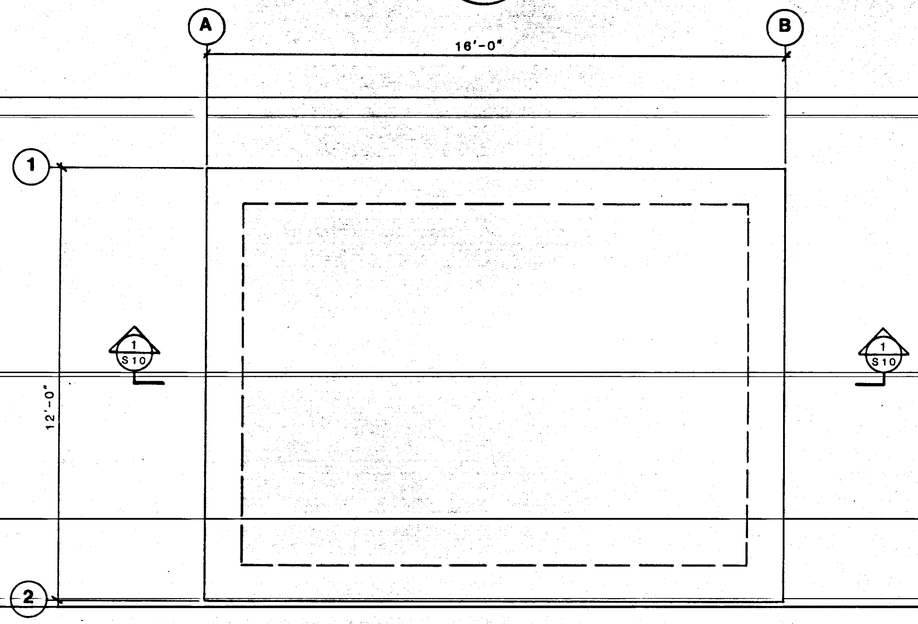
REVISIONS
1.
2.
3.
4.
5.

Larson Engineering, Inc.
Consulting Engineers
4900 Memorial Ave. W. Suite 304
Bradenton, Florida 33529
(813) 746-2426

MAY 31 1984

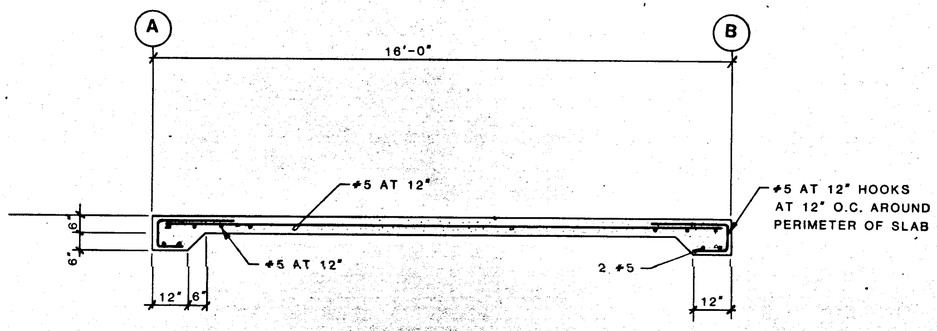
DESIGNED ——— CHECKED ——— DATE 5/31/84 SCALE AS NOTED
DRAWN ——— FILE NO. 031-011-84 SHEET S-9 OF S-10

12-10 T-232



PLAN

SCALE: 1/2"= 1'-0"



SECTION 1/S10

SCALE: 1/2"= 1'-0"

CHLORINE CONTACT CHAMBER

PLANT REUSE PUMP STATION

THIGPEN & TREON, INC.
CONSULTING STRUCTURAL ENGINEERS
A DIVISION OF GAI CONSULTANTS-SOUTHEAST, INC.
ORLANDO, FLORIDA
FLORIDA CERTIFICATES: FIRM #9-1813, PE #3470

DRAWN	CHECKED	ISSUED	REVISED	DWG. NO.
PTP	MA	MAY 1984		S10

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I — SEGMENT B — PART B

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1.
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LEI Larson Engineering, Inc. MAY 31 1984
Consulting Engineers
4900 Memorial Ave. W., Suite 301
Bradenton, Florida 33529
(813) 748-2426

DESIGNED ____ CHECKED ____ DATE 5/31/84 SCALE AS NOTED
DRAWN ____ FILE NO. 031-011-84 SHEET S-10 OF S-10

12" PLUG
4" PVC, RW, M.J.
12" D.I.P., E.W., M.J.
GRADE IN THIS AREA TO BE 36" BELOW TOP OF WALL
EMERGENCY OVERFLOW WEIR EL
4" PLUG - TAPPED 2"
1" SADDLE W/DOUBLE STRAP
1" GSP
36" WALL PIPE FOR FUTURE EXPANSION
36" BLIND FLG
PROPELLER FLOW METER & INDICATING TRANSMITTER MOUNTED ON METER
FIT 102
2" PVC, RW, M.J.
18" D.I.P EFFLUENT (TO REUSE SYSTEM)
36" D.I.P. OVERFLOW TO POND
4x4 JB ON CONC. POLE FOR CAPACITANCE LEVEL PROBE
ULTRASONIC FLOWMETER & FLOW INDICATING TRANSMITTER
FIT 101-2
8'-0" (TYP)
6" D.I.P STILL WELL FOR LIQUID LEVEL PROB.
L.S. 103
EFF. PUMP 4 (FUTURE)
PCV 3
CONC PUMP BASE
EFF. PUMP 3 (FUTURE)
6" D.I. WALL PIPE (UNFILTERED WATER)
6" PVC, Cl_2S, M.J. FROM CHLORINE ROOM
6" S.S. A.P.W
LIGHT
CHLORINE DIFFUSER
CHLORINE CONTACT CHAMBER # 2
SANITAIRE D-24 O/E DIFFUSER
4" S.S. A.P.W
WET WELL #2
EFF. PUMP 2
SLIDE GATE #1
4" DROP PIPE
SLIDE GATE #7
SLIDE GATE
BY PASS CHANNEL
1 3/4" ALUM GRATING (TYP)
SLUICE GATE & STAND
SLIDE GATE #6
14" D.I. EFFLUENT HEADER
18"x14" RED.
FEEDERS TO PUMPS
EFF. PUMP 1
EX. FAN SEE ELEV.
EQUIPMENT CABINET 60"W x 72"H x 16"D NEMA 4X O/E STAINLESS STEEL ENCLOSURE SEE ELEVATION
CONCRETE PAD BY GENERAL CONTRACTOR
GRATING SEAT & SLIDE GATE FRAME
36" D.I. WALL PIPE (FILTERED WATER)
SLIDE GATE #2
6" DROP PIPE
42" HIGH ALUM HANDRAIL (TYP)
3/4" C
4" COMBINATION AIR & VACUUM VALVE (TYP)
FEEDERS TO BLOWER BUILDING 240 FT ± SEE SITE PLAN & ONE LINE RISER. PROVIDE 30"x30" PULLBOX AT 200 FT ± FROM BLOWER BUILDING.
EFF. PUMP (FUTURE)
WET WELL #1
CONC PIPE SUPPORTS (TYP)
STONECO O/E PFAII-70XL LIGHT FIXTURE 70 WATT HIGH PRESSURE SODIUM WITH 120V HPF BALLAST, NEMA TYPE V DISTRIBUTION MOUNTED ON 4" SQUARE 10 FT. HIGH ALUMINUM POLE WITH 9" BOLT CIRCLE, BLACK DURIPLEX FINISH, 3" TENON, DUPLEX WP RECEPTACLE WHERE INDICATED. POLE WITH RECEPTACLE STONECO O/E AS-100-3 POLE WITHOUT RECEPTACLE STONECO O/E AS-100-3 TYPICAL.
CHLORINE CONTACT CHAMBER #1
EFFLUENT CIPOLLETTI WEIR (TYP)
ULTRASONIC FLOWMETER & FLOW INDICATING TRANSMITTER
12" D.I. WALL PIPE FOR PLANT REUSE PUMP SYSTEM
C 5' BELOW TOP OF WALL
1" HB & HOSE RACK
2" PVC, RW, M.J.
TO WWTP
2" C WITH 3-3/0 THW TO MCC IN BLOWER BUILDING. 240 FT ± (SEE SITE PLAN)
1" H.B. & RACK
1" SADDLE DOUBLE STRAP
6" WALL PIPE Cl_2 (30" LG)
12" PVC, RW, M.J.
1" GSP
N
1/4" = 1'-0"

C.W. Whidden, P.E., P.A.
Consulting Engineer
115 South Desoto Avenue
Arcadia, Florida 33821
(813) 494-3249

CHLORINE CONTACT CHAMBER AND EFFLUENT PUMP STATION

PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I SEGMENT B - PART B

E.P.A. NO. C-1205(C060)

MANATEE COUNTY, FLORIDA

REVISIONS
1.
2.
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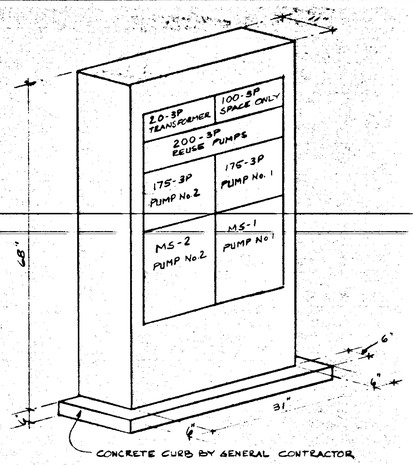
5.

Larson Engineering, Inc.
Consulting Engineers
4900 Manatee Ave W. Suite 201
Bradenton, Florida 33529
813 748 2425

MAY 31 1984

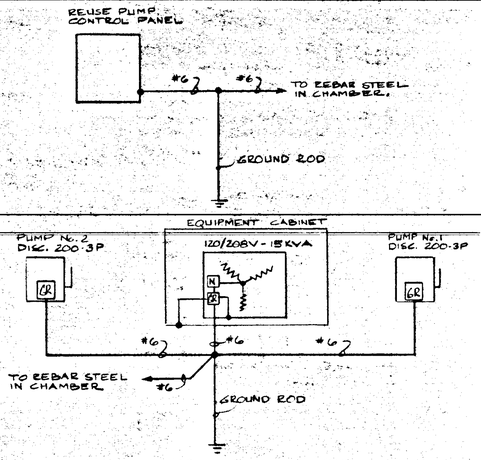
DESIGNED ____ CHECKED ____ DATE ____ SCALE 1/4"
DRAWN ____ FILE NO. ____ SHEET E-1 OF E-2

12-10 T-233



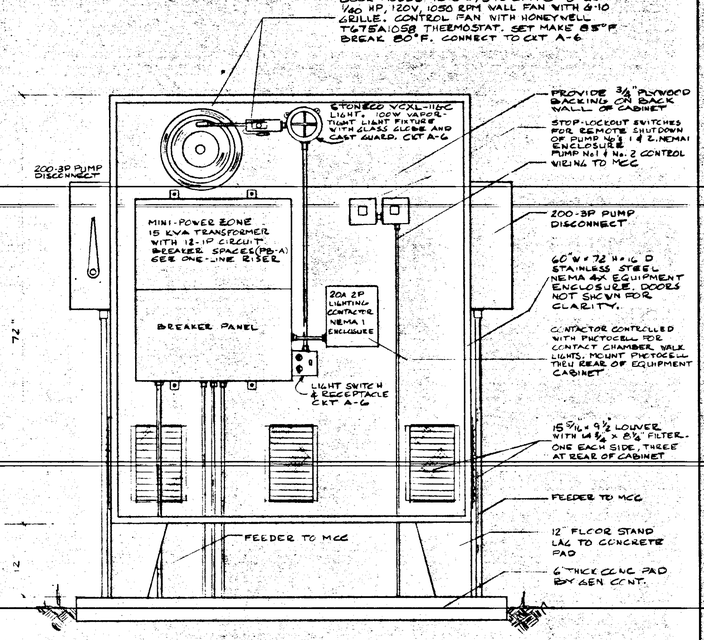
MOTOR CONTROL CENTER PICTORIAL

N. T. S.



GROUNDING DETAIL

N. T. S.



EQUIPMENT CABINET ELEVATION

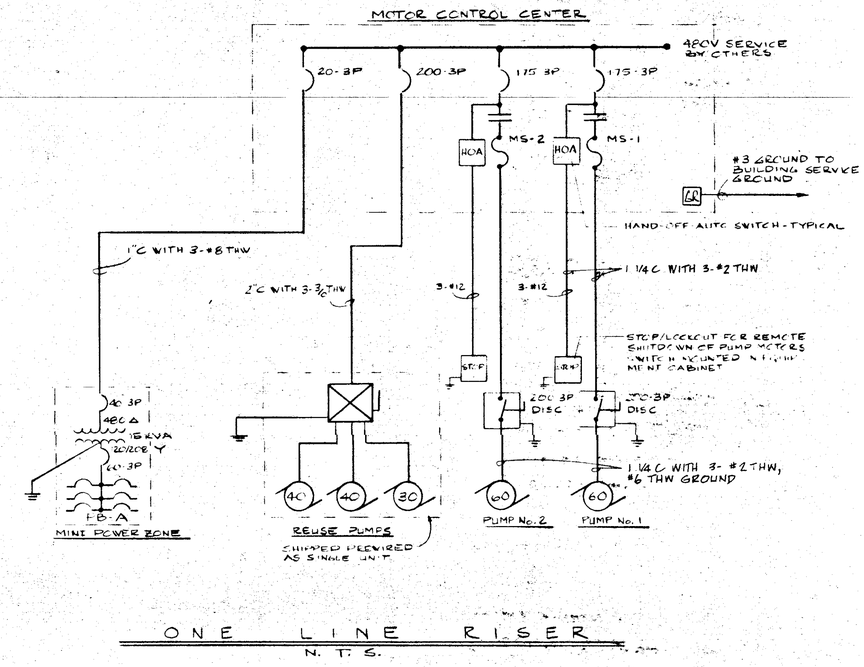
SCALE: 1" = 1'-0"

ELECTRICAL LEGEND

MARK	DESCRIPTION
	Light Fixture
	Light Fixture with Duplex WP Receptacle in Base
	Conduit - Hash Marks indicate No. of conductors
	Homerun to Panel
	Feeder Conduit & Wire
	Feeder to Motor Control Center
DS OR	Disconnect Switch
JB OR	Junction Box
JB WP	Flush mounted Junction Box 6x6x4-wp
WP	Weatherproof
CB OR	Circuit Breaker
MCC	Motor Control Center
	Motor - No. indicates horsepower
	Controller
	Controller With Disconnect
15KVA	Transformer
MS	Magnetic Starter
PC	Photocell

MOTOR CONTROL CENTER SCHEDULE

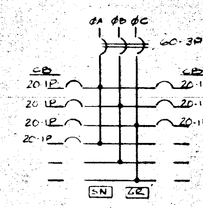
FEEDER	TO SERVE	HP	VOLTAGE	TYPE STARTER	NEMA SIZE STARTER	CB FRAME	CB TRIP	CONDUCTOR	CONDUIT
MS-1	Pump No. 1	60	480	Across Line	4	225-3P	175	#1	1-1/4
MS-2	Pump No. 2	60	480	" "	4	225-3P	175	#1	1-1/4
CB-3	Reuse Pumps	2-40,1-30	480	-----	---	225-3P	200	3/0	2"
CB-4	Transformer	15KVA	480	-----	---	100-3P	20	#8	1"



ONE LINE RISER

N. T. S.

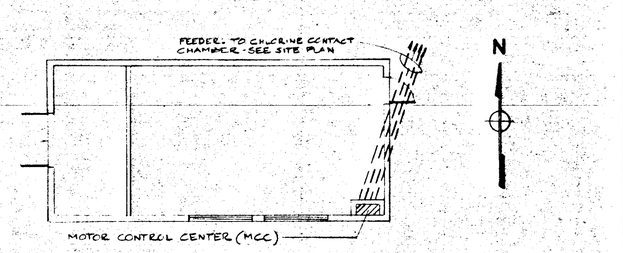
PANELBOARD PB-A SCHEDULE



CKT	TO SERVE	CB	CB	TO SERVE	CKT
1	LIGHTING	20-1P	20-1P	INSTRUMENTATION	2
3	LIGHTING	20-1P	20-1P		4
5	RECEPTACLES	20-1P	20-1P	EQ CAB. LIGHTS/RECEPT/FAN	6
7	SPARE BREAKER	20-1P			

NOTES: 1) PANELBOARD IS INTEGRAL WITH MINI POWER ZONE TRANSFORMER.
2) CONTROL CKT 1 & CKT 3 WITH 20A-2P LIGHTING CONTACTOR

NOTE: POWER TO MOTOR CONTROL CENTER TO BE BY OTHERS.



BLOWER BUILDING PLAN

SCALE: 1/8" = 1'-0"

C.W. Whidden

C.W. Whidden, P.E., P.A.
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115 South Desoto Avenue
Arcadia, Florida 33821
(813) 494-3249

CHLORINE CONTACT CHAMBER AND EFFLUENT PUMP STATION

ELECTRICAL DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I — SEGMENT B — PART B

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1.
2.
3.
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5.

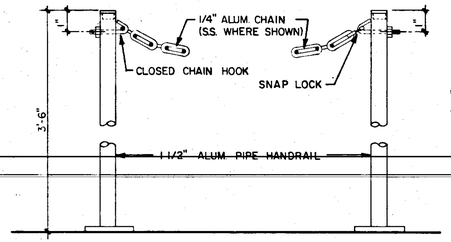
Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave. W, Suite N
Bradenton, Florida 33529
(813) 794-5450

MAY 31 1984

DESIGNED C.W.W. CHECKED DATE SCALE AS SHOWN
DRAWN FILE NO. 031-011-84 SHEET E2 OF E2

12-10 T-234

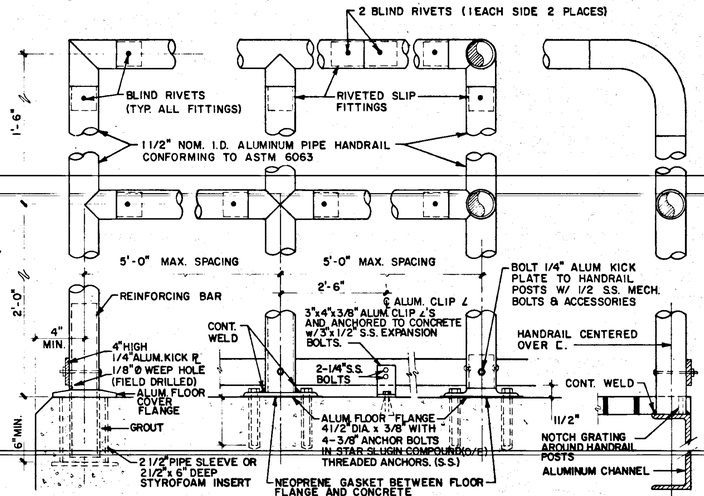
AF 31693A



FRONT VIEW

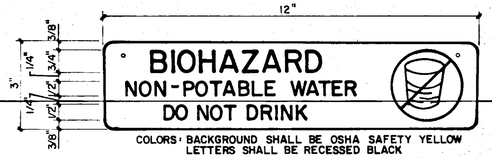
CHAIN GUARD DETAIL 4 VAR

N.T.S.



TYPICAL PIPE HANDRAIL DETAILS 12 VAR

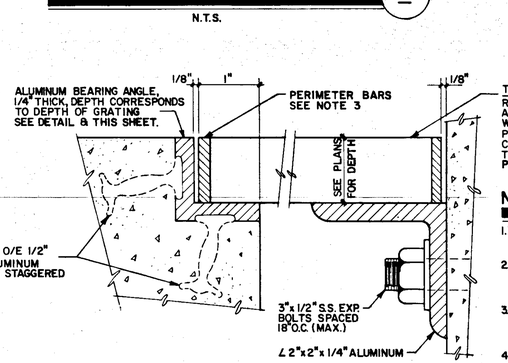
N.T.S.



COLORS: BACKGROUND SHALL BE OSHA SAFETY YELLOW
LETTERS SHALL BE RECESSED BLACK

NON-POTABLE WATER SIGN 9 —

N.T.S.

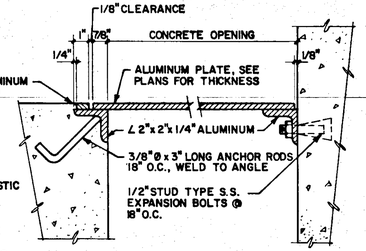


NOTE

1.) BEARING TO BE PROVIDED ON ALL SIDES OF GRATING EXCEPT WHERE SHOWN.
2) ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR OTHER METALS TO HAVE A COATING OF HEAVY BITUMASTIC PAINT TO PREVENT CORROSION.
3) SIDES OF ALL GRATINGS SHALL BE PROVIDED WITH BINDING STRIPS OF SAME DEPTH AND THICKNESS AS THE MAIN BARS WELDED THERETO.
4) GRATING SHALL BE MFR'D. IN SECTIONS SO THAT NO SINGLE PIECE WILL EXCEED 60 LBS.

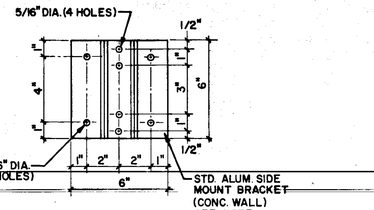
TYPICAL ALUMINUM GRATING DETAIL 1 VAR

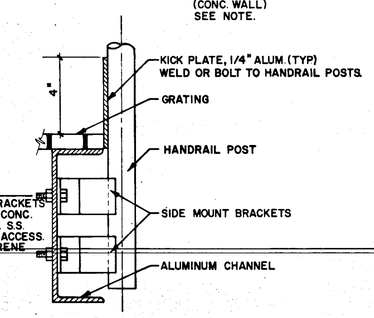
N.T.S.



DETAIL OF ACCESS HATCH 2 VAR

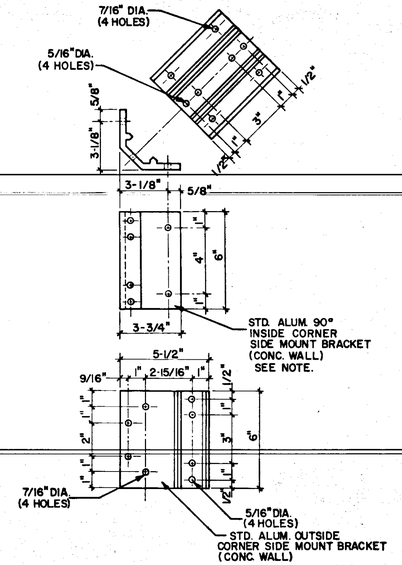
N.T.S.

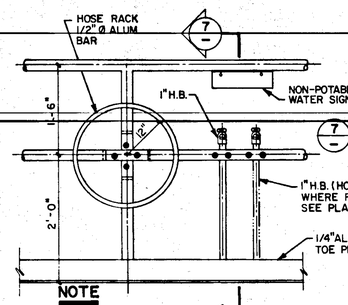




NOTE

ALUM. SIDE MOUNT BRACKETS TO BE FASTENED TO CONC. WALL W/ 3/8" x 4" LG. S.S. EXPANSION BOLTS & ACCESS. & W/ 1/4" THK. NEOPRENE GASKETS BETWEEN BRACKETS & WALL.



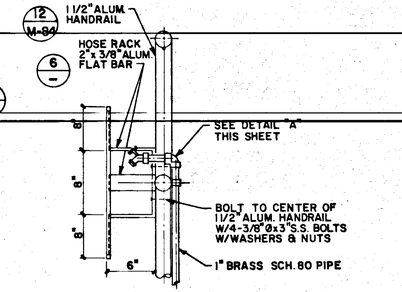


NOTE

ATTACH HOSE RACK TO CONC. WALL W/4-3/8"Ø S.S. MASONARY ANCHORS.

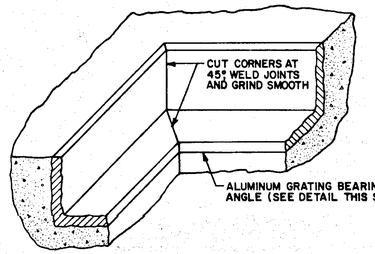
HOSE RACK 8 VAR

N.T.S.



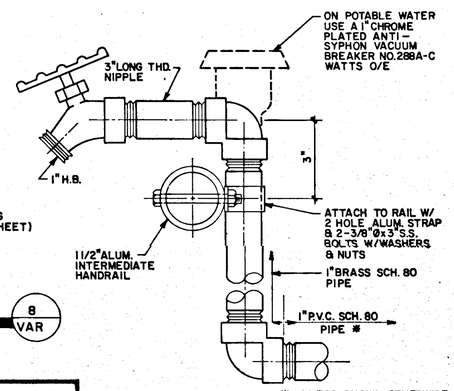
HOSE BIBB 7 VAR

N.T.S.

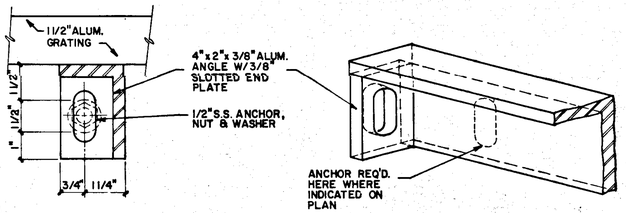


GRATING SEAT CORNER DETAIL 6 VAR

N.T.S.

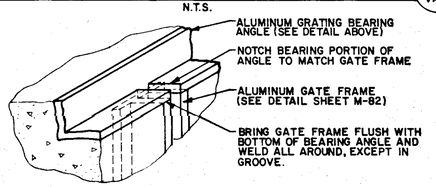


* UNLESS SHOWN OTHERWISE ON PLANS



GRATING SEAT & GATE FRAME DETAIL 5 VAR

N.T.S.



GRATING SUPPORT 10 VAR

N.T.S.

DETAIL "A"

N.T.S.

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

DESIGNED BY C.J.F.
DRAWN BY: C.J.F.
CHECKED BY:
APPROVED BY:
DATE MAY, 1984

CHLORINE CONTACT CHAMBER AND EFFLUENT PUMP STATION

DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I — SEGMENT B — PART B

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
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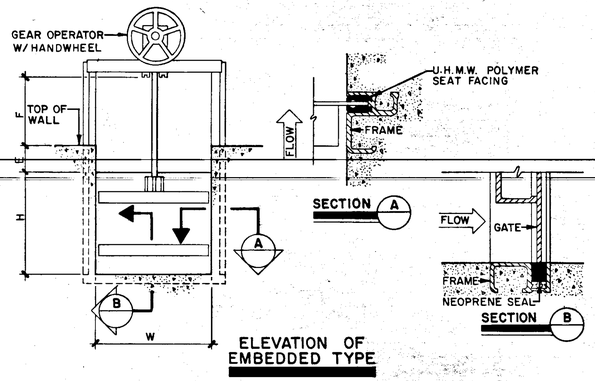
LFI Larson Engineering, Inc. MAY 31 1984
Consulting Engineers
4900 Manatee Ave. W, Suite 201 Bradenton, Florida 33529 (813) 748-2428

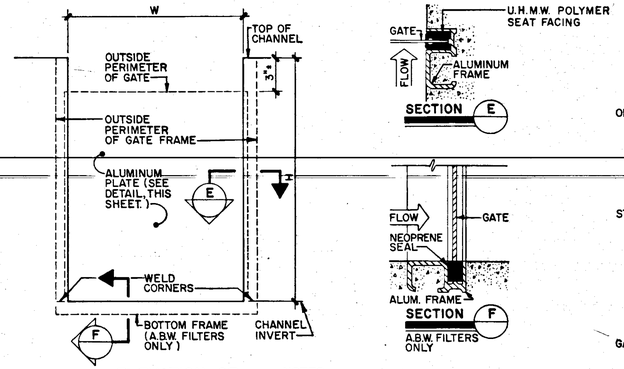
DESIGNED — CHECKED — DATE 5/31/84 SCALE AS NOTED
DRAWN — FILE NO. 031-011-84 SHEET D-1 OF D-3

12-10 T-23

AF 31693A



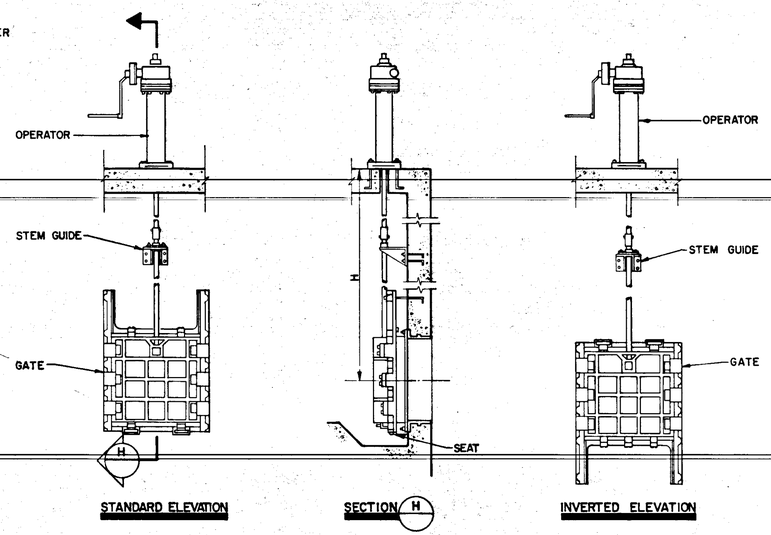
ELEVATION OF EMBEDDED TYPE

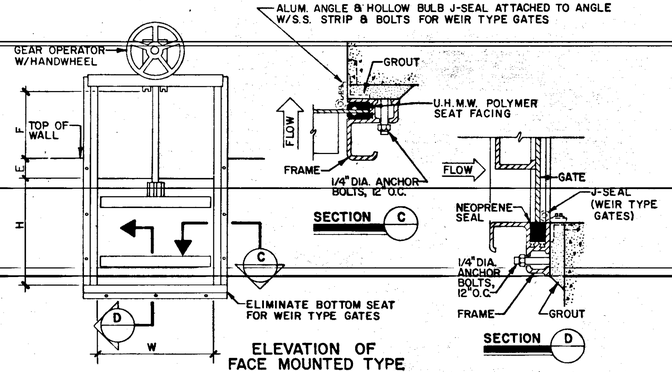


ELEVATION OF STOP GATE

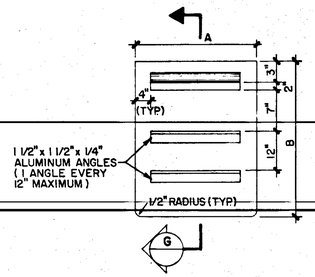
NOTES

1. SHOP COAT OF HEAVY BITUMASTIC PAINT ON ALL SURFACES IN CONTACT WITH CONCRETE.
2. FOR FRAME DETAIL AT GRATING SEAT, SEE _____.

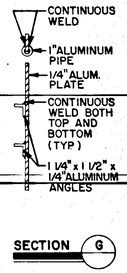


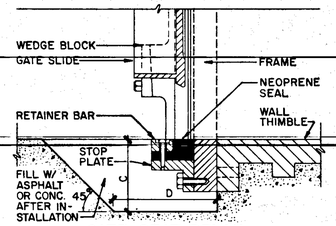


ELEVATION OF FACE MOUNTED TYPE



ALUMINUM PLATE DETAIL





GATE SEAT DETAIL

INSTALLATION CLEARANCES FOR FLUSH BOTTOM SLUICE GATES

GATE DIAMETER OR GATE HEIGHT	FLAT BACK FRAME DIM.		FLANGE BACK FRAME DIM.		REMARKS
	C	D	C	D	
6" THRU 24"	6"	12"	11"	18"	
30" THRU 48"	7"	15"	15"	20"	

NOTES

1. FOR HANDWHEEL POSITION, SEE MECHANICAL DRAWINGS.
2. FOR FRAME DETAIL AT GRATING SEAT, SEE D-1
3. WEIR GATES SHALL HAVE J-SEALS

SLIDE GATE DETAILS

N.T.S.

NOTE

ALL SLIDE GATES SHALL HAVE RISING STEMS

SLIDE GATE SCHEDULE

GATE NO.	LOCATION	GATE TYPE	OPERATOR TYPE	E	W	H	F	REMARKS
1	C.C.C.	EMB	HNDWHL	1'-0"	6'-0"	5'-0"	5'-0"	ALUMINUM
2	C.C.C.	EMB	HNDWHL	1'-0"	6'-0"	5'-0"	5'-0"	ALUMINUM
3	C.C.C.	EMB	HNDWHL	2'-0"	4'-0"	5'-0"	4'-0"	ALUMINUM
4	C.C.C.	EMB	HNDWHL	0'-9"	4'-0"	3'-6"	4'-0"	ALUMINUM
5	C.C.C.	EMB	HNDWHL	2'-0"	4'-0"	5'-0"	4'-0"	ALUMINUM
6	C.C.C.	EMB	HNDWHL	2'-0"	4'-0"	5'-0"	4'-0"	ALUMINUM
7	C.C.C.	EMB	HNDWHL	2'-0"	4'-0"	5'-0"	4'-0"	ALUMINUM

STOP GATE DETAILS

N.T.S.

STOP GATE SCHEDULE

GATE NO.	LOCATION	FRAME QT'Y	FRAME DIM W	FRAME DIM H	PLATE QT'Y	PLATE DIM A	PLATE DIM B	REMARKS

SLUICE GATE DETAILS

N.T.S.

SLUICE GATE SCHEDULE

GATE NO.	QT'Y.	LOCATION	GATE TYPE	OPERATOR TYPE	SEATING / UNSEATING	SIZE	FRAME	THIMBLE TYPE	THIMBLE LENGTH	H	REMARKS
1		C.C.C.	STD	GEAR	SEATING	60" SQ	FLAT	FLG x PE	12"	11'-9"	OPTION - MOTOR
2		C.C.C.	STD	GEAR	SEATING	60" SQ	FLAT	FLG x PE	12"	11'-9"	OPERATORS
3		C.C.C.	STD	GEAR	SEATING	60" SQ	FLAT	FLG x PE	12"	11'-9"	

SLIDE GATES

STOP GATES

SLUICE GATES

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners & management consultants CDM

DESIGNED BY C.J.F.
DRAWN BY C.J.F.
CHECKED BY _____
APPROVED BY _____
DATE MAY, 1984

CHLORINE CONTACT CHAMBER AND EFFLUENT PUMP STATION

LEGEND & SYMBOLS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I SEGMENT B – PART B

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

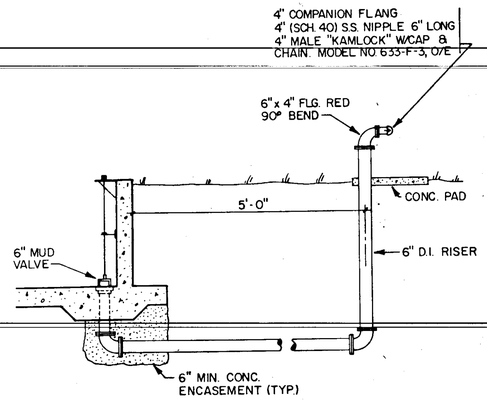
REVISIONS
1. _____
2. _____
3. _____
4. _____
5. _____

LEI Larson Engineering, Inc. MAY 31 1984
Consulting Engineers
4900 Manatee Ave W. Suite 201
Bradenton, Florida 33529
(813) 748-2426

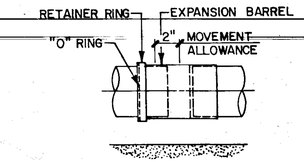
DESIGNED _____ CHECKED _____ DATE 5/31/84 SCALE AS NOTED
DRAWN _____ FILE NO. 031-011-84 SHEET D-2 OF D-3

12-10 T-236

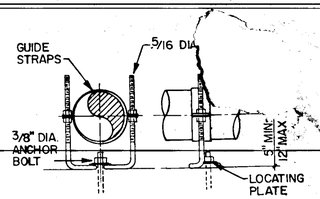
AF 31693A



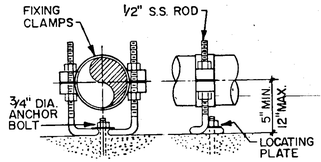
DETAIL 2 M-1 D-3



EXPANSION JOINT DETAIL 6 M-4 D-3



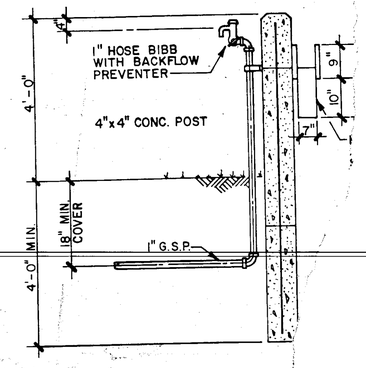
GUIDE SUPPORT DETAIL 4 M-4 D-3



ANCHOR SUPPORT DETAIL 5 M-4 D-3

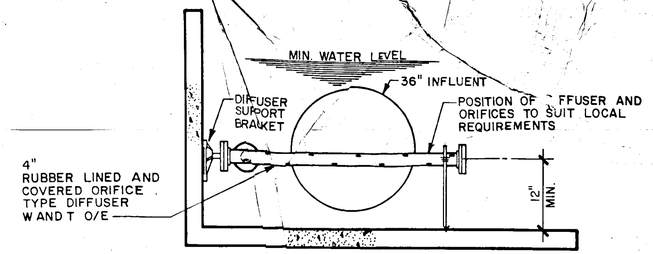
NOTE

ANCHOR



HOSE BIBB DETAIL

N.T.S.



CHLORINE DIFFUSER DETAIL 3 M-1 D-3

N.T.S.

CAMP DRESSER & McKEE INC.

environmental engineers scientists planning & management consultants CDM

DESIGNED BY C.J.F.
DRAWN BY D.M.E.
CHECKED BY
APPROVED BY
DATE MAY, 1984

CHLORINE CONTACT CHAMBER AND EFFLUENT PUMP STATION

GENERAL DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL SEWER SYSTEM

PHASE I SEGMENT B - PART B

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1.
2.
3.
4.
5.

LEI Lirson Engineering, Inc. MAY 31 1984
Consulting Engineers
4900 Manatee Ave. W, Suite 201
Bradenton, Florida 33529
(813) 748-2426

DESIGNED — CHECKED — DATE 5/31/84 SCALE AS NOTED
DRAWN — FILE NO. 031-011-84 SHEET D-3 OF D-3

12-10 T-23

MANATEE COUNTY

PUBLIC UTILITIES DEPARTMENT

WASTEWATER FACILITIES IMPROVEMENTS

E.P.A. NO. C-120540060 (STEP 3)
COUNTY BID NO. 87-25

NORTH SUBREGIONAL

WASTEWATER TREATMENT FACILITY

MANATEE COUNTY, FLORIDA

MARCH 1985

REVISED NOVEMBER 1986

CONFORMED FEBRUARY, 1987

FINAL SITE PLAN
APPROVED _____ FILE NUMBER _____
DATE
PLANNING & DEVELOPMENT: _____
UTILITIES: _____
TRANSPORTATION DIVISION: _____
POLLUTION CONTROL: _____
HEALTH DEPARTMENT: _____
FIRE DISTRICT: _____
ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.
OWNER/AGENT

LLOYD WILKINSON GRIFFITH JR. CERTIFICATE NO. 9282 STATE OF FLORIDA REGISTERED ENGINEER

LLOYD W. GRIFFITH, JR., P.E.
FLORIDA P.E. No. 9282
CIVIL
DATE 11-10-86

RICHARD C. MOORE CERTIFICATE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

RICHARD D. MOORE, P.E.
FLORIDA P.E. No. 34083
MECHANICAL
DATE 11/9/86

CHARLES E. BAILEY, P.E.
FLORIDA P.E. No. 6985
ELECTRICAL
DATE 11/5/86

BILGIN EREL CERTIFICATE NO. 34053 STATE OF Florida REGISTERED ENGINEER

BILGIN EREL, P.E.
FLORIDA P.E. No. 34053
STRUCTURAL
DATE 11-7-86

gai Consultants-Southeast, Inc.
Consulting Engineers

C.E. BAILEY & ASSOCIATES INC.
ELECTRICAL ENGINEERS

environmental engineers, scientists, planners, & management consultants **CDM**

LARSON ENGINEERING, INC.
ENGINEERS . . PLANNERS

6404 Manatee Avenue West, Suite N
Bradenton, Florida 33529

26-01 T1

RECORD DRAWINGS 12/19/89

AF 31693A

GENERAL NOTES

1) LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF THE PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND OTHER FEATURES AFFECTING HIS WORK PRIOR TO CONSTRUCTION.

2) ALL SOILS EXPOLORATION WORK PERFORMED BY JAMMAL & ASSOCIATES, INC., WINTER PARK, FLORIDA PROJECT NO. 84-30067, DECEMBER 1984. SOILS EXPOLORATION WORK IS SOLELY TO ASSIST BIDDERS IN ASSESSING THE NATURE AND EXTENT OF TESTING PROCEDURES REQUIRED TO MAKE THEIR OWN DETERMINATION OF ACTUAL CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK. NO REPRESENTATION IS MADE OR WILL BE GIVEN CONCERNING ACTUAL CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THIS WORK, AND BIDDERS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHAT INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING SUCH CONDITIONS.

3) NO IMPROVEMENTS BY THESE DRAWINGS ARE LOCATED WITHIN THE 100-YEAR FLOOD PLAIN WHICH IS LOCATED BELOW ELEVATION 21.0

4) ALL ELEVATIONS REFER TO UNITED STATES COASTAL AND GEODETIC SURVEY B.M. Z254.

5) AERIAL PHOTOGRAPHY FLOWN OCTOBER 1984.

6) THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.

7) THE CONTRACTOR SHALL CONTACT THE PROFESSIONAL'S OFFICE IMMEDIATELY ON ANY CONFLICTS BETWEEN WHAT IS SHOWN HEREIN AND ACTUAL CONDITIONS DISCOVERED DURING CONSTRUCTION OF ANY IMPROVEMENTS SHOWN ON THESE DRAWINGS.

8) SPECIAL PIPE FOUNDATIONS, IF REQUIRED, SHALL BE DETERMINED IN THE FIELD AND THE TYPE REQUIRED WILL BE AS DIRECTED BY THE ENGINEER.

9) ALL PIPE, FITTINGS, SPECIALS AND VALVES, INCLUDING LININGS AND COATINGS, PRESSURE TESTINGS AND INSTALLATIONS SHALL CONFORM TO THE SPECIFICATONS, SANITARY DETAILS, AND THE REQUIREMENTS OF MANATEE COUNTY.

10) ALL PRESSURE PIPING AND FITTINGS 6 INCHES IN DIAMETER AND OVER SHALL HAVE RESTRAINED JOINTS IN ACCORDANCE WITH THE SPECIFICATIONS.

11) ALL FITTINGS 6 INCHES AND LARGER ON GRAVITY LINES SHALL HAVE RESTRAINED JOINTS.

12) A MINIMUM OF 18 INCHES VERTICAL CLEARANCE AND 10-FOOT HORIZONTAL CLEARANCE SHALL BE MAINTAINED BETWEEN ALL WATER AND FORCE MAIN LINES. WHEN THIS IS NOT POSSIBLE OR FEASIBLE, THE FORCE MAIN SHALL BE ENCASED IN 6 INCHES OF CONCRETE FOR A DISTANCE OF 10 FEET ON BOTH SIDES OF THE CONFLICT IN CONFORMANCE WITH THE DRAWINGS.

13) FORCE MAINS SHALL HAVE A MINIMUM COVER OF 36 INCHES BELOW FINISHED GRADE AND SHALL BE LOCATED AS SHOWN ON THE DRAWINGS, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

14) AIR RELIEF VALVES ARE TO BE FIELD LOCATED AT HIGH POINTS IN THE LINE AND IN THE LOCATIONS AS SHOWN ON THE DRAWINGS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

15) INSTALLATION OF ALL STORM SEWERS, INLETS, MANHOLES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE SECTIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, OR AS INDICATED ON THE DRAWINGS.

16) ALL STORM SEWERS, WHERE INDICATED, UNLESS OTHERWISE SHOWN OR DIRECTED, SHALL BE REINFORCED CONCRETE PIPE AS SPECIFIED.

17) STORM SEWER PIPE LENGTHS SHOWN ARE APPROXIMATE AND MAY BE ADJUSTED AS REQUIRED IN THE FIELD.

18) ALL POTABLE WATER AND REUSE WATER LINE VALVES SHALL BE GATE VALVES FOR VALVES SMALLER THAN 4" DIAMETER, RESILIENT SEATED GATE VALVES FOR VALVES 4" TO 12" AND RESILIENT SEATED BUTTERFLY VALVES FOR VALVES 12" AND LARGER EXCEPT WHERE OTHERWISE INDICATED.

19) PIPES UNDERNEATH STRUCTURES AND SLABS SHALL HAVE A 6" MINIMUM CONC. ENCASEMENT FOR PIPES 24" AND SMALLER (EXCEPT PIPES 2" AND SMALLER, WHICH SHALL BE SCH. 80 INSTEAD), 9" MINIMUM CONCRETE ENCASEMENT FOR PIPES LARGER THAN 24" UP TO AND INCLUDING 36" AND 12" MINIMUM CONC. ENCASEMENT FOR PIPES LARGER THAN 36". CONC. ENCASEMENT SHALL EXTEND A MINIMUM OF 12" PAST EDGE OF STRUCTURE OR SLAB.

20) CONTRACTOR SHALL PROVIDE A 12" WIDE CONCRETE MOWING STRIP AROUND STRUCTURES.

21) ALL CONCRETE SHALL BE 3500 PSI UNLESS OTHERWISE INDICATED AND SHALL BE IN CONFORMANCE WITH THE LATEST A.C.I. BUILDING CODE REQUIREMENTS.

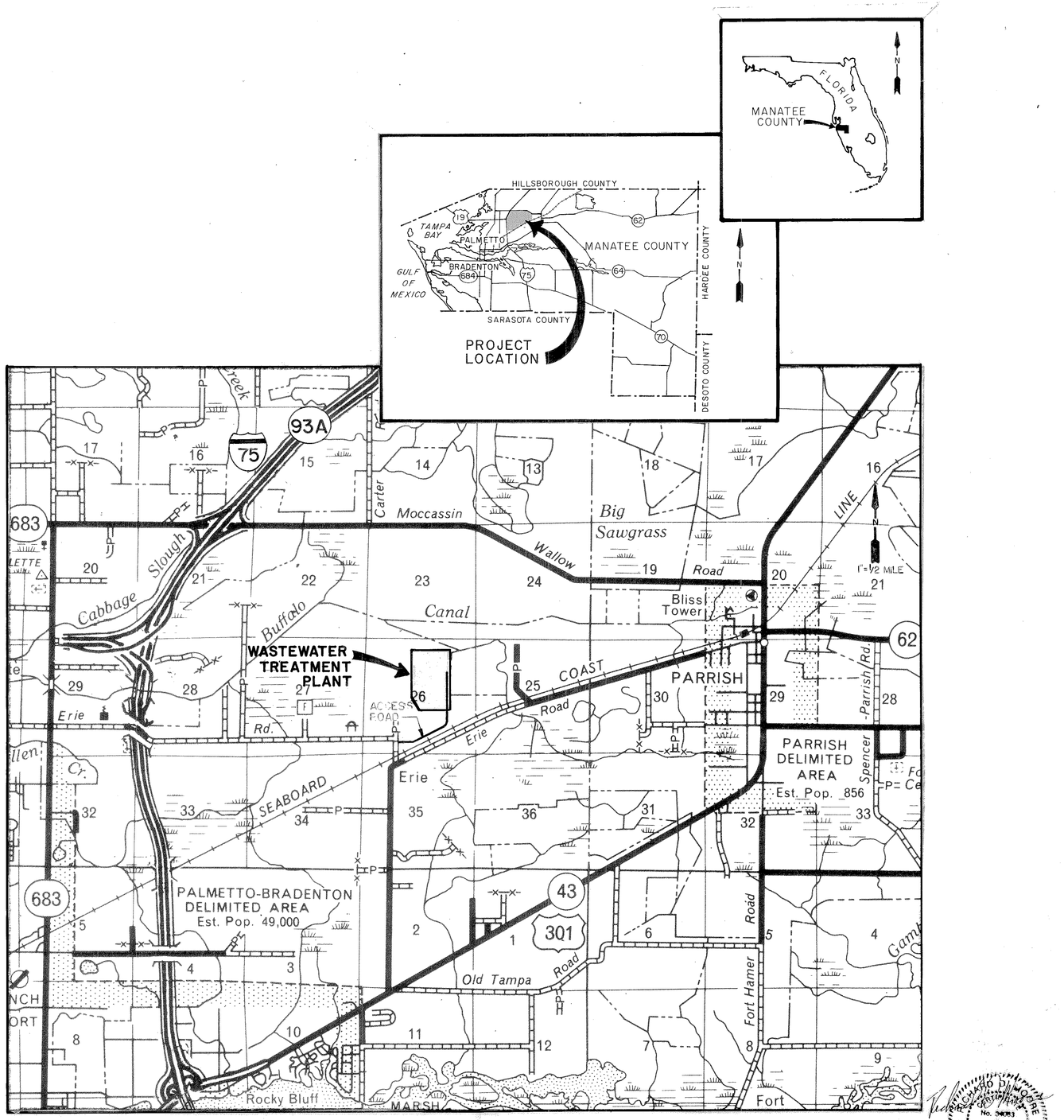
22) THE CONTRACTOR SHALL PROVIDE A SIGN ABOVE ALL HOSE BIBBS WHICH SHALL STATE EITHER "POTABLE" OR "NONPOTABLE DO NOT DRINK." THE SIGN SHALL BE MADE OF LAMINATED PLASTIC W/ AN OSHA SAFETY YELLOW FACE AND BLACK LETTERS APPROX. 3/4" HIGH. ATTACH THE SIGN TO STRUCTURE OR HANDRAIL W/ STAINLESS STEEL HARDWARE. THESE SIGNS SHALL BE PREPARED AND POSTED ABOVE ALL EXISTING AND NEW HOSE BIBBS.

23) FINISHED GRADE FOR GROUND ELEVATIONS ON DRAWINGS REFER TO GRADE AFTER SODDING.

24) IN ORDER TO PERMIT THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE 48-HOURS NOTICE TO THE UNDERGROUND UTILITY NOTIFICATION CENTER (CALL CANDY) AT 1-800-282-8881.

25) FURNISH ALL NECESSARY CONNECTIONS ON THE REUSE WATER SYSTEM FOR THE IRRIGATION SYSTEM - SEE SPECIFICATIONS FOR IRRIGATION SYSTEM DESIGN.

26) ALL MAIN PROCESS PIPING SHALL HAVE A MINIMUM COVER OF 30".



FINAL SITE PLAN		
APPROVED	DATE	FILE NUMBER
PLANNING & DEVELOPMENT:		ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.
UTILITIES :		
TRANSPORTATION DIVISION :		
POLLUTION CONTROL :		
HEALTH DEPARTMENT :		
FIRE DISTRICT :		OWNER/AGENT

RICHARD PLYMALE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

PROJECT LOCATION & GENERAL NOTES

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

REVISIONS
1. 2/87 WLR CONFORMED
2.
3.
4.
5.

LEI Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

T2

DESIGNED W.L.R. CHECKED W.L.R. DATE MARCH,1985 SCALE AS NOTED
DRAWN P.V.R. FILE NO 031-006-84 SHEET G-1 OF G-4

26-01 RECORD DRAWINGS 12/19/89

A.F. 31693A

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G-4	ABBREVIATIONS
	CIVIL
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C-2	EXISTING AERIAL/PROPOSED SITE PLAN
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C-4	DETAILED SITE PLAN
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S-59	NaOH TANK PAD-PLAN & SECTIONS
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M-1	EXISTING YARD PIPING
M-2	NEW YARD PIPING
M-3	NEW YARD PIPING
M-4	NEW YARD PIPING
M-5	NEW YARD PIPING
M-6	HEADWORKS - TOP PLAN
M-7	HEADWORKS - SECTIONAL PLAN
M-8	HEADWORKS SECTION
M-9	HEADWORKS - SECTION
M-10	HEADWORKS - DETAILS

NO.	DESCRIPTION
M-11	ANOXIC/AEROBIC TANK - PLAN
M-12	ANOXIC/AEROBIC TANKS - SECTION & DETAILS
M-13	ANOXIC/AEROBIC TANKS - EFFLUENT BOX & R. M. L. PUMPS
M-14	FINAL CLARIFIERS - PLAN & SECTION
M-15	FINAL CLARIFIERS - DETAILS
M-16	RAS/WAS PUMP STATION - PLAN
M-17	RAS/WAS PUMP STATION - PLAN
M-18	RAS/WAS PUMP STATION - PLAN & SECTIONS
M-19	FLASH MIXERS/FLOCCULATORS - PLAN
M-20	FLASH MIXERS/FLOCCULATORS - SECTIONS & DETAILS
M-21	AUTOMATIC BACKWASH FILTERS - PLAN
M-22	AUTOMATIC BACKWASH FILTERS - SECTIONS
M-23	AUTOMATIC BACKWASH FILTERS - SECTIONS
M-24	AUTOMATIC BACKWASH FILTERS - SECTIONS
M-25	AUTOMATIC BACKWASH FILTERS - SECTIONS
M-26	AUTOMATIC BACKWASH FILTERS - DETAILS
M-27	AUTOMATIC BACKWASH FILTERS - CARRIAGE
M-28	PLANT DRAIN PUMP STATION
M-29	PLANT DRAIN PUMP STATION
M-30	CHLORINE BUILDING - PLAN
M-31	CHLORINE BUILDING - SECTIONS
M-32	CHLORINE BUILDING - DETAILS
M-33	DEWATERING/CHEMICAL BUILDING - PLAN
M-34	DEWATERING/CHEMICAL BUILDING - SECTIONS
M-35	DEWATERING/CHEMICAL BUILDING - SECTIONS
M-36	DEWATERING/CHEMICAL BUILDING - SECTIONS
M-37	ELECTRICAL BUILDING - PLAN
M-38	ELECTRICAL BUILDING - SECTION & DETAILS
M-39	EXISTING PACKAGE PLANTS NO.1 & NO.2 DEMOLITION-PLAN
M-40	DAF THICKENERS - PLAN
M-41	DAF THICKENERS - SECTIONS
M-42	DAF THICKENERS - SECTIONS
M-43	DAF THICKENERS - PIPING SCHEMATIC & DETAIL
M-44	EFFLUENT PUMP STATION
M-45	EXISTING PACKAGE PLANTS NO.3 & NO.4 DEMOLITION-PLAN
M-46	EFFLUENT STORAGE TANKS
	DETAILS
D-1	STAIR & LADDER DETAILS
D-2	HANDRAIL & GRATING DETAILS
D-3	SLUICE, SLIDE & STOP GATE DETAILS
D-4	PIPE SUPPORT DETAILS
D-5	LINER DETAILS
D-6	YARD PIPING DETAILS
D-7	MANHOLE DETAILS
D-8	MISCELLANEOUS DETAILS
D-9	MISCELLANEOUS DETAILS
D-10	MISCELLANEOUS DETAILS
	PLUMBING
P-1	CONTROL BUILDING
P-2	MISCELLANEOUS STRUCTURES
P-3	SCHEDULE & RISERS
	HEATING, VENTILATING & AIR CONDITIONING
A/C-1	CONTROL BLDG.
A/C-2	ELECTRICAL BLDG.
A/C-3	DEWATERING BLDG.
A/C-4	MISCELLANEOUS STRUCTURES
A/C-5	SCHEDULES & DETAILS

NO.	DESCRIPTION
	ELECTRICAL
E-1	SITE PLAN
E-2	SINGLE LINE POWER DIAGRAMS
E-3	SWGR. ELEMENTARY
E-4	MCC SINGLE LINE DIAGRAMS
E-5	MCC SINGLE LINE DIAGRAMS
E-6	MCC SINGLE LINE DIAGRAMS
E-7	MCC SINGLE LINE DIAGRAMS
E-8	MCC FRONT VIEWS
E-9	ELEMENTARY CONTROL DIAGRAMS
E-10	ELEMENTARY CONTROL DIAGRAMS
E-11	CONTROL & INSTRUMENTATION CONDUIT RISER
E-12	CONTROL BLDG. - LIGHTING PLAN
E-13	CONTROL BLDG. - POWER PLAN
E-14	HEADWORKS LOWER PLAN
E-15	HEADWORKS UPPER PLAN
E-16	ANOXIC/AEROBIC TANKS
E-17	SECONDARY CLARIFIER PLANS
E-18	FLOCCULATOR & FLASH MIXERS
E-19	A. B. W. FILTERS
E-20	EFFLUENT PUMP STATION
E-21	CHLORINATION BLDG.
E-22	DEWATERING BLDG. - LIGHTING PLAN
E-23	DEWATERING BLDG. - POWER PLAN
E-24	ELECTRICAL BLDG. - LIGHTING PLAN
E-25	ELECTRICAL BLDG. - POWER PLAN
E-26	PACKAGE PLANT
E-27	MISCELLANEOUS STRUCTURES
E-28	PANEL SCHEDULES
E-29	SCHEDULES & DETAILS
E-30	DETAILS

RICHARD P. MOORE, CONSULTANT, No. 34083, STATE OF FLORIDA, REGISTERED ENGINEER

INDEX OF SHEETS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

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DESIGNED WLR CHECKED R.D.M. DATE MARCH 1985 SCALE NONE
DRAWN MJP FILE NO. 031-006-84 SHEET G-2 OF G-4

26-01

RECORD DRAWINGS 12/19/89

AF 31693A

SYMBOLS, STRUCTURES & FEATURES

EXISTING	DESCRIPTION	PROPOSED
	YARD PIPING	
PIPE SIZE, PROCESS FLUID, PIPE MATERIAL, PIPE JOINT TYPE; 36 R A S, DIP, MJ; FLOW DIRECTION	TYPICAL PIPE IDENTIFICATION (SEE ABBREVIATIONS SHEET FOR PROCESS FLUID, PIPE MATERIAL & PIPE JOINT ABBREVIATIONS)	PIPE SIZE, PROCESS FLUID, PIPE MATERIAL, PIPE JOINT TYPE; 36" R A S, DIP, MJ; FLOW DIRECTION
8 SAN. SEW., D.I.P., M.J. — MH	SANITARY SEWER AND MANHOLE	8 SAN. SEW., D.I.P., M.J. — MH
42 SAN. SEW., DIP, S.J. — MH	OVER 36" SIZE & TYPE	42 SAN. SEW., D.I.P., S.J. — MH
12 S.S., R.C.P., S.J. — MH	STORM SEWER / DRAIN AND MANHOLE	12 S.S., R.C.P., S.J. — MH
42 S.S., R.C.P., S.J. — MH; ◎ MH	OVER 36" SIZE & TYPE; MANHOLE, WATER TIGHT	42 S.S., R.C.P., S.J. — MH
6 F.M., PVC., M.J.	FORCE MAIN, SIZE & TYPE	6 F.M. P.V.C., M.J.
6 F.M. D.I.P. M.J	POTABLE WATER MAIN, SIZE & TYPE	6 P.M., D.I.P. M.J.
F	FIRE LINE	F
4 G., ST'L.	GAS LINE AND DRIP, SIZE & TYPE	4 G., ST'L.
12 14 KVA E	ELECTRIC CABLE/DUCT, SIZE & TYPE (BURIED)	12 14 KVA E
6, 4, 50 P. T	TELEPHONE CABLE / DUCT, SIZE & TYPE (BURIED)	6, 4, 50 P. T.
T.V.	TELEVISION CABLE (BURIED) / CABLE BOX	T.V.
S	SIGNAL LINE	S
F.H.	FIRE HYDRANT ASSEMBLY (INCLUDES VALVE)	F.H.
Y.H. Y.H. BOX	YARD HYDRANT ASSEMBLY (INCLUDES VALVE)	F.H. Y.H. Y.H. BOX
90° BEND, CROSS TEE, PLUG, WYE VALVE, REDUCER, BLOW OFF	PIPING, VALVES AND FITTINGS (GENERAL) (GENERAL CONFIGURATIONS REFER TO ALL SINGLE LINE DIAGRAMS)	90° BEND, CROSS TEE, PLUG, WYE VALVE, REDUCER (R.E.D.), BLOW OFF (B.O.)
A; 1" H.B. 1" H.B.	AIR RELEASE VALVE; HOSE BIBB CONNECTION W/ SIZE	A; 1" H.B. 1" H.B.
	GENERAL SITEWORK	
M.B.	MAILBOX	M.B.
V	VALVE VAULT	V
W.M.	WATER METER	W.M.
E	ELECTRIC MANHOLE / VAULT	E
T T G.T.E.	TELEPHONE MANHOLE / VAULT & CABLE BOX	T T G.T.E.
BORING T.B. II; NO. OF BORING B.M.	TEST BORING; BENCH MARK	BORING T.B. II; NO. OF BORING B.M.
R R	LIMITED ACCESS RIGHT OF WAY (L.A. R/W); RIGHT OF WAY (R/W); PROPERTY LINE (℄)	R R
I.P. I.R. C.M.	PROPERTY CORNERS: IRON PIPE, IRON ROD, CONCRETE MONUMENT	I.P. I.R. C.M.
6' CHAIN LINK	FENCE, SIZE & TYPE	6' CHAIN LINK
24' ± ASPH. PAV'T.	BUILDING / STRUCTURE; PAVEMENT, SIZE & TYPE	24' ± ASPH. PAV'T.
C.B. C.B.	CATCH BASIN	C.B. C.B.
GUY WIRE, P-#55, 12" PALM, 24" OAK	CULVERT OR BRIDGE; RAILROAD TRACKS; SIGNS; POLE, POWER POLE & COMBINATION POLE W/NO.; TREE, SIZE & TYPE	P-#55, 4" OAK
52 52	HEDGE; CONTOURS	52
92 x 5 92.5 x	SPOT ELEVATIONS; STORM WATER RUNOFF FLOW DIRECTION	92.5 x
	STREAM (SMALL) / DITCH; SHORE LINE	
C.O. C.O.	CLEAN OUT C.O.	C.O. C.O.

VALVE, PIPE & FITTING SYMBOLS

(EXISTING & NEW)

VALVE SYMBOLS

NOTE

1) PROPOSED PIPING & VALVES FOR NEW CONST. ARE SHOWN ON PLANS IN HEAVIER LINE WEIGHTS

- CORP. COCK
- GATE VALVE (GV)
- KNIFE GATE VALVE (KGV)
- PINCH VALVE
- PLUG VALVE (PV)
- BUTTERFLY VALVE (BV) (BUTTERFLY DAMPER ON DUCTS)
- BALL VALVE (BoV)
- PRESSURE CONTROL VALVE
- BACK PRESSURE VALVE
- PRESSURE REGULATING VALVE
- NEEDLE VALVE
- VALVE WITH HOSE END (GATE VALVE SHOWN)
- BALL CHECK VALVE
- DOUBLE DOOR CHECK VALVE
- CHECK VALVE (GENERAL) (CV)
- OR — PRESSURE SAFETY VALVE OR PRESSURE RELIEF VALVE
- GLOBE VALVE (Go V)
- 3 WAY VALVE (GENERAL)
- 4 WAY VALVE (GENERAL)
- ANGLE VALVE
- TELESCOPING VALVE
- DIAPHRAGM VALVE

VALVE ACTUATORS

- H P — CYLINDER ACTUATOR (H = HYDRAULIC, P = PNEUMATIC)
- DIAPHRAGM ACTUATOR
- M — ELECTRIC MOTOR ACTUATOR
- ⊗ OR T — HANDWHEEL ACTUATOR
- S — SOLENOID ACTUATOR

PIPING SYMBOLS

DOUBLE LINE

- SLIP-ON JOINT (S.J.)
- MECHANICAL JOINT (M.J.)
- RESTRAINED JOINT (R.J.)
- FLANGED JOINT (FLG.)
- WELDED JOINT (W) (STL., S.S., F.R.P., ETC.) OR SOLDER JOINT (S)
- THREADED JOINT (THD.)
- GROOVED PIPE END COUPLING - (G.C.) (ALSO SHOULDERED TYPE)
- BALL JOINT
- SOLVENT WELD (THERMOPLASTICS ONLY)

INTERMEDIATE LINE

- M.J. OR R.J.
- FLG.
- FLEXIBLE COUPLING
- PLAIN END PIPE COUPLING

SINGLE LINE

- SLIP JOINT
- JOINT (GENERAL)
- M.J. OR R.J.
- PULSATION DAMPENER
- RUPTURE DISC
- Y-STRAINER
- REDUCER OR REDUCING BUSHING
- DIRECTION OF FLOW
- OPEN EQUIPMENT DRAIN
- FLEXIBLE CONNECTION
- FLOW METER (VENTURI)
- FLOW METER (SONIC OR MAGNETIC)
- QUICK CONNECT COUPLING
- UNION (UN)

PROCESS SYMBOLS

LINE DIAGRAM

- MAIN PROCESS
- MINOR PIPING
- SONIC SIGNAL
- ES — ELECTRIC SIGNAL
- PNEUMATIC SIGNAL
- HYDRAULIC SIGNAL
- AIR — AIR SUPPLY
- ES — ELECTRIC SUPPLY

PROCESS INSTRUMENTATION SYMBOL

- SLUICE, SLIDE OR STOP GATE
- MIXER
- SCREW
- CENTRIFUGAL PUMP
- BLOWER OR COMPRESSOR
- PNEUMATIC EJECTOR
- M — MOTOR
- M — VARIABLE SPEED MOTOR
- BELT CONVEYOR
- POSITIVE DISPLACEMENT PUMP
- M — DOUBLE DIAPHRAGM PUMP

TARGET SYSTEM

- SECTION TARGET: 3 / M-I — SECTION DESIGNATION; SHEET ON WHICH SECTION IS CUT
- DETAIL TARGET: 3 / D-8 — DETAIL DESIGNATION; SHEET ON WHICH DETAIL IS DRAWN
- SECTION TITLE TARGET: SECTION 3 / M-II — SECTION DESIGNATION; SHEET ON WHICH SECTION IS DRAWN (A "VAR." HERE INDICATES THAT SECTION IS CUT ON MORE THAN ONE SHEET)
- DETAIL TITLE TARGET: DETAIL 3 / M-II — DETAIL DESIGNATION; SHEET ON WHICH DETAIL IS DRAWN (A "VAR." HERE INDICATES THAT DETAIL IS CALLED FROM MORE THAN ONE SHEET.)

RICHARD D. TAYLOR, REGISTERED TO PRACTICE, No. 34083, STATE OF FLORIDA, REGISTERED ENGINEER

LEGENDS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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26-01

RECORD DRAWINGS 12/19/89

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PROCESS FLUID NOMENCLATURE

AL.	ALUM SOLUTION
AL.VT.	ALUM VENT
AS.	ACTIVATED SILICA
ASPH.	ASPHALT
ASV.	ACTIVATED SILICA VENT
ARL.	AIR RELEASE LINE
AREW	AERATED RECYCLED WATER
BA	BLOWER AIR
CA	COMPRESSED AIR
CAP	CORE AIR PURGE
CCW	CLOSED LOOP COOLING WATER
CCWF	CLOSED LOOP COOLING WATER FILL
CCWR	CLOSED LOOP COOLING WATER RETURN
CHW	CHEMICALLY CONDITIONED WATER (CLARIFIER INF.)
CL_2G	CHLORINE (GAS)
CL_2L	CHLORINE (LIQUID)
CL_2S	CHLORINE SOLUTION
CL_2V	CHLORINE VENT
CLW	CLARIFIED WATER (CLARIFIER EFF.)
CR	CORE RETURN
CS	CONDITIONED SLUDGE
CW	COLD WATER (POTABLE)
CWD	COLD WATER DRAIN
CWP	CORE WASH PURGE
D	DRAIN
DA	COMPRESSED DRIED AIR
DAL	DISSOLVED ALUM
DAP	DIAPHRAGM AIR PURGE
DAV	DIAPHRAGM AIR VENT
DR.	DRIVE
DSS	DILUTED SODIUM SILICATE
EB	EMERGENCY BY-PASS
EA	ENGINE STARTING COMPRESSED AIR
EV	EVAPORATOR VENT
F.O.R.	FUEL OIL RETURN
F	FILTRATE
FAP	FILTRATE AIR PURGE
FDV	FLUORIDE DUST COLLECTOR VENT
FNW	FINISH WATER
FO	FUEL OIL
FOV	FUEL OIL VENT
FS	FLOATED SLUDGE
FV	FLUORIDE VENT
FW	FILTERED WATER
FLW	FLOCCULATED WATER
G	GRIT LINE
HPW	HOT PLANT REUSE WATER
HW	HOT WATER (POTABLE)
L	DRY LIME
LS	LIME SLURRY
LV	LIME VENT
ML	MIXED LIQUOR
NW	RAW WATER (NON-POTABLE)
O.V.A.	ODOR VENT AIR
OA	OZONATED AIR
OG	OFF-GAS
OGE	OFF-GAS EXHAUST
ORW	OZONATED RAW WATER (RAPID MIX INF.)
OVF	OVER FLOW
OW	OZONATED WATER
P.W.	POTABLE WATER
P.	POLYMER
PA	PURGE AIR (LIME SILOS)
PWD	PLANT WATER DRAIN
PWW	PLATE WASH WATER
Q.D.	QUICK DRAIN
R.E.W.	RECYCLED WATER
R.A.S.	RETURN ACTIVATED SLUDGE
RBA	REGENERATION BLOWER AIR
RBE	REGENERATION BLOWER EXHAUST
RW	PLANT WATER REUSE WATER
R.S.	RAW SEWAGE
R.M.L.	RECIRCULATED MIXED LIQUOR
SC	SCUM LINE
SL.	SAMPLE LINE
SPW	SPRAY WATER
SSF	SODIUM SILICATE TANK FILL TANK
SSI	SODIUM SILICATE
SV	SODIUM SILICATE VENT
SW	SQUEEZE WATER
SWR	SQUEEZE WATER RETURN
TD	TANK DRAIN
TS	THICKENED SLUDGE
T.W.A.S.	THICKENED WASTE ACTIVATED SLUDGE
VA	VENT AIR
WBW	WASTE BACKWASH WATER
WS	WASTE SLUDGE
WW	WASTE WATER
W.A.S.	WASTE ACTIVATED SLUDGE

PROCESS SYSTEMS

AL	ALUM SYSTEM
AS	ACTIVATED SILICA SYSTEM
BA	BLOWER AIR SYSTEM
CC	CLOSED LOOP COOLING SYSTEM
CH	CHLORINE SYSTEM
D.A.F.	DISSOLVED AIR FLOTATION
DA	COMPRESSED DRY AIR SYSTEM
DR	DESICCANT REGENERATION SYSTEM
EG	EMERGENCY GENERATION SYSTEM
FP	FILTER PRESS SYSTEM
FS	FLUORIDE SYSTEM
LS	LIME SYSTEM
NW	RAW WATER SYSTEM (NON POTABLE)
OA	OZONATED AIR SYSTEM
OG	OFF-GAS SYSTEM
OM	OZONE MONITORING SYSTEM
OW	OZONATED WATER SYSTEM
PR	PRETREATED WATER SYSTEM
RW	PLANT WATER SYSTEM (REUSE)
SL	SLUDGE-SYSTEM
SO	SODIUM SILICATE SYSTEM

GENERAL

A.B.	ANCHOR BOLTS
ADJ.	ADJUSTABLE
ADPT.	ADAPTER
A/C	AIR CONDITIONING UNIT
ALUM.	ALUMINUM
∠	ANGLE
APPROX.	APPROXIMATELY
AR.	ACID RESISTANT
ASSY.	ASSEMBLY

ABBREVIATIONS

&	AND
@	AT
AUTO.	AUTOMATIC
AUX.	AUXILIARY
BTWN.	BETWEEN
BFP.	BACKFLOW PREVENTER
BLDG.	BUILDING
BLK.	BLOCK
BM.	BENCH MARK
BOT.	BOTTOM
COMM.	COMMON
CHK'R.	CHECKER
C'SNK.	COUNTERSINK
CONN.	CONNECTION
CAP.	CAPACITY
CAT.	CATALOG
C.C.	CENTER TO CENTER
C.F.M.	CUBIC FEET PER MINUTE
C.F.S.	CUBIC FEET PER SECOND
℄	CENTERLINE
CL_2	CHLORINE
CLG.	CEILING
CLR.	CLEAR
C.O.	CLEAN OUT
COL.	COLUMN
CONC.	CONCRETE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CPLG.	COUPLING
Cu.	COPPER
CU. FT., C.F.	CUBIC FEET
CU. IN.	CUBIC INCH
C.W.	COLD WATER
CORP.	CORPORATION
[	CHANNEL (STRUCTURAL)
CHAN.	CHANNEL
DIA., Ø	DIAMETER
DIAG.	DIAGONAL
DIFF.	DIFFUSER
DIM.	DIMENSION
DISCH.	DISCHARGE
DN.	DOWN
DWG.	DRAWING
DBL.	DOUBLE
D.H.W.	DESIGN HIGH WATER
EA.	EACH
ECC.	ECCENTRIC
E.D.	EQUIPMENT DRAIN (FLUSH TYPE)
E.F.	EACH FACE
EFF.	EFFLUENT
EL.	ELEVATION
ELEC.	ELECTRIC
E.O.P.	EDGE OF PAVEMENT
EQ.	EQUAL
EQUIP.	EQUIPMENT
E.S.	EMERGENCY SHOWER
ET.	ELAPSED TIME
E.W.	EACH WAY
E.W.U.	EYE WASH UNIT
EX.	EXHAUSTER
EXIST.	EXISTING
EXP.	EXPANSION
F.D.	FLOOR DRAIN
FIG.	FIGURE
FIN.	FINISHED
FIN.GR.	FINISHED GRADE
FLEX.	FLEXIBLE
FL.	FLOOR
F.M.	FORCE MAIN
FNDN.	FOUNDATION
FT.	FEET
FTG.	FOOTING
F.B.	FLAT BAR
FUT.	FUTURE
GA.	GAUGE
GALV.	GALVANIZED
G.P.D.	GALLONS PER DAY
G.P.H.	GALLONS PER HOUR
G.P.M.	GALLONS PER MINUTE
GSKT.	GASKET
GYP.	GYPSUM
GR.	GRADE
HT.	HEIGHT
H.B.	HOSE BIBB
H.P.	HIGH POINT
HEX.	HEXAGON
HGR.	HANGER
H.O.A.	HAND-OFF-AUTOMATIC
HORIZ.	HORIZONTAL
H.S.	HIGH SERVICE
HW.	HOT WATER (POTABLE)
H.W.A.	HIGH WATER ALARM
H.W.L.	HIGH WATER LEVEL
H.F.A.C.	HARNESSED FLANGE ADAPTER COUPLING
IND.	INDICATOR
I.D.	INSIDE DIAMETER
IN.	INCH
INFL.	INFLUENT
INS.	INSULATION
INST.	INSTRUMENTATION
INV.	INVERT
JAN.	JANITOR CLOSET
JCT.	JUNCTION
JT..	JOINT
K.U.	KITCHEN UNIT
KWY.	KEYWAY
L.	LENGTH
LAB.	LABORATORY
LAM.	LAMINATED
LAV.	LAVATORY
LB.,#	POUND
L.F.	LINEAL FEET
LG.	LONG
L.P.	LOW POINT
LT.	LIGHT
L.W.A.	LOW WATER ALARM
L.W.L.	LOW WATER LEVEL
M	METER
MAT'L.	MATERIAL
MAX.	MAXIMUM
M.C.C.	MOTOR CONTROL CENTER
MECH.	MECHANICAL
M.F.D.	MANUFACTURED
MFG.	MANUFACTURING
MFR.	MANUFACTURER
M.G.D.	MILLION GALLONS PER DAY
MG/L	MILLIGRAMS PER LITER
MH.	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MON.	MONUMENT
M.P.H.	MILES PER HOUR
MTD.	MOUNTED
M.W.L.	MEAN WATER LEVEL
MFR'S.	MANUFACTURERS
MTG.	MOUNTING
NEC.	NATIONAL ELECTRIC CODE
N.I.C.	NOT IN CONTRACT
NO., #	NUMBER
NOM.	NOMINAL
N.O.S.	NATIONAL OCEANOGRAPHIC SERVICE
N.T.S.	NOT TO SCALE
N.C.	NORMALLY CLOSED
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O/E	OR EQUAL
OPNG.	OPENING
OPP.	OPPOSITE
OPT.	OPTION
O.H.	OVERHEAD
PAV'T.	PAVEMENT
P.C.	POINT OF CURVE
PERF.	PERFORATED
P.I.	POINT OF INTERSECTION
PL., P.	PLATE
P.P.M.	PARTS PER MILLION
PRES.	PRESSURE
P.S.	PUMP STATION
P.S.F.	POUNDS PER SQUARE FOOT
P.T.	POINT OF TANGENCY
RECIRC.	RECIRCULATIONS
RECOMM.	RECOMMENDATIONS
R.	RADIUS
R.A.S.	RETURN ACTIVATED SLUDGE
R.D.	ROOF DRAIN
REINF.	REINFORCING
REQ'D.	REQUIRED
RM.	ROOM
RD.	RD.
R.P.M.	REVOLUTIONS PER MINUTE
R.R.	RAILROAD
R/W	RIGHT OF WAY
REV.	REVERSABLE
SAN.	SANITARY
S/W	SIDEWALK
SEC.	SECTION
SHT.	SHEET
SL.	SLUDGE
SLV.	SLEEVE
SPECS.	SPECIFICATIONS
SQ.	SQUARE
SQ. FT.	SQUARE FEET
SQ. IN.	SQUARE INCHES
S.S.	STAINLESS STEEL
STA.	STATION
STD.	STANDARD
STL.	STEEL
STRUCT.	STRUCTURAL
SYMM.	SYMMETRICAL
SWD.	SIDE WATER DEPTH
SCH.	SCHEDULE
TAN.	TANGENT
T.B.	TOP OF BERM / BANK
T&B	TOP AND BOTTOM
TECH.	TECHNICAL
TEL.	TELEPHONE
TEMP.	TEMPORARY
T & G	TONGUE & GROOVE
THK.	THICK
TM.	TELEMETER
TRANS.	TRANSFER / TRANSFORMER
T.V.	TELEVISON
T.W.A.S.	THICKENED WASTE ACTIVATED SLUDGE
TYP.	TYPICAL
T./I.	TOTALIZER / INDICATOR
VAC.	VACUUM
VAR.	VARIOUS / VARIABLE
V.B.	VACUUM BREAKER
VERT.	VERTICAL
VOL.	VOLUME
V.S.	VARIABLE SPEED
V.S.D.	VARIABLE SPEED DRIVE
V.T.	VENT
V.T.R.	VENT THRU ROOF
W.	WIDTH
w/	WITH
W.A.S.	WASTE ACTIVATED SLUDGE
W.C.	WATER CLOSET
W.H.	WATER HEATER
W.L., W/L	WATER LEVEL
W.M.	WATER MAIN (POTABLE)
w/o	WITHOUT
WPF.	WEATHERPROOF
WS	WATERSTOP
W.T.P.	WATER TREATMENT PLANT
W.W.M.	WELDED WIRE MESH
W.W.T.P.	WASTEWATER TREATMENT PLANT
YD.	YARD
YR.	YEAR

PIPE MATERIALS

A.C.P.	ABESTOS CEMENT PIPE
B.S.P.	BLACK STEEL PIPE
C.S.	CARBON STEEL
C.I.	CAST IRON
C.I.P.	CAST IRON PIPE
C.I.S.P.	CAST IRON SOIL PIPE
C.M.P.	CORRUGATED METAL PIPE
C.P.P.	CONCRETE PRESSURE PIPE
Cu. P.	COPPER PIPE
D.I.	DUCTILE IRON
D.I.P.	DUCTILE IRON PIPE
F.R.P.	FIBERGLASS REINFORCED PIPE
G.S.P.	GALVANIZED STEEL PIPE
M.R.P.P.	METAL REINFORCED PLASTIC PIPE
PE.P.	POLYETHYLENE PIPE
P.P.	POLYPROPYLENE
P.V.C.	POLYVINYL CHLORIDE
U.P.V.C.	UN-PLASTICIZED POLYVINYL CHLORIDE
R.C.P.	REINFORCED CONCRETE PIPE
ST'L.	STEEL PIPE
S.S.	STAINLESS STEEL PIPE
V.C.P.	VITRIFIED CLAY PIPE
C.P.V.C.	CHORINATED POLYVINYL CHORIDE
P.V.D.F.	POLYVINYLIDENE FLORIDE

VALVES, FITTINGS, & JOINTS

A.C.C.V.	AIR CUSHION CHECK VALVE
A.R.V.	AIR RELEASE VALVE
Ba.V.	BALL VALVE
Ba.C.V.	BALL CHECK VALVE
B.F.	BLIND FLANGE
B.O.	BURIED GEAR OPERATOR
B.V.	BUTTERFLY VALVE
C	COMPRESSION JOINT
C.V.	CHECK VALVE
E.O.	ELEVATED GEAR OPERATOR
E.V.A.	ELEVATED VALVE ACTUATOR
EX.J.	EXPANSION JOINT
F.B.	FLOOR BOX (BUSHING TYPE)
F.H.	FIRE HYDRANT
FLG.	FLANGED
F.A.C.	FLANGED ADAPTOR COUPLING
F.S.	FLOOR STAND
Go.V.	GLOBE VALVE
G.V.	GATE VALVE
H.V.A.	HYDRAULIC VALVE ACTUATOR
L.	LEAD JOINT
M.J.	MECHANICAL JOINT
P.Ba.V.	PLASTIC BALL VALVE
P.C.V.	PRESSURE CONTROL VALVE
P.E.	PLAIN END
P.O.	PUSH ON JOINT
P.R.V.	PRESSURE REDUCING VALVE
P.V.	PLUG VALVE
RED.	REDUCER
R.J.	RESTRAINED JOINT
S.	SOLDERED JOINT
S.C.V.	SILENT CHECK VALVE
S.V.	SOLENOID VALVE
THD.	THREADED
U.	UNION
V.B.	VALVE BOX
G.C.	GROOVED PIPE END COUPLING
S.H.C.	SHOULDERED PIPE END COUPLING
W.	WELDED JOINT
W.P.	WELDED PIPE
W.S.	WALL SLEEVE
S.J. (PO.,B&S)	SLIP-ON JOINT (PUSH ON, BELL & SPIGOT)
SW.	SOLVENT WELD
K.G.V.	KNIFE GATE VALVE
P.Ba.C.V.	PLASTIC BALL CHECK VALVE

MISCELLANEOUS

F.D.O.T.	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
N.P.T.	NATIONAL PIPE THREAD
W. & T.	WALLACE & TIERNAN
A.B.W.	AUTOMATIC BACKWASH

RICHARD D. [illegible] REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

ABBREVIATIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL

WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

REVISIONS
1. 2/87 WLR CONFORMED
2.
3.
4.
5.

Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

T5

DESIGNED W.L.R. CHECKED W.L.R. DATE MARCH, 1985 SCALE NONE
DRAWN S.A.F. FILE NO. 031-006-84 SHEET G-4 OF G-4

26-01 RECORD DRAWINGS 12/19/89

A.F. 31693A

STRUCTURE USES & SIZES

STRUCTURE	USE	SIZE (APPROX.)
HEADWORKS	PROCESS	60' x 40' x 30'
ANOXIC/AEROBIC TANKS	PROCESS	240' x 340' x 15'
FINAL CLARIFIERS	PROCESS	250' x 110' x 15'
FLASH MIXERS/FLOCCULATORS	PROCESS	51' x 21' x 10'
FILTERS	PROCESS	50' x 115' x 8'
DEWATERING & CHEMICAL FEED BUILDING	DEWATERING & CHEMICAL HANDLING	50' x 120' x 12'
CHLORINE BUILDING	CHLORINE HANDLING	60' x 30' x 12'
RECYCLE PUMPING FACILITIES	PROCESS	40' x 60' x 12'
ELECTRICAL BUILDING	ELECTRICAL CONTROL	40' x 75' x 12'
CONTROL BUILDING	PLANT CONTROL & ADMINISTRATION	50' x 70' x 12'
T.S. PUMP STATION	PUMPING	25' x 20' x 10'

NOTES:

1. ALL BUILDINGS DO NOT EXCEED 35 FEET IN HEIGHT.
2. ALL LANDSCAPING 100% AUTOMATIC SPRINKLING.
3. SITE ZONING: Ag.

PROPERTY OF MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT (ZONING: Ag.)

SHEET C-6 OF C-14 | SHEET C-5 OF C-14 | SHEET C-4 OF C-14

N 130153.142 E 1187405.548

BENCHMARK R.R. SPIKE IN 24" OAK TREE EL. = 33.00

CONSTRUCT 6' HIGH x 14' WIDE DOUBLE GATE

CONSTRUCT 6' HIGH CHAINLINK FENCE

N 00°47'25" E 1587.21'

W.W.T.P. RESERVATION LINE

N 145923.769 E 1189539.367

DEWATERING AND CHEMICAL FEED BUILDING

BLOWER BUILDING

R.W. PUMP STATION

EXISTING FILTERS + T.S. PUMPS

CHLORINATION BUILDING

CONSTRUCT 6' HIGH X 14' WIDE DOUBLE GATE

AUTOMATIC BACKWASH FILTERS

FLASH MIXERS / FLOCCULATORS

PLANT DRAIN P.S.

FINAL CLARIFIER #2

EXISTING 1 M.G.D. PLANT

EXISTING 1 M.G.D. PLANT

EXISTING 1 M.G.D. PLANT

EXISTING 1 M.G.D. PLANT

RECYCLE PUMPING FACILITIES

T.S. PUMPS

CHLORINE CONTACT CHAMBERS

ELECTRICAL BUILDING

CONTROL BUILDING

(FUTURE)

R.A.S. / W.A.S. PUMP STATION

FINAL CLARIFIER #1

SECOND ANOXIC BASINS (FUTURE)

ANOXIC AEROBIC TANK #1

ANOXIC AEROBIC TANK #2

PROPOSED STORMWATER RETENTION POND

(SEE SHEET C-7 OF C-14 FOR DETAILS)

PROPERTY OF BLOSSOM GROVE (ZONING: Ag.)

N. PROPERTY LINE

N 29° 36' 02" W 857.86'

N 123593.986 E 1229779.70

PROPERTY OF MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT (ZONING: Ag.)

CONSTRUCT 6' HIGH CHAINLINK FENCE

W.W.T.P. RESERVATION LINE 800.00'

N 89° 12' 35" W

BOTTOM OF EFFLUENT EVAPORATION/PERCOLATION PONDS (TO BE CONSTRUCTED BY OTHERS)

(SEE SHEET C-7 OF C-14 FOR DETAILS)

PONDS ARE TO BE UTILIZED FOR EFFLUENT STORAGE UPON COMPLETION OF SPRAY IRRIGATION DISPOSAL SYSTEM

ODOR CONTROL FACILITIES

FERMENTATION BASIN (FUTURE)

HEADWORKS

CONSTRUCT 6' HIGH X 14' WIDE DOUBLE GATE

CONSTRUCT FENCE AT ERIE RD. ENTRANCE WITH 6' HIGH x 28' WIDE DOUBLE GATE

832.44'

512.14'

ACCESS ROAD

1344.58'

EAST PROPERTY LINE

S 00° 47' 25" W

WADE CANAL

CONSTRUCT 6' HIGH x 25' WIDE DOUBLE GATE

2325.00'

BENCHMARK TOP OF CONCRETE MONUMENT EL. = 27.41

EAST LINE OF W1/2 OF SECTION 26

WADE CANAL

N.E. CORNER OF N.W.1/4 OF SECTION 26, TWP. 33 S., RGE. 18 E.

IRON ROD

N 145732.433 E 1198155.005

NORTH LINE OF SECTION 16

S 89°06'25" E 1239.83'

N 122483.544 E 1309772.09

SHEET C-11 OF C-14 | SHEET C-12 OF C-14 | SHEET C-3 OF C-14

FOR CONTINUATION OF THE ACCESS ROAD PLANS SEE SHEETS C-8, C-9 AND C-10.

PROPERTY OF BLOSSOM GROVE (ZONING: Ag.)

DAVID WILKINSON GRIFFIN — CERTIFICATE NO. 29067 — STATE OF FLORIDA — REGISTERED ENGINEER — 11-7-89

FINAL SITE PLAN

APPROVED _____ DATE _____ FILE NUMBER _____

PLANNING & DEVELOPMENT: _____

UTILITIES: _____

TRANSPORTATION DIVISION: _____

POLLUTION CONTROL: _____

HEALTH DEPARTMENT: _____

FIRE DISTRICT: _____

ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.

OWNER/AGENT

LEGEND:

- EXISTING FACILITIES
- PROPOSED STRUCTURES
- PROPOSED PAVEMENT
- PROPOSED STORMWATER RETENTION POND
- FUTURE STRUCTURES

PROPOSED SITE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

REVISIONS
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Larson Engineering, Inc. — Consulting Engineers — 6404 Manatee Ave.W., Suite N, Bradenton, Florida 33529 (813) 794-5450

DESIGNED L.W.G. CHECKED _____ DATE 3/15/85 SCALE 1" = 100'

DRAWN D.K.F./M.J.K. FILE NO. 031-006-84 SHEET C-1 OF C-14

26-01

RECORD DRAWINGS 12/19/89

AF 316918

FINAL SITE PLAN	
APPROVED _____ DATE	FILE NUMBER _____
PLANNING & DEVELOPMENT:	ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.
UTILITIES:	
TRANSPORTATION DIVISION:	
POLLUTION CONTROL:	
HEALTH DEPARTMENT:	
FIRE DISTRICT:	OWNER/AGENT

N

LANDS OF
MANATEE COUNTY PUBLIC UTILITIES DEPT.

N 00°47'25" E 1587.21'

N 25°36'02" W 857.84'

N 65°12'35" E 800.00'

EVAPORATION / PERCOLATION POND

ACCESS ROAD

S 00°47'25" W 2325.00'

PROPERTY OF BLOSSOM GROVE

S 89°06'25" E 1339.33'

EXISTING 1 M.G.D. PLANT

EXISTING 1 M.G.D. PLANT

EXISTING 1 M.G.D. PLANT

EXISTING 1 M.G.D. PLANT

T.S. PUMPS

PUMPS

RECYCLE PUMPING FACILITIES

EXIST. FILTERS

BLOWER BLDG.

EXIST. CHLORINE CONTACT CHAMBER

(FUTURE)

DEWATERING CHEMICAL BUILDING

CHLORINATION BLDG.

AUTOMATIC BACKWASH FILTERS

(FUTURE)

FLASH MIXERS/ FLOCCULATORS

PLANT DRAIN P.S.

ELECTRICAL BUILDING

CONTROL BLDG.

FINAL CLARIFIER #2

(FUTURE)

R.A.S./W.A.S. PUMP STATION

FINAL CLARIFIER #1

(FUTURE)

SECOND ANOXIC BASINS (FUTURE)

ANOXIC/ AEROBIC TANK #1

ANOXIC/ AEROBIC TANK #2

(FUTURE)

ODOR CONTROL FACILITIES

HEADWORKS

PROPOSED STORMWATER RETENTION POND

FRED WILKINSON GRIFFIS, JR. CERTIFICATE NO. 9952 STATE OF FLORIDA REGISTERED ENGINEER

PHOTO DATE 10-2-84

EXISTING AERIAL PROPOSED SITE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

REVISIONS
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Larson Engineering, Inc.
Consulting Engineers
4900 Manatee Ave. W, Suite 201
Bradenton, Florida 33529
(813) 748-2426

DESIGNED I.W.G. CHECKED _____ DATE 3/15/85 SCALE 1" = 100'
DRAWN M.M.M. FILE NO. 031-006-84 SHEET C-5 OF C-14

HAMRICK

46-01

RECORD DRAWINGS 12/19/89 SHEET 3 OF 15

A.F. 31693A

NOTES:

1. ALL SIDEWALKS WITHIN THIS PROJECT WILL BE 5' WIDE

2. SOD STRIP 2' WIDE TO BE PLANTED ALONG PERIMETER OF ALL STRUCTURES AND ALL EDGES OF PAVEMENT AND WALKS; PLUS OTHER AREAS AS NOTED
ALL OTHER AREAS TO BE SEEDED AND MULCHED

6' HIGH CHAINLINK FENCE

FOR CONTINUATION OF SWALE TO STORMWATER RETENTION POND SEE SHEET C-7 OF C-14

N

CONSTRUCT 6' HIGH 1 4' WIDE DOUBLE GATE

CONCRETE PAD FOR STAIRS

FINAL SITE PLAN

APPROVED _____ DATE _____ FILE NUMBER _____

PLANNING & DEVELOPMENT: _____

UTILITIES: _____

TRANSPORTATION DIVISION: _____

POLLUTION CONTROL: _____

HEALTH DEPARTMENT: _____

FIRE DISTRICT: _____

ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.

OWNER/AGENT

(FUTURE) SECOND ANOXIC BASINS

TANK

ANOXIC AEROBIC TANK #2

ANOXIC AEROBIC TANK #1

R.M.L. PUMPS

CONSTRUCT CONCRETE CHANNEL
TOP EL.= 29.30
INV.EL.= 28.30

HEADWORKS

ODOR CONTROL FACILITIES
TOP OF SLAB EL. = 30.58

CONCRETE PAD FOR STAIRS

CONCRETE PAD FOR STAIRS

EAST PROPERTY LINE

6' HIGH CHAINLINK FENCE

CANAL WIDE

PRESTRESSED CONCRETE BRIDGE (BY OTHERS)

CONC. MON.

CONTRACT SEPARATION LINE

EXISTING 16" P.V.C. FORCE MAIN

CONSTRUCT 6" P.V.C. WATER MAIN

CONSTRUCT 20" D.I. FORCE MAIN FOR CONTINUATION SEE SHEET M-2

EXIST PP

SWALE

12' SHOULDER

REGRADE AND SOD SIDE SLOPE OF EVAPORATION/PERCOLATION POND TO LINES AND GRADES SHOWN

4:1 SIDE SLOPE

EVAPORATION/PERCOLATION POND

PINE NEEDLE MULCH
65 Ld @ 2' oc.
20 Lm @ 7' oc.

20 Pe @ 10' oc.
13 Lm @ 7' oc.
45 Ld @ 2' oc.
PINE NEEDLE MULCH

16 Pe @ 10' oc.

EXIST 16" PLUG VALVE

EXIST. 24" D.I. F.M.

FOR CONTINUATION OF POND SEE SHEET C-7 OF C-14

N 13754.03
E 12514.63

N 13765.93
E 12512.06

N 13726.13
E 12775.81

REGISTERED ENGINEER

DETAILED SITE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners & management consultants CDM

REVISIONS
1 2-12-86 M.W.M.
2 2/87 WLR CONFORMED
3
4
5

Larson Engineering, Inc. TB
Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED L.W.G. CHECKED _____ DATE 3-15-85 SCALE 1" = 20'
DRAWN D.K.F. FILE NO. 031-006-84 SHEET C-3 OF C-14

26-01

RECORD DRAWINGS 12/19/89

SHEET 4 OF 15

140'

FOR CONTINUATION OF OUTFALL
TO STORMWATER RETENTION POND
SEE SHEET C-7 OF C-14

6' HIGH CHAINLINK FENCE

CONSTRUCT
6' HIGH
14' WIDE
DOUBLE GATE

APPROVED FINAL SITE PLAN

DATE _____ FILE NUMBER _____

PLANNING & DEVELOPMENT: _____

UTILITIES: _____

TRANSPORTATION DIVISION: _____

POLLUTION CONTROL: _____

HEALTH DEPARTMENT: _____

FIRE DISTRICT: _____

ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.

OWNER/AGENT

FOR CONTINUATION OF OUTFALL
TO STORMWATER RETENTION POND
SEE SHEET C-7 OF C-14

TRANSITION SWALE TO CONNECT
TO EXISTING FIELD DITCH
AND REGRADE SLOPES TO 4:1

N

(FUTURE)
CLARIFIER

(FUTURE)
CLARIFIER

(FUTURE)
SECOND
ANOXIC
BASINS

FLASH MIXERS /
FLOCULATORS

N 13791.0958
E 12361.8085

N 13791.7587
E 12107.4181

CONSTRUCT CONCRETE
CHANNEL
TOP EL.= 27.20
INV.EL.= 26.20

CONCRETE SIDEWALK

N 13765.8157
E 12360.8446

25.0

29.0

16.9

29.56

28.92

29.31

28.9

28.9

145'

R.A.S. /
W.A.S.
PUMP
STATION
FIN.FL.
EL.=29.58

28.9

28.08

28.60

1.6'

28.44

25' R

28.0

28.0

N 13603.1831
E 12314.4122

N 13603.3852
E 12328.0103

AUTOMATIC
BACKWASH
FILTERS

N 13654.0395
E 12385.0127

(FUTURE)
AUTOMATIC
BACKWASH
FILTERS

26.5

FINAL
CLARIFIER #2

N 13686.8256
E 12245.4801

TANK

CONSTRUCT CONCRETE CHANNEL
TOP EL. = 28.50
INV. EL. = 27.50

FINAL
CLARIFIER #1

N 13686.8210
E 12391.8063

TANK

PLANT
DRAIN
P.S.

EXIST P.P

MATCH
WALKWAY TO PAVEMENT

N 13678.4335
E 11912.4464

1.8'

27.50

35' R

CHLORI-
NATION
BUILDING

F.F. EL. = 29.00'

N 13684.4398
E 11984.4225

30'

N 13682.1127
E 11963.3390

4'

CONSTRUCT 6' HIGH x 14'
WIDE DOUBLE GATE

28.17

28.17

N 13684.4402
E 11911.3809

28.00

28.17

27.93

28.25

28.01

28.30

28.06

15' R

75' R

N 13659.8402
E 12021.2649

122' - 8"
OUT TO OUT

27.7

35' R

27.60

15' R

27.53

27.4

N 13656.1481
E 11932.2396

45'

F.F.=28.17

28.42

1.2'

N 13660.4662
E 12055.8869

35'

DEWATERING & CHEMICAL FEED BUILDING

EXIST.PP

28.47
28.71

28.50

28.47

28.50

28.57

HANDICAP

28.66

28.66

29.00

29.00

19 Hk @ 2' O.C.
9 Pt @ 5' O.C.
3 Pe

5 Lm @ 5' O.C.
10 Ld @ 2' O.C.

17 Lm @ 4' O.C.
3 P.E.
15 Ld @ 2' O.C.

EXISTING 16" P.V.C. FORCE MAIN
EXIST.PP

28.35

29.12

6'

12'

10'

TYP.

3'

TYP.

29.02

29.00

29.17

32 Ld @ 3' O.C.
69 Sl @ 18" O.C.

29.19

29.27

29.22

37 Ld @ 3' O.C.

4 Pt

57 Sl @ 18" O.C.

29.83
CONTROL BLDG.

11 Ld @ 3' O.C.
27 Sl @ 18" O.C.

28.5

15'±

TO TOP OF BERM ELEVATION ±32
WITH SWALE BETWEEN BERM AND ROAD.
SEE SHT. C-3

(FUTURE)
CHLORINE CONTACT
CHAMBER

METER
PAD

MATCH LINE (SEE SHEET C-5 OF C-14)

1. ALL SIDEWALKS WITHIN THIS PROJECT WILL BE 5' WIDE

2. SOD STRIP 2' WIDE TO BE PLANTED ALONG PERIMETER OF ALL STRUCTURES AND ALL EDGES OF PAVEMENT AND WALKS; PLUS OTHER AREAS AS NOTED
ALL OTHER AREAS TO BE SEEDED AND MULCHED

DONALD WILKINSON GRIFFIN
CERTIFICATE NO. 29853
STATE OF FLORIDA
REGISTERED ENGINEER

DETAILED SITE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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Bradenton, Florida 33529
(813) 794-5450

T9

DESIGNED L.W.G. CHECKED DG DATE 3/15/95 SCALE 1" = 20'
DRAWN D.K.F. / K.A.T. FILE NO. 031-006-84 SHEET C-4 OF C-14

26-01

RECORD DRAWINGS 12/19/89

SHEET 5 OF 15

(A)F 31693A

MATCH LINE (SEE SHEET C-4 OF C-14)

N

F.F.EL= 28.17
DEWATERING AND CHEMICAL FEED BUILDING

(FUTURE)
CHLORINE CONTACT CHAMBERS
CONSTRUCT CONCRETE CHANNEL
TOP EL= 28.20
INV.EL= 27.20

METER PAD
6 P1

F.F.EL= 30.00
CONTROL BUILDING
28 Ld @ 3' O.C.
23 Si @ 18" O.C.
30 Si @ 18" O.C.
6 Bv
31 Ld @ 3' O.C.
46 Si @ 18" O.C.
3 P1
8 Lm @ 4' o.c.

CONCRETE SIDEWALK
CONCRETE CHANNEL
6' HIGH CYPRESS WOOD FENCE W/ 10' WIDE DOUBLE GATE
INV.EL= 26.08
50' R.
CONSTRUCT 60 L.F. 12"X18" R.C.P. @ 0.80% W/ MITERED END SECTIONS
INV.EL= 25.60

EXISTING BLOWER BUILDING

CONSTRUCT CONCRETE CHANNEL
TOP EL= 30.00
INV.EL= 29.00

EXISTING CHLORINE CONTACT CHAMBERS
CONSTRUCT CONCRETE CHANNEL
TOP EL= 28.60
INV.EL= 27.60

DUMPSTER PAD
2'x8' CONC.
ASPHALT FLUME
CONCRETE SIDEWALK
100'
0.50%

PINE NEEDLE MULCH
5 Bv
8 Hk @ 3' o.c.

4:1 SIDE SLOPE (TYP.)

REGRADE AND SOD SIDE SLOPE OF EXISTING INTERIM W.W.T.P. EVAPORATION/PERCOLATION POND

EXIST. R.W. PUMP STATION

CONSTRUCT 80 L.F.- 12" X18" R.C.P. @ 0.50% W/ MITERED END SECTIONS

CATCH BASIN
TOP EL.= 27.00

ELECTRICAL BUILDING
F.F.EL= 30.00

EXISTING CULVERT TO BE REMOVED
CONCRETE WALKWAY @ TANK
UNDERGROUND FUEL STORAGE TANK
12' SHOULDER
MONITORING WELLS

SWALE

EXISTING 16" P.V.C. FORCE MAIN

EVAPORATION/ PERCOLATION POND

W.W.T.P. RESERVATION LINE

CONTRACTOR SHALL KEEP ALL SITE CONSTRUCTION OUTSIDE OF E.R.D. JURISDICTIONAL AREA AND PRIOR TO SITE CONSTRUCTION SHALL CONSTRUCT A TEMPORARY 6' HIGH CHAINLINK FENCE ALONG THE APPROXIMATE D.E.R. JURISDICTIONAL LINE

6' HIGH CHAINLINK FENCE

TOP.EL.= 26.6

EXISTING FILTERS
CONSTRUCT 7 CONCRETE STEPS

CONSTRUCT CONCRETE CHANNEL
TOP EL.= 28.65
INV.EL.= 27.65

TOP OF CURB EL.= 33.00
RECYCLE PUMPING FACILITIES

CONCRETE SIDEWALK

T.S. PUMPS
TOP OF CURB EL.= 33.50
EXISTING 1 M.G.D. PLANT
TO BE CONVERTED TO SLUDGE THICKENER & HOLDING TANK

EXISTING 1 M.G.D. PLANT
TOP OF CURB EL.= 33.50
T.S. PUMPS
TO BE CONVERTED TO SLUDGE THICKENER & HOLDING TANK

MATCH LINE (SEE SHEET C-6 OF C-14)

FINAL SITE PLAN

APPROVED _____ DATE _____ FILE NUMBER _____

PLANNING & DEVELOPMENT:	ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.
UTILITIES:	
TRANSPORTATION DIVISION:	
POLLUTION CONTROL:	
HEALTH DEPARTMENT:	
FIRE DISTRICT:	OWNER/AGENT

EDWARD WILKINSON GRIFFITH, JR. CERTIFICATE NO. 30,965 STATE OF FLORIDA REGISTERED ENGINEER 11-7-85

1. ALL SIDEWALKS WITHIN THIS PROJECT WILL BE 5' WIDE

2. SOD STRIP 2' WIDE TO BE PLANTED ALONG PERIMETER OF ALL STRUCTURES AND ALL EDGES OF PAVEMENT AND WALKS; PLUS OTHER AREAS AS NOTED
ALL OTHER AREAS TO BE SEEDED AND MULCHED

DETAILED SITE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

REVISIONS
1 2-12-86 M.W.M.
2 2/87 WLR CONFORMED
3
4
5

Larson Engineering, Inc. T10
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED L.W.G. CHECKED [illegible] DATE 3/15/85 SCALE 1" = 20'
DRAWN D.K.F. / M.W.M. FILE NO 031-006-84 SHEET C-5 OF C-14

26-01

RECORD DRAWINGS 12/19/89

SHEET 6 OF 15

AF 31693A

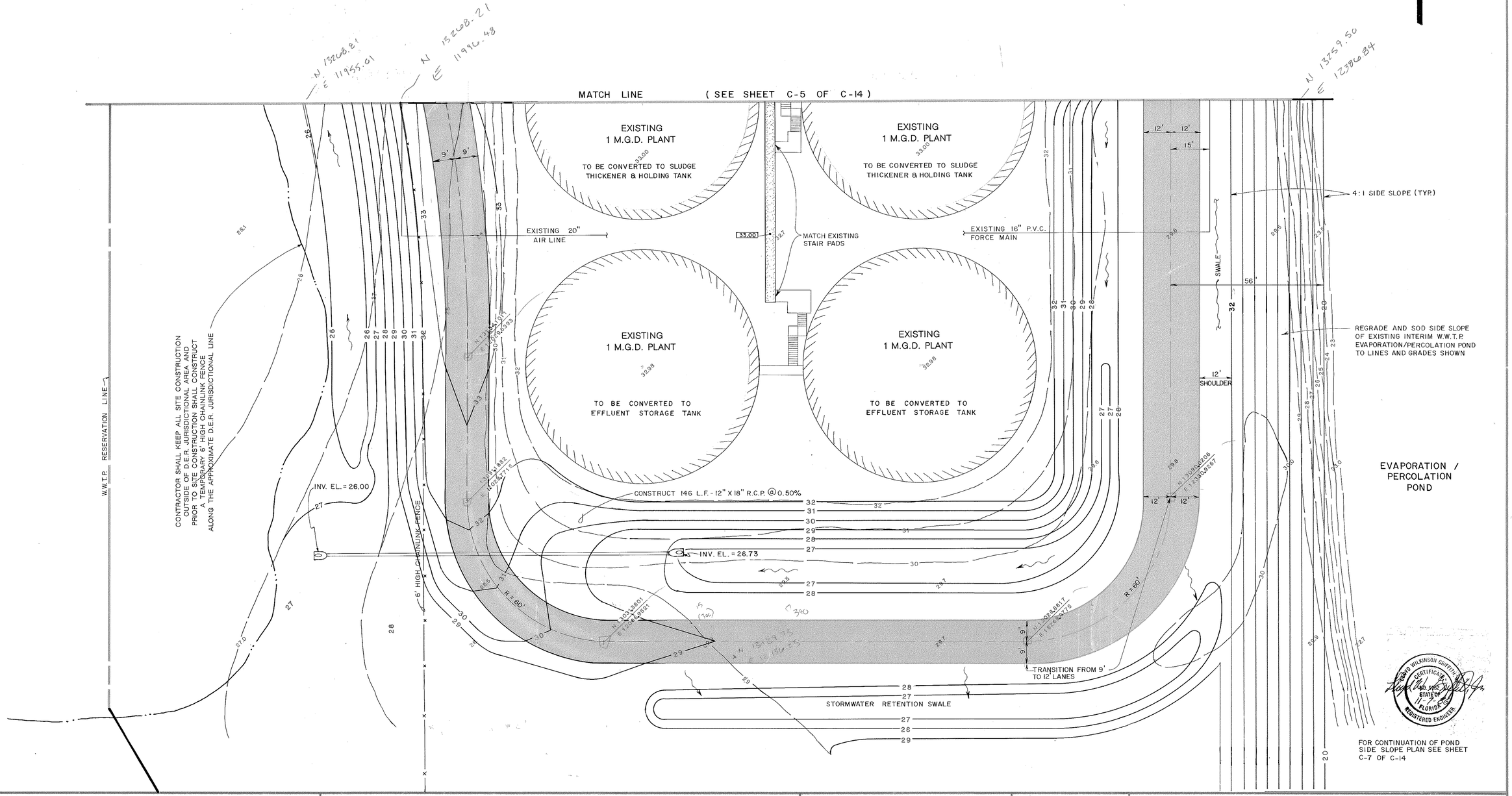
FINAL SITE PLAN	
APPROVED	
DATE	FILE NUMBER
PLANNING & DEVELOPMENT:	ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.
UTILITIES :	
TRANSPORTATION DIVISION :	
POLLUTION CONTROL :	
HEALTH DEPARTMENT :	
FIRE DISTRICT :	OWNER/AGENT

N

NOTES

1. ALL SIDEWALKS WITHIN THIS PROJECT WILL BE 5' WIDE

2. SOD STRIP 2' WIDE TO BE PLANTED ALONG PERIMETER OF ALL STRUCTURES AND ALL EDGES OF PAVEMENT AND WALKS; PLUS OTHER AREAS AS NOTED
ALL OTHER AREAS TO BE SEEDED AND MULCHED



DETAILED SITE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

REVISIONS
2/87 WLR CONFORMED

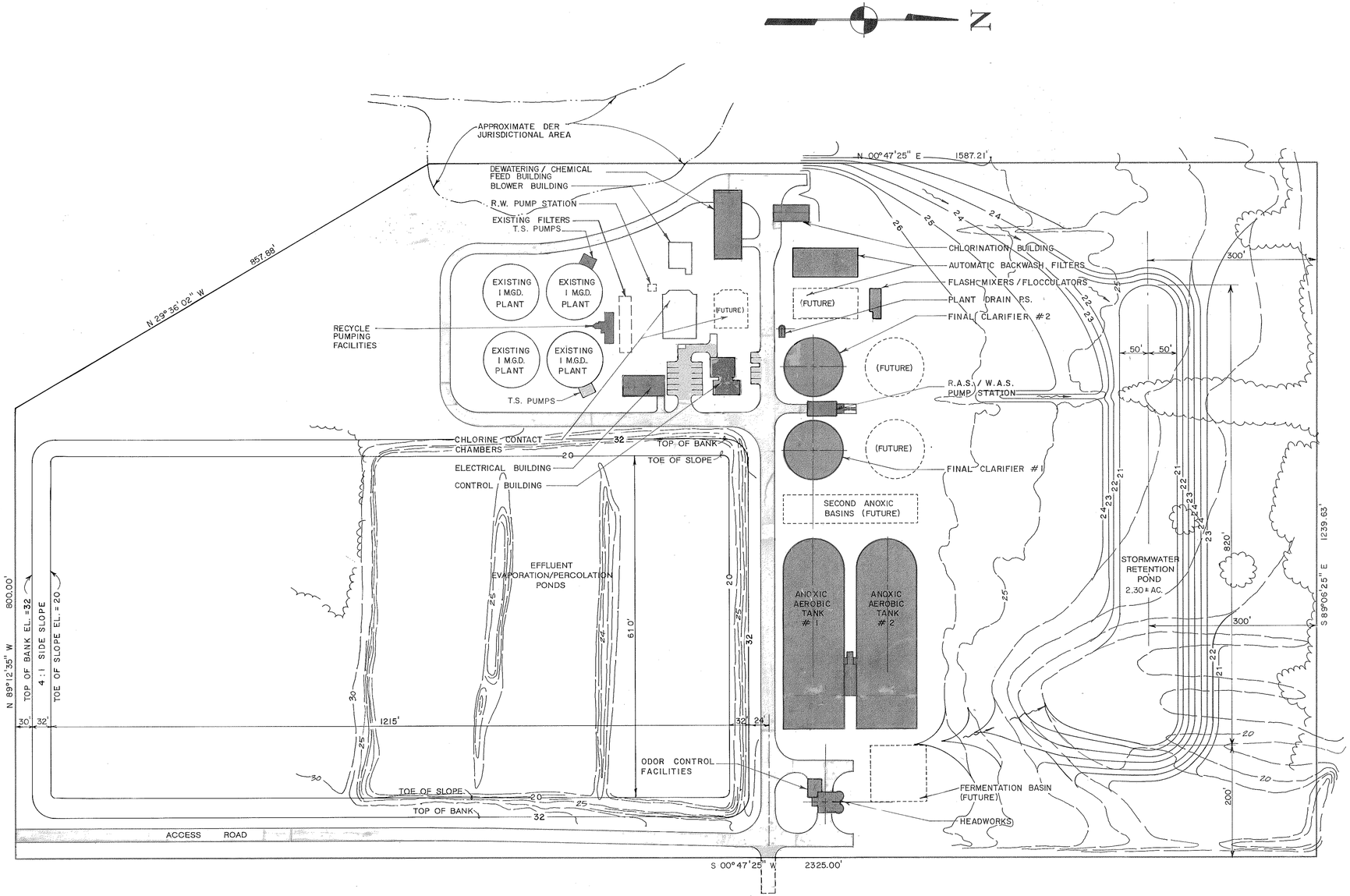
Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED L.W.G. CHECKED EG DATE 3/15/85 SCALE 1" = 20'
DRAWN C.K.F./ M.W.M. FILE NO 031-006-84 SHEET C-6 OF C-14

26-01

RECORD DRAWINGS 12/19/89

AF 31693A



FINAL SITE PLAN	
APPROVED	DATE / FILE NUMBER
PLANNING & DEVELOPMENT:	ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.
UTILITIES:	
TRANSPORTATION DIVISION:	
POLLUTION CONTROL:	
HEALTH DEPARTMENT:	
FIRE DISTRICT:	OWNER/AGENT

FRED WILKINSON GRIFFITH CERTIFICATE NO. 29853 STATE OF FLORIDA REGISTERED ENGINEER

STORMWATER RETENTION PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

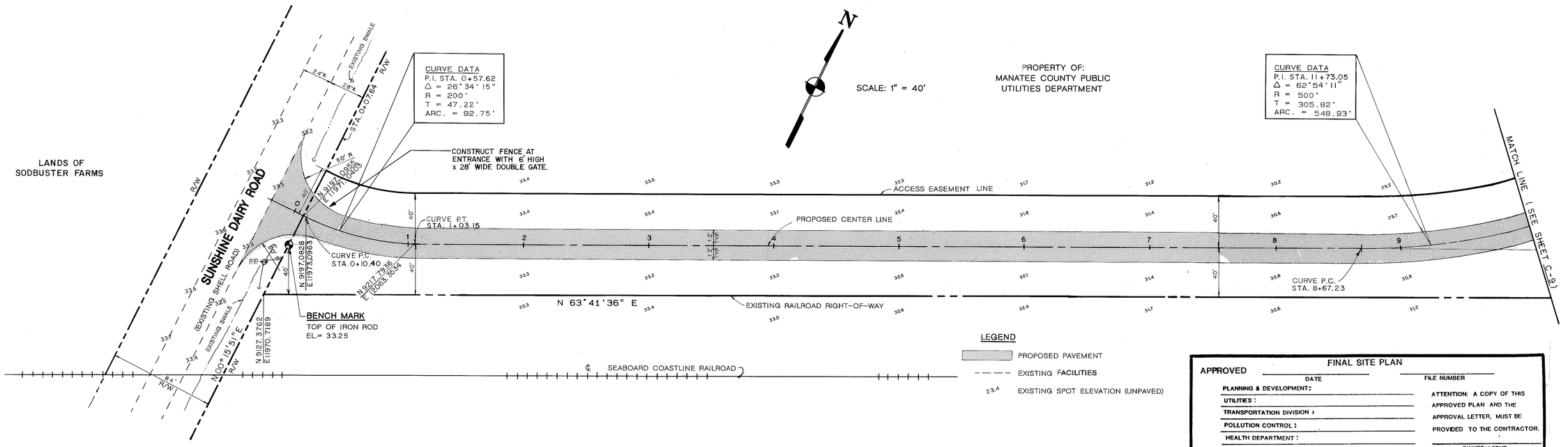
environmental engineers, scientists, planners, & management consultants CDM

REVISIONS
1. 2/87 WLR CONFORMED
2.
3.
4.
5.

Larson Engineering, Inc. T12
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED L.W.G. CHECKED [illegible] DATE 3/15/85 SCALE 1" = 100'
DRAWN D.K.F. / O.M.M. FILE NO. 031-006-84 SHEET C-7 OF C-14

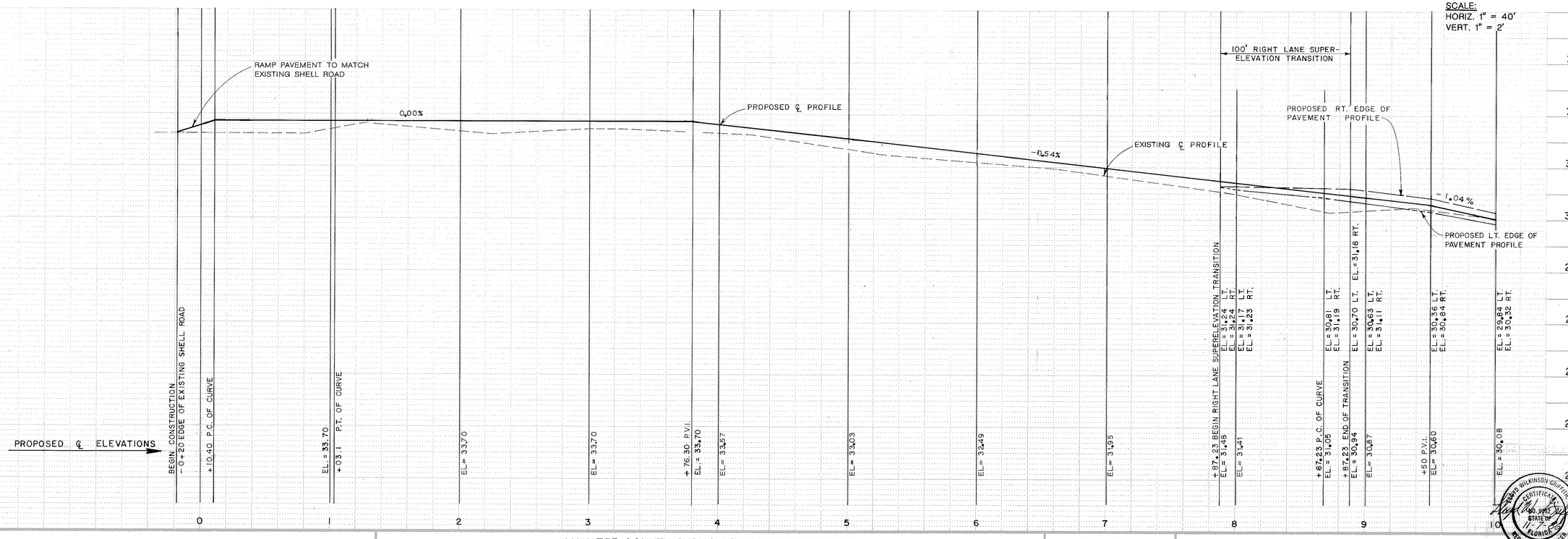
26-01 RECORD DRAWINGS 12/19/89 SHEET 8 OF 15



FINAL SITE PLAN

APPROVED

DATE	FILE NUMBER
PLANNING & DEVELOPMENT:	ATTENTION: A COPY OF THIS
UTILITIES:	APPROVED PLAN AND THE
TRANSPORTATION DIVISION:	APPROVAL LETTER, MUST BE
POLLUTION CONTROL:	PROVIDED TO THE CONTRACTOR.
HEALTH DEPARTMENT:	
FIRE DISTRICT:	OWNER/AGENT



EDWARD WILKINSON-GRIFFITH, JR. CERTIFICATE NO. 39167 STATE OF FLORIDA REGISTERED ENGINEER

ACCESS ROAD

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. CURVE REV. IN PLAN & PROFILE 1-6-86 D.K.E.
2. 2/87 WLR CONFORMED
3.
4.
5.

Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave. W. Suite H
Bradenton, Florida 33529
(813) 794-5450

T13

DESIGNED L.W.G. CHECKED EW DATE 3/15/85 SCALE AS SHOWN
DRAWN J.R.R. FILE NO. 031-006-84 SHEET C-8 OF C-14

26-01

RECORD DRAWINGS 12/19/89

APPROVED

FINAL SITE PLAN

DATE _____ FILE NUMBER _____

PLANNING & DEVELOPMENT: _____

UTILITIES: _____

TRANSPORTATION DIVISION: _____

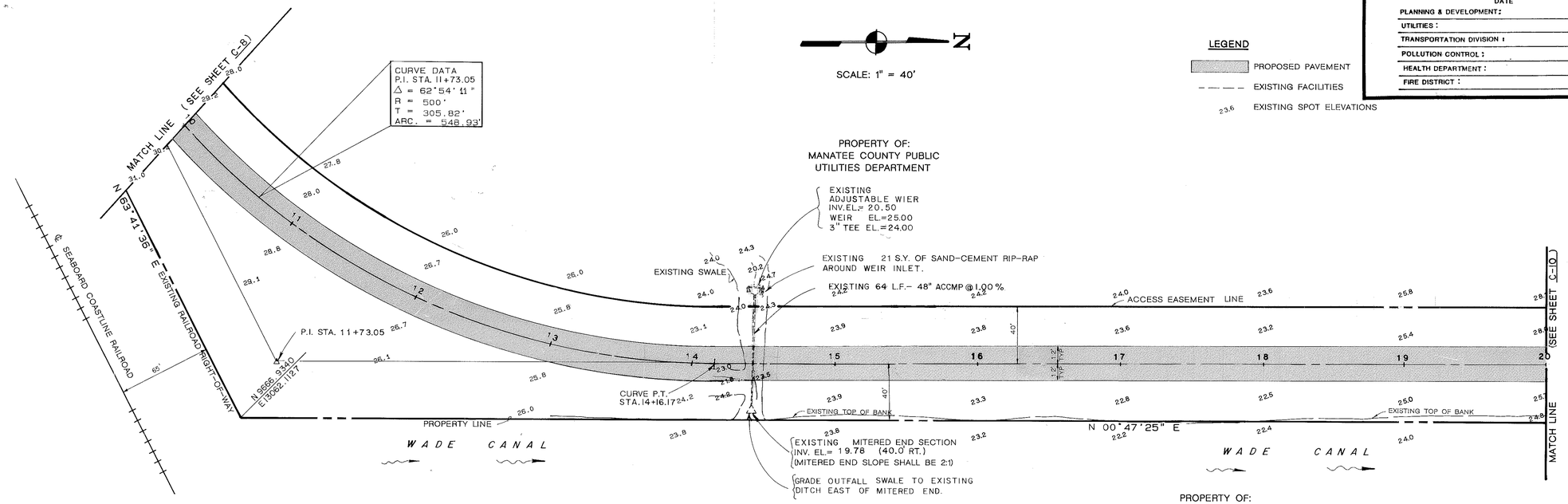
POLLUTION CONTROL: _____

HEALTH DEPARTMENT: _____

FIRE DISTRICT: _____

ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.

OWNER/AGENT

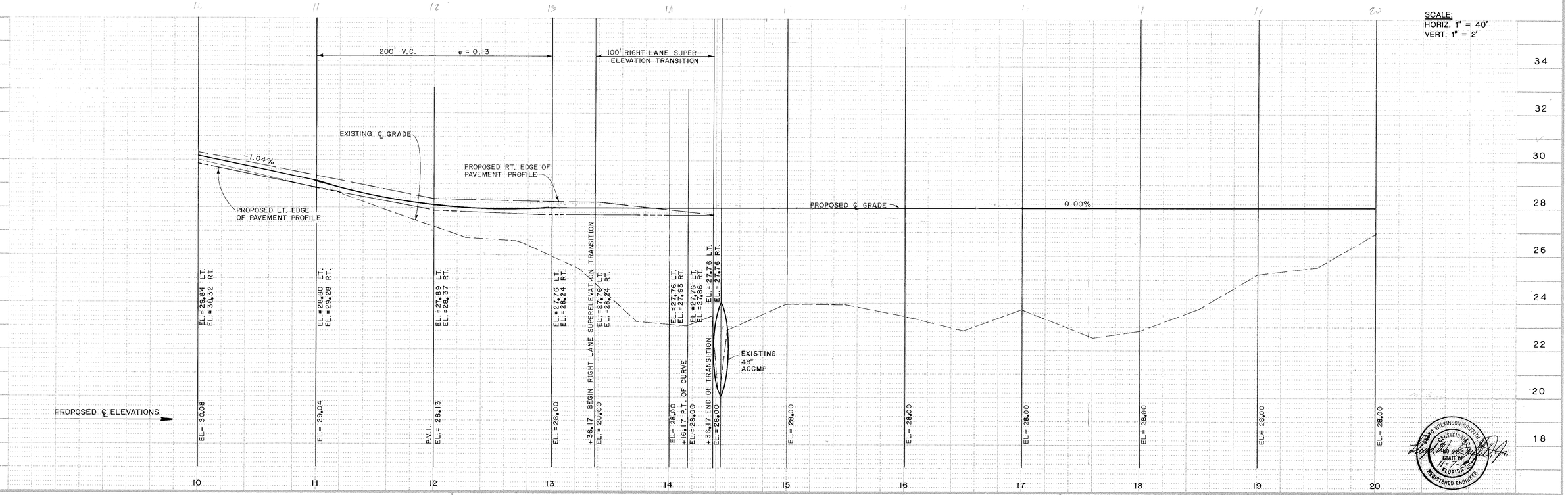


SCALE: 1" = 40'

LEGEND

- PROPOSED PAVEMENT
- EXISTING FACILITIES
- 23.6 EXISTING SPOT ELEVATIONS

SCALE:
HORIZ. 1" = 40'
VERT. 1" = 2'



REVISIONS

1. ADD L.W.G. GRADE SHEET 4/8/85 CURVE REV IN PLAN & PROFILE 1-6-86 D.K.F.
2. 2/87 WLR CONFORMED
3. _____
4. _____
5. _____

ACCESS ROAD

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

Larson Engineering, Inc. T14
Consulting Engineers
6404 Manatee Ave. W. Suite N
Bradenton, Florida 33529
(813) 794-5450

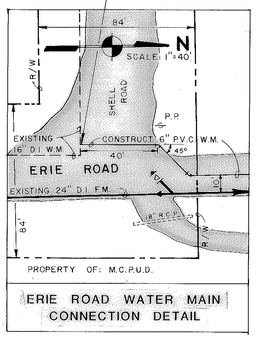
DESIGNED L.W.G. CHECKED _____ DATE 3/15/85 SCALE AS SHOWN
DRAWN J.R.R. FILE NO. 031-006-84 SHEET C-9 OF C-14

DAVID WILKINSON GRIFFIN CERTIFICATE NO. 36855 STATE OF FLORIDA REGISTERED ENGINEER

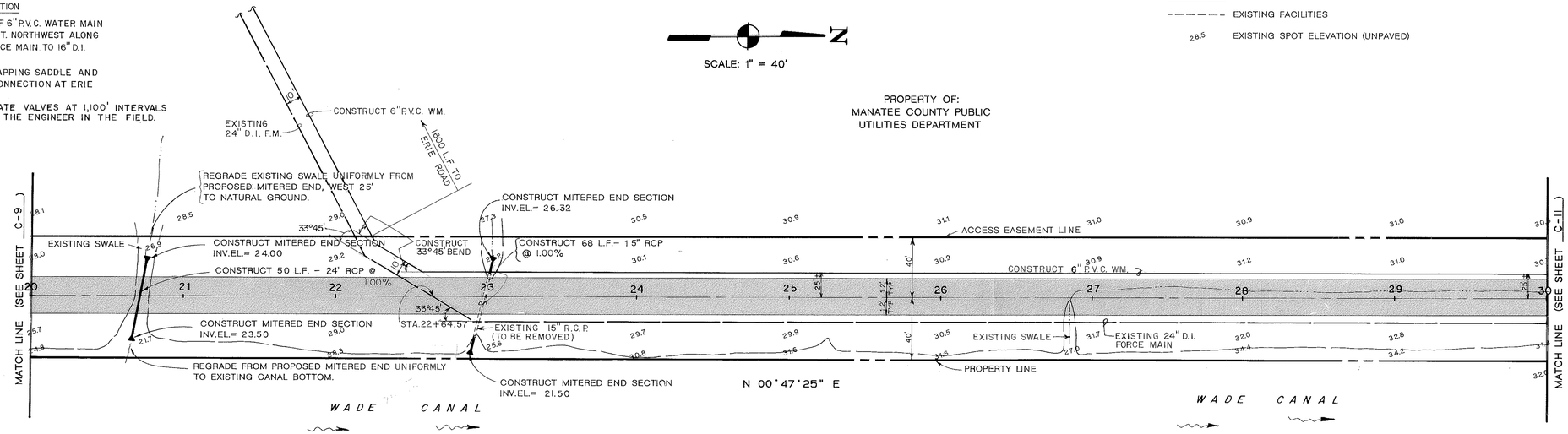
26-01 **RECORD DRAWINGS 12/19/89** SHEET 10 OF 15

NOTES: WATER MAIN CONSTRUCTION

1. CONSTRUCT 1600 L.F. OF 6" P.V.C. WATER MAIN PARALLEL TO AND 10 FT. NORTHWEST ALONG EXISTING 24" D.I. FORCE MAIN TO 16" D.I. W.M. IN ERIE RD.
2. CONSTRUCT 6" X 16" TAPPING SADDLE AND 6" TAPPING VALVE CONNECTION AT ERIE RD. INTERSECTION.
3. CONSTRUCT 4-6" GATE VALVES AT 1,100' INTERVALS OR AS DIRECTED BY THE ENGINEER IN THE FIELD.



ERIE ROAD WATER MAIN CONNECTION DETAIL



LEGEND

- PROPOSED PAVEMENT
- EXISTING FACILITIES
- 28.5 EXISTING SPOT ELEVATION (UNPAVED)

APPROVED

FINAL SITE PLAN

DATE

FILE NUMBER

PLANNING & DEVELOPMENT:

UTILITIES:

TRANSPORTATION DIVISION:

POLLUTION CONTROL:

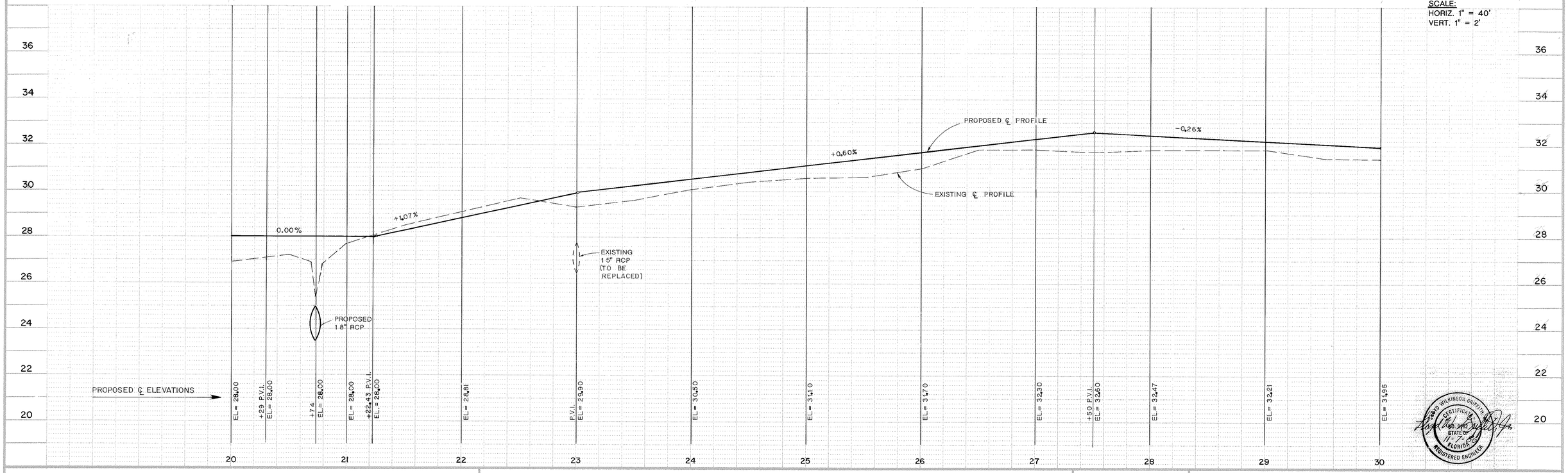
HEALTH DEPARTMENT:

FIRE DISTRICT:

ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.

OWNER/AGENT

SCALE:
HORIZ. 1" = 40'
VERT. 1" = 2'



ACCESS ROAD

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. REV. E PROFILE FROM STA. 20+21+26 D.K.F. 12-20-85
2.
3. 2/87 WLR CONFORMED
4.
5.

Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave. W., Suite N
Bradenton, Florida 33529
(813) 794-5450

T15

DESIGNED L.W.G. CHECKED [illegible] DATE 3/15/85 SCALE AS SHOWN
DRAWN J.R.R. FILE NO. 031-006-84 SHEET C-10 OF C-14

26-01

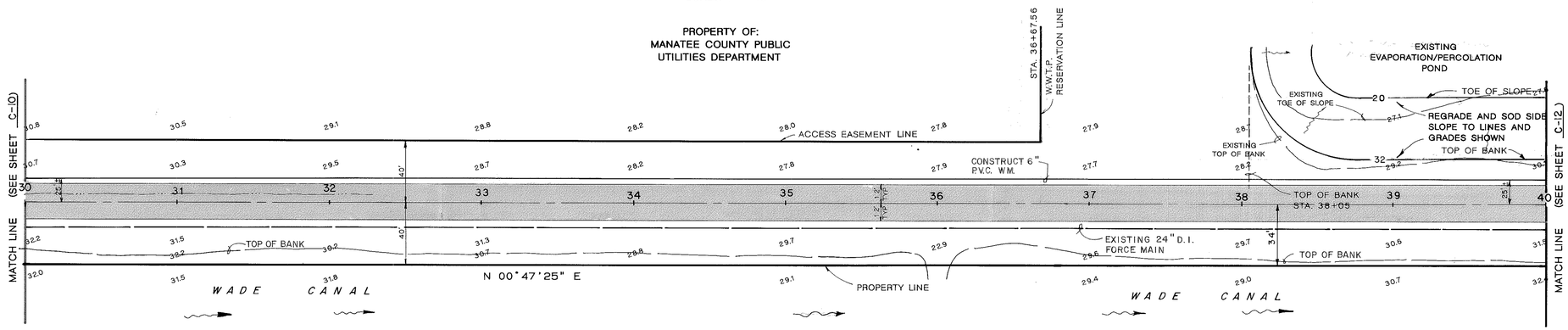
RECORD DRAWINGS 12/19/89

AF 314936

LEGEND
- PROPOSED PAVEMENT
- EXISTING FACILITIES
- 27.9 EXISTING SPOT ELEVATION (UNPAVED)

N

SCALE: 1" = 40'



APPROVED

FINAL SITE PLAN

DATE _____ FILE NUMBER _____

PLANNING & DEVELOPMENT: _____

UTILITIES: _____

TRANSPORTATION DIVISION: _____

POLLUTION CONTROL: _____

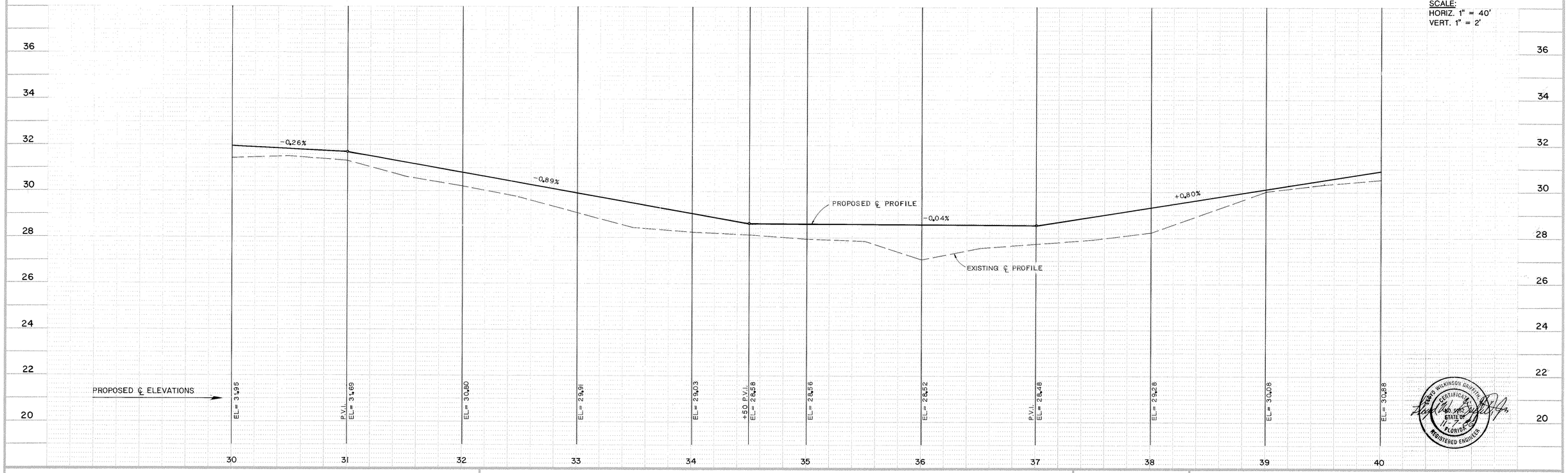
HEALTH DEPARTMENT: _____

FIRE DISTRICT: _____

ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.

OWNER/AGENT

SCALE:
HORIZ. 1" = 40'
VERT. 1" = 2'



Edgar Wilkinson Griffin, Jr. CERTIFICATE NO. 19,995 STATE OF FLORIDA REGISTERED ENGINEER 11-7-89

ACCESS ROAD

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

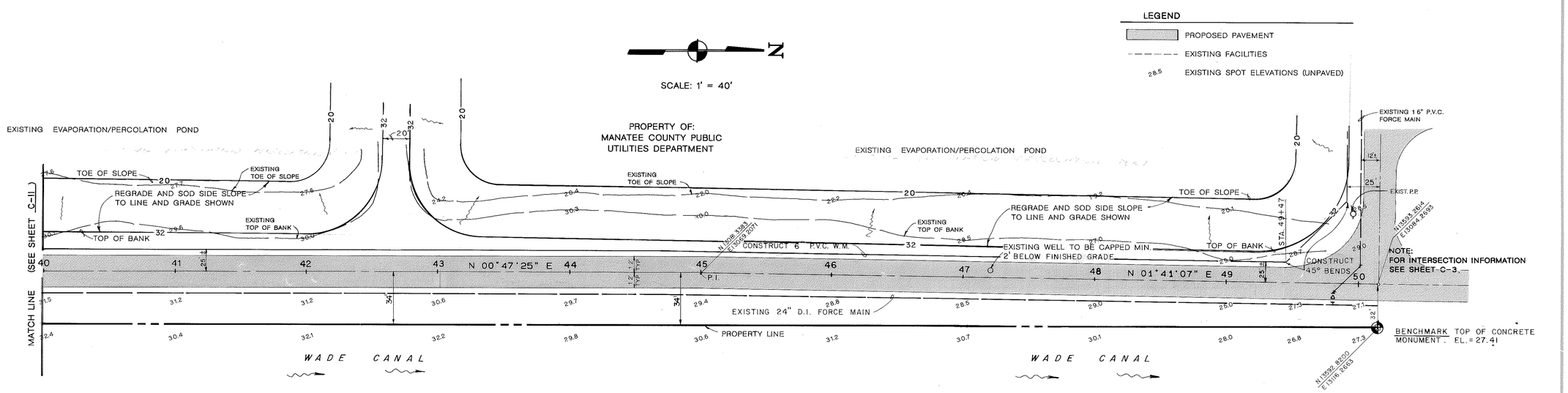
REVISIONS
1. 2/87 WLR CONFORMED
2. _____
3. _____
4. _____
5. _____

Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave. W, Suite N
Bradenton, Florida 33529
(813) 794-5450

T16

DESIGNED L.W.G. CHECKED EJG DATE 3/15/85 SCALE AS SHOWN
DRAWN J.R.R. FILE NO. 031-006-84 SHEET C-11 OF C-14

26-01 **RECORD DRAWINGS 12/19/89**



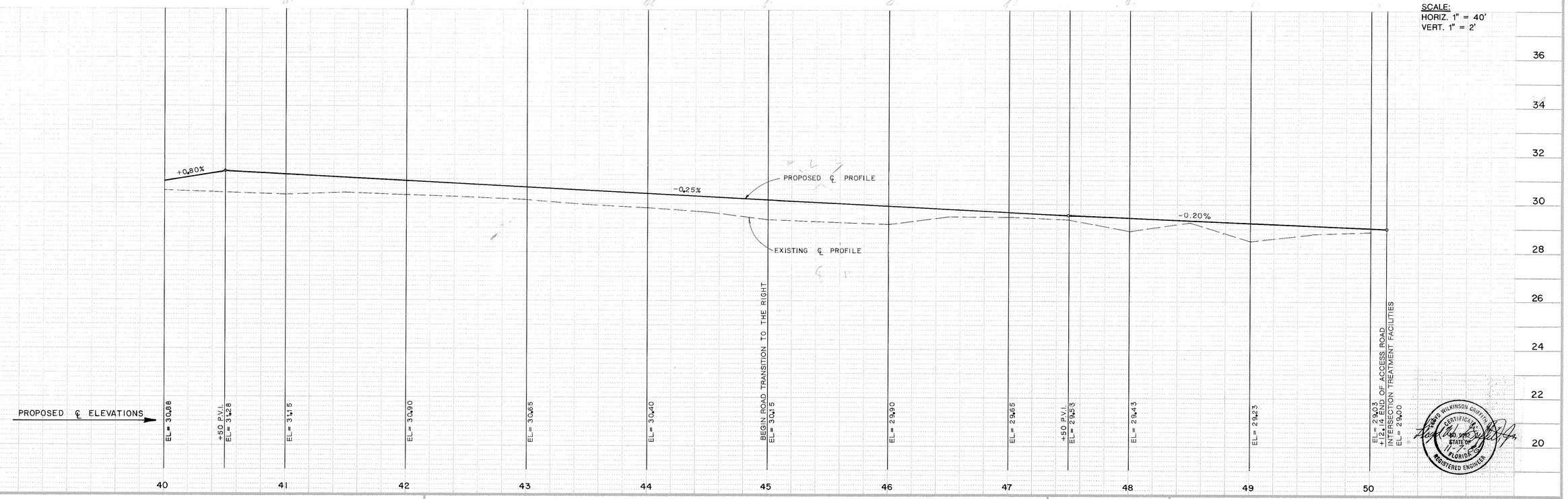
APPROVED — FINAL SITE PLAN

DATE	FILE NUMBER
PLANNING & DEVELOPMENT :	
UTILITIES :	
TRANSPORTATION DIVISION :	
POLLUTION CONTROL :	
HEALTH DEPARTMENT :	
FIRE DISTRICT :	

ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.

OWNER/AGENT

SCALE:
HORIZ. 1" = 40'
VERT. 1" = 2'



RICHARD WILKINSON GRIFFIN
CERTIFICATE NO. 39167
STATE OF FLORIDA
REGISTERED ENGINEER

ACCESS ROAD

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1 2/87 WLR CONFORMED
2
3
4
5

Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave. W., Suite N
Bradenton, Florida 33529
(813) 794-5450

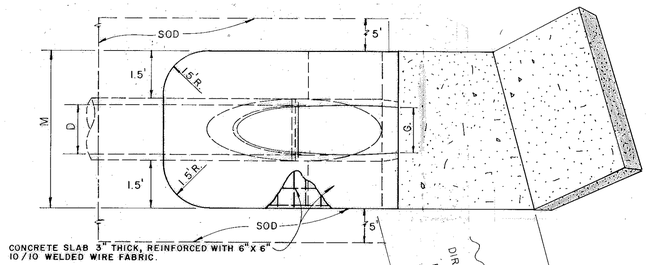
T17

DESIGNED L.W.G. CHECKED [illegible] DATE 3/15/85 SCALE AS SHOWN
DRAWN J.R.R. FILE NO. 031-006-84 SHEET C-12 OF C-14

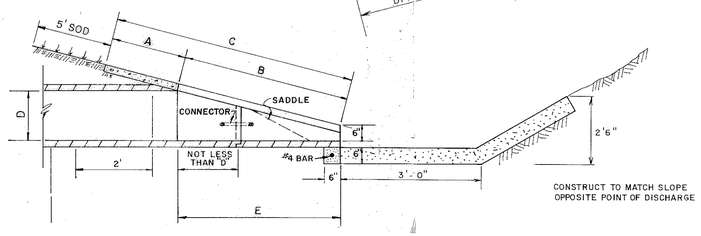
26-01 **RECORD DRAWINGS 12/19/89**

AF 31693A

DIMENSIONS								
	D	N	A	B	C	E	M	G
2:1 SLOPE	48"	1.42'	2.43'	8.33'	10.76'	7.56'	7.83'	2.65'
4:1 SLOPE	15"	1.19'	2.27'	4.09'	6.36'	4.03'	4.63'	1.22'
	18"	1.21'	2.36'	5.12'	7.48'	5.03'	4.92'	1.41'
	48"	1.42'	3.22'	15.43'	18.65'	15.03'	7.83'	2.65'



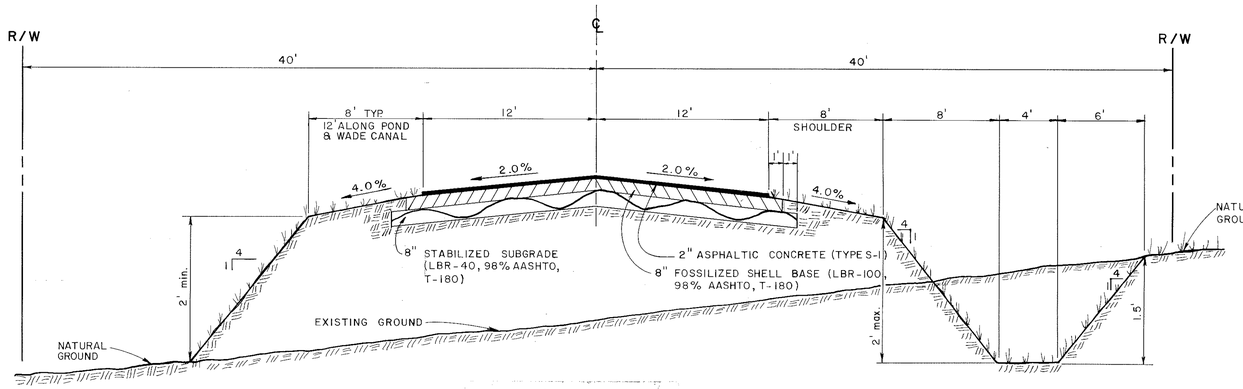
PLAN



SECTION

MITERED END SECTION WITH ENERGY DISSIPATOR

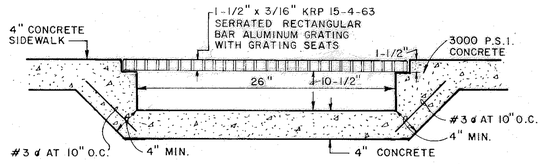
NOT TO SCALE



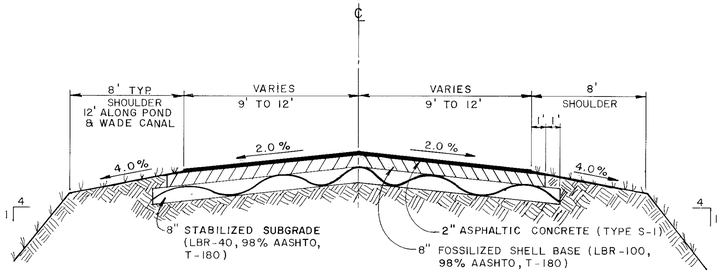
ACCESS ROAD TYPICAL STREET SECTION

NOT TO SCALE

NOTE: IF REQUIRED FILL FOR ROAD SECTION IS 2' OR GREATER VERTICALLY THEN NO SWALE IS REQUIRED ALONG PAVEMENT SECTION. IF FILL FOR ROAD SECTION IS LESS THAN 2' THEN ROAD SIDE SWALE SHALL BE REQUIRED.

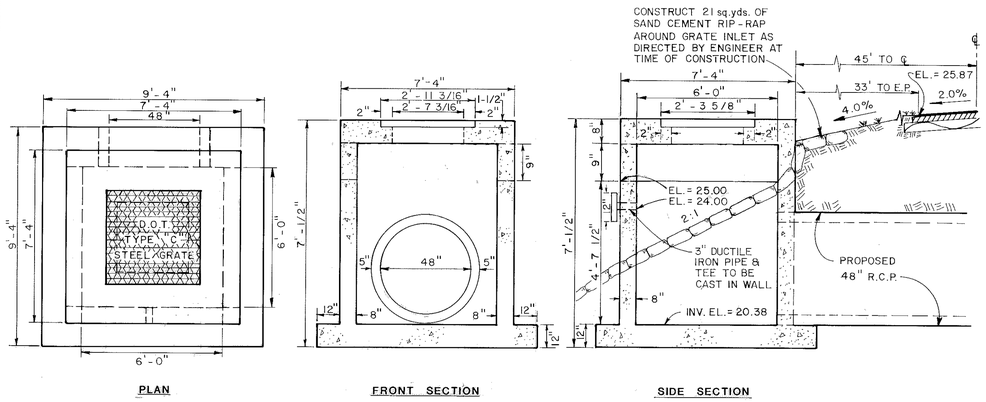


SECTION



MAIN PLANT ROAD TYPICAL STREET SECTION

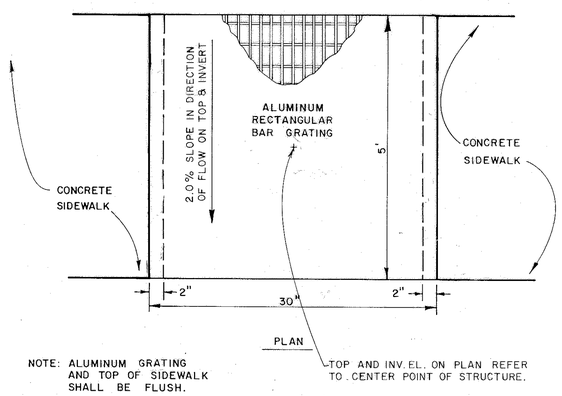
NOT TO SCALE



PLAN FRONT SECTION SIDE SECTION

GRATE INLET WITH THROAT ON THREE SIDES

NOT TO SCALE



NOTE: ALUMINUM GRATING AND TOP OF SIDEWALK SHALL BE FLUSH.

CONCRETE CHANNELS

NOT TO SCALE

APPROVED — FINAL SITE PLAN

DATE — FILE NUMBER

PLANNING & DEVELOPMENT:

UTILITIES:

TRANSPORTATION DIVISION:

POLLUTION CONTROL:

HEALTH DEPARTMENT:

FIRE DISTRICT:

ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.

OWNER/AGENT

DAVID WILKINSON GRIFFIN CERTIFICATE NO. 37657 STATE OF FLORIDA REGISTERED ENGINEER

PAVING AND DRAINAGE DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

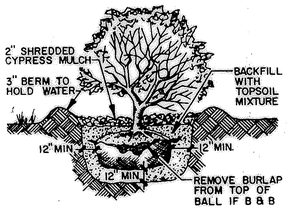
REVISIONS
1. GRATE INLET ADDED 7-31-85 D.K.F.
2. 2/87 WLR CONFORMED
3.
4.
5.

Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

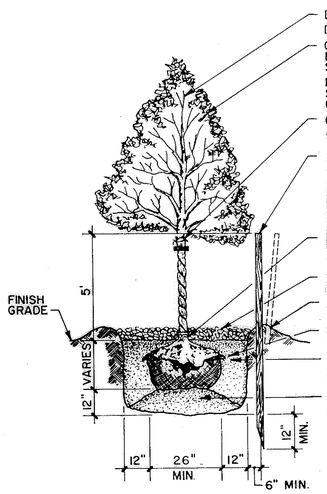
T 18

DESIGNED L.W.G. CHECKED [illegible] DATE 3/15/85 SCALE AS SHOWN
DRAWN D.K.F. FILE NO. 031-006-84 SHEET C-13 OF C-14

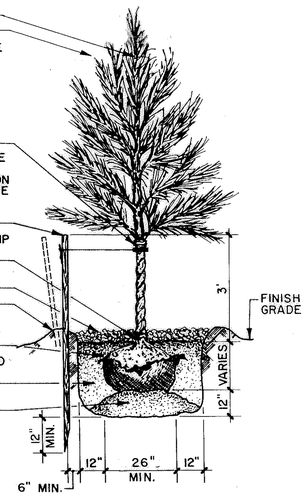
26-9 **RECORD DRAWINGS 12/19/89** SHEET 14 OF 15



SHRUBS



TREES



PINES

DO NOT CUT THE LEADER
DO NOT TRIM SLASH PINES
ON OAK, THIN BRANCHES AND FOLIAGE BY 1/3 RETAINING NORMAL TREE SHAPE
PLANTING AS PER F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
CORD TO SECURE WRAPPING MATERIAL AT TOP AND BASE OF 6'-10" HIGH TREE WRAPPING.
2 - 2"x 2" WOOD STAKES 8' LONG, DRIVE AT ANGLE SHOWN BY DASHED STAKE, AND SECURED IN A VERTICAL POSITION W/ 2 STRANDS OF NO. 10 TWISTED TIE WIRE AND BLACK RUBBER HOSE COLLARS. STAKES ARE TO BE PLACED OPPOSITE ONE ANOTHER.
TREE SHALL BEAR SAME RELATIONSHIP TO FINISHED GRADE AS IT BORE PREVIOUSLY.
3" BARK MULCH TO OUTER EDGE OF EARTH SAUCER.
3" BERM TO HOLD WATER
CUT AND REMOVE BURLAP FROM 1/3 OF ROOT BALL.
TOPSOIL MIXTURE AS SPECIFIED, IS TO BE BACKFILLED IN 2-3 LIFTS, AND WATERED IN, EACH LIFT.
TOPSOIL MIXTURE, TAMPED TO PREVENT SETTLING.

PLANTING DETAILS

N.T.S.

SYMBOL	KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE
	Bv	16	BAUHINIA variegata	LIVE OAKS	5'-6' (1-1 1/2" DIA.)
	Ld	265	LANTANA depressa SMALL	DWARF LANTANA	FLATS or 1qt.
	Lm	63	LANTANA montevidensis	WEEPING LANTANA	1 GAL.
	Pt	19	PITTOSPORUM tobira	PITTOSPORUM	3 GAL.
	Pe	59	PINUS elliottii	SLASH PINE	8'-10' (2" DIA.)
	Sl	243	STOKESIA laevis	VERBINA	FLATS
	Hk	47	HYMENOCALLIS keyensis SMALL	LIRIOPE	1 GAL.
		141,940 sq. ft.	PASPALUM notatum 'ARGENTINE'	FLORITAN GRASS	SOD
		373,999 sq. ft.	SEED AND MULCH - SEE SPECIFICATIONS		
		4,435 sq. ft.	PINE NEEDLE MULCH		LOAD

THIS PLANT LIST IS PROVIDED AS A CONVENIENCE TO THE CONTRACTOR. ALL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR. SHOULD ANY CONFLICTS ARISE BETWEEN THE DRAWINGS AND THE PLANT LIST, THE DRAWINGS SHALL PREVAIL. FOR PLANTING AND MAINTENANCE CRITERIA, SEE THE SPECIFICATIONS.

CONTRACTOR SHALL MAINTAIN (MOW, WATER, ETC.) PLANTINGS AND AREA OF RESPONSIBILITY UNTIL PROJECT IS ACCEPTED BY OWNER. SEE SPECIFICATIONS.

ALL LANDSCAPING (TREES, SHRUBS, GROUNDCOVER & SODDING, ETC.) SHALL BE STARTED AT COMPLETION OF ALL STRUCTURES, PIPING, VALVES, ETC.. SEE SPECIFICATIONS.

ALL PLANTING AREAS SHOWN ON DRAWINGS (GROUNDCOVER, SHRUBS, TREES) SHALL BE MULCHED IN ACCORDANCE WITH DETAILS AND SPECIFICATIONS.

EXISTING TREES TO REMAIN ON SITE WHERE APPLICABLE. ALL OTHERS TO BE REMOVED.

FINAL SITE PLAN

APPROVED _____ DATE _____ FILE NUMBER

PLANNING & DEVELOPMENT:
UTILITIES:
TRANSPORTATION DIVISION:
POLLUTION CONTROL:
HEALTH DEPARTMENT:
FIRE DISTRICT:

ATTENTION: A COPY OF THIS APPROVED PLAN AND THE APPROVAL LETTER, MUST BE PROVIDED TO THE CONTRACTOR.

OWNER/AGENT

DAVID WILKINSON GRIFFITH, CERTIFICATE NO. 9765, STATE OF FLORIDA, REGISTERED ENGINEER

LANDSCAPE SCHEDULE AND DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
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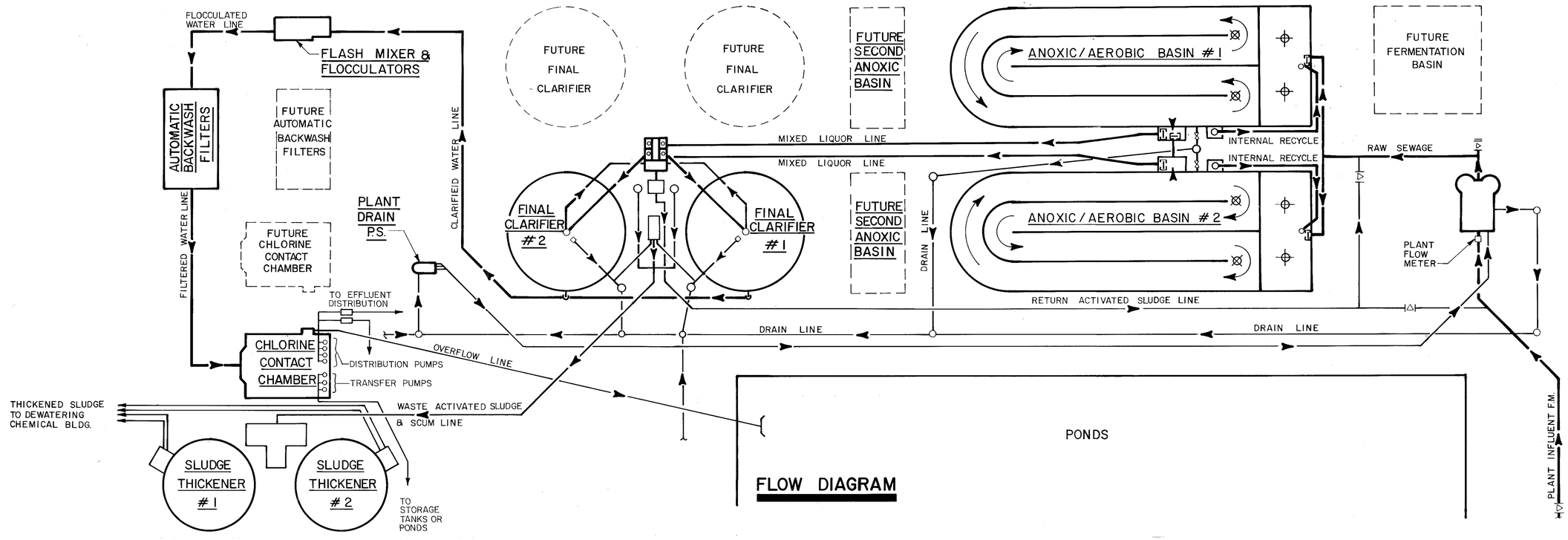
Bradenton, Florida 33529
(813) 794-5450

DESIGNED L.W.G. CHECKED DG DATE 3/15/85 SCALE AS SHOWN
DRAWN D.K.F. FILE NO. 031-006-84 SHEET C-14 OF C-14

T19

26-01 RECORD DRAWINGS 12/19/89

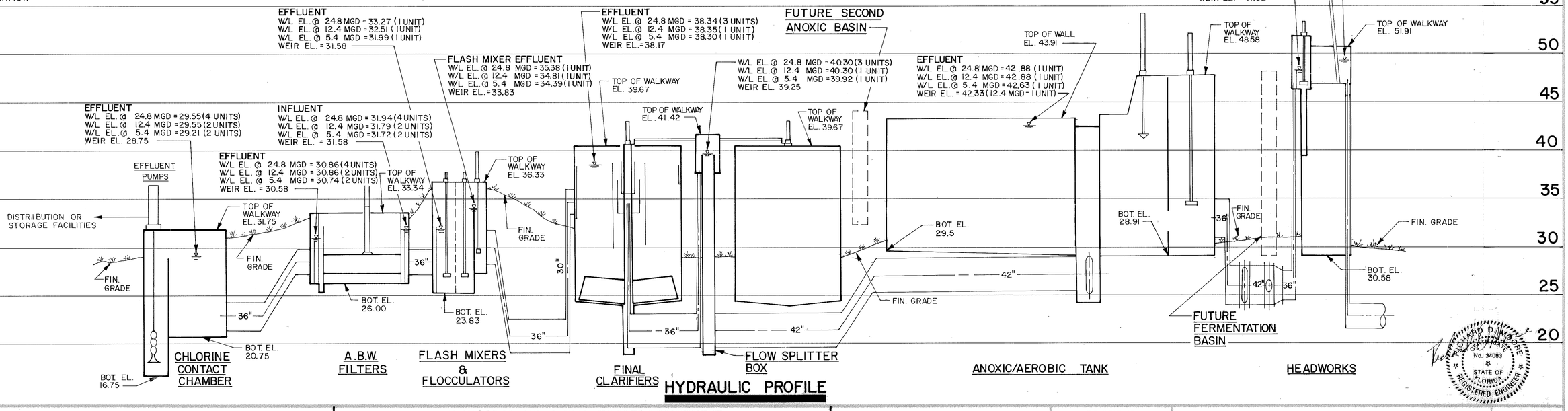
AP 31693A



65 65

NOTES

1. FLOW CONDITIONS: DESIGN ANNUAL AVERAGE DAILY FLOW = 5.4 MGD
   DESIGN PEAK HYDRAULIC FLOW = 12.4 MGD
   FUTURE PEAK HYDRAULIC FLOW = 24.8 MGD
2. WATER LEVEL ELEVATIONS (W/L EL.) REFLECT ONE FLASH MIXER, ONE CLARIFIER, ONE ANOXIC/AEROBIC TANK AND ONE GRIT UNIT OUT OF SERVICE. NUMBER OF UNITS IN OPERATION IS LISTED IN PARENTHESIS FOLLOWING W/L ELEVATION



60 55 50 45 40 35 30 25 20

Richard D. Kane — No. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

FLOW DIAGRAM / HYDRAULIC PROFILE

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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DESIGNED S.A.F. CHECKED W.L.R. DATE MARCH, 1985 SCALE NONE
DRAWN S.A.F. FILE NO. 031-006-84 SHEET I-1 OF I-3

26-01

RECORD DRAWINGS 12/19/89

AF 31693A

RAW WASTEWATER INFLUENT

MECHANICAL FILTER SCREEN

MANUALLY CLEANED BY-PASS SCREEN

MECHANICAL FILTER SCREEN

VORTEX GRIT CHAMBERS

GRIT PUMPS (LOOP 0320)

GRIT CLASSIFIERS (LOOP 0330)

TO DISPOSAL

SCREENINGS CONVEYOR

CARBON ABSORPTION VESSEL

EXHAUST

BY-PASS

WET SCRUBBER

NaOH METERING PUMP

RECIRCULATION PUMPS

TO DRAIN

NaOH CHEMICAL TANK

ODOR CONTROL SYSTEM

ANOXIC MIXERS

MECHANICAL SURFACE AERATORS

INTERNAL RECIRCULATION PUMPS (LOOP 2315-1,2)(RML PUMPS)

ANOXIC MIXERS

MECHANICAL SURFACE AERATORS

INTERNAL RECIRCULATION PUMPS (LOOP 2315-3,4) (RML PUMPS)

ANOXIC/AEROBIC TANKS

FLOW SPLITTER BOX

FINAL CLARIFIERS (LOOP 2400)

SCUM EJECTOR (LOOP 2500-1)

SCUM EJECTOR (LOOP 2500-2)

RAPID MIXERS (LOOP 3100)

FLOCCULATORS (LOOP 3120)

AUTOMATIC BACKWASH FILTERS (LOOP 3200)

CHLORINE CONTACT CHAMBERS

EFFLUENT STORAGE TANKS (2)

TO EFFLUENT STORAGE PONDS

MAKE-UP WATER

TRANSFER PUMPS

TO DISTRIBUTION SYSTEM

DISTRIBUTION PUMPS

EMERGENCY OVERFLOW

TO HEADWORKS

PLANT DRAIN PUMP STATION (LOOP 7400)

PLANT REUSE PUMP STATION (LOOP 7100)

WASTEWATER

PLANT REUSE WATER

EFFLUENT PUMP STATION (LOOP 8000)

RAS

WAS

RAS/WAS

SCUM

FUTURE W.A.S. PUMPS 3 & 4

FILTRATE TO PLANT DRAIN PUMP STATION

RETURN ACTIVATED SLUDGE PUMPS (LOOP 2610)

SLUDGE WET WELL

WASTE ACTIVATED SLUDGE PUMPS (LOOP 2710)

POLYMER

SUPERNATANT

OVERFLOW

AIR DISSOLUTION SYSTEM (LOOP 5210 RECYCLE PUMPS) (LOOP 5215 COMPRESSORS)

RECYCLE WATER RESERVOIR

DAF THICKENERS/ SLUDGE HOLDING TANKS (LOOP 5200)

MIXING AIR BLOWERS (LOOP 5320)

AIR

EXHAUST TO ATMOSPHERE

THICKENED SLUDGE

THICKENED SLUDGE FEED PUMPS (LOOP 5601)

SLUDGE CONDITIONING TANKS

BELT FILTER PRESSES (LOOP 5610)

SLUDGE CAKE CONVEYOR

RICHARD D. MOORE REGISTERED ENGINEER No. 34083 STATE OF FLORIDA

PLANT PROCESS & INSTRUMENTATION DIAGRAM

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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DRAWN J.M.P. FILE NO. 031-006-84 SHEET I-2 OF I-3

26-01

RECORD DRAWINGS 12/19/89

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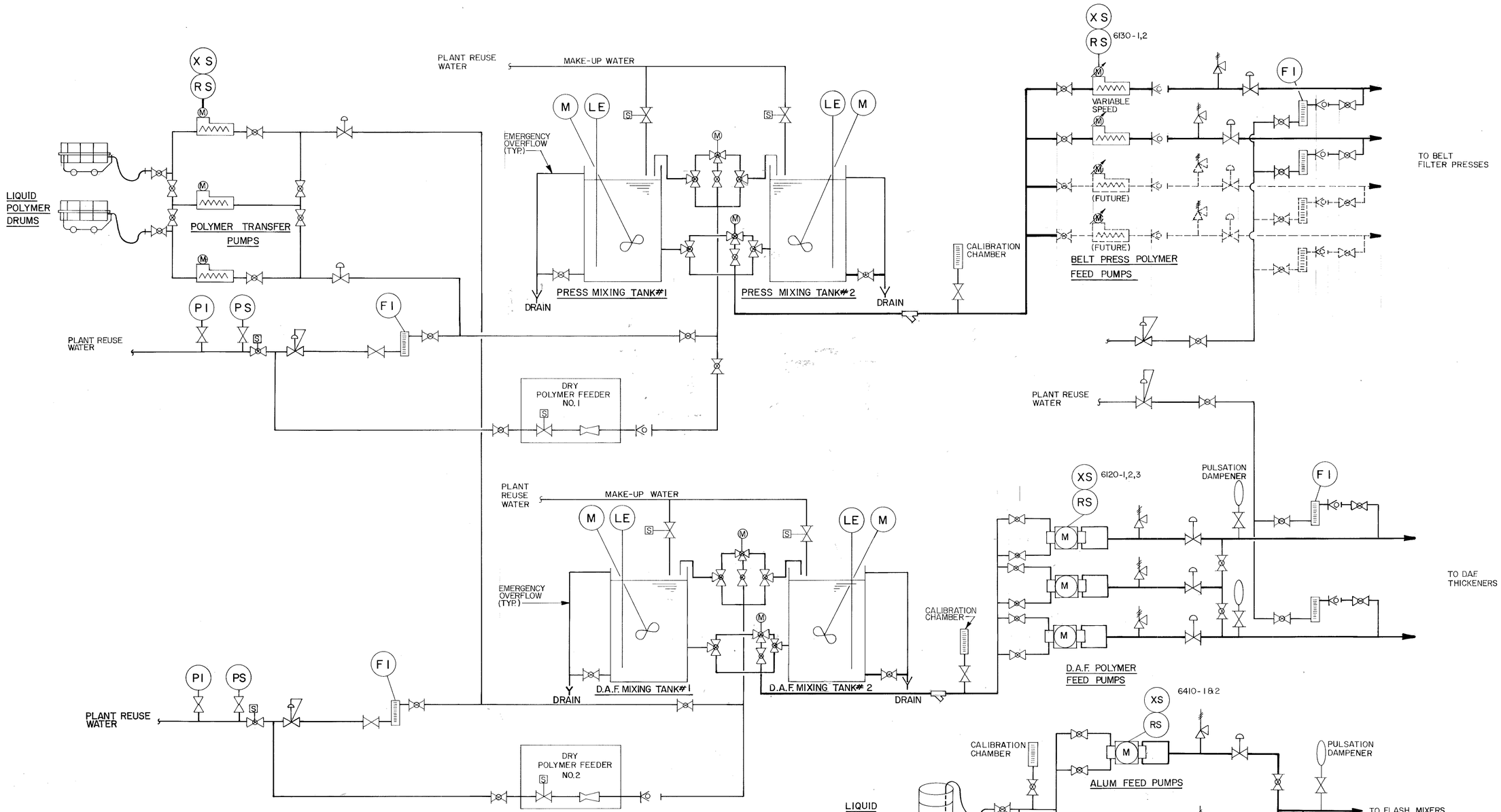

POLYMER SYSTEM DIAGRAM

ALUM SYSTEM DIAGRAM

RICHARD D. LARSON — No. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

CHEMICAL PROCESS & INSTRUMENTATION DIAGRAMS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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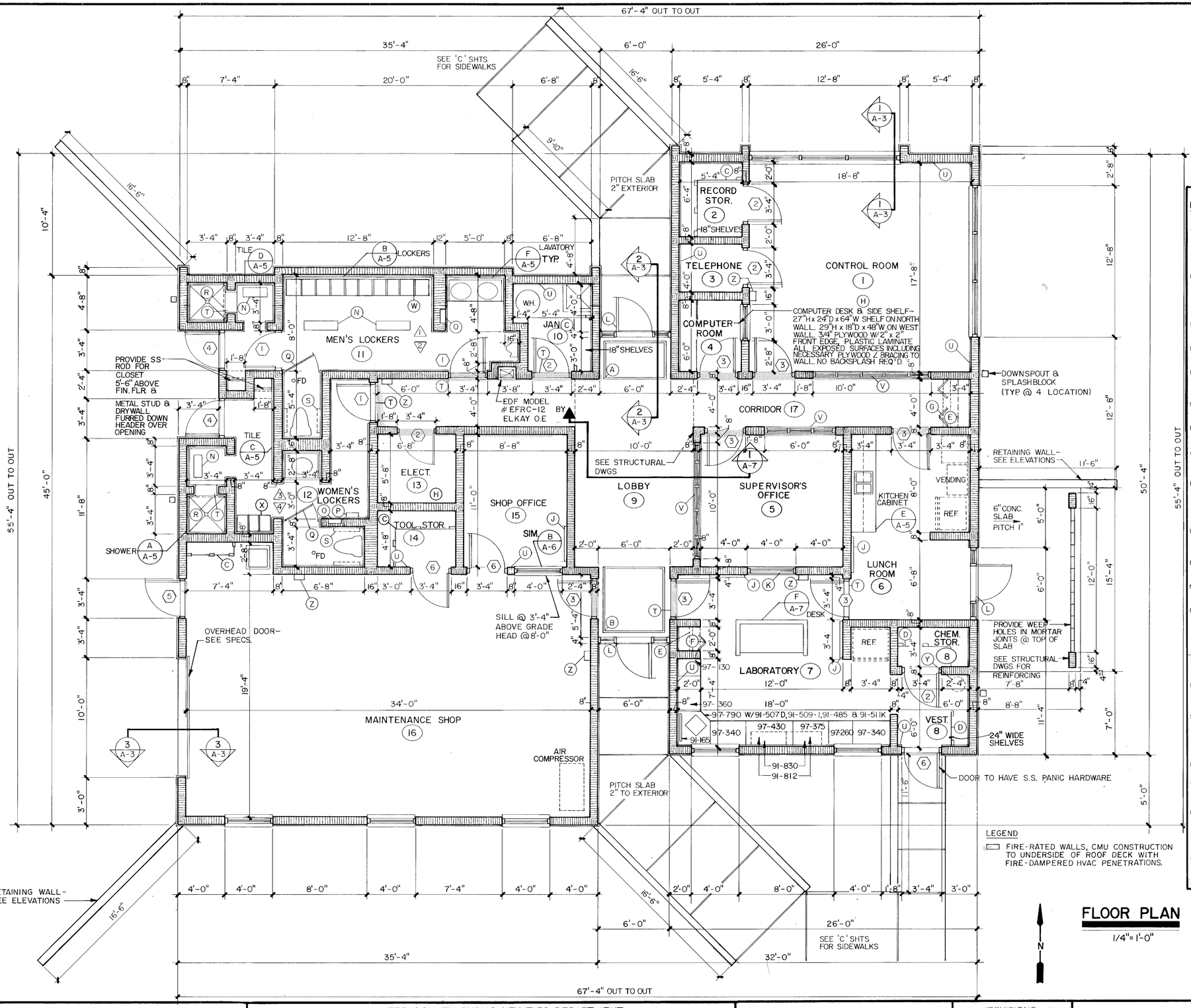
DRAWN P.V.R. FILE NO. 031-006-84 SHEET I-3 OF I-3

26-01

RECORD DRAWINGS 12/19/89

A.F. 31693A



NOTES

A. ALUM. ALLOY 6063T-5 MAT RECESS FRAME & DURITE 108S MATS 5'-0" x 3'-6" BY DURABLE MAT CO. O.E.

B. ALUM. ALLOY 6063T-5 MAT RECESS FRAME & DURITE 108S MATS 5'-0" x 5'-6" BY DURABLE MAT CO. O.E.

C. 3/4" PAINTED PLYWOOD SHELVING @ 18" O.C. FROM FLR. TO CLG. W/1" x 3" CLEAR PINE CONTINUOUS WALL SUPPORTS @ ENDS. REAR & ALL EXPOSED FRONT EDGES W/ VERTICAL SUPPORTS FROM FLR. @ 3'-0" SPACING. MAX.

D. SAME AS NOTE C ABOVE. ALL W/SHELF TOPS. FRONTS & VERTICAL SUPPORTS COVERED W/PLASTIC LAMINATE.

E. VINYL-COATED, OPEN-WEB METAL SHELVING BY RUBBERMAID O.E.

F. 6'-8"H x 2'-0"W BI-FOLD DOORS-SEE SPECS. PROVIDE METAL STUD & DRYWALL FURRED DOWN HEADER OVER OPENING.

G. SAME AS NOTE F ABOVE. 6'-8"H x 4'-0"W BI-FOLD DOORS.

H. SEE ELECTRICAL & INSTRUMENTATION DWGS. FOR LOCATION OF CONDUITS THRU FLR. SLAB.

J. SERIES 4, TYPE CO, NO.1100 BULLETIN BOARDS BY CLARIDGE O.E. MOUNTED 36" ABOVE FIN. FLR. 36"W x 48"H.

K. 4'-0"W x 6'-8"H FIXED GLASS PANEL W/HORIZONTAL SAFETY DIVIDER AS PER CODE REQ'MTS. PLACE PANEL ON 8" SOLID MASONRY COURSING ON FLR. & UP TO UNDERSIDE OF MASONRY LINTEL 7'-4" ABOVE FIN. FLR.

L. SERIES 350 DARK BRONZE ANOD. ALUM. GLASS DOORS W/CLOSERS BY KAWNEER O.E. PANIC HARDWARE @ ALL EXIT DOORS.

M. ▷ SYMBOLS REFER TO TOILET & SHOWER ROOM ELEVATIONS.

N. 18"H ENAMELED BASE HARDWOOD BENCH BY LYON O.E. - SEE SPECS. 2'-10" IN LENGTH.

O. 12 1/2"W x 4"D x 57 1/4"H RECESS 8" ABOVE FIN. FLR. BRADLEY #2251 TOWEL DISPENSER.

P. 5 5/16"D SURFACE MOUNTED SANITARY NAPKIN/TAMPON VENDOR #420 BY BRADLEY O.E.

Q. PLASTIC LAMINATE TOILET PARTITIONS - SEE SPECS.

R. PROVIDE S.S. SHOWER CURTAIN ROD & VINYL SHOWER CURTAIN W/ PLASTIC HOOKS. TYP. @ ALL SHOWERS.

S. S.S. GRAB RAILS TO MEET HANDICAPPED CODE.

T. 8"W MARBLE SADDLE.

U. DRYWALL ON FURRING W/RIGID INSULATION - SEE TYPICAL WALL SECTION.

V. 4'-8" HIGH FIXED WIRE GLASS WINDOWS, SILL AT 3'-4" ABOVE FIN. FL. & MULLIONS AT 24" O.C. WITH FIRE RATED STL. FRAMES BY HOPE'S ARCH. PRODUCTS, INC., O.E.

W. DOUBLE TIER 15"W x 18"D x 36"H LOUVERED METAL LOCKERS BY LYON O.E.

X. DOUBLE TIER 12"W x 18"D x 36"H LOUVERED METAL LOCKERS BY LYON O.E.

Y. DELUGE SHOWER & EYE/FACE WASH SAFETY STATION #91-589 BY FISHER SCIENTIFIC O.E.

Z. FIRE EXTINGUISHERS & CABINETS - SEE SPECS.

LEGEND

▭ FIRE-RATED WALLS, CMU CONSTRUCTION TO UNDERSIDE OF ROOF DECK WITH FIRE-DAMPERED HVAC PENETRATIONS.

N

FLOOR PLAN

1/4"= 1'-0"

RICHARD D. LARSON REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

CONTROL BUILDING
FLOOR PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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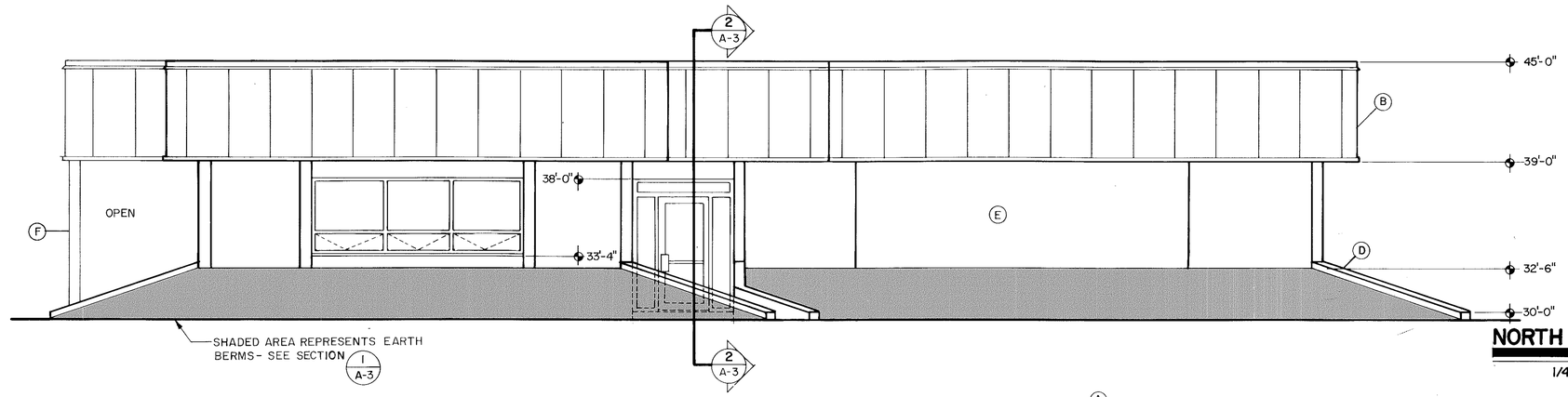
DRAWN KAF FILE NO. 031-006-84 SHEET A-1 OF A-15

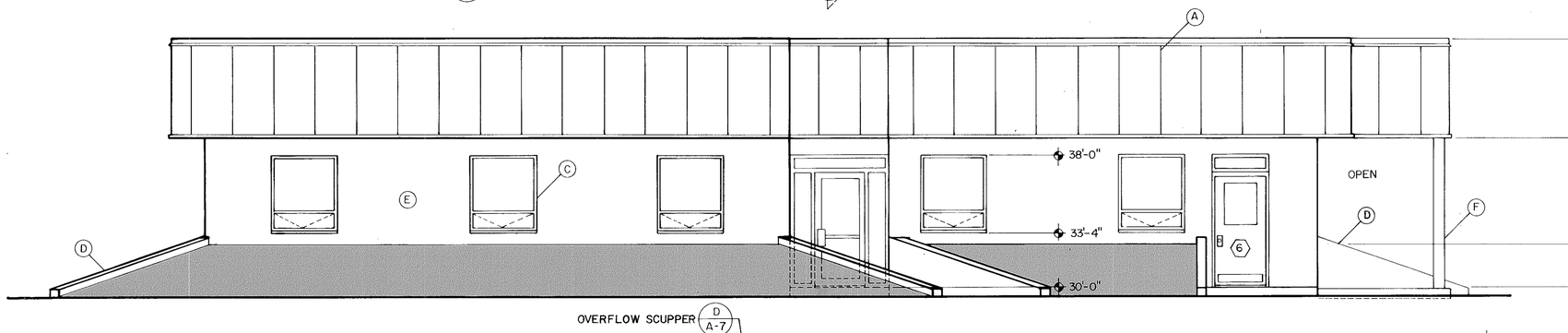
26-01 **RECORD DRAWINGS 12/19/89**

AF 31693A



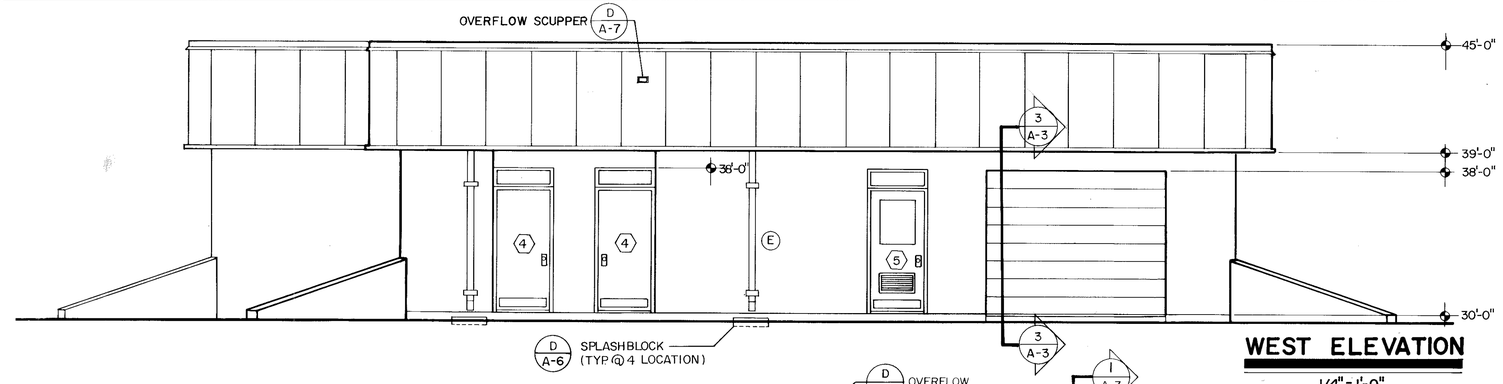
NORTH ELEVATION

1/4" = 1'-0"



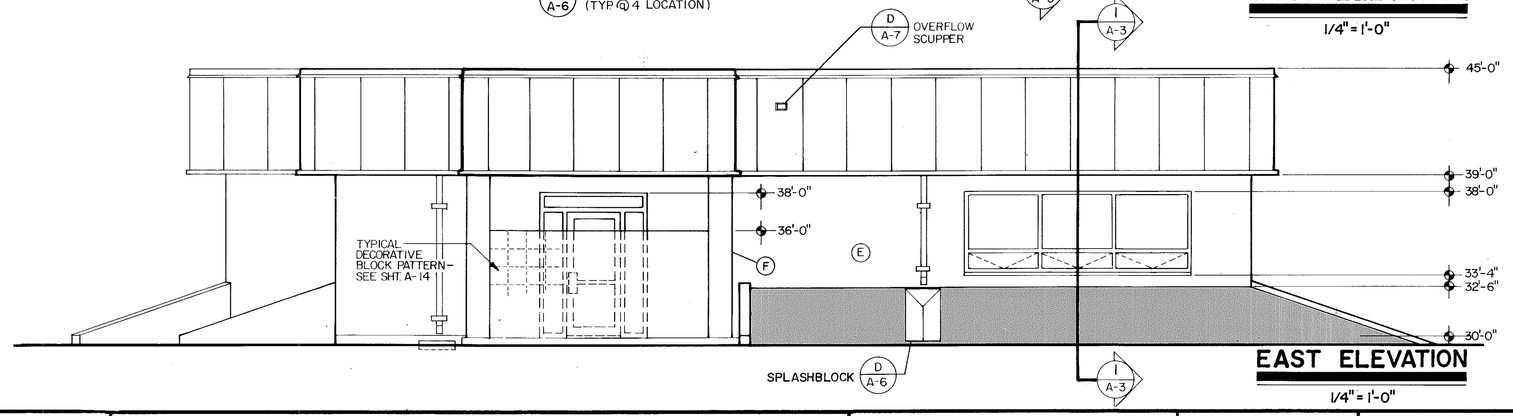
SOUTH ELEVATION

1/4" = 1'-0"



WEST ELEVATION

1/4" = 1'-0"



EAST ELEVATION

1/4" = 1'-0"

NOTES

A. 30" WIDE METAL FASCIA PANELS. SEE WALL SECTIONS ON A-3 & SPECS.

B. FOUR CORNER PANELS TO BE ONE PIECE "L" SHAPE. TWO PIECE PANELS WILL NOT BE APPROVED.

C. DARK BRONZE ANOD. ALUM. OPERATING SASH - SEE SPECS.

D. 8" REINFORCED CONC. RETAINING WALL SLOPES TO GROUND W/ANGLE OF EARTH BERM.

E. EXTERIOR FINISH TO BE 3/4"- 3 COAT STUCCO ON MASONRY BLOCK - SEE SPECS.

F. MASONRY PIER SUPPORT FOR PORCH OVERHANG.

REGISTERED RICHARD D. MOORE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

CONTROL BUILDING
ELEVATIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
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26-01

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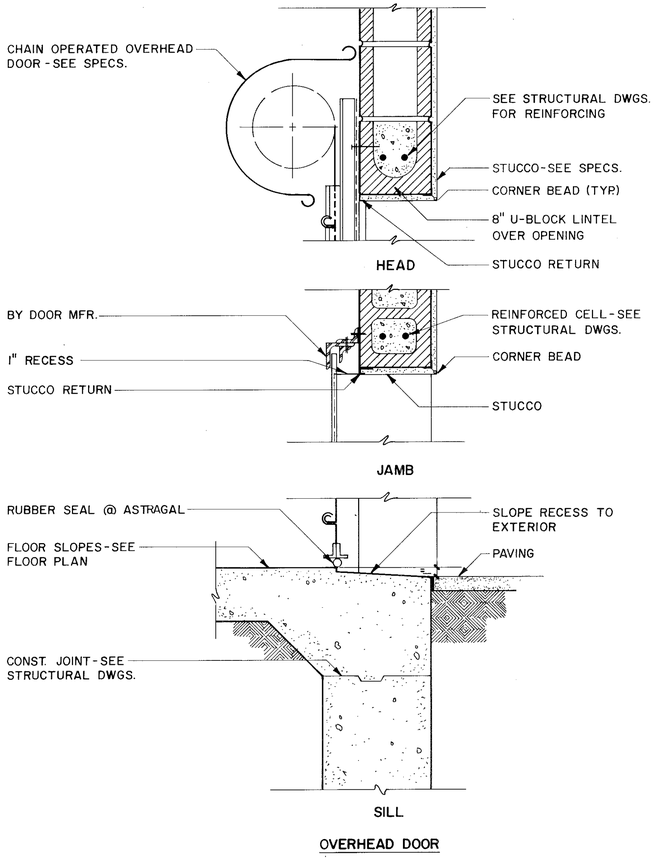
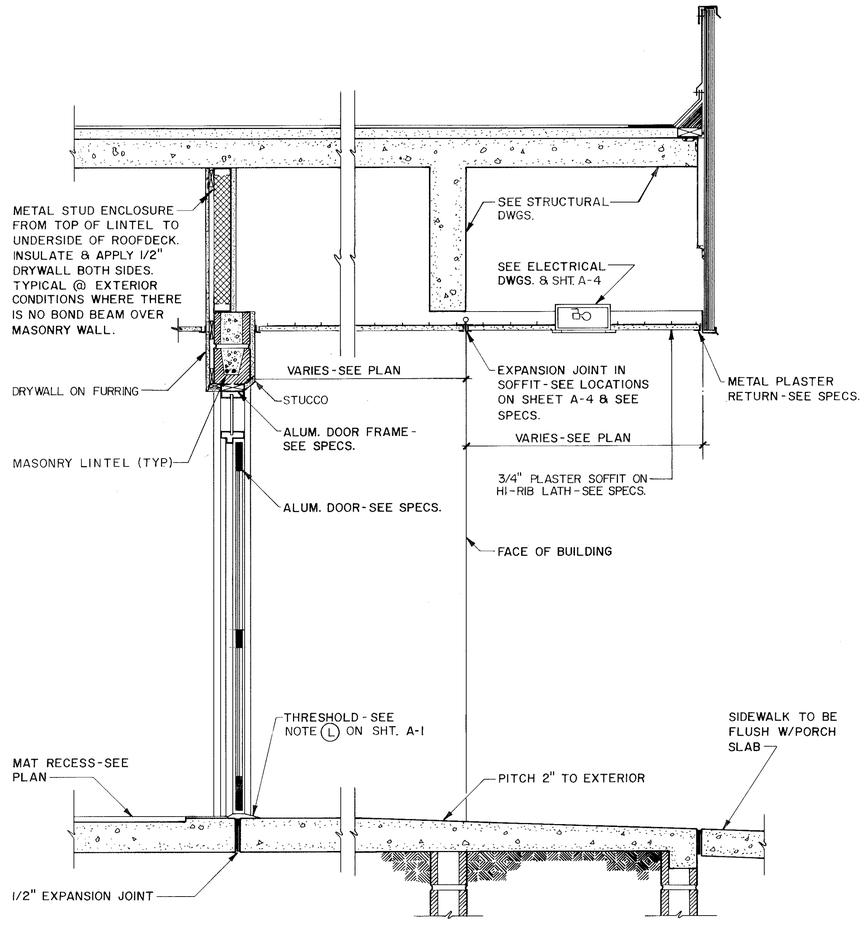
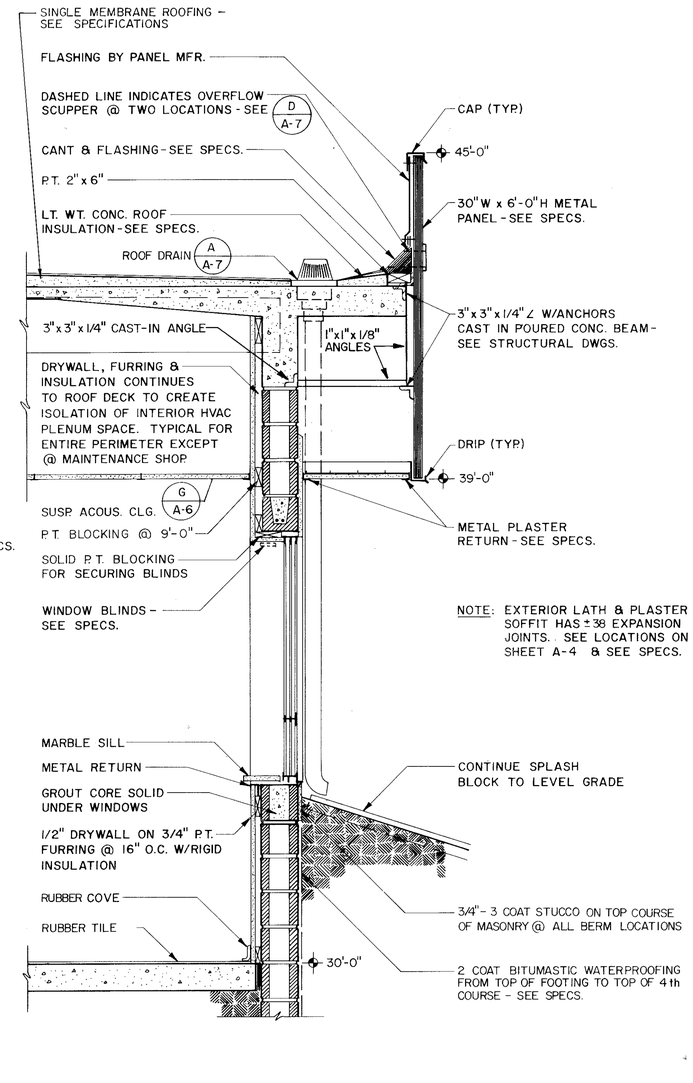


SECTION 3 / VAR.
1 1/2"=1'-0"



SECTION 2 / A-1
3/4"=1'-0"



SECTION 1 / A-1
3/4"=1'-0"

RICHARD D. LARSON REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

CONTROL BUILDING
BUILDING SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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26-01

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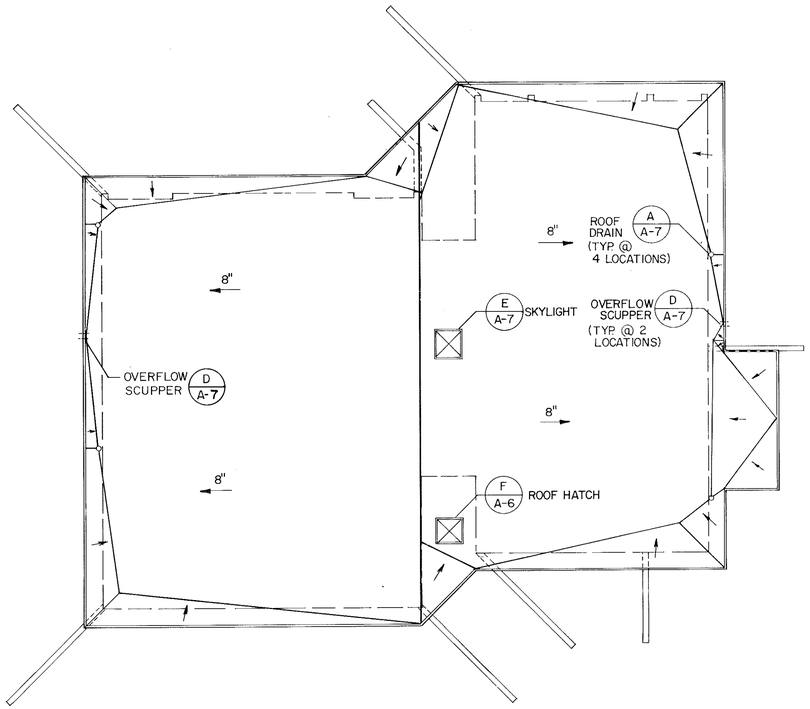
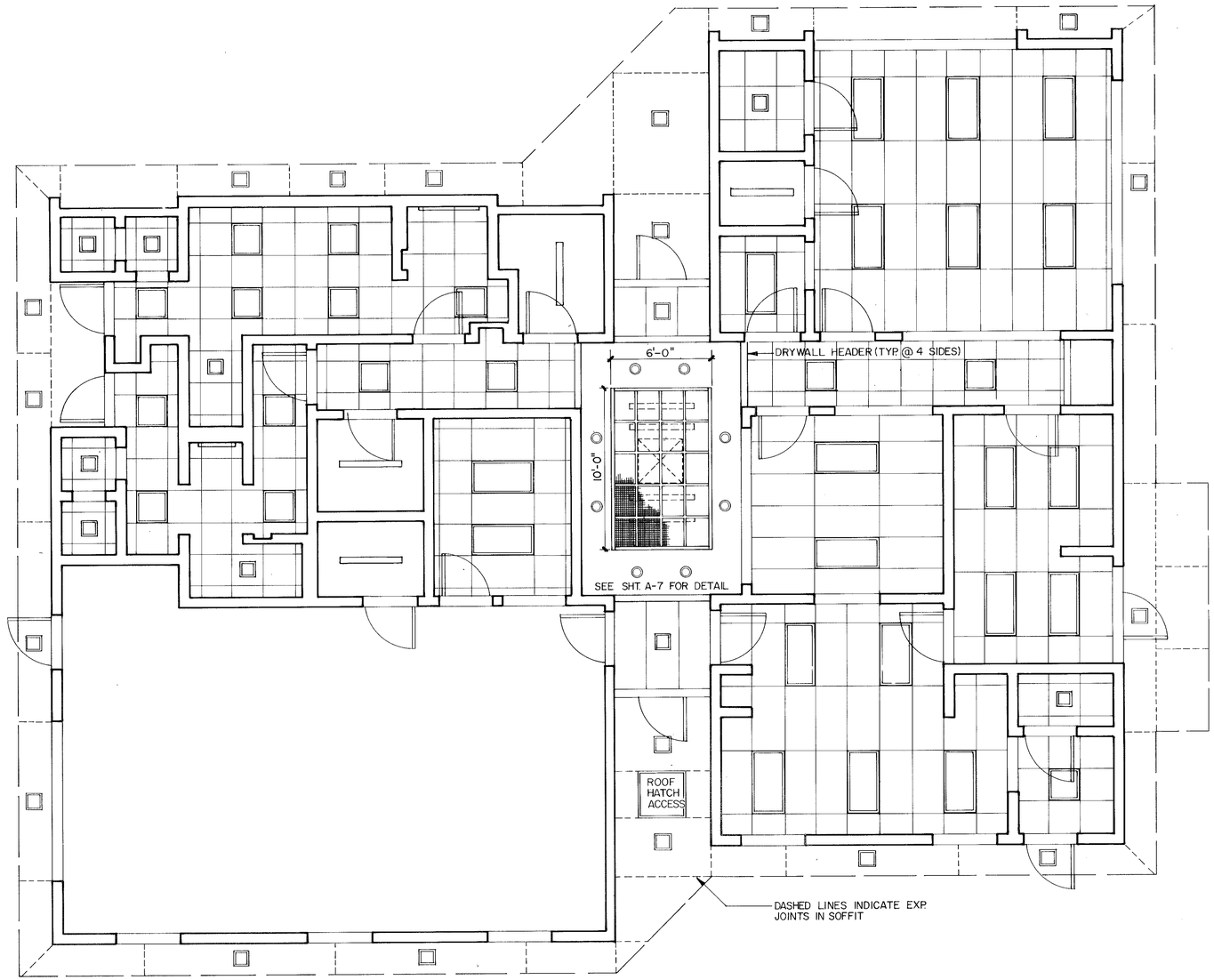


ROOF PLAN

1/8"=1'-0"



REFLECTED CEILING PLAN

1/4"=1'-0"

Richard D. Moore, P.E. No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

CONTROL BUILDING
REFLECTED CEILING & ROOF PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
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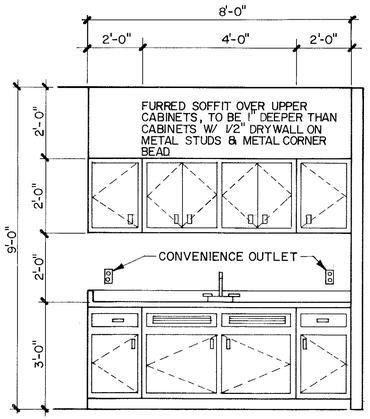
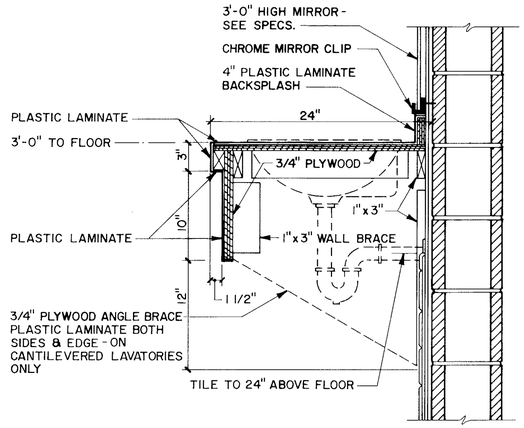
A.F. 31693A



KITCHEN CABINETS

DETAIL E / A-1

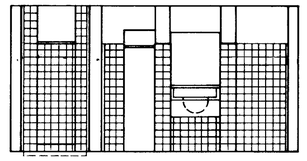
N.T.S.



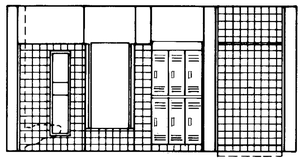
LAVATORY COUNTER

DETAIL F / VAR.

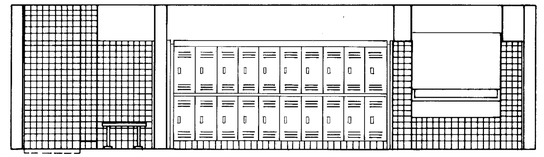
1 1/2" = 1'-0"



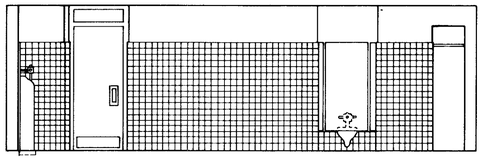
ELEV. 3



ELEV. 4



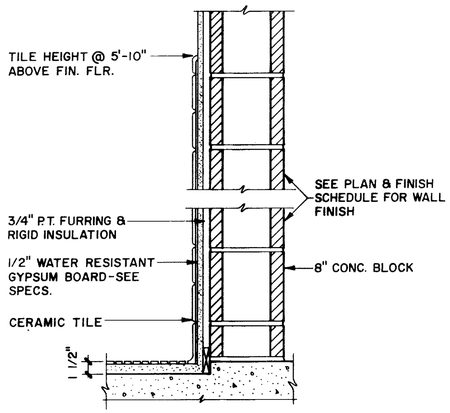
ELEV. 1



ELEV. 2

TOILET ELEVATIONS

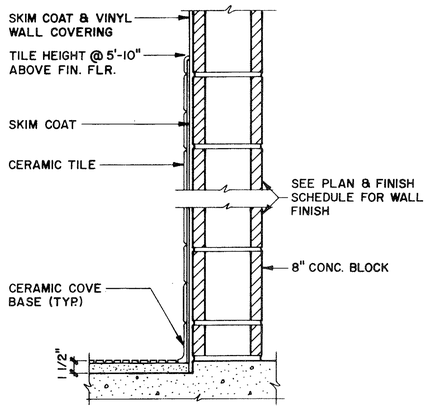
1/4"=1'-0"



TILE ON FURRED DRYWALL

DETAIL D / A-1

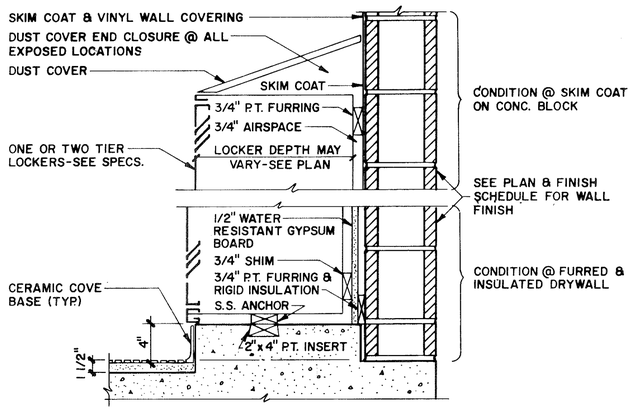
1 1/2" = 1'-0"



TILE ON CONCRETE BLOCK

DETAIL C / A-1

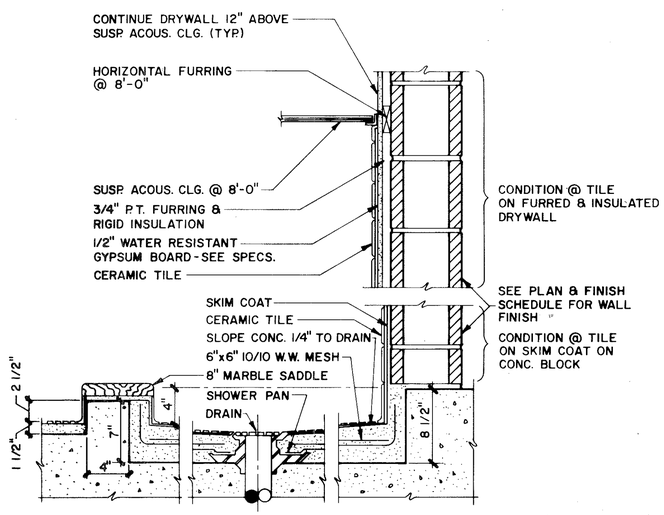
1 1/2" = 1'-0"



LOCKER BASE & WALL

DETAIL B / A-1

1 1/2" = 1'-0"



SHOWER FLOOR & WALL

DETAIL A / A-1

1 1/2" = 1'-0"

RICHARD D. MOORE — REGISTERED — No. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

CONTROL BUILDING
TOILET DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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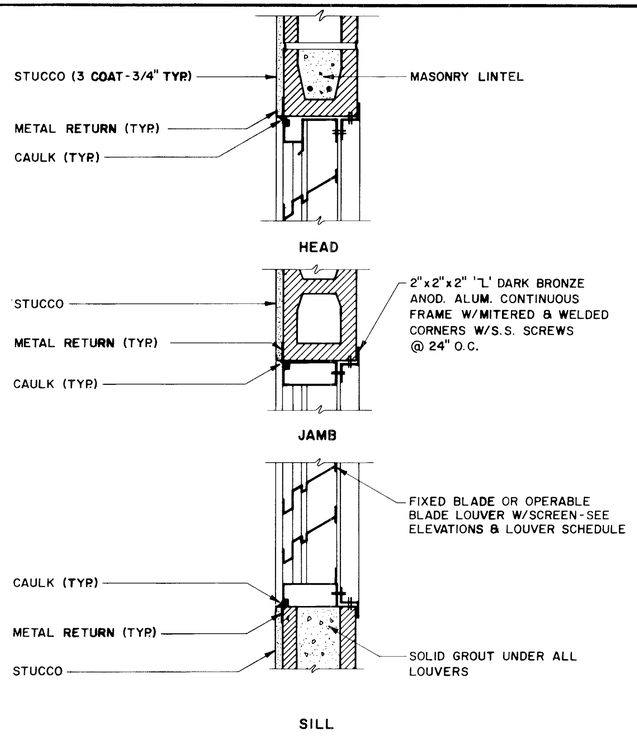
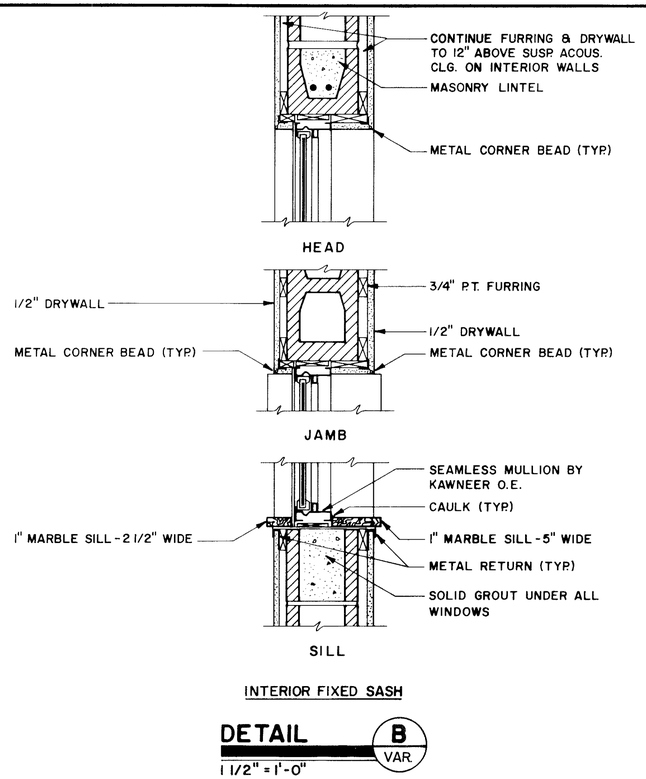
26-01

RECORD DRAWINGS 12/19/89



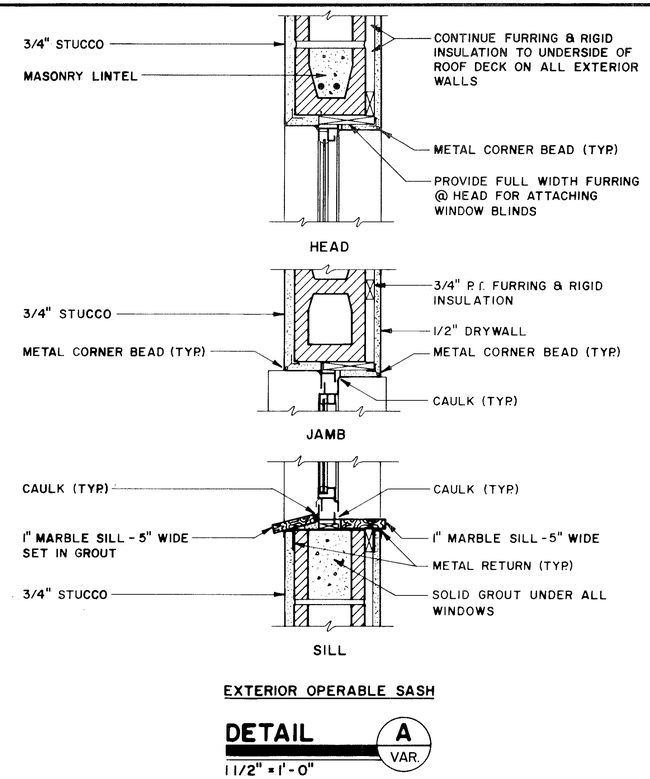
LOUVER

DETAIL C VAR.
1 1/2" = 1'-0"



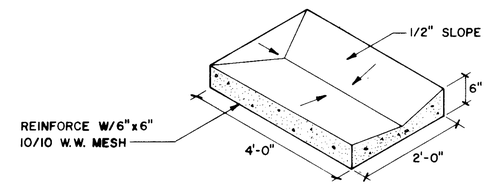
INTERIOR FIXED SASH

DETAIL B VAR.
1 1/2" = 1'-0"



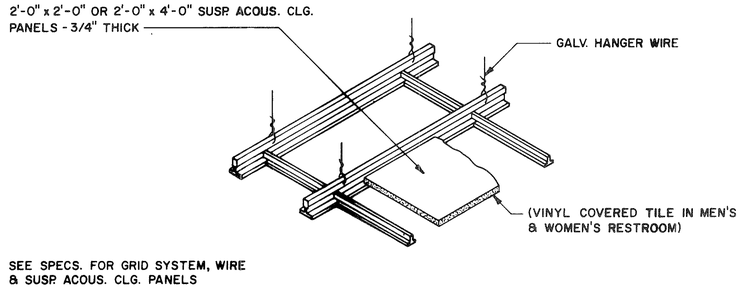
EXTERIOR OPERABLE SASH

DETAIL A VAR.
1 1/2" = 1'-0"



SPLASHBLOCK

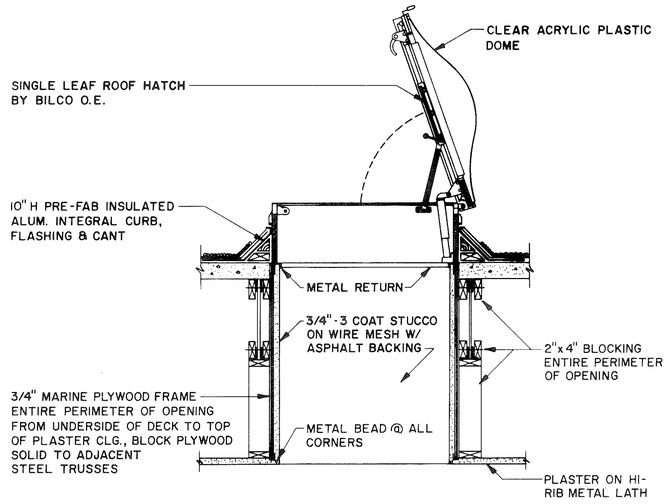
DETAIL D VAR.
N.T.S.



SEE SPECS. FOR GRID SYSTEM, WIRE & SUSP. ACOUS. CLG. PANELS

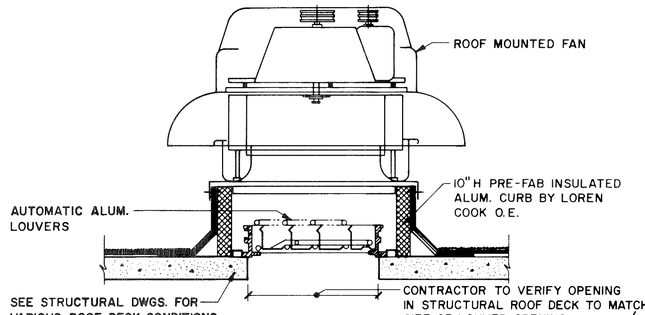
SUSPENDED ACOUSTICAL CEILING

DETAIL G VAR.
N.T.S.



ROOF ACCESS HATCH

DETAIL F A-4
N.T.S.



ROOF EXHAUST FAN

DETAIL E VAR.
N.T.S.

CHARLES D. LARSON REGISTERED ENGINEER No. 34083 STATE OF FLORIDA

MISCELLANEOUS DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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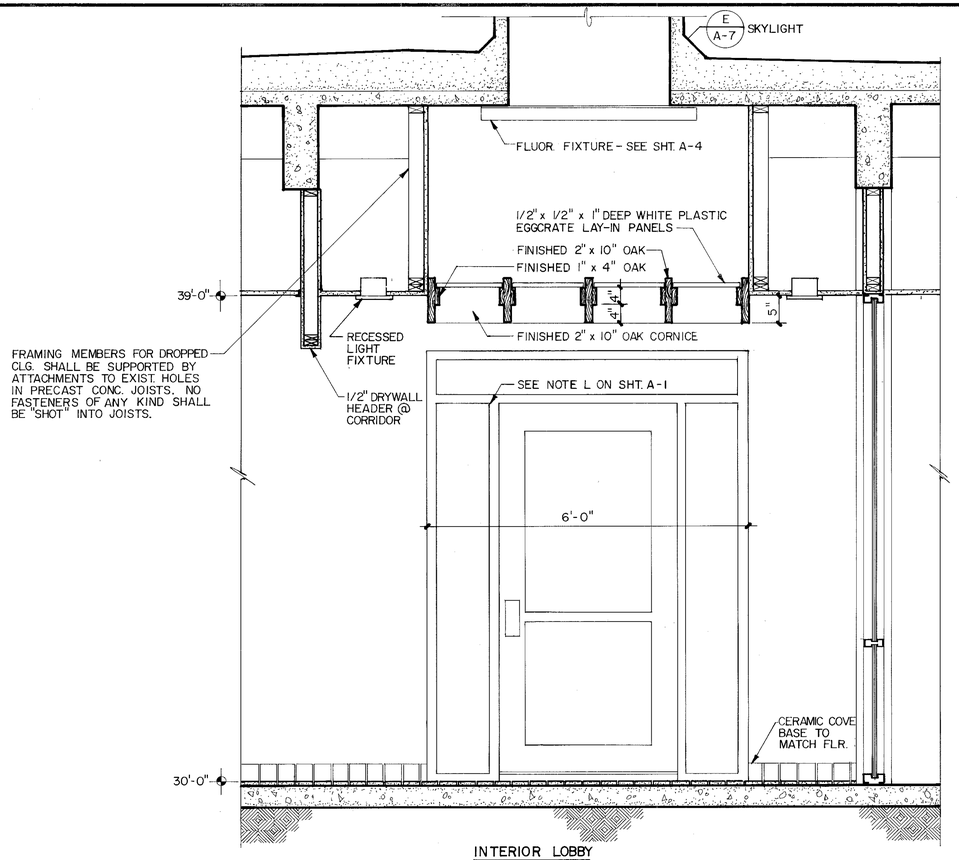
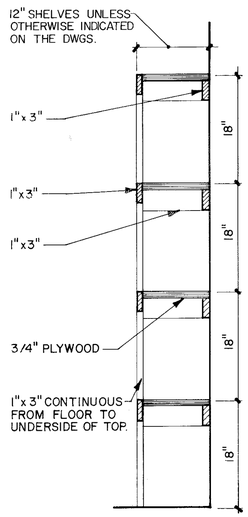


INTERIOR LOBBY

SECTION I / A-1

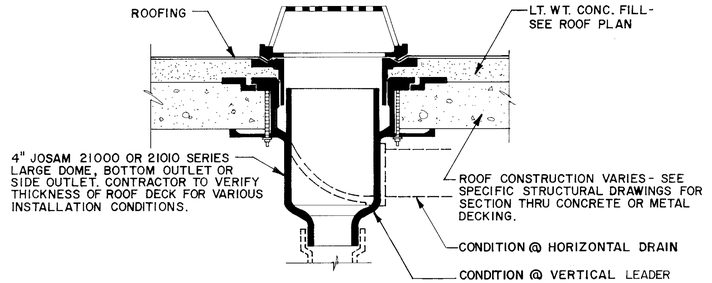
3/4" = 1'-0"



12" OR 18" SHELVES

DETAIL B / A-1

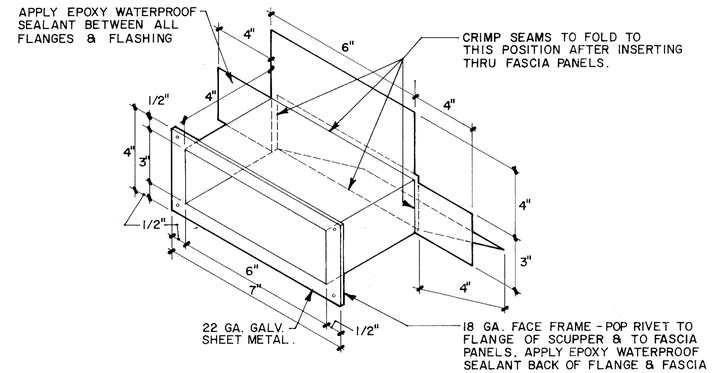
1" = 1'-0"



ROOF DRAIN

DETAIL A / A-4

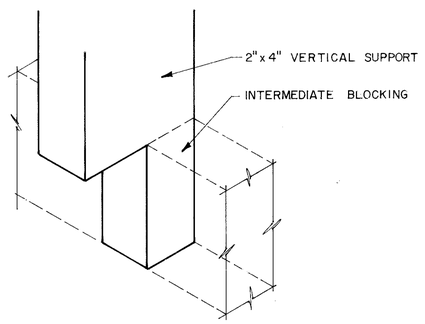
1/2" = 1'-0"



OVERFLOW SCUPPER

DETAIL D / A-4

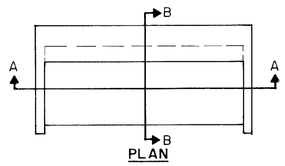
N.T.S.



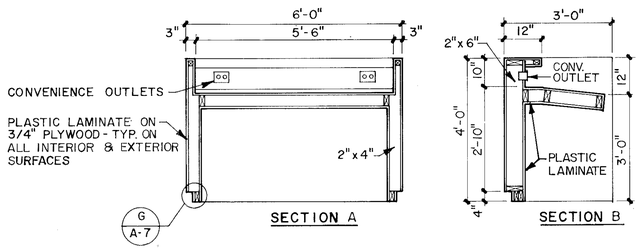
BASE CONDITION

DETAIL G / A-7

1/2" = 1"



PLAN



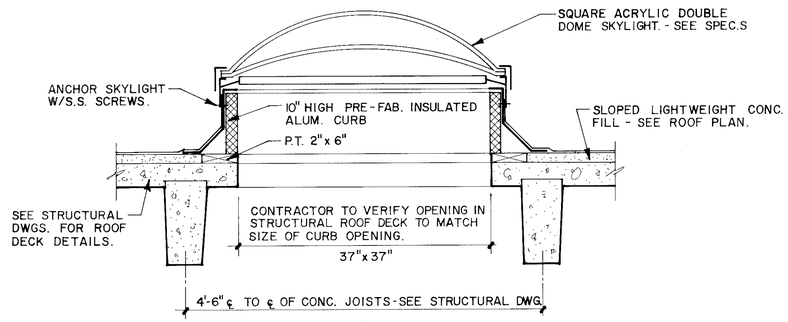
SECTION A

SECTION B

LABORATORY DESK

DETAIL F / A-1

1/2" = 1'-0"



SKYLIGHT

DETAIL E / A-4

N.T.S.

RICHARD D. MOORE REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

MISCELLANEOUS DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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26-01

RECORD DRAWINGS 12/19/89

LOUVER SCHEDULE

MARK	SIZE	TYPE	REMARKS
⚠1	3'-4"W x 10'-0"H	CONST. SPEC. # 6157	
2	3'-6"W x 3'-6"H	CONST. SPEC. # 6157	
3	3'-0"W x 4'-0"H	CONST. SPEC. # 6157	
4	4'-0"W x 8'-0"H	CONST. SPEC. # 6967M	
5	6'-0"W x 2'-0"H	CONST. SPEC. # 6157	
6	4'-0"W x 12'-8"H	CONST. SPEC. # 6157	

NOTE: ALL LOUVERS TO HAVE .8 x 8 .028 SS HIGH TENSILE ALLOY NO. 304 SCREEN MESH IN SS FRAMES W/ THREADED SS STUDS SECURED TO LOUVER FRAME. PROVIDE SS WING NUTS.

FINISH SCHEDULE

MARK	ROOM	FLOOR	WALL BASE	WALLS	WALL FINISH	CEILING	SADDLE	REMARKS
(1)	CONTROL ROOM	RUBBER TILE	RUBBER COVE	SKIM COAT ON CMU OR DRYWALL	VINYL W.C.	SUSP. ACOUS. TILE @ 9'-0"		
2	RECORD STORAGE	RUBBER TILE	RUBBER COVE	SKIM COAT ON CMU OR DRYWALL	VINYL W.C.	SUSP. ACOUS. TILE @ 9'-0"		
3	TELEPHONE	RUBBER TILE	RUBBER COVE	MASONRY BLOCK	PAINTED	PAINTED CONCRETE		
4	COMPUTER ROOM	RUBBER TILE	RUBBER COVE	SKIM COAT ON CMU OR DRYWALL	VINYL W.C.	SUSP. ACOUS. TILE @ 9'-0"		
5	SUPERVISOR'S OFFICE	RUBBER TILE	RUBBER COVE	SKIM COAT ON CMU	VINYL W.C.	SUSP. ACOUS. TILE @ 9'-0"		
6	LUNCH ROOM	RUBBER TILE	RUBBER COVE	SKIM COAT ON CMU OR DRYWALL	VINYL W.C.	SUSP. ACOUS. TILE @ 9'-0"		
7	LABORATORY	ACID RESISTANT TILE	ACID RESISTANT COVE	SKIM COAT ON CMU OR DRYWALL	VINYL W.C.	SUSP. ACOUS. TILE @ 9'-0"		
8	CHEM. STORAGE & VEST.	ACID RESISTANT TILE	ACID RESISTANT COVE	SKIM COAT ON CMU OR DRYWALL	VINYL W.C.	SUSP. ACOUS. TILE @ 9'-0"		
9	LOBBY	CERAMIC TILE	CERAMIC TILE	SKIM COAT ON CMU	VINYL W.C.	DRYWALL AND WOOD GRILLE		SEE SHT. A-7
10	JANITOR	1"x1" UNGLAZED TILE	4"x4" COVE	MASONRY BLOCK	PAINTED	PAINTED CONCRETE	8" MARBLE	VINYL W.C. ABOVE TILE
11	MEN'S LOCKERS	1"x1" UNGLAZED TILE	4"x4" COVE	SKIM COAT ON CMU OR DRYWALL	4"x4" TILE	SUSP. ACOUS. TILE @ 8'-0"	8" MARBLE	VINYL W.C. ABOVE TILE
12	WOMEN'S LOCKERS	1"x1" UNGLAZED TILE	4"x4" COVE	SKIM COAT ON CMU OR DRYWALL	4"x4" TILE	SUSP. ACOUS. TILE @ 8'-0"	8" MARBLE	VINYL W.C. ABOVE TILE
13	ELECT.	RUBBER TILE	RUBBER COVE	MASONRY BLOCK	PAINTED	PAINTED CONCRETE		
14	TOOL STOR.	RUBBER TILE	RUBBER COVE	MASONRY BLOCK	PAINTED	PAINTED CONCRETE		
15	SHOP OFFICE	RUBBER TILE	RUBBER COVE	SKIM COAT ON CMU OR DRYWALL	VINYL W.C.	SUSP. ACOUS. TILE @ 9'-0"		
16	MAINTENANCE SHOP	BROOM FINISH CONC.	NONE	MASONRY BLOCK	PAINTED	DRESSED & PAINTED STRUCT.		

GENERAL NOTES

1. CORNER BEADS & PLASTER RETURNS TO BE USED @ ALL STUCCO APPLICATIONS.
2. TOP OF ALL EMBEDDED ITEMS (FLOOR DRAINS, GRATING, FRAMES, EXPANSION JOINTS, ETC.) SHALL BE LEVEL W/ THE TOP OF APPROPRIATE FINISH FLOOR
3. ALL WOOD THAT IS ATTACHED TO MASONRY SHALL BE PRESSURE TREATED (P.T.)
4. LOCK KEYS (PIN TYPE)
   A. ALL EXTERIOR DOORS KEYED ALIKE.
   B. ALL INTERIOR DOORS KEYED IN SUB-GROUPS.
   C. ALL DOORS MASTER KEYED.
5. FOR DOOR GRILLE SIZE & LOCATION SEE DOOR SCHEDULE. ALL GRILLES TO BE DARK BRONZE ANOD. ALUM.
6. ALL HOLLOW METAL DOORS TO HAVE REINFORCING UNIT TO RECEIVE LOCKSET.
7. ALL WINDOW GLASS TO BE 1/4" TEMPERED BRONZE CLEAR FLOAT GLASS.
8. ALL WINDOW FRAMES, LOUVERS & GRILLES TO BE DARK BRONZE ANOD. ALUM.
9. COLORS OF WALL PAINT & TILE SHALL BE SELECTED BY THE ENGINEER. CONTRACTOR TO SUBMIT COLOR CHIPS W/ SHOP DWGS.
10. ALL LOUVER DIMENSIONS SHALL BE VERIFIED IN THE FIELD BEFORE FABRICATION.
11. THRESHOLD - EXTRUDED ALUM. WATER RETURN (PEMKO 136A O.E.) W/ CONCEALED INTERLOCKING HOOK STRIP ON DOOR (PEMKO 61 O.E.)

DOOR SCHEDULE

MARK	HW-NO.	FRAME SIZE	DOOR SIZE	FRAME	DOOR	JAMB	HEAD	REMARKS
(1)	3,4,5,6,7	3'-4" x 8'-0"	3'-0"x6'-8"x1 3/4"	STEEL	WOOD-FLUSH	6 3/4"x 2"	2"	(SEE NOTE)
2	2,5,6,7	3'-4" x 8'-0"	3'-0"x6'-8"x1 3/4"	STEEL	WOOD-FLUSH	6 3/4"x2"	2"	(SEE NOTE)
3	2,5,6,7	3'-4" x 8'-0"	3'-0"x6'-8"x1 3/4"	STEEL	WOOD-FLUSH	6 3/4"x2"	2"	4"x25" VIEW (SEE NOTE)
4	2,5,6,7,8	3'-4" x 8'-0"	3'-0"x 6'-8"x1 3/4"	ALUM.	ALUM.-FLUSH	6 3/4"x2"	2"	TRANSOM
5	2,5,6,7,8	3'-4" x 8'-0"	3'-0"x 6'-8"x1 3/4"	ALUM.	ALUM.-FLUSH	6 3/4"x2"	2"	TRANS./24"x 30" VIEW/12"x24"LVR
6	2,5,6,7,8	3'-4" x 8'-0"	3'-0"x 6'-8"x1 3/4"	ALUM.	ALUM.-FLUSH	6 3/4"x2"	2"	TRANSOM/24"x 30" VIEW
7	2,5,6,7,8	3'-4" x 7'-4"	3'-0"x 7'-0"x1 3/4"	ALUM.	ALUM.-FLUSH	6 3/4"x2"	4"	24"x 30" VIEW/12"x 24" LOUVER
8	2,5,6,7,8	3'-4" x 7'-4"	3'-0"x 7'-0"x1 3/4"	ALUM.	ALUM.-FLUSH	6 3/4"x2"	4"	24"x 30" VIEW
9	2,5,6,7,8	6'-4" x 8'-8"	3'-0"x 8'-0"x1 3/4"	ALUM.	ALUM.-FLUSH	6 3/4"x2"	4"	24"x 78" LOUVER
10	2,5,6,7,8	6'-4" x 7'-4"	3'-0"x 7'-0"x1 3/4"	ALUM.	ALUM.-FLUSH	6 3/4"x2"	4"	24"x 30" VIEW/12"x 24" LOUVER
11	2,5,6,7,8	3'-4" x 7'-0"	3'-0"x6'-8"x1 3/4"	ALUM	ALUM-FLUSH	6 3/4"x2"	4"	24"x 30" VIEW/12"x24" LOUVER
12	2,5,6,7,8	3'-4 x 7'-0"	3'-0"x6'-8"x1 3/4"	ALUM	ALUM-FLUSH	6 3/4"x2"	4"	24"x 30" VIEW

NOTE: TRANSOM; ALL GLASS w/ WIRED GLASS, 20 MINUTES FIRE-RATED

HARDWARE SCHEDULE

HW.-NO.	TYPE	REMARKS	HW.-NO.	TYPE	REMARKS
1	LOCKSET	NO LOCK	5	CLOSER	
2	LOCKSET	LOCKABLE	6	KICK PLATES	
3	PUSH PLATE		7	STOP & HOLDER	
4	PULL		8	THRESHOLD	SEE NOTE # 11

Professional Engineer — Richard P. Moore — No. 34083 — State of Florida — Registered Engineer

SCHEDULES

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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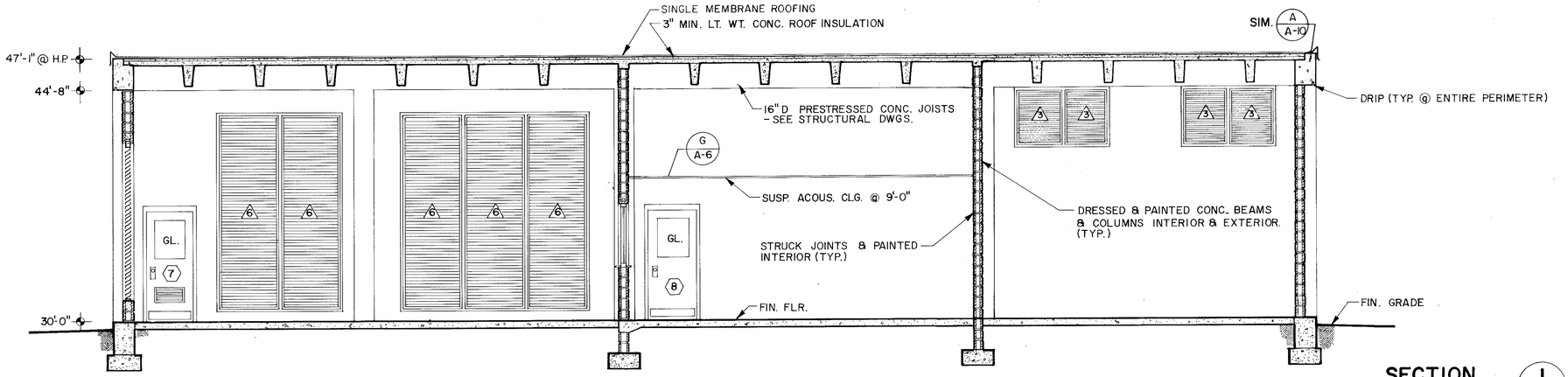
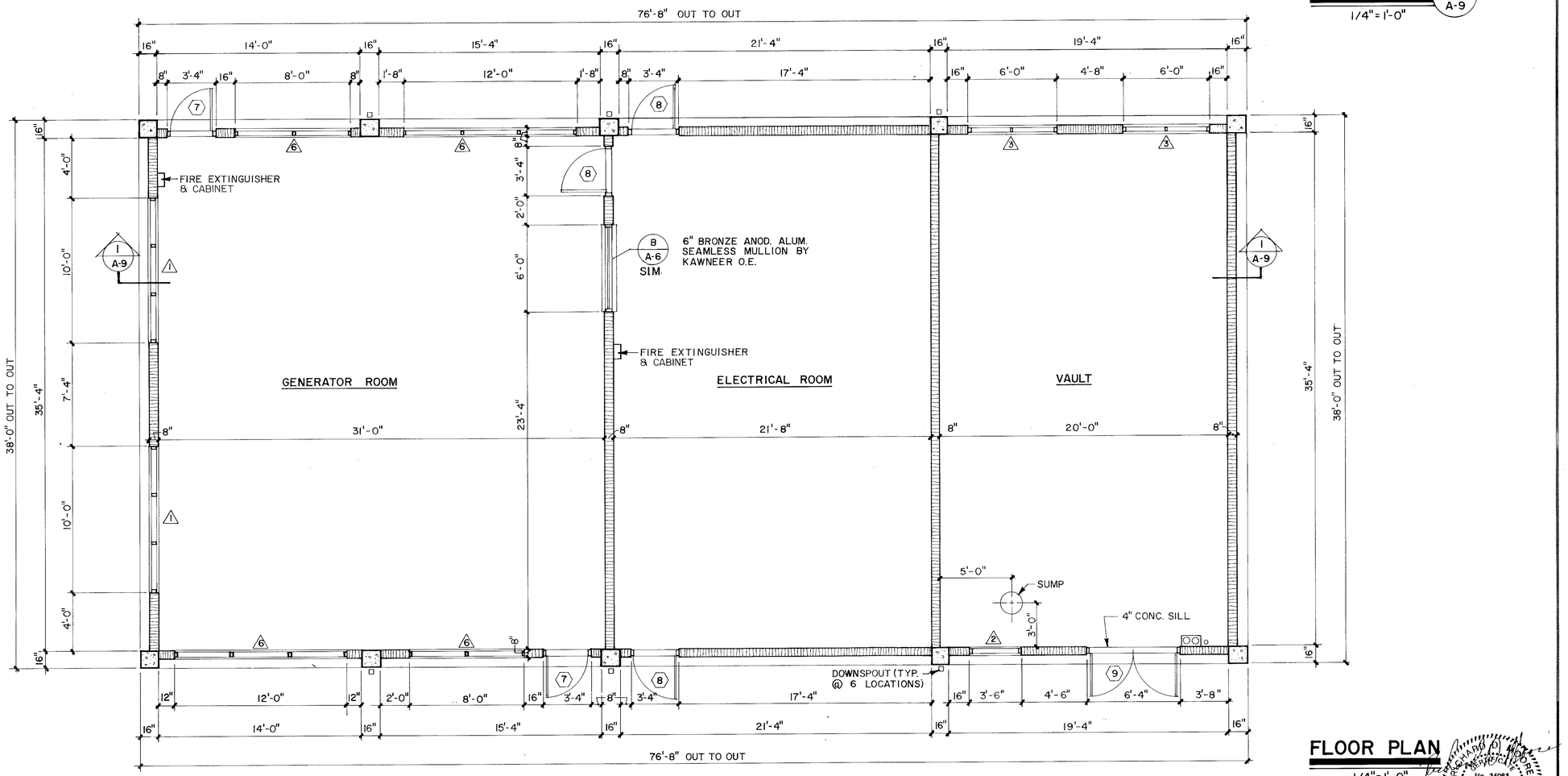


SECTION 1 / A-9
1/4" = 1'-0"



FLOOR PLAN
1/4" = 1'-0"

REGINALD L. MOORE REGISTERED ENGINEER No. 34083 STATE OF FLORIDA

ELECTRICAL BUILDING
PLAN & SECTION

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
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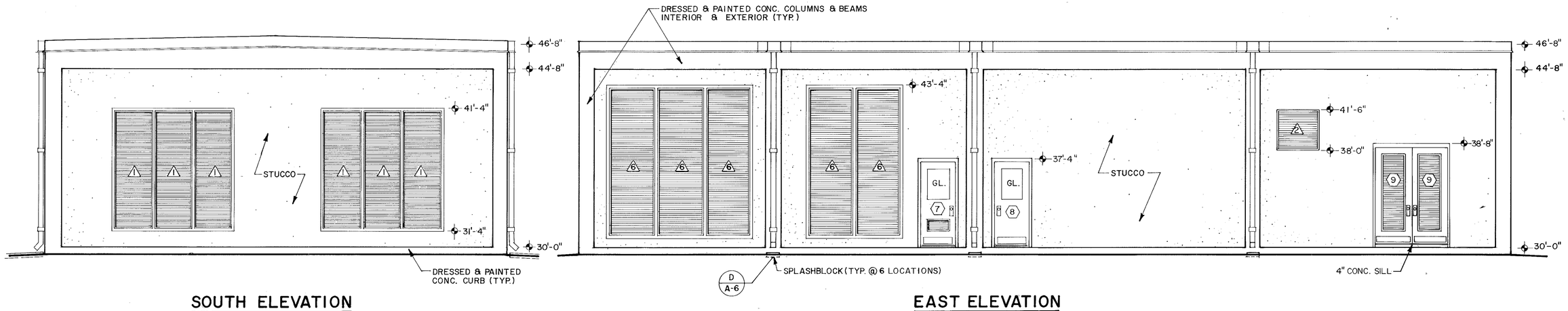
AF 31693A

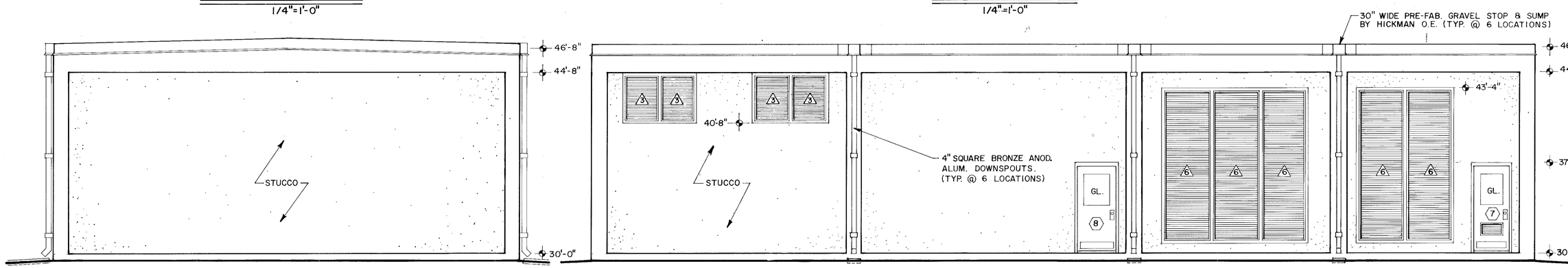


SOUTH ELEVATION

1/4"=1'-0"

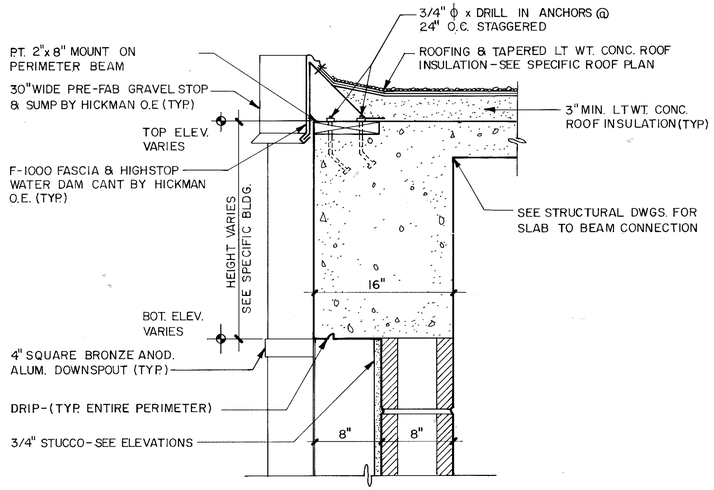
EAST ELEVATION

1/4"=1'-0"



NORTH ELEVATION

1/4"=1'-0"



TYPICAL BEAM/FASCIA

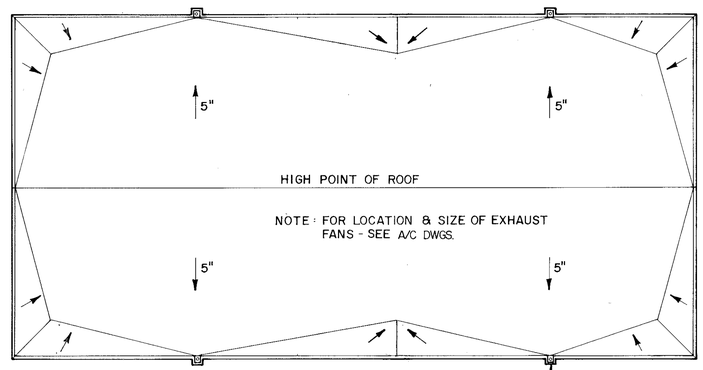
DETAIL A

VAR.

1 1/2"=1'-0"

WEST ELEVATION

1/4"=1'-0"



N

ROOF PLAN

1/8"=1'-0"

RICHARD D. MOORE REGISTERED ENGINEER No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

ELECTRICAL BUILDING
ELEVATIONS & ROOF PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

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Consulting Engineers
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(813) 794-5450

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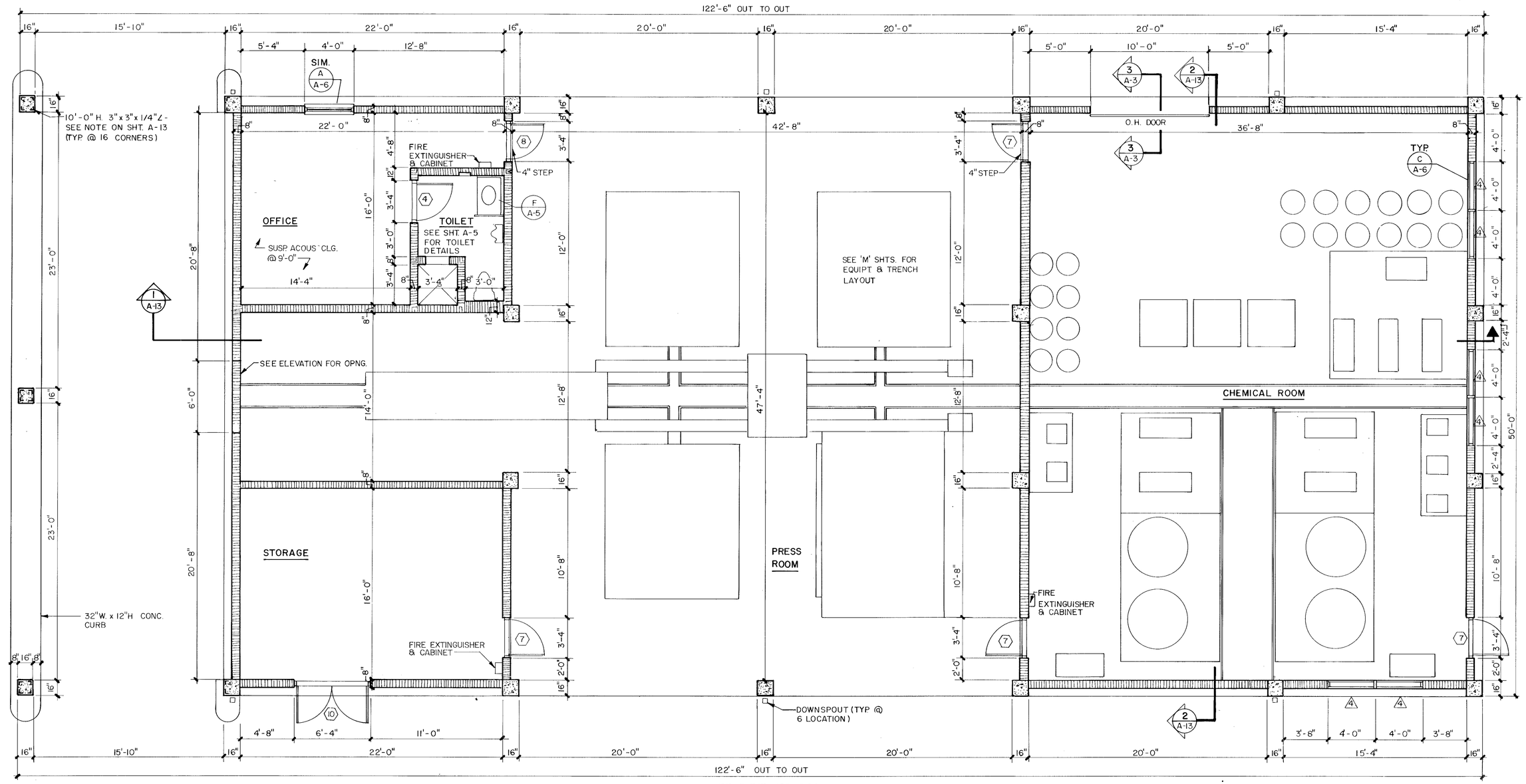
DRAWN L.F.C.II FILE NO. 031-006-84 SHEET A-10 OF A-15

26-01 RECORD DRAWINGS 12/19/89

AF 31693A



FLOOR PLAN

1/4" = 1'-0"

RICHARD D. MOORE REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

N

DEWATERING BUILDING
FLOOR PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
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26-01

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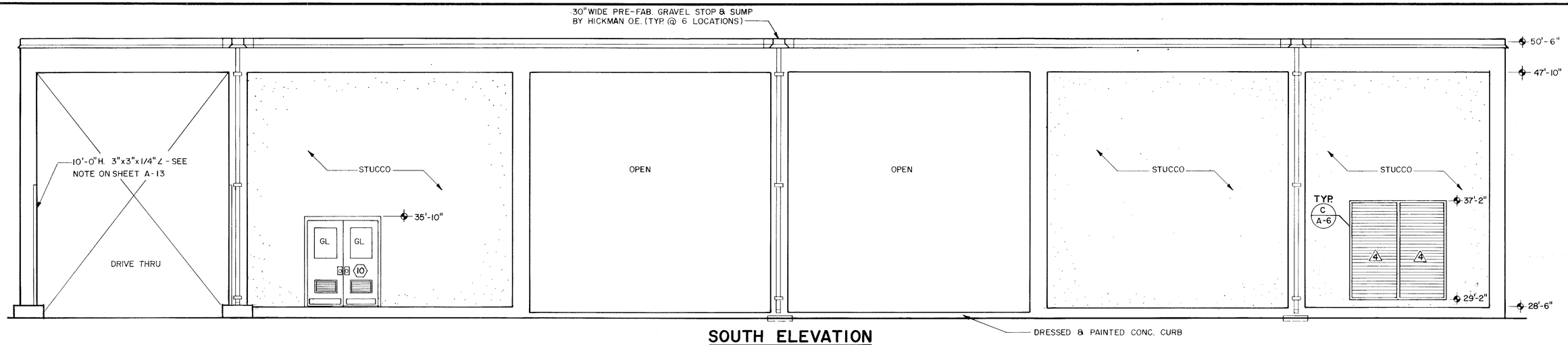
A.F. 31693A



SOUTH ELEVATION

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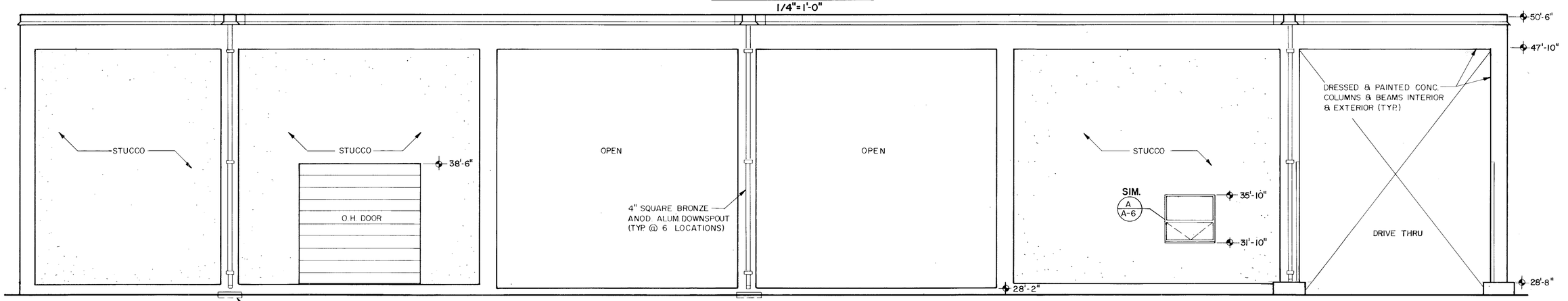

NORTH ELEVATION

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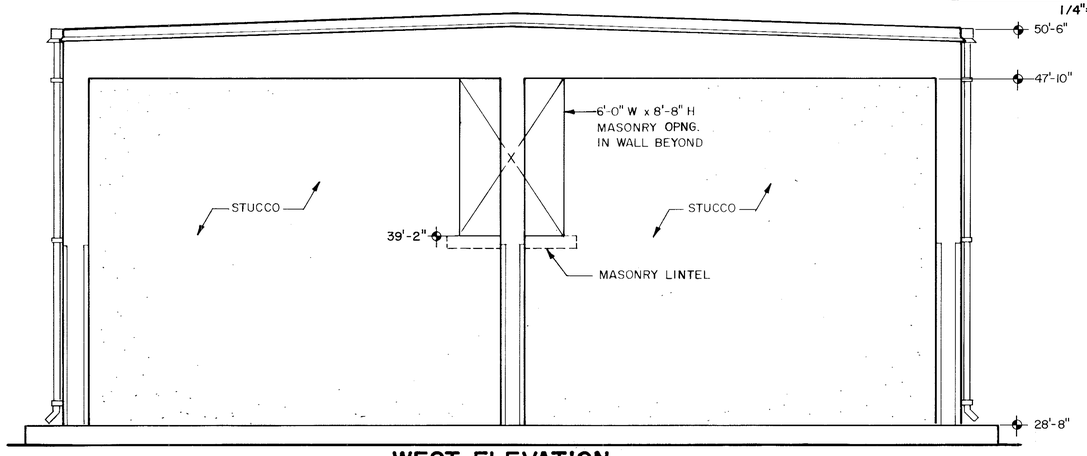

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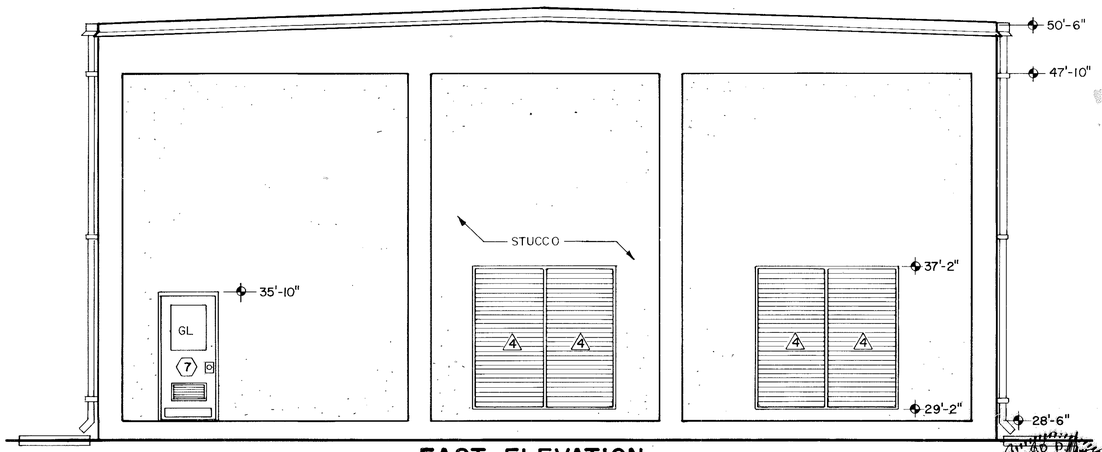

EAST ELEVATION

1/4"=1'-0"

RICHARD F. MOORE REGISTERED ARCHITECT No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

DEWATERING BUILDING
ELEVATIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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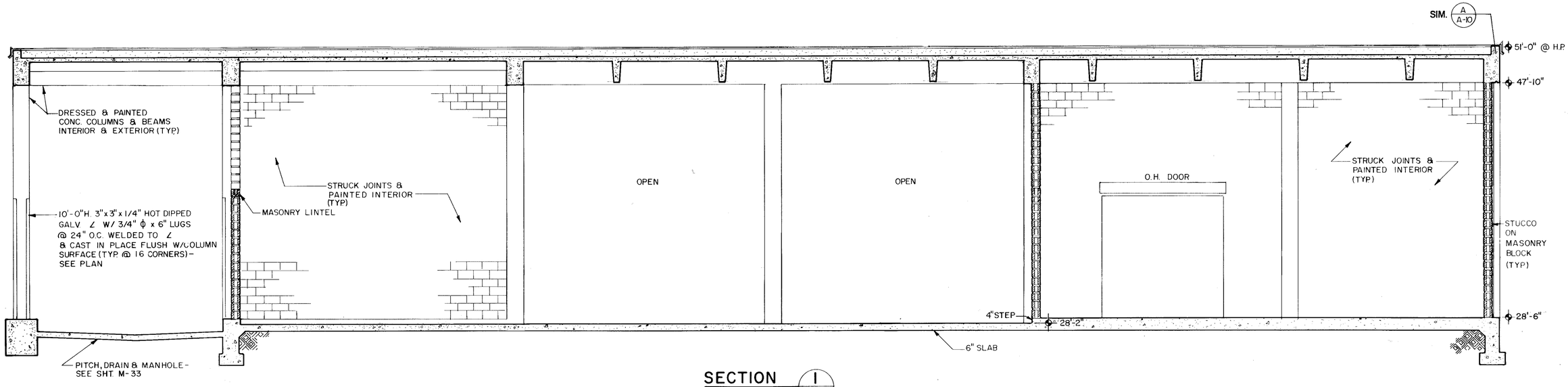
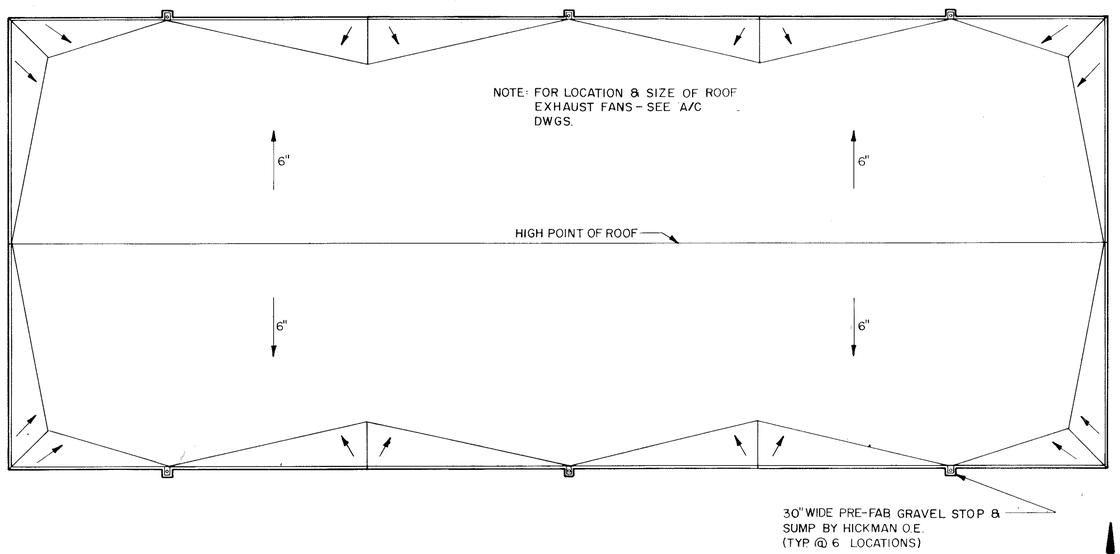
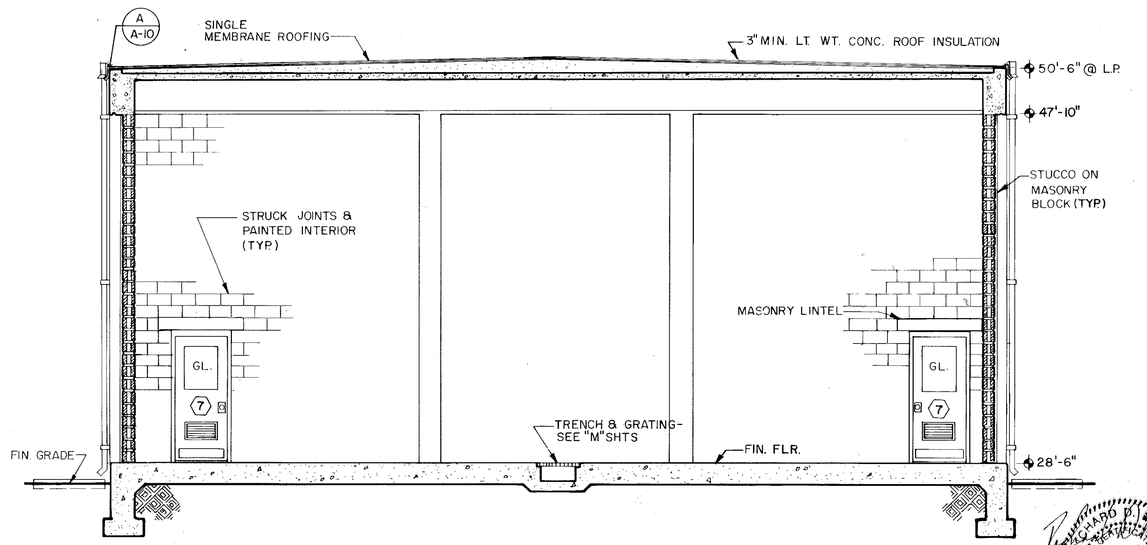


SECTION 1 / A-11
1/4"=1'-0"



ROOF PLAN
1/8"=1'-0"



SECTION 2 / A-11
1/4"=1'-0"

RICHARD P. LARSON SERVICE No. 34063 STATE OF FLORIDA REGISTERED ENGINEER

DEWATERING BUILDING
SECTIONS & ROOF PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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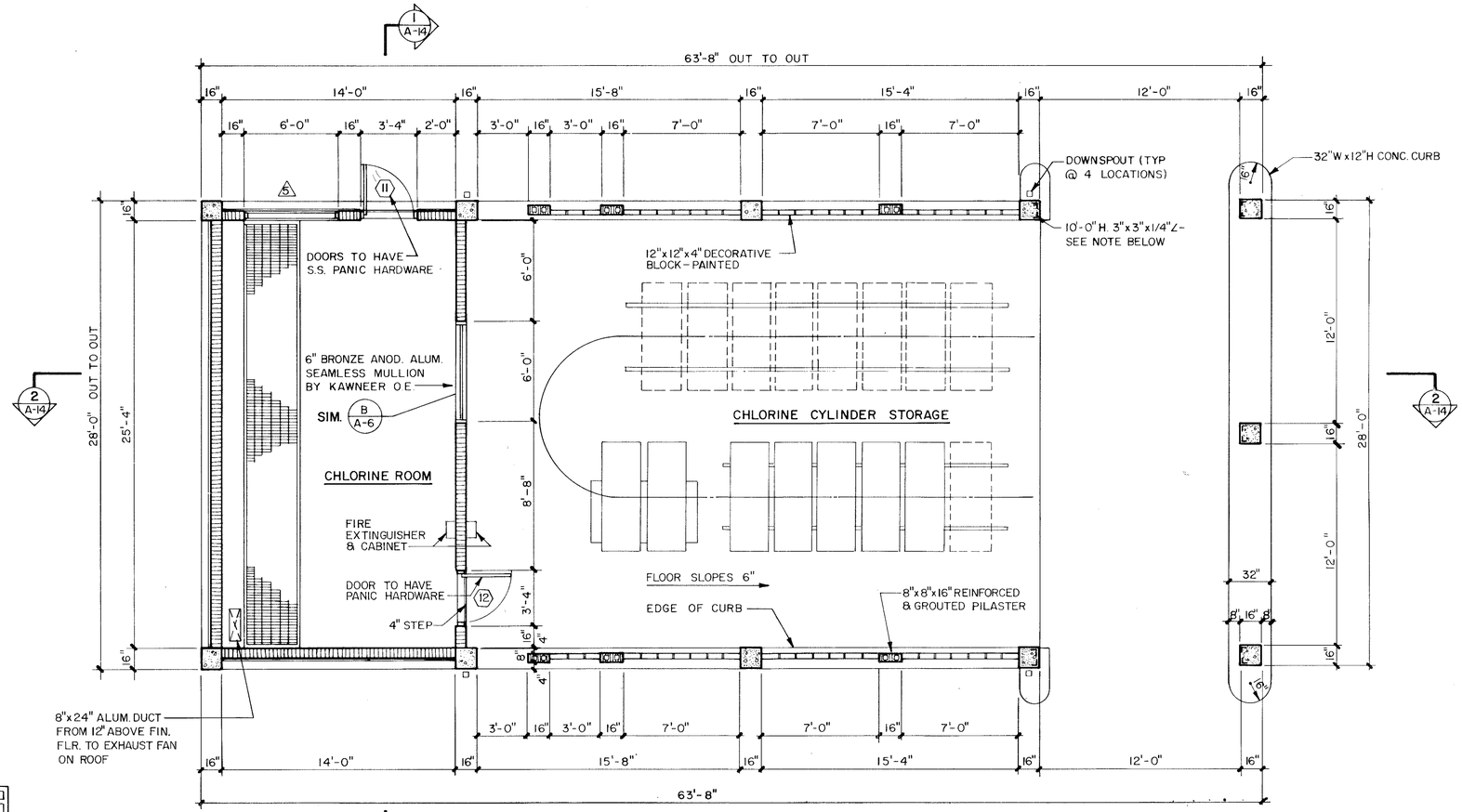
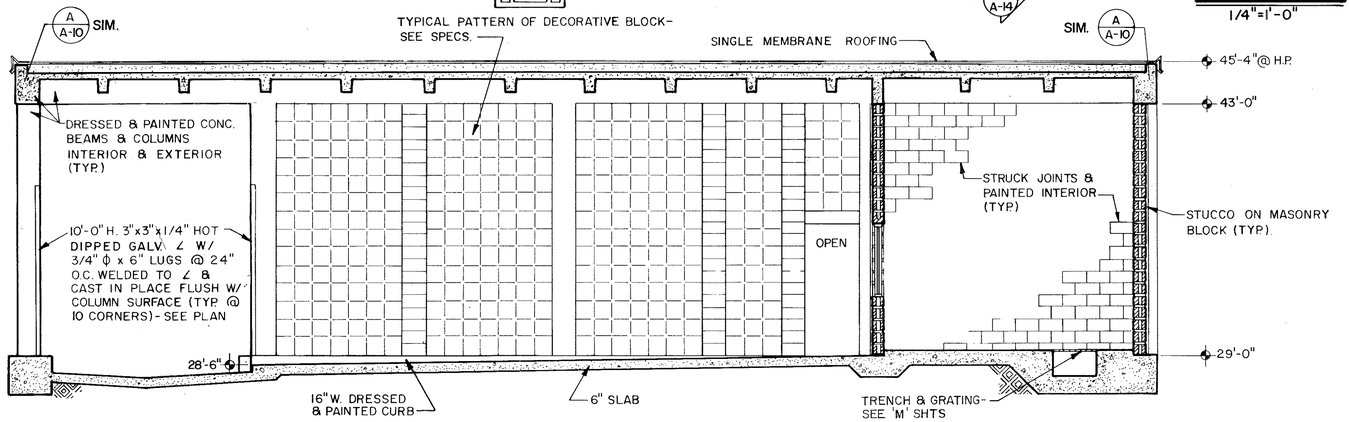
26-01 **RECORD DRAWINGS 12/19/89**



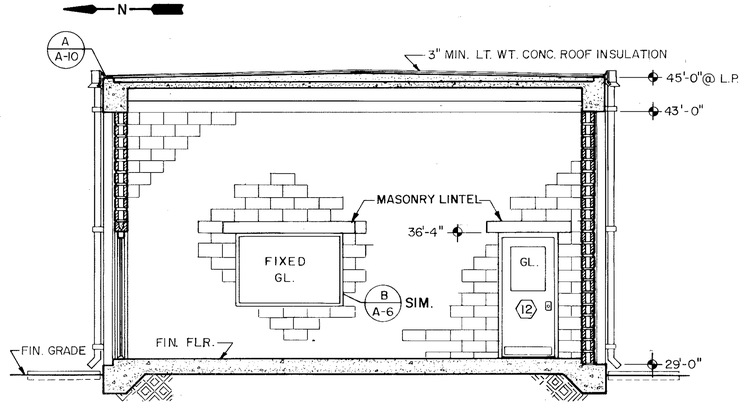
FLOOR PLAN

1/4"=1'-0"



SECTION 2

1/4"=1'-0"



SECTION 1

1/4"=1'-0"

RICHARD A. FORE
CERTIFICATE OF AUTHORIZATION
No. 34083
STATE OF FLORIDA
REGISTERED ENGINEER

CHLORINATION BUILDING
PLAN & SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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26-01

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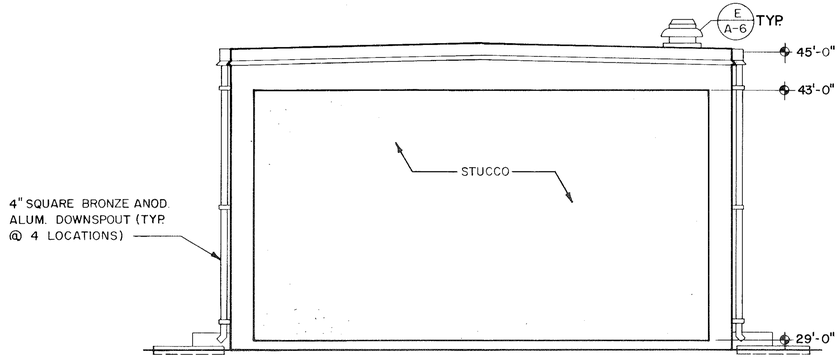
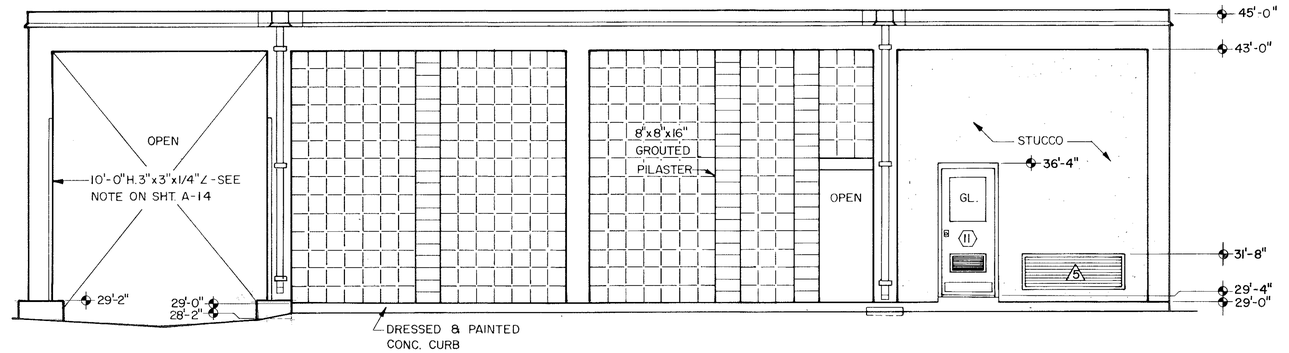


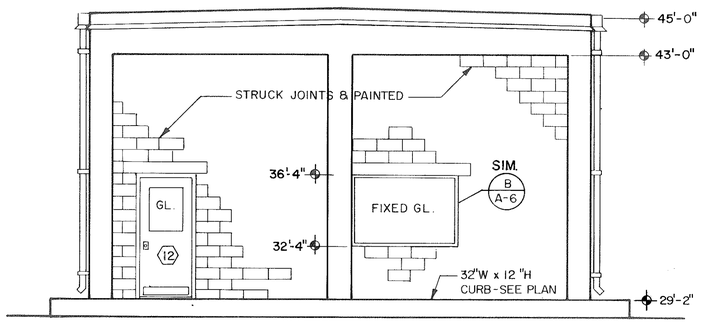
NORTH ELEVATION

1/4"=1'-0"



EAST ELEVATION

1/4"=1'-0"



SOUTH ELEVATION

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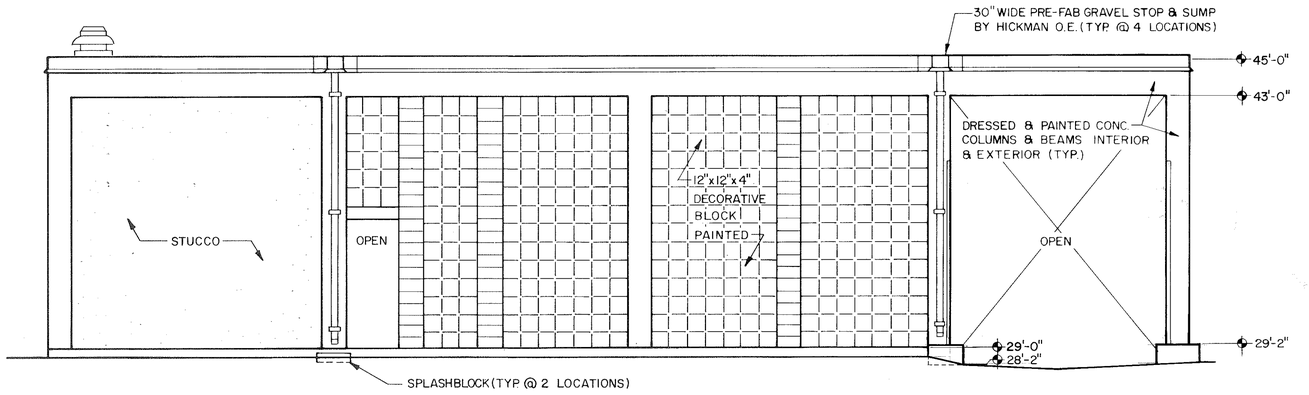

WEST ELEVATION

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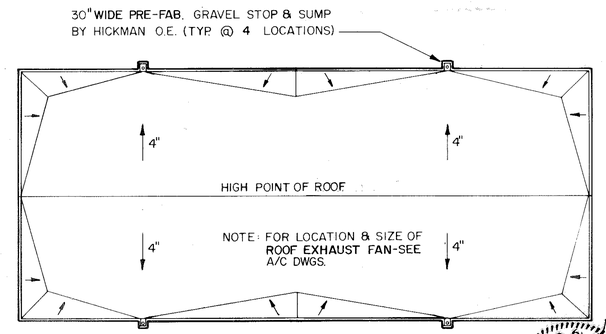

ROOF PLAN

1/8"=1'-0"

RICHARD D. MOORE
No. 34083
STATE OF FLORIDA
REGISTERED ENGINEER

CHLORINATION BUILDING
ELEVATION & ROOF PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
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T42

26-01

RECORD DRAWINGS 12/19/89

GENERAL NOTES

CLARIFICATIONS IN CONFORMANCE WITH SPECIFICATIONS

GENERAL NOTES

DESIGN CRITERIA AND LOADING

- DESIGN CRITERIA:

  SANITARY STRUCTURES: ACI-350R-83 "CONCRETE SANITARY ENGINEERING STRUCTURES"

  OTHER STRUCTURES: ACI-318-83 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"

  LOCAL BUILDING CODE REQUIREMENTS

- DESIGN LIVE LOADS:

  ROOFS 30 PSF

  BUILDINGS:

OFFICE AREAS	50 PSF
STAIRWAYS	100 PSF
STORAGE AREAS	250 PSF

  PROCESS RELATED STRUCTURES:

OFFICE AREAS	150 PSF
STAIRWAYS	150 PSF
PROCESS SLABS	200 PSF
STORAGE AREAS	300 PSF

- DESIGN 28-DAY CONCRETE STRENGTH:

COLUMNS AND BEAMS	4000 PSI
SLABS, WALLS, AND MATS	4000 PSI
WORKING SLABS	2500 PSI
C M U GROUT	2500 PSI

- REINFORCING STEEL: ASTM A615 - GRADE 60

GENERAL CONDITIONS

- ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, CIVIL, ELECTRICAL, HEATING AND VENTILATING, SHOP DRAWINGS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FACILITY. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING THE WORK.
- FOR ALL ITEMS EMBEDDED IN OR PASSED THROUGH CONCRETE THE CONTRACTOR SHALL INITIALLY REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, HEATING AND VENTILATION DRAWINGS FOR TYPE SIZE, LOCATION, AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.
- THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATION, AND OTHERS.
- SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE AS REQUIRED BY EQUIPMENT MANUFACTURERS.
- ANY EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURES.

CONCRETE

- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI-318-83 REQUIREMENTS.
- ALL CONCRETE SHALL BE AIR-ENTRAINED WITH 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. WORKING SLAB CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI.
- WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.
- ALL CONCRETE SURFACES EXPOSED TO AIR SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS CEMENT FINISHING IS COMPLETED OR FORMS ARE REMOVED.
- ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE A MINIMUM CHAMFER OF ONE INCH (1") UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATION OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWINGS.

REINFORCING STEEL

- REINFORCEMENT SHALL CONFORM TO ASTM A615 - GRADE 60 REQUIREMENTS.
- AN APPROXIMATELY ONE AND ONE-HALF INCH (1 1/2") THICK CONCRETE WORKING MAT SHALL BE PROVIDED BENEATH MATS, SLABS, AND FOUNDATIONS TO SUPPORT REINFORCEMENT ACCESSORIES AS USED IN ELEVATED INSTALLATIONS.
- ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI-315 REQUIREMENTS.
- REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:

CONCRETE CAST AGAINST WORKING SLAB	2"
CONCRETE CAST AGAINST EARTH	3"
FORMED SURFACES IN CONTACT WITH SOIL, SEWAGE, WATER, OR EXPOSED TO WEATHER	2"
FORMED SURFACES NOT EXPOSED TO WEATHER OR IN CONTACT WITH SOIL:	
SLAB WALLS AND JOISTS	3/4"
BEAMS AND COLUMNS	1 1/2"

- MINIMUM LENGTH OF LAP FOR SPLICES SHALL BE AS REQUIRED FOR CLASS C SPLICE.
- THE CONTRACTOR SHALL PREPARE DETAIL PLACEMENT DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI-315 REQUIREMENTS.

REINFORCED CONCRETE MASONRY UNITS

- DESIGN CRITERIA:

  DESIGN COMPRESSIVE STRENGTH OF MASONRY AT 28 DAYS - fm = 1500 psi

  ALLOWABLE STEEL STRESS - fs = 24,000 psi

- CONTINUOUS INSPECTION IS REQUIRED FOR ALL MASONRY WORK
- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS AND:

  THE NATIONAL CONCRETE MASONRY ASSOCIATION "SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF LOAD BEARING STRUCTURES"

  ACI 531 "BUILDING CODE REQUIREMENTS FOR REINFORCED MASONRY STRUCTURES"

- MATERIALS:

  BLOCK: CONFORM TO ASTM C-90 - GRADE N, TYPE I TWO-CELL, 8"x8"x16" (COMPRESSIVE STRENGTH, GROSS 1000 PSI)

  MORTAR: CONFORM TO ASTM C476, TYPE PM. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS - 2500 psi

  GROUT: CONFORM TO C476, COARSE GROUT. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS - 2500 psi

  STEEL: DUR-O-WAL OR EQUAL JOINT REINFORCEMENT AT EVERY THIRD COURSE (24" O.C.) BOND BEAM AND FILLED CELL REINFORCEMENT AS PER DRAWINGS - ASTM A615 - GRADE 60.

PRECAST PRESTRESSED COMPOSITE CONSTRUCTION

- ALL PRECAST PRESTRESSED MEMBERS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR THE SUPERIMPOSED LOADS SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF APPLICABLE SPECIFICATIONS. EQUIPMENT LOADS OR OTHER LOADING SUCH AS MONORAIL SUPPORT LOADS SHALL BE CONSIDERED AS REQUIRED.

PRECAST PRESTRESSED CONSTRUCTION (HOLLOW CORE SLABS)

- ALL PRECAST PRESTRESSED MEMBERS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR THE SUPERIMPOSED LOADS SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF APPLICABLE SPECIFICATIONS. EQUIPMENT LOADS OR OTHER LOADING SUCH AS MONORAIL SUPPORT LOADS SHALL BE CONSIDERED AS REQUIRED.

FOUNDATIONS

- ALLOWABLE BEARING PRESSURE FOR SPREAD FOOTINGS: 2500 PSF OVER SUBSURFACE PREPARED AS PER SPECIFICATION REQUIREMENTS OR AS SHOWN ON DRAWINGS.

ABBREVIATIONS:

E.F.	EACH FACE	PSI	POUNDS PER SQUARE INCH
E.W.	EACH WAY	U.N.	UNLESS NOTED
F.F.	FAR FACE	TYP.	TYPICAL
N.F.	NEAR FACE	REINF.	REINFORCEMENT
O.C.	ON CENTER	C.J.	CONTROL JOINT
PLF	POUNDS PER LINEAL FOOT	CONST.J.	CONSTRUCTION JOINT
PSF	POUNDS PER SQUARE FOOT	E.J.	EXPANSION JOINT

DRAWING LIST

S- 1 GENERAL NOTES & DRAWING LIST

S- 2 SITE PLAN & FOUNDATION PREP. PLAN

S- 3 TYPICAL DETAILS
S- 4 TYPICAL DETAILS

S- 5 HEADWORKS - FOUNDATION PLAN
S- 6 HEADWORKS - SLAB PLAN
S- 7 HEADWORKS - INTERMEDIATE PLAN
S- 7A HEADWORKS - FLOOR SLAB & INTERMED. SLAB REINF. PLANS
S- 8 HEADWORKS - PLAN AT TOP OF STRUCTURE
S- 9 HEADWORKS - SECTIONS
S-10 HEADWORKS - SECTIONS
S-11 HEADWORKS - SECTIONS
S-12 HEADWORKS - STAIRS
S-13 HEADWORKS - STAIRS

S-14 ANOXIC/AEROBIC TANK - FOUNDATION MAT PLAN & WALL JOINTS
S-15 ANOXIC/AEROBIC TANK - PLAN MAT REINF. & CONTROL JOINTS
S-16 ANOXIC/AEROBIC TANK - PLAN AT TOP OF STRECTURE
S-17 ANOXIC/AEROBIC TANK - DETAIL PLANS AT TOP
S-18 ANOXIC/AEROBIC TANK - SECTIONS
S-19 ANOXIC/AEROBIC TANK - SECTIONS
S-20 ANOXIC/AEROBIC TANK - SECTIONS
S-21 ANOXIC/AEROBIC TANK - WALKWAY PLAN & DETAILS

S-22 CLARIFIER PLAN & SECTIONS

S-23 FLOW SPLITTER BOX - PLAN & SECTIONS
S-24 FLOW SPLITTER BOX - SECTIONS

S-25 R.A.S./W.A.S. - PUMP STATION - PLANS & SECTIONS
S-26 R.A.S./W.A.S. - PUMP STATION - SECTIONS

S-27 FLASH MIXER/FLOCCULATORS - FOUNDATION PLAN & DETAILS
S-28 FLASH MIXER/FLOCCULATORS - PLAN AT TOP OF STRUCTURE
S-29 FLASH MIXER/FLOCCULATORS - SECTIONS & DETAILS
S-30 FLASH MIXER/FLOCCULATORS - SECTIONS & DETAILS
S-31 FLASH MIXER/FLOCCULATORS - SECTIONS & DETAILS

S-32 A.B.W. FILTERS - FOUNDATION PLAN
S-33 A.B.W. FILTERS - PLAN AT TOP OF STRUCTURE
S-34 A.B.W. FILTERS - SECTIONS
S-35 A.B.W. FILTERS - SECTIONS
S-36 A.B.W. FILTERS - SECTIONS
S-37 A.B.W. FILTERS - SECTIONS

S-38 NOT USED

S-39 CHLORINE BUILDING - FOUNDATION PLAN & SECTIONS
S-40 CHLORINE BUILDING - ROOF PLAN & SECTIONS
S-41 CHLORINE BUILDING - SECTIONS

S-42 DEWATERING BUILDING - FOUNDATION PLAN & SECTIONS
S-43 DEWATERING BUILDING - SLAB PLAN & SECTIONS
S-44 DEWATERING BUILDING - ROOF PLAN & SECTIONS
S-45 DEWATERING BUILDING - SECTION

S-46 ELECTRICAL BUILDING-- Sections and Details

S-47 ELECTRICAL BUILDING - FOUNDATION PLAN & SECTIONS
S-48 ELECTRICAL BUILDING - SLAB PLAN & SECTIONS
S-49 ELECTRICAL BUILDING - ROOF PLAN & SECTIONS
S-50 ELECTRICAL BUILDING - SECTIONS & DETAILS

S-51 CONTROL BUILDING - FOUNDATION PLAN
S-52 CONTROL BUILDING - SLAB PLAN
S-53 CONTROL BUILDING - ROOF FRAMING PLAN
S-54 CONTROL BUILDING - SECTIONS
S-55 CONTROL BUILDING - SECTIONS & DETAILS

S-56 D.A.F. FACILITIES - FOUNDATION PLANS
S-57 D.A.F. FACILITIES - ROOF PLANS
S-58 D.A.F. FACILITIES - SECTIONS & DETAILS

S-59 NaOH TANK PAD - PLAN & SECTIONS

BILGIN, REL, FLORIDA REGISTERED ENGINEER NO. 34053 STATE OF

5-7-86

GENERAL NOTES & DRAWING LIST

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gai Consultants-Southeast, Inc.
1833 Edgewater Drive
Orlando, Florida 32804
305/423-8398

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

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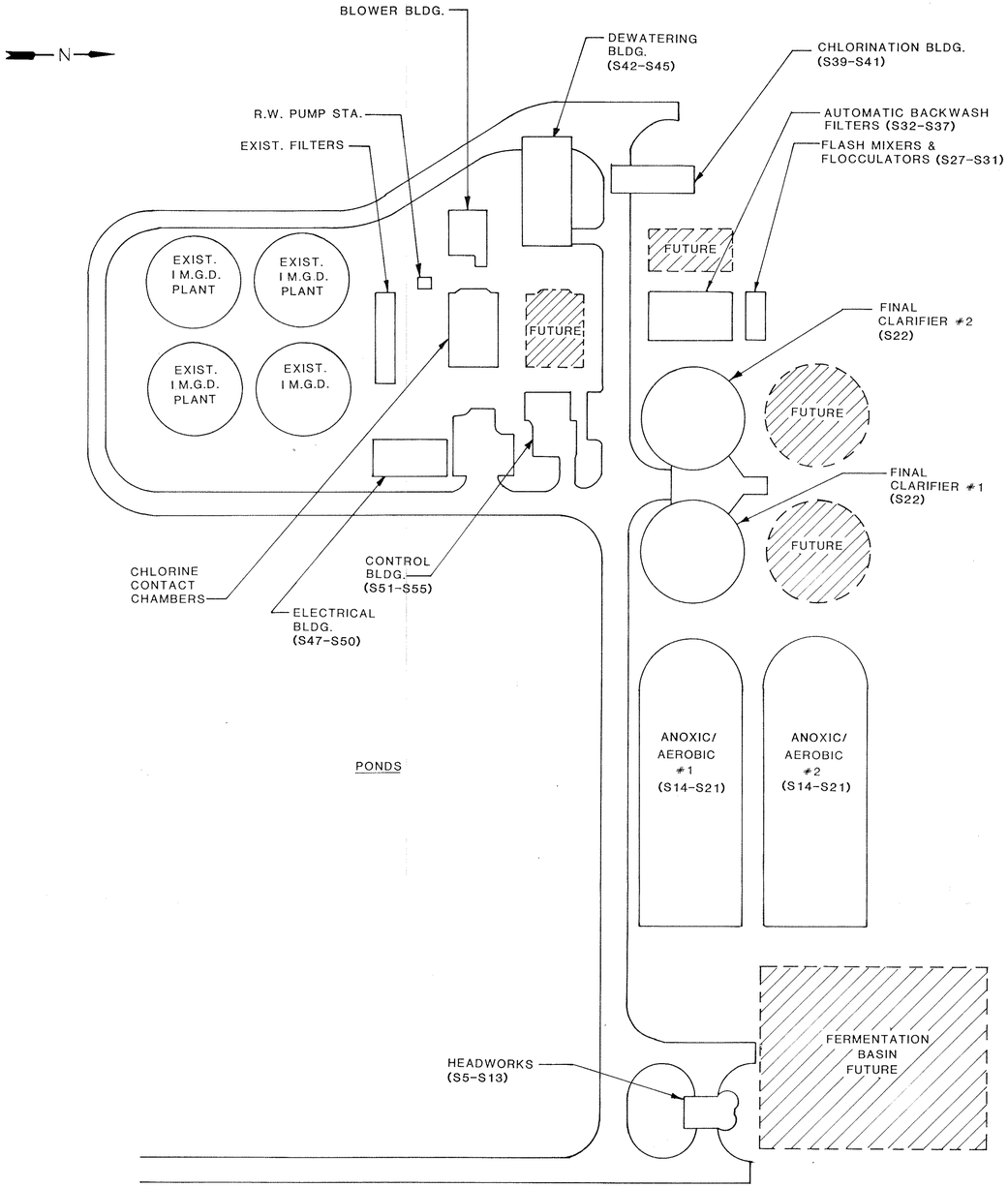

SITE PLAN & FOUNDATION PREP. PLAN

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
JLA	BE	AS SHOWN	84-160S-E2	S2
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MANATEE COUNTY, FLORIDA

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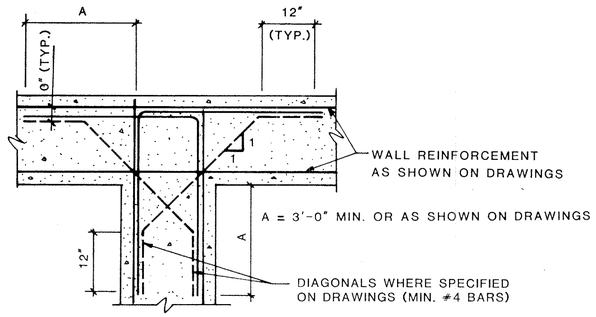
DRAWN ____ FILE NO. ____ SHEET S-2 OF S-59

REGISTERED ENGINEER 5-7-86

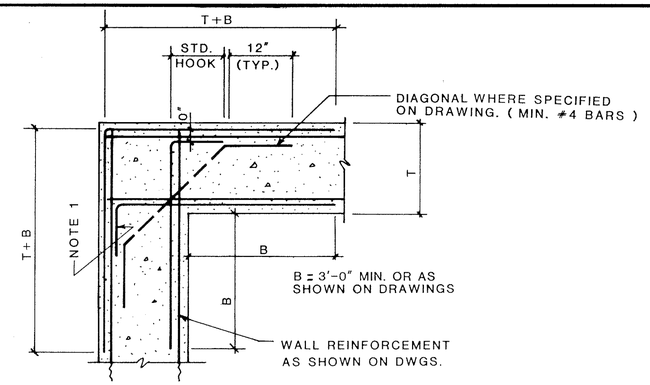
26-01 RECORD DRAWINGS 12/19/89



SIZE AND SPACING OF TYPICAL INTERSECTION BARS TO MATCH WALL REINFORCEMENT UNLESS NOTED

PLAN SECTION WALL INTERSECTION 1/S3

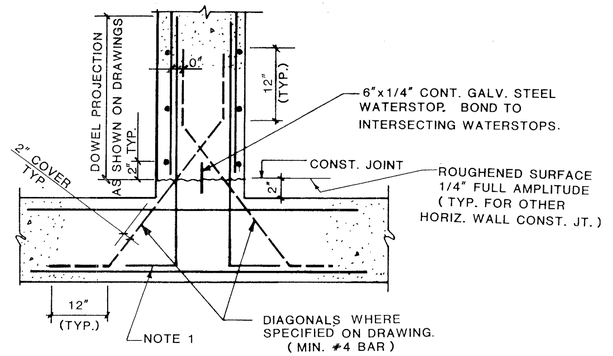
N.T.S.



SIZE AND SPACING OF TYPICAL INTERSECTION BARS TO MATCH WALL REINFORCEMENT UNLESS NOTED.

PLAN SECTION WALL CORNER 2/S3

N.T.S.



SECTION-WALL BASE CONSTRUCTION JOINT 3/S3

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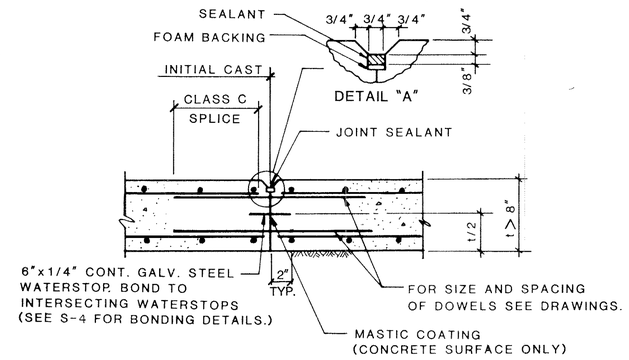

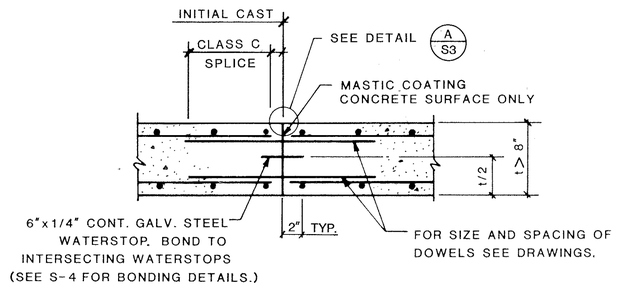

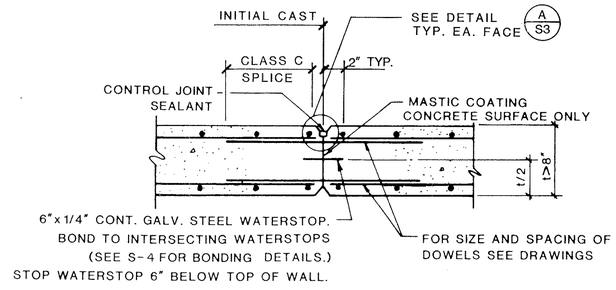

BASE SLAB CONTROL JOINT 4/S3

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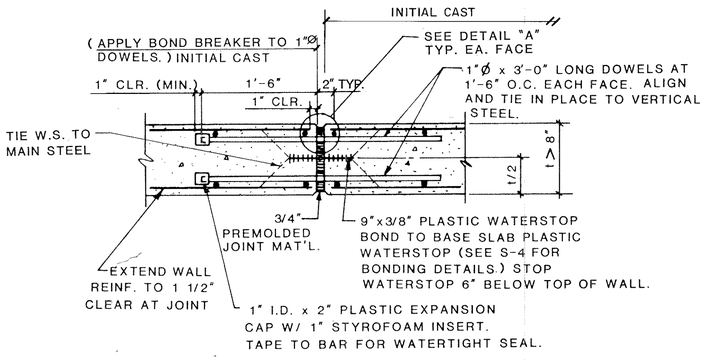
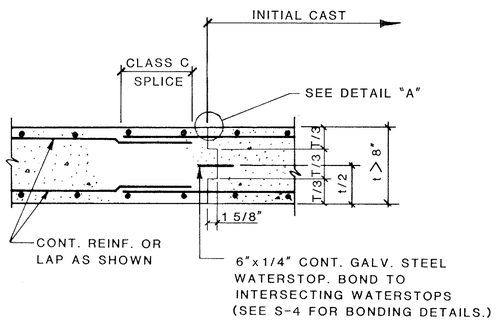


ELEVATED SLAB CONTROL JOINT 5/S3

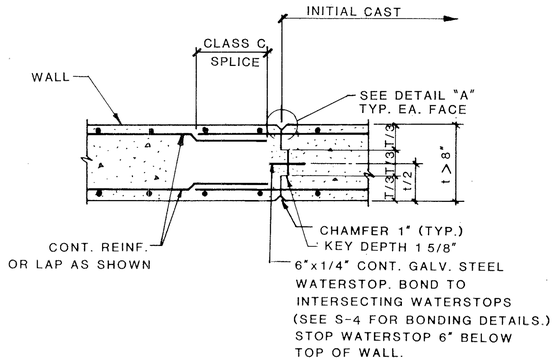
N.T.S.



CONTRACTOR SUBMIT LOCATION IF NOT SPECIFIED.

VERTICAL CONTROL JOINT 6/S3

N.T.S.



CONTRACTOR SUBMIT LOCATION IF NOT SPECIFIED.

VERTICAL EXPANSION JOINT 7/S3

N.T.S.

BASE/ELEVATED SLAB CONSTR. JOINT 8/S3

N.T.S.

VERTICAL CONSTR. JOINT 9/S3

N.T.S.

BLGIN ERIC L. CERTIFICATE NO. 34083 STATE OF FLORIDA REGISTERED ENGINEER
5-7-86

NOTE 1 : ALL HOOKS ARE STD. 90° HOOKS UNLESS NOTED.

TYPICAL DETAILS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
JLA	BE	AS SHOWN	84-160S-E3	S3
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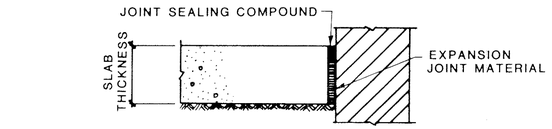
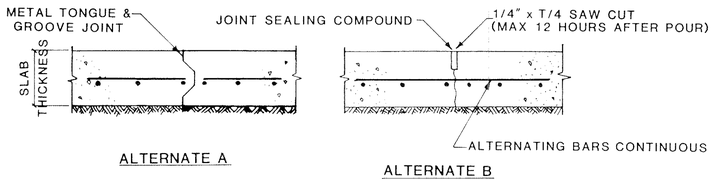
DRAWN ____ FILE NO. ____ SHEET S-3 OF S-59

26-01

RECORD DRAWINGS 12/19/89

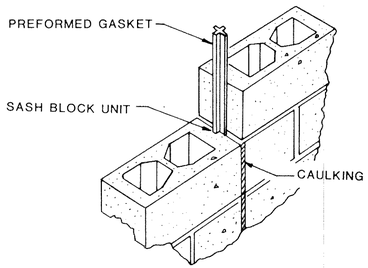




SLAB ON GRADE JOINTS — 10 / S4

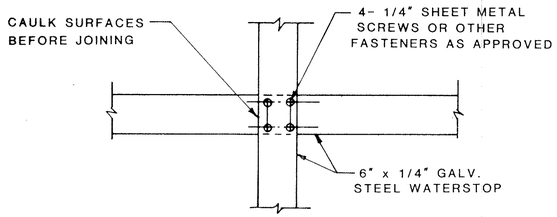
(NON-WATER CONTAINMENT STRUCTURES)

N.T.S.



CMU CONTROL JOINT — 13 / S4

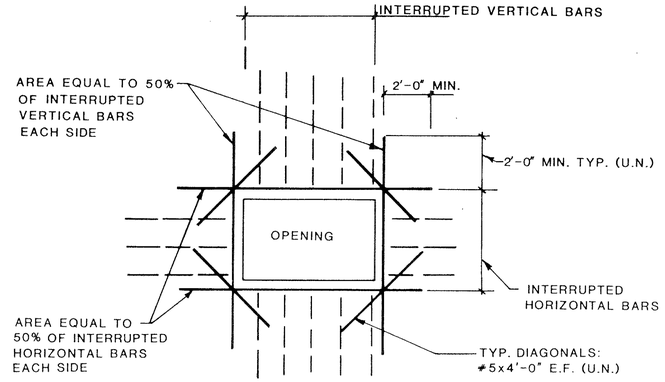
N.T.S.



(ALTERNATE SPLICE : WELDED CONNECTIONS)

STEEL-STEEL WATERSTOP SPLICE — 16 / S4

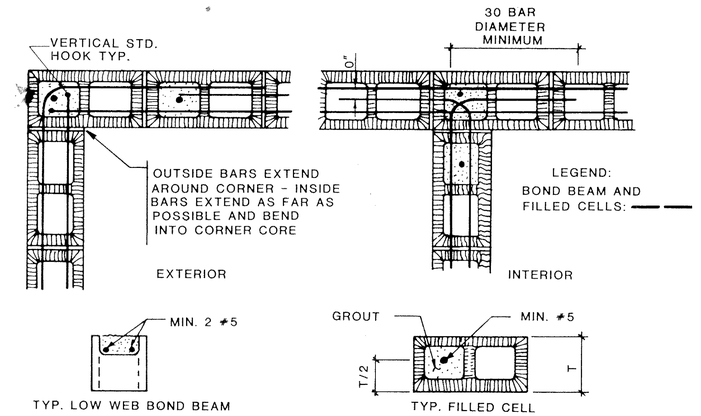
N.T.S.



REINF. AT RECTANGULAR OPENINGS — 11 / S4

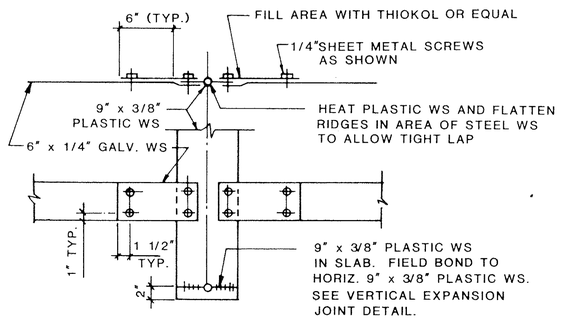
FOR OPENINGS GREATER THAN 12"

N.T.S.



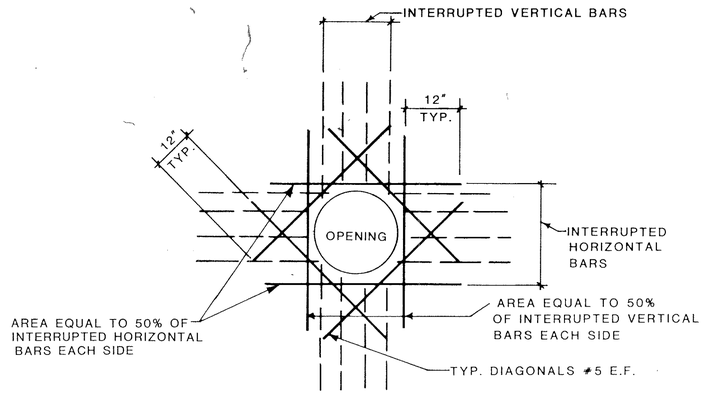
CMU BOND BEAM/FILLED CELL — 14 / S4

N.T.S.



STEEL-PLASTIC WATERSTOP SPLICE — 17 / S4

N.T.S.



REINF. AT CIRCULAR OPENINGS — 12 / S4

FOR OPENINGS GREATER THAN 12"

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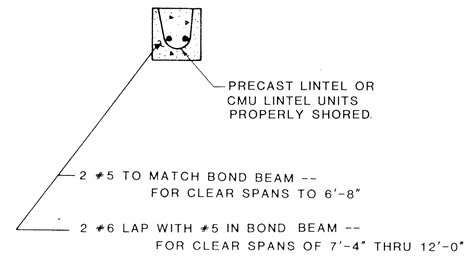
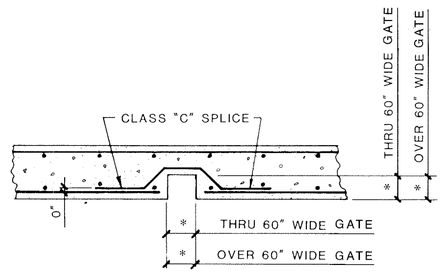


TYPICAL LINTEL DETAIL — 15 / S4

N.T.S.



(MAX. BLOCKOUT SIZE OR AS SPECIFIED BY EQUIP. MANUFACTURE)

BLOCK-OUT AT SLIDE GATES — 18 / S4

N.T.S.

STATE OF FLORIDA — JOHN E. LARSON — NO. 14053 — REGISTERED ENGINEER — 5-7-86

TYPICAL DETAILS

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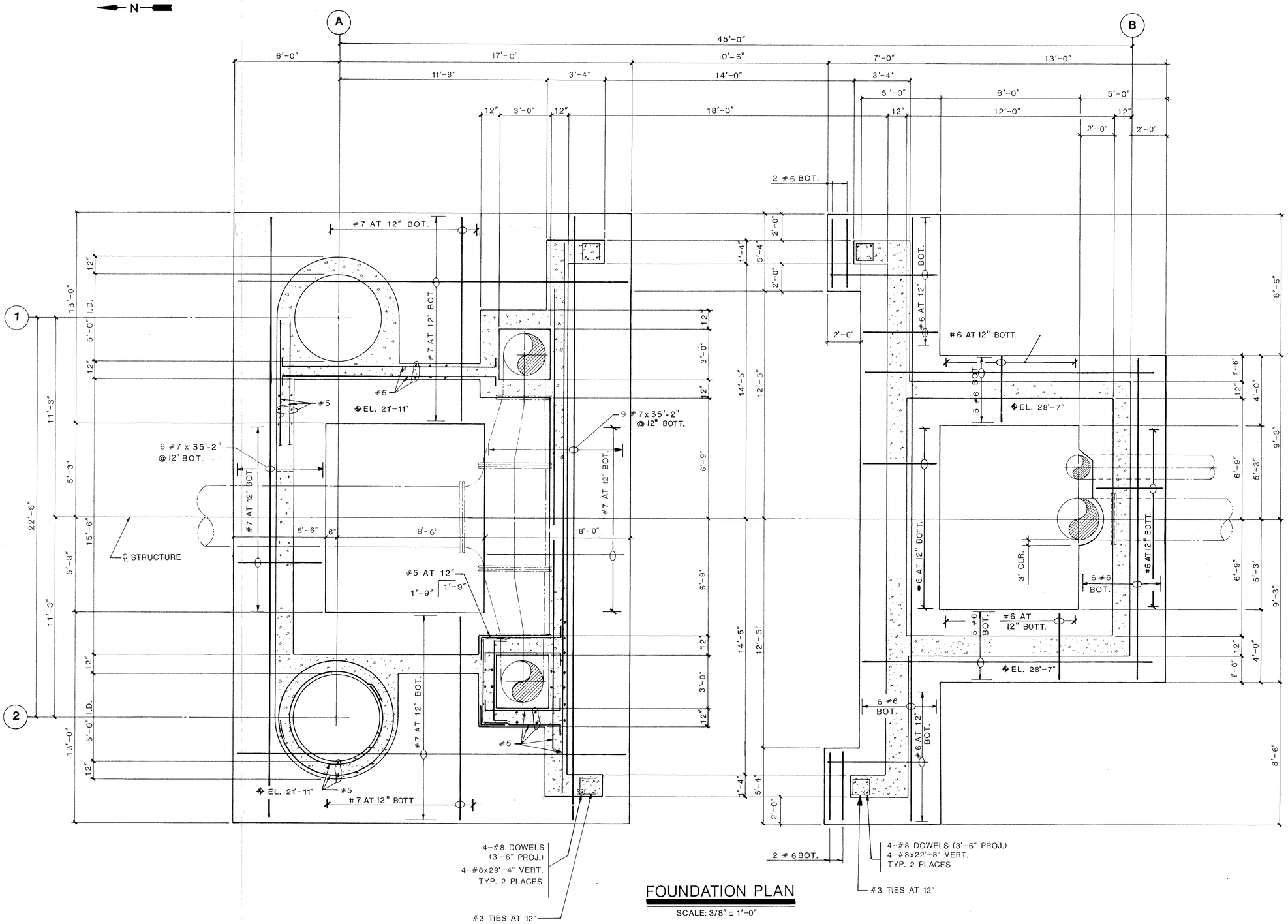
RECORD DRAWINGS 12/19/89



FOUNDATION PLAN

SCALE: 3/8" = 1'-0"

HEADWORKS FOUNDATION PLAN				
DRAWN MFS	APPROVED BE	SCALE AS SHOWN	REFERENCE NUMBER: 84-160S-E5	SHEET NO. S5
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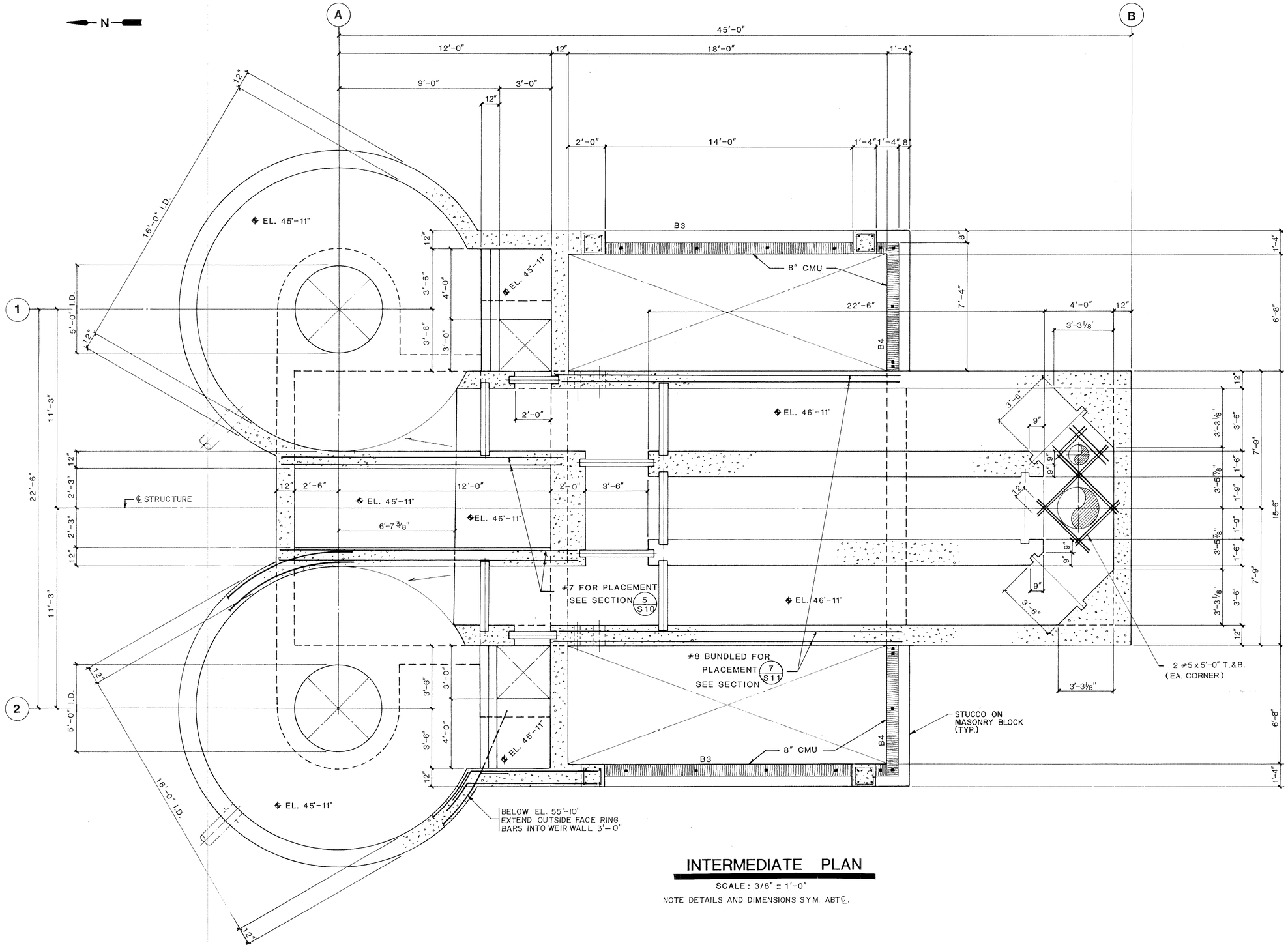

INTERMEDIATE PLAN

SCALE: 3/8" = 1'-0"

NOTE DETAILS AND DIMENSIONS SYM. ABT ℄.

BILGIN EREL — REGISTERED — NO. 34053 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
5-7-86

HEADWORKS
INTERMEDIATE PLAN

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
MFS	BE	AS SHOWN	84-160S-E6	S6
CHECKED REH	DATE MARCH 1985			

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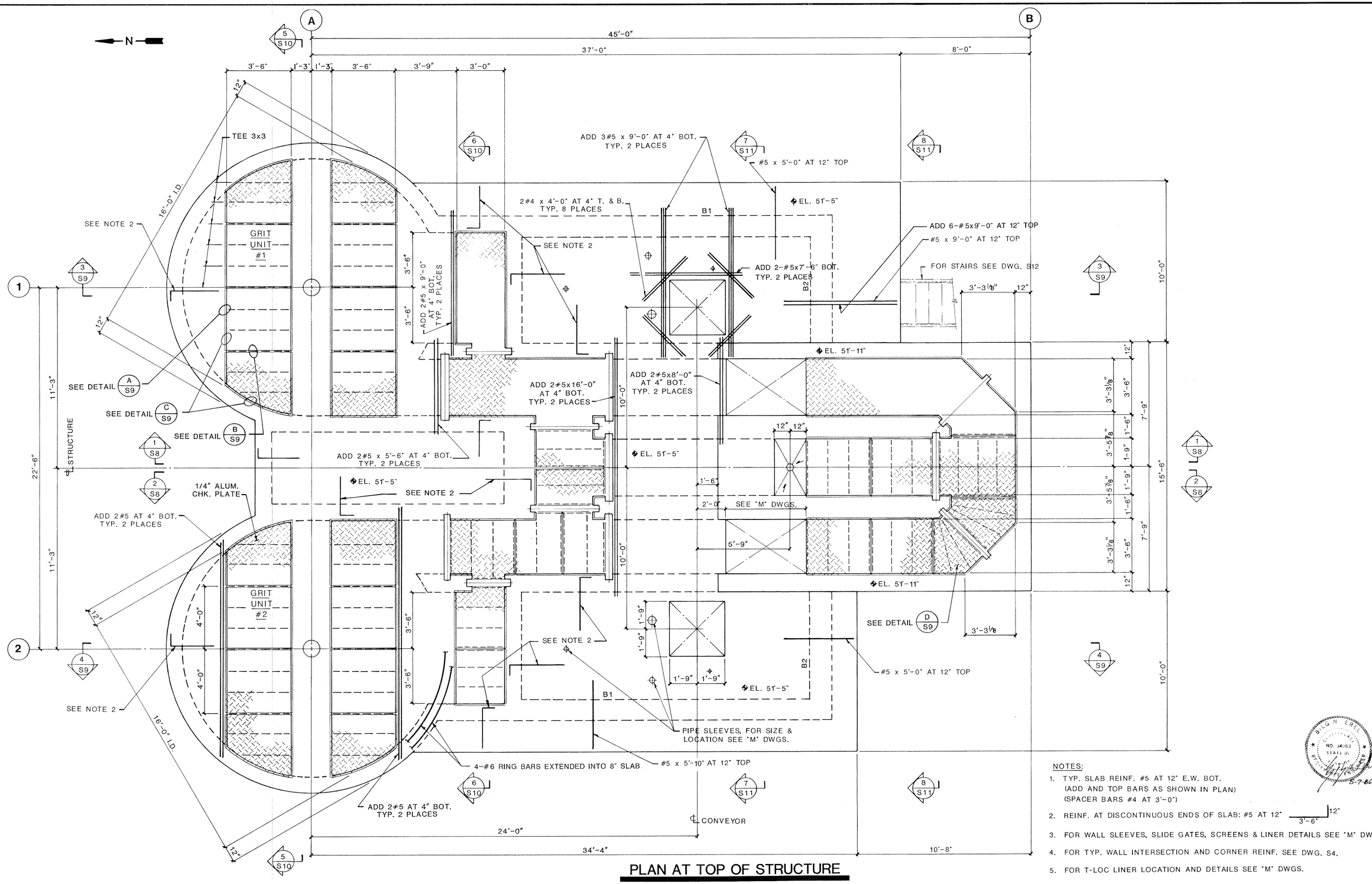
RECORD DRAWINGS 12/19/89



PLAN AT TOP OF STRUCTURE

SCALE: 3/8" = 1'-0"

NOTES:

1. TYP. SLAB REINF. #5 AT 12" E.W. BOT. (ADD AND TOP BARS AS SHOWN IN PLAN) (SPACER BARS #4 AT 3'-0")
2. REINF. AT DISCONTINUOUS ENDS OF SLAB: #5 AT 12" (3'-6" / 12")
3. FOR WALL SLEEVES, SLIDE GATES, SCREENS & LINER DETAILS SEE "M" DWGS.
4. FOR TYP. WALL INTERSECTION AND CORNER REINF. SEE DWG. S4.
5. FOR T-LOC LINER LOCATION AND DETAILS SEE "M" DWGS.

HEADWORKS
PLAN AT TOP OF STRUCTURE

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
MFS	BE	AS SHOWN	84-160S-E7	S7
CHECKED REH	DATE MARCH 1985			

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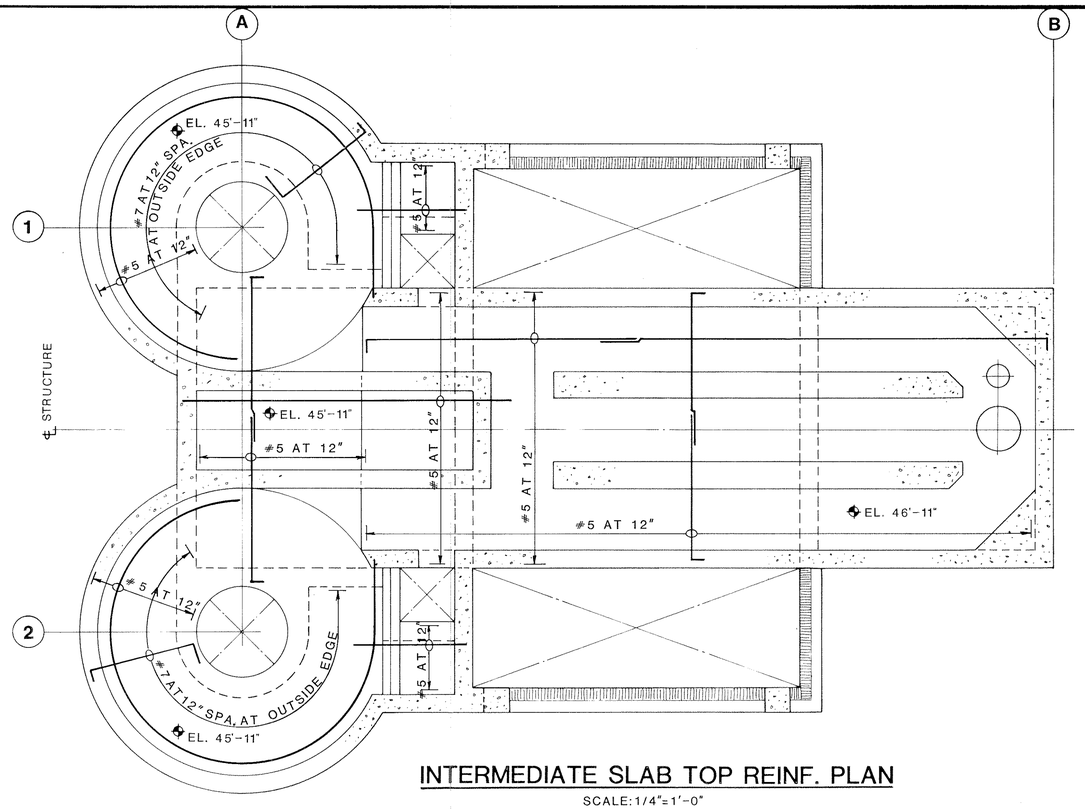
T-49

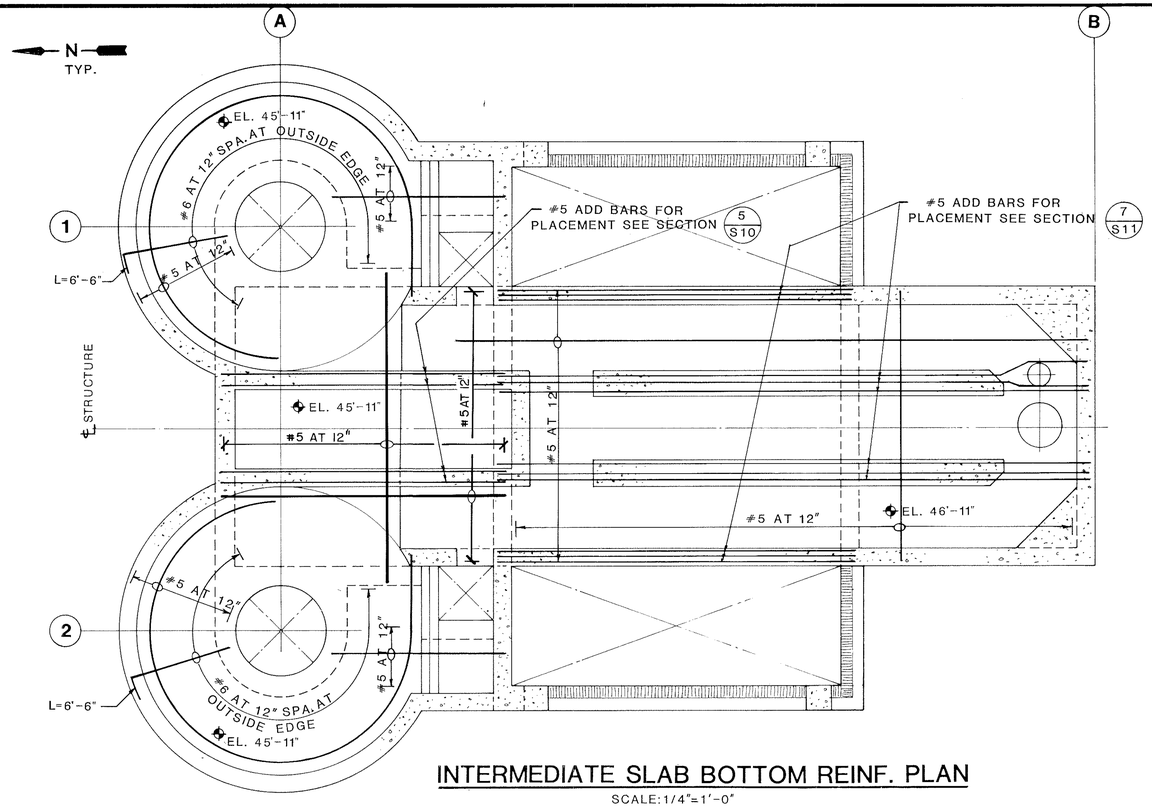
26-01

RECORD DRAWINGS 12/19/89



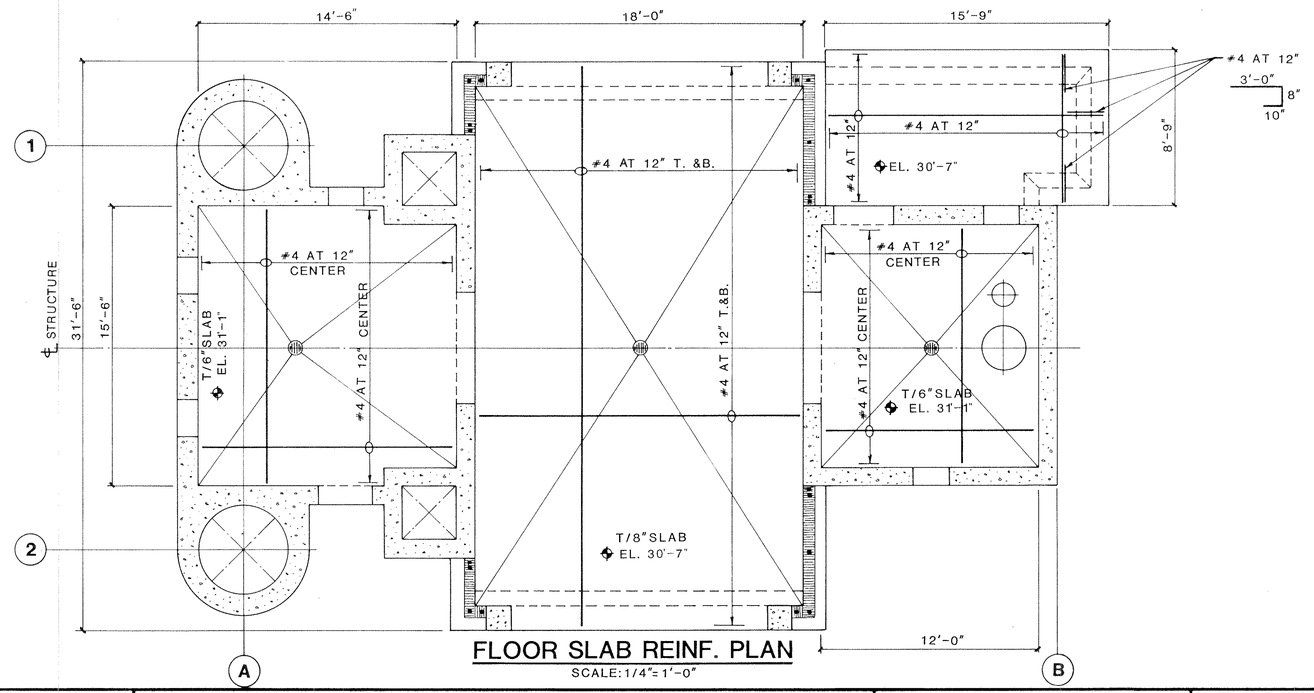
INTERMEDIATE SLAB TOP REINF. PLAN

SCALE: 1/4"=1'-0"



INTERMEDIATE SLAB BOTTOM REINF. PLAN

SCALE: 1/4"=1'-0"



FLOOR SLAB REINF. PLAN

SCALE: 1/4"=1'-0"

HEADWORKS
FLOOR SLAB & INTERMEDIATE
SLAB REINF. PLANS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
MFS	BE			
CHECKED REH	DATE MARCH 1985	AS SHOWN	84-160S-E7A	S7A

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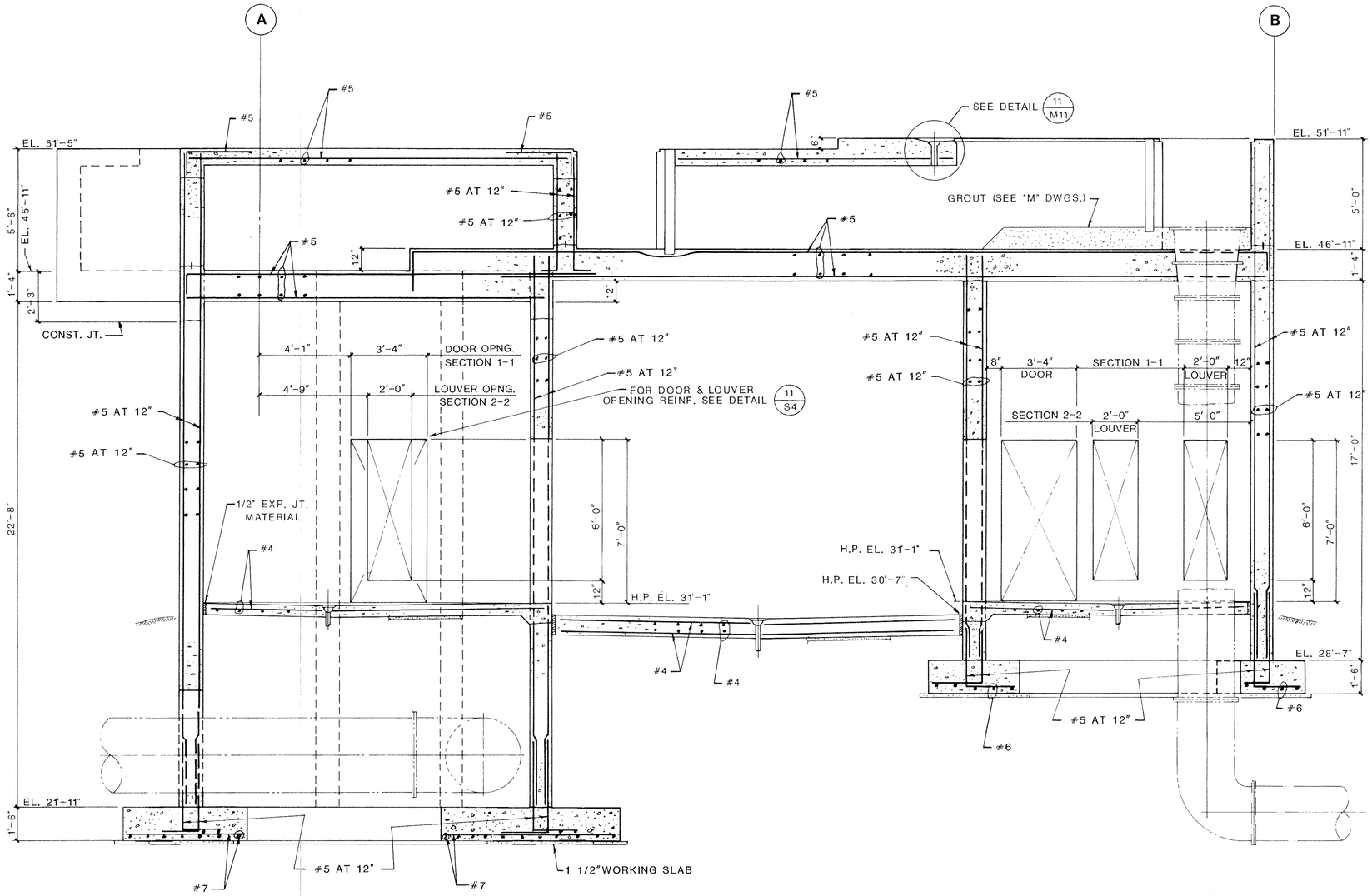
RECORD DRAWINGS 12/19/89



SECTION 1 / S7 SCALE:3/8" 1'-0" — AS SHOWN

SECTION 2 / S7 SCALE:3/8" 1'-0" — OPP. HAND

HEADWORKS
SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER:	SHEET NO.
MFS	BE	AS SHOWN	84-160S-E8	S8
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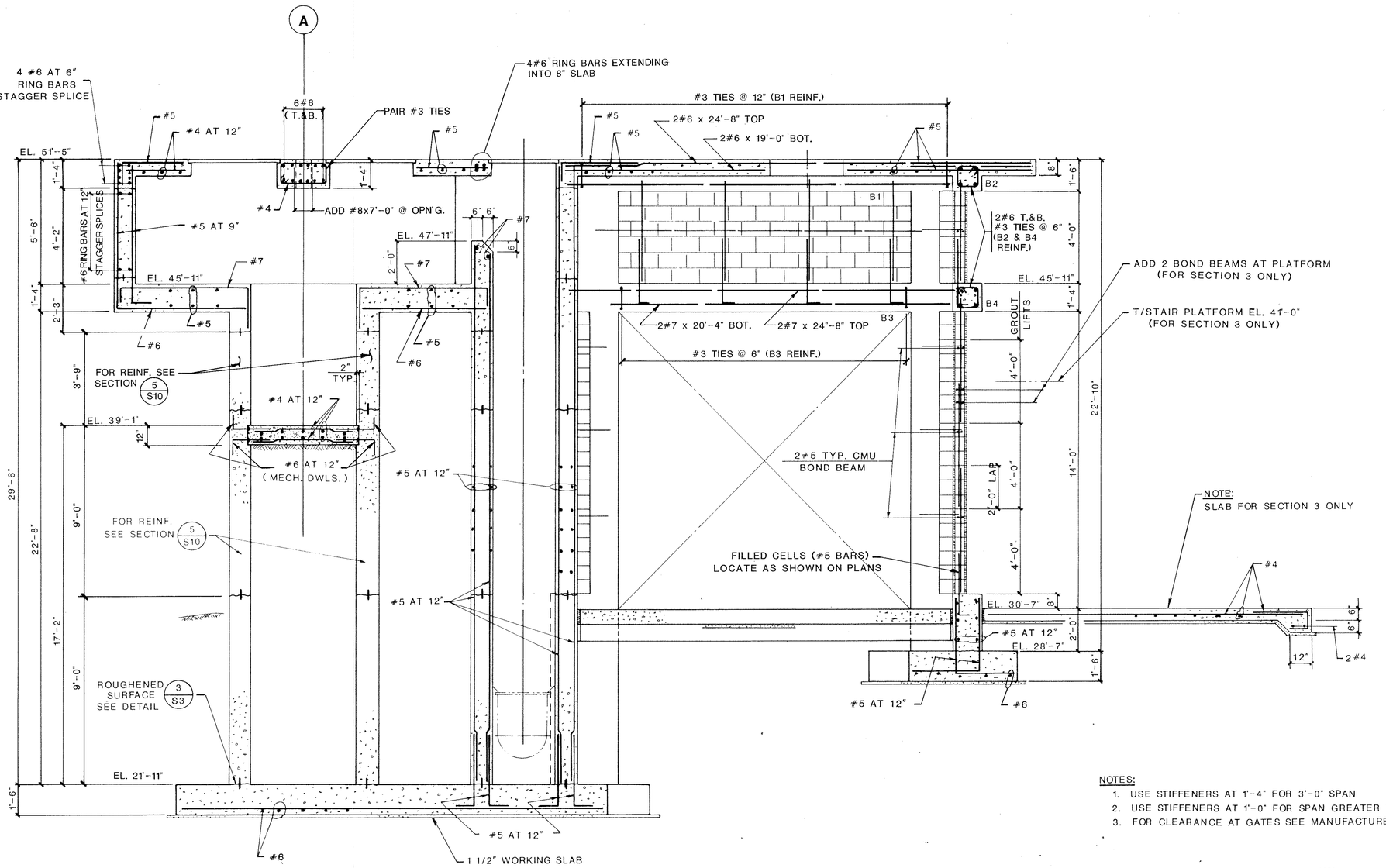
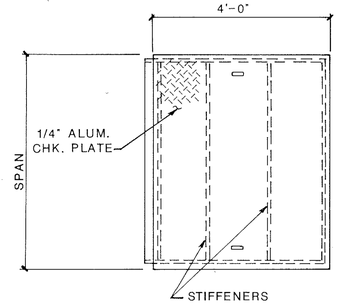
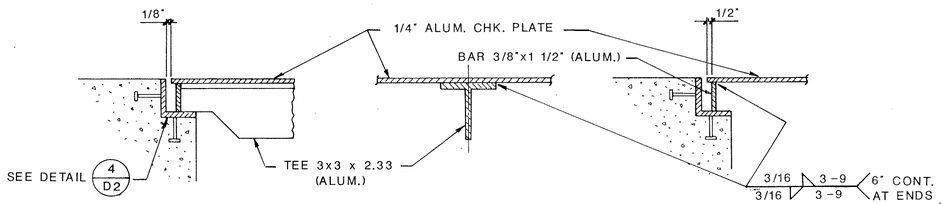


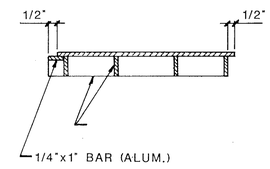
SECTION 3/S7 — SCALE: 3/8"=1'-0" — AS SHOWN

SECTION 4/S7 — SCALE: 3/8"=1'-0" — OPP. HAND

NOTES:
1. USE STIFFENERS AT 1'-4" FOR 3'-0" SPAN
2. USE STIFFENERS AT 1'-0" FOR SPAN GREATER THAN 3'-0"
3. FOR CLEARANCE AT GATES SEE MANUFACTURERS SPECS.







DETAIL A/S7 — NTS

DETAIL B/S7 — NTS

DETAIL C/S7 — NTS

DETAIL D/S7 — NTS

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HEADWORKS SECTIONS

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MFS	BE	AS SHOWN	84-160S-E9	S9
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305/423-8198

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 — MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers scientists planners & management consultants **CDM**

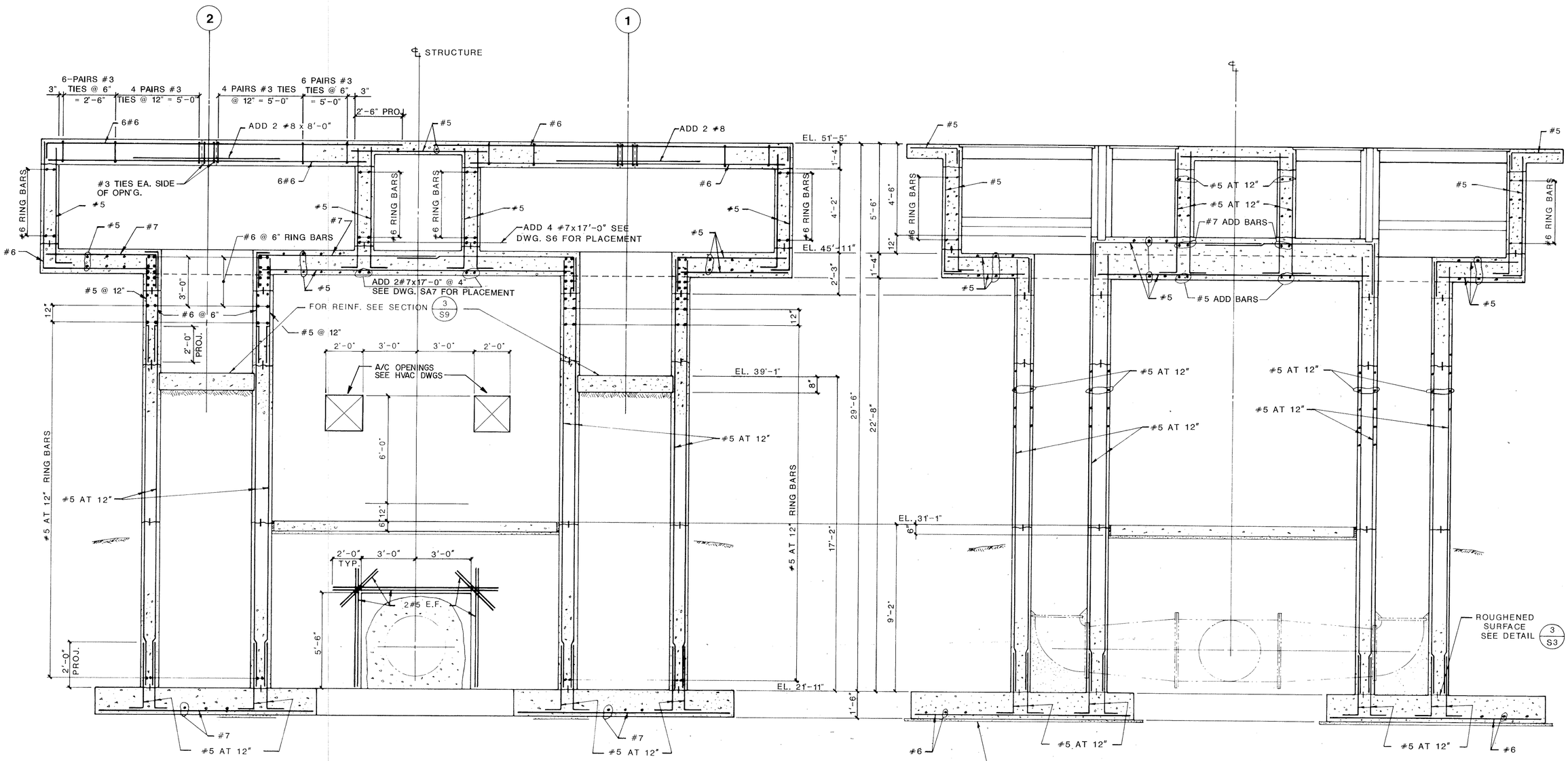
NO.	DATE	BY	DESCRIPTION
1	2/87	WLR	CONFORMED

Larson Engineering, Inc. — Consulting Engineers — T52
6404 Manatee Ave W, Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED ____ CHECKED ____ DATE ____ LEAD ____
DRAWN ____ FILE NO. ____ SHEET S-9 OF S-59

26-01

RECORD DRAWINGS 12/19/89



SECTION 5 / S7
SCALE: 3/8"=1'-0"

SECTION 6 / S7
SCALE: 3/8"=1'-0"

STATE OF FLORIDA — BRIAN E. ELGIN — No. 34053 — REGISTERED PROFESSIONAL ENGINEER — 5-7-86

HEADWORKS
SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER:	SHEET NO
MFS	BE	AS SHOWN	84-160S-E10	S10
CHECKED REH	DATE MARCH 1985			

gai Consultants-Southeast, Inc.
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MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060
MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers scientists planners & management consultants CDM

FILE NO. 2/87 WLR CONFORMED
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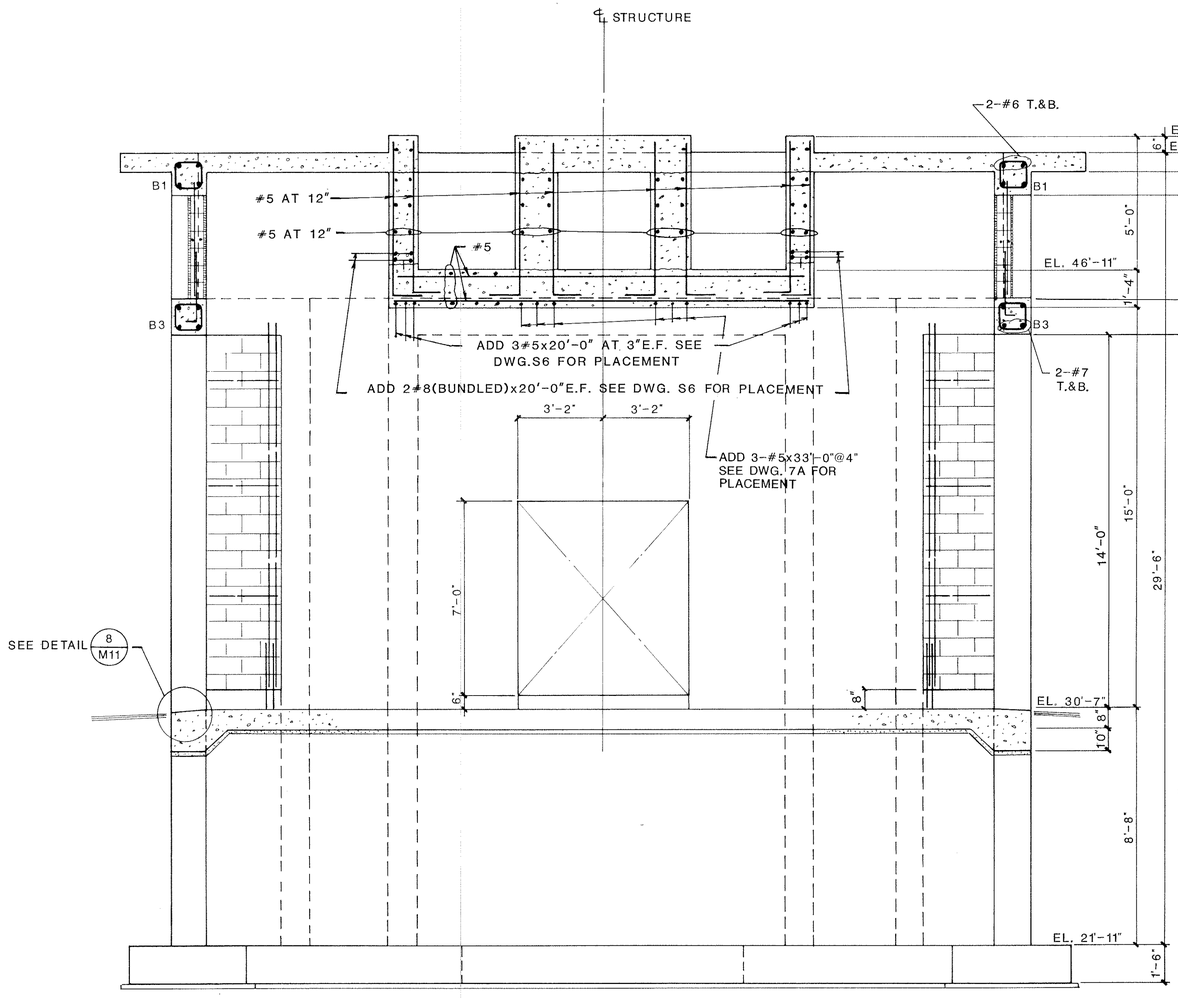
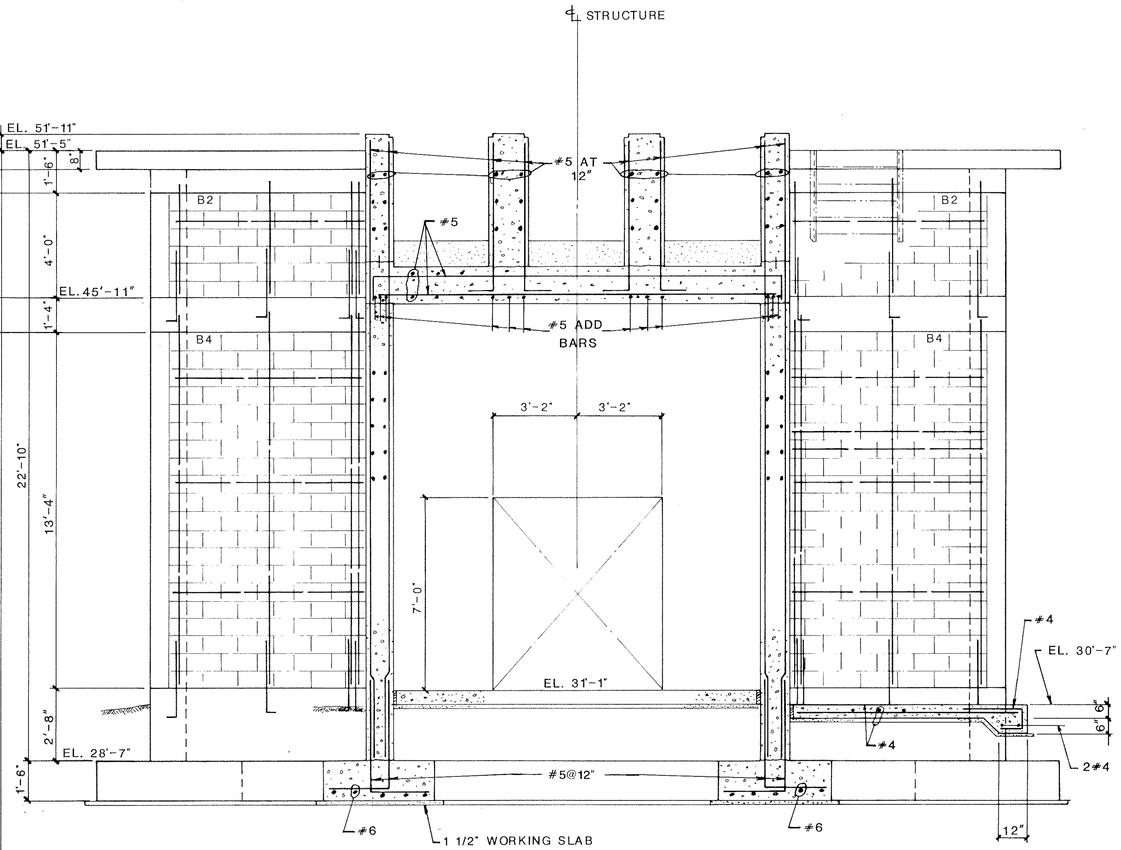
26-01 RECORD DRAWINGS 12/19/89



SECTION 7
SCALE: 3/8"=1'-0"



SECTION 8
SCALE: 3/8"=1'-0"

NOTE: CONSTRUCTION SEQUENCE

MASONRY WALLS SHALL BE CONSTRUCTED BEFORE CONCRETE COLUMNS AND BEAMS. HORIZONTAL MASONRY REINFORCEMENT SHALL BE CONTINUOUS THROUGH COLUMNS. VERTICAL REINFORCEMENT SHALL EXTEND INTO BEAM ABOVE.

ELGIN C. REL CONSULTANT NO. 14053 STATE OF FLORIDA REGISTERED ENGINEER
5-2-06

HEADWORKS
SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
MFS	BE	AS SHOWN	84-160S-E11	S11
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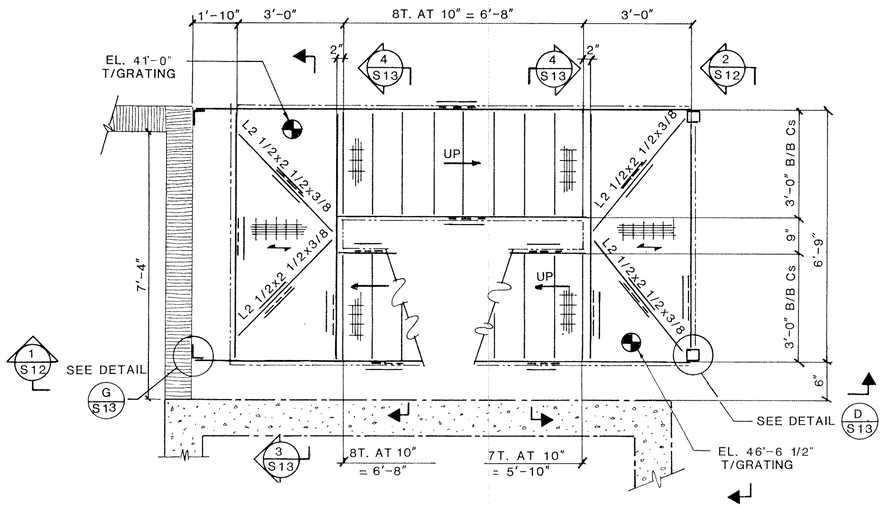
T54

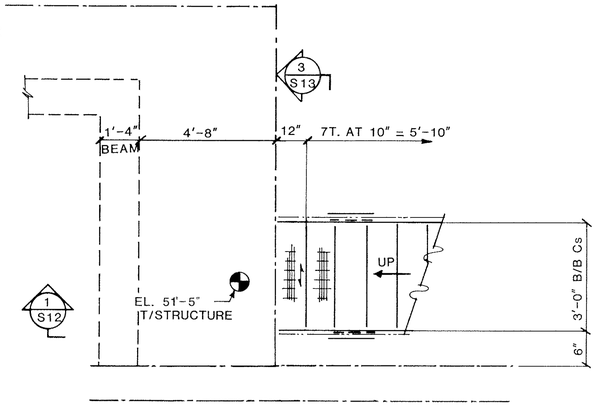
26-01

RECORD DRAWINGS 12/19/89



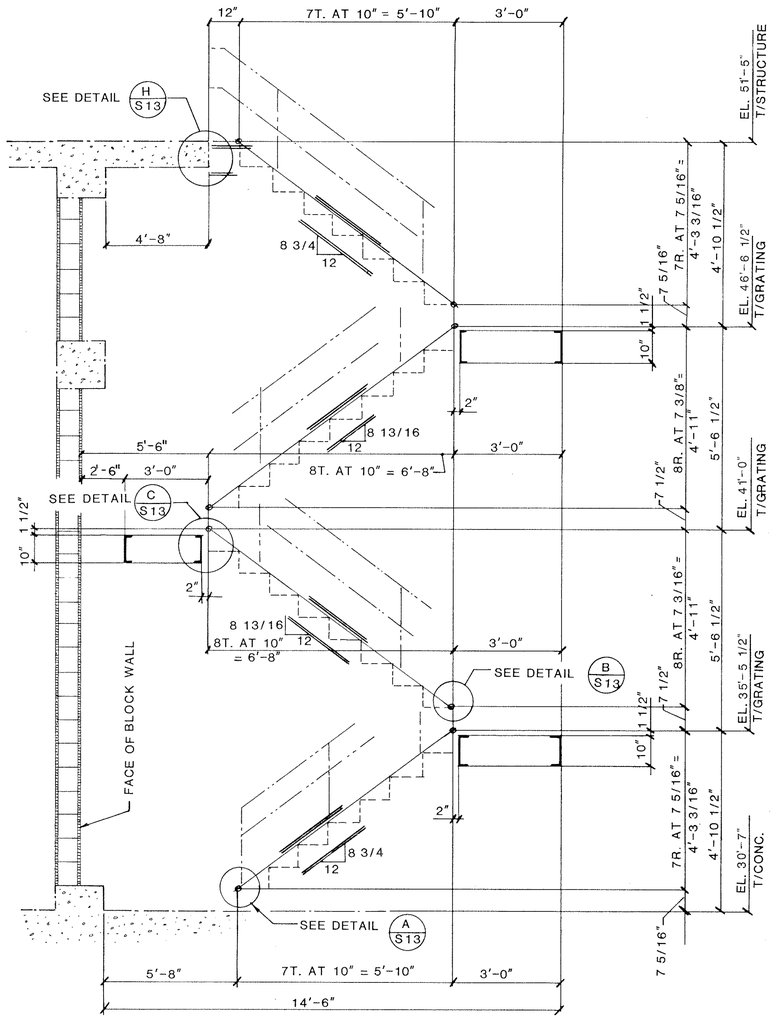
PLAN AT EL. 41'-0" & 46'-6 1/2"

SCALE: 1/2"= 1'-0"



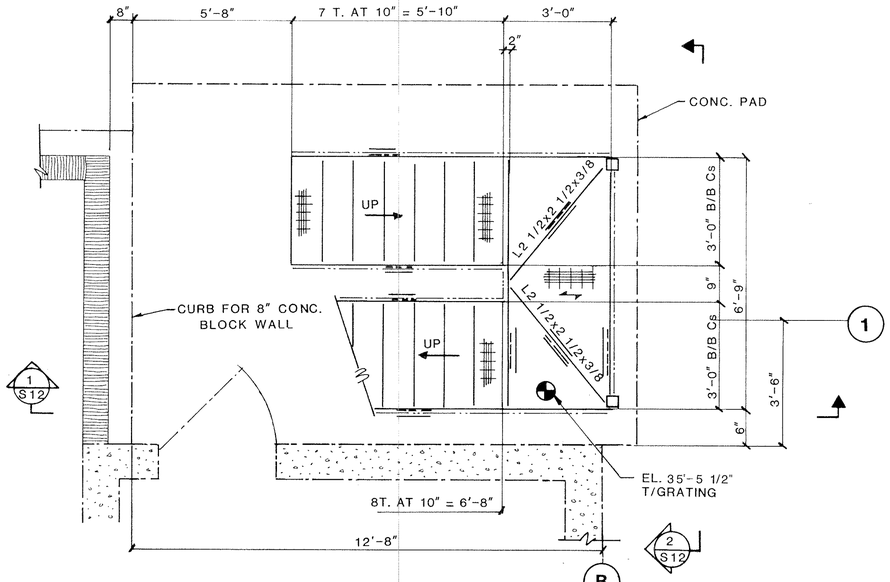
PLAN AT EL. 51'-5"

SCALE: 1/2"= 1'-0"



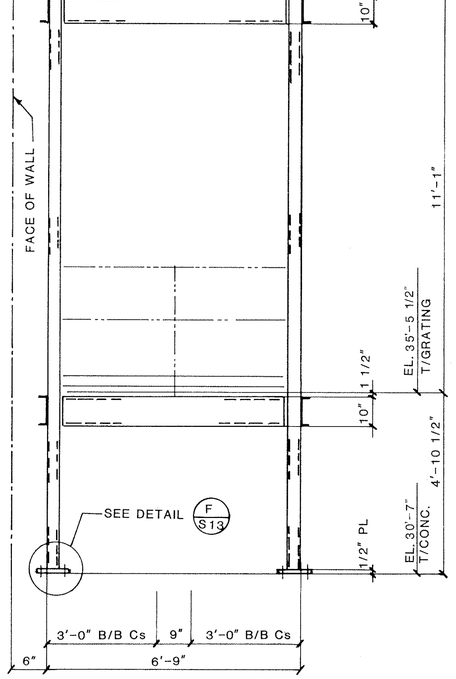
ELEVATION 1 S12

SCALE: 1/2"= 1'-0"



PLAN AT EL. 35'-5 1/2"

SCALE: 1/2"= 1'-0"



ELEVATION 2 S12

SCALE: 1/2"= 1'-0"

GENERAL NOTES:

1. ALL MATERIAL THIS DRAWING TO BE ALUMINUM
2. ALL CHANNELS TO BE C 10 x 8.64 ALL TUBES TO BE 4 x .125
3. FIELD BOLTS TO BE 3/4 o H.T BOLTS, GALVANIZED
4. ALL GRATING TO BE 1¼", WITH 1⅛ x 3/16 BEAR BARS, WITH ABRASIVE NOSING @ STAIR LANDING.
5. STAIR TREADS TO BE BORDEN O/E ALUMINUM, TYPE BB, 11" WIDE x 3'-0 LONG, 1⅛ x 3/16 BEAR BARS, 1¼ ABRASIVE NOSING AND TOE PLATE.
6. SEE DRAWING D1 FOR HANDRALL DETAILS. HANDRAIL TO BE 1½ I.D ALUMINUM PIPE. 5'-0 MAX POST SPACING. ¼ x 4 KICK PLATES WELDED OR BOLTED TO POSTS.

STAIR & PLATFORM CONN TO CONCRETE STRUCTURES - ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE TO HAVE A COATING OF HEAVY BITUMASTIC PAINT OR MATERIAL TO PREVENT CORROSION.

ELGIN EREL NO. 34053 STATE OF FLORIDA REGISTERED ENGINEER
5-7-86

HEADWORKS
STAIR PLANS & ELEVATIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
JS	BE	AS SHOWN	84-160S-E12	S12
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MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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E.P.A. NO. C-120540060

MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

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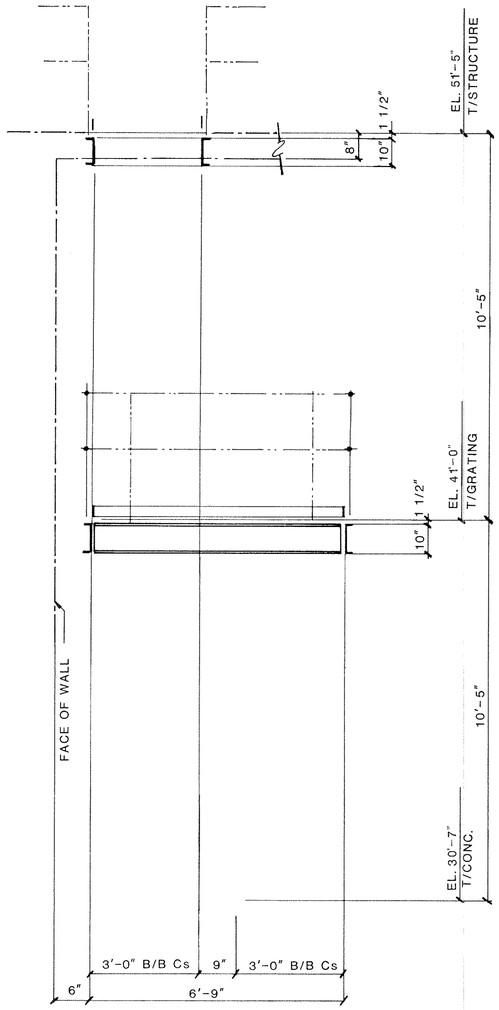
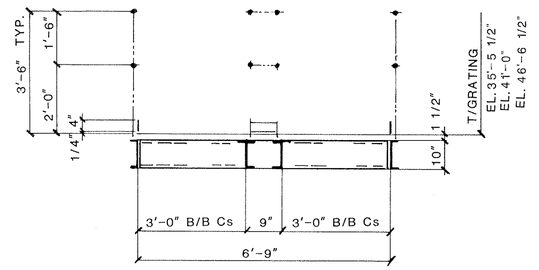
26-01

RECORD DRAWINGS 12/19/89



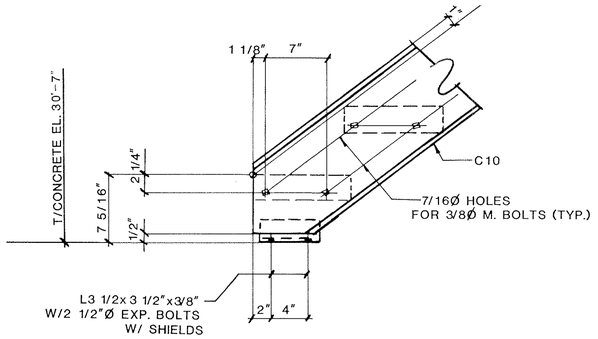
SECTION 3 S12

SCALE: 1/2"= 1'-0"



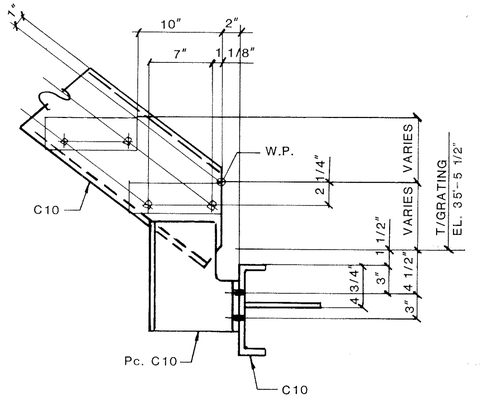
SECTION 4 S12

SCALE: 1/2"= 1'-0"



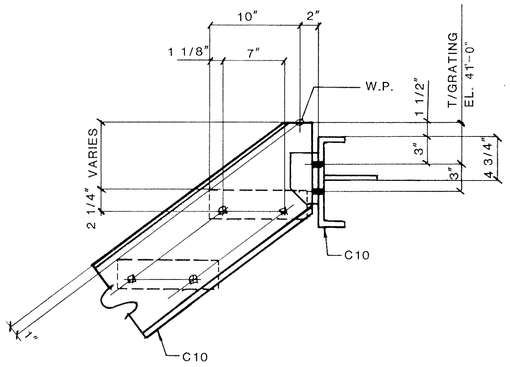
DETAIL A S12

SCALE: 1 1/2"=1'-0"



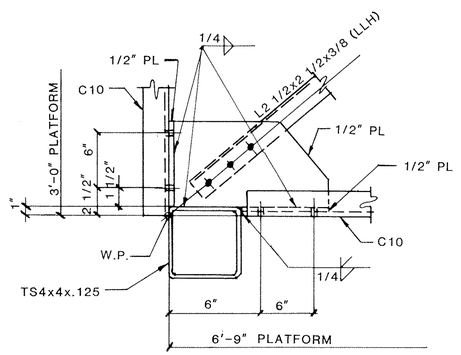
DETAIL B S12

SCALE: 1 1/2"=1'-0"



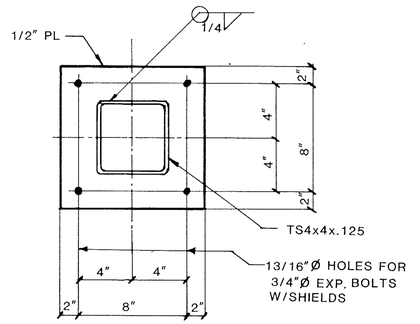
DETAIL C S12

SCALE: 1 1/2"= 1'-0"



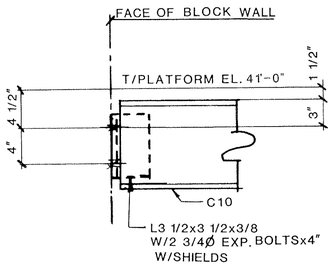
DETAIL D S12

SCALE: 3"= 1'-0"



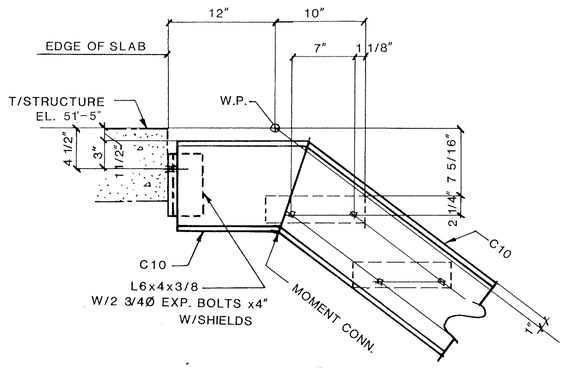
DETAIL F S12

NTS



DETAIL G S12

SCALE: 1 1/2"=1'-0"



DETAIL H S12

SCALE: 1 1/2"=1'-0"

HEADWORKS
STAIR SECTIONS & DETAILS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER:	SHEET NO.
JS	BE	AS SHOWN	84-160S-E13	S13
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MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
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E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
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6404 Manatee Ave.W.,Suite N
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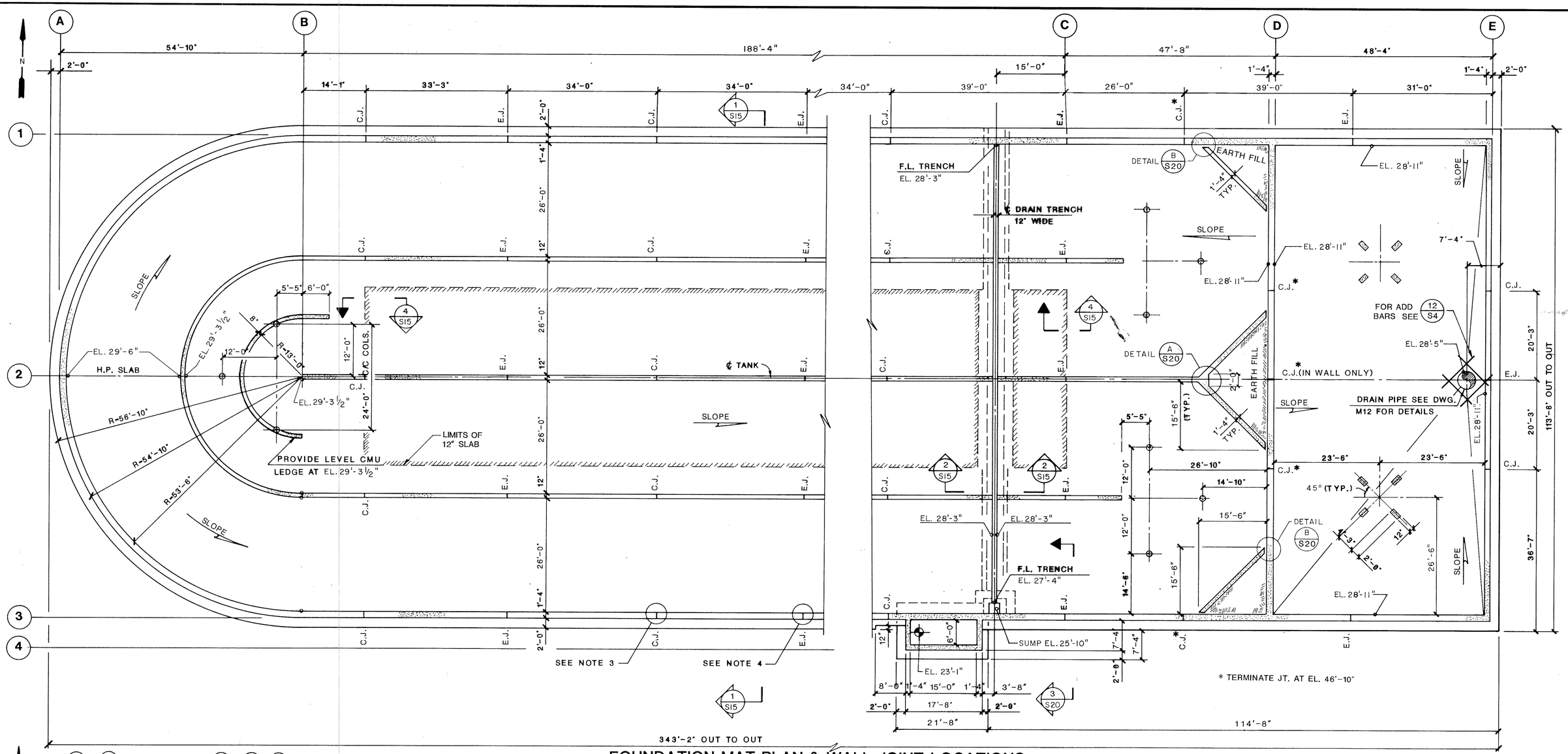
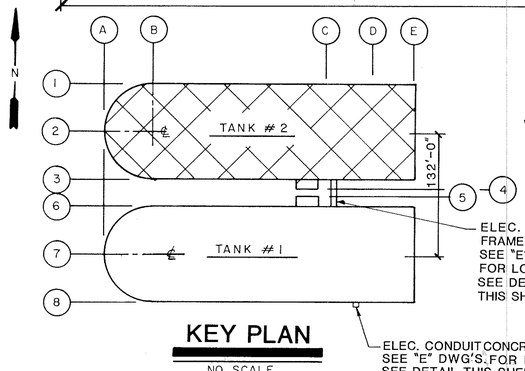
5-7-86

RECORD DRAWINGS 12/19/89

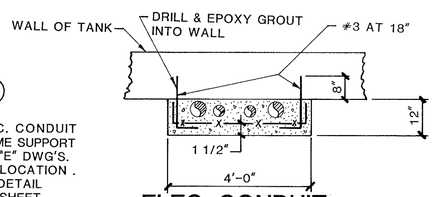


FOUNDATION MAT PLAN & WALL JOINT LOCATIONS



KEY PLAN

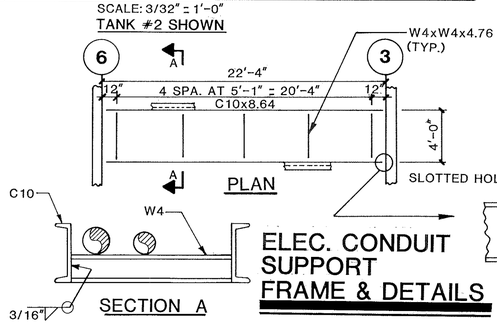
NO SCALE



ELEC. CONDUIT ENCASEMENT DETAIL (PLAN)

SCALE: 3/32" = 1'-0"

TANK #2 SHOWN



ELEC. CONDUIT SUPPORT FRAME & DETAILS

NOTES:

1. TANK #2 IS MIRROR IMAGE OF TANK #1.
2. DIMENSIONS & DETAILS NOT SHOWN SYMMETRICAL ABT. ℄ TANK.
3. FOR WALL CONTROL JOINTS SEE DETAIL (6 S3).

   DOWELS FOR WALL CONTROL JOINTS

   #4 AT 12" E.F. x 3'-6" L (WHERE MAIN REINF. IS #4 AT 6")

   #4 AT 16" E.F. x 3'-6" L (WHERE MAIN REINF. IS #4 AT 8")
4. FOR EXPANSION JOINTS SEE DETAIL (7 S3).

ELGIN ERIC PLANT NO. 14053 STATE OF FLORIDA REGISTERED 5-7-86

ANOXIC/AEROBIC TANKS

FOUNDATION MAT PLAN & WALL JOINTS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER:	SHEET NO
JAM	BE	AS SHOWN	84-160S-E14	S14
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MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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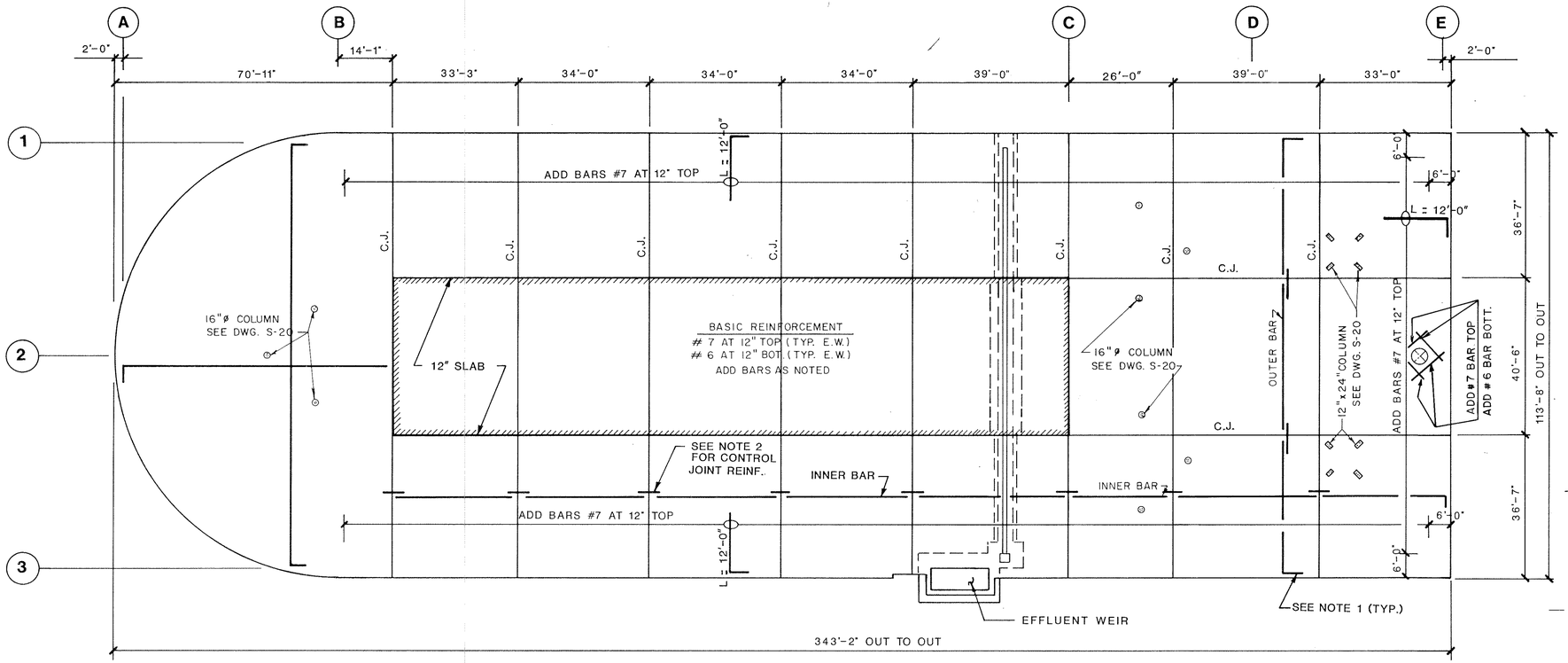
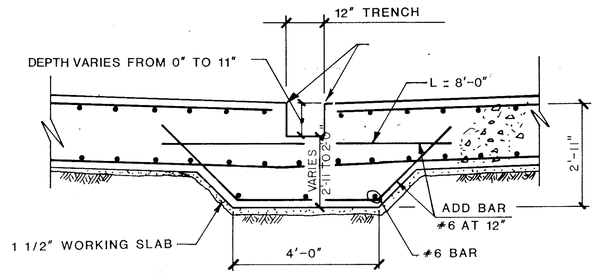
RECORD DRAWINGS 12/19/89



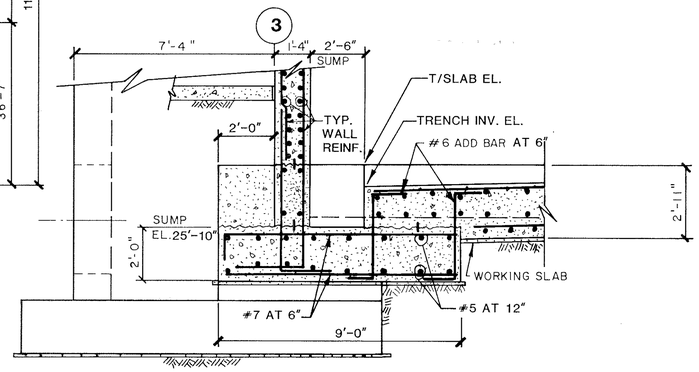
PLAN MAT REINF. & C.J. LOCATIONS

NO SCALE



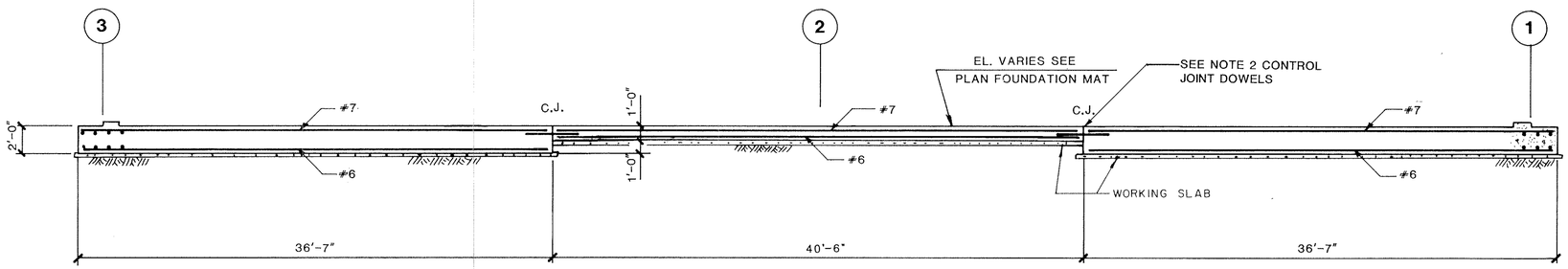
SECTION 2 / S14

SCALE 1/2" = 1'-0"



SECTION 3 / S14

SCALE = 3/8"=1'-0"



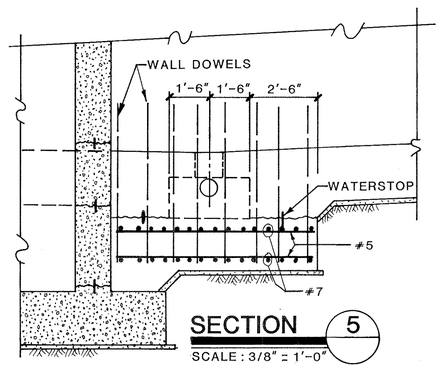
SECTION 1 / S14

SCALE 3/16" = 1'-0"

NOTES

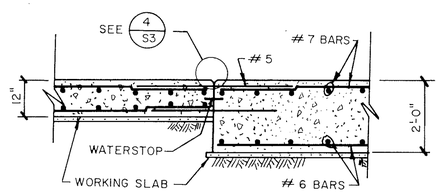
1. ALL TOP BARS HAVE STD. 90° HOOKS AT END
2. SEE DETAIL 4/S3 FOR SLAB CONTROL JOINTS

DOWELS FOR SLAB CONTROL JOINTS
5 x 4'-2" AT 12" TOP
4 x 3'-6" AT 12" BOT.



SECTION 5

SCALE : 3/8" = 1'-0"



SECTION 4 / S14

SCALE 1/2" = 1'-0"

ANOXIC/AEROBIC TANKS
PLAN MAT REINF. & CONTROL JOINTS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
JAM		AS SHOWN	84-160S-E15	S15
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MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

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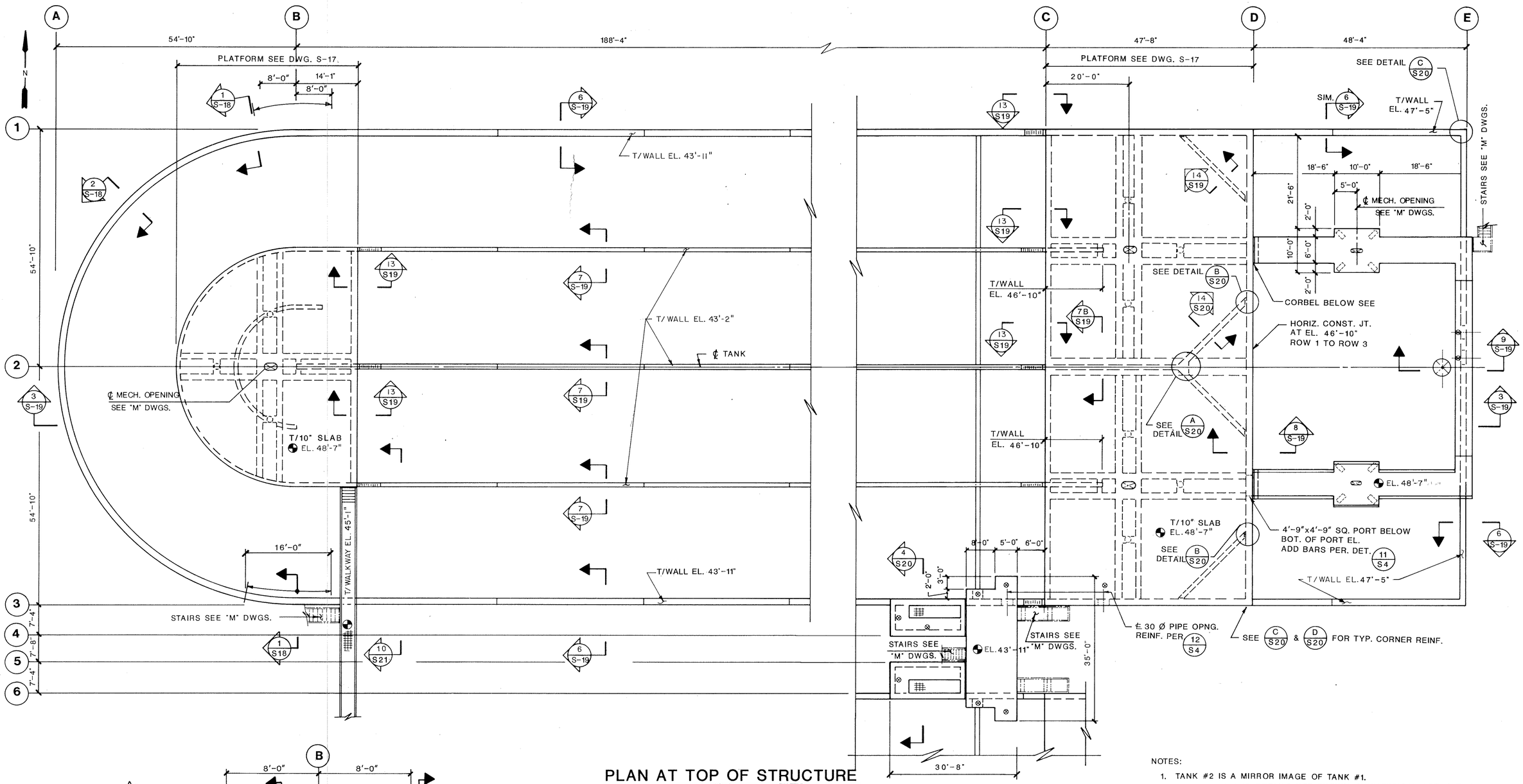
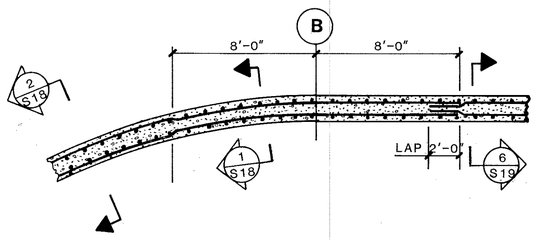


PLAN AT TOP OF STRUCTURE

SCALE 3/32" = 1'-0"



DETAIL A S16

SCALE : 1/4" = 1'-0"

NOTES:

1. TANK #2 IS A MIRROR IMAGE OF TANK #1.
2. DIMENSIONS AND DETAILS NOT SHOWN SYMMETRICAL ABT. ℄ TANK.
3. ⊗DENOTES OPENINGS FOR MECH. EQUIPMENT.
4. FOR KEY PLAN SEE DWG. S14.

ELGIN ERIC PHILLIPS NO. 14053 STATE OF FLORIDA REGISTERED ENGINEER 5-2-86

ANOXIC/AEROBIC TANKS
PLAN AT TOP OF STRUCTURE

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MANATEE COUNTY, FLORIDA

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environmental engineers, scientists, planners, & management consultants CDM

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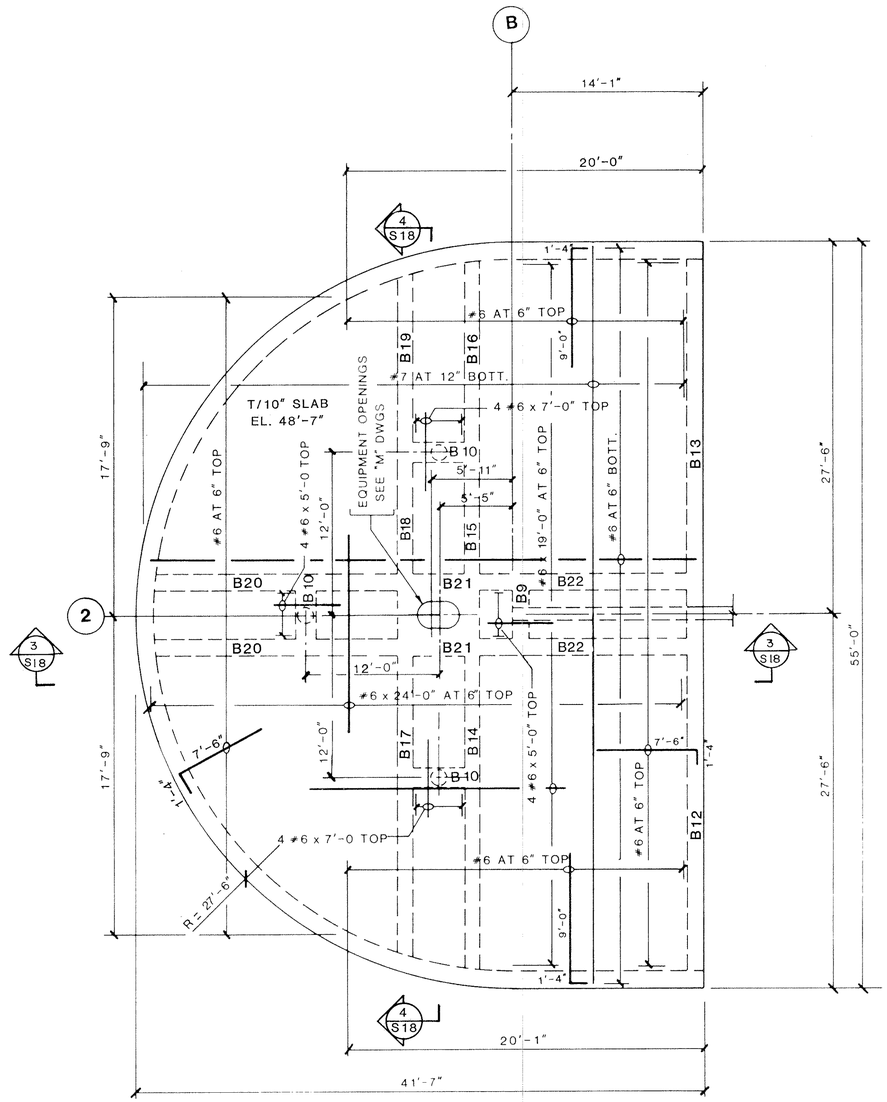
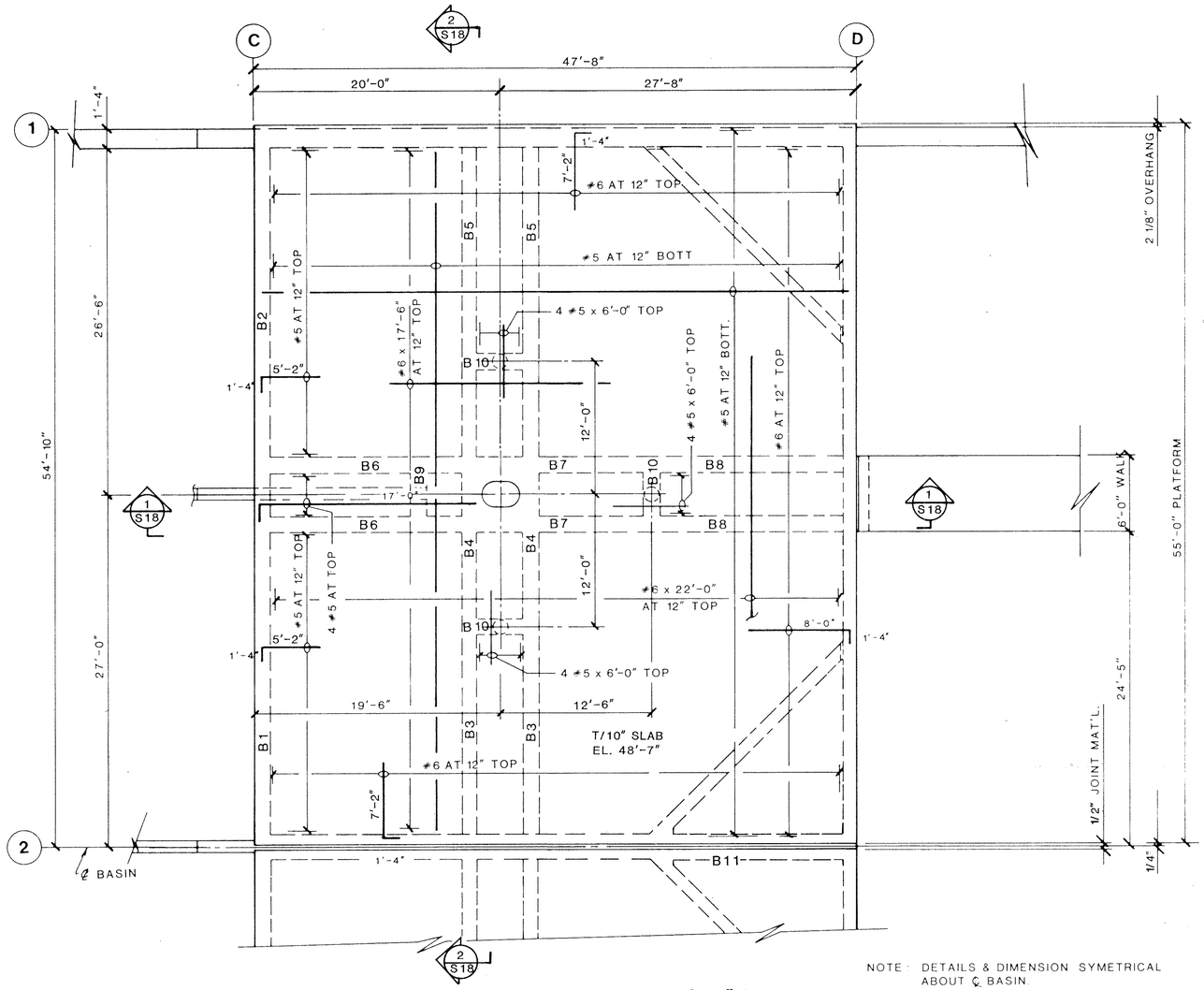
RECORD DRAWINGS 12/19/89



PLAN AT (B) EL. 48'-7"

SCALE 3/16" :: 1'-0"



PARTIAL PLAN AT EL. 48'-7"

SCALE: 3/16" = 1'-0"

NOTE: DETAILS & DIMENSION SYMETRICAL ABOUT ℄ BASIN

GILGIN ERIC NO. 34053 STATE OF FLORIDA REGISTERED ENGINEER 5-7-86

ANOXIC/AEROBIC TANKS
DETAIL PLANS AT EL. 48'-7"

DRAWN JAM | APPROVED BE | SCALE AS SHOWN | REFERENCE NUMBER 84-160S-E17 | SHEET NO. S17
CHECKED MSR | DATE MARCH 1985

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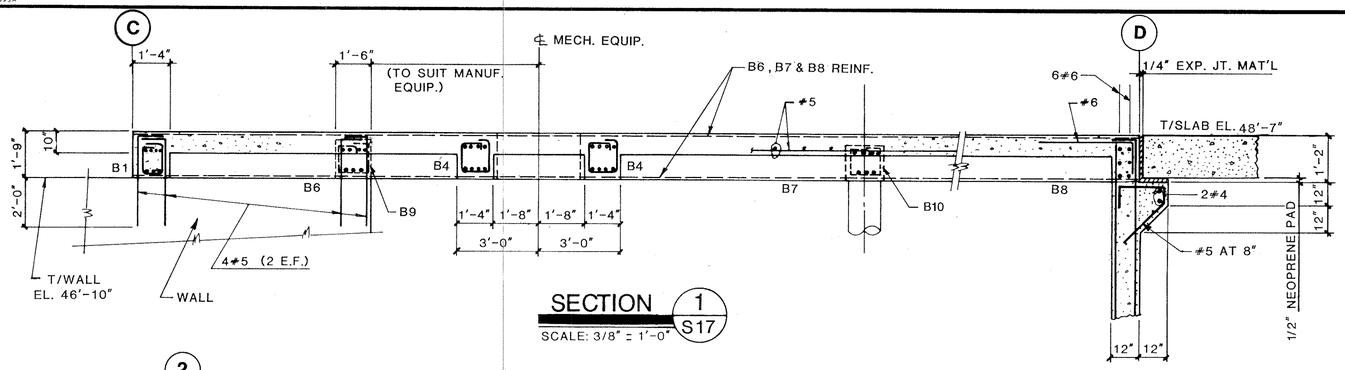
DESIGNED CHECKED DATE SCALE
DRAWN FILE NO. SHEET S-17 OF S-59

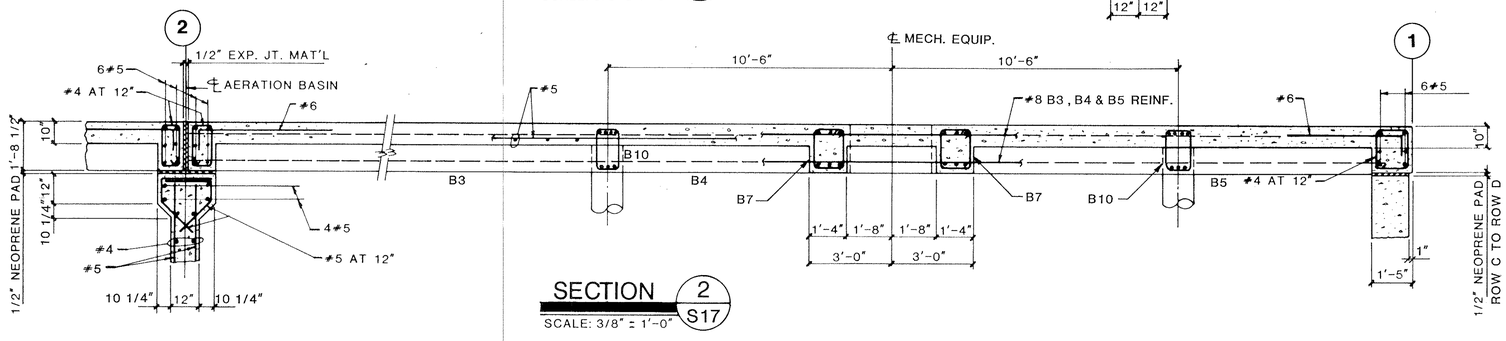
26-01

RECORD DRAWINGS 12/19/89

AF 31693A



SECTION 1 / S17
SCALE: 3/8" = 1'-0"



SECTION 2 / S17
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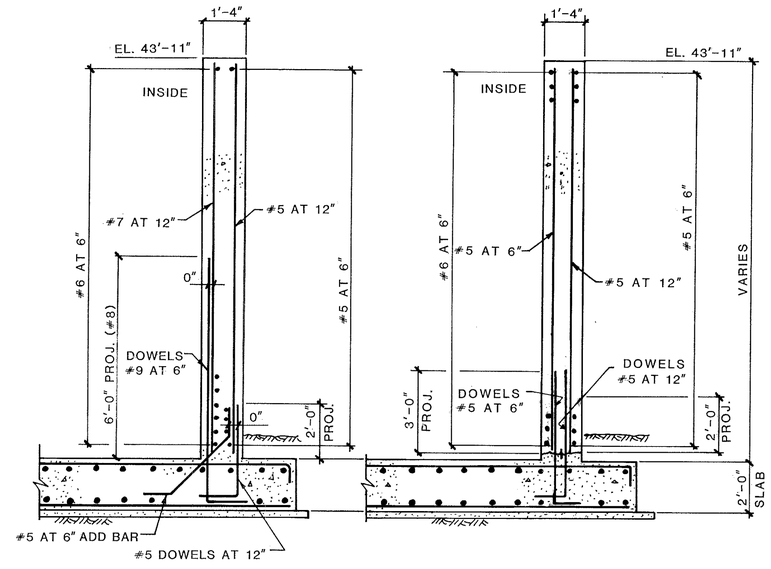
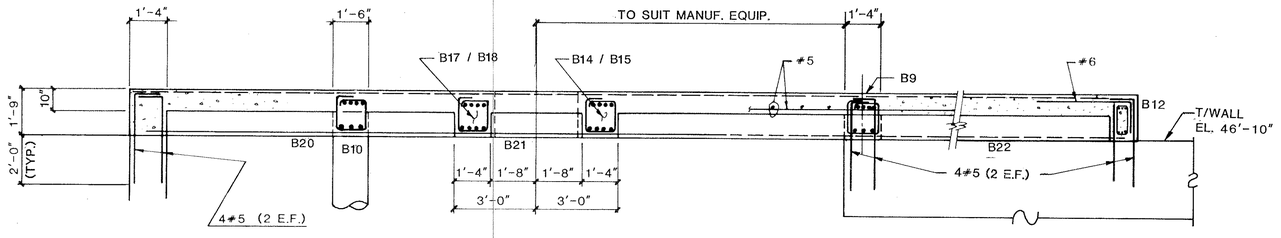


SECTION 1 / S16
SCALE: 3/8" = 1'-0"

SECTION AT TRANSITION CANT. WALL TO RING TENSION WALL TYP. THROUGH TRANSITION SECTION

SECTION 2 / S16
SCALE: 3/8" = 1'-0"

RING TENSION WALL



SECTION 3 / S17
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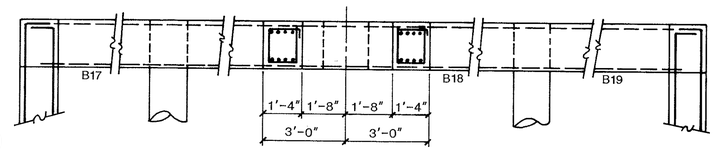
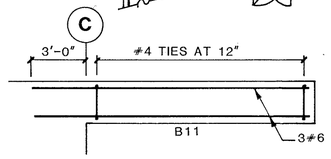
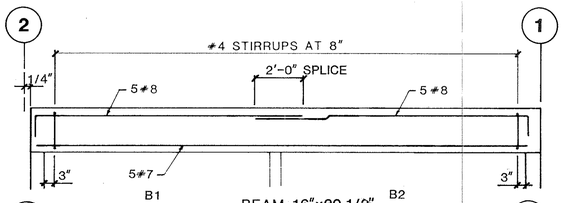


SECTION 4 / S17
SCALE: 3/8" = 1'-0"



BEAM 16"x20 1/2"



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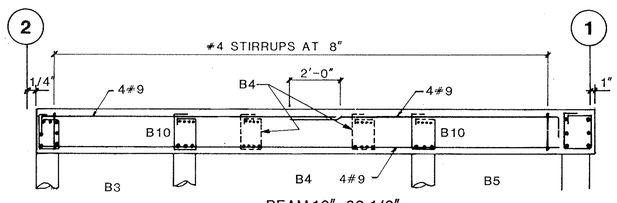

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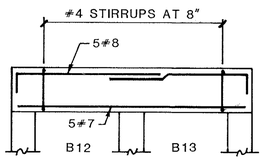

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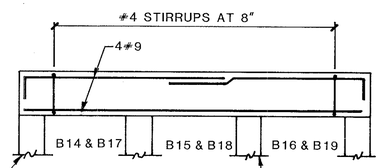

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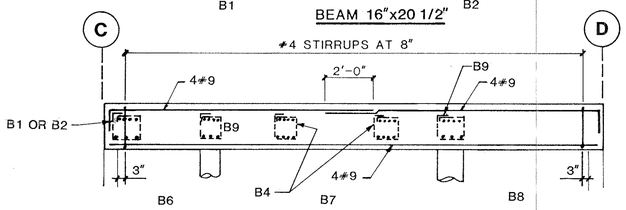

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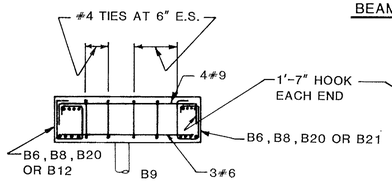

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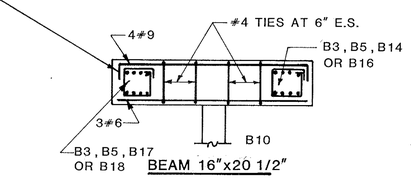

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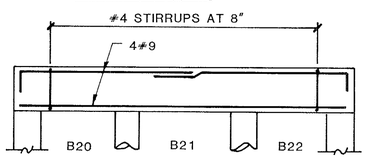

BEAM 16"x20 1/2"

BILGIN ERL NO. 34053 STATE OF FLORIDA REGISTERED ENGINEER
5-7-86

ANOXIC/AEROBIC TANKS SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
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MANATEE COUNTY, FLORIDA

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DRAWN ____ FILE NO. ____ SHEET S-18 OF S-59

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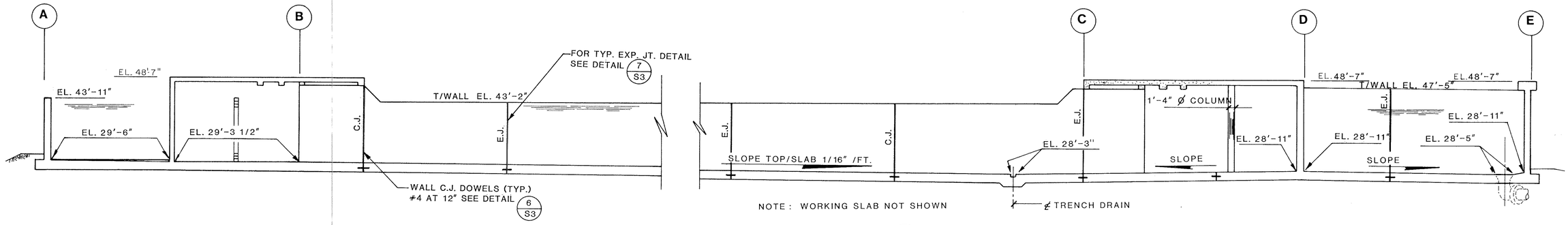
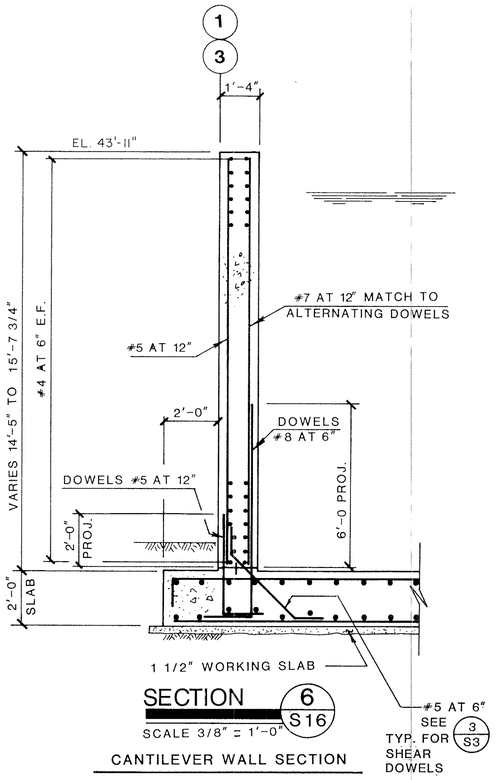
RECORD DRAWINGS 12/19/89



NOTE : WORKING SLAB NOT SHOWN

SECTION 3 / S16

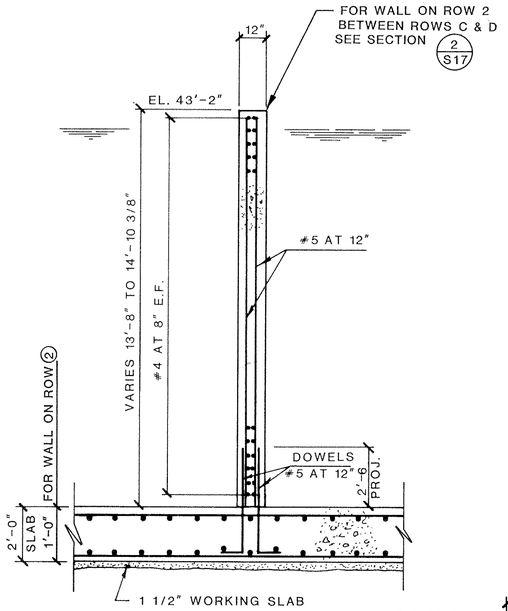
SCALE 3/32" = 1'-0"



SECTION 6 / S16

SCALE 3/8" = 1'-0"

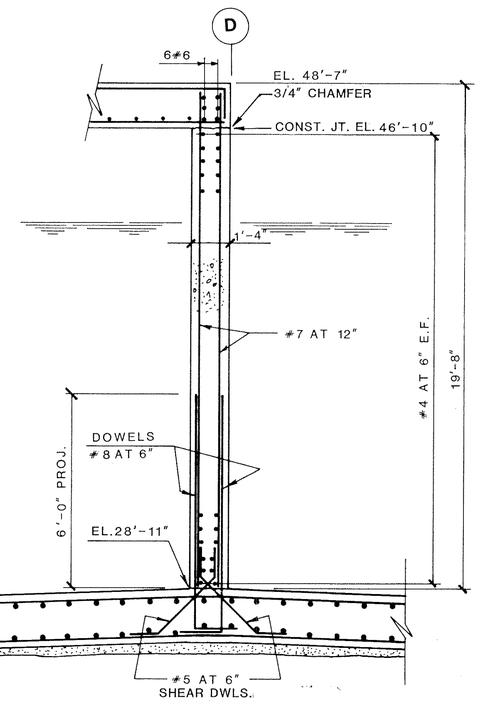
CANTILEVER WALL SECTION



SECTION 7 / S16

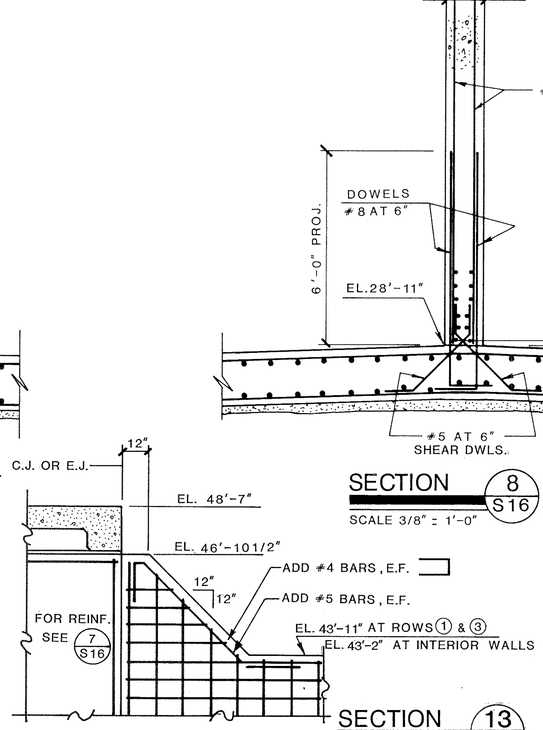
SCALE 3/8" = 1'-0"

INTERIOR 12" WALL



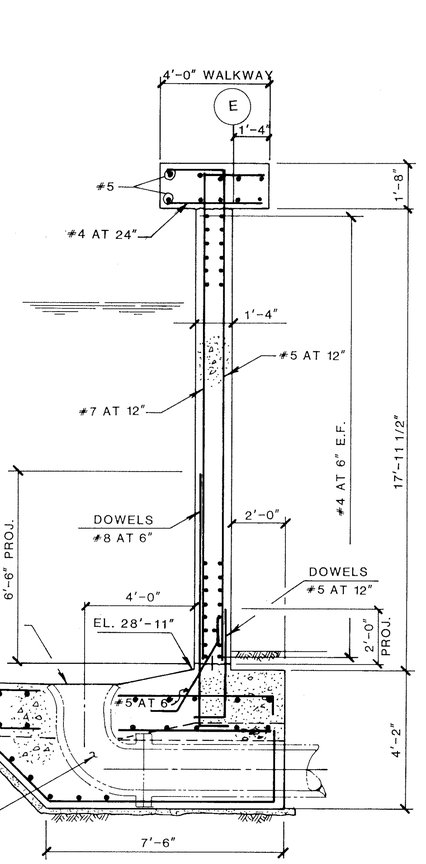
SECTION 8 / S16

SCALE 3/8" = 1'-0"



SECTION 13 / S16

SCALE : 3/8" = 1'-0"



SECTION 9 / S16

SCALE 3/8" = 1'-0"

NOTES

1. FOR SHEAR DOWEL DETAILS SEE 3 S3

BILGIN ENGINEERING CORPORATION NO. 34053 STATE OF FLORIDA REGISTERED ENGINEER 5-7-86

ANOXIC/AEROBIC TANKS
SECTIONS

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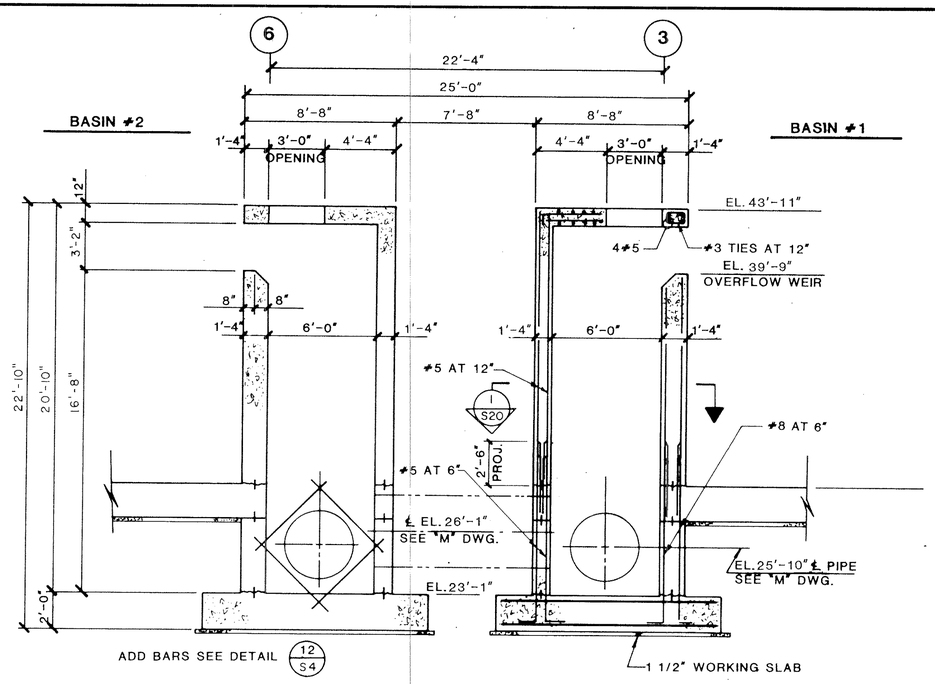
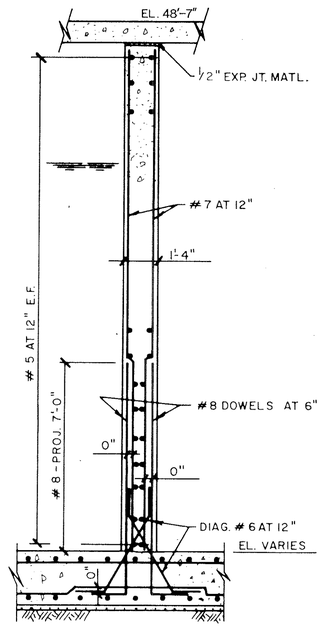
RECORD DRAWINGS 12/19/89



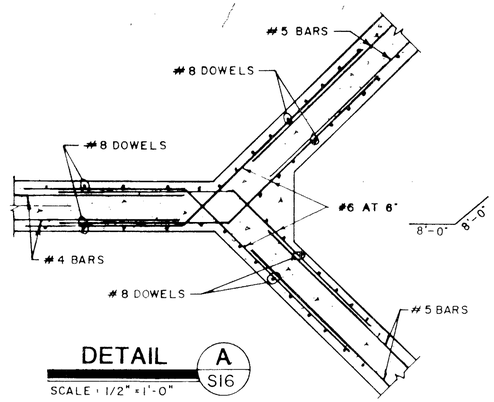
SECTION 4 S16

SCALE: 1/4" = 1'-0"



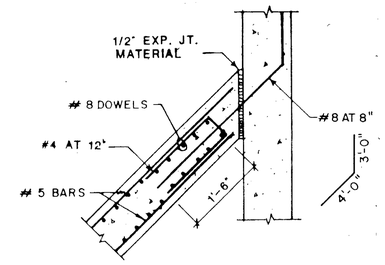
SECTION 14 S16

SCALE 3/8" = 1'-0"



DETAIL A S16

SCALE : 1/2" = 1'-0"



DETAIL B S16

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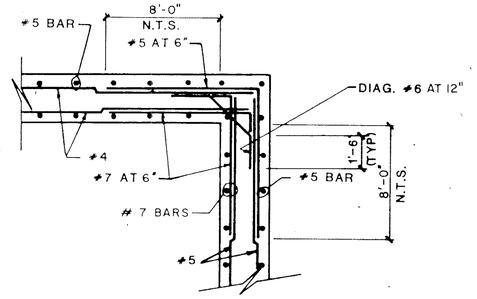
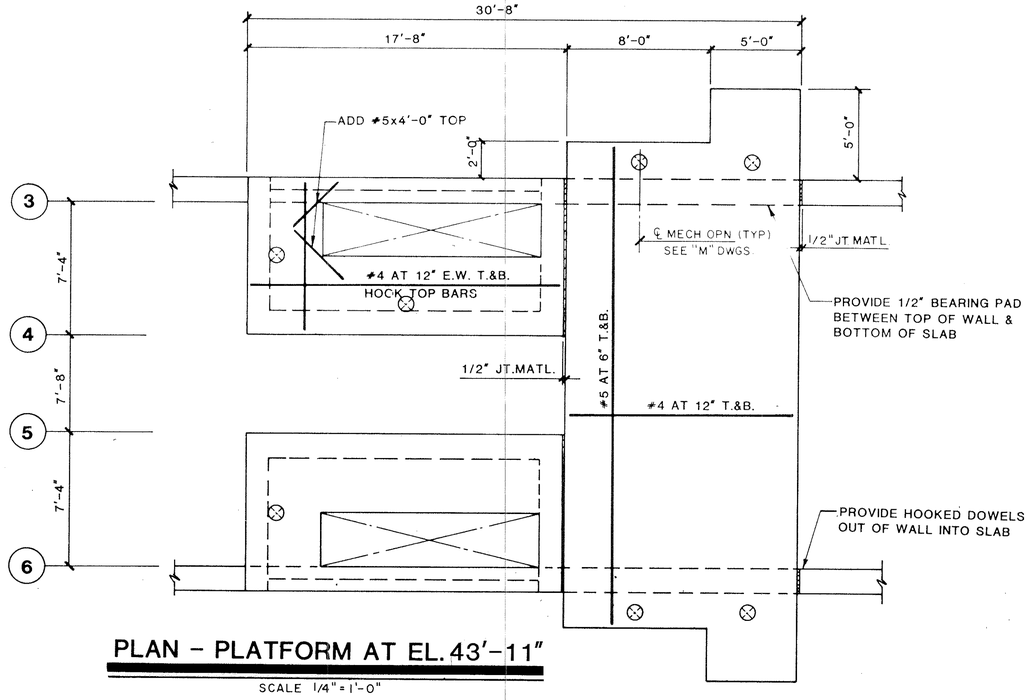


DETAIL C S16

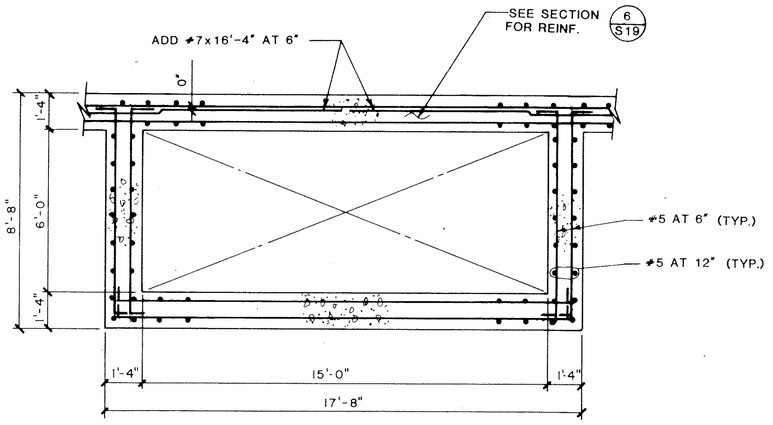
SCALE : 1/2" = 1'-0"

EXTERIOR CORNER REINFORCEMENT



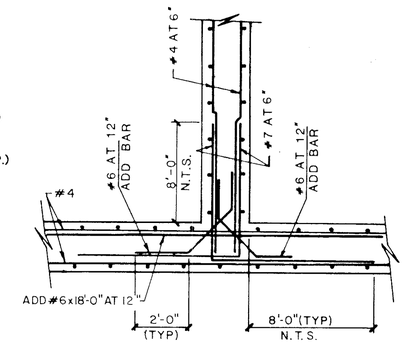
PLAN - PLATFORM AT EL. 43'-11"

SCALE 1/4" = 1'-0"



SECTION 1 S20

SCALE 3/8" = 1'-0"



DETAIL D S16

SCALE: 1/2" = 1'-0"

GILGIN ERIC CONSTANTINE No. 34053 STATE OF FLORIDA REGISTERED ENGINEER 5-7-86

ANOXIC / AEROBIC TANKS
SECTIONS & DETAILS

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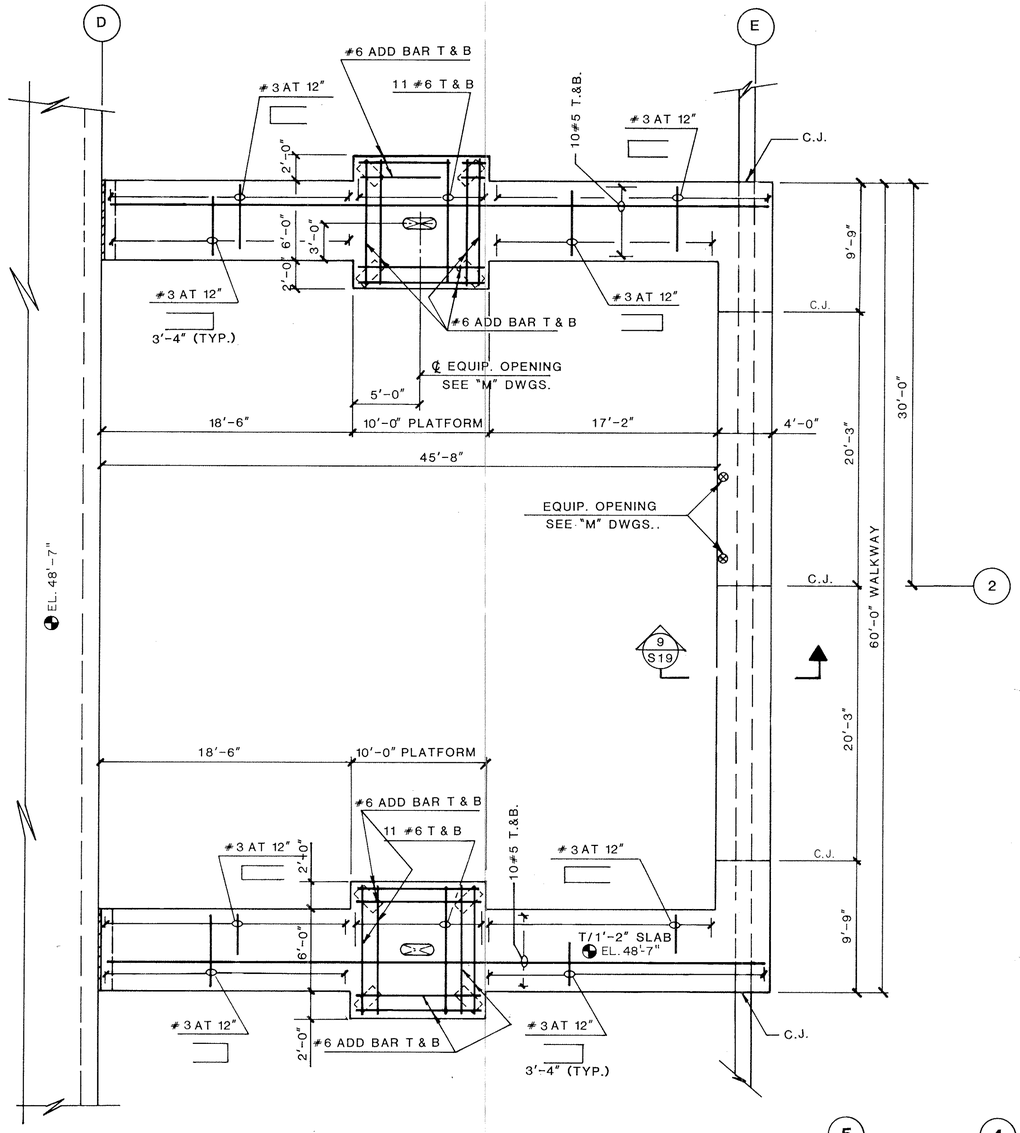
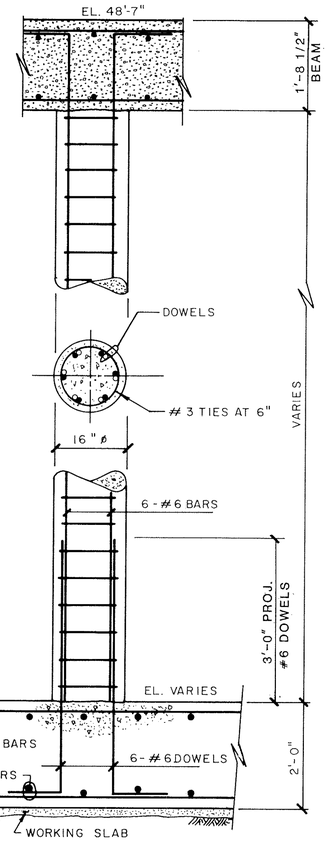


PLAN WALKWAYS & PLATFORMS

SCALE 3/16" = 1'-0"

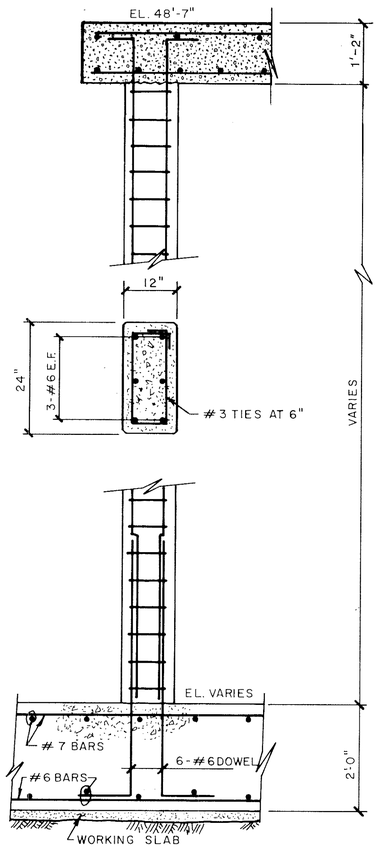


16"ø COLUMN DETAIL

SCALE 3/4" = 1'-0"

FOR COLUMN LOCATIONS SEE DWG. S-14.

TYPICAL FOR 12 COLUMNS.

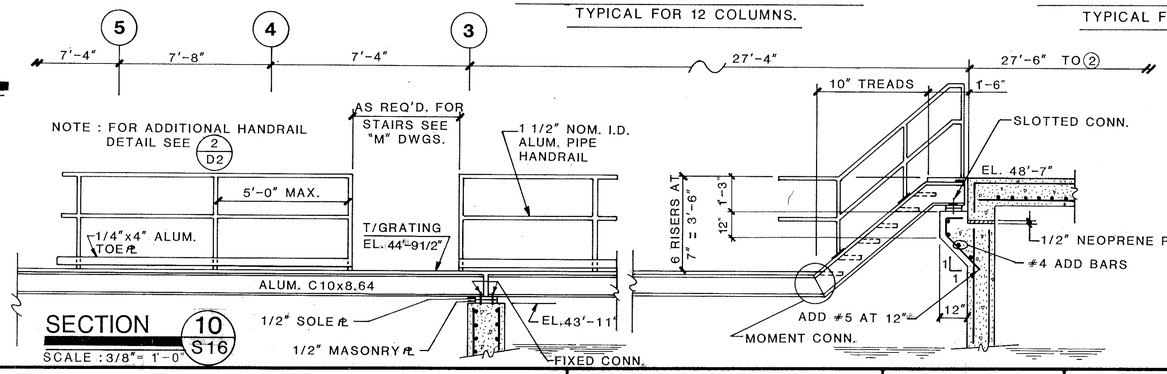


12"x24" COLUMN DETAIL

SCALE 3/4" = 1'-0"

FOR COLUMN LOCATIONS SEE DWG. S-14.

TYPICAL FOR 8 COLUMNS.



SECTION 10 S16

SCALE : 3/8" = 1'-0"

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REGISTERED ENGINEER
5-7-86

ANOXIC/AEROBIC TANKS WALKWAY PLAN & DETAILS

DRAWN	APPROVED	SCALE:	REFERENCE NUMBER:	SHEET NO.
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CHECKED	DATE MARCH 85			

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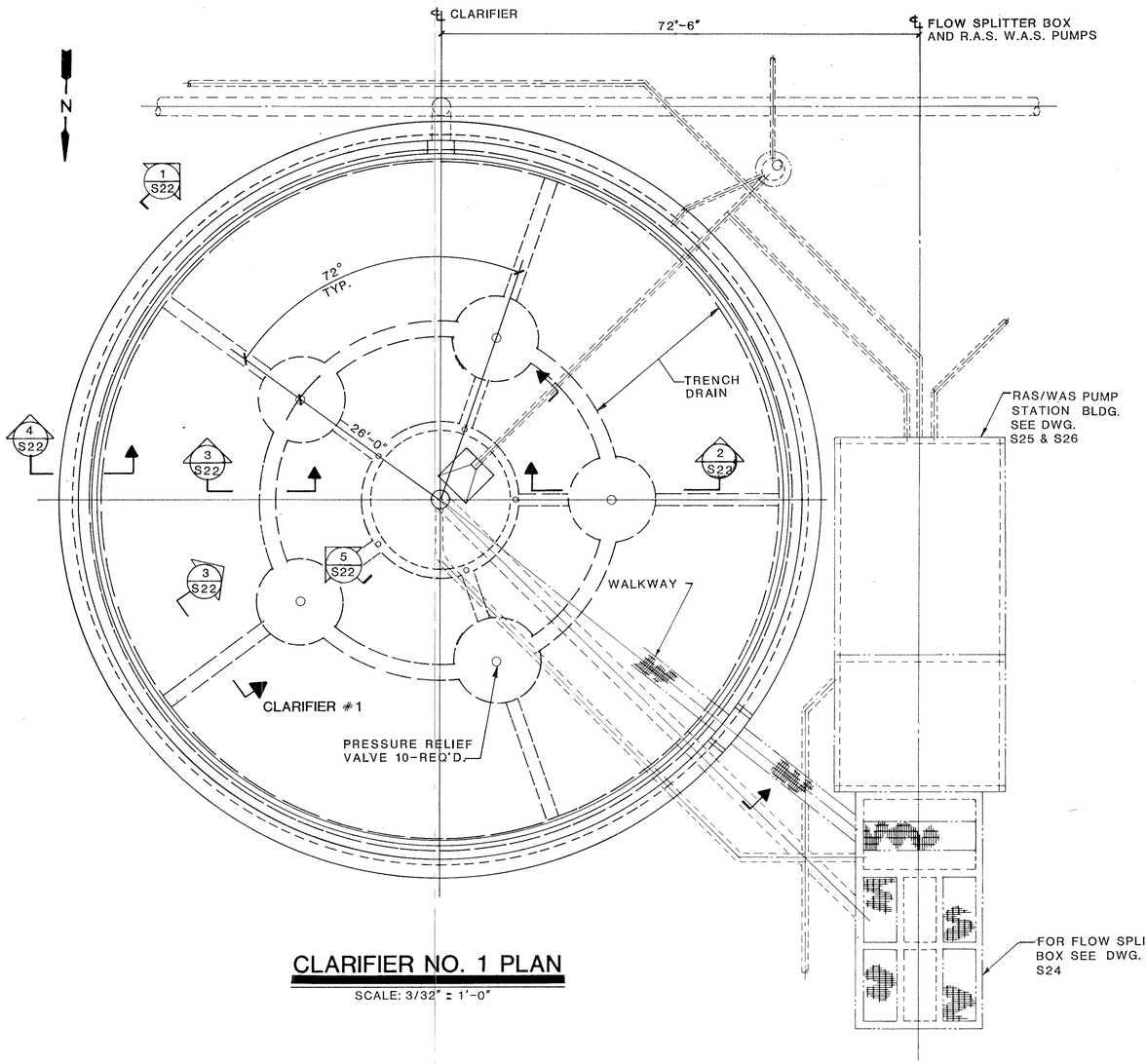
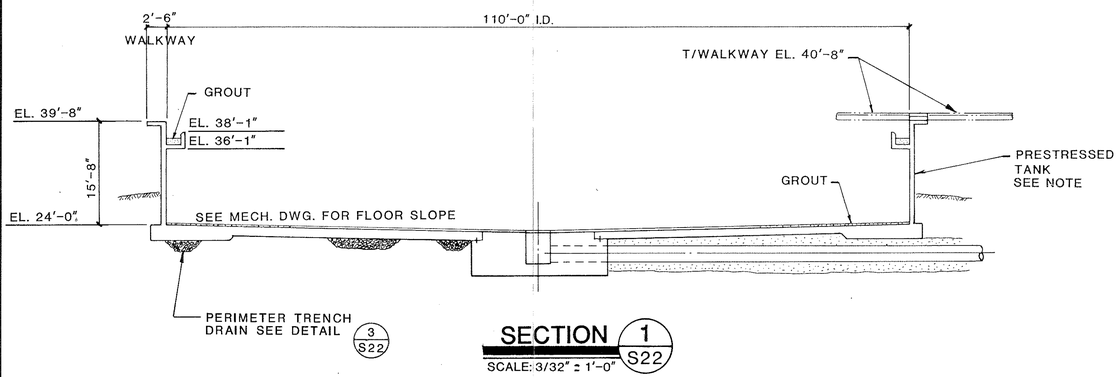
26-01

RECORD DRAWINGS 12/19/89



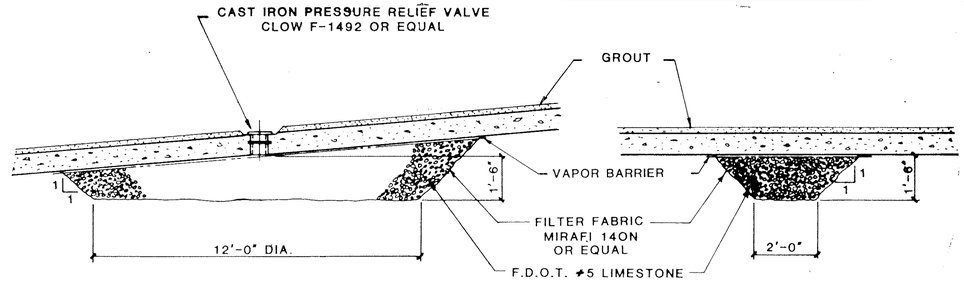
CLARIFIER NO. 1 PLAN

SCALE: 3/32" = 1'-0"



SECTION 1 S22

SCALE: 3/32" = 1'-0"

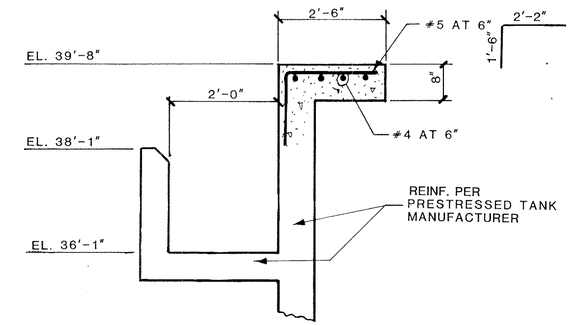


SECTION 2 S22

N.T.S.

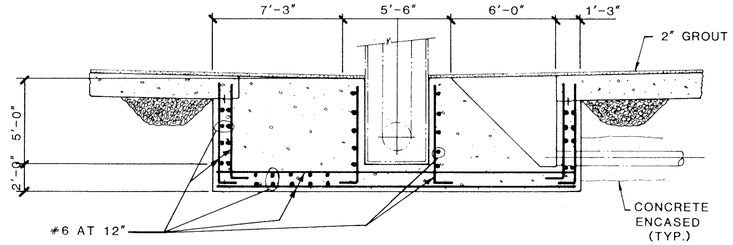
SECTION 3 S22

N.T.S.



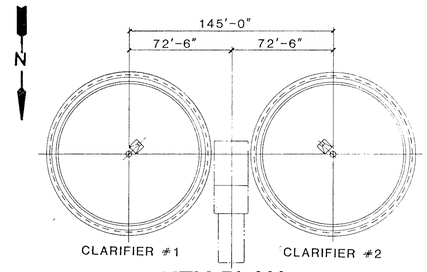
SECTION 4 S22

SCALE: 3/4" = 1'-0"



SECTION 5 S22

SCALE: 1/4" = 1'-0"



KEY PLAN

NTS

BILGIN EREL CERTIFICATE NO. 34053 STATE OF Florida REGISTERED ENGINEER 5-19-86

NOTE : TANK TO BE DESIGNED BY TANK CONTRACTOR PER SPECIFICATION REQUIREMENTS .

CLARIFIER PLAN AND SECTION

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
MFS	BE	AS SHOWN	84-160S-E21	S22
CHECKED MA	DATE MARCH 85			

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NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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environmental engineers scientists planners & management consultants CDM

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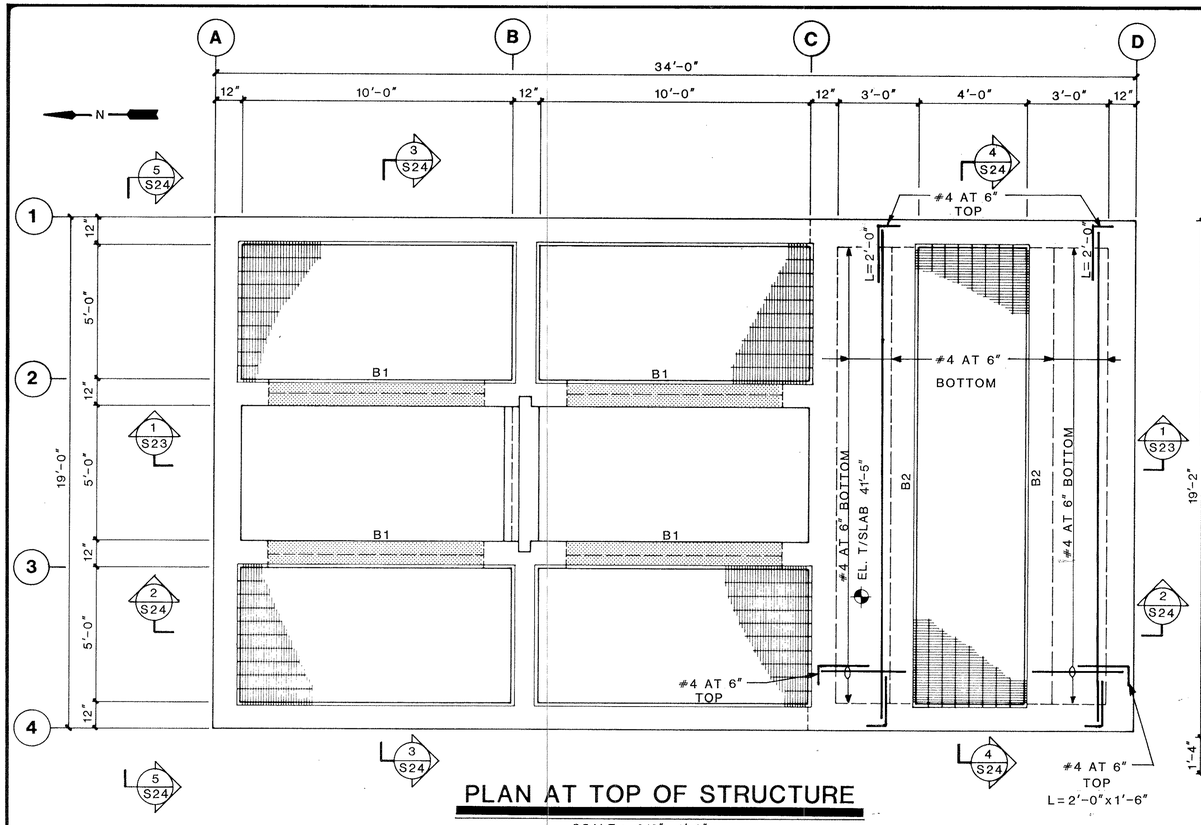
DESIGNED ____ CHECKED ____ DATE ____ SCALE ____
DRAWN ____ FILE NO ____ SHEET S-22 OF S-59

T65

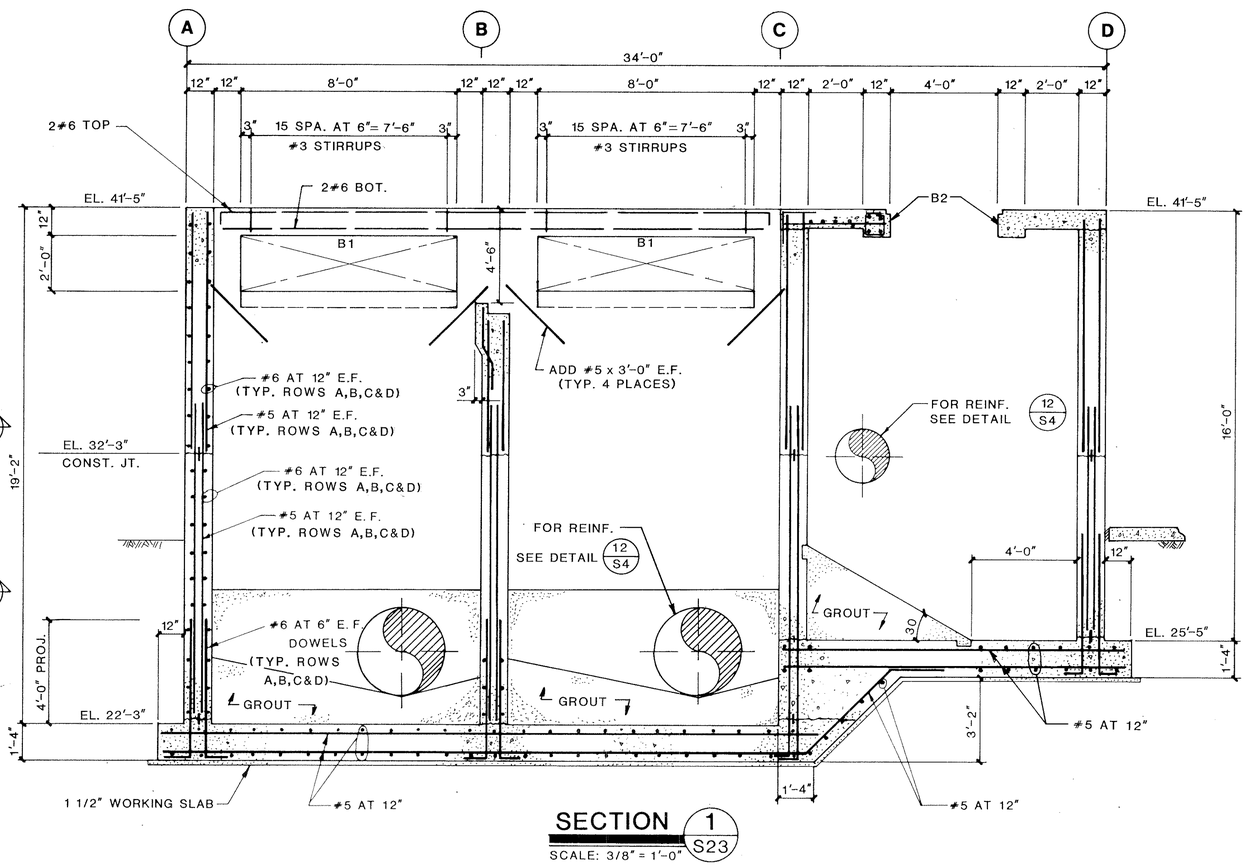
26-01

RECORD DRAWINGS 12/19/89



PLAN AT TOP OF STRUCTURE

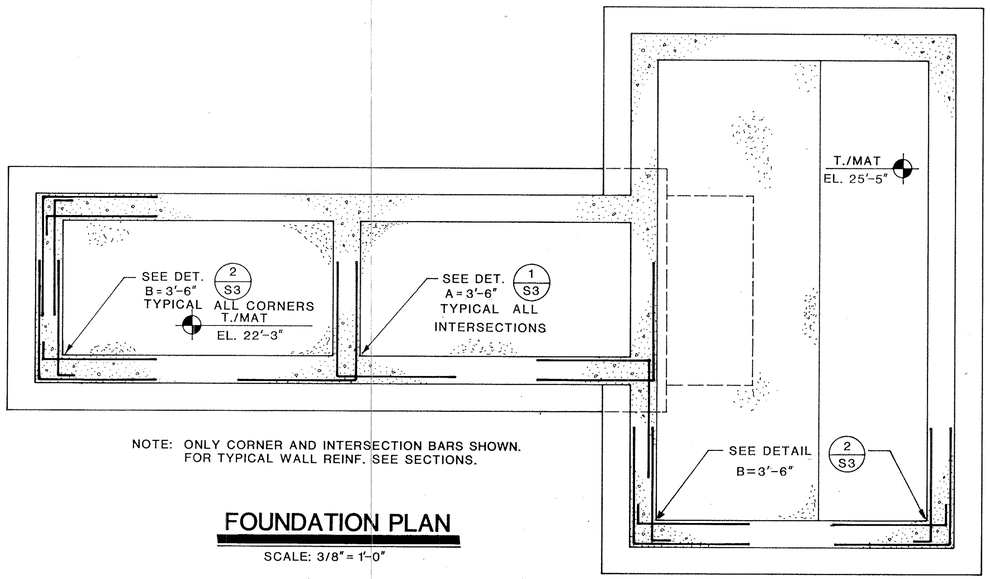
SCALE : 3/8" = 1'-0"



SECTION 1/S23

SCALE: 3/8" = 1'-0"

ALONG ROW (2)



NOTE: ONLY CORNER AND INTERSECTION BARS SHOWN.
FOR TYPICAL WALL REINF. SEE SECTIONS.

FOUNDATION PLAN

SCALE: 3/8" = 1'-0"

BILGIN EREL
NO. 34053
STATE OF FLORIDA
REGISTERED ENGINEER
5-9-86

FLOW SPLITTER BOX
PLANS & SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER:	SHEET NO.
WSM	BE	AS SHOWN	84-160S-E23	S23
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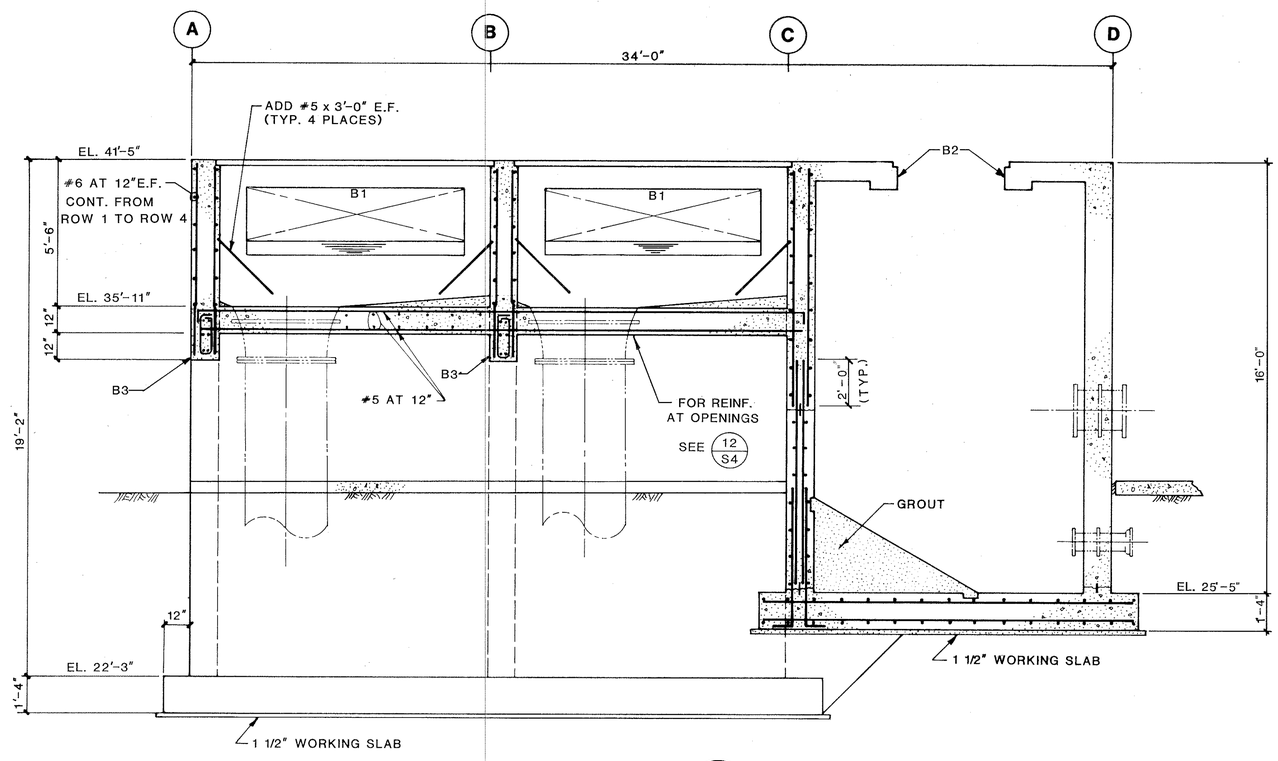
DRAWN ____ FILE NO. ____ SHEET S-23 OF S-59

26-01

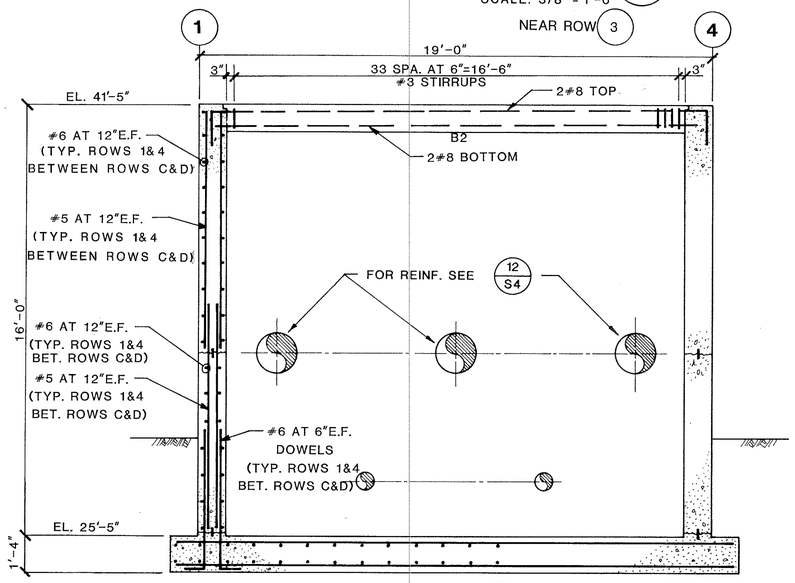
RECORD DRAWINGS 12/19/89



SECTION 2 / S23

SCALE: 3/8" = 1'-0"

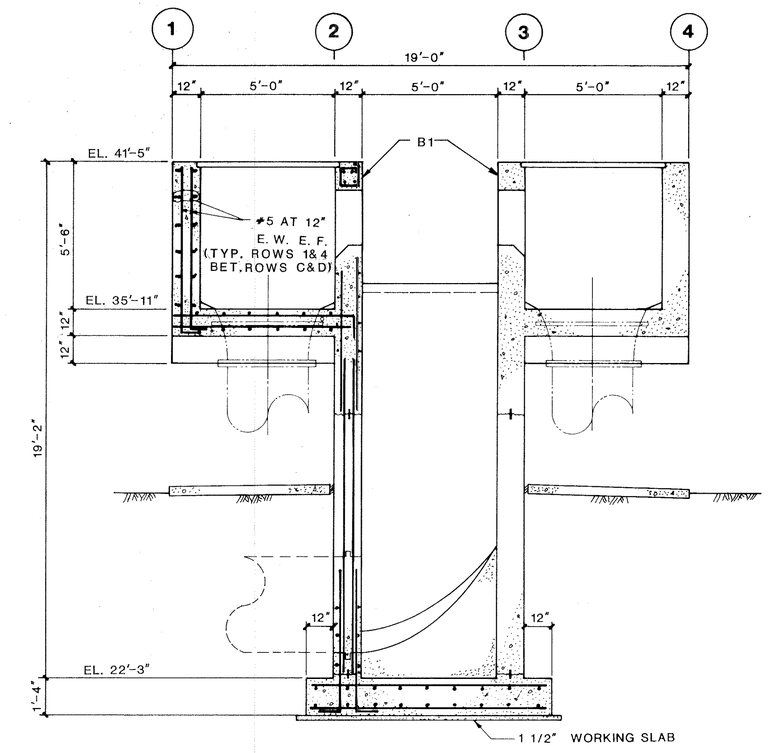
NEAR ROW 3



SECTION 4 / S23

SCALE: 3/8"=1'-0"

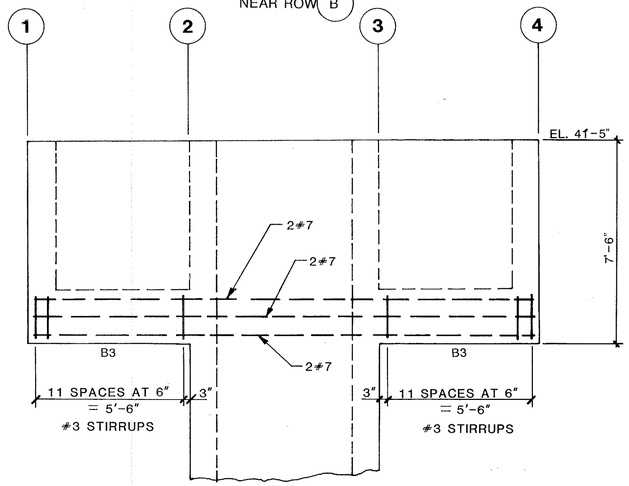
NEAR ROW D



SECTION 3 / S23

SCALE: 3/8"= 1'-0"

NEAR ROW B



ELEVATION 5 / S23

SCALE: 3/8"=1'-0"

ALONG ROW A

S-7-86

FLOW SPLITTER BOX SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
WSM	BE	AS SHOWN	84-160S-E24	S24
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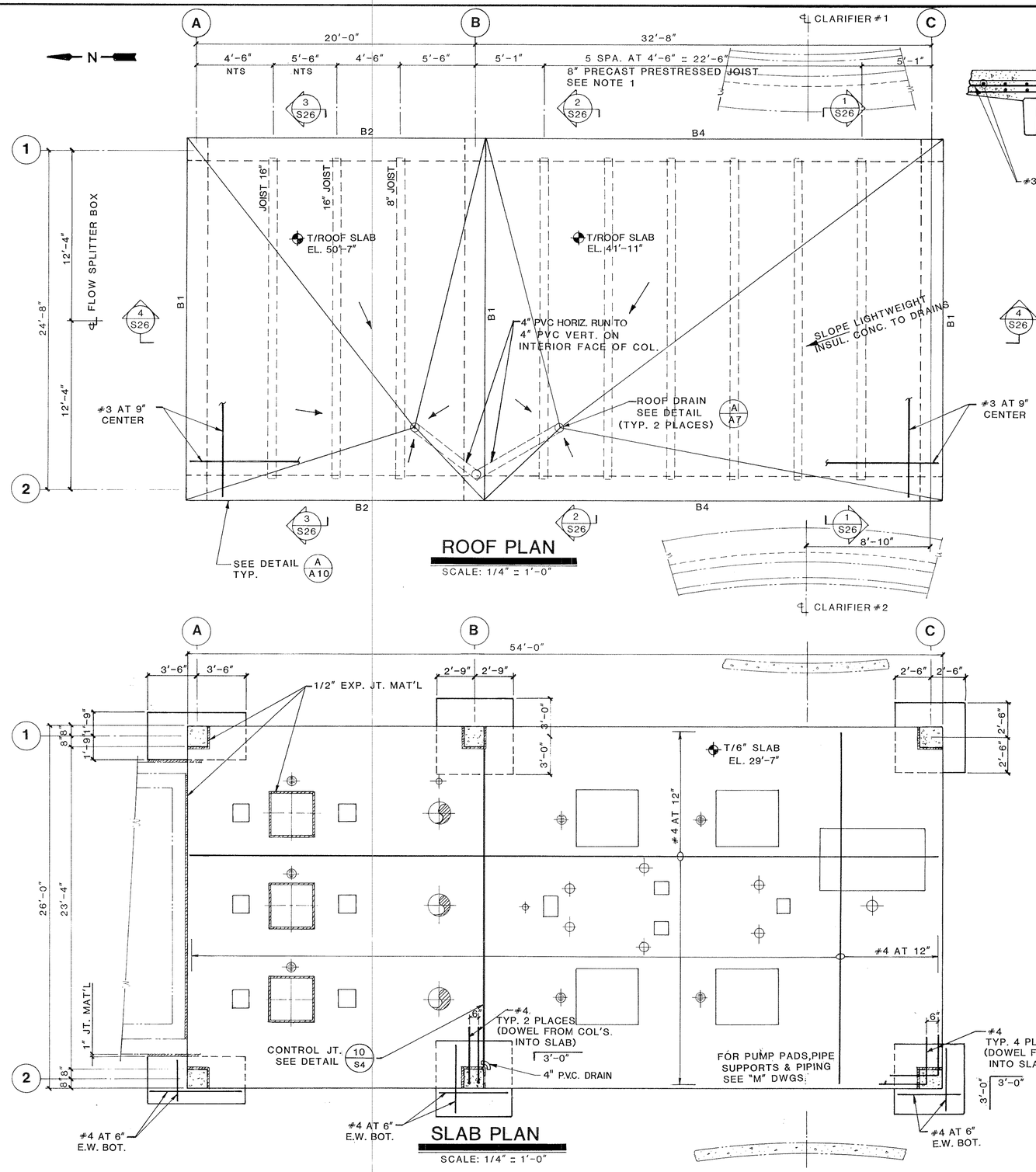
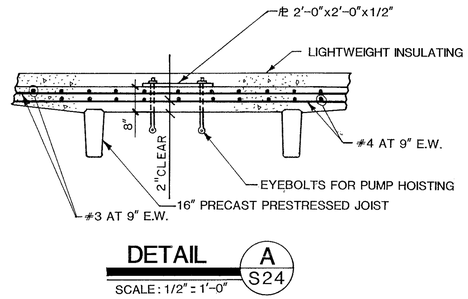
RECORD DRAWINGS 12/19/89



ROOF PLAN

SCALE: 1/4" = 1'-0"



DETAIL A / S24

SCALE: 1/2" = 1'-0"

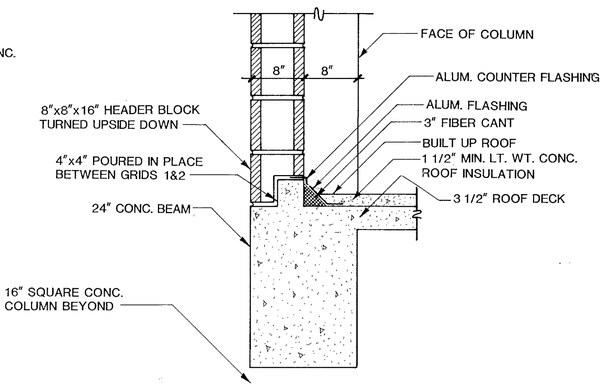
NOTE

1. PRECAST PRESTRESSED JOIST TO BE DESIGNED BY SPECIALTY CONTRACTOR PER SPECS.

LL : 30 PSF

DL : ROOF SYSTEM WEIGHT PLUS 20 PSF

PUMP HOIST : REFER TO PUMP MANUFACTURERS EQUIPMENT INFORMATION FOR PUMP WEIGHT .



FLASHING BETWEEN DIFFERENT ROOF LEVELS

DETAIL B / S24

NTS

ARCHITECTURAL NOTES:

A. EXTERIOR FINISH TO BE 3/4" 3-COAT STUCCO ON MASONRY BLOCK.

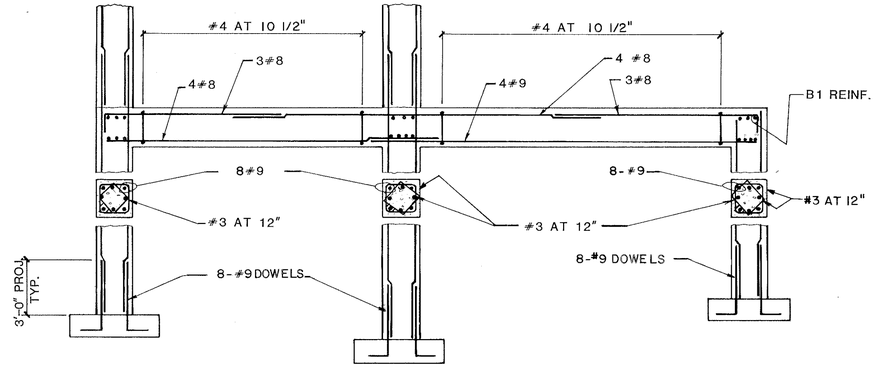
B. DRESSED & PAINTED CONC. BEAMS & COLUMNS INTERIOR & EXTERIOR.

C. INTERIOR MASONRY BLOCK WALLS TO BE STRUCK JOINTS & PAINTED.

D. ELEVATIONS TO HAVE DETAILS FOR GRAVEL STOP/FASCIA, ROOF DRAINS, DRESSED & PAINTED CONC. BEAMS & COLUMNS, STUCCO & STRUCK JOINTS W/PAINTED INTERIOR SURFACES SIMILAR TO THOSE SHOWN ON SHTS A-9 THRU A-15.

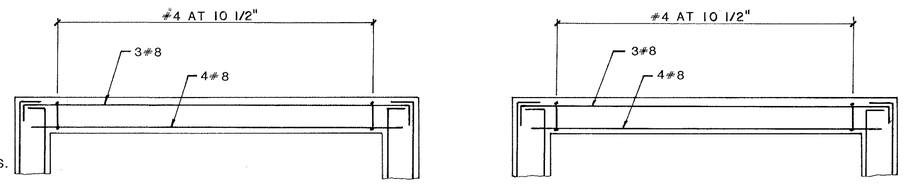
SLAB PLAN

SCALE: 1/4" = 1'-0"



BEAM B3

BEAM B4



BEAM B1

BEAM B2

GILGIN ERIC PARTAIN REGISTERED NO. 36053 STATE OF FLORIDA 5-7-86

R.A.S. / W.A.S. PUMP STATION
PLANS & SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
MFS	BE	AS SHOWN	84-160S-E25	S25
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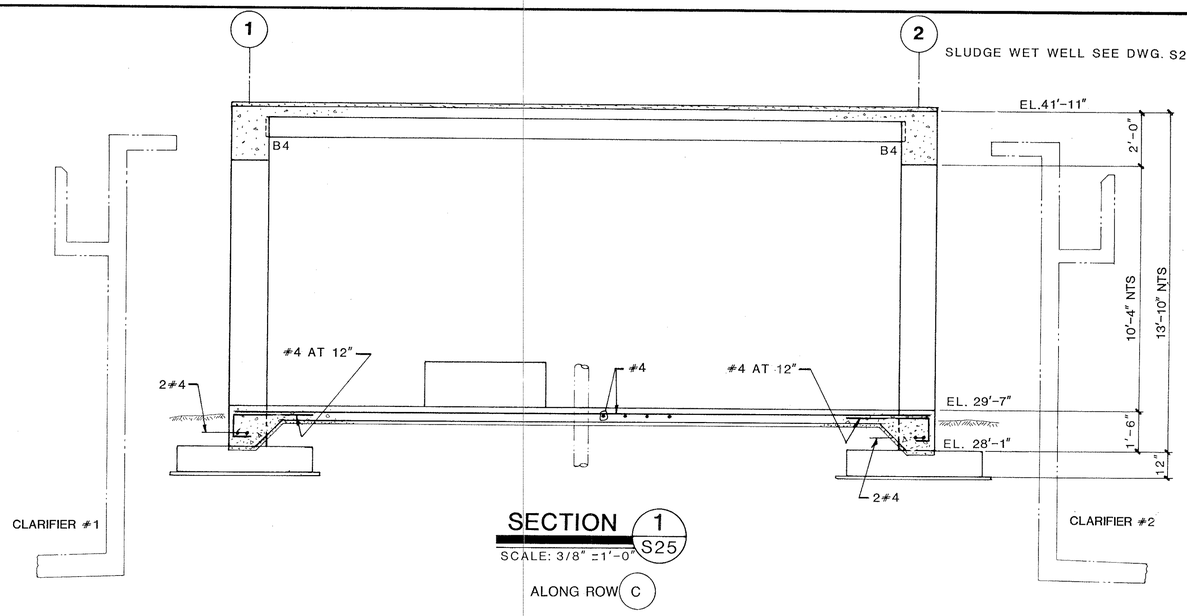
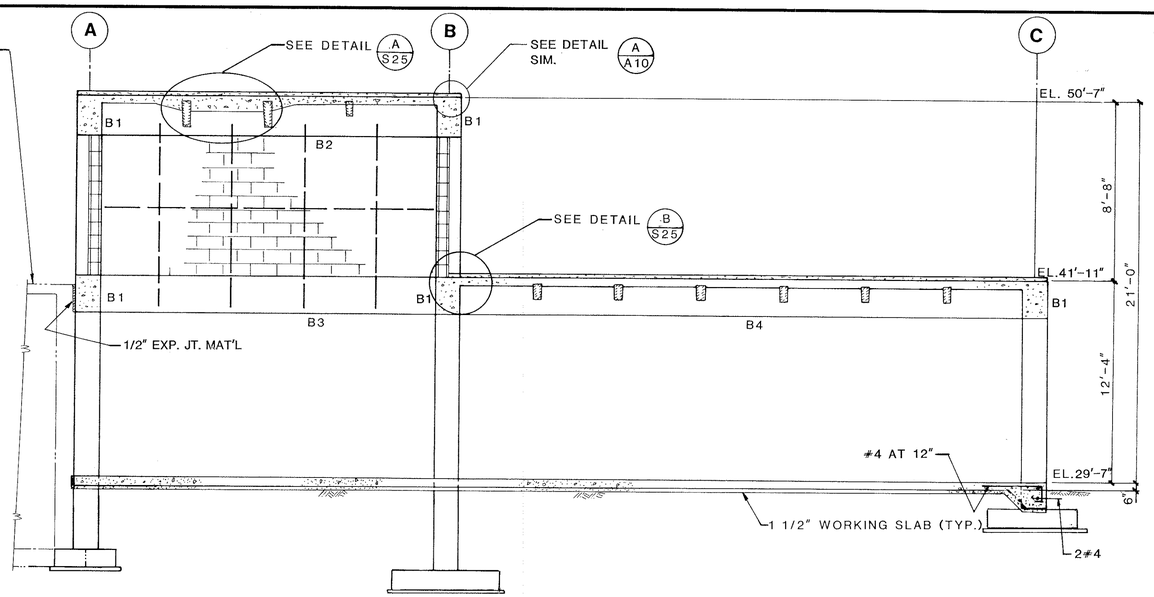
DRAWN ____ FILE NO. ____ SHEET S-25 OF S-59

26-01

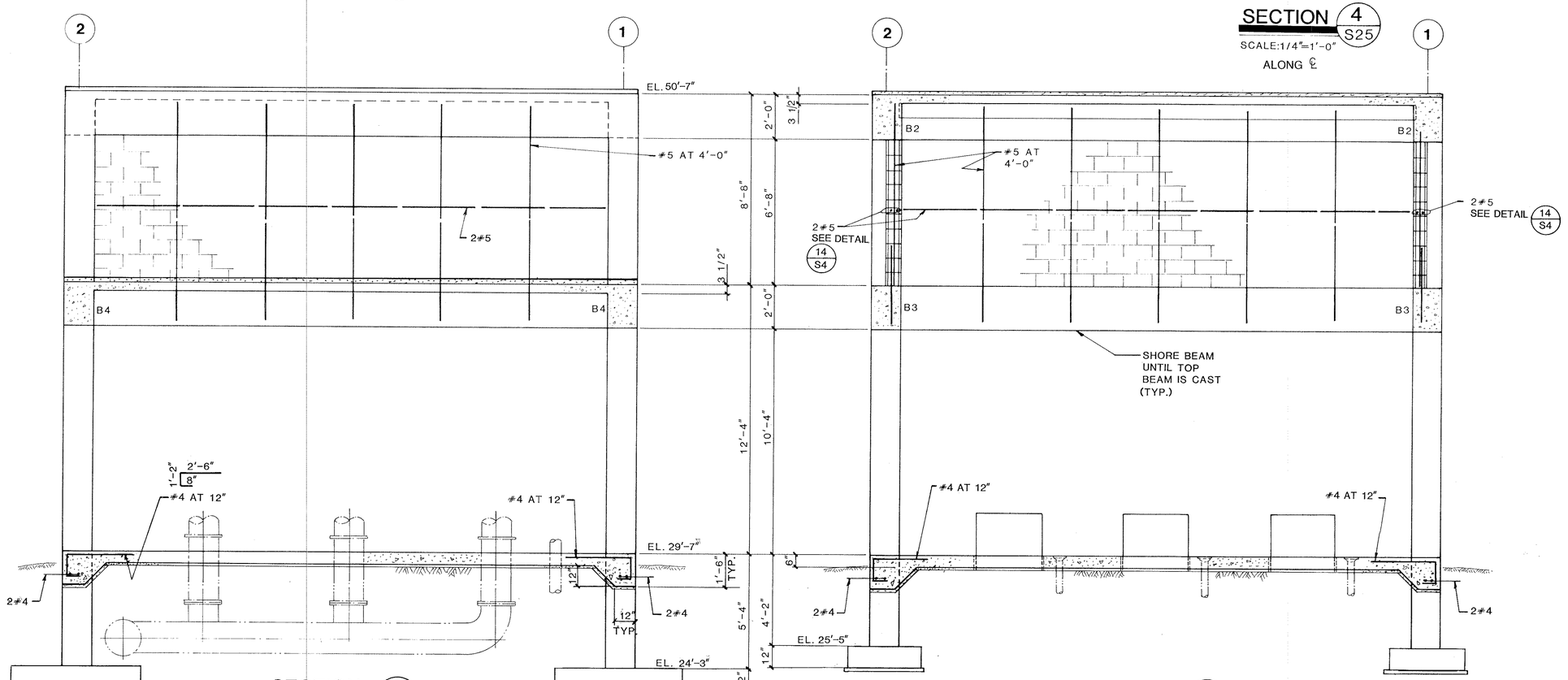
RECORD DRAWINGS 12/19/89



SECTION 1 / S25
SCALE: 3/8" =1'-0"
ALONG ROW C



SECTION 4 / S25
SCALE:1/4"=1'-0"
ALONG ℄



SECTION 2 / S25
SCALE: 3/8" = 1'-0"
ALONG ROW B

SECTION 3 / S25
SCALE: 3/8" = 1'-0"
ALONG ROW A

BILGIN EREL — NO. 34053 — STATE OF FLORIDA — REGISTERED ENGINEER
5-9-86

R.A.S. / W.A.S. PUMP STATION
SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
MFS	BE	AS SHOWN	84-160S-E26	S26
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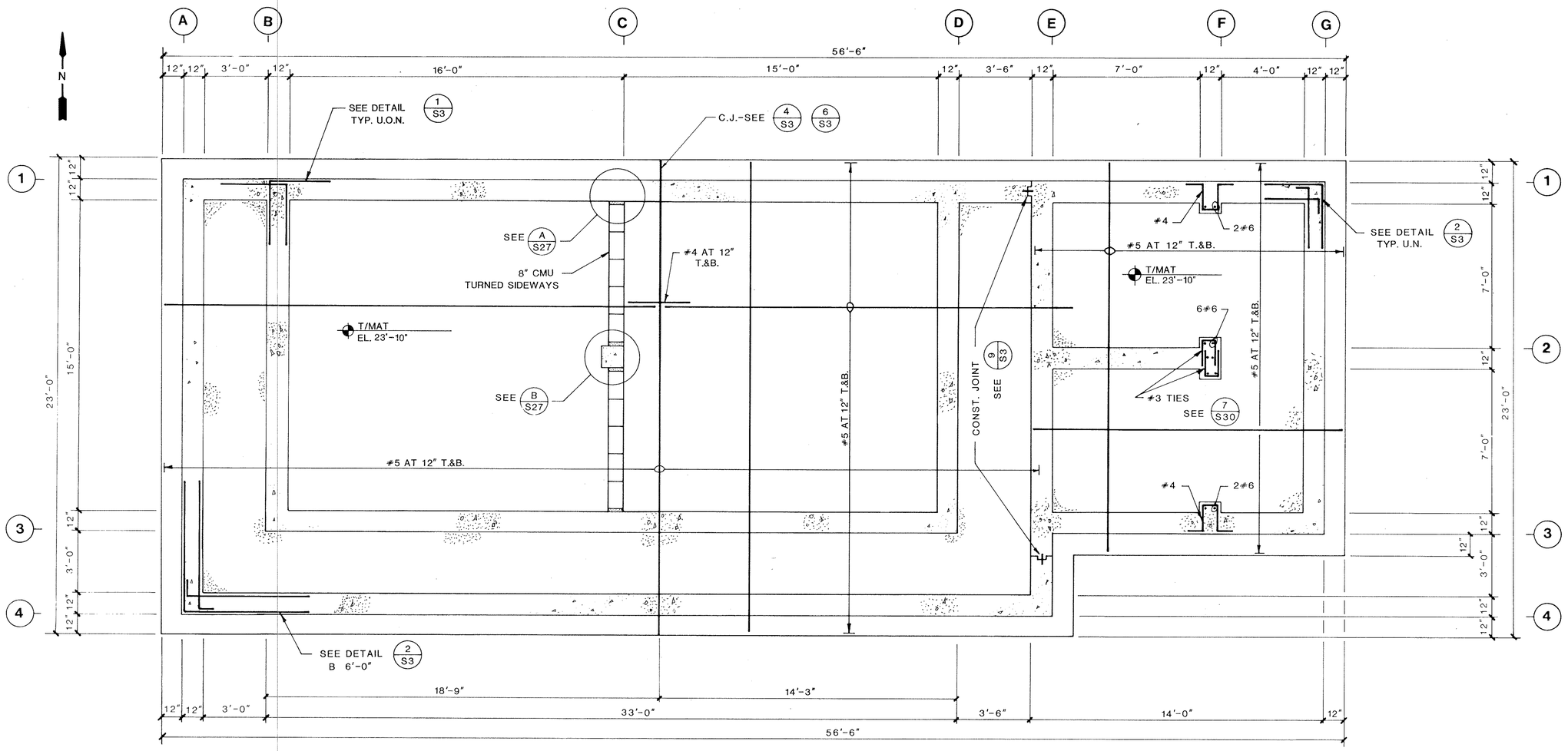
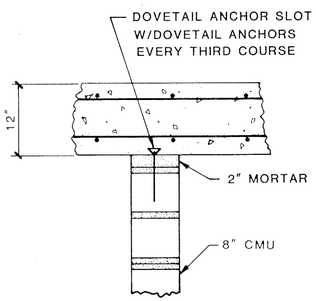
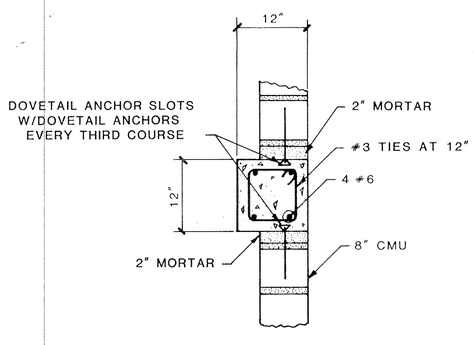
RECORD DRAWINGS 12/19/89





DETAIL A/S27
SCALE: 1" = 1'-0"



DETAIL B/S27
SCALE: 1" = 1'-0"

FOUNDATION PLAN
SCALE: 3/8" = 1'-0"

BILGIN ERE — REGISTERED ENGINEER — NO. 34053 — STATE OF FLORIDA
5-9-86

FLASH MIXER/FLOCCULATORS FOUNDATION PLAN & DETAILS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
WSM	BE	AS SHOWN	84-1605-E27	S27
CHECKED MA	DATE MARCH 85			

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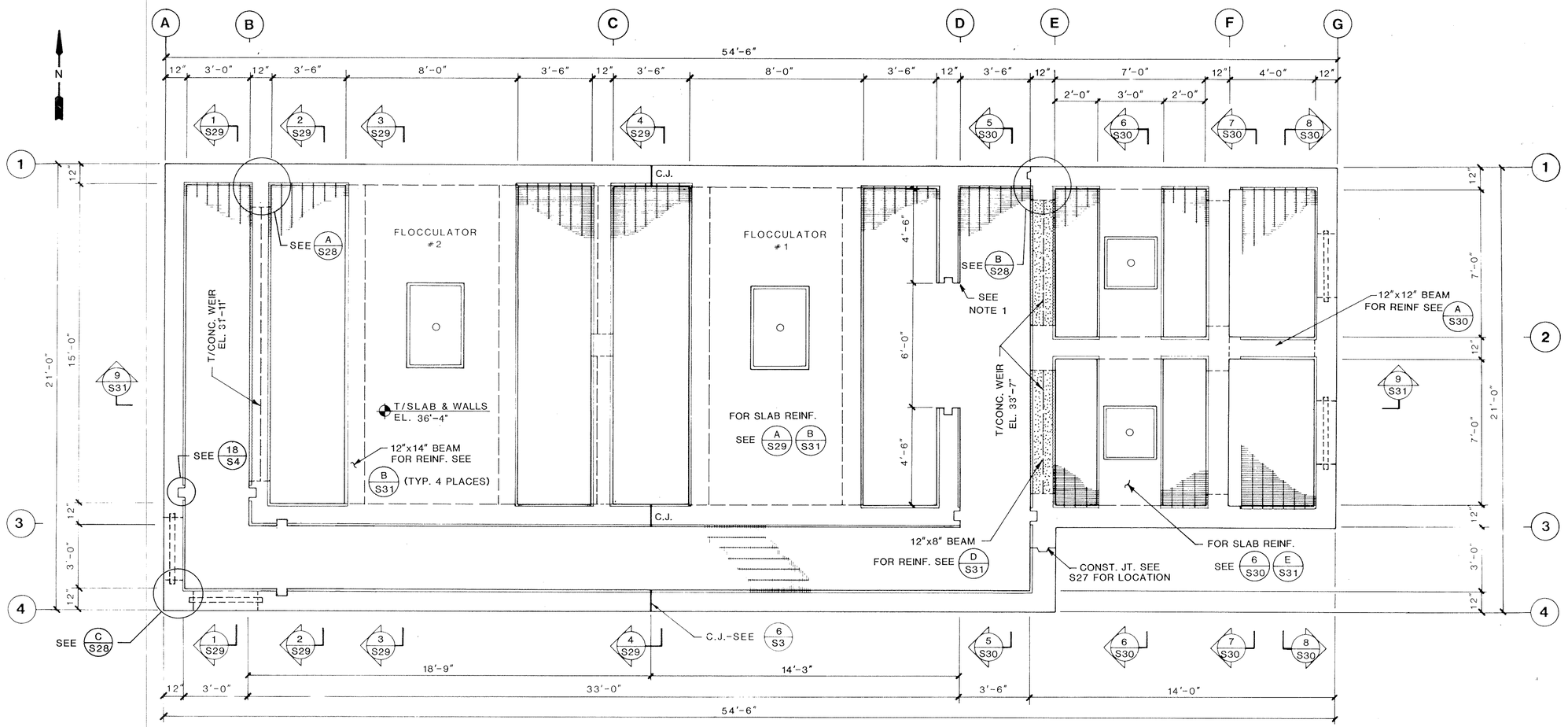
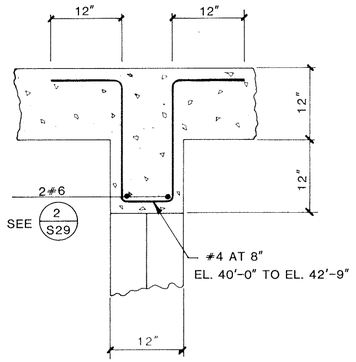
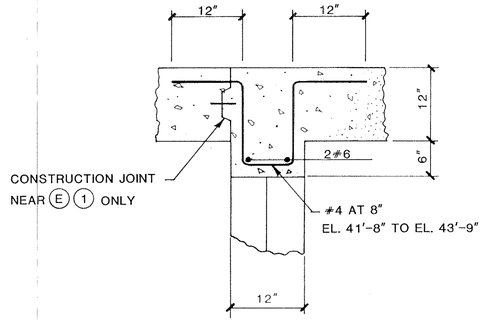


PLAN AT TOP OF STRUCTURE

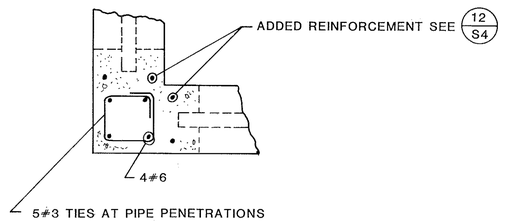
SCALE: 3/8" = 1'-0"



DETAIL A S28
SCALE: 1" = 1'-0"



DETAIL B S28
SCALE: 1" = 1'-0"



PROVIDE CORNER BARS AS SHOWN ON FOUNDATION PLAN ABOVE AND BELOW PIPE PENETRATIONS

DETAIL C S28
SCALE: 1" 1'-0"

LEGEND

DENOTES WEIR LOCATION

DENOTES GRATING

NOTES

1. SEE "M" DWGS. FOR GRATING SUPPORTS ACROSS GRATE OPENINGS

BILGIN EREL NO. 34053 STATE OF FLORIDA REGISTERED ENGINEER 5-7-86

FLASH MIXER/FLOCCULATORS
PLAN AT TOP OF STRUCTURE

DRAWN	CHECKED	APPROVED	DATE	SCALE	REFERENCE NUMBER	SHEET NO
WSM	MA	BE	MARCH 85	AS SHOWN	84-1605-E28	S28

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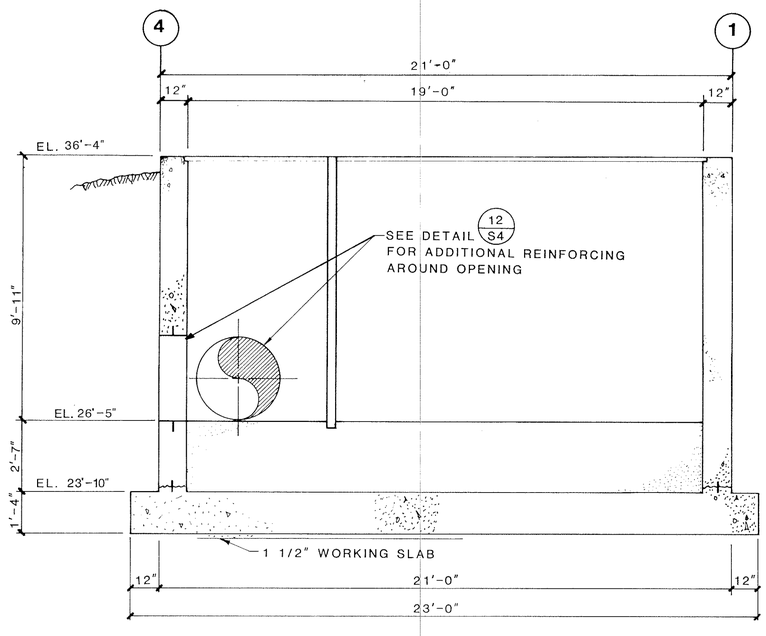
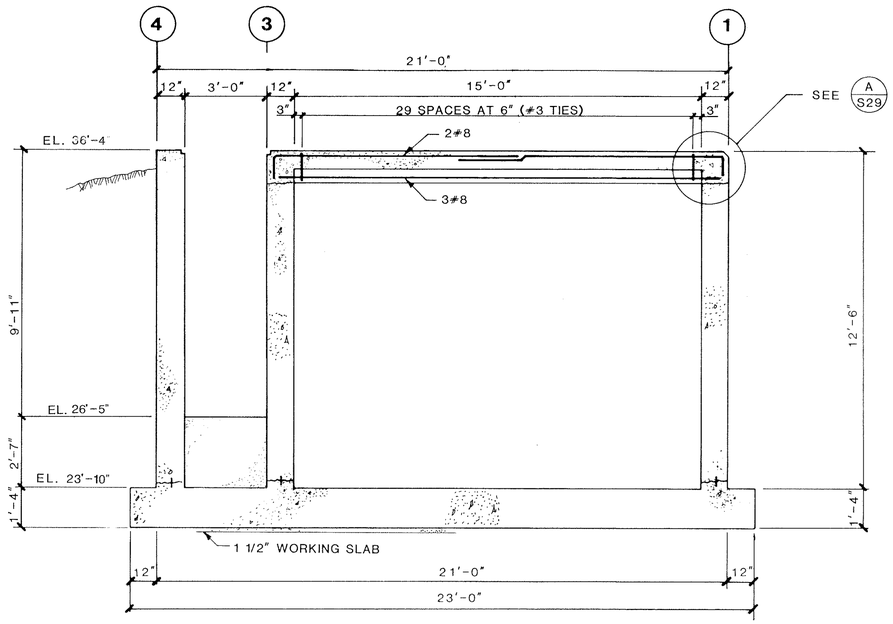
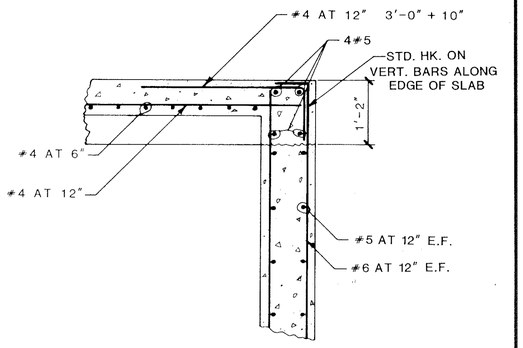


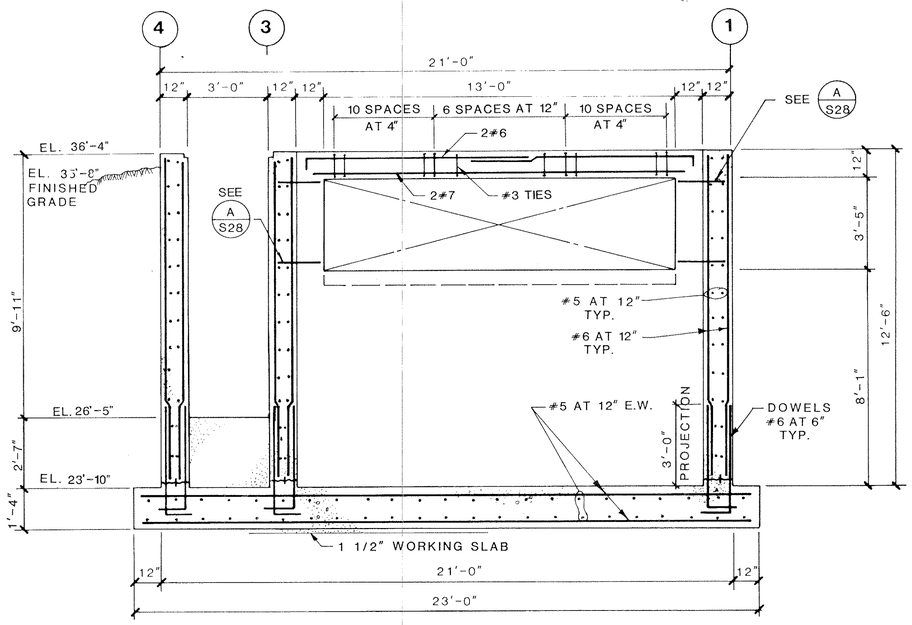
SECTION 1/S28
SCALE: 3/8" = 1'-0"



SECTION 3/S28
SCALE: 3/8"=1'-0"



DETAIL A/S29
SCALE: 3/4" = 1'-0"



SECTION 2/S28
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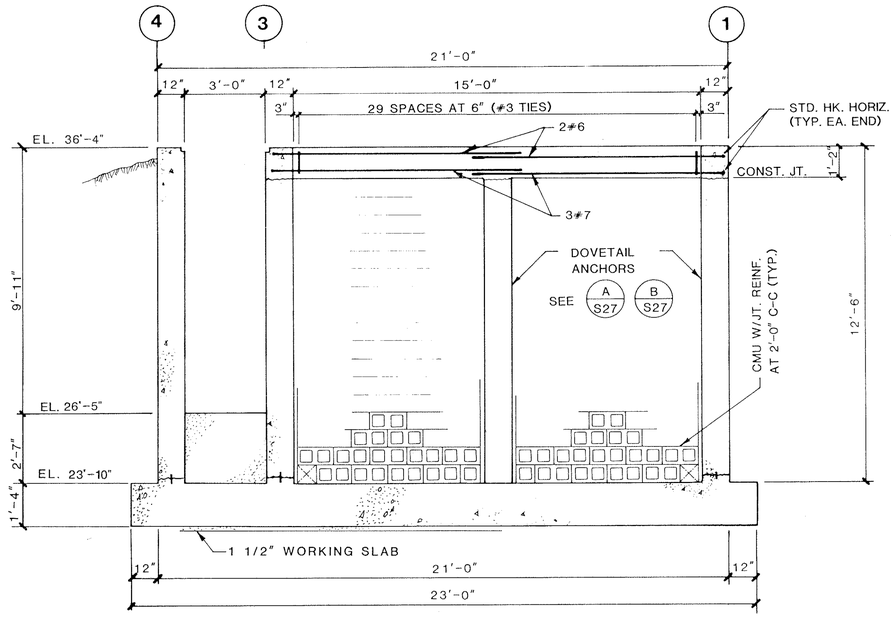

SECTION 4/S28
SCALE: 3/8"=1'-0"

BILGIN EREL
NO. 34053
STATE OF FLORIDA
REGISTERED ENGINEER
5-2-86

FLASH MIXER/FLOCCULATORS SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
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MANATEE COUNTY, FLORIDA

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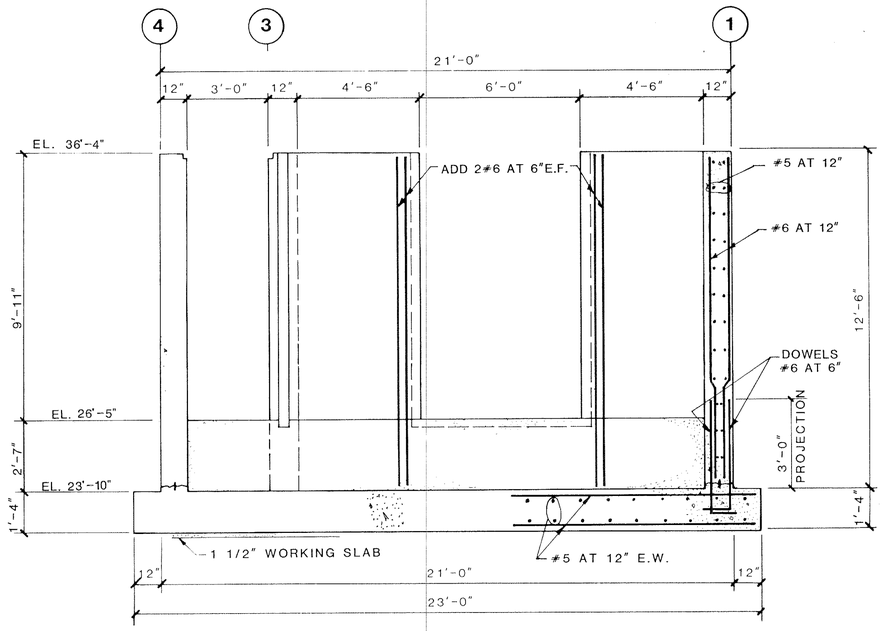
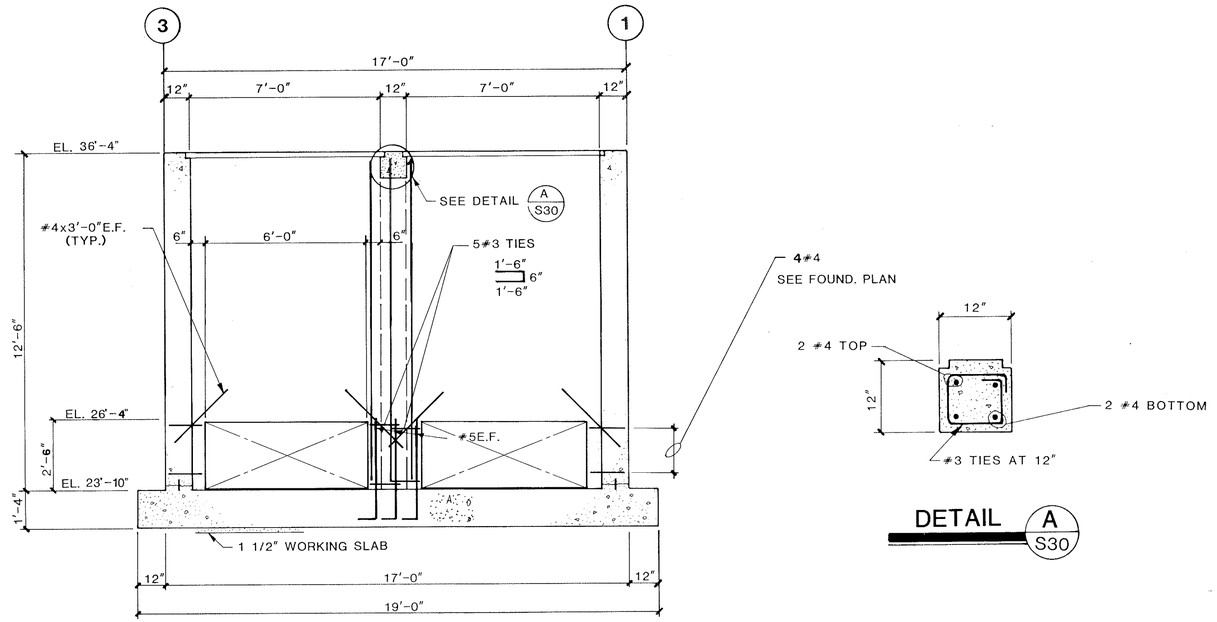


SECTION 5 / S28

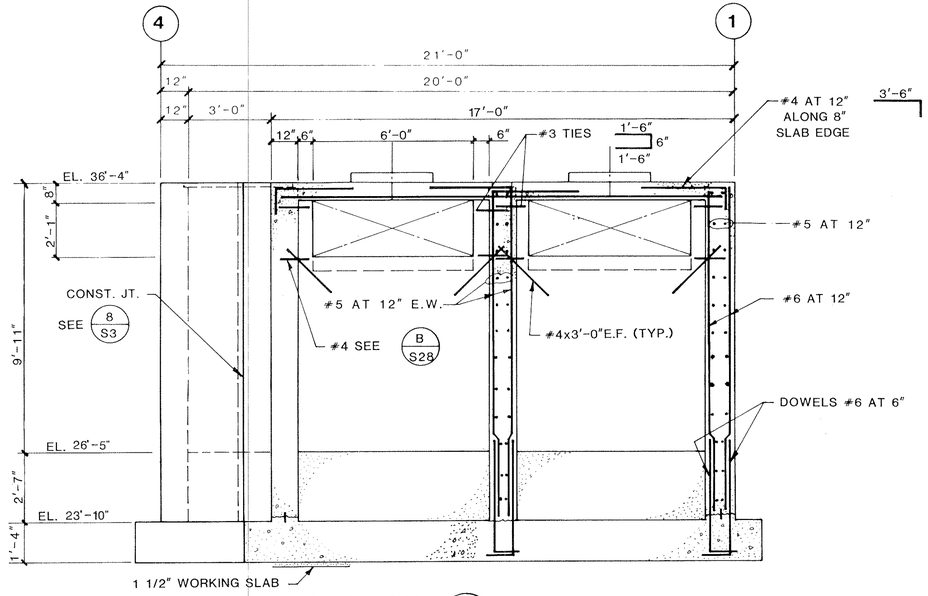
SCALE: 3/8"=1'-0"



SECTION 7 / S28

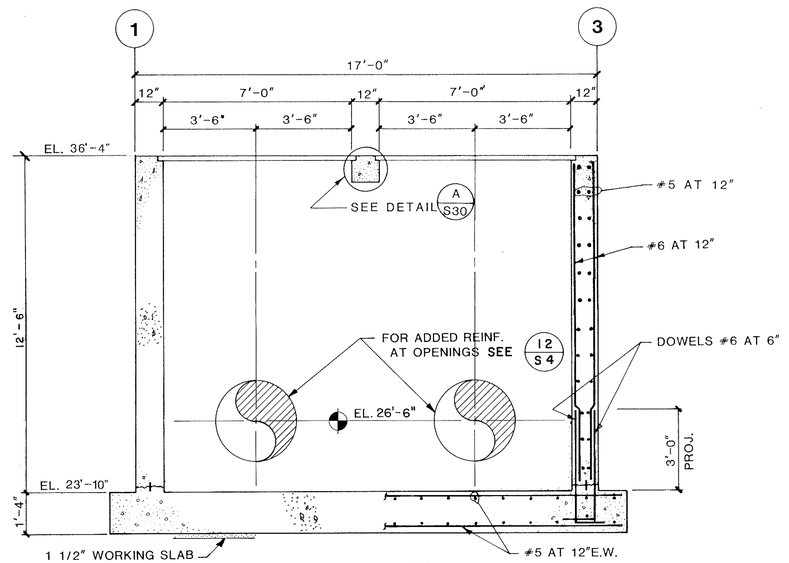
SCALE: 3/8"=1'-0"

DETAIL A / S30



SECTION 6 / S28

SCALE: 3/8"=1'-0"



SECTION 8 / S28

SCALE: 3/8"=1'-0"

BILGIN CREL CONSULTANTS INC. NO. 34053 STATE OF FLORIDA REGISTERED 5-9-86

FLASH MIXER/FLOCCULATORS SECTIONS & DRAWN WSM CHECKED MA	APPROVED BE DATE MARCH 85	SCALE AS SHOWN	REFERENCE NUMBER 84-160S-E30	SHEET NO S30

Consultants-Southeast, Inc. 1833 Edgewater Drive Orlando, Florida 32804 305 423 8398

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

CDM

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Larson Engineering, Inc. T73

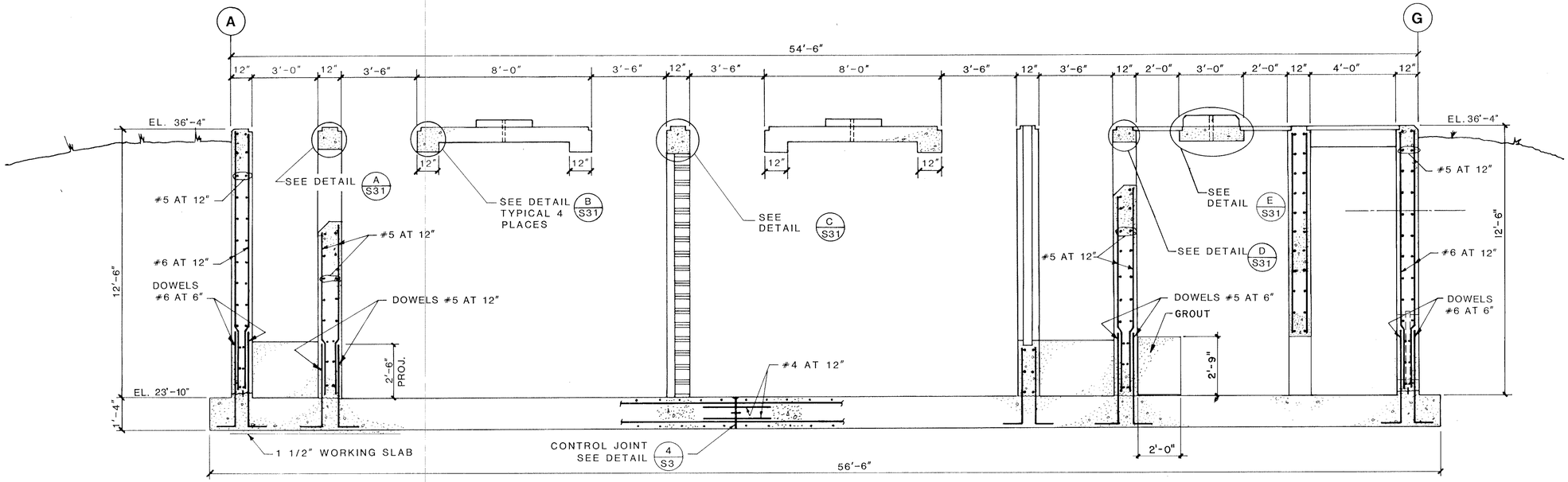
Consulting Engineers

6404 Manatee Ave W Suite N Bradenton, Florida 33529 813 / 794-1420

S-30 S-59

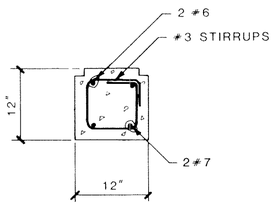
26-01

RECORD DRAWINGS 12/19/89



SECTION 9 S31

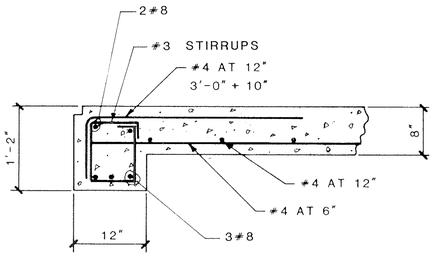
SCALE: 3/8" = 1'-0"



SEE SECTION 2 S28

DETAIL A S31

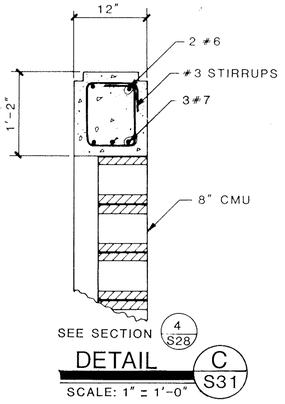
SCALE: 1" = 1'-0"



DETAIL B S31

SCALE: 1" = 1'-0"

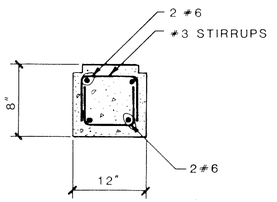
SEE SECTION 3 S28



SEE SECTION 4 S28

DETAIL C S31

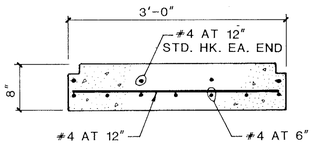
SCALE: 1" = 1'-0"



SEE SECTION 6 S28

DETAIL D S31

SCALE: 1" = 1'-0"



DETAIL E S31

SCALE: 1" = 1'-0"

ELGIN, ERIC
CIVIL
NO. 34058
STATE OF
REGISTERED ENGINEER
8-7-86

FLASH MIXER/FLOCCULATORS SECTIONS & DETAILS			
DRAWN WSM	APPROVED BE	SCALE AS SHOWN	REFERENCE NUMBER: 84-1605-E31
CHECKED MA	DATE MARCH 85		SHEET NO. S31

gai Consultants-Southeast, Inc
1843 Edgewater Drive
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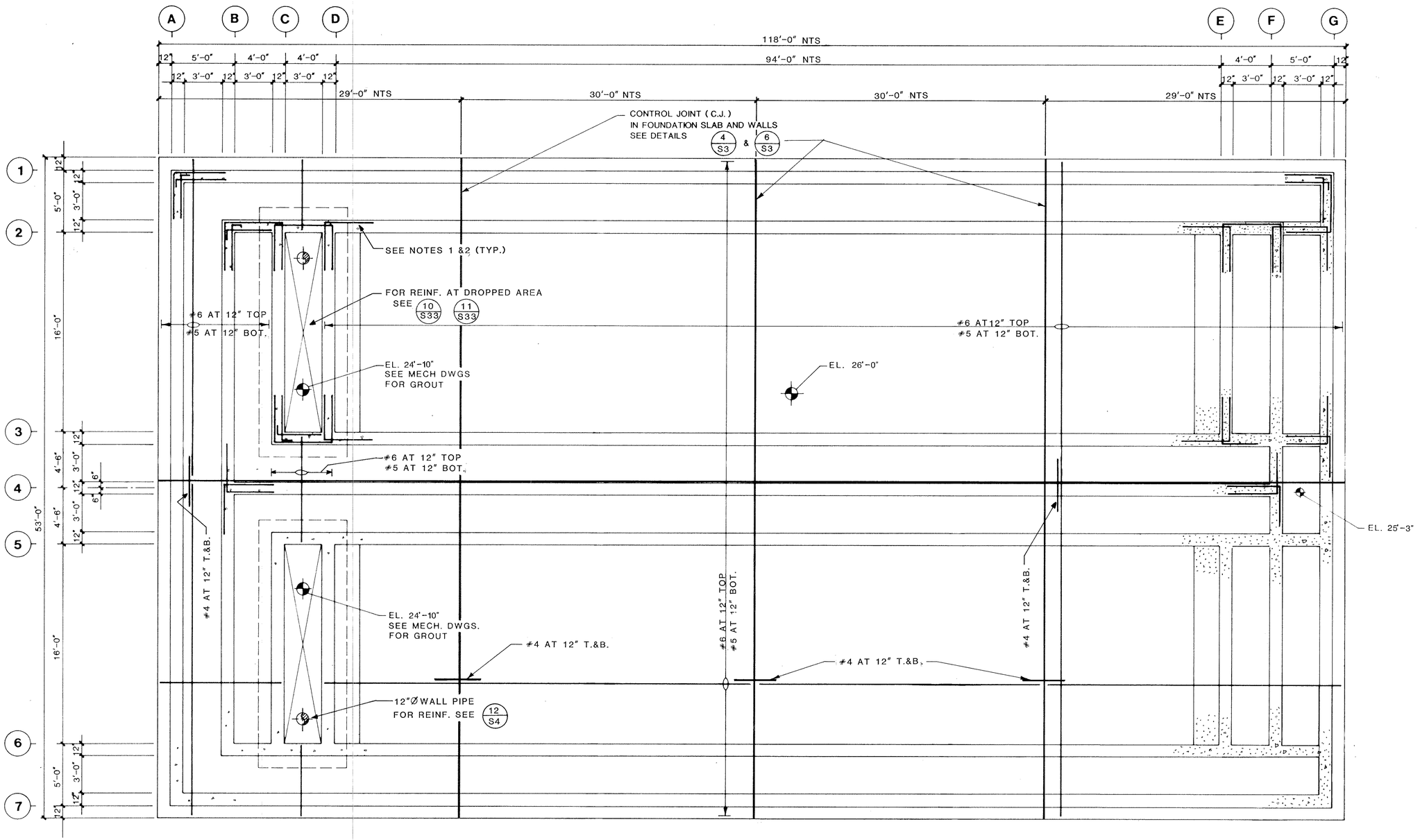

FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

NOTE 1: ADDED BARS SHOWN ARE TYPICAL AND ARE TO BE PROVIDED AT ALL CORNERS AND INTERSECTIONS SIMILAR TO THOSE SHOWN. SEE DET. 1 & 2 ON DWG. S3.

NOTE 2: CORNER AND INTERSECTION BARS TO BE THE SAME SIZE AND SPACING AS WALL REINFORCING

GILGIN, CREL. NO. 34053 STATE OF FLORIDA REGISTERED ENGINEER 5-7-86

A.B.W. FILTERS
FOUNDATION PLAN

DRAWN WSM | APPROVED BE | SCALE AS SHOWN | REFERERENCE NUMBER: 84-160S-E32 | SHEET NO. S32
CHECKED MA | DATE MARCH 1985

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305/423-8398

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MANATEE COUNTY, FLORIDA

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DRAWN ____ FILE NO ____ SHEET S-32 OF S-59

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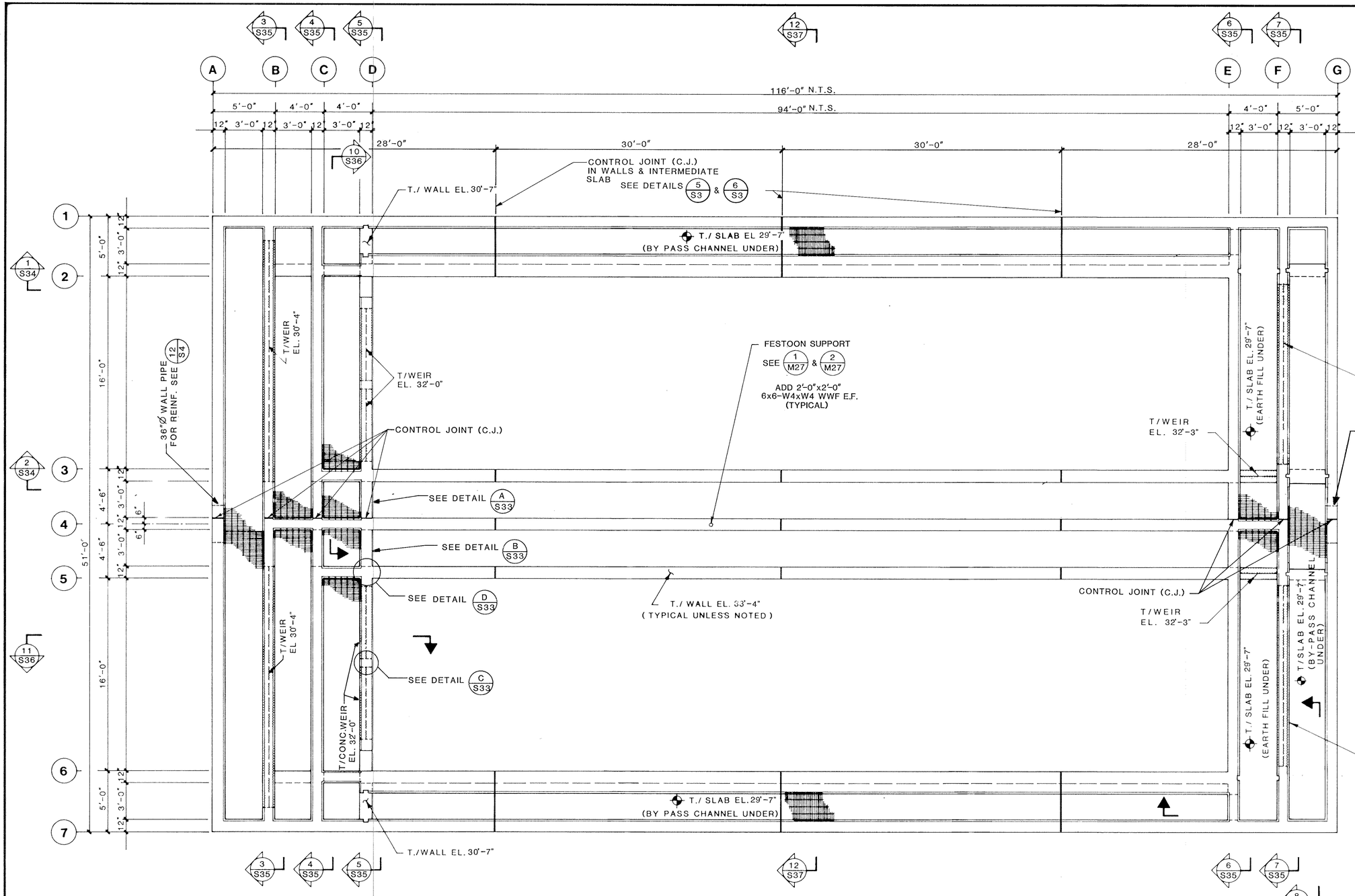
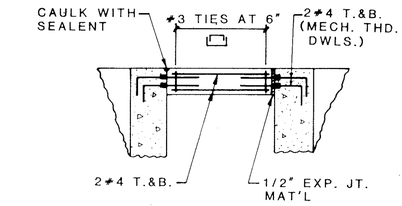
RECORD DRAWINGS 12/19/89

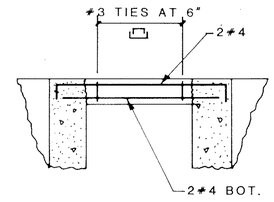


PLAN AT TOP OF STRUCTURE

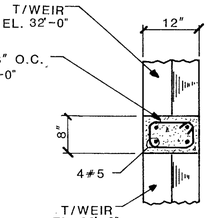
SCALE: 1/4" = 1'-0"



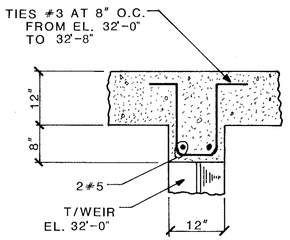
DETAIL A/S33
SCALE: 1/2" = 1'-0"



DETAIL B/S33
SCALE: 1/2" = 1'-0"



DETAIL C/S33
SCALE: 3/4"::1'-0"



DETAIL D/S33
SCALE: 3/4"::1'-0"

BILGIN EREL. NO. 34053 STATE OF FLORIDA REGISTERED 5-7-89

A.B.W. FILTERS PLAN AT TOP OF STRUCTURE					
DRAWN WSM	APPROVED BE	SCALE	REFERENCE NUMBER:	SHEET NO.	
CHECKED MA	DATE MARCH 1985	AS SHOWN	84-160S-E33	S33	

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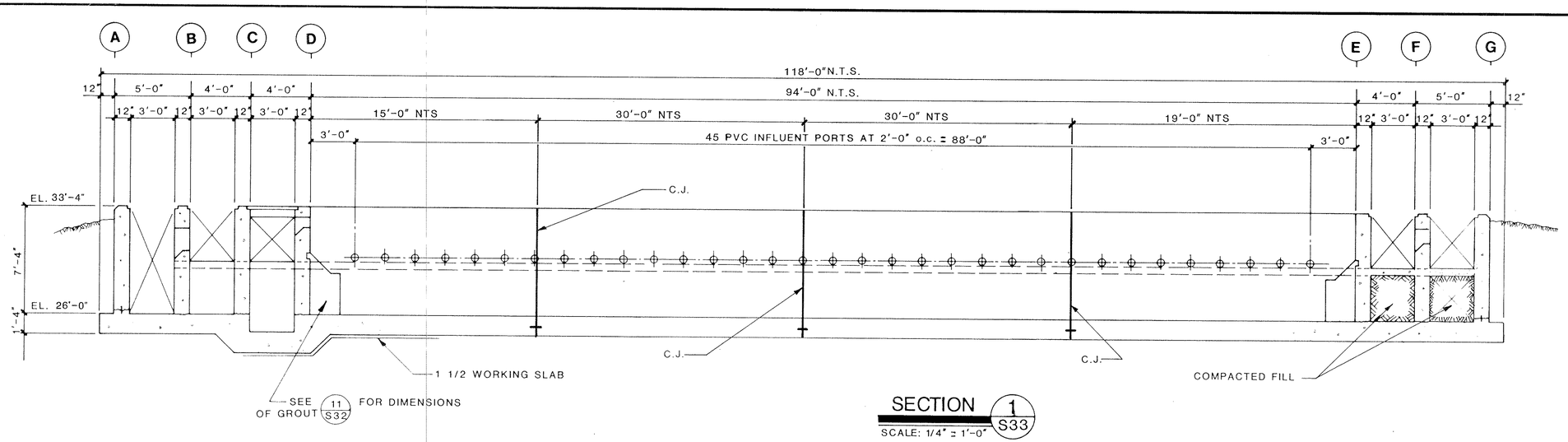
DESIGNED ____ CHECKED ____ DATE ____ SCALE ____
DRAWN ____ FILE NO ____ SHEET S-33 OF S-59

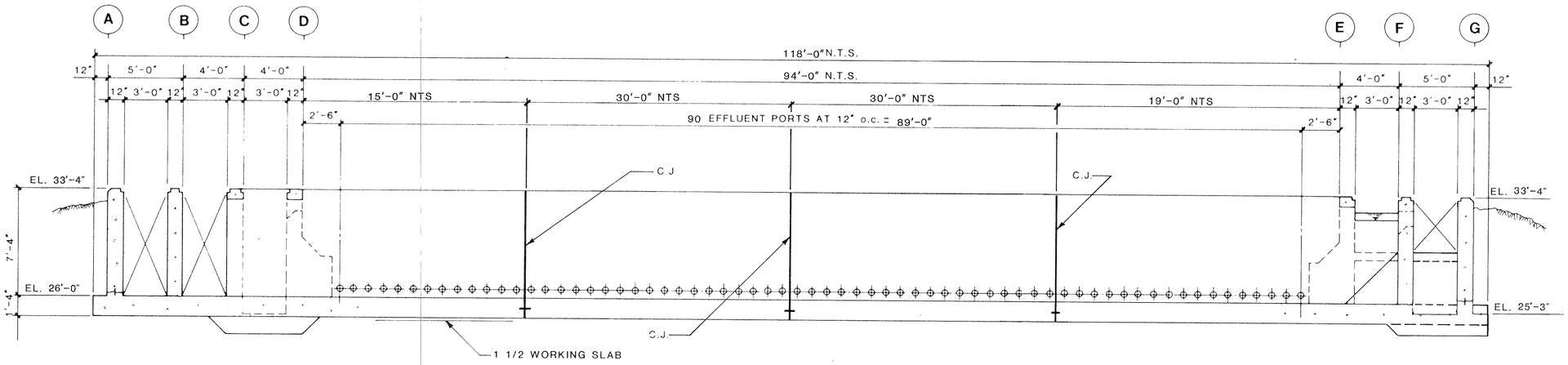
26-01

RECORD DRAWINGS 12/19/89



SECTION 1/S33

SCALE: 1/4" = 1'-0"



SECTION 2/S33

SCALE: 1/4" = 1'-0"

BILGIN EREL NO. 34053 STATE OF FLORIDA REGISTERED 5-7-86

A.B.W. FILTERS SECTIONS				
DRAWN WSM	APPROVED BE	SCALE	REFERERENCE NUMBER	SHEET NO.
CHECKED MA	DATE MARCH 1985	AS SHOWN	84-160S-E34	S34

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DRAWN ____ FILE NO ____ SHEET S-34 OF S-59

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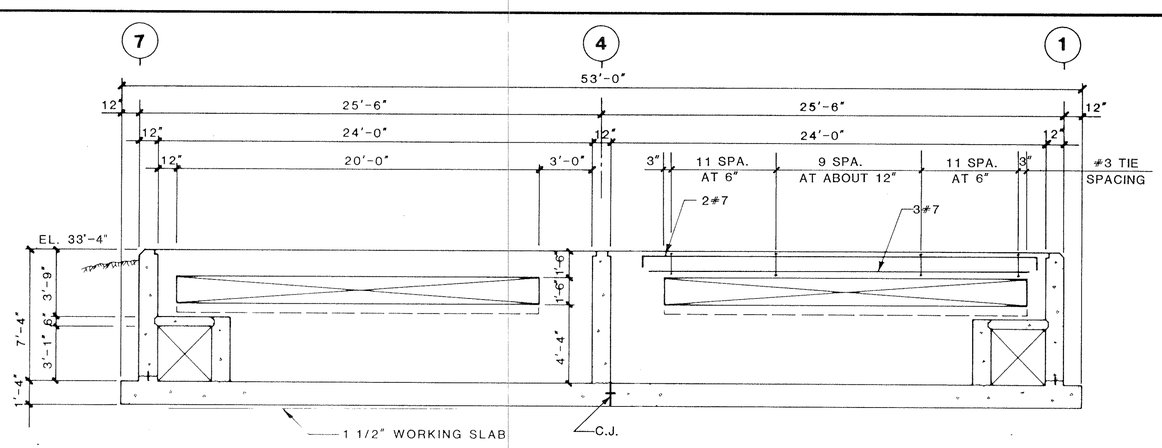
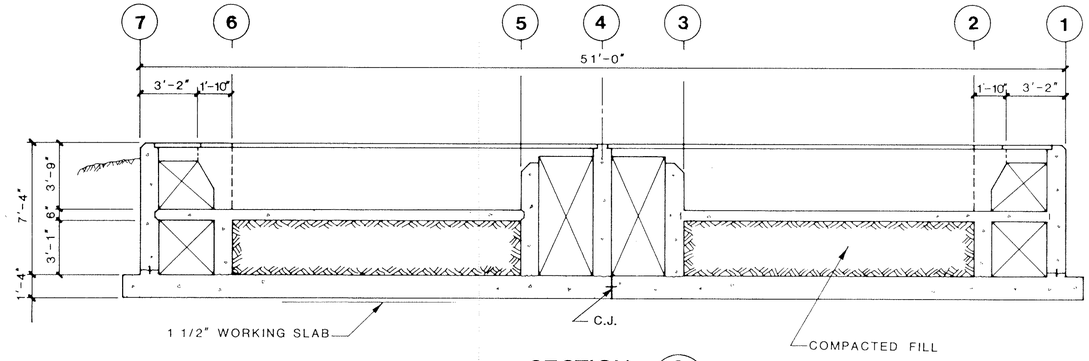
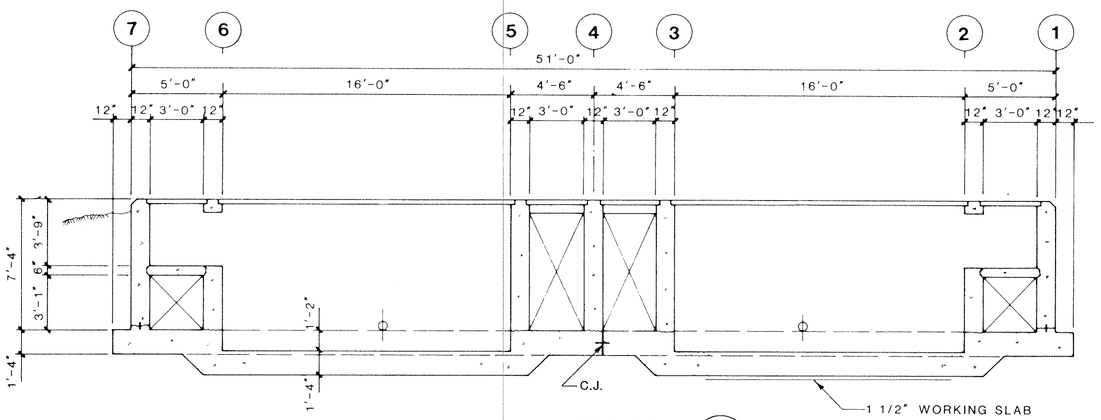
RECORD DRAWINGS 12/19/89



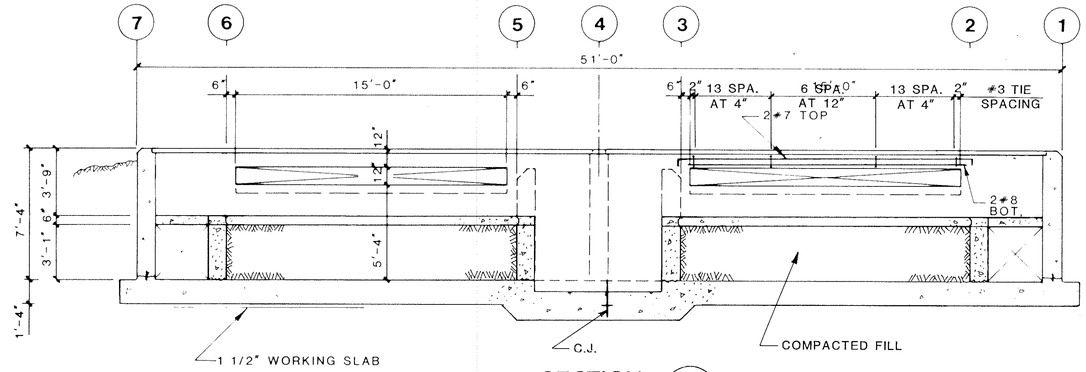
SECTION 3 / S33
SCALE: 1/4" = 1'-0"



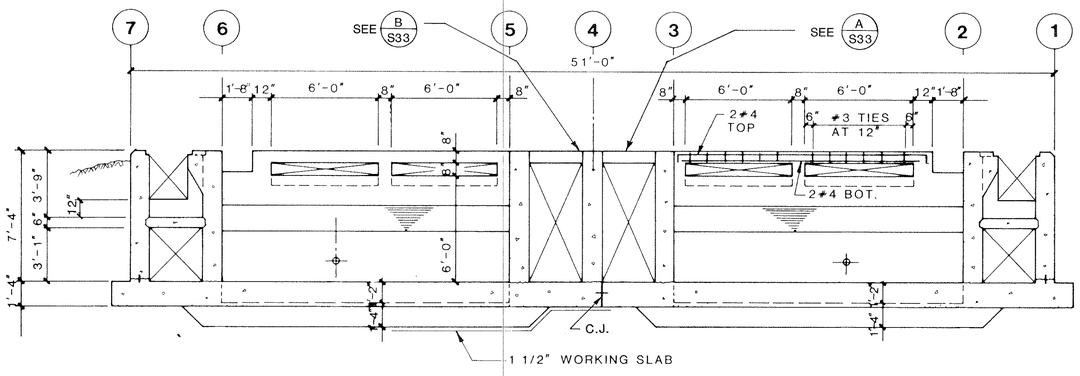
SECTION 6 / S33
SCALE: 1/4" = 1'-0"



SECTION 4 / S33
SCALE: 1/4" = 1'-0"



SECTION 7 / S33
SCALE: 1/4" = 1'-0"



SECTION 5 / S33
SCALE: 1/4" = 1'-0"

NOTE:

1. ALL SECTIONS ON THIS DRAWING ARE SYMMETRICAL ABOUT LINE 4. REINFORCING AND DIMENSIONS SHOWN ARE APPLICABLE TO BOTH SIDES OF LINE 4.

BILGIN EREL — NO. 34053 — STATE OF FLORIDA — REGISTERED ENGINEER — 5-9-95

A.B.W. FILTERS
SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
WSM	BE	AS SHOWN	84-160S-E35	S35
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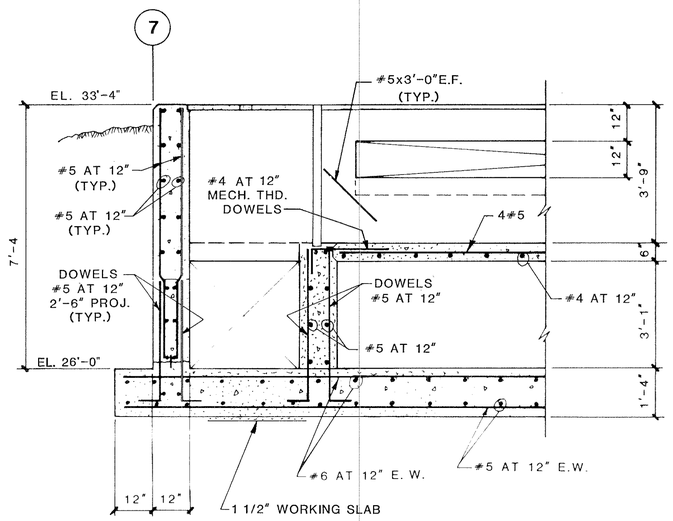
DRAWN ____ FILE NO. ____ SHEET S-35 OF S-59

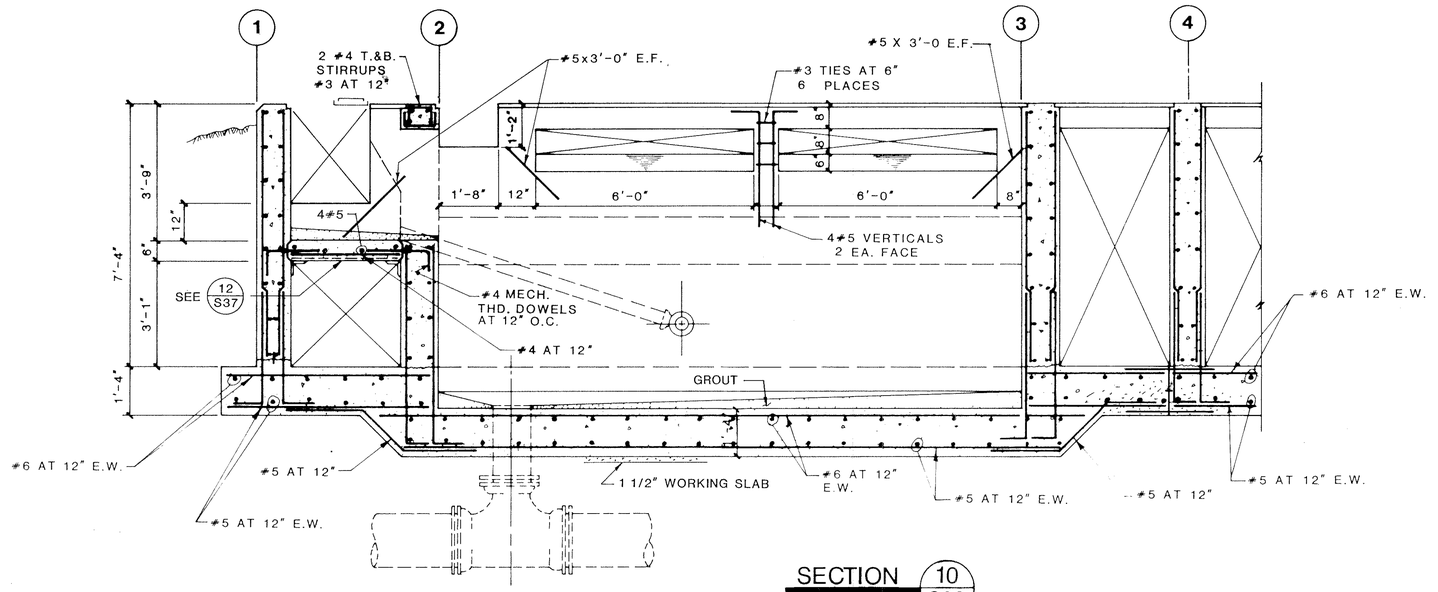
26-01

RECORD DRAWINGS 12/19/89



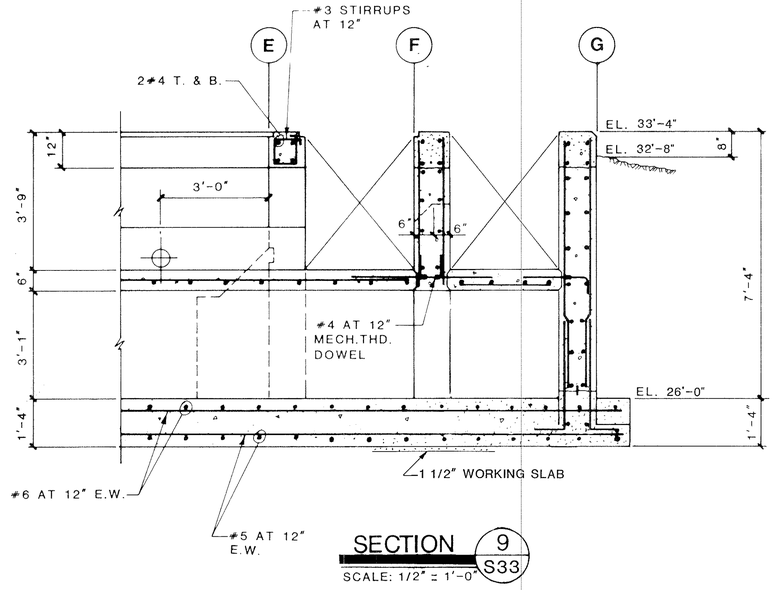
SECTION 8 S33

SCALE: 1/2" = 1'-0"



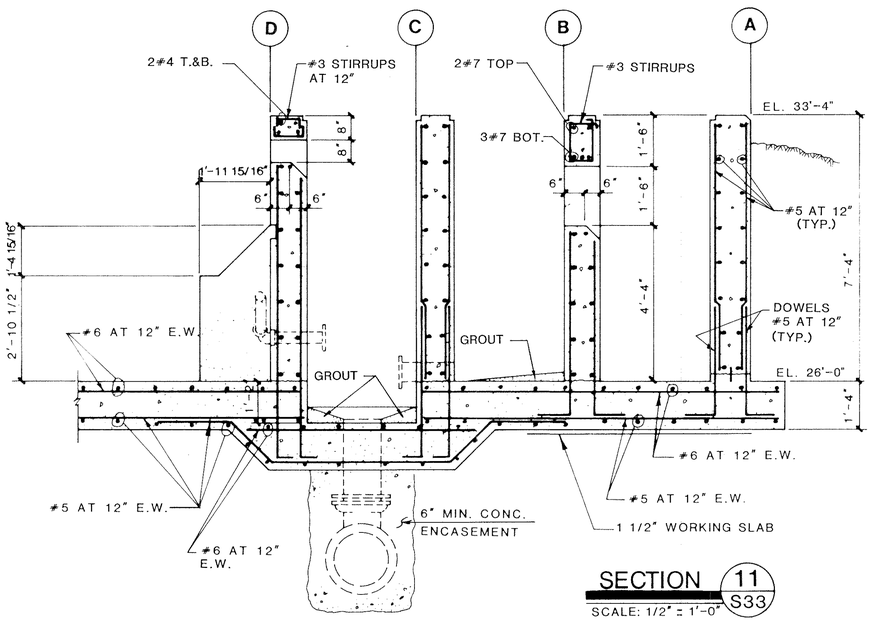
SECTION 10 S33

SCALE: 1/2" = 1'-0"



SECTION 9 S33

SCALE: 1/2" = 1'-0"



SECTION 11 S33

SCALE: 1/2" = 1'-0"

BILGIN ESKI CONSULTING ENGINEERS NO. 34053 STATE OF FLORIDA REGISTERED ENGINEER 5-7-86

A.B.W. FILTERS
SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER:	SHEET NO.
WSM	BE	AS SHOWN	84-160S-E36	S36
CHECKED MA	DATE MARCH 1985			

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1833 Edgewater Drive
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MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060
MANATEE COUNTY, FLORIDA

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6404 Manatee Ave.W.,Suite N
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DRAWN ____ FILE NO. ____ SHEET S-36 OF S-59

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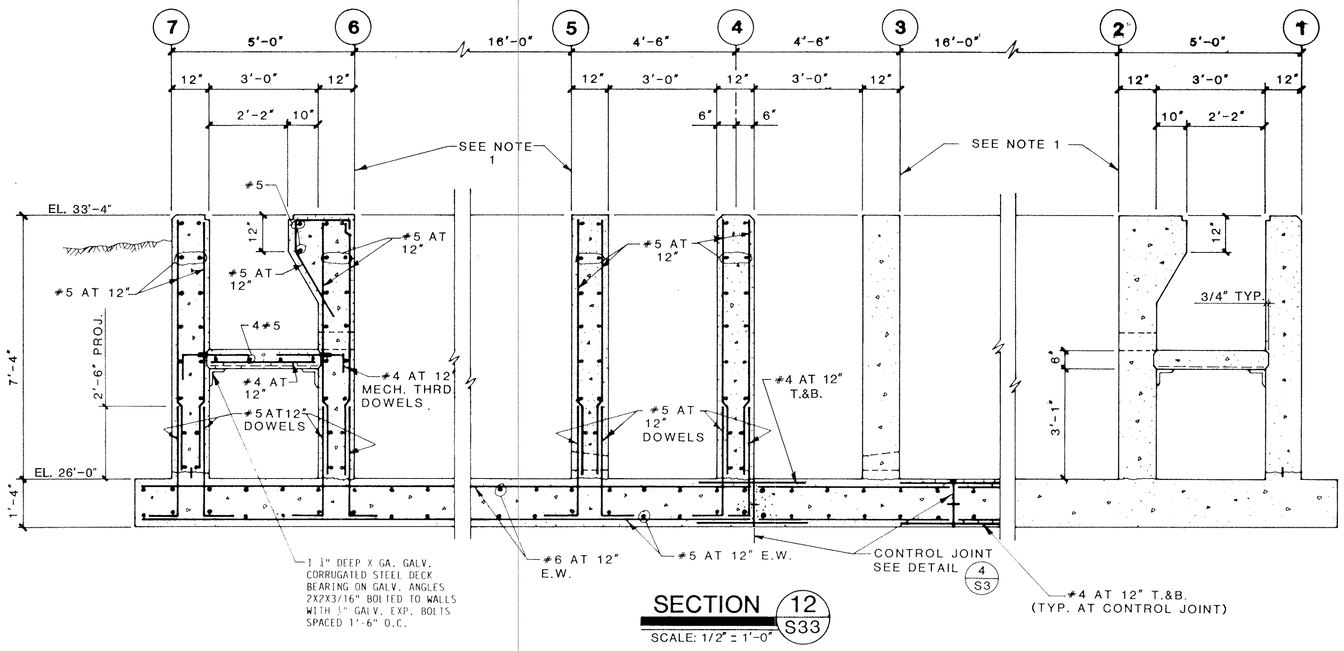
RECORD DRAWINGS 12/19/89



SECTION 12/S33

SCALE: 1/2" = 1'-0"

NOTE:

1. A SKIMMER ASSEMBLY AND ITS SUPPORTING MOVING CARRIAGE TRAVEL BETWEEN THESE WALLS. THE 16'-0" DISTANCE BETWEEN THE ROWS MUST BE MAINTAINED AND THE WALL MUST BE STRAIGHT AND PLUMB WITHOUT BULGES TO INTERFERE WITH THE MECH. EQUIP.
   TOLERANCE PER MANUFACTURER'S REQUIREMENTS.
   SEE "M" DWG'S. FOR RAIL LOCATION AND DETAILS.

GILGIN ERIC K. CHRISTENSEN NO. 34053 STATE OF FLORIDA REGISTERED ENGINEER
Approved 5-7-86

A.B.W. FILTERS
SECTION

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
WSM	BE	AS SHOWN	84-160S-E37	S37
CHECKED MA	DATE MARCH 1985			

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E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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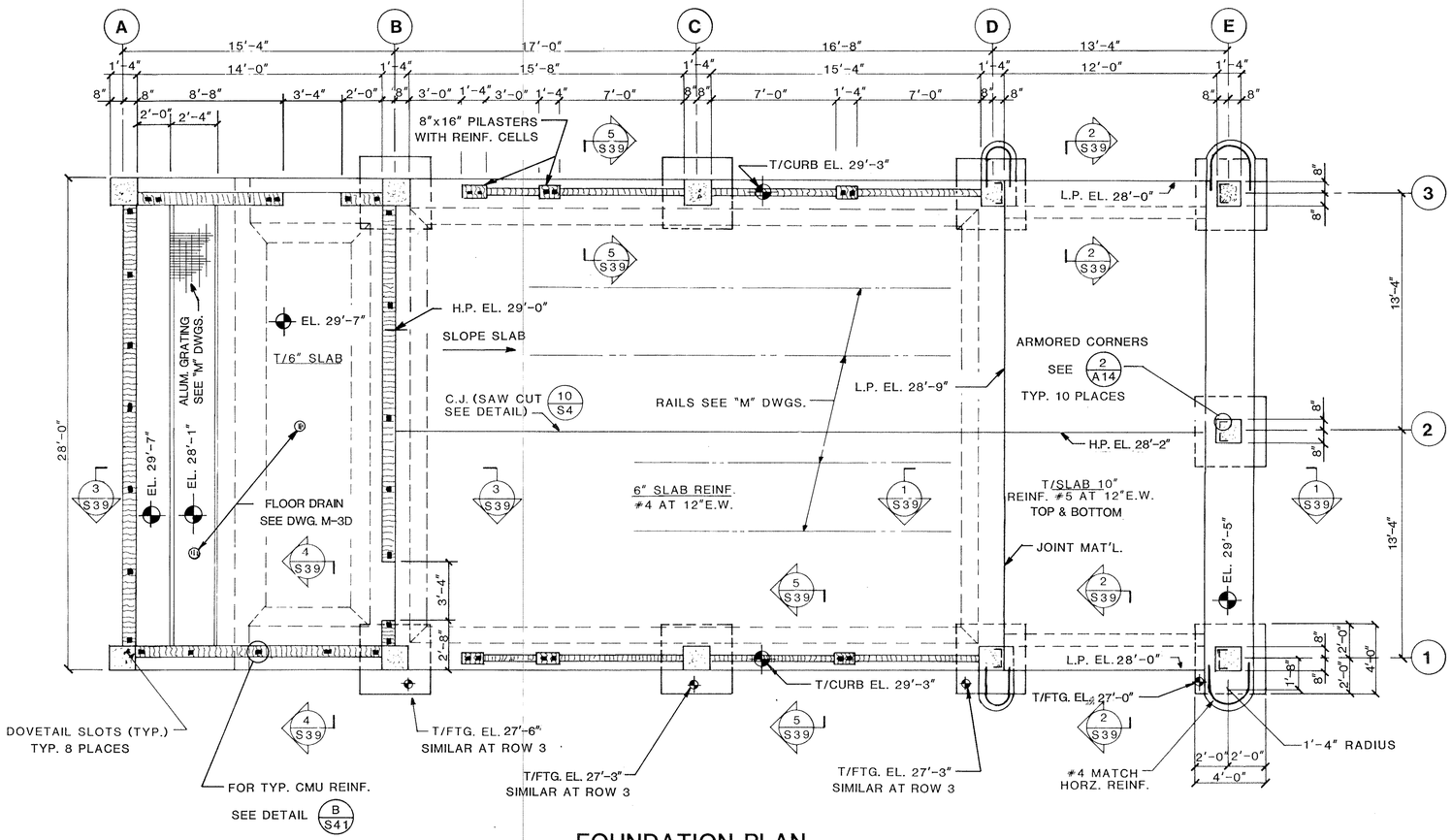
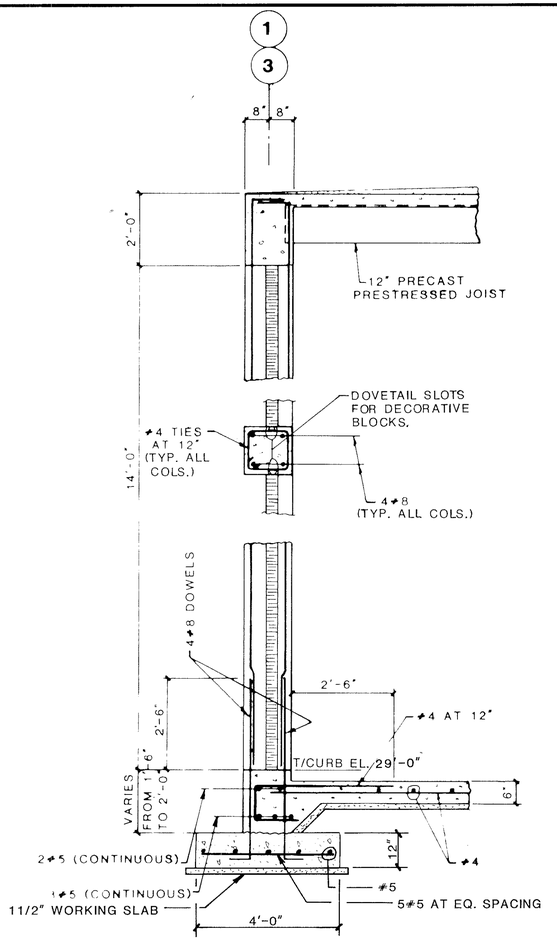
RECORD DRAWINGS 12/19/89



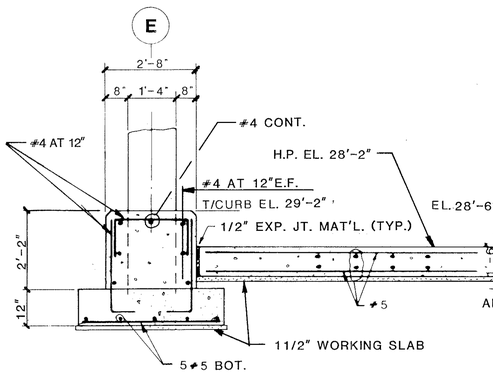
FOUNDATION PLAN

SCALE: 1/4"=1'-0"



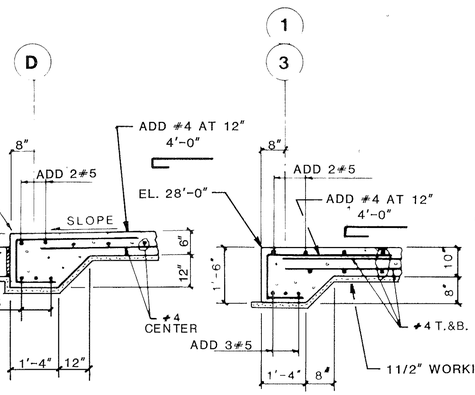
SECTION 5 S39

SCALE 1/2"=1'-0"



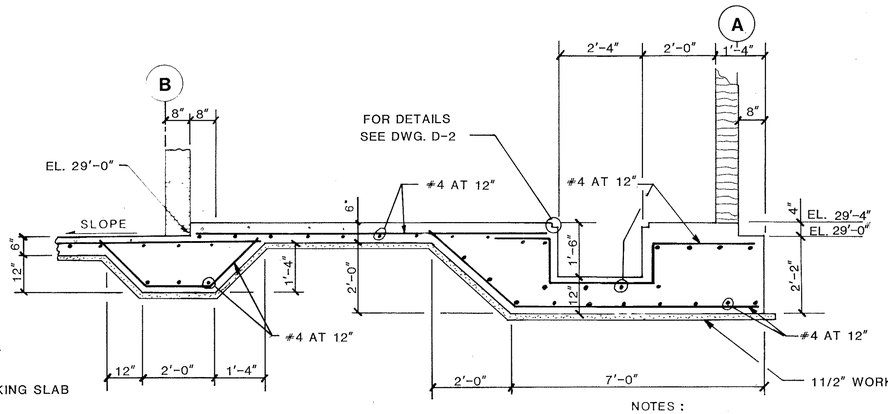
SECTION 1 S39

SCALE: 1/2"=1'-0"



SECTION 2 S39

SCALE: 1/2"=1'-0"

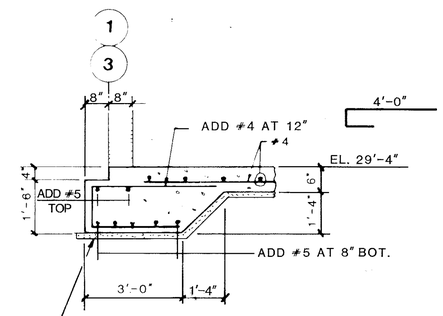


SECTION 3 S39

SCALE: 1/2"=1'-0"

NOTES :

1. CURB CONSTRUCTION: INSTALL CURB REINF. DURING PLACEMENT OF COLUMN DOWEL CAST CURB AFTER 10"-SLAB IS POURED. EXTEND CONCRETE TO TOP OF FTG. PROVIDE BOND BREAKER BETWEEN CURB & 10"-SLAB.



SECTION 4 S39

SCALE: 1/2"=1'-0"

BEGIN EREL CERTIFICATE NO. 34053 STATE OF FLORIDA REGISTERED ENGINEER

5-7-90

CHLORINATION BUILDING FOUNDATION PLAN & SECTIONS	Consultants Southeast, Inc 1811 Edgewater Drive Orlando Florida 32804 305 423 8398	MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA	CAMP DRESSER & McKEE INC CDM	2/87 WLR CONFORMED

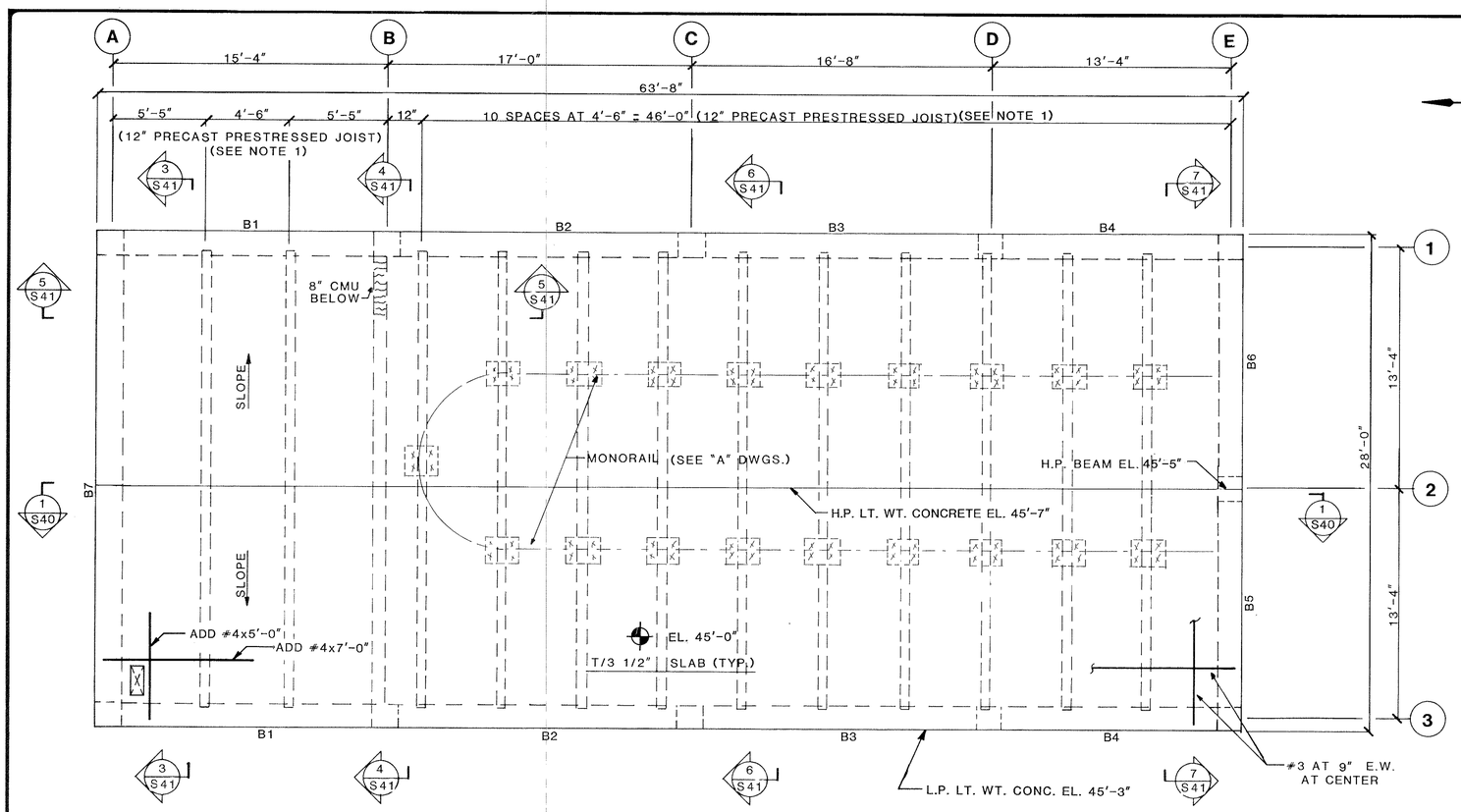
DRAWN	APPROVED	SCALE	REFERENCE NO.	SHEET NO.
RSH	BE	AS SHOWN	84-1605-E39	S39
CHECKED MA	DATE MARCH 85			

Larson Engineering, Inc. Consulting Engineers T81

S-39 S-59

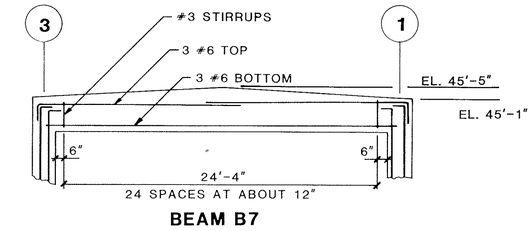
26-01

RECORD DRAWINGS 12/19/89

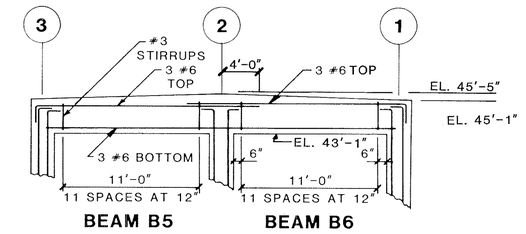


ROOF PLAN

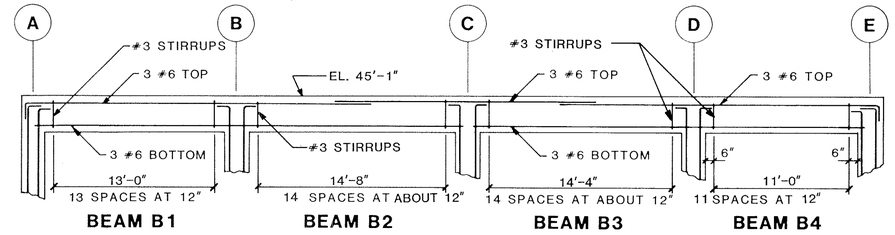
SCALE: 1/4" = 1'-0"



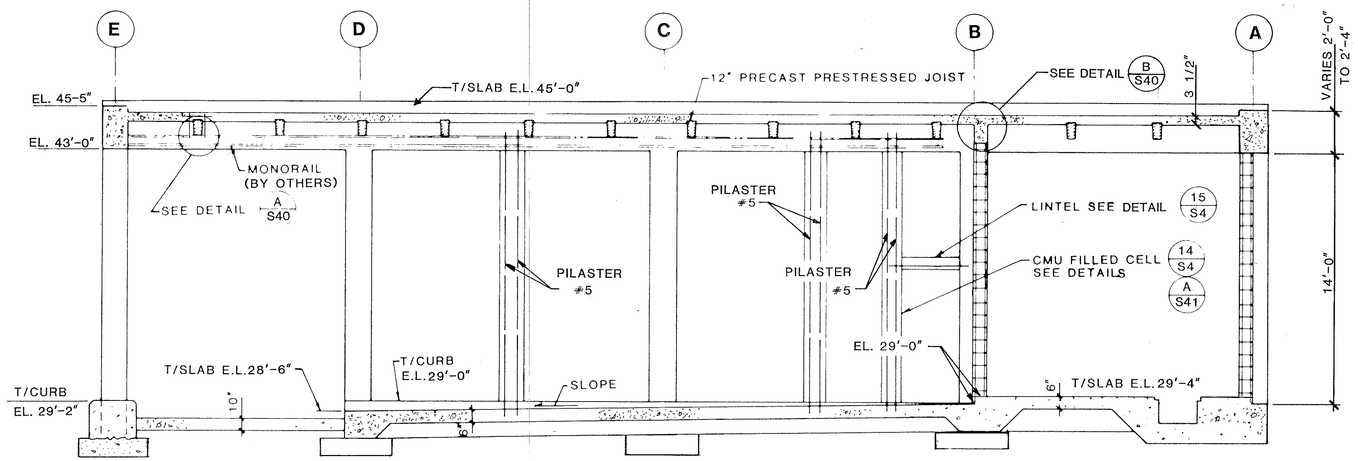
BEAM B7



BEAM B5 **BEAM B6**



BEAM B1 **BEAM B2** **BEAM B3** **BEAM B4**

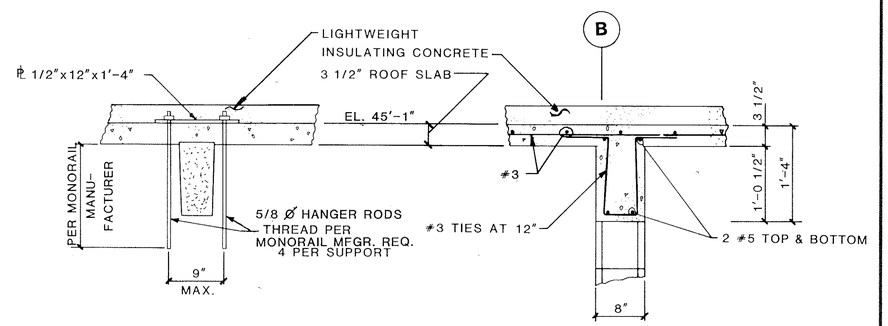


NOTE: WORKING SLAB NOT SHOWN

SECTION 1 S40

SCALE: 1/4"=1'-0"

SECTION ALONG ℄ BUILDING



MONORAIL SUPPORT - TYP. 19 PLACES

DETAIL A S40

SCALE: 1"= 1'-0"

DETAIL B S40

SCALE: 1"= 1'-0"

NOTE

1. PRECAST PRESTRESSED JOISTS TO BE DESIGNED BY SPECIALTY CONTRACTOR PER SPECS.

   LL: 30 PSF
   DL: ROOF SYSTEM WEIGHT PLUS 20 PSF
   MONORAIL: 2.5 TONS + 25% IMPACT.

BILGIN EREL — No. 34053 — STATE OF FLORIDA — REGISTERED PROFESSIONAL ENGINEER — 5-7-86

CHLORINATION BUILDING ROOF PLAN & SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
RSH	BE	AS SHOWN	84-1605-E40	S40
CHECKED MA	DATE MARCH 85			

gai Consultants-Southeast, Inc.
1833 Edgewater Drive
Orlando, Florida 32804
305 423 8398

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

CDM

2/87 WLR CONFORMED

LEI Larson Engineering, Inc. T82
Consulting Engineers
6303 Manatee Ave W Suite H
Bradenton Florida 34209
813 792 2662

S-40 S-59

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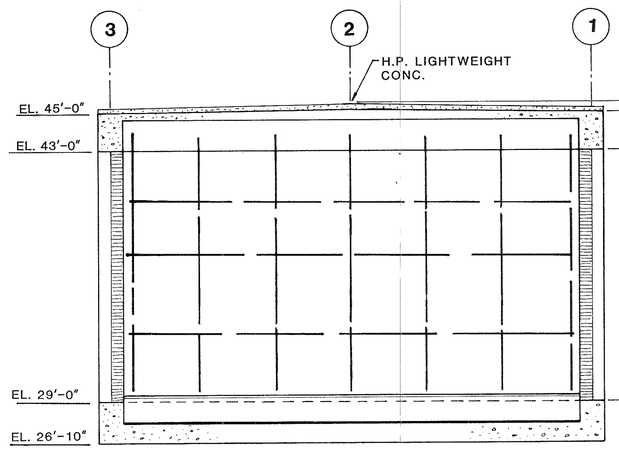
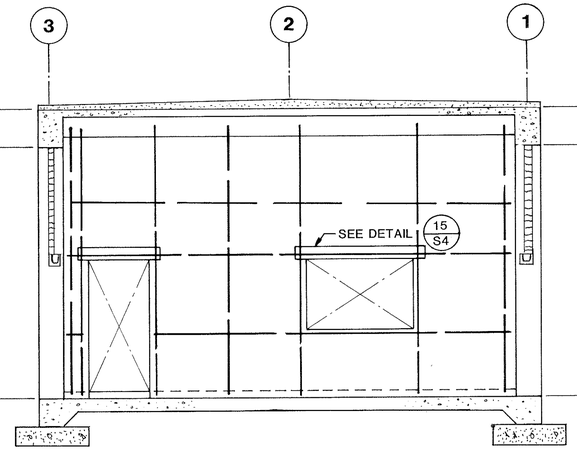
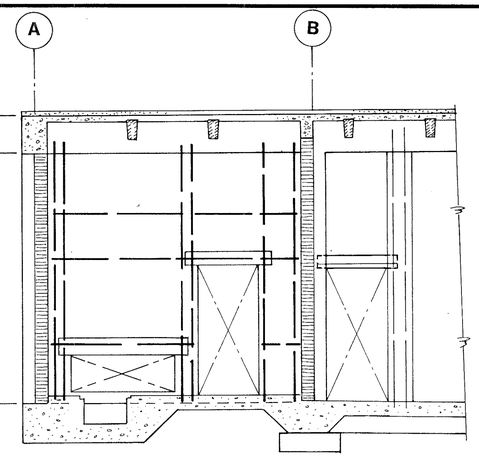
RECORD DRAWINGS 12/19/89



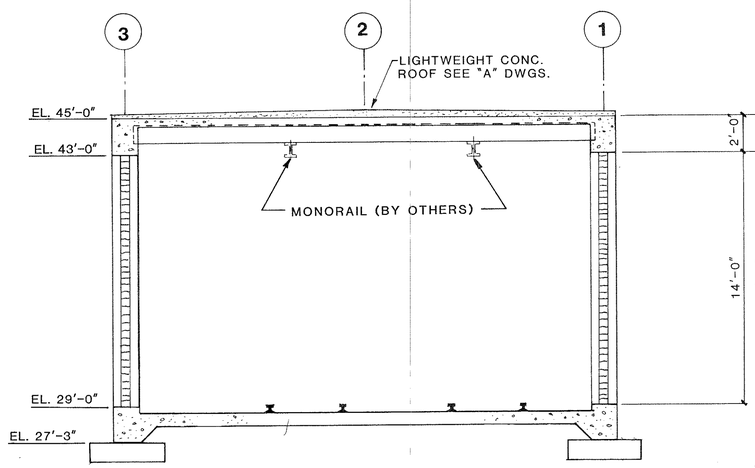
SECTION 3 / S40
SCALE: 1/4"=1'-0"



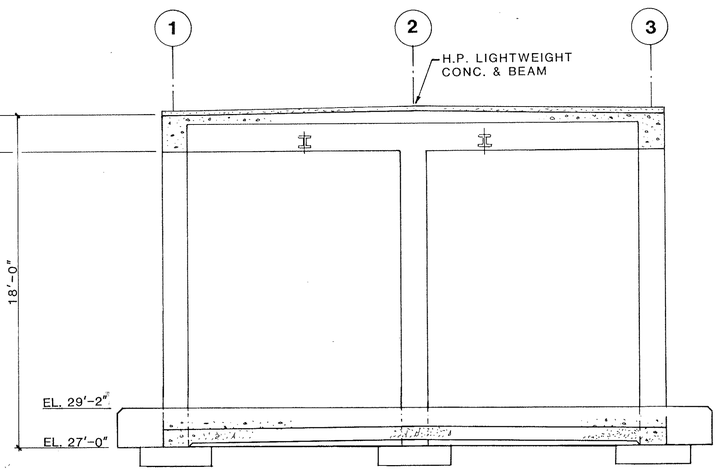
SECTION 4 / S40
SCALE: 1/4"=1'-0"



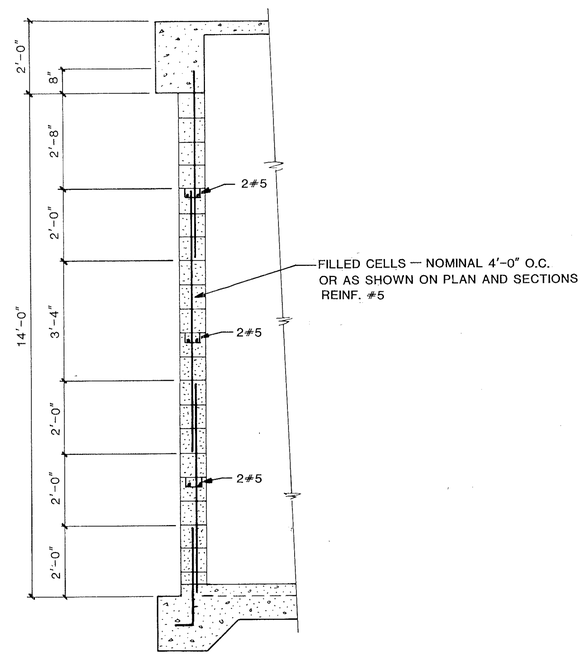
SECTION 5 / S40
SCALE: 1/4" 1'-0"



SECTION 6 / S40
SCALE: 1/4"=1'-0"



SECTION 7 / S40
SCALE: 1/4"=1'-0"



DETAIL A / S40
SCALE: 1/2"=1'-0"

NOTE:
WORKING SLAB NOT SHOWN

KEITH BILGIN CREL REGISTERED ENGINEER NO. 34053 STATE OF FLORIDA

CHLORINATION BUILDING
SECTIONS & DETAILS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
RSH	BE	AS SHOWN	84-160S-E41	S41
CHECKED: MA	DATE: MARCH 1985			

Consultants Southeast, Inc.
1525 Edgewater Drive
Orlando, Florida 32804-6314

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060
MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants
CDM.

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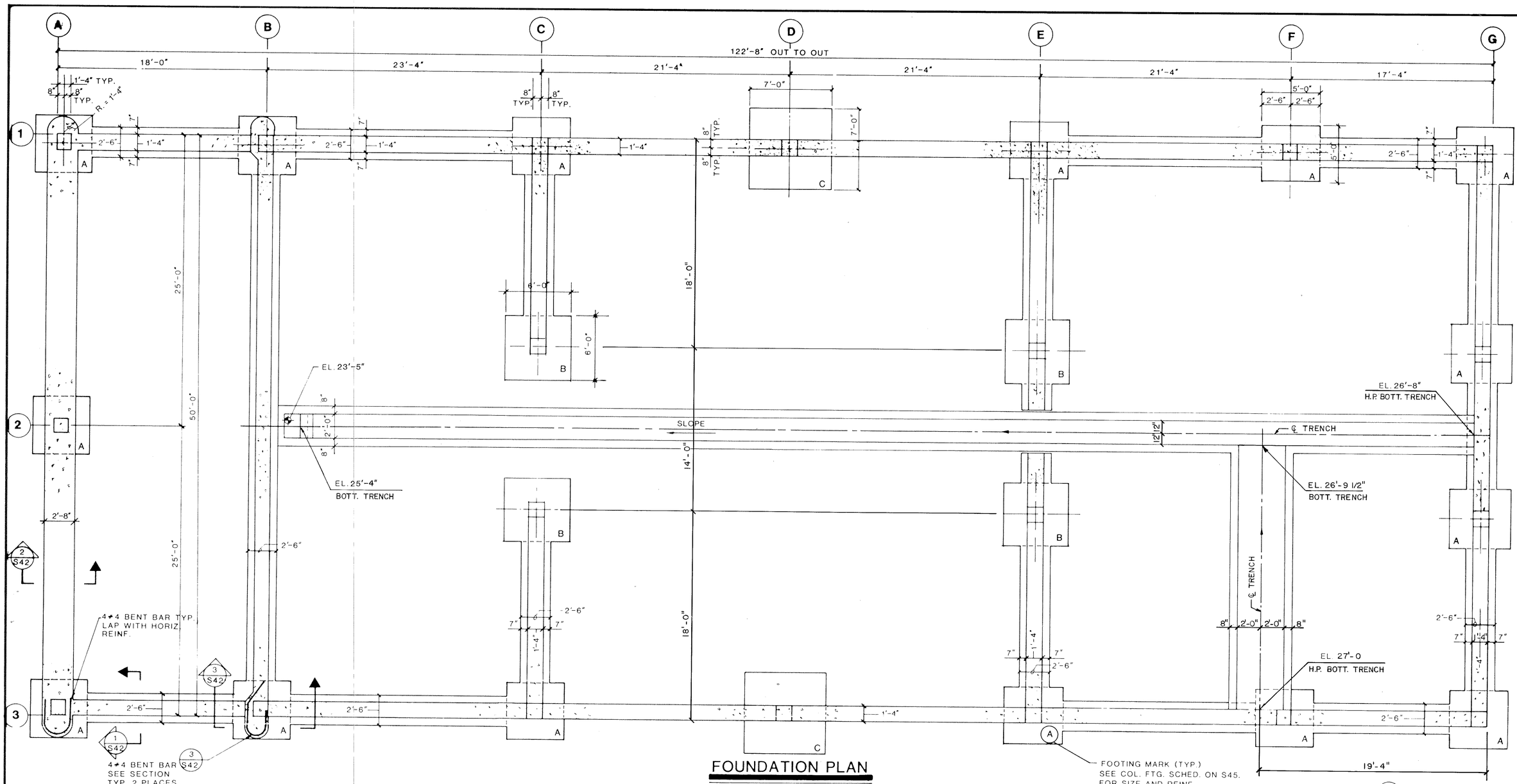
Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED ____ CHECKED ____ DATE ____ SCALE ____
DRAWN ____ FILE NO. ____ SHEET S-41 OF S-59

T 83

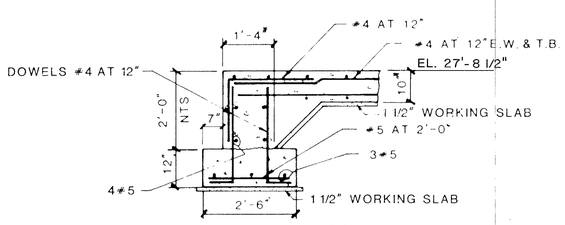
26-01

RECORD DRAWINGS 12/19/89



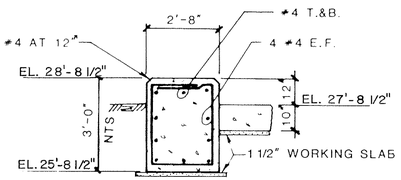
FOUNDATION PLAN

SCALE: 1/4"=1'-0"



SECTION 1 / S42

SCALE: 1/2"=1'-0"

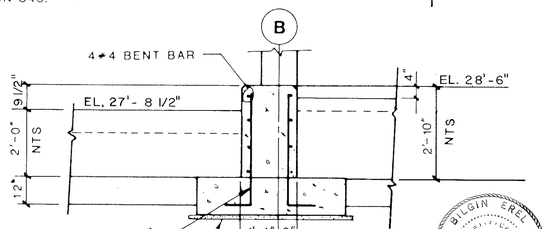


SECTION 2 / S42

SCALE: 3/8"=1'-0"

NOTE:

1. FOR FOOTING SCHEDULE REFER TO DWG. S45.



SECTION 3 / S42

SCALE: 3/8"=1'-0"

BILGIN EREL — CERTIFIED — NO. 34053 — STATE OF FLORIDA — REGISTERED

DEWATERING BUILDING FOUNDATION PLAN & SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER:	SHEET NO.
RSH	BE	AS SHOWN	84-160S E42	S42
CHECKED	DATE MARCH 85			

gai Consultants-Southeast, Inc.
1833 Edgewater Drive
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305/423-8398

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060

MANATEE COUNTY, FLORIDA

GAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants **CDM**

2/87 WLR CONFORMED

LEI **Larson Engineering, Inc.** T84
Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED _____ DRAWN _____ CHECKED _____ DATE _____ SHEET S-42 OF S-59 SCALE _____

26-01

RECORD DRAWINGS 12/19/89

FLOOR SLAB PLAN

SCALE : 1/4" = 1'-0"

SECTION 1 / S43

SCALE : 1/2" = 1'-0"

SECTION 2 / S43

SCALE : 1/2" = 1'-0"

SECTION 3 / S43

SCALE : 1/2" = 1'-0"

SECTION 4 / S43

SCALE: 1/2" 1'-0"

NOTE

* DIMENSIONS PER MANUFACTURER. CONTRACTOR SHALL VERIFY EQUIPMENT REQUIREMENTS.

WORK THIS SHEET WITH M-33 & A-11.

BILGIN EREL — CERTIFICATE NO. 34053 — STATE OF FLORIDA — REGISTERED ENGINEER — 5-7-85

DEWATERING BUILDING
SLAB PLAN & SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
RSH	BE	AS SHOWN	84-1605-E43	S43
CHECKED	DATE MARCH 85			

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MANATEE COUNTY, FLORIDA

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Consulting Engineers
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Bradenton, Florida 33529
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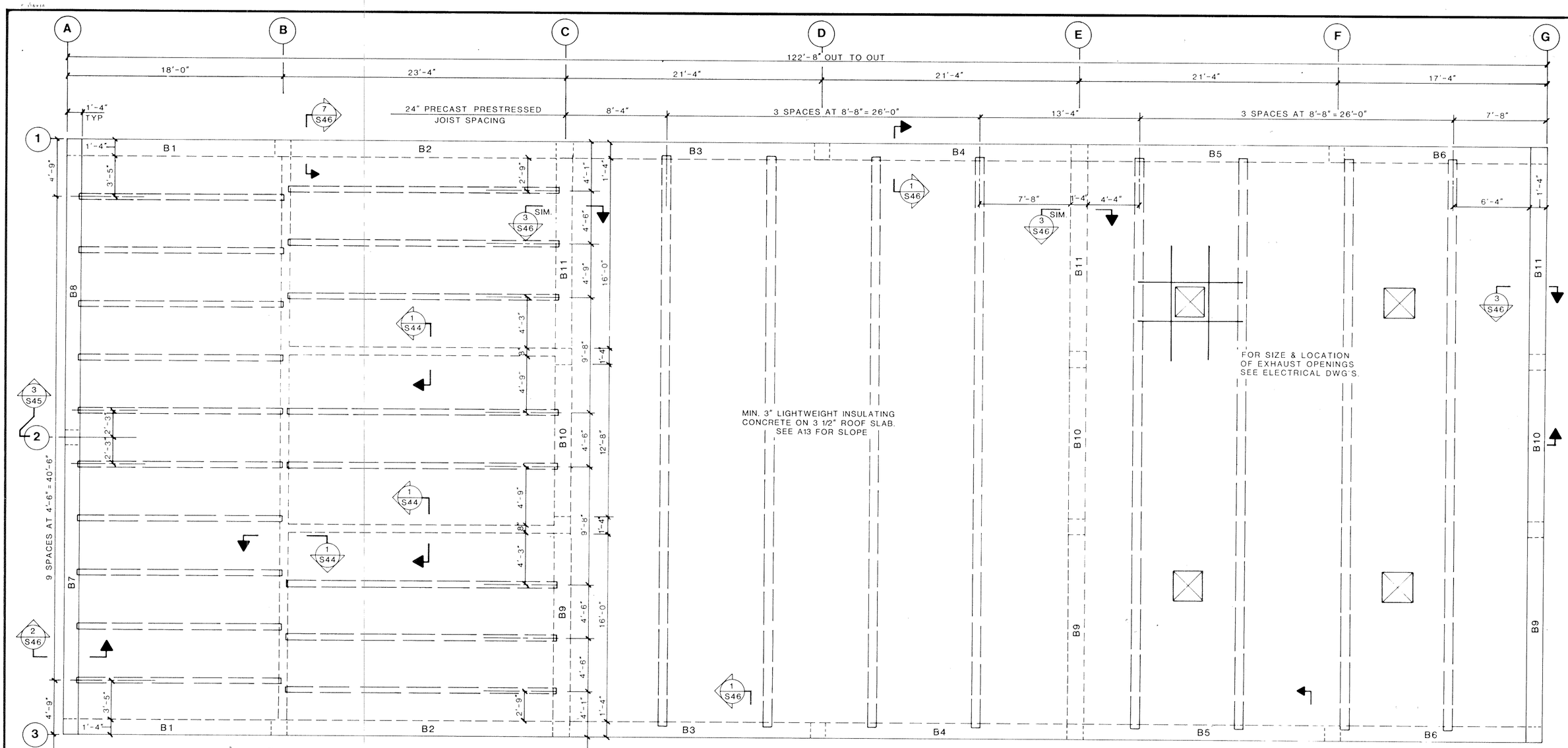
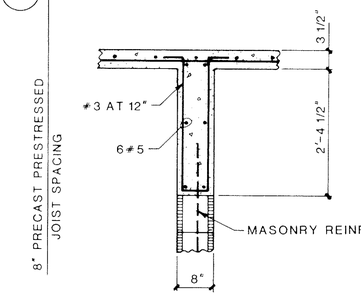
DESIGNED ____ CHECKED ____ DATE ____ SCALE ____

DRAWN ____ FILE NO ____ SHEET S-43 OF S-59

26-01

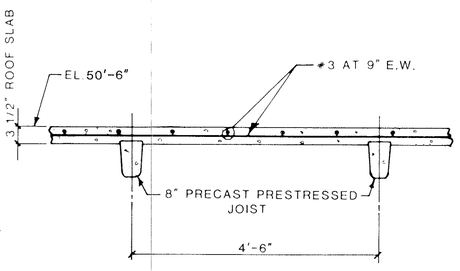
RECORD DRAWINGS 12/19/89





SECTION 1 S44

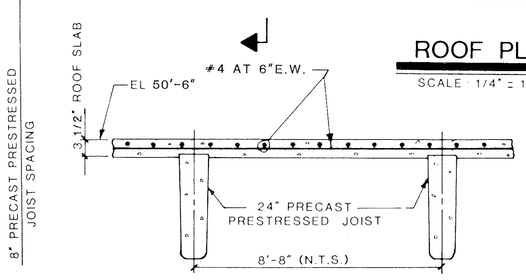
SCALE: 3/4" = 1'-0"



DETAIL B S44

SCALE : 3/4" = 1'-0"

TYP. ROOF SLAB REINF. AT 8" JOIST



DETAIL A S44

SCALE : 3/4" = 1'-0"

TYP. ROOF SLAB REINF. AT 24" JOIST

ROOF PLAN

SCALE : 1/4" = 1'-0"

7 S46

SUPERIMPOSED ROOF LOADS

LIVE LOADS	30 PSF
DEAD LOADS	
ROOFING	6 PSF
5" LIGHTWEIGHT CONCRETE	45 PSF
MISC.	5 PSF

REFER TO MANUFACTURERS INFORMATION FOR ALL EQUIP. LOADS

BILGIN ERCL — CERTIFICATE OF AUTHORIZATION — NO. 34053 — STATE OF FLORIDA — REGISTERED ENGINEER — 5-7-86

DEWATERING BUILDING ROOF PLAN & SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
RSH	BE	AS SHOWN	84-160S-E44	S44
CHECKED	DATE MARCH 85			

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MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060

MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

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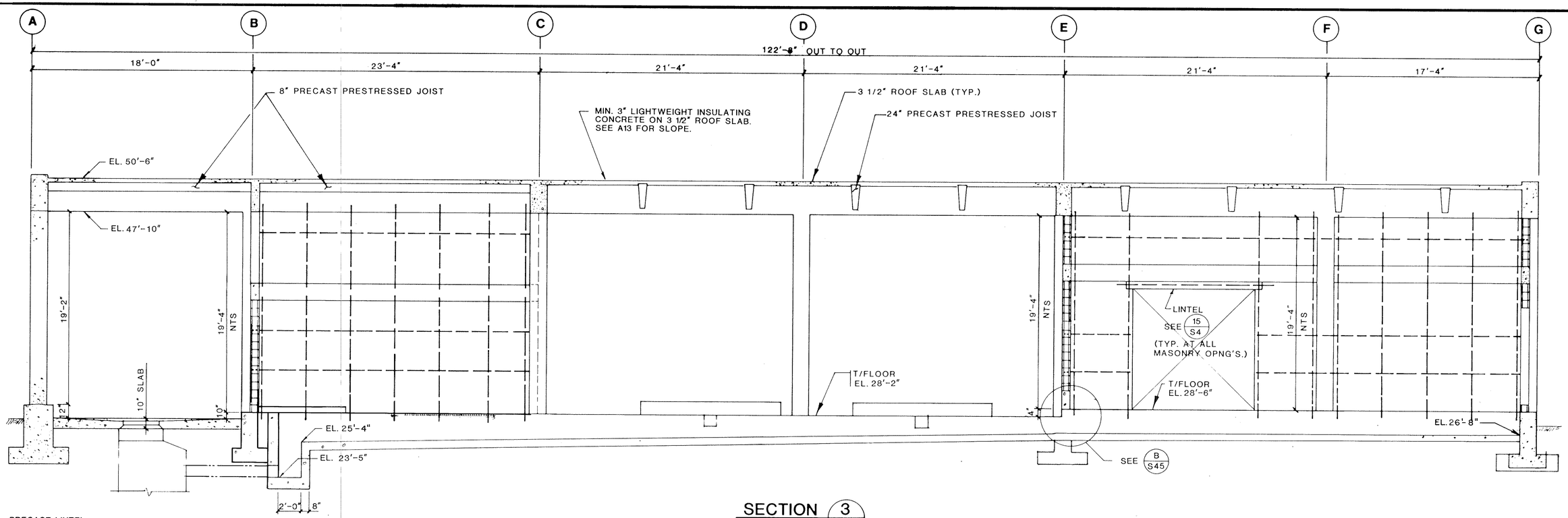
LE Larson Engineering, Inc.
Consulting Engineers
T86
6404 Manatee Ave W, Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED ____ DETAILED ____ CHECKED ____ DATE ____ SCALE ____
DRAWN ____ CHECKED ____ APPROVED ____ DATE ____ SHEET S-44 OF S-59

26-01

RECORD DRAWINGS 12/19/89



SECTION 3/S44

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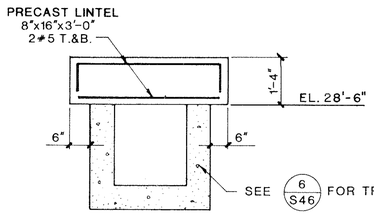
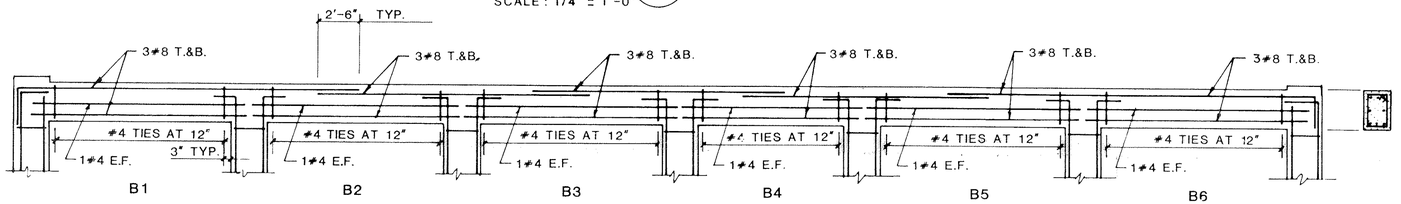
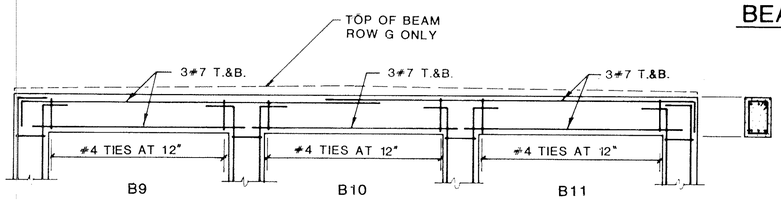


DETAIL B/S45

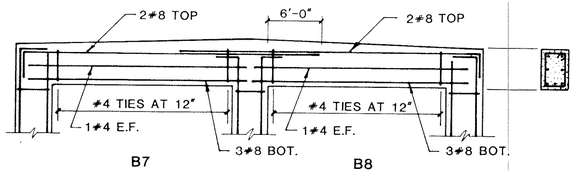
SCALE: 1/2" 1'-0"



BEAM (16" x 32")

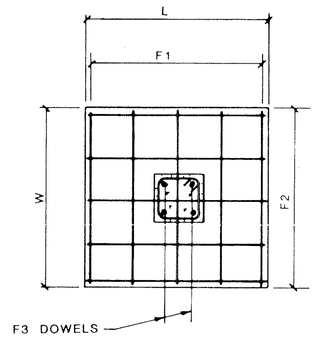


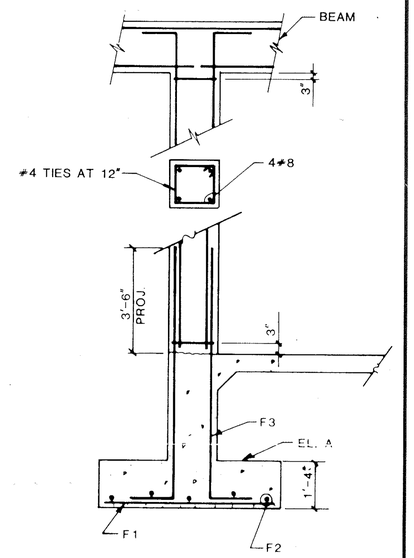
BEAM (16" x 32")



BEAM (16" x 32")

COLUMN FOOTING SCHEDULE							
FOOTING MARK	W	L	D	F1	F2	F3	EL.A
A	5'-0"	5'-0"	1'-4"	6#5 EQ. SPC'D	6#5 EQ. SPC'D	4#8	25'-8"
B	6'-0"	6'-0"	1'-4"	7#5 EQ. SPC'D	7#5 EQ. SPC'D	4#8	25'-8"
C	7'-0"	7'-0"	1'-4"	8#5 EQ. SPC'D	8#5 EQ. SPC'D	4#8	25'-8"





TYPICAL COLUMN DETAIL

DETAILS A/S45

N.T.S.

BRIGIN EBEL — NO. 34053 — STATE OF FLORIDA — REGISTERED — 5-7-86

DEWATERING BUILDING
SECTIONS & DETAILS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
RSH	BE	AS SHOWN	84-160S-E45	S45
CHECKED	DATE MARCH 85			

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1833 Edgewater Drive
Orlando, Florida 32804
305/423-8398

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060
MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
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Consulting Engineers
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Bradenton, Florida 33529
(813) 794-5450

DESIGNED ____ CHECKED ____ DATE ____ SCALE ____
DRAWN ____ FILE NO. ____ SHEET S-45 OF S-59

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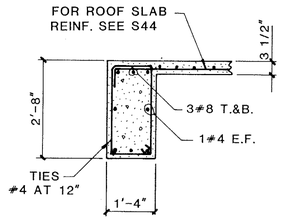
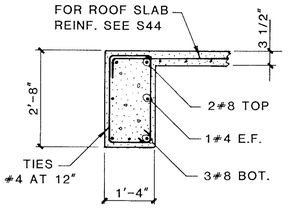
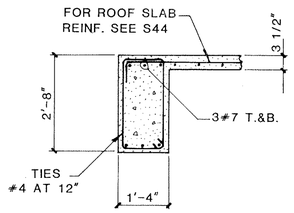
RECORD DRAWINGS 12/19/89



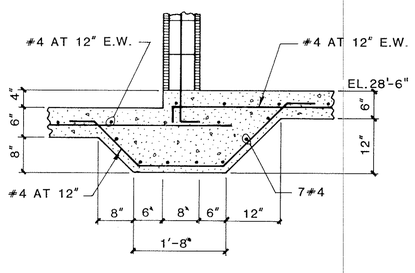
SECTION 1 / S44
SCALE: 1/2" = 1'-0"



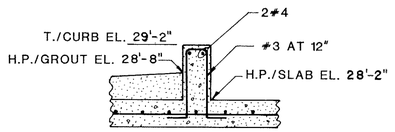
SECTION 2 / S44
SCALE: 1/2" = 1'-0"



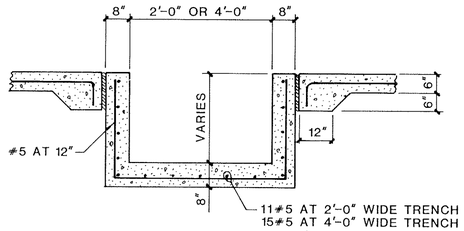
SECTION 3 / S44
SCALE: 1/2" = 1'-0"



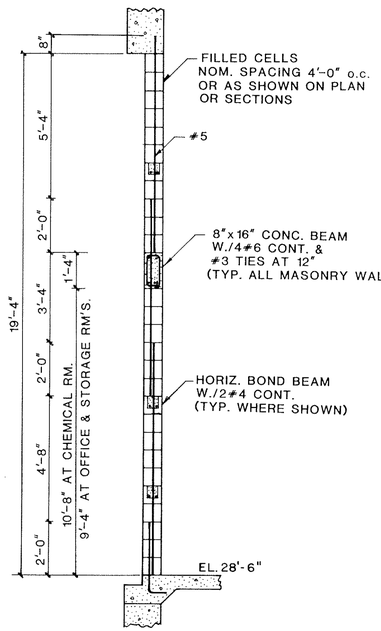
SECTION 4 / S43
SCALE: 3/4" = 1'-0"



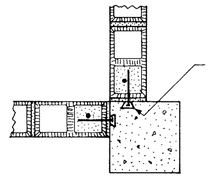
SECTION 5 / S43
SCALE: 3/4" = 1'-0"



SECTION 6 / S43
SCALE: 1/2" = 1'-0"



SECTION 7 / S44
SCALE: 3/8" = 1'-0"



DETAIL A / S43
SCALE: 3/4" = 1'-0"

BINGIN EREL
NO. 34053
STATE OF
5-7-86

DEWATERING BUILDING
SECTIONS & DETAILS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER:	SHEET NO.
WSM	BE	AS SHOWN	84-160S-E46	S46
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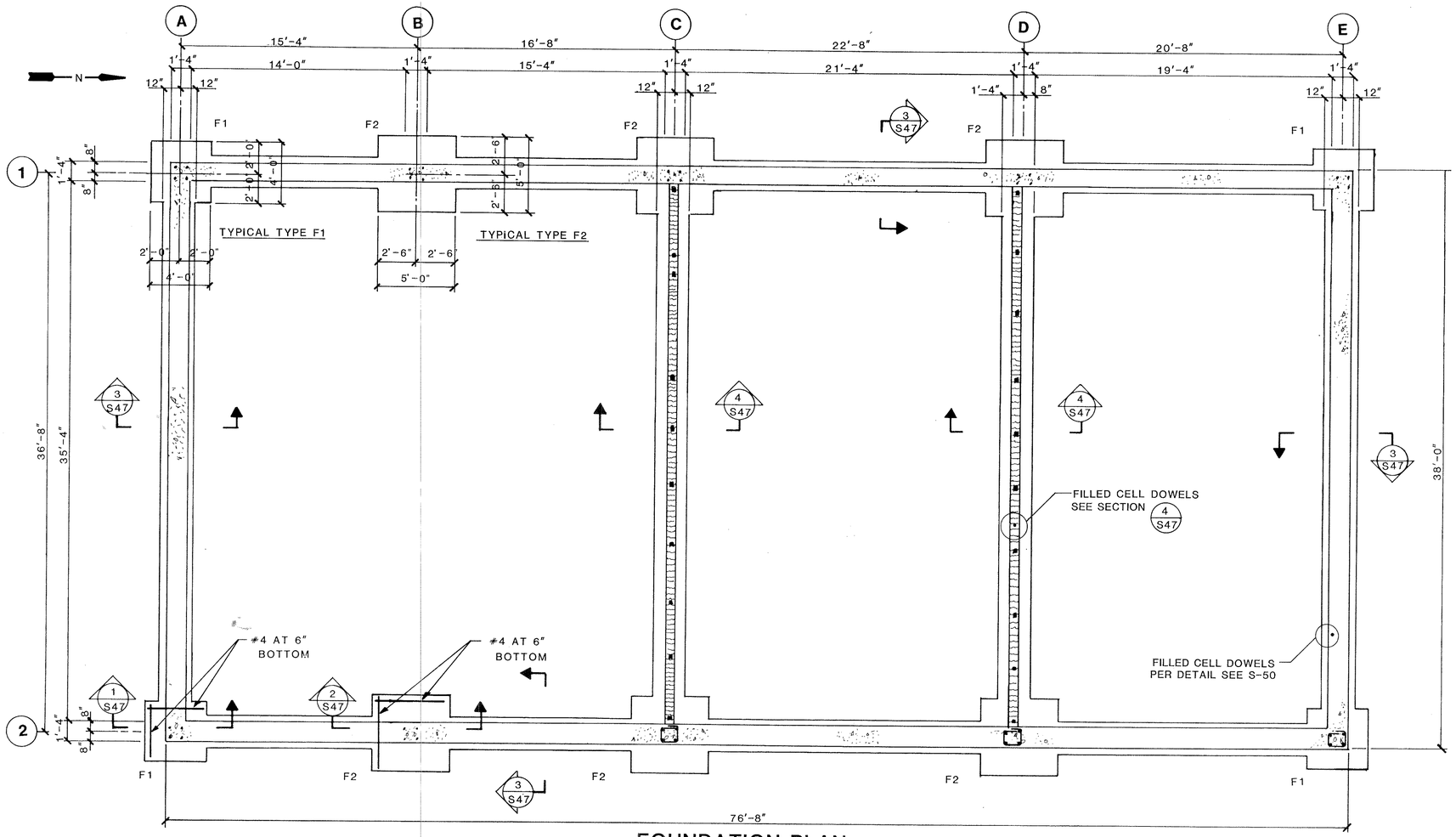
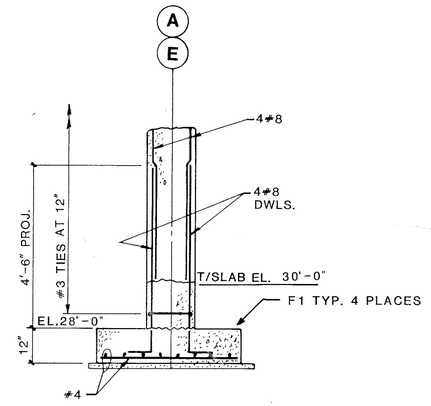


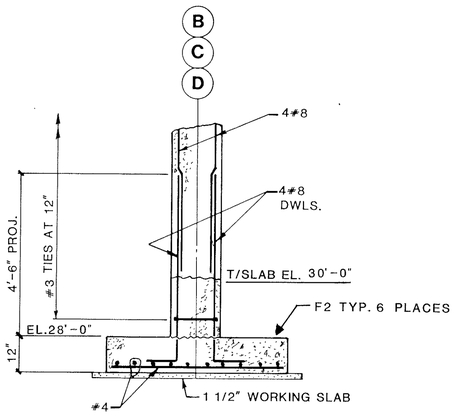
FOUNDATION PLAN

SCALE: 1/4"=1'-0"



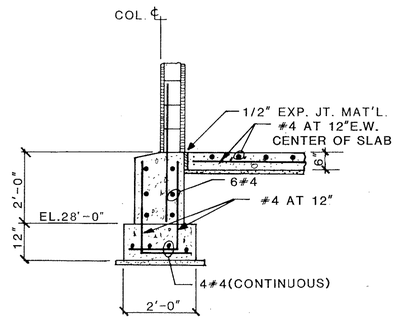
SECTION 1 S47

SCALE: 1/2"=1'-0"



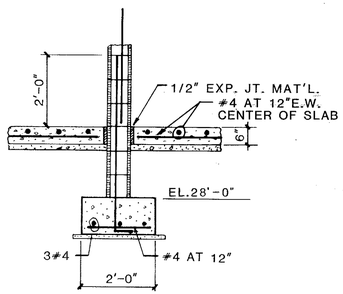
SECTION 2 S47

SCALE: 1/2"=1'-0"



SECTION 3 S47

SCALE: 1/2"=1'-0"



SECTION 4 S47

SCALE: 1/2"=1'-0"

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NO. 34053
STATE OF
REGISTERED
5-7-86

ELECTRICAL BUILDING
FOUNDATION PLAN & SECTIONS

DRAWN	RSH	APPROVED	BE	SCALE	REFERENCE NUMBER:	SHEET NO
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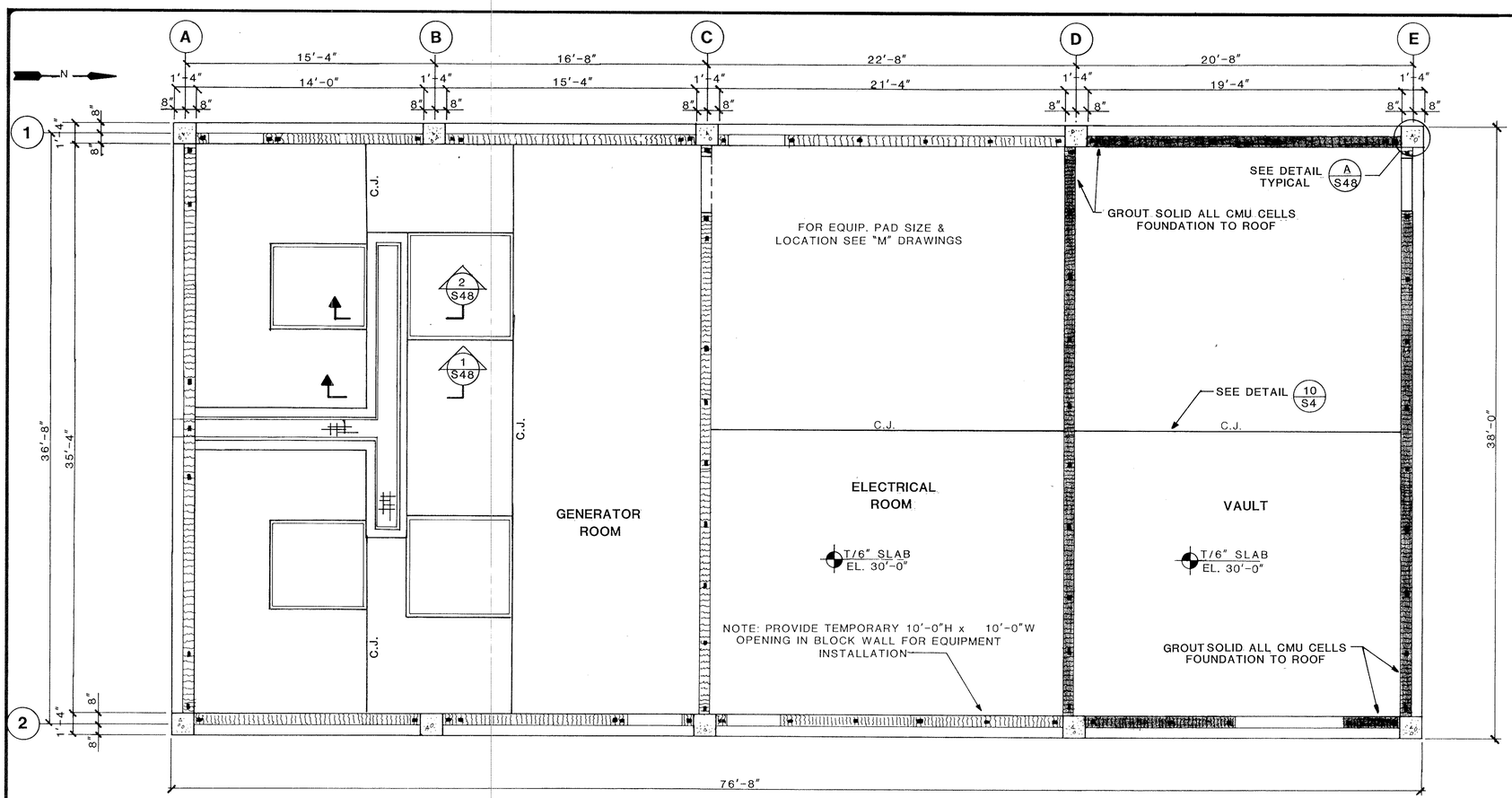
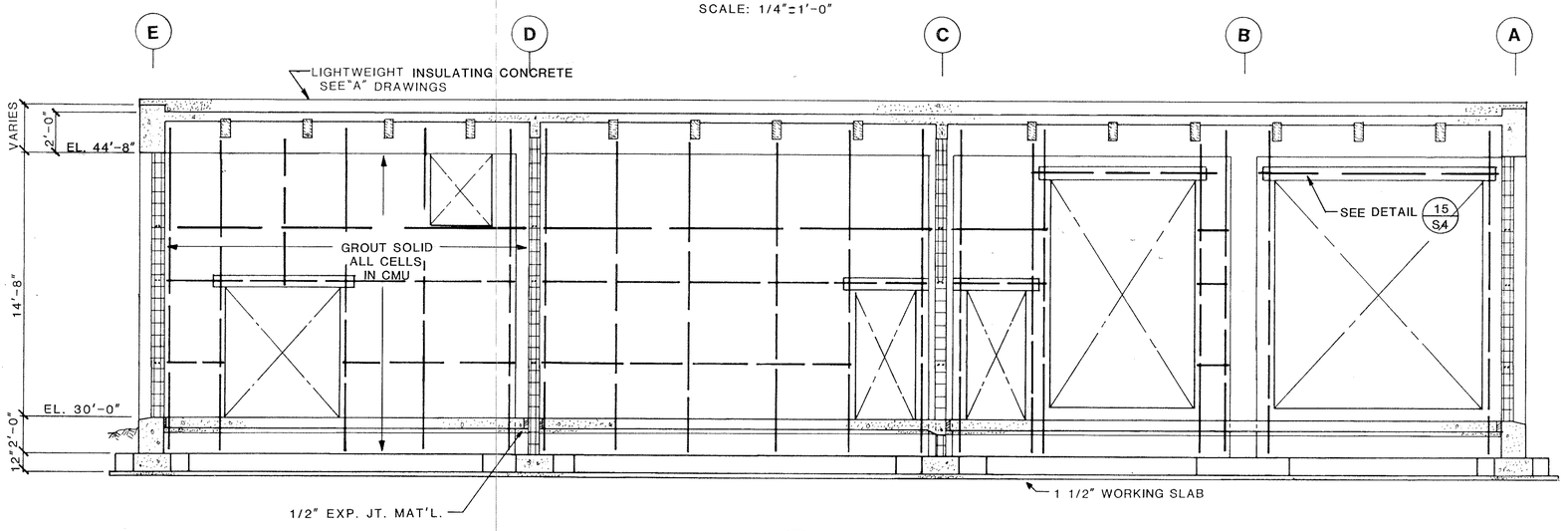


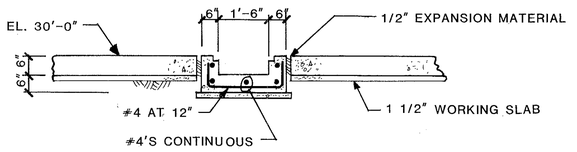
FLOOR PLAN

SCALE: 1/4"=1'-0"



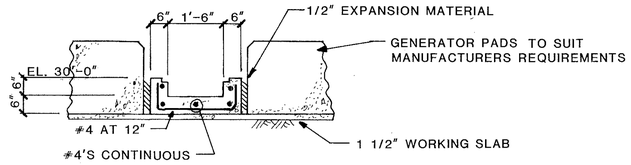
SECTION 1 S49

SCALE: 1/4"= 1'-0"



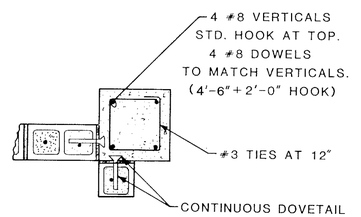
SECTION 1 S48

SCALE: 1/2"=1'-0"



SECTION 2 S48

SCALE: 1/2"=1'-0"



DETAIL A S48

SCALE: 3/4"= 1'-0"

BILGIN ERL REGISTERED ENGINEER NO. 34053 STATE OF FLORIDA 5-7-86

ELECTRICAL BUILDING SLAB PLAN & SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
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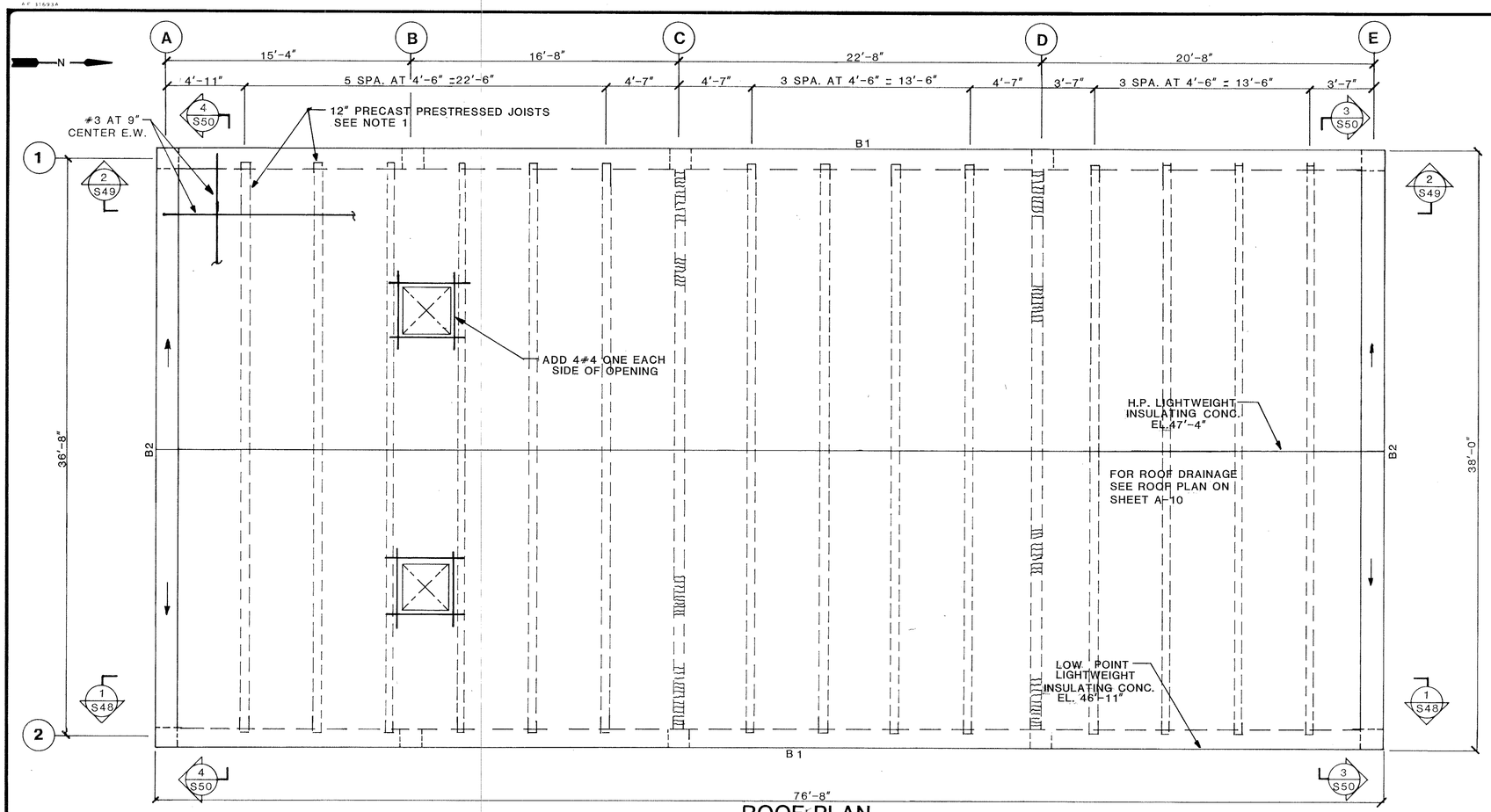
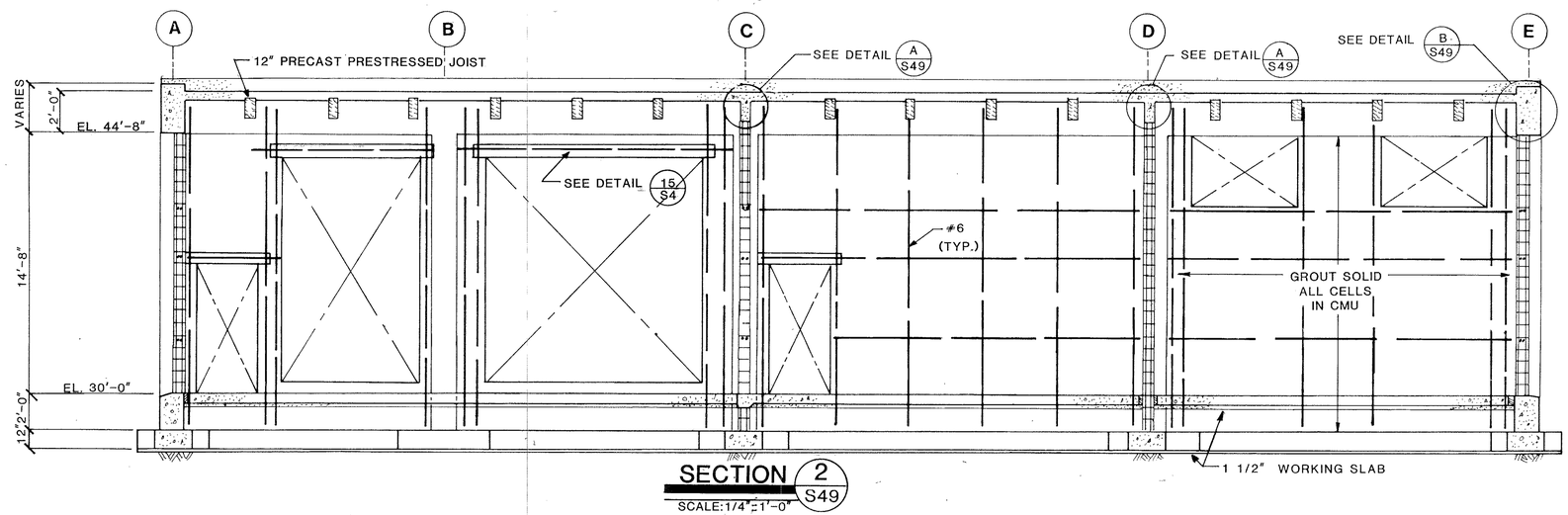


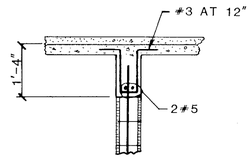
ROOF PLAN

SCALE: 1/4" = 1'-0"



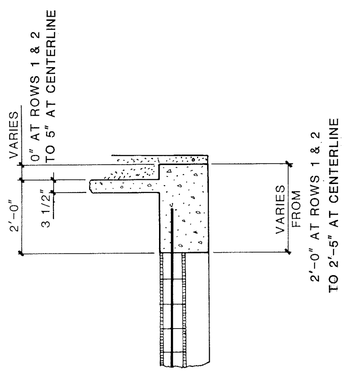
SECTION 2 S49

SCALE: 1/4" = 1'-0"



DETAIL A S49

SCALE: 1/2" = 1'-0"



DETAIL B S49

SCALE: 1/2" = 1'-0"

NOTE:

1. PRECAST PRESTRESSED JOISTS TO BE DESIGNED BY SPECIALTY CONTRACTOR PER SPECS
   LL. 30 PSF
   DL. SYSTEM WT. (JOISTS & 3 1/2" SLAB) PLUS 35 PSF.
   REFER TO MANUFACTURERS EQUIPMENT LOAD INFORMATION

BILGIN EREL — NO. 34053 — STATE OF FLORIDA — REGISTERED ENGINEER — 5-7-86

ELECTRICAL BUILDING ROOF PLAN & SECTIONS

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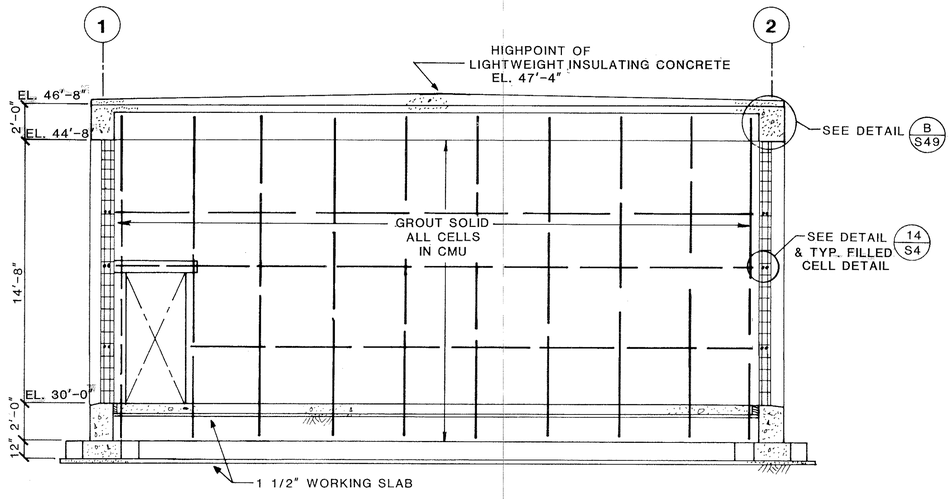
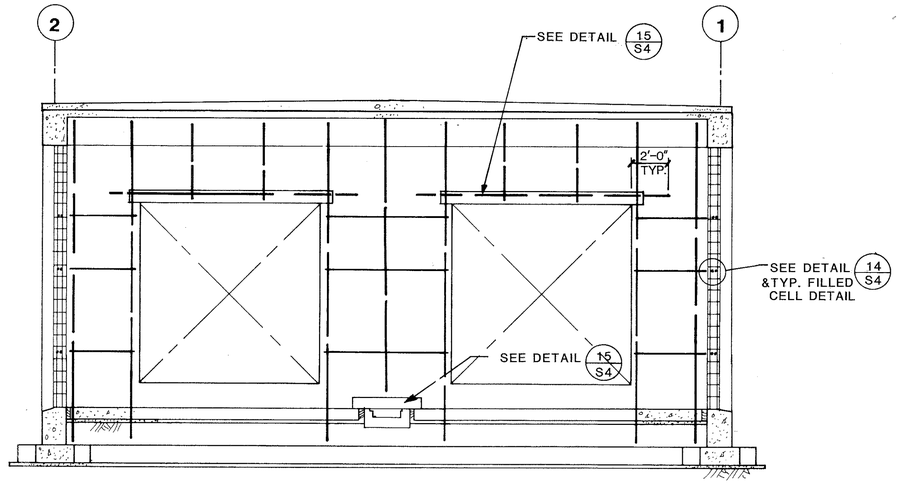


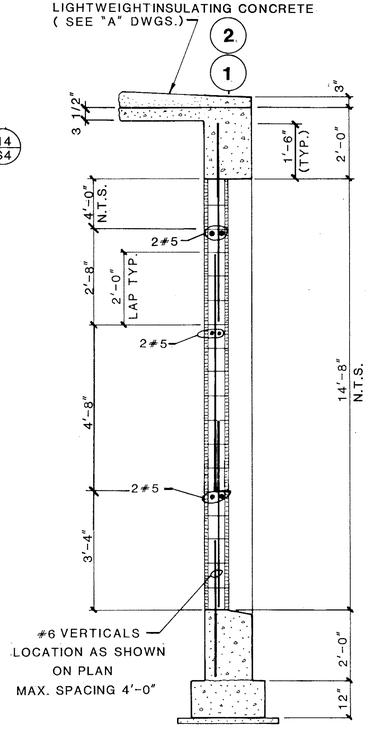
SECTION 3 S50

SCALE: 1/4"=1'-0"



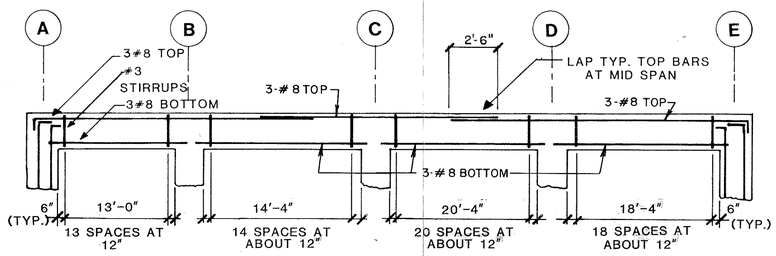
SECTION 4 S50

SCALE: 1/4"=1'-0"

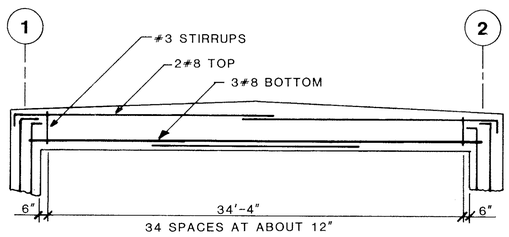


TYP. FILLED CELL DETAIL

SCALE: 1/2" = 1'-0"



BEAM B1



BEAM B2

BILGIN EREL
NO. 34053
STATE OF
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5-7-86

ELECTRICAL BUILDING SECTIONS & DETAILS

DRAWN	APPROVED	SCALE	REFERENCE NUMBERS	SHEET NO
RSH	BE	AS SHOWN	84-160S-E50	S50
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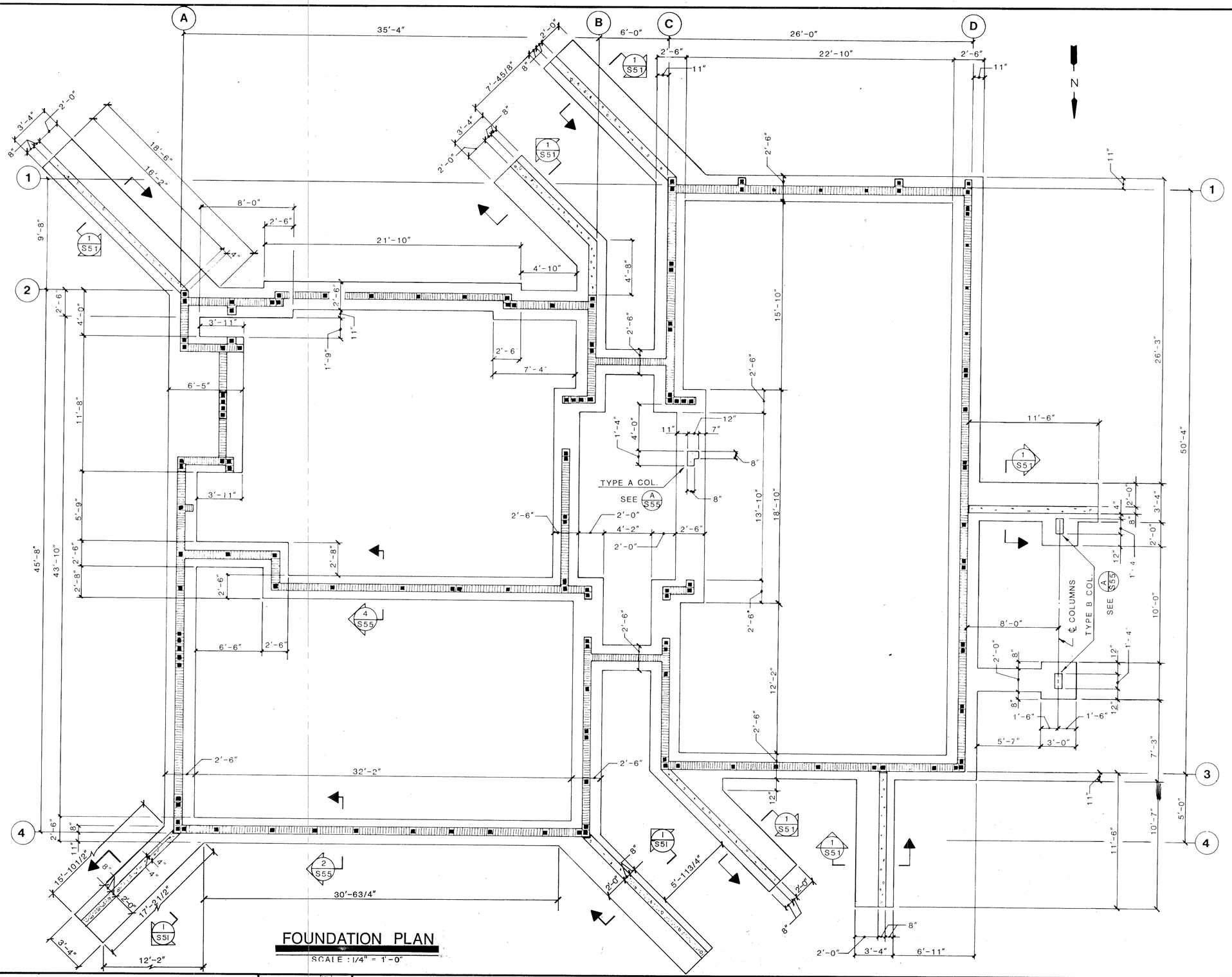

SECTION 1/S51

SCALE 3/8" = 1'-0"

FOUNDATION PLAN

SCALE : 1/4" = 1'-0"

NOTES

1. TOP OF FOOTINGS, EL. 33'-0"
2. SEE "A" DWGS. FOR LAYOUT OF WALLS

K. BILGIN EREL
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CONTROL BUILDING
FOUNDATION PLAN

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
JW	BE	AS SHOWN	84-160S-E51	S51
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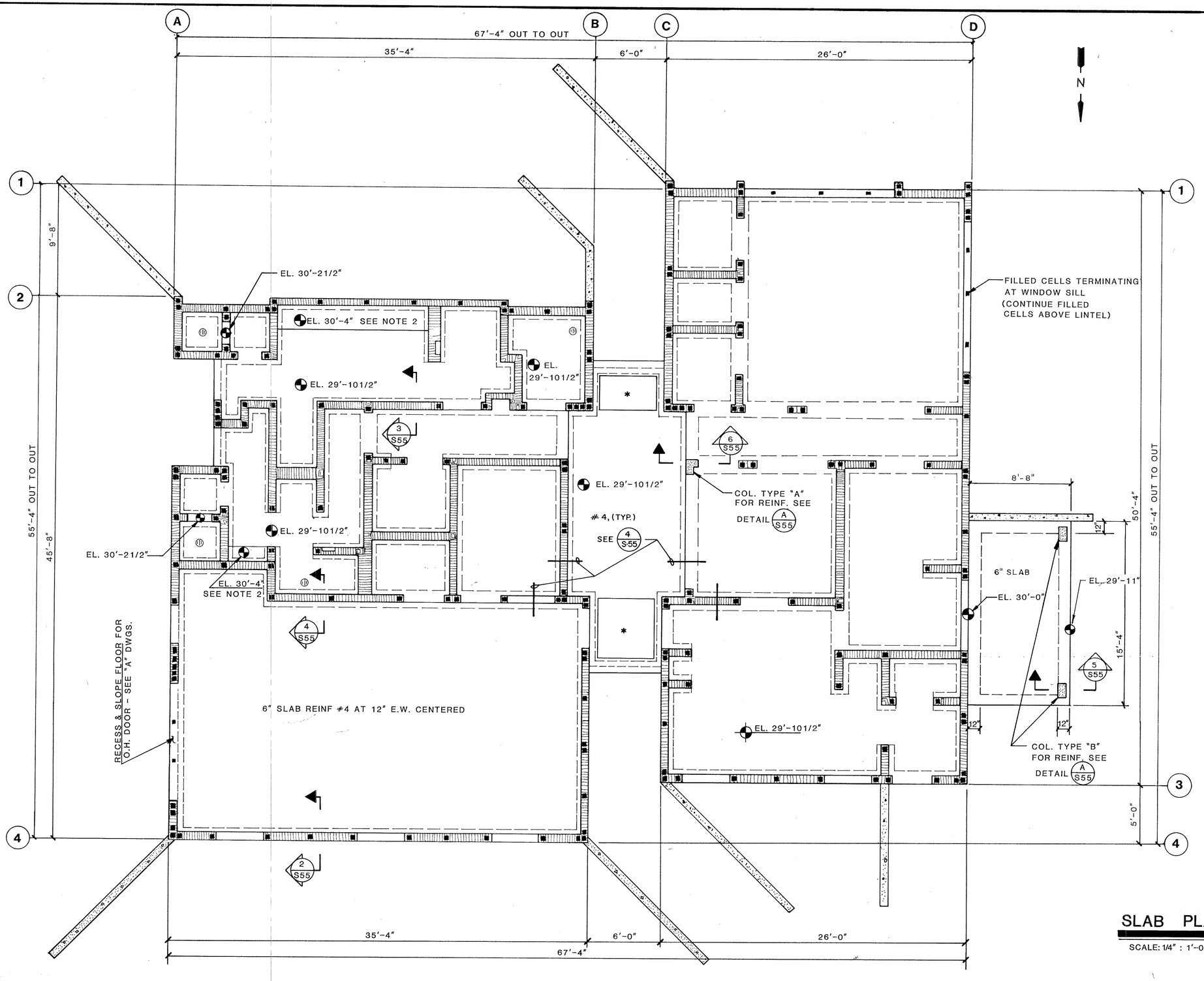

NOTES

1. FOR SIZES AND LOCATION OF CMU WALLS SEE "A" DWGS.
2. PROVIDE RAISED BASE FOR LOCKERS, SEE "A" DWGS.
3. PROVIDE FILLED CELLS : EXTERIOR WALLS = 4'-0" O.C. AND AS SHOWN INTERIOR WALLS = AS SHOWN
4. T/SLAB EL. 30'-0" (U.N.)
5. SIDE WALKS NOT SHOWN , CONSTRUCT PER SPECIFICATIONS.
6. FILL CELLS AS SHOWN FOR DETAILS SEE SHEET S4

LEGEND

* denotes RECESSED FLOOR TO DEPTH OF FRAME PROVIDED BY FLOOR MAT MFR. SEE "A" DWGS

Ⓓ denotes FLOOR DRAIN

SLAB PLAN

SCALE: 1/4" : 1'-0"

NOTE: EL. 30'-0" TOP 4" SLAB (TYP. U.N.)
REINF.: WWF 6x6-W1.4xW1.4

ELGIN ERIC CERTIFICATE NO. 34053 STATE OF FLORIDA 5-7-86

CONTROL BUILDING
SLAB PLAN

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
JW	BE	AS SHOWN	84-160S-E52	S52
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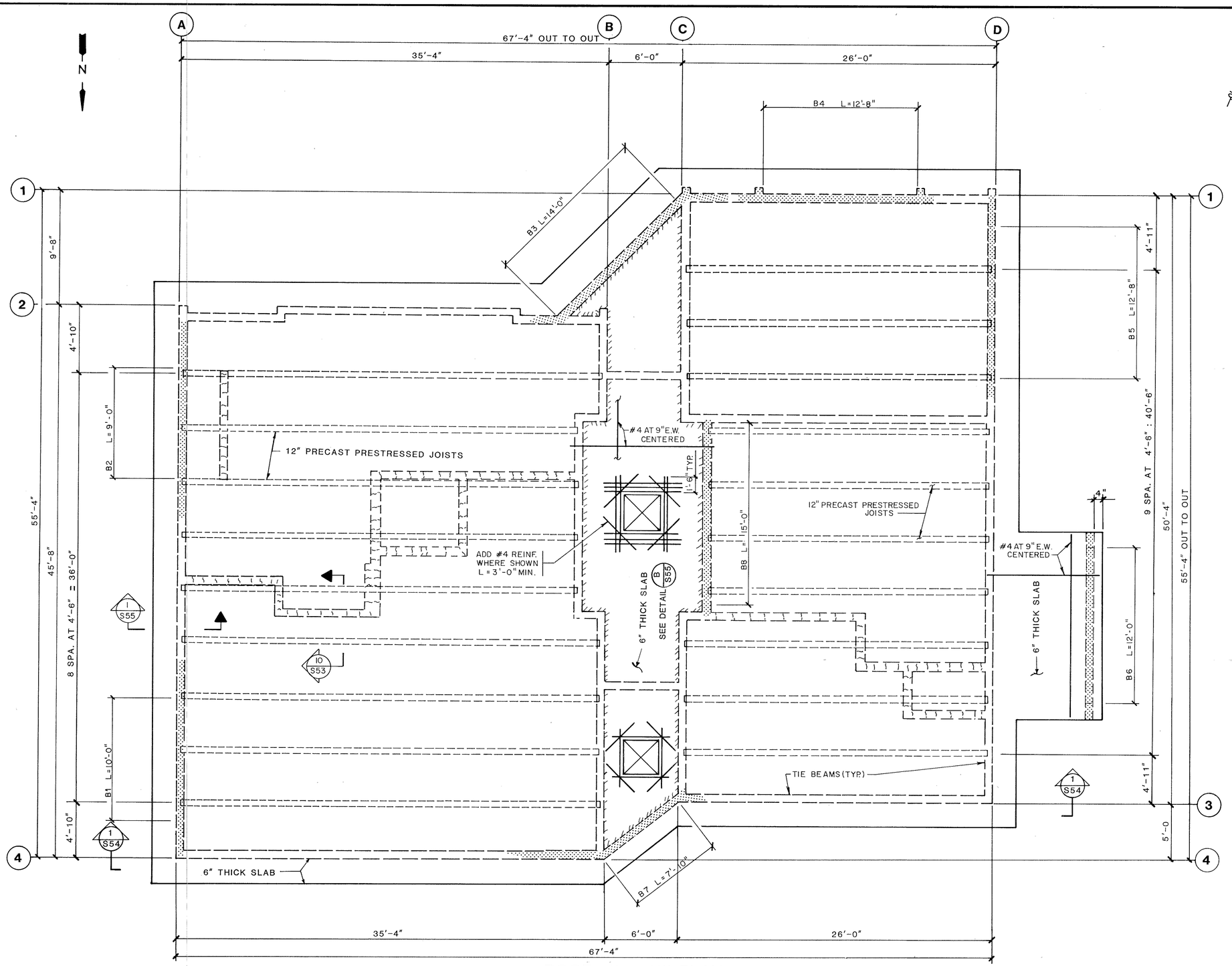

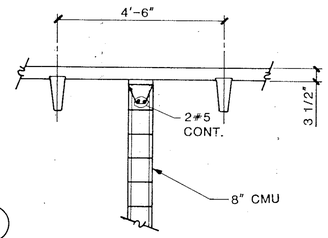

SECTION 10 / S53
SCALE: 1/2" = 1'-0"

NOTES:

1. FOR TYP. TIE BEAM REINF. SEE (1/S55)
2. FOR BEAM REINF. (BEAMS B1 THRU B6), SEE (7/S55)
3. ROOF SLAB = 3½" THICK, UNLESS NOTED FOR REINF. SEE DETAIL (A/S55)

ROOF FRAMING PLAN

SCALE: 1/4" : 1'-0"

ROOF SLAB 3 1/2" THICK UNLESS NOTED, SEE DETAIL (A/S55)

BILGIN EREL — NO. 34053 — STATE OF FLORIDA — REGISTERED ENGINEER — 5-7-86

CONTROL BUILDING
ROOF FRAMING PLAN

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
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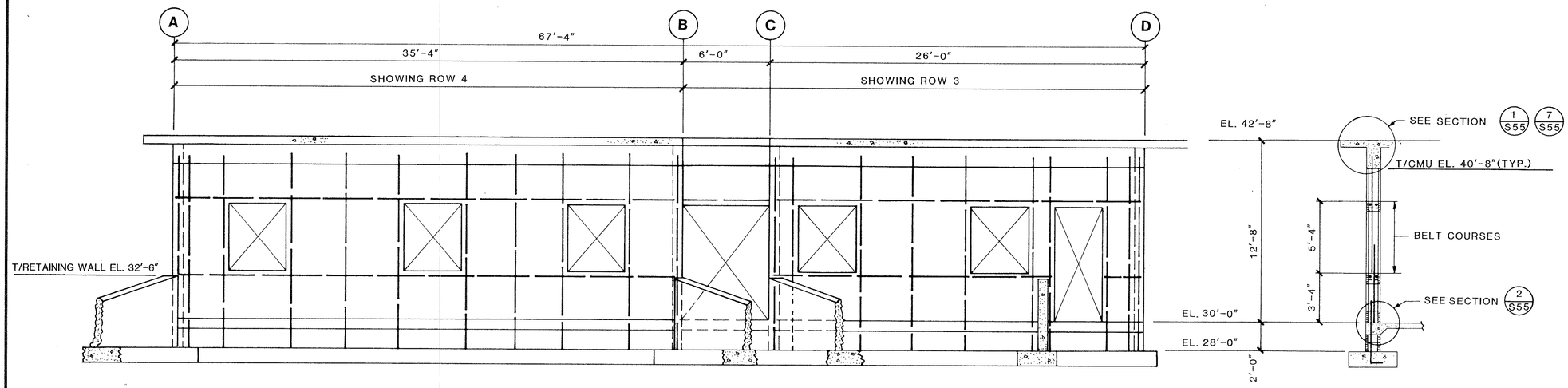
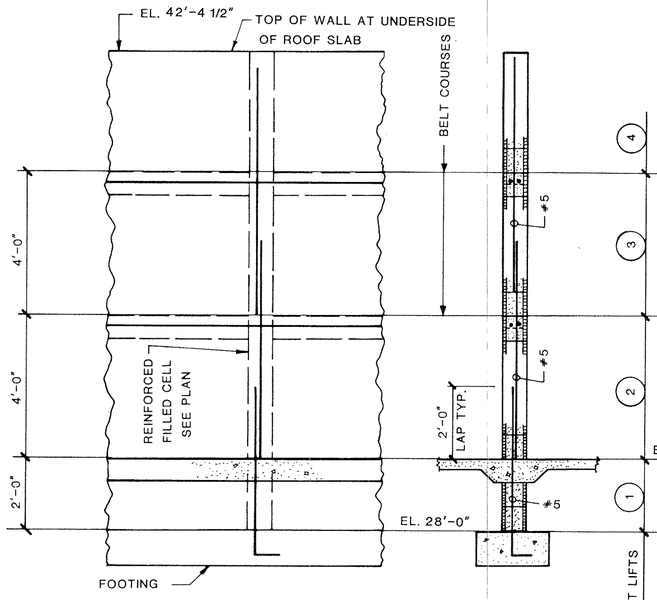
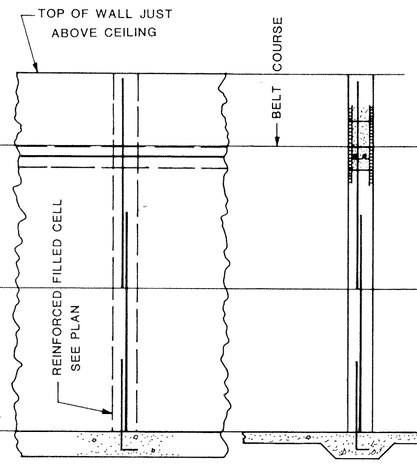


WALL ELEVATION 1/S53

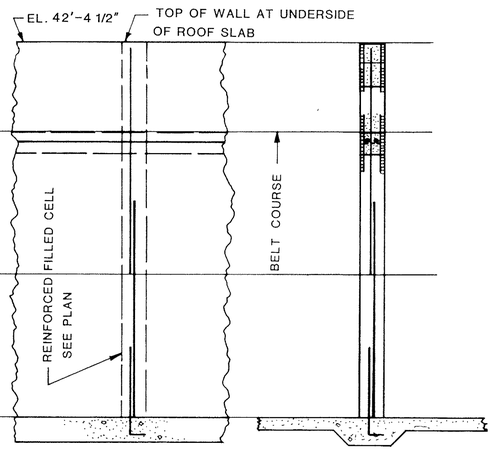
TYPICAL FOR OTHER EXTERIOR WALLS



DETAIL A/S54 — INTERIOR WALL



DETAIL B/S54 — INTERIOR WALL



DETAIL C/S54 — INTERIOR WALL

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CONTROL BUILDING SECTIONS

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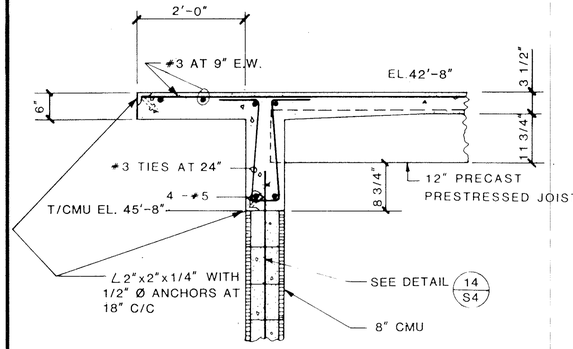
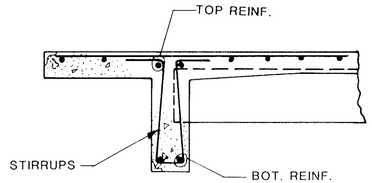
26-01

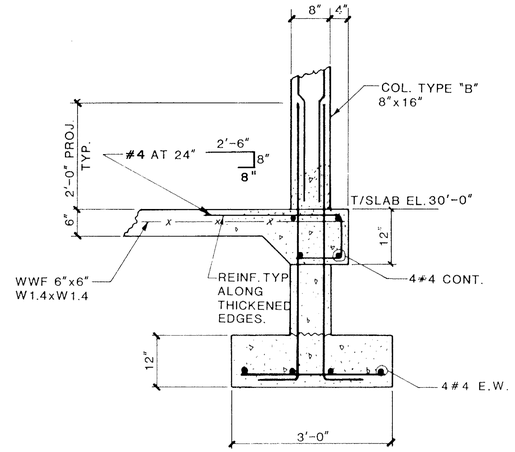
RECORD DRAWINGS 12/19/89



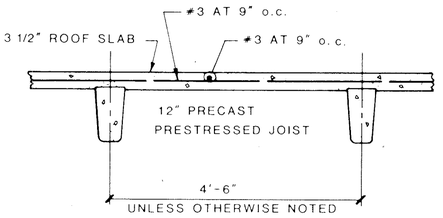
SECTION 1 / S53
SCALE: 3/4" = 1'-0"
TYP. ROOF TIE BEAM



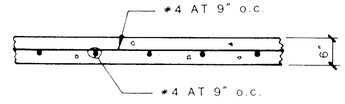
SECTION 7 / S53
SCALE: 3/4" = 1'-0"
BEAM OVER OPENING
SEE BEAM SCHEDULE



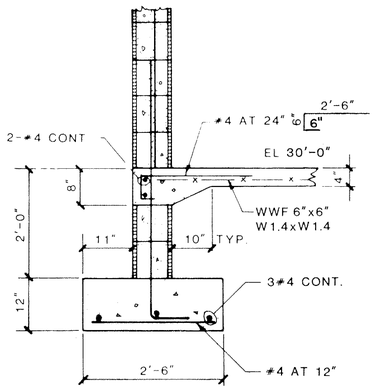
SECTION 5 / S52
SCALE: 3/4" = 1'-0"



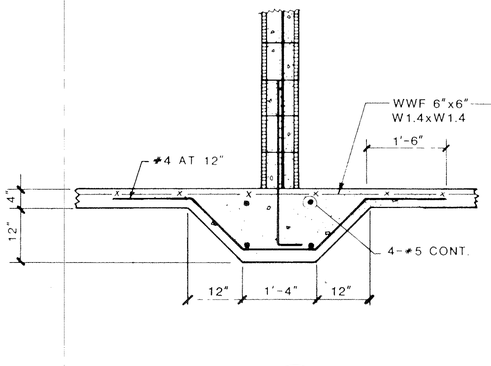
DETAIL A / S55
SCALE: 3/4" = 1'-0"
TYPICAL 3 1/2" ROOF SECTION



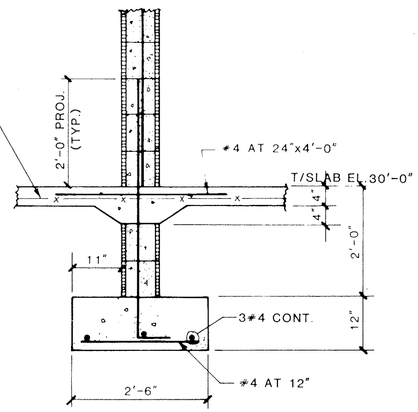
DETAIL B / S55
SCALE: 3/4" = 1'-0"
TYPICAL UNIFORM 6" ROOF SECTION



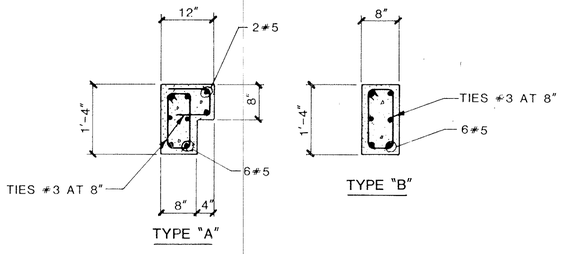
SECTION 2 / S51
SCALE: 3/4" = 1'-0"



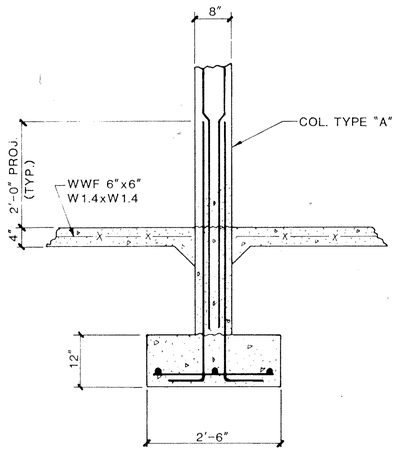
SECTION 3 / S52
SCALE: 3/4" = 1'-0"



SECTION 4 / S51
SCALE: 3/4" = 1'-0"



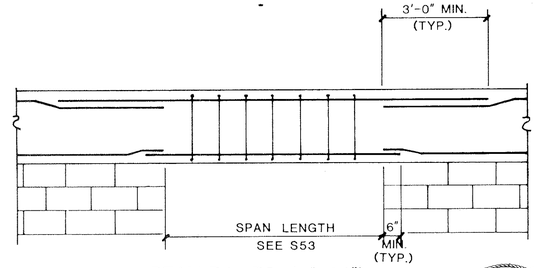
DETAIL A / S52
SCALE: 3/4" = 1'-0"
TYP. COL. REINF.



SECTION 6 / S52
SCALE: 3/4" = 1'-0"

BEAM SCHEDULE

BEAM MARK	TOP REINF.	BOTTOM REINF	STIRRUPS	REMARKS
B1	2#6	2#6	#3 AT 9"	
B2	2#6	2#6	#3 AT 9"	
B3	2#6	2#6	#3 AT 9"	PROVIDE BENT BARS PER PLAN
B4	2#6	2#6	#3 AT 9"	
B5	2#6	2#6	#3 AT 9"	
B6	2#5	2#5	#3 AT 9"	PROVIDE STD. HOOK TOP BARS
B7	2#6	2#6	#3 AT 9"	PROVIDE BENT BARS PER PLAN
B8	2#6	2#6	#3 AT 9"	PROVIDE STD. HOOK TOP BARS



BEAM B1 - B8 (8"x24")

SILGIN EREL * NO. 34053 * STATE OF * REGISTERED * CIVIL * FLORIDA
5-7-86

CONTROL BUILDING

DRAWN	APPROVED	SCALE	REFERENCE NUMBER:	SHEET NO
JW	BE	AS SHOWN	84-1605-E55	S55
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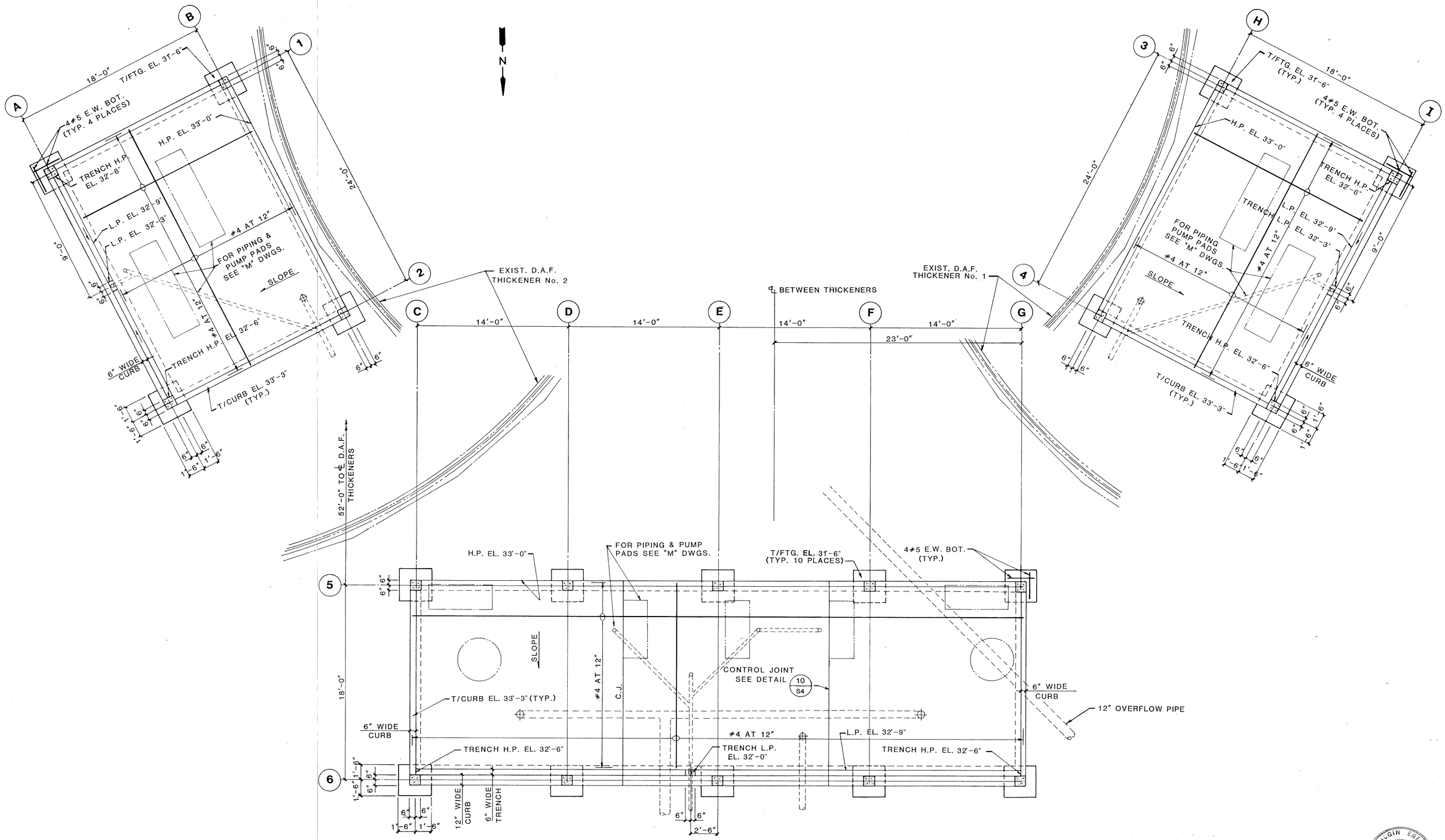
T97

DESIGNED ____ DRAWN ____ CHECKED ____ DATE ____ SHEET S-55 OF S-59

26-01

RECORD DRAWINGS 12/19/89



FOUNDATION PLAN

SCALE: 1/4"=1'-0"

SILGIN EREN CERTIFICATE NO. 34053 STATE OF FLORIDA REGISTERED ENGINEER 5-7-86

D.A.F. FACILITIES
FOUNDATION PLAN

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO
MFS	BE	AS SHOWN	84-160S-E56	S56
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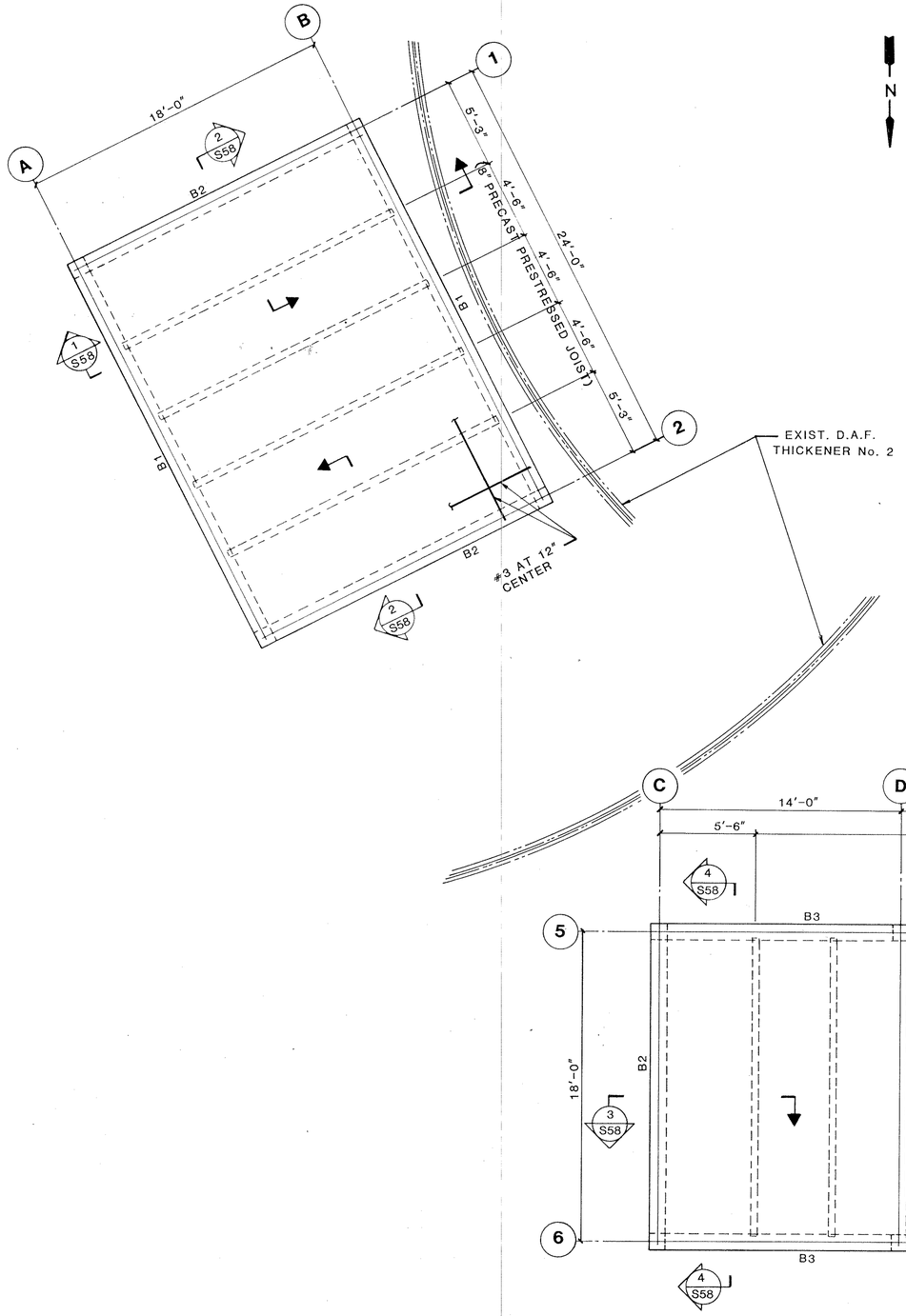
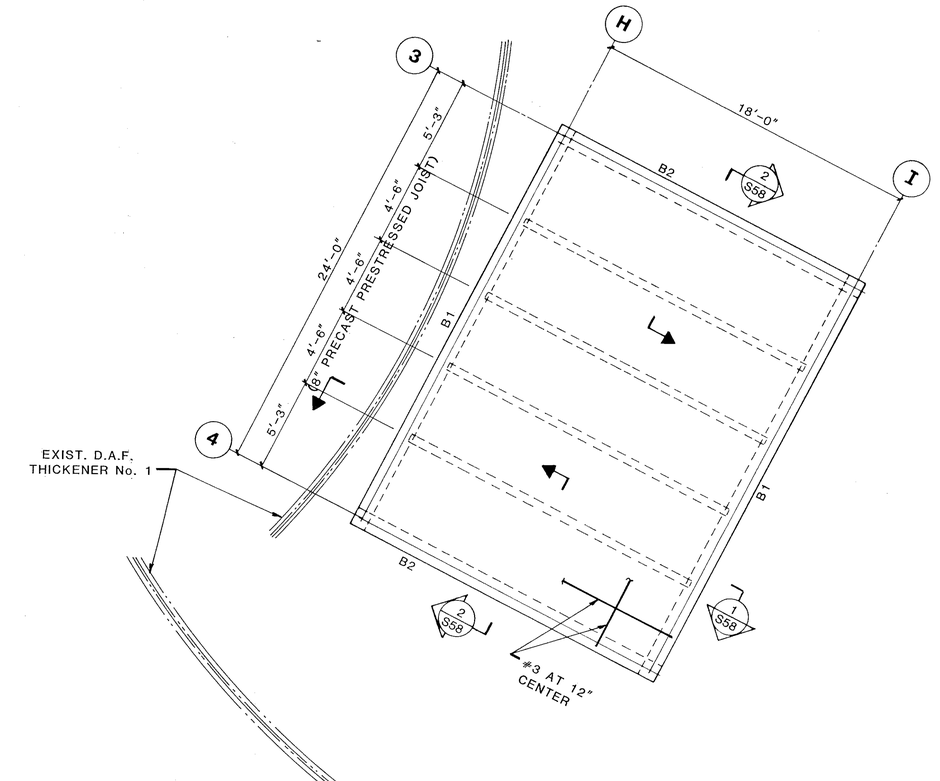
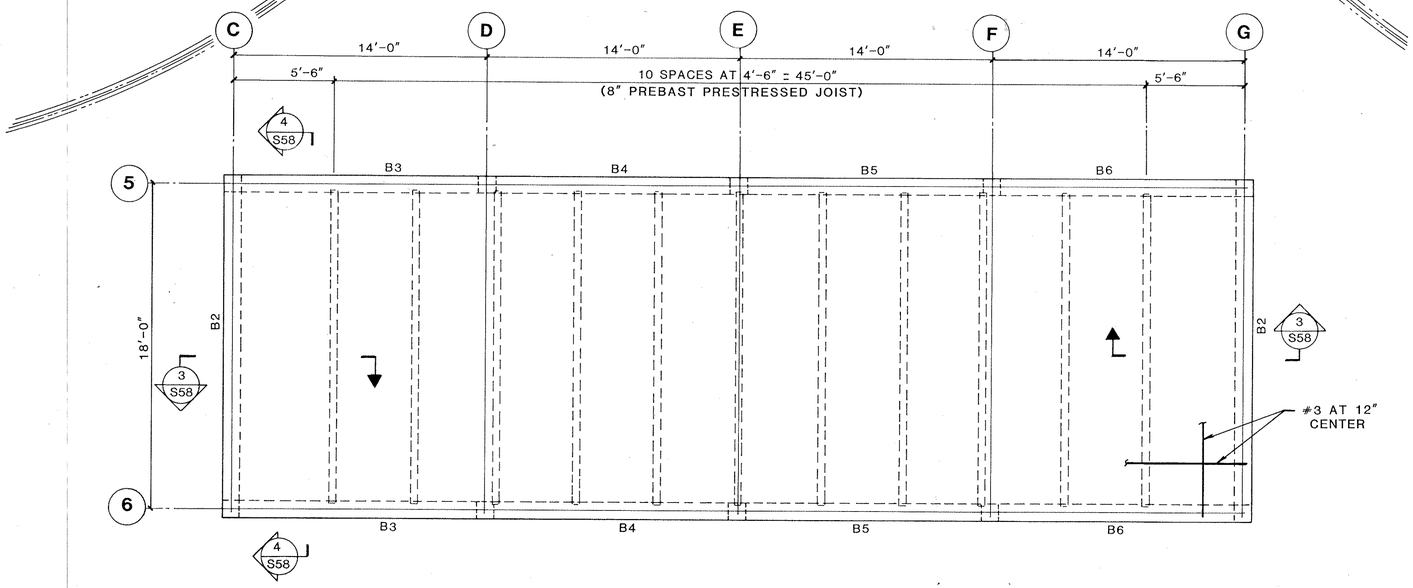
DRAWN ____ FILE NO. ____ SHEET S-56 OF S-59

26-01

RECORD DRAWINGS 12/19/89







ROOF PLAN

SCALE: 1/4"= 1'-0"

NOTE:
PRECAST PRESTRESSED JOIST TO BE DESIGNED BY SPECIALTY CONTRACTOR PER SPECS
LL: PSF
DL:ROOF SYSTEM WEIGHT PLUS PSF

GILSIN EREZ CERTIFICATE NO. 34053 STATE OF FLORIDA REGISTERED ENGINEER
5-7-86

D.A.F. FACILITIES
ROOF PLANS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER:	SHEET NO
MFS	BE	AS SHOWN	84-160S-E57	S57
CHECKED BE	DATE MARCH 1985			

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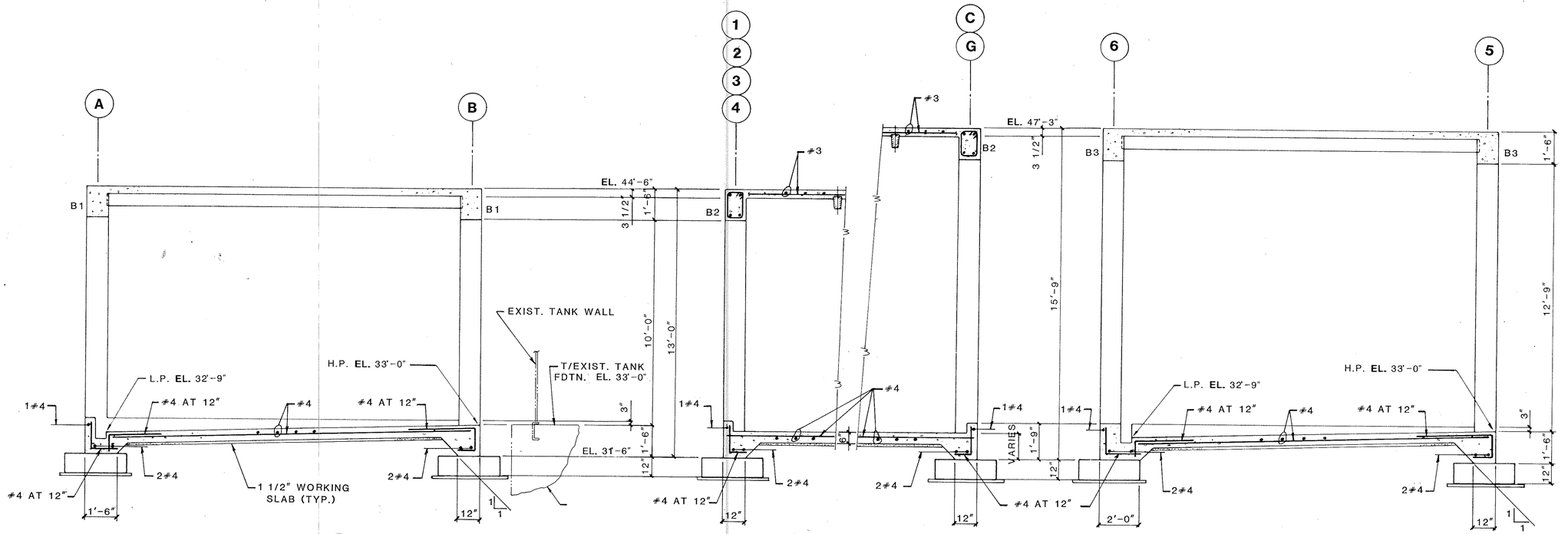
DESIGNED CHECKED DATE SCALE
DRAWN FILE NO. SHEET S-57 OF S-59

T 99

26-01

RECORD DRAWINGS 12/19/89

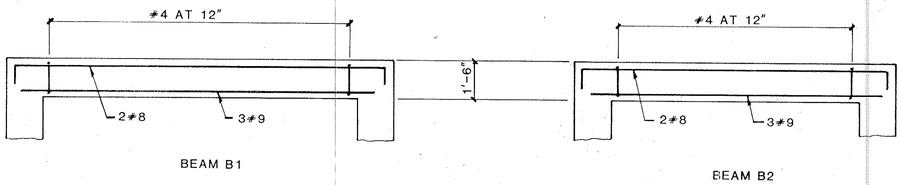


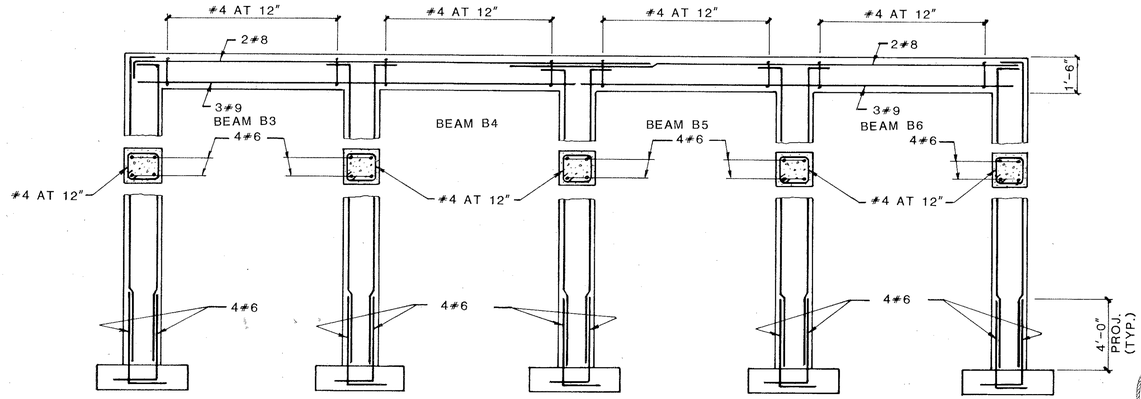
SECTION 1 — SCALE: 3/8"=1'-0" — S57

SECTION 2 — SCALE: 3/8"=1'-0" — S57

SECTION 3 — SCALE: 3/8=1'-0" — S57

SECTION 4 — SCALE: 3/8"=1'-0" — S57





BINGIN EREL — NO. 34053 — STATE OF — REGISTERED — 5-7-86

D.A.F. FACILITIES
SECTIONS & DETAILS

DRAWN: MFS	APPROVED: BE	SCALE: AS SHOWN	REFERENCE NUMBER: 84-160S-E58	SHEET NO: S58
CHECKED: BE	DATE: MARCH 1985			

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DESIGNED ____ CHECKED ____ DATE ____ SCALE ____
DRAWN ____ FILE NO ____ SHEET S-58 OF S-59

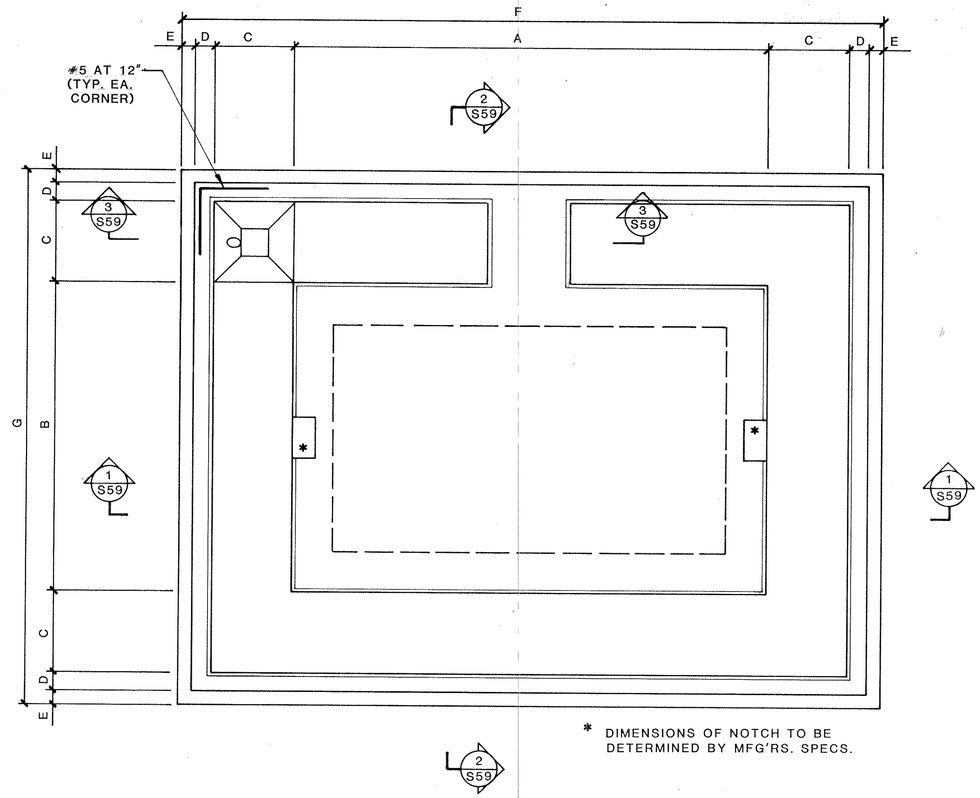
T100

26-01

RECORD DRAWINGS 12/19/89

TANK PAD	A	B	C	D	E	F	G	H	J	K	L	M			
NaOH	16'-8"	8'-6"	3'-0"	8"	6"	25'-0"	16'-10"	12"	2'-0"	8"	12"	6"			

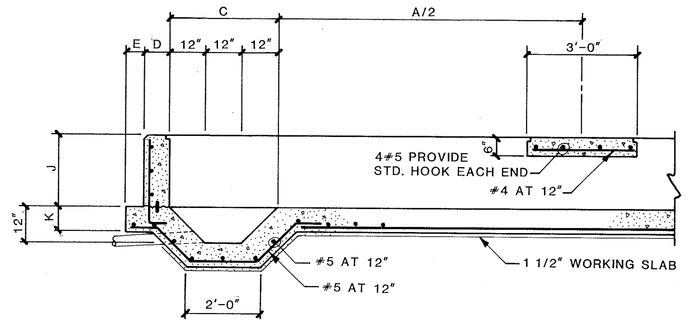
NOTE : FOR ADDITIONAL DETAILS SEE SHEET M-10.



* DIMENSIONS OF NOTCH TO BE DETERMINED BY MFG'RS. SPECS.

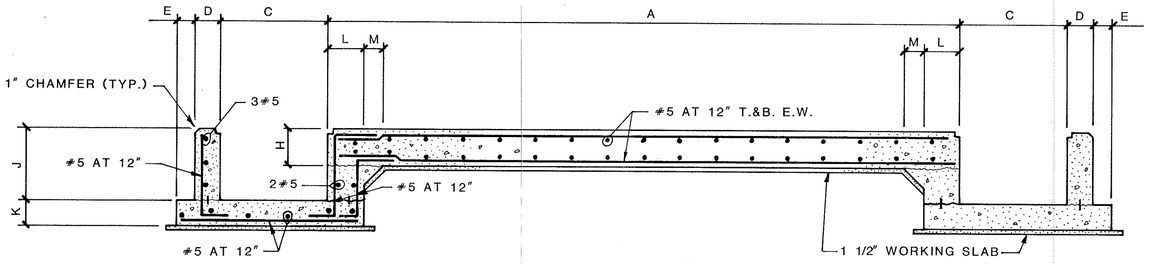
PLAN

NTS



SECTION 3 / S59

NTS

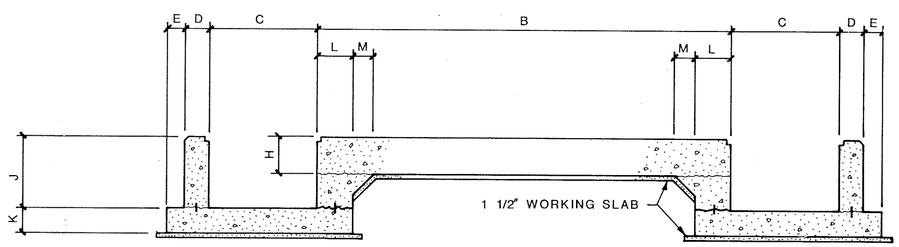


TYPICAL REINFORCING

SECTION 1 / S59

N.T.S.

SEE TYPICAL REINFORCING



SEE TYPICAL REINFORCING

SEE TYPICAL REINFORCING

SECTION 2 / S59

N.T.S.

BILGIN EREL — NO. 34053 — STATE OF FLORIDA — REGISTERED ENGINEER — 5-7-86

NaOH TANK PAD
PLANS AND SECTIONS

DRAWN	APPROVED	SCALE	REFERENCE NUMBER	SHEET NO.
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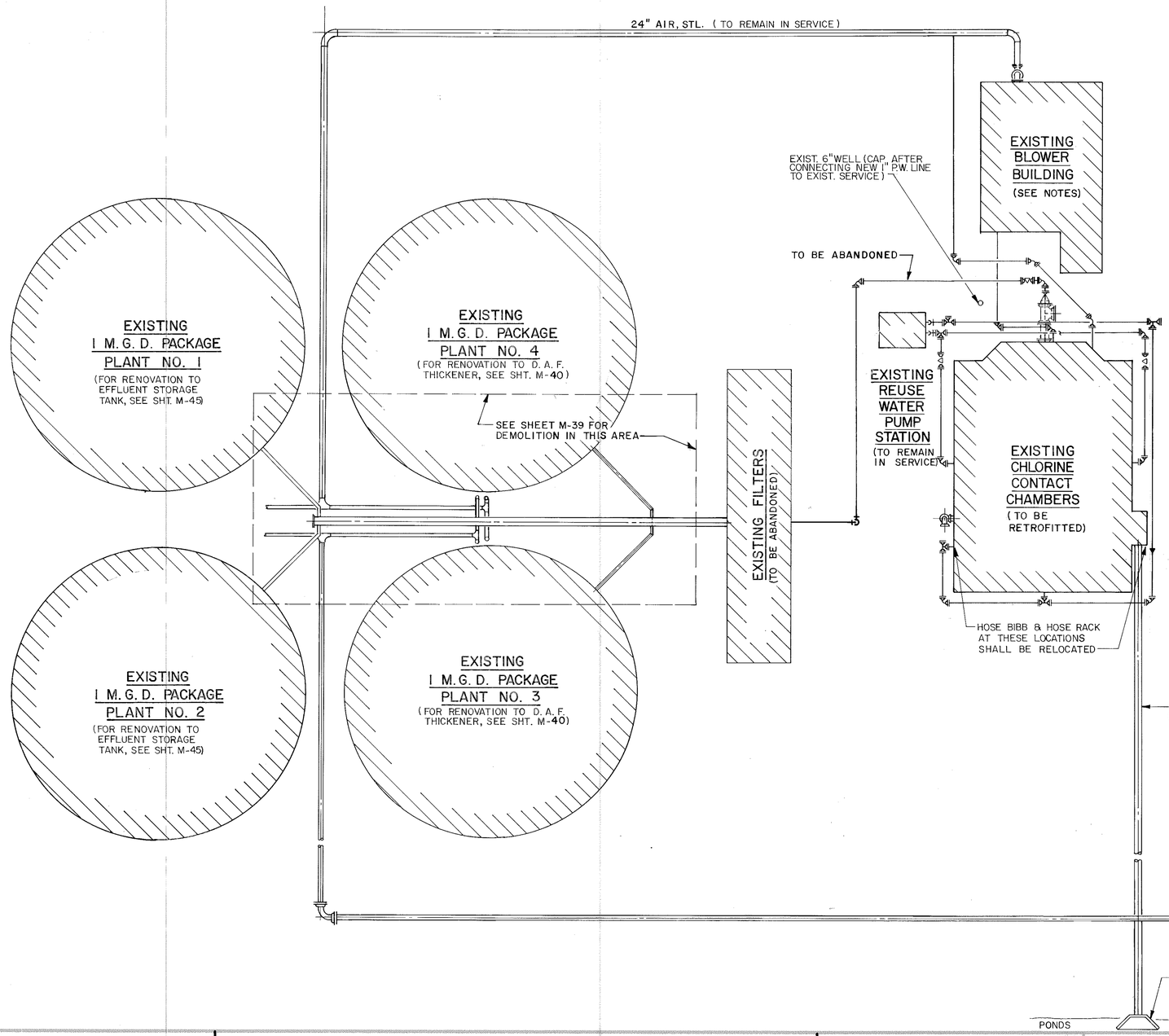
DRAWN ____ FILE NO. ____ SHEET S-59 OF S-59

T101

26-01

RECORD DRAWINGS 12/19/89

AF 31693A



NOTES

1. REMOVE BLOWERS NO. 2 & NO. 3 UP TO BUT NOT INCLUDING THE DISCHARGE HEADER. REMOVE ALL CONTROLS AND APPURTENANCES FOR BLOWERS NO. 2 & NO. 3 INCLUDING STARTERS, CIRCUIT BREAKERS, LIGHTS, SWITCHES, ETC. STORE PER SPECIFICATIONS.

2. BLOWER NO 1 SHALL REMAIN OPERATIONAL.

3. RELOCATE AND INSTALL IN BLOWER BLDG. ONE CENTRIFUGAL BLOWER CURRENTLY LOCATED IN THE BLOWER BLDG. OF THE SOUTHEAST MANATEE WASTEWATER TREATMENT PLANT. CONTRACTOR SHALL DISASSEMBLE THIRD BLOWER, PIPING AND VALVES TO DISCHARGE HEADER, AND ALL CONTROLS AND APPURTENANCES WHICH DO NOT INTERFACE WITH THE CONTROL AND OPERATION OF THE REMAINING TWO BLOWERS. THE REMAINING TWO BLOWERS, PIPING, VALVES, CONTROLS, AND APPURTENANCES SHALL REMAIN OPERATIONAL. ALL PIPING, CONDUITS, WIRES, ETC. SHALL BE NEATLY TERMINATED WITH PLUGS, CAPS, BLIND FLANGES, ETC.

4. PROVIDE ALL PIPING, VALVES, CONTROLS, AND APPURTENANCES NECESSARY TO INSTALL AND MAKE OPERATIONAL THE THIRD BLOWER FROM THE SOUTHEAST MANATEE WASTEWATER TREATMENT PLANT ON THE EXIST BLOWER PAD NO. 2.

5. ALL REMAINING, RELOCATED, AND NEW CONTROLS SHALL BE REMOUNTED IN A NEW FREE-STANDING NEMA 1A, 14 GAUGE STEEL OPERATING PANEL. INCLUDED IN SUCH CONTROLS SHALL BE AMMETERS, CALIBRATED IN AMPS AND SCFM, AND ELAPSED TIME METERS.

RICHARD D. MOORE REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

EXISTING YARD PIPING

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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T102

DESIGNED W.L.R. CHECKED W.L.R. DATE MARCH, 1985 SCALE AS NOTED
DRAWN J.T.W. FILE NO. 031-006-84 SHEET M-1 OF M-46

26-01

RECORD DRAWINGS 12/19/89

AF 31693A

N

0 10' 20' 30'

1" = 20'

SEE SHEET M-3

MATCH LINE

FUTURE SECOND ANOXIC BASIN

FUTURE SECOND ANOXIC BASIN

ANOXIC /AEROBIC TANK #2 (SEE SHT. M-11)

ANOXIC /AEROBIC TANK #1 (SEE SHT. M-11)

FUTURE FERMENTATION BASIN

8"R.W., P.V.C., (SCH. 40), S.J.

8 G.V.

20'

6"R.W., P.V.C. (SCH. 40), S.J.

2"R.W., P.V.C. (SCH. 40), S.W.

4"R.W., P.V.C. (SCH. 40) S.W.

5'

6"R.W., P.V.C. (SCH. 40), S.J.

2" CL_2S, P.V.C. (SCH 80), S.W. TO R.A.S. LINE

4"R.W., P.V.C. (SCH. 40), S.W.

4"R.W., D.I.P., R.J.

42"M.L., D.I.P., S.J.

R.M.L. PUMPS (SEE SHT. M-13)

24"R.M.L., D.I.P., R.J.

42"R.S., D.I.P., S.J.

36"R.S., D.I.P., S.J.

36"R.S., D.I.P., S.J.

PLUG

42"x 36" TEE, ℄ EL. 24.33

M.H. #1 (SHALLOW)
RIM EL. 30.00
INV. EL. 25.90
INV. EL. 26.00

7'

12"D., P.V.C., S.J. @ 0.24 % SLOPE

1" CL_2G, P.V.C. (SCH. 80), S.W

4"R.W., P.V.C. (SCH. 40), S.J.

M.H. #3
RIM EL. 40.04 (IN CONC. SLAB)
INV. EL. 26.58 (N)
INV. EL. 24.75 (N.E.)
INV. EL. 23.58 (E)
INV. EL. 24.75 (S.E.)
INV. EL. 26.58 (S)
INV. EL. 22.58 (W)

M.H. #4
RIM EL. 27.00
INV. EL. 22.03 (E)
INV. EL. 21.93 (S)

12"D., P.V.C., S.J. @ 0.24% SLOPE

5'

36"R.S., D.I.P., S.J.

16"R.A.S., D.I.P., R.J.

10'

2" CL_2S, P.V.C.

HEADWORKS (SEE SHT. M-6)

6"D., P.V.C., S.J. @ 2.25% SLOPE

ODOR CONTROL FACILITIES (SEE SHT. M-7)

5' 10'

2"R.W., P.V.C. (SCH. 40), S.W.

16"R.A.S., D.I.P., R.J.

17'

1" CL_2S, P.V.C. (SCH. 80) S.W.

16"W.W., D.I.P., R.J.

30"FM., D.I.P., R.J.

2"P.W., P.V.C. (SCH. 40), S.W.

8"D., P.V.C., S.J. @ 1.06 % SLOPE

4"R.W., P.V.C. (SCH. 40) S.W.

1" CL_2G, P.V.C. (SCH. 80), S.W

4"G.V.

7'8"

16"R.A.S., D.I.P., R.J.

11'5"

4'

2"R.W., P.V.C. (SCH. 40), S.W.

3'

20" EFF., D.I.P., R.J.
8" R.W., P.V.C., (SCH. 40), S.J.

1" CL_2G, P.V.C. (SCH. 80), S.W. TO HEADWORKS

20" EFF., D.I.P., R.J.
6" R.W., P.V.C. (SCH. 80), R.J.

30"x24" R.J. WYE

PRESTRESSED CONC. BRIDGE (BY OTHERS)

12"D., P.V.C., S.J. @ 0.24% SLOPE

8"D., P.V.C., S.J. @ 0.42% SLOPE

EXIST. 16"FM., P.V.C.

12'± N.T.S.

40'

PLUG

16'

REMOVE PLUG & CONNECT 24" D.I.P.

M.H. #5
RIM EL. 29.00
INV. EL. 21.62 (N)
INV. EL. 22.55 (E)
INV. EL. 21.52 (W)

6" P.W., P.V.C., S.J.

10' MIN

CUT-IN TO EXIST. 16" P.V.C. & CONNECT NEW 16" W.W., D.I.P., M.J. LINE

ABANDONED 16" P.V.C.

EXIST. 16" P.V.

24" FM., D.I.P. (EXIST)

M.H. #2 (SHALLOW)
RIM EL. 29.00
INV. EL. 24.90 (N)
INV. EL. 24.80 (W)

16'±

RICHARD D. MOORE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

NOTE:
ALL PIPE ≥ 30" DIA. IS P.C.C.P.

NEW YARD PIPING

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 , MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners & management consultants CDM

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Consulting Engineers
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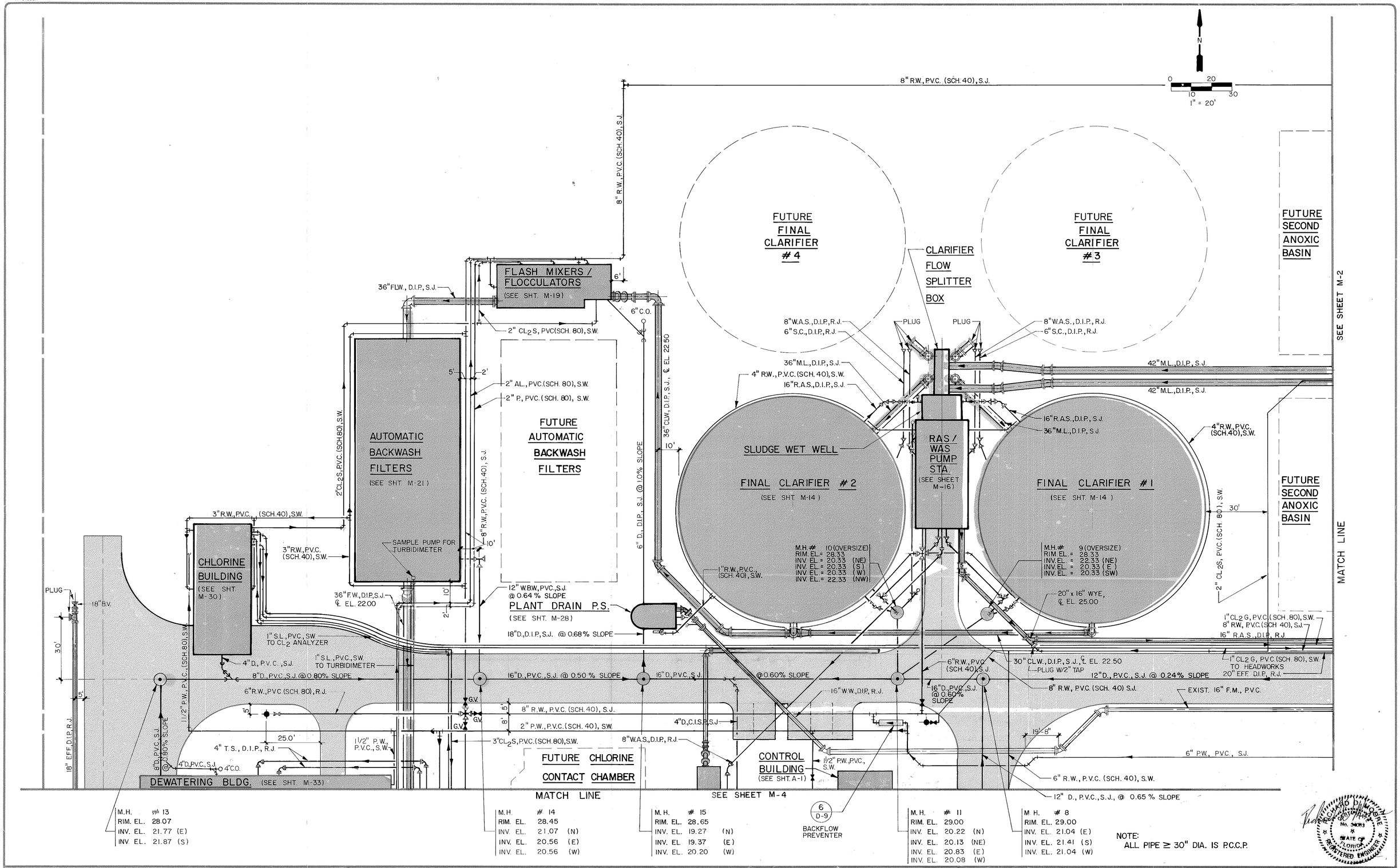
Bradenton, Florida 33529
(813) 794-5450

DESIGNED W.L.R. CHECKED W.L.R DATE MARCH, 1985 SCALE 1" = 20'
DRAWN P.V.R. FILE NO. 031-006-84 SHEET M-2 OF M-46

26-01

RECORD DRAWINGS 12/19/89

AF 31693A



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DESIGNED W.L.R. CHECKED W.L.R. DATE MARCH, 1985 SCALE 1" = 20'-0"
DRAWN J.T.W. FILE NO. 031-006-84 SHEET M-3 OF M-46

26-01 RECORD DRAWINGS 12/19/89

A.F. 31693A

N

0 20
10 30
1" = 20'

MATCH LINE

SEE SHEET M-3

M.H. #12
RIM EL. 27.70
INV. EL. 22.40 (N)
INV. EL. 23.40 (E)

DEWATERING BUILDING
(SEE SHEET M-33)

36" F.W., D.I.P., S.J.
℄ EL. 22.00

2" P.PVC (SCH. 80) TO FLASH MIXERS FLOCCULATORS

3" R.W., PVC., S.W.

4" R.W., PVC., S.W.

1" P.W., PVC., S.W.

4" R.W., PVC (SCH. 40), S.W.

3" CL2 P.V.C. (SCH. 80, THD.

12" R.W., P.V.C., (SCH. 40), S.J.

FUTURE CHLORINE CONTACT CHAMBER

1" S.L., PVC. (SCH. 80) S.W. TO CL2 RESIDUAL ANALYZER

4" D., C.I.S.P., S.J.

4" C.O.

CONTROL BUILDING
(SEE SHT. A-1)

4" PV.

1" S.L., PVC (SCH. 80), S.W.

12" R.W., P.V.C. (SCH. 40), S.J.

CONNECT NEW 12" R.W. LINE TO EXIST. VALVE

24" EFF. D.I.P. R.J.

DISTRIBUTION METERING FACILITY
(SEE SHT. D-10)

GV.

EXIST. 36" OVERFLOW LINE

EXIST. HEADWALL

PVC. S.J. @ 0.65 % SLOPE

6" R.W., P.V.C. (SCH. 40), S.W.

6" R.W., P.V.C. (SCH. 40), S.W.

1" P.W., P.V.C. (SCH. 40), S.W. (CONNECT TO EXIST. SERVICE)

36" R.J., 22 1/2° BEND

CONNECT NEW CHLORINE LINE

REMOVE PLUG & CONNECT NEW 36" F.W., D.I.P., S.J.

EXISTING CHLORINE CONTACT CHAMBER
(SEE SHT. M-44)

PLUG

ROTATE 36" TEE DOWN 22 1/2°

8 M-42

EXISTING BLOWER BUILDING
CONNECT TO EXIST. SAN. SERVICE

C.O.

EXIST. CL2 LINE (ABANDONED)

EXIST. 6" WELL

CONNECT NEW 6" R.W. LINE TO EXIST. VALVE

PARKING

12' x 8' CONC. PAD FOR DUMPSTER (6" THK. W/ 6" x 6" x 10/10 W.W.M. T.& B.

M.H. # 7
RIM EL. 29.00
INV. EL. 22.16 (N)
INV. EL. 22.26 (SW)

EXIST POND

6" R.W., P.V.C. (SCH. 40), S.W. CONNECT 1" S.L., P.V.C. S.W. TO EXIST. CORP. COCK

2" P. P.V.C. (SCH. 80), S.W.

4" D., P.V.C., S.J. @ 1.0 %

PIT DETAIL (TYP) A M-4

EXISTING REUSE WATER PUMP STATION

12" D., P.V.C., S.J. @ 0.65 % SLOPE

18" R.J., 22 1/2° BEND

18" EFF. D.I.P. R.J.

8" W.A.S., D.I.P., R.J.

EXIST FILTER EFFLUENT LINE (ABANDONED)

ELECTRICAL BUILDING
(SEE SHEET M-37)

4" D., P.V.C., S.J.

MONITORING WELL (TYP)

UNDERGROUND FUEL STORAGE TANK

18" EFF. D.I.P. R.J.

4" T.S., D.I.P., R.J.

EXISTING FILTERS

4" C.O.

1" R.W., PVC., (SCH. 40), S.W.

6" R.W., P.V.C. (SCH. 40), S.J.

6" R.W., P.V.C. (SCH. 80), R.J.

M.H. # 6
RIM EL. 27.75
INV. EL. 23.90 (N.E.)
INV. EL. 24.00 (S)
INV. EL. 24.00 (N.W.)

SEE SHEET M-40 FOR YARD PIPING IN THIS AREA

EXIST. 24" AIR. STL.

6" R.W., P.V.C. (SCH. 40), S.J.

D.A.F. THICKENER
(SEE SHEET M-40)

D.A.F. THICKENER
(SEE SHEET M-40)

6" R.W., P.V.C., (SCH. 40), S.J.

MATCH LINE

SEE SHEET M-5

2'-6" SQ. ALUM. HATCH

HINGED SIDE

NON-SHRINK GROUT (TYP.)

5'-0" DIA. PRECAST CONC. MANHOLE W/MONOLITHIC BASE

#5

#4

12" RUBBER FLAPPER CHECK VALVES (TYP. 2 PLCS.)

4'-0"

6" (TYP)

12"

#5 @ 8"

PRECAST CONSTRUCTION: 12" MIN. CRUSHED STONE OR SHELL FOR LEVELING/ STABILIZATION (TYP)

CONC. BASE SUPPORT

DETAIL A
N.T.S.

✱ NOTE:
ALL PIPE ≥ 30" DIA. IS P.C.C.P.

REGISTERED ENGINEER
No. 34083
STATE OF FLORIDA

NEW YARD PIPING

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DRAWN S.A.F. FILE NO. 031-006-84 SHEET M-4 OF M-46

26-01

RECORD DRAWINGS 12/19/89

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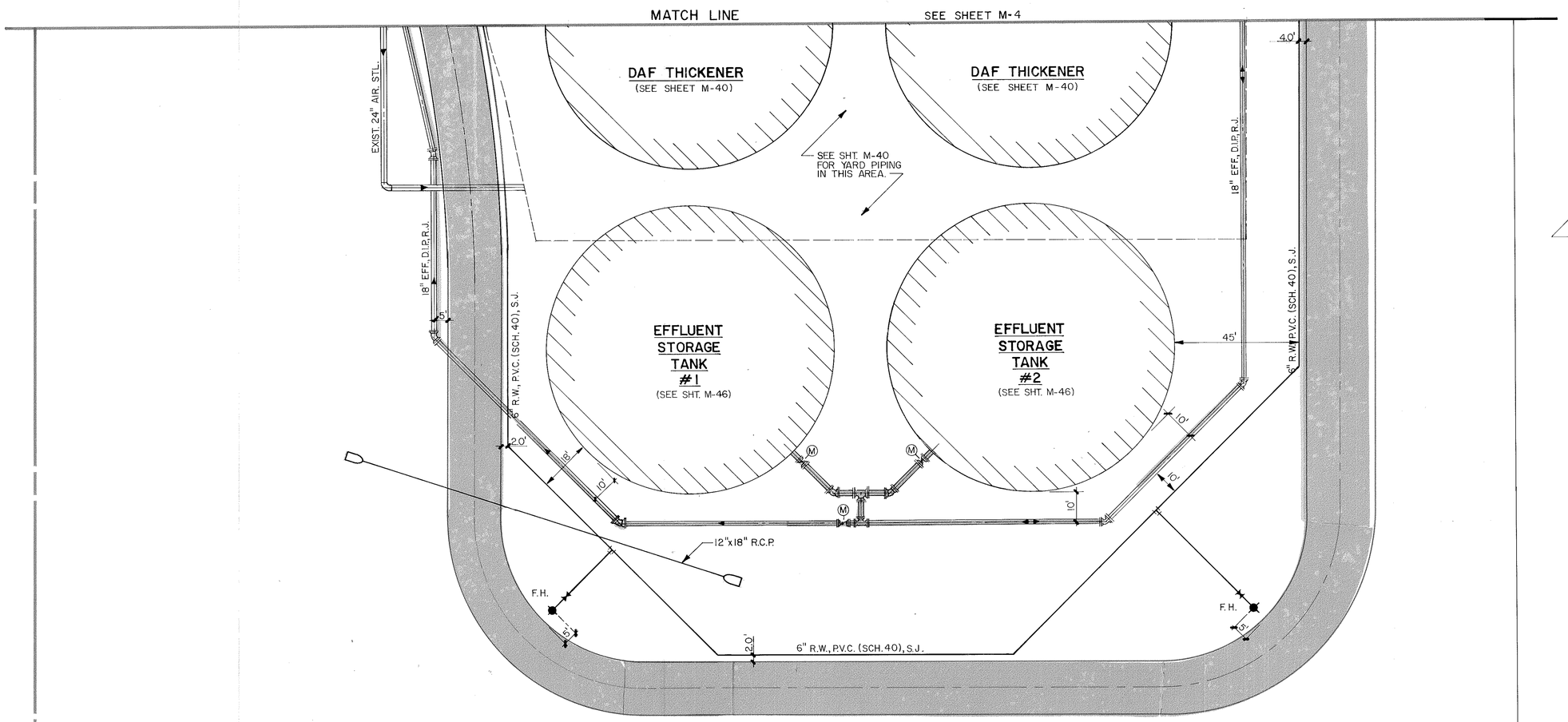

NEW YARD PIPING

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DRAWN J.T.W. FILE NO. 031-006-84 SHEET M-5 OF M-46

RICHARD P. [illegible]
No. 34083
STATE OF FLORIDA
REGISTERED ENGINEER

2601

RECORD DRAWINGS 12/19/89

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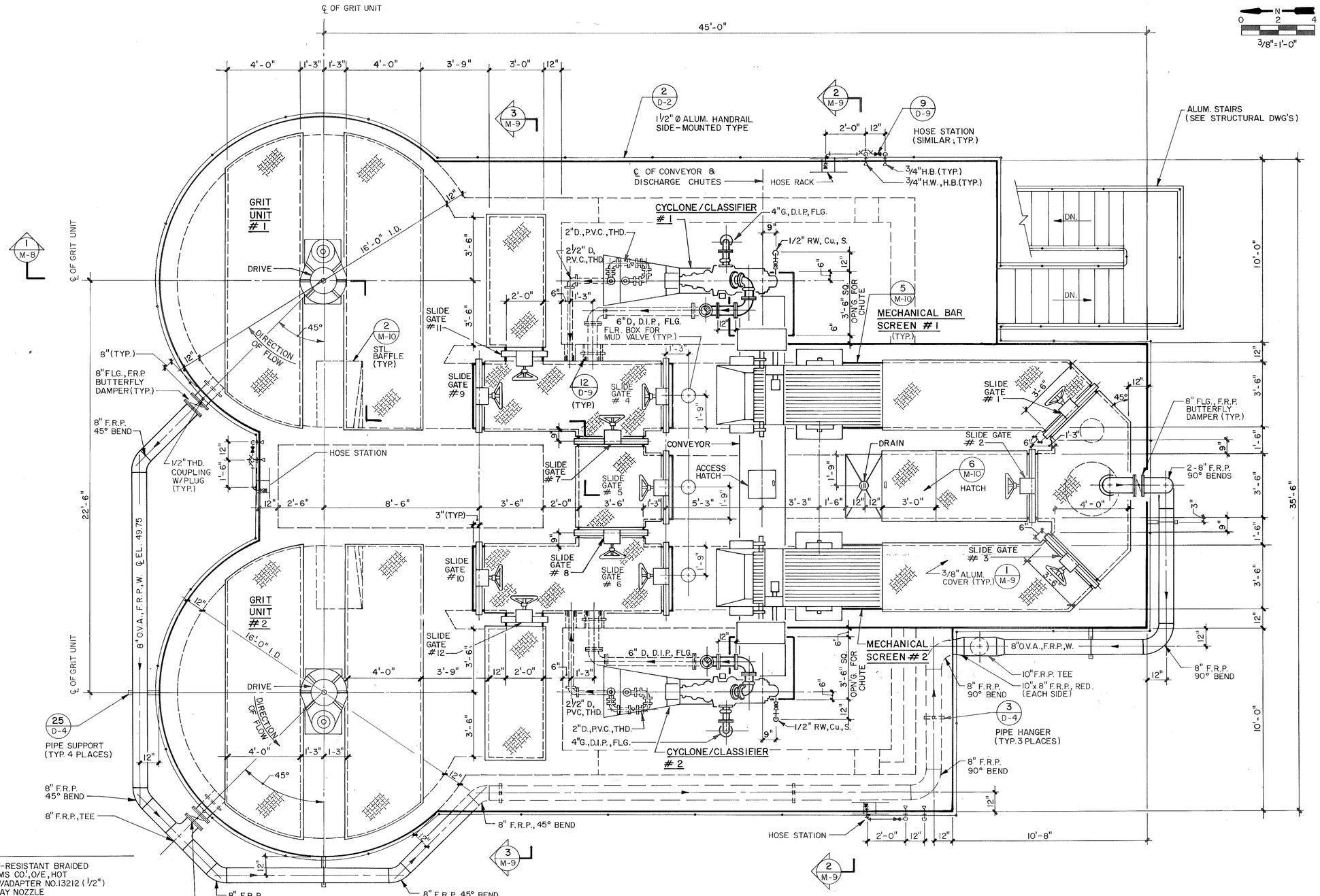

NOTES

1. PROVIDE 25' OF 3/4" HEAT-RESISTANT BRAIDED HOSE & 'SPRAYING SYSTEMS CO', O/E, HOT SPRAY GUN, MODEL 47L, W/ADAPTER NO. 13212 (1/2") AND 'UNIJET' 15° FLAT SPRAY NOZZLE (TYP. ALL HOSE STATIONS WITHIN HEADWORKS)
2. COVERS & CHUTES SHALL BE PROVIDED FOR MECHANICAL SCREENS, CONVEYOR & CYCLONE/CLASSIFIERS. COVERS SHALL BE PROVIDED FOR SLIDE GATES, GRIT CHAMBERS AND CHANNELS. ALL COVERS, CHUTES & ASSOCIATED ACCESS HATCHES SHALL BE AIR TIGHT.
3. 'AMERON', O/E, WHITE T-LOCK LINER SHALL BE APPLIED TO ALL INTERIOR CONCRETE SURFACES OF CHANNELS & GRIT CHAMBERS AS A CONTINUOUS GAS IMPERVIOUS MEMBRANE. SEE SHEET D-5 FOR DETAILS.
4. ALL WALL PENETRATIONS ABOVE GRADE SHALL BE 'LINK SEAL', O/E, (EXCEPT AS NOTED). SEE DETAIL 12, SHEET D-9

RICHARD B. LARSON — REGISTERED ENGINEER — No. 34083 — STATE OF FLORIDA

HEADWORKS - TOP PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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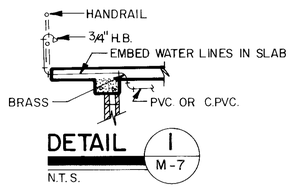
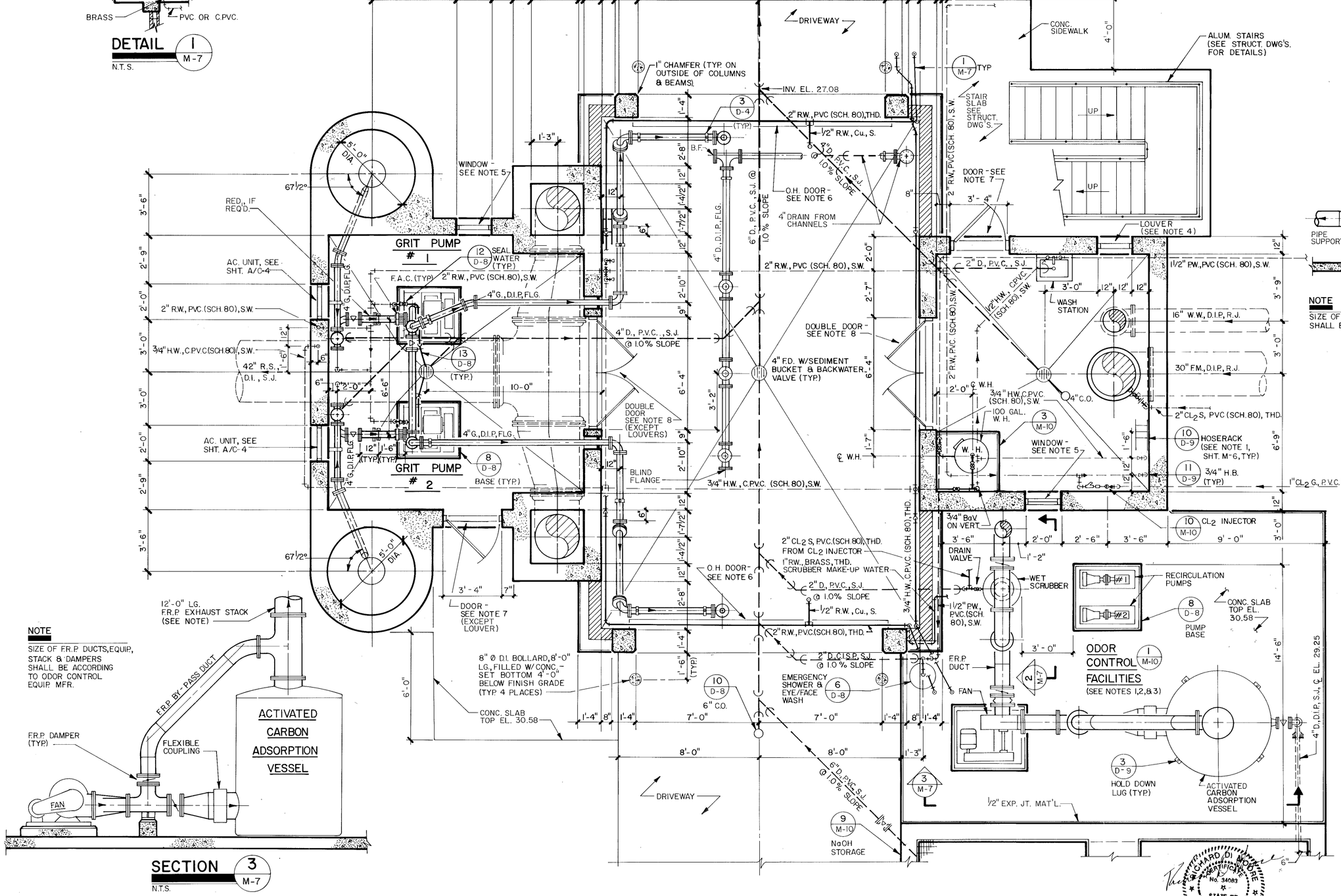


DETAIL 1 / M-7

N.T.S.

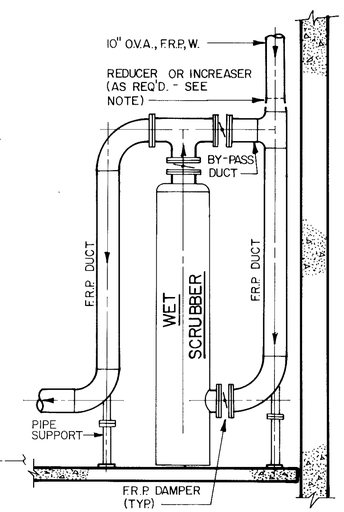


NOTE

SIZE OF F.R.P DUCTS, EQUIP, STACK & DAMPERS SHALL BE ACCORDING TO ODOR CONTROL EQUIP MFR.

SECTION 3 / M-7

N.T.S.



NOTE

SIZE OF F.R.P DUCT FROM THIS POINT ON SHALL BE ACCORDING TO ODOR CONTROL EQUIP

SECTION 2 / M-7

N.T.S.

NOTES

1. ODOR CONTROL EQUIP. MFR. SHALL PROVIDE ALL EQUIP., PIPING, VALVES AND APPURTENANCES FOR PROPER INSTALLATION, OPERATION AND MAINTENANCE OF ODOR CONTROL SYSTEM.
2. ALL SODIUM HYDROXIDE (NaOH) PIPING FOR ODOR CONTROL SYSTEM SHALL BE 2" F.R.P.
3. CONTRACTOR SHALL PROVIDE ALL NECESSARY PIPE SUPPORTS (SEE PIPE SUPPORT DETAIL SHEET).
4. 2'-0" W x 6'-0" H DARK BRONZE ANODIZED ALUM. FIXED BLADE LOUVER - SEE SPECS.
5. 2'-0" W x 6'-0" H DARK BRONZE ANODIZED ALUM. FIXED SASH SERIES 350 BY KAWNEER O/E.
6. 14'-0" W x 14'-0" H DARK BRONZE ANODIZED ALUM. MOTOR OPERATED OVERHEAD DOOR - SEE SPECS. & SECTION #3 ON SHEET A-3.
7. 3'-4" W x 7'-0" H DARK BRONZE ANODIZED ALUM. FRAME W/ 3'-0" x 6'-10" FLUSH ALUM. DOOR, 24" x 30" VIEW, 18" x 24" FIXED BLADE LOUVER, S.S. HARDWARE & KICKLATES BOTH SIDES. SEE SPECS & TYPICAL DOOR SCHEDULE ON SHEET A-8.
8. 6'-4" W x 7'-0" H DARK BRONZE ANODIZED ALUM. FRAME W/ TWO 3'-0" W x 6'-10" H FLUSH ALUM. DOORS W/ LOCKING CENTER STILE, 24" x 30" VIEW, 18" x 24" FIXED BLADE LOUVER, S.S. HARDWARE & KICKPLATES BOTH SIDES. SEE SPECS & TYPICAL DOOR SCHEDULE ON SHEET A-8.

RICHARD D. MOORE CERTIFICATE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

HEADWORKS - SECTIONAL PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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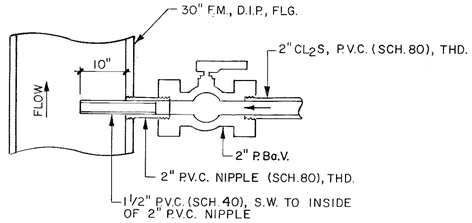
26-01

RECORD DRAWINGS 12/19/89

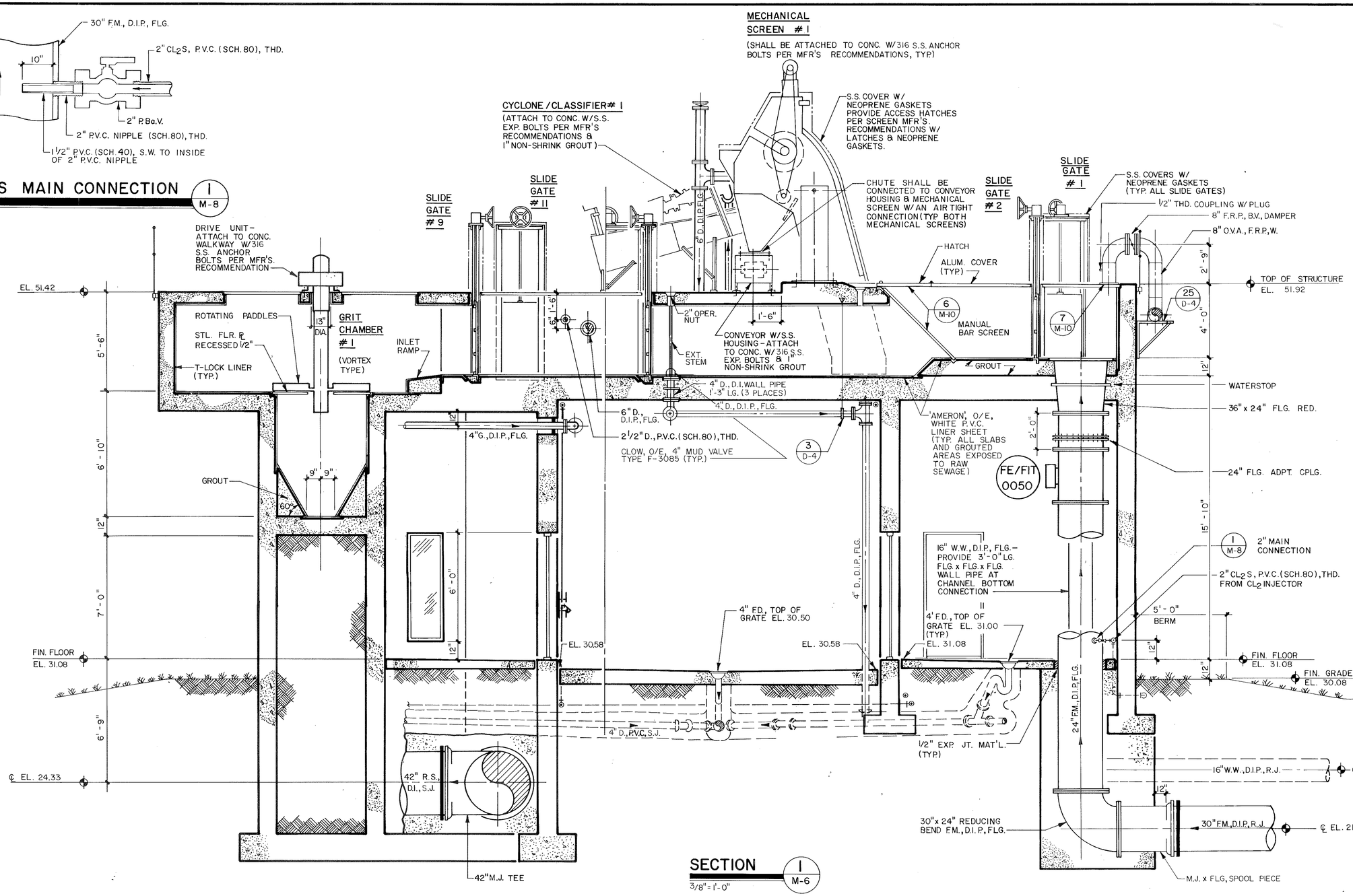
4.F. 31693A



2" CL_2S MAIN CONNECTION

I / M-8

N.T.S.



SECTION

I / M-6

3/8" = 1'-0"

RICHARD P. MOORE — No. 34082 — STATE OF FLORIDA — REGISTERED ENGINEER

HEADWORKS - SECTIONS

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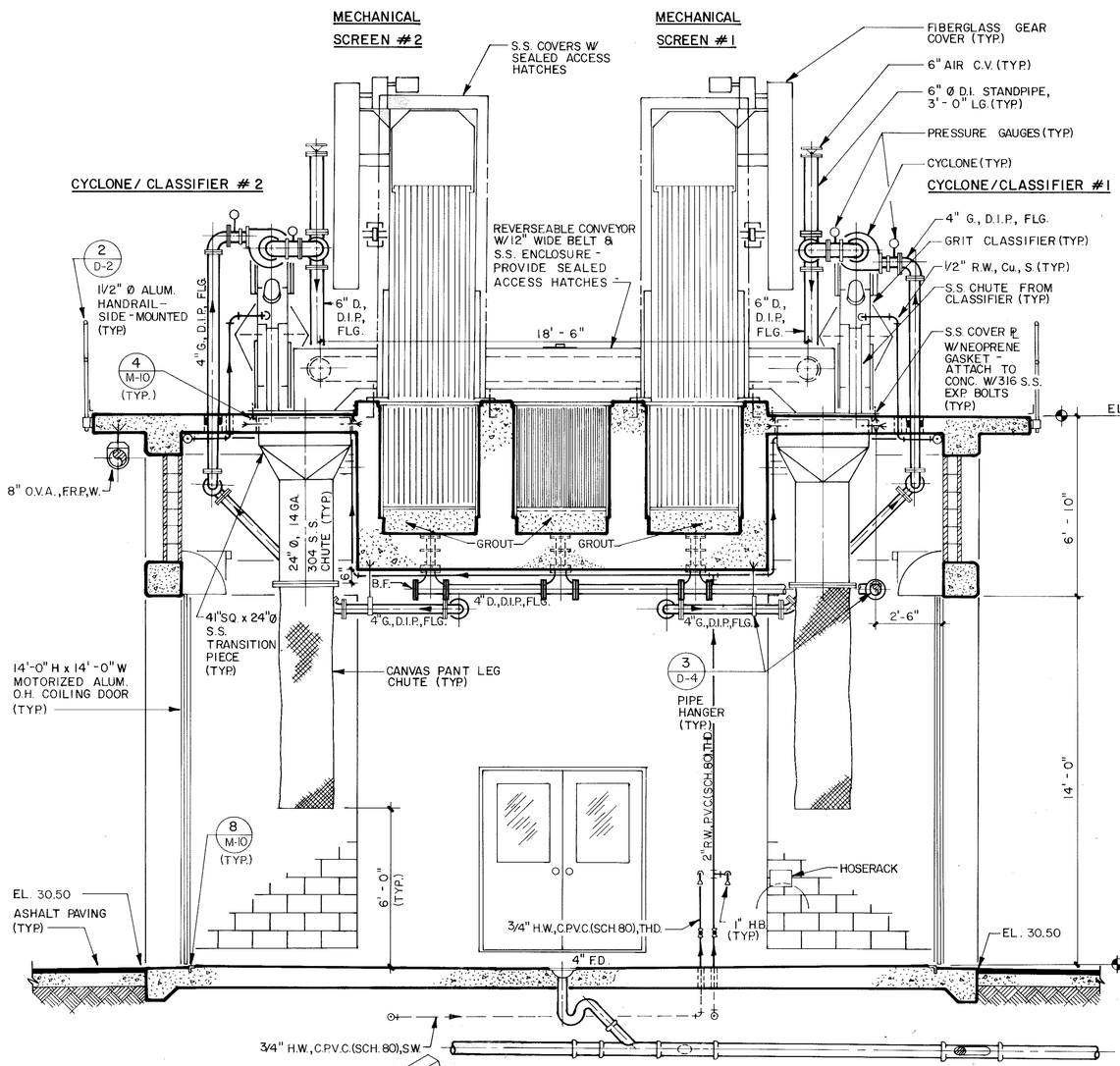
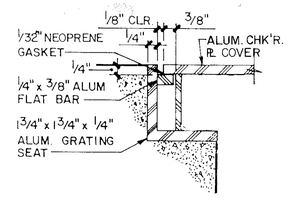
DRAWN J.T.W. FILE NO. 031-006-84 SHEET M-8 OF M-46

26-01

RECORD DRAWINGS 12/19/89

AF J1693A

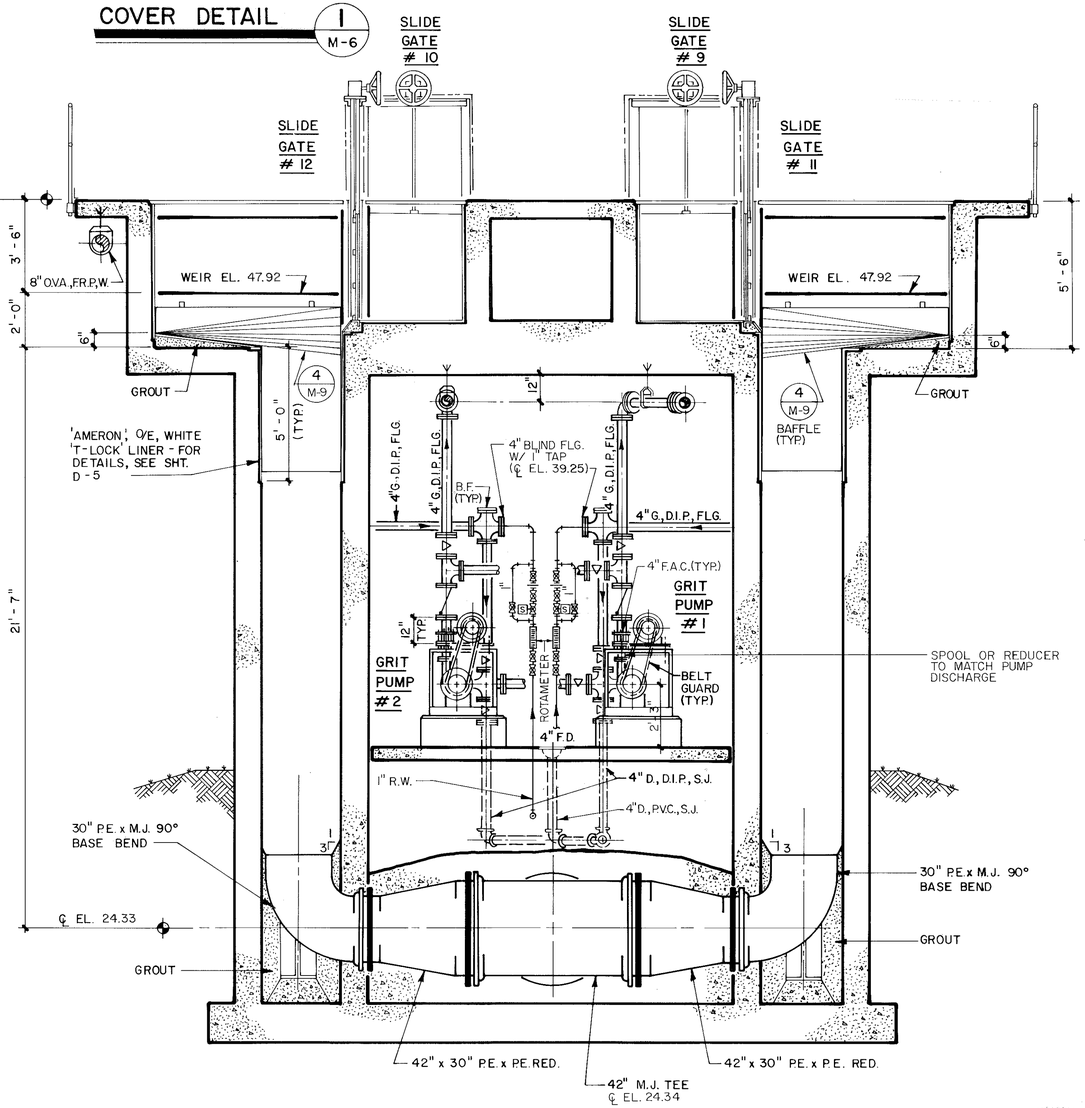




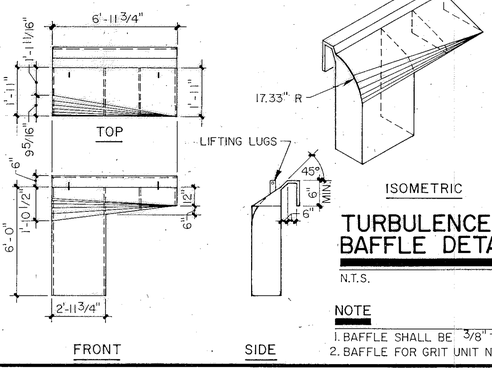
NOTES

1. ALUMINUM COVER DIMENSIONS AND SHAPES WILL VARY ACCORDING TO APPLICATION BUT UNIT WEIGHT SHALL NOT EXCEED 60 lbs..
2. COVERS SHALL BE OF WELDED CONSTRUCTION ACCORDINGS TO AMERICAN WELDING SOCIETY STANDARDS.
3. DEFLECTION OF COVER SHALL NOT EXCEED 1/360 OF IT'S SPAN.
4. PROVIDE A HANDLE FOR EACH COVER - TOP OF HANDLE SHALL BE LEVEL WITH TOP OF CHECKER PLATE.

COVER DETAIL 1 / M-6



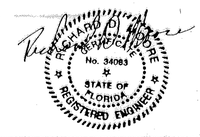
SECTION 3 / M-6
3/8" = 1'-0"



TURBULENCE CONTROL BAFFLE DETAIL 4 / M-9
N.T.S.

NOTE
1. BAFFLE SHALL BE 3/8" THK. FIBERGLASS
2. BAFFLE FOR GRIT UNIT NO. 2 IS A MIRROR-IMAGE

SECTION 2 / M-6
3/8"=1'-0"



HEADWORKS - SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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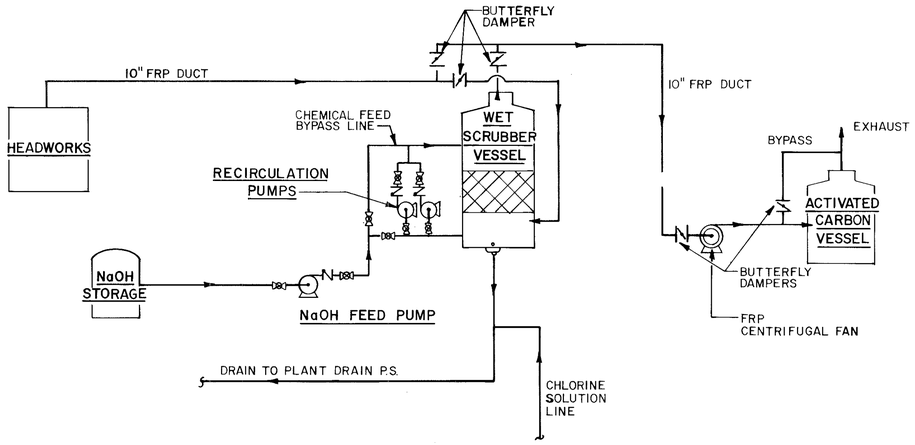
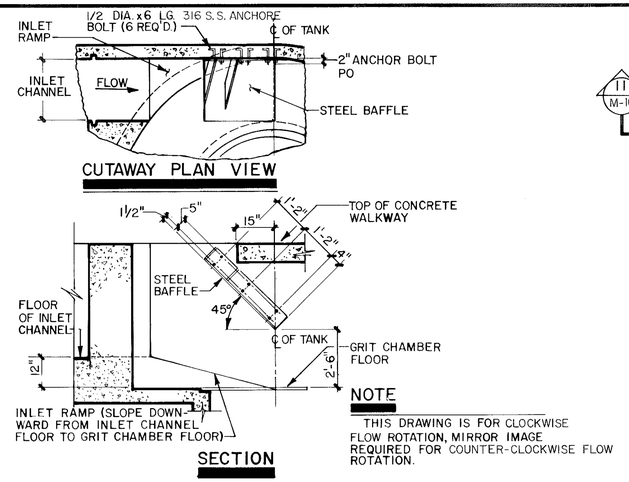


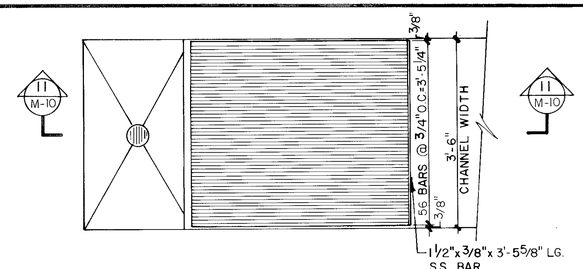
ODOR CONTROL SYSTEM SCHEMATIC 1 M-7



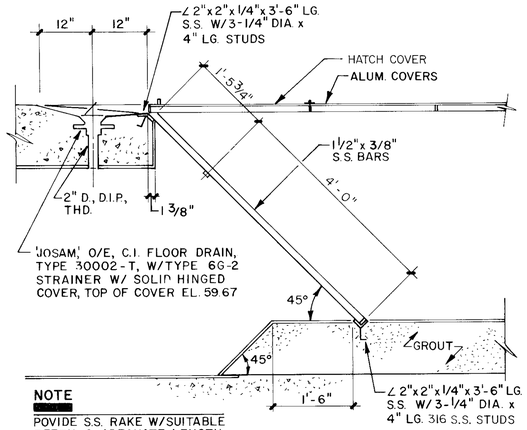
NOTE
THIS DRAWING IS FOR CLOCKWISE FLOW ROTATION, MIRROR IMAGE REQUIRED FOR COUNTER-CLOCKWISE FLOW ROTATION.

STEEL BAFFLE DETAIL 2 M-6

N.T.S.



PLAN

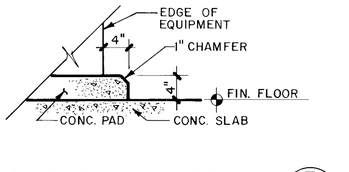


NOTE
POVIDE S.S. RAKE W/SUITABLE TEETH & ADEQUATE LENGTH.

SECTION 11 M-10

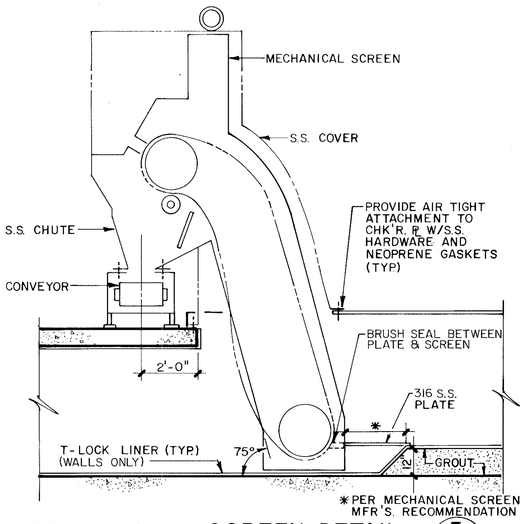
MANUAL BAR SCREEN DETAIL 6 M-8

3/4" = 1'-0"



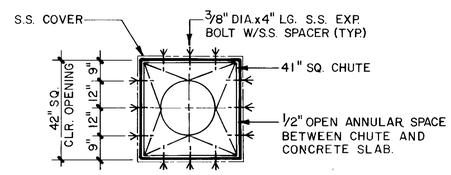
EQUIPMENT PAD DETAIL 3 VAR

N.T.S.



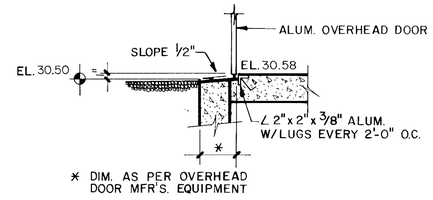
MECHANICAL SCREEN DETAIL 5 M-6

N.T.S.



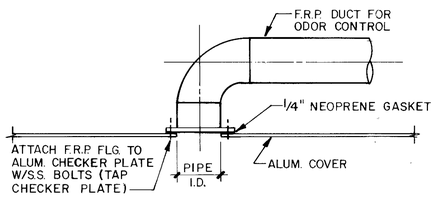
CHUTE DETAIL 4 M-9

3/8" = 1'-0"



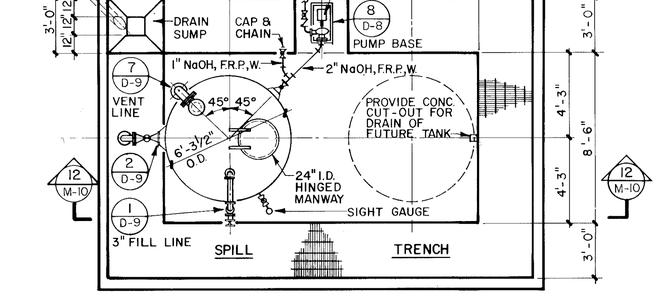
DETAIL 8 M-9

N.T.S.

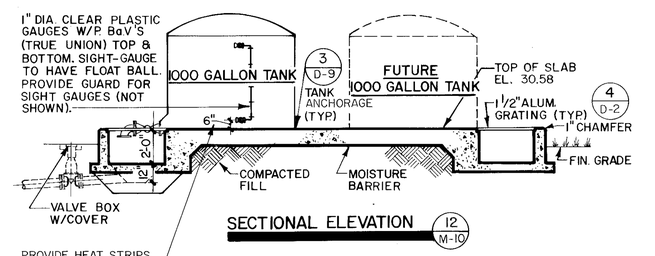


DETAIL 7 M-8

N.T.S.



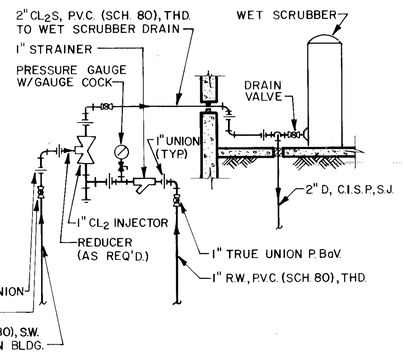
PLAN



SECTIONAL ELEVATION 12 M-10

NaOH STORAGE 9 M-7

N.T.S.



CL2 INJECTOR SCHEMATIC 10 M-7

N.T.S.

TW

RICHARD D. LARSON No. 34983 STATE OF FLORIDA REGISTERED ENGINEER

HEADWORKS - DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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RECORD DRAWINGS 12/19/89

A.P. 31693A

2"R.W.,PVC.(SCH.40),S.W. - FOR CONTINUATION SEE SHT. M-2

SIDEWALK

2" R.W., BRASS, THD.

DIRECTION OF ROTATION

MIXER #4

ALUM. STAIR # 3 (ALUM. STAIR # 1 ON ANOXIC/AEROBIC TANK # 1)

N

0 4 8
2 6 10'
3/32 = 1'-0"

2 D-2

1½" ALUM. HANDRAIL SIDE-MOUNT TYPE (TYP.)

AERATOR # 5

9 D-9

HOSE STATION (TYP 9 PLACES EACH TANK)

36"x 36" SLUICE GATE # 4 W/FLG. x FLG. x FLG. RND. WALL THIMBLE & B.F. ℄ EL. 32.42 (TYP)

36"x 36" SLUICE GATE # 3 W/ FLG. x FLG. x FLG. RND. WALL THIMBLE

1 M-12

FLOW

159'-3"

15'-0"

14'-1"

5'-11"

26'-4"

11'-0"

45°

3'-0"

2'-0"

1'-2"

18'-6"

5'-0"

5'-0"

6'-0"

2'-0"

24" FLG. x FLARE L.R. 90° BEND

4'-0"

4'-9" x 4'-9" PORT BELOW

8'-9"

2'-3"

2" R.W., BRASS, THD.

2"BRASS RISER (TYP. ALL R.W. RISERS)

24" R.M.L., D.I.P., R.J.

2" R.W., P.V.C. (SCH. 40), S.W.

4" R.W., P.V.C. (SCH. 40), S.W

42" R.S., D.I.P., S.J.

36" R.S., D.I.P., S.J.

7'

4'-0"

5'-6"

63'-0"

26'-0"

5'-11"

6'-0"

8'-1"

FUT. AERATOR # 6

CHK'R. R. COVER

LIFE RINGS - TYP AS SHOWN, 9 PER TANK

CONC. BLK. TURNING VANE BELOW

2" R.W., BRASS, THD.

AEROBIC BASIN # 2

ANOXIC BASIN # 2

DRAIN TRENCH

STILLING WELL

AERATOR # 4

MIXER # 3

15'-0" LG. WEIR-TYPE SLIDE GATE # 2 W/ TWO INTERCONNECTED OPERATORS AND A LEVEL INDICATOR (TYP.)

3'-0"

4'-0"

1'-4"

15'-0" EFFLUENT WEIR

FLOOR STAND FOR 30" P.V. ON 30" R.M.L. LINE.

5'-0"

ALUM. STAIR # 4

ALUM. STAIR # 6

PLATFORM

42" M.L., D.I.P., S.J.

4" R.W., P.V.C. (SCH. 40), S.W.

12" D., D.I.P., S.J. @ 0.24% SLOPE

FLOOR BOX FOR 8" P.V. ON 8" DRAIN LINE

R.M.L. PUMPS (SEE SHT. M-13)

CONC. SLAB

10'-0"

48" M.L., D.I.P.

ALUM. STAIR # 5

4 D-2

MOTORIZED WEIR TYPE SLIDE GATE

1½" ALUM. #1 GRATING

ALUM. STAIR # 2

AERATOR # 1

MIXER #1

STILLING WELL

AEROBIC BASIN # 1

ANOXIC BASIN # 1

36"x36" SLUICE GATE # 1

36"x 36" SLUICE GATE # 2

FUT. AERATOR # 3

℄ ANOXIC/AEROBIC TANK #1

NOTES

1. ANOXIC/AEROBIC TANK # 1 IS MIRROR-IMAGE OF ANOXIC/AEROBIC TANK # 2, EXCEPT FOR THE 48" INTERCONNECTING M.L. LINE.
2. ATTACH R.W. LINES TO CONC. W/S.S. PIPE STRAPS & EXP. BOLTS, @ 8'-0" O.C. MAX.

Richard D. Woerner No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

ANOXIC/AEROBIC TANK - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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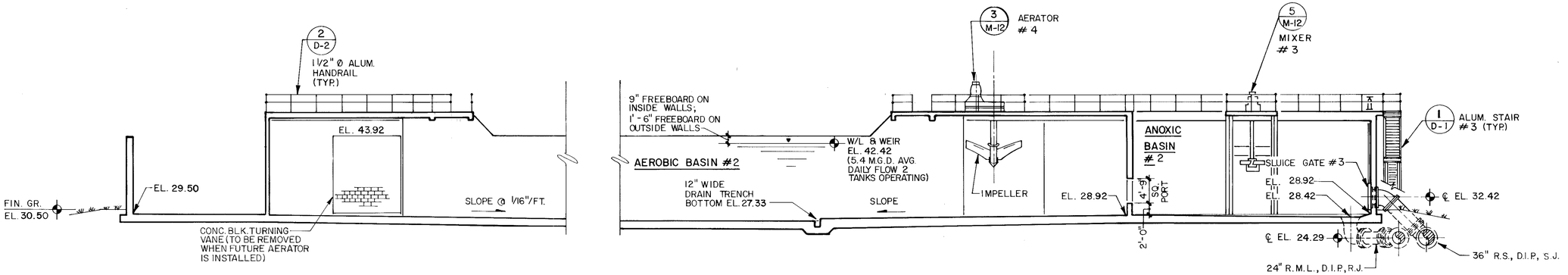
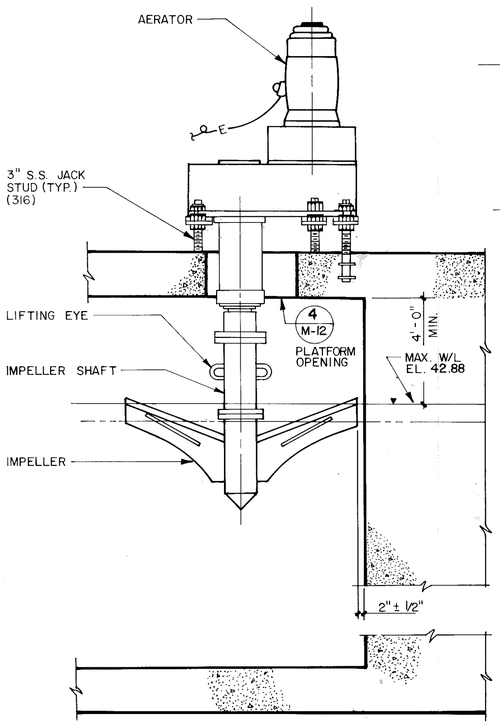
RECORD DRAWINGS 12/19/89

AF 31693A

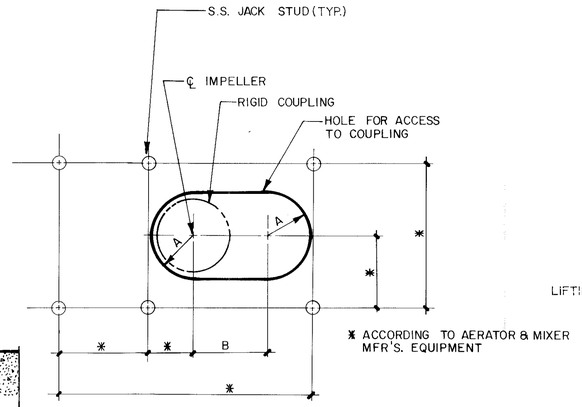


SECTION 1 / M-11
3/32" = 1'-0"



NOTE
TYPICAL FOR ALL AERATORS - SEE PLAN VIEW FOR DIRECTION OF ROTATION

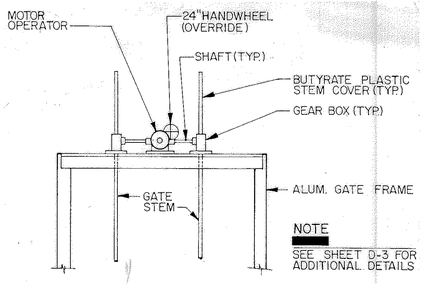
AERATOR DETAIL 3 / M-12
N.T.S.



NOTE
PLATFORM CLEARANCE REQUIREMENT FOR COUPLING

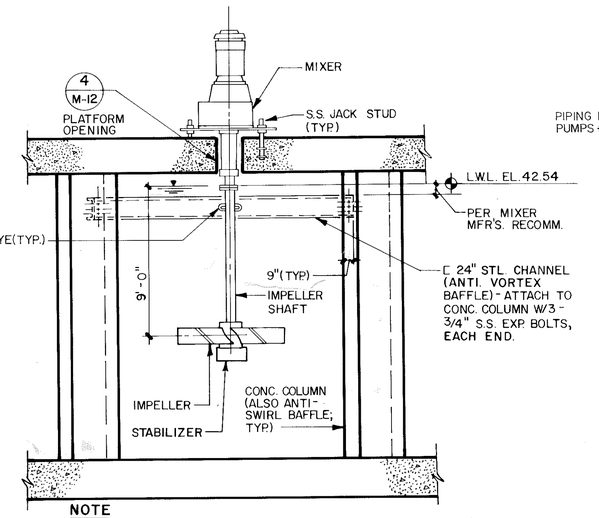
EQUIPMENT	A	B
AERATORS	12"	12"
MIXERS	10"	10"

OPENING DETAIL 4 / M-12
N.T.S.



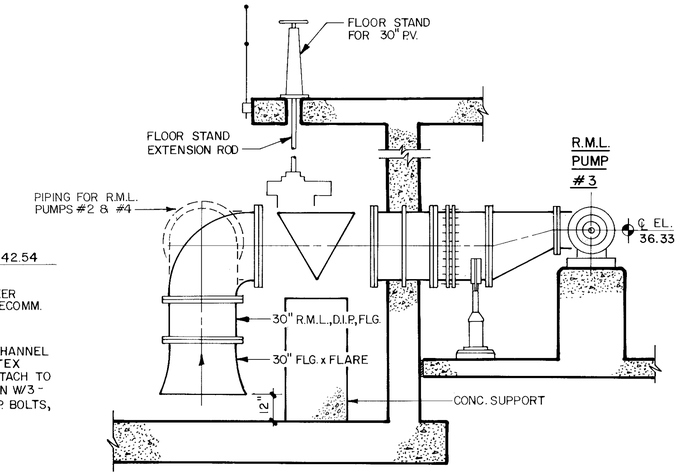
NOTE
SEE SHEET D-3 FOR ADDITIONAL DETAILS

WEIR GATE DETAIL 7 / M-1
N.T.S.



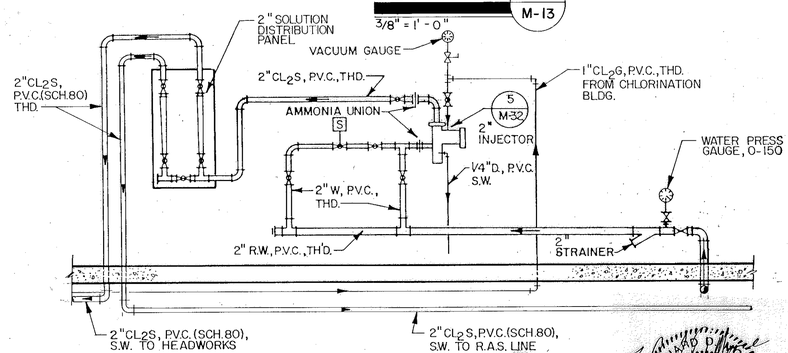
NOTE
TYPICAL FOR ALL MIXERS - SEE PLAN VIEW FOR DIRECTION OF ROTATION.

MIXER DETAIL 5 / M-12
N.T.S.



NOTE
SECTION IS TYPICAL FOR R.M.L. PUMPS # 1, 2, 3 & 4, EXCEPT FOR SUCTION PIPING BEFORE 30" P.V. & AFTER 30" FLG. x FLARE - SEE PLAN FOR ADDITIONAL INFORMATION.

SECTION 2 / M-13
3/8" = 1'-0"



CL2 DETAIL 6 / M-13
N.T.S.

Thomas P. Moore, Richard P. Moore, Certificate No. 34083, State of Florida, Registered Engineer

ANOXIC / AEROBICS TANKS - SECTION & DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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T13

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RECORD DRAWINGS 12/19/89

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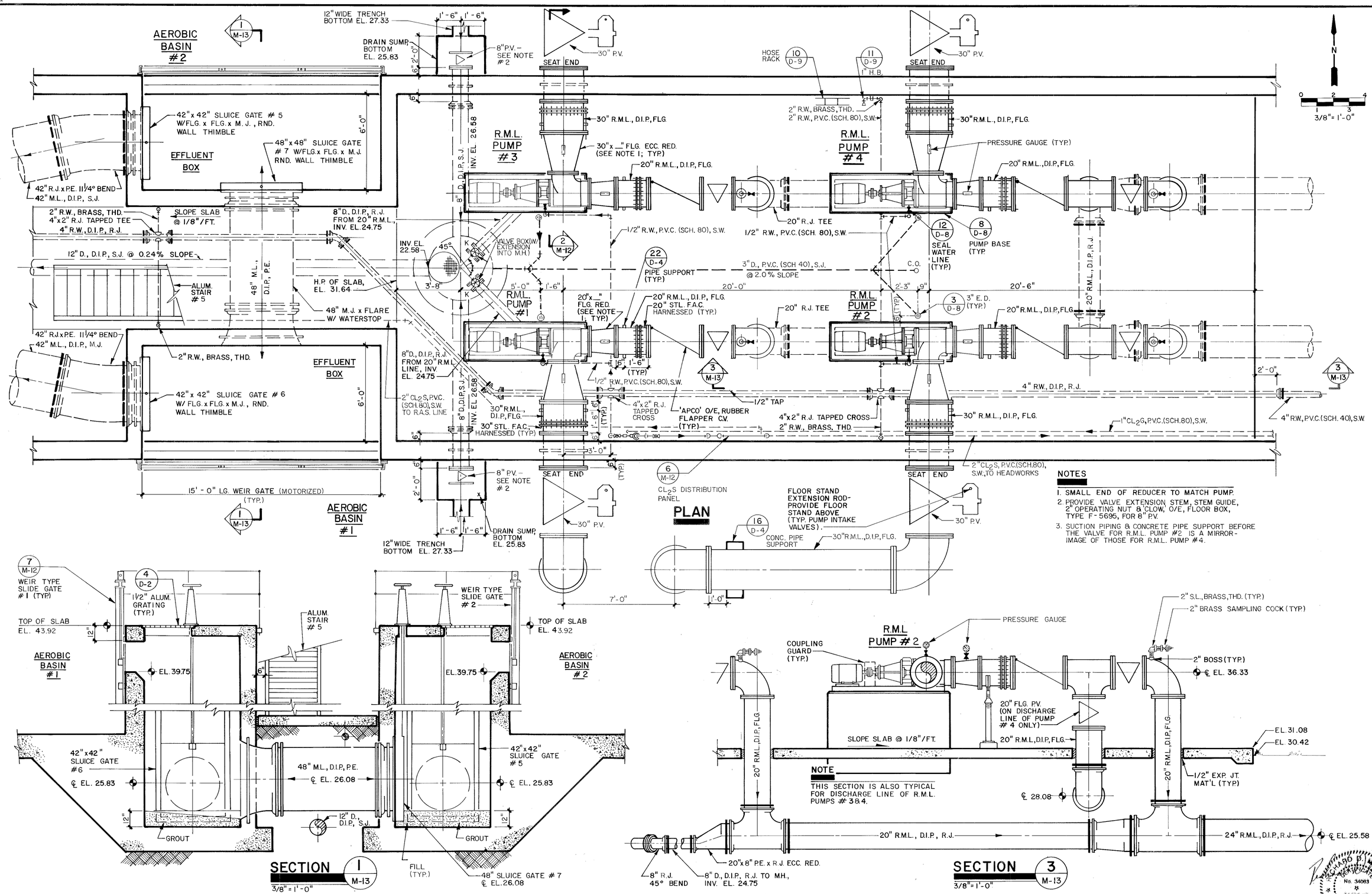

PLAN

SECTION 1 / M-13

3/8" = 1'-0"

NOTE

THIS SECTION IS ALSO TYPICAL FOR DISCHARGE LINE OF R.M.L. PUMPS # 3 & 4.

SECTION 3 / M-13

3/8" = 1'-0"

NOTES

1. SMALL END OF REDUCER TO MATCH PUMP.
2. PROVIDE VALVE EXTENSION STEM, STEM GUIDE, 2" OPERATING NUT & 'CLOW, O/E, FLOOR BOX, TYPE F-5695, FOR 8" P.V.
3. SUCTION PIPING & CONCRETE PIPE SUPPORT BEFORE THE VALVE FOR R.M.L. PUMP #2 IS A MIRROR-IMAGE OF THOSE FOR R.M.L. PUMP #4.

ANOXIC / AEROBIC TANKS - EFFLUENT BOX & R.M.L. PUMPS

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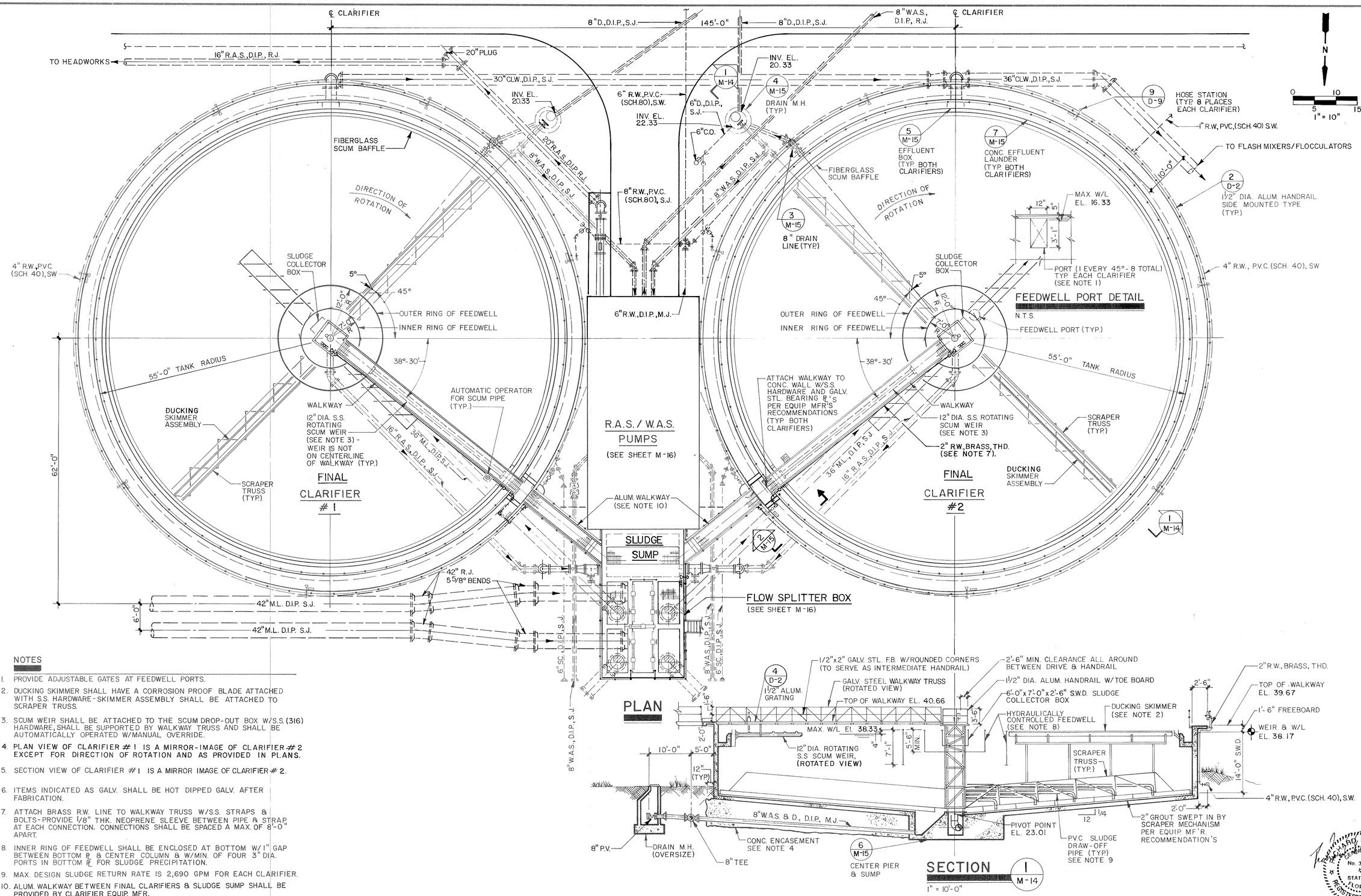

NOTES

1. PROVIDE ADJUSTABLE GATES AT FEEDWELL PORTS.
2. DUCKING SKIMMER SHALL HAVE A CORROSION PROOF BLADE ATTACHED WITH S.S. HARDWARE - SKIMMER ASSEMBLY SHALL BE ATTACHED TO SCRAPER TRUSS.
3. SCUM WEIR SHALL BE ATTACHED TO THE SCUM DROP-OUT BOX W/S.S. (316) HARDWARE, SHALL BE SUPPORTED BY WALKWAY TRUSS AND SHALL BE AUTOMATICALLY OPERATED W/MANUAL OVERRIDE.
4. PLAN VIEW OF CLARIFIER #1 IS A MIRROR-IMAGE OF CLARIFIER #2 EXCEPT FOR DIRECTION OF ROTATION AND AS PROVIDED IN PLANS.
5. SECTION VIEW OF CLARIFIER #1 IS A MIRROR IMAGE OF CLARIFIER #2.
6. ITEMS INDICATED AS GALV. SHALL BE HOT DIPPED GALV. AFTER FABRICATION.
7. ATTACH BRASS R.W. LINE TO WALKWAY TRUSS W/S.S. STRAPS & BOLTS - PROVIDE 1/8" THK. NEOPRENE SLEEVE BETWEEN PIPE & STRAP AT EACH CONNECTION. CONNECTIONS SHALL BE SPACED A MAX. OF 8'-0" APART.
8. INNER RING OF FEEDWELL SHALL BE ENCLOSED AT BOTTOM W/1" GAP BETWEEN BOTTOM ℄ & CENTER COLUMN & W/MIN. OF FOUR 3" DIA. PORTS IN BOTTOM ℄ FOR SLUDGE PRECIPITATION.
9. MAX. DESIGN SLUDGE RETURN RATE IS 2,690 GPM FOR EACH CLARIFIER.
10. ALUM. WALKWAY BETWEEN FINAL CLARIFIERS & SLUDGE SUMP SHALL BE PROVIDED BY CLARIFIER EQUIP. MFR.

Richard D. Moore — No. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

FINAL CLARIFIERS - PLAN & SECTION

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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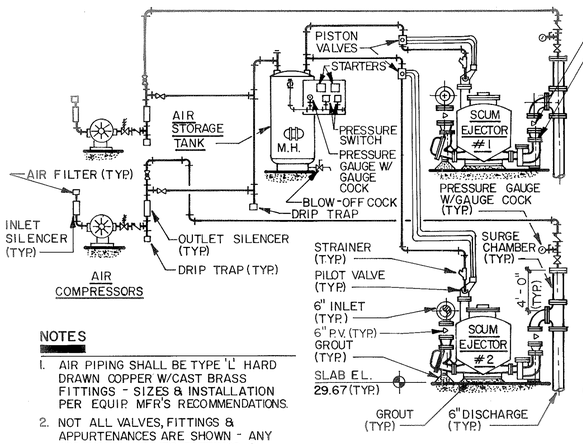
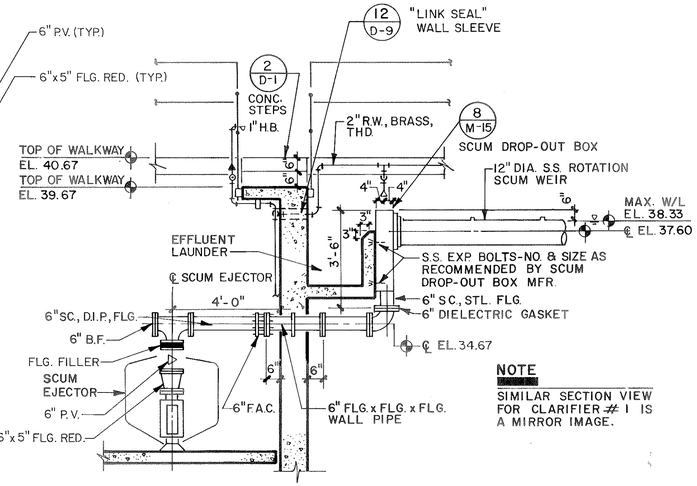


NOTES

1. AIR PIPING SHALL BE TYPE 'L' HARD DRAWN COPPER W/CAST BRASS FITTINGS - SIZES & INSTALLATION PER EQUIP. MFR'S RECOMMENDATIONS.
2. NOT ALL VALVES, FITTINGS & APPURTENANCES ARE SHOWN - ANY ADDITIONAL VALVES, FITTINGS & APPURTENANCES REQUIRED FOR PROPER EJECTOR OPERATION SHALL BE FURNISHED & INSTALLED AT NO EXTRA COST.
3. SUPPORT PIPING AS REQUIRED W/S.S. (316) HARDWARE.

SCUM EJECTOR SCHEMATIC — 1 / M-16

N.T.S.

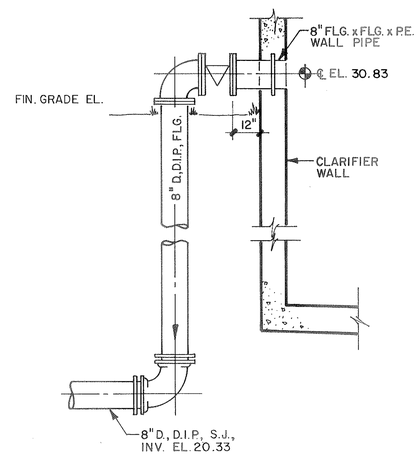


NOTE

SIMILAR SECTION VIEW FOR CLARIFIER # 1 IS A MIRROR IMAGE.

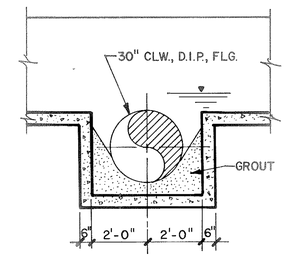
SECTION — 2 / M-14

3/8" = 1'-0"

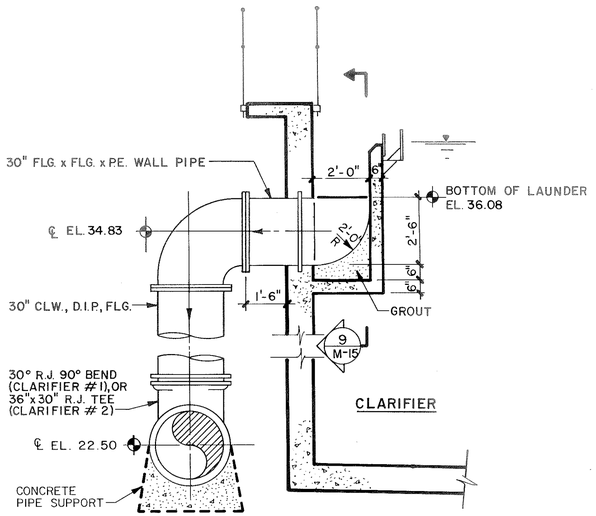


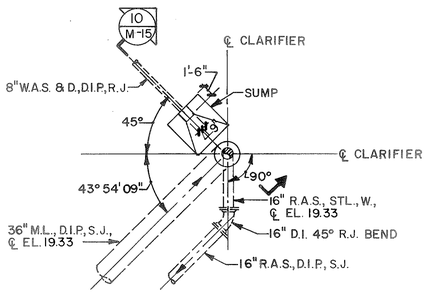
DRAIN DETAIL — 3 / M-14

N.T.S.

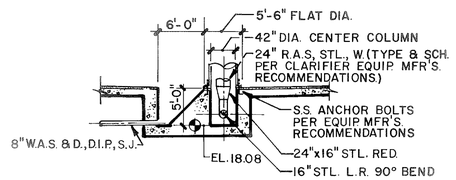


SECTION — 9 / M-15





PLAN



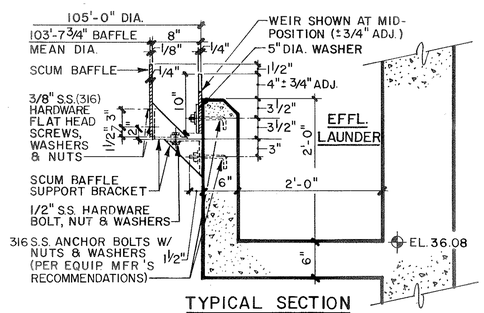
SECTION — 10 / M-15

NOTE

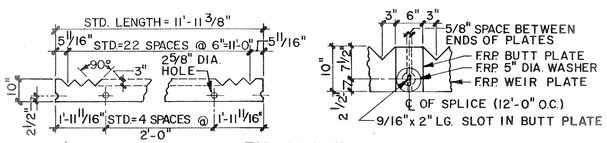
CENTER PIER & SUMP FOR CLARIFIER # 1 IS A MIRROR IMAGE.

CENTER PIER & SUMP DETAIL — 6 / M-14

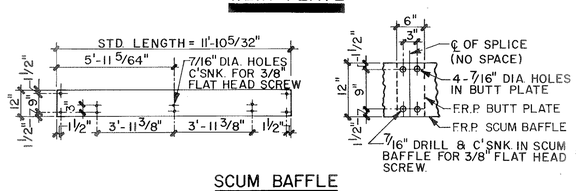
1" = 10'



TYPICAL SECTION



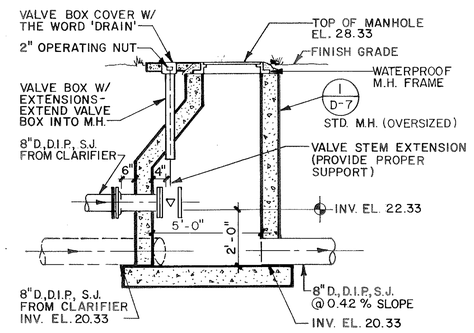
WEIR PLATE



SCUM BAFFLE

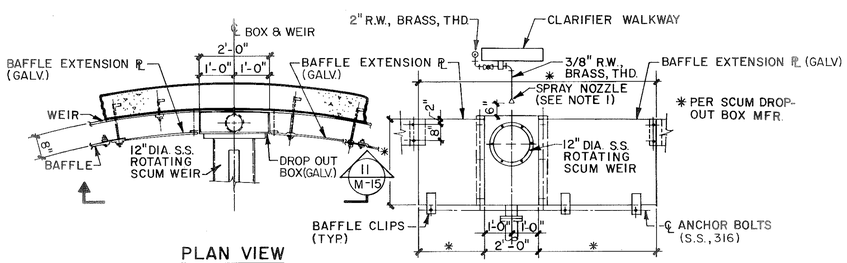
LAUNDER, WEIR & BAFFLE DETAIL — 7 / M-14

N.T.S.



CLARIFIER DRAIN M.H. DETAIL — 4 / M-14

N.T.S.



PLAN VIEW (DROP OUT BOX DETAIL)

SECTION — 11 / M-15 (DEVELOPED ELEVATION VIEW)

NOTES

1. SPRAY NOZZLE SHALL BE 'SPRAYING SYSTEMS CO', O/E, 'UNIJET' NOZZLE, MODEL 3/8 T9510 BRASS.

SCUM DROP-OUT BOX DETAIL — 8 / M-15

N.T.S.

FINAL CLARIFIERS - DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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RECORD DRAWINGS 12/19/89

CLARIFIER #2

6" SC., D.I.P, FLG. FROM CLARIFIER #2

6"P.V.

SCUM EJECTOR #2

CONC. SLAB

6" FLG. 90° BEND

6"P.V.

SURGE CHAMBER

4' - 6"

6" R.J. 22 1/2° BEND

6" SC., D.I.P, R.J.

7' - 0"

10 D-9 HOSERACK

8" W.A.S., D.I.P, R.J.

6"D, C.I.S.P, S.J. @ 1.0% SLOPE

INV. EL. 26.00

10 D-8 6" C.O.

4" R.W. PVC. (SCH. 80), S.W.

1/2" SEAL DRAIN LINE (TYP.)

3" D, C.I.S.P, S.J. @ 1.0% SLOPE

13 D-8 (TYP.)

1" R.W., BRASS, THD.

1" TAP

11 D-9

1" H.B.

16" x _" FLG. RED. (SEE NOTE 1) (TYP.)

16" R.A.S., D.I.P, FLG.

16" x 6" FLG. TEE

3" E.D. (TYP.)

18" x _" FLG. ECC. RED. (SEE NOTE 1) (TYP.)

18" R.A.S. D.I.P., FLG.

1/2" R.W., P.V.C. (SCH. 80), S.W.

1/2" SEAL WATER LINE (TYP.)

12 D-8

R.A.S. PUMP # 3

8" FLG. x M.J. WALL PIPE

8" W.A.S., D.I.P, M.J.

3" D, C.I.S.P, S.J.

3" E.D. (TYP.)

8" R.A.S. D.I.P, FLG.

16" R.A.S., D.I.P, FLG.

24" x 16" P.E. x R.J. RED.

3" C.O.

3" D, C.I.S.P, S.J. @ 1.0% SLOPE

R.A.S. PUMP #2

8" FLG. x M.J. WALL PIPE

8" W.A.S., D.I.P, R.J.

1/2" R.W., P.V.C. (SCH. 80) S.W.

16" R.A.S. D.I.P, FLG.

9" (TYP.)

18" R.A.S. D.I.P, FLG.

8"

1' - 6" (TYP.)

12" (TYP.)

R.A.S. PUMP #1

18" STL. F.A.C. (HARN.) (TYP.)

1' - 6" (TYP.)

6" (TYP.)

16" STL. F.A.C. (TYP.)

22 D-4 PIPE SUPPORT (TYP.)

7' - 6"

2" R.W., P.V.C. (SCH 80), S.W.

2" D, C.I.S.P, S.J. @ 1.0 % SLOPE.

2" G.V. w/HOSE END

LAUNDRY TYPE-FIBERGLASS SAMPLING SINK - ATTACH TO CONC. w/S.S. EXP. BOLTS.

8' - 4"

20' - 8"

8" W.A.S., D.I.P, R.J.

8" R.J. 45° BEND

6" R.J. 22 1/2° BEND

6" SC., D.I.P, R.J.

7' - 0"

6" P.V.

CONC. SLAB

SURGE CHAMBER

SCUM EJECTOR #1

6" FLG. 90° BEND

6"P.V.

1 M-15 SCUM EJECTOR (TYP.)

6" SC., D.I.P, FLG. FROM CLARIFIER #1

CLARIFIER #1

MATCH LINE

SEE SHEET M-17

1 M-16 FLOAT CONTROL

6' - 0"

1' - 0"

3' - 4"

SLUDGE WETWELL

ALUM. BAFFLE

2' - 0"

12"

5' - 0"

4' - 0"

2" RW. BRASS, THD.

2" S., BRASS, THD.

1' - 9"

2' - 6"

16" R.A.S., D.I.P, S.J. FROM CLARIFIER #2

4' - 0"

24" x 16" FLG. RED.

24" x 16" FLG. TEE

36" M.L., D.I.P, S.J. TO CLARIFIER #2

16" B.F.

24" x 16" FLG. TEE

12 D-9

24" x 16" FLG. RED.

16" R.A.S., D.I.P, S.J. FROM CLARIFIER #1

WALKWAY

ALUM. STAIRS #7

16' - 9"

9' - 6"

6" PLUG

8" PLUG

36" PLUG

36" M.L., D.I.P, R.J.

36" R.J. 90° BEND ℄ EL. 20.67

CONC. SLAB (AT GRADE)

SLOPE @ 1/4" / FT

EL. 29.39

1 M-18

50° 24' 25"

FLOW SPLITTER BOX

42" M.J. X FLG x P.E. WALL PIPE ℄ EL. 20.58

3' - 0"

11' - 0"

EL. 29.39 x 2 (TYP.)

CONC. SLAB (AT GRADE)

SLOPE 1"

36" R.J. 90° BEND, ℄ EL. 20.67

36" M.J., D.I.P, S.J. TO CLARIFIER #1

42" M.L., D.I.P, S.J.

42" M.L., D.I.P, S.J.

36" M.L., D.I.P, S.J.

7' - 0"

36" PLUG

8" PLUG

6" PLUG

N

0 2 4

1 3

3/8" = 1'-0"

3 1/2"

ELEC. CABLE

6"

'CONSOLIDATED' O/E PIPE BRACKET MODEL 9G-CLI- ATTACH TO WALL W/2-1/2" DIA. S.S. EXP. BOLTS

1" NPT S.S. PIPE

'CONSOLIDATED' O/E, FLOAT SWITCH, BULLETIN B100, MODEL 9G-ATTACH TO 1" PIPE W/S.S. HARDWARE (TYP.)

R.A.S./W.A.S. PUMPS CUT-ON EL. 38.33

R.A.S./W.A.S. PUMPS CUT-OFF EL. 32.33

6' - 0"

2 M-29

DETAIL 1 M-16

N.T.S.

PARTIAL PLAN

NOTES

1. SMALL END OF FLANGED REDUCERS AT PUMP SUCTION & DISCHARGE LINES SHALL MATCH PUMP SUCTION AND DISCHARGE SIZES, RESPECTIVELY. (TYP FOR ALL PUMPS).
2. ALL WALL PIPES SHALL HAVE WATERSTOPS.

RICHARD D. MOORE CERTIFICATE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

RAS / WAS PUMP STATION - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

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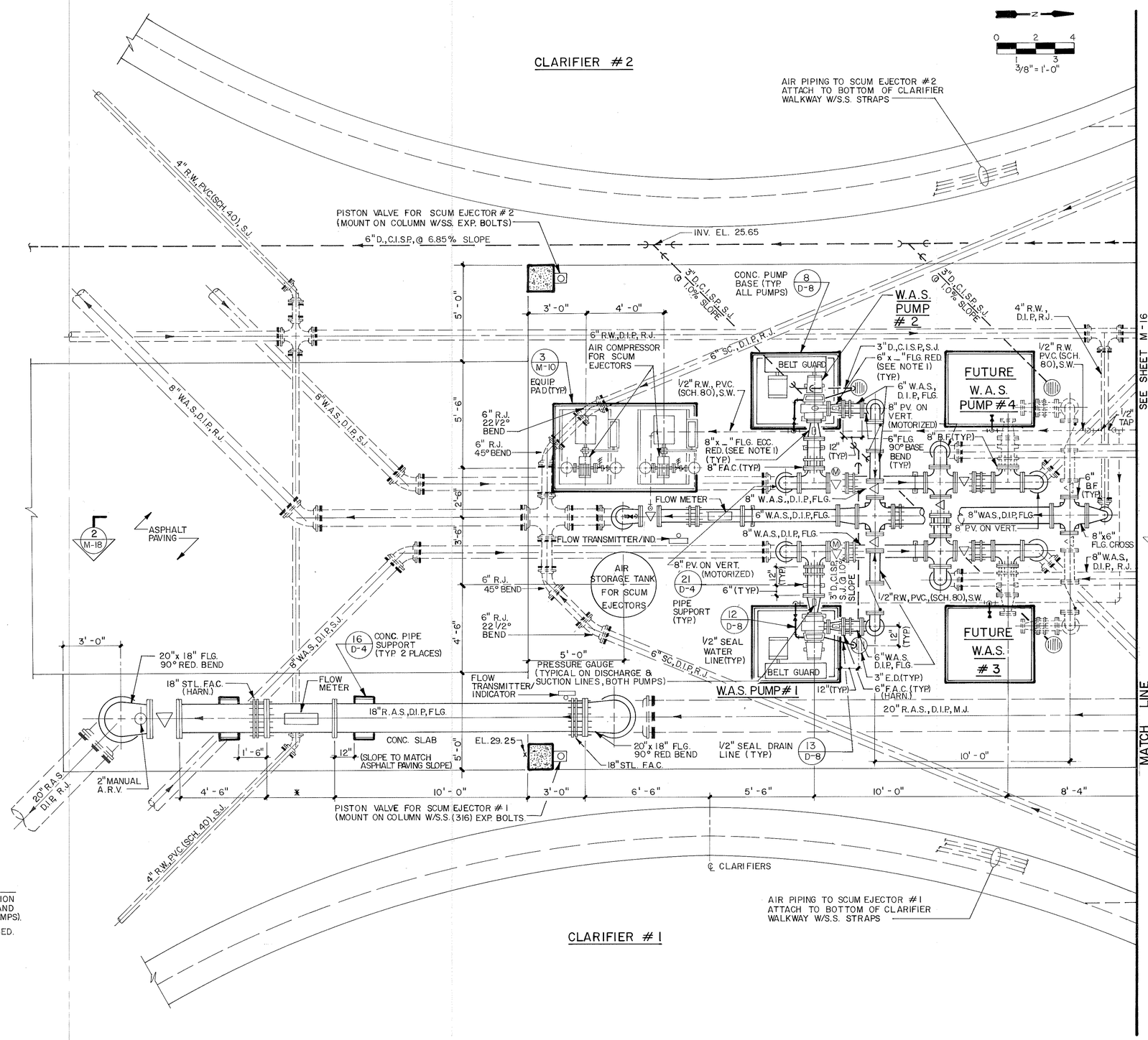
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED W.L.R. CHECKED W.L.R. DATE MARCH, 1985 SCALE 3/8" = 1'-0"
DRAWN S.A.F. FILE NO. 031-006-84 SHEET M-16 OF M-46

26-01

RECORD DRAWINGS 12/19/89

A.F. 31693A



NOTES

1. SMALL END OF FLANGED REDUCERS AT PUMP SUCTION & DISCHARGE LINES SHALL MATCH PUMP SUCTION AND DISCHARGE SIZES, RESPECTIVELY. (TYP. FOR ALL PUMPS).
2. ALL FLANGE ADPT. COUPLINGS SHALL BE HARNESSED.

RICHARD D. LARSON REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

RAS / WAS PUMP STATION - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
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DRAWN S.A.F. FILE NO. 031-006-84 SHEET M - 17 OF M - 46

26-01

RECORD DRAWINGS 12/19/89

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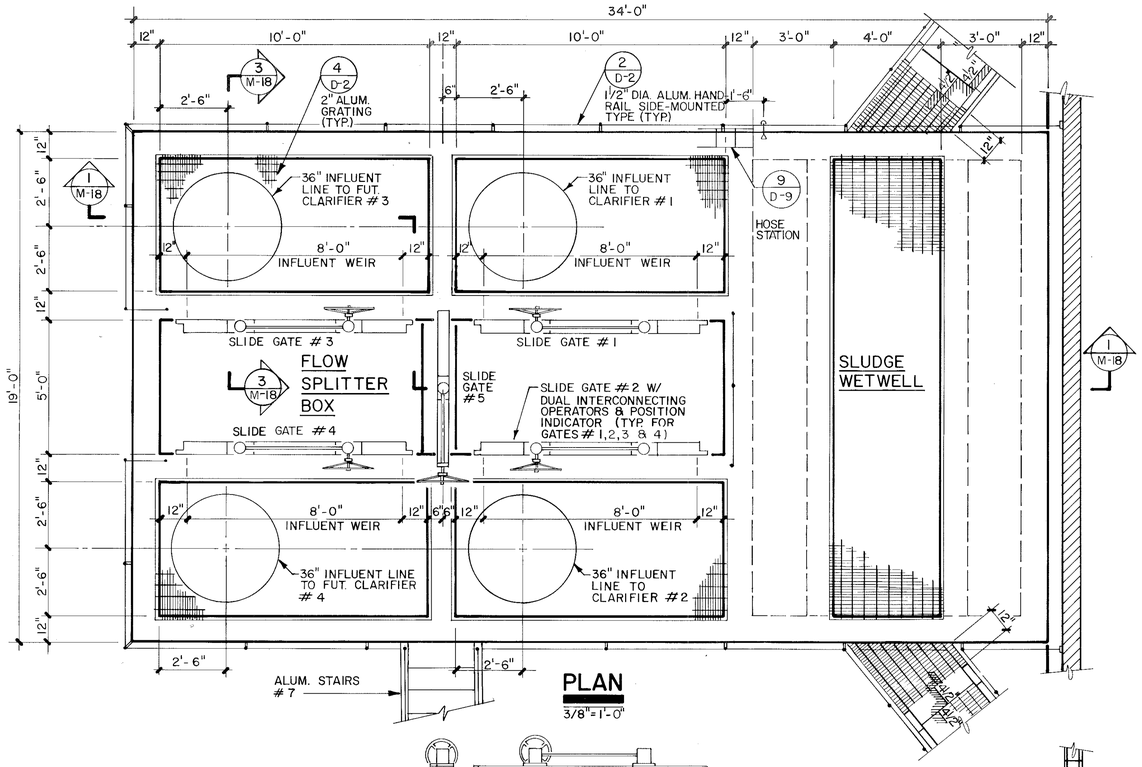
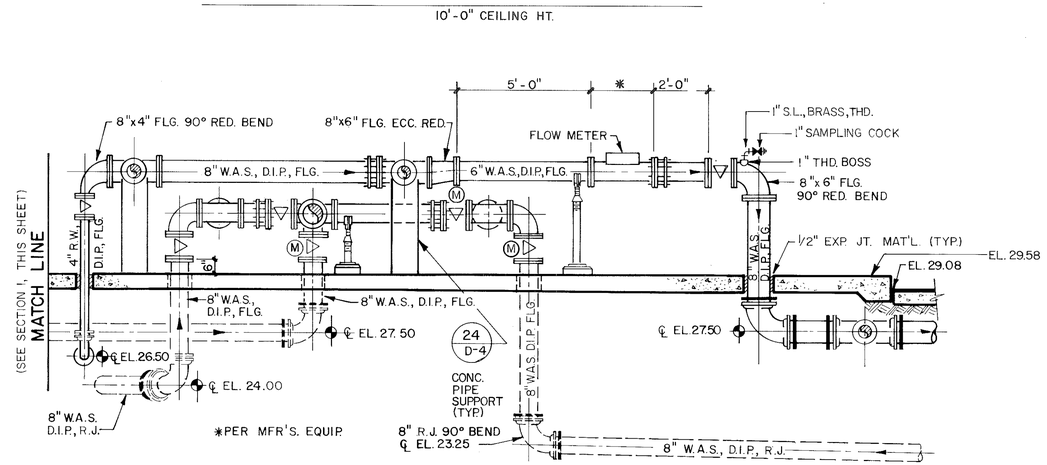
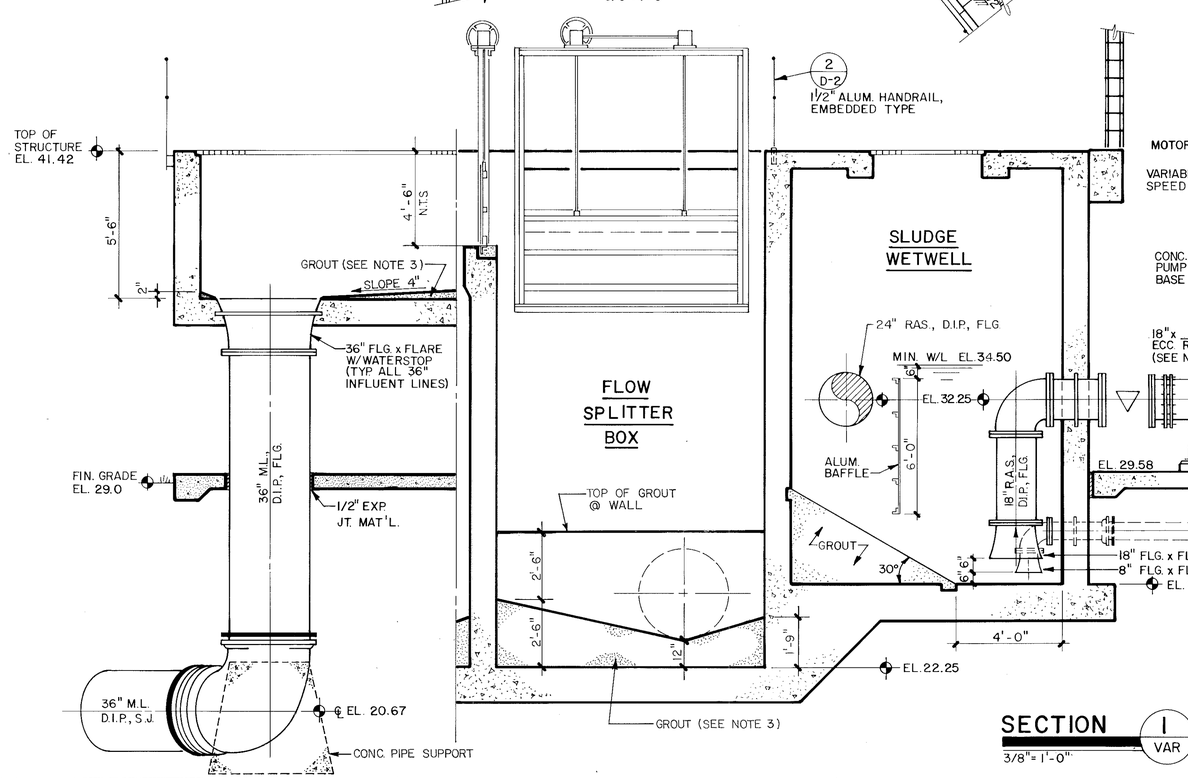


PLAN
3/8"=1'-0"

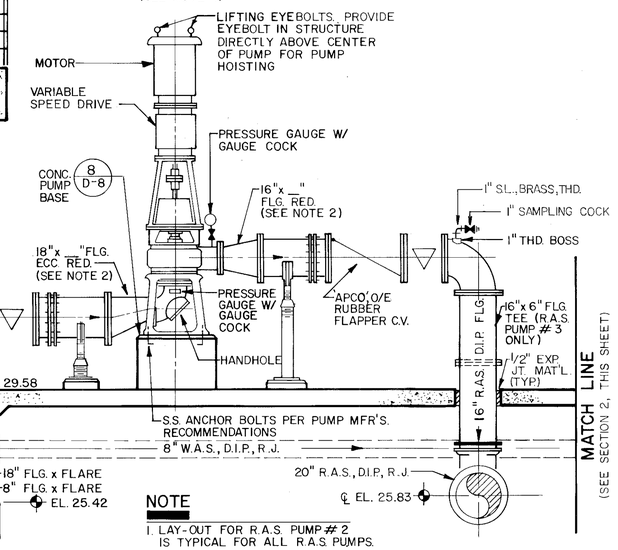


SECTION 2 M-17
3/8"=1'-0"

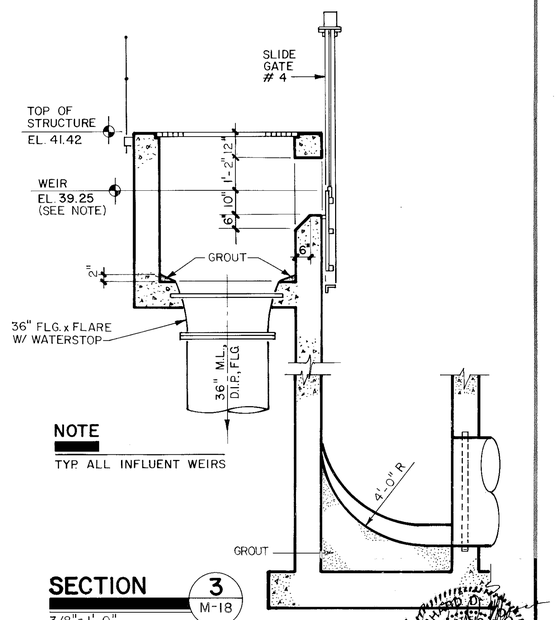


SECTION 1 VAR
3/8"=1'-0"

R.A.S. PUMP # 2
(SEE NOTE 1)



NOTE
1. LAY-OUT FOR R.A.S. PUMP # 2 IS TYPICAL FOR ALL R.A.S. PUMPS.
2. SMALL END OF REDUCER TO MATCH PUMP.
3. GROUT CONFIGURATION IN FLOW SPLITTER BOX TYPICAL FOR BOTH 42" M.L. LINES & FOR ALL 36" M.L. LINES.



NOTE
TYP ALL INFLUENT WEIRS

SECTION 3 M-18
3/8"=1'-0"

T19

RICHARD D. LARSON — STATE OF FLORIDA — REGISTERED ENGINEER — No. 34983

RAS/WAS PUMP STATION - PLAN & SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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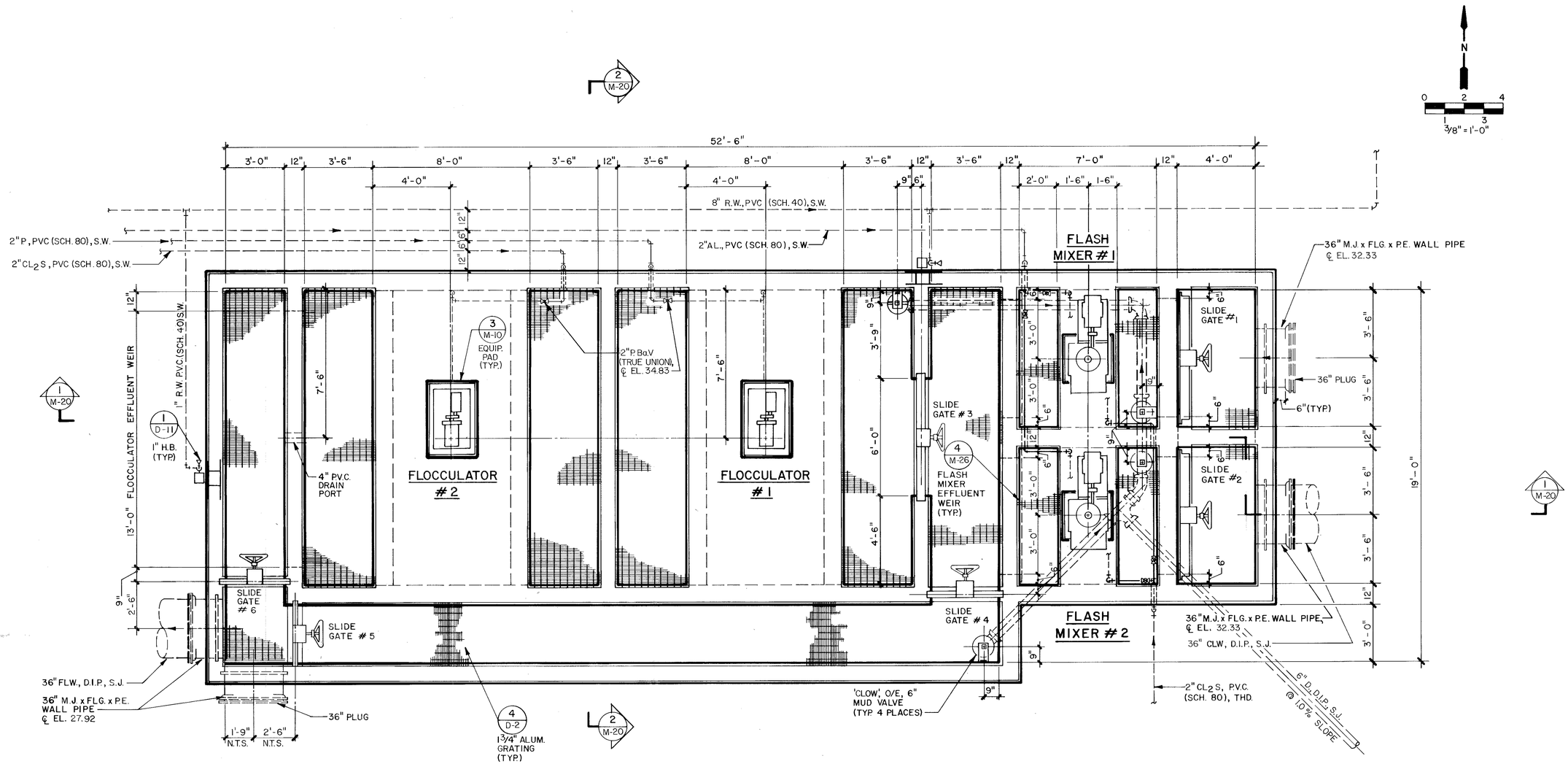

FLASH MIXERS / FLOCCULATORS - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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REGISTERED DIVISION OF ENGINEERING No. 34583 STATE OF FLORIDA REGISTERED ENGINEER

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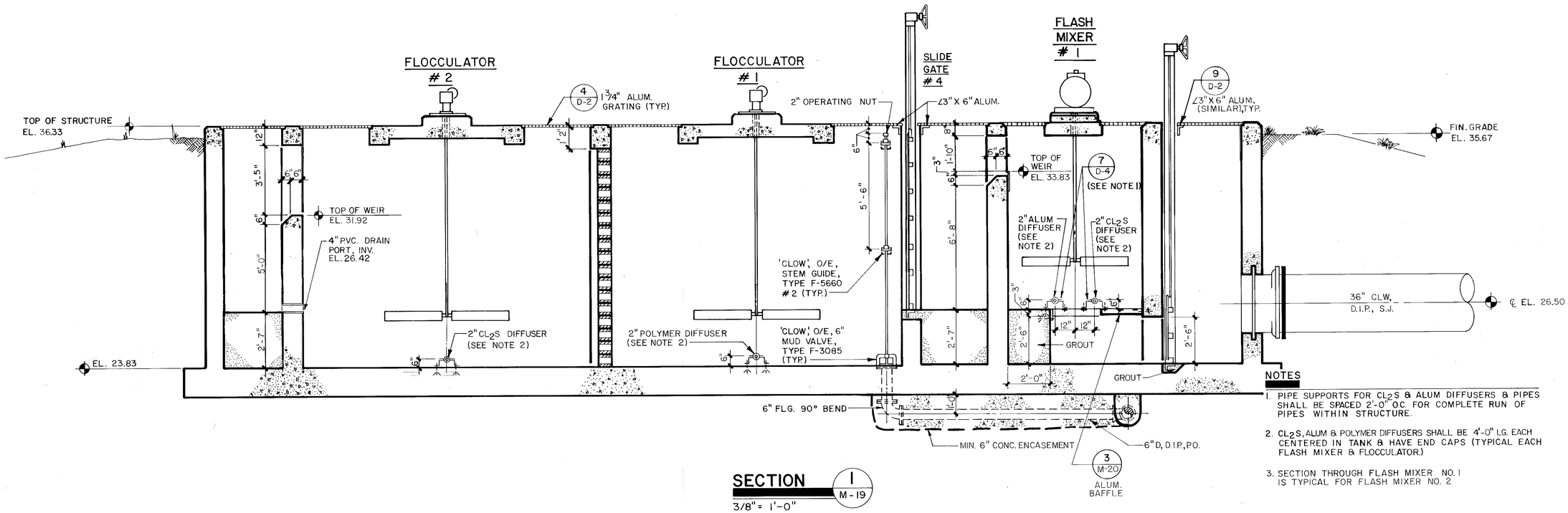
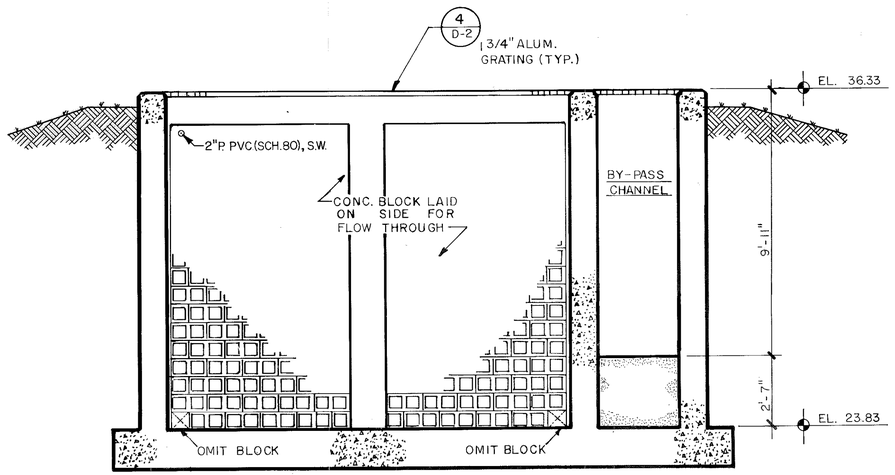


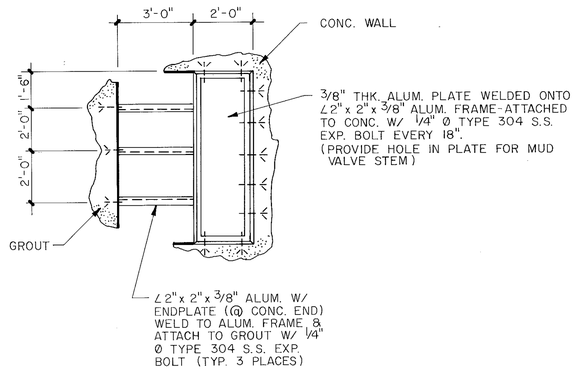
SECTION 1 / M-19
3/8" = 1'-0"

NOTES

1. PIPE SUPPORTS FOR CL_2S & ALUM DIFFUSERS & PIPES SHALL BE SPACED 2'-0" O.C. FOR COMPLETE RUN OF PIPES WITHIN STRUCTURE.
2. CL_2S, ALUM & POLYMER DIFFUSERS SHALL BE 4'-0" LG. EACH CENTERED IN TANK & HAVE END CAPS (TYPICAL EACH FLASH MIXER & FLOCCULATOR.)
3. SECTION THROUGH FLASH MIXER NO. 1 IS TYPICAL FOR FLASH MIXER NO. 2



SECTION 2 / M-19
3/8" = 1'-0"



DETAIL 3 / M-20
N.T.S.

RICHARD D. LARSON FLORIDA REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

FLASH MIXERS / FLOCCULATORS - SECTION & DETAILS

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RECORD DRAWINGS 12/19/89

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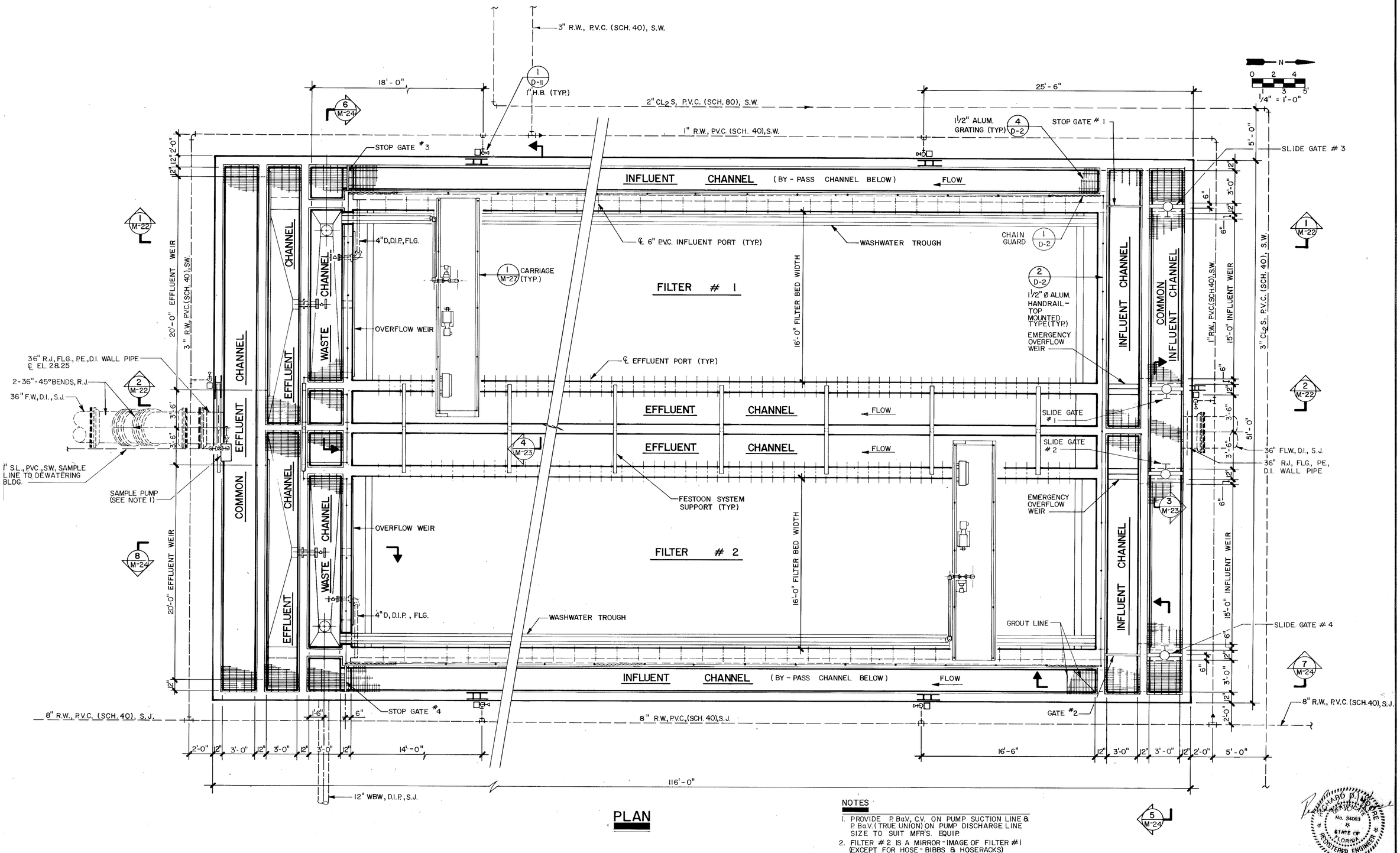

PLAN

NOTES

1. PROVIDE P.B.V., C.V. ON PUMP SUCTION LINE & P.B.V. (TRUE UNION) ON PUMP DISCHARGE LINE SIZE TO SUIT MFR'S. EQUIP.
2. FILTER # 2 IS A MIRROR-IMAGE OF FILTER # I (EXCEPT FOR HOSE-BIBBS & HOSERACKS)

RICHARD D. LARSON No. 34063 STATE OF FLORIDA REGISTERED ENGINEER

AUTOMATIC BACKWASH FILTERS - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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DRAWN P.V.R. FILE NO. 031-006-84 SHEET M-21 OF M-46

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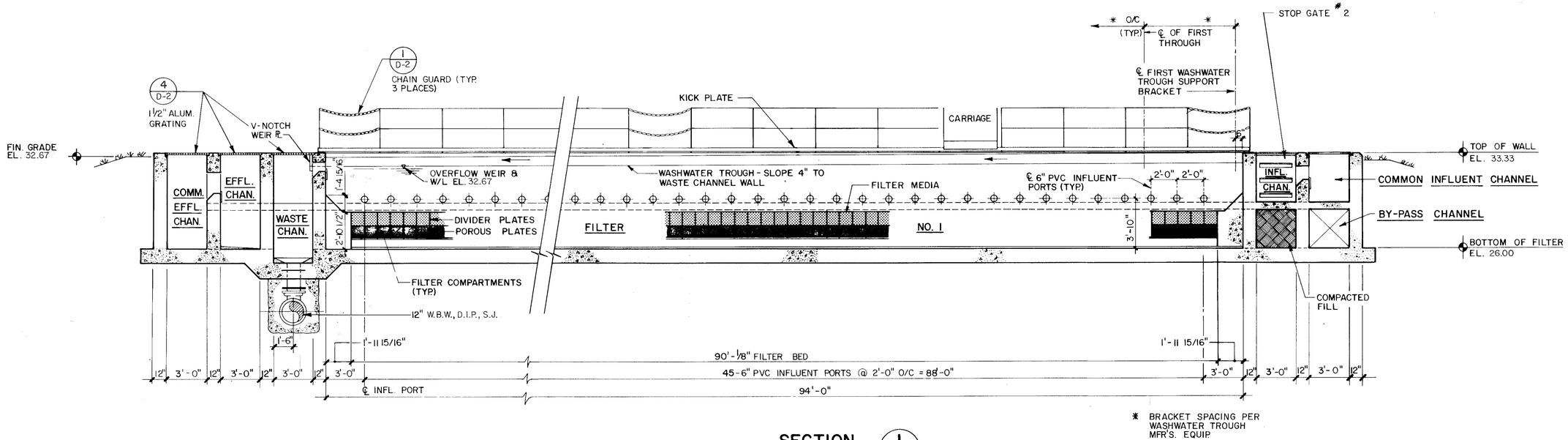
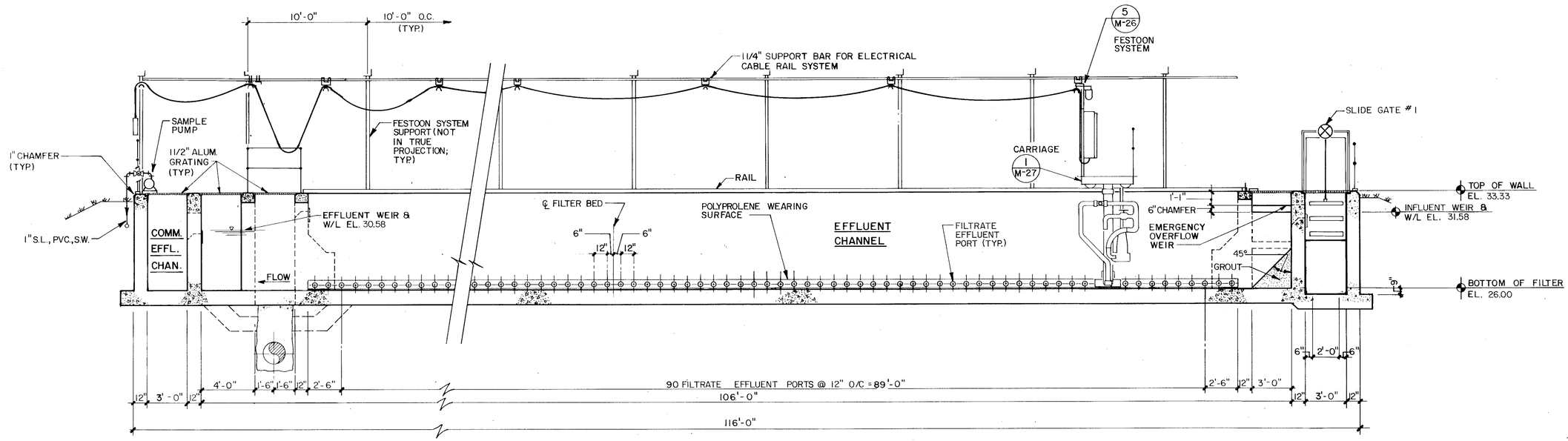


SECTION 1 / M-21

1/4"=1'-0"



SECTION 2 / M-21

1/4"= 1'-0"

No. 34083 * STATE OF FLORIDA REGISTERED ENGINEER

AUTOMATIC BACKWASH FILTERS - SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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RECORD DRAWINGS 12/19/89

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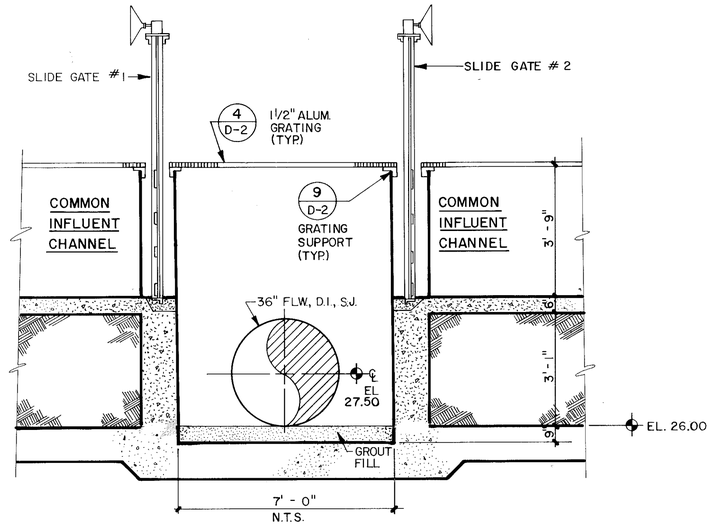
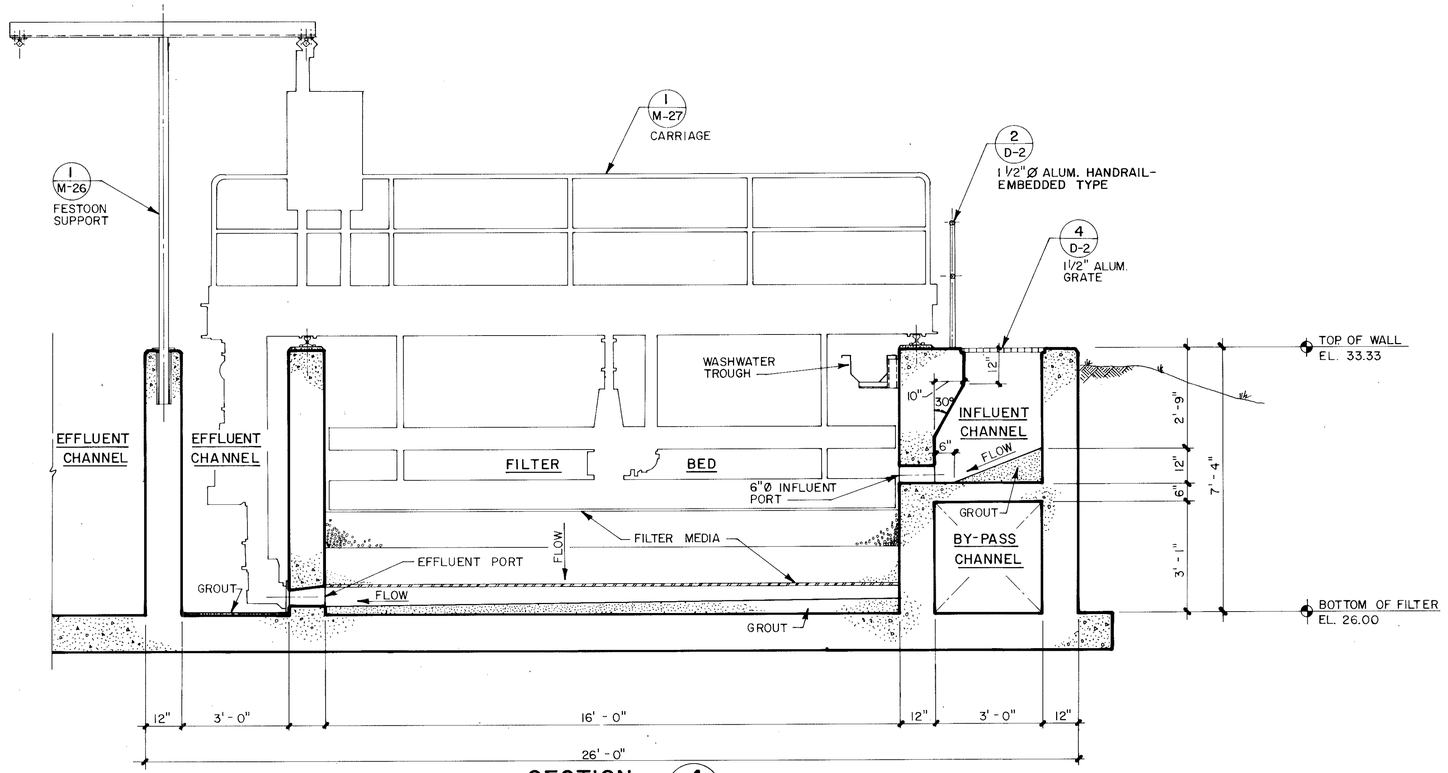


SECTION 3 M-21

1/2" = 1' - 0"



SECTION 4 M-21

1/2" = 1' - 0"

RICHARD DI MORE CERTIFICATE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

AUTOMATIC BACKWASH FILTERS - SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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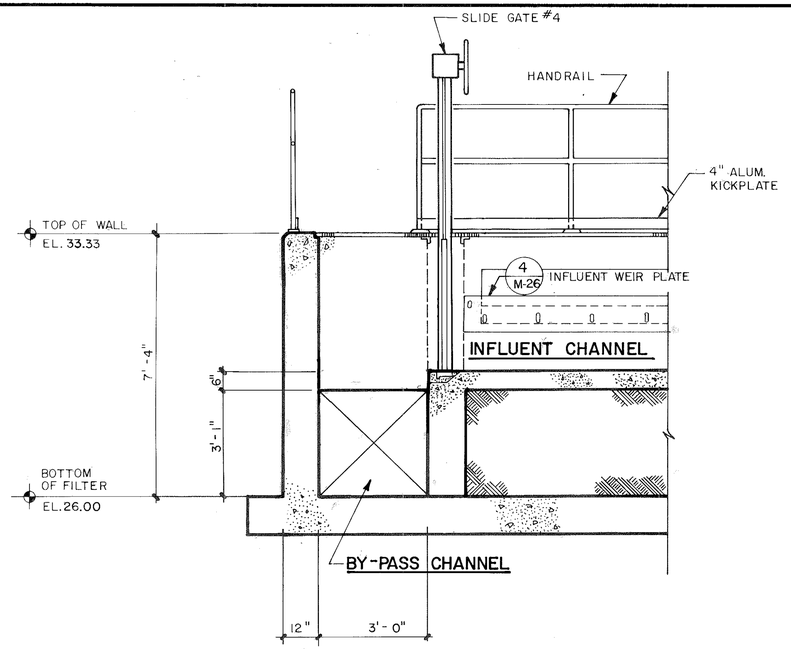
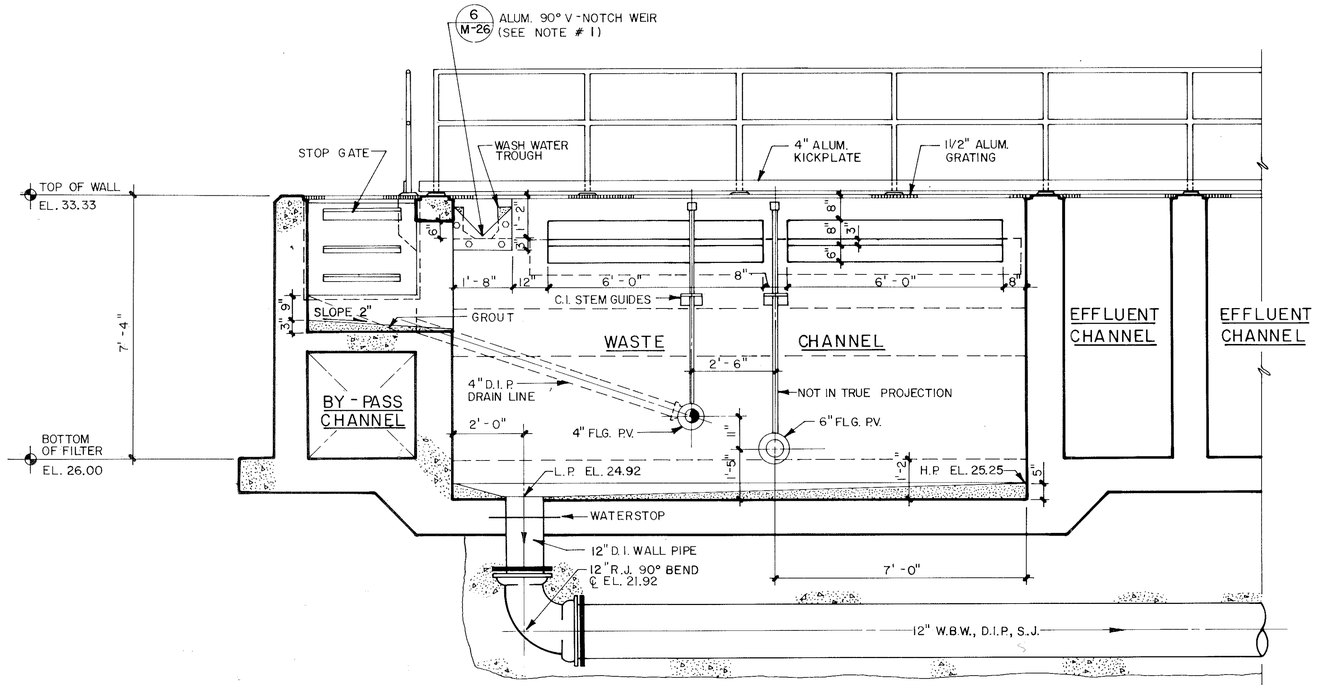
26-01 RECORD DRAWINGS 12/19/89

A.F. #1693A

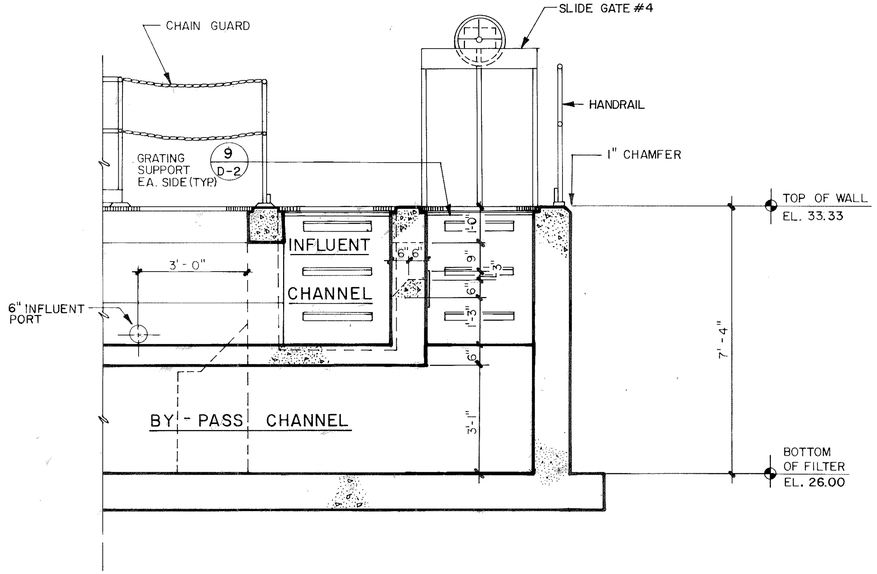


SECTION 5 M-21
1/2" = 1'-0"

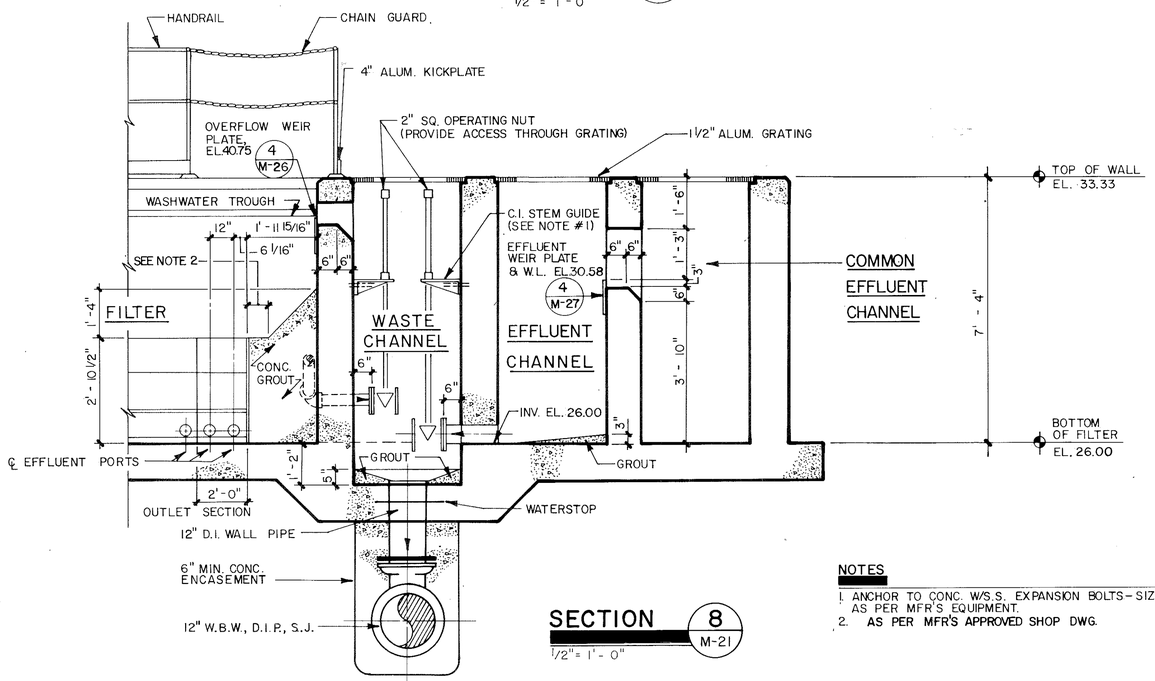


SECTION 6 M-21
1/2" = 1'-0"

NOTE
1. ANCHOR ALUM. WEIR PLATE TO CONC. W/4-1/4" x 1" S.S. EXPANSION BOLTS. APPLY SEALENT BETWEEN CONC. & PLATE.



SECTION 7 M-21
1/2" = 1'-0"



SECTION 8 M-21
1/2" = 1'-0"

NOTES
1. ANCHOR TO CONC. W/S.S. EXPANSION BOLTS – SIZES & NUMBER AS PER MFR'S EQUIPMENT.
2. AS PER MFR'S APPROVED SHOP DWG.

RICHARD D. LARSON REGISTERED ENGINEER No. 34083 STATE OF FLORIDA

AUTOMATIC BACKWASH FILTERS - SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
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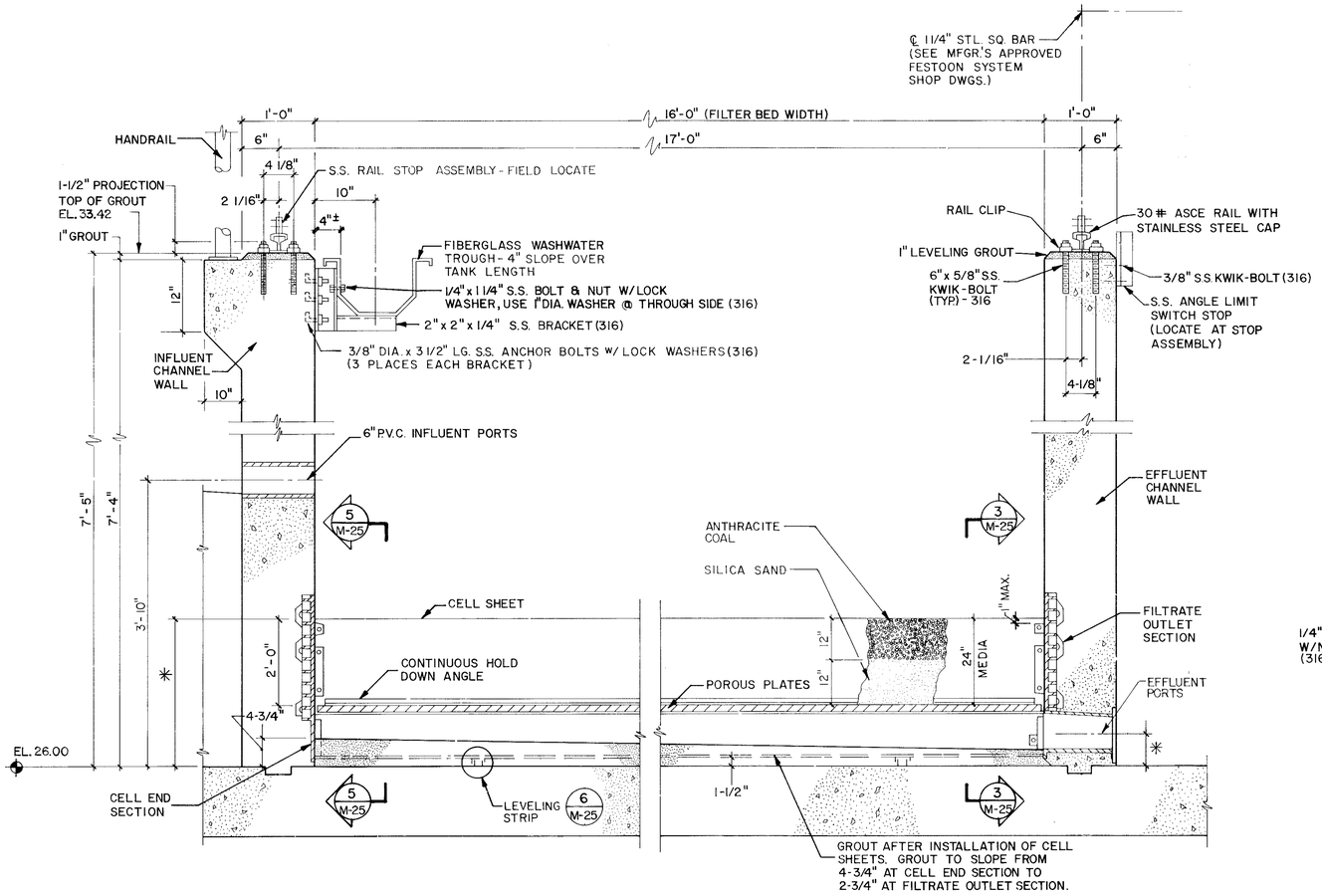
DRAWN D.T.D. FILE NO. 031-006-84 SHEET M-24 OF M-46

26-01

RECORD DRAWINGS 12/19/89

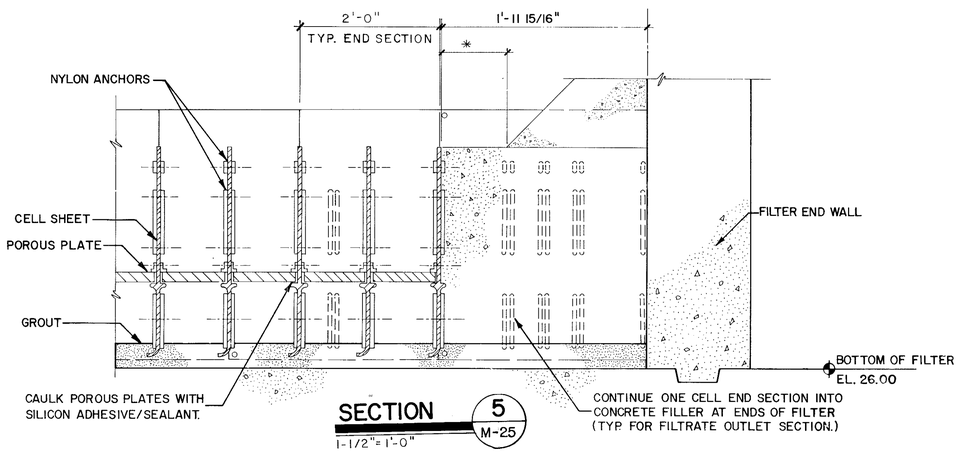
A.F. 11693A



TYPICAL SECTION - FILTER BED

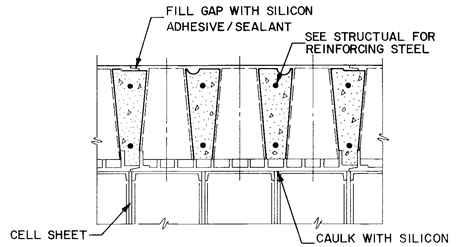
N.T.S.

✱ SEE MFR.'S APPROVED SHOP DRAWINGS



SECTION 5 M-25

1-1/2"=1'-0"

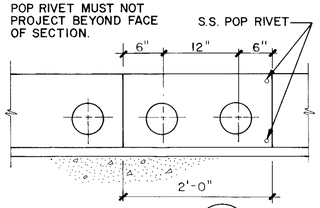


SECTION 1 M-25

N.T.S.

NOTE

POP RIVET MUST NOT PROJECT BEYOND FACE OF SECTION.



SECTION 2 M-25

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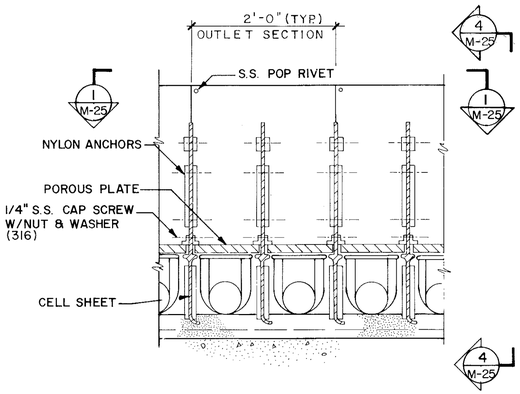

SECTION 3 M-25

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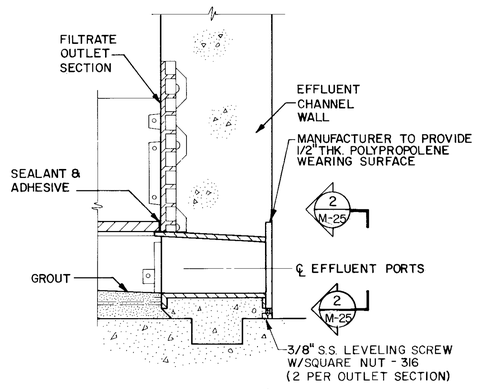

SECTION 4 M-25

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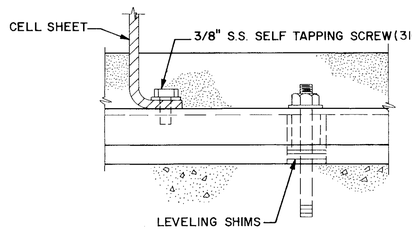

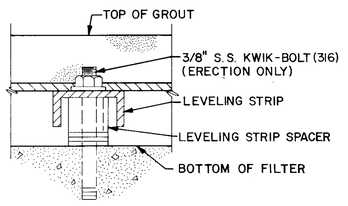

DETAIL 6 M-25

N.T.S.

RICHARD D. WHITE, JR. REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

AUTOMATIC BACKWASH FILTERS - SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

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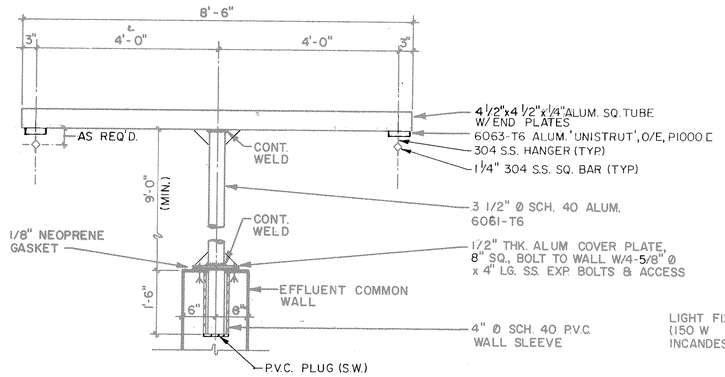
DRAWN D.T.D. FILE NO. 031-006-84 SHEET M-25 OF M-46

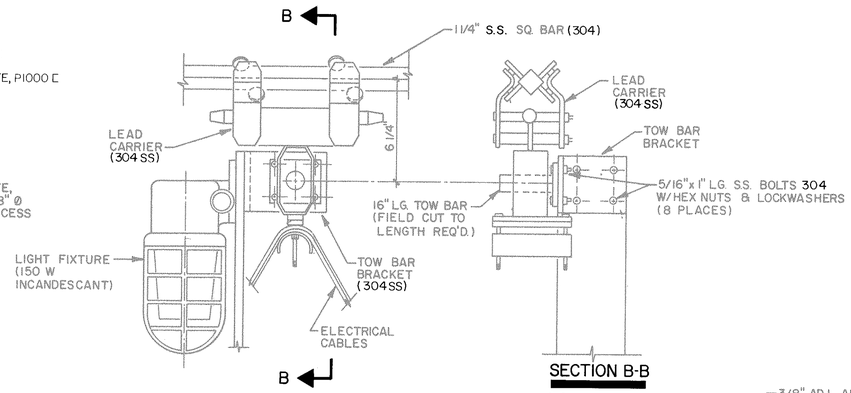
26-01

RECORD DRAWINGS 12/19/89

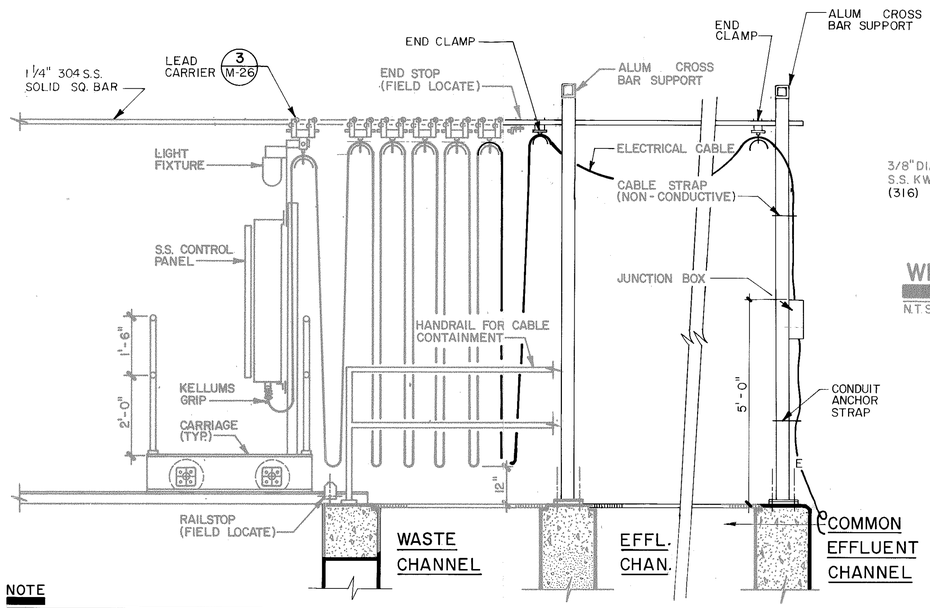
AF 31693A



DETAIL 1
M-23
N.T.S.



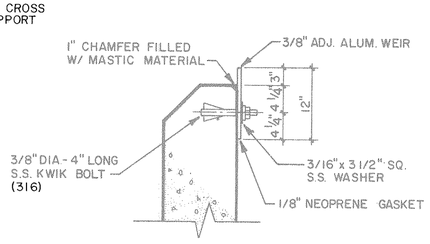
LEAD CARRIER DETAIL 2
M-26
N.T.S.



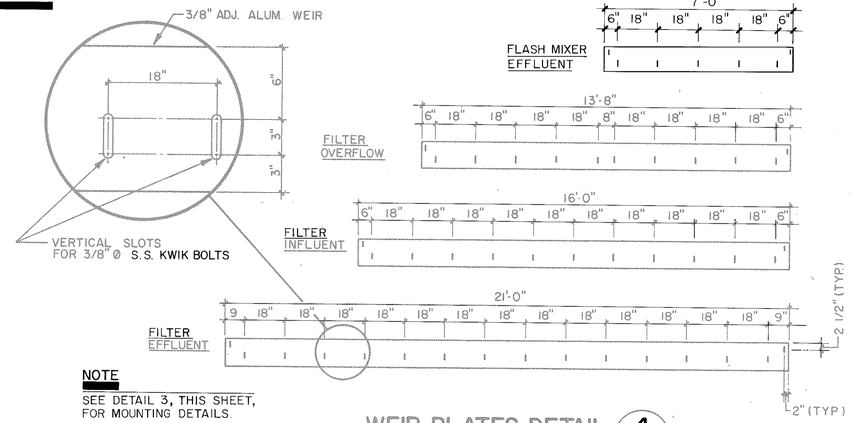
NOTE

1. FESTOON SYSTEM SHALL BE 'INSUL-8', O/E, 'MOTIV-8' HEAVY DUTY SQUARE BAR SYSTEM. FESTOON SYSTEM SHALL BE CONSTRUCTED TO A MAX. DEFLECTION OF 1" BETWEEN SUPPORTS. ADDITIONAL SUPPORTS MAY BE ADDED AS NECESSARY TO MEET DEFLECTION CRITERIA.

FESTOON SYSTEM 5
M-22
N.T.S.



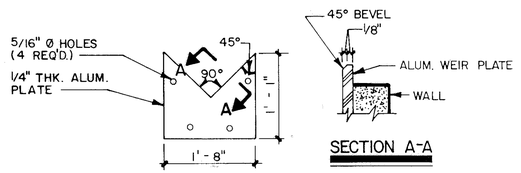
WEIR PLATE MOUNTING DETAIL 3
M-26
N.T.S.



NOTE

SEE DETAIL 3, THIS SHEET, FOR MOUNTING DETAILS.

WEIR PLATES DETAIL 4
VAR
N.T.S.



V-NOTCH WEIR DETAIL 6
M-24
N.T.S.

REGISTERED ENGINEER No. 34083 STATE OF FLORIDA

AUTOMATIC BACKWASH FILTERS - DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

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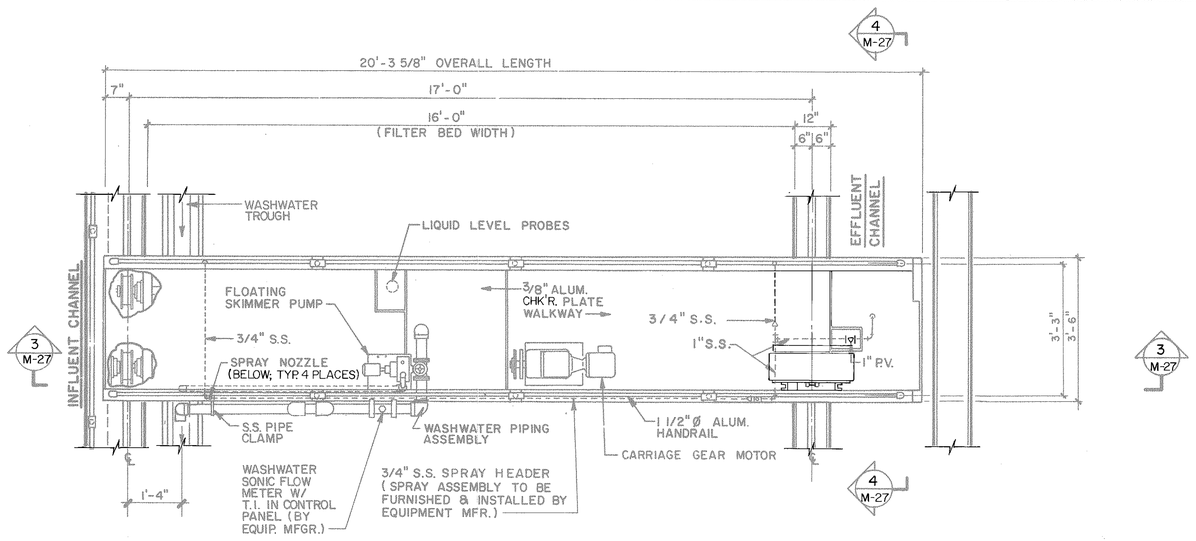
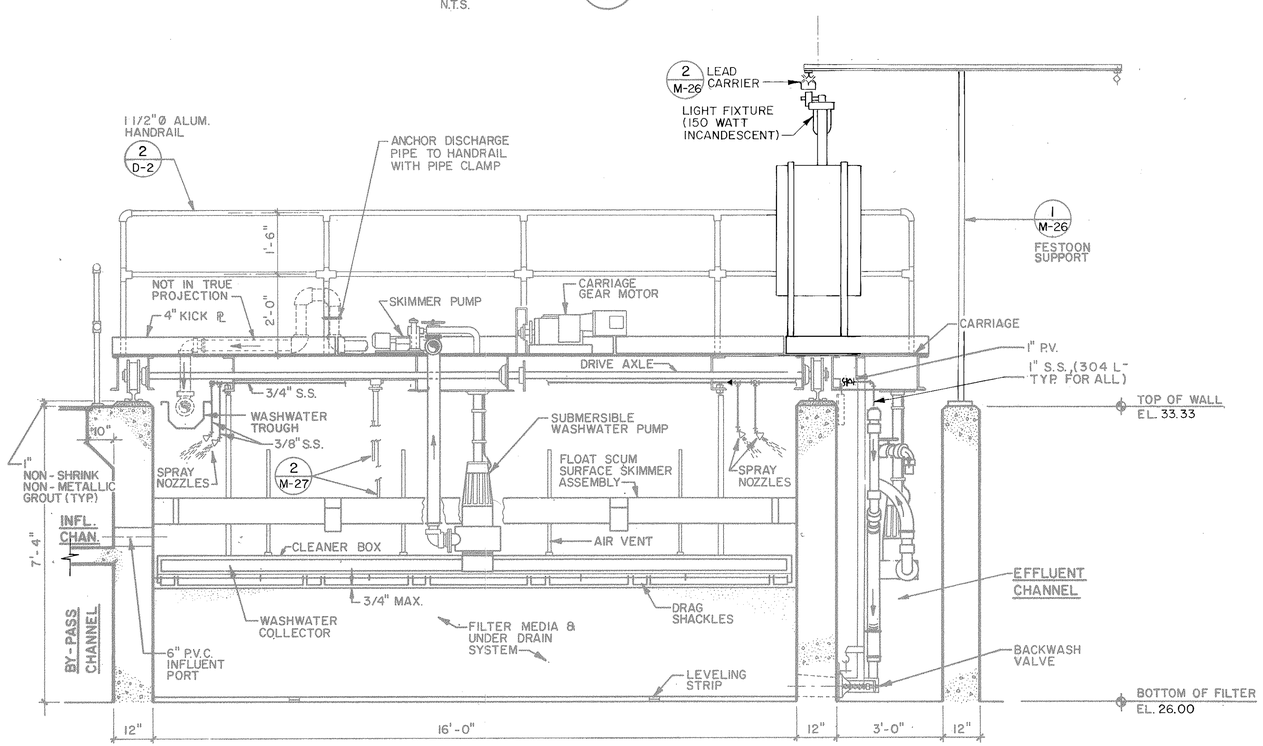


NOTE

1.) WASHWATER & BACKWASH SONIC FLOW METER SHALL BE PROVIDED WITH A MIN. OF 4-5 PIPE DIA'S BEFORE & AFTER

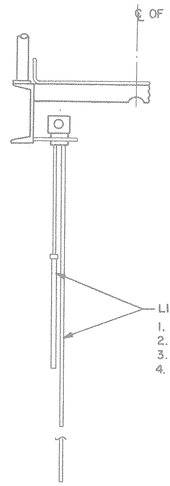
PLAN 1 VAR.

N.T.S.



SECTION 3 M-27

N.T.S.



NOTES

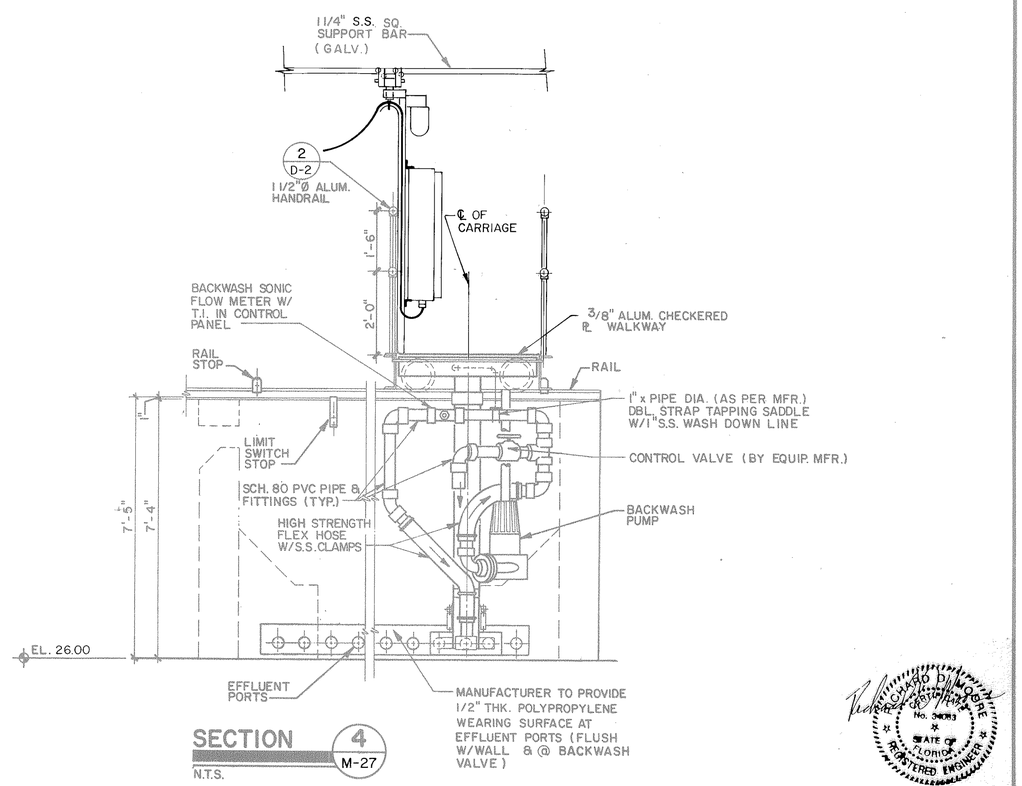
1. LIQUID LEVEL PROBES ON EACH CARRIAGE.
2. INDICATING LIGHTS & ALARMS REQUIRED IN BRIDGE CONTROL PANEL. CONTROL PANEL IN ELECTRICAL BLDG. SHALL HAVE REPORT BACKS FOR HIGH WATER & EMERGENCY CUT-OFF ALARMS ONLY.

LIQUID LEVEL PROBES (4 REQ'D.)

1. HIGH LEVEL ALARM ELECTRODE.
2. UPPER START WASH CYCLE ELECTRODE.
3. LOWER HOLD WASH CYCLE ELECTRODE.
4. EMERGENCY CUT-OFF ELECTRODE.

LIQUID LEVEL PROBES DETAIL 2 M-27

N.T.S.



SECTION 4 M-27

N.T.S.

RICHARD D. MOORE REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

AUTOMATIC BACKWASH FILTERS - CARRIAGE

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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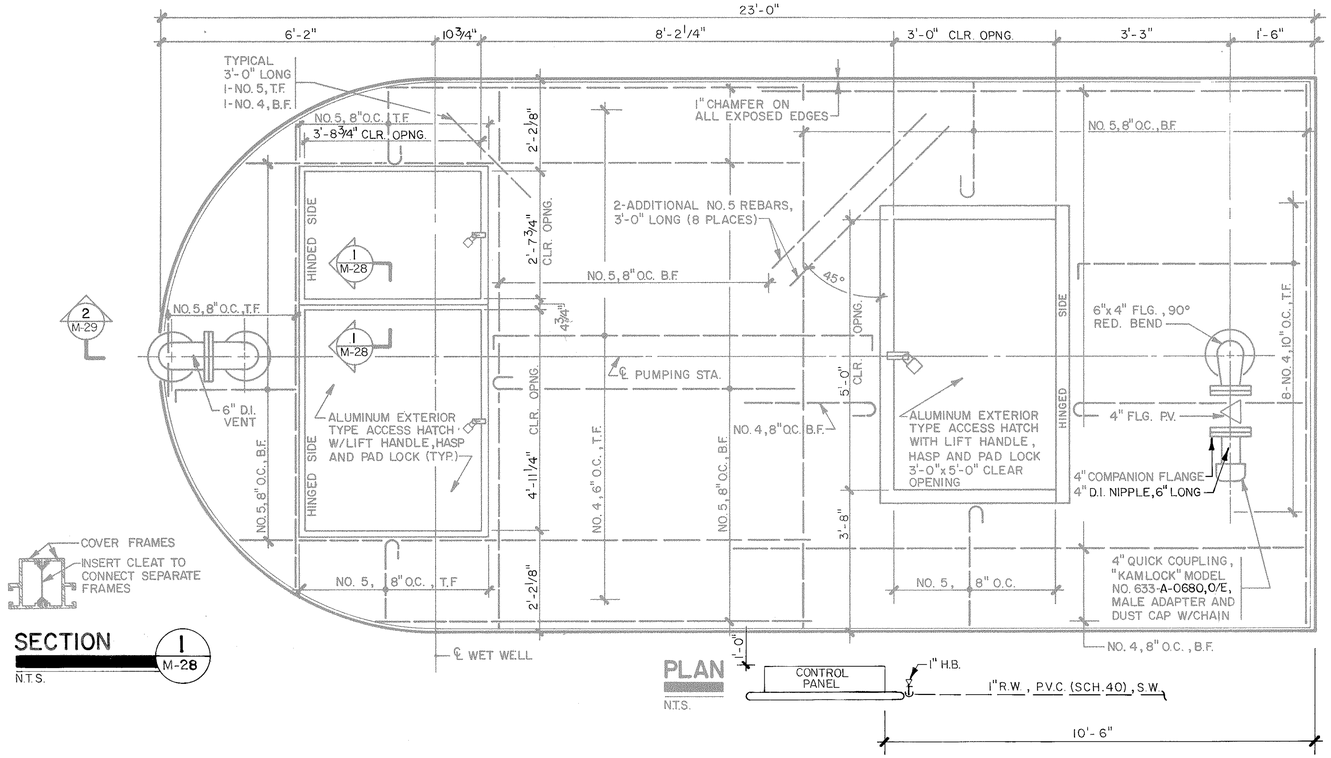
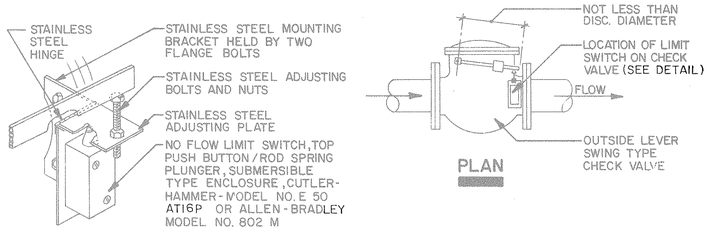


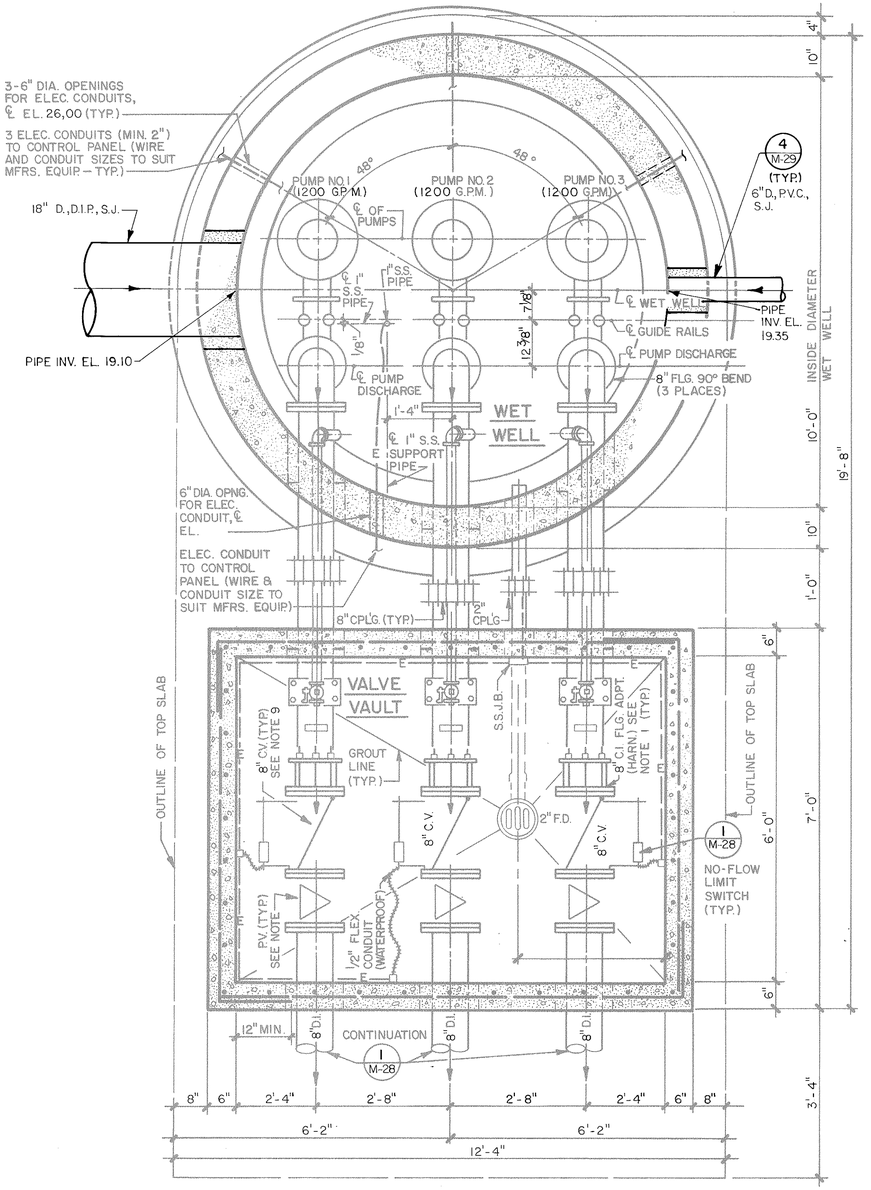
SECTION 1 M-28
N.T.S.

PLAN
N.T.S.



DETAIL

NO FLOW LIMIT SWITCH ASSEMBLY 1 M-28
N.T.S.



SECTIONAL PLAN 3 M-29
N.T.S.

PACHARD P. MOORE — No. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

PLANT DRAIN PUMP STATION

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
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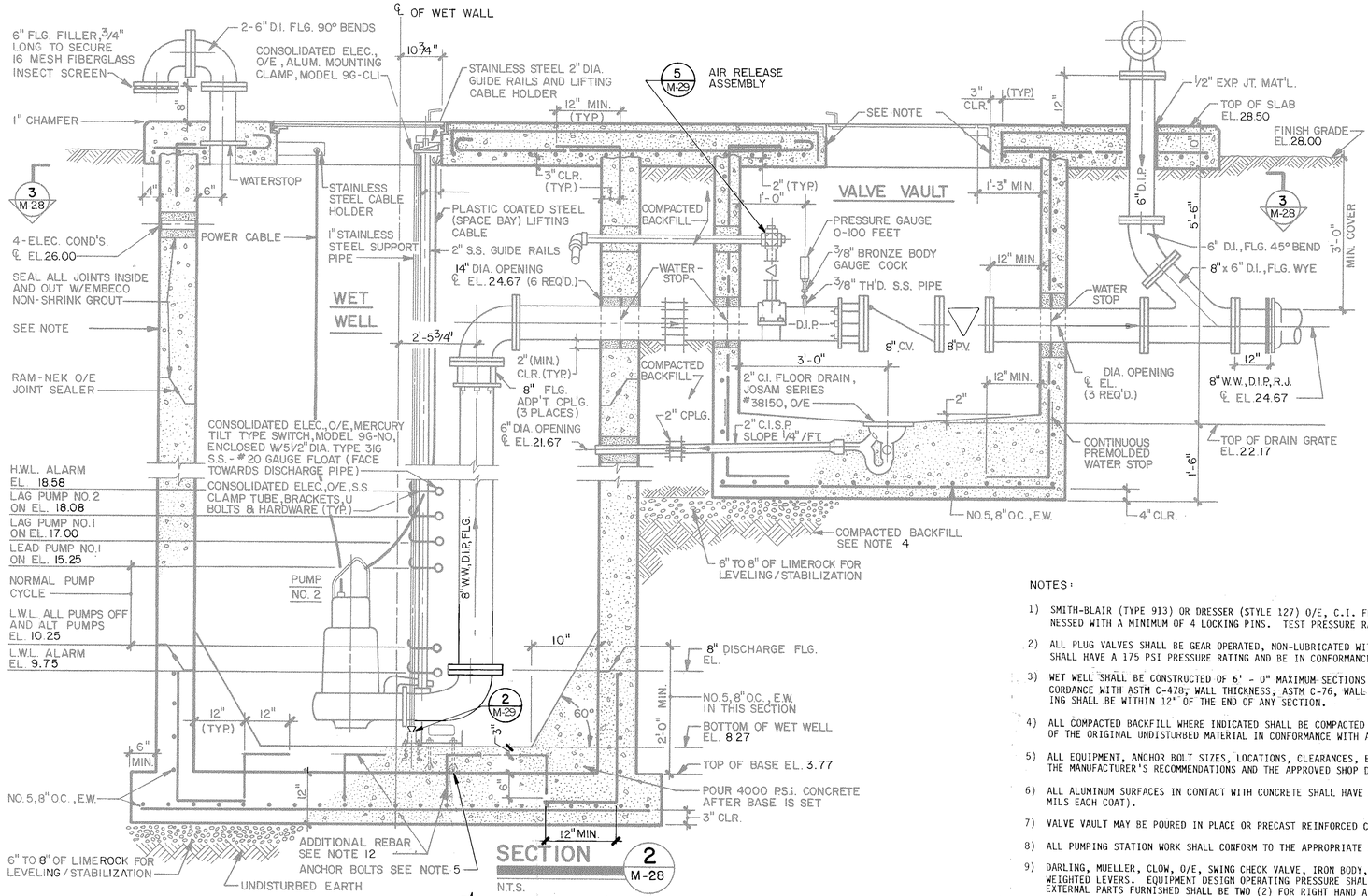
26-01

RECORD DRAWINGS 12/19/89



SECTION 2 / M-28

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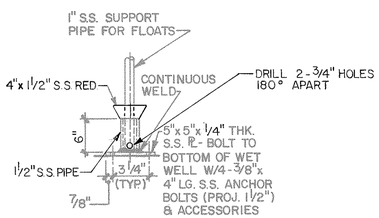
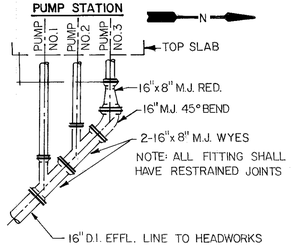


DETAIL 2 / VAR

N.T.S.



DETAIL 3 / M-28

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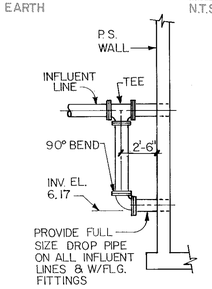

DETAIL 4 / M-28

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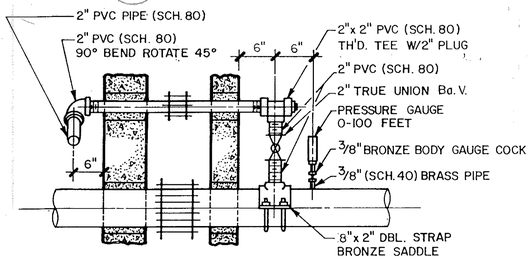

AIR RELEASE ASSEMBLY 5 / M-29

N.T.S.

NOTES:

1) SMITH-BLAIR (TYPE 913) OR DRESSER (STYLE 127) O/E, C.I. FLA. ADAPTER COUPLINGS, AND HARNESSED WITH A MINIMUM OF 4 LOCKING PINS. TEST PRESSURE RATING, 150 PSI MINIMUM.

2) ALL PLUG VALVES SHALL BE GEAR OPERATED, NON-LUBRICATED WITH AN ECCENTRIC CONFIGURATION AND SHALL HAVE A 175 PSI PRESSURE RATING AND BE IN CONFORMANCE WITH THE SPECIFICATIONS.

3) WET WELL SHALL BE CONSTRUCTED OF 5' - 0" MAXIMUM SECTIONS OF REINFORCED CONCRETE PIPE, IN ACCORDANCE WITH ASTM C-478; WALL THICKNESS, ASTM C-76, WALL "B". WHENEVER POSSIBLE NO OPENING SHALL BE WITHIN 12" OF THE END OF ANY SECTION.

4) ALL COMPACTED BACKFILL WHERE INDICATED SHALL BE COMPACTED IN 12" MAX. LAYERS AT 95% DENSITY OF THE ORIGINAL UNDISTURBED MATERIAL IN CONFORMANCE WITH ASTM D1557, METHOD "D".

5) ALL EQUIPMENT, ANCHOR BOLT SIZES, LOCATIONS, CLEARANCES, ETC. SHALL BE IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE APPROVED SHOP DRAWINGS.

6) ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A BITUMASTIC COATING (2 COATS, 9 MILS EACH COAT).

7) VALVE VAULT MAY BE POURED IN PLACE OR PRECAST REINFORCED CONCRETE AT THE CONTRACTOR'S OPTION.

8) ALL PUMPING STATION WORK SHALL CONFORM TO THE APPROPRIATE SECTIONS IN THE SPECIFICATIONS.

9) DARLING, MUELLER, CLOW, O/E, SWING CHECK VALVE, IRON BODY, BRONZE MOUNTED WITH OUTSIDE WEIGHTED LEVERS. EQUIPMENT DESIGN OPERATING PRESSURE SHALL BE A MINIMUM 150 PSI. EXTERNAL PARTS FURNISHED SHALL BE TWO (2) FOR RIGHT HAND AND ONE (1) FOR LEFT HAND OPERATOR.

10) INSIDE AND OUTSIDE OF WET WELL AND VALVE VAULT SHALL HAVE A BITUMASTIC COATING (2 COATS, 9 MILS EACH COAT).

11) SECURE ALL ELEC. CABLES TO 1" SUPPORT PIPE AS PER MFR'S RECOMMENDATION.

12) ADDITIONAL #5 RE-BAR IN BOTTOM GROUT OF WETWELL SHALL BE PROVIDED EVERY 12" O.C., E.W., AS SHOWN.

RICHARD D. LARSON REGISTERED ENGINEER No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

PLANT DRAIN PUMP STATION

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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26-01

RECORD DRAWINGS 12/19/89

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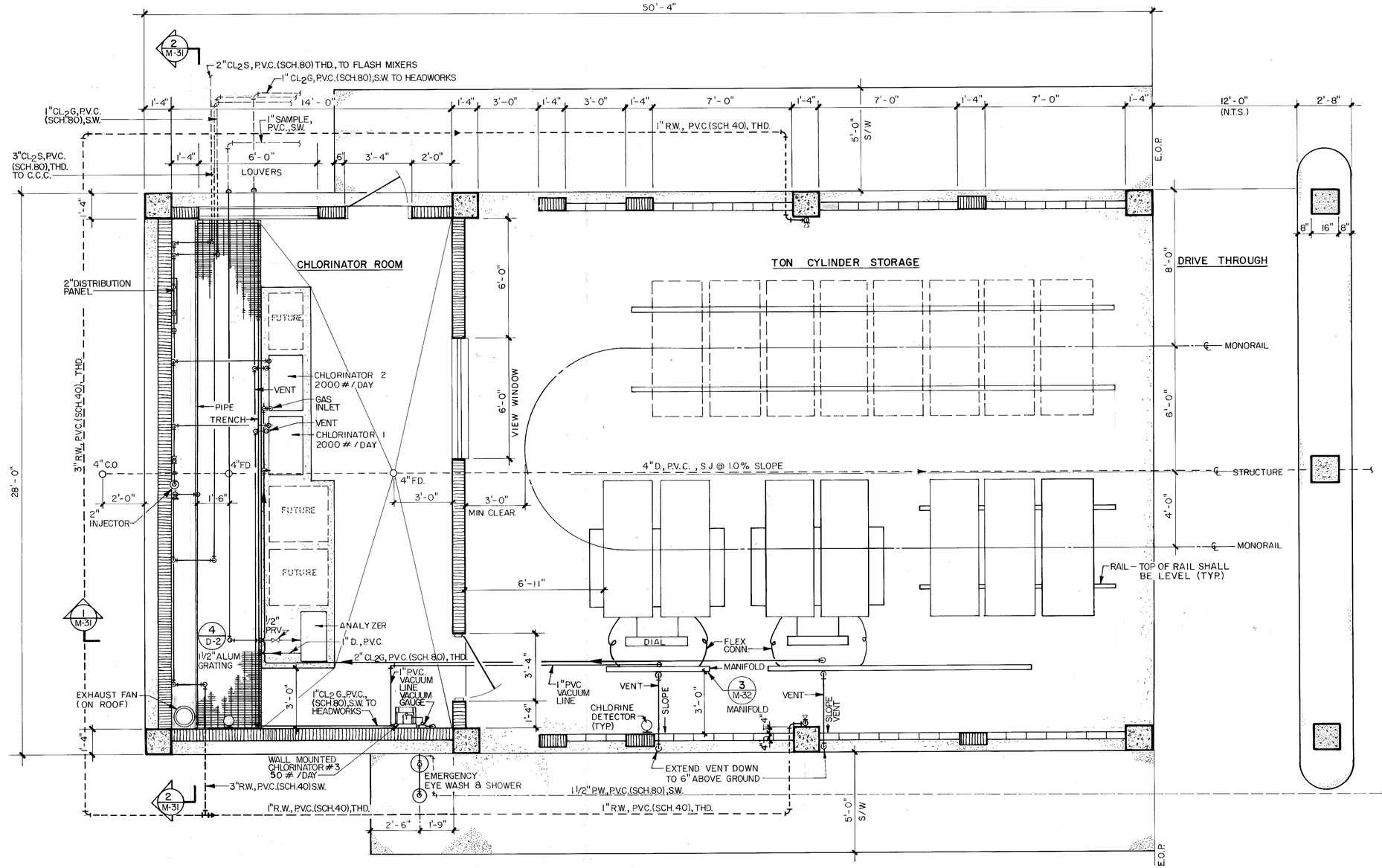
N
0 2 4
3/8" = 1'-0"



PLAN

RICHARD D. MOORE REGISTERED ENGINEER No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

CHLORINE BUILDING - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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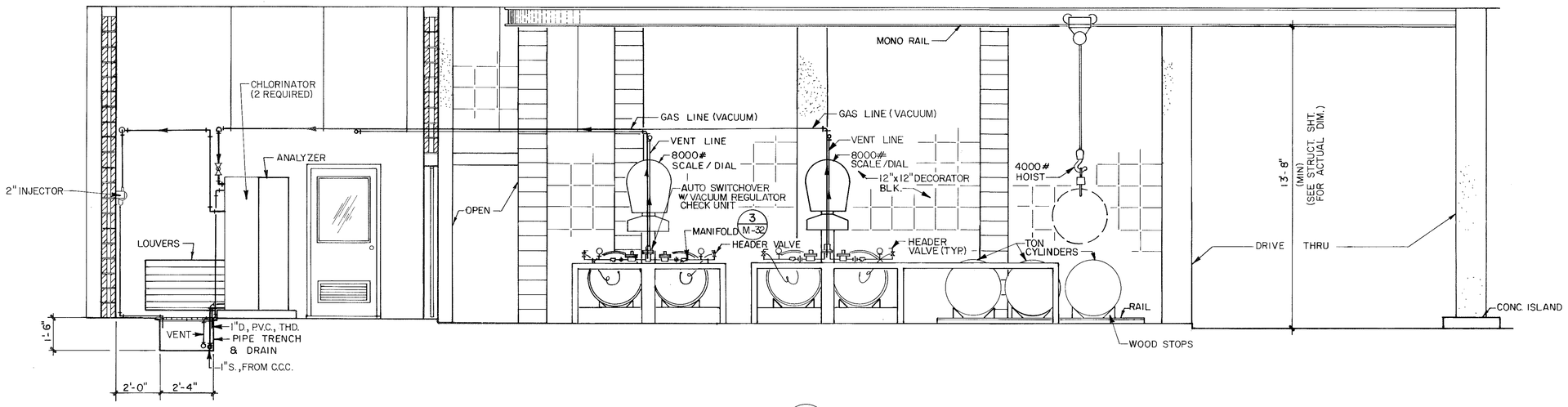
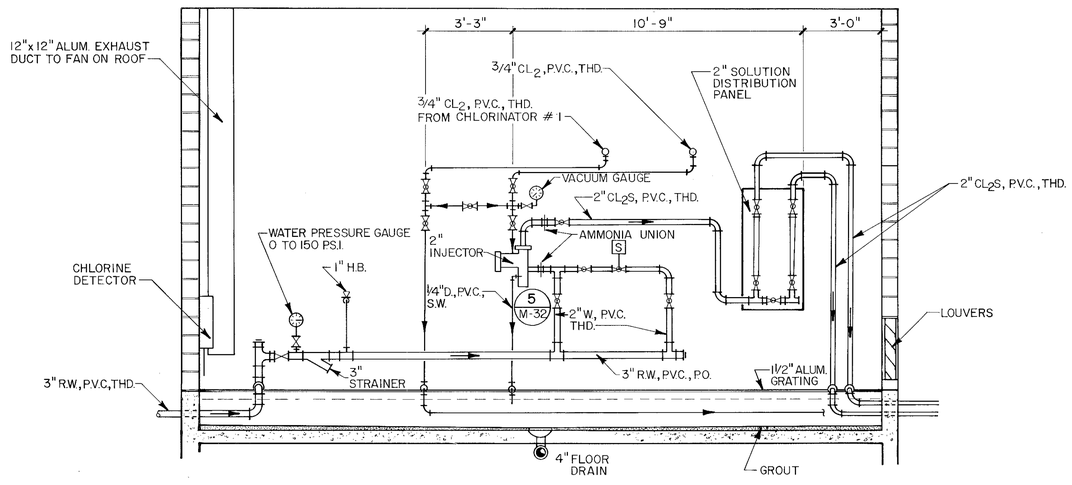


SECTION 1 / M-30

3/8" = 1'-0"



SECTION 2 / M-30

3/8" = 1'-0"

NOTE

ALL BALL VALVES SHALL BE TRUE UNION TYPE.

RICHARD DI MONTE — No. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

CHLORINE BUILDING - SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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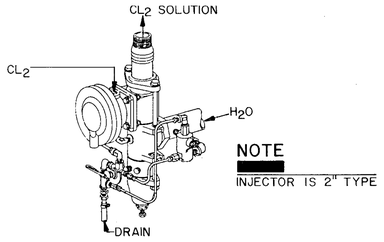
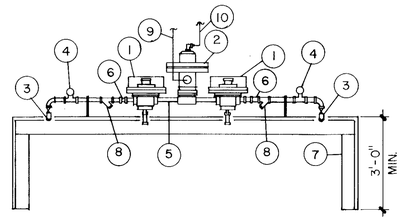
26-01 RECORD DRAWINGS 12/19/89



NOTE
INJECTOR IS 2" TYPE

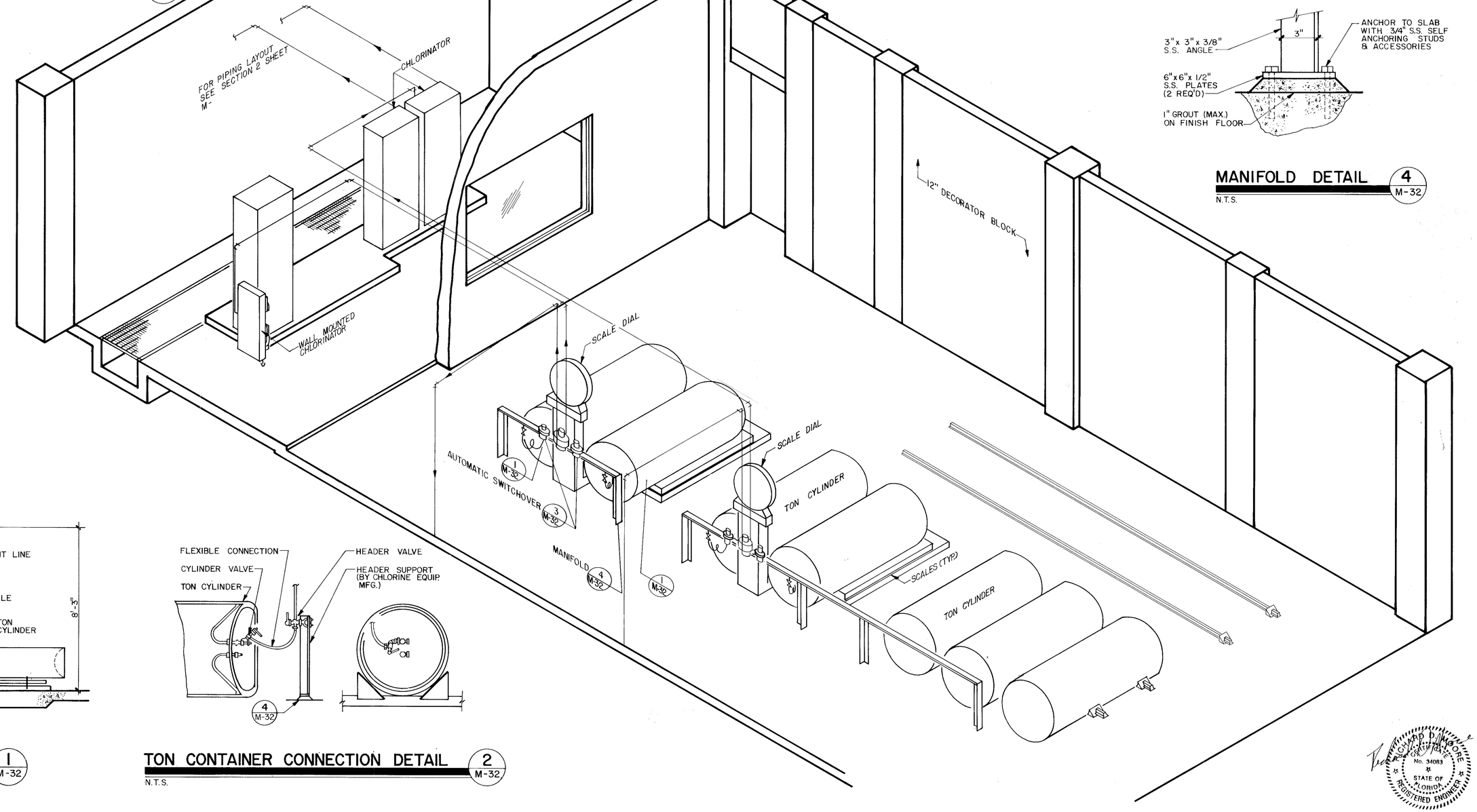
REMOTE INJECTOR DETAIL 5 M-31
N.T.S.

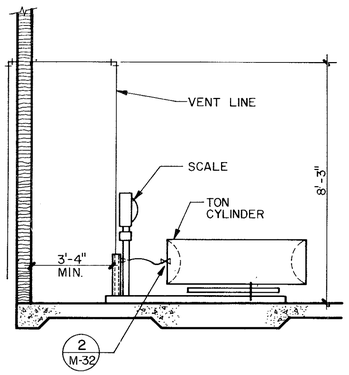


LEGEND
1. AUTOMATIC SWITCHOVER, PRESSURE REDUCING AND SHUT OFF VALVE
2. PRESSURE CHECK UNIT AND RELIEF VALVE
3. 3/4" HEADER VALVE
4. CHLORINE GAS PRESSURE GAGE
5. 3/4" BLACK IRON SCD. 80 PIPE
6. 3/4" AMMONIA UNION
7. MANIFOLD SUPPORT FRAME 3"x3"x3/16"x FT. (ASSEMBLED AND SUPPLIED BY CHLORINATOR MANUFACTURER)
8. 3/4" STRAINER
9. 1" VACUUM LINE, PVC (SCH. 40) TO CHLORINATORS
10. VENT LINE

AUTOMATIC SWITCHOVER AND MANIFOLD DETAIL 3 M-32
N.T.S.

MANIFOLD DETAIL 4 M-32
N.T.S.





DETAIL 1 M-32
N.T.S.

TON CONTAINER CONNECTION DETAIL 2 M-32
N.T.S.

RICHARD P. MOORE CIVIL No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

CHLORINE BUILDING - DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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Consulting Engineers
6404 MANATEE AVE., W., SUITE N
BRADENTON, FLORIDA 33529
(813) 794-5450

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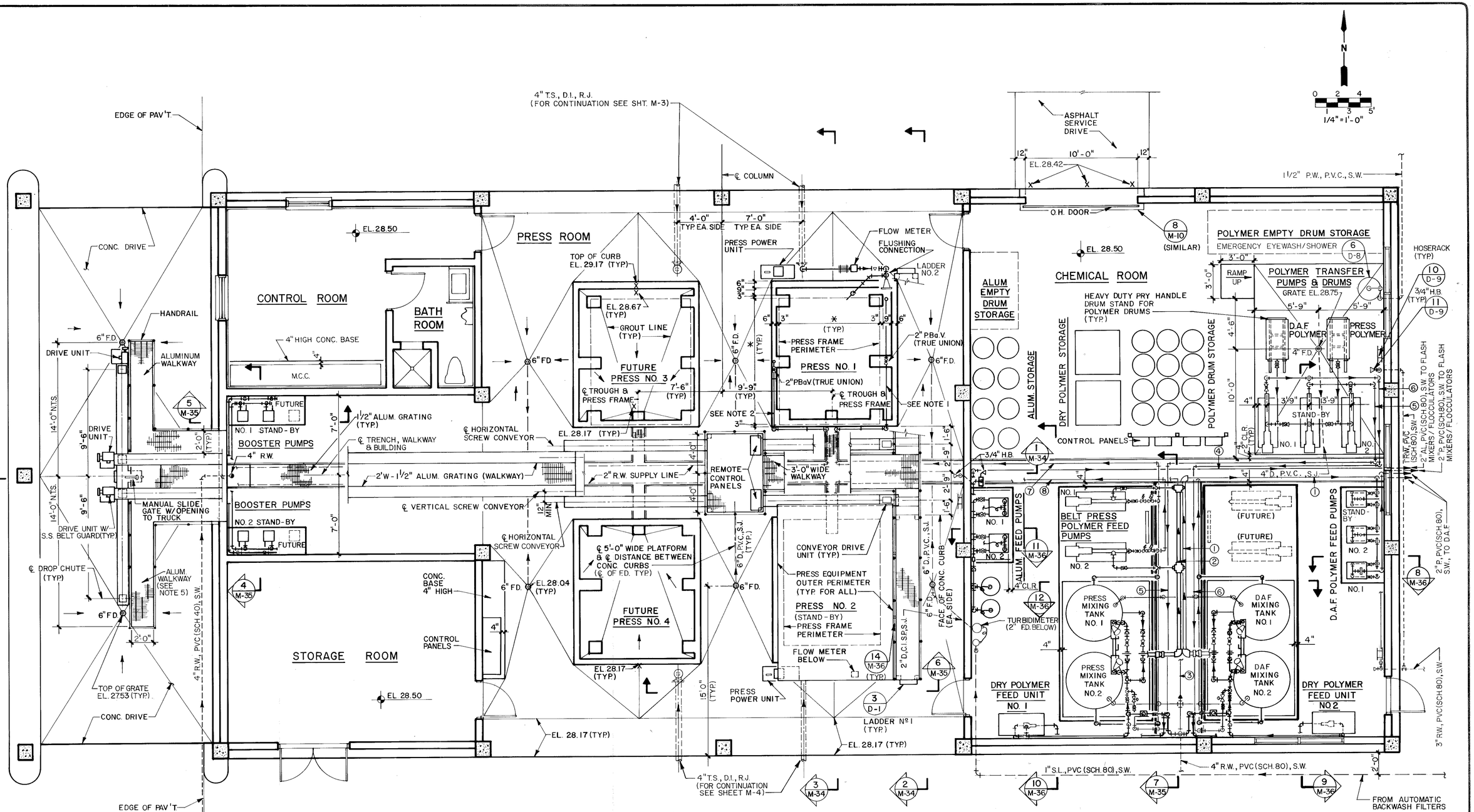
26-01 RECORD DRAWINGS 12/19/89

AP 31693A



* AS PER MFR'S. EQUIP.

LEGEND

① 4" POLYMER SOLUTION TO D.A.F. FEED PUMPS
② 4" POLYMER SOLUTION TO PRESS FEED PUMPS
③ 2" R.W. LINE TO ALUM FEED PUMPS
④ 3" ALUM SOLUTION LINE TO FLASH MIXERS / FLOCCULATORS
⑤ 3" POLYMER TO PRESS MIXING TANKS
⑥ 3" POLYMER TO D.A.F. MIXING TANKS
⑦ 2" POLYMER SOLUTION TO PRESS # 1
⑧ 2" POLYMER SOLUTION TO PRESS # 2

NOTES

1. 2" PVC (SCH. 80), POLYMER SUPPLY LINE, ANCHOR TO CONC. W/MIN. 2 S.S. PIPE STRAPS & ACCESSORIES (TYP. BOTH PRESSES).
2. 2" PVC (SCH 80) R.W. SPRAY WATER SUPPLY LINE (TYP. BOTH PRESSES) ANCHOR TO CONC. W/ MIN. 2 S.S. PIPE STRAPS & ACCESSORIES (TYP. BOTH PRESSES).
3. ALL SHUT-OFF AND ISOLATION VALVES FOR POLYMER & ALUM PIPING SYSTEMS SHALL BE TRUE UNION P.Ba.V UNLESS OTHERWISE NOTED OR INDICATED.
4. ALL CHEMICAL PIPING AND BOOSTER PUMP PIPING SHALL BE SCH. 80 PVC W/ THD. JOINTS AND FITTINGS.
5. ALUM. WALKWAYS IN DRIVE-THROUGH AREA SHALL BE SUPPORTED FROM THE ROOF W/ S.S. HARDWARE.

RICHARD L. MOORE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

DEWATERING / CHEMICAL BUILDING - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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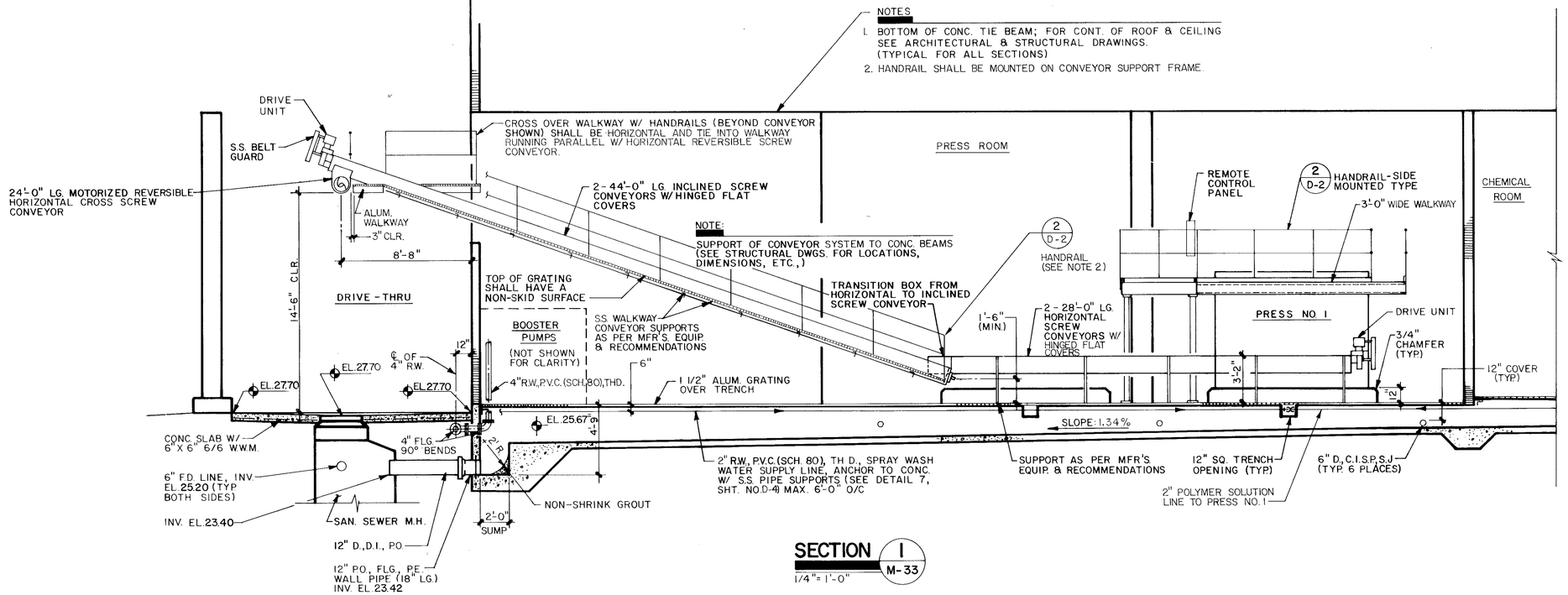
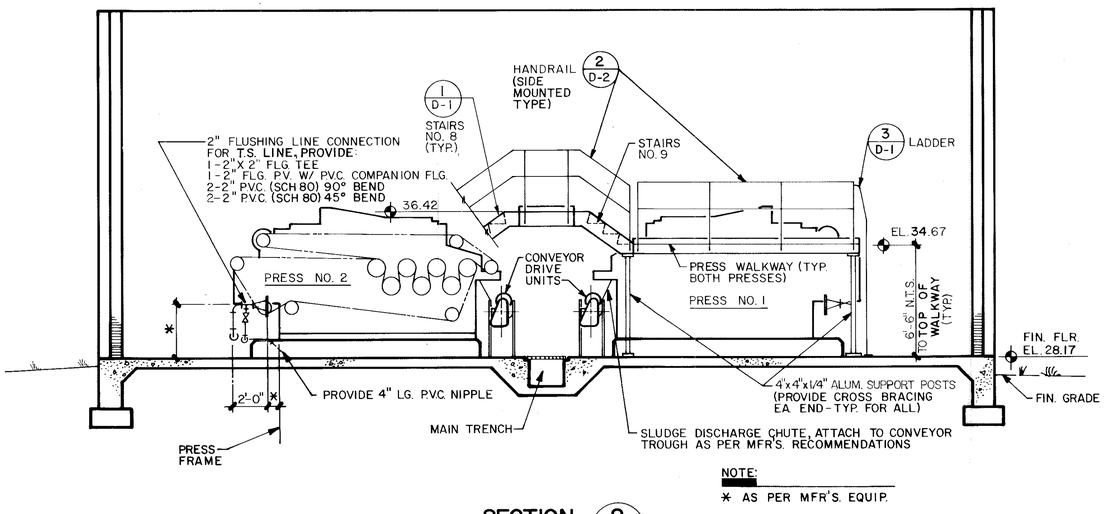
26-01

RECORD DRAWINGS 12/19/89

4 F 31693A

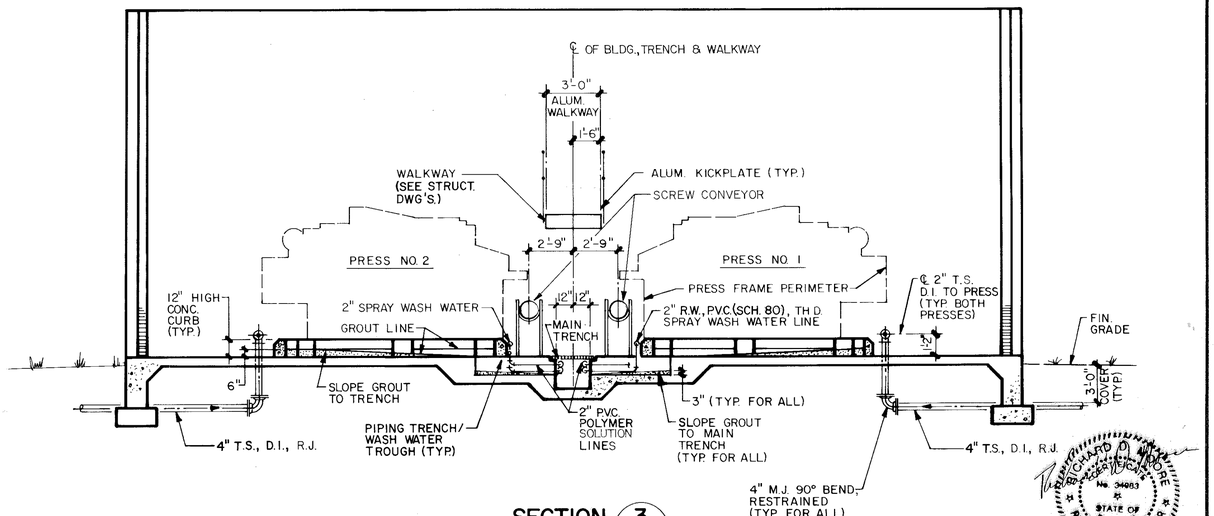


SECTION 1 M-33
1/4"= 1'-0"



NOTE:
* AS PER MFR'S. EQUIP.

SECTION 2 M-33
1/4"= 1'-0"



SECTION 3 M-33
1/4"= 1'-0"

RICHARD O. MOORE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

DEWATERING/CHEMICAL BUILDING - SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
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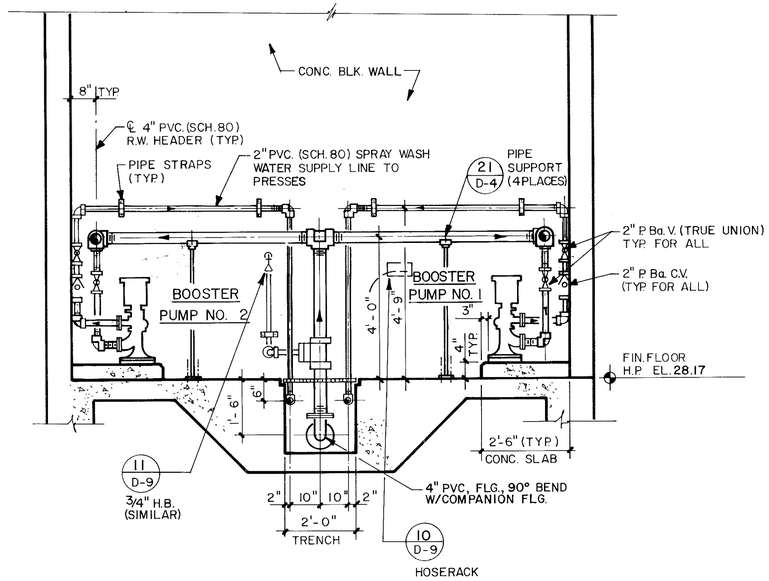
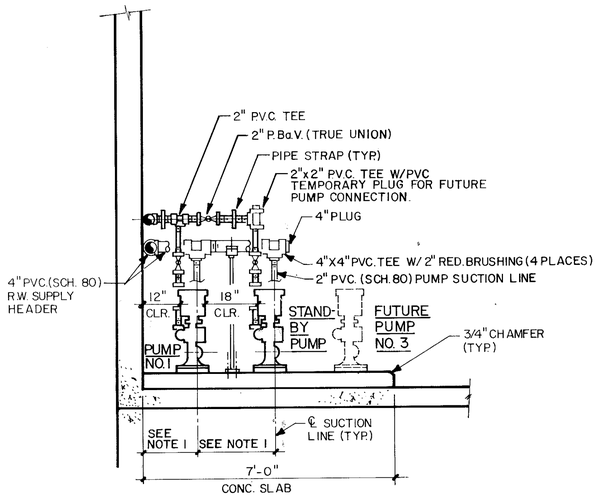


SECTION 4 / M-33

1/2"=1'-0"

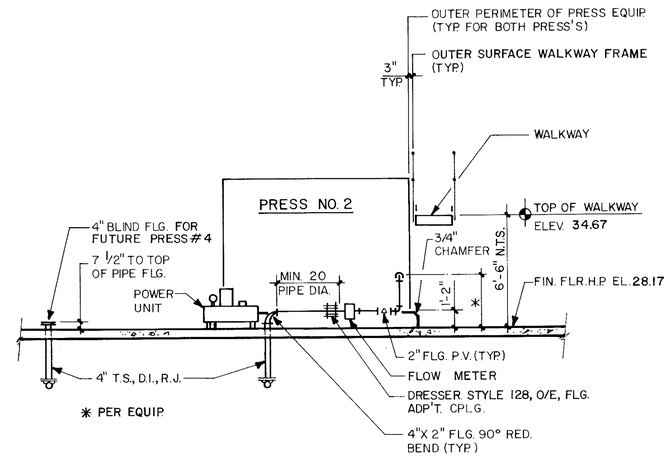


NOTES

1. AS PER MFR'S EQUIP.
2. ATTACH PIPES TO PIPE SUPPORTS & PIPE SUPPORTS TO CONC. PADS OR FLOOR W/SS. HARDWARE

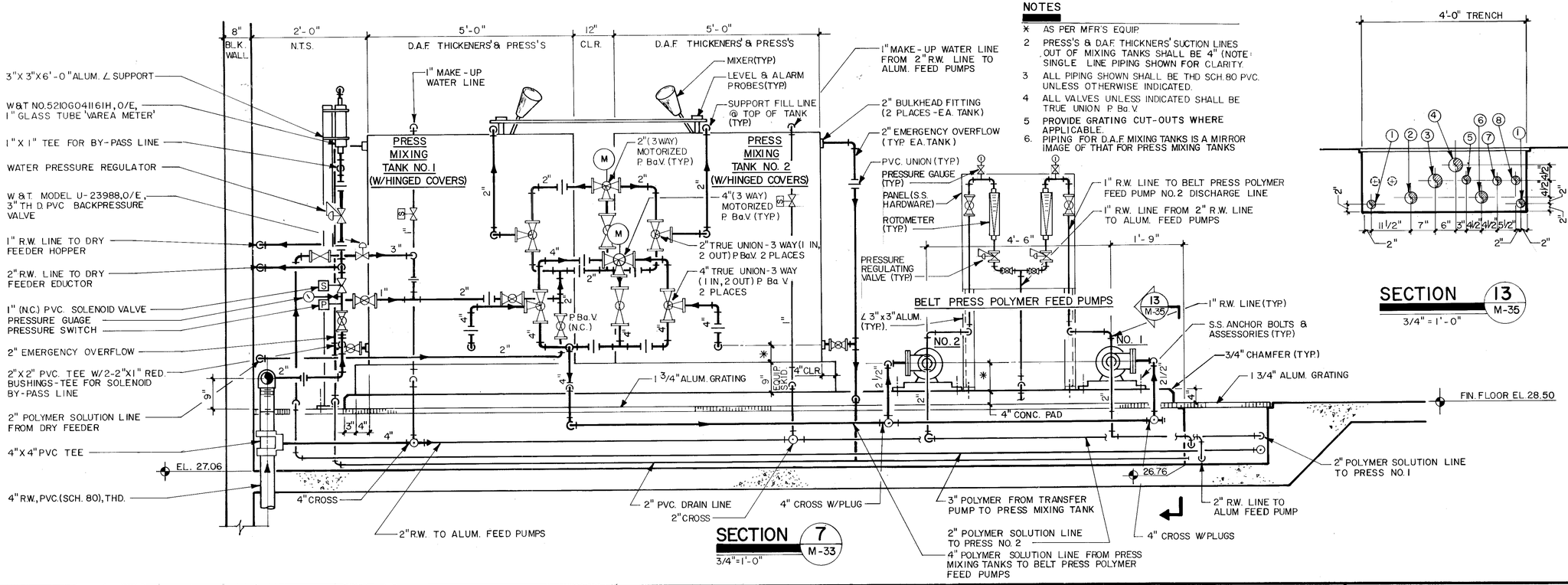
SECTION 5 / M-33

1/2"=1'-0"



SECTION 6 / M-33

1/4"=1'-0"



SECTION 7 / M-33

3/4"=1'-0"

SECTION 13 / M-35

3/4" = 1'-0"

NOTES

1. * AS PER MFR'S EQUIP.
2. PRESS'S & D.A.F. THICKNERS' SUCTION LINES OUT OF MIXING TANKS SHALL BE 4" (NOTE: SINGLE LINE PIPING SHOWN FOR CLARITY.
3. ALL PIPING SHOWN SHALL BE THD SCH. 80 PVC. UNLESS OTHERWISE INDICATED.
4. ALL VALVES UNLESS INDICATED SHALL BE TRUE UNION P. Ba. V.
5. PROVIDE GRATING CUT-OUTS WHERE APPLICABLE.
6. PIPING FOR D.A.F MIXING TANKS IS A MIRROR IMAGE OF THAT FOR PRESS MIXING TANKS

LEGEND

1. 2" PVC DRAIN LINE
2. 3" PVC POLYMER LINE FROM POLYMER TRANSFER PUMP TO D.A.F. MIXING TANKS
3. 4" PVC POLYMER SOLUTION LINE TO D.A.F. POLYMER FEED PUMPS
4. 4" PVC POLYMER SOLUTION LINE TO BELT PRESS POLYMER FEED PUMPS
5. 2" R.W. LINE TO ALUM. FEED PUMPS
6. 3" PVC POLYMER LINE FROM POLYMER TRANSFER PUMP TO PRESS MIXING TANKS
7. 2" PVC POLYMER SOLUTION LINE TO PRESS NO. 2
8. 2" PVC POLYMER SOLUTION LINE TO PRESS NO. 1

REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

DEWATERING / CHEMICAL BUILDING - SECTIONS

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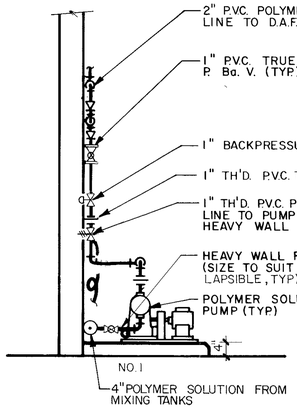
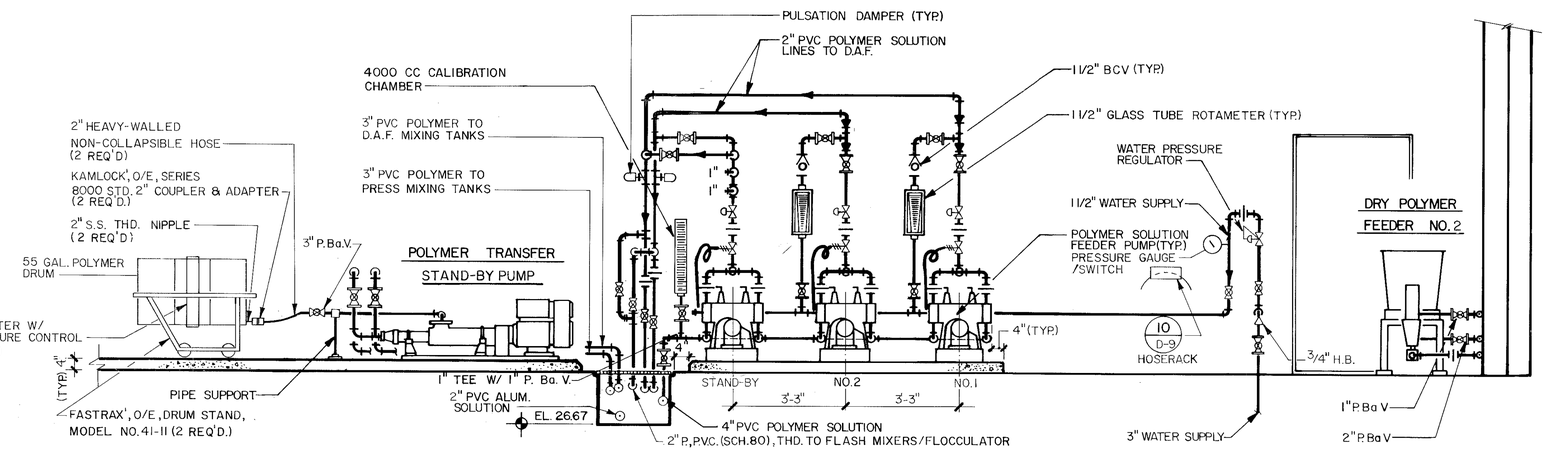


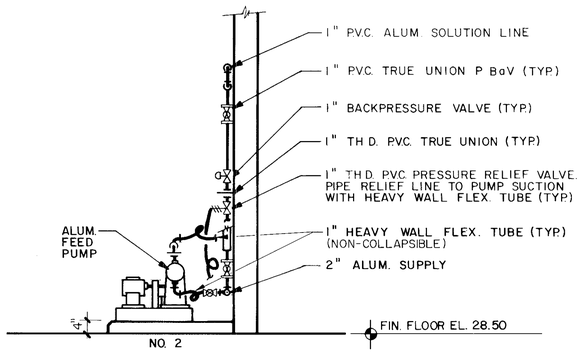
SECTION 8 M-33
1/2"=1'-0"

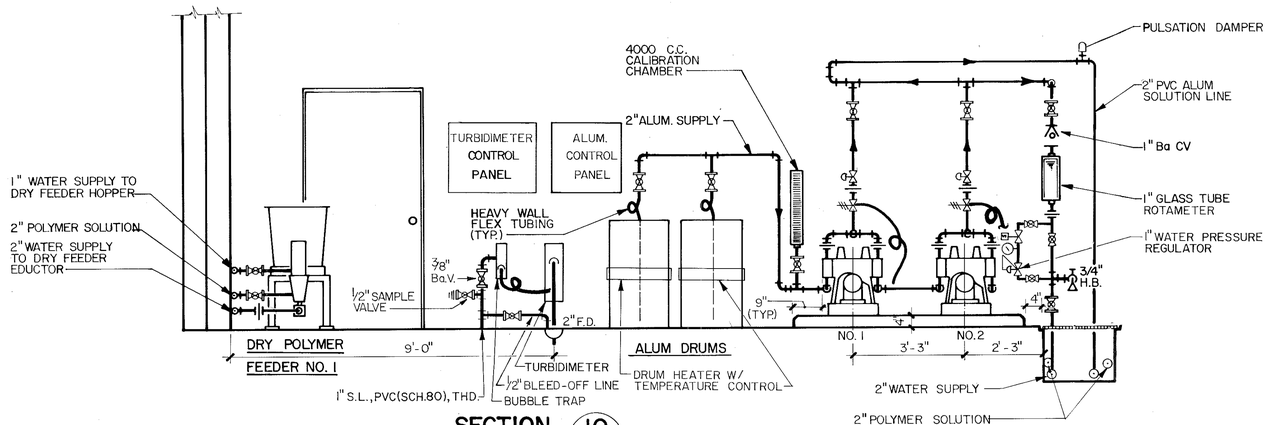


NOTE

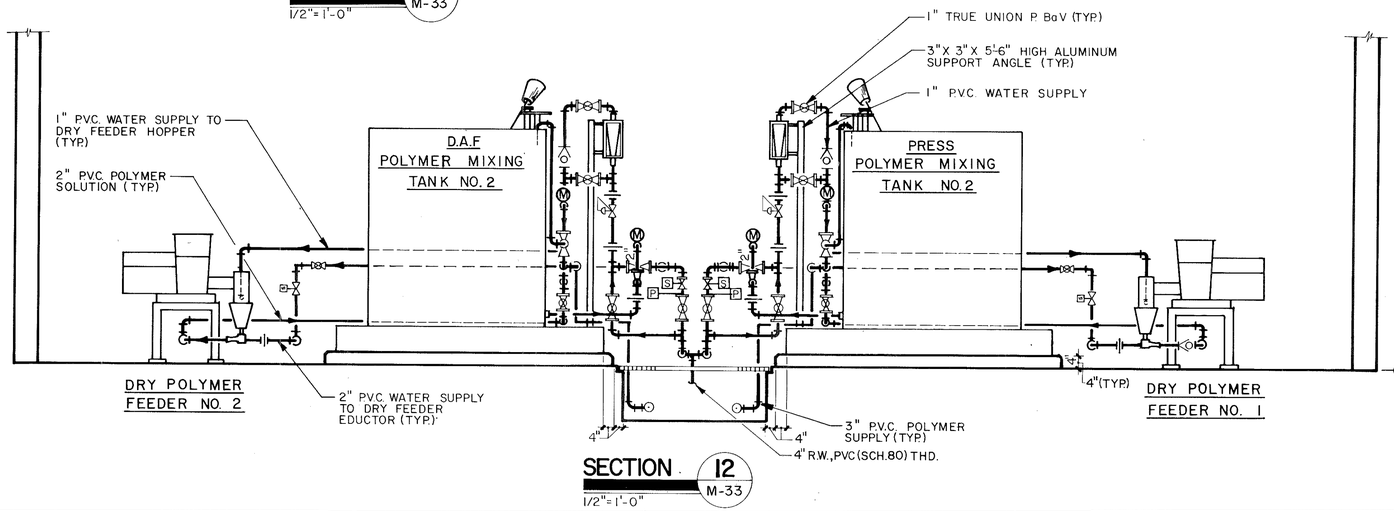
CONTRACTOR TO PROVIDE PIPE SUPPORTS AND HANGERS AS REQUIRED TO PROPERLY SUPPORT PIPING AND EQUIPMENT.

SECTION 9 M-33
1/2"=1'-0"



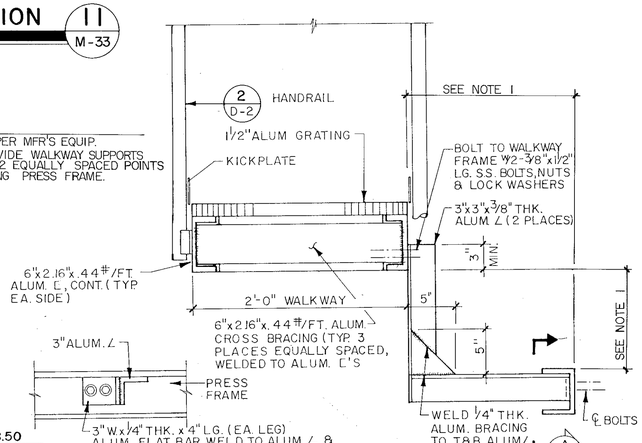


SECTION 10 M-33
1/2"=1'-0"



SECTION 12 M-33
1/2"=1'-0"

SECTION 11 M-33
1/2"=1'-0"



NOTES

1. AS PER MFR'S EQUIP.
2. PROVIDE WALKWAY SUPPORTS AT 2 EQUALLY SPACED POINTS ALONG PRESS FRAME.

DETAIL A
N.T.S.

DETAIL 14 M-33
1 1/2"=1'-0"

THOMAS P. MOORE — No. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

DEWATERING / CHEMICAL BUILDING - SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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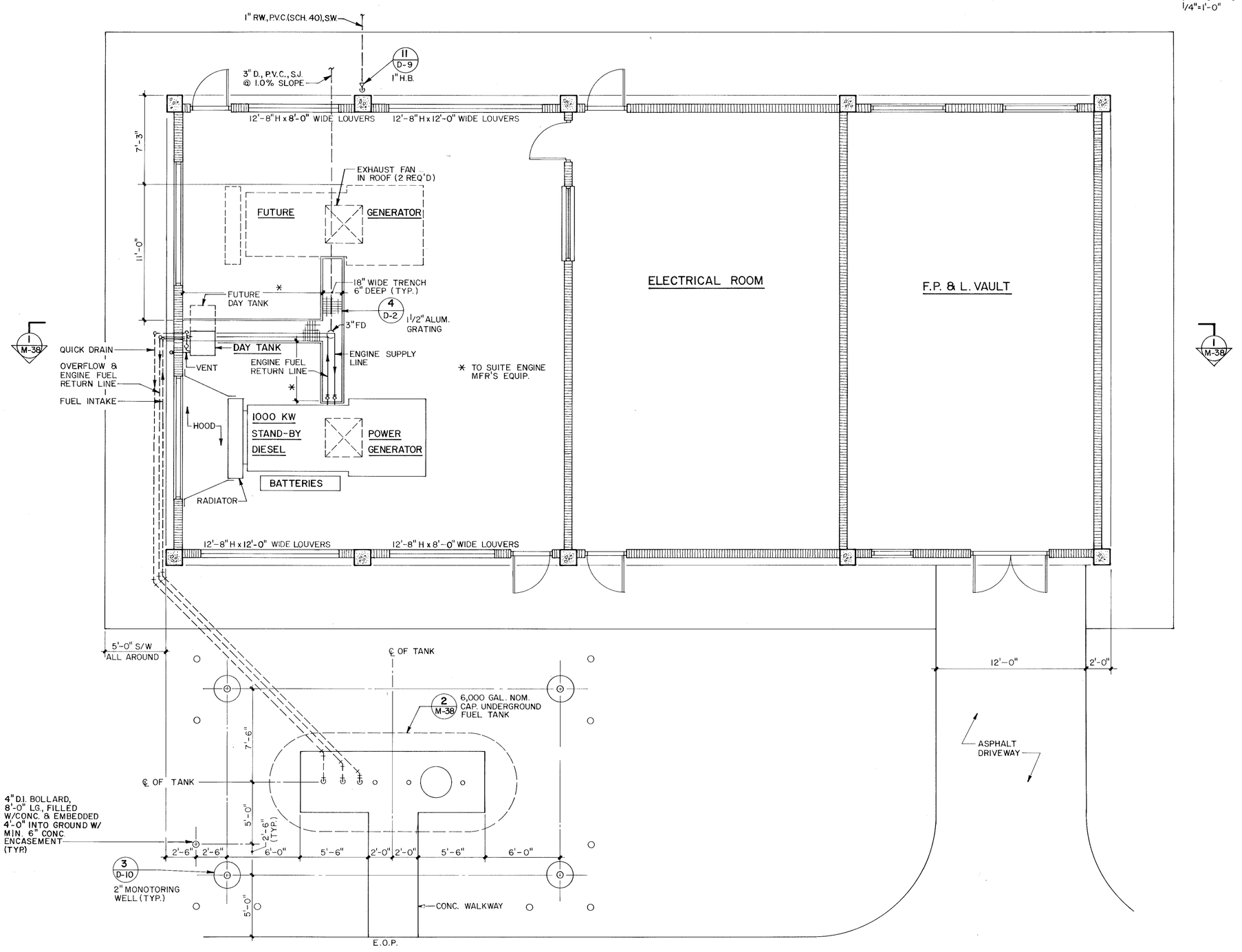
26-01 RECORD DRAWINGS 12/19/89

AF J1693A

N
0 2 4
1 3 5
1/4"=1'-0"



RICHARD P. WILLIAMS
No. 34083
STATE OF FLORIDA
REGISTERED ENGINEER

ELECTRICAL BUILDING - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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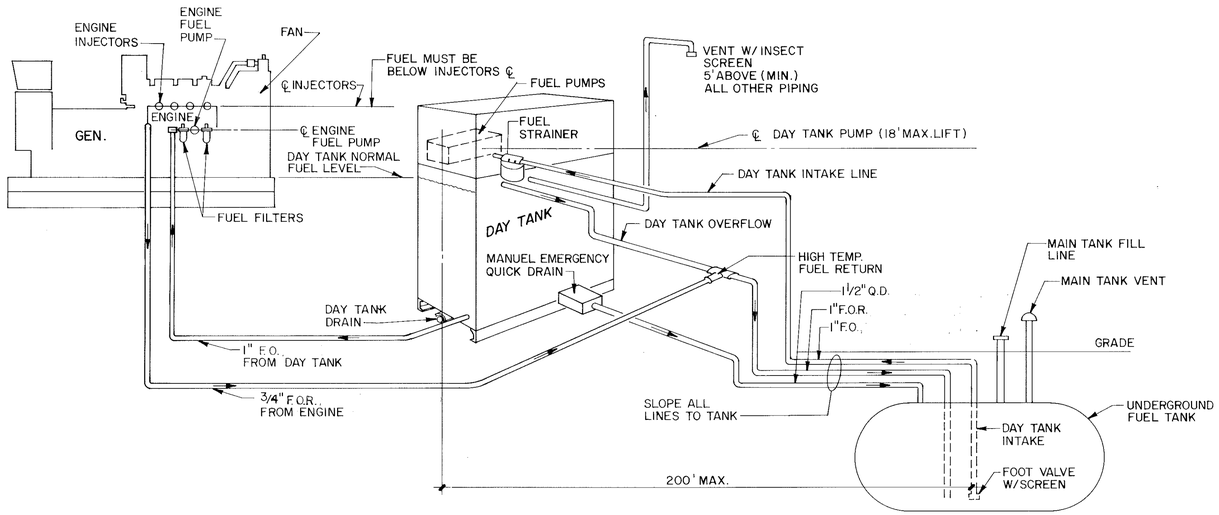
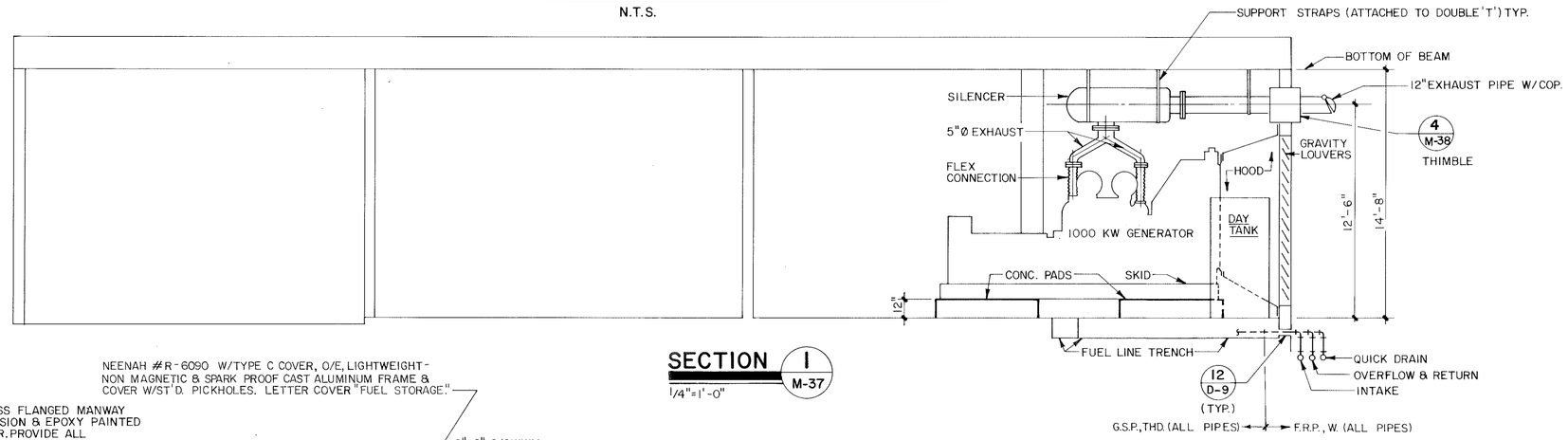
26-01

RECORD DRAWINGS 12/19/89



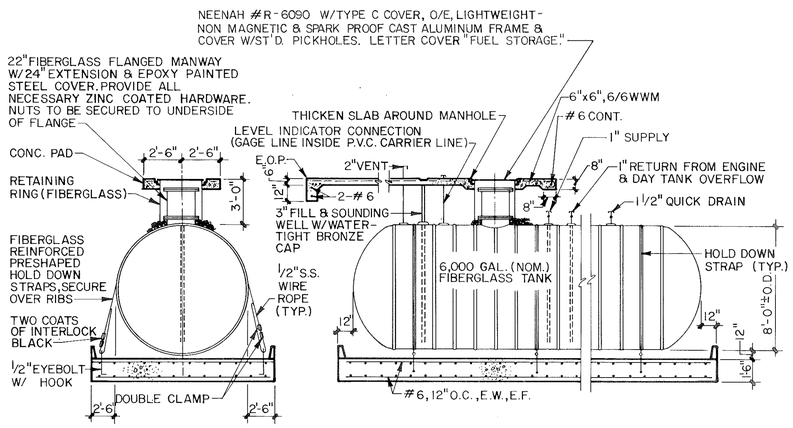
EMERGENCY GENERATOR FUEL LINE SCHEMATIC

N.T.S.



SECTION 1 / M-37

1/4"=1'-0"



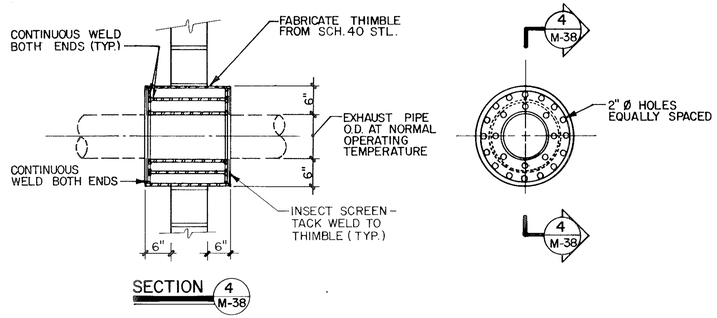
NOTES

1) ACTUAL LOCATION OF MANWAYS & FITTINGS SHALL BE ACCORDING TO TANK MFR'S STANDARD.

2) SEE PLAN FOR CONFIGURATION OF TOP SLAB

FUEL TANK DETAIL 2 / M-37

N.T.S.



SECTION 4 / M-38

THIMBLE DETAIL 3 / M-38

N.T.S.

RICHARD D. MOORE
No. 34083
STATE OF FLORIDA
REGISTERED ENGINEER

ELECTRICAL BUILDING - SECTION & DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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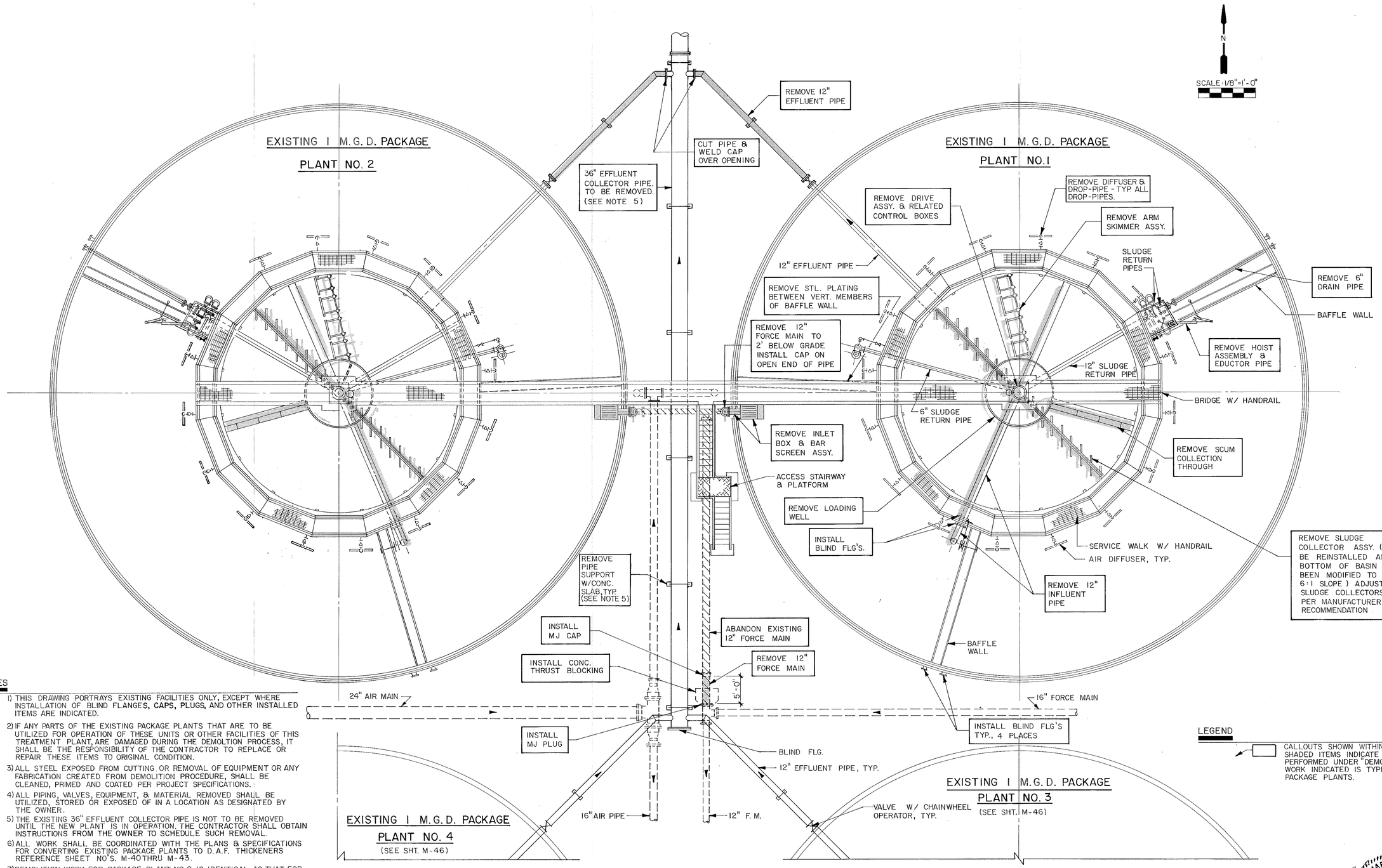

NOTES

1) THIS DRAWING PORTRAYS EXISTING FACILITIES ONLY, EXCEPT WHERE INSTALLATION OF BLIND FLANGES, CAPS, PLUGS, AND OTHER INSTALLED ITEMS ARE INDICATED.
2) IF ANY PARTS OF THE EXISTING PACKAGE PLANTS THAT ARE TO BE UTILIZED FOR OPERATION OF THESE UNITS OR OTHER FACILITIES OF THIS TREATMENT PLANT, ARE DAMAGED DURING THE DEMOLTION PROCESS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE OR REPAIR THESE ITEMS TO ORIGINAL CONDITION.
3) ALL STEEL EXPOSED FROM CUTTING OR REMOVAL OF EQUIPMENT OR ANY FABRICATION CREATED FROM DEMOLITION PROCEDURE, SHALL BE CLEANED, PRIMED AND COATED PER PROJECT SPECIFICATIONS.
4) ALL PIPING, VALVES, EQUIPMENT, & MATERIAL REMOVED SHALL BE UTILIZED, STORED OR EXPOSED OF IN A LOCATION AS DESIGNATED BY THE OWNER.
5) THE EXISTING 36" EFFLUENT COLLECTOR PIPE IS NOT TO BE REMOVED UNTIL THE NEW PLANT IS IN OPERATION. THE CONTRACTOR SHALL OBTAIN INSTRUCTIONS FROM THE OWNER TO SCHEDULE SUCH REMOVAL.
6) ALL WORK SHALL BE COORDINATED WITH THE PLANS & SPECIFICATIONS FOR CONVERTING EXISTING PACKACE PLANTS TO D.A.F. THICKENERS REFERENCE SHEET NO'S. M-40 THRU M-43.
7) DEMOLITION WORK FOR PACKAGE PLANT NO.2 IS IDENTICAL AS THAT FOR PACKAGE PLANT NO. I.

LEGEND

CALLOUTS SHOWN WITHIN BOXES & SHADED ITEMS INDICATE WORK TO BE PERFORMED UNDER "DEMOLITION PLAN". WORK INDICATED IS TYPICAL OF BOTH PACKAGE PLANTS.

RICHARD D. MOORE — CERTIFICATE NO. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

EXISTING PACKAGE PLANTS NO. I & NO. 2 DEMOLITION - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
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DRAWN J.T.W. FILE NO. 031-006-84 SHEET M-39 OF M-46

26-01 RECORD DRAWINGS 12/19/89

A.F. 31693A

NOTES

1. PUMPING FACILITIES EQUIPMENT & PIPING FOR D.A.F. THICKENERS NO.1 & NO.2 ARE IDENTICAL EXCEPT FOR ORIENTATION.
2. ALL CALLOUTS THAT ARE NOT PRECEDED BY THE WORD EXIST. ARE NEW ITEMS & SHALL BE CONSIDERED AS NEW WORK BY THE CONTRACTOR.
3. ALL PIPING EQUIPMENT & VALVES SHALL BE ADEQUATELY SECURED IN PLACE WITH PIPE HANGERS OR SUPPORTS PER PROJECT SPECIFICATIONS.
4. ALL PIPING INSTALLED UNDER CONCRETE SLAB SHALL BE ENCASED IN CONCRETE.

N

0 4 8
2 6 10
1/8" = 1'-0"

RECYCLE PUMPING FACILITY

D.A.F. THICKENER NO.1 (SEE NOTE 1)

D.A.F. THICKENER NO.2 (SEE NOTE 1)

(TYP.) BOTH SIDES OF RECYCLE PUMPING FACILITY (EXCEPT AS OTHERWISE INDICATED)

FLOW METER 7 M-42

EXIST. WALL - REMOVE PLATES BETWEEN SUPPORTS

EXIST. CONC. PAD

EXIST. ACCESS STAIRWAY

EXIST. WALL

B.F.

FS. FLOW DIVISION BOX

FLOAT BOX

EXIST. BRIDGE

EXIST. SERVICE WALK

EXIST. SCRAPPER ARMS

FLOAT SKIMMER ASSEMBLY W/SUPPORT CABLES

EXIST. AIR MAIN

EXIST. TANK, (TYP. 2 PLACES)

EXIST. CONC. SLAB

EXIST. SL. AIRLIFT PIPE & VALVE ASSEMBLY

4"AIR, S.S., W. RADIAL TO TANK (TYP.)

'SANITAIRE' O/E, S.S. PIPE SUPPORT (TYP.)

'SANITAIRE' O/E, D-24 S.S. COARSE BUBBLER DIFFUSER (4 PER DROP-PIPE, TYP. EACH DROP-PIPE.)

CONNECT 4"AIR, S.S., W. DROP-PIPE TO EXIST. QUICK CONNECT ADAPTER (TYP.)

EXIST. SETTLED SL. WITHDRAWAL PIPE

EXIST. WALL

DISCH. SUMP (TYP.)

SLOPE TOWARD DISCH. SUMP @ 1/16"/1'

SLOPE

ROTATION

Richard D. Moore
CERTIFICATE OF AUTHORIZATION No. 34083
STATE OF FLORIDA
REGISTERED ENGINEER

DAF THICKENERS - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL

WASTEWATER TREATMENT FACILITIES

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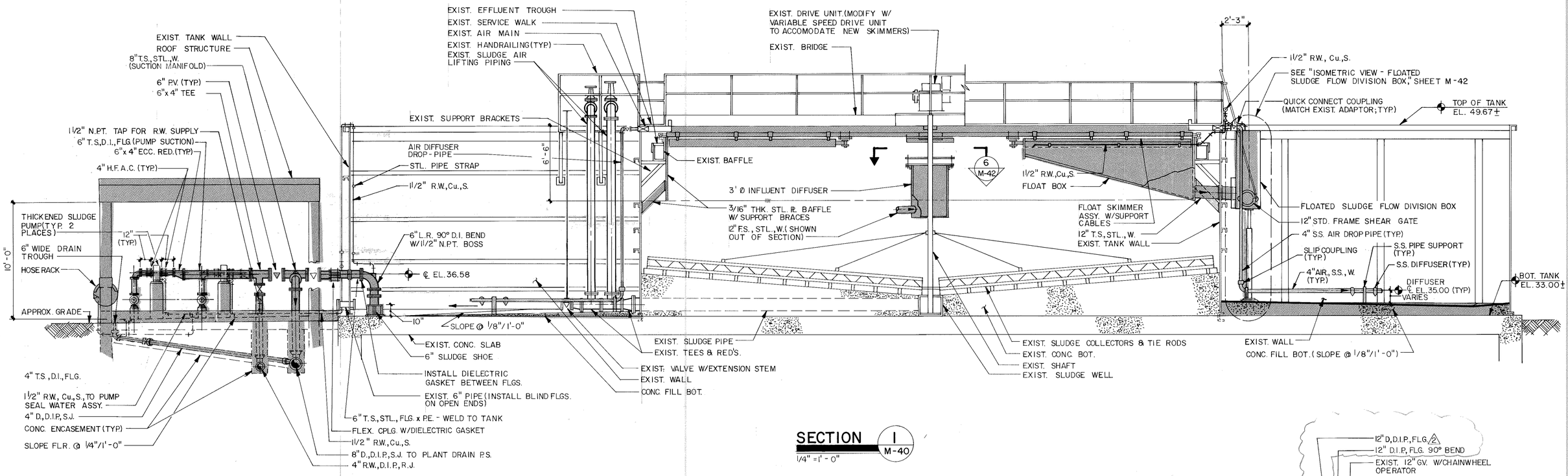
DRAWN J.T.W. FILE NO. 031-006-84 SHEET M-40 OF M-46

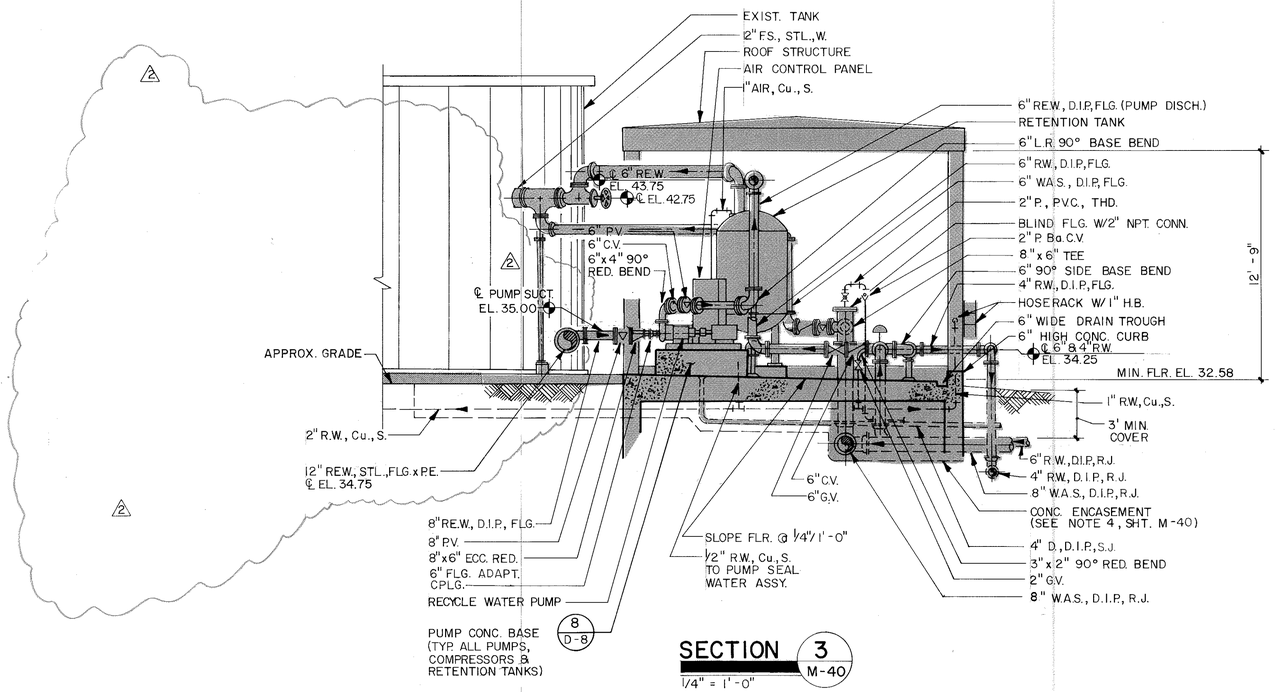
26-01

RECORD DRAWINGS 12/19/89

A.F. 51693A



SECTION 1 — M-40
1/4" = 1'-0"



SECTION 3 — M-40
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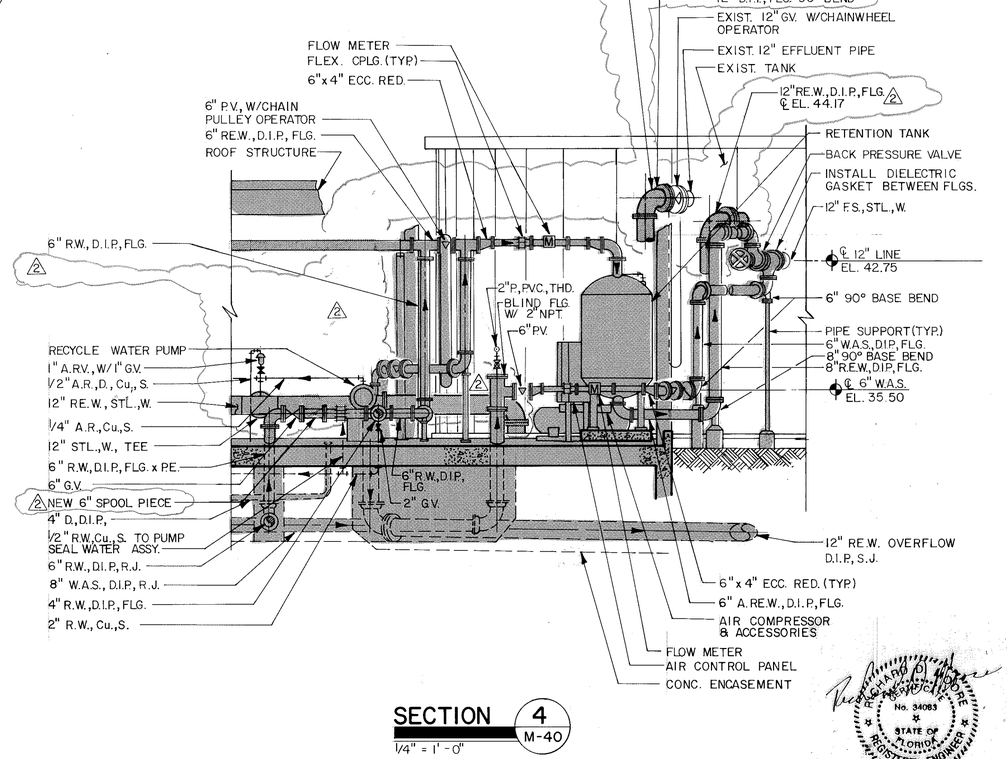

SECTION 4 — M-40
1/4" = 1'-0"

RICHARD D. MOORE — No. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

DAF THICKENERS - SECTIONS

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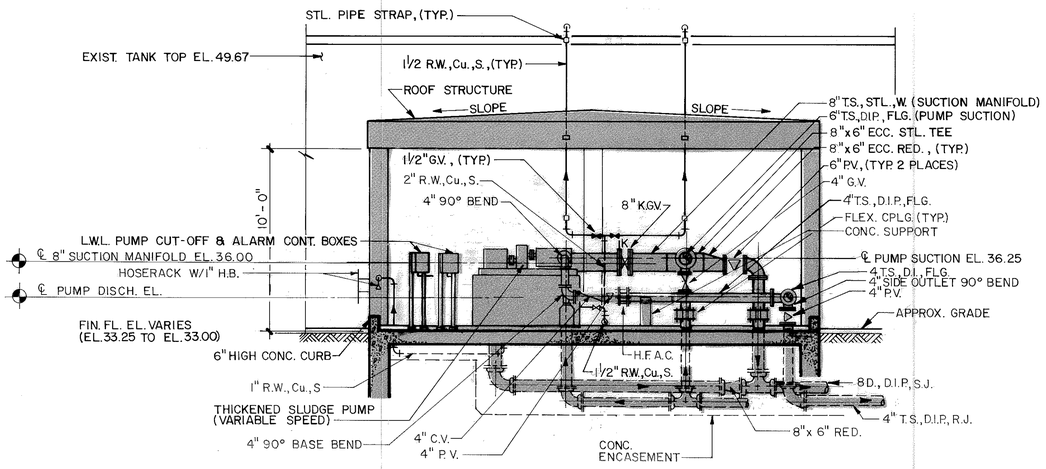
26-01 **RECORD DRAWINGS 12/19/89**

A.P. 31693A



SECTION 2 / M-40
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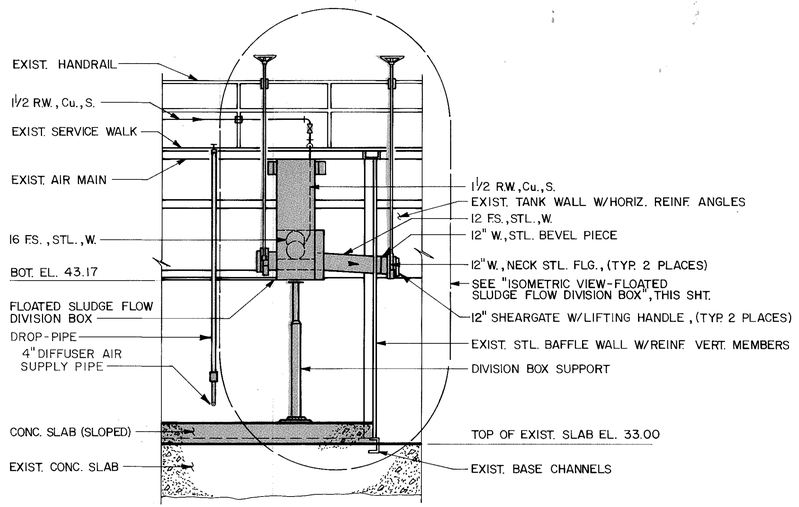
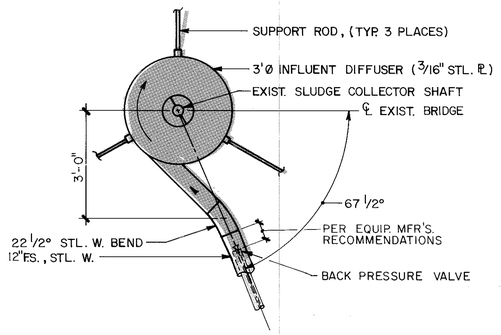
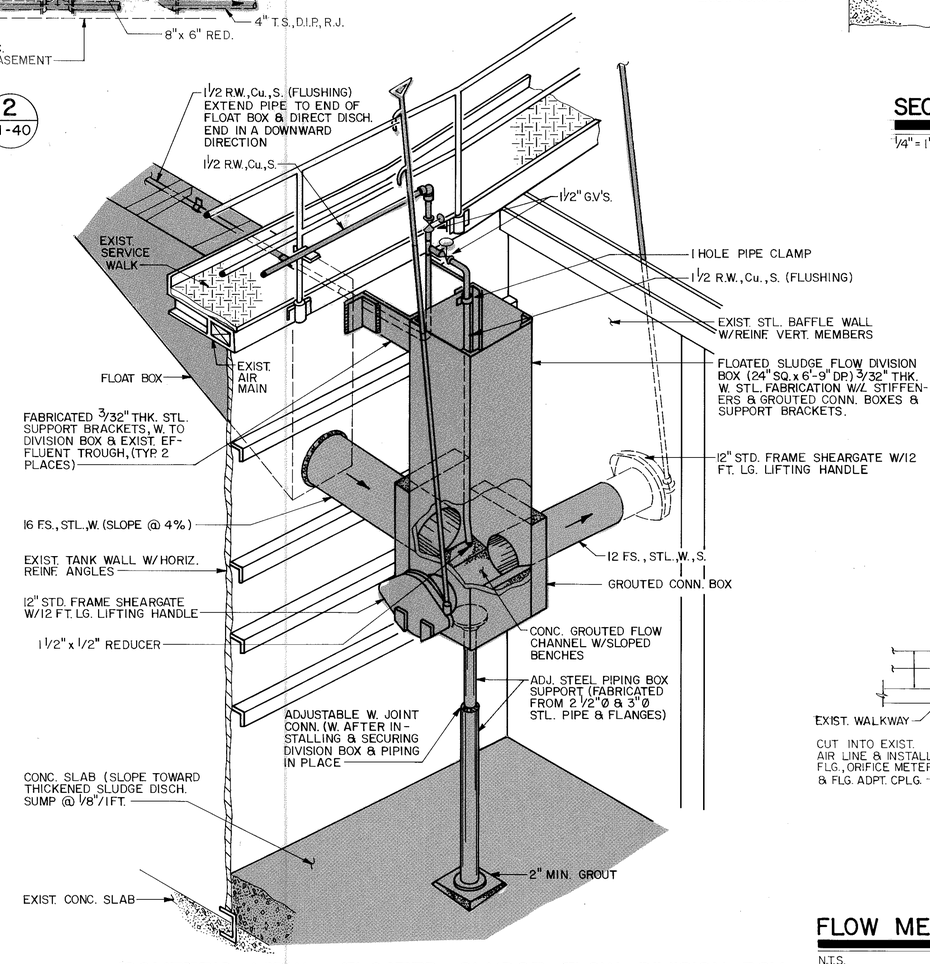


SECTION 5 / M-40
1/4" = 1'-0"

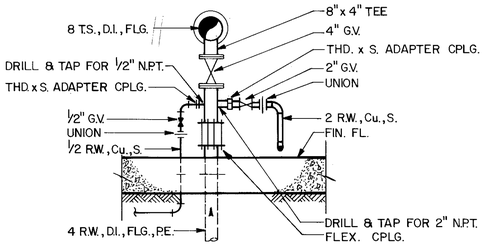


SECTION 5 / M-41
N.T.S.

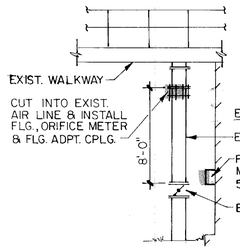


ISOMETRIC VIEW - FLOATED SLUDGE FLOW DIVISION BOX

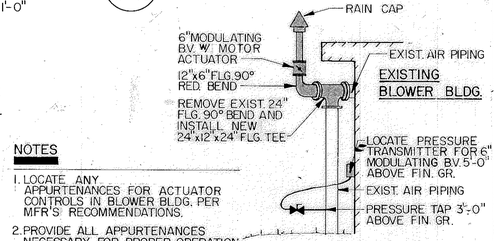
N.T.S.



SECTION 6 / M-43
1/2" = 1'-0"



FLOW METER DETAIL 7 / M-40
N.T.S.



NOTES

1. LOCATE ANY APPURTENANCES FOR ACTUATOR CONTROLS IN BLOWER BLDG. PER MFR'S RECOMMENDATIONS.
2. PROVIDE ALL APPURTENANCES NECESSARY FOR PROPER OPERATION OF MODULATING B.V.
3. CONNECT PRESSURE TAP W/ COPPER TUBING - SEE SPECS.

AIR BLEED-OFF DETAIL 8 / M-4
N.T.S.

DAF THICKENERS - SECTIONS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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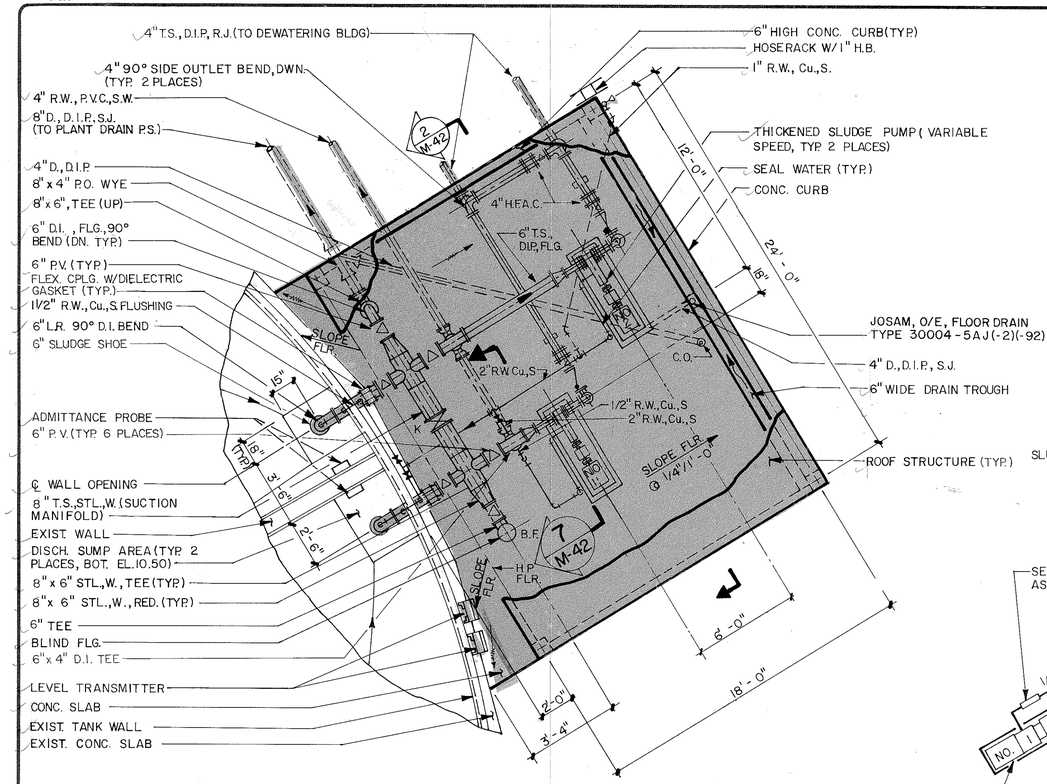
Z6-01

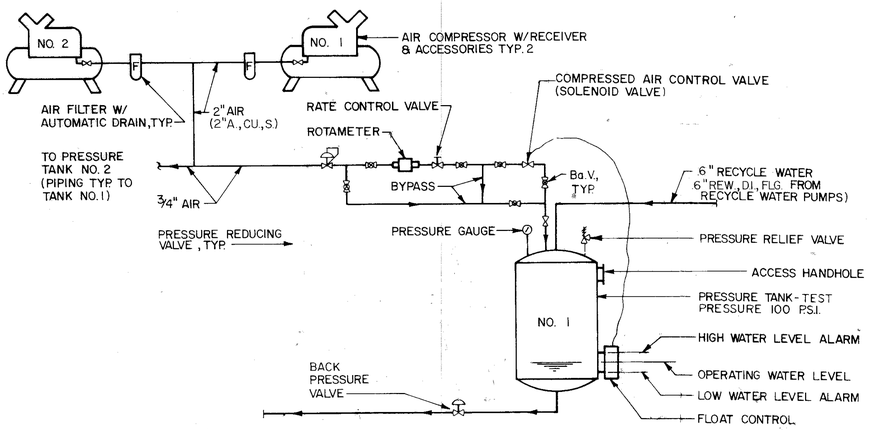
RECORD DRAWINGS 12/19/89

AF 31693A



DETAIL A M-40

1/4" = 1'-0"



PRESSURE TANK CONTROL DIAGRAM

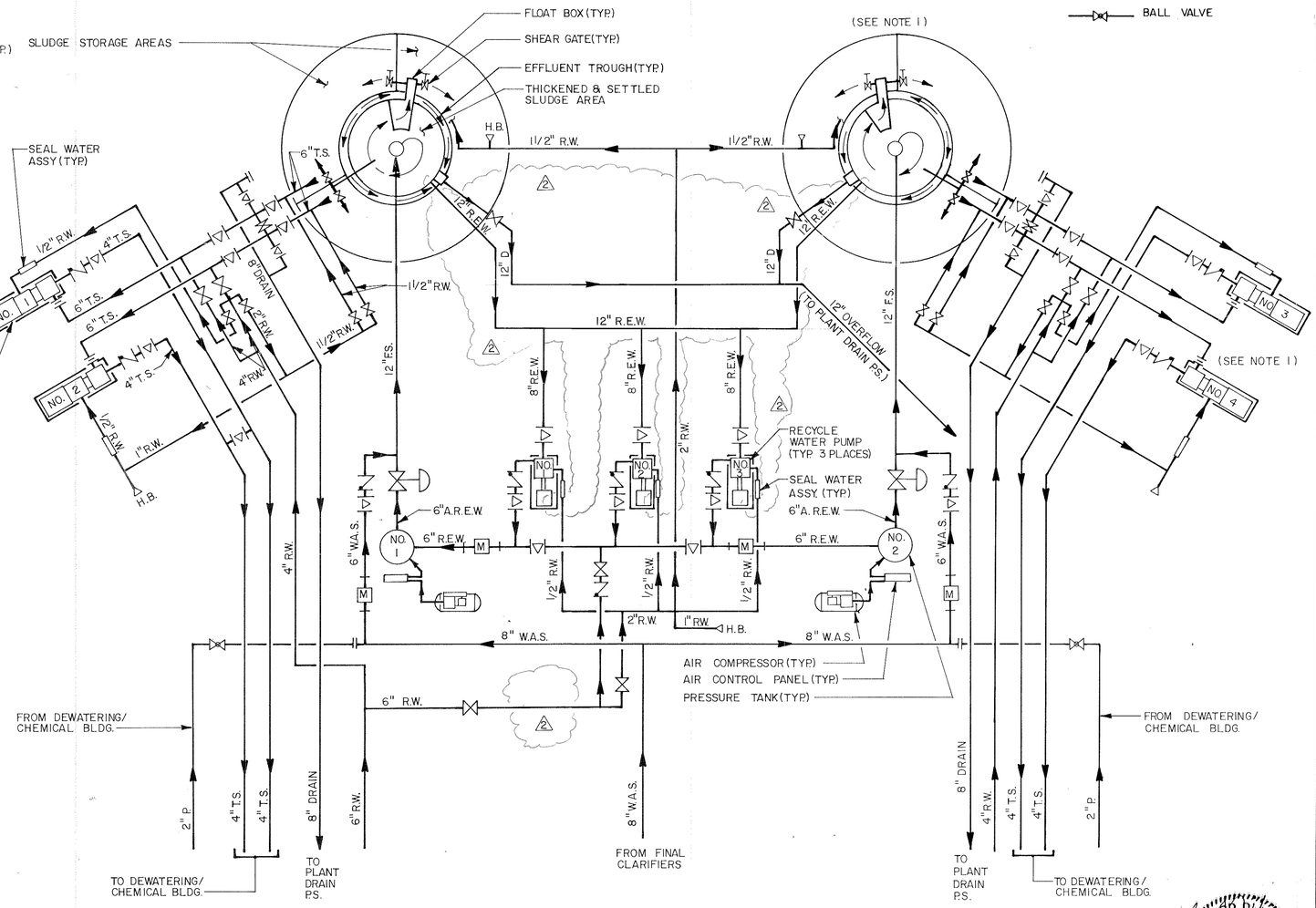
N.T.S.

NOTE

1. PIPING & EQUIPMENT CALLOUTS FOR D.A.F. THICKENER NO. 1 & THICKENED SLUDGE PUMPS NO. 1 & NO. 2 ARE TYPICAL FOR D.A.F. THICKENER NO. 2 & THICKENED SLUDGE PUMPS NO. 3 & NO. 4

LEGEND

- PLUG VALVE
- GATE VALVE
- CHECK VALVE
- KNIFE GATE VALVE
- FLUID DETECTOR SENSOR
- BLIND FLG.
- FLOW METER
- BACK PRESSURE VALVE
- PRESSURE RED., REG. VALVE
- FLOW DIRECTION
- SHEAR GATE
- BALL VALVE



PIPING SCHEMATIC

N.T.S. (SEE NOTE 1, THIS SHEET)

RICHARD D. MOORE — No. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

DAF THICKENERS - PIPING SCHEMATIC & DETAIL

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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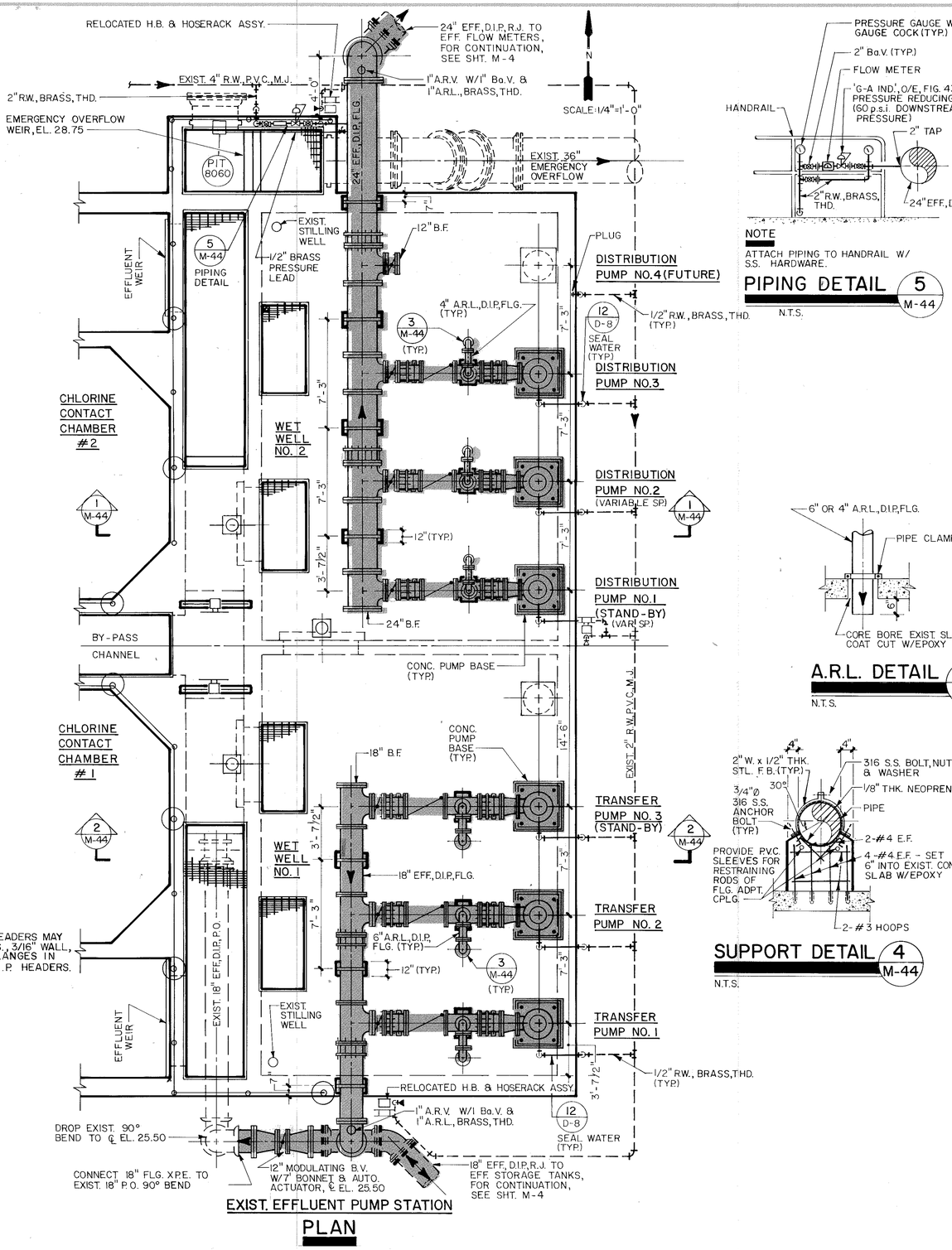
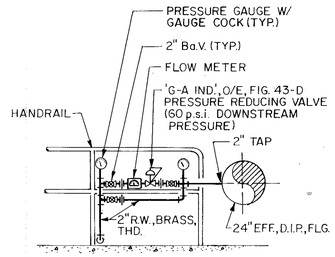
26-01 **RECORD DRAWINGS 12/19/89**



EXIST. EFFLUENT PUMP STATION

PLAN

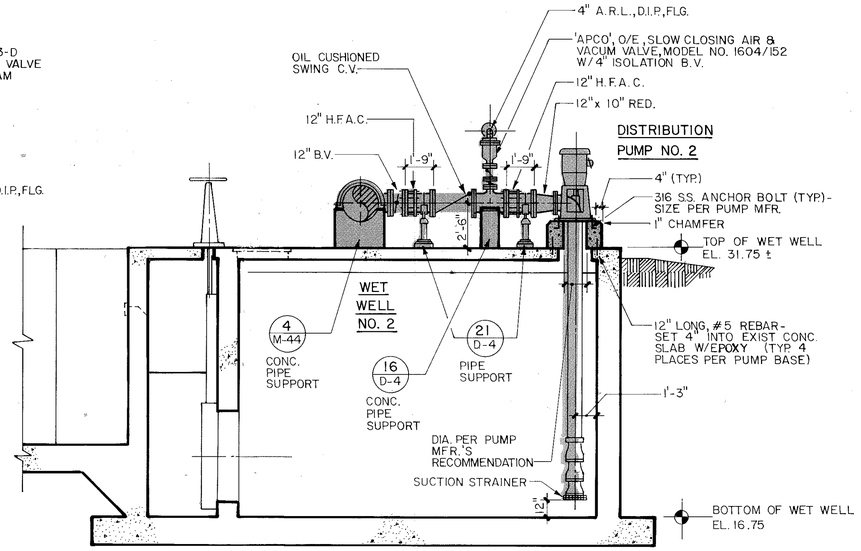


NOTE

ATTACH PIPING TO HANDRAIL W/ S.S. HARDWARE.

PIPING DETAIL 5 M-44

N.T.S.



NOTE

PUMP & PIPING LAY-OUT FOR DISTRIBUTION PUMP NO. 2 IS TYPICAL FOR DISTRIBUTION PUMPS NO.'S 1 & 3

SECTION 1 M-44

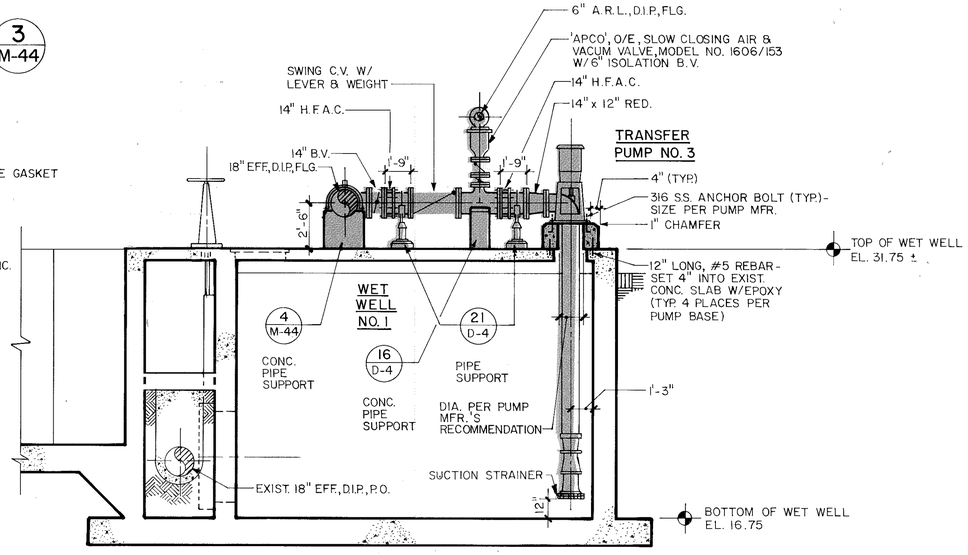
1/4"=1'-0"

A.R.L. DETAIL 3 M-44

N.T.S.

SUPPORT DETAIL 4 M-44

N.T.S.



NOTE

PUMP & PIPING LAY-OUT FOR TRANSFER PUMP NO. 3 IS TYPICAL FOR TRANSFER PUMPS NO. 1 & 2

SECTION 2 M-44

1/4"=1'-0"

Richard D. Moore Registered Engineer No. 34083 State of Florida

EFFLUENT PUMP STATION

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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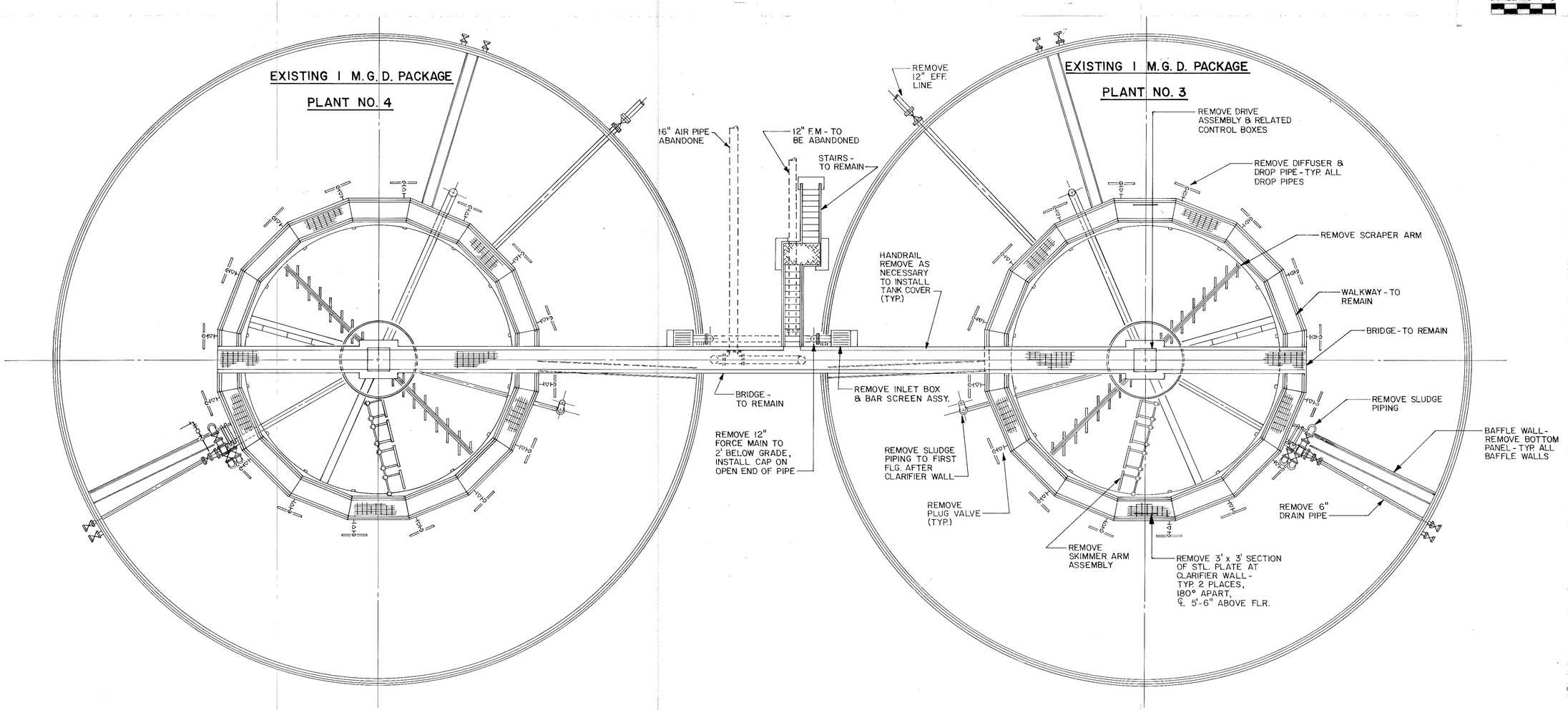
DRAWN D.R.K. FILE NO. 031-006-84 SHEET M-44 OF M-46

26-01 RECORD DRAWINGS 12/19/89

A.F. 31693A



NOTES

1.) THIS DWG. DIPICTS EXIST. FACILITIES ONLY.

2) ALL STEEL EXPOSED FROM CUTTING OR REMOVAL OF EQUIPMENT OR ANY FABRICATION CREATED FROM DEMOLITION PROCEDURE, SHALL BE CLEANED, PRIMED AND COATED PER PROJECT SPECIFICATIONS.

3.) ALL PIPING, VALVES, EQUIPMENT & MATERIAL REMOVED SHALL BE UTILIZED, STORED OR DISPOSED OF IN A LOCATION AS DESIGNATED BY OWNER.

4) ALL WORK SHALL BE COORDINATION WITH CONVERSION OF PACKAGE PLANTS NO.1 & NO. 2 TO D.A.F. THICKENERS AND TO CONVERSION OF PACKAGE PLANTS NO. 3 & NO. 4 TO EFFLUENT STORAGE TANKS.

5.) DEMOLITION WORK FOR PACKAGE PLANT NO. 4 IS IDENTICAL AS THAT FOR PACKAGE PLANT NO. 3.

6.) BLIND FLANGE ALL EXIST. ABOVE GROUND PORTS

7.) REMOVE ALL ELECTRICAL CONDUITS WITHIN TANKS

RICHARD D. LARSON REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

EXISTING PACKAGE PLANTS NO. 3 & NO. 4 DEMOLITION - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

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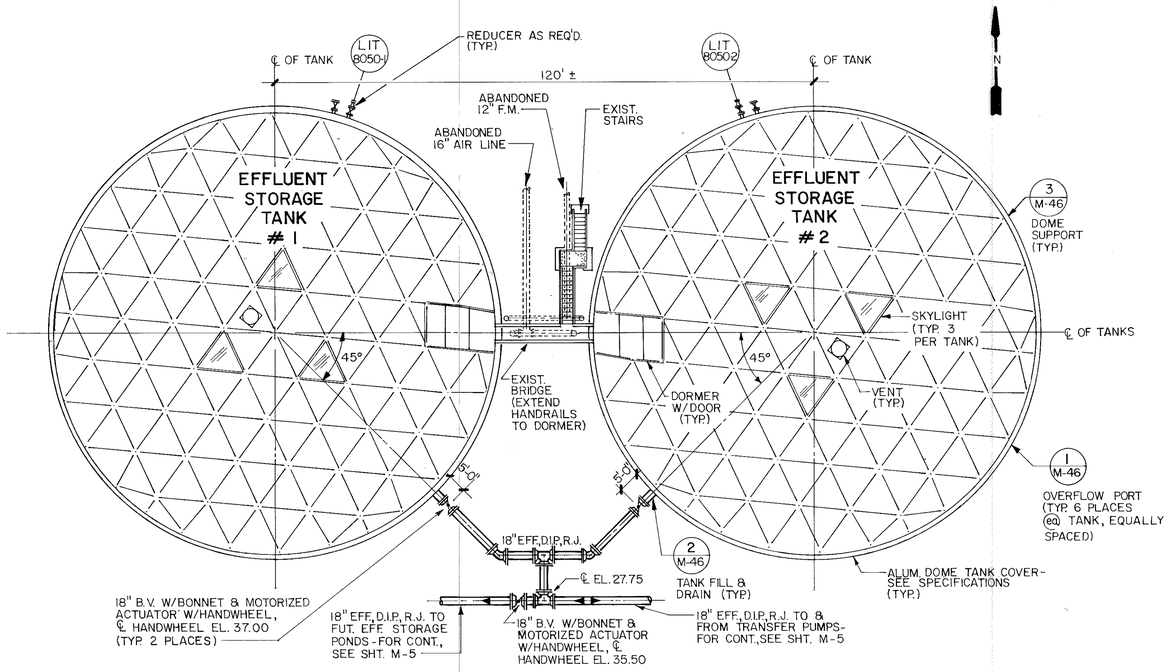
DESIGNED W.L.R. CHECKED C.J.F DATE JAN.,1985 SCALE 1/8"= 1'-0"
DRAWN D.R.K. FILE NO. 031-006-84 SHEET M-45 OF M-46

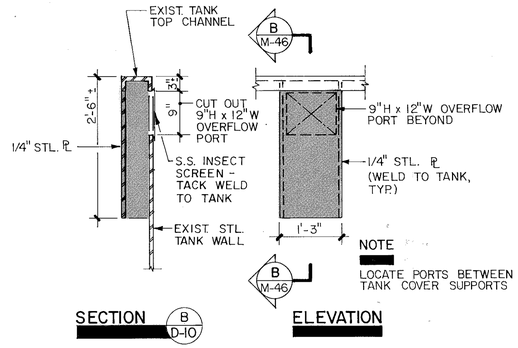
26-01

RECORD DRAWINGS 12/19/89



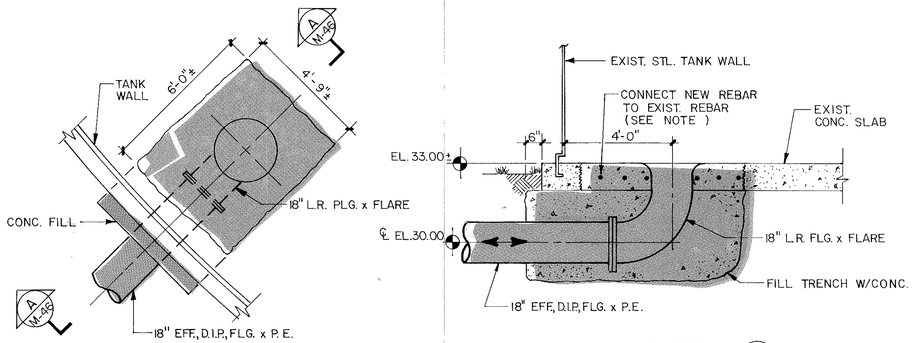
EFFLUENT STORAGE TANKS PLAN

1/16"=1'-0"



OVERFLOW PORT DETAIL I M-46

N.T.S.



PLAN

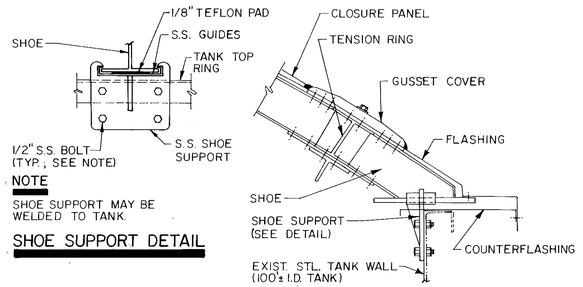
NOTE

RESTORE CONC. SLAB (INCLUDING REINFORCING) TO NEAR ORIGINAL CONDITION AFTER INSTALLING PIPE

SECTION A M-46

TANK FILL & DRAIN DETAIL 2 M-46

3/8"=1'-0"



DOME SUPPORT DETAIL 3 M-46

N.T.S.

RICHARD D. MOORE
No. 34083
STATE OF FLORIDA
REGISTERED ENGINEER

EFFLUENT STORAGE TANKS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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DRAWN D.R.K. FILE NO. 031-006-84 SHEET M-46 OF M-46

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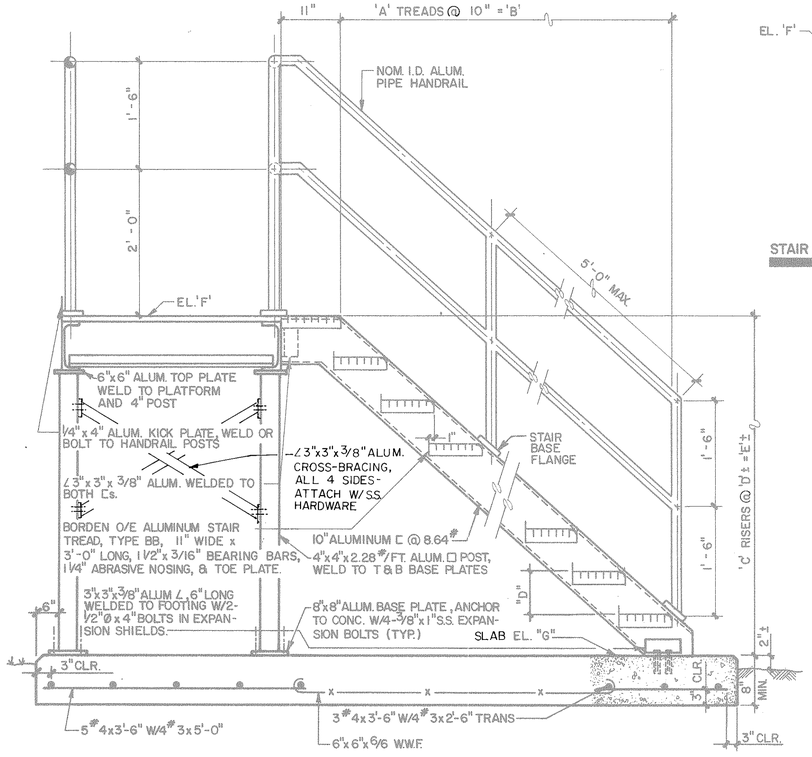
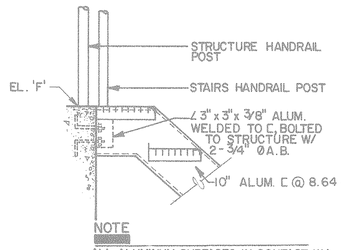


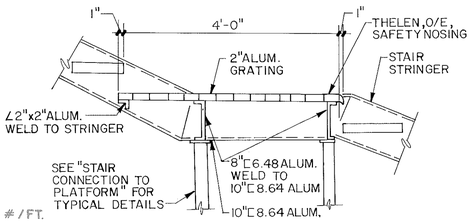
STAIR CONNECTION TO PLATFORM



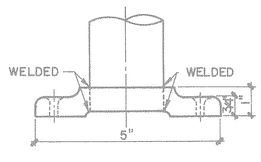
NOTE

ALL ALUMINUM SURFACES IN CONTACT W/ CONCRETE TO HAVE A COATING OF HEAVY BITUMASTIC PAINT OR MATERIAL TO PREVENT CORROSION.

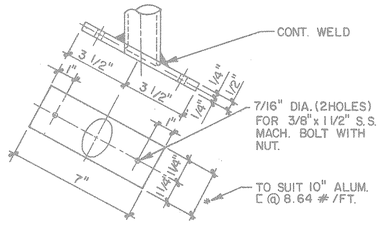
STAIR CONNECTION TO CONCRETE STRUCTURE



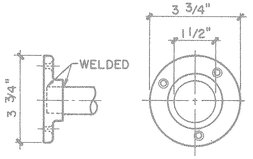
INTERMEDIATE PLATFORM



BASE FLANGE FLOOR MOUNT ALUMINUM ALLOY CASTING



BASE FLANGE STAIR MOUNT ALUMINUM ALLOY



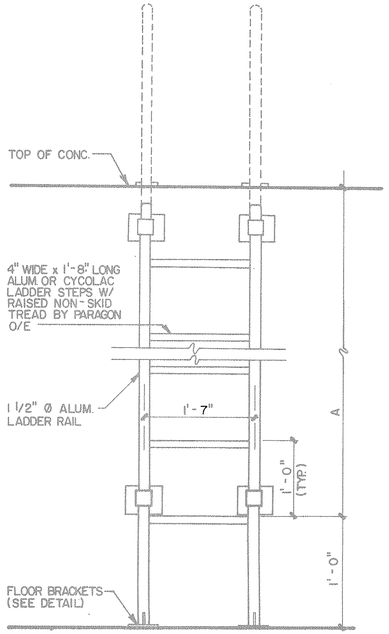
WALL TERMINAL BRACKET CAST ALUMINUM ALLOY

TABLE OF STAIR DIMENSIONS

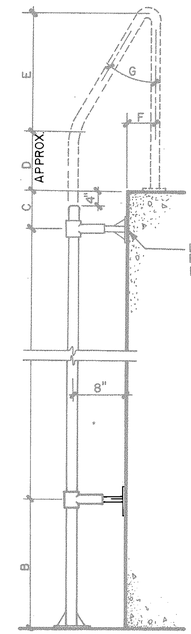
STAIR NO.	LOCATION	DIMENSIONS A	B	C	D	E	F	G	REMARKS
1,3	ANOXIC/AER.	27	22'-6"	28	7 5/8"	17'-9 1/2"	48.58	30.79	PLATFORMS @
	TANK'S								EL. 40.79 & 48.58
2,4	"	7	5'-10"	8	7"	4'-8"	48.58	43.92	PLATFORM @
									EL. 48.58
5	"	19	15'-10"	20	7 1/2"	12'-6"	43.92	31.42	PLATFORM @
									EL. 38.92
6	"	22	18'-4"	23	7 3/8"	14'-5 5/8"	44.96	30.80	PLATFORM @
									EL. 38.87
7	FINAL	19	15'-10"	20	7 1/2"	12'-6"	41.42	28.92	
	CLARIFIERS								
8,9	DEWATERING/	2	1'-8"	3	7	1'-9"	36.42	34.67	PLATFORMS @
	CHEMICAL BLDG								TOP & BOTTOM

TABLE OF LADDER DIMENSIONS

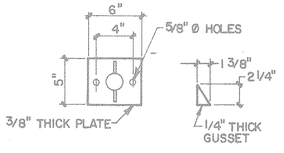
LADDER NO.	LADDER LOCATION	DIMENSIONS A	B	C	D	E	F	G
1, 2	DEWATERING/CHEMICAL BLDG.	5'-6"	1'-4"	4 1/2"	12"	2'-6"	4"	



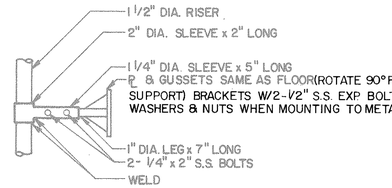
FRONT VIEW



SIDE VIEW



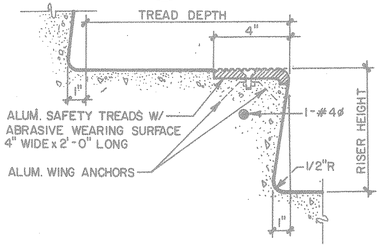
FLOOR BRACKET



LADDER & WALL BRACKET

TYPICAL ALUMINUM STAIR AND MOUNTING DETAILS 1 VAR

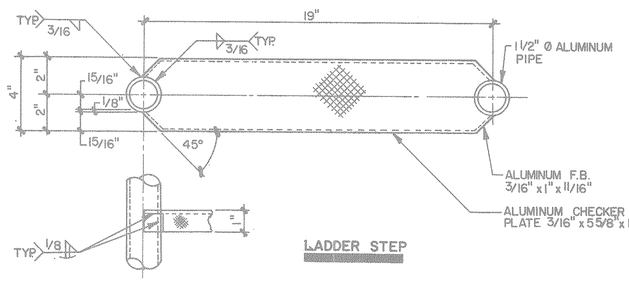
N.T.S.



SECTION

TYPICAL CONCRETE STAIR DETAIL 2 VAR

N.T.S.



LADDER STEP

NOTES

1. ALL TUBULAR MATERIAL TO BE NOMINAL DIA. SCH. 40 ALUMINUM PIPE-6061-T6.
2. PLATES & GUSSETS TO BE STRUCTURAL GRADE ALUMINUM-6061-T6.

TYPICAL ALUMINUM LADDER AND DETAILS 3 VAR

N.T.S.

RICHARD D. MOORE CERTIFICATE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

STAIR & LADDER DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
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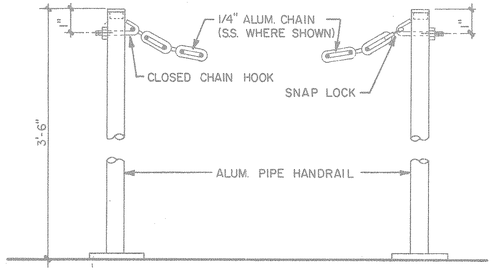
DRAWN D.T.D. FILE NO. 031-006-84 SHEET D-1 OF D-10

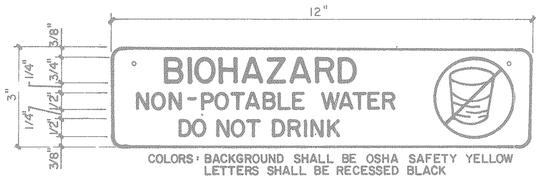
26-01 RECORD DRAWINGS 12/19/89



FRONT VIEW

CHAIN GUARD DETAIL 1 VAR.

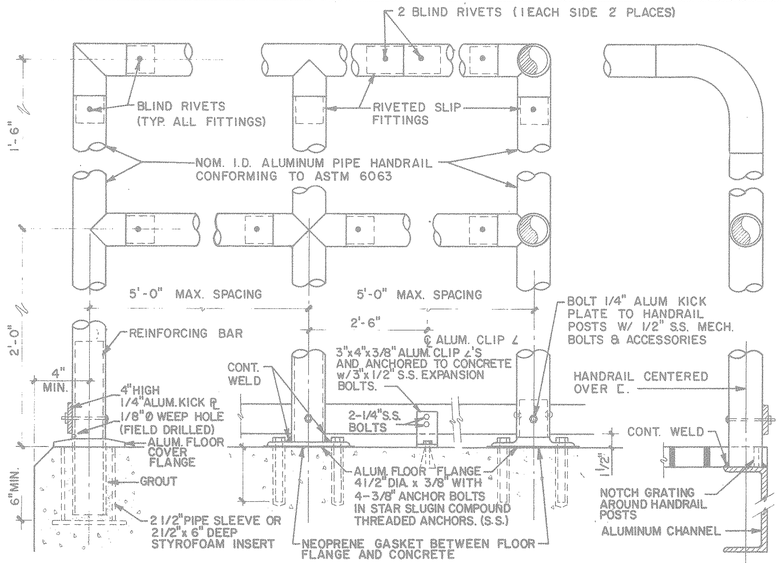
N.T.S.



COLORS: BACKGROUND SHALL BE OSHA SAFETY YELLOW
LETTERS SHALL BE RECESSED BLACK

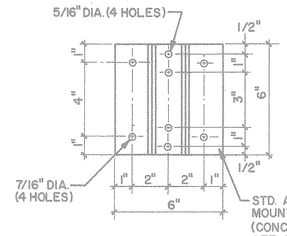
NON-POTABLE WATER SIGN 3 VAR.

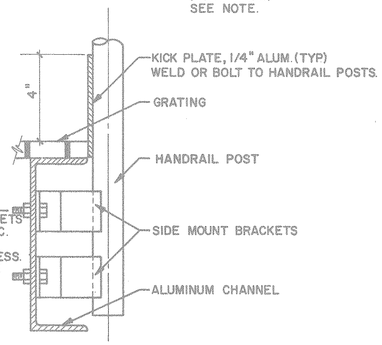
N.T.S.



TYPICAL PIPE HANDRAIL DETAILS 2 VAR.

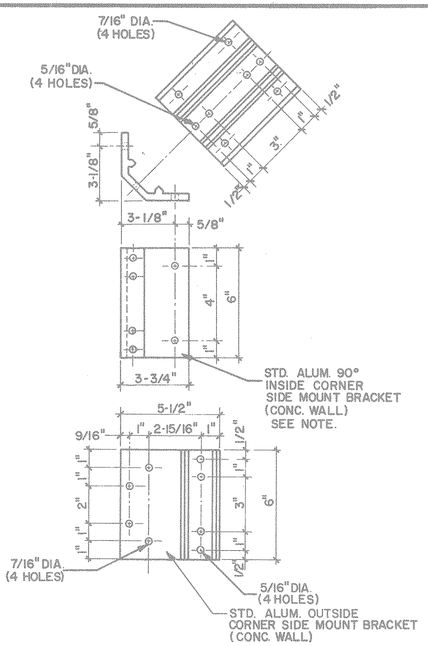
N.T.S.

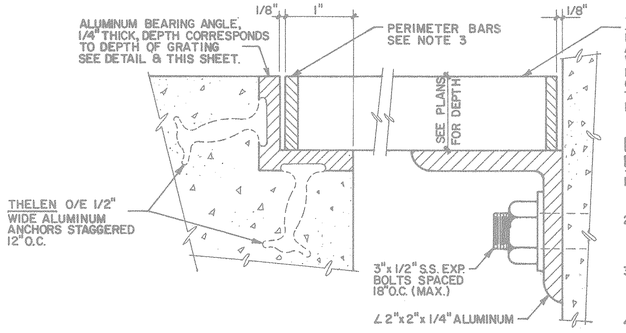




NOTE

ALUM. SIDE MOUNT BRACKETS TO BE FASTENED TO CONC. WALL W/-3/8"x 4" LG. S.S. EXPANSION BOLTS & ACCESS. & W/ 1/4" THK. NEOPRENE GASKETS BETWEEN BRACKETS & WALL.





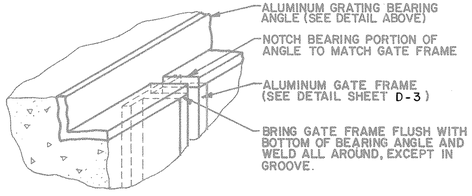
THELEN O/E SOLID RECTANGULAR BAR REMOVABLE ALUMINUM GRATING IN MAXIMUM WIDTH OF 3'-0" (FOR SIZES, SEE PLAN WHERE USED). FASTEN TO CHANNELS & ANGLES W/"THELEN" TYPE F-F FASTENING CLIP AS PER MFR'S RECOMMENDATIONS.

NOTES

1) BEARING TO BE PROVIDED ON ALL SIDES OF GRATING EXCEPT WHERE SHOWN.
2) ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR OTHER METALS TO HAVE A COATING OF HEAVY BITUMASTIC PAINT TO PREVENT CORROSION.
3) SIDES OF ALL GRATINGS SHALL BE PROVIDED WITH BINDING STRIPS OF SAME DEPTH AND THICKNESS AS THE MAIN BARS WELDED THERETO.
4) GRATING SHALL BE MFR'D. IN SECTIONS SO THAT NO SINGLE PIECE WILL EXCEED 60 LBS.
5) PROVIDE ACCESS OPENINGS IN GRATING FOR OPERATION OF VALVES UNDER GRATING.

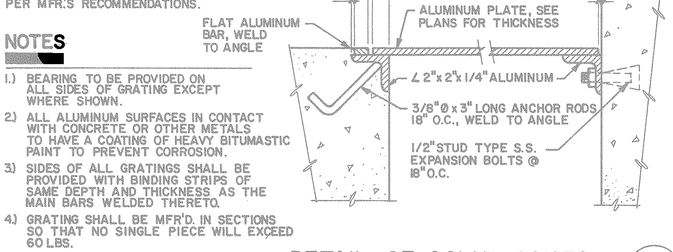
TYPICAL ALUMINUM GRATING DETAIL 4 VAR.

N.T.S.



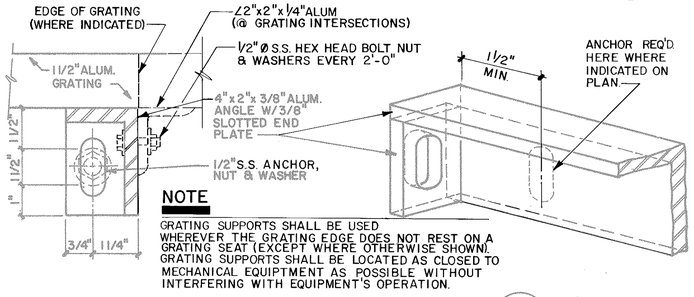
GRATING SEAT & GATE FRAME DETAIL 8 VAR.

N.T.S.



DETAIL OF SOLID COVER 5 VAR.

N.T.S.

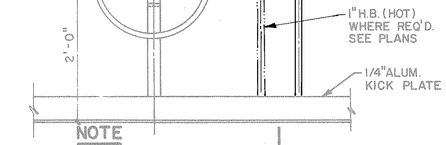


NOTE

GRATING SUPPORTS SHALL BE USED WHEREVER THE GRATING EDGE DOES NOT REST ON A GRATING SEAT (EXCEPT WHERE OTHERWISE SHOWN). GRATING SUPPORTS SHALL BE LOCATED AS CLOSED TO MECHANICAL EQUIPMENT AS POSSIBLE WITHOUT INTERFERING WITH EQUIPMENT'S OPERATION.

GRATING SUPPORT 9 VAR.

N.T.S.

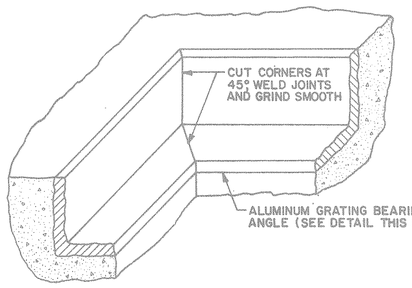


NOTE

ATTACH HOSE RACK TO CONC. WALL W/4-3/8"Ø S.S. MASONARY ANCHORS.

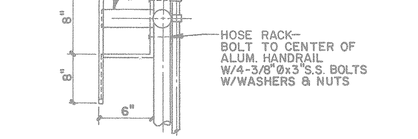
HOSE RACK 6 VAR.

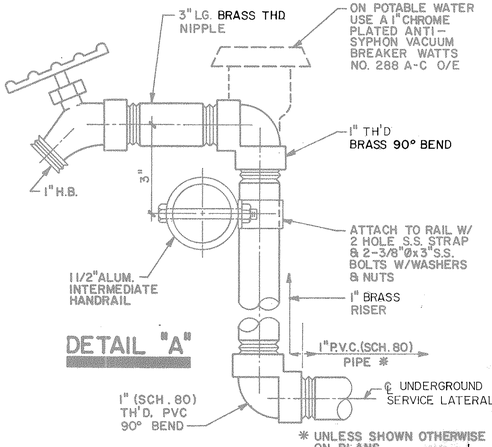
N.T.S.



GRATING SEAT CORNER DETAIL 10 VAR.

N.T.S.





HOSE BIBB 7 VAR.

N.T.S.

RICHARD D. MOORE — No. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

HANDRAIL AND GRATING DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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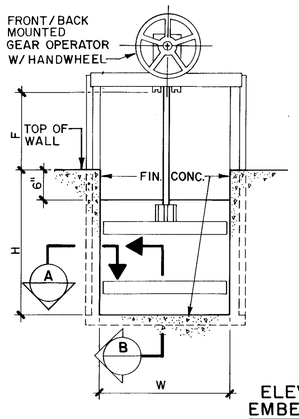
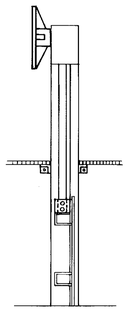
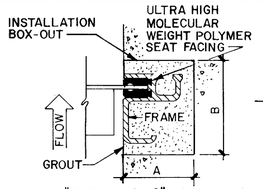
26'01 RECORD DRAWINGS 12/19/89

AF 31693A



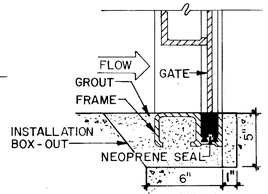
ELEVATION OF EMBEDDED TYPE



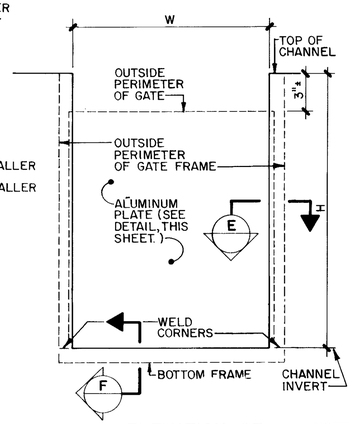


A=5" FOR GATES 60" WIDE & SMALLER
=6" FOR GATES OVER 60"
B=6" FOR GATES 60" WIDE & SMALLER
=6 1/2" FOR GATES OVER 60"

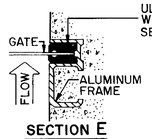
SECTION A



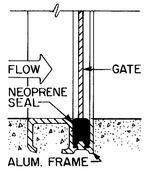
SECTION B



ELEVATION OF STOP GATE FRAME

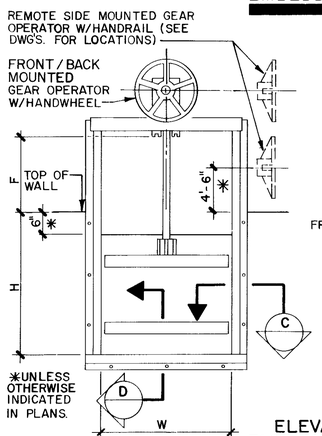


SECTION E

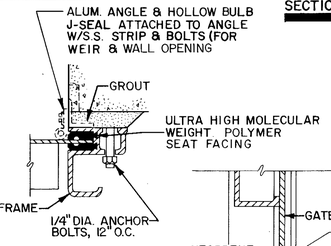


SECTION F

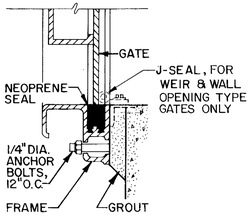
NOTES
1. SHOP COAT OF HEAVY BITUMASTIC PAINT ON ALL SURFACES IN CONTACT WITH CONCRETE.
2. FOR FRAME DETAIL AT GRATING SEAT, SEE DETAIL 8, SHEET D-2.



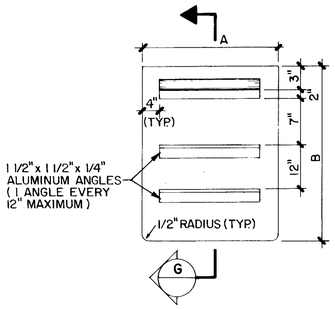
ELEVATION OF FACE MOUNTED TYPE
(ALSO FOR WALL OPENING & WEIR TYPES)



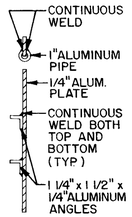
SECTION C



SECTION D



ALUMINUM GATE DETAIL

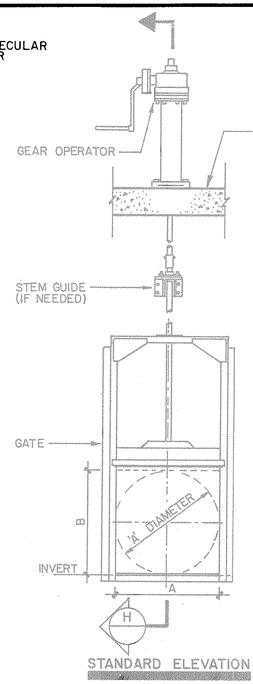


SECTION G

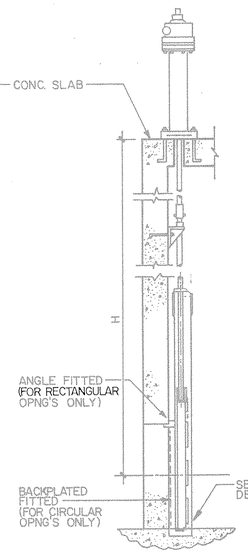
NOTES
1. FOR HANDWHEEL POSITION, SEE MECHANICAL DRAWINGS.
2. WEIR & WALL OPENING GATES SHALL HAVE J-SEALS AS SHOWN.
3. ALL SLIDE GATES SHALL HAVE RISING STEMS.

SLIDE GATE DETAILS (1 VAR.)
N.T.S.

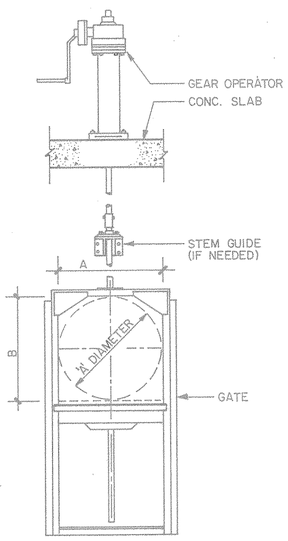
STOP GATE DETAILS (2 VAR.)
N.T.S.



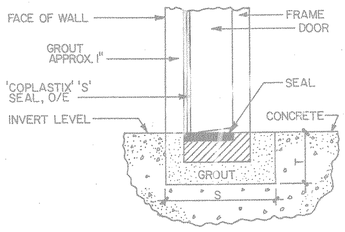
STANDARD ELEVATION



SECTION H

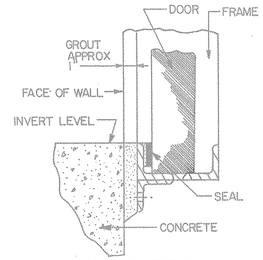


WEIR ELEVATION



FLUSH INVERT DETAIL

FLUSH INVERT CONC. BOX-OUT DIM.		
SLUICE GATE WIDTHS	S	T
12-36 INCHES	7"	3"
42-60 INCHES	8"	3 1/2"
66-84 INCHES	9"	4"



CHASE INVERT DETAIL

SLUICE GATE DETAILS (3 VAR.)
N.T.S.

SLIDE GATE SCHEDULE

GATE NO.	LOCATION	GATE TYPE	OPERATOR TYPE	HANDWHEEL SIZE	W	H	F	REMARKS
	HEADWORKS							
1,2&3		EMB.	GEAR	18"	3'-6"	4'-0"	3'-6"	S.S. W/S.S. COVER
4-10	(INCLUSIVE)	EMB.	GEAR	18"	3'-6"	4'-6"	3'-6"	S.S. W/S.S. COVER
11,12		EMB.	GEAR	18"	2'-0"	4'-6"	3'-6"	S.S. W/S.S. COVER
	ANOXIC/AEROBIC TANK							
1,2		WEIR	GEAR	18"	15'-0"	6'-0"	3'-6"	ALUMINUM; 3'-0" HIGH GATE;
	FINAL CLARIFIERS							DUAL OPERATORS
1,4	(INCLUSIVE)	WEIR	GEAR	18"	8'-0"	6'-0"	3'-6"	ALUMINUM; 3'-0" HIGH GATE;
								DUAL OPERATORS
5		EMB.	GEAR	18"	5'-0"	4'-6"	3'-6"	ALUMINUM; REMOTE
	FLASH MIXER /							OPERATOR
	FLOCCULATORS							
1,2		W/O	GEAR	18"	6'-0"	9'-0"	3'-6"	ALUMINUM; 3'-6" HIGH GATE
3		EMB.	GEAR	18"	6'-0"	8'-0"	5'-0"	ALUMINUM
4		EMB.	GEAR	18"	3'-6"	8'-0"	5'-0"	ALUMINUM
5,6		EMB.	GEAR	18"	3'-0"	8'-0"	5'-0"	ALUMINUM
	AUTOMATIC BACKWASH							
	FILTERS							
1,2		EMB.	GEAR	18"	3'-0"	3'-9"	4'-0"	ALUMINUM
3,4		EMB.	GEAR	18"	3'-0"	3'-9"	4'-0"	ALUMINUM

NOTE: W/O DENOTES GATE TYPE FOR WALL OPENING

STOP GATE SCHEDULE

GATE NO.	LOCATION	FRAME QT'Y.	FRAME DIM. W	FRAME DIM. H	PLATE QT'Y.	PLATE DIM. A	PLATE DIM. B	REMARKS
	AUTOMATIC BACKWASH							
	FILTERS							
1,2		2	3'-0"	3'-9"	2	3'-2"	3'-6"	
3,4		2	2'-2"	2'-9"	2	2'-4"	2'-6"	

SLUICE GATE SCHEDULE

GATE NO.	QT'Y	LOCATION	GATE TYPE	OPERATOR TYPE	SEATING / UNSEATING	A	B	H	INVERT TYPE	REMARKS
		AEROBIC/ANOXIC TANKS								
1-4	4		STD.	FLOOR STAND	UNSEATING	36"	—	15'-3"	CHASE	STAINLESS STEEL FRAMES
5,6	2		STD.	FLOOR STAND	SEATING	42"	—	18'-1"	FLUSH	
7	1		STD.	FLOOR STAND	UNSEATING	48"	—	17'-10"	FLUSH	

NOTE: ALL GATES SHALL HAVE RISING STEMS - STEMS FOR GATES 1-4, INCLUSIVE, ON AEROBIC/ANOXIC TANKS SHALL BE CORROSION - RESISTANT.

RICHARD D. MOORE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

SLUICE, SLIDE & STOP GATE DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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WASTEWATER TREATMENT FACILITIES
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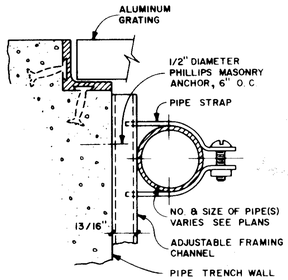
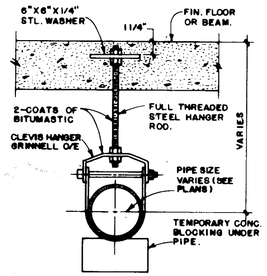
26-01 RECORD DRAWINGS 12/19/89



P.H. DETAIL 1
NO SCALE



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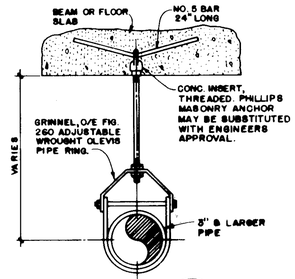
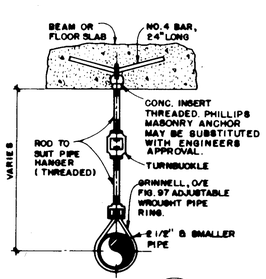


P.H. DETAIL 3
NO SCALE



P.H. DETAIL 4
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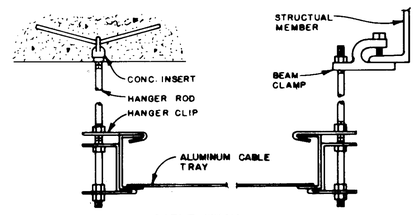
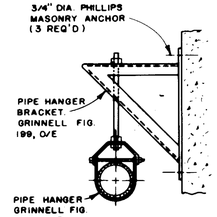


CABLE TRAY
DETAIL 5
NO SCALE



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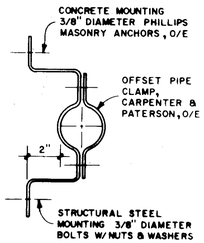

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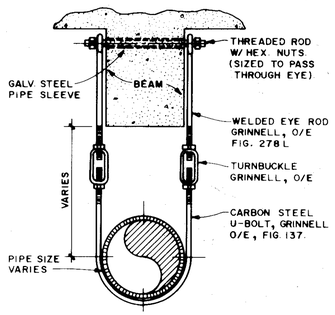
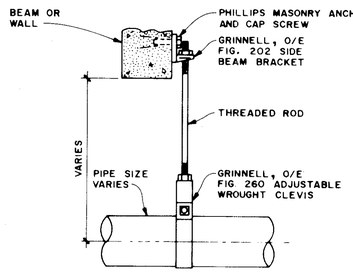


PIPE HANGER
DETAIL 8
NO SCALE



DETAIL 9
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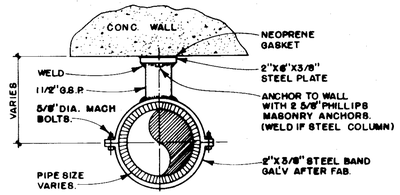

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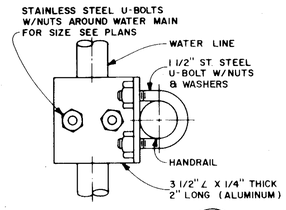

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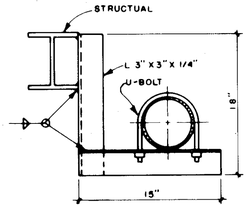

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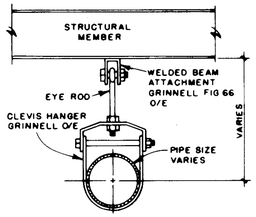

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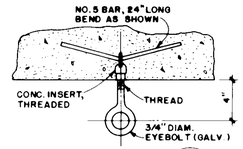

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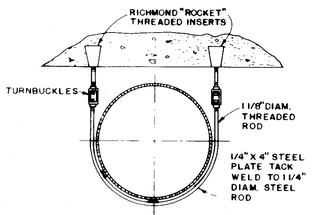

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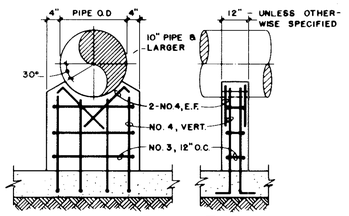

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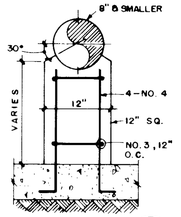

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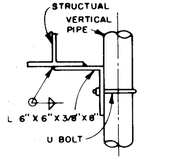

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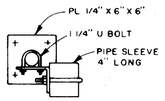
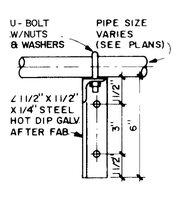
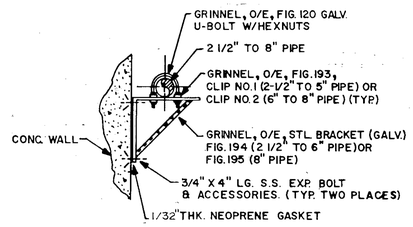




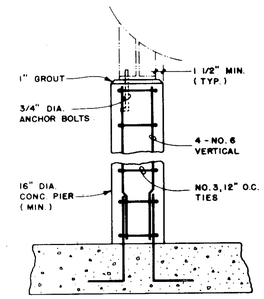
DETAIL 19
NO SCALE



NOTE

DO NOT CLAMP PIPE DOWN W/U BOLT. ALLOW PIPE TO MOVE FOR EXPASION/CONTRACTION

P.S. DETAIL 25
NTS



DETAIL 20
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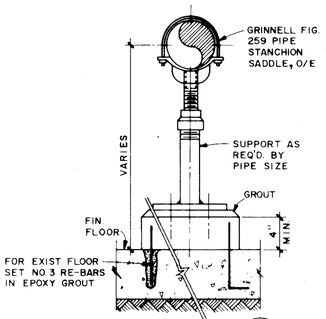

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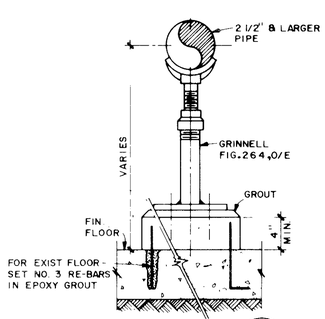
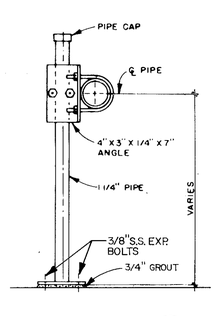
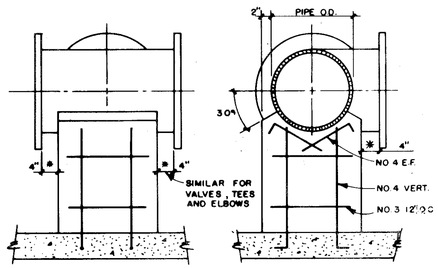


P.S. DETAIL 22
NO SCALE



P.S. DETAIL 23
NO SCALE

✱ INCREASE 4" CLEARANCE AS REQ'D IF BOLT HAS TO BE INSERTED FROM THE SUPPORT SIDE OF THE CONNECTION.



P.S. DETAIL 24
NO SCALE

NOTES

1. USE WASHERS WITH NUTS AND BOLTS
2. ALL ANCHORS, FASTENERS, BOLTS, NUTS, WASHERS, SCREWS, ETC. SHALL BE STAINLESS STEEL. (TYPE 316)
3. S.S. U-BOLTS SHALL BE PROVIDED WHERE INDICATED ON THE DRAWINGS.

RICHARD D. LARSON REGISTERED No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

PIPE SUPPORT DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

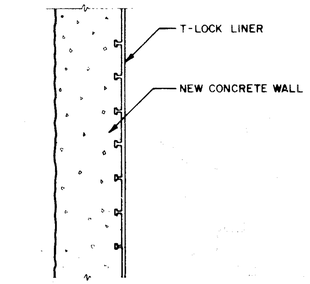
REVISIONS
1. 2/87 W.L.R. CONFORMED
2.
3.
4.
5.

Larson Engineering, Inc.
Consulting Engineers
6404 MANATEE AVE., W., SUITE N
BRADENTON, FLORIDA 33529
(813) 794-5450

T151

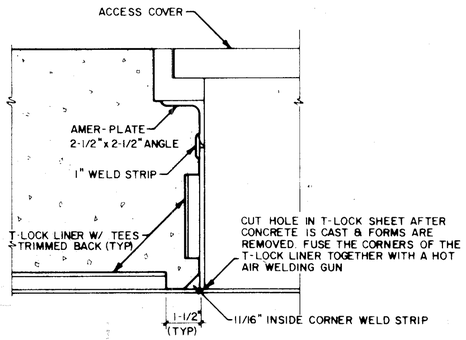
DESIGNED C.S.L. CHECKED W.L.R. DATE MARCH, 1985 SCALE AS NOTED
DRAWN D.T.D. FILE NO. 031-006-84 SHEET D-4 OF D-10

26-01 RECORD DRAWINGS 12/19/89

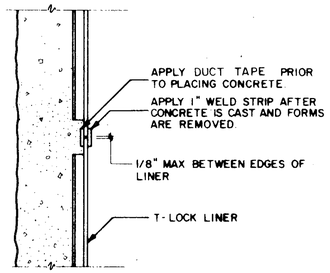


TYPICAL WALL SECTION

DETAIL 1 VAR N.T.S.

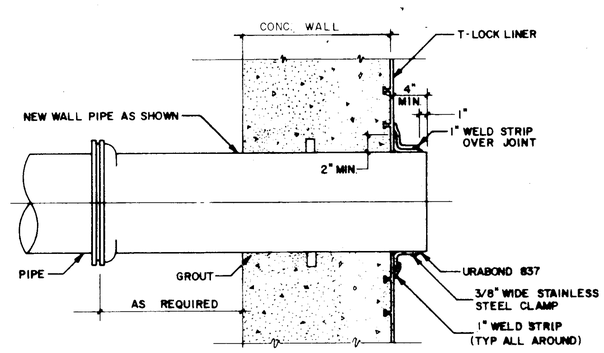


DETAIL 2 VAR N.T.S

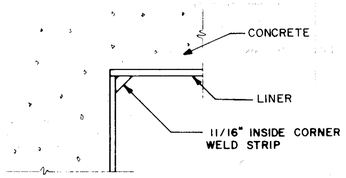


TYPICAL T-LOCK JOINT

DETAIL 3 VAR N.T.S.

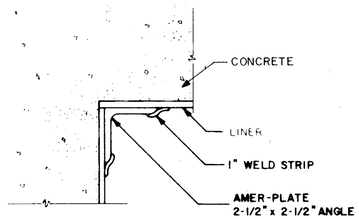


DETAIL 4 VAR N.T.S.



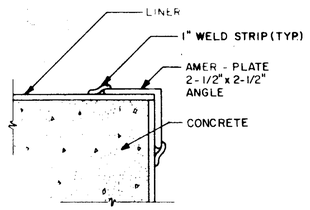
CORNER DETAIL

DETAIL 5 VAR N.T.S



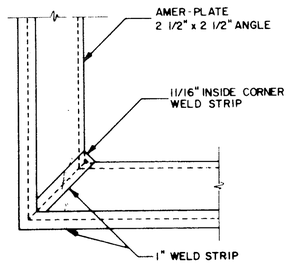
CORNER DETAIL

DETAIL 6 VAR N.T.S.

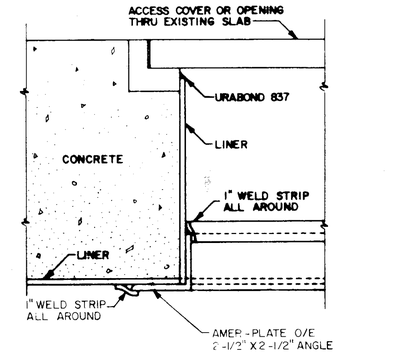


CORNER DETAIL

DETAIL 7 VAR N.T.S.

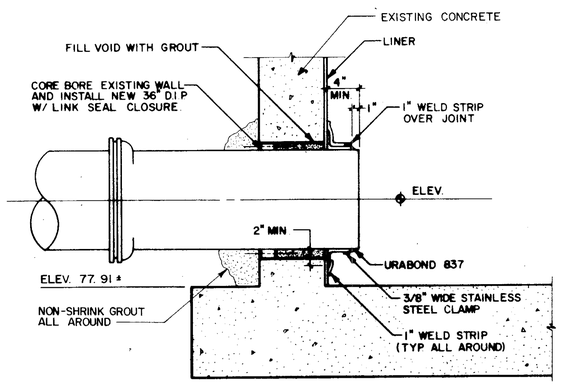


DETAIL 8 VAR N.T.S.



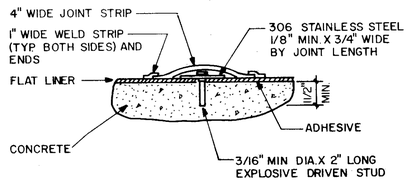
TYPICAL OPENING THRU EXISTING SLAB

DETAIL 9 VAR N.T.S



BY - PASS INFLUENT

DETAIL 10 VAR N.T.S.

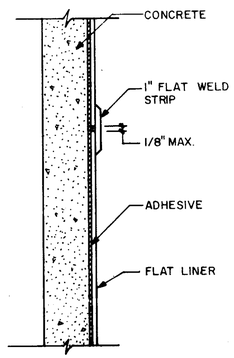


NOTES

1. ATTACH PLAIN SHEET LINER TO CONCRETE WITH ADHESIVE CLOSELY FOLLOW INSTRUCTIONS PROVIDED FOR APPLYING ADHESIVE.
2. ATTACH STAINLESS STEEL STRIP OVER LINER WITH EXPLOSIVE DRIVEN STUDS.. STUDS TO BE 8" ON CENTER FOR UNDERSIDE OF ROOF SLABS AND 18" ON CENTER FOR WALLS.
3. HEAT WELD 4" JOINT STRIP OVER METAL STRIP AND STUDS USING 1" FLAT WELD STRIP.

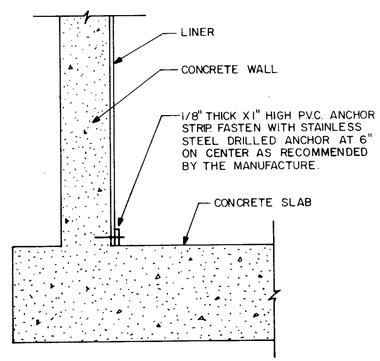
FLAT LINER INSTALLATION

DETAIL 11 VAR N.T.S.



FLAT LINER JOINT

DETAIL 12 VAR N.T.S.



BOTTOM SEAL

DETAIL 13 VAR N.T.S.

RICHARD D. MOORE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

LINER DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

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6404 MANATEE AVE., W., SUITE N
BRADENTON, FLORIDA 33529
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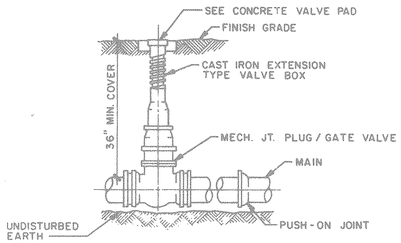
DESIGNED C.S.L. CHECKED W.L.R. DATE MARCH, 1985 SCALE AS NOTED
DRAWN D.T.D. FILE NO. 031-006-84 SHEET D-5 OF D-10

26-01 RECORD DRAWINGS 12/19/89

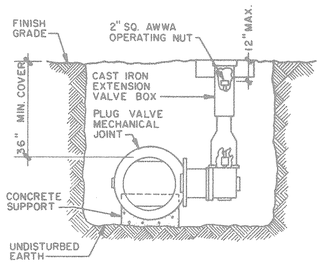
AF 31693A



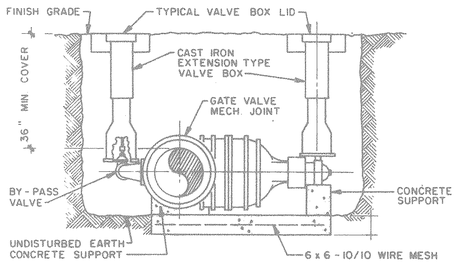
NOTE

OPERATING NUT TO BE WITHIN 12" OF GRADE.

VERTICAL PLUG/GATE VALVE



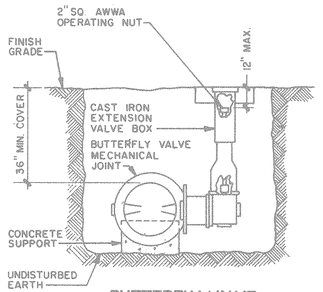
PLUG VALVE



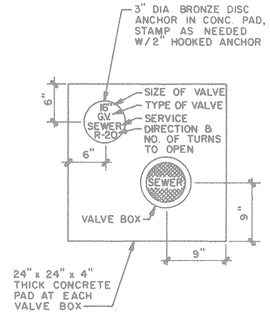
NOTE

FOR INSTALLATION OF 16" & LARGER GATE VALVES ONLY.

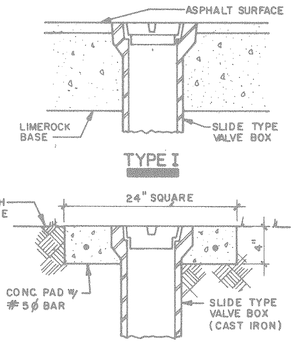
HORIZONTAL GATE VALVE



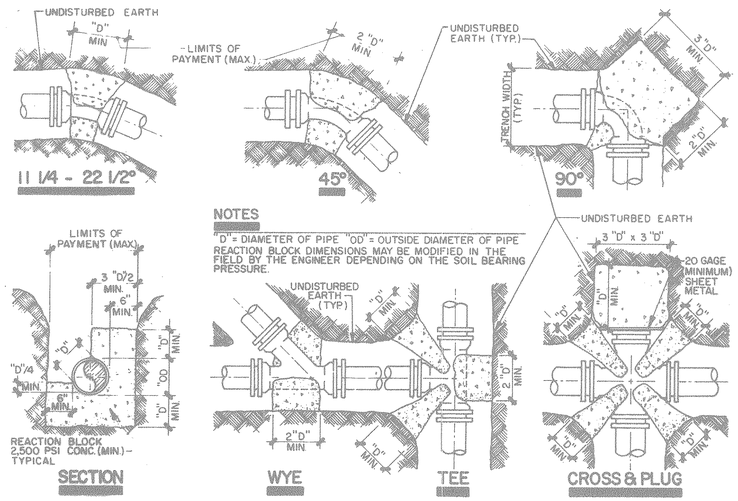
BUTTERFLY VALVE



CONCRETE VALVE PAD



TYPICAL VALVE INSTALLATION DETAILS 1 VAR.

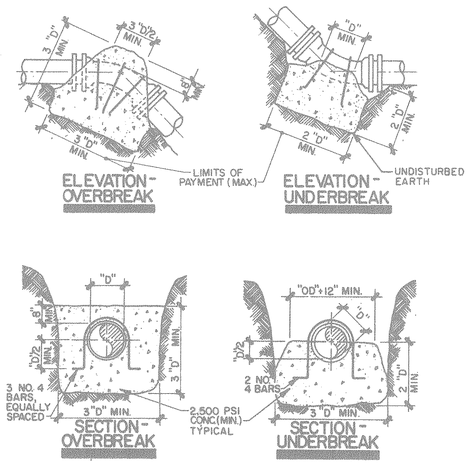


HORIZONTAL REACTION BLOCK DETAILS 4 VAR.

N.T.S.

VALVE BOX DETAIL 2 VAR.

N.T.S.

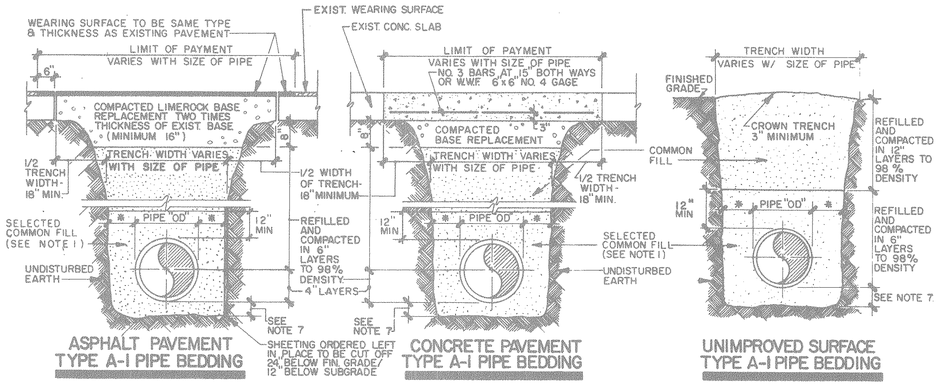


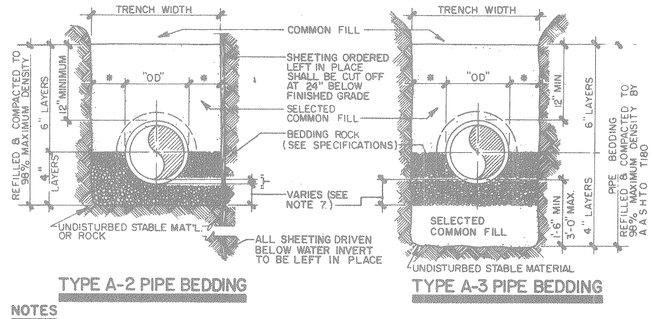
VERTICAL REACTION BLK. DETAILS 5 VAR.

N.T.S.

NOTE

EXISTING CONCRETE/ASPHALT PAVEMENT SURFACE & BASE SHALL BE CUT SQUARE WITH CONCRETE SAW.



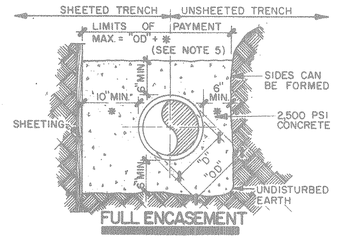


NOTES

1. SELECTED COMMON FILL FROM ORIGINAL EXCAVATION SEE SPECIFICATIONS.
2. USE OF TYPE A-2, A-3, AND A-4 PIPE BEDDING TO BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER.
3. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION. DEWATER AS NECESSARY.
4. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF FLOW.
* 5. 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER OVER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER
7. 4" MIN. FOR PIPE 24" DIA. & LESS; 6" MIN. FOR PIPE 27" AND LARGER.

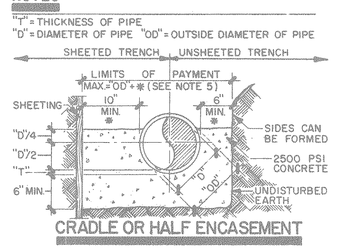
TYPICAL DITCH EXCAVATION & PAVEMENT REPLACEMENT DETAILS 3 VAR.

N.T.S.



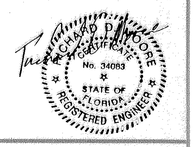
NOTES

"T" = THICKNESS OF PIPE
"D" = DIAMETER OF PIPE "OD" = OUTSIDE DIAMETER OF PIPE



CONCRETE ENCASEMENT DETAILS 7 VAR.

N.T.S.



YARD PIPING DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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6404 Manatee Ave. W., Suite N
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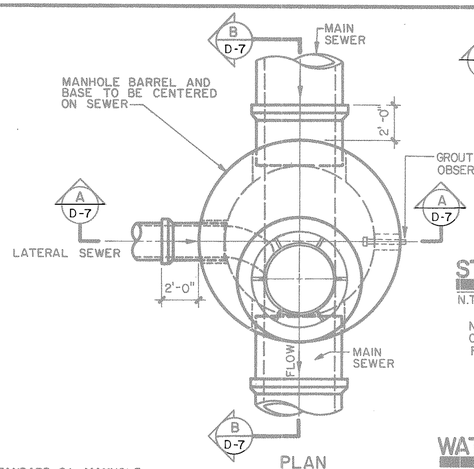
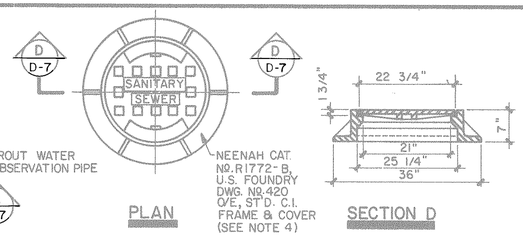
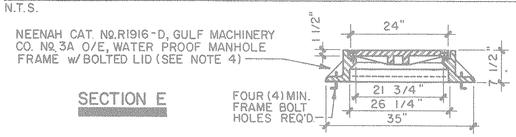
26-01 RECORD DRAWINGS 12/19/89





STANDARD C.I. MANHOLE FRAME & COVER DETAIL

N.T.S.



WATERPROOF MANHOLE FRAME & BOLTED LID DETAIL

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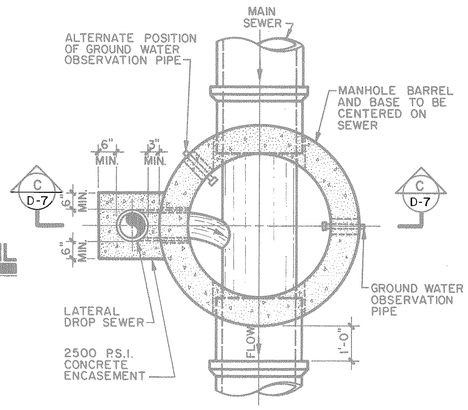
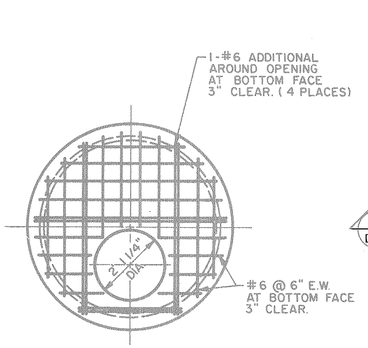
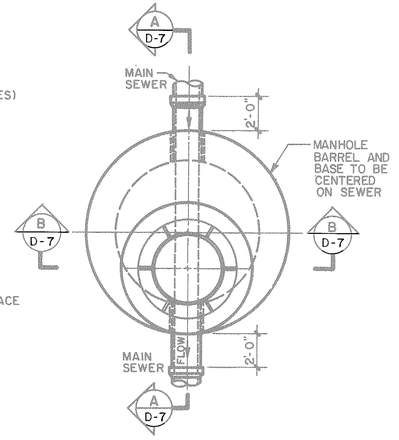
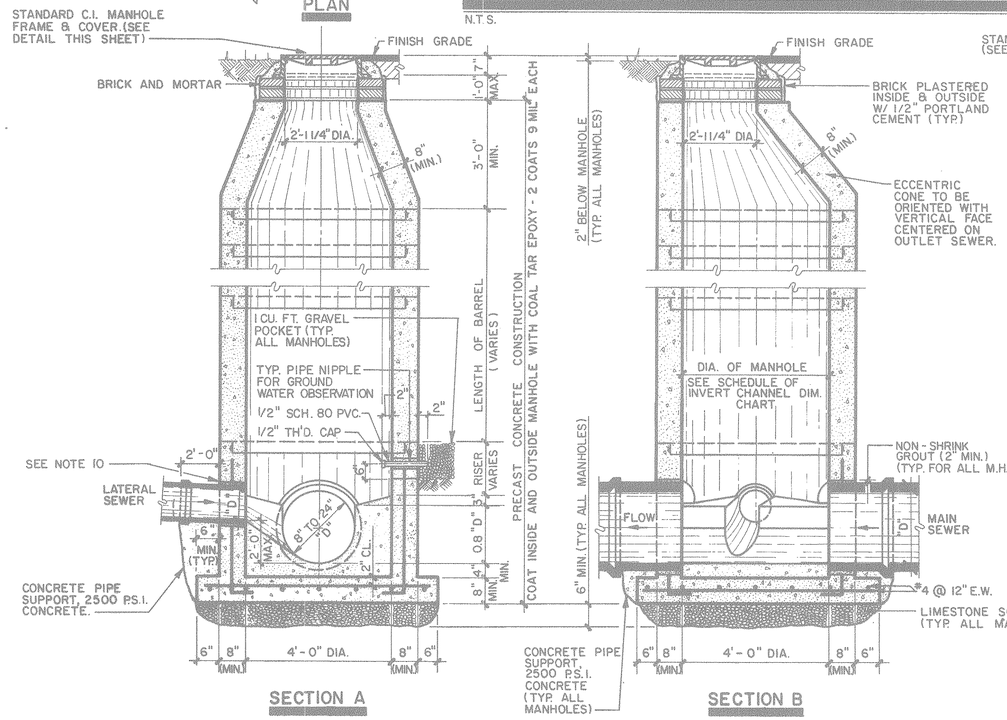




CONCRETE SLAB DETAIL





STANDARD SHALLOW MANHOLE DETAIL 3 VAR.

N.T.S.

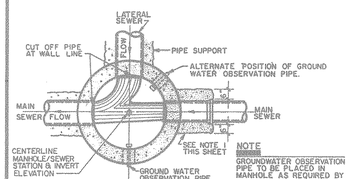
SCHEDULE FOR DROP MANHOLE	
INLET PIPE I.D. DIAMETER "D"	DROP PIPE I.D. DIAMETER "d"
8"	8"
10"	8"
12"	10"
15"	12"
18"	15"
21"	18"
24"	18"

STANDARD MANHOLE SCHEDULE OF INVERT CHANNEL DIMENSIONS				
PIPE SIZE	ANGLE Δ	M.H. DIA.	R	X
8" TO 15"	0° TO 90°	4'-0"	1'-8"	0" TO 10"
18", 21" & 24"	0° TO 60°	4'-0"	2'-0"	0" TO 4"
* 18" & 21"	60° TO 90°	5'-0"	2'-0"	4" TO 12"
* 30"	0° TO 60°	5'-0"	2'-0"	0" TO 6"
* 24" & 30"	60° TO 90°	6'-0"	2'-0"	6" TO 12"

* SEE NOTE 5

GENERAL NOTES

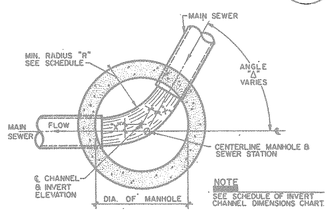
1. ALL V.C.P. CONNECTIONS TO MANHOLE MUST BE SUPPORTED OUTSIDE OF THE MANHOLE WALL OVER THE FIRST LENGTH OF PIPE WITH CONCRETE FROM BOTTOM OF MANHOLE EXCAVATION TO CENTER LINE OF PIPE BARREL.
2. ALL STUBS FROM MANHOLES AND ENDS OF PIPE TO WHICH CONNECTIONS ARE TO BE MADE UNDER THIS CONTRACT SHALL BE PROVIDED WITH TEMPORARY WATER TIGHT PLUGS OR CAPS. ALL STUBS FOR CONNECTIONS TO OTHER CONTRACTS SHALL BE PROVIDED WITH WATER TIGHT PLUGS PLACED FROM INSIDE OF THE MANHOLE. SUCH PLUGS LOCATED AT JUNCTIONS OF TWO CONTRACTS SHALL REMAIN IN PLACE AND SHALL BE REMOVED BY OTHERS. SEWERS WHICH ARE TO BE CONNECTED TO MANHOLES WHICH WILL BE BUILT UNDER OTHER CONTRACTS SHALL BE PROVIDED WITH WATER TIGHT PLUGS AND CAPS. STUBS = ONE PIPE LENGTH.
3. THE SHELF SHALL SLOPE TOWARD THE INVERT CHANNEL AT THE RATE OF 1"/FT. BUT A MIN. 3" DIFFERENCE SHALL BE MAINTAINED FROM THE 0.8 POINT OF THE CHANNEL TO THE WALL.
4. CAST IRON MANHOLE FRAME AND COVER SHALL BE TRAFFIC BEARING WITH A MIN. COMBINED WEIGHT OF 340 LBS. CAST IRON COVERS SHALL BE NON-ROCKING WITH A MIN. WEIGHT OF 150 LBS.
5. MANHOLE WITH A DIAMETER OF 5'-0" & 6'-0" SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIAL SPECIFICATIONS FOR SEWERS GREATER THAN 24" IN DIAMETER.
6. THE DEPTH OF THE INVERT CHANNEL SHALL BE EQUAL TO 0.8 OF THE LARGEST DIAMETER SEWER IN THE MH.
7. MANHOLE SECTIONS SHALL BE JOINED TOGETHER WITH EITHER RAM NEK, RUBBER GASKETS, O/E.
8. ALL MANHOLES TO BE CONSTRUCTED OF PRECAST CONCRETE (BASES, BARRELS AND CONES) WITH CAST-IN-PLACE FLEXIBLE RUBBER MANHOLE SLEEVES. PROVIDE COATING ON ALL INSIDE AND OUTSIDE WALLS & BASES IN ACCORDANCE WITH SPECIFICATIONS. NO BRICK MANHOLES WILL BE ACCEPTED UNLESS APPROVED IN WRITING
9. SEE SPECIFICATIONS FOR MATERIALS REQUIREMENTS AND PLACEMENT AND COMPACTION OF PIPE BEDDING AND LIMESTONE SCREENINGS.
10. 8"-18" PIPE: USE CAST-IN-PLACE FLEXIBLE RUBBER MANHOLE SLEEVE. 21" AND LARGER PIPE: USE MIN. 2" NON-SHRINK GROUT. 8"-15" PIPE: USE CAST-IN-PLACE FLEXIBLE RUBBER MANHOLE SLEEVE OR GASKETED CEMENT MANHOLE SLEEVE WITH MIN. 2" NON-SHRINK GROUT.
11. REINFORCING FOR PRE-CAST MANHOLES AS PER MANUFACTURE'S RECOMMENDATIONS (TYP. ALL MANHOLES)



SECTIONAL INVERT PLAN

N.T.S.

TABLE OF 0.8 "D" POINTS								
PIPE SIZE - "D" - INCHES	8"	10"	12"	15"	18"	21"	24"
PIPE SIZE - "D" - FEET	0.67'	0.83'	1.00'	1.25'	1.50'	1.75'	2.00'
0.8 "D" - FEET	0.54'	0.66'	0.80'	1.00'	1.20'	1.40'	1.60'
0.8 "D" - INCHES	6 1/2"	7 7/8"	9 5/8"	12"	14 1/4"	16 3/4"	19 1/4"



SECTIONAL INVERT PLAN

N.T.S.

(FOR SEWERS 24" OR LESS IN DIA.) STANDARD MANHOLE DETAIL 1 VAR.

N.T.S.

STANDARD DROP MANHOLE DETAIL 2 VAR.

N.T.S.

RICHARD D. MOORE CERTIFICATE No. 34083 STATE OF FLORIDA REGISTERED ENGINEER

MANHOLE DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
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E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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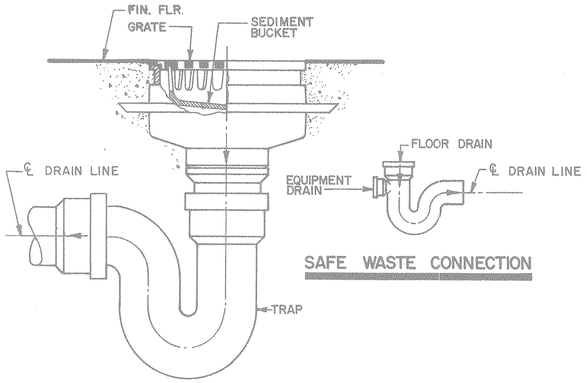
DRAWN S.A.F. FILE NO. 031-006-84 SHEET D-7 OF D-10

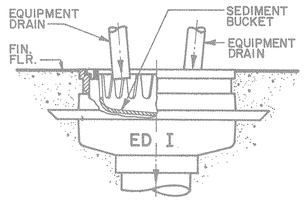
26-01 RECORD DRAWINGS 12/19/89



SAFE WASTE CONNECTION

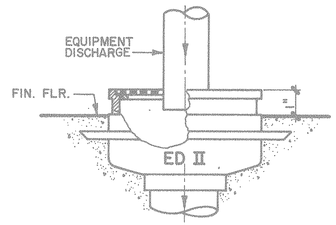
FLOOR DRAIN DETAIL 1 VAR.

N.T.S.



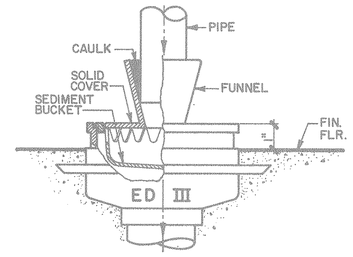
EQUIPMENT DRAIN DETAIL 2 VAR.

N.T.S.



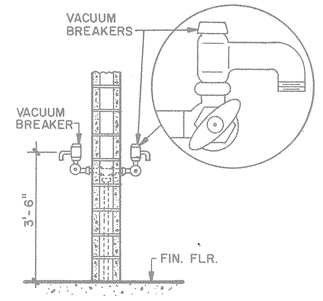
EQUIPMENT DRAIN II DETAIL 3 VAR.

N.T.S.



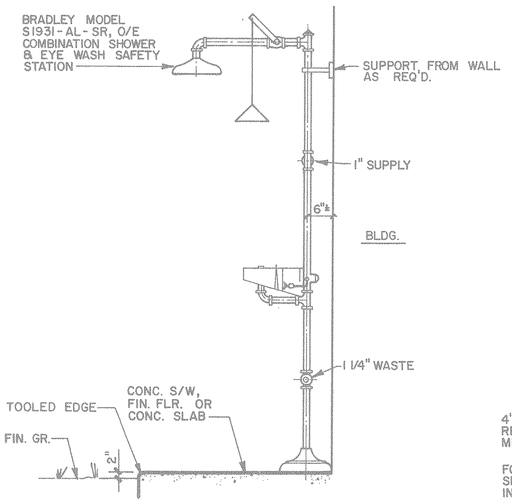
SEALED EQUIPMENT DRAIN DETAIL 4 VAR.

N.T.S.



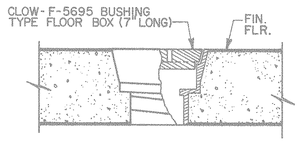
HOSE BIBB DETAIL 5 VAR.

N.T.S.



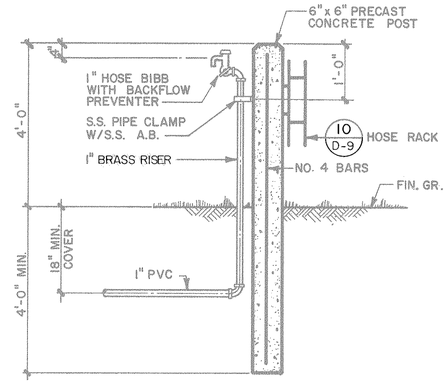
COMBINATION SHOWER & EYE WASH 6 VAR.

N.T.S.



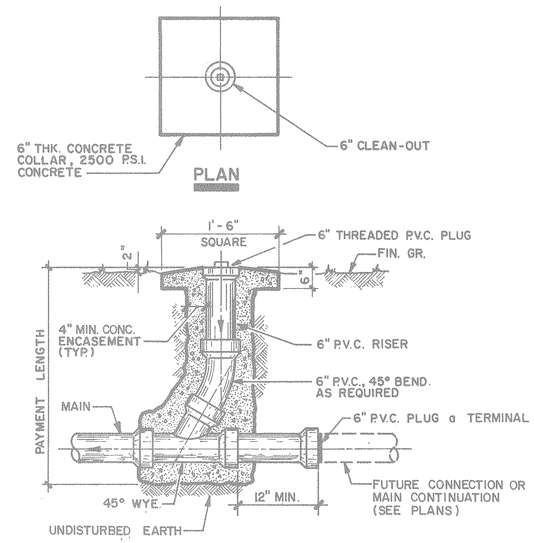
FLOOR BOX DETAIL 7 VAR.

N.T.S.



HOSE BIBB DETAIL 9 VAR.

N.T.S.

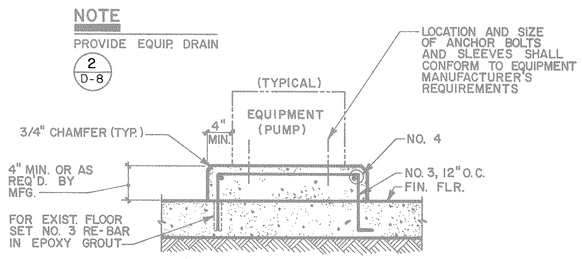


CLEANOUT DETAIL 10 VAR.

N.T.S.

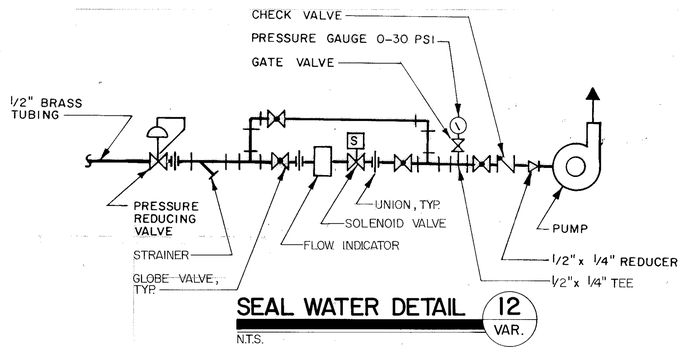
NOTE

PROVIDE EQUIP. DRAIN (2 D-8)



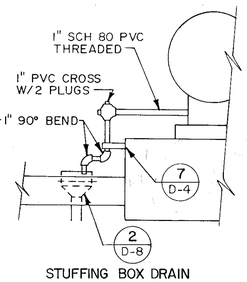
PUMP BASE DETAIL 8 VAR.

N.T.S.

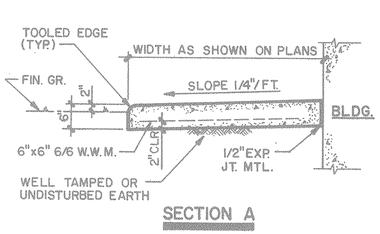


SEAL WATER DETAIL 12 VAR.

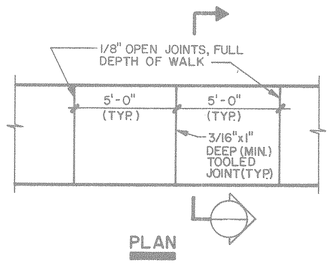
N.T.S.



DETAIL 13 VAR.



SECTION A



PLAN

CONCRETE WALK DETAILS 11 VAR.

N.T.S.

Richard D. Moore, Registered Professional Engineer, No. 34083, State of Florida

MISCELLANEOUS DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL

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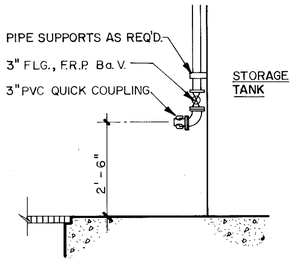
26-01 RECORD DRAWINGS 12/19/89



DETAIL 1 VAR
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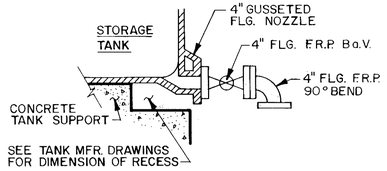

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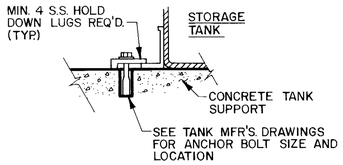

DETAIL 3 VAR
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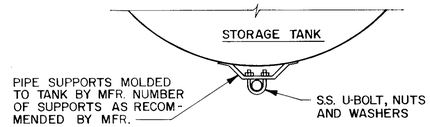

DETAIL 4 VAR
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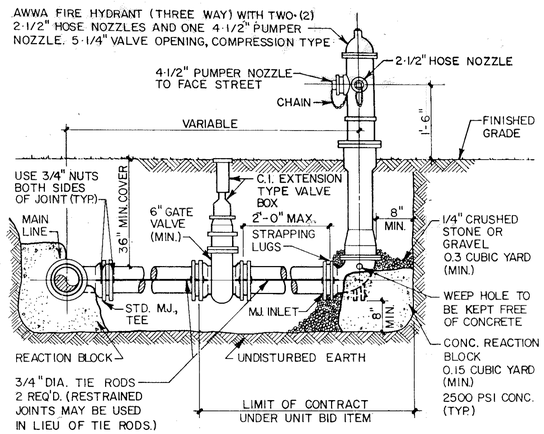
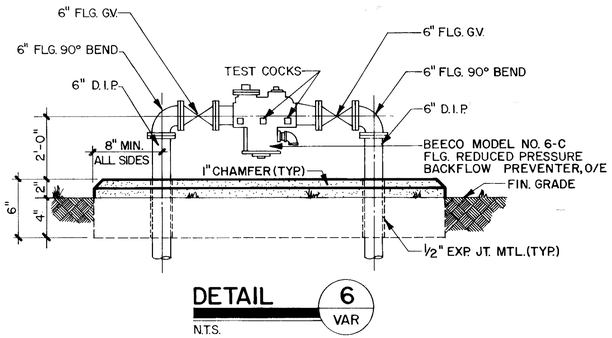


TYPICAL FIRE HYDRANT ASSEMBLY 5 VAR
N.T.S.



DETAIL 6 VAR
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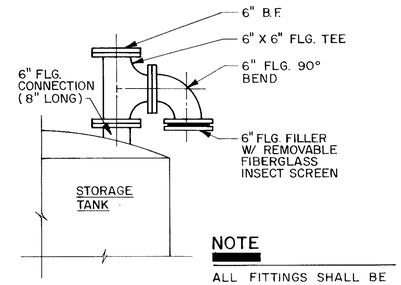
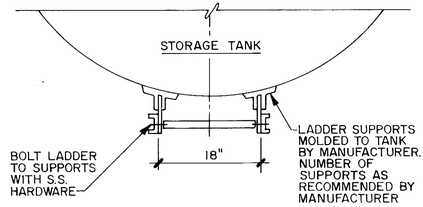


NOTE
ALL FITTINGS SHALL BE F.R.P. BY EQUIP. MFR.

DETAIL 7 VAR
N.T.S.



DETAIL 8 VAR
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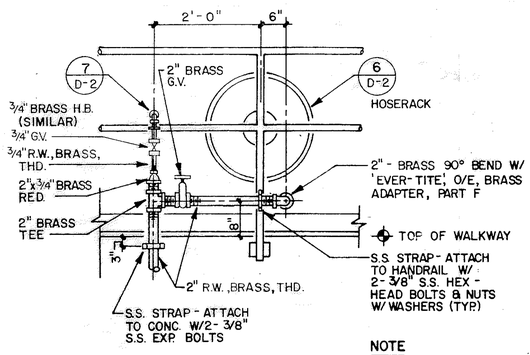
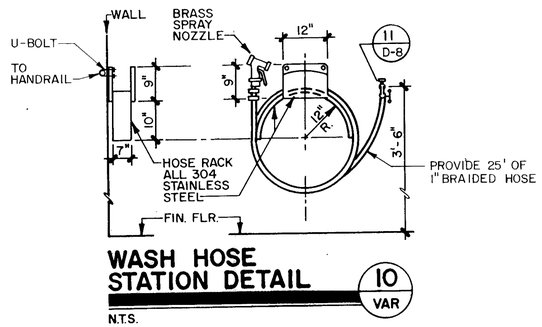


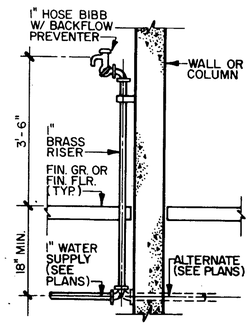
DETAIL 9 VAR
N.T.S.

NOTE
PROVIDE 1/8" THK. NEOPRENE SLEEVE ON R.W. LINE AT ALL SUPPORT CONNECTIONS.

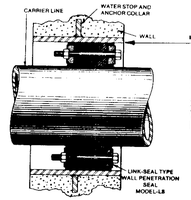
NOTE
ANCHOR WASH HOSE STATION TO WALL OR HANDRAIL W/ STAINLESS STEEL HARDWARE AS REQUIRED.



WASH HOSE STATION DETAIL 10 VAR
N.T.S.



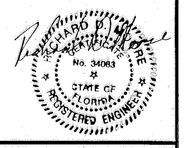
HOSE BIBB DETAIL 11 VAR
N.T.S.



'LINK SEAL' BY 'THUNDERLINE CORP', O/E

NOTE
ALL METAL PARTS OF WALL PENETRATION SEALS SHALL BE 316 STAINLESS STEEL (INCLUDING BOLTS, NUTS & WASHERS).

'LINK SEAL' WALL SLEEVE DETAIL 12 VAR
N.T.S.



MISCELLANEOUS DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

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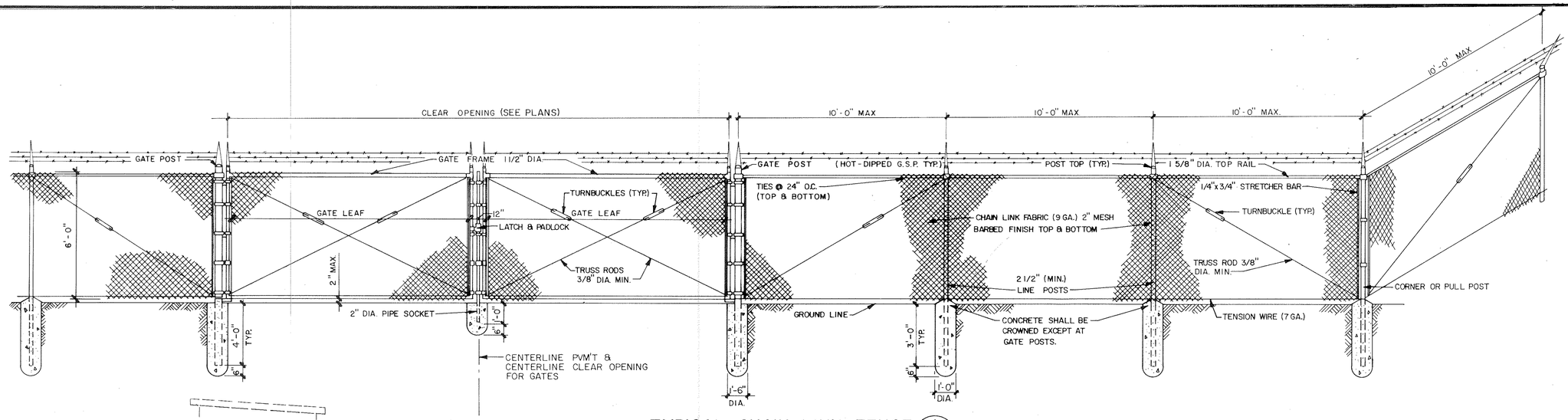
Larson Engineering, Inc. T156
Consulting Engineers
6404 MANATEE AVE., W. SUITE N
BRADENTON, FLORIDA 33529
(813) 794-5450

DESIGNED C.J.F CHECKED W.L.R. DATE MARCH, 1985 SCALE AS NOTED
DRAWN D.T.D FILE NO. 031-006-84 SHEET D-9 OF D-10

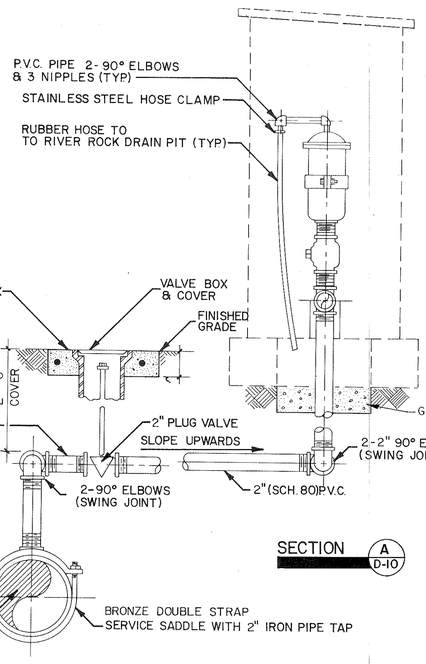
26-01 RECORD DRAWINGS 12/19/89

AF 31693A

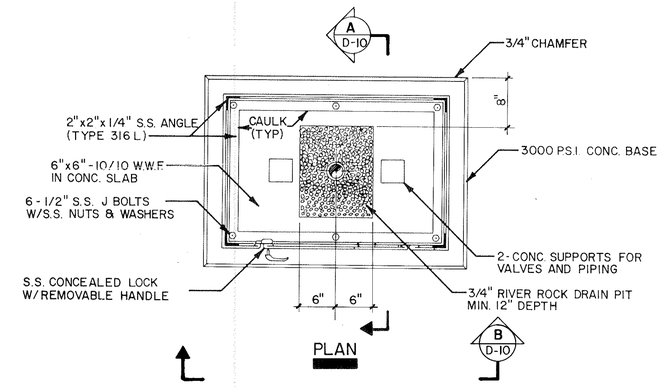


TYPICAL CHAIN LINK FENCE — 1 VAR.

N.T.S.



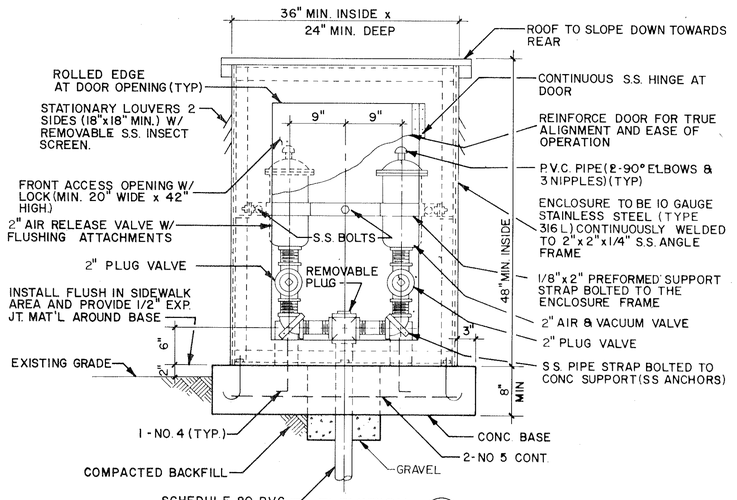
SECTION A D-10



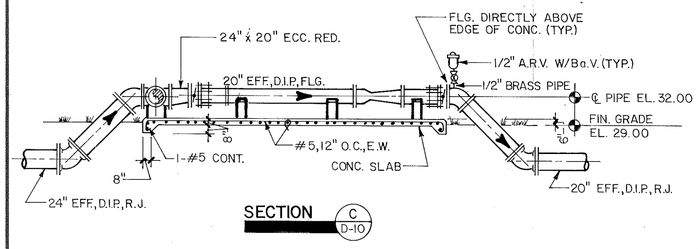
TYPE "D" AUTOMATIC

SPECIAL AIR RELEASE VALVE DETAIL — 2 VAR.

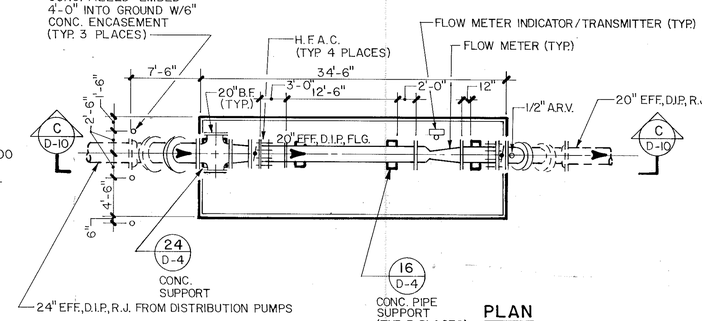
N.T.S.



ELEVATION B D-10

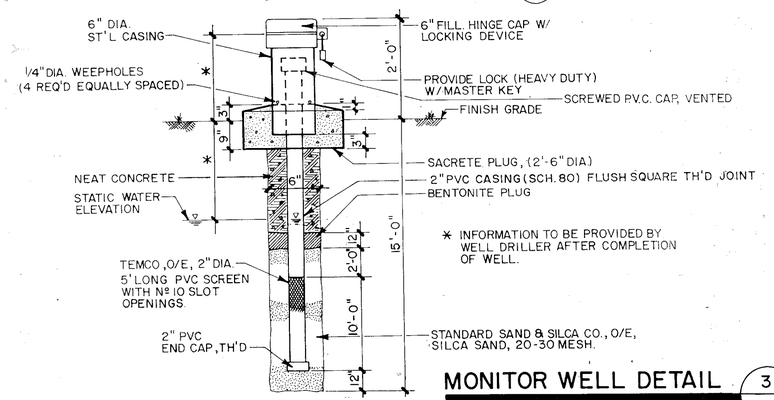


SECTION C D-10



DISTRIBUTION METERING FACILITY — 4 M-4

1/8"=1'-0"



MONITOR WELL DETAIL — 3 VAR

N.T.S.

RICHARD D. MOORE — No. 34083 — STATE OF FLORIDA — REGISTERED ENGINEER

MISCELLANEOUS DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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Consulting Engineers
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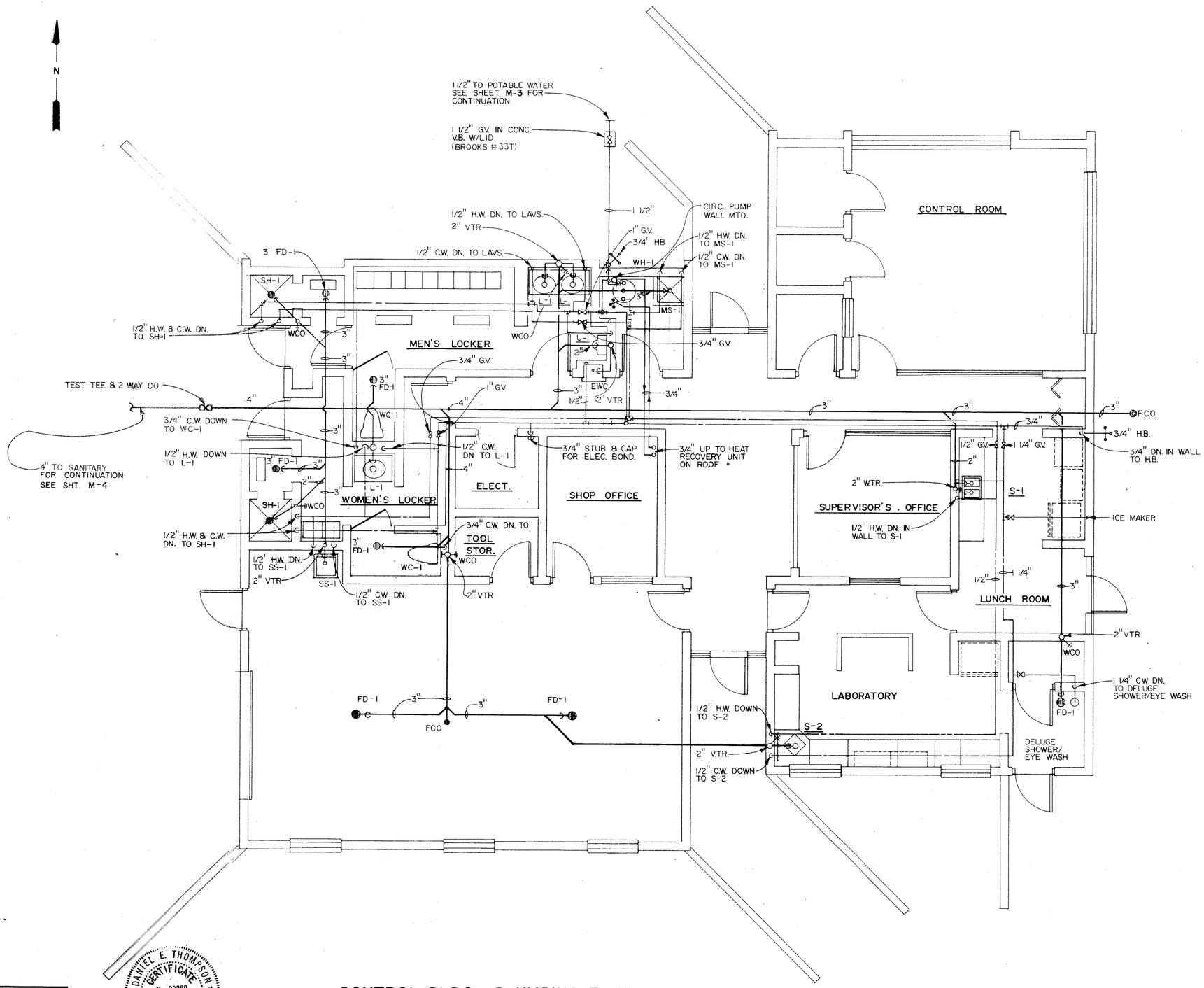
DRAWN D.R.K. FILE NO. 031-006-84 SHEET D-10 OF D-10

26-01 RECORD DRAWINGS 12/19/89

A.F. 31693A



LEGEND

- COLD WATER
- HOT WATER
- SANITARY
- VENT
- GATE VALVE
- HOT WATER CIRCULATING
- HOSE BIBB

ABBREVIATIONS

CW	COLD WATER
HW	HOT WATER
FD	FLOOR DRAIN
CO	CLEANOUT (WALL OR CEILING)
FCO	FLUSH CLEANOUT (FLOOR OR GRADE)
HB	HOSE BIBB
VTR	VENT THRU ROOF
EX	EXISTING
CONN	CONNECT OR CONNECTION
CP	CHROME PLATED
WS	WASTE STACK
VS	VENT STACK
VB	VALVE BOX

NOTES

1. CONFIRM SIZE, LOCATION, AND ELEV. OF ALL SERVICES BEFORE INSTALLING ANY PIPE.
2. ALL GRAVITY LINES SIZED TO SLOPE 1/8" PER FOOT UNLESS OTHERWISE NOTED.
3. DO NOT SCALE THE DRAWINGS. CONSULT THE ARCHITECTS AND STRUCTURAL DWGS. FOR DIMENSIONS.
4. CONSULT ARCHITECTS DRAWINGS FOR ALL GRADE AND FINISHED FLOOR ELEVATIONS.

CONTROL BLDG. – PLUMBING PLAN

1/4" = 1'-0"

C. E. BAILEY & ASSOCIATES. INC.
CONSULTING ENGINEERS
FORT LAUDERDALE, FLORIDA

DANIEL E. THOMPSON CERTIFICATE No. 33289 STATE OF FLORIDA REGISTERED ENGINEER

CONTROL BLDG.

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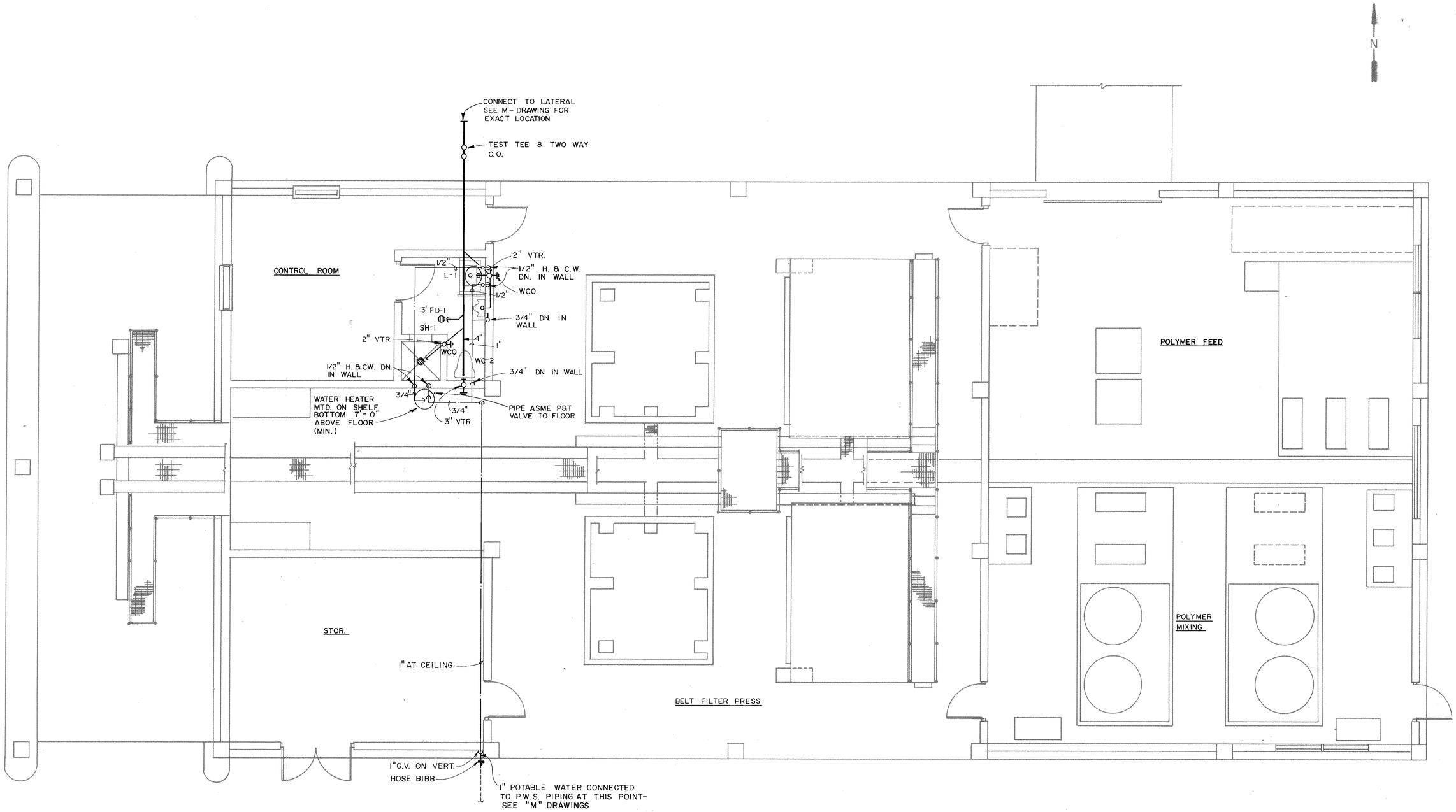
DESIGNED WCH CHECKED CEB/CEB DATE MARCH 1985 SCALE 1/4"=1'-0"
DRAWN AJY FILE NO. 031-006-84 SHEET P-1 OF 3

26-01 RECORD DRAWINGS 12/19/89

A.F. 31693A



DEWATERING/CHEMICAL BUILDING - PLUMBING PLAN

SCALE: 1/4" = 1'-0"

DANIEL E. THOMPSON CERTIFICATE No. 33285 STATE OF FLORIDA REGISTERED ENGINEER

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

DEWATERING/CHEMICAL BUILDING

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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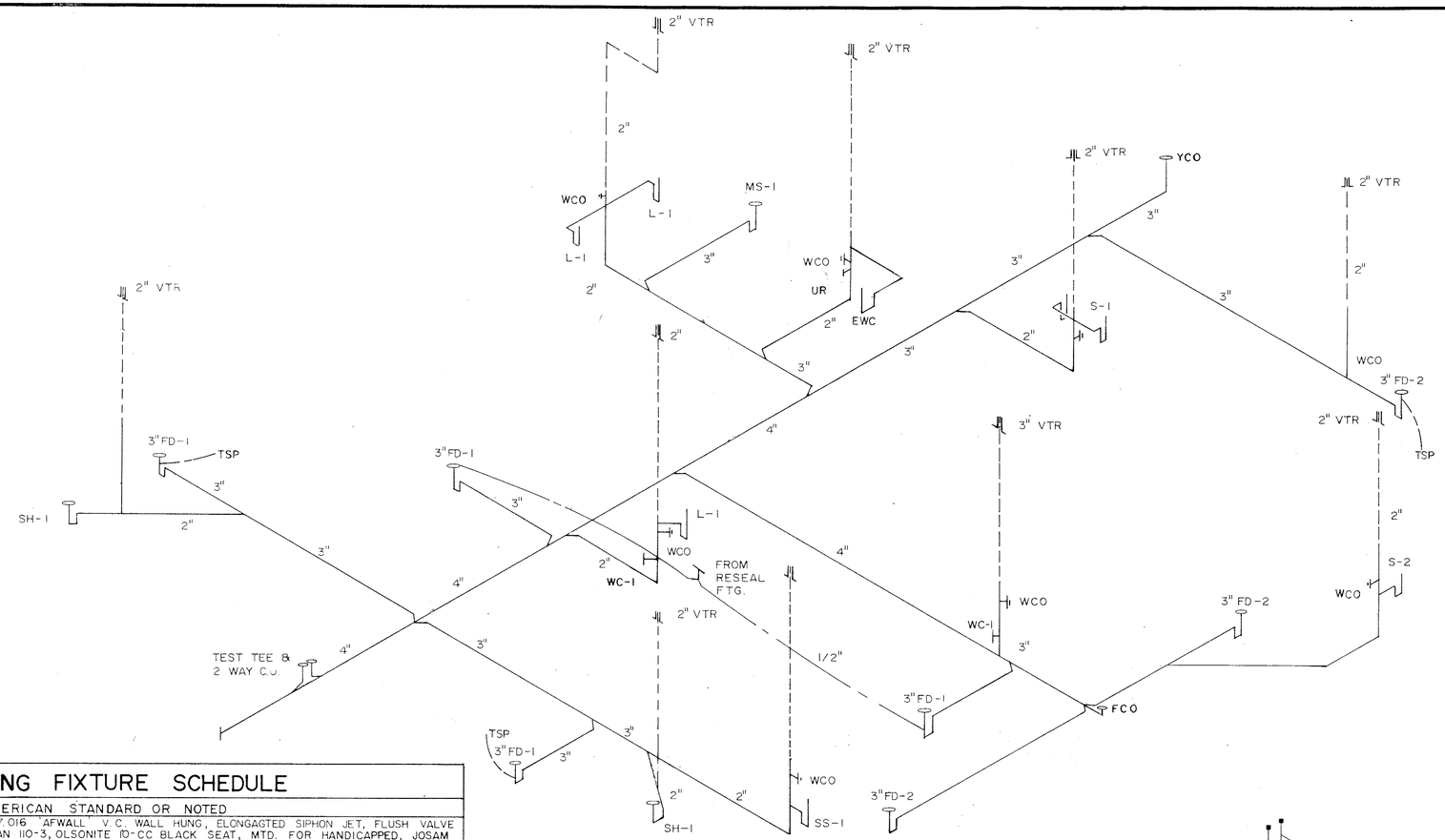
DESIGNED WCH CHECKED CEB/CEB DATE MARCH,1985 SCALE 1/4" = 1"-0"
DRAWN RHT FILE NO. 031-006-84 SHEET P-2 OF 3

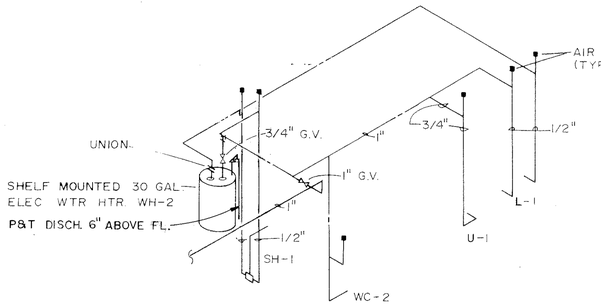
26-01 **RECORD DRAWINGS 12/19/89**

A.F. 31693A



CONTROL BUILDING SANITARY RISER

NO SCALE

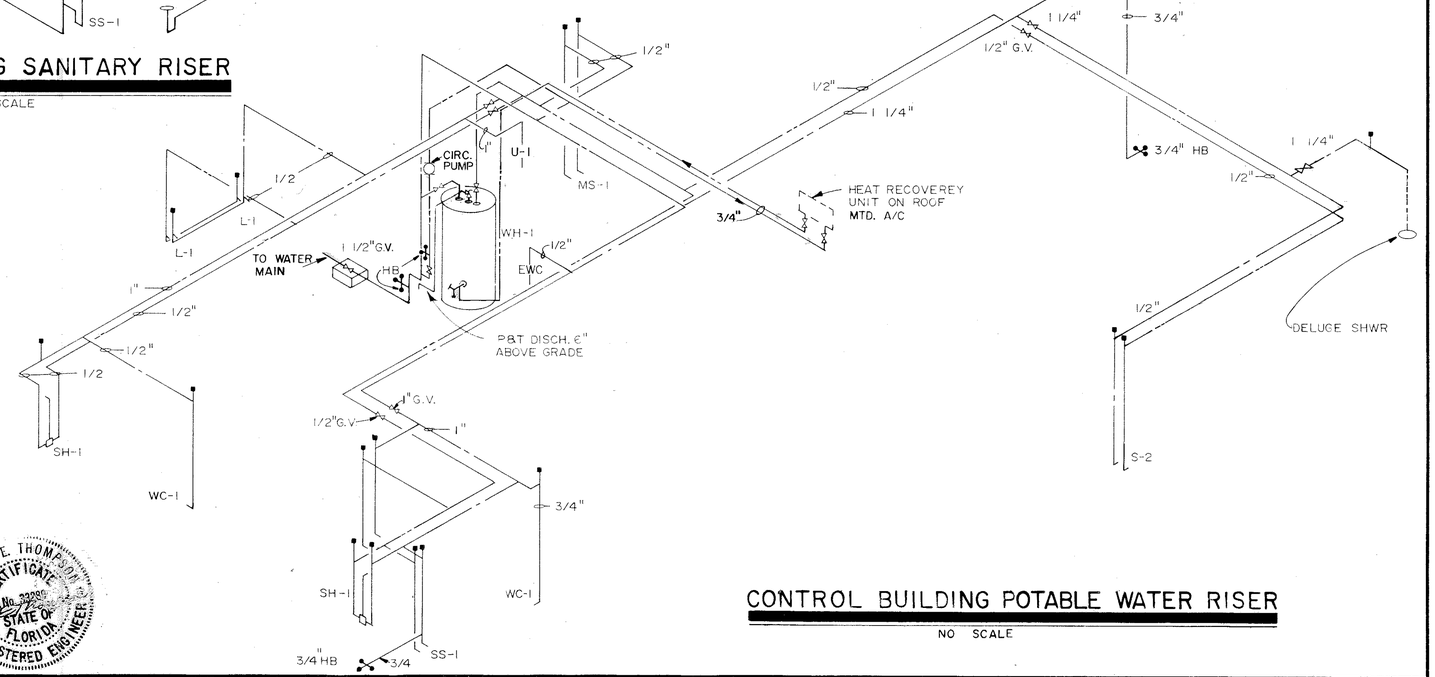


DEWATERING BLDG. POTABLE WATER RISER

NO SCALE

PLUMBING FIXTURE SCHEDULE

	ITEM	AMERICAN STANDARD OR NOTED
WC-1	WATER CLOSET	2477.016 'AFWALL' V.C. WALL HUNG, ELONGAGTED SIPHON JET, FLUSH VALVE SLOAN 110-3, OLSONITE 10-CC BLACK SEAT, MTD. FOR HANDICAPPED, JOSAM CARRIER.
WC-2	WATER CLOSET	SAME AS WC-1 EXCEPT STANDARD MTD. HEIGHT
U-1	URINAL	6400.14 'STALLBROOK' V.C. FLOOR MTD. SLOAN 186 FLUSH VALVE
TSP	TRAP PRIMER	JOSAM SERIES 88250
L-1	LAVATORIES	0476.028 'AQUALYN' V.C. 20" X17" SELF-RIMMING 2248.714 FAUCET, 3/8" C.P. SUPPLIES W/ STOPS 11/4" C.P. 17 GA. P TPAP.
SH-1	SHOWERS	SYMMONS 1-801S SAFETY MIX UNIT, INTEGRAL 21/2 GPM FLOW & VOLUME CONTROL, 4-131 SHOWER HEAD & SOAP DISH. JOSAM SERIES 30000A DRAIN
SS-1	SERVICE SINK	7692.049 'LAKEWELL' 22" X 18" W/RIM GUARD 8341.075 FAUCET, 3" TRAP STANDARD
EWC-1	ELECTRIC WATER COOLER	ELKAY MODEL EFRC-12 STN. STL. FULLY RECESSED 3/8" SUPPLY W/STOP, 11/4" 17 GA. C.P. P TRAP. 12 GPH, 380 WATTS, 1/5 HP, 4.7 FLA, 115-1-60
S-4	SINK	ELKAY MODEL PSR-3321 STN. STL. SELF-RIMMING 2-COMP. 3-FAUCET HOLES. LK-35 STRAINERS. LK-1102 FAUCET, 3/8" C.P. SUPPLIES W/STOPS, 11/2" C.P. 17 GA. P TRAP.
FD-2	FLOOR DRAIN	JOSAM SERIES 31220-1 W/DEEP SEAL TRAP
	LAB SINKS & CUP SINKS	FURN. W/LAB EQ. CONTR. TO FURN, SUPPLIES W/STOPS, DILUTION TRAPS & CONNECT
	EYE WASH, EM. SH., STILL, GLASS WASHER, ECT.	FURN. W/LAB EQ. CONTR. TO FURN. SUPPLIES W/STOPS, TRAPS & CONNECT.
WH-1	WATER HEATER	A.O. SMITH MODEL SEH-82 W/2-4.5 KW ELEMENTS 208V, 1Ø, FURN. CIRCULATOR & P/T VALVE (PIPE TO OUTSIDE OF BLDG.)
FD-1	FLOOR DRAIN	JOSAM SERIES 30000A-1-50
FCO	FLOOR CLEAN OUT	JOSAM SERIES 56010-12
CO	YARD CLEAN OUT WALL CLEAN OUT	JOSAM SERIES 56050 JOSAM SERIES 58790
	ENERGY RECOVERY LOOP	B&G '100' PUMP, 1/12 HP, 10' HD., 5 GPM, 115-1-60 INTERLOCK PUMP RELAY W/CONDENSOR



CONTROL BUILDING POTABLE WATER RISER

NO SCALE

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

DANIEL L. THOMPSON CERTIFICATE No. 32305 STATE OF FLORIDA REGISTERED ENGINEER

SCHEDULE & RISERS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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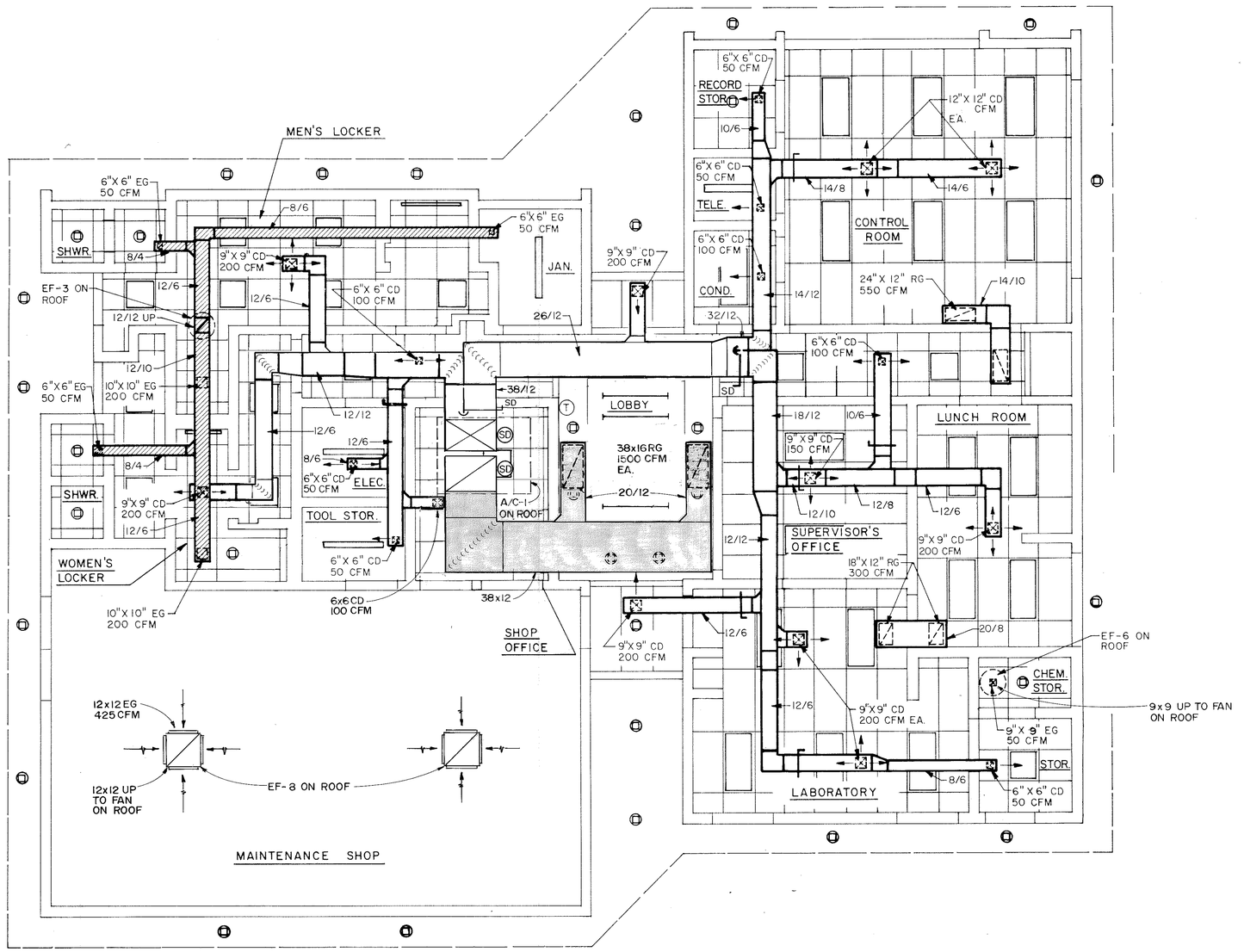
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5460

T160

DESIGNED WCH CHECKED CEB/CEB DATE MARCH 1985 SCALE NONE
DRAWN RHT FILE NO. 031-006-84 SHEET P-3 OF 3

26-01 RECORD DRAWINGS 12/19/89

AF 31693A



CONTROL BLDG. - A/C PLAN

1/4" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

DANIEL E. THOMPSON CERTIFICATE No. 33289 STATE OF FLORIDA REGISTERED ENGINEER

CONTROL BLDG.

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
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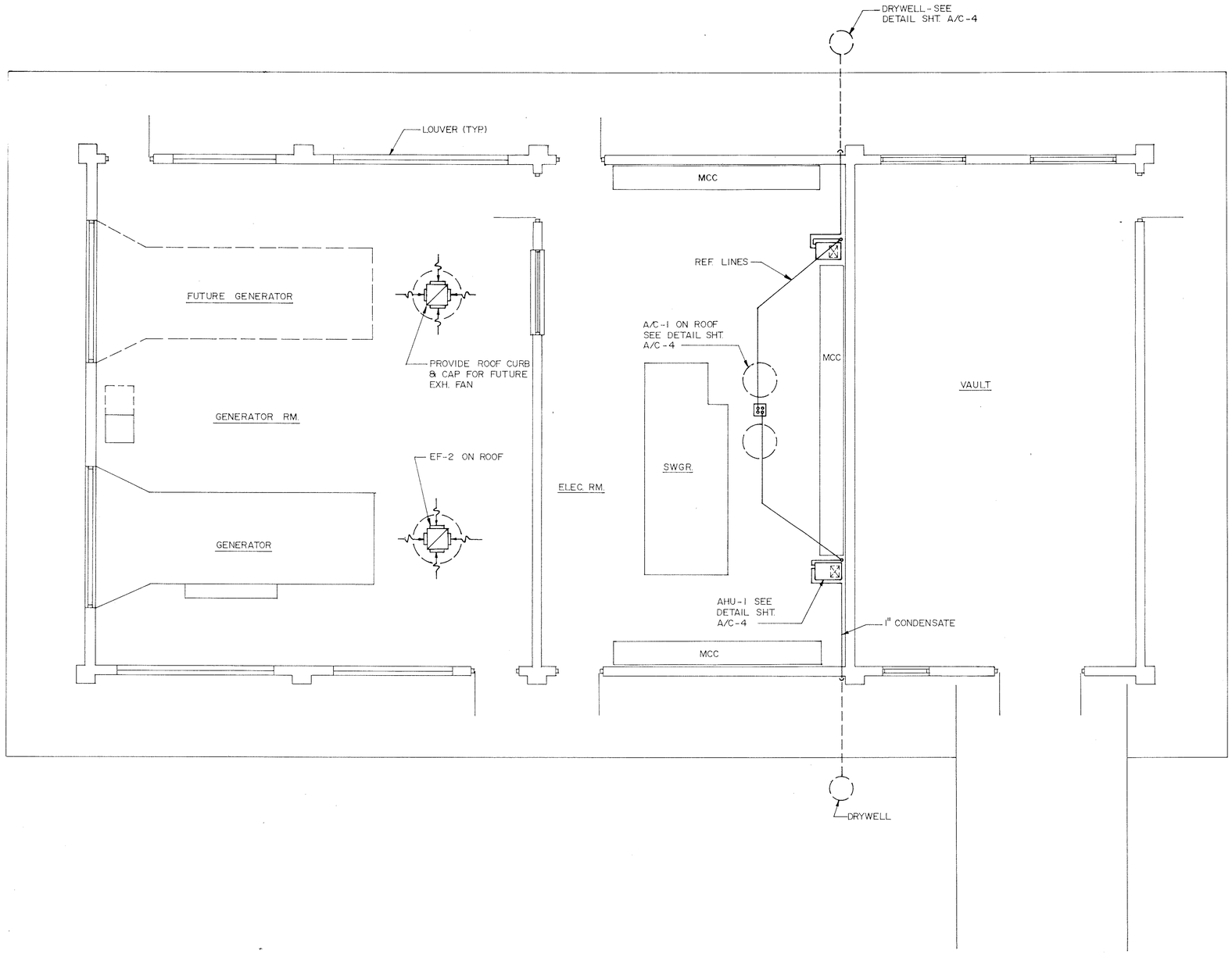
5404 Manatee Ave. W., Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED WCH CHECKED CEB/ DATE MARCH 1985 SCALE 1/4"=1'-0"
DRAWN TRH FILE NO. 031-006-84 SHEET A/C-1 OF 5

26-01 RECORD DRAWINGS 12/19/89

AP 31693A



ELECTRICAL BLDG. - A/C PLAN

1/4" = 1'-0"

DANIEL E. THOMPSON CERTIFICATE No. 33289 STATE OF FLORIDA REGISTERED ENGINEER

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

ELECTRICAL BLDG.

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
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Bradenton, Florida 33529
(813) 794-3450

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DRAWN RHT FILE NO. 031-006-84 SHEET A/C-2 OF 5

26-01 RECORD DRAWINGS 12/19/89

AP 81693A

N

DRYWELL

REFRIG. PIPING UP TO CONDENSING UNIT ON ROOF

WALL CAP

1 1/4"

SAFE PAN DRAIN

6/6 O/A

24 X16 FILTER BACK RG. 600 CFM

A/C-2 CONDENSING UNIT MOUNTED ON ROOF

A/C-2 FAN COIL

8/4

6X6 CD 50 CFM

12X12 CD 550 CFM

16/10

EF-5 INTERLOCK W/LIGHT SWITCH

10/4 EG

16 x 16 UP TO FAN (TYP.)

12 X 12 EG 525 CFM (TYP.)

EF-7 ON ROOF (TYP. OF 4)

12 x 12 UP TO FAN

EF-4 ON ROOF

10 X 8 EG 210 CFM (TYP.)

ELECTRIC UNIT HEATER 5KW, 480V/3/60, WITH 1/50 HP FAN MOTOR AT 480V/3/60 CFM. WITH CEILING MOUNTING BRACKET AND WALL MOUNTED PILOT DUTY T'STAT - TYPICAL OF 4.

DEWATERING BLDG. A/C PLAN

1/4" = 1'-0"

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FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

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DEWATERING BLDG.

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E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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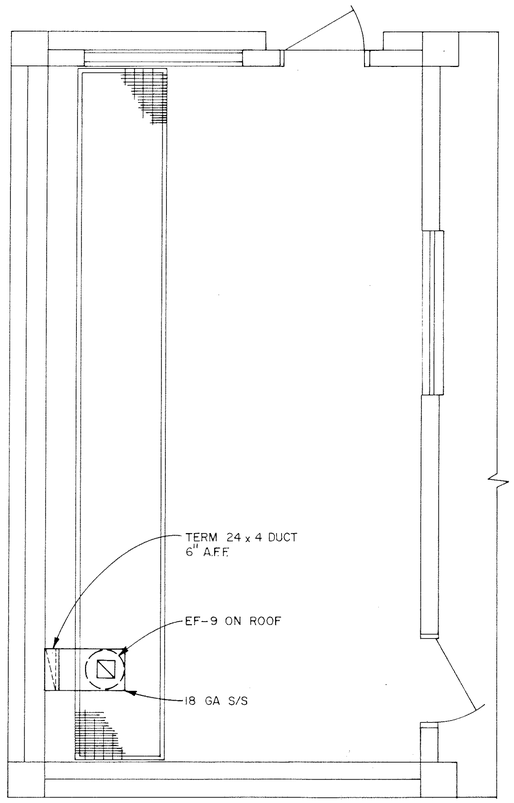
T163

DESIGNED WCH CHECKED CEB/CEB DATE MARCH, 1985 SCALE 1/4"=1"-0"
DRAWN RHT FILE NO. 031-006-84 SHEET A/C-3 OF 5

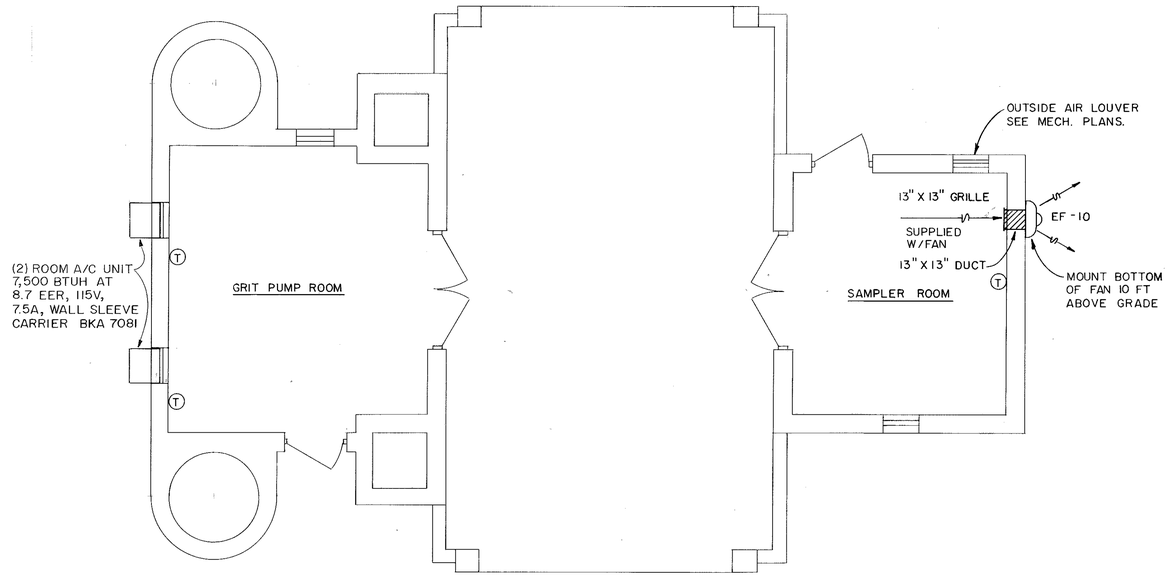
26-01 RECORD DRAWINGS 12/19/89

A.F. 31693A



CHLORINATION BLDG. A/C PLAN

SCALE: 3/8" = 1'-0"



HEADWORKS BLDG. A/C PLAN

1/4" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

DANIEL E. THOMPSON
CERTIFICATE
No. 33289
STATE OF
FLORIDA
REGISTERED ENGINEER

MISCELLANEOUS STRUCTURES

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers scientists planners & management consultants CDM

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DESIGNED WCH CHECKED CEB/ DATE MARCH 1985 SCALE 3/8"=1'-0"
DRAWN RHT FILE NO. 031-006-84 SHEET A/C-4 OF 5

26-01 RECORD DRAWINGS 12/19/89

AF 31693A

AIR COOLED A/C ROOF-TOP PACKAGE UNIT SCHEDULE

ITEM NO	AREA SERVED	COOLING CAPACITY			DESIGN CONDITIONS		SUPPLY AIR FAN					COND. UNIT SECTION						HEAT CAPACITY		OPER. WGT LBS.	CARRIER MODEL NO.
		CAPACITY MBTUH	POWER KW	E.E.R.	ENT. AIR DB / WB	LVG. AIR DB / WB	O/A CFM	CFM	HP	VOLT	Ø	EXT. S.P. IN. W.G.	COMPRESSOR FLA	COMPRESSOR VOLT	COMPRESSOR Ø	FAN FLA	FAN VOLT	FAN Ø	MBTUH	C.O.P. @ 47°		
A/C 1	CONTROL BLDG.	87.0	10.5	8.3	80/67	58/57	300	2,900	1.5	460	3	0.5	10.4	460	3	1.5	460	3	92.0	3.1	990	50QD008 HEAT PUMP

COMPLETE WITH "NATIONAL ENERGY SAVER PRODUCTS" ESP-341-75-C-0 HEAT RECOVERY UNIT, 20,000 BTU MOUNTED ON A/C-1. PROVIDE SMOKE DETECTORS IN SUPPLY & RETURN DUCTS AT UNIT.

AIR COOLED SPLIT SYSTEMS SCHEDULE

ITEM NO	NO. REQ'D	AREA SERVED	SYSTEM CAPACITY				COND. UNIT			AIR HANDLER					REFR. PIPE SIZE		OPER WT LBS	CARRIER MODEL NO.
			CAP. MBTUH	ENT. AIR DB/WB	HEATING KW/VOLT	EER	FLA	VOLT	Ø	CFM O/A	CFM SUP	EXT. S.P.	FAN H.P.	VOLT Ø	SUCT	LIQ.		
A/C-2	1	DEWATERING BLDG	18	80/67	5.63	9.0	10	208	1	*100	600	.3	1/8	208/1	5/8"	3/8"	69 121	40AQ018 38EH018
A/C-3	2	ELECTRICAL BLDG	22.6	80/67	NONE	9.2	14.0	208	1		600	.3	1/4	208/1	3/4"	3/8"	69 105	40AQ024 38EH024

AIR DISTRIBUTION DEVICE SCHEDULE

SYMBOL	DESCRIPTION	CARNES MODEL NO.
PD	PLENUM DIFFUSER	DASA(INLET)(LENGTH)A(SLOT)N
LD	LINEAR DIFFUSER	48-6(SLOTS)(LENGTH)
CD	CEILING DIFFUSER	47(FATT'N)2(SIZE)
EG,RG	EXHAUST/RETURN GRILLE	6845AH(SIZE)

DUCT LEGEND

SYMBOL	MATERIAL	LINER	SMACNA PRESSURE CLASS	SMACNA SEAL CLASS
	METAL LINED	1 1/2" PCF	1"WG	—
	METAL	NONE	1"WG	D
	METAL LINED	3 PCF 1"	1/2"WG	B
	FLEXIBLE	—	—	—

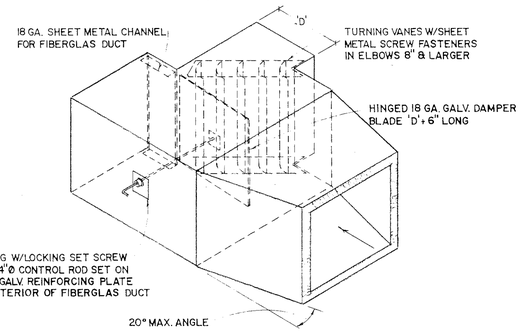
ALL REINFORCING, SUPPORTING AND SEALING SHALL BE IN ACCORDANCE WITH SMACNA STANDARDS

FAN SCHEDULE

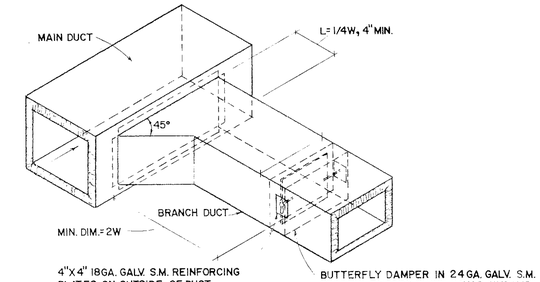
ITEM NO	NO REQD	AREA SERVED	SHT. NO.	CFM	S.P.	TYPE			HP	VOLT Ø	FAN RPM	MAX SONE VALUE	* PENN MODEL NO	REMARKS
						SET	WHEEL	DRIVE						
EF-1	2	GENERATOR ROOM	A/C-2	3440	1/8"	ROOF	CENT.	BELT	1/2	460/3	750	7.8	CB 18	DS, CURB, BS
EF-2	1	CHLORINE BLDG.	A/C-4	3050	1/4"	ROOF	CENT.	BELT	1/2	120/1	750	8.1	FMX-18B	DS, BS, CURB, AG
EF-3	1	CONTROL BLDG. TOILETS	A/C-1	550	3/8"	ROOF	CENT.	BELT	1/6	115/1	930	5.7	AB-35	DS, BS, CURB
EF-4	1	DEWATERING BLDG. STORAGE	A/C-3	840	3/8"	ROOF	CENT.	DIRECT	1/8	115/1	1075	6.3	AT-24	DS, BS, CURB
EF-5	1	DEWATERING BLDG. TOILETS	A/C-3	90	1/8"	CLG.	CENT.	DIRECT	1/25	115/1	1050	1.3	Z-6	10 FR ROOF CAP
EF-6	1	CONTROL CHEM. STOR.	A/C-1	55	1/16"	ROOF	CENT.	DIRECT	1/25	115/1	950	1.5	XR-60L	DS, BDD, CURB(1)
EF-7	4	DEWATERING	A/C-3	2100	1/4"	ROOF	CENT.	BELT	1/2	460/3	1025	8.5	BB531	DS, BDD, CURB, BS
EF-8	2	CONTROL BLDG	A/C-1	425	1/4"	ROOF	CENT.	DIRECT	1/12	115/1	1750	3.8	XQ82	DS, BS, CURB
EF-9	2	NOT USED	A/C-4	2340	1/4"	WALL	PROP	DIRECT	1/4	115/1	1140	—	P181T	LT, DS, BS, BDD
EF-10	1	HEADWORKS BLDG.	A/C-4	1050	1/4"	WALL	CENT.	DIRECT	1/4	115/1	1750	8.9	WAQ10	LT, DS, BS, BDD

* UNLESS NOTED OTHERWISE, ALL MODELS ARE PENN
(1) WITH SPEED CONTROL MOUNTED IN FAN HOUSING

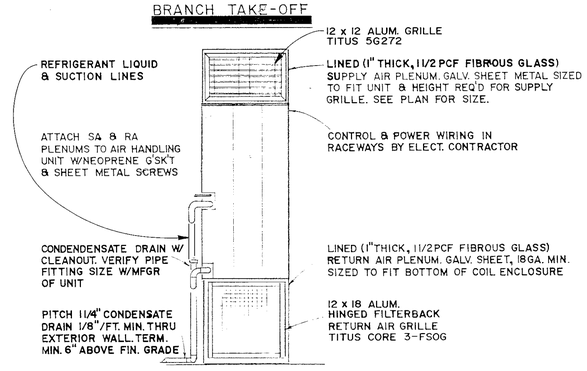
DS - DISCONNECT SWITCH, LT - LINE THERMOSTAT, BS - BIRD SCREEN, AG - ALUMINUM-GLASS, BDD - BACKDRAFT DAMPER



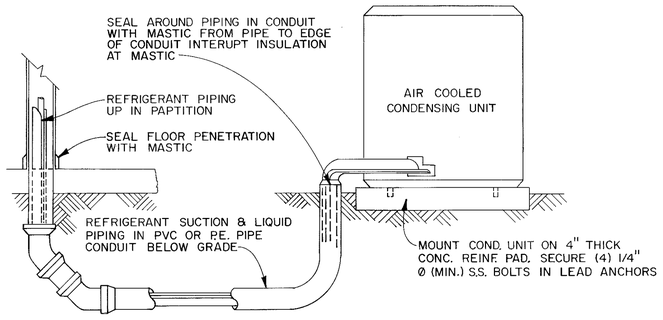
VERTICAL SPLITTER DAMPER



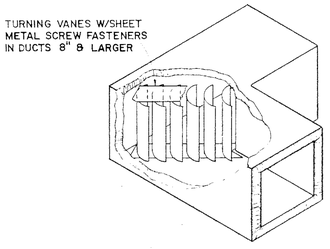
BRANCH TAKE-OFF



EXPOSED FAN COIL UNIT



BELOW GRADE REFRIGERANT PIPING DETAIL



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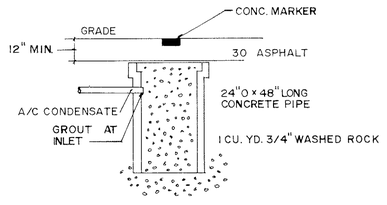

DRYWELL DETAIL

NOTES

1. ALL DUCTWORK, FITTINGS AND DETAILS TO COMPLY DETAILS ABOVE UNLESS OTHERWISE NOTED.
2. ALL DAMPER CONTROLS SHALL BE ACCESSIBLE.
3. DUCTWORK SHALL BE IN ACCORDANCE WITH SMACNA LOW VELOCITY DUCT CONSTRUCTION & FIBROUS GLASS DUCT CONSTRUCTION STANDARDS LATEST EDITION.
4. ALL A/C CONTROLS FURNISHED BY A/C EQUIP. MANUFACTURER
5. ALL DUCT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE NET FREE AREA UNLESS OTHERWISE NOTED.

DANIEL E. THOMASON CERTIFICATE No. 22283 STATE OF FLORIDA REGISTERED ENGINEER

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SCHEDULES & DETAILS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
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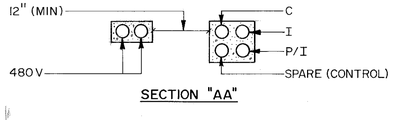
DESIGNED JJM CHECKED CEB/LES DATE MARCH SCALE NONE
DRAWN RHT FILE NO. 031-006-84 SHEET A/C-5 OF 5

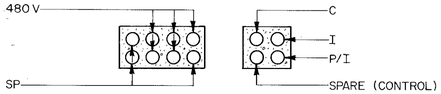
26-01 RECORD DRAWINGS 12/19/89

AP 31693A



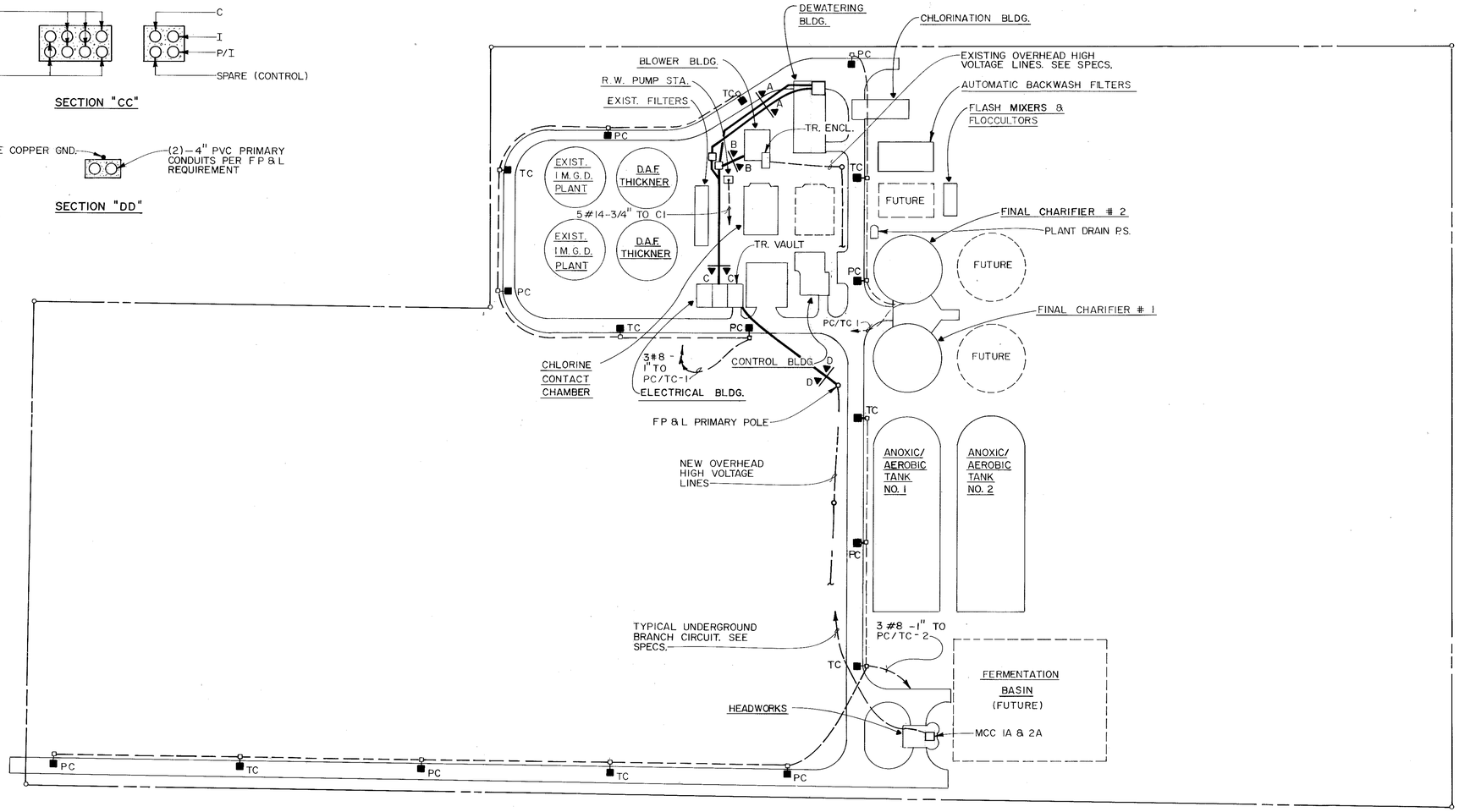
SECTION "AA"

SECTION "BB"



SECTION "CC"

SECTION "DD"



NOTE:
ALL UNDERGROUD CONDUIT EXCEPT LIGHTING IS CONCRETE ENCASED P.V.C.

SITE PLAN

1" = 100'

LEGEND

○	INCANDESCENT LIGHTING FIXTURE CEILING MTD.
○H	INCANDESCENT LIGHTING FIXTURE WALL MTD.
▭○	INCANDESCENT LIGHTING FIXTURE
■□	POLE MTD. LIGHTING FIXTURE (NEW)
	EMERGENCY LIGHTING UNIT 12 VOLT D.C. NICKEL CADMIUM BATTERIES AUTOMATIC CHARGING
S	LOCAL TUMBLER SWITCH FLUSH MTD.
S	LOCAL TUMBLER SWITCH SURFACE MTD.
S_3	3 WAY SWITCH
⊖	DUPLEX WALL RECEPTACLE FLUSH MTD. 125V, 20A, 3W
⊖□	DUPLEX WALL RECEPTACLE SURFACE MTD. 125V, 20A, 3W
⊖	SINGLE RECEPTACLE 125V, 20A, 3W
⊖H	SINGLE RECEPTACLE 250V, 1Φ, 3W, 30A
⊖H	SINGLE RECEPTACLE 250V, 1Φ, 3W, 20A
(J)	JUNCTION BOX
MCC	MOTOR CONTROL CENTER
▨	POWER PANEL
■	LIGHTING PANEL
▽	DRY TYPE TRANSFORMER
◎	ELECTRIC OPERATED MOTOR
▭	MAGNETIC MOTOR STARTER
◪	MANUAL MOTOR STARTER
◠	NON-FUSIBLE DISCONNECT SWITCH
EP	EXPLOSION PROOF
———	EXPOSED RIGID GALVANIZED CONDUIT 1/2" DIA. WITH 2 # 12 CONDUCTORS UNLESS OTHERWISE NOTED. (##) CROSSMARKS INDICATE NO. OF # 12 CONDUCTORS
⌒	CONDUIT CONCEALED IN CEILING OR WALL
- - -	CONDUIT IN/OR UNDERFLOOR OR UNDERGROUND
◂◂—	INDICATES HOME RUN TO PANEL. ARROWS REPRESENT NO. OF CIRCUITS
▶	TELEPHONE OUTLET
P.C.	PHOTO CELL
C	LIGHTING CONTACTOR
⊣⊢	NORMALLY OPEN CONTACTS
⊣/⊢	NORMALLY CLOSED CONTACTS
CR	CONTROL RELAY
⌒	MOLDED CASE CIRCUIT BREAKER
W P	WEATHER PROOF
(T)	THERMOSTAT
	MAJOR DUCT BANK W/REINFORCING
V-VS	VOLTMETER WITH 8 POSITION SWITCH
A-AS	AMMETER WITH 4 POSITION SWITCH
TC	TIME CLOCK
ETM	ELAPSED TIME METER
K ⊙	MAINTAINED CONTACT SEL. SW. (KEY OPERATED)
R ⊙	RESET BUTTON (MOMENTARY)
⊙	START/STOP (S/S) CONTROL SW. (MAINTAINED)
⊖□	SURFACE MTD. FLOOD LIGHT
⊖S	SPEAKER MTD. ON. POLE
⊖P	SPEAKER WITH CALL-IN
⊖WP	WEATHERPROOF RECEPTACLE – HUBBELL # 7423

NOTES

1. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO THE MECHANICAL, STRUCTURAL DRAWINGS, AND APPROVED MFR'S. SHOP DRWGS, FOR THE EXACT LOCATION OF ALL EQUIPMENT.
2. ALL WORK SHALL COMPLY WITH N.E.C. AND LOCAL CODES.

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

SITE PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

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T166

DESIGNED WCH CHECKED C.E.B. DATE MARCH 1985 SCALE 1" = 100'
DRAWN AJY FILE NO 031-006-84 SHEET E-1 OF 30

26-01

RECORD DRAWINGS 12/19/89

A.F. 31693A

480 V, 3φ WYE CONN. TRANSFORMER

CT'S IN TR. VAULT

METER VERIFY LOCATION

3000 A., 3φ BUS W/ GND.

1 1/4" EMPTY

2/C #16 SH-3/4" TO PIC

VOLTAGE TRANSDUCER W/ 4-20 MA. TRANSMITTER (BUS 1 & 2)

LIGHTING ARRESTER & SURGE CAPACITOR

WATT TRANSDUCER W/ 4-20 MA. TRANSMITTER (BUS 1 & 2)

1-2/C#16SH-3/4" TO PIC (TYP)

GAS TUBE LIGHTNING ARRESTER

PT

CT

3000 A.

M1

E

M2

ELECTRIC INTERLOCK

480 V. SWGR.

SPECIAL LUG COMPARTMENT (SEE SPECS)

1600 A.

ST

PROVIDE 4-500 MCM LUGS/φ

800A.,3P FEEDER NO. 1	V VS A AS	SWGR. CONTROL COMP.	V VS A AS	800A.,3P FEEDER NO. 2
800A.,3P FEEDER NO. 3	3000A.,3P MAIN NO. 1		3000A.,3P MAIN NO. 2	800A.,3P FEEDER NO. 4
1200A.,3P FEEDER NO. 5		STATION TIE		800A.,3P FEEDER SPACE
800A.,3P FEEDER SPACE				800A.,3P FEEDER SPACE

SWGR. FRONT VIEW

F7 SPACE

F5 1200A

F3 800A.

F1 800A.

F2 800A.

F4 800A.

F6 SPACE

SPACE

300 A. GND. BUS

#1/0 GND. TO GRID AND 3/4" CWP.

1-3" W/ 3-500 MCM & 1#1/0 GND. EACH

G1

GENERATOR SWGR. & CONTROL PNL.

1-3" W/3-500 MCM & 1#1/0 GND. EACH

120 #14-3" (CONFIRM)

2-2/C#16SH-1"

1000KW 480V, 3φ, 4W WYE CONN. GENERATOR

G2

FUTURE GENERATOR

MCC

EXIST. BLOWER BLDG.

MCC-3

MCC-5

MCC-1

MCC-1A HEADWORKS

3#4/0 & 1#2-3"

MCC-2

MCC-2A HEADWORKS

3#4/0 & 1#2-3"

MCC-4

MCC-6

SINGLE LINE POWER DIAGRAM

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY — CERTIFICATE NO. 19995 — STATE OF FLORIDA — REGISTERED ENGINEER

SINGLE LINE POWER DIAGRAMS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

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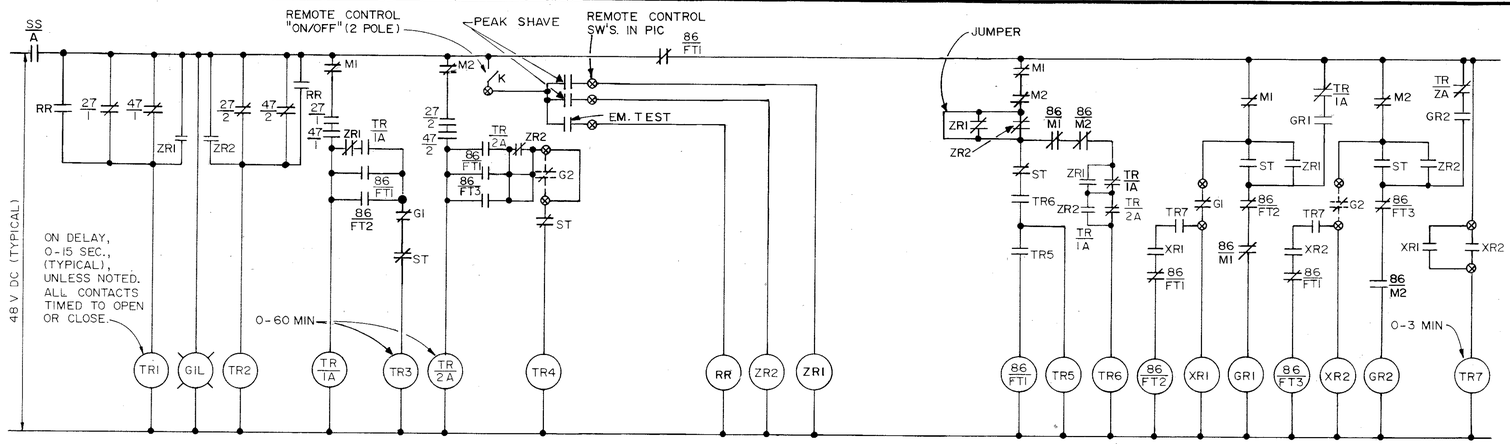
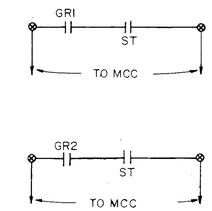
DESIGNED WCH CHECKED CEB/WCH DATE MARCH 1985 SCALE NONE
DRAWN TRH FILE NO. 031-006-84 SHEET E-2 OF 30

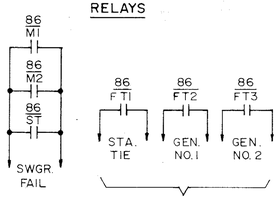
26-01

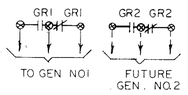
RECORD DRAWINGS 12/19/89

AF 31693A

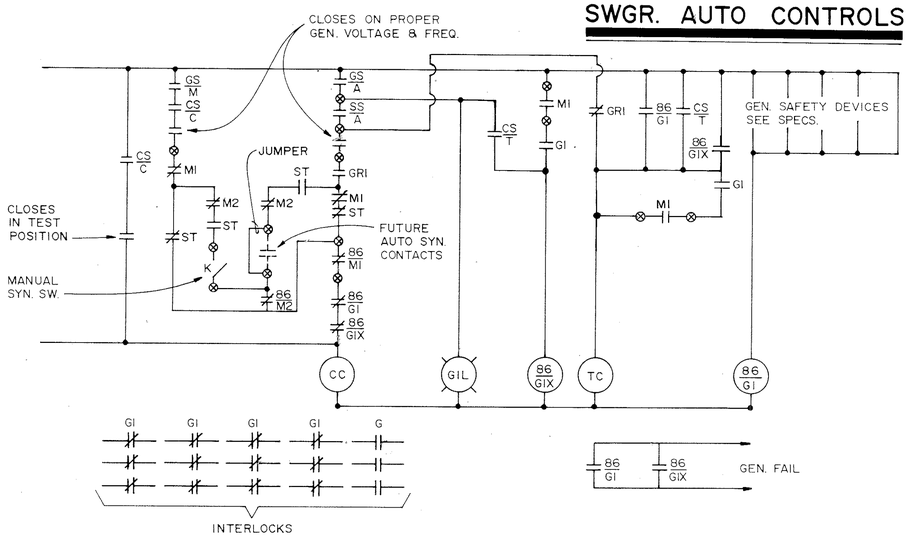




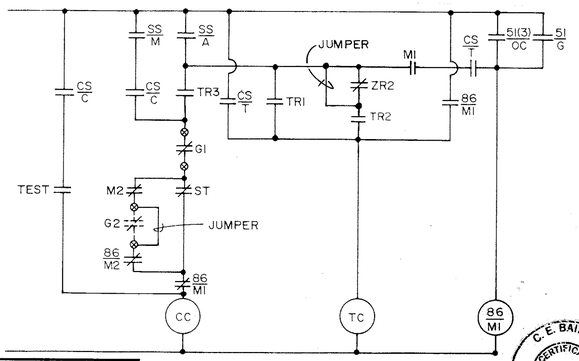




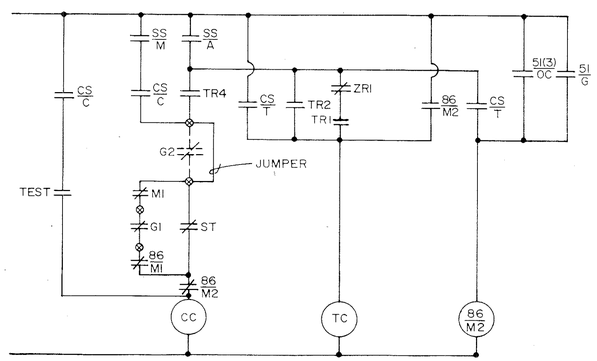
SWGR. AUTO CONTROLS



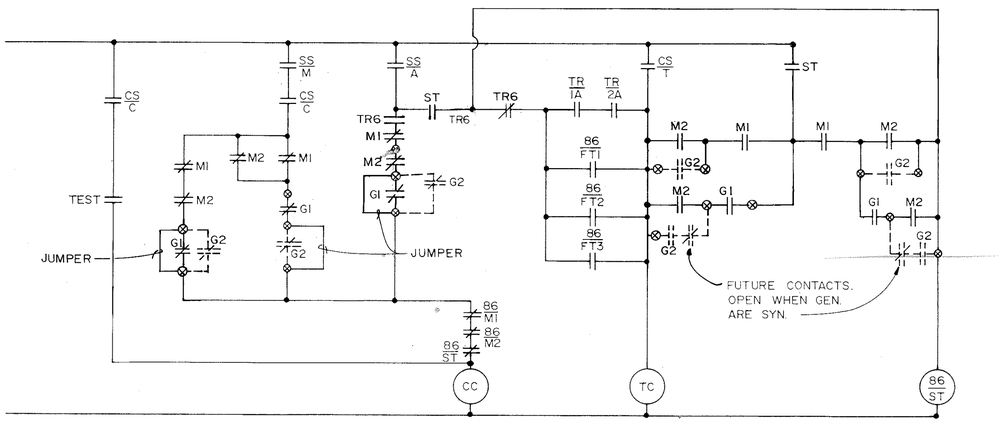
GENERATOR BKR. NO. 1 (GI)



MAIN BKR. NO. 1 (MI)



MAIN BKR. NO. 2 (M2)



STATION TIE BKR. (ST)

LEGEND

51/OC	OVERCURRENT RELAY
57/G	TIME OVERCURRENT GROUND RELAY
ZR	PEAK SHAVE RELAY
47	3 PHASE UNDERVOLTAGE AND PHASE REVERSAL
27	UNDERVOLTAGE RELAY
86	LOCKOUT RELAY MANUAL RESET OVERCURRENT
86/X	CIRCUIT BKR. INTERLOCK FAIL
TR	PNEUMATIC TIMING RELAY (AGASTAT)
GIL	GREEN INDICATING LIGHT
G	GENERATOR BKR.
MI	MAIN BKR. NO. 1
M2	MAIN BKR. NO. 2
XR	AUX. CONTROL RELAY
CS/T	CIRCUIT BKR. CONTROL SW. (T-TRIP, C-CLOSED)
GS	GENERATOR SELECTOR SW. (MAN.-OFF-AUTO)
SS	STATION SWGR. SELECTOR SW. (MAN.-AUTO)
GR	GENERATOR RUN RELAY
ST	STATION TIE BKR.
CC	CLOSING COIL
TC	TRIP COIL
FT	FAIL TO TRANSFER
RR	EMERGENCY MODE RELAY
K	MAINTAINED SELECTOR SW. (KEY OPERATED)

C. E. BAILEY & ASSOCIATES, INC.
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FORT LAUDERDALE, FLORIDA

C. E. BAILEY CERTIFICATE No. 6285 STATE OF FLORIDA REGISTERED ENGINEER

SWGR ELEMENTARY

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Consulting Engineers
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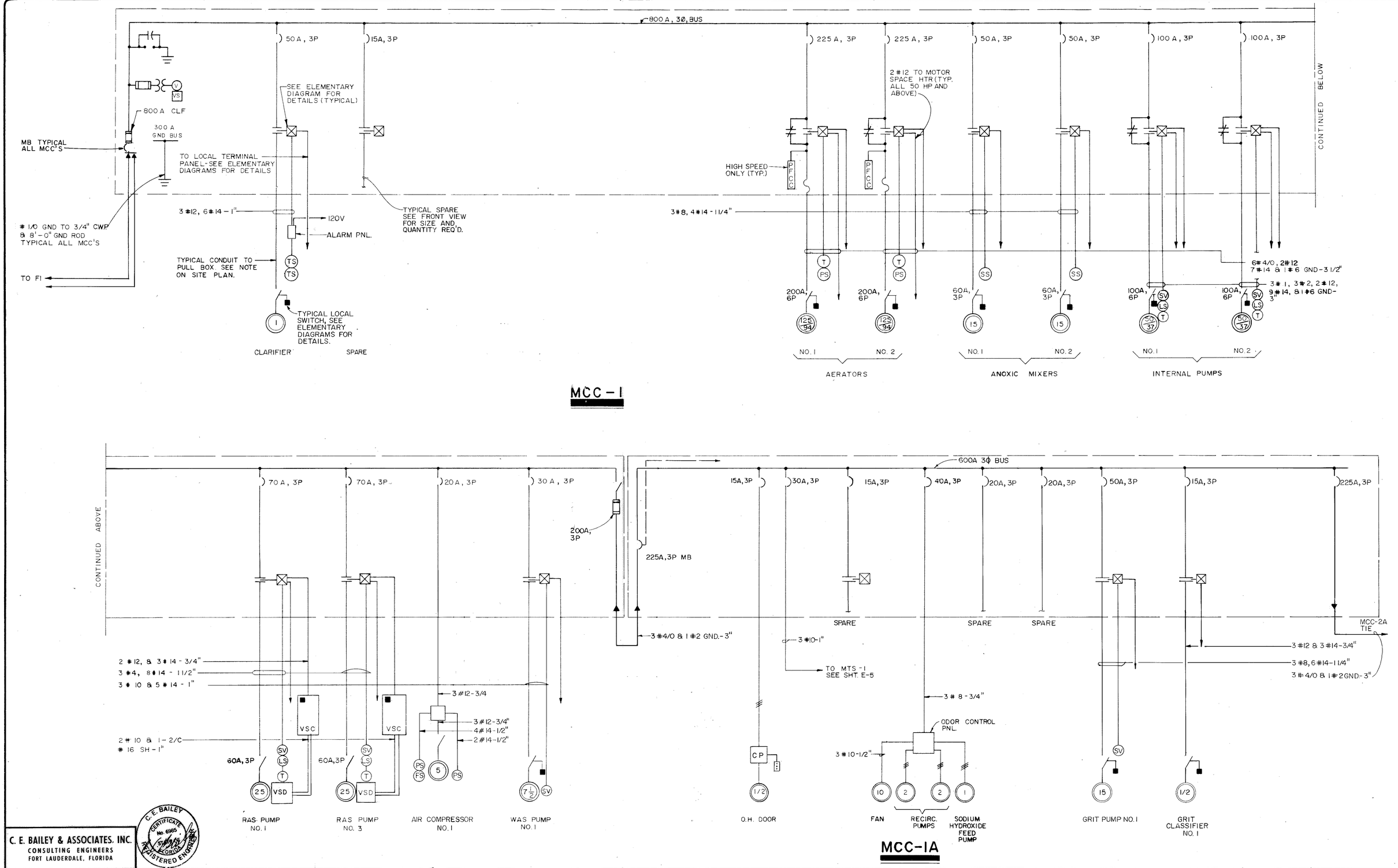
DRAWN T.R.H. FILE NO. 031-006-84 SHEET E-3 OF 30

26-01 RECORD DRAWINGS 12/19/89

AF 31693A



MCC - 1

MCC-1A

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C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

MCC SINGLE LINE DIAGRAMS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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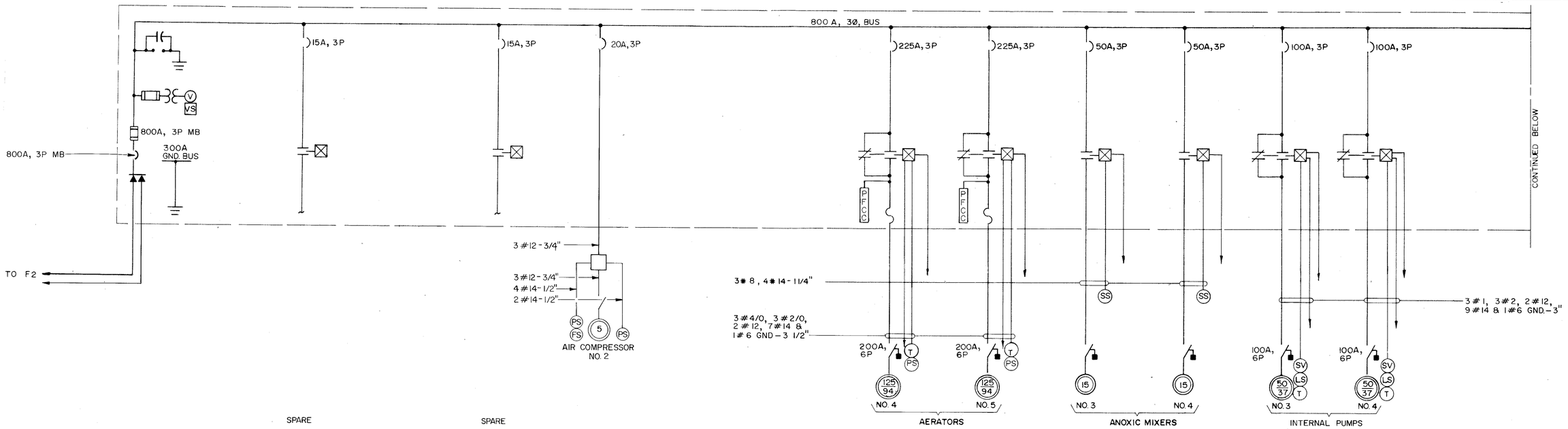
DESIGNED WCH CHECKED CEB DATE MARCH, 1985 SCALE NONE
DRAWN RHT FILE NO. 031-006-84 SHEET E-4 OF 30

26-01 **RECORD DRAWINGS 12/19/89**

AF 31693A



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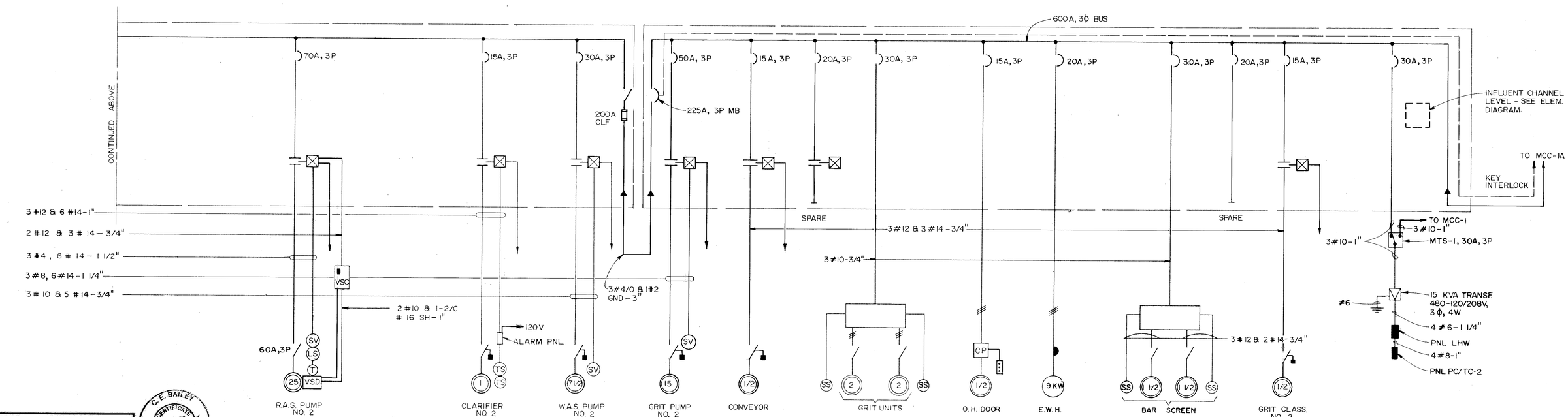

MCC-2A

C. E. BAILEY & ASSOCIATES, INC.
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FORT LAUDERDALE, FLORIDA

C. E. BAILEY CERTIFICATE No. 6965 STATE OF FLORIDA REGISTERED ENGINEER

MCC SINGLE LINE DIAGRAMS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
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E.P.A. NO C-120540060 MANATEE COUNTY, FLORIDA

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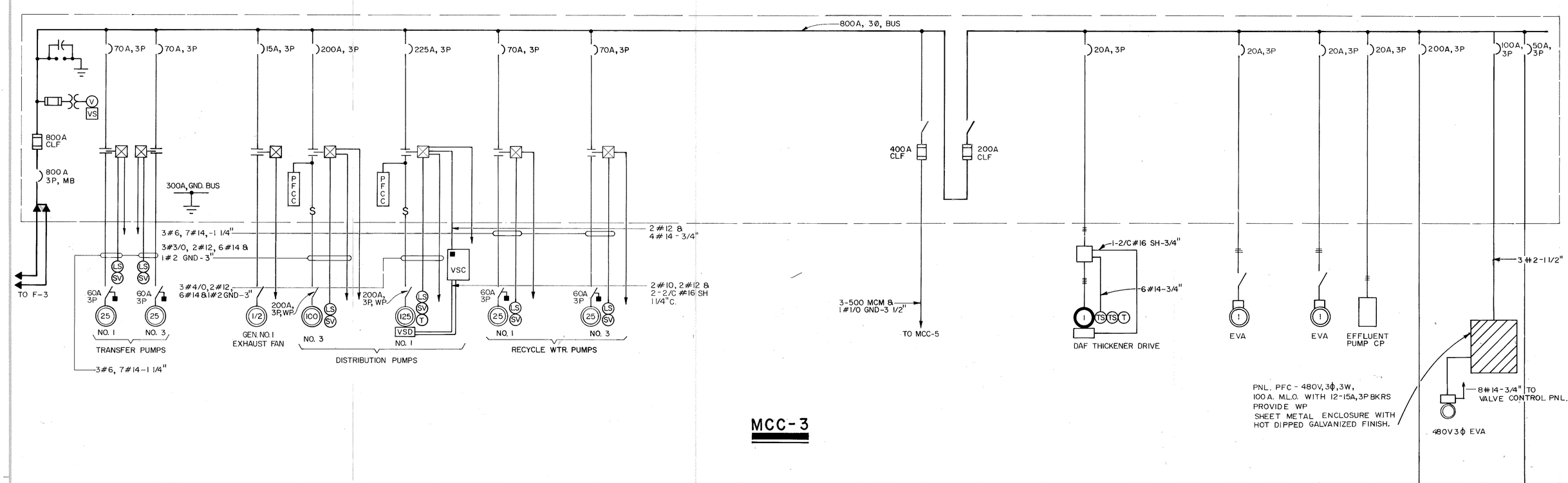
DESIGNED WCH CHECKED CEB DATE MARCH,1985 SCALE NONE
DRAWN TRH FILE NO. 031-006-84 SHEET E-5 OF 30

26-01 **RECORD DRAWINGS 12/19/89**

AF 31633A



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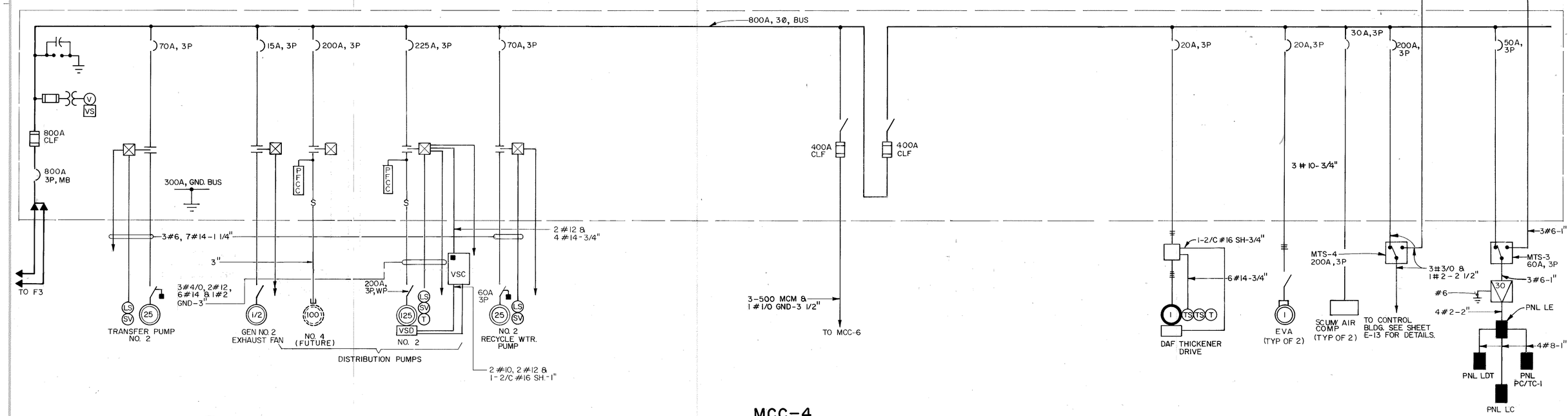

MCC-4

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6965 STATE OF FLORIDA REGISTERED ENGINEER

MCC SINGLE LINE DIAGRAMS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

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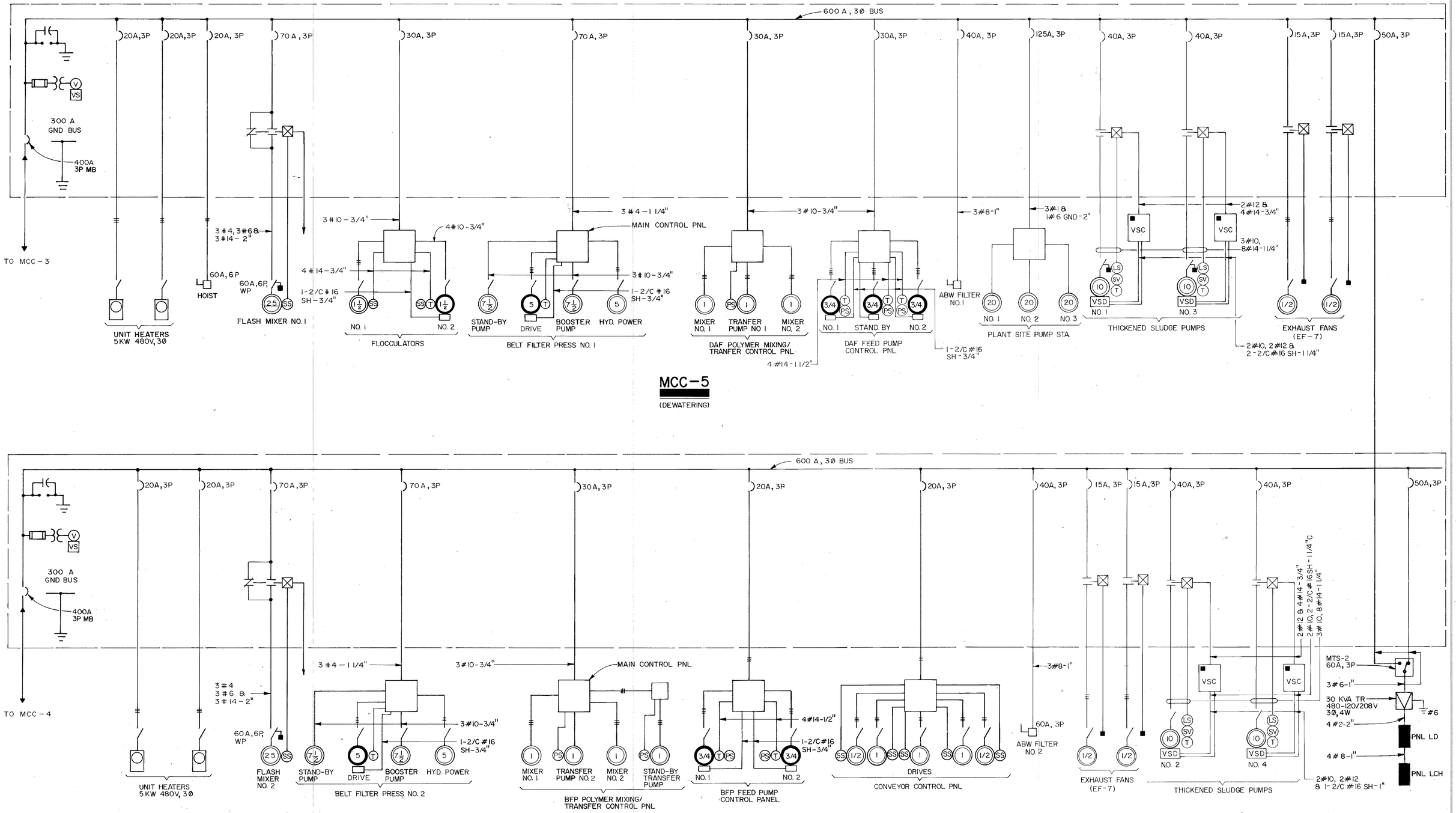
Consulting Engineers
6404 Manatee Ave. W., Suite N
Bradenton, Florida 33529
(813) 794-5450

T171

DESIGNED WCH CHECKED CEB DATE MARCH, 1985 SCALE NONE
DRAWN TRH FILE NO. 031-006-84 SHEET E-6 OF 30

26-01 **RECORD DRAWINGS 12/19/89**

AS 31693A



MCC-5
(DEWATERING)

MCC-6
(DEWATERING)

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6685 STATE OF FLORIDA REGISTERED ENGINEER

MCC SINGLE LINE DIAGRAMS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. 2/87 WLR CONFORMED
2.
3.
4.
5.

Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

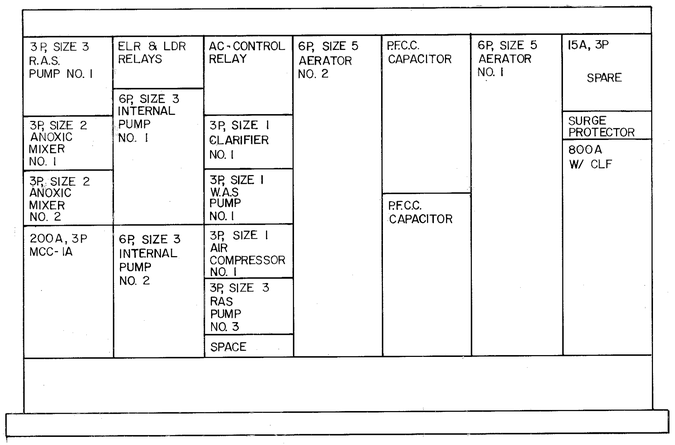
T172

DESIGNED W.C.H. CHECKED C.E.B. DATE MARCH, 1985 SCALE NONE
DRAWN K.T.L. FILE NO. 031-006-84 SHEET E-7 OF 30

26-01

RECORD DRAWINGS 12/19/89

AF 31693A



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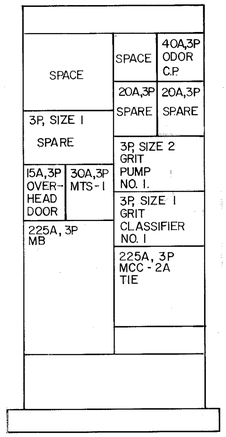

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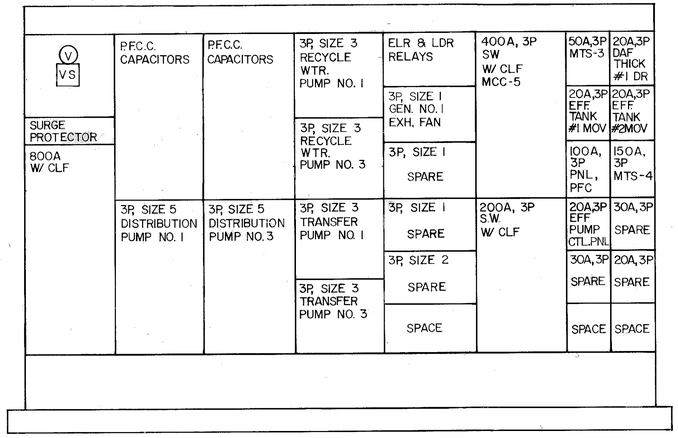

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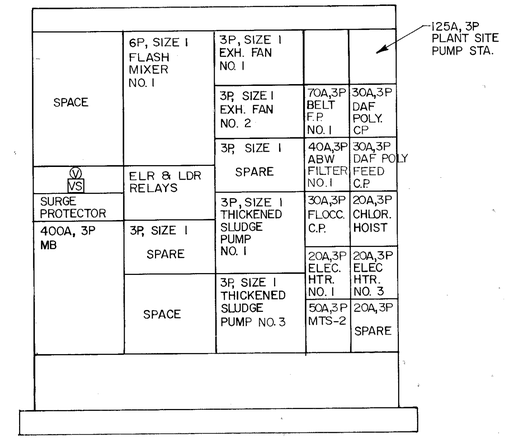

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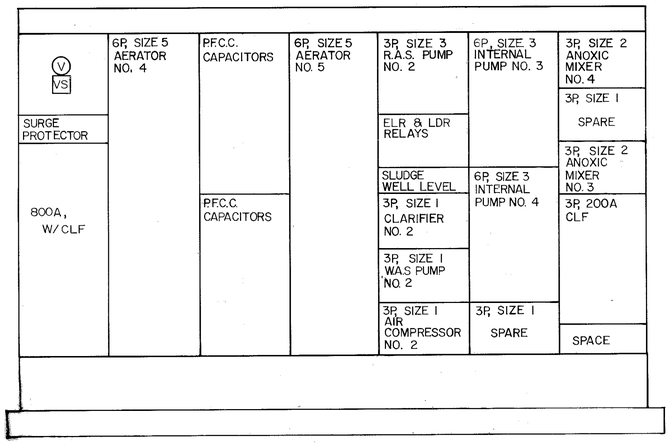
✱ INSTALL POWER FACTOR CORRECTION CAPACITORS PER SPECS.



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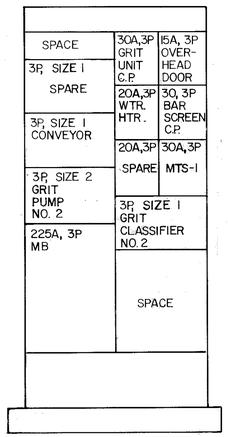

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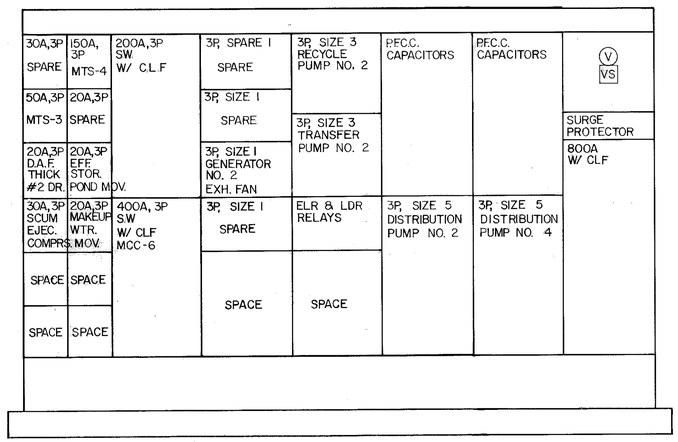

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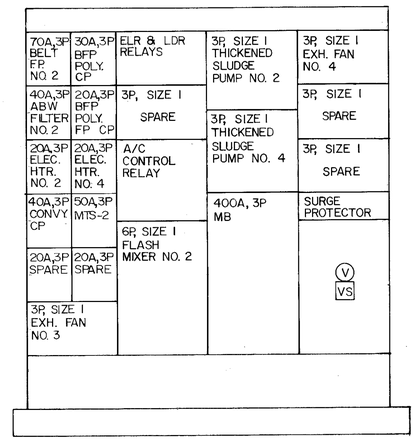

MCC-6

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

MCC FRONT VIEWS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

REVISIONS
1. 2/87 WLR CONFORMED
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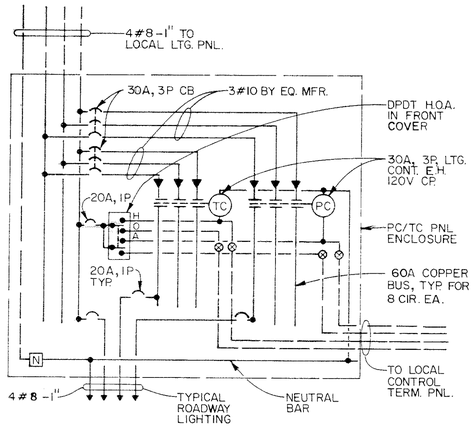
LEI Larson Engineering, Inc. T173
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

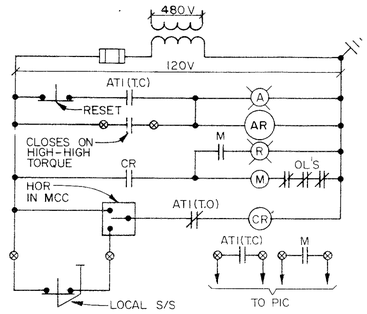
DESIGNED WCH CHECKED CEB/CEB DATE MARCH 1985 SCALE NONE
DRAWN TRH FILE NO. 031-006-84 SHEET E-8 OF 30

26-01 RECORD DRAWINGS 12/19/89

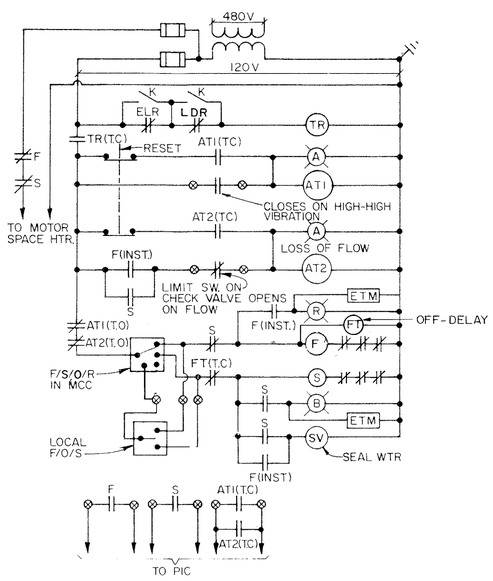
AF 31693A



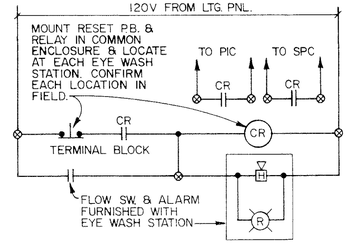
TYPICAL PC/TC PANEL DETAIL



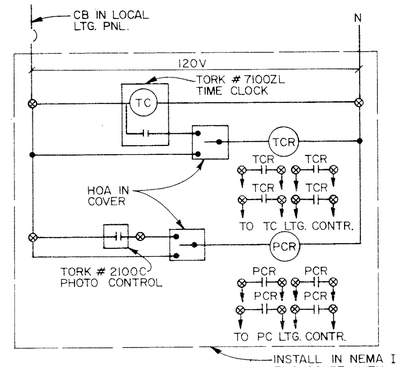
FINAL CLARIFIERS



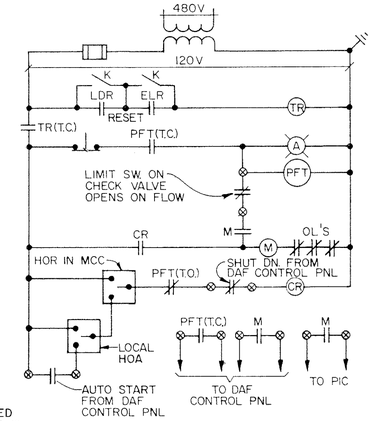
INTERNAL RECIRCULATION PUMPS



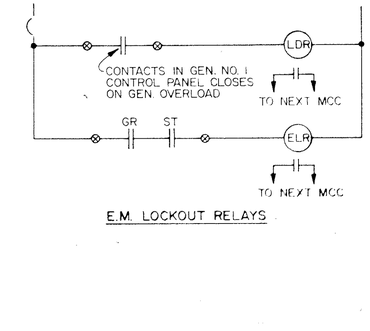
EYE WASH ALARM AND RESET



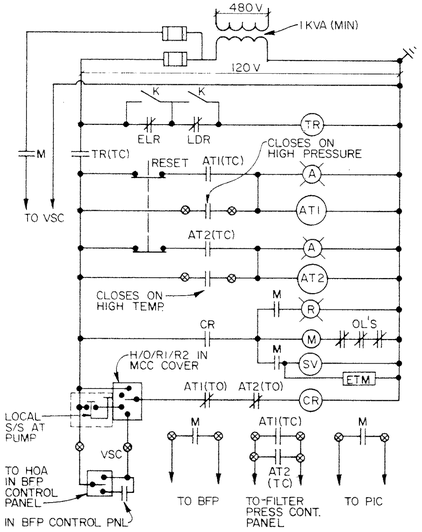
REMOVE CONTROL OF OUTSIDE LIGHTING



RECYCLE WATER PUMPS

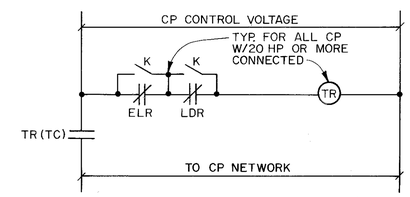


E.M. LOCKOUT RELAYS



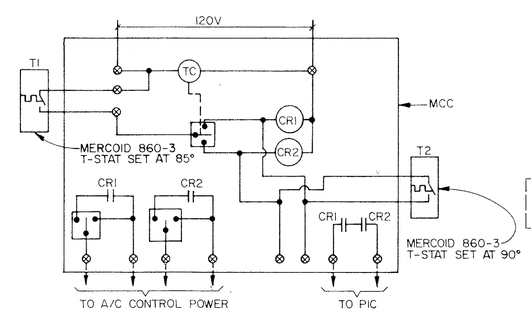
SLUDGE FEED PUMP

AERATORS (TWO SPEED)

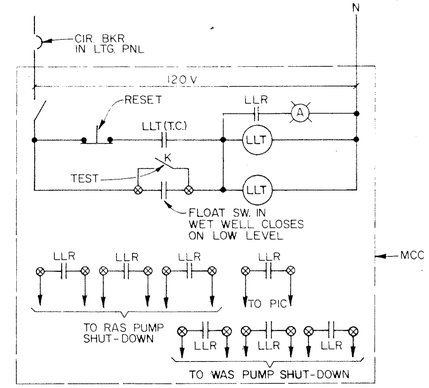


CP EMERGENCY LOCKOUT

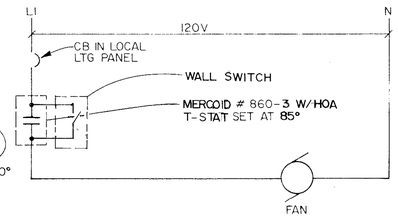
DISTRIBUTION PUMPS



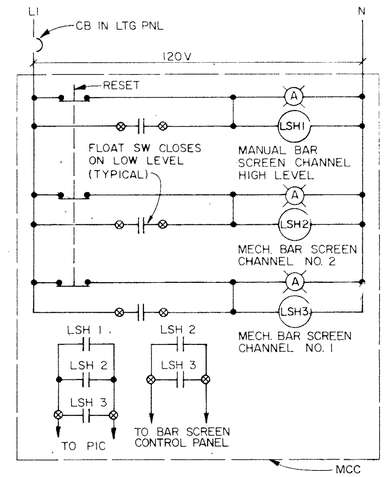
ELECTRICAL ROOM A/C CONTROLS



ACTIVATED SLUDGE WELL LEVEL



120V EXHAUST FAN



INFLUENT CHANNEL LEVEL

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE, FLORIDA

C. E. BAILEY CERTIFICATE STATE OF FLORIDA REGISTERED ENGINEER

ELEMENTARY CONTROL DIAGRAMS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. 2/87 WLR CONFORMED
2.
3.
4.
5.

Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave W., Suite N
Bradenton, Florida 33529
(813) 794-5450

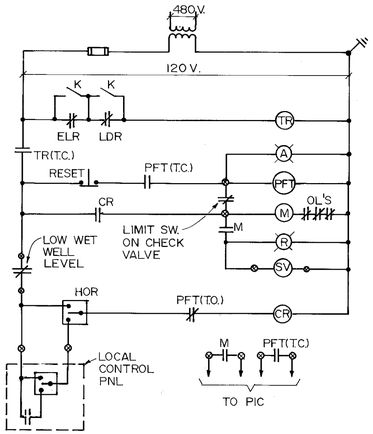
DESIGNED W.C.H. CHECKED C.E.B. DATE MARCH, 1985 SCALE NONE
DRAWN T.R.H. FILE NO. 031-006-84 SHEET E-9 OF 30

T174

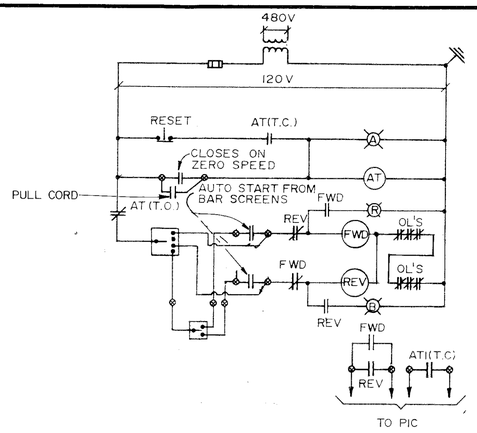
26-01

RECORD DRAWINGS 12/19/89

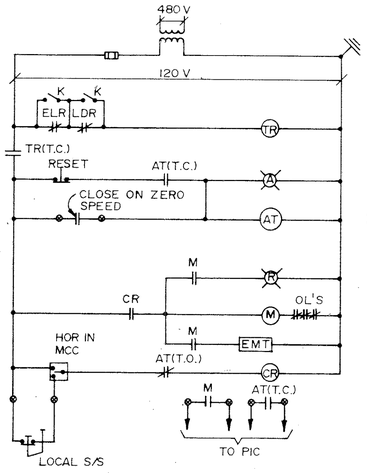
AF 31693A



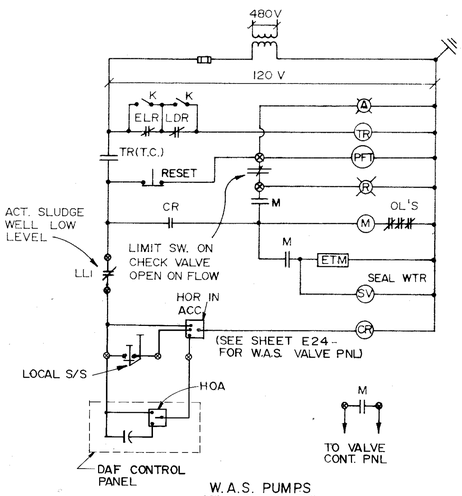
TRANSFER PUMPS



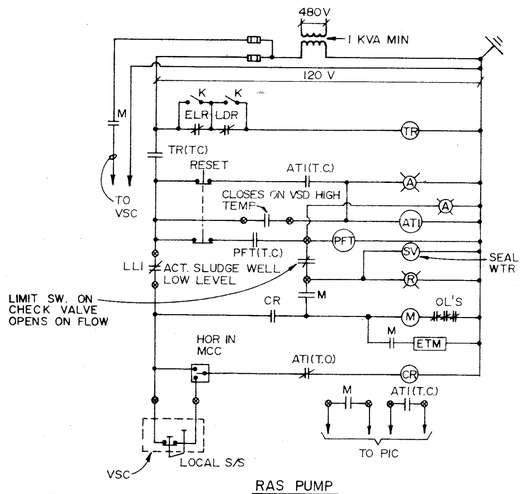
SCREENINGS CONVEYOR



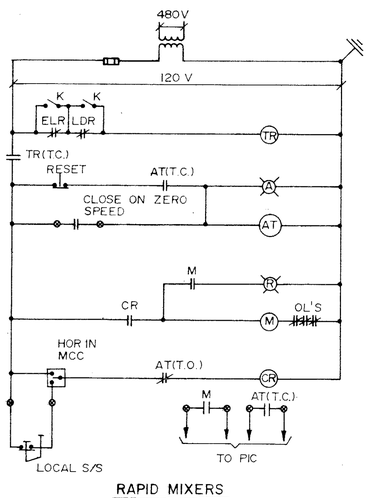
ANOXIC MIXERS



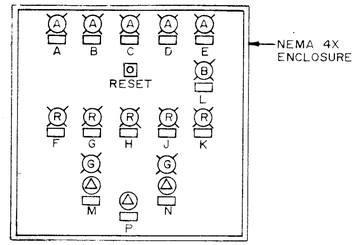
W.A.S. PUMPS



RAS PUMP

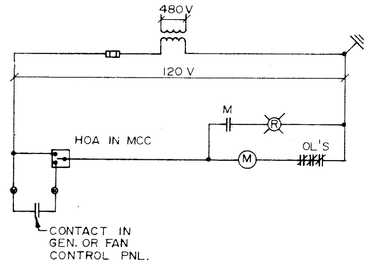


RAPID MIXERS

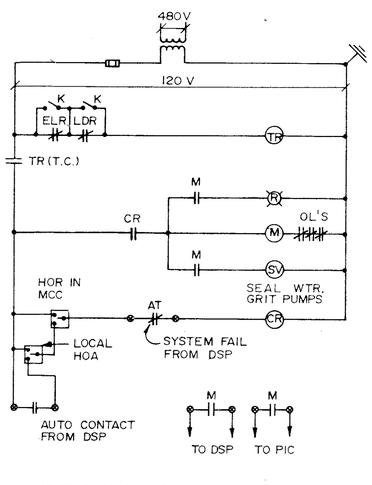


A. GRIT PUMP # 1 HIGH PRESSURE
B. GRIT PUMP # 2 HIGH PRESSURE
C. GRIT CLASSIFIER # 1 ZERO SPEED
D. GRIT CLASSIFIER # 2 ZERO SPEED
E. CONVEYOR ZERO SPEED
F. GRIT PUMP # 1 RUN
G. GRIT PUMP # 2 RUN
H. GRIT CLASSIFIER # 1 RUN
J. GRIT CLASSIFIER # 2 RUN
K. CONVEYOR FOWARD
L. CONVEYOR REVERSE
M. SOLENOID VALVE # 1 HOA
N. SOLENOID VALVE # 2 HOA
P. SYSTEM HOA

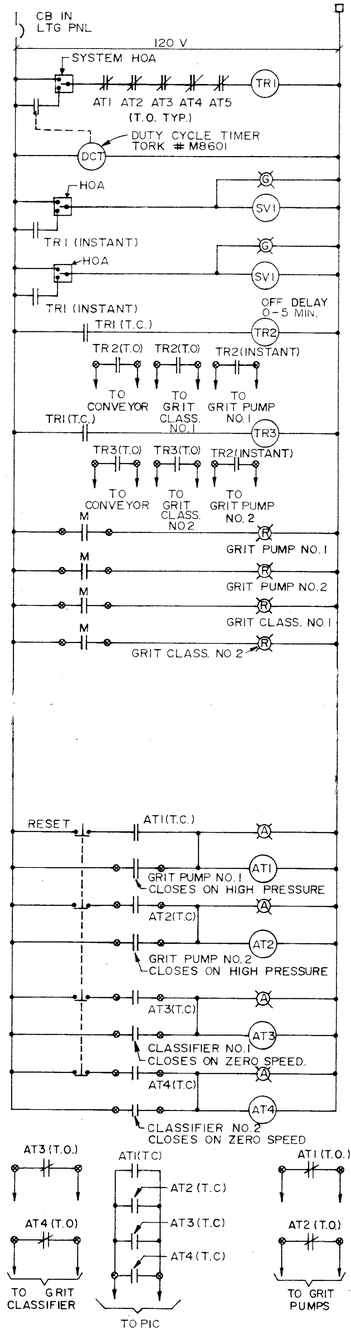
DEGRITTER SYSTEM PANEL



EXH. FANS



GRIT PUMPS / GRIT CLASSIFIER



DEGRITTER SYSTEM PANEL (DSP)

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE, FLORIDA

C. E. BAILEY CERTIFICATE NUMBER 22006 STATE OF FLORIDA REGISTERED ENGINEER

ELEMENTARY CONTROL DIAGRAMS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. 2/87 WLR CONFORMED
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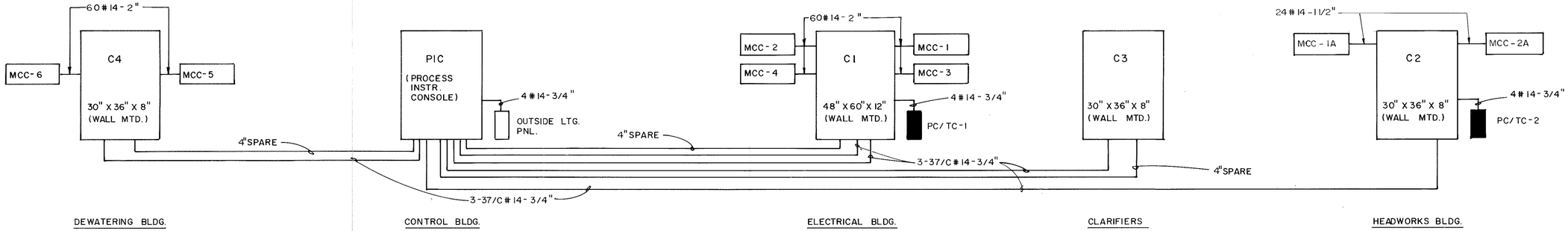
Larson Engineering, Inc.
Consulting Engineers
T175
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

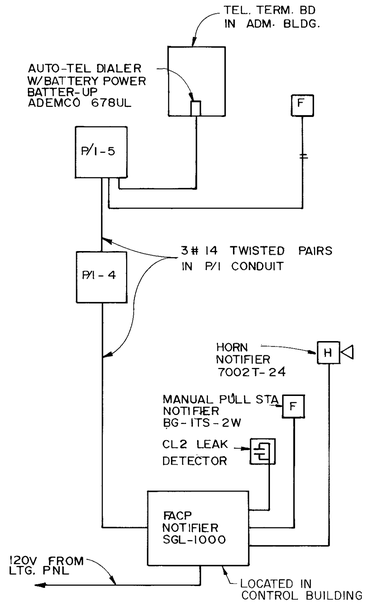
DESIGNED WCH CHECKED CEB/CWB DATE MARCH 1985 SCALE NONE
DRAWN TRH FILE NO. 031-006-84 SHEET E-10 OF 30

26-01 RECORD DRAWINGS 12/19/89

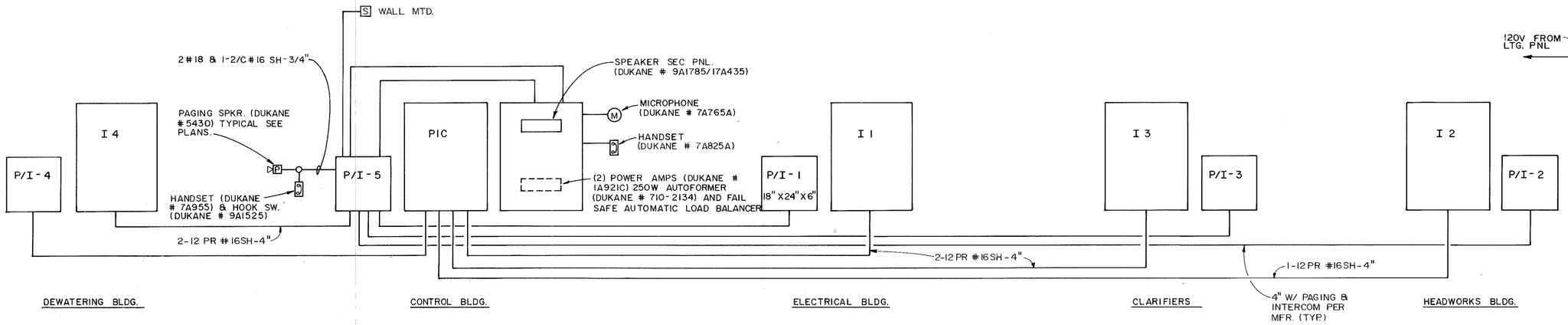


CONTROL CONDUIT & WIRE RISER

SEE PLANS FOR REMOTE EQUIP.



FIRE ALARM RISER



INSTRUMENTATION / INTERCOM CONDUIT & WIRE RISER

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

CONTROL & INSTRUMENTATION CONDUIT RISER

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1 2/87 WLR CONFORMED
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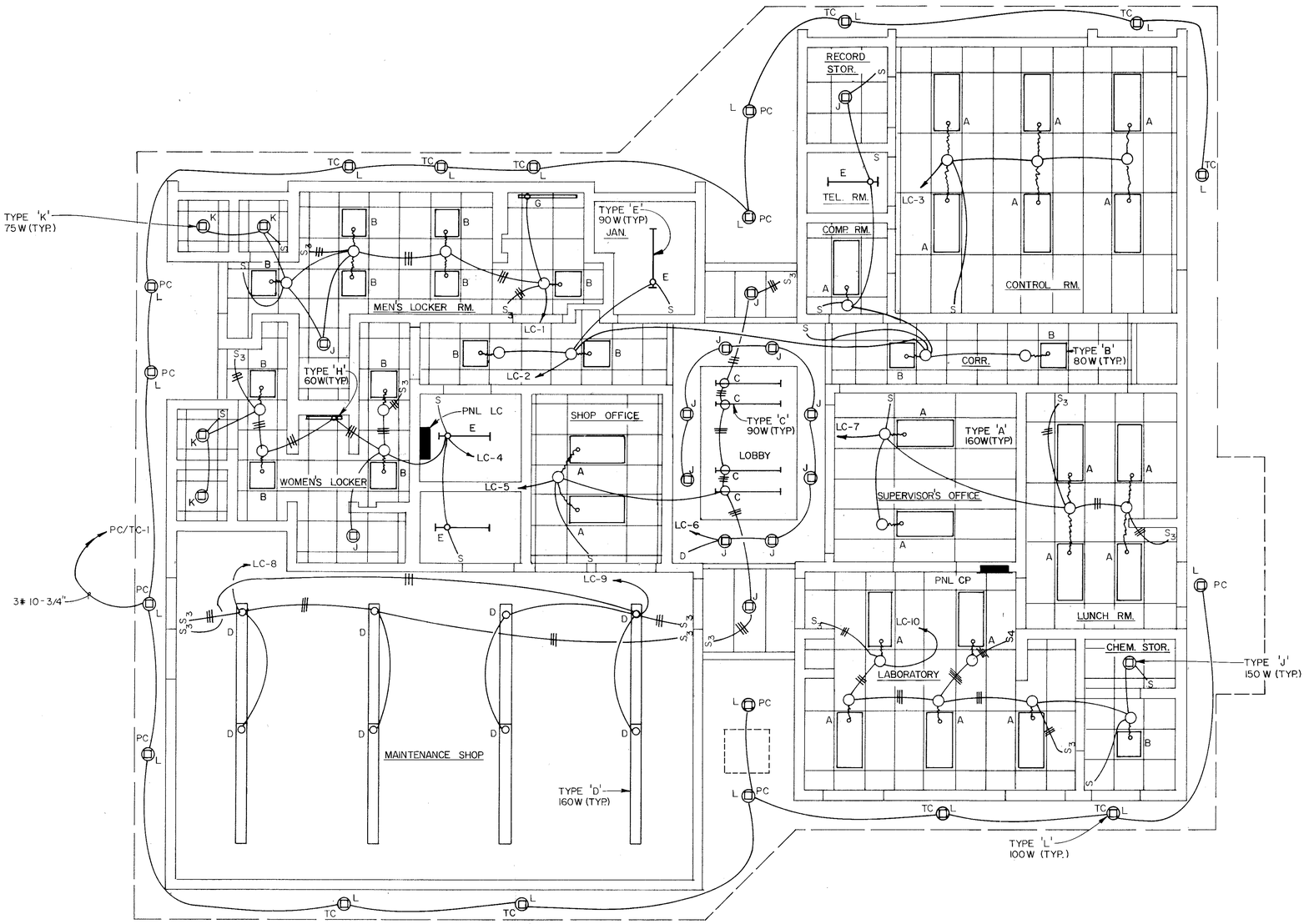
Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

T176

DESIGNED WCH CHECKED CEB DATE MARCH 1985 SCALE NONE
DRAWN AJY FILE NO. 031-006-84 SHEET E - 11 OF 30

26-01 **RECORD DRAWINGS 12/19/89**

AF 31693A



CONTROL BLDG. - LIGHTING PLAN

SCALE: 1/4" = 1' - 0"

C. E. BAILEY & ASSOCIATES. INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

CONTROL BLDG.-LIGHTING PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

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Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave.W.,Suite N
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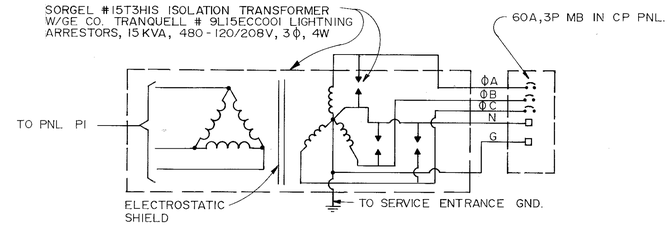
(813) 794-5450

T177

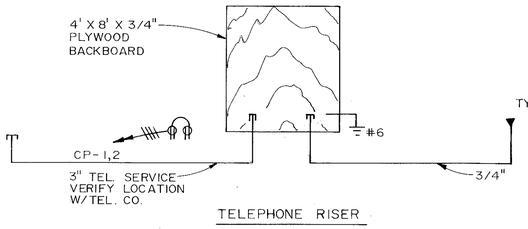
DESIGNED WCH CHECKED CEB/ DATE MARCH 1985 SCALE 1/4" = 1'-0"
DRAWN TRH FILE NO. 031-006-84 SHEET E-12 OF 30

26-01 RECORD DRAWINGS 12/19/89

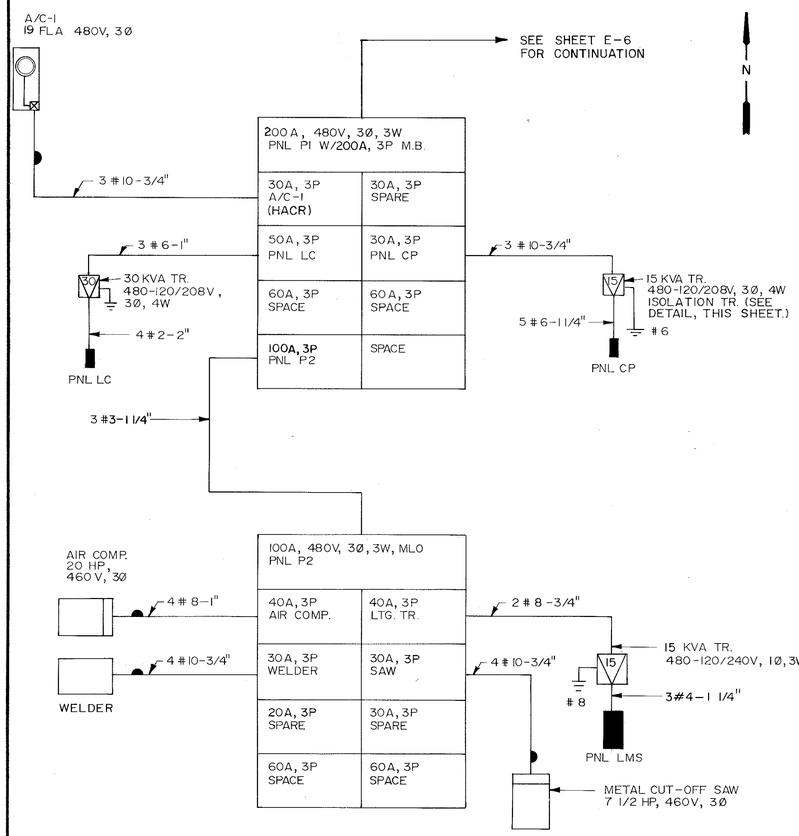
AF 31693A



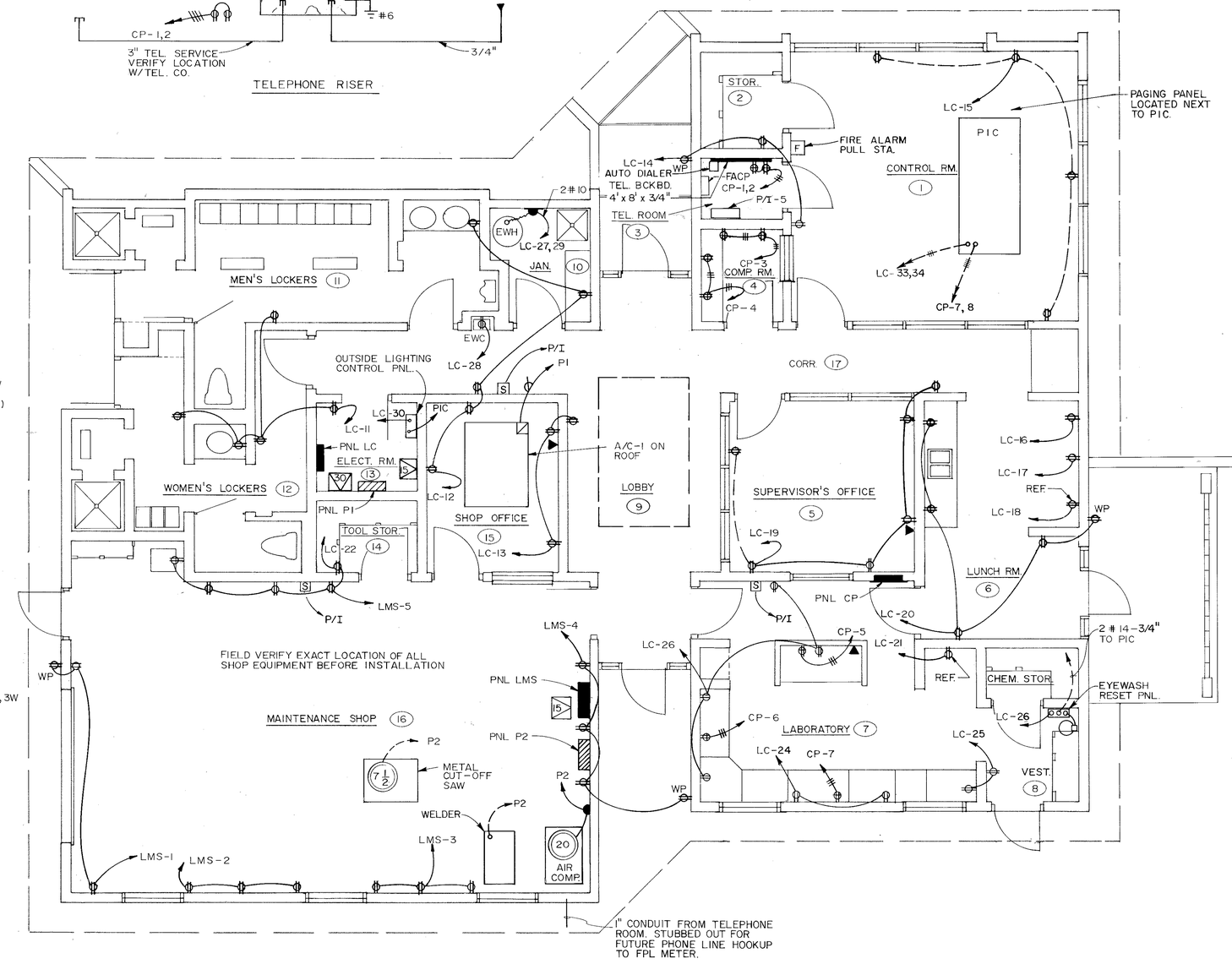
ISOLATION TRANSFORMER DETAIL



TELEPHONE RISER



RISER DIAGRAM



NOTE: EXHAUST FANS LOCATED ON AC DRAWINGS AND WIRED PER PANEL SCHEDULES.

POWER PLAN

SCALE: 1/4" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6965 STATE OF FLORIDA REGISTERED ENGINEER

26-01 **RECORD DRAWINGS 12/19/89**

CONTROL BLDG.- POWER PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

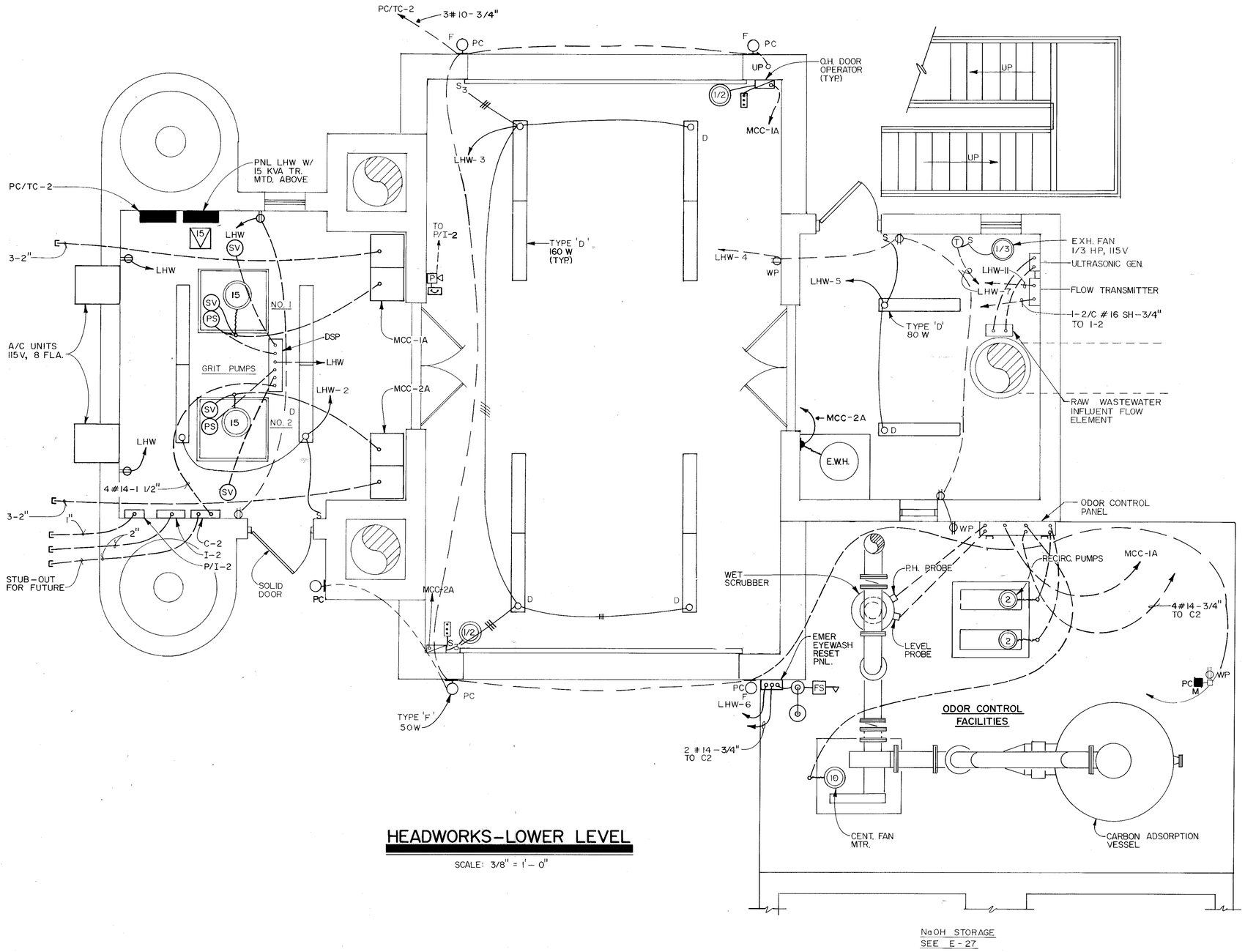
CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners & management consultants CDM

REVISIONS
1. 2/87 WLR CONFORMED
2.
3.
4.
5.

Larson Engineering, Inc. T178
Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED WCH CHECKED CEB/ DATE MARCH 1985 SCALE 1/4" = 1'-0"
DRAWN RHT FILE NO. 031-006-84 SHEET E-13 OF 30

AF 31693A



HEADWORKS-LOWER LEVEL

SCALE: 3/8" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE NO. 13888 STATE OF FLORIDA REGISTERED ENGINEER

HEADWORKS-LOWER LEVEL

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

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1. 2/87 WLR CONFORMED
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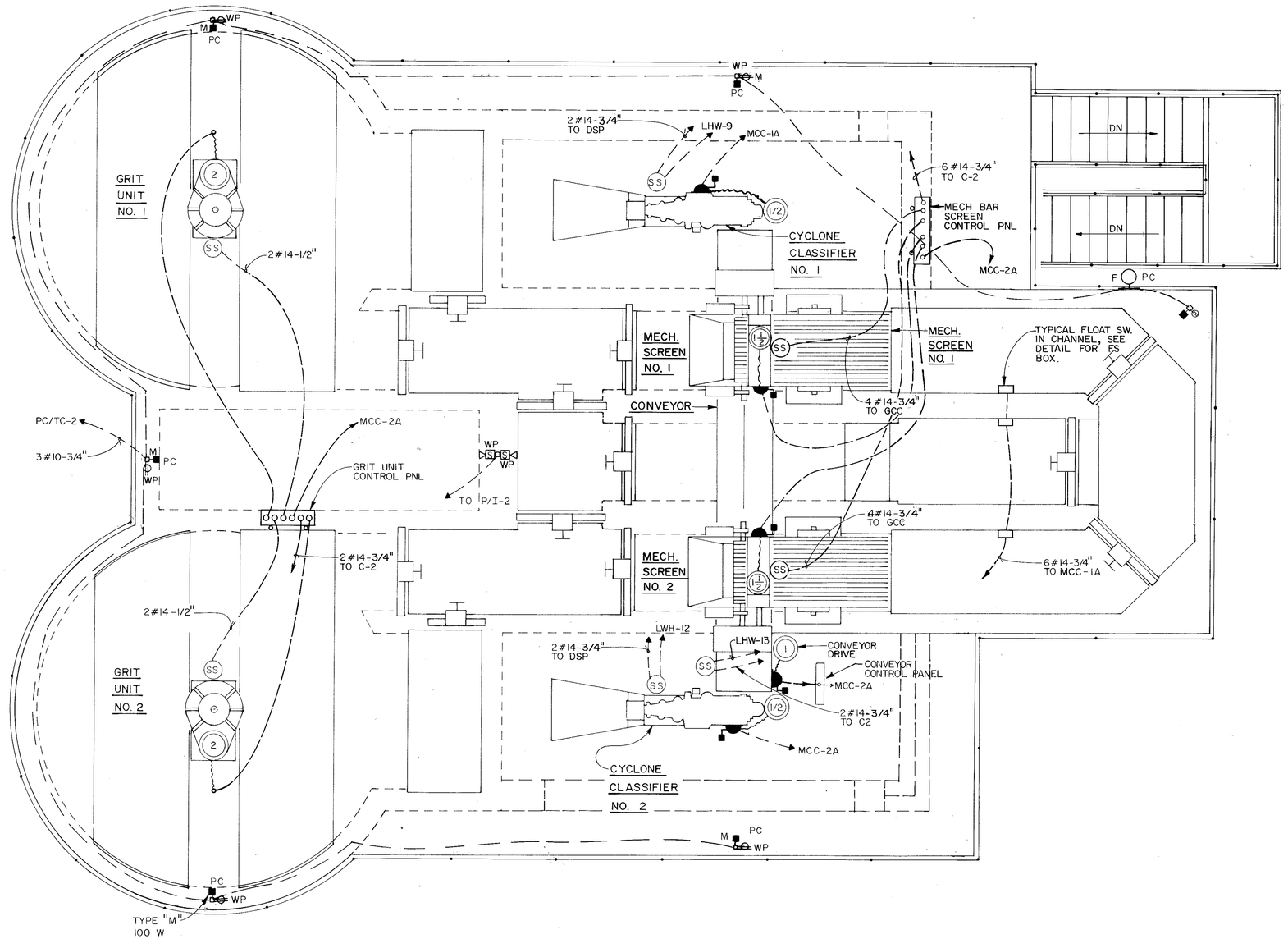
Larson Engineering, Inc. T179
Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED WCH CHECKED CEB/CEB DATE MARCH 1985 SCALE 3/8"=1'-0"
DRAWN TRH FILE NO. 031-006-84 SHEET E-14 OF 30

26-01 RECORD DRAWINGS 12/19/89

AF 31693A



HEADWORKS – UPPER LEVEL

SCALE: 3/8" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

HEADWORKS – UPPER LEVEL

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers scientists planners & management consultants CDM

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Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

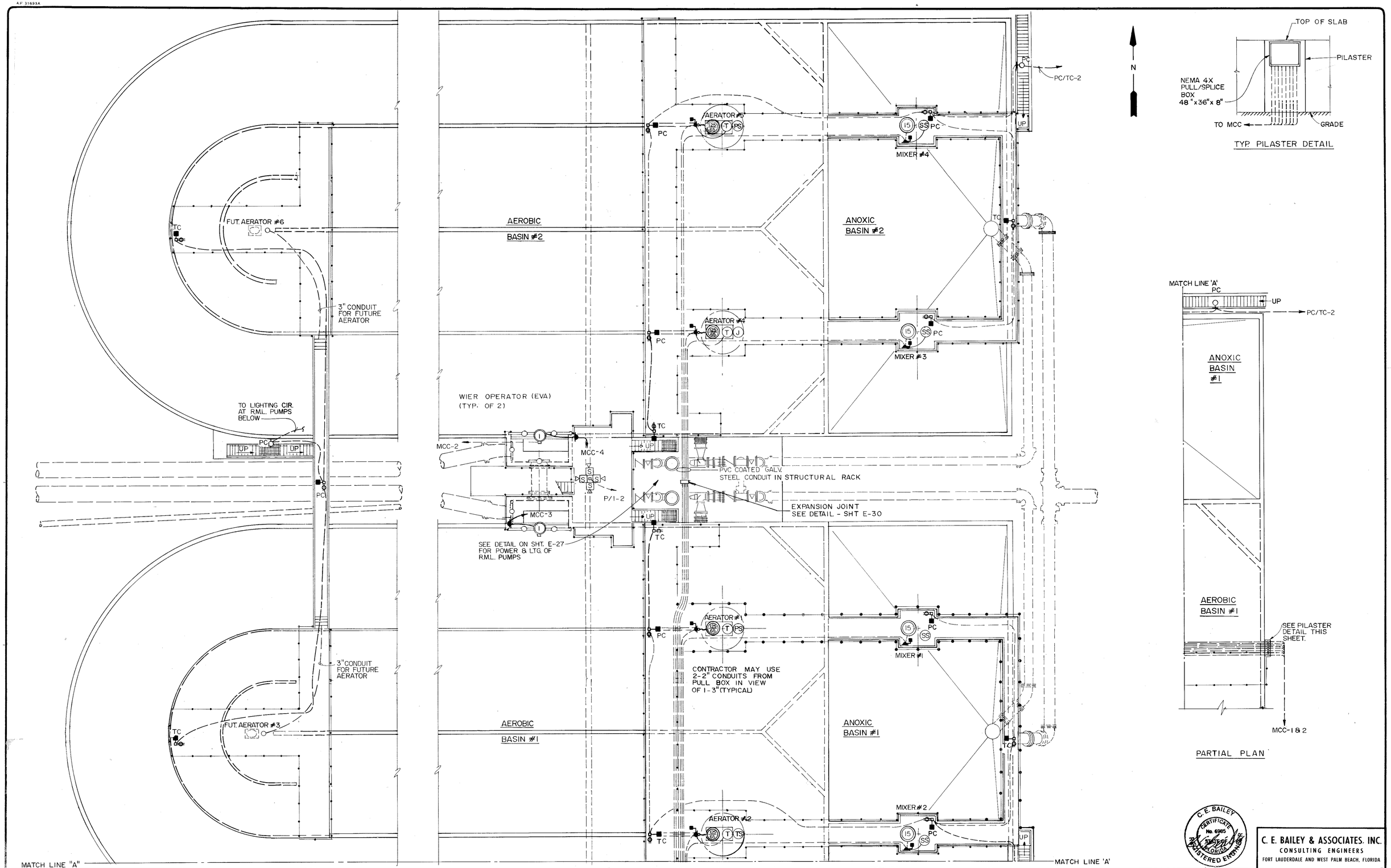
T18D

DESIGNED WCH CHECKED CEB/ DATE MARCH 1985 SCALE 3/8"=1'-0"
DRAWN AY FILE NO. 031-006-84 SHEET E-15 OF 30

26-01

RECORD DRAWINGS 12/19/89

AF 31693A



TYP. PILASTER DETAIL

PARTIAL PLAN

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

ANOXIC/AEROBIC TANKS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners & management consultants CDM

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1. 2/87 WLR CONFORMED
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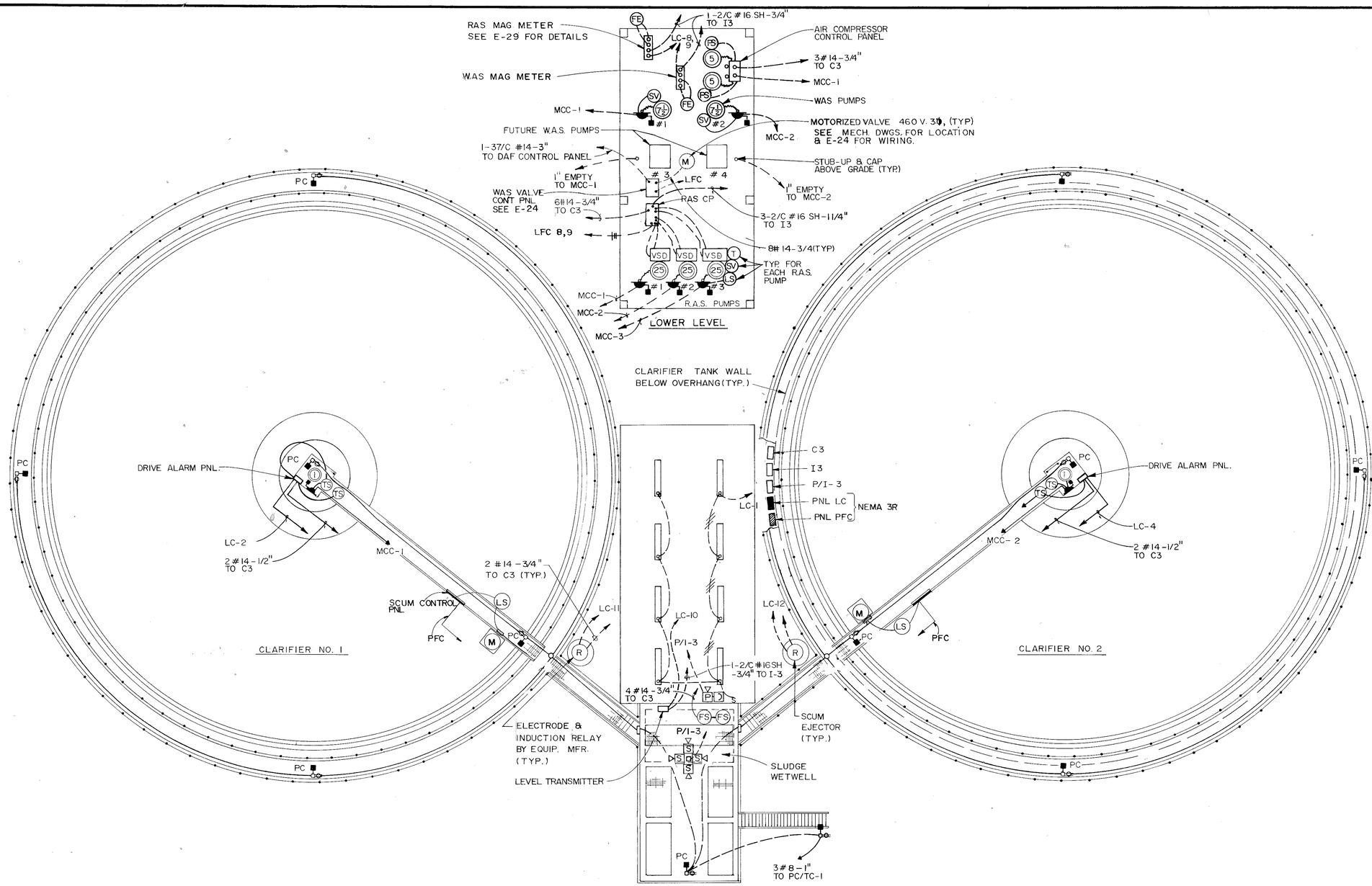
Larson Engineering, Inc. T181
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED WCH CHECKED CEB/ DATE MARCH 1985 SCALE 3/32"=1'-0"
DRAWN AJY FILE NO. 031-006-84 SHEET E-16 OF 30

26-01

RECORD DRAWINGS 12/19/89

AF 31693A



ELECTRICAL PLAN

SCALE: 1" – 10'

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

SECONDARY CLARIFIER PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers scientists planners & management consultants CDM

REVISIONS
1 2/87 WLR CONFORMED
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Consulting Engineers
T182
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED WCH CHECKED CEB/CLB DATE MARCH 1985 SCALE 1"=1'-0"
DRAWN TRH FILE NO. 031-006-84 SHEET E-17 OF 30

26-01

RECORD DRAWINGS 12/19/89

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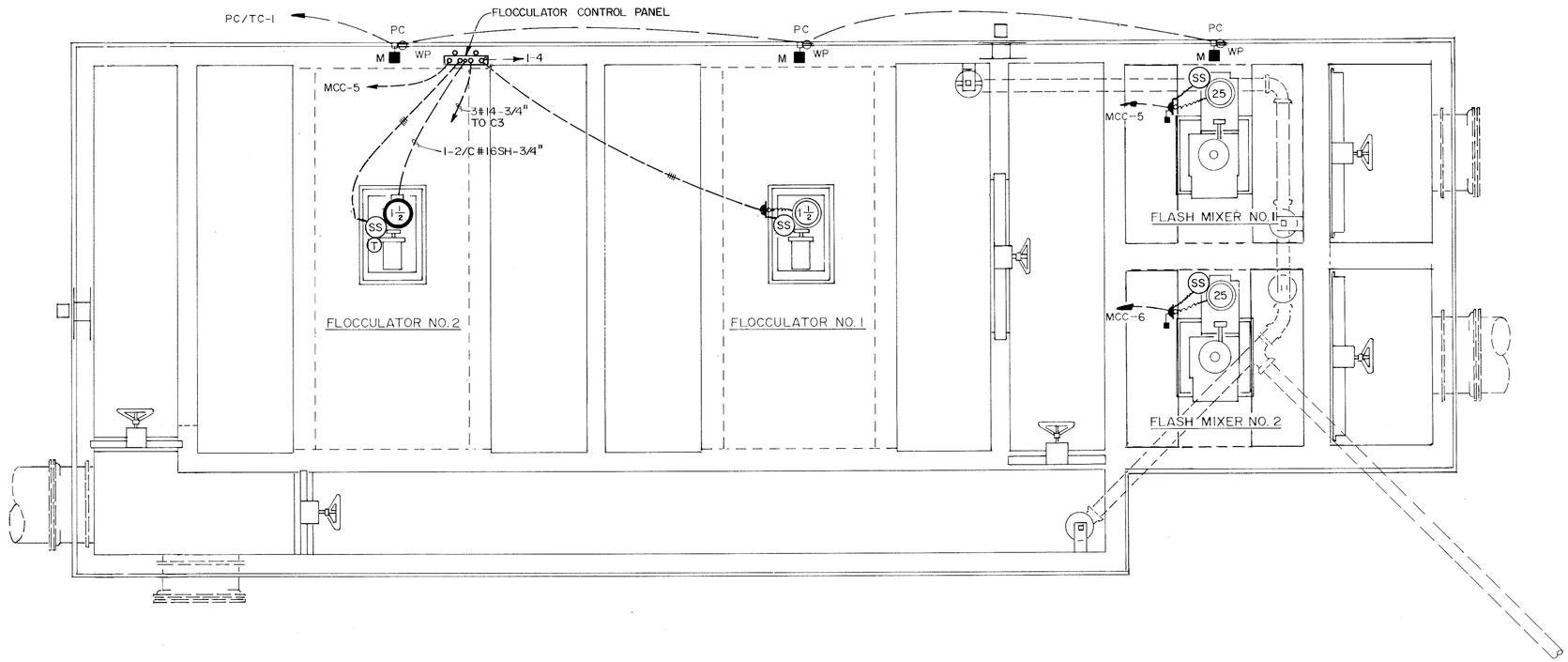

ELECTRICAL PLAN

SCALE: 3/8" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

FLOCCULATORS & FLASH MIXERS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

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1. 2/87 WLR CONFORMED
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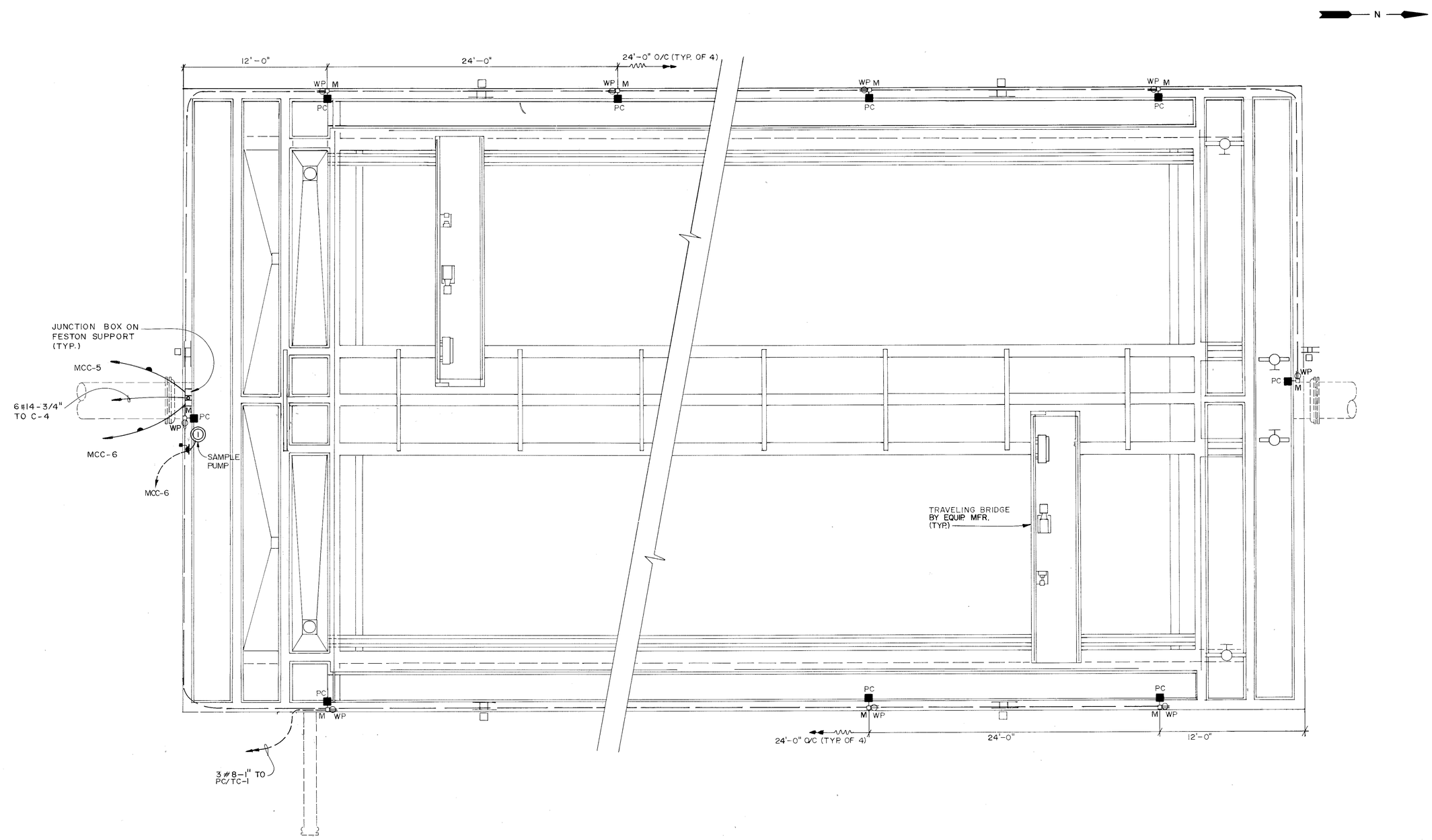
Larson Engineering, Inc. T183
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED WCH CHECKED CEB/[illegible] DATE MARCH 1985 SCALE 3/8"= 1'-0"
DRAWN WCH FILE NO. 031-006-84 SHEET E-18 OF 30

26-01

RECORD DRAWINGS 12/19/89

A.F. 31693A



ELECTRICAL PLAN

1/4" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6965 STATE OF FLORIDA REGISTERED ENGINEER

A.B.W. FILTERS

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

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Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave.W. Suite N
Bradenton, Florida 33529
(813) 794-5450

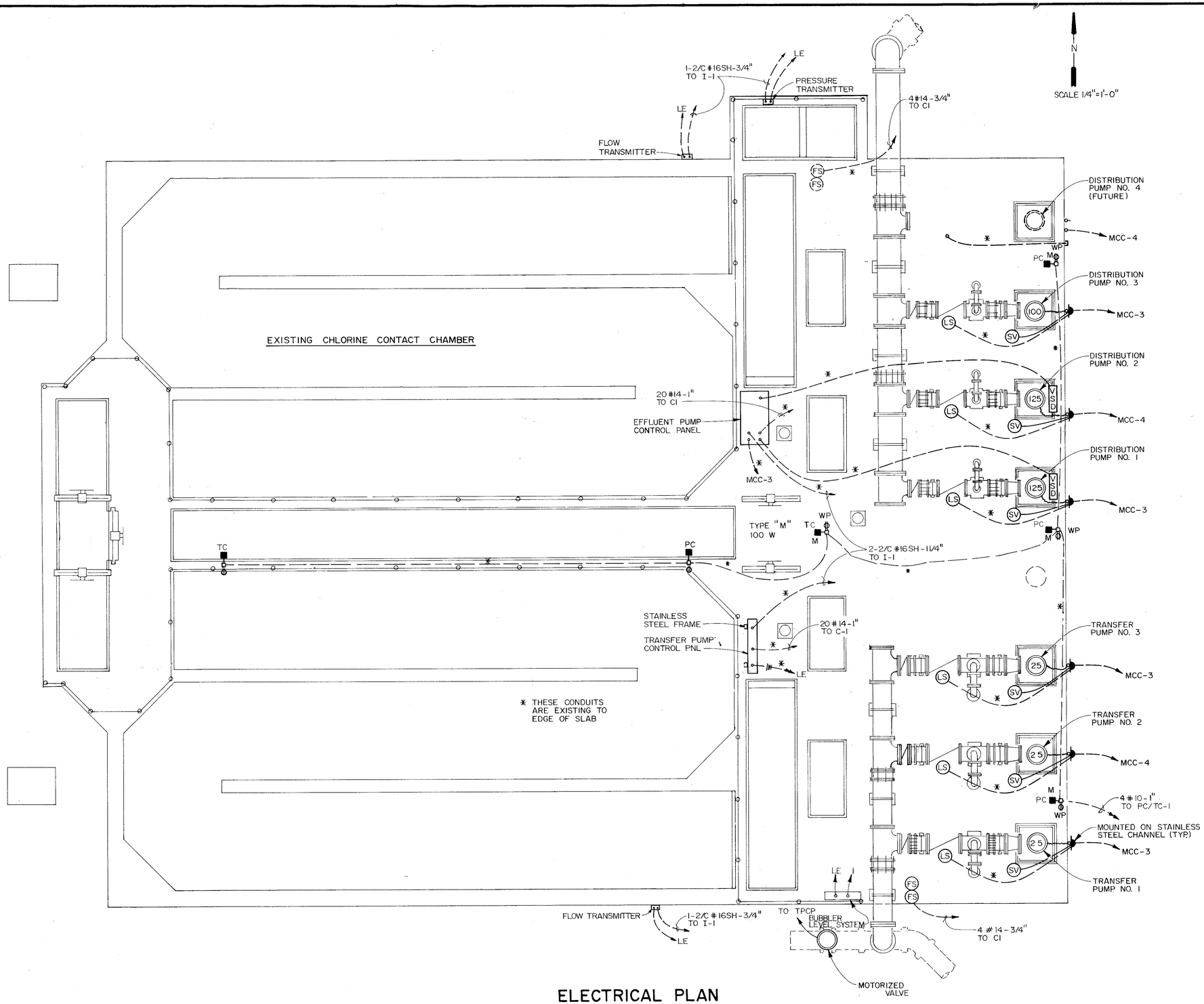
DESIGNED WCH CHECKED CEB/WCH DATE MARCH1985 SCALE 1/4"=1'-0"
DRAWN AJY FILE NO. 031-006-84 SHEET E-19 OF 30

T84

26-01

RECORD DRAWINGS 12/19/89

AF 31693A



ELECTRICAL PLAN

SCALE: 1/4" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

EFFLUENT PUMP STATION

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

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1. 2/87 WLR CONFORMED
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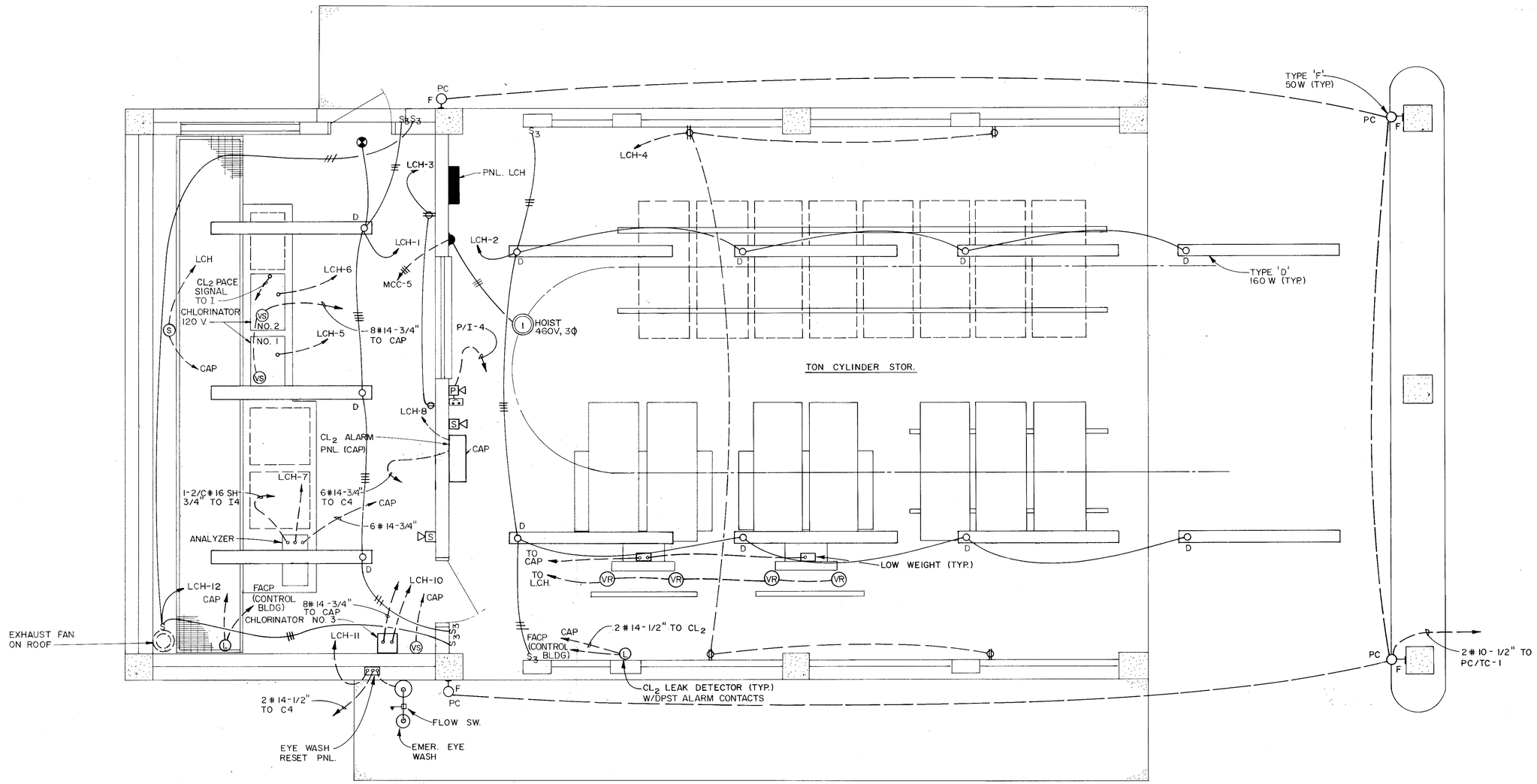
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED WCH CHECKED CEB/[illegible] DATE MARCH 1985 SCALE 1/4" = 1'-0"
DRAWN TRH FILE NO. 031-006-84 SHEET E-20 OF 30

26-01 **RECORD DRAWINGS 12/19/89**

AF 31693A



CHLORINATION BLDG. - ELECTRICAL PLAN

SCALE: 3/8" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

CHLORINATION BLDG.

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers scientists planners & management consultants CDM

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1. 2/87 WLR CONFORMED
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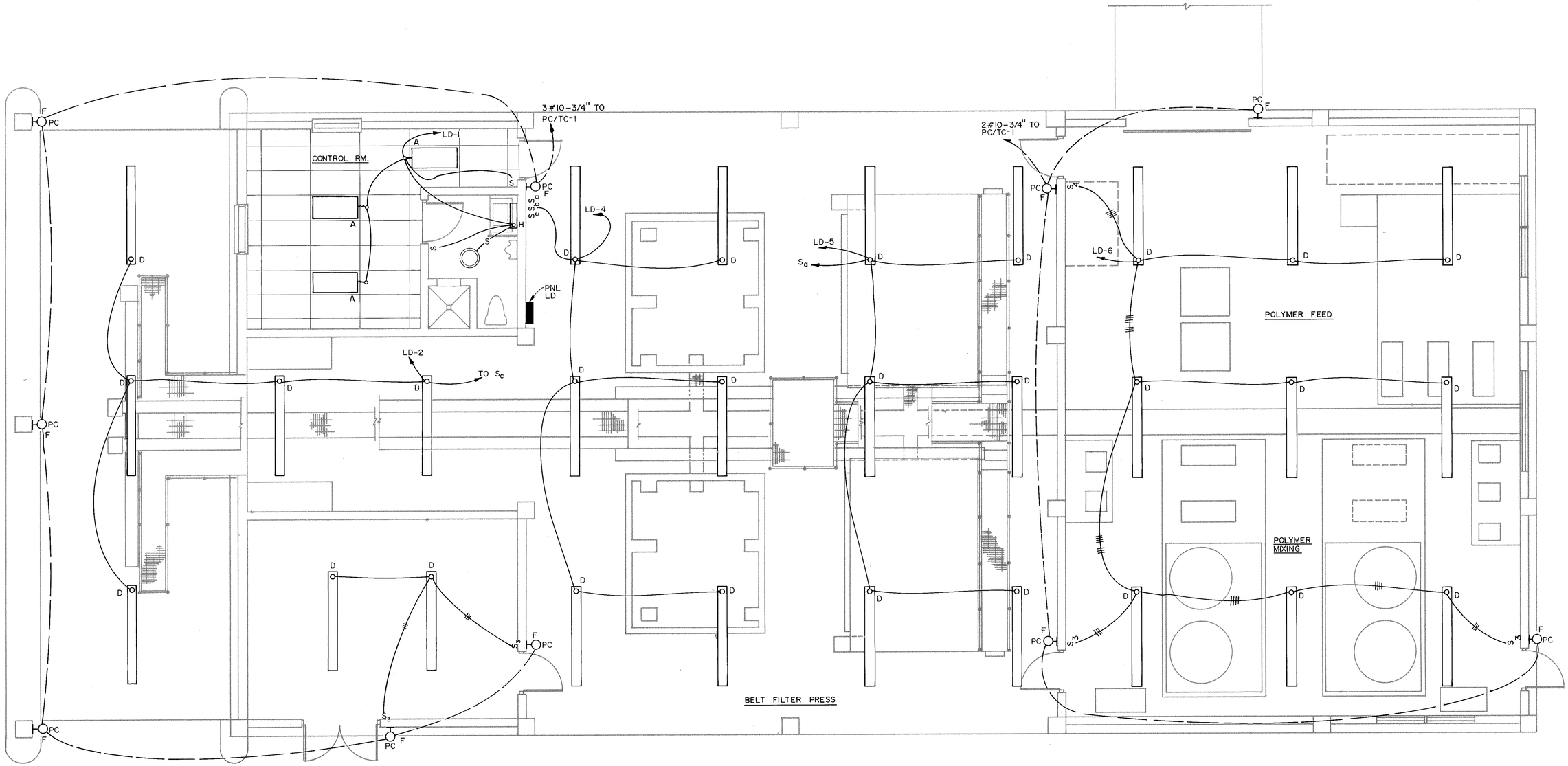
Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

T186

DESIGNED WCH CHECKED CEB/WLR DATE MARCH 1985 SCALE 3/8"=1'-0"
DRAWN AJY FILE NO. 031-006-84 SHEET E-21 OF 30

26-01 RECORD DRAWINGS 12/19/89

AF 31693A



LIGHTING PLAN

SCALE: 1/4" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

DEWATERING/CHEMICAL BUILDING

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. 2/87 WLR CONFORMED
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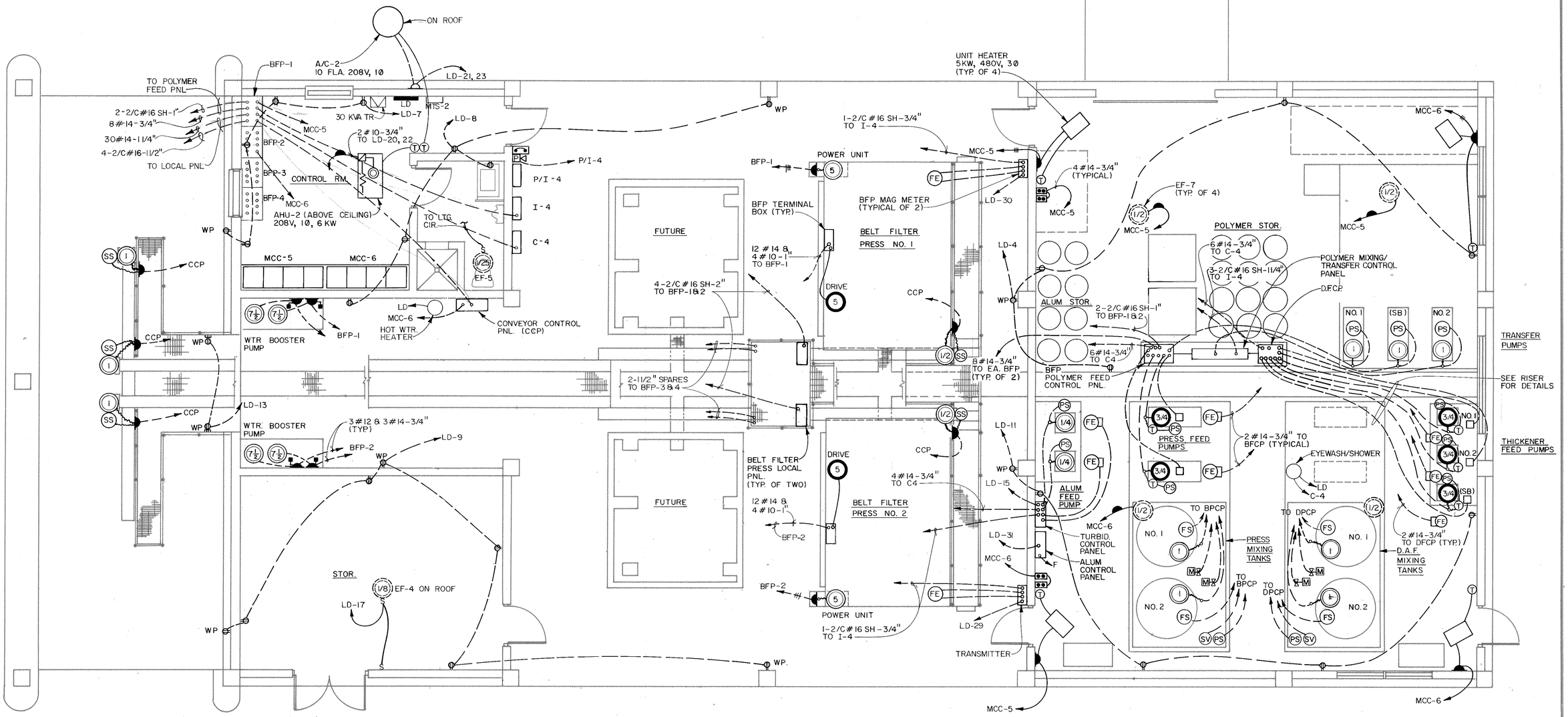
Larson Engineering, Inc.
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

T187

DESIGNED WCH CHECKED CEB/CEB DATE MARCH, 1985 SCALE 1/4" = 1'-0"
DRAWN RHT FILE NO. 031-006-84 SHEET E-22 OF 30

26-01 **RECORD DRAWINGS 12/19/89**

AF 31693A



POWER PLAN

SCALE: 1/4" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6965 STATE OF FLORIDA REGISTERED ENGINEER

DEWATERING/CHEMICAL BUILDING

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. 2/87 WLFi CONFORMED
2.
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Larson Engineering, Inc.
Consulting Engineers
5404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

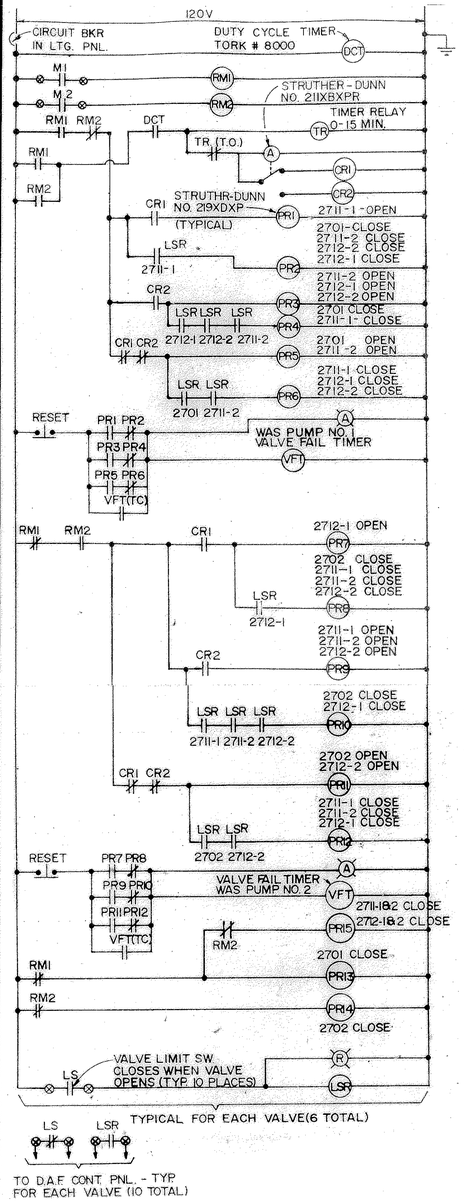
T188

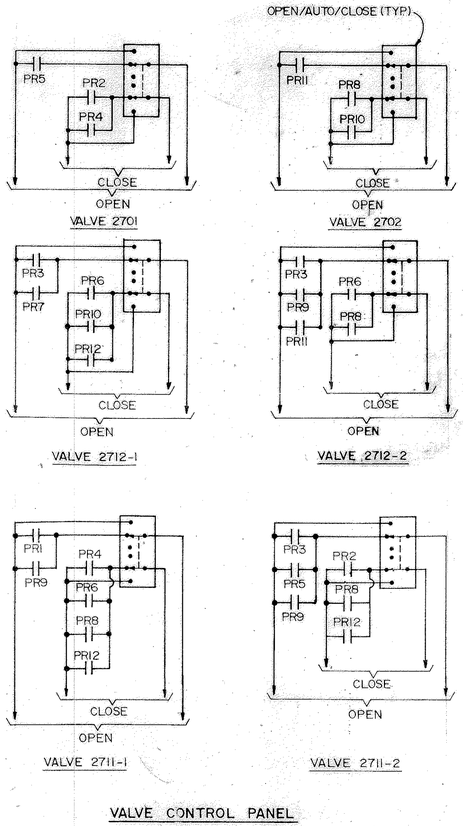
DESIGNED WCH CHECKED CEB/CEB DATE MARCH, 1985 SCALE 1/4" = 1"-0"
DRAWN RHT FILE NO. 031-006-84 SHEET E-23 OF 30

26-01

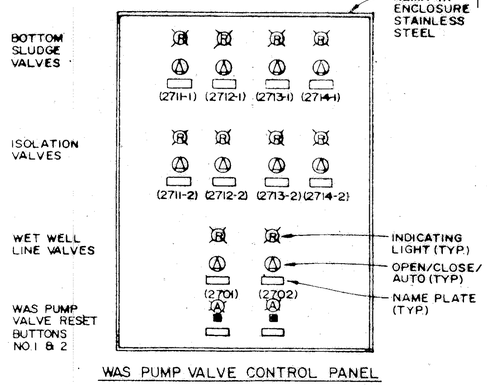
RECORD DRAWINGS 12/19/89

AP 31693A

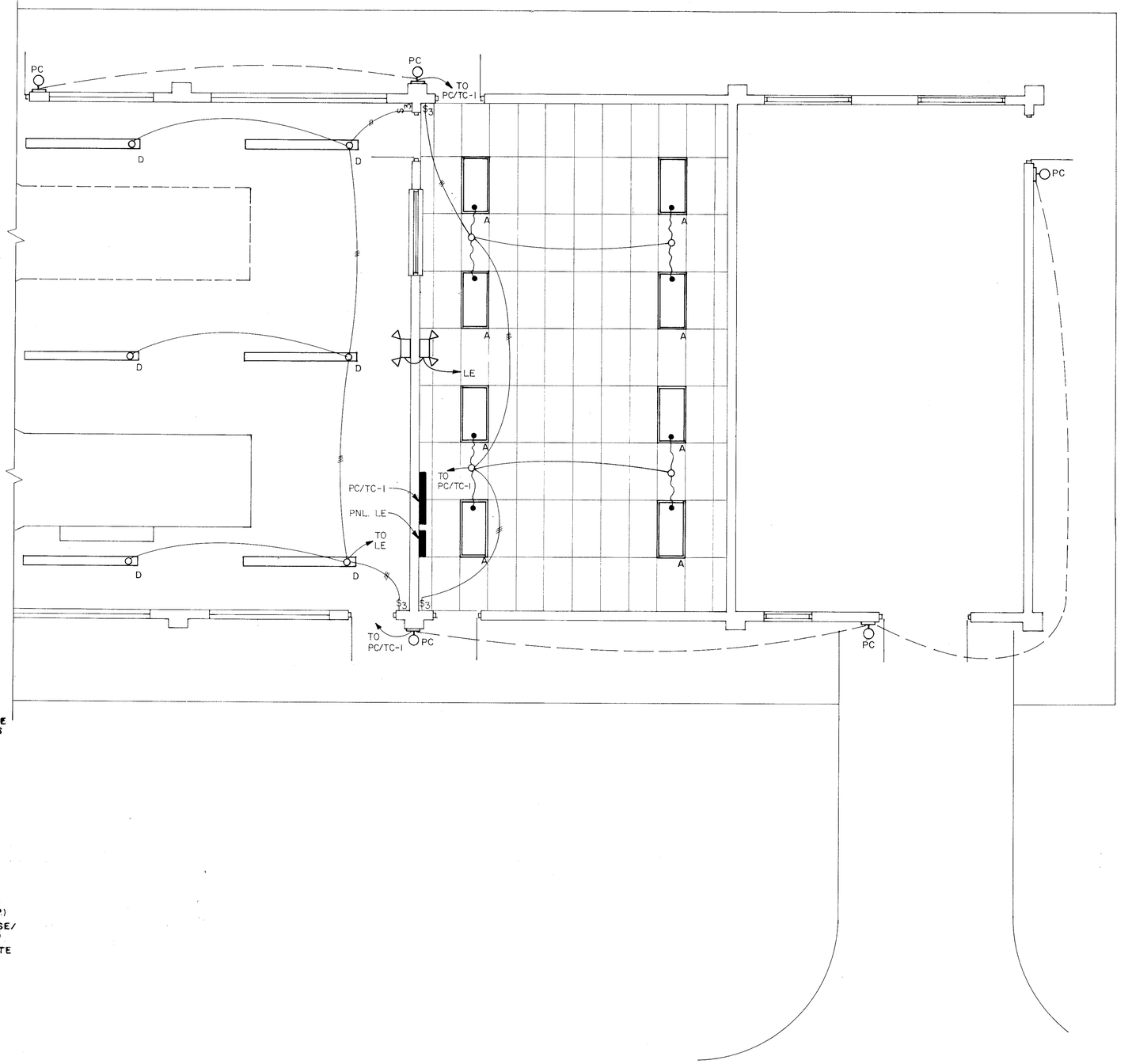




VALVE CONTROL PANEL



WAS PUMP VALVE CONTROL PANEL



ELECTRICAL BLDG-LIGHTING PLAN

1/4" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6965 STATE OF FLORIDA REGISTERED ENGINEER

ELECTRICAL BLDG. - LIGHTING PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers, scientists, planners, & management consultants CDM

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Larson Engineering, Inc. T 189
Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED WCH CHECKED CEB/ DATE MARCH 1985 SCALE 1/4"=1'-0"
DRAWN RAH FILE NO. 031-006-84 SHEET E-24 OF 30

E24

26-01 RECORD DRAWINGS 12/19/89

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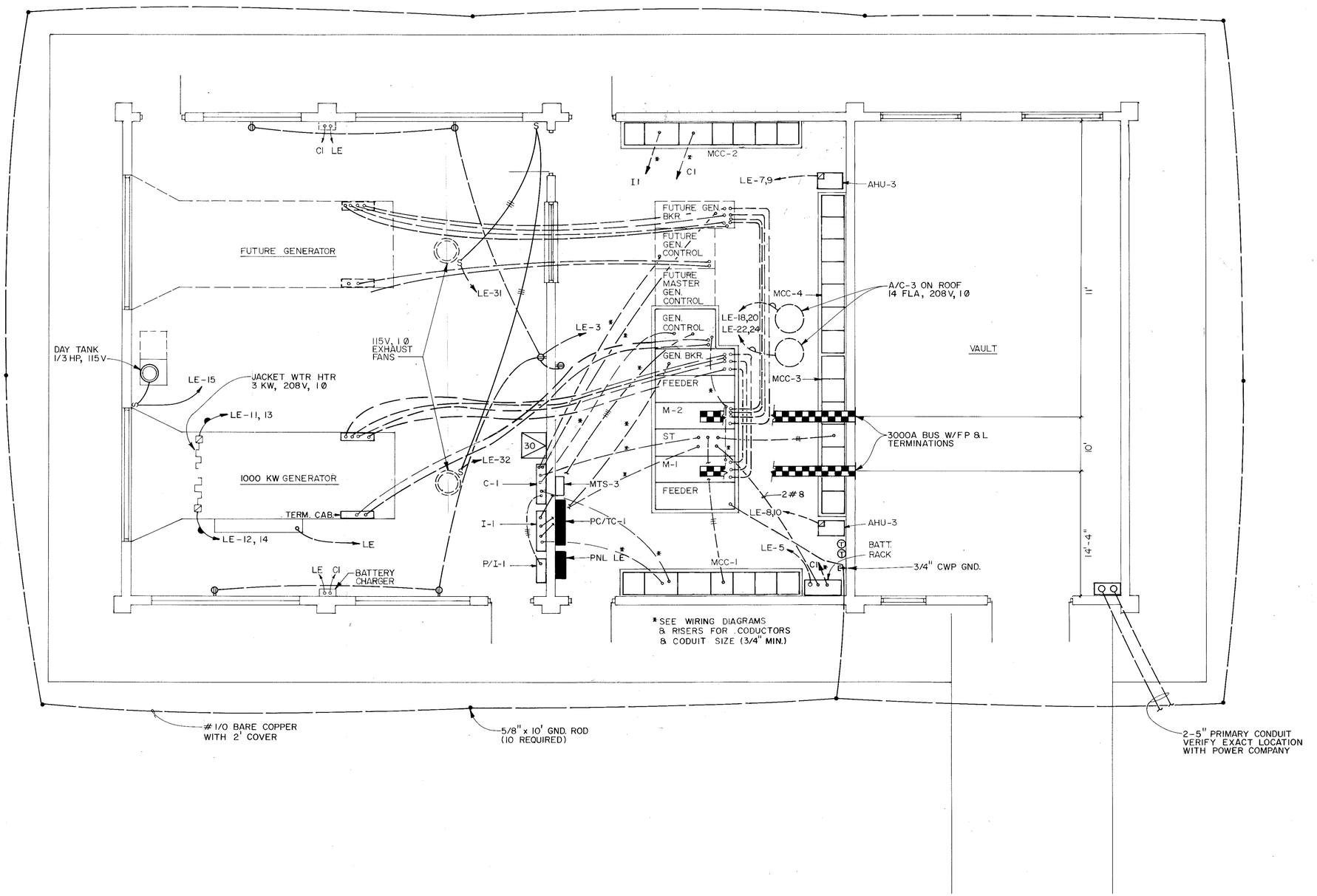

ELECTRICAL BLDG.- POWER PLAN

1/4" = 1'-0"

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

RECORD DRAWINGS 12/19/89

ELECTRICAL BLDG. - POWER PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants CDM

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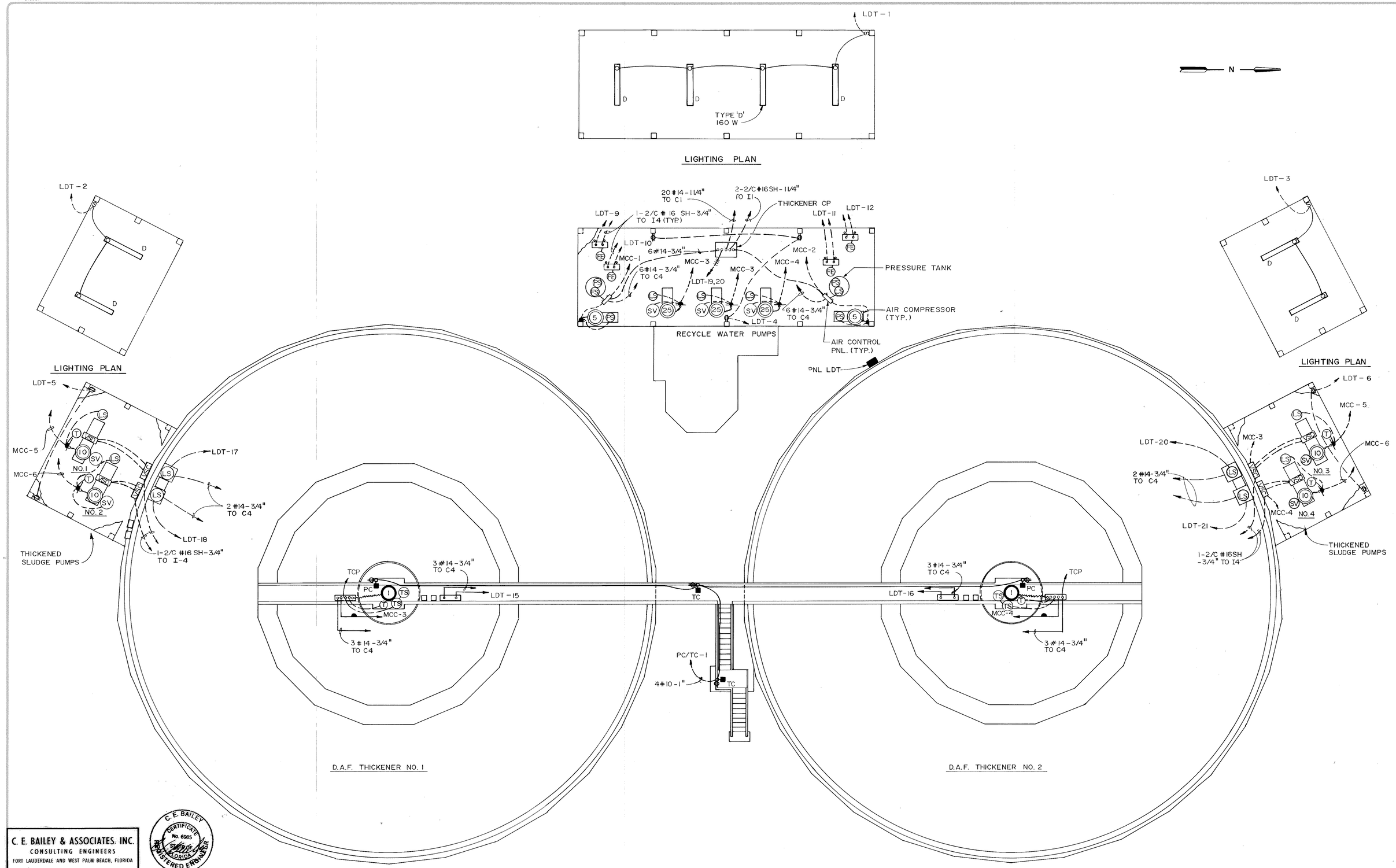
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED WCH CHECKED CEB/ DATE MARCH 1985 SCALE 1/4" = 1'-0"
DRAWN RAH FILE NO. 031-006-84 SHEET E-25 OF 30

AF 31893A



C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C.E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

DAF THICKENERS - PLAN

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. 2/87 WLR CONFORMED
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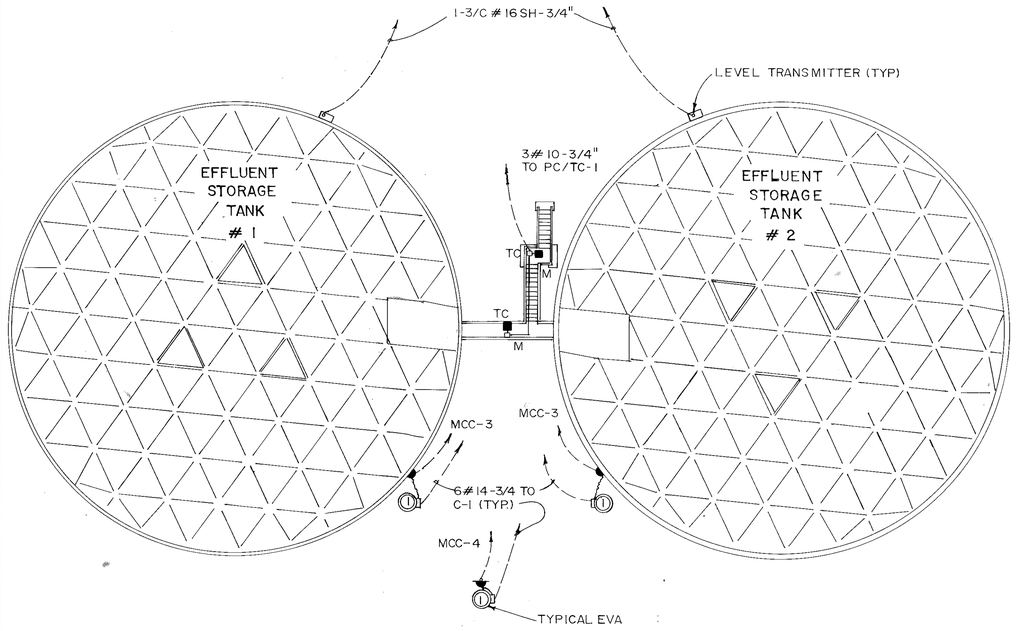
Larson Engineering, Inc.
Consulting Engineers
T191
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED RAH CHECKED CEB/CEB DATE MARCH, 1985 SCALE 1/8" = 1'-0"
DRAWN AJY FILE NO. 031-006-84 SHEET E-26 OF 30

26-01

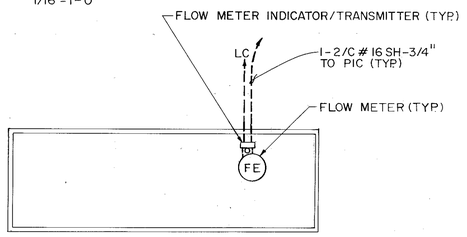
RECORD DRAWINGS 12/19/89

AF 31693A



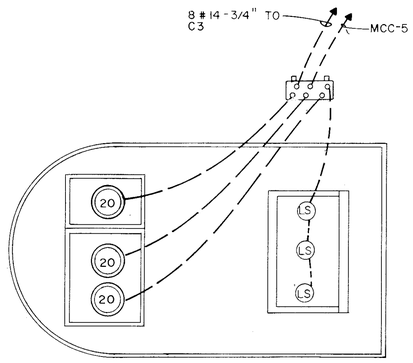
EFFLUENT STORAGE TANKS PLAN

1/16"=1'-0"



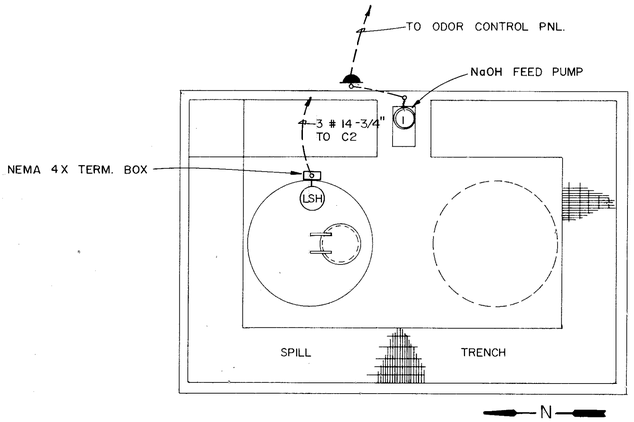
DISTRIBUTION METERING FACILITY

1/8"=1'-0"



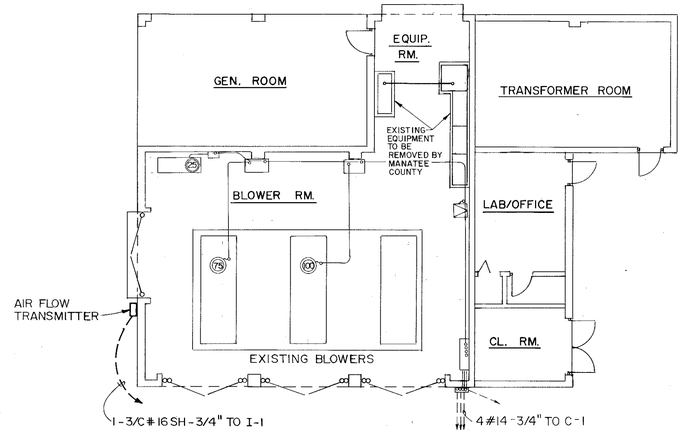
PLANT SITE PUMP STATION

N.T.S.



NaOH STORAGE

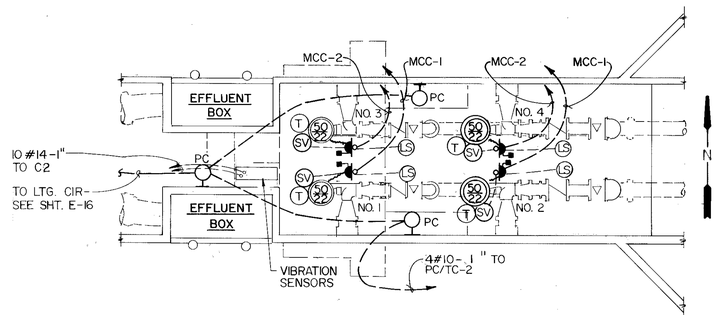
N.T.S.



EXIST. BLOWER BLDG.

SCALE: 1/8" = 1'-0"

NOTE: SEE SHEET E-1 FOR LOCATION



I. R. PUMPS

N.T.S.

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

MISCELLANEOUS STRUCTURES

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT

NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

CAMP DRESSER & McKEE INC.

environmental engineers scientists planners & management consultants CDM

REVISIONS
1. 2/87 WLR CONFORMED
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Larson Engineering, Inc. T192
Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

DESIGNED WCH CHECKED CEB DATE MARCH 1985 SCALE NONE
DRAWN AJY FILE NO. 031-006-84 SHEET E-27 OF 30

26-01 RECORD DRAWINGS 12/19/89

AF 31693A

PANEL: LDT (DAF THICKENER) BUS: 100 A VOLTAGE: 120/208 V, 3Ø, 4W
LOAD: POLES: 30
MOUNTING: SURFACE REMARKS: MLO

CIR. NO.	DESCRIPTION	TRIP	POLES	KVA	REMARKS
1	LIGHTING	20	1	0.7	
2	W.P. RECEPTACLE	20	1	0.4	
3,4	FLOW INDICATING TRANSMITTER	20	1	0.2	
5,6	SCRAPER DRIVE CONTROL PANEL	20	1	0.2	
7	W.P. RECEPTACLE	20	1	0.4	
8,9	FLOW INDICATING TRANSMITTER	20	1	0.2	
10	LIGHTING	20	1	1.0	
11	W.P. RECEPTACLE	20	1	0.6	
12-15	FLOW INDICATING TRANSMITTER	20	1	0.4	
16	LIGHTING	20	1	0.7	
17-22	FLOAT SWITCHES	20	1	0.6	
23-30	SPARES	20	1	—	

PANEL: LMS (MAINT. SHOP) BUS: 100 A VOLTAGE: 120/240 V, 1Ø, 3W
LOAD: POLES: 30
MOUNTING: SURFACE REMARKS: 70A, 2P, MB

CIR. NO.	DESCRIPTION	TRIP	POLES	KVA	REMARKS
1-5	GENERAL RECEPTACLES	20	1	2.0	
6-15	SHOP EQUIP.	20	1	3.0	
16,18	SHOP EQUIP.	20	2	1.0	
17,19	SHOP EQUIP	30	2	1.0	
20	EF-8	20	1	0.5	
21	EF-8	20	1	0.5	
22	SHOP LTG.	20	1	0.8	
23	SHOP LTG.	20	1	0.8	
24-30	SPARES	20	1	—	

PANEL: LCH (CHLORINE BLDG.) BUS: 100A VOLTAGE: 120/208V, 3Ø, 4W
LOAD: 13A POLES: 30
MOUNTING: SURFACE REMARKS: M.L.O.

CIR. NO.	DESCRIPTION	TRIP	POLES	KVA	REMARKS
1	GEN. LTG.	20	1	0.5	
2	LTG. - TON CYLINDER STOR.	20	1	1.3	
3	GEN. RECEPT.	20	1	0.2	
4	RECEPT. - TON CYLINDER STOR.	20	1	0.8	
5	CHLORINATOR NO. 2	20	1	0.1	
6	CHLORINATOR NO. 1	20	1	0.1	
7	ANALYZER	20	1	0.3	
8	CL_2 ALARM PNL.	20	1	0.1	
9	AUTO-CHANGE OVER PNL.	20	1	0.1	
10	CHLORINATOR NO. 3	20	1	0.1	
11	EYEWASH RESET PNL.	20	1	0.1	
12	EXHAUST FAN	20	1	1.1	
13-20	SPARES	20	1	—	
21-30	SPARES	20	1	—	

PANEL: LD (DEWATERING) BUS: 225A VOLTAGE: 120/208V, 3Ø, 4W
LOAD: 72A POLES: 42
MOUNTING: SURFACE REMARKS: 100A, 3P, MB

CIR. NO.	DESCRIPTION	TRIP	POLES	KVA	REMARKS
1,2	LTG-CONTROL RM./LOADING AREA	20	1	1.3	
3	LTG-STORAGE RM.	20	1	0.3	
4	LTG-PRESS RM.	20	1	1.0	
5	LTG-PRESS RM.	20	1	1.0	
6	LTG-POLYMER FEED/MIXING	20	1	1.5	
7	RECEPT. - CONTROL RM.	20	1	1.0	
8	RECEPT. - CONTROL RM.	20	1	1.0	
9	RECEPT. - STORAGE RM.	20	1	1.6	
10	RECEPT. - PRESS RM.	20	1	0.8	
11	RECEPT. - POLYMER RM.	20	1	1.2	
12	RECEPT. - POLYMER RM.	20	1	1.0	
13	RECEPT. - OUTSIDE LOADING AREA	20	1	0.4	
14,16,18	PNL LCH	40	3	5.0	
15	ALUM. FEED PUMP CONTROL PANEL	20	1	1.6	
20,22	AHU-2	20	2	0.5	
21,23	AC-2	20	2	2.0	(HACR)
17	EXHAUST FAN — 4	20	1	0.6	
24,26,28	SPARE	40	3	5.0	
25,27	WTR. HTR.	20	2	3.0	
29	METER	20	1	.1	
30	METER	20	1	.1	
31	ALUM. CP	20	1	.1	

PANEL: LHW (HEADWORKS) BUS: 100A VOLTAGE: 120/208V, 3Ø, 4W
LOAD: 3 A POLES: 30
MOUNTING: SURFACE REMARKS: 60A, 3P MB

CIR. NO.	DESCRIPTION	TRIP	POLES	KVA	REMARKS
1,4	GEN. RECEPT.	20	1	1.4	
2,3,5	GEN. LTG.	20	1	1.3	
6	EYEWASH RESET PNL.	20	1	0.1	
7	A/C	20	1	1.0	
8	A/C	20	1	1.0	
9	SPEED SWITCH	20	1	0.1	
10	DEGRITTER SYSTEM CONTROL PNL.	20	1	0.1	
11	FLOW TRANSMITTER	20	1	0.3	
12	SPEED SWITCH	20	1	0.1	
13	SPEED SWITCH	20	1	0.1	
14,16,18	PC/TC-2	40	3	5.0	
15	EXH. FAN EF	20	1	0.5	
17	CHANNEL HIGH LEVEL PNL.	20	1	0.1	
19-30	SPARES	20	1	—	

PANEL: LC (CONTROL BLDG.) BUS: 225 A VOLTAGE 120/208 V, 3Ø, 4W
LOAD: 75A POLES: 42
MOUNTING: SURFACE REMARKS: 100 A, 3P, MB

CIR. NO.	DESCRIPTION	TRIP	POLES	KVA	REMARKS
1-10	GEN. LTG. & SPARE	20	1	9.1	
11-17	GEN. RECEPT.	20	1	4.2	
18	REF. IN KITCHEN	20	1	1.0	
19	RECEPT. SUPERVISOR'S OFFICE	20	1	1.0	
20	RECEPT. LUNCH RM.	20	1	1.0	
21	REF. IN LAB.	20	1	1.0	
22	TOOL STOR. RECEPT.	20	1	0.2	
23-25	RECEPT. — LABORATORY	20	1	1.6	
26	EYEWASH RESET PNL.	20	1	0.1	
27, 29	E.W.H.	30	2	4.5	
28	E.W.C.	20	1	0.6	
30	OUTSIDE LIGHTING PNL.	20	1	0.1	
31	EF-3	20	1	0.5	
32	EF-6	20	1	0.2	
33	PIC	20	1	0.5	
34	PIC	20	1	0.5	
35	LUNCH RM. APPLI.	20	1	1.0	
36-42	SPARES	20	1	—	

PANEL: LC (FINAL CLARIFIERS) BUS: 100 A VOLTAGE: 120/208V, 3Ø, 4W
LOAD: 5.82 POLES: 30
MOUNTING: SURFACE REMARKS: MLO, W.P.

CIR. NO.	DESCRIPTION	TRIP	POLES	KVA	REMARKS
1	LTG. WAS/RAS PUMPS	20	1	1.3	
2,4	TORQUE SWITCHES	20	1	0.4	
3	SCUM CONTROL PNL.	20	1	0.1	
5	SCUM CONTROL PNL.	20	1	0.1	
6	SCUM EJECTOR	20	1	0.1	
7	SCUM EJECTOR	20	1	0.1	
8-18	SPARES	20	1	—	
19-30	SPACES				

PANEL: LE (ELECT. BLDG.) BUS: 225 A. VOLTAGE: 120/208V, 3Ø, 4W
LOAD: 78A POLES: 42
MOUNTING: SURFACE REMARKS: 100A, 3P MB

CIR. NO.	DESCRIPTION	TRIP	POLES	KVA	REMARKS
1	LGT. - GENERATOR ROOM	20	1	1.0	
2	LGT. - SWGR. ROOM	20	1	1.3	
3	RECEPT. - GENERATOR RM.	20	1	1.0	
4	RECEPT. - GENERATOR/SWGR.	20	1	0.8	
5	BATT. RACK	20	1	0.1	
6	BATT. RACK	20	1	0.1	
7, 9	AHU-3	20	2	0.5	
8,10	AHU-3	20	2	0.5	
11,13	JKT. WTR. HTR.	20	2	3.0	
12,14	JKT. WTR. HTR.	20	2	3.0	
15	DAY TANK	20	1	1.2	
16	BATT. RACK	20	1	0.1	
17,19,21	PNL PC/TC-1	40	3	7.0	
18,20	A/C-1	20	2	0.7	(HACR)
22,24	A/C-2	20	2	0.7	(HACR)
25,27,29	PNL-LDT	40	3	5.0	
26,28,30	PNL-LC	40	3	2.1	
31-42	SPARES	20	1	—	

PANEL: TYPICAL PC/TC BUS: 100A VOLTAGE: 120/208, 3Ø, 4W
LOAD: 30 A POLES: SEE DETAIL
MOUNTING: SURFACE REMARKS: MLO

CIR. NO.	DESCRIPTION	TRIP	POLES	KVA	REMARKS
1, 3, 5	PC CONTACTOR	30	3	2.0	
2,4,6	TC CONTACTOR	30	3	2.0	
7-17	GENERAL RECEPTACLES	40	3	1.0	
18-29	PC LTG. & SPARES	20	1		
30-42	TC LTG & SPARES	20	1		

PANEL: CP (CONTROL BLDG) BUS: 100 A VOLTAGE: 120/208V, 3Ø, 4W
LOAD: 21A POLES: 30
MOUNTING: FLUSH REMARKS: 60 A, 3P, MB & ISOLATED GND BAR

CIR. NO.	DESCRIPTION	TRIP	POLES	KVA	REMARKS
1,2	TEL. EQUIP.	20	1	2.5	
3,4	COMP. EQUIP.	20	1	1.0	
5,6,7	LAB RECEPT.'S	20	1	1.0	
8,10,12	INSTR. PNL (PIC)	20	1	3.0	
9,11	SPARES	20	1	—	
13-20	SPARES	20	1	—	
21-30	SPACES				

NOTE: SEE PANEL SCHEDULES IN FIELD FOR EXACT DETAILS.

C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE, FLORIDA

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

PANEL SCHEDULES

MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT
NORTH SUBREGIONAL
WASTEWATER TREATMENT FACILITIES
E.P.A. NO. C-120540060 MANATEE COUNTY, FLORIDA

REVISIONS
1. 2/87 WLR CONFORMED
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5.

Larson Engineering, Inc. T193
Consulting Engineers
6404 Manatee Ave.W., Suite N
Bradenton, Florida 33529
(813) 794-5450

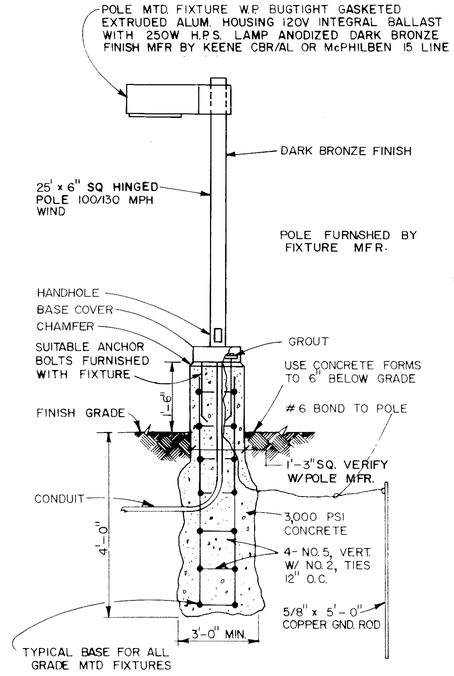
DESIGNED W.C.H. CHECKED CEB/ DATE MARCH 1985 SCALE NONE
DRAWN T.R.H. FILE NO. 031-006-84 SHEET E-28 OF 30

26-01 RECORD DRAWINGS 12/19/89

AF 31693A

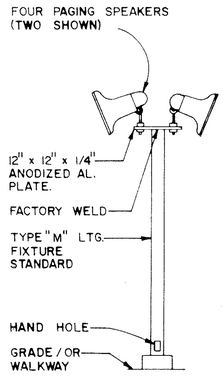
LIGHTING FIXTURE SCHEDULE

MARK	WATT	DESCRIPTION	MFR (OR APPROVED EQUAL)
A	160	2'X4' FLUOR.-TROFFER W/4-40W R.S. LAMP COMBINATION AIR HANDLING AND HEAT REMOVAL (WITH DAMPER) VIRGIN ACRYLIC LENS. EMBOSSED STEEL HOUSING REGRESSED ALUMINUM DOOR 120V ESB	"KEENE" MODULINE AH/HR DAYBRITE DESIGNER SERIES
B	80	SIMILAR TO TYPE 'A' EXCEPT 2'X2' W/2-40W U-LAMP	"KEENE" MODULINE AR/HR DAYBRITE DESIGNER SERIES
C	90	4'-0" FLUORESCENT STRIP FIXTURE W/2-34W R.S. LAMPS, BAKED WHITE ENAMAL FINISHED 120V ESB.	"KEENE" POWERSTRIP/SU
D	160	8'-0" VAPOR TIGHT GASKETED FIXTURE W/4-40W R.S. FLUOR. LAMPS NON-CORROSSIVE, NON-METALLIC HOUSING, HIGH IMPACT ACRYLIC LENS SUITABLE FOR WASHDOWN, 120V ESB	"DAYBRITE" VAPORLUME LITHONIA DD SERIES
E	80	SIMILAR TO TYPE 'D' EXCEPT W/WIRE GUARD	
F	50	WALL BRACKET FIXTURE W/50W H.P.S. LAMP, NONMETALLIC HOUSING, PRISMATIC REFRACTOR	"HUBBELL" NRG-121
G	80	WALL MTD. 4'-0" FLUORESCENT RESTROOM FIXTURE W/2-40W R.S. LAMPS, VIRGIN ACRYLIC LENS, FLAT BLACK ENAMEL FINISH, DOWN LIGHT ONLY, 120V BALLAST	"BENJAMIN" AZTEC
H	60	SIMILAR TO FIXTURE 'G' EXCEPT 3'-0" W/2-30 R.S. LAMPS	
J	150	RECESSED INCANDESCENT DOWN LIGHT W/150W PAR 38 LAMP, 6" DIA. BLACK MILLIGROOVE OPEN BAFFLE, ALUM. HOUSING. THRU WIRING, 120V	"KEENE" POINTLINE/OD SERIES
K	75	RECESSED INCANDESCENT DOWN LIGHT DROPPED OPALEX SHOWER LIGHT, GASKETED DIFFUSSER, A19, 75W LAMP, FRAME KIT, 120V	"LIGHTOLIER" 1102/1178
L	100	RECESSED MERCURY VAPOR DOWN LIGHT, SUITABLE FOR DAMP LOCATION, THRU WIRING, BLACK MILLIGROOVE 10" DIA. OPEN BAFFLE, CAST ALUM. SOCKET & HOUSING, 120V	"KEENE" POINTLINE/OD SERIES
M	100	SEE POLE MTD FIXTURE DETAIL 'B' THIS SHEET FOR SPEC.	
N	250	SEE POLE MTD FIXTURE DETAIL 'A' THIS SHEET FOR SPEC.	
P	80	SIMILAR TO TYPE 'D' EXCEPT 4'-0" LONG W/2-40W RS LAMPS	
⧓		EMERGENCY LIGHTING UNIT SELF CONTAINED AUTO-CHARGING BATTERY BACK-UP W/TEST SW., SEMI RECESSED NICKEL CADMIUM BATTERY, 7W HALOGEN LAMP EXPIPATION ALARM CAPABLE OF 3 REMOTES. 12V	"EMERGI-LITE" PS SERIES "DUAL-LITE" LITE SERIES
⊠		REMOTE UNIT TO FIXTURE ABOVE	"EMERGI-LITE" PS SERIES "DUAL-LITE" LITE SERIES
⊗		EXIT SIGN CAST ALUM. STENCIL FACE, BLACK ENAMEL FINISH, BATTERY BACK-UP, AND AUTO-CHARGING TEST SW., FLAT WALL OR CEILING MTD. AS SHOWN ON PLANS. 12V	"LITHONIA" ES SERIES "PRESCOLITE" EMERG. EXIT SERIES



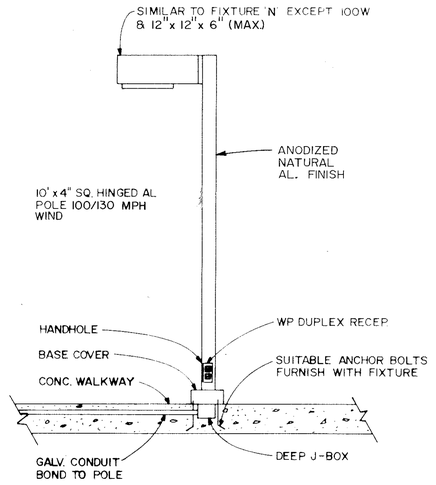
GRADE MOUNTED FIXTURE (DETAIL 'A')

N.T.S.



POST MTD. SPEAKER DETAIL

N.T.S.



WALKWAY MOUNTED FIXTURE (DETAIL 'B')

N.T.S.

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FORT LAUDERDALE AND WEST PALM BEACH, FLORIDA

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SCHEDULES & DETAILS

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NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITIES

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environmental engineers scientists planners & management consultants CDM

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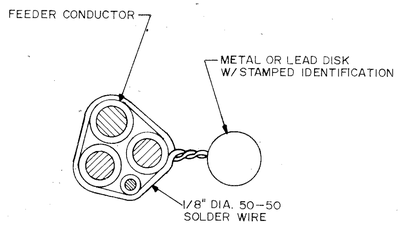
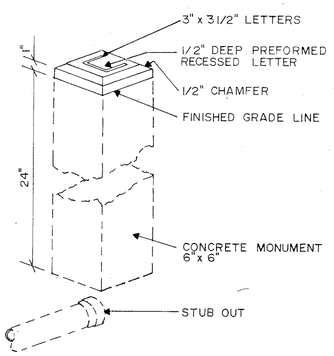
26-01 RECORD DRAWINGS 12/19/89

AF 31893A

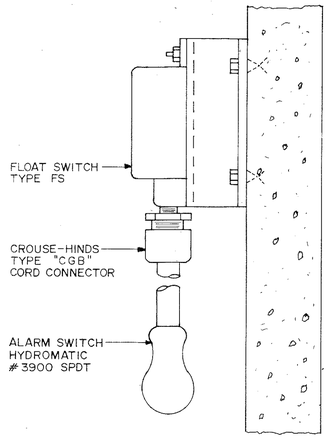


U.G. CABLE TAG DETAIL

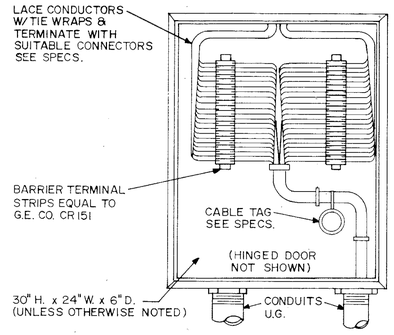
E - ELECTRICAL
T - TELEPHONE
C - COMMUNICATION

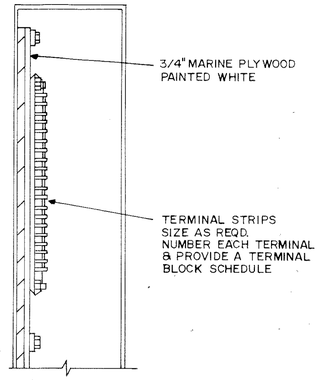


CONDUIT STUB MONUMENT DETAILS

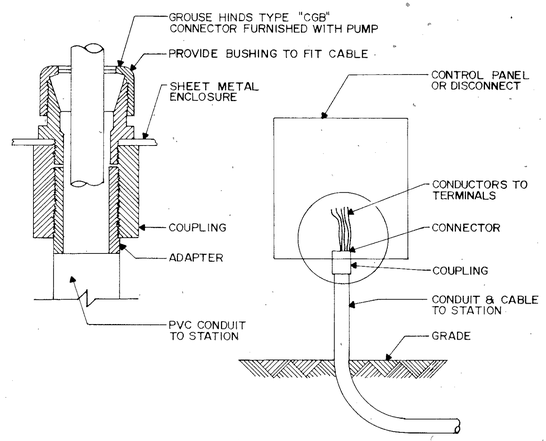


FLOAT SWITCH SUPPORT DETAIL

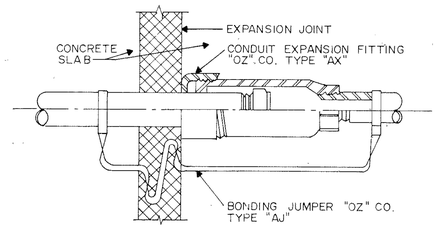




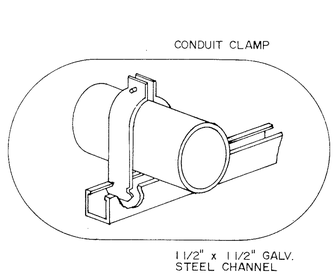
TYPICAL COMMUNICATION CABINET

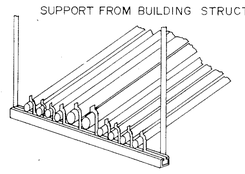


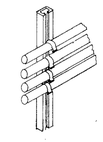
WATER-TIGHT CONNECTION DETAIL



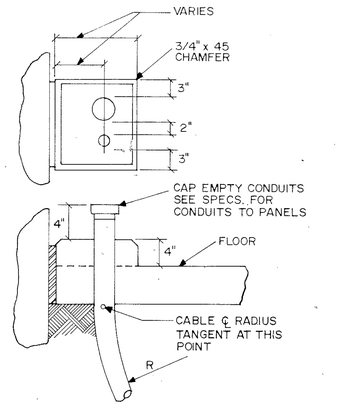
EXPANSION FITTING DETAIL



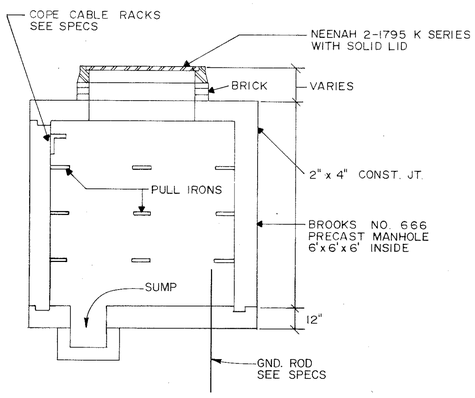




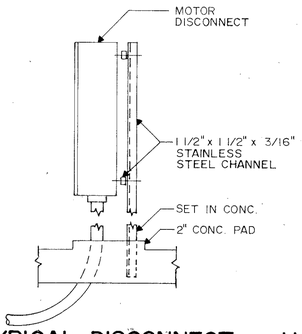
CONDUIT PIPE STRAP MOUNTING DETAILS



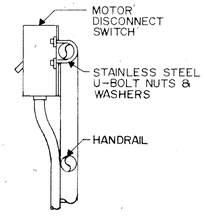
TYPICAL CONDUIT THRU SLAB



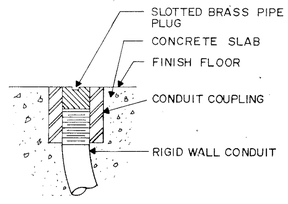
MANHOLE DETAIL



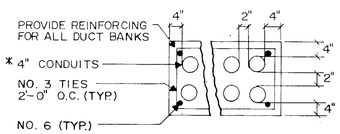
TYPICAL DISCONNECT



HANDRAIL MTD. DISCONNECT



DETAIL OF CONDUIT TERMINATION STUB OUT



TYPICAL DUCT BANK

* ALL SHIELDED INST. CABLES SHALL BE INSTALLED IN GALV. RIGID STEEL CONDUIT. PROVIDE ONE GALV. CONDUIT IN EACH INST. DUCT BANK WITH SPARES FOR FUTURE.

C. E. BAILEY CERTIFICATE No. 6985 STATE OF FLORIDA REGISTERED ENGINEER

C. E. BAILEY & ASSOCIATES, INC.
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DETAILS

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Consulting Engineers
6404 Manatee Ave.W.,Suite N
Bradenton, Florida 33529
(813) 794-5450

T195

DESIGNED WCH CHECKED CEB/ DATE MARCH 1985 SCALE NONE
DRAWN TRH FILE NO. 031-006-84 SHEET E-30 OF 30

26-01 RECORD DRAWINGS 12/19/89

ELECTRICAL ONE-LINE DIAGRAM

EXISTING WESTINGHOUSE MCC BUSS

800/3

NEW BREAKER,
SPB100E0D0
800AMP
STRUCTURE 1
COMPARTMENT F-7

NEW 800AMP PANEL "BP-1"

225/3 225/3

NEW 225A
BREAKERS
3P 35KAIC
KH225 SQ-D

PARALELL 4" CONDUCTORS W/
3-600MCM XHHW FEEDERS
1-1/0 XHHW GROUND
GROUND SIZED AS PER NEC-250-122

EXISTING
BLOWER
BUILDING

SIDEWALK

29'

TANK

34' 34' 34'

30'

SIDEWALK

31'

SIDEWALK

9'

EXISTING
ELECTRICAL
BUILDING

(A) NEW 800 AMP SQUARE-D I-LINE PANELBOARD, SEE ATTACHED ONE-LINE

(B) SAW CUT AND PATCH EXISTING SIDE WALK TO MATCH EXISTING

(C) EXISTING UNDERGROUND ELECTRIC PULL BOX

(D) ROUTE FEEDER FROM EXISTING MCC OVERHEAD, SUPPORT WITH STRUT AND THREADED ROD

(E) CONDUIT TO BE PVC SCHEDULE 40 UNDERGROUND, PVC SCHEDULE 80 ABOVE GROUND

(G) NEW 800 AMP BREAKER, INSTALL IN EXISTING WESTINGHOUSE MCC, SEE ATTACHED ONE-LINE

ELECTRICAL RECORD
DRAWINGS

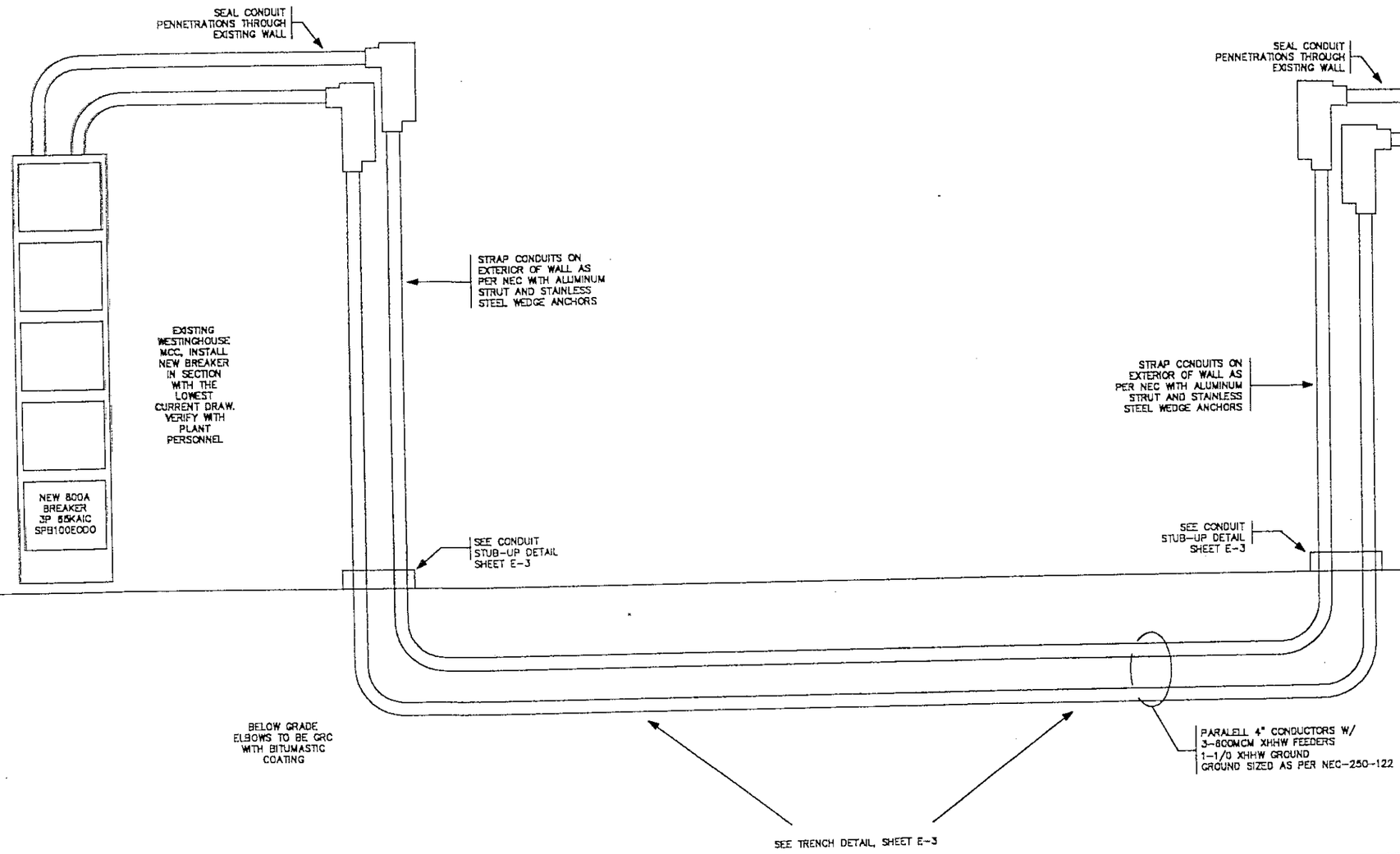
E-1

NORTH REGIONAL WWTP
BLOWER PANEL INSTALLATION

SITE PLAN AND
ONE-LINE DIAGRAM

WINDEMULLER
TECHNICAL SERVICES

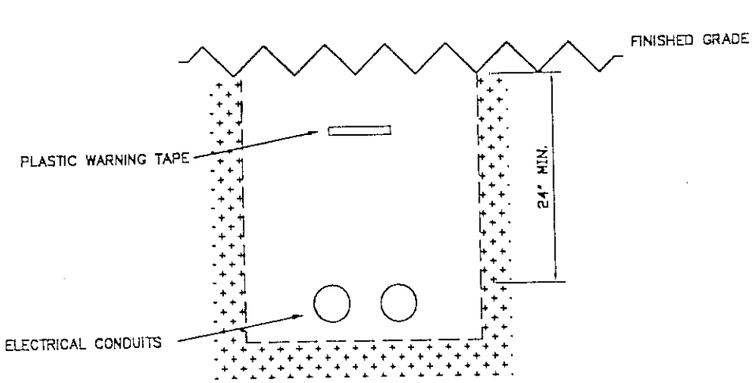
ELECTRICAL RISER DIAGRAM



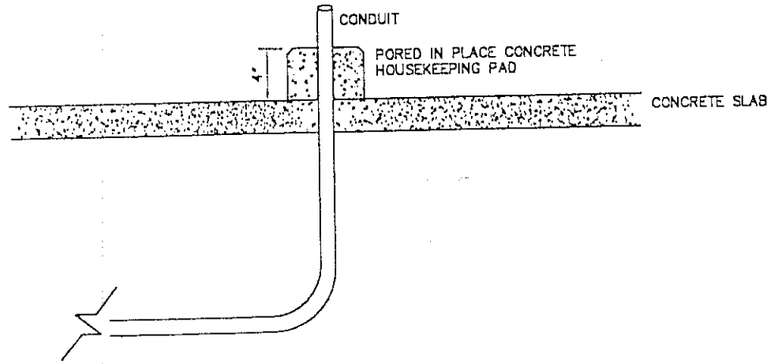
ELECTRICAL RECORD DRAWINGS

E-2	NORTH REGIONAL WWTP BLOWER PANEL INSTALLATION	
	ELECTRICAL RISER DIAGRAM	WINDEMULLER TECHNICAL SERVICES

TRENCH DETAIL



CONDUIT STUB-UP DETAIL



ELECTRICAL RECORD DRAWINGS

E-3	NORTH REGIONAL WWTP BLOWER PANEL INSTALLATION	
	ELECTRICAL INSTALLATION DETAILS	WINDEMULLER TECHNICAL SERVICES

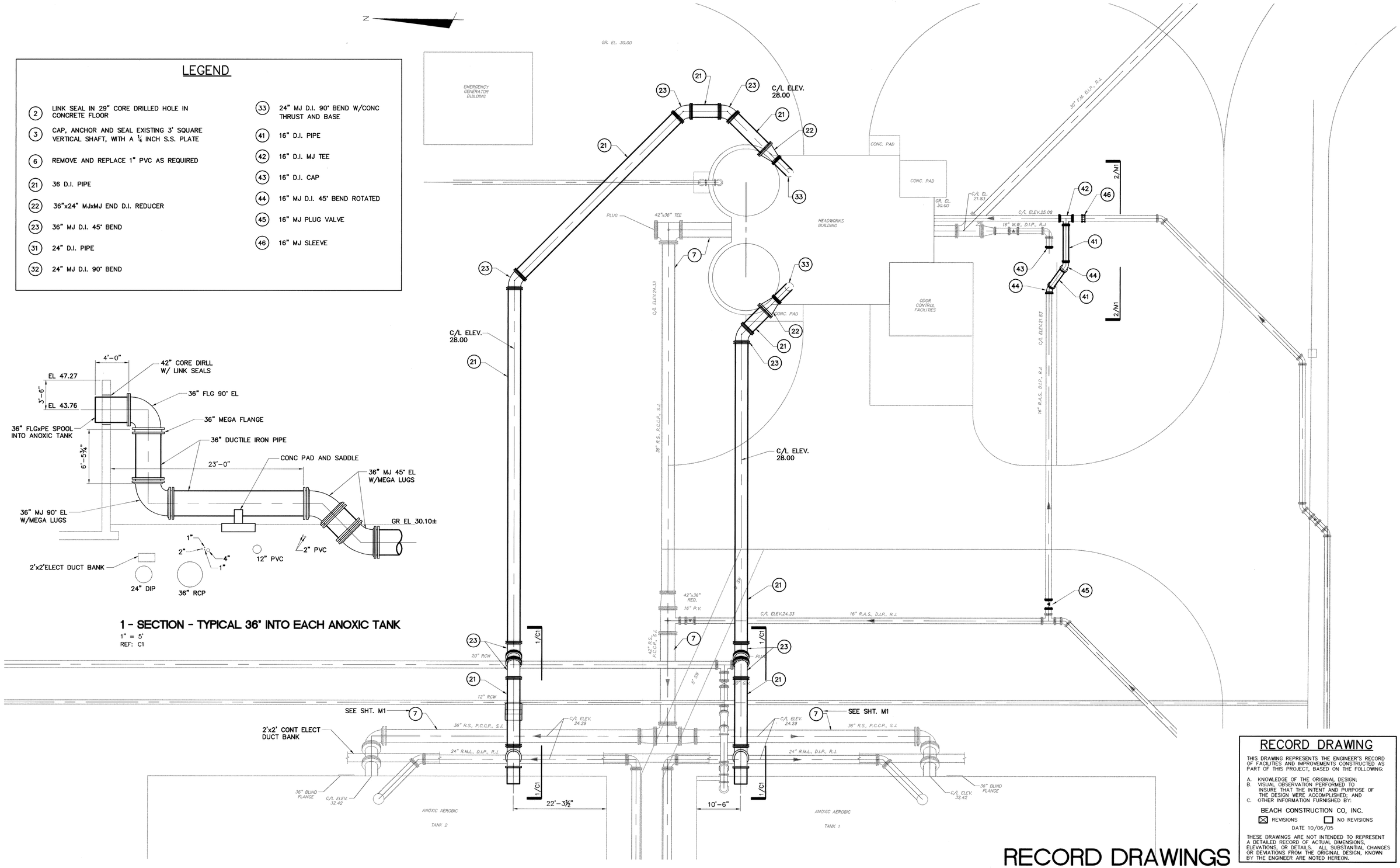
LEGEND

(2) LINK SEAL IN 29" CORE DRILLED HOLE IN CONCRETE FLOOR	(33) 24" MJ D.I. 90° BEND W/CONC THRUST AND BASE
(3) CAP, ANCHOR AND SEAL EXISTING 3' SQUARE VERTICAL SHAFT, WITH A ¼ INCH S.S. PLATE	(41) 16" D.I. PIPE
(6) REMOVE AND REPLACE 1" PVC AS REQUIRED	(42) 16" D.I. MJ TEE
(21) 36 D.I. PIPE	(43) 16" D.I. CAP
(22) 36"x24" MJxMJ END D.I. REDUCER	(44) 16" MJ D.I. 45° BEND ROTATED
(23) 36" MJ D.I. 45° BEND	(45) 16" MJ PLUG VALVE
(31) 24" D.I. PIPE	(46) 16" MJ SLEEVE
(32) 24" MJ D.I. 90° BEND	

1 - SECTION - TYPICAL 36" INTO EACH ANOXIC TANK

1" = 5'

REF: C1



RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. KNOWLEDGE OF THE ORIGINAL DESIGN;
B. VISUAL OBSERVATION PERFORMED TO INSURE THAT THE INTENT AND PURPOSE OF THE DESIGN WERE ACCOMPLISHED; AND
C. OTHER INFORMATION FURNISHED BY:

BEACH CONSTRUCTION CO, INC.

☒ REVISIONS ☐ NO REVISIONS

DATE 10/06/05

THESE DRAWINGS ARE NOT INTENDED TO REPRESENT A DETAILED RECORD OF ACTUAL DIMENSIONS, ELEVATIONS, OR DETAILS. ALL SUBSTANTIAL CHANGES OR DEVIATIONS FROM THE ORIGINAL DESIGN, KNOWN BY THE ENGINEER ARE NOTED HEREON.

RECORD DRAWINGS

REV.NO.	DESCRIPTIONS	DATE
1	RECORD DRAWING	10/6/05

REVISIONS

SEAL

SEAL

NORMAN J. SCALLY
No. 41338

McKIM&CREED
1365 Hamlet Avenue
Clearwater, FL 33756
Phone: (727)442-7196, Fax: (727)461-3827
AA0002667 EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

NORTH WRF
HEADWORKS PIPING
IMPROVEMENTS

SITE PIPING PLAN

DATE:	APRIL, 2005
MCE PROJ. #	1024-0070
DRAWN	NER
DESIGNED	NJS
CHECKED	NJS
PROJ. MGR.	ALM

SCALE
HORIZONTAL: 1"= 10'
VERTICAL: NA

M&C FILE NUMBER

DRAWING NUMBER C1

STATUS: "AS BUILTS" 10/05 REVISION

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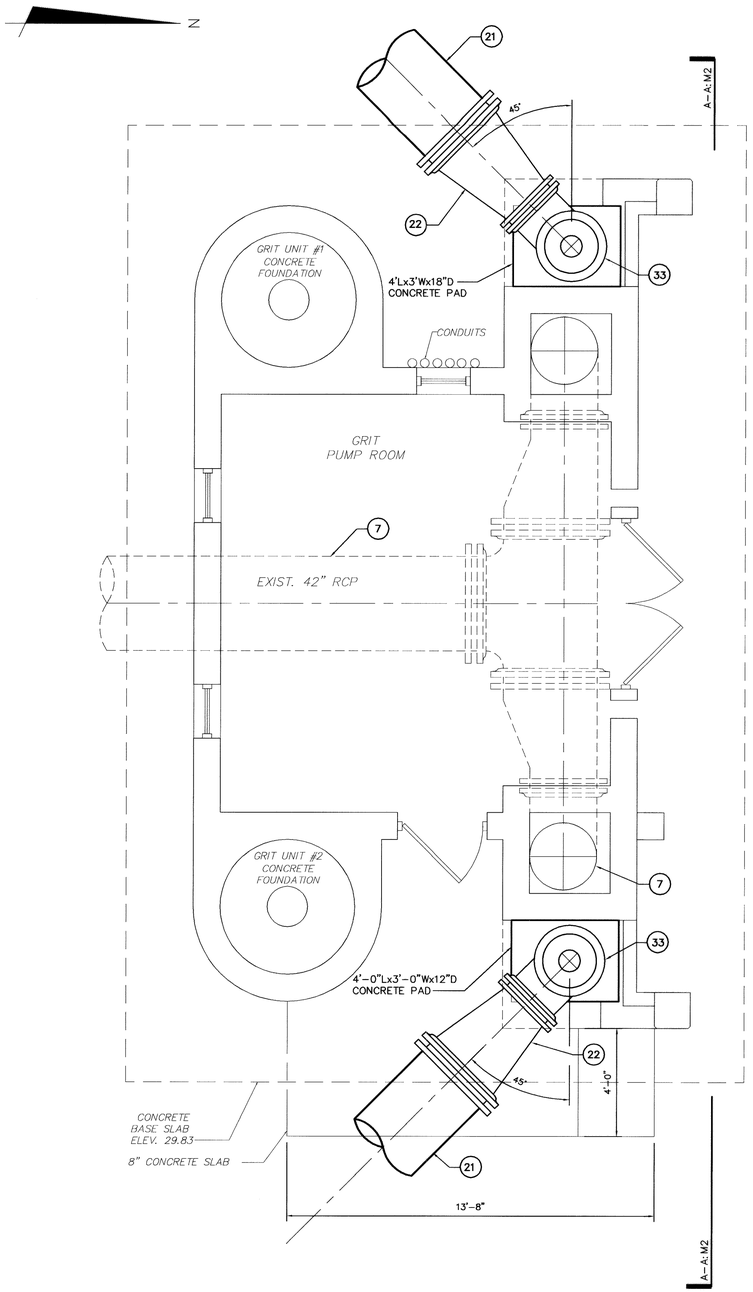
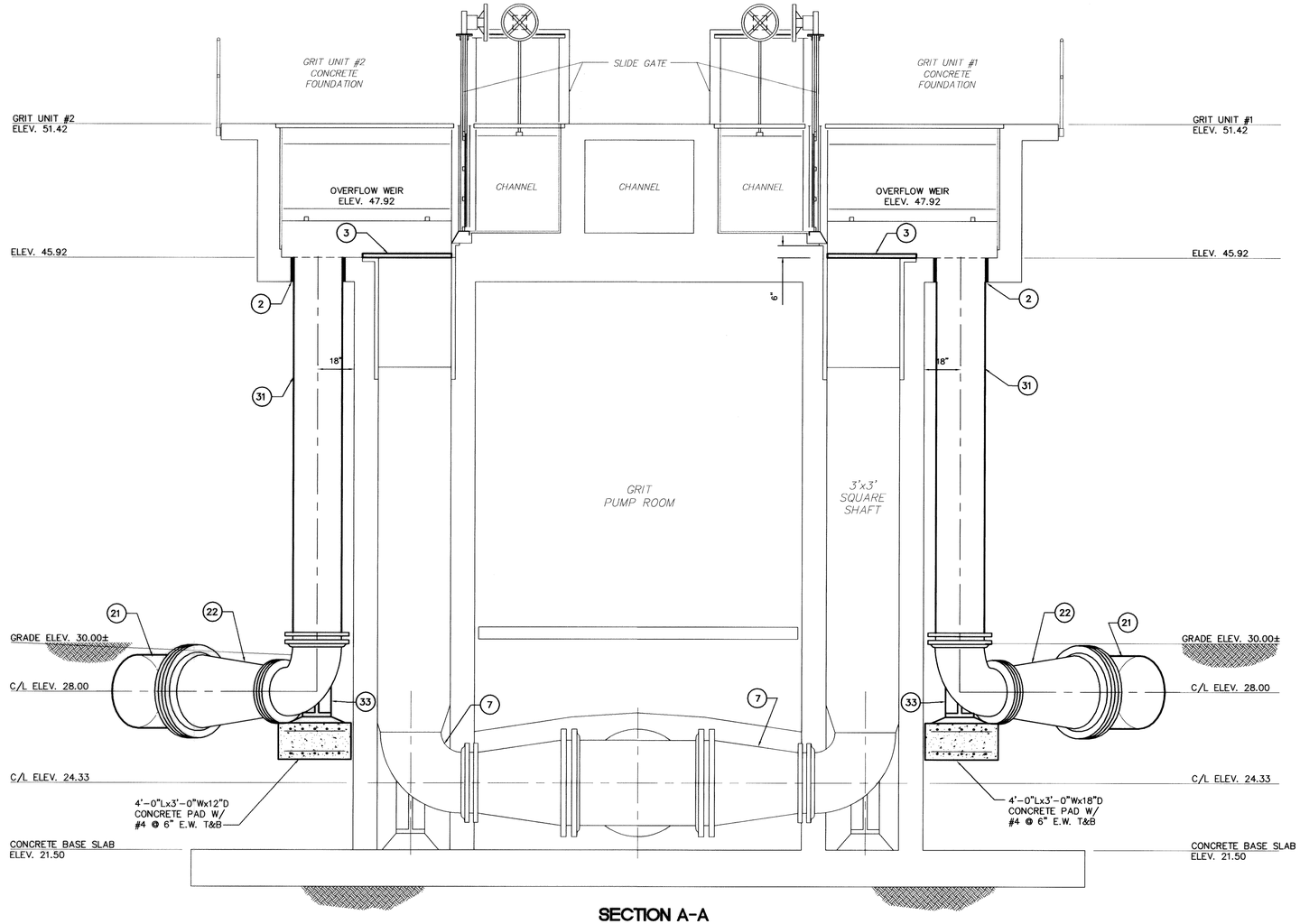


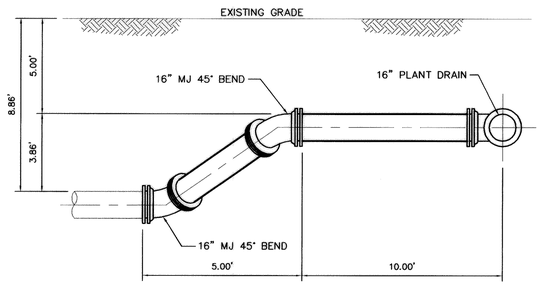
PARTIAL FLOOR PLAN ABOVE ELEV. 35.00

3/8"=1'-0"



SECTION A-A

3/8"=1'-0"



2-SECTION

NOT TO SCALE
REF: C1

LEGEND

1	~~COULD NOT DO GATES WOULD NOT CLOSE REMOVE 36" D.I. CAP AND CONNECT TO 36" D.I. FLANGE~~	31	24" D.I. PIPE
2	LINK SEAL IN 29" CORE DRILLED HOLE IN CONCRETE FLOOR	32	24" MJ D.I. 90° BEND
3	CAP, ANCHOR AND SEAL EXISTING 3' SQUARE VERTICAL SHAFT, WITH A ¼" S.S. PLATE	33	24" MJ D.I. 90° BEND W/CONC THRUST AND SUPPORT
6	REMOVE AND REPLACE 1" PVC AS REQUIRED	41	16" D.I. PIPE
7	~~COULD NOT DO GATES WOULD NOT CLOSE PUMP WASTEWATER OUT OF EXISTING PIPE~~	42	16" D.I. MJ TEE
21	36 D.I. PIPE	43	16" D.I. CAP
22	36"x24" MJxMJ END D.I. REDUCER	44	16" MJ D.I. 45° BEND ROTATED
23	36" MJ D.I. 45° BEND	45	16" MJ PLUG VALVE

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C. OTHER INFORMATION FURNISHED BY:

BEACH CONSTRUCTION CO, INC.

☒ REVISIONS ☐ NO REVISIONS

DATE 10/06/05

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RECORD DRAWINGS

REV.NO.	DESCRIPTIONS	DATE
1	RECORD DRAWING	10/6/05

REVISIONS

SEAL

SEAL

NORMAN J. SCALLY
No. 41338

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Clearwater, FL 33756
Phone: (727)442-7196, Fax: (727)461-3827
AA0002667 EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

NORTH WRF
HEADWORKS PIPING
IMPROVEMENTS

HEADWORKS DISCHARGE
PIPE REVISIONS

DATE:	APRIL, 2005
MCE PROJ. #	1024-0070
DRAWN	NER
DESIGNED	NJS
CHECKED	NJS
PROJ. MGR.	ALM

SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: NA

M&C FILE NUMBER

DRAWING NUMBER
M1

STATUS: "AS BUILTS" 10/05 REVISION

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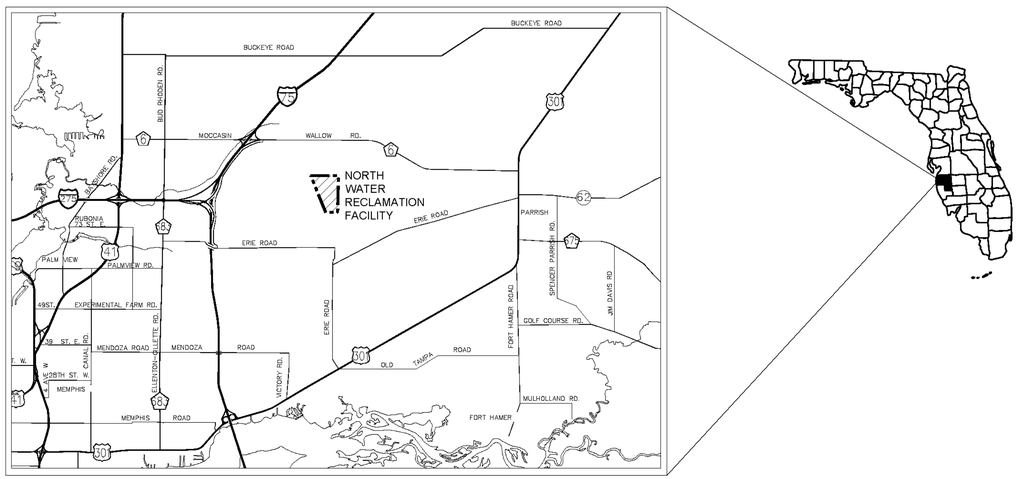
NORTH WATER RECLAMATION FACILITY EXPANSION PHASE 1

COUNTY PROJECT #6011283

RECORD DRAWINGS
JUNE 2014

MANATEE COUNTY, FLORIDA



PROJECT VICINITY MAP

McKIM&CREED
1365 Hamlet Avenue
Clearwater, FL 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

RECORD DRAWING

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A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

DAVID C. WEHNER, P.E.
No. 59541

NWRF EXPANSION PHASE 1 1024-0143

JUNE 2014

RECORD DRAWINGS

G-0.1 - COVER SHEET

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DISCIPLINE	DRAWING	TITLE
GENERAL	G-0.1	COVER SHEET
	G-0.2	DRAWING INDEX AND GENERAL NOTES
	G-0.3	ABBREVIATIONS AND LEGENDS
	G-0.4	SITE PLAN AND PROPOSED WORK LOCATIONS
	G-0.5	SOIL EROSION AND SEDIMENTATION CONTROL PLAN
	G-0.6	PROPOSED EFFLUENT IMPROVEMENTS SCHEMATIC
DEMOLITION	D-0.1	YARD PIPING DEMOLITION PLAN NO. 1
	D-0.2	YARD PIPING DEMOLITION PLAN NO. 2
	D-0.3	YARD PIPING DEMOLITION PLAN NO. 3
	D-3.1	INTERNAL RECYCLE DEMOLITION AND SECTIONS
	D-3.2	ANOXIC / AEROBIC BASINS NO. 1 AND NO. 2 DEMOLITION PLAN AND DETAILS
	D-7.1	EFFLUENT PUMP BACK STATION NO. 1 AND NO. 2 DEMOLITION PLAN
	D-7.2	EFFLUENT PUMP BACK STATION NO. 3 DEMOLITION PLAN
	D-10.1	PLANT DRAIN PUMP STATION DEMOLITION PLAN AND SECTION
CIVIL	C-0.1.1	GRADING AND DRAINAGE PLAN
	C-0.2.1	CIVIL DETAILS NO. 1
	C-0.2.2	CIVIL DETAILS NO. 2
	C-0.2.3	CIVIL DETAILS NO. 3
	C-0.4.1	YARD PIPING PLAN NO. 1
	C-0.4.2	YARD PIPING PLAN NO. 2
	C-0.4.3	YARD PIPING PLAN NO. 3
	C-0.4.4	YARD PIPING PLAN NO. 4
STRUCTURAL	S-0.1	STRUCTURAL GENERAL NOTES, DESIGN LOADS, CRITERIA AND LEGEND
	S-0.2	OVERALL STRUCTURAL KEY PLAN
	S-3.1	ANOXIC / AEROBIC BASINS NO. 1 AND NO. 2 BOTTOM PLAN, SECTIONS AND DETAILS
	S-3.2	ANOXIC / AEROBIC BASINS NO. 1 AND NO. 2 TOP PLAN, SECTIONS AND DETAILS
	S-7.1	METER AND PRESSURE REGULATING VALVE ASSEMBLY, PLANS, SECTIONS & DETAILS
	S-7.2	GOLF COURSE STORAGE LAKE FLOW INTAKE STRUCTURES PLANS, SECTIONS AND DETAILS
	S-7.3	LAKE GRAVITY DISK FILTER FOUNDATION PLAN, SECTIONS AND DETAILS
	S-7.4	LAKE GRAVITY DISK FILTER ADDITIONAL & FRAMING SECTIONS AND DETAILS
MECHANICAL	M-0.1	MECHANICAL DETAILS 1
	M-0.2	MECHANICAL DETAILS 2
	M-2.1	HEADWORKS MECHANICAL PLAN AT TOP
	M-2.2	HEADWORKS MECHANICAL SECTIONS
	M-2.3	HEADWORKS MECHANICAL SECTIONS AND DETAILS
	M-3.1	NEW INTERNAL RECYCLE PUMPS PLAN AND SECTIONS
	M-7.1	METER AND PRV ASSEMBLY, METER AND CHECK VALVE ASSEMBLY PLAN AND SECTION
	M-7.2	INTAKE STRUCTURE PLANS AND SECTIONS
	M-7.3	LAKE GRAVITY DISK FILTER PLAN
	M-7.4	LAKE GRAVITY DISK FILTER SECTIONS 1
	M-7.5	LAKE GRAVITY DISK FILTER SECTIONS 2
	M-7.6	LAKE FILTER BACKWASH PUMP STATION PLAN AND SECTION
	M-7.7	ABW / DIGESTER CONNECTION DETAILS
	M-7.8	VAVLE MODIFICATIONS
	M-8.1	SODIUM HYPOCHLORITE CHEMICAL SKID PLAN AND DETAILS
	M-8.2	SODIUM HYPOCHLORITE CHEMICAL SKID DETAILS
	M-10.1	PLANT DRAIN PUMP STATION PLAN
	M-10.2	PLANT DRAIN PUMP STATION SECTION
INSTRUMENTATION	I-0.1	PROCESS AND INSTRUMENTATION GENERAL NOTES, LEGENDS AND ABBREVIATIONS
	I-0.2	NETWORK DIAGRAM
	I-0.3	PROCESS AND INSTRUMENTATION DETAILS
	I-2.1	PROCESS AND INSTRUMENTATION DIAGRAM HEADWORKS BAR SCREEN AND CONVEYOR
	I-3.1	PROCESS AND INSTRUMENTATION DIAGRAM ANOXIC / AEROBIC BASIN NO. 1 AND NO. 2
	I-7.1	PROCESS AND INSTRUMENTATION DIAGRAM EFFLUENT STORAGE AND DISCHARGE
	I-7.2	PROCESS AND INSTRUMENTATION DIAGRAM LAKE GRAVITY DISK FILTERS NO. 1 AND NO. 2
	I-7.3	PROCESS AND INSTRUMENTATION DIAGRAM LAKE GRAVITY DISK FILTERS NO. 3 AND BACKWASH PUMP STATION
	I-8.1	PROCESS AND INSTRUMENTATION DIAGRAM SODIUM HYPOCHLORITE STORAGE AND PUMPING
	I-10.1	PROCESS AND INSTRUMENTATION DIAGRAM PLANT DRAIN PUMP STATION
ELECTRICAL	E-0.1	ELECTRICAL GENERAL NOTES, LEGENDS AND ABBREVIATIONS
	E-0.2	OVERALL ELECTRICAL SITE PLAN
	E-0.3	ELECTRICAL DETAILED SITE PLAN
	E-0.4	ELECTRICAL BUILDING NO. 1 EXISTING SINGLE-LINE DIAGRAM AND MODIFICATIONS
	E-0.5	ELECTRICAL BUILDING NO. 1 MCC-1 AND MCC-2 MODIFICATIONS SINGLE-LINE DIAGRAM
	E-0.6	ELECTRICAL BUILDING NO.1 EXISTING MCC ELEVATIONS
	E-0.7	ELECTRICAL SCHEMATICS
	E-0.8	MISCELLANEOUS ELECTRICAL DETAILS NO. 1
	E-0.9	MISCELLANEOUS ELECTRICAL DETAILS NO. 2
	E-0.10	MISCELLANEOUS ELECTRICAL DETAILS NO. 3
	E-0.11	PANEL BOARD SCHEDULE
	E-2.1	HEADWORKS LOW LEVEL POWER CONTROLS PLANS
	E-2.2	HEADWORKS UPPER LEVEL POWER CONTROLS PLANS AND DETAILS
	E-2.3	EXISTING INFLUENT STRUCTURE SINGLE LINE DIAGRAMS
	E-2.4	CONDUIT SCHEDULE
	E-2.5	RISER DIAGRAM FOR BAR SCREEN #3
	E-3.1	NEW INTERNAL RECYCLE PUMPS
	E-7.1	FLOW METER ASSEMBLY AND METER AND CHECK VALVE ASSEMBLY POWER PLAN
	E-7.2	GOLF COURSE STORAGE LAKE FLOW CONTROL STRUCTURE ELECTRICAL SITE PLAN AND SINGLE LINE
	E-7.3	LAKE GRAVITY DISK FILTER PLAN
	E-7.6	LAKE GRAVITY BACKWASH PUMP STATION
	E-8.1	DEWATERING BUILDING PLAN AND DETAILS
	E-10.1	PLANT DRAIN PUMP STATION ELECTRICAL MODIFICATIONS
	E-10.2	PLANT DRAIN PUMP STATION METERING POWER PLAN

DRAWING NUMBER DESIGNATION

M - 7 . 1

- M — INDICATES DISCIPLINE (EX. "M" REFERS TO MECHANICAL)
- 7 — INDICATES PROCESS AREA OR STRUCTURE (EX. "7" REFERS TO THE EFFLUENT PROCESS AREA) * NOT ALL PROCESS AREAS / STRUCTURES ARE INCLUDED FOR EACH DISCIPLINE
- 1 — INDICATES SHEET NUMBER OF PROCESS AREA OR STRUCTURE

PROCESS AREA TABLE

NUMERIC DESIGNATION	PROCESS AREA
0	SITE CIVIL AND MISCELLANEOUS
1	NOT USED
2	HEADWORKS
3	BIOLOGICAL PROCESS
4	SECONDARY CLARIFICATION/RAS
5	FILTRATION
6	NOT USED
7	EFFLUENT
8	DEWATERING BUILDING
9	NOT USED
10	REJECT WATER/PLANT DRAIN
11	ELECTRICAL/GENERATOR BUILDING NO. 2
12	ELECTRICAL/GENERATOR BUILDING NO. 1

GENERAL NOTES

1. THESE PLANS ARE SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE EXISTING CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF WORK. CONTRACTORS ARE DIRECTED TO CONDUCT WHATEVER INVESTIGATION THEY DEEM NECESSARY PRIOR TO BIDDING TO DETERMINE THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED.
2. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) AFFECTING HIS WORK.
3. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN WRITTEN CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.
4. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, STORM DRAINS, SEWERS, UTILITIES, AND OTHER FACILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR ANY DAMAGES DUE TO HIS CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER.
5. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURERS' MAXIMUM RECOMMENDED DEFLECTION.
6. THERE ARE TO BE NO "SIZE ON SIZE TAPS" OR "SIZE ON SMALLER TAPS" ON THIS PROJECT.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE EXISTING DRAINAGE SYSTEM WITHIN THE LIMITS OF THE PROJECT AREA FOR THE DURATION OF THE PROJECT.
8. THE CONTRACTOR SHALL PROVIDE CERTIFIED RECORD DRAWINGS AS OUTLINED IN THE SPECIFICATIONS. RED-LINE DRAWINGS SHALL BE CURRENT WITH EACH PAY APPLICATION SUBMITTED AND WILL BE CHECKED AS PART OF THE PAY APPLICATION REVIEW PROCESS. PAYMENT WILL NOT BE MADE TO CONTRACTOR WITHOUT APPROVED RED-LINE DRAWINGS. THE MOST CURRENT SET OF RED-LINES DRAWINGS SHALL ALSO BE BROUGHT TO EACH MONTHLY PROGRESS MEETING.
9. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A DETAILED CONSTRUCTION PHASING PLAN FOR APPROVAL, PRIOR TO BEGINING CONSTRUCTION.
10. FIELD CONDITIONS MAY NECESSITATE ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED PIPELINES TO AVOID CONFLICTS. NO ADDITIONAL PAYMENT SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND THE OWNER'S ENGINEER.
11. THE CONTRACTOR SHALL INCLUDE IN HIS BID; BY-PASS PUMPING FACILITIES, PUMPS, FITTINGS, LABOR, ETC, AS NECESSARY, BASED ON METHOD AND SEQUENCE OF CONSTRUCTION TO COMPLETE ALL WORK WHILE MAINTAINING THE EXISTING WASTEWATER TREATMENT PLANT OPERATIONS AT ALL TIMES.
12. ALL PROPOSED WORK SHALL BE COORDINATED WITH WASTEWATER TREATMENT PLANT PERSONNEL AND MANATEE COUNTY UTILITIES DEPARTMENT AT LEAST TWO WEEKS IN ADVANCE OF PROPOSED CONSTRUCTION.
13. THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL OF ALL PIPE CONNECTIONS, TRANSITIONS, AND SPECIALS PRIOR TO FABRICATION OR DELIVERY TO THE JOB SITE.
14. CONNECTIONS TO EXISTING FACILITIES SHALL BE ACCOMPLISHED IN A NEAT WORKMANLIKE MANNER. WHEN FIELD CONDITIONS INDICATE ANY VARIANCE FROM DETAILED METHODS, THE CONTRACTOR SHALL PROVIDE COMPREHENSIVE AND DETAILED DRAWINGS FOR OWNER REVIEW AND APPROVAL PRIOR TO MAKING THE CONNECTIONS.
15. UNLESS OTHERWISE INDICATED OR APPROVED, ALL BELOW GROUND DUCTILE IRON PIPE SHALL HAVE PUSH-ON OR MECHANICAL JOINTS, AND ALL ABOVE GROUND DUCTILE IRON PIPE SHALL HAVE FLANGED JOINTS. ALL JOINTS SHALL BE FULLY RESTRAINED. CONTRACTOR TO FULLY RESTRAIN EXISTING PIPE AT TIE-IN LOCATIONS OF NEW PIPE.
16. ALL PIPELINES SHALL HAVE A MINIMUM COVER OF 36" BELOW EXISTING GRADE UNLESS OTHERWISE NOTED OR DIRECTED.
17. SANITARY SEWERS AND FORCE MAINS CROSSING OVER OR UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18" BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER OR FORCE MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN 10' BETWEEN ANY TWO JOINTS. AS AN ALTERNATE, THE SEWER OR FORCE MAIN MAY BE PLACED IN A WATERTIGHT CASING PIPE.
18. WATER SHALL NOT BE PERMITTED IN BUILDING EXCAVATIONS AND TRENCHES DURING CONSTRUCTION. DEWATERING IS REQUIRED TO A MINIMUM OF 18" BELOW BOTTOM OF EXCAVATION.
19. THE CONTRACTOR SHALL NOT ALLOW ANY DISCHARGE OF WASTEWATER TO LANDS AND/OR ADJACENT WATER BODIES OR STORM DRAINS. ANY LEAKAGE MUST BE CONTAINED AND TRANSFERRED BY THE CONTRACTOR TO THE PLANT DRAIN PUMP STATION AT THE WASTEWATER TREATMENT PLANT.
20. ALL BELOW-GRADE FITTINGS 4-INCHES AND GREATER IN DIAMETER SHALL BE MECHANICAL JOINT DUCTILE IRON WITH FACTORY APPLIED, FUSION BONDED EPOXY COATINGS FOR THEIR INTERIOR AND EXTERIOR SURFACES.
21. ALL EXPOSED PIPING SHALL BE PAINTED WITH DESIGNATED COLORS ASSOCIATED WITH THEIR USAGE AS PROVIDED IN THE SPECIFICATIONS.
22. ALL NEW PIPELINES SHALL BE FLUSHED, PRESSURE TESTED, AND APPROVED PRIOR TO TIE-INS TO EXISTING FACILITIES. THE CONTRACTOR WILL BE ALLOWED TO USE TEMPORARY PLUGS FOR PRESSURE TESTING.
23. ALL CONCRETE THRUST BLOCKS INSTALLED FOR TESTING PURPOSES AND NOT REQUIRED FOR THE PIPELINE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE.
24. CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR ALL SURFACE WATER DRAINAGE STRUCTURES AND DITCHES DURING ALL PHASES OF CONSTRUCTION.THE CONTRACTOR SHALL BE REQUIRED TO INSTALL ALL EROSION, SEDIMENT AND TURBIDITY CONTROL MEASURES PRIOR TO CONSTRUCTION OF ANY COMPONENTS ASSOCIATED WITH THE PROJECT. SEDIMENT CONTROL INCLUDES SILT DAMS, TRAPS, EROSION PROTECTION, AND ANY OTHER APPURTENANCES NEEDED BUT NOT NECESSARILY SHOWN ON THESE DRAWINGS.
25. CONTRACTOR SHALL PROVIDE PROTECTIVE MATTING, FUEL CONTAINMENT AND ALL OTHER MATERIALS, EQUIPMENT AND LABOR TO PROTECT THE STAGING AREA DURING CONSTRUCTION.
26. CONTRACTOR SHALL, PRIOR TO BEGINNING CONSTRUCTION, SUBMIT A "FUELING SPILL PREVENTION PLAN" THAT SHALL CLEARLY INDICATE HOW FUEL SPILLS WILL BE PREVENTED WHEN FUELING BOTH WITHIN AND OUTSIDE OF THE STAGING AREA.
27. CONTRACTOR SHALL SUBMIT A DEWATERING PLAN FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH THE BMPS IDENTIFIED IN CHAPTER 4, 4.40 "DEWATERING" OF "THE FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL".

SURVEY NOTES

1. ELEVATIONS ARE BASED ON MANATEE COUNTY BENCHMARK 133-2, A DISK AND RIVET ON TOP OF THE NORTH 6" CURB, AT A BRIDGE OVER A CANAL THAT RUNS NORTH AND SOUTH AND IS EAST OF THE TREATMENT PLANT, 50'± EAST OF THE INTERSECTION OF THE ENTRANCE ROAD AND THE ROAD THAT LEADS TO THE TREATMENT PLANT ADMINISTRATION BUILDING, HAVING AN ELEVATION OF 28.866, NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).
2. ALL COORDINATES ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM FOR THE WEST ZONE (SPC FL W), NORTH AMERICAN DATUM OF 1983/1999 ADJUSTMENT (NAD 83/99), TRANSVERSE MERCATOR PROJECTION AND ARE MATCHED TO THE FOLLOWING NATIONAL GEODETIC SURVEY (NGS) PUBLISHED CONTROL.

   ORIGINATING COORDINATES:

   STATION DESIGNATION – NORTHING – EASTING

   GIS 009 – 1188044.30 – 494782.22

   I75 84 A45 – 1171936.68 – 490517.59
3. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR, LICENSED IN THE STATE OF FLORIDA TO PERFORM CONSTRUCTION STAKING IN ACCORDANCE WITH RULE 61G17-6.004(3) OF THE FLORIDA ADMINISTRATIVE CODE.
4. THE LOCATIONS AND ELEVATIONS OF ALL EXISTING FACILITIES SHOWN WITHIN THE LIMITS OF CONSTRUCTION ARE PROVIDED BY FORESIGHT SURVEYORS SPECIFICALLY FOR THIS PROJECT.

UTILITY NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE FOLLOWING JURISDICTIONAL BODIES AND UTILITY COMPANIES:

   INVESTIGATE BEFORE YOU EXCAVATE
   CALL LOCAL PUBLIC UTILITY NOTIFICATION CENTER
   TOLL FREE 1-800-432-4770
   MIN. 48 HOURS BEFORE YOU EXCAVATE

   MANATEE COUNTY TRANSPORTATION DEPT.
   GENE RIGGS
   2904 12TH STREET COURT E.
   BRADENTON, FL 34208
   (941) 708-7509 Ext. 7509

   VERIZON FLORIDA, INC.
   DON DURDEN
   1701 RINGLING BLVD.
   SARASOTA, FL 34236
   (941) 952-5616

   MANATEE COUNTY UTILITIES OPERATIONS
   BOB CROUCH
   4422-C 66TH STREET W.
   BRADENTON, FL 34210
   (941) 792-8811 Ext 5075

   PARAGON CABLE – BRIGHTHOUSE NETWORK, LLC
   WALTER KROL
   5413 S.R. 64 E.
   BRADENTON, FL 34208
   (941) 748-3816 Ext. 24053

   FLORIDA POWER AND LIGHT
   LARRY RUSSO
   125 12TH AVENUE EAST
   BRADENTON, FL 34208
   (941) 723-4424

   TECO/PEOPLES GAS
   TED FELEGY
   8261 VICO CT.
   SARASOTA, FL 34240
   (941) 342-4026
2. ALL UTILITY CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE LATEST VERSION OF THE MANATEE COUNTY UTILITY STANDARDS.
3. ALL BELOW GROUND DUCTILE IRON PIPE SHALL BE ENCASED IN A POLYETHYLENE WRAP IN ACCORDANCE WITH AWWA STANDARDS.
4. ALL VALVE BOX COVERS SHALL BE PAINTED TO INDICATE THEIR TYPE OF SERVICE.
5. ALL TEST POINT TAPPING SHALL BE CUT LOOSE FROM THE CORPORATION STOP AND COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE. THE CORPORATION STOP SHALL BE CAPPED AND REMAIN IN PLACE.
6. ADJUST EXISTING MANHOLE FRAMES AND COVERS TO MATCH FINAL GRADE.

RESTORATION AND MISCELLANEOUS NOTES

1. THE CONTRACTOR SHALL PROVIDE AN ASPHALT PATCH FOR TRENCH AREAS CONSTRUCTED IN EXISTING ROADWAYS. ADJUST ALL CASTINGS TO MATCH NEW PAVEMENT SURFACE.
2. THE CONTRACTOR SHALL REPLACE ALL EXISTING PAVING, STABILIZED EARTH, CURBS, SIDEWALKS, FENCES, LANDSCAPING AND OTHER IMPROVEMENTS WITH THE SAME OR BETTER TYPE OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
3. ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS OTHERWISE NOTED.
4. ALL EXISTING FENCES DISTURBED DURING CONSTRUCTION SHALL BE REPLACED AND REINSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER UNLESS SHOWN TO BE REMOVED ON CONSTRUCTION PLANS.
5. CONTRACTOR SHALL RESTORE ALL IRRIGATION SYSTEM COMPONENTS TO PRE-CONSTRUCTION CONDITIONS.
6. THE CONTRACTOR SHALL ADJUST EXISTING MANHOLE FRAMES AND COVERS TO MATCH FINAL GRADE.
8. ALL DISTURBED GRASS AREAS SHALL BE RESTORED WITH SOLID SOD IN LIKE KIND UNLESS OTHERWISE DIRECTED BY OWNER

SIDEWALK NOTES

1. ALL SIDEWALKS SHALL BE CONSTRUCTED WITH 4 INCH THICK 3000 PSI CLASS I CONCRETE REINFORCED WITH 6X6 NO. 10 MESH.
2. SIDEWALKS SHALL BE CONSTRUCTED TO THE SPECIFICATIONS OF THE MANATEE COUNTY DEVELOPMENT STANDARDS AND A MINIMUM OF FIVE (5) FEET WIDE.
3. THE CONCRETE SHALL BE GIVEN A BROOM FINISH. THE SURFACE VARIATIONS SHALL NOT BE MORE THAN 1/2 INCH UNDER A TEN-FOOT STRAIGHTEDGE, NOR MORE THAN 1/8 INCH ON A FIVE-FOOT TRAVERSE SECTION. THE EDGE OF THE SIDEWALK SHALL BE CAREFULLY FINISHED WITH AN EDGING TOOL HAVING A RADIUS OF 1/2 INCH.
4. EXPANSION JOINT: EXPANSION JOINTS BETWEEN THE SIDEWALK AND DRIVEWAYS OR AT FIXED OBJECTS AND SIDEWALK INTERSECTIONS SHALL BE 1/2 INCH JOINTS.
5. CONTRACTION JOINTS: FIXED OPEN-TYPE CONTRACTION JOINTS SHALL BE FORMED BY STAKING A METAL BULKHEAD IN PLACE AND DEPOSITING THE CONCRETE ON BOTH SIDES. AFTER THE CONCRETE HAS SET SUFFICIENTLY TO PRESERVE THE WIDTH AND SHAPE OF THE JOINT, THE BULKHEAD SHALL BE REMOVED. AFTER THE SIDEWALK HAS BEEN FINISHED OVER THE JOINT, THE SLOT SHALL BE EDGED WITH A TOOL HAVING A 1/2 INCH RADIUS. SAWED JOINTS: A SLOT APPROXIMATELY 3/16 INCH WIDE AND NOT LESS THAN 1-1/2 INCHES DEEP SHALL BE CUT WITH A CONCRETE SAW AFTER THE CONCRETE HAS SET.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☒ REVISIONS ☐ NO REVISIONS

THESE DRAWINGS ARE NOT INTENDED TO REPRESENT A DETAILED RECORD OF ACTUAL DIMENSIONS, ELEVATIONS, OR DETAILS. SUBSTANTIAL CHANGES OR DEVIATIONS FROM THE ORIGINAL DESIGN, KNOWN BY THE ENGINEER ARE NOTED HEREON.

DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

McKIM & CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

DRAWING INDEX AND GENERAL NOTES

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	MSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NONE
VERTICAL: NA

DRAWING NUMBER: G-0.2

STATUS: RECORD DRAWINGS
REVISION

5916.002

S:\1024\01-Records\Record_G-0.2.dwg, 6/9/2014 7:31:30 AM, Quint Shelton

GENERAL ABBREVIATIONS

@.	AT	LN.	LANE
ABW	AUTOMATIC BACKWASH	LP	LIGHT POLE
A/C	AIR CONDITIONER UNIT	LS	LICENSED SURVEYOR
AC	ACRES	MAS	MASONRY
AC	ASPALTIC CONCRETE	MAX.	MAXIMUM
ABD	ABANDONED	MCC	MOTOR CONTROL CENTER
AL./ALUM.	ALUMINUM	MES	MITERED END SECTION
ANCH.	ANCHOR	MG	MILLION GALLONS
APPROX.	APPROXIMATE	MES	MILLION GALLONS PER DAY
AFF.	ABOVE FINISHED FLOOR	MHW	MEAN HIGH WATER
BLDG.	BUILDING	MON.	MONUMENT
BM.	BEAM	NG	NATURAL GROUND
BOT./BOTT.	BOTTOM	N.T.S.	NOT TO SCALE
(C)	CALCULATED DATA	NO.	NUMBER
C	CHANNEL	NP	NORMAL POOL
C.	CONDUIT	ø	DIAMETER/PHASE
C.B.	CATCH BASIN	O/A	OVERALL
CCR	CERTIFIED CORNER RECORD	OPNG.	OPENING
CHKR	CHECKERED	OR	OFFICIAL RECORDS BOOK
CIR.	CIRCLE	(P)	PLAT BOOK
CLF	CHAIN LINK FENCE	PCCP	PRE-STRESSED CONCRETE PIPE
℄	CENTERLINE	PG	PAGE
CMP	CORRUGATED METAL PIPE	PLCS.	PLACES
COL.	COLUMN	PLS	PROFESSIONAL LAND SURVEYOR
CONN.	CONNECTOR/CONNECTION	POB	POINT OF BEGINNING
CONC.	CONCRETE	POC	POINT OF COMMENCEMENT
COR	CORNER	POT	POTABLE
CPB	CONDOMINIUM PLAT BOOK	PP	POWER POLE
C/T	CURB TIE	PRM	PERMANENT REFERENCE MONUMENT
CU.	COPPER	PROP.	PROPOSED
(D)	DEED DATA	PSM	PROFESSIONAL SURVEYOR & MAPPER
D.	DEEP/DRAIN	P/T	PAVEMENT TIE
DB	DEED BOOK	P.V.	PLUG VALVE
DBL.	DOUBLE	PVMT	PAVEMENT
DHW.	DESIGN HIGH WATER	R.	RADIUS/RISER/RELAY
DISCH.	DISCHARGE	RCP	REINFORCED CONCRETE PIPE
DN.	DOWN	REF.	REFERENCED
DRWY	DRIVEWAY	REINF.	REINFORCED/REINFORCING
E.W.	EACH WAY	REQ'D	REQUIRED
EA.	EACH	RESTR.	RESTRAINED
ECMP	ELLIPTICAL CORRUGATED METAL PIPE	RLS	REGISTERED LAND SURVEYOR
EL./ELEV.	ELEVATION	RW;R/W	RIGHT-OF-WAY
ELEC.	ELECTRICAL CONDUIT	SAN.	SANITARY
EP	EDGE OF PAVEMENT	SEC.	SECTION
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE	SGL	SINGLE
ETC.	AND SO FORTH	SHW	SEASONAL HIGH WATER
EXIST.	EXISTING	SIR	SET IRON ROD ½" LB 6113
EXP.	EXPANSION	SND	SET NAIL & DISC LB 6113
(F)	FIELD DATA	SPRK	SPRINKLER
FCM	FOUND CONCRETE MONUMENT	SQ.	SQUARE
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	SN.	SIGN
FF	FINISHED FLOOR	SR	STATE ROAD
FIR	FOUND IRON ROD	SSMH	SANITARY SEWER MANHOLE
FND	FOUND NAIL & DISC	S/T	SIDEWALK TIE
FOP	FOUND OPEN PIPE	STL.	STEEL
FPP	FOUND PINCHED PIPE	STY	STORY
FRRS	FOUND RAILROAD SPIKE	S/W; SWK	SIDEWALK
F/T	FENCE TIE	SYM.	SYMBOL
FT.	FOOT	TBM	TEMPORARY BENCH MARK
FTG.	FOOTING	TOB	TOP OF BANK
FXC	FOUND X-CUT	T.&B.	TOP & BOTTOM
GALV.	GALVANIZED	TEL.	TELEPHONE
GDRL	GUARDRAIL	TEMP.	TEMPORARY
GE	GRATE ELEVATION	THK	THICK
GEN	GENERATOR	TOS	TOE OF SLOPE
GI	GRATED INLET	TYP.	TYPICAL
GPM	GALLONS PER MINUTE	UG	UNDERGROUND GAS
GRTG.	GRATING	UP	UTILITY POLE
G.S.	GALVANIZED STEEL	UT	UNDERGROUND TELEPHONE
GR./GRD.	GRADE	VCP	VITRIFIED CLAY PIPE
GWP	GUY WIRE POLE	VERT.	VERTICAL
HDWALL	HEADWALL	W	WIDE FLANGE/WIDE/WATT
H.R.	HANDRAIL	W/	WITH
HWL	HIGH WATER LEVEL	WF	WOOD FENCE
IE	INVERT ELEVATION	W/L	WATER LINE
IN.	INCH	W.L.	WATER LEVEL
INV.	INVERT	W/M	WATER MAIN
IP	IRON PIPE	W.M.	WATER METER
IR	IRON ROD	W.P.	WEATHER PROOF
J.B.	JUNCTION BOX	W.S.	WALL SLEEVE/WATER STOP/WATER SERVICE
JT.	JOINT	W/T	WALL TIE
(L)	LEGAL DESCRIPTION DATA	WTR.	WATER
LB	LICENSED BUSINESS		
LG.	LONG		

LEGEND

- + 25.25 = POINT OF ELEVATION
- 25.2' = DIMENSION FROM BUILDING TO BOUNDARY / RIGHT-OF-WAY LINE
- BP = BACKFLOW PREVENTER
- = BOLLARD or POST
- CA = BOX, CABLE TELEVISION
- EB = BOX, ELECTRIC UTILITY
- = BOX, ELECTRIC UTILITY (TRANSFORMER)
- TB = BOX, TELEPHONE
- = DECORATIVE LIGHT POLE
- = ELECTRIC OUTLET
- = FIRE HYDRANT
- = FIRE HYDRANT, RECLAIMED
- = FLAGPOLE
- = FLARED END SECTION
- = GRATE INLET
- = GROUND LIGHT
- = GUY ANCHOR
- = LIGHT POLE, CONCRETE
- = LIGHT POLE, METAL
- = LIGHT POLE, WOOD
- MB = MAILBOX
- = MANHOLE, ELECTRIC
- = MANHOLE, GREASE TRAP
- = MANHOLE, SANITARY SEWER
- = MANHOLE, STORM SEWER
- = MANHOLE, TELEPHONE
- EM = METER, ELECTRIC
- GM = METER, GAS
- RM = METER, RECLAIMED WATER
- WM = METER, WATER
- = MITERED END SECTION
- MW = MONITORING WELL
- = PEDESTRIAN CROSSING SIGNAL
- = SANITARY CLEANOUT
- = SPRINKLER HEAD
- = TELEPHONE RISER
- = TRAFFIC SIGN
- TSB = TRAFFIC SIGNAL BOX
- = TRAFFIC SIGNAL POLE
- = UNDERGROUND CABLE TELEVISION MARKER
- UCWS = UNDERGROUND CABLE TELEVISION WARNING SIGN
- = UNDERGROUND ELECTRIC MARKER
- UEWS = UNDERGROUND ELECTRIC WARNING SIGN
- = UNDERGROUND FIBER OPTIC MARKER
- UFWS = UNDERGROUND FIBER OPTIC WARNING SIGN
- = UNDERGROUND FORCEMAIN MARKER
- UFWS = UNDERGROUND FORCEMAIN WARNING SIGN
- = UNDERGROUND GAS MARKER
- UGWS = UNDERGROUND GAS WARNING SIGN
- = UNDERGROUND RECLAIMED WATER MARKER
- URWS = UNDERGROUND RECLAIMED WATER WARNING SIGN
- = UNDERGROUND SANITARY SEWER MARKER
- USWS = UNDERGROUND SANITARY SEWER WARNING SIGN
- = UNDERGROUND TELEPHONE MARKER
- UTWS = UNDERGROUND TELEPHONE WARNING SIGN
- = UNDERGROUND WATER MARKER
- UWWS = UNDERGROUND WATER WARNING SIGN
- = UTILITY POLE, CONCRETE
- = UTILITY POLE, METAL
- = UTILITY POLE, WOOD
- UV = VALVE, UTILITY NOT DETERMINED
- GV = VALVE, GAS
- RV = VALVE, RECLAIMED WATER
- SV = VALVE, SANITARY
- WV = VALVE, WATER
- = WELL
- = CONCRETE
- = ASPHALT
- = OVERLAY EXIST. PAVEMENT
- = CONCRETE PAVERS
- = BRICK
- = DEMOLITION
- = TOP OF BANK
- = TOE OF SLOPE or CENTER LINE OF DITCH
- = 6' CHAIN LINK FENCE UNLESS OTHERWISE NOTED
- = OVERHEAD UTILITY LINES
- = STAKED SILT FENCE
- = FLOATING TURBITIY BARRIER

STORM CURB INLETS

LEGEND

EXISTING		PROPOSED
	PIPE 12" OR LARGER (ABOVE GROUND)	
	PIPE 12" OR LARGER (UNDERGROUND)	
	PIPE SMALLER THAN 12" (ABOVE GROUND)	
	PIPE SMALLER THAN 12" (UNDERGROUND)	
	GATE VALVE	
	BUTTERFLY VALVE	
	BALL VALVE	
	PLUG VALVE	
	REDUCER	
	MANHOLE	M.H.
C.B.	CATCH BASIN	C.B.
	TOP OR TOE OF BANK	
	PIPING, STRUCTURES OR EQUIPMENT TO BE REMOVED	
25	CONTOURS	26

FLOW ABBREVIATIONS

AL	ALUM SOLUTION
AB	AERATION BASIN
AD	AEROBIC DIGESTER
AX	ANOXIC BASIN
BA	BLOWER AIR
BP	BYPASS
BW	BACKWASH
CA	COMPRESSED AIR
CCC	CHLORINE CONTACT CHAMBER
CE	CHLORINATED EFFLUENT
CF	CLOTH FILTER
CLE	CLARIFIER EFFLUENT
CLG	CHLORINE GAS
CLS/CL2S	CHLORINE SOLUTION
D/DR	DRAIN
DAF	DISSOLVED AIR FLOTATION
DF	NEW CLOTH FILTER
DS	DEWATERED SLUDGE
EFF	EFFLUENT
EXP	EXPANSION
FBW	FILTER BACKWASH
FC	FINAL CLARIFIER
FE	FILTER EFFLUENT
FLE	FILTERED LAKE EFFLUENT
FLW	FLOCCULATED WATER
FM	FLOW METER
FW	FILTERED WATER
GBT	GRAVITY BELT THICKENER
GR	GRIT
HDW	HEADWORKS
INF	INFLUENT
IR	INTERNAL RECYCLE
HSBFP	HIGH SOLIDS BELT FITER PRESS
ML	MIXED LIQUOR
OF	OVERFLOW
P	POLYMER
PD	PLANT DRAIN
PDFM	PLANT DRAIN FORCE MAIN
PS	PUMP STATION
PW	POTABLE WATER
RAS	RETURNED ACTIVATED SLUDGE
RCW	RECLAIMED WATER
REJ	REJECT
RML	RECIRCULATED MIXED LIQUOR
RW	REUSE WATER
SAM	SAMPLE
SB	SPLITTER BOX
SC	SCUM
SDR	STORMWATER DRAINAGE
SL	SAMPLE LINE
SS	SANITARY SEWER
TS	THICKENED SLUDGE
WAS	WASTE ACTIVATED SLUDGE
WBW	WASTE BACKWASH WATER
WW	WASTEWATER

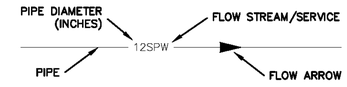
PIPING ABBREVIATIONS

ARV	AIR RELEASE VALVE
ABD	ABANDONED
BFV	BUTTERFLY VALVE
BV	BALL VALVE
CB	CATCH BASIN
CO	CLEANOUT
CORP	CORPORATION
CV	CHECK VALVE
D.I.	DUCTILE IRON
DIA	DIAMETER
D.I.P.	DUCTILE IRON PIPE
ELEC.	ELECTRICAL
EXIST.	EXISTING
FHA	FIRE HYDRANT ASSEMBLY
FL	FLANGED
GS	GALVANIZED STEEL
GV	GATE VALVE
HB	HOSE BIBB
HDPE	HIGH DENSITY POLYETHYLENE
MH	MANHOLE
MJ	MECHANICAL JOINT
PE	PLAIN END
PS	PUMP STATION
PV	PLUG VALVE
PVC	POLYVINYLCHLORIDE
RED.	REDUCER
SCH	SCHECULE
SDR.	DIAMETER RATIO
SHC.	SODIUM HYPOCHLORITE
SS.	STAINLESS STEEL
TBR	TO BE REMOVED
UE	UNDERGROUND ELECTRIC
VERT.	VERTICAL
WM	WATER METER

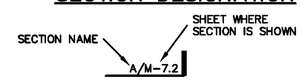
TREE LEGEND

- = BAY TREE
- = BOTTLE BRUSH TREE
- = CAMPHOR TREE
- = CEDAR
- = CHINABERRY TREE
- = CITRUS TREE
- = CYPRESS TREE
- = ELM TREE
- = EUCALYPTUS TREE
- = MAGNOLIA TREE
- = MAPLE TREE
- = MULBERRY TREE
- = OAK TREE
- = OTHER SPECIES
- = PALM TREE
- = PECAN TREE
- = PERSIMMON TREE
- = PINE TREE
- = SYCAMORE TREE
- = WAX MYRTLE TREE
- = WILLOW TREE

PIPE IDENTIFICATION



SECTION DESIGNATION



RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

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Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

ABBREVIATIONS AND LEGEND

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NONE
VERTICAL: NA

DRAWING NUMBER
G-0.3

STATUS: RECORD DRAWINGS
REVISION

5916.003

S:\1024\01-03\Tp-Reuse\Record_G-0.3.dwg, 6/6/2014 12:36:31 PM, Quin Shelton

RECORD DRAWING

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	8/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

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1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

SITE PLAN AND PROPOSED WORK LOCATIONS

DATE:	JUNE 2014
MCF PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

DRAWING NUMBER
G-0.4

STATUS: RECORD DRAWINGS
REVISION

5916.004

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NOTES

1. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION OR DEMOLITION ACTIVITIES, ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE AND REMAIN THROUGHOUT CONSTRUCTION.
2. CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES THROUGHOUT CONSTRUCTION.
3. CONTRACTOR SHALL PREPARE AND SUBMIT A STORM WATER POLLUTION PLAN (SWPPP) FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. APPROVAL DOES NOT OBSOLVE CONTRACTOR OF RESPONSIBILITY FOR THE IMPLEMENTATION AND COMPLIANCE OF THE SWPPP. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS ASSOCIATED WITH THE SWPPP.
4. SEE DWG NO. C-0.2.2 FOR DETAILS.
5. CARE SHALL BE EXERCISED TO PREVENT DISTURBANCE TO THE NATURAL VEGETATION IN AREAS NOT PROPOSED FOR IMMEDIATE CONSTRUCTION.
6. AS SOON AS PRACTICAL, ALL DRESSED SLOPES AND DISTURBED AREAS SHALL BE SODDED OR SEEDED AND MULCHED TO PREVENT EROSION.
7. CONTRACTOR SHALL PREPARE AND SUBMIT A DEWATERING PLAN SHOWING APPLICABLE BEST MANAGEMENT PRACTICES FOR REVIEW AND APPROVAL BY THE OWNER PRIOR TO ANY DEWATERING ACTIVITIES. APPROVAL DOES NOT OBSOLVE CONTRACTOR OF RESPONSIBILITY FOR DEWATERING ACTIVITIES.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS ASSOCIATED WITH DEWATERING ACTIVITIES.
9. DEWATERING WATER SHALL BE FILTERED AND TREATED WITH SILTATION SUMP AND/OR FILTER SOCKS OR OTHER FDEP APPROVED METHOD PRIOR TO DISCHARGE ONTO THE GROUND IN A MANNER IN WHICH THE WATER DOES NOT LEAVE THE PREMESIS OR CAUSE A NUISANSE TO PLANT OPERATIONS.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

McKIM&CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

SOIL EROSION AND SEDIMENTATION CONTROL PLAN

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

DRAWING NUMBER: G-0.5

STATUS: RECORD DRAWINGS
REVISION

5916.005

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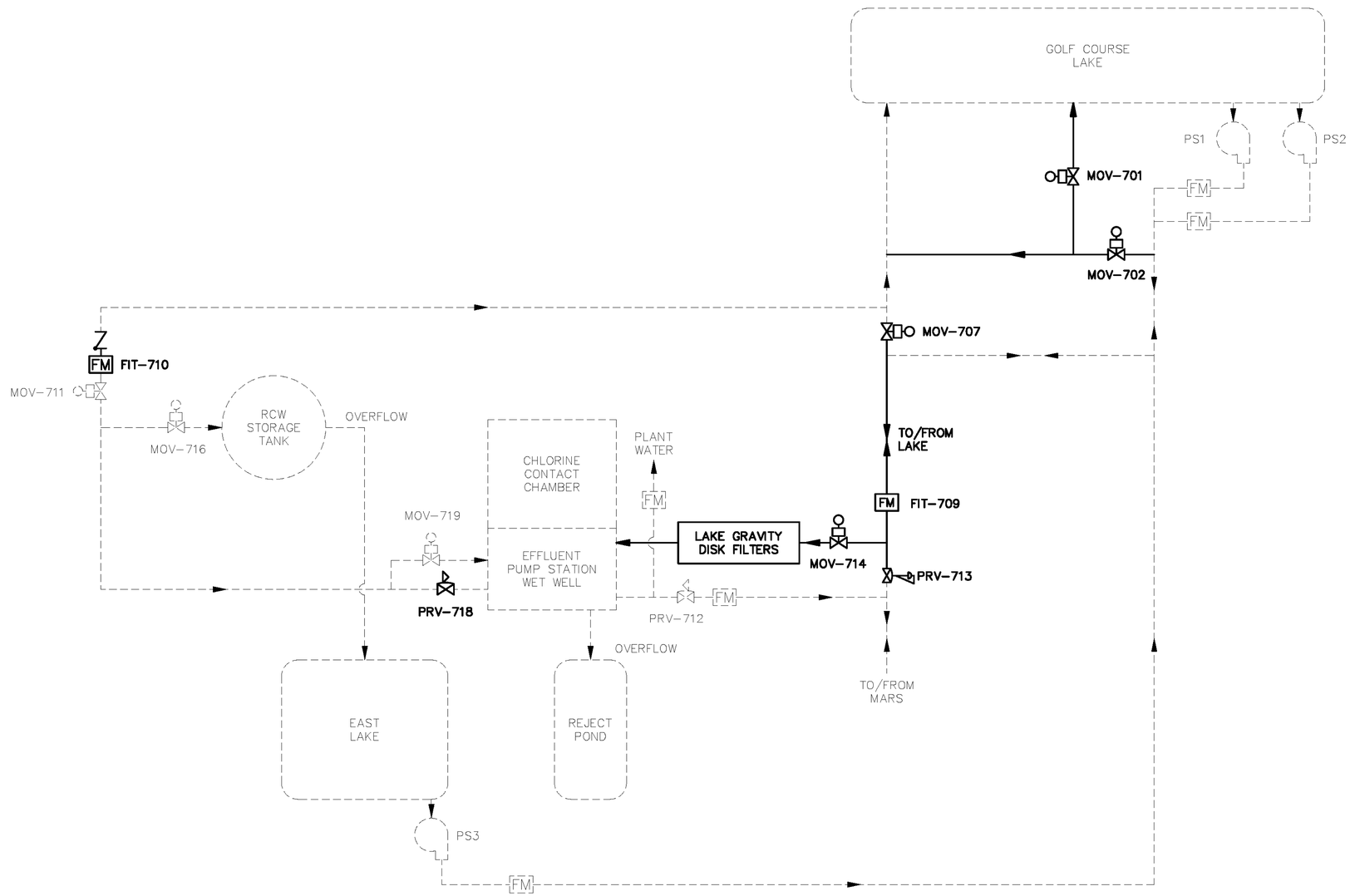
LEGEND

EXISTING		PROPOSED
----------	PIPELINE	————
——	CHECK VALVE	
——	MOTORIZED VALVE	
——	PRESSURE REGULATING VALVE	
	PUMP STATION	——
FM	FLOW METER	FM



RECORD DRAWING

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FORT MYERS, FL 33905
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DAVID C. WEHNER, P.E.
No. 59541

REV./NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

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No. 59541

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PROPOSED EFFLUENT IMPROVEMENTS SCHEMATIC

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NONE
VERTICAL: NA

DRAWING NUMBER
G-0.6

STATUS: RECORD DRAWINGS
REVISION

5916.006

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MAINTENANCE BUILDING

CHLORINATION/ CHEMICAL BUILDING

ABW FILTERS

FINAL CLARIFIER NO. 2

RAS/WAS PUMP STATION

FINAL CLARIFIER NO. 1

PLANT DRAIN PUMP STATION NO. 1

SLUDGE DEWATERING BUILDING

CHLORINE CONTACT CHAMBER NO. 2

CONTROL BUILDING

BLOWER BUILDING

CHLORINE CONTACT CHAMBER NO. 1

EFFLUENT PUMP STATION

ELECTRICAL BUILDING NO. 1

CONCRETE PAD

DAF PUMPS

SEE D-10.1

REMOVE 20" 90° BEND

CAP 12" DIP AND ABANDON IN PLACE

REMOVE 12" DIP

REMOVE 2" PW

SEE SHEET M-8.1 FOR CHEMICAL ROOM DEMOLITION

REMOVE 12" D.I.P. AND 12" FLOWMETER/CONTROL VALVE ASSEMBLY SEE DETAIL A ON THIS SHEET

REMOVE CONC.

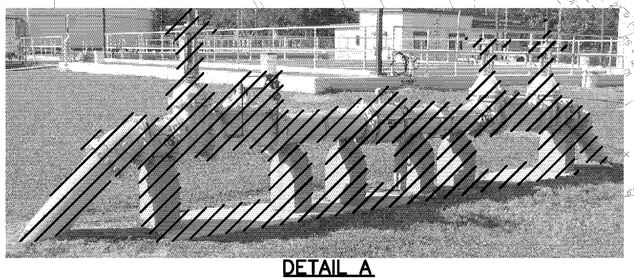
NORTH

20' 0 20' 40'

SCALE: 1"=20' (Horiz.)

MATCHLINE D-0.3

MATCHLINE D-0.2



DETAIL A

NOT TO SCALE

RECORD DRAWING

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MITCHELL & STARK CONSTRUCTION CO. FORT MYERS, FL 33905

DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

YARD PIPING DEMOLITION PLAN NO. 1

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	NJS
CHECKED	DCW
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
D-0.1

STATUS: RECORD DRAWINGS
REVISION

5916.007

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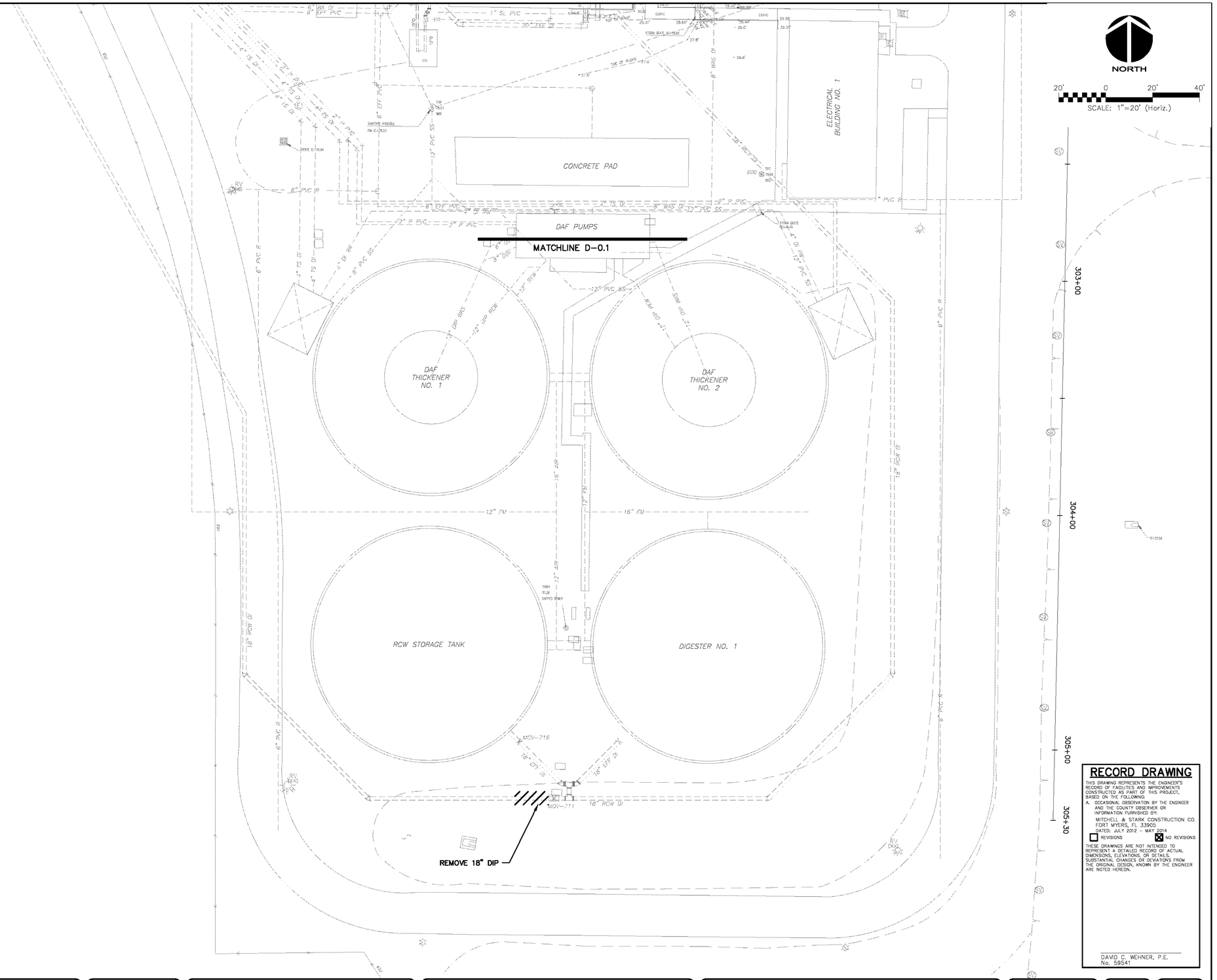

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MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

DAVID C. WEHNER, P.E.
No. 59541

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

YARD PIPING DEMOLITITION PLAN NO. 2

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	NJS
CHECKED	DCW
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
D-0.2

STATUS: RECORD DRAWINGS
REVISION

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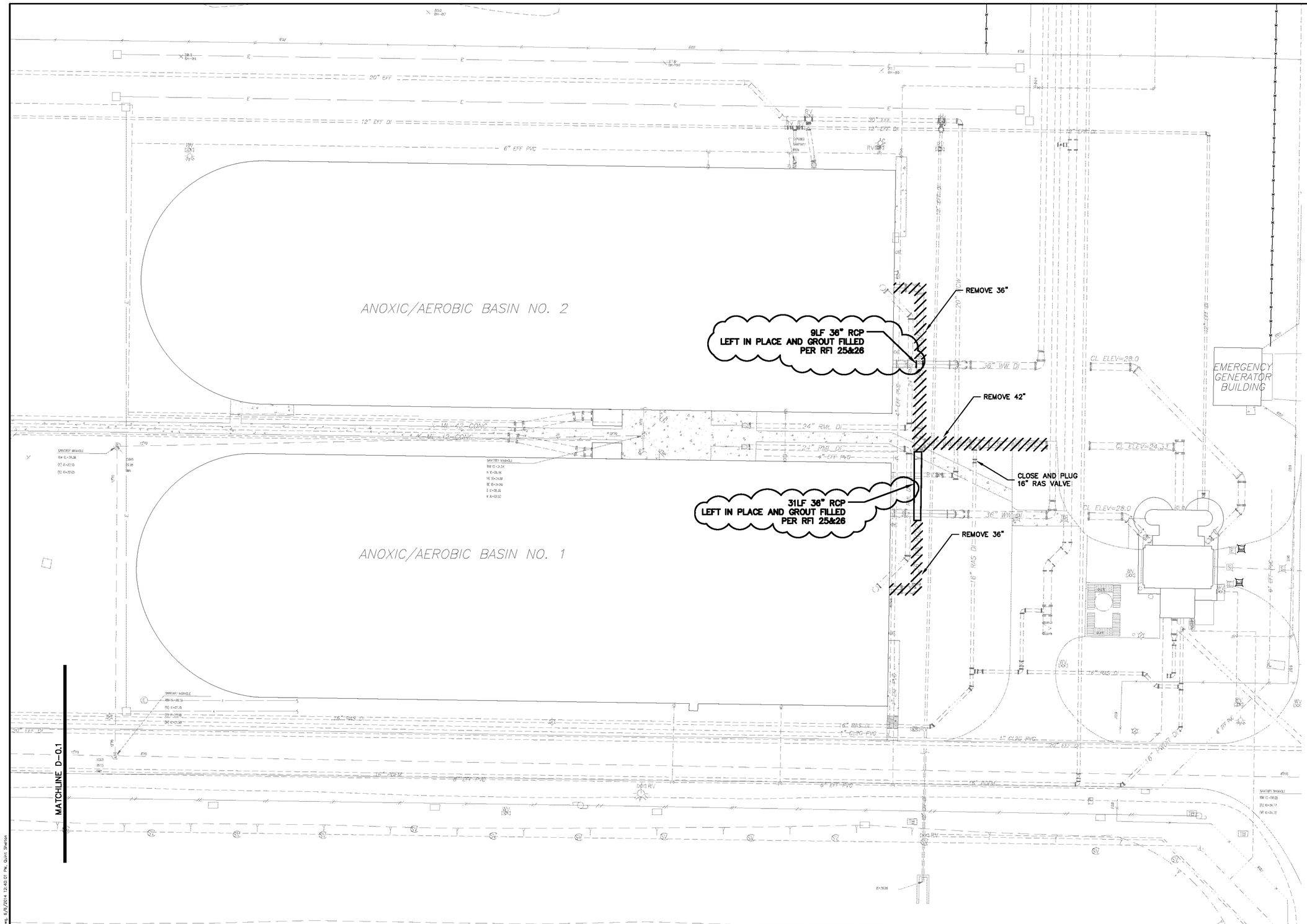
5916.008



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FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

YARD PIPING DEMOLITION PLAN NO. 3

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	NJS
CHECKED	DCW
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER: D-0.3

STATUS: RECORD DRAWINGS
REVISION

5916.009

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BACKGROUND IMAGE FROM RECORD DRAWINGS DATED 12/19/89 FOR "WASTEWATER FACILITIES IMPROVEMENTS"; MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT; NORTH SUB REGIONAL WASTEWATER TREATMENT FACILITY.

NORTH

AEROBIC BASIN #2

AEROBIC BASIN #1

EFFLUENT BOX

EFFLUENT BOX

R.M.L. PUMP #1

R.M.L. PUMP #2

R.M.L. PUMP #3

R.M.L. PUMP #4

12" WIDE TRENCH BOTTOM EL. 27.33

DRAIN SUMP BOTTOM EL. 25.83

42"x42" SLUICE GATE # 5 W/FLG. x FLG. x M.J., RND. WALL THIMBLE

48"x48" SLUICE GATE # 7 W/FLG x FLG. x M.J. RND. WALL THIMBLE

42"x42" SLUICE GATE # 6 W/ FLG. x FLG. x M.J., RND. WALL THIMBLE

42" R.J. x PE. 11 1/4° BEND
42" M.L., D.I.P., S.J.

42" R.J. x PE. 11 1/4° BEND
42" M.L., D.I.P., M.J.

2" R.W., BRASS, THD.
4"x2" R.J. TAPPED TEE
4" R.W., D.I.P., R.J.

2" R.W., BRASS, THD.

SLOPE SLAB @ 1/8"/FT.

12" D., D.I.P., S.J. @ 0.24% SLOPE

ALUM. STAIR # 5

48" M.L., D.I.P., P.E.

H.P. OF SLAB, EL. 31.64

48" M.J. x FLARE W/ WATERSTOP

8" D., D.I.P., R.J. FROM 20" R.M.L., INV. EL. 24.75

8" D., D.I.P., R.J. FROM 20" R.M.L. LINE., INV. EL. 24.75

INV. EL. 22.58

VALVE BOX W/ EXTENSION IN I/O M.H.

45°

8" D.I.P.S.J. INV. EL. 26.58

I/O-3.1

I/O-3.2

NOTE 1

NOTE 2

NOTE 3

NOTE 4

30" R.M.L., D.I.P., FLG.

30"x__" FLG. ECC. RED.

20" R.M.L., D.I.P., FLG.

20" FLG. RED. (SEE NOTE TYP.)

20" STL. F.A.C. HARNESS (TYP.)

1/2" R.W., P.V.C. (SCH. 80), S.W.

20" R.J. TEE

3" D., P.V.C. (SCH 40), S.J. @ 2.0% SLOPE

C.O.

20'-0"

20'-6"

2'-3"

1'-6" (TYP.)

2'-0"

4" R.W., D.I.P., R.J.

4"x2" R.J. TAPPED CROSS

1/2" TAP

30" STL. F.A.C. HARNESSED (TYP.)

4"x2" R.J. TAPPED CROSS

2" R.W., BRASS, THD.

4" R.W., P.V.C. (SCH. 40), S.W.

2" CL2 S. P.V.C. (SCH. 80), S.W. TO R.A.S. LINE

2" CL2 S. P.V.C. (SCH. 80), S.W.

100' O/E, RUBBER FLAPPER C.V. (TYP.)

SEE CL2 DETAIL ON SHEET D-3.2

2" CL2 S. P.V.C. (SCH. 80), S.W. TO HEADWORKS

PRESSURE GAUGE (TYP.)

20" R.M.L., D.I.P., FLG.

20" R.J. TEE

20" R.M.L., D.I.P., R.J.

15'-0" LG. WEIR GATE (MOTORIZED) (TYP.)

12" WIDE TRENCH

DRAIN SUMP BOTTOM EL. 25.83

8" P.V.

2'-0"

1'-6"

1'-6"

LOWER PLAN
NTS

FLOOR STAND EXTENSION ROD

(TYP. PUMP INTAKE VALVES)

CONC. PIPE SUPPORT

30" R.M.L., D.I.P., FLG.

7'-0"

1'-0"

NOTES:
1. REMOVE 30" PLUG VALVE, OPERATING STEM EXTENSION, STEM GUIDES AND FLOOR STAND.
2. REMOVE 30" FLANGE ADAPTER COUPLING, D.I. PIPE AND 30"x16" ECCENTRIC REDUCER.
3. REMOVE PUMP, MOTOR, AND STEEL BASE.
4. REMOVE EXISTING SUBMERSIBLE PUMP AND 6" DISCHARGE PIPE.
5. SEE SECTION 01030 OF THE TECHNICAL SPECIFICATIONS FOR FUTHER REQUIREMENTS REGARDING THE BASINS.

FLOOR STAND FOR 30" P.V.

FLOOR STAND SHALL BE REMOVED AND STEM OPENING SHALL BE FILLED SEE STRUCTURAL DETAILS SEE NOTE 1

FLOOR STAND EXTENSION ROD

PIPING FOR R.M.L. PUMPS #2 & #4

R.M.L. PUMP #3

NOTE 2

NOTE 3

℄ EL. 36.33

30" R.M.L., D.I.P., FLG.

30" FLG. x FLARE

12"

CONC. SUPPORT

NOTE

SECTION IS TYPICAL FOR R.M.L. PUMPS # 1, 2, 3 & 4, EXCEPT FOR SUCTION PIPING BEFORE 30" P.V. & AFTER 30" FLG. x FLARE - SEE PLAN FOR ADDITIONAL INFORMATION.

SECTION 1

RECORD DRAWING

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DAVID C. WEHNER, P.E.
No. 59541

2" S.L., BRASS, THD. (TYP.)
2" BRASS SAMPLING COCK (TYP.)
PRESSURE GAUGE
R.M.L. PUMP # 2
COUPLING GUARD (TYP.)
2" BOSS (TYP.)
℄ EL. 36.33
NOTE 3
20" FLG. PV (ON DISCHARGE LINE OF PUMP # 4 ONLY)
SLOPE SLAB @ 1/8"/FT
20" R.M.L., D.I.P., FLG.
20" R.M.L., D.I.P., FLG.
EL. 31.08
EL. 30.42
1/2" EXP. JT. MAT'L (TYP.)
℄ 28.08
20" R.M.L., D.I.P., R.J.
24" R.M.L., D.I.P., R.J.
℄ EL. 25.58
20"x8" P.E. x R.J. ECC. RED.
8" R.J. 45° BEND
8" D., D.I.P., R.J. TO M.H., INV. EL. 24.75

SECTION 3

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

BLAKE R. PETERS, P.E.
No. 64429

SEAL

McKIM & CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

INTERNAL RECYCLE DEMOLITION PLAN AND SECTIONS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NTS
VERTICAL: NTS

DRAWING NUMBER
D-3.1

STATUS: RECORD DRAWINGS
REVISION

5916.010

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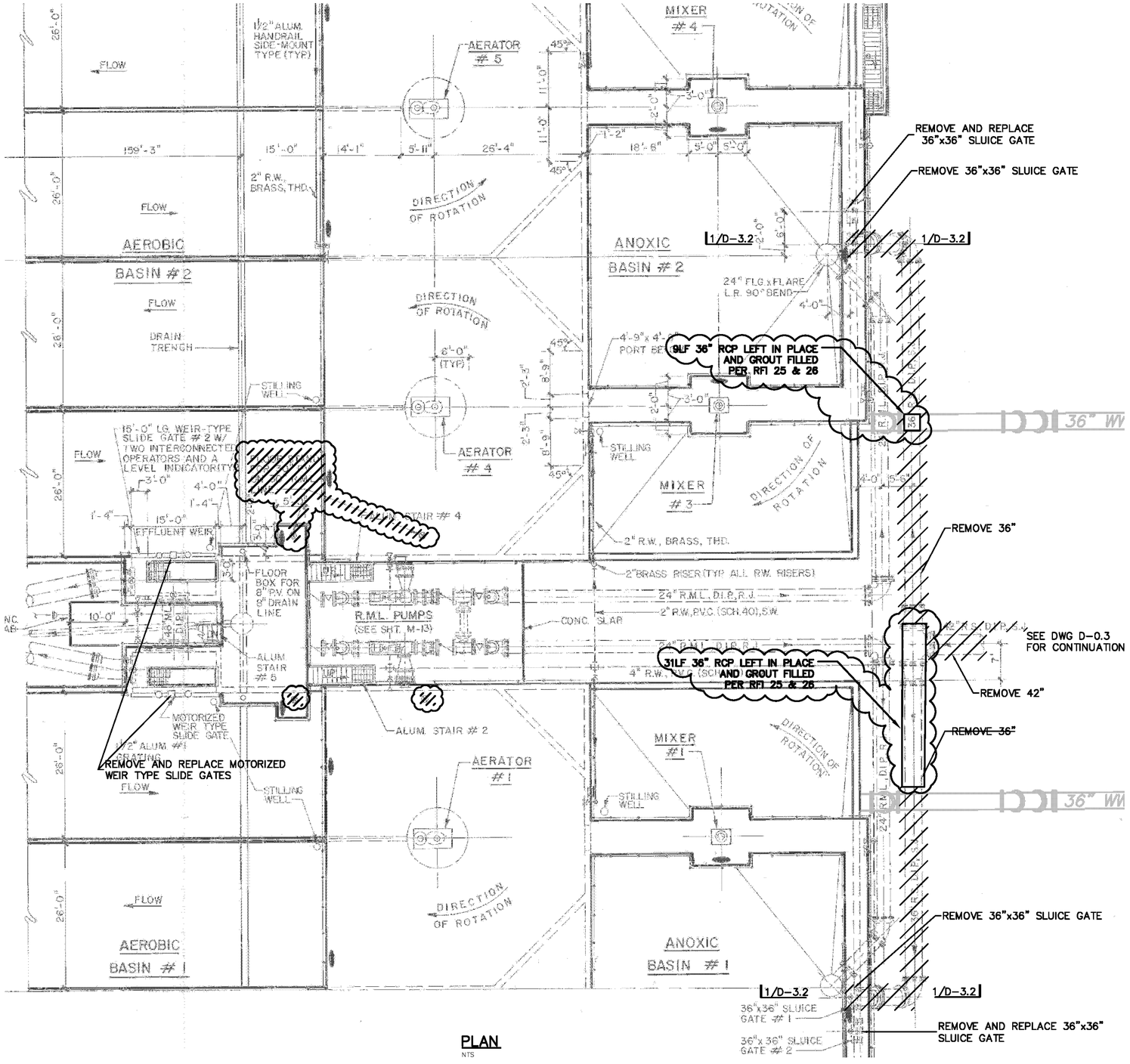
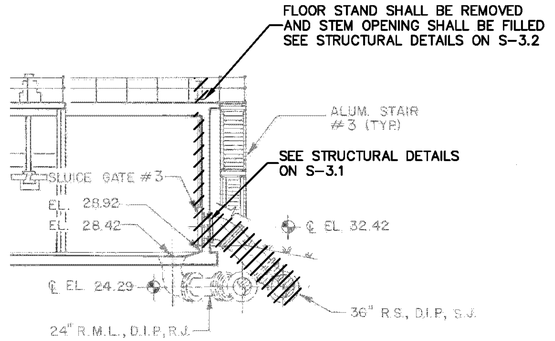
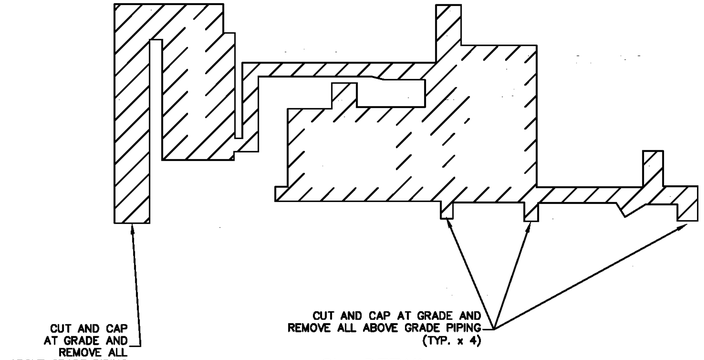


PLAN
NTS



SECTION 1
NTS



CL₂ DETAIL
NTS

REMOVE

BACKGROUND IMAGE FROM RECORD DRAWINGS DATED 12/19/89 FOR "WASTEWATER FACILITIES IMPROVEMENTS"; MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT; NORTH SUB REGIONAL WASTEWATER TREATMENT FACILITY.

RECORD DRAWING

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DATED: JULY 2012 – MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL
BLAKE R. PETERS, P.E.
No. 64429

SEAL

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

ANOXIC / AEROBIC BASINS NO. 1 AND NO. 2 DEMOLITION PLAN AND DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	QES
DESIGNED	MSL
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

DRAWING NUMBER
D-3.2

STATUS: RECORD DRAWINGS
REVISION

5916.011

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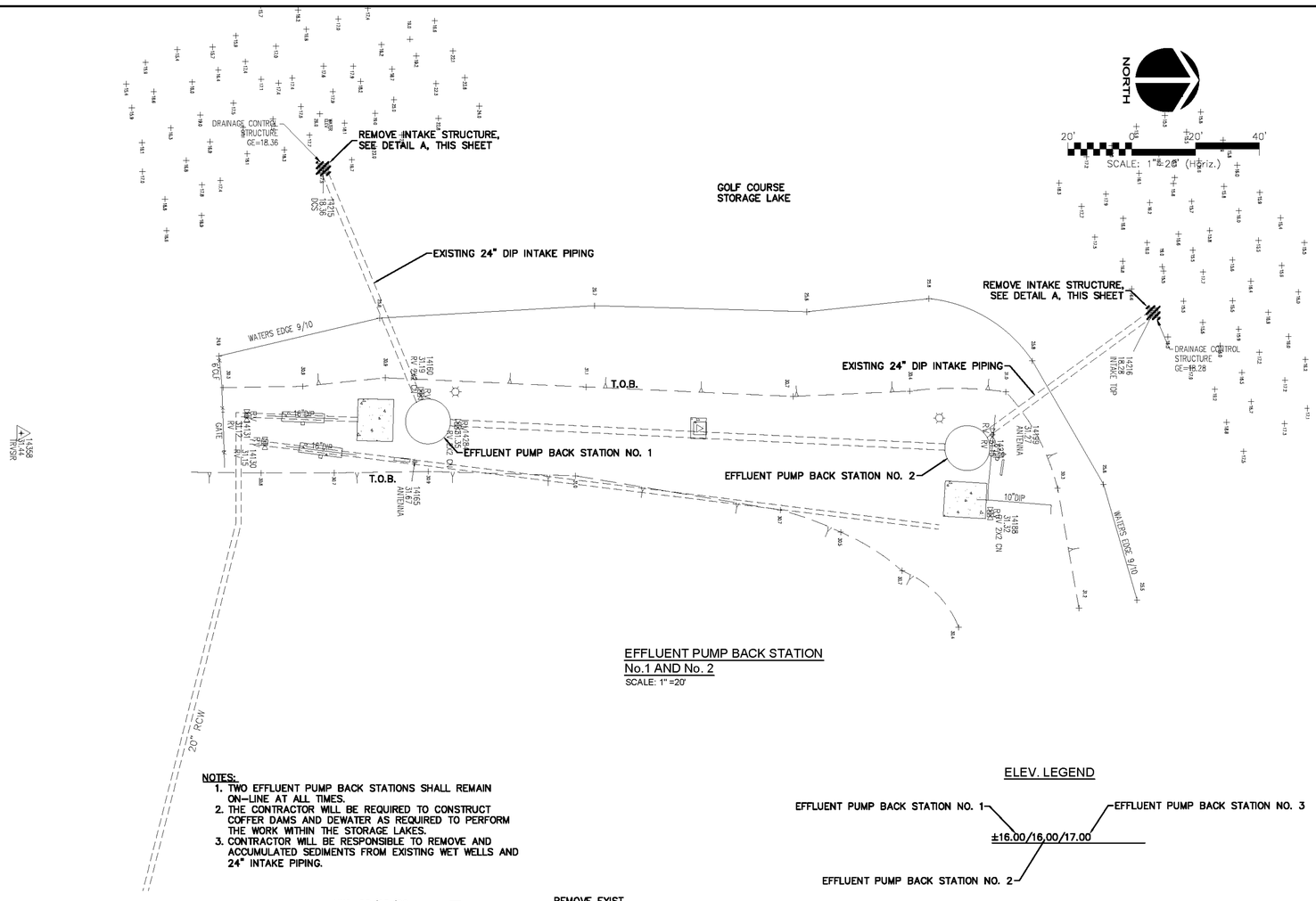


EFFLUENT PUMP BACK STATION
No.1 AND No. 2
SCALE: 1" =20'

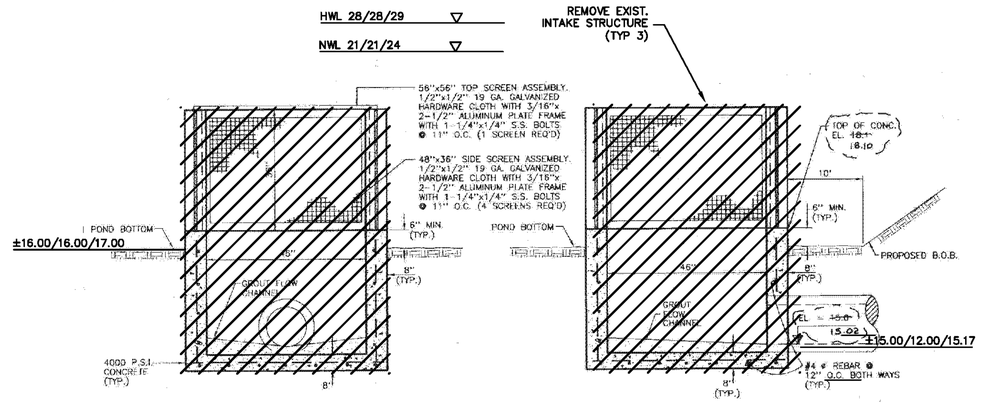
NOTES:
1. TWO EFFLUENT PUMP BACK STATIONS SHALL REMAIN ON-LINE AT ALL TIMES.
2. THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT COFFER DAMS AND DEWATER AS REQUIRED TO PERFORM THE WORK WITHIN THE STORAGE LAKES.
3. CONTRACTOR WILL BE RESPONSIBLE TO REMOVE AND ACCUMULATED SEDIMENTS FROM EXISTING WET WELLS AND 24" INTAKE PIPING.

ELEV. LEGEND

EFFLUENT PUMP BACK STATION NO. 1 — EFFLUENT PUMP BACK STATION NO. 3

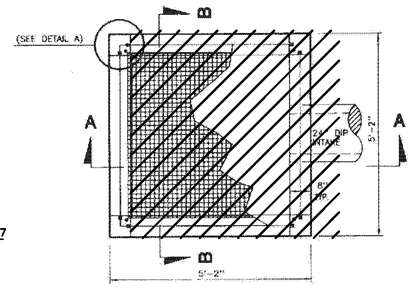
±16.00/16.00/17.00

EFFLUENT PUMP BACK STATION NO. 2



SECTION B-B

SECTION A-A



PLAN

DETAIL A
NTS

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:
A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014
☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

McKIM&CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

EFFLUENT PUMP BACK STATION NO. 1 AND NO. 2 DEMOLITION PLAN

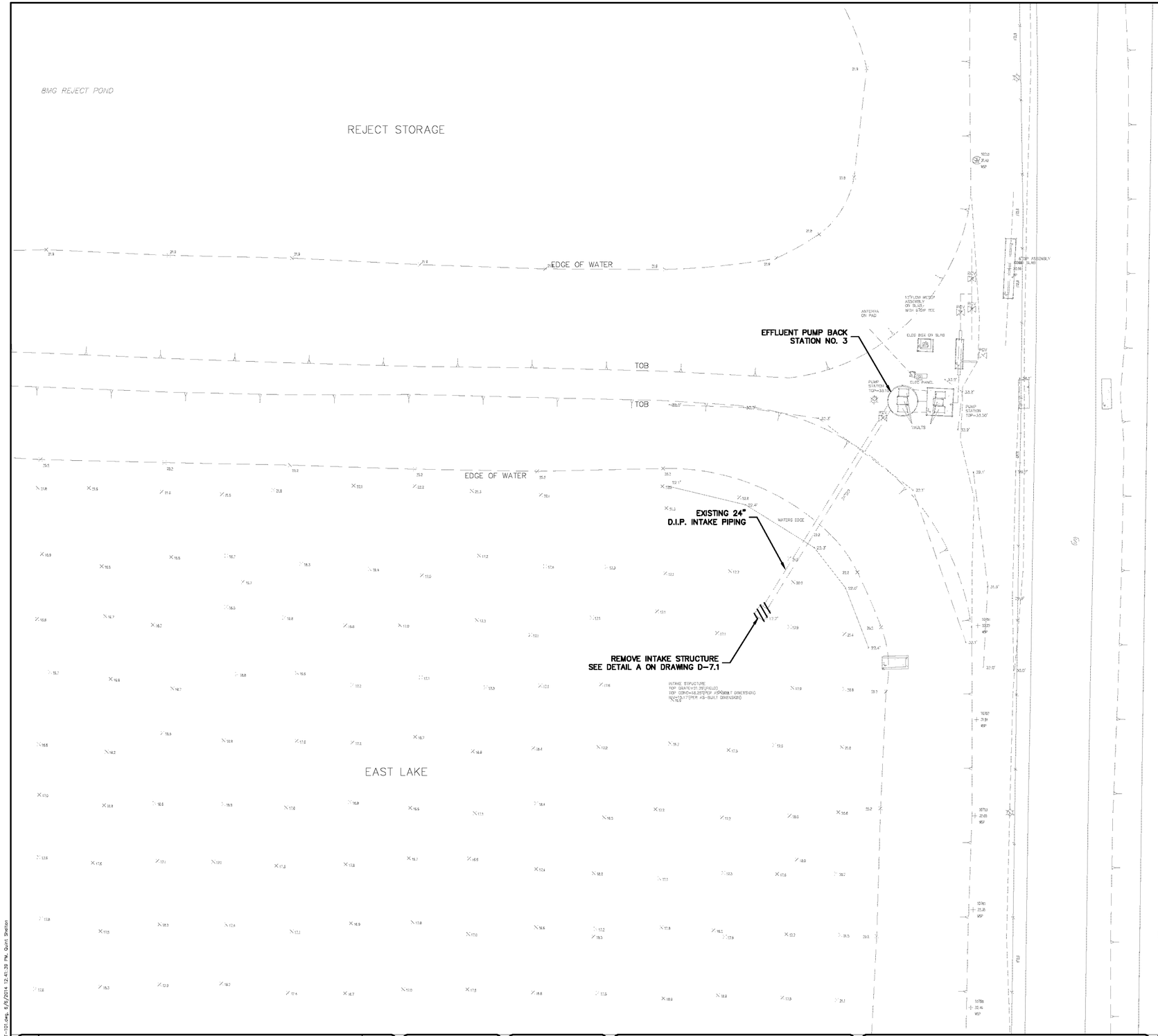
DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	NJS
CHECKED	DCW
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 10'
VERTICAL: NA

DRAWING NUMBER
D-7.1

STATUS: RECORD DRAWINGS
REVISION

5916.012



NORTH

20' 0 20' 40'

SCALE: 1"=20' (Horiz.)

NOTES:

1. TWO EFFLUENT PUMP BACK STATIONS SHALL REMAIN ON-LINE AT ALL TIMES.
2. THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT COFFER DAMS AND DEWATER AS REQUIRED TO PERFORM THE WORK WITHIN THE STORAGE LAKES.
3. CONTRACTOR WILL BE RESPONSIBLE TO REMOVE AND ACCUMULATED SEDIMENTS FROM EXISTING WET WELLS AND 24" INTAKE PIPING.

RECORD DRAWING

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FORT MYERS, FL 33905
DATED: JULY 2012 - MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

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Clearwater, Florida 33756
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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

EFFLUENT PUMP BACK STATION NO. 3 DEMOLITION PLAN

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER: D-7.2

STATUS: RECORD DRAWINGS
REVISION

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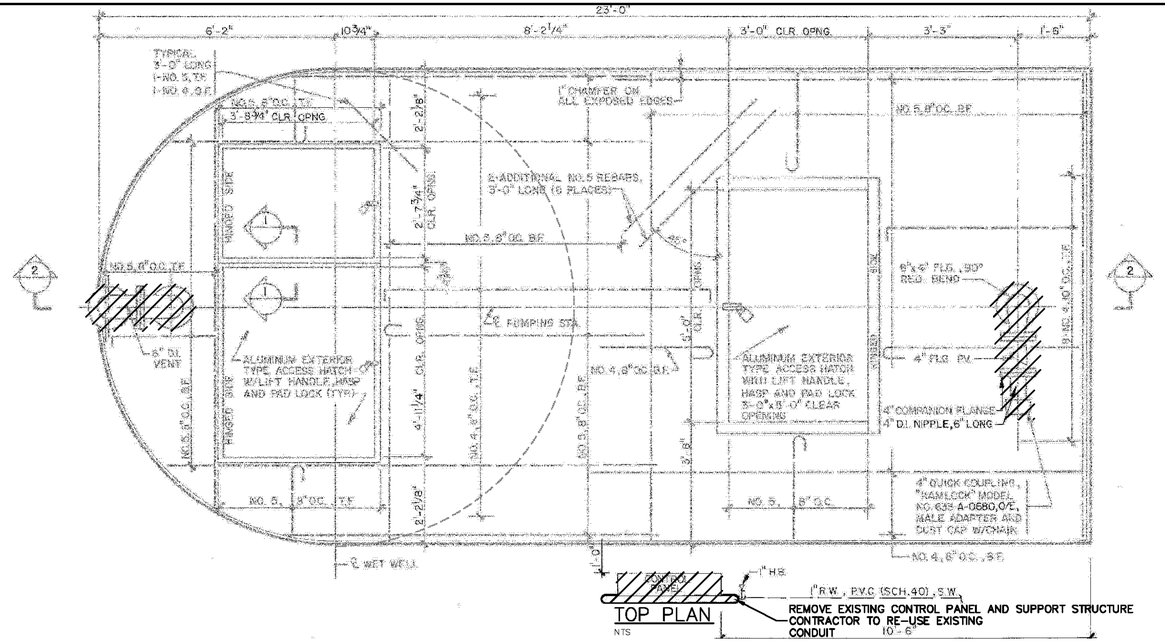
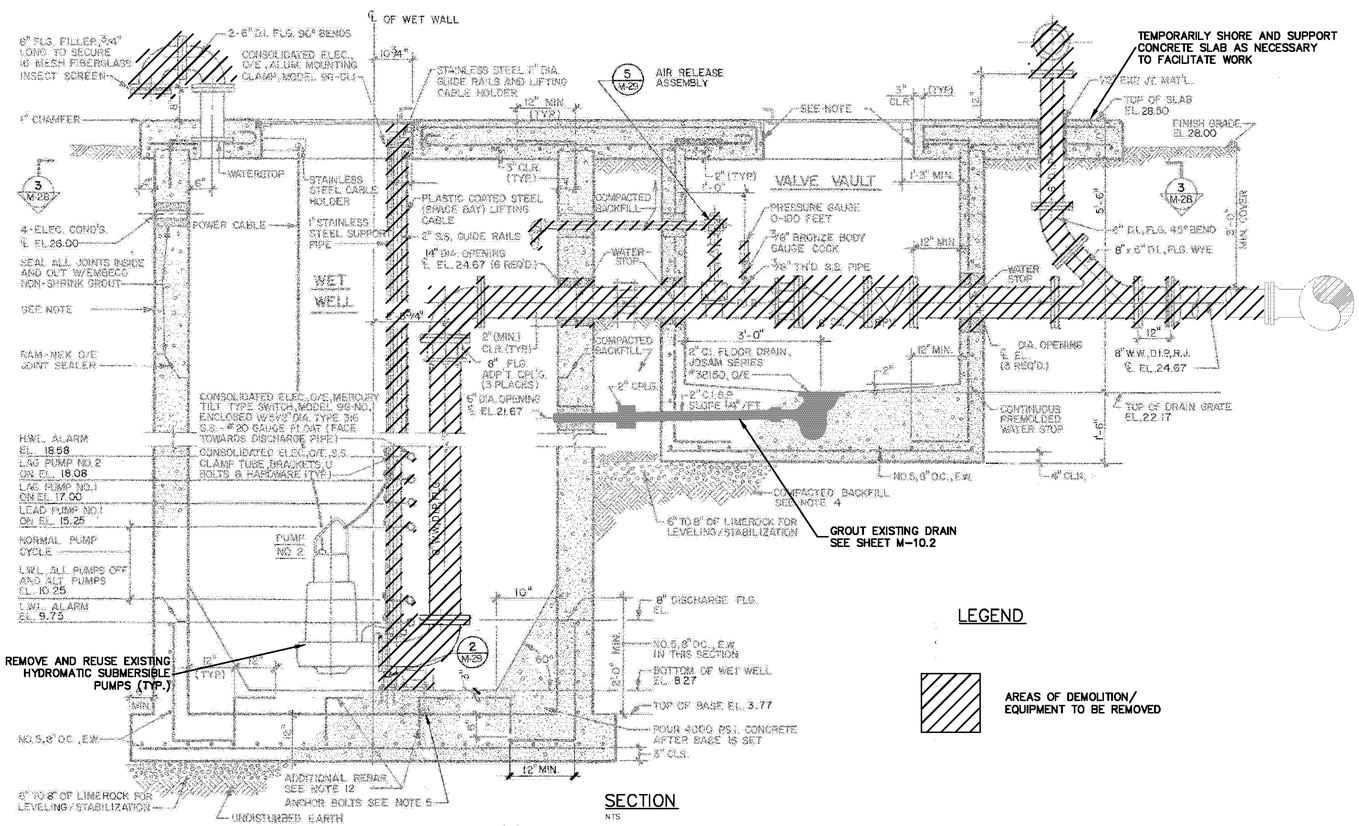
5916.013



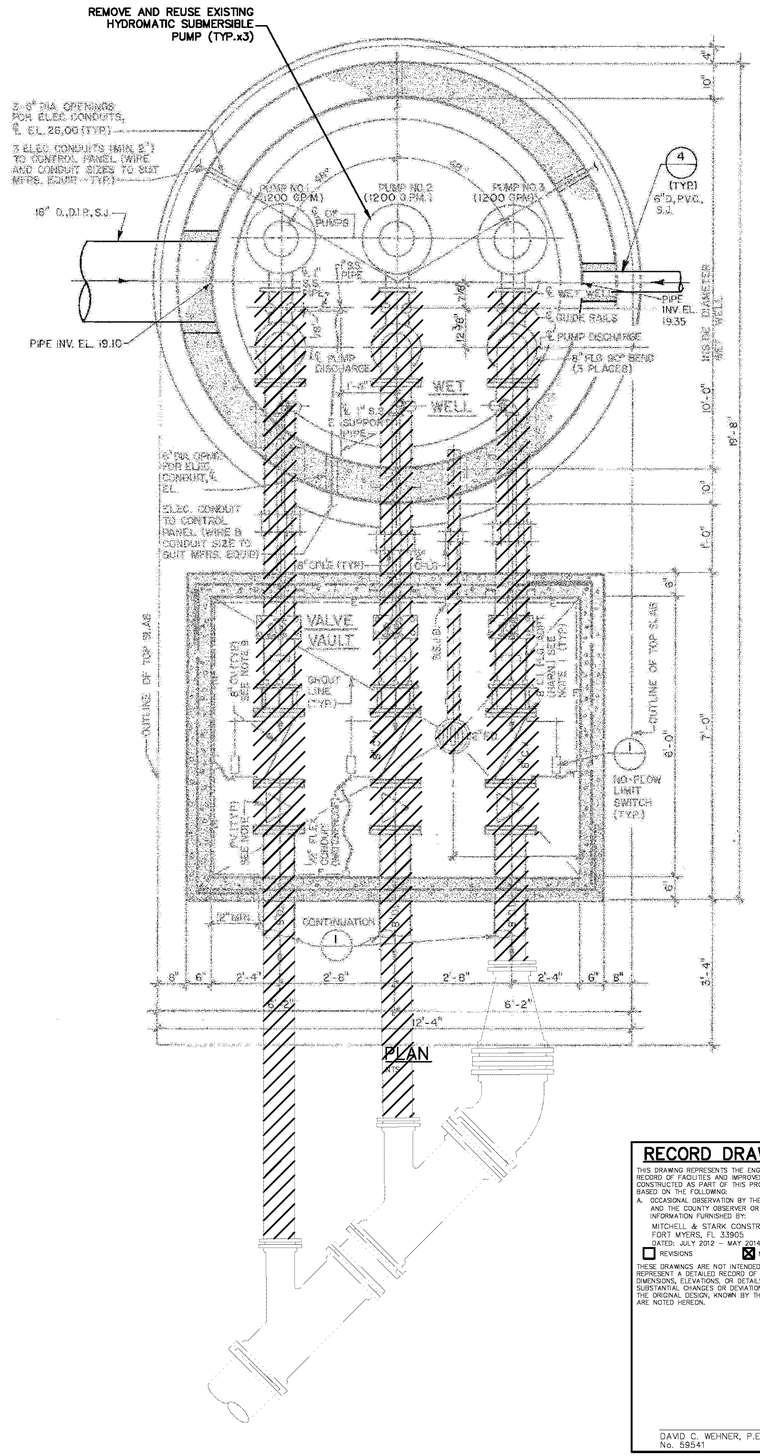
TOP PLAN
NTS



SECTION
NTS

LEGEND

AREAS OF DEMOLITION/ EQUIPMENT TO BE REMOVED



PLAN
NTS

RECORD DRAWING

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FORT MYERS, FL 33905
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☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REVNO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL
BLAKE R. PETERS, P.E.
No. 64429

SEAL

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PLANT DRAIN PUMP STATION
DEMOLITION PLAN AND SECTION

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NTS
VERTICAL: NTS

DRAWING NUMBER
D-10.1

STATUS: RECORD DRAWINGS
REVISION

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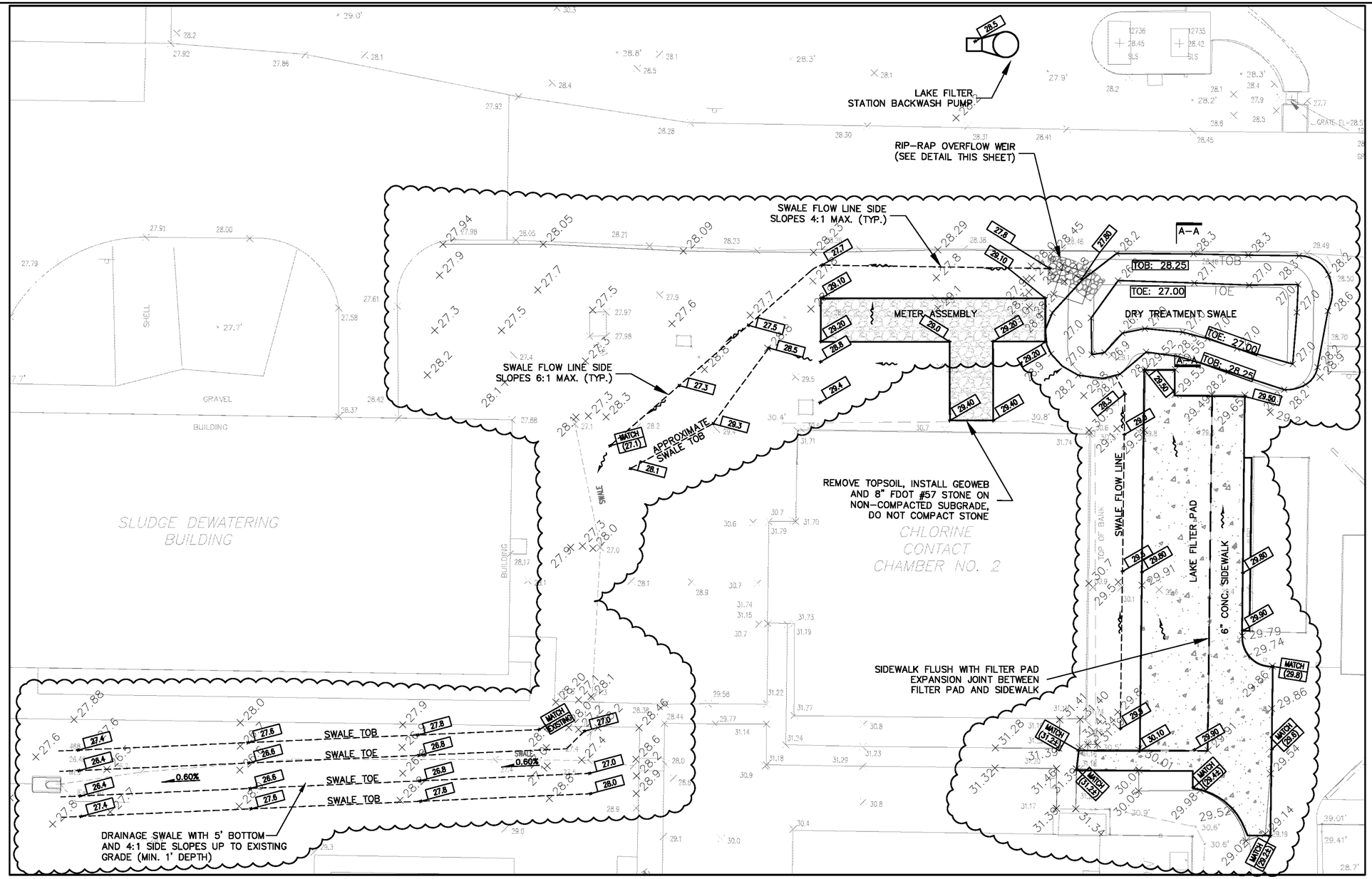
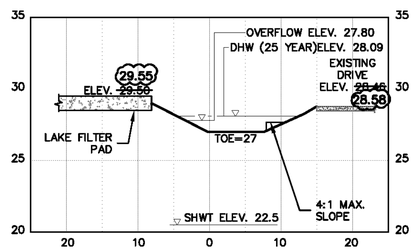
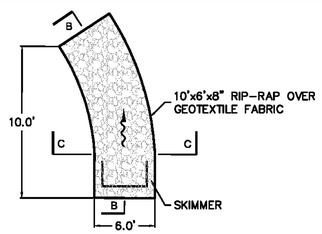
5916.014

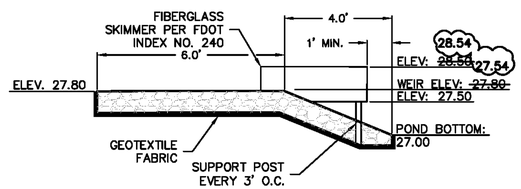




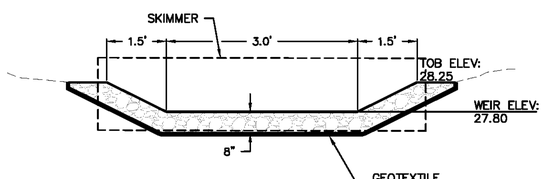
SECTION A-A (TYPICAL POND SECTION)
SCALE: VERT. 1" = 5' HOR. 1" = 10'



OVERFLOW PLAN
NTS



SECTION B-B
OVERFLOW PROFILE
NTS



SECTION C-C
OVERFLOW SECTION
NTS

NOTES:

1. "RIP-RAP" IS PER FDOT SPECIFICATION SECTION 530.2.2.2.
2. GEOTEXTILE FABROC IS PER D-3 IN FDOT INDEX #199.

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DAVID C. WEHNER, P.E.
No. 59541

REVNO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

TRAVIS N. TERPSTRA, P.E.
No. 71412

SEAL

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

GRADING AND DRAINAGE PLAN

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	QES
DESIGNED	–
CHECKED	–
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

DRAWING NUMBER
C-0.1.1

STATUS: RECORD DRAWINGS
REVISION

5916.015

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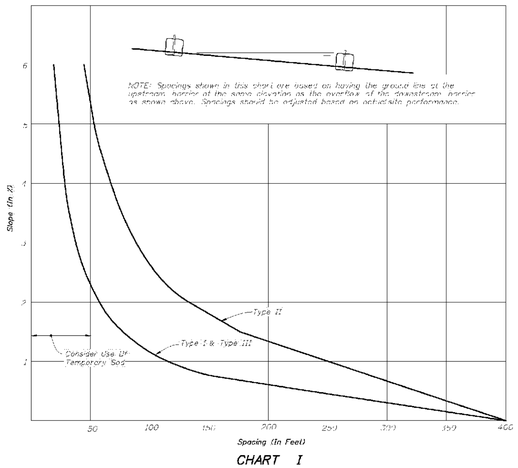
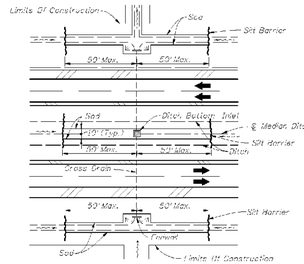


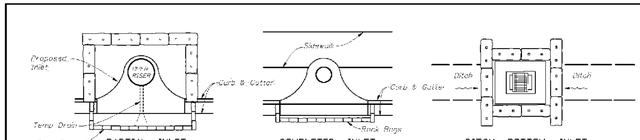
CHART I

RECOMMENDED SPACING FOR SYNTHETIC BALES OR BALE TYPE BARRIERS AND TYPE III SILT FENCE

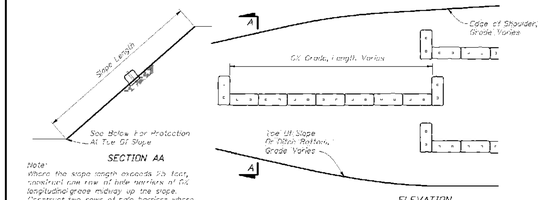


DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

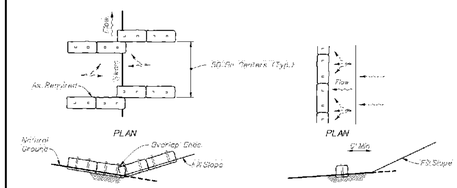
2008 FDOT Design Standards	Last Revision 07/01/07	Sheet No. 1 of 3
TEMPORARY EROSION AND SEDIMENT CONTROL		Index No. 102



PROTECTION AROUND INLETS OR SIMILAR STRUCTURES

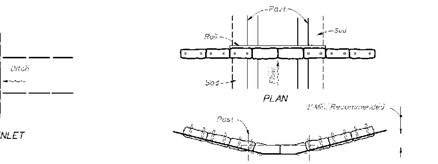


ALONG FILL SLOPE

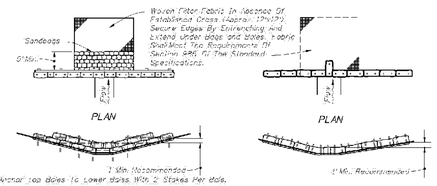


AT TOE OF SLOPE

BARRIERS FOR FILL SLOPES



SYNTHETIC BALES OR BALE TYPE BARRIERS FOR PAVED DITCHES

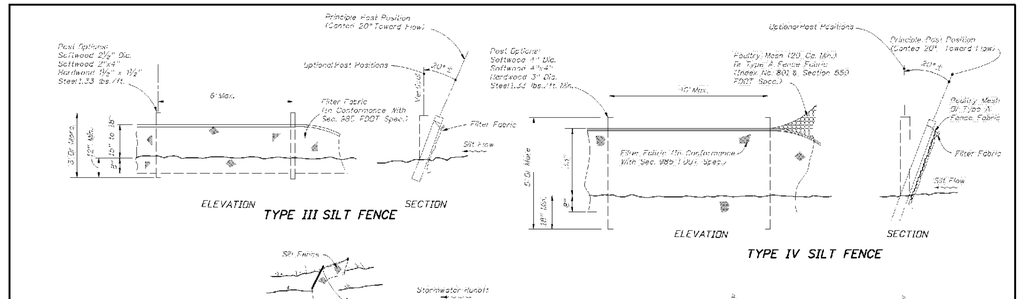


SYNTHETIC BALES OR BALE TYPE BARRIERS FOR UNPAVED DITCHES

NOTES FOR SYNTHETIC BALES OR BALE TYPE BARRIERS

1. Type I and II Synthetic Barrier should be placed in accordance with Detail 1, Sheet 1.
2. Bales shall be trenched 3" to 4" and anchored with 2-1" x 2" for 1" dia. x 4' wood stakes. Stakes of other materials or strength may be used if approved by the Engineer. Stakes other than wood shall be removed upon completion of the project.
3. Rods and posts shall be 2" x 4" wood. Other materials providing equivalent strength may be used if approved by the Engineer.
4. Adjacent bales shall be butted firmly together.
5. Where used in conjunction with silt fence, bales shall be placed on the upstream side of the fence.
6. Bales to be paid for under the contract unit price for Synthetic Bales, LF. The unit price shall include the cost of filter fabric for type I and II barriers. Sandbags shall be paid for under the unit price for Sandbagging, CY. Rock bags to be paid for under the contract unit price for Rock Bags, EA.

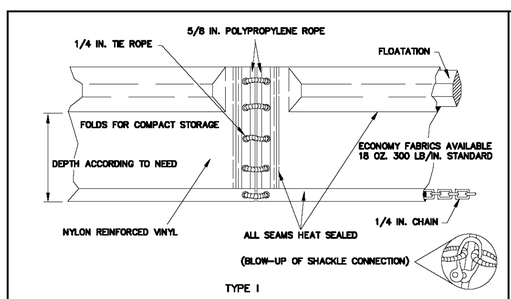
2008 FDOT Design Standards	Last Revision 07/01/07	Sheet No. 2 of 3
TEMPORARY EROSION AND SEDIMENT CONTROL		Index No. 102

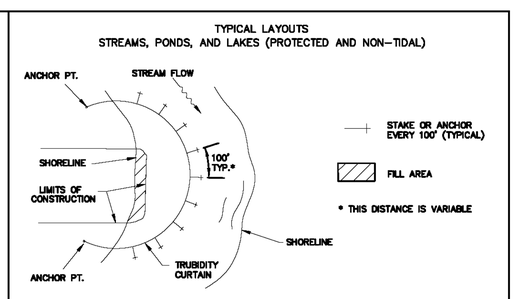


NOTES FOR SILT FENCES

1. Type III Silt Fence to be used at inlet locations. Where used in ditches, the spacing for Type III Silt Fence shall be in accordance with Detail 1, Sheet 1.
2. Type IV Silt Fence to be used where large sediment loads are anticipated. Suggested use is where flow is 1/2 cfs or greater and length of slope exceeds 75 feet. Avoid use where the deposited water may back into trenchlines or off the right of way.
3. Do not construct silt fences across permanent flowing watercourses. Silt fences are to be at upland locations and turbidity barriers used at permanent bodies of water.
4. Where used as slope protection, Silt Fence is to be constructed on the longitudinal grade to avoid channelling runoff along the length of the fence.
5. Silt Fence to be paid for under the contract unit price for Staked Silt Fence, LF.

2008 FDOT Design Standards	Last Revision 07/01/05	Sheet No. 3 of 3
TEMPORARY EROSION AND SEDIMENT CONTROL		Index No. 102





RECORD DRAWING

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FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

McKIM&CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

CIVIL DETAILS NO. 1

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

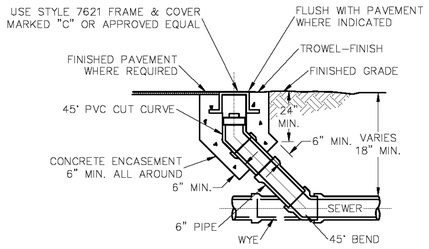
SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-0.2.1

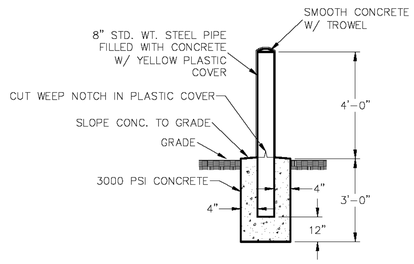
STATUS: RECORD DRAWINGS
REVISION

5916.016

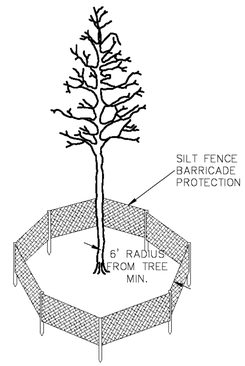
S:\1024\01\03\10-Reuse\Revised_C-0.2.1-C-1.01.dwg, 6/6/2014 12:42:46 PM, Burt Shelton



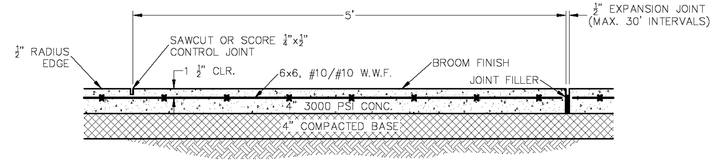
CLEANOUT DETAIL
NOT TO SCALE



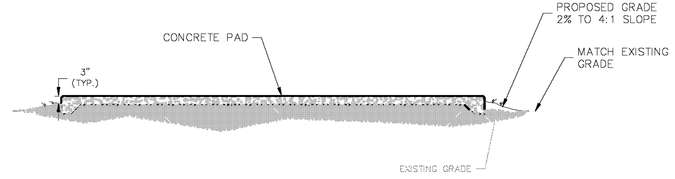
BOLLARD DETAIL
NOT TO SCALE



TREE PROTECTION DETAIL
NOT TO SCALE



TYPICAL SIDEWALK DETAIL
NOT TO SCALE



TYPICAL PAD GRADING DETAIL
NOT TO SCALE

RECORD DRAWING

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FORT MYERS, FL 33905
DATED: JULY 2012 - MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

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Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

CIVIL DETAILS NO. 2

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-0.2.2

STATUS: RECORD DRAWINGS
REVISION

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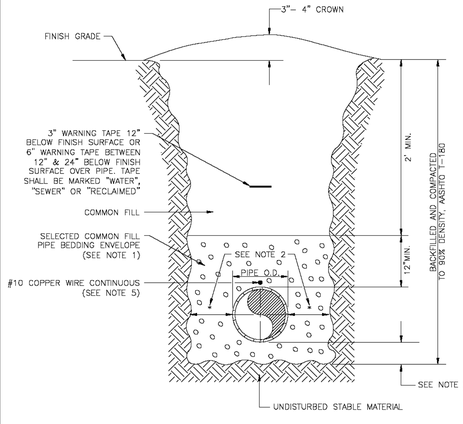
5916.017

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
WRT/KE	03/11

MAY 10, 2011
DATE OF APPROVAL

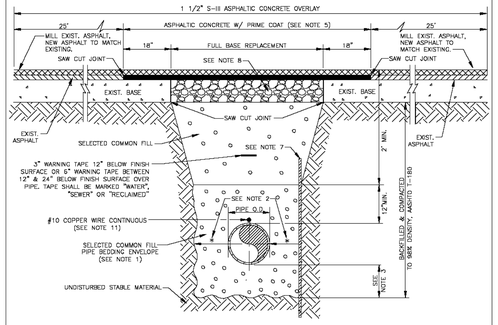
TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING

UG-11

PAGE 111

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. ASPHALTIC CONCRETE STRUCTURE COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF 1 1/4 INCH, WHICHEVER IS GREATER.
6. MILL 25' BACK FROM TRENCH SAW CUT. ADJUST MILLING PER INDIVIDUAL SITE TO NOT IMPACT BASE. BUTT JOINT TO EXIST ASPHALT. FINAL OVERLAY LIMITS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT. FINAL OVERLAY TO MATCH EXISTING WITH NO DISCERNABLE "BUMP" AT JOINT. MILLING LIMITS THAT IMPACT INTERSECTION SHALL BE ADDRESSED ON A CASE BY CASE BASIS AND APPROVED BY MANATEE COUNTY.
7. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
8. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
9. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
10. RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.
11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
12. NOTES 5. THRU 10. ARE MINIMUM REQUIREMENTS FOR A TRENCH IN A ROAD. REFER TO LATEST EDITION OF MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
WRT/KE	03/11

MAY 10, 2011
DATE OF APPROVAL

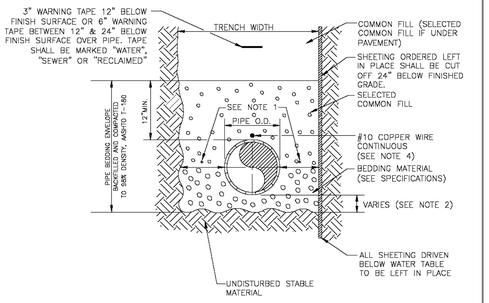
TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING

UG-12

PAGE 112

NOTES:

1. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
2. TYPICALLY 4" TO 6".
3. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/BR	11/10

MAY 10, 2011
DATE OF APPROVAL

TRENCH WITH TYPE A-2 PIPE BEDDING

UG-15

PAGE 115

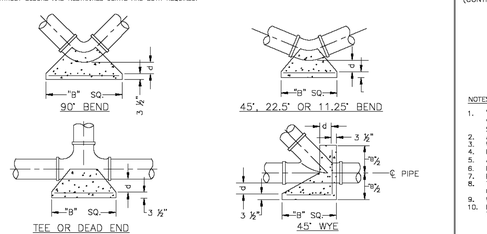
THRUST BLOCK DIMENSIONS B ft. x d inches												
PIPE SIZE (IN.)	90°BEND		45°BEND		22.5°BEND		11.25°BEND		DEAD END & TEE		45° WYE	
	B	d	B	d	B	d	B	d	B	d	B	d
4	1.5	3 ½	1.1	3 ½	0.8	3 ½	0.6	3 ½	1.3	3 ½	1.1	3 ½
6	2.2	5 ¼	1.6	3 ¾	1.2	3 ½	0.8	3 ½	1.9	4 ½	1.6	3 ¾
8	2.9	7	2.1	5	1.5	3 ¾	1.1	3 ½	2.4	5 ¾	2.0	4 ¾
10	3.5	8 ½	2.6	6 ¼	1.9	4 ½	1.3	3 ½	3.0	7 ¼	2.5	6
12	4.2	10	3.1	7 ½	2.2	5 ¼	1.6	3 ¾	3.5	8 ¼	3.0	7 ¼
14	4.9	11 ¾	3.6	8 ¾	2.6	6 ¼	1.8	4 ¼	4.1	9 ¾	3.4	8 ¼
16	5.5	13 ¼	4.1	9 ¾	2.9	7	2.1	5	4.7	11 ¼	3.9	9 ¼
18	6.2	15	4.6	11	3.3	8	2.3	5 ½	5.2	12 ½	4.4	10 ½
20	6.9	16 ½	5.0	12	3.6	8 ¾	2.6	6 ¼	5.8	14	4.9	11 ¾
24	8.2	19 ¾	6.0	14 ¼	4.3	10 ¼	3.1	7 ½	6.9	16 ½	5.8	14
30	10.1	24 ¼	7.5	18	5.3	12 ¾	3.8	9	8.5	20 ½	7.2	17 ¼
36	12.1	29	8.9	21 ¼	6.4	15 ¼	4.5	10 ¾	10.2	24 ½	8.6	20 ¾

REINFORCEMENT MAT SCHEDULE

FOR DIM. "B" BETWEEN 5.75' & 12.5' USE #4 @ 8" EACH WAY
FOR DIM. "B" LESS THAN 5.75' USE #3 @ 8" EACH WAY

NOTES:

1. ALL THRUST BLOCKS SHALL BE CAST IN PLACE. FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
2. THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF, CONCRETE STRENGTH f_c =3000 PSI, REINFORCEMENT f_y =60.0 KSI. THRUST BLOCK SHALL BE CAST AGAINST FIRM UNDISTURBED SOIL.
3. FOR LARGER "B" DIMENSIONS IT IS NECESSARY TO CHECK THAT PIPE IS SUFFICIENTLY DEEP TO ALLOW 15" MIN. SOIL COVER OVER TOP EDGE OF THRUST BLOCK.
4. RESTRAINED JOINTS MAY BE USED IN LIEU OF THRUST BLOCKS TO SAVE SPACE. THRUST BLOCKS SHALL BE USED IN SITUATIONS WHERE THRUST BLOCKS AND RESTRAINED JOINTS ARE BOTH REQUIRED.



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

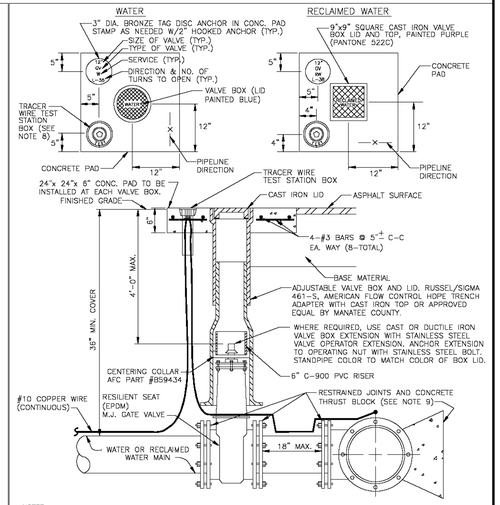
REV.BY	DATE
CLB/BR	11/10

MAY 10, 2011
DATE OF APPROVAL

CONCRETE THRUST BLOCKS

UG-7

PAGE 107



NOTES:

1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC WITH "RWV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
3. WATER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. FOR VALVES 16" AND LARGER, USE BUTTERFLY VALVES.
7. PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
8. TRACER WIRE TEST STATION BOX IS NOT REQUIRED IN VALVE BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 200 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTER OR FIRE HYDRANT THAT HAS A TRACER WIRE BOX.
9. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
10. BINGHAM & TAYLOR P3200N7G FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE P525RD CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

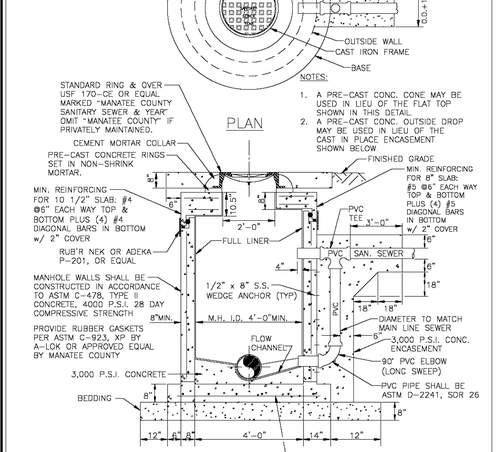
REV.BY	DATE
CLB/KE	11/10

MAY 10, 2011
DATE OF APPROVAL

GATE VALVE, BOX, LID AND TAG

UW-2

PAGE 120



NOTES:

1. A PRE-CAST CONC. CONE MAY BE USED IN LIEU OF THE FLAT TOP SHOWN IN THIS DETAIL.
2. A PRE-CAST CONC. OUTSIDE DROP MAY BE USED IN LIEU OF THE CAST IN PLACE ENCASEMENT SHOWN BELOW

1. THIS IS AN INTERCEPT MANHOLE AND MUST BE LINED WITH AN APPROVED LINER.
2. DROP MANHOLES ARE REQUIRED WHEN THE VERTICAL DISTANCE BETWEEN THE LOWEST EXISTING MANHOLE INVERT AND THE HIGHEST PIPE INVERT IS 2'-0" OR GREATER.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/KE	11/10

MAY 10, 2011
DATE OF APPROVAL

GRAVITY SEWER STANDARD DROP CONNECTION

US-6

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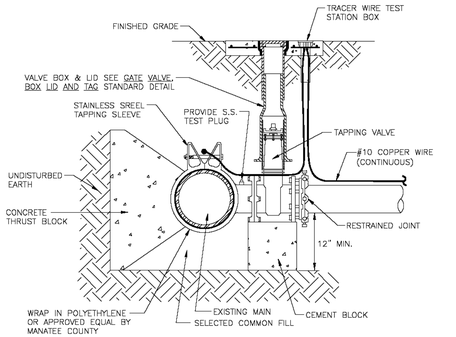


ELEVATION

NOTES:

1. PRIOR TO TAPPING, CONTRACTOR TO DEMONSTRATE 60 MINUTE HYDROSTATIC TEST OF THE TAPPING SLEEVE AND VALVE WITH NO LOSS OF 180 PSI PRESSURE FOR WATER AND RECLAIMED WATER OR 150 PSI FOR FORCE MAIN.
2. ALL FITTINGS TO BE WRAPPED WITH 20 MIL VISQUEEN AT THRUST BLOCK.
3. ALL TAPS ON CONCRETE WATER MAINS AND LARGER THAN 12" ARE TO BE MADE BY A MANATEE COUNTY APPROVED TAPPING COMPANY. ALL MATERIALS TO BE SUPPLIED BY THE CONTRACTOR.
4. ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS GREATER) FROM A JOINT OR FITTING.
5. CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
6. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
7. TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

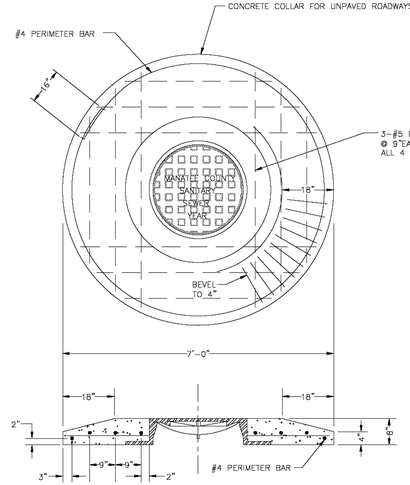
REV.BY	DATE
CLB/KE	11/10

MAY 10, 2011
DATE OF APPROVAL

TAPPING SLEEVE AND VALVE

UW-4

PAGE 122



NOTES:

1. OMIT "MANATEE COUNTY" IF PRIVATELY MAINTAINED.
2. PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE 1, AND CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 P.S.I.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

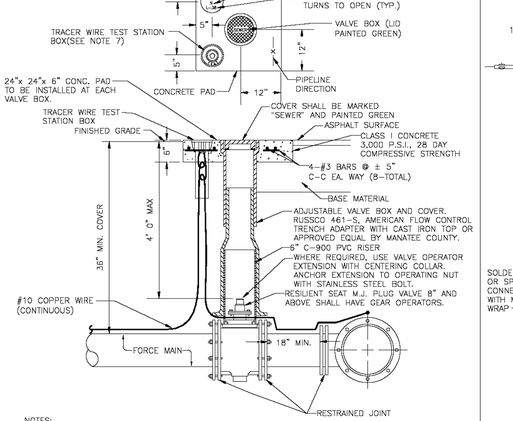
REV.BY	DATE
CLB/BR	11/10

MAY 10, 2011
DATE OF APPROVAL

MANHOLE COVER & CONCRETE COLLAR FOR UNPAVED ROADWAYS

US-11

PAGE 151



NOTES:

1. "SV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A GREEN DISC WITH "SV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (FT.) FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS ESTABLISHED IN THE FIELD.
3. SEWER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. PLUG VALVES SHALL NOT BE USED AS A TAPPING VALVE. WHERE AN EXISTING FORCE MAIN IS TO BE TAPPED, USE A TAPPING GATE VALVE PER THE TAPPING SLEEVE AND VALVE DETAIL.
7. TEST BOX TO BE BINGHAM & TAYLOR P200N7G OR EQUAL FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR UNDER VEHICLE TRAFFIC, USE P525RD CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

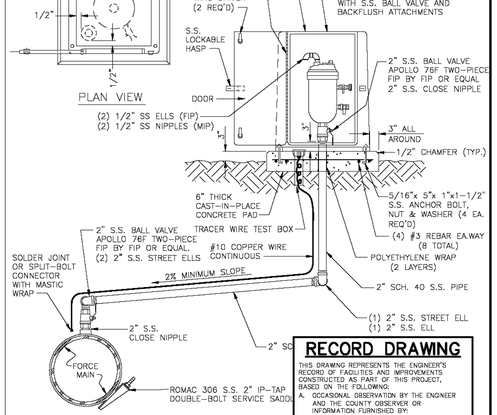
REV.BY	DATE
CLB/DOM	11/10

MAY 10, 2011
DATE OF APPROVAL

PLUG VALVE, BOX, COVER AND TAG

US-12

PAGE 152



NOTES:

1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS, ALONG 4" AND LARGER FORCE MAINS.
2. FORCE MAIN VERTICAL ALIGNMENT TO BE DESIGNED SUCH AIR RELEASE VALVES ARE INSTALLED.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLES
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
5. VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT
6. AIR RELEASE VALVES TO BE IN BELOW-GRADE INSTALLATI MAY BE ABOVE-GROUND ONLY WHERE APPROVED AND SI
7. CONCRETE PAD SHALL BE TYPE I CONCRETE W/ 3,000 P

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REV.BY	DATE
CLB/KE	11/10

MAY 10, 2011
DATE OF APPROVAL

ABOVE-G RELEASE FOR FO

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

THESE DRAWINGS ARE NOT INTENDED TO REPRESENT A DETAILED RECORD OF ACTUAL DIMENSIONS, ELEVATIONS, OR DETAILS. SUBSTANTIAL CHANGES OR DEVIATIONS FROM THE ORIGINAL DESIGN, KNOWN BY THE ENGINEER ARE NOTED HEREIN.

DAVID C. WEHNER, P.E.
No. 59541

REVISIONS		
REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

McKIM&CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

CIVIL DETAILS NO. 3

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
C-0.2.3

STATUS: RECORD DRAWINGS
REVISION

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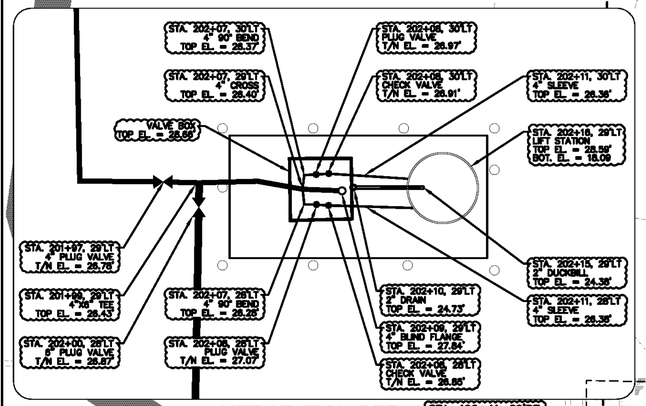
SUE TABLE						
VVH#	PIPE SIZE	MATERIAL	DESC.	GRND ELEV.	COVER	TOP OF UTIL. ELEV.
1	36"	DI	FW	28.04	3.18'	24.86
2	12"	PVC	EFF	28.08	3.13'	24.95
3	24"Wx14"D	ROUGH POUR CONCRETE	ELECT DUCT	28.09	2.26'	25.83
4	36"	DI	FW	28.22	3.83'	24.39
5	20"	DI	EFF	28.07	4.66'	23.41
6	8"	PVC	EFF	28.41	2.98'	25.43
7	24"Wx14"D	ROUGH POUR CONCRETE	ELECT DUCT	28.71	2.36'	26.35
8	(4)2"	PVC	FO	29.30	2.54'	26.76
9	(3) 2", 1"	PVC	FO, UNKNOWN	29.63	2.06'	27.57



LIFT STATION DETAIL
SCALE: 1" = 5'

SWING TIE REFERENCE POINTS			
	POINT	NORTHING	EASTING
STA. 200+00	REF1	1181778.19	501278.57
	REF2	1181772.78	501221.57
STA. 204+00	REF3	1181807.08	501662.41
	REF4	1181775.38	501681.32

VALVE TYPE	MANUFACTURER
PLUG VALVE (PV)	DEZURIK
BUTTERFLY VALVE (BFV)	DEZURIK
PRESSURE REGULATING VALVE (PRV)	BERMAD
CHECK VALVE (CV)	APCO

NOTES:
1. PROVIDE FLOWABLE FILL BETWEEN 30" EFF AND EXIST. 36" EFF AND 20" EFF
2. ALL BURIED PIPE, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.

NORTH

SCALE: 1"=20' (Horiz.)

RECORD DRAWING

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MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☒ REVISIONS ☐ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REVISIONS		
REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

SEAL.
DAVID C. WEHNER, P.E.
No. 59541

SEAL.

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

YARD PIPING PLAN NO. 1

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	NJS
CHECKED	DCW
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER: C-0.4.1

STATUS: RECORD DRAWINGS
REVISION

5916.019

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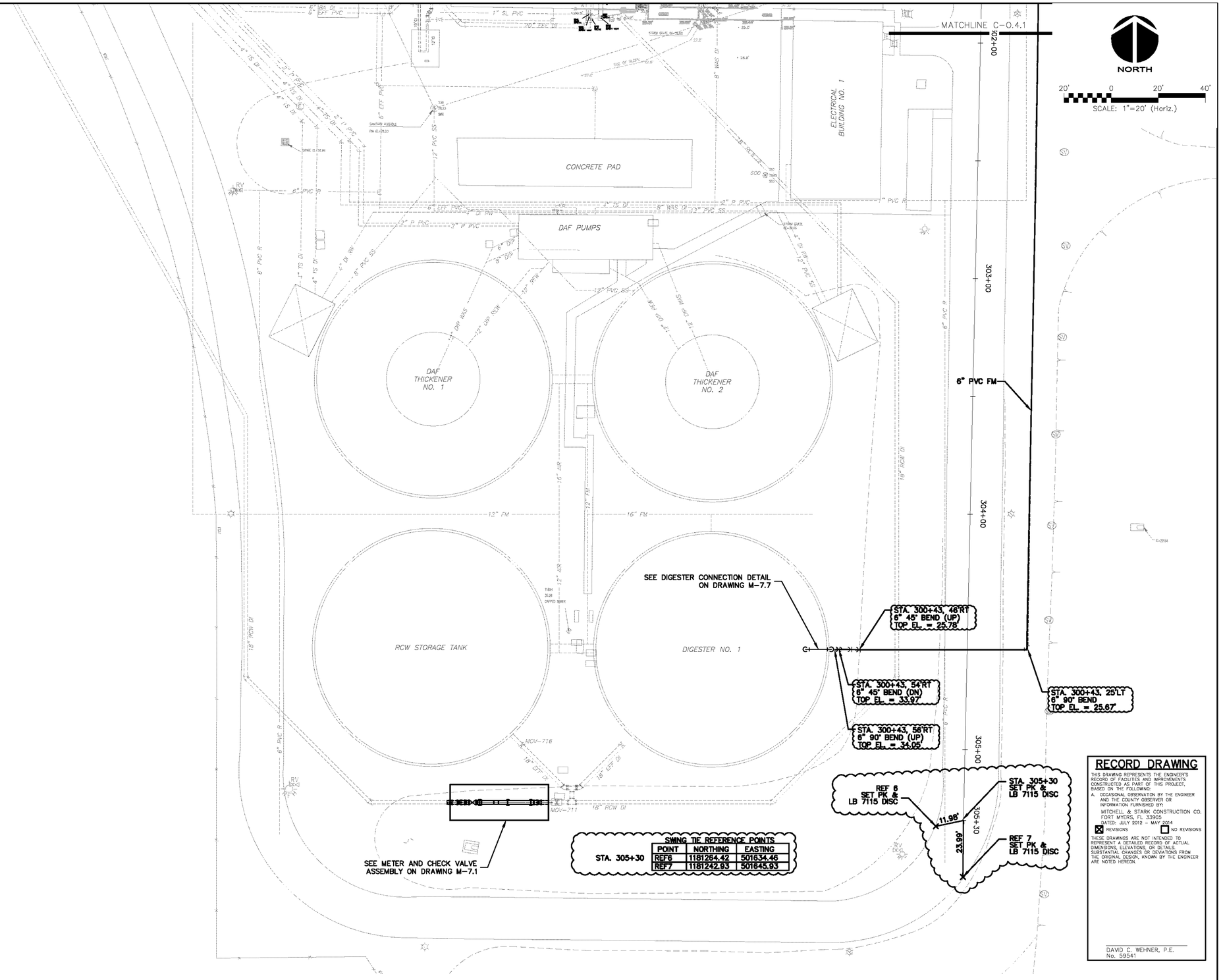

NOTE:
ALL BURIED PIPE, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☒ REVISIONS ☐ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REVNO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

YARD PIPING PLAN NO. 2

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	NJS
CHECKED	DCW
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-0.4.2

STATUS: RECORD DRAWINGS
REVISION

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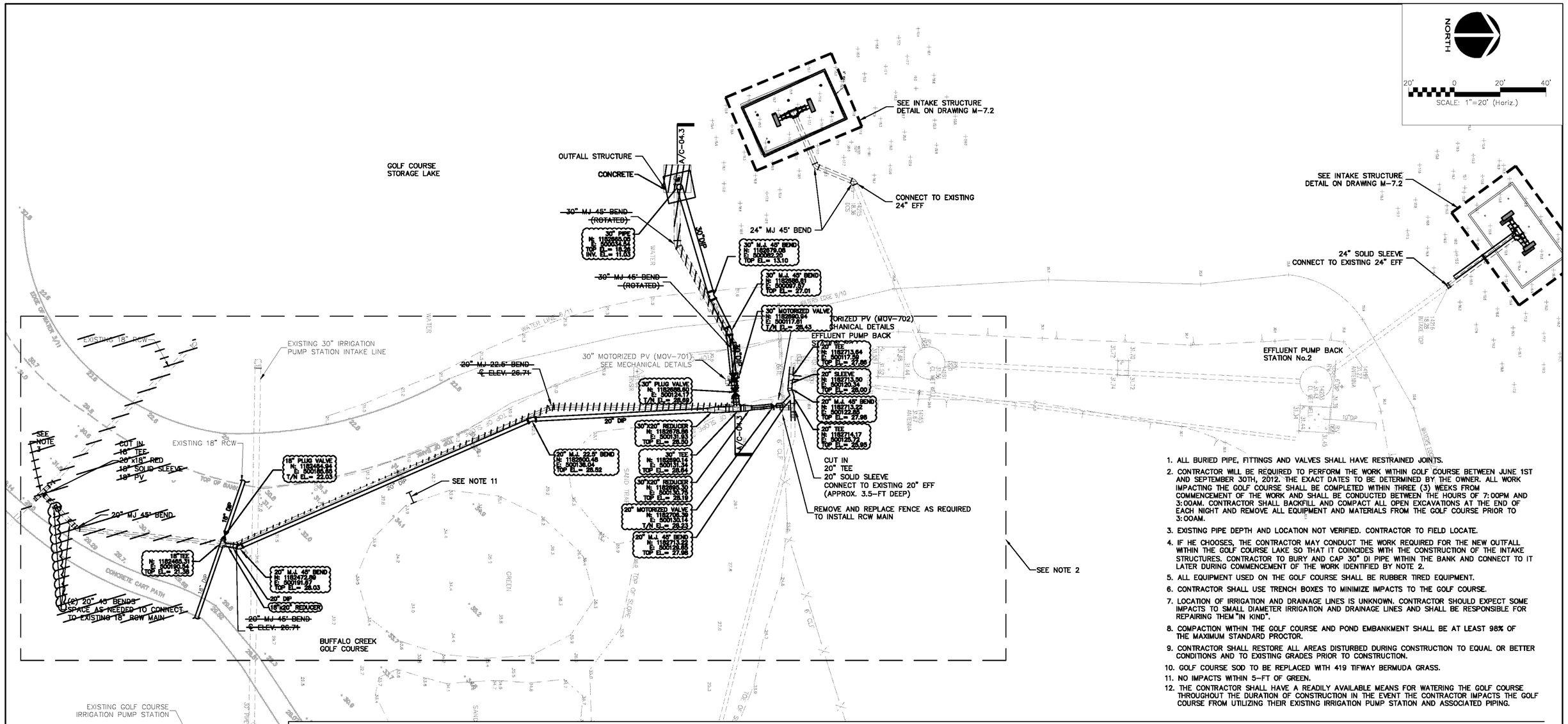

A / C-04.3
SCALE: 1"=5'

1. ALL BURIED PIPE, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.
2. CONTRACTOR WILL BE REQUIRED TO PERFORM THE WORK WITHIN GOLF COURSE BETWEEN JUNE 1ST AND SEPTEMBER 30TH, 2012. THE EXACT DATES TO BE DETERMINED BY THE OWNER. ALL WORK IMPACTING THE GOLF COURSE SHALL BE COMPLETED WITHIN THREE (3) WEEKS FROM COMMENCEMENT OF THE WORK AND SHALL BE CONDUCTED BETWEEN THE HOURS OF 7:00PM AND 3:00AM. CONTRACTOR SHALL BACKFILL AND COMPACT ALL OPEN EXCAVATIONS AT THE END OF EACH NIGHT AND REMOVE ALL EQUIPMENT AND MATERIALS FROM THE GOLF COURSE PRIOR TO 3:00AM.
3. EXISTING PIPE DEPTH AND LOCATION NOT VERIFIED. CONTRACTOR TO FIELD LOCATE.
4. IF HE CHOOSES, THE CONTRACTOR MAY CONDUCT THE WORK REQUIRED FOR THE NEW OUTFALL WITHIN THE GOLF COURSE LAKE SO THAT IT COINCIDES WITH THE CONSTRUCTION OF THE INTAKE STRUCTURES. CONTRACTOR TO BURY AND CAP 30" DI PIPE WITHIN THE BANK AND CONNECT TO IT LATER DURING COMMENCEMENT OF THE WORK IDENTIFIED BY NOTE 2.
5. ALL EQUIPMENT USED ON THE GOLF COURSE SHALL BE RUBBER TIRED EQUIPMENT.
6. CONTRACTOR SHALL USE TRENCH BOXES TO MINIMIZE IMPACTS TO THE GOLF COURSE.
7. LOCATION OF IRRIGATION AND DRAINAGE LINES IS UNKNOWN. CONTRACTOR SHOULD EXPECT SOME IMPACTS TO SMALL DIAMETER IRRIGATION AND DRAINAGE LINES AND SHALL BE RESPONSIBLE FOR REPAIRING THEM "IN KIND".
8. COMPACTION WITHIN THE GOLF COURSE AND POND EMBANKMENT SHALL BE AT LEAST 98% OF THE MAXIMUM STANDARD PROCTOR.
9. CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED DURING CONSTRUCTION TO EQUAL OR BETTER CONDITIONS AND TO EXISTING GRADES PRIOR TO CONSTRUCTION.
10. GOLF COURSE SOD TO BE REPLACED WITH 419 TIFWAY BERMUDA GRASS.
11. NO IMPACTS WITHIN 5-FT OF GREEN.
12. THE CONTRACTOR SHALL HAVE A READILY AVAILABLE MEANS FOR WATERING THE GOLF COURSE THROUGHOUT THE DURATION OF CONSTRUCTION IN THE EVENT THE CONTRACTOR IMPACTS THE GOLF COURSE FROM UTILIZING THEIR EXISTING IRRIGATION PUMP STATION AND ASSOCIATED PIPING.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☒ REVISIONS ☐ NO REVISIONS

THESE DRAWINGS ARE NOT INTENDED TO REPRESENT A DETAILED RECORD OF ACTUAL DIMENSIONS, ELEVATIONS, OR DETAILS. SUBSTANTIAL CHANGES OR DEVIATIONS FROM THE ORIGINAL DESIGN, KNOWN BY THE ENGINEER ARE NOTED HEREIN.

DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL
DAVID C. WEHNER, P.E.
No. 59541
SEAL

McKIM&CREED
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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

YARD PIPING PLAN NO. 3

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	NJS
CHECKED	DCW
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER: C-0.4.3

STATUS: RECORD DRAWINGS
REVISION

5916.021

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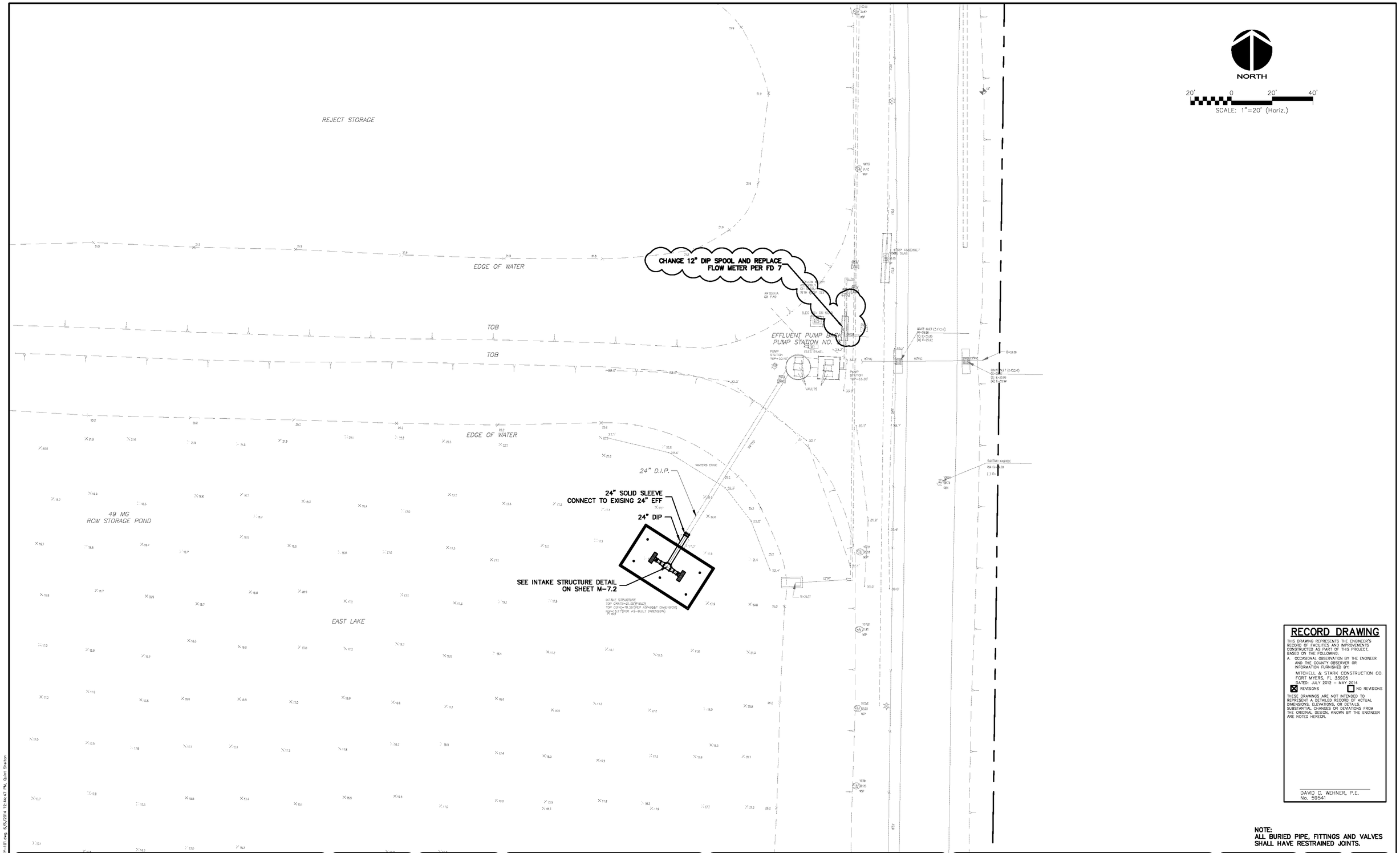

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:

MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☒ REVISIONS ☐ NO REVISIONS

THESE DRAWINGS ARE NOT INTENDED TO REPRESENT A DETAILED RECORD OF ACTUAL DIMENSIONS, ELEVATIONS, OR DETAILS. SUBSTANTIAL CHANGES OR DEVIATIONS FROM THE ORIGINAL DESIGN, KNOWN BY THE ENGINEER ARE NOTED HEREON.

DAVID C. WEHNER, P.E.
No. 59541

NOTE:
ALL BURIED PIPE, FITTINGS AND VALVES SHALL HAVE RESTRAINED JOINTS.

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

YARD PIPING PLAN NO. 4

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	NJS
CHECKED	DCW
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER
C-0.4.4

STATUS: RECORD DRAWINGS
REVISION

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STRUCTURAL NOTES:

1.0 GENERAL

1.1 ALL WORK IS TO BE PERFORMED IN A GOOD, WORKMANLIKE AND PROFESSIONAL MANNER.

1.2 ALL CONSTRUCTION SHALL BE IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF THE FLORIDA STATE BUILDING CODE, LATEST EDITION, OR LOCAL BUILDING CODE REQUIREMENTS IF MORE STRINGENT.

1.3 THESE DRAWINGS DO NOT SHOW PROVISIONS FOR SAFETY DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THE REQUIRED BRACING, SHORING, AND SAFETY DEVICES THROUGHOUT THE CONSTRUCTION OF THIS PROJECT.

2.0 COORDINATION

2.1 STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH AND COORDINATED WITH GENERAL, ARCHITECTURAL, CIVIL, ELECTRICAL AND MECHANICAL DRAWINGS AND OTHER CONTRACT DOCUMENTS. IF COORDINATION OF INFORMATION PRESENTED ON DRAWINGS CONFLICTS w/ THE PROJECT SPECIFICATIONS, THE DRAWINGS WILL TAKE PRECEDENCE.

2.2 COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES AND OPENINGS THROUGH SLABS AND WALLS w/ GENERAL, ARCHITECTURAL, CIVIL, ELECTRICAL AND MECHANICAL DRAWINGS AND OTHER CONTRACT DOCUMENTS.

2.3 ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE SHOWN ON THESE DRAWINGS ARE TO BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER BEFORE CONSTRUCTION WORK PROCEEDS, INCLUDING ORDERING AND FABRICATING MATERIALS.

2.4 INDEPENDENT TESTING OF MATERIALS SHALL BE PROVIDED AS DEFINED IN PROJECT SPECIFICATIONS. IN GENERAL PROJECT INVOLVES THE FOLLOWING:
- A. CONCRETE.

2.5 IF COORDIINATION OF INFORMATION PRESENTED CONFLICTS w/ THE PROJECT SPECIFICATIONS, THE DRAWINGS WILL TAKE PRECEDENCE.

2.6 IN GENERAL CALL-OUTS ARE FOR NEW CONSTRUCTION U.N.O., EXISTING CONSTRUCTION CALL-OUTS, ELEVATIONS AND DIMENSIONS OF EXISTING STRUCTURES ARE BASED ON EXISTING RECORD DRAWINGS PROVIDED TO McKIM & CREED. THE (*) SYMBOL ON INDIVIDUAL FACILITY "STRUCTURAL" DRAWINGS INDICATES EXISTING CONSTRUCTION CALL-OUTS, CONDITIONS, ELEVATIONS AND DIMENSIONS TO BE FIELD VERIFIED BY THE GENERAL CONTRACTOR U.N.O. PRIOR TO CONSTRUCTION, INCLUDING ORDERING AND FABRICATING MATERIALS. RECORD DRAWINGS PROVIDED BY THE MANATEE CO. PUBLIC UTILITIES DEPARTMENT UTILIZED INCLUDES:
- A. "WASTEWATER FACILITIES IMPROVEMENTS" DATED 12/19/89.
- B. "AUTOMATIC BACKWASH FILTER EXPANSION" DATED 10/03.

3.0 FOUNDATIONS

3.1 DESIGN ALLOWABLE SOIL BEARING PRESSURE = 2,000 PSF IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AS PREPARED BY DRIGGERS ENGINEERING SERVICES, INC. (PROJECT No. DES 086271 DATED JANUARY 30, 2009) AND (PROJECT No. DES 096349 DATED APRIL 29, 1989). THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THIS VALUE PRIOR TO FOUNDATION CONSTRUCTION. IN AREAS WHERE THE SOIL DOES NOT YIELD THIS BEARING STRESS VALUE, ADJUSTMENT IN THE FOOTING DEPTHS AND FOUNDATION DIMENSION MAY BE MADE BY THE ENGINEER BEFORE WORK PROCEEDS. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY SUCH ADJUSTMENTS.

3.2 PREPARE THE EXISTING SUBGRADE IN ACCORDANCE w/ THE GEOTECHNICAL REPORT AS PREPARED BY DRIGGERS ENGINEERING SERVICES, INC. (PROJECT No. DES 086271 DATED JANUARY 30, 2009) AND (PROJECT No. DES 096349 DATED APRIL 29, 1989). IN THE EVENT UNUSUAL SOIL CONDITIONS ARE UNCOVERED, INCLUDING CONDITIONS THAT DEVIATE FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT, NOTIFY THE OWNER AND ENGINEER PRIOR TO FOUNDATION CONSTRUCTION FOR INSTRUCTIONS HOW TO PROCEED. ADJUSTMENT IN THE FOOTING DEPTHS AND GENERAL FOUNDATION CONSTRUCTION MAY BE MADE BY THE ENGINEER BEFORE WORK PROCEEDS. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY SUCH ADJUSTMENTS.

3.3 ALL FILL INSIDE THE BUILDING(S) AND BELOW FOUNDATIONS SHALL BE SELECT MATERIAL FREE FROM ROOTS, TRASH WOOD SCRAPS, AND OTHER EXTRANEOUS MATERIALS. PLACE FILL IN LIFTS NOT EXCEEDING THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AS PREPARED BY DRIGGERS ENGINEERING SERVICES, INC. (PROJECT No. DES 086271 DATED JANUARY 30, 2009) AND (PROJECT No. DES 096349 DATED APRIL 29, 1989).

3.4 FOOTING ELEVATIONS SHALL NOT BE RAISED OR LOWERED WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.

3.5 ALL EXCAVATIONS SHALL BE ADEQUATELY DEWATERED BEFORE PLACEMENT OF CONCRETE. NO CONCRETE OR CONCRETE FILL SHALL BE PLACED IN STANDING WATER. WATER ACCUMULATION EXCEEDING 1 INCH SHALL BE PUMPED OUT.

3.6 FOOTING EXCAVATIONS AND FORMS SHALL BE REVIEWED BY AN OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.

3.7 ALL FOOTINGS SHALL BE CENTERED UNDER THE SUPPORTING MEMBER UNLESS NOTED OTHERWISE.

3.8 CONSTRUCTION JOINTS IN SLABS, WALLS & FOOTINGS SHALL BE MADE AT LOCATIONS SHOWN ON DRAWINGS.

3.9 ANCHOR BOLTS SHALL BE SET BY MEANS OF TEMPLATE. "FLOATING" ANCHOR BOLTS INTO PLACE IS PROHIBITED.

3.10 CONTRACTOR IS TO VERIFY THE ELEVATION AND LOCATION OF ALL EXISTING AND PROPOSED UTILITIES PRIOR TO CONSTRUCTION. ANY "KNOWN" UTILITY LINES DAMAGED WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. IF ANY "UNKNOWN" UTILITY LINES ARE ENCOUNTERED WHEN EXCAVATING THE CONTRACTOR IS TO CEASE ALL EXCAVATION ACTIVITY UNTIL THE ENGINEER AND OWNER ARE NOTIFIED AND INSTRUCTIONS ARE PROVIDED ABOUT HOW TO PROCEED.

3.11 THE CONTRACTOR SHALL OBTAIN THE OWNER'S PERMISSION BEFORE ENCASING OR BACK FILLING AROUND ANY EXISTING UNDERGROUND STRUCTURE, PIPING, ELECTRICAL, OR OTHER UNDERGROUND WORK.

4.0 REINFORCING STEEL

4.1 BARS SHALL BE ROLLED FROM NEW BILLET-STEEL OF DOMESTIC MANUFACTURE CONFORMING TO "STANDARD SPECIFICATION FOR DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," ASTM A 615, GRADE 60 AND SUPPLEMENTARY REQUIREMENT S-1.

4.2 DETAIL AND FABRICATE REINFORCING STEEL IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "ACI DETAILING MANUAL," LATEST PUBLICATION.

4.3 REINFORCING STEEL IN PLACE SHALL BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE. IN GENERAL "CLR" DISTANCES FOR CONCRETE COVER ARE PROVIDED ON THE DRAWINGS IN THE SECTIONS & DETAILS. FOR SECTIONS & DETAILS w/OUT CONCRETE COVER FOR REINFORCING BARS REFERENCE THE PROJECTS SPECIFICATIONS.

4.4 WELDED WIRE FABRIC SHALL CONFORM TO "STANDARD SPECIFICATION FOR WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT," ASTM A-185.

4.5 PLACE WELDED WIRE FABRIC AT CENTER OF SLABS-ON-GRADE UNLESS NOTED OTHERWISE.

4.6 PROVIDE BARS AT CORNERS AND INTERSECTIONS OF SLAB THK'D T/D EDGES, WALLS & FOOTINGS OF THE SAME NUMBER AND SIZE AS LONGITUDINAL BARS, U.N.O. ON THE DRAWINGS.

4.7 FABRICATE CONTINUOUS BARS IN SLABS, WALLS & FOOTINGS TO THE LONGEST PRACTICABLE LENGTHS.

4.8 REINFORCING STEEL SHALL NOT BE BENT AFTER BEING PARTIALLY EMBEDDED IN HARDENED CONCRETE.

4.9 BARS SHALL BE COLD BENT AND SHALL NOT BE HEATED FOR ANY REASON.

4.10 REINFORCING BARS SHALL NOT BE WELDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

4.11 REFERENCE DRAWINGS FOR REQUIREMENTS FOR LAP REINFORCING STEEL IN CONCRETE. ALL "LCS" SHALL CONFORM TO CLASS B SPLICE CRITERIA. IT IS ACCEPTABLE TO LAP REINFORCING IN NON "LCS" STRUCTURES A MINIMUM 50 BAR DIAMETERS, UNLESS NOTED OTHERWISE.

4.12 LAP SPLICED BARS IN CONCRETE ARE TO BE WIRE TIED.

5.0 CONCRETE

5.1 IN GENERAL CONCRETE SHALL DEVELOP 3,000 TO 4,500 psi MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS. REFERENCE "DESIGN CRITERIA" THIS DWG. & PROJECT SPECIFICATIONS, FOR APPLICATION & SPECIFIC CONCRETE MIX DESIGN REQUIREMENTS.

5.2 CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318 & TO "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES", ACI 350 (LATEST EDITIONS).

5.3 PLACE 1 /2 INCH EXPANSION JOINT MATERIAL BETWEEN EDGES OF SLABS AND VERTICAL SURFACES UNLESS NOTED OTHERWISE.

5.4 PROVIDE CONSTRUCTION OR CONTROL JOINTS IN SLABS & WALLS AT LOCATIONS SHOWN ON DRAWINGS, AT OFFSETS AND CHANGES IN DIRECTION AND AT THIRTY (30) FEET MAXIMUM U.N.O.. GENERAL CONTRACTOR TO PROVIDE CONSTRUCTION JOINT LAYOUT PLAN PER THE PROJECT SPECIFICATIONS PRIOR TO CONSTRUCTION, INCLUDING ORDERING & FABRICATING MATERIALS.

5.5 CHAMFER EXPOSED EDGES OF CONCRETE 3/4 INCH, UNLESS NOTED OTHERWISE.

5.6 CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER CURING OF ALL CONCRETE. CURING METHODS SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318, "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES" ACI 350 AND "STANDARD PRACTICE FOR CURING CONCRETE," ACI 308, LATEST EDITIONS.

5.7 UNLESS NOTED OTHERWISE DOWELS SHALL BE THE SAME NUMBER AND SIZE AS THE LARGEST VERTICAL BAR TO WHICH THEY ARE SPLICED.

5.8 REFERENCE PROJECT SPECIFICATIONS FOR REQUIRED FINISHES.

5.9 BONDING AGENT TO BE STRUCTURAL EPOXY ADHESIVE CONFORMING TO ASTM C-881 TYPE I AND II, GRADE 2, CLASS B AND C WITH A MINIMUM BOND STRENGTH OF 1900 PSI.

5.10 CONTRACTOR SHALL SUBMIT REBAR SHOP DRAWINGS FOR APPROVAL TO OWNER PRIOR TO FABRICATION. DO NOT FABRICATE REINFORCING PRIOR TO RECEIPT OF APPROVED SHOP DRAWINGS.

5.11 ROUGHEN THE "BASE" CONCRETE POUR SURFACE TO A FULL AMPLITUDE OF 1/4" MINIMUM, WHERE NOTED ON THE CONSTRUCTION DRAWINGS.

5.12 CONCRETE MIXES TO BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE. COMPRESSIVE STRENGTH TEST CYLINDERS TO BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE THROUGHOUT CONCRETE CONSTRUCTION OF THE PROJECT.

5.13 CONCRETE ACCESSORIES AS FOLLOWS:
- a.) PREFORMED WATERSTOPS SHALL BE PVC IN ACCORDANCE w/ THE PROJECT SPECIFICATIONS.
- b.) EXPANSIVE WATERSTOPS SHALL BE ADEKA ULTRA SEAL TYPE MC-2010M. THE WATERSTOP CAN BE EITHER ADHERED TO THE CONCRETE WITH 3M-2141 BONDING ADHESIVE OR NAILED IN PLACE USING USING 1.5 INCH CONCRETE NAILS 3 TO 6 INCHES APART.
- c.) CAULK/SEALANT - SONOLASTIC (2) PART POLYSULFIDE.
- d.) BONDING AGENT - SHALL BE STRUCTURAL EPOXY ADHESIVE CONFORMING TO ASTM C-881 TYPE I STRENGTH AND II, GRADE 2, CLASS B AND C WITH A MINIMUM BOND STRENGTH OF 1900 PSI.
  1.) SIKA ARMATEC 110 EpoCem.

6.0 GROUT

6.1 PROVIDE NON-SHRINK GROUT UNDER ALL COLUMN BASE PLATES AND BEAM BEARING PLATES AND ELSEWHERE AS INDICATED ON DRAWINGS. NON-SHRINK GROUT SHALL CONFORM TO ASTM C 1107.

6.2 GROUT SHALL BE NON-METALLIC AND NON-STAINING AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 7000 psi.

7.0 MASONRY (NOT APPLICABLE)

8.0 STRUCTURAL STEEL

8.1 STEEL SHALL CONFORM TO "STANDARD SPECIFICATION FOR STRUCTURAL STEEL," ASTM A-36 (Fy=36 ksi) FOR ANGLES, PLATES AND CHANNEL SECTIONS. WIDE FLANGE SECTIONS SHALL CONFORM TO ASTM A-572 (Fy=50ksi). HOLLOW STEEL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE B (Fy=46 ksi). STEEL PIPE SHALL CONFORM TO ASTM A-53, GRADE B, (Fy=35 ksi).

8.2 STEEL WORK SHALL CONFORM TO "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS", OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC., (LATEST EDITION), INCLUDING ALL SUPPLEMENTS AND THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", (LATEST EDITION).

8.3 CONNECTION BOLTS SHALL BE 3/4 INCH DIAMETER CONFORMING TO "STANDARD SPECIFICATION FOR HIGH-STRENGTH BOLTS FOR STRUCTURAL STEEL JOINTS", ASTM A-325, UNLESS NOTED OTHERWISE CONNECTIONS ARE BEARING TYPE WITH THREADS EXCLUDED FROM SHEAR PLANES-(A-325x).

8.4 WELDING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY AWS D1.1 "STRUCTURAL WELDING CODE". WELDING SHALL BE PERFORMED BY CERTIFIED PERSONNEL WHO HAVE BEEN PREVIOUSLY QUALIFIED BY TEST PRESCRIBED IN THE AWS "STRUCTURAL WELDING CODE". ELECTRODES SHALL CONFORM TO AWS 5.5, E70XX.

8.5 LINTELS SHALL BEAR EIGHT (8) INCHES MINIMUM ON MASONRY UNLESS NOTED OTHERWISE.

8.6 THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING, SHORING, AND GUYING OF STEEL FRAMING AGAINST WIND, CONSTRUCTION LOADS, AND OTHER TEMPORARY FORCES UNTIL SUCH PROTECTION IS NO LONGER REQUIRED FOR THE SAFE SUPPORT OF THE FRAMING.

8.7 ALL COPES, BLOCKS, CUTS, CUT-OFFS AND OTHER CUTTING OF STRUCTURAL MEMBERS SHALL HAVE ALL RE-ENTRANT CORNERS SHAPED, AND NOTCH-FREE TO A RADIUS OF AT LEAST 1 /2 INCH. THE FILLET AND ITS CONTIGUOUS CUTS SHALL MEET WITHOUT OFFSET OR CUTTING PAST THE POINT OF TANGENCY.

8.8 ANCHOR BOLTS SHALL BE ASTM F-1554 OR A-36 (NON-HEADED) AND SHALL HAVE HOOKS AS REQUIRED BY THE DRAWINGS. PROVIDE TWO (2) NUTS AND WASHERS WITH EACH ANCHOR BOLT AT COLUMNS UNLESS NOTED OTHERWISE.

8.9 OVERSIZED AND SLOTTED HOLES SHALL NOT BE USED FOR BOLTED CONNECTIONS ON THIS PROJECT EXCEPT AT LOCATIONS NOTED ON DRAWINGS.

8.10 SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER, AS TO LOCATION AND TYPE OF SPLICE. ANY MEMBER HAVING A SPLICE NOT SHOWN AND DETAILED ON THE SHOP DRAWINGS WILL BE REPLACED.

8.11 PRE-GROUTING BASE PLATES IS NOT PERMITTED.

8.12 ALL HOLES IN STRUCTURAL STEEL ARE TO BE PUNCHED OR DRILLED. FLAME CUTTING OF STEEL IS STRICTLY PROHIBITED.

8.13 ALL DESIGN, DETAILING, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION.

8.14 STRUCTURAL STEEL ERECTION SHALL BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE.

8.15 IN GENERAL SHOP CONNECTIONS SHALL BE EITHER WELDED OR BOLTED AND FIELD CONNECTIONS SHALL BE BOLTED UNLESS NOTED OTHERWISE.

8.16 FABRICATOR/CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR OWNER/ENGINEER APPROVAL PRIOR TO FABRICATION. ALL SHOP DRAWINGS MAY BE EXPEDITED IF THE FABRICATOR ADHERES CLOSELY TO THE DETAILS, NOTES, AND INSTRUCTIONS, SHOWN ON THE DRAWINGS.

8.17 ALL GALVANIZED MATERIALS THAT ARE FIELD CUT, FIELD WELDED OR DAMAGED IN SURFACE FINISH SHALL BE CLEANED AND RE-COATED AS CALLED OUT IN THE PROJECT SPECIFICATIONS.

9.0 ALUMINUM

9.1 ALUMINUM FABRICATION SHALL BE IN CONFORMANCE WITH THE ALUMINUM ASSOCIATION, INC. "SPECIFICATIONS FOR ALUMINUM STRUCTURES".

9.2 UNLESS NOTED OTHERWISE, MATERIALS SHALL BE:
a. PLATE & SHEET - ASTM B209; 6061-T6, 6061-T651 ALLOY.
b. EXTRUDED SHAPES - ASTM B221; 6061-T6, 6061-T651 ALLOY. PIPE SECTIONS ARE SCHEDULE 40 U.N.O..
c. CASTINGS - ASTM B108; 214 ALLOY.
d. BOLTS - ASTM A193; GRADE B8 OR, ASTM 276; TYPE 316 STAINLESS STEEL.
e. NUTS - ASTM A194; GRADE M, OR ASTM 276; TYPE 316 STAINLESS STEEL.

9.3 ALUMINUM SHALL BE SEPARATED FROM DIRECT CONTACT WITH OTHER MATERIALS (STEEL, CONCRETE, ETC.) BY PRESSURE SENSITIVE TAPE, BITUMASTIC COATING, OR OTHER PROTECTIVE METHOD SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE.

9.4 CONNECTIONS SHALL HAVE A MINIMUM OF TWO 3/4" DIAMETER STAINLESS STEEL BOLTS.

9.5 WELDING ALUMINUM SHALL CONFORM TO AWS A5.10 & THE REQUIREMENTS OF THE ALUMINUM ASSOCIATIONS "ALUMINUM DESIGN MANUAL" (LATEST EDITION)
TABLE 7.1-1 FOR WELD FILLERS FOR WROUGHT ALLOYS.

9.6 REFERENCE PROJECT SPECIFICATIONS FOR HANDRAIL REQUIREMENTS.

10.0 ABBREVIATIONS

10.1 THE FOLLOWING LIST OF ABBREVIATIONS IS NOT INTENDED TO REPRESENT ALL THOSE USED ON THE DRAWINGS, BUT TO SUPPLEMENT THE MORE COMMON ABBREVIATIONS USED.

ADD'L	=	ADDITIONAL	LLH	=	LONG LEG HORIZONTAL
AL	=	ALUMINUM	LLV	=	LONG LEG VERTICAL
BM.	=	BEAM	L.P.	=	LOW POINT
B.O.	=	BOTTOM OF	LSL	=	LONG SLOTTED
BRG.	=	BEARING	MAT'L	=	MATERIAL
BTM.	=	BOTTOM	MECH.	=	MECHANICAL
C.I.P.	=	CAST-IN-PLACE	MFG.	=	MANUFACTURER
CJ	=	CONSTRUCTION JT.	MIN.	=	MINIMUM
CLR.	=	CLEAR	MTL.	=	METAL
COL.	=	COLUMN	NO.	=	NUMBER
CONC.	=	CONCRETE	N.S.	=	NEAR SIDE
CONN.	=	CONNECTION	N.T.S.	=	NOT TO SCALE
CONT.	=	CONTINUOUS	O.C.	=	ON CENTER
COORD.	=	COORDINATE	O/F	=	OUTSIDE FACE
CTR.	=	CENTER	O/O	=	OUT TO OUT
CTR'D.	=	CENTERED	OPNG.	=	OPENING
DIR.	=	DIRECTION	OPP.	=	OPPOSITE
DIST.	=	DISTANCE	ORIENT.	=	ORIENTED
DWG.	=	DRAWING	PLCS.	=	PLACES
DWG's.	=	DRAWINGS	PROJ.	=	PROJECT
DWL.	=	DOWEL	P.S.	=	PUMP STATION
DWL's	=	DOWELS	RAD.	=	RADIUS
EA.	=	EACH	RECT.	=	RECTANGULAR
EFFL.	=	EFFLUENT	REF.	=	REFERENCE
EL	=	ELEVATION	REINF.	=	REINFORCING
E.O.	=	EDGE OF	REINF.	=	REINFORCED
EQUIP.	=	EQUIPMENT	REQ'D.	=	REQUIRED
EXIST.	=	EXISTING	SIM.	=	SIMILAR
EXP.	=	EXPANSION	SL.	=	SLOPED
EXTR.	=	EXTERIOR	SPA.	=	SPACED
FDN.	=	FOUNDATION	SPECS.	=	SPECIFICATIONS
FLG.	=	FLANGE	SQ.	=	SQUARE
F.S.	=	FAR SIDE	S.S.	=	STAINLESS STEEL
FT.	=	FEET	SSL	=	SHORT SLOTTED
FTG.	=	FOOTING	STD.	=	STANDARD
GA.	=	GAGE	STL.	=	STEEL
GALV.	=	GALVANIZED	SUPPT.	=	SUPPORT
GALV'D.	=	GALVANIZED	T&B	=	TOP & BOTTOM
G'RAIL	=	GUARD RAIL	T/D	=	TURN DOWN
HORZ.	=	HORIZONTAL	THK.	=	THICK
H.P.	=	HIGH POINT	THK'D	=	THICKENED
H'RAIL	=	HAND RAIL	T.O.	=	TOP OF
I/F	=	INSIDE FACE	TYP.	=	TYPICAL
INFO.	=	INFORMATION	U.N.O.		UNLESS NOTED OTHERWISE
INTR.	=	INTERIOR	VERT.		VERTICAL
JT.	=	JOINT	W.W.F.		WELDED WIRE FABRIC

DESIGN LOADS:

LIVE LOAD:	300 PSF SLAB-ON-GRADE, 100 PSF STAIRS & PLATFORMS
ROOF:	NA
SNOW:	NA, IMPORTANCE FACTOR (Is): NA
SEISMIC:	NA, IMPORTANCE FACTOR (Ie): NA
WIND: ZONE:	130 mi/hr, EXPOSURE C, CATEGORY III, IMPORTANCE FACTOR (Iw): 1.15

FLORIDA BUILDING CODE (FBC) 2007 & ASCE 7-05 WIND DESIGN:

CALCULATED WIND BASE SHEARS: Vx = 1.7 k Vy = 4.3 k (FILTER UNIT CURBS) [EA. PAIR]

DESIGN CRITERIA:

CONCRETE 28 DAY COMPRESSIVE STRENGTH:	
SLAB-ON-GRADE:	f'c = 4,000 psi
EQUIPMENT PADS:	f'c = 3,000 psi
WALLS OF LIQUID CONTAINMENT STUCTURES (LCS):	f'c = 4,500 psi
SLABS OF LCS:	f'c = 4,500 psi
FOOTINGS:	f'c = 4,000 psi
BELOW GRADE & RETAINING WALLS:	f'c = 4,000 psi
SIDEWALK:	f'c = 3,000 psi
REINFORCING STEEL:	ASTM A615, GRADE 60
WELDED WIRE FABRIC:	ASTM A185
STRUCTURAL STEEL:	REF. STRUCTURAL NOTE 8.1
ALUMINUM:	REF. STRUCTURAL NOTE 9.2
BOLTS SHALL BE 3/4"ø ASTM A325 OR TYPE 316 S.S.:	REF. STRUCTURAL NOTES 8.3 & 9.2.d
ANCHOR BOLTS SHALL BE 3/4"ø ASTM F-1554 OR ASTM A-36 (STEEL): TYPE 316 S.S. (ALUMINUM):	REF. STRUCTURAL NOTE 8.8
STEEL ELECTRODES SHALL CONFORM TO:	AWS 5.5 E70XX
ALUMINUM WELD FILLERS ALLOYS SHALL CONFORM TO:	AWS A5.10 (REF. STRUCTURAL NOTE 9.5)
SOIL BEARING CAPACITY:	REF. STRUCTURAL NOTE 3.1

LEGEND:

ENLARGED PLAN AREA, DETAIL =

CONC. WALL, PAD, ETC. =

GROUT =

GRATING =

DETAIL OR SECTION NUMBER/SHOWN ON SHEET = X.SYY

PROJECT NORTH = NORTH

ELEVATION DATUM =

ELEVATIONS X'-X" (Y.YY') = X'-X" = DISTANCE TO/FROM FACILITY REFERENCE EL 0'-0"
Y.YY' = EQUIVALENT SITE EL VERTICAL DATUM

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:
A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 - MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

WILLIAM F. BAND, P.E.
No. 67838

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McKIM&CREED
1365 Hamlet Avenue
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Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

STRUCTURAL GENERAL NOTES, DESIGN LOADS, CRITERIA AND LEGEND

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
S-0.1

STATUS: RECORD DRAWINGS
REVISION

5916.023

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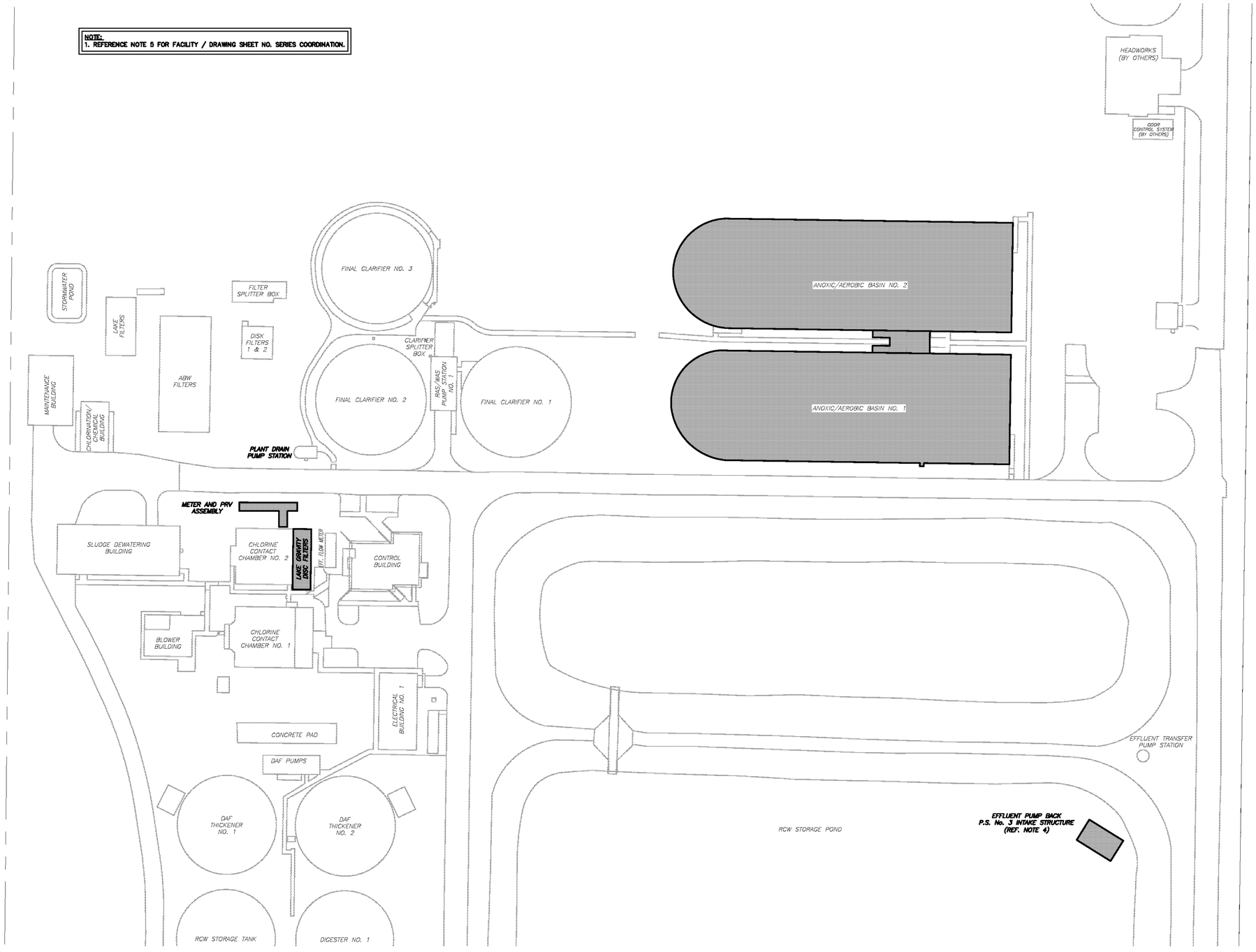
NOTE:
1. REFERENCE NOTE 5 FOR FACILITY / DRAWING SHEET NO. SERIES COORDINATION.



1 - PARTIAL PLAN - SITE
SCALE: 1"=50'-0"

NORTH

GENERAL NOTES:

1. REFERENCE INDIVIDUAL BLDG's & FACILITIES FOR THEIR RESPECTIVE "REFERENCE" ELEVATIONS. COORDINATE ELEVATIONS w/ CIVIL DWGS. AS REQUIRED.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. GRADE ELEVATIONS & CONTOURS NOT SHOWN FOR CLARITY. COORDINATE w/ CIVIL DRAWINGS AS REQUIRED FOR ADDITIONAL INFORMATION.
4. EFFLUENT PUMP BACK P.S. No. 1 AND EFFLUENT PUMP BACK P.S. No. 2 & THEIR RESPECTIVE INTAKE STRUCTURES ARE NORTHWEST OF THE PARTIAL PLAN AREA SHOWN. REFERENCE GENERAL, DEMOLITION, CIVIL & MECHANICAL DRAWINGS FOR LOCATION INFORMATION AS REQUIRED.
5. FACILITY: — DRAWING SHEET NO. SERIES:

FACILITY:	DRAWING SHEET NO. SERIES:
ANOXIC/AEROBIC BASINS	3
METER & PRV ASSEMBLY	7
EFFL. PUMP BACK P.S. INTAKE STRUCTURES	7
LAKE GRAVITY DISC FILTERS	7

RECORD DRAWING

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MITCHELL & STARK CONSTRUCTION CO. FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

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WILLIAM F. BAND, P.E.
No. 67838

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

OVERALL STRUCTURAL KEY PLAN

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER: S-0.2

STATUS: RECORD DRAWINGS
REVISION

5916.024

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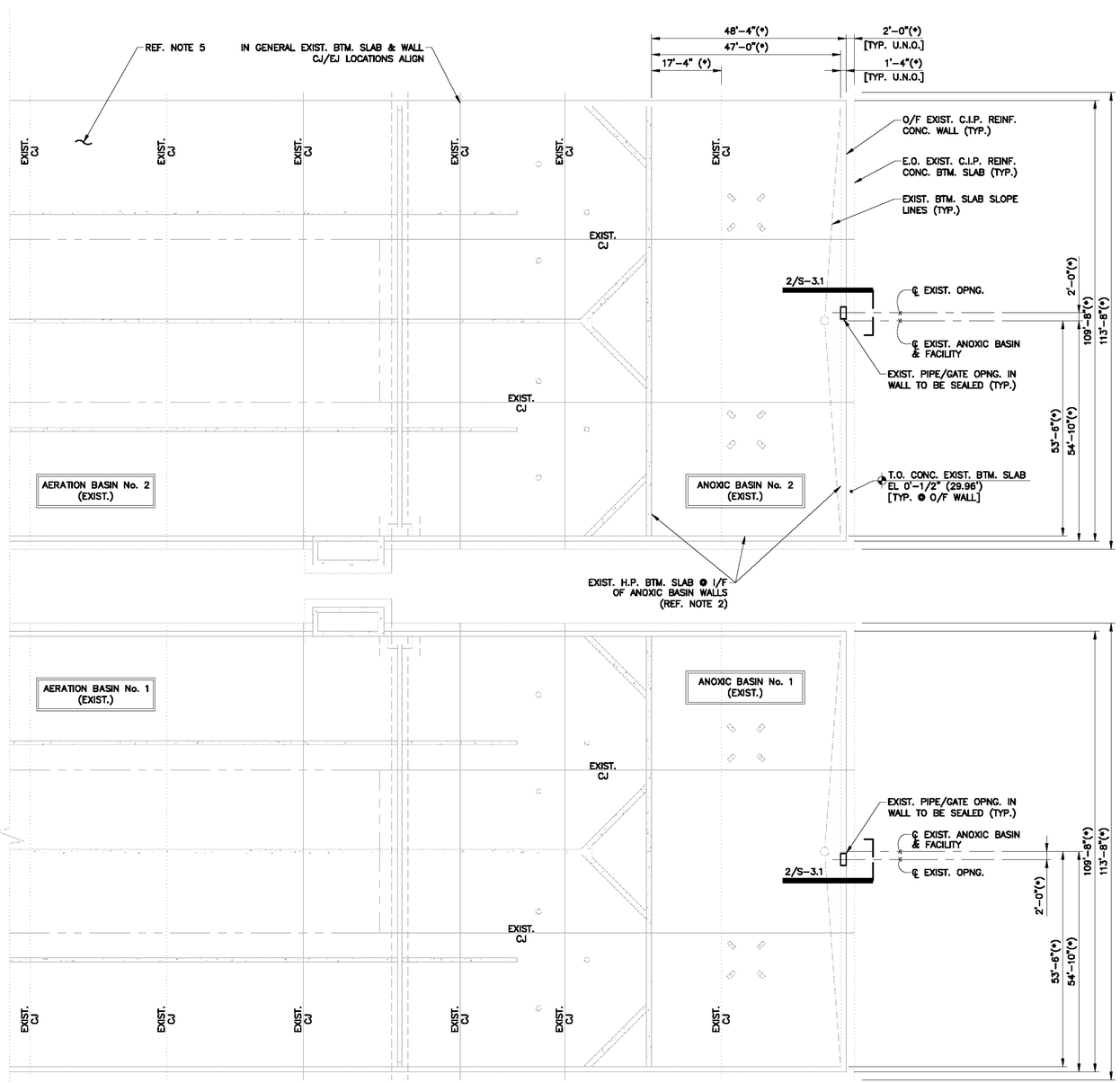
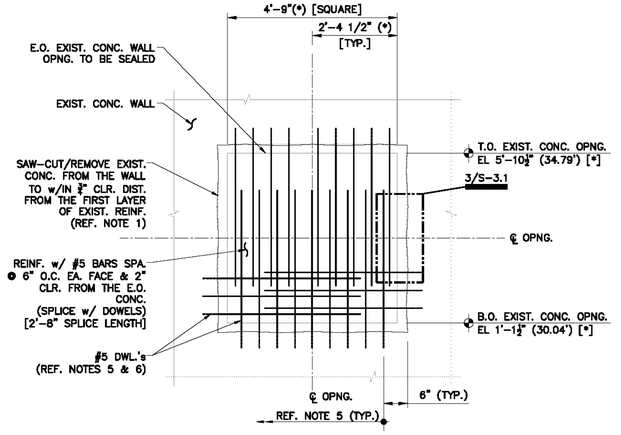


1 - PARTIAL PLAN - ANOXIC/AEROBIC BASINS NO. 1 & NO. 2 BOTTOM LAYOUT

SCALE: 1/16"=1'-0"

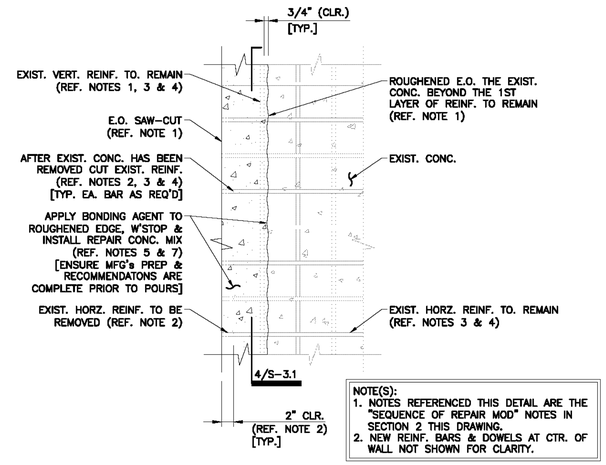


2 - SECTION - EXIST. WALL OPNG. MODIFICATION

SCALE: 1/2"=1'-0"

SEQUENCE OF REPAIR MOD NOTES:

1. REMOVE EXIST. CONCRETE FROM THE E.O. SAW-CUT TO A ROUGHENED EDGE ¾" BEYOND THE FIRST LAYER OF REINFORCEMENT PARALLEL TO THE E.O. THE SAW-CUT. USE EXTREME CAUTION NOT TO DAMAGE THE EXISTING REINFORCING. EXISTING REINFORCING DAMAGED BY THE GC OR THEIR SUBS SHALL BE REPAIRED & REPLACED BY THE GC, PER THE DIRECTION OF THE ENGINEER & AT NO EXPENSE TO THE OWNER OR THE ENGINEER.
   REGARDING CONCRETE REMOVAL:
   a.) IMPACT TOOLS CAN CAUSE MICRO-CRACKS IN THE CONCRETE TO REMAIN. IF IMPACT TOOLS ARE USED ADD'L CONCRETE TO BE REMOVED BY WATER JETTING OR OTHER APPROVED NON-IMPACT MEANS.
2. CUT REINFORCING BARS PERPENDICULAR TO THE E.O. THE SAW-CUT TO 2" CLEAR OF THE E.O. THE SAW-CUT.
3. CLEAN EXPOSED REINFORCING OF ALL LOOSE CONC., AGGREGATE, DIRT, DUST & DEBRIS.
4. COAT REINFORCING BARS w/ SIKA FERROGARD 903.
5. INSTALL VERT. & HORZ. DWL.'s AT CENTER OF THE WALL. DWL.'s SHALL BE #5 BARS SPA. @ 6" O.C. ALL AROUND. ONLY THE VERT. DWL.'s & A PARTIAL NUMBER OF THE HORZ. DWL.'s ALONG THE BTM. EDGE ARE SHOWN FOR CLARITY.
6. ANCHOR DWL.'s w/ HILTI HY150 INJECTION ADHESIVE. EMBED DWL.'s 6" IN TO THE EXIST. CONCRETE WALL.
7. APPLY BONDING AGENT & W'STOP TO ROUGHENED SURFACES & INSTALL REPAIR CONCRETE AS FOLLOWS:
   a.) 4500 PSI PEA-GRAVEL MIX w/ SIKADUR 32 HI-MOD LPL, HIGH STRENGTH EPOXY BONDING/GROUTING ADHESIVE. (MIX IS SIM. TO PROJ. SPEC. EXCEPT FOR AGGREGATE SIZE.)



NOTE(S):
1. NOTES REFERENCED THIS DETAIL ARE THE "SEQUENCE OF REPAIR MOD" NOTES IN SECTION 2 THIS DRAWING.
2. NEW REINF. BARS & DOWELS AT CTR. OF WALL NOT SHOWN FOR CLARITY.

3 - DETAIL - ENLARGED VIEW OF E.O. MODIFIED WALL OPNG.

SCALE: 1/2"=1'-0"

4 - SECTION - E.O. MODIFIED WALL OPNG.

SCALE: 1/2"=1'-0"

BOTTOM PLAN NOTES:

1. REFERENCE ELEVATION FOR THE EXISTING ANOXIC/AEROBIC BASINS No. 1 AND No. 2 FACILITIES ARE THE EXISTING ANOXIC BASIN CELL BOTTOM SLAB H.P. T.O. CONC. EL 0'-0" = EL 28'-11" (28.92') N.G.V.D.-29. REFERENCE CIVIL DWG's FOR ADDITIONAL INFORMATION.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. IN GENERAL CALL-OUTS & DIMENSIONS ARE TYPICAL FOR EACH ANOXIC/AEROBIC BASIN FACILITY U.N.O..
4. GRADE ELEVATION AROUND THIS STRUCTURE IS 29.17' (±) REFERENCE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
5. IN GENERAL THE EXISTING BOTTOM SLAB IS REINFORCED w/:
   N/S ORIENTATION = #7(*) BARS SPACED @ 1'-0"(*) O.C. (TOP).
   E/W ORIENTATION = #6(*) BARS SPACED @ 1'-0"(*) O.C. (BTM.).
   NOTE IT IS NOT NECESSARY FOR THE GC TO VERIFY THE EXISTING BOTTOM SLAB REINFORCING BAR DIAMETERS. HOWEVER GC TO USE CAUTION TO AVOID DAMAGING EXIST. REINFORCING WHEN CONDUCTING DEMOLITION RELATED WORK IN SLABS & WALLS.
6. PIPE & EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL, ELECTRICAL, MECHANICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB OR WALL PENETRATIONS, PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.
7. EXISTING FACILITY DRAWINGS UTILIZED ARE SHEETS 14, 15, 16, 17, 18, 19, 20 & 21 OF 59 OF THE "WASTEWATER FACILITIES IMPROVEMENTS" RECORD DRAWINGS.

RECORD DRAWINGS

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPREVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
   MITCHELL & STARK CONSTRUCTION CO. FORT MYERS, FL 33905
   DATED: JULY 2012 - MAY 2014
☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E. No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

WILLIAM F. BAND, P.E. No. 67838

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1365 Hamlet Avenue
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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

ANOXIC/AEROBIC BASINS No.1 AND No.2 BOTTOM PLAN, SECTIONS AND DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER: S-3.1

STATUS: RECORD DRAWINGS
REVISION

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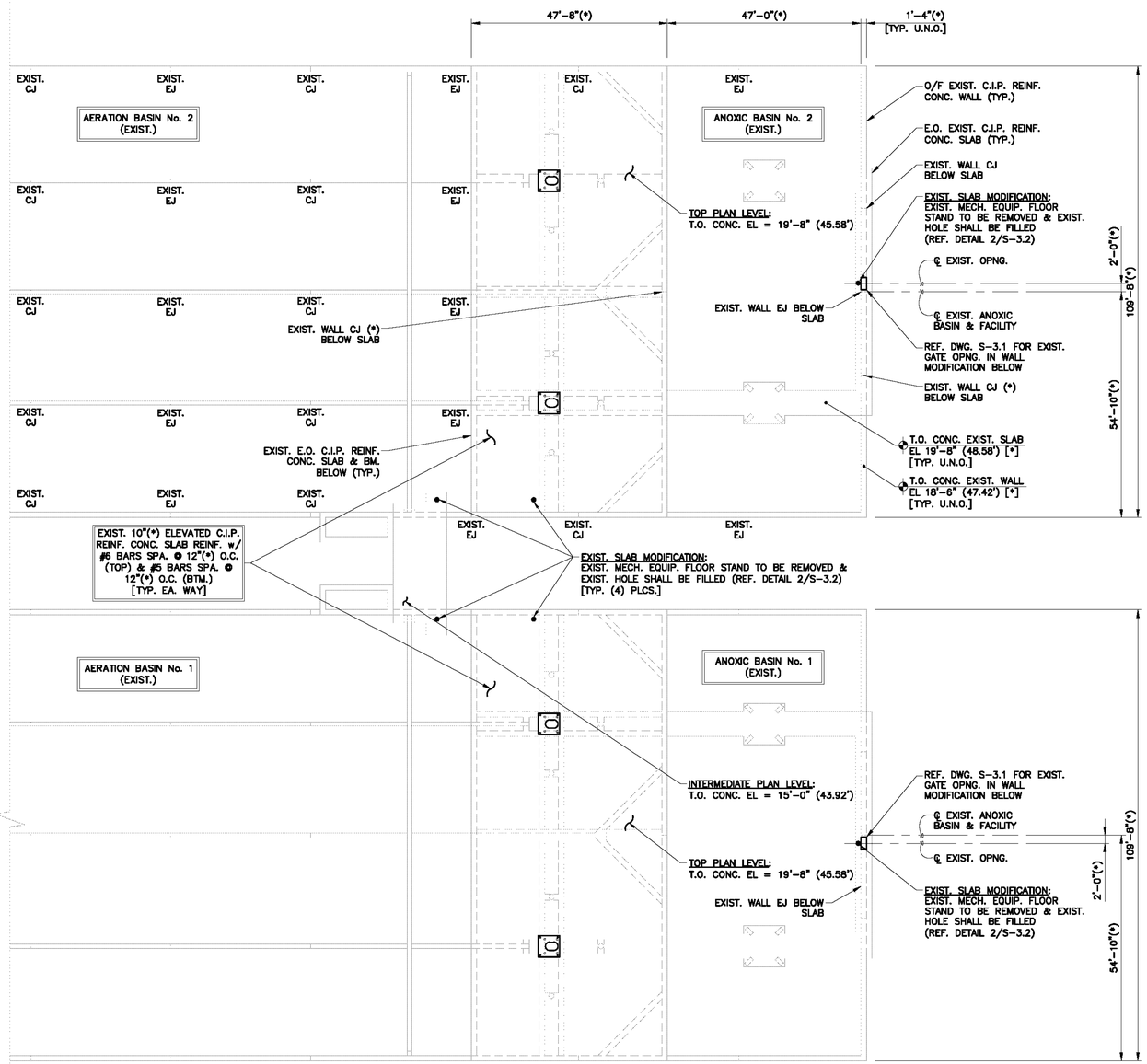
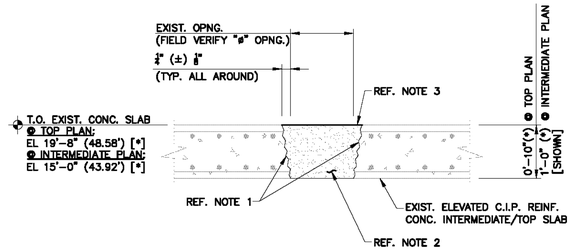


1 - PLAN - ANOXIC/AEROBIC BASINS NO. 1 & NO. 2 TOP LAYOUT

SCALE: 1/16"=1'-0"



NOTES:
1. ALL AROUND THE EXISTING OPENING CHIP & ROUGHEN SURFACE TO EXPOSE AGGREGATE. APPLY TO ALL EDGES OF THE EXPOSED SURFACE SIKA ARMATEC 110 EPOCEM.
2. FILL EXISTING OPENING w/ SIKAGROUT 328 & INSTALL PER SIKA'S "PRODUCT EXTENSION" RECOMMENDATIONS. GC TO COORDINATE w/ SIKA'S TECHNICAL REPRESENTATIVE & SERVICE DEPARTMENT AS REQUIRED.
3. ROUGHEN THE TOP SURFACE TO MATCH EXISTING SLAB & PROVIDE SLIP RESISTANT FINISH.

2 - DETAIL - EXIST. SLAB MOD. @ EXIST. FLOOR STANDS

SCALE: 3/4"=1'-0"

TOP PLAN NOTES:

1. REFERENCE ELEVATION FOR THE EXISTING ANOXIC/AEROBIC BASINS NO. 1 AND NO. 2 FACILITIES ARE THE EXISTING ANOXIC BASIN CELL BOTTOM SLAB H.P. T.O. CONC. EL 0'-0" = EL 28'-11" (28.92') N.G.V.D.-29. REFERENCE CIVIL DWGS. FOR ADDITIONAL INFORMATION.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. REFERENCE BOTTOM PLAN NOTES FOR ADDITIONAL FACILITY INFORMATION.
4. IN GENERAL CALL-OUTS & DIMENSIONS ARE TYPICAL FOR EACH ANOXIC/AEROBIC BASIN FACILITY U.N.O..
5. PIPE & EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL, ELECTRICAL, MECHANICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB OR WALL PENETRATIONS, PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.
6. REFERENCE EQUIPMENT VENDOR DRAWINGS FOR COORDINATION & INSTALLATION OF ANCHORING EQUIPMENT TO T.O. SLAB & WALLS.
7. EXISTING AL STAIR & PLATFORMS NOT SHOWN FOR CLARITY.
8. IN GENERAL THE EXISTING C.I.P. REINF. CONCRETE BEAMS AROUND THE PERIMETER OF THE EXISTING SLAB OPENING ARE 1'-4"(*) WIDE x 1'-10½"(*) DEEP AND REINFORCED w/ (4) #9 TOP & BOTTOM BARS & #4 STIRRUPS SPACED @ 8" O.C.. NOTE IT IS NOT REQUIRED FOR THE GC TO VERIFY THE EXISTING BEAM REINFORCING.
9. EXISTING FACILITY DRAWINGS UTILIZED ARE SHEETS 17 AND 18 OF 59 OF "WASTEWATER FACILITIES IMPROVEMENTS" RECORD DRAWINGS.

RECORD DRAWING

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A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014
☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

ANOXIC/AEROBIC BASINS No.1 & No.2
TOP PLAN, SECTIONS AND DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER
S-3.2

STATUS: RECORD DRAWINGS
REVISION

5916.026

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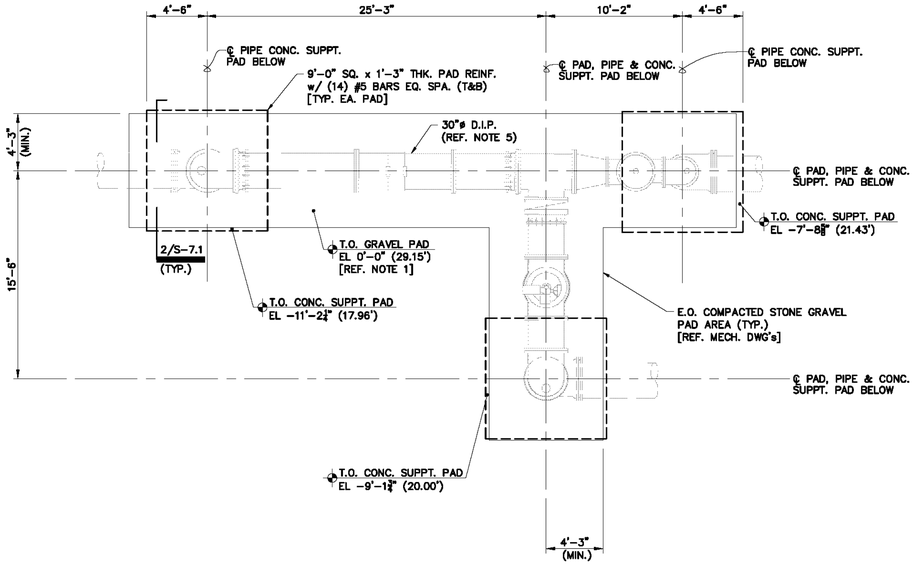
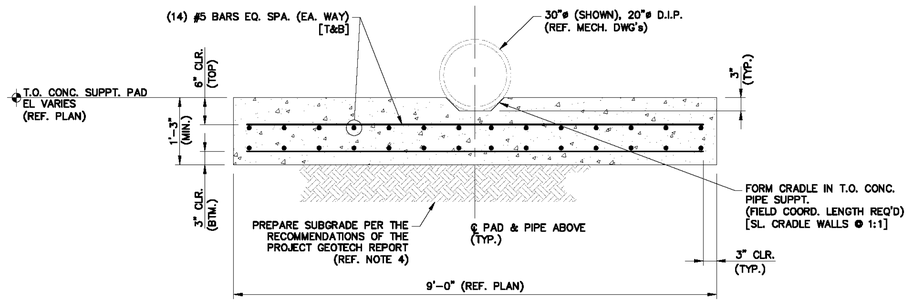


NORTH

1 - PLAN - METER & PRESSURE REGULATING VALVE (PRV) ASSEMBLY

SCALE: 3/16"=1'-0"



2 - SECTION - TYP. METER & PRV ASSEMBLY PIPE C.I.P. REINF. CONC. SLAB SUPPT. PAD

SCALE: 3/4" = 1'-0"

NOTES:

1. REFERENCE ELEVATION FOR THE METER AND PRV ASSEMBLY IS THE NON-COMPACTED STONE GRAVEL AREA T.O. GRAVEL EL 0'-0" = EL 29'-1⅝" (29.15') N.G.V.D.-29. REFERENCE CIVIL DWG's FOR ADDITIONAL INFORMATION.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. GRADE ELEVATION AROUND THE METER AND PRV ASSEMBLY IS 29.00' (±). REFERENCE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
4. PREPARE THE SUBGRADE MATERIAL BELOW THE FOUNDATION PADS FOR BELOW GRADE PIPES & THE STONE GRAVEL PAD PER THE RECOMMENDATIONS OF THE "REFERENCE" GEOTECHNICAL REPORT. REFERENCE DRAWING S-0.1 & PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. PIPE & EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL, ELECTRICAL, MECHANICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING REQUIREMENTS FOR PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.

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FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

METER AND PRESSURE REGULATING VALVE ASSEMBLY PLANS, SECTIONS AND DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER
S-7.1

STATUS: RECORD DRAWINGS
REVISION

5916.027

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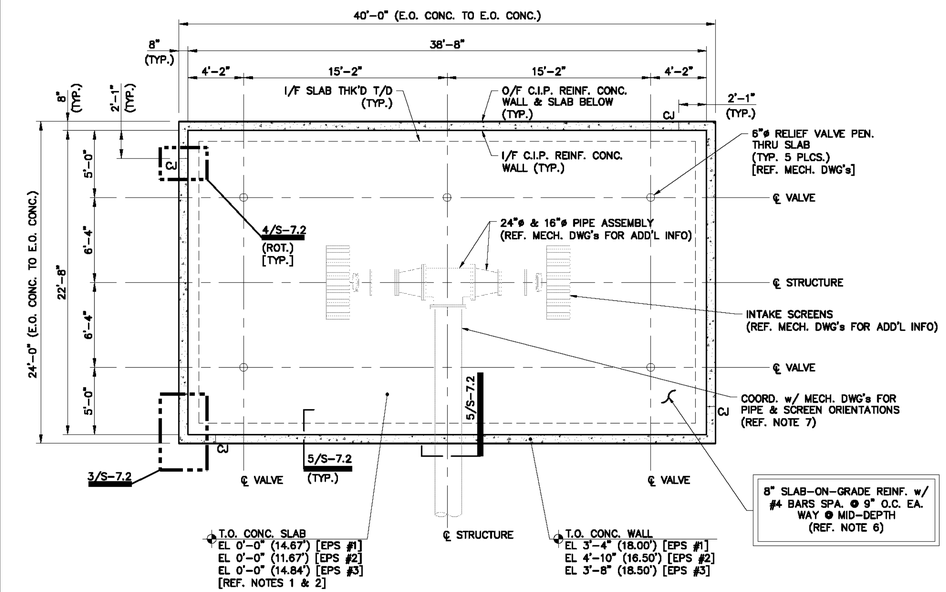
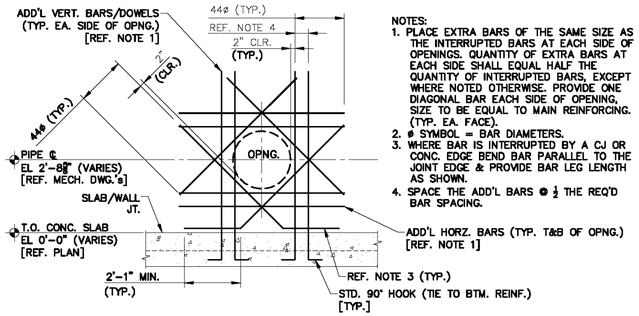


NORTH (EFFL. STA. No.1) NORTH (EFFL. STA. No.2) NORTH (EFFL. STA. No.3)

1 - PLAN - C.I.P. REINF. CONC. INTAKE STRUCTURE(S)
SCALE: 3/16"=1'-0"

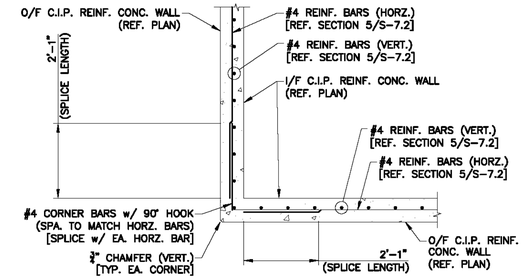
PLAN NOTES:

1. REFERENCE ELEVATIONS FOR THE EFFLUENT PUMP BACK STATIONS (EPS) INTAKE STRUCTURES IS THE SLAB T.O. CONC. EL 0'-0". FOR THESE FACILITIES THE T.O. CONC. SLAB EL IN REGARDS TO THE CORRESPONDING N.G.V.D.-29 DATUM VARIES. REFERENCE CIVIL & MECH. DWG's FOR ADDITIONAL INFORMATION.
2. REFERENCE ELEVATIONS FOR THE EPS FACILITIES INTAKE STRUCTURES IS AS FOLLOWS:
   a.) EPS #1 T.O. CONC. SLAB EL 0'-0" = EL 14'-8" (14.67') N.G.V.D.-29.
   b.) EPS #2 T.O. CONC. SLAB EL 0'-0" = EL 11'-8" (11.67') N.G.V.D.-29.
   c.) EPS #3 T.O. CONC. SLAB EL 0'-0" = EL 13'-10¾" (13.84') N.G.V.D.-29.
3. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
4. REFERENCE CIVIL & MECH. DWG's FOR THE EXISTING BOTTOM OF POND ELEVATIONS AT EACH OF THE INTAKE STRUCTURES.
5. REFERENCE CIVIL & MECH. DWG's FOR THE VARIOUS LOW, NORMAL & HIGH WATER LEVELS FOR THE POND ELEVATIONS AT EACH OF THE INTAKE STRUCTURES.
6. PREPARE THE SUBGRADE MATERIAL BELOW THE SLAB IN ACCORDANCE w/ THE PROJECT SPECIFICATIONS & INFORMATION PROVIDED ON THE MECH. DWG's & THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT; REFERENCE DRAWING S-0.1 & PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
7. PIPE & EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL, MECHANICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING REQUIREMENTS FOR PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.

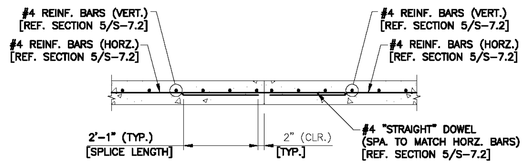


NOTES:
1. PLACE EXTRA BARS OF THE SAME SIZE AS THE INTERRUPTED BARS AT EACH SIDE OF OPENINGS. QUANTITY OF EXTRA BARS AT EACH SIDE SHALL EQUAL HALF THE QUANTITY OF INTERRUPTED BARS, EXCEPT WHERE NOTED OTHERWISE. PROVIDE ONE DIAGONAL BAR EACH SIDE OF OPENING, SIZE TO BE EQUAL TO MAIN REINFORCING. (TYP. EA. FACE).
2. ø SYMBOL = BAR DIAMETERS.
3. WHERE BAR IS INTERRUPTED BY A CJ OR CONC. EDGE BEND BAR PARALLEL TO THE JOINT EDGE & PROVIDE BAR LEG LENGTH AS SHOWN.
4. SPACE THE ADD'L BARS @ ½ THE REQ'D BAR SPACING.

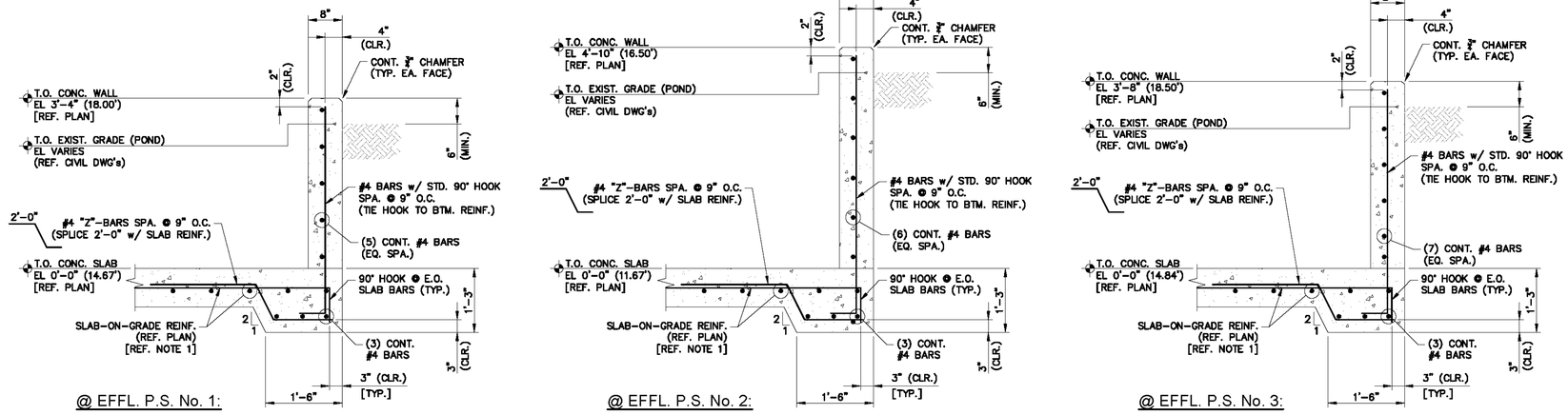
2 - SECTION - TYP. WALL PIPE OPNG.
SCALE: 3/8" = 1'-0"



3 - DETAIL - TYP. CORNER BAR REINF.
SCALE: 1/2" = 1'-0"



4 - DETAIL - TYP. WALL CONST. JT. (CJ)
SCALE: 1/2" = 1'-0"



5 - SECTION - THRU E.O. INTAKE STRUCTURE SLABS / WALLS
SCALE: 1/2" = 1'-0"

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:
A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014
☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

NOTES:

1. SLAB BARS MAY BE INSTALLED w/ STRAIGHT BARS SPLICED w/ HOOKED BARS REQUIRED AT THE SLAB EDGES. SPLICE LENGTHS = 2'-1" (MIN.) U.N.O..

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	5/14

REVISIONS

SEAL

WILLIAM F. BAND, P.E.
No. 67838

SEAL

McKIM&CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

GOLF COURSE STORAGE LAKE FLOW INTAKE STRUCTURES PLANS, SECTIONS AND DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER: S-7.2

STATUS: RECORD DRAWINGS
REVISION

5916.028

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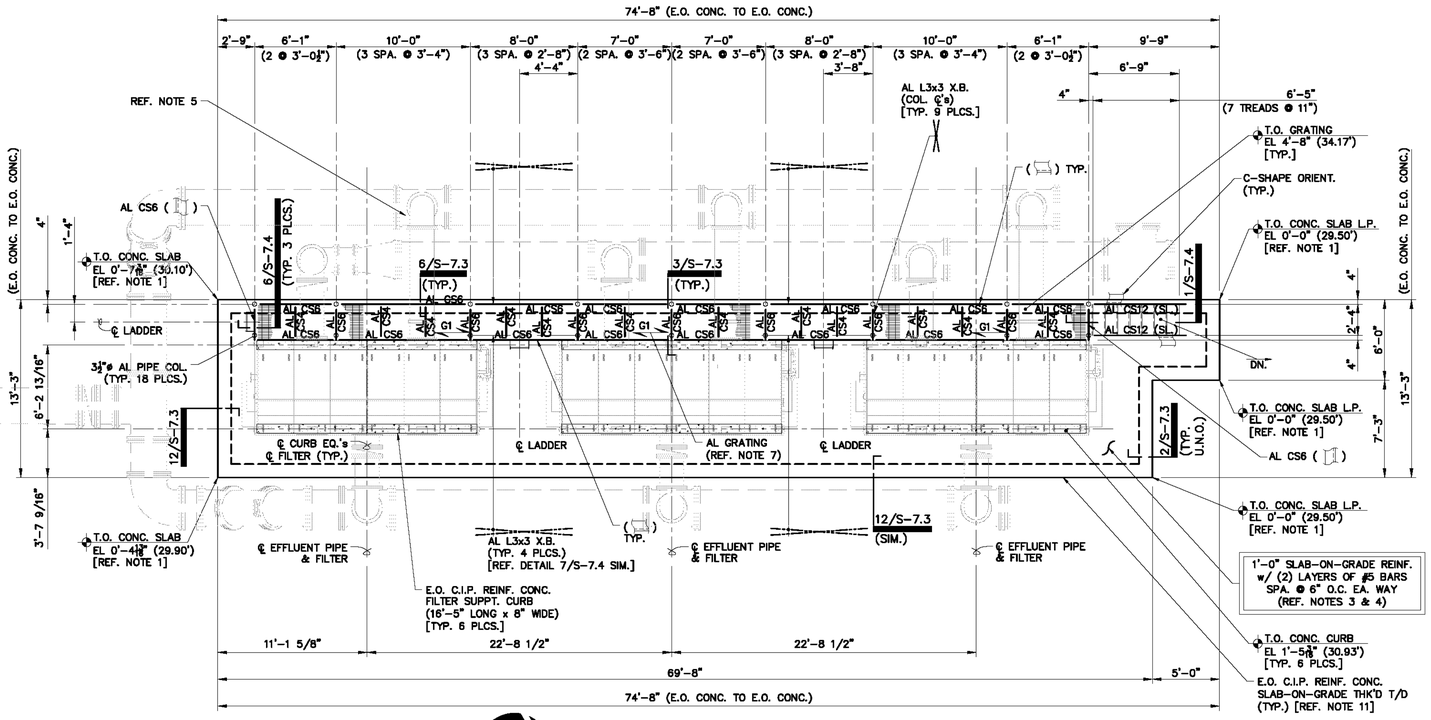
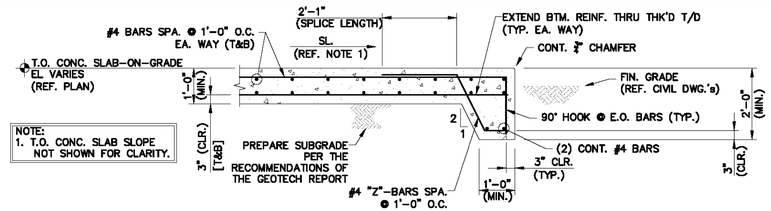


1 - PLAN - GRAVITY LAKE DISC FILTER SLAB

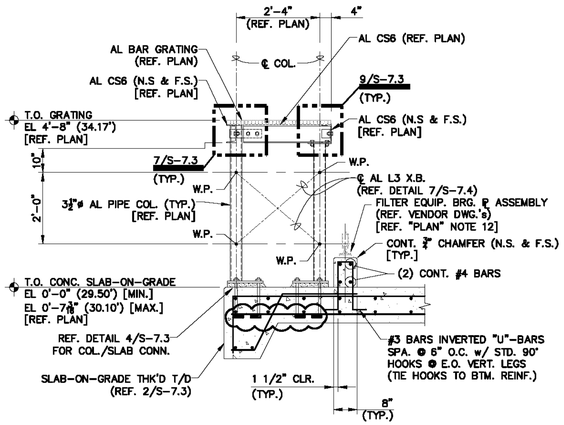
SCALE: 3/16"=1'-0"

NORTH



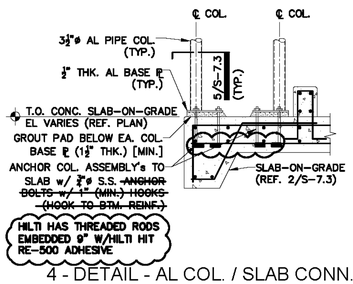
2 - SECTION - TYP. E.O. REINF. CONC. SLAB-ON-GRADE SUPPT. PAD @ GRADE

SCALE: 1/2" = 1'-0"



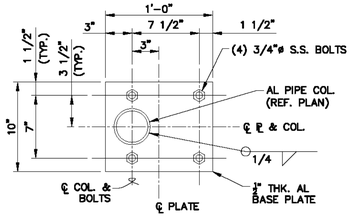
3 - SECTION - THRU AL PLATFORM FRAMING @ COL.'s

SCALE: 1/2" = 1'-0"



4 - DETAIL - AL COL. / SLAB CONN.'s

SCALE: 1/2" = 1'-0"

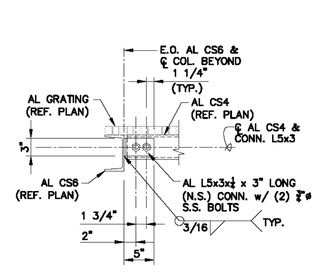


5 - SECTION - AL COL. BASE PLATE

SCALE: 1 1/2" = 1'-0"

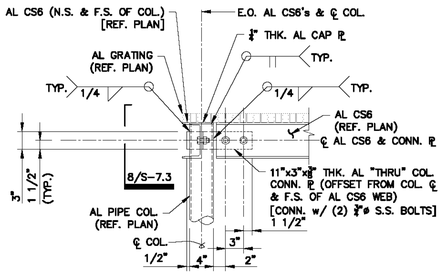
FOUNDATION PLAN NOTES:

1. REFERENCE ELEVATION FOR THE GRAVITY DISK FILTER FACILITY IS THE SLAB-ON-GRADE T.O. CONC. L.P. EL 0'-0" = EL 29'-6" (29.50') N.G.V.D.-29. REFERENCE CIVIL DWGS. FOR ADDITIONAL INFORMATION.
2. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
3. GRADE ELEVATION AROUND THIS STRUCTURE VARIES FROM 29.50' (±) TO 30.10'(±). REFERENCE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
4. PREPARE THE SUBGRADE MATERIAL BELOW THE FACILITY SLAB-ON-GRADE PER THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT. REFERENCE DRAWING S-0.1 & PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. PIPE & EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFORMATION ONLY. REFERENCE CIVIL, ELECTRICAL, MECHANICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB PENETRATIONS, PIPING & MISCELLANEOUS EQUIPMENT EITHER SHOWN OR NOT SHOWN.
6. REFERENCE EQUIPMENT VENDOR DRAWINGS FOR COORDINATION & INSTALLATION OF ANCHORING EQUIPMENT TO T.O. CONC. SLAB & CURB.
7. "~~~~" SYMBOL ON PLANS INDICATES SPAN DIRECTION OF GRATING MAIN BEARING BARS. GRATING IS ALUMINUM (AL) RECTANGULAR BAR U.N.O..
   G1 = 1½ x ⅜" AL RECTANGULAR BAR GRATING (MFG's 19 "SG" SERIES SPACE PROFILE OR GREATER).
8. ATTACH GRATING TO AL SUPPORT FRAMING w/ S.S. CLIPS PER GRATE MFG's. RECOMMENDATIONS.
9. ALUMINUM FRAMING SECTIONS:
   AL CS4 = CS4x2.33 ALUMINUM ASSOCIATION STD. CHANNEL SECTION.
   AL CS6 = CS6x4.03 ALUMINUM ASSOCIATION STD. CHANNEL SECTION.
   AL CS12 = CS12x8.27 ALUMINUM ASSOCIATION STD. CHANNEL SECTION.
   X.B. = ALUMINUM L3x3x¼ L-SHAPE SECTION "X"-CROSS BRACING.
10. IN GENERAL FOR PLATFORM CONNECTIONS NOT SHOWN IT IS THE FABRICATOR'S RESPONSIBILITY TO PROVIDE IN THE PROJECT SHOP DRAWINGS.
11. WHERE SLAB WILL BE CONSTRUCTED TO ADJACENT CONCRETE SIDEWALK SECTIONS INSTALL EXTR. GRADE EXP. JT. MATERIAL. CAULK & SEAL THE TOP OF JOINT w/ SONOLASTIC "SL-2" POLYEURETHANE OR AN APPROVED EQUAL.
12. ~~PROVIDE GROUT PAD IF REQ'D BY THE FILTER EQUIPMENT MFG. TO ENSURE EQUIPMENT IS INSTALLED LEVEL & w/IN MFG's ALLOWED TOLERANCES. GC TO FIELD COORDINATE S.O.G. CONC. CURB, EL, AS, REQUIRED.~~
12. FILTER EQUIPMENT ANCHORED TO THE SLAB-ON-GRADE UTILIZING THE "L"-BRACKET ASSEMBLY DESIGNED BY THE FILTER EQUIPMENT MFG. PROVIDED IN RFI NO. 018



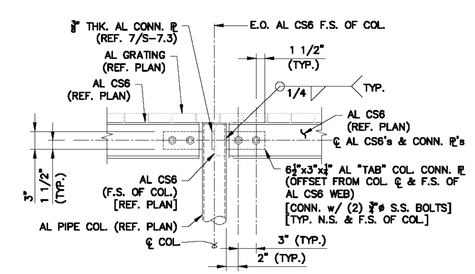
6 - SECTION - AL CS6 / AL CS4 CONN.

SCALE: 1" = 1'-0"



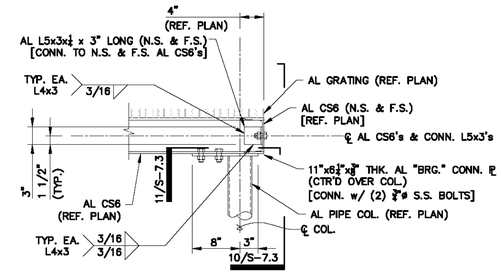
7 - DETAIL - AL PIPE COL. / AL CS6 THRU CONN. ℙ

SCALE: 1" = 1'-0"



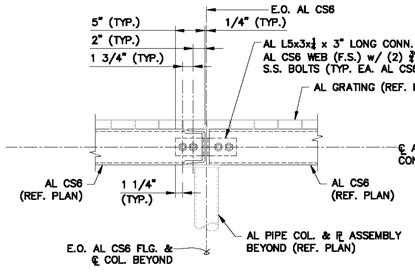
8 - SECTION - AL PIPE COL. / AL CS6 TAB CONN. ℙ

SCALE: 1" = 1'-0"



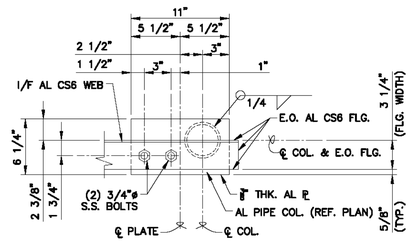
9 - DETAIL - AL PIPE COL. / AL CS6 BRG. CONN. ℙ

SCALE: 1" = 1'-0"



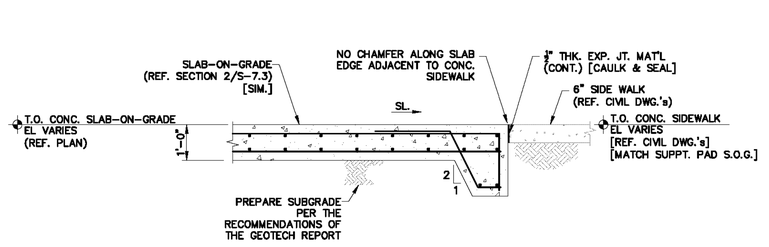
10 - SECTION - AL CS6 / AL CS6 / AL CS6 CONN.

SCALE: 1" = 1'-0"



11 - SECTION - AL COL. / BRG. ℙ CONN.

SCALE: 1 1/2" = 1'-0"



12 - SECTION - TYP. E.O. REINF. CONC. SLAB-ON-GRADE SUPPT. PAD @ SIDEWALK

SCALE: 1/2" = 1'-0"

RECORD DRAWING

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MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☒ REVISIONS ☐ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL.

WILLIAM F. BAND, P.E.
No. 57838

SEAL.

McKIM&CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

LAKE GRAVITY DISC FILTER FOUNDATION PLAN, SECTIONS AND DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER: S-7.3

STATUS: RECORD DRAWINGS
REVISION

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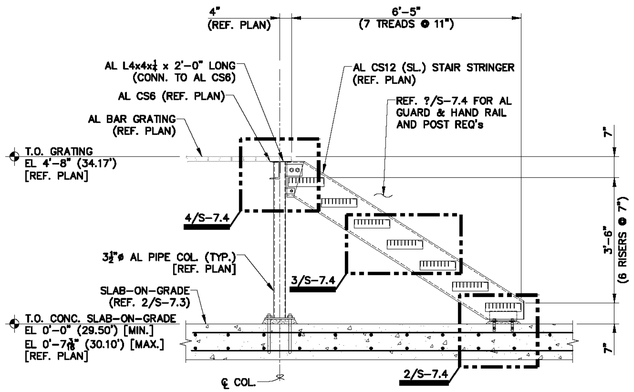
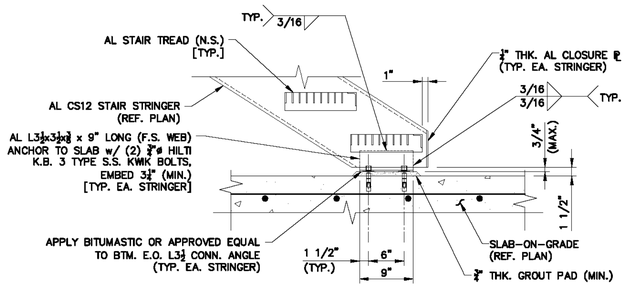
5916.029



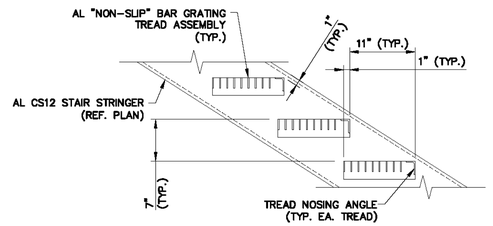
1 - SECTION - THRU AL PLATFORM ACCESS STAIR

SCALE: 1/2" = 1'-0"



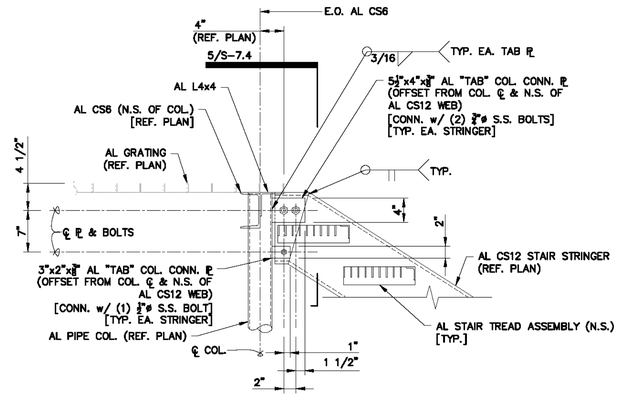
2 - DETAIL - TYP. AL STAIR / SLAB-ON-GRADE CONN.

SCALE: 1" = 1'-0"



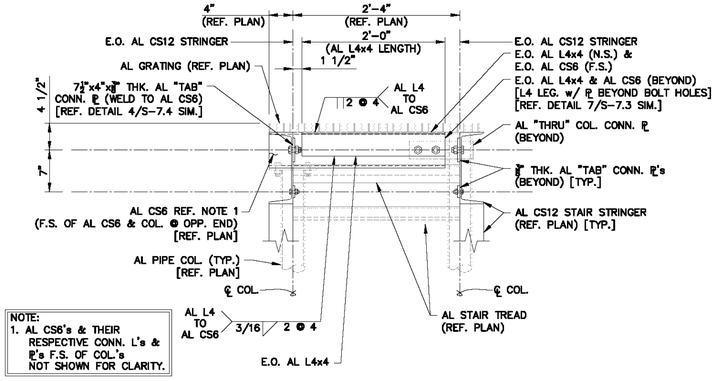
3 - DETAIL - TYP. AL STAIR INFO

SCALE: 1" = 1'-0"



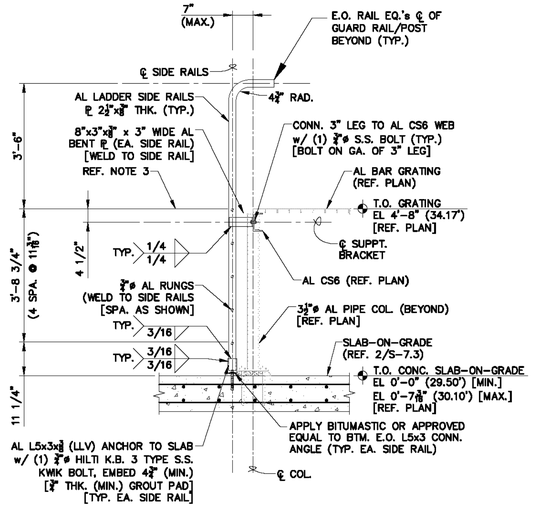
4 - DETAIL - TYP. AL PIPE COL. / AL STAIR AL CS12 CONN.

SCALE: 1" = 1'-0"



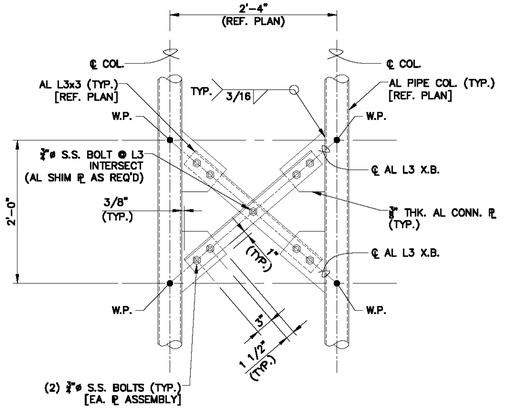
5 - SECTION - AL STAIR FRMG. & GRATING SUPPT.

SCALE: 1" = 1'-0"



6 - SECTION - TYP. AL ACCESS LADDER FRMG.

SCALE: 1/2" = 1'-0"

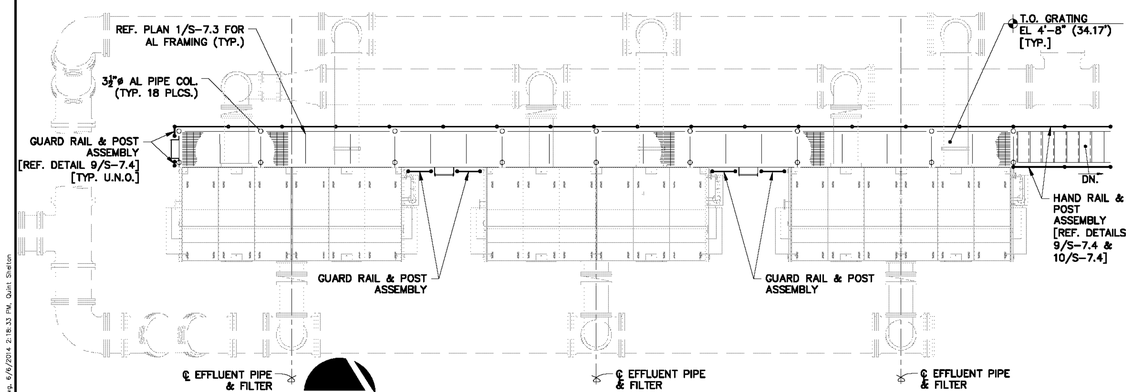


7 - DETAIL - AL PLATFORM E/W DIR. "X"-BRACING

SCALE: 1" = 1'-0"

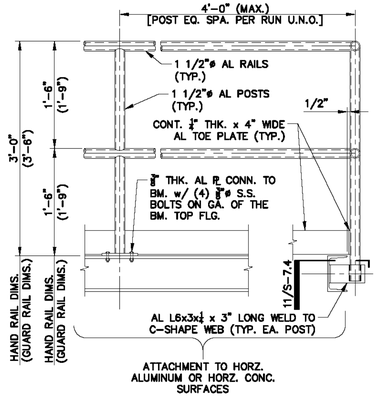
NOTES:

1. REFERENCE DWG. S-0.1 FOR ADDITIONAL GENERAL NOTES & DESIGN CRITERIA.
2. REFERENCE DWG. S-7.3 FOR ADDITIONAL AL PLATFORM FRAMING & SLAB-ON-GRADE REQUIREMENTS.
3. T.O. AL GRATING EL EQUALS THE T.O. TOP RUNG EL FOR THE AL LADDER SECTIONS.
4. IN GENERAL FOR PLATFORM CONNECTIONS NOT SHOWN IT IS THE FABRICATOR'S RESPONSIBILITY TO PROVIDE IN THE PROJECT SHOP DRAWINGS.
5. HAND RAIL & GUARD RAIL ASSEMBLY INFORMATION AS FOLLOWS:
   a.) PROVIDE HAND RAIL ALONG STAIR RUNS & GUARD RAIL AT PLATFORMS.
   b.) HANDRAILS DETAILS SHOWN DEPICT INTENT OF HANDRAIL INSTALLATION. HANDRAIL FABRICATOR/INSTALLER SHALL BE RESPONSIBLE FOR ADHERING TO FLORIDA BUILDING, OSHA & ADDITIONAL JURISDICTION CODES THAT MAY BE APPLICABLE. IT IS THE GENERAL CONTRACTOR'S (GC) RESPONSIBILITY TO VERIFY APPLICABLE CODES w/ THE INSPECTOR FOR THE LOCAL JURISDICTION.
   c.) HANDRAIL DETAILS SHOWN ARE 1 1/2"ø ALUMINUM POSTS AND RAILS. REFERENCE DWG. S-0.1 GENERAL NOTES & DESIGN CRITERIA, IN ADDITION TO THE PROJECT SPECS. FOR MATERIAL REQUIREMENTS.
   d.) COORDINATE w/ MECH. DWG.s THE REQUIRED LOCATIONS OF HANDRAIL/GUARDRAIL ASSEMBLIES. GC TO VERIFY LOCATIONS w/ THE INSPECTOR FOR THE LOCAL JURISDICTION, IF APPLICABLE.
   e.) WHERE ALUMINUM MEETS CONCRETE OR DISSIMILAR METALS, BITUMASTIC OR AN APPROVED EQUAL SHALL BE APPLIED TO THE MATING SURFACE.
   f.) HANDRAIL CENTERLINE TO EDGE OF CONCRETE DIMENSION SHALL BE 6" (MIN.) U.N.O. WHERE APPLICABLE.
   g.) GAP FOR TOE PLATE ABOVE WALKING SURFACE U.N.O..
   h.) POST & HANDRAIL FABRICATOR TO PROVIDE HARDWARE AND/OR JOINTS FOR THERMAL EXPANSION / CONTRACTION AS REQ'D.



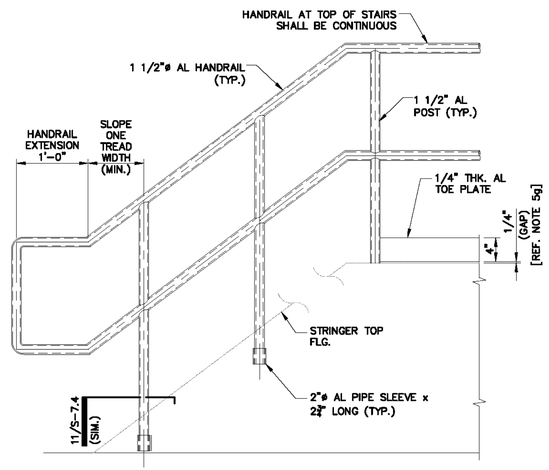
8 - PLAN - AL HAND & GUARDRAIL LAYOUT

SCALE: 3/16" = 1'-0"



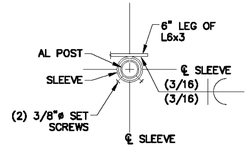
9 - DETAIL - AL HAND / GUARD RAIL & POST CONN.'s

SCALE: 1" = 1'-0"



10 - DETAIL - AL RAIL STAIR STRINGER INFO.

SCALE: 1" = 1'-0"



11 - SECTION - AL POST C-SHAPE CONN.

SCALE: 1 1/2" = 1'-0"

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MITCHELL & STARK CONSTRUCTION CO. FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

WILLIAM F. BAND, P.E.
No. 67838

SEAL

McKIM&CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

LAKE GRAVITY DISC FILTER
ADDITIONAL FOUNDATION & FRAMING
SECTIONS AND DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	WFB
DESIGNED	WFB
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS NOTED
VERTICAL: NA

DRAWING NUMBER
S-7.4

STATUS: RECORD DRAWINGS
REVISION

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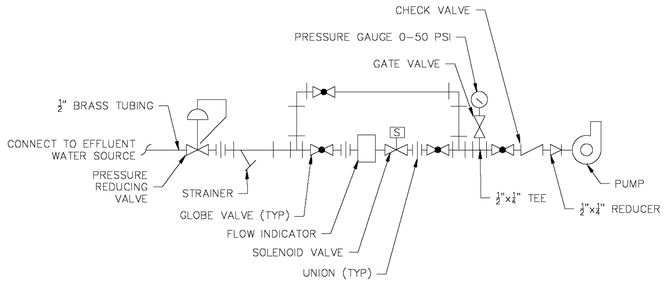
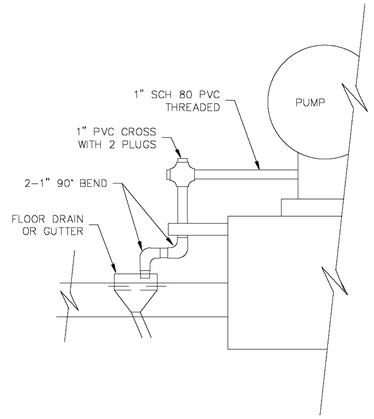
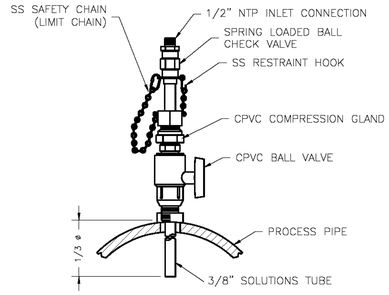
5916.030



PUMP WATER SEAL SYSTEM DETAIL
NOT TO SCALE

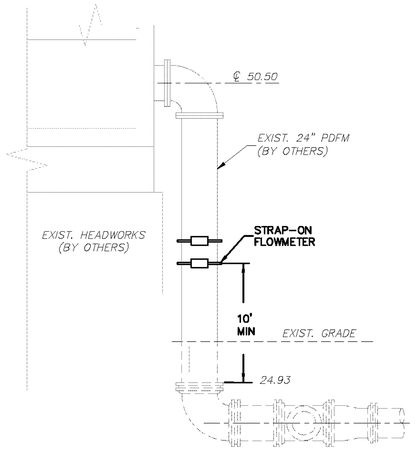


PUMP STUFFING BOX DRAIN DETAIL
NOT TO SCALE

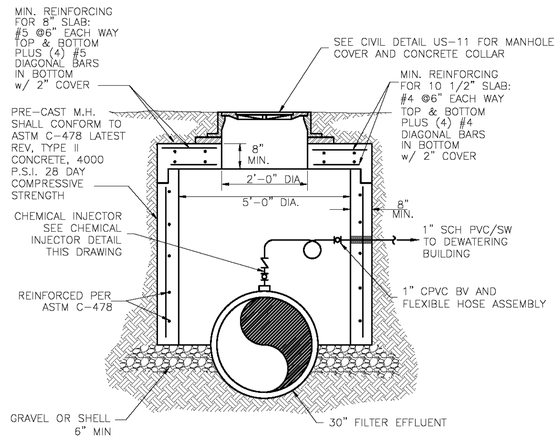


SAF-T-FLOW EB-162 OR APPROVED EQUAL

CHEMICAL INJECTION DETAIL DETAIL
NOT TO SCALE



PLANT DRAIN PUMP STATIONS FLOWMETER DETAIL
SCALE: NTS



CHEMICAL INJECTION VAULT DETAIL DETAIL
NOT TO SCALE

RECORD DRAWING

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A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL
DAVID C. WEHNER, P.E.
No. 59541

SEAL

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Clearwater, Florida 33756
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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

MECHANICAL DETAILS 1

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	QES
DESIGNED	DCW
CHECKED	MSL
PROJ. MGR.	DCW

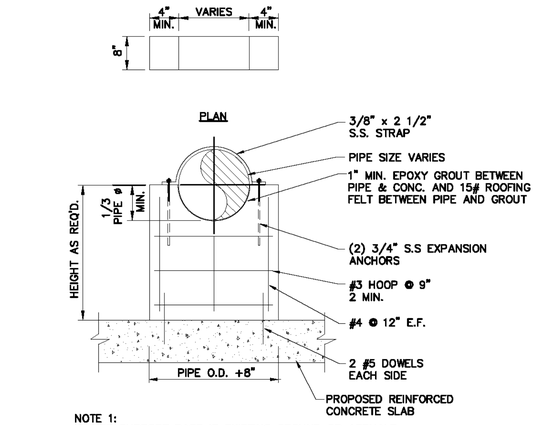
SCALE
HORIZONTAL: NONE
VERTICAL: NA

DRAWING NUMBER
M-0.1

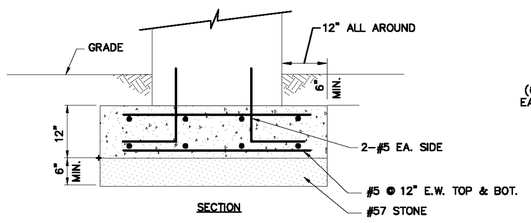
STATUS: REVISION
RECORD DRAWINGS

5916.031

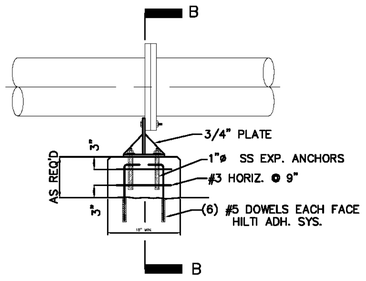
S:\1024\01-43\03-Record\Record_M-0.1-1024143.dwg, 6/6/2014 12:44:52 PM, Quist Stefan



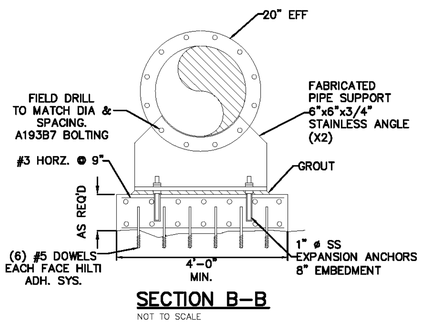
NOTE 1:
IF PIPE SUPPORT BASE IS EXISTING GROUND OR ASPHALT PAVEMENT, ADD CONCRETE BASE AS SHOWN BELOW.



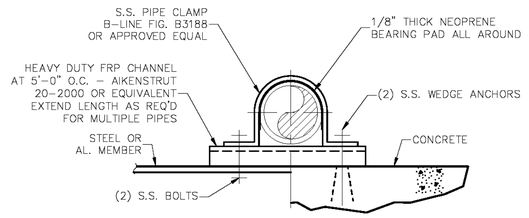
PIPE SUPPORT TYPE 1
NOT TO SCALE



PIPE SUPPORT TYPE 2
NOT TO SCALE

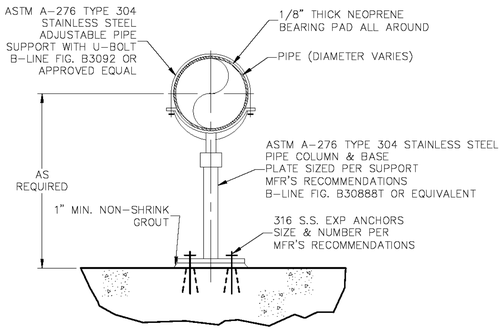


SECTION B–B
NOT TO SCALE

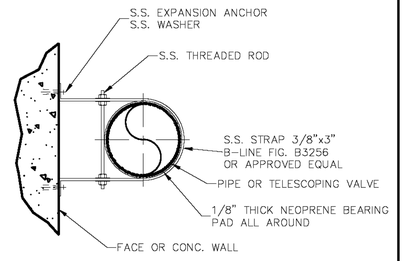


NOTE:
USE THIS DETAIL FOR SMALL DIA. PIPING OR CONDUIT ATTACHED TO CONCRETE SLAB, WALL, CEILING, METAL FRAMING MEMBERS OR EQUIPMENT MOUNTING BOARDS.

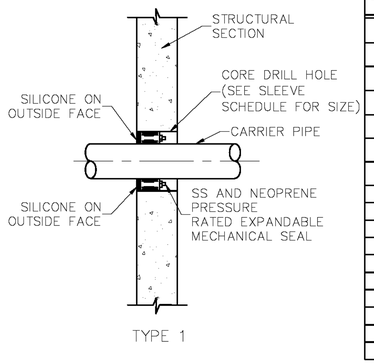
PIPE SUPPORT TYPE 3
NOT TO SCALE



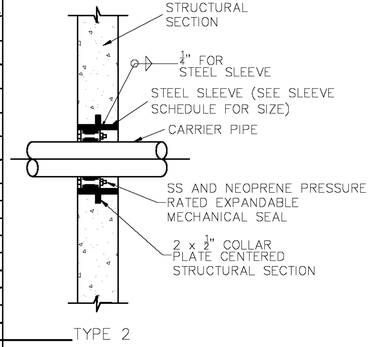
PIPE SUPPORT TYPE 4
NOT TO SCALE



PIPE STAND-OFF BRACKET TYPE 5
NOT TO SCALE

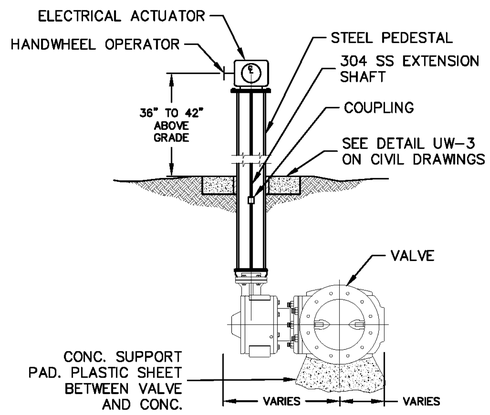


SLEEVE SCHEDULE				
CARRIER PIPE			STEEL SLEEVE INSIDE DIAMETER (INCHES)	CORE DRILLED HOLE INSIDE DIAMETER (INCHES)
NOMINAL DIAMETER INCHES	MATERIAL	OUTSIDE DIAMETER INCHES		
1/2	SCH. 80 PVC	0.84	2.067	2
3/4	SCH. 80 PVC	1.05	2.067	3.0
1	SCH. 80 PVC	1.315	2.469	2.5
1 1/2	SCH. 80 PVC	1.90	4.026	4
2	SCH. 80 PVC	2.38	4.026	4
3	SCH. 80 PVC	3.50	5.047	5
4	SCH. 80 PVC	4.5	6.065	6
6	D.I.	6.90	10.02	10
8	D.I.	9.05	12.0	12
10	D.I.	11.10	13.25	14
12	D.I.	13.20	15.25	16
16	D.I.	17.40	19.25	20
18	D.I.	19.50	23.25	24
24	D.I.	25.80	29.25	30
36	D.I.	38.30	43.25	43
42	D.I.	44.50	47.25	48
8	HDPE	9.050	12.0	12



NOTE:
INSTALL SEALS FROM DRY SIDE OF PENETRATION. WET SIDE FILLED WITH WATERPROOF NON-SHRINK GROUT.

LINK SEAL WALL PENETRATION
NOT TO SCALE



MOTOR OPERATED BURIED VALVE DETAIL
NOT TO SCALE

RECORD DRAWING

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FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL
DAVID C. WEHNER, P.E.
No. 59541

SEAL

McKIM&CREED
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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

MECHANICAL DETAILS 2

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	QES
DESIGNED	DCW
CHECKED	MSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NONE
VERTICAL: NA

DRAWING NUMBER
M-0.2

STATUS: RECORD DRAWINGS
REVISION

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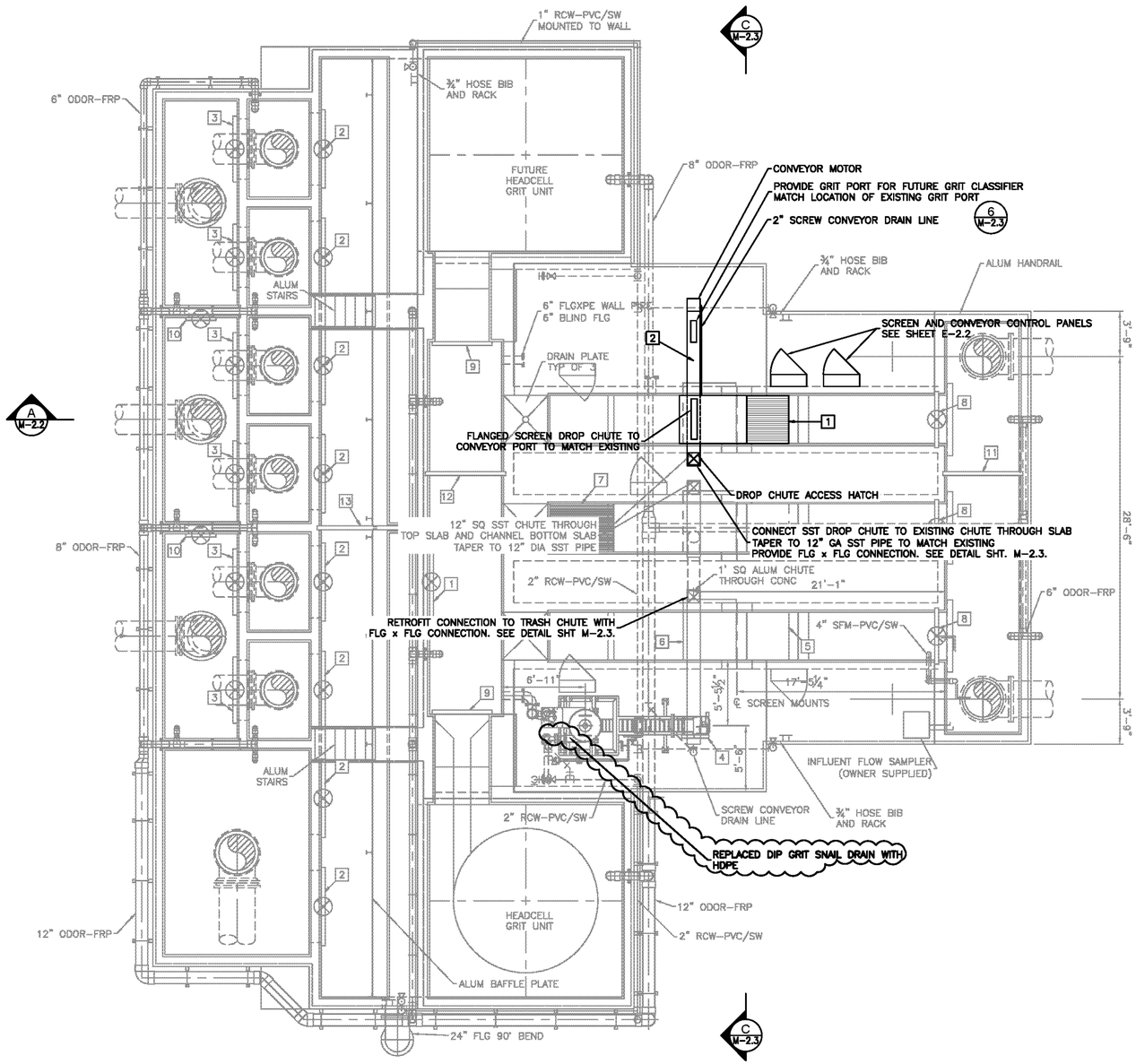

PLAN VIEW AT TOP OF STRUCTURE
SCALE: 3/16"=1'–0"

EQUIPMENT LIST

1. AUTOMATIC FINE SCREEN "PARKSON CORPORATION". SEE TECHNICAL SPECIFICATIONS FOR ADDITIONAL DETAILS.
2. SCREW CONVEYOR "SHAFTED TYPE". SEE TECHNICAL SPECIFICATION FOR ADDITIONAL DETAILS.

RECORD DRAWING

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DAVID C. WEHNER, P.E.
No. 59541

BACKGROUND INFORMATION FROM RECORD DRAWINGS DATED APRIL 2010 FOR MANATEE COUNTY, FL. NORTH WATER RECLAMATION FACILITY INFLUENT STRUCTURE PROJECT NO. 6011281

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

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Clearwater, Florida 33756
Phone: (727)442–7196, Fax: (727)461–3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

HEADWORKS MECHANICAL
PLAN AT TOP

DATE:	JUNE 2014
MCE PROJ. #	1024–0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	MSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 3/16" = 1'–0"
VERTICAL: NA

DRAWING NUMBER
M–2.1

STATUS: RECORD DRAWINGS
REVISION

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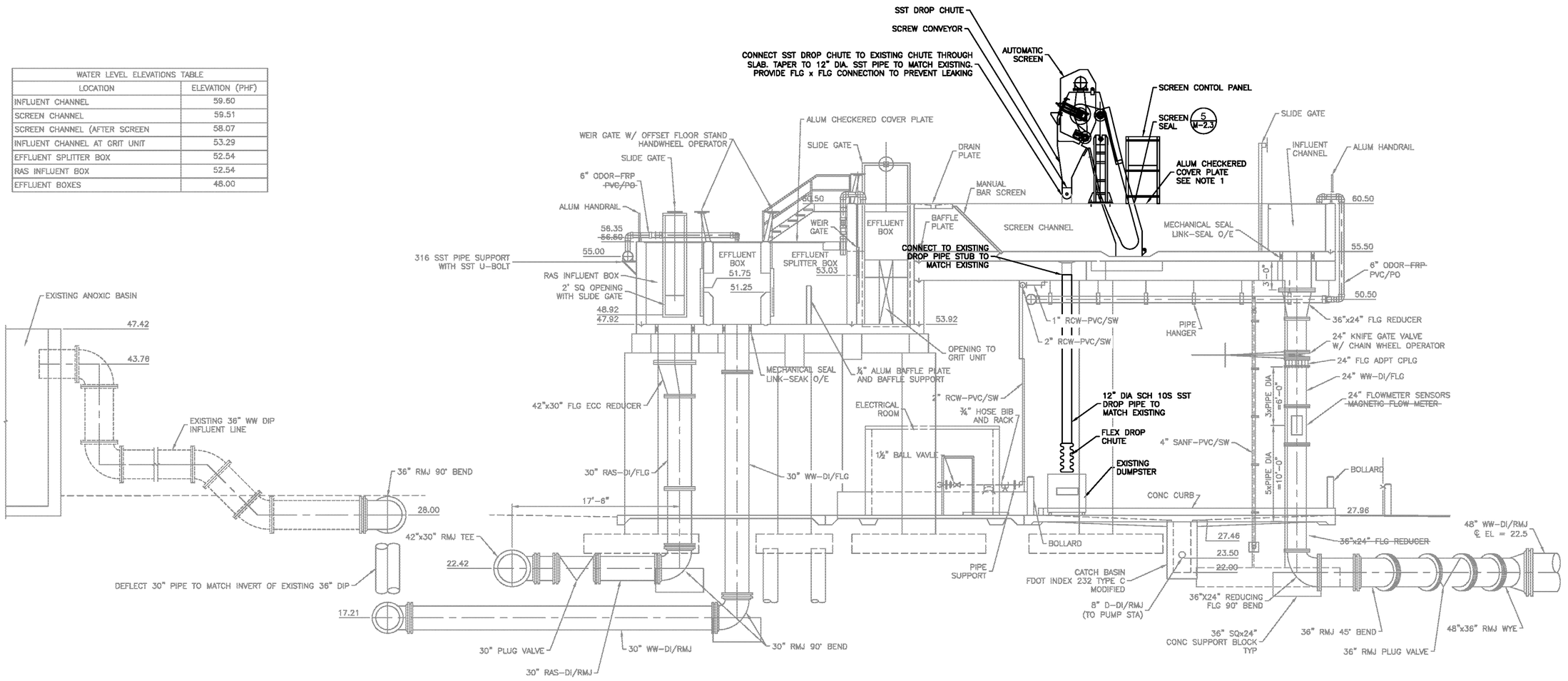
5916.033

NOTES:
1. PROVIDE ALUMINUM CHECKERED COVER PLATE TO CLOSE GAP BETWEEN ADJACENT PLATE AND SCREEN. SEE DETAIL 4 ON SHEET M-2.3

WATER LEVEL ELEVATIONS TABLE	
LOCATION	ELEVATION (PHF)
INFLUENT CHANNEL	59.60
SCREEN CHANNEL	59.51
SCREEN CHANNEL (AFTER SCREEN	58.07
INFLUENT CHANNEL AT GRIT UNIT	53.29
EFFLUENT SPLITTER BOX	52.54
RAS INFLUENT BOX	52.54
EFFLUENT BOXES	48.00



A M-2.1 SECTION
SCALE: 3/16"=1'-0"

BACKGROUND INFORMATION FROM RECORD DRAWINGS DATED APRIL 2010 FOR MANATEE COUNTY, FL. NORTH WATER RECLAMATION FACILITY INFLUENT STRUCTURE PROJECT NO. 6011281

RECORD DRAWING

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REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

HEADWORKS MECHANICAL SECTION

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	MSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 3/16" = 1'-0"
VERTICAL: NA

DRAWING NUMBER: M-2.2

STATUS: RECORD DRAWINGS
REVISION

5916.034

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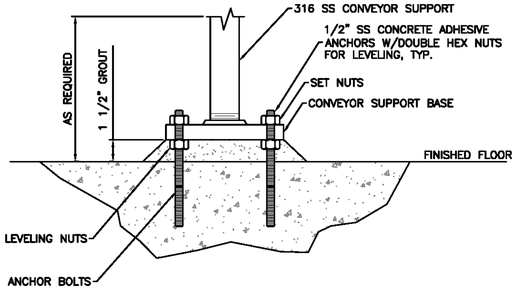
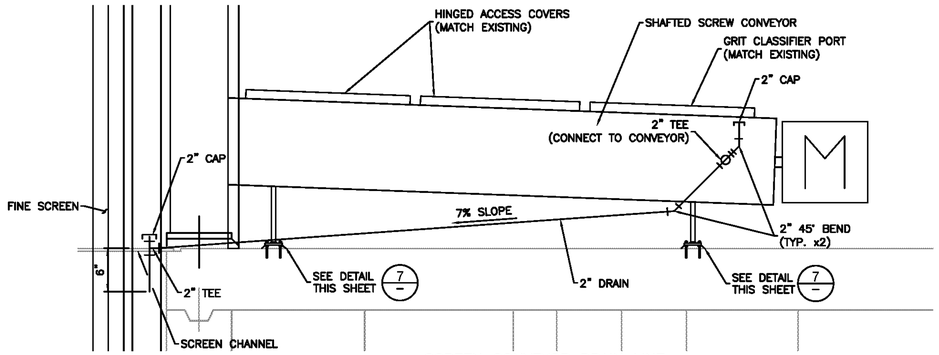


CONVEYOR SUPPORT

7 — DETAIL

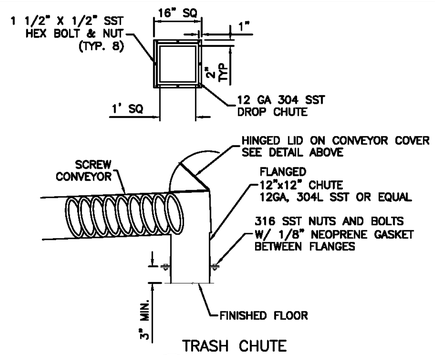
SCALE: NTS



SCREEN CONVEYOR DRAIN LINE

6 — DETAIL

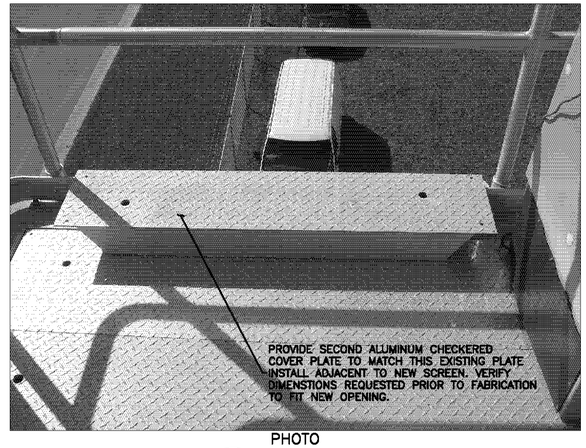
SCALE: NTS



TRASH CHUTE

2 — DETAIL

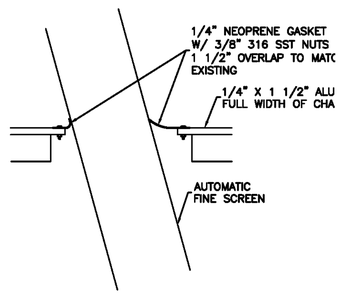
SCALE: NTS



PHOTO

4 — DETAIL

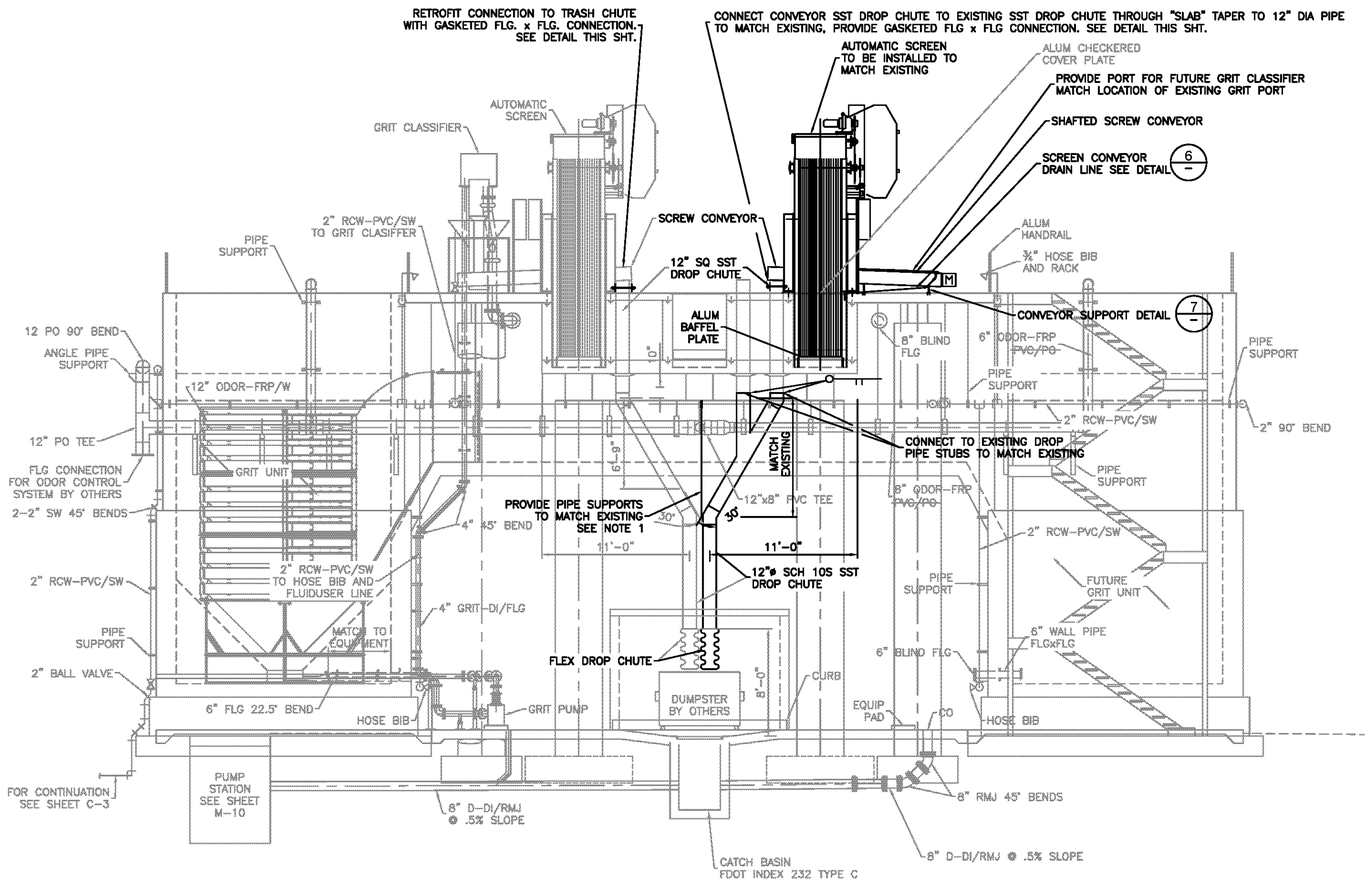
SCALE: NTS



SCREEN SEAL

5 — DETAIL

SCALE: NTS



C — SECTION

M-2.1 — SCALE: 3/16"=1'-0"

NOTES:

1. ANCHOR PIPE SUPPORT RODS INTO EXISTING CONCRETE SLAB WITH HILTI HIT-RE500 SD EPOXY ADHESIVE, EMBED 4" MIN.

RECORD DRAWING

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FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

BACKGROUND INFORMATION FROM RECORD DRAWINGS DATED APRIL 2010 FOR MANATEE COUNTY, FL.
NORTH WATER RECLAMATION FACILITY
INFLUENT STRUCTURE
PROJECT NO. 6011281

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

HEADWORKS MECHANICAL SECTION AND DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	MSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

DRAWING NUMBER: M-2.3

STATUS: RECORD DRAWINGS

REVISION

5916.035

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BACKGROUND IMAGE FROM RECORD DRAWINGS DATED 12/19/89 FOR "WASTEWATER FACILITIES IMPROVEMENTS"; MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT; NORTH SUBREGIONAL WASTEWATER TREATMENT FACILITY.

NORTH

REMOVE EX 8" PV PER FD1

NEW 8" PV PER-FD1

(2) 8" KNIFE GATE VALVES W/ W PER FD6

NEW 8" PV PER-FD1

REMOVE EX 8" PV PER FD1

AEROBIC BASIN #2

AEROBIC BASIN #1

EFFLUENT BOX

EFFLUENT BOX

42"x42" SLUICE GATE # 5 W/FLG.x FLG.x M.J., RND. WALL THIMBLE

46"x46" SLUICE GATE # 7 W/FLG.x FLG.x M.J. RND. WALL THIMBLE

42"x42" SLUICE GATE # 6 W/ FLG.x FLG.x M.J., RND. WALL THIMBLE

42" R.J.xP.E. 11¼° BEND
42" M.L., D.I.P., S.J.

42" R.J.xP.E. 11¼° BEND
42" M.L., D.I.P., M.J.

2" R.W., BRASS, THD.
4"x2" R.J. TAPPED TEE
4" R.W., D.I.P., R.J.

SLOPE SLAB @ 1/8"/FT.

12" D., D.I.P., S.J. @ 0.24% SLOPE

ALUM. STAIR #5

48" M.L., D.I.P., P.E.

2" R.W., BRASS, THD.

8"D., D.I.P. R.J. FROM 20" R.M.L. INV. EL. 24.75

8" P.V.

15'-0" LG. WEIR GATE (MOTORIZED) (TYP.)

12" WIDE TRENCH BOTTOM EL. 27.33

DRAIN SUMP BOTTOM EL. 25.83

1/M-3.1

1/M-3.1

30" FL x PE D.I.P. (TYP. X 4)

30" UNI-FLANGE (TYP. x 4)

30" UNI-FLANGE (TYP. x 4)

30" x 16" ECCENTRIC REDUCER (TYP. x 4)

SEE NOTE 5

16" EXPANSION JOINT (TYP. x 4)

8"D., D.I.P., AXIAL FLOW PUMP FROM 20" MOTOR AND BASE INV. EL. 24.75 (TYP. x 4)

INV. EL. 22.58

H.P. OF SLAB EL. 31.64

R.M.L. PUMP #3

R.M.L. PUMP #1

R.M.L. PUMP #4

R.M.L. PUMP #2

EXIST. 1/2" RCW PVC PIPE

REPLACE ABOVE GRADE PORTIONS OF WATER SEAL ASSEMBLY (TYP x 4)

PIPE SUPPORT TYPE 2 (TYP. x4) SEE SHEET M-0.2 FOR DETAIL

30"BONNETED KNIFEGATE VALVE (TYP. x 4)

2" R.W., BRASS, THD.
2" R.W., P.V.C. (SCH. 80), S.W.

30" FL x PE D.I.P. (TYP. X 4)

PRESSURE GAUGE (TYP.)

20" R.M.L., D.I.P., FLG.

20"x6" R.J. TEE

20" R.M.L., D.I.P., R.J.

3"D., P.V.C. (SCH 40), S.J. @ 2.0% SLOPE

SEE NOTE 4 (TYP.)

20"x__" FLG. RED. (SEE NOTE 1: TYP.)

20" STL. F.A.C. HARNESSED (TYP.)

6'-0" 1'-6" 3'-8" 20'-0" 2'-3" 3" 20'-6"

FLOW METER AND 20"x2" TAPPING SLEEVE (TYP. X4)

1'-6" (TYP.)

3'-0"

4" R.W., D.I.P., R.J.

1/2" TAP

TAPPED CROSS

APCO O/E, RUBBER FLAPPER C.V. (TYP.)

4"x2" R.J. TAPPED CROSS
2" R.W., BRASS, THD.

1"CL.2O, P.V.C. (SCH.80), S.W.

4" R.W., P.V.C. (SCH. 40), S.W.

2"CL.S. P.V.C.(SCH.80), S.W. TO HEADWORKS

FLOOR STAND EXTENSION ROD

CONC. PIPE SUPPORT

30" R.M.L., D.I.P., FLG.

7'-0" 1'-0"

LOWER PLAN
NTS

NOTES:
1. ADJUST CONCRETE PUMP SUPPORT PADS TO ACCOMODATE NEW PUMP DIMENSIONS.
2. TEST AND PROVIDE A REPORT REGARDING THE CONDITION OF THE EXISTING POWER WIRE TO THE INTERNAL RECYCLE PUMPS. WIRE SHALL BE REPLACED AS DIRECTED BY THE OWNER AND AS PROVIDED IN THE BID ITEMS.
3. THE BASIN SHALL BE DEWATERED AND PHASED AS APPROVED BY THE ENGINEER AND OWNER PRIOR TO THE START OF WORK.
4. PROVIDE VALVE POSITION INDICATOR WITH LIMIT SWITCH ON EXISTING CHECK VALVES.
5. EXISTING DISTANCE IS 19". IF SELECTED EQUIPMENT DIFFERS, CONTRACTOR TO PROVIDE FLANGE FILLERS, CUT EXISTING SPOOL OR PROVIDE NEW SPOOL AS NEEDED TO MAKE SELECTED EQUIPMENT FIT.

SEE STRUCTURAL DRAWINGS FOR REPAIR DETAIL

AXIAL FLOW PUMP MOTOR AND BASE

30"x16" ECCENTRIC REDUCER

3/8" x 2-1/2" S.S. STRAP

36" FL x PE D.I.P.

PIPING FOR R.M.L. PUMPS #2 & #4

R.M.L. PUMP #3

℄ EL. 36.33

30" R.M.L., D.I.P., F.G.

30" FLG. x FLARE

CONC. SUPPORT

PIPE SUPPORT TYPE 4 (TYP x 4) SEE SHEET M-0.2 FOR DETAIL

ADD NON-SHRINK GROUT TO EXISTING PIPE SUPPORT

NOTE
SECTION IS TYPICAL FOR R.M.L. PUMPS # 1,2,3 & 4, EXCEPT FOR SUCTION PIPING BEFORE 30" P.V. & AFTER 30" FLG.x FLARE -SEE PLAN FOR ADDITIONAL INFORMATION.

SECTION 1

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☒ REVISIONS ☐ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

PRESSURE GAUGE

PRESSURE GAUGE

R.M.L. PUMP # 2

REMOVE AND REPLACE RUBBER FLAPPER(TYP. X4)

2" SL., BRASS, THD. (TYP.)

2" BRASS SAMPLING COCK (TYP.)

NOTE 1

2" BOSS (TYP.)

℄ EL. 36.33

20" FLG. P.V. ON DISCHARGE LINE OF PUMP # 4 ONLY)

FLOW METER AND 20"X2" TAPPING SLEEVE (TYP. X4)

SLOPE SLAB @ 1/8"/FT

20" R.M.L., D.I.P., FLG.

EL. 31.08

EL. 30.42

NOTE
THIS SECTION IS ALSO TYPICAL FOR DISCHARGE LINE OF R.M.L. PUMPS # 3 & 4.

1/2" EXP. JT MAT'L. (TYP.)

℄ 28.08

20" R.M.L., D.I.P., R.J.

24" R.M.L., D.I.P., R.J.

℄ EL. 25.56

20"x8" P.E. x R.J. ECC. RED.

8" R.J. 45° BEND

8"D., D.I.P., R.J. TO M.H., INV. EL. 24.75

SECTION 3
NTS

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	5/14

SEAL

BLAKE R. PETERS, P.E.
No. 64429

SEAL

McKIM & CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

NEW INTERNAL RECYCLE PUMPS

PLAN AND SECTIONS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	NJS
CHECKED	
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NTS
VERTICAL: NTS

DRAWING NUMBER
M-3.1

STATUS: RECORD DRAWINGS
REVISION

5916.036

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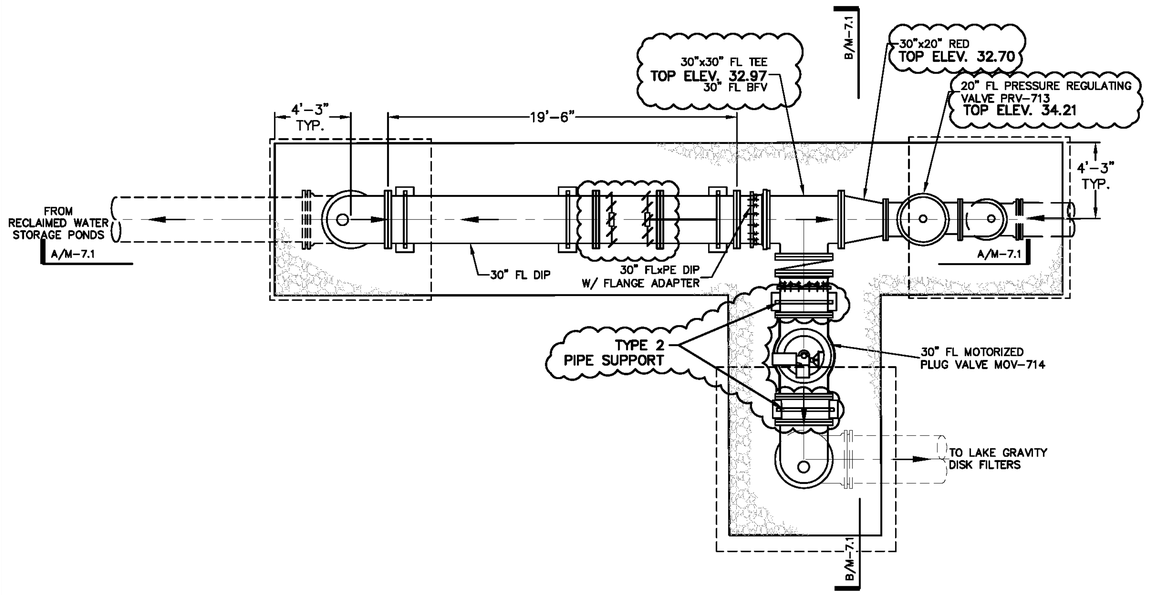
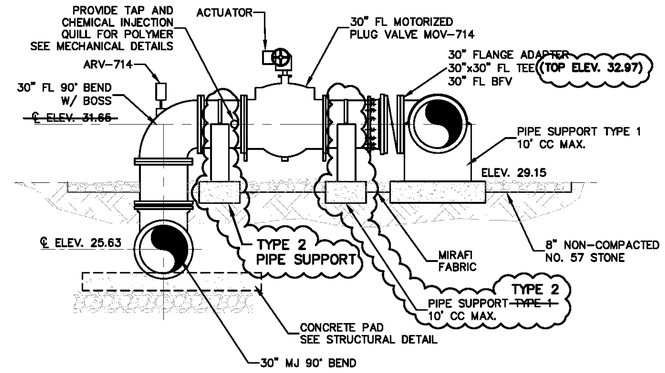
VALVE TYPE	MANUFACTURER
PLUG VALVE (PV)	DEZURIK
BUTTERFLY VALVE (BFV)	DEZURIK
PRESSURE REGULATING VALVE (PRV)	BERMAD
CHECK VALVE (CV)	APCO

NORTH



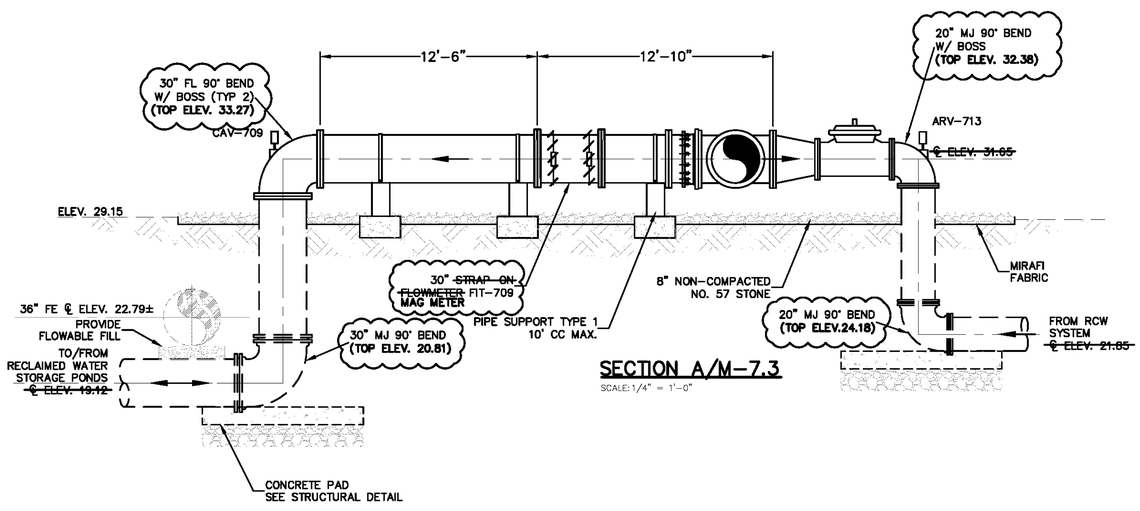
METER AND PRESSURE REGULATING VALVE ASSEMBLY

SCALE: 1/4" = 1'-0"



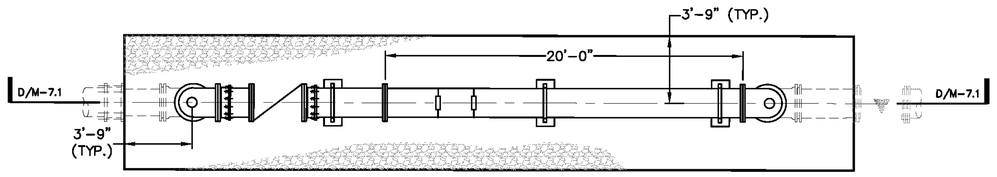
SECTION B/M-7.1

SCALE: 1/4" = 1'-0"



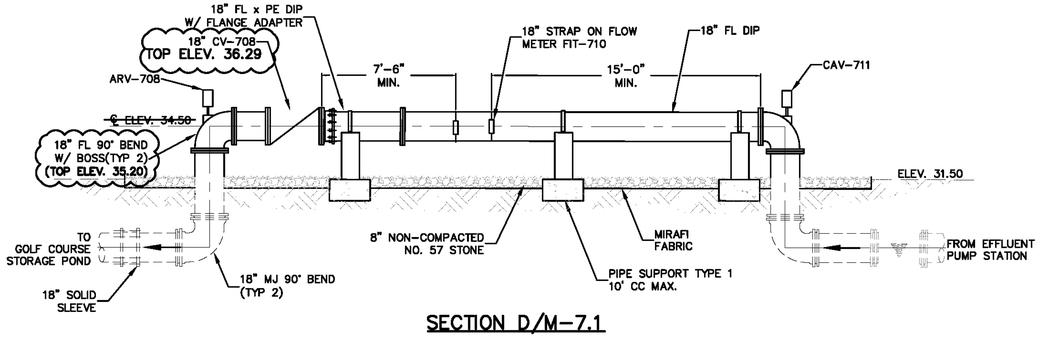
SECTION A/M-7.3

SCALE: 1/4" = 1'-0"



METER AND CHECK VALVE ASSEMBLY

SCALE: 1/4" = 1'-0"



SECTION D/M-7.1

SCALE: 1/4" = 1'-0"

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FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

McKIM&CREED
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Clearwater, Florida 33756
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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

METER AND PRV ASSEMBLY, METER AND CHECK VALVE ASSEMBLY PLAN AND SECTION

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	DMP
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: AS SHOWN

DRAWING NUMBER: M-7.1

STATUS: RECORD DRAWINGS
REVISION

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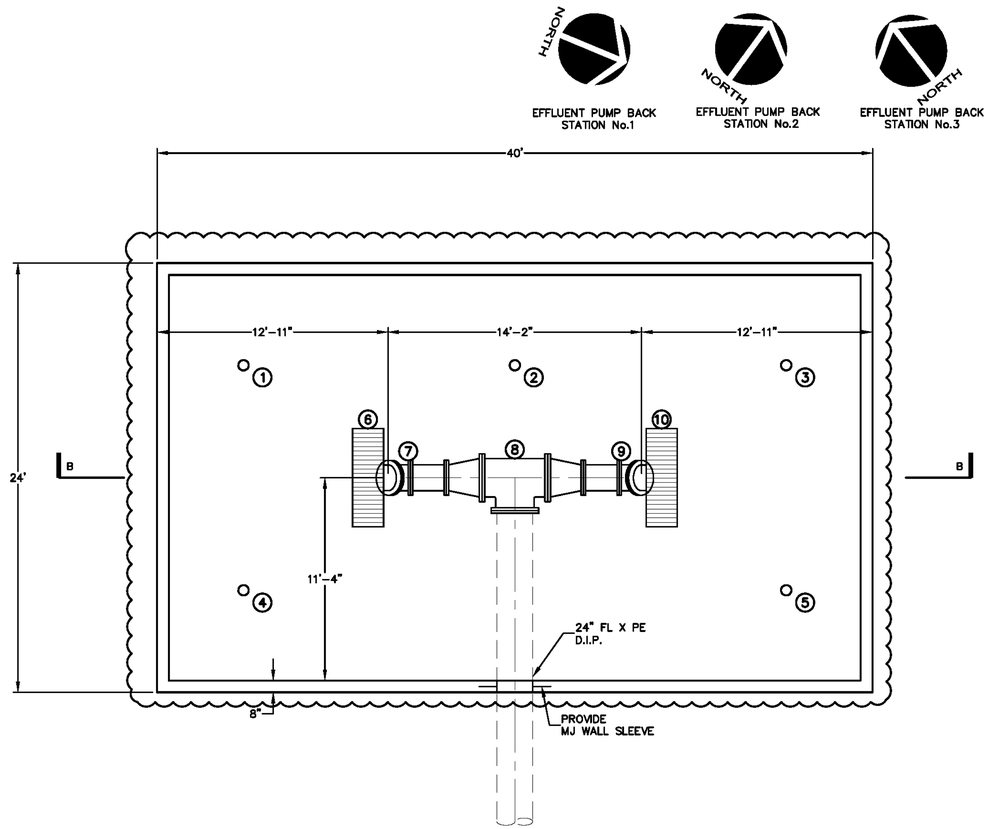
5916.037

EFFLUENT PUMP BACK STATION No. 1			
NUMBER	DESCRIPTION	LOCATION	TOP ELEVATION
1	6" PRESSURE RELIEF VALVE	N: 1182699.13 E: 500003.12	14.29'
2	6" PRESSURE RELIEF VALVE	N: 1182712.62 E: 499996.72	14.36'
3	6" PRESSURE RELIEF VALVE	N: 1182726.81 E: 499990.18	14.33'
4	6" PRESSURE RELIEF VALVE	N: 1182704.03 E: 500014.90	14.24'
5	6" PRESSURE RELIEF VALVE	N: 1182726.81 E: 499990.18	14.33'
6	16" INTAKE SCREEN AT TEE	N: 1182707.29 E: 500005.82	18.19'
7	16" M.J. 45° BEND	N: 1182709.54 E: 500004.77	16.37'
8	24" TEE	N: 1182714.97 E: 500002.19	17.12'
9	16" M.J. 45° BEND	N: 1182720.76 E: 499999.70	16.37'
10	16" INTAKE SCREEN AT TEE	N: 1182722.77 E: 499998.66	18.14'

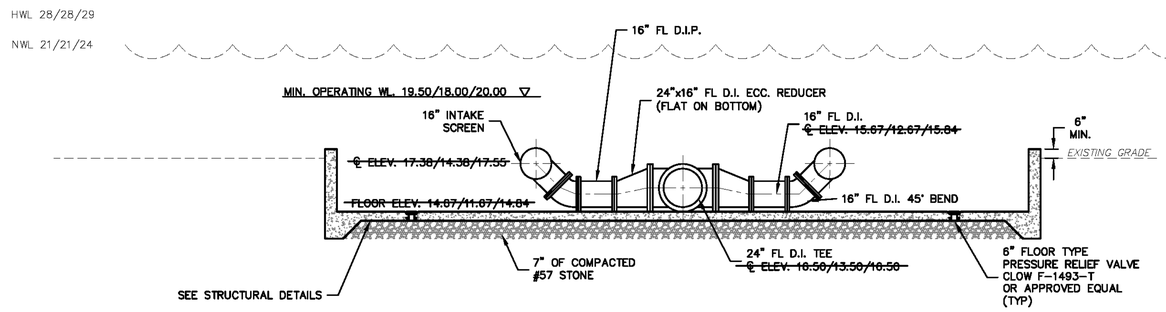
EFFLUENT PUMP BACK STATION No. 2			
NUMBER	DESCRIPTION	LOCATION	TOP ELEVATION
1	6" PRESSURE RELIEF VALVE	N: 1183027.94 E: 500038.66	12.11
2	6" PRESSURE RELIEF VALVE	N: 1183036.41 E: 500051.06	12.07
3	6" PRESSURE RELIEF VALVE	N: 1183044.95 E: 500063.68	12.13
4	6" PRESSURE RELIEF VALVE	N: 1183020.86 E: 500049.05	12.09
5	6" PRESSURE RELIEF VALVE	N: 1183034.51 E: 500070.87	12.21
6	16" INTAKE SCREEN AT TEE	N: 1183025.64 E: 500046.88	15.51
7	16" M.J. 45° BEND	N: 1183027.06 E: 500048.84	13.72
8	24" TEE	N: 1183030.58 E: 500053.78	14.40
9	16" M.J. 45° BEND	N: 1183034.30 E: 500058.92	13.76
10	16" INTAKE SCREEN AT TEE	N: 1183034.91 E: 500059.52	14.74

EFFLUENT PUMP BACK STATION No. 3			
NUMBER	DESCRIPTION	LOCATION	TOP ELEVATION
1	6" PRESSURE RELIEF VALVE	N: 1181412.35 E: 502282.48	14.91'
2	6" PRESSURE RELIEF VALVE	N: 1181420.42 E: 502269.55	14.89'
3	6" PRESSURE RELIEF VALVE	N: 1181428.77 E: 502256.70	14.95'
4	6" PRESSURE RELIEF VALVE	N: 1181423.08 E: 502289.64	14.91'
5	6" PRESSURE RELIEF VALVE	N: 1181439.38 E: 502263.55	14.90'
6	16" INTAKE SCREEN AT TEE	N: 1181421.35 E: 502280.41	18.35'
7	16" M.J. 45° BEND	N: 1181422.42 E: 502278.47	16.60'
8	24" TEE	N: 1181425.84 E: 502273.46	17.12'
9	16" M.J. 45° BEND	N: 1181428.08 E: 502267.62	15.98'
10	16" INTAKE SCREEN AT TEE	N: 1181430.19 E: 502266.37	18.35



INTAKE STRUCTURE

SCALE: 1/4" = 1'



SECTION B

SCALE: 1/4" = 1'

NOTES:
1. TWO EFFLUENT PUMP BACK STATIONS SHALL REMAIN ON-LINE AT ALL TIMES.
2. THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT COFFER DAMS AS REQUIRED TO PERFORM THE WORK WITHIN THE STORAGE LAKES.

ELEV. LEGEND

EFFLUENT PUMP BACK STATION NO. 1 — ±16.00/16.00/17.00 — EFFLUENT PUMP BACK STATION NO. 3

EFFLUENT PUMP BACK STATION NO. 2

RECORD DRAWING

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FORT MYERS, FL 33905
DATED: JULY 2012 - MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

INTAKE STRUCTURE PLANS AND SECTIONS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	DMP
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE: HORIZONTAL: AS SHOWN; VERTICAL: AS SHOWN

DRAWING NUMBER: M-7.2

STATUS: RECORD DRAWINGS

REVISION

5916.038

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NOTES:

1. PROVIDE ALUMINUM ROLLING LADDER MEETING OSHA AND ANSI REQUIREMENTS FOR ACCESS TO GRAVITY DISK FILTER FRONT PANELS. PROVIDE 24" WIDE GRIP TREAD STEP. TOP STEP TO BE 14" DEEP. PROVIDE 30" HANDRAIL. CAPACITY TO BE 350lb MIN, GLOBAL INDUSTRIAL OR APPROVED EQUAL.

VALVE TYPE	MANUFACTURER
PLUG VALVE (PV)	DEZURIK
BUTTERFLY VALVE (BFV)	DEZURIK

SEE YARD PIPING FOR CONTINUATION

BUILT 30"X48" TEE GS EL. = 31.35' IN THIS AREA

STA. 202+28, 106' RT 6"X4" WYE TOP EL. = 23.00'

STA. 202+28, 108' RT 6" 45° BEND TOP EL. = 23.01'

STA. 202+28, 110' RT 6" CLEAN OUT INV. EL. = 23.75'

36" BFV

8" PVC DRAIN

CHLORINE CONTACT CHAMBER NO. 2

STA. 202+28, 60' RT 6" 22.5° BEND TOP EL. = 22.47'

STA. 202+28, 61' RT 6"X4" WYE TOP EL. = 22.48'

STA. 202+28, 46' RT 6" 22.5° BEND TOP EL. = 20.05'

20" 90° BEND TOP EL. = 33.10' CL EL. = 30.81'

20" 90° BEND TOP EL. = 33.03' CL EL. = 30.79'

STA. 202+32, 115' RT 30" 90° BEND (GS)TOP EL.=21.94'

30" 90° BEND

30" BFV

STA. 202+30, 115' RT 30" BF VALVE T/N EL. = 28.11'

20" 90° BEND TOP EL. = 33.05' CL EL. = 30.80'

STA. 202+28, 84' RT 6"X4" WYE TOP EL. = 22.83'

20" 90° BEND TOP EL. = 33.07' CL EL. = 30.79'

20" 90° BEND TOP EL. = 33.02' CL EL. = 29.73'

30"x20" TEE (UP) (TYP x 8)

6" DRAIN INV. ELEV. 27.58

6" DRAIN INV. ELEV. 27.29

6" DRAIN INV. ELEV. 27.00

6" DRAIN 11.25° BEND

20" FL 90° BEND (DOWN) (TYP x 9)

6" DRAIN 11.25° BEND ENV. ELEV. 23.42

1" SHC

1" SHC

1" SHC

E/M-7.5

D/M-7.5

B/M-7.4

B/M-7.4

STA. 202+35, 98' RT 30"x20" REDUCER INV. EL.=26.71'

4" DRAIN @ 4%

A/M-7.4

8" PVC DRAIN

4" DRAIN @ 4%

A/M-7.4

STA. 202+35, 40' RT 30" TEE GS EL. = 29.10'

30" TEE

STA. 202+32, 115' RT GS EL. 30.66',30" TEE TOP EL. = 21.94'

17'-8"

20" 90° BEND TOP EL. = 33.11' CL EL. = 30.86'

~~30" 45° BEND (UP)~~

PIPE SUPPORT TYPE I (TYP.)

20" FL BFV (TYP x 6)

1" PVC CHEMICAL INJECTION LINE

LADDER (TYP. 3)

STAIRS

INV. ELEV. 28.10

EFFLUENT PUMP STATION

AL WALKWAY SEE STRUCTURAL DRAWINGS

~~2" 90° BEND TYP x 2~~

INV. ELEV. 27.85

INV. ELEV. 27.56

~~4" TEE~~ ~~4"x2" RED~~

STA. 202+41, 42' RT 4" TEE TOP EL. = 25.88'

STA. 202+47, 115' RT CHEMICAL INJECTION VAULT TOP EL. = 23.99' (SEE MECHANICAL DETAILS)

GRAVITY DISK FILTER #1

GRAVITY DISK FILTER #2

GRAVITY DISK FILTER #3

F/M-7.5

FUTURE CHEMICAL SKID

~~2" RCW~~

FUTURE CHEMICAL SKID

~~2" RCW~~

FUTURE CHEMICAL SKID

STA. 202+52, 88' RT 4" 90° BEND TOP EL. = 26.72'

FILTER PAD

~~30" BFV~~

~~30" TEE~~

F/M-7.5

C/M-7.5

STA. 202+51, 42' RT 4" 90° BEND TOP EL. = 26.15'

C/M-7.5

~~4"x2" TEE~~

~~4"x2" RED~~

E/M-7.5

D/M-7.5

~~30" 90° BEND~~

SIDEWALK

12" RCW

~~2" 90° BEND~~

~~2" RCW~~

~~4" 90° BEND~~

STA. 202+53, 114' RT GS EL=27.81' 30° TOP EL. = 22.10'

~~30" 45° BEND (UP)~~

~~30" 45° BEND W/ BOSS (DOWN)~~

STA. 202+53, 98' RT 30"x20" TEE (UP) TOP EL.=23.99

~~CHEMICAL INJECTION VAULT SEE MECHANICAL DETAILS~~

SEE ELECTRICAL SHEETS FOR DETAILS

2-45° BENDS BUILT IN THIS AREA (INACCESSIBLE)

EFFLUENT METER STATION

20" 90° BEND TOP EL. = 33.09' CL EL. = 30.91'

8" FDOT #57 STONE

SEE ELECTRICAL SHEETS FOR DETAILS

STA. 202+51, 65' RT 4" TEE TOP EL. = 27.26'

4" SCH 80 RCW

20" 90° BEND TOP EL. = 33.11' CL EL. = 30.87'

1/2" SAMPLE LINE TO CHLORINE ANALYZER

1/2" TAP W/CORP STOP

36" OVERFLOW

24" RCW

28'

22'-8½"

22'-8½"

PRV-712 MODIFICATION SEE DRAWING M-7.8

3/8" = 1'-0"

12" 0 1' 2' 3' 4' 5'

NORTH

PIT 713 SEE INSTRUMENTATION DRAWINGS

RECORD DRAWING

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DAVID C. WEHNER, P.E. No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

DAVID C. WEHNER, P.E. No. 59541

SEAL

SEAL

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

LAKE GRAVITY DISK FILTER PLAN

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: NA

DRAWING NUMBER: M-7.3

STATUS: RECORD DRAWINGS

REVISION

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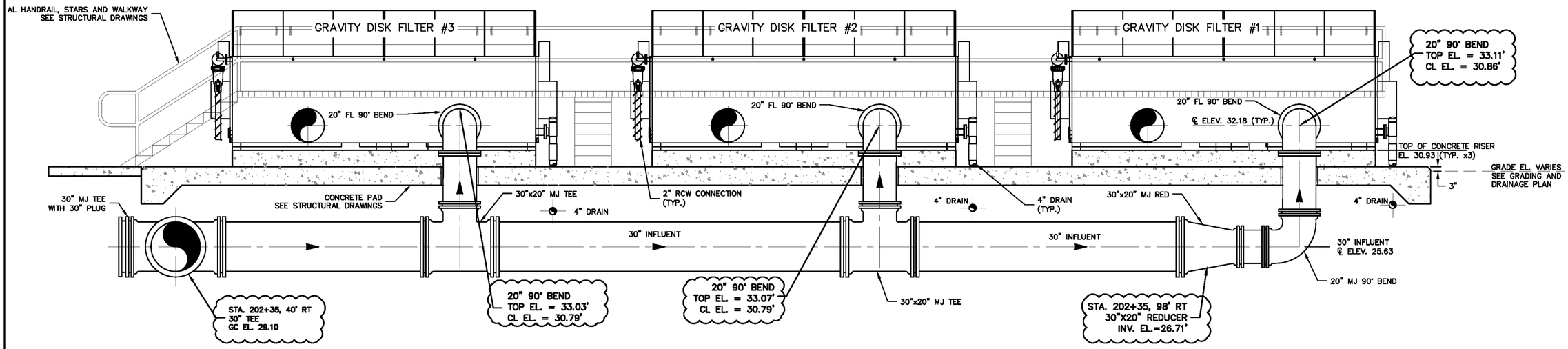
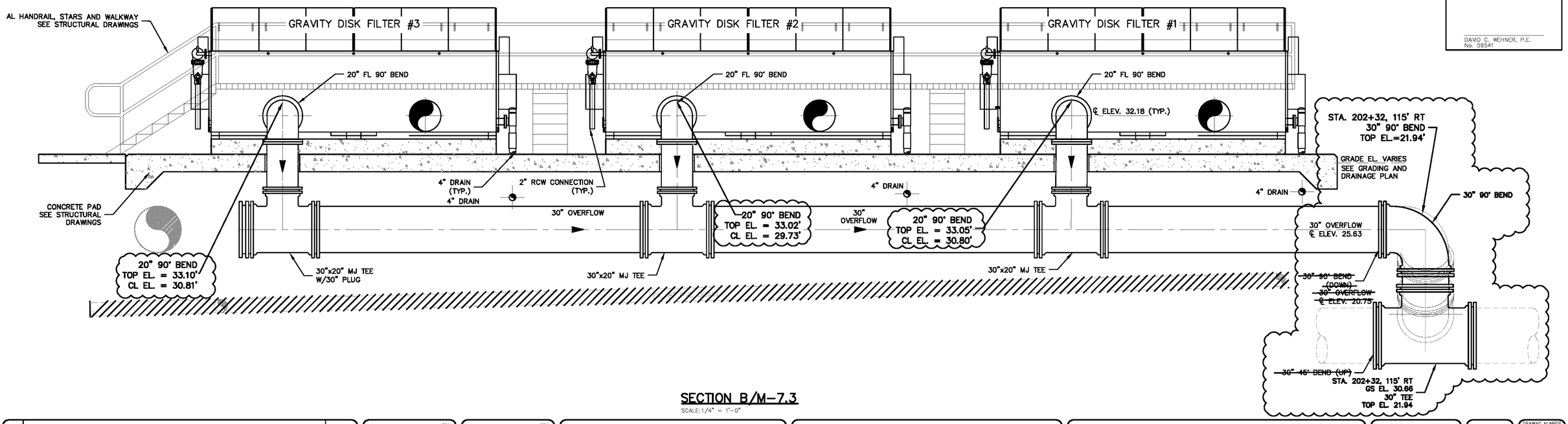
5916.039



SECTION A/M-7.3

SCALE: 1/8" = 1'-0"



SECTION B/M-7.3

SCALE: 1/4" = 1'-0"

RECORD DRAWING

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FORT MYERS, FL 33905
DATED: JULY 2012 - MAY 2014

☒ REVISIONS ☐ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

DAVID C. WEHNER, P.E.
No. 59541

SEAL

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

LAKE GRAVITY DISK FILTER SECTIONS 1

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
M-7.4

STATUS: RECORD DRAWINGS

REVISION

5916.040

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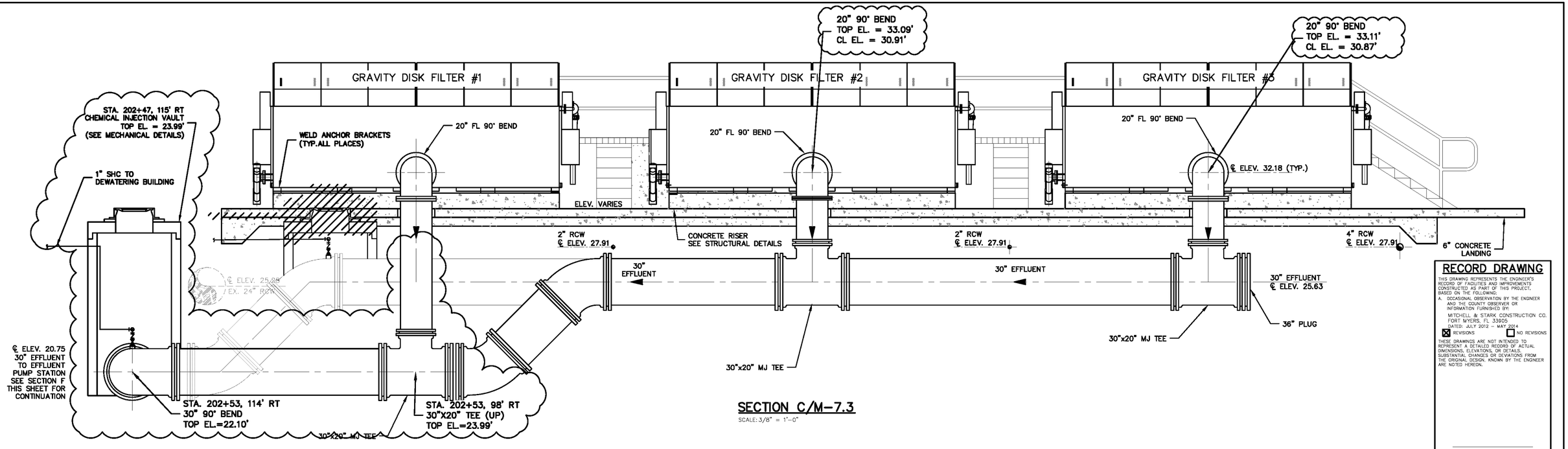

SECTION C/M-7.3

SCALE: 3/8" = 1'-0"

RECORD DRAWING

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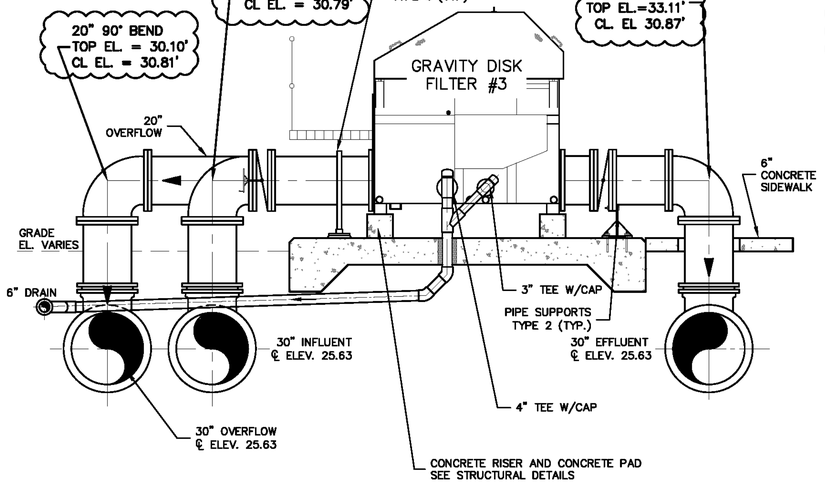
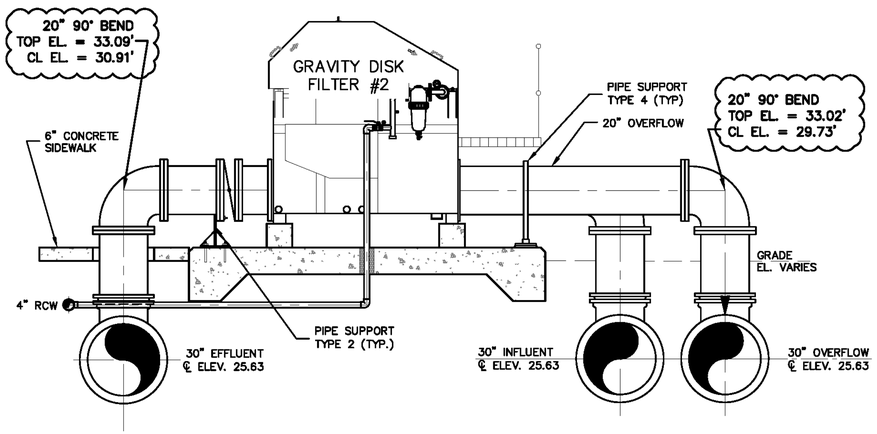
DAVID C. WEHNER, P.E.
No. 59541



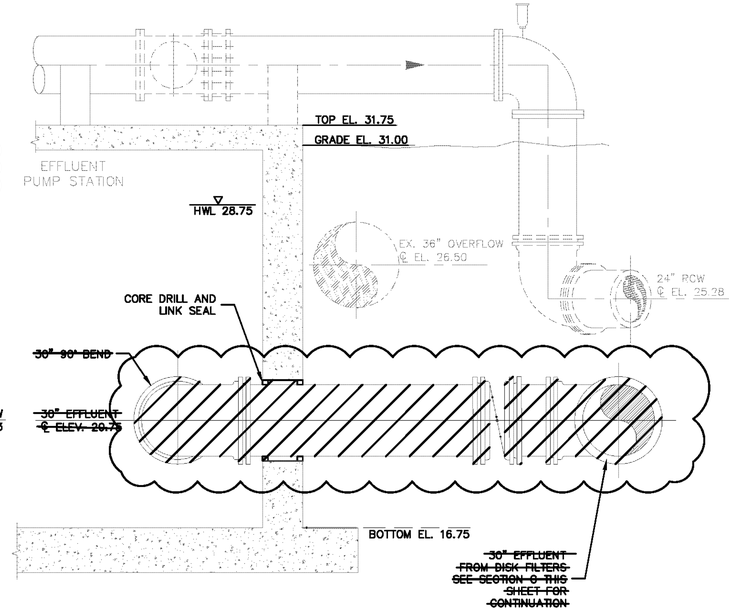
SECTION D/M-7.3

SCALE: 3/8" = 1'-0"



SECTION E/M-7.3

SCALE: 3/8" = 1'-0"



SECTION F/M-7.3

SCALE: 3/8" = 1'-0"

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

DAVID C. WEHNER, P.E.
No. 59541

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

LAKE GRAVITY DISK FILTER SECTIONS 2

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	BFN
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
M-7.5

STATUS: RECORD DRAWINGS
REVISION

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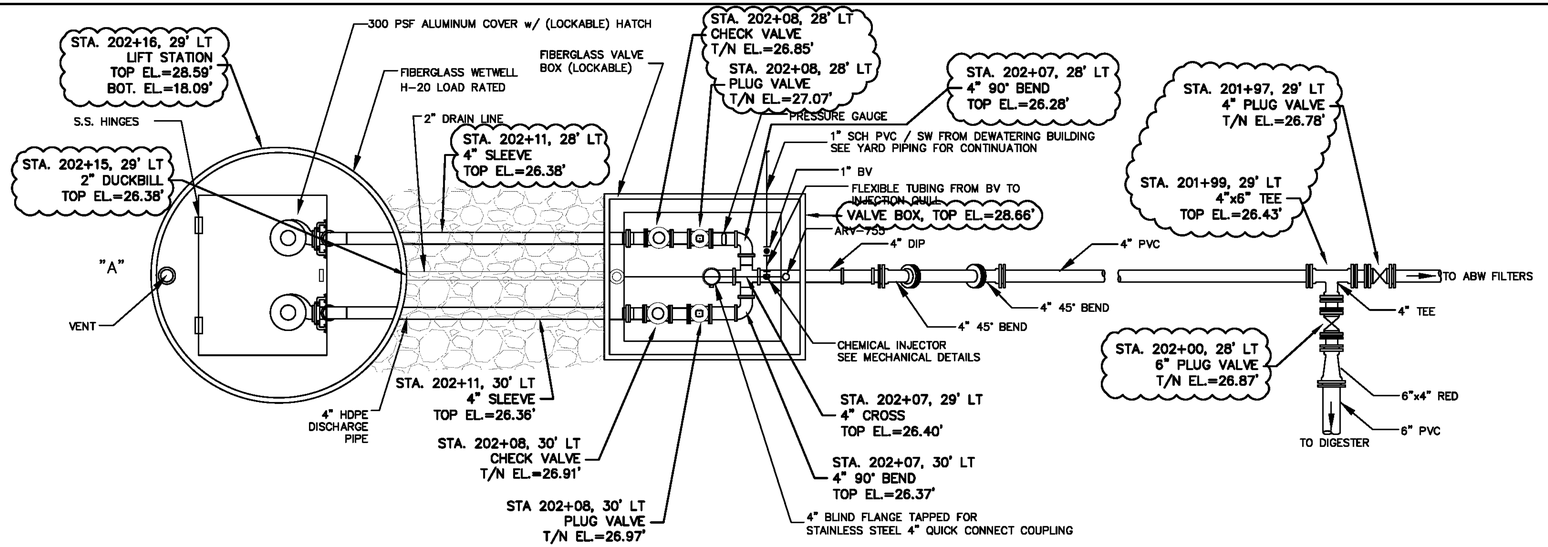
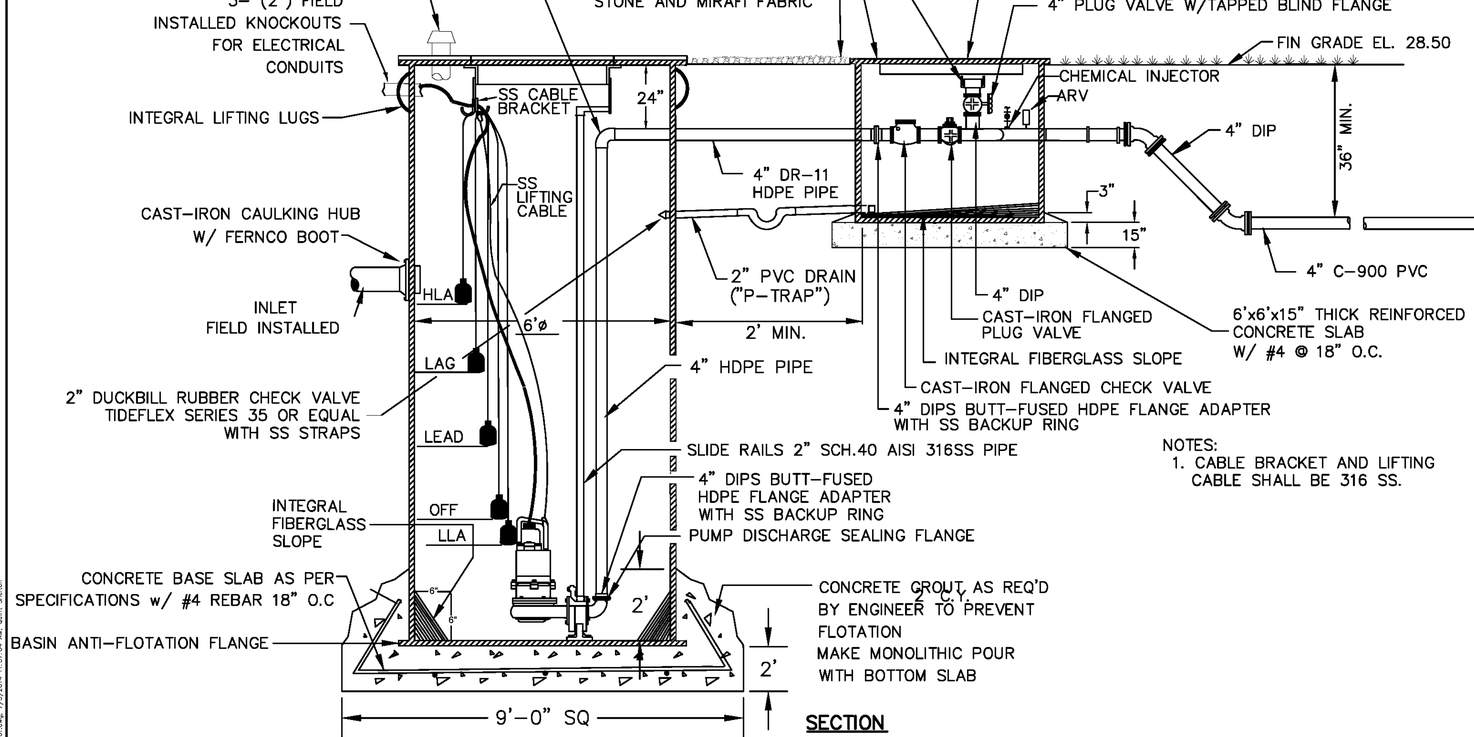


VALVE TYPE	MANUFACTURER
PLUG VALVE (PV)	DEZURIK
CHECK VALVE (CV)	APCO

NOTE: PUMP CONTROL PANEL SHALL BE LOCATED 3 FEET MINIMUM FROM WETWELL PERIMETER AT POINT "A"

PLAN



SECTION

NOTES:
1. CABLE BRACKET AND LIFTING CABLE SHALL BE 316 SS.

PUMP DATA		ELEVATIONS	
PRIMARY PUMP CAPACITY	200 GPM	TOP OF WETWELL	28.59
PRIMARY TDH	40' TDH	INLET INVERT	23.00
PUMP MANUFACTURER	FLYGT	HIGH LEVEL ALARM (HLA)	22.50
PUMP MODEL #	CP3102-181	2nd PUMP ON (LAG)	22.00
R.P.M.	1750	1st PUMP ON (LEAD)	21.00
HORSEPOWER	5	PUMPS OFF (OFF)	20.00
ELECTRICAL/VOLTS/PHASE	460/3	LOW LEVEL ALARM	19.50
PUMP DISCHARGE SIZE	4"	BOTTOM OF WETWELL	18.09
IMPELLER CODE	432	WETWELL DIAMETER	6'
IMPELLER DIA.	183MM		
SERIAL NO.	3102.181-1240761		
SERIAL NO.	3102.181-1240762		

PUMP DATA

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REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL
SCOTT R. SPOONER, P.E.
No. 23273

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

LAKE FILTER BACKWASH PUMP STATION
PLAN AND SECTION

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	DMP
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NTS
VERTICAL: AS SHOWN

DRAWING NUMBER
M-7.6

STATUS: RECORD DRAWINGS
REVISION

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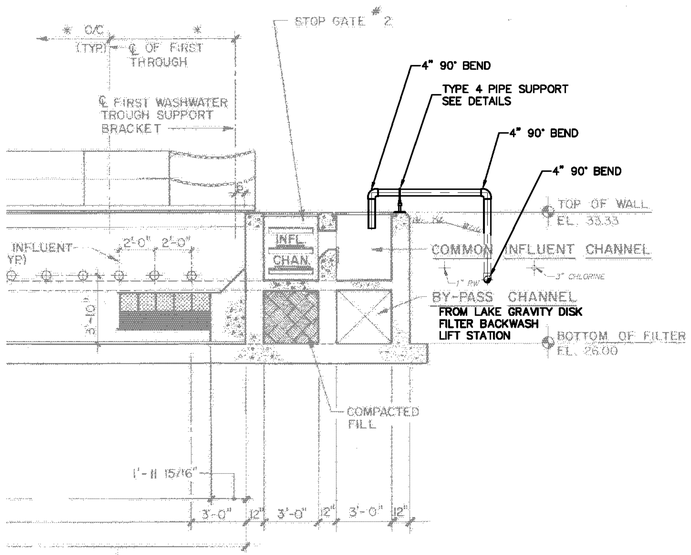
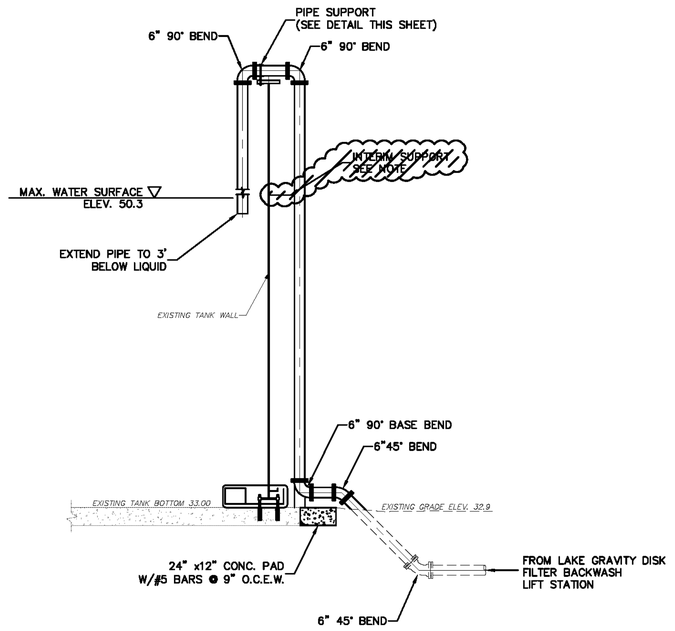
5916.042



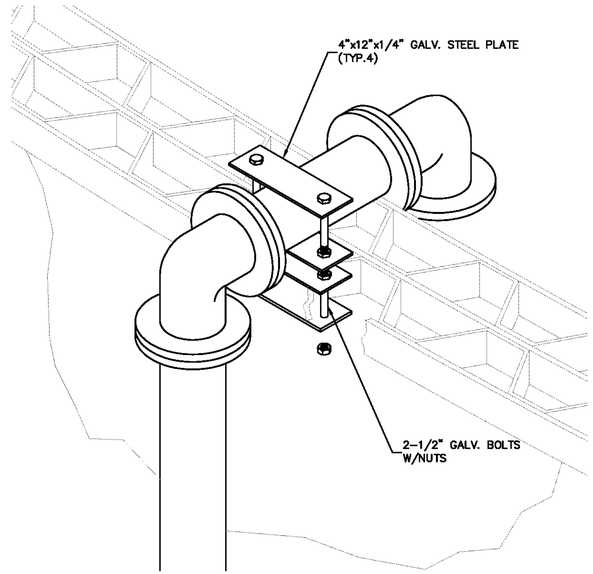
ABW CONNECTION DETAIL

SCALE: 1/4" = 1'-0"



DIGESTER CONNECTION DETAIL

SCALE: 1/4" = 1'-0"



PIPE SUPPORT DETAIL

SCALE: 1-1/2" = 1'-0"

NOTE:

1. INSTALL PIPE SUPPORT AS SHOWN IN DETAIL LOCATED ON UPPER RIGHT CORNER OF THIS SHEET, EXCEPT SUPPORT SHALL BE ORIENTED IN HORIZONTAL CONFIGURATION. LOCATE SUPPORT AT EXTERIOR TRUSS SUPPORT SYSTEM.

RECORD DRAWING

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REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

SCOTT R. SPOONER, P.E.
No. 23273

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

ABW / DIGESTER CONNECTION DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	DMP
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: AS SHOWN

DRAWING NUMBER
M-7.7

STATUS: RECORD DRAWINGS
REVISION

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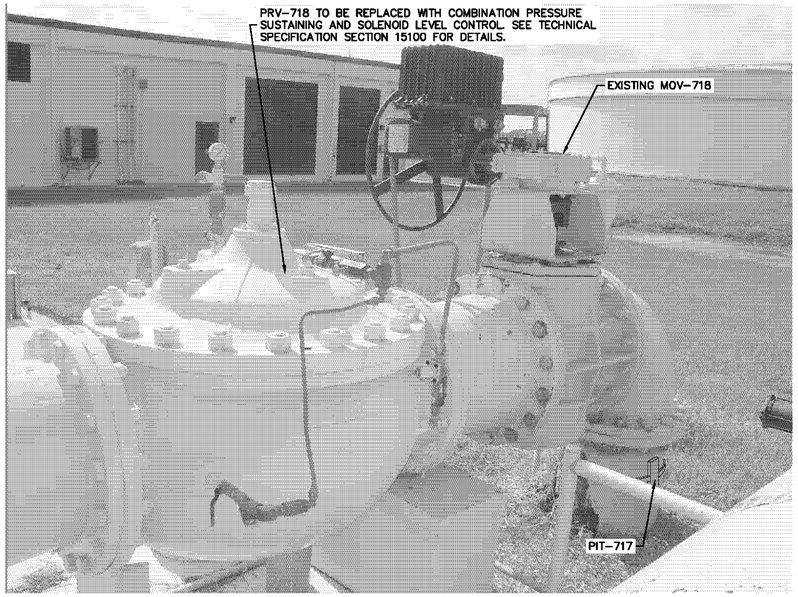
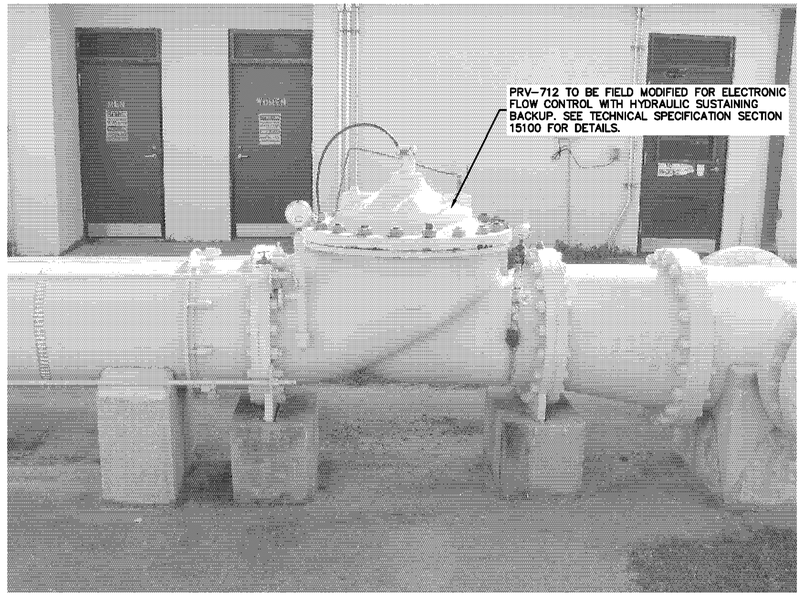


16" PRESSURE REGULATING VALVE (PRV-718) MODIFICATION

NOT TO SCALE



20" PRESSURE REGULATING VALVE (PRV-712) MODIFICATION

NOT TO SCALE

RECORD DRAWING

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

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No. 59541

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

VALVE MODIFICATIONS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	DMP
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: AS SHOWN

DRAWING NUMBER
M-7.8

STATUS: RECORD DRAWINGS
REVISION

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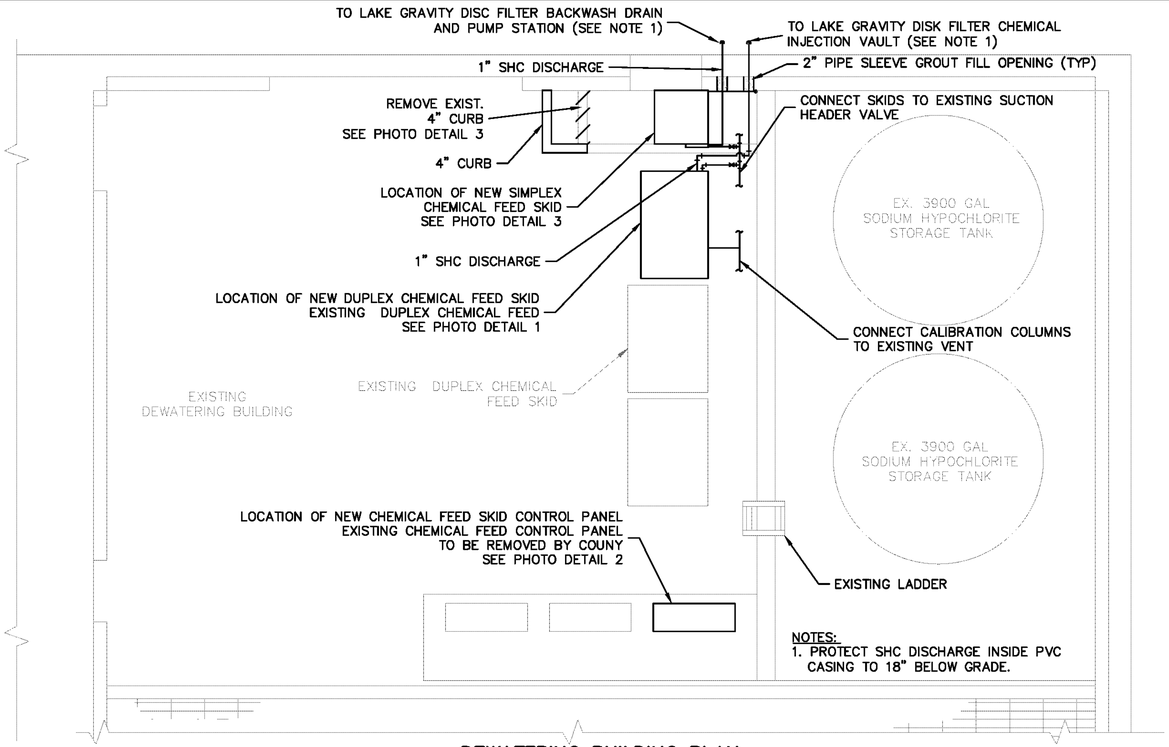

DEWATERING BUILDING PLAN

SCALE: 3/8" = 1'-0"

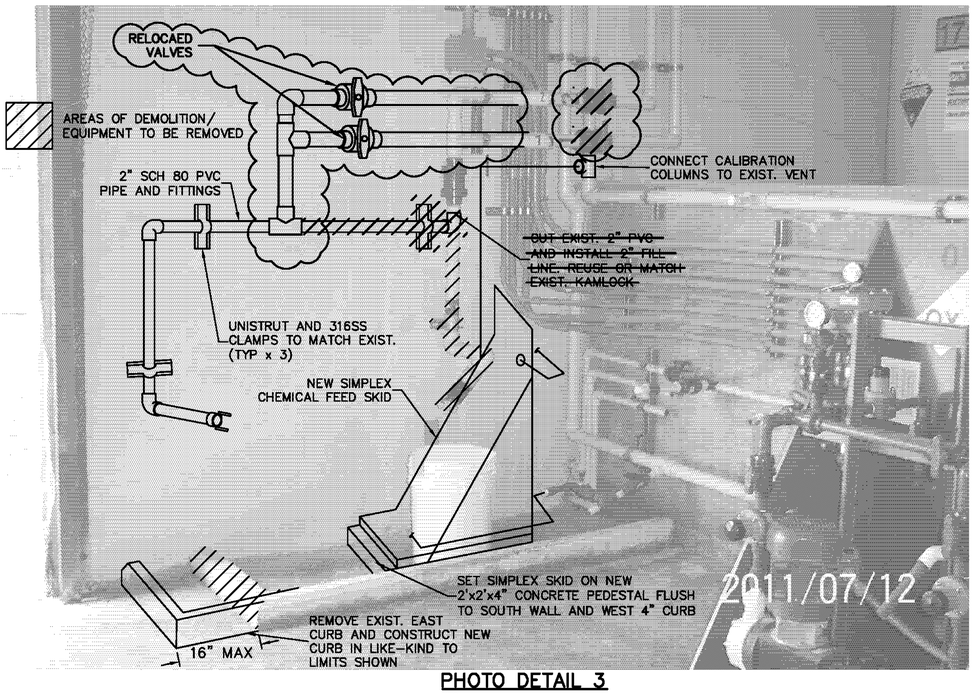

PHOTO DETAIL 3

NTS

PHOTO DETAIL 1

NTS

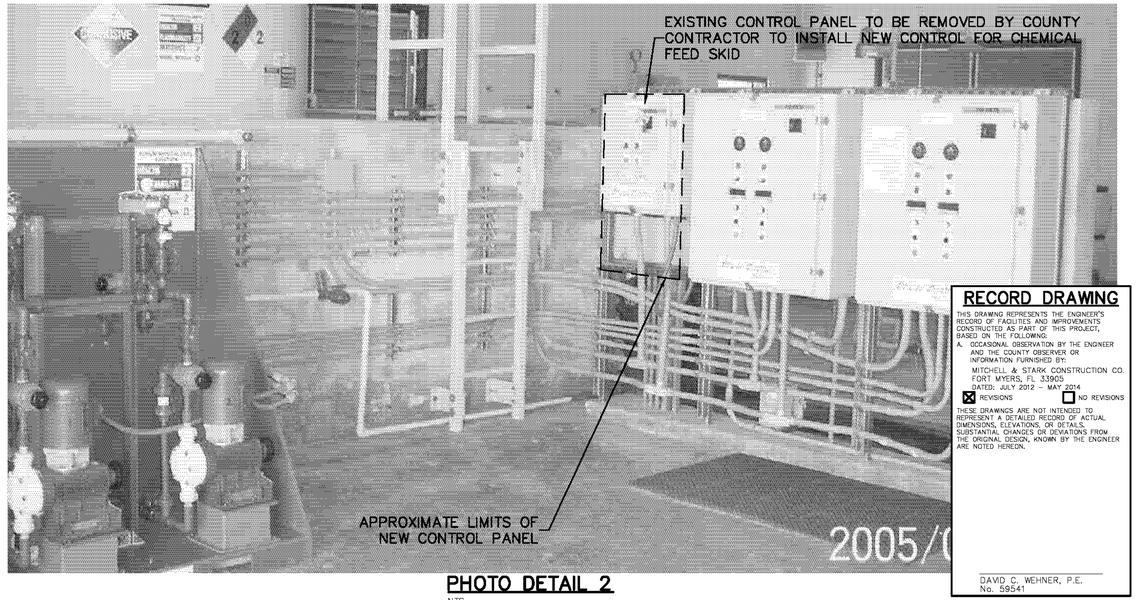

PHOTO DETAIL 2

NTS

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	RECORD DRAWINGS	6/14

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

SODIUM HYPOCHLORITE CHEMICAL SKID PLAN AND DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	QES
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

DRAWING NUMBER
M-8.1

STATUS: RECORD DRAWINGS
REVISION

5916.045

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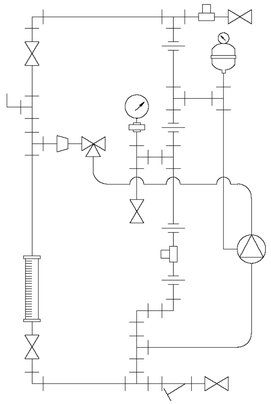
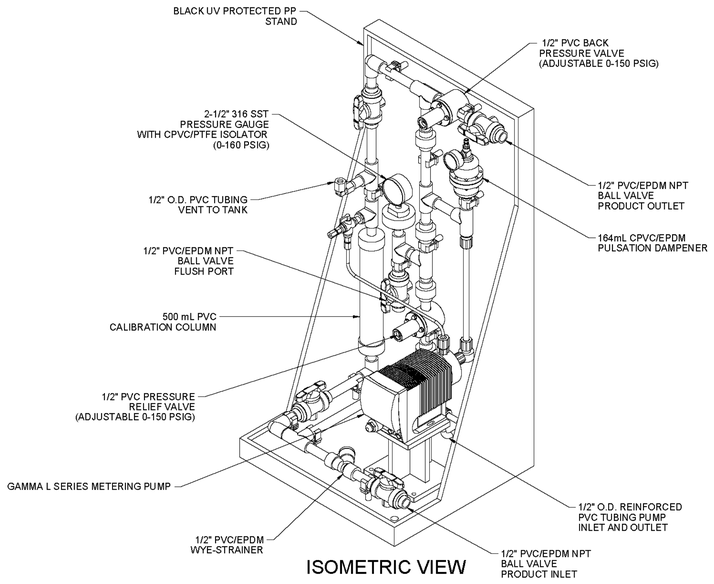
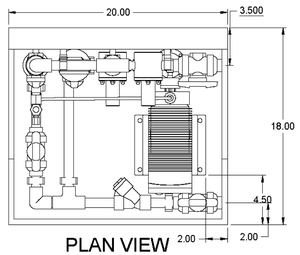


PIPING SCHEMATIC



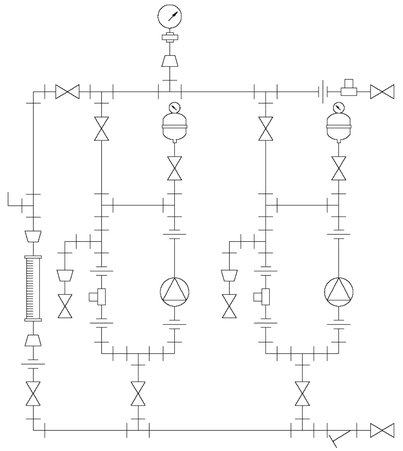
ISOMETRIC VIEW



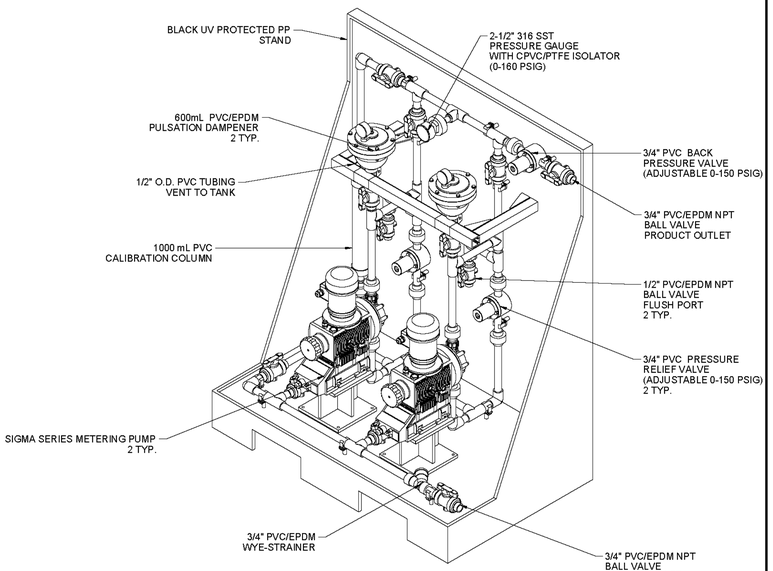
PLAN VIEW

NOTES:

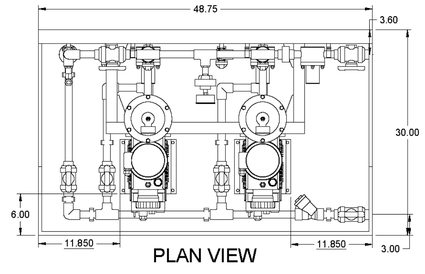
1. ALL PIPING AND FITTINGS SHALL BE 1/2" SCH. 80 PVC SOCKET WELD WITH EPDM SEALS UNLESS OTHERWISE REQUIRED BY COMPONENTS.
2. ALL DIMENSIONS ARE IN INCHES AND ARE SHOWN FOR REFERENCE ONLY.



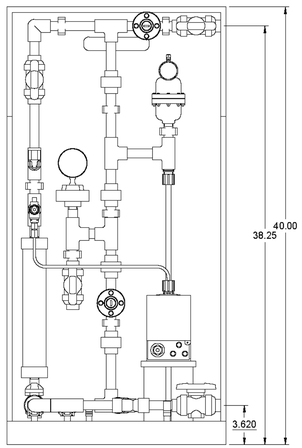
PIPING SCHEMATIC



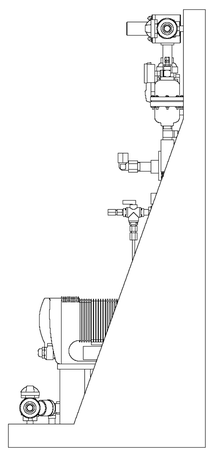
ISOMETRIC VIEW



PLAN VIEW



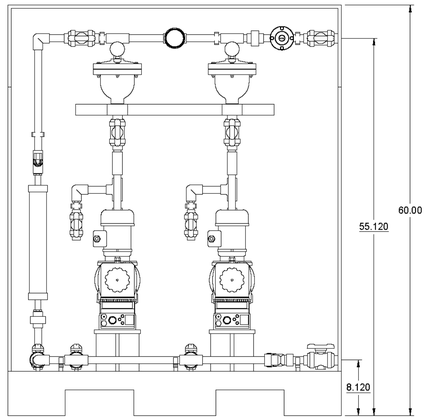
FRONT VIEW



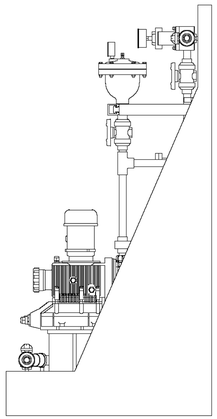
SIDE VIEW

SIMPLEX CHEMICAL FEED SKID

NOT TO SCALE



FRONT VIEW



SIDE VIEW

DUPLEX CHEMICAL FEED SKID

NOT TO SCALE

RECORD DRAWING

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

SODIUM HYPOCHLORITE CHEMICAL SKID DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	DMP
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: AS SHOWN

DRAWING NUMBER
M-8.2

STATUS: REVISION
RECORD DRAWINGS

5916.046

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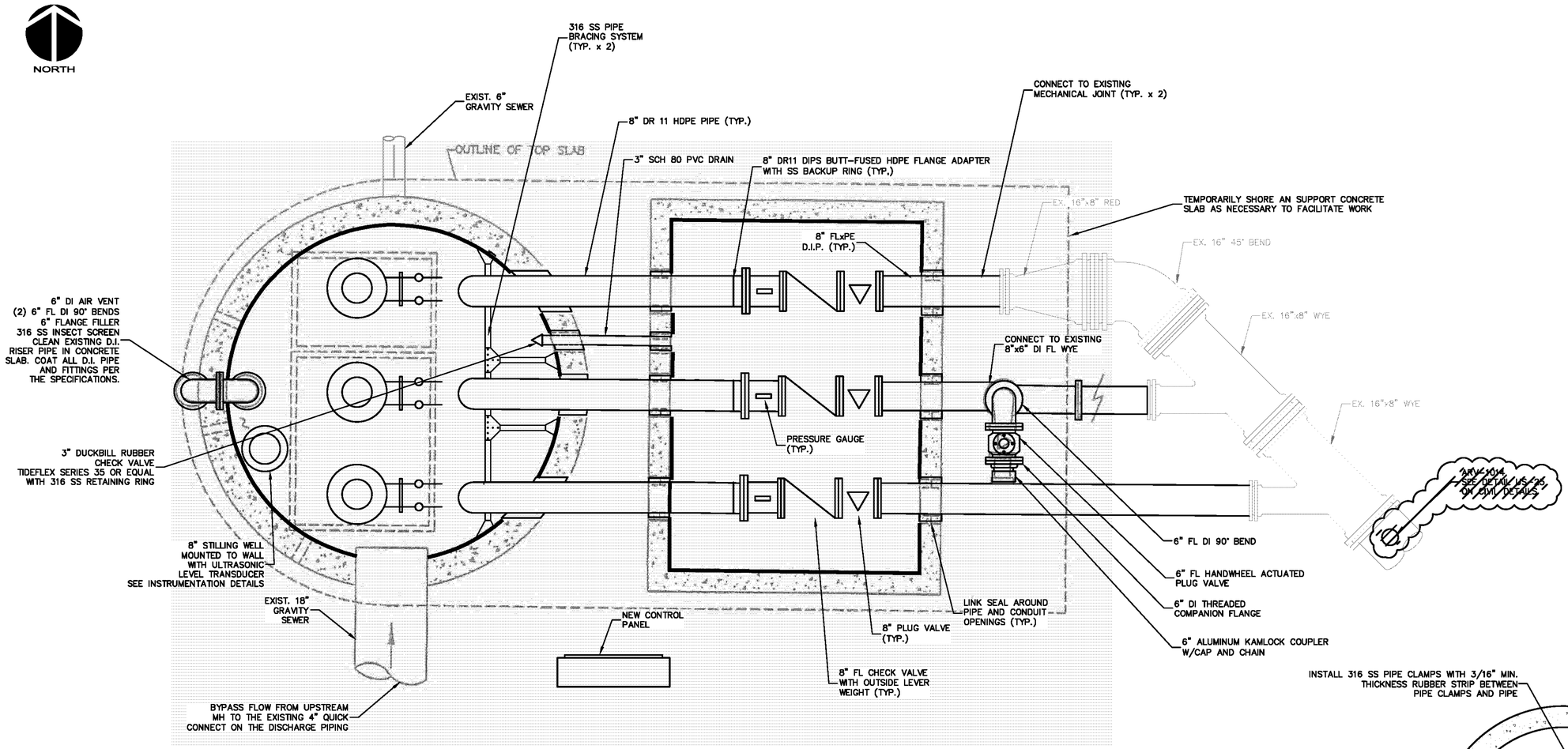
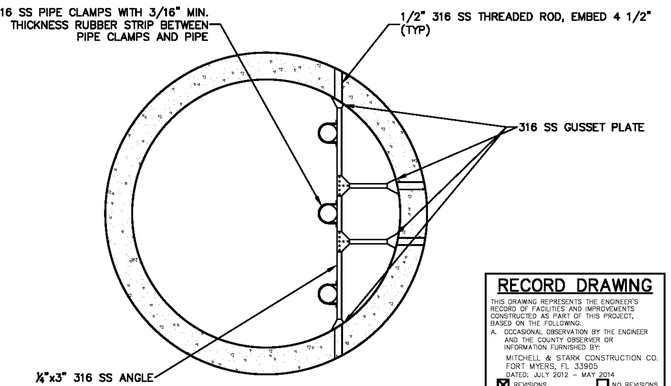


PLAN
NTS

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE WETWELL AND VALVE VAULT FROM DAMAGE DUE TO HYDROSTATIC UPLIFT FROM HIGH WATER LEVELS.
2. ALL BURIED VALVES AND FITTINGS SHALL HAVE RESTRAINED JOINTS. ALL ABOVE GROUND PIPE, FITTINGS AND VALVES SHALL HAVE FLANGED JOINTS.
3. ALL PUMP STATION HARDWARE SHALL BE 316 SS EXCEPT WHERE OTHERWISE INDICATED.
4. LINK SEAL SHALL BE PROVIDED FOR ALL PIPE / CONDUIT OPENINGS.



WETWELL PIPE BRACING DETAIL

SCALE: 3/8" = 1'-0"

THE PIPE CLAMPS SHALL BE CONSTRUCTED FROM MIN. 1½"x¼"-316 STAINLESS STEEL FLAT STOCK. ALL BRACING SYSTEM COMPONENTS SHALL BE CONNECTED USING 316 STAINLESS STEEL FASTENERS. ALL THREADED CONNECTIONS SHALL HAVE 316 STAINLESS STEEL FLAT WASHERS AND 316 STAINLESS STEEL NYLON INSERT LOCK NUTS.

RECORD DRAWING

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A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 - MAY 2014
☒ REVISIONS ☐ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

BLAKE R. PETERS, P.E.
No. 64429

SEAL

McKIM&CREED
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Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PLANT DRAIN PUMP STATION PLAN

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	QES
DESIGNED	BRP
CHECKED	
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NTS
VERTICAL: NTS

DRAWING NUMBER
M-10.1

STATUS: RECORD DRAWINGS
REVISION

5916.047

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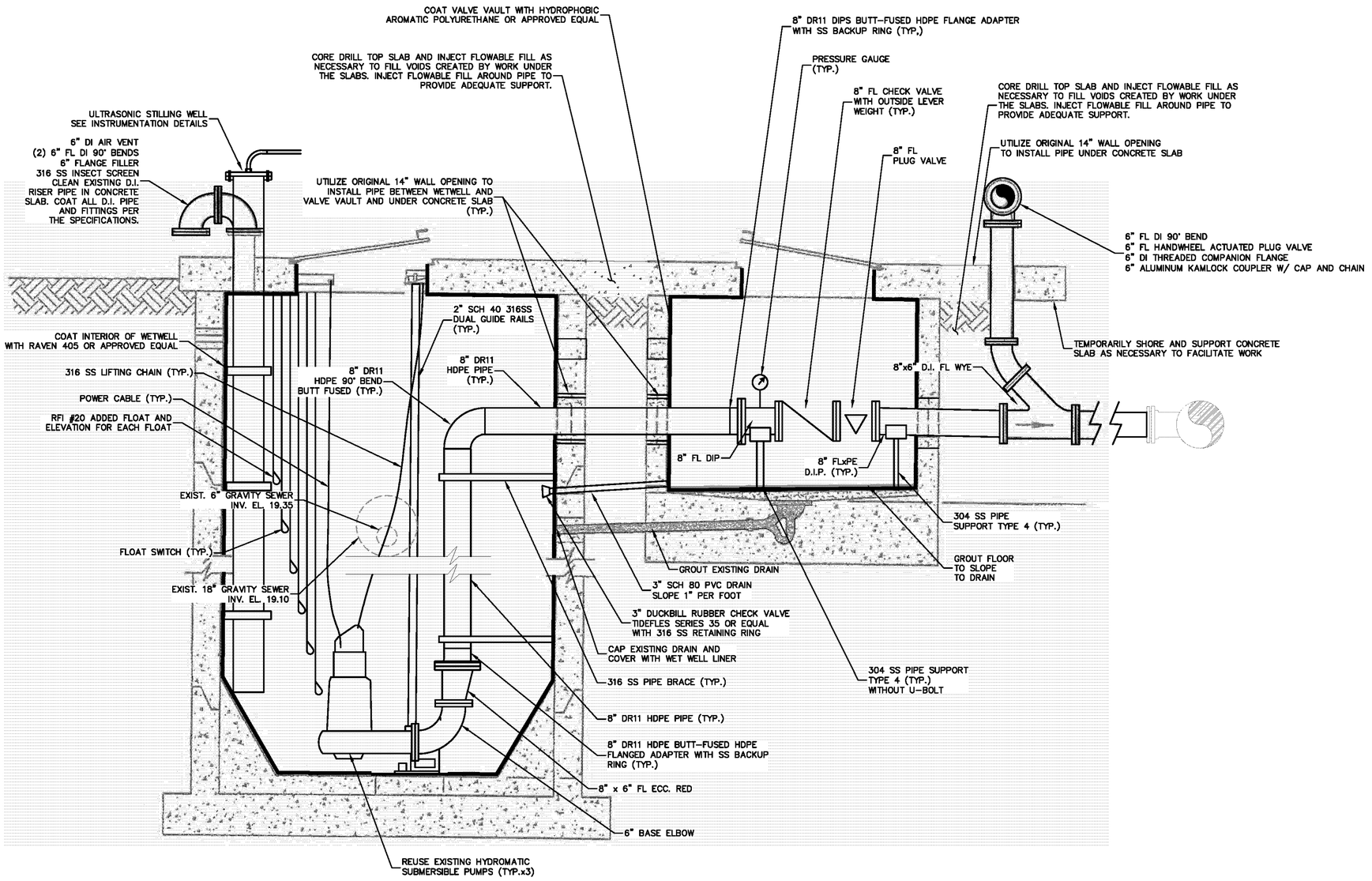

PROFILE

NTS

GENERAL NOTES:

1. ALL BURIED VALVES AND FITTINGS SHALL HAVE RESTRAINED JOINTS. ALL ABOVE GROUND PIPE, FITTINGS AND VALVES SHALL HAVE FLANGED JOINTS.
2. ALL PUMP STATION HARDWARE SHALL BE 316 SS EXCEPT WHERE OTHERWISE INDICATED.
3. LINK SEAL SHALL BE PROVIDED FOR ALL PIPE / CONDUIT OPENINGS.
4. GROUT EXISTING SMALL DIAMETER OPENINGS, NOT UTILIZED AFTER DEMOLITION, WITH NON-SHRINK GROUT.
5. THE CONTRACTOR SHALL REPLACE THE TOP SLAB IN LIKE-KIND IF DAMAGED AT NO ADDITIONAL COST TO THE OWNER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE WETWELL AND VALVE VAULT FROM DAMAGE DUE TO HYDROSTATIC UPLIFT FROM HIGH WATER LEVELS.

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PLANT DRAIN PUMP STATION SECTION

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	QES
DESIGNED	BRP
CHECKED	
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NTS
VERTICAL: NTS

DRAWING NUMBER
M-10.2

STATUS: RECORD DRAWINGS
REVISION

5916.048

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FUNCTION SYMBOL SCHEDULE

FIRST LETTER			SUCCEEDING–LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	Analysis		Alarm		
B	Burner, Combustion		Programmer		
C	Conductivity (Electrical)			Control	Closed
D	Density or Specific Gravity	Differential			
E	Voltage		Sensor (Primary Element)	Eduction	
F	Flow Rate	Ratio (Fraction)			
G	Gaging		Glass, Viewing Device		
H	Hand				High
I	Current (Electrical)		Indicate		
J	Power	Scan			
K	Time, Time Schedule			Control Station	
L	Level		Light (Pilot)		Low
M	Motor				Middle, Intermediate
N	Vibration				
O	Operation	Offset	Orifice, Restriction		Open
P	Pressure, Vacuum		Point (Test) Connection		
Q	Quantity, Event	Integrate, Totalize	Integrate		
R	Radiation		Record, Print	Regulate	
S	Speed, Frequency	Safety		Switch	
T	Temperature			Transmit	
U	Multivariable	Trend	Multifunction	Multifunction	Multifunction
V	Viscosity	Vacuum		Valve, Damper, Louver, Gate	
W	Weight, Force, Torque		Well		
X	Unclassified		Unclassified	Unclassified	Unclassified
Y				Relay, Compute, Convert	
Z	Position			Final Control Element	Drive, Actuator, Unclassified Final Control Element

BASIC SYMBOLS

MULTIPLE FUNCTION

- OR — FIELD MOUNTED INSTRUMENT OR DEVICE
- OR — FRONT OF PANEL MOUNTED INSTRUMENT ON UCP OR MCC, VFD
- OR — REAR OF PANEL MOUNTED INSTRUMENT ON UCP OR MCC, VFD
- OR — FRONT OF PANEL MOUNTED INSTRUMENT ON MAIN PANEL
- OR — REAR OF PANEL MOUNTED INSTRUMENT ON MAIN PANEL
- OR — PLC AND/OR COMPUTER SOFTWARE COMPONENT (OPERATOR ACCESSIBLE UNDER NORMAL CONDITIONS)
- OR — PLC AND/OR COMPUTER GENERATED COMPONENT (NOT OPERATOR ACCESSIBLE UNDER NORMAL CONDITIONS)
- OR — PLC INPUT/OUTPUT

LINE CODES

- INSTRUMENT SIGNAL
- ELECTRICAL SIGNAL
- DATA LINK
- PNEUMATIC
- CAPILLARY
- SONIC OR R.F.
- HYDRAULIC
- TELEPHONE
- NO ELECTRICAL CONNECTION
- ELECTRICAL CONNECTIONS (INDICATED BY DOTS)
- HEAT TRACED PROCESS
- LINE OR EQUIPMENT
- MATCHLINE
- SHEET — PROCESS LINE OR ELECTRICAL SIGNAL CONTINUATION TO/FROM SHEET NUMBER INDICATED
- CONTINUATION ON SAME SHEET
- CONTINUATION ON FACILITIES NOT SHOWN ON DRAWINGS

VALVES, PUMPS & METERS

- FLAME ARRESTOR
- PINCH VALVE
- GATE
- NEEDLE
- BUTTERFLY
- BALL OR ROTARY
- GLOBE
- PLUG OR COCK
- DIAPHRAGM
- CHECK
- DIAPHRAGM CHECK
- CONTROL VALVE POSITIONER
- PRESSURE REGULATING VALVE
- BACKPRESSURE REGULATING VALVE
- PISTON OPERATED S=SOLENOID OPERATED M=MOTOR OPERATED P=PNEUMATIC OPERATED
- DRAIN
- Y=WEIR GATE T=SLIDE SLUICE GATE I =STOP LOG
- BLIND FLANGE
- PULSATION DAMPENER
- PRESSURE RELIEF OR SAFETY
- 3–WAY
- 4–WAY
- TELESCOPING
- REDUCER
- HOSE CONNECTION
- WAFER/CHECK VALVE

VALVES, PUMPS & METERS (CONT'D)

- FLOAT SWITCH OR FLOAT
- (ARV) AIR RELEASE VALVE (ARVV) AIR RELEASE VACUUM VALVE (CAV) COMBINED AIR RELEASE VALVE
- ELECTRIC MOTOR
- ORIFICE/ANNUBAR
- AIR DIFFUSER
- LIQUID DIFFUSER
- CAPACITANCE METER
- REGULATOR/FILTER
- SUBMERSIBLE PUMP
- MAGNETIC METER (INLINE/INSERT)
- ULTRASONIC METER
- VENTURI OR FLOW TUBE
- PROPELLER OR TURBINE METER
- DOPPLER OR TRANSIT TIME FLOW METER
- ROTAMETER
- PROGRESSING CAVITY PUMP
- CENTRIFUGAL PUMP
- POSITIVE DISPLACEMENT PUMP
- DIAPHRAGM OR METERING PUMP
- EDUCTOR
- STRAINER
- DIAPHRAGM ISOLATOR
- HORN
- GRADUATED MEASURING CYLINDER
- CYLINDER HYDRAULIC OR PNEUMATIC
- LATERAL WYE
- RUPTURE DISK
- RESTRAINED FLEX CONN.
- FLEX CONN.
- FILTER AIR/WATER
- CENTRIFUGAL BLOWER
- POSITIVE DISPLACEMENT BLOWER
- MANUAL BAR RACK
- MIXER
- SUBMERSIBLE AERATOR/MIXER (ELECTRIC MOTOR DRIVEN)
- UNION

MISCELLANEOUS SYMBOLS

- PURGE CONNECTION
- SAMPLE POINT
- INTERLOCK
- MULTIPLY
- DIVIDE
- HIGH SELECT
- LOW SELECT
- SQUARE ROOT
- SUM (ALGEBRAIC)
- SPECIAL FUNCTION
- R+B — RATIO PLUS BIAS
- dL/dt — RATE OF RISE (LEVEL)

EQUIPMENT NOTATION

B = BLOWER OR FAN
E = ENGINE
G = GENERATOR
F = FILTER
GS = GRINDER/SCREEN
K = COMPRESSOR
H = HOIST
ME = MECHANICAL EQUIPMENT
MX = MIXER
P = PUMP
R = HEAT EXCHANGER
T = TANK OR SUMP

VALVE DESIGNATIONS

HV = HAND VALVE
FCV = FLOW CONTROL VALVE (MODULATING)
PRV = PRESSURE REGULATING VALVE
LCV = LEVEL CONTROL VALVE
FV = FLOW VALVE (NON–MODULATING)
MV = MUD VALVE
TV = TELESCOPING VALVE
CV = CHECK VALVE
MOV = MOTOR OPERATED VALVE

INSTRUMENT TAG NOTATION

FIC 0 1 01 A

- A — INSTRUMENT QUANTITY SUFFIX
- 01 — INSTRUMENT NUMBER
- 1 — PROCESS AREA
- 0 — PLANT AREA
- FIC — ISA INSTRUMENT FUNCTION

VALVE OPERATION NOTATION

EFC = ELECTRIC FAIL CLOSE
AFC = AIR FAIL CLOSE
EFO = ELECTRIC FAIL OPEN
AFO = AIR FAIL OPEN
AFS = AIR FAIL STATIC
EFS = ELECTRIC FAIL STATIC

CONTROLLER NOTATION

PV = PROCESS VARIABLE INPUT
SP = SET POINT INPUT
C = CONTROL OUTPUT

PLC NOTATIONS

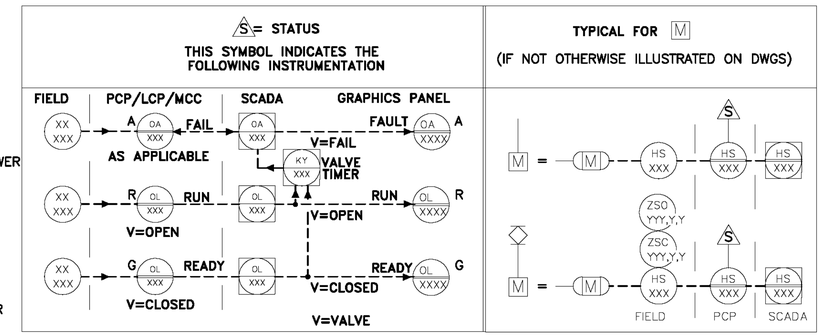
AI = ANALOG INPUT
AO = ANALOG OUTPUT
DI = DISCRETE INPUT
DO = DISCRETE OUTPUT
D/A = DISCRETE TO ANALOG CONVERTOR
SSDC = SURGE SUPPRESSION DEVICE

HAND SWITCH NOTATION

HOA = HAND–OFF–AUTO
S/S = START/STOP
SEL = SELECTOR
O/C = OPEN/CLOSE
O/O = ON/OFF
LOS = LOCKOUT–START
D/S = DUTY/STANDBY
FOS = FAST–OFF–SLOW
OAC = OPEN–AUTO–CLOSE
OOCA = OPEN–OFF–CLOSE–AUTO
ROF = REVERSE–OFF–FORWARD
ROL = RAISE–OFF–LOWER
F/R = FORWARD/REVERSE
HOR = HAND–OFF–REMOTE
LOR = LOCAL–OFF–REMOTE
SAR = SILENCE–AUTO–RESET

MISCELLANEOUS NOTATIONS

S/D = SHUTDOWN
O/R = OVERRIDE
MCC = MOTOR CONTROL CENTER
VFD = VARIABLE FREQUENCY DRIVE
UCP = UNIT CONTROL PANEL
LCP = LOCAL CONTROL PANEL
MCP = MASTER CONTROL PANEL
ES = ELECTRICAL SUPPLY
IS = INLET SILENCER
DS = DISCHARGE SILENCER
SEQ = SEQUENCER/ALTERNATOR
SA = SURGE ARRESTOR
DO = DISSOLVED OXYGEN
ETM = ELAPSED TIME METER
TURB = TURBIDITY
US = ULTRASONIC



RECORD DRAWING

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FORT MYERS, FL 33905
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DAVID C. WEHNER, P.E.
No. 59541

REV./NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	8/14

SEAL
MICHAEL TWEEDEL, P.E.
No. 60940

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PROCESS AND INSTRUMENTATION GENERAL NOTES, LEGEND AND ABBREVIATIONS

DATE:	JUNE 2014
MCE PROJ. #	1024–0143
DRAWN	MDT
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I–0.1

STATUS: RECORD DRAWINGS
REVISION

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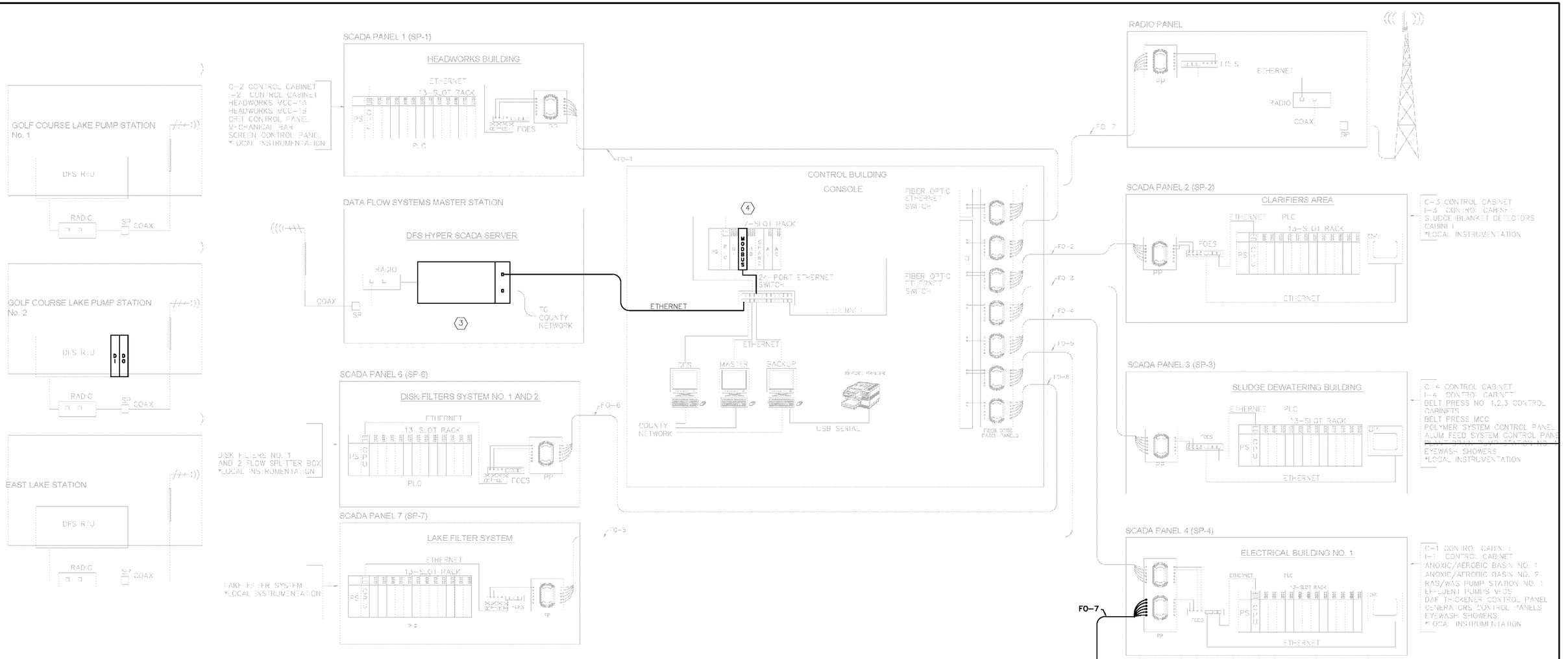

NOTES:

1. HIGHLIGHTED ITEMS INDICATE EQUIPMENT TO BE PROVIDED AS PART OF THIS PROJECT. GREY ITEMS INDICATE EXISTING EQUIPMENT.
2. COORDINATE EQUIPMENT IP ADDRESSING STRUCTURE WITH THE OWNER'S INFORMATION SERVICES DEPARTMENT (ISD).
3. UPGRADE DFS SERVER TO LATEST VERSION TO ALLOW MODBUS TCP/IP COMMUNICATIONS. SEE SPECIFICATIONS FOR DETAILS
4. INSTALL PROSOFT MVI46-MNET MODBUS TCP/IP SERVER COMMUNICATIONS MODULE IN CONTROL CONSOLE PLC RACK AND CONNECT TO CONSOLE NETWORK SWITCH.
5. UPGRADE GOLF COURSE LAKE PUMP STATION NO.2 TO INCORPORATE THE I/O REQUIREMENTS FOR LAKE STORAGE RETURN AND GOLF COURSE IRRIGATION PUMP STATION

LEGEND	
FO-X	FIBER OPTIC CABLE IDENTIFICATION NUMBER CABLES TO BE TAGGED AT EVERY BOX
FOES	MANAGED FIBER OPTIC ETHERNET SWITCH
PP	FIBER OPTIC PATCH PANEL
PLC	PROGRAMMABLE LOGIC CONTROLLER
OPI	LOCAL OPERATOR INTERFACE
SP	SURGE PROTECTOR

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

NETWORK DIAGRAM

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	MDT
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PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-0.2

STATUS: RECORD DRAWINGS
REVISION

5916.050

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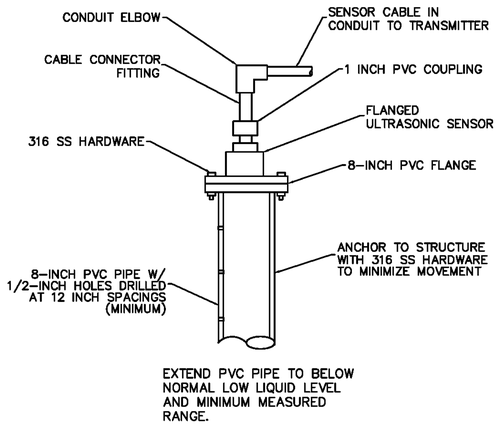
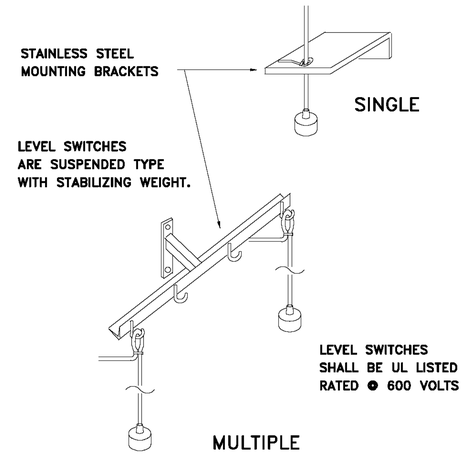
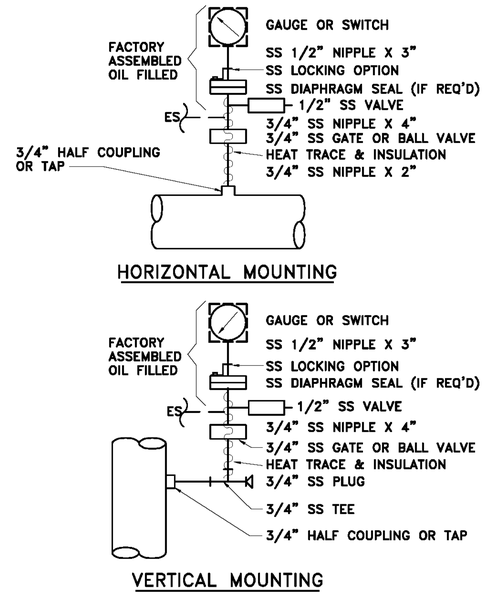


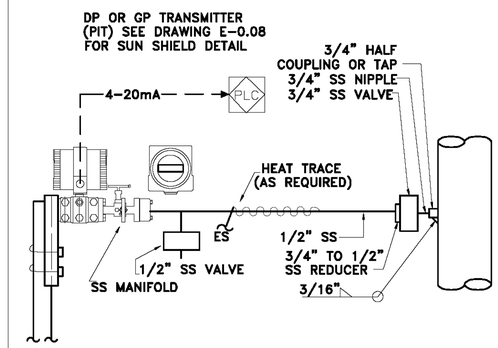
ULTRASONIC SENSOR MOUNTING WITH STILLING WELL



TYPICAL LEVEL SWITCH MOUNTING DETAIL

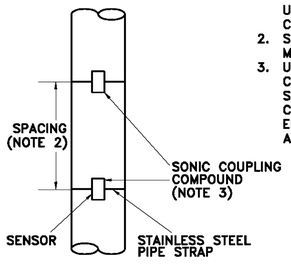


TYPICAL PRESSURE INDICATOR/ SWITCH PIPING DETAIL

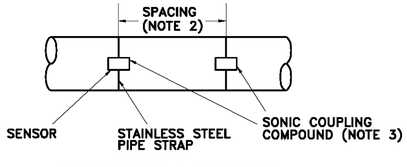


TYPICAL PRESSURE TRANSDUCER PIPING DETAIL

NOTES:
1. SENSORS TO BE MOUNTED USING 'V' TYPE CONFIGURATION.
2. SENSOR SPACING PER MANUFACTURER INSTRUCTION.
3. UTILIZE SONIC COUPLING COMPOUND. COMPOUND TYPE SHALL BE SIL-GLYDE, DOW CORNING 111, GENERAL ELECTRIC RTV-108 OR APPROVED EQUAL.

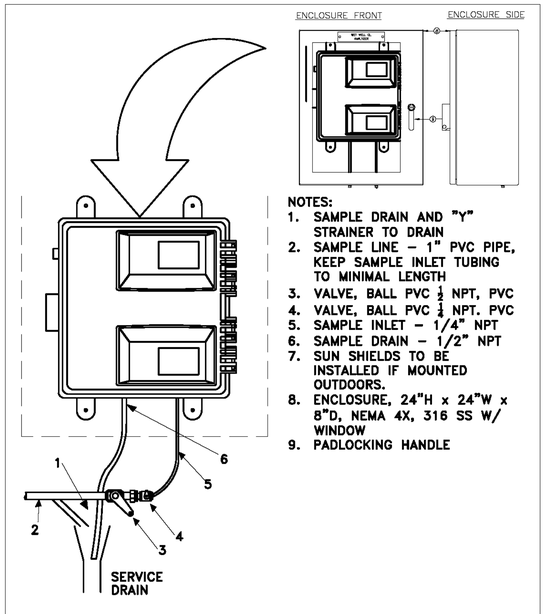


VERTICAL MOUNTING



HORIZONTAL MOUNTING

TRANSIT TIME FLOW METER SENSOR MOUNTING DETAIL



NOTES:
1. SAMPLE DRAIN AND "Y" STRAINER TO DRAIN
2. SAMPLE LINE - 1" PVC PIPE, KEEP SAMPLE INLET TUBING TO MINIMAL LENGTH
3. VALVE, BALL PVC ½ NPT, PVC
4. VALVE, BALL PVC ¼ NPT. PVC
5. SAMPLE INLET - 1/4" NPT
6. SAMPLE DRAIN - 1/2" NPT
7. SUN SHIELDS TO BE INSTALLED IF MOUNTED OUTDOORS.
8. ENCLOSURE, 24"H x 24"W x 8"D, NEMA 4X, 316 SS W/ WINDOW
9. PADLOCKING HANDLE

CHLORINE ANALIZER MOUNTING WITH SAMPLING TUBING

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PROCESS AND INSTRUMENTATION DETAILS

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DRAWN	JCS
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SCALE
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VERTICAL: NA

DRAWING NUMBER
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STATUS: RECORD DRAWINGS
REVISION

5916.051

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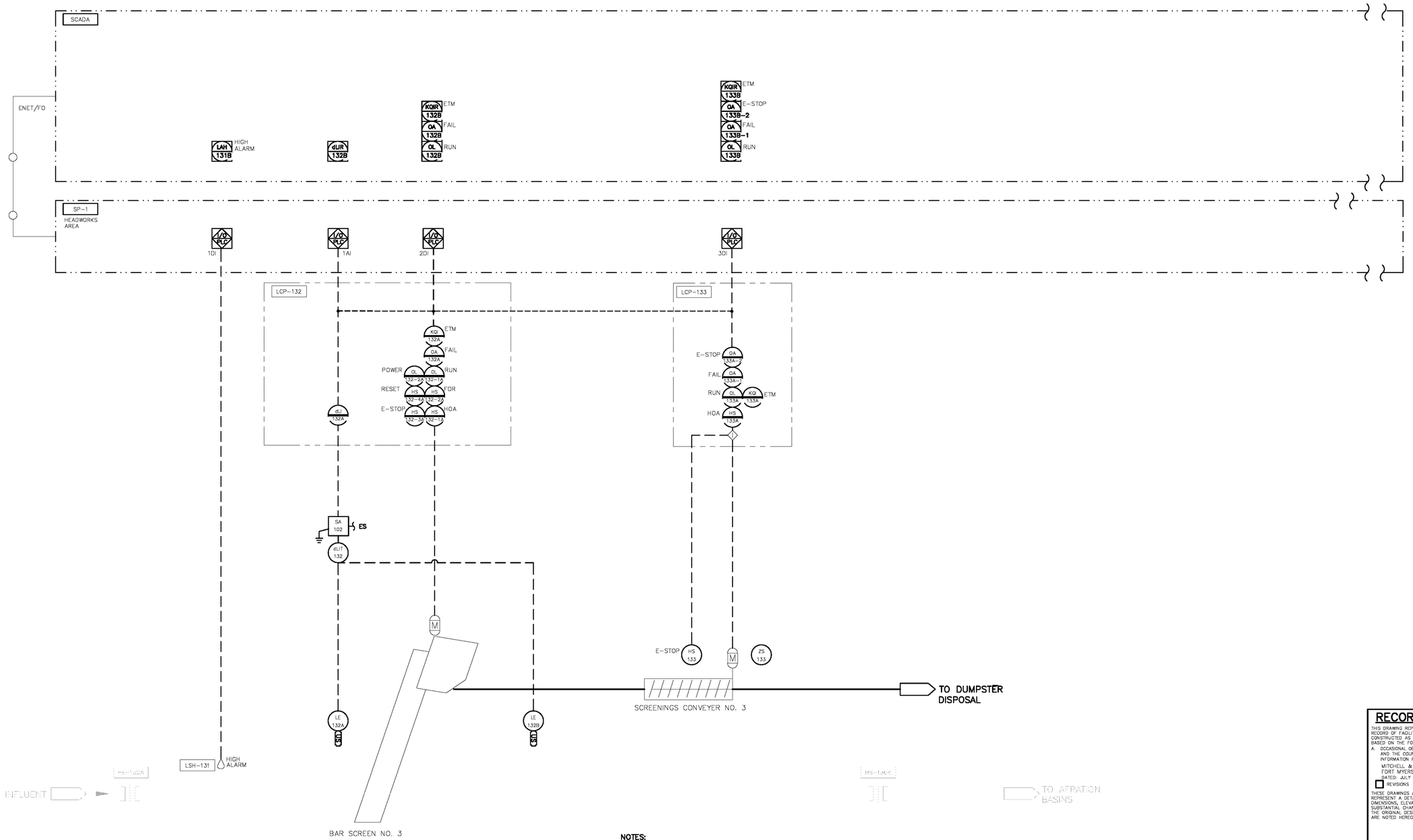

NOTES:

1. **BAR SCREEN OPERATION IN AUTOMATIC MODE IS BASED ON A MAINTAINED HIGH DIFFERENTIAL WATER LEVEL ACROSS THE SCREEN,**
2. **INTERLOCK SCREENINGS CONVEYOR CONTROLS TO OPERATION OF BAR SCREEN. START CONVEYOR AN ADJUSTABLE TIME DELAY AFTER START OF BAR SCREEN. CONTINUE TO OPERATE CONVEYOR FOR AN ADJUSTABLE TIME DELAY AFTER BAR SCREEN SHUTS DOWN.**

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

MICHAEL TWEEDEL, P.E.
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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM HEADWORKS BAR SCREEN & CONVEYOR

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	MDT
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-1.1

STATUS: RECORD DRAWINGS
REVISION

5916.052

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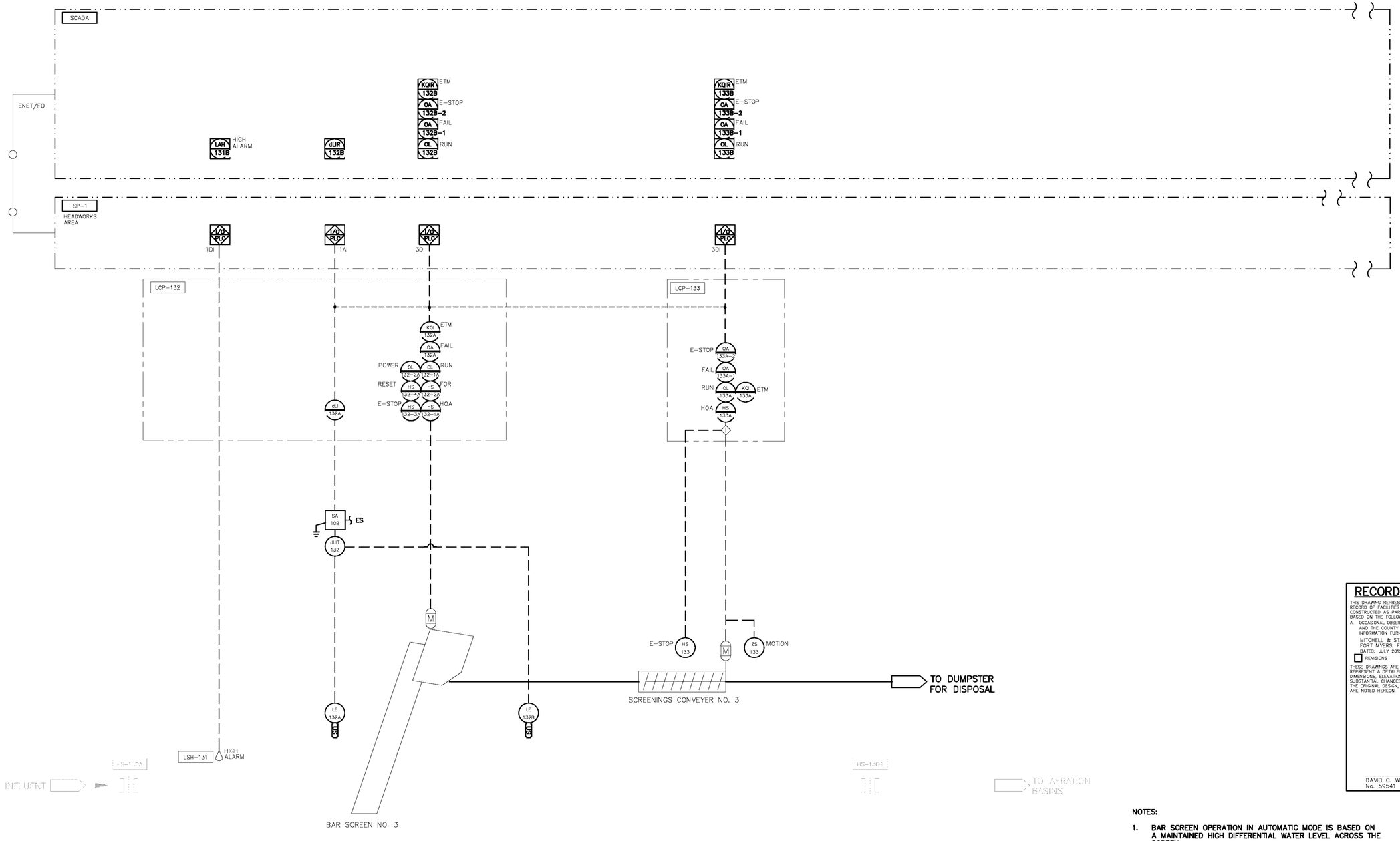

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DAVID C. WEHNER, P.E.
No. 59541

NOTES:

1. **BAR SCREEN OPERATION IN AUTOMATIC MODE IS BASED ON A MAINTAINED HIGH DIFFERENTIAL WATER LEVEL ACROSS THE SCREEN.**
2. **INTERLOCK SCREENINGS CONVEYOR CONTROLS TO OPERATION OF BAR SCREEN. START CONVEYOR AN ADJUSTABLE TIME DELAY AFTER START OF BAR SCREEN. CONTINUE TO OPERATE CONVEYOR FOR AN ADJUSTABLE TIME DELAY AFTER BAR SCREEN SHUTS DOWN.**

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

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NWRF EXPANSION PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM HEADWORKS BAR SCREEN & CONVEYOR

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	MDT
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-2.1

STATUS: RECORD DRAWINGS
REVISION

5916.053

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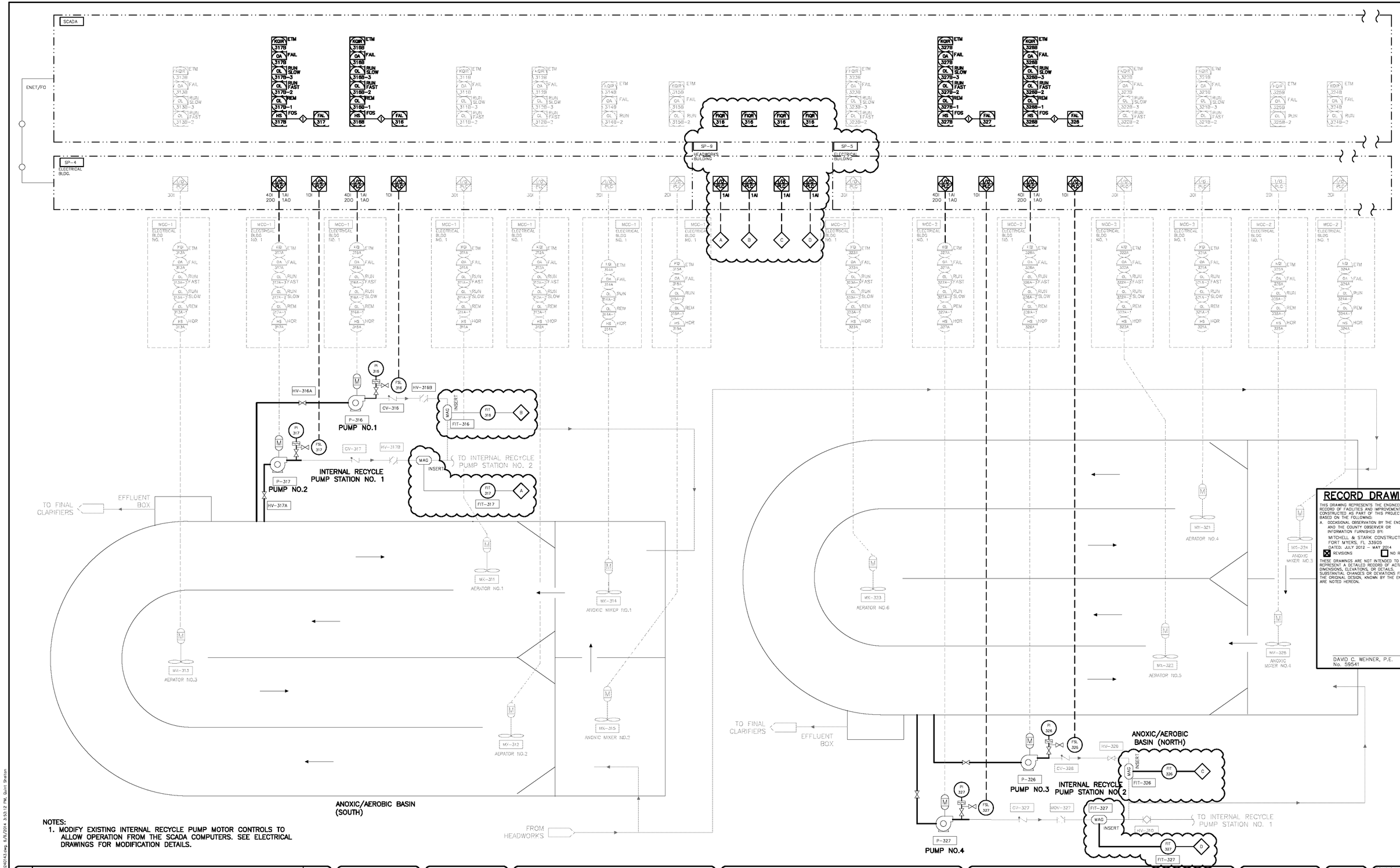

NOTES:

1. MODIFY EXISTING INTERNAL RECYCLE PUMP MOTOR CONTROLS TO ALLOW OPERATION FROM THE SCADA COMPUTERS. SEE ELECTRICAL DRAWINGS FOR MODIFICATION DETAILS.

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REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM ANOXIC/AEROBIC BASINS NO. 1 AND NO. 2

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	MDT
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-3.1

STATUS: RECORD DRAWINGS
REVISION

5916.054

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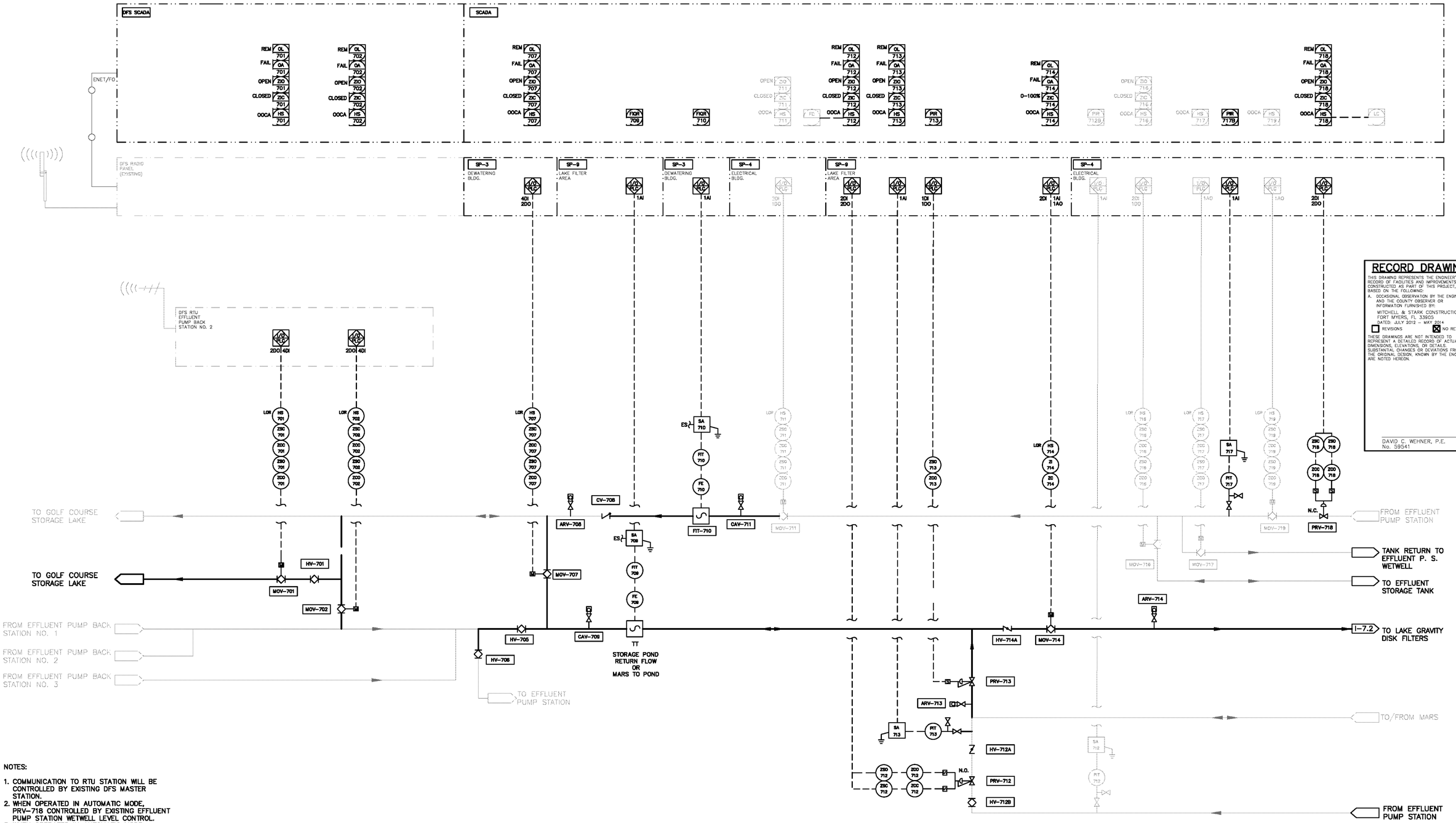

NOTES:

1. COMMUNICATION TO RTU STATION WILL BE CONTROLLED BY EXISTING DFS MASTER STATION.
2. WHEN OPERATED IN AUTOMATIC MODE, PRV-718 CONTROLLED BY EXISTING EFFLUENT PUMP STATION WETWELL LEVEL CONTROL.
3. WHEN OPERATED IN AUTOMATIC MODE, PRV-712 CONTROLLED BY EXISTING EFFLUENT FLOW CONTROL.

RECORD DRAWING

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REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM EFFLUENT STORAGE AND DISCHARGE

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JCS
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-7.1

STATUS: RECORD DRAWINGS
REVISION

5916.055

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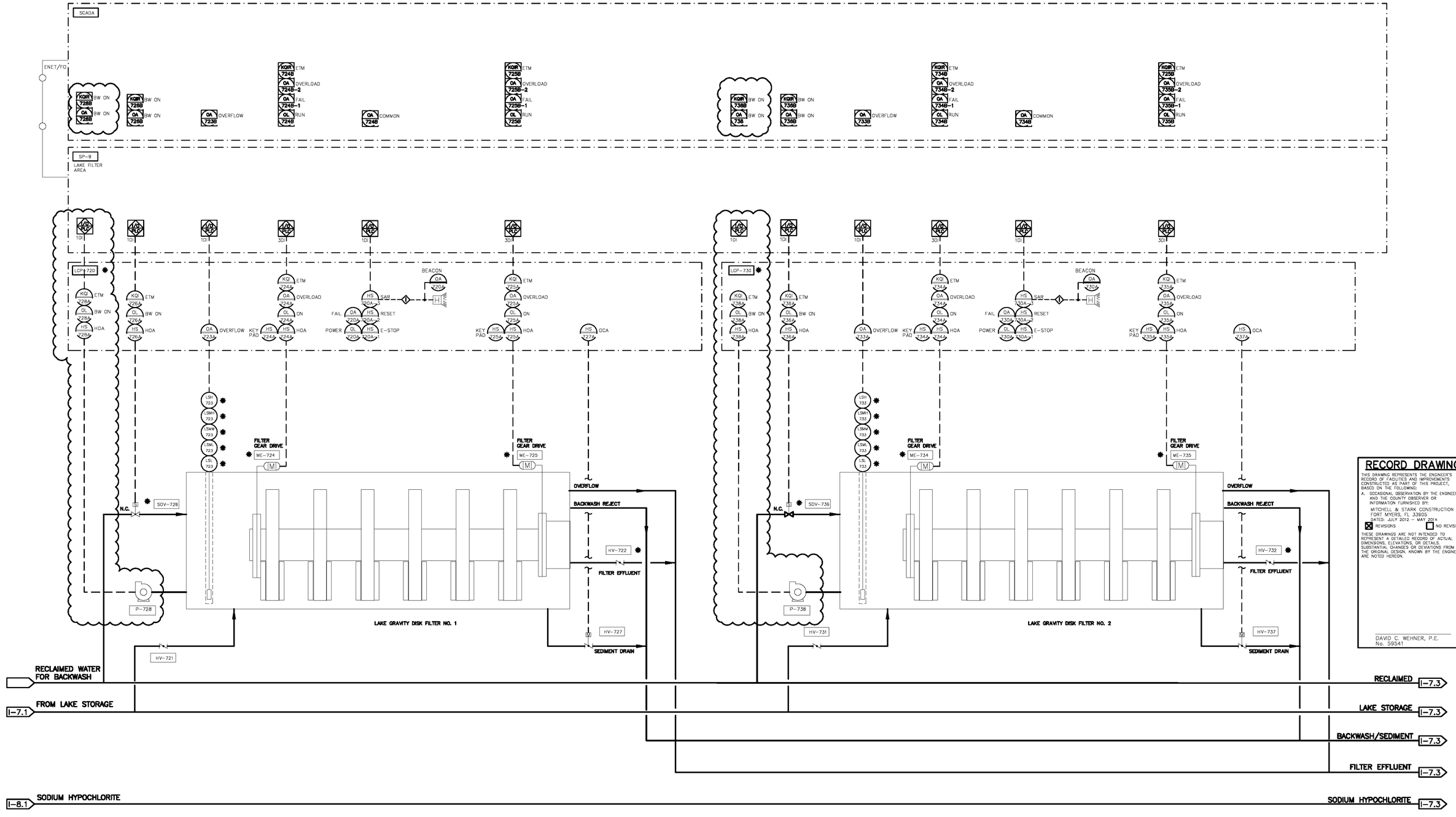

✱ BY FILTER EQUIPMENT SUPPLIER

RECORD DRAWING

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FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014
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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM LAKE GRAVITY DISK FILTERS NO. 1 AND 2

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JCS
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-7.2

STATUS: RECORD DRAWINGS
REVISION

5916.056

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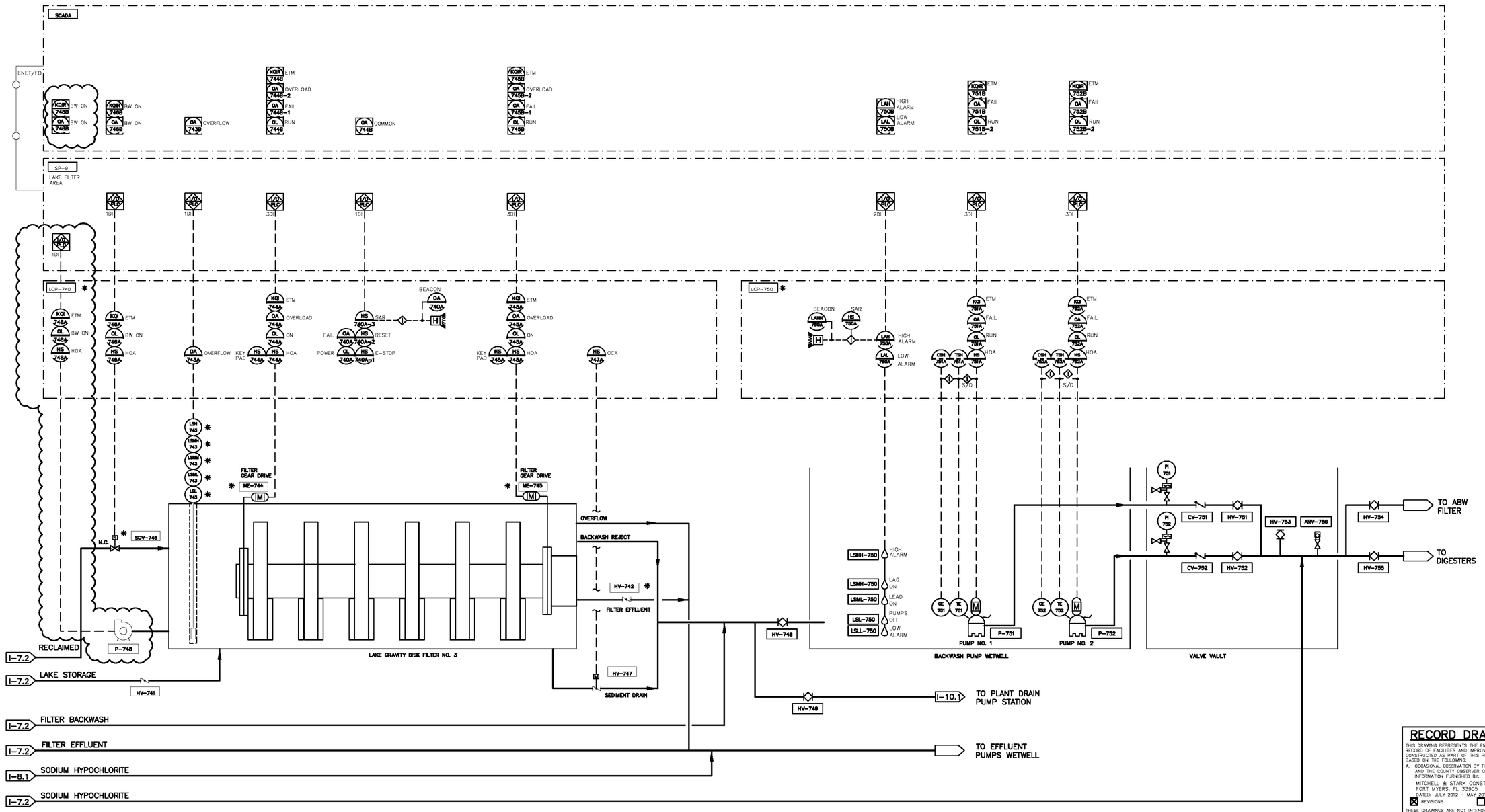

NOTE:
✱ BY FILTER EQUIPMENT SUPPLIER

RECORD DRAWING

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DAWD C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
LAKE GRAVITY DISK FILTER NO. 3
AND BACKWASH PUMP STATION

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JCS
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-7.3

STATUS: RECORD DRAWINGS
REVISION

5916.057

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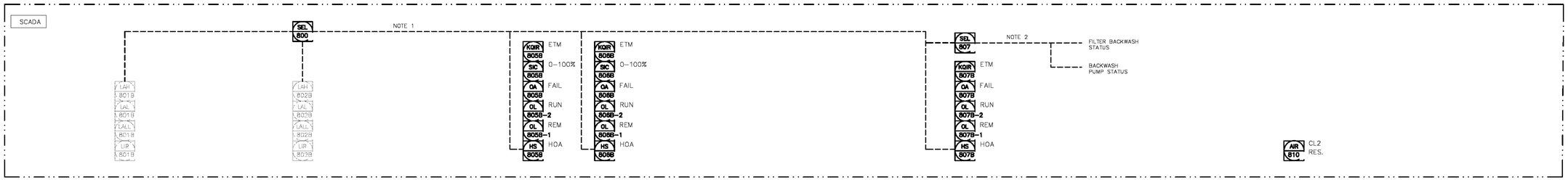

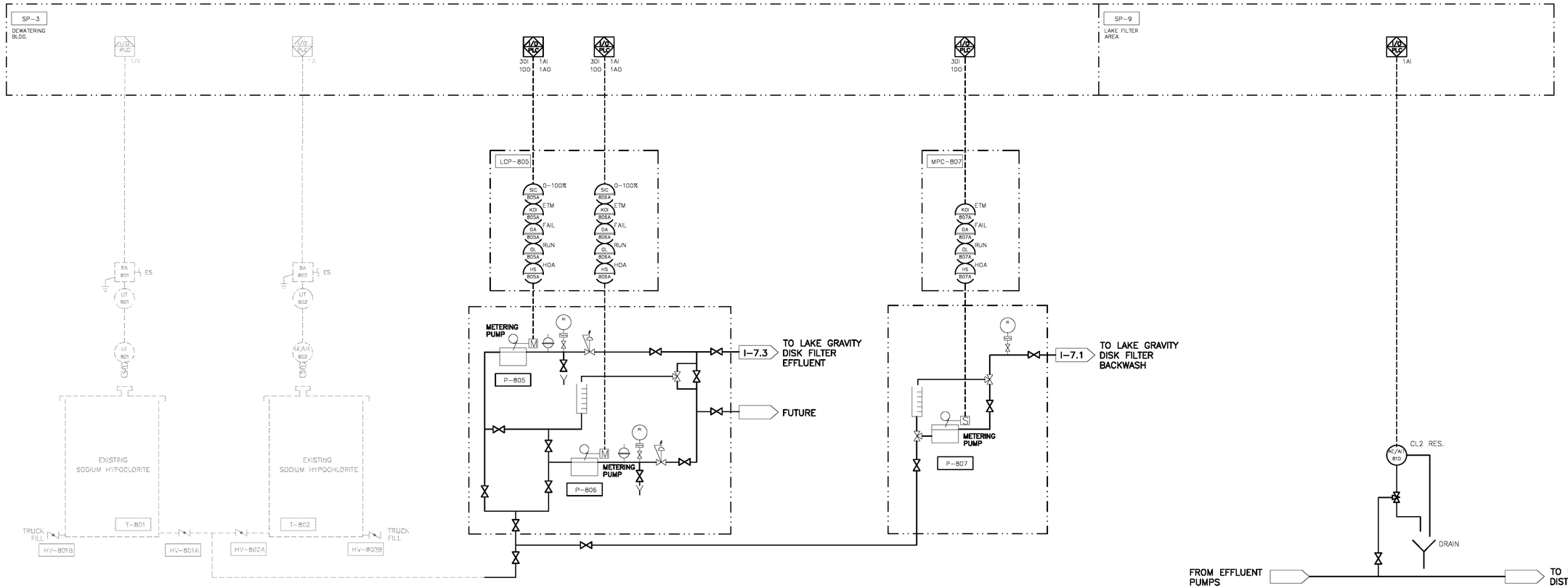

NOTES:

1. METERING PUMPS ARE DISABLED FROM OPERATION IN AUTO MODE WHEN SELECTED STORAGE TANK IS AT LOW LEVEL.
2. IN AUTO MODE, IF METERING PUMP IS SELECTED FOR PLANT DRAIN PUMP STATION, PUMP WILL OPERATE ON ANY LAKE FILTER BACKWASH STATUS. WHEN PUMP IS SELECTED FOR BACKWASH PUMP STATION, PUMP WILL OPERATE ON RUN STATUS OF EITHER BACKWASH PUMP.

RECORD DRAWING

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DAVID C. WEHNER, P.E.
No. 59541

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM SODIUM HYPOCHLORITE STORAGE AND PUMPING

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JCS
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-8.1

STATUS: RECORD DRAWINGS
REVISION

5916.056

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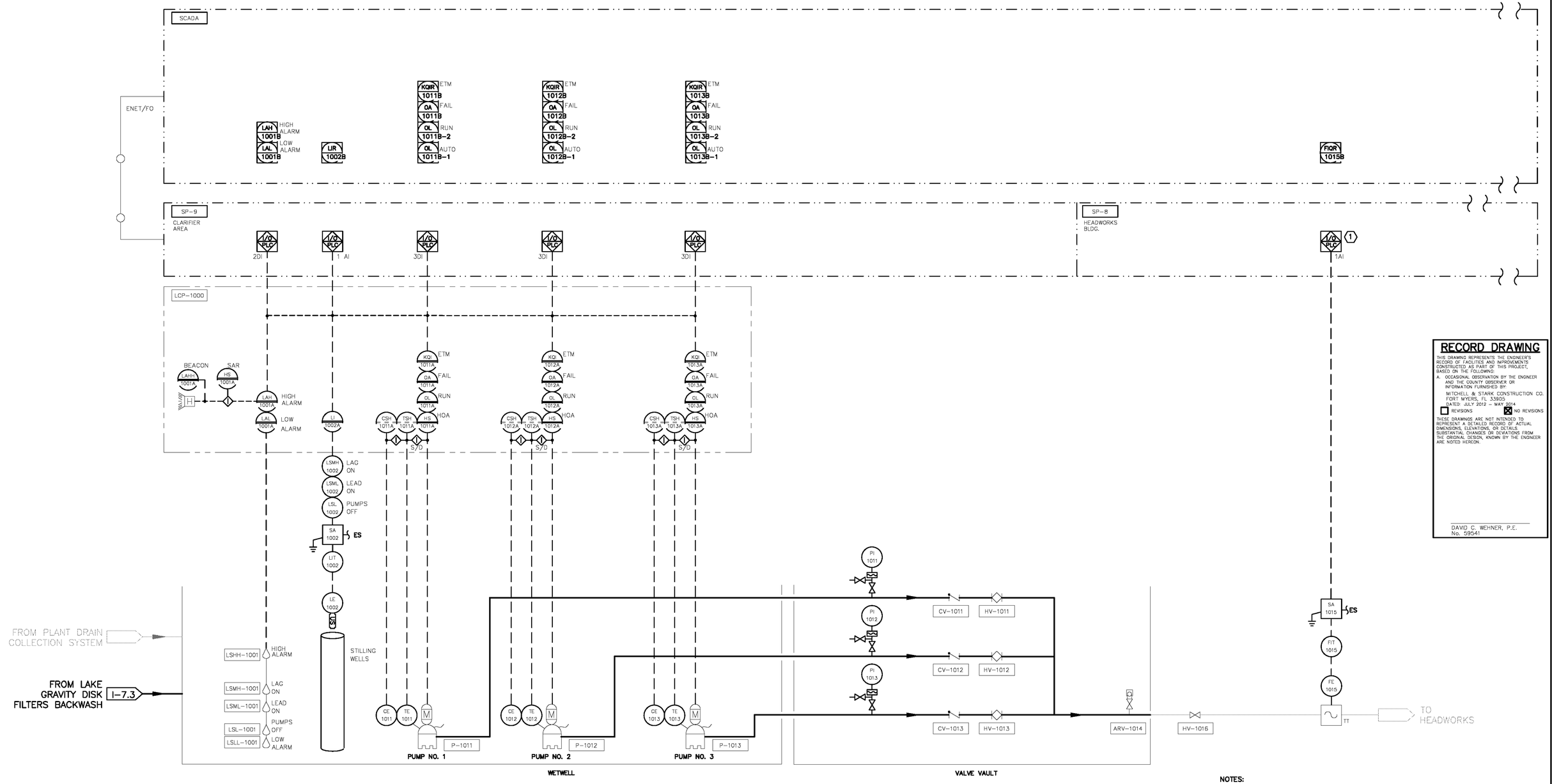

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DAVID C. WEHNER, P.E.
No. 59541

NOTES:

1. TERMINATE NEW FLOW METER TO EXISTING SPARE ANALOG INPUT POINT WITHIN HEADWORKS SCADA PANEL. PROVIDE SURGE PROTECTION AT SIGNAL INPUT TO PANEL.
2. ULTRA SONIC LEVEL CONTROL RELAYS AND FLOAT SWITCHES TO OPERATE IN PARALLEL WITH FLOATS SET 6 INCHES HIGHER THAN ULTRASONIC LEVEL CONTROL RELAYS.

PLANT DRAIN PUMP STATION

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
PLANT DRAIN PUMP STATION

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	MDT
DESIGNED	MDT
CHECKED	TER
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-10.1

STATUS: RECORD DRAWINGS
REVISION

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5916.059

DEVICE SYMBOLS

- (FS) FLOAT/FLOW SWITCH
- (LS) LIMIT SWITCH
- (PS) PRESSURE SWITCH
- (T) THERMOSTAT
- PULL BOX, SIZE PER NEC
- (JB) JUNCTION BOX, SIZE PER NEC
- (E) ELECTRICAL EQUIPMENT CONNECTION
- GROUND ROD
- CONTROL STATION
- STOP–START STATION
- LOCK–OUT–STOP SWITCH
- (R) RED STOPPED LIGHT
- FUSE
- MOTOR OL RELAY
- HEATER
- CLASS 1/DIVISION 1/II CONDUIT SEAL–OFF FITTING

- □ LOCATED AT FIELD DEVICE
- △ LOCATED AT MAIN CONTROL PANEL
- ◐ LOCATED AT LOCAL CONTROL PANEL
- ○ MOUNTED ON DOOR

- CIRCUIT BREAKER
- (A) AMMETER
- (AS) AMMETER SWITCH
- (V) VOLTMETER
- (VS) VOLTMETER SWITCH
- (HP) MOTOR (HP=RATED HORSEPOWER)
- VACUUM STARTER
- (52) ANSI/IEEE TYPE–52 AC POWER CIRCUIT BREAKER
- INDUSTRIAL BATTERY SET W/MOUNTING RACK

- (PM) POWER MONITOR
- (27) UNDER VOLTAGE
- (46) PHASE UNBALANCE
- (48) INCOMPLETE SEQUENCE
- (49) OVER TEMPERATURE
- (51) TIMED OVERCURRENT
- (51G) TIMED GROUND FAULT
- (74) ALARM RELAY
- (81) FREQUENCY
- (86) LOCK OUT
- (87) DIFFERENTIAL

- (E110) DUCTBANK CALLOUT
- (042000) CONDUIT OR CABLE NUMBER

GENERAL ELECTRICAL SYMBOLS

- LP–3 — CONDUIT HOMERUN TO EQUIPMENT SHOWN. LINE TYPE DESIGNATES CONCEALED, EXPOSED, ETC. NUMBERS/TEXT DESIGNATE HOMERUN EQUIPMENT (I.E. PANEL BOARD CIRCUIT NUMBER).
- GENERAL CONDUIT RUN EXPOSED
- CONCEALED CONDUIT IN FLOOR SLAB, UNDERGROUND, ETC.
- EXISTING CABLE OR CONDUIT
- CONDUIT TURNED DOWN
- CONDUIT TURNED UP
- E — SITE ELECTRICAL
- EXISTING SITE ELECTRICAL
- T — SITE TELEPHONE
- EXISTING SITE TELEPHONE
- OHE — OVERHEAD ELECTRICAL UTILITY
- OHT — OVERHEAD TELEPHONE UTILITY
- UGE — UNDERGROUND ELECTRICAL UTILITY
- UGT — UNDERGROUND TELEPHONE UTILITY
- G — SITE GROUND
- EXISTING SITE GROUND
- ELECTRICAL INTERLOCK
- ELECTRICAL BUSS
- ELECTRICAL BUSS DUCT

- 0A / 0F / 3R — DISCONNECT SWITCH. TOP NUMBER DENOTES FUSE SIZE (NF=NON–FUSED). BOTTOM NUMBER DENOTES FRAME SIZE. RIGHT NUMBER DENOTES NEMA ENCLOSURE RATING.
- CB — 0A / 0F / 3R — CIRCUIT BREAKER. TOP NUMBER DENOTES TRIP. BOTTOM NUMBER DENOTES FRAME SIZE. RIGHT NUMBER DENOTES NEMA ENCLOSURE RATING.
- 2 — 0A / 0F / 3R — COMBINATION MAGNETIC MOTOR STARTER AND DISCONNECT SWITCH OR MOTOR CIRCUIT PROTECTOR. LEFT NUMBER DENOTES NEMA STARTER SIZE. TOP NUMBER DENOTES FUSE SIZE OR MCP. BOTTOM NUMBER DENOTES FRAME SIZE. RIGHT NUMBER DENOTES NEMA ENCLOSURE.
- 3 FVNR — FULL VOLTAGE NON–REVERSING MOTOR STARTER. LEFT NUMBER DENOTES NEMA STARTER SIZE.
- RVSS — REDUCED VOLTAGE SOLID–STATE MOTOR STARTER.
- VFD — VARIABLE FREQUENCY MOTOR CONTROLLER.

$_4$ LIGHTING CONTROL SWITCH:
{LOWERCASE LETTER} – CONTROL SWITCHING

M – MOTOR RATED SWITCH
D – DIMMER CONTROL
OS – OCCUPANCY SENSOR
3 – THREE–WAY SWITCHING
4 – FOUR–WAY SWITCHING

OUTLETS: NUMBER DENOTES PANEL BOARD CIRCUIT FOR POWER OUTLETS. IF SHOWN, LOWERCASE LETTER DENOTES CONTROL SWITCHING FOR POWER OUTLETS.

- SIMPLEX RECEPTACLE.
- DUPLEX RECEPTACLE.
- QUADRAPLEX RECEPTACLE.
- VOICE (PHONE) OUTLET.
- DATA OUTLET.
- VOICE/DATA COMBINATION OUTLET.

LIGHTING SYMBOLS

- PP–C/1, B1:a — LIGHT FIXTURES (VARIOUS TYPES) – UPPERCASE LETTER DENOTES FIXTURE TYPE. REFER TO LIGHTING SCHEDULE OR NOTES. NUMBER DENOTES LIGHTING PANEL CIRCUIT. LOWERCASE LETTER DENOTES CONTROL SWITCH.
- PP–C/3, E2 — EMERGENCY LIGHT – BATTERY EQUIPPED, CIRCUIT AHEAD OF CONTROL SWITCHES. ADDITIONAL FIXTURE HEADS MAY BE SHOWN CONNECTED TO UNIT.
- PP–C/1, E3 — EMERGENCY EXIT LIGHT – BATTERY EQUIPPED.

- PC — PHOTOELECTRIC CONTROL DEVICE
- LC — LIGHTING CONTACTOR

TYPICAL ABBREVIATIONS

A, AMP	AMPERE
AFD	ADJUSTABLE FREQUENCY DRIVE
AFG	ABOVE FINISHED GRADE
AIT	ANALYTICAL INDICATION TRANSMITTER
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
BKR	BREAKER
C	CONDUIT
CAB	CABINET
CAT	CATALOG
CL	CHLORINE
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
CP	CONTROL PANEL
CR	CONTROL RELAY, CORROSION RESISTANT
CS	CONTROL SWITCH
CV	CONTROL VALVE
CT	CURRENT TRANSFORMER
CU	COPPER
EF	EXHAUST FAN
EMER	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EPRF	EXPLOSION PROOF
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FLA	FULL LOAD AMPS
FVNR	FULL VOLTAGE NON–REVERSING STARTER
FLOUR	FLUORESCENT
FLR	FLOOR
FMC	FLEXIBLE METAL CONDUIT
FWE	FURNISHED WITH EQUIPMENT
GEN	GENERATOR
G, GND	GROUND
GFIC	GROUND FAULT CIRCUIT INTERRUPTER
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND–OFF–AUTO
HP	HORSE POWER
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
Hz	HERTZ
IMC	INTERMEDIATE METALLIC CONDUIT (GALVANIZED)
INCAND	INCANDESCENT
JB	JUNCTION BOX
k	THOUSAND
kCMIL	THOUSAND CIRCULAR MILLS
kA	KILOVOLT AMPERE
kW	KILOWATTS
kWH	KILOWATT–HOURS
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LFNC	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT
LIT	LEVEL INDICATION TRANSMITTER
LP	LIGHTING PANEL, LIGHT POLE
LTG	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MSB	MAIN SWITCHBOARD
MTD	MOUNTED/MOUNTING
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
NEC	NATIONAL ELECTRIC CODE
N, NEU	NEUTRAL
NA	NOT APPLICABLE
NC	NORMALLY CLOSE
NO	NORMALLY OPEN
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX, PUSH–BUTTON
PCP	PUMP CONTROL PANEL
PF	POWER FACTOR
ϕ, PH	PHASE
PIT	PRESSURE INDICATION TRANSMITTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PP	POWER PANEL, POWER POLE
PT	POTENTIAL TRANSFORMER
PWR	POWER
RECEP	RECEPTACLE
RVSS	REDUCED VOLTAGE SOFT STARTER
REQ	REQUIRED
RM	ROOM
RMC	RIGID METAL CONDUIT (GALVANIZED)
RTU	REMOTE TELEMETRY UNIT
SCR	DC MOTOR DRIVE
SH	SHEET
SPEC	SPECIFICATION
SS	SELECTOR SWITCH
SST.	STAINLESS STEEL
STP	SHIELDED TWISTED PAIR
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCH GEAR
TEL	TELEPHONE
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UTIL	UTILITY
UTP	UNSHIELDED TWISTED PAIR
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE, WATT
WH	WATT–HOUR
WP	WEATHERPROOF
XFMR	TRANSFORMER

GENERAL NOTES

1. REFERENCE ALL SPECIFICATIONS AND CONTRACT DRAWINGS FOR ADDITIONAL REQUIREMENTS AND CONTRACT RESPONSIBILITIES PRIOR TO COMMENCING WORK.
2. THE GENERAL NOTES STATED ON THIS DRAWING ARE APPLICABLE TO ALL ELECTRICAL WORK UNLESS NOTED OTHERWISE.
3. ALL ELECTRICAL WORK SHALL COMPLY WITH THE CURRENT NEC, NESC AND LOCAL CODES INCLUDING OWNERS STANDARDS AND REQUIREMENTS.
4. THE ELECTRICAL INSTALLATION SHALL COMPLY THE REQUIREMENTS OF NECA–1 2006: (STANDARD PRACTICES FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION).
5. THE SCHEDULING AND DURATION OF ANY SHUTDOWN OF ANY PLANT PROCESS FOR THE REMOVAL OF EXISTING EQUIPMENT OR INSTALLATION OF NEW EQUIPMENT SHALL BE COORDINATED IN ADVANCE WITH THE OWNER.
6. ALL SYMBOLS AND ABBREVIATION MAY NOT BE UTILIZED FOR THIS PROJECT.
7. ADDITIONAL SYMBOLS NOT SHOWN ON THIS DRAWING MAY BE SHOWN ELSEWHERE ON THE ELECTRICAL DRAWINGS.
8. ELECTRICAL DRAWINGS SHOW MAJOR CABLE AND CONDUIT REQUIREMENTS. REFERENCE EQUIPMENT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
9. ALL 480V ELECTRICAL EQUIPMENT SHALL HAVE A MINIMUM RATING OF 22K AIC.
10. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED SO THAT ALL CODE–REQUIRED AND MANUFACTURER–RECOMMENDED SERVICING CLEARANCES ARE MAINTAINED. INSTALLATIONS SHALL COMPLY WITH NEC 110–26 FOR CLEARANCE REQUIREMENTS.
11. ALL POWER AND CONTROL WIRING OR CABLES SHALL BE 600V RATED XHHW–2 STRANDED COPPER, UNLESS OTHERWISE NOTED ON DRAWINGS.
12. ALL AMPACITIES ARE BASED ON 75°C RATING. THE CONTRACTOR IS RESPONSIBLE FOR THE INCREASING OF CONDUCTOR SIZES AS NECESSARY TO MEET THE REQUIREMENTS OF NEC 110–14(C) WHERE TERMINATIONS ARE NOT LISTED AND LABELED FOR USE AT 75°C. THIS REQUIREMENT APPLIES TO TERMINATIONS IN BOTH NEW EQUIPMENT AND IN EXISTING EQUIPMENT TO WHICH TERMINATIONS ARE MADE AS PART OF THIS PROJECT.
13. NO SPLICES OR JUNCTIONS TO FEEDER CABLES SHALL BE MADE WITHOUT ENGINEERS APPROVAL.
14. ALL EXPOSED CONDUIT SHALL BE RIGID ALUMINUM.
15. ALL CONDUIT INSTALLED BELOW GRADE SHALL BE NON–REINFORCED CONCRETE DUCTBANK; REFERENCE DETAIL SHEETS.
16. ALL DUCTBANKS CROSSING ROADWAYS SHALL BE REINFORCED CONCRETE AND EXTEND 5–FEET FROM EDGE OF PAVEMENT. DUCTBANKS SHALL CROSS PROCESS PIPING AT 90° ANGLE WHERE POSSIBLE. REFERENCE DETAIL SHEETS.
17. ALL CONDUIT TRANSITIONS THROUGH FINISHED GRADE OR CONCRETE SHALL BE ALUMINUM WITH HEAVY WALL HEAT–SHRINKABLE TUBING 6" MIN. ABOVE AND BELOW TRANSITION.
18. ROUGH–IN CONDUIT AS REQUIRED FOR DIRECT CONNECTION TO EQUIPMENT AS SHOWN. PROVIDE FLEXIBLE CONNECTIONS TO ALL EQUIPMENT AND MAKE ALL CONNECTIONS COMPLETE AND IN ACCORDANCE WITH THE SPECIFICATIONS.
19. ALL CONDUIT SHALL RUN CONCEALED UNLESS OTHERWISE NOTED OR SHOWN. THE CONDUITS SHALL RUN PARALLEL TO LANDSCAPE AND STRUCTURAL FEATURES, AND THE BENDS AND TURNS SHALL BE MADE BY MEANS OF CONDUIT FITTINGS. MOST CONDUIT LAYOUTS ARE NOT AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROPOSE LOGICAL GROUPINGS, MARSHALLING AND ROUTING OF CONDUITS AND WIRING FOR APPROVAL BY ENGINEER PRIOR TO INSTALLATION.
20. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED PULL BOXES, TERMINAL BOXES AND JUNCTION BOXES FOR INSTALLATION OF THE WIRING IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS THOUGH THE BOXES MAY NOT BE INDICATED ON THE DRAWINGS.
21. CONDUIT AND WIRING FOR LIGHTING, RECEPTACLES AND OTHER SINGLE PHASE POWERED DEVICES ARE GENERALLY NOT SHOWN BUT SHALL BE PROVIDED AS REQUIRED FOR PROPER SERVICE. MULTI–PHASE CIRCUITS SHALL BE PROVIDED WITH DEDICATED NEUTRAL CONDUCTORS.
22. ALL SPARE CONDUITS SHALL BE CAPPED OR PLUGGED AND SHALL INCLUDE 200# TEST POLYPROPYLENE PULL STRING.
23. STRUT–CHANNEL SHALL NOT BE BENT, DRILLED, CUT OR OTHERWISE MODIFIED TO PRODUCE FITTINGS, BRACES OR BRACKETS FOR CONDUIT AND EQUIPMENT SUPPORTS.
24. MANUFACTURED STRUT–CHANNEL BRACES, BRACKETS, FITTINGS OR POST BASES SHALL BE PROVIDED AND INSTALLED WITH ASSOCIATED HARDWARE AND FASTENERS FOR CONDUIT AND EQUIPMENT SUPPORTS.
25. CONTRACTOR SHALL PROVIDE AUXILIARY SUPPORTS FOR SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, CONTROL PANELS, ETC., AS REQUIRED.
26. CONTRACTOR SHALL PROVIDE AND INSTALL CONCRETE EMBEDDED LEVELING CHANNEL SUPPORTS FOR FLOOR MOUNTED EQUIPMENT.
27. STRUCTURAL MEMBERS SHALL NOT BE DRILLED, CUT, WELDED OR OTHERWISE MODIFIED WITHOUT PRIOR APPROVAL OF THE ENGINEER OF RECORD.
28. ALL NEW EQUIPMENT SHALL FIT INTO EXISTING AVAILABLE SPACE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE EQUIPMENT WHICH MEETS THE SPACE REQUIREMENTS.
29. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUITS ARE BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS APPROVED BY THE ENGINEER MAY BE MADE BY THE CONTRACTOR AT HIS EXPENSE TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED.
30. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY COMPONENTS REQUIRED FOR MAKING FINAL CONNECTION OF ALL EQUIPMENT INSTALLED OR MODIFIED AS PART OF THIS CONTRACT.
31. NOT ALL MOISTURE AND HAZARDOUS AREA CONDUIT SEALS ARE SHOWN ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE CODE, SPECIFICATION, AND DRAWING REQUIREMENTS FOR THEIR LOCATION.
32. CONTRACTOR SHALL PROVIDE BLACK TEXT ON WHITE HEAT–SHRINKABLE CABLE/WIRE IDENTIFICATION LABEL AT BOTH ENDS OF POWER, CONTROL AND DATA WIRING.
33. GROUND FAULT CURRENT INTERRUPTING (GFCI) RECEPTACLES:
    A. SHALL BE RATED FOR 20A AT 120V WITH LED POWER INDICATOR
    B. INSTALLED IN INTERIOR SPACES WHERE EXPOSED TO WATER SOURCES SUCH AS TOILET ROOMS, SHOWER AREAS, KITCHENS, ETC., INDIVIDUAL GFCI RECEPTACLES SHALL BE PROVIDED.
    C. INSTALLED OUTDOORS OR IN PROCESS AREAS, ALL RECEPTACLES SHALL BE WEATHER PROOF, CORROSION RESISTANT, AND SHALL BE INDIVIDUAL GFCI DEVICES.

TYPICAL DEVICE MOUNTING HEIGHTS

RECEPTACLES (INTERIOR PROCESS AREAS)	16" AFF
RECEPTACLES (EXTERIOR PROCESS AREAS)	48" AFF
LIGHT SWITCHES	48" AFF
PHONE OUTLETS	16" AFF
PHONE OUTLETS (WALL MOUNT)	64" AFF
DATA OUTLETS	16" AFF
FIRE ALARM PULL STATION	48" AFF
FIRE ALARM AUDIO/VISUAL ALARM	80" AFF
FIRE ALARM VISUAL ALARM ONLY	80" AFF
EXIT LIGHTS (WALL MOUNT)	16" ABOVE DOOR
EMERGENCY LIGHTS (WALL MOUNT)	96" AFF

NOTE: DIMENSIONS ARE TO DEVICE TOP UNLESS NOTED OTHERWISE.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMP DATA No.	LAMP DATA TYPE	BALLAST No.	BALLAST TYPE	VOLTAGE	WATTAGE	MOUNTING	MANUFACTURER	CATALOGUE/SERIES NUMBER	REMARKS
P1	HIGH–PRESSURE SODIUM SITE LIGHTING FIXTURE POLE–MOUNTED	1	150W HPS	1	ELCTRNC	120	187	POLE	NITE–BRITES COOPER/LUMARK LITHONIA	SBX–150S–5T–SC2–PSC HPHR–R2–150–120V–LL KSF1–150S–R2–120–SP04–LPI–CR	FIXTURE SHALL INCLUDE ENHANCED CORROSION RESISTANCE
	12' AL STRAIGHT SQUARE POLE	–	–	–	–	–	–	–	NITE–BRITES COOPER/LUMARK LITHONIA	SSA4–STB–12–D1–BRA SSA–4T12–WCM1–XG SSA–12–4C–DM19–DDB	POLE SHALL INCLUDE VIBRATION DAMPER

LIGHTING FIXTURE SCHEDULE NOTES:

1. COORDINATE LIGHTING FIXTURE FINISHES WITH ARCHITECTURAL DRAWINGS.
2. REFER TO INDIVIDUAL LIGHTING PLANS FOR FIXTURE MOUNTING HEIGHTS NOT INDICATED ON THE SCHEDULE.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

ARTHUR L. ANCHORS, P.E.
No. 39804

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

ELECTRICAL GENERAL NOTES, LEGENDS AND ABBREVIATIONS

DATE:	JUNE 2014
MCE PROJ. #	1024–0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E–0.01

STATUS: RECORD DRAWINGS
REVISION

5916.060

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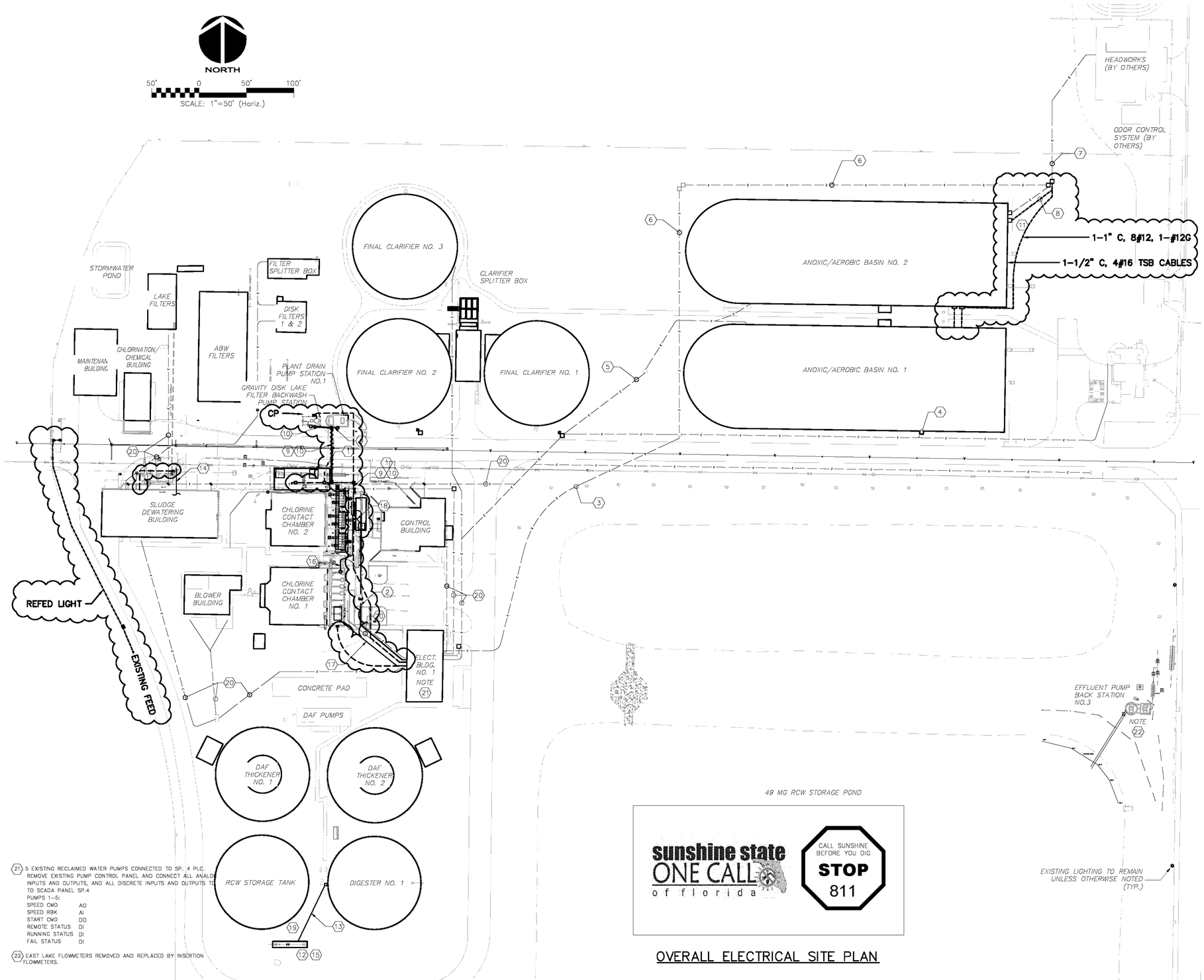
GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING PIPING, UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN BASED ON INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE ELECTRICAL PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY AND REVIEW THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING PIPING, UTILITIES, STRUCTURES AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) PRIOR TO COMMENCING WORK.
3. THE CONTRACTOR SHALL REFERENCE THE YARD PIPING DRAWINGS FOR LOCATIONS OF EXISTING AND PROPOSED PIPE WORK. THE CONTRACTOR SHALL COORDINATE THE DUCTBANK ROUTINGS AND UNDERGROUND PULL-BOX LOCATIONS SUCH THAT THE ELECTRICAL WORK DOES NOT CONFLICT WITH THE PIPE WORK.
4. THE CONTRACTOR SHALL COORDINATE WITH THE OTHER CONSTRUCTION PROJECT(S), SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION PRIOR TO THE INSTALLATION.

KEYNOTES:

1. NEW FLOW CONTRL ASSEMBLY. REFER TO DRAWING E-7.1 INSTALL THE FOLLOWING CONCRETE ENCASED CONDUIT TO THE EQUIPMENT RACK AT THE LAKE GRAVITY DISC FILTERS:
   A. 3#10, #10G, 1" CONDUIT (MOV-714 480V POWER)
   B. 2#10, 1#10G, 1" CONDUIT (FIT-709 120V POWER)
   C. 18#14, #14G, 1.25" CONDUIT (CONTROL FROM MOV-714, PRV-713 TO SP-8)
   D. 2#16 TSP 1"C (FIT-714, SPARE TO SP-8)
2. INSTALL THE FOLLOWING CONCRETE ENCASED CABLE AND CONDUIT FROM THE ELECTRICAL BUILDING TO THE EQUIPMENT BUILDING RACK AT THE DISK FILTERS.
   A. 3#3/0, 1#6G, 2.5"C (480V TO PP-701)
   B. FIBER OPTIC CABLE 2"C (COMMUNICATION FROM SP-8 TO PLC IN ELECTRICAL BUILDING.
3. EXISTING DUCT BANK TO ANOXIC / AERATION BASINS INCLUDING THE FOLLOWING EQUIPMENT.
   A. BASIN 1 AERATOR NO.1
   B. BASIN 1 AERATOR NO. 2
   C. BASIN 1 INTERNAL RECYCLE PUMP 1 – REFER TO E.3.1
   D. BASIN 1 INTERNAL RECYCLE PUMP 2 – REFER TO E.3.1
   E. ANOXIC MIXER NO. 1
   F. ANOXIC MIXER NO. 2
   G. BASIN 2 AERATOR NO.1
   H. BASIN 2 AERATOR NO. 2
   I. BASIN 2 INTERNAL RECYCLE PUMP 1
   J. BASIN 2 INTERNAL RECYCLE PUMP 2
   K. ANOXIC MIXER NO. 3
   L. ANOXIC MIXER NO. 4
4. REPLACE EXISTING 48" X 36" FIBERGLASS JUNCTION BOX ENCLOSURE WITH NEW STAINLESS STEEL NEMA 4X JUNCTION BOX ENCLOSURE.
5. EXISTING DUCT BANK TO ANOXIC / AERATION BASINS INCLUDING THE FOLLOWING EQUIPMENT.
   A. BASIN 1 AERATOR NO.3
   B. BASIN 2 AERATOR NO.3
6. EXISTING DUCT BANK FOR 480V POWER TO HEADWORKS.
7. INSTALL THE FOLLOWING WIRE IN THE EXISTING SPARE CONDUIT FROM THE HEADWORKS BUILDING TO THE EXISTING HANDHOLES AS SHOWN.
   A. 8#10, 4#10G, 3 INCH CONDUIT (120V FROM RECEPTACLES AND AREA LIGHTS TO 120/208V PANELBOARD HWL.
8. INSTALL THE FOLLOWING CONCRETE ENCASED CONDUIT AND WIRE FROM THE HANDHOLES TO THE NEW STAINLESS STEEL TERMINAL BOXES MOUNTED TO THE BASIN WALL AS SHOWN.
   A. 8#10, 4#10G, 2 INCH CONDUIT (120V FROM INSTRUMENTS, RECEPTACLES AND AREA LIGHTS TO 120/208V PANELBOARD HWL.
   B. 2 INCH CONDUIT SPARE FOR FUTURE INSTRUMENTATION.
9. REPLACE EXISTING 3#1, 1#8G 480V POWER IN EXISTING CONDUIT FROM PLANT DRAIN PUMP STATION TO MCC-5 LOCATED IN SLUDGE DEWATERING BUILDING. INSTALL THE FOLLOWING CONCRETE ENCASED CONDUIT AND WIRE FROM THE PLANT DRAIN PUMP STATION CONTROL PANEL TO SCADA PANEL SP-8:
   A. 2-TSP, 1" CONDUIT (LIT-1002, SPARE)
   B. 22#14, #14G, 1.25" CONDUIT (STATUS)
10. INSTALL THE FOLLOWING CONCRETE ENCASED CONDUIT AND WIRE FROM THE BACKWASH PUMP STATION CONTROL PANEL CP-750 TO SCADA PANEL SP8 AND PANELBOARD PP-701.
    A. 3#10, 1#10, 1 INCH CONDUIT (480V POWER TO CP-750)
    B. 20#14, 1#14G, 1.25 INCH CONDUIT (STATUS TO SP-8)
11. INSTALL TWO STAINLESS STEEL TERMINAL BOXES. ONE BOX SHALL BE USED TO TERMINATE 120V POWER. THE OTHER WILL TERMINATE FUTURE PROCESS SIGNALS. RECONNECT EXISTING ANOXIC/AERATION BASIN 120V POWER CIRCUITS FOR RECEPTACLES AND LIGHTING TO 120/208V PANELBOARD IN THE HEADWORKS. REFER TO PANELBOARD SCHEDULE.
12. METER AND CHECK VALVE ASSEMBLY. SEE DRAWING E-7.1.
13. INSTALL THE FOLLOWING CONCRETE ENCASED CONDUIT AND WIRE FROM THE EXISTING ABANDONED METER AT THE DIGESTER TANK TO THE FIT-710 METER AND CHECK VALVE ASSEMBLY. INSTALL NEW STAINLESS STEEL NEMA 4X JUNCTION AND CONNECT POWER AND SIGNAL CABLES AS LISTED BELOW.
    A. 2#10, 1#10G, 1 INCH CONDUIT (FIT-710 120V POWER).
    B. 1#16 TSP (FIT-710 SIGNAL)
14. INSTALL THE FOLLOWING CONCRETE ENCASE CONDUIT AND WIRE FROM MOTORIZED VALVE MOV-707 TO THE DEWATERING BUILDING.
    A. 3#10, 1#10G, 1 INCH CONDUIT (MOV-707 480v POWER TO MCC-5)
    B. 12#14, 1#14G, 1 INCH CONDUIT (MOV-707 STATUS TO SCADA PANEL SP-3)
15. EXISTING MOTORIZED VALVE MOV-711. REPLACE EXISTING CONTROL CONDUIT CONDUCTORS ROUTED TO EXISTING CONNECTION IN SCADA PANEL SP-4 LOCATED IN THE ELECTRICAL BUILDING WITH 12#14, 1#14G.
16. INSTALL THE FOLLOWING CONCRETE ENCASED CONDUIT AND WIRE FROM PIT-713 TO SCADA PANEL SP-8.
    A. 1#16 TSP, 1 INCH CONDUIT (PIT-713 SIGNAL).
17. INSTALL THE FOLLOWING CONCRETE ENCASED CONDUIT AND WIRE FROM PRV-718 AND PIT-717 TO SCADA PANEL SP-4 IN THE ELECTRICAL BUILDING.
    A. 10#14, 1#14G, 1 INCH CONDUIT (PRV-718 STATUS TO SCADA PANEL SP-4).
    B. 1#16 TSP, 1 INCH CONDUIT (PIT-717 SIGNAL TO SCADA PANEL SP-4).
18. INSTALL THE FOLLOWING CONCRETE ENCASED CONDUIT AND WIRE FROM PRV-713 TO SCADA PANEL SP-8.
    A. 8#14, 1#14G, 1 INCH CONDUIT (STATUS TO SP-8).
19. EXISTING MOTORIZED VALVE MOV-716. REPLACE EXISTING CONTROL CONDUIT CONDUCTORS ROUTED TO EXISTING CONNECTION IN SCADA PANEL SP-4 LOCATED IN THE ELECTRICAL BUILDING WITH 12#14, 1#14G.
20. EXISTING UNDERGROUND CONDUIT/DUCT BANK.



21. 5 EXISTING RECLAIMED WATER PUMPS CONNECTED TO SP. 4 PLC. REMOVE EXISTING PUMP CONTROL PANEL AND CONNECT ALL ANALOG INPUTS AND OUTPUTS, AND ALL DISCRETE INPUTS AND OUTPUTS TO SCADA PANEL SP.4

PUMPS 1-5:	
SPEED CMD	AO
SPEED RBK	AI
START CMD	DO
REMOTE STATUS	DI
RUNNING STATUS	DI
FAIL STATUS	DI

22. EAST LAKE FLOWMETERS REMOVED AND REPLACED BY INSERTION FLOWMETERS.

OVERALL ELECTRICAL SITE PLAN

sunshine state ONE CALL of florida — CALL SUNSHINE BEFORE YOU DIG — STOP 811

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:
A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014
☒ REVISIONS ☐ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

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EB0006691
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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

OVERALL ELECTRICAL SITE PLAN

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE: HORIZONTAL: 1" = 50' VERTICAL: NA

DRAWING NUMBER: E-0.02

STATUS: RECORD DRAWINGS

REVISION

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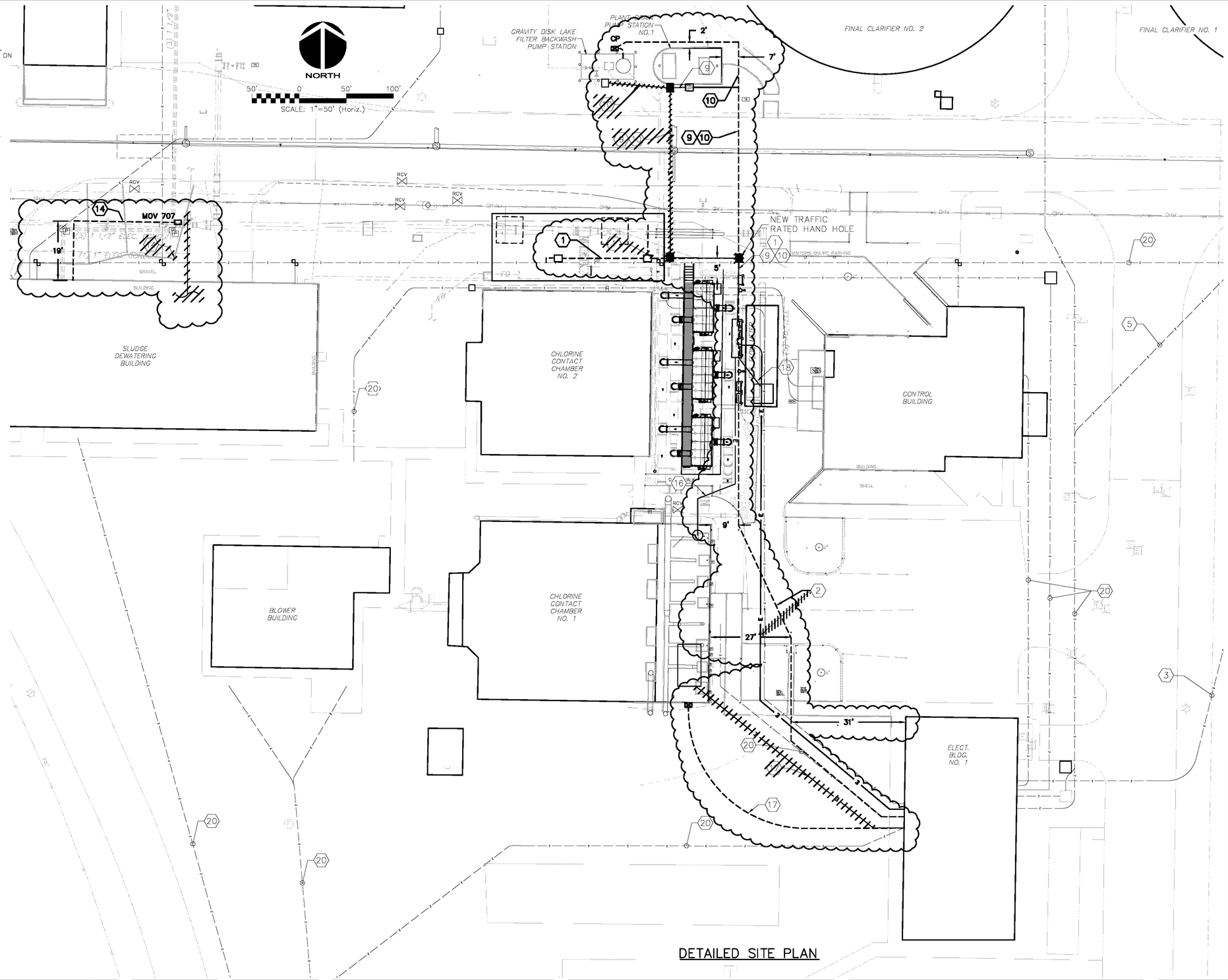
GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING PIPING, UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN BASED ON INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE ELECTRICAL PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY AND REVIEW THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING PIPING, UTILITIES, STRUCTURES AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) PRIOR TO COMMENCING WORK.
3. THE CONTRACTOR SHALL REFERENCE THE YARD PIPING DRAWINGS FOR LOCATIONS OF EXISTING AND PROPOSED PIPE WORK. THE CONTRACTOR SHALL COORDINATE THE DUCTBANK ROUTINGS AND UNDERGROUND PULL-BOX LOCATIONS SUCH THAT THE ELECTRICAL WORK DOES NOT CONFLICT WITH THE PIPE WORK.
4. THE CONTRACTOR SHALL COORDINATE WITH THE OTHER CONSTRUCTION PROJECT(S), SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION PRIOR TO THE INSTALLATION.

KEYNOTES:

REFER TO E0.02 FOR KEYNOTES.



DETAILED SITE PLAN

sunshine state ONE CALL of florida

CALL SUNSHINE BEFORE YOU DIG
STOP
811

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	RECORD DRAWINGS	6/14

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Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

ELECTRICAL
DETAILED SITE PLAN

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 3/4" = 1'
VERTICAL: NA

DRAWING NUMBER
E-0.03

STATUS: RECORD DRAWINGS
REVISION

5916.062

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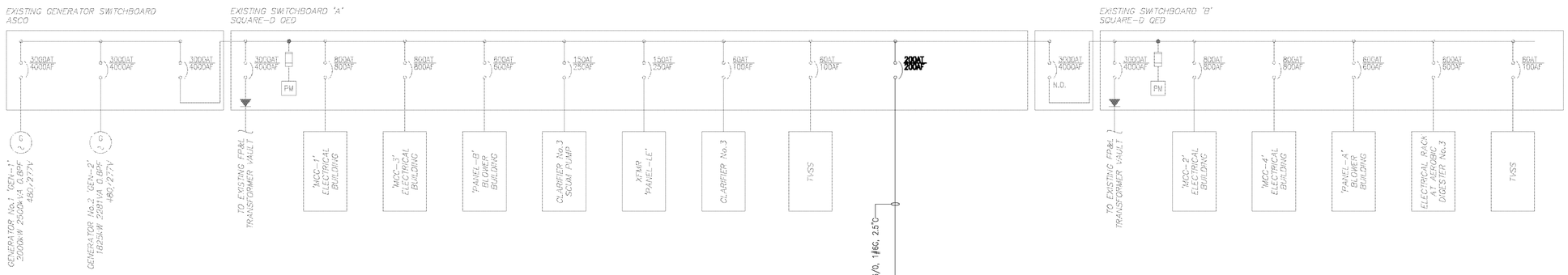
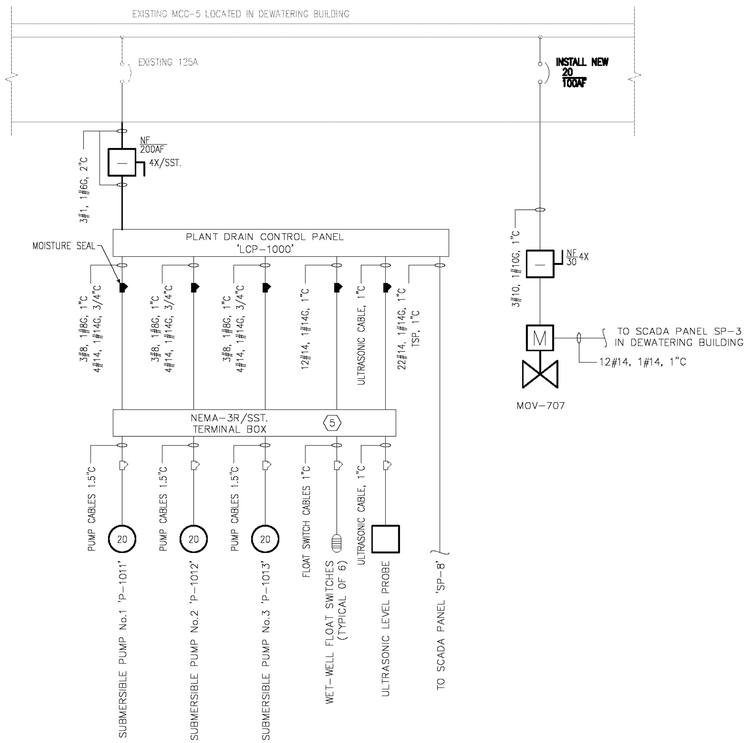


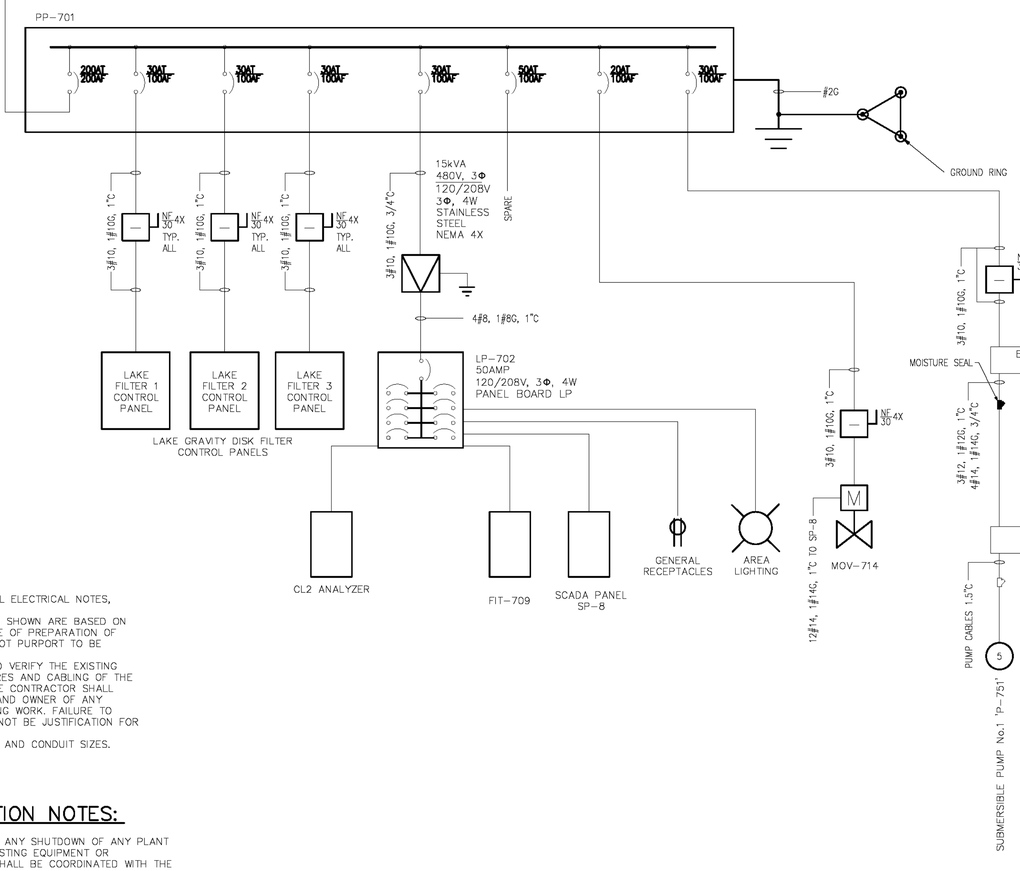
EXISTING ELECTRICAL MAIN SWITCHBOARD "A & B" SINGLE-LINE DIAGRAM MODIFICATIONS

N.T.S.



PLANT DRAIN PUMP STATION

N.T.S.



LAKE FILTER BACKWASH PUMP STATION

N.T.S.

GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. THE EXISTING SINGLE-LINE DIAGRAMS SHOWN ARE BASED ON INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE ELECTRICAL PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT.
3. THE CONTRACTOR SHALL REVIEW AND VERIFY THE EXISTING ARRANGEMENTS, CONDITIONS, FEATURES AND CABLING OF THE EXISTING ELECTRICAL EQUIPMENT. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND OWNER OF ANY DISCREPANCIES PRIOR TO COMMENCING WORK. FAILURE TO VERIFY EXISTING CONDITIONS SHALL NOT BE JUSTIFICATION FOR ADDITIONAL CLAIMS.
4. REFER TO SHEET E-0.11 FOR WIRING AND CONDUIT SIZES.

ELECTRICAL DEMOLITION NOTES:

1. THE SCHEDULING AND DURATION OF ANY SHUTDOWN OF ANY PLANT PROCESS FOR THE REMOVAL OF EXISTING EQUIPMENT OR INSTALLATION OF NEW EQUIPMENT SHALL BE COORDINATED WITH THE OWNER IN ADVANCE.
2. THE DEMOLISHED EQUIPMENT SHALL BE REMOVED FROM THE PLANT SITE AND PROPERLY DISPOSED, SALVAGED OR DELIVERED TO A SPECIFIED LOCATION AS DIRECTED BY THE OWNER.
3. ALL WIRE AND CABLING TO BE DEMOLISHED SHALL BE REMOVED IN THEIR ENTIRETY.
4. ALL EXPOSED CONDUIT TO BE DEMOLISHED SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING ALL SUPPORTS AND HARDWARE.
5. ALL OPENINGS OR MOUNTING HOLES LEFT BY REMOVED ELECTRICAL EQUIPMENT SHALL BE PATCHED AND REPAIRED.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 - MAY 2014

☐ REVISIONS ☒ NO REVISIONS

THESE DRAWINGS ARE NOT INTENDED TO REPRESENT A DETAILED RECORD OF ACTUAL DIMENSIONS, ELEVATIONS, OR DETAILS. SUBSTANTIAL CHANGES OR DEVIATIONS FROM THE ORIGINAL DESIGN, KNOWN BY THE ENGINEER ARE NOTED HEREON.

DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

ARTHUR L. ANCHORS, P.E.
No. 39804

SEAL

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1365 Hamlet Avenue
Clearwater, Florida 33755
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

ELECTRICAL BUILDING NO.1
EXISTING SINGLE-LINE DIAGRAM
AND MODIFICATIONS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.04

STATUS: RECORD DRAWINGS
REVISION

5916.063

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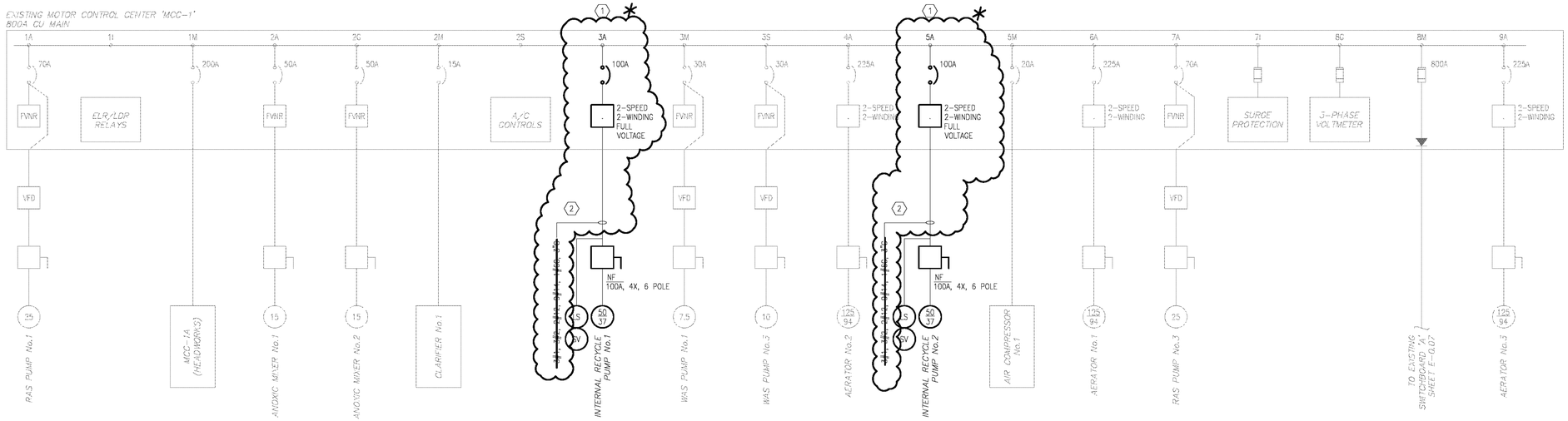
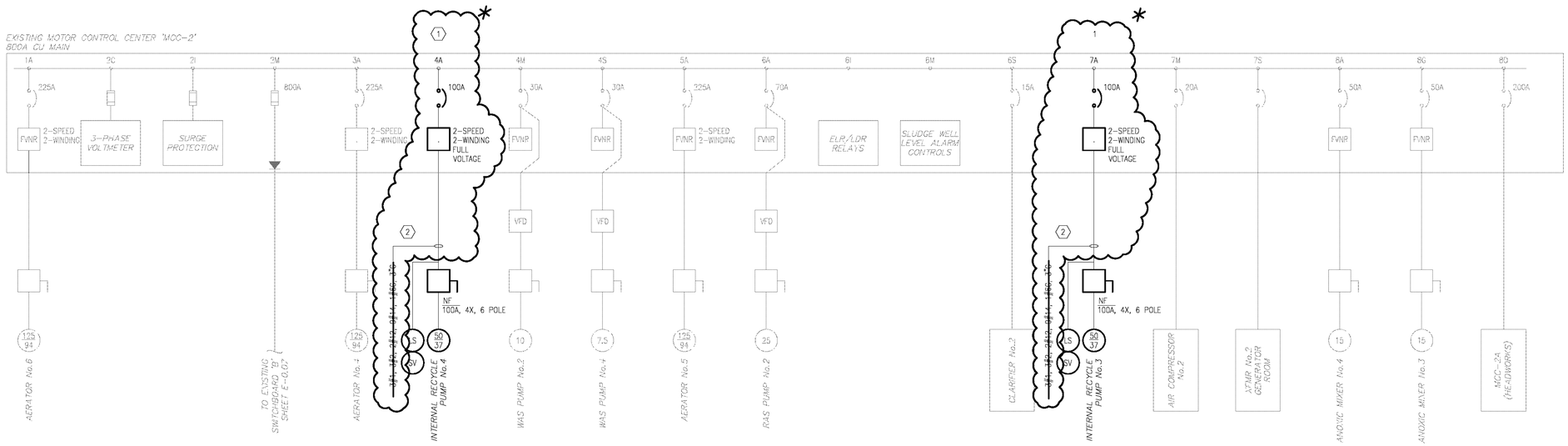


EXISTING MCC-1 SINGLE-LINE DIAGRAM
N.T.S.

*** NOT REPLACED UTILIZED EXISTING**



EXISTING MCC-2 SINGLE-LINE DIAGRAM
N.T.S.

GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. THE EXISTING SINGLE-LINE DIAGRAMS SHOWN ARE BASED ON INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE ELECTRICAL PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT.
3. THE CONTRACTOR SHALL REVIEW AND VERIFY THE EXISTING ARRANGEMENTS, CONDITIONS, FEATURES AND CABLING OF THE EXISTING ELECTRICAL EQUIPMENT. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND OWNER OF ANY DISCREPANCIES PRIOR TO COMMENCING WORK. FAILURE TO VERIFY EXISTING CONDITIONS SHALL NOT BE JUSTIFICATION FOR ADDITIONAL CLAIMS.

ELECTRICAL DEMOLITION NOTES:

1. THE SCHEDULING AND DURATION OF ANY SHUTDOWN OF ANY PLANT PROCESS FOR THE REMOVAL OF EXISTING EQUIPMENT OR INSTALLATION OF NEW EQUIPMENT SHALL BE COORDINATED WITH THE OWNER.
2. THE DEMOLISHED EQUIPMENT SHALL BE REMOVED FROM THE PLANT SITE AND PROPERLY DISPOSED, SALVAGED OR DELIVERED TO A SPECIFIED LOCATION AS DIRECTED BY THE OWNER.
3. ALL WIRE AND CABLING TO BE DEMOLISHED SHALL BE REMOVED IN THEIR ENTIRETY.
4. ALL EXPOSED CONDUIT TO BE DEMOLISHED SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING ALL SUPPORTS AND HARDWARE.
5. ALL OPENINGS OR MOUNTING HOLES LEFT BY REMOVED ELECTRICAL EQUIPMENT SHALL BE PATCHED AND REPAIRED.

KEYNOTES:

(1) EXISTING TWO SPEED TWO WINDING MOTOR STARTER FOR EACH OF FOUR INTERNAL RECYCLE PUMPS SHALL BE REBUILT WITH ALL NEW INTERNAL COMPONENTS INCLUDING BREAKERS, CONTACTORS, CONTROL SWITCHES, INDICATING LIGHTS, ETMS, INTERNAL RELAYS AND WIRING. REFER TO INTERNAL RECYCLE PUMP CONTROL DIAGRAM. COORDINATE WITH PUMP SUPPLIER FOR EXACT HIGH SPEED AND LOW SPEED FULL LOAD AMERAGE.

(2) PRIOR TO EQUIPMENT INSTALLATION, THE CONTRACTOR SHALL UTILIZE AN INDEPENDENT TESTING SERVICE TO TEST THE CONDITION OF EACH POWER AND CONTROL CONDUCTOR TO EACH OF THE FOUR INTERNAL RECYCLE PUMPS TO VERIFY THE EXISTING POWER AND CONTROL WIRING CAN BE REUSED WITH THE REPLACEMENT PUMPS. THE TESTING SERVICE SHALL PREPARE A REPORT TO BE SUBMITTED TO THE OWNER EVALUATING THE TEST RESULTS ON ALL CONDUCTORS AND IDENTIFY PROBLEMS IN ANY CONDUCTOR TESTED. REFER TO SITE ELECTRICAL PLAN, SINGLE LINE DIAGRAM, AND BID DOCUMENTS.

(3) EXISTING MOTOR CONTROL CENTERS 1 & 2 ARE WESTINGHOUSE SERIES 2100.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT. BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☒ REVISIONS ☐ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

ARTHUR L. ANCHORS, P.E.
No. 39804

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

ELECTRICAL BUILDING NO.1
MCC-1 AND MCC-2 MODIFICATIONS
SINGLE-LINE DIAGRAM

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.05

STATUS: RECORD DRAWINGS
REVISION

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5916.064

SECTION 1	SECTION 2	SECTION 3	SECTION 4	SECTION 5	SECTION 6	SECTION 7	SECTION 8	SECTION 9
RAS PUMP No.1	ANOXIC MIXER No.1	INTERNAL RECYCLE PUMP No.1 ⟨1⟩	AERATOR MIXER No.2	INTERNAL RECYCLE PUMP No.2 ⟨1⟩	AERATOR MIXER No.1	RAS PUMP No.3	SPACE	AERATOR MIXER No.3
ELR/LDP RELAYS	ANOXIC MIXER No.2					SURGE PROTECTION	3-PHASE VOLTMETER	
MCC-1A FEEDER (HEADWORKS)	CLARIFIER No.1	WAS PUMP No.1		AIR COMPRESSOR No.1		SPARE BREAKERS	MAIN FEEDER	
	A/C CONTROLS	WAS PUMP No.3		SPACE				

EXISTING MCC-1 ELEVATION
N.T.S.

SECTION 1	SECTION 2	SECTION 3	SECTION 4	SECTION 5	SECTION 6	SECTION 7	SECTION 8
AERATOR MIXER No.6	SPACE	AERATOR MIXER No.4	INTERNAL RECYCLE PUMP No.4 ⟨1⟩	AERATOR MIXER No.5	RAS PUMP No.2	INTERNAL RECYCLE PUMP No.3 ⟨1⟩	ANOXIC MIXER No.4
	3-PHASE VOLTMETER						ANOXIC MIXER No.3
	SURGE PROTECTION				ELR/LDR RELAYS		SPACE
	MAIN FEEDER		WAS PUMP No.2		SLUDGE WELL LEVEL ALARM RELAYS	AIR COMPRESSOR No.2	MCC-2A FEEDER (HEADWORKS)
			WAS PUMP No.4		CLARIFIER No.2	XFMR No.2 GENERATOR ROOM	

EXISTING MCC-2 ELEVATION
N.T.S.

GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. THE EXISTING MCC ELEVATIONS ARE SHOWN APPROXIMATE AND INTENDED TO ASSIST THE CONTRACTOR WITH PROVIDING NEW MOTOR CONTROL CENTER REPLACEMENTS.
3. THE CONTRACTOR IS DIRECTED TO CONDUCT AN INVESTIGATION TO DETERMINE THE EXACT ARRANGEMENTS, MOTOR STARTERS, CIRCUIT BREAKERS, CABLE/WIRE SIZES AND QUANTITIES OF ALL THE EXISTING ELECTRICAL EQUIPMENT PRIOR TO COMMENCING WORK. FAILURE TO COMPLETE INVESTIGATION OF ALL EXISTING ELECTRICAL EQUIPMENT SHALL NOT BE JUSTIFICATION FOR ADDITIONAL CLAIMS.

ELECTRICAL MODIFICATION NOTES:

1. THE SCHEDULING AND DURATION OF ANY SHUTDOWN OF ANY PLANT PROCESS FOR THE REMOVAL OF EXISTING EQUIPMENT OR INSTALLATION OF NEW EQUIPMENT SHALL BE COORDINATED WITH THE OWNER.
2. DEMOLISHED EQUIPMENT SHALL BE REMOVED FROM THE PLANT SITE AND PROPERLY DISPOSED, SALVAGED OR DELIVERED TO A SPECIFIED LOCATION AS DIRECTED BY THE OWNER.
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5. ALL OPENINGS OR MOUNTING HOLES LEFT BY REMOVED ELECTRICAL EQUIPMENT SHALL BE PATCHED AND REPAIRED.

KEYNOTES:

⟨1⟩ EXISTING TWO SPEED TWO WINDING MOTOR STARTER FOR EACH OF FOUR INTERNAL RECYCLE PUMPS SHALL BE REBUILT WITH ALL NEW INTERNAL COMPONENTS INCLUDING BREAKERS, CONTACTORS, CONTROL SWITCHES, INDICATING LIGHTS, ETMS, INTERNAL RELAYS AND WIRING. REFER TO DRAWING E-0.07 FOR INTERNAL RECYCLE PUMP CONTROL DIAGRAM.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

ARTHUR L. ANCHORS, P.E.
No. 39804

SEAL

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1365 Hamlet Avenue
Clearwater, Florida 33755
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EB0006691
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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

ELECTRICAL BUILDING NO.1
EXISTING MCC ELEVATIONS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.06

STATUS: RECORD DRAWINGS
REVISION

5916.065

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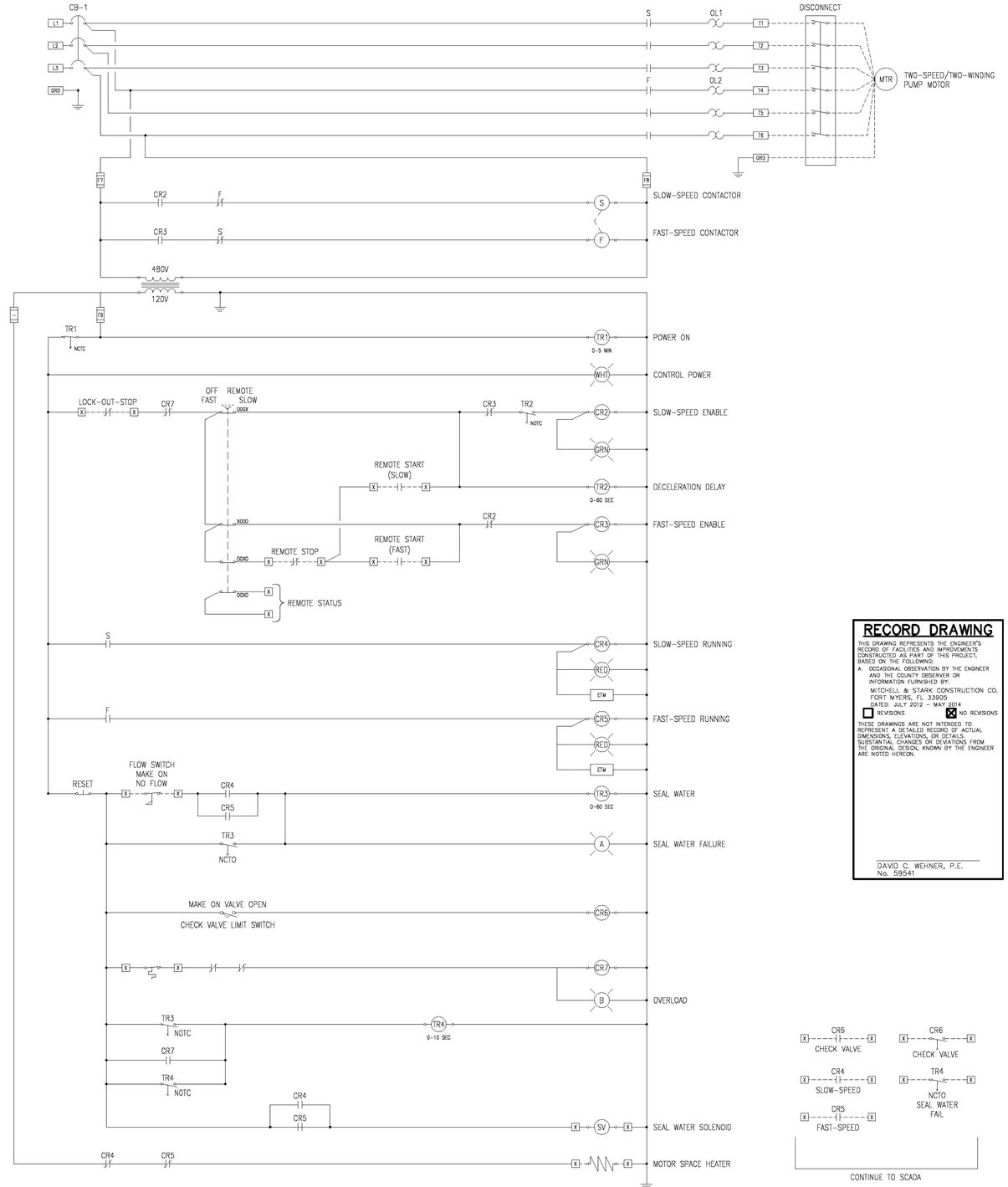

INTERNAL RECIRCULATION PUMPS (TYPICAL OF 4)
N.T.S.

RECORD DRAWING

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A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

ARTHUR L. ANCHORS, P.E.
No. 39804

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

ELECTRICAL SCHEMATICS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.07

STATUS: RECORD DRAWINGS
REVISION

5916.066

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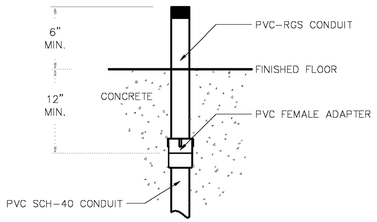
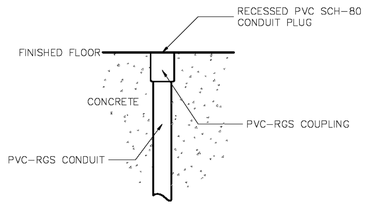
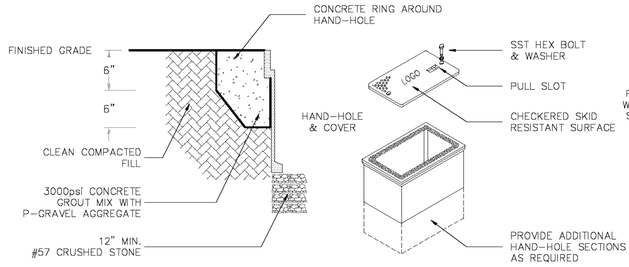


CONDUIT STUB–UP DETAIL (NEW)
N.T.S.



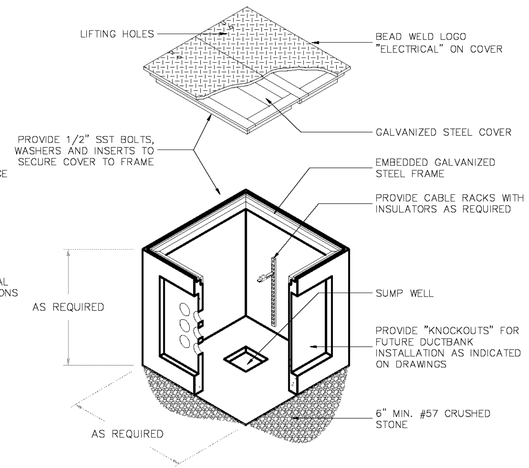
CONDUIT STUB–UP DETAIL (FUTURE)
N.T.S.



NOTES:

1. HOUSING SHALL BE REINFORCED CONCRETE AND SHALL HAVE A COMPRESSIVE STRENGTH NO LESS THAN 10,000psi.
2. HAND–HOLE AND COVER SHALL BE RATED FOR AASHTO H20 LOADING.
3. PROVIDE STAINLESS STEEL BOLTS, WASHERS AND INSERTS.
4. PROVIDE COVER LOGO "ELECTRICAL" "CONTROLS" OR "COMMUNICATIONS" AS APPLICABLE OR INDICATED ON THE DRAWINGS.
5. MINIMUM BOX SIZE SHALL BE 24" LONG x 17" WIDE x 24" DEEP.

TRAFFIC RATED HAND–HOLE DETAIL
N.T.S.



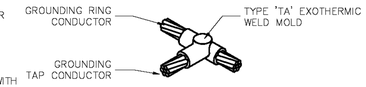
NOTES:

1. BOND ALL METALLIC PARTS WITH #2 TINNED COPPER.
2. EXOTHERMIC WELD CU–CLAD GROUND ROD TO GROUND CABLE.
3. PULL–BOX LID AND LID COLLAR SHALL BE RATED FOR AASHTO H20 LOADING.

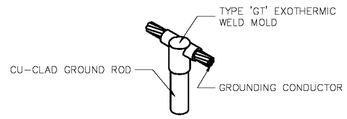
STANDARD ELECTRICAL PULL–BOX DETAIL
N.T.S.

GENERAL NOTES:

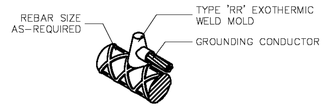
1. REFER TO SHEET E–0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.



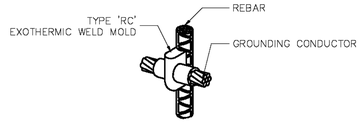
EXOTHERMIC WELD 'TA' CONNECTION
N.T.S.



EXOTHERMIC WELD 'GT' CONNECTION
N.T.S.

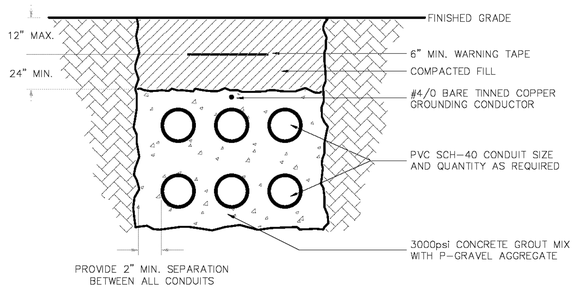


EXOTHERMIC WELD 'RR' CONNECTION
N.T.S.

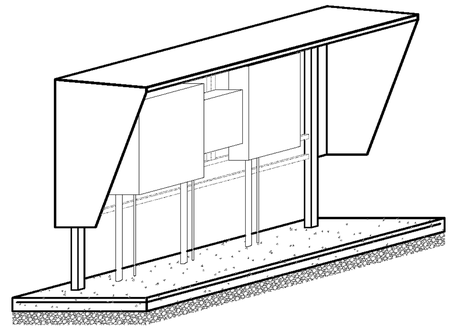


EXOTHERMIC WELD 'RC' CONNECTION
N.T.S.

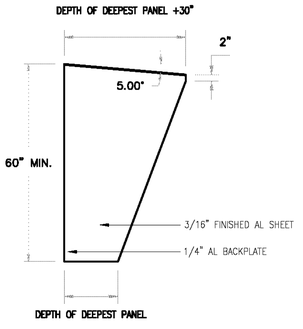
EXOTHERMIC WELD 'VB' CONNECTION
N.T.S.



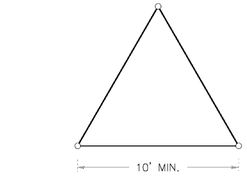
NON–REINFORCED CONCRETE DUCTBANK (YARD PIPING)
N.T.S.

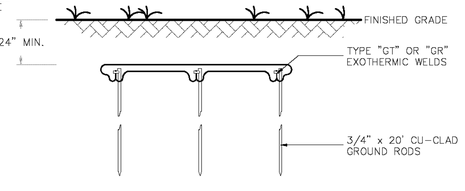


SUN/RAIN HOOD TYPICAL (ISOMETRIC)
N.T.S.

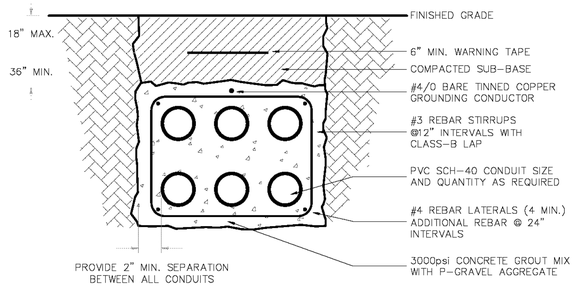


SUN/RAIN HOOD DETAIL (SIDE–VIEW)
N.T.S.

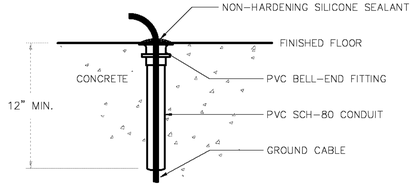




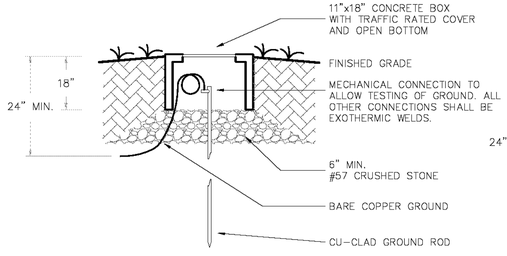
GROUND ROD TRIODE DETAIL
N.T.S.



REINFORCED CONCRETE DUCTBANK (ROADWAY CROSSING)
N.T.S.



GROUND CABLE SLEEVE DETAIL
N.T.S.



GROUND ROD TEST WELL DETAIL
N.T.S.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014
☐ REVISIONS ☒ NO REVISIONS

THESE DRAWINGS ARE NOT INTENDED TO REPRESENT A DETAILED RECORD OF ACTUAL DIMENSIONS, ELEVATIONS, OR DETAILS. SUBSTANTIAL CHANGES OR DEVIATIONS FROM THE ORIGINAL DESIGN, KNOWN BY THE ENGINEER ARE NOTED HEREON.

DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

ARTHUR L. ANCHORS, P.E.
No. 39804

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

MISCELLANEOUS ELECTRICAL DETAILS NO.1

DATE:	JUNE 2014
MCE PROJ. #	1024–0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

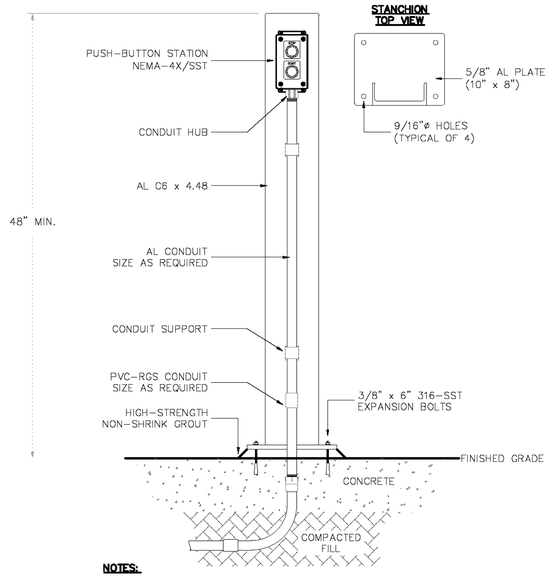
SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E–0.08

STATUS: RECORD DRAWINGS
REVISION

5916.067

S:\1024\01\43\70–Record\ELECTRICAL\E–0.08–ELEC_07102401.dwg 6/9/2014 1:45:53 PM Quint Sheton

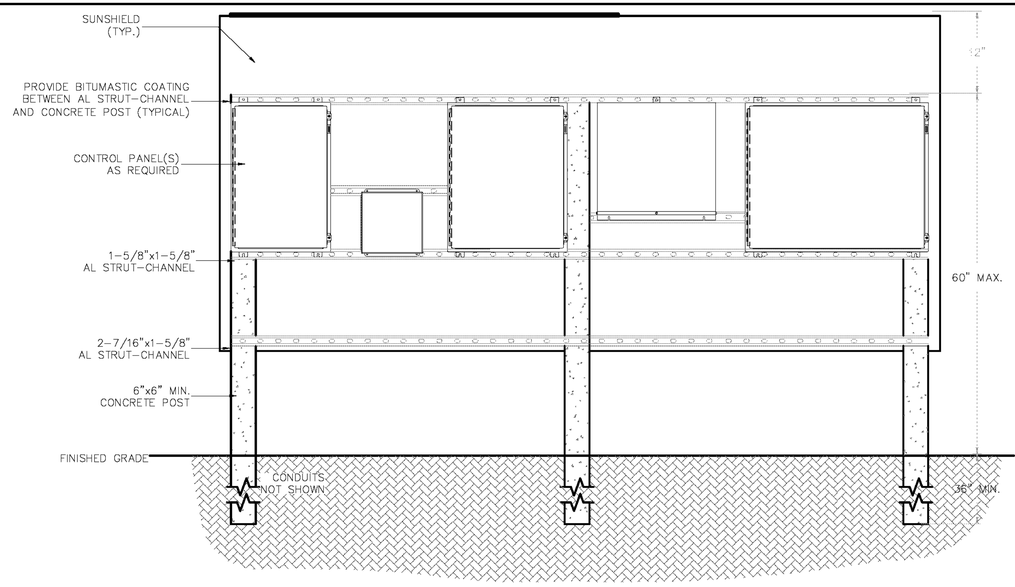


NOTES:

1. FILE AND ROUND ALL CORNERS SMOOTH, REAM ALL HOLES AND REMOVE ALL SLAG.
2. USE 316-SST FASTENERS, HARDWARE AND CONDUIT STRAPS.
3. PROVIDE AND INSTALL 18"ø X 30" DEEP CONCRETE FOUNDATION WHERE MOUNTING SURFACE IS NOT AVAILABLE.
4. NYLON SPACERS SHALL BE USED ON ALL ALUMINUM MATERIALS IN CONTACT WITH CONCRETE OR COATED WITH BITUMASTIC PAINT.

PUSH-BUTTON STANCHION DETAIL

N.T.S.

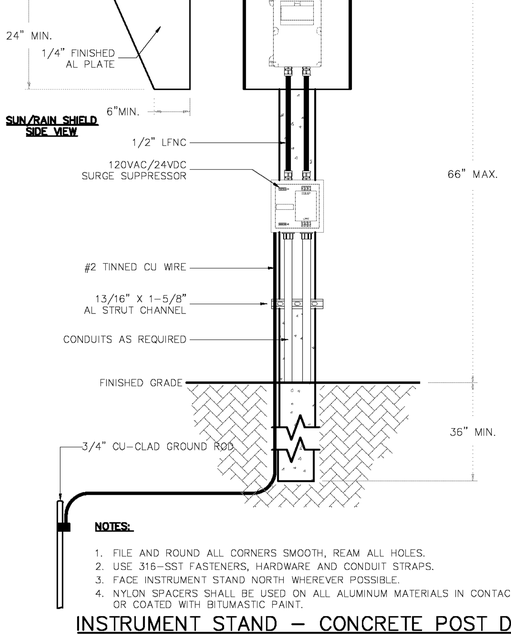


ELECTRICAL EQUIPMENT RACK FIELD MOUNTING DETAIL

N.T.S.

GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT LAYOUT OF ELECTRICAL EQUIPMENT RACK.
2. CONTRACTOR SHALL NOT CONSTRUCT ELECTRICAL EQUIPMENT RACK PRIOR TO RECEIVING APPROVED SUBMITTAL, INCLUDING ORDERING AND FABRICATION OF MATERIALS.
3. ALL EQUIPMENT MOUNTING HARDWARE SHALL BE 316 STAINLESS-STEEL.
4. CONCRETE SHALL BE 3000psi. CONCRETE PADS SHALL BE REINFORCED WITH 6x6-1.4Wx1.4W WWF. PAD SHALL EXTEND 36" OUT FROM DEEPEST PANEL AND 6" OUT FROM SIDES OF SUN/RAIN HOOD.
5. PROVIDE ADDITIONAL VERTICAL 6" 'I-BEAM' POSTS AND BASES LIKE THOSE SHOWN ON PLANS TO SPAN GREATER DISTANCES GREATER THAN 96".
6. ALARM STROBE SHALL BE MOUNTED, WATER-TIGHT, ATOP PUMP CONTROL PANEL 'POP'.
7. PROVIDE WEATHERPROOF CORROSION RESISTANT FLUORESCENT FIXTURE MOUNTED UNDERNEATH SUN/RAIN HOOD, LIGHT SWITCH AND GFIC RECEPTACLE.
8. STRUT-CHANNEL SHALL BE MOUNTED TO 'I-BEAM' POSTS WITH STAINLESS-STEEL FASTENERS AND GALVANIZED CLAMPING HARDWARE.
9. THE BOTTOM OF EQUIPMENT SHALL BE MOUNTED NO LESS THAN 20" ABOVE FINISHED CONCRETE PERSONNEL PAD.
10. CONDUITS SHALL BE INSTALLED UNBROKEN (NO FITTINGS, COUPLINGS, UNIONS, ETC.) THROUGH CLASS-1/DIV-II BOUNDARY.
11. REFER TO SHEET E-0.01 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.

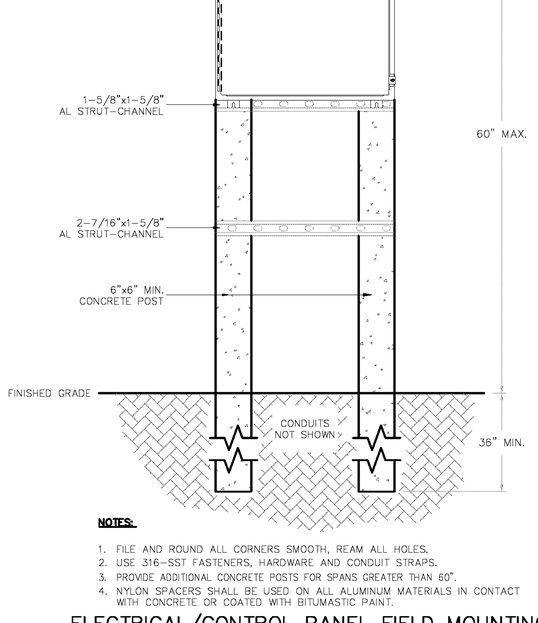


NOTES:

1. FILE AND ROUND ALL CORNERS SMOOTH, REAM ALL HOLES.
2. USE 316-SST FASTENERS, HARDWARE AND CONDUIT STRAPS.
3. FACE INSTRUMENT STAND NORTH WHEREVER POSSIBLE.
4. NYLON SPACERS SHALL BE USED ON ALL ALUMINUM MATERIALS IN CONTACT WITH CONCRETE OR COATED WITH BITUMASTIC PAINT.

INSTRUMENT STAND - CONCRETE POST DETAIL

N.T.S.

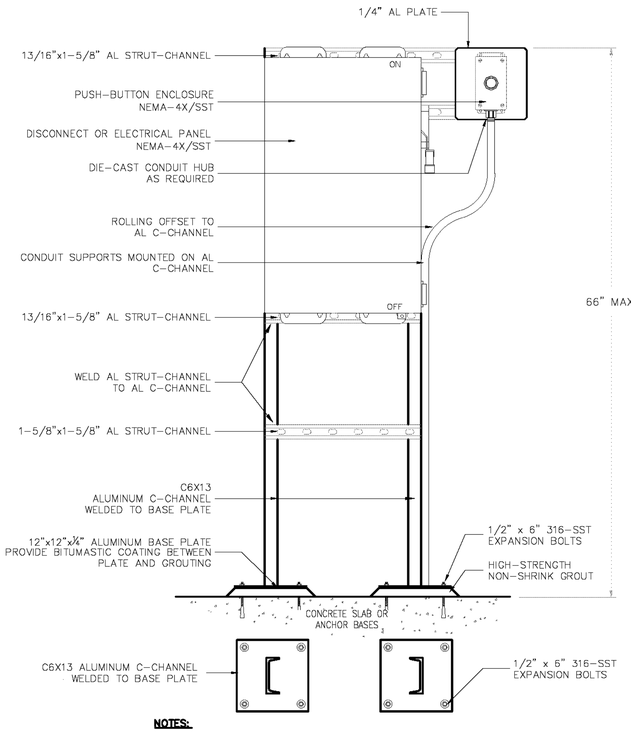


NOTES:

1. FILE AND ROUND ALL CORNERS SMOOTH, REAM ALL HOLES.
2. USE 316-SST FASTENERS, HARDWARE AND CONDUIT STRAPS.
3. PROVIDE ADDITIONAL CONCRETE POSTS FOR SPANS GREATER THAN 60".
4. NYLON SPACERS SHALL BE USED ON ALL ALUMINUM MATERIALS IN CONTACT WITH CONCRETE OR COATED WITH BITUMASTIC PAINT.

ELECTRICAL/CONTROL PANEL FIELD MOUNTING DETAIL

N.T.S.



NOTES:

1. FILE AND ROUND ALL CORNERS SMOOTH, REAM ALL HOLES.
2. USE 316-SST FASTENERS AND HARDWARE UNLESS OTHERWISE NOTED.

PANEL/DISCONNECT CONCRETE FLOOR MOUNTING DETAIL

N.T.S.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED JULY 2012 - MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

ARTHUR L. ANCHORS, P.E.
No. 39804

SEAL

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www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

MISCELLANEOUS ELECTRICAL DETAILS NO.2

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.09

STATUS: RECORD DRAWINGS
REVISION

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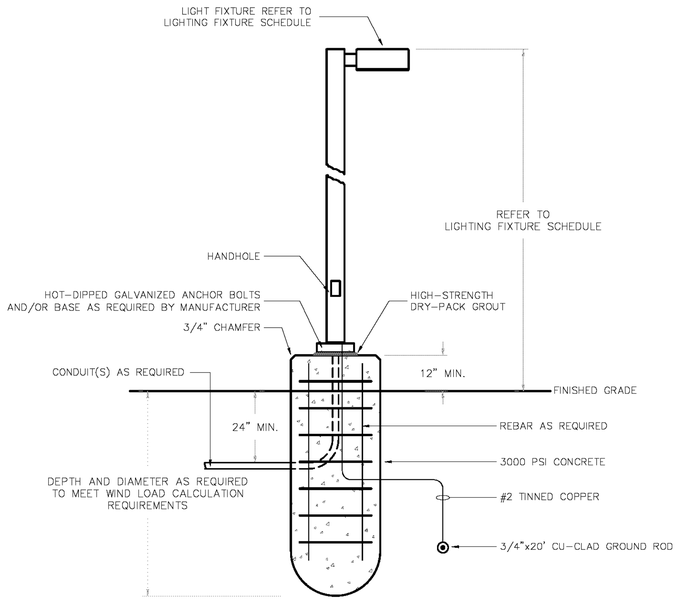
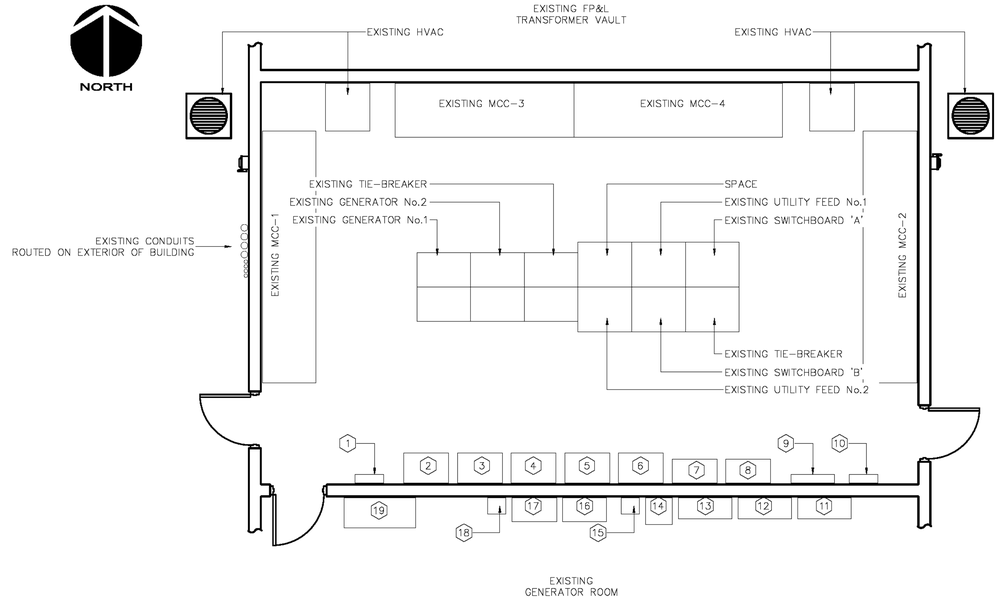


DETAIL NOTES:

1. LIGHT-POLE CONCRETE ANCHOR BASE SHALL BE PROVIDED AND INSTALLED PER LIGHT-POLE FIXTURE MANUFACTURER INSTRUCTIONS.
2. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED DRAWINGS AND DESIGN CALCULATIONS FOR THE CONCRETE ANCHOR BASE IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA BUILDING CODE.
3. DESIGN SUBMITTAL SHALL BE FROM A CURRENTLY LICENSED STRUCTURAL ENGINEER BY THE STATE OF FLORIDA.
4. CONCRETE ANCHOR BASE DESIGN SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT.
5. CONTRACTOR SHALL PROVIDE GEOTECHNICAL REPORT(S) FOR THE PROJECT SITE(S) IF NOT ALREADY REQUIRED BY CONTRACT DOCUMENTS.
6. CONTRACTOR SHALL NOT CONSTRUCT CONCRETE ANCHOR BASE PRIOR TO RECEIVING APPROVED SUBMITTAL, INCLUDING ORDERING AND FABRICATION OF MATERIALS.
7. PROVIDE ANCHORS, HARDWARE, SUPPORTS, ETC., AS NEEDED TO LIGHT-POLE FIXTURE.

LIGHT-POLE & CONCRETE ANCHOR BASE DETAIL

N.T.S.



EXISTING ELECTRICAL BUILDING No.1

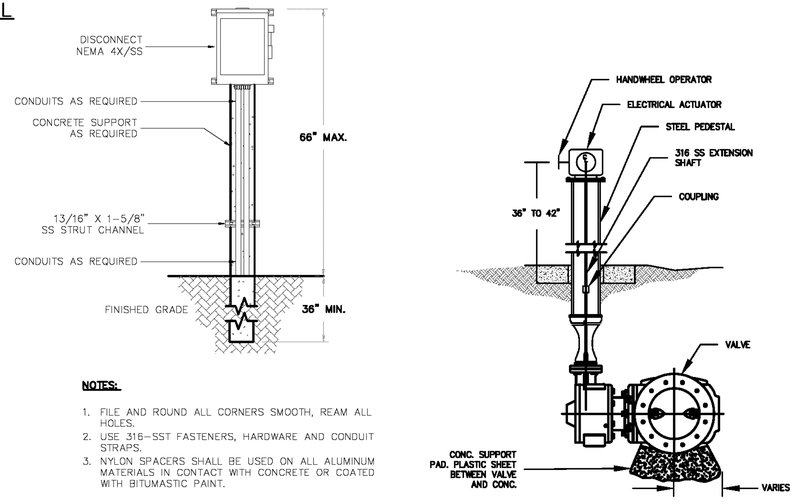
1/4" = 1'

GENERAL NOTES:

1. REFER TO SHEET E-0.01 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. THE EXISTING ELECTRICAL FLOOR PLANS ARE SHOWN APPROXIMATE AND INTENDED TO ASSIST THE CONTRACTOR WITH PROVIDING AND INSTALLING THE NEW EQUIPMENT.
3. THE CONTRACTOR IS DIRECTED TO CONDUCT AN INVESTIGATION TO DETERMINE THE EXISTING ARRANGEMENTS, CONDITIONS, FEATURES AND CABLING OF ALL THE EXISTING ELECTRICAL EQUIPMENT PRIOR TO ORDERING AND INSTALLING THE NEW ELECTRICAL EQUIPMENT.
4. INSTALL NEW CONTROL, SIGNAL AND POWER CONDUITS TO NEW EQUIPMENT AS SHOWN IN THE CABLE SCHEDULE.

EXISTING ELECTRICAL EQUIPMENT KEY:

1. DISTRIBUTION PUMP CONTROL PANEL
2. DISTRIBUTION PUMP No.5 VFD
3. DISTRIBUTION PUMP No.4 VFD
4. DISTRIBUTION PUMP No.3 VFD
5. DISTRIBUTION PUMP No.2 VFD
6. DISTRIBUTION PUMP No.1 VFD
7. DOUBLE-THROW SWITCH TO PANEL 'PL'
8. DISCONNECT & 45kVA TRANSFORMER
9. PANEL 'PC/TC'
10. PANEL 'LE'
11. PANEL 'P/I-1'
12. PANEL 'I-1'
13. PANEL 'C-1'
14. TRANSFORMER
15. DC
16. PANEL 'LE-2'
17. PANEL 'TF'
18. DC
19. SCADA PANEL 'SP-4'



NOTES:

1. FILE AND ROUND ALL CORNERS SMOOTH, REAM ALL HOLES.
2. USE 316-SST FASTENERS, HARDWARE AND CONDUIT STRAPS.
3. NYLON SPACERS SHALL BE USED ON ALL ALUMINUM MATERIALS IN CONTACT WITH CONCRETE OR COATED WITH BITUMASTIC PAINT.

MOTOR OPERATED BURIED VALVE WITH DISCONNECT DETAIL

NOT TO SCALE

RECORD DRAWING

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A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 - MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

ARTHUR L. ANCHORS, P.E.
No. 39804

SEAL

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EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

MISCELLANEOUS ELECTRICAL DETAILS NO.3

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.10

STATUS: RECORD DRAWINGS
REVISION

S:\1024\01\43\05-Record\ELECTRICAL\E-0.08-0.10_ELEC_DETAILS.dwg 9/9/2014 1:44:35 PM Quint Shelton

PANEL: HWL

ENCLOSURE: NEMA 4X MOUNTING: SURFACE — MAIN: MB ☒ ML ☐
VOLTS: 208/120V, 3ø, 4 WIRE — NEUTRAL: 100% ☒ 200% ☐
LOCATION: ELECTRICAL ROOM — BRACING: 22,000A FULLY RATED — FEED: PANEL PNL-2B VIA TRANSFORMER T1

LOAD SERVED	LOAD (KVA) A	B	C	BREAKER AMP	POLE	BRANCH CIRCUIT CONDUIT & WIRING	CKT	PH	CKT	BRANCH CIRCUIT CONDUIT & WIRING	BREAKER AMP	POLE	LOAD (KVA) A	B	C	LOAD SERVED
LTG – ELECTRICAL ROOM	0.40			20	1	2#12, 1#12G,.75"C	1	A	2	2#12, 1#12G,.75"C	20	1	0.20			
LTG – LOWER LEVER		1.20		20	1	2#12, 1#12G,.75"C	3	B	4	2#12, 1#12G,.75"C	20	1		0.70		REC LOWER LEVEL, CONVENIENCE
LTG – STAR TOWER VIA LTG CONT. C1			0.40	20	1	2#12, 1#12G,.75"C	5	C	6	2#12, 1#12G,.75"C	20	1			1.50	SCADA PANEL
LTG-LOWER LVL SEC VIA LTG CONT C1	0.40			20	1	2#12, 1#12G,.75"C	7	A	8	2#12, 1#12G,.75"C	20	1	0.20			REC FUTURE CCTV CAMERA
LTG-UPPER LVL VIA LTG CONT C2		1.60		20	1	2#12, 1#12G,.75"C	9	B	10	2#12, 1#12G,.75"C	20	1		0.60		BASIN D.O. ANALYZER (FUTURE)
LTG-UPPER LVL VIA LTG CONT C2			0.80	20	1	2#12, 1#12G,.75"C	11	C	12	2#10, 1#10G,.75"C	20	1			1.08	BASIN RECEPTACLES [*]
REC-UPPER LVL LIGHT POLE MTD	1.60			20	1	2#12, 1#12G,.75"C	13	A	14	2#10, 1#10G,.75"C	20	1	1.08			BASIN LIGHTING [*]
LIGHTING CONTACTOR CONTROL PANEL		0.10		20	1	2#12, 1#12G,.75"C	15	B	16	2#10, 1#10G,.75"C	20	1				MAIN LIGHTING [*]
MOTORIZED GATE OPERATOR			1.20	20	1	2#12, 1#12G,.75"C	17	C	18	2#10, 1#10G,.75"C	20	1				MAIN RECEPTACLES [*]
IRRIGATION CONTROLLER	1.000000			1520	1		19	A	20		20	1				RML #1 FLOW METER
FIT-1015		.1		20	1	2#12, 1#12G,.75"C	21	B	22		20	1				RML #2 FLOW METER
				20	1		23	C	24		20	1				RML #3 FLOW METER
				20	1		25	A	26		20	1				RML #4 FLOW METER
				20	1		27	B	28		20	1				
				20	1		29	C	30		20	1				
				20	1		31	A	32		20	1				
				20	1		33	B	34		20	1				
				20	1		35	C	36		20	1				
				20	1		37	A	38		20	1				
				20	1		39	B	40		20	1				
				20	1		41	C	42							
TOTAL	3.40	3.00	2.40										1.48	1.30	2.58	
						TOTAL BUS A LOAD:	4.88	KVA								
						TOTAL BUS B LOAD:	4.30	KVA								
TOTAL CONNECTED KVA:	14.16					TOTAL BUS C LOAD:	4.98	KVA								

NOTES:
1. REFER TO SPECIFICATION 16470 PANELBOARDS FOR ADDITIONAL REQUIREMENTS.
2. ALL BUSSES SHALL BE PLATED COPPER.
3. ALL BREAKERS SHALL BE FULLY RATED.
[*] NEW CIRCUITS ADDED IN THIS CONTRACT

PANEL: LP-702

ENCLOSURE: NEMA 4X MOUNTING: SURFACE — MAIN: 50A MB ☒ ML ☐
VOLTS: 208/120V, 3ø, 4 WIRE — NEUTRAL: 100% ☒ 200% ☐
LOCATION: — BRACING: 22,000A FULLY RATED — FEED:

LOAD SERVED	LOAD (KVA) A	B	C	BREAKER AMP	POLE	BRANCH CIRCUIT CONDUIT & WIRING	CKT	PH	CKT	BRANCH CIRCUIT CONDUIT & WIRING	BREAKER AMP	POLE	LOAD (KVA) A	B	C	LOAD SERVED
SP-8	0.2			20	1	2#12, 1#12G,.75"C	1	A	2	2#12, 1#12G,.75"C	20	1	0.36			RECEPTACLES ON EQUIPMENT RACK
CL2 ANALYZER		0.1		15	1	2#12, 1#12G,.75"C	3	B	4	2#12, 1#12G,.75"C	20	1		1.5		LIGHTS AT DISK FILTERS
FIT-709			0.1	15	1	2#12, 1#12G,.75"C	5	C	6		20	1			0	SPARE
SPARE				20	1		7	A	8		20	1				SPARE
SPARE				20	1		9	B	10		20	1				SPARE
SPARE				20	1		11	C	12		20	1				SPARE
						PRIMARY MAIN	13		14							
				50	3	PRIMARY MAIN	15		16							
						PRIMARY MAIN	17		18							
TOTAL	0.20	0.10	0.10										0.36	1.50	0.00	
						TOTAL BUS A LOAD:	0.56	KVA								
						TOTAL BUS B LOAD:	1.60	KVA								
TOTAL CONNECTED KVA:	2.26					TOTAL BUS C LOAD:	0.10	KVA								

NOTES:
1. REFER TO SPECIFICATION 16470 PANELBOARDS FOR ADDITIONAL REQUIREMENTS.
2. ALL BUSSES SHALL BE PLATED COPPER.
3. ALL BREAKERS SHALL BE FULLY RATED.

PANEL: PP-701

ENCLOSURE: NEMA: 4X MOUNTING: SURFACE — MAIN: 200A MB ☒ MLO ☐
VOLTS: 480V, 3 PHASE, 4 WIRE — NEUTRAL: 100% ☒ 200% ☐
LOCATION: — BRACING: 22,000A FULLY RATED — FEED:

LOAD SERVED	LOAD (KVA) A	B	C	BREAKER AMP	POLE	BRANCH CIRCUIT CONDUIT & WIRING	CKT	PH	CKT	BRANCH CIRCUIT CONDUIT & WIRING	BREAKER AMP	POLE	LOAD (KVA) A	B	C	LOAD SERVED
	5.60						1	A	2				5.00			
GRAVITY DISK FILTER 1		5.60		30	3	3#10, 1#10G, 3/4"C	3	B	4	3#10, 1#10G, 3/4"C	25	3		5.00		PANEL LP-702 TRANSFORMER
			5.60				5	C	6						5.00	
	5.60						7	A	8				0.00			
GRAVITY DISK FILTER 2		5.60		30	3	3#10, 1#10G, 3/4"C	9	B	10		50	3		0.00		SPARE
			5.60				11	C	12						0.00	
	5.60						13	A	14				0.25			
GRAVTIY DISK FILTER 3		5.60		30	3	3#10, 1#10G, 3/4"C	15	B	16	3#10, 1#10G, 1"C	20	3		0.25		MOV-714
			5.60				17	C	18						0.25	
	3						19	A	20		~~20~~	~~1~~	0.00			
BACKWASH PUMP CONTROL PANEL		3		30	3	3#10, 1#10G, 3/4"C	21	B	22	SPARE	~~20~~	~~1~~		0.00		
			3				23	C	24		~~20~~	~~1~~			0.00	
	0			20	1		25	A	26		~~20~~	~~1~~	0.00			
		0		20	3	SPARE	27	B	28	SPARE	20	3		0.00		
			0	20	1		29	C	30		~~20~~	~~1~~			0.00	
	0			20	1		31	A	32		~~20~~	~~1~~	0.00			
		0		20	1		33	B	34		20	1		0.00		
			0	20	1		35	C	36		20	1			0.00	
	0			20	1		37	A	38		20	1	0.00			
		0		20	1		39	B	40		20	1		0.00		
			0	20	1		41	C	42		20	1			0.00	
TOTAL(S):	19.80	19.80	19.80										5.25	5.25	5.25	
						TOTAL BUS A LOAD:	25.05	KVA								
						TOTAL BUS B LOAD:	25.05	KVA								
TOTAL CONNECTED KVA:	75.15					TOTAL BUS C LOAD:	25.05	KVA								

SCHEDULE NOTES:
1. REFER TO SPECIFICATION SECTION 16470 PANELBOARDS FOR ADDITIONAL REQUIREMENTS.
2. ALL BUSSES SHALL BE PLATED COPPER.
3. ALL BREAKERS SHALL BE FULLY RATED.

RECORD DRAWING

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A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014
☒ REVISIONS ☐ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL
ARTHUR L. ANCHORS, P.E.
No. 39804

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PANEL BOARD SCHEDULE

DATE: JUNE 2014
MCE PROJ. # 1024-0143
DRAWN JZW
DESIGNED ALA
CHECKED ALA
PROJ. MGR. DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-0.11

STATUS: RECORD DRAWINGS
REVISION

5916.070

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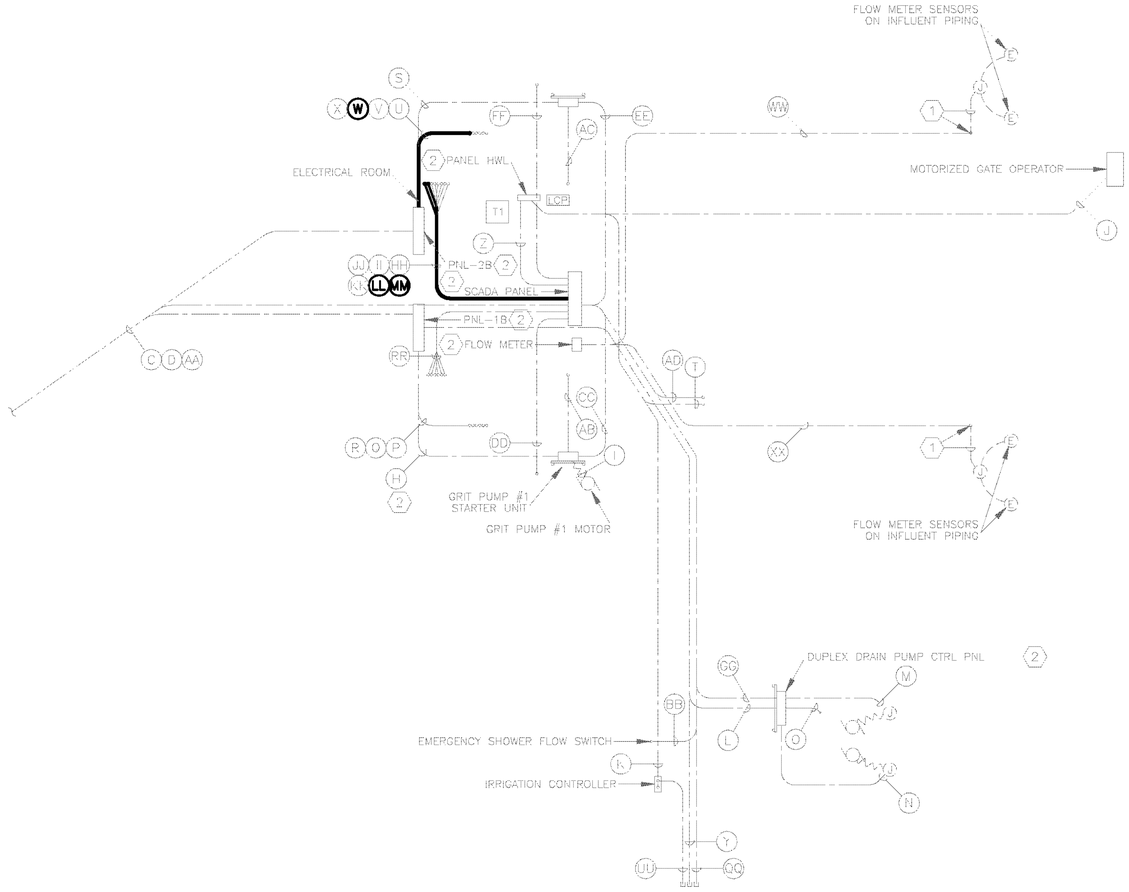
GENERAL NOTES:

1. REFER TO SHEET E-2.4 FOR CONDUIT SCHEDULE.

REFERENCE NOTES:

(2) EXTEND CONDUIT STUB UP IN KIND WITH EXPOSED CONDUIT OVERHEAD TO FLOW METER SENSORS. TERMINATE CONDUIT TO FLOW METER SENSORS USING 1 FNC.

(3) SEAL ENDS OF EACH CONDUIT TERMINATED IN BOTTOM OF CABINET/ ENCLOSURE WITH DUCT SEAL COMPOUND AFTER ALL CABLES/WIRES ARE INSTALLED, CHECKED OUT, TESTED, AND PLACED INTO SERVICE.



HEADWORKS LOW LEVEL - POWER AND CONTROLS CONDUIT PLAN
SCALE: 3/16" = 1'

RECORD DRAWING

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DAVID C. WEHNER, P.E.
No. 59541

BACKGROUND INFORMATION FROM RECORD DRAWINGS DATED APRIL 2010 FOR MANATEE COUNTY, FL.
NORTH WATER RECLAMATION FACILITY
INFLUENT STRUCTURE
PROJECT NO. 6011281

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

HEADWORKS LOW LEVEL
POWER AND CONTROLS PLANS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	CJR
DESIGNED	CJR
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-2.1

STATUS: RECORD DRAWINGS
REVISION

5916.071

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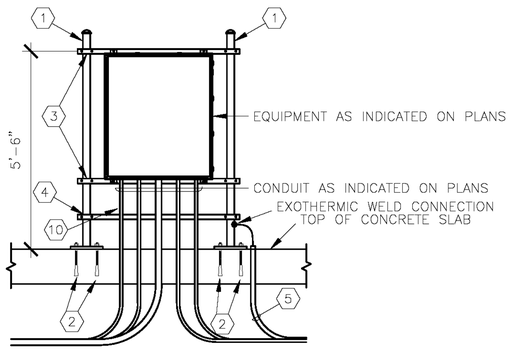
REFERENCE NOTES:

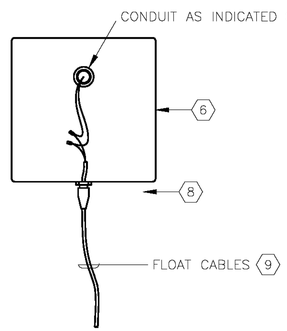
1. PROVIDE 3 1/2" DIA. BY 6'-0" LONG ASTM A/S A312, A778 SCH. 80 304 STAINLESS STEEL TUBE POST WITH 304 STAINLESS STEEL BUTTWELD CAP ON TOP.
2. PROVIDE 3/8" x 6" 316-SST EXPANSION BOLTS.
3. PROVIDE 1 5/8" SQ. BY LENGTH AS REQUIRED, 304 STAINLESS STEEL STRUT SPACED AS REQUIRED FOR MOUNTING OF EQUIPMENT. SECURE STRUT TO POST USING STAINLESS STEEL 3/8" U-BOLT, NUTS, WASHERS, AND LOCK WASHERS.
4. PROVIDE 1 5/8" SQ. BY LENGTH AS REQUIRED, 304 STAINLESS STEEL STRUT LOCATED AS REQUIRED FOR SUPPORTING CONDUIT. PROVIDE COMPLETE WITH 304 STAINLESS STEEL CONDUIT STRAPS; QUANTITY AND SIZES AS REQUIRED. SECURE STRUT TO POST USING STAINLESS STEEL 3/8" U-BOLT, NUTS, WASHERS, AND LOCK WASHERS.

REFERENCE NOTES CONT. . .

5. CONNECT TO EXISTING GROUNDING CONDUCTOR ROUTED VIA SCH. 80 PVC CONDUIT.
6. PROVIDE 10" SQ. BY 6" DEEP NEMA 4X POLYESTER HINGED COVER JUNCTION BOX WITH QUICK RELEASE LATCHES AND STAINLESS STEEL HARDWARE, HOFFMAN ENCLOSURES INC. A10106PHC SERIES OR APPROVED EQUAL. RIGIDLY MOUNT JUNCTION BOX TO WET WELL WALL USING 316 STAINLESS STEEL HARDWARE IN ACCORDANCE WITH THE WET WELL MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.
7. TERMINATE CONDUIT INTO REAR OF JUNCTION BOX. SEAL END OF CONDUIT WITH DUCT SEAL COMPOUND AFTER ALL WIRES ARE INSTALLED, CHECKED OUT, TESTED, AND PLACED INTO SERVICE.
8. PROVIDE NON-METALLIC CORROSION-RESISTANT CABLE STRAIN RELIEF CONNECTOR SIZED FOR THE EXACT FLOAT CABLE FURNISHED, CROUSE-HINDS NCGB SERIES OR APPROVED EQUAL.
9. ADJUST LENGTH OF EACH FLOAT CABLE LENGTH FOR OPTIMAL FLOAT OPERATION AT INDICATED ACTUATION LEVEL. SECURE FLOAT CABLES TO WET WELL WALL SO AS TO PREVENT FLOAT CABLES FROM BECOMING ENTANGLED.
10. PROVIDE SEAL OFFS AS SHOWN ON SINGLE LINE DIAGRAM ON SHEET E-2.5.



ELEVATION
TYPICAL CONCRETE MOUNTED EQUIPMENT RACK
NTS



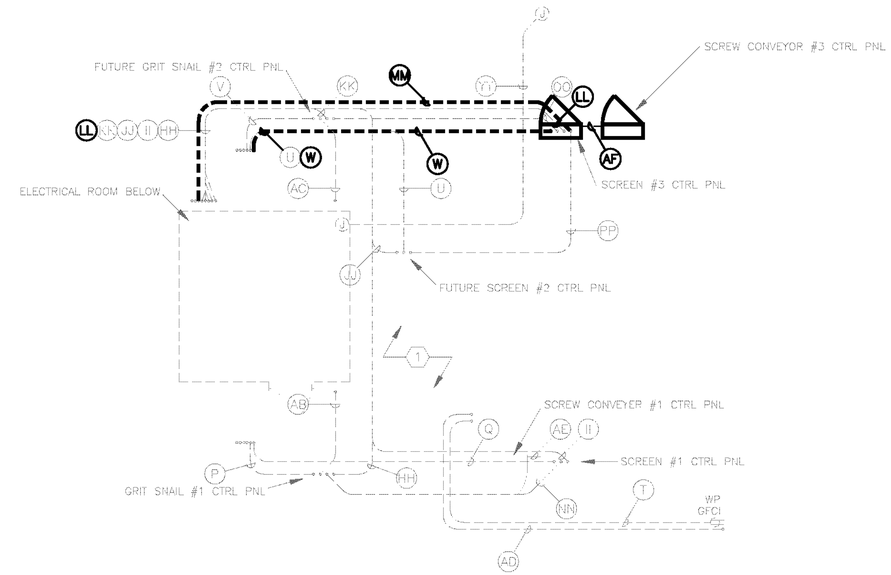
DETAIL
FLOAT SWITCH JUNCTION BOX
NTS

ELECTRICAL EQUIPMENT DETAILS
SCALE: N.T.S.

BACKGROUND INFORMATION FROM RECORD DRAWINGS DATED APRIL 2010 FOR MANATEE COUNTY, FL. NORTH WATER RECLAMATION FACILITY INFLUENT STRUCTURE PROJECT NO. 6011281

REFERENCE NOTES:

1. ALL CONDUITS SHOWN ON THIS PLAN ARE TO BE ROUTED EXPOSED ALONG THE UNDERSIDE OF THE UPPER LEVEL DECK SLAB.
2. MOUNT ALL CONTROL PANELS, JUNCTION BOXES, ETC, A MINIMUM OF 24" ABOVE THE SLAB



HEADWORKS UPPER LEVEL - POWER AND CONTROLS CONDUIT PLAN
SCALE: 3/16" = 1'

RECORD DRAWING

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MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

HEADWORKS UPPER LEVEL POWER AND CONTROLS PLANS, AND DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	CJR
DESIGNED	CJR
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-2.2

STATUS: RECORD DRAWINGS
REVISION

5916.072

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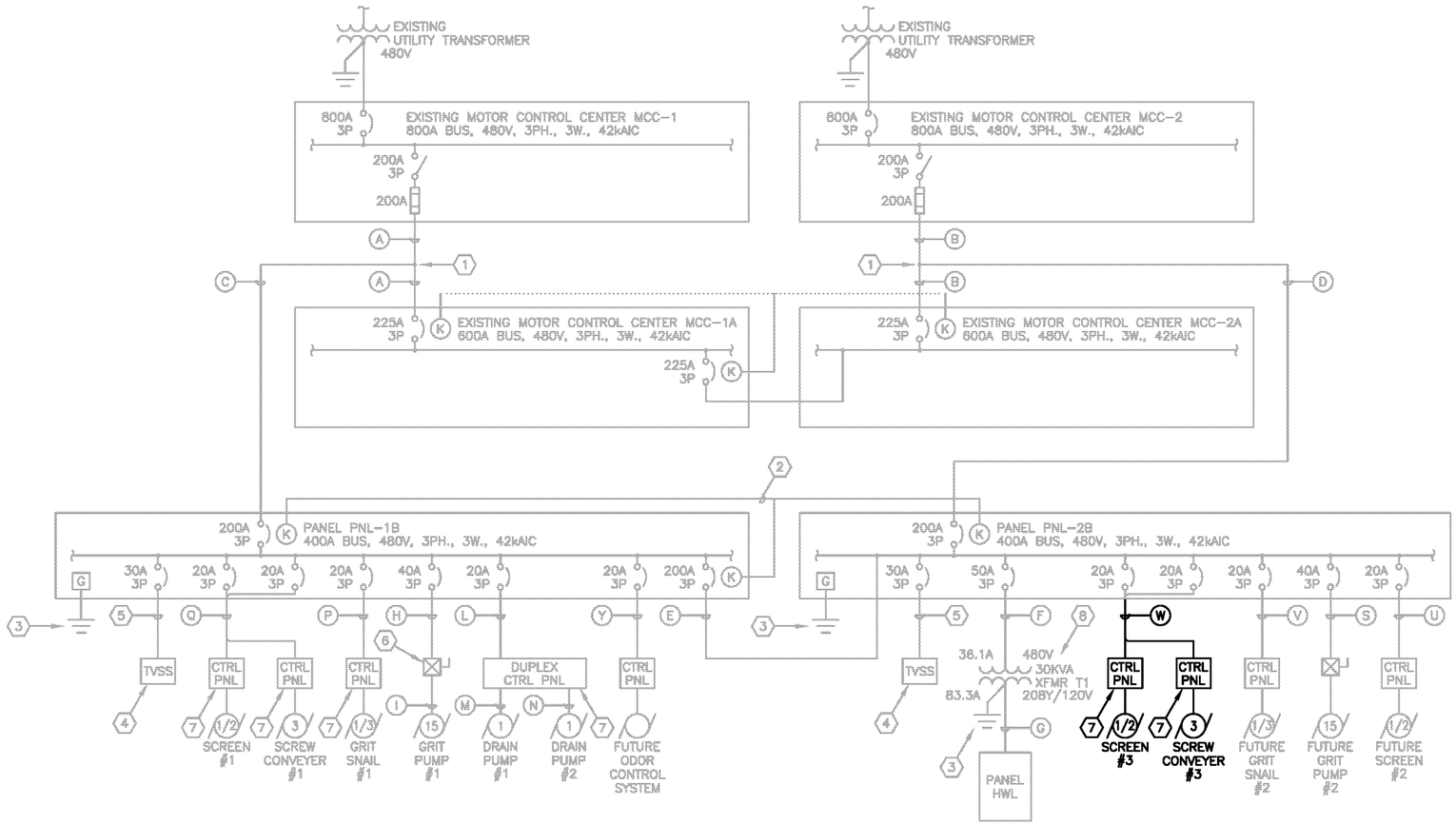

GENERAL NOTES:

1. "LIGHT" LINES OR NOTES INDICATE EXISTING OR FUTURE EQUIPMENT AS INDICATED. "BOLD" LINES OR NOTES INDICATE NEW WORK.
2. REFER TO SHEET E-2.4 FOR CONDUIT SCHEDULE.

REFERENCE NOTES:

(1) SPLICE NEW FEEDER TO EXISTING FEEDER INSIDE EXISTING POWER MANHOLE.

(2) PROVIDE KIRK KEY INTERLOCK SYSTEM CONSISTING OF THREE (3) KEY OPERATED MECHANISMS, ALL KEYED ALIKE, AND TWO (2) KEYS. SYSTEM SHALL BE CONFIGURED TO ENSURE THAT ONLY TWO OF THE THREE CIRCUIT BREAKERS MAY BE CLOSED AT ANY GIVEN POINT IN TIME.

(3) NOT USED.

(4) PROVIDE TVSS UNIT. REFER TO SPECIFICATIONS FOR REQUIREMENTS.

(5) PROVIDE 1" SCH. 80 PVC CONDUIT NIPPLE WITH 3 #8 PH. AND 1 #8 GND WIRES TWISTED TOGETHER IN ACCORDANCE WITH THE TVSS MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS. ROUTE WIRES FOLLOWING THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. WHERE BENDS ARE REQUIRED, MAKE BENDS FOLLOWING THE LARGEST RADIUS POSSIBLE. SPACE PERMITTING. DO NOT LINK CONDUCTORS. NO CONDUCTOR SHALL BE LONGER THAN 60" IN LENGTH BETWEEN ITS TERMINATION INSIDE THE PANELBOARD AND ITS TERMINATION INSIDE THE TVSS UNIT.

(6) PROVIDE FVNR COMBINATION STARTER UNIT. COMBINATION STARTER UNIT SHALL HAVE MAGNETIC ONLY MOTOR CIRCUIT PROTECTOR TYPE CIRCUIT BREAKER, NEMA SIZE 2 MAGNETIC MOTOR STARTER WITH 120V AC COIL, TRIP CLASS 20 SOLID STATE OVERLOAD RELAY, PHASE FAILURE RELAY, 500VA 480V-120V CONTROL POWER TRANSFORMER, 2-POSITION "ON-OFF" SELECTOR SWITCH, GREEN "POWER ON" 120V AC LED PILOT LIGHT, RED "MOTOR RUNNING" 120V AC LED PILOT LIGHT, PILOT RELAYS, FIELD WIRING TERMINAL BLOCKS, AUXILIARY CONTACTS AS REQUIRED TO IMPLEMENT SPECIFIED CONTROL SCHEME, AND NEMA TYPE 4X WATERTIGHT, DUSTTIGHT, AND CORROSION RESISTANT POLYESTER ENCLOSURE. PHASE FAILURE RELAY SHALL BE PANEL MOUNT TYPE WITH THE FOLLOWING PROTECTION MODES: (1) PHASE LOSS, (2) PHASE REVERSAL, (3) PHASE VOLTAGE UNBALANCE OF 10% OR GREATER, AND (4) UNDERVOLTAGE, ADJUSTABLE FROM 75% TO 100% OF NOMINAL. PILOT RELAYS SHALL BE PLUG-IN TYPE INDUSTRIAL CONTROL RELAY WITH 20A, 120V AC RATED DPDT CONTACTS, 120V AC COIL, AND MATING MODULAR SOCKET.

(7) EQUIPMENT CONTROL PANELS AND ANCILIARY DEVICES SHIPPED LOOSE WITH EQUIPMENT. PROVIDE FOR THE INSTALLATION OF EQUIPMENT CONTROL PANELS AND ANCILIARY DEVICES, INCLUDING ALL CONDUIT AND CABLES/WIRING, IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.

(8) TRANSFORMER T1 SHALL BE 115°C RISE DRY TYPE WITH EPOXY RESIN ENCAPSULATED CORE AND COIL ASSEMBLY AND NEMA 3R 316 STAINLESS STEEL ENCLOSURE.

BACKGROUND INFORMATION FROM
RECORD DRAWINGS DATED APRIL 2010
FOR MANATEE COUNTY, FL.
NORTH WATER RECLAMATION FACILITY
INFLUENT STRUCTURE
PROJECT NO. 6011281

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

EXISITING INFLULENT STRUCTURE
SINGLE LINE DIAGRAM

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	CJR
DESIGNED	CJR
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-2.3

STATUS: RECORD DRAWINGS
REVISION

5916.073

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CONDUIT SCHEDULE

ID NO.	QTY–SIZE	CONTENTS	CONDUIT/CABLE/WIRE ORIGIN	CONDUIT/CABLE/WIRE DESTINATION	NOTES
A	1–3"	3–#4/0 PH. AND 1–#2 GND	MCC–1	MOTOR CONTROL CENTER MCC–1A	
B	1–3"	3–#4/0 PH. AND 1–#2 GND	MCC–2	MOTOR CONTROL CENTER MCC–2A	
C	1–3" 1–3"	3–#4/0 PH. AND 1–#2 GND PULL STRING FOR FUTURE USE BY COUNTY	EXISTING POWER HANDHOLE	PANEL PNL–1B	
D	1–3" 1–3"	3–#4/0 PH. AND 1–#2 GND SPARE WITH PULL STRING FOR USE BY COUNTY	EXISTING POWER HANDHOLE	PANEL PNL–2B	
E	1–2 1/2"	3–#4/0 PH. 1–#2 GND	PANEL PNL–1B	PANEL PNL–2B	
F	1–3/4"	3–#8 PH. AND 1–#10 GND	PANEL PNL–2B	TRANSFORMER T1	
G	1–1 1/2"	3–#2 PH., 1–#2 NEUT., AND 1–#8 GND	TRANSFORMER T1	PANEL HWL	
H	1–3/4"	3–#8 PH. AND 1–#10 GND	PANEL PNL–1B	GRIT PUMP #1 STARTER UNIT	
I	1–3/4"	3–#8 PH., 2–#14 MTR HTR PWR, 2–#14 THERMAL CUTOUT, AND 1–#10 GND	GRIT PUMP #1 STARTER UNIT	GRIT PUMP #1 MOTOR	
J	1–3/4"	1–#12 PH., 1–#12 NEUT., AND 1–#12 GND	PANEL HWL	MOTORIZED GATE OPERATOR	
K	1–3/4"	1–#12 PH., 1–#12 NEUT., AND 1–#12 GND	PANEL HWL	IRRIGATION CONTROLLER	
L	1–3/4"	3–#12 PH. AND 1–#12 GND	PANEL PNL–1B	DUPLEX DRAIN PUMP CONTROL PANEL	
M	1–3/4"	3–#14 PH. AND 1–#14 GND	DUPLEX DRAIN PUMP CONTROL PANEL	DRAIN PUMP #1	
N	1–3/4"	3–#14 PH. AND 1–#14 GND	DUPLEX DRAIN PUMP CONTROL PANEL	DRAIN PUMP #2	
O	1–1"	10–#14 CTRL (INTRINSICALLY SAFE)	DUPLEX DRAIN PUMP CONTROL PANEL	JUNCTION BOX IN WET WELL	
P	1–3/4"	3–#12 PH. AND 1–#12 GND	PANEL PNL–1B	GRIT SNAIL #1 CONTROL PANEL	
Q	1–3/4"	3–#12 PH. AND 1–#12 GND (SCREEN #1 CONTROL PANEL) 3–#12 PH. (SCREW CONVEYER #1 CONTROL PANEL)	PANEL PNL–1B	SCREEN #1 CONTROL PANEL SCREW CONVEYER #1 CONTROL PANEL	
R	4–3/4"	SPARE WITH PULL STRINGS FOR FUTURE USE BY COUNTY	PANEL PNL–1B	–	
S	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	PANEL PNL–2B	FUTURE GRIT PUMP #2 STARTER UNIT	
T	1–3/4"	1–#12 PH., 1–#12 NEUT., AND 1–#12 GND	PANEL HWL	INFLUENT FLOW SAMPLER	
U	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	PANEL PNL–2B	FUTURE SCREEN #2 CONTROL PANEL	
V	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	PANEL PNL–2B	FUTURE GRIT SNAIL #2 CONTROL PANEL	
W	**1–3/4"**	**3–#10 PH. AND 1–#10 GND (SCREEN #3 CONTROL PANEL) 3–#10 PH. (SCREW CONVEYER #3 CONTROL PANEL)**	**PANEL PNL–2B**	**SCREEN #3 CONTROL PANEL SCREW CONVEYER #3 CONTROL PANEL**	**1, 2**
X	3–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	PANEL PNL–2B	–	
Y	1–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	PANEL PNL–1B	FUTURE ODOR CONTROL SYSTEM	
Z	1–3/4"	1–#12 PH., 1–#12 NEUT., AND 1–#12 GND	PANEL HWL	SCADA PANEL	
AA	1–3" 1–3"	12–STRAND OPTICAL FIBER CABLE SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	EXISTING HEADWORKS SCADA PANEL	NEW HEADWORKS SCADA PANEL	
BB	1–3/4"	2–#14 CTRL AND 1–#14 GND	SCADA PANEL	EYEWASH STATION FLOW SWITCH	
CC	1–3/4"	2–#14 CTRL AND 1–#14 GND	SCADA PANEL	GRIT PUMP #1 STARTER UNIT	
DD	1–3/4"	2–#14 CTRL AND 1–#14 GND	SCADA PANEL	GRIT PUMP #1 DISCHARGE PRESSURE SWITCH	
EE	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	FUTURE GRIT PUMP #2 STARTER UNIT	
FF	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	FUTURE GRIT PUMP #2 DISCHARGE PRESSURE SWITCH	
GG	1–3/4"	6–#14 CTRL AND 1–#14 GND	SCADA PANEL	DUPLEX DRAIN PUMP CONTROL PANEL	
HH	1–1"	16–#14 CTRL, 2–#14 SPARE, AND 1–#14 GND	SCADA PANEL	GRIT SNAIL #1 CONTROL PANEL	
II	1–1 1/4"	18–#14 CTRL, 2–#14 SPARE, AND 1–#14 GND	SCADA PANEL	SCREEN #1 CONTROL PANEL	
JJ	1–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	SCREEN #2 CONTROL PANEL	
KK	1–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	GRIT SNAIL #2 CONTROL PANEL	
LL	**1–1"**	**20–#14 CTRL, 2–#14 SPARE, AND 1–#14 GND**	**SCADA PANEL**	**SCREEN #3 CONTROL PANEL**	**2**
MM	2–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	–	
MM	**1–1"**	**1 TSP (ULTRASONIC TRANSMITTER)**	**SCADA PANEL**	**SCREEN #3 CONTROL PANEL**	**1, 2, 4**
NN	1–3/4"	INTERLOCK WIRING AS PER APPROVED MANUFACTURER'S SHOP DRAWINGS AND 1–#14 GND	GRIT SNAIL #1 CONTROL PANEL	SCREW CONVEYER #1 CONTROL PANEL VIA SCREEN #1 CONTROL PANEL	
OO	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	GRIT SNAIL #2 CONTROL PANEL	SCREEN #3 CONTROL PANEL	
PP	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCREEN #2 CONTROL PANEL	SCREEN #3 CONTROL PANEL	
QQ	1–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	FUTURE ODOR CONTROL SYSTEM	
RR	6–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	–	
SS	1–1/2"	1–#14 PH., 1–#14 NEUT., AND 1–#14 GND	SCADA PANEL	FLOW METER	
TT	1–1/2"	1–ANALOG I/O CABLE FOR 4–20 mA ANALOG FLOW RATE INPUT PER SCADA INTEGRATOR RECOMMENDATIONS	SCADA PANEL	FLOW METER	
UU	1–3/4"	WIRES AS SPECIFIED BY IRRIGATION CONTROLLER INSTALLER	IRRIGATION CONTROLLER	IRRIGATION SYSTEM FIELD DEVICES	
VV	–	–	–	–	
WW	1–1"	2–FLOW METER SENSOR ANALOG I/O CABLES PER APPROVED FLOW METER MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS	FLOW METER	FLOW METER SENSORS	
XX	1–1"	2–FLOW METER SENSOR ANALOG I/O CABLES PER APPROVED FLOW METER MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS	FLOW METER	FLOW METER SENSORS	
YY	1–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	EAST WALL OF ELECTRICAL ROOM	LIGHT POLE ALONG THE NORTH SIDE OF THE HEADWORKS UPPER LEVEL	
AB	1–3/4"	2–#14 INTERLOCK AND 1–#14 GND	GRIT PUMP #1 STARTER UNIT	GRIT SNAIL #1 CONTROL PANEL	
AC	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	FUTURE GRIT PUMP #2 STARTER UNIT	FUTURE GRIT SNAIL #2 CONTROL PANEL	
AD	1–3/4"	1–ANALOG I/O CABLE FOR 4–20 mA ANALOG FLOW RATE INPUT PER SCADA INTEGRATOR RECOMMENDATIONS	SCADA PANEL	INFLUENT FLOW SAMPLER	
AE	1–3/4"	INTERLOCK WIRING AS PER APPROVED MANUFACTURER'S SHOP DRAWINGS AND 1–#14 GND	SCREEN #1 CONTROL PANEL	SCREW CONVEYER #1 CONTROL PANEL	
AF	**1–3/4"**	**6#14, 1#14G, 3/4"C (24VDC STATUS) 6#14, 1#14G, 3/4"C (120V CONTROL)**	**SCREEN #3 CONTROL PANEL**	**SCREW CONVEYER #3 CONTROL PANEL**	**3**
AG	**1–3/4" 1–3/4" 1–3/4"**	**2#12, 1#12G, 3/4"C (120V POWER) 4#14, 1#14G, 3/4"C 1 TSP, 3/4"C**	**SCREEN #3 CONTROL PANEL**	**ULTRA SONIC TRANSMITTER**	**3**

CONDUIT SCHEDULE NOTES:

1. **PROVIDE TEE CONDULET IN CONDUIT AS REQUIRED TO FEED BOTH THE SCREEN #3 CONTROL PANEL AND THE SCREW CONVEYER #3 CONTROL PANELS.**
2. **INSTALL PVC COATED RGS CONDUIT AS REQUIRED FROM UNDERSIDE OF TOP SLAB OF INFLUENT STRUCTURE TO STUB–UPS OUTSIDE OF ELECTRICAL ROOM AT GROUND LEVEL.**
3. **ALL EXTENDING CONDUIT SHALL BE PVC COATED RGS.**
4. **CONDUITS LABELED 'MM' ON CONDUIT SCHEDULE ARE LABELED 'M' INSIDE SCADA PANEL.**

BACKGROUND INFORMATION FROM
RECORD DRAWINGS DATED APRIL 2010
FOR MANATEE COUNTY, FL.
NORTH WATER RECLAMATION FACILITY
INFLUENT STRUCTURE
PROJECT NO. 6011281

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:
A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

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ARTHUR L. ANCHORS, P.E.
No. 39804

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Phone: (727)442–7196, Fax: (727)461–3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

CONDUIT SCHEDULE

DATE:	JUNE 2014
MCE PROJ. #	1024–0143
DRAWN	CJR
DESIGNED	CJR
CHECKED	ALA
PROJ. MGR.	DCW

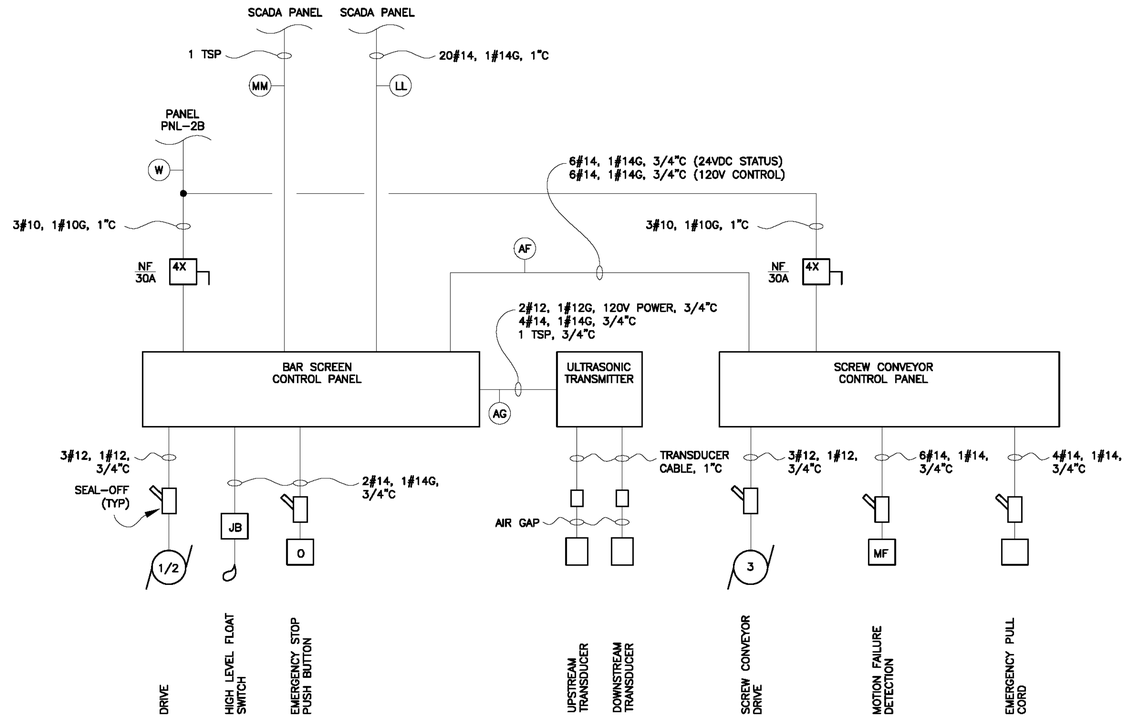
SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-2.4

STATUS: RECORD DRAWINGS
REVISION

S:\1024\0143\Vol-Record\ELECTRICAL\E-2.4_01024143.dwg, 6/9/2014 8:11:07 AM, Guhl Shelton

5916.074



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No. 59541

BACKGROUND INFORMATION FROM
RECORD DRAWINGS DATED APRIL 2010
FOR MANATEE COUNTY, FL.
NORTH WATER RECLAMATION FACILITY
INFLUENT STRUCTURE
PROJECT NO. 6011281

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

RISER DIAGRAM FOR BAR SCREEN #3

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	CJR
DESIGNED	CJR
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-2.5

STATUS: RECORD DRAWINGS
REVISION

5916.075

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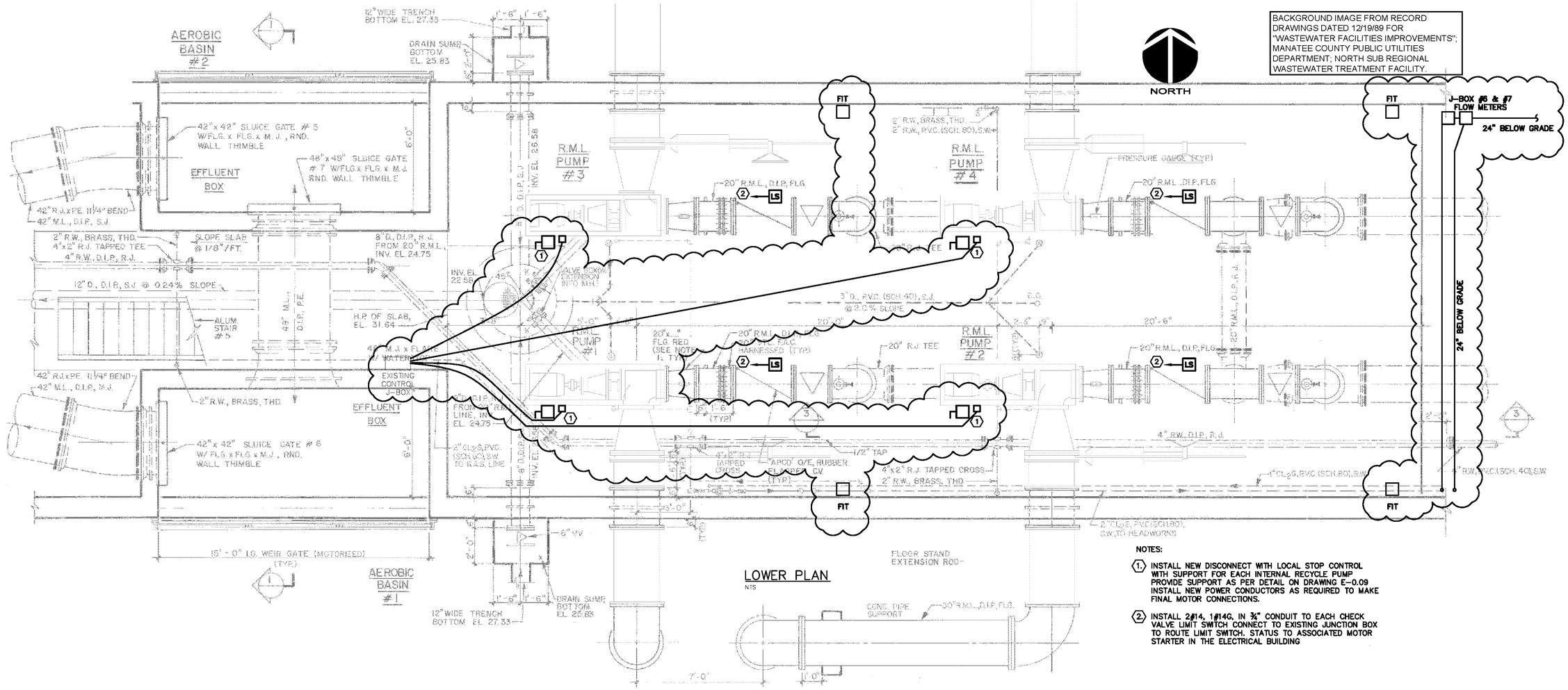

BACKGROUND IMAGE FROM RECORD DRAWINGS DATED 12/19/89 FOR "WASTEWATER FACILITIES IMPROVEMENTS"; MANATEE COUNTY PUBLIC UTILITIES DEPARTMENT; NORTH SUB REGIONAL WASTEWATER TREATMENT FACILITY.

NOTES:

1. INSTALL NEW DISCONNECT WITH LOCAL STOP CONTROL WITH SUPPORT FOR EACH INTERNAL RECYCLE PUMP PROVIDE SUPPORT AS PER DETAIL ON DRAWING E-0.09 INSTALL NEW POWER CONDUCTORS AS REQUIRED TO MAKE FINAL MOTOR CONNECTIONS.
2. INSTALL 2#14, 1#14G, IN ¾" CONDUIT TO EACH CHECK VALVE LIMIT SWITCH CONNECT TO EXISTING JUNCTION BOX TO ROUTE LIMIT SWITCH, STATUS TO ASSOCIATED MOTOR STARTER IN THE ELECTRICAL BUILDING

RECORD DRAWING

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FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

☒ REVISIONS ☐ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

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EB0006691
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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

NEW INTERNAL RECYCLE PUMPS PLAN

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NTS
VERTICAL: NTS

DRAWING NUMBER
E-3.1

STATUS: RECORD DRAWINGS
REVISION

5916.076

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GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. EXISTING LIGHTING AND RECEPTACLES TO REMAIN.
3. PROVIDE INSTRUMENT STAND PER DETAIL ON DRAWING E-0.08 FOR FLOWMETER TRANSMITTERS SHOWN.
4. PROVIDE SUPPORT FOR LOCAL DISCONNECT AND CONTROL PANELS AS PER DETAIL ON DRAWING E-0.08.

KEYNOTES:

(1) BOND TO PUMP FRAMES WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS. EXOTHERMIC WELD TO GROUND RING.

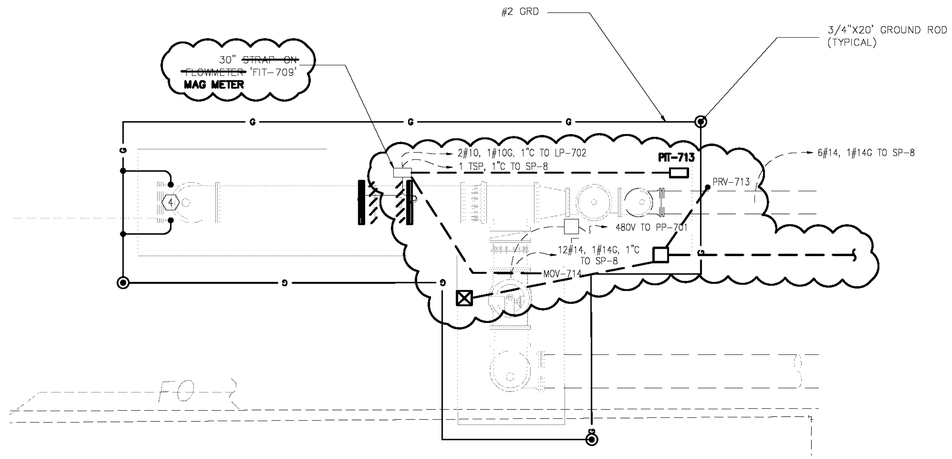
(2) BOND PIPING WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS (2) LOCATIONS MINIMUM. EXOTHERMIC WELD TO GROUNDING RING.

(3) EXOTHERMIC WELD DUCTBANK GROUNDING CONDUCTOR TO GROUNDING RING (2) LOCATIONS MINIMUM.

(4) REFER TO DRAWING E-7.3 FOR LOCATION OF PP-701, LP-702, SP-8

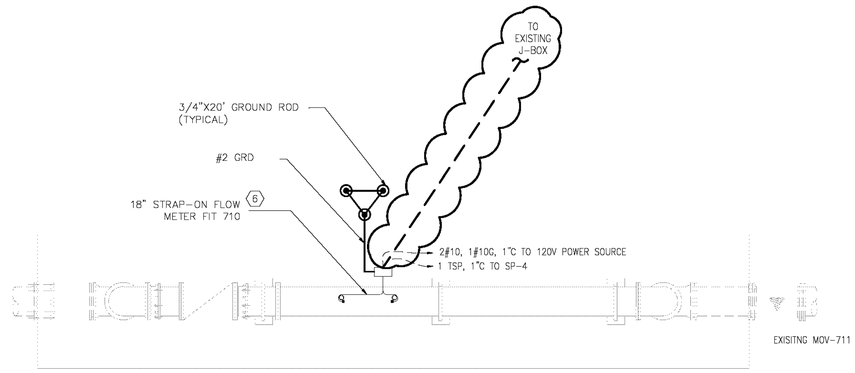
(5) REFER TO TYPCAL CONDUIT ROUTING DETAIL, FOR ADDITIONAL REQUIREMENTS.

(6) REFER TO DRAWING E0.02 FOR POWER AND SIGNAL FIT-710



METER AND PRESSURE REGULATING VALVE ASSEMBLY

3/16" = 1'



METER AND CHECK VALVE ASSEMBLY

SCALE: 1/4" = 1'-0"

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DATED: JULY 2012 – MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	9/14

REVISIONS

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

METER AND PRV ASSEMBLY AND METER CHECK VALVE ASSEMBLY POWER PLAN

DATE:	SEPTEMBER 2014
MCE PROJ. #	1024-0143
DRAWN	JAG
DESIGNED	JAG
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
E-7.1

STATUS: RECORD DRAWINGS
REVISION

5916.077

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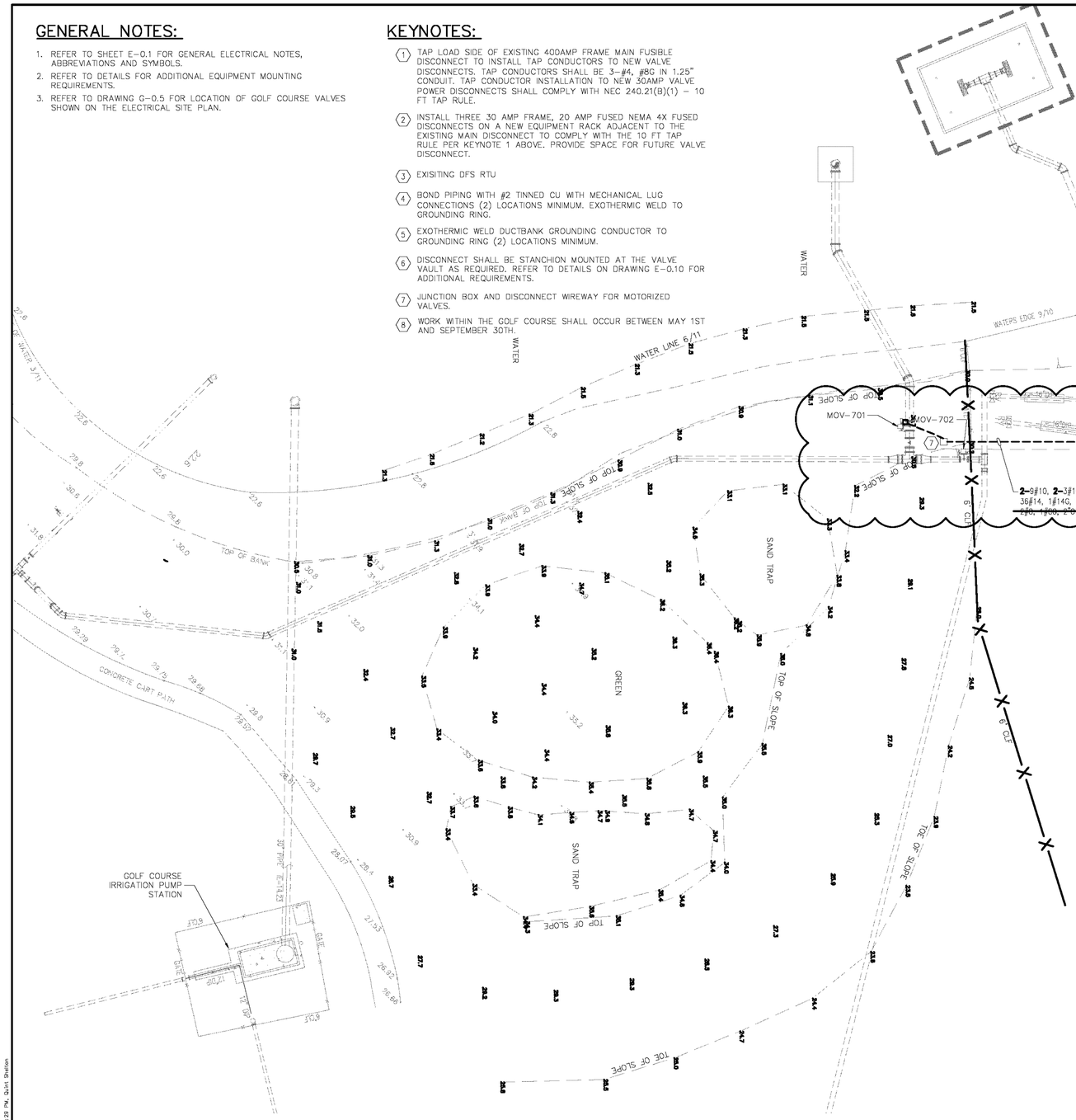
GENERAL NOTES:

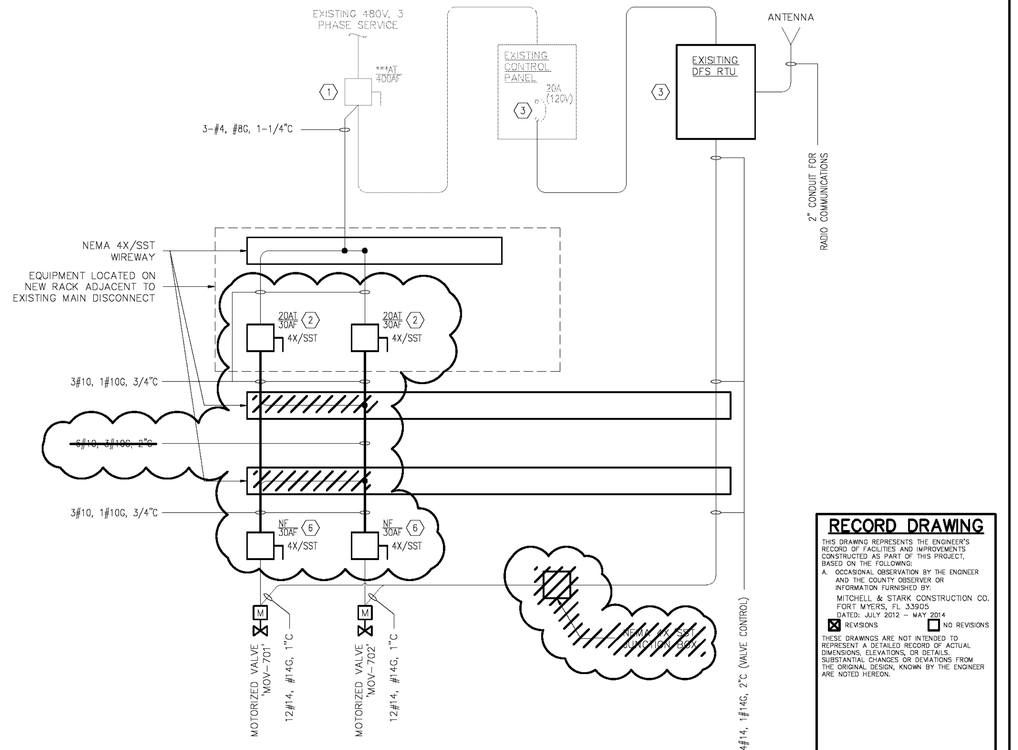
1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. REFER TO DETAILS FOR ADDITIONAL EQUIPMENT MOUNTING REQUIREMENTS.
3. REFER TO DRAWING C-0.5 FOR LOCATION OF GOLF COURSE VALVES SHOWN ON THE ELECTRICAL SITE PLAN.

KEYNOTES:

1. TAP LOAD SIDE OF EXISTING 400AMP FRAME MAIN FUSIBLE DISCONNECT TO INSTALL TAP CONDUCTORS TO NEW VALVE DISCONNECTS. TAP CONDUCTORS SHALL BE 3-#4, #8G IN 1.25" CONDUIT. TAP CONDUCTOR INSTALLATION TO NEW 30AMP VALVE POWER DISCONNECTS SHALL COMPLY WITH NEC 240.21(B)(1) – 10 FT TAP RULE.
2. INSTALL THREE 30 AMP FRAME, 20 AMP FUSED NEMA 4X FUSED DISCONNECTS ON A NEW EQUIPMENT RACK ADJACENT TO THE EXISTING MAIN DISCONNECT TO COMPLY WITH THE 10 FT TAP RULE PER KEYNOTE 1 ABOVE. PROVIDE SPACE FOR FUTURE VALVE DISCONNECT.
3. EXISITING DFS RTU
4. BOND PIPING WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS (2) LOCATIONS MINIMUM. EXOTHERMIC WELD TO GROUNDING RING.
5. EXOTHERMIC WELD DUCTBANK GROUNDING CONDUCTOR TO GROUNDING RING (2) LOCATIONS MINIMUM.
6. DISCONNECT SHALL BE STANCHION MOUNTED AT THE VALVE VAULT AS REQUIRED. REFER TO DETAILS ON DRAWING E-0.10 FOR ADDITIONAL REQUIREMENTS.
7. JUNCTION BOX AND DISCONNECT WIREWAY FOR MOTORIZED VALVES.
8. WORK WITHIN THE GOLF COURSE SHALL OCCUR BETWEEN MAY 1ST AND SEPTEMBER 30TH.



GOLF COURSE STORAGE LAKE FLOW CONTROL STRUCTURE
ELECTRICAL SITE PLAN
1" = 20'



GOLF COURSE STORAGE LAKE FLOW CONTROL STRUCTURE
SINGLE LINE DIAGRAM
N.T.S.

RECORD DRAWING

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FORT MYERS, FL 33905
DATED: JULY 2012 – MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

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EB0006691
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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

GOLF COURSE STORAGE LAKE FLOW CONTROL STRUCTURE ELECTRICAL SITE PLAN AND SINGLE LINE

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: NA

DRAWING NUMBER: E-7.2

STATUS: RECORD DRAWINGS
REVISION

S:\1024\0143\05-Design\ELECTRICAL\E-7.2_FCS_SITE2014.dwg, 6/6/2014 1:46:29 PM, Quint Sheton

5916.078

GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. REFER TO DETAILS FOR ADDITIONAL EQUIPMENT MOUNTING REQUIREMENTS.

KEYNOTES:

(1) JUNCTION BOX(ES) FOR TERMINATION OF POWER, CONTROL, AND SIGNAL CONDUCTORS TO GRAVITY DISC FILTERS. REFER TO EQUIPMENT SUPPLIER DRAWINGS FOR LOCATIONS.

NORTH

3/8" = 1'-0" 12" 0 1' 2' 3' 4' 5'

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DATED: JULY 2012 – MAY 2014

☒ REVISIONS ☐ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

CHLORINE CONTACT CHAMBER NO. 2

ELEC PANEL

GRAVITY DISK FILTER #1

GRAVITY DISK FILTER #2

GRAVITY DISK FILTER #3

SPARE LP 702 SP-9 SPARE

15#14, 1#14G, 1"C
2#16SH, 3#16SH, 1"C
6#10, 1#10G, 1"C
SPARE 1"C

BOND TO PIPELINE

SPARE LP 707 SP-9 SPARE

15#14, 1#14G, 1"C
2#16SH, 3#16SH, 1"C
6#10, 1#10G, 1"C
SPARE 1"C

LP 702 SPARE

SP-9 SPARE

PANEL PP-701
480V
(PADLOCKABLE)

SUN/RAIN SHIELD

15kVA TRANSFORMER

3/4" X 20' GROUND RODS

PANEL LP 702
120/208V

#2G

DISK FILTER #1 CONTROL PANEL

DISK FILTER #2 CONTROL PANEL

DISK FILTER #3 CONTROL PANEL

CL2 ANALYZER

SCADA PANEL SP-8

P1

PP-701
SP-8

20#14, 1#14G, 1"C

LP 702

1 TSP, 3/4"C

PP 701

15kVA TRANSFORMER

EXISTING SWITCH BOARD 'A'

TSP, 3/4"C
SP-8

PIT 713

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

LAKE GRAVITY DISC FILTER PLAN

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 3/8" = 1'-0"
VERTICAL: NA

DRAWING NUMBER
E-7.3

STATUS: RECORD DRAWINGS
REVISION

5916.079

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GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.

KEYNOTES:

(1) BOND TO PUMP CONTROL PANEL WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS. EXOTHERMIC WELD TO GROUND RING.

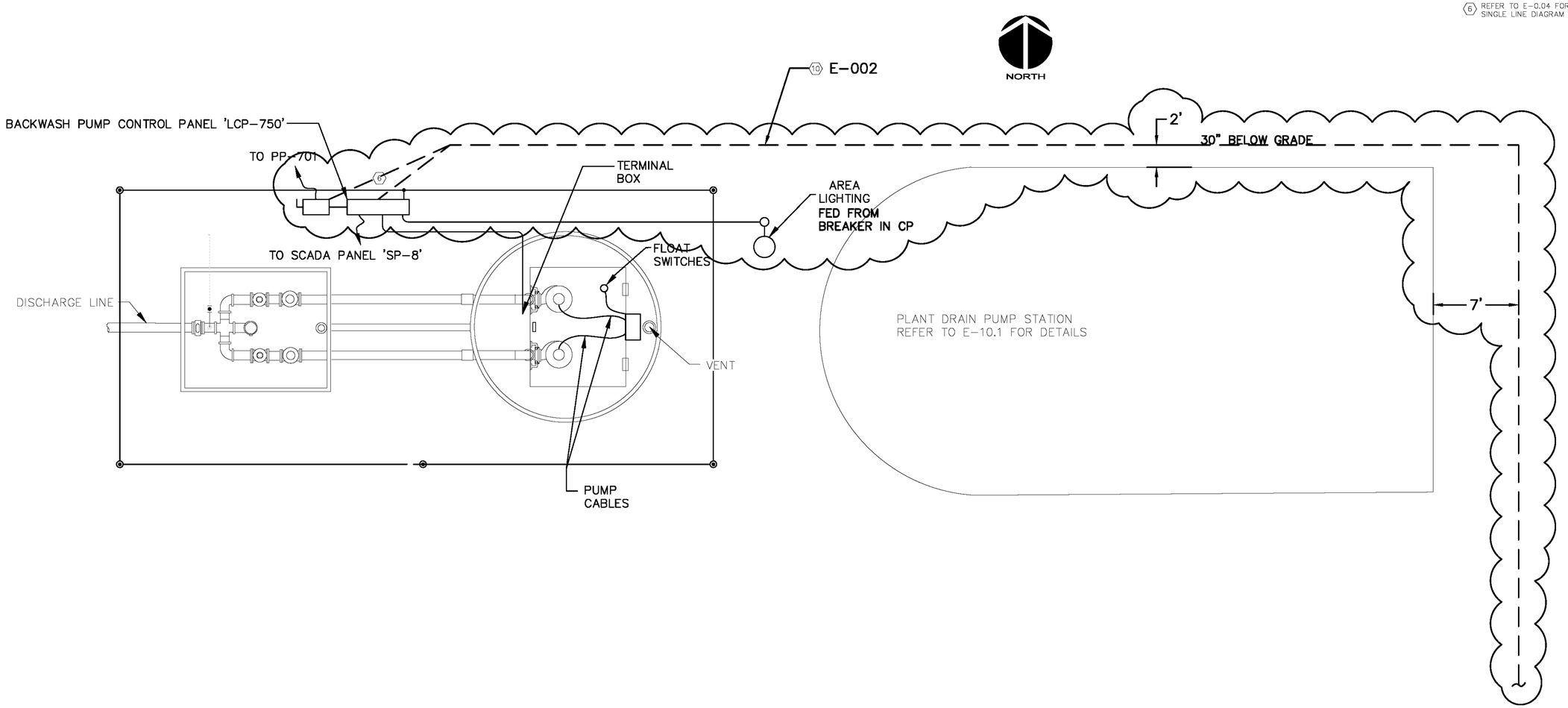
(2) BOND MECHANICAL PIPING WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS. EXOTHERMIC WELD CONNECTIONS TO GROUNDING RING.

(3) EXOTHERMIC WELD DUCTBANK GROUNDING CONDUCTOR TO GROUNDING RING (2) LOCATIONS MINIMUM.

(4) PROVIDE NEW SUPPORT FOR NEW PUMP CONTROL PANEL, REFER TO DETAILS

(5) PROVIDE SEAL-OFFS TO PROTECT CONTROL PANEL FROM CORROSIVE/COMBUSTABLE GAS. REFER TO SINGLE LINE DIAGRAM ON SHEET E-0.04.

(6) REFER TO E-0.04 FOR LAKE FILTER BACKWASH PUMP STATION SINGLE LINE DIAGRAM FOR WIRE AND CONDUIT REQUIREMENTS.



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DATED: JULY 2012 – MAY 2014

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

LAKE FILTER BACKWASH PUMP STATION

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	CJR
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NTS
VERTICAL: AS SHOWN

DRAWING NUMBER
E-7.6

STATUS: RECORD DRAWINGS
REVISION

5916.080

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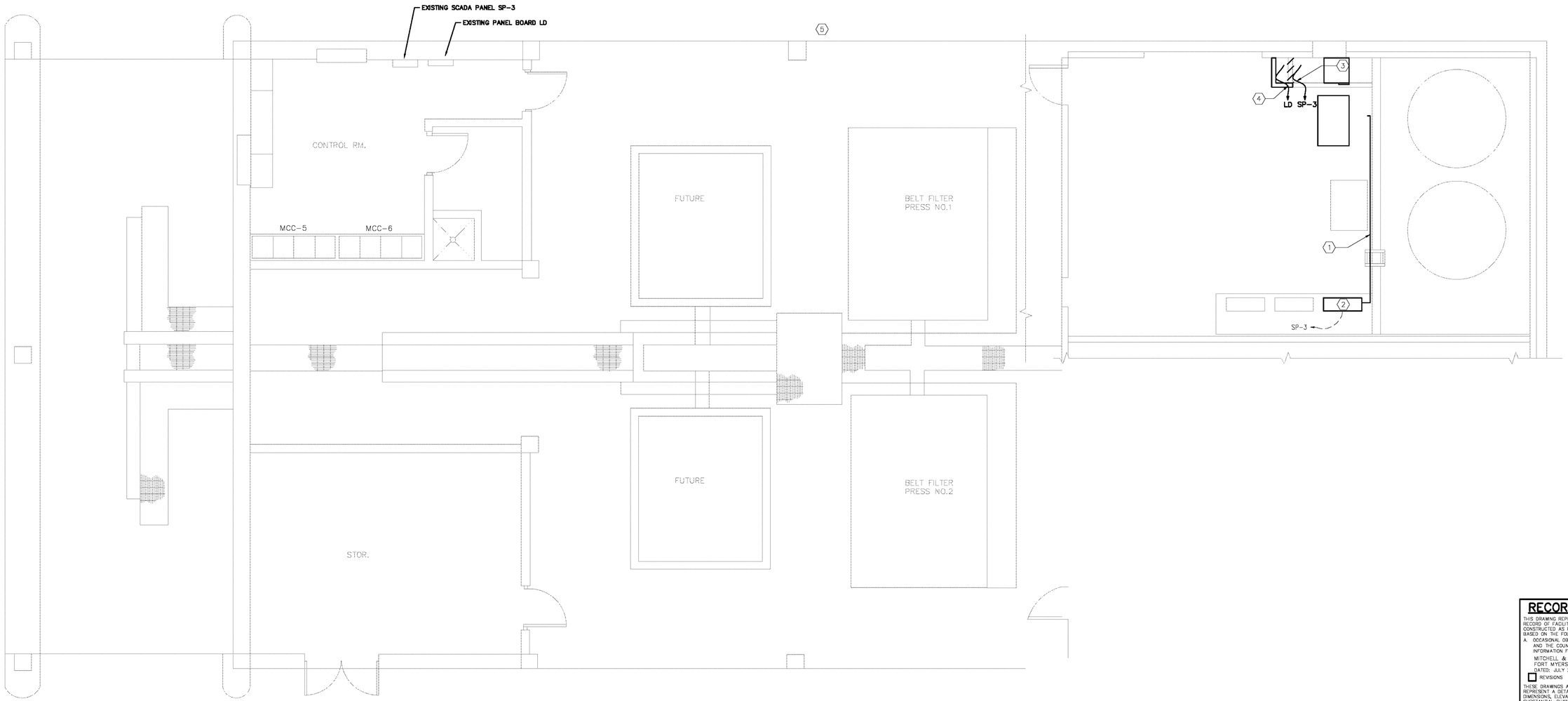
KEYNOTES:

1. INTERCONNECTING WIRE AND CONDUIT BETWEEN THE CHEMICAL BUILDING FEED SKID AND THE CHEMICAL FEED CONTROL PANEL IS AS FOLLOWS:
   A. 6#10, 1#10G, 3/4"C
   B. 16#14, 1#14G, 1"C
   C. 4 – TSP, 1"C
2. INTERCONNECTING WIRE AND CONDUIT BETWEEN THE CHEMICAL FEED CONTROL PANEL TO SP-3 IS AS FOLLOWS:
   A. 16#14, 1#14G, 1"C
   B. 4-TSP, 1"C
3. INTERCONNECTING WIRE AND CONDUIT BETWEEN THE SIMPLEX CHEMICAL SKID AND SP-3 AS FOLLOWS:
   A. 8#14, 1#14G, 3/4"C
4. INSTALL NEW 20A, 1 POLE BREAKER IN SPACE 33 IN EXISTING 120/208V WESTINGHOUSE TYPE PR1 PANEL "LD." INSTALL 2#12, #12G IN 3/4"C TO SIMPLEX CHEMICAL SKID.
5. ROUTE ALL CONDUIT ABOVE BELT PRESS AREA WALL OPENINGS.



DEWATERING BUILDING PLAN

SCALE: 3/8" = 1'-0"

RECORD DRAWING

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   FORT MYERS, FL 33905
   DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

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MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

DEWATERING BUILDING PLAN AND DETAILS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	QES
DESIGNED	DCW
CHECKED	JSL
PROJ. MGR.	DCW

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

DRAWING NUMBER
E-8.1

STATUS: RECORD DRAWINGS
REVISION

5916.081

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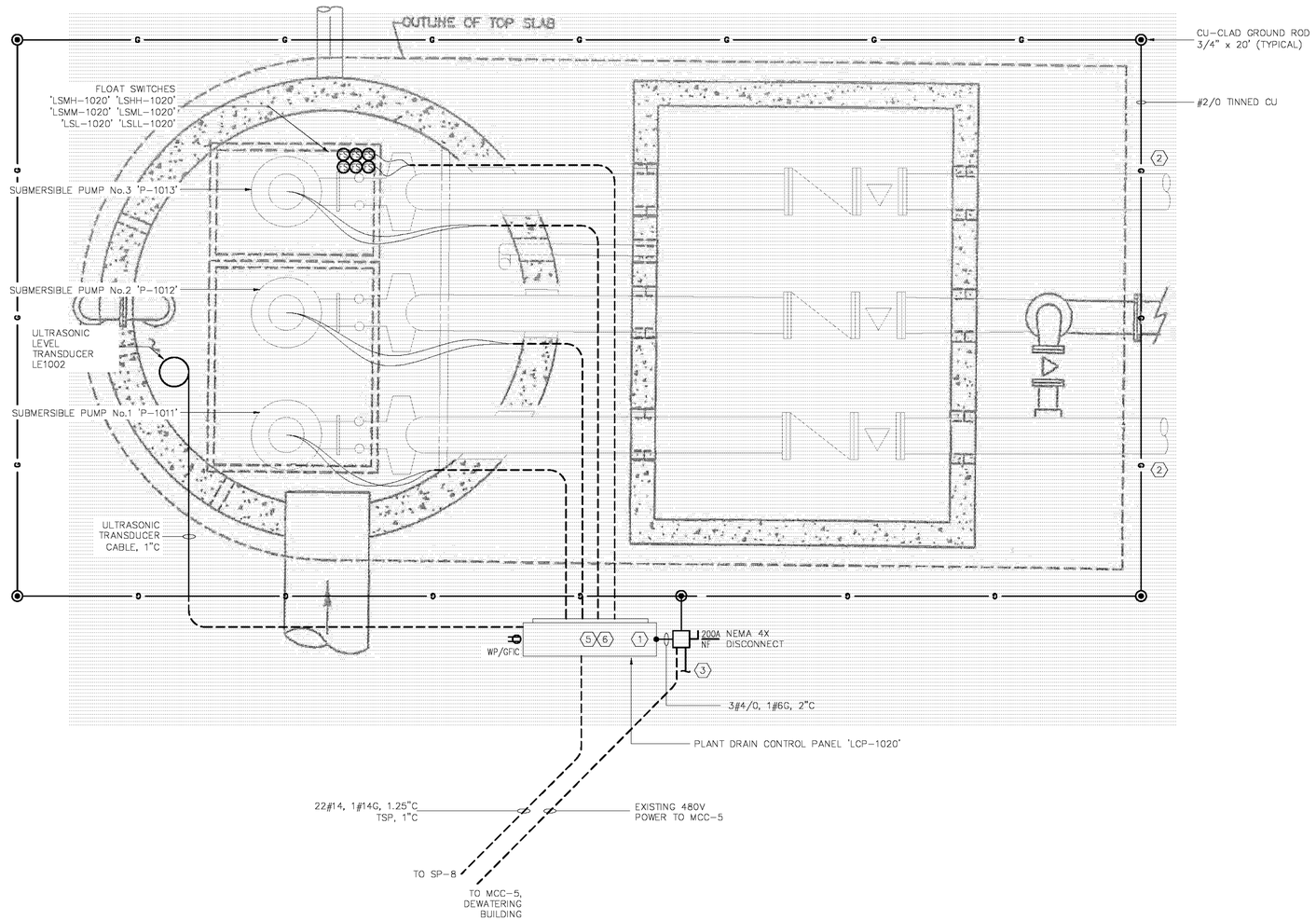

PLANT DRAIN PUMP STATION POWER PLAN
N.T.S.

GENERAL NOTES:

1. REFER TO SHEET E-0.1 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.

KEYNOTES:

1. BOND TO PUMP CONTROL PANEL WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS. EXOTHERMIC WELD TO GROUND RING.
2. BOND MECHANICAL PIPING WITH #2 TINNED CU WITH MECHANICAL LUG CONNECTIONS. EXOTHERMIC WELD CONNECTIONS TO GROUNDING RING.
3. EXOTHERMIC WELD DUCTBANK GROUNDING CONDUCTOR TO GROUNDING RING (2) LOCATIONS MINIMUM.
4. NA
5. EXISTING CONTROL PANEL TO BE REPLACED. EXISTING POWER FEED FROM MCC-5 TO BE REUSED. EXISTING CONDUIT RUNS FROM CONTROL PANEL TO PUMP STATION TO BE REUSED.
6. PROVIDE NEW SUPPORT FOR NEW PUMP CONTROL PANEL, REFER TO DETAILS
7. PROVIDE SEAL-OFFS TO PROTECT CONTROL PANEL FROM CORROSIVE/COMBUSTABLE GAS. REFER TO SINGLE LINE DIAGRAM ON SHEET E-0.04.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL. 33905
DATED: JULY 2012 – MAY 2014

☐ REVISIONS ☒ NO REVISIONS

THESE DRAWINGS ARE NOT INTENDED TO REPRESENT A DETAILED RECORD OF ACTUAL DIMENSIONS, ELEVATIONS, OR DETAILS. SUBSTANTIAL CHANGES OR DEVIATIONS FROM THE ORIGINAL DESIGN, KNOWN BY THE ENGINEER ARE NOTED HEREON.

DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS	DATE
	RECORD DRAWINGS	6/14

REVISIONS

SEAL

ARTHUR L. ANCHORS, P.E.
No. 39804

SEAL

McKIM&CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PLANT DRAIN PUMP STATION ELECTRICAL MODIFICATIONS

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: NTS
VERTICAL: NTS

DRAWING NUMBER
E-10.1

STATUS: RECORD DRAWINGS
REVISION

5916.082

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GENERAL NOTES:

1. REFER TO SHEET E-0.01 FOR GENERAL ELECTRICAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. UTILIZE 316 SST HARDWARE, FASTENERS, AND SUPPORTS AS REQUIRED TO ROUTE CONDUIT AS SHOWN.

KEYNOTES:

(1) STANCHION MOUNT NEMA 4X SST JUNCTION BOX MIN. 18" OFF OF HEADWORKS WALL AND MIN. 24" AFG OUTSIDE OF CLASS I DIV II SPACE.

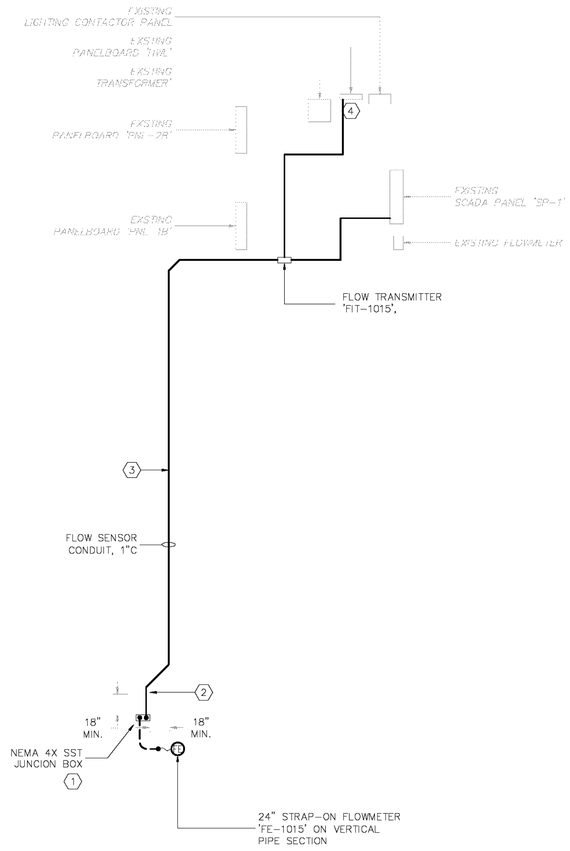
(2) CONTRACTOR SHALL ROUTE CONDUIT EXPOSED ALONG THE OUTSIDE HEADWORKS WALL AND CORE DRILL THE WALL AS REQUIRED TO ROUTE THE CONDUIT THROUGH THE WALL INSIDE THE BUILDING. USE DRY PACK GROUT TO SEAL CONDUIT PENETRATING THE WALL. EXPANSION FOAM IS NOT PERMITTED.

(3) PROVIDE CONDUIT SUPPORTS AS REQUIRED TO ROUTE CONDUIT EXPOSED OVERHEAD TO THE ELECTRICAL ROOM AS SHOWN.

(4) CONTRACTOR SHALL UTILIZE THE EXISTING SPARE 120VAC, 20AMP, 1-POLE BREAKER IN SPACE 10 OF PANEL 'HWL' TO PROVIDE POWER FOR THE FLOW TRANSMITTER FIT-1015.

(5) ROUTE FLOW SENSOR CABLE THROUGH CONDUIT SLEEVE BETWEEN JUNCTION BOX AND FLOW SENSOR. PROVIDE MIN. 6" AIR GAP AT EACH END. UTILIZE ALUMINUM CORD GRIP FITTING, CROUSE-HINDS COB SERIES OR APPROVED EQUAL, TO TERMINATE INTO JUNCTION BOX AND FLOW SENSOR.

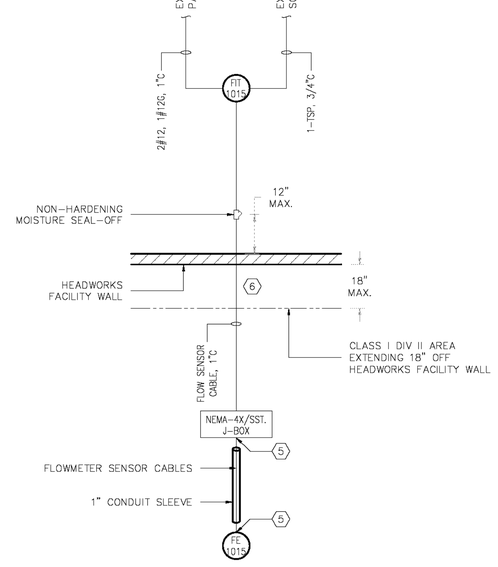
(6) NO COUPLING, FITTINGS, JUNCTIONS, ETC. SHALL BE MADE IN THE CONDUIT RUN EXTENDING 18" OUT FROM THE HEADWORKS FACILITY WALL. THE CONDUIT SHALL BE RUN DOWN TO A JUNCTION BOX OUTSIDE OF THE CLASSIFIED AREA. PROVIDE SST. CONDUIT SUPPORTS AS REQUIRED TO KEEP THE CONDUIT OUTSIDE OF THE CLASSIFIED AREA.



NORTH

HEADWORKS - FLOWMETER POWER PLAN

3/16" = 1'



PLANT DRAIN PUMP STATION FLOWMETER FE/FIT-1015 RISER DIAGRAM

N.T.S.

RECORD DRAWING

THIS DRAWING REPRESENTS THE ENGINEER'S RECORD OF FACILITIES AND IMPROVEMENTS CONSTRUCTED AS PART OF THIS PROJECT, BASED ON THE FOLLOWING:

A. OCCASIONAL OBSERVATION BY THE ENGINEER AND THE COUNTY OBSERVER OR INFORMATION FURNISHED BY:
MITCHELL & STARK CONSTRUCTION CO.
FORT MYERS, FL 33905
DATED: JULY 2012 - MAY 2014

☐ REVISIONS ☒ NO REVISIONS

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DAVID C. WEHNER, P.E.
No. 59541

REV.NO.	DESCRIPTIONS REVISIONS	DATE
	RECORD DRAWINGS	6/14

SEAL

ARTHUR L. ANCHORS, P.E.
No. 39804

SEAL

McKIM&CREED
1365 Hamlet Avenue
Clearwater, Florida 33755
Phone: (727)442-7196, Fax: (727)461-3827
EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA

NWRF EXPANSION PHASE 1

PLANT DRAIN PUMP STATION METERING POWER PLAN

DATE:	JUNE 2014
MCE PROJ. #	1024-0143
DRAWN	JZM
DESIGNED	ALA
CHECKED	ALA
PROJ. MGR.	DCW

SCALE
HORIZONTAL: 3/16" = 1'
VERTICAL: NA

DRAWING NUMBER
E-10.2

STATUS: RECORD DRAWINGS
REVISION

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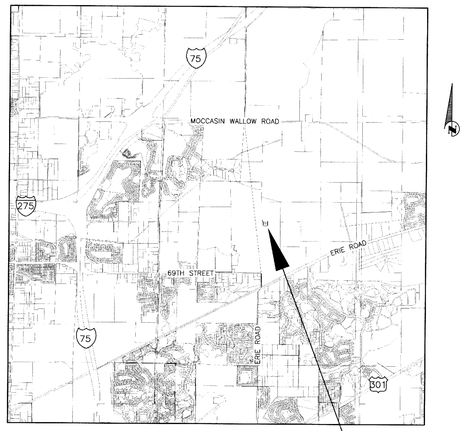
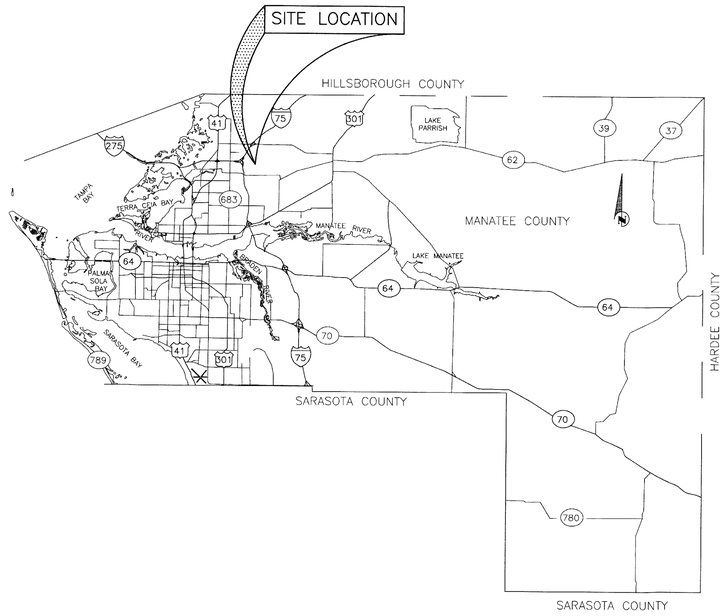
MANATEE COUNTY, FLORIDA
NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
6050581

December 2013



VICINITY MAP
N.T.S.

PROJECT SITE



PROJECT DESCRIPTION

PROJECT INCLUDES IMPROVEMENTS TO THE SLUDGE HOLDING FACILITIES AND REHABILITATION OF EFFLUENT AUTOMATIC BACKWASH FILTERS. THESE IMPROVEMENTS WILL PROVIDE OPERATIONAL RELIABILITY AND FLEXIBILITY. IMPROVEMENTS INCLUDE THE FOLLOWING:

- DEMOLISH AND REPLACE TWO SLUDGE HOLDING TANKS
- INSTALL FINE BUBBLE DIFFUSERS IN THE TWO NEW TANKS
- REPLACE THE AERATION SYSTEM BLOWERS AND MODIFY ASSOCIATED ELECTRICAL AND CONTROL SYSTEMS
- REPLACE AIR PIPING
- MODIFY YARD PIPING AND VALVES TO IMPROVE RELIABILITY AND FLEXIBILITY OF SLUDGE TRANSFER FROM THE HOLDING TANKS TO THE BELT FILTER PRESSES.
- EXTEND THE CATWALK AT THE EXISTING SLUDGE HOLDING TANK
- REHABILITATION OF TWO EFFLUENT AUTOMATIC BACKWASH FILTERS
- MODIFY EXISTING BELT FILTER PRESS CONTROL PANEL.

RECORD DRAWINGS

NO.	INDEX OF SHEETS
G-1	COVER SHEET
G-2	GENERAL NOTES
G-3	LEGEND AND AERIAL
G-4	PROCESS FLOW DIAGRAM
C-1	EXISTING SLUDGE HOLDING FACILITY SITE PLAN
C-2	EXISTING SLUDGE HOLDING FACILITY SITE TOPOGRAPHY
C-3	SLUDGE HOLDING FACILITY DEMOLITION PLAN
C-4	DEMOLITION DETAILS
C-5	DEMOLITION DETAILS
C-6	PROPOSED SLUDGE HOLDING FACILITY SITE PLAN
C-7	PROPOSED SLUDGE HOLDING FACILITY SITE TOPOGRAPHY
C-8	PROPOSED YARD PIPING PLAN
C-9	PROPOSED YARD PIPING PLAN AND SECTION
C-10	PROPOSED YARD PIPING PLAN AND SECTION
C-11	PROPOSED YARD PIPING SECTION
C-12	PROPOSED YARD PIPING SECTION
C-13	CIVIL DETAILS
C-14	EROSION CONTROL PLAN
C-15	UNDERGROUND PIPING PLAN– SURVEYED
C-16	UNDERGROUND PIPING PLAN– SURVEYED
S-1	STRUCTURAL NOTES
S-2	STRUCTURAL DETAILS
S-3	STRUCTURAL DETAILS
S-4	STRUCTURAL DETAILS
S-5	STRUCTURAL DETAILS
M-1	SLUDGE HOLDING TANK PLAN
M-2	SLUDGE HOLDING TANK SECTION AND DETAILS
M-3	SLUDGE HOLDING TANK DETAILS
M-4	SLUDGE HOLDING TANK DETAILS
M-5	SLUDGE PUMP STATIONS PLAN AND DETAILS
M-6	BLOWER IMPROVEMENT PLAN AND SECTION
M-7	AUTOMATIC BACKWASH FILTER PLAN
M-8	AUTOMATIC BACKWASH SECTION AND DETAILS
I-1	INSTRUMENTATION SYMBOLS AND ABBREVIATIONS
I-2	PROCESS AND INSTRUMENTATION DIAGRAM
E-1	ELECTRICAL SITE PLAN
E-2	BLOWER IMPROVEMENT ELECTRICAL PLAN
E-3	POWER RISERS
E-4	ELECTRICAL DETAILS
E-5	ELECTRICAL DETAILS

RECORD DRAWING

THESE RECORD DOCUMENTS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. STANTEC HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

811 Know what's below Call before you dig

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS

COVER SHEET

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	N/A

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 49139
1-27-17
Signature & Date

ROBERT JAMES HALBACH LICENSE NUMBER 49139 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET G-1

6387.001

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GENERAL

1. ALL CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH THE PROJECT MANAGEMENT DIVISION. THE PROJECT MANAGER IS: WALTER SOWA III, P.E. (941) 708–7450 EXT. 7332
2. SITE VISITS ARE MANDATORY FOR ALL BIDDERS. THESE SITE VISITS CAN BE ARRANGED THROUGH THE PROJECT MANAGER.
3. ALL CONSTRUCTION ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF MANATEE COUNTY UTILITY AND TRANSPORTATION STANDARDS AND/OR FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" UNLESS OTHERWISE INDICATED ON THE PLANS.
4. VERTICAL CONTROL FOR THIS PROJECT WAS ESTABLISHED BY A MINIMUM OF TWO REFERENCE BENCHMARKS DESCRIBED ON THE "THE NATIONAL GEODETIC VERTICAL DATUM OF 1929", (NGVD '29).
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS AND ALL GOVERNING FEDERAL, STATE, AND LOCAL AGENCIES. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS THAT ARE NOT PROVIDED IN THE BID DOCUMENTS, AT NO ADDITIONAL COST TO THE OWNER.
6. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATION THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
7. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.
8. AT LEAST 2 BUSINESS DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA AT 1–800–432–4770, OR THE NATIONAL 811 ONE CALL NUMBER WHEN APPLICABLE FOR UTILITY LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITIES FOR THE POSSIBLE RELOCATION OR THE TEMPORARY MOVEMENT OF ANY EXISTING UTILITIES WITHIN THE RIGHTS–OF–WAY.
9. NO WORK, EXCEPT FOR EMERGENCY TYPE, SHALL BE PERFORMED AFTER 7:00 PM AND BEFORE 7:00 AM. FOR ADDITIONAL PROJECT RESTRAINTS, REFER TO SECTION 01310 OF THE SPECIFICATIONS.

SAFETY

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR * CONSTRUCTION SITE SAFETY, COMPLIANCE WITH THE FLORIDA TRENCH SAFETY ACT, 90–96, LAWS OF FLORIDA EFFECTIVE OCTOBER 1, 1990 AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION EXCAVATION SAFETY STANDARDS, 29 CFR 1926.650, SUBPART P, AS AMENDED. THE CONTRACTOR SHALL INCLUDE IN THE TOTAL BID PRICE ALL COSTS FOR COMPLIANCE WITH THESE REGULATIONS.
11. THE CONTRACTOR SHALL USE SHEET PILING, SHEETING, BRACING, ETC., AS REQUIRED IN ALL EXCAVATION AREAS AND CONFORM TO ALL OSHA REQUIREMENTS.
12. THE CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND UTILITIES, POWER LINES, ETC.
13. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THIS EXCLUSION DOES NOT ALLEVIATE THE CONTRACTOR FOR PROVIDING A CONTINUOUS SAFE WORKSPACE.

ENVIRONMENTAL

14. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION ALL SEDIMENT AND EROSION CONTROL (SEC) DEVICES (E.G., BARRIERS, SEDIMENT TRAPS/BASINS, VEGETATIVE BUFFERS, ETC.) AS SPECIFIED IN THE FINAL APPROVED PLANS FOR THE PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SEC DEVICES UTILIZED DURING THE PROJECT, AS WELL AS INSTALLATION & MAINTENANCE OF ANY ADDITIONAL MEASURES DEEMED NECESSARY DURING PROJECT IMPLEMENTATION, TO PREVENT EROSION AND OFF–SITE SEDIMENT MIGRATION. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVAL AND PROPER DISPOSAL OF ALL SEC DEVICES UPON CONCLUSION OF THE PROJECT, AND UPON ADEQUATE STABILIZATION OF DISTURBED SOILS.

*15. NOT USED

*16. NOT USED

17. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY STORM WATER, EROSION, AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THE FDEP "FLORIDA STORM WATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL". IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL AND PREVENT EROSION AND TRANSPORT OF SEDIMENT TO SURFACE DRAINS AND TO DITCHES DURING CONSTRUCTION.
18. STOCKPILES SHALL BE PROTECTED AT ALL TIMES BY ON–SITE DRAINAGE CONTROLS WHICH PREVENT EROSION OF THE STOCKPILED MATERIAL. CONTROL OF DUST FROM SUCH STOCKPILES IS REQUIRED, DEPENDING UPON THEIR LOCATION AND THE EXPECTED LENGTH OF TIME THE STOCKPILES WILL BE PRESENT. IN NO CASE SHALL ANY STOCKPILED MATERIAL REMAIN AFTER THIRTY (30) CALENDAR DAYS.
19. STORM WATER INLETS IN THE VICINITY OF THE PROJECT SHALL BE PROTECTED BY SEDIMENT TRAPS SUCH AS SECURED HAY BALES, SOD, STONE, ETC., WHICH SHALL BE MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS, AND WHICH MUST BE APPROVED BY THE ENGINEER BEFORE INSTALLATION. THIS WILL BE MAINTAINED TO PREVENT DEGRADATION OF THE WATERS OF THE COUNTY AND STATE.
20. SEDIMENT BASINS AND TRAPS, PERIMETER BERMS, SEDIMENT BARRIERS, VEGETATIVE BUFFERS, AND OTHER MEASURES INTENDED TO TRAP SEDIMENT AND/OR PREVENT THE TRANSPORT OF SEDIMENT ONTO ADJACENT PROPERTIES, OR INTO EXISTING BODIES OF WATER, MUST BE INSTALLED, CONSTRUCTED, OR IN THE CASE OF VEGETATIVE BUFFERS, PROTECTED FROM DISTURBANCE, AS A FIRST STEP IN THE LAND ALTERATION PROCESS. SUCH SYSTEMS SHALL BE FULLY OPERATIVE BEFORE ANY OTHER DISTURBANCE OF THE SITE BEGINS. EARTHEN STRUCTURES INCLUDING BUT NOT LIMITED TO BERMS, EARTH FILTERS, DAMS OR DIKES SHALL BE STABILIZED AND PROTECTED FROM DRAINAGE DAMAGE OR EROSION WITHIN ONE (1) WEEK OF INSTALLATION.
21. ALL SWALES, DITCHES, AND CHANNELS LEADING FROM THE SITE SHALL BE PROTECTED FROM SILTATION AND EROSION DURING CONSTRUCTION AND BE SODDED WITHIN THREE (3) DAYS OF EXCAVATION.
22. SOIL DISPLACED BY CONSTRUCTION WILL BE REMOVED. EROSION CONTROL SHALL BE IMPLEMENTED IN AREAS WHICH ARE CONSIDERED ENVIRONMENTALLY SENSITIVE. EROSION CONTROL SYSTEMS SHALL BE REQUIRED FOR ALL WORK WITHIN JURISDICTIONAL AREAS. THESE SYSTEMS MAY INCLUDE STAKED HAY BALES, SILT SCREENS, FILTER FABRIC, AND TURBIDITY SCREENS.
23. ALL EROSION AND POLLUTION CONTROL DEVICES SHALL BE CHECKED REGULARLY, ESPECIALLY AFTER EACH RAINFALL AND SHALL BE CLEANED OUT AND/OR REPAIRED AS REQUIRED.
24. THE CONTRACTOR SHALL NOT ENTER UPON OR IN ANY WAY ALTER WETLAND AREAS THAT MAY BE ON OR NEAR THE CONSTRUCTION SITE. ALL WORK IN THE VICINITY OF OPEN WATER AND/OR WETLANDS IS TO BE PERFORMED IN COMPLIANCE WITH THE ENVIRONMENTAL REGULATIONS AND/OR PERMITS FOR THE SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINES RESULTING FROM HIS VIOLATION OF ANY REGULATIONS OR PERMIT CONDITIONS.
25. FOR MORE INFORMATION, SEE THE EROSION CONTROL DETAIL SHEET INCLUDED IN THE PLANS.

RIGHT–OF–WAY

26. ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO WITHIN THE MANATEE COUNTY/FDOT RIGHT–OF–WAY AND/OR EASEMENTS SHOWN ON THE DRAWINGS.
27. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO REFERENCE AND RESTORE PROPERTY CORNER MONUMENTS, PINS, AND LANDMARKS THAT MAY BE DISTURBED BY CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
28. THE CONTRACTOR, PRIOR TO CONSTRUCTION AND RESTRICTING ANY TRAFFIC, MUST OBTAIN A RIGHTS–OF–WAY USE PERMIT AND A TRAFFIC CONTROL PLAN. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM OTHER GOVERNMENTAL AGENCIES HAVING RELEVANT JURISDICTION. ALL MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE CURRENT FLORIDA DEPARTMENT OF TRANSPORTATION "MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES". A TRAFFIC CONTROL PLAN SHALL BE SUPPLIED BY THE CONTRACTOR AT THE PRE–CONSTRUCTION MEETING.
29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL DAMAGED STORM WATER STRUCTURES, PIPING, ENTRANCE PIPE AND HEADWALLS WHETHER SHOWN ON THE PLANS OR NOT. THE HEADWALLS SHALL BE REPLACED IN ACCORDANCE WITH F.D.O.T. STANDARDS.
30. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH IN THE FIELD THE RIGHT–OF–WAY LINES, BASE LINES, BENCH MARKS (ELEV.), CENTER LINES, AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.

*31. NOT USED.

*32. NOT USED.

UTILITIES

33. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC. WHICH ARE WITHIN THE PROJECT AREA AND WHICH HAVE NOT BEEN LOCATED OR IDENTIFIED, MAY NOT BE IN THE EXACT LOCATION SHOWN OR RELOCATED SINCE THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES STRUCTURES AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) THAT MAY EFFECT HIS WORK. ALL EXISTING UTILITIES TO BE EXTENDED, CROSSED OR CONNECTION POINTS SHALL BE EXPOSED PRIOR TO CONSTRUCTION TO VERIFY LOCATION AND ELEVATION. ANY DISCREPANCIES OR CONFLICTS FOUND SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR RESOLUTION.
34. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, WATER AND SEWER LINES, STORM DRAINS, UTILITIES, DRIVEWAYS, SIDEWALKS, SIGNS, MAIL BOXES, FENCES, TREES, LANDSCAPING, AND ANY OTHER IMPROVEMENT OR FACILITY IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DAMAGED ITEM DUE TO HIS CONSTRUCTION ACTIVITIES TO EQUAL OR BETTER THAN PRE–CONSTRUCTION CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
35. THE CONTRACTOR SHALL USE APPROPRIATE TECHNIQUES, AS APPROVED, RECOMMENDED OR OFFERED BY FLORIDA POWER AND LIGHT TO PREVENT UNDERMINING OF POWER POLES DURING CONSTRUCTION. IF HOLDING OF POWER POLES IS RECOMMENDED OR REQUIRED BY THE UTILITY, THE CONTRACTOR SHALL COORDINATE THIS ACTIVITY WITH THE UTILITY AND BEAR ALL RELATED COSTS.
36. ANY TEMPORARY SHUTDOWNS FOR MODIFICATIONS OF EXISTING UTILITY SYSTEMS THAT MUST REMAIN IN SERVICE DURING CONSTRUCTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE COORDINATED WITH AND APPROVED BY THE MANATEE COUNTY UTILITY OPERATIONS DEPARTMENT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. IT IS NOTED THAT TEMPORARY SHUTDOWNS MAY BE RESTRICTED TO CERTAIN HOURS AT ANY TIME OF THE DAY OR NIGHT AND WILL BE COMPLETED AT NO ADDITIONAL COST TO THE OWNER.
37. FOR WORK BEING DONE ON EXISTING SANITARY SEWER LINES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE FLOW OF ALL SEWAGE DURING CONSTRUCTION, WHICH MAY REQUIRE BY–PASS PUMPING AND/OR PUMPER TRUCKS. THE CONTRACTOR SHALL SUBMIT A DETAILED BY–PASS PUMPING PLAN PER SECTION 02720.

RESTORATION

38. ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS SHOWN OTHERWISE.
39. ALL DISTURBED GRASSED AREAS SHALL BE SODDED OR SEEDED UNLESS OTHERWISE INDICATED. THE TYPE OF SOD USED TO REPLACE OWNER MAINTAINED AREAS IN RIGHT–OF–WAY SHALL BE COORDINATED WITH THE PROPERTY OWNER.
40. ALL CONCRETE THRUST BLOCKS INSTALLED FOR TESTING PURPOSES AND NOT REQUIRED FOR THE OPERATION OF THE PIPELINE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR, PRIOR TO FINAL ACCEPTANCE, AT NO ADDITIONAL COST TO THE OWNER.
41. ASPHALT DRIVES THAT ARE CUT SHALL BE RESTORED PER SECTION 02513.
42. CONCRETE DRIVEWAYS OR SIDEWALKS THAT ARE CUT SHALL BE RESTORED TO MATCH EXISTING ACCORDING TO THE CURRENT EDITIONS OF THE F.D.O.T. SPECIFICATIONS FOR ROAD AND BRIDGE DESIGN, SECTION 522, AND SECTION 310 OF THE F.D.O.T. DESIGN STANDARDS.
43. WHENEVER A PERMANENT ROADWAY SURFACE IS NOT PLACED IMMEDIATELY AFTER BACKFILLING AND COMPACTION OF THE NEWLY INSTALLED PIPE LINE IN AREAS WHERE TRAFFIC MUST PASS, THE CONTRACTOR SHALL INSTALL A TEMPORARY SURFACE CONSISTING OF NINE INCHES OF COMPACTED LIME ROCK BASE AND A COAT OF ASPHALT EMULSION. PERMANENT ROADWAY REPAIR SHALL BE PERFORMED A MAXIMUM OF TWENTY–ONE CALENDAR DAYS AFTER THE INITIAL OPEN CUTTING.
44. RESTORATION OF CURBS, DRIVEWAYS, SIDEWALKS, AND PLACEMENT OF SOD SHALL BE COMPLETED WITHIN FORTY–FIVE CALENDAR DAYS OF INITIAL DISTURBANCE, OR TWENTY–ONE CALENDAR DAYS OF SUBSTANTIAL COMPLETION, WHICHEVER OCCURS FIRST.

CONSTRUCTION

45. THE EXHAUST SYSTEM OF ALL GASOLINE AND DIESEL ENGINES SHALL BE EQUIPPED WITH MUFFLERS THAT MEET THE EQUIPMENT MANUFACTURER'S REQUIREMENTS FOR NOISE SUPPRESSION. THE CONTRACTOR SHALL INSTALL NOISE ABATEMENT BAFFLES POSITIONED TO BREAK LINE–OF–SITE FROM THE NOISE SOURCE TO AFFECTED RESIDENCES, AS APPROVED BY THE ENGINEER.
46. NO MATERIAL SHALL BE STOCKPILED IN ROADWAYS. ALL DIRT AND DEBRIS SHALL BE REMOVED FROM THE JOB SITE DAILY. ROADS SHALL BE SWEPT DAILY AS PART OF DAILY CLEAN UP.
47. THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.
48. INGRESS AND EGRESS TO ALL THE PROPERTIES IN THE CONSTRUCTION AREA SHALL BE MAINTAINED AT ALL TIMES.
49. PRIOR APPROVAL WILL BE REQUIRED FOR REMOVAL OF ANY TREE WITHIN THE CONSTRUCTION AREA.
50. THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP ALL EXCAVATIONS DRY. DEWATERING IS REQUIRED TO 18" BELOW TRENCH BOTTOM.
51. ALL PIPING AND FITTINGS USED ON THIS PROJECT SHALL BE AS NOTED ON THE PLANS AND IN THE CONTRACT DOCUMENT AND SHALL BE INSTALLED TO THE LINES AND GRADES SHOWN ON THE PLANS AND PROFILES.
52. ALL PIPE SHALL BE COLOR CODED TO CONFORM TO MANATEE COUNTY STANDARDS.
53. ALL PIPE AND FITTINGS SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER AND ALL PIPE JOINTS SHALL BE RESTRAINED WHERE REQUIRED.
54. ALL FITTINGS FOR PRESSURE CLASS–RATED PIPE SHALL BE RESTRAINED DUCTILE IRON. RESTRAINED LENGTHS OF PIPE SHALL ADHERE TO THE REQUIREMENTS AS SHOWN ON THE DETAIL SHEETS.
55. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE RECOMMENDED DEFLECTION.
56. ALL PIPE LENGTHS ARE PLUS OR MINUS AND MAY BE ADJUSTED IN THE FIELD AS REQUIRED. PIPE MEASUREMENTS ARE TO CENTER OF STRUCTURES OR FITTINGS.
57. ALL ROCKS OR STONES LARGER THAN SIX INCH DIAMETER SHALL BE REMOVED FROM THE BACKFILL MATERIAL. BACKFILL MATERIAL PLACED WITHIN ONE FOOT OF PIPING AND APPURTENANCES SHALL NOT CONTAIN ANY STONES LARGER THAN TWO INCH DIAMETER.
58. ONLY MANATEE COUNTY UTILITY OPERATIONS STAFF ARE AUTHORIZED TO OPERATE VALVES ON COUNTY OWNED AND MAINTAINED UTILITY SYSTEMS.
59. ALL PENETRATION OF EXISTING STRUCTURES SHALL BE BY THE MECHANICAL ROTARY CORE BORING METHOD.
60. ALL CONCRETE PENETRATED OR DISTURBED SHALL BE COATED WITH TWO COATS OF EPOXY.

*61. NOT USED

62. ALL NEW PIPE LINES SHALL BE PIG CLEANED (4" AND LARGER), FLUSHED, PRESSURE TESTED, DISINFECTED AND CERTIFIED PRIOR TO TIE–INS TO EXISTING FACILITIES. THE CONTRACTOR WILL BE ALLOWED TO USE TEMPORARY PLUGS FOR PIG CLEANING AND PRESSURE TESTING.
63. ALL TEST POINT PIPING SHALL BE CUT LOOSE FROM THE CORPORATION STOP AND COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE. A CORPORATION STOP PLUG SHALL BE INSTALLED AND THE CORPORATION STOP SHALL REMAIN IN PLACE.
64. ALL EXISTING MAINS THAT ARE BEING REPLACED SHALL BE ABANDONED IN PLACE * ~~UNLESS OTHERWISE NOTED ON PLANS~~, UPON ACCEPTANCE AND ACTIVATION OF THE NEW MAINS. ABANDONED MAINS ~~SHALL BE CUT, FILLED WITH GROUT~~, AND CAPPED. REFER TO SECTION 02064 OF THE SPECIFICATIONS FOR GROUTING OF ABANDONED PIPE.
65. WATER MAINS CROSSING OVER OR UNDER SANITARY SEWERS, FORCE MAINS, AND RECLAIMED WATER LINES SHALL BE LAID PER CURRENT EDITION OF "10 STATE STANDARDS" AND MANATEE COUNTY UTILITY STANDARDS UNLESS NOTED OTHERWISE ON THE PLANS.
66. FIELD CONDITIONS MAY NECESSITATE MINOR ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED UTILITIES TO AVOID OBSTACLES, AS ORDERED BY THE ENGINEER.
67. CONTRACTOR SHALL PROVIDE RECORD DRAWINGS IN ACCORDANCE WITH SECTION 14 IN THE CURRENT MANATEE COUNTY UTILITY STANDARDS AT NO COST TO THE OWNER. RECORD DRAWINGS SHALL BE SIGNED & SEALED BY A SURVEYOR CURRENTLY LICENSED BY THE STATE OF FLORIDA. ALL RECORD DRAWING INFORMATION REQUIREMENTS IN SECTION 14 SHALL BE STRICTLY ENFORCED. A COPY OF SECTION 14 WILL BE PROVIDED UPON REQUEST.

* PROJECT NOTES

1. ALL ABOVE GRADE PIPING SHALL BE FLANGED DUCTILE IRON CLASS 53, UNLESS OTHERWISE SPECIFIED. FLANGED COUPLING ADAPTORS SHALL BE MEGA LUGS BY EBAA.
2. ALL BURIED PIPE SHALL BE DUCTILE IRON WITH CLASS 53 WITH RESTRAINED MECHANICAL JOINTS, UNLESS OTHERWISE SPECIFIED.
3. ALL BURIED PIPES SHALL HAVE A MINIMUM OF 30 INCHES OF COVER UNLESS OTHERWISE SPECIFIED.
4. ALL ABOVE GRADE AIR PIPING SHALL BE 10S STAINLESS STEEL 304L.
5. RESTRAIN ALL PIPE.
6. WHEN CONNECTING TO AN EXISTING PIPE USE ADAPTORS AS REQUIRED. CONTRACTOR SHALL EXPOSE 60 FEET OF THE EXISTING PIPE AND RESTRAIN ALL JOINTS, AS NECESSARY.
7. PROVIDE STAINLESS STEEL TAGS FOR IDENTIFICATION ON ALL VALVES. TAGS SHALL CONSIST OF A 14 GA 304 SS DISK (2" DIAMETER) WITH A 304 SS BEAD CHAIN WITH CLOSURE. THE DISK SHALL BE ENGRAVED WITH ½" BLOCK LETTERING TO INCLUDE THE VALVE SIZE AND TYPE AND PROCESS FLOW ABBREVIATION AS SHOWN ON THE DRAWING.
8. WHERE PIPING CONNECTS TO EQUIPMENT, IT SHALL BE SUPPORTED BY A PIPE SUPPORT AND NOT THE EQUIPMENT. REFER TO MECHANICAL DRAWINGS FOR PIPE SUPPORTS.
9. DIMENSIONS FOR ALL EQUIPMENT SHALL BE VERIFIED BY CONTRACTOR PER MANUFACTURERS' SHOP DRAWINGS AND REVISED AS NECESSARY PRIOR TO CONSTRUCTION. CONTRACTOR SHALL INFORM COUNTY OF ANY DISCREPANCY.
10. SIZE AND FINAL LOCATION OF ALL OPENINGS AND CONNECTIONS SHALL BE COORDINATED WITH EQUIPMENT MANUFACTURER/SUPPLIER. ALL EQUIPMENT PAD DIMENSIONS INDICATED ON THE DRAWINGS SHALL BE VERIFIED WITH MANUFACTURER FOR ACTUAL SIZE OF EQUIPMENT SELECTED.

CONTACTS

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811

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paul.villaluz@mymanatee.org

RECORD DRAWING

THESE RECORD DOCUMENTS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. STANTEC HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

* INDICATES REVISION TO STANDARD MANATEE COUNTY NOTES

RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
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FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS

GENERAL NOTES

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	1"=XX'

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET G–2

6387.002

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LEGEND

EXISTING

- BENCH MARK
- CONCRETE MONUMENT
- IRON PIPE
- IRON ROD
- HUB
- NAIL & DISK
- ELEVATION (×5.23)
- PARCEL ID NO. (1234)
- PARCEL ID NO. (1234 5678)
- LOT NO. (777)
- GUY WIRE
- POWER POLE
- LIGHT POLE
- MAIL BOX
- SIGN
- REFLECTOR
- SPRINKLER
- GAS MARKER
- BACKFLOW PREVENTER
- BLOW OFF VALVE
- FIRE HYDRANT
- WATER VALVE
- AIR RELEASE VALVE
- WATER METER
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEAN OUT
- SB# SOIL BORING LOCATION
- TEL TELEPHONE SERVICE BOX
- FLOW DIRECTION
- GRATE INLET
- MITERED END SECTION
- BUSH
- TREE
- OAK TREE
- PALM TREE
- PINE TREE
- EDGE OF VEGETATION

- CHAIN LINK FENCE
- WOOD FENCE
- X — BARBED WIRE FENCE
- FM — FORCE MAIN
- PW — POTABLE WATER
- RW — RECLAIMED WATER
- SS — SANITARY SEWER
- SD — STORM DRAIN
- GAS — GAS LINE
- OCATV — OVERHEAD CABLE TV
- BCATV — BURIED CABLE TV
- OE — OVERHEAD ELECTRIC
- BE — BURIED ELECTRIC
- OHVER — OVERHEAD VERIZON
- BVER — BURIED VERIZON
- VER — VERIZON
- BU — BURIED UTILITY
- OHU — OVERHEAD UTILITY
- AIR — AIR LINE
- EFF — EFFLUENT MAIN
- FBW — FILTER BACK WASH
- RCW — RECLAIMED MAIN
- SS — SANITARY SEWER
- TS — THICKENED SLUDGE
- WAS — WASTE ACTIVATED SLUDGE
- RAIL ROAD TRACKS
- EDGE OF CONCRETE
- EDGE OF ROAD
- TOE OF SLOPE
- TOP OF BANK
- PROPERTY LINE
- RIGHT OF WAY
- CONCRETE
- ASPHALT
- AIR — ABANDONDED
- DEMOLITION

PROPOSED

- MAIN
- VALVE
- CHECK VALVE
- BUTTERFLY VALVE
- REDUCER
- TEE
- HORIZONTAL BEND
- VERTICAL BEND
- PLUG
- SIDEWALK
- CONCRETE

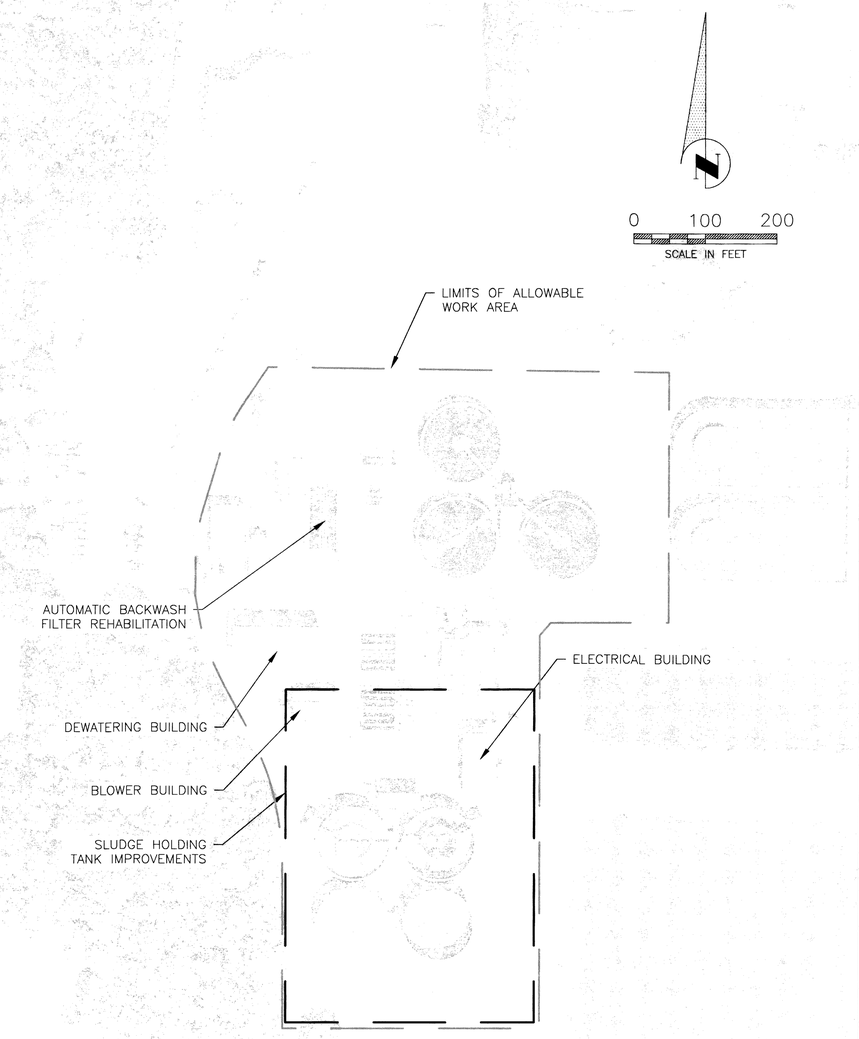

PHOTO CALL OUT SYMBOLS

- 1 / A–1: INDICATES LOCATION OF PHOTO TAKEN
- THE PHOTO BEING REFERENCED
- THE SHEET THE PHOTO IS LOCATED ON

DETAIL CALL OUT SYMBOLS

- 1 / A–1
- THE DETAIL BEING REFERENCED
- THE SHEET THE DETAIL IS LOCATED ON

SECTION CUT SYMBOLS

- 1 / A–1
- DIRECTION OF THE SECTION BEING REFERENCED
- THE SECTION BEING REFERENCED
- THE SHEET THE SECTION IS LOCATED ON

SECTION AND DETAIL TITLES

- 1 / A–1 SECTION/DETAL TITLE N.T.S.
- THE SECTION/DETAIL NUMBER
- THE SHEET THE SECTION/DETAIL IS LOCATED ON

RECORD DRAWING

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
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MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS

LEGEND AND AERIAL

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	AS SHOWN

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
STATE OF FLORIDA PROFESSIONAL ENGINEER
1-27-17
Signature & Date

SHEET G–3

6387.003

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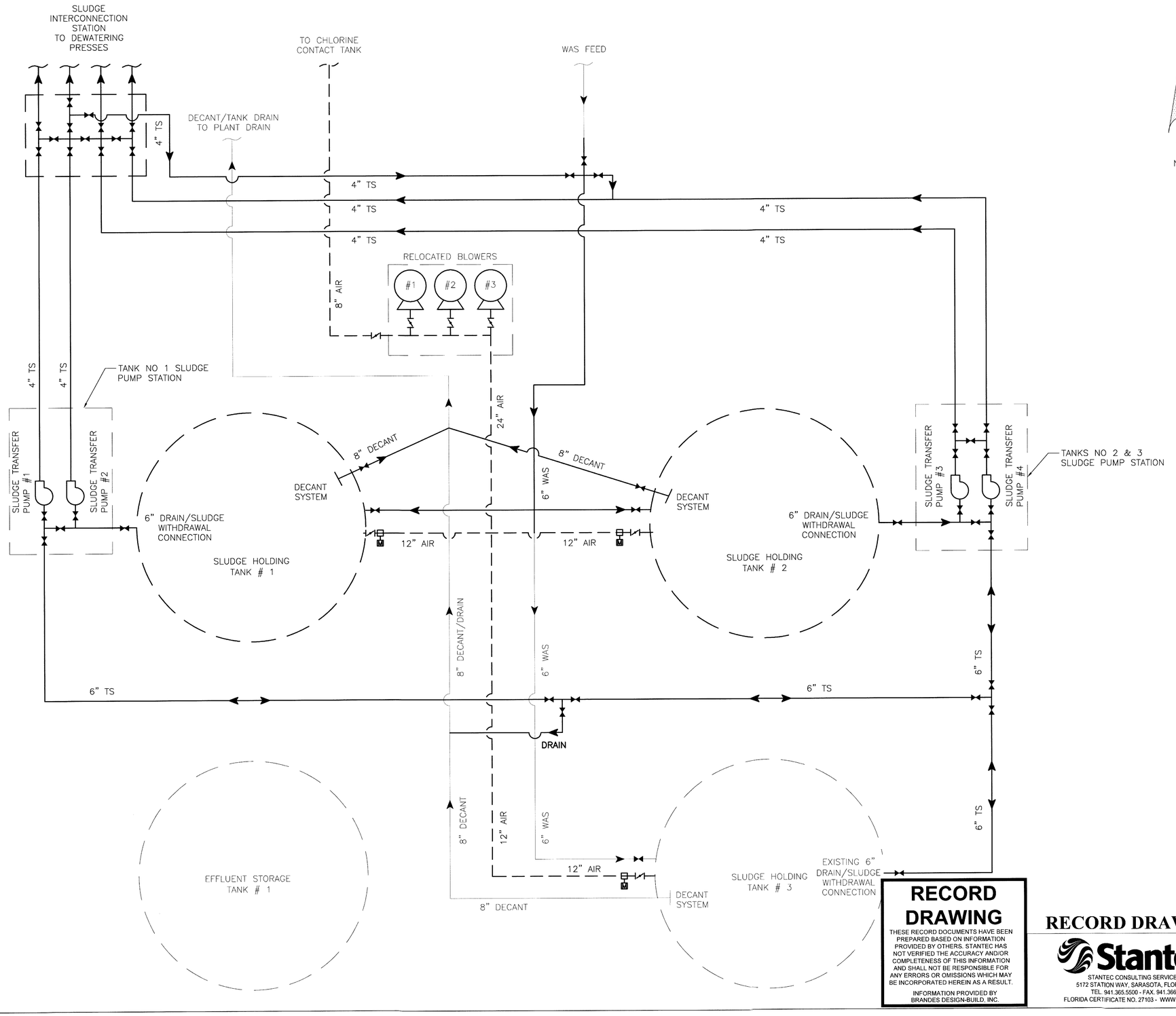

RECORD DRAWING

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PUBLIC WORKS DEPARTMENT
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1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
PROCESS FLOW DIAGRAM

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	N.T.S.

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET G-4

6387.004

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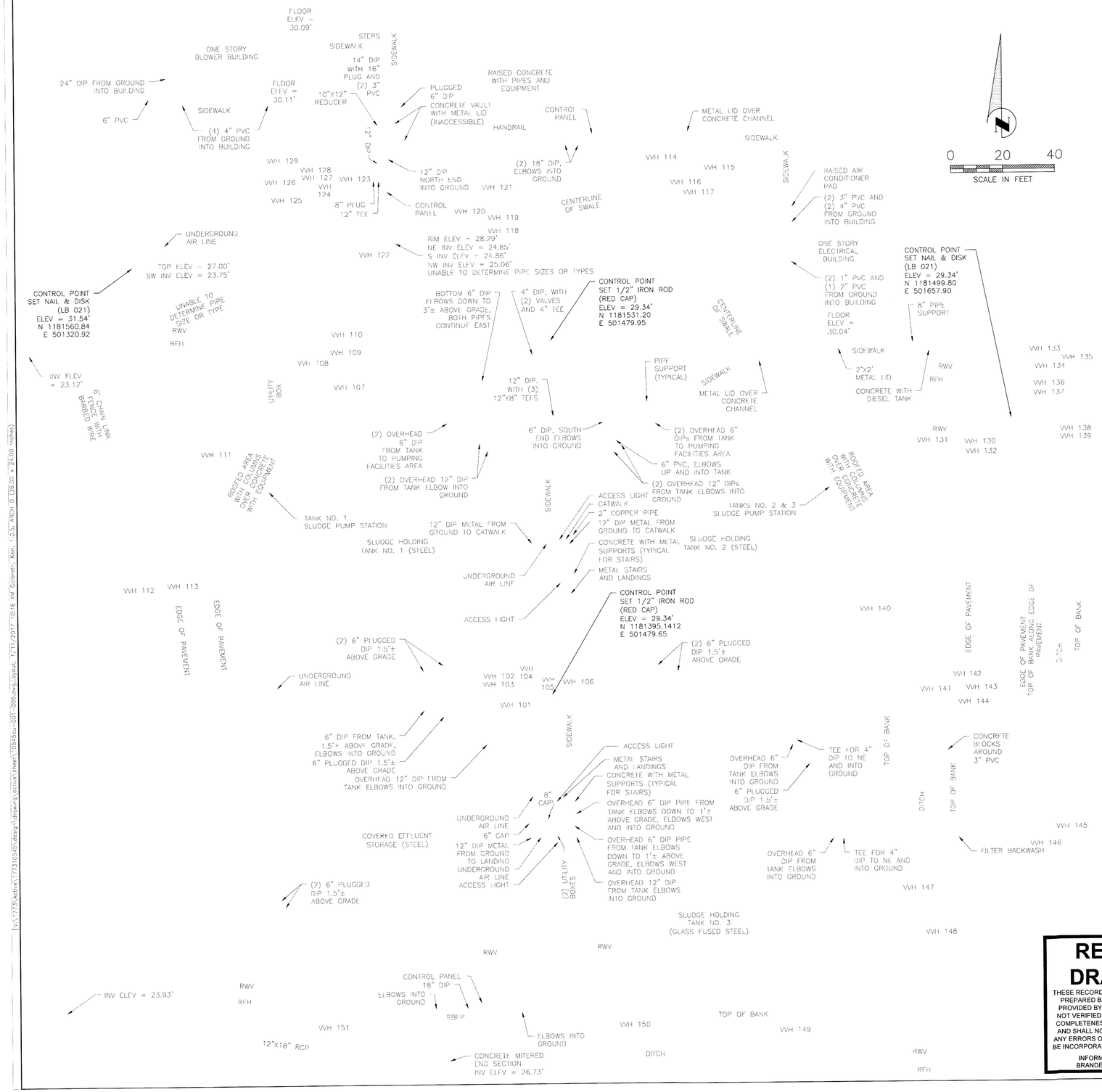

VVH TABLE

TEST HOLE	NORTHING	EASTING	SURF EL	M.D.	T.O.P.	DESCRIPTION
VVH 101	1181394.98	501461.24	33.2	3.0	30.2	18" WRAPPED DIP DRAIN
VVH 102	1181400.96	501466.77	33.3	2.3	31.0	(4) 1" STEEL BURIED ELECTRIC (LIGHTING)
VVH 103	1181397.45	501466.92	33.3	4.2	29.1	20" DIP AIR LINE
VVH 104	1181402.50	501473.73	33.4	4.4	29.0	16" DIP AIR LINE
VVH 105	1181396.74	501476.41	33.4	2.2	31.2	8" DIP DRAIN
VVH 106	1181399.07	501483.57	33.3	2.1	31.2	6" DIP WATER SERVICE
VVH 107	1181512.50	501397.47	31.7	3.3	28.4	CONCRETE CAP DRAIN
VVH 108	1181523.95	501396.91	31.7	2.5	28.7	4" DIP WATER MAIN
VVH 109	1181529.90	501396.42	31.0	4.5	26.5	8" PVC UNKNOWN (YELLOW)
VVH 110	1181532.34	501396.20	31.0	4.3	26.7	6" DIP UNKNOWN
VVH 111	1181487.81	501345.65	33.1	5.1	28.0	6" PVC RECLAIMED WATER (WHITE)
VVH 112	1181437.06	501328.89	32.8	1.5	31.3	1/2" STEEL BURIED ELECTRIC (LIGHTING)
VVH 113	1181437.44	501331.31	32.8	3.3	29.5	18" DIP WATER MAIN (EFF)
VVH 114	1181604.24	501529.98	28.5	1.0	27.5	(1) 1" PVC BURIED ELECTRIC (WHITE) & (8) 1/2" DB BURIED ELEC
VVH 115	1181597.64	501539.13	28.6	2.3	26.3	8" DIP WATER MAIN
VVH 116	1181594.95	501529.65	28.2	3.4	24.8	16" PVC FORCE MAIN (GREEN)
VVH 117	1181587.37	501531.22	28.6	2.0	26.6	(2) 2" PVC BURIED ELECTRIC (GREY)
VVH 118	1181576.19	501456.47	28.1	2.5	25.6	(2) 4" PVC BURIED ELECTRIC (GREY)
VVH 119	1181579.80	501455.96	27.9	1.6	26.3	12" PVC SANITARY SEWER (GREEN)
VVH 120	1181584.27	501455.66	27.7	2.9	24.8	16" PVC FORCE MAIN (GREEN)
VVH 121	1181588.65	501455.62	28.4	2.3	26.1	CONCRETE CAP UNKNOWN
VVH 122	1181562.84	501419.52	28.8	3.4	25.4	16" PVC FORCE MAIN – END (GREEN)
VVH 123	1181591.78	501399.80	29.0	1.2	27.8	6" DIP UNKNOWN
VVH 124	1181591.07	501398.26	29.0	3.8	25.2	16" PVC FORCE MAIN (GREEN)
VVH 125	1181588.96	501385.76	29.7	1.8	27.9	6" DIP UNKNOWN
VVH 126	1181593.70	501384.64	29.8	2.5	27.3	(2) 4" PVC BURIED ELECTRIC
VVH 127	1181595.69	501384.46	29.8	1.1	28.7	1" STEEL UNKNOWN
VVH 128	1181596.70	501384.42	29.8	3.5	26.3	12" PVC UNKNOWN
VVH 129	1181599.34	501384.17	29.9	3.0	26.9	6" PVC RECLAIMED WATER (WHITE)
VVH 130	1181491.19	501634.10	28.8	0.7	28.1	2" PVC BURIED ELECTRIC & (8) 1" DB BURIED ELECTRIC
VVH 131	1181491.24	501638.36	29.1	1.6	27.5	6" PVC RECLAIMED WATER (WHITE)
VVH 132	1181488.93	501638.20	29.2	5.2	24.0	16" PVC UNKNOWN (GREEN)
VVH 133	1181525.11	501665.54	29.1	1.7	27.4	6" PVC RECLAIMED WATER (WHITE)
VVH 134	1181523.14	501669.65	28.9	1.5	27.4	1" STEEL BURIED ELECTRIC
VVH 135	1181523.34	501676.04	30.0	4.1	25.9	6" PVC UNKNOWN (BLUE)
VVH 136	1181512.78	501665.63	29.2	0.8	28.4	2" PVC UNKNOWN (WHITE)
VVH 137	1181508.21	501666.16	29.0	3.8	25.2	16" PVC UNKNOWN (GREEN)
VVH 138	1181495.76	501675.51	29.8	4.6	25.2	16" PVC UNKNOWN (GREEN)
VVH 139	1181493.07	501675.59	29.8	3.8	26.0	6" PVC UNKNOWN (BLUE)
VVH 140	1181427.32	501612.69	31.5	2.8	28.7	6" DIP SLUDGE LINE
VVH 141	1181395.71	501621.19	29.7	0.9	28.8	18" DIP (EFF)
VVH 142	1181402.09	501633.96	29.2	1.5	27.7	6" PVC RECLAIMED WATER (WHITE)
VVH 143	1181397.29	501638.52	29.6	2.5	27.1	16" PVC UNKNOWN – END (GREEN)
VVH 144	1181394.41	501637.12	29.5	5.2	24.3	18" DIP DRAIN
VVH 145	1181342.30	501672.74	29.4	3.7	25.7	6" PVC UNKNOWN (BLUE)
VVH 146	1181339.73	501668.25	29.1	3.4	25.7	6" PVC UNKNOWN (BLUE)
VVH 147	1181322.59	501614.83	29.7	1.8	27.9	18" DIP (EFF)
VVH 148	1181303.69	501622.36	28.3	0.9	27.4	6" PVC RECLAIMED WATER (WHITE)
VVH 149	1181268.17	501567.21	30.2	1.6	28.6	6" PVC RECLAIMED WATER (WHITE)
VVH 150	1181266.62	501504.94	30.4	0.8	29.6	6" PVC RECLAIMED WATER (WHITE)
VVH 151	1181270.26	501389.82	31.8	2.4	29.4	CONCRETE CAP RECLAIMED WATER

* VVH = VERIFIED VERTICAL AND HORIZONTAL
M.D. = MEASURE DOWN
T.O.P. = TOP OF PIPE/UTILITY

NOTES:

VVH TABLE PROVIDES THE FINDINGS OF SUBSURFACE INVESTIGATIONS PERFORMED BY GEORGE F. YOUNG. THE VVH DATA PROVIDED IS FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES. DATA PRESENTED IN THE VVH TABLE WAS DETERMINED BASED ON INDUSTRY RECOGNIZED PROCEDURES FOR FINDING AND LOCATING UNDERGROUND UTILITIES AND FEATURES. ALTHOUGH EFFECTIVE AND RELIABLE, THERE IS THE POSSIBILITY THAT ALL UTILITIES MAY NOT BE DETECTED DUE TO ENVIRONMENTAL CONDITIONS, SOIL CONDITIONS, WATER TABLE, EXCESSIVE DEPTH, AND/OR FEATURE MAKEUP. VVH DATA WAS CROSS CHECKED WITH AVAILABLE RECORD DRAWING INFORMATION AND THE TABLE BELOW IDENTIFIES ALTERNATE INTERPRETATIONS OF SOME OF THE IDENTIFIED PIPE USES AND SIZES.

RECORD DRAWING DATA

VVH#	DESCRIPTION
VVH 103	24" STEEL AIR MAIN
VVH 107	8" PVC DRAIN LINE
VVH 108	4" DIP RCW LINE
VVH 110	6" DIP RCW LINE
VVH 115	8" WAS LINE
VVH 122	16" PVC FORCE MAIN (PREVIOUSLY TO OLD FILTERS)
VVH 123	6" DIP AIR MAIN
VVH 124	16" PVC FORCE MAIN (PREVIOUSLY TO OLD FILTERS)
VVH 125	6" DIP AIR MAIN
VVH 140	4" DIP SLUDGE LINE
VVH 145	6" PVC FILTER BACKWASH LINE
VVH 146	6" PVC FILTER BACKWASH LINE

RECORD DRAWING

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL 941.365.5500 - FAX 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
EXISTING SLUDGE HOLDING FACILITY
SITE PLAN

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	1"=20'

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

KELLY BLAKE
FLORIDA P.E. # 69879
ECH FOR CONSTRUCTION
1-27-17
ROBERT J. HALBACH, PE
FL. LIC. 40136
Signature & Date

STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET C-1

6387.005

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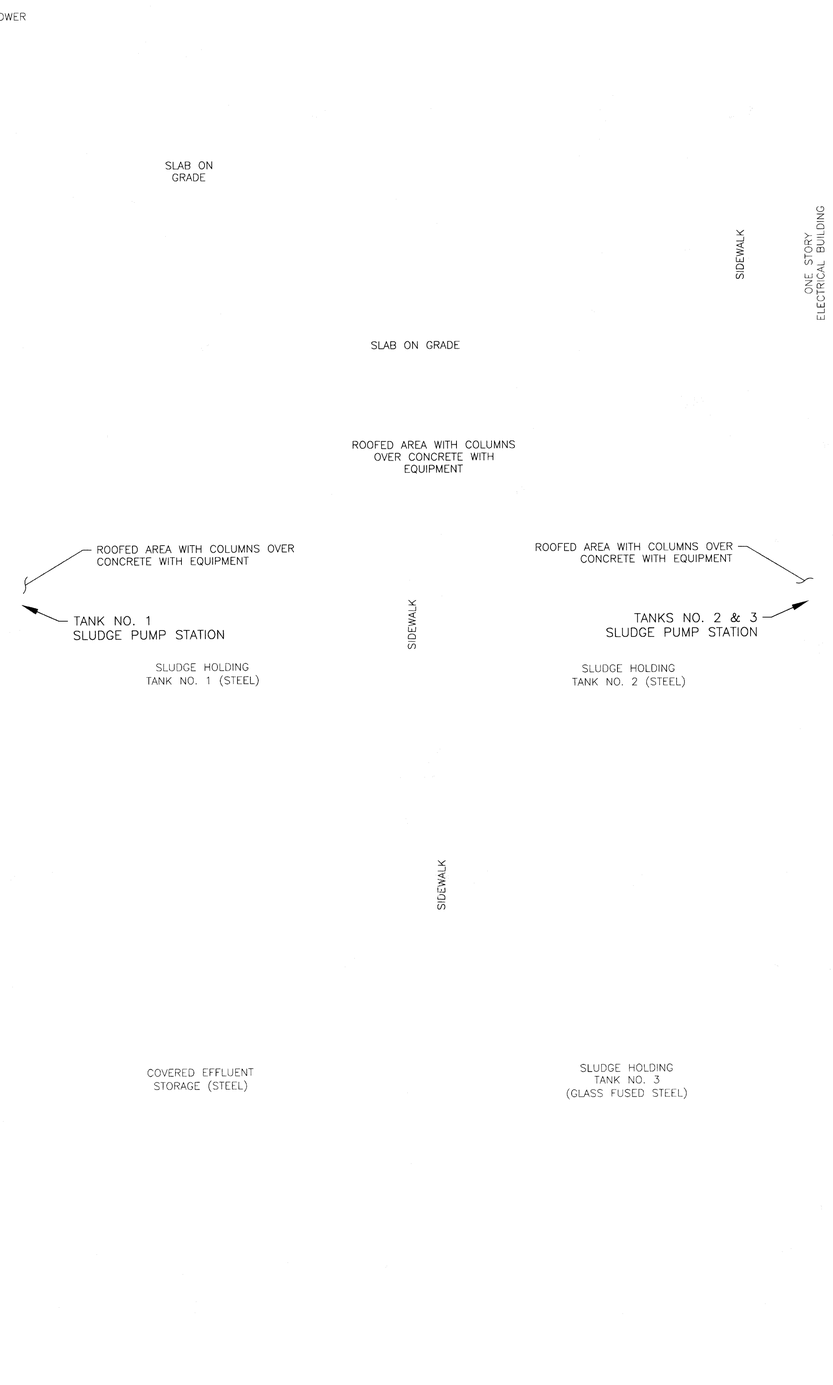

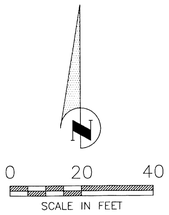

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES

1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
EXISTING SLUDGE HOLDING FACILITY
SITE TOPOGRAPHY

NO.	REVISION DESCRIPTION	BY	DATE
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~~KELLY BLAKE~~
~~FLORIDA P.E. # 69876~~
~~EOR FOR CONSTRUCTION~~
1-19-17

ROBERT J. HALBACH, PE
FL. LIC. 40139
Signature & Date

STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET C-2

RECORD DRAWING

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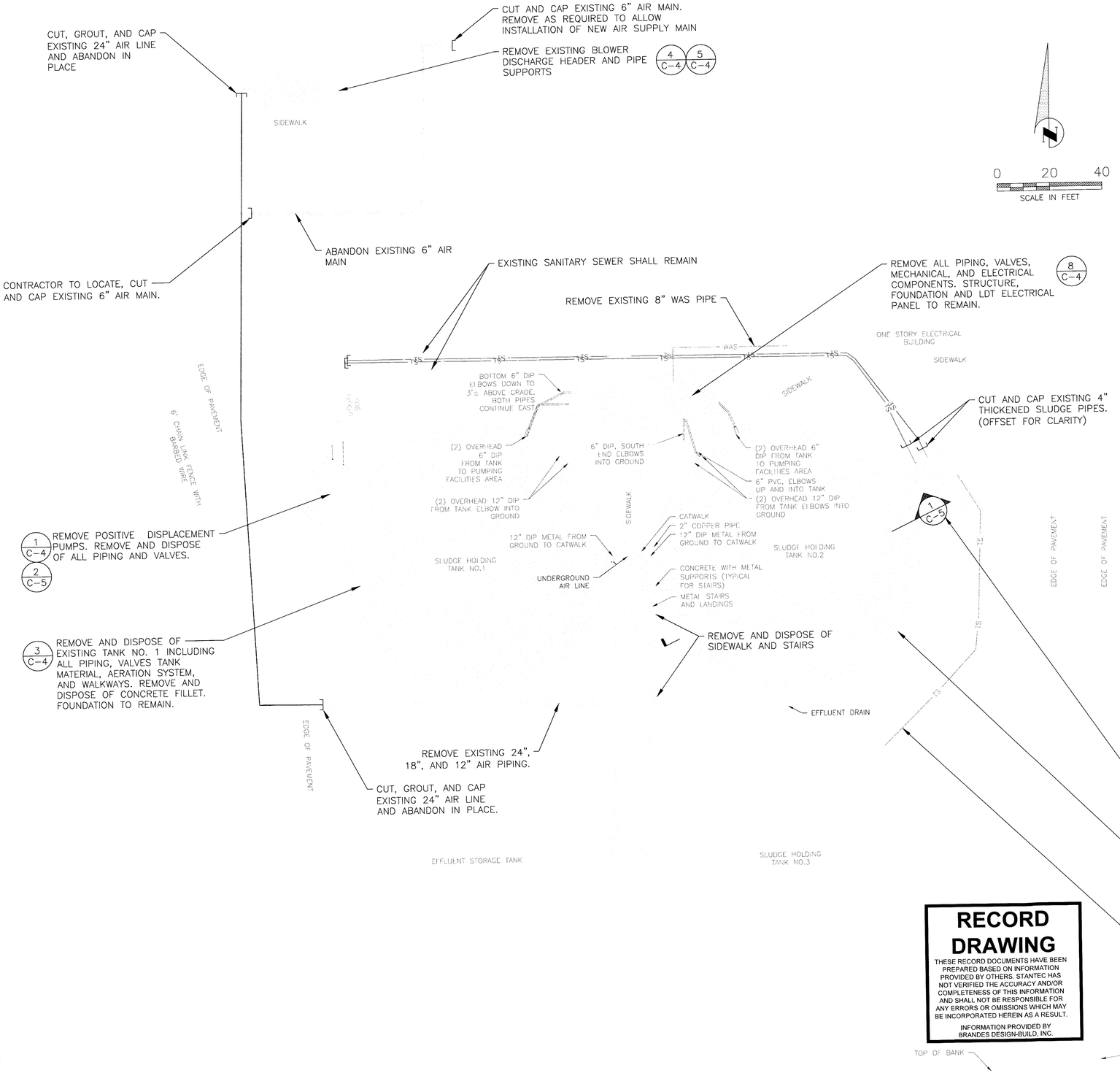

MAINTENANCE OF FLOW NOTES:

1. THE CONTRACTOR SHALL, AT HIS OWN COST, PROVIDE FOR THE FLOW OF SEWERS, DRAINS, AND PROCESS WATERS DURING THE PROGRESS OF THE WORK.
2. THE CONTRACTOR SHALL PREPARE A WRITTEN MAINTENANCE OF FLOW PLAN AND SUBMIT IT TO THE COUNTY FOR REVIEW AND APPROVAL PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES.
3. THE MAINTENANCE OF FLOW PLAN SHALL INCLUDE THE CONTRACTOR'S PROPOSED SEQUENCING OF WORK. INFORMATION TO BE SUBMITTED TO THE COUNTY FOR REVIEW PRIOR TO COMMENCEMENT OF THE WORK SHALL INCLUDE, BUT NOT LIMITED TO:
   - 3.1. SLUDGE REMOVAL AND DISPOSAL MEANS AND METHODS INCLUDING METHOD OF DEWATERING, TRANSPORTATION OF MATERIAL, TO ANY INTERMEDIATE SITE PRIOR TO DISPOSAL SITE AND THE FINAL DISPOSAL SITE.
   - 3.2. DISINFECTION MEANS AND METHODS INCLUDING CHEMICALS AND STRENGTHS OF CHEMICALS TO BE UTILIZED FOR NECESSARY ITEMS.
   - 3.3. TANK DEMOLITION MEANS AND METHODS INCLUDING EQUIPMENT AND DISPOSAL LOCATION. THE SUBMITTALS SHALL INCLUDE APPROVED METHODS OF CUTTING OF STEEL AND FIBERGLASS AND RESPIRATION EQUIPMENT NECESSARY FOR MEETING AIR QUALITY STANDARDS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING, SUBMITTING, AND EXECUTING A SEQUENCE OF CONSTRUCTION THAT MINIMIZES THE TIME THAT ANY EQUIPMENT IS OUT OF SERVICE. THE CONTRACTOR SHALL DEVELOP A CONSTRUCTION SEQUENCE SO THAT TWO SLUDGE HOLDING TANKS AND ASSOCIATED EQUIPMENT, PIPING, AND APPURTENANCES ARE ALWAYS IN SERVICE.
   - 4.1 SLUDGE HOLDING TANK NO. 1 AND ASSOCIATED SLUDGE PUMPING STATION WILL REMAIN IN SERVICE AND OPERATIONAL WHILE SLUDGE HOLDING TANK NO. 2 IS BEING DEMOLISHED AND NEW TANK CONSTRUCTED.
   - 4.2 CONTRACTOR TO PROVIDE TEMPORARY FLOW FROM SLUDGE TANK NO. 3 TO SLUDGE TANK NO. 1 WHILE SLUDGE TANK NO. 2 WORK IS OCCURRING.
   - 4.3 EXISTING AERATION SYSTEM MUST BE MAINTAINED UNTIL NEW AERATION SYSTEM CAN BE ACTIVATED.

DEMOLITION NOTES:

1. CONTRACTOR SHALL DESIGN, INSTALL, AND REMOVE TEMPORARY WORKS NECESSARY TO GAIN ACCESS TO WORK AREAS FOR REMOVAL AND INSTALLATION OF EQUIPMENT.
2. UNLESS OTHERWISE NOTED CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF ALL DEMOLITION MATERIAL.
3. ALL TANKS SHALL BE DRAINED, CLEANED, AND DISINFECTED PRIOR TO DEMOLITION. THE COUNTY WILL DRAIN THE TANKS TO WITHIN 2' OF BOTTOM. CONTRACTOR IS RESPONSIBLE FOR REMOVING EXCESS SLUDGE WITHIN THE TANKS BELOW THE 2' LINE. CONTRACTOR SHALL COORDINATE ALL SLUDGE REMOVAL WITH THE COUNTY.
4. TANK DEMOLITION METHODS SHALL NOT COMPROMISE THE EXISTING FOUNDATIONS. CONTRACTOR SHALL BE REQUIRED TO HAVE AN INVESTIGATION PERFORMED BY A LICENSED GEOTECHNICAL ENGINEER AND STRUCTURAL ENGINEER TO ESTABLISH THE CONDITION OF THE EXISTING TANK FOUNDATION. THE ENGINEERING REPORT SHALL BE SUBMITTED TO THE COUNTY TO CERTIFY THE CONDITIONS OF THE EXISTING FOUNDATIONS.
5. CONTRACTOR SHALL REMOVE BURIED PIPING SHOWN, AND VERIFIED BASED ON FIELD CONDITIONS.
6. CONTRACTOR SHALL CUT FLUSH ALL PIPES, BOLTS, LAGS, CONDUITS, ETC. AND GROUT FILL ALL HOLES AND PENETRATIONS, NOT INTENDED FOR USE IN THE COMPLETED PROJECT TO A MINIMUM DEPTH OF 6".

RECORD DRAWING

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MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
SLUDGE HOLDING FACILITY
DEMOLITION PLAN

NO.	REVISION DESCRIPTION	BY	DATE
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SURVEY #	000
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SCALE	1"=20'

	BY	DATE
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DESIGNED	KKB	05/23/13
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CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E.# 40139
1-27-17
Signature & Date

SHEET C-3

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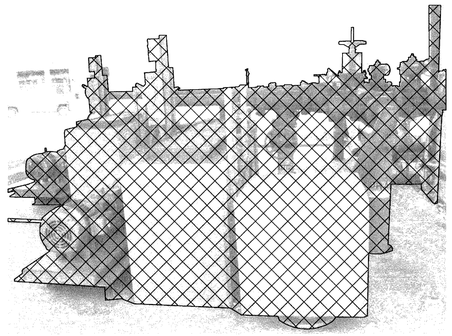
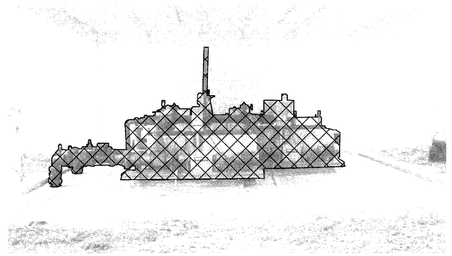


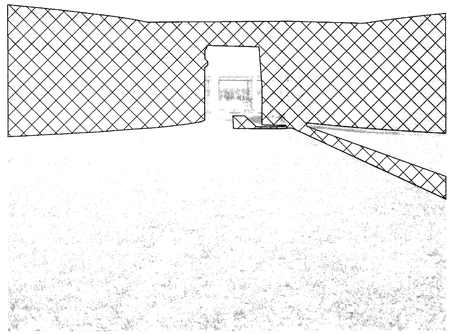
1 / C-3 TANK NO. 1 SLUDGE PUMP STATION
N.T.S.

REMOVE POSITIVE DISPLACEMENT PUMPS. REMOVE AND DISPOSE OF ALL PIPING, VALVES, AND CONCRETE PUMP PEDESTALS.



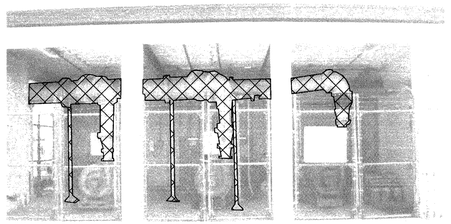
2 / C-3 TANKS NO. 2 & 3 SLUDGE PUMP STATION
N.T.S.

REMOVE POSITIVE DISPLACEMENT PUMPS. REMOVE AND DISPOSE OF ALL PIPING, VALVES, AND CONCRETE PUMP PEDESTALS.



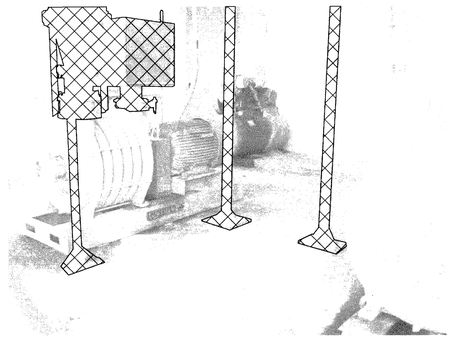
3 / C-3 TANKS NO. 1 & 2
N.T.S.

REMOVE AND DISPOSE OF EXISTING TANKS INCLUDING ALL PIPING, VALVES, TANK MATERIAL, AERATION SYSTEM, AND WALKWAYS, AND CONCRETE FILLET. PRESERVE FOUNDATION.



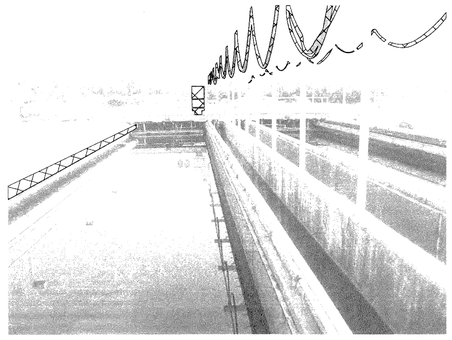
4 / C-3 BLOWER ROOM
N.T.S.

REMOVE AND DISPOSE OF ABOVE GRADE PIPING, AIR HEADER, AND SUPPORTS.



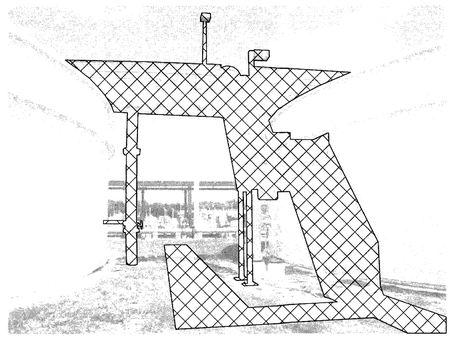
5 / C-3 BLOWER ROOM
N.T.S.

REMOVE AND DISPOSE OF ALL ABOVE GRADE AIR PIPING SUPPORTS. (TYPICAL OF 3).



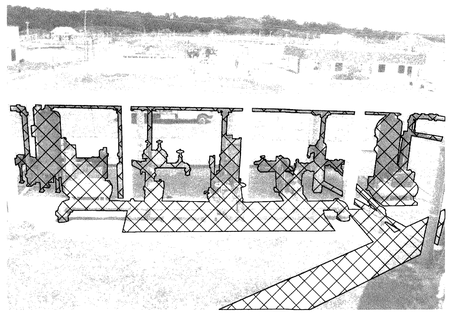
6 / M-7 AUTOMATIC BACKWASH FILTER
N.T.S.

REMOVE, DISPOSE OF, AND REPLACE FILTER COMPONENTS INCLUDING: POROUS PLATES, MEDIA, WASH TROUGH, RAIL CAP, TRAVEL TIP, BACKWASH DRIVE ASSEMBLY, ELECTRICAL CABLE FESTOONING SYSTEM, AND CONTROL SYSTEM.



7 / C-3 TANK NO. 1 AND 2 STAIRS AND BRIDGE
N.T.S.

REMOVE AND DISPOSE OF ACCESS STAIRS AND BRIDGE. REMOVE STAIR FOUNDATION AND COLUMNS.



8 / C-3 PROPOSED BLOWER LOCATION
N.T.S.

REMOVE AND DISPOSE OF ALL PIPING, VALVES, MECHANICAL, ELECTRICAL COMPONENTS OF DAF RE-CIRCULATION STATION (CURRENTLY NOT IN SERVICE), STRUCTURE, FOUNDATION, AND LDT ELECTRICAL PANEL TO REMAIN IN SERVICE

RECORD DRAWING

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

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FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
DEMOLITION DETAILS

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1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

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SURVEY #	000
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SCALE	N.T.S.

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
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EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
STATE OF FLORIDA PROFESSIONAL ENGINEER
1-27-17
Signature & Date

SHEET C-4

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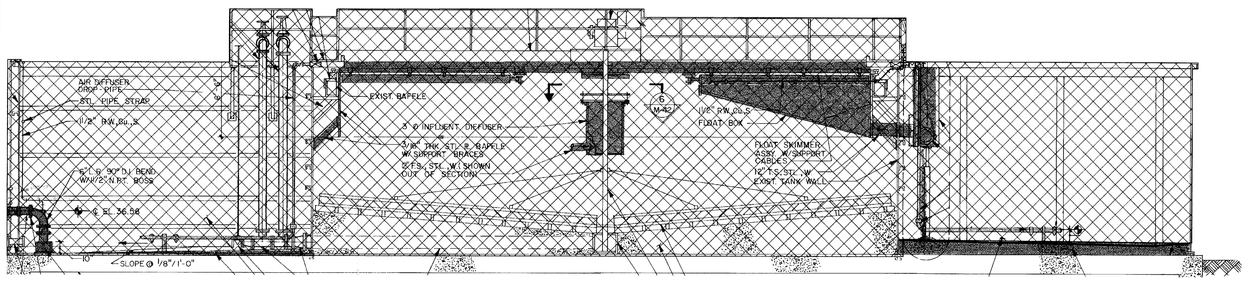

1 / C-3 TYPICAL TANK SECTION

N.T.S.

TANK DEMOLITION NOTES:

1. EXISTING STEEL TANKS WERE ORIGINALLY CONSTRUCTED AS PACKAGE PLANTS AND THEN WERE RETROFITTED INTO DISSOLVED AIR FLOTATION THICKENERS AND LATER SLUDGE HOLDING TANKS. MECHANICAL COMPONENTS DEPICTED ABOVE MAY OR MAY NOT BE CURRENTLY INSTALLED.
2. ALL MATERIALS ABOVE DIGESTER TANK BASE FOUNDATION AND INCLUDING TANK WALLS SHALL BE REMOVED.
3. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEMOLITION MATERIALS FROM SITE.

PUMP STATION DEMOLITION NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING 10 HP INLINE MOYNO POSITIVE DISPLACEMENT PUMPS (MODEL 1G065 G1 CBQ3AAA).
2. CONTRACTOR SHALL REMOVE AND DISPOSE OF CONCRETE EQUIPMENT PADS, PUMP CONTROL PANEL, PIPING, VALVES, SEAL WATER SYSTEM, PIPE SUPPORTS, AND MISCELLANEOUS APPURTENANCES.
3. CONTRACTOR SHALL PROTECT INCOMING ELECTRICAL CONDUIT TO PUMP PANELS.
4. PLAN VIEW SHOWS EXISTING SLAB PENETRATIONS FOR CLARITY. SEE PHOTOS FOR EXISTING ABOVE GRADE PIPING, VALVES, AND APPURTENANCES.

LEGEND

1. PUMP No. 1
2. PUMP No. 2
3. PUMP No. 3
4. PUMP No. 4
5. 4" RECLAIMED WATER
6. 8" SANITARY SEWER
7. 1" PUMP DRAIN
8. CONCRETE EQUIPMENT PAD
9. 4" THICKENED SLUDGE DISCHARGE
10. 2" RECLAIMED WATER
11. WATER SEAL SYSTEM
12. ELECTRICAL FEED

RECORD DRAWING

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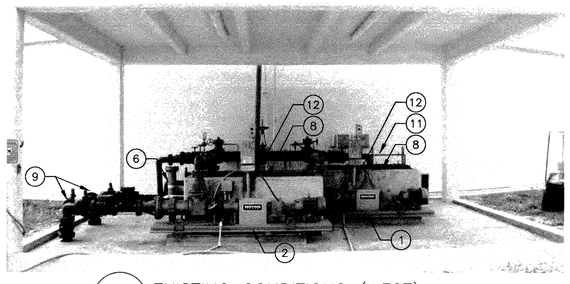
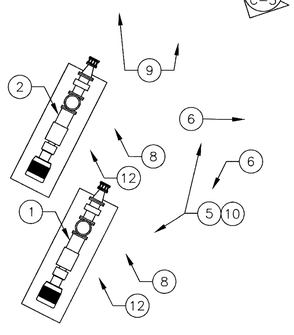
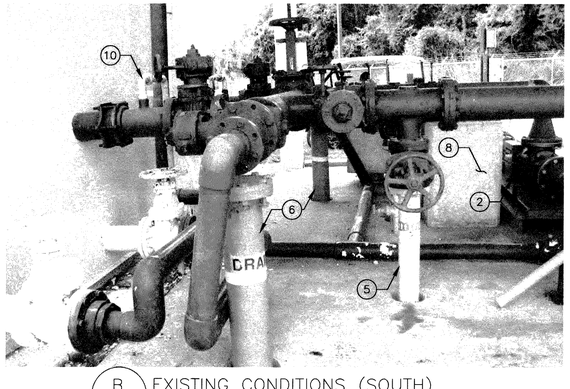


A / C-5 EXISTING CONDITIONS (WEST)

N.T.S.





B / C-5 EXISTING CONDITIONS (SOUTH)

N.T.S.

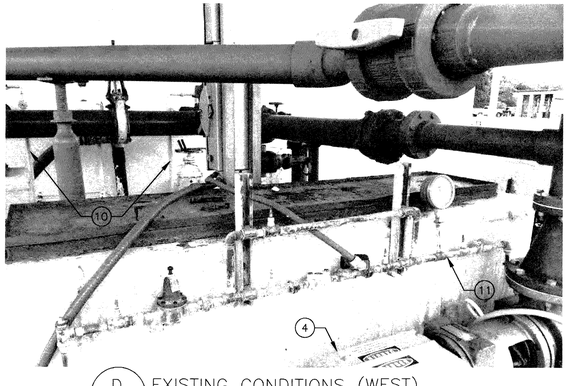
2 / C-3 TANK NO. 1 PUMP STATION

0 5 10

SCALE IN FEET

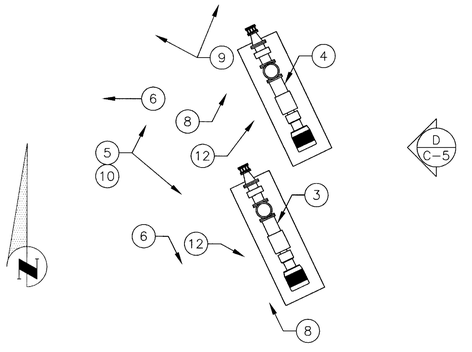
C / C-5 EXISTING CONDITIONS (NORTH)

N.T.S.



D / C-5 EXISTING CONDITIONS (WEST)

N.I.S.



C / C-5

3 / C-3 TANK NO. 2 AND 3 PUMP STATION

0 5 10

SCALE IN FEET

RECORD DRAWINGS

Stantec
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MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS

DEMOLITION DETAILS

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DRAWN	SRP	05/23/13
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EOR FOR CONSTRUCTION
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1-27-17
Signature & Date

SHEET C-5

6387.009

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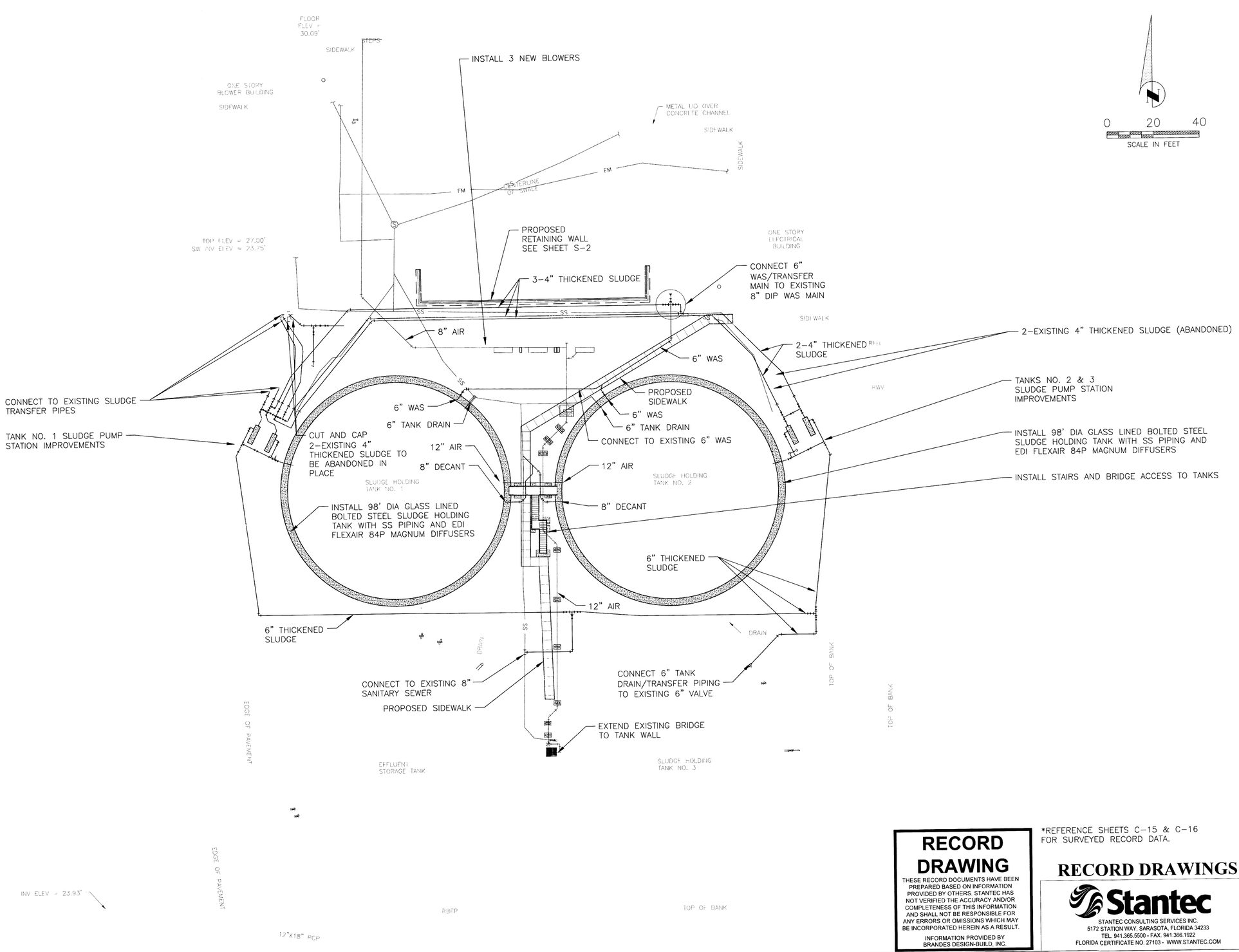


MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES

1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
PROPOSED SLUDGE HOLDING FACILITY SITE PLAN

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	1"=20'

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET C-6

RECORD DRAWING

THESE RECORD DOCUMENTS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. STANTEC HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

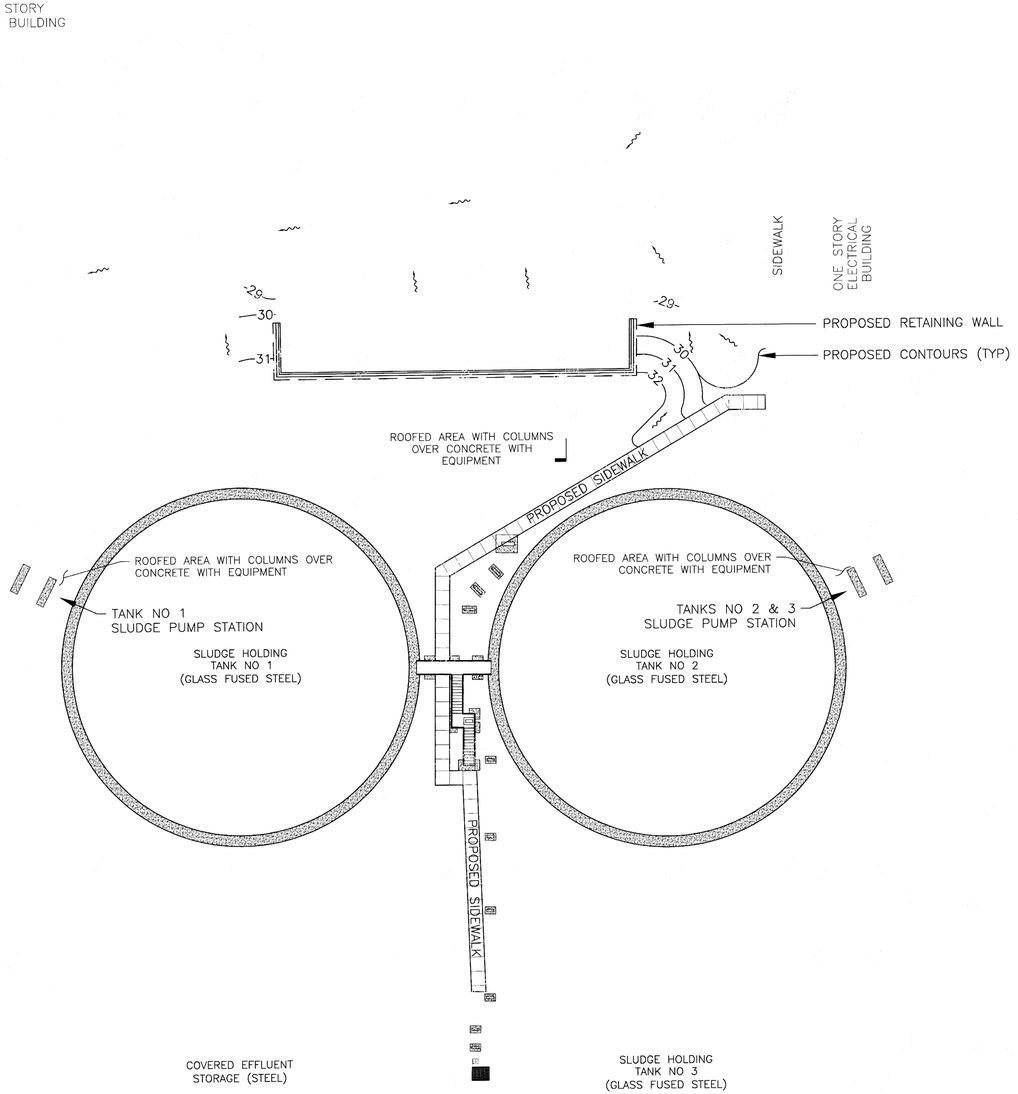
*REFERENCE SHEETS C-15 & C-16 FOR SURVEYED RECORD DATA.

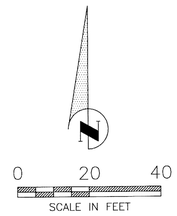
RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

6387.010

NOTE:
ALL DISTURBED AREAS TO BE RESTORED TO EXISTING CONDITIONS. AREAS TO BE REGRADED IN ACCORDANCE WITH SPECIFICATION SECTION 02260. RESODDED IN ACCORDANCE WITH SPECIFICATION SECTION 02485. PAYMENT WILL BE INCLUDED AS INCIDENTAL TO OTHER ITEMS, NO SEPARATE PAYMENT WILL BE MADE FOR RESTORATION.





MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES

1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
PROPOSED SLUDGE HOLDING FACILITY
SITE TOPOGRAPHY

NO.	REVISION DESCRIPTION	BY	DATE
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PROJECT #	177310545
SURVEY #	000
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CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET C-7

RECORD DRAWING
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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

RECORD DRAWINGS

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TEL. 941.365.5500 - FAX. 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

6387.011

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SEE SHEET C-9 FOR CONTINUATION

6"x6"x4" TEE
4" GATE VALVE
4" 45° BEND
8" 45° D.I. BEND
REMOVE EXIST 90° BEND CONNECT TO EXIST 6" RCW (NORTH)
4" 45° BENDS
4" GATE VALVE
INSTALL BENDS AS REQUIRED FOR CONNECTIONS TO EXISTING (TYP)
6"x4" REDUCER
2-4" 45° BENDS
REMOVE EXIST 45° BEND CONNECT TO EXIST 4" RCW (EAST)
4" 45° BEND
8" D.I. 45° BEND
8" D.I. AIR
6" 45° BEND
6" 11.25° BEND
6" WAS
24" AIR
3 M-3 6" WAS
2 M-3 6" DRAIN
INSTALL FITTINGS AS REQUIRED FOR CONNECTIONS TO EXISTING DRAIN
TANK NO. 1 SLUDGE PUMP PAD AND SLUDGE PIPE INTERCONNECT STATION 1 M-5
SLUDGE HOLDING TANK NO. 1
12" AIR
4 M-3 8" DECANTER
1 C-10
1 C-9
12" S.S. AIR
6" PLUG VALVES
6"x6" TEE
6" PLUG VALVE
6" THICKENED SLUDGE
6" 90° BEND
8"x8"x6" TEE
6" 45° BEND
2 C-10
2-12" S.S. 45° BENDS
12" S.S. AIR
2-12" S.S. 90° BENDS
12" BUTTERFLY VALVE
2-12" S.S. 90° BENDS
CONNECT TO EXIST. 12" FLANGE
6" THICKENED SLUDGE
6" 11.25° BEND
6" 90° BEND
4" THICKENED SLUDGE
4" THICKENED SLUDGE
8"x6" REDUCER
6" PLUG VALVE
6"x4" REDUCER
4" PLUG VALVE
6"x6" CROSS
4" THICKENED SLUDGE
6"x4" REDUCER
4" PLUG VALVE
4" 90° BEND
4"x4"x4" TEE
4" 45° BENDS
6" 22.5° BEND
6" 45° BEND
6" WAS
6"x6"x6" WYE
6" WAS 3 M-3
6" 22.5° BEND
6" 11.25° BEND
6" DRAIN 2 M-3
STEEL PIPE SUPPORT
2-24" S.S. 90° BENDS
24" S.S. 45° BEND
12" S.S. AIR
8" DECANTER 4 M-3
12" S.S. 45° BENDS
4" 22.5° BEND
TANKS NO 2 & 3 SLUDGE PUMP STATION SEE 2 M-5
6" 11.25° BEND
6" PLUG VALVE
6"x6" TEE
6" PLUG VALVE
6" 45° BEND
6" 90° BEND
CONNECT TO EXISTING 6" VALVE
SLUDGE HOLDING TANK NO. 2
SLUDGE HOLDING TANK NO. 3
EFFLUENT STORAGE TANK
TANK NO. 1 SLUDGE PUMP PAD AND SLUDGE PIPE INTERCONNECT STATION 1 M-5
6" THICKENED SLUDGE
6" 11.25° BEND
6" 90° BEND
AIR (Aban)
RCW
EFF
BE
SS
WAS
TS (Abgn)
TS (Abgn)
UTL
LP

0 10 20
SCALE IN FEET

Ⓐ AIR PIPING TRANSITION AREA, SEE SHEET C-9 FOR DETAIL

NOTE:
ALL ABOVE GROUND AIR PIPE WILL INCLUDE A 3' WIDE BY 1' HIGH WEED BARRIER. BARRIER WILL BE UNDERNEATH AND CONTOURED ALONG THE AIR PIPE PATH. WEED BARRIER WILL BE 12" OF 1" WASHED, CRUSHED SHELL OVER ONE LAYER OF WEED BARRIER. BEFORE APPLYING WEED BARRIER GROUND WILL BE CLEARED OF ALL VEGETATION AND COMPACTED TO 95% OF MAXIMUM DENSITY. WEED BARRIER SHALL BE MIRASCAPE BY MIRAFI OR APPROVED EQUAL. PAYMENT WILL BE INCLUDED IN THE PRICE PER FOOT OF AIR PIPING INSTALLED.

*REFERENCE SHEETS C-15 & C-16 FOR SURVEYED RECORD DATA.

RECORD DRAWING
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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
PROPOSED YARD PIPING PLAN

NO.	REVISION DESCRIPTION	BY	DATE
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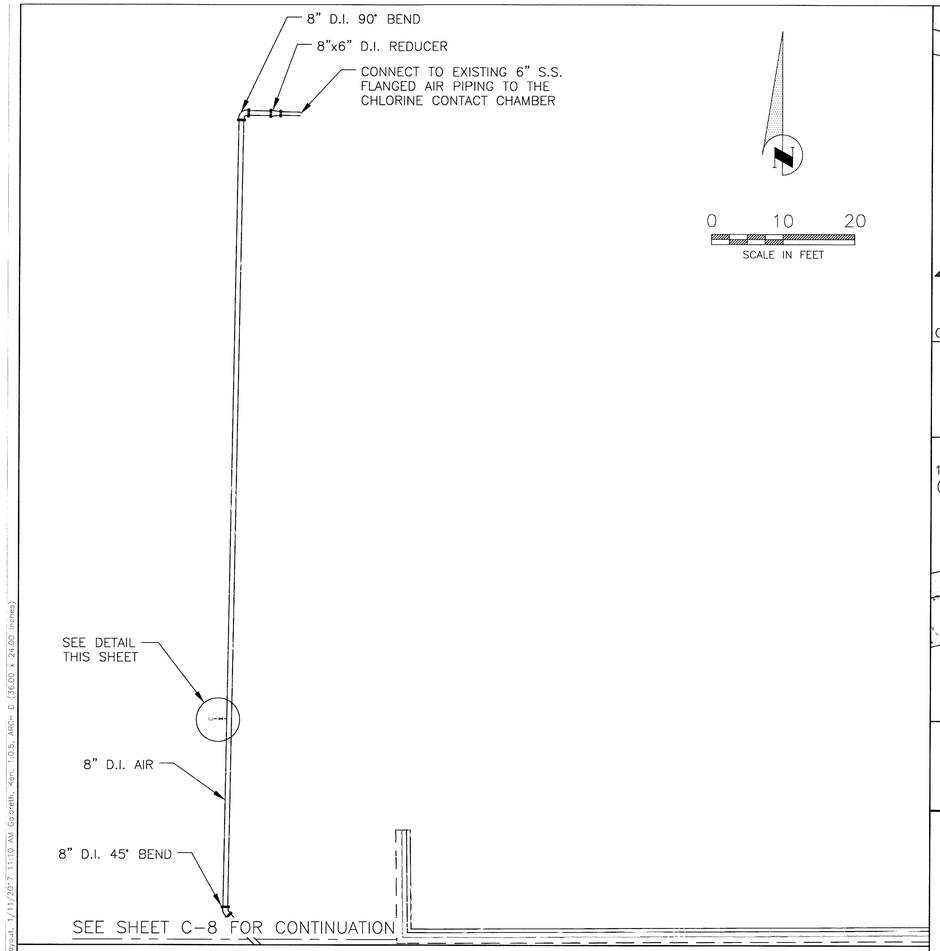
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	1"=10'

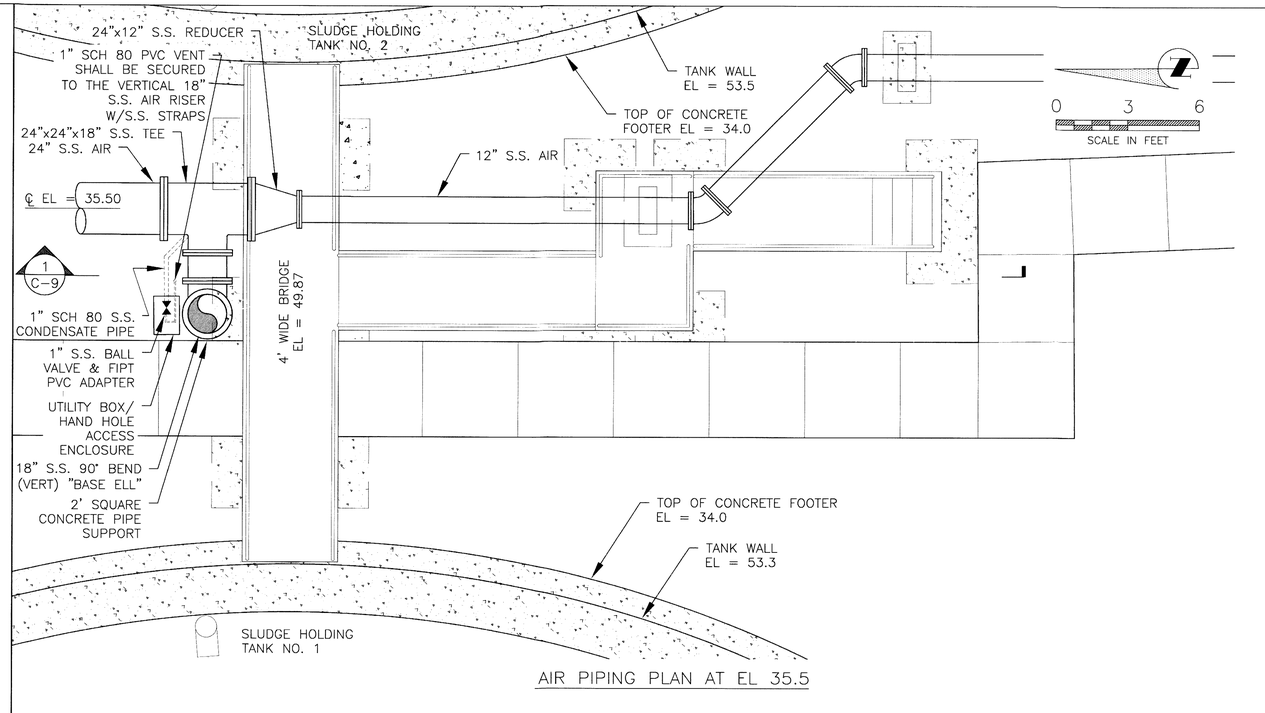
	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
Signature & Date

SHEET C-8

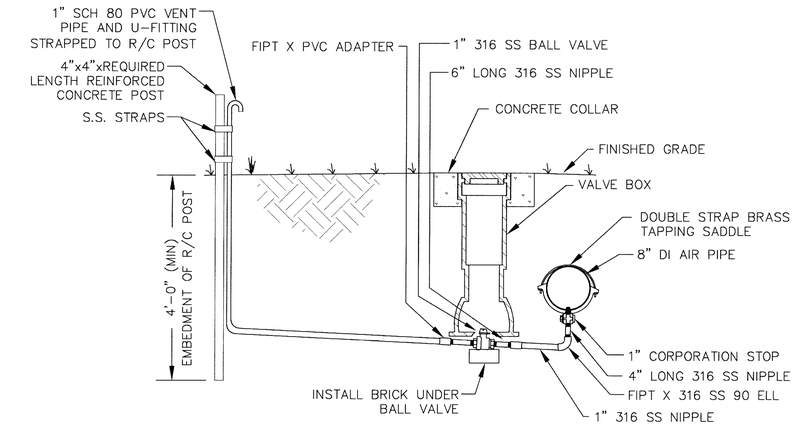
6387.012





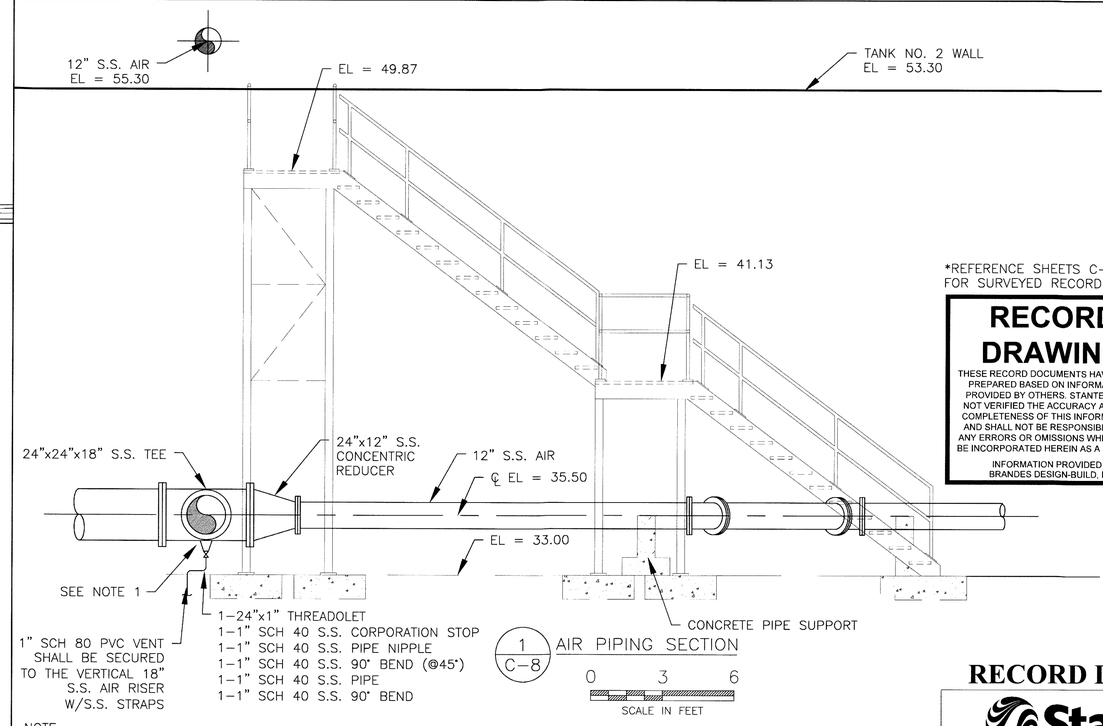
AIR PIPING PLAN AT EL 35.5

NOTES:
1. CONTRACTOR SHALL ROUTE 8" D.I. AIR PIPING TO THE CHLORINE CONTACT MIXING SYSTEM AS REQUIRED TO AVOID CONFLICT WITH EXISTING UTILITIES. PROVIDE MINIMUM OF 24" COVER.



8" D.I. AIR PIPING CONDENSATE OUTLET DETAIL

NOTE: CREATE LOW POINT AT PROPOSED CONDENSATE OUTLET SADDLE.



1 C-8 AIR PIPING SECTION

0 3 6
SCALE IN FEET

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

NOTE:
1. CONTRACTOR SHALL FURNISH AND INSTALL A CONDENSATE OUTLET ASSEMBLY FABRICATED ON THE PROPOSED 24"x24"x18" SCHEDULE 10 STAINLESS STEEL TEE BY WELDING A 24"x1" STAINLESS STEEL THREADOLET BOTTOM-DEAD-CENTER ON THE TEE. CONDENSATE REMOVAL SHALL BE BY A 1" THREADED SCHEDULE 40 STAINLESS STEEL PIPE, FITTINGS, VALVES AND UTILITY BOX AS SHOWN ON THE DRAWINGS. THIS ITEM SHALL BE INCIDENTAL TO THE AIR PIPING SYSTEM.

RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
PROPOSED YARD PIPING
PLAN AND SECTION

NO.	REVISION DESCRIPTION	BY	DATE
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PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	AS SHOWN

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	03/13/14
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
Signature & Date

SHEET C-9

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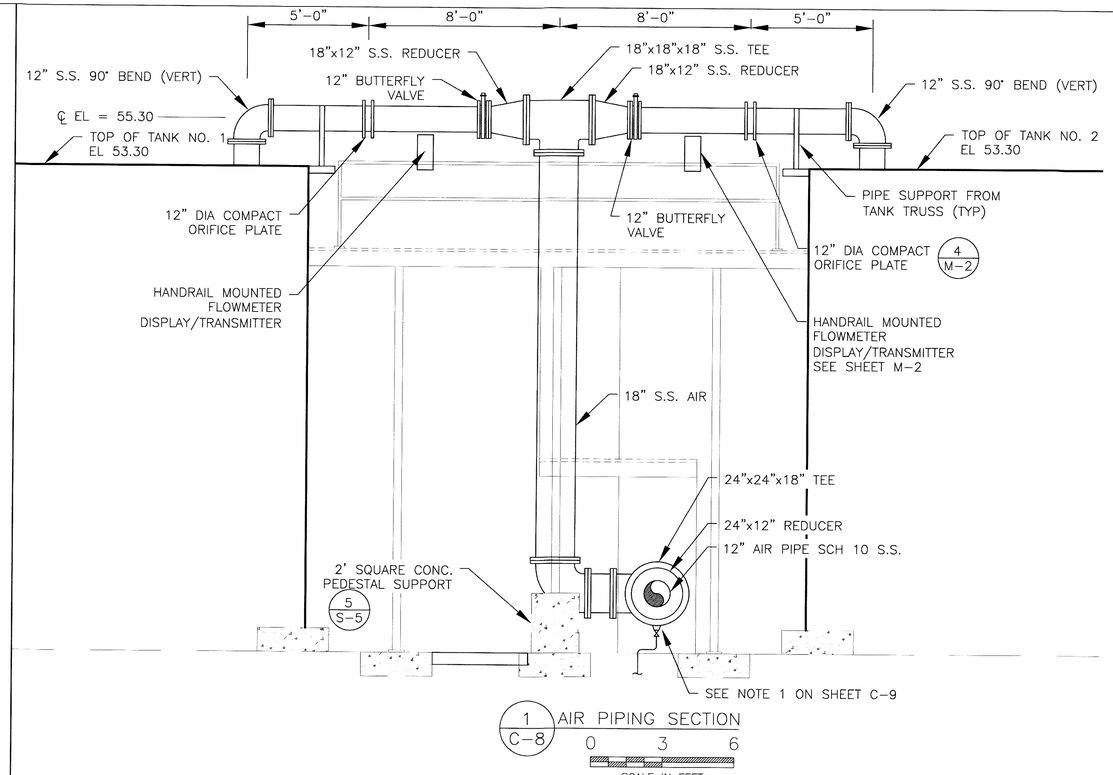

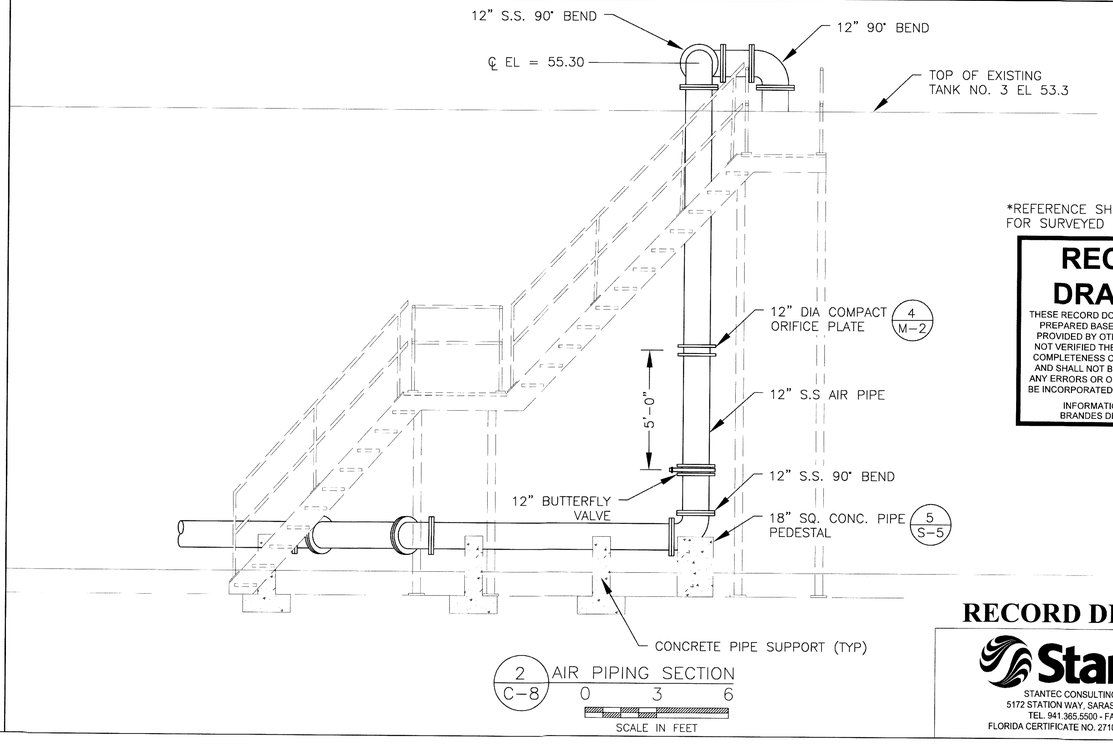

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

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MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
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NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
PROPOSED YARD PIPING PLAN AND SECTION

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CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET C-10

6387.014

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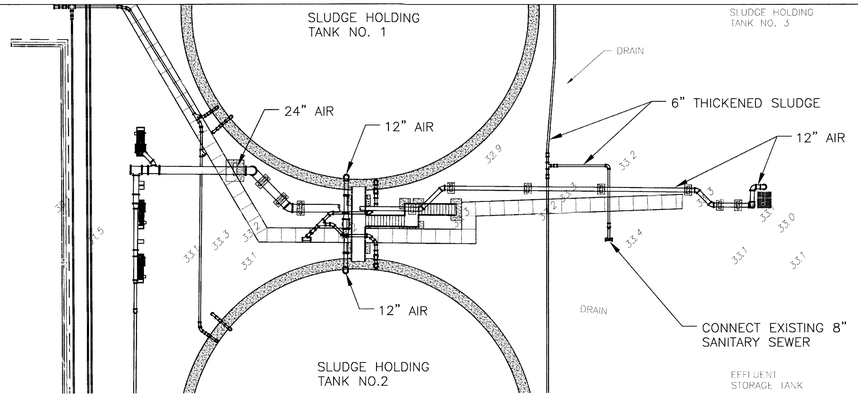

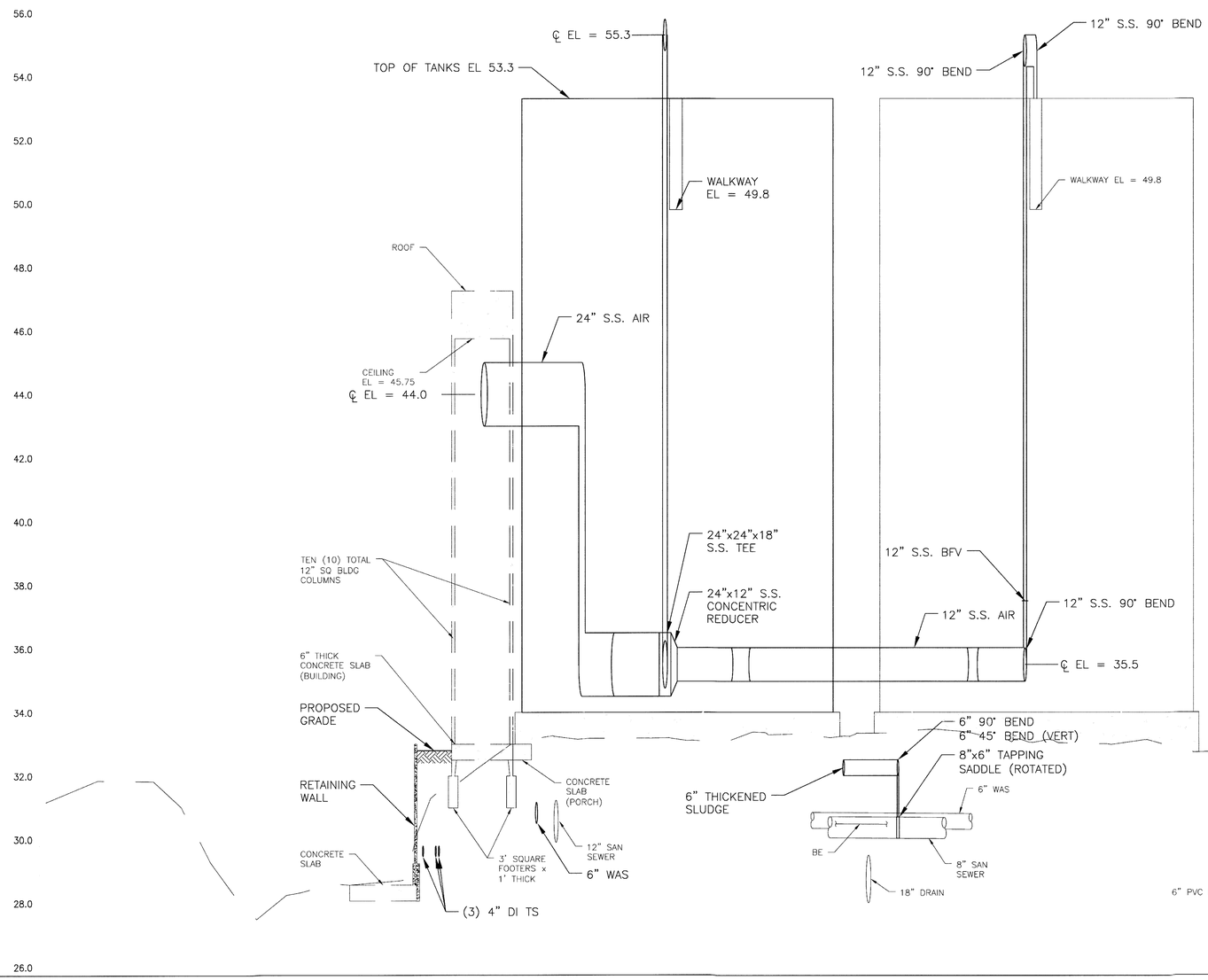

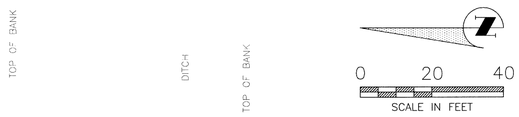

*REFERENCE SHEETS C-15 & C-16 FOR SURVEYED RECORD DATA.

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

NOTE:
ALL BURIED IMPROVEMENTS SHOWN BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR TO COORDINATE WITH PLANT STAFF AND EXCAVATE WITH CAUTION DUE TO POSSIBILITY OF UNIDENTIFIED IMPROVEMENTS.

RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
FLORIDA CERTIFICATE NO. 2703 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
PROPOSED YARD PIPING SECTION

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION:	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
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DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139

Signature & Date

SHEET C-11

6387.015

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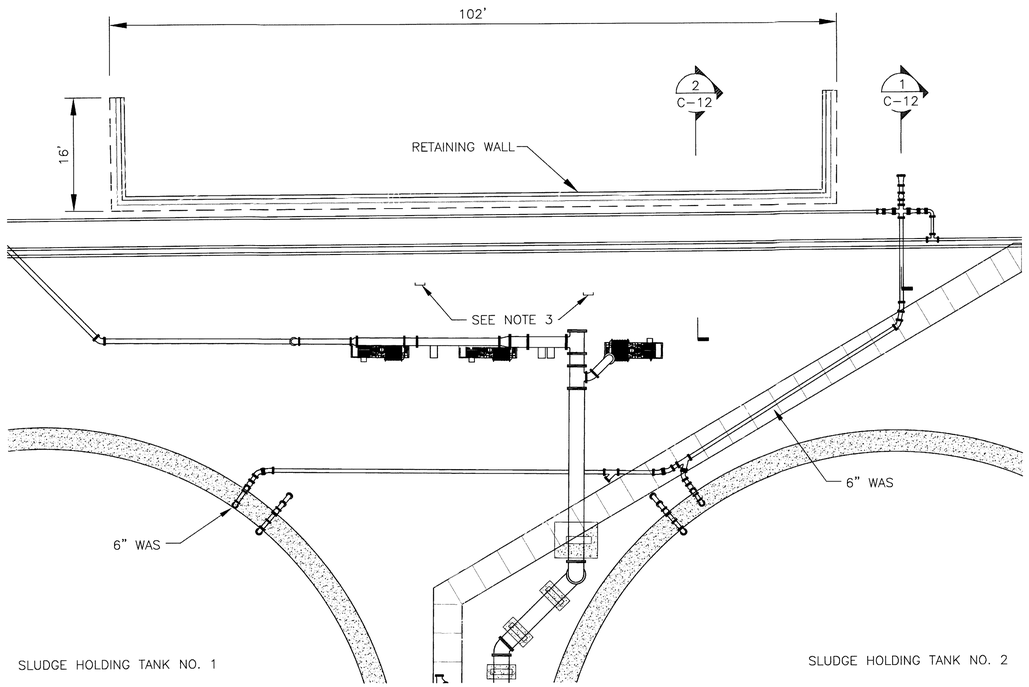

WAS, TS, AND RCW PIPING PLAN VIEW

NOTES:
1. EXISTING FACILITIES ARE DESCRIBED BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY.
2. GRADE BELOW PROPOSED FACILITIES SHALL BE COMPACTED TO 98% PROCTOR PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL CAP ANY EXISTING PIPE PENETRATIONS THAT ARE NOT IN SERVICE UNLESS OTHERWISE SPECIFIED.

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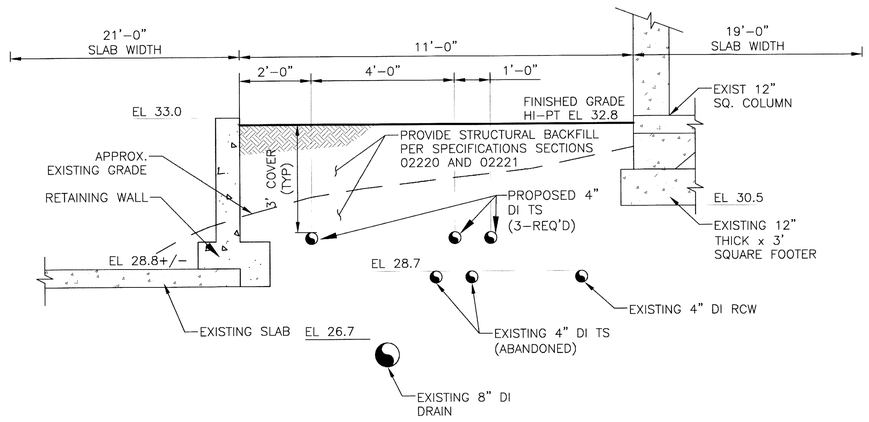

1 / C-12 T.S. PIPE SECTION (3)

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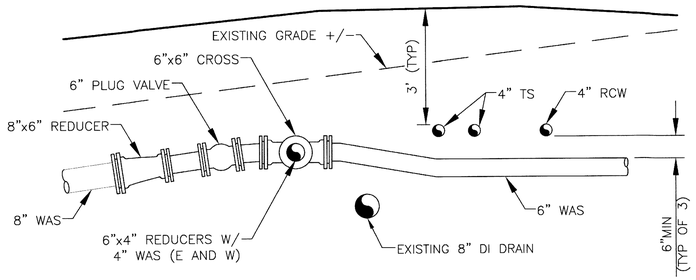

2 / C-12 CONNECTION TO EXISTING 8" WAS PIPE
N.T.S.

RECORD DRAWING

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NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
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CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET C-12

6387.016

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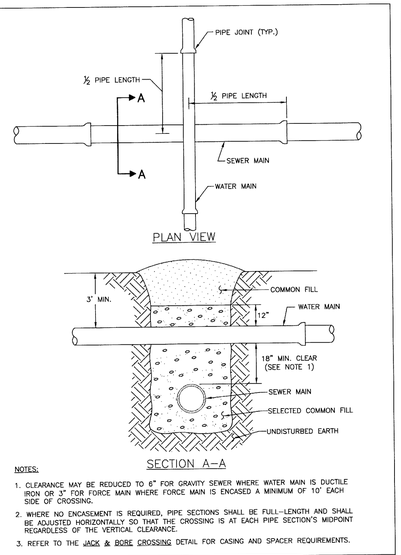


NOTES:

1. CLEARANCE MAY BE REDUCED TO 6" FOR GRAVITY SEWER WHERE WATER MAIN IS DUCTILE IRON OR 2" FOR FORCE MAIN WHERE FORCE MAIN IS ENCASED A MINIMUM OF 10' EACH SIDE OF CROSSING.
2. WHERE NO ENCASEMENT IS REQUIRED, PIPE SECTIONS SHALL BE FULL-LENGTH AND SHALL BE ADJUSTED HORIZONTALLY SO THAT THE CROSSING IS AT EACH PIPE SECTION'S MIDPOINT REGARDLESS OF THE VERTICAL CLEARANCE.
3. REFER TO THE JACK & BORE CROSSING DETAIL FOR CASING AND SPACER REQUIREMENTS.

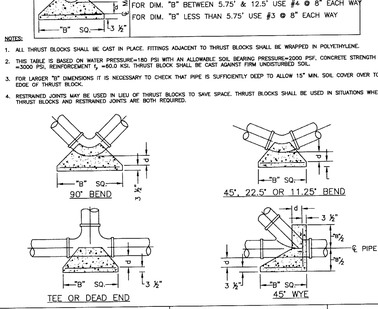
MANATEE COUNTY PUBLIC WORKS DEPARTMENT			
REV.BY	DATE	TYPICAL NEW WATER & SEWER LINE CROSSING	UG-2
CLB/BR	11/10		
		MAY 10, 2011 DATE OF APPROVAL	PAGE 102

THRUST BLOCK DIMENSIONS B ft. x d inches

PIPE SIZE (IN.)	90°BEND B	90°BEND d	45°BEND B	45°BEND d	22.5°BEND B	22.5°BEND d	11.25°BEND B	11.25°BEND d	DEAD END & TEE B	DEAD END & TEE d	45° WYE B	45° WYE d
4	1.5	3 ½	1.1	3 ½	0.8	3 ½	0.6	3 ½	1.3	3 ½	1.1	3 ½
6	2.2	5 ¼	1.6	3 ¾	1.2	3 ½	0.8	3 ½	1.9	4 ½	1.6	3 ¾
8	2.9	7	2.1	5	1.5	3 ½	1.1	3 ½	2.4	5 ¾	2.0	4 ¾
10	3.5	8 ½	2.6	6 ¼	1.9	4 ½	1.3	3 ½	3.0	7 ¼	2.5	6
12	4.2	10	3.1	7 ½	2.2	5 ¼	1.6	3 ¾	3.5	8 ¼	3.0	7 ¼
14	4.9	11 ¾	3.6	8 ¾	2.6	6 ¼	1.8	4 ¼	4.1	9 ¾	3.4	8 ¼
16	5.5	13 ¼	4.1	9 ¾	2.9	7	2.1	5	4.7	11 ¼	3.9	9 ¼
18	6.2	15	4.6	11	3.3	8	2.3	5 ½	5.2	12 ½	4.4	10 ½
20	6.9	16 ½	5.0	12	3.6	8 ¾	2.6	6 ¼	5.8	14	4.9	11 ¾
24	8.2	19 ¾	6.0	14 ½	4.3	10 ¼	3.1	7 ½	6.9	16 ½	5.8	14
30	10.1	24 ¼	7.5	18	5.3	12 ¾	3.8	9	8.5	20 ½	7.2	17 ¼
36	12.1	29	8.9	21 ¼	6.4	15 ¼	4.5	10 ¾	10.2	24 ½	8.6	20 ¾

REINFORCEMENT MAT SCHEDULE

FOR DIM. "B" BETWEEN 5.75' & 12.5' USE #4 @ 8" EACH WAY
FOR DIM. "B" LESS THAN 5.75' USE #3 @ 8" EACH WAY



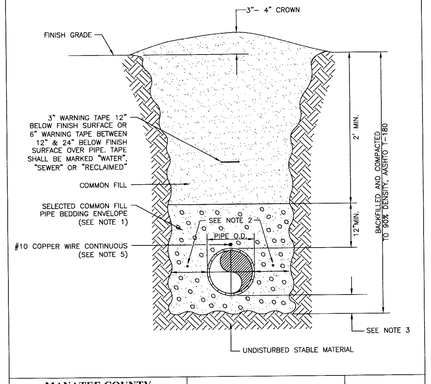
NOTES:

1. ALL THRUST BLOCKS SHALL BE CAST IN PLACE. FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
2. THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF, CONCRETE STRENGTH f'c =3000 PSI, REINFORCEMENT fy =60.0 KSI. THRUST BLOCK SHALL BE CAST AGAINST FIRM UNDISTURBED SOIL.
3. FOR LARGER "B" DIMENSIONS IT IS NECESSARY TO CHECK THAT PIPE IS SUFFICIENTLY DEEP TO ALLOW 15" MIN. SOIL COVER OVER TOP EDGE OF THRUST BLOCK.
4. RESTRAINED JOINTS MAY BE USED IN LIEU OF THRUST BLOCKS TO SAVE SPACE. THRUST BLOCKS SHALL BE USED IN SITUATIONS WHERE THRUST BLOCKS AND RESTRAINED JOINTS ARE BOTH REQUIRED.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT			
REV.BY	DATE	CONCRETE THRUST BLOCKS	UG-7
CLB/BR	11/10		
		MAY 10, 2011 DATE OF APPROVAL	PAGE 107

NOTES:

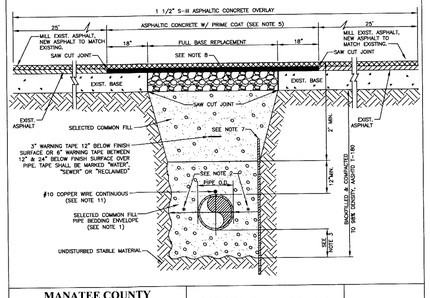
1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



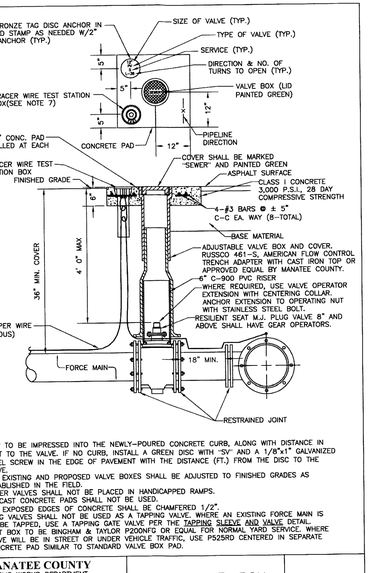
MANATEE COUNTY PUBLIC WORKS DEPARTMENT			
REV.BY	DATE	TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	UG-11
WRT/KE	03/11		
		MAY 10, 2011 DATE OF APPROVAL	PAGE 111

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. ASPHALTIC CONCRETE STRUCTURE COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF 1 1/4 INCH, WHICHEVER IS GREATER.
6. MILL 25' BACK FROM TRENCH SAW CUT. ADJUST MILLING PER INDIVIDUAL SITE TO NOT IMPACT BASE. BUTT JOINT TO EXIST ASPHALT. FINAL OVERLAY LIMITS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT. FINAL OVERLAY TO MATCH EXISTING WITH NO DISCERNABLE "BUMP" AT JOINT. MILLING LIMITS THAT IMPACT INTERSECTION SHALL BE ADDRESSED ON A CASE BY CASE BASIS AND APPROVED BY MANATEE COUNTY.
7. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
8. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
9. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
10. RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.
11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
12. NOTES 5. THRU 10. ARE MINIMUM REQUIREMENTS FOR A TRENCH IN A ROAD. REFER TO LATEST EDITION OF MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



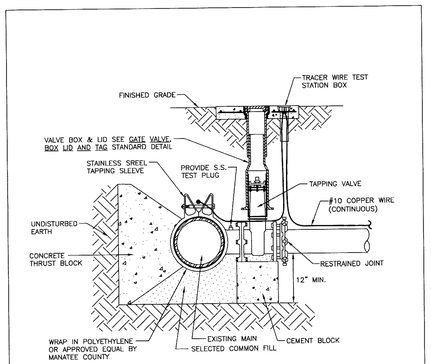
MANATEE COUNTY PUBLIC WORKS DEPARTMENT			
REV.BY	DATE	TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-12
WRT/KE	03/11		
		MAY 10, 2011 DATE OF APPROVAL	PAGE 112



NOTES:

1. "SV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A GREEN DISC WITH "SV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (FT.) FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS ESTABLISHED IN THE FIELD.
3. SEWER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. PLUG VALVES SHALL NOT BE USED AS A TAPPING VALVE. WHERE AN EXISTING FORCE MAIN IS TO BE TAPPED, USE A TAPPING GATE VALVE PER THE TAPPING SLEEVE AND VALVE DETAIL.
7. TEST BOX TO BE BINGHAM & TAYLOR P200NFG OR EQUAL FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR UNDER VEHICLE TRAFFIC, USE P525RD CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT			
REV.BY	DATE	PLUG VALVE, BOX, COVER AND TAG	US-12
CLB/DOM	11/10		
		MAY 10, 2011 DATE OF APPROVAL	PAGE 152



NOTES:

1. PRIOR TO TAPPING, CONTRACTOR TO DEMONSTRATE 60 MINUTE HYDROSTATIC TEST OF THE TAPPING SLEEVE AND VALVE WITH NO LOSS OF 180 PSI PRESSURE FOR WATER AND RECLAIMED WATER OR 150 PSI FOR FORCE MAIN.
2. ALL FITTINGS TO BE WRAPPED WITH 20 MIL VISQUEEN AT THRUST BLOCK.
3. ALL TAPS ON CONCRETE WATER MAINS AND LARGER THAN 12" ARE TO BE MADE BY A MANATEE COUNTY APPROVED TAPPING COMPANY. ALL MATERIALS TO BE SUPPLIED BY THE CONTRACTOR.
4. ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS GREATER) FROM A JOINT OR FITTING.
5. CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
6. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
7. TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT			
REV.BY	DATE	TAPPING SLEEVE AND VALVE	UW-4
CLB/KE	11/10		
		MAY 10, 2011 DATE OF APPROVAL	PAGE 122

RECORD DRAWING

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL 941.365.5500 - FAX 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS

CIVIL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

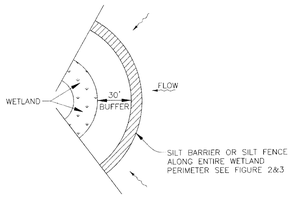
PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

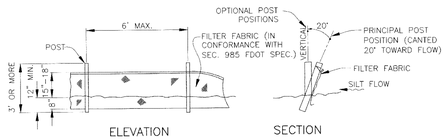
EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET C-13

6387.017

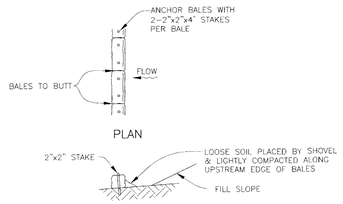


WETLAND BUFFER
FIGURE 1

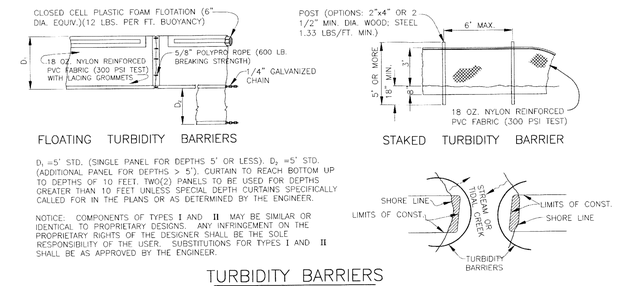


NOTE: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (LF).

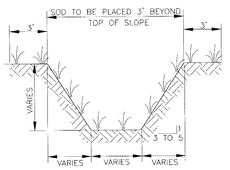
TYPICAL SILT FENCE
FIGURE 2



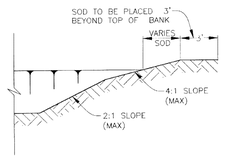
TYPICAL BALE SILT BARRIER
FIGURE 3



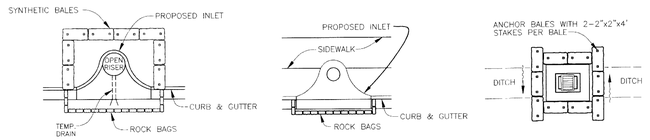
TURBIDITY BARRIERS
FIGURE 4



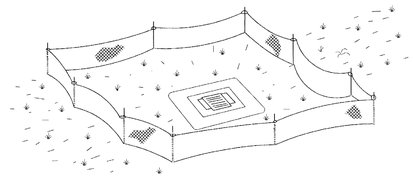
TYPICAL SWALE SECTION
FIGURE 5



TYPICAL RETENTION/DETENTION POND SECTION
FIGURE 6

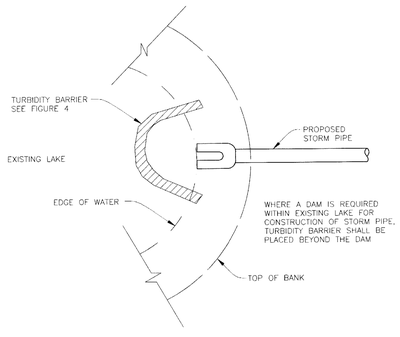


SYNTHETIC BALE PROTECTION AROUND INLETS OR SIMILAR STRUCTURES
FIGURE 7

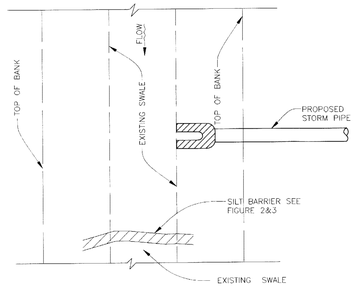


TYPE III SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS

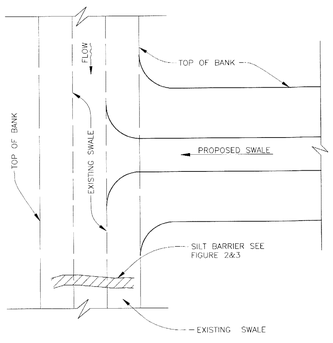
STAKED SILT BARRIER OR SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS
FIGURE 8



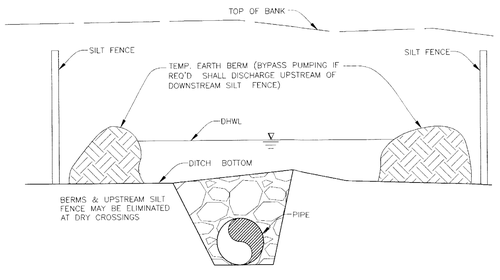
TURBIDITY BARRIER AT CONNECTION OF STORM PIPE TO EXISTING LAKE
FIGURE 9



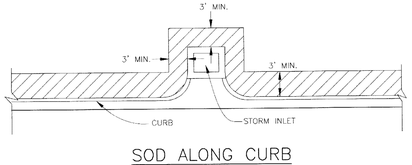
SILT BARRIER AT CONNECTION OF STORM PIPE TO EXISTING SWALE
FIGURE 10



SILT BARRIER AT CONNECTION OF SWALE TO EXISTING SWALE
FIGURE 11

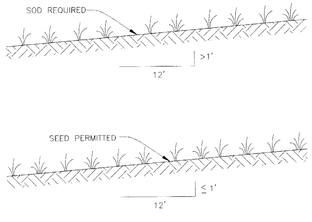


UNDERGROUND PIPE CROSSING
FIGURE 12

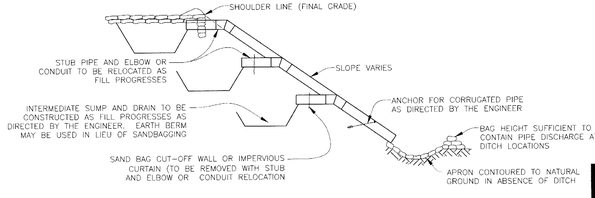


SOD ALONG CURB AND AROUND INLET
FIGURE 14

NOTE:
REFERENCE THE FDOT DESIGN STANDARDS LATEST EDITION FOR ALL TEMPORARY EROSION CONTROL MEASURES.



GRASS SLOPES
FIGURE 13



SECTION AA

TEMPORARY SLOPE DRAIN
FIGURE 15

RECORD DRAWING

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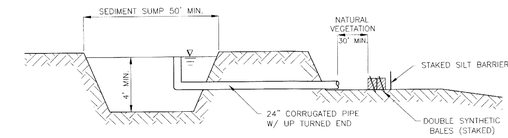
INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.



SEDIMENT SUMP SECTION
FIGURE 16

RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
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MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS

EROSION CONTROL PLAN

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	1"=XX'

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
12/17
Signature & Date

SHEET C-14

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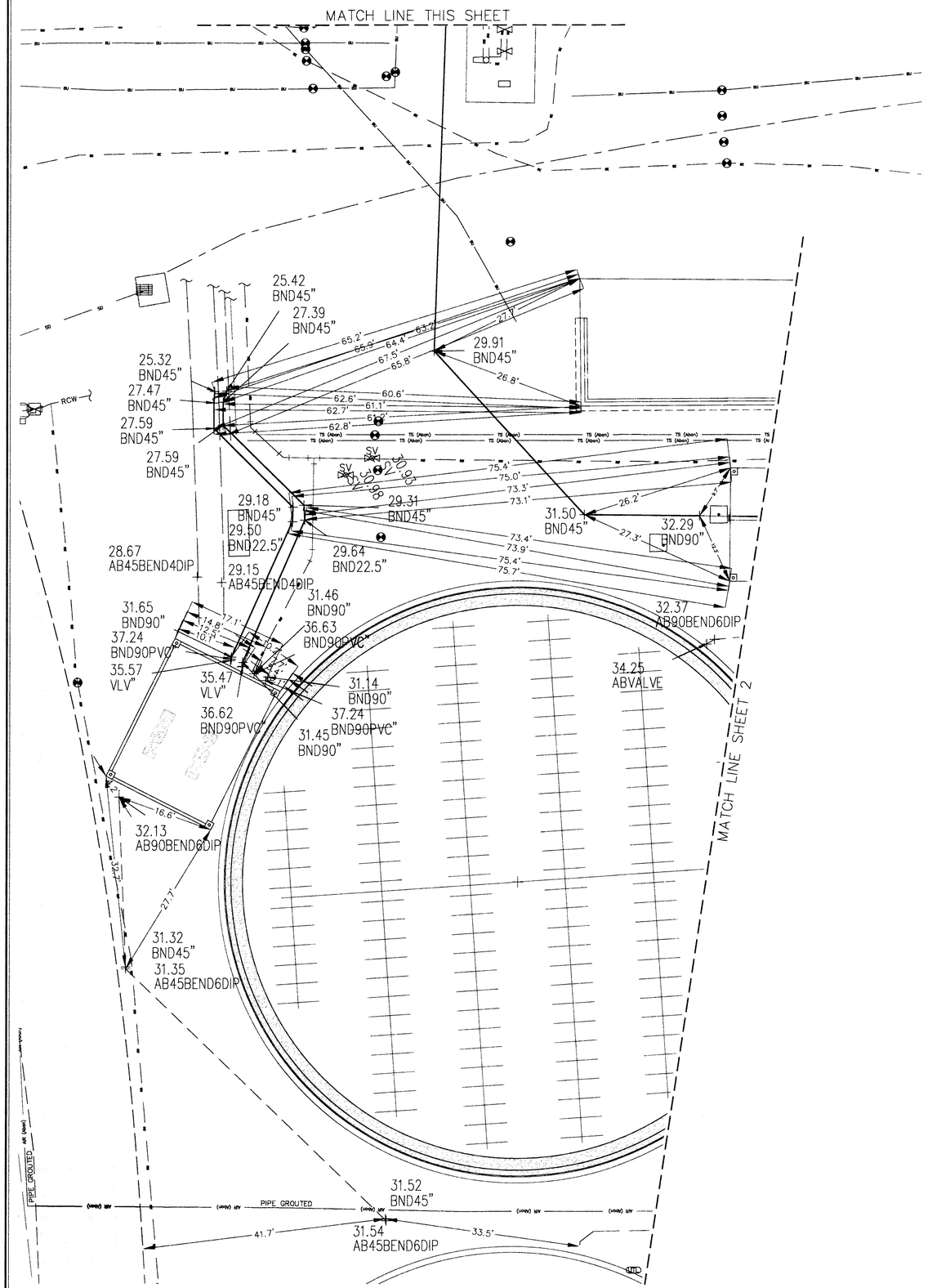
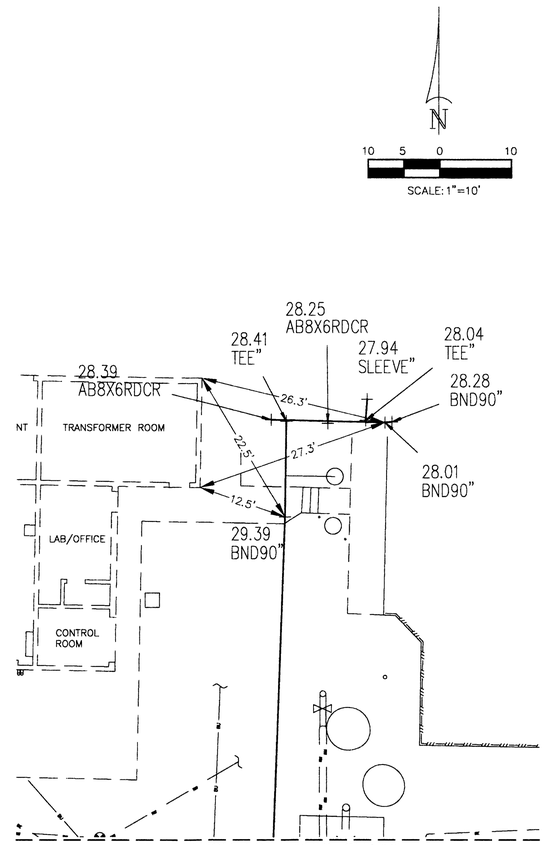
\\v1773\Active\177310545\design\drawings\plans\sheet\105450-001-016.dwg, Layout: 1, 1/11/2017 11:26 AM Gilgreth, Ken, 1:0.5, ARCH D (36.00 x 24.00 inches)





NOTES

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2. NO EXCAVATION WAS PERFORMED TO VERIFY THE LOCATION OR EXISTENCE OF ANY UNDERGROUND UTILITIES, ENCROACHMENTS, IMPROVEMENTS, STRUCTURES OR FOUNDATIONS. UNDERGROUND UTILITY LINE LOCATIONS (IF SHOWN HEREON) ARE BASED UPON UTILITY PROVIDER ATLASES AND VISIBLE SURFACE EVIDENCE.
3. RE-USE OF THIS SURVEY FOR PURPOSES OTHER THAN WHICH IT WAS INTENDED, WITHOUT WRITTEN VERIFICATION, WILL BE AT THE RE-USERS SOLE RISK AND WITHOUT LIABILITY TO THE SURVEYOR. NOTHING HEREIN SHALL BE CONSTRUED TO GIVE ANY RIGHTS OR BENEFITS TO ANYONE OTHER THAN THOSE TO WHOM CERTIFIED.
4. ALL FOUND POINTS ARE UNMARKED UNLESS OTHERWISE NOTED. ALL PERIMETER BEARINGS AND DISTANCES ARE ALSO FIELD MEASURED UNLESS NOTED.
5. THIS SURVEY IS NOT INTENDED TO SHOW THE LOCATION OR EXISTENCE OF ANY JURISDICTIONAL, HAZARDOUS OR ENVIRONMENTALLY SENSITIVE AREAS.
6. ANY ZONING INFORMATION SHOWN OR NOTED HEREON IS BASED ON INFORMATION AVAILABLE DURING THE PREPARATION OF THE SURVEY. THIS INFORMATION SHOULD BE VERIFIED WITH THE GOVERNING AUTHORITY PRIOR TO ANY DETERMINATIONS OR DESIGN.
7. SHOWN ANYWHERE ON THIS SURVEY, THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF A PROFESSIONAL OPINION BASED UPON THE SURVEYOR'S BEST KNOWLEDGE, INFORMATION AND BELIEF, AND THAT IT THUS CONSTITUTES NEITHER A GUARANTEE NOR A WARRANTY.
8. UNLESS OTHERWISE INDICATED, THE PROPERTY DESCRIPTION AND EASEMENTS SHOWN WERE FURNISHED TO POLARIS ASSOCIATES, INC. AND ARE PRESUMED TO BE CORRECT. NO SEARCH OF ANY PUBLIC RECORDS, FOR EASEMENTS, DEEDS, ETC., WAS PERFORMED BY THIS FIRM FOR THE COMPLETION OF THIS SURVEY AND THERE MAY BE ADDITIONAL RESTRICTIONS THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
9. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND MAY BE SUBJECT TO EASEMENTS, RESTRICTIONS, RIGHTS-OF-WAY AND OTHER MATTERS OF RECORD.
10. ELEVATIONS ARE BASED ON MANATEE COUNTY BENCHMARK 133-2, HAVING AN ELEVATION OF 28.866, NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).
11. THIS SURVEY IS BASED ON U.S. FEET.
12. THE PURPOSE OF THIS SURVEY IS TO LOCATED THE NEWLY INSTALLED PIPE FITTINGS.

SECTION 26, TOWNSHIP 33 S., RANGE 18 E

MANATEE COUNTY, FLORIDA

LEGEND

A/C = AIR CONDITIONER UNIT
BLDG = BUILDING
(C) = CALCULATED DATA
CCR = CERTIFIED CORNER RECORD
CLF = CHAIN LINK FENCE
CMP = CORRUGATED METAL PIPE
CONC = CONCRETE
COR = CORNER
CPB = CONDOMINIUM PLAT BOOK
C/T = CURB TIE
(D) = DEED DATA
DB = DEED BOOK
DIP = DUCTILE IRON PIPE
ECMP = ELLIPTICAL CORRUGATED METAL PIPE
EL = ELEVATION
EP = EDGE OF PAVEMENT
ERCP = ELLIPTICAL REINFORCE CONCRETE PIPE
(F) = FIELD DATA
FCM = FOUND CONCRETE MONUMENT
FDOT = FLORIDA DEPARTMENT OF TRANSPORTATION
FIR = FOUND IRON ROD
FND = FOUND NAIL & DISC
FOP = FOUND OPEN PIPE
FPP = FOUND PINCHED PIPE
FRRS = FOUND RAILROAD SPIKE
F/T = FENCE TIE
FXC = FOUND X-CUT
GE = GRATE ELEVATION
IE = INVERT ELEVATION
(L) = LEGAL DESCRIPTION DATA
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LS = LICENSED SURVEYOR
MAS = MASONRY
MHW = MEAN HIGH WATER
NP = NORMAL POOL
O/A = OVERALL
OR = OFFICIAL RECORDS BOOK
(P) = PLAT DATA
PB = PLAT BOOK
PG = PAGE
PLS = PROFESSIONAL LAND SURVEYOR
POB = POINT OF BEGINNING
POC = POINT OF COMMENCEMENT
PRM = PERMANENT REFERENCE MONUMENT
PSM = PROFESSIONAL SURVEYOR & MAPPER
P/T = PAVEMENT TIE
PVC = POLY VINYL CHLORIDE
RCP = REINFORCE CONCRETE PIPE
RLS = REGISTERED LAND SURVEYOR
R/W = RIGHT-OF-WAY
SEC = SECTION
SHW = SEASONAL HIGH WATER
SIR = SET IRON ROD 1/2" LB 6113
SND = SET NAIL & DISC LB 6113
SR = STATE ROAD
S/T = SIDEWALK TIE
STY = STORY
SW = SIDEWALK
TBM = TEMPORARY BENCH MARK
(TYP) = TYPICAL
VCP = VITRIFIED CLAY PIPE
W/ = WITH
WF = WOOD FENCE
W/T = WALL TIE
+ 25.25 = POINT OF ELEVATION
25.2' = DIMENSION FROM BUILDING TO BOUNDARY / RIGHT-OF-WAY LINE

= BACKFLOW PREVENTER
= BOLLARD or POST
= BOX, CABLE TELEVISION
= BOX, ELECTRIC UTILITY
= BOX, ELECTRIC UTILITY (TRANSFORMER)
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= UNDERGROUND TELEPHONE MARKER
= UNDERGROUND TELEPHONE WARNING SIGN
= UNDERGROUND WATER MARKER
= UNDERGROUND WATER WARNING SIGN
= UTILITY POLE, CONCRETE
= UTILITY POLE, METAL
= UTILITY POLE, WOOD
GV box = VALVE, GAS
RV box = VALVE, RECLAIMED WATER
SV box = VALVE, SANITARY
WV box = VALVE, WATER
= WELL

STORM CURB INLETS

= CONCRETE
= ASPHALT
= CONCRETE PAVERS
= BRICK

= TOP OF BANK
= TOE OF SLOPE or CENTER LINE OF DITCH
= 6' CHAIN LINK FENCE UNLESS OTHERWISE NOTED
= OVERHEAD UTILITY LINES
= APPROXIMATE LOCATION OF UNDERGROUND GAS LINE
= APPROXIMATE LOCATION OF UNDERGROUND WATER LINE
= APPROXIMATE LOCATION OF UNDERGROUND FORCEMAIN
= APPROXIMATE LOCATION OF UNDERGROUND RECLAIMED WATER LINE
12" PVC = APPROXIMATE LOCATION OF UNDERGROUND SANITARY SEWER LINE
24" RCP = APPROXIMATE LOCATION OF UNDERGROUND STORM SEWER LINE

52.15 = BACK OF CURB
51.61 = FLOWLINE
51.63 = EDGE OF PAVEMENT

POINT LEGEND
14471 = POINT NUMBER
31.14 = ELEVATION
BND90 = DESCRIPTION

1-27-17

ROBERT J. HALBACH, PE
FL. LIC. 40139

DATE	NUMBER	REVISIONS	BY
11-9-16	4	ADDRESSED COMMENTS	JT
11-14-16	3	ADDRESSED COMMENTS	JT
09-13-16	2	ADDED EAST SIDE	JT
09-01-16	1	REMOVED DESIGN LABELS, ADDED POINT LEGEND	JT

CERTIFICATION

CERTIFIED TO: BRANDES DESIGN BUILD

I HEREBY CERTIFY THAT THE SURVEY REPRESENTED HEREON MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027 FLORIDA STATUTES.

JULY 8, 2016
DATE OF SURVEY

JUSTIN D. FERRANS
PROFESSIONAL LAND SURVEYOR
LICENSE NUMBER LS 6958
STATE OF FLORIDA

PROJECT: NRWRF

TYPE OF SURVEY: RECORD SURVEY

PREPARED FOR: BRANDES DESIGN BUILD

POLARIS ASSOCIATES INC.
PROFESSIONAL SURVEYING LB 6113
2165 SUNNYDALE BOULEVARD, SUITE D
CLEARWATER, FLORIDA 33765
(727) 461-6113

DATE OF SURVEY: JULY 8, 2016

CHECKED BY:	SCALE:	DRAWN BY:	JOB NO.	DRAWING PATH:	SHEET
JDF	1"=10'	JT	3093-02	H:\jw\3093SPC\DWG\3093 ASBUILT.DWG	1 OF 2

H:\JW\3093SPC\dwg\3093 ASBUILT.dwg, 1/10/2017 8:03:34 AM, jthomas

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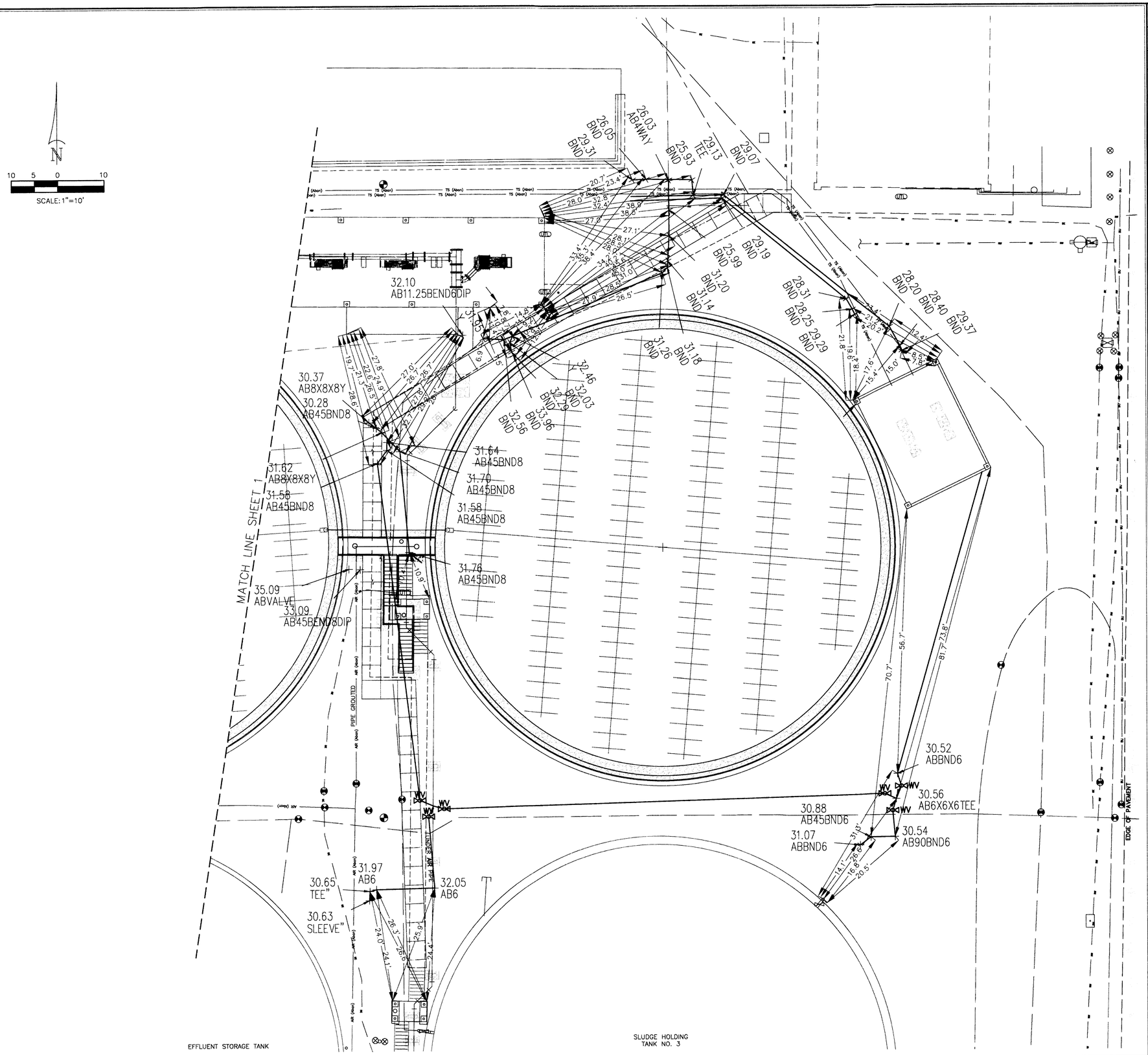

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ROBERT J. HALBACH, PE
FL. LIC. 40139

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PROJECT: NRWRF

TYPE OF SURVEY: RECORD SURVEY

PREPARED FOR: BRANDES DESIGN BUILD

POLARIS ASSOCIATES INC.
PROFESSIONAL SURVEYING LB 6113
2165 SUNNYDALE BOULEVARD, SUITE D
CLEARWATER, FLORIDA 33765
(727) 461-6113

DATE OF SURVEY: JULY 8, 2016

CHECKED BY:	SCALE:	DRAWN BY:	JOB NO.	DRAWING PATH:	SHEET
JDF	1"=10'	JT	3093-02	H:\JN\3093SPC\DWG\3093 ASBUILT.DWG	2 OF 2

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EXISTING TANK FOUNDATION NOTES:

1. CONTRACTOR SHALL PERFORM ALL REQUIRED TESTS TO CERTIFY THE EXISTING CONCRETE FOUNDATION IS ACCEPTABLE FOR PROPOSED TANKS.

2. CONTRACTOR SHALL RETAIN A LICENSED STRUCTURAL AND GEOTECHNICAL ENGINEER TO PERFORM ALL TESTING. A GEOTECHNICAL REPORT SHALL BE PREPARED AND CERTIFY THE CONDITION OF THE EXISTING TANK FOUNDATION TO SUPPORT NEW TANK LIVE, DEAD, FLUID, AND ERECTION LOADS. THE REPORT SHALL BE PREPARED BY A GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF FLORIDA.

3. UPON RECEIPT OF THE GEOTECHNICAL REPORT, THE CONTRACTOR SHALL SUBMIT DETAILS AND SHOP DRAWINGS FOR RECOMMENDED FOUNDATION MODIFICATIONS OR IMPROVEMENTS AS STATED IN THE GEOTECHNICAL REPORT.

4. TANK CONSTRUCTION SHALL NOT COMMENCE UNTIL THE COUNTY HAS APPROVED THE PROPOSED TANK FOUNDATION MODIFICATIONS OR IMPROVEMENTS IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.

PROPOSED TANK FOUNDATION NOTES:

1. NO CONCRETE SHALL BE PLACED IN WATER.

2. ALL FOUNDATIONS SHALL BEAR ON 12" OF COMPACTED GRAVEL ON UNDISTURBED SOIL WITH A BEARING CAPACITY OF NOT LESS THAN 2500 PSF.

3. ALL FINISHED EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY THE ENGINEER OR HIS DESIGNEE BEFORE ANY CONCRETE IS PLACED.

4. ALL BACKFILL UNDER OR ADJACENT TO ANY PORTION OF THE STRUCTURES SHALL BE COMPACTED IN 12" LIFTS. SEE SPECIFICATIONS.

5. PROVIDE 6" GRAVEL, COMPACTED TO 90% MODIFIED PROCTOR DENSITY, UNDER ALL SLABS ON GRADE AND WHERE INDICATED ON THE DRAWINGS OVER WELL COMPACTED STRUCTURAL FILL.

CONCRETE:

1. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE LATEST EDITION OF THE ACI BUILDING CODE (ACI 318) AND ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS, AND TO THE FLORIDA BUILDING CODE. IN CASE OF CONFLICT, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.

2. ALL CONCRETE SHALL BE READY-MIXED IN ACCORDANCE WITH ASTM C94.

3. VERTICAL CONSTRUCTION JOINTS AND STOPS IN THE CONCRETE WORK SHALL BE MADE AT MIDSPAN. PROVIDE DOWELS AT CONSTRUCTION JOINTS OF AREA EQUAL TO 0.5% OF THE VERTICAL CONCRETE AREA. SEE SPECIFICATIONS. PROVIDE BEVELED KEYWAYS AT ALL CONSTRUCTION JOINTS.
4. AT LEAST 48 HOURS SHALL ELAPSE BEFORE DEPOSITING NEW CONCRETE AGAINST PREVIOUSLY PLACED CONCRETE.

5. ALL CONCRETE SHALL ATTAIN THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS AT 28 DAYS AGE: FOOTINGS AND INTERIOR CONCRETE SLABS – 3500 PSI., CONCRETE EXPOSED TO THE ELEMENTS (EXTERIOR SLABS) – 4,000 PSI. REFER TO SPECIFICATIONS AND ACI 301 FOR DESIGN STRENGTHS REQUIRED FOR SELECTING MIX PROPORTIONS.

6. ALL SLABS ON GRADE SHALL BE PLACED IN ALTERNATE PANELS NOT EXCEEDING 900 S.F.

REINFORCING:

1. ALL REINFORCING BAR DETAILS SHALL CONFORM TO THE LATEST ACI CODE AND DETAILING MANUAL, EXCEPT AS OTHERWISE SPECIFIED.

2. ALL REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60 EXCEPT TIES AND STIRRUPS GRADE 40. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 AND SHALL BE PROVIDED IN FLAT SHEETS. LAPS SHALL BE STAGGERED AND SHALL BE 1-1/2 FULL MESH MIN.

3. SCHEDULE WITH THE SHOP DRAWINGS ALL NECESSARY ACCESSORIES TO HOLD REINFORCING SECURELY IN POSITION. MINIMUM REQUIREMENTS SHALL BE: HIGH CHAIRS – 4 FEET ON CENTERS; SLAB BOLSTERS – 3'-6" ON CENTERS; SUPPORT BARS FOR HIGH CHAIRS – #5.

4. ALL BARS, EXCEPT AS OTHERWISE NOTED, SHALL BE CONTINUOUS AND SHALL BE RUN CONTINUOUSLY AROUND CORNERS, LAPPED AT NECESSARY SPLICES, AND HOOKED AT DISCONTINUOUS ENDS. LAPS SHALL BE 30-BAR DIAMETER MINIMUM, UNLESS OTHERWISE NOTED.

5. THE CONCRETE PROTECTIVE COVERING FOR MAIN REINFORCEMENT SHALL BE, UNLESS SHOWN OTHERWISE:
   A. FOOTING BOTTOMS...3 INCHES.
   B. COLUMNS, BEAMS AND FORMED SURFACES IN DIRECT CONTACT WITH SOIL OR EXPOSED TO THE WEATHER (EXCEPT SLABS)...2 INCHES.
   C. SLABS EXPOSED TO THE WEATHER...1 INCH.
   D. INTERIOR SLABS...3/4 INCH.

6. ALL CONCRETE, UNLESS SPECIFICALLY NOTED TO BE PLAIN CONCRETE, SHALL BE REINFORCED.

7. ALL REINFORCING SHALL BE INSPECTED AND APPROVED BY THE COUNTY BEFORE CONCRETE IS PLACED.

MISCELLANEOUS:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AT THE JOB SITE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHORING AND BRACING AND SHALL SUBMIT HIS METHODS WITH THE ENGINEER PRIOR TO THE START OF WORK.

3. CONSULT THE CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS FOR VERIFICATION OF LOCATION AND DIMENSIONS OF CHASES, INSERTS, OPENINGS, SLEEVES, WASHES, REVEALS, DEPRESSIONS AND OTHER PROJECT REQUIREMENTS.

4. ALL EQUIPMENT PENETRATIONS TO BE VERIFIED BY THE CONTRACTOR.

5. DO NOT SCALE FROM DRAWINGS.

6. CONTRACTOR AND MANUFACTURERS SHALL FOLLOW MANATEE COUNTY SPECIFICATIONS FOR ALL ASSEMBLIES.

7. CONTRACTOR SHALL ENSURE ALL DISSIMILAR MATERIALS ARE CONSTRUCTED IN ACCORDANCE WITH SPECIFICATIONS.

8. ALL MANUFACTURERS SHALL VISIT SITE TO CONFIRM THEIR DESIGNS DO NOT CONFLICT WITH ANY ABOVE AND/OR UNDER GROUND OBSTRUCTIONS.

RECORD DRAWING

THESE RECORD DOCUMENTS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. STANTEC HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS

STRUCTURAL NOTES

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 49139
1-27-17
Signature & Date

ROBERT JAMES HALBACH No. 49139 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET S-1

6387.021

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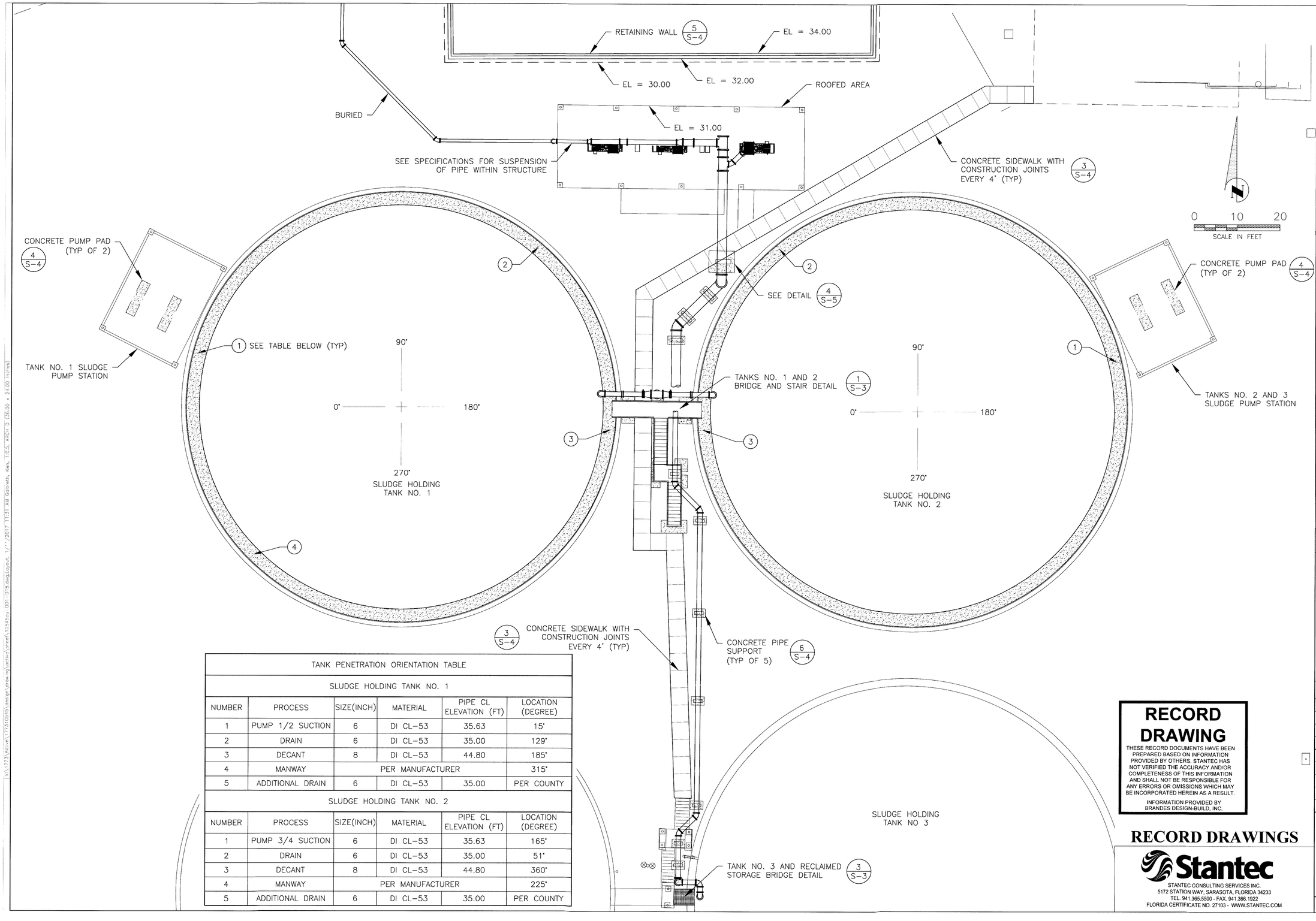

TANK PENETRATION ORIENTATION TABLE					
SLUDGE HOLDING TANK NO. 1					
NUMBER	PROCESS	SIZE(INCH)	MATERIAL	PIPE CL ELEVATION (FT)	LOCATION (DEGREE)
1	PUMP 1/2 SUCTION	6	DI CL-53	35.63	15°
2	DRAIN	6	DI CL-53	35.00	129°
3	DECANT	8	DI CL-53	44.80	185°
4	MANWAY	PER MANUFACTURER			315°
5	ADDITIONAL DRAIN	6	DI CL-53	35.00	PER COUNTY
SLUDGE HOLDING TANK NO. 2					
NUMBER	PROCESS	SIZE(INCH)	MATERIAL	PIPE CL ELEVATION (FT)	LOCATION (DEGREE)
1	PUMP 3/4 SUCTION	6	DI CL-53	35.63	165°
2	DRAIN	6	DI CL-53	35.00	51°
3	DECANT	8	DI CL-53	44.80	360°
4	MANWAY	PER MANUFACTURER			225°
5	ADDITIONAL DRAIN	6	DI CL-53	35.00	PER COUNTY

RECORD DRAWINGS

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES

1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS

STRUCTURAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

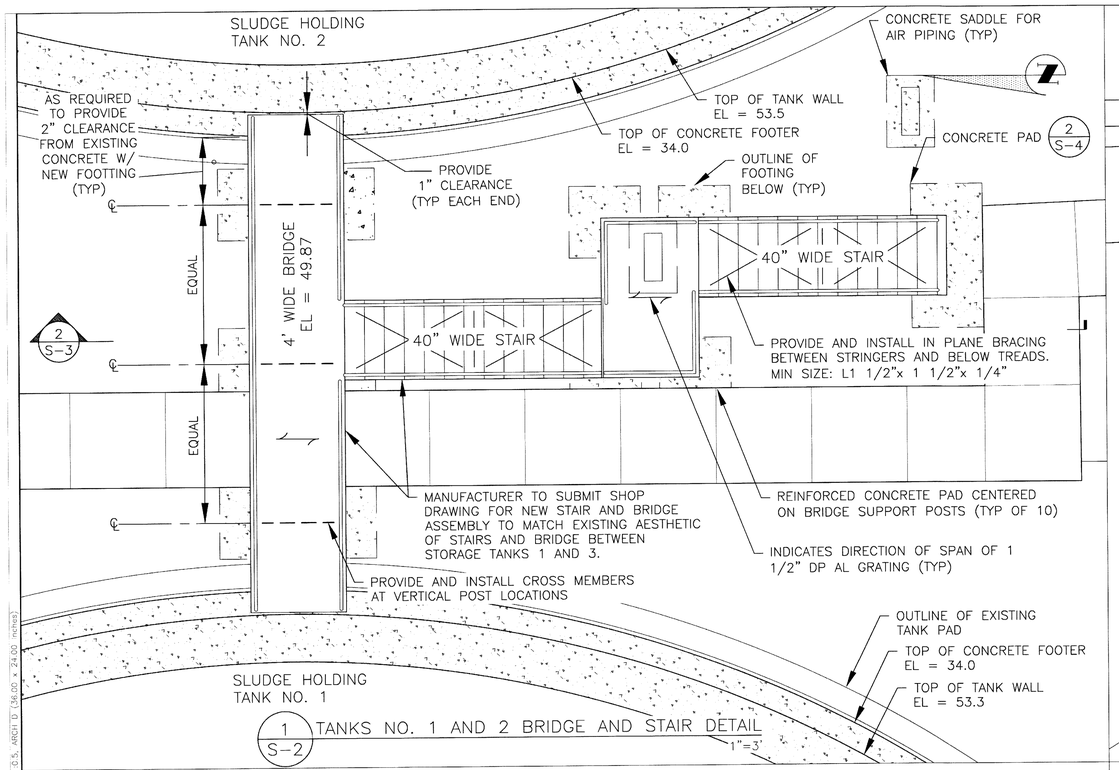
PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	1"=10'

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

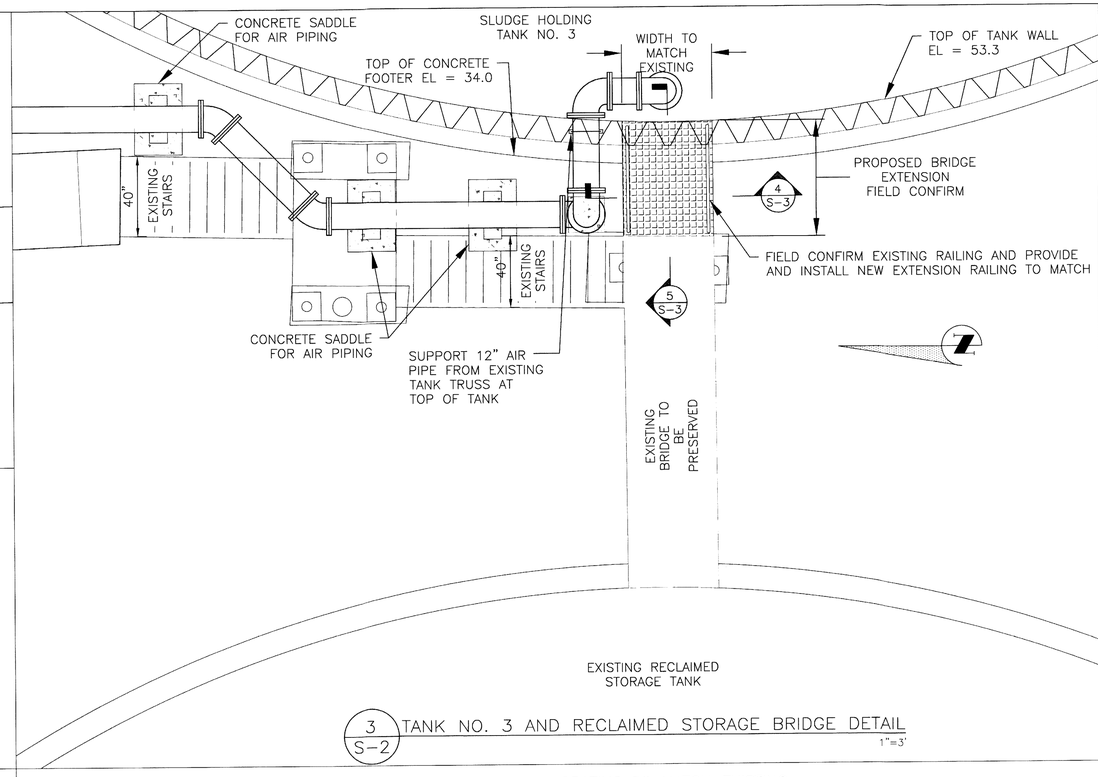
EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET S-2

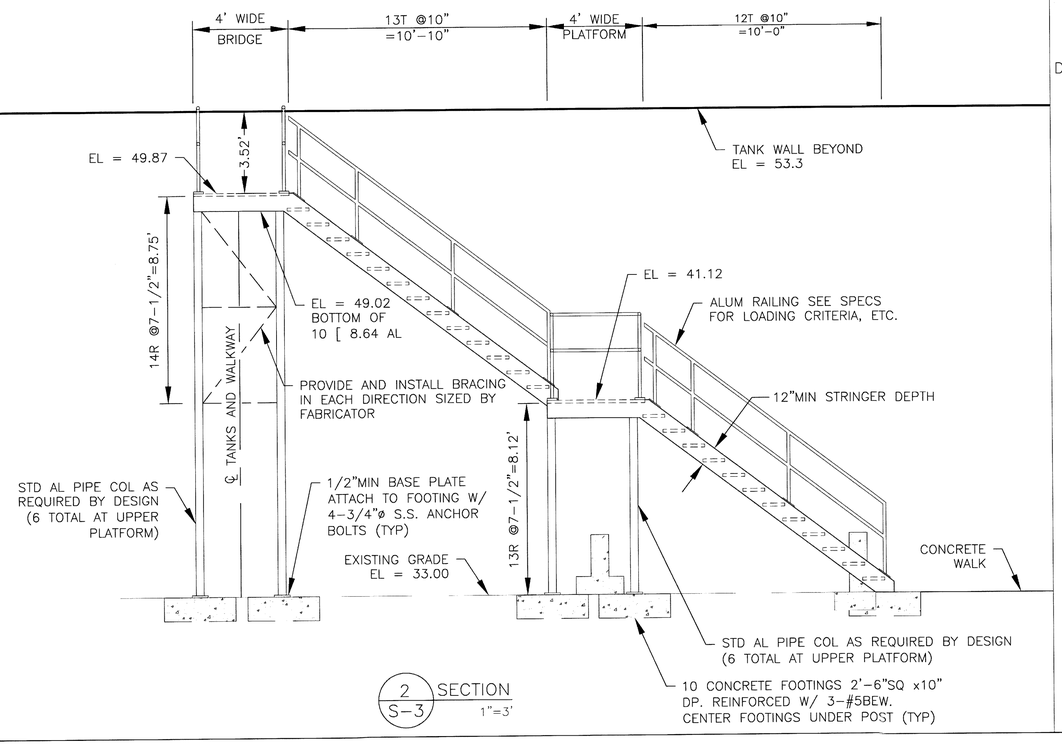
6387.022



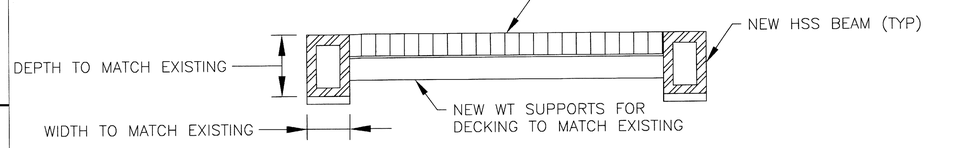
1/S-2 TANKS NO. 1 AND 2 BRIDGE AND STAIR DETAIL 1"=3'



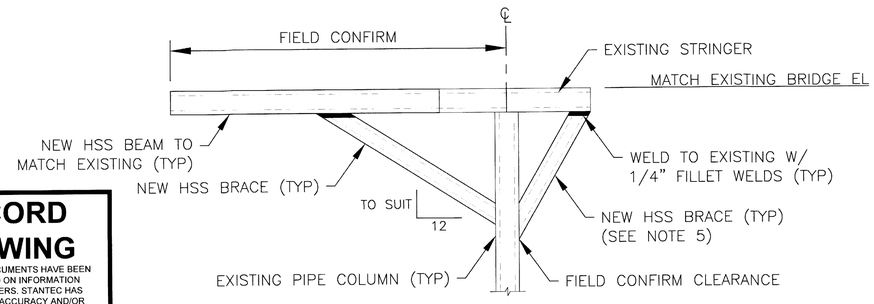
3/S-2 TANK NO. 3 AND RECLAIMED STORAGE BRIDGE DETAIL 1"=3'



2/S-3 SECTION 1"=3'



4/S-3 SECTION N.T.S.



5/S-3 SECTION N.T.S.

RECORD DRAWING

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

NOTES:

1. CONTRACTOR SHALL CONFIRM LOCATION AND DIMENSION OF STAIRS AS SHOWN.
2. CONTRACTOR SHALL INSTALL HANDRAIL ALONG NEW BRIDGE TO MATCH EXISTING.
3. HANDRAIL SHALL BE DESIGNED AND PROVIDED BY CONTRACTOR.
4. ALL GRATING TO BE INSTALLED WITH HOLDOWN CLIPS.
5. PROVIDE CONSTRUCTION DETAILS FOR CONNECTIONS OF NEW MEMBERS TO EXISTING.
6. IN GENERAL ALL PLATFORMS SHALL BE DESIGNED FOR LIVE LOAD = 100 PSF.

RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
STRUCTURAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	

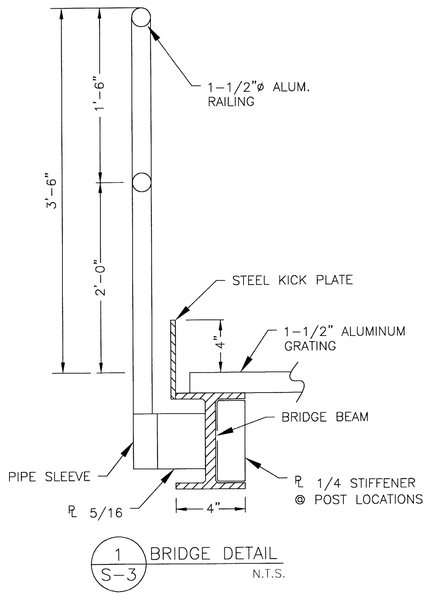
	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET S-3

6387.023

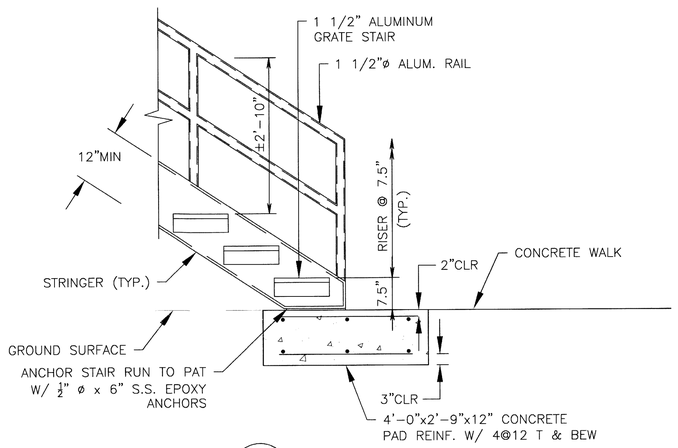
C:\177310\Active\177310545\design\Drawing\sheet\105450-001-019.dwg Layout: 1 1/27/2017 11:36 AM Gilbreth, Ken - T.0.5, ARCH D (36.00 x 24.00 inches)



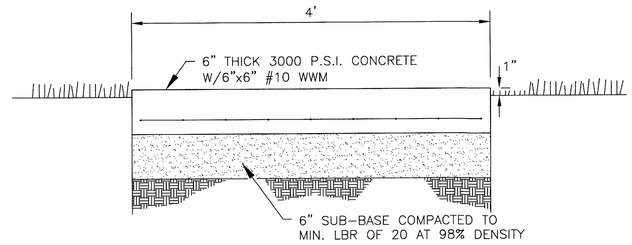
1 / S-3 BRIDGE DETAIL
N.T.S.

NOTE:

1. BRIDGE AND STAIR BY TANK MANUFACTURER



2 / S-3 STAIR DETAIL
N.T.S.



3 / S-2 CONCRETE SIDEWALK DETAIL
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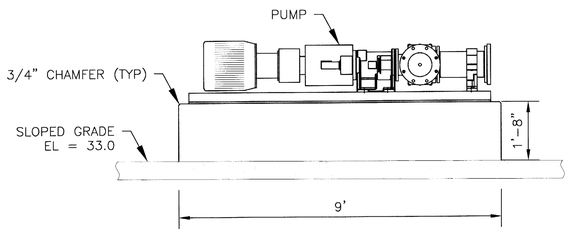
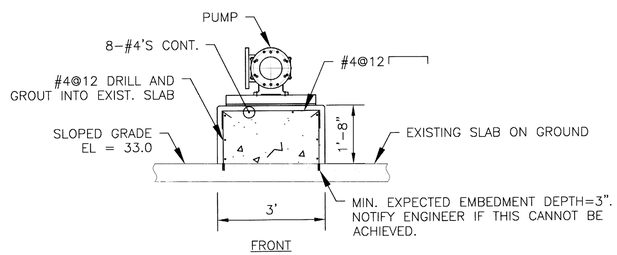
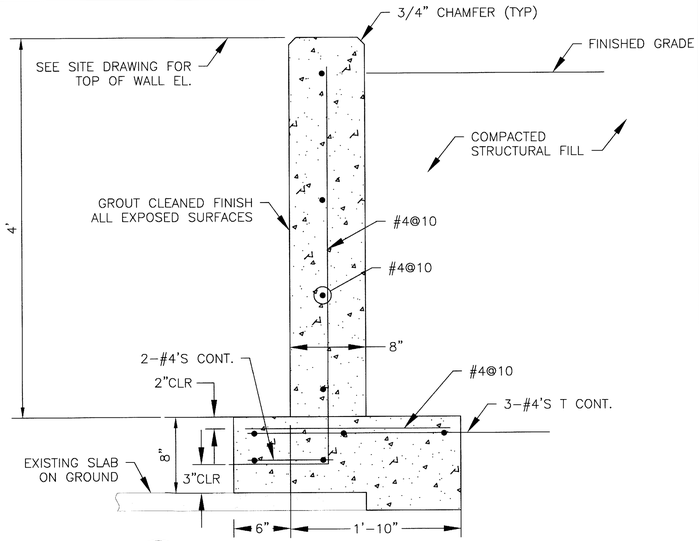


PROFILE

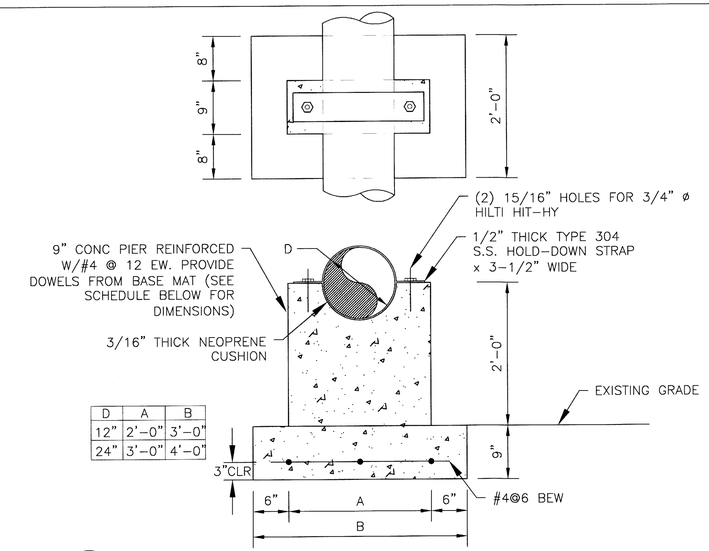


FRONT

4 / S-2 EQUIPMENT PAD DETAIL
N.T.S.



5 / S-2 RETAINING WALL EXTENSION DETAIL
N.T.S.



D	A	B
12"	2'–0"	3'–0"
24"	3'–0"	4'–0"

6 / S-2 CONCRETE PIPE SUPPORT TYPE 304 S.S./SCH 10 AIR PIPE
N.T.S.

RECORD DRAWING

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ENGINEERING SERVICES
1022 26th Avenue East
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NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS

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DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET S-4

6387.024

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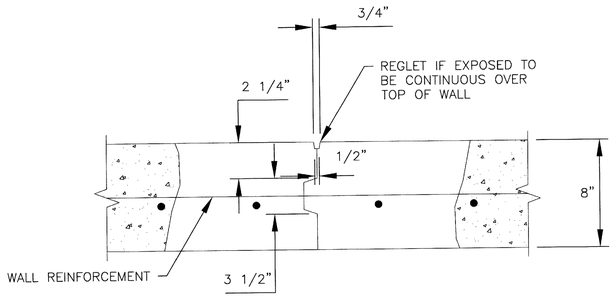
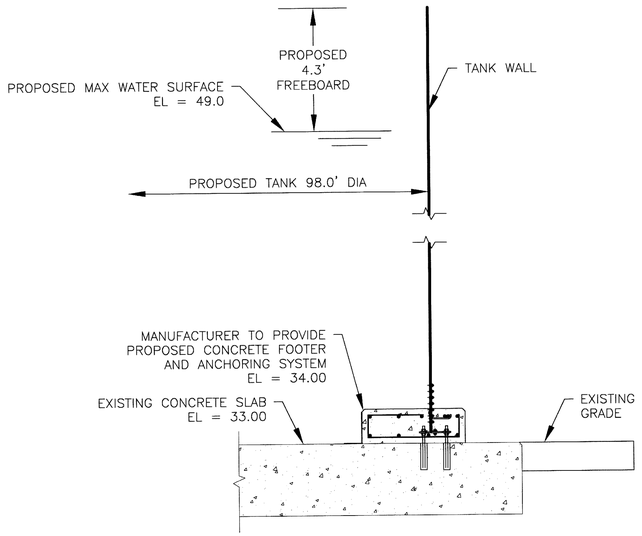
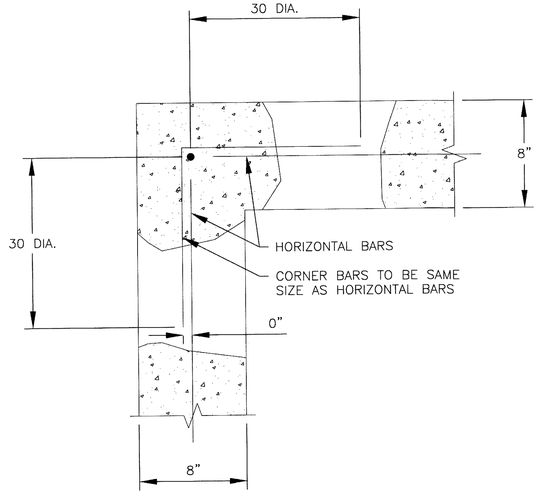


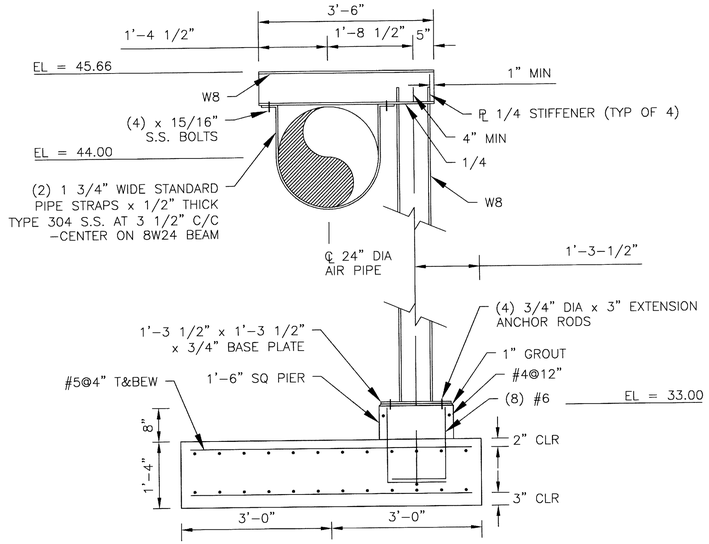
1 WALL CONSTRUCTION JOINT DETAIL
N.T.S.



2 TYPICAL TANK WALL SECTION
N.T.S.

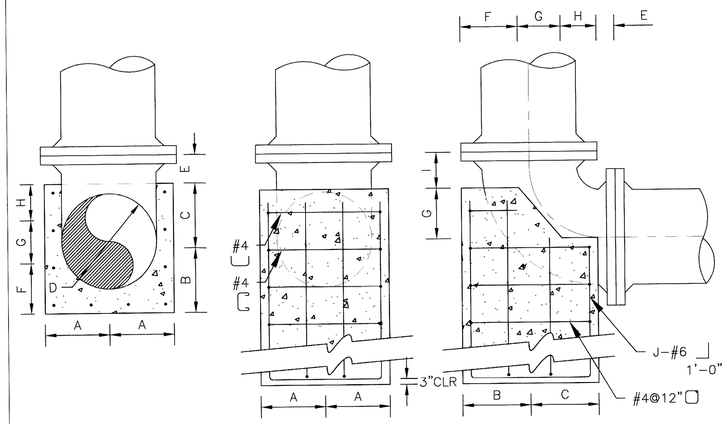


3 PLAN OF HORIZONTAL REINFORCEMENT AT WALL CORNER
N.T.S.



4 S-2 5-FT x 6-FT FOUNDATION AND STEEL PIPE SUPPORT
N.T.S.

NOTES:
1. PIPE SUPPORT SHALL BE HOT DIP GALVANIZED.
2. PROVIDE FULL PENETRATION SHOP WELDED MOMENT CONNECTION AT BEAM TO COLUMN CONNECTION. CONTRACTOR TO PROVIDE SHOP DRAWING FOR COUNTY APPROVAL.



D	A	B	C	E	F	G	H	I	J
12"	9"	10"	8"	4"	7"	6"	5"	6"	8"
18"	12"	12"	12"	4½"	9"	9"	6"	7½"	12"

5 C-10 90° BEND CONCRETE BASE SUPPORT
N.T.S.

RECORD DRAWING

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MANATEE COUNTY, FLORIDA
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ENGINEERING SERVICES
1022 26th Avenue East
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NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS

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SCALE	

	BY	DATE
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DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET S-5

6387.025

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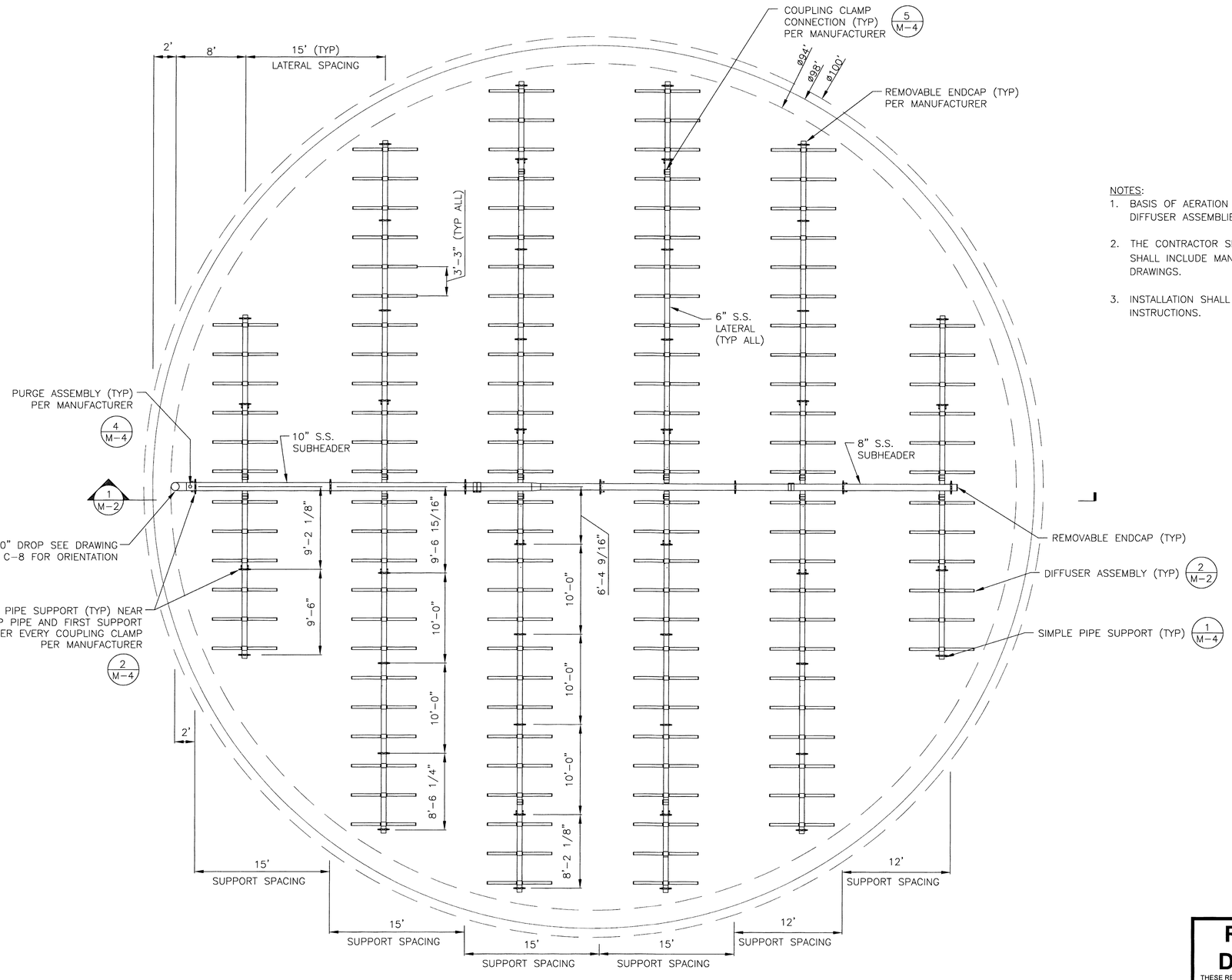

TYPICAL PROPOSED TANK DIFFUSER PLAN

NOTES:

1. BASIS OF AERATION DESIGN IS ENVIRONMENTAL DYNAMICS INC. FLEXAIR 84P MAGNUM DIFFUSER ASSEMBLIES. 128 DIFFUSER ASSEMBLIES PER TANK.
2. THE CONTRACTOR SHALL VERIFY DIMENSIONS, DETAILS AND QUANTITIES. SUBMITTALS SHALL INCLUDE MANUFACTURER'S AERATION DESIGN CALCULATIONS AND SHOP DRAWINGS.
3. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

RECORD DRAWING

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Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
SLUDGE HOLDING TANK PLAN

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DRAWN	SRP	05/23/13
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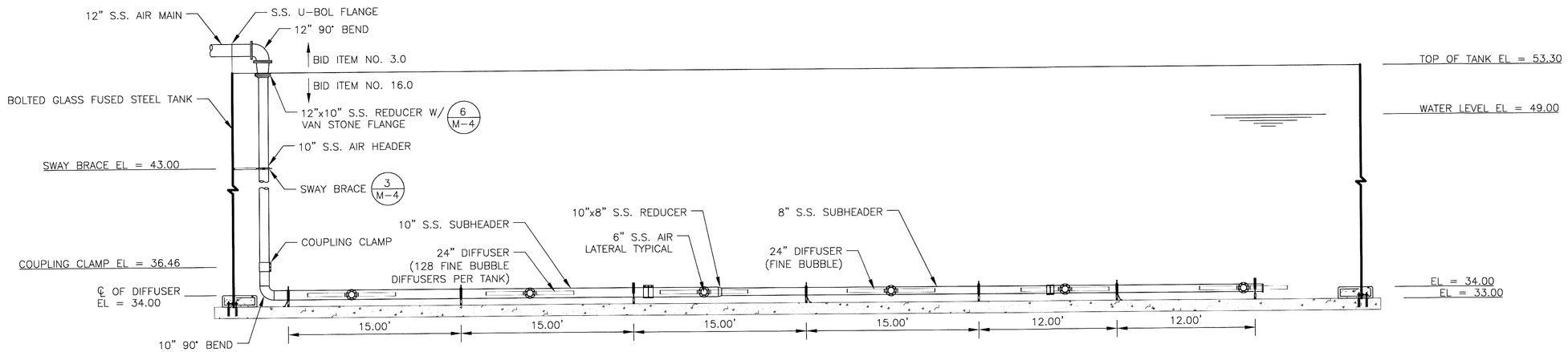
EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET M-1

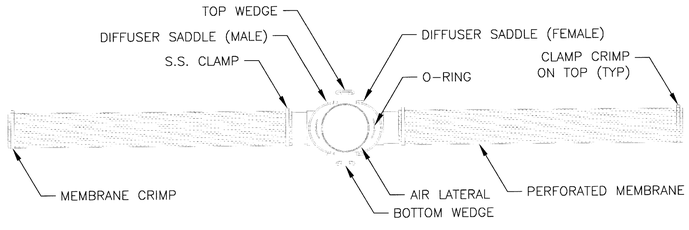
6387.026



1 M-1 TANK CROSS SECTION

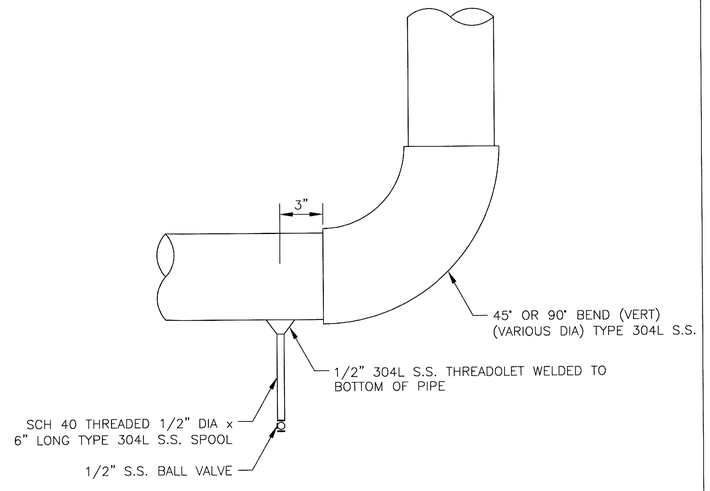
0 5 10

SCALE IN FEET



2 M-1 DIFFUSER ASSEMBLY

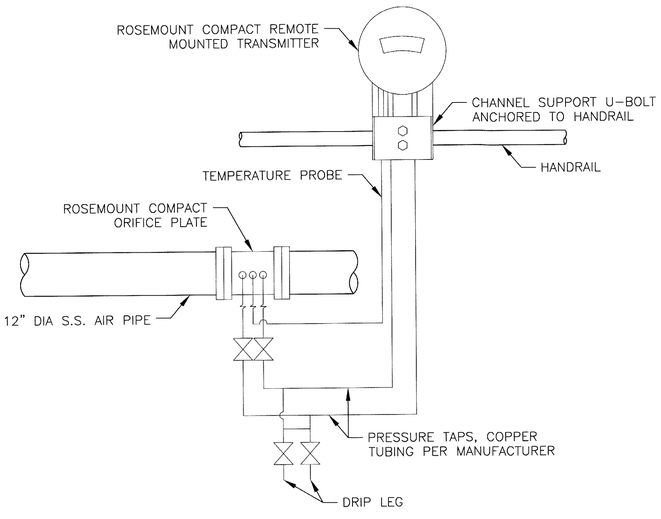
N.T.S.



3 CONDENSATE BLOW OFF ASSEMBLY DETAIL

N.T.S.

NOTE:
CONTRACTOR SHALL PROVIDE CONDENSATE BLOW OFF ASSEMBLY AT ALL LOW POINTS IN AIR PIPING AS REQUIRED.



4 C-10 ORIFICE PLATE ASSEMBLY

N.T.S.

RECORD DRAWING

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NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
SLUDGE HOLDING TANK SECTION AND DETAILS

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EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET M-2

6387.027

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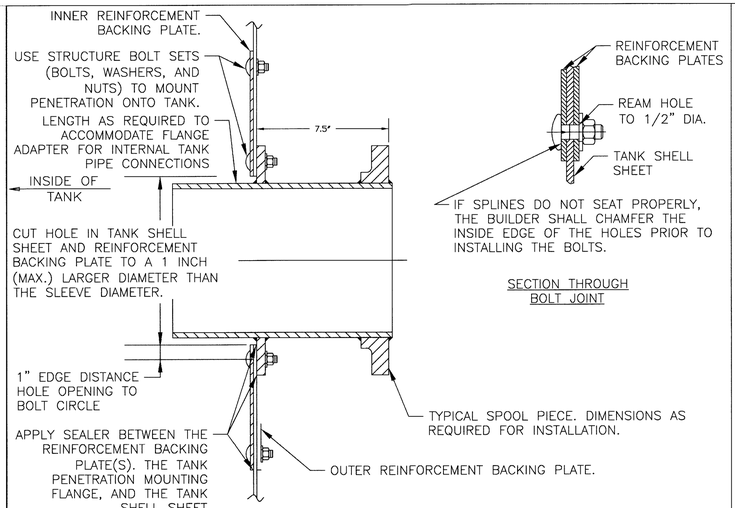
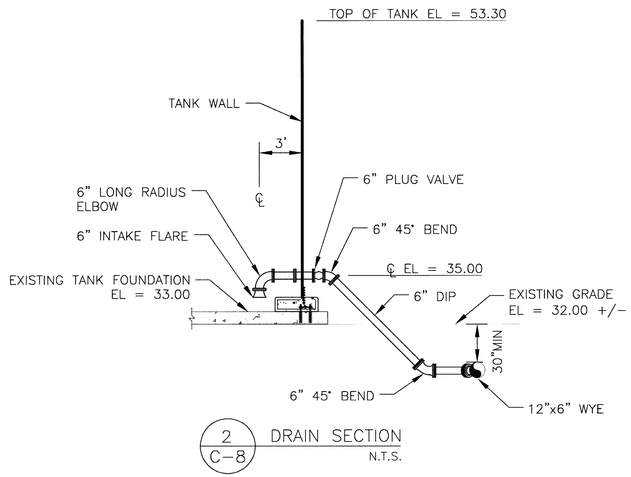


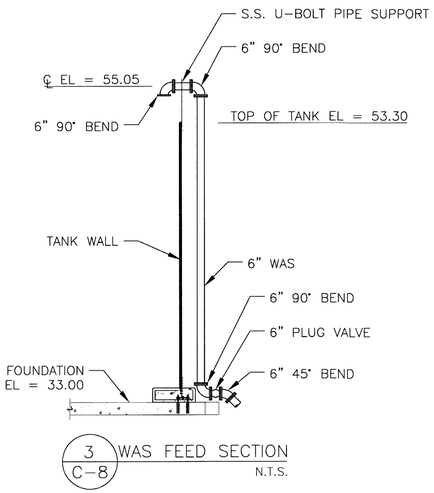
1 C-8 TYPICAL TANK PENETRATION DETAIL
N.T.S.

NOTE:

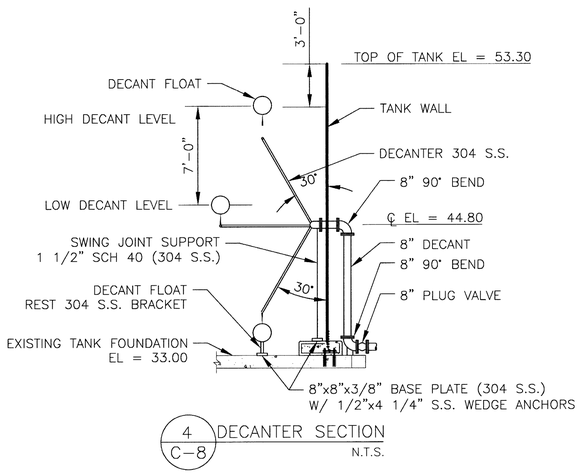
1. ALL TANK PENETRATIONS SHALL FOLLOW THIS GENERAL DETAIL.
2. SEALER IS NOT SHOWN FOR DRAWING CLARITY.
3. DETAIL IS TYPICAL. SPECIFIC DETAIL AND REQUIREMENTS TO BE PROVIDED BY TANK MANUFACTURER, CONFIRMED BY CONTRACTOR AND SUPPLIED WITH SUBMITTAL FOR APPROVAL BY COUNTY.



2 C-8 DRAIN SECTION
N.T.S.



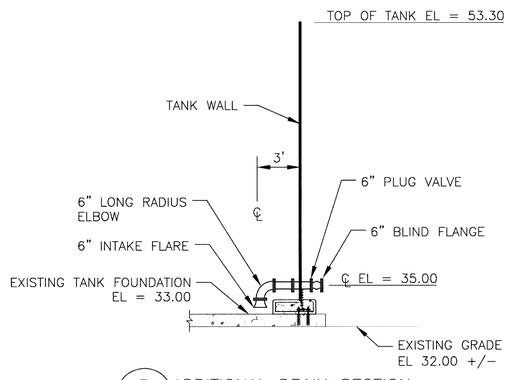
3 C-8 WAS FEED SECTION
N.T.S.



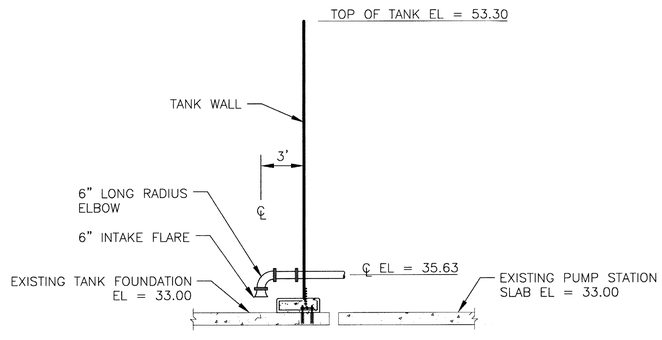
4 C-8 DECANTER SECTION
N.T.S.

NOTES:

1. CONTRACTOR SHALL PROVIDE AN ADDITIONAL DRAIN ON EACH OF THE NEW TANKS.
2. CONTRACTOR SHALL COORDINATE THE LOCATION OF THE ADDITIONAL DRAIN AND THE BLIND FLANGE WITH THE COUNTY.



5 ADDITIONAL DRAIN SECTION
N.T.S.



6 PUMP INTAKE
N.T.S.

RECORD DRAWINGS

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SLUDGE HOLDING TANK DETAILS

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EOR FOR CONSTRUCTION
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FLORIDA P.E. # 40139
1-27-17
Signature & Date

STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET M-3

6387.028

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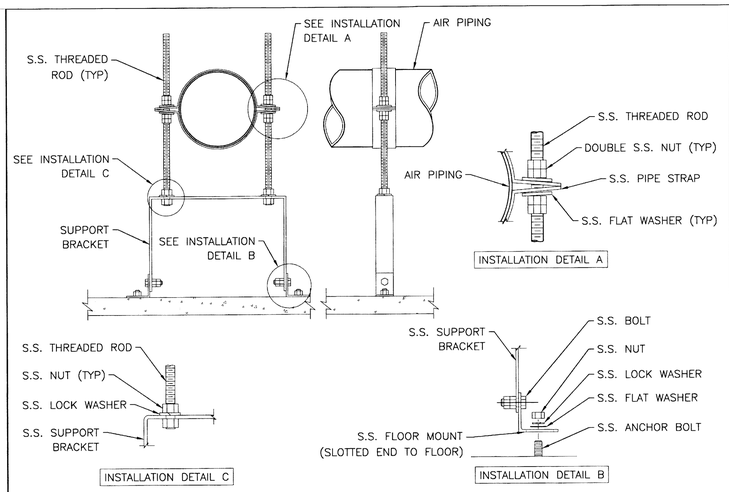
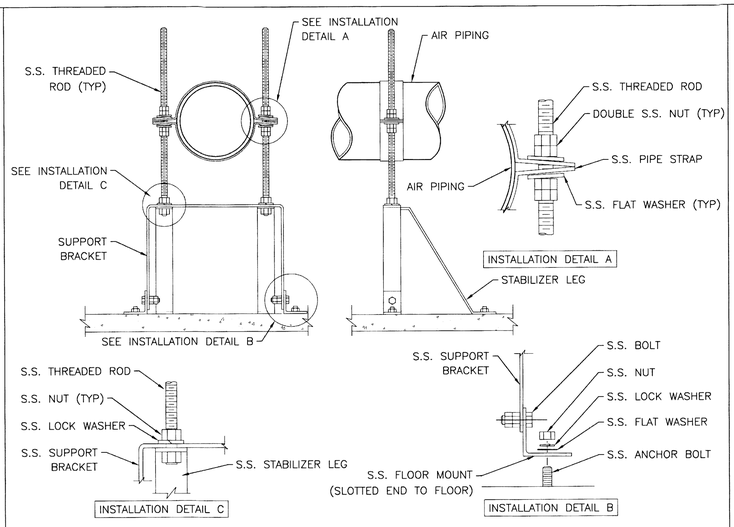


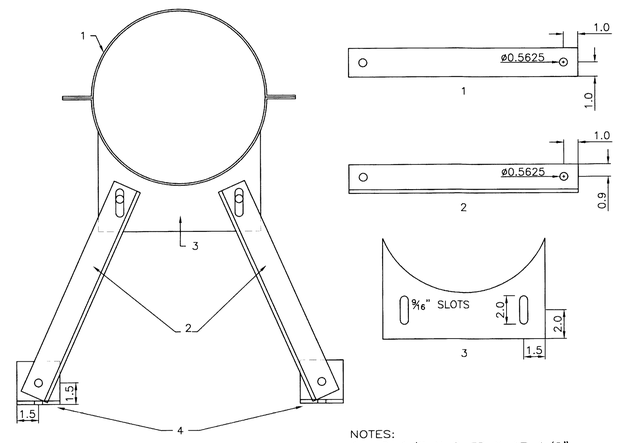
1 / M-1 S.S. SIMPLE PIPE SUPPORT DETAIL
N.T.S.

NOTES:
1. FLOOR MOUNTS SHALL BE SECURED TO BASIN FLOOR BY CONCRETE ANCHOR BOLTS.
2. A COMMERCIAL GRADE ANTI SEIZE LUBRICANT SHALL BE USED ON ALL STAINLESS STEEL THREADED CONNECTIONS.
3. ANCHOR HARDWARE SHALL BE PER MANUFACTURERS RECOMMENDATION.
4. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.



2 / M-1 S.S. RIGID PIPE SUPPORT DETAIL
N.T.S.

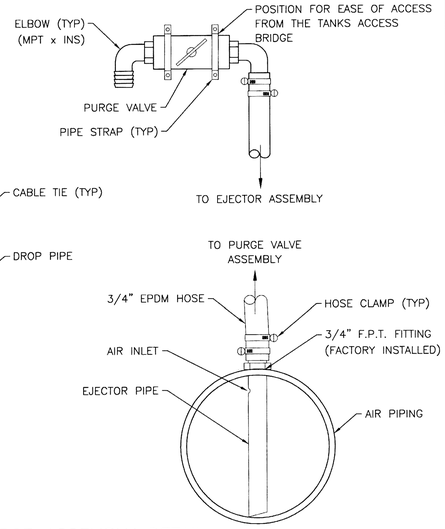
NOTES:
1. FLOOR MOUNTS SHALL BE SECURED TO BASIN FLOOR BY CONCRETE ANCHOR BOLTS.
2. A COMMERCIAL GRADE ANTI SEIZE LUBRICANT SHALL BE USED ON ALL STAINLESS STEEL THREADED CONNECTIONS.
3. ANCHOR HARDWARE SHALL BE PER MANUFACTURERS RECOMMENDATION.
4. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.



NOTES:
1. 2-1/8 X 2 FB X 17 1/2"
2. 2-1/4 X 2 X 2 ANGLE x 15 1/2"
3. 1-1/4 PLATE CUT D X F
4. 2-1/4 X 3 X 3 ANGLE X 3"
5. TWO SUPPLIED

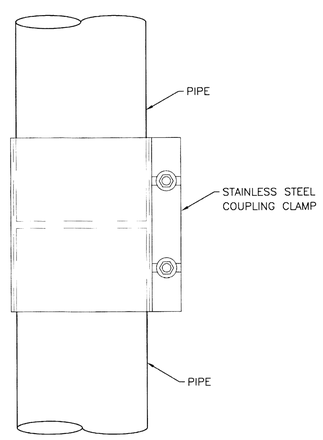
3 / M-2 S.S. SWAY BRACE
N.T.S.

NOTES:
1. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.



4 / M-1 PURGE ASSEMBLY DETAIL
N.T.S.

NOTES:
1. CONNECT EPDM HOSE AND SECURE TO EJECTOR WITH 2 HOSE CLAMPS OFFSET 180°.
2. ANCHOR VALVE WITH PE PIPE STRAPS.
3. CONNECT EPDM HOSE AND SECURE TO ELBOW WITH 2 HOSE CLAMPS OFFSET 180°.
4. SECURE HOSE TO DROP WITH CABLE TIES.
5. HOSE TO BE SECURED ON APPROXIMATELY 3FT CENTERS.

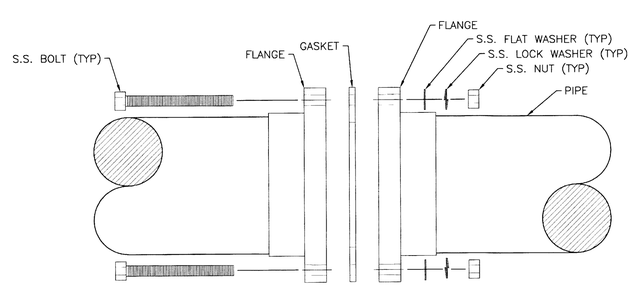


COUPLING CLAMPS

NOMINAL PIPE SIZE (INCHES)	CLAMP O.D. RANGE (INCHES)
2	2.32–2.63
3	3.40–3.70
4	4.45–4.75
6	6.55–6.95
8	8.59–8.99
10	10.65–11.05
12	12.65–13.05
14	14.00–14.40

5 / M-1 S.S. COUPLING CLAMP DETAIL
N.T.S.

NOTES:
1. COUPLING CLAMP SHALL BE INSTALLED A MINIMUM OF 2 FT. BELOW WATER LEVEL.
2. GAP BETWEEN PIPES SHALL BE LESS THEN 0.25 INCHES.
3. MATING PIPES SHALL HAVE THE SAME OUTSIDE DIAMETER.
4. BOLTS SHALL BE TORQUED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



SIZE	BOLT CIRCLE	BOLTS REQ'D	BOLT SIZE (UNC x LENGTH)
2	4.75	4	5/8 – 11 x 3
3	6.00	4	5/8 – 11 x 4
4	7.50	8	5/8 – 11 x 4
6	9.50	8	3/4 – 10 x 4 1/2
8	11.75	8	3/4 – 10 x 4 1/2
10	14.25	12	7/8 – 9 x 4 1/2
12	17.00	12	7/8 – 9 x 5
14	18.75	12	7/8 – 9 x 5 1/2

6 / M-2 VAN STONE FLANGE DETAIL
N.T.S.

NOTES:
1. ANTI-SEIZE LUBRICANT SHALL BE USED ON ALL STAINLESS STEEL FASTENERS.
2. BOLT THREADS SHALL BE WELL LUBRICATED.
3. NUT AND BOLT THREADS SHALL BE FREE RUNNING DURING ASSEMBLY.
4. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.

RECORD DRAWING

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

RECORD DRAWINGS

Stantec
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
SLUDGE HOLDING TANK DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

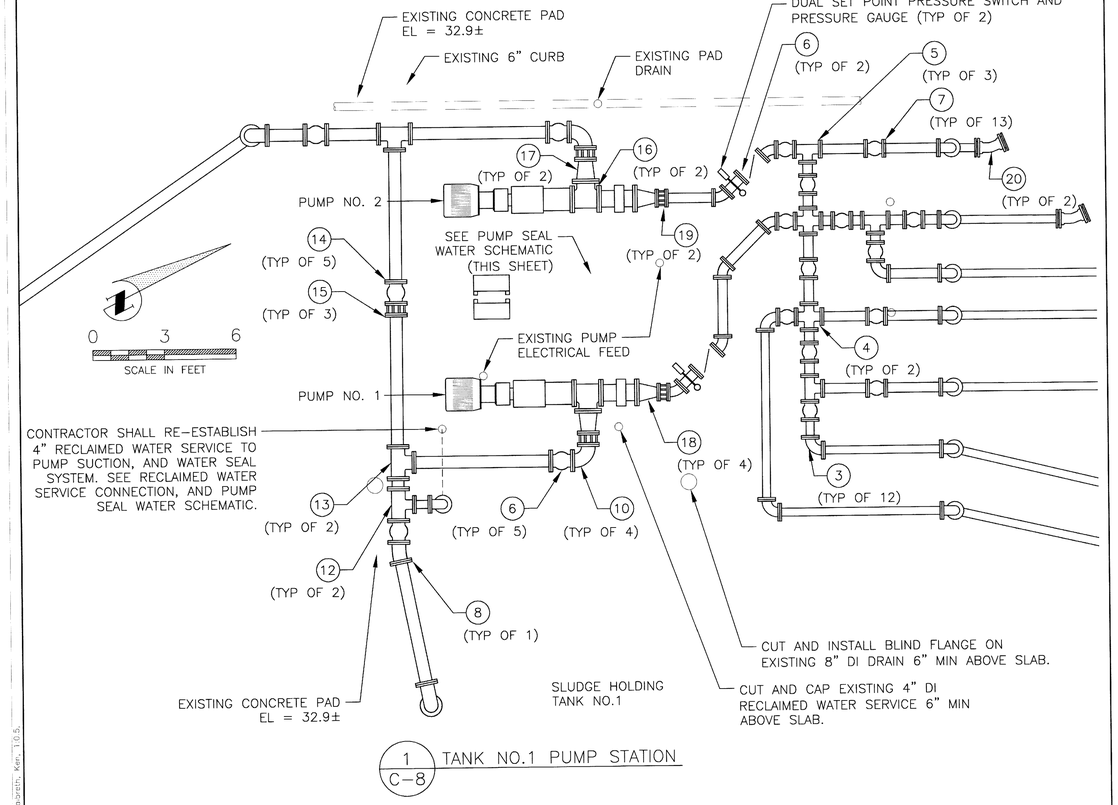
PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	N.T.S.

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

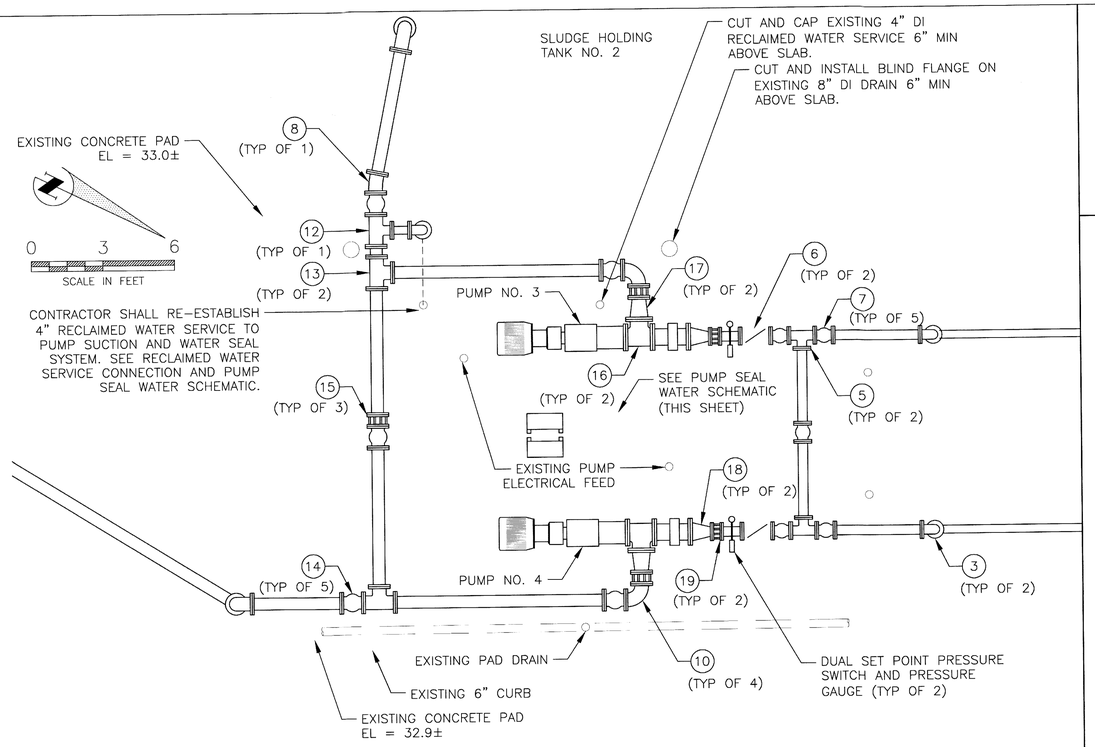
EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET M-4

6387.029



1 / C-8 TANK NO.1 PUMP STATION



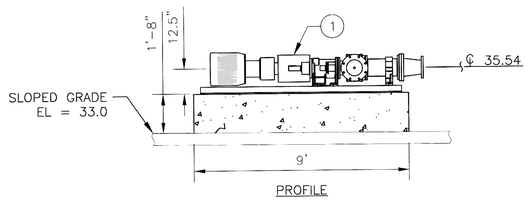
2 / C-8 TANK NO. 2 PUMP STATION

NOTES:

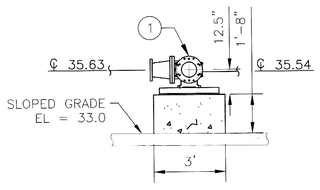
1. ALL ABOVE GRADE PIPING SHALL BE FLANGED DUCTILE IRON CLASS 53, UNLESS OTHERWISE SPECIFIED. FLANGED COUPLING ADAPTORS SHALL BE MEGA LUGS BY EBAA.
2. ALL BURIED PIPE SHALL BE DUCTILE IRON WITH CLASS 53 WITH RESTRAINED MECHANICAL JOINTS, UNLESS OTHERWISE SPECIFIED.
3. ALL BURIED PIPES SHALL HAVE A MINIMUM OF 30 INCHES OF COVER UNLESS OTHERWISE SPECIFIED.
4. CONTRACTOR SHALL RELOCATE EXISTING POWER AND EXISTING CONTROL CONDUIT AND WIRE FOR EACH PUMP AS NECESSARY.
5. CONTRACTOR SHALL INSTALL AND ROUTE 1" PVC SCHEDULE 80 PUMP SEAL WATER DRAIN PIPE TO EXISTING PAD DRAIN. DRAIN PIPE SHALL BE SURFACE MOUNTED WITH STAINLESS STEEL STRAPS TO THE EXISTING SLAB AND/OR THE PROPOSED CONCRETE PUMP PADS, AS NECESSARY.
6. CONTRACTOR SHALL ROUTE 1" PVC SCHEDULE 80 WATER SEAL FEED LINE TO THE PROPOSED WATER SEAL STATION. WATER SEAL FEED LINE SHALL BE SURFACE MOUNTED WITH STAINLESS STEEL STRAPS TO THE EXISTING CONCRETE SLAB AND/OR THE PROPOSED CONCRETE PUMP PADS, AS NECESSARY.
7. WATER SEAL SYSTEM SHALL BE FIELD MOUNTED ON S.S. UNISTRUT SUPPORTS A MINIMUM OF 1' ABOVE EXISTING SLAB. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF SEAL WATER ASSEMBLY FOR APPROVAL.
8. CONTRACTOR SHALL CAP ANY EXISTING PIPE PENETRATIONS THAT ARE NOT IN SERVICE UNLESS OTHERWISE SPECIFIED.
9. CUT AND INSTALL 4" DI BLIND FLANGE ON EXISTING 4" THICKENED SLUDGE DISCHARGE LINES.
10. CONTRACTOR SHALL PROVIDE STAINLESS STEEL PIPE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS FOR DUCTILE IRON PIPE, VALVES, AND APPURTENANCES. PIPE SUPPORTS SHALL BE PROVIDED AT EACH VALVE AS WELL AS INTERMEDIATE LOCATIONS ALONG ABOVE GRADE PIPING. CONTRACTOR SHALL SUBMIT PIPE SUPPORT LOCATIONS TO COUNTY FOR APPROVAL.

LEGEND

1. MOYNO PUMP
2. 4" 45° BEND
3. 4" 90° BEND
4. 4"x4" CROSS
5. 4"x4" TEE
6. 4" CHECK VALVE
7. 4" PLUG VALVE
8. 6" 11.25° BEND
9. NOT USED
10. 6" 90° BEND
11. NOT USED
12. 6"x4" TEE
13. 6"x6" TEE
14. 6" PLUG VALVE
15. 6" COUPLING ADAPTER
16. 8"x8" TEE
17. 8"x6" REDUCER
18. 8"x4" REDUCER
19. 4" COUPLING ADAPTER
20. 4" 22.5° BEND

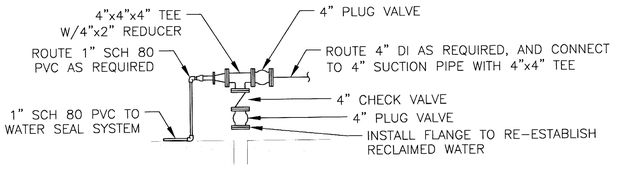


PROFILE

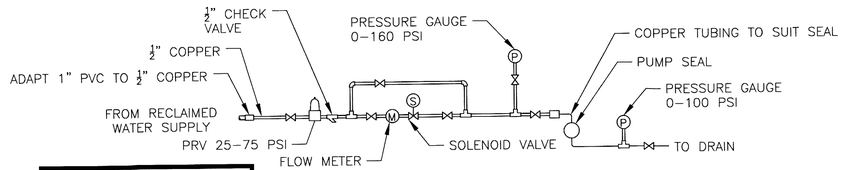


FRONT

3 PUMP SECTION (TYP) N.T.S.



4 RECLAIMED WATER SERVICE SCHEMATIC N.T.S.



5 PUMP SEAL WATER SCHEMATIC N.T.S.

RECORD DRAWING

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

RECORD DRAWINGS

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5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
SLUDGE PUMP STATIONS
PLAN AND DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/1/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	1"=5'

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET M-5

6387.030

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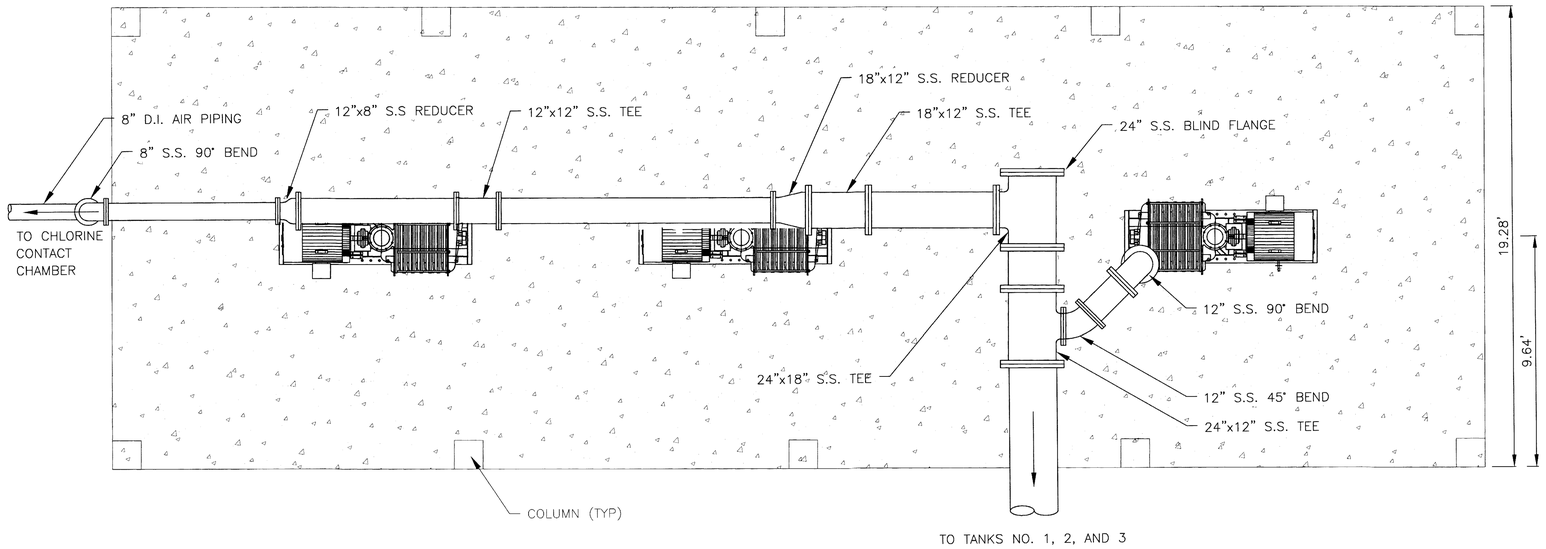
NOTES:

1. CONTRACTOR SHALL DESIGN, FURNISH, AND INSTALL STAINLESS STEEL PIPE SUPPORTS AS SPECIFIED IN DIVISION 15 OF CONTRACT DOCUMENTS.

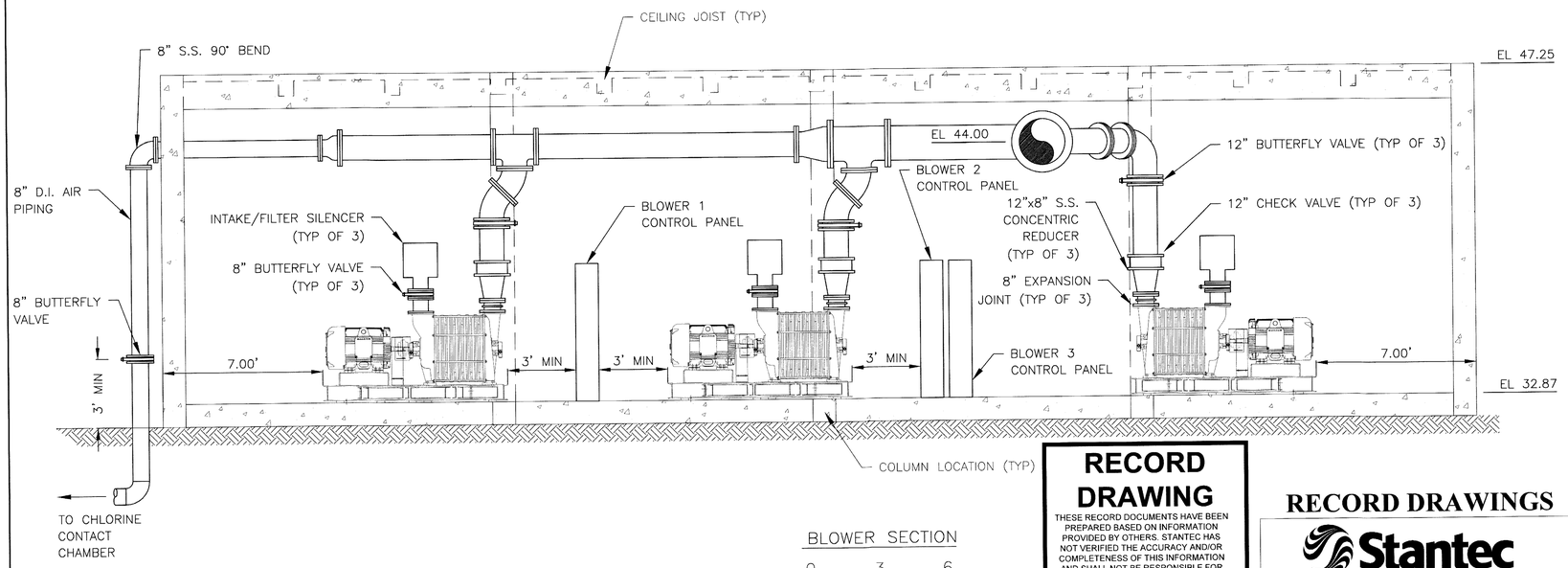
2. CONTRACTOR SHALL SUBMIT PIPE SUPPORT SYSTEM TO COUNTY FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION.



BLOWER PLAN

0 3 6

SCALE IN FEET



*NOTE: ORIENT BUTTERFLY VALVES FOR CONVENIENT OPERATION BY STAFF

BLOWER SECTION

0 3 6

SCALE IN FEET

RECORD DRAWING

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

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MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES

1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
BLOWER IMPROVEMENT
PLAN AND SECTION

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	AS SHOWN

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET M-6

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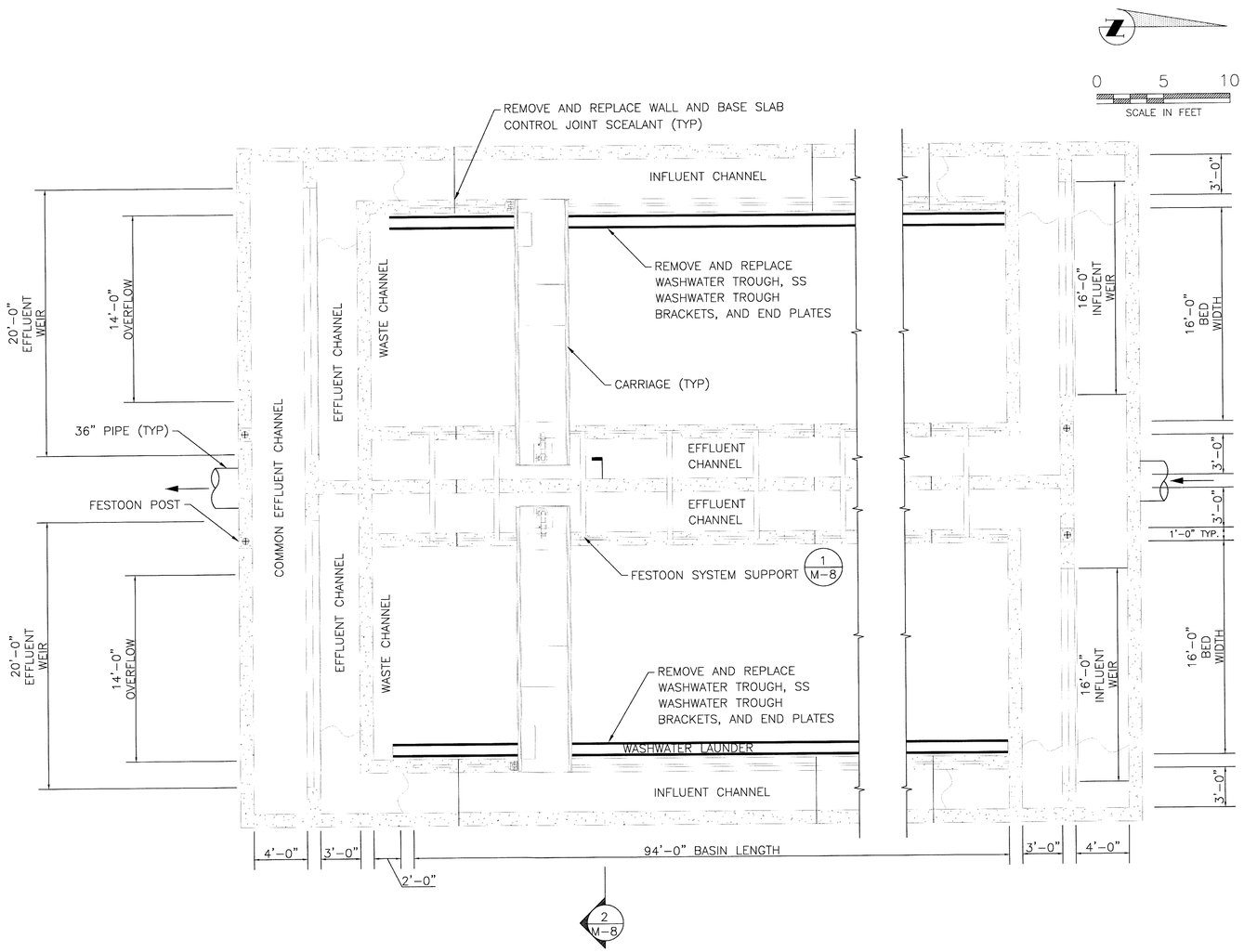

BACKWASH FILTER UPPER PLAN

0 5 10
SCALE IN FEET

NOTES:

1. RECOAT FILTER INTERIOR CONCRETE SURFACES. COATING SHALL BE AS SPECIFIED IN SECTION 09900. SURFACE PREPARATION AND APPLICATION SHALL BE IN STRICT ACCORDANCE WITH THE COATING MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. REMOVE AND REPLACE SEALANT IN CONTROL AND EXPANSION JOINTS.
3. ALL REPLACEMENT PARTS SHALL BE FROM THE ORIGINAL EQUIPMENT MANUFACTURER.
4. REHABILITATION SHALL INCLUDE ALL INCIDENTALS RECOMMENDED BY THE EQUIPMENT MANUFACTURER WHETHER SHOWN OR NOT.
5. BOTH FILTERS ARE TO BE REHABILITATED. ONE FILTER MUST REMAIN IN SERVICE AT ALL TIMES.

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS
AUTOMATIC BACKWASH FILTER PLAN

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION.	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	1"=5'

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH, P.E.
FLORIDA P.E. # 40139
1-22-17
Signature & Date

SHEET M-7

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

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5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
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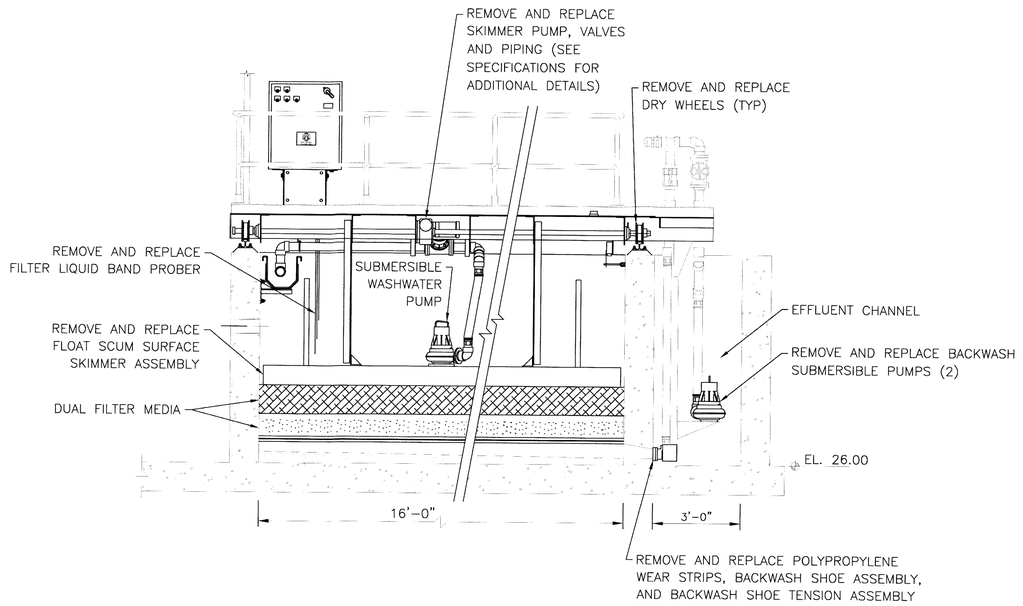

2 / M-7 SECTION

0 2.5 5

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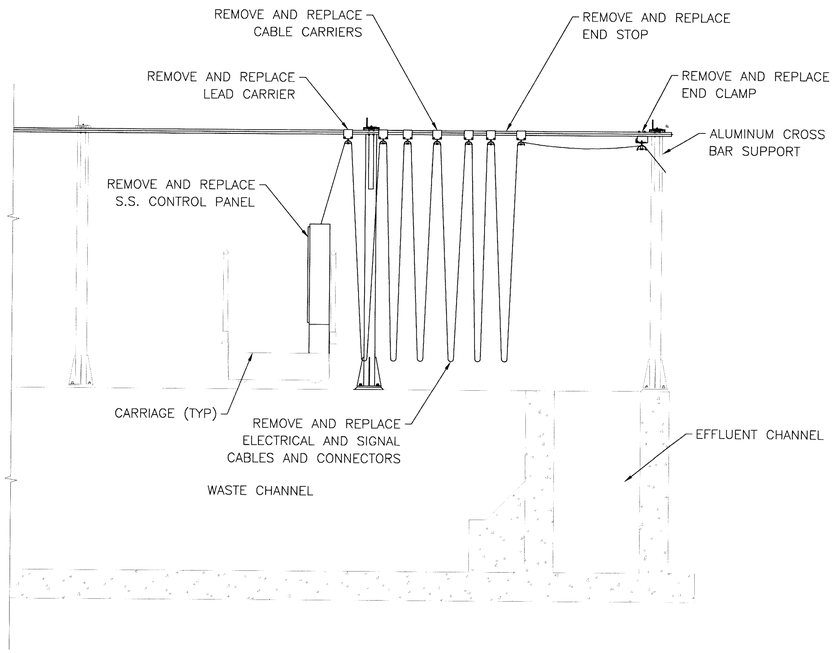

1 / M-7 FESTOON SYSTEM

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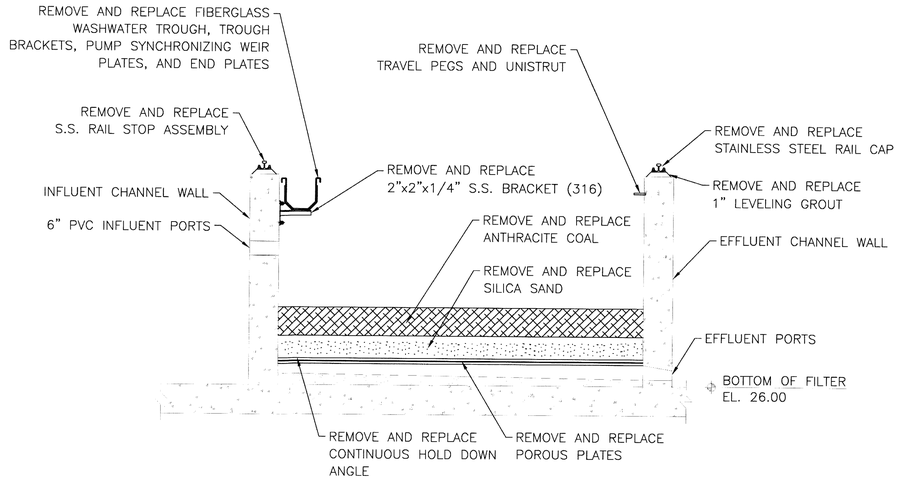

3 / M-7 TYPICAL SECTION–FILTER BED

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SCALE IN FEET

RECORD DRAWING

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MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS
AUTOMATIC BACKWASH
SECTION AND DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
1	ADD BRANDES DESIGN-BUILD, INC. RECORD DATA INFORMATION	KG	1/11/17

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	1"=5'

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

EOR FOR CONSTRUCTION
ROBERT J. HALBACH
FLORIDA P.E. # 40139
1-27-17
Signature & Date

SHEET M-8

6387.033

SCADA DISPLAY OR CONTROL

PANEL MOUNTED (MAIN OR REMOTE)

PANEL BEHIND (MAIN OR REMOTE)

PANEL MOUNTED (LOCAL)

LOCALLY MOUNTED

SINGLE LINE TAG

MOUNTED BEHIND PANEL (LOCAL)

PILOT LIGHT

PANEL PILOT LIGHT

COMPUTER FUNCTION

CONTROL TYPE (DI, DO, AI, AO)

(I) DATA LINK

INTERLOCKING FUNCTION

PANEL

DIAPHRAGM CONTROL

GROUND

POLYMER FEED HOPPER / DRY FEEDER — POLYMER FEED SYSTEM (DRY)

PROGRESSIVE CAVITY PUMP

ELECTRICAL SIGNAL

3 PHASE AC POWER

DATALINK

24VDC SIGNAL

DC POWER

GLOBE VALVE

BALL VALVE

HALF SIZE BALL VALVE

GATE VALVE

PLUG VALVE

CHECK VALVE

NEEDLE VALVE

PINCH VALVE

FOOT VALVE

DIAPHRAGM

BUTTERFLY VALVE

FILL VALVE

REDUCER

FLEXIBLE CONNECTOR

INLINE STATIC MIXER

CENTRIFUGAL PUMP

BLOWER PUMP

SUBMERSIBLE PUMP

METERING PUMP

ROTAMETER

MOTOR

MIXER

FLANGE

VACUUM BREAKER

RELIEF AND/OR SAFETY

SOLENOID VALVE

3-WAY SOLENOID

4-WAY SOLENOID

DRAIN

DOUBLE LEAF CHECK VALVE

WYE STRAINER

VIC COUPLING

3-WAY VALVE

4-WAY VALVE

HOSE CONNECTION

VENT WITH SCREEN

LEVEL GAUGE

GAS CYLINDERS

EDUCTOR

AIR RELEASE VALVE

BACK PRESSURE VALVE

HOSE PUMP

SIMPLEX RECEPTACLE

DUPLEX RECEPTACLE

TIE POINT

SELF ACTUATED REGULATOR

PILOT OPERATED PRESSURE REGULATOR

PILOT OPERATED BACKPRESSURE REGULATOR

MOTOR OPERATED

CYLINDER OR PISTON OPERATED

DIAPHRAGM ACTUATOR W/DOUBLE ACTING OPERATOR W/O ACCESSORIES

DIAPHRAGM ACTUATOR W/DOUBLE ACTING OPERATOR WITH HANDWHEEL

DIAPHRAGM ACTUATOR W/DOUBLE ACTING OPERATOR WITH ADJUSTABLE OPENING LIMIT STOP

VANE TYPE ACTUATOR

AIR OPERATOR W/POSITIONER

FAIL OPEN

FAIL CLOSED

FAIL LAST POSITION

STEAM TRAP

RESIN OR MEDIA TRAP

DESICCANT BREATHER

VENT PIPE

RUPTURE DISC

DIAPHRAGM SEAL

SPECTACLE BLIND

PULSATION DAMPENER

TURBINE DRIVE

PNEUMATIC PISTON

PADDLE WHEEL FLOW SENSOR

END CLOSURE (CLEANING CONNECTION)

EJECTOR

VACUUM PUMP

POSITIVE DISPLACEMENT PUMP W/MANUAL STROKE ADJUSTMENT

POSITIVE DISPLACEMENT PUMP W/PNEUMATIC STROKE ADJUSTMENT

POSITIVE DISPLACEMENT PUMP W/ELECTRIC STROKE ADJUSTMENT

HEAT EXCHANGER

VENT TO ATMOSPHERE

ROTARY COMPRESSER OR BLOWER

VENTURI

VORTEX SENSOR

FLOW NOZZLE

SONIC FLOW SENSOR

INJECTION SPARGER

RO BLOCK OR TUBE

DOUBLE SKIN UF CARTRIDGE

FLOW SIGHT GLASS

SIGHTGLASS (ON VESSEL)

LEVEL GAUGE

AIR SUPPLY

NITROGEN SUPPLY

FLOW ELEMENT (ORIFICE PLATE)

INLINE FLOW INDICATOR (ROTAMETER)

FLOW ELEMENT (ANNUBAR)

FLOW TOTALIZING INDICATOR (TURBINE METER)

FLOW ELEMENT (MAGNETIC)

FLOW ELEMENT (VENTURI)

LEVEL ELEMENT (ULTRASONIC OR RADAR)

INSTRUMENT SOCIETY OF AUTOMATION

LETTER	FIRST LETTER (S)		SUCCEEDING LETTERS		
	PROCESS OF INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (+)		ALARM		
B	BURNER FLAME		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
C	USERS CHOICE (+)			CONTROL	
D	USERS CHOICE	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT/SENSOR		
F	FLOW RATE	RATIO/FRACTION			
G	USERS CHOICE		GLASS/VIEWING DEVICE		
H	HAND (MANUAL)				HIGH
I	CURRENT (ELECTRIC)		INDICATE		
J	POWER/TORQUE	SCAN			
K	TIME OR SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTOR	MOMENTARY			MIDDLE/INTERMEDIATE
N	DATA		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
O	USERS CHOICE (+)		ORIFICE		
P	PRESSURE (OR VACUUM)		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE			INTEGRATE/TOTALIZE
R	RADIATION		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	STARTER
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE (+)		MULTIFUNCTION (+)	MULTIFUNCTION (+)	MULTIFUNCTION (+)
V	VIBRATION MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT OR FORCE		WELL		
X	MALFUNCTION/FAULT	X AXIS	UNCLASSIFIED (+)	UNCLASSIFIED (+)	UNCLASSIFIED (+)
Y	EVENT STATE OR PRESENCE	Y AXIS		RELAY OR COMPUTE (+)	
Z	POSITION	Z AXIS		DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

(+) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL. SEE ABBREVIATIONS AND LETTERS SYMBOLS.

TRANSDUCER SUBSCRIPTS

A	ANALOG	I	CURRENT
D	DIGITAL	P	PNEUMATIC
E	VOLTAGE	PF	PULSE FREQUENCY
F	FREQUENCY	PD	PULSE DURATION
H	HYDRAULIC	R	RESISTANCE
		POT	POTENTIOMETER

EXAMPLE: FY (I/P) — CURRENT TO PNEUMATIC TRANSDUCER (BACK OF PANEL, IN A FLOW LOOP)

AIT (pH) — ANALYSIS INDICATING TRANSMITTER WITH THE SUBSCRIPT SHOWING THE TYPE, SUCH AS pH, TURBIDITY, Cl RESIDUAL, ETC.

DEVICES FURNISHED BY OTHER THAN SYSTEM SUPPLIER OR EXISITNG

RECORD DRAWING

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

RECORD DRAWINGS

EMJ

WILLARD C. HOANSHELT, P.E.
FLORIDA P.E. NO. 42593
EB 6160

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS INSTRUMENTATION SYMBOLS AND ABBREVIATIONS

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	N.T.S.

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

WILLARD C. HOANSHELT, P.E.
FLORIDA P.E. # 42593

Signature & Date

SHEET 1-1

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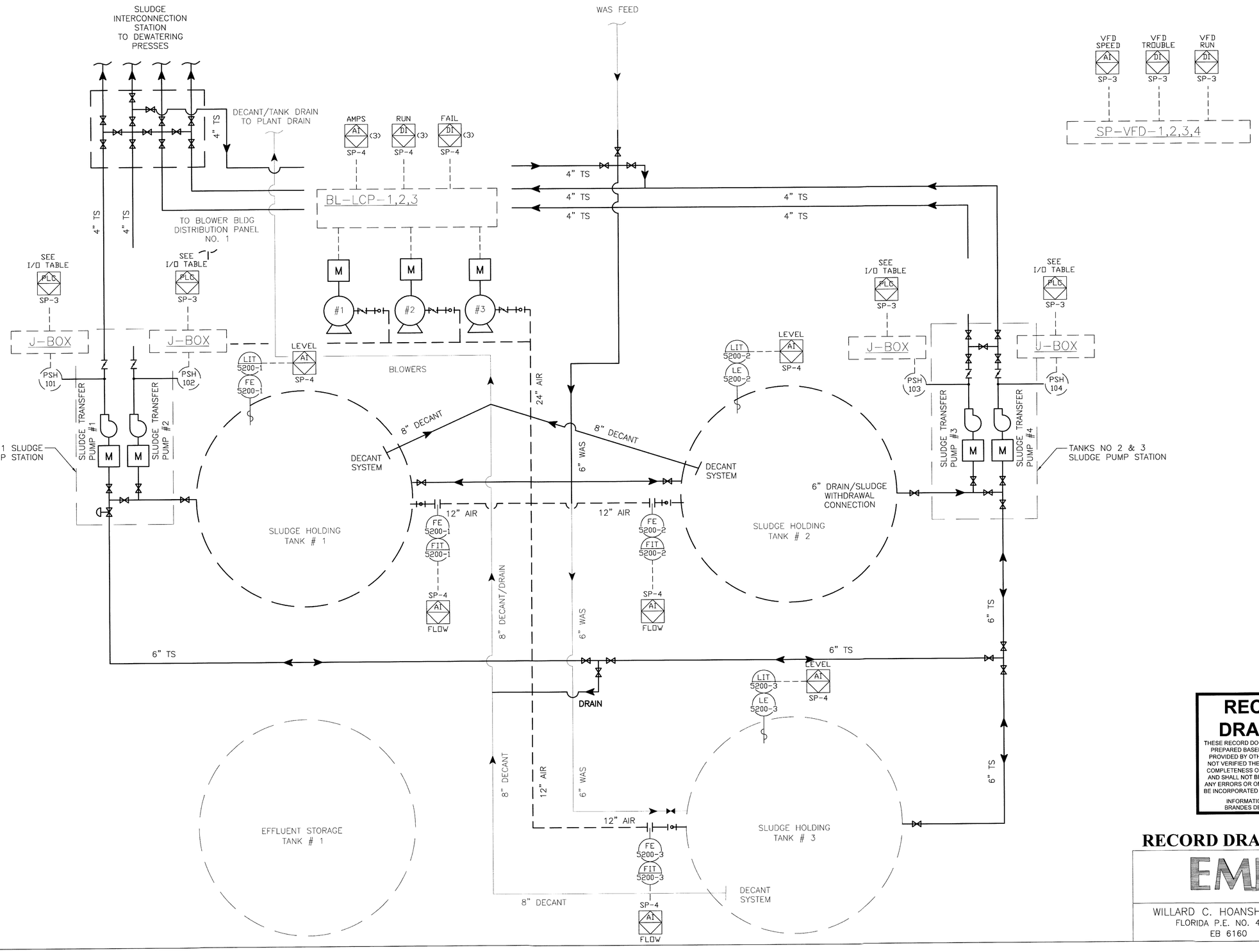

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES

1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS PROCESS AND INSTRUMENTATION DIAGRAM

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT #	177310545	
SURVEY #	000	
SEC./TWN./RGE	26/33S/18E	
SCALE	N.T.S.	

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

WILLARD C. HOANSHELT, P.E.
FLORIDA P.E. # 42593

Signature & Date

SHEET 1-2

RECORD DRAWING

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EB 6160

\\1773\Active\177310545\design\drawing\civil\sheet\10545u-001-030.dwg P & ID, 11/8/2016 8:18 AM Gajpreth, Ken, 10.5 ARCH D (36.00 x 24.00 Inches)

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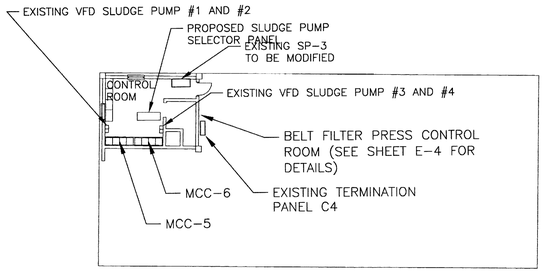
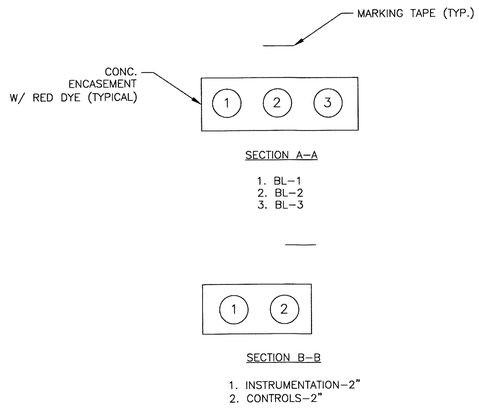
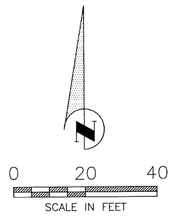
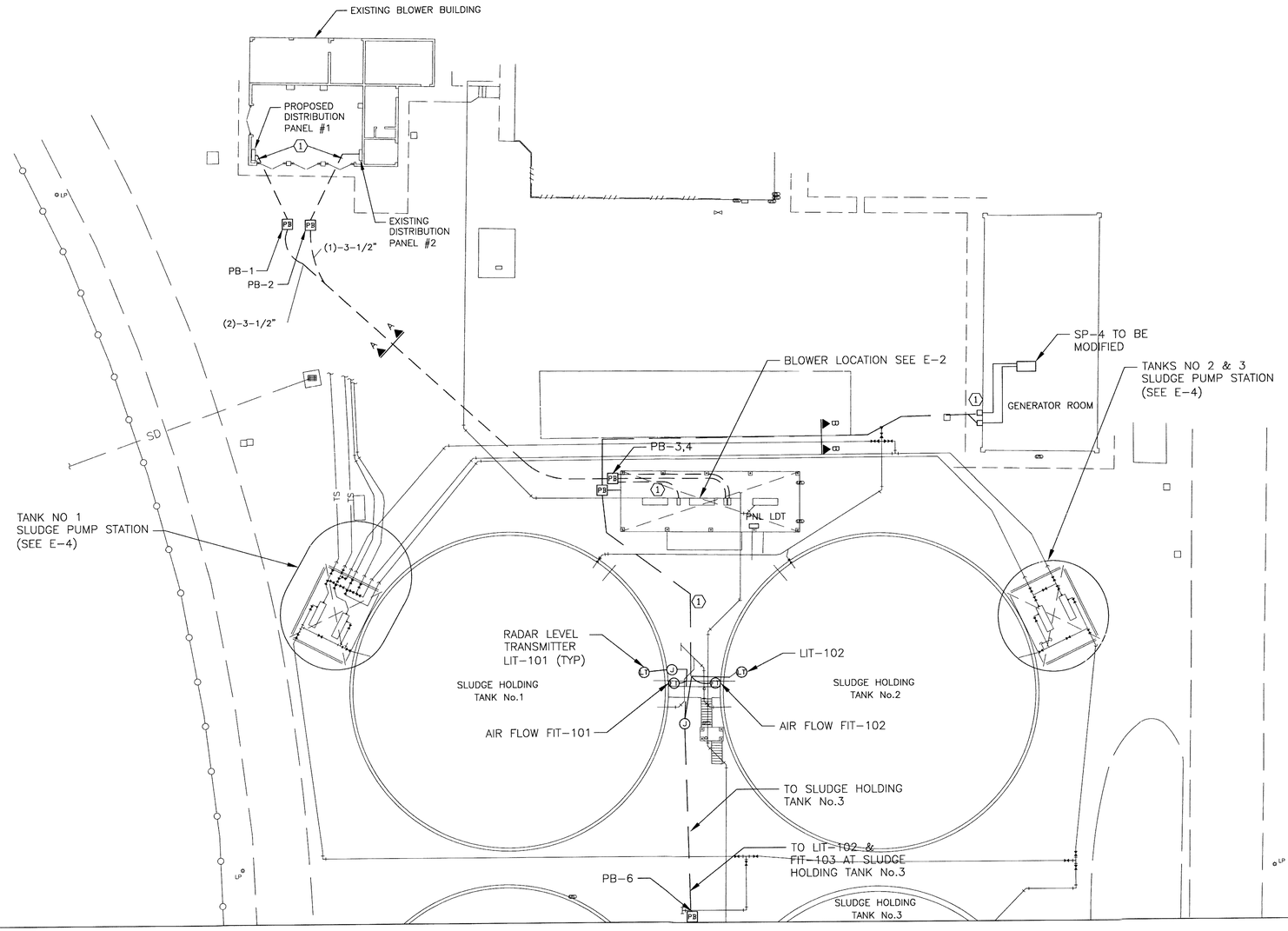






SHEET NOTES

(1) CUT & PATCH CONCRETE TO MATCH EXISTING.



SYMBOLS

- HOME RUN TO PANELBOARD. NO. OF ARROWS INDICATE NO. OF CIRCUITS, HASH MARKS INDICATE NO. OF #12 AWG. CONDUCTORS. NO HASH MARKS INDICATE 2 #12 CONDUCTORS.
- CONDUIT CONCEALED IN WALL OR ABOVE CEILING.
- CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.
- CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.
- FLEXIBLE CONDUIT WITH EQUIPMENT CONNECTION.
- FUSE
- MOLDED CASE CIRCUIT BREAKER

ABBREVIATIONS

A	AMPERES
AIC	ASYMMETRICAL INTERRUPTING CURRENT
BFP	BELT FILTER PRESS
BKR	BREAKER
BL	BLOWER
BLDG	BUILDING
CAB	CABINET
CIR	CIRCUIT
CONT	CONTROL
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CKTS	CIRCUITS
EC	EMPTY CONDUIT
ELEC	ELECTRICAL
EM	EMERGENCY
ENCL	ENCLOSURE
ETM	ELAPSE TIME METER
EXIST	EXISTING
GEN	GENERATOR
GND	GROUND
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERES
LS	LIMIT SWITCH
LSCP	LIFT STATION CONTROL PANEL
LTG	LIGHTING
MAX	MAXIMUM
MB	MAIN BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MIN	MINIMUM
MTD	MOUNTED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
P	POLE
PB	PULL BOX
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
RGS	RIGID GALVANIZED STEEL
SW	SWITCH
SS	STAINLESS STEEL
TYP	TYPICAL
UG	UNDERGROUND
V	VOLT
VAC	VOLTS ALTERNATING CURRENT
W	WIRE
WP	WEATHER PROOF
XMFR	TRANSFORMER

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH N.E.C. AND LOCAL CODES.
2. REFER TO EQUIPMENT SHOP DRAWINGS FOR EXACT LOCATION OF CONDUITS.
3. INSTALL BOND WIRE IN ALL RACEWAYS PER N.E.C.
4. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO THE MECHANICAL, CIVIL AND STRUCTURAL DRAWINGS FOR DETAILED LOCATIONS OF ALL PIPING AND EQUIPMENT.

RECORD DRAWING

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

RECORD DRAWINGS

EMI

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MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
ELECTRICAL SITE PLAN

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT #	177310545	
SURVEY #	000	
SEC./TWN./RGE	26/33S/18E	
SCALE	AS SHOWN	
	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

WILLARD C. HOANSHELT, P.E.
FLORIDA P.E. # 42593
STATE OF FLORIDA
Signature & Date

SHEET E-1

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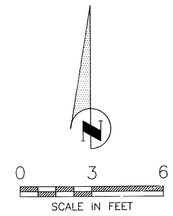

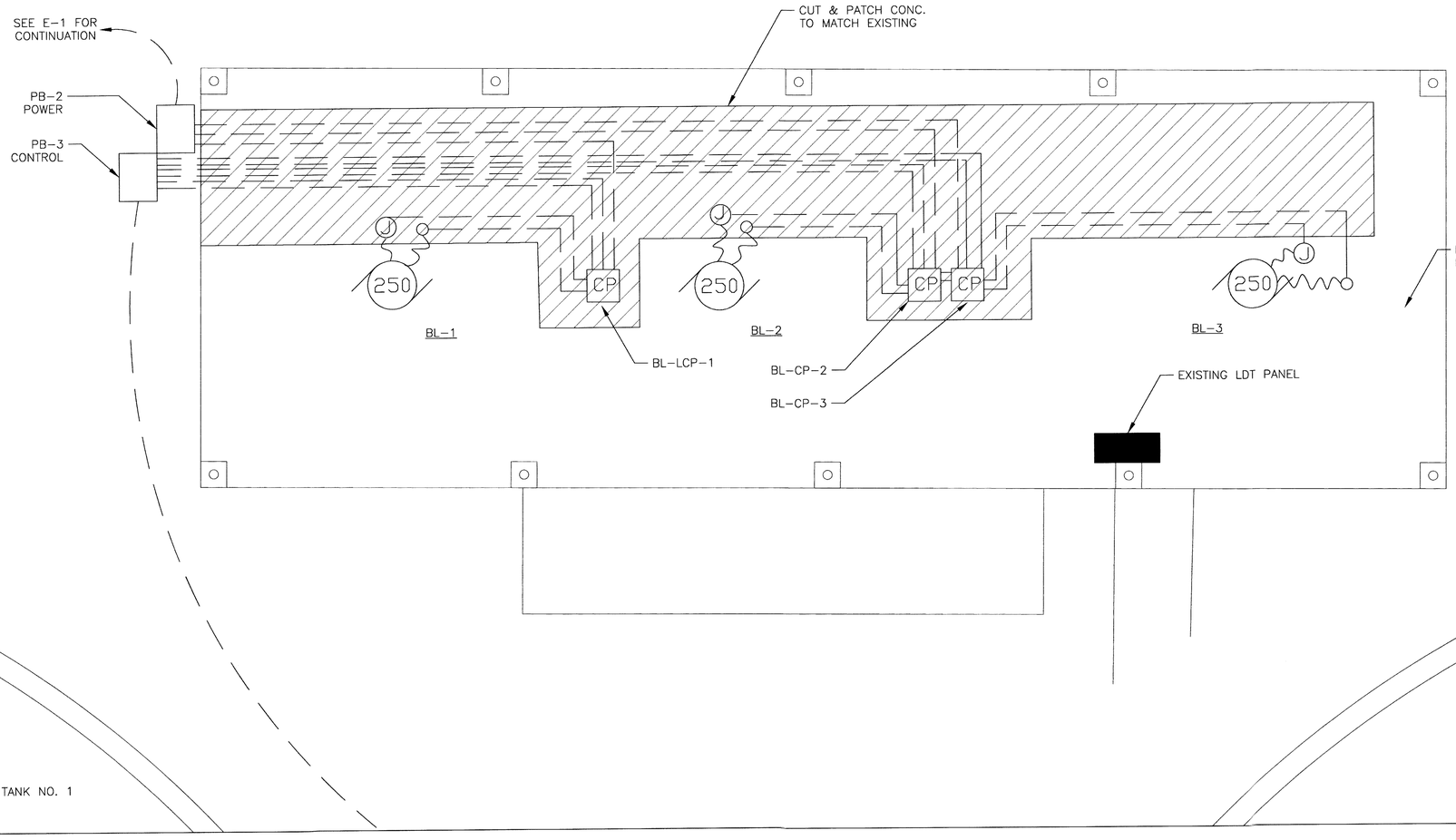

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES

1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
BLOWER IMPROVEMENT
ELECTRICAL PLAN

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	AS SHOWN

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

WILLARD C. HOANSHELT, P.E.
FLORIDA P.E. # 42593

Signature & Date

SHEET E-2

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INFORMATION PROVIDED BY BRANDES DESIGN-BUILD, INC.

RECORD DRAWINGS

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FLORIDA P.E. NO. 42593
EB 6160

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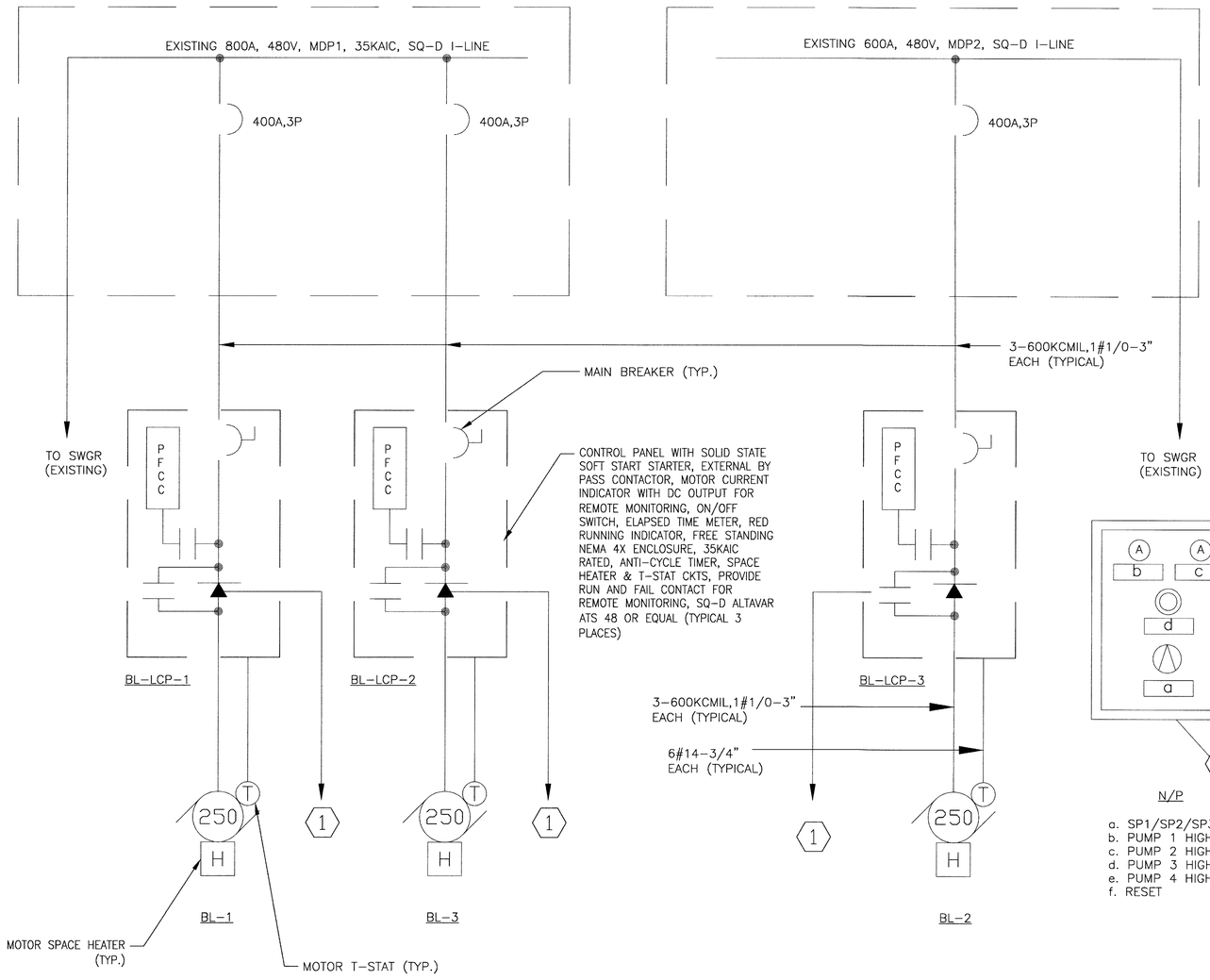
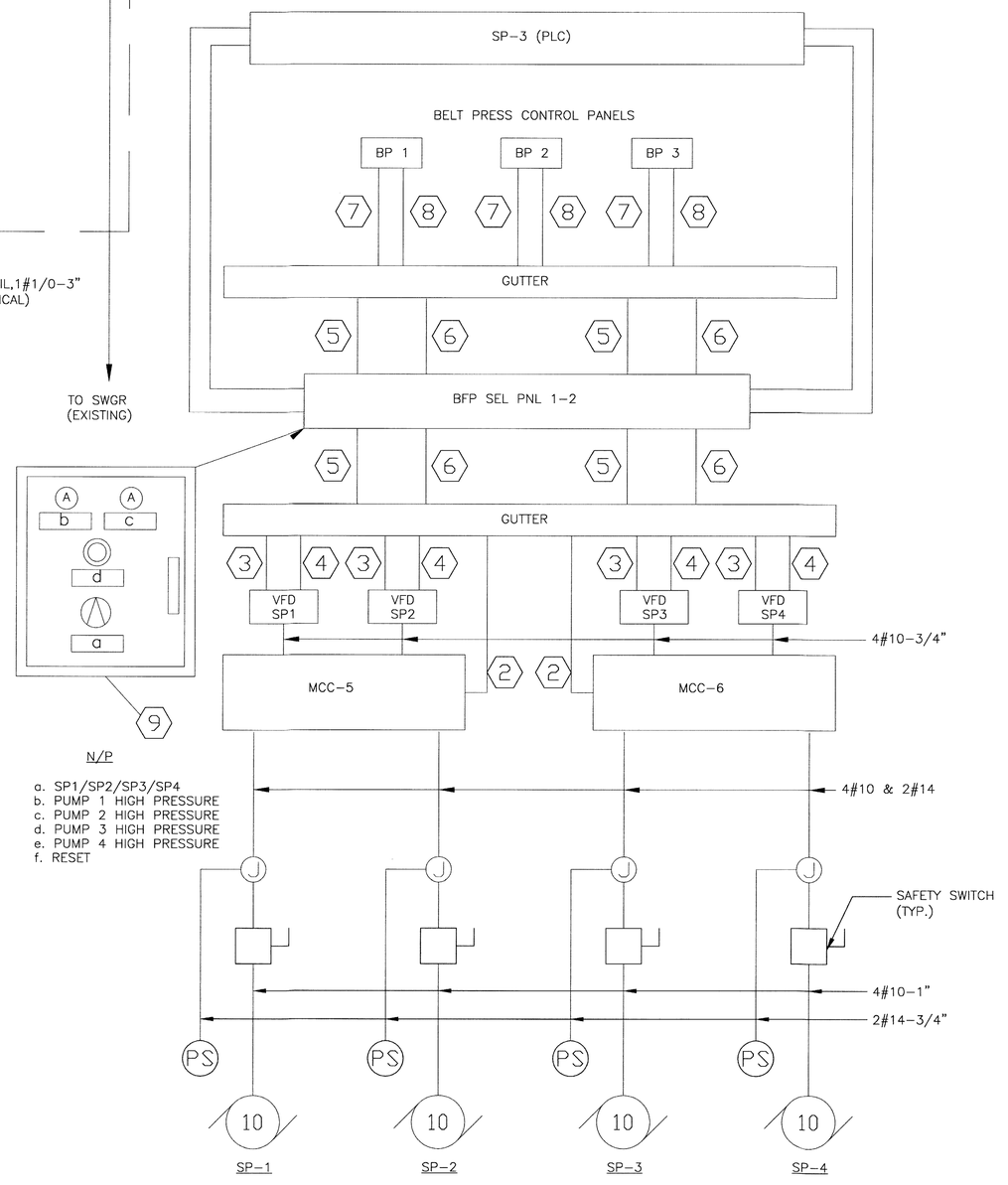


BLOWER RISER DIAGRAM



SLUDGE PUMP RISER DIAGRAM

RISER NOTES

1. STATUS & ALARM TO PLC-G LOCATED IN GENERATOR BUILDING 4#14-3/4" & 1-2/C#16SH-3/4"
2. 4#14-3/4"
3. (2)-2/C#16 SH-1" TO PLC-DW
4. 6#14-3/4"
5. (16) 1-2/C#16SH-1 1/2"
6. 24#14-1 1/4"
7. (9)-2/C#16SH-1 1/2"
8. (24) #14-1 1/4"
9. NEMA 12 WALL MTD PNL W/ 3 POINT LATCH & HANDLE. CONTROL PANEL SHALL RELAY BELT PRESS PNLS 1,2,3 CONTROL SIGNALS TO AN OPERATOR SELECTABLE SLUDGE PUMP VARIABLE FREQ. DRIVE. SHUT DN RESPECTIVE DRIVE ON DISCHARGE HIGH PRESSURE. REFER TO ASHBROOK SO#86127 FOR BELT PRESS PANEL MODIFICATIONS AND THE EXISTING ABB ACS 600 DRIVES FOR DETAILS. RELAY THE FOLLOWING SIGNALS TO SP-3:
   A. HIGH DISCHARGE PRESSURE (EACH PUMP)
   B. PUMP SPEED (EACH PUMP)
   C. PUMP RUN STATUS (EACH PUMP)
   D. DRIVE FAIL (EACH DRIVE)

RECORD DRAWING

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RECORD DRAWINGS

EMI

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EB 6160

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
POWER RISERS

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	N.T.S.

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

WILLARD C. HOANSHELT, P.E.
FLORIDA P.E. # 42593
Signature & Date

SHEET E-3

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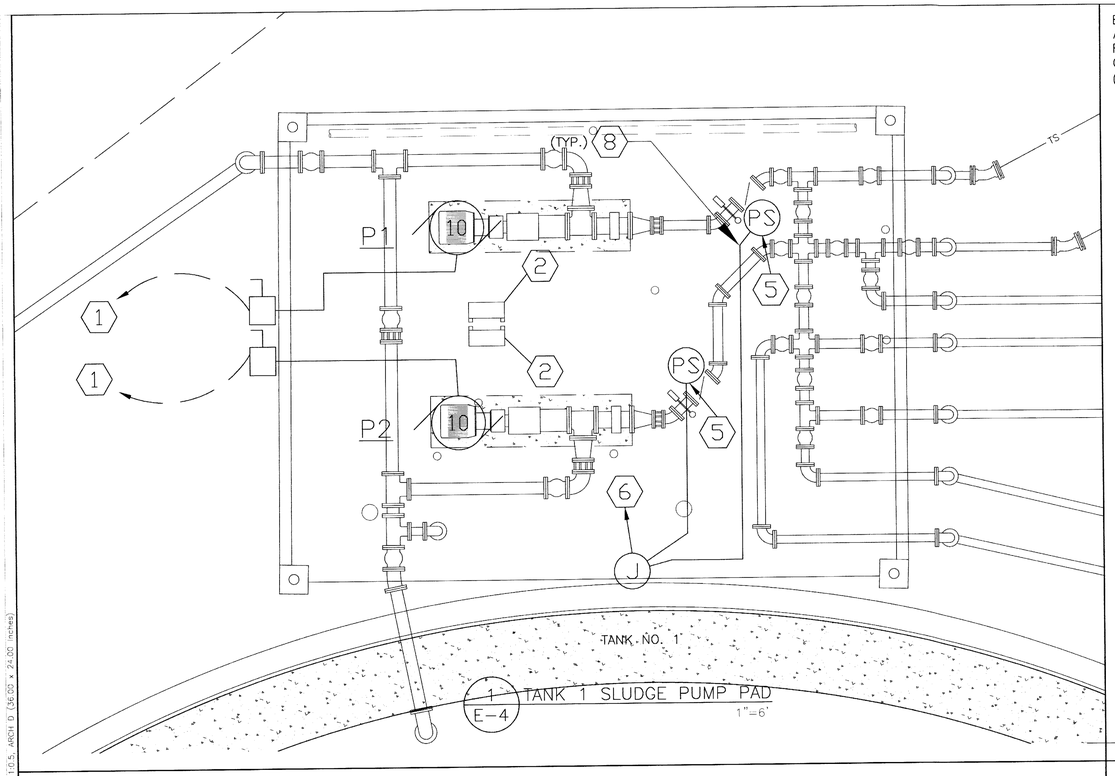
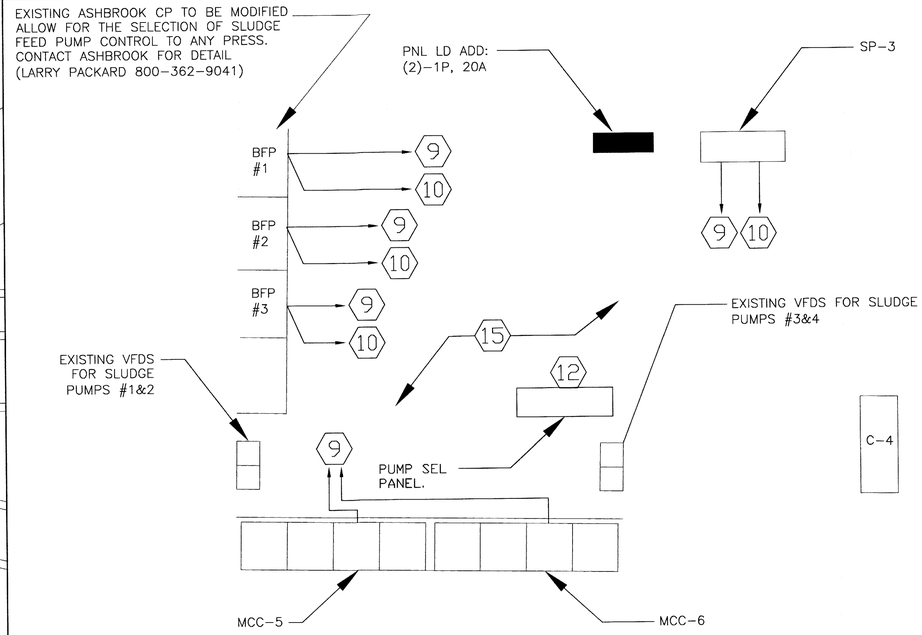
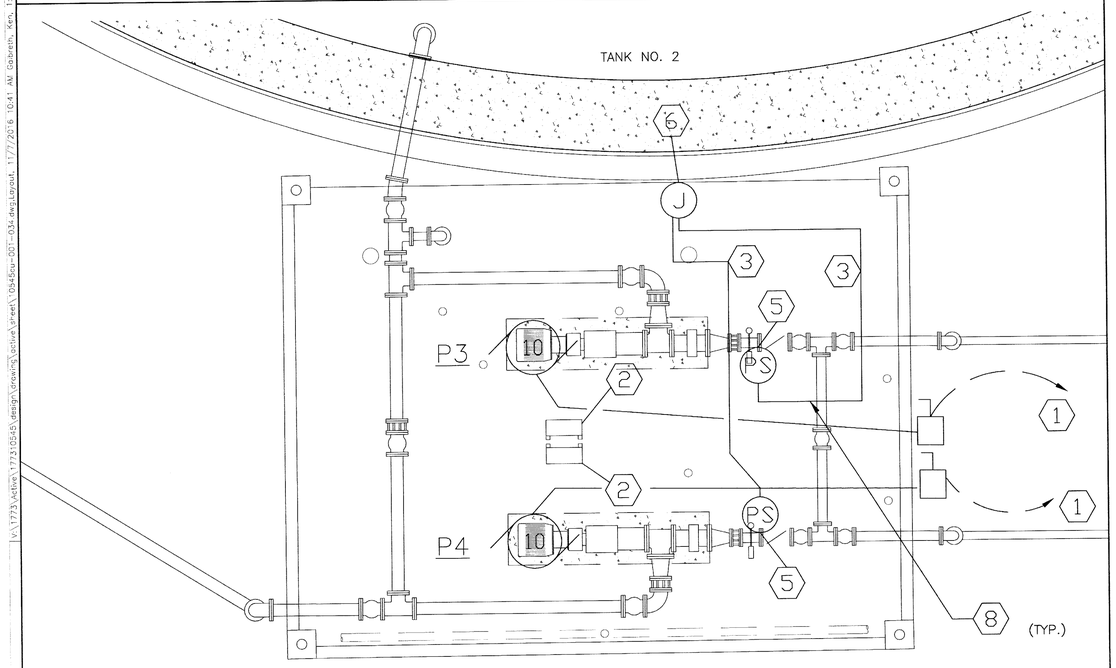


1 / E-4 TANK 1 SLUDGE PUMP PAD
1"=6'



3 / E-4 CONTROL ROOM DE-WATERING BUILDING
1"=6'



2 / E-4 TANKS 2 & 3 SLUDGE PUMP PAD
1"=6'

1. RE-USE EXISTING CONDUIT & REPLACE WIRE TO RESPECTIVE VFD
2. REPLACE EXISTING SAFETY SWITCH (NEMA 4X)
3. 2#14-3/4" TO J-BOX
4. EXISTING ELECTRICAL FEED TO PUMP, REPLACE WIRE
5. HIGH PRESSURE SWITCH
6. REPLACE CONTROL WIRE TO MCC-5&6, ADD SS J-BOX
7. NOT USED
8. SURFACE MTD. CONDUIT (ALL 316 SS HARDWARE)
9. CONTROL WIRE (SEE E-4)
10. SIGNAL WIRE (SEE E-4)
11. SLUDGE PUMP SELECTOR PANEL
12. NOT USED
13. LD-30
14. LD-32
15. REMOVE ALL WIRE MADE OBSOLETE BY THIS WORK

RECORD DRAWING

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EB 6160

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY
SLUDGE HOLDING IMPROVEMENTS
ELECTRICAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT #	177310545
SURVEY #	000
SEC./TWN./RGE	26/33S/18E
SCALE	1"=6'

	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

WILLARD C. HOANSHELT, P.E.
FLORIDA P.E. # 42593
Signature & Date

SHEET E-4

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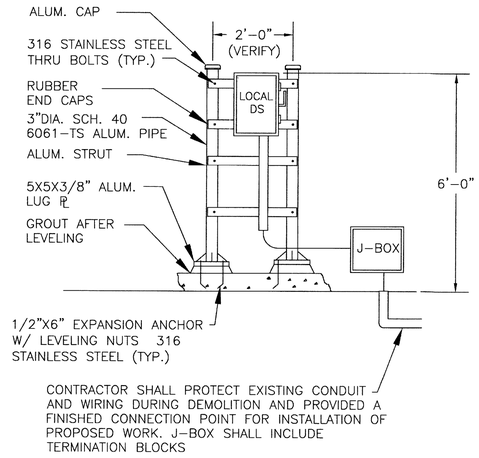
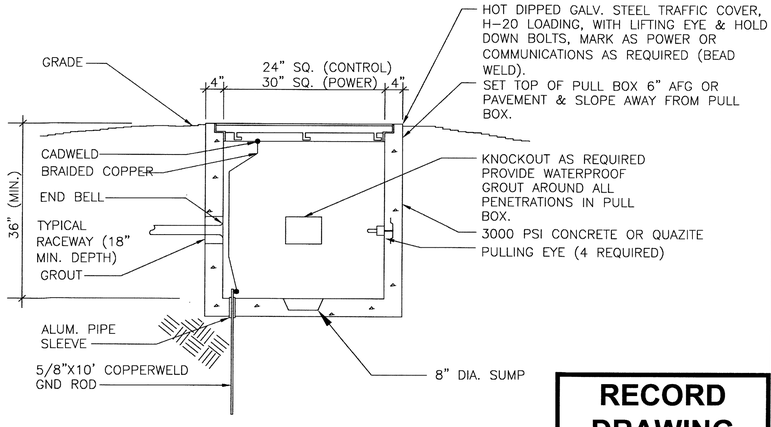


SLUDGE PUMP MOUNTING DETAIL

N.T.S.

NOTES:

1. UTILIZE EXISTING PUMP ELECTRICAL WIRES. CONTRACTOR SHALL EXTEND ELECTRICAL SERVICE FROM THE EXISTING SERVICE LOCATION TO THE PROPOSED LOCAL DISCONNECT. CONTRACTOR SHALL PROVIDE JUNCTION BOX IF NECESSARY. CONTRACTOR SHALL SUBMIT DETAILS FOR APPROVAL.
2. CONTRACTOR SHALL PROVIDE NEW CONDUIT FOR ALL ABOVE GRADE ELECTRICAL SERVICES. CONDUIT SHALL BE SECURED TO SLAB AND/OR EQUIPMENT PADS WITH S.S. STRAPS AND STRUT.



PULLBOX (PB)

N.T.S.

NOTES:

1. CONDUCTORS SHALL BE SECURED WITH NYLON SELF CLINCHING CABLE TIES.
2. PROVIDE RACK SUPPORTS FOR CABLES AND CONDUCTORS FOR SIDEWALL MTG..

RECORD DRAWING

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EB 6160

MANATEE COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES

1022 26th Avenue East
Bradenton, FL 34208

NORTH WATER RECLAMATION FACILITY SLUDGE HOLDING IMPROVEMENTS

ELECTRICAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT #	177310545	
SURVEY #	000	
SEC./TWN./RGE	26/33S/18E	
SCALE	1"=5'	
	BY	DATE
SURVEYED	GFY	05/10/13
DESIGNED	KKB	05/23/13
DRAWN	SRP	05/23/13
CHECKED	JRG	12/10/13

WILLARD C. HOANSHELT, P.E.
FLORIDA P.E. # 42593
11/14/16
Signature & Date

SHEET E-5

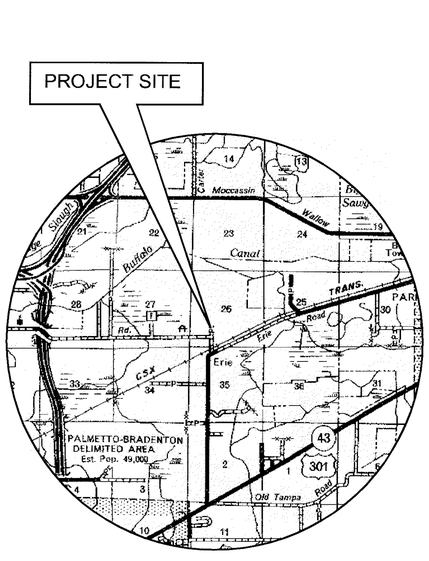
6387.040

[V:\1773\Active\177310545\design\drawing\active\sheet\105455u-001-035.dwg,Layout: 11/7/2016 10:43 AM Gilbreth, Ken, 1:0.5, ARCH D (36.00" x 24.00 inches)]

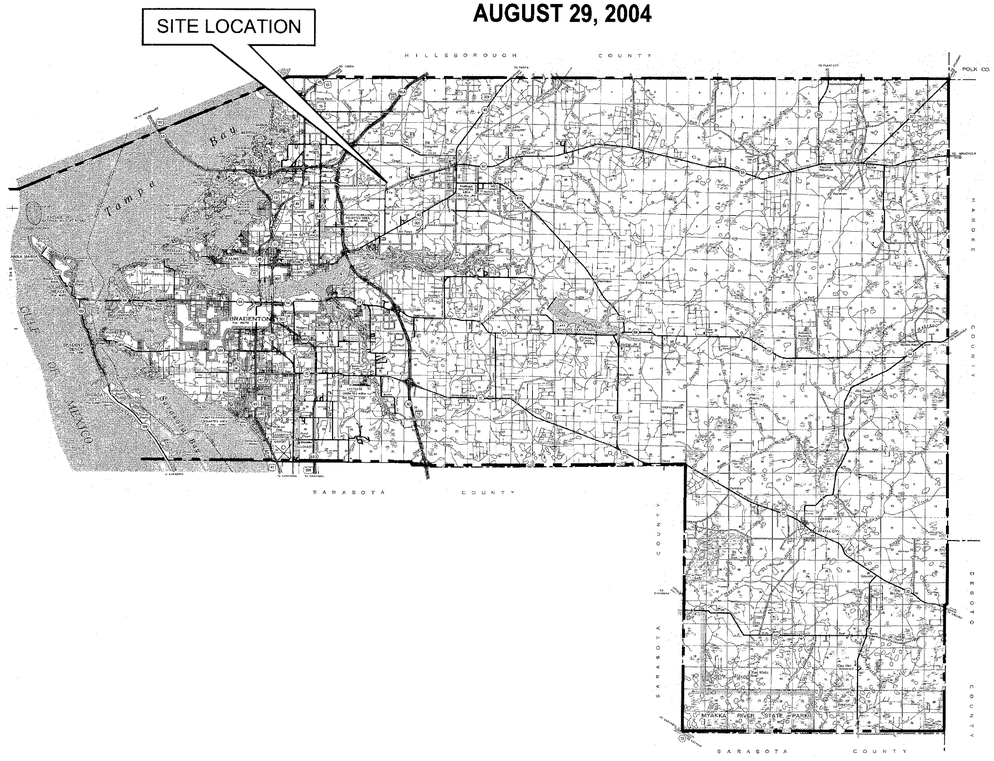
RECORD DRAWING

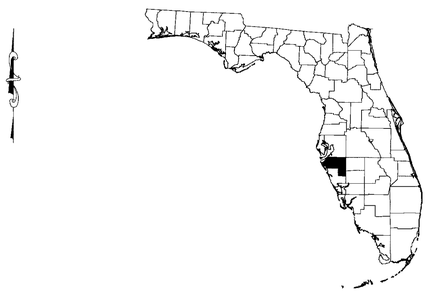
MANATEE COUNTY, FLORIDA
NORTH REGIONAL WASTEWATER TREATMENT PLANT AERATION IMPROVEMENTS
PROJECT NO. 6047180

AUGUST 29, 2004



PROJECT MAP
N.T.S.





NO.	INDEX OF SHEETS
G-1	COVER SHEET
C-1	SITE PLAN
M-1	MECHANICAL AERATOR DETAILS
E-1	ELECTRICAL SITE PLAN
E-2	ELECTRICAL BUILDING & AERATOR PLAN
E-3	ELECTRICAL DETAILS
E-4	ELECTRICAL DETAILS

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	12/11/02
CHECKED BY:	D. WILCOX	12/11/02
DRAWN BY:	D. ELLIS	12/11/02
SCALE:	N.T.S.	
FILE NAME:	COVER SHEET.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLAN
AERATION IMPROVEMENTS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

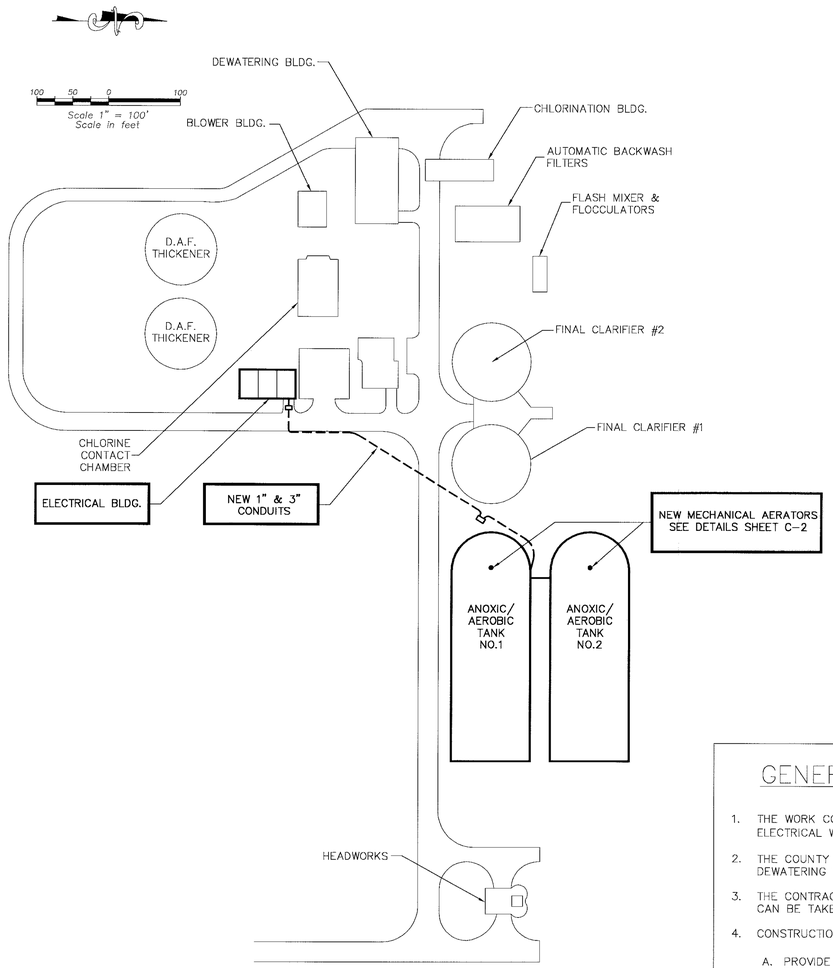
COVER SHEET

NO.	REVISION DESCRIPTION	BY	DATE

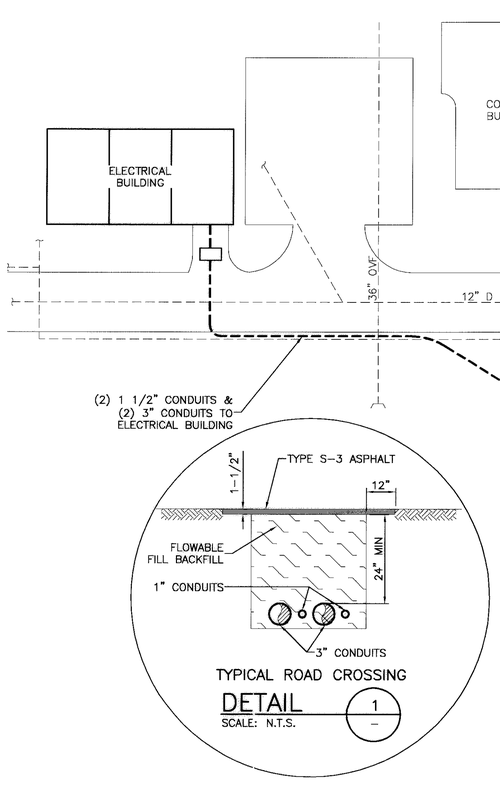
PROJ. NO: 12003131
DWG DATE: FEB. 2003
DWG NO:
SHEET: G-1

4893.001

Drawing Name: G:\WATERWASTE\MANATEE_PROJECTS\12003131 NRWWTP Aeration\CADD\COVER SHEET.dwg
Last Modified: Sep 16, 2004 - 9:06am by tpadme
Xrefs:

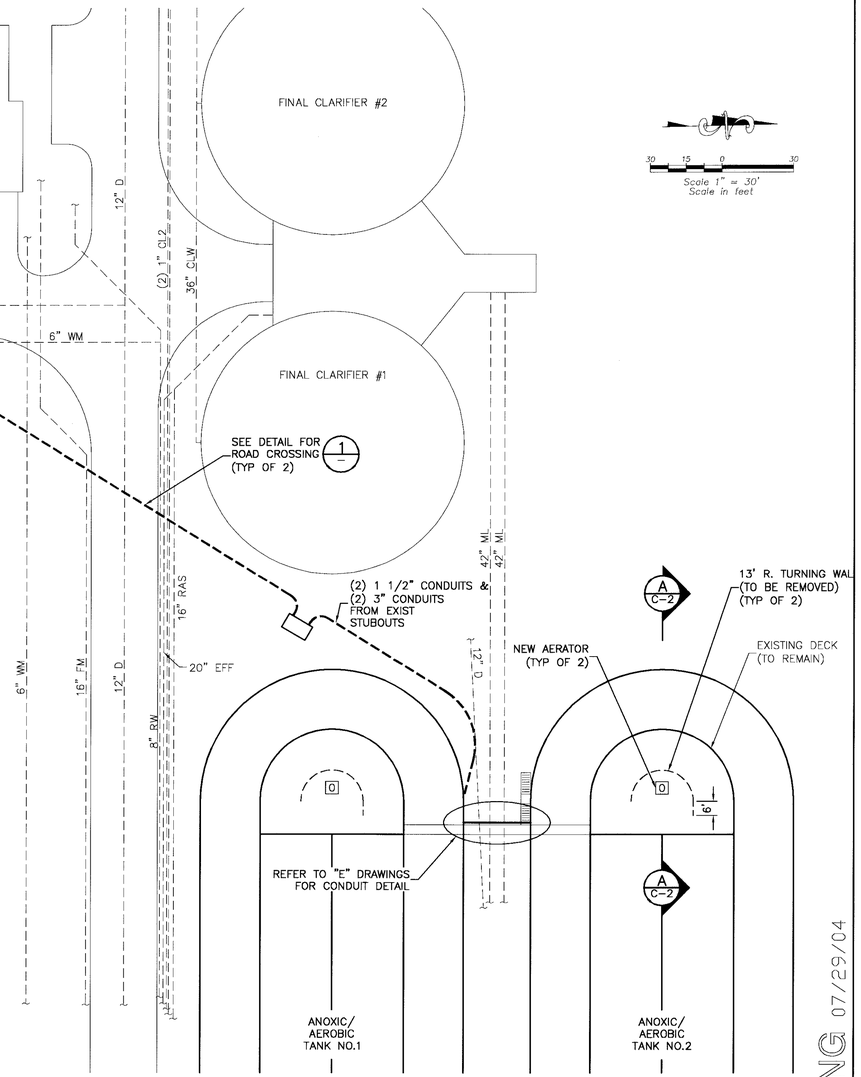


EXISTING SITE PLAN



GENERAL NOTES:

1. THE WORK CONSISTS OF FURNISHING AND INSTALLING TWO NEW MECHANICAL AERATORS AND ASSOCIATE ELECTRICAL WORK AND THE DEMOLITION OF THE EXISTING ANOXIC/AEROBIC TANK TURNING WALLS.
2. THE COUNTY WILL BE RESPONSIBLE FOR TAKING EACH ANOXIC/ AEROBIC TANK OUT OF SERVICE, DEWATERING THE TANK AND CLEANING THE TANK.
3. THE CONTRACTOR SHALL SUPPLY THE COUNTY WITH 30 DAYS WRITTEN NOTICE SO THAT EACH TANK CAN BE TAKEN OUT OF SERVICE.
4. CONSTRUCTION SEQUENCE:
   - A. PROVIDE WRITTEN NOTICE TO COUNTY REQUESTING THAT ONE TANK BE TAKEN OUT OF SERVICE.
   - B. AFTER COUNTY HAS DEWATERED AND CLEANED THE TANK, PROCEED WITH DEMOLITION OF THE TURNING WALL.
   - C. INSTALL AERATOR, ELECTRICAL EQUIPMENT AND APPURTENANCES.
   - D. REQUEST THAT COUNTY PLACE TANK IN SERVICE.
   - E. PERFORM EQUIPMENT START UP AND TESTING.
   - F. RECEIVE WRITTEN APPROVAL FROM ENGINEER AND COUNTY.
   - G. ALLOW A MINIMUM 30 DAYS PRIOR TO REQUESTING THAT THE SECOND TANK BE TAKEN OUT OF SERVICE.
   - H. FOLLOW THE SAME PROCEDURES FOR INSTALLATION OF THE SECOND AERATOR.
5. DUE TO NUMBER OF EXISITNG UTILITIES, NEW CONDUIT SHALL BE HAND DUG.
6. CONTRACTOR SHALL FIELD LOCATE EXISTING UTILITIES PRIOR TO DIGGING.
7. THE NEW CONDUIT SHALL BE SCH 80 PVC.



DETAILED SITE PLAN

RECORD DRAWING 07/29/04

URS Corporation 7650 West Courtney Campbell Causeway Tampa, FL 33607-1462		NAME	DATE
	DESIGNED BY:	D. WILCOX	12/11/02
	CHECKED BY:	D. WILCOX	12/11/02
	DRAWN BY:	D. ELLIS	12/11/02
	SCALE:	AS SHOWN	
	FILE NAME:	SITE PLAN.DWG	

NORTH REGIONAL WASTWATER TREATMENTPLANT
AERATION IMPROVEMENTS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

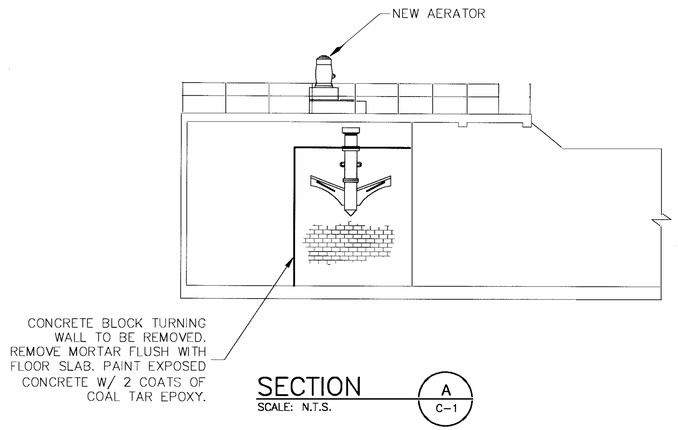
SITE PLAN

NO.	REVISION DESCRIPTION	BY	DATE

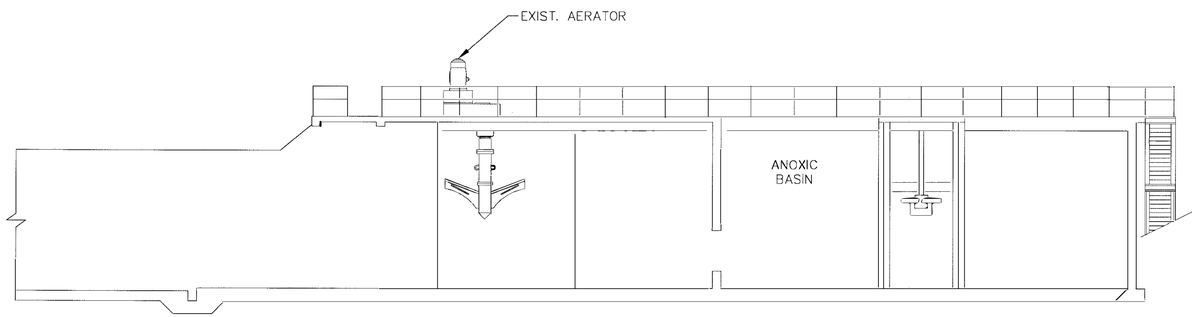
PROJ. NO: 12003131
DWG DATE: FEB. 2003
DWG NO:
SHEET: C-1

4093.002

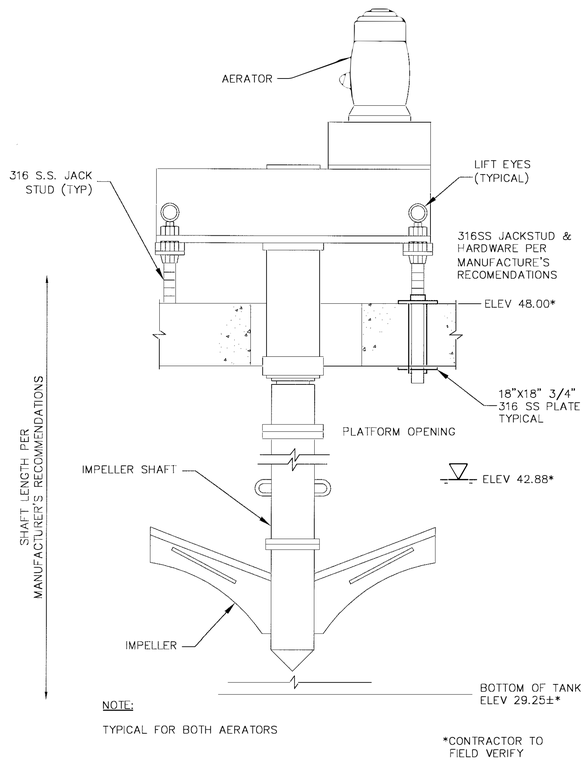
Drawing Name: G:\WATERWASTE\MANATEE PROJECTS\12003131 NRWWTP Aeration\CADD\SITE PLAN.dwg
Last Modified: Sep 16, 2004 - 9:13am by tpadme
Xrefs:



SECTION A C-1
SCALE: N.T.S.



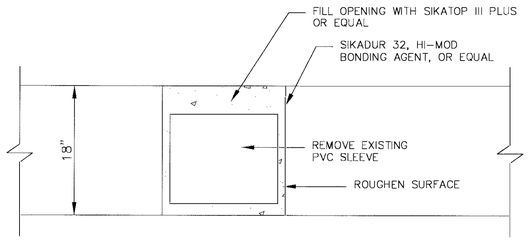
ANOXIC/AEROBIC BASIN (TYPICAL OF 2)
N.T.S.



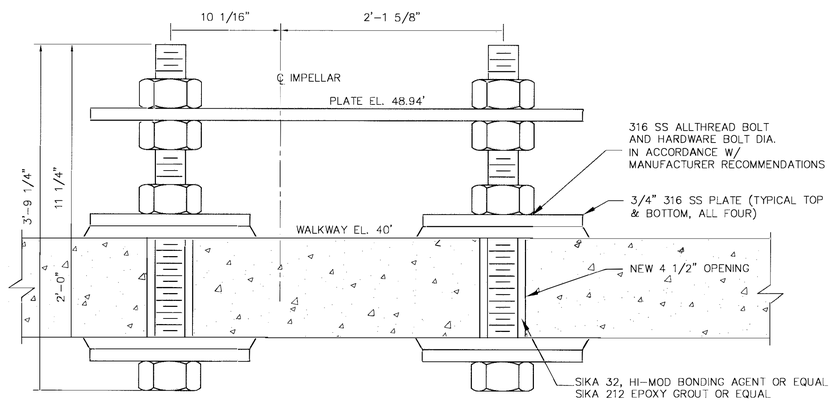
NOTE:
TYPICAL FOR BOTH AERATORS

*CONTRACTOR TO FIELD VERIFY

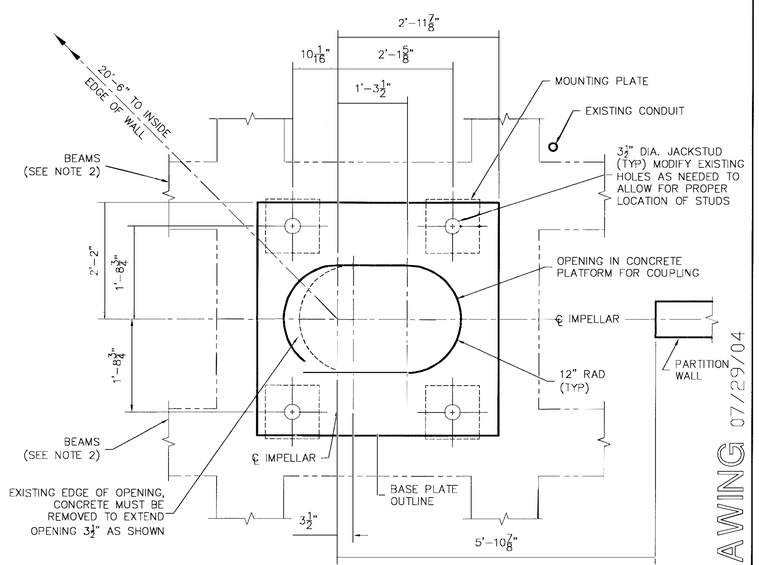
AERATOR DETAIL
N.T.S.



EXISTING BOLT HOLE REPAIR DETAIL



TYPICAL AERATOR ANCHOR BOLT DETAIL
N.T.S.



NOTES:
1. USE TEMPLATE TO SET JACKSTUDS. TEMPLATE NOT BY DOOR-OLIVER EIMCO. TAKE APPROXIMATE MEASURES TO ENSURE THAT JACKSTUDS ARE VERTICAL PRIOR TO SETTING.
2. CONTRACTOR HAS VERIFIED EXISTANCE, LOCATION, WIDTH, AND DEPTH OF BEAM.
3. CONTRACTOR HAS VERIFIED PLATFORM THICKNESS (INCLUDING DEPTH OF ANY EXISTING BEAMS) IN AREA OF THE JACKSTUDS, LOCATION OF EXISTING STUD HOLES, AND ROTATION OF AERATORS.
4. THE BONDING AGENT/GROUT ASSOCIATED WITH JACKSTUD PLACEMENT IS NOT BY DOOR-OLIVER EIMCO.

EXISTING AND PROPOSED
ANCHOR BOLT HOLE LOCATIONS
N.T.S.

RECORD DRAWING 07/29/04

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	12/11/02
CHECKED BY:	D. WILCOX	12/11/02
DRAWN BY:	D. ELLIS	12/11/02
SCALE:	AS SHOWN	
FILE NAME:	MECHANICAL AREATOR DETAILS.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AERATION IMPROVEMENTS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY FLORIDA

MECHANICAL AERATION DETAILS

NO.	REVISION DESCRIPTION	BY	DATE

PROJ. NO: 12003131
DWG DATE: FEB. 2003
DWG NO:
SHEET: M-1

4093.003

Drawing Name: G:\WATERWASTE\MANATEE PROJECTS\12003131 NRWWTP Aeration\CADD\MECHANICAL AERATOR DETAILS.dwg
Last Modified: Sep 16, 2004 - 9:13am by tpadme
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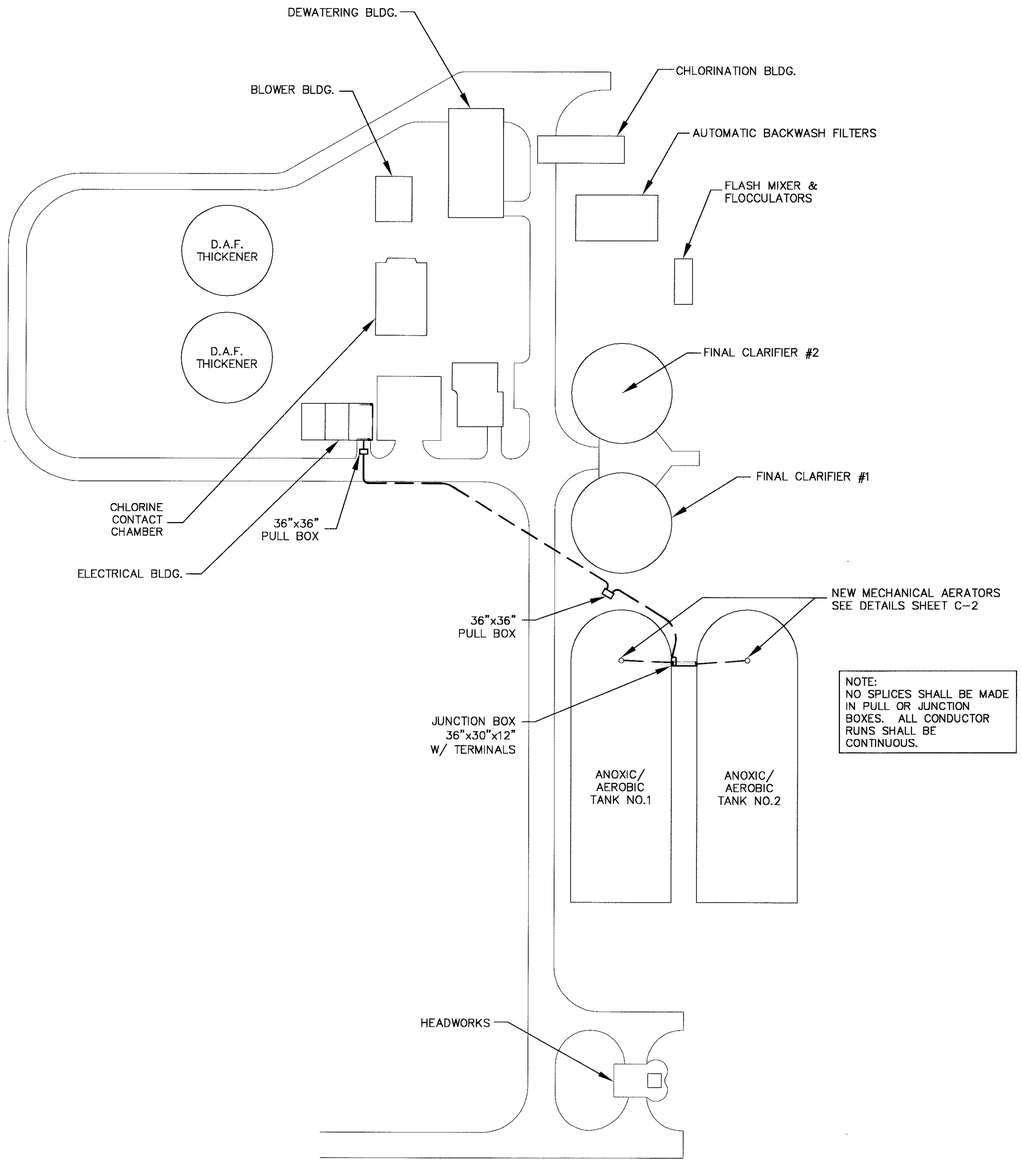
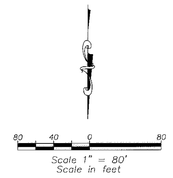




ELECTRICAL SITE PLAN

RECORD DRAWING 07/29/04

Drawing Name: G:\WATERWASTE\MANATEE PROJECTS\12003131 NRWWTP Aeration\CADD\ELECTRICAL SHEETS E1 E2.dwg
Last Modified: Sep 16, 2004 - 9:13am by tpadme
Xrefs:

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	12/11/02
CHECKED BY:	D. WILCOX	12/11/02
DRAWN BY:	D. ELLIS	12/11/02
SCALE:	AS NOTED	
FILE NAME:	ELECTRICAL SHEETS E1 E2.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AERATION IMPROVEMENTS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL SITE PLAN

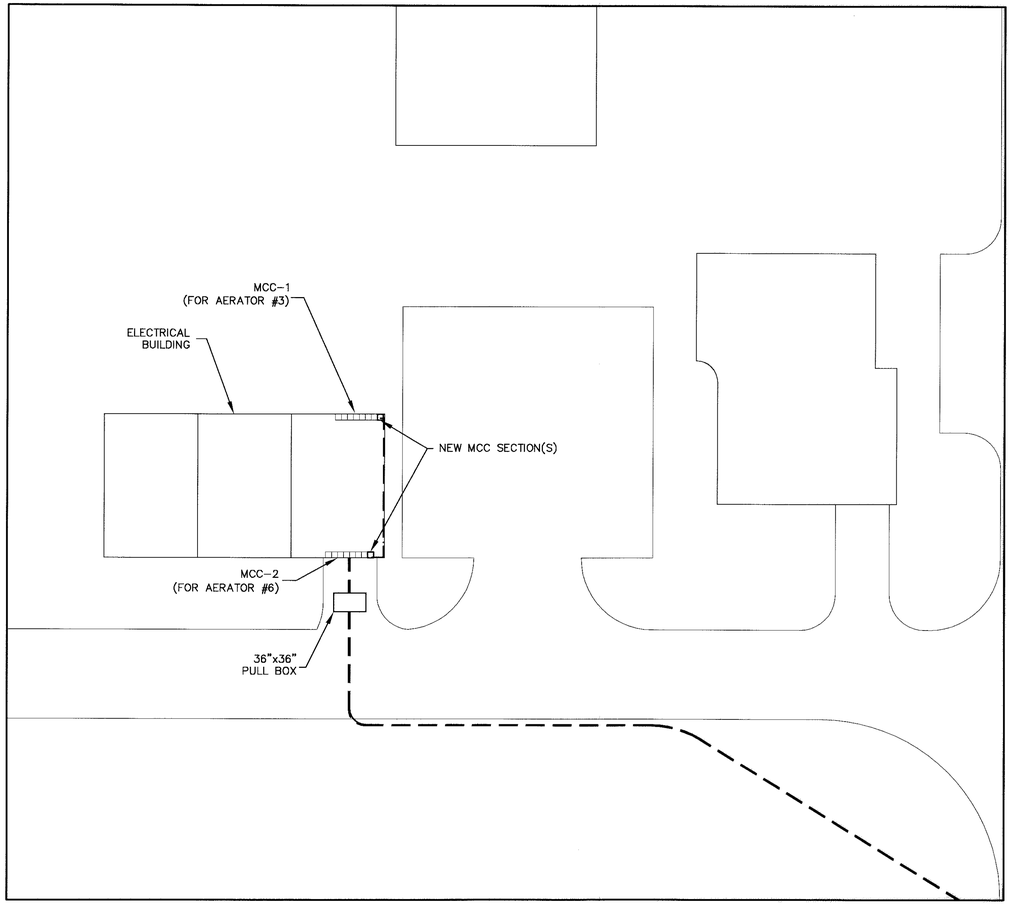
NO.	REVISION DESCRIPTION	BY	DATE

PROJ. NO: 12003131
DWG DATE: 2/21/03
DWG NO:
SHEET: E-1

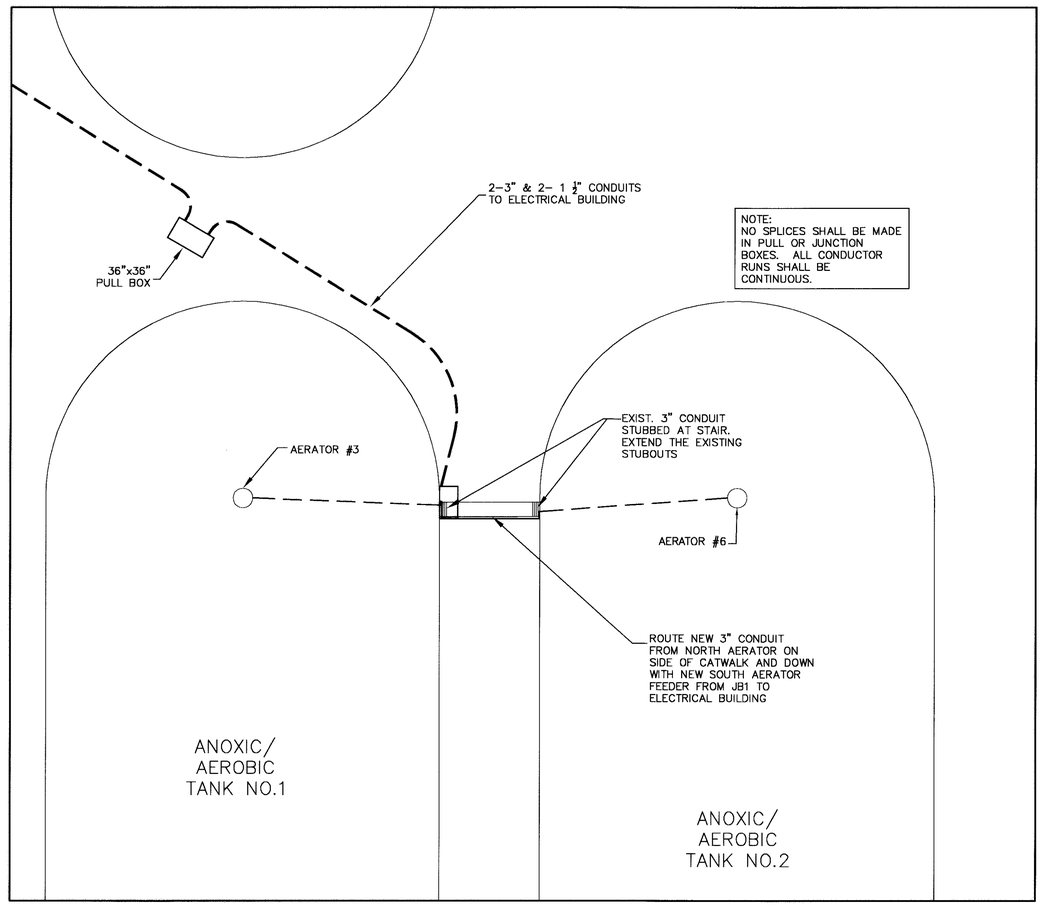
4093.004

20 10 0 20

Scale 1" = 20'
Scale in feet



ELECTRICAL BLDG. PLAN
SCALE: 1" =20'



AERATOR PLAN
SCALE: 1" = 20'

RECORD DRAWING 07/29/04

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	12/11/02
CHECKED BY:	D. WILCOX	12/11/02
DRAWN BY:	D. ELLIS	12/11/02
SCALE:	AS NOTED	
FILE NAME:	ELECTRICAL SHEETS E1 E2.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AERATION IMPROVEMENTS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL BUILDING &
AERATOR PLAN

NO.	REVISION DESCRIPTION	BY	DATE

PROJ. NO: 12003131
DWG DATE: 2/21/03
DWG NO:
SHEET: E-2

4393.005

Drawing Name: G:\WATERWASTE\MANATEE PROJECTS\12003131 NRWWTP Aeration\CADD\ELECTRICAL SHEETS E1 E2.dwg
Last Modified: Sep 16, 2004 - 9:13am by tpadme
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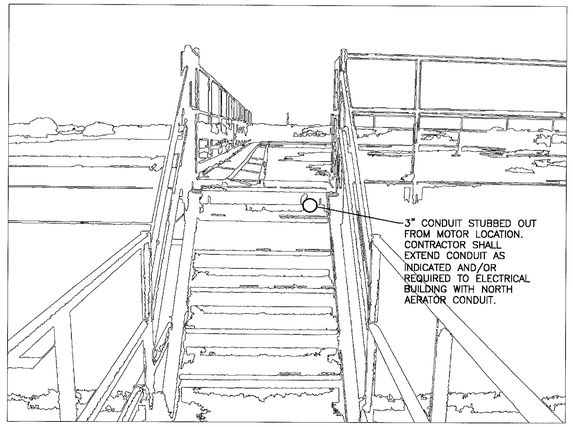
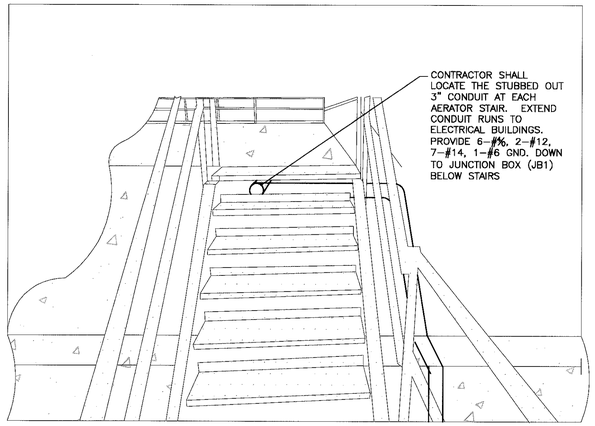
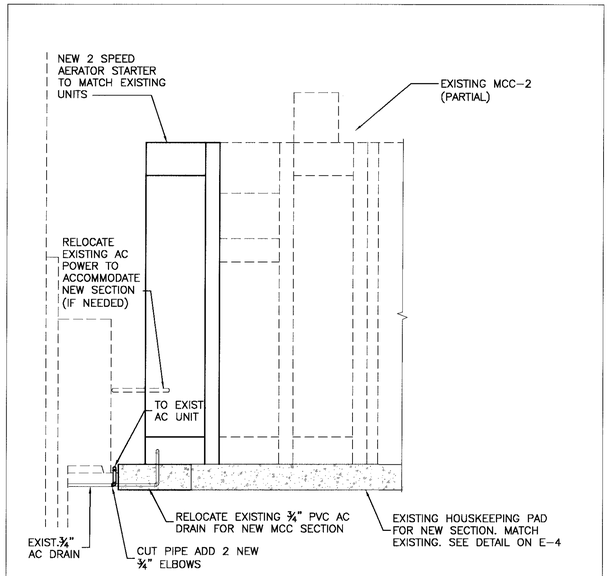


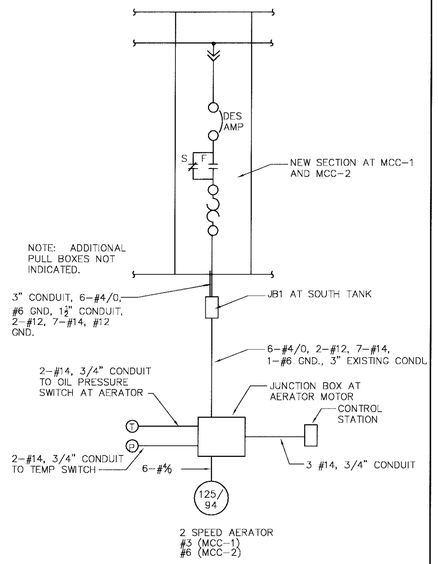
SOUTH AERATOR STAIR



NORTH AERATOR STAIR

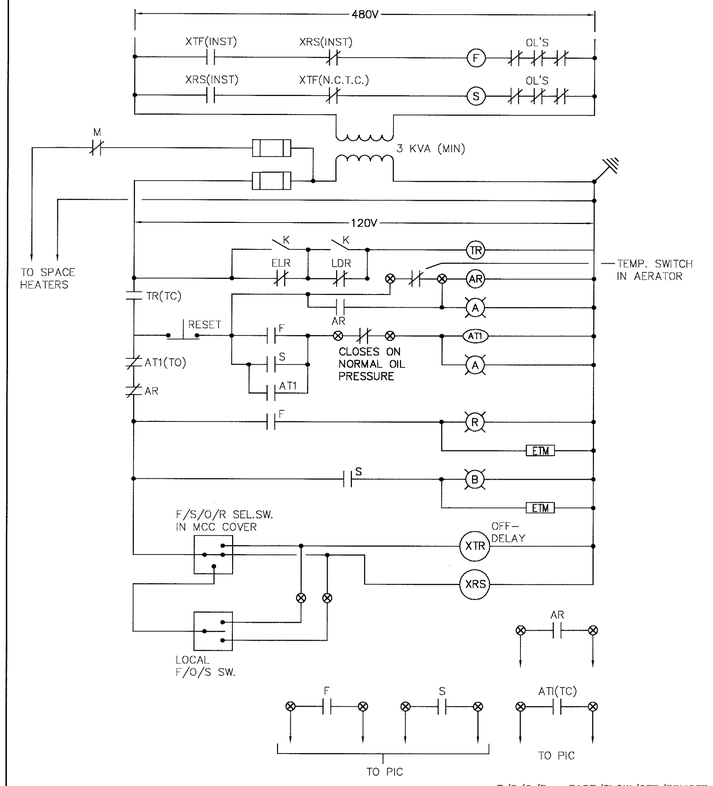
3" CONDUIT STUBPUT DETAILS





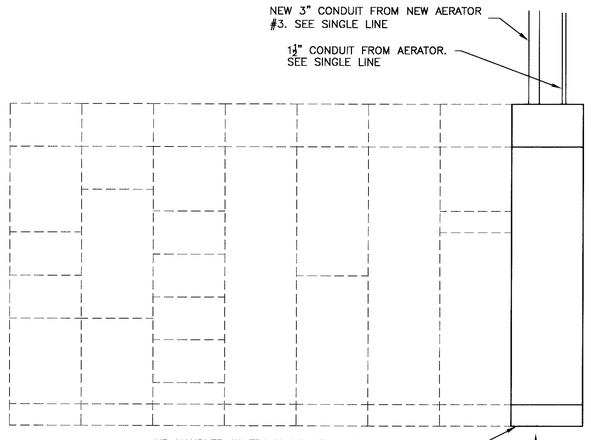
TYPICAL AERATOR SINGLE LINE

MCC-2 PARTIAL WITH ADDITION MODIFICATIONS

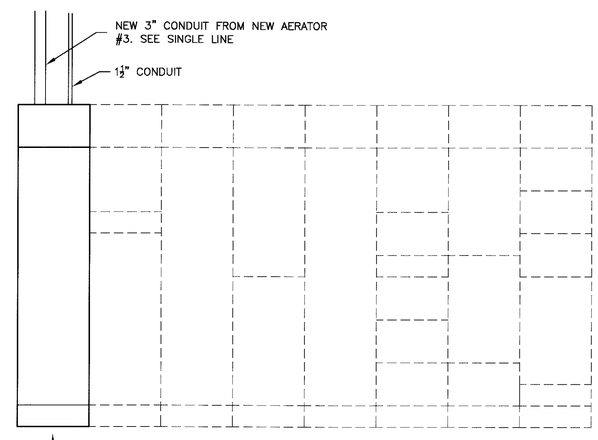


F/S/O/R = FAST/SLOW/OFF/REMOTE

TWO SPEED AERATORS ELEMENTARY DIAGRAM



EXISTING MCC-1



EXISTING MCC-2

RECORD DRAWING 07/29/04

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	12/11/02
CHECKED BY:	D. WILCOX	12/11/02
DRAWN BY:	D. ELLIS	12/11/02
SCALE:	AS NOTED	
FILE NAME:	ELECTRICAL SHEETS E3 E4.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AERATION IMPROVEMENTS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

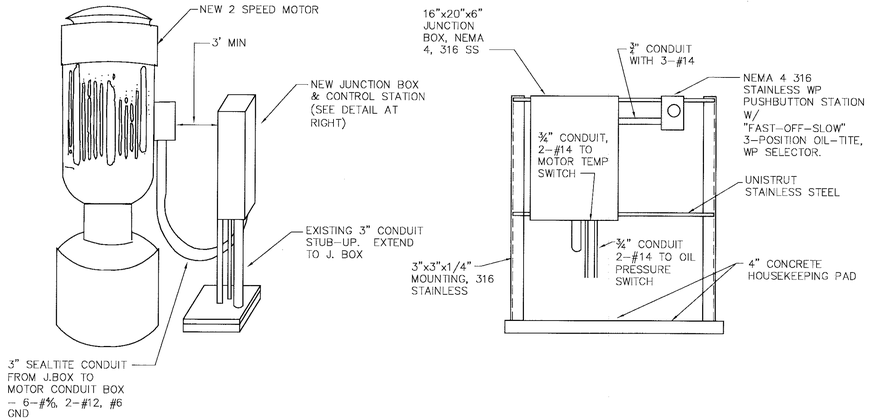
ELECTRICAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE

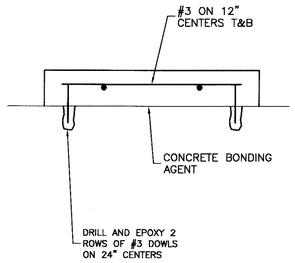
PROJ. NO: 12003131
DWG DATE: 2/21/03
DWG NO:
SHEET: E–3

4093.006

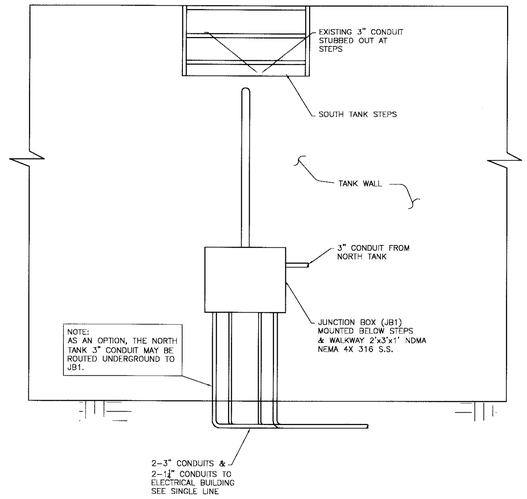
Drawing Name: G:\WATERWASTE\MANATEE PROJECTS\12003131 NRWWTP Aeration\CADD\ELECTRICAL SHEETS E-3 E-4.dwg
Last Modified: Sep 16, 2004 — 9:13am by tpadme
Xrefs:



MOTOR TERMINATION DETAILS

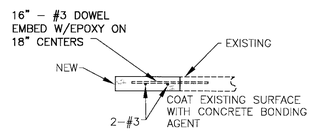


TYPICAL PAD DETAILS

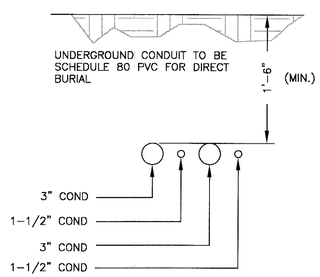


JUNCTION BOX (JB1) AT TANK

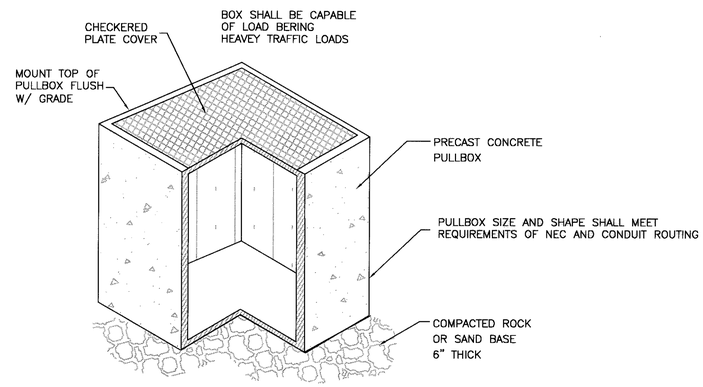
NOT TO SCALE



PAD EXTENSION DETAILS



UNDERGROUND CONDUIT



UNDERGROUND PULL/JUNCTION BOX

NOT TO SCALE

RECORD DRAWING 07/29/04

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	12/11/02
CHECKED BY:	D. WILCOX	12/11/02
DRAWN BY:	D. ELLIS	12/11/02
SCALE:	AS NOTED	
FILE NAME:	ELECTRICAL SHEETS E3 E4.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AERATION IMPROVEMENTS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE

PROJ. NO: 12003131
DWG DATE: 2/21/03
DWG NO:
SHEET: E-4

4093.007

Drawing Name: G:\WATERWASTE\MANATEE PROJECTS\12003131 NRWWTP Aeration\CADD\ELECTRICAL SHEETS E-3 E-4.dwg
Last Modified: Sep 16, 2004 - 9:13am by lpadme
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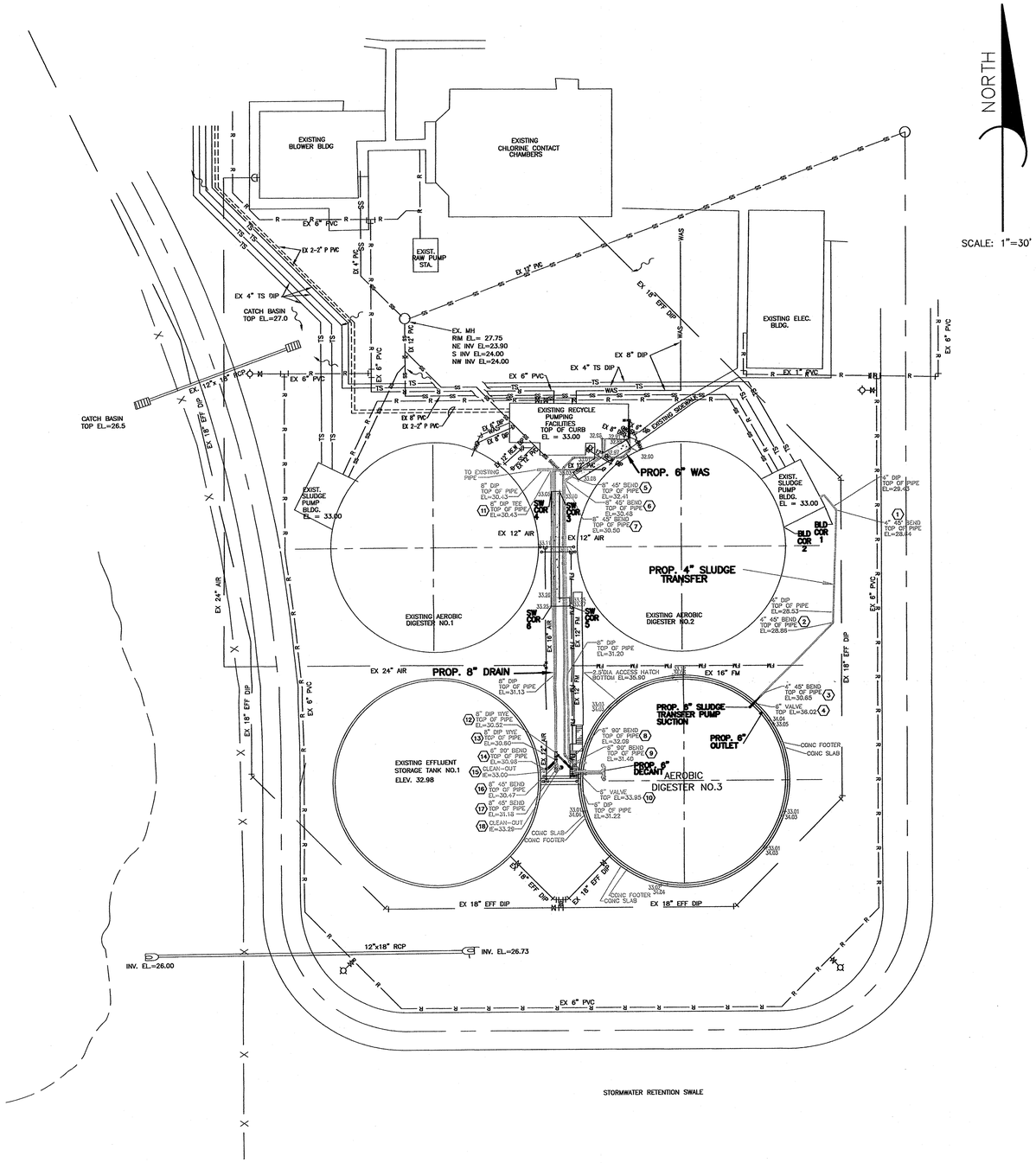
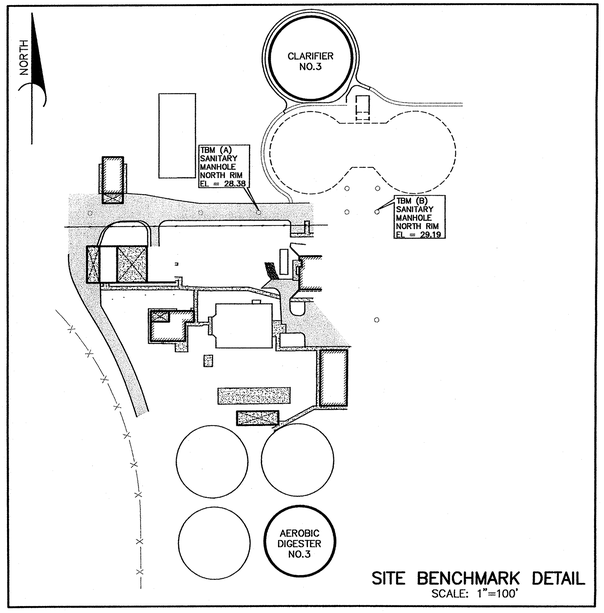


GENERAL NOTES:

1. THE CONTRACTOR SHALL ADHERE TO ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS WHICH HAVE BEEN OBTAINED.
2. ALL DISTURBED AREAS SHALL BE SODDED.
3. UNDERGROUND FACILITIES, STRUCTURES AND UTILITY HAVE BEEN PLOTTED FROM THE BEST AVAILABLE SURVEYS AND RECORDS. THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS NOT PRESENTLY KNOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT LOCATION PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL USE METAL DETECTOR, PROBE AND OTHER NON-DESTRUCTIVE METHODS TO LOCATE ALL EXISTING LINES PRIOR AND DURING EXCAVATION. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES IN THE AREA BEFORE BEGINNING CONSTRUCTION, AT LEAST 48 HOURS IN ADVANCE. CALL FLORIDA SUNSHINE STATE ONE CALL CENTER (1-800-432-4770).
4. A LATERAL SEPARATION OF TEN FEET OUT-TO-OUT SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND ANY SANITARY SEWER MAINS. IN CASE OF CROSSING, A VERTICAL SEPARATION OF NOT LESS THAN 18-INCHES SHALL BE MAINTAINED.
5. THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP EXCAVATIONS DRY AND SHALL PROVIDE ALL SHEETING, SHORING, AND BRACING NECESSARY TO PROTECT ADJACENT STRUCTURES, UTILITIES, EXISTING PAVEMENT, OR TO MINIMIZE TRENCH WIDTH.
6. THE CONTRACTOR SHALL PROVIDE AND INSTALL HAY BALES AND/OR SILT SCREENS AROUND THE PROPOSED CONSTRUCTION ACTIVITY, AS NECESSARY, TO PREVENT THE TRANSPORT OF SEDIMENT DOWNSTREAM INTO STREETS, STORM SEWERS, OPEN DITCHES, LAKES, DETENTION PONDS, ETC., AND SHALL PERFORM ALL NECESSARY INSPECTIONS, ALL IN ACCORDANCE WITH THE SPECIFICATIONS-PREVENTION, CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION.
7. THE CONTRACTOR SHALL KEEP ROADS OPEN FOR TRAFFIC AND MAINTAIN CONTINUOUS ACCESS TO PLANT STRUCTURES ADJACENT TO THE WORK.
8. THE CONTRACTOR SHALL CONTACT THE OWNER'S CONSTRUCTION MANAGER IMMEDIATELY REGARDING ANY CONFLICTS ARISING DURING CONSTRUCTION FROM ANY IMPROVEMENTS SHOWN ON THE DRAWINGS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING UTILITIES CAUSED BY CONSTRUCTION OPERATIONS.
10. CONNECTIONS TO EXISTING FACILITIES SHALL BE MADE IN THE PRESENCE OF THE UTILITY OWNERS, PLANT OPERATORS AND THE ENGINEER. THE CONTRACTOR SHALL GIVE AT LEAST TWO WEEKS NOTICE TO ALL PARTIES CONCERNED PRIOR TO BEGINNING WORK.
11. ALL MAINS SHALL BE TESTED AND FLUSHED IN ACCORDANCE WITH THE SPECIFICATIONS PRIOR TO CONNECTING TO EXISTING MAINS. ALL MAINS TO BE ABANDONED IN PLACE SHALL BE DRAINED, FLUSHED, AND DISINFECTED.
12. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE PLANT OPERATOR ON A DAILY BASIS TO MINIMIZE INTERFERENCE WITH PLANT OPERATIONS AND OPERATOR ACTIVITIES. THE CONTRACTOR SHALL MAINTAIN ROAD ACCESS AT ALL TIMES FOR COUNTY VEHICLES AND OTHER CONTRACTORS. THE CONTRACTOR SHALL PROVIDE ADVANCED NOTICE OF CRITICAL PIPING CONNECTIONS AND PLANT SHUT DOWN.
13. BURIED PIPE SHALL HAVE A MINIMUM OF 3-FEET COVER.
14. BURIED PIPE SHALL BE RESTRAINED WITH RESTRAINED MECHANICAL JOINT, (RMJ) MEGALUG SERIES 1100 OR EQUAL.
15. FLANGE ADAPTERS SHALL BE EBAA SERIES 2100 MEGAFLANGE-FLANGE ADAPTERS OR EQUAL.
16. ALL FLANGE CONNECTIONS SHALL USE STAINLESS STEEL NUTS AND BOLTS.
17. NEW WORK UNDER THIS CONTRACT ON EXISTING SITE DRAWINGS IS SHOWN IN HEAVY LINE WEIGHTS



SITE BENCHMARK DETAIL
SCALE: 1"=100'

SECTION 26, TOWNSHIP 33 S, RANGE 18 E,

MANATEE COUNTY, FLORIDA

SURVEY NOTES

2. SURVEY MAP AND REPORT OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED.
3. NO EXCAVATION WAS PERFORMED TO VERIFY THE LOCATION OR EXISTENCE OF ANY UNDERGROUND UTILITIES, ENCROACHMENTS, IMPROVEMENTS, STRUCTURES OR FOUNDATIONS. UNDERGROUND UTILITY LINE LOCATIONS (IF SHOWN HEREON) ARE BASED UPON UTILITY PROVIDER ATLASES AND VISIBLE SURFACE EVIDENCE.
4. RE-USE OF THIS SURVEY FOR PURPOSES OTHER THAN WHICH IT WAS INTENDED, WITHOUT WRITTEN VERIFICATION, WILL BE AT THE RE-USERS SOLE RISK AND WITHOUT LIABILITY TO THE SURVEYOR. NOTHING HEREIN SHALL BE CONSTRUED TO GIVE ANY RIGHTS OR BENEFITS TO ANYONE OTHER THAN THOSE TO WHOM CERTIFIED.
5. ALL FOUND POINTS ARE UNMARKED UNLESS OTHERWISE NOTED. ALL PERIMETER BEARINGS AND DISTANCES ARE ALSO FIELD MEASURED UNLESS NOTED.
6. THIS SURVEY IS NOT INTENDED TO SHOW THE LOCATION OR EXISTENCE OF ANY JURISDICTIONAL, HAZARDOUS OR ENVIRONMENTALLY SENSITIVE AREAS.
8. ANY ZONING INFORMATION SHOWN OR NOTED HEREON IS BASED ON INFORMATION AVAILABLE DURING THE PREPARATION OF THE SURVEY. THIS INFORMATION SHOULD BE VERIFIED WITH THE GOVERNING AUTHORITY PRIOR TO ANY DETERMINATIONS OR DESIGN.
9. SHOWN ANYWHERE ON THIS SURVEY, THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF A PROFESSIONAL OPINION BASED UPON THE SURVEYOR'S BEST KNOWLEDGE, INFORMATION AND BELIEF, AND THAT IT THUS CONSTITUTES NEITHER A GUARANTEE NOR A WARRANTY.
10. UNLESS OTHERWISE INDICATED, THE PROPERTY DESCRIPTION AND EASEMENTS SHOWN WERE FURNISHED TO POLARIS ASSOCIATES, INC. AND ARE PRESUMED TO BE CORRECT. NO SEARCH OF ANY PUBLIC RECORDS, FOR EASEMENTS, DEEDS, ETC., WAS PERFORMED BY THIS FIRM FOR THE COMPLETION OF THIS SURVEY AND THERE MAY BE ADDITIONAL RESTRICTIONS THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
11. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND MAY BE SUBJECT TO EASEMENTS, RESTRICTIONS, RIGHTS-OF-WAY AND OTHER MATTERS OF RECORD.
12. ELEVATIONS ARE BASED ON TEMPORARY SITE BENCHMARKS, BEING THE NORTH RIM OF A SANITARY MANHOLE (TBM A), HAVING AN ELEVATION OF 28.38 AND THE NORTH RIM OF A SANITARY MANHOLE (TBM B), HAVING AN ELEVATION OF 29.19, NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29). (SEE SITE BENCHMARK DETAIL.

PIPE FITTING TIES TABLE

FROM\FITTING	1	2	3	4						
BLD COR 1	5.7'	55.8'	99.4'	100.9'						
BLD COR 2	26.5'	51.6'	80.5'	86.3'						
FROM\FITTING	5	6	7	11						
SW COR 3	8.8'	6.0'	5.2'	11.1'						
SW COR 4	11.6'	8.7'	7.8'	10.3'						
FROM\FITTING	8	9	10	12	13	14	15	16	17	18
SW COR 5	75.3'	75.5'	80.0'	71.8'	75.5'	79.6'	80.9'	76.8'	77.6'	78.5'
SW COR 6	75.6'	76.2'	80.8'	71.4'	74.9'	78.6'	79.9'	76.4'	77.4'	78.3'

LEGEND

BLD = BUILDING
COR = CORNER
DIP = DUCTILE IRON PIPE
EL = ELEVATION
LB = LICENSED BUSINESS
SW = SIDEWALK
TBM = TEMPORARY BENCH MARK

+ 25.25 = POINT OF ELEVATION
[. .] = CONCRETE
(W) = PIPE FITTING REFERENCE NUMBER

DATE	NUMBER	REVISIONS	BY
09-17-08	1	ADDED PIPE FITTING TIES	JT

CERTIFICATION

CERTIFIED TO: BRANDES DESIGN BUILD, INC.

I HEREBY CERTIFY THAT THE SURVEY REPRESENTED HEREON MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027 FLORIDA STATUTES.

JUNE 9, 2008
DATE OF SURVEY

STATE OF FLORIDA SEP 21 2008 DAN D. FERRANS PROFESSIONAL SURVEYOR

DAN D. FERRANS
PROFESSIONAL LAND SURVEYOR
LICENSE NUMBER LS 3885
STATE OF FLORIDA

PROJECT: N.R.W.W.T.P. DIGESTER

TYPE OF SURVEY: RECORD SURVEY

PREPARED FOR: BRANDES DESIGN BUILD, INC.

POLARIS ASSOCIATES INC.
PROFESSIONAL SURVEYING LB 6113
18850 U.S. HIGHWAY 19 SUITE 500
CLEARWATER, FLORIDA 33764
(727) 524-6500

SAVED:9/19/2008 7:49 AM
PLOTTED:9/19/2008 7:49 AM

CHECKED BY:	SCALE:	DRAWN BY:	JOB NO.	DRAWING PATH:	SHEET
DDF	1"=30'	JT	3093-02	H:\JM\3093\DWG\AB-DIGESTER.DWG	1 OF 1

POST, BUCKLEY, SCHUH & JERNIGAN, INC., D/B/A/
PBS&J
PRINCIPAL ADDRESS:
5300 W CYPRESS ST. SUITE 100
TAMPA, FL 33607
FBRP CERT. OF AUTH. No. 24
PRODUCTION ADDRESS:
2803 FRUITVILLE RD. SUITE 130
SARASOTA, FLORIDA 34237
Ph. (941) 954-4036

CLIENT
MANATEE COUNTY PROJECT MANAGEMENT
4410 66TH STREET WEST
BRADENTON, FLORIDA 34210
MANATEE COUNTY FLORIDA

PROJECT 60527
NORTH REGIONAL WWTP
AEROBIC DIGESTER NO.3

TASK
PROPOSED AEROBIC DIGESTER
SITE PLAN AND GENERAL NOTES

ORIGINAL: JAN. 2007
REVISIONS:
1 2 3 4 5 6 7 8 9 10 11 12

ENGINEER
CHARLES P. PUTMAN
LIC. NO. 35217
DATE

JOB NO. 120507.38
DRAWN MV / JDF
DESIGNED DAW / RGB
CHECKED DAW / CPP
QC JME / RCS

SHEET M-1

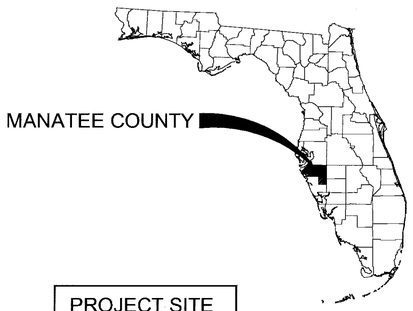
4950.001

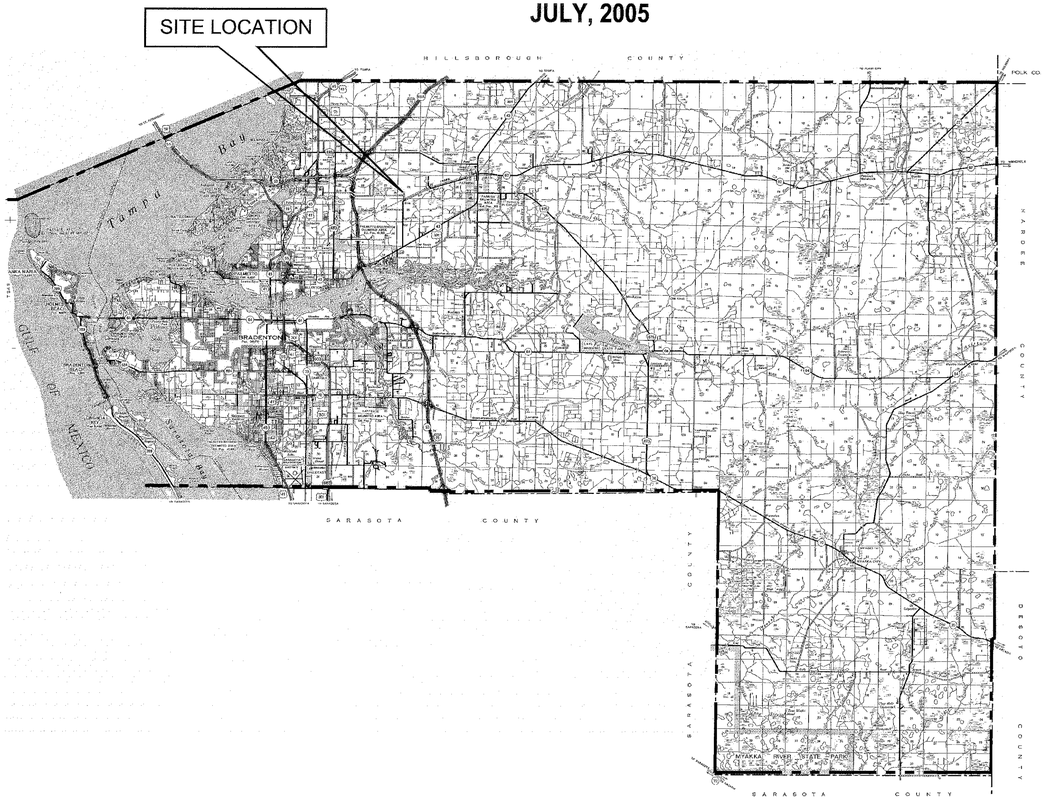
User Name: j_thomas
Drawing Name: H:\JM\3093\dwg\AB-DIGESTER.dwg
Sep 19, 2008 - 7:49am

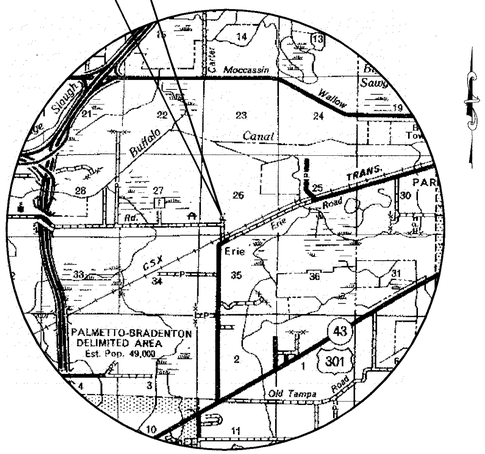
RECORD DRAWINGS

MANATEE COUNTY, FLORIDA
NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
PROJECT NO. 60107

JULY, 2005







PROJECT MAP
N.T.S.

NO.	INDEX OF SHEETS
G-1	COVER SHEET
G-2	GENERAL NOTES, INDEX, ABBREVIATIONS, SYMBOLS & OVERALL SITE PLAN
G-3	HYDRAULIC PROFILE
C-1	YARD PIPING PLAN
C-2	YARD PIPING PROFILES
C-3	YARD PIPING DETAILS
C-4	YARD PIPING DETAILS
C-5	GRADING AND HORIZONTAL CONTROL PLAN
M-1	EXISTING FLASH MIXER & FLOCCULATORS DEMOLITION PLAN & SECTIONS
M-2	PROPOSED FLOW SPLITTER BOX PLAN & SECTIONS
M-3	PROPOSED FLOW SPLITTER BOX DETAILS
M-4	PROPOSED DISK FILTERS PLAN
M-5	PROPOSED DISK FILTERS SECTIONS & DETAILS
M-6	PROPOSED DISK FILTERS SECTION
M-7	PROPOSED DISK FILTERS SECTION & DETAIL
M-8	PROPOSED DISK FILTERS SECTION
M-9	MECHANICAL DETAILS
S-1	DISK FILTER STRUCTURAL GENERAL NOTES
S-2	DISK FILTERS FOUNDATION & GRATING PLANS
S-3	DISK FILTERS SECTIONS AND DETAILS
S-4	DISK FILTERS SECTION AND DETAILS
E-1	ELECTRICAL - SITE PLAN
E-2	DISK FILTERS PLAN - ELECTRICAL
E-3	DISK FILTERS SECTIONS - ELECTRIC
E-4	FLOW SPLITTER BOX PLAN - ELECTRIC
E-5	DEWATERING BUILDING CONTROL ROOM
E-6	DISK FILTERS INTERCONNECT DIAGRAM
E-7	CONTROL & INSTRUMENTAION BLOCK DIAGRAMS
I-1	INSTRUMENTATION LEGEND
I-2	INSTRUMENTATION DIAGRAM

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. AVALOS	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	T. SONNENBERG	03/01/03
SCALE:	N.T.S.	
FILE NAME:	COVER SHEET.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

COVER SHEET

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: G-1

23-18

4445.001

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\COVER SHEET.dwg
Last Modified: Oct 05, 2005 - 9:08am by dells
Xrefs:

GENERAL NOTES:

GENERAL NOTES:

1. ALL ELEVATIONS ARE BASED ON THE TBM INDICATED AND ARE SHOWN IN FEET.

2. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR LOCATING AND AVOIDING ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND SURFACE. THE CONTRACTOR SHALL REPAIR ALL DAMAGES RESULTING FROM THE CONTRACTORS FAILURE TO COMPLY WITH THIS REQUIREMENT.

3. THE CONTRACTOR SHALL PROVIDE NO LESS THAN A 6 INCH VERTICAL CLEARANCE BETWEEN ALL UTILITIES.

4. PIPE JOINT DEFLECTION SHALL NOT EXCEED 80% OF THE MAXIMUM ALLOWED BY THE MANUFACTURER FOR THE SIZE AND TYPE OF JOINT.

5. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO REFERENCE AND RESTORE PROPERTY CORNERS AND LANDMARKS THAT MAY BE DISTURBED BY CONSTRUCTION.

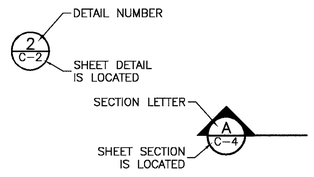
6. THE CONTRACTOR SHALL NOTIFY PLANT PERSONNEL NOT LESS THAN (2) TWO WEEKS PRIOR TO THE SHUTDOWN AND BYPASSING OF UNIT PROCESS TANKAGE.

7. CONTRACTOR SHALL REFER TO EQUIPMENT SHOP DRAWINGS FOR SIZE AND POSITION OF ALL OPENINGS IN STRUCTURES REQUIRED BY THE EQUIPMENT. ENGINEERING DRAWINGS ARE APPROXIMATE.

PIPE AND FITTING SYMBOLS

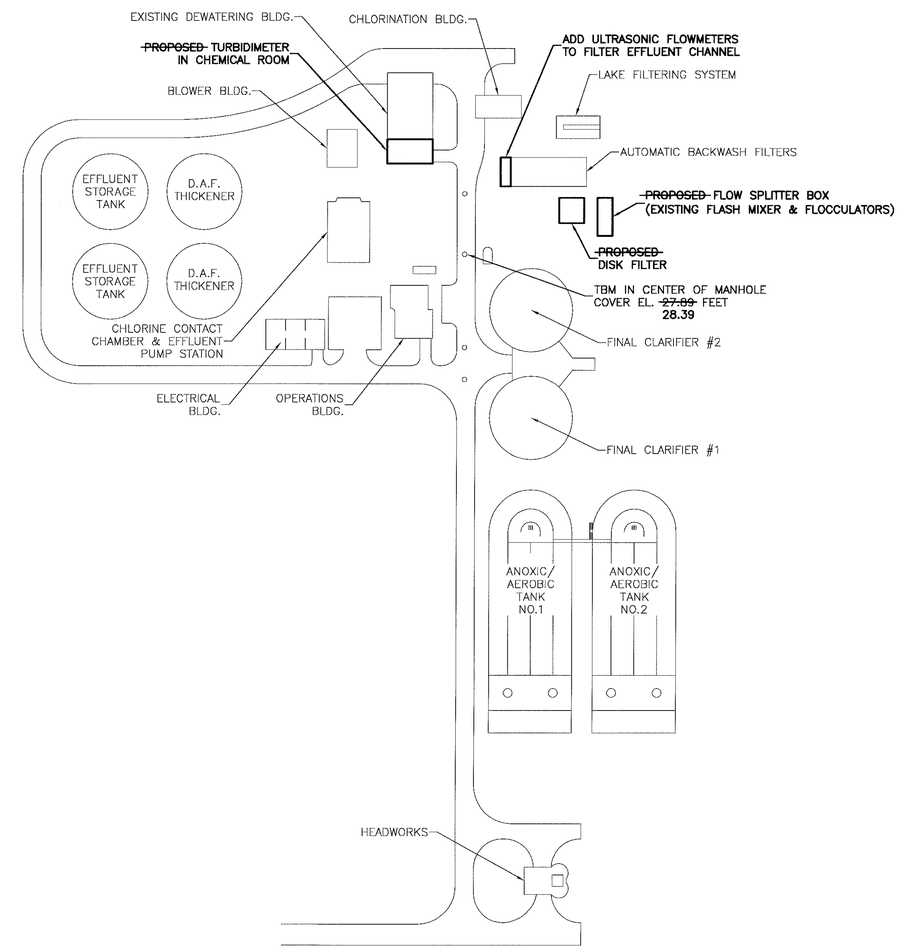
DOUBLE LINE	SINGLE LINE	
		90° ELBOW
		90° ELBOW ROTATED UP
		90° ELBOW ROTATED DOWN
		TEE
		TEE ROTATED UP
		TEE ROTATED DOWN
		REDUCER
		ECCENTRIC REDUCER
		HOSE BIBB & VALVE
		BALL VALVE
		BUTTERFLY VALVE

DETAIL & SECTION DESIGNATION



ABBREVIATIONS:

A/C	AIR CONDITIONER
ADPT.	ADAPTER
AL	ALUM SOLUTION
ALUM	ALUMINUM
AM.	AMMONIA
Ba.V.	BALL VALVE
BFV	BUTTERFLY VALVE
BLDG	BUILDING
CCC	CHLORINE CONTACT CHAMBER
CL2S	CHLORINE SOLUTION
CLG	CHLORINE GAS
CLW	CLARIFIED WATER
CONC.	CONCRETE
CPLG.	COUPLING
D	DRAIN
DI	DUCTILE IRON
ECC.	ECCENTRIC
EFF	EFFLUENT
EL.	ELEVATION
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EXIST.	EXISTING
FLG.	FLANGE
FLW	FLOCCULATED WATER
FSB	FLOW SPLITTER BOX
FT.	FOOT OR FEET
FW	FILTERED WATER
GAL.	GALVANIZED
LF.	LINER FEET
MIN.	MINIMUM
O.C.	ON CENTER
O/E	OR EQUAL
OVF	OVERFLOW
P	POLYMER
PE	PLAIN END
PVC	POLYVINYL CHLORIDE PIPE
PW	POTABLE WATER
RCW	RECLAIMED WATER
RED	REDUCER
RMJ	RESTRAIN MECHANICAL JOINT
RW	RAW WATER
SCH.	SCHEDULE
SL	SAMPLE LINE
SST	STAINLESS STEEL
SW	SOLVENT WELD
T&B	TOP AND BOTTOM
THD.	THREADED
TS	THICKENED SLUDGE
TYP.	TYPICAL
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WBW	WASTE BACKWASH WATER
WL	WATER LEVEL
WWM	WOVEN WIRE MESH



OVERALL SITE PLAN

	NAME	DATE
DESIGNED BY:	R. AVALOS	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	T. SONNENBERG	03/01/03
SCALE:	AS SHOWN	
FILE NAME:	GEN-NOTES.DWG	

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

GENERAL NOTES, ABBREVIATIONS, SYMBOLS & OVERALL SITE PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

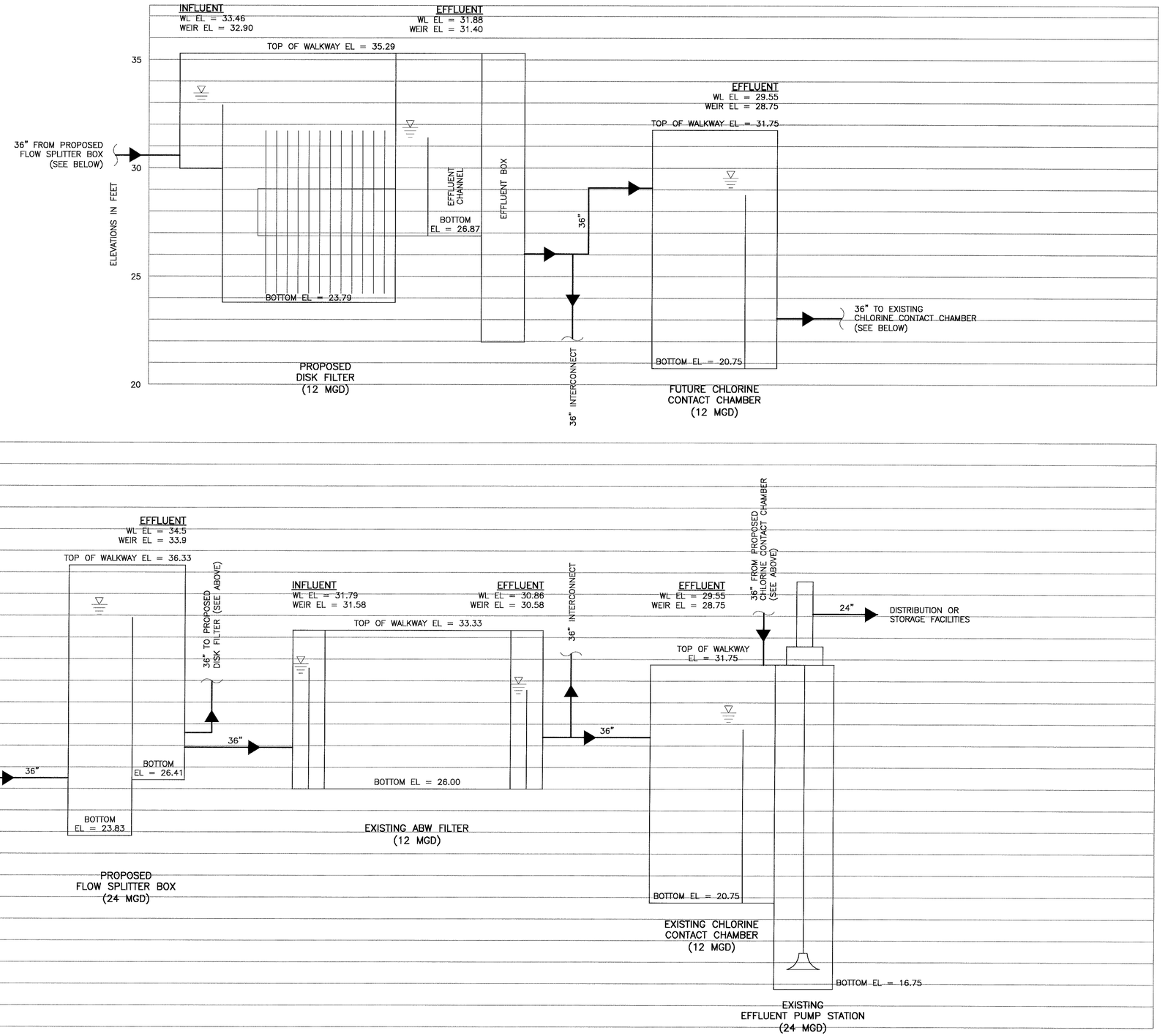
PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: G-2

4445.002

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\GEN-NOTES.dwg
Last Modified: Oct 05, 2005 - 9:23am by dellis
Xrefs:

NOTES:

1. HYDRAULIC PROFILE IS FOR FUTURE PEAK HYDRAULIC FLOWRATE OF 24 MGD.
2. SOURCE FOR EXISTING UNITS: LARSON ENGINEERING – "FLOW DIAGRAM/HYDRAULIC PROFILE", SHEET I-1, MARCH 1985.



URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. AVALOS	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	T. SONNENBERG	03/01/03
SCALE:	AS SHOWN	
FILE NAME:	HYDRO-PROFILE.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUTOMATIC BACKWASH FILTER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HYDRAULIC PROFILE

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: G-3

4445.003

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\HYDRO-PROFILE.dwg
Last Modified: Oct 05, 2005 – 9:23am by dellis
Xrefs:

N

20 10 0 20

Scale 1" = 20'
Scale in feet

~~NEW~~ 20" 45° BEND
[1+92.4 ,35.3'L TOP EL 23.7'L]
~~REMOVE~~ EXIST. PLUG AND
~~INSTALL NEW~~ 20" PIPE
[20" 45° BEND STA 1+88, 31.5'L TOP EL 23.7']
[20" BFV STA 1+88, 27.6'L TOP EL 23.8']
[20" TEE STA 1+86, 13.6'L TOP EL 23.8']

~~INSTALL~~ 20" TEE
20" SOLID SLEEVE

RESTRAIN ALL JOINTS
ON ~~NEW~~ 20" PIPE
[20" TEE]
[2+78, 36.2'L]
[TOP EL 23.1

[20" 90° BEND]
[STA 2+78, 17.7'L]
[TOP EL 38.3]

[5+15.89] ~~NEW~~ 20" EFF-DI/RMJ

[5+00]
[N-S]
[BASELINE]

~~PROPOSED~~ FLOW SPLITTER BOX
(EXISTING FLASH MIXER & FLOCCULATORS)
(SEE SHT M-1 & M-2)

12'-6"

[1+00]

[2+00]
[4+85.9]
[BASELINE N-S]

[3+00]
[6"90°BEND]
[4+51.3, 64.9'R]
[TOP=21.4]
[6"45°BEND]
[4+20.8, 64.6'R]
[INV.=27.1]
[6"PIPE]
[4+03.8, 82.6'R]
[TOP=20.3]

INSTALL 36" PIPE
[4+60.5, 33.8'R]
[INV.=27.1]

24'-0"

~~¾~~" SERVICE SADDLE
AND VALVE

~~NEW~~ 3/4" RW-PVC

36" SOLID SLEEVE
W/36" BFV

30'-9"

~~PROPOSED~~
DISK FILTERS
(SEE SHT M-4)

~~NEW~~ 1" PVC
TURBIDITY
SAMPLE LINE

CONNECT TO ABW
~~CL=24.0~~
[4+26.1, 32.8R]
[TOP=25.4]

CUT IN 6" WYE
6" SOLID SLEEVE

~~NEW~~ 36" FW-DI

36" TEE, ROTATED UP 11.25°
AND 36" BFV
~~CL=24.0~~
[3+52.5, 31.7'R]
[TOP=25.0]

EXISTING
LAKE
FILTERING
SYSTEM

EXISTING
AUTOMATIC BACKWASH FILTERS

EXISTING
FINAL CLARIFIER #2

EXISTING
FINAL CLARIFIER #1

EXISTING
CHLORINATOR
BUILDING

EXISTING
PLANT
DRAIN P.S.

36" 11.25° BEND,
ROTATED DN
~~CL=27.3~~
[3+52.9, 7.7'R]
[TOP=29.6]

[4+00]

~~PROPOSED~~
ULTRASONIC
FLOWMETERS
(1 / M-9)

[3+50.1, 7.5'R] 36" BFV
[NUT=29.7] ~~CL=27.3~~

[3+52.4, 0.1'R] 36"x24" RED
[TOP=28.7] ~~CL=27.3~~

CORE HOLE
FOR 24" PIPE
~~CL=27.3~~

[3+50.0]
[BASELINE N-S]

ACCESS ROAD
CROSSING (4 / C-3)

[3+00]

TYPICAL
PIPE CROSSING (5 / C-3)

~~NEW~~ 1" PVC TURBIDITY
SAMPLE LINE

(2) 20"
45° BENDS
[STA N/A]

[20"x20"TEE]
[TOP=21.1]
[2+26, 15.5'R]

[36"11.25°BEND][TOP=24.4]
[2+71.0, 30.4'R]

[36"11.25°BEND][TOP=24.7]
[2+31.7, 11.2'R]

[36"TEE] [TOP=24.5]
[2+26.7, 10.7'R]

[36"PLUG][TOP=24.5]
[2+26.8, 12.5'R]

FUTURE
CHLORINE
CONTACT
CHAMBER

CCC CONNECTION (3 / -)

EXISTING
DISTRIBUTION
METERING
FACILITY

EXISTING
CONTROL
BLDG

EXISTING DEWATERING BUILDING

~~PROPOSED~~
TURBIDIMETER
(2 / M-7)

[12"TEE] [TOP=25.5]
[2+21.6, 0.7'R]
[6"90°BEND][TOP=25.5]
[2+21.4, 2.8'L]
[36"PIPE][TOP=24.7]
[2+18.4, 1.8'L]
[12"45°BEND][TOP=25.4]
[2+15.2, 1.0'R]
[36"VALVE][TOP=24.0]
[2+15.1, 7.2'R]

(2) 20" 45° BENDS

[2+00]

[6"90°BEND][TOP=24.4]
[2+01.5, 3.2'L]

[36"PIPE][TOP=24.3]
[2+06.0, 3.2'R]
[36"PIPE][TOP=24.2]
[1+89.8, 10.2'R]

[12"45°BEND][TOP=25.2]
[2+00.0, 14.4'R]

[20"PIPE] [TOP=27.2]
[1+82.6, 14.6'R]

~~REMOVE EXIST. 36" 22.5° PCCP BEND AND PIPE AS NECESSARY~~
~~REPLACE~~ WITH 36" PCCP 22.5° WYE
(~~NEW~~ FITTING SHOWN IS APPROX.)
~~CL=22.7~~

EXISTING CHLORINE
CONTACT CHAMBER

EXISTING
BLOWER
BLDG

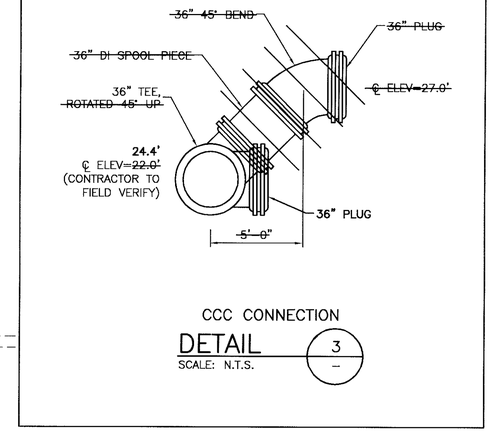
CONCRETE SIDEWALK

ASPHALT PAVEMENT

YARD PIPING NOTES:

1. CONTRACTOR TO FIELD VERIFY ELEVATION OF EXISTING 36" PIPELINE AT CONNECTION POINTS PRIOR TO STARTING WORK. CONTRACTOR WILL PROVIDE INFORMATION TO ENGINEER.
2. ALL BURIED DUCTILE IRON PIPE SHALL BE POLY-WARAPPED EXCEPT IN CONCRETE ENCASEMENT.
3. ALL BURIED BUTTERFLY VALVES SHALL BE POLY-WRAPPED. SEE DETAIL ON SHEET C-4.
4. REFER TO SHEET C-4 FOR BYPASS DETAILS.

RESTRAIN ALL JOINTS ON
RELOCATED 20" PIPE



CCC CONNECTION
DETAIL (3 / -)
SCALE: N.T.S.

URS Corporation 7650 West Courtney Campbell Causeway Tampa, FL 33607-1462		

	NAME	DATE
DESIGNED BY:	R. AVALOS	03-14-03
CHECKED BY:	D. WILCOX	03-14-03
DRAWN BY:	T. SONNENBERG	03-14-03
SCALE:	AS SHOWN	
FILE NAME:	YARD PIPING.DWG	

MANATEE COUNTY FLORIDA

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

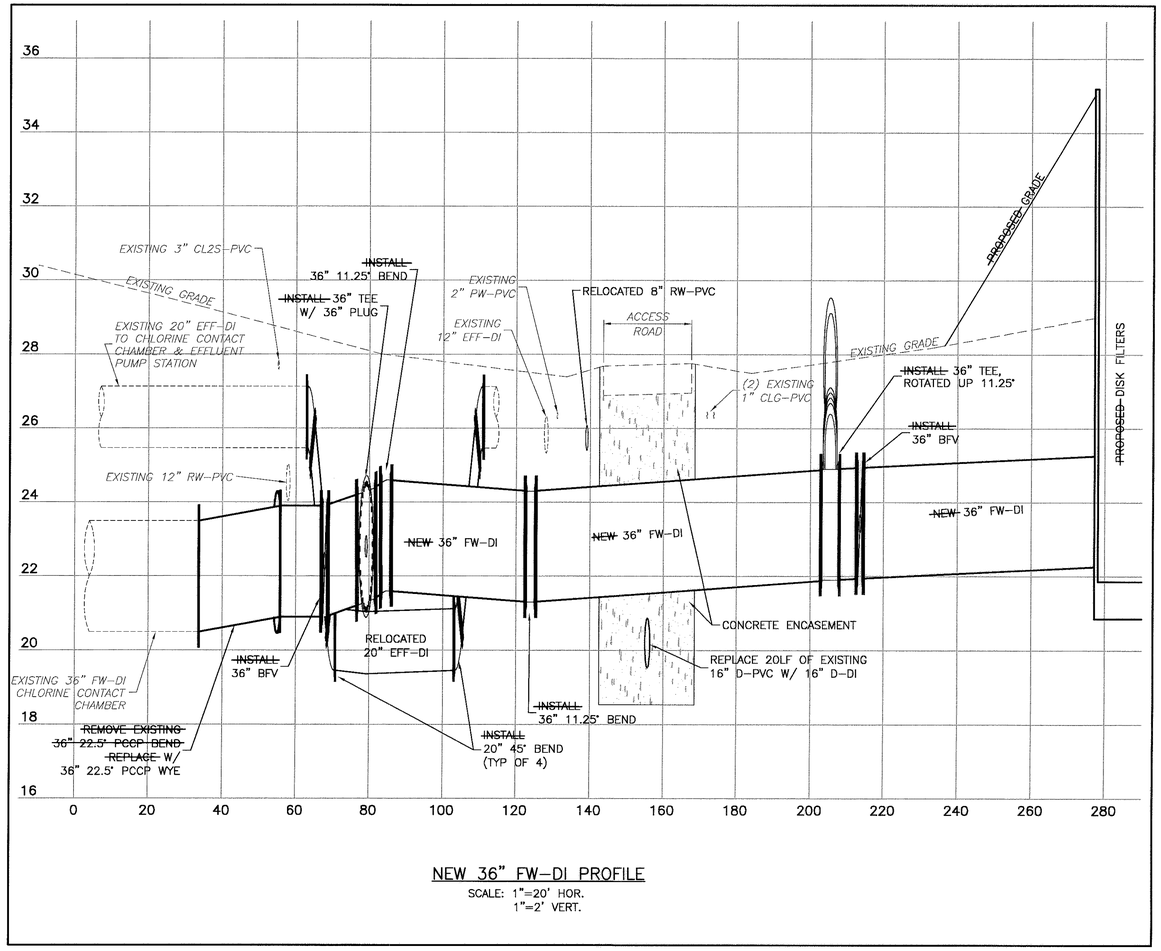
YARD PIPING PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: C-1

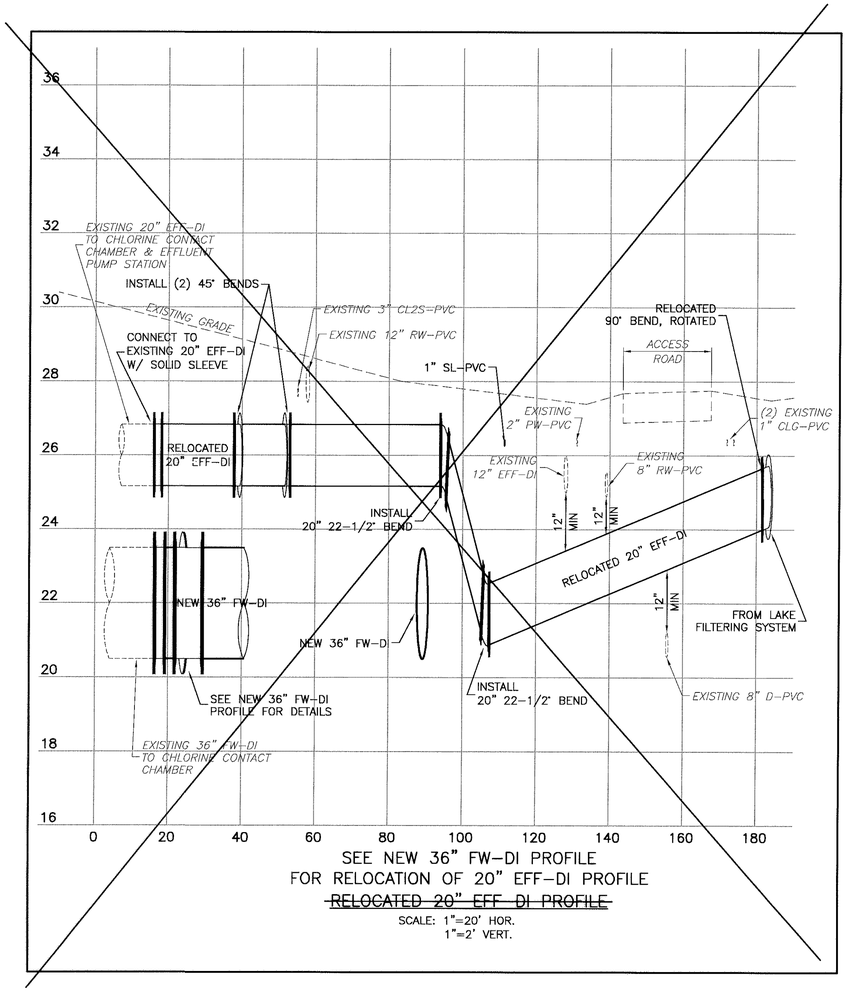
4445.004

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\YARD PIPING.dwg
Last Modified: Oct 05, 2005 - 10:30am by dellis



NEW 36" FW-DI PROFILE

SCALE: 1"=20' HOR.
1"=2' VERT.



SEE NEW 36" FW-DI PROFILE
FOR RELOCATION OF 20" EFF-DI PROFILE
~~RELOCATED 20" EFF DI PROFILE~~

SCALE: 1"=20' HOR.
1"=2' VERT.

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\YARD PIPING-PROFILE.dwg
Last Modified: Oct 05, 2005 - 9:26am by cellis
Xrefs: Disparis Survey 10Jun03 [G:\WATERWASTE\MANATEE PROJECTS\12003628 NRWWTP ABW Filter Expansion\CADD\Polaris Survey 10Jun03.dwg]
YARD PIPING [X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\YARD PIPING.dwg]

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. AVALOS	03-14-03
CHECKED BY:	D. WILCOX	03-14-03
DRAWN BY:	T. SONNENBERG	03-14-03
SCALE:	AS SHOWN	
FILE NAME:	YARD PIPING-PROFILE.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUTOMATIC BACKWASH FILTER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

YARD PIPING PROFILES

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: C-2

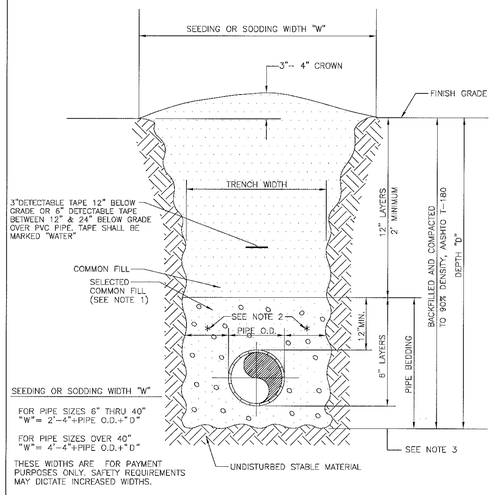
4445.005

NOTES:

1.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

2.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX FOR PIPE 42" DIAMETER AND LARGER.

3.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH DETAIL UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	UW-26
REV.BY	DATE			
RTH	11/99	MARCH 18, 1997 DATE OF APPROVAL		

NOTES:

1.) ~~USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.~~

2.) 10" MAX. FOR PIPE DIAMETERS LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 8" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

4.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

5.) WEARING SURFACE TO BE SAME TYPE & THICKNESS (1½" MIN.) AS EXISTING PAVEMENT.

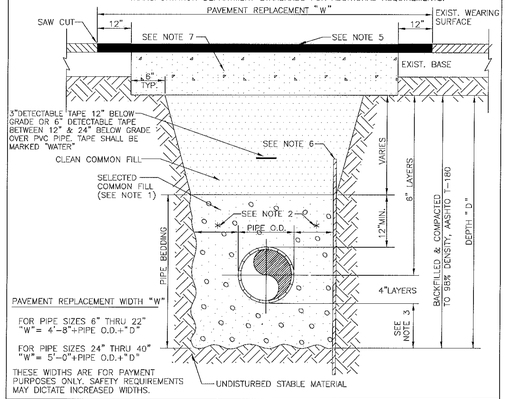
6.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.

7.) BASE SHALL BE 6" MINIMUM THICKNESS SAND ASPHALT, 10" MIN. THICKNESS CRUSHED CONCRETE, OR APPROVED EQUAL.

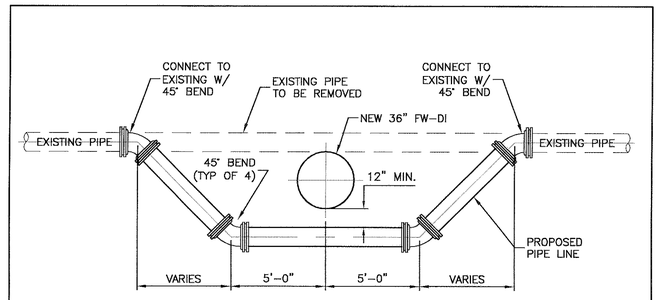
8.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.

9.) TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIME. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.

10.) NOTES 5.) THRU 9.) ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY TRANSPORTATION DEPARTMENT STANDARDS FOR ADDITIONAL REQUIREMENTS.



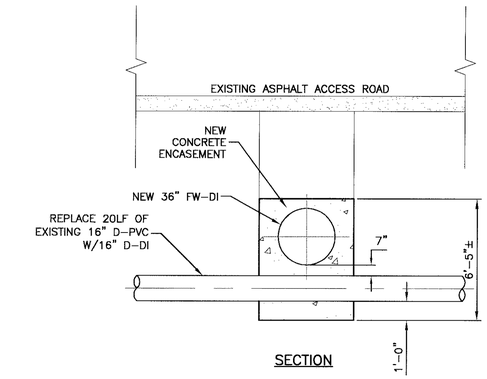
MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH DETAIL ASPH. PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UW-27
REV.BY	DATE			
RTH	11/99	MARCH 18, 1997 DATE OF APPROVAL		



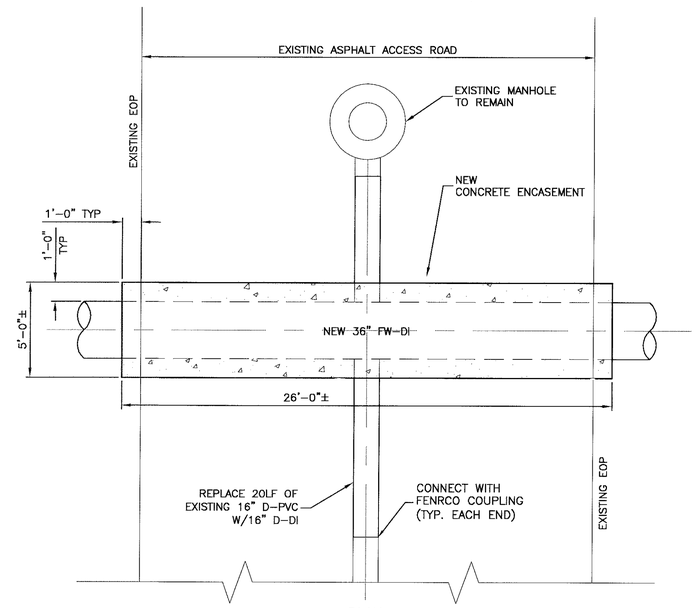
TYPICAL PIPE CROSSING

DETAIL 5 / C-1

SCALE: N.T.S.



SECTION

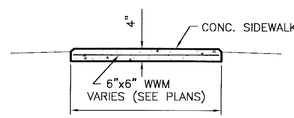


PLAN

ACCESS ROAD CROSSING

DETAIL 4 / C-1

SCALE: 1/4"=1'-0"



CONCRETE SIDEWALK

DETAIL 7 / –

SCALE: NTS

	NAME	DATE
DESIGNED BY:	R. AVALOS	07/01/03
CHECKED BY:	D. WILCOX	07/01/03
DRAWN BY:	J. SCHEUERMAN	07/01/03
SCALE:	AS SHOWN	
FILE NAME:	YARD PIPING DETAILS.DWG	

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

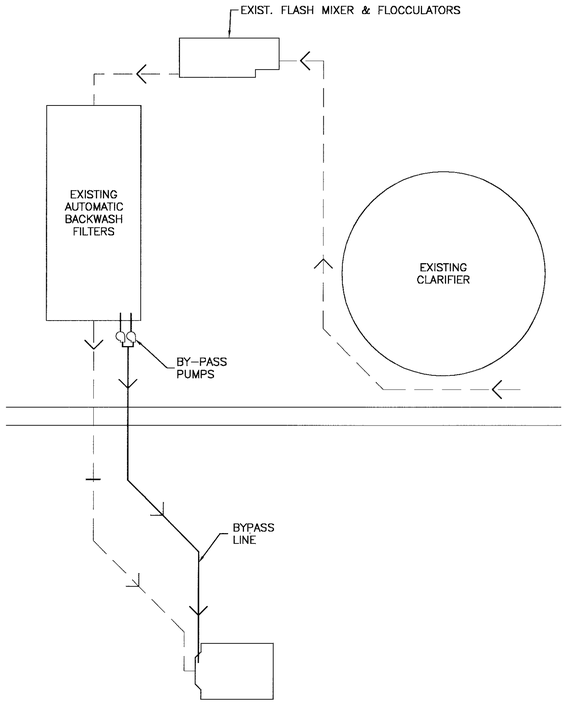
YARD PIPING DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: C-3

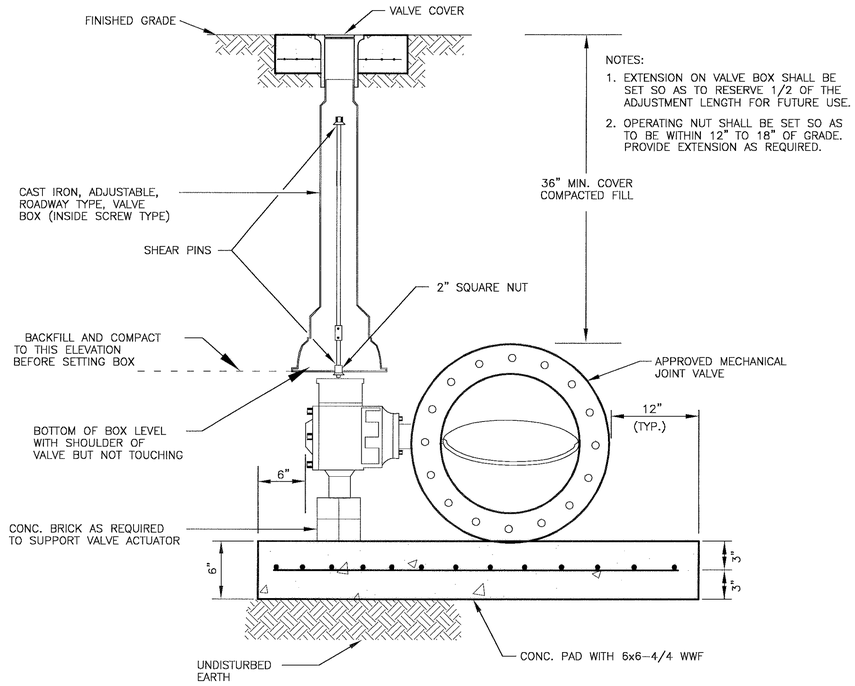
4445.006

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\YARD PIPING-DETAILS.dwg
Last Modified: Oct 05, 2005 - 9:23am by dellis
Xrefs: YARD PIPING G:\WATERWASTE\MANATEE PROJECTS\12003628 NRWWTP ABW Filter Expansion\CADD\YARD PIPING.dwg



CHLORINE CONTACT CHAMBER INTERCONNECT BY-PASS PLAN

DETAIL 2 / SCALE: N.T.S.



BURIED BUTTERFLY VALVE

DETAIL 3 / SCALE: N.T.S.

LEGEND

1	AREA NUMBER
SG-1	SLIDGE GATE NUMBER (SG)
	WORK AREA 1
	WORK AREA 2
	WORK AREA 3
	WORK AREA 4

PHASE 1

SG OPENED 2,4,5 & 6
SG CLOSED 1 & 3

PHASE 2

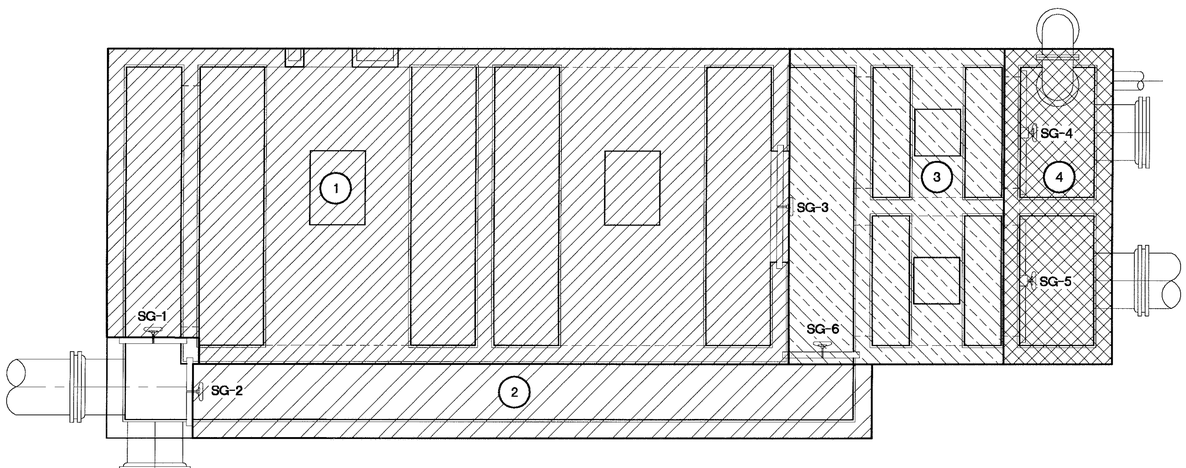
SG OPENED 1,3,4 & 5
SG CLOSED 2 & 6
PERFORM ALL REQUIRED WORK IN AREA 2

PHASE 3

SG OPENED 2
SG CLOSED 1,3,4,5 & 6
INSTALL BYPASS PUMPS IN AREA 4 AND PUMP TO AREA 2.
PERFORM ALL REQUIRED WORK IN AREA 3

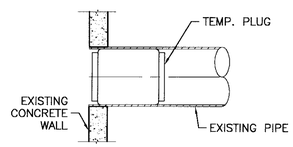
PHASE 4

SG OPENED 2
SG CLOSED 1,3 & 6
SG REMOVED 4 & 5
INSTALL PLUG IN 36" LINE PER DETAIL
CONNECT TO BYPASS PUMPS
PUMP TO AREA 2
PERFORM ALL REQUIRED WORK IN AREA 4



CONSTRUCTION PHASING

DETAIL 1 / SCALE: N.T.S.



CHERNE TYPE INFLATABLE PLUG OR EQUAL WITH TRANSFER TUBE CONNECTION. SEWAGE BYPASS PUMP SUB CONTRACTOR TO COORDINATE REQUIRED SIZES.

BYPASS PLUG DETAIL

DETAIL 4 / SCALE: N.T.S.

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. AVALOS	07/01/03
CHECKED BY:	D. WILCOX	07/01/03
DRAWN BY:	J. SCHEUERMAN	07/01/03
SCALE:	AS SHOWN	
FILE NAME:	YARD PIPING DETAILS.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

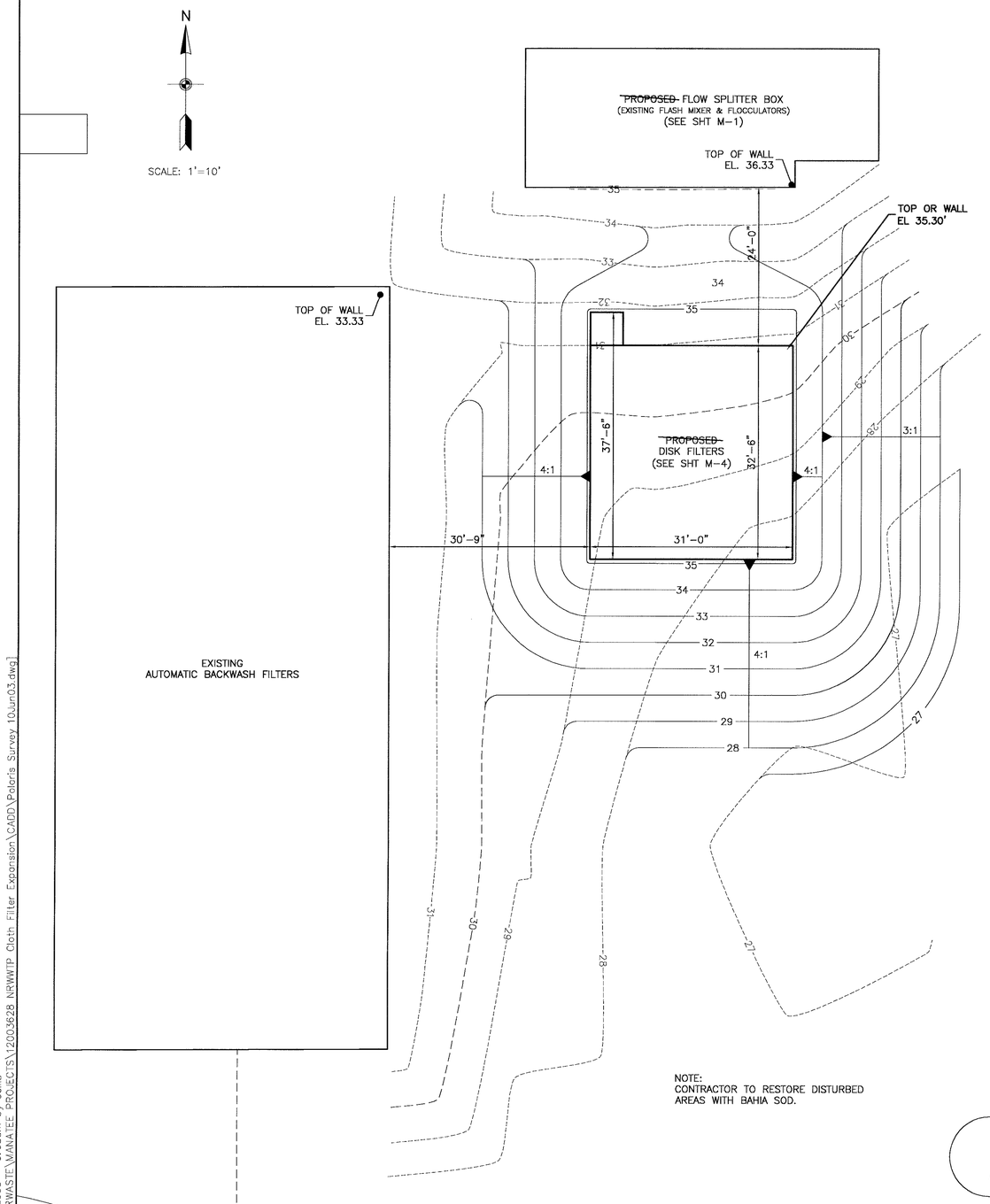
YARD PIPING DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: C-4

4445.007

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\YARD PIPING-DETAILS.dwg
Last Modified: Oct 05, 2005 - 9:25am by dellis
Xrefs: YARD PIPING [G:\WATERWASTE\MANATEE PROJECTS\12003628 NRWWTP ABW Filter Expansion\CADD\YARD PIPING.dwg]



NOTE:
CONTRACTOR TO RESTORE DISTURBED
AREAS WITH BAHIA SOD.

EXISTING PLANT DRAIN P.S.

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\CIVIL SITE WORK.dwg
Last Modified: Oct 05, 2005 - 9:08am by dellis
Xrefs: 3093 [G:\WATERWASTE\MANATEE PROJECTS\12003628 NRWWTP Cloth Filter Expansion\CADD\Polaris Survey 10Jun03.dwg]

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07-09-03
CHECKED BY:	D. WILCOX	07-12-03
DRAWN BY:	D. ELLIS	07-09-03
SCALE:	AS SHOWN	
FILE NAME:	CIVIL SITE WORK.DWG	

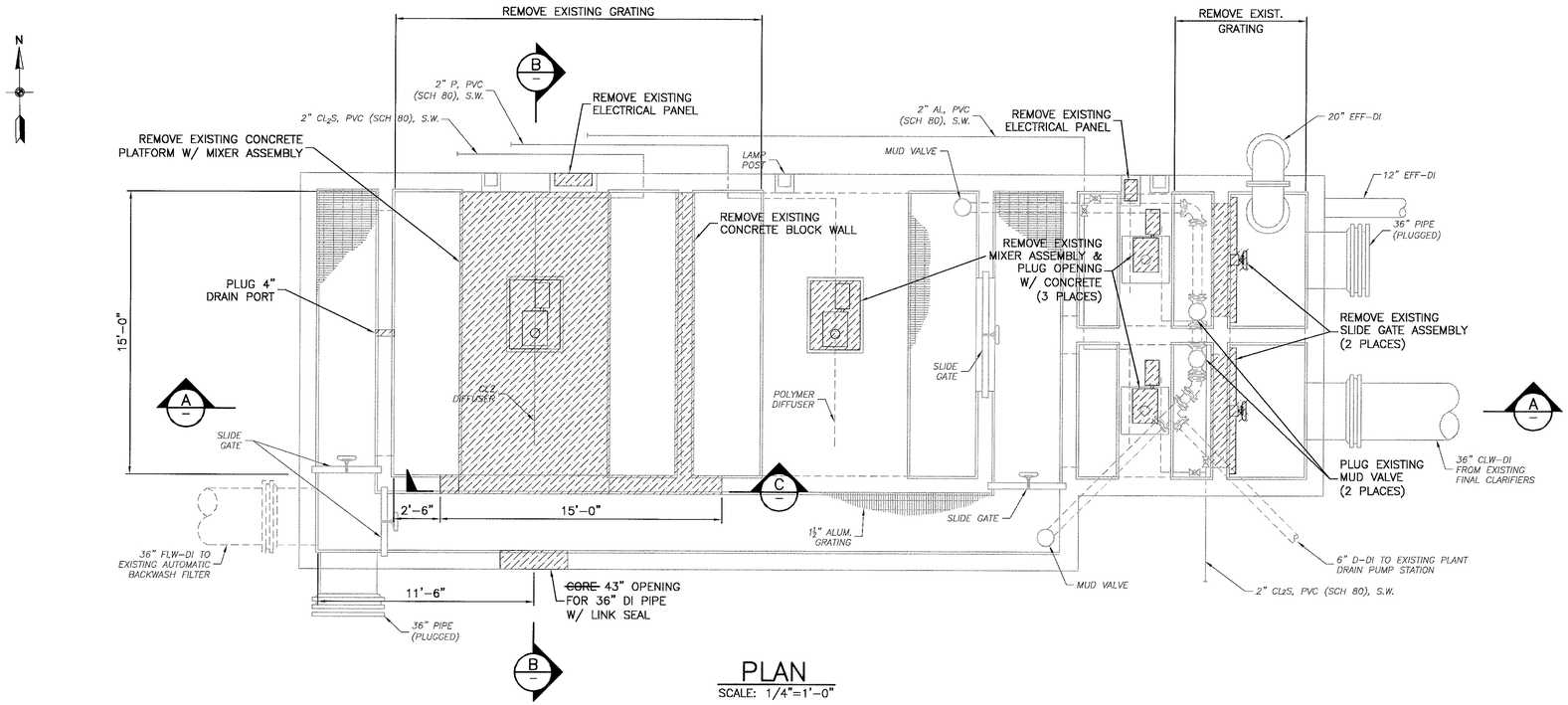
NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

GRADING AND HORIZONTAL CONTROL PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: C-5

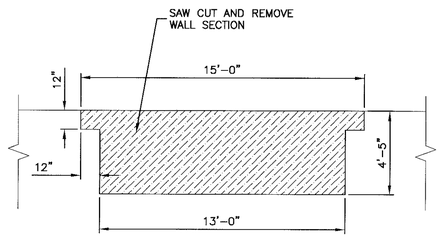
4445.008



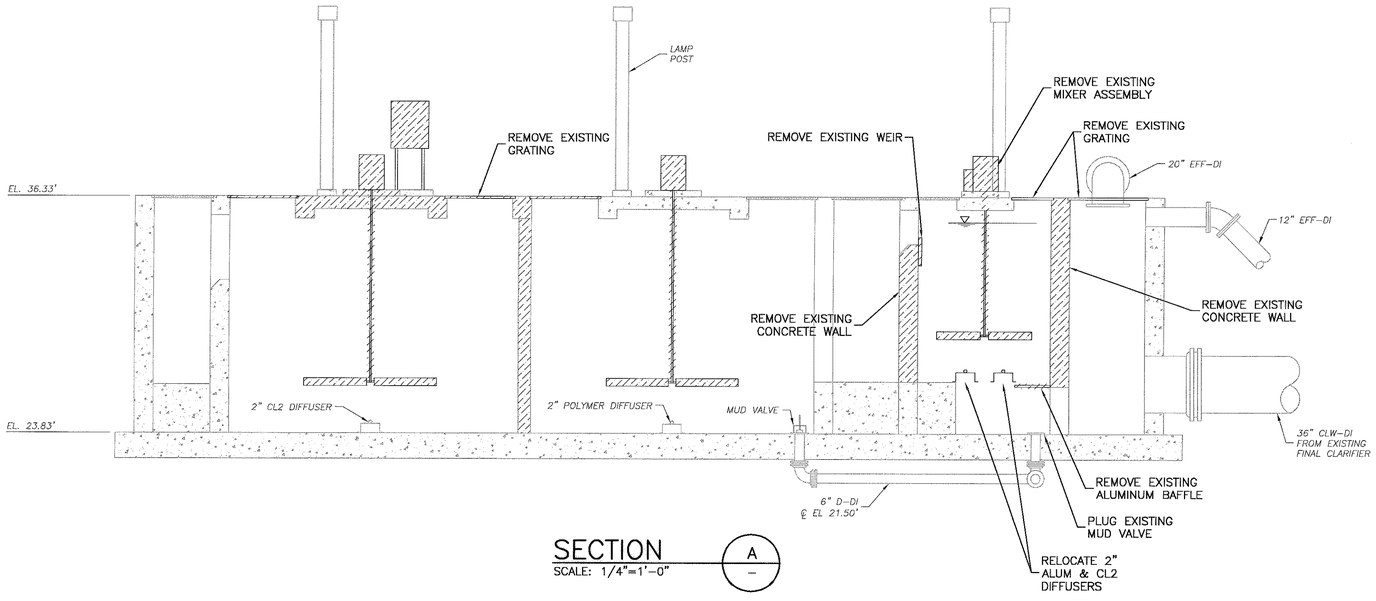
PLAN
SCALE: 1/4"=1'-0"

NOTES:
1. EXISTING FASH MIXER & FLOCULATORS WILL BE CONVERTED TO FLOW SPLITTER BOX.

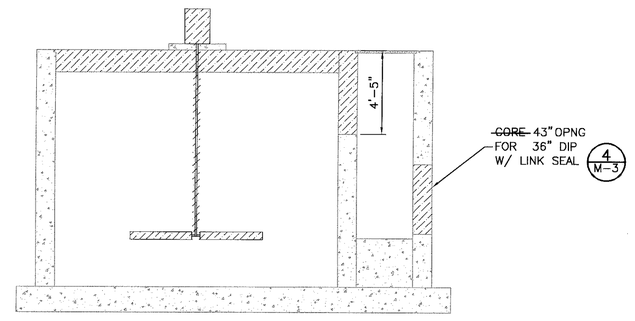
2. CONTRACTOR TO REMOVE EQUIPMENT AS INDICATED AND PLACE IN AN ONSITE LOCATION DETERMINED BY THE COUNTY.



SECTION (C)
SCALE: 1/4"=1'-0"



SECTION (A)
SCALE: 1/4"=1'-0"



SECTION (B)
SCALE: 1/4"=1'-0"

URS Corporation 7650 West Courtney Campbell Causeway Tampa, FL 33607-1462		

	NAME	DATE
DESIGNED BY:	R. AVALOS	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	J. SCHEUERMAN	5/5/03
SCALE:	AS SHOWN	
FILE NAME:	FLOW SPLITTER BOX.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

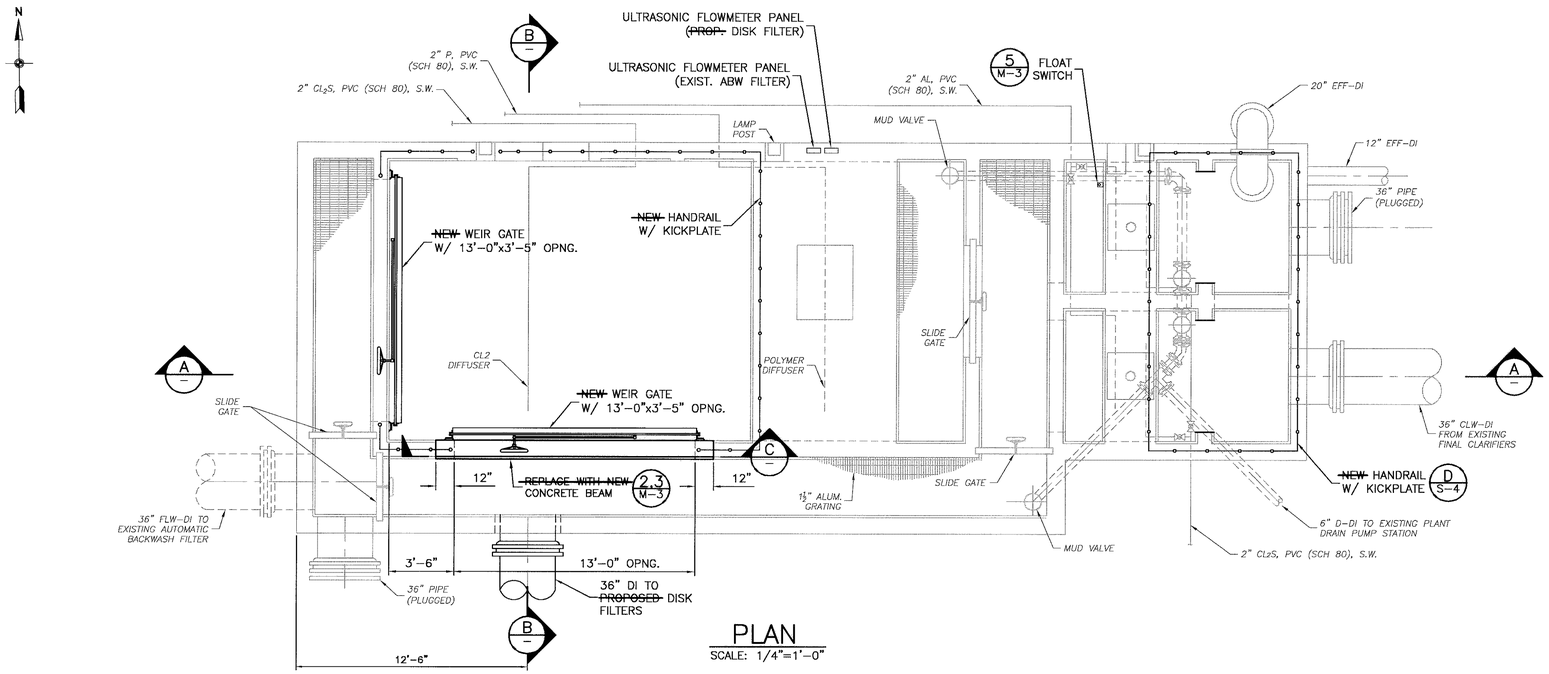
EXISTING FLASH MIXER & FLOCCULATORS DEMOLITION PLAN & SECTIONS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

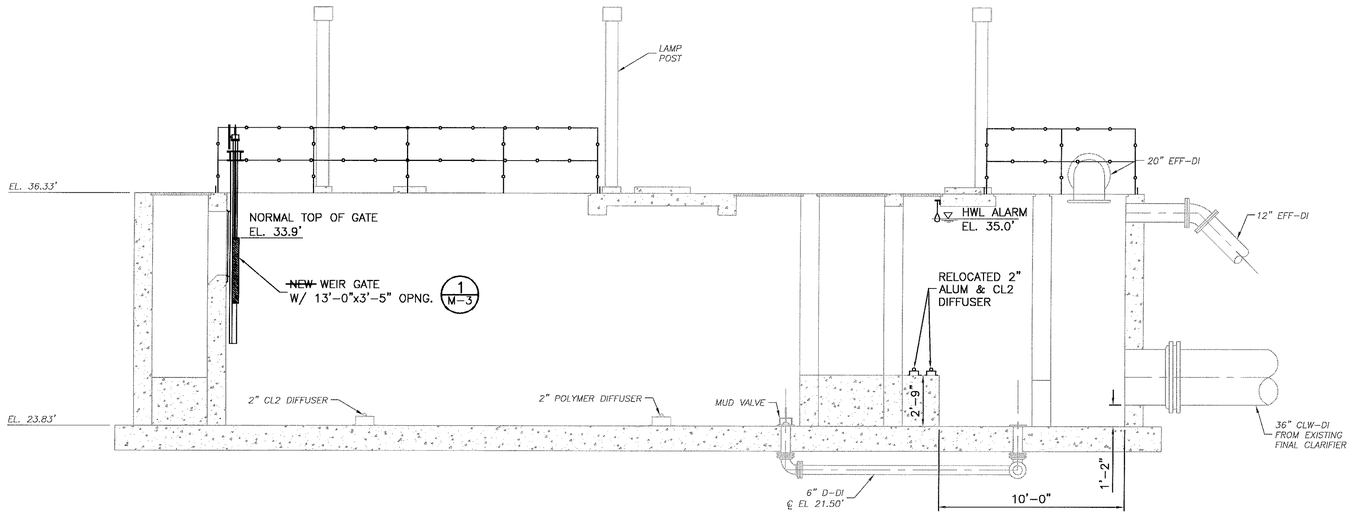
PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: M-1

4445.009

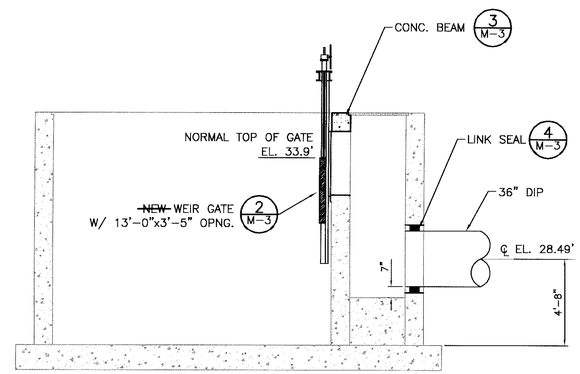
Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\FLOW SPLITTER BOX.dwg
Last Modified: Oct 05, 2005 - 9:22am by dellis
Xrefs:



PLAN
SCALE: 1/4"=1'-0"



SECTION
SCALE: 1/4"=1'-0"
A



SECTION
SCALE: 1/4"=1'-0"
B

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. AVALOS	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	J. SCHEUERMAN	5/5/03
SCALE:	AS SHOWN	
FILE NAME:	FLOW SPLITTER BOX.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

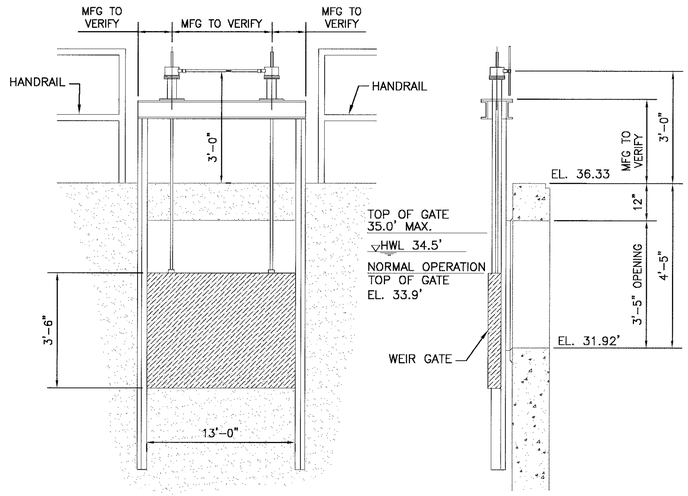
PROPOSED FLOW SPLITTER BOX
PLAN & SECTIONS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: M-2

4445.010

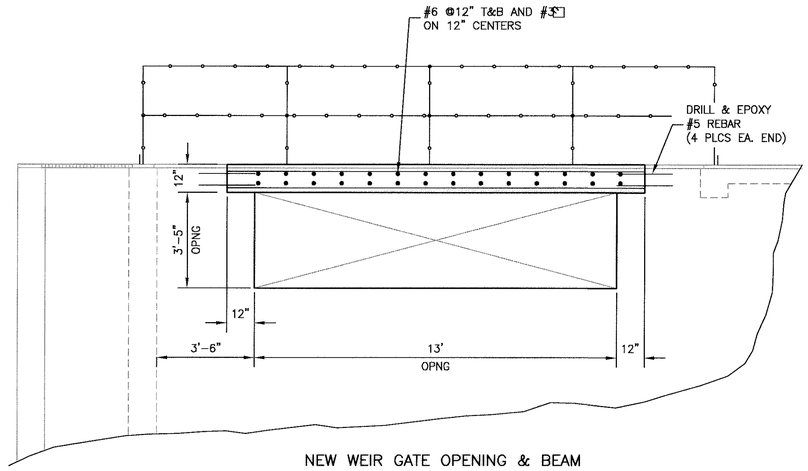
Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\FLOW SPLITTER BOX.dwg
Last Modified: Oct 05, 2005 - 9:22am by dellis
Xrefs:



WEIR GATE INSTALLATION

DETAIL 1 / M-2

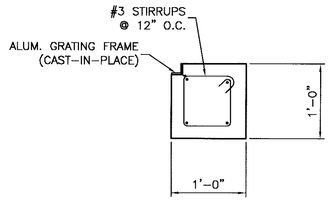
SCALE: N.T.S.



NEW WEIR GATE OPENING & BEAM

DETAIL 2 / M-2

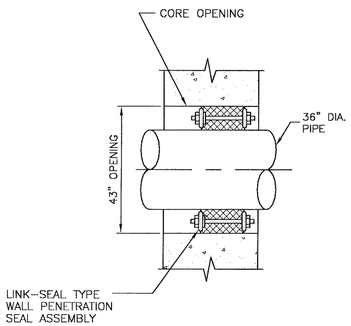
SCALE: M-6



CONCRETE BEAM

DETAIL 3 / M-2

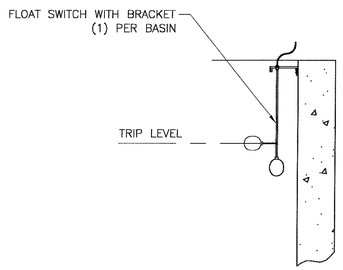
SCALE: 1"=1'-0"



LINK SEAL

DETAIL 4 / M-1/M-2

SCALE: N.T.S.



FLOAT SWITCH MOUNTING

DETAIL 5 / M-2/M-4

SCALE: N.T.S.

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\FLOW SPLITTER BOX.dwg
Last Modified: Oct 05, 2005 - 9:22am by dellis
Xrefs:

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. AVALOS	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	J. SCHEUERMAN	5/5/03
SCALE:	AS SHOWN	
FILE NAME:	FLOW SPLITTER BOX.DWG	

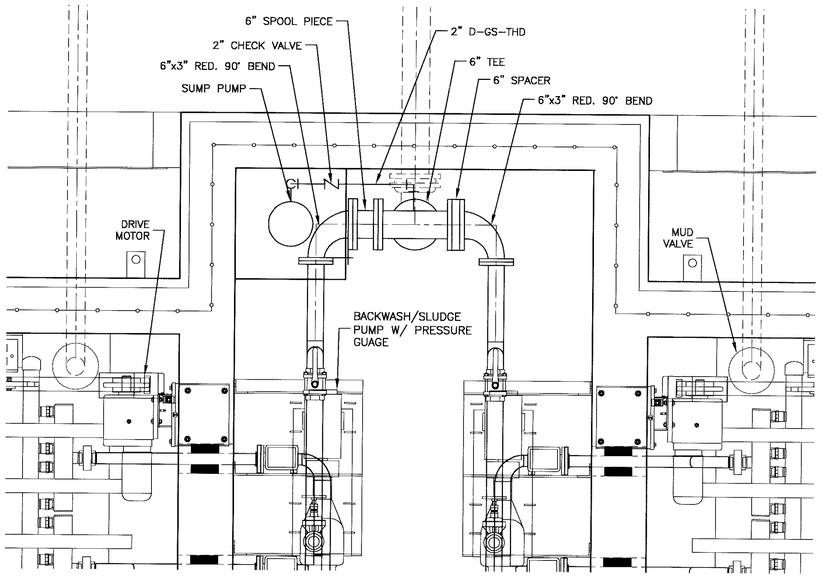
NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PROPOSED FLOW SPLITTER BOX
DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

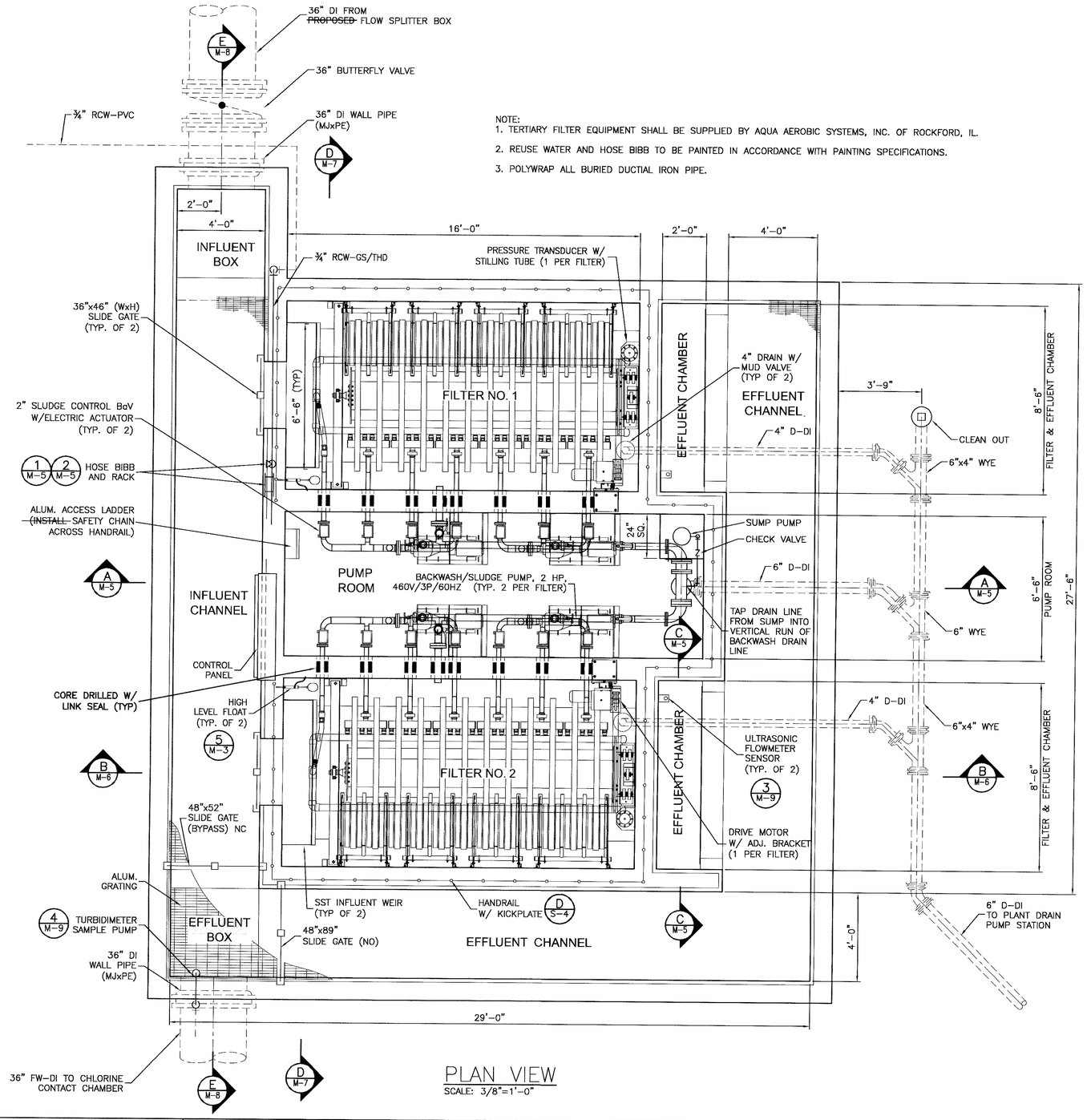
PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: M-3

4445.011



BACKWASH DISCHARGE CONNECTION DETAIL

DETAIL 1 — SCALE: 3/4"=1'-0"



NOTE:
1. TERTIARY FILTER EQUIPMENT SHALL BE SUPPLIED BY AQUA AEROBIC SYSTEMS, INC. OF ROCKFORD, IL.
2. REUSE WATER AND HOSE BIBB TO BE PAINTED IN ACCORDANCE WITH PAINTING SPECIFICATIONS.
3. POLYWRAP ALL BURIED DUCTIAL IRON PIPE.

PLAN VIEW — SCALE: 3/8"=1'-0"

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\DISCFILTERS.dwg
Last Modified: Oct 05, 2005 - 9:10am by dellis
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7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. AVALOS	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	J. SCHEUERMAN	5/5/03
SCALE:	AS SHOWN	
FILE NAME:	DISCFILTERS.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUTOMATIC BACKWASH FILTER EXPANSION

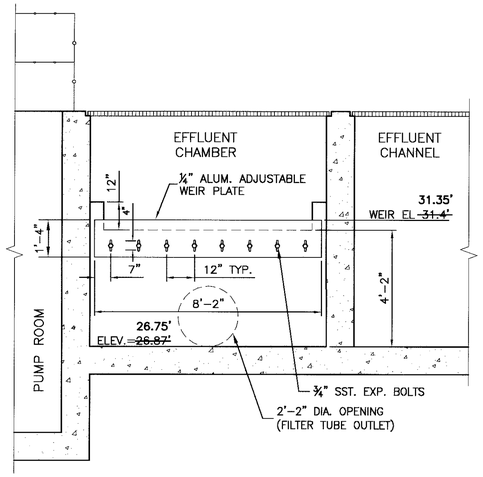
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PROPOSED DISK FILTERS PLAN

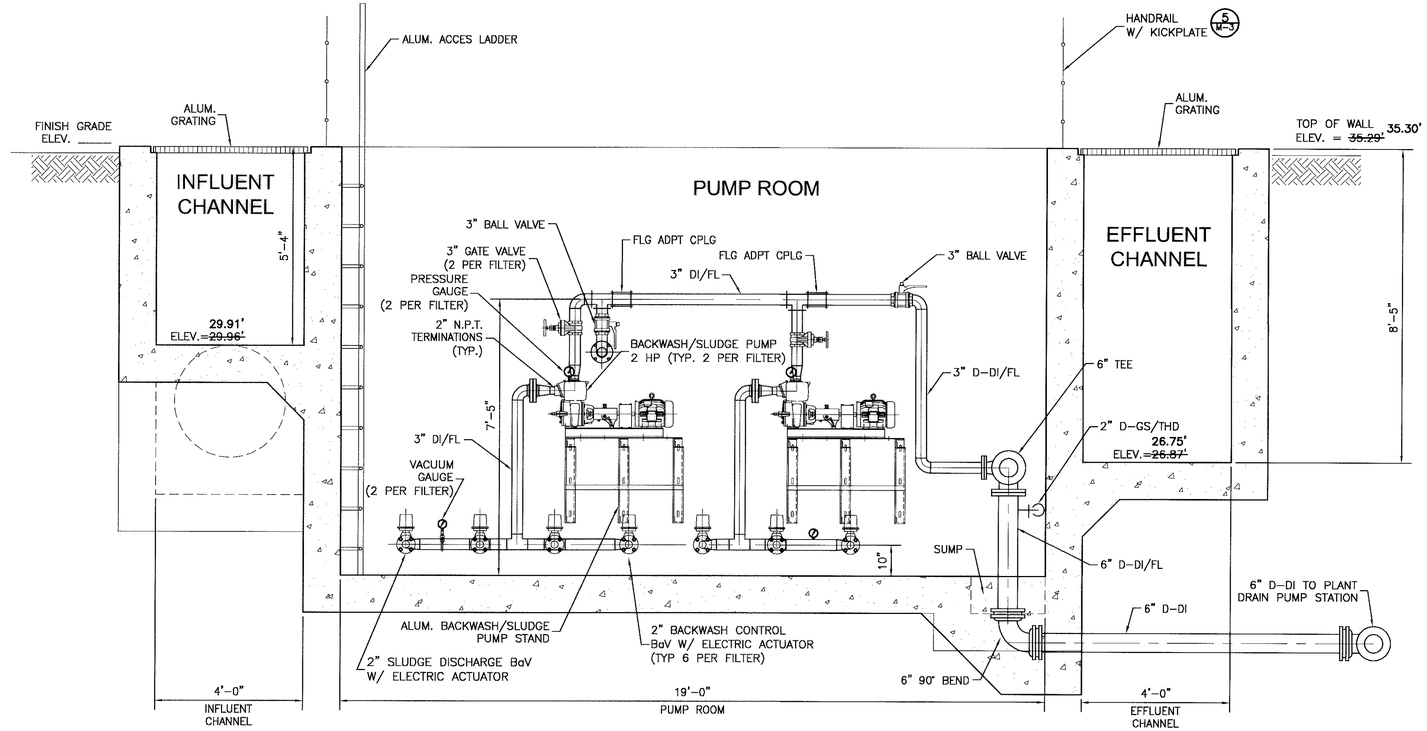
NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: M-4

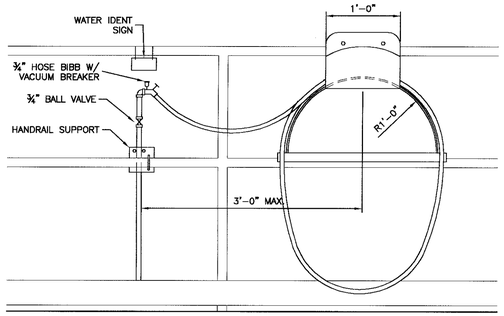
4445.012



SECTION C
SCALE: 3/8"=1'-0" M-4

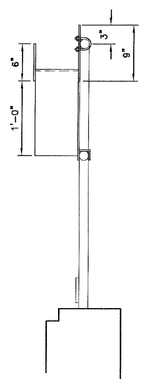


SECTION A
SCALE: 1/2"=1'-0" M-4



WASH HOSE STATION

DETAIL 1
SCALE: NTS M-4



URS Corporation 7650 West Courtney Campbell Causeway Tampa, FL 33607-1462		

	NAME	DATE
DESIGNED BY:	R. AVALOS	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	J. SCHEUERMAN	5/5/03
SCALE:	AS SHOWN	
FILE NAME:	DISCFILTERS.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

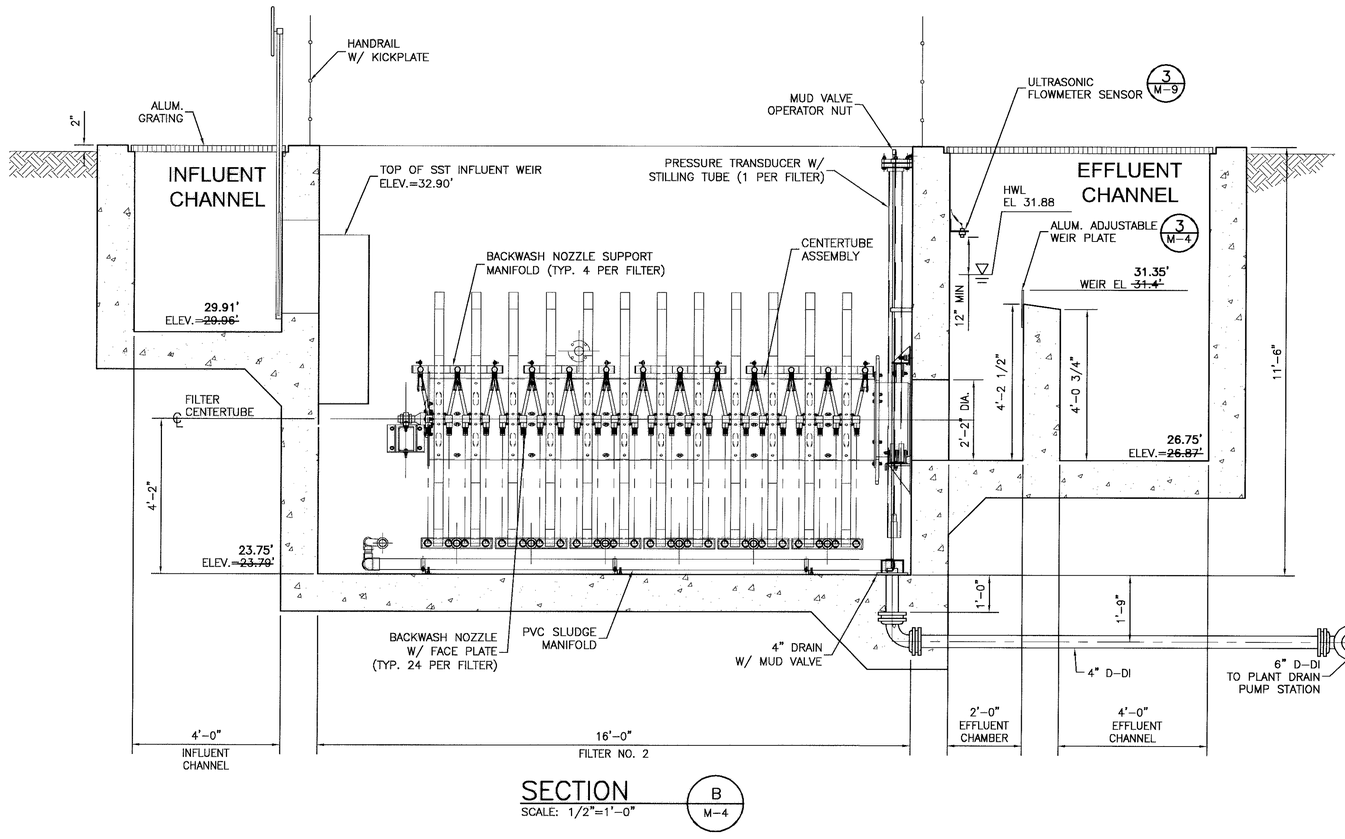
PROPOSED DISK FILTERS
SECTIONS & DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: M-5

4445.013

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ADW FILTER EXPANSION\CADD\DISCFILTERS.dwg
Last Modified: Oct 05, 2005 - 9:10am by dellis
Xrefs:



SECTION

SCALE: 1/2"=1'-0"

B
M-4

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. AVALOS	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	J. SCHEUERMAN	5/5/03
SCALE:	AS SHOWN	
FILE NAME:	DISCFILTERS.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PROPOSED DISK FILTERS
SECTION

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: M-6

4445.014

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\DISCFILTERS.dwg
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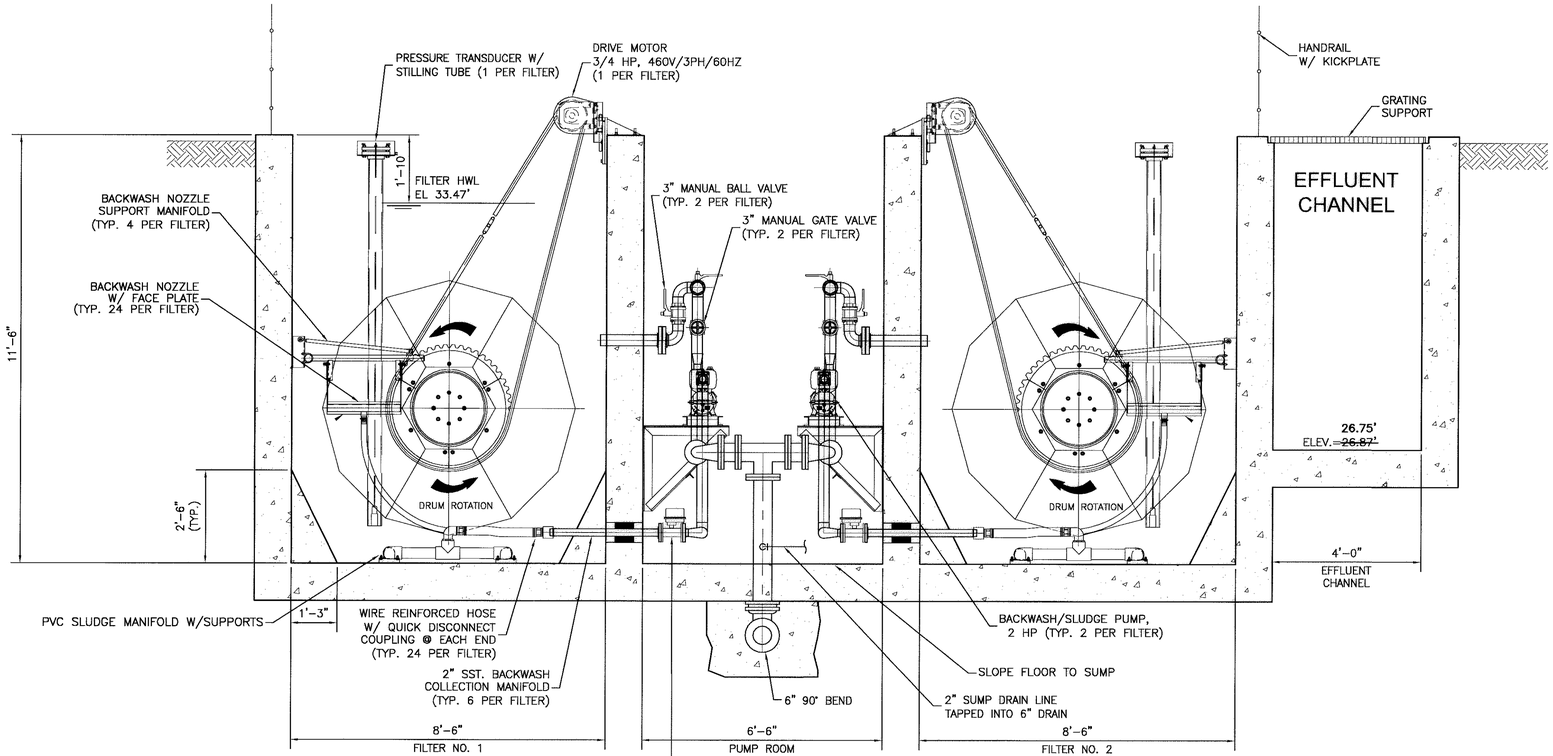
Xrefs:



NOTES:
1.REUSE WATER AND HOSE BIBB TO BE PAINTED IN ACCORDANCE WITH PAINTING SPECIFICATIONS.

2.CHANNEL ELEVATION ARE SHOWN FOR INFORMATION ONLY–SEE STRUCTURAL DRAWINGS FOR CONSTRUCTION.

SECTION D
SCALE: 1/2"=1'-0"

M-4

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\DISCFILTERS.dwg
Last Modified: Oct 05, 2005 - 9:10am by dellis
Xrefs:

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. AVALOS	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	D. ELLIS	5/5/03
SCALE:	AS SHOWN	
FILE NAME:	DISCFILTERS.DWG	

MANATEE COUNTY FLORIDA

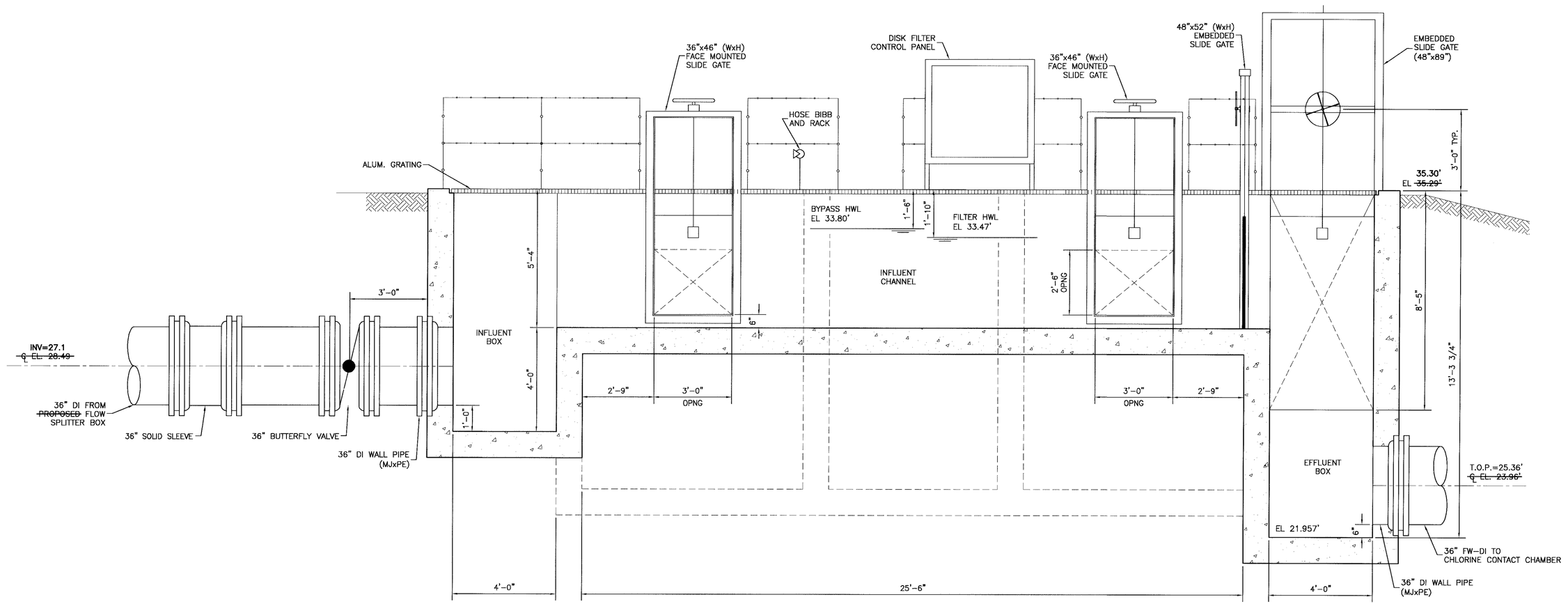
NORTH REGIONAL WASTEWATER TREATMENT PLANT AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PROPOSED DISK FILTERS SECTION & DETAIL

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: M-7

4445.015



SECTION E
SCALE: 1/2"=1'-0"
M-4

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\DISCFILTERS.dwg
Last Modified: Oct 05, 2005 - 9:10am by dellis
Xrefs:

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. AVALOS	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	D. ELLIS	5/5/03
SCALE:	AS SHOWN	
FILE NAME:	DISCFILTERS.DWG	

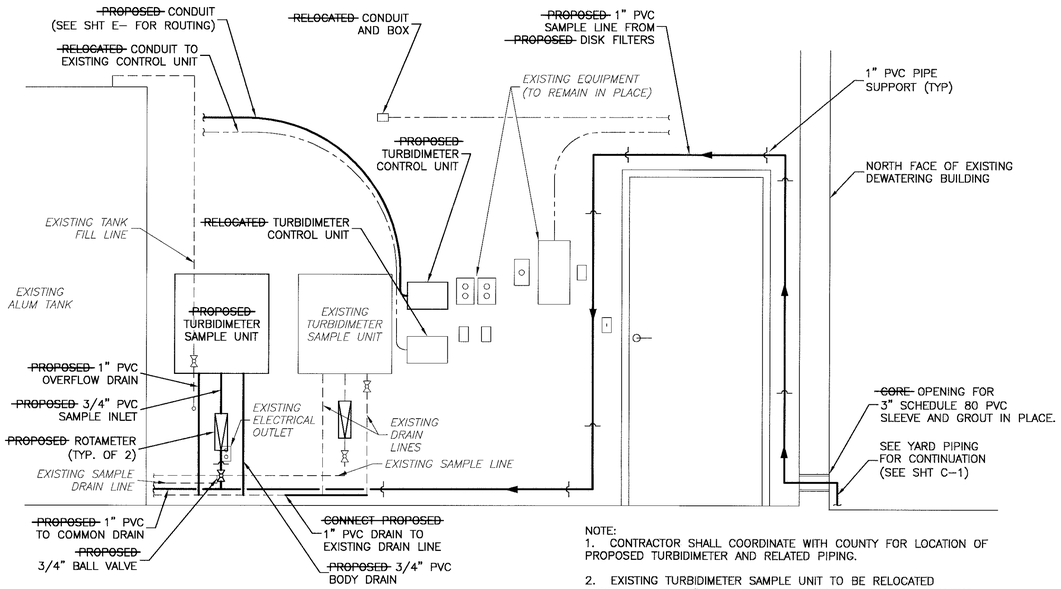
NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PROPOSED DISK FILTERS
SECTION

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: M-8

4445.016

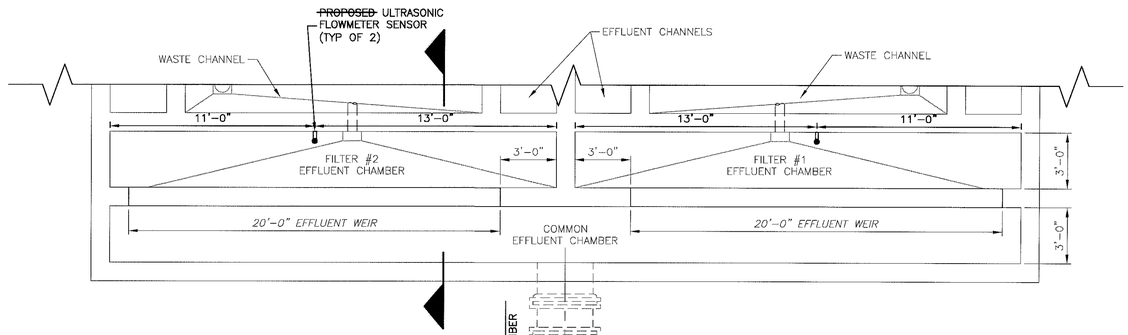


~~PROPOSED~~ TURBIDIMETER (DEWATERING BLDG)

DETAIL 2 / C–1

SCALE: N.T.S.

NOTE:
1. CONTRACTOR SHALL COORDINATE WITH COUNTY FOR LOCATION OF PROPOSED TURBIDIMETER AND RELATED PIPING.
2. EXISTING TURBIDIMETER SAMPLE UNIT TO BE RELOCATED APPROXIMATELY 18" TO THE LEFT OF EXISTING LOCATION. EXISTING TURBIDIMETER CONTROL UNIT TO BE RELOCATED APPROXIMATELY 36" TO THE LEFT AND 18" ABOVE EXISTING LOCATION.
3. CONTRACTOR TO RECONNECT EXISTING TURBIDIMETER SAMPLE AND DRAIN LINES AFTER RELOCATION.
4. CONTRACTOR SHALL WALL MOUNT RELOCATED AND PROPOSED TURBIDIMETER SAMPLE AND CONTROL UNITS USING GALVANIZED STEEL MASONRY BLOCK WEDGE ANCHORS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATING EXISTING CONDUITS AS DIRECTED BY COUNTY.
6. ROTOMETERS SHALL HAVE A MINIMUM RANGE OF 0.1 TO 1.0 GPM.

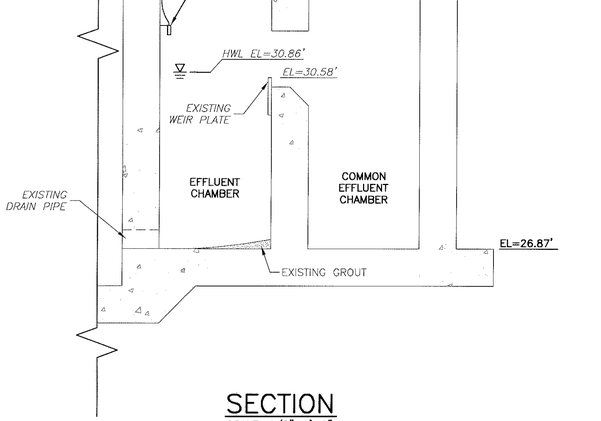


N

NOTE:
1. PLAN HAS BEEN SIMPLIFIED FOR CLARITY.
2. EXACT LOCATION OF ULTRASONIC FLOWMETER SENSOR SHALL BE PER MANUFACTURER'S RECOMMENDATION.

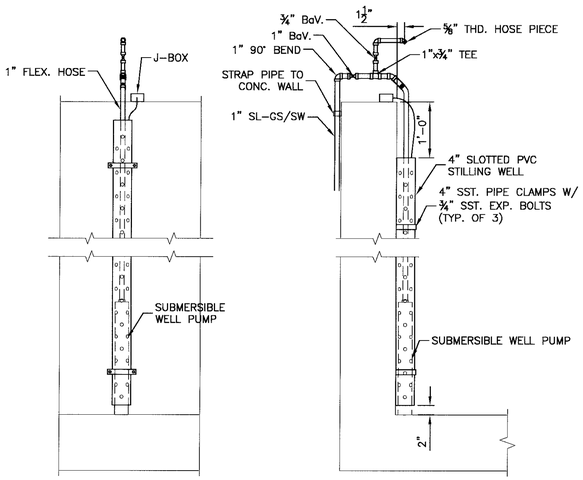
PLAN

SCALE: 1/4"=1'–0"



SECTION

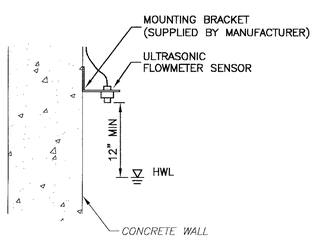
SCALE: 1/2"=1'–0"



~~PROPOSED~~ TURBIDIMETER SAMPLE PUMP

DETAIL 4 / M–4

SCALE: N.T.S.



~~PROPOSED~~ ULTRASONIC FLOWMETER SENSOR

DETAIL 3 / C–1/M–4

SCALE: 1"=1'–0"

~~PROPOSED~~ ULTRASONIC FLOWMETER (EXISTING AUTOMATIC BACKWASH FILTERS)

DETAIL 1 / C–1

SCALE: AS SHOWN

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. AVALOS	07/01/03
CHECKED BY:	D. WILCOX	07/01/03
DRAWN BY:	T. SONNENBERG	07/01/03
SCALE:	AS SHOWN	
FILE NAME:	MECH DETAILS.DWG	

MANATEE COUNTY FLORIDA

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUTOMATIC BACKWASH FILTER EXPANSION

FOR

MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

MECHANICAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCT. 2003
DWG NO:
SHEET: M–9

4445.017

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\MECH DETAILS.dwg
Last Modified: Oct 05, 2005 – 9:24am by dellis
Xrefs:

GENERAL STRUCTURAL NOTES:

A. BUILDING CODES:

1. FLORIDA BUILDING CODE, 2001 EDITION.
2. ACI 318-02 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
3. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, NINTH EDITION.

B. DESIGN CRITERIA:

1. LIVE LOADS:
   GRATING AREAS ---- 50 PSF
2. ALLOWABLE SOIL PRESSURE - 2500 PSF REFER TO GEOTECHNICAL REPORT BY URS, INC. (PROJECT NO. 12003628.00001) DATED AUGUST 8, 2003.

C. CONSTRUCTION MATERIALS:

1. CAST-IN-PLACE CONCRETE COMPRESSIVE STRENGTH: 4000 PSI AT 28 DAYS
2. STAINLESS STEEL EXPANSION BOLTS - TYPE 316
3. REINFORCING STEEL - ASTM A 615, GRADE 60 UNCOATED.
4. STRUCTURAL STEEL SHAPES ASTM A572, GRADE 50 (U.N.O.); GALVANIZED
5. ALL MISCELLANEOUS STEEL ASTM - A 36; GALVANIZED
6. CONNECTION BOLTS - ASTM A 325 N, 3/4" DIAMETER, UNLESS NOTED OTHERWISE: GALVANIZED

D. FOUNDATIONS:

1. ALL EARTHWORK AND COMPACTION FOR STRUCTURES SHALL BE AS PER SPECIFICATION SECTION 02220 EXCAVATION, BACKFILL, FILL AND GRADING FOR STRUCTURES.

E. GENERAL NOTES:

1. ALL CONCRETE EMBEDDED STEEL ANGLES, WELD PLATES, ANCHORAGE DEVICES, ETC., SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123 AND / OR A 153.
2. ALL REINFORCEMENT TO BE DETAILED AND FABRICATED IN ACCORDANCE WITH ACI 315-94 ALL CONSTRUCTION JOINTS, WITH REINFORCING PASSING THROUGH THE JOINT, SHALL BE ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY 1/4" INCH, UNLESS NOTED OTHERWISE.
3. PROVIDE THE FOLLOWING MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE ON THE PLANS:
   SLABS ---------- 3"
   WALLS ---------- 1 1/2"
4. ALL BOLTED CONNECTIONS (BEARING TYPE) SHALL USE STANDARD HOLES UNLESS OTHERWISE NOTED ON DRAWINGS.
5. CONTRACTOR SHALL VERIFY AND CORRELATE ALL DIMENSIONS BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
6. APPLY FINISH TO ALL CONCRETE AS NOTED IN THE SPECIFICATIONS.
7. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" X 3/4", EXCEPT AS NOTED OTHERWISE.

F. EXCAVATIONS:

1. THE SIDES OF EXCAVATIONS, SHALL BE CUT TO STABLE SLOPES OR SHALL BE SHEETED, SHORED, OR BRACED BY CONTRACTOR AS REQUIRED FOR STABILITY.

G. COORDINATION:

1. THE CONTRACTOR SHALL COORDINATE ALL PENETRATIONS THROUGH CONCRETE WITH THE CIVIL, MECHANICAL, ELECTRICAL, AND SPECIALTY SUB-CONTRACTORS SHOP DRAWINGS PRIOR TO PLACING CONCRETE. THE MECHANICAL SUB-CONTRACTORS SHALL PROVIDE SHOP DRAWINGS FOR ALL ANCHOR BOLT LOCATIONS.
2. THE STRUCTURAL SHEETS SHALL BE COORDINATED WITH THE CIVIL, MECHANICAL, AND ELECTRICAL SHEETS TO PROPERLY LOCATE PIPE SLEEVES, ANCHOR BOLTS, BLOCK-OUTS, ETC. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
3. THE STRUCTURAL SHEETS SHALL BE COORDINATED WITH THE PROJECT SPECIFICATIONS.

H. PRECAUTIONS:

1. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT THE FLOTATION OF STRUCTURES UNTIL ALL BACKFILL IS IN PLACE AND COMPACTED AND CONSTRUCTION IS COMPLETE.

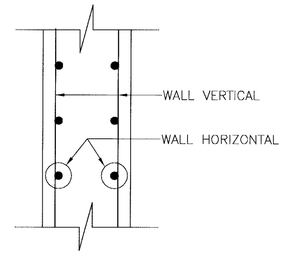
J. DEWATERING

1. THE CONTRACTOR SHALL EXPECT TO PERFORM DEWATERING. SEE THE GEOTECHNICAL REPORT BY URS, INC (PROJECT NO. 12003628.00001)DATED AUGUST 8, 2003.

DO NOT INSTALL BACKFILL UNTIL WALLS HAVE ATTAINED 100% OF THEIR DESIGN COMPRESSIVE STRENGTH. DO NOT FILL ANY INTERIOR AREA WITH WATER UNTIL ALL BACKFILL IS INSTALLED.

TYPICAL REINFORCEMENT SCHEDULE (UNLESS NOTED OTHERWISE)

AREA	HORIZONTAL	VERTICAL
WALL	#4@10" E.F.	#4@18" E.F.
SLAB	#5@12" E.W., (TOP & BOT)	--



WALL SECTION
N.T.S.

WALL - DOWEL LAP LENGTH TABLE	
DOWEL SIZE	LAP LENGTH
#4	19"
#5	23"
#6	28"
#7	33"

ALL DOWELS SHALL HAVE A STANDARD 90 DEGREE ACI HOOK. ALL DOWELS SHALL MATCH THE SIZE AND SPACING OF THE WALL REINFORCEMENT THEY LAP WITH.

ENGINEER OF RECORD.
URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
Certificate of Authorization No. 00000002
WILLIAM NICHOLAS HAUSHEER P.E. No. 31715

	NAME	DATE
DESIGNED BY:	W.N. HAUSHEER	10/10/03
CHECKED BY:	--	--
DRAWN BY:	E.J. CHAVERIAT	10/10/03
SCALE:	AS SHOWN	
FILE NAME:	NOTES S-1.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

DISK FILTERS
STRUCTURAL GENERAL NOTES

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCTOBER 2003
DWG NO:
SHEET: S-1

4445.018

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\NOTES S-1.dwg
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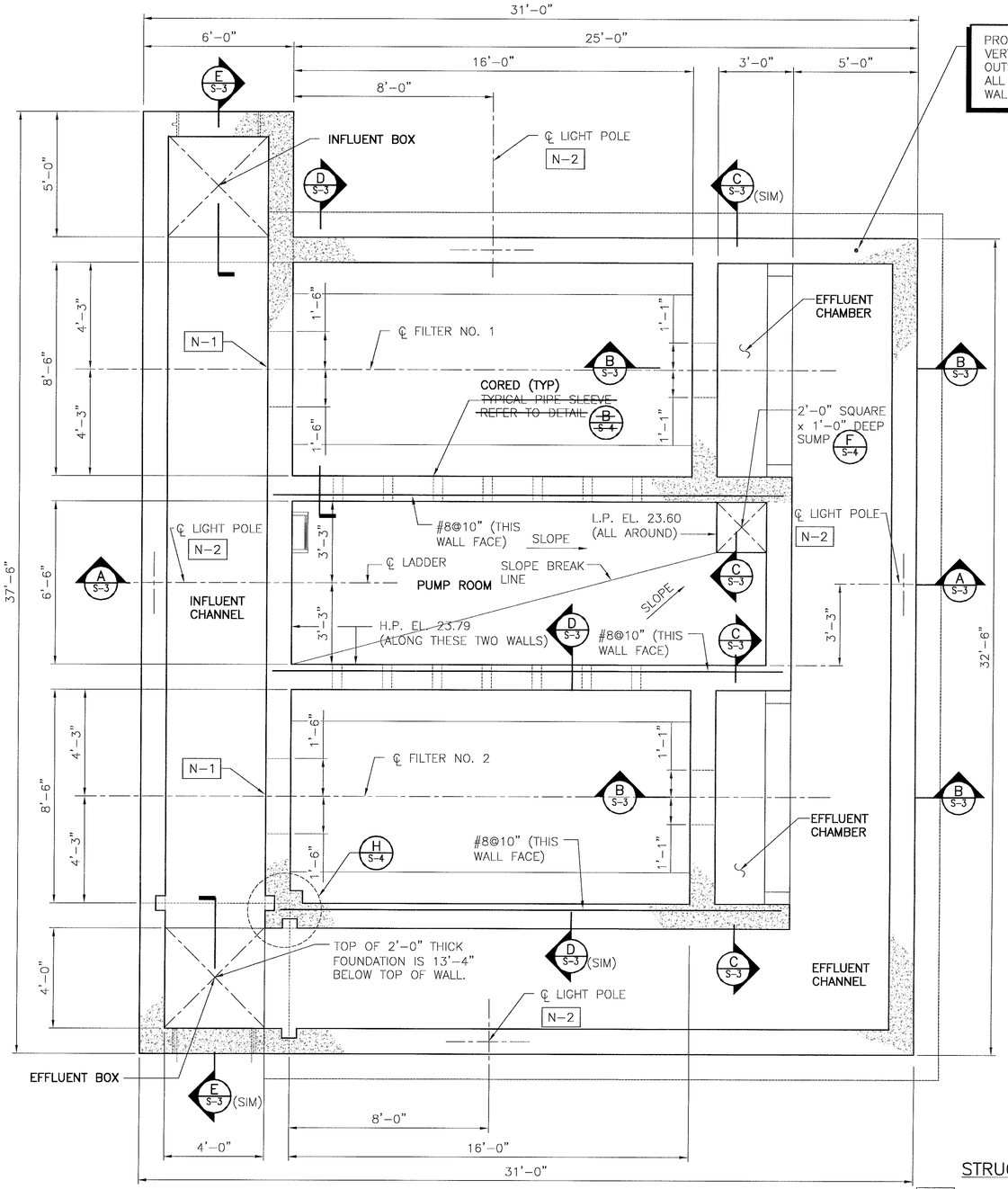
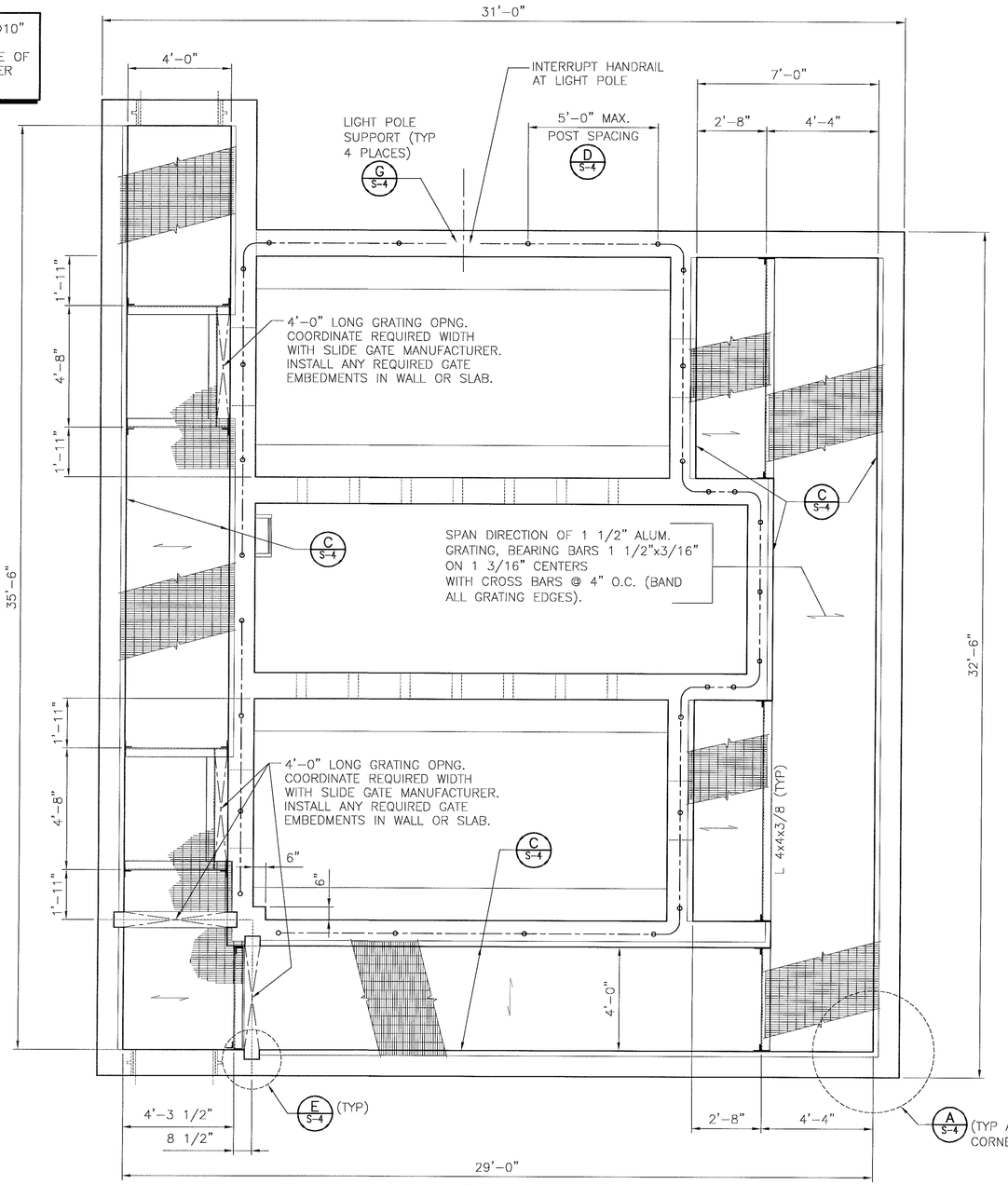


FOUNDATION AND WALL PLAN

SCALE: 3/8"= 1'-0"



GRATING AND HANDRAIL PLAN

SCALE: 3/8"= 1'-0"

STRUCTURAL ITEM NOTES:

N-1 BOTTOM OF 2'-6"x3'-0" OPENING IS 6" ABOVE TOP OF FOUNDATION SLAB AT EL. 29.96.

N-2 INSTALL POLE MANUFACTURER'S ANCHOR BOLTS AS PER POLE BASE PLATE TEMPLATE.

FABRIACTE GRATING IN SECTIONS WHOSE SIZE WILL MAKE THEM EASY TO HANDLE AND REMOVE.

ALL WALLS ARE 1'-0" ~~WIDE.~~ THICK

ENGINEER OF RECORD.
URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
Certificate of Authorization No. 00000002
WILLIAM NICHOLAS HAUSHEER P.E. No. 31715

	NAME	DATE
DESIGNED BY:	W.N. HAUSHEER	10/10/03
CHECKED BY:	–	–
DRAWN BY:	E.J. CHAVERIAT	10/10/03
SCALE:	AS SHOWN	
FILE NAME:	FDN S-2.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUTOMATIC BACKWASH FILTER EXPANSION

FOR

MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

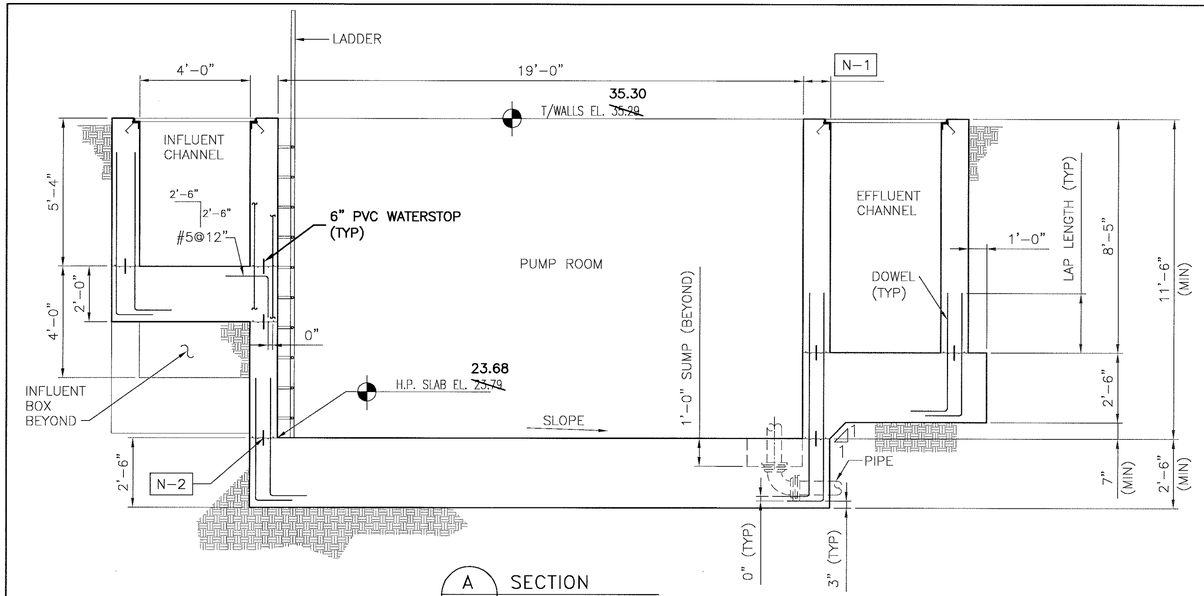
DISK FILTERS FOUNDATION & GRATING PLANS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

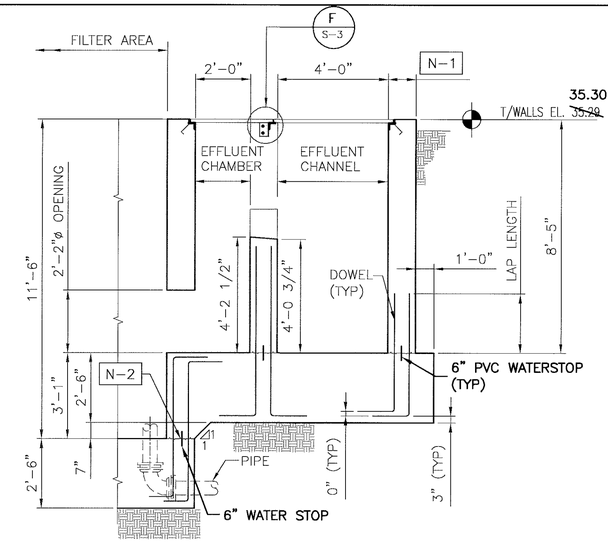
PROJ. NO: 12003628
DWG DATE: OCTOBER 2003
DWG NO:
SHEET: S-2

4445.019

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\FDN S-2.dwg
Last Modified: Oct 05, 2005 - 9:21am by dellis
Xrefs:



A S-2 SECTION
SCALE: 3/8" = 1'-0"



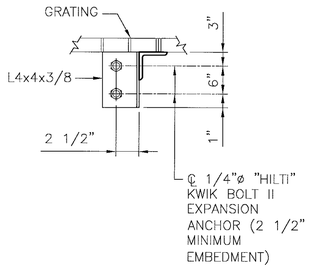
B S-2 SECTION
SCALE: 3/8" = 1'-0"

NOTES:

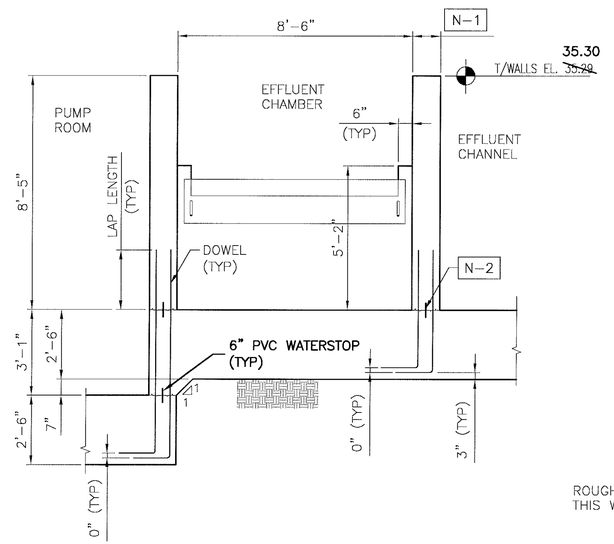
N-1 1'-0" WIDTH IS TYPICAL FOR ALL WALLS.

N-2 TYPICAL ROUGHENED CONSTRUCTION JOINT. SEE NOTE E.2 ON SHEET S-1 FOR MORE INFORMATION.

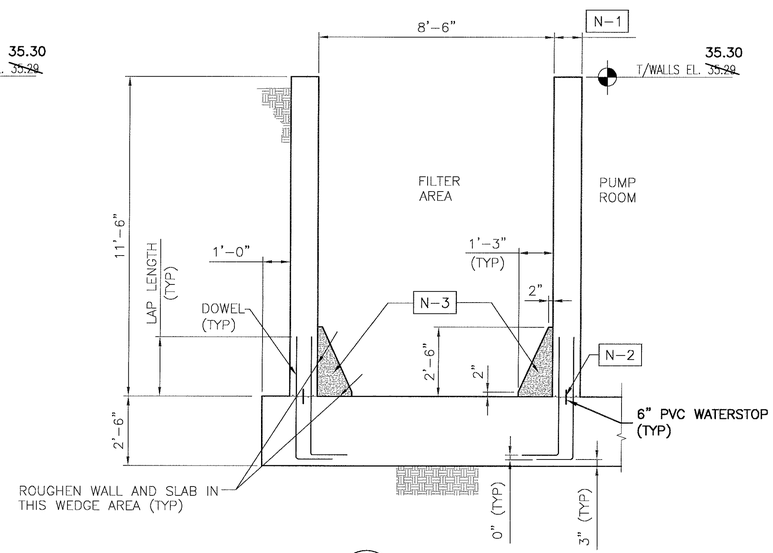
N-3 ADD THIS TYPICAL CONTINUOUS UNREINFORCED CONCRETE WEDGE AFTER ADJACENT WALLS ARE NO LONGER GREEN.



F S-3 DETAIL
N.T.S.



C S-2 SECTION
SCALE: 3/8" = 1'-0"



D S-2 SECTION
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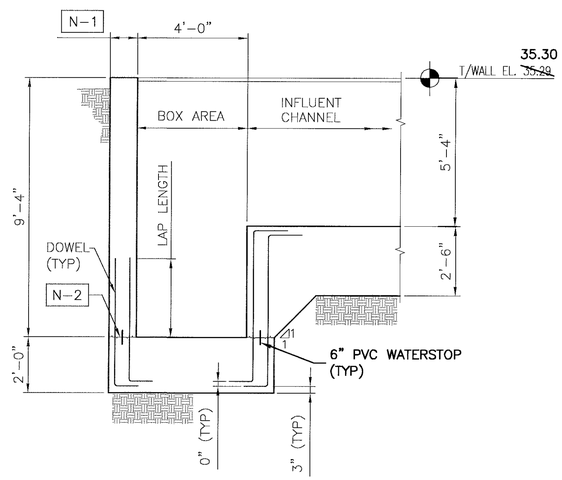


E S-2 SECTION
SCALE: 3/8" = 1'-0"

ENGINEER OF RECORD.
URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
Certificate of Authorization No. 00000002
WILLIAM NICHOLAS HAUSHEER P.E. No. 31715

	NAME	DATE
DESIGNED BY:	W.N. HAUSHEER	10/10/03
CHECKED BY:	–	–
DRAWN BY:	E.J. CHAVERIAT	10/10/03
SCALE:	AS SHOWN	
FILE NAME:	FDN S-2.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUTOMATIC BACKWASH FILTER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

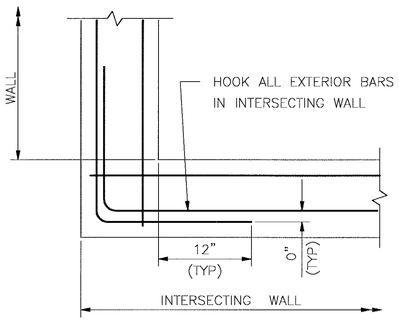
DISK FILTERS SECTIONS AND DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCTOBER 2003
DWG NO:
SHEET: S-3

4445.020

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\Sections S-3.dwg
Last Modified: Oct 05, 2005 - 9:26am by dellis
Xrefs:



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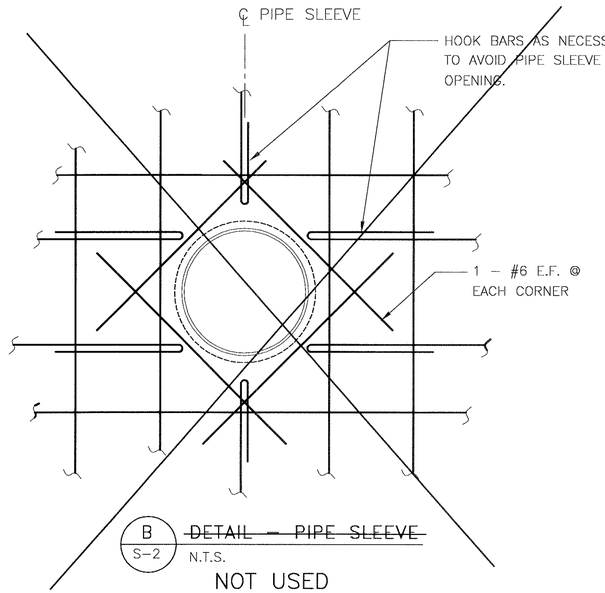
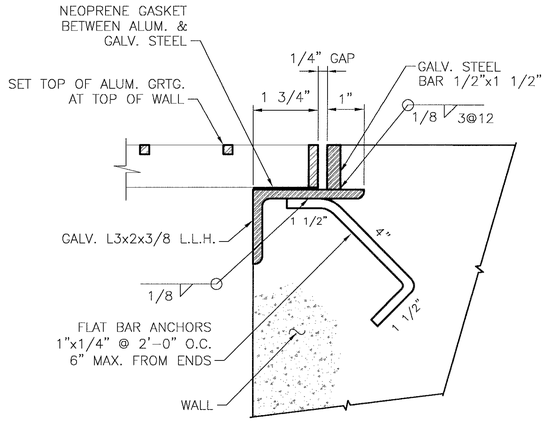


B S-2 ~~DETAIL – PIPE SLEEVE~~ N.T.S.

NOT USED



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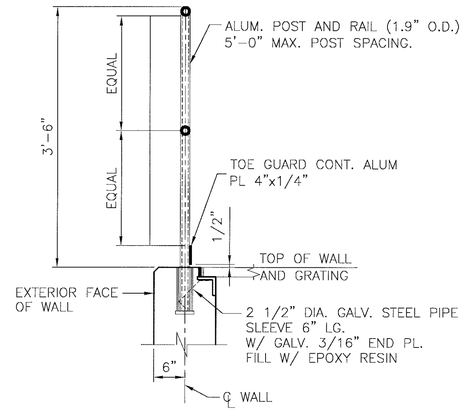
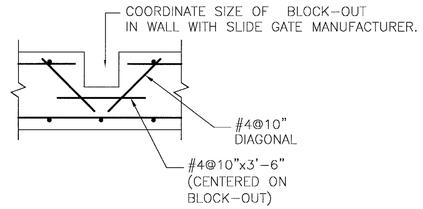
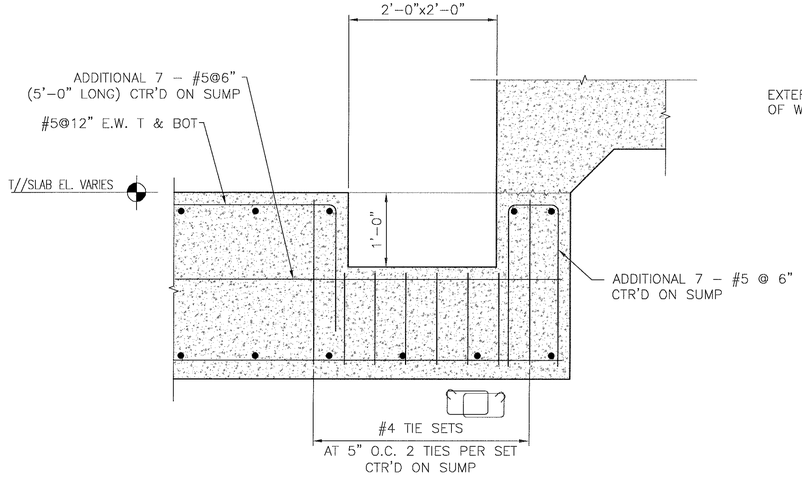


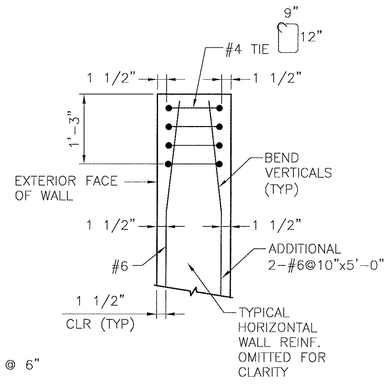
D S-2 DETAIL – HANDRAIL N.T.S.



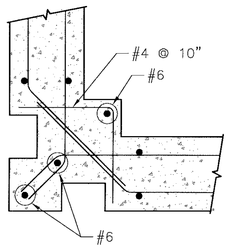
E S-2 DETAIL – REINF. @ BLOCK-OUT N.T.S.



F S-2 DETAIL – REINF. @ SUMP N.T.S.



G S-2 DETAIL N.T.S.



H S-2 DETAIL N.T.S.

ENGINEER OF RECORD.
URS Corporation Southern
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
Certificate of Authorization No. 00000002
WILLIAM NICHOLAS HAUSHEER P.E. No. 31715

	NAME	DATE
DESIGNED BY:	W.N. HAUSHEER	10/10/03
CHECKED BY:	–	–
DRAWN BY:	E.J. CHAVERIAT	10/10/03
SCALE:	AS SHOWN	
FILE NAME:	FDN S-2.DWC	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUTOMATIC BACKWASH FILTER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

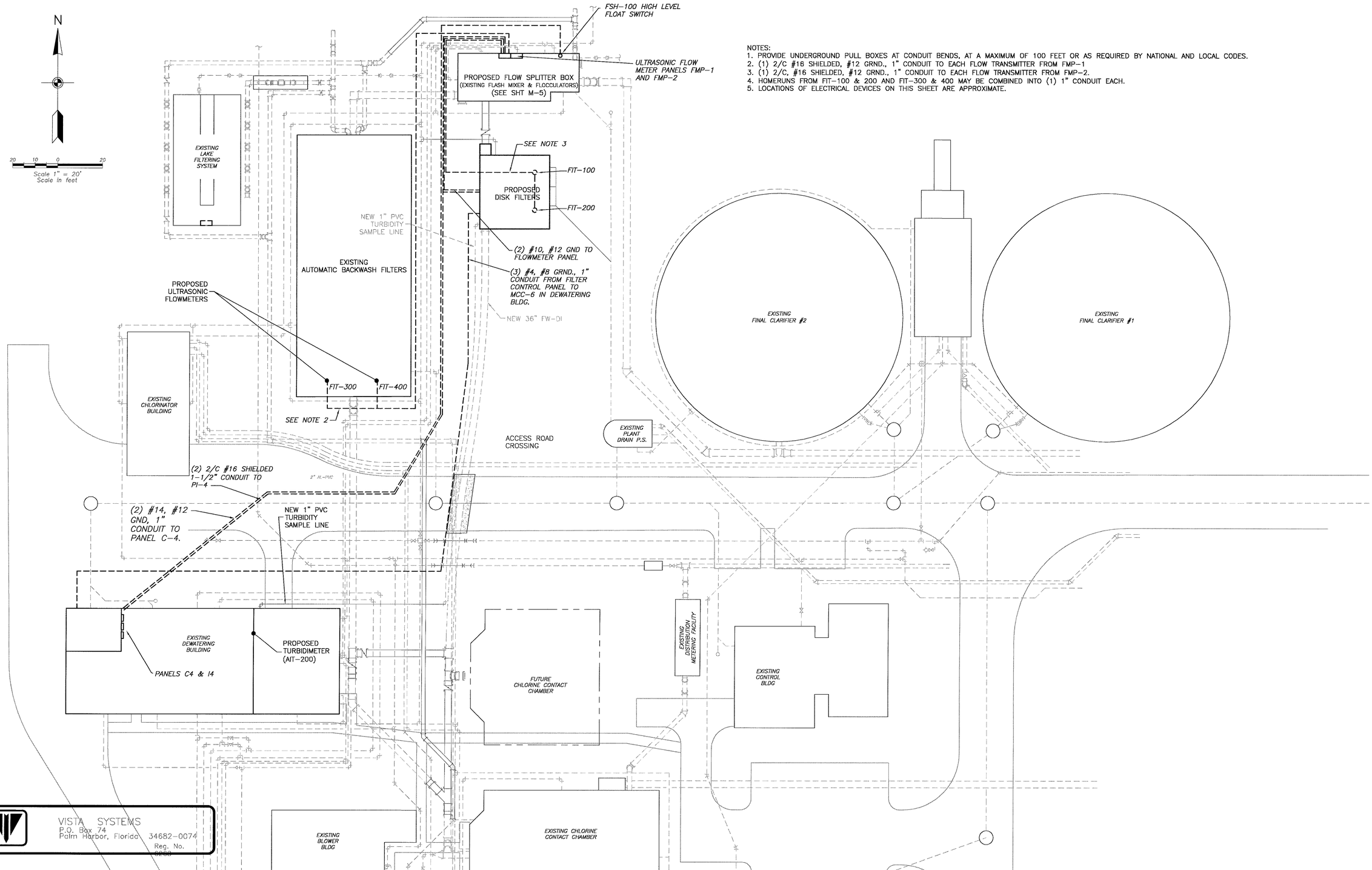
DISK FILTERS SECTIONS AND DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: OCTOBER 2003
DWG NO:
SHEET: S-4

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\Sections S-4.dwg
Last Modified: Oct 05, 2005 - 9:26am by dellis
Xrefs:

4445.021



NOTES:
1. PROVIDE UNDERGROUND PULL BOXES AT CONDUIT BENDS, AT A MAXIMUM OF 100 FEET OR AS REQUIRED BY NATIONAL AND LOCAL CODES.
2. (1) 2/C #16 SHIELDED, #12 GRND., 1" CONDUIT TO EACH FLOW TRANSMITTER FROM FMP–1
3. (1) 2/C, #16 SHIELDED, #12 GRND., 1" CONDUIT TO EACH FLOW TRANSMITTER FROM FMP–2.
4. HOMERUNS FROM FIT–100 & 200 AND FIT–300 & 400 MAY BE COMBINED INTO (1) 1" CONDUIT EACH.
5. LOCATIONS OF ELECTRICAL DEVICES ON THIS SHEET ARE APPROXIMATE.

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682–0074
Reg. No. 6258

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	8/20/03
CHECKED BY:	D. WILCOX	8/20/03
DRAWN BY:	R. WIEGMAN	8/21/03
SCALE:	AS SHOWN	
FILE NAME:	E–1 SITE PLAN – ELECTRIC	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

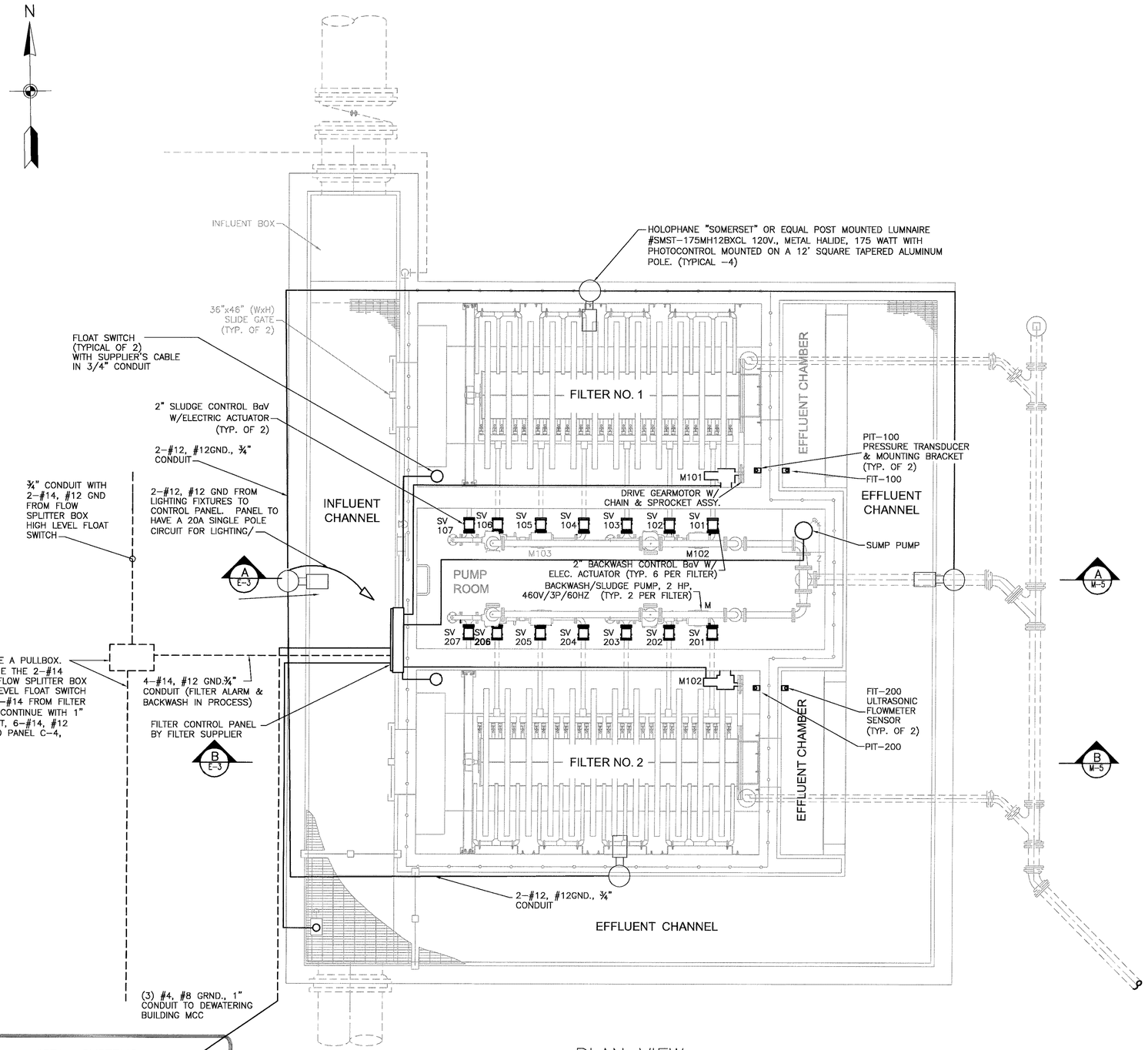
ELECTRIC – SITE PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: AUGUST 2003
DWG NO:
SHEET: E–1

4445-022

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\E-1 SITE PLAN – ELECTRIC.dwg
Last Modified: Oct 05, 2005 – 9:19am by dellis
Xrefs:



PLAN VIEW
SCALE: 3/8"=1'-0"

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	08/20/03
CHECKED BY:	D. WILCOX	08/20/03
DRAWN BY:	R. WIEGMAN	8/21/03
SCALE:	AS SHOWN	
FILE NAME:	E-2 DISCFILTERS	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

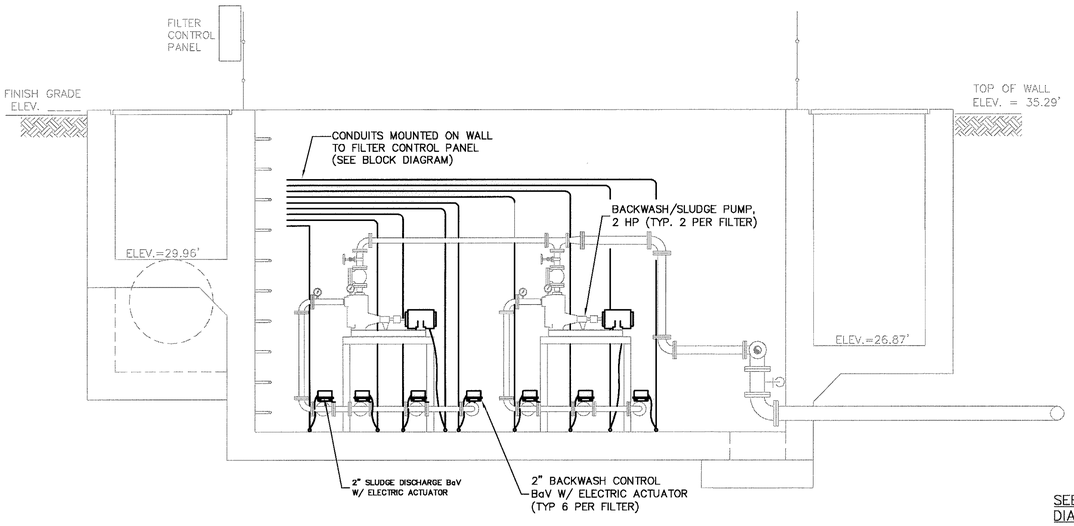
DISK FILTERS
PLAN - ELECTRIC

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

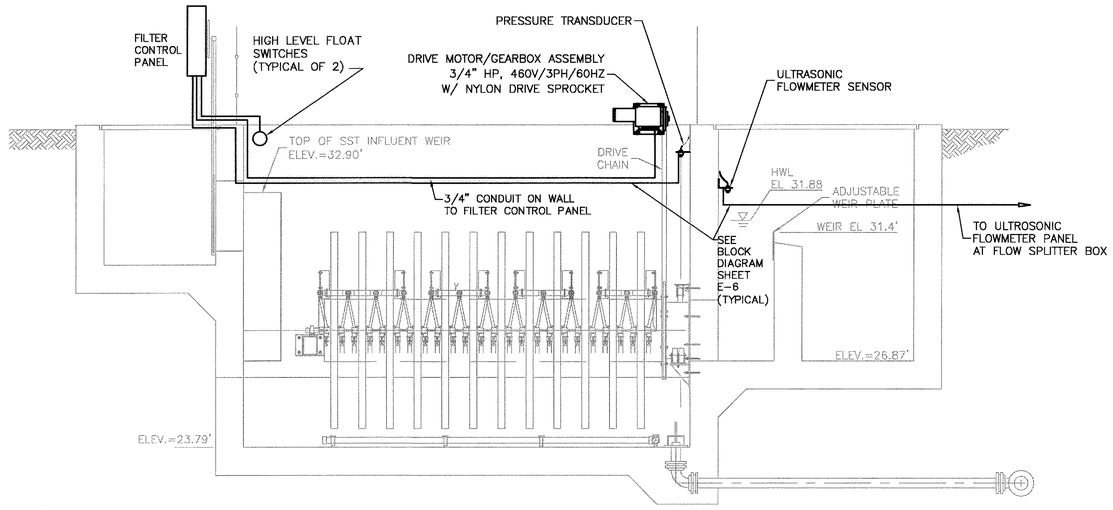
PROJ. NO: 12003628
DWG DATE: AUGUST 2003
DWG NO:
SHEET: E-2

4445.023

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\E-2 DISCFILTERS.dwg
Last Modified: Oct 05, 2005 - 9:19am by dellis
Xrefs:



SECTION A
SCALE: 3/8"=1'-0"
E-2



SECTION B
SCALE: 3/8"=1'-0"
E-2

SEE SHEET E-2 FOR CONDUIT & CONDUCTOR BLOCK DIAGRAM

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	08/20/03
CHECKED BY:	D. WILCOX	08/20/03
DRAWN BY:	R. WIEGMAN	08/21/03
SCALE:	AS SHOWN	
FILE NAME:	E-3 DISCFILTERS - SECTION	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

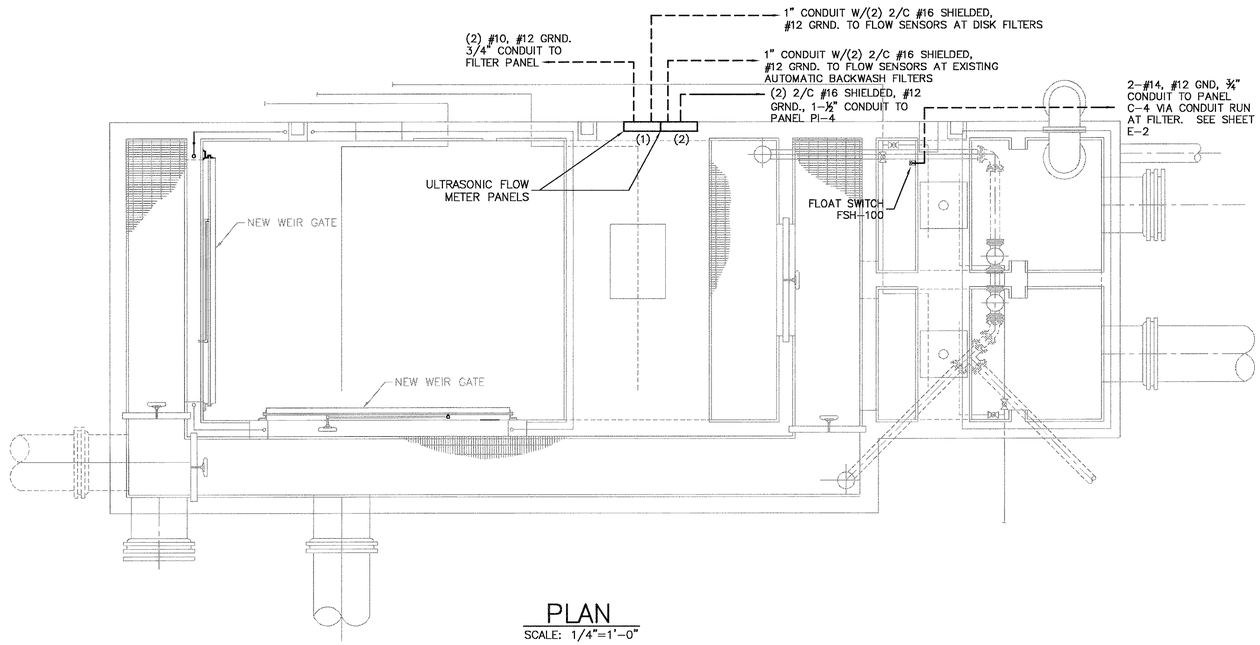
DISK FILTERS
SECTIONS - ELECTRIC

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: AUGUST 2003
DWG NO:
SHEET: E-3

4445.024

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\E-3 DISCFILTERS - SECTION.dwg
Last Modified: Oct 05, 2005 - 9:20am by dells
Xrefs:



PLAN
SCALE: 1/4"=1'-0"

NOTE:
1. RUN TO EACH AREA MAY BE COMBINED INTO (1) 1" CONDUIT.

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	08/20/03
CHECKED BY:	D. WILCOX	08/20/03
DRAWN BY:	R. WIEGMAN	08/20/03
SCALE:	AS SHOWN	
FILE NAME:	E-4 FLOW SPLITTER	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

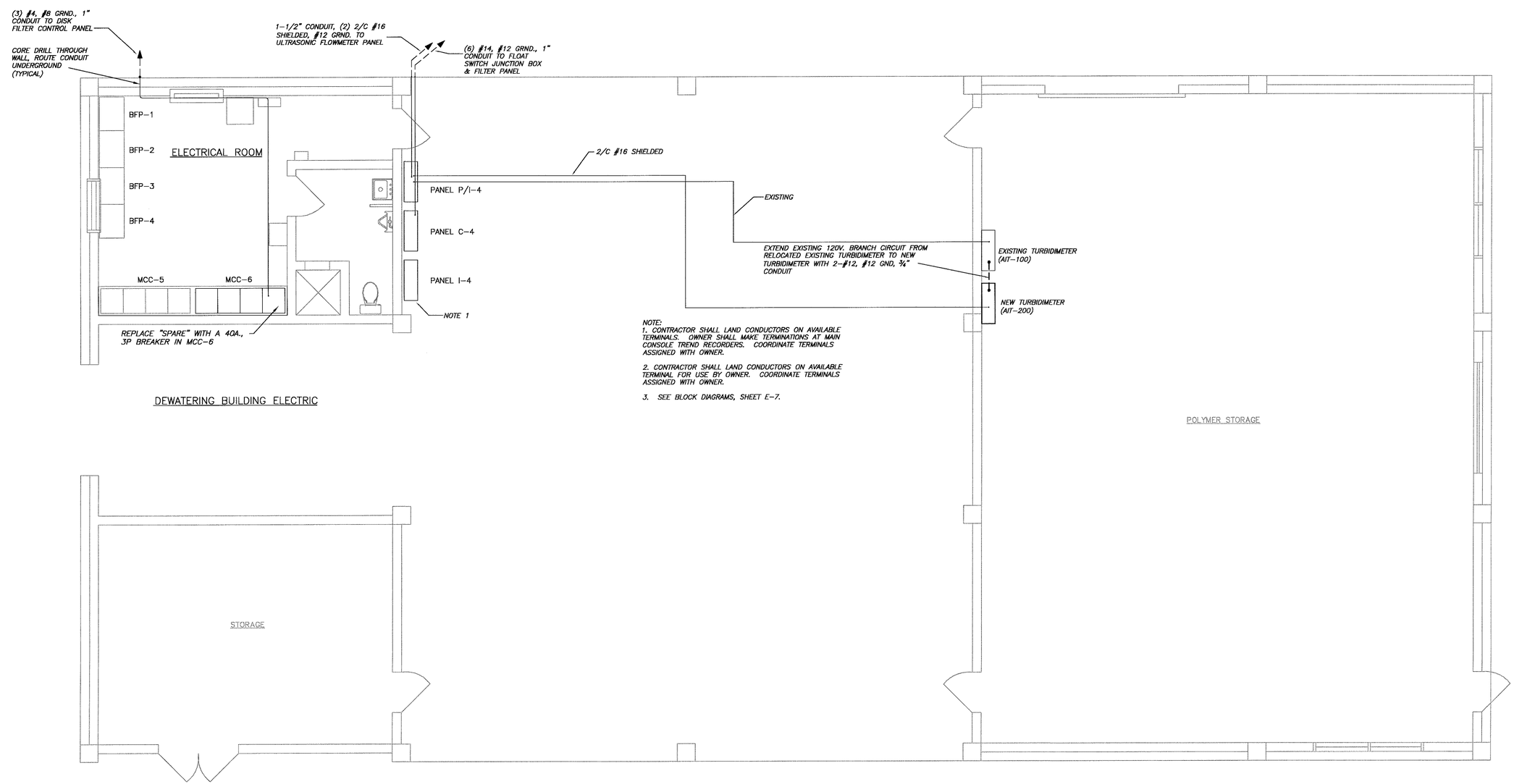
FLOW SPLITTER BOX PLAN
ELECTRIC

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: AUGUST 2003
DWG NO:
SHEET: E-4

4445.025

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\E-4 FLOW SPLITTER.dwg
Last Modified: Oct 05, 2005 - 9:20am by dellis
Xrefs:



FLOOR PLAN
1/4" = 1'-0"

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	08/20/03
CHECKED BY:	D. WILCOX	08/20/03
DRAWN BY:	R. WIEGMAN	8/21/03
SCALE:	AS SHOWN	
FILE NAME:	E-5 BUILDING PLAN	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

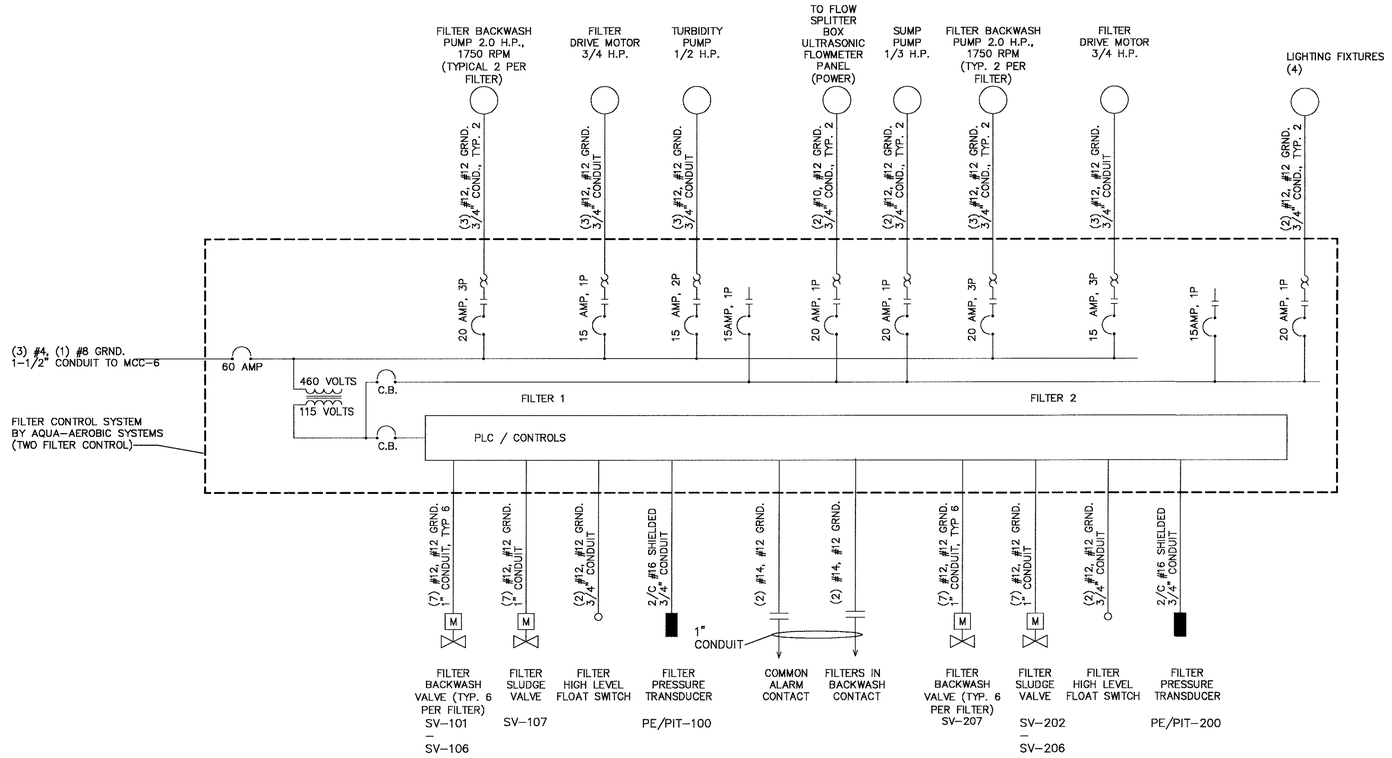
DEWATERING BUILDING CONTROL ROOM

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: AUGUST 2003
DWG NO:
SHEET: E-5

4445.026

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\E-5 BUILDING PLAN.dwg
Last Modified: Oct 05, 2005 - 9:20am by dellis
Xrefs:



SYMBOL KEY

- MOTOR
- MOTOR OPERATED VALVE
- CIRCUIT BREAKER
- MOTOR OVERLOAD
- PRESSURE TRANSDUCER
- TRANSFORMER
- STARTER CONTACTOR

FILTER VENDOR SHALL PROVIDE REQUIRED ADDITONAL BREAKERS AND SIZE TRANSFORMER TO ACCOMODATE ADDITIONAL LOADS AS REQUIRED AND INDICATED.

DISK FILTERS INTERCONNECTION DIAGRAM

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	08/20/03
CHECKED BY:	D. WILCOX	08/20/03
DRAWN BY:	R. WIEGMAN	8/21/03
SCALE:	AS SHOWN	
FILE NAME:	E-6 FILTER DIAGRAM	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

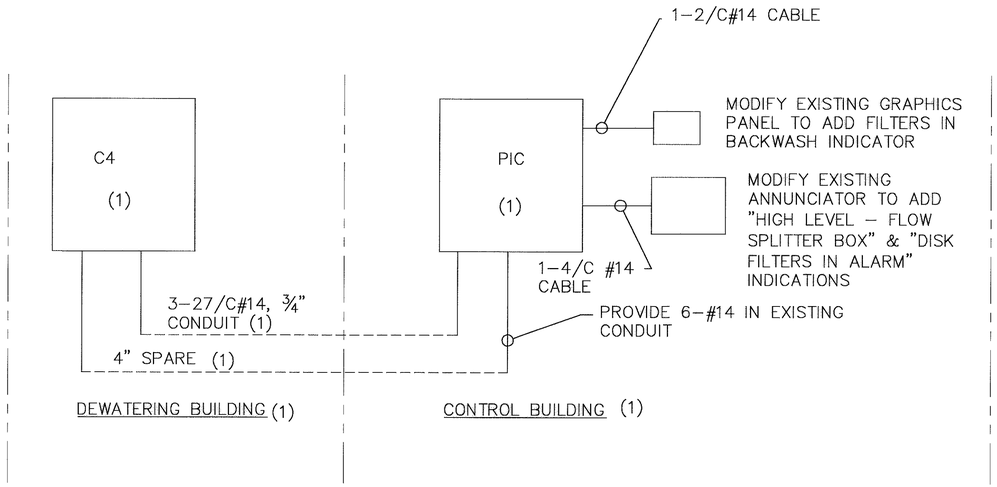
DISK FILTERS INTERCONNECTION DIAGRAM

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: AUGUST 2003
DWG NO:
SHEET: E-6

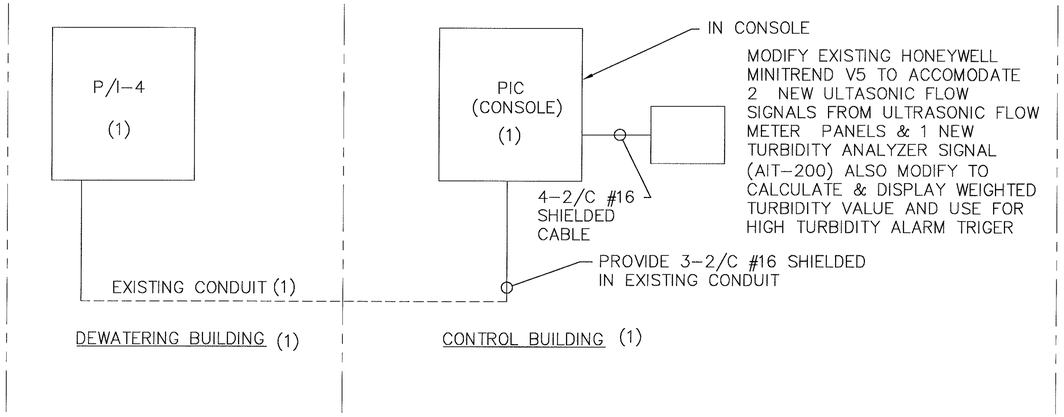
4445.027

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\E-6 FILTER DIAGRAM.dwg
Last Modified: Oct 05, 2005 - 9:21am by dellis
Xrefs:



(1) EXISTING

CONTROL BLOCK DIAGRAM



(1) EXISTING

INSTRUMENTATION BLOCK DIAGRAM

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682–0074
Reg. No. 6268

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	08/20/03
CHECKED BY:	D. WILCOX	08/20/03
DRAWN BY:	R. WIEGMAN	8/21/03
SCALE:	AS SHOWN	
FILE NAME:	E–5 BUILDING PLAN	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

CONTROL & INSTRUMENTATION BLOCK DIAGRAMS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: AUGUST 2003
DWG NO:
SHEET: E–7

4445.028

Drawing Name: X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\E–7 CONTROL & INSTRUMENT DIAGRAM.dwg
Last Modified: Oct 05, 2005 - 9:21am by dellis
Xrefs:

PROCESS LINE ABBREVIATIONS

AIR	AIR, ATMOSPHERIC PRESSURE
BW	BACKWASH
CA	COMPRESSED AIR
CCA	CHLORINE CONTAMINATED AIR
CGW	CONTAMINATED GROUNDWATER
D	DRAIN
EFF	EFFLUENT
EXH	EXHAUST
FLT	FILTRATE
FTW	FILTER-TO-WASTE
NPW	NON-POTABLE WATER
OZE	OZONE GAS
P	PRODUCT
PW	POTABLE WATER
RW	RAW WATER
S	SANITARY
SL	SLUDGE
SN	SUPERNATANT
SP	SAMPLE PORT
SS	STORM SEWER
TF	TOTAL FLUIDS
TW	TREATED WATER
V	VENT
VAP	VAPOR

EQUIPMENT NOTATION ABBREVIATIONS

AC	AIR COMPRESSOR
AN	ANNUBAR
ARV	AIR RELIEF VALVE
B	BLOWER
BFP	BELT FILTER PRESS
BP	BOOSTER PUMP
BPD	BACKFLOW PREVENTION DEVICE
C	CATALYST
CC	CALIBRATION COLUMN (LG)
CH	CHLORINATOR
CV	CHECK VALVE
D	DIFFUSERS
FC	FILTER CELL
FM	FLOW METER
FV	FLOW VALVE
GC	GRIT CLASSIFIER
GT	GRAVITY THICKENER
H	HYDROCYCLONE
HP	HOPPER
HV	HAND VALVE
IN	INJECTOR
L	LAUNDER
MX	MIXER
OP	ORIFICE PLATE
P	PUMP
PCV	PRESSURE CONTROL VALVE
PD	PULSATION DAMPENER
RM	ROTOMETER
S	STORAGE
SC	SCALE
SIL	SILENCER
SM	STATIC MIXER
SP	SAMPLE PUMP
SV	SOLENOID VALVE
SW	STILLING WELL
T	TANK
V	VIBRATOR
VR	AUTOMATIC SWITCHOVER VACUUM REGULATOR W/ TRAP & FILTER
WP	ADJUSTABLE WEIR PLATE
WW	WETWELL

GENERAL INSTRUMENT SYMBOLS

- FIELD MOUNTED
- PANEL MOUNTED
- AIR 100 E — SOFTWARE (OR INTERNAL FIRMWARE) E = EXISTING
- DIGITAL (ON-OFF) SIGNAL
- ANALOG (CONTINUOUS VARYING) SIGNAL
- INTERNAL MATH ALGORITHM

LINE SYMBOLS

- ELECTRIC SIGNAL

INSTRUMENT IDENTIFICATION TABLE

FIRST LETTER			SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION				
C	CONDUCTIVITY			CONTROL	CLOSED
D	DENSITY (SP. GR.)	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	GAGING (DIMENSIONAL)		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOTOR	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE		ISOLATE	ISOLATOR	
O	OPERATION		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE OR DAMPER, LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED	X-AXIS			
Y	EVENT, STATE OR PRESENCE	Y-AXIS		RELAY OR COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z-AXIS		DRIVE, ACTUATOR	

INSTRUMENT IDENTIFICATION

FIT 1000-2B — FIT-1000-2B

- MODIFIER
- TOTAL NUMBER OF TYP. UNITS
- SERIES LOOP NUMBER
- SUCCEEDING LETTERS
- FIRST LETTER

FUNCTION ABBREVIATIONS

A	ANALOG
AIT	ANALOG INDICATING TRANSMITTER
ALT	ALTERNATE
BFC	BALLASTED FLOCCULATION / CLARIFICATION
CL_2	CHLORINE RESIDUAL
CS	CONTROL STATION
D	DIGITAL
dP	DIFFERENTIAL PRESSURE
DO	DISSOLVED OXYGEN
ϟ	INTERNAL INDICATOR
FC	FAIL CLOSED
FI	FAIL INDETERMINATE
FL	FAIL LOCKED
FO	FAIL OPEN
HMI	HUMAN MACHINE INTERFACE
HOA	HAND-OFF-AUTOMATIC
HS	HAND SWITCH
I/I	CURRENT-TO-CURRENT
I/P	CURRENT-TO-PNEUMATIC
LEL	LOWER EXPLOSIVE LIMIT
L	LENGTH
LCP	LOCAL CONTROL PANEL
L/R	LOCAL-REMOTE
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
O_3	OZONE GAS
OAC	OPEN-AUTO-CLOSE
OC	OPEN-CLOSE
OO	ON-OFF....MAINTAINED
ORP	OXIDATION REDUCTION POTENTIAL
OSC	OPEN-STOP-CLOSE....MOMENTARY
SP	SET POINT
SS	START-STOP....MOMENTARY
TURB	TURBIDITY
UCP	UNIT CONTROL PANEL
VGAC	VAPOR-PHASE GRANULAR ACTIVATED CARBON
>	HIGH SELECT
<	LOW SELECT

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	08/20/03
CHECKED BY:	D. WILCOX	08/20/03
DRAWN BY:	R. WIEGMAN	8/21/03
SCALE:	AS SHOWN	
FILE NAME:	I-1 INSTRUMENTATION LEGEND	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUTOMATIC BACKWASH FILTER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

INSTRUMENTATION LEGEND

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: AUGUST 2003
DWG NO:
SHEET: I-1

4445.029

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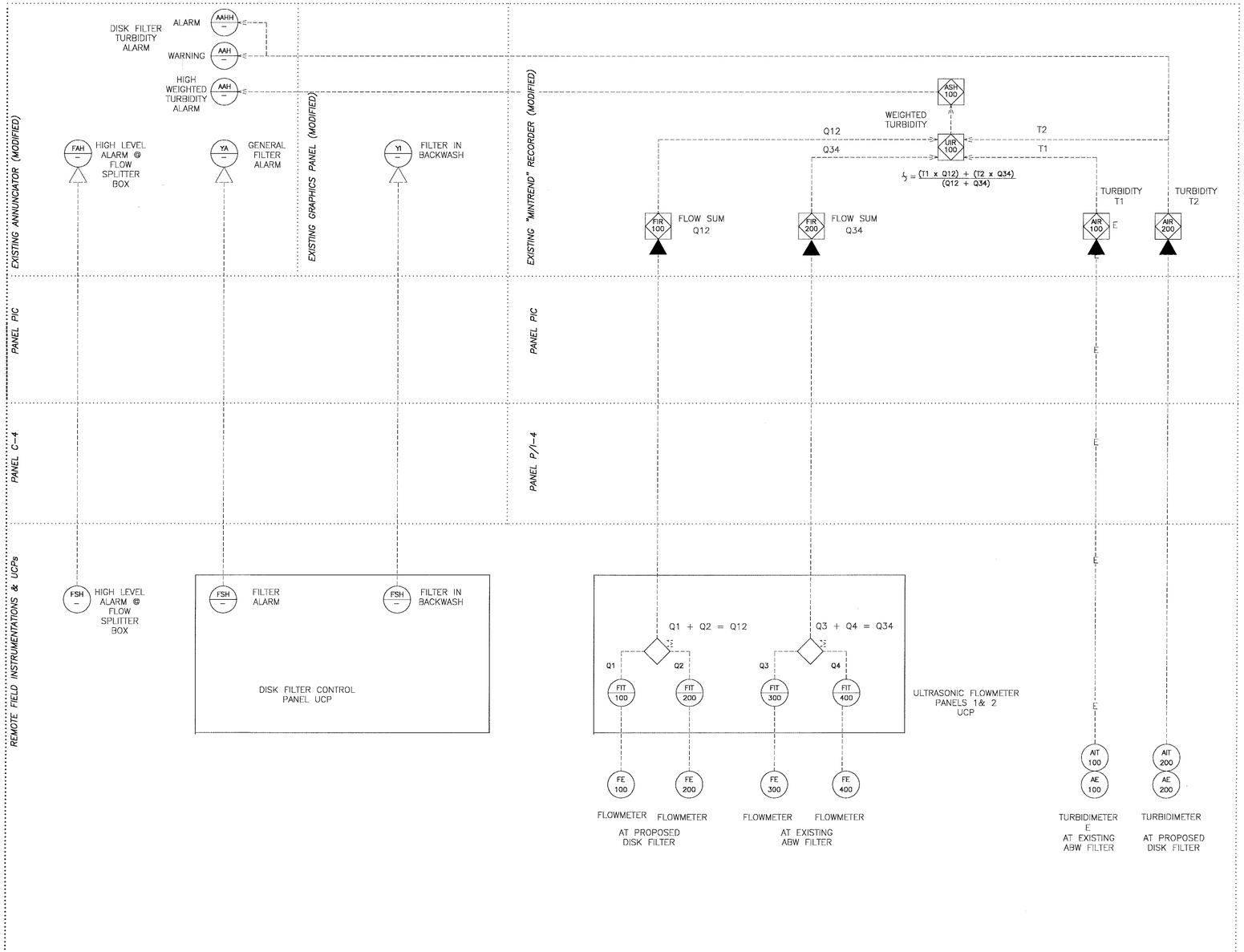

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	08/20/03
CHECKED BY:	D. WILCOX	08/20/03
DRAWN BY:	R. WIEGMAN	8/21/03
SCALE:	AS SHOWN	
FILE NAME:	I-2 INSTRUMENTATION DIAGRAM	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUTOMATIC BACKWASH FILTER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

INSTRUMENTATION DIAGRAM

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	7/19/05

PROJ. NO: 12003628
DWG DATE: AUGUST 2003
DWG NO:
SHEET: I-2

4445.030

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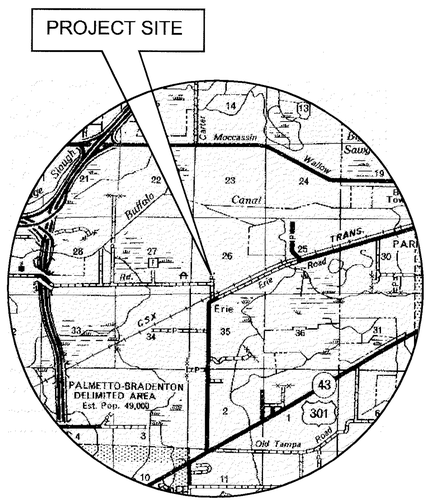
Last Modified: Oct 05, 2005 - 9:24am by dellis
Xrefs:

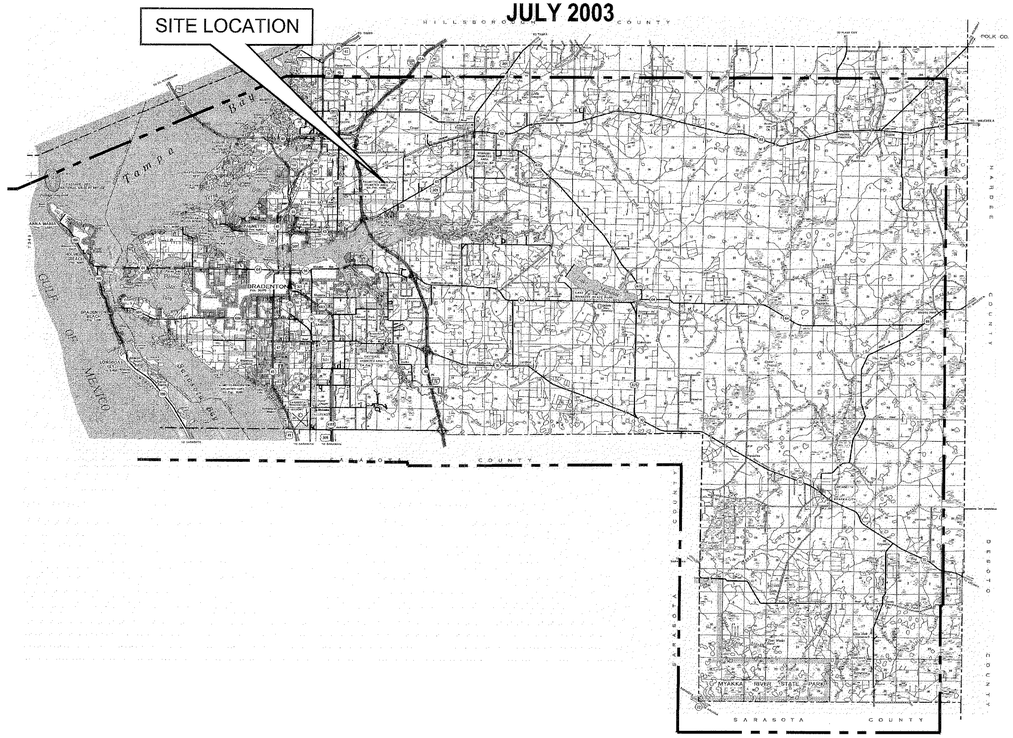
RECORD DRAWINGS

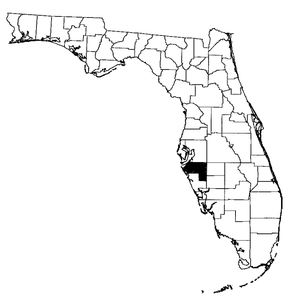
MANATEE COUNTY, FLORIDA
NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUXILIARY GENERATOR UPGRADE PLANS
PROJECT NO. 6037981

JULY 2003



PROJECT MAP
N.T.S.





NO.	INDEX OF SHEETS
1	COVER SHEET
2	GENERAL NOTES
3	DEMOLITION PLAN
4	DEMOLITION DETAILS
5	PROPOSED GENERATOR AND FUEL TANK PLAN
6	SECTIONS
7	MECHANICAL DETAILS
8	DEMOLITION AND PROPOSED ELECTRICAL PLANS
9	ELECTRICAL DETAILS
10	ELECTRICAL SINGLE LINE DIAGRAM

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6288

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	3/03/03
CHECKED BY:	D. WILCOX	3/03/03
DRAWN BY:	T. SONNENBERG	3/03/03
SCALE:	N.T.S.	
FILE NAME:	COVER SHEET.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUXILIARY GENERATOR UPGRADE PLANS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

COVER SHEET

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	DME	7/19/05

PROJ. NO: 12003313
DWG DATE: JULY 2003
DWG NO:
SHEET: 1

23-15

4437.001

Drawing Name: X:\MANATEE PROJECTS\12003313 NRWWTP Aux Generator\CADD\COVER SHEET.dwg
Last Modified: Aug 19, 2005 - 7:33am by dellis
Xrefs:

GENERAL NOTES:

1. ALL ELEVATIONS ARE BASED ON THE BM INDICATED AND ARE SHOWN IN FEET.

2. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR LOCATING AND AVOIDING ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND SURFACE. THE CONTRACTOR SHALL REPAIR ALL DAMAGES RESULTING FROM THE CONTRACTORS FAILURE TO COMPLY WITH THIS REQUIREMENT.

3. THE CONTRACTOR SHALL PROVIDE NO LESS THAN A 6 INCH VERTICAL CLEARANCE BETWEEN ALL UTILITIES.

4. THE CONTRACTOR SHALL NOTIFY APPLICABLE UTILITY CONTACT PERSONNEL NOT LESS THAN ONE WEEK PRIOR TO CONSTRUCTION OF FACILITIES IN THEIR RESPECTIVE AREAS.

5. CONTRACTOR SHALL REFER TO EQUIPMENT SHOP DRAWINGS FOR SIZE AND POSITION OF ALL OPENINGS IN STRUCTURES REQUIRED BY THE EQUIPMENT. ENGINEERING DRAWINGS ARE APPROXIMATE.

6. CONTRACTOR SHALL MAINTAIN THE OPERATION OF THE ONE EXISTING GENERATOR DURING PERFORMANCE OF THE WORK.

ABBREVIATIONS:

A/C	AIR CONDITIONER
ADPT.	ADAPTER
Ba.V.	BALL VALVE
CONC.	CONCRETE
CPLG.	COUPLING
DI	DUCTILE IRON
DW	DOUBLE WALL
ECC.	ECCENTRIC
EL.	ELEVATION
EXIST.	EXISTING
FLG.	FLANGE
FT.	FOOT OR FEET
GAL.	GALVANIZED
MIN.	MINIMUM
O.C.	ON CENTER
O/E	OR EQUAL
PE	PLAN END
PVC	POLYVINYL CHLORIDE PIPE
RED.	REDUCER
RMJ	RESTRAIN MECHANICAL JOINT
SCH.	SCHEDULE
SW	SOLVENT WELD
THD.	THREADED
TYP.	TYPICAL
W/	WITH

GENERAL CONSTRUCTION SEQUENCING:

STEP 1
1. INSTALL NEW DAY TANK FOR 1,825KW PRIME RATED / 2,000KW STANDBY GENERATOR.

2. PROVIDE 6,000 GALLON TEMPORARY FUEL STORAGE TANK.

3. CONNECT NEW DAY TANK TO EXISTING 2,000KW GENERATOR AND CONNECT (WITH TEMPORARY PIPING) NEW DAY TANK AND TEMPORARY FUEL STORAGE TANK.

4. MAKE SYSTEM OPERATIONAL.

STEP 2
1. REMOVE EXISTING 6,000 GALLON UNDERGROUND FUEL STORAGE TANK, MONITORING WELLS AND PIPING.

2. INSTALL NEW 12,000 GALLON ABOVE GROUND FUEL STORAGE TANK, PIPING AND APPURTENANCES AND CONNECT TO NEW (INSTALLED) 275 GALLON DAY TANK.

3. MAKE SYSTEM OPERATIONAL.

4. REMOVE TEMPORARY FUEL STORAGE TANK AND PIPING.

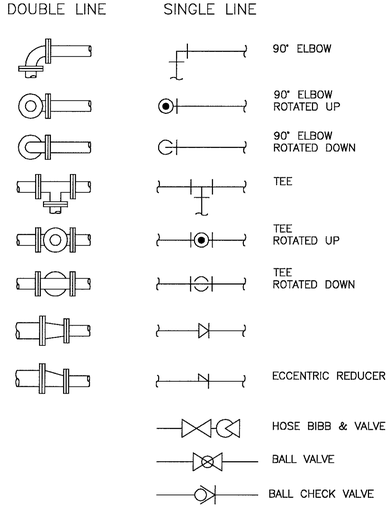
STEP 3
1. REMOVE EXISTING 1,000KW GENERATOR AND DAY TANK.

2. INSTALL NEW 2,000KW GENERATOR AND DAY TANK.

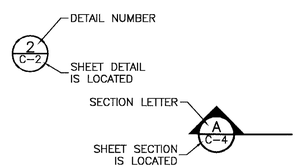
3. CONNECT FUEL PIPING TO GENERATOR AND DAY TANK.

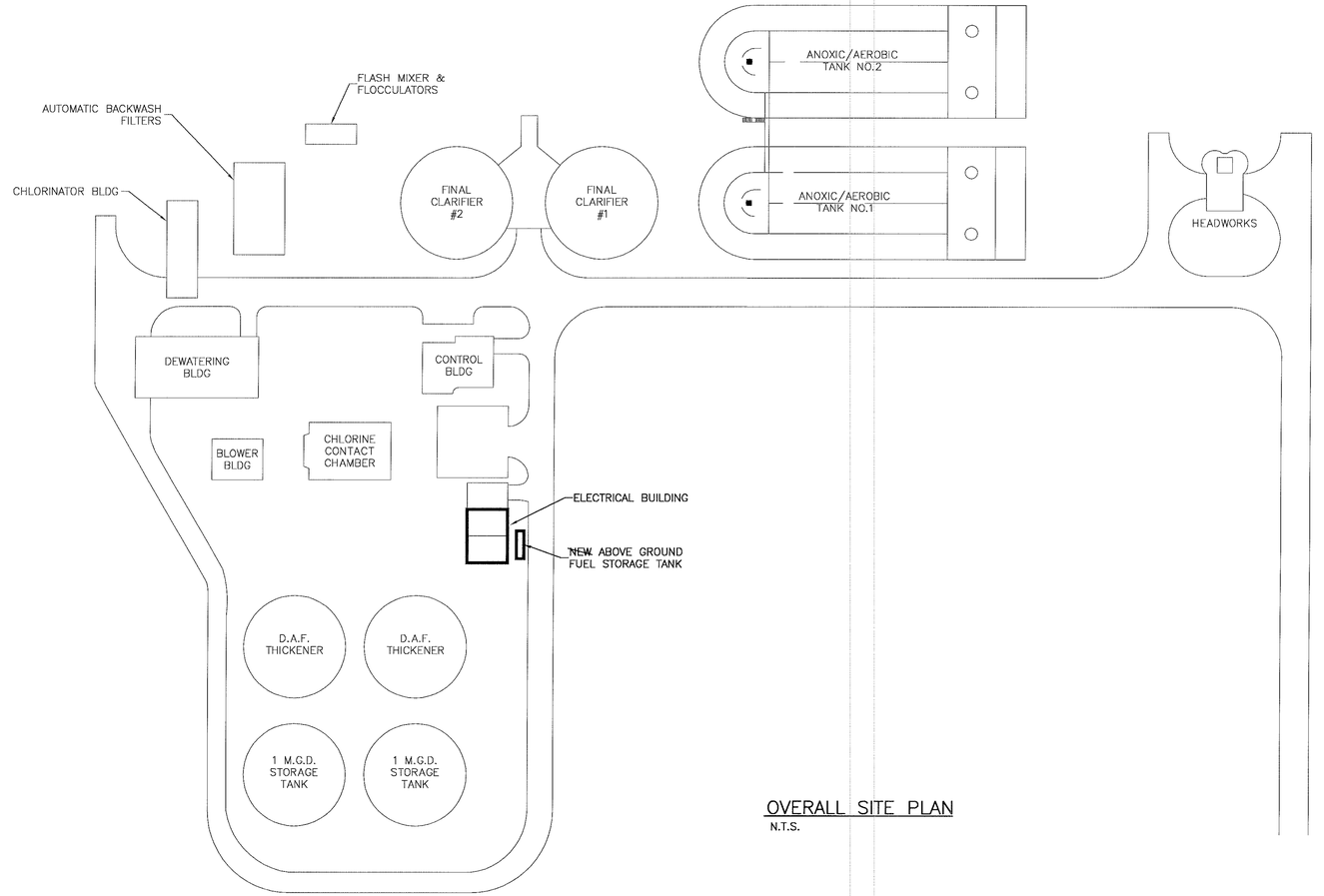
4. MAKE SYSTEM OPERATIONAL.

PIPE AND FITTING SYMBOLS



DETAIL & SECTION DESIGNATION





OVERALL SITE PLAN
N.T.S.

Drawing Name: X:\MANATEE PROJECTS\12003313 NRWWTP Aux Generator\CADD\NOTES.dwg
Last Modified: Aug 19, 2005 - 7:28am by dallis
Xrefs:

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	3/03/03
CHECKED BY:	D. WILCOX	3/03/03
DRAWN BY:	T. SONNENBERG	3/03/03
SCALE:	N.T.S.	
FILE NAME:	NOTES.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUXILIARY GENERATOR UPGRADE PLANS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

GENERAL NOTES

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	DME	7/19/05

PROJ. NO: 12003313
DWG DATE: JULY 2003
DWG NO:
SHEET: 2

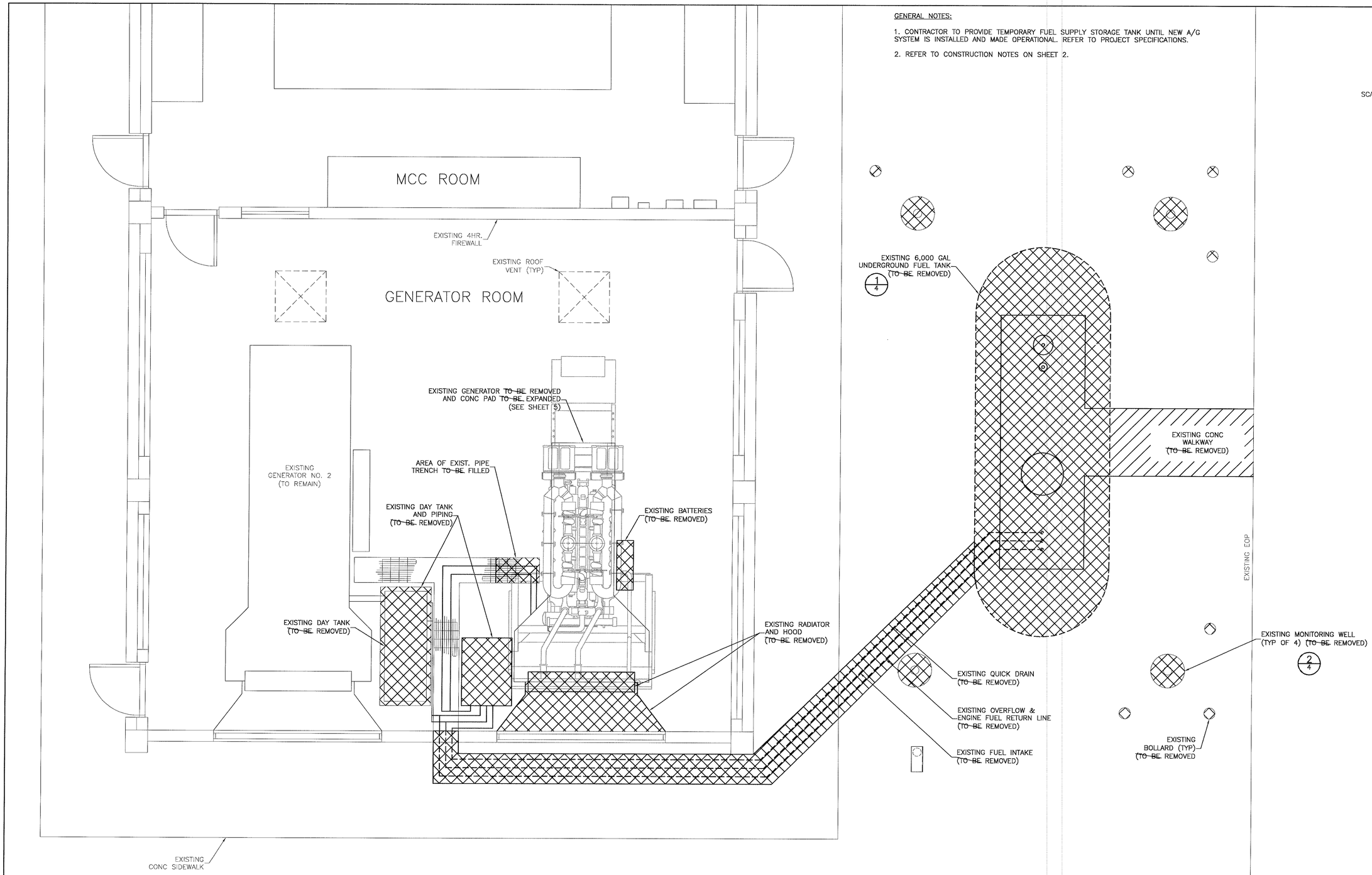
4437.002

GENERAL NOTES:

1. CONTRACTOR TO PROVIDE TEMPORARY FUEL SUPPLY STORAGE TANK UNTIL NEW A/G SYSTEM IS INSTALLED AND MADE OPERATIONAL. REFER TO PROJECT SPECIFICATIONS.

2. REFER TO CONSTRUCTION NOTES ON SHEET 2.

SCALE: 3/8"=1'-0"



URS Corporation
7650 West Courtney
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Tampa, FL 33607-1462

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CHECKED BY:	D. WILCOX	3/03/03
DRAWN BY:	T. SONNENBERG	3/03/03
SCALE:	AS SHOWN	
FILE NAME:	PLAN.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUXILIARY GENERATOR UPGRADE PLANS

FOR

MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

DEMOLITION PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	DWE	7/19/05

PROJ. NO: 12003313
DWG DATE: JULY 2003
DWG NO:
SHEET: 3

4437.003

Drawing Name: X:\MANATEE PROJECTS\12003313 NRWWTP Aux Generator\CADD\MECH PLAN -REVISED.dwg
Last Modified: Aug 19, 2005 - 7:31am by dells
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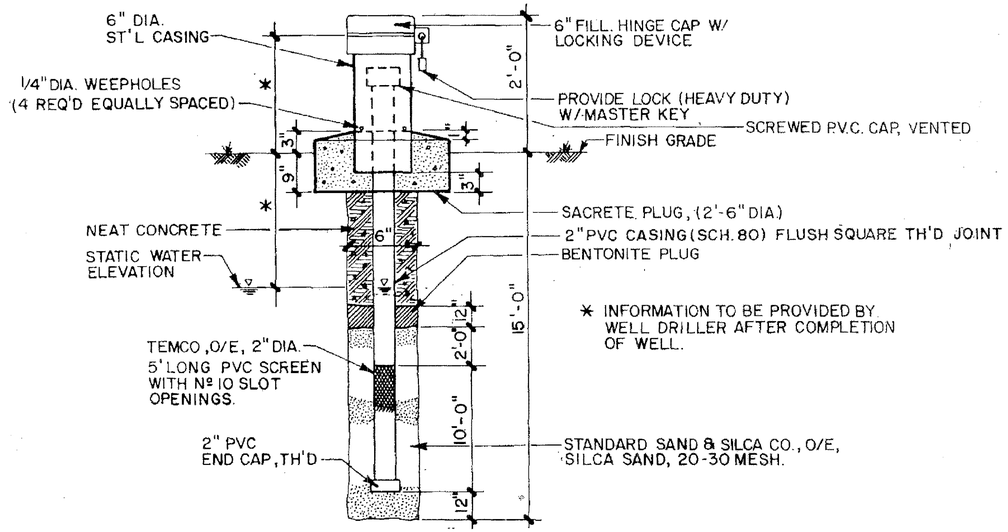


* INFORMATION TO BE PROVIDED BY WELL DRILLER AFTER COMPLETION OF WELL.

NOTES:

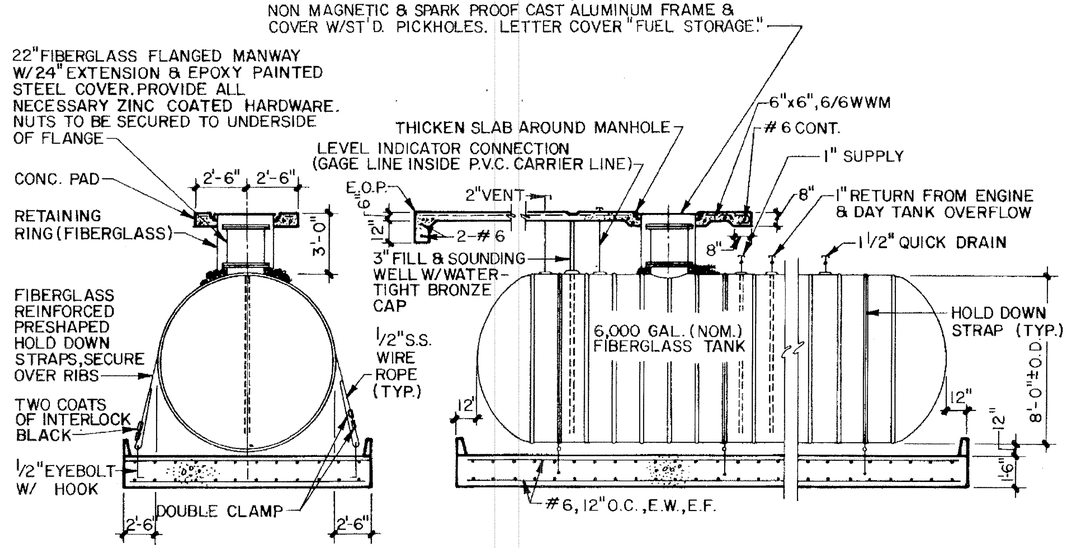
1. REMOVE AND DISPOSE OF EXISTING MONITORING WELLS.

2. FILL OPENINGS IN ACCORDANCE WITH SWFWMD REGULATIONS AND PROJECT SPECIFICATIONS.

EXISTING MONITOR WELL DEMOLITION

DETAIL 2/3

SCALE: N.T.S.



NOTES:

1. PRIOR TO THE START OF DEMOLITION WORK THE CONTRACTOR SHALL HAVE THE TEMPORARY FUEL SUPPLY SYSTEM INSTALLED AND FUNCTIONAL.

2. PROVIDE THE COUNTY WITH 2 WEEKS NOTICE PRIOR TO THE START OF DEMOLITION WORK SO THAT FUEL SYSTEM CAN BE REMOVED FROM THE UNDERGROUND STORAGE TANK BY COUNTY PERSONEL.

3. REMOVE AND DISPOSE OF EXISTING FIBERGLASS TANK AND APPURTENANCES. CONCRETE SLAB CAN BE BURIED

4. FILL EXCAVATION WITH SOIL COMPACTED PER SPECIFICATIONS.

EXISTING FUEL TANK DEMOLITION

DETAIL 1/3

SCALE: N.T.S.

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	3/03/03
CHECKED BY:	D. WILCOX	3/03/03
DRAWN BY:	T. SONNENBERG	3/03/03
SCALE:	AS SHOWN	
FILE NAME:	PLAN.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUXILIARY GENERATOR UPGRADE PLANS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

DEMOLITION DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	DME	7/19/05

PROJ. NO: 12003313
DWG DATE: JULY 2003
DWG NO:
SHEET: 4

4437.004

Drawing Name: X:\MANATEE PROJECTS\12003313 NRWWTP Aux Generator\CADD\MECH PLAN -REVISED.dwg
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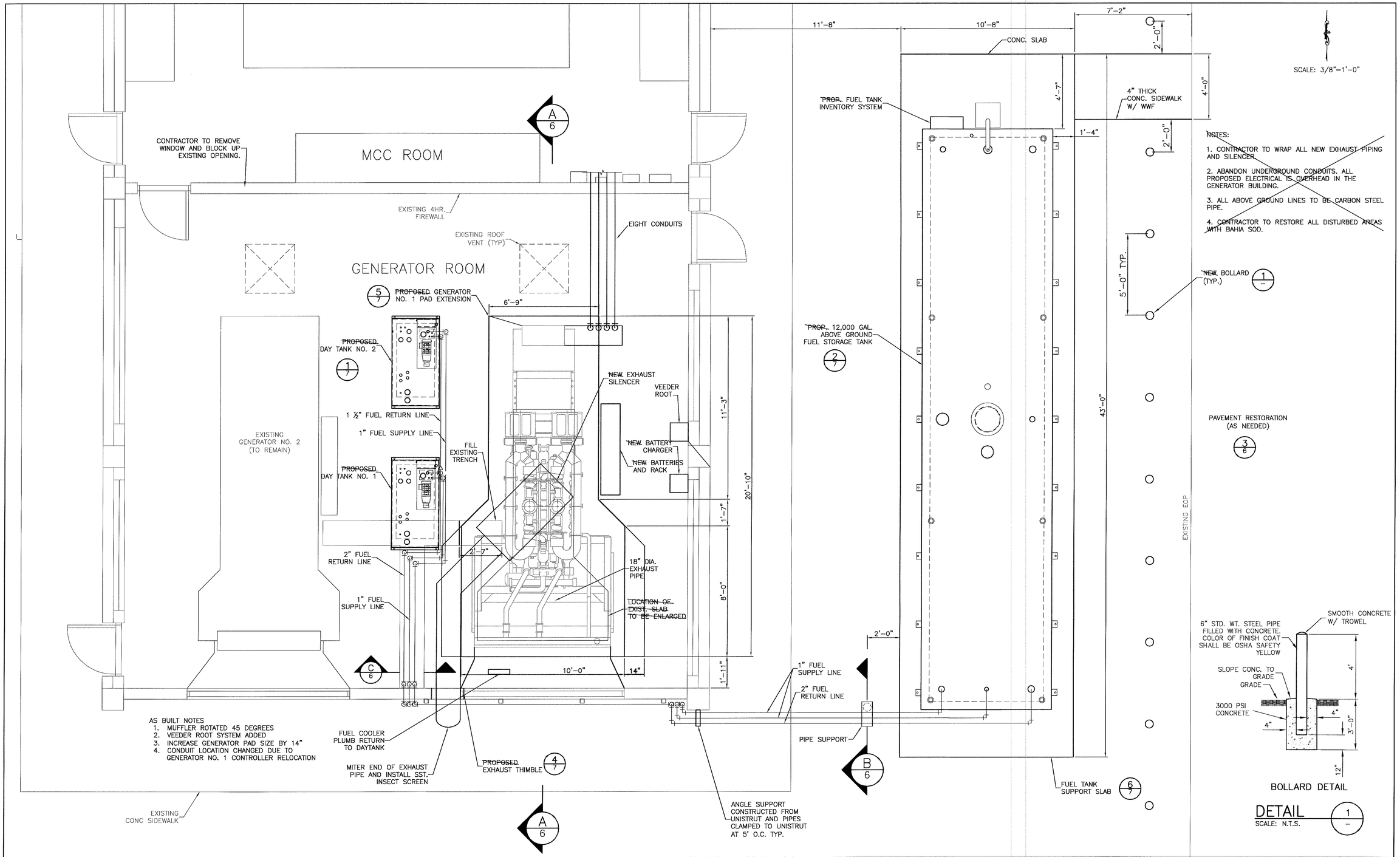

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DRAWN BY:	T. SONNENBERG	3/03/03
SCALE:	AS SHOWN	
FILE NAME:	PLAN.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUXILIARY GENERATOR UPGRADE PLANS

FOR

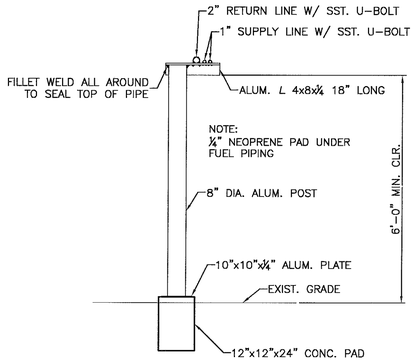
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

PROPOSED GENERATOR AND FUEL TANK PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	DME	7/19/05

PROJ. NO: 12003313
DWG DATE: JULY 2003
DWG NO:
SHEET: 5

4437.005



SECTION B
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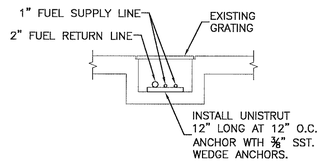

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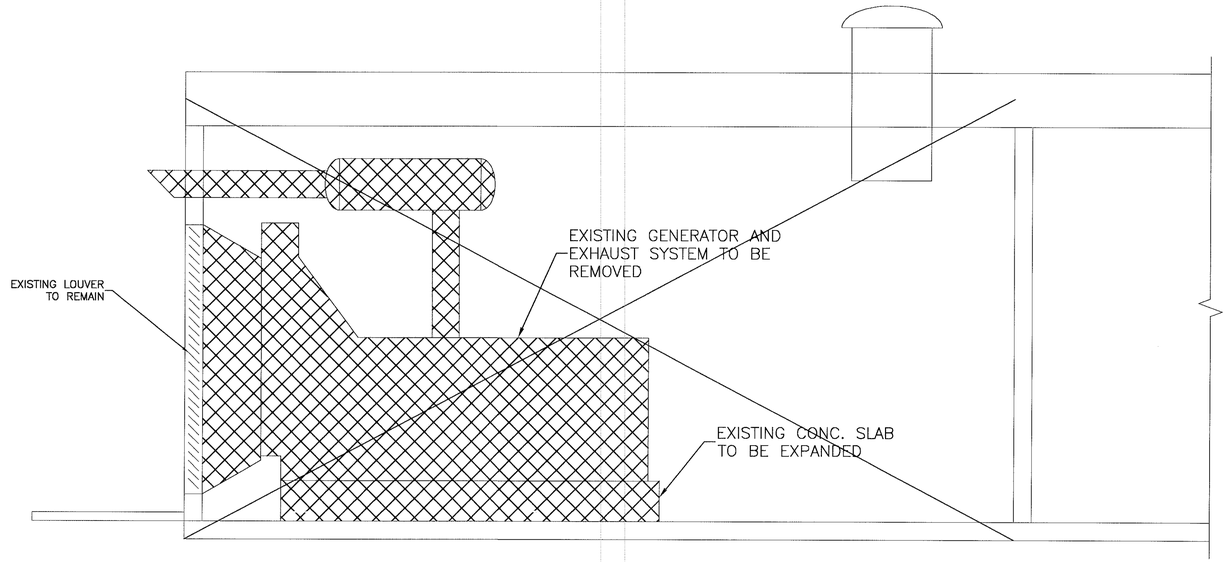
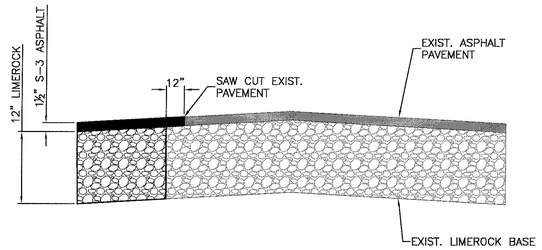


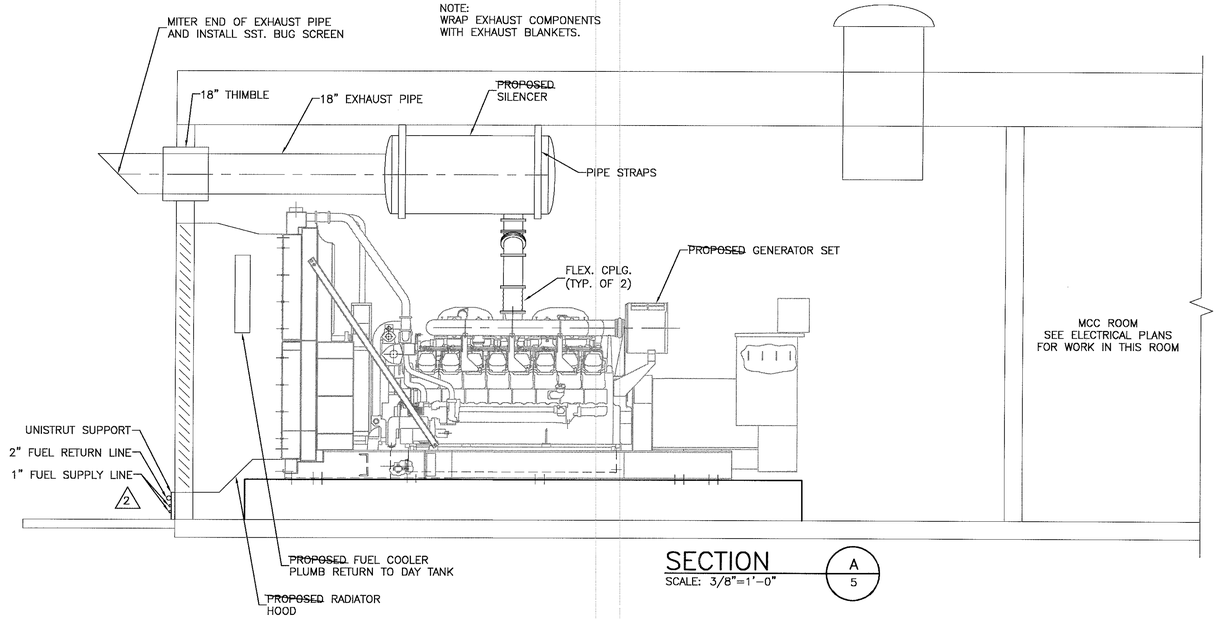
SECTION A
SCALE: 3/8"=1'-0"
5



NOTES:

1. COMPACT LIMEROCK AND SUBGRADE TO 98% MODIFIED PROCTOR.
2. SAW CUT ASPHALT 12" BEYOND DISTURBED AREA.

PAVEMENT RESTORATION
DETAIL 3
SCALE: N.T.S.
5



SECTION A
SCALE: 3/8"=1'-0"
5

Drawing Name: X:\MANATEE PROJECTS\12003313 NRWWTP Aux Generator\CADD\MECH PLAN -REVISED.dwg
Last Modified: Aug 19, 2005 - 7:31am by dellis
Xrefs:

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
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CHECKED BY:	D. WILCOX	3/03/03
DRAWN BY:	T. SONNENBERG	3/03/03
SCALE:	AS SHOWN	
FILE NAME:	PLAN.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUXILIARY GENERATOR UPGRADE PLANS

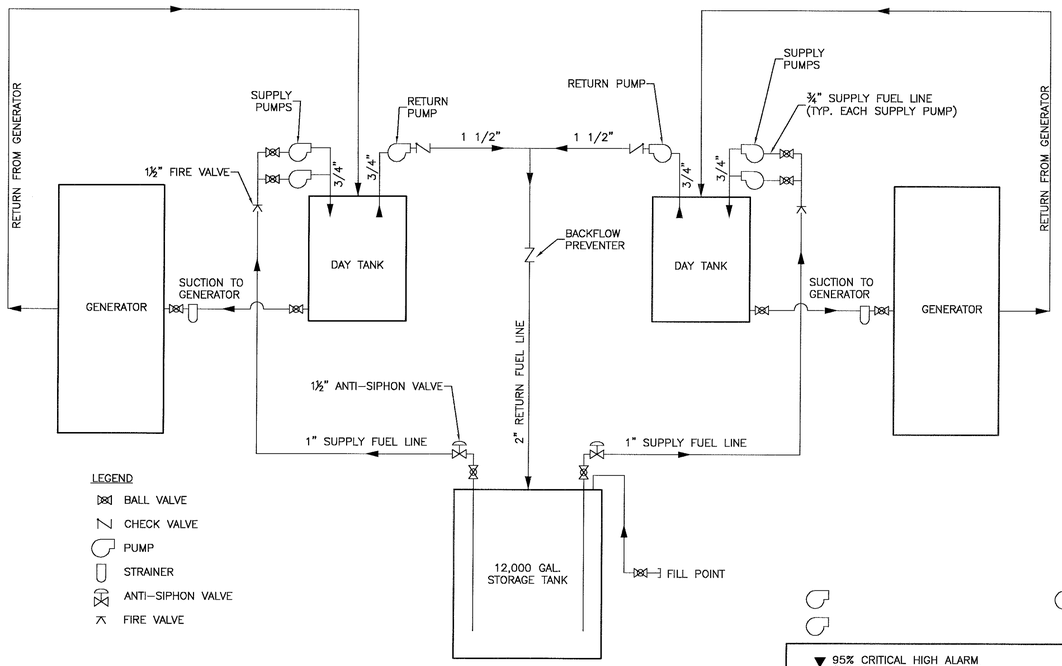
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

SECTIONS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	DME	7/19/05

PROJ. NO: 12003313
DWG DATE: JULY 2003
DWG NO:
SHEET: 6

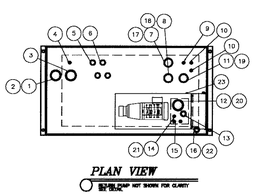
4437.006



FUEL SYSTEM PIPING SCHEMATIC

DETAIL 7 / –

SCALE: N.T.S.



PLAN VIEW

SCALE: N.T.S.

PUMP ENCLOSURE NOT SHOWN FOR CLARITY

TANK MODEL:	EDE-275	
TANK CAPACITY:	275	GALLONS
TANK WEIGHT:	1,500	LBS.
EMERGENCY VENTING CAPACITY:	63,200	CFH
PRIMARY TANK DIMENSIONS:		
LENGTH:	52	INCHES
WIDTH:	28	INCHES
HEIGHT:	45	INCHES
SECONDARY TANK DIMENSIONS:		
LENGTH:	63	INCHES
WIDTH:	34	INCHES
HEIGHT:	46	INCHES

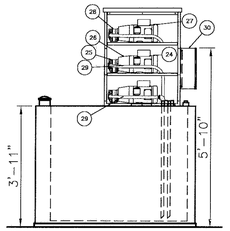
TANK EXTERIOR FINISH: PHOENIX GRAY ENAMEL
PUMP COVER: PHOENIX BLUE ENAMEL

ALL FITTINGS TO BE C.S.

STANDARD FLOAT SCHEDULE	PERCENTAGE	SWITCH ACTION
CRITICAL HIGH LEVEL	95%	N.O.
HIGH LEVEL / RETURN PUMP ON	90%	N.O.
PUMPS OFF	85%	N.C.
SUPPLY PUMP ON	50%	N.C.
LOW LEVEL	25%	N.C.
CRITICAL LOW LEVEL	10%	N.C.

BILL OF MATERIALS

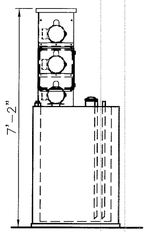
ITEM	QTY	DESCRIPTION	NOTE
1	1	3" FOR SECONDARY EMERGENCY VENT	CARBON STEEL HALF COUPLING
2	2	3" EMERGENCY VENT	MORRISON 244#
3	1	3" FOR PRIMARY EMERGENCY VENT	3" CARBON STEEL HALF COUPLING
4	1	3/4" FOR SIPHON DRAIN	CARBON STEEL PIPE MNPT
5	1	1" FOR SPARE	1" WELD FLANGE FNPT
6	1	1" FOR ENGINE RETURN	CARBON STEEL WELD FLANGE FNPT
7	1	2" FOR PRIMARY VENT	CARBON STEEL WELD FLANGE FNPT
8	1	2" FOR MANUAL FILL	CARBON STEEL WELD FLANGE FNPT
9	1	3/4" FOR HAND PUMP	3/4" CARBON STEEL PIPE MNPT
10	2	3/4" FOR ENGINE FUEL OIL SUPPLY	CARBON STEEL WELD FLANGE
11	1	2" FOR VISUAL GAUGE	CARBON STEEL WELD FLANGE
12	1	3" FOR FLOAT PROBE ASSEMBLY	CARBON STEEL COUPLING FNPT
13	1	1-1/4" FOR SPARE	CARBON STEEL COUPLING FNPT
14	1	3/4" FOR FUEL OIL RETURN	CARBON STEEL WELD FLANGE
15	2	3/4" FOR FUEL OIL SUPPLY	CARBON STEEL PIPE MNPT
16	1	1-1/4" FOR LEAK SENSOR	CARBON STEEL HALF COUPLING
17	1	2" MUSHROOM VENT	PREFERRED UTILITIES
18	1	2" LOCKABLE FILL CAP	
19	1	VISUAL GAUGE	ROCHESTER 8580 FOR 45" INNER TANK W/ 1" EXT.
20	1	MULTI LEVEL PROBE ASSEMBLY	MADISON 4502
21	7	3/4" PUSH-ON HOSE FITTING	
22	1	LEAK SENSOR ASSEMBLY	MADISON 3782
23	1	PUMP ENCLOSURE	
24	2	1/2 HP MOTOR	
25	2	4 GPM SUPPLY PUMP	
26	3	PUMP/ MOTOR ADAPTER	
27	1	3/4 HP MOTOR	
28	1	10 GPM RETURN PUMP	
29	2	FLEX HOSE	
30	1	PUMP CONTROL PANEL	DIESEL DIRECTOR 2 SUPPLY 1 RETURN



LEFT SIDE VIEW

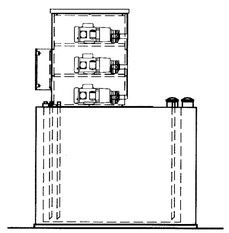
SCALE: N.T.S.

PUMP ENCLOSURE COVERS REMOVED FOR CLARITY



FRONT VIEW

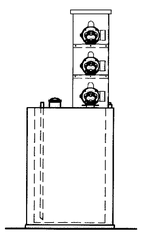
SCALE: N.T.S.



RIGHT SIDE VIEW

SCALE: N.T.S.

PUMP ENCLOSURE COVERS REMOVED FOR CLARITY



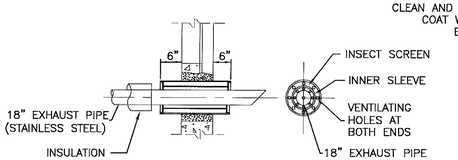
REAR VIEW

SCALE: N.T.S.

DAY TANK

DETAIL 1 / 5

SCALE: N.T.S.

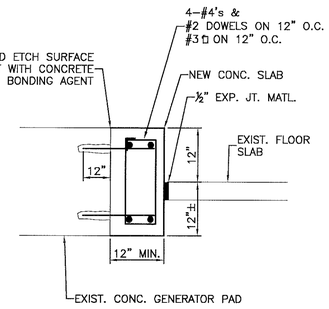


NOTES:
1. INSTALL THIMBLE.
2. SEAL OPENING W/ TEMPERATURE RESISTANT GROUT.

THIMBLE

DETAIL 4 / 5

SCALE: N.T.S.



GENERATOR PAD ADDITION

DETAIL 5 / 5

SCALE: N.T.S.

- ▼ 95% CRITICAL HIGH ALARM
- ▼ 90% RETURN PUMP ON (HIGH LEVEL)
- ▼ 85% ALL PUMPS OFF
- ▼ 50% SUPPLY PUMP ON

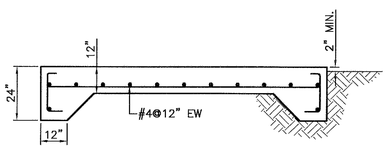
(TYP. OF 2 DAY TANKS)

- ▼ 25% LOW LEVEL ALARM
- ▼ 10% CRITICAL LOW LEVEL ALARM

FUEL SYSTEM CONTROL LOGIC

DETAIL 8 / –

SCALE: N.T.S.



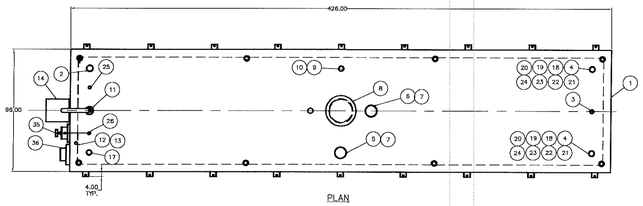
FUEL TANK PAD

DETAIL 6 / 5

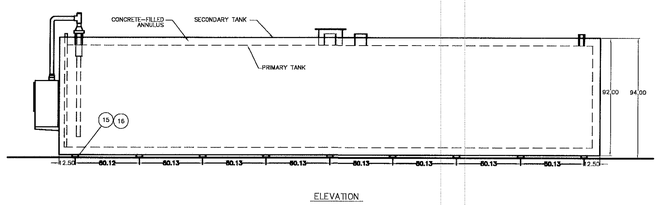
SCALE: N.T.S.

PARTS LIST

ITEM	QTY	DESCRIPTION		NOTE
1	1	12,000 GALLON ENVIRONAULT	EV-12000	
2	1	4" SPARE W/ GALV. THREADED CAP		
3	1	2" FOR F.O.R.		
4	2	3" FOR F.O.S.		
5	1	8" FOR EMERGENCY VENT		
6	1	8" FOR SECONDARY EMERGENCY VENT		
7	2	8" EMERGENCY VENT		MORRISON 244
8	1	18" DIA. MANWAY		
9	1	3" FOR PRIMARY VENT		
10	1	PRIMARY VENT RISER ASSEMBLY & SET 12" ABOVE GRADE		FBW 802-304-05
11	1	6" FOR FILL		
12	1	2" FOR LEAK SWITCH ASSEMBLY		
13	1	LEAK SWITCH ASSEMBLY		MADISON M3782
14	1	S.S. GRADE FILL BOX		SEE DETAILS THIS SHEET
15	7	1/4" X 3"W. X 2"H. X 104"L. FORMED EXTERNAL SUPPORT W/ 1" MOUNTING HOLE		
16	7	3/8" X 6"W. X 104"L. NEOPRENE		UNDER EACH SUPPORT
17	1	4" FOR INVENTORY PROBE		
18	2	3" COUPLING		CARBON STEEL
19	2	3" X 1" DOUBLE TAP BUSHING		CARBON STEEL
20	2	1" SUCTION TUBE		CARBON STEEL
21	2	1" FOOT VALVE		
22	2	1" NIPPLE		CARBON STEEL
23	2	ANTI-SIPHON VALVE		
24	2	1" BALL VALVE		
25	1	2" FOR CLOCK GAUGE		
26	1	2" FOR HAND PUMP		
27	1	18"W X 18"D X 36"H GRADE FILL BOX		
28	2	GRADE FILL BOX SUPPORT ANGLE		
29	1	3" ANGLE CHECK VALVE		
30	1	6" S.S. PIPE NIPPLE 4" LONG		
31	1	3-1/2" X 2" H. (FORMED) S.S.BRACKET 10"L.		
32	1	6" X 3" FLEXICO BOOT W/ S.S. DRAWBANDS		
33	1	3" FILL ADAPTOR		
34	1	3/4" DRAIN COUPLING		
35	1	HAND PUMP		
36	1	TANK MONITORING PANEL		PNEUMERCATOR TMS-2000



PLAN

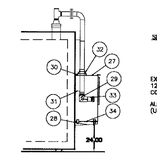


ELEVATION

TANK MODEL:	EV-12000	
TANK CAPACITY:	12,000	GALLONS
TANK WEIGHT:	53,000	LBS.
EMERGENCY VENTING CAPACITY:	480,300	CFH
PRIMARY TANK DIMENSIONS:		
LENGTH:	414	INCHES
WIDTH:	64	INCHES
HEIGHT:	80	INCHES
SECONDARY TANK DIMENSIONS:		
LENGTH:	426	INCHES
WIDTH:	98	INCHES
HEIGHT:	92	INCHES

EXTERIOR FINISH: CORAL WHITE WITH SANDBLAST, 12 TO 15 MIL INTERMEDIATE GLASS FLAKE EPOXY COAT & 2 TO 3 MIL POLYURETHANE TOP COAT

ALL FITTINGS TO BE S.S. THREADED PIPE. (UNLESS OTHERWISE NOTED)



DETAIL: GRADE FILL BOX

ABOVE GROUND FUEL STORAGE TANK

DETAIL 2 / 5

SCALE: N.T.S.

Drawing Name: X:\MANATEE PROJECTS\12003313 NRWWTP Aux Generator\CADD\MECH PLAN –REVISED.dwg
Last Modified: Aug 19, 2005 – 7:31am by dellis
Xrefs:

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	3/03/03
CHECKED BY:	D. WILCOX	3/03/03
DRAWN BY:	T. SONNENBERG	3/03/03
SCALE:	AS SHOWN	
FILE NAME:	MECH PLAN.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUXILIARY GENERATOR UPGRADE PLANS

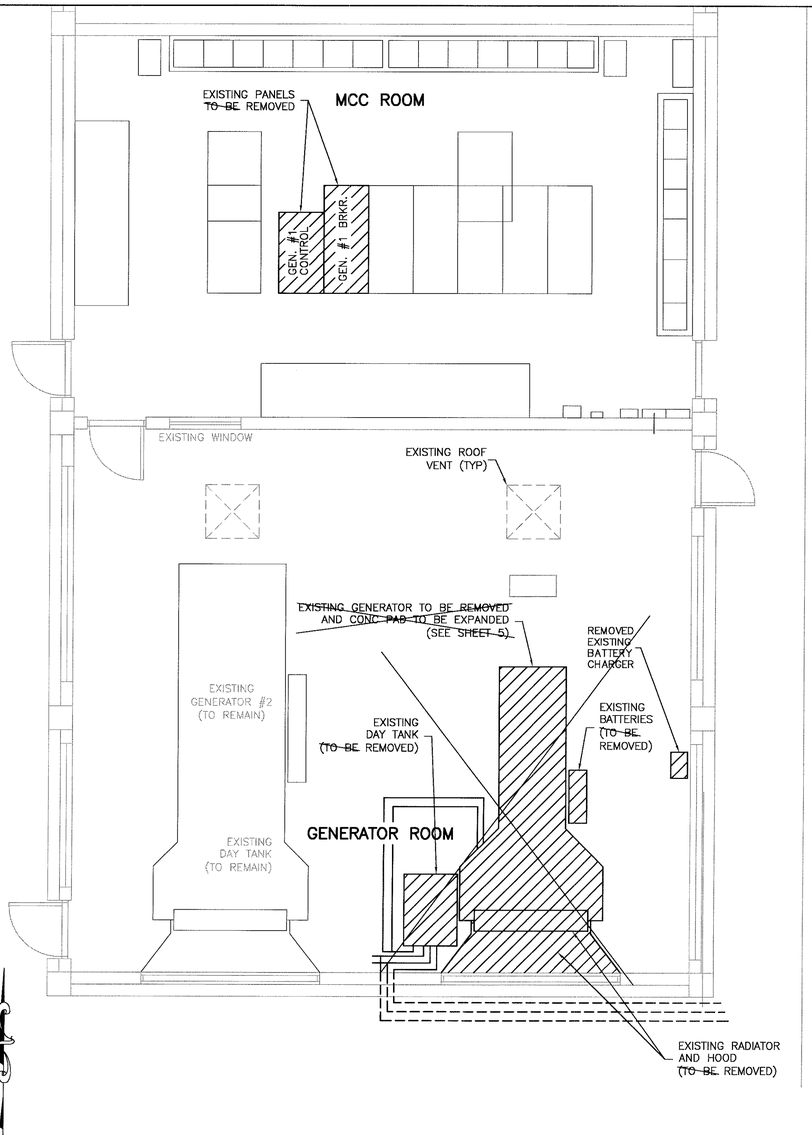
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

MECHANICAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	DME	7/19/05

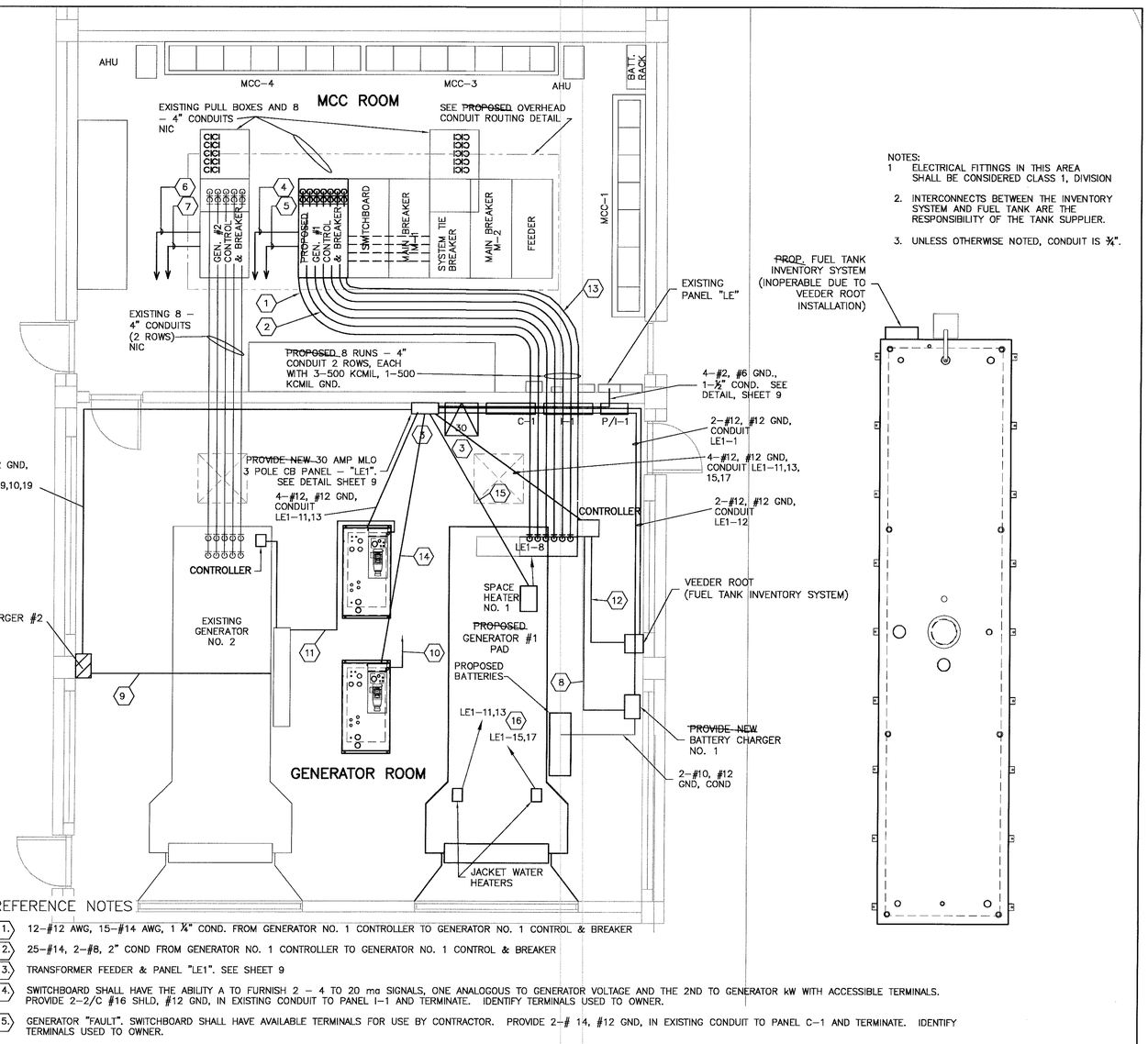
PROJ. NO: 12003313
DWG DATE: JULY 2003
DWG NO:
SHEET: 7

4437.007



SCALE: 1/4"=1'-0"

DEMOLITION ELECTRICAL PLAN



NOTES:
1. ELECTRICAL FITTINGS IN THIS AREA SHALL BE CONSIDERED CLASS 1, DIVISION
2. INTERCONNECTS BETWEEN THE INVENTORY SYSTEM AND FUEL TANK ARE THE RESPONSIBILITY OF THE TANK SUPPLIER.
3. UNLESS OTHERWISE NOTED, CONDUIT IS ¾".

REFERENCE NOTES

1. 12–#12 AWG, 15–#14 AWG, 1 ¼" COND. FROM GENERATOR NO. 1 CONTROLLER TO GENERATOR NO. 1 CONTROL & BREAKER
2. 25–#14, 2–#8, 2" COND FROM GENERATOR NO. 1 CONTROLLER TO GENERATOR NO. 1 CONTROL & BREAKER
3. TRANSFORMER FEEDER & PANEL "LE1". SEE SHEET 9
4. SWITCHBOARD SHALL HAVE THE ABILITY A TO FURNISH 2 – 4 TO 20 ma SIGNALS, ONE ANALOGOUS TO GENERATOR VOLTAGE AND THE 2ND TO GENERATOR kW WITH ACCESSIBLE TERMINALS. PROVIDE 2–2/C #16 SHLD, #12 GND, IN EXISTING CONDUIT TO PANEL I–1 AND TERMINATE. IDENTIFY TERMINALS USED TO OWNER.
5. GENERATOR "FAULT". SWITCHBOARD SHALL HAVE AVAILABLE TERMINALS FOR USE BY CONTRACTOR. PROVIDE 2–# 14, #12 GND, IN EXISTING CONDUIT TO PANEL C–1 AND TERMINATE. IDENTIFY TERMINALS USED TO OWNER.
6. MODIFY EXISTING SWITCHBOARD TO HAVE THE ABILITY TO FURNISH 2 – 4 TO 20ma SIGNALS, ONE ANALOGOUS TO GENERATOR VOLTAGE AND THE 2ND TO GENERATOR kW WITH ACCESSIBLE TERMINALS. PROVIDE 2–2/C #16 SHLD, #12 GND, IN EXISTING CONDUIT TO PANEL I–1 AND TERMINATE. IDENTIFY TERMINALS USED TO OWNER.
7. GENERATOR "FAULT". EXISTING SWITCHBOARD SHALL BE MODIFIED TO HAVE AVAILABLE TERMINALS FOR USE BY CONTRACTOR. PROVIDE 2–# 14, #12 GND, IN EXISTING CONDUIT TO PANEL C–1 AND TERMINATE. IDENTIFY TERMINALS USED TO OWNER.
8. BATTERY CHARGER NO. 1 GENERAL ALARM: 2–#14, #12 GND, ¾" COND TO GENERATOR NO. 1 CONTROLLER.
9. BATTERY CHARGER NO. 2 GENERAL ALARM: 2–#14, #12 GND, ¾" COND TO GENERATOR NO. 2 JUCTION BOX.
10. DAY TANK NO. 1 GENERAL ALARM: 2–#14, #12 GND, ¾" COND TO GENERATOR NO. 1 CONTROLLER.
11. DAY TANK NO. 2 GENERAL ALARM: 2–#14, #12 GND, ¾" COND TO GENERATOR NO. 2 JUCTION BOX.
12. VEEDER ROOT GENERAL ALARM: 2–#14, #12 GND, ¾" COND TO GENERATOR NO. 1 CONTROLLER.
13. GENERAL ALARM FOR FAULT CONDITION AT BATTERY CHARGER NO. 1, DAY TANK NO. 1, OR VEEDER ROOT SYSTEM: 2–#14, #12 GND, ¾" COND FROM GENERATOR NO. 1 CONTROLLER TO GENERATOR NO. 1 CONTROL & BREAKER.
14. 4–#12 #12 GND CONDUIT LE1–15, 17
15. LE1–8 2–#12, #12 GND COND
16. LE1– 11,13, 15, 17 ROUTE THROUGH GENERATOR CONTROLLER

GENERATOR AND FUEL TANK ELECTRICAL PLAN

SCALE: 1/4"=1'-0"

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	B. TOTH	3/03/03
CHECKED BY:	B. TOTH	3/03/03
DRAWN BY:	DRAFT	3/03/03
SCALE:	1/4" = 1'-0"	
FILE NAME:	ELECTRICAL PLAN.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUXILIARY GENERATOR UPGRADE PLANS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

DEMOLITION AND PROPOSED ELECTRICAL PLANS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	DME	7/19/05

PROJ. NO: 12003313
DWG DATE: JULY 2003
DWG NO:
SHEET: 8

4437.008

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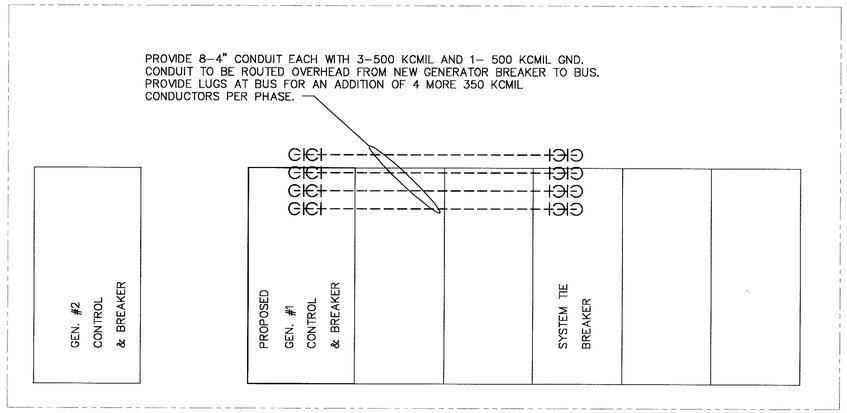
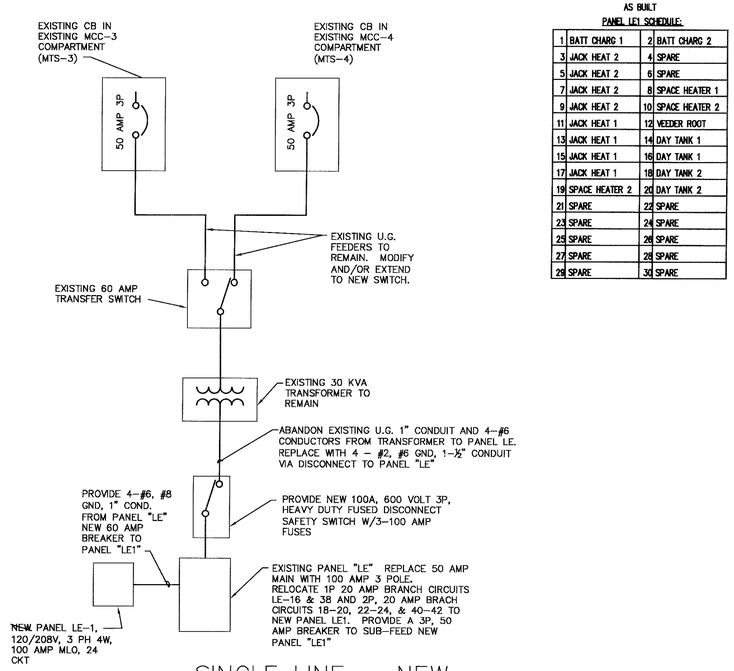
Last Modified: Aug 19, 2005 – 7:32am by dells
Xrefs:



~~PROPOSED~~ OVERHEAD ROUTING DETAIL

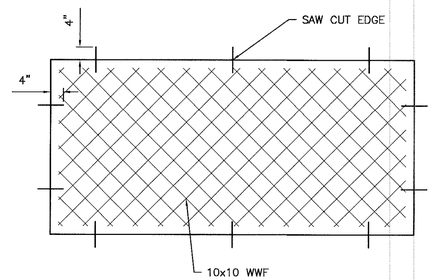
NTS

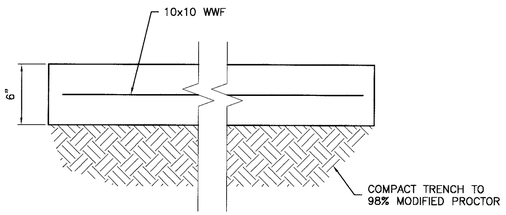


SINGLE LINE – NEW FEEDERS AND PANEL "LE1"

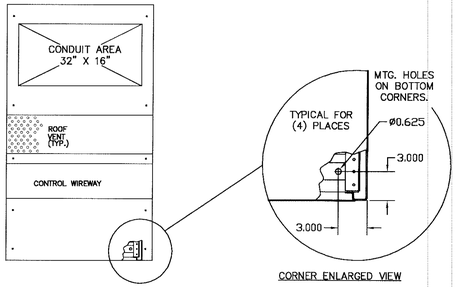
AS BUILT
PANEL LE1 SCHEDULE:

1	BATT CHARG 1	2	BATT CHARG 2
3	JACK HEAT 2	4	SPARE
5	JACK HEAT 2	6	SPARE
7	JACK HEAT 2	8	SPACE HEATER 1
9	JACK HEAT 2	10	SPACE HEATER 2
11	JACK HEAT 1	12	WEEDER ROOT
13	JACK HEAT 1	14	DAY TANK 1
15	JACK HEAT 1	16	DAY TANK 1
17	JACK HEAT 1	18	DAY TANK 2
19	SPACE HEATER 2	20	DAY TANK 2
21	SPARE	22	SPARE
23	SPARE	24	SPARE
25	SPARE	26	SPARE
27	SPARE	28	SPARE
29	SPARE	30	SPARE



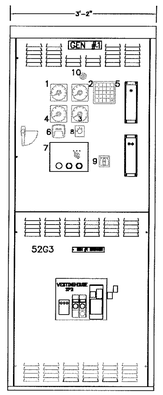


CONCRETE FLOOR REPLACMENT
DETAIL 1 / –
SCALE: N.T.S.



PLAN VIEW

CORNER ENLARGED VIEW

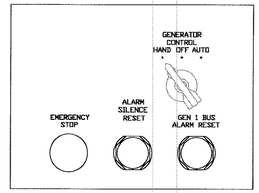


GENERATOR 1

FRONT ELEVATION
* CATERPILLAR GENERATOR ANNUNCIATOR
* * PROVISIONS PROVIDED FOR FUTURE

DOOR COMPONENT LEGEND		
ITEM NO.	DESCRIPTION	
1	WATTMETER	(2500KW)
2	AMMETER	(0–4000A)
3	VOLTMETER	(0–600V)
4	FREQUENCY METER	(55–65Hz)
5	PANALARM STATUS PANEL	
6	RUNNING TIME METER	(0–99999)
7	MANUAL CONTROL STATION	
8	AM/VM SELECTOR SWITCH	
9	LOCKOUT RELAY DEV 86	
10	ALARM HORN	

GENERATOR CIRCUIT BREAKER	
ITEM	DESCRIPTION
52G1	WESTINGHOUSE STB, DRAWOUT,4000AF/3200AT 3 POLE ELECTRICALLY OPERATED, 120VAC CHARGE AND CLOSE, 24VDC SHUNT TRIP, 4A/4B AUX., CONTACTS L.S.I.G. TRIP FUNCTIONS.



GENERATOR 1
CONTROL STATION

GENERAL NOTES
1. NEMA CONSTRUCTION, FREE STANDING–FLOOR SUPPORTED.
2. SWITCHBOARD IS FRAME CONSTRUCTION, 12 GA. FORMED FRAME. N.E.C. STD. GAUGE PAN TYPE DOORS AND COVERS. ALL DOORS SUPPLIED WITH LOCKABLE HANDLES, COMMON KEYING AND CAPTIVE SCREWS AS REQUIRED. REMOVABLE PANELS SUPPLIED ON SIDES AND TOP.
3. AIR VENTS PER MANUFACTURES STANDARDS.
4. FABRICATED AS (2) SECTIONS FOR SHIPMENT. DENOTES SHIPPING SPLIT.
5. DESIGNED FOR FRONT, SIDE AND REAR ACCESS. DOORS SUPPLIED IN REAR.
6. DESIGNED FOR SERVICE CABLE ENTRY ON TOP FOR CABLE SIZE AND QTY. SEE ONE LINE DIAGRAM.
7. FINISH: GRAY POLYESTER SEMI GLOSS, ELECTROSTATIC POWDER.
8. ENCLOSURE DIMENSIONS ARE APPROXIMATE AND SUBJECT TO APPROVAL OF DESIGN AND MAY VARY AS REVISIONS, IF ANY, DICTATE.

SPECIFICATIONS
1. SERVICE VOLTAGE: 480Y GROUNDED
   SYSTEM RATING: 4000 AMP, 3 ø, 3 W.
2. BATTERY VOLTAGE: 24 VDC
3. GROUND BUS: 800 AMP
4. ALL BUS IS SILVER–PLATED COPPER, BASED ON 1000A/SQ. IN DENSITY.
5. APPLICABLE LABELS: U.L. 891 DEADFRONT SWITCHBOARD.

~~PROPOSED~~ GENERATOR #1
CONTROL AND BREAKER SECTION

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682–0074
Reg. No. 6268

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	B. TOTH	3/03/03
CHECKED BY:	B. TOTH	3/03/03
DRAWN BY:	DRAFT	3/03/03
SCALE:	AS SHOWN	
FILE NAME:	ELECTRICAL PLAN.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
AUXILIARY GENERATOR UPGRADE PLANS
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL DETAILS

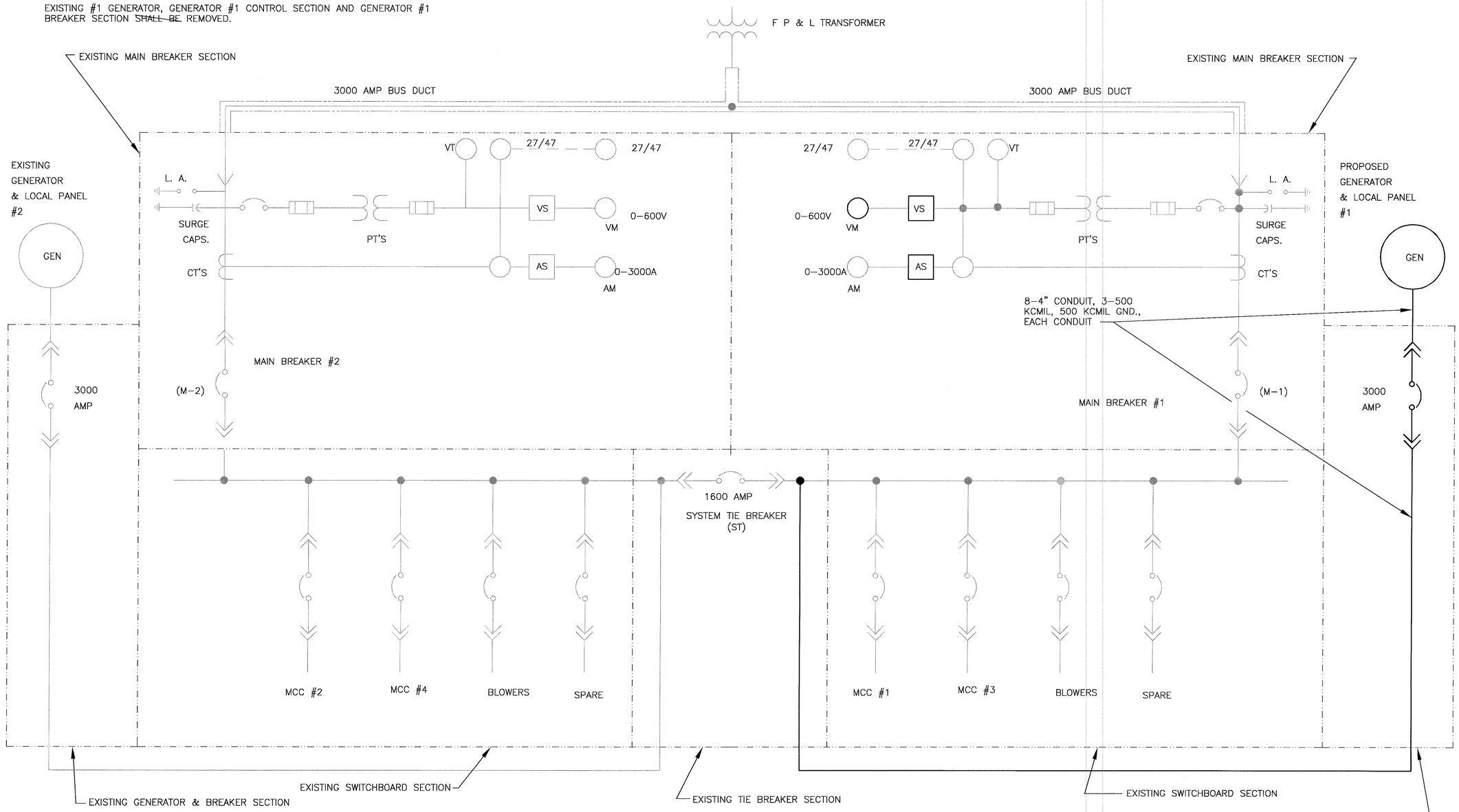
NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	DME	7/19/05

PROJ. NO: 12003313
DWG DATE: JULY 2003
DWG NO:
SHEET: 9

4437-009

Drawing Name: X:\MANATEE PROJECTS\12003313 NRWWTP Aux Generator\CADD\electrical plan.dwg
Last Modified: Aug 19, 2005 - 7:32pm by dellis
Xrefs:

EXISTING #1 GENERATOR, GENERATOR #1 CONTROL SECTION AND GENERATOR #1 BREAKER SECTION ~~SHALL BE~~ REMOVED.



VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682–0074
Reg. No. 6268

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	B. TOTH	3/03/03
CHECKED BY:	B. TOTH	3/03/03
DRAWN BY:	DRAFT	3/03/03
SCALE:	N.T.S.	
FILE NAME:	SINGLE LINE DIAGRAM.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT AUXILIARY GENERATOR UPGRADE PLANS

FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL SINGLE LINE DIAGRAM

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	DME	7/19/05

PROJ. NO: 12003313
DWG DATE: JULY 2003
DWG NO:
SHEET: 10

4437.010

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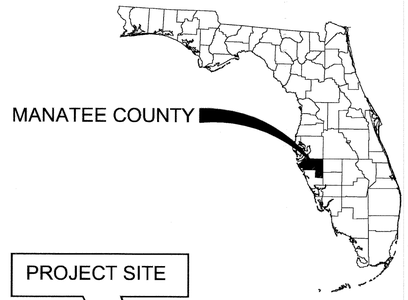
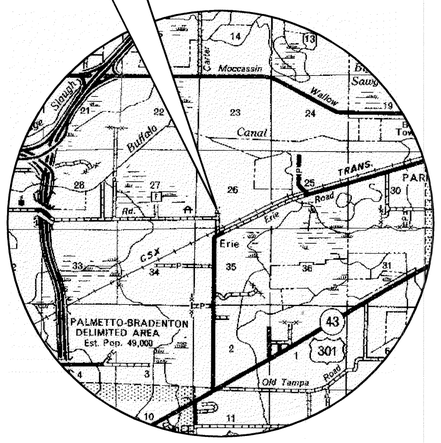
Xrefs:

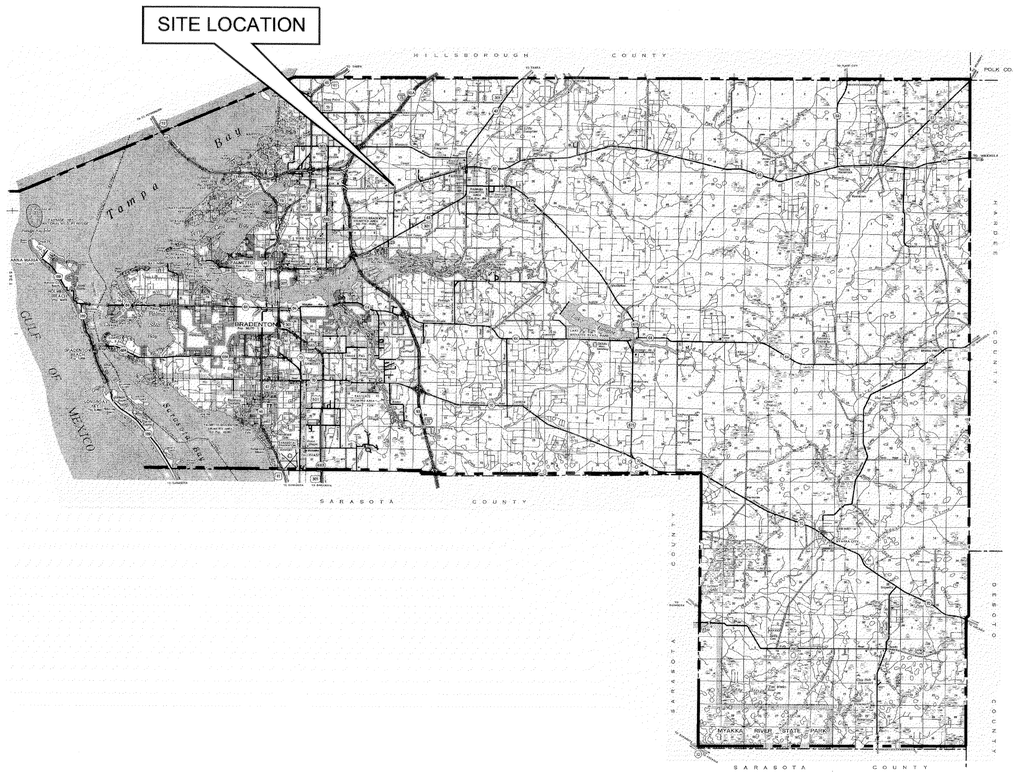
MANATEE COUNTY, FLORIDA
NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
PROJECT NO. 6032481

RECORD DRAWINGS - JULY 2006





PROJECT MAP
N.T.S.



NO.	INDEX OF SHEETS
G-1	COVER SHEET
G-2	GENERAL NOTES, ABBREVIATIONS, SYMBOLS & OVERALL SITE PLAN
C-1	YARD PIPING PLAN
C-1A	12" PLANT WATER RELOCATION
C-2	YARD PIPING DETAILS
M-1	CHLORINE CONTACT CHAMBER PLAN VIEW
M-2	CHLORINE CONTACT CHAMBER SECTIONS & DETAILS
M-2A	CHLORINE CONTACT CHAMBER ROTARY SKIMMER DETAILS
M-3	EFFLUENT PUMP STATION
M-4	EXISTING CHEMICAL ROOM MODIFICATIONS PLAN VIEW
M-5	EXISTING CHEMICAL ROOM MODIFICATIONS SECTIONS AND DETAILS
M-6	EXISTING CHEMICAL ROOM MODIFICATIONS SECTION AND DETAILS
S-1	CHLORINE CONTACT CHAMBER FOUNDATION PLAN
S-2	CHLORINE CONTACT CHAMBER TOP PLAN
S-3	CHLORINE CONTACT CHAMBER SECTIONS & DETAILS
S-4	CHLORINE CONTACT CHAMBER SECTIONS & DETAILS
S-5	CHLORINE CONTACT CHAMBER DETAILS
S-6	CHLORINE CONTACT CHAMBER DETAILS
E-1	ELECTRICAL SITE PLAN
E-2	ELECTRICAL - DEWATERING BUILDING
E-3	ELECTRICAL - CHLORINE CONTACT CHAMBER
E-4	ELECTRICAL - DETAILS
I-1	INSTRUMENTATION DIAGRAM
I-2	INSTRUMENTATION DETAILS

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/19/03
CHECKED BY:	D. WILCOX	09/19/03
DRAWN BY:	D. ELLIS	09/19/03
SCALE:	N.T.S.	
FILE NAME:	COVER SHEET.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

COVER SHEET

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: G-1

23-21

4592.00

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\COVER SHEET.dwg
Last Modified: Jul 11, 2006 - 2:06pm by tpats
Xrefs:

GENERAL NOTES:

GENERAL NOTES:

1. ALL ELEVATIONS ARE BASED ON THE TBM INDICATED AND ARE SHOWN IN FEET.

2. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR LOCATING AND AVOIDING ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND SURFACE. THE CONTRACTOR SHALL REPAIR ALL DAMAGES RESULTING FROM THE CONTRACTORS FAILURE TO COMPLY WITH THIS REQUIREMENT.

3. THE CONTRACTOR SHALL PROVIDE NO LESS THAN A 6 INCH VERTICAL CLEARANCE BETWEEN ALL UTILITIES.

4. PIPE JOINT DEFLECTION SHALL NOT EXCEED 80% OF THE MAXIMUM ALLOWED BY THE MANUFACTURER FOR THE SIZE AND TYPE OF JOINT.

5. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO REFERENCE AND RESTORE PROPERTY CORNERS AND LANDMARKS THAT MAY BE DISTURBED BY CONSTRUCTION.

6. THE CONTRACTOR SHALL NOTIFY PLANT PERSONNEL NOT LESS THAN (2) TWO WEEKS PRIOR TO THE SHUTDOWN AND BYPASSING OF UNIT PROCESS TANKAGE.

7. CONTRACTOR SHALL REFER TO EQUIPMENT SHOP DRAWINGS FOR SIZE AND POSITION OF ALL OPENINGS IN STRUCTURES REQUIRED BY THE EQUIPMENT. ENGINEERING DRAWINGS ARE APPROXIMATE.

PIPE AND FITTING SYMBOLS

DOUBLE LINE / SINGLE LINE

- 90° ELBOW
- 90° ELBOW ROTATED UP
- 90° ELBOW ROTATED DOWN
- TEE
- TEE ROTATED UP
- TEE ROTATED DOWN
- REDUCER
- ECCENTRIC REDUCER
- HOSE BIBB & VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE

ABBREVIATIONS:

A/C	AIR CONDITIONER
ADPT.	ADAPTER
AL	ALUM SOLUTION
ALUM	ALUMINUM
AM.	AMMONIA
BA	BLOWER AIR
Ba.V.	BALL VALVE
BFV	BUTTERFLY VALVE
BLDG	BUILDING
CCC	CHLORINE CONTACT CHAMBER
CL2S	CHLORINE SOLUTION
CL2G	CHLORINE GAS
CLW	CLARIFIED WATER
CONC.	CONCRETE
CPLG.	COUPLING
D	DRAIN
DI	DUCTILE IRON
ECC.	ECCENTRIC
EFF	EFFLUENT
EL.	ELEVATION
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EXIST.	EXISTING
FLG.	FLANGE
FLW	FLOCCULATED WATER
FSB	FLOW SPLITTER BOX
FT.	FOOT OR FEET
FW	FILTERED WATER
GAL.	GALVANIZED
HC.	SODIUM HYPOCHLORITE
LF.	LINER FEET
MIN.	MINIMUM
O.C.	ON CENTER
O/E	OR EQUAL
OVF	OVERFLOW
P	POLYMER
PE	PLAIN END
PVC	POLYVINYL CHLORIDE PIPE
PW	POTABLE WATER
RCW	RECLAIMED WATER
RED	REDUCER
RMJ	RESTRAIN MECHANICAL JOINT
RW	RAW WATER
SCH.	SCHEDULE
SL	SAMPLE LINE
SST	STAINLESS STEEL
SW	SOLVENT WELD
T&B	TOP AND BOTTOM
THD.	THREADED
TS	THICKENED SLUDGE
TYP.	TYPICAL
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WBW	WASTE BACKWASH WATER
WL	WATER LEVEL
WWM	WOVEN WIRE MESH

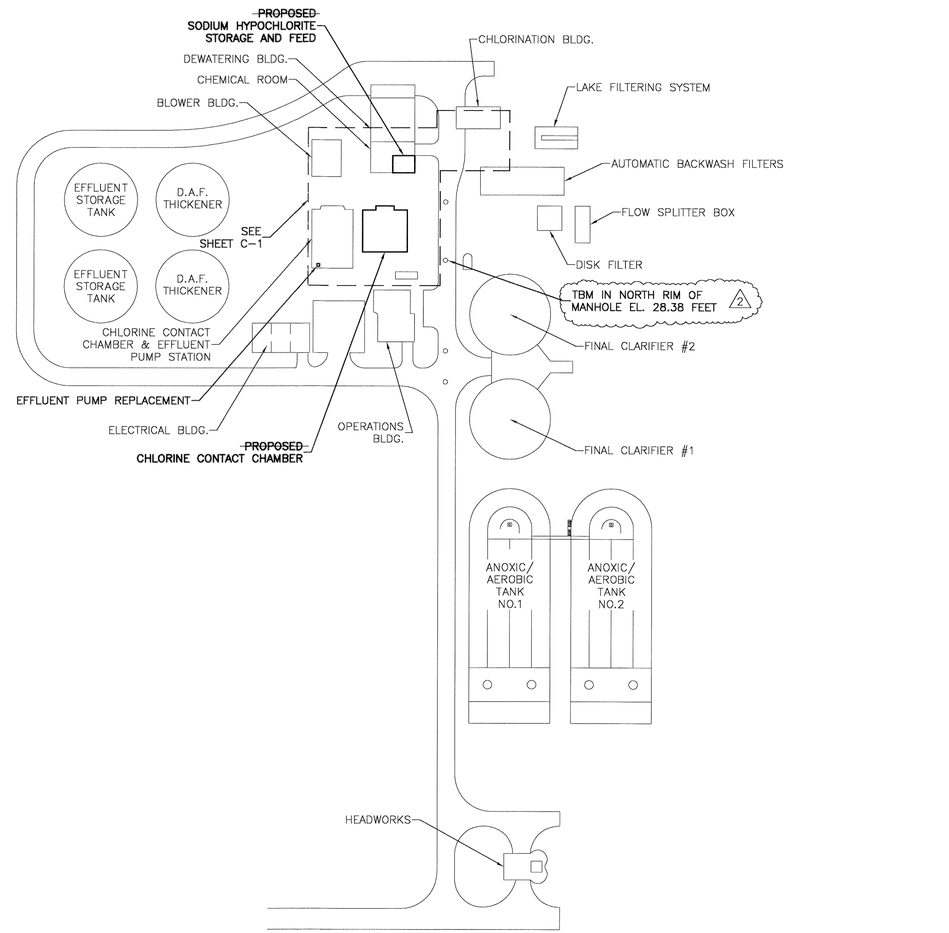
CONSTRUCTION SEQUENCE:

1. CONSTRUCT NEW CCC, CHEMICAL METERING PUMP AND CHEMICAL PIPING AND APPURTENANCES.
2. TEST AND MAKE OPERATIONAL THE CHEMICAL SUPPLY AND MONITORING SYSTEM.
3. ALLOW MANATEE COUNTY UP TO 3 WEEKS TO SUPPLY HYPOCHLORITE TO THE NEW BULK STORAGE TANKS.
4. TRANSFER FLOW TO THE NEW CCC, ACTIVATE NEW SYSTEM.
5. CONNECT EXISTING CHEMICAL LINES TO NEW FEED SYSTEM.
6. REACTIVATE EXISTING CCC.
7. INSTALL NEW EFFLUENT PUMP AND APPURTENANCES ANY TIME DURING THE PROJECT.

N

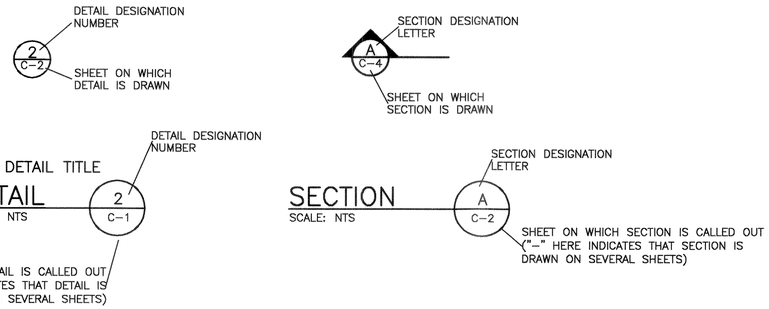
100 50 0 100

Scale 1" = 100'
Scale in feet



OVERALL SITE PLAN

DETAIL & SECTION DESIGNATION



RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/19/03
CHECKED BY:	D. WILCOX	09/19/03
DRAWN BY:	D. ELLIS	09/19/03
SCALE:	AS SHOWN	
FILE NAME:	GEN-NOTES.DWG	

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

GENERAL NOTES, ABBREVIATIONS, SYMBOLS & OVERALL SITE PLAN

NO.	REVISION DESCRIPTION	BY	DATE
1	CHANGERS PER BUILDING DEPT. COMMENTS	DME	2/11/05
2	REVISED BENCHMARK ELEVATION	DME	7/20/05
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: G-2

4592.002

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\GEN-NOTES.dwg
Last Modified: Jul 19, 2006 - 11:54am by tpats
Xrefs:

TIE INTO EXIST. HC. FEED LINE FOR AUXILLARY LOCATIONS WITH 1"x2" RED. & 1" 90° BEND

CAP EXIST. LINE

EXISTING CHLORINATOR BUILDING

EXISTING AUTOMATIC BACKWASH FILTERS

3" RW-PVC

2" CL2S-PVC

1" CLG-PVC

1" CLG-PVC

3" CL2S-PVC TO BE ABANDONED

1" SL-PVC TO BE ABANDONED

1" HC-PVC/SW

~~1" HC-PVC/SW~~

16'-0"

20" EFF-DI

2" AL-PV

3" RW-PVC

8" D-PVC

12" EFF-DI

2 / C-2 PIPE CROSSING

2 / C-2 PIPE CROSSING

MATCH LINE SEE THIS SHEET

MATCH LINE SEE THIS SHEET

1" SL-PVC

2" P-PVC

36" FW-DI

8" RW-PVC

1" HC-PVC/SW TOP 25.06'

~~1" HC-PVC/SW~~

12'-7"

4" TS-DI

4" TS-DI

AREA OF NEW SODIUM HYPOCHLORITE STORAGE AND FEED SYSTEM SEE SHEETS M-4, M-5 & M-6

EXISTING DEWATERING BUILDING

EXISTING CHEMICAL ROOM

1" HC-PVC/SW

1" SL-PVC/SW

4" TS-DI

4" TS-DI

1" FW-PVC

1" SL-PVC

3" CL2S-PVC

12" RW-PVC

4" TS-DI

4" TS-DI

6" RW-PVC

2" P-PVC

2" P-PVC

6" RW-PVC

EXISTING BLOWER BLDG

6" BA-DI

ASPHALT PAVEMENT

16" D-DI

16" D-PVC

16" D-PVC

RIM EL=27.89
W INV=19.24
N INV=19.61
E INV=19.27

3 / C-2 CONNECT 8" D-PVC TO EXISTING MH

RIM EL=27.89
W INV=18.89
N INV=18.76
E INV=18.69
S. INV=20.5

8" RW-PVC

2" PW-PVC

12" EFF-DI

8" D-PVC @ 2.3%

EXISTING METER ASSEMBLY

36'-6"

1'-0"

1" SL-PVC/SW EL 27.15

8" D-PVC @ 2.3%

6'-0"

31'-8"

EXISTING DISTRIBUTION METERING FACILITY

TIE INTO EXIST. SAMPLE LINE AND INSTALL NEW 90° BEND AND CAP EXIST. LINE & ABANDON

TIE INTO EXIST. FILTERED WATER SUPPLY PIPE

36" BFV

TOP 24.41'

6'-0"

1" HC-PVC/SW

~~PROPOSED~~ CHLORINE CONTACT CHAMBER

INSTALL 12" ~~BFV~~ GV 12"x12" LONG SPOOL PIECE 12" FLG 90° BEND 12" RMJ 90° BEND

12" RW-DI/RMJ TOP 27.96'

1'-4"

5'-9"

1'-0"

EXIST. CONC. SIDEWALK ~~TO BE~~ REMOVED

TOP 28.61'

CONCRETE SIDEWALK

24" EFF-DI

1"SL-PVC/SW EL 27.20

EXIST. 2" PVC RW TO HOSE BIBBS

12" RMJ TEE REDUCED TO 2" 2" GV

12" RMJ 45° BEND

TOP 30.14'

TOP 27.88'

30" GV

12" RMJ 90° BEND, ROTATED

12" 45° BEND

6" BA-SST/W TOP 28.11'

1 / C-2 CONC. SIDEWALK

~~PROP.~~ 4'

36" BFV

22'-2"

SEE NOTE 1

TOP 33.6'

12" FLG 90° BEND

12" RMJ 90° BEND

TOP 25.62'

12" RMJ 45° BEND

12" SLEEVE

EXST. 12" RW TO BE REMOVED

(2) 12" RMJ 45° BEND

REMOVE EXIST. PLUG INSTALL 36" DI/MJ CONNECTION PIPE

TIE INTO EXIST. 36" WALL PIPE

10'-8"

1" HC-PVC/SW

~~1" HC-PVC/SW~~

TIE INTO EXIST. BLOWER AIR LINE & INSTALL NEW TEE

~~INSTALL (2) 1" 90° BENDS~~

REPLACE EXISTING HYPOCHLORITE DIFFUSER WITH NEW DIFFUSERS

3 / M-2 5

EXISTING CHLORINE CONTACT CHAMBER & EFFLUENT PUMP STATION

PUMP REPLACMENT SEE SHEET M-3

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

NOTES:

1. CONTRACTOR TO VERIFY THAT THE NEW CHLORINE CONTACT CHAMBER IS CENTERED ON THE PROPOSED INFLUENT LINE THAT WAS OR WILL BE INSTALL BY THE ABW FILTER CONTRACTOR.
2. CONTRACTOR TO FIELD LOCATE EXISTING UTILITIES PRIOR TO INSTALLING PVC PIPING.
3. CONTRACTOR CANT DISCONNECT EXISTING HYPOCHLORITE FEED SYSTEM AND SAMPLING LINE UNTIL NEW HYPOCHLORITE STORAGE AND FEED SYSTEM IS MADE OPERATIONAL.
4. EXISTING HYPOCHLORITE DIFFUSER SYSTEM CAN NOT BE REPLACED UNTIL PROPOSED CCC IS CONSTRUCTED AND MADE OPERATIONAL.

N

30 20 10 0 10

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/19/03
CHECKED BY:	D. WILCOX	09/19/03
DRAWN BY:	T. SONNENBERG	09/19/03
SCALE:	1" = 10'	
FILE NAME:	YARD PIPING.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT CHLORINE CONTACT CHAMBER EXPANSION

FOR

MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

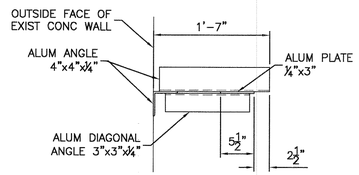
YARD PIPING PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

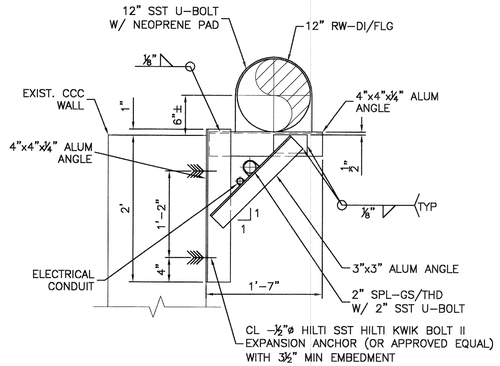
PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: C-1

4592.003

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\YARD PIPING-20.dwg
Last Modified: Jul 19, 2006 - 11:57am by tpats



PLAN



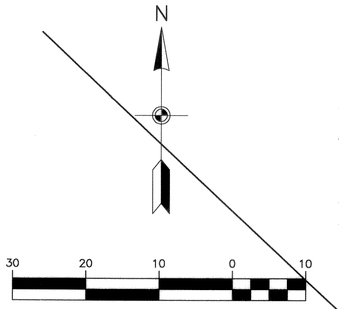
NOTE:
PROVIDE PIPE SUPPORT BRACKET AT 6'-0" ON CENTER (MAX)

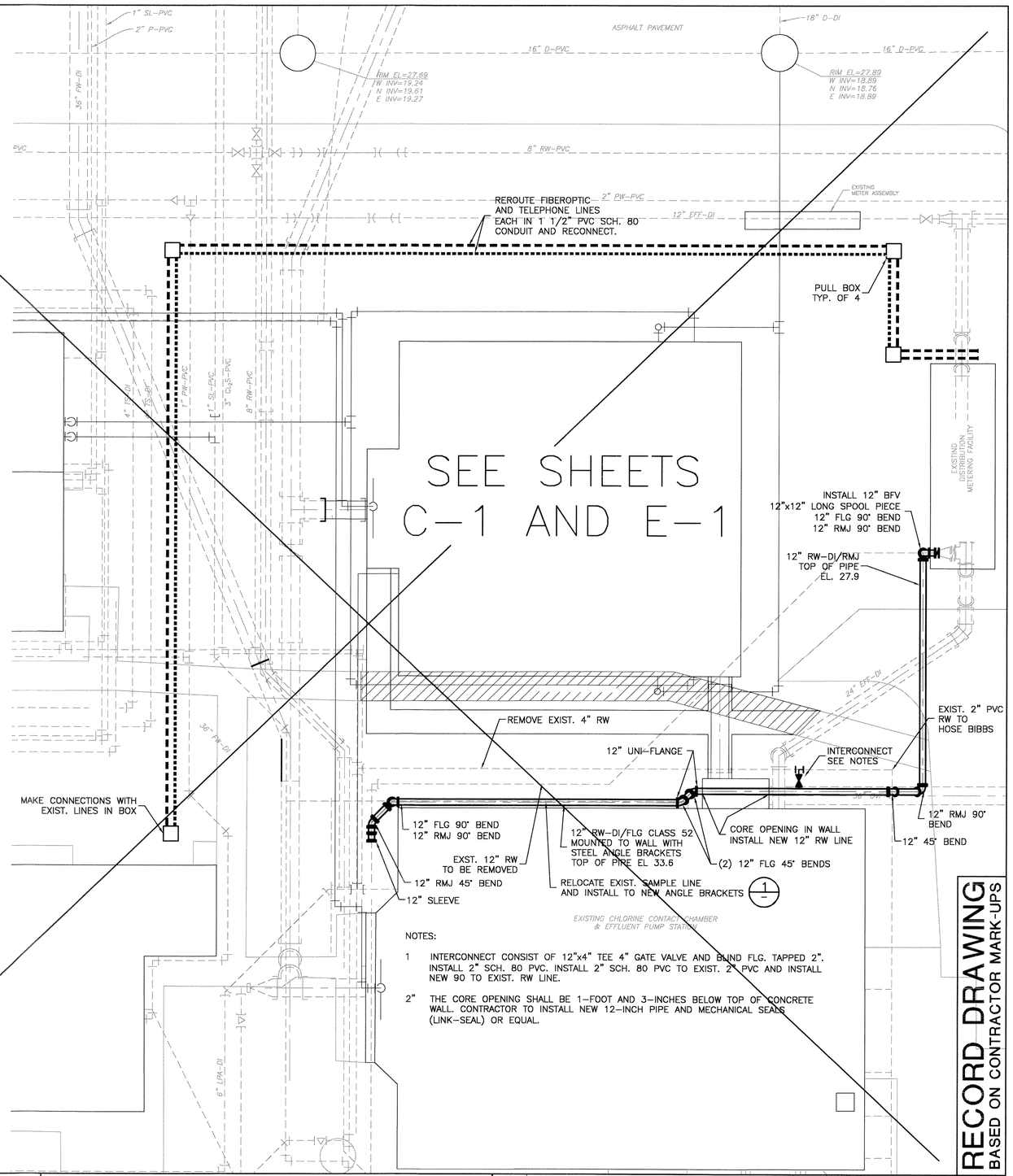
SECTION

SUPPORT BRACKET

DETAIL 1/–

SCALE: 1"=1'





NOTES:

1 INTERCONNECT CONSIST OF 12"x4" TEE 4" GATE VALVE AND BLIND FLG. TAPPED 2". INSTALL 2" SCH. 80 PVC. INSTALL 2" SCH. 80 PVC TO EXIST. 2" PVC AND INSTALL NEW 90 TO EXIST. RW LINE.

2" THE CORE OPENING SHALL BE 1-FOOT AND 3-INCHES BELOW TOP OF CONCRETE WALL. CONTRACTOR TO INSTALL NEW 12-INCH PIPE AND MECHANICAL SEALS (LINK-SEAL) OR EQUAL.

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/19/03
CHECKED BY:	D. WILCOX	09/19/03
DRAWN BY:	T. SONNENBERG	09/19/03
SCALE:	1" = 10'	
FILE NAME:	YARD PIPING.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

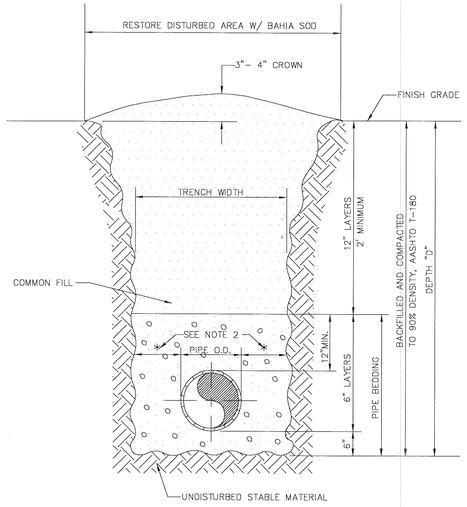
12" PLANT WATER RELOCATION

NO.	REVISION DESCRIPTION	BY	DATE
1	CHANGERS PER BUILDING DEPT. COMMENTS	DME	2/11/05
2	RFI NO.7	DME	4/25/05
	RECORD DRAWING	JRS	6/06

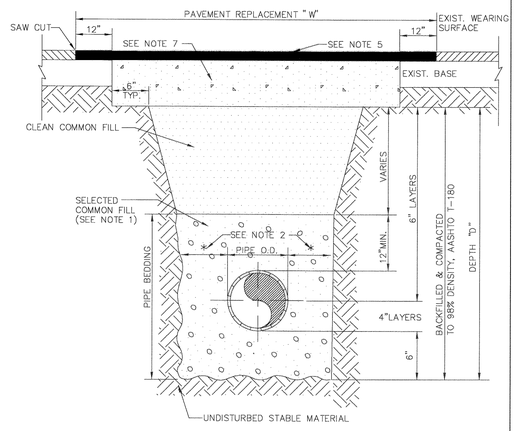
PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: C-1A

4592.004

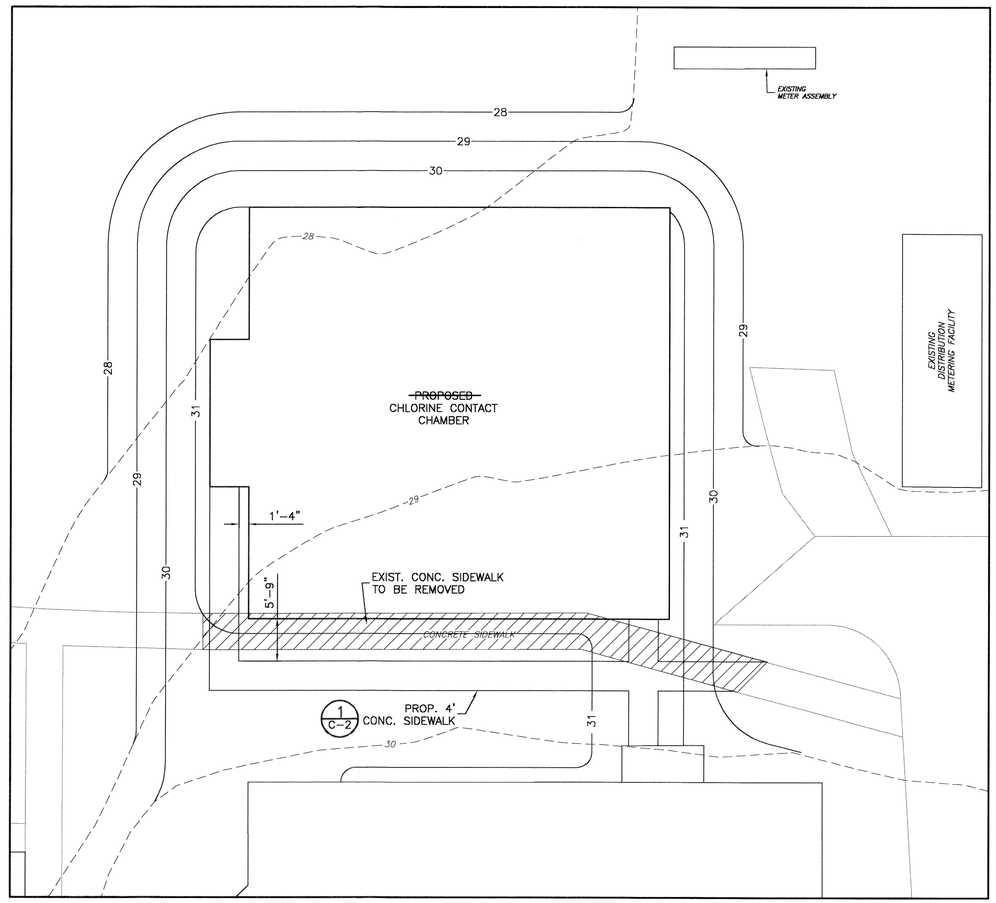
Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\YARD PIPING-20 RFI.dwg
Last Modified: Jul 10, 2006 - 2:17pm by tpats
Xrefs:



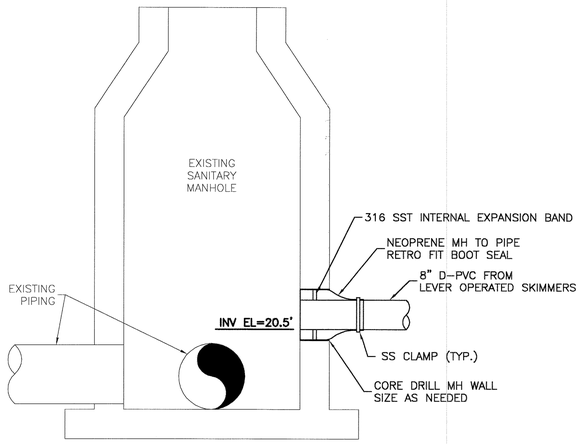
MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE	MARCH 18, 1997	TRENCH DETAIL UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	US–11
RTH	11/99	DATE OF APPROVAL		



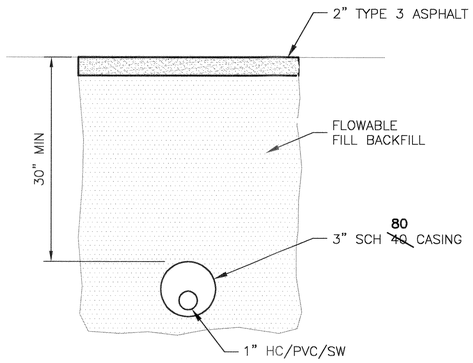
MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE	MARCH 18, 1997	TRENCH DETAIL ASPH. PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	US–12
RTH	11/99	DATE OF APPROVAL		



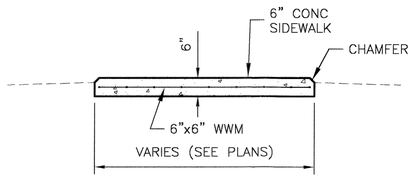
SITE GRADING DETAIL
SCALE: 1"=10'



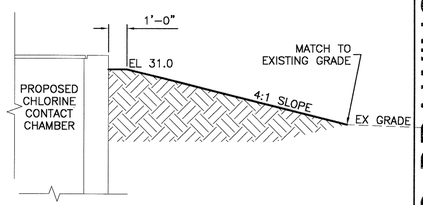
MANHOLE CONNECTION
DETAIL 3 / C–1
SCALE: NTS



ROAD CROSSING DETAIL
DETAIL 2 / –
SCALE: NTS



TYPICAL CONCRETE SIDEWALK
DETAIL 1 / –
SCALE: NTS



TYPICAL CROSS SECTION
SCALE: N.T.S.

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/19/03
CHECKED BY:	D. WILCOX	09/19/03
DRAWN BY:	T. SONNENBERG	09/19/03
SCALE:	1" = 10'	
FILE NAME:	YARD PIPING.DWG	

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

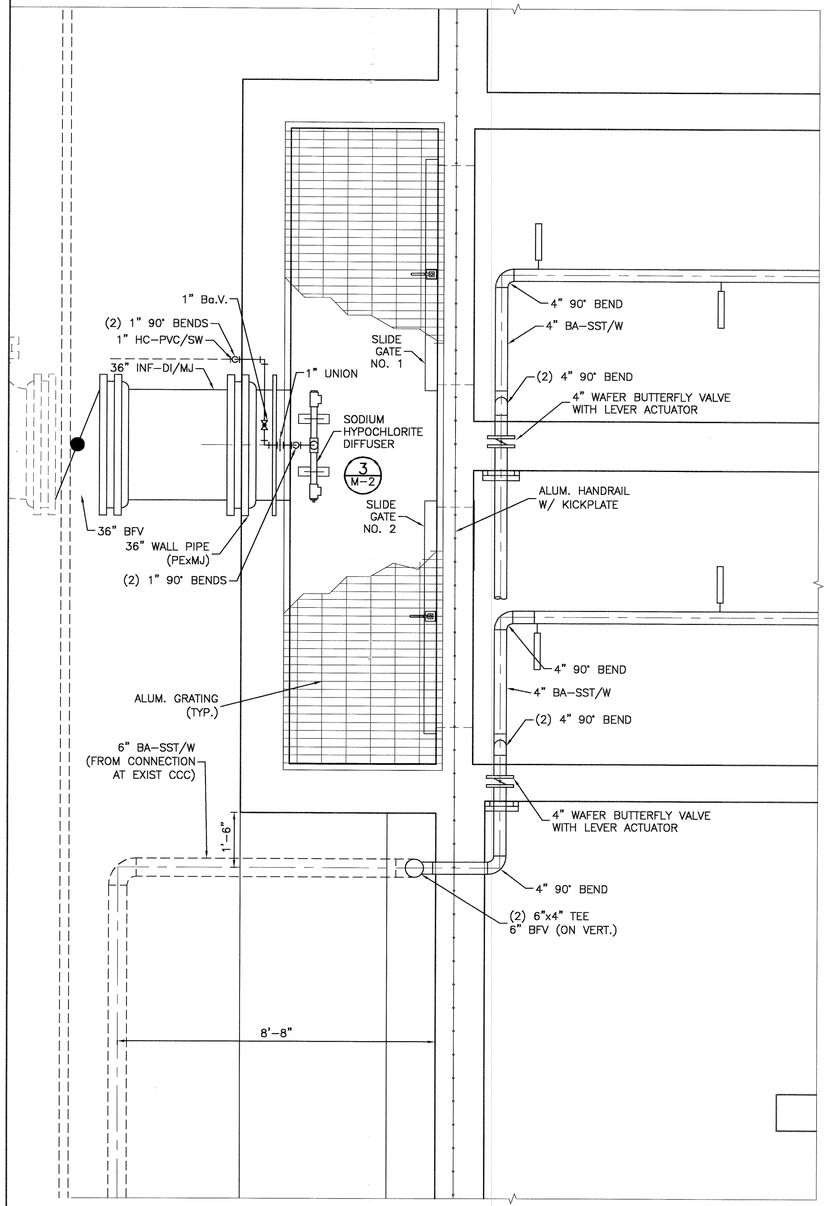
YARD PIPING DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
1	CHANGES PER BUILDING DEPT. COMMENTS	DME	2/11/05
	RECORD DRAWINGS	JRS	6/06

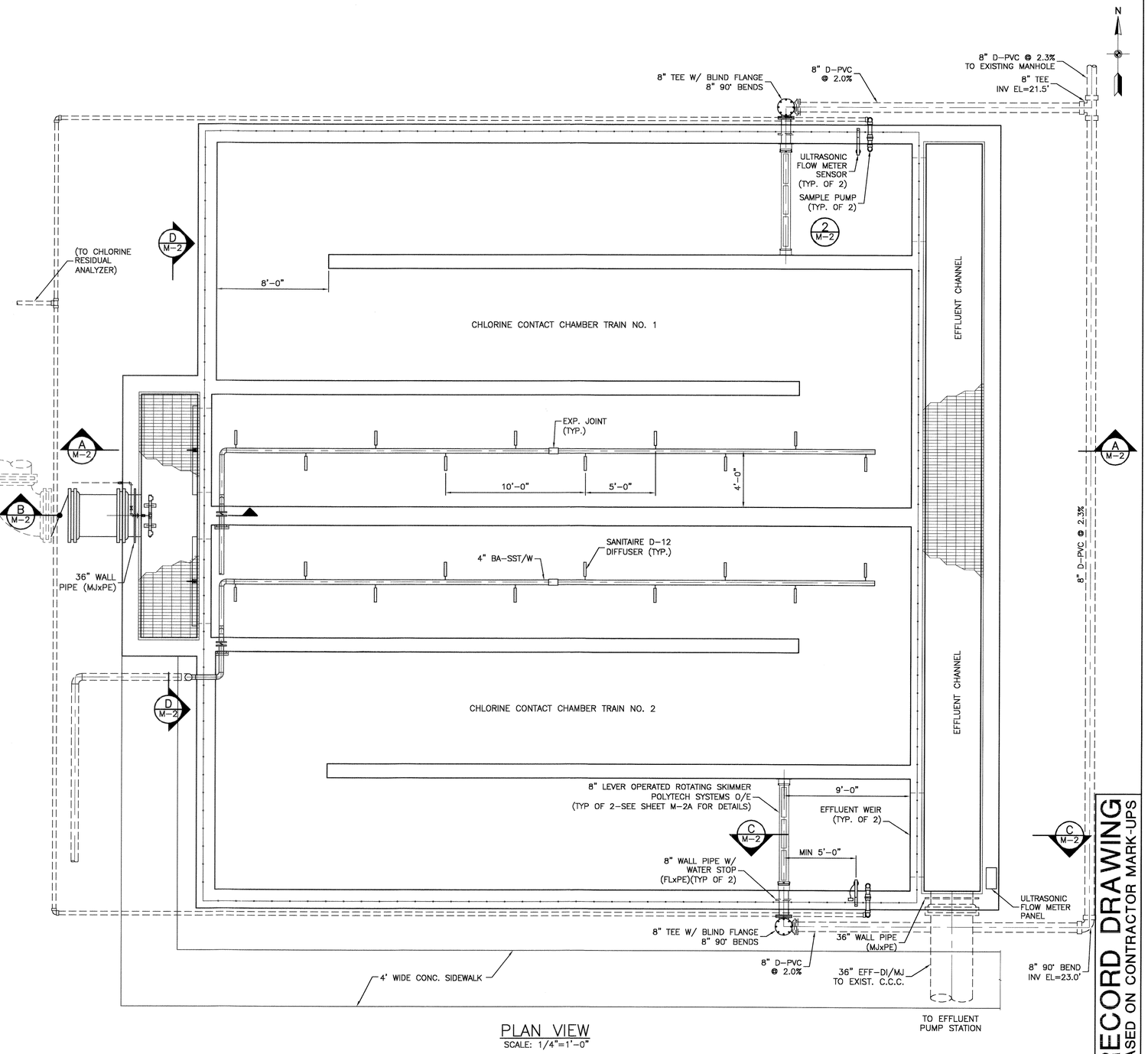
PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: C–2

4592.005

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\YARD PIPING-20.dwg
Last Modified: Jul 19, 2006 – 11:57am by bats
Xrefs: YARD PIPING (X:\MANATEE PROJECTS\12003628 NRWWTP ABW FILTER EXPANSION\CADD\YARD PIPING.dwg)



PARTIAL PLAN VIEW
SCALE: 1/2"=1'-0"



PLAN VIEW
SCALE: 1/4"=1'-0"

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	AS SHOWN	
FILE NAME:	CCC.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

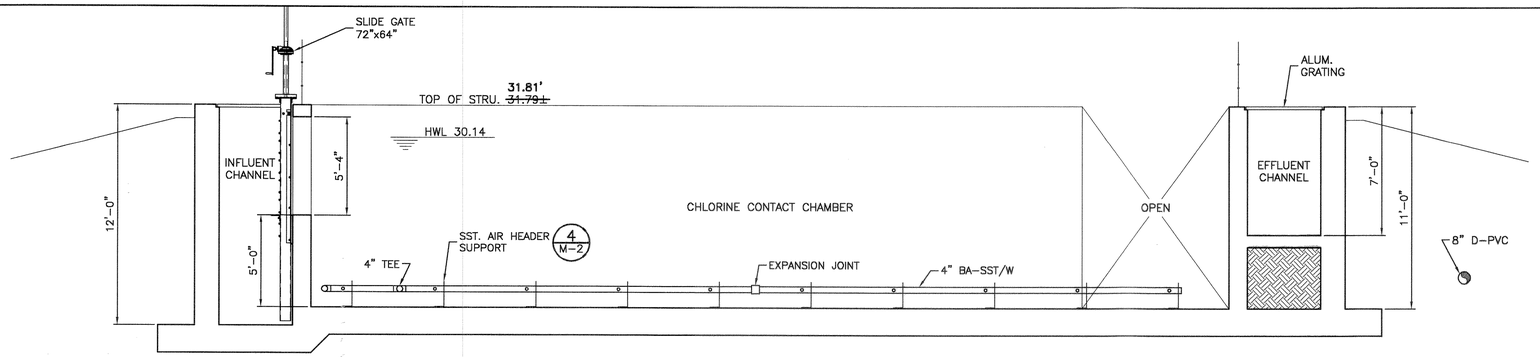
CHLORINE CONTACT CHAMBER PLAN VIEW

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

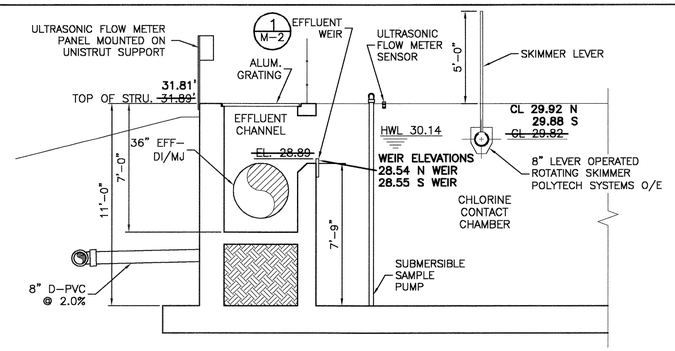
PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: M-1

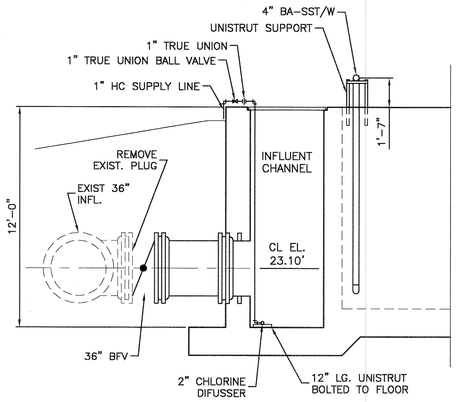
4592.006

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CCC.dwg
Last Modified: Jul 19, 2006 - 11:52am by tpots
Xrefs:

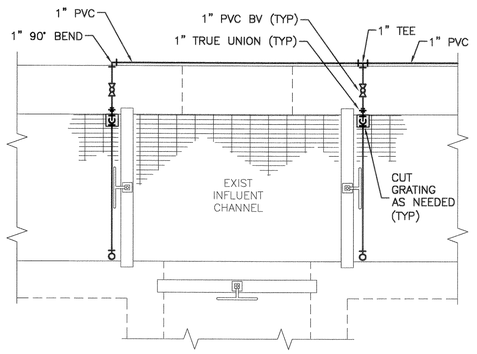


SECTION A
SCALE: 1/4"=1'-0"

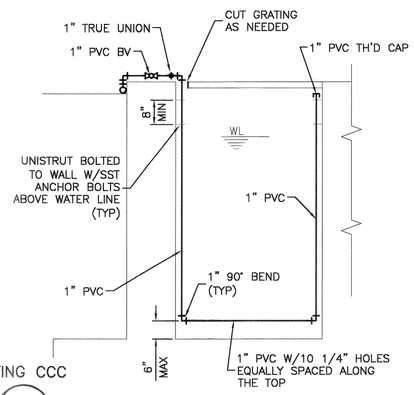




SECTION B
SCALE: 1/4"=1'-0"

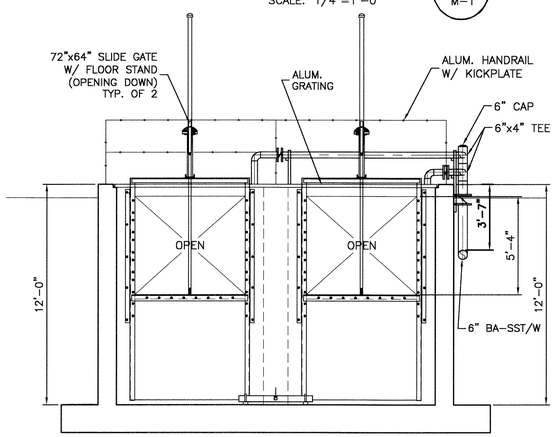


PLAN



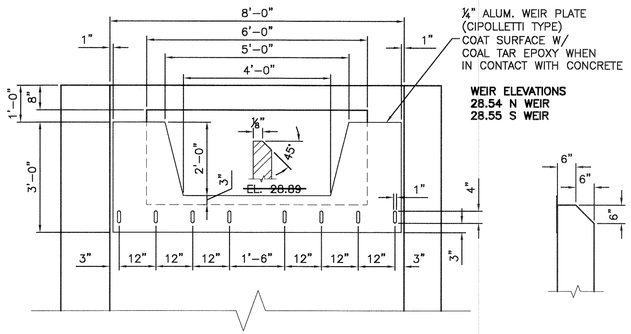
DIFFUSER IN EXISTING CCC
DETAIL 5
SCALE: 1/2"=1'-0"

SECTION
SECTION HAS BEEN SIMPLIFIED FOR CLARITY.

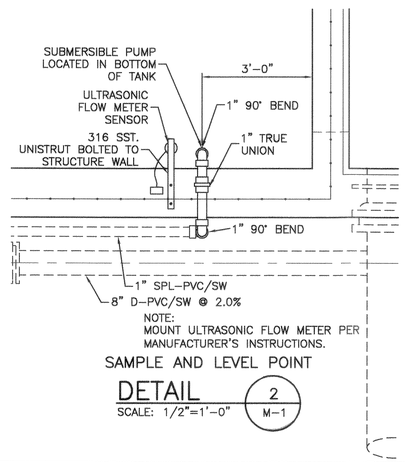


SECTION C
SCALE: 1/4"=1'-0"

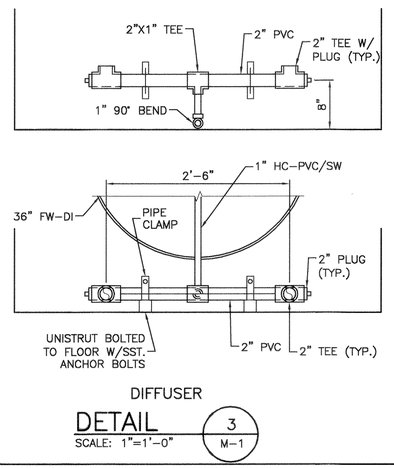
SECTION D
SCALE: 1/4"=1'-0"



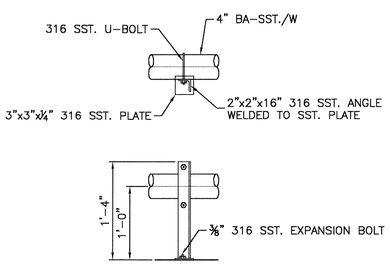
EFFLUENT WEIR
DETAIL 1
SCALE: 1/2"=1'-0"



SAMPLE AND LEVEL POINT
DETAIL 2
SCALE: 1/2"=1'-0"



DIFFUSER
DETAIL 3
SCALE: 1"=1'-0"



AIR HEADER SUPPORT BRACKET
DETAIL 4
SCALE: 1"=1'-0"

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	AS SHOWN	
FILE NAME:	CCC.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

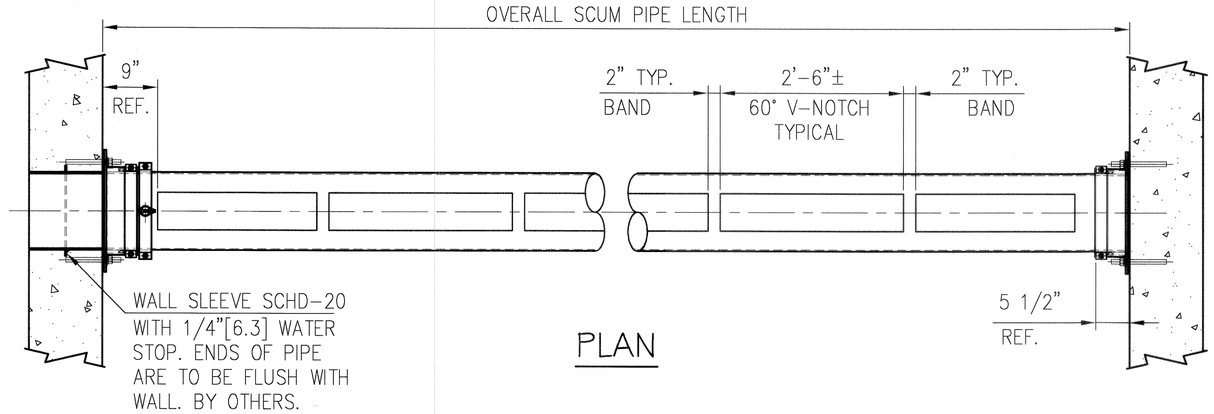
CHLORINE CONTACT CHAMBER
SECTIONS & DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
1	ADDED CL ELEV. OF INFLUENT PIPE	DME	12/23/04
2	CHANGERS PER BUILDING DEPT. COMMENTS	DME	2/11/05
3	REVISED ELEVATIONS	DME	7/21/05
	RECORD DRAWINGS	JRS	6/06

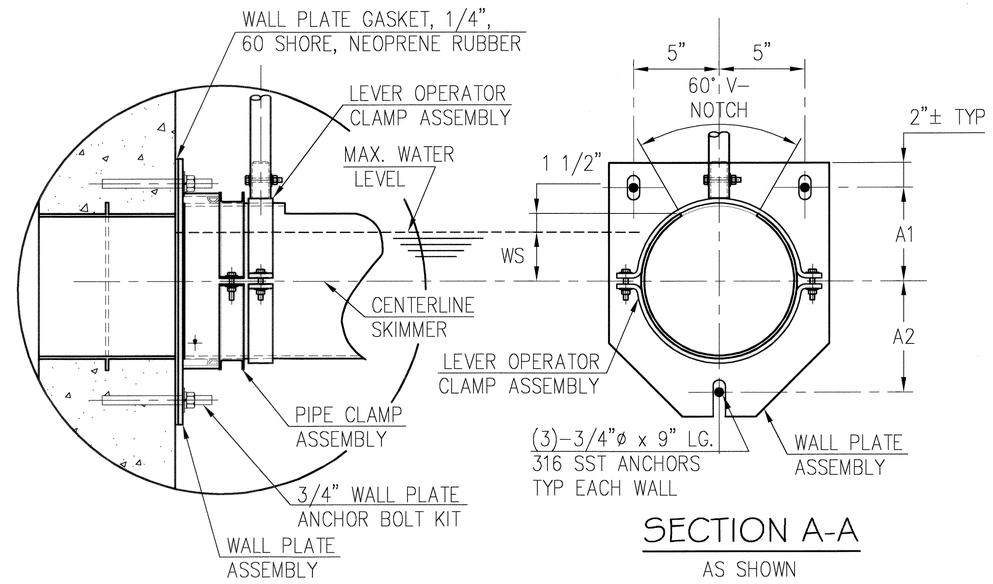
PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: M-2

4592.007

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CCC.dwg
Last Modified: Jul 19, 2006 - 11:52am by tpats
Xrefs:



PLAN



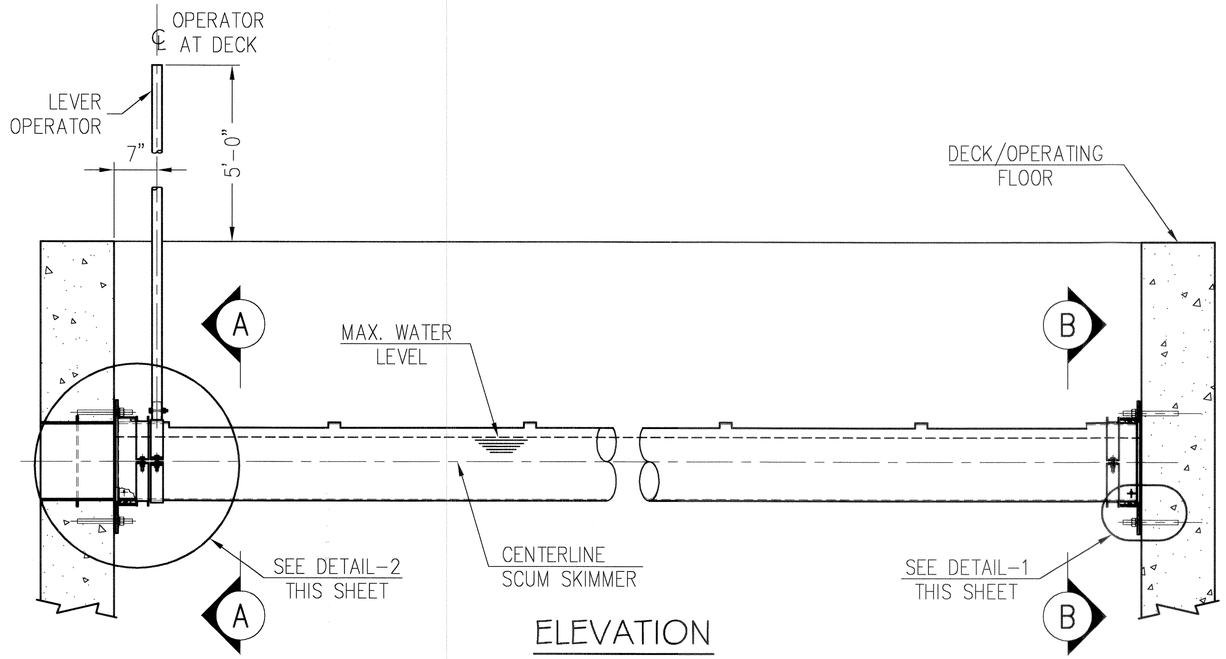
DETAIL-2

SECTION A-A

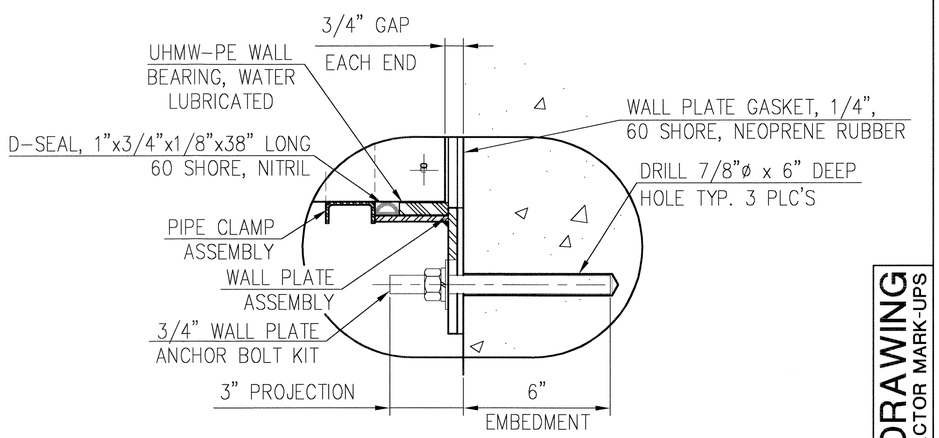
AS SHOWN

SECTION B-B

SAME AS A-A W/O
LEVER OPERATOR CLAMP ASSEMBLY



ELEVATION



DETAIL-1

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	AS SHOWN	
FILE NAME:	CCC.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

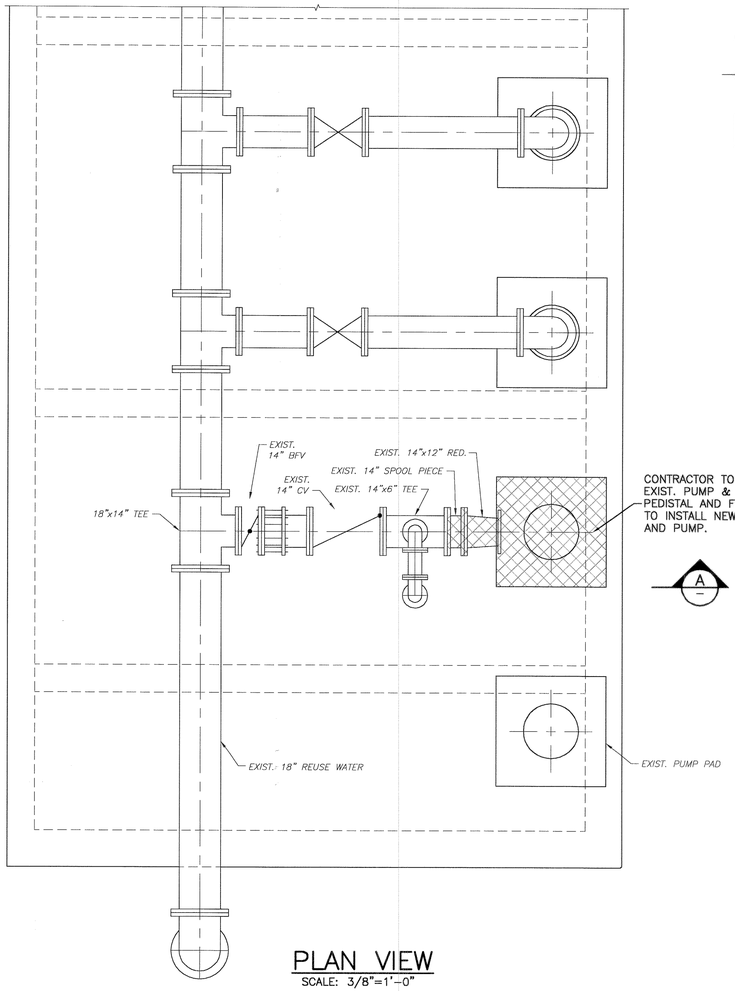
CHLORINE CONTACT CHAMBER
ROTARY SKIMMER DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: M-2A

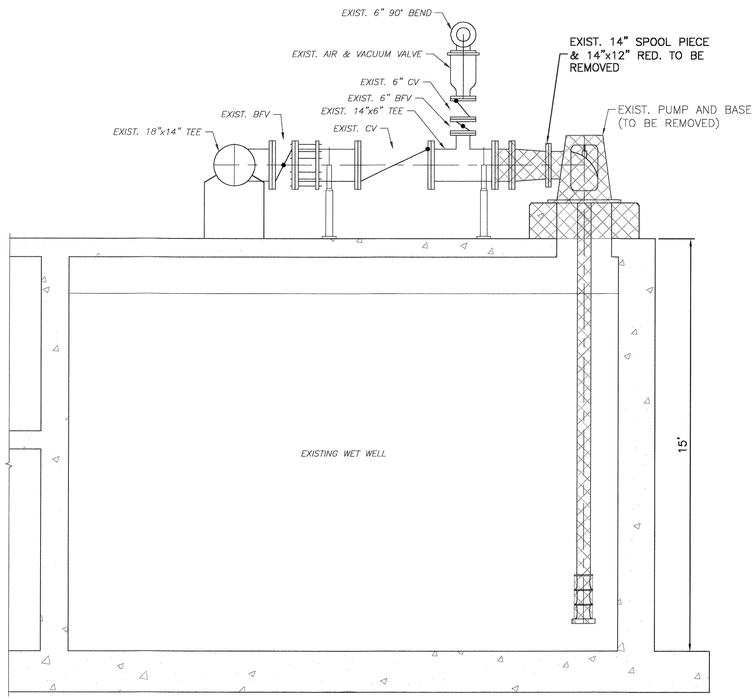
4592.008

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CCC.dwg
Last Modified: Jul 19, 2006 - 11:52am by tpats
Xrefs:

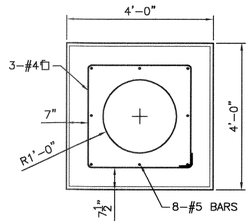


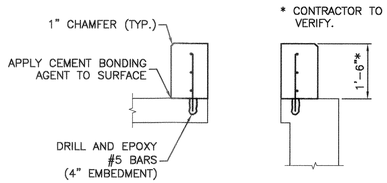
CONTRACTOR TO REMOVE EXIST. PUMP & CONC. PUMP PEDISTAL AND FITTINGS REQUIRED TO INSTALL NEW PUMP BASE AND PUMP.

PLAN VIEW
SCALE: 3/8"=1'-0"



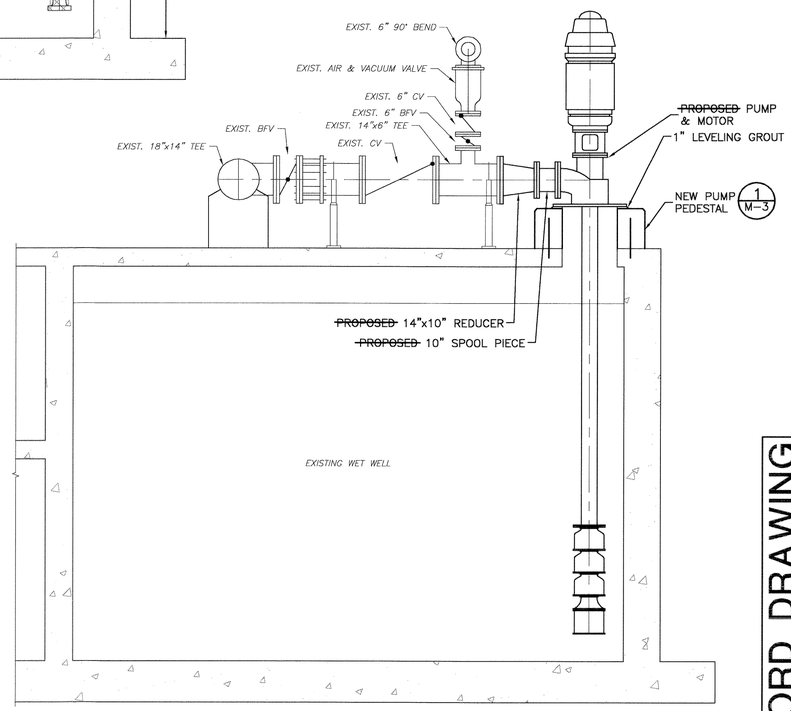
SECTION
SCALE: 3/8"=1'-0"





PUMP PEDISTAL

DETAIL
SCALE: 1/2"=1'-0"



SECTION
SCALE: 3/8"=1'-0"

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	AS SHOWN	
FILE NAME:	PUMP STATION.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

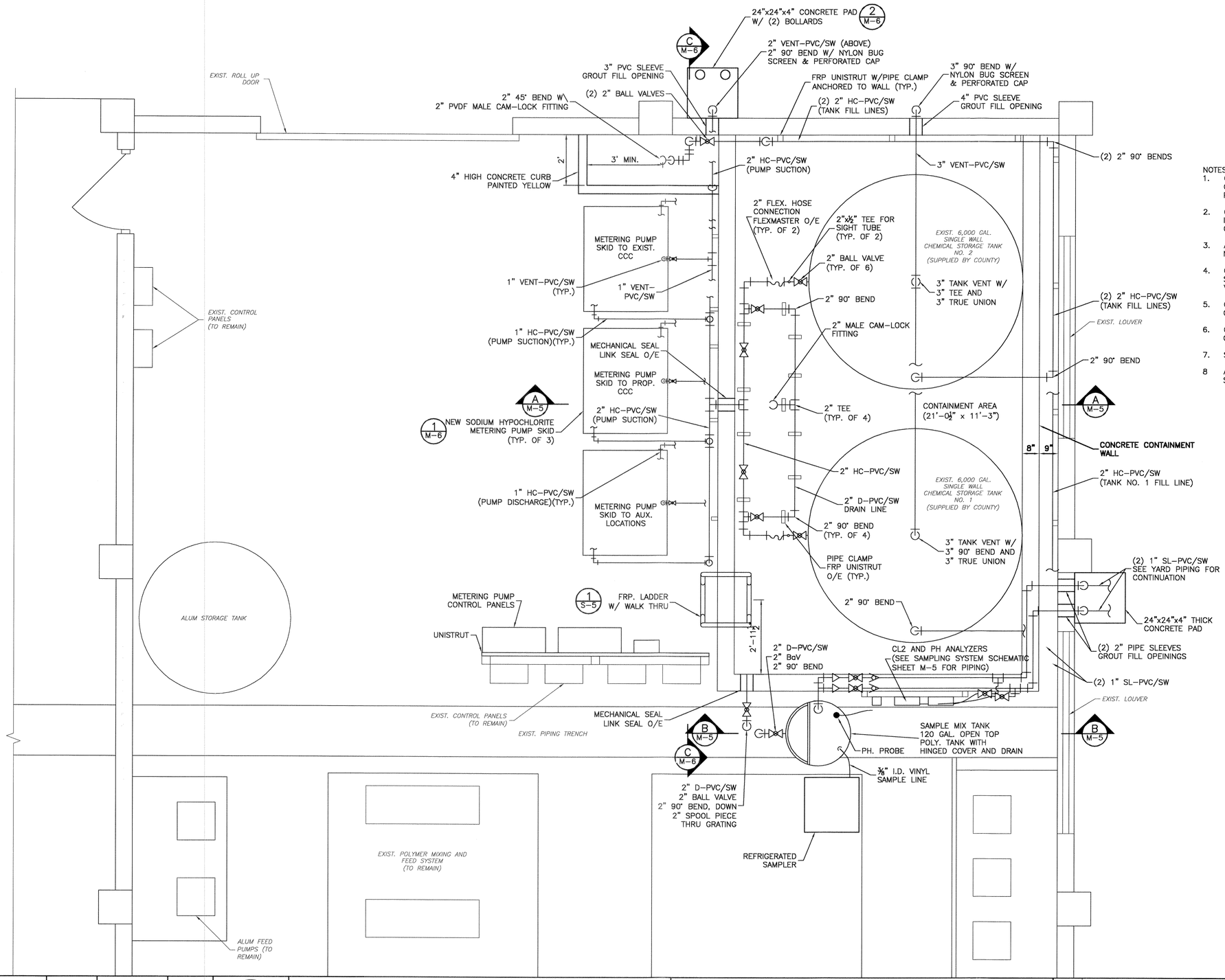
EFFLUENT PUMP STATION

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: M-3

4592.009

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\PUMP STATION.dwg
Last Modified: Jul 19, 2006 - 12:00pm by tpats
Xrefs:



NOTES:

1. CONTAINMENT WALL AND ALL CONCRETE WITHIN THE CONTAINMENT AREA WILL BE INSTALLED BY COUNTY PRIOR TO CONSTRUCTION.
2. CHEMICAL STORAGE TANKS TO BE SUPPLIED AND INSTALLED BY THE COUNTY PRIOR TO START OF CONSTRUCTION.
3. ALL VALVES SHALL BE TRUE UNION UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL MODIFY EXISTING CHEMICAL STORAGE TANK U-VENTS TO CONNECT TO OUTSIDE VENT LINE.
5. CONTRACTOR SHALL CONNECT FILL LINE TO EXISTING CHEMICAL STORAGE TANKS.
6. CONTRACTOR SHALL USE 45° BENDS TO AVOID PIPING CONFLICTS.
7. SHADED AREAS TO BE INSTALLED BY THE COUNTY.
8 ANCHORS, BOLTS AND FASTENERS SHALL BE 316 STAINLESS STEEL.

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/19/03
CHECKED BY:	D. WILCOX	09/19/03
DRAWN BY:	D. ELLIS	09/19/03
SCALE:	1/2" = 1'-0"	
FILE NAME:	CHEMICAL BLDG.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT CHLORINE CONTACT CHAMBER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

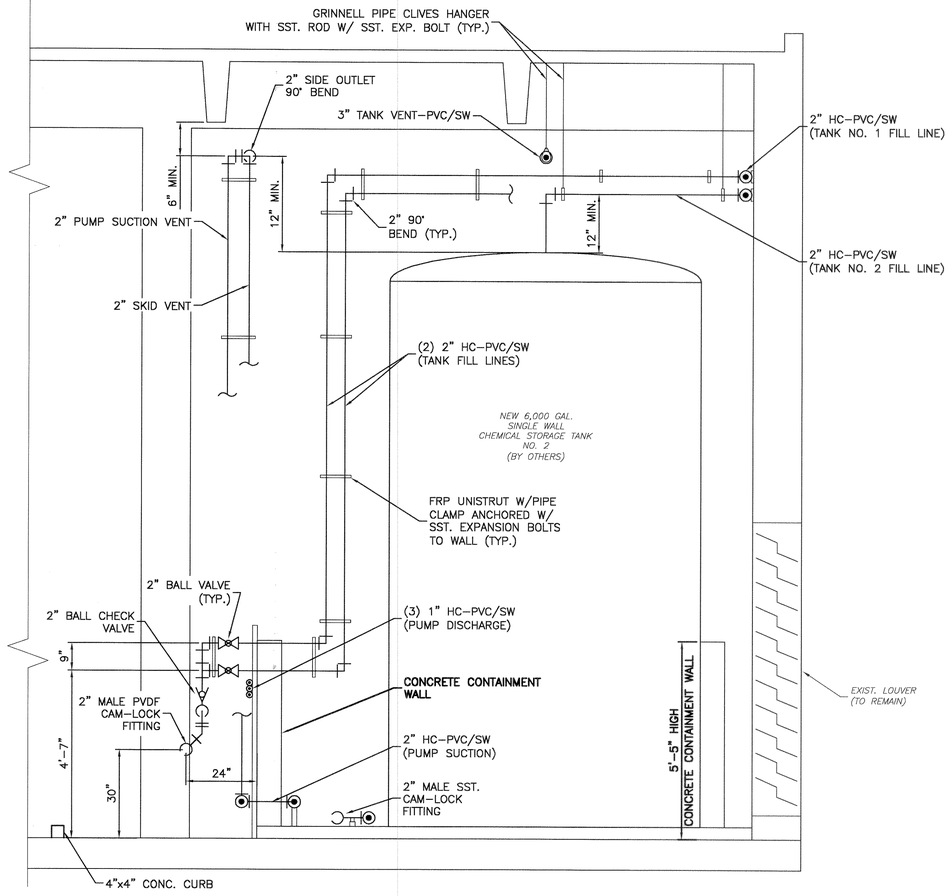
EXISTING CHEMICAL ROOM MODIFICATIONS PLAN VIEW

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: M-4

4592.010

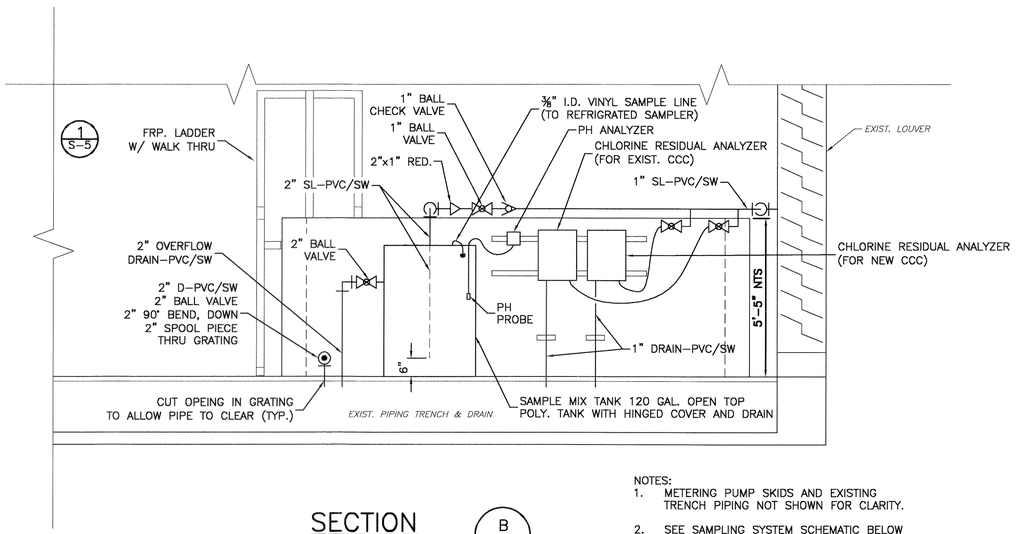
Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CHEMICAL BLDG.dwg
Last Modified: Jul 10, 2006 - 1:28pm by tpats
Xrefs:



SECTION
SCALE: 1/2"=1'-0"

A
M–4

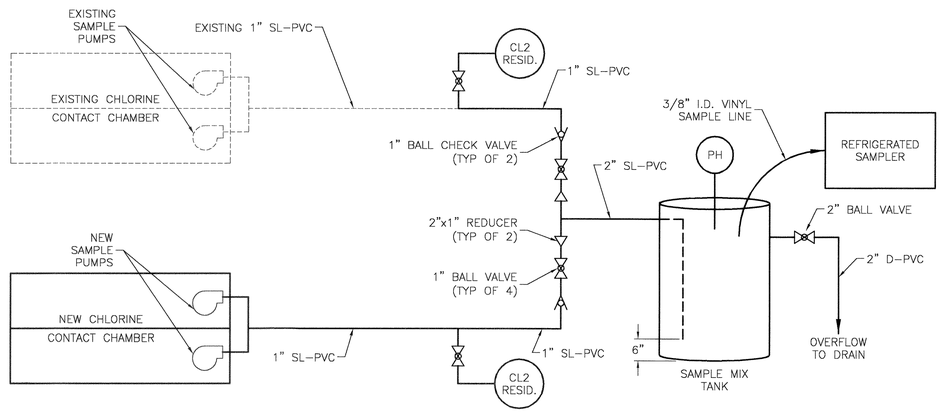
NOTES:
1. METERING PUMP SKIDS NOT SHOWN FOR CLARITY.
2. HATCHED AREA IS TO BE INSTALLED BY THE COUNTY.



SECTION
SCALE: 1/2"=1'-0"

B
M–4

NOTES:
1. METERING PUMP SKIDS AND EXISTING TRENCH PIPING NOT SHOWN FOR CLARITY.
2. SEE SAMPLING SYSTEM SCHEMATIC BELOW FOR PIPING.



SAMPLING SYSTEM SCHEMATIC
N.T.S.

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/19/03
CHECKED BY:	D. WILCOX	09/19/03
DRAWN BY:	D. ELLIS	09/19/03
SCALE:	AS SHOWN	
FILE NAME:	CHEMICAL BLDG.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

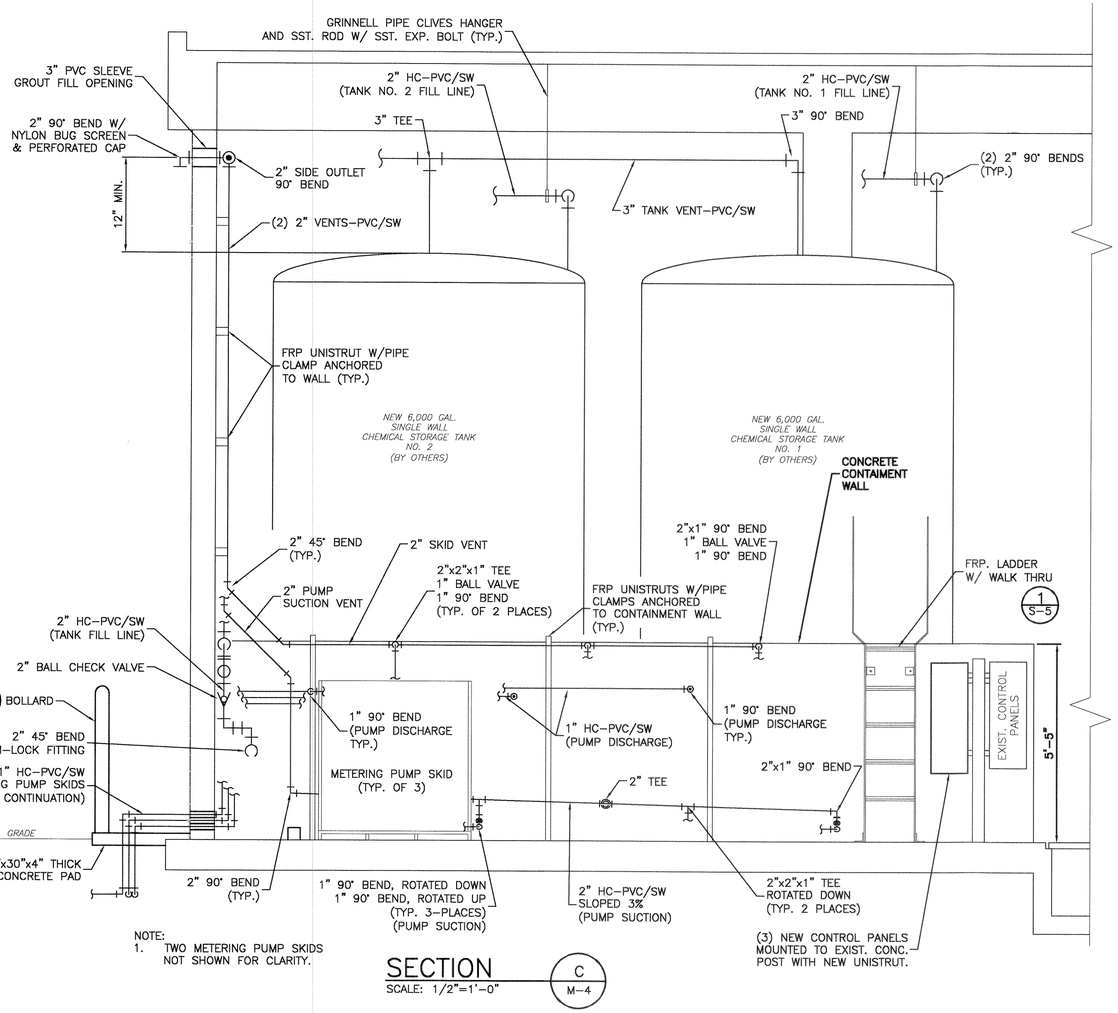
EXISTING CHEMICAL ROOM MODIFICATIONS SECTION AND DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: M–5

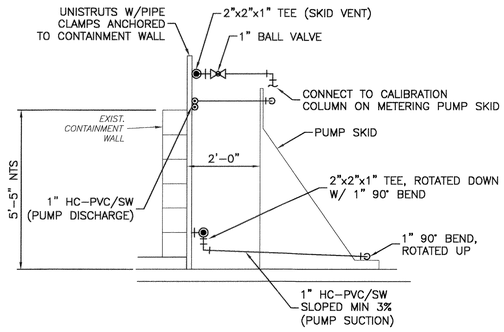
4592.011

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CHEMICAL BLDG.dwg
Last Modified: Jul 19, 2006 - 12:02pm by tpots
Xrefs:



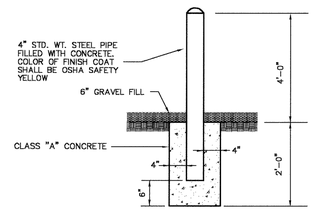
NOTE:
1. TWO METERING PUMP SKIDS NOT SHOWN FOR CLARITY.

SECTION C / M-4
SCALE: 1/2"=1'-0"

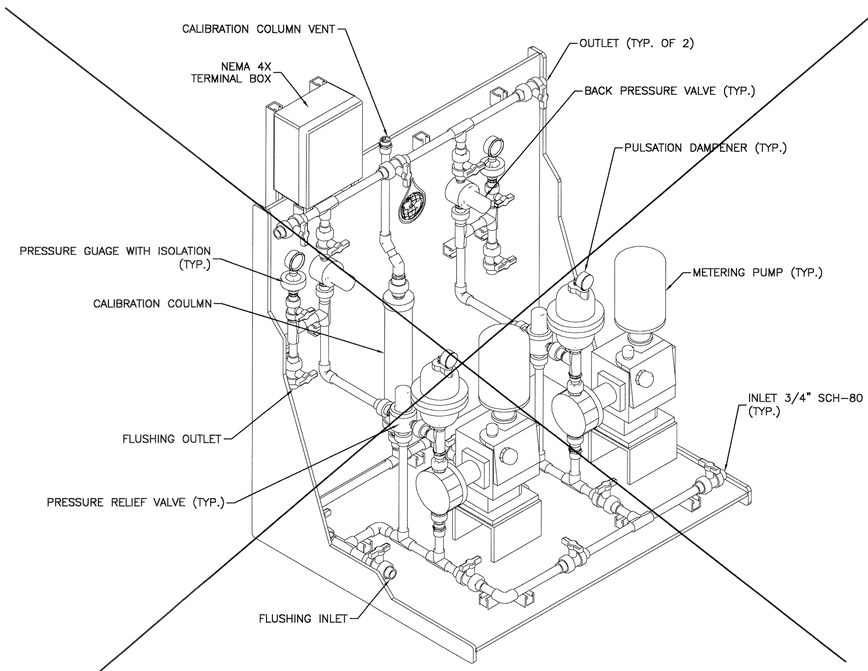


NOTE:
1. PUMP SKID PUMPS AND PIPING NOT SHOWN FOR CLARITY.

PUMP SKID CONNECTION DETAIL 1 / M-4
SCALE: 1/2"=1'-0"



BOLLARD DETAIL
DETAIL 2 / —
SCALE: N.T.S.



PROPOSED METERING PUMP SKID ISOMETRIC
SCALE: N.T.S.

RECORD DRAWING NOTE:
INSTALLED PUMP SKID DIFFERS FROM PROPOSED PUMP SKID SHOWN.
MANUFACTURER USED FOR BASIS OF DESIGN DID NOT SUPPLY PUMP SKIDS.

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/19/03
CHECKED BY:	D. WILCOX	09/19/03
DRAWN BY:	D. ELLIS	09/19/03
SCALE:	AS SHOWN	
FILE NAME:	CHEMICAL BLDG.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

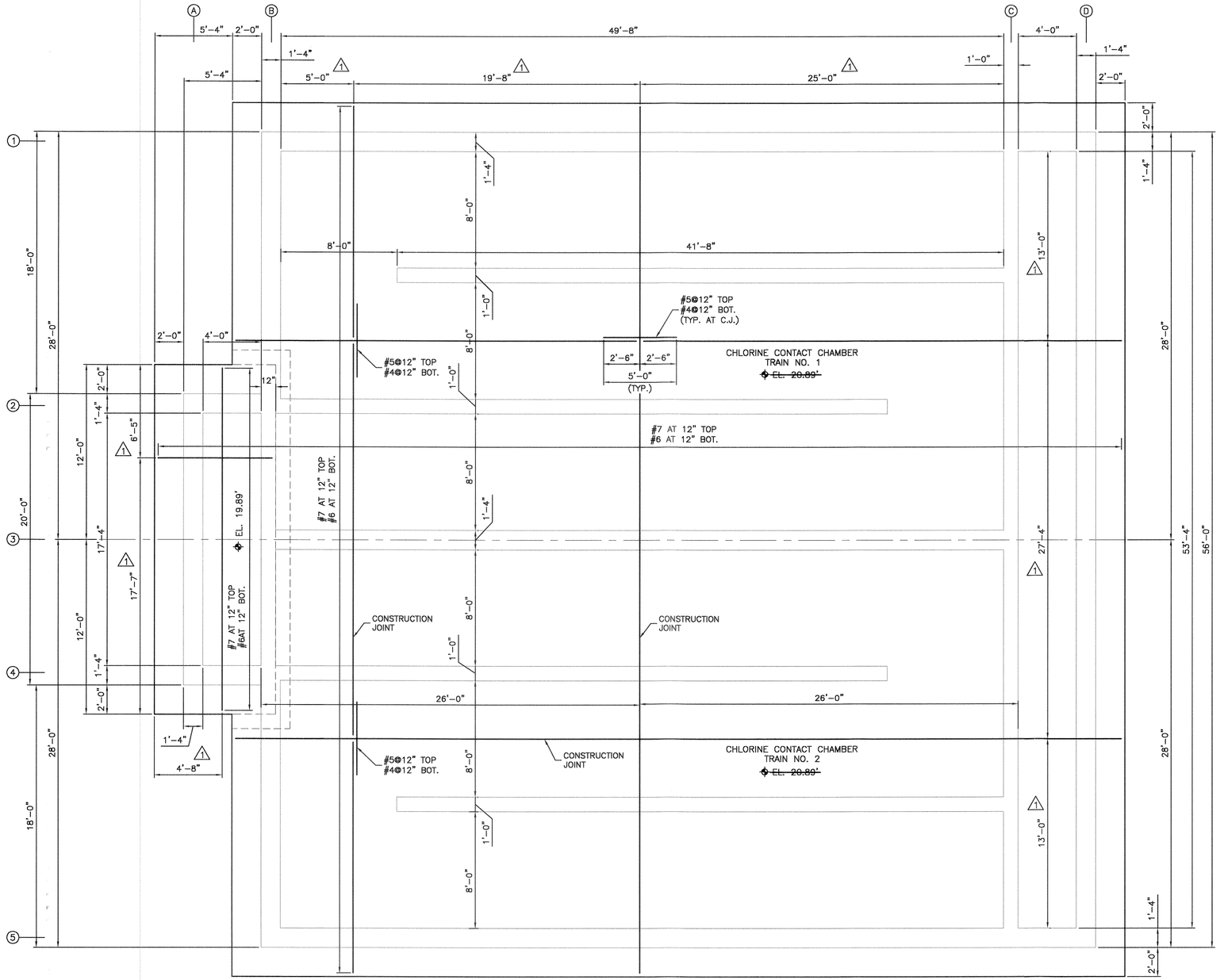
EXISTING CHEMICAL ROOM MODIFICATIONS
SECTION AND DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: M-6

4592.012

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CHEMICAL BLDG.dwg
Last Modified: Jul 19, 2006 - 12:02pm by tpats
Xrefs:



FOUNDATION PLAN

SCALE: 1/4"=1'-0"

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation 7650 West Courtney Campbell Causeway Tampa, FL 33607-1462		
	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	1/4" = 1'-0"	
FILE NAME:	CCC-STRU.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

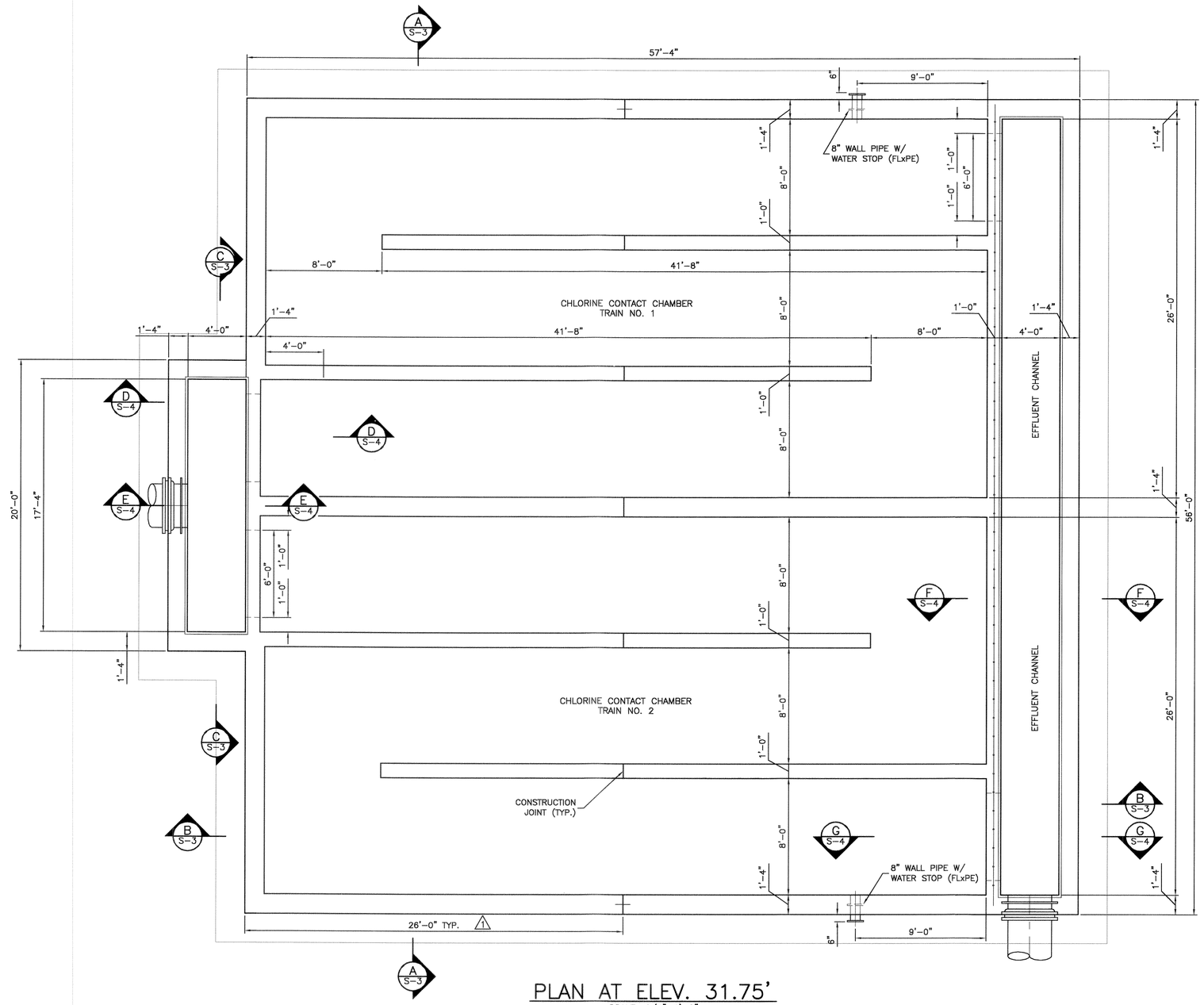
CHLORINE CONTACT CHAMBER
FOUNDATION PLAN

NO.	REVISION DESCRIPTION	BY	DATE
1	ADDED DIMENSIONS FOR CONSTRUCTION JOINT LOCATIONS	DME	12/23/04
2	REVISED ELEVATIONS	DME	07/21/05
	RECORD DRAWINGS	JRS	8/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: S-1

4592.013

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CCC-STRU.dwg
Last Modified: Jul 10, 2006 - 1:31pm by tpats
Xrefs:



PLAN AT ELEV. 31.75'

SCALE: 1/4"=1'-0"

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	1/4" = 1'-0"	
FILE NAME:	CCC-STRU.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

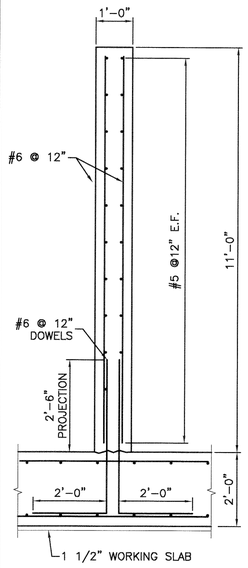
CHLORINE CONTACT CHAMBER
TOP PLAN

NO.	REVISION DESCRIPTION	BY	DATE
1	ADDED DIMENSIONS FOR CONSTRUCTION JOINT LOCATIONS	DME	12/23/04
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: S-2

4592.014

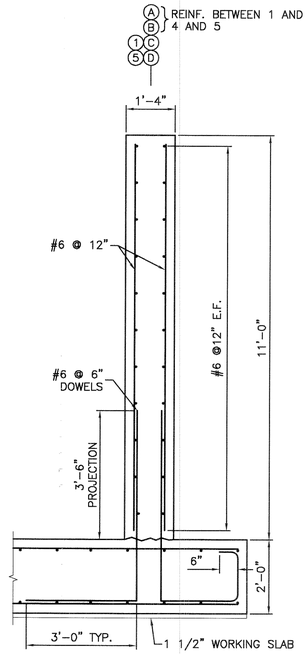
Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CCC-STRU.dwg
Last Modified: Jul 10, 2006 - 1:31pm by tpats
Xrefs:



INTERIOR WALL REBAR

DETAIL 1 / –

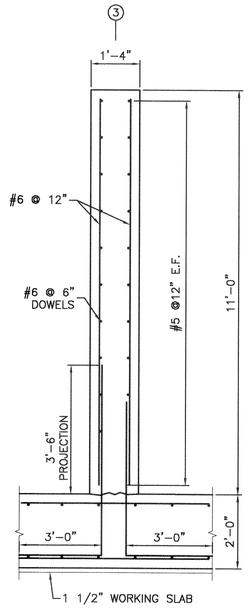
SCALE: 1/2"=1'-0"



EXTERIOR WALL REBAR

DETAIL 2 / –

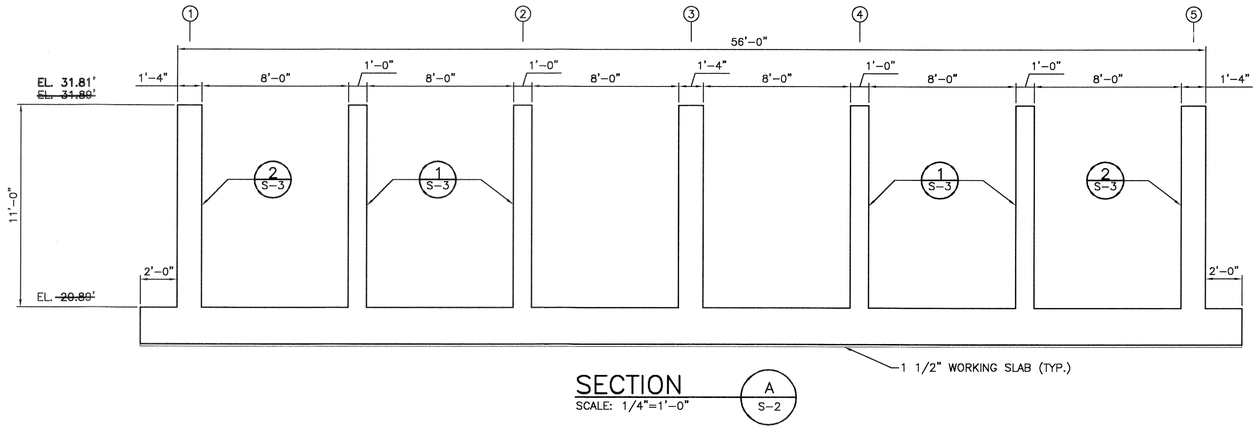
SCALE: 1/2"=1'-0"



DIVIDER WALL REBAR

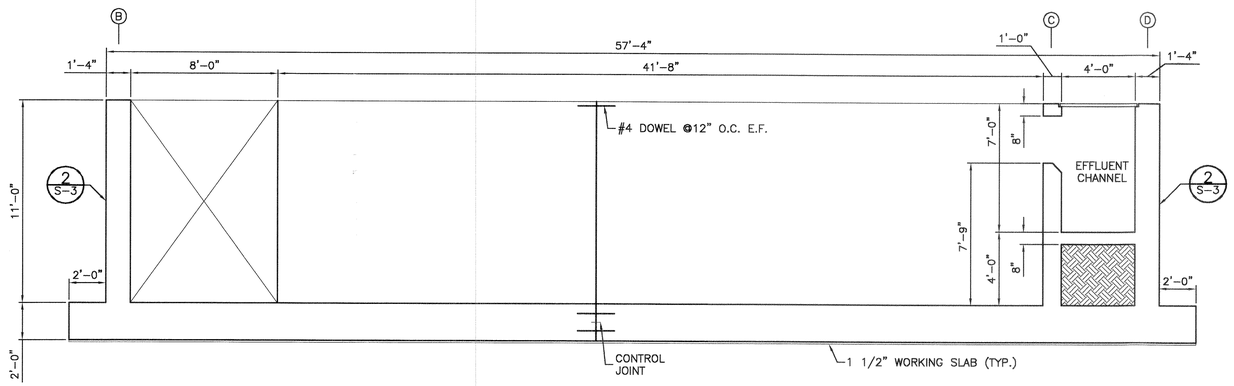
DETAIL 1 / –

SCALE: 1/2"=1'-0"



SECTION A / S-2

SCALE: 1/4"=1'-0"



SECTION B / S-2

SCALE: 1/4"=1'-0"

SECTION C / S-2

SCALE: 1/2"=1'-0"

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	AS SHOWN	
FILE NAME:	CCC-STRU.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT CHLORINE CONTACT CHAMBER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

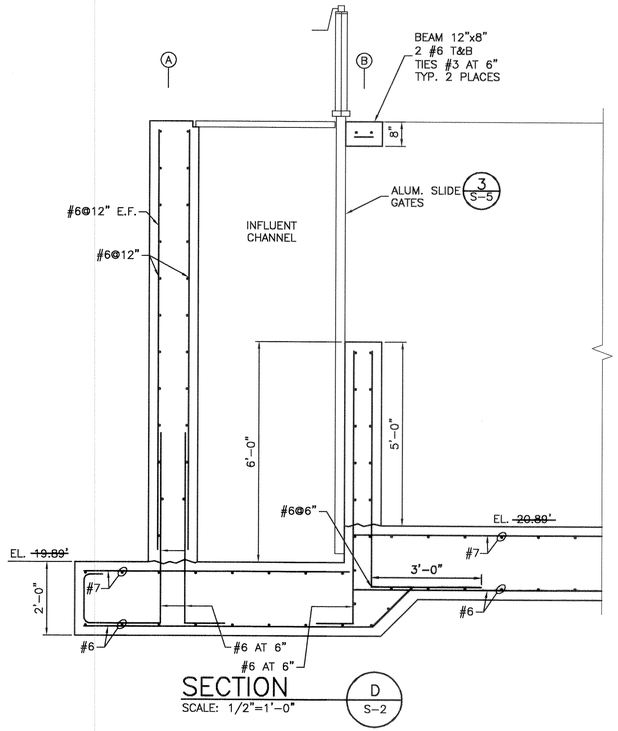
CHLORINE CONTACT CHAMBER SECTIONS & DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
1	REVISED ELEVATIONS	DME	07/21/05
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: S-3

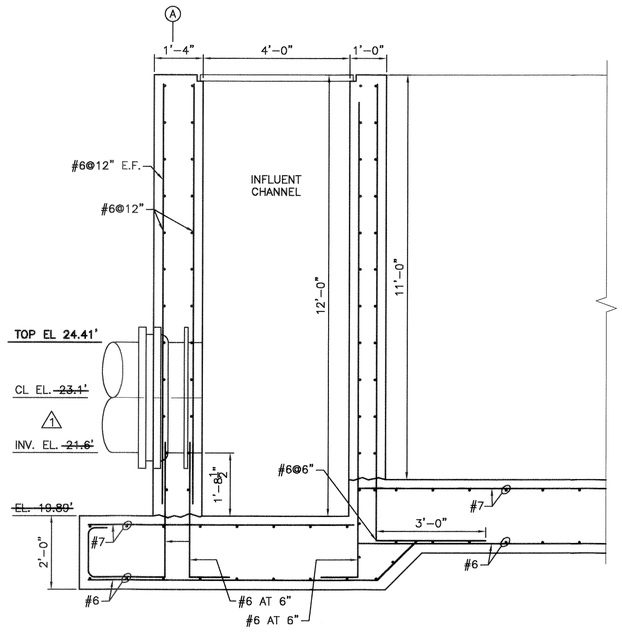
4592.015

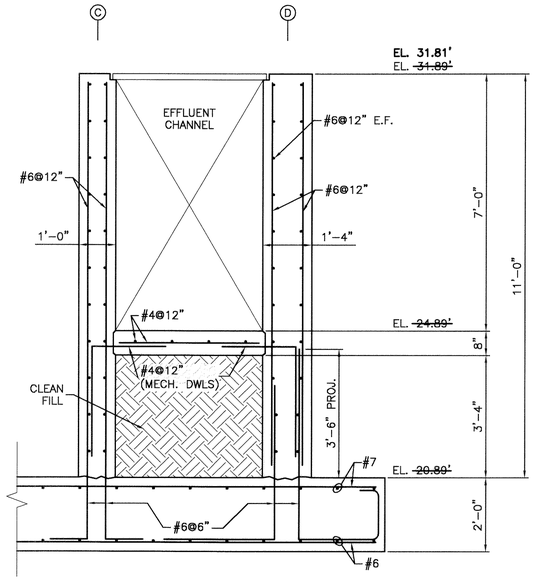
Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CCC-STRU.dwg
Last Modified: Jul 10, 2006 - 1:31pm by tpats
Xrefs:



SECTION
SCALE: 1/2"=1'-0"

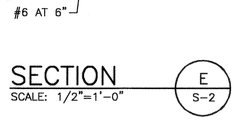
D
S-2





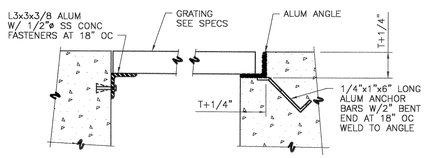
SECTION
SCALE: 1/2"=1'-0"

F
S-2



SECTION
SCALE: 1/2"=1'-0"

G
S-2



OPTIONAL

MAXIMUM SPAN	DEPTH "T"	BEARING BAR	
		THICKNESS	SPACING
3'-0"	1 1/4"	3/16"	1 3/16"
4'-0"	1 1/2"	3/16"	1 3/16"
5'-0"	2"	3/16"	1 3/16"
6'-0"	2 1/4"	3/16"	1 3/16"

DETAIL
GRATING AND GRATING SUPPORT
NTS

1
—

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	AS SHOWN	
FILE NAME:	CCC-STRU.DWG	

MANATEE COUNTY FLORIDA

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

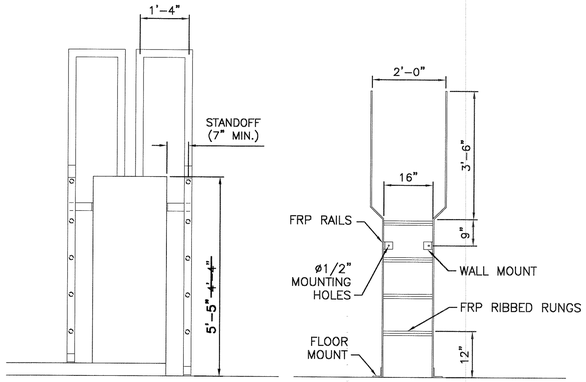
CHLORINE CONTACT CHAMBER SECTIONS & DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
1	ADDED ELEVATIONS FOR INFLUENT AND EFFLUENT PIPES	DME	12/23/04
2	REVISED ELEVATIONS	DME	07/21/05
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: S-4

4592.016

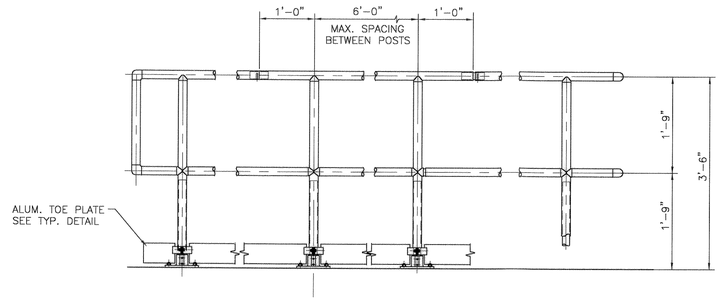
Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CCC-STRU.dwg
Last Modified: Jul 10, 2006 - 1:31pm by tpats
Xrefs:



LADDER DETAIL

DETAIL 1 / M-4

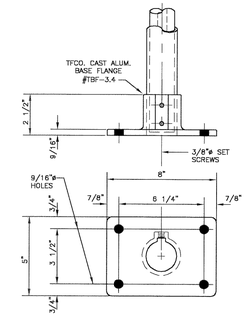
SCALE: N.T.S.



TYPICAL HANDRAIL

1

NOTE:
SEE SPECIFICATION SECTION 05500, MISCELLANEOUS METALS, FOR ADDITIONAL SPECIFICATIONS.



TYPE B (4-HOLE)

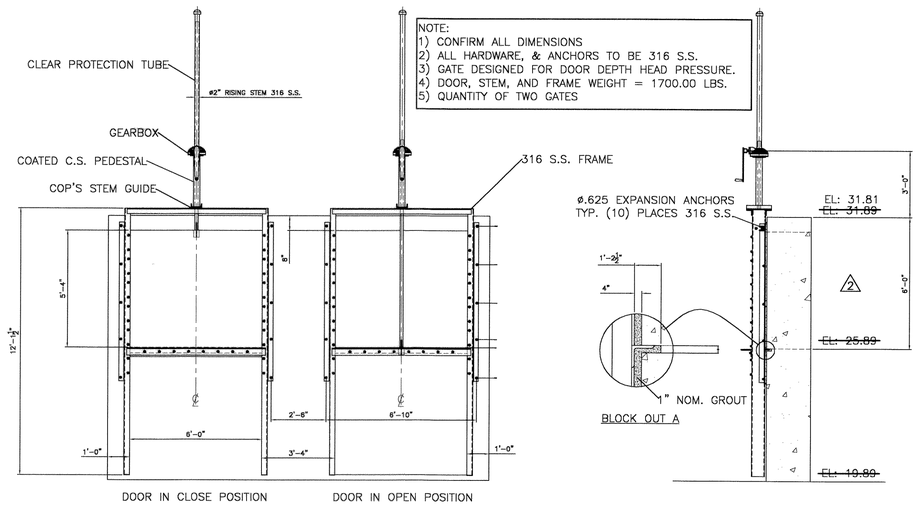
LOCATE SET SCREWS IN BASE FLANGE AT 90° FROM CENTERLINE OF H.R. RUN AND ON SIDE AWAY FROM WALKING SURFACE.

HANDRAIL DETAIL

DETAIL 2 / M-2

SCALE: N.T.S.

1



SLIDE GATE

DETAIL 3 / S-4

SCALE: N.T.S.

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	N.T.S.	
FILE NAME:	CCC-STRU.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

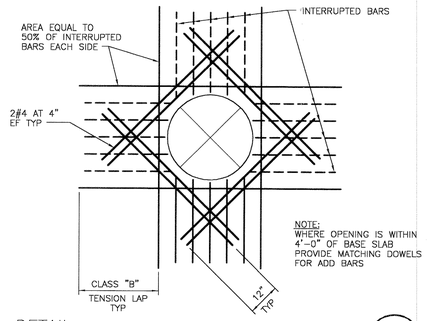
CHLORINE CONTACT CHAMBER SECTIONS AND DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
1	CHANGERS PER BUILDING DEPT. COMMENTS	DME	2/11/05
2	REVISED ELEVATIONS	DME	7/21/05
	RECORD DRAWINGS	JRS	6/06

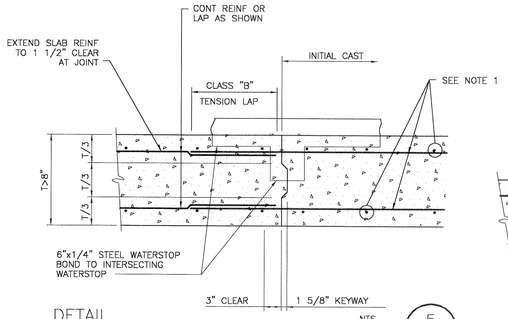
PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: S-5

4592.017

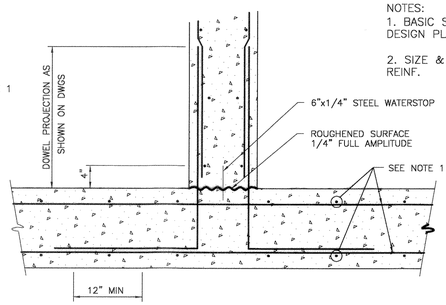
Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CCC-STRU.dwg
Last Modified: Jul 10, 2006 - 1:31pm by tpats
Xrefs:



DETAIL NTS 4
REINFORCING AT CIRCULAR OPENINGS GREATER THAN 12"



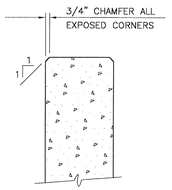
DETAIL NTS 5
BASE/ELEVATED SLAB CONSTRUCTION JOINT



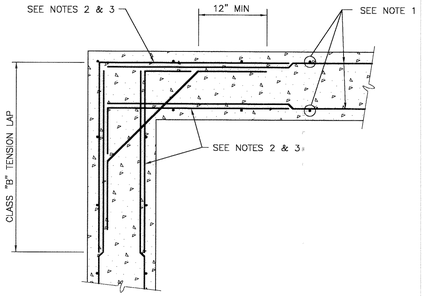
DETAIL NTS 6
WALL BASE CONSTRUCTION JOINT

NOTES:
1. BASIC SLAB/WALL/BEAM REINF. AS SHOWN ON DESIGN PLANS.

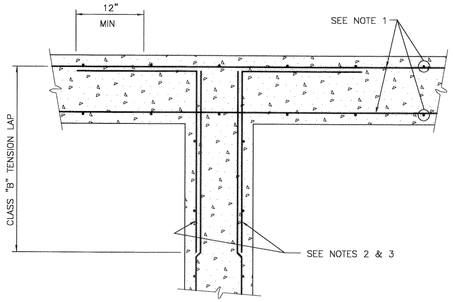
2. SIZE & SPACING OF BAR TO MATCH WALL/BEAM REINF.



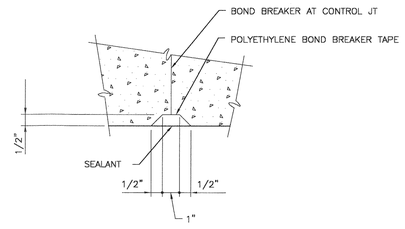
DETAIL NTS 7
CHAMFER



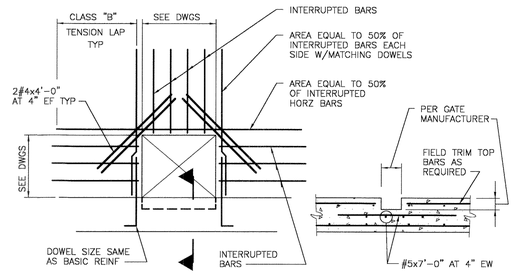
DETAIL NTS 8
WALL CORNER REINFORCING



DETAIL NTS 9
WALL INTERSECTION REINFORCING



DETAIL NTS 10
JOINT SEALANT



DETAIL NTS 11
SLIDE GATE FLUSH BOTTOM

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\CCC-STRU.dwg
Last Modified: Jul 10, 2006 - 1:31pm by tpats
Xrefs:

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	N.T.S.	
FILE NAME:	CCC-STRU.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

CHLORINE CONTACT CHAMBER
DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: S-6

4592.018

5-2/C #16 SHIELDED IN EXISTING CONDUIT FROM EXISTING PANEL I-4 TO CONTROL CONSOLE IN OPERATIONS BUILDING.

5-2/C #16 SHIELDED IN EXISTING CONDUIT TO CONTROL CONSOLE IN OPERATIONS BUILDING.

P.B.

AREA OF NEW SODIUM HYPOCHLORITE STORAGE AND FEED SYSTEM

PANEL I-4
(APPROX. LOCATION)

EXISTING DEWATERING BUILDING
(SEE SHEET E-2)

RELOCATED FIBER-OPTIC & TELEPHONE LINES (24" DEEP)

~~PROPOSED~~
CHLORINE CONTACT CHAMBER
(SEE SHEET E-3)

24" DEEP

RELOCATED FIBER-OPTIC TELEPHONE LINES

FLOW METER SIGNAL
1-2/C #16, #12 GND, 3/4" CONDUIT

EXISTING DISTRIBUTION METERING FACILITY

EXISTING OPERATIONS BLDG

EXISTING CONTROL CONSOLE (LOCATION APPROXIMATE)NEW ANALOG SIGNALS WILL BE TERMINATED AT NEW HONEYWELL MINITREND DATA LOGGER PROVIDED BY COUNTY AND INSTALLED AND PROGRAMED BY CONTRACTOR.

208/120 VOLT PANEL-IN-SHOP
(USED EXISTING SPARE BREAKERS, 1 CIRCUIT EACH TO SAMPLE PUMPS, LIGHTING & FLOWMETER PANEL)

2-#10, #12 GND, 3/4" CONDUIT, FLOWMETER POWER

3-#10, #12 GND, 3/4" CONDUIT, SAMPLE PUMPS POWER

3-#10, #12 GND, 3/4" CONDUIT, LIGHTING POWER

EXISTING ULTRASONIC FLOW METER SENSOR (FE-403)

EXIST. ULTRASONIC FLOW METER PANEL (FIT 405)

NOTE:
THE ULTRASONIC FLOW METER SIGNAL IS PRESENTLY TERMINATED AT AN EXSITING DATALOGGER IN THE CENTRAL CONSOLE. RECONNECT THESE TO I/O TERMINALS AT THE NEW DATALOGGER.

EXISTING CHLORINE CONTACT CHAMBER & EFFLUENT PUMP STATION

EXISTING BLOWER BLDG

PROVIDE A 400 AMP 3 POLE NON-FUSED, 600V., NEMA 4X S.S. HEAVY-DUTY, DISCONNECT TO BE MOUNTED SIMILAR TO EXISTING UNITS.

PUMP REPLACMENT

EXISTING ULTRASONIC FLOW METER SENSOR (FE-404)

24" DEEP

3" CONDUIT TO PROPOSED EFFLUENT PUMP FROM VFD. ROUTE 4-4/0 & 1-4/0, GND., 2-#12 TO NEW PUMP MOTOR DISCONNECT. CONDUIT TO BE ROUTED ADJACENT TO EXISTING CONDUIT RUNS, UP THE ELECTRICAL BUILDING WALL.

EXISTING FILTERS

MODIFY EXISTING MCC SECTION. PROVIDE A 250A., 3 POLE CB IN AVAILABLE SPACE.

NEW 150 HP EFFLUENT PUMP #5 VFD

EXISTING MCC4

EXISTING MCC ROOM

EXISTING GENERATOR ROOM

3" CONDUIT WITH 4-#4/0 & 1-#2 GND FROM MCC4 TO PROPOSED VFD,

EXISTING PUMP CONTROLLER

4-#14, #12 GND., 3/4" CONDUIT (VFD #5 RUN) FROM NEW VFD TO CONSOLE IN OPERATIONS BUILDING VIA PANEL C-1. ROUTE TO TERMINALS ON C-1. PULL 4-#14 FROM PANEL C-1 TO CONSOLE IN OPS BUILDING. MODIFY ANNUNCIATOR PANEL WITH "EFFLUENT DISTRIBUTION PUMP #5 FAILURE" INDICATOR, GRAPHICS PANEL "EFFLUENT PUMP #5 RUN" INDICATOR AND TERMINATE CONDUCTORS.

1-2/C #16 SHIELDED, #12 GND., 3/4" CONDUIT TO PUMP CONTROLLER FROM VFD

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/19/03
CHECKED BY:	D. WILCOX	09/19/03
DRAWN BY:	T. SONNENBERG	09/19/03
SCALE:	N.T.S.	
FILE NAME:		

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

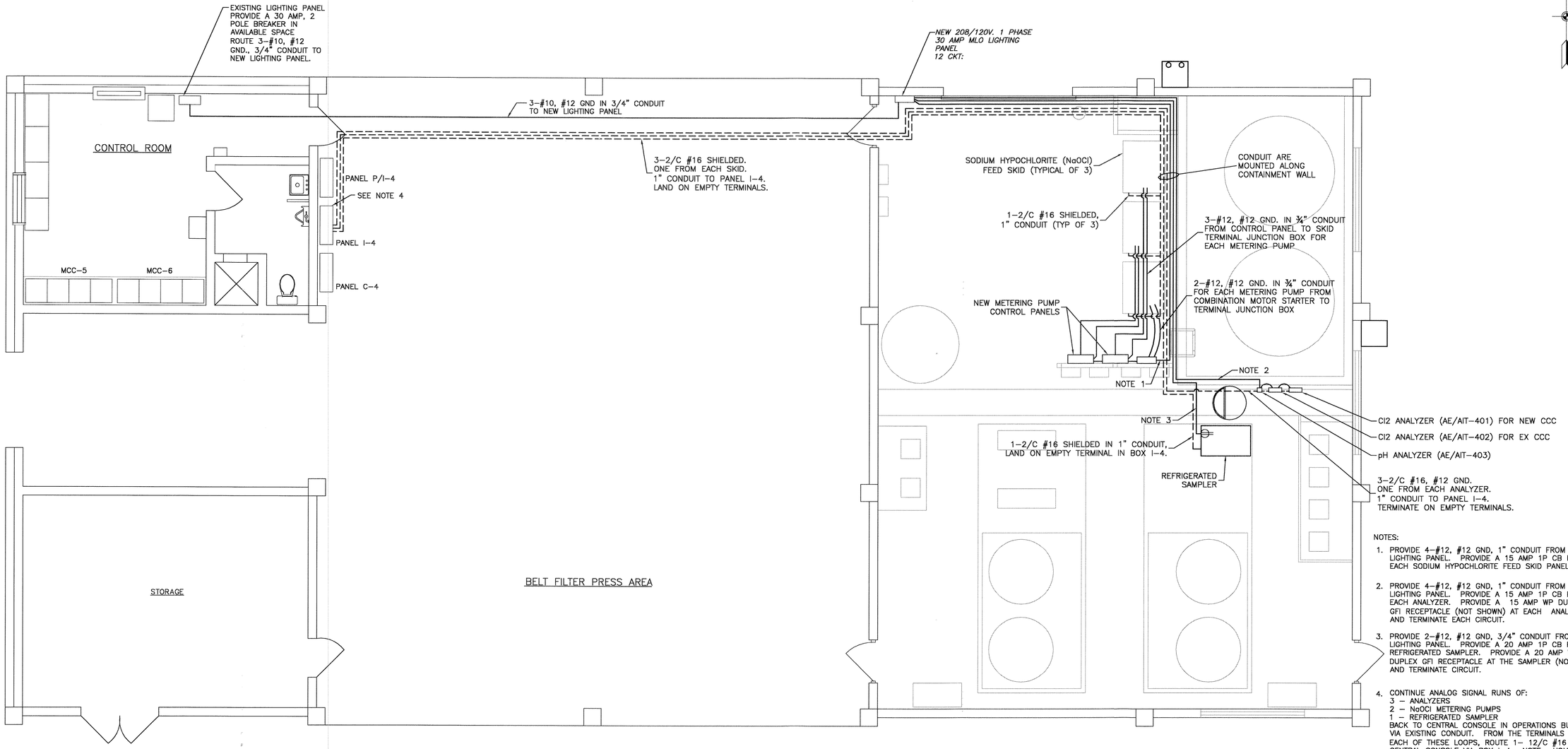
ELECTRICAL SITE PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: E-1

4592.019

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\E-1 ELECTRIC SITE 1 & 2.dwg
Last Modified: Jul 19, 2006 - 8:54am by tpats
Xrefs:



NOTES:

1. PROVIDE 4–#12, #12 GND, 1" CONDUIT FROM NEW LIGHTING PANEL. PROVIDE A 15 AMP 1P CB FOR EACH SODIUM HYPOCHLORITE FEED SKID PANEL.
2. PROVIDE 4–#12, #12 GND, 1" CONDUIT FROM NEW LIGHTING PANEL. PROVIDE A 15 AMP 1P CB FOR EACH ANALYZER. PROVIDE A 15 AMP WP DUPLEX GFI RECEPTACLE (NOT SHOWN) AT EACH ANALYZER AND TERMINATE EACH CIRCUIT.
3. PROVIDE 2–#12, #12 GND, 3/4" CONDUIT FROM NEW LIGHTING PANEL. PROVIDE A 20 AMP 1P CB FOR THE REFRIGERATED SAMPLER. PROVIDE A 20 AMP WP DUPLEX GFI RECEPTACLE AT THE SAMPLER (NOT SHOWN) AND TERMINATE CIRCUIT.
4. CONTINUE ANALOG SIGNAL RUNS OF:
   3 – ANALYZERS
   2 – NaOCl METERING PUMPS
   1 – REFRIGERATED SAMPLER
   BACK TO CENTRAL CONSOLE IN OPERATIONS BUILDING VIA EXISTING CONDUIT. FROM THE TERMINALS FOR EACH OF THESE LOOPS, ROUTE 1– 12/C #16 TO CENTRAL CONSOLE VIA BOX I–4. NOTE: HOMERUN OF pH ANALYZER FROM BOX I–4 TO CONSOLE IS EXISTING.

LEGEND

——— POWER

– – – – INSTRUMENTATION

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682–0074
Reg. No. 6268

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/19/03
CHECKED BY:	D. WILCOX	09/19/03
DRAWN BY:	D. ELLIS	09/19/03
SCALE:	N.T.S.	
FILE NAME:		

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

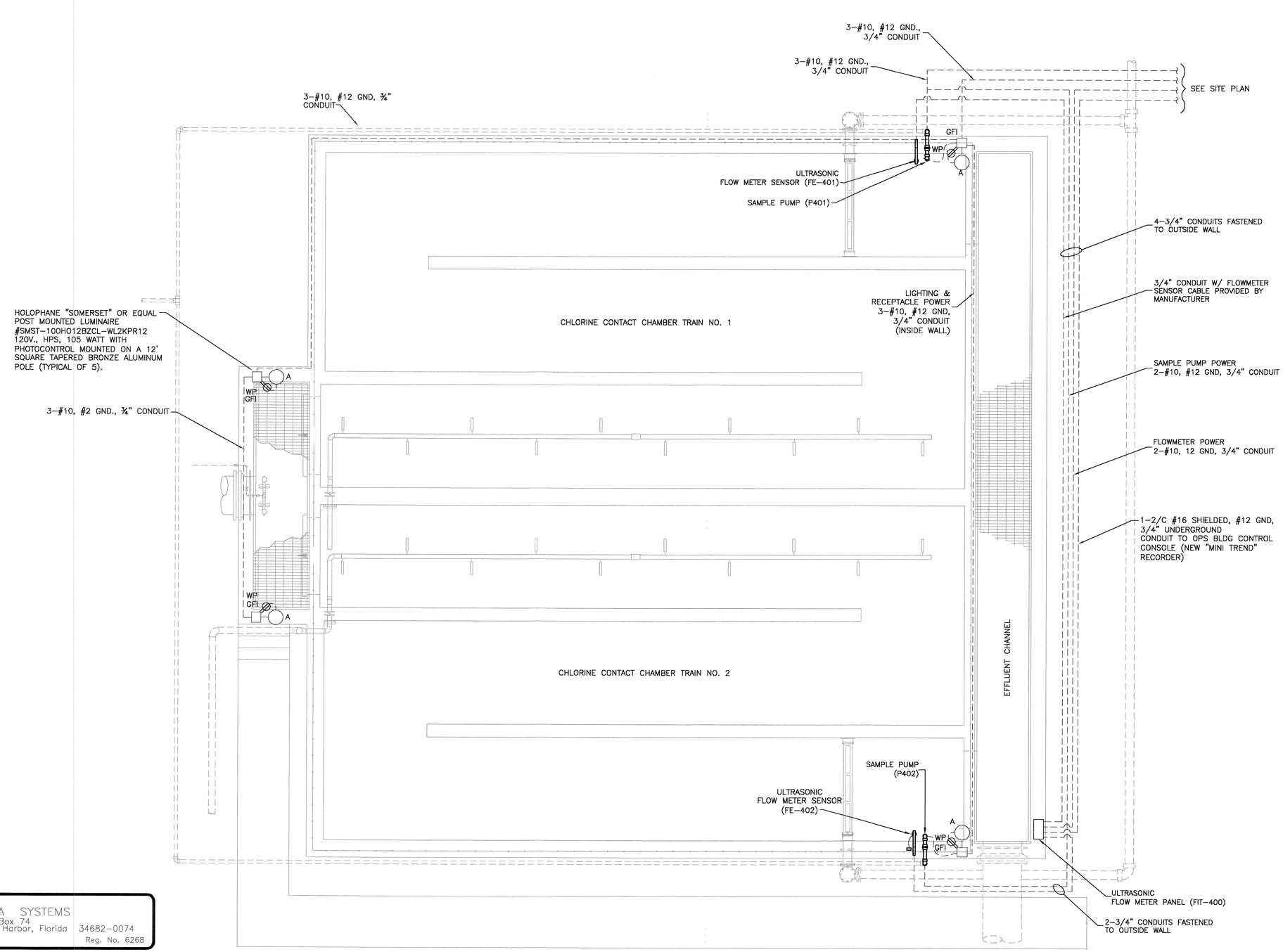
ELECTRICAL – DEWATERING BUILDING

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: E–2

4592.020

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\E-4 ELECTRICAL – CHEMICAL BLDG.dwg
Last Modified: Jul 19, 2006 – 8:54am by tpats
Xrefs:



PLAN VIEW

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	1/4" = 1'-0"	
FILE NAME:		

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

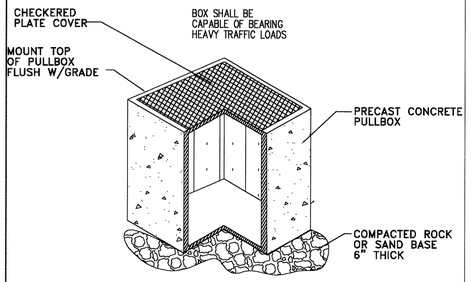
ELECTRICAL – CHLORINE CONTACT CHAMBER

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: E-3

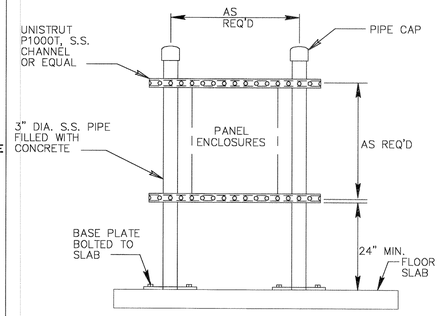
4592.021

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\E-5 ELECTRICAL – CHLORINE CONTACT CHAMBER.dwg
Last Modified: Jul 19, 2006 – 12:27pm by tpots
Xrefs:



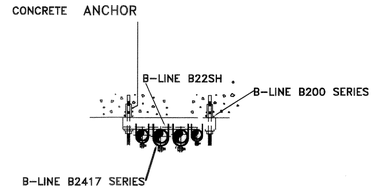
PULLBOX

NOT TO SCALE



ENCLOSURE MOUNTING

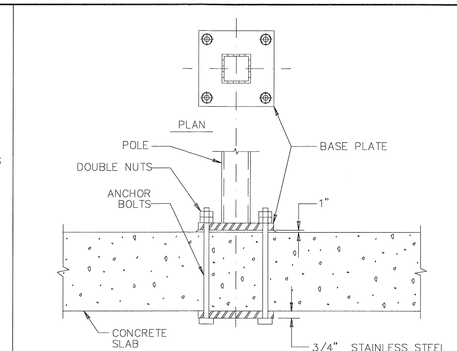
NOT TO SCALE



NOTES:
1. SIZE STRUT, CLAMP & INSERT TO ADEQUATELY SUPPORT LOAD
2. STRUT SHALL BE HOT-DIPPED GALVANIZED INDOOR GALVANIZED, PVC COATED OUTDOORS
3. PARTS BASED ON B-LINE. UNISTRUT SHALL BE CONSIDERED EQUAL

CONDUIT ON CEILING/WALL

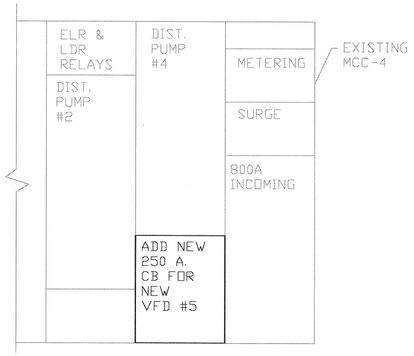
NOT TO SCALE



* BACKING PLATE SHALL BE 6" LARGER IN BOTH DIMENSIONS THAN POLE BASE, COAT BOLT HEADS FOR CORROSION PROTECTION.

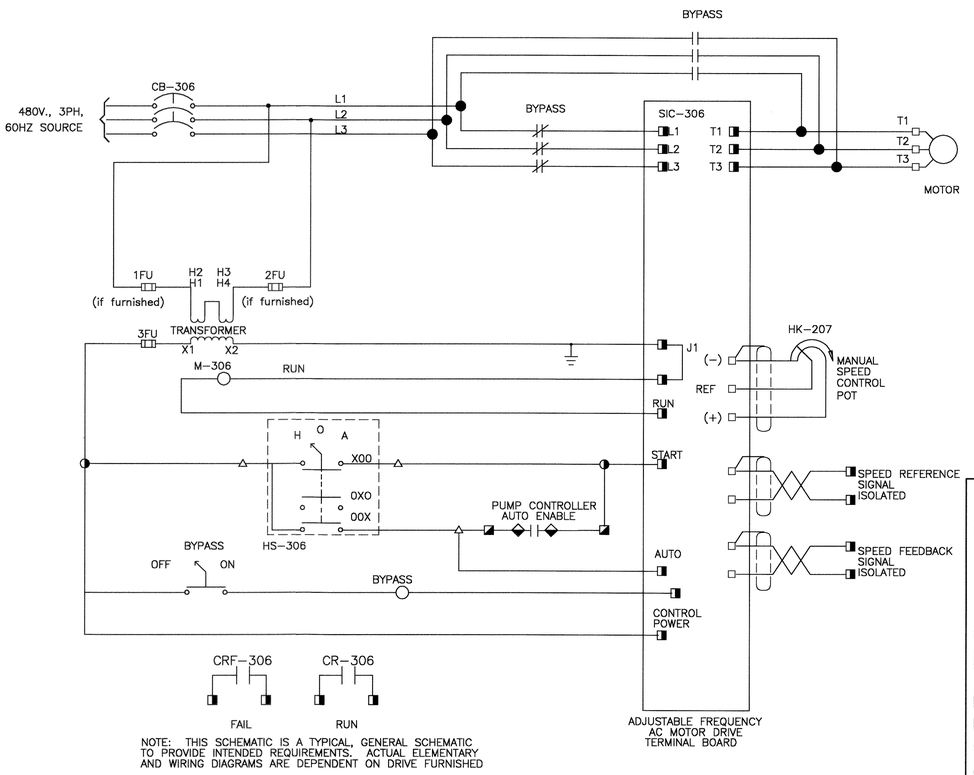
POLE MOUNTING ON SLAB

NOT TO SCALE



MCC-4 PARTIAL VIEW

NOT TO SCALE



NOTE: THIS SCHEMATIC IS A TYPICAL, GENERAL SCHEMATIC TO PROVIDE INTENDED REQUIREMENTS. ACTUAL ELEMENTARY AND WIRING DIAGRAMS ARE DEPENDENT ON DRIVE FURNISHED

VARIABLE FREQUENCY DRIVE SCHEMATIC (TYPICAL)

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	1/4" = 1'-0"	
FILE NAME:	CCC.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

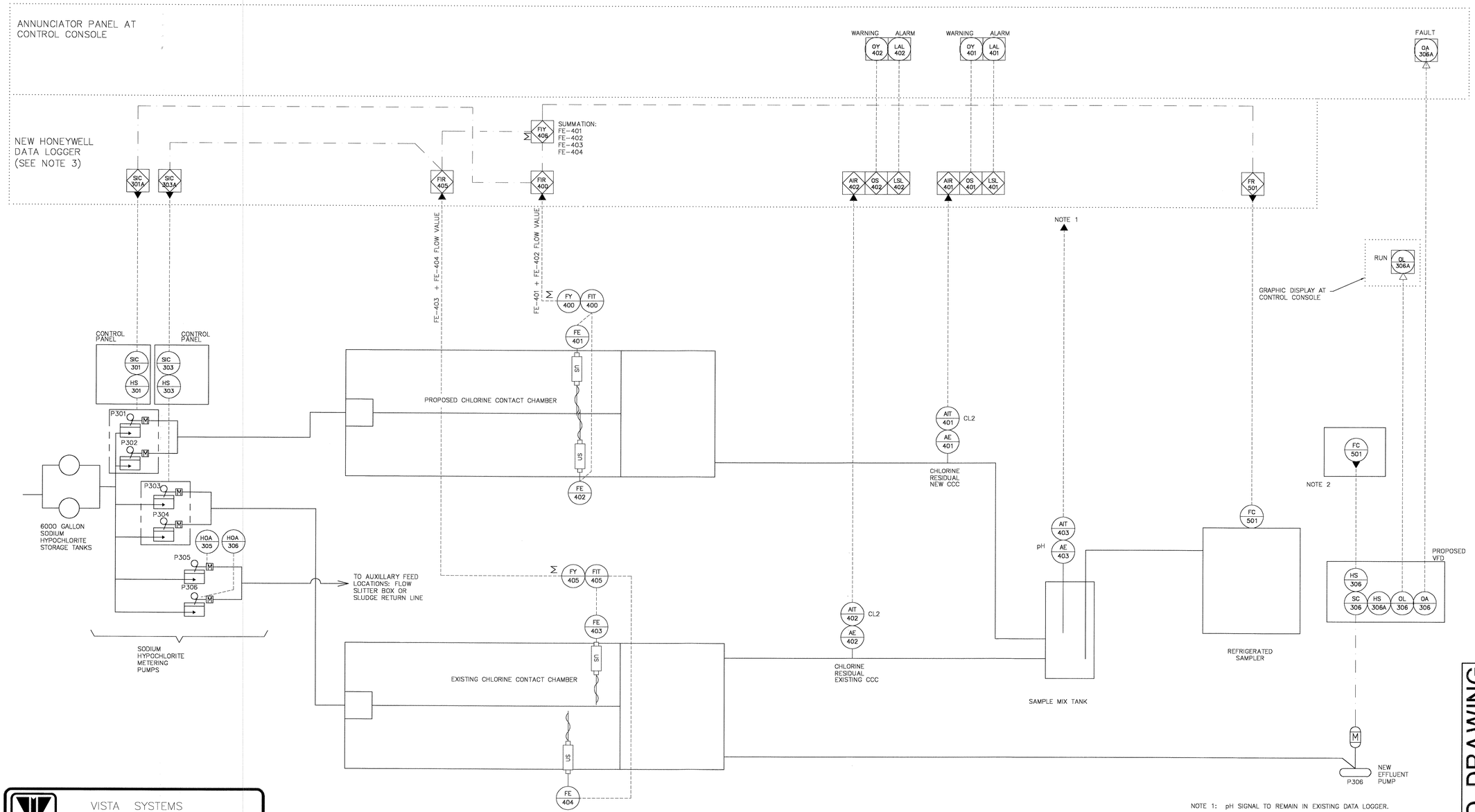
ELECTRICAL – DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: E-4

4592.022

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\E-X DETAILS.dwg
Last Modified: Jul 10, 2006 - 1:24pm by tpats
Xrefs:



VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

NOTE 1: pH SIGNAL TO REMAIN IN EXISTING DATA LOGGER.

NOTE 2. EXISTING PRESSURE-BASED PUMP CONTROL PANEL TO BE MODIFIED BY CONTRACTOR/MANUFACTURER TO ADD NEW VFD.

NOTE 3. COUNTY TO PROVIDE NEW HONEYWELL DATA LOGGER. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND PROGRAMING

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\I-1 INSTRUMENTATION DIAGRAM.dwg
Last Modified: Jul 19, 2006 - 12:30pm by tpotts
Xrefs:

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/19/03
CHECKED BY:	D. WILCOX	09/19/03
DRAWN BY:	T. SONNENBERG	09/19/03
SCALE:	N.T.S.	
FILE NAME:	I-1 INSTRUMENTATION DIAGRAM.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

INSTRUMENTATION DIAGRAM

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: I-1

4592.023

GENERAL INSTRUMENT SYMBOLS

ONE VARIABLE / TWO VARIABLES

- FIELD MOUNTED
- PANEL MOUNTED
- INTERLOCK
- HONEYWELL MINITREND DATA LOGGER
- ANNUNCIATOR PANEL
- DIGITAL INPUT
- DIGITAL OUTPUT
- ANALOG INPUT
- ANALOG OUTPUT

PRIMARY ELEMENT SYMBOLS - FLOW

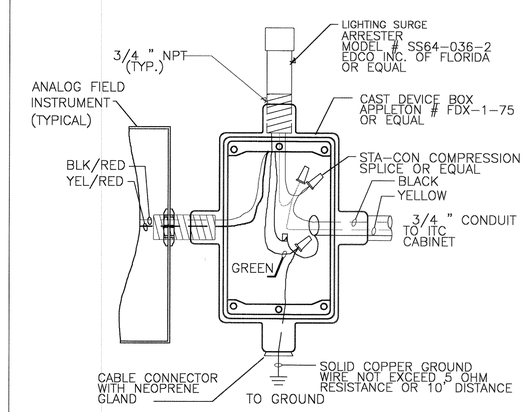
US — ULTRASONIC FLOWMETER

EQUIPMENT SYMBOLS

- CENTRIFUGAL PUMP
- METERING PUMP
- VERTICAL TURBINE PUMP

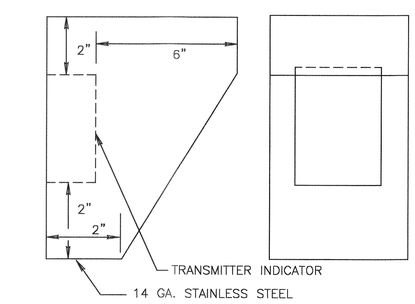
INSTRUMENT IDENTIFICATION TABLE

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION				
C	CONDUCTIVITY			CONTROL	CLOSED
D	DENSITY (SP. GR.)	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	GAUGING (DIMENSIONAL)		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOTOR	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE		ISOLATE	ISOLATOR	
O	OPERATION		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE OR DAMPER, LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED	X-AXIS			
Y	EVENT, STATE OR PRESENCE	Y-AXIS		RELAY OR COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z-AXIS		DRIVE, ACTUATOR	



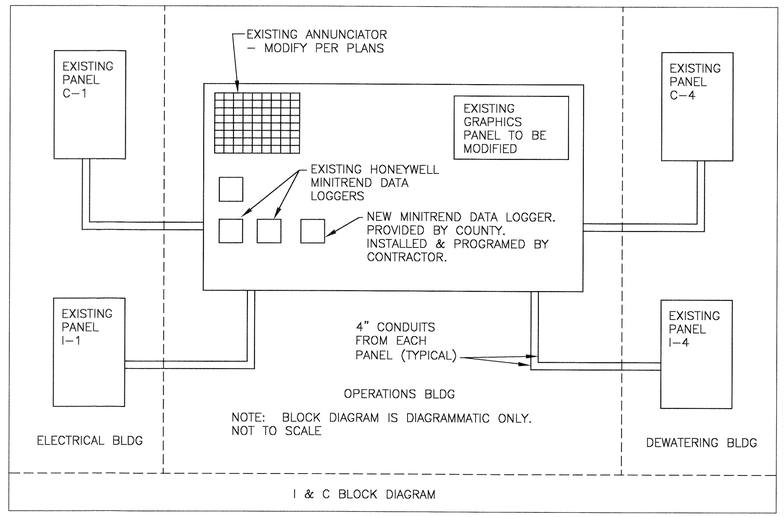
LIGHTNING SURGE ARRESTOR INSTALLATION

4-20mA ANALOG INSTRUMENT - UNGROUNDED



INSTRUMENT SUN SHIELD

(PROVIDE FOR ALL INSTRUMENTS EXPOSED TO THE WEATHER)



I & C BLOCK DIAGRAM

VISTA SYSTEMS
P.O. Box 74
Palm Harbor, Florida 34682-0074
Reg. No. 6268

RECORD DRAWING
BASED ON CONTRACTOR MARK-UPS

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	09/17/03
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	D. ELLIS	09/17/03
SCALE:	N.T.S.	
FILE NAME:	I-2 INSTRUMENTAION DETAILS.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
CHLORINE CONTACT CHAMBER EXPANSION
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

INSTRUMENTAION DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	6/06

PROJ. NO: 12003710
DWG DATE: JULY 2006
DWG NO:
SHEET: I-2

4592.024

Drawing Name: X:\MANATEE PROJECTS\12003710 NRWWTP Chlorine Contact Chamber\CADD\I-2 INSTRUMENTATION DETAILS.dwg
Last Modified: Jul 10, 2006 - 1:22pm by tpats
Xrefs:

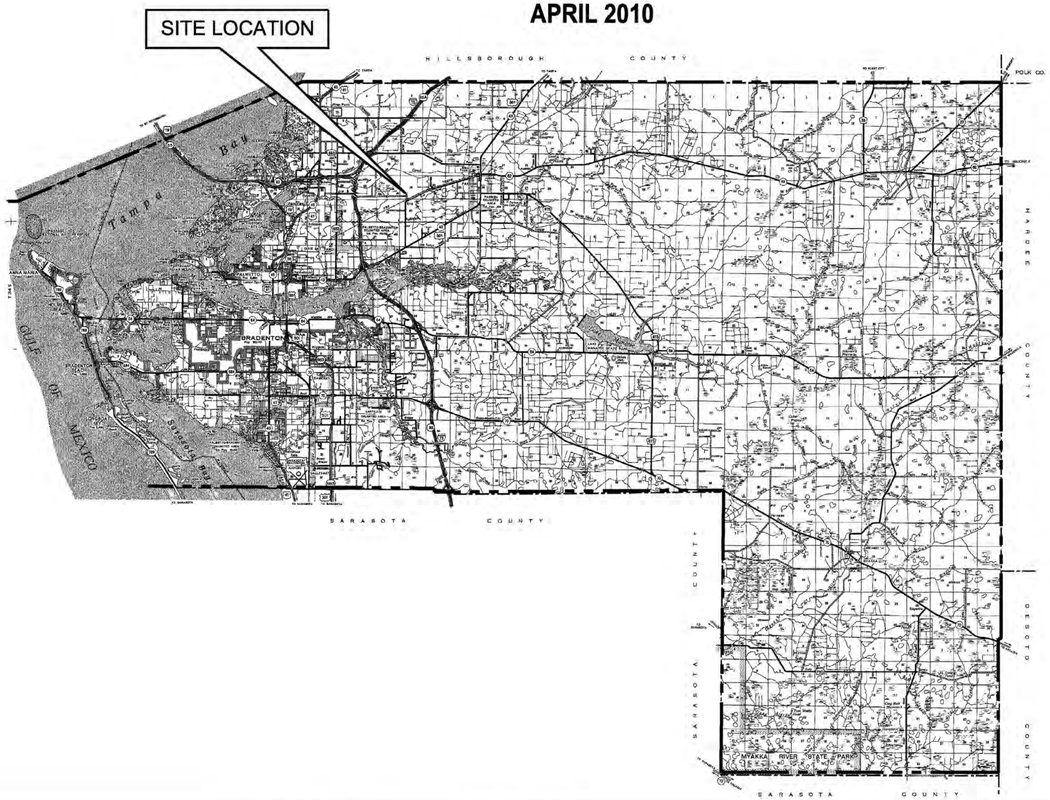
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

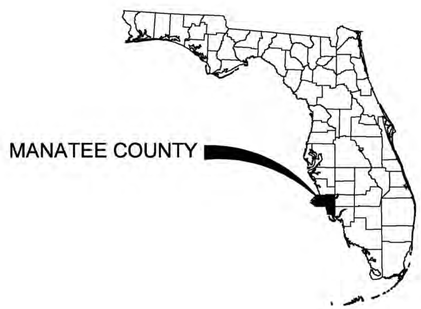
PLOTTED June 15, 2006 3:51 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\G-1 COVER SHEET.DWG

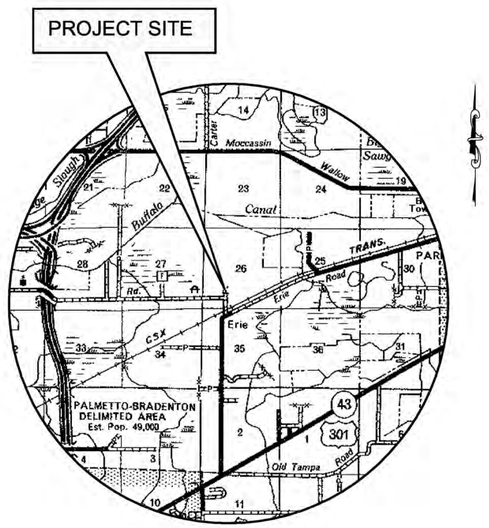
RECORD DRAWINGS

MANATEE COUNTY, FLORIDA
NORTH WATER RECLAMATION FACILITY
INFLUENT STRUCTURE
PROJECT NO. 6011281

APRIL 2010







PROJECT MAP
N.T.S.

RECORD DRAWING

MANATEE COUNTY, FLORIDA NORTH WATER RECLAMATION FACILITY INFLUENT STRUCTURE, PROJECT NO. 6011281, RECORD DRAWINGS APRIL 2010

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

COVER SHEET

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

G-1

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

GENERAL NOTES

1. ELEVATIONS SHOWN ON THE PLANS REFERENCE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (N.G.V.D. – 1929).
2. LOCATION, ELEVATION, AND DIMENSIONS OF THE EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT TIME OF THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING THIS WORK PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE UTILITY COMPANIES PRIOR TO CONSTRUCTION TO OBTAIN FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES IN PUBLIC RIGHT–OF–WAYS. CALL SUNSHINE ONE CALL CENTER OF FLORIDA AT 1–800–432–4770 TO ARRANGE FIELD LOCATIONS. THE CONTRACTOR SHALL REPAIR ALL DAMAGES RESULTING FROM FAILURE TO COMPLY WITH THIS REQUIREMENT. THE CONTRACTOR SHALL PROVIDE 48 HOUR NOTICE TO PLANT PERSONNEL PRIOR TO CONSTRUCTION TO OBTAIN FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES ON COUNTY / PLANT PROPERTY.
4. THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATION, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING HIS WORK AND SHALL COMPLY WITH ALL STATE, COUNTY, AND LOCAL ORDINANCES AND OBTAIN ANY NECESSARY WORK PERMITS THAT MAY BE REQUIRED PRIOR TO CONSTRUCTION.
5. UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS AND SPECIFICATIONS, THE CONTRACTOR SHALL PROVIDE SUITABLE BORROW MATERIAL, APPROVED BY THE ENGINEER, AND INSTALL SAID MATERIAL IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
6. OVERALL CLEAN UP SHALL BE ACCOMPLISHED BY THE CONTRACTOR IN ACCORDANCE WITH COUNTY STANDARDS OR AS DIRECTED BY THE ENGINEER. ANY AND ALL EXPENSES INCURRED FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MOBILIZATION.
7. THE CONTRACTOR SHALL ENDEAVOR TO PROTECT PRIVATE PROPERTY. ANY DAMAGE CAUSED BY THE CONTRACTOR IN THE PERFORMANCE OF HIS WORK SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. PAYMENT SHALL NOT BE MADE FOR THIS WORK.
8. ANY DAMAGE TO STATE, COUNTY, OR LOCAL ROADS CAUSED BY THE CONTRACTOR'S HAULING OR EXCAVATION EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE COUNTY PROJECT ENGINEER. PAYMENT SHALL NOT BE MADE FOR THIS WORK.
9. ANY U.S.C. AND G.S. MONUMENT WITHIN LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHALL NOTIFY. GEODETIC INFORMATION CENTER
   ATTN.: MARK MAINTENANCE CENTER
   ATTN.: N/CG–162
   6001 EXECUTIVE BLVD. ROCKVILLE,
   MARYLAND 20852 PH. (301)443–8319
10. THE CONTRACTOR(S) PERFORMING TRENCH EXCAVATION ON THIS CONTRACT, SHALL COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S (OSHA) TRENCH EXCAVATION SAFETY STANDARDS, 29 C.F.R., S.1926.650, SUBPART P, INCLUDING ALL SUBSEQUENT REVISIONS OR UPDATES TO THE STANDARDS AS ADOPTED BY THE DEPARTMENT OF LABOR AND EMPLOYMENT SECURITY (DLES).
11. UNLESS OTHERWISE SPECIFIED IN THE PLANS, EXISTING SOD, DISTURBED BY CONSTRUCTION, SHALL BE REPLACED IN KIND (OR BETTER, AS APPROVED BY THE COUNTY'S PROJECT MANAGER.)
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL EXCESS MATERIAL AND THE PROPER DISPOSAL OF THE SAME.
13. CONTRACTOR IS TO PROVIDE EROSION CONTROL/SEDIMENTATION BARRIER (HAY BALES OR SILTATION CURTAIN) TO PREVENT SILTATION OF ADJACENT PROPERTY STREETS, STORM SEWERS AND DRAINAGE DITCHES, AND WATERWAYS. IF IN THE OPINION OF THE ENGINEER AND/OR LOCAL AUTHORITIES, EXCESSIVE QUANTITIES OF EARTH ARE TRANSPORTED OFF–SITE EITHER BY NATURAL DRAINAGE OR VEHICULAR TRAFFIC, THE CONTRACTOR IS TO REMOVE AND CLEAN SAID EARTH TO THE SATISFACTION OF THE ENGINEER AND/OR AUTHORITIES. THE MAINTENANCE OF EROSION CONTROL DEVICES AND THEIR COMPLETE REMOVAL ARE TO BE INCLUDED IN THE LUMP SUM BID PRICE.
14. THE CONTRACTOR SHALL PROVIDE ROUTINE MAINTENANCE OF PERMANENT AND TEMPORARY EROSION CONTROL FEATURES UNTIL THE PROJECT IS COMPLETE AND ALL BARED SOILS ARE STABILIZED.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE EXISTING DRAINAGE SYSTEM WITHIN THE LIMITS OF THE PROJECT AREA, FOR THE DURATION OF THE PROJECT. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE WORK INVOLVED.
16. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND THAT MAY OCCUR AS A RESULT OF THIS WORK PERFORMED IN THIS CONTRACT.
17. A VERTICAL CLEARANCE OF 18 INCHES SHALL BE MAINTAINED BETWEEN SANITARY SEWERS AND WATER MAINS. IF CLEARANCE CANNOT BE ACHIEVED BY ADJUSTING THE WATER MAIN, THE WATER MAIN SHALL BE ENCASED IN CONCRETE FOR A REQUIRED 10 FEET ON EACH SIDE OF THE CONFLICT POINT. SUFFICIENT LENGTHS DI PIPE MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE LEAK FREE AND MECHANICALLY RESTRAINED. ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE STAGGERED AS FAR APART AS POSSIBLE WITH NOT LESS THAN 10 FEET BETWEEN ANY TWO JOINTS. SPECIAL STRUCTURAL SUPPORTS FOR THE MAINS MAY BE REQUIRED. ALTERNATIVELY, THE SANITARY SEWERS, STORM SEWERS, FORCE MAINS AND RECLAIMED WATER MAINS AT THE CROSSING CAN BE PLACED IN SLEEVES OR ENCASED IN CONCRETE TO OBTAIN THE EQUIVALENT OF THE 10 FEET SEPARATION BETWEEN JOINTS.
20. A LATERAL SEPARATION OF 10 FEET SHALL BE MAINTAINED BETWEEN WATER MAINS AND SANITARY SEWER.
21. ALL PROPOSED MAINS SHALL HAVE A MINIMUM OF 36 INCHES OF COVER UNLESS OTHERWISE SHOWN.
22. ALL COMPONENTS OF THE NEW YARD PRESSURE PIPING SYSTEM SHALL BE PRESSURE TESTED PER THE SPECIFICATIONS PRIOR TO ACCEPTANCE BY THE ENGINEER. CONTRACTOR TO NOTIFY OWNER'S ENGINEER AT (813) 286–1711 48 HOURS IN ADVANCE OF PERFORMING TESTS.
23. THE CONTRACTOR IS TO "PROTECT IN PLACE" THE FACILITIES THAT ARE NOT TO BE RELOCATED AND/OR REMOVED, BUT ARE TO REMAIN IN PLACE.
24. THE CONTRACTOR IS TO ADJUST OR RELOCATE ALL THE FACILITIES THAT FALL IN CONFLICT IN ACCORDANCE WITH COUNTY STANDARDS.
25. THE CONTRACTOR SHALL PROVIDE DETAILED RECORD DRAWINGS, ANY AND ALL EXPENSES INCURRED FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MOBILIZATION. RED–LINE DRAWINGS SHALL BE CURRENT WITH EACH PAY APP SUBMITTED AND WILL BE CHECKED AS PART OF THE PAY APPLICATION REVIEW PROCESS.
26. ALL UTILITY CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE LATEST VERSION OF THE MANATEE COUNTY UTILITY STANDARDS.
27. SEE SPECIFICATION FOR SEQUENCE OF CONSTRUCTION
28. ALL PLANT PROCESS YARD PIPING SHALL BE RESTRAINED JOINT. SEE SPECIFICATIONS.
29. ONLY PLANT PERSONNEL SHALL OPERATE EXISTING VALVES, SLIDE GATES, ETC.

REFERENCE:

THE FOLLOWING RECORD DRAWINGS WERE USED IN CONJUNCTION WITH SITE VISITS TO PREPARE THE BASE SHEETS FOR THIS PROJECT. TO OBTAIN A COPY OF THE RECORD DRAWINGS, CONTACT OLGA ROSIER, MANATEE COUNTY UTILITIES, AT (914) 792–8811

1. WASTEWATER FACILITIES IMPROVEMENTS. NORTH SUB–REGIONAL WASTEWATER TREATMENT FACILITY DATED 12/19/1989, ENGINEER–CDM.
2. NORTH WATER RECLAMATION FACILITY, HEADWORKS PIPING IMPROVEMENTS DATED 10/2005, ENGINEER–MCKIM & CREED.

BENCHMARK DESCRIPTION

1. BENCHMARK 133–29–06: ELEVATION 28.866 RIVET AND DISC ON BRIDGE AT ENTRANCE TO THE NWRF. 1929 DATUM.
2. BENCHMARK 133–29–05: ELEVATION 31.969 RIVET AND DISC ON CART PATH OF GOLF COURSE NEAR GATE AT NWRF ENTRANCE.

Sheet Number	Sheet Title
G–1	COVER SHEET
G–2	GENERAL NOTES AND INDEX OF SHEETS
G–3	SYMBOLS AND ABBREVATIONS
C–1	OVERALL SITE PLAN, HORIZONTAL CONTROL AND BORING LOCATIONS
C–2	PAVING GRADING AND DRAINAGE
C–3	YARD PIPING PLAN
C–4	DETAIL YARD PIPING PLAN
C–5	CIVIL DETAILS
C–6	CIVIL DETAILS
C–7	CIVIL DETAILS
C–8	CIVIL DETAILS
C–9	SOIL BORING LOGS
S–1	STRUCTURAL NOTES AND DETAILS
S–2	HEADWORKS STRUCTURAL PLAN AT GRADE AND FOUNDATION LEVEL
S–3	HEADWORKS STRUCTURAL BEAM LAYOUT
S–4	HEADWORKS STRUCTURAL ELEVATED SLAB PLAN
S–5	HEADWORKS STRUCTURAL PLAN AT TOP
S–6	HEADWORK STRUCTURAL SECTION
S–7	HEADWORKS STRUCTURAL SECTIONS
S–8	HEADWORKS STRUCTURAL SECTIONS
S–9	HEADWORKS STRUCTURAL SECTIONS
S–10	STRUCTURAL DETAILS
S–11	STRUCTURAL DETAILS
S–12	STRUCTURAL DETAILS
S–13	STRUCTURAL DETAILS
S–14	STAIRTOWER PLAN
S–15	STAIR DETAILS
S–16	GRIT TANK DETAILS
S–17	GRIT TANK DETAILS
M–1	HEADWORKS MECHANICAL PLAN AT GRADE
M–2	HEADWORKS MECHANICAL PLAN AT TOP
M–3	HEADWORKS MECHANICAL SECTION
M–4	HEADWORKS MECHANICAL SECTIONS
M–5	HEADWORKS MECHANICAL SECTIONS
M–6	HEADWORKS MECHANICAL SECTIONS
M–7	MECHANICAL SECTION AND DETAILS
M–8	MECHANICAL DETAILS
M–9	MECHANICAL DETAILS
M–10	DRAIN PUMP STATION
M–11	ODOR CONTROL COLLECTION PIPING
E–1	ELECTRICAL ABBREVIATIONS AND LEGEND
E–2	SITE ELECTRICAL WORK
E–3	HEADWORKS LOWER LEVEL POWER AND CONTROLS PLANS
E–4	HEADWORKS UPPER LEVEL POWER AND CONTROLS PLAN
E–5	HEADWORKS LIGHTING PLANS
E–6	HEADWORKS GROUNDING AND LPS PLANS
E–7	SINGLE LINE POWER DIAGRAM
E–8	PANEL SCHEDULES
E–9	CONDUIT SCHEDULE
E–10	LIGHTING FIXTURE SCHEUDLE
E–11	MISCELLANEOUS ELECTRICAL DETAILS AND DIAGRAMS
E–12	MISCELLANOUS ELECTRICAL DETAILS AND DIAGRAMS
E–13	GROUNDING AND LPS DETAILS
E–14	SCADA NOTES AND I–O SCHEDULE
E–15	EXISTING HEADWORKS SCADA PANEL AS–BUILTS
E–16	EXISTING HEADWORKS SCADA PANEL AS–BUILTS
E–17	EXISTING HEADWORKS SCADA PANEL AS–BUILTS
E–18	EXISTING HEADWORKS SCADA PANEL AS–BUILTS
E–19	EXISTING HEADWORKS SCADA PANEL AS–BUILTS
E–20	EXISTING HEADWORKS SCADA PANEL AS–BUILTS
E–21	EXISTING HEADWORKS SCADA PANEL AS–BUILTS
E–22	EXISTING HEADWORKS SCADA PANEL AS–BUILTS
L–1	LANDSCAPE PLAN
L–2	LANDSCAPE DETAILS
IR–1	IRRIGATION PLAN
IR–2	IRRIGATION DETAILS
IR–3	IRRIGATION DETAILS

RECORD DRAWING

PLOTTED May 27, 2010 3:34 PM PLOTTED BY: SONNENBERG, TERRY
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\G–2 GENERAL NOTES AND INDEX OF SHEETS.DWG

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286–1711 Fax: (813) 286–6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: May 27, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

GENERAL NOTES AND
INDEX OF SHEETS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

G–2

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PIPE AND FITTING SYMBOLS

DOUBLE LINE / SINGLE LINE

- 90° ELBOW
- 90° ELBOW ROTATED UP
- 90° ELBOW ROTATED DOWN
- TEE
- TEE ROTATED UP
- TEE ROTATED DOWN
- REDUCER
- ECCENTRIC REDUCER
- BALL VALVE
- BUTTERFLY VALVE
- GATE VALVE
- CHECK VALVE
- PLUG VALVE
- HOSE BIBB & VALVE
- FLANGED JOINT
- MECHANICAL JOINT
- TO BE REMOVED
- GROUND WATER FLOW

FITTING TYPE SYMBOLS

	DOUBLE LINE	SINGLE LINE
FLANGE		
MECHANICAL JOINT		
PUSH ON JOINT		

LEGEND OF SYMBOLS

TYPICAL EXISTING SYMBOLS / TYPICAL PROPOSED SYMBOLS

- BP = BACKFLOW PREVENTER
- = BOLLARD or POST
- CA = BOX, CABLE TELEVISION
- EB = BOX, ELECTRIC UTILITY
- = BOX, ELECTRIC UTILITY (TRANSFORMER)
- TB = BOX, TELEPHONE
- = DECORATIVE LIGHT POLE
- = FIRE HYDRANT
- = FLAGPOLE
- = FLARED END SECTION
- = GRATE INLET
- = GROUND LIGHT
- = GUY ANCHOR
- = LIGHT POLE, CONCRETE
- = LIGHT POLE, METAL
- = LIGHT POLE, WOOD
- MB = MAILBOX
- E = MANHOLE, ELECTRIC
- G = MANHOLE, GREASE TRAP
- S = MANHOLE, SANITARY SEWER
- D = MANHOLE, STORM SEWER
- T = MANHOLE, TELEPHONE
- EM = METER, ELECTRIC
- GM = METER, GAS
- RM = METER, RECLAIMED WATER
- WM = METER, WATER
- = MITERED END SECTION
- MW = MONITORING WELL
- = PEDESTRIAN CROSSING SIGNAL
- = SANITARY CLEANOUT
- = SCHEDULE B-2 ITEM
- = SOIL BORING
- TR = TELEPHONE RISER
- = TRAFFIC SIGN
- TSB = TRAFFIC SIGNAL BOX
- TSP = TRAFFIC SIGNAL POLE

- CWS = UG CABLE TELEVISION WARNING SIGN
- EWS = UG ELECTRIC WARNING SIGN
- OWS = UG FIBER OPTIC WARNING SIGN
- FWS = UG FORCEMAIN WARNING SIGN
- GWS = UG GAS WARNING SIGN
- RWS = UG RECLAIMED WATER WARNING SIGN
- SWS = UG SANITARY SEWER WARNING SIGN
- TWS = UG TELEPHONE WARNING SIGN
- WWS = UG WATER WARNING SIGN
- = UTILITY POLE, CONCRETE
- = UTILITY POLE, METAL
- = UTILITY POLE, WOOD
- GV = VALVE, GAS
- RV = VALVE, RECLAIMED WATER
- SV = VALVE, SANITARY
- WV = VALVE, WATER
- W = WELL

- = CONCRETE
- = ASPHALT
- = CONCRETE PAVERS
- = BRICK

- + 25.25 = POINT OF ELEVATION
- 25.2' = DIMENSION FROM BUILDING TO BOUNDARY / RIGHT-OF-WAY LINE

STORM CURB INLETS

- = CHAIN LINK FENCE
- = CHANNEL OUTLINE
- = CONTOUR
- OHC = OVERHEAD UTILITY
- TOS = TOE OF SLOPE
- TOB = TOP OF BANK
- = WOOD FENCE

- UGC = UG CABLE
- UGE = UG ELECTRIC
- UGFO = UG FIBER OPTIC
- GAS = UG GAS
- IRG = UG IRRIGATION
- RCW = UG RECLAIME WATER
- SFM = UG SANITARY FORCEMAIN
- SAN = UG SANITARY SEWER
- STRM = UG STORM SEWER
- UGT = UG TELEPHONE
- WM = UG WATER MAIN

- = SILT FENCE
- = RIGHT-OF-WAY LINE
- = EASEMENT BOUNDARY
- = SECTION LINE

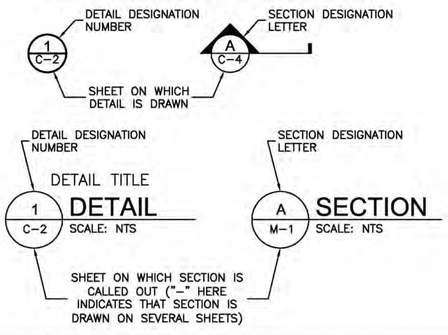
TREE LEGEND

- = BAY TREE
- = BOTTLE BRUSH TREE
- = CAMPHOR TREE
- = CEDAR
- = CHINABERRY TREE
- = CITRUS TREE
- = CYPRESS TREE
- = ELM TREE
- = EUCALYPTUS TREE
- = MAGNOLIA TREE
- = MAPLE TREE
- = MULBERRY TREE
- = OAK TREE
- = OTHER SPECIES
- = PALM TREE
- = PECAN TREE
- = PERSIMMON TREE
- = PINE TREE
- = SYCAMORE TREE
- = WAX MYRTLE TREE
- = WILLOW TREE

ABBREVIATIONS:

#	NUMBER
A/C	AIR CONDITIONER
AC	ASBESTOS CEMENT PIPE
ADDL	ADDITIONAL
ADJ	ADJUSTABLE
ADPT	ADAPTER
ALUM	ALUMINUM
APPROX	APPROXIMATE (LY)
ARV	AIR RELEASE VALVE
ASPH	ASPHALT
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
BM	BENCHMARK
BV	BALL VALVE
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BOT	BOTTOM
BWF	BARBED WIRE FENCE
CATV	CABLE TV
CHKD	CHECKED
℄	CENTERLINE
CLF	CHAINLINK FENCE
CLG	CHLORINE GAS
CI	CAST IRON
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNITS
CO	CLEAN OUT
CONC	CONCRETE
CONST	CONSTRUCTION
COR	CORNER
CPLG	COUPLING
CTR	CENTER (ED)
CV	CHECK VALVE
D	DRAIN
DEMO	DEMOLITION
DEPT	DEPARTMENT
DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DR	DIMENSION RATIO
E	EAST
EA	EACH
ECC	ECCENTRIC
EFF	EFFLUENT
EL	ELEVATION
EOP	EDGE OF PAVEMENT
EQ	EQUAL (LY)
EQUIP	EQUIPMENT
ESMT	EASEMENT
ETC	ETCETERA
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISH (ED)
FLG	FLANGE
FLR	FLOOR
FM	FORCE MAIN
FRP	FIBERGLASS REINFORCED PIPE
FT	FOOT OR FEET
GAL	GALLON
GALV	GALVANIZED
GS	GALVANIZED STEEL (PIPE)
GV	GATE VALVE
HB	HOSE BIBB
HDPE	HIGH DENSITY POLYETHYLENE
HORZ	HORIZONTAL
HT	HEIGHT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
LF	LINER FEET
LR	LONG RADIUS
LT	LEFT
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MFD	MANUFACTURED
MFG	MANUFACTURING
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NORTH
NE	NORTHEAST
NW	NORTHWEST
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
O/E	OR EQUAL
OVFL	OVERFLOW
OVRT	OVERFLOW RETURN
PE	PLAIN END OR POLYETHYLENE
℗	PROPERTY LINE
PP	POWER POLE
PROP	PROPOSED
PS	PUMP STATION
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE PIPE
PVMT	PAVEMENT
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RCCP	REINFORCED CONCRETE CYLINDER PIPE
R/W	RIGHT-OF-WAY
RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
RCW	RECLAIMED WATER
RED	REDUCER
RMJ	RESTRAIN MECHANICAL JOINT
RML	RETURN MIXED LIQUOR
RR	RAILROAD
RT	RIGHT
RW	REUSE WATER
S	SOUTH
SAN	SANITARY
SCH	SCHEDULE
SE	SOUTHEAST
SFM	SANITARY FORCE MAIN
SHC	SODIUM HYPOCHLORITE
SHT	SHEET
SMH	SANITARY MANHOLE
SQ	SQUARE
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
SW	SOLVENT WELD OR SOUTHWEST
SWLK	SIDEWALK
T&B	TOP AND BOTTOM
TBM	TEMPORARY BENCHMARK
TEL	TELEPHONE
THD	THREADED
THK	THICK (NESS)
TYP	TYPICAL
UD	UNDERDRAIN
UG	UNDERGROUND
VERT	VERTICAL
W	WELD OR WELDED OR WEST
W/	WITH
WM	WATERMAIN OR WATER METER
WV	WATER VALVE
WW	WASTEWATER
WWF	WOVEN WIRE FABRIC
WWM	WOVEN WIRE MESH
XFMR	TRANSFORMER

DETAIL & SECTION DESIGNATION



RECORD DRAWINGS LEGEND

DESIGN – INVERT ELEV. ~~24.88~~

RECORD – INVERT ELEV. 24.75

RELOCATED OR REMOVED –X X– PER AS-BUILT DRAWINGS

RECORD DRAWING

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NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031

PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: May 25, 2010

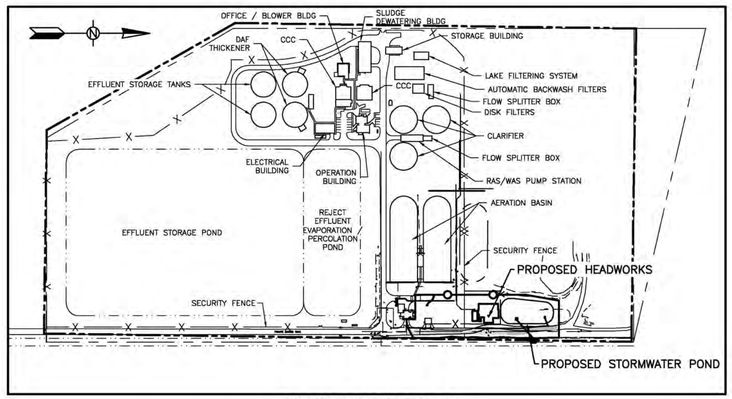
INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

SYMBOLS AND ABBREVATIONS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

G-3



NWRF SITE PLAN

SCALE: NTS

SITE NOTES

1. CONTRACTOR TO VERIFY THE LOCATION OF THE CONNECTION POINT FOR THE INFLUENT PIPING. THE CENTER LINE OF THAT PIPE WILL BE THE CENTER LINE OF THE PROPOSED HEADWORKS.
2. CONTRACTOR TO ADJUST ALL EXISTING VALVE MANHOLES AND LIDS WITHIN THE PROPOSED ROAD TO MATCH FINISHED GRADES.

SETBACKS FROM PROPERTY LINE

NORTH: 558'
EAST: 67.6'
SOUTH: 1685'
WEST: 1085'

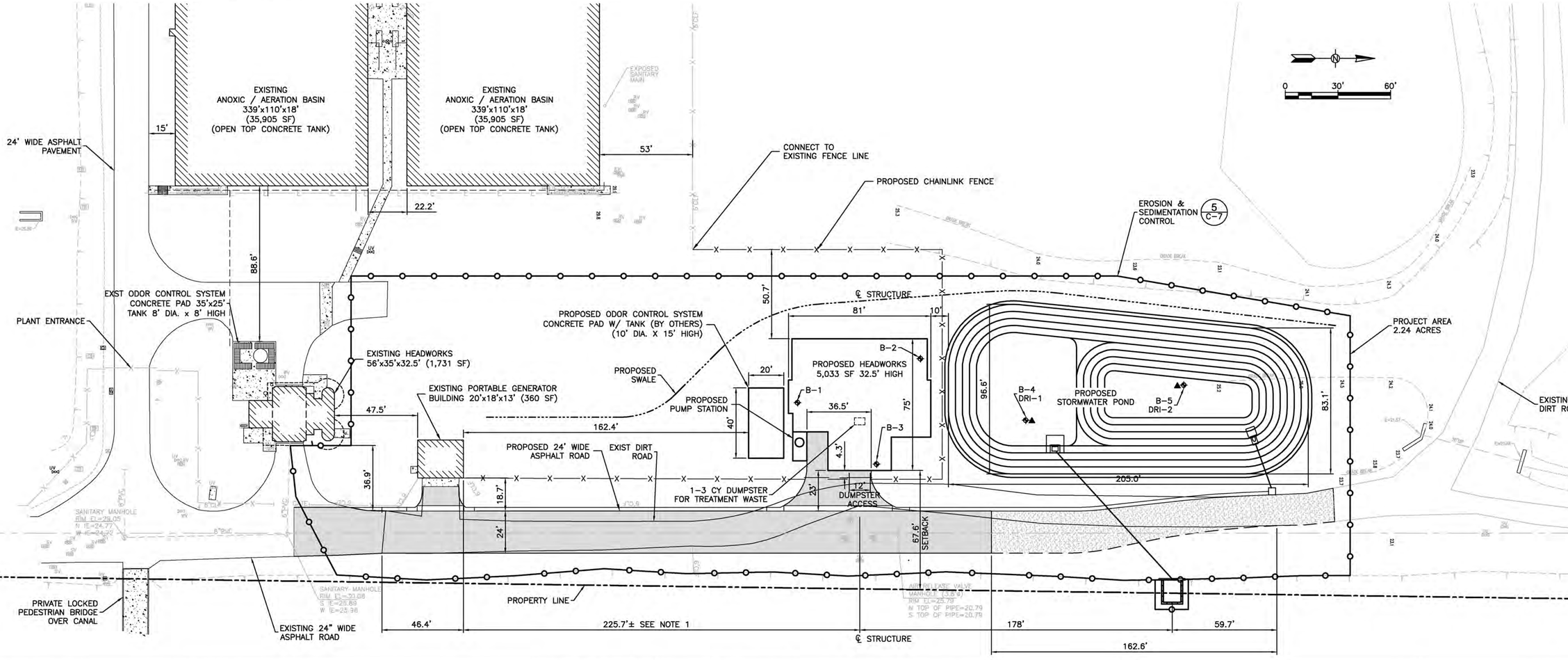
BORING NOTES

1. LOCATIONS BASED ON THE NORTHWEST CORNER OF THE EXISTING FENCE.
2. PLAN VIEW IS PRELIMINARY FOR SHOWING BORING LOCATION ONLY AND MAY NOT BE INDICATIVE OF FINAL PLAN.
3. SEE SHEET C-9 FOR BORING LOGS, NOTES AND LEGEND.

⊕ APPROXIMATE BORING LOCATION

▲ APPROXIMATE LOCATION OF DOUBLE RING INFILTRATION TEST (DRI)

BORING DESIGNATION	DEPTH (FT) BORING TYPE	DISTANCE X (FT)	DISTANCE Y (FT)
B-1	40' (S.P.T)	60	60
B-2	40' (S.P.T)	130	85
B-3	25' (S.P.T)	105	25
B-4	10' AUGER	190	50
B-5	10' AUGER	280	70
DRI-1	1.5-2.0	190	50
DRI-2	1.5-2.0	280	70



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FILE SAVE DATE: April 27, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

OVERALL SITE PLAN, HORIZONTAL CONTROL AND BORING LOCATIONS

DAVID A. WILCOX, P.E.
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PROJECT STATUS
RECORD DRAWINGS
MAY 2010

C-1

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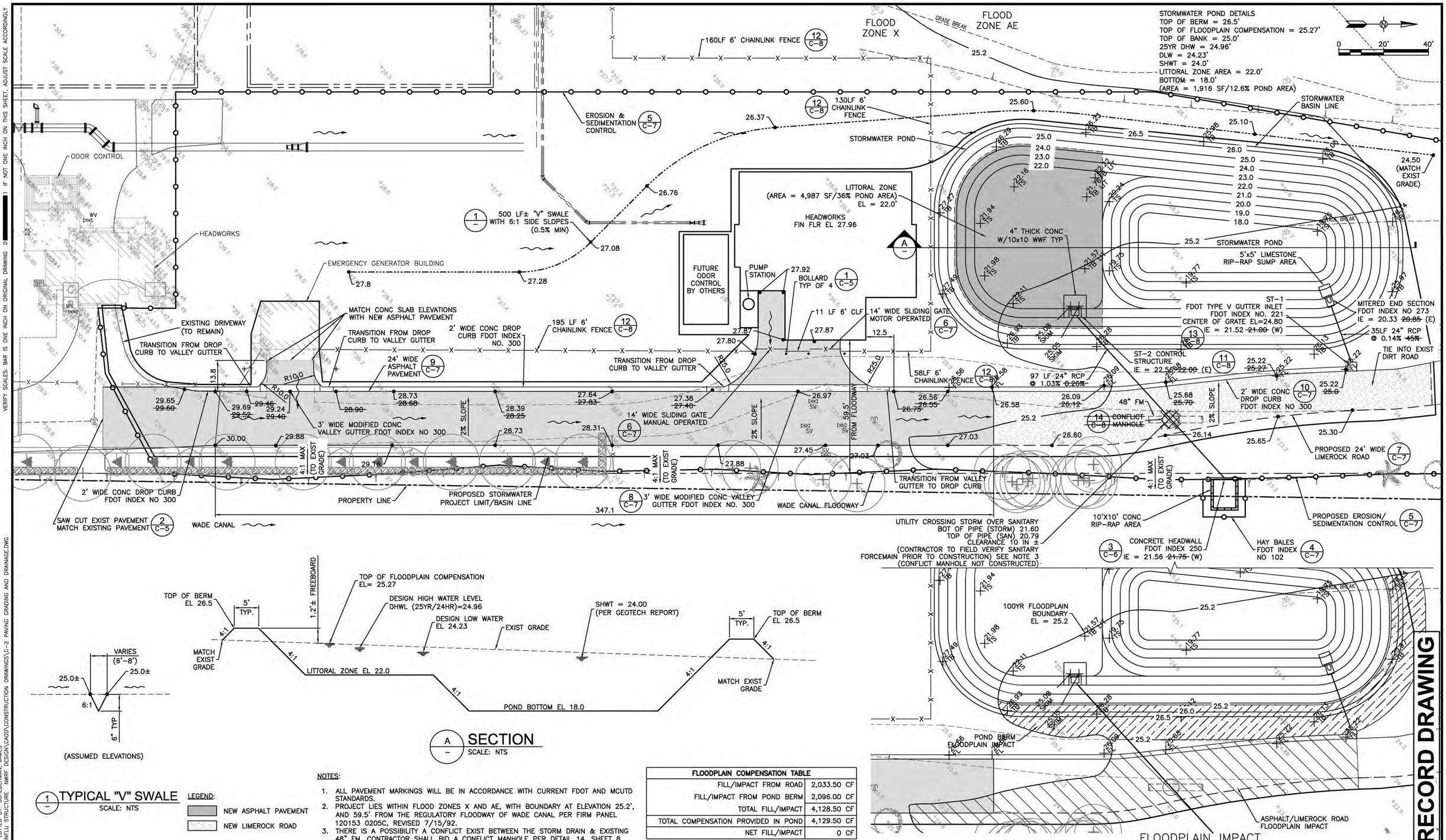

A (–) SECTION
SCALE: NTS

(ASSUMED ELEVATIONS)

1 (–) TYPICAL "V" SWALE
SCALE: NTS

LEGEND:
- NEW ASPHALT PAVEMENT
- NEW LIMEROCK ROAD

NOTES:
1. ALL PAVEMENT MARKINGS WILL BE IN ACCORDANCE WITH CURRENT FDOT AND MCUTD STANDARDS.
2. PROJECT LIES WITHIN FLOOD ZONES X AND AE, WITH BOUNDARY AT ELEVATION 25.2', AND 59.5' FROM THE REGULATORY FLOODWAY OF WADE CANAL PER FIRM PANEL 120153 0205C, REVISED 7/15/92.
3. THERE IS A POSSIBILITY A CONFLICT EXIST BETWEEN THE STORM DRAIN & EXISTING 48" FM. CONTRACTOR SHALL BID A CONFLICT MANHOLE PER DETAIL 14, SHEET 8.

FLOODPLAIN COMPENSATION TABLE	
FILL/IMPACT FROM ROAD	2,033.50 CF
FILL/IMPACT FROM POND BERM	2,096.00 CF
TOTAL FILL/IMPACT	4,128.50 CF
TOTAL COMPENSATION PROVIDED IN POND	4,129.50 CF
NET FILL/IMPACT	0 CF

RECORD DRAWING

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MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PAVING, GRADING AND DRAINAGE

DAVID A. WILCOX, P.E.
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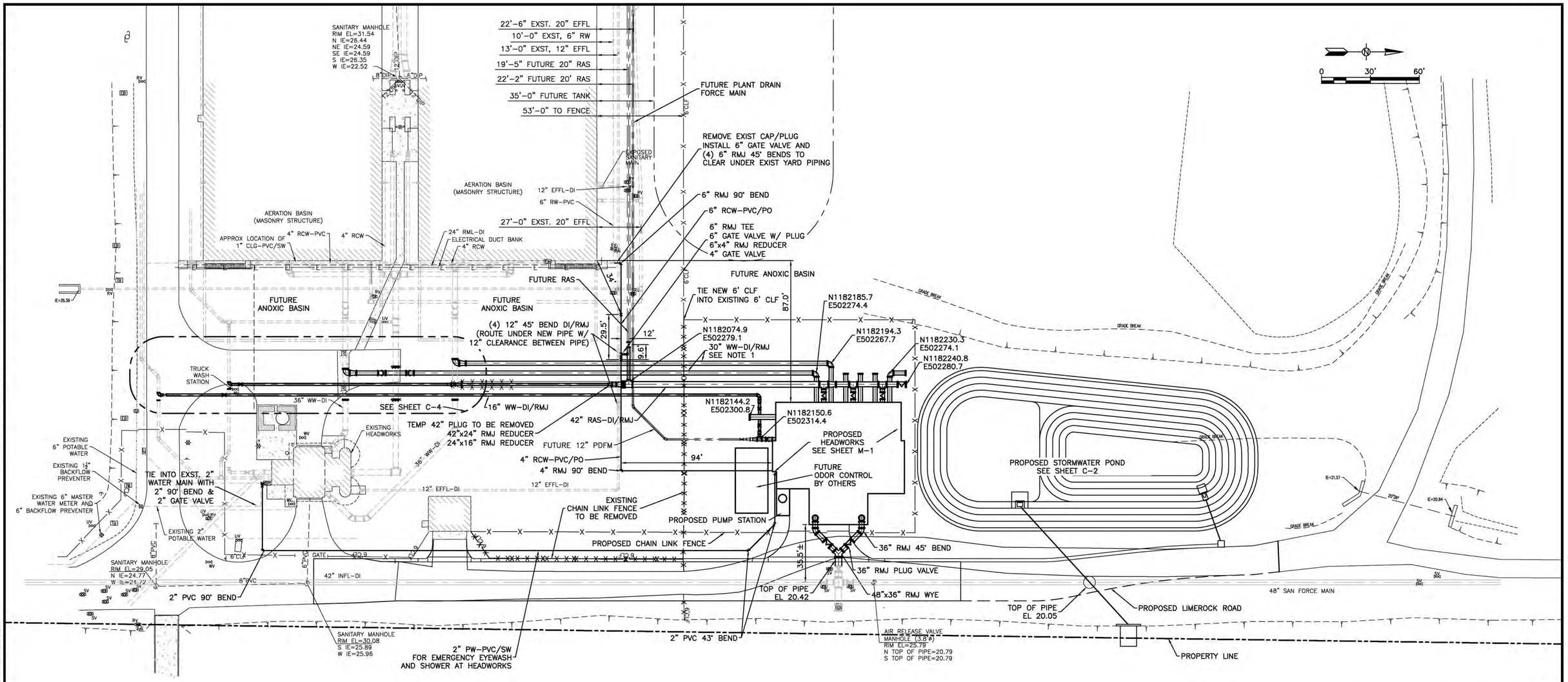
PROJECT STATUS
RECORD DRAWINGS
MAY 2010

C–2



NOTES:
1. CONTRACTOR SHALL VERIFY ELEVATIONS OF THE EXISTING YARD PIPING PRIOR TO INSTALLATION OF NEW YARD PIPING.
2. DEFLECT JOINTS OF NEW 30" WW LINES ON NORTH SOUTH RUNS TO MATCH ℄ ELEVATIONS OF EXISTING 30" WW LINES AT THE TIE-IN POINT. NEW 30" WW LINES SHALL CROSS OVER EXISTING 36" WW RCCP INFLUENT PIPE.
3. BENCHMARK (WAITING FOR INFORMATION FROM SURVEYOR)

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INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

YARD PIPING PLAN

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

C-3

NOTES:
1. FOR TIE-INS INTO EXISTING YARD PIPING, SEE WORK SEQUENCE SPECIFICATION.
2. CONTRACTOR SHALL VERIFY ELEVATIONS OR THE EXISTING YARD PIPING PRIOR TO INSTALLATION OF NEW YARD PIPING.
3. DEFLECT JOINTS OF NEW 30" WW LINES ON NORTH SOUTH RUNS TO MATCH ℄ ELEVATIONS OF EXISTING 30" WW LINES AT THE TIE-IN POINT. NEW 30" WW LINES SHALL CROSS OVER EXISTING 36" WW RCCP INFLUENT PIPE.

AERATION BASIN (MASONRY STRUCTURE)
APPROX LOCATION OF 1" CLG-PVC/SW
4" RCW-PVC
24" RML-DI BELOW DUCT BANK
ELECTRICAL DUCT BANK
4" RCW
GRATE
ALUM STAIR
36" WW-RCCP
12" EFFL-PVC
2" CL2-PVC
FUTURE ANOXIC BASIN
16" RAS-DI
42" WW-PCCP
20" RCW
12" EFFL-DI
36" WW-DI ℄ EL 28.0
TB
RV
UV
WV
BP
LP
86'
74'
83'
119'
133'-10"
68.9
70'
80'
99'
62'
TOP EL=23.67
TIE INTO EXISTING 16" RAS (CUT IN NO. 2) WITH 16" RMJ 90° BEND AND 16" PLUG VALVE
2" ELECT. CONDUIT TOP EL=27.62
7'-0"
TIE INTO EXISTING 16" SFM WITH 16" RMJ 90° BEND (CUT IN NO. 3)
N1181776.0 E502286.6
TRUCK WASH STATION
TOP EL=25.21
16" PV-DI/RMJ
16" RAS-DI/RMJ
41.5
TOP EL=23.74
11'
CAMERA MOUNTED ON POLE
PLUG EXIST 16" LINE 16" CAP W/ MEGALUG
N1181825.0 E502280.7
PLUG EXIST 16" RAS LINE
10'-0"
16" WW-DI/RMJ
6.2
12.7
TOP EL=28.63
TOP EL=28.50
16" SFM TO BE ABANDON
30.0
97.2
67'-6"
8' DIA FERROUS SULFATE TANK
6' CLF
16" RAS TO BE ABANDONED
SPEAKER AND KEYPAD
ABANDONED 36" WW-PCCP ℄ EL 24.33
FF=31.15
HEADWORKS FF=30.52
FF=31.09
CUT IN NEW 2" TEE AND 2" GATE VALVE
2" PW-PVC/SW
GENERATOR BUILDING
TOP EL=28.32
CUT-IN NO. 4 NEW 36" 90° BEND 36"x30" PExRMJ REDUCER
(2) 30" 45° BENDS DI/MJ
N1181896.5 E502273.7
REMOVE 25 LF OF 36" PCCP
TOP OF PIPE = EL 26.19
TOP OF PIPE = EL 22.36
30" WW-DI/RMJ
REMOVE 25 LF OF EXISTING 36" WW LINE
(2) 30" 45° BENDS DI/MJ
PERMANENTLY BULKHEAD EXIST 36" WW LINE
~~PERMANENTLY BULKHEAD EXIST 36" WW LINE~~
MJ PLUG W/ PEGALUG
~~PERMANENTLY BULKHEAD~~ EXIST 36" WW LINE
TOP EL=24.51
CUT-IN NO. 1 NEW 36" 90° BEND
36"x30" PExRMJ REDUCER
TOP EL=24.22
2" ELECT. CONDUIT TOP EL=26.29
30" WW-DI/RMJ
TOP EL=26.24
6.0
7.0
6.5
16" ~~42"~~ RAS-DI/RMJ
~~TEMP 42" PLUG TO BE REMOVED~~
~~42"x24" RMJ REDUCER~~
~~24"x16" RMJ REDUCER~~
2" PVC ELECT. CONDUIT TOP EL =25.80
FOR CONTINUATION SEE SHEET C-3

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ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: May 25, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

DETAIL YARD PIPING PLAN

DAVID A. WILCOX, P.E.
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PROJECT STATUS
RECORD DRAWINGS
MAY 2010

C-4

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES SIZE	TEES LENGTH	REDUCERS SIZE	REDUCERS LENGTH	PLUGS
24	90	38	18	X24 X20 X16 X12 X10	177 139 94 40 6	X20 X16 X12	64 117 158	214
20	78	32	15	X20 X16 X12 X10 X8	148 105 58 25 0	X16 X12 X10	65 115 149	184
16	66	27	13	X16 X12 X10 X8	116 70 42 12	X12 X10 X8	64 90 111	151
12	51	22	10	X12 X10 X8 X6	83 59 32 0	X10 X8 X6	34 62 86	118
10	44	18	9	X10 X8 X6	66 41 8	X8 X6 X4	33 61 81	100
8	37	15	7	X8 X6 X4	50 21 0	X6 X4	35 59	83
6	29	12	5	X6 X4	30 0	X4	32	63
4	21	8	4	X4	14			45

NOTES:

1.) RESTRAIN TO NEXT FULL JOINT BEYOND GIVEN LENGTH.

2.) RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.

3.) ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.

4.) ALL VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.

5.) PIPE SIZES ARE GIVEN IN INCHES.

6.) PIPE LENGTHS ARE GIVEN IN FEET.

7.) LENGTHS SHOWN ARE FOR A TEST PRESURE OF 180 PSI.

8.) THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON THE USE OF LIGHTLY COMPACTED CLEAN SAND WITH AT LEAST A 95% COARSE PARTICLE CONTENT. ACTUAL SOIL CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		RESTRAINED LENGTHS FOR PVC PIPE	UW-14A
		NOVEMBER 1, 1999 DATE OF APPROVAL		

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

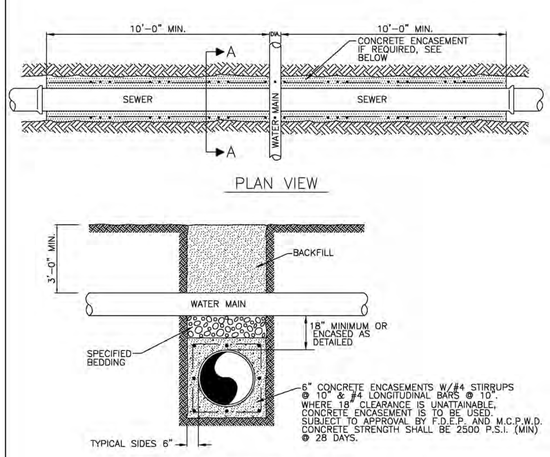
MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES SIZE	TEES LENGTH	REDUCERS SIZE	REDUCERS LENGTH	PLUGS
36	116	48	23	X36 X30 X24 X20 X16 X12	282 232 175 130 77 11	X30 X24 X20 X16	96 173 216 257	317
30	102	42	20	X30 X24 X20 X16 X12 X10	241 186 144 95 54 7	X24 X20 X16	96 150 194	275
24	87	36	17	X24 X20 X16 X12 X10 X8	197 157 112 58 25 0	X20 X16 X12	69 125 170	230
20	75	31	15	X20 X16 X12 X10 X8	165 122 72 41 6	X16 X12 X10	69 123 145	197
16	63	26	13	X16 X12 X10 X8 X6	132 85 57 25 0	X12 X10 X8	69 97 119	163
12	50	21	10	X12 X10 X8 X6	97 71 43 7	X10 X8 X6	37 68 93	128
10	43	18	9	X10 X8 X6	78 52 19	X8 X6 X4	37 67 89	109
8	36	15	7	X8 X6 X4	60 29 0	X6 X4	38 65	90
6	28	12	6	X6 X4	40 5	X4	36	70
4	20	8	4	X4	19			49

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS 90°	45°	22.5°	TEES SIZE	TEES LENGTH	REDUCERS SIZE	REDUCERS LENGTH	PLUGS
36	100	42	20	X36 X30 X24 X20 X16 X12	198 162 123 91 54 7	X30 X24 X20 X16	67 121 151 176	222
30	88	37	18	X30 X24 X20 X16 X12 X10	169 131 101 67 25 0	X24 X20 X16	67 105 136	192
24	75	31	15	X24 X20 X16 X12 X10 X8	138 110 78 40 17 0	X20 X16 X12	48 88 119	161
20	65	27	13	X20 X16 X12 X10 X8	115 86 50 29 4	X16 X12 X10	48 86 101	138
16	54	22	11	X16 X12 X10 X8 X6	92 59 40 18 0	X12 X10 X8	49 68 83	114
12	43	18	8	X12 X10 X8 X6	68 50 30 5	X10 X8 X6	26 47 65	89
10	37	15	7	X10 X8 X6	55 36 13	X8 X6 X4	26 47 62	76
8	30	13	6	X8 X6 X4	42 20 0	X6 X4	26 45	63
6	24	10	5	X6 X4	28 4	X4	25	49
4	17	7	3	X4	14			34

NOTE:
SEE DETAIL UW-14A FOR NOTES 1 THRU 8

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		RESTRAINED LENGTHS FOR DIP	UW-14B
		NOVEMBER 1, 1999 DATE OF APPROVAL		



PLAN VIEW

SECTION A-A

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		TYPICAL WATER/ SEWER CROSSING	UW-8
		MARCH 18, 1997 DATE OF APPROVAL		

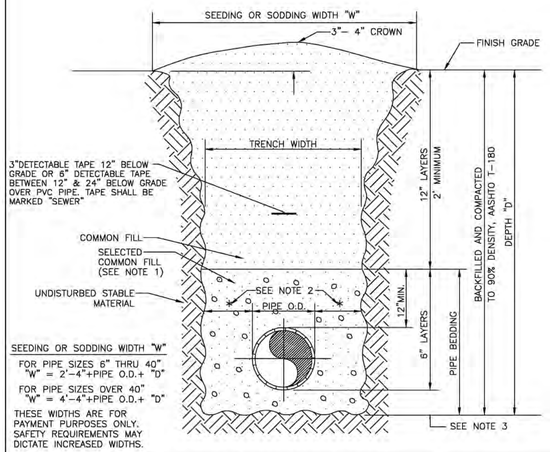
NOTES:

1.) USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

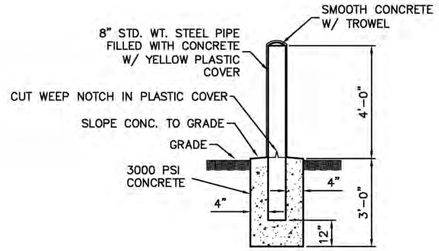
2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX FOR PIPE 42" DIAMETER AND LARGER.

4.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

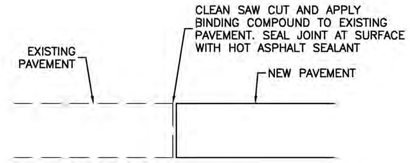


MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		TRENCH DETAIL UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	US-11
RTH	11/99	MARCH 18, 1997 DATE OF APPROVAL		



BOLLARD DETAIL

1 / C-2 DETAIL SCALE: NTS



ASPHALT CONNECTION

2 / C-2 DETAIL SCALE: NTS

NOTES:

1.) ~~USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.~~

2.) 10" MAX. FOR PIPE DIAMETERS LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

4.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

5.) WEARING SURFACE TO BE SAME TYPE & THICKNESS (1½" MIN.) AS EXISTING PAVEMENT.

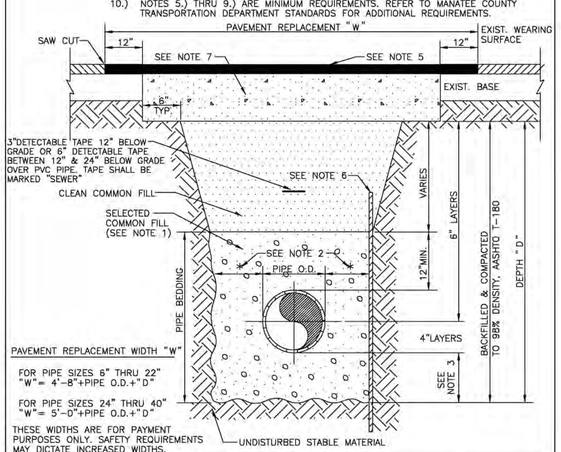
6.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.

7.) BASE SHALL BE 6" MINIMUM THICKNESS SAND ASPHALT, 10" MIN. THICKNESS CRUSHED CONCRETE, OR APPROVED EQUAL.

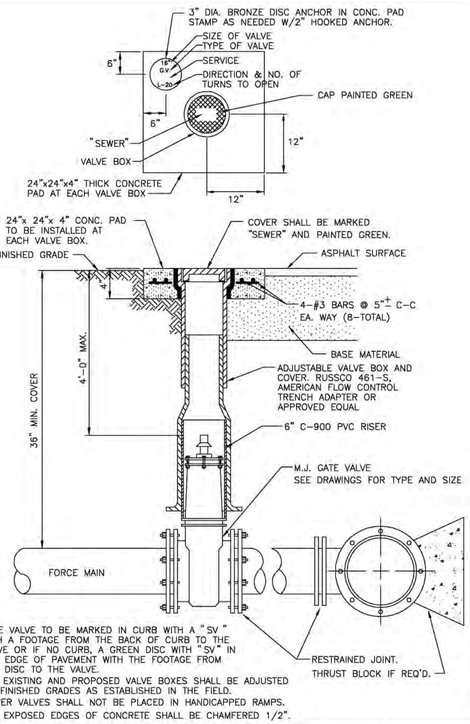
8.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.

9.) TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIME. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.

10.) NOTES 5.) THRU 9.) ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY TRANSPORTATION DEPARTMENT STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		TRENCH DETAIL ASPH. PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	US-12
RTH	11/99	MARCH 18, 1997 DATE OF APPROVAL		



NOTES:

1. GATE VALVE TO BE MARKED IN CURB WITH A "SV" WITH A FOOTAGE FROM THE BACK OF CURB TO THE VALVE OR IF NO CURB, A GREEN DISC WITH "SV" IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS ESTABLISHED IN THE FIELD.
3. SEWER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		GATE VALVE, BOX, COVER AND TAG	US-16
RTH	11/99	MARCH 18, 1997 DATE OF APPROVAL		

RECORD DRAWING

PLOTTED May 25, 2010 3:33 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\C-5 CIVIL DETAILS.DWG

URS
7650 West Courtney Campbell Causeway
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Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031

PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS

FILE SAVE DATE: April 23, 2010

MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE AT THE NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

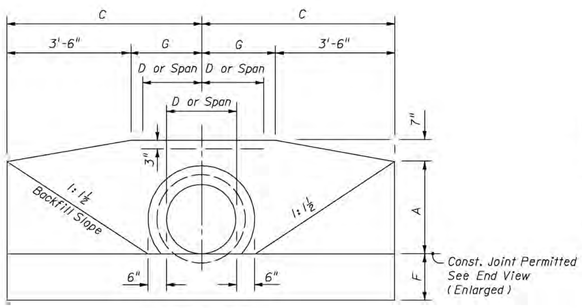
CIVIL DETAILS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

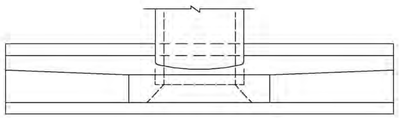
PROJECT STATUS
RECORD DRAWINGS
MAY 2010

C-5

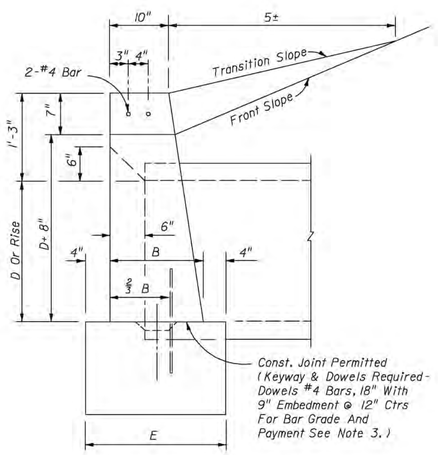
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



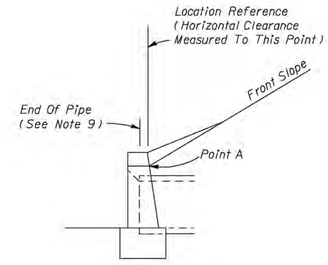
FRONT VIEW



TOP VIEW



END VIEW (ENLARGED)



END VIEW

1. Position is set by the intersection of the front slope and Point A where this intersection falls outside the clear zone.
2. Where the front slope and Point A intersects inside the clear zone, the endwall is positioned so the location reference point is at the clear zone limit. The front slope is transitioned to the endwall as shown in Index No. 280.

STANDARD LOCATION CONTROL

GENERAL NOTES

1. Endwall dimensions, locations and positions are for round and elliptical concrete pipe and for round and pipe-arch corrugated metal pipe. Round concrete pipe shown.
2. Front slope and ditch transitions shall be in accordance with Index No. 280.
3. Endwalls may be cast in place or precast concrete. Reinforcing steel shall be Grades 40 or 60. Additional reinforcement necessary for handling precast units shall be determined by the Contractor or the supplier. Cost of reinforcement shall be included in the contract unit price for concrete, (endwalls).
4. All exposed corners and edges of concrete are to be chamfered ¾".
5. Concrete meeting the requirements of ASTM C478 (4000 psi) may be used in lieu of Class I concrete in precast items manufactured in plants which are under the Standard Operating Procedures for the inspection of precast drainage products.
6. On outfall ditches with side slopes flatter than 1:1½ provide 20' transitions from the endwall to the flatter side slopes, right of way permitting.
7. For sodding around endwalls see Index No. 281.
8. Payment for concrete quantities for endwalls skewed to the pipe shall be made on the following basis:

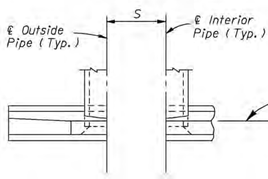
Endwall Skew To Pipe	Use Tabulated Value
0° to 5°	0°
6° to 15°	15°
16° to 30°	30°
31° or over	45°

9. Pipe length plan quantities shall be based on the pipe end locations shown in the standard location control end view, or lengths based on special endwall locations called for in the plans.
10. Payment for pipe in pipe culverts shall be based on plan quantities, adjusted for endwall locations subsequently established by the Engineer.
11. Endwalls to be paid for under the contract unit price for Class I Concrete (Endwalls), CY.

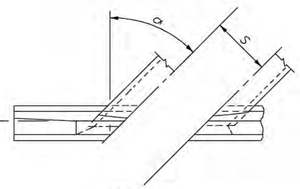
ENDWALL DIMENSIONS (EXCLUSIVE OF MULTIPLE PIPE SPACING)

FRONT VIEW

FRONT VIEW



TOP VIEW



TOP VIEW

NORMAL PIPE

LEGEND

- α Pipe Skew
- S Center To Center Pipe Spacing
- X Centerline To Centerline Dimension At Face Of Headwall

SKEWED PIPE

ENDWALL POSITIONS FOR SINGLE AND MULTIPLE PIPE AND SPACING FOR MULTIPLE PIPE

DATA AND ESTIMATED QUANTITIES FOR ONE ENDWALL

ROUND CONCRETE AND CORRUGATED METAL PIPE

D	Opening Area (SF)				Dimensions											Class I Concrete (CY)																				D
	Number Of Pipes											X				Number And Type Of Pipe And Skew Angle Of Pipe																				
																Single		Double						Triple						Quadruple						
	1	2	3	4	A	B	C	E	F	G	S	0°	15°	30°	45°	Concrete	Metal	Concrete				Metal				Concrete				Metal				Concrete				Metal			
																		0°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	
24"	3.14	6.28	9.42	12.56	2'-8"	1'-4"	5'-6"	2'-0"	1'-4"	2'-0"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"	2.24	2.29	2.82	2.84	2.91	3.06	2.91	2.93	3.01	3.17	3.39	3.43	3.57	3.87	3.52	3.56	3.71	4.03	3.97	4.03	4.24	4.69	4.14	4.20	4.43	4.91	24"

CONCRETE HEADWALL (FDOT INDEX 250)

3 / C-2 DETAIL SCALE: NTS

Note: Use the guidelines of General Note No. 8 for selecting tabular quantities.

RECORD DRAWING

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Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031

PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
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MANATEE COUNTY, FLORIDA

CIVIL DETAILS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

C-6

PLOTTED May 25, 2010 3:33 PM PLOTTED BY: SCHEUERMAN, JAMES
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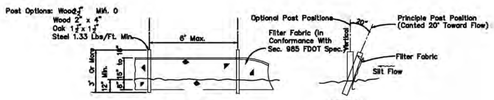
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



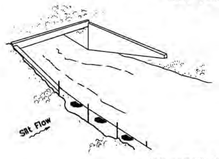
Note: Silt Fence to be paid for under the contract unit price for Staked Silt Fence (LF).

TYPE ~~~ SILT FENCE

Type ~~~ Silt Fence Protection Around Ditch Bottom Inlets.

Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

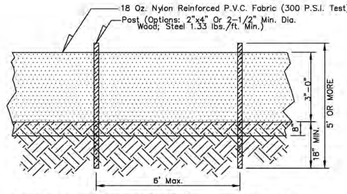
SILT FENCE APPLICATIONS



Type ~~~ Silt Fence

Note: Spacing for Type ~~~ Fence to be in accordance with Chart ~, Sheet 1 of 3 and ditch installations at drainage structures Sheet 2 of 3.

Type ~~~ Silt Fence



Note: Refer to Latest Edition of F.D.O.T. "Roadway and Traffic Design Standards" Index No. 102 for Additional Details and Specifications.

NOTES:

1. CONTRACTOR SHALL INSTALL EROSION CONTROL DEVICES PRIOR TO ANY OTHER CONSTRUCTION ACTIVITIES. THE DEVICE SHALL BE INSTALLED IN THE LOCATIONS ON THE DRAWINGS AND ANYWHERE ELSE THERE IS A POTENTIAL FOR EROSION AS SEDIMENT TO EXIT THE WORK AREA.
2. CONTRACTOR SHALL INSPECT INSTALLED EROSION CONTROL DEVICE WEEKLY DURING CONSTRUCTION AND AFTER HEAVY RAINS FOR DAMAGE. MAINTENANCE SHALL INCLUDE CLEANING BUILT-UP SEDIMENT BEHIND THE BARRIERS AND/OR REPLACING DAMAGED SECTIONS.
3. THE EROSION CONTROL DEVICE SHALL BE MAINTENANCED BY THE CONTRACTOR UNTIL A PERMANENT STAND OF GRASS (OR OTHER PERMANENT STABILIZATION) IS ESTABLISHED.
4. IN NO CASE SHOULD HAY BALES BE USED AS EROSION CONTROL.

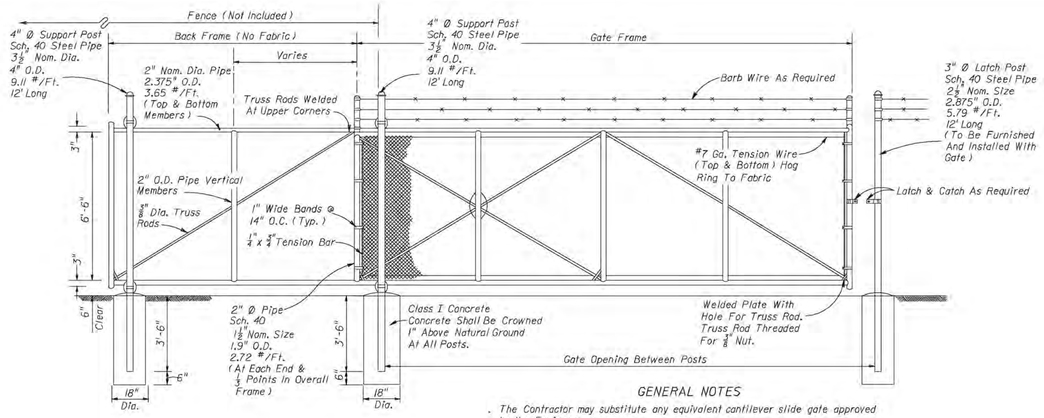
FDOT INDEX 102

BALED HAY OR STRAW BARRIERS & SILT FENCES

4 / C-2 DETAIL SCALE: NTS

EROSION/SEDIMENTATION CONTROL DEVICE

5 / C-1&C-2 DETAIL SCALE: NTS

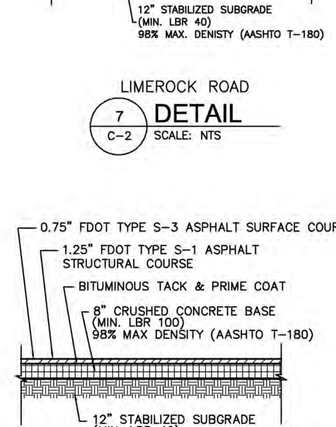


GENERAL NOTES

1. The Contractor may substitute any equivalent cantilever slide gate approved by the Engineer. Extruded, rolled or formed components that provide equal strength and stability may be used in lieu of the pipe components shown; and, internal rollers may be used in lieu of the external roller units shown.
2. Gate components shall meet or exceed the protective coatings specified. Steel gate frame shall be fabricated prior to galvanizing, except that truss rods may be fabricated following frame galvanizing provided surfaces damaged during welding are galvanized in accordance with Section 24 of AASHTO M36; or, fabricated from pipe components with protective coating meeting the requirements of Index No. 452 that are tolerant of welding (low burn back), and a protective coating applied to the weld and damaged pipe surfaces that is equivalent to the protective coating of the fabricated pipe stock.
3. All fabric shall be knuckled top and bottom selvages.
4. Cost of all gate components shall be included in the contract unit price for Sliding Fence Gate (Cantilever), EA.

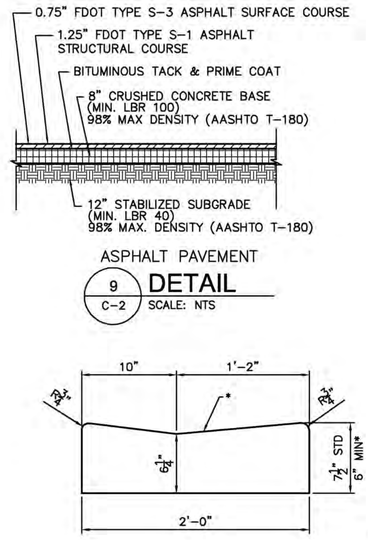
CHAIN LINK COUNTERLEAVER SLIDE GATE

6 / C-2 DETAIL SCALE: NTS



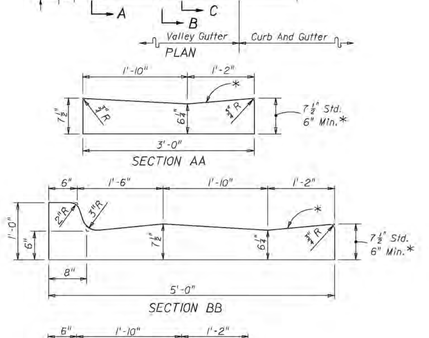
LIMEROCK ROAD

7 / C-2 DETAIL SCALE: NTS



ASPHALT PAVEMENT

9 / C-2 DETAIL SCALE: NTS



VALLEY GUTTER

* WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT. THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOWN ON PLANS.

☑ ROTATE ENTIRE SECTION SO THAT GUTTER CROSS SLOPE MATCHES SLOPE OF ADJACENT CIRCULATING ROADWAY PAVEMENT.

VALLEY GUTTER DETAIL (FDOT INDEX 300)

8 / C-2 DETAIL SCALE: NTS

* WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT. THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOW ON PLANS

NOTES:

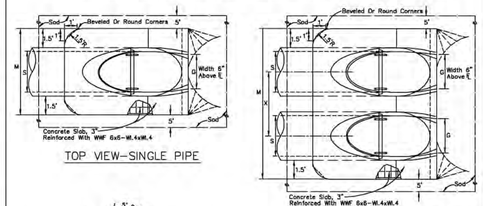
1. FOR CURB, GUTTER AND CURB & GUTTER PROVIDE ⅛" -½" CONTRACTION JOINTS AT 10' CNTERS (MAX). CONSTRUCTION JOINTS ADJACENT TO CONCRETE PAVEMENT ON TANGENTS AND FLAT CURVES ARE TO MATCH THE PAVEMENT JOINTS, WITH INTERMEDIATE JOINTS NOT T OEXCEED 10' CENTERS. CURB, GUTTER AND CURB AND GUTTER EXPANSIONS JOINTS SHALL BE LOCATED IN ACCORDANCE WITH SECTION 520 OF THE STANDARD SPECIFICATIONS.
2. END OF CURBS TYPE B AND D SHALL TRANSITION FROM FULL TO ZERO HEIGHTS IN 3'.

DROP CURB (FDOT INDEX NO 300)

10 / C-2 DETAIL SCALE: NTS

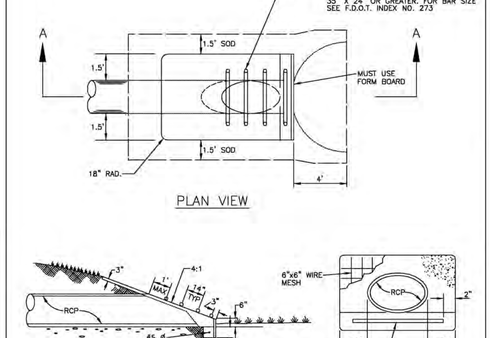
ELIPTICAL PIPE

	DIMENSIONS & QUANTITIES											
	Rise R	Span S	X	A	B	C	E	F	G	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad. Pipe
2:1 Slope	12"	18"	2'-10"	1.97'	1.62'	3.59'	1.56'	4"	1.50'	4.92'	7.75'	10.58'	13.42'
	14"	23"	3'-4"	2.01'	1.99'	4.00'	1.89'	5'	1.90'	5.38'	8.71'	12.04'	15.38'
	19"	30"	4'-0"	2.11'	2.92'	5.03'	2.73'	6'	2.37'	6.04'	10.04'	14.04'	18.04'
	24"	38"	5'-0"	2.22'	3.83'	6.05'	3.56'	7'	2.85'	6.78'	11.78'	16.78'	21.79'
	29"	45"	5'-11"	2.34'	4.75'	7.13'	4.39'	8'	3.19'	7.50'	13.42'	19.33'	25.25'
	34"	53"	7'-0"	2.43'	5.72'	8.15'	5.23'	9'	3.57'	8.25'	15.25'	22.25'	29.25'
	38"	60"	7'-10"	2.52'	6.46'	8.98'	5.89'	9"	3.85'	8.92'	16.75'	24.58'	32.42'
	43"	68"	8'-11"	2.62'	7.39'	10.01'	6.73'	10'	4.28'	9.67'	18.58'	27.50'	36.42'
	48"	75"	9'-11"	2.71'	8.33'	11.04'	7.56'	11'	4.58'	10.42'	20.33'	30.25'	40.17'
	53"	83"	10'-8"	2.80'	9.28'	12.08'	8.39'	12'	4.77'	11.08'	21.75'	32.42'	43.08'
	58"	91"	11'-8"	2.90'	10.19'	13.09'	9.23'	13'	5.01'	11.83'	23.50'	35.17'	46.83'
4:1 Slope	12"	18"	2'-10"	2.38'	3.06'	5.42'	3.03'	5'	1.50'	4.92'	7.75'	10.58'	13.42'
	14"	23"	3'-4"	2.44'	3.75'	6.18'	3.70'	6'	1.90'	5.38'	8.71'	12.04'	15.38'
	19"	30"	4'-0"	2.62'	5.47'	8.09'	5.36'	8'	2.37'	6.04'	10.04'	14.04'	18.04'
	24"	38"	5'-0"	2.79'	7.18'	9.97'	7.03'	10'	2.85'	6.78'	11.78'	16.78'	21.79'
	29"	45"	5'-11"	3.05'	8.90'	11.80'	8.70'	12'	3.19'	7.50'	13.42'	19.33'	25.25'
	34"	53"	7'-0"	3.22'	10.62'	13.84'	10.36'	13'	3.57'	8.25'	15.25'	22.25'	29.25'
	38"	60"	7'-10"	3.39'	11.99'	15.38'	11.70'	15'	3.85'	8.92'	16.75'	24.58'	32.42'
	43"	68"	8'-11"	3.56'	13.71'	17.27'	13.36'	17'	4.28'	9.67'	18.58'	27.50'	36.42'
	48"	75"	9'-11"	3.73'	15.43'	19.16'	15.03'	19'	4.58'	10.42'	20.33'	30.25'	40.17'
	53"	83"	10'-8"	3.91'	17.15'	21.08'	16.70'	20'	4.77'	11.08'	21.75'	32.42'	43.08'
	58"	91"	11'-8"	4.08'	18.87'	22.95'	18.36'	22'	5.01'	11.83'	23.50'	35.17'	46.83'



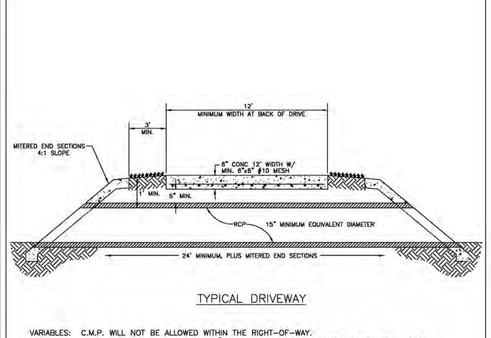
* Slope: 4:1 Miter: To Major Axis For Pipes 24"x38" And Smaller. 2:1 For Pipes 29"x45" And Larger.
2:1 Miter: To Major Axis For Pipes 29"x45" And Smaller. 1:1 For Pipes 34"x53" And Larger.

MANATEE COUNTY TRANSPORTATION DEPARTMENT			
REV.BY	DATE	MITERED END SECTION FOR ELIPTICAL, SINGLE, AND MULTIPLE PIPES	102.1
	6/12/07 DATE OF B.O.C.C. APPROVAL		



SOD TO BE PLACED 1.5 FT AROUND THE PERIMETER OF THE WALL. SOD TO BE BAHIA; ST. AUGUSTINE SOD WHERE THERE IS TIDAL, HEAVY CONCENTRATION OF SALT, OR SURROUNDING PROPERTY IS ST. AUGUSTINE.

MANATEE COUNTY TRANSPORTATION DEPARTMENT			
REV.BY	DATE	DRIVEWAY AND ROAD PIPE MITERED END SECTION	103.0
	6/12/07 DATE OF B.O.C.C. APPROVAL		



TYPICAL DRIVEWAY

VARIABLES: C.M.P. WILL NOT BE ALLOWED WITHIN THE RIGHT-OF-WAY. R.C.P. WILL REQUIRE A MINIMUM 6" OF COVER BENEATH BOTTOM OF DRIVEWAY, FOR A TOTAL OF 1' OF COVER. HDPE PIPE IS ACCEPTABLE IN LIEU OF RCP.

NOTE: 1) GRADES AND LOCATIONS MUST BE REVIEWED AND APPROVED BY THE DRIVEWAY INSPECTOR FOR ALL PIPE INSTALLATIONS

2) ACTUAL REQUIRED PIPE DIAMETER WILL BE BASED ON THE FLOW RATE REQUIRED TO PASS THROUGH PIPE SO AS NOT TO IMPOUND WATER UPSTREAM.

3) PIPE SIZE TO BE DETERMINED AND APPROVED BY MANATEE COUNTY.

MANATEE COUNTY TRANSPORTATION DEPARTMENT			
REV.BY	DATE	TYPICAL DRIVEWAY PIPE CROSS SECTION	102.0
	6/12/07 DATE OF B.O.C.C. APPROVAL		

RECORD DRAWING

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE AT THE NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

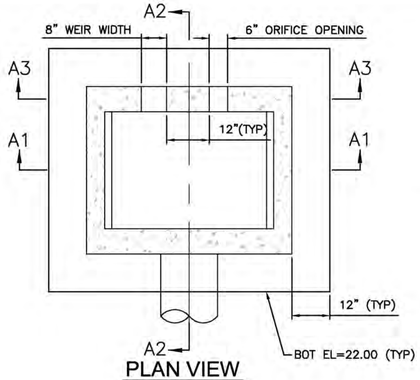
CIVIL DETAILS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

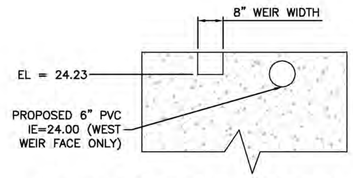
PROJECT STATUS
RECORD DRAWINGS
MAY 2010

C-7

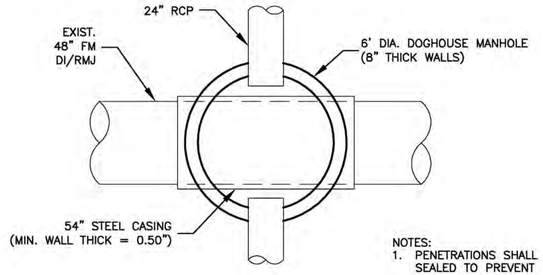
PLOTTED May 25, 2010 3:33 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\C-7 CIVIL DETAILS.DWG



PLAN VIEW
SCALE: NTS

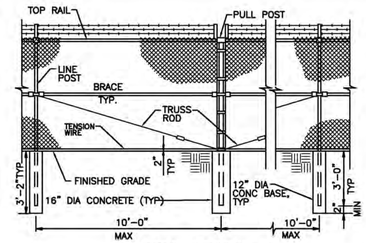


WEIR FACE DETAIL (SECTION A3-A3)
SCALE: NTS

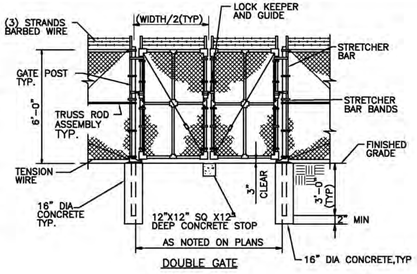


PLAN

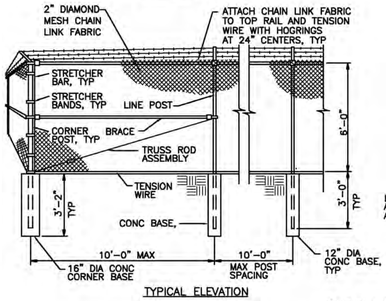
NOTES:
1. PENETRATIONS SHALL BE SEALED TO PREVENT LEAKAGE.



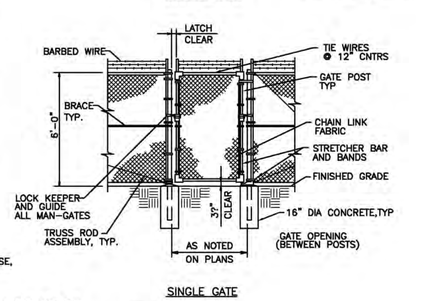
TYPICAL ELEVATION



DOUBLE GATE



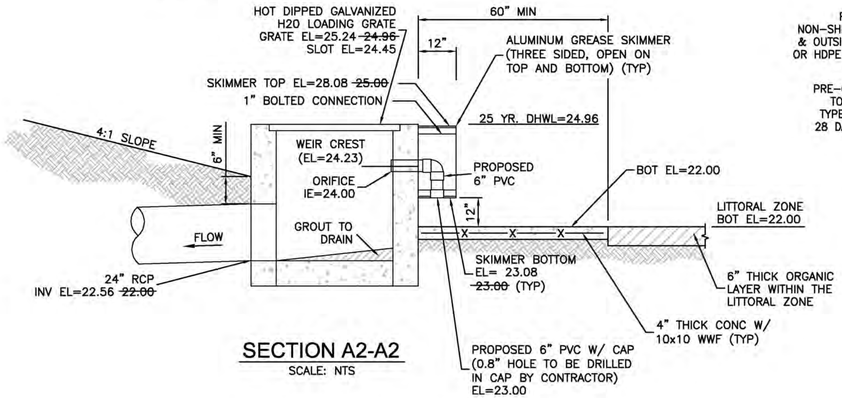
TYPICAL ELEVATION



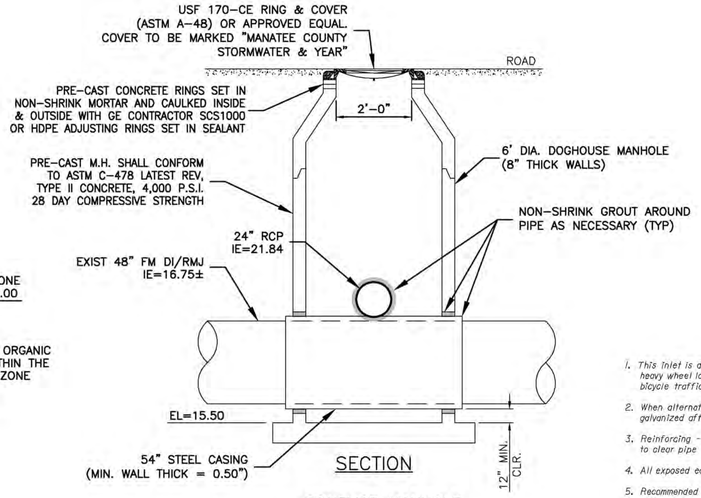
SINGLE GATE

CHAIN LINK FENCE DETAIL
12 / C-2
SCALE: NTS

FENCE NOTES:
1. BRACE AND TRUSS ROD REQUIRED AT GATES AND SIDES OF ALL CORNER POSTS.
2. FENCING MATERIALS AND INSTALLATION TO BE IN ACCORDANCE WITH "FENCING" SPECIFICATION.

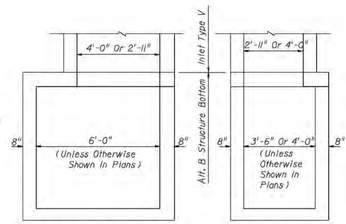


SECTION A2-A2
SCALE: NTS



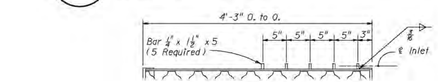
SECTION
CONFLICT MANHOLE
14 / C-2
DETAIL
SCALE: NTS

GENERAL NOTES
1. This inlet is designed for village swales, ditches, or other areas subject to heavy wheel loads, minimum debris and subject to pedestrian and/or bicycle traffic.
2. When alternate "G" grate is specified in plans, the grate is to be hot dipped galvanized after fabrication.
3. Reinforcing - #4 bars at 12" ctrs. both ways. Cut or bend bars out of way of pipe to clear pipe 1½".
4. All exposed edges and corners shall be tooled to ¼" radius.
5. Recommended maximum pipe sizes shown are for concrete pipe.
6. For supplementary details see Index No. 201.

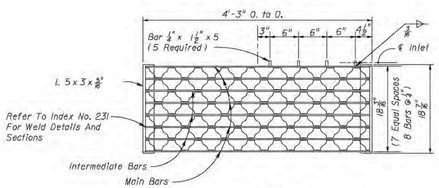


NOTE: Alt. B Structure Bottom Only. See Index No. 200 for structure bottom details and hole reinforcement. (For Pipes 30" Dia. And Larger)

INLET WITH STRUCTURE BOTTOM



OPTIONAL BAR SPACING

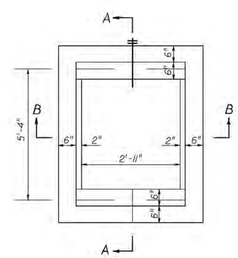


STEEL GRATE

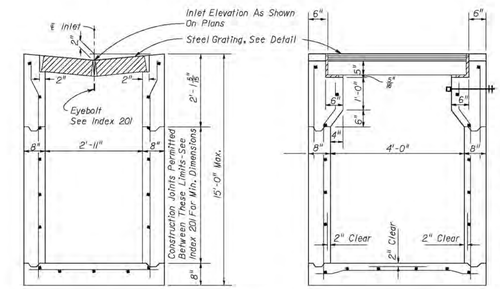
TWO REQUIRED PER INLET

5" Steel Grate — Main Bars 5" x ½"
Intermediate Bars 1½" x ¼" — Reticuline Bars 1¼" x ⅜"

Steel Grate : Manufactured By Borden, Florida Steel, U.S. Foundry Irving, Reliance, Greulich (Or Equal).



PLAN

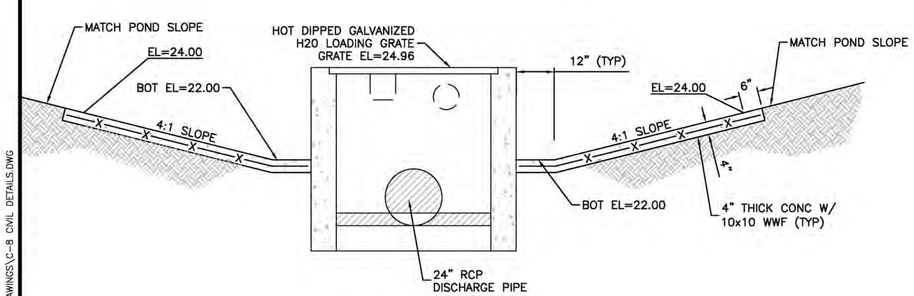


SECTION BB

Recomended Maximum Pipe Size:
2'-11" Wall - 24" Size
4'-0" Wall - 36" Size

SECTION AA

FDOT GUTTER INLET TYPE V (INDEX NO. 221)
13 / C-2
DETAIL
SCALE: NTS



SECTION A1-A1
SCALE: NTS

NOTE: SEE "STORMWATER POND, ON SHEET C-2 FOR FURTHER DETAILS.

MODIFIED TYPE 'D' CONTROL STRUCTURE (ST-2)
11 / C-2
DETAIL
SCALE: NTS

RECORD DRAWING

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 27, 2010

MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

CIVIL DETAILS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

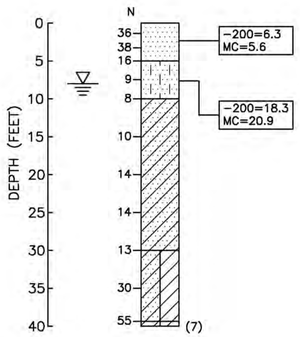
C-8

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

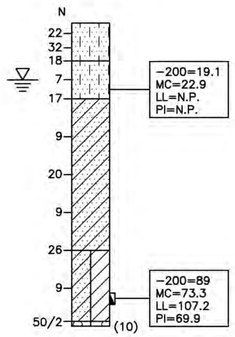
PLOTTED May 25, 2010 3:33 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\C-8 CIVIL DETAILS.DWG

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

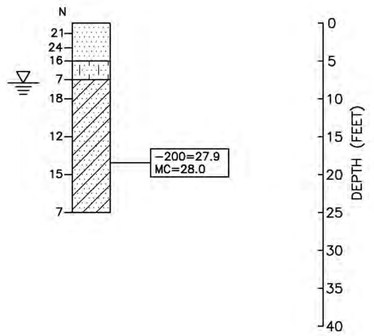
BORING B-1
GSE APPROX. 25.0
GROUNDWATER DEPTH = 8.0'
DATE: 10/17/07



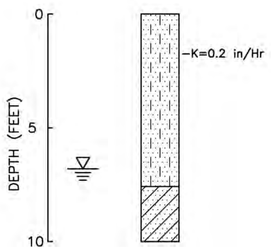
BORING B-2
GSE APPROX. 25.0
GROUNDWATER DEPTH = 7.5'
DATE 10/17/07



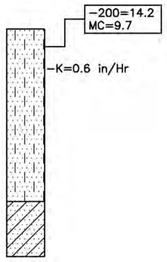
BORING B-3
GSE APPROX. 25.0
GROUNDWATER DEPTH = 7.9'
DATE 10/17/07



BORING B-4
GSE APPROX. 25.0
GROUNDWATER DEPTH = 6.8'
DATE: 10/17/07



BORING B-5
GSE APPROX. 25.0
GROUNDWATER DEPTH = 6.6'
DATE 10/17/07



SOIL LEGEND:

- 1) SAND (SP)
- 2) SAND W/SOME SILT (SP, SP-SM)
- 4) SAND W/SOME CLAY (SP-SC)
- 5) CLAYEY SAND (SC)
- 7) CLAYEY SAND (SC) AND HIGHLY PLASTIC CLAY (CH)
- 10) LIMESTONE (LS)

LEGEND:

-200	%PASSING #200 SIEVE
MC	MOISTURE CONTENT (%)
ORG	ORGANIC CONTENT (%)
LL	LIQUID LIMIT
N.P.	NON-PLASTIC
PI	PLASTICITY INDEX
GSE	GROUND SURFACE ELEVATION
▽	GROUNDWATER LEVEL AT TIME OF DRILLING
N	STANDARD PENETRATION RESISTANCE IN BLOWS/12 IN
WOH	WEIGHT OF HAMMER
WOR	WEIGHT OF ROD
(SP)	UNIFIED SOIL CLASSIFICATION
k	PERMEABILTY VALUE FROM DOUBLE RING INFILTRATION TEST
	UNDISTURBED SAMPLE (SHELBY TUBE)

SOIL DESIGN PARAMETERS

BORING NUMBER	DEPTH (FEET)	SPT 'N' RANGE	APPROX. SOIL UNIT WEIGHT (pcf) MOIST	APPROX. SOIL UNIT WEIGHT (pcf) SUBMERGED	ANGLE OF INTERNAL FRICTION	UNDRAINED SHEAR STRENGTH (psf)
B-1	0-5	16-38	115	52.6	34	0
	5-10	8-9	110	47.6	30	0
	10-35	10-30	115	52.6	32	0
	35-40	30-55	125	62.6	0	4,000
B-2	0-5	18-32	115	52.6	34	0
	5-7.5	7	110	47.6	30	0
	7.5-15	9-17	110	47.6	30	0
	15-40	9-26	110	47.6	30	0
	40-40.2	50/2	125	62.6	0	4,000
B-3	0-5	16-24	115	52.6	34	0
	5-7.5	7	110	47.6	30	0
	7.5-20	12-18	115	52.6	32	0
	20-25	7	110	47.6	30	0

ENGINEERING CLASSIFICATION

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	0 TO 4
LOOSE	5 TO 10
MEDIUM OR COMPACT	11 TO 30
DENSE	31 TO 50
VERY DENSE	OVER 50

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	0 TO 2
SOFT	2 TO 4
FIRM	4 TO 8
STIFF	8 TO 15
VERY STIFF	15 TO 30
HARD	OVER 30

NOTES
1. BORINGS ARE NOT TO SCALE HORIZONTALLY.
2. SOIL BORINGS REFERENCED FROM EXISTING FEATURES ON SITE. SEE SHEET C-1 FOR APPROXIMATE LOCATIONS.
3. HAMMER TYPE: MANUAL
4. DRILL RIG TYPE: CME-75

RECORD DRAWING

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: K. GIANG
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

SOIL BORING LOGS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

C-9

PLOTTED May 25, 2010 3:33 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\C-9 SOIL BORING LOGS.DWG

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

A. BUILDING CODES:

1. FLORIDA BUILDING CODE, 2004 EDITION (2005 AND 2006 REVISIONS).
2. ACI 318-02 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
3. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, NINTH EDITION (ASD).
4. AWS STRUCTURAL WELDING CODE (CURRENT EDITION).
5. ACI 350-06 CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES AND COMMENTARY.

B. DESIGN CRITERIA:

1. LIVE LOADS:

   STAIRS 100 PSF CONCRETE DECK 50 PSF ELEVATED TRENCH/PIT COVERS 50 PSF.
2. WIND LOADS AS PER ASCE 7-02 FOR A BASIC WIND SPEED OF 130 MPH;
   WIND IMPORTANCE FACTOR: 1.15
   BUILDING CATEGORY: III
   OTHER STRUCTURE
   EXPOSURE "C"
3. ALLOWABLE SOIL PRESSURE - 2500 PSF

C. CONSTRUCTION MATERIALS:

1. CAST-IN-PLACE CONCRETE COMPRESSIVE STRENGTH: 4000 PSI AT 28 DAYS.
2. ANCHOR BOLTS STAINLESS STEEL TYPE 316
3. REINFORCING STEEL - ASTM A 615, GRADE 60 UNCOATED.
4. NON SHRINK, NON METALIC GROUT:
   EUCO-NS BY EUCLID CHEMICAL COMPANY OR APPROVED EQUAL.
5. WELDED STEEL WIRE FABRIC - ASTM A 185.
6. WELDING ELECTRODES - AWS STANDARDS (ALUMINUM, STAINLESS STEEL).
7. STAINLESS STEEL - ANCHOR BOLTS, EXPANSION ANCHORS, THREADED RODS, NUTS AND WASHERS. PROVIDE TYPE 316
8. NEOPRENE PADS - 200 PSI (MINIMUM) ALLOWABLE COMPRESSIVE STRESS.

B. FOUNDATIONS:

1. ALL EARTHWORK AND COMPACTION FOR STRUCTURES SHALL BE AS NOTED IN THE SPECIFICATIONS.

E. EXCAVATIONS:

1. THE SIDES OF EXCAVATIONS, SHALL BE CUT TO STABLE SLOPES OR SHALL BE SHEETED, SHORED, OR BRACED BY CONTRACTOR AS REQUIRED FOR STABILITY.

F. GENERAL NOTES:

1. APPLY FINISH TO ALL CONCRETE AS NOTED IN THE SPECIFICATIONS.
2. ALL REINFORCEMENT TO BE DETAILED AND FABRICATED IN ACCORDANCE WITH ACI 315-94. ALL CONSTRUCTION JOINTS, WITH REINFORCING PASSING THROUGH THE JOINT, SHALL BE ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY ¼", UNLESS NOTED OTHERWISE.
3. PROVIDE THE FOLLOWING MINIMUN CONCRETE COVER, UNLESS NOTED OTHERWISE ON THE PLANS:
   FOOTINGS - - - - 3"
   SLABS ON GRADE - CENTERED
   ELEVATED SLABS 3"
   WALLS (EXPOSED TO UNTREATED WATER) 3"
   BEAM STIRRUPS 2".
4. CHAMFER ALL EXPOSED CONCRETE EDGES ¾"x¾" EXCEPT AS NOTED OTHEWISE.
5. CONTRACTOR SHALL VERIFY AND CORRELATE ALL DIMENSIONS BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.

G. COORDINATION:

1. THE CONTRACTOR SHALL COORDINATE ALL PIPE AND CONDUIT PENETRATIONS THROUGH CONCRETE WITH THE CIVIL, MECHANICAL, AND ELECTRICAL SHOP DRAWINGS PRIOR TO PLACING CONCRETE.
2. THE STRUCTURAL SHEETS SHALL BE COORDINATED WITH THE CIVIL,ARCHITECTURAL, MECHANICAL AND ELECTRICAL SHEETS TO PROPERLY LOCATE DRAINS, SLOPES, PIPE SLEEVES, ANCHOR BOLTS, BLOCK-OUTS, ETC. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
3. THE STRUCTURAL SHEETS SHALL BE COORDINATED WITH THE PROJECT SPECIFICATIONS.

H. SUBMITTALS:

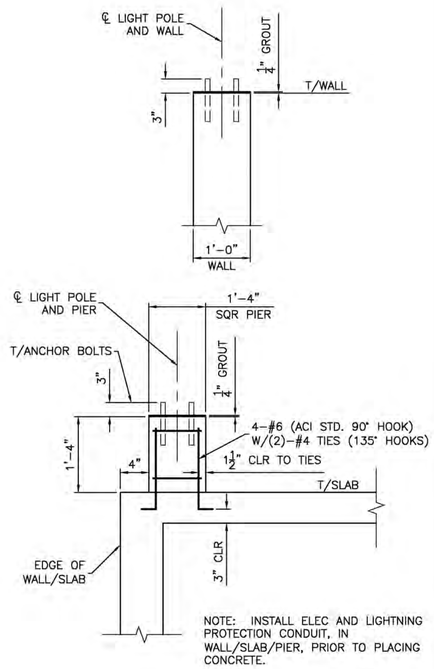
1. ALL SHOP DRAWINGS MUST BE REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL.
2. THE GENERAL CONTRACTOR SHALL SUBMIT FOR ENGINEER REVIEW SHOP DRAWINGS FOR THE FOLLOWING ITEMS:
   REINFORCING STEEL
   CONCRETE MIX DESIGNS
   ALUMINUM STAIRTOWERS
   ALUMINUM GRATING
   ALUMINUM HANDRAILS
   ALUMINUM PLATES
   ALUMINUM STAIRS
   STAINLESS STEEL BEAMS / COVER PLATE AND ANGLES
   GROUT MIX DESIGNS (4000 PSI) FOR AUGERED CAST-IN-PLACE PILES
3. MANUFACTURER'S LITERATURE: SUBMIT TWO COPIES OF MANUFACTURER'S LITERATURE FOR ALL MATERIALS AND PRODUCTS USED IN CONSTRUCTION ON THE PROJECT.

ALL AREAS THAT CONVEY/CONTAIN THE WASTEWATER SHALL HAVE A STAINLESS STEEL PLATE COVER PLATE, AT THEIR TOP, TO ALLOW PERSONNEL ACCESS AND TO LIMIT ODOR.

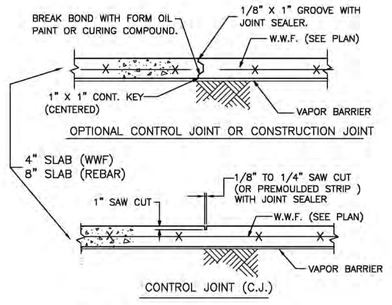
IN ORDER TO CHECK FOR LEAKS BEFORE HEADWORKS IS OPERATIONAL, FILL ALL CHANNELS WITH ONE-FOOT OF WATER FOR 2 DAYS. FILL TANKS WITH 3-FEET OF WATER FOR 2 DAYS.

BUILD CONCRETE GRIT TANK INDEPENDENT OF ALL ADJACENT BEAM / SLAB / WALL CONSTRUCTION, UNLESS NOTED. WATERSTOPS, NOT REBAR, WILL SPAN ALL OF THE ADJACENT SLAB / WALL JOINTS, UNLESS NOTED.

CONTRACTOR SHALL EXPECT TO PERFORM DEWATERING. MAINTAIN GROUND-WATER LEVEL AT EL. 19.00 DURING CONSTRUCTION. MAINTAIN AT EL. 16.00 WHILE INSTALLING UNDERGROUND PIPING AT EAST AND WEST ENDS OF THE HEADWORKS.



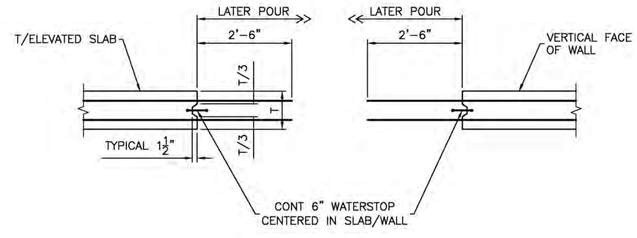
LIGHT POLE SUPPORTS
SCALE: NTS



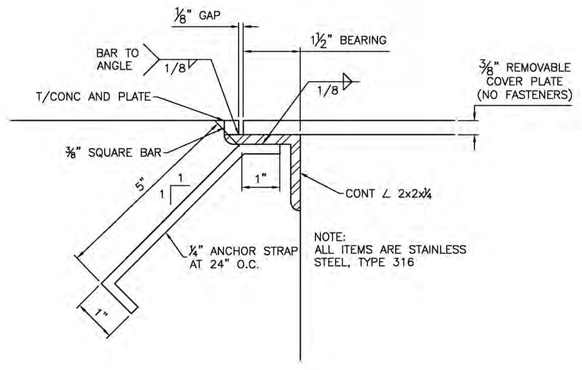
SAW CONTROL JOINT NOTES:
MAKE SAW CUT AS SOON AS SLAB IS ABLE TO SUPPORT WEIGHT OF WORKERS AND SAWING EQUIPMENT WITHOUT DAMAGE TO FINISH SURFACE OF SLAB. BEGIN SAW CUTTING OF SLAB WITHIN 8 HOURS OF SLAB BEING FINISHED.

CLEAN JOINT PRIOR TO FILLING, WITH JOINT SEALER

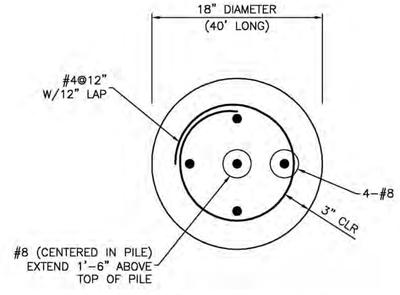
TYPICAL SLAB JOINTS
SCALE: NTS



TYPICAL CONSTRUCTION JOINTS
SCALE: NTS



TYPICAL COVER PLATE BEARING DETAIL
SCALE: NTS



35 TON ALLOWABLE AXIAL LOAD

NOTE: SEE CONSTRUCTION/INSTALLATION/MONITORING RECOMMENDATIONS CONTAINED IN "GEOTECHNICAL REPORT FOR INFLUENT STRUCTURE-NORTH REGIONAL WWTP-MANATEE COUNTY" BY URS (MARCH 2008).

TYPICAL AUGERED CAST-IN-PLACE PILE DETAIL
SCALE: NTS

RECORD DRAWING

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Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: W. HAUSHEER
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

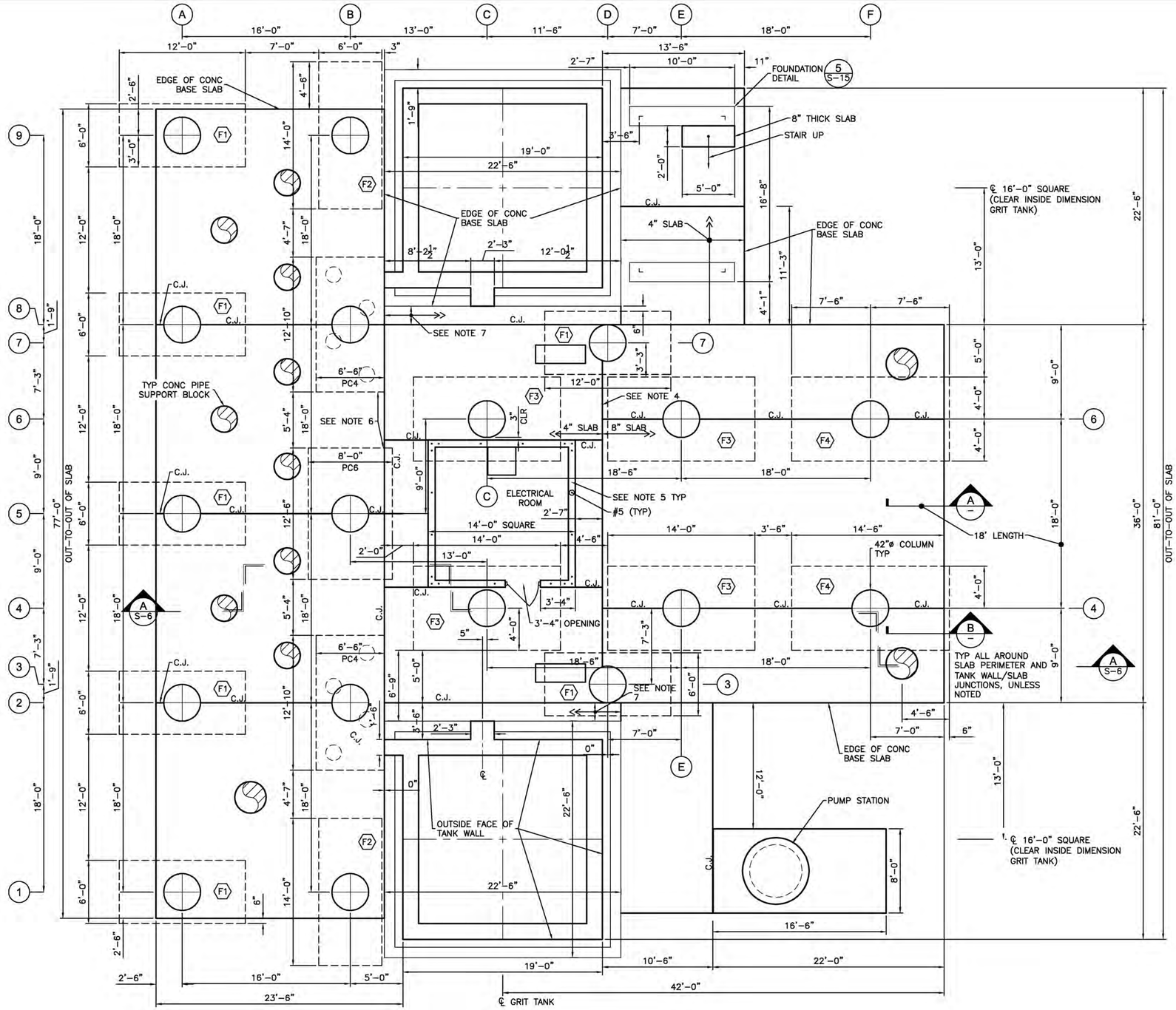
STRUCTURAL NOTES AND DETAILS

WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

S-1

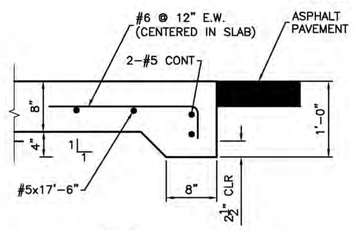
PLOTTED: May 25, 2010 3:33 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\S-1 STRUCTURAL NOTES AND DETAILS.DWG



PLAN VIEW AT GRADE AND FOUNDATION LEVEL T/SLAB-ON-GRADE EL 27.96

SCALE: 3/16"=1'-0"

NOTES:
1. PROVIDE ½" PREMOULDED JOINT FILLER WITH SEALANT AROUND ALL COLUMN, TANK WALL, AND VERTICAL PIPE FACES IN CONTACT WITH SLAB-ON-GRADE.
2. CENTER COLUMNS ON ALL FOOTINGS. SEE DETAIL "3"/S-10 FOR ADDITIONAL INFORMATION.
3. INSTALL ALL CONCRETE PIPE SUPPORT BLOCKS AND PORTION OF VERTICAL PIPE BEFORE INSTALLING FOUNDATIONS.
4. PROVIDE ½" PREMOULDED JOINT FILLER WITH SEALANT ALONG THIS 4"/8" SLAB JUNCTION.
5. SEE "TYPICAL WALL SECTION FOR ELECTRICAL ROOM" ON S-12 FOR INFORMATION. PROVIDE CONCRETE FILLED CELLS (FULL HEIGHT OF 8" CMU) ON BOTH SIDES OF 3'-4" OPENING. PROVIDE 8"x8"(NOM)x4'-8" PRECAST CONCRETE LINTEL ABOVE 3'-4"x7'-4" OPENING.
6. SEE DETAIL 4 FOR PIPE CAPS ON SHEET S-10.
7. PROVIDE 1'-9" LONG CONSTRUCTION JOINT AT 3'-9" ON CENTER IN THIS AREA



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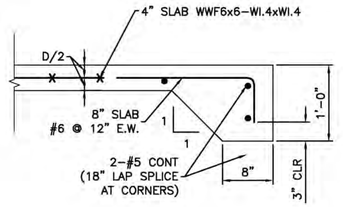

B SECTION
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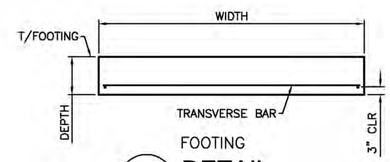

FOOTING 1 DETAIL
SCALE: NTS

FOOTING SCHEDULE

MARK	SIZE			REINFORCING		TOP OF FOOTING ELEVATION	QUANTITY REQUIRED
Fx	LENGTH	WIDTH	DEPTH	(LONGIT)-BOT	(TRANSV)		
F1	12'-0"	6'-0"	2'-3"	#8@10"	#8@10"	26.00	7
F2	14'-0"	6'-0"	2'-3"	#8@10"	#8@10"	26.00	2
F3	14'-0"	8'-0"	2'-3"	#8@10"	#8@10"	26.00	4
F4	15'-0"	8'-0"	2'-3"	#9@10"	#9@10"	22.50	2

RECORD DRAWING

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REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: W. HAUSHEER
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS STRUCTURAL PLAN AT GRADE AND FOUNDATION LEVEL

WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

S-2

PLOTTED May 25, 2010 3:34 PM PLOTTED BY: SCHEUERMAN, JAMES
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VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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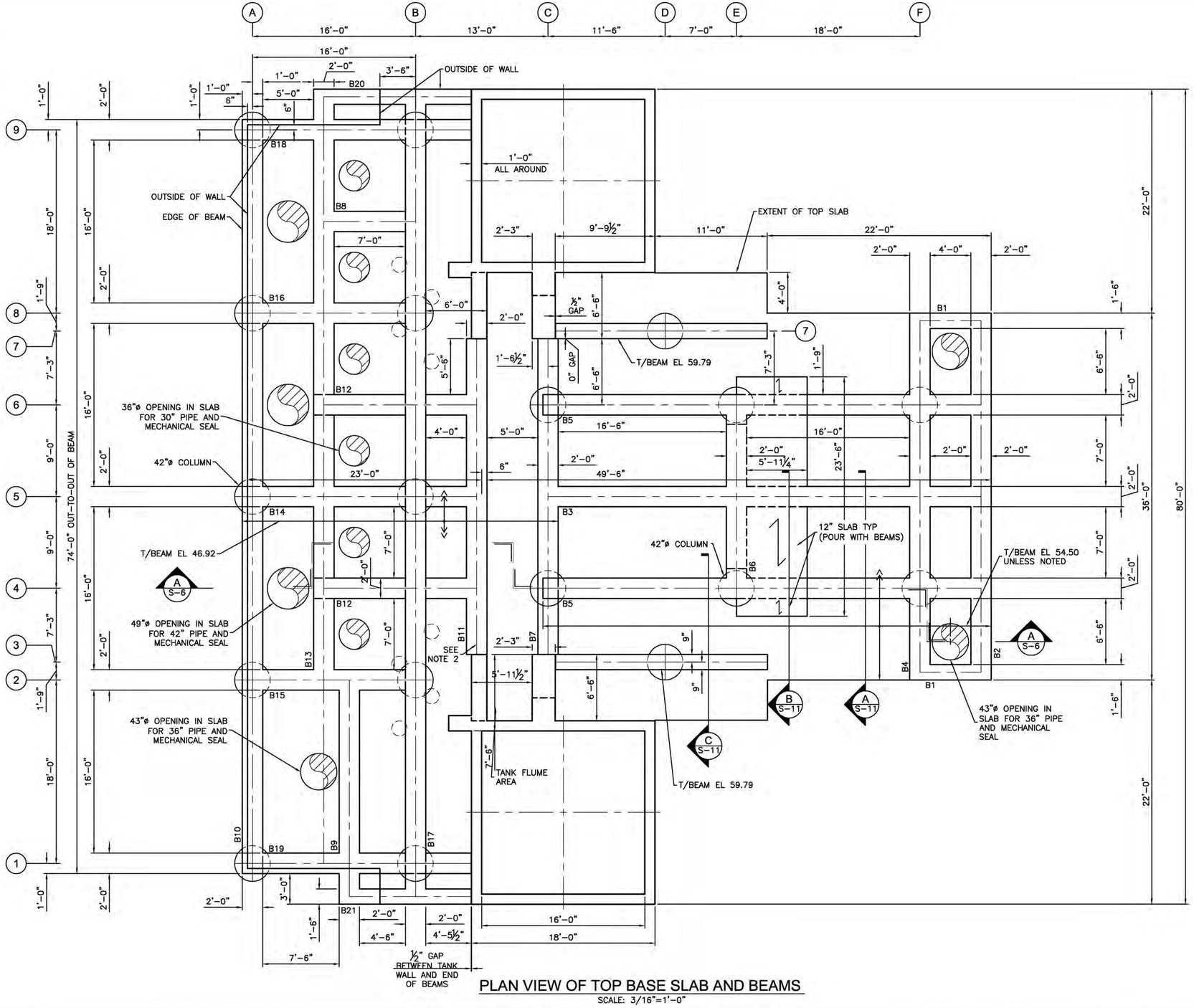

PLAN VIEW OF TOP BASE SLAB AND BEAMS

SCALE: 3/16"=1'-0"

NOTES:
1. ALL BEAM AND COLUMN CENTERLINES ARE THE SAME.
2. URS DETAILS HAVE ASSUMED THAT TANK WALLS / COLUMNS / UPPER FLUME AREA ARE IN-PLACE PRIOR TO ANY ADJACENT BEAM OR SLAB CONSTRUCTION UNLESS NOTED. THE FLUME HAS BEEN OMITTED FOR CLARITY. NOTE THERE IS NO GAP BETWEEN THE END OF THE FLUME AND BEAMS B7 AND B11.
3. DO NOT POUR SLABS SHOWN ON DRAWING S-4 UNTIL THEIR SUPPORTING BEAMS ARE AT THEIR 100% COMPRESSIVE STRENGTH.

RECORD DRAWING

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INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS STRUCTURAL
BEAM LAYOUT

WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

S-3

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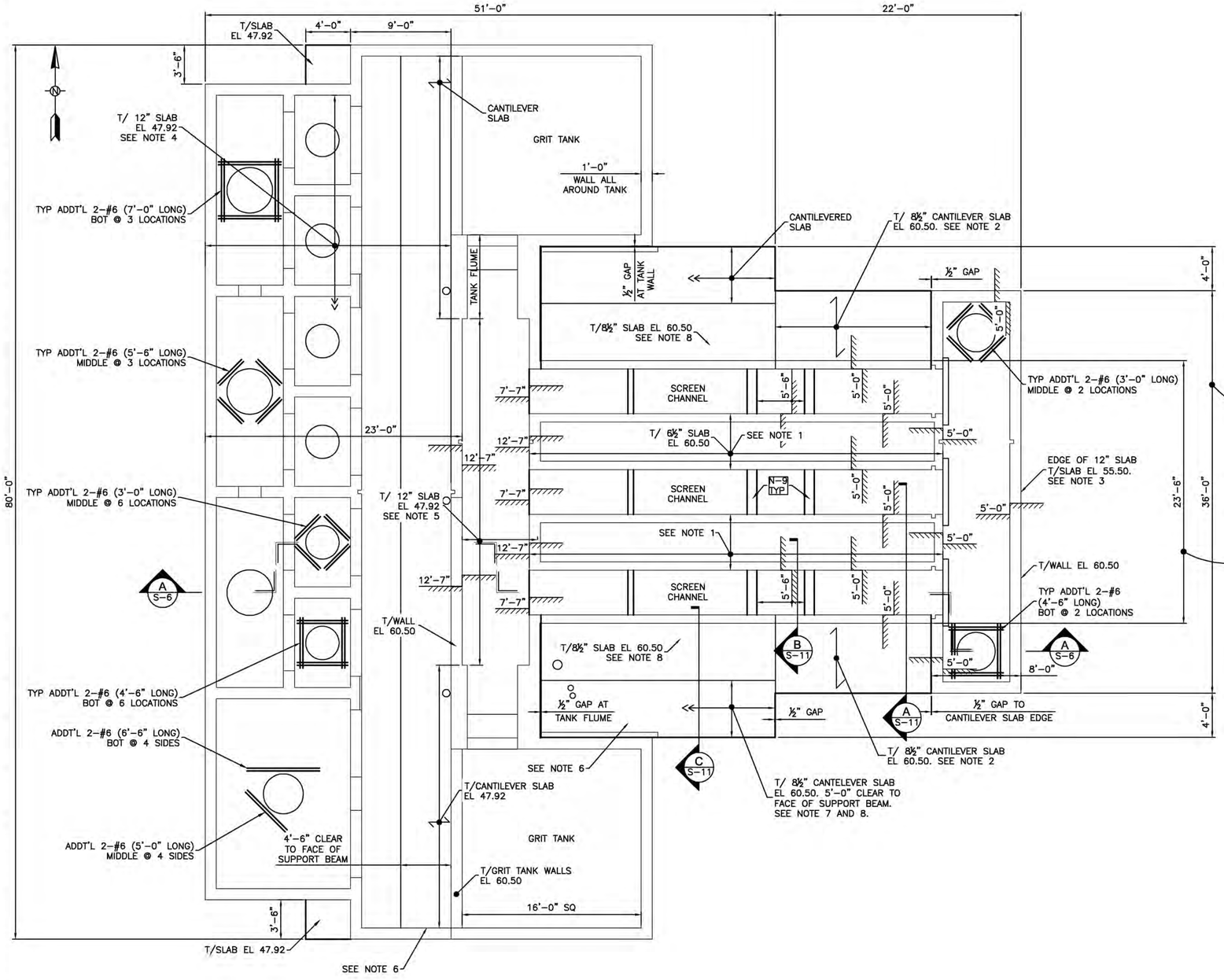
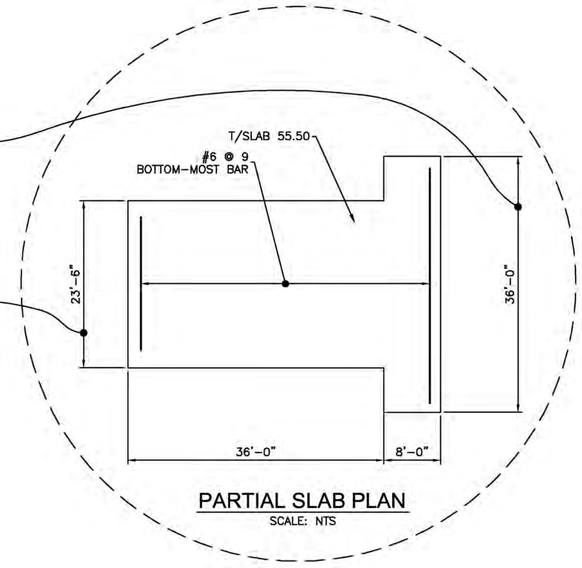


PLAN VIEW AT ELEVATED SLAB

SCALE: 3/16"=1'-0"



PARTIAL SLAB PLAN

SCALE: NTS

NOTES:

1. INTERIOR AREA IS EMPTY. SOME FORMWORK MAY NEED TO BE ABANDONED IN PLACE. POUR SLAB IN 5'-0" x 9'-3" PORTIONS.
2. POUR SLAB IN 14'-0" LONG PORTIONS. PROVIDE ADEQUATE SHORING/BRACING FOR CANTILEVER SLAB AND SUPPORTING SCREENING CHANNEL WALLS, DURING CANTILEVER SLAB POUR. THE CHANNEL WALLS ARE TO BE AT 100% COMPRESSIVE STRENGTH BEFORE ANY CANTILEVER SLAB POUR.
3. POUR SLAB IN 22'-0" x 23'-6" MAXIMUM PORTIONS.
4. POUR SLAB IN 20'0" x 23'-0" MAXIMUM PORTIONS.
5. POUR SLAB IN THREE EQUAL PORTIONS.
6. URS DETAILS HAVE ASSUMED THAT TANK WALLS / COLUMN / UPPER FLUME AREA ARE IN-PLACE PRIOR TO ANY ADJACENT BEAM OR SLAB CONSTRUCTION UNLESS NOTED.
7. PROVIDE ADEQUATE BRACING / SHORING FOR CANTILEVER SLAB AND SUPPORTING SCREENING CHANNEL WALL / BEAM DURING SLAB POUR. ENSURE WALL / BEAM ARE AT 100% COMPRESSIVE STRENGTH BEFORE SLAB POUR.
8. PROVIDE REBAR AND CLEAR COVER AS PER 8½" CANTILEVER SLAB IN SECTION A ON SHEET S-11.
9. TOP OF SLAB SLOPES DOWN 6".

RECORD DRAWING

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DRW: D. ELLIS
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INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS STRUCTURAL
ELEVATED SLAB PLAN

WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

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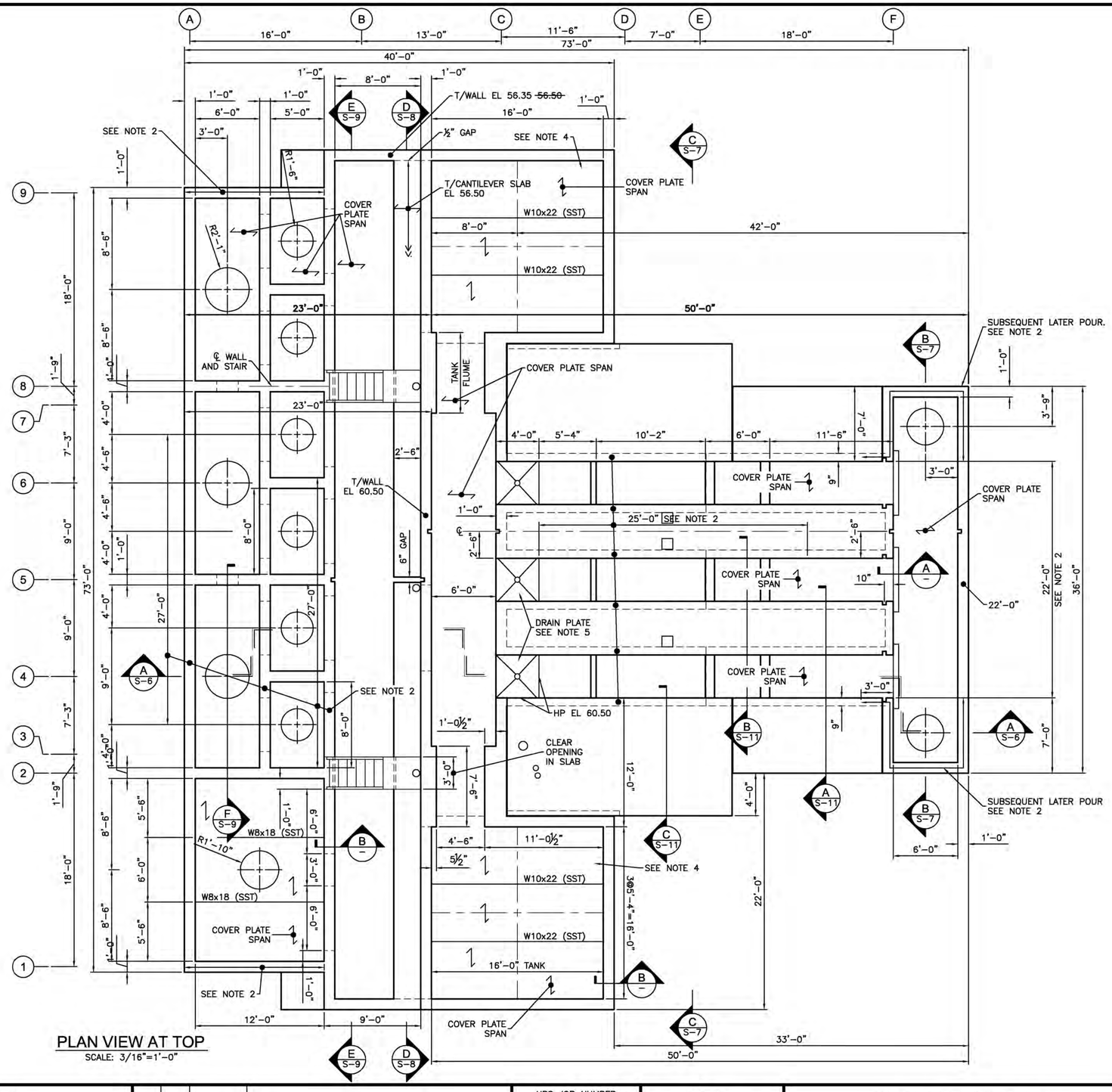
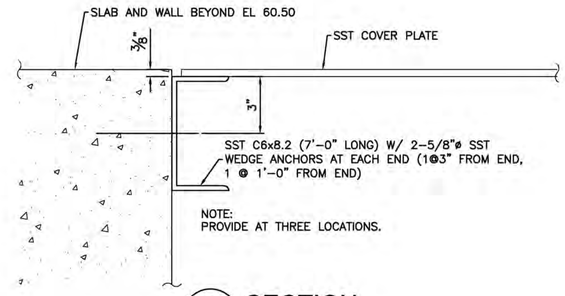


PLAN VIEW AT TOP
SCALE: 3/16"=1'-0"

NOTES:
1. URS DETAILS HAVE ASSUMED THAT TANK WALLS / COLUMNS / UPPER FLUME AREA ARE IN-PLACE PRIOR TO ANY ADJACENT BEAM OR SLAB CONSTRUCTION, UNLESS NOTED.
2. URS SUGGESTS THESE 12 STRAIGHT WALL LENGTHS BE INSTALLED FIRST. TO MINIMIZE CRACKING, LIMIT SUBSEQUENT ADJACENT POURS TO A MAXIMUM OF 27' TOTAL LENGTH.
3. DO NOT POUR WALLS UNTIL THEIR SUPPORTING SLABS ARE AT THEIR 100% COMPRESSIVE STRENGTH.
4. DO NOT USE TOP OF TANK / TANK FLUME COVER PLATES AS EQUIPMENT LAYDOWN AREAS.
5. AT EDGES, SLAB DEPTH IS 7-1/2" (SLOPE TOP OF SLAB 1" TO DRAIN). KEEP BOTTOM OF SLAB HORIZONTAL. PROVIDE #5@11" EACH WAY, CENTERED IN SLAB.



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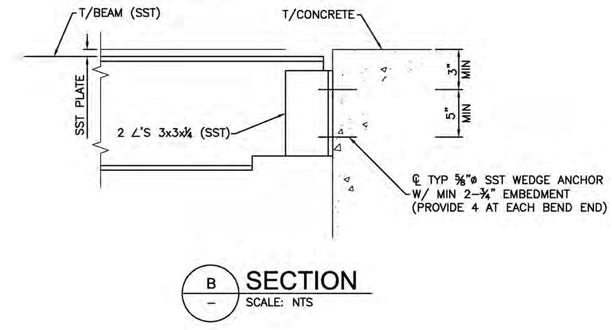

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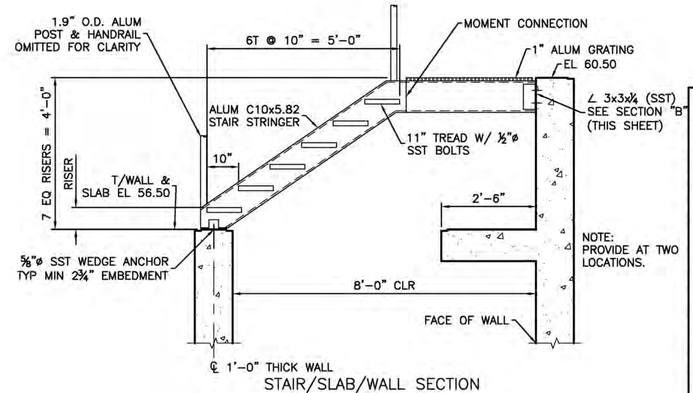

STAIR/SLAB/WALL SECTION

1 – DETAIL
SCALE: NTS

RECORD DRAWING

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INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS STRUCTURAL PLAN AT TOP

WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

S-5

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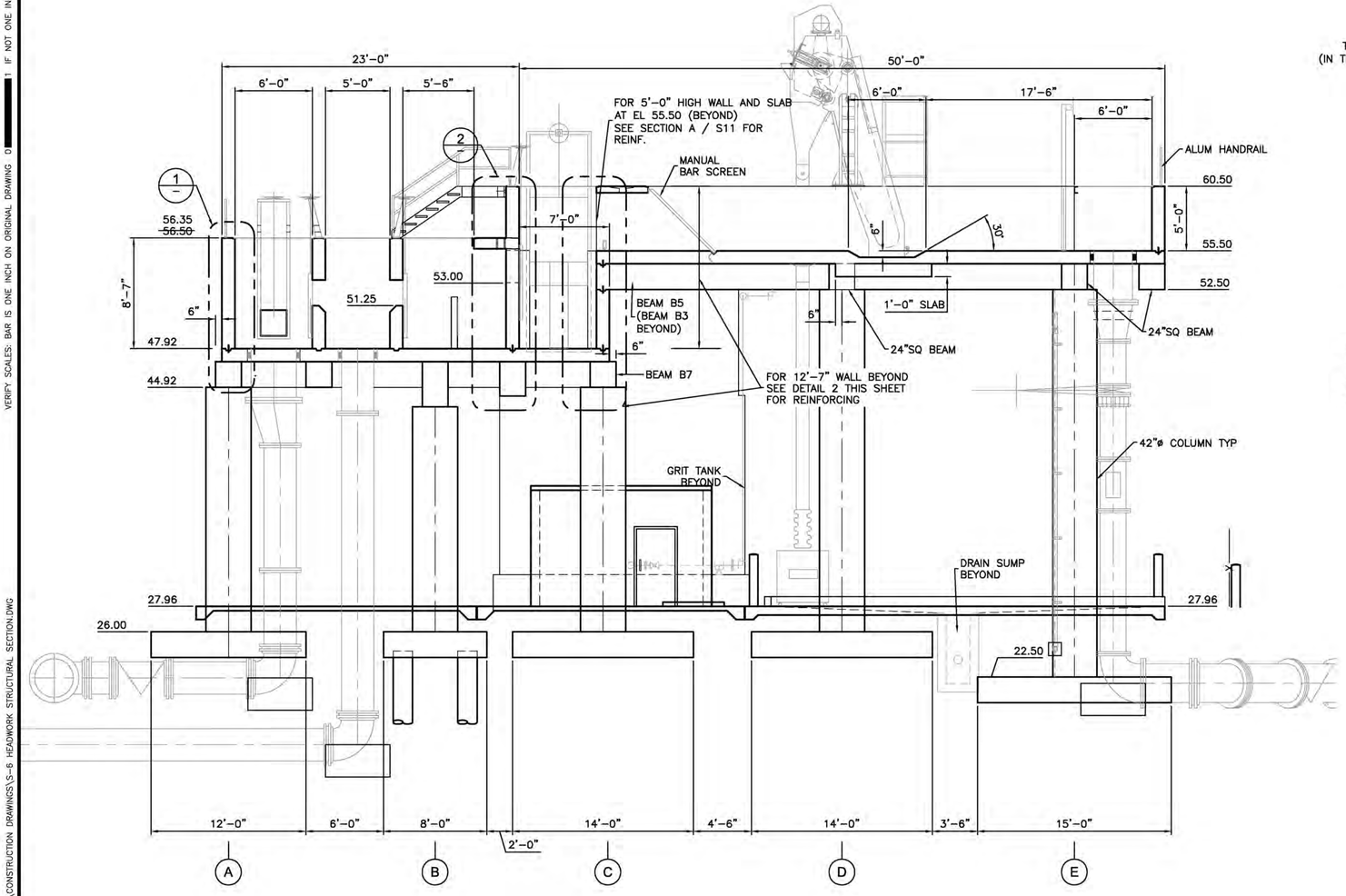
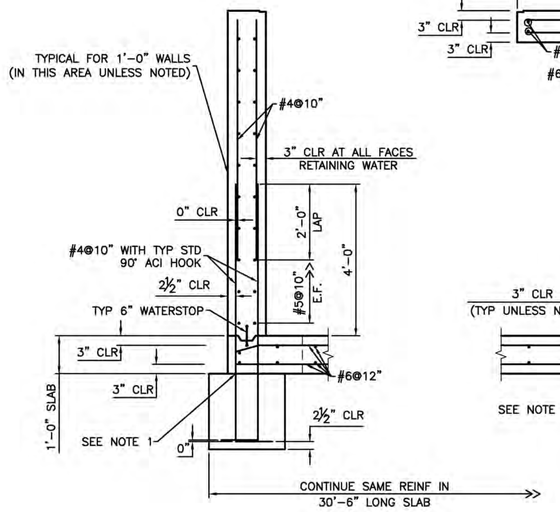
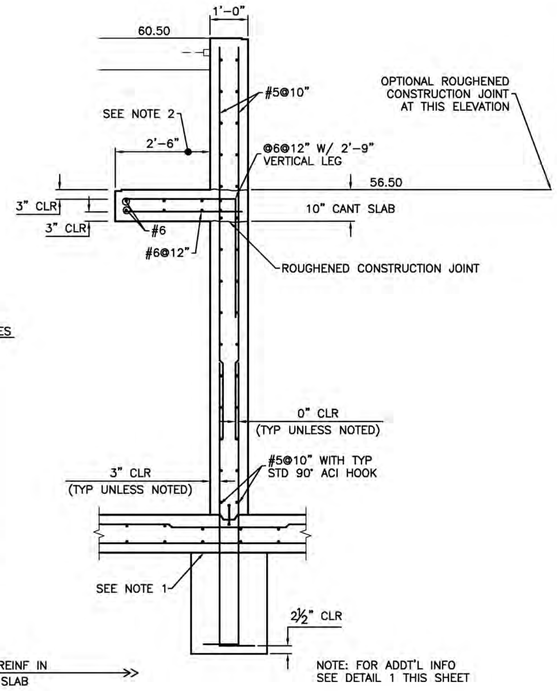


A SECTION
SCALE: 3/16"=1'-0"



1 DETAIL
SCALE: NTS



2 DETAIL
SCALE: NTS

NOTE:
1. ROUGHEN CONSTRUCTION JOINT SURFACE TO A MINIMUM ¼" AMPLITUDE AFTER CONCRETE IS SET. PROVIDE ADDITIONAL #4@10" STIRRUPS WITH 2'-3" VERTICAL LEGS AS SHOWN IN SECTION A ON SHEET 11.
2. LIMIT POUR TO A MAXIMUM LENGTH OF 10'.

RECORD DRAWING

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INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORK STRUCTURAL SECTION

WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

S-6

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY
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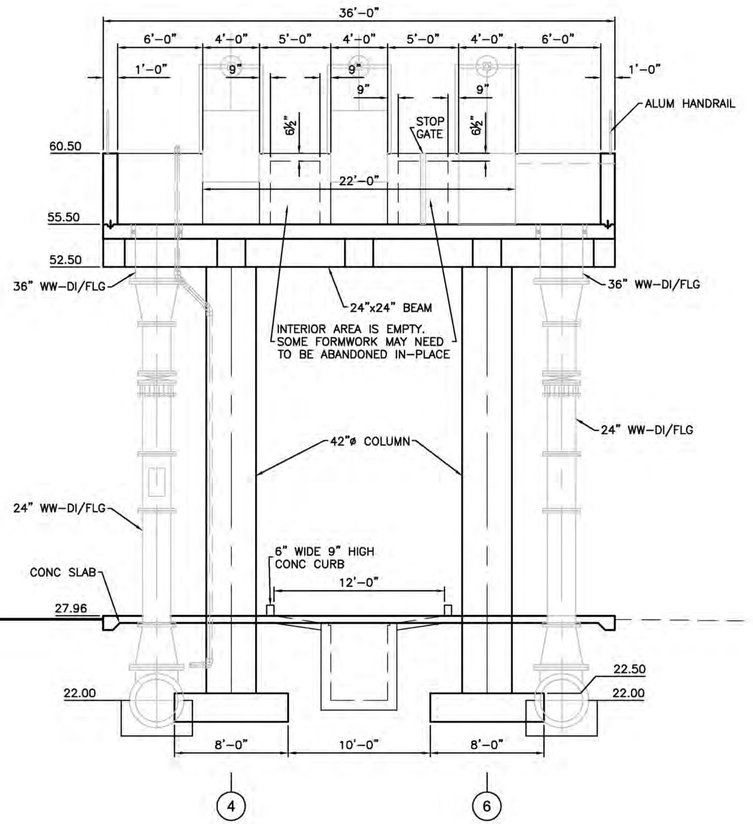

B S-5 SECTION
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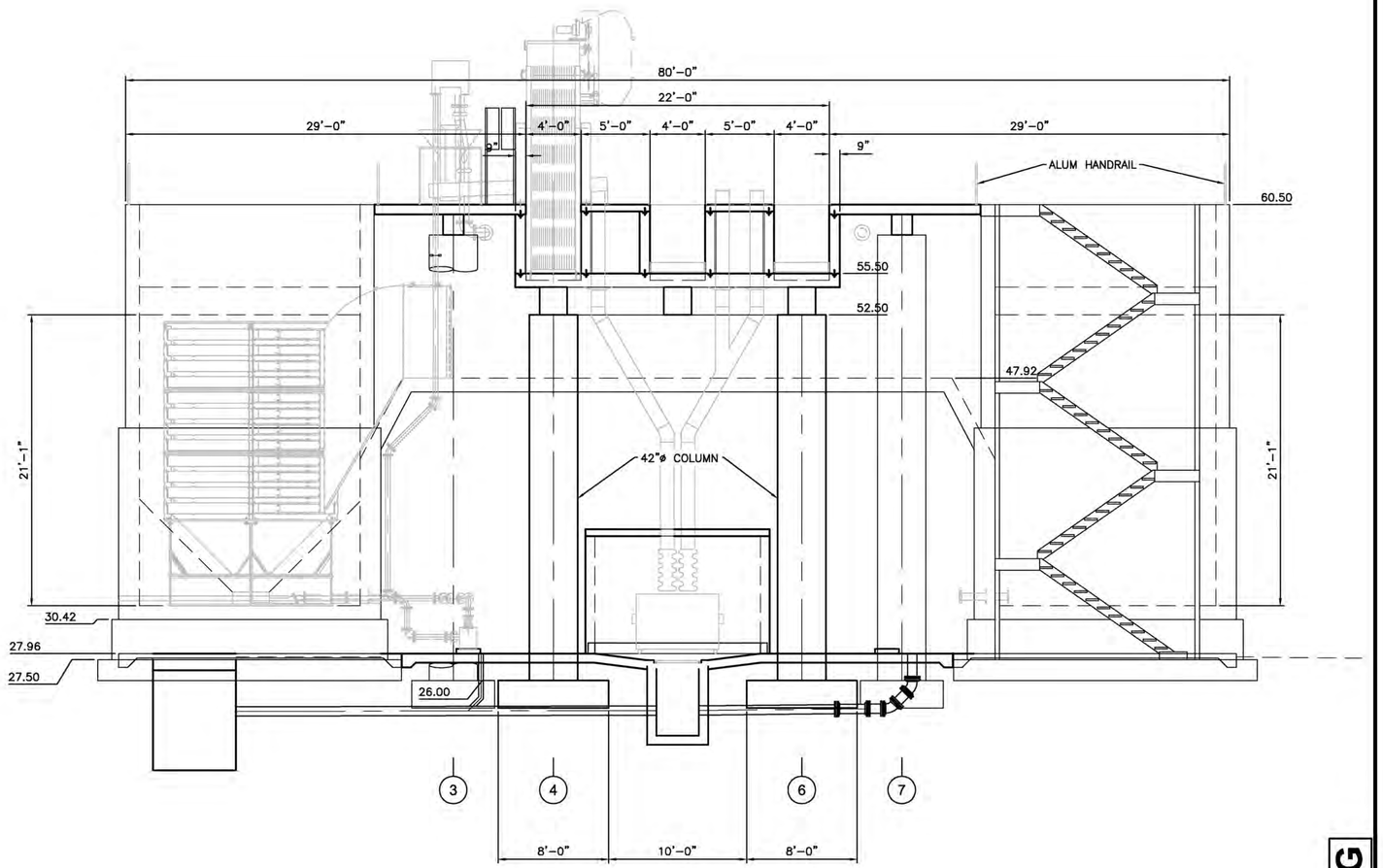

C S-5 SECTION
SCALE: 3/16"=1'-0"

RECORD DRAWING

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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URS
7650 West Courtney Campbell Causeway
Suite 700
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Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: W. HAUSHEER
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS STRUCTURAL SECTIONS

WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

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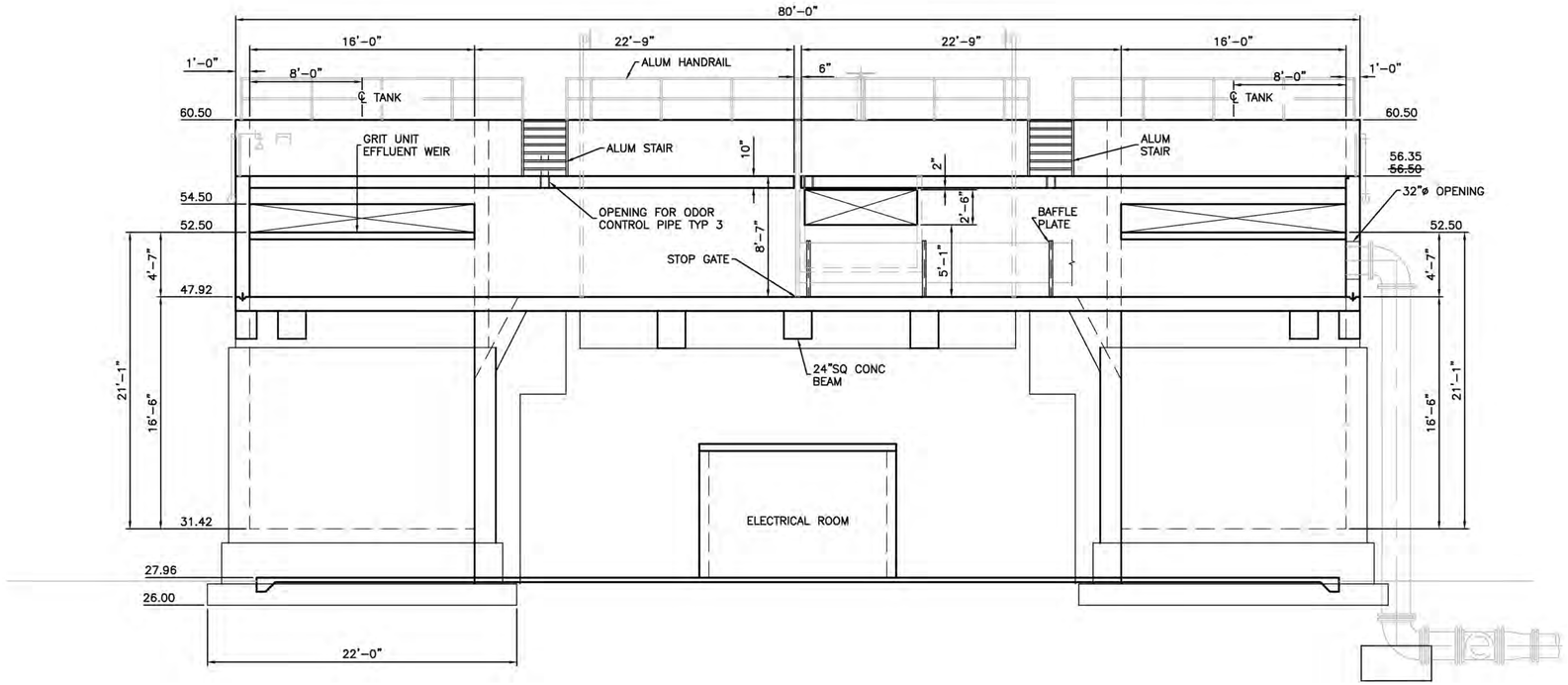

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SCALE: 3/16"=1'-0"

RECORD DRAWING

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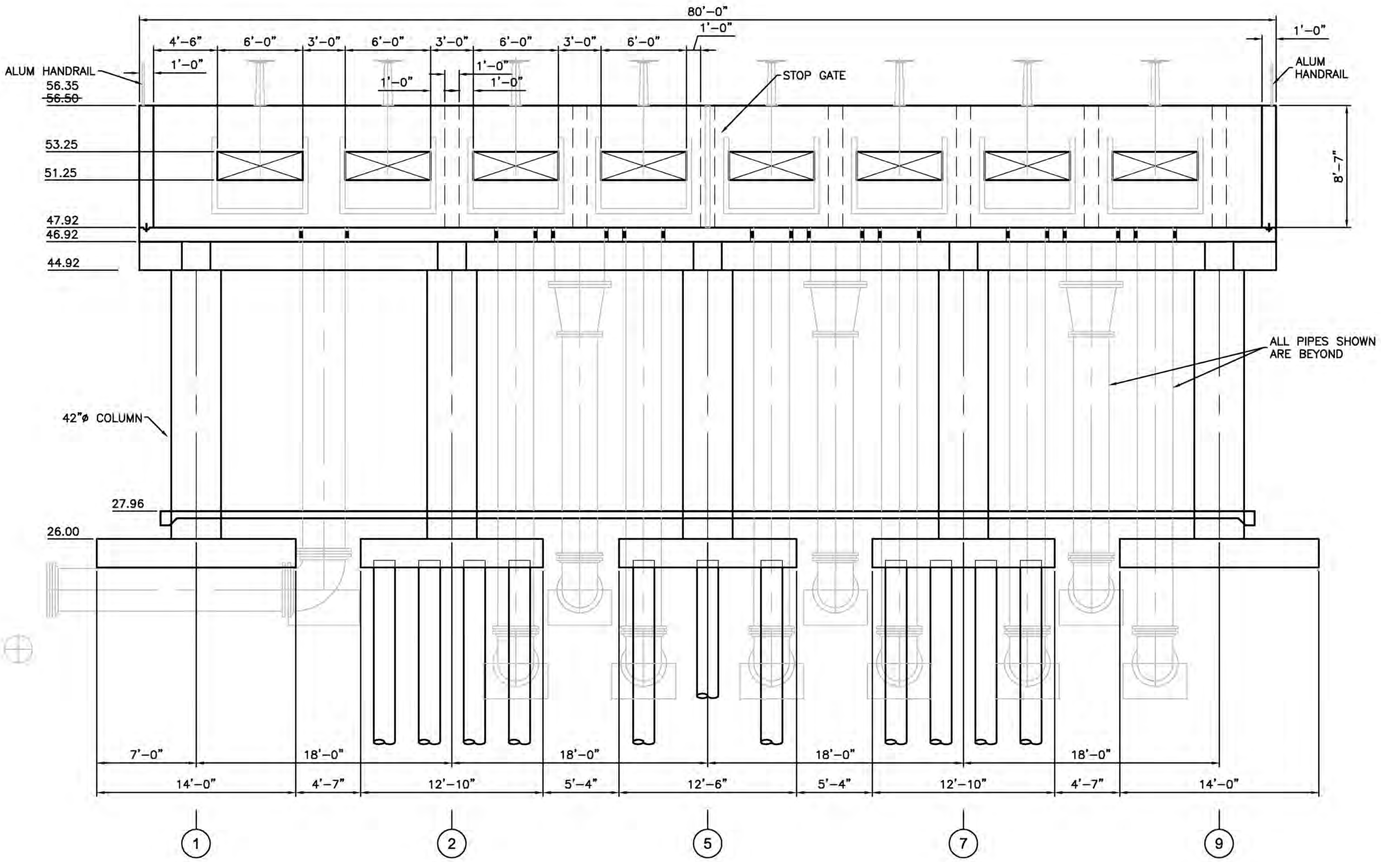

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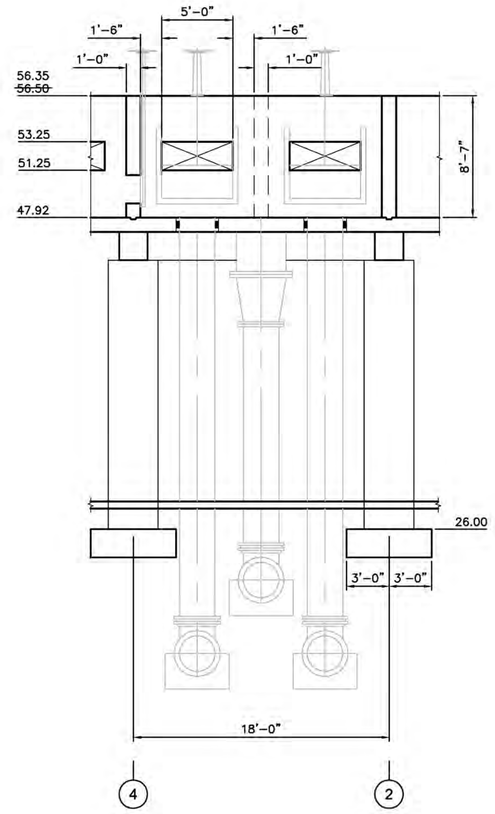

F S-5 SECTION
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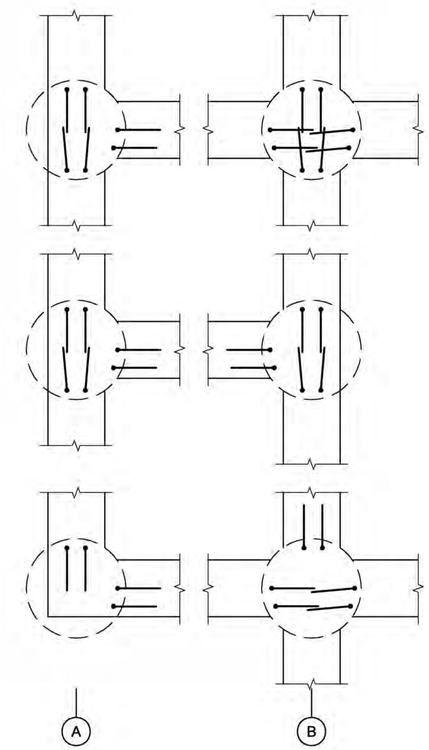

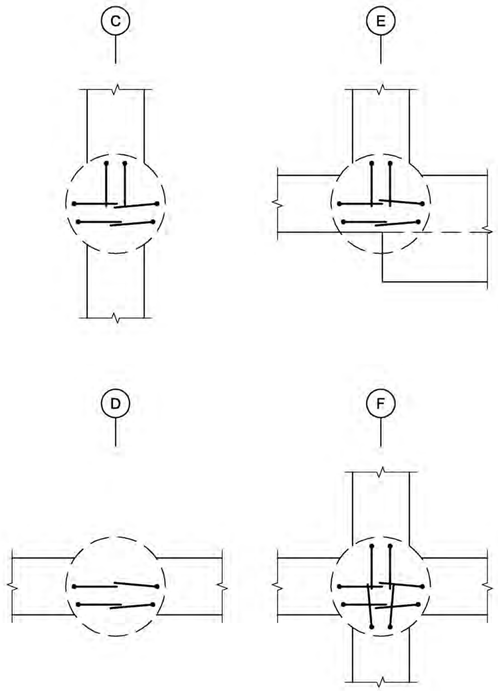

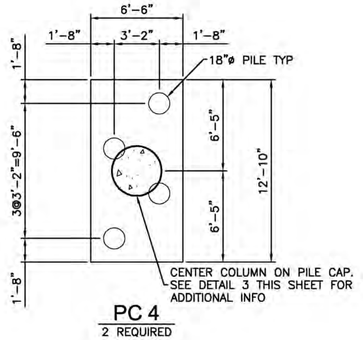

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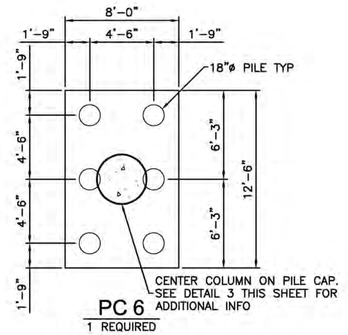
2 REQUIRED



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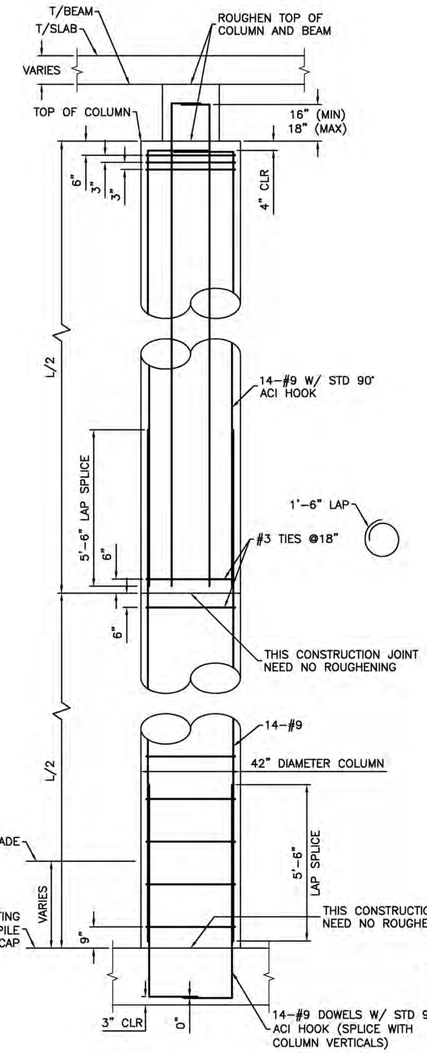
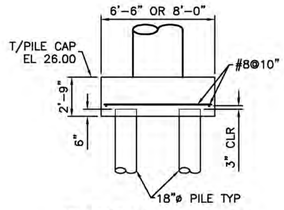


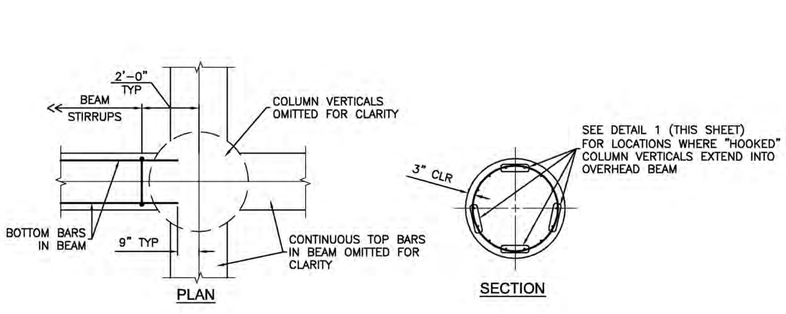
COLUMN
3 DETAIL
SCALE: NTS



TYPICAL SECTION

PILE CAP
4 DETAIL
SCALE: NTS

TOP OF COLUMN
1 DETAIL
SCALE: NTS



2 DETAIL
SCALE: NTS

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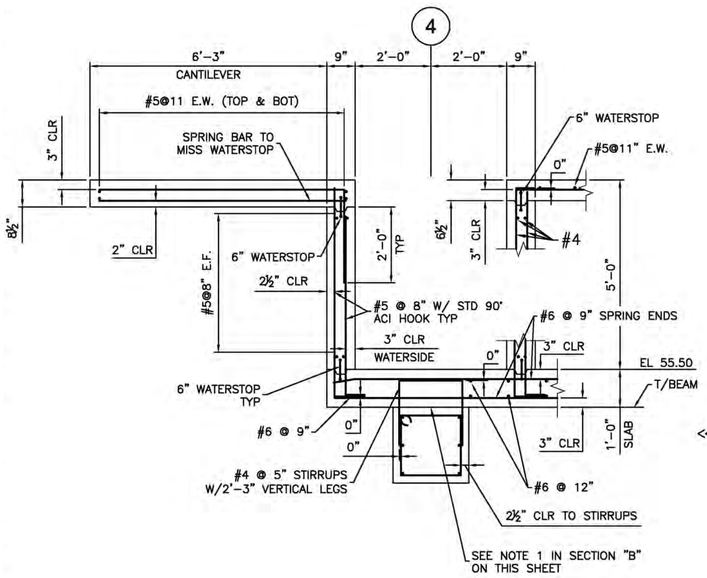

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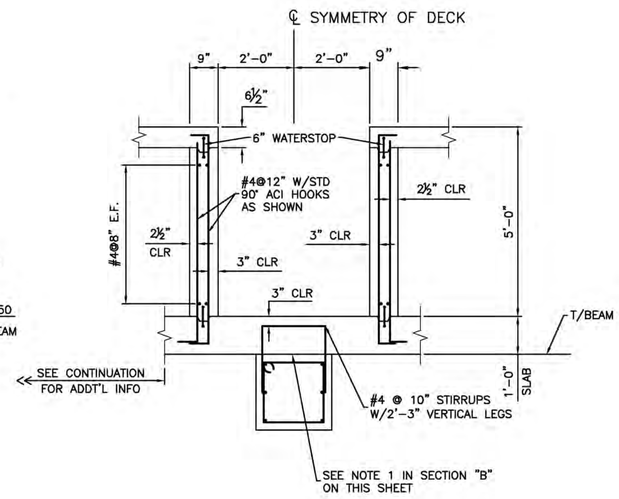
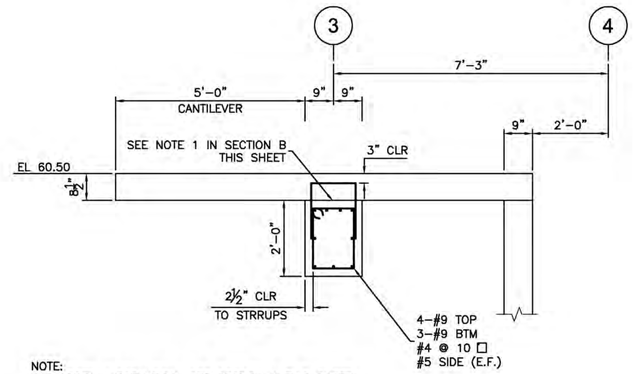
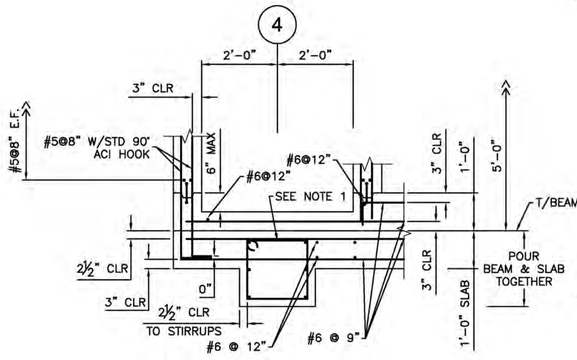
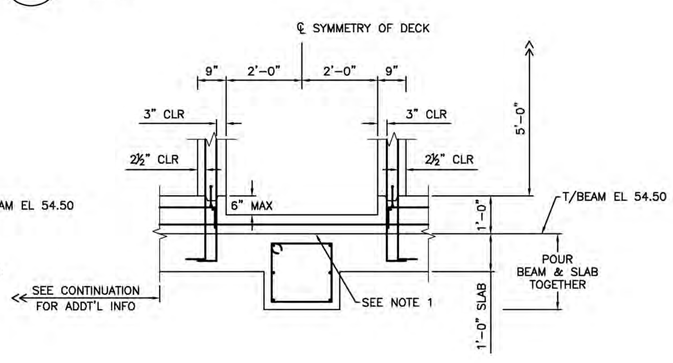




NOTE:
FOR ADDT'L INFORMATION, SEE SECTION A THIS SHEET.

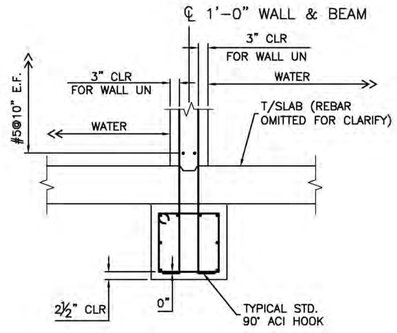
C S-11 SECTION
SCALE: NTS





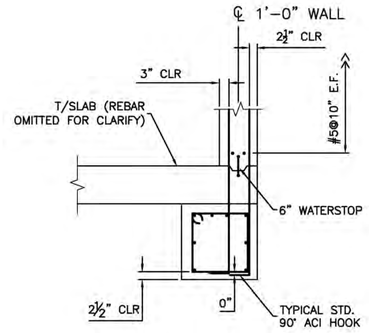
NOTE:
1. ROUGHEN CONSTRUCTION JOINT SURFACE TO A MINIMUM ¼" AMPLITUDE AFTER CONCRETE IS SET. APPLY EPOXY BOND AGENT AT JOINT, PER MANUFACTURER'S DIRECTIONS, PRIOR TO TOPPING SLAB POUR.

B S-11 SECTION
SCALE: NTS



TYPICAL WALL/BEAM

D – SECTION
SCALE: NTS



TYPICAL WALL/BEAM

E – SECTION
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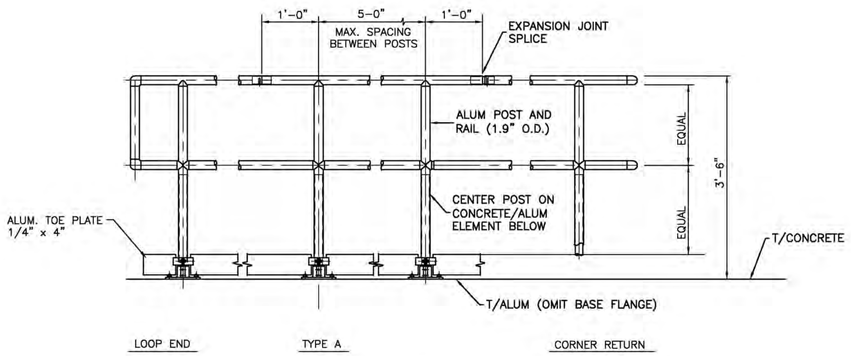
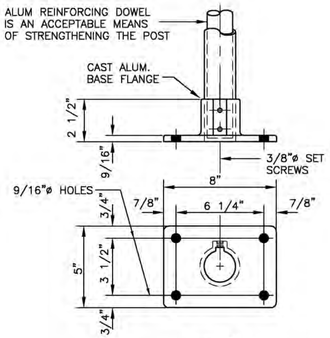


TYPICAL HANDRAIL

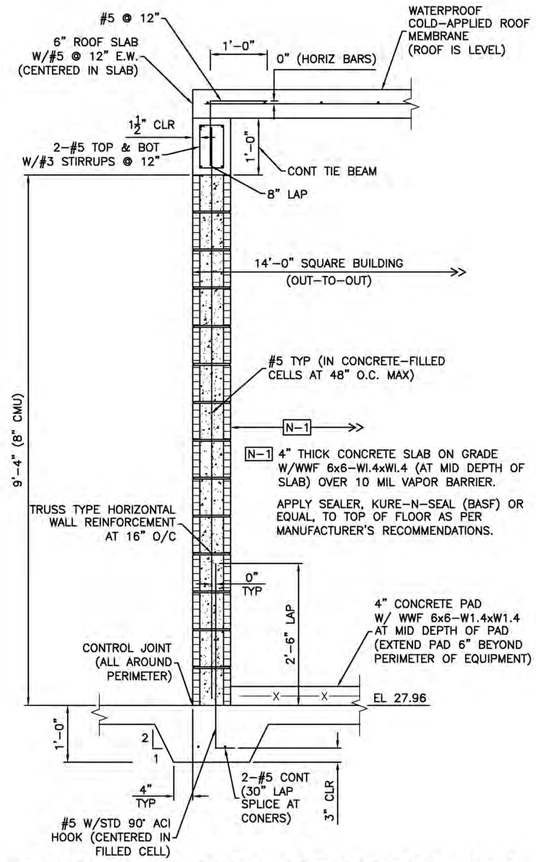
NOTE:
SEE SPECIFICATION SECTION 05500, FOR ADDITIONAL SPECIFICATIONS.



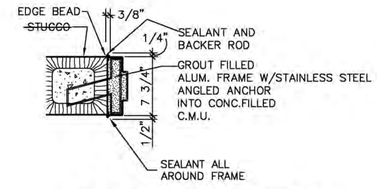
4-HOLE

LOCATE SET SCREWS IN BASE FLANGE AT 90° FROM CENTERLINE OF H.R. RUN AND ON SIDE AWAY FROM WALKING SURFACE.

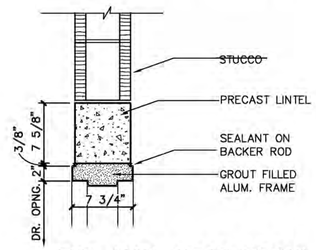
HANDRAIL
1 / – DETAIL
SCALE: NTS



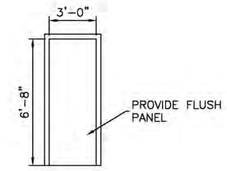
TYPICAL WALL SECTION OF ELECTRICAL ROOM
SCALE: NTS



EXT. MAS. JAMB DETAIL



EXT. MAS. HEAD DETAIL



FRAME ELEVATION

NOTE: ALL EXTERIOR DOOR INSTALLATIONS SHALL BE DESIGNED TO WITHSTAND 130 MPH WIND LOADS PER MANATEE COUNTY CODES.

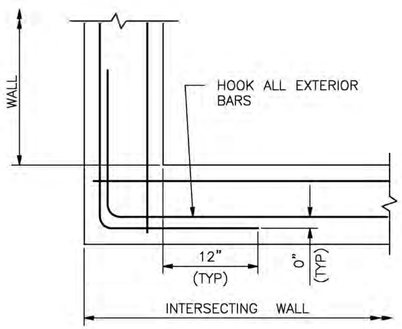
NOTES:

DOOR, FRAME AND HARDWARE NOTES:

1. ALUMINUM DOOR:
   A. ALUMINUM DOOR SHALL BE NOMINAL 1-3/4" THICK FLUSH DESIGN WITH ONE PIECE .090" SMOOTH ALUMINUM FACE SHEET ON A RIGID ALUMINUM SUB-FRAME WITH INTEGRAL EDGE CAPS. THE SUB-FRAME SHALL BE CONNECTED BY A 3/8" CADMIUM PLATED STEEL TIE ROD TOP AND BOTTOM.
   B. ALL VOIDS BETWEEN SUB-FRAMES SHALL BE FILLED WITH A LAMINATED URETHANE FOAM BOARD THAT IS FIRE RETARDANT AND HAS AN R-VALUE OF 9.
   C. FINISH SHALL BE 204-R1 CLEAR (NATURAL) ANODIZE, DESIGNATION AA-M10-C22-A31, ARCHITECTURAL CLASS II.
   D. BASIS OF DESIGN: SERIES 290I ~~295I~~ MANUFACTURED BY ALUTECH CORPORATION, OR APPROVED EQUAL.
2. ALUMINUM FRAME:
   A. ALUMINUM FRAME SHALL BE FABRICATED WITH INTEGRAL STOP WITH MILL JOINTS IN FRAME MEMBERS MITERED TO A HAIRLINE FIT AND CONTINUOUSLY WELDED. MINIMUM WALL THICKNESS SHALL BE 0.125 INCHES.
   B. MITERED CORNERS SHALL BE REINFORCED WITH CHANNEL-SHAPED REINFORCEMENTS. PROVIDE INTEGRAL WEATHERSTRIPPING.
   E. USE STAINLESS STEEL ANCHORS TO SECURE FRAMES TO ADJACENT CONSTRUCTION AND GROUT SOLID.
   F. FINISH SHALL BE 204-R1 CLEAR (NATURAL) ANODIZE, DESIGNATION AA-M10-C22-A31, ARCHITECTURAL CLASS II.
   G. BASIS OF DESIGN: SERIES FR575 MANUFACTURED BY ALUTECH CORPORATION, OR APPROVED EQUAL.
3. DOOR HARDWARE:
   A. PROVIDE THE FOLLOWING HARDWARE SET. MANUFACTURERS LISTED ARE "BASIS OF DESIGN":

   SINGLE DOOR - AL X AL - SIZE AND SWING AS INDICATED

   HINGES: 1-1/2 PR HAGER BB1168 - 4-1/2 X 4-1/2 NRP - US32D
   LOCKSET: 1 SCHLAGE D80PD RHO LEVER - UR 26D ~~US32D~~
   THRESHOLD: 1 PEMKO 27748A AL



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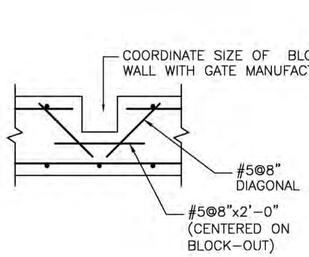
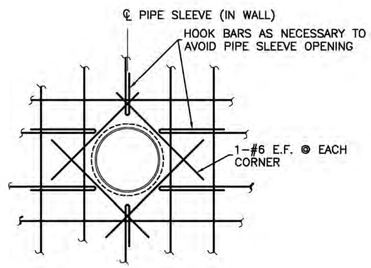


REINF. @ BLOCK OUT
3 / – DETAIL
SCALE: NTS



PIPE SLEEVE
4 / – DETAIL
SCALE: NTS

RECORD DRAWING

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S-12

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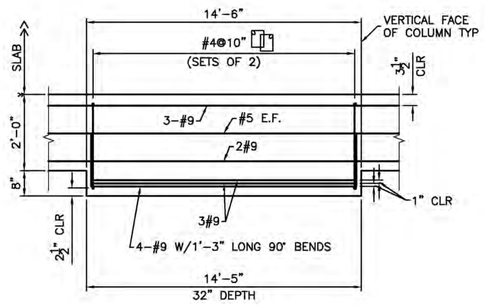
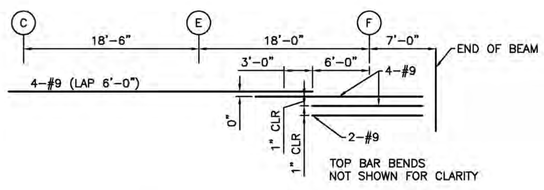
BEAM SCHEDULE

BEAM MARK	SIZE	REINFORCEMENT						REMARKS	
	WIDTH x DEPTH	TOP		BOTTOM	SIDE	STIRRUPS 135° HOOKS	TOP COVER		
		LEFT	RIGHT						
B1	18"x24"	3–#7	3–#7	3–#7	1–#5 E.F.	#4 @ 10"	2 1/2"		PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B2	24"x24"	4–#9	4–#9	3–#9	1–#5 E.F.	#4 @ 10"	3 1/2"	TOP BARS LAP 6'–0" AT MIDSPAN	PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B3	24"x24"	5–#9	3–#9	4–#9 CONT ON CANT	1–#5 E.F.	#4 @ 10"	2 1/2"	TOP BARS LAP 6'–0" AT MIDSPAN OF 18' SPAN; SPRING BOTTOM "CANTILEVER" BARS UP	PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B4	24"x24"	4–#9	4–#9	3–#9	1–#5 E.F.	#4 @ 10"	3 1/2"	TOP BARS LAP 6'–0" AT MIDSPAN	PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B5	24"x24"	4–#9	10–#9	4–#9 CONT ON CANT	1–#5 E.F.	#4 @5"	2 1/2"	SEE TOP BAR LAYOUT ON THIS SHEET. SPRING BOTTOM "CANTILEVER" BARS UP	PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B6	24"x24"/32"				1–#5 E.F.		3 1/2"	SEE REBAR LAYOUT ON THIS SHEET	PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B7	24"x24"	3–#9	3–#9	4–#9 CONT ON CANT	1–#5 E.F.	#4@10"	2 1/2"		PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B8	24"x24"	3–#7	3–#7	3–#7	1–#5 E.F.	#4@10"	3 1/2"		–
B9	24"x24"	3–#9	3–#9	3–#9	1–#5 E.F.	#4@10"	2 1/2"		–
B10	24"x24"	3–#9	3–#9	3–#9	1–#5 E.F.	#4@10"	2 1/2"	TOP BARS LAP 6'–0" AT MIDSPAN BETWEEN COLUMN LINES 5 AND 8	PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B11	24"x32"	4–#9	4–#9	3–#9 CONT ON CANT	2–#5 E.F.	#4@10"	2 1/2"		PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B12	24"x32"	4–#9 CONT	4–#9 CONT 4–#9x13'–0" 2–#9x13'–0"	3–#9 CONT ON CANT	2–#5 E.F.	#5@5"	3 1/2"	INSTALL 10–#9 SIMILAR TO BEAM B5	PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B13	24"x24"	4–#9	4–#9	4–#9 CONT ON CANT	1–#5 E.F.	#4@10"	2 1/2"	TOP BARS LAP 6'–0" AT MIDSPAN BETWEEN COLUMN LINES 2 AND 5	PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B14	24"x24"	4–#9 CONT	4–#9 CONT 2–#9x15'–0"	4–#9 CONT ON CANT	1–#5 E.F.	@4@5"	3 1/2"	INSTALL 6–#9 SIMILAR TO BEAM B5	PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B15	24"x24"	3–#9	3–#9	5–#9 (2 LAYERS)	1–#5 E.F.	#4@10"	3 1/2"		PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B16	24"x24"	3–#9	3–#9	10–#9 (3 LAYERS)	1–#5 E.F.	#4@10"	3 1/2"		PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B17	24"x42"			8–#9 (2 LAYERS) CONT ON CANT	2–#5 E.F.	#4@5"	2 1/2"	SEE TOP REBAR LAYOUT ON THIS SHEET	PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B18	24"x24"	3–#9	3–#9	6–#9 (2 LAYERS) CONT ON CANT	1–#5 E.F.	#4@10"	3 1/2"		PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B19	24"x24"	3–#9	3–#9	4–#9 CONT ON CANT	1–#5 E.F.	#4@10"	3 1/2"		PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B20	18"x24"	3–#7	3–#7	3–#7 CONT ON CANT	1–#5 E.F.	#4@10"	3 1/2"		PROVIDE 90° BEND AT ENDS OF ALL TOP BARS
B21	18"x24"	3–#7	3–#7	3–#7 CONT ON CANT	1–#5 E.F.	#4@10"	3 1/2"		PROVIDE 90° BEND AT ENDS OF ALL TOP BARS



BEAM B-6
SCALE: NTS



BEAM B-5 (TOP BARS)
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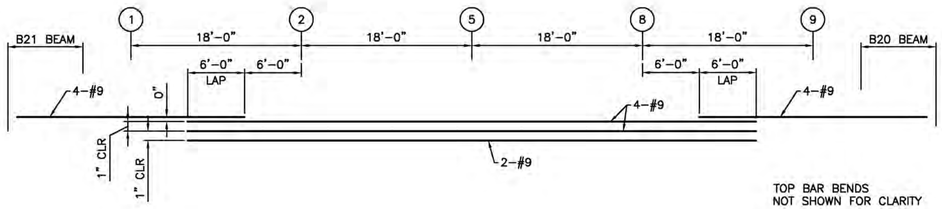

BEAM B-17 (TOP BARS)
SCALE: NTS

RECORD DRAWING

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Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: W. HAUSHEER
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

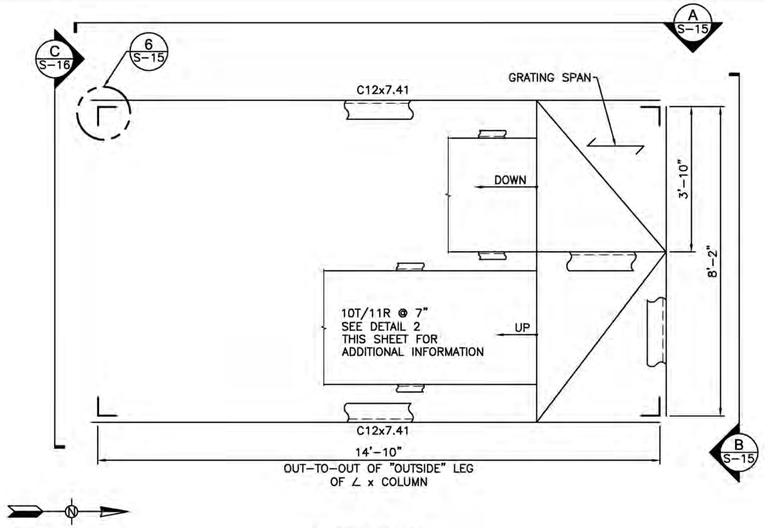
INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

STRUCTURAL DETAILS

WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

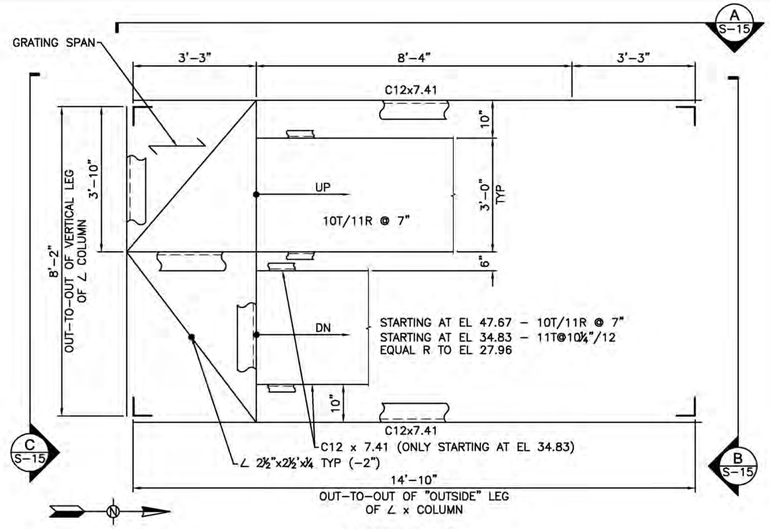
S–13



T/GRATING EL 41.25
T/GRATING EL 54.08

ALUMINUM FRAMING PLAN

1 / – DETAIL
SCALE: NTS

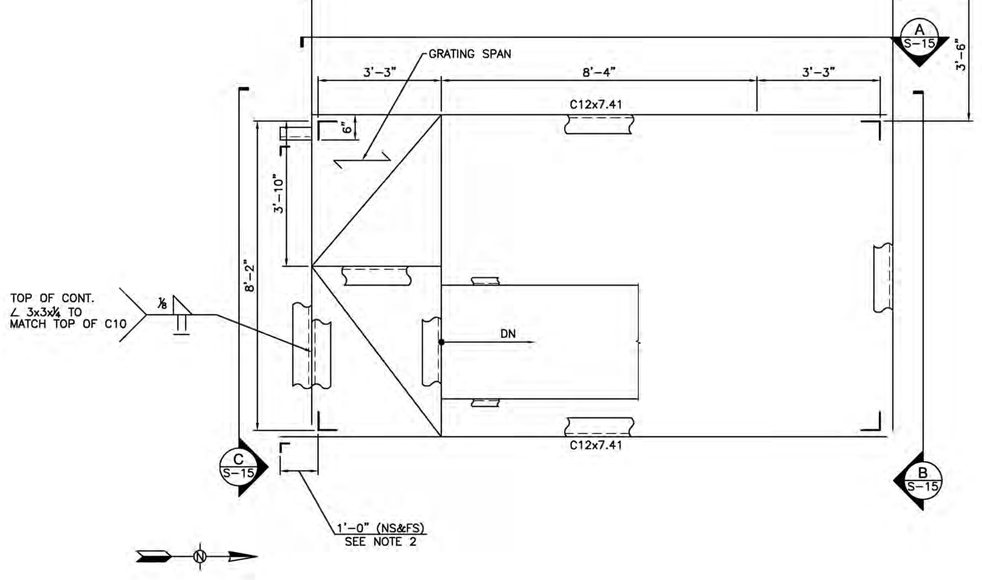


T/GRATING EL 34.83
T/GRATING EL 47.67

ALUMINUM FRAMING PLAN

2 / – DETAIL
SCALE: NTS

NOTES:
1. HANDRAIL AND KICK PLATE ARE REQUIRED AROUND ALL PLATFORM AND LANDING EDGES. HANDRAIL IS REQUIRED ON ALL STAIRS. THE HANDRAIL AND KICK PLATE HAVE NOT BEEN SHOWN FOR CLARITY. SEE DETAIL 1/S–12 FOR INFORMATION.
2. PROVIDE VERTICAL ∠ 3x3x¼x0'–7". PROVIDE ⅛" FILLET WELD (ALL AROUND) FOR ∠ 3x3 TO C10/C12 CONNECTION. PROVIDE (2) ⅝" ø SST EXP ANCHORS AT 3" OC (2¾" MIN EMBEDMENTS) FOR ∠ 3x3 CONNECTION TO VERTICAL FACE OF CONCRETE.



T/GRATING EL 60.50

ALUMINUM FRAMING PLAN

3 / – DETAIL
SCALE: NTS

RECORD DRAWING

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REVISIONS

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MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

STAIRTOWER PLAN

WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

S–14

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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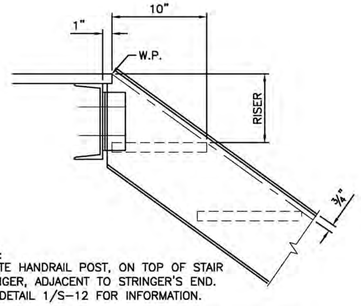
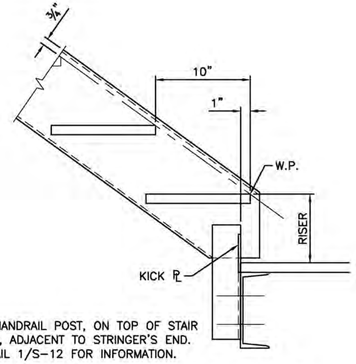


NOTE:
LOCATE HANDRAIL POST, ON TOP OF STAIR STRINGER, ADJACENT TO STRINGER'S END. SEE DETAIL 1/S-12 FOR INFORMATION.

ASCENDING TO LANDING

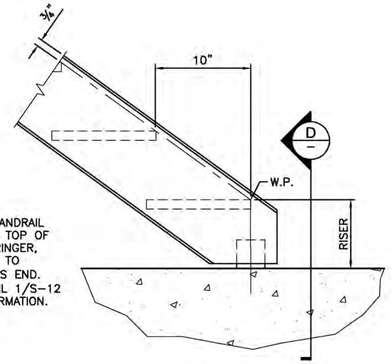
1 / – DETAIL
SCALE: NTS



NOTE:
LOCATE HANDRAIL POST, ON TOP OF STAIR STRINGER, ADJACENT TO STRINGER'S END. SEE DETAIL 1/S-12 FOR INFORMATION.

DESCENDING TO LANDING

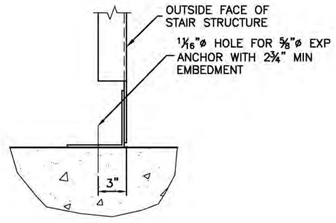
2 / – DETAIL
SCALE: NTS

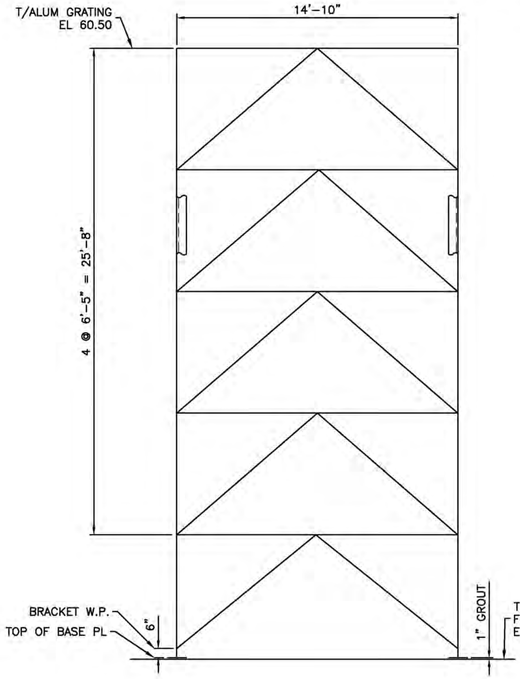


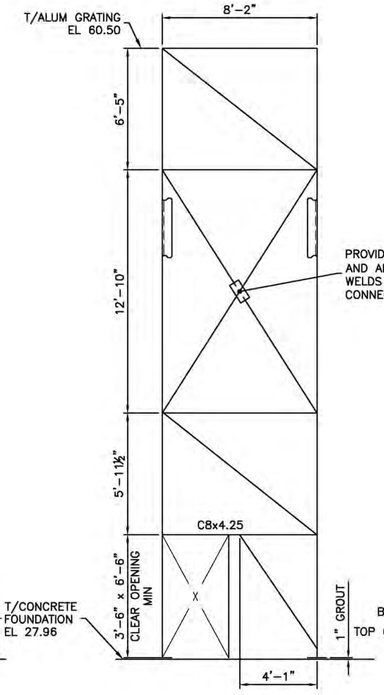
NOTE:
LOCATE HANDRAIL POST, ON TOP OF STAIR STRINGER, ADJACENT TO STRINGER'S END. SEE DETAIL 1/S-12 FOR INFORMATION.

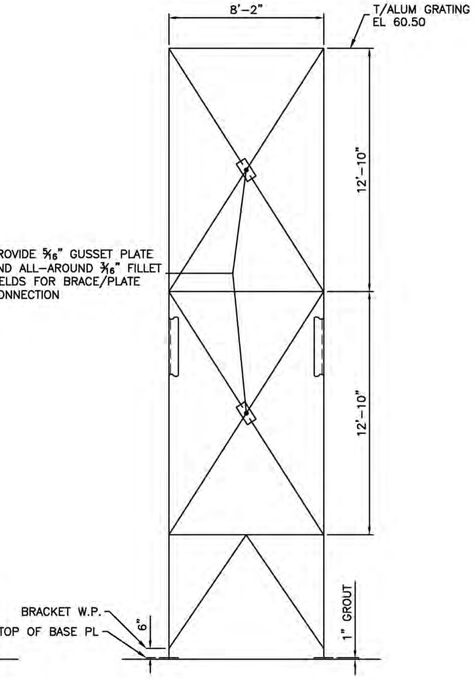
STAIR DETAILS AT FOOT OF STAIRS

3 / – DETAIL
SCALE: NTS

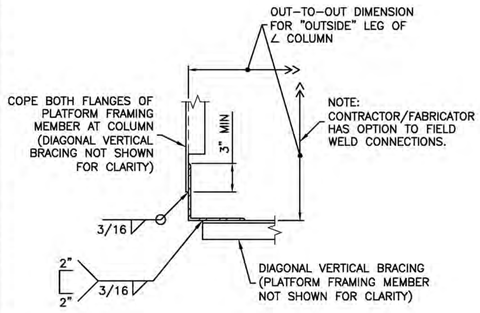








D / – SECTION
SCALE: NTS



4 / – DETAIL
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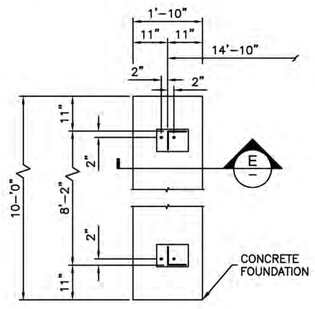
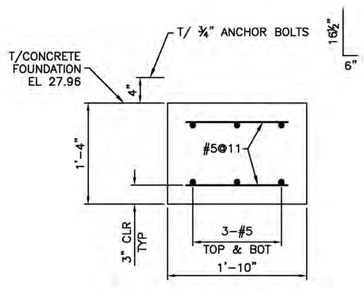


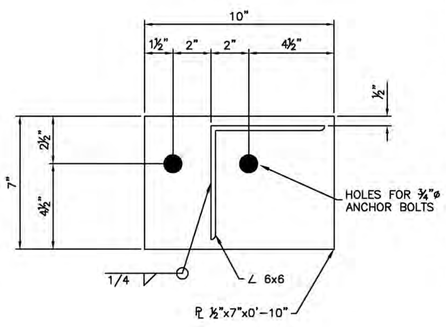
5 / – DETAIL
SCALE: NTS

A / S-15 SECTION
SCALE: NTS



E / – SECTION
SCALE: NTS

B / S-15 SECTION
SCALE: NTS



C / S-15 SECTION
SCALE: NTS

STAIRTOWER NOTES:

1. ALL COLUMNS SHALL BE ∠ 6X6X7/16.
2. ALL STAIR STRINGERS ARE C10X5.28, UNLESS NOTED.
3. STAIR TREADS: ALUMINUM BEARING BAR WITH CORRUGATED ANGLE NOSING. BEARING BARS 1½" X 3/16" (MIN.); ALUM ALLOY 6063
4. ALL PLATFORM FRAMING IS C10X5.28, UNLESS NOTED.
5. ALL DIAGONAL VERTICAL BRACING IS ∠ 3X3X3/8.
6. PROVIDE ALUMINUM GRATING: 1" ALUM; 1"X3/16" BEARING BARS AT 1 3/16" O.C WITH CROSS BARS AT 4" O.C. ; ALUM ALLOY 6063. BAND ALL OPENINGS IN GRATING.
7. BOLTS, NUTS AND WASHERS ¾"ø STAINLESS STEEL TYPE 316
8. GASKETS: NEOPRENE. USE BETWEEN ALL STEEL / ALUM CONTACT SURFACES.
9. PLATES, STAIR TREADS SUPPORT ANGLES: ALUM ALLOY 6061-T6.

RECORD DRAWING

COLUMN BASE PLATE

6 / S-15 DETAIL
SCALE: NTS

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1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: W. HAUSHEER
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

STAIR DETAILS

WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

S-15

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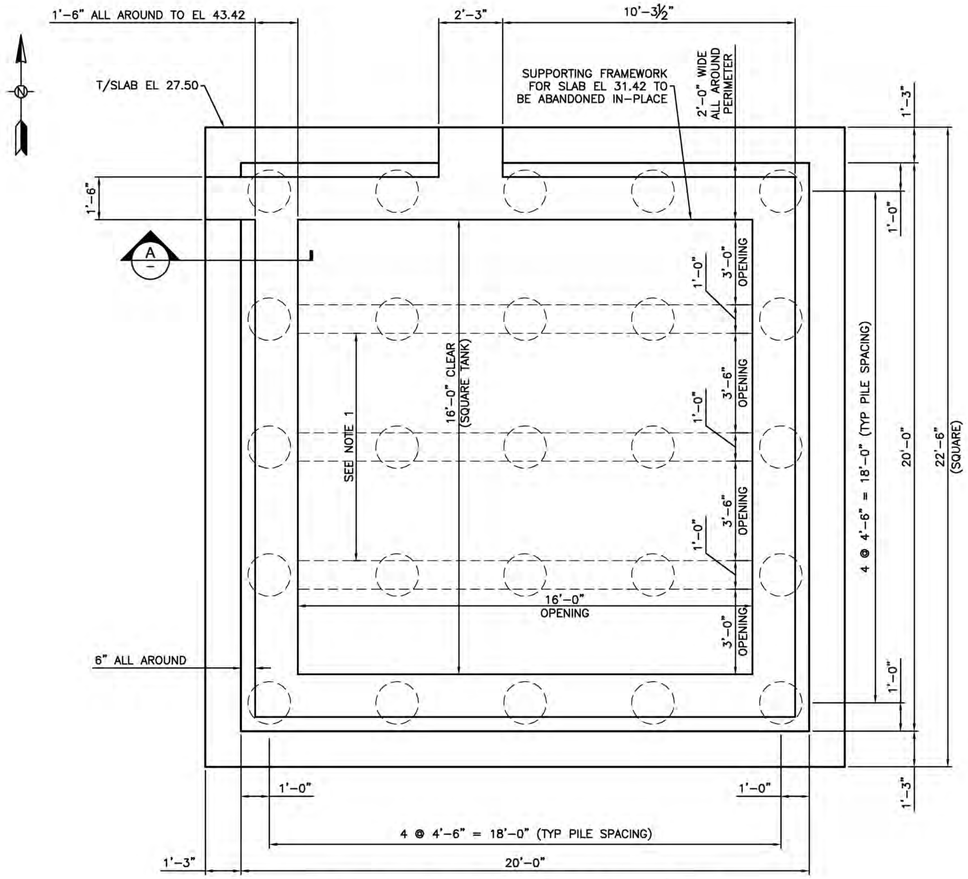
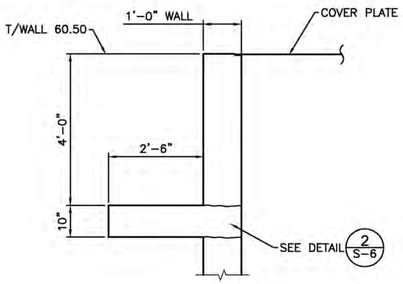
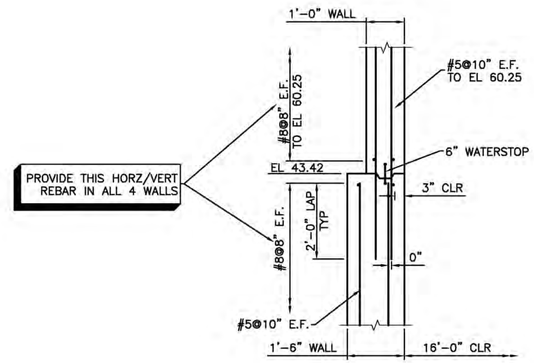


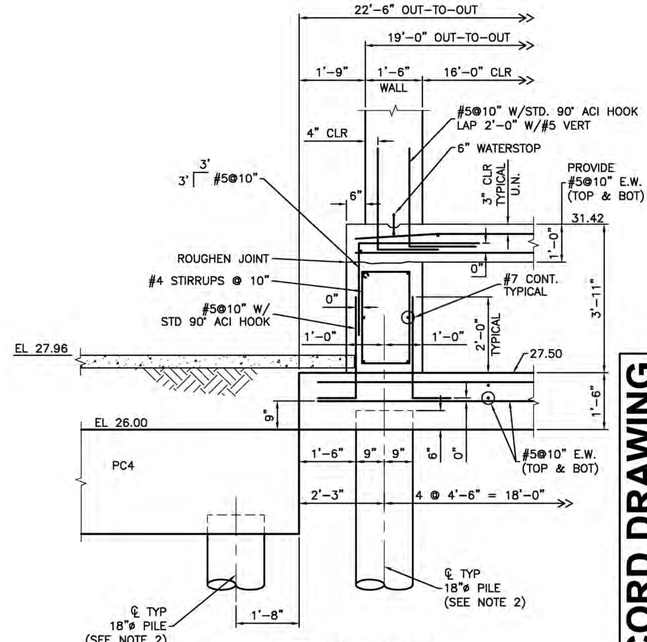
NOTE: SOUTH TANK SHOWN ABOVE. NORTH TANK IS OPPOSITE HAND.

PLAN VIEW - FOUNDATION LEVEL
SCALE: 3/8"=1'-0"

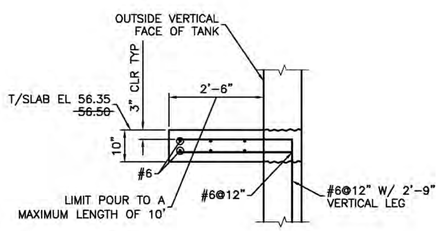
NOTES:
1. PROVIDE CONT. HORIZONTAL 2-#7 BARS (TOP, BOT, MID) WITH #4 STIRRUPS @10" O.C. IN THIS 12" WIDE x 35" DEEP CONCRETE BEAM.
2. VERTICAL BAR EXTENSION, AT CENTER OF PILE, OMITTED FOR CLARITY.



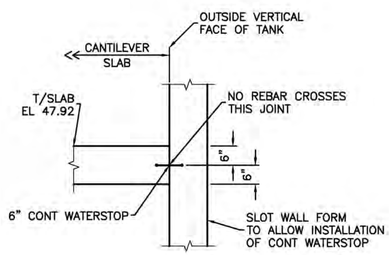




A SECTION
SCALE: NTS



TANK/SLAB SECTION (LOOKING NORTH)
SCALE: NTS



TANK/SLAB SECTION (LOOKING NORTH)
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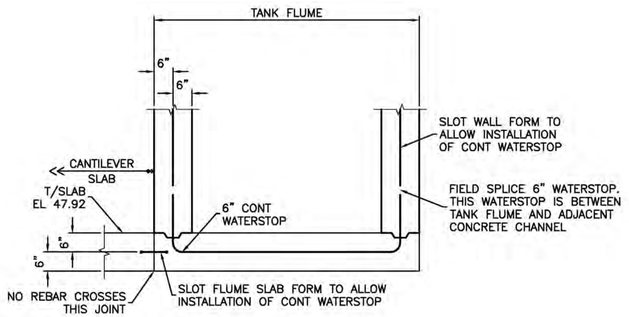

END VIEW OF TANK FLUME (LOOKING NORTH)
SCALE: NTS

RECORD DRAWING

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MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

GRIT TANK DETAILS

WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

S-16

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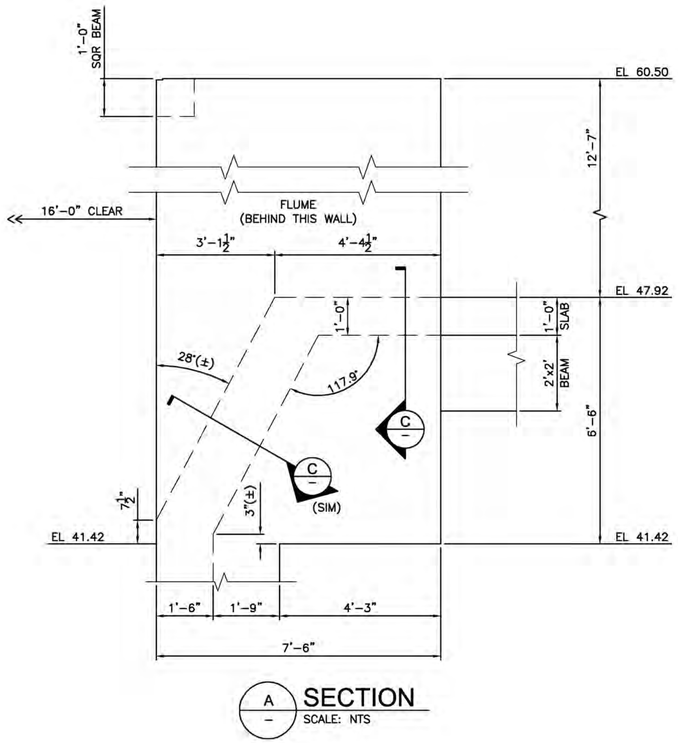

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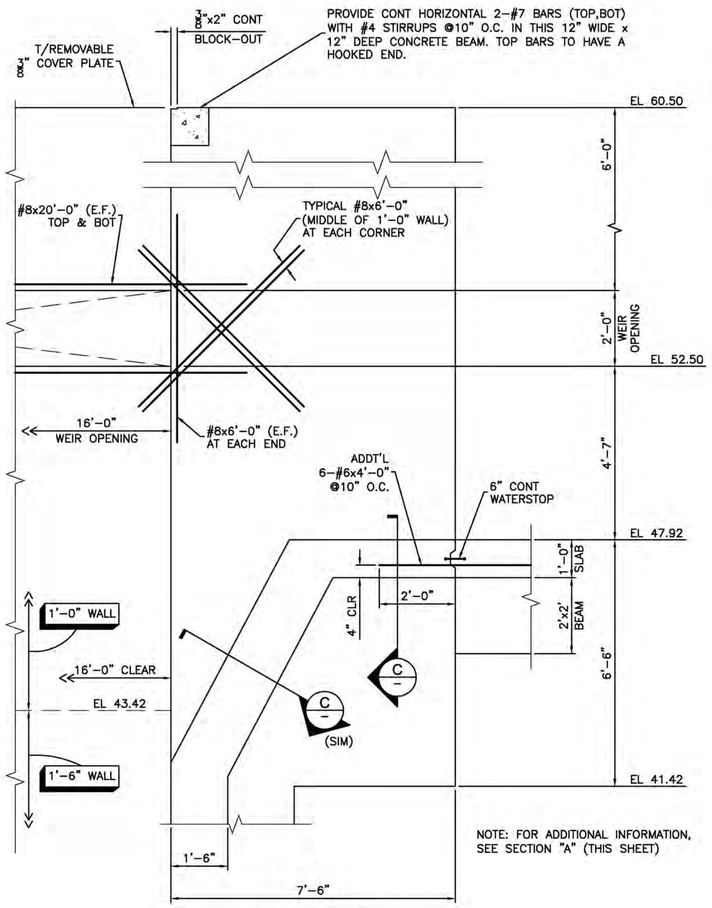

NOTE: FOR ADDITIONAL INFORMATION, SEE SECTION "A" (THIS SHEET)

B SECTION
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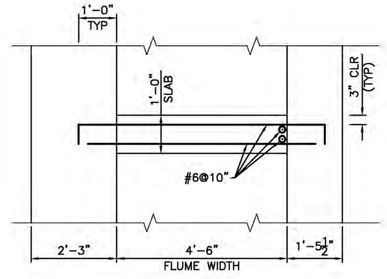

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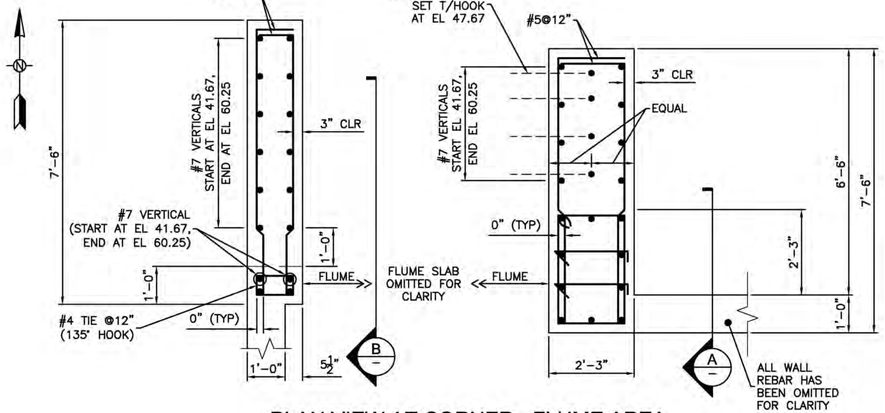
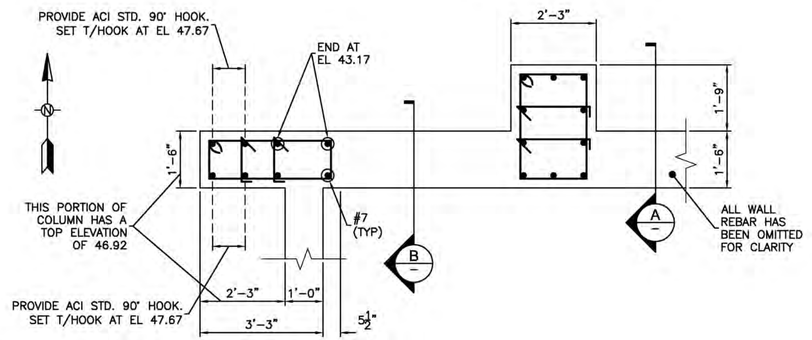
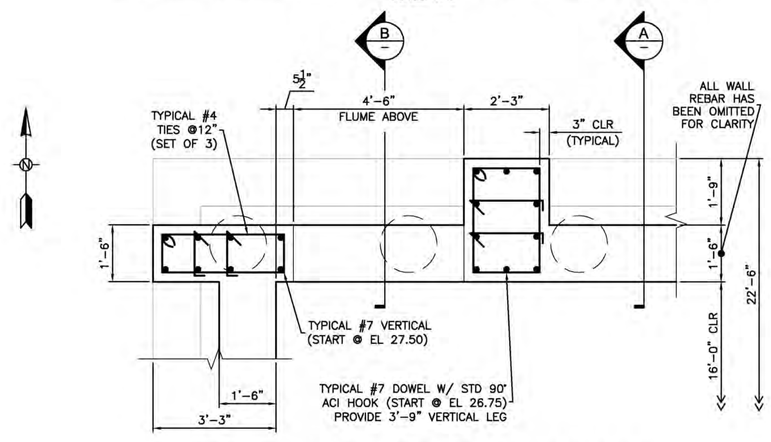


PLAN VIEW AT CORNER - FLUME AREA
SCALE: NTS



PLAN VIEW AT CORNER - JUST BELOW BOTTOM OF FLUME
SCALE: NTS



PLAN VIEW AT CORNER - FOUNDATION LEVEL
SCALE: NTS

RECORD DRAWING

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Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: W. HAUSHEER
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

GRIT TANK DETAILS

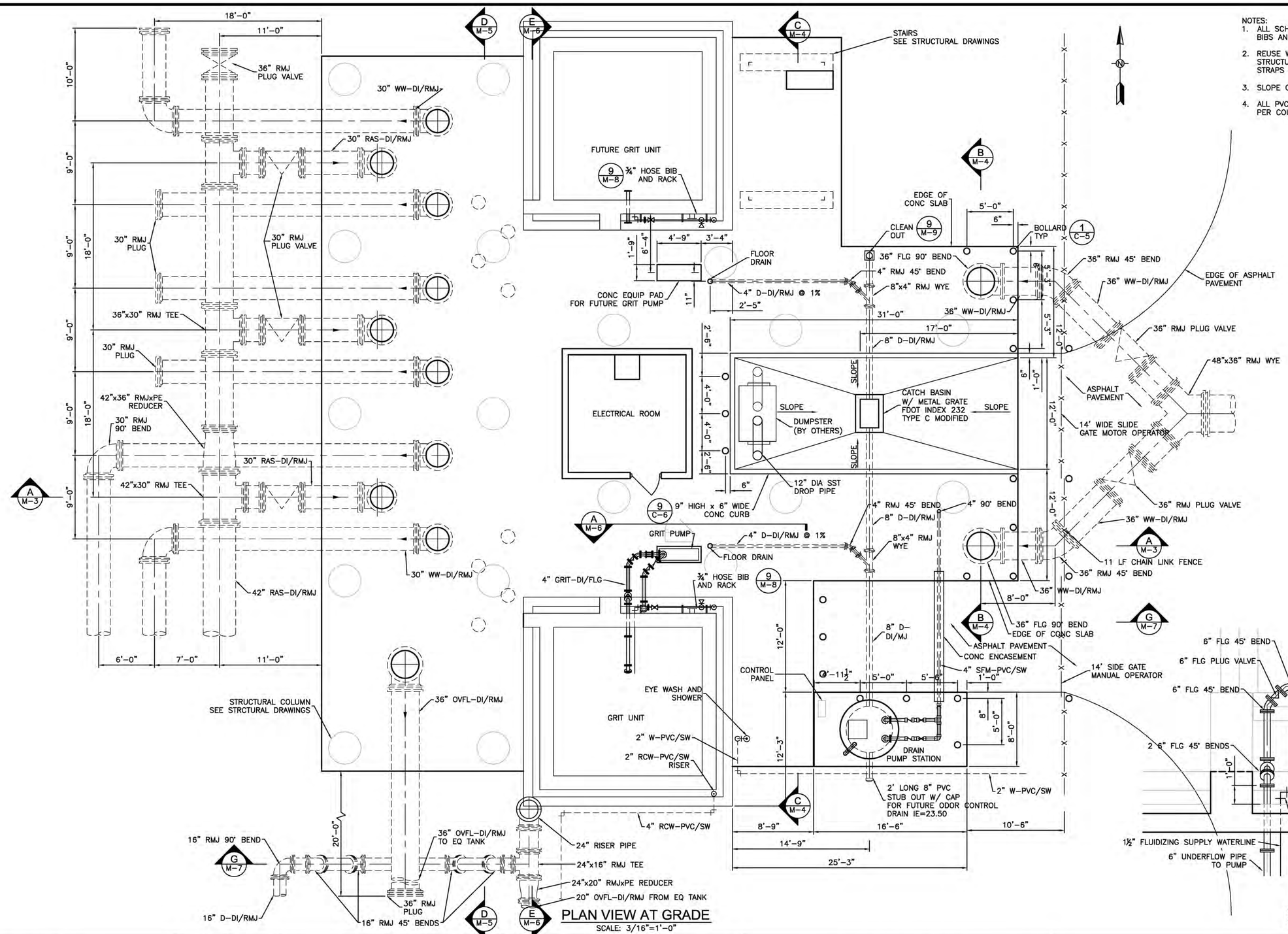
WILLIAM N. HAUSHEER
FLORIDA P.E. NO. 31715

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

S-17

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

NOTES:
1. ALL SCHEDULE 80 PVC REUSE WATER PIPING AND VALVES TO HOSE BIBS AND THE SLURRYCUP GRIT UNITS SHALL BE SOLVENT WELD.
2. REUSE WATER PIPING SHALL BE HUNG FROM THE HEADWORKS STRUCTURE USING 316 SST UNISTRUT. PROVIDE 2 ADDITIONAL 316 SST STRAPS ON HANDRAIL TO HOSE BIB. SEE DETAIL 9 ON SHEET M-8.
3. SLOPE CONCRETE ⅛" PER FOOT TO FLOOR DRAINS.
4. ALL PVC RECLAIMED WATER PIPING SHALL BE PAINTED REUSE PURPLE PER COUNTY STANDARDS.



PLAN VIEW AT GRADE
SCALE: 3/16"=1'-0"

1 – GRIT PUMP PIPING DETAIL
SCALE: NTS

RECORD DRAWING

PLOTTED May 25, 2010 3:36 PM PLOTTED BY: SCHEUERMAN, JAMES
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URS
7650 West Courtney Campbell Causeway
Suite 700
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URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

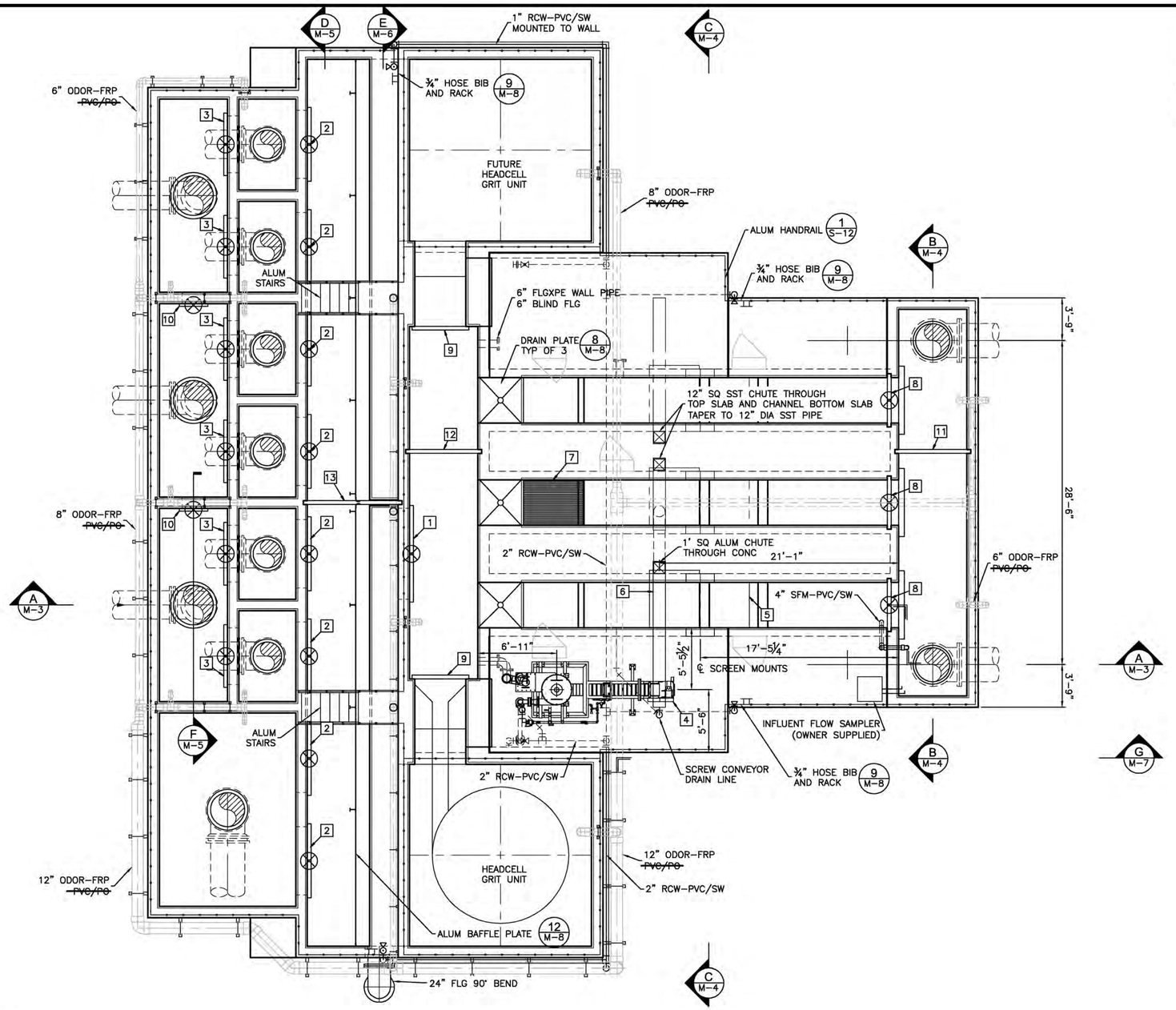
INFLUENT STRUCTURE AT THE NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS MECHANICAL PLAN AT GRADE

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

M-1



NOTES:
1. FOR ODOR CONTROL AIR PIPING SEE SHEET M-11

EQUIPMENT LIST
1. 8' WIDE x 2'-0" HIGH FACE MOUNTED WEIR GATE .
2. 6' WIDE x 2' HIGH WEIR GATE FACE MOUNTED WITH OFFSET FLOOR STAND AND HANDWHEEL OPERATOR.
3. 5' WIDE x 2' HIGH WEIR GATE FACE MOUNTED WITH OFFSET FLOOR STAND AND HANDWHEEL OPERATOR.
4. 32"ø SLURRYCUP "EUTEK SYSTEMS" O/E.
5. AUTOMATIC SCREEN "PARKSON CORPORATION".
6. SCREW CONVEYOR "SHAFTLESS TYPE".
7. MANUAL BAR SCREEN (SEE DETAIL SHEET M-?).
8. 4' WIDE x 5' HIGH SLIDE GATE WITH HANDWHEEL OPERATOR.
9. 4'-6" WIDE x 5' HIGH SLIDE GATE FACE MOUNTED WITH HANDWHEEL OPERATOR.
10. 2' WIDE x 2' HIGH SLIDE GATE WITH HANDWHEEL OPERATOR.
11. 5' WIDE x 5' HIGH STOP GATE.
12. 6' WIDE x 11.5' HIGH STOP GATE.
13. 8' WIDE x 7' HIGH STOP GATE

PLAN VIEW AT TOP OF STRUCTURE
SCALE: 3/16"=1'-0"

RECORD DRAWING

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS MECHANICAL
PLAN AT TOP

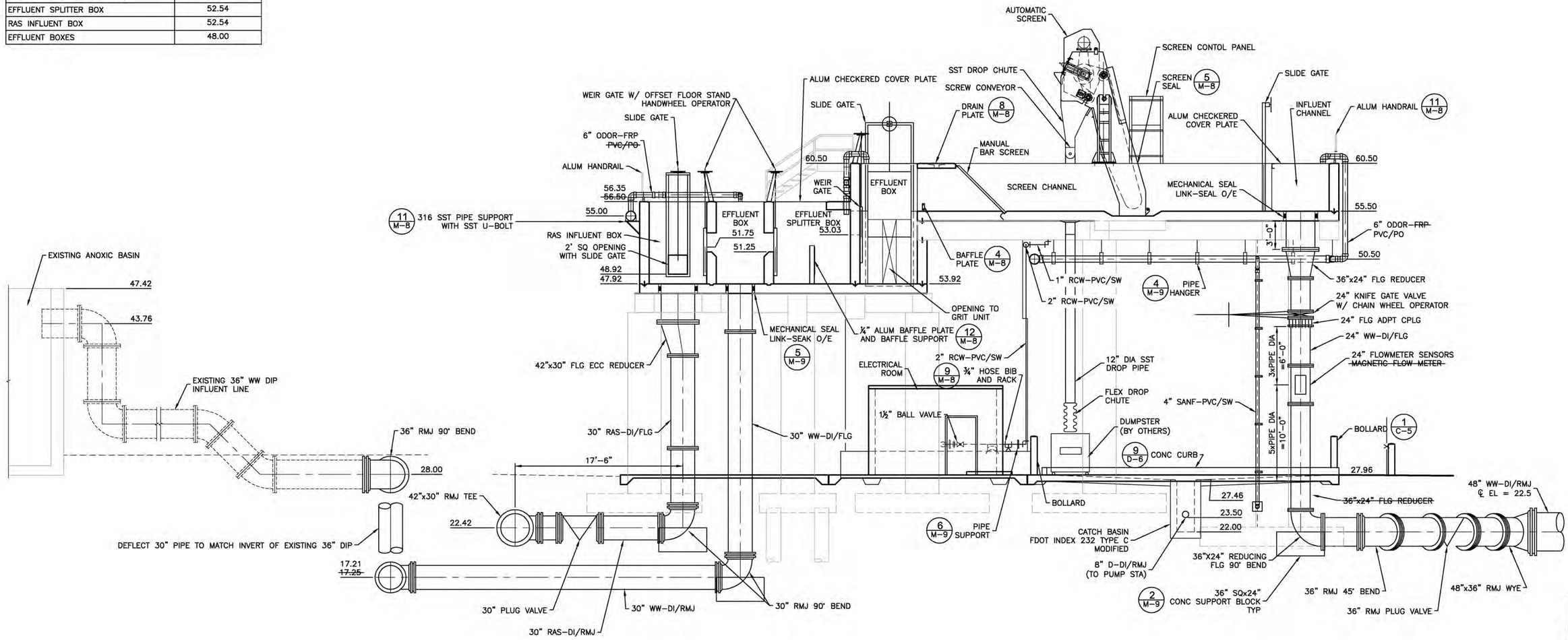
DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

M-2

WATER LEVEL ELEVATIONS TABLE	
LOCATION	ELEVATION (PHF)
INFLUENT CHANNEL	59.60
SCREEN CHANNEL	59.51
SCREEN CHANNEL (AFTER SCREEN	58.07
INFLUENT CHANNEL AT GRIT UNIT	53.29
EFFLUENT SPLITTER BOX	52.54
RAS INFLUENT BOX	52.54
EFFLUENT BOXES	48.00

NOTES:
1. FOR ODOR CONTROL AIR PIPING SEE SHEET M-11.
2. CONTRACTOR SHALL VERIFY ELEVATIONS OR THE EXISTING YARD PIPING PRIOR TO INSTALLATION OF NEW YARD PIPING.
3. DEFLECT JOINTS OF NEW 30" WW LINES ON NORTH SOUTH RUNS TO MATCH ℄ ELEVATIONS OF EXISTING 30" WW LINES AT THE TIE-IN POINT. NEW 30" WW LINES SHALL CROSS OVER EXISTING 36" WW RCCP INFLUENT PIPE.



A/M-1 SECTION
SCALE: 3/16"=1'-0"

RECORD DRAWING

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INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

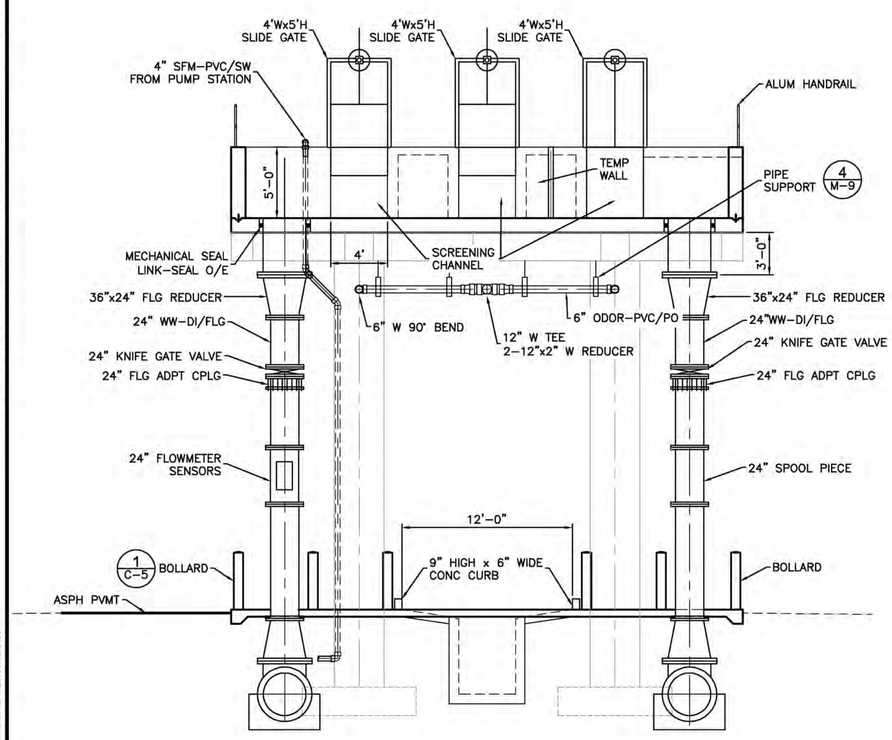
HEADWORKS MECHANICAL SECTION

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

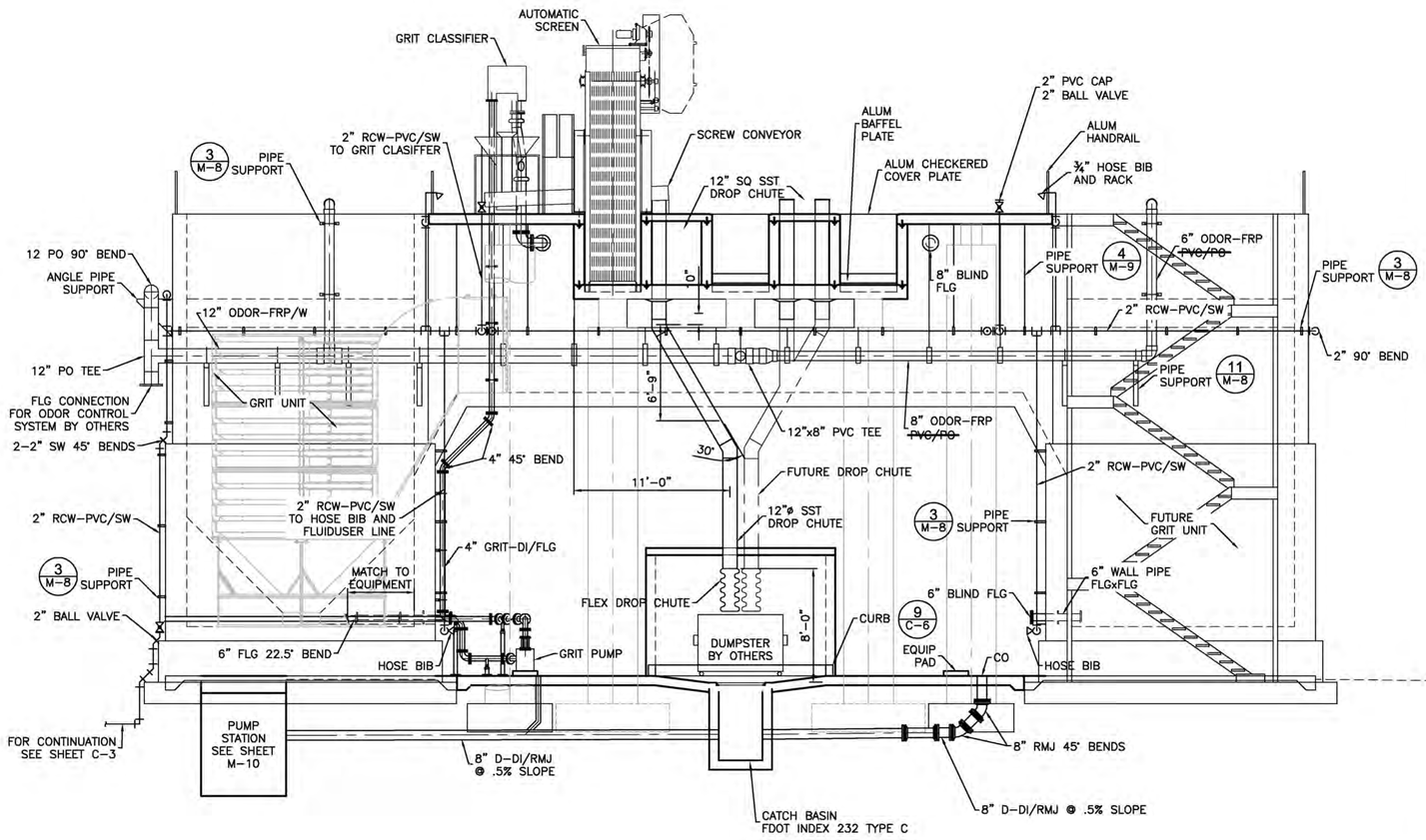
PROJECT STATUS
RECORD DRAWINGS
MAY 2010

M-3

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



B M-1 SECTION
SCALE: 3/16"=1'-0"



C M-1 SECTION
SCALE: 3/16"=1'-0"

RECORD DRAWING

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INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS
MECHANICAL SECTIONS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

M-4

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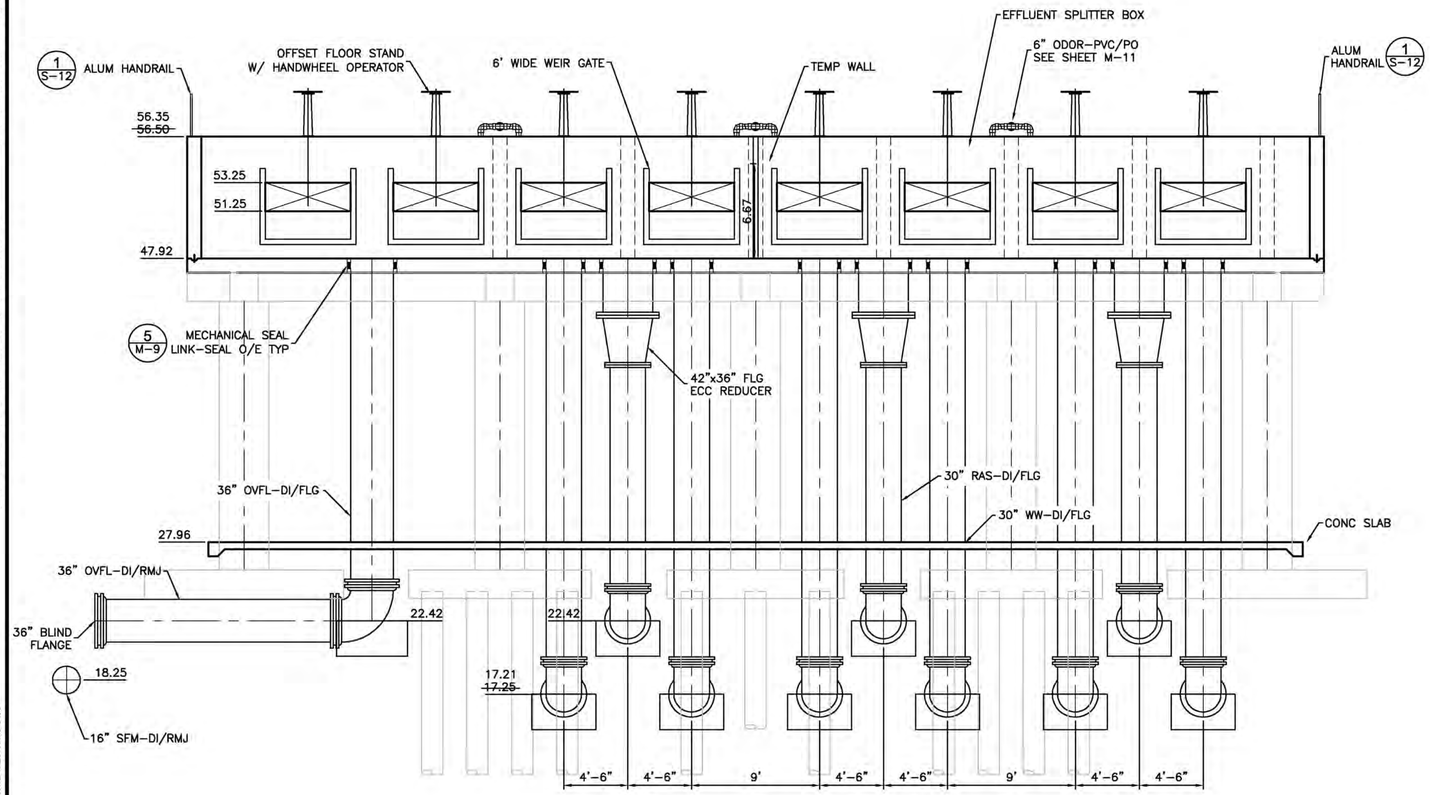
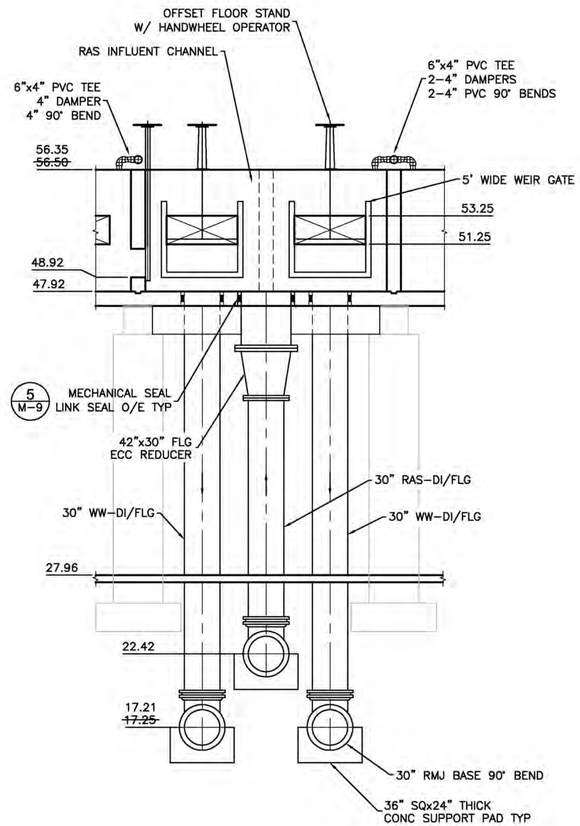


D SECTION
SCALE: 3/16"=1'-0"



F SECTION
SCALE: 3/16"=1'-0"

RECORD DRAWING

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REVISIONS

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INFLUENT STRUCTURE
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NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS MECHANICAL SECTIONS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

M-5

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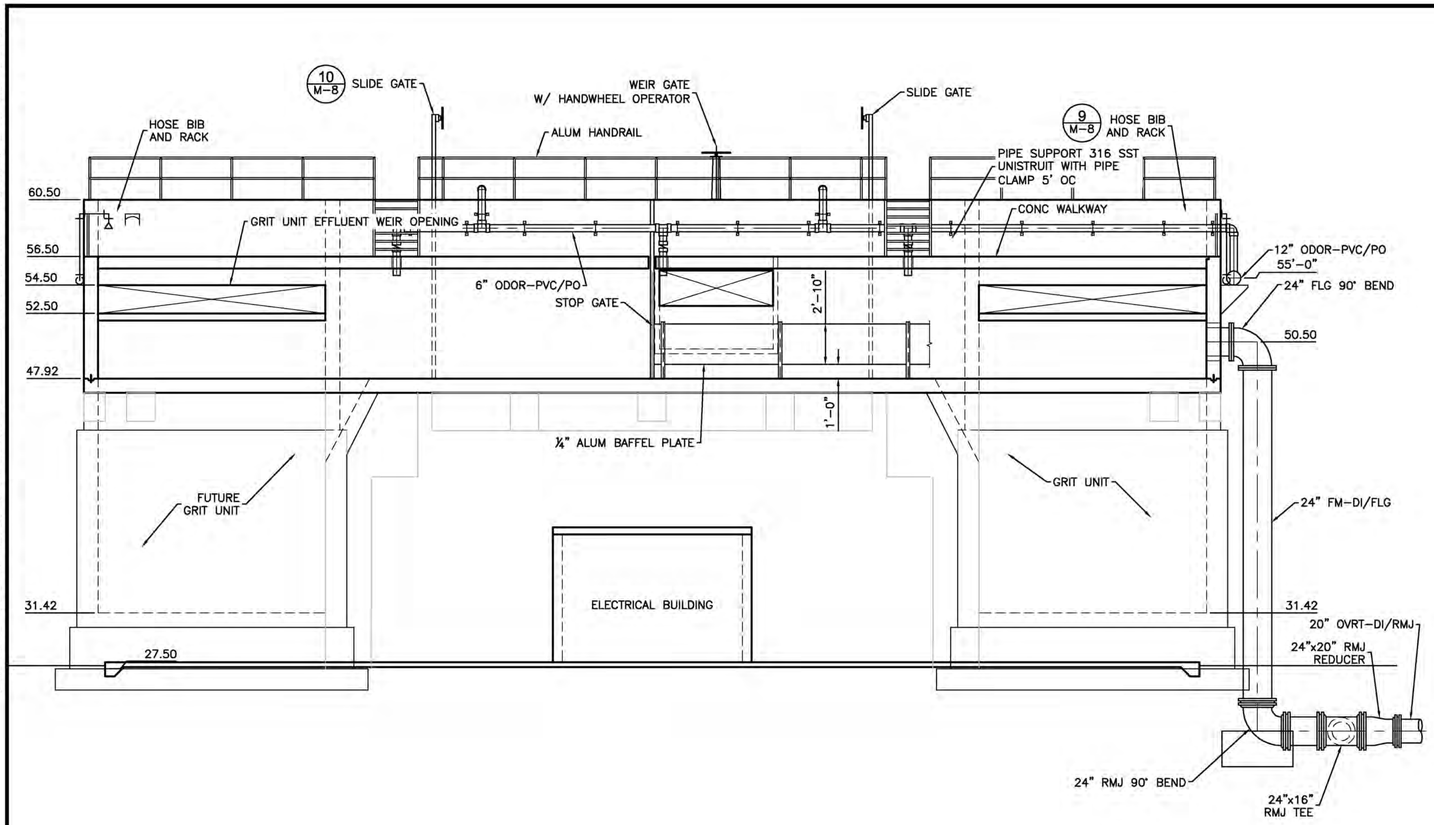
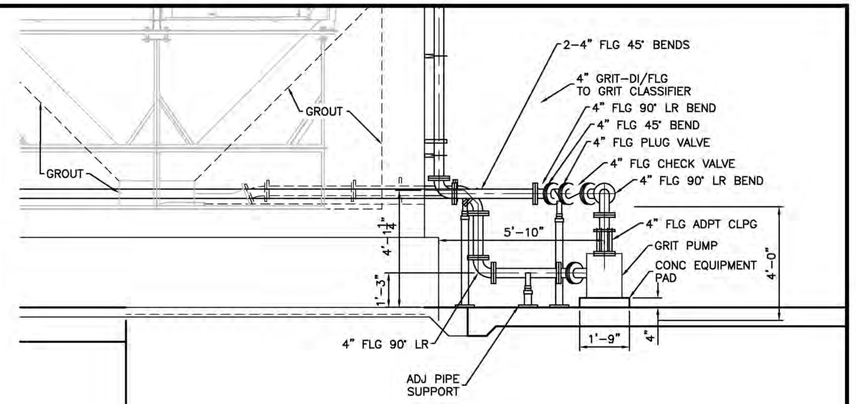
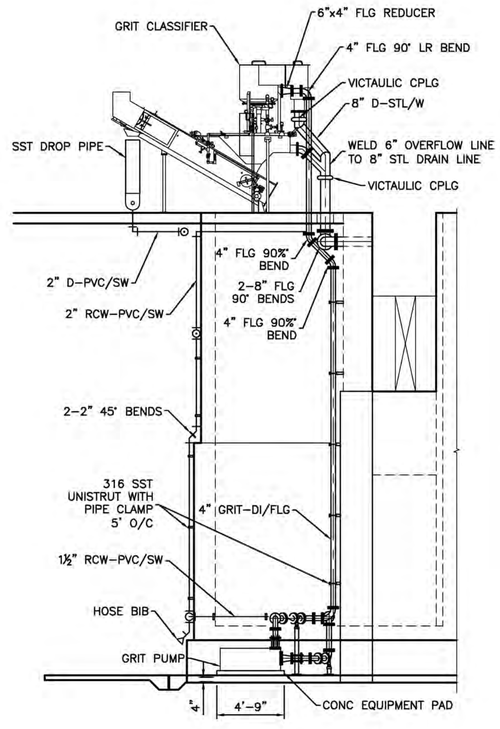


E M-2 SECTION
SCALE: 3/16"=1'-0"



GRIT PUMP SECTION & DISCHARGE PIPING
2 – DETAIL
SCALE: NTS



A M-1 SECTION
SCALE: 3/16"=1'-0"

RECORD DRAWING

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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MANATEE COUNTY FLORIDA

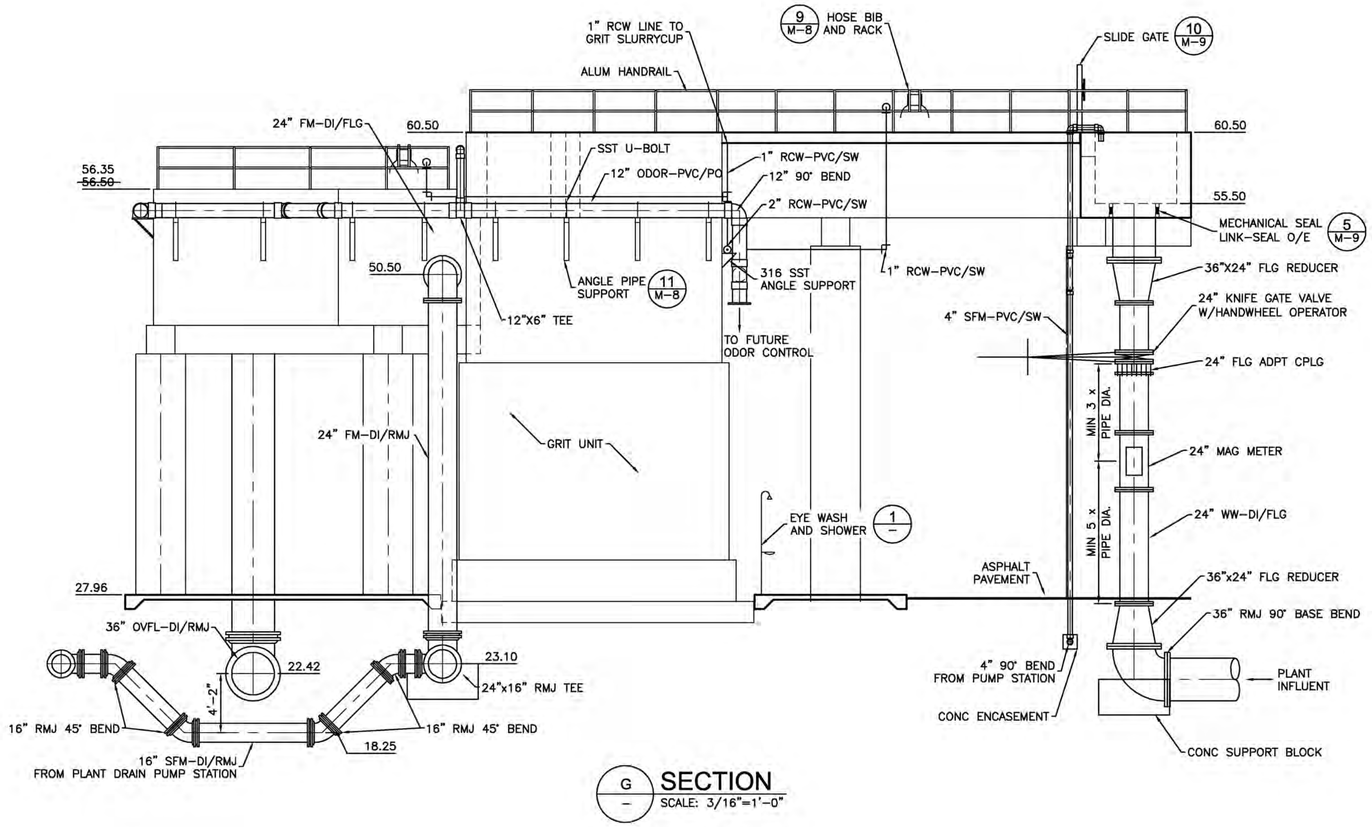
INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS MECHANICAL SECTIONS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

M-6



G — SECTION
SCALE: 3/16"=1'-0"

RECORD DRAWING

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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INFLUENT STRUCTURE
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NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

MECHANICAL SECTION AND DETAILS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

M-7

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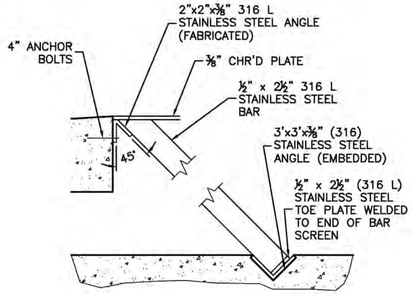
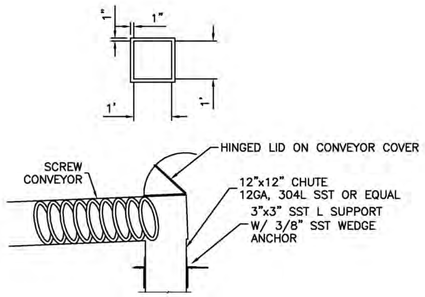
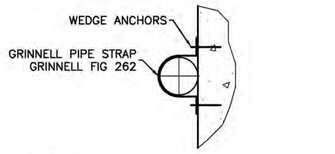


MANUAL SCREEN
1 – DETAIL
SCALE: NTS

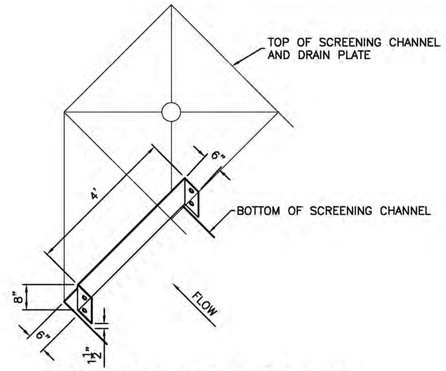


TRASH CHUTE
2 – DETAIL
SCALE: NTS

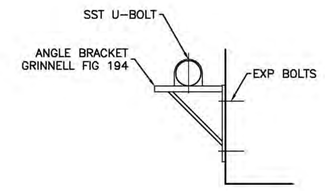


NOTE:
ALL PIPE HANGER HARDWARE IS TO BE 316 SST.

PIPE SUPPORT
3 – DETAIL
SCALE: NTS

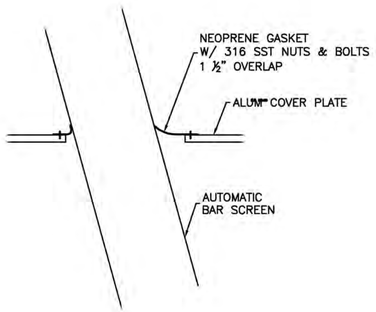


SCREENING CHANNEL BAFFLE PLATE
4 – DETAIL
SCALE: NTS

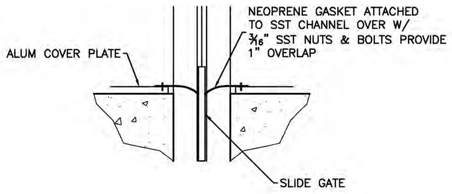


NOTE:
ALL PIPE HANGER HARDWARE IS TO BE 316 SST.

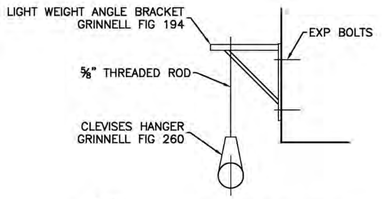
ANGLE PIPE SUPPORT
11 – DETAIL
SCALE: NTS



SCREEN SEAL
5 – DETAIL
SCALE: NTS

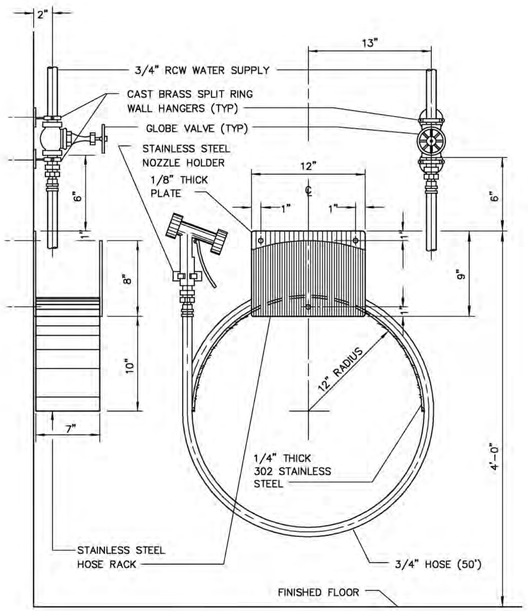


GATE SEAL
6 – DETAIL
SCALE: NTS

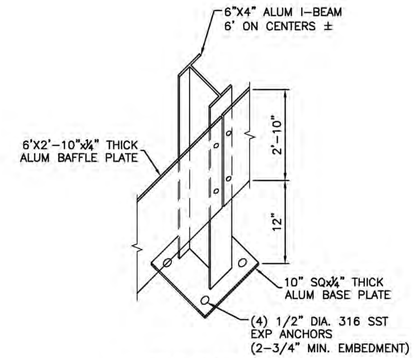


NOTE:
ALL PIPE HANGER HARDWARE IS TO BE 316 SST.

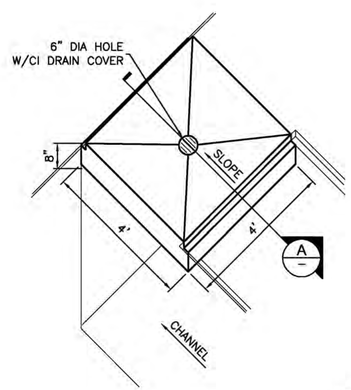
HANGING PIPE SUPPORT
7 – DETAIL
SCALE: NTS



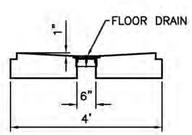
HOSE BIB AND RACK
9 – DETAIL
SCALE: NTS



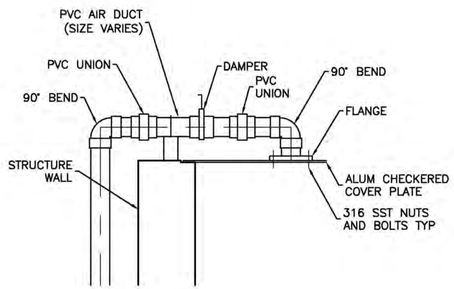
BAFFLE PLATE & SUPPORT
12 – DETAIL
SCALE: NTS



DRAIN PLATE
8 – DETAIL
SCALE: NTS



SECTION A



AIR DUCT CONNECTION
10 – DETAIL
SCALE: NTS

RECORD DRAWING

URS
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MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

MECHANICAL DETAILS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

M-8

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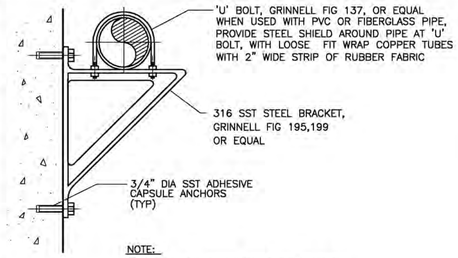
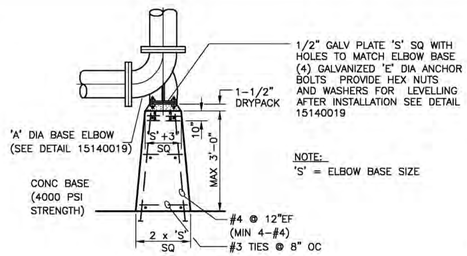


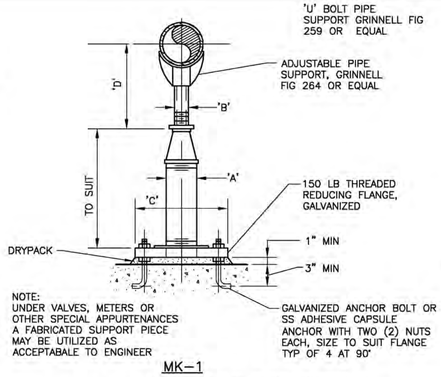
NOTE:
GALVANIZE ALL PARTS AFTER FABRICATION WHERE SUBMERGED OR LOCATED OVER WATER, STEEL SHIELDS, BRACKETS, 'U' BOLTS, AND BOLTS ARE TO BE SS TYPE 316

PIPE BRACKET
1 DETAIL
SCALE: NTS



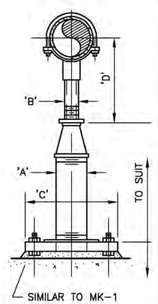
NOTE:
'S' = ELBOW BASE SIZE

PIPE ELBOW SUPPORT
2 DETAIL
SCALE: NTS



NOTE:
UNDER VALVES, METERS OR OTHER SPECIAL APPURTENANCES A FABRICATED SUPPORT PIECE MAY BE UTILIZED AS ACCEPTABALE TO ENGINEER

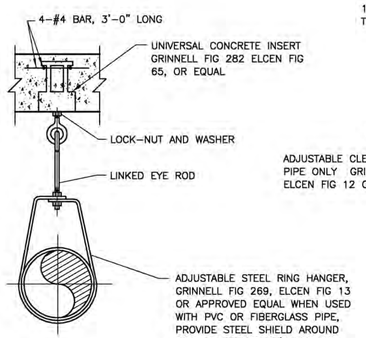
MK-1



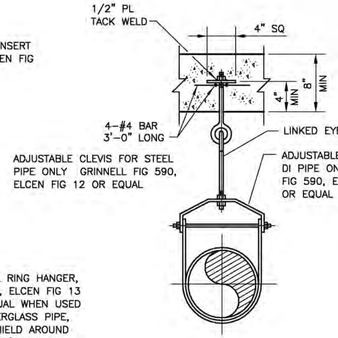
MK-2

ADJUSTABLE PIPE SUPPORT
3 DETAIL
SCALE: NTS

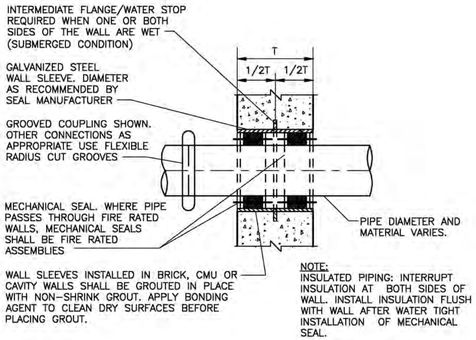
ADJUSTABLE PIPE SUPPORT APPROX DIMENSIONS IN INCHES					
PIPE SIZE	A	B	C	D MIN	D MAX
2 1/2	2 1/2	1 1/2	9	8	13
3	2 1/2	1 1/2	9	8 1/4	13 1/4
3 1/2	3 1/2	1 1/2	9	8 1/2	12
4	3	2 1/2	9	9 1/4	14
6	3	2 1/2	9	10 1/4	15 1/4
8	3	2 1/2	9	11 3/4	16 1/2
10	3	2 1/2	9	13 1/2	18 1/4
12	3	2 1/2	9	15	19 3/4
14	4	3	11	16 1/4	20 3/4
16	4	3	11	17 3/4	22 1/4
18	6	3 1/2	13 1/2	19 1/2	24
20	6	3 1/2	13 1/2	21	25 1/2
24	6	4	13 1/2	23 3/4	28 1/4
30	6	4	13 1/2	27	31 1/2
32	6	4	13 1/2	28 1/4	32 3/4
36	6	4	13 1/2	30 1/4	34 3/4



TYPE 'A'
FOR HANGER RODS
3/4" DIA AND SMALLER

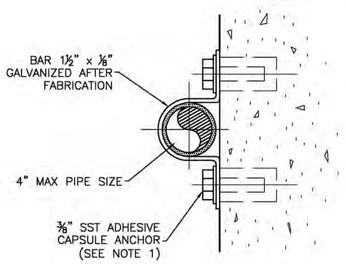


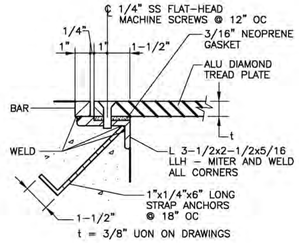
TYPE 'B'
FOR HANGER RODS 7/8" DIA
AND LARGER, AND MIN 8" THICK CONCRETE



NOTE:
INSULATED PIPING: INTERRUPT INSULATION AT BOTH SIDES OF WALL. INSTALL INSULATION FLUSH WITH WALL AFTER WATER TIGHT INSTALLATION OF MECHANICAL SEAL.

WALL SLEEVE WITH MECHANICAL SEAL FOR CONCRETE, BRICK CMU OR CAVITY WALLS
5 DETAIL
SCALE: NTS





NOTES:
1. PIPE CLAMP, WASHER AND SHIELD SHALL BE TYPE 316 STAINLESS STEEL
2. WHEN USED WITH PVC OR FIBERGLASS PIPE, PROVIDE STEEL SHIELD AROUND PIPE AT CLAMP WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" WIDE STRIP OF RUBBER FABRIC

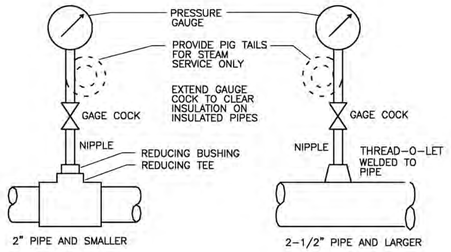
PIPE HANGER RODS & SUPPORT SPACING					
PIPE DIA (INCHES)	ROD DIA (INCHES)	MAX SUPPORT SPACING (FEET) STL PIPE	MAX SUPPORT SPACING (FEET) CI/DI PIPE	WEIGHT LIMIT (LBS) TYPE 'A'	WEIGHT LIMIT (LBS) TYPE 'B'
1 & SMALLER	3/8	5	MIN 1 HANGER PER PIPE LENGTH AND FITT MAX SPACING 5 FEET- LOCATE HANGER CLOSE TO EACH CONNECTION	610	——
1½" TO 2	3/8	5		610	——
2½" TO 3½"	1/2	10		1130	——
4 TO 5	5/8	10		1430	——
6	3/4	10		1430	3800
8,10,12	7/8	10		——	3800
14,16	1	10		——	3800

NOTE:
GALVANIZE ALL PARTS AFTER FABRICATION

PIPE HANGER
4 DETAIL
SCALE: NTS

PIPE CLAMPS FOR INDIVIDUAL PIPES
6 DETAIL
SCALE: NTS

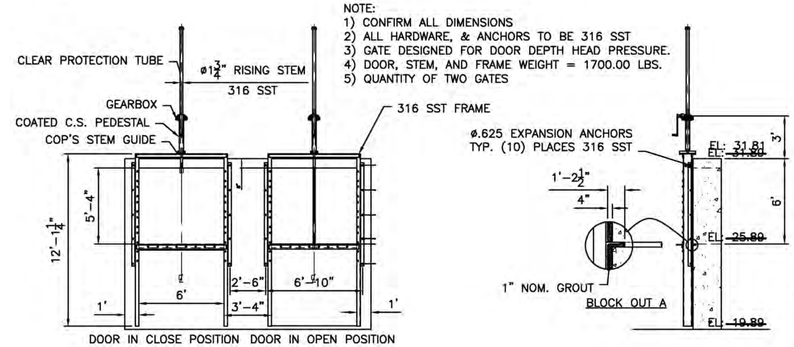
WATERTIGHT COVER PLATE
8 DETAIL
SCALE: NTS



GUAGE CONNECTION
7 DETAIL
SCALE: NTS

FLUSH FLOOR CLEANOUT
9 DETAIL
SCALE: NTS

NOTE:
1) CONFIRM ALL DIMENSIONS
2) ALL HARDWARE, & ANCHORS TO BE 316 SST
3) GATE DESIGNED FOR DOOR DEPTH HEAD PRESSURE.
4) DOOR, STEM, AND FRAME WEIGHT = 1700.00 LBS.
5) QUANTITY OF TWO GATES



SLIDE GATE
10 DETAIL
SCALE: NTS

RECORD DRAWING

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

MECHANICAL DETAILS

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

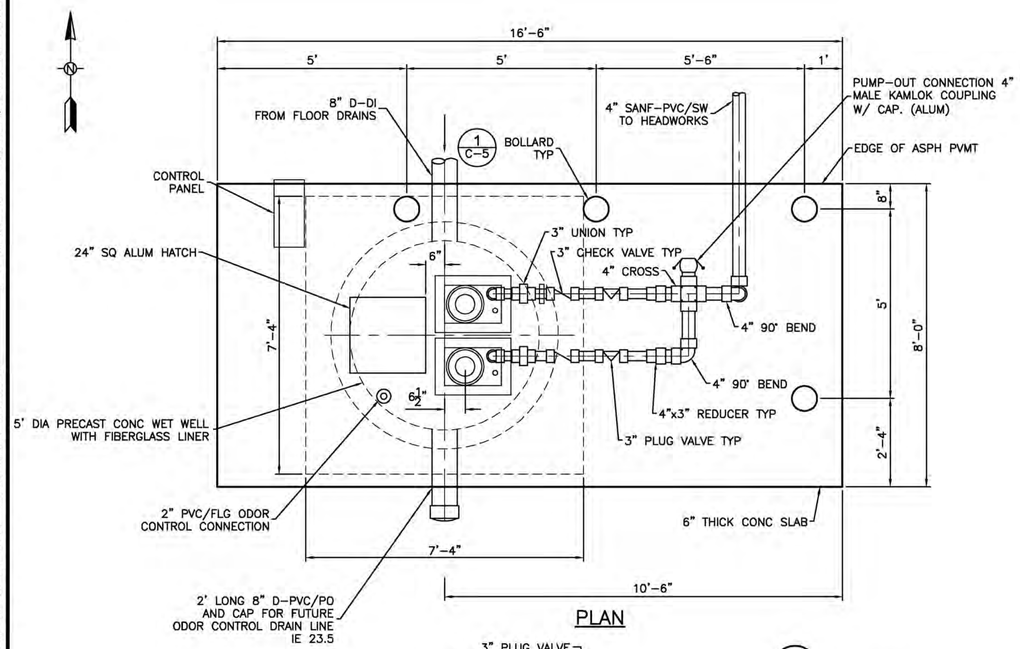
PROJECT STATUS
RECORD DRAWINGS
MAY 2010

M-9

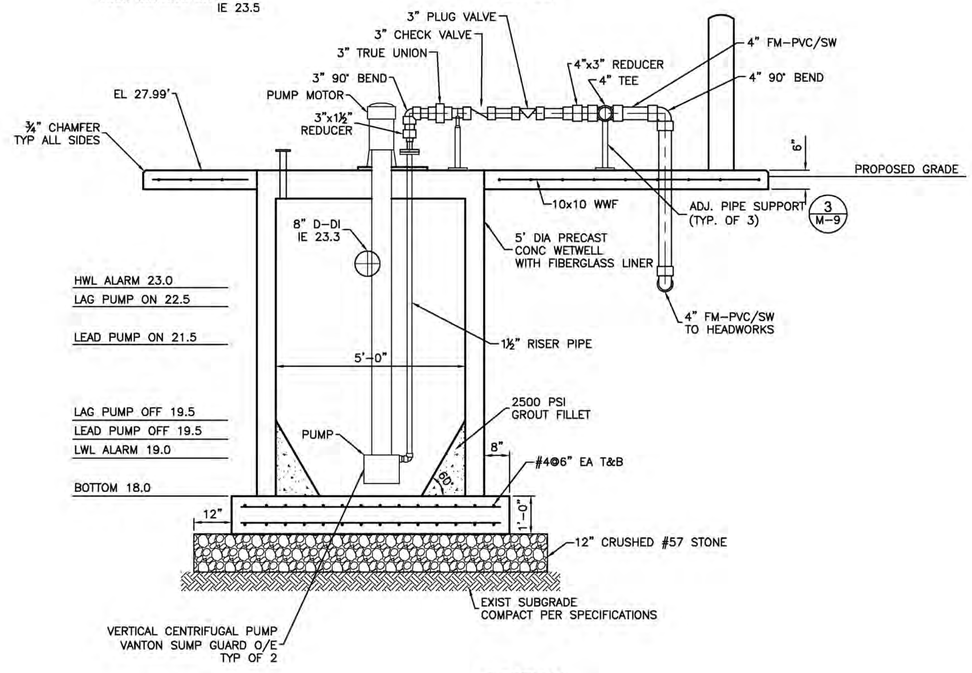
PLOTTED May 25, 2010 3:37 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\M-9 MECHANICAL DETAILS.DWG

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING D IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

NOTES:
1. PUMP FLOAT CABLES SHALL BE TIED TO 316 SST HOOK RACK AT TOP OF WET WELL WALL. INSTALL PVC CONDUIT THROUGH WET WELL WALL TO FLOAT PANEL
2. ALL SCH 80 PVC FITTINGS SHALL BE SOLVENT WELD. 4" PVC VALVES 4 INCH SHALL BE FLANGED WITH 316 SST NUTS AND BOLTS.



PLAN



SECTION

PROPOSED DRAIN PUMP STATION

RECORD DRAWING

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

DRAIN PUMP STATION

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

M-10

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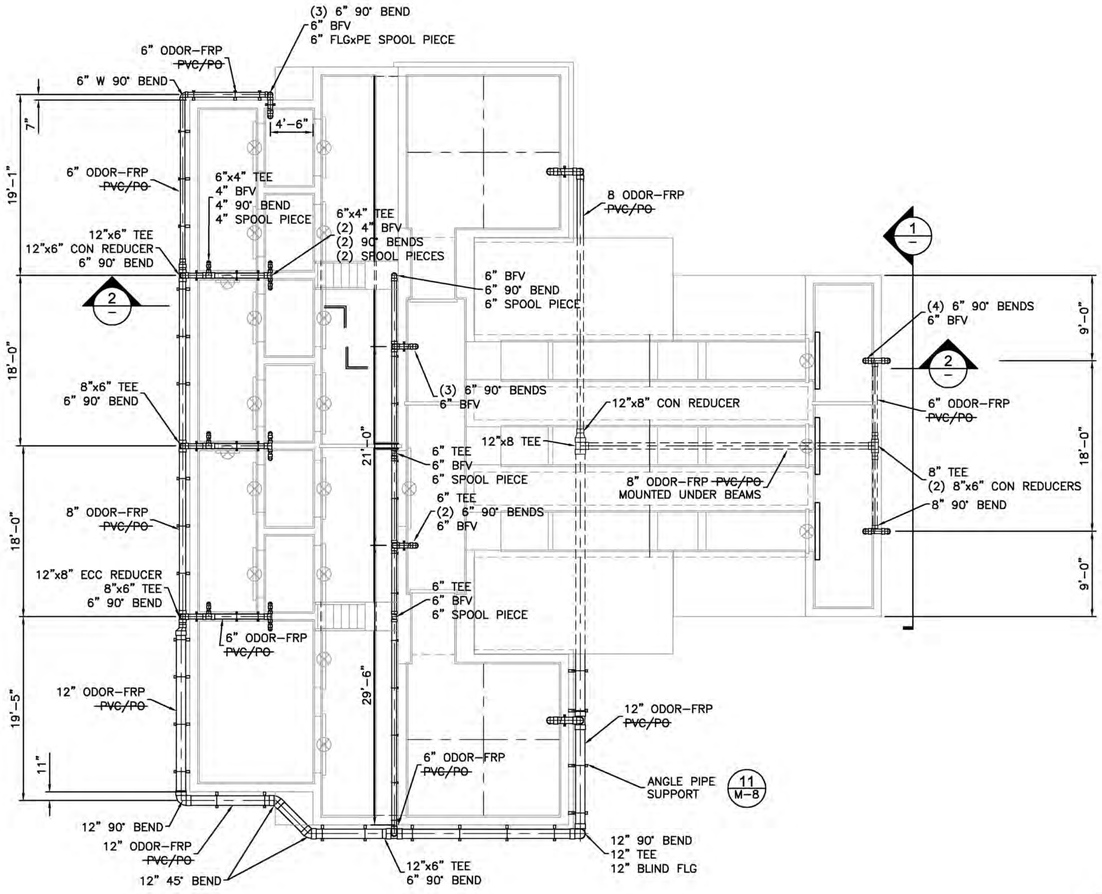

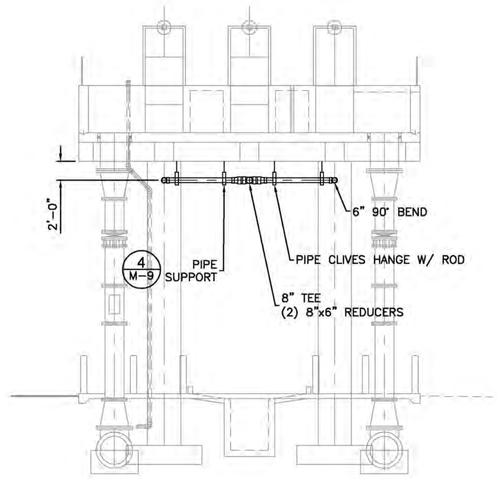

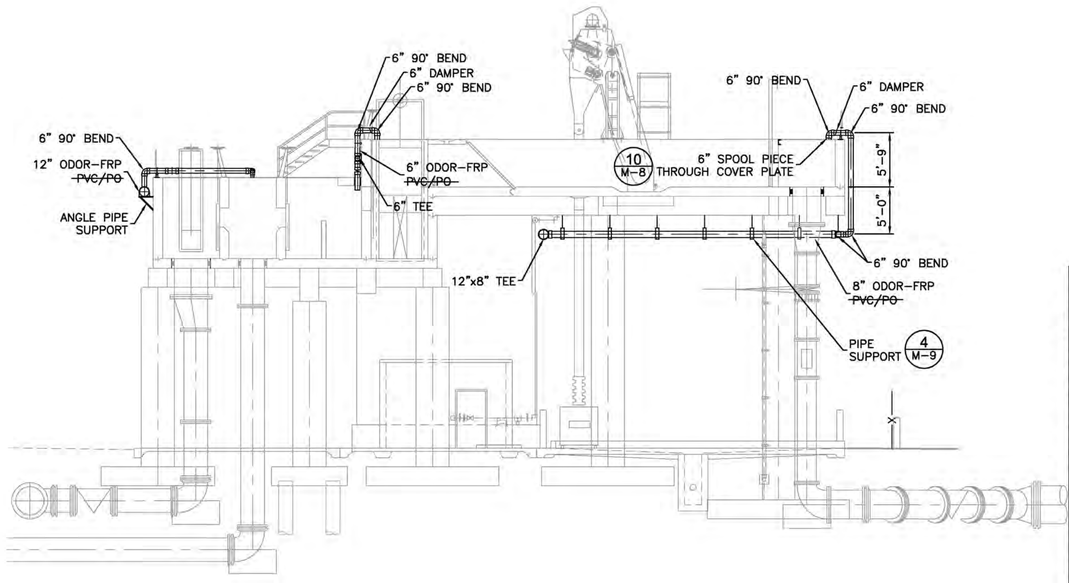

RECORD DRAWING

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Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: May 25, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ODOR CONTROL COLLECTION PIPING

DAVID A. WILCOX, P.E.
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

M-11

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

ABBREVIATIONS:

A	AMPS, AMPERE
AC	ALTERNATING CURRENT
AF	AMP FRAME, AMP FUSE
AFF	ABOVE FINISHED FLOOR
AI	ANALOG INPUT
AL	ALUMINUM
ALT.	ALTERNATE
AM	AMMETER
AMPS	AMPERES
AO	ANALOG OUTPUT
APPROX.	APPROXIMATE
ASPH.	ASPHALT
AST	ABOVEGROUND STORAGE TANK
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUX.	AUXILIARY
AUTO.	AUTOMATIC
AVG.	AVERAGE
AWG	AMERICAN WIRE GAUGE
&	AND
@	AT
BATT.	BATTERY
BC	BARE COPPER, BOLT CIRCLE
BET.	BETWEEN
BIS	BITS PER SECOND
BIL	BASIC IMPULSE LEVEL
BLDG	BUILDING
BKR	BREAKER
BNC	BAYONET-NIELL-CONCELMAN
BOT.	BOTTOM
C	CELSIUS, CONDUCTOR
C.	CONDUIT
CAB.	CABINET
CAT.	CATALOG
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER, CATCH BASIN
CCTV	CLOSED CIRCUIT TELEVISION
CEM.	CEMENT
CF	CUBIC FOOT
CIP	CAST-IN-PLACE
CKT	CIRCUIT
CLR	CLEAR
CL	CLASS, CENTERLINE, CURRENT LIMITING
CLG	CEILING
COL.	COLUMN
COMM.	COMMUNICATION(S)
CONC.	CONCRETE
COND.	CONDUIT
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUED
CONTR.	CONTRACTOR
COORD.	COORDINATE
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CRS	PVC COATED RIGID STEEL CONDUIT
CS	CONTROL STATION
CT	CURRENT TRANSFORMER
CTR	CENTER
CTRL	CONTROL
CU	COPPER
DB	DIRECT BURIED
dB	DECIBELS
DC	DIRECT CURRENT
DED.	DEDICATED
DEG.	DEGREES
DI	DISCRETE INPUT
DIA.	DIAMETER
DIV.	DIVISION
DIM.	DIMENSIONS
DO	DISCRETE OUTPUT
DWG	DRAWING
EA.	EACH
ELEC.	ELECTRIC, ELECTRICAL
EL.	ELEVATION
EMBT	EMBEDMENT
EMT	ELECTRICAL METALLIC TUBING
ENCL.	ENCLOSURE, ENCLOSED
ENGR	ENGINEER
EPO	EMERGENCY POWER OFF
EPR	ETHYLENE PROPYLENE RUBBER
EQ.	EQUAL
EQUIP.	EQUIPMENT
EQUIV.	EQUIVALENT
EXIST.	EXISTING
EXP.	EXPOSED
EXT.	EXTERIOR

ABBREVIATIONS:

F	FUSE
FA	FIRE ALARM
FAA	FUTURE FORCED AIR
FACP	FIRE ALARM CONTROL PANEL
FACS	FIRE ALARM CONTROL SYSTEM
FBC	FLORIDA BUILDING CODE
FC	FOOT-CANDLE
FND	FOUNDATION
FDR	FEEDER
FHP	FRACTIONAL HORSEPOWER
FIN.	FINISHED
FIN. FL.	FINISHED FLOOR
FIXT.	FIXTURE
FLEX.	FLEXIBLE
FLR	FLOOR
FLUOR.	FLUORESCENT
FO	FIBER OPTIC
FT	FOOT, FEET
FTG	FOOTING
FU	FUSE
FUT.	FUTURE
FV	FULL VOLTAGE
FVR	FULL VOLTAGE REVERSING
FVNR	FULL VOLTAGE NON-REVERSING
GA	GAUGE
GALV.	GALVANIZED
GEN.	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRS	GALVANIZED RIGID STEEL
H	HEIGHT
HD	HEAVY DUTY
HDPE	HIGH DENSITY POLYETHYLENE
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HORIZ.	HORIZONTAL
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HR	HOUR
HZ	HERTZ
ID.	IDENTIFICATION
I.D.	INSIDE DIMENSION
IE	INVERT ELEVATION
IEEE	INSTITUTE OF ELECTRICAL & ELECTRONIC ENGINEERS
IES	ILLUMINATING ENGINEERING SOCIETY
IN.	INCH(ES)
INCL.	INCLUDING
INST.	INSTANTANEOUS
INSTR.	INSTRUMENT, INSTRUMENTATION
INV.	INVERT
I/O	INPUT/OUTPUT
J, JB	JUNCTION BOX
JCT	JUNCTION
JT	JOINT
K	KIRK KEY INTERLOCK
KA	KILO AMPERES
KAIC	KILO AMPS INTERRUPTING CAPACITY
KCMIL	ONE THOUSAND CIRCULAR MILS
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES REACTIVE
KW	KILOWATTS
KWH	KILOWATT HOURS
KWHD	KILOWATT HOURS DEMAND
L	LENGTH
LB	POUND
LBS	POUNDS
LC	LOAD CENTER
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET
LIN.	LINEAR
LOC.	LOCATION(S)
LPS	LIGHTNING PROTECTION SYSTEM
LS	LIMIT SWITCH
LT	LIGHT
LTG	LIGHTING
LTS	LIGHTS
LV	LOW VOLTAGE
LVMH	LOW VOLTAGE MANHOLE
L-G	LINE-TO-GROUND
L-L	LINE-TO-LINE

ABBREVIATIONS:

M	MOTOR
MAX.	MAXIMUM
MCM	ONE THOUSAND CIRCULAR MILS
MCOV	MAXIMUM CIRCUIT OPERATING VOLTAGE
MECH.	MECHANICAL
MEMB.	MEMBRANE
MFR	MANUFACTURER
MH	METAL HALIDE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MOV	METAL OXIDE VARISTOR
MPH	MILES PER HOUR
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTR	MOTOR
MV	MEDIUM VOLTAGE
MVA	MEGAVOLT AMPERES
N	NEUTRAL
N.C.	NORMALLY CLOSED
NE	NORTH EAST
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NEUT.	NEUTRAL
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NO.	NUMBER
NOS.	NUMBERS
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NPT	NOMINAL PIPE THREAD
NTS	NOT TO SCALE
O.C.	ON CENTER(S)
O.D.	OUTSIDE DIAMETER
OH	OVERHEAD
OL	OVERLOADS
OPP.	OPPOSITE
OPER.	OPERATOR
OWS	OIL WATER SEPARATOR
P	POLE
PB	PULL BOX, PUSH BUTTON
PE	PHOTOELECTRIC DEVICE
PF	POWER FACTOR
PH. OR ø	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLCS	PLACES
PM	POWER METER
PNL	PANEL
PNLBD	PANELBOARD
PR	PAIR
PRI.	PRIMARY
PROJ.	PROJECT
PS	PRESSURE SENSOR, POWER SUPPLY
psi	POUNDS PER SQUARE INCH
PT	POTENTIAL TRANSFORMER, PRESSURE TRANSMITTER
PVC	POLYVINYL CHLORIDE
PWR	POWER
%	PERCENT
QTY	QUANTITY
RECP.	RECEPTACLE
REF.	REFERENCE
REINF.	REINFORCEMENT
REQD	REQUIRED
REV.	REVISION, REVISED
RF	RATING FACTOR
RGS	RIGID GALVANIZED STEEL
RMS	ROOT-MEAN-SQUARE
RVAT	REDUCED VOLTAGE AUTO TRANSFORMER
RVNR	REDUCED VOLTAGE NON-REVERSING
R/W	RIGHT-OF-WAY
SA	SURGE ARRESTER
SCH.	SCHEDULE
SEC.	SECONDARY, SECOND(S)
SECT.	SECTION
SF	SQUARE FOOT, SQUARE FEET
SHLD	SHIELDED
SHT	SHEET
SI	SQUARE INCH, SQUARE INCHES
SIM.	SIMILAR
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SPEC	SPECIFICATION(S)
SQ.	SQUARE
SS	STAINLESS STEEL
ST.	STREET
SW.	SWITCH

ABBREVIATIONS:

STA.	STATION
STD	STANDARD
STL	STEEL
STR	STRANDED
SW.	SWITCH
SWBD	SWITCHBOARD
SYM.	SYMMETRICAL
SYNC.	SYNCHRONOUS
SY	SQUARE YARD, SQUARE YARDS
SYS.	SYSTEM
TB	TERMINAL BLOCK
TBD	TO BE DETERMINED
TD	TIME DELAY
TELE.	TELEPHONE
TEMP.	TEMPORARY, TEMPERATURE
TERM.	TERMINAL
THHN	HEAT RESISTANT THERMOPLASTIC INSULATION
THK	THICK
THWN	HEAT AND MOISTURE RESISTANT THERMOPLASTIC INSULATION
THRU	THROUGH
T.O.S.	TOP OF STEEL, TOP OF SLAB
TSP	TWISTED SHIELDED PAIR
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP.	TYPICAL
UBC	UNIFORM BUILDING CODE
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
UVIR	ULTRAVIOLET INFRARED
V	VOLTS, VOLTAGE
VAR	VOLT AMPERES REACTIVE
VERT.	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLT METER
VOL.	VOLUME
VT	VOLTAGE TRANSFORMER
W	WATT
W.	WIDE, WIDTH, WIRE
WF	WASTE FUEL
WH	WATT-HOUR
WM	WATT-HOUR METER
W/O	WITHOUT
WP	WEATHERPROOF
WT	WEIGHT
WWF	WELDED WIRE FABRIC
W/	WITH
X	REACTANCE
XFMR	TRANSFORMER
XHHW	HEAT AND MOISTURE RESISTANT CROSS LINKED SYNTHETIC POLYMER
XP	EXPLOSION PROOF
Z	IMPEDANCE

LEGEND:

———	CONDUIT(S), AS INDICATED.
- - - - -	EXPOSED CONDUIT(S), AS INDICATED.
———	UNDERGROUND DUCT BANK, AS INDICATED.
(#)	REFERENCE NOTE REFERENCE TAG.
(—)	CONDUIT SCHEDULE REFERENCE TAG.
(J)	EQUIPMENT AS INDICATED.
(E)	LIGHTING CONTACTOR PANEL.
▭	EXPOSED JUNCTION BOX.
LCP	EXPOSED CONDUIT TERMINATION, AND ASSOCIATED CABLE/WIRING CONNECTION, TO EXPOSED DEVICE AS INDICATED.
$$_{WP}$$	20A, 120-277V AC, SINGLE POLE, SNAP TYPE INDUSTRIAL GRADE TOGGLE SWITCH WITH WEATHERPROOF PVC FS BOX AND MATING RED HANDLE TOGGLE SWITCH GASKETED COVER.
$$_{3WP}$$	20A, 120-277V AC, 3-WAY, SNAP TYPE INDUSTRIAL GRADE TOGGLE SWITCH WITH WEATHERPROOF PVC FS BOX AND MATING RED HANDLE TOGGLE SWITCH GASKETED COVER.

LEGEND CONT. . .

WP GFCI	20A, 120V AC, NEMA 5-20R, GROUND FAULT CIRCUIT INTERRUPTER TYPE INDUSTRIAL GRADE DUPLEX RECEPTACLE WITH WEATHERPROOF PVC FS BOX AND MATING PVC WET LOCATION (WHEN IN USE) GASKETED COVER.
X-#	CIRCUIT HOMERUN TO PANEL "X" FEEDER/BRANCH CIRCUIT "#", 1-#12 PH., 1-#12 NEUT., AND 1-#12 GND IN 3/4" C., UON.
- - -||- - -	EXPOSED CONDUIT WITH BRANCH CIRCUIT WIRING. THE SHORT SLASH MARKS INDICATE TWO PHASE WIRES, THE LONG SLASH MARKS INDICATE TWO NEUTRAL WIRES, AND THE SINGLE DOT INDICATES A SINGLE GROUND WIRE.
(P)	PHOTOCELL.
A	TYPE A LIGHTING FIXTURE.
BE B	TYPES B AND BE LIGHTING FIXTURES.
EM	TYPE EM EMERGENCY LIGHTING UNIT.
P# P#	TYPE P# LIGHTING FIXTURE.
—G—	GROUNDING CONDUCTOR AS INDICATED.
	GROUND ROD OR GROUND CONNECTION AS INDICATED.
•	BOND POINT.
—LP—	LPS MAIN OR SECONDARY CONDUCTOR AS INDICATED.
—DC— DC DC	LPS DOWN CONDUCTOR AS INDICATED.
X	TYPE "X" AIR TERMINAL.
#A 3P	SWITCH. "#A" INDICATES AMPERE RATING. "#P" INDICATES NUMBER OF POLES.
#A OR FU	FUSE. "#A" INDICATES AMPERE RATING. "FU" INDICATES AMPERE RATING SPECIFIED BY EQUIPMENT MANUFACTURER.
#A OR MCP 3P	CIRCUIT BREAKER. "#A" INDICATES THERMAL-MAGNETIC AMPERE RATING. "MCP" INDICATES CIRCUIT BREAKER IS INSTANTANEOUS TRIP ONLY TYPE. "#P" INDICATES NUMBER OF POLES.
	COMBINATION STARTER UNIT.
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR.
	TRANSFORMER.
(#)	MOTORIZED EQUIPMENT. "#" INDICATES MOTOR HORSEPOWER RATING.
M (C)	MAGNETIC MOTOR STARTER UNIT.
(C#)	LIGHTING CONTACTOR C#.
X (R)	RELAY. "X" IS USED FOR RELAY IDENTIFICATION.
X OR M | |	NORMALLY OPEN CONTACT. "X" IS USED FOR RELAY IDENTIFICATION. "M" INDICATES THE CONTACT IS A MAGNETIC MOTOR STARTER AUXILIARY CONTACT.
ID OR M N	NORMALLY CLOSED CONTACT. "X" IS USED FOR RELAY IDENTIFICATION. "M" INDICATES THE CONTACT IS A MAGNETIC MOTOR STARTER AUXILIARY CONTACT.
(R) (G)	120V AC LED TYPE PILOT LIGHT. "R" = RED "G" = GREEN.
TC	MOTOR WINDINGS THERMAL CUTOUT.
□ TB	TERMINAL BLOCK.

RECORD DRAWING

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NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

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DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

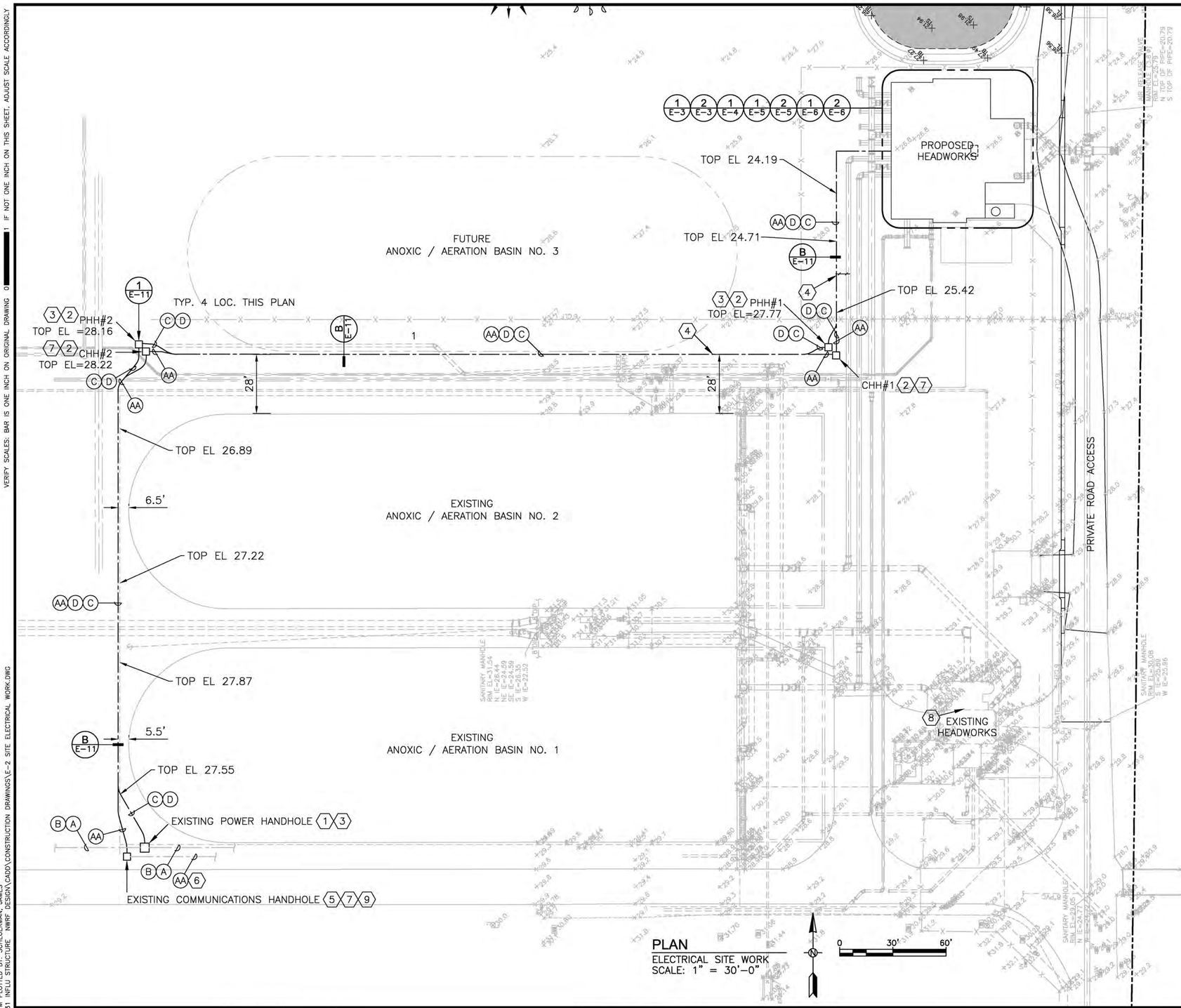
INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL ABBREVIATIONS AND LEGEND

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-1



PLAN
ELECTRICAL SITE WORK
SCALE: 1" = 30'-0"

GENERAL NOTES:

1. REFER TO SHEET E-9 FOR CONDUIT SCHEDULE.
2. PROVIDE TOPOGRAPHICAL SURVEY AND SUBSURFACE UTILITY LOCATION INVESTIGATION EVERYWHERE EARTH EXCAVATION IS REQUIRED TO COMPLETE THE WORK OF THIS PROJECT.

REFERENCE NOTES:

(1) CORE DRILL WALL OF EXISTING POWER HANDHOLE, AND GROUT INTO PLACE SCH. 80 PVC END BELLS FOR TERMINATION OF CONDUITS TO EXISTING HANDHOLE. DE-WATER AND CLEAN HANDHOLE OF DIRT AND DEBRIS. PROVIDE FOR DE-WATERING OF HANDHOLE AS REQUIRED TO COMPLETE THE WORK OF THIS PROJECT. SPLICE NEW HEADWORKS FEEDER CONDUCTORS TOGETHER WITH THE EXISTING HEADWORKS FEEDER CONDUCTORS INSIDE EXISTING HANDHOLE WITH MADE 3-WAY JUNCTIONS CONSTRUCTED USING 3-WAY IRREVERSIBLE COMPRESSION JUNCTIONS, MASTIC ELECTRICAL TAPE, AND VINYL ELECTRICAL TAPE.

(2) PROVIDE 3'-6" SQ. BY 3'-3" DEEP (I.D.) PRECAST CONCRETE HANDHOLE, H-20 TRAFFIC RATED WITH H-20 TRAFFIC RATED COVER, RACKING, AND GROUNDING, UTILITY OLDCASTLE PRECAST INC./VAULT 444-LA SERIES WITH 332P SERIES COVER. COVER SHALL HAVE 2'-9 1/2" SQ. CLEAR OPENING, SHALL BE CONSTRUCTED OF STEEL DIAMOND PLATE WITH STEEL FRAME AND HARDWARE, ALL GALVANIZED AFTER FABRICATION, SHALL BE H-20 TRAFFIC LOAD RATED IN OFF-STREET LOCATIONS NOT SUBJECT TO HIGH DENSITY TRAFFIC, SHALL BE HINGED (180° OPENING) WITH SPRING ASSIST OPENING MECHANISM, AND SHALL BE EQUIPPED WITH PENTAHEAD BOLT SECURED LOCKING LATCH, AND RECESSED LIFT HANDLE, AND SHALL BE EQUIPPED WITH 3" HIGH BLOCK LETTER LEGEND, "ELECTRIC" FOR POWER HANDHOLE AND "COMMUNICATIONS" FOR COMMUNICATIONS HANDHOLE. REFER TO DRAWING E-11 FOR TYPICAL HANDHOLE DETAIL AND ADDITIONAL REQUIREMENTS.

(3) PROVIDE ONE COMPLETE MAINTENANCE LOOP IN NEW FEEDER WIRES, NEATLY TRAINED, BUNDLED, RACKED, AND SECURED AROUND PERIMETER OF HANDHOLE,

(4) ROUTE DUCT BANK PARALLEL, AND AS CLOSE AS POSSIBLE, TO THE UNDERGROND PIPE IN THIS AREA, BUT NO CLOSER THAN 24" FROM SIDE OF DUCT BANK TO SIDE OF PIPE.

(5) CORE DRILL WALL OF EXISTING COMMUNICATIONS HANDHOLE, AND GROUT INTO PLACE SCH. 80 PVC END BELLS FOR TERMINATION OF CONDUITS TO EXISTING HANDHOLE. DE-WATER AND CLEAN HANDHOLE OF DIRT AND DEBRIS. PROVIDE FOR DE-WATERING OF HANDHOLE AS REQUIRED TO COMPLETE THE WORK OF THIS PROJECT.

(6) FIELD VERIFY EXISTING SPARE/EMPTY 2" CONDUIT BETWEEN EXISTING COMMUNICATIONS HANDHOLE AND EXISTING HEADWORKS. CONDUIT STUBS UP DIRECTLY BELOW THE EXISTING HEADWORKS RECENTLY INSTALLED SCADA PANEL INSIDE THE EXISTING HEADWORKS ELECTRICAL ROOM. USE THIS EXISTING CONDUIT TO INSTALL NEW OPTICAL FIBER CABLE BETWEEN EXISTING COMMUNICATIONS HANDHOLE AND EXISTING HEADWORKS SCADA PANEL. TERMINATE THIS EXISTING CONDUIT INTO THE BOTTOM OF THE EXISTING HEADWORKS SCADA PANEL. PREPARE THIS CONDUIT TO RECEIVE NEW OPTICAL FIBER CABLE. CLEAN THIS CONDUIT BY PULLING A MANDREL THROUGH IT IN EACH DIRECTION, AND THEREAFTER PULLING A STIFF BRISTLE BRUSH WITH SWAB THROUGH IT, UNTIL IT IS CLEAR OF EARTH, SAND, AND GRAVEL.

(7) PROVIDE ONE COMPLETE MAINTENANCE LOOP IN NEW OPTICAL FIBER CABLE, NEATLY TRAINED, BUNDLED, RACKED, AND SECURED AROUND PERIMETER OF HANDHOLE.

(8) COMPLETE THE FOLLOWING WORK INSIDE THE EXISTING HEADWORKS SCADA PANEL:

REMOVE EXISTING FIBER STRANDS NOS. 11 AND 12 FROM THE BULKHEAD CONNECTORS INSIDE THE FO PATCH PANEL.

ROUTE NEW 12-STRAND OPTICAL FIBER CABLE UP INTO THE FO PATCH PANEL. TERMINATE STRAND NOS. 1 AND 2 AND CONNECT THEM TO THE BULKHEAD CONNECTORS IN POSITION NOS. 11 AND 12 IN THE FO PATCH PANEL.

PROVIDE NEW OPTICAL FIBER PATCH CABLE, ST-TO-DUPLEX SC, BETWEEN FO PATCH PANEL POSITION NOS. 11 AND 12, AND DUPLEX SC CONNECTORS ON ETHERNET SWITCH.

(9) WHEN THE EXISTING HEADWORKS IS TO BE DEMOLISHED (BY OTHERS UNDER A SEPARATE CONTRACT), THE OPTICAL FIBER CABLE SERVING THE EXISTING HEADWORKS MAY BE CUT INSIDE THIS HANDHOLE, AND SPLICED TOGETHER WITH THE OPTICAL FIBER CABLE SERVING THE NEW HEADWORKS.

RECORD DRAWING

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REVISIONS

URS JOB NUMBER 12007031
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FILE SAVE DATE: April 27, 2010

MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

SITE ELECTRICAL WORK

GARRET S. KERLY, P.E.
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PROJECT STATUS
RECORD DRAWINGS
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E-2

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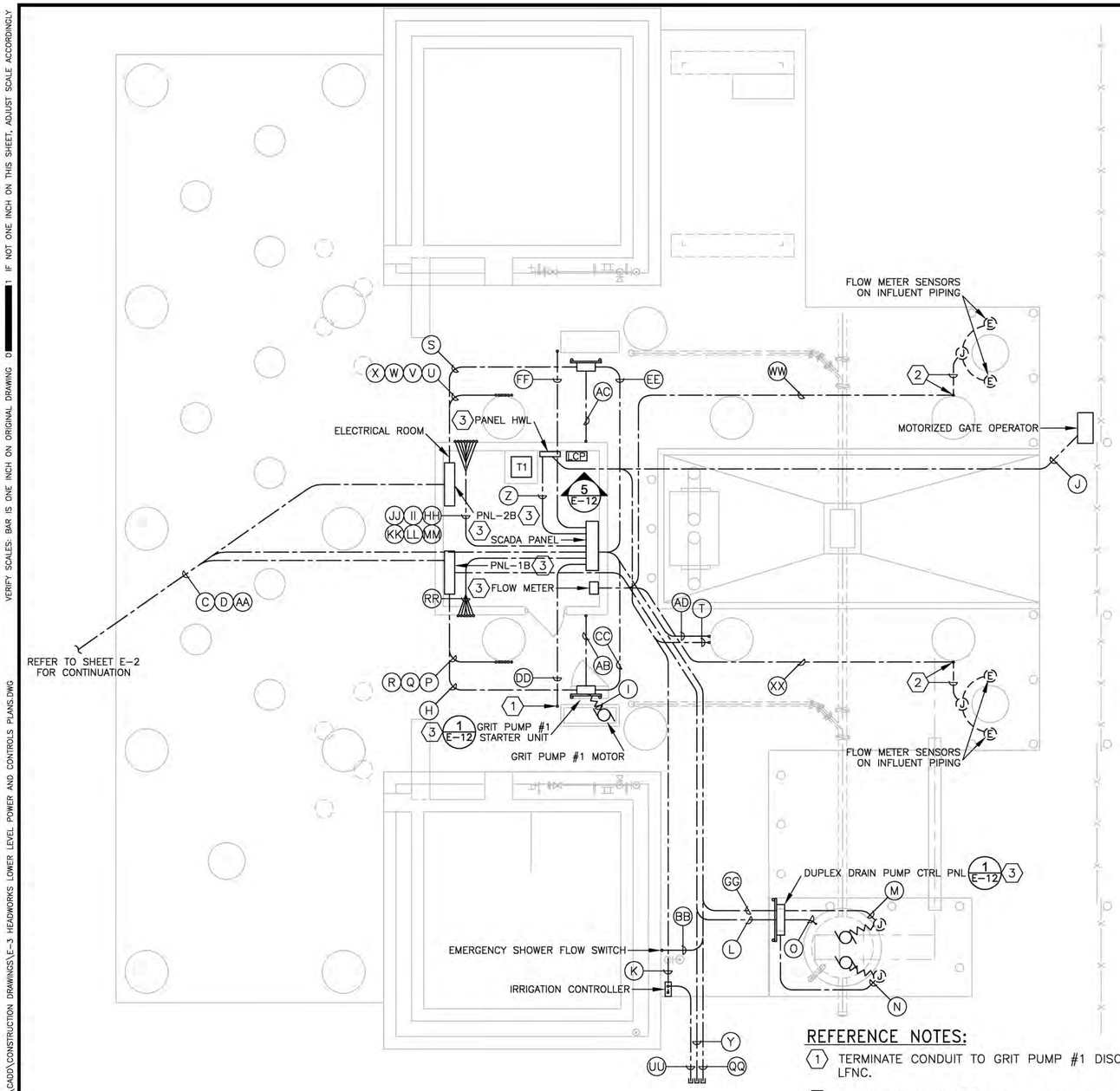
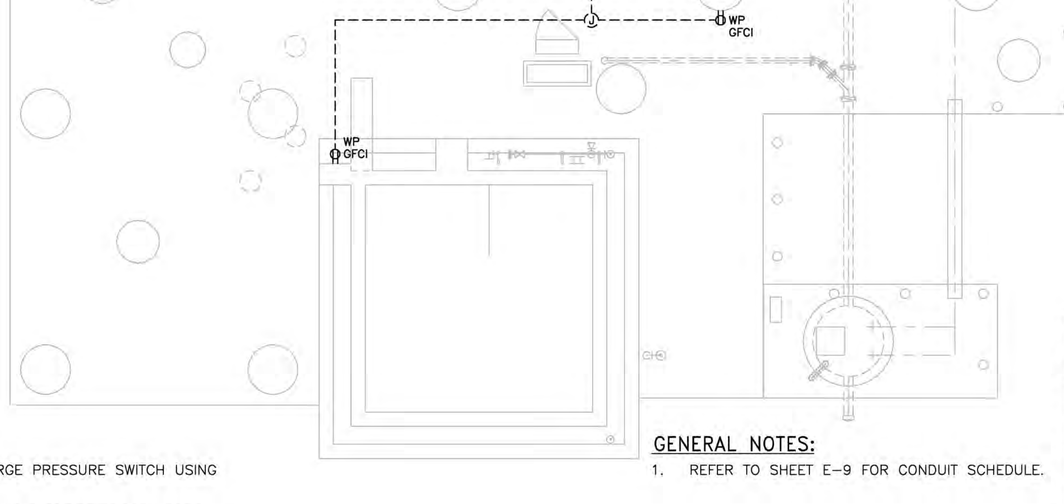


1 E-3 **PLAN**
HEADWORKS LOWER LEVEL POWER AND CONTROLS CONDUIT LAYOUT
SCALE: 3/16" = 1'-0"



2 E-3 **PLAN**
HEADWORKS LOWER LEVEL POWER CONDUIT AND RECEPTACLES LAYOUT
SCALE: 3/16" = 1'-0"

REFERENCE NOTES:

1. TERMINATE CONDUIT TO GRIT PUMP #1 DISCHARGE PRESSURE SWITCH USING LFNC.
2. EXTEND CONDUIT STUB UP IN KIND WITH EXPOSED CONDUIT OVERHEAD TO FLOW METER SENSORS. TERMINATE CONDUIT TO FLOW METER SENSORS USING LFNC.
3. SEAL ENDS OF EACH CONDUIT TERMINATED IN BOTTOM OF CABINET/ ENCLOSURE WITH DUCT SEAL COMPOUND AFTER ALL CABLES/WIRES ARE INSTALLED, CHECKED OUT, TESTED, AND PLACED INTO SERVICE.
4. MOUNT WP GFCI RECEPTACLE WITH BOTTOM AT 72" AFF FOR FUTURE CCTV CAMERA PLUG-IN TRANSFORMER.

GENERAL NOTES:

1. REFER TO SHEET E-9 FOR CONDUIT SCHEDULE.

RECORD DRAWING

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FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS LOWER LEVEL POWER AND CONTROLS PLANS

GARRET S. KERLY, P.E.
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PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-3

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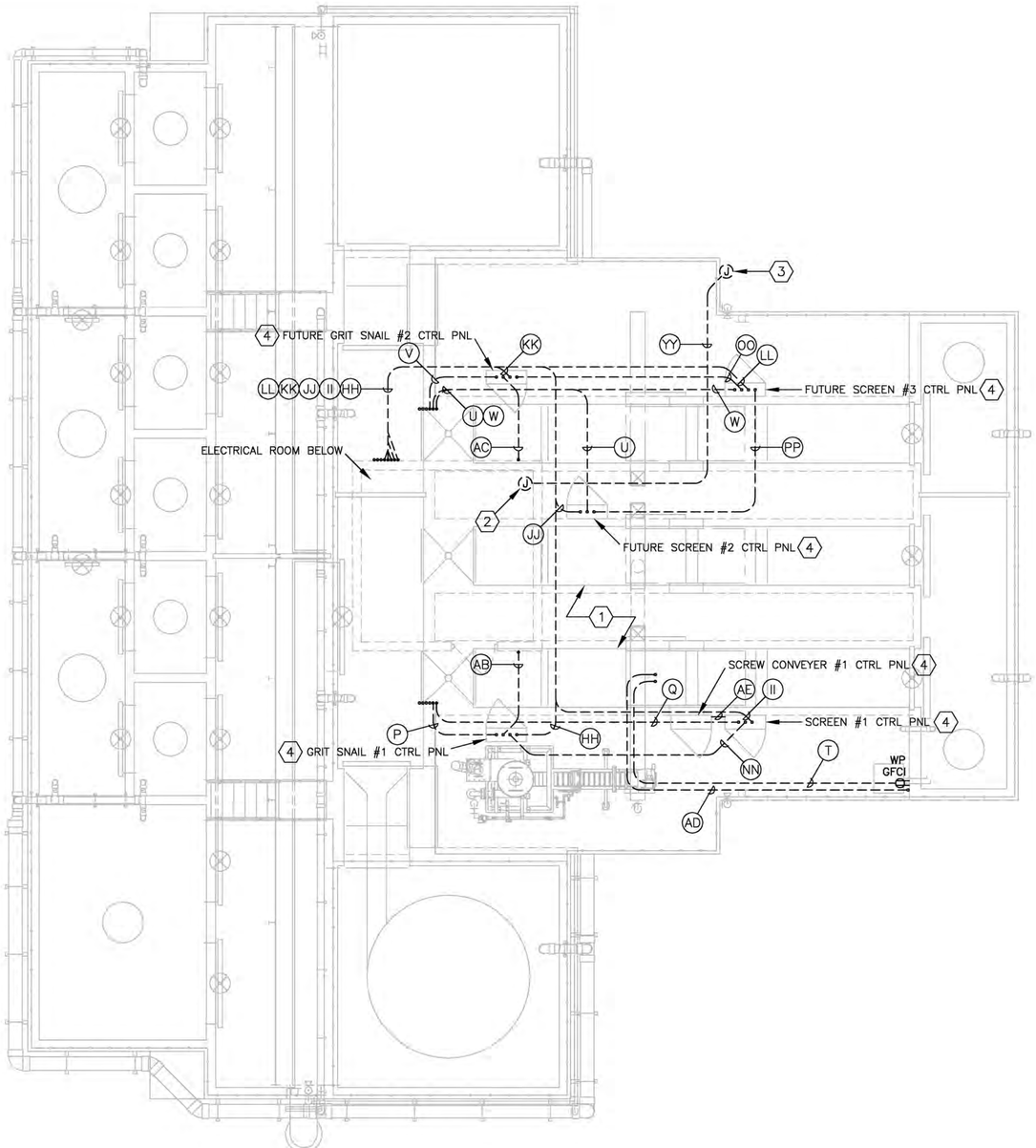

1 / E-4 PLAN
HEADWORKS UPPER LEVEL POWER AND CONTROLS CONDUIT LAYOUT
SCALE: 3/16" = 1'-0"

N

0 5.33' 10.67'

GENERAL NOTES:

1. REFER TO SHEET E-9 FOR CONDUIT SCHEDULE.

REFERENCE NOTES:

1. ALL CONDUITS SHOWN ON THIS PLAN ARE TO BE ROUTED EXPOSED ALONG THE UNDERSIDE OF THE UPPER LEVEL DECK SLAB.
2. MOUNT JUNCTION BOX ADJACENT TO DUPLEX RECEPTACLE DESIGNATED FOR FUTURE CCTV CAMERA INSIDE ELECTRICAL ROOM, WITH BOTTOM AT 72" AFF. REFER TO SHEET E-3 FOR DUPLEX RECEPTACLE LOCATION.
3. EXTEND CONDUIT UP TO LIGHT POLE ABOVE. REFER TO DRAWING E-5 FOR CONTINUATION. PROVIDE WEATHERPROOF JUNCTION BOX RIGIDLY MOUNTED TO LIGHT POLE WITH BOTTOM AT 60" AFF, AND TERMINATE CONDUIT INTO BOTTOM OF JUNCTION BOX.
4. PROVIDE ALL POWER AND CONTROL CONDUIT AND CABLES/WIRING BETWEEN EQUIPMENT CONTROL PANEL AND EQUIPMENT AS PER THE APPROVED MANUFACTURER'S SHOP DRAWINGS. WITH RESPECT TO ALL ITEMS SHIPPED LOOSE WITH EQUIPMENT, PROVIDE FOR THE INSTALLATION OF THESE ITEMS IN ACCORDANCE WITH THE APPROVED MANUFACTURER'S SHOP DRAWINGS.

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FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS UPPER LEVEL POWER AND CONTROLS PLAN

GARRET S. KERLY, P.E.
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PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-4

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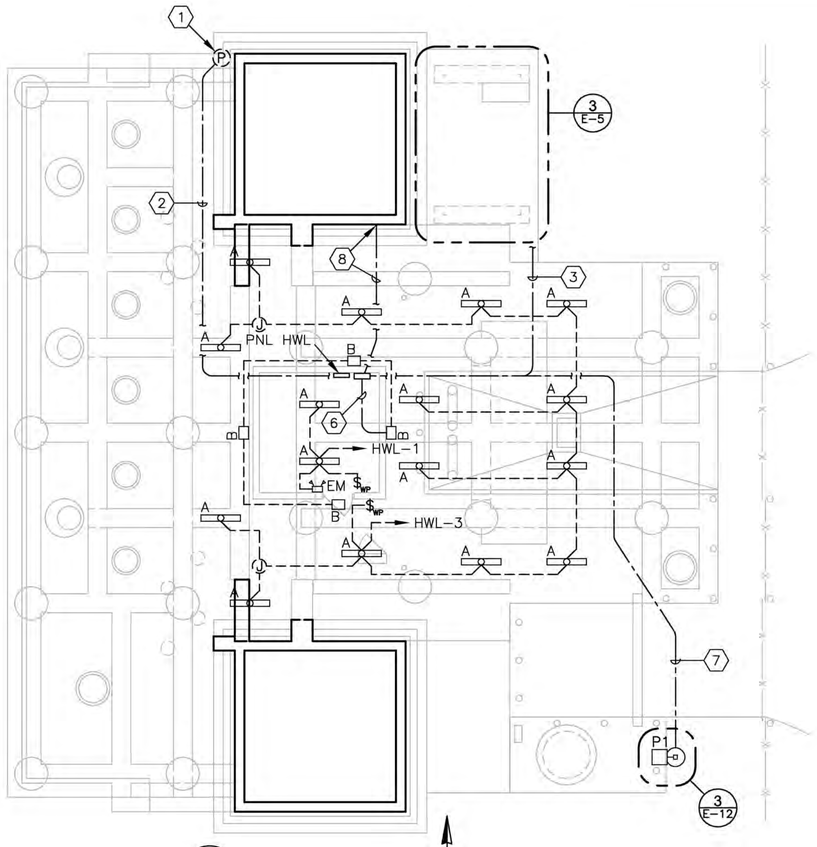
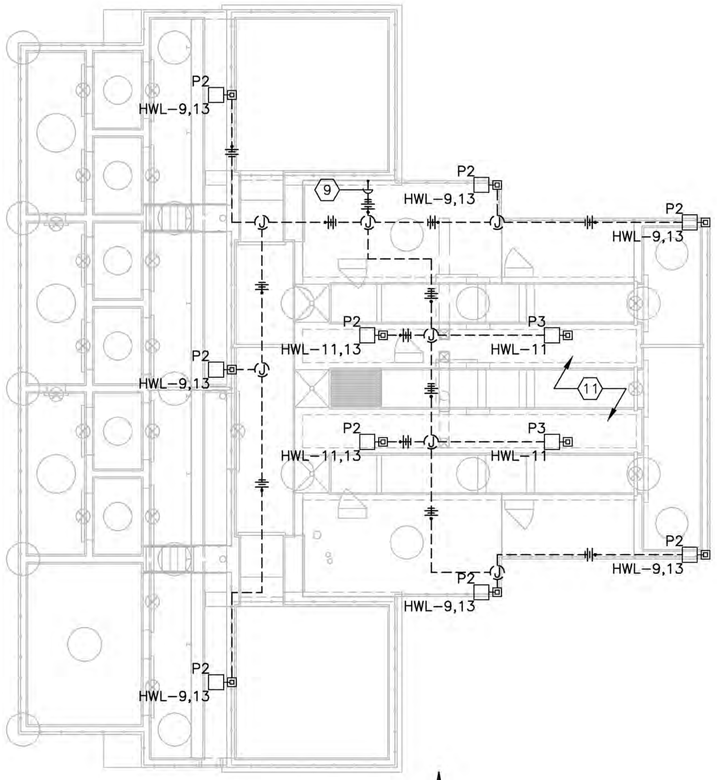
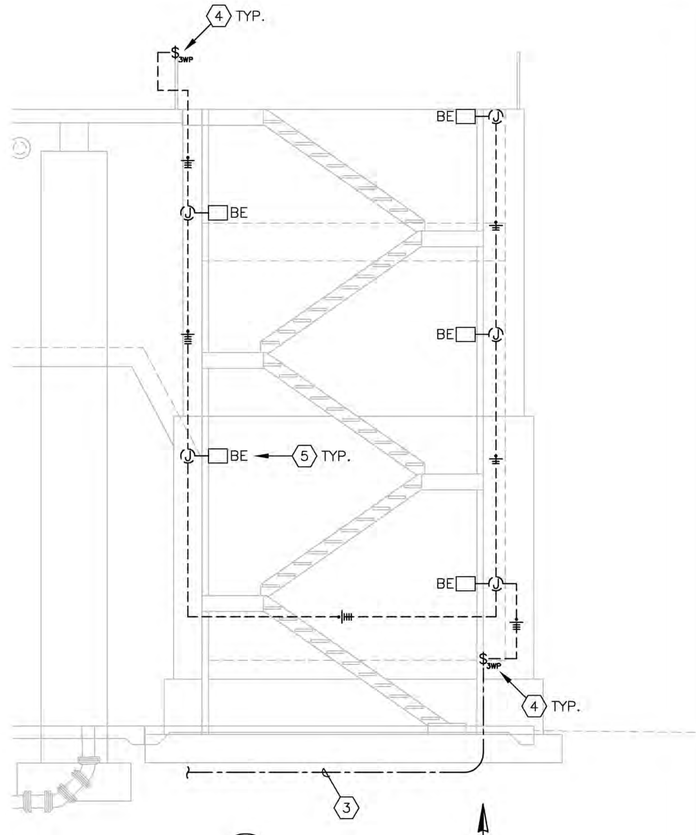


1 E-2 **PLAN**
LOWER LEVEL LIGHTING
SCALE: 1/8" = 1'-0"



2 E-2 **PLAN**
UPPER LEVEL LIGHTING
SCALE: 1/8" = 1'-0"



3 E-5 **ELEVATION**
STAIR LIGHTING
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET E-10 FOR LIGHTING FIXTURE SCHEDULE.

REFERENCE NOTES:

1. PROVIDE 2000W, 120V AC, 60 HZ, SPST PHOTOCELL, TORK 2100 SERIES OR APPROVED EQUAL. MOUNT PHOTOCELL WITH TOP 10'-0" ABOVE TOP OF SLAB, AIM TOWARD THE NORTH, AND ADJUST THE SENSOR SLIDE SHIELD FOR OPTIMAL PERFORMANCE AS DIRECTED BY THE ENGINEER OR COUNTY.
2. PROVIDE 3/4" C. DIRECT BURIED UNDERGROUND BETWEEN BOTTOM OF LIGHTING CONTACTOR PANEL AND PHOTOCELL. PROVIDE 1-#12 PH., 1-#12 SW., 1-#12 NEUT., AND 1-#12 GND IN CONDUIT.
3. PROVIDE 3/4" C. DIRECT BURIED UNDERGROUND BETWEEN BOTTOM OF LIGHTING CONTACTOR PANEL AND LIGHT SWITCH AT BOTTOM OF STAIRS FOR STAIR LIGHTING. PROVIDE 1-#10 PH., 1-#10 SW., 1-#10 NEUT., AND 1-#10 GND (CIRCUIT NO. HWL-5 VIA LIGHTING CONTACTOR) IN CONDUIT. USE UNSWITCHED PHASE CONDUCTOR TO FEED BATTERY BACKED EMERGENCY BALLAST.
4. RIGIDLY MOUNT LIGHT SWITCH TO STRUCTURE WITH BOTTOM AT 42" ABOVE FINISHED SLAB/FLOOR.
5. RIGIDLY MOUNT TYPE BE LIGHTING FIXTURE TO STRUCTURE WITH BOTTOM AT 7'-0" ABOVE STAIR LANDING.
6. PROVIDE 3/4" C. DIRECT BURIED UNDERGROUND BETWEEN BOTTOM OF LIGHTING CONTACTOR PANEL AND TYPE B LIGHTING FIXTURE. PROVIDE 1-#12 PH., 1-#12 NEUT., AND 1-#12 GND (CIRCUIT NO. HWL-7 VIA LIGHTING CONTACTOR) IN CONDUIT.

REFERENCE NOTES CONT. . .

7. PROVIDE 3/4" C. DIRECT BURIED UNDERGROUND BETWEEN BOTTOM OF LIGHTING CONTACTOR PANEL AND TYPE P1 LIGHTING FIXTURE. PROVIDE 1-#12 PH., 1-#12 NEUT., AND 1-#12 GND (CIRCUIT NO. HWL-7 VIA LIGHTING CONTACTOR) IN CONDUIT.
8. PROVIDE 1" C. DIRECT BURIED UNDERGROUND BETWEEN BOTTOM OF LIGHTING CONTACTOR PANEL AND STUB UP ADJACENT TO HEADCELL STRUCTURE WALL FOR UPPER LEVEL LIGHTING. REFER TO REFERENCE NOTE 9 BELOW FOR EXPOSED CONDUIT CONTINUATION UP WALL, AND FOR CONDUIT CONTENTS.
9. PROVIDE 1" C. EXPOSED ALONG THE UNDERSIDE OF THE UPPER LEVEL DECK FOR UPPER LEVEL LIGHTING. PROVIDE 3-#10 PH., 2-#10 NEUT., AND 1-#10 GND (CIRCUIT NOS. HWL-9,11 FOR LIGHTING VIA LIGHTING CONTACTOR AND CIRCUIT NO. 13 UNSWITCHED FOR RECEPTACLES) IN CONDUIT.
10. REFER TO STRUCTURAL PLANS FOR CAST-IN-PLACE 1" C. STUBBED THROUGH UPPER LEVEL DECK INTO BOTTOM OF LIGHT POLE.
11. ALL CONDUITS SHOWN ON THIS PLAN ARE TO BE ROUTED EXPOSED ALONG THE UNDERSIDE OF THE UPPER LEVEL DECK SLAB.

RECORD DRAWING

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DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS LIGHTING PLANS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-5

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GENERAL NOTES:

1. REFER TO SHEET E-1 FOR LEGEND.
2. DO NOT INSTALL COPPER LPS MATERIALS IN CONTACT WITH ALUMINUM MATERIALS.
3. MAKE ALL BOND CONNECTIONS BETWEEN LPS MAIN CONDUCTORS, LPS SECONDARY CONDUCTORS, AND COUNTERPOISE GROUND RING CONDUCTORS VIA THE EXOTHERMIC WELDING PROCESS.

REFERENCE NOTES:

(1) PROVIDE 2/0 BARE STRANDED COPPER COUNTERPOISE GROUND RING DIRECTED BURIED A MINIMUM OF 30" BELOW GRADE, 36" TO THE OUTSIDE OF THE HEADWORKS UPPER LEVEL PERIMETER OVERHANG.

(2) PROVIDE 3/4" DIA. BY 20'-0" LONG COPPER-CLAD STEEL GROUND ROD. DRIVE GROUND ROD UNTIL ITS TOP IS 12" BELOW FINAL GRADE.

(3) PROVIDE 36" LONG BY 4" HIGH BY 1/4" THICK SOLID COPPER ELECTRICAL ROOM GROUND BUS. RIGIDLY MOUNT GROUND BUS TO ELECTRICAL ROOM WALL WITH BOTTOM AT 18" AFF.

(4) PROVIDE 1 1/2" SCH. 80 PVC CONDUIT DIRECT BURIED UNDERGROUND STUBBED FROM BELOW ELECTRICAL ROOM GROUND BUS, 24" TO THE OUTSIDE OF THE HEADWORKS UPPER LEVEL PERIMETER OVERHANG. PROVIDE 2/0 BARE STRANDED COPPER GROUNDING CONDUCTOR IN CONDUIT BETWEEN ELECTRICAL ROOM GROUND BUS AND COUNTERPOISE GROUND RING. AFTER GROUNDING CONDUCTOR IS INSTALLED, SEAL END OF CONDUIT INSIDE ELECTRICAL ROOM WITH DUCT SEAL COMPOUND.

(5) PROVIDE 1 1/2" SCH. 80 PVC CONDUIT EXPOSED BETWEEN PANEL PNL-1B AND ELECTRICAL ROOM GROUND BUS. PROVIDE 2/0 BARE STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR IN CONDUIT BETWEEN PANEL PNL-1B GROUND BUS AND ELECTRICAL ROOM GROUND BUS.

(6) PROVIDE 1 1/2" SCH. 80 PVC CONDUIT EXPOSED BETWEEN PANEL PNL-2B AND ELECTRICAL ROOM GROUND BUS. PROVIDE 2/0 BARE STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR IN CONDUIT BETWEEN PANEL PNL-2B GROUND BUS AND ELECTRICAL ROOM GROUND BUS.

(7) PROVIDE 3/4" SCH. 80 PVC CONDUIT EXPOSED BETWEEN ELECTRICAL ROOM GROUND BUS AND TRANSFORMER T1. PROVIDE #8 THHN/THWN-2 STRANDED COPPER CONDUCTOR MAIN BONDING JUMPER IN CONDUIT BETWEEN ELECTRICAL ROOM GROUND BUS AND TRANSFORMER T1.

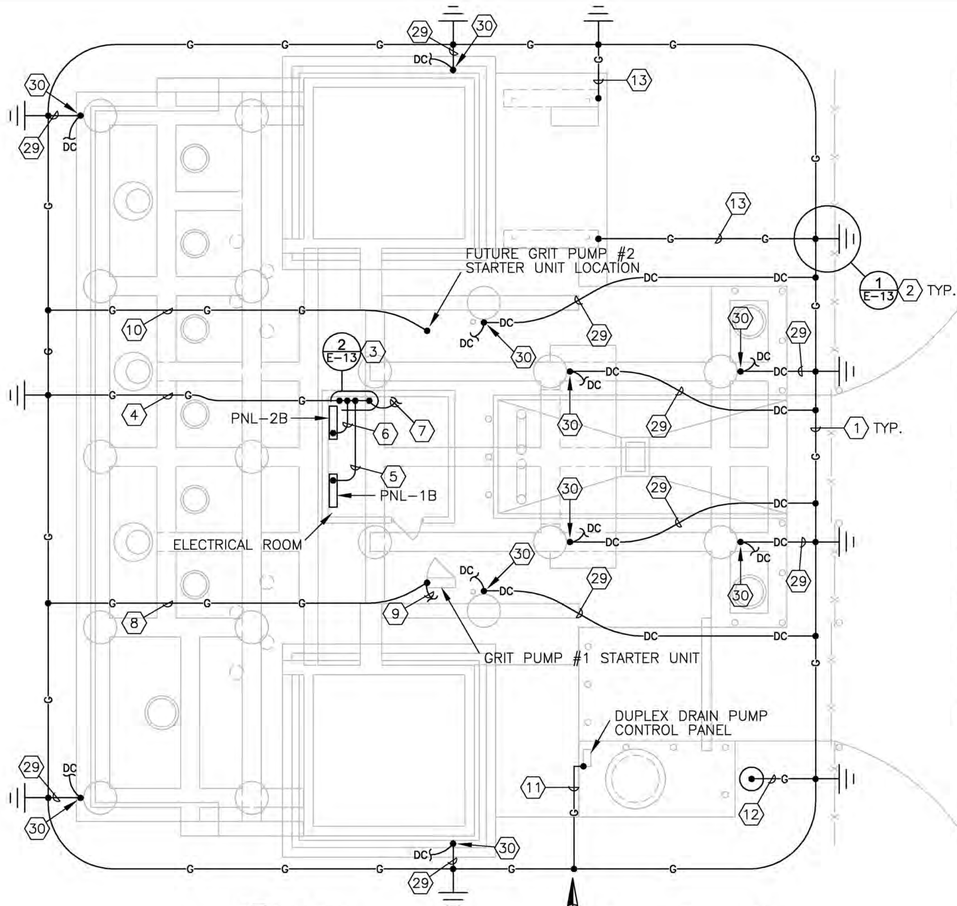
(8) PROVIDE 1 1/2" SCH. 80 PVC CONDUIT DIRECT BURIED UNDERGROUND STUBBED FROM ADJACENT TO GRIT PUMP #1 STARTER UNIT EQUIPMENT RACK, 24" TO THE OUTSIDE OF THE HEADWORKS UPPER LEVEL PERIMETER OVERHANG. PROVIDE 2/0 BARE STRANDED COPPER GROUNDING CONDUCTOR IN CONDUIT BETWEEN GRIT PUMP #1 STARTER UNIT EQUIPMENT RACK AND COUNTERPOISE GROUND RING. AFTER GROUNDING CONDUCTOR IS INSTALLED, SEAL END OF CONDUIT STUBBED UP AT GRIT PUMP #1 STARTER UNIT EQUIPMENT RACK WITH DUCT SEAL COMPOUND.

(9) EXTEND 2/0 BARE STRANDED COPPER GROUNDING CONDUCTOR TO GRIT PUMP SKID. BOND GROUNDING CONDUCTOR TO GRIT PUMP SKID USING A SINGLE HOLE COMPRESSION LUG SIZED FOR THE GRIT PUMP SKID ANCHOR BOLT. LAND SINGLE HOLE COMPRESSION LUG UNDERNEATH NEAREST ANCHOR BOLT NUT.

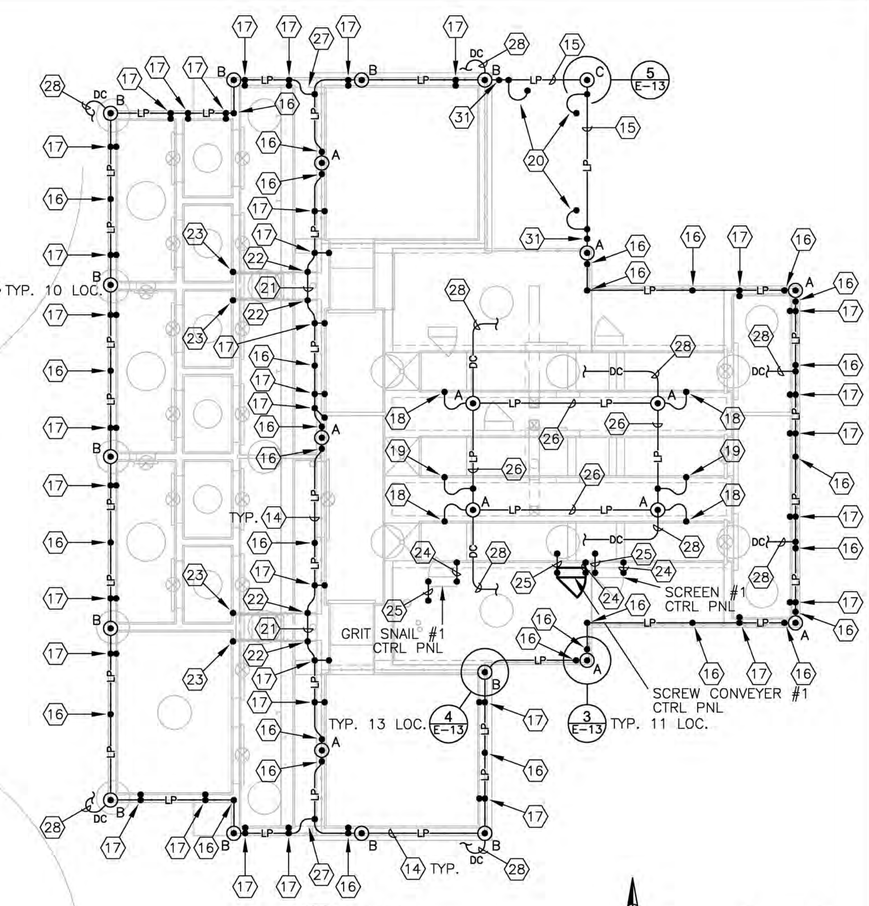
(10) PROVIDE 1 1/2" SCH. 80 PVC CONDUIT DIRECT BURIED UNDERGROUND STUBBED FROM ADJACENT TO FUTURE GRIT PUMP #2 STARTER UNIT EQUIPMENT RACK LOCATION, 24" TO THE OUTSIDE OF THE HEADWORKS UPPER LEVEL PERIMETER OVERHANG. PROVIDE 2/0 BARE STRANDED COPPER GROUNDING CONDUCTOR IN CONDUIT BETWEEN FUTURE GRIT PUMP #2 STARTER UNIT EQUIPMENT RACK LOCATION AND COUNTERPOISE GROUND RING. LEAVE 6'-0" SLACK GROUNDING CONDUCTOR NEATLY BUNDLED AND SECURED AT FUTURE GRIT PUMP #2 STARTER UNIT EQUIPMENT RACK LOCATION FOR FUTURE CONNECTION TO EQUIPMENT RACK. AFTER GROUNDING CONDUCTOR IS INSTALLED, SEAL END OF CONDUIT STUBBED UP AT FUTURE GRIT PUMP #2 STARTER UNIT EQUIPMENT RACK LOCATION WITH DUCT SEAL COMPOUND.

(11) PROVIDE 1 1/2" SCH. 80 PVC CONDUIT DIRECT BURIED UNDERGROUND STUBBED FROM ADJACENT TO DUPLEX DRAIN PUMP CONTROL PANEL EQUIPMENT RACK, 24" TO THE OUTSIDE OF THE HEADWORKS PERIMETER. PROVIDE 2/0 BARE STRANDED COPPER GROUNDING CONDUCTOR IN CONDUIT BETWEEN DUPLEX DRAIN PUMP CONTROL PANEL EQUIPMENT RACK AND COUNTERPOISE GROUND RING.

(12) PROVIDE 2/0 BARE STRANDED COPPER GROUNDING CONDUCTOR DIRECT BURIED BETWEEN TYPE P1 LIGHT POLE AND COUNTERPOISE GROUND RING.



1 E-6 PLAN
GROUNDING
SCALE: 1/8" = 1'-0"



2 E-6 PLAN
LPS
SCALE: 1/8" = 1'-0"

REFERENCE NOTES CONT. . .

(13) PROVIDE 2/0 BARE STRANDED COPPER GROUNDING CONDUCTOR DIRECT BURIED BETWEEN STEEL STAIR STRUCTURE AND COUNTERPOISE GROUND RING.

(14) PROVIDE ALUMINUM LPS MAIN CONDUCTOR. SUPPORT CONDUCTOR ROUTED ALONG HORIZONTAL SURFACES USING ADHESIVE CABLE FASTENERS SPACED 3'-0" O.C. MAX., AND ALONG VERTICAL SURFACES USING VERTICAL CABLE SUPPORTS SPACED 3'-0" O.C. MAX.

(15) PROVIDE COPPER LPS MAIN CONDUCTOR. SUPPORT CONDUCTOR ROUTED ALONG HORIZONTAL SURFACES USING ADHESIVE CABLE FASTENERS SPACED 3'-0" O.C. MAX., AND ALONG VERTICAL SURFACES USING VERTICAL CABLE SUPPORTS SPACED 3'-0" O.C. MAX.

(16) BOND LPS MAIN CONDUCTOR TO ALUMINUM HANDRAIL USING A PIPE BONDING CLAMP.

(17) BOND LPS MAIN CONDUCTOR TO CAST-IN-PLACE STAINLESS STEEL ANGLE USING ALUMINUM LPS SECONDARY CONDUCTOR. MAKE BOND CONNECTION TO STAINLESS STEEL ANGLE VIA THE EXOTHERMIC WELDING PROCESS.

(18) BOND LPS MAIN CONDUCTOR TO ALUMINUM EQUIPMENT STRUCTURE USING ALUMINUM LPS SECONDARY CONDUCTOR AND SECONDARY CONDUCTOR BONDING LUG.

REFERENCE NOTES CONT. . .

(19) BOND LPS MAIN CONDUCTOR TO ALUMINUM EQUIPMENT STRUCTURE USING ALUMINUM LPS SECONDARY CONDUCTOR AND SECONDARY CONDUCTOR BONDING LUG. PROVIDE 1 1/2" SCH. 80 PVC SLEEVE THROUGH HEADWORKS UPPER LEVEL DECK SLAB FOR ROUTING LPS MAIN CONDUCTOR DOWN TO UNDERSIDE OF HEADWORKS UPPER LEVEL DECK SLAB.

(20) BOND LPS MAIN CONDUCTOR TO STEEL STAIR STRUCTURE USING COPPER LPS MAIN CONDUCTOR AND MAIN CONDUCTOR BONDING LUG.

(21) ROUTE LPS MAIN CONDUCTOR UNDER STAIRS, HORIZONTALLY ALONG THE VERTICAL WALL SURFACE.

(22) BOND LPS MAIN CONDUCTOR TO ALUMINUM STAIR STRUCTURE USING ALUMINUM LPS MAIN CONDUCTOR AND MAIN CONDUCTOR BONDING LUG.

(23) BOND ALUMINUM STAIR STRUCTURE TO CAST-IN-PLACE STAINLESS STEEL ANGLE USING ALUMINUM LPS SECONDARY CONDUCTOR. MAKE BOND CONNECTION TO STAINLESS STEEL ANGLE VIA THE EXOTHERMIC WELDING PROCESS.

(24) BOND CONTROL PANEL ALUMINUM EQUIPMENT RACK TO CAST-IN-PLACE STAINLESS STEEL ANGLE USING ALUMINUM LPS SECONDARY CONDUCTOR. MAKE BOND CONNECTIONS VIA THE EXOTHERMIC WELDING PROCESS..

REFERENCE NOTES CONT. . .

(25) BOND CONTROL PANEL ALUMINUM EQUIPMENT RACK TO ALUMINUM EQUIPMENT STRUCTURE USING ALUMINUM LPS SECONDARY CONDUCTOR AND SECONDARY CONDUCTOR BONDING LUGS.

(26) LPS ALUMINUM MAIN CONDUCTOR ROUTED ALONG THE UNDERSIDE OF THE HEADWORKS UPPER LEVEL DECK SLAB.

(27) VERTICAL TRANSITION OF 48" REQUIRED AT THIS LOCATION.

(28) PROVIDE ALUMINUM LPS DOWN CONDUCTOR DOWN TO BIMETAL CABLE SPLICER CENTERED AT 48" ABOVE FINAL GRADE. SUPPORT CONDUCTOR ROUTED ALONG VERTICAL SURFACES USING VERTICAL CABLE SUPPORT.

(29) PROVIDE 1 1/2" SCH. 80 PVC CONDUIT DIRECT BURIED UNDERGROUND STUBBED 24" TO THE OUTSIDE OF THE HEADWORKS UPPER LEVEL PERIMETER OVERHANG. STUB CONDUIT UP 36" ABOVE FINAL GRADE BELOW BIMETAL CABLE SPLICER. PROVIDE COPPER LPS DOWN CONDUCTOR IN CONDUIT TO COUNTERPOISE GROUND RING.

(30) PROVIDE BIMETAL CABLE SPLICER TO TRANSITION, ALUMINUM LPS DOWN CONDUCTOR TO COPPER LPS DOWN CONDUCTOR, CENTERED AT 48" ABOVE FINAL GRADE.

(31) PROVIDE BIMETAL CABLE SPLICER TO TRANSITION, ALUMINUM LPS MAIN CONDUCTOR TO COPPER LPS MAIN CONDUCTOR.

RECORD DRAWING

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REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

MANATEE COUNTY FLORIDA

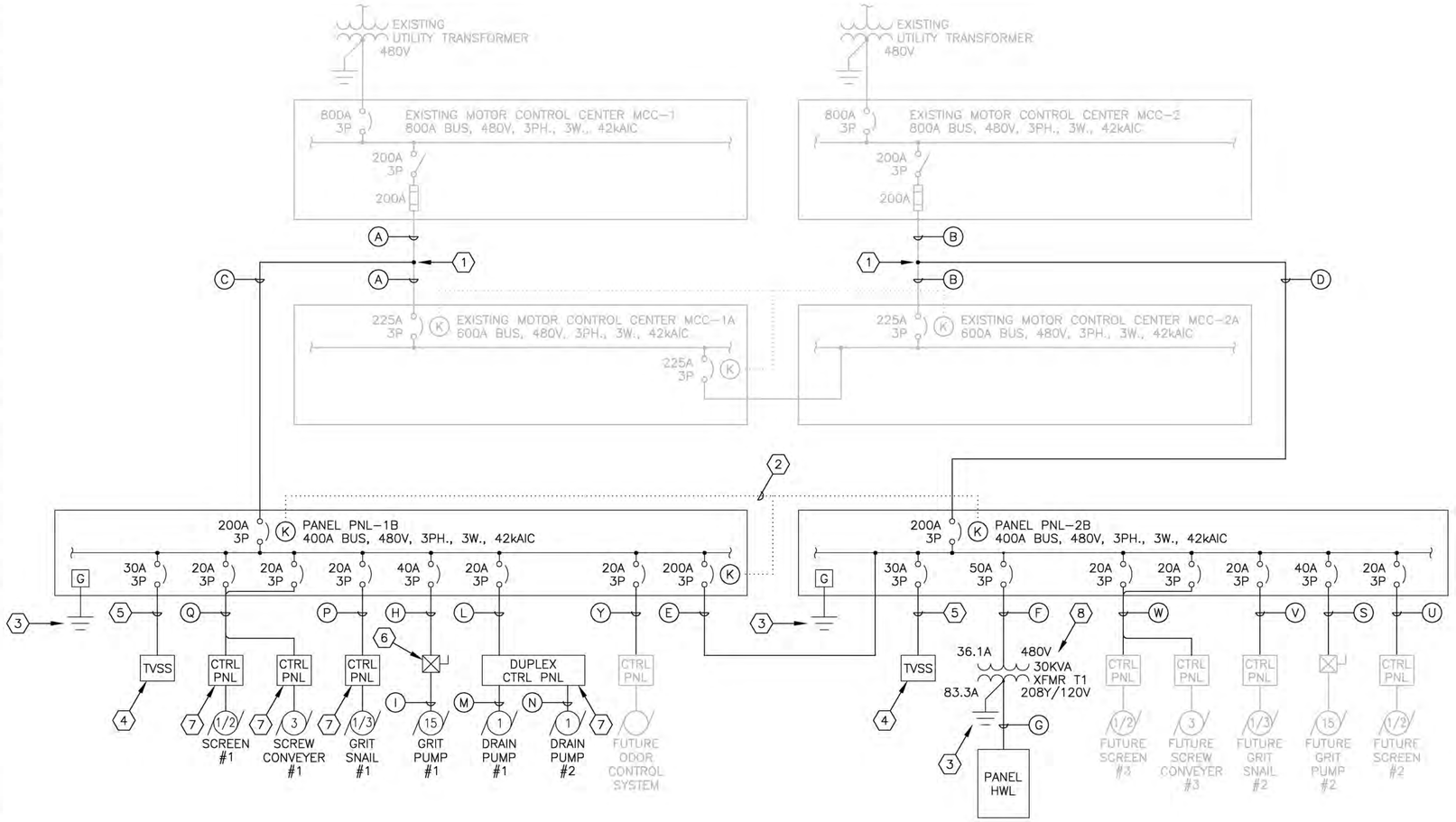
INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

HEADWORKS GROUNDING AND LPS PLANS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-6



GENERAL NOTES:

1. "LIGHT" LINES INDICATE EXISTING OR FUTURE EQUIPMENT AS INDICATED. "BOLD" LINES INDICATE NEW WORK.
2. REFER TO SHEET E-9 FOR CONDUIT SCHEDULE.

REFERENCE NOTES:

(1) SPLICE NEW FEEDER TO EXISTING FEEDER INSIDE EXISTING POWER HANDHOLE. REFER TO SHEET E-2 FOR EXISTING POWER HANDHOLE LOCATION.

(2) PROVIDE KIRK KEY INTERLOCK SYSTEM CONSISTING OF THREE (3) KEY OPERATED MECHANISMS, ALL KEYED ALIKE, AND TWO (2) KEYS. SYSTEM SHALL BE CONFIGURED TO ENSURE THAT ONLY TWO OF THE THREE CIRCUIT BREAKERS MAY BE CLOSED AT ANY GIVEN POINT IN TIME.

(3) REFER TO SHEET E-6 FOR SPECIFICATION OF CONNECTION TO ELECTRICAL ROOM GROUND BUS.

(4) PROVIDE TVSS UNIT. REFER TO SPECIFICATIONS FOR REQUIREMENTS.

(5) PROVIDE 1" SCH. 80 PVC CONDUIT NIPPLE WITH 3-#8 PH. AND 1-#8 GND WIRES TWISTED TOGETHER IN ACCORDANCE WITH THE TVSS MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS. ROUTE WIRES FOLLOWING THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. WHERE BENDS ARE REQUIRED, MAKE BENDS FOLLOWING THE LARGEST RADIUS POSSIBLE, SPACE PERMITTING. DO NOT KINK CONDUCTORS. NO CONDUCTOR SHALL BE LONGER THAN 60" IN LENGTH BETWEEN ITS TERMINATION INSIDE THE PANELBOARD AND ITS TERMINATION INSIDE THE TVSS UNIT.

(6) PROVIDE FVNR COMBINATION STARTER UNIT. COMBINATION STARTER UNIT SHALL HAVE MAGNETIC ONLY MOTOR CIRCUIT PROTECTOR TYPE CIRCUIT BREAKER, NEMA SIZE 2 MAGNETIC MOTOR STARTER WITH 120V AC COIL, TRIP CLASS 20 SOLID STATE OVERLOAD RELAY, PHASE FAILURE RELAY, 500VA 480V-120V CONTROL POWER TRANSFORMER, 2-POSITION "ON-OFF" SELECTOR SWITCH, GREEN "POWER ON" 120V AC LED PILOT LIGHT, RED "MOTOR RUNNING" 120V AC LED PILOT LIGHT, PILOT RELAYS, FIELD WIRING TERMINAL BLOCKS, AUXILIARY CONTACTS AS REQUIRED TO IMPLEMENT SPECIFIED CONTROL SCHEME, AND NEMA TYPE 4X WATERTIGHT, DUSTTIGHT, AND CORROSION RESISTANT POLYESTER ENCLOSURE. PHASE FAILURE RELAY SHALL BE PANEL MOUNT TYPE WITH THE FOLLOWING PROTECTION MODES: (1) PHASE LOSS, (2) PHASE REVERSAL, (3) PHASE VOLTAGE UNBALANCE OF 10% OR GREATER, AND (4) UNDERVOLTAGE, ADJUSTABLE FROM 75% TO 100% OF NOMINAL. PILOT RELAYS SHALL BE PLUG-IN TYPE INDUSTRIAL CONTROL RELAY WITH 20A, 120V AC RATED DPDT CONTACTS, 120V AC COIL, AND MATING MODULAR SOCKET.

(7) EQUIPMENT CONTROL PANELS AND ANCILIARY DEVICES SHIPPED LOOSE WITH EQUIPMENT. PROVIDE FOR THE INSTALLATION OF EQUIPMENT CONTROL PANELS AND ANCILIARY DEVICES, INCLUDING ALL CONDUIT AND CABLES/WIRING, IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.

(8) TRANSFORMER T1 SHALL BE 115°C RISE DRY TYPE WITH EPOXY-RESIN ENCAPSULATED CORE AND COIL ASSEMBLY AND NEMA 3R 316 STAINLESS STEEL ENCLOSURE.

SERVICE LOAD SUMMARY	
EXISTING SERVICE CAPACITY (KVA)	665 KVA
EXISTING SERVICE CAPACITY (AMPERES @ 480V)	800 AMPERES
EXISTING DEMAND MCC-1 OR MCC-2 (KVA)	442.3 KVA
LOAD INSTALLED BY PROJECT (KVA)	76.7 KVA
PROJECTED DEMAND AFTER PROJECT (KVA)	519.0 KVA
PROJECTED DEMAND AFTER PROJECT (AMPERES @ 480V)	624.5 AMPERES
SPARE CAPACITY IN EXISTING SERVICE AFTER PROJECT (KVA)	146.0 KVA
SPARE CAPACITY AFTER PROJECT (AMPERES @ 480V)	175.7 AMPERES

RECORD DRAWING

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REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

SINGLE LINE DIAGRAM

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-7

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PANEL NAME: PNL–1B | VOLTAGE: 480V | PHASE: 3 | WIRE: 3 | BUS RATING: 400A | MAIN BKR RATING: 200A | LOCATION: ELECTRICAL ROOM | MOUNTING: SURFACE | FED FROM: 200A/3P FUSE IN MCC–1

CKT NO.	CIRCUIT DESCRIPTION	LOAD (kVA)	BKR AMPS	PH	BKR AMPS	LOAD (kVA)	CIRCUIT DESCRIPTION	CKT NO.
1	GRIT PUMP #1	17.5	40	– A –	40	–	SPARE	2
3	GRIT SNALE #1	5.0	20	– B –	20	0.9	SCREEN #1	4
5	DRAIN PUMPS #1 AND #2	3.5	20	– C –	20	4.0	FUTURE ODOR CONTROL	6
7	SCREW CONVEYER #1	4.0	20	– A –	30	–	SPARE	8
9	SPACE	–	–	– B –	–	–	SPACE	10
11	SPACE	–	–	– C –	–	–	SPACE	12
13	TVSS	–	30	– A –	–	–	SPACE	14
15	–	–	–	– B –	200	42.1	TIE BREAKER	16
				– C –				

	A	B	C	TOTAL
CONNECTED LOAD (PER PHASE kVA):	25.6	25.6	25.6	76.7*
CONNECTED LOAD (PER PHASE AMPS):	92.4	92.4	92.4	

ACCESSORIES:
NEMA 4X 304 STAINLESS STEEL ENCLOSURE
KIRK KEY INTERLOCK SYSTEM

* INCLUDES 37.7KVA FROM PANEL PNL–2B WITH TIE BREAKER CLOSED AND THE LOAD FED FROM PANEL PNL–2B

PANEL NAME: PNL–2B | VOLTAGE: 480V | PHASE: 3 | WIRE: 3 | BUS RATING: 400A | MAIN BKR RATING: 200A | LOCATION: ELECTRICAL ROOM | MOUNTING: SURFACE | FED FROM: 200A/3P FUSE IN MCC–2

CKT NO.	CIRCUIT DESCRIPTION	LOAD (kVA)	BKR AMPS	PH	BKR AMPS	LOAD (kVA)	CIRCUIT DESCRIPTION	CKT NO.
1	GRIT PUMP #2	17.5	40	– A –	50	10.4	PANEL HWL VIA TRANSFORMER T1	2
3	GRIT SNAIL #2	5.0	20	– B –	20	4.0	FUTURE SCREEN #2	4
5	FUTURE SCREEN #3	0.9	20	– C –	20	4.0	FUTURE SCREW CONVEYER #3	6
7	SPACE	–	–	– A –	–	–	SPACE	8
9	SPACE	–	–	– B –	–	–	SPACE	10
11	SPACE	–	–	– C –	–	–	SPACE	12
13	SPACE	–	–	– A –	–	–	SPACE	14
15	TVSS	–	30	– B –	–	–	SPACE	16
				– C –				

	A	B	C	TOTAL
CONNECTED LOAD (PER PHASE kVA):	25.6	25.6	25.6	76.7*
CONNECTED LOAD (PER PHASE AMPS):	92.4	92.4	92.4	

ACCESSORIES:
SUB–FEED LUGS FOR TERMINATING TIE CONDUCTORS
NEMA 4X 304 STAINLESS STEEL ENCLOSURE
KIRK KEY INTERLOCK SYSTEM

* INCLUDES 30.8KVA FROM PANEL PNL–1B WITH TIE BREAKER CLOSED AND THE LOAD FED FROM PANEL PNL–1B

PANEL NAME: HWL | VOLTAGE: 208Y/120V | PHASE: 3 | WIRE: 4 | BUS RATING: 100A | MAIN BKR RATING: 100A | LOCATION: ELECTRICAL ROOM | MOUNTING: SURFACE | FED FROM: PANEL PNL–2B VIA TRANSFORMER T1

CKT NO.	CIRCUIT DESCRIPTION	LOAD (kVA)	BKR AMPS	PH	BKR AMPS	LOAD (kVA)	CIRCUIT DESCRIPTION	CKT NO.
1	LTG – ELECTRICAL ROOM	0.4	20	– A –	20	0.2	REC. – ELECTRICAL ROOM, CONVENIENCE	2
3	LTG – LOWER LEVEL	1.2	20	– B –	20	0.7	REC. – LOWER LEVEL, CONVENIENCE	4
5	LTG – STAIR TOWER VIA LTG CONT. C1	0.4	20	– C –	20	1.5	SCADA PANEL	6
7	LTG – LOWER LEVEL SECURITY VIA LTG CONT. C1	0.4	20	– A –	20	0.2	REC. – FUTURE CCTV CAMERA	8
9	LTG – UPPER LEVEL VIA LTG CONT. C2	1.6	20	– B –	20	0.2	REC. – INFLUENT FLOW SAMPLER	10
11	LTG – UPPER LEVEL VIA LTG CONT. C2	0.9	20	– C –	20	–	SPARE	12
13	REC. – UPPER LEVEL LIGHT POLE MOUNTED	1.6	20	– A –	20	–	SPARE	14
15	LIGHTING CONTACTOR PANEL CONTROL	0.1	20	– B –	20	–	SPARE	16
17	MOTORIZED GATE OPERATOR	1.2	20	– C –	20	–	SPARE	18
19	IRRIGATION CONTROLLER	1.0	15	– A –	20	–	SPARE	20
21	SPARE	–	20	– B –	20	–	SPARE	22
23	SPARE	–	20	– C –	20	–	SPARE	24
25	SPACE	–	–	– A –	–	–	SPACE	26
27	SPACE	–	–	– B –	–	–	SPACE	28
29	SPACE	–	–	– C –	–	–	SPACE	30
31	SPACE	–	–	– A –	–	–	SPACE	32
33	SPACE	–	–	– B –	–	–	SPACE	34
35	SPACE	–	–	– C –	–	–	SPACE	36
37	SPACE	–	–	– A –	–	–	SPACE	38
39	SPACE	–	–	– B –	–	–	SPACE	40
41	SPACE	–	–	– C –	–	–	SPACE	42

	A	B	C	TOTAL
CONNECTED LOAD (PER PHASE kVA):	3.8	3.8	4.0	11.6
CONNECTED LOAD (PER PHASE AMPS):	31.7	31.7	33.3	

ACCESSORIES:
NEMA 4X 304 STAINLESS STEEL ENCLOSURE

RECORD DRAWING

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INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PANEL SCHEDULES

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E–8

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CONDUIT SCHEDULE

ID NO.	QTY–SIZE	CONTENTS	CONDUIT/CABLE/WIRE ORIGIN	CONDUIT/CABLE/WIRE DESTINATION	NOTES
A	1–3"	3–#4/0 PH. AND 1–#2 GND	MCC–1	MOTOR CONTROL CENTER MCC–1A	1
B	1–3"	3–#4/0 PH. AND 1–#2 GND	MCC–2	MOTOR CONTROL CENTER MCC–2A	1
C	1–3" 1–3"	3–#4/0 PH. AND 1–#2 GND PULL STRING FOR FUTURE USE BY COUNTY	EXISTING POWER HANDHOLE	PANEL PNL–1B	2
D	1–3" 1–3"	3–#4/0 PH. AND 1–#2 GND SPARE WITH PULL STRING FOR USE BY COUNTY	EXISTING POWER HANDHOLE	PANEL PNL–2B	2
E	1–2 1/2"	3–#4/0 PH. 1–#2 GND	PANEL PNL–1B	PANEL PNL–2B	
F	1–3/4"	3–#8 PH. AND 1–#10 GND	PANEL PNL–2B	TRANSFORMER T1	
G	1–1 1/2"	3–#2 PH., 1–#2 NEUT., AND 1–#8 GND	TRANSFORMER T1	PANEL HWL	
H	1–3/4"	3–#8 PH. AND 1–#10 GND	PANEL PNL–1B	GRIT PUMP #1 STARTER UNIT	
I	1–3/4"	3–#8 PH., 2–#14 MTR HTR PWR, 2–#14 THERMAL CUTOUT, AND 1–#10 GND	GRIT PUMP #1 STARTER UNIT	GRIT PUMP #1 MOTOR	
J	1–3/4"	1–#12 PH., 1–#12 NEUT., AND 1–#12 GND	PANEL HWL	MOTORIZED GATE OPERATOR	
K	1–3/4"	1–#12 PH., 1–#12 NEUT., AND 1–#12 GND	PANEL HWL	IRRIGATION CONTROLLER	
L	1–3/4"	3–#12 PH. AND 1–#12 GND	PANEL PNL–1B	DUPLEX DRAIN PUMP CONTROL PANEL	
M	1–3/4"	3–#14 PH. AND 1–#14 GND	DUPLEX DRAIN PUMP CONTROL PANEL	DRAIN PUMP #1	
N	1–3/4"	3–#14 PH. AND 1–#14 GND	DUPLEX DRAIN PUMP CONTROL PANEL	DRAIN PUMP #2	
O	1–1"	10–#14 CTRL (INTRINSICALLY SAFE)	DUPLEX DRAIN PUMP CONTROL PANEL	JUNCTION BOX IN WET WELL	3
P	1–3/4"	3–#12 PH. AND 1–#12 GND	PANEL PNL–1B	GRIT SNAIL #1 CONTROL PANEL	
Q	1–3/4"	3–#12 PH. AND 1–#12 GND (SCREEN #1 CONTROL PANEL) 3–#12 PH. (SCREW CONVEYER #1 CONTROL PANEL)	PANEL PNL–1B	SCREEN #1 CONTROL PANEL SCREW CONVEYER #1 CONTROL PANEL	4
R	4–3/4"	SPARE WITH PULL STRINGS FOR FUTURE USE BY COUNTY	PANEL PNL–1B	–	5
S	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	PANEL PNL–2B	FUTURE GRIT PUMP #2 STARTER UNIT	
T	1–3/4"	1–#12 PH., 1–#12 NEUT., AND 1–#12 GND	PANEL HWL	INFLUENT FLOW SAMPLER	13
U	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	PANEL PNL–2B	FUTURE SCREEN #2 CONTROL PANEL	
V	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	PANEL PNL–2B	FUTURE GRIT SNAIL #2 CONTROL PANEL	
W	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	PANEL PNL–2B	FUTURE SCREEN #3 CONTROL PANEL FUTURE SCREW CONVEYER #3 CTRL PNL	
X	3–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	PANEL PNL–2B	–	5
Y	1–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	PANEL PNL–1B	FUTURE ODOR CONTROL SYSTEM	6
Z	1–3/4"	1–#12 PH., 1–#12 NEUT., AND 1–#12 GND	PANEL HWL	SCADA PANEL	
AA	1–3" 1–3"	12–STRAND OPTICAL FIBER CABLE SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	EXISTING HEADWORKS SCADA PANEL	NEW HEADWORKS SCADA PANEL	7
BB	1–3/4"	2–#14 CTRL AND 1–#14 GND	SCADA PANEL	EYEWASH STATION FLOW SWITCH	8
CC	1–3/4"	2–#14 CTRL AND 1–#14 GND	SCADA PANEL	GRIT PUMP #1 STARTER UNIT	8
DD	1–3/4"	2–#14 CTRL AND 1–#14 GND	SCADA PANEL	GRIT PUMP #1 DISCHARGE PRESSURE SWITCH	8
EE	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	FUTURE GRIT PUMP #2 STARTER UNIT	8
FF	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	FUTURE GRIT PUMP #2 DISCHARGE PRESSURE SWITCH	8
GG	1–3/4"	6–#14 CTRL AND 1–#14 GND	SCADA PANEL	DUPLEX DRAIN PUMP CONTROL PANEL	8
HH	1–1"	16–#14 CTRL, 2–#14 SPARE, AND 1–#14 GND	SCADA PANEL	GRIT SNAIL #1 CONTROL PANEL	8
II	1–1 1/4"	18–#14 CTRL, 2–#14 SPARE, AND 1–#14 GND	SCADA PANEL	SCREEN #1 CONTROL PANEL	8
JJ	1–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	SCREEN #2 CONTROL PANEL	8
KK	1–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	GRIT SNAIL #2 CONTROL PANEL	8
LL	1–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	SCREEN #3 CONTROL PANEL	8
MM	3–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	–	9
NN	1–3/4"	INTERLOCK WIRING AS PER APPROVED MANUFACTURER'S SHOP DRAWINGS AND 1–#14 GND	GRIT SNAIL #1 CONTROL PANEL	SCREW CONVEYER #1 CONTROL PANEL VIA SCREEN #1 CONTROL PANEL	
OO	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	GRIT SNAIL #2 CONTROL PANEL	SCREEN #3 CONTROL PANEL	10
PP	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCREEN #2 CONTROL PANEL	SCREEN #3 CONTROL PANEL	10
QQ	1–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	FUTURE ODOR CONTROL SYSTEM	6
RR	6–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	SCADA PANEL	–	11
SS	1–1/2"	1–#14 PH., 1–#14 NEUT., AND 1–#14 GND	SCADA PANEL	FLOW METER	
TT	1–1/2"	1–ANALOG I/O CABLE FOR 4–20 mA ANALOG FLOW RATE INPUT PER SCADA INTEGRATOR RECOMMENDATIONS	SCADA PANEL	FLOW METER	14
UU	1–3/4"	WIRES AS SPECIFIED BY IRRIGATION CONTROLLER INSTALLER	IRRIGATION CONTROLLER	IRRIGATION SYSTEM FIELD DEVICES	6
VV	–	–	–	–	–
WW	1–1"	2–FLOW METER SENSOR ANALOG I/O CABLES PER APPROVED FLOW METER MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS	FLOW METER	FLOW METER SENSORS	15
XX	1–1"	2–FLOW METER SENSOR ANALOG I/O CABLES PER APPROVED FLOW METER MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS	FLOW METER	FLOW METER SENSORS	15
YY	1–1"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	EAST WALL OF ELECTRICAL ROOM	LIGHT POLE ALONG THE NORTH SIDE OF THE HEADWORKS UPPER LEVEL	12
AB	1–3/4"	2–#14 INTERLOCK AND 1–#14 GND	GRIT PUMP #1 STARTER UNIT	GRIT SNAIL #1 CONTROL PANEL	
AC	1–3/4"	SPARE WITH PULL STRING FOR FUTURE USE BY COUNTY	FUTURE GRIT PUMP #2 STARTER UNIT	FUTURE GRIT SNAIL #2 CONTROL PANEL	
AD	1–3/4"	1–ANALOG I/O CABLE FOR 4–20 mA ANALOG FLOW RATE INPUT PER SCADA INTEGRATOR RECOMMENDATIONS	SCADA PANEL	INFLUENT FLOW SAMPLER	14
AE	1–3/4"	INTERLOCK WIRING AS PER APPROVED MANUFACTURER'S SHOP DRAWINGS AND 1–#14 GND	SCREEN #1 CONTROL PANEL	SCREW CONVEYER #1 CONTROL PANEL	

CONDUIT SCHEDULE NOTES:

1. EXISTING TO REMAIN.
2. ROUTE VIA NEW POWER HANDHOLES PHH#1 AND PHH#2.
3. CONDUIT IS FOR INTRINSICALLY SAFE FLOAT CONTROL CIRCUITS. CONDUIT SHALL BE RGS WITH CLASS I, DIVISION 1, GROUP CD HAZARDOUS LOCATION CLASSIFIED SEALING FITTING AT 18" AFF BELOW DUPLEX DRAIN PUMP CONTROL PANEL. TERMINATE CONDUIT INTO BOTTOM OF DUPLEX DRAIN PUMP CONTROL PANEL IN AREA DESIGNATED FOR INTRINSICALLY SAFE CIRCUITS.
4. PROVIDE TEE CONDULET IN CONDUIT AS REQUIRED TO FEED BOTH THE SCREEN #1 CONTROL PANEL AND THE SCREW CONVEYER #1 CONTROL PANELS.
5. STUB CONDUIT UP 18" ABOVE SLAB AND CAP.
6. STUB CONDUIT OUT 5'–0" BEYOND PERIMETER OF PROPOSED HEADWORKS AND CAP.
7. ROUTE VIA NEW COMMUNICATIONS HANDHOLES CHH#1 AND CHH#2, EXISTING COMMUNICATIONS HANDHOLE, AND EXISTING 2" SPARE CONDUIT.
8. REFER TO SHEET E–14 FOR I/O SCHEDULE.
9. CONDUIT FOR FUTURE DISCRETE I/O. STUB CONDUIT UP 18" ABOVE SLAB AND CAP.
10. CONDUIT FOR FUTURE INTERLOCK WIRING.
11. CONDUIT FOR FUTURE ANALOG I/O. STUB CONDUIT UP 18" ABOVE SLAB AND CAP.A
12. CONDUIT FOR FUTURE CCTV CAMERA.
13. PROVIDE WP GFCI DUPLEX RECEPTACLE FOR CORD–AND–PLUG CONNECTED INFLUENT FLOW SAMPLER.
14. SERIES THE FLOW METER 4–20mA OUTPUT THROUGH THE INFLUENT FLOW SAMPLER AND SCADA PANEL 4–20mA INPUTS. MAKE THIS SERIES CONNECTION INSIDE THE SCADA PANEL.
15. CONDUIT SHALL BE RGS.

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1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
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ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

CONDUIT SCHEDULE

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E–9

PLOTTED: May 25, 2010 3:39 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\E–9 CONDUIT SCHEDULE.DWG

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLOTTED May 25, 2010 3:39 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\E-10 LIGHTING FIXTURE SCHEDULE.DWG

LIGHTING FIXTURE SCHEDULE

TYPE	VOLTAGE	LAMP TYPE/QTY	DESCRIPTION	MANUFACTURER / PRODUCT SERIES OR APPROVED EQUAL
A	120V AC	F48T8 HO / 2 4100°K	INDUSTRIAL VAPORTIGHT LUMINAIRE UL LISTED AS SUITABLE FOR USE IN WET (CEILING AND WALL), OUTDOOR, HAZARDOUS (UL844 – CL. I, DIV. 2, GROUPS ABCD), HOSEDOWN, CORROSIVE, HIGH AMBIENT (UP TO 40°C) LOCATIONS, WITH GRAY FIBERGLASS REINFORCED POLYESTER HOUSING LISTED AS AN ELECTRICAL ENCLOSURE FOR THRU-BRANCH WIRING, CREPE STYLE 25% DR ACRYLIC DIFFUSER, NEC-COMPLIANT BALLAST DISCONNECT, ELECTRONIC INSTANT START BALLAST SUITABLE FOR -20°F STARTING, DIE-CAST ALUMINUM CONDUIT HUBS, AND 304 STAINLESS STEEL TOP BRACKET FOR SURFACE MOUNTING.	COLUMBIA LIGHTING / FNPH4-244-E120-2H-BD-PTBS3 SERIES
B	120V AC	PLT42W / 2 4100°K	DIE-CAST ALUMINUM UL 1598 (OR CSA CERTIFIED TO UL 1598) WET LOCATION LISTED FULL CUTOFF FLAT GLASS PERIMETER LUMINAIRE WITH HIGH FREQUENCY ELECTRONIC BALLAST SUITABLE FOR 0°F STARTING AND GRAY POWDER COAT FINISH. MOUNT LUMINAIRE AT 7'-0" ABOVE STAIR LANDING.	HUBBELL LIGHTING / LMC 84F 8 3 LP SERIES
BE	120V AC	PLT42W / 2 4100°K	DIE-CAST ALUMINUM UL 1598 (OR CSA CERTIFIED TO UL 1598) WET LOCATION LISTED FULL CUTOFF FLAT GLASS PERIMETER LUMINAIRE WITH HIGH FREQUENCY ELECTRONIC BALLAST SUITABLE FOR 0°F STARTING, BATTERY BACKED EMERGENCY BALLAST TO POWER ONE LAMP TO 1250 LUMENS. AND GRAY POWDER COAT FINISH. MOUNT LUMINAIRE AT 7'-0" ABOVE STAIR LANDING.	HUBBELL LIGHTING / LMC 84F 8 3 LP BBU-120 SERIES
EM	120V AC	8W PAR36 / 2	BATTERY BACKED WET AND HAZARDOUS (UL844 – CL. I, DIV. 2 GROUPS BCD) LOCATION LISTED INDUSTRIAL UL924 EMERGENCY LIGHTING UNIT WITH TWIN NON-METALLIC POLYMERIC LAMP HEADS, MAINTENANCE-FREE BATTERY, SOLID-STATE, TEMPERATURE COMPENSATED BATTERY CHARGING CIRCUIT, SOLID-STATE TRANSFER CIRCUIT, BATTERY CAPACITY TO SUPPLY 36W AT 6V DC FOR 120 MINUTES, SEALED TEST SWITCH AND LED "AC ON" INDICATOR, AND NON-METALLIC POLYMERIC ENCLOSURE WITH CORROSION-RESISTANT STAINLESS STEEL EXTERIOR HARDWARE.	DUALLITE / C1D2-6V36 SERIES
P1	120V AC	250W MH / 1	CONCRETE BASE MOUNTED POLE MOUNTED LUMINAIRE WALKWAY TYPE FIXTURE – 12'-6" TALL SQUARE STRAIGHT ALUMINUM SHAFT POLE WITH POLE TOP TENON AND NATURAL ALUMINUM ANNODIZED FINISH, ANCHOR BOLTS AND HARDWARE SHALL BE STAINLESS STEEL. HARDWARE SHALL INCLUDE LEVELING NUTS, SECURING NUTS, WASHERS AND LOCK WASHERS. ANCHOR BOLT COVER SHALL BE SECURED TO THE POLE BASE USING TAMPERPROOF SCREWS THAT MUST BE DRILLED OUT IN ORDER TO BE REMOVED. ANCHOR BOLT COVER SHALL NOT BE INSTALLED UNTIL POLE IS SET AND PLUMBED, AND HARDWARE IS PROPERLY TORQUED. "SHOE BOX" STYLE LUMINAIRE WITH MITRED AND FORMED EXTRUDED ALUMINUM HOUSING AND DOOR, STAINLESS STEEL TOOL-LESS ENTRY, IMPACT RESISTANT FULL CUTOFF FLAT GLASS LENS, TYPE III IES DISTRIBUTION, HOUSE SIDE SHIELD, PROVISIONS FOR POLE TOP TENON MOUNTING, QUICK DISCONNECT REMOVEABLE BALLAST TRAY WITH MODULAR PLUGS, FUSING AND NATURAL ALUMINUM ANNODIZED FINISH. DESIGN SHALL BE SUITABLE FOR A BASIC WIND SPEED OF 130 MPH (3 SEC. GUST) IN ACCORDANCE WITH THE FLORIDA BUILDING CODE.	STERNER LIGHTING SYSTEMS INC. / LUMINAIRE: EXEC/SQ19/250MH/3S/120/10/HS/VF/AAL/AAL SERIES POLE: AS REQUIRED TO COMPLY WITH SPECIFIED DESIGN WIND SPEED, WITH FINISH MATCHING THAT OF THE LUMINAIRE
P2	120V AC	250W MH / 1	STRUCTURE MOUNTED POLE MOUNTED LUMINAIRE WALKWAY TYPE FIXTURE – 12'-6" TALL SQUARE STRAIGHT ALUMINUM SHAFT POLE WITH POLE TOP TENON AND NATURAL ALUMINUM ANNODIZED FINISH, ANCHOR BOLTS AND HARDWARE SHALL BE STAINLESS STEEL. HARDWARE SHALL INCLUDE LEVELING NUTS, SECURING NUTS, WASHERS AND LOCK WASHERS. ANCHOR BOLT COVER SHALL BE SECURED TO THE POLE BASE USING TAMPERPROOF SCREWS THAT MUST BE DRILLED OUT IN ORDER TO BE REMOVED. ANCHOR BOLT COVER SHALL NOT BE INSTALLED UNTIL POLE IS SET AND PLUMBED, AND HARDWARE IS PROPERLY TORQUED. POLE SHAFT SHALL BE EQUIPPED WITH BASE MOUNTED 20A, 120V, NEMA 5-20R, SPECIFICATION GRADE GROUND FAULT CIRCUIT INTERRUPTER TYPE DUPLEX RECEPTACLE WITH SPRING-HINGED AND GASKETED CAST ALUMINUM OR ALUMINUM ALLOY WEATHERPROOF COVER PLATE. RECEPTACLE WILL BE LOCATED WITH CENTER AT 30" UP FROM THE BASE OF THE POLE. "SHOE BOX" STYLE LUMINAIRE WITH DIE FORMED ALUMINUM HOUSING AND DOOR, STAINLESS STEEL TOOL-LESS ENTRY, IMPACT RESISTANT FULL CUTOFF FLAT GLASS LENS, TYPE III IES DISTRIBUTION, HOUSE SIDE SHIELD, PROVISIONS FOR POLE TOP TENON MOUNTING, QUICK DISCONNECT REMOVEABLE BALLAST TRAY WITH MODULAR PLUGS, FUSING AND NATURAL ALUMINUM ANNODIZED FINISH. DESIGN SHALL BE SUITABLE FOR A BASIC WIND SPEED OF 130 MPH (3 SEC. GUST) IN ACCORDANCE WITH THE FLORIDA BUILDING CODE.	STERNER LIGHTING SYSTEMS INC. / LUMINAIRE: EXEC/SQ19/250MH/3S/120/10/HS/VF/AAL/AAL SERIES POLE: AS REQUIRED TO COMPLY WITH SPECIFIED DESIGN WIND SPEED, WITH FINISH MATCHING THAT OF THE LUMINAIRE
P3	120V AC	250W MH / 1	STRUCTURE MOUNTED POLE MOUNTED LUMINAIRE WALKWAY TYPE FIXTURE – 12'-6" TALL SQUARE STRAIGHT ALUMINUM SHAFT POLE WITH POLE TOP TENON AND NATURAL ALUMINUM ANNODIZED FINISH, ANCHOR BOLTS AND HARDWARE SHALL BE STAINLESS STEEL. HARDWARE SHALL INCLUDE LEVELING NUTS, SECURING NUTS, WASHERS AND LOCK WASHERS. ANCHOR BOLT COVER SHALL BE SECURED TO THE POLE BASE USING TAMPERPROOF SCREWS THAT MUST BE DRILLED OUT IN ORDER TO BE REMOVED. ANCHOR BOLT COVER SHALL NOT BE INSTALLED UNTIL POLE IS SET AND PLUMBED, AND HARDWARE IS PROPERLY TORQUED. "SHOE BOX" STYLE LUMINAIRE WITH DIE FORMED ALUMINUM HOUSING AND DOOR, STAINLESS STEEL TOOL-LESS ENTRY, IMPACT RESISTANT FULL CUTOFF FLAT GLASS LENS, TYPE III IES DISTRIBUTION, HOUSE SIDE SHIELD, PROVISIONS FOR POLE TOP TENON MOUNTING, QUICK DISCONNECT REMOVEABLE BALLAST TRAY WITH MODULAR PLUGS, FUSING AND NATURAL ALUMINUM ANNODIZED FINISH. DESIGN SHALL BE SUITABLE FOR A BASIC WIND SPEED OF 130 MPH (3 SEC. GUST) IN ACCORDANCE WITH THE FLORIDA BUILDING CODE.	STERNER LIGHTING SYSTEMS INC. / LUMINAIRE: EXEC/SQ19/250MH/3S/120/10/HS/VF/AAL/AAL SERIES POLE: AS REQUIRED TO COMPLY WITH SPECIFIED DESIGN WIND SPEED, WITH FINISH MATCHING THAT OF THE LUMINAIRE

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1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
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FILE SAVE DATE: April 23, 2010

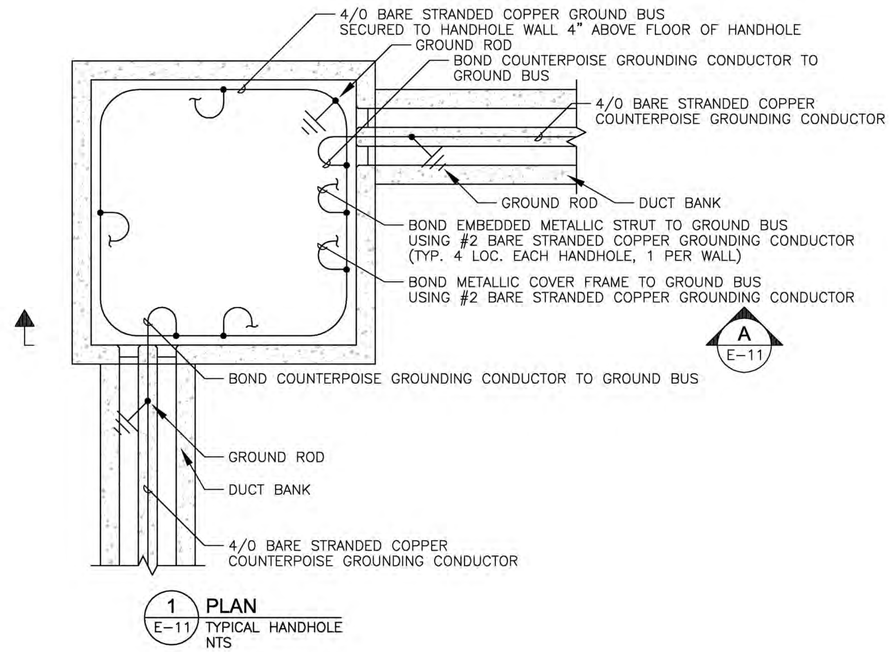
INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

LIGHTING FIXTURE SCHEDULE

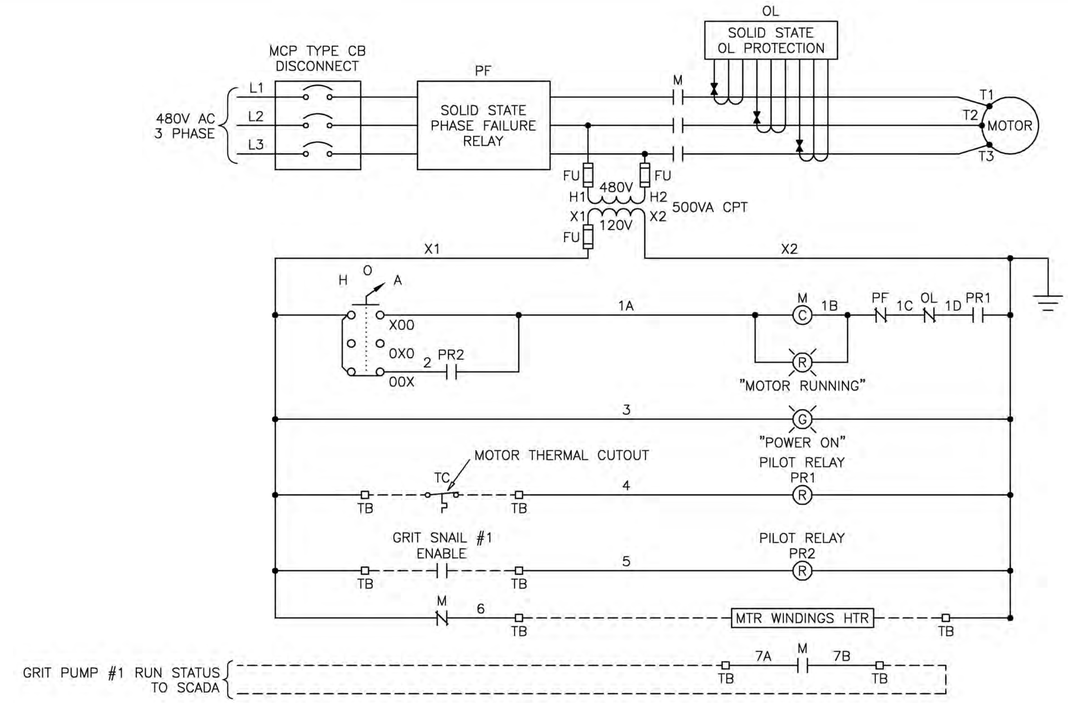
GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

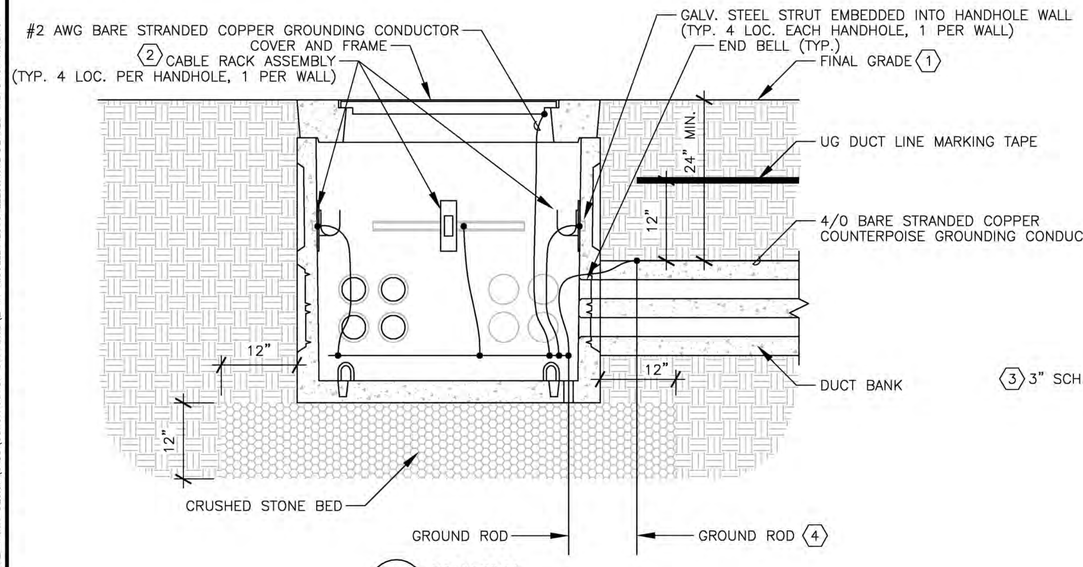
E-10



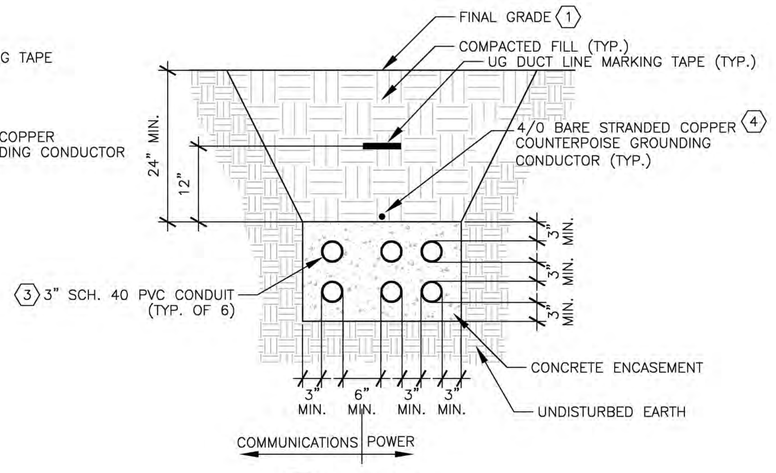
1 E-11 **PLAN**
TYPICAL HANDHOLE
NTS



2 E-11 **DIAGRAM**
GRIT PUMP #1 SCHEMATIC WIRING
NTS



A E-11 **SECTION**
TYPICAL HANDHOLE
NTS



B E-11 **SECTION**
TYPICAL DUCT BANK
NTS

REFERENCE NOTES:

1. "FINAL GRADE" SHALL BE UNDERSTOOD TO REFER TO THE "FINAL EARTHEN GRADE," "BOTTOM OF BASE," OR "BOTTOM OF STABLIZED SUB-BASE," WHICHEVER THE FINAL CONDITION IS SPECIFIED TO BE. RESTORE SURFACES DISTURBED BY CONSTRUCTION ACTIVITIES TO ORIGINAL CONDITION IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT GOVERNING SURFACE RESTORATION.
2. EACH CABLE RACK ASSEMBLY SHALL CONSIST OF A NON-METALLIC VERTICAL SUPPORT RAIL AND A NON-METALLIC CABLE SADDLE, UNDERGROUND DEVICES INC. CAT. NOS. CR8-B AND 3HDS OR APPROVED EQUAL. SECURE THE CABLE RACK ASSEMBLY TO THE HANDHOLE WALL THROUGH THE TOP MOUNTING HOLE USING ONE CIP 1/2-13 THREADED HEX HEAD BOLT WITH 316 SS 0.5625" I.D. BY 1.25" O.D. BY 0.078" THK FLAT WASHER, UNDERGROUND DEVICES INC. CAT. NOS. FNMA-16, FHC316-16-088, AND FFW316-13-28 OR APPROVED EQUAL. SECURE THE CABLE RACK ASSEMBLY TO THE STRUT EMBEDDED INTO THE SIDE WALL OF THE HANDHOLE THROUGH THE BOTTOM MOUNTING HOLE USING 1/2" 316 STAINLESS STEEL HARDWARE COMPATIBLE WITH THE STRUT, AND SUITED TO THE TASK.
3. PROVIDE PLASTIC SPACERS FOR DUCT BANK CONSTRUCTION. LOCATE DUCT SPACERS ON MAXIMUM 48" CENTERS FOR THE ENTIRE LENGTH OF THE DUCT BANK.
4. PROVIDE GROUND RODS ON MAXIMUM 100'-0" CENTERS FO RTHE ENTIRE LENGTH OF THE DUCT BANK, AND WITHIN 10'-0" OF EACH DUCT BANK TERMINATION TO A HANDHOLE. BOND COUNTERPOISE GROUNDING CONDUCTOR TO GROUND RODS VIA THE EXOTHERMIC WELDING PROCESS. AT EACH DUCT BANK TERMINATION TO A HANDHOLE, STUB THE COUNTERPOISE GROUNDING CONDUCTOR INTO THE HANDHOLE AND BOND IT TO THE GROUND ROD INSIDE THE HANDHOLE.

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MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

MISCELLANEOUS ELECTRICAL DETAILS AND DIAGRAMS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-11

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY
PLOTTED May 25, 2010 3:39 PM PLOTTED BY: SCHEUERMAN, JAMES
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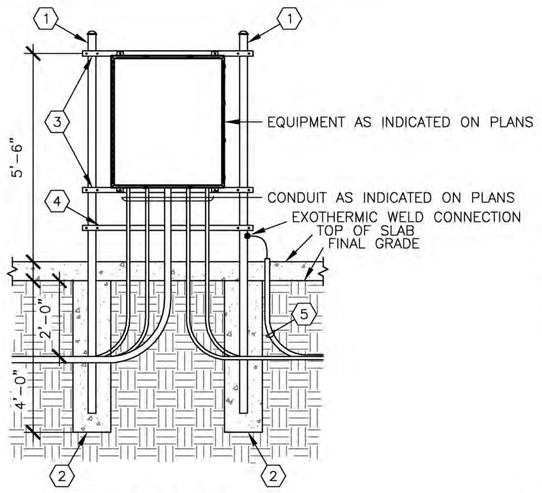
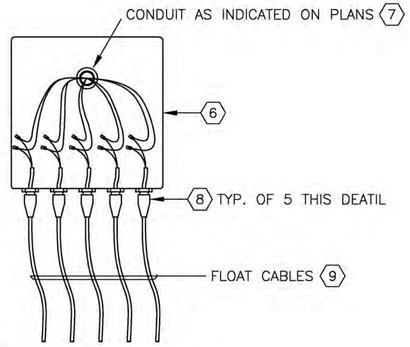
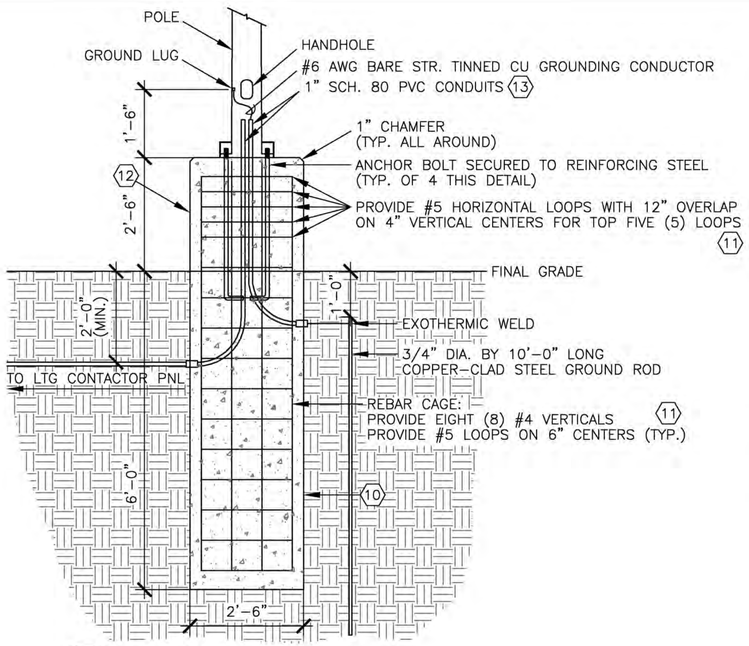


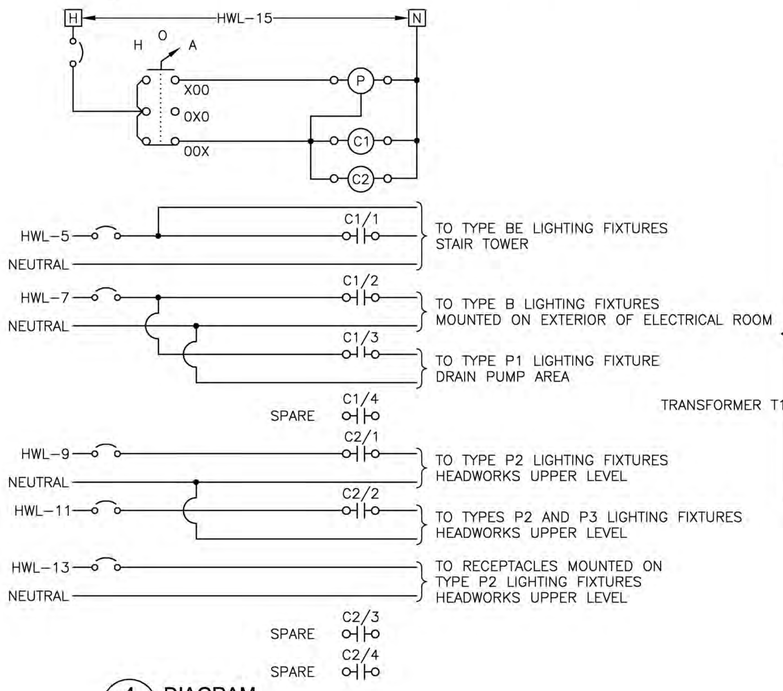
1 ELEVATION
E-12 TYPICAL GRADE MOUNT EQUIPMENT RACK
NTS



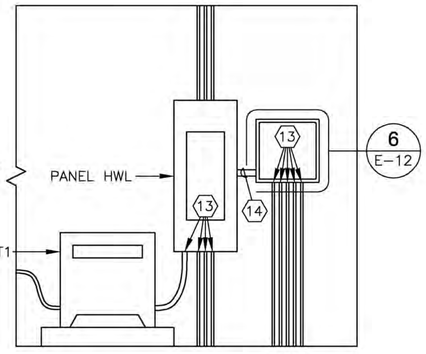
2 DETAIL
E-12 WELL WELL JUNCTION BOX
NTS



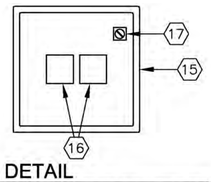
3 SECTION
E-12 LIGHT POLE CONCRETE BASE
TYPICAL FOR TYPE P1 LIGHTING FIXTURES
NTS



4 DIAGRAM
E-12 LIGHTING CONTACTOR PANEL
SCHEMATIC WIRING
NTS



5 ELEVATION
E-12 LIGHTING CONTACTOR PANEL
NTS



6 DETAIL
E-12 LIGHTING CONTACTOR PANEL
NTS

REFERENCE NOTES:

1. PROVIDE 2 1/2" DIA. BY 10'-0" LONG ASTM A/S A312, A778 SCH. 40 304 STAINLESS STEEL TUBE POST WITH 304 STAINLESS STEEL BUTTWELD CAP ON TOP.
2. PROVIDE 12" DIA. SONOTUBE FORMED CONCRETE BASE. MAINTAIN A MINIMUM CONCRETE COVER OVER POST OF 4". CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3000 psi IN 28 DAYS AS DETERMINED BY TEST CYLINDERS MADE IN ACCORDANCE WITH ASTM C 31 AND TESTED IN ACCORDANCE WITH ASTM C 39. CONCRETE SHALL CONTAIN NOT LESS THAN 470 LBS OF CEMENT PER CUBIC YARD. CONCRETE SHALL CONTAIN 5 PERCENT OF ENTRAINED AIR, PLUS OR MINUS 1 PERCENT, AS DETERMINED BY ASTM C 231 AND SHALL HAVE A SLUMP OF NOT MORE THAN 4" AS DETERMINED BY ASTM C 143.

REFERENCE NOTES CONT. . .

3. PROVIDE 1 5/8" SQ. BY LENGTH AS REQUIRED, 304 STAINLESS STEEL STRUT SPACED AS REQUIRED FOR MOUNTING OF EQUIPMENT. SECURE STRUT TO POST USING STAINLESS STEEL 3/8" U-BOLT, NUTS, WASHERS, AND LOCK WASHERS.
4. PROVIDE 1 5/8" SQ. BY LENGTH AS REQUIRED, 304 STAINLESS STEEL STRUT LOCATED AS REQUIRED FOR SUPPORTING CONDUIT. PROVIDE COMPLETE WITH 304 STAINLESS STEEL CONDUIT STRAPS; QUANTITY AND SIZES AS REQUIRED. SECURE STRUT TO POST USING STAINLESS STEEL 3/8" U-BOLT, NUTS, WASHERS, AND LOCK WASHERS.
5. PROVIDE GROUNDING CONDUCTOR ROUTED VIA SCH. 80 PVC CONDUIT. REFER TO SHEET E-6 FOR SPECIFICATION.
6. PROVIDE 10" SQ. BY 6" DEEP NEMA 4X POLYESTER HINGED COVER JUNCTION BOX WITH QUICK RELEASE LATCHES AND STAINLESS STEEL HARDWARE, HOFFMAN ENCLOSURES INC. A10106PHC SERIES OR APPROVED EQUAL. RIGIDLY MOUNT JUNCTION BOX TO WET WELL WALL USING 316 STAINLESS STEEL HARDWARE IN ACCORDANCE WITH THE WET WELL MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.
7. TERMINATE CONDUIT INTO REAR OF JUNCTION BOX. SEAL END OF CONDUIT WITH DUCT SEAL COMPOUND AFTER ALL WIRES ARE INSTALLED, CHECKED OUT, TESTED, AND PLACED INTO SERVICE.
8. PROVIDE NON-METALLIC CORROSION-RESISTANT CABLE STRAIN RELIEF CONNECTOR SIZED FOR THE EXACT FLOAT CABLE FURNISHED, CROUSE-HINDS NCGB SERIES OR APPROVED EQUAL.
9. ADJUST LENGTH OF EACH FLOAT CABLE LENGTH FOR OPTIMAL FLOAT OPERATION AT INDICATED ACTUATION LEVEL. REFER TO WET WELL DETAIL ON SHEET M-10 FOR FLOAT ACTUATION LEVELS SPECIFICATION. SECURE FLOAT CABLES TO WET WELL WALL SO AS TO PREVENT FLOAT CABLES FROM BECOMING ENTANGLED. REFER TO WET WELL MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR METHOD OF ATTACHMENT.
10. PROVIDE 2'-6" DIA. SONOTUBE FORMED CONCRETE LIGHT POLE BASE. MAINTAIN A MINIMUM CONCRETE COVER OVER REINFORCING STEEL OF 3". CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3000 psi IN 28 DAYS AS DETERMINED BY TEST CYLINDERS MADE IN ACCORDANCE WITH ASTM C 31 AND TESTED IN ACCORDANCE WITH ASTM C 39. CONCRETE SHALL CONTAIN NOT LESS THAN 470 LBS OF CEMENT PER CUBIC YARD. CONCRETE SHALL CONTAIN 5 PERCENT OF ENTRAINED AIR, PLUS OR MINUS 1 PERCENT, AS DETERMINED BY ASTM C 231 AND SHALL HAVE A SLUMP OF NOT MORE THAN 4" AS DETERMINED BY ASTM C 143.
11. REINFORCING STEEL SHALL BE DEFORMED BARS OF NEW BILLET STEEL MEETING THE REQUIREMENTS OF ASTM A 615, GRADE 60, UNCOATED.
12. HAND RUB EXPOSED BASE TO A SAND FINISH.
13. SEAL END OF CONDUIT WITH DUCT SEAL COMPOUND AFTER ALL WIRES ARE INSTALLED, CHECKED OUT, TESTED, AND PLACED INTO SERVICE.
14. PROVIDE 2" SCH. 80 PVC CONDUIT NIPPLE WITH 7-#10, 4-#12, AND 1-#10 GND [PANEL HWL CKT NOS. 5, 7, 9, 11, 13, AND 15].
15. PROVIDE 20" H. BY 20" W. BY 8" D. NEMA 4X 316 STAINLESS STEEL, CONTINUOUS HINGE, SINGLE DOOR ENCLOSURE WITH BACKPANEL, PAD LOCK HANDLE, AND DATA POCKET, HOFFMAN CATALOG NO. CSD20208SS6, CP2020, C-WHPTO, AND A-DP1, OR APPROVED EQUAL. PROVIDE LEGEND PLATE ON FRONT DOOR OF ENCLOSURE. LEGEND PLATE SHALL BE ENGRAVED LAMACOID PLATE WITH MINIMUM 1/4" HIGH WHITE LETTERS ON A RED FIELD. LEGEND PLATE SHALL BE PERMANENTLY AFFIXED TO THE ENCLOSURE DOOR USING SELF-TAPPING STAINLESS STEEL SCREWS. LEGEND PLATE SHALL READ AS FOLLOWS: (1ST LINE) "LIGHTING CONTACTOR PANEL", (2ND LINE) "CAUTION - THIS PANEL CONTAINS", (3RD LINE) "MULTIPLE CIRCUITS FED VIA", (4TH LINE) "MULTIPLE INDEPENDENT CIRCUIT BREAKERS", AND (5TH LINE) "IN PANEL HWL".
16. PROVIDE TWO 4P, 30A, 480V RATED, N.O. CONTACTS, ELECTRICALLY HELD LIGHTING CONTACTOR WITH 120V AC COIL, SQUARE D CLASS 8903 TYPE SMO3V02 OR APPROVED EQUAL.
17. PROVIDE 3-POSITION HAND-OFF-AUTO SELECTOR SWITCH WITH BACKPANEL MOUNTING BRACKET AND LEGEND PLATE. LEGEND PLATE SHALL BE ENGRAVED LAMACOID PLATE WITH MINIMUM 1/8" HIGH BLACK LETTERS ON A WHITE FIELD, SHALL IDENTIFY THE "HAND,", "OFF," AND "AUTO" SWITCH POSITIONS, AND SHALL BE PERMANENTLY AFFIXED TO THE SELECTOR SWITCH. SELECTOR SWITCH SHALL BE INDUSTRIAL GRADE, 30.5 MM, NEMA TYPE 4/13, HEAVY DUTY, CORROSION RESISTANT, WATERTIGHT AND OIL TIGHT, WITH 20A, 120V AC 60 HZ RATED CONTACTS. TYPE AND NUMBER OF CONTACTS SHALL BE AS REQUIRED.

RECORD DRAWING

PLOTTED May 25, 2010 3:39 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\E-12 MISCELLANOUS ELECTRICAL DETAILS AND DIAGRAMS.DWG
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

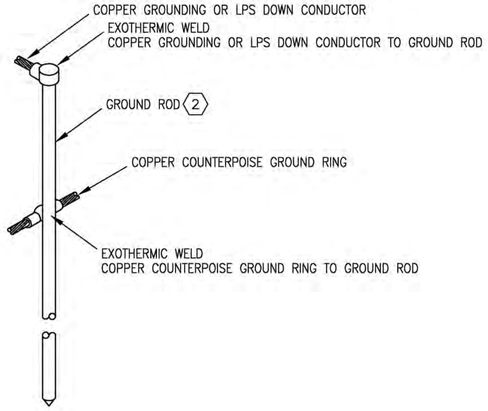
MISCELLANEOUS ELECTRICAL
DETAILS AND DIAGRAMS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

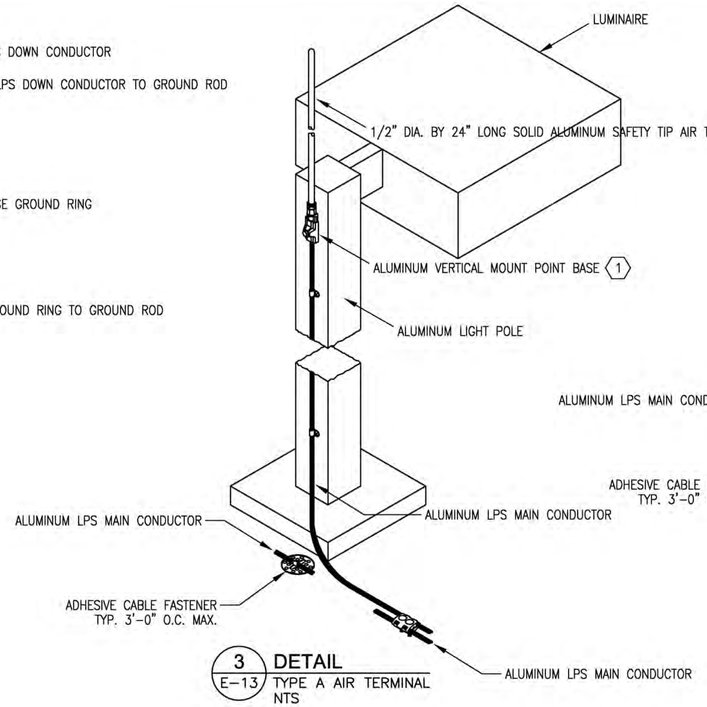
PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-12

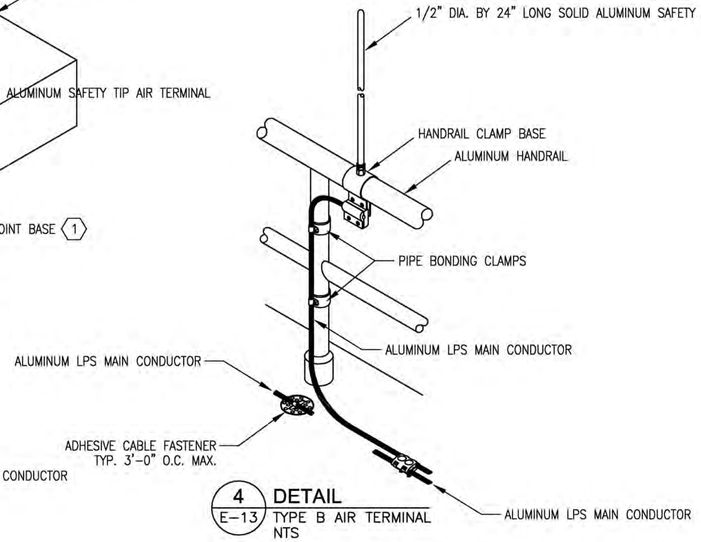
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



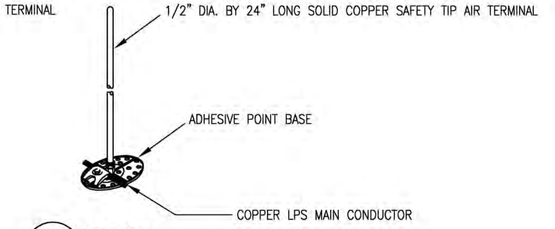
1 / E-13 **DETAIL**
GROUND ROD
NTS



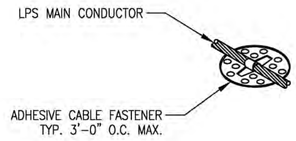
3 / E-13 **DETAIL**
TYPE A AIR TERMINAL
NTS



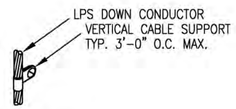
4 / E-13 **DETAIL**
TYPE B AIR TERMINAL
NTS



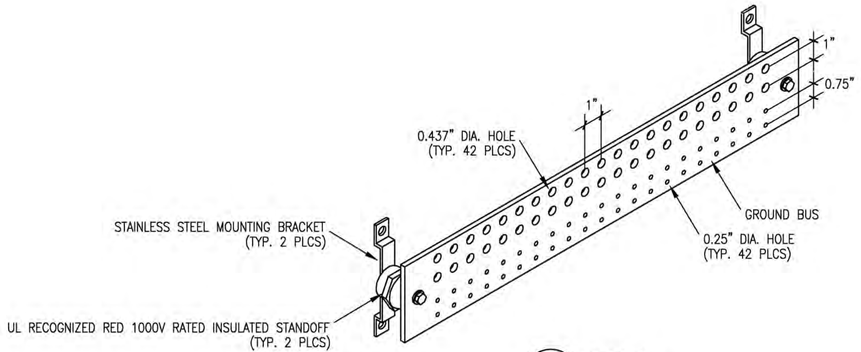
5 / E-13 **DETAIL**
TYPE C AIR TERMINAL
NTS



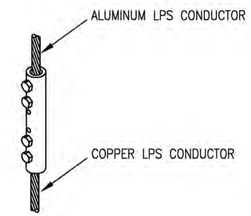
6 / E-13 **DETAIL**
TYPICAL ADHESIVE CABLE FASTENER
NTS



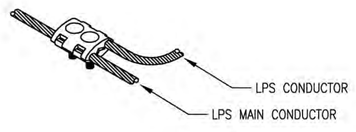
7 / E-13 **DETAIL**
TYPICAL SINGLE HOLE LOOP
VERTICAL CABLE FASTENER
NTS



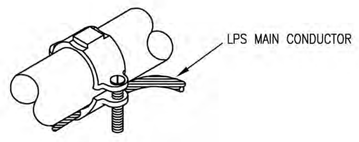
2 / E-13 **DETAIL**
GROUND BUS
NTS



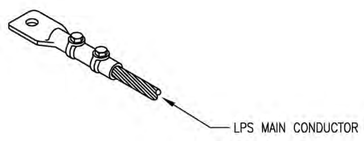
8 / E-13 **DETAIL**
TYPICAL BIMETAL CABLE SPLICER
NTS



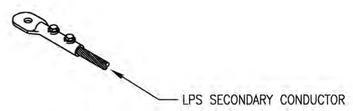
9 / E-13 **DETAIL**
TYPICAL PARALLEL CABLE SPLICE
NTS



10 / E-13 **DETAIL**
TYPICAL PIPE BONDING CLAMP
NTS



11 / E-13 **DETAIL**
TYPICAL LPS
MAIN CONDUCTOR BONDING LUG
NTS



12 / E-13 **DETAIL**
TYPICAL LPS
SECONDARY CONDUCTOR BONDING LUG
NTS

REFERENCE NOTES:

1. RIGIDLY MOUNT VERTICAL MOUNT POINT BASE TO LIGHT POLE VIA THROUGH BOLTING USING STAINLESS STEEL HARDWARE (i.e. BOLTS, NUTS, WASHERS, AND LOCK WASHERS). MOUNT VERTICAL MOUNT POINT BASE TO LIGHT POLE SUCH THAT A MINIMUM OF 18" OF THE AIR TERMINAL EXTENDS UP ABOVE THE TOP OF THE LIGHT POLE CAP.
2. DRIVE GROUND ROD UNTIL ITS TOP IS 12" BELOW FINAL GRADE.

RECORD DRAWING

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REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

GROUNDING AND LPS DETAILS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-13

PLOTTED May 25, 2010 3:39 PM PLOTTED BY: SCHEUERMAN, JAMES
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I/O SCHEDULE

NO.	I/O POINT DESCRIPTION	ASSOCIATED DEVICE DESCRIPTION	TYPE	VOLTAGE	NOTES
1	SCREEN #1 RUN STATUS	SCREEN #1 CONTROL PANEL RUN STATUS N.O. DRY CONTACTS	DI	24V DC	1
2	SCREEN #1 INFLUENT CHANNEL HIGH LEVEL ALARM	SCREEN #1 CONTROL PANEL INFLUENT CHANNEL HIGH LEVEL ALARM N.C. DRY CONTACTS	DI	24V DC	1
3	SCREEN #1 MOTOR OVERLOAD ALARM	SCREEN #1 CONTROL PANEL MOTOR OVERLOAD ALARM N.C. DRY CONTACTS	DI	24V DC	1
4	SPARE	SPARE	DI	24V DC	1
5	SPARE	SPARE	DI	24V DC	1
6	SPARE	SPARE	DI	24V DC	1
7	SCREEN #1 SCREW CONVEYER MOTOR RUN STATUS	SCREEN #1 CONTROL PANEL SCREW CONVEYER MOTOR RUN STATUS N.O. DRY CONTACTS	DI	24V DC	1
8	SCREEN #1 SCREW CONVEYER MOTOR OVERLOAD ALARM	SCREEN #1 CONTROL PANEL SCREW CONVEYER MOTOR OVERLOAD ALARM N.C. DRY CONTACTS	DI	24V DC	1
9	SCREEN #1 SCREW CONVEYER LOSS OF MOTION ALARM	SCREEN #1 CONTROL PANEL SCREW CONVEYER LOSS OF MOTION ALARM N.C. DRY CONTACTS	DI	24V DC	1
10	FUT. SCREEN #2 RUN STATUS	FUT. SCREEN #2 CONTROL PANEL RUN STATUS N.O. DRY CONTACTS	DI	24V DC	1
11	FUT. SCREEN #2 INFLUENT CHANNEL HIGH LEVEL ALARM	FUT. SCREEN #2 CONTROL PANEL INFLUENT CHANNEL HIGH LEVEL ALARM N.C. DRY CONTACTS	DI	24V DC	1
12	FUT. SCREEN #2 MOTOR OVERLOAD ALARM	FUT. SCREEN #2 CONTROL PANEL MOTOR OVERLOAD ALARM N.C. DRY CONTACTS	DI	24V DC	1
13	SPARE	SPARE	DI	24V DC	1
14	SPARE	SPARE	DI	24V DC	1
15	SPARE	SPARE	DI	24V DC	1
16	FUT. SCREEN #2 SCREW CONVEYER MOTOR RUN STATUS	FUT. SCREEN #2 CONTROL PANEL SCREW CONVEYER MOTOR RUN STATUS N.O. DRY CONTACTS	DI	24V DC	1
17	FUT. SCREEN #2 SCREW CONVEYER MOTOR OVERLOAD ALARM	FUT. SCREEN #2 CONTROL PANEL SCREW CONVEYER MOTOR OVERLOAD ALARM N.C. DRY CONTACTS	DI	24V DC	1
18	FUT. SCREEN #2 SCREW CONVEYER LOSS OF MOTION ALARM	FUT. SCREEN #2 CONTROL PANEL SCREW CONVEYER LOSS OF MOTION ALARM N.C. DRY CONTACTS	DI	24V DC	1
19	FUT. SCREEN #3 RUN STATUS	FUT. SCREEN #3 CONTROL PANEL RUN STATUS N.O. DRY CONTACTS	DI	24V DC	1
20	FUT. SCREEN #3 INFLUENT CHANNEL HIGH LEVEL ALARM	FUT. SCREEN #3 CONTROL PANEL INFLUENT CHANNEL HIGH LEVEL ALARM N.C. DRY CONTACTS	DI	24V DC	1
21	FUT. SCREEN #3 MOTOR OVERLOAD ALARM	FUT. SCREEN #3 CONTROL PANEL MOTOR OVERLOAD ALARM N.C. DRY CONTACTS	DI	24V DC	1
22	SPARE	SPARE	DI	24V DC	1
23	SPARE	SPARE	DI	24V DC	1
24	SPARE	SPARE	DI	24V DC	1
25	FUT. SCREEN #3 SCREW CONVEYER MOTOR RUN STATUS	FUT. SCREEN #3 CONTROL PANEL SCREW CONVEYER MOTOR RUN STATUS N.O. DRY CONTACTS	DI	24V DC	1
26	FUT. SCREEN #3 SCREW CONVEYER MOTOR OVERLOAD ALARM	FUT. SCREEN #3 CONTROL PANEL SCREW CONVEYER MOTOR OVERLOAD ALARM N.C. DRY CONTACTS	DI	24V DC	1
27	FUT. SCREEN #3 SCREW CONVEYER LOSS OF MOTION ALARM	FUT. SCREEN #3 CONTROL PANEL SCREW CONVEYER LOSS OF MOTION ALARM N.C. DRY CONTACTS	DI	24V DC	1
28	GRIT SNAIL #1 RUN STATUS	GRIT SNAIL #1 CONTROL PANEL RUN STATUS N.O. DRY CONTACTS	DI	24V DC	1
29	GRIT SNAIL #1 HOA IN AUTO STATUS	GRIT SNAIL #1 CONTROL PANEL HOA SWITCH IN AUTO N.C. DRY CONTACTS	DI	24V DC	1
30	GRIT SNAIL #1 SLURRYCUP SUPPLY HOA IN AUTO STATUS	GRIT SNAIL #1 CONTROL PANEL SLURRYCUP SUPPY HOA SWITCH IN AUTO N.C. DRY CONTACTS	DI	24V DC	1
31	GRIT SNAIL #1 BACKWASH HOA IN AUTO STATUS	GRIT SNAIL #1 CONTROL PANEL BACKWASH HOA SWITCH IN AUTO N.C. DRY CONTACTS	DI	24V DC	1
32	GRIT SNAIL #1 BLOWDOWN HOA IN AUTO STATUS	GRIT SNAIL #1 CONTROL PANEL BLOWDOWN HOA SWITCH IN AUTO N.C. DRY CONTACTS	DI	24V DC	1
33	GRIT SNAIL #1 SUMMARY ALARM	GRIT SNAIL #1 CONTROL PANEL SUMMARY ALARM N.C. DRY CONTACTS	DI	24V DC	1
33A	GRIT SNAIL #1 SLURRYCUP HOA IN AUTO STATUS	GRIT SNAIL #1 CONTROL PANEL SLURRYCUP HOA SWITCH IN AUTO N.C. DRY CONTACTS	DI	24V DC	1
33B	GRIT SNAIL #1 SNAIL RINSE WATER HOA IN AUTO STATUS	GRIT SNAIL #1 CONTROL PANEL SNAIL RINSE WATER HOA IN AUTO N.C. DRY CONTACTS	DI	24V DC	1
34	GRIT PUMP #1 RUN STATUS	GRIT PUMP #1 STARTER UNIT N.O. DRY CONTACTS	DI	24V DC	1
35	GRIT PUMP #1 HIGH DISCHARGE PRESSURE ALARM	GRIT PUMP #1 DISCHARGE PRESSURE SWITCH N.C. DRY CONTACTS	DI	24V DC	1
36	FUT. GRIT SNAIL #2 RUN STATUS	FUT. GRIT SNAIL #2 CONTROL PANEL RUN STATUS N.O. DRY CONTACTS	DI	24V DC	1

I/O SCHEDULE

NO.	I/O POINT DESCRIPTION	ASSOCIATED DEVICE DESCRIPTION	TYPE	VOLTAGE	NOTES
37	FUT. GRIT SNAIL #2 HOA IN AUTO STATUS	FUT. GRIT SNAIL #2 CONTROL PANEL HOA SWITCH IN AUTO N.C. DRY CONTACTS	DI	24V DC	1
38	FUT. GRIT SNAIL #2 SLURRYCUP SUPPLY HOA IN AUTO STATUS	FUT. GRIT SNAIL #2 CONTROL PANEL SLURRYCUP SUPPLY HOA SWITCH IN AUTO N.C. DRY CONTACTS	DI	24V DC	1
39	FUT. GRIT SNAIL #2 BACKWASH HOA IN AUTO STATUS	FUT. GRIT SNAIL #2 CONTROL PANEL BACKWASH HOA SWITCH IN AUTO N.C. DRY CONTACTS	DI	24V DC	1
40	FUT. GRIT SNAIL #2 BLOWDOWN HOA IN AUTO STATUS	FUT. GRIT SNAIL #2 CONTROL PANEL BLOWDOWN HOA SWITCH IN AUTO N.C. DRY CONTACTS	DI	24V DC	1
41	FUT. GRIT SNAIL #2 SUMMARY ALARM	FUT. GRIT SNAIL #2 CONTROL PANEL SUMMARY ALARM N.C. DRY CONTACTS	DI	24V DC	1
42	FUT. GRIT PUMP #2 RUN STATUS	FUT. GRIT PUMP #2 STARTER UNIT N.O. DRY CONTACTS	DI	24V DC	1
43	FUT. GRIT PUMP #2 HIGH DISCHARGE PRESSURE ALARM	FUT. GRIT PUMP #2 DISCHARGE PRESSURE SWITCH N.C. DRY CONTACTS	DI	24V DC	1
44	WET WELL HIGH LEVEL ALARM	DUPLEX DRAIN PUMP CONTROL PANEL N.C. DRY CONTACTS	DI	24V DC	1
45	WET WELL LOW LEVEL ALARM	DUPLEX DRAIN PUMP CONTROL PANEL N.C. DRY CONTACTS	DI	24V DC	1
46	DRAIN PUMPS COMMON ALARM	DUPLEX DRAIN PUMP CONTROL PANEL N.C. DRY CONTACTS	DI	24V DC	1
47	EMERGENCY SHOWER ALARM	EMERGENCY SHOWER FLOW SWITCH N.C. DRY CONTACTS	DI	24V DC	1
48	UTILITY POWER FAIL ALARM	SCADA PANEL UTILITY POWER FAIL RELAY N.C. DRY CONTACTS	DI	24V DC	1
49	INFLUENT FLOW RATE (GPH)	FLOW METER 4–20mA TOTALIZED OUTPUT	AI	24V DC	2, 3

I/O SCHEDULE NOTES:

1. SENSE VOLTAGE SUPPLIED BY SCADA PANEL 24V DC POWER SUPPLY.
2. PROVIDE POWER TO FLOW METER FROM UPS BACKED SEPARATE DEDICATED 120V AC FUSED CIRCUIT INSIDE SCADA PANEL.
3. SERIES THE FLOW METER 4–20mA OUTPUT THROUGH THE INFLUENT FLOW SAMPLER AND SCADA PANEL 4–20mA INPUTS. MAKE THIS SERIES CONNECTION INSIDE THE SCADA PANEL.

SCADA NOTES:

THE NEW HEADWORKS TO BE CONSTRUCTED BY THIS PROJECT IS ULTIMATELY INTENDED TO REPLACE THE EXISTING HEADWORKS; HOWEVER, FOR AN UNDETERMINED PERIOD OF TIME, THE NEW HEADWORKS AND THE EXISTING HEADWORKS MUST OPERATE CONCURRENTLY.

THE EXISTING NORTH WATER RECLAMATION FACILITY RECENTLY RECEIVED A NEW FACILITY–WIDE SCADA SYSTEM UPGRADE. AS PART OF THIS NEW FACILITY–WIDE SCADA SYSTEM UPGRADE, A NEW SCADA PANEL WAS INSTALLED IN THE EXISTING HEADWORKS. SEE SHEETS E–15 THROUGH –22 FOR EXISTING HEADWORKS SCADA PANEL AS–BUILTS.

PROVIDE A NEW SCADA PANEL FOR THE NEW HEADWORKS THAT IS VIRTUALLY IDENTICAL TO THE EXISTING HEADWORKS SCADA PANEL, AS CONVEYED BY THE AS–BUILTS ON SHEETS E–15 THROUGH –22, WITH THE FOLLOWING MODIFICATIONS:

1. THE I/O POINTS FROM THE I/O SCHEDULE ON THIS SHEET SHALL BE USED IN LIEU OF THE I/O POINTS INDICATED ON THE AS–BUILTS. PROVIDE ALL ADDITIONAL MATERIALS REQUIRED TO ACCOMMODATE THE INDICATED I/O POINTS INCLUDING, BUT NOT NECESSARILY LIMITED TO DISCRETE INPUT MODULES, POWER SUPPLIES, FUSE BLOCKS, TVSS BLOCKS, TERMINAL BLOCKS, AND WIRING.
2. THE QUANTITY OF SPARE DI POINTS SHALL BE FOURTEEN (14). SPARE DI POINTS SHALL INCLUDE DISCRETE INPUT MODULES, POWER SUPPLIES, FUSE BLOCKS, TVSS BLOCKS, AND TERMINAL BLOCKS, WIRED IN–PLACE AND READY TO BE ACTIVATED.
3. THE QUANTITY OF SPARE DO POINTS AND ASSOCIATED CONTROL RELAYS SHALL BE AS SHOWN ON THE AS–BUILTS. SPARE DO POINTS SHALL INCLUDE DISCRETE OUTPUT MODULES, POWER SUPPLIES, AND FUSE BLOCKS, WIRED IN–PLACE AND READY TO BE ACTIVATED.
4. THE QUANTITY OF SPARE AI POINTS SHALL BE AS SHOWN ON THE AS–BUILTS. SPARE AI POINTS SHALL INCLUDE ANALOG INPUT MODULES, POWER SUPPLIES, FUSE BLOCKS, TVSS BLOCKS, AND TERMINAL BLOCKS, WIRED IN–PLACE AND READY TO BE ACTIVATED.
5. THE QUANTITY OF SPARE AO POINTS SHALL BE AS SHOWN ON THE AS–BUILTS. SPARE AO POINTS SHALL INCLUDE ANALOG OUTPUT MODULES, POWER SUPPLIES, FUSE BLOCKS, TVSS BLOCKS, AND TERMINAL BLOCKS, WIRED IN–PLACE AND READY TO BE ACTIVATED.
6. FUSE BLOCKS, TERMINAL BLOCKS, AND WIRING TO SUPPLY 120V AC POWER TO FLOW METER.

REFER TO THE CONTRACT SPECIFICATIONS FOR ADDITIONAL SCADA REQUIREMENTS.

RECORD DRAWING

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Florida Engineering Number: 000002

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REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

SCADA NOTES AND I/O SCHEDULE

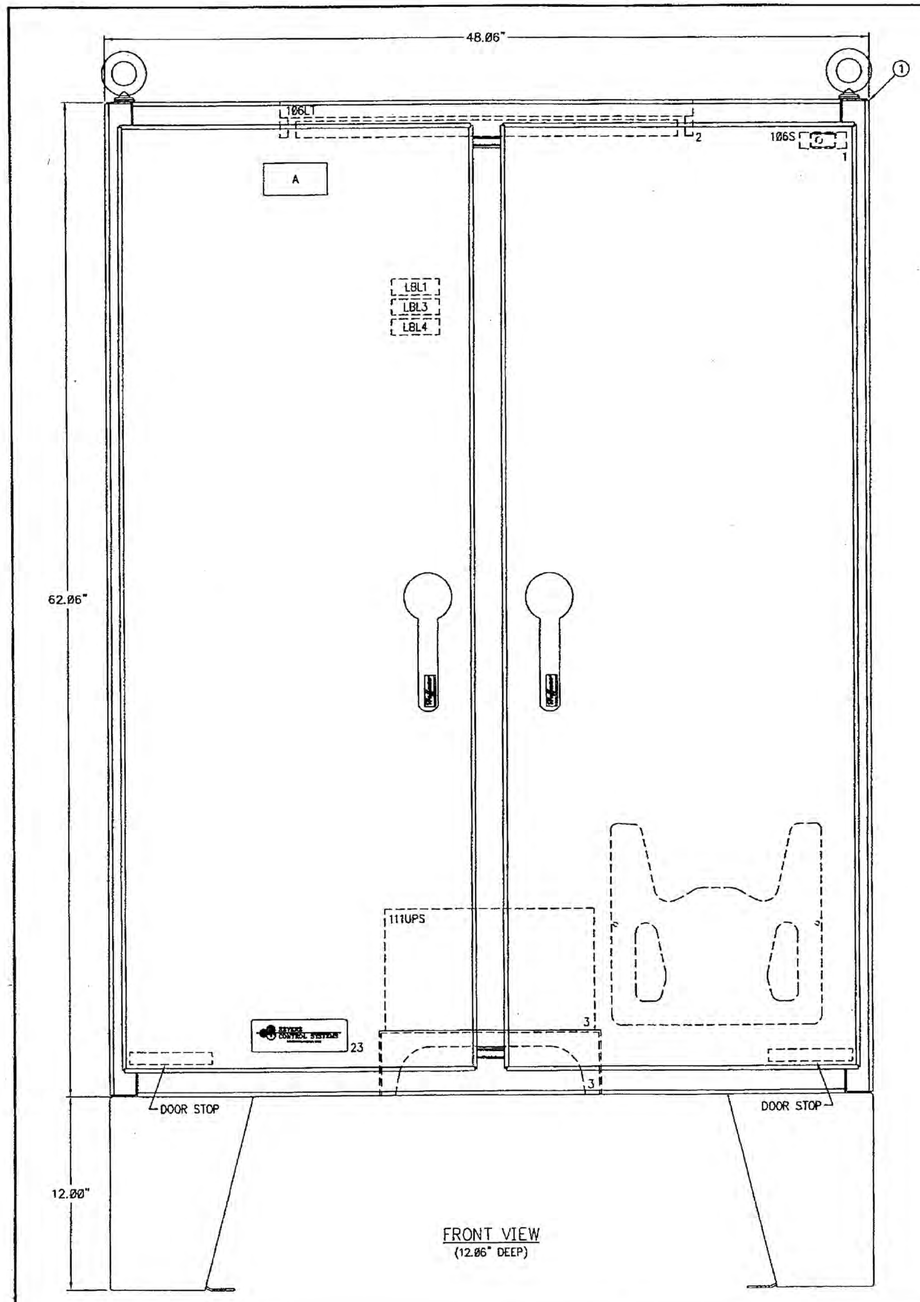
GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E–14

PLOTTED May 25, 2010 3:40 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWWF DESIGN\CADD\CONSTRUCTION DRAWINGS\E-14 SCADA NOTES AND I-O SCHEDULE.DWG

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



ENGRAVING SCHEDULE

ID NO.	QTY.	TYPE	SIZE	PLATE COLOR	LETTER COLOR	FIRST LINE \ SECOND LINE, ETC.
A	1	NP	2" X 4"	BLACK	WHITE	SP-1 \ NWRF PLC \ HEADWORKS

ATTACH NAMEPLATE WITH STAINLESS STEEL SCREWS.
DEVICE LABELS ARE TO BE ENGRAVED AND ATTACHED WITH STAINLESS STEEL SCREWS.

ACTB
H
N1
GND
N2
N2
N
N
N

DCTB
BF1151
BF1151
BF1153
BF1153
BF1153
BF1153
BF1153
BF1541

DITB
117SUP
119SUP
201SUP
BF1173
203SUP
BF1173
205SUP
BF1173
207SUP
BF1173
209SUP
BF1182
211SUP
BF1182
213SUP
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215SUP
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231SUP
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233SUP
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235SUP
BF1192
237SUP
BF1192
239SUP
BF1202
241SUP
BF1202
243SUP
BF1202
245SUP
BF1202

DOTB
302CR
303CR
304CR
305CR
306CR
307CR
308CR
309CR
310CR
311CR
312CR
313CR
314CR
315CR
316CR
317CR

ANALOG TB
402FU
BF4031
SH
405FU
BF4061
SH
407FU
BF4081
SH
410FU
BF4111
SH
412FU
BF4131
SH
415FU
BF4161
SH
417FU
BF4181
SH
420FU
BF4211
SH
501FU
BF5022
SH
504FU
BF5052
SH
507FU
BF5082
SH
510FU
BF5112
SH

TERMINAL BLOCK LAYOUT

LABEL SCHEDULE

LBL1 RCS INFORMATION LABEL:
SERIAL NO. G1037BF CUSTOMER ID: 60420
LINE VOLTAGE 120VAC, 1 PHASE, WIRE, 60Hz.
CONTROL VOLTAGE 120VAC LARGEST MOTOR HP N/A TOTAL FLA N/A
RCS CONTACT C. HARRIS
REF. DWG. NO. G1037BF TYPE 4X ENCLOSURE
SHORT CIRCUIT CURRENT RATING 2k RMS SYMMETRICAL AMPERES

LBL2 USE COPPER CONDUCTORS ONLY.
RECOMMENDED TORQUE: 5.31 - 7.08 IN. LBS.

LBL3 TO MAINTAIN ENCLOSURE RATING, USE HUBS OR FITTINGS WITH THE SAME ENVIRONMENTAL RATING AS THE ENCLOSURE.
O-Z/GEDNEY CHM SERIES HUBS
APPLETON HUB SERIES HUBS
CROUSE HINDS ST SERIES HUBS

LBL4 UL508A LABEL

LBL5 UPS ONLY

LBL6 PANEL 1 TELECOM ROOM IN CONTROL BUILDING
PANEL 2 FUTURE

LBL7 10 AMPS

FUSES

114FU, 161FU	AGC-3/4	3/4A	125V
115FU	AGC-5	5A	125V
117FU2, 118FU, 119FU, 120FU	AGC-1/4	1/4A	125V
153FU	AGC-1/2	1/2A	125V
154FU, 164FU	AGC-1	1A	125V
117FU1, 132FU	AGC-10	10A	125V
402FU, 405FU, 407FU, 410FU, 412FU, 415FU, 417FU, 420FU, 501FU, 504FU, 507FU, 510FU	AGC-1/8	1/8A	125V

NOTE: FUSE LABELS TO BE LOCATED NEAR EACH RESPECTIVE FUSEHOLDER.

POWER SUPPLY CALCULATION FOR SP-1			
DESCRIPTION	PART #	mA	QTY
DI PLC CARD	1746-IB16	170	2
DO PLC CARD	1746-OB16	340	1
AI PLC CARD	1746-NI8	200	1
AO PLC CARD	1746-NO4I	100	1
ENET-F/O CONV.	27 08 16 4	100	
ETHER SWITCH	28 32 93 3	240	1
		TOTAL mA	1220

NOTE:
PANEL SHALL BEAR UL508A LABEL FOR ENCLOSED INDUSTRIAL CONTROL PANELS.

REVERE CONTROL SYSTEMS
(205) 824-0004 BIRMINGHAM, ALABAMA 35216

SUBJECT:
MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM
NORTH WRF SP-1 HEADWORKS
FRONT PANEL LAYOUT, TB LAYOUT & LABEL SCHEDULE

CUSTOMER:
MANATEE COUNTY, FLORIDA

DRAWN BY: CMH	DATE: 06-25-07
CHECKED: CHI	SCALE: 1/4" = 1"
JOB NO. 60420	DWG. NO. G1037BF 1/8

NO.	DATE	DESCRIPTION	BY
		REVISION	

RECORD DRAWING

PLOTTED May 25, 2010 3:40 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\E-15 EXISTING HEADWORKS SCADA PANEL AS-BUILTS.DWG

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: October 8, 2008

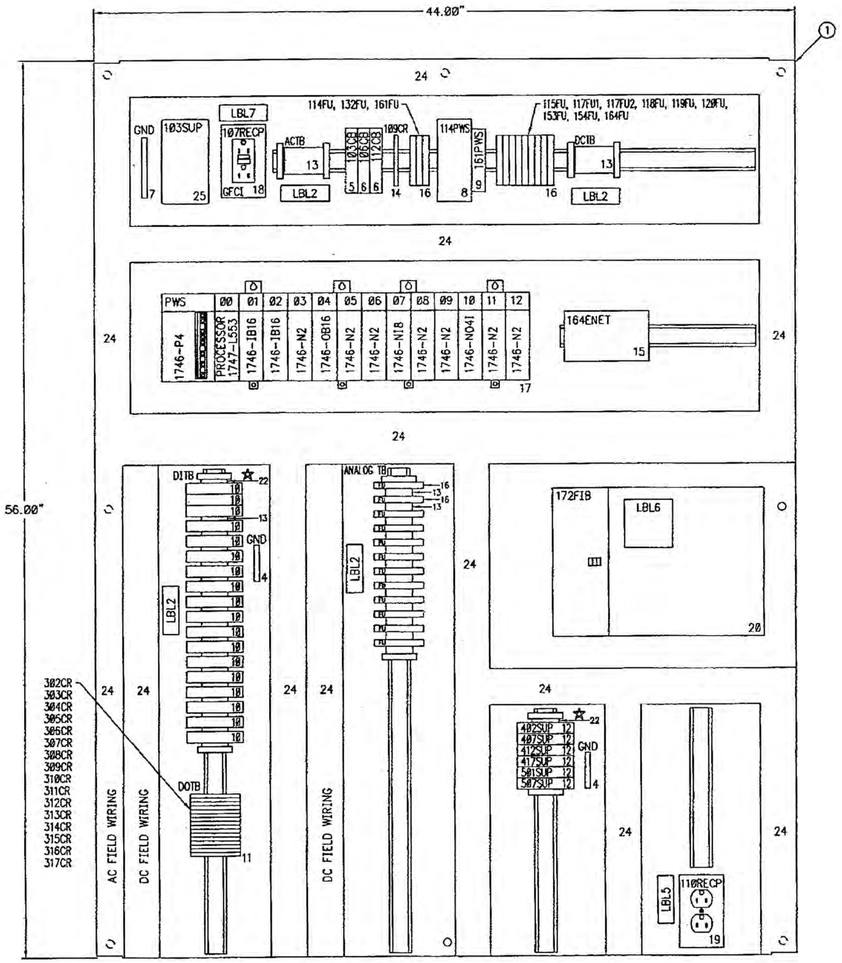
INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING HEADWORKS
SCADA PANEL AS-BUILTS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-15



SUBPANEL LAYOUT

BILL OF MATERIAL

ITEM	QTY.	MANUFACTURER AND CATALOG NUMBER		DESCRIPTION
1	1	HOFFMAN	CUSTOM (A62H4812SS6LP3PT)	ENCLOSURE, NEMA 4X, STAINLESS STEEL, 62.06"H X 48.06"W X 12.06"D, POWDER COATED WHITE
	1	HOFFMAN	A60P48	SUBPANEL, 56"H X 44"W
	1	HOFFMAN	ALFSWD	DOOR ACTIVATED SWITCH
	2	HOFFMAN	ADSTOPK	ADJ. DOOR STOP
	2	HOFFMAN	AHCI10E	CORROSION INHIBITOR, 1 YEAR LIFE, COVERS 10 CUBIC FEET
2	1	LITHONIA	S120120ES	FLUORESCENT LIGHT, 24" SINGLE STRIP
	1	SYLVANIA	F20T12C/W	FLUORESCENT BULB, 24"
▲ 3	1	POWERWARE	103005146554-5591	UPS, 120VAC, 750VA, MODEL 5115, 7.6"H X 5.9"W X 13.2"D, (TD #91874A)
	1	CABLES TO GO	09482	15' PIGTAIL, (TD #68502A)
	1	REVERE	F-G1037Ø1	RAISED SUPPORT
4	2	SQUARE D	PK5GTA	GROUND BAR
5	1	SQUARE D	QOU-115	CIRCUIT BREAKER, 15 AMP
6	2	SQUARE D	QOU-110	CIRCUIT BREAKER, 10 AMP
7	1	SQUARE D	PK9GTA	GROUND BAR
8	1	PHOENIX CONTACT	29 38 58 1	POWER SUPPLY, 120 VAC INPUT, 24 VDC OUTPUT, 5 AMP, QUINT-PS-100-240AC/24DC/5
9	1	PHOENIX CONTACT	29 38 84 0	POWER SUPPLY, SLIM DESIGN, 120 VAC INPUT, 24 VDC OUTPUT, 1 AMP, MINI-PS-100-240AC/24VDC/1
10	18	PHOENIX CONTACT	28 56 08 7	DI TVSS, PT 2x1-24DC-ST
	18	PHOENIX CONTACT	28 56 13 9	BASE ELEMENT, PT 2x1-BE
11	16	PHOENIX CONTACT	29 66 17 1	DO RELAY, PLC-RSC-24DC/21
12	6	PHOENIX CONTACT	28 38 22 8	AI/AO TVSS, PT 2x2-24DC-ST
	6	PHOENIX CONTACT	28 39 20 8	BASE ELEMENT, PT 2x2-BE
13	60	PHOENIX CONTACT	30 04 36 2	TERMINAL BLOCK, UK5N, 600 VAC, 30 AMP, #24-#10 AWG
14	1	PHOENIX CONTACT	29 66 19 7	DO RELAY WITH BASE, 120VAC COIL, 1 PDT CONTACT, PLC-RSC-120UC/21
15	1	PHOENIX CONTACT	28 32 93 3	ETHERNET SWITCH, FL SWITCH SF 8TX/2FX
16	24	PHOENIX CONTACT	30 04 17 1	FUSE BLOCK, UK6,3-HESI, 1/4" X 1-1/4"
	4	BUSSMANN	AGC-3/4	FUSE, 3/4 AMP, FAST ACTING (2 SPARE)
	4	BUSSMANN	AGC-1	FUSE, 1 AMP, FAST ACTING (2 SPARE)
	2	BUSSMANN	AGC-5	FUSE, 5 AMP, FAST ACTING (1 SPARE)
	6	BUSSMANN	AGC-1/4	FUSE, 1/4 AMP, FAST ACTING (2 SPARE)
	3	BUSSMANN	AGC-10	FUSE, 10 AMP, FAST ACTING (1 SPARE)
	2	BUSSMANN	AGC-1/2	FUSE, 1/2 AMP, FAST ACTING (1 SPARE)
	16	BUSSMANN	AGC-1/8	FUSE, 1/8 AMP, FAST ACTING (4 SPARE)
17	1	ALLEN-BRADLEY	1746-A13	I/O RACK, 13 SLOT
	1	ALLEN-BRADLEY	1746-P4	PLC POWER SUPPLY
	1	ALLEN-BRADLEY	1747-L553	SLC 5/05 CONTROLLER
	7	ALLEN-BRADLEY	1746-N2	SLC SLOT FILLER
	1	ALLEN-BRADLEY	1747-M13	MEMORY MODULE
	2	ALLEN-BRADLEY	1746-IB16	DISCRETE INPUT MODULE, 16 POINT
	1	ALLEN-BRADLEY	1746-OB16	DISCRETE OUTPUT MODULE, 16 POINT
	1	ALLEN-BRADLEY	1746-NI8	ANALOG INPUT MODULE, 8 CH.
	1	ALLEN-BRADLEY	1746-NO4I	ANALOG OUTPUT MODULE, 4 CH.
18	1	LEVITON	8599	RECEPTACLE, DUPLEX GFCI
	1	RED DOT	D1H31LM	RECEPTACLE BOX, SINGLE GANG
	1	HUBBELL	S-26	RECEPTACLE COVER
19	1	HUBBELL	CR15	RECEPTACLE, 15 AMP
	1	RED DOT	D1H31LM	RECEPTACLE BOX, SINGLE GANG
	1	HUBBELL	S-8	RECEPTACLE COVER
20	1	CORNING CABLE SYSTEMS	WCH-02P	F/O PATCH PANEL (ANIXTER #180452)
	1	CORNING CABLE SYSTEMS	CCH-CP12-25T	12 PORT PANEL, ST MM LOADED (ANIXTER #207403)
21	1	CORNING CABLE SYSTEMS	505702K5141006F	FIBER PATCH CABLE, 6 FT, ST TO DUPLEX SC CERAMIC, 62.5/125
22	2	PHOENIX CONTACT	27 98 78 9	TERMINAL BLOCK, PROVIDES CONNECTION FOR COMMON DIN RAIL REFERENCE
23	1	REVERE	CUSTOM	NAMEPLATE, "REVERE CONTROL SYSTEMS"
24	A/R	PANDUIT	TYPE F	WIRE DUCT, RIGID GRAY VINYL
25	1	EDCO	HSP121BT-1RU	SURGE SUPPRESSOR, EPOXY ENCAPSULATED, BARRIER TERMINAL STRIPS, 120 VAC, 15 AMP

▲ DENOTES ITEM SHIPPED LOOSE

NOTE:
PANEL SHALL BEAR UL508A LABEL FOR ENCLOSED INDUSTRIAL CONTROL PANELS.

☆ TERMINATE TO GROUND

NO.	DATE	DESCRIPTION	BY
		REVISION	

REVERE CONTROL SYSTEMS
(205) 824-0004 BIRMINGHAM, ALABAMA 35216

SUBJECT:
MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM
NORTH WRF SP-1 HEADWORKS
SUBPANEL LAYOUT & BILL OF MATERIAL

CUSTOMER:
MANATEE COUNTY, FLORIDA

DRAWN BY: CMH	DATE: 06-25-07
CHECKED: CH1	SCALE: 1/4" = 1"
JOB NO. 60420	DWG. NO. G1037BF 2/8

RECORD DRAWING

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING HEADWORKS
SCADA PANEL AS-BUILTS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-16

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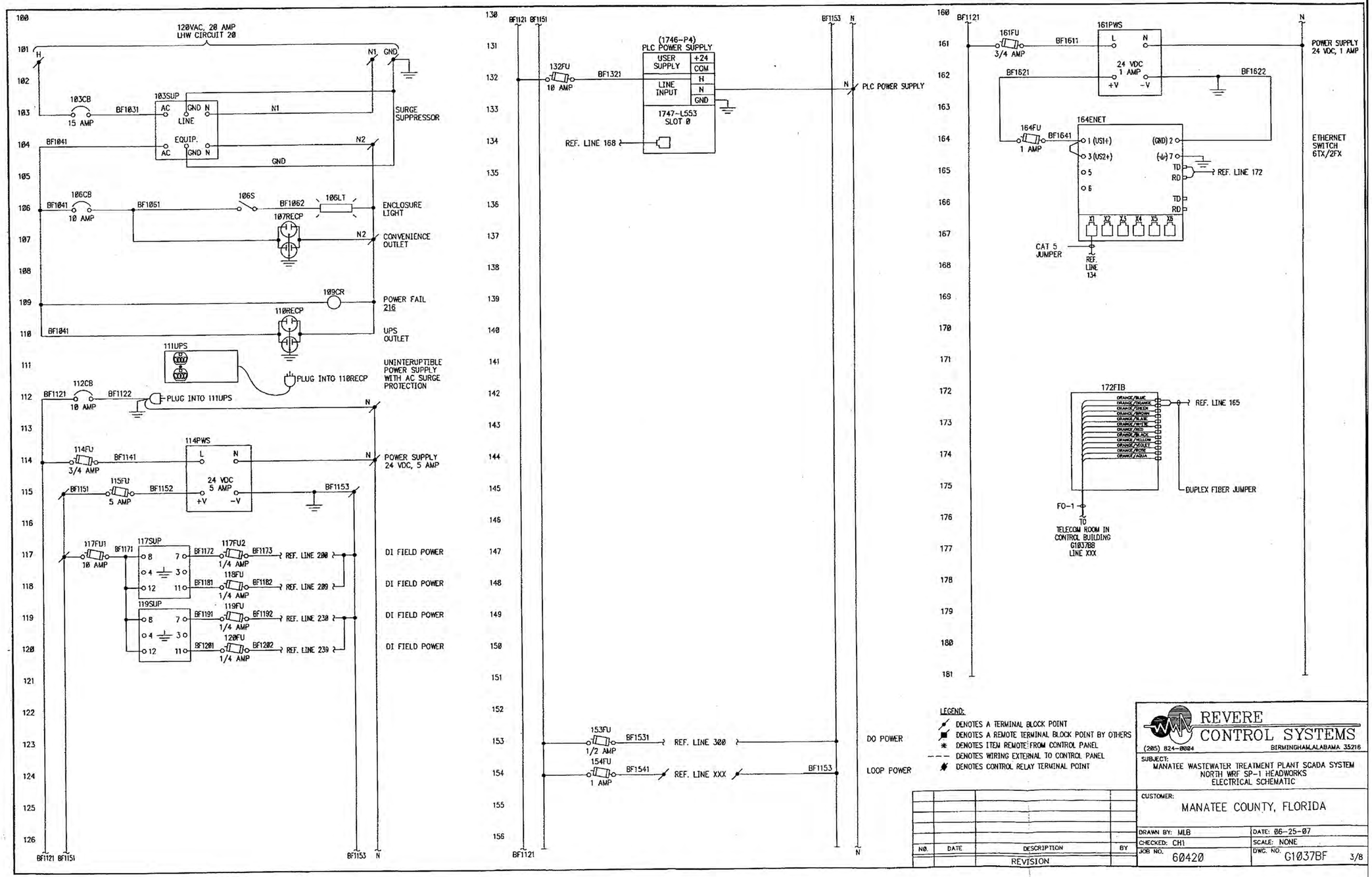

LEGEND:
- DENOTES A TERMINAL BLOCK POINT
- DENOTES A REMOTE TERMINAL BLOCK POINT BY OTHERS
- DENOTES ITEM REMOTE FROM CONTROL PANEL
- DENOTES WIRING EXTERNAL TO CONTROL PANEL
- DENOTES CONTROL RELAY TERMINAL POINT

REVERE CONTROL SYSTEMS
(205) 824-0024 BIRMINGHAM,ALABAMA 35216

SUBJECT:
MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM
NORTH WRF SP-1 HEADWORKS
ELECTRICAL SCHEMATIC

CUSTOMER: MANATEE COUNTY, FLORIDA

NO.	DATE	DESCRIPTION	BY
		REVISION	

DRAWN BY: MLB | DATE: 06-25-07
CHECKED: CH1 | SCALE: NONE
JOB NO. 60420 | DWG. NO. G1037BF 3/8

RECORD DRAWING

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: September 29, 2008

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING HEADWORKDS
SCADA PANEL AS-BUILTS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-17

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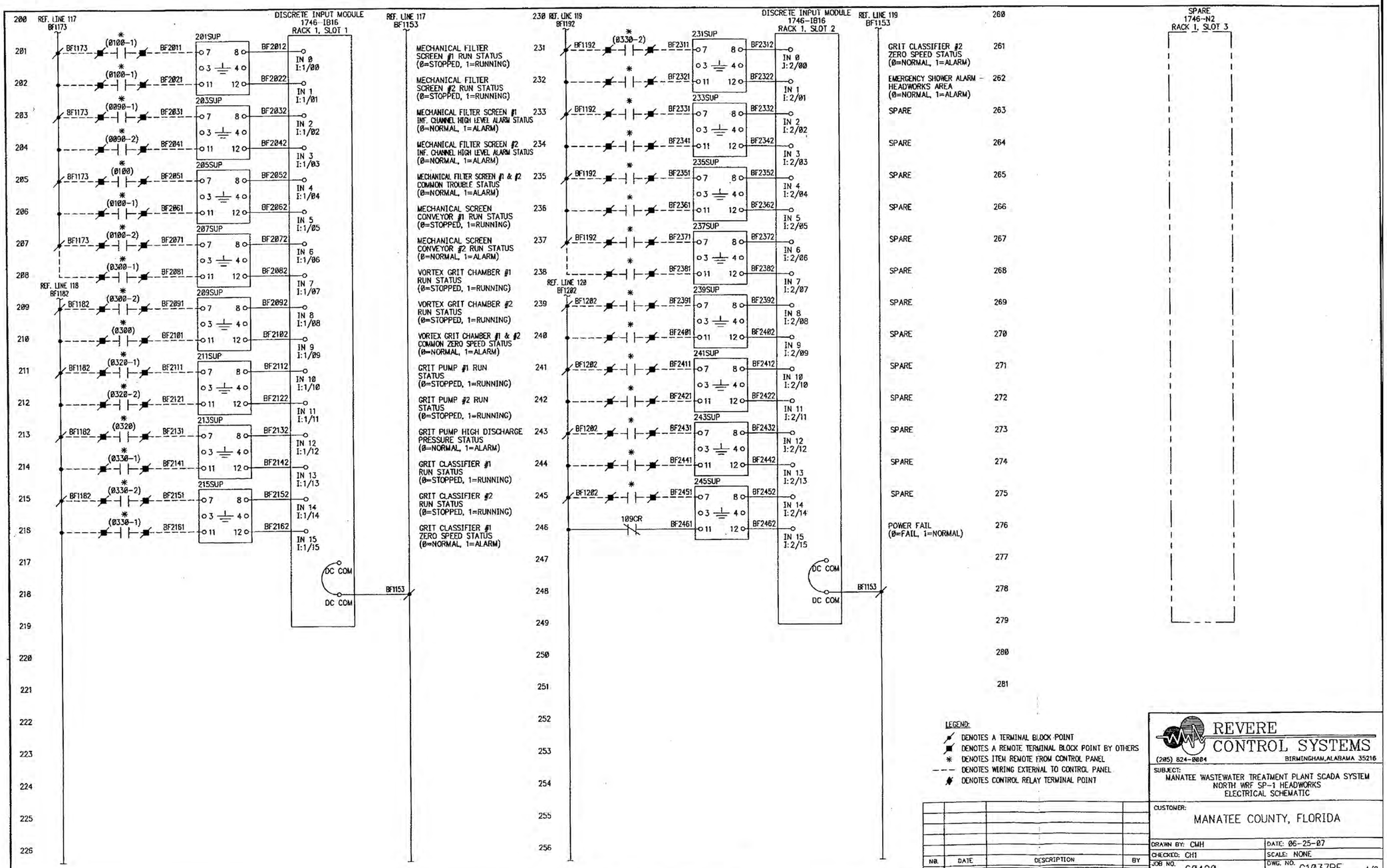

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- DENOTES WIRING EXTERNAL TO CONTROL PANEL
- DENOTES CONTROL RELAY TERMINAL POINT

REVERE CONTROL SYSTEMS
(205) 824-0004 BIRMINGHAM, ALABAMA 35216

SUBJECT:
MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM
NORTH WRF SP-1 HEADWORKS
ELECTRICAL SCHEMATIC

CUSTOMER:
MANATEE COUNTY, FLORIDA

NO.	DATE	DESCRIPTION	BY
		REVISION	

DRAWN BY: CMH | DATE: 06-25-07
CHECKED: CH1 | SCALE: NONE
JOB NO. 60420 | DWG. NO. G1037BF 4/8

RECORD DRAWING

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
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NO.	BY	DATE	DESCRIPTION
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REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: September 29, 2008

MANATEE COUNTY FLORIDA

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING HEADWORKS
SCADA PANEL AS-BUILTS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-18

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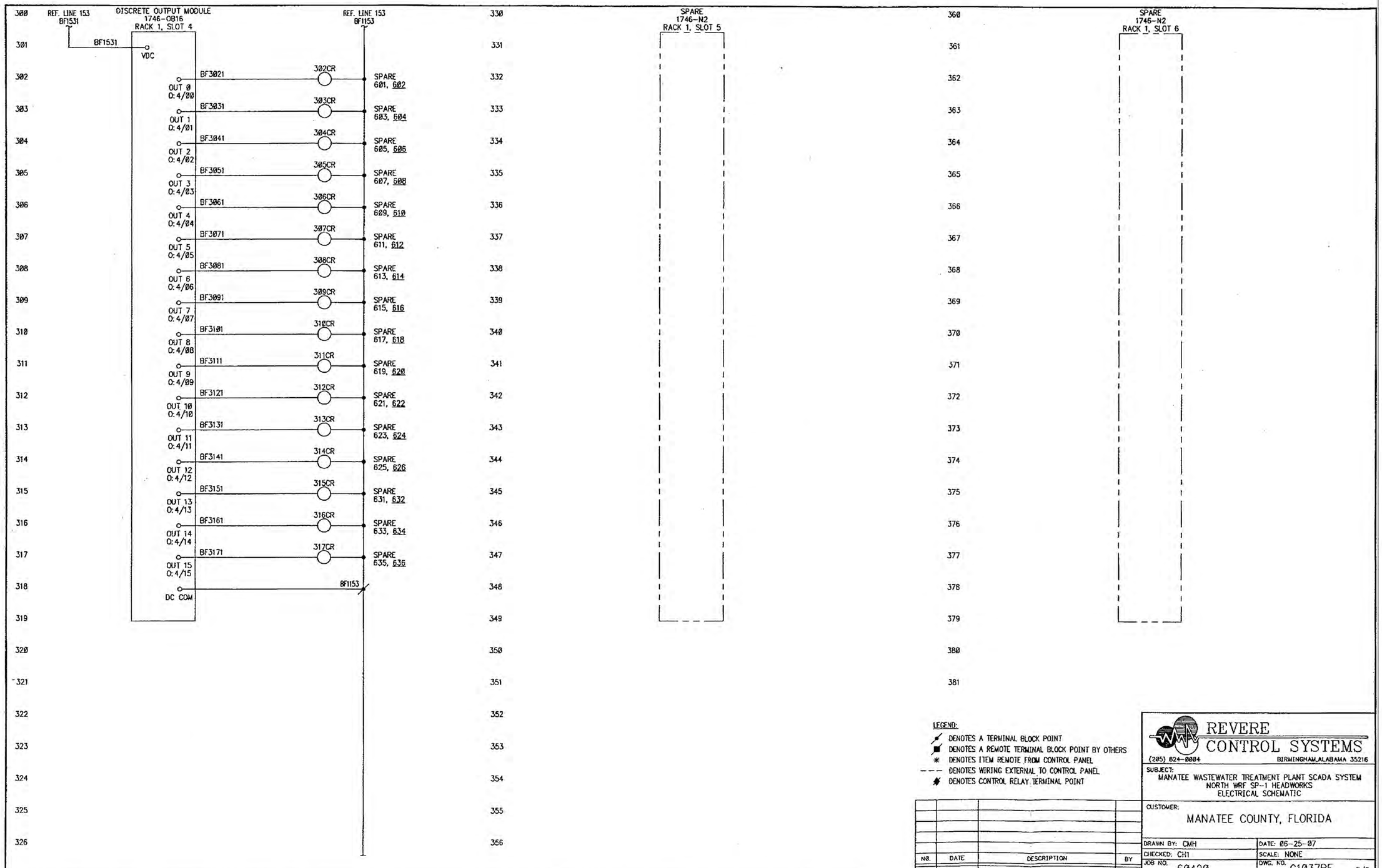

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NO.	DATE	DESCRIPTION	BY
		REVISION	

REVERE CONTROL SYSTEMS
(205) 824-0884 BIRMINGHAM, ALABAMA 35216

SUBJECT:
MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM
NORTH WRF SP-1 HEADWORKS
ELECTRICAL SCHEMATIC

CUSTOMER:
MANATEE COUNTY, FLORIDA

DRAWN BY: CMH	DATE: 06-25-07
CHECKED: CH1	SCALE: NONE
JOB NO. 60420	DWG. NO. G1037BF 5/8

RECORD DRAWING

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PM: D. WILCOX
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September 29, 2008

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING HEADWORKS
SCADA PANEL AS-BUILTS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-19

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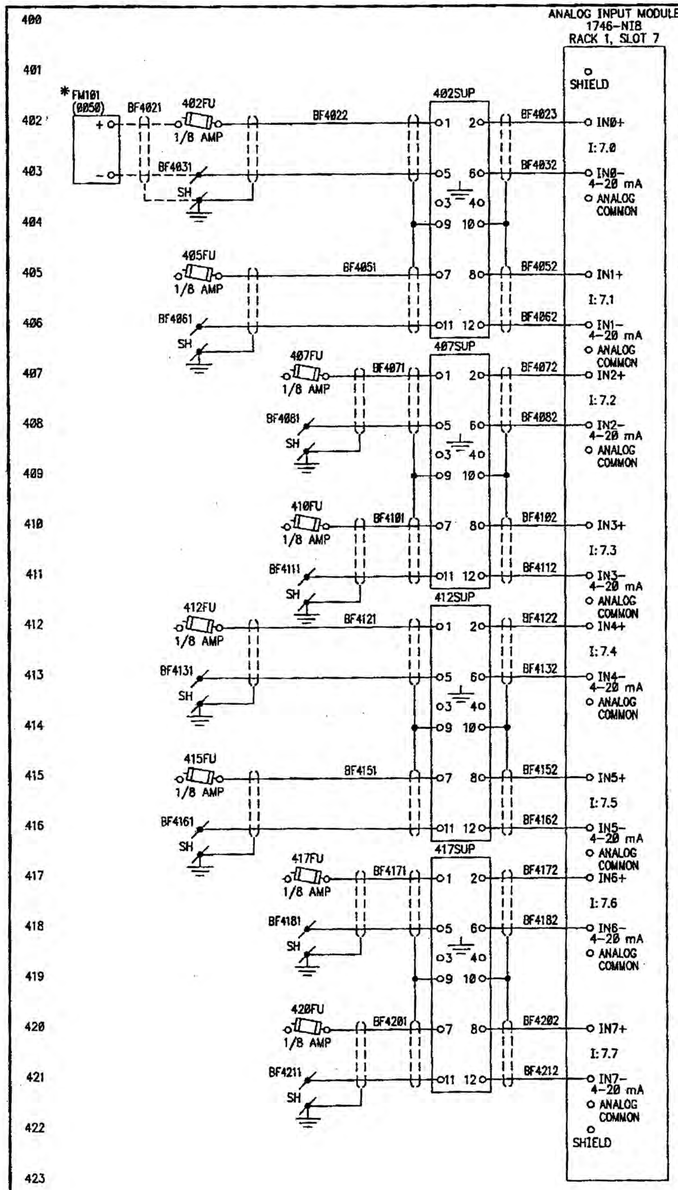

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- DENOTES WIRING EXTERNAL TO CONTROL PANEL
- DENOTES CONTROL RELAY TERMINAL POINT

NO.	DATE	DESCRIPTION	BY

REVISION

REVERE CONTROL SYSTEM
(205) 824-0004 BIRMINGHAM, ALABAMA

SUBJECT:
MANATEE WASTEWATER TREATMENT PLANT SCADA SYS
NORTH WRF SP-1 HEADWORKS
ELECTRICAL SCHEMATIC

CUSTOMER:
MANATEE COUNTY, FLORIDA

DRAWN BY: CMH | DATE: 06-25-07
CHECKED: CH1 | SCALE: NONE
JOB NO. 60420 | DWG. NO. G1037BF

RECORD DRAWING

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

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URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: September 29, 2008

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING HEADWORKS
SCADA PANEL AS-BUILTS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-20

PLOTTED: May 25, 2010 3:40 PM PLOTTED BY: SCHEUERMAN, JAMES
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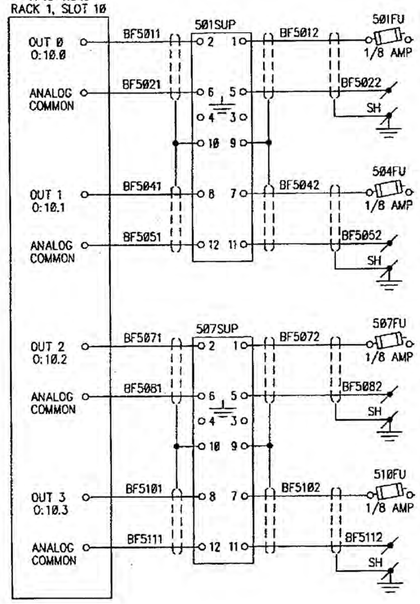
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

500 ANALOG OUTPUT MODULE
1746-NO4I
RACK 1, SLOT 10



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SPARE
1746-N2
RACK 1, SLOT 11

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581

SPARE
1746-N2
RACK 1, SLOT 12

LEGEND:
- DENOTES A TERMINAL BLOCK POINT
- DENOTES A REMOTE TERMINAL BLOCK POINT BY OTHERS
- DENOTES ITEM REMOTE FROM CONTROL PANEL
- DENOTES WIRING EXTERNAL TO CONTROL PANEL
- DENOTES CONTROL RELAY TERMINAL POINT

NO.	DATE	DESCRIPTION	BY
		REVISION	

REVERE CONTROL SYSTEMS
(205) 824-0004 BIRMINGHAM, ALABAMA 35216

SUBJECT:
MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM
NORTH WRF SP-1 HEADWORKS
ELECTRICAL SCHEMATIC

CUSTOMER:
MANATEE COUNTY, FLORIDA

DRAWN BY: CMH	DATE: 06-25-07
CHECKED: CH1	SCALE: NONE
JOB NO. 60420	DWG. NO. G1037BF 7/8

RECORD DRAWING

PLOTTED May 25, 2010 3:41 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\E-21 EXISTING HEADWORKS SCADA PANEL AS-BUILTS.DWG

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: September 29, 2008

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING HEADWORKS
SCADA PANEL AS-BUILTS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-21

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PLOTTED May 25, 2010 3:41 PM PLOTTED BY: SCHEUERMAN, JAMES
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600		630	660
601	BF6011 — 302CR — BF6012	631	661
602	302CR — BF6021 SPARE	632	662
603	BF6031 — 303CR — BF6032	633	663
604	303CR — BF6041 SPARE	634	664
605	BF6051 — 304CR — BF6052	635	665
606	304CR — BF6061 SPARE	636	666
607	BF6071 — 305CR — BF6072	637	667
608	305CR — BF6081 SPARE	638	668
609	BF6091 — 306CR — BF6092	639	669
610	306CR — BF6101 SPARE	640	670
611	BF6111 — 307CR — BF6112	641	671
612	307CR — BF6121 SPARE	642	672
613	BF6131 — 308CR — BF6132	643	673
614	308CR — BF6141 SPARE	644	674
615	BF6151 — 309CR — BF6152	645	675
616	309CR — BF6161 SPARE	646	676
617	BF6171 — 310CR — BF6172	647	677
618	310CR — BF6181 SPARE	648	678
619	BF6191 — 311CR — BF6192	649	679
620	311CR — BF6201 SPARE	650	680
621	BF6211 — 312CR — BF6212	651	
622	312CR — BF6221 SPARE	652	
623	BF6231 — 313CR — BF6232	653	
624	313CR — BF6241 SPARE	654	
625	BF6251 — 314CR — BF6252	655	
626	314CR — BF6261 SPARE	656	

630		660	
631	BF6311 — 315CR — BF6312	661	
632	315CR — BF6321 SPARE	662	
633	BF6331 — 316CR — BF6332	663	
634	316CR — BF6341 SPARE	664	
635	BF6351 — 317CR — BF6352	665	
636	317CR — BF6361 SPARE	666	
637		667	
638		668	
639		669	
640		670	
641		671	
642		672	
643		673	
644		674	
645		675	
646		676	
647		677	
648		678	
649		679	
650		680	

NOTE:
CONTACT RATING 6A @ 250V AC/DC

LEGEND:
- DENOTES A TERMINAL BLOCK POINT
- DENOTES A REMOTE TERMINAL BLOCK POINT BY OTHERS
- DENOTES ITEM REMOTE FROM CONTROL PANEL
- DENOTES WIRING EXTERNAL TO CONTROL PANEL
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SUBJECT:
MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM
NORTH WRF SP-1 HEADWORKS
ELECTRICAL SCHEMATIC

CUSTOMER:
MANATEE COUNTY, FLORIDA

NO.	DATE	DESCRIPTION	BY
		REVISION	

DRAWN BY: CMH — DATE: 06-25-07
CHECKED: CH1 — SCALE: NONE
JOB NO. 60420 — DWG. NO. G1037BF 8/8

RECORD DRAWING

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Florida Engineering Number: 000002

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REVISIONS

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PM: D. WILCOX
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DRW: D. ELLIS
FILE SAVE DATE: September 29, 2008

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

EXISTING HEADWORKS SCADA PANEL AS-BUILTS

GARRET S. KERLY, P.E.
FLORIDA P.E. NO. 54952

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

E-22

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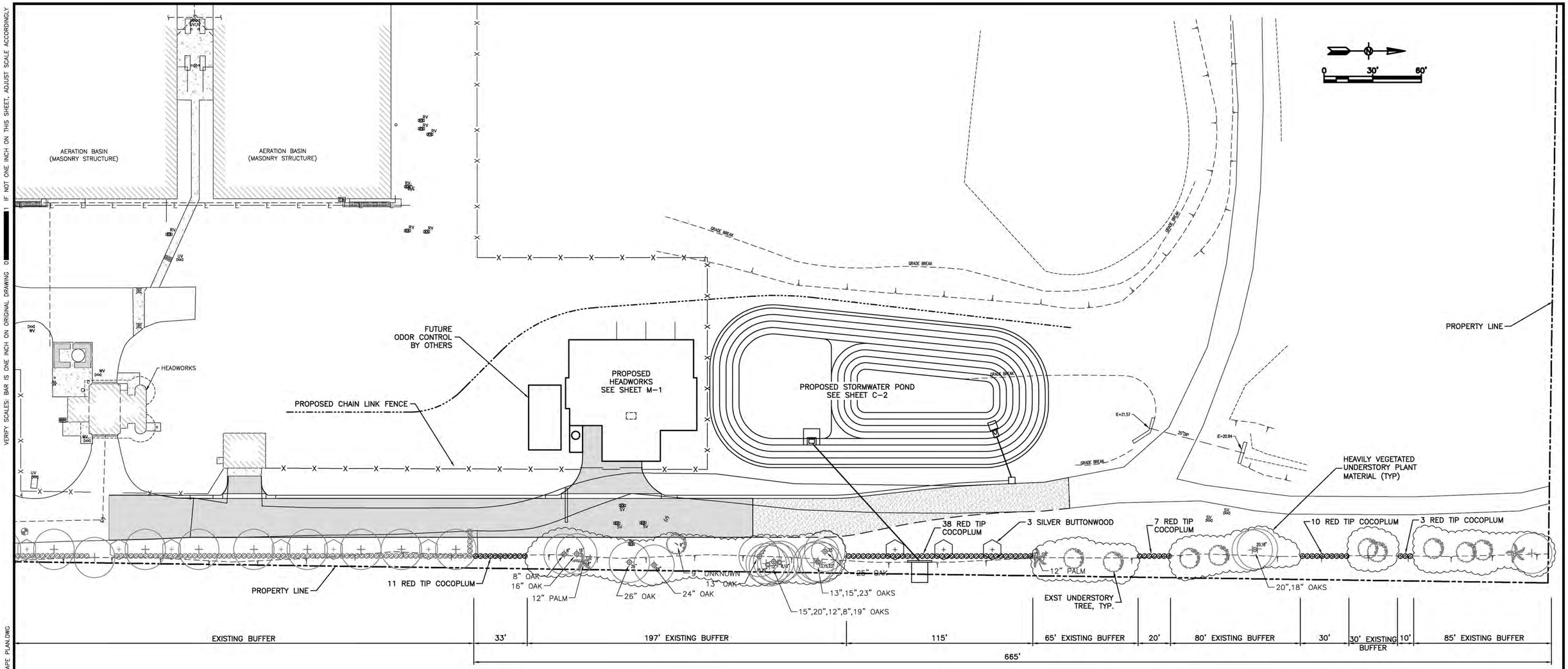

LEGEND

- PROPOSED SILVER BUTTONWOOD
- PROPOSED RED TIP COCOPLUM
- EXISTING LIVE OAK
- EXISTING SILVER BUTTONWOOD
- EXISTING RED TIP COCOPLUM
- EXISTING PALM TREE
- EXISTING UNDERSTORY TREE

PLANT LIST

QTY.	COMMON NAME	BOTANICAL NAME	MINIMUM SPECIFICATIONS
	TREES		
3	SILVER BUTTONWOOD	*Conocarpus erectus 'Sericeus'*	15 GAL., 6' HT. x 2.5' SPR., 1-1/2" CAL., MULTI TRUNK, 3-5 STEMS., FL. #1, AS SHOWN
	SHRUBS		
69	RED TIP COCOPLUM	*Chrysobalanus icaco 'Red Tip'*	5 GAL., 36" HT. x 18" SPR., 36" O.C., FL. #1

NOTES

1. THEIR ARE NO EXISTING TREES IN THE PROJECT AREA TO BE CLEARED, ONLY EXISTING LAWN / GRASS.
2. ALL TREE AND SHRUBS IN THE EXISTING BUFFER SHALL BE PROTECTED DURING CONSTRUCTION.

LANDSCAPE TABULATIONS

TOTAL BUFFER LENGTH - 665 LF
EXISTING BUFFER LENGTH - 457 LF
BUFFER REQUIRED - 208 LF
BUFFER CANOPY TREES REQUIRED - 13 = 665 LF X 2 TREES / 100 LF
BUFFER CANOPY TREES PROVIDED - 16 (ALL EXISTING OAKS)
BUFFER UNDERSTORY TREES REQUIRED - 13 = 665 LF X 2 TREES / 100 LF
BUFFER UNDERSTORY TREES PROVIDED - 13 = 3 PROPOSED + 10 EXISTING
BUFFER 5 GAL. SHRUBS REQUIRED - 69 = 208 LF X 33 SHRUBS / 100 LF
BUFFER - 5 GAL. SHRUBS PROVIDED - 69

RECORD DRAWING

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Florida Engineering Number: 000002

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REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 27, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

LANDSCAPE PLAN

PAUL D KURTZ, RLA.
FLORIDA RLA NO. 0001716

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

L-1

PLOTTED May 25, 2010 3:41 PM PLOTTED BY: SCHEUERMAN, JAMES
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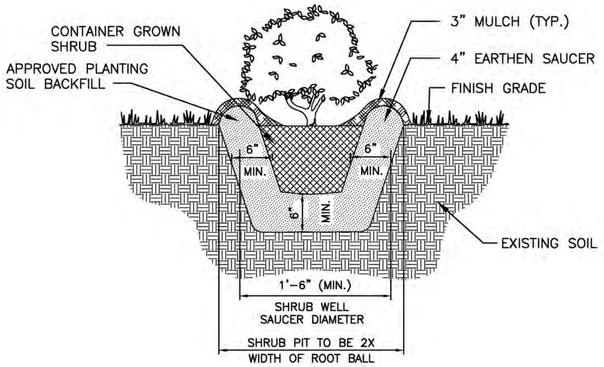
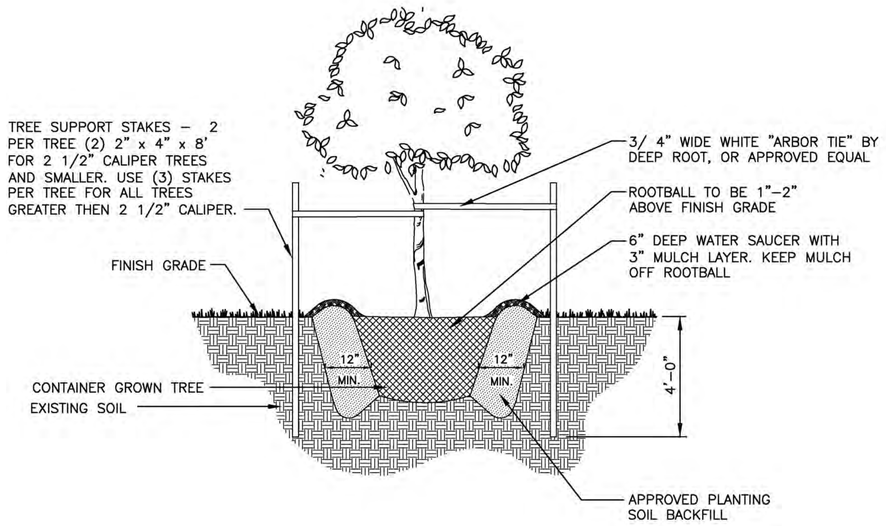
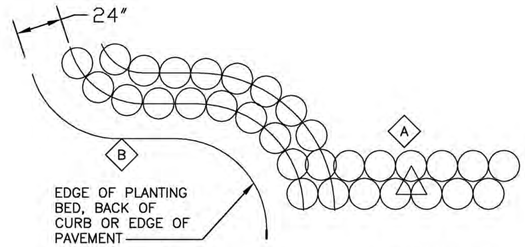


1 SHRUB PLANTING DETAIL
NTS



2 TREE PLANTING DETAIL
NTS



A SHRUBS & GROUNDCOVERS ADJACENT TO STRAIGHT EDGES SHALL BE TRIANGULAR SPACED IN ROWS PARALLEL TO THE STRAIGHT EDGE.

B SHRUBS & GROUNDCOVERS ADJACENT TO CURVED EDGES SHALL BE PLANTED IN ROWS PARALLEL TO THE CURVED EDGE.

3 SHRUB LAYOUT DETAIL
NTS

LANDSCAPE NOTES

1. THE WORK CONSISTS OF THE COMPLETE PLANT MATERIAL INSTALLATION AS SHOWN ON THE DRAWINGS AND AS HEREIN SPECIFIED. THIS WORK SHALL INCLUDE BUT IS NOT LIMITED TO THE SUPPLYING OF ALL PLANT MATERIAL SPECIFIED, THE FURNISHING OF LABOR, EQUIPMENT, AND MATERIALS CALLED FOR, AND PERFORMING ALL OPERATIONS IN CONNECTION WITH THE LANDSCAPE INSTALLATION AS SHOWN ON THESE PLANS. FURTHER, THE WORK SHALL INCLUDE THE MAINTENANCE OF ALL PLANTS AND PLANTING AREAS UNTIL ACCEPTANCE BY THE OWNER AND THE FULFILLING OF GUARANTEE PROVISIONS SPECIFIED HEREIN.

2. THE CONTRACTOR SHALL BE FULLY ACQUAINTED WITH THE RELATED PAVING, SITE GRADING, WATER SUPPLY, ELECTRICAL SUPPLY, AND OTHER UTILITIES TO PREVENT ANY MISUNDERSTANDING AND TO FACILITATE A TROUBLE FREE INSTALLATION. CALL THE SUNSHINE STATE ONE CALL 1–800–432–4770 PRIOR TO ANY CONSTRUCTION FOR UTILITY COORDINATION. IN ADDITION, NOTIFY THE OWNER A MINIMUM OF 72 HOURS IN ADVANCE OF CONSTRUCTION TO IDENTIFY UTILITY LINE LOCATIONS.

3. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGES TO EXISTING FACILITIES THAT MAY RESULT FROM WORK PERFORMED BY THE CONTRACTOR. THE WORK PERFORMED UNDER THIS CONTRACT WILL INTERFACE WITH OTHER WORK BEING PERFORMED BY OTHER CONTRACTORS. IT WILL BE NECESSARY FOR THE CONTRACTOR TO COORDINATE AND SCHEDULE ACTIVITIES WITH OTHER CONTRACTORS AND THEIR SUBCONTRACTORS.

4. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE, PRIOR TO INSTALLATION OF SUCH MATERIALS. SUBMIT SUBSTITUTION REQUESTS IN WRITING FOR APPROVAL BY OWNER'S REPRESENTATIVE.

5. IN THE EVENT DISCREPANCIES ARE NOTED BETWEEN THE PLANT LIST AND THE ACTUAL NUMBER OF PLANTS SHOWN ON THE PLANS, THE PLANS SHALL CONTROL.

6. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE A MINIMUM OF 48 HOURS PRIOR TO THE DELIVERY OF ANY PLANT MATERIAL. THE PLANT MATERIAL SHALL BE INSPECTED BY THE OWNER'S REPRESENTATIVE PRIOR TO THE UNLOADING OF ANY PLANTS.

7. PLANT MATERIALS WILL BE INSPECTED AT THE JOB SITE BY THE OWNER'S REPRESENTATIVE. WHEN INSPECTION WORK DOES NOT COMPLY WITH PROJECT REQUIREMENTS, CONTRACTOR SHALL REPLACE REJECTED WORK AND CONTINUE SPECIFIED MAINTENANCE UNTIL WORK IS REINSPECTED AND FOUND TO BE ACCEPTABLE. REMOVE REJECTED PLANTS AND MATERIALS FROM THE SITE WITHIN 48 HOURS AND REPLACE WITH ACCEPTABLE MATERIALS.

8. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO DIRECT THE REMOVAL AND REPLACEMENT OF ANY ITEMS WHICH DO NOT REPRESENT SUCH AN INSTALLATION.

9. ALL PLANT MATERIALS SHALL BE GRADE FLORIDA NO. 1 OR BETTER AS OUTLINED UNDER GRADES AND STANDARDS FOR NURSERY PLANTS, LATEST EDITION, FLORIDA DIVISION OF PLANT INDUSTRY, FLORIDA DEPT. OF AGRICULTURE, AND SHALL CONFORM TO ANSI STANDARDS FOR NURSERY STOCK (ANSI Z60.1–1990).

10. ALL PLANTING BEDS SHALL BE MULCHED WITH A THREE (3") INCH LAYER OF FLORIMULCH, IN ACCORDANCE WITH THE PLANTING DETAILS.

11. APPLY "CHIPCO RONSTAR G" PRE–EMERGENT WITH A PROPERLY CALIBRATED GRANULAR APPLICATOR AFTER INITIAL PLANTINGS HAVE BEEN COMPLETED. APPLY AT A RATE OF 4 LBS PER 1000 SQ. FT. OF PLANTED AREA SPECIFIED. DO NOT APPLY PRE–EMERGENT CHEMICAL DIRECTLY ON PLANT MATERIAL.

12. PLANTING SOIL FOR TREE AND SHRUB MATERIALS SHALL CONSIST OF TWO (2) PARTS TOPSOIL, ONE (1) PART CLEAN SAND AND ONE (1) PART COMMERCIAL COMPOST (CONSOLIDATED RESOURCE RECOVERY SCREENED YARD MULCH FINES OR EQUAL). PLANTING SOIL MIXTURE SAMPLES MUST BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL. NO PLANTING SHALL OCCUR UNTIL PLANTING SOIL IS APPROVED.

13. ALL TREES SHRUBS, AND GROUNDCOVER MATERIALS SHALL BE WATERED BY THE CONTRACTOR FROM PLANTING TIME TO 90 DAYS PAST FINAL ACCEPTANCE AS NECESSARY.

14. ALL SOD (GRASS) DAMAGED BY THE CONTRACTOR THAT HAS BEEN DESIGNATED TO REMAIN SHALL BE REPLACED WITH LIKE TYPE BY CONTRACTOR AT THE CONTRACTOR'S EXPENSE. SOD SHALL BE WATERED BY THE CONTRACTOR FROM PLANTING TIME TO 120 DAYS PAST FINAL ACCEPTANCE AS NECESSARY.

15. SOD TYPE SHALL BE ARGENTINE BAHIA AND SHALL BE WELL MATTED WITH ROOTS. THE SOD SHALL BE TAKEN UP IN RECTANGLES PREFERABLY 12" X 24" AND SHALL BE LIVE, FRESH AND UNINJURED AT THE TIME OF PLANTING. SOD SHALL BE REASONABLY FREE OF WEEDS AND OTHER GRASS AND SHALL HAVE A SOIL MAT OF SUFFICIENT THICKNESS ADHERING FIRMLY TO THE ROOTS TO WITHSTAND ALL NECESSARY HANDLING. THE SOD SHALL BE SHADED AND KEPT MOIST UNTIL IT IS PLANTED. DUMPING FROM VEHICLES WILL NOT BE PERMITTED. DAMAGED SOD WILL BE REJECTED. REPLANTING SHALL BE DONE WITHIN 48 HOURS AFTER TIME OF HARVESTING OR SOD SHALL BE KEPT DAMP UNTIL PLANTED.

16. SODDING SCHEDULE:
A. SOFT SPOTS AND INEQUITIES IN GRADE SHALL BE CORRECTED BEFORE BEGINNING SOD WORK.
B. GROUND SHALL BE SUFFICIENTLY MOIST PRIOR TO LAYING OF SOD. CONTRACTOR SHALL WATER AS NEEDED PRIOR TO LAYING SOD.
C. LAY SOD WITHOUT VOIDS, TAMP OR ROLL. SOD SHALL BE THOROUGHLY WATERED. THE SURFACE SHALL BE TRUE TO FINISHED GRADE LINES; EVEN AND FIRM AT ALL POINTS.
D. PLACE SOD WITH STAGGERED JOINTS CLOSELY BUTTED, TAMPED OR ROLLED TO AN EVEN SURFACE TO THE REQUIRED FINISHED GRADE. AVOID CONTINUOUS SEAM ALONG LINES OF WATER FLOW IN SWALES. PLACE SOD IN ROWS AT RIGHT ANGLES TO SLOPE.
E. FERTILIZE.

17. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY CONFLICT OR DISCREPANCY IN PLANS PRIOR TO PERFORMING ANY WORK IN THE AFFECTED AREA.

18. CONTRACTOR SHALL CLEAN UP AND REMOVE ALL SURPLUS AND DISCARDED MATERIALS AND RUBBISH FROM HIS CONSTRUCTION. ON A DAILY BASIS.

19. ALL GROWN PLANT MATERIAL SHALL BE GUARANTEED FOR ONE (1) YEAR AND ALL SOD SHALL BE GUARANTEED FOR 90 DAYS AFTER FINAL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.

20. FINAL INSPECTION WILL NOT TAKE PLACE UNTIL ALL MATERIALS ARE PLANTED/INSTALLED CORRECTLY. CONTRACTOR SHALL REQUEST A FINAL INSPECTION BY OWNER'S REPRESENTATIVE IN WRITING.

21. CONTRACTOR WILL BE NOTIFIED BY LETTER OF FINAL ACCEPTANCE WITHIN TEN DAYS AFTER FINAL INSPECTION OR TEN DAYS AFTER REINSPECTION.

22. UPON NOTICE OF FINAL ACCEPTANCE, THE OWNER WILL ASSUME MAINTENANCE AND THE CONTRACTOR'S WARRANTY PERIOD BEGINS.

RECORD DRAWING

URS
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1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE AT THE NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

LANDSCAPE DETAILS

PAUL D KURTZ, RLA.
FLORIDA RLA NO. 0001716

PROJECT STATUS
RECORD DRAWINGS MAY 2010

L–2

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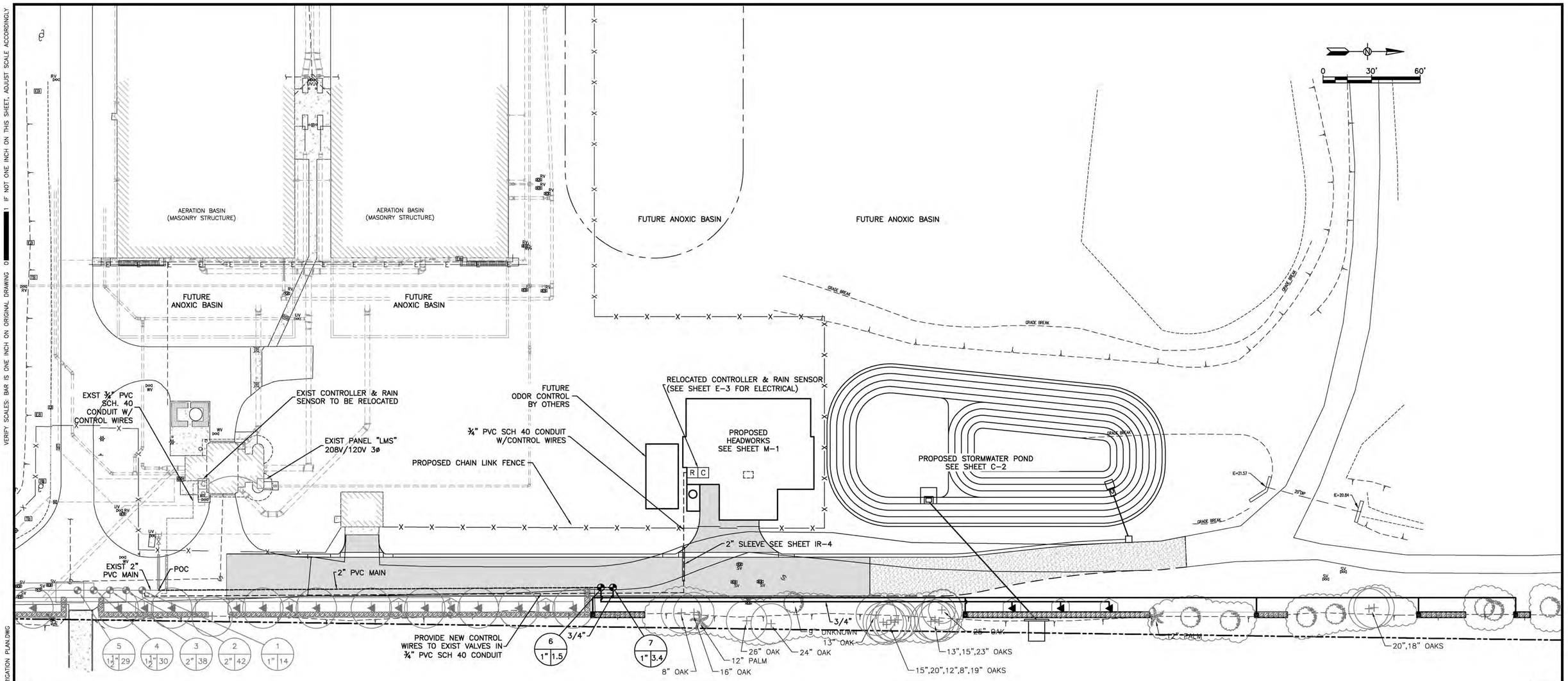

LEGEND

- PVC SCH 80 SLEEVE, (SEE PLAN FOR SIZES)
- PVC SCH 40 MAIN, (SEE PLAN FOR SIZES)
- PVC CLASS 200 LATERAL, (SEE PLAN FOR SIZES)
- NETAFIM TLDL-9-12-XXX DRIPLINE (12" EMITTER SPACING, 18" ROW SPACING)

- BRASS GATE VALVE IN CONCRETE VALVE BOX WITH CAST IRON COVER. (LINE SIZE)
- RAIN BIRD QUICK COUPLER IN CONCRETE VALVE BOX WITH CAST IRON COVER
- PVC LATERAL LINE CONNECTION TO PVC HEADER MANIFOLD

- P.O.C. POINT OF CONNECTION TO 2" RECLAIMED WATERLINE. CUT IN 2"x2" TEE W/ CORP STOP.
- C RAIN BIRD ESP-LX PLUS SERIES (RELOCATE TO SOUTH EXTERIOR WALL OF GRIT UNIT OF PROPOSED HEADWORKS)
- R HUNTER MINI-CLIK RAIN SENSOR (MOUNTED ON TOP OF PROPOSED HEADWORKS)
- RAIN BIRD 1400 SERIES BUBBLER – 1402 (0.5 GPM) (TWO BUBBLERS PER SYMBOL LOCATION AS SHOWN ON PLAN)
- RAIN BIRD PESB-PRS-D SERIES REMOTE CONTROL VALVE WITH PRESSURE REGULATING MODULE IN CONCRETE VALVE BOX WITH CAST IRON COVER

ZONE NUMBER / VALVE SIZE / GALLONS PER MINUTE

LFDL = LINEAR FEET OF DRIPLINE

VALVE TABLE

ZONE #	VALVE SIZE	GPM	TYPE
6	1"	1.5	BUBBLER
7	1"	3.4	DRIP

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ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 27, 2010

INFLUENT STRUCTURE AT THE NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

IRRIGATION PLAN

PAUL D KURTZ, RLA.
FLORIDA RLA NO. 0001716

PROJECT STATUS
RECORD DRAWINGS
MAY 2010

IR-1

PLOTTED May 25, 2010 3:41 PM PLOTTED BY: SCHEUERMAN, JAMES
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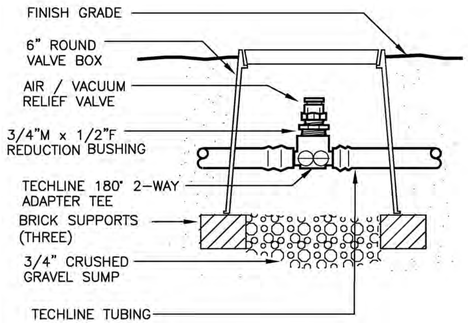
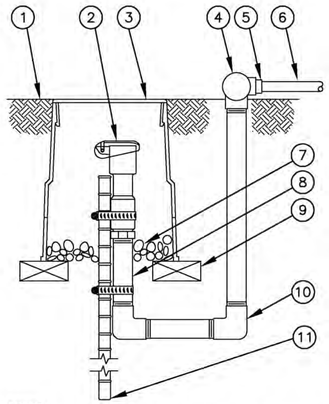


1 NETAFIM AR VACUUM
NOT TO SCALE

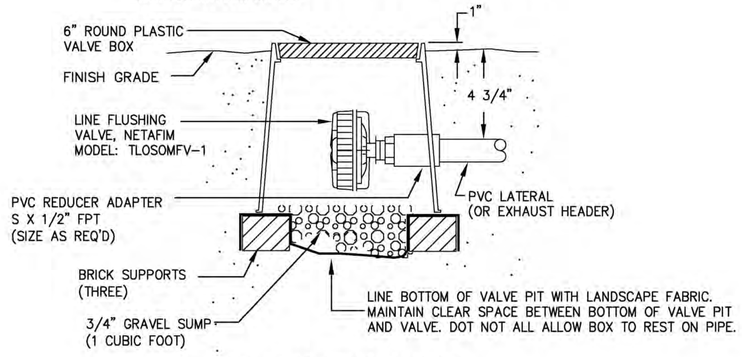


1. FINISH GRADE/TOP OF MULCH
2. QUICK-COUPLING VALVE: RAIN BIRD MODEL 33DNP
3. RECTANGULAR VALVE BOX WITH PURPLE COVER: 6-INCH SIZE
4. PVC SCH 40 SOC X SOC X 3/4-INCH FIPT ON PVC DISTRIBUTION MANIFOLD
5. 1/2-INCH COMP X 3/4-INCH MPT ADAPTER
6. NETAFIM TECHLINE INTEGRAL DRIPPERLINE
7. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
8. PVC SCH 80 NIPPLE (1 OF 3, LENGTH AS REQUIRED)
9. BRICK (1 OF 2)
10. PVC SCH 40 ELL (1 OF 2)
11. #4 REBAR STAKE WITH STAINLESS STEEL GEAR CLAMPS OR APPROVED EQUAL SUPPORT SYSTEM (30-INCH MIN. LENGTH)

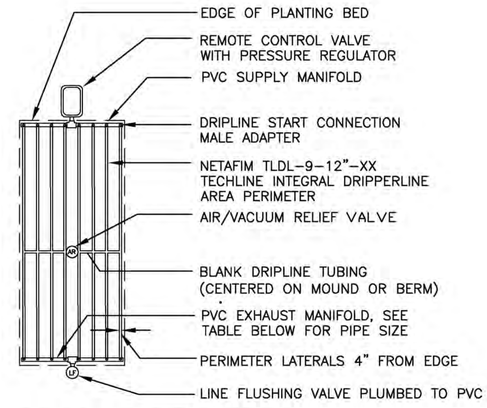
NOTE:
1. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.
2. IF POLYETHYLENE IS USED FOR DISTRIBUTION MANIFOLD, SUBSTITUTE 3/4 – INCH FIPT INSERT TEE FOR SCH 40 TEE.

2 LANDSCAPE DRIPLINE FLUSH POINT
NOT TO SCALE

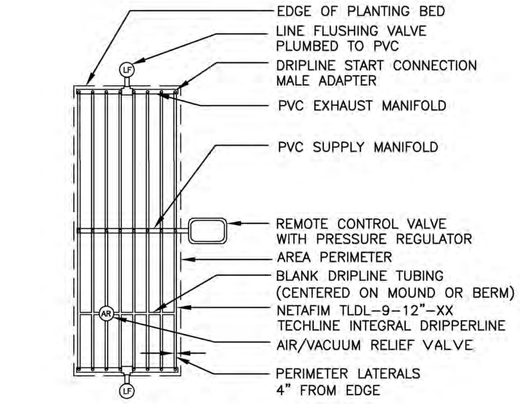
NOTE: MAXIMUM VALVE FLOW RATE, 15 GPM. USE MULTIPLE FLUSH VALVES AS ZONE FLOW RATE REQUIRES. REFER TO PLANS FOR TOTAL ZONE FLOW RATES.



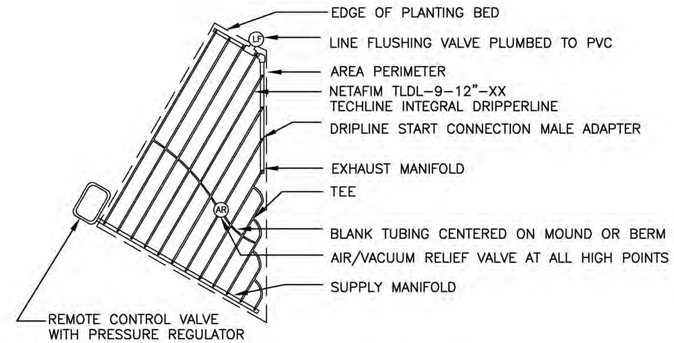
3 LINE FLUSHING VALVE
NOT TO SCALE



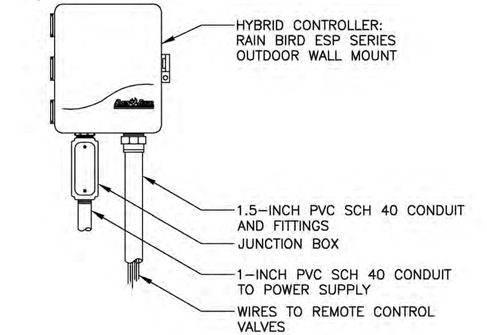
4 END FEED LAYOUT
NOT TO SCALE



5 CENTER FEED LAYOUT
NOT TO SCALE

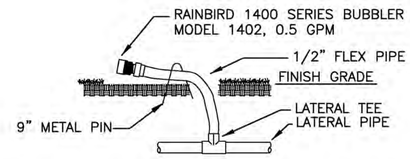


6 IRREGULAR AREAS: TRIANGULAR
NOT TO SCALE



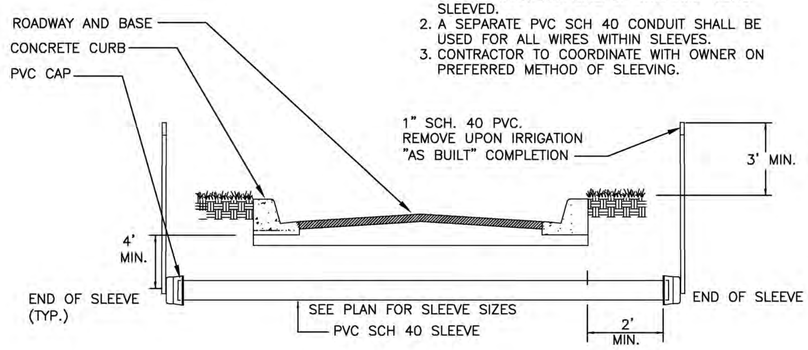
7 HYBRID CONTROLLER
NOT TO SCALE

NOTE: INSTALL TWO BUBBLERS PER TREE ON TOP OF ROOTBALL. BUBBLERS TO BE LOCATED 180° APART, EQUALLY SPACED.



8 RAIN BIRD 1400 SERIES BUBBLER
NOT TO SCALE

NOTES:
1. SLEEVES SHALL BE A MINIMUM OF TWO TIMES LARGER THAN THE SIZE OF THE PIPE BEING SLEEVED.
2. A SEPARATE PVC SCH 40 CONDUIT SHALL BE USED FOR ALL WIRES WITHIN SLEEVES.
3. CONTRACTOR TO COORDINATE WITH OWNER ON PREFERRED METHOD OF SLEEVING.



9 SLEEVE DETAIL
NOT TO SCALE

RECORD DRAWING

URS
7650 West Courtney Campbell Causeway
Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: April 23, 2010

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

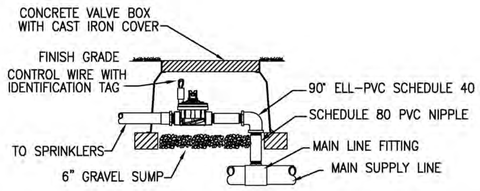
IRRIGATION DETAILS

PAUL D KURTZ, RLA.
FLORIDA RLA NO. 0001716

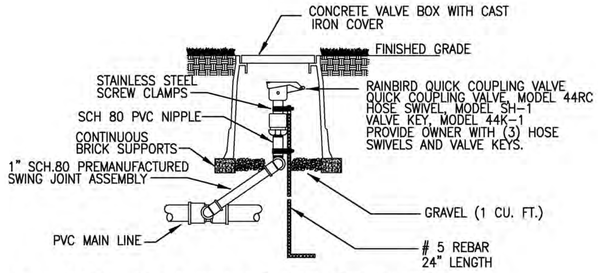
PROJECT STATUS
RECORD DRAWINGS
MAY 2010

IR-2

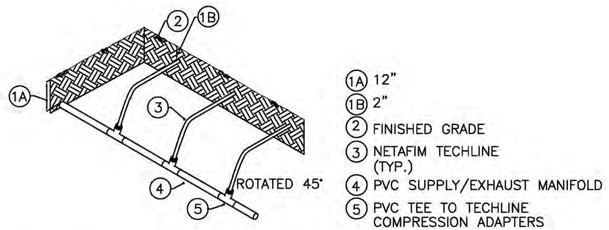
PLOTTED May 25, 2010 3:41 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\IR-2 IRRIGATION DETAILS.DWG



10 RAIN BIRD 100-PRS-D SERIES CONTROL VALVE
NOT TO SCALE



11 RAIN BIRD QUICK COUPLING VALVE
NOT TO SCALE



12 SUPPLY / EXHAUST MANIFOLD
NOT TO SCALE

IRRIGATION NOTES

1) IRRIGATION SYSTEM IS 100% AUTOMATIC AND INCLUDES A RAIN SENSOR WITH A SHUT-OFF DEVICE.
2) THE IRRIGATION WATER SOURCE IS RECLAIMED WATER PRODUCED AT THE PLANT.
3) VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF IRRIGATION SYSTEM. MAINLINE SHALL NOT BE LOCATED WITHOUT PRIOR APPROVAL OF THE PROJECT MANAGER AND THE LANDSCAPE ARCHITECT. ALL UTILITIES AND STRUCTURES MAY NOT BE SHOWN ON THESE PLANS-CONTRACTOR SHALL VERIFY.
4) ALL PRESSURE MAINLINES UNDER ASPHALT PAVEMENT SHALL BE WITHIN SLEEVES AS NOTED. WHERE ELECTRIC VALVE CONTROL LINES PASS THROUGH A SLEEVE WITH OTHER MAIN OR LATERAL LINES THEY SHALL BE CONTAINED WITHIN A SEPARATE, SMALLER CONDUIT.
5) MAINLINE AND VALVES ARE SHOWN IN SCHEMATIC FORM. LOCATE AS NOTED ON PLANS.
6) LOCATE ALL VALVES A MINIMUM OF 24" FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS NOTED OTHERWISE.
7) CONTRACTOR SHALL PROVIDE AN AS-BUILT DRAWING TO THE OWNER'S REPRESENTATIVE PRIOR TO FINAL ACCEPTANCE. AS-BUILT IS INCLUDED IN PRICE BID FOR IRRIGATION. ALL SLEEVES UTILIZED BY THE IRRIGATION CONTRACTOR, WHETHER INSTALLED BY HIM OR NOT, SHALL BE LOCATED ON THE "AS-BUILT" DRAWINGS. THE DEPTH BELOW FINISH GRADE, TO THE NEAREST FOOT OF EACH END OF EACH SLEEVE SHALL BE NOTED AT EACH SLEEVE LOCATION ON THE "AS-BUILT" DRAWINGS.
8) ALL UNSIZED PIPE SHALL BE 3/4" UNLESS OTHERWISE NOTED.
9) ALL CONTROL VALVES AND QUICK COUPLER VALVES SHALL BE INSTALLED IN CONCRETE VALVE BOXES WITH CAST IRON COVER.
10) IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO MANATEE COUNTY AND THE GENERAL CONTRACTOR.
11) VERIFY LOCATION OF CONTROLLER AND MAINLINE POINT OF CONNECTION AT PROJECT SITE WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
12) ELECTRIC SERVICE TO THE CONTROLLER SHALL BE PROVIDED BY THE IRRIGATION CONTRACTOR. ELECTRICAL INSTALLATION SHALL PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.
13) ALL 24 VAC WIRING SHALL BE OF DIRECT BURIAL COPPER WIRE AS FOLLOWS: CONTROL WIRES - 14 GAUGE RED COLOR COMMON WIRES - 12 GAUGE WHITE COLOR SPARE WIRES - 14 GAUGE BLACK COLOR
14) INSTALLATION OF WORK SHALL BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON THE SITE.
15) RESTORE ALL DISTURBED AREAS. SEED AREAS WITH ARGENTINA BAHIA GRASS THAT ARE LESS THAN 12" WIDE AT THE RATE OF 10 LBS. PER 1000 SQUARE FEET. SOD AREAS 12" OR WIDER WITH ARGENTINA BAHIA GRASS SOD. PROVIDE A SMOOTH TRANSITION BETWEEN THE REPAIRED DISTURBED AREAS AND THE UNDISTURBED AREAS.

RECORD DRAWING

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLOTTED May 25, 2010 3:41 PM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12007031 INFLU STRUCTURE NWRF DESIGN\CADD\CONSTRUCTION DRAWINGS\IR-3 IRRIGATION DETAILS.DWG

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Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
1	JRS	04/26/10	RECORD DRAWING

REVISIONS

URS JOB NUMBER 12007031
PM: D. WILCOX
ENG: C. OSMANSKI
DRW: D. ELLIS
FILE SAVE DATE: August 5, 2008

INFLUENT STRUCTURE
AT THE
NORTH WATER RECLAMATION FACILITY
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

IRRIGATION DETAILS

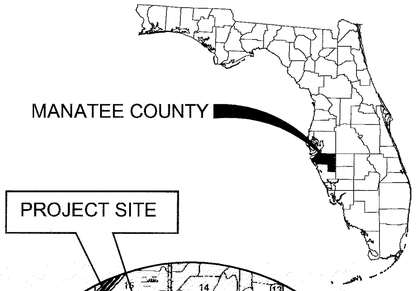
PAUL D KURTZ, RLA.
FLORIDA RLA NO. 0001716

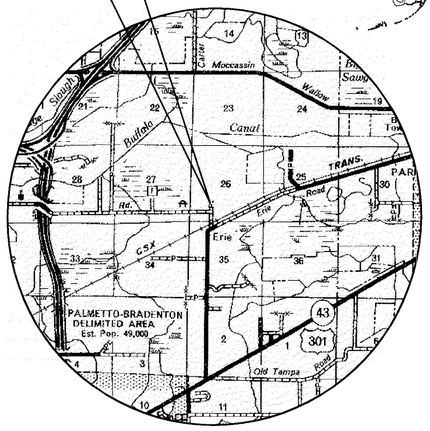
PROJECT STATUS
RECORD DRAWINGS
MAY 2010

IR-3

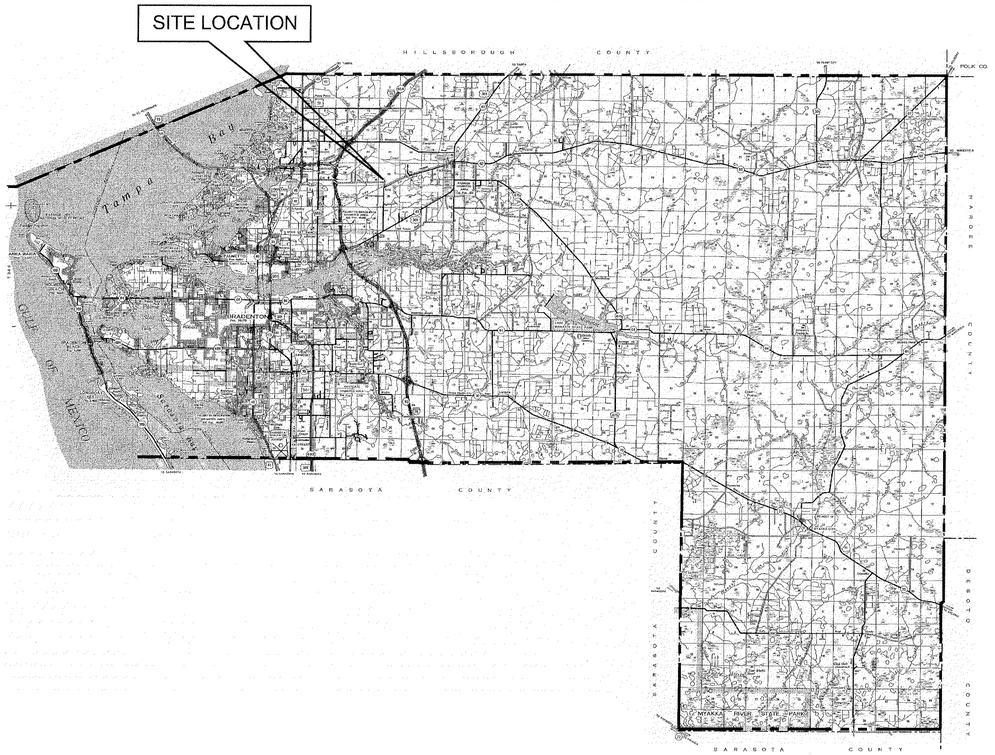
MANATEE COUNTY, FLORIDA
NORTH REGIONAL WASTEWATER TREATMENT PLANT LAKE FILTERING SYSTEM
PROJECT NO. 6011192

RECORD DRAWINGS





PROJECT MAP
N.T.S.



NO.	INDEX OF SHEETS
G-1	COVER SHEET
G-2	GENERAL NOTES, ABBREVIATIONS, SYMBOLS & OVERALL SITE PLAN
C-1	YARD PIPING
C-2	YARD PIPING PROFILE AND DETAILS
M-1	MECHANICAL PLAN
M-2	MECHANICAL SECTIONS
M-3	FLOW METER PLAN AND SECTION
E-1	ELECTRICAL FILTER PLAN
E-2	ELECTRICAL SITE PLAN
E-3	ELECTRICAL ROOM AT DEWATERING BUILDING
E-4	ELECTRICAL DETAILS
E-5	ELECTRICAL DETAILS

VISTA SYSTEMS
P.O. Box 74
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Reg. No. 6268

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	T. SONNENBERG	03/01/03
SCALE:	N.T.S.	
FILE NAME:	COVER SHEET.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY
MANATEE COUNTY, FLORIDA

COVER SHEET

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

PROJ. NO: 12003357
DWG DATE: AUGUST 2003
DWG NO:
SHEET: G-1

23-16

4438.001

Drawing Name: X:\MANATEE PROJECTS\12003357 NRWWTP Lake Filtering System\CADD\COVER SHEET.dwg
Last Modified: Aug 10, 2005 - 8:23am by dells
Xrefs:

GENERAL NOTES:

GENERAL NOTES:

1. ALL ELEVATIONS ARE BASED ON THE TBM INDICATED AND ARE SHOWN IN FEET.

2. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR LOCATING AND AVOIDING ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND SURFACE. THE CONTRACTOR SHALL REPAIR ALL DAMAGES RESULTING FROM THE CONTRACTORS FAILURE TO COMPLY WITH THIS REQUIREMENT.

3. THE CONTRACTOR SHALL PROVIDE NO LESS THAN A 6 INCH VERTICAL CLEARANCE BETWEEN ALL UTILITIES.

4. PIPE JOINT DEFLECTION SHALL NOT EXCEED 80% OF THE MAXIMUM ALLOWED BY THE MANUFACTURER FOR THE SIZE AND TYPE OF JOINT.

5. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO REFERENCE AND RESTORE PROPERTY CORNERS AND LANDMARKS THAT MAY BE DISTURBED BY CONSTRUCTION.

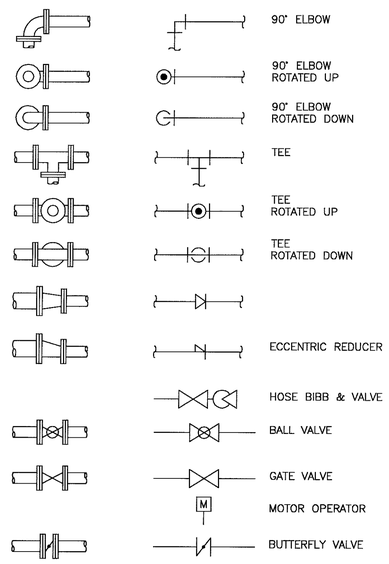
6. THE CONTRACTOR SHALL NOTIFY APPLICABLE UTILITY CONTACT PERSONNEL NOT LESS THAN ONE WEEK PRIOR TO CONSTRUCTION OF FACILITIES IN THEIR RESPECTIVE AREAS.

7. CONTRACTOR SHALL REFER TO EQUIPMENT SHOP DRAWINGS FOR SIZE AND POSITION OF ALL OPENINGS IN STRUCTURES REQUIRED BY THE EQUIPMENT. ENGINEERING DRAWINGS ARE APPROXIMATE.

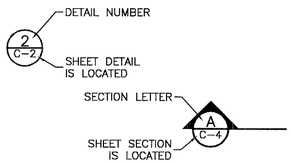
ABBREVIATIONS:

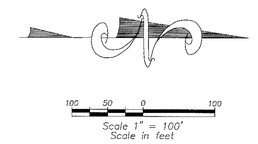
A/C	AIR CONDITIONER
ADPT.	ADAPTER
AL.	ALUM LINE
AM.	AMMONIA
Bo.V.	BALL VALVE
BWD	BACKWASH DRAIN
BWS	BACKWASH SUPPLY
CLG	CHLORINE GAS LINE
CL2S	CHLORINE SOLUTION LINE
CONC.	CONCRETE
CPLG.	COUPLING
D	DRAIN
DI	DUCTILE IRON
ECC.	ECCENTRIC
EFF	EFFLUENT
EL.	ELEVATION
EXIST.	EXISTING
FLG.	FLANGE
FT.	FOOT OR FEET
GAL.	GALVANIZED
LF	LINER FOOT
MIN.	MINIMUM
O.C.	ON CENTER
O/E	OR EQUAL
PE	PLAIN END
PVC	POLYVINYL CHLORIDE PIPE
PW	POTABLE WATER
RCW	RECLAIMED WATER
RED.	REDUCER
RMJ	RESTRAIN MECHANICAL JOINT
SCH.	SCHEDULE
SW	SOLVENT WELD
THD.	THREADED
TS	THICKENED SLUDGE
TYP.	TYPICAL
WBW	WASTE BACKWASH WATER
W/	WITH

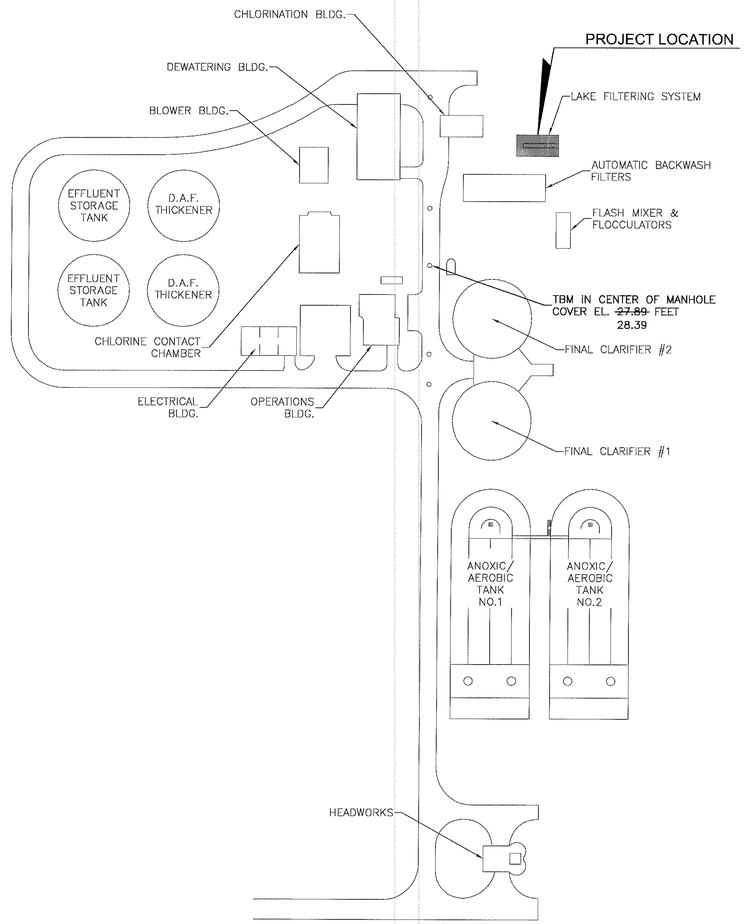
PIPE AND FITTING SYMBOLS



DETAIL & SECTION DESIGNATION







OVERALL SITE PLAN

[0+00, 0.0'R] = RECORD DRAWING INFORMATION
(0+00, 0.0'L) = INFORMATION PROVIDED BY CONTRACTOR

URS Corporation
7650 West Courtney
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Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	T. SONNENBERG	03/01/03
SCALE:	AS SHOWN	
FILE NAME:	SITE PLAN.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY
MANATEE COUNTY, FLORIDA

GENERAL NOTES, ABBREVIATIONS, SYMBOLS & OVERALL SITE PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

PROJ. NO: 12003357
DWG DATE: AUGUST 2003
DWG NO:
SHEET: G-2

4438.002

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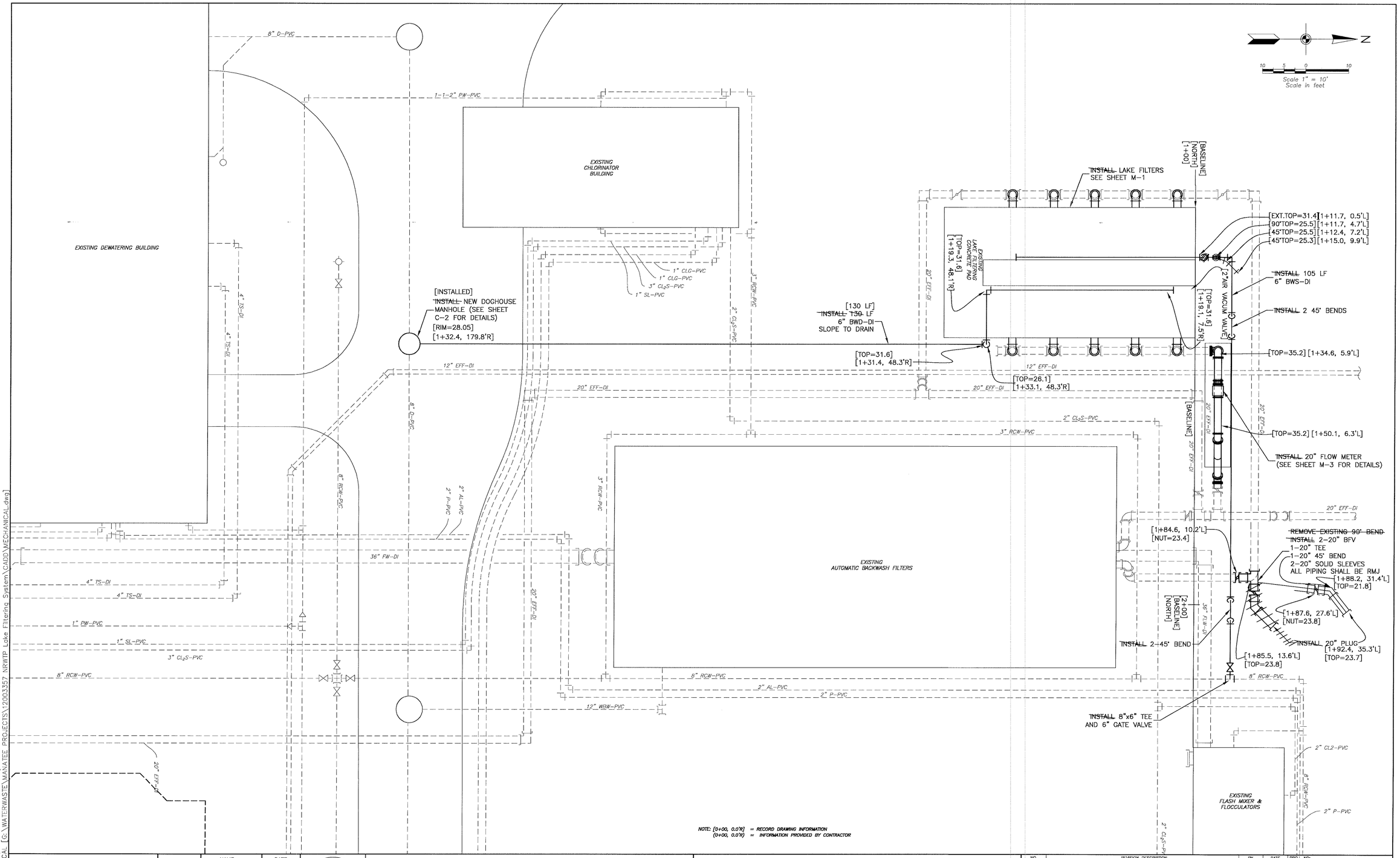
Last Modified: Sep 02, 2005 - 11:41am by dellis
Xrefs:



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Last Modified: Aug 10, 2005 - 8:24am by dells
Xrefs: MECHANICAL [G:\WATERWASTE\MANATEE PROJECTS\12003357 NRWTP Lake Filtering System\CADD\MECHANICAL.dwg]

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	03/01/03
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DRAWN BY:	T. SONNENBERG	03/01/03
SCALE:	AS SHOWN	
FILE NAME:	YARD PIPING1.DWG	

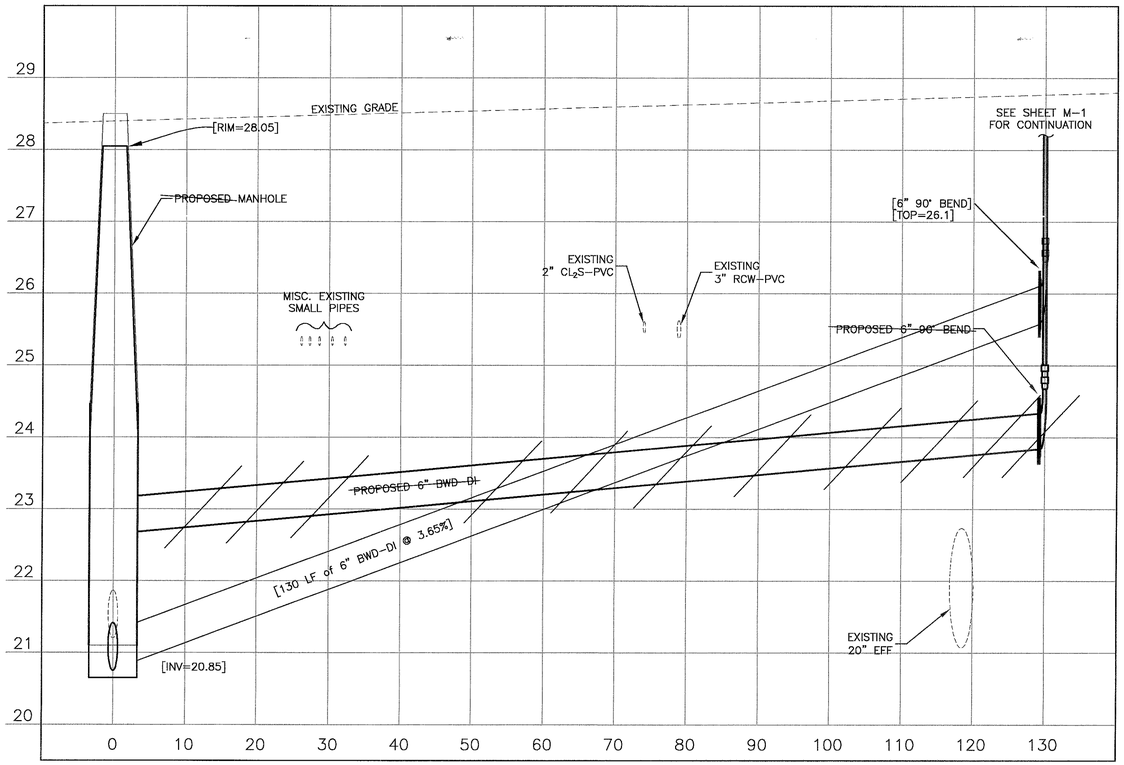
NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY
MANATEE COUNTY, FLORIDA

YARD PIPING

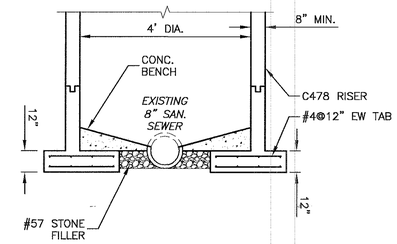
NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

PROJ. NO: 12003357
DWG DATE: AUGUST 2003
DWG NO:
SHEET: C-1

4438.003

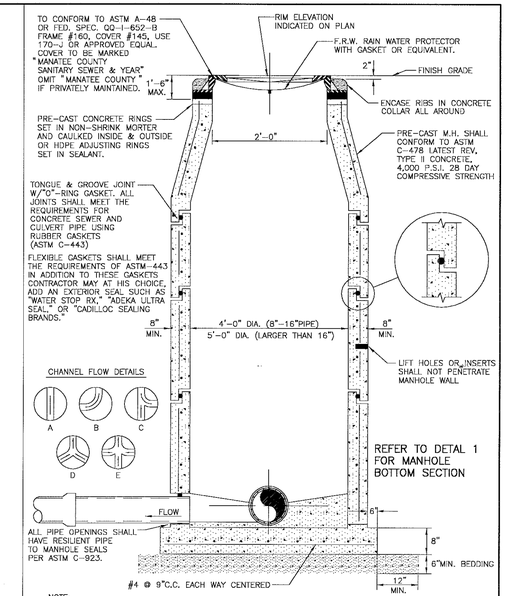


PROPOSED 6" BACKWASH DRAIN PROFILE
SCALE: 1"=10' HOR.
1"=1' VERT.



NOTES:
1. SET MANHOLE OVER PIPE.
2. INSTALL PROTECTIVE INTERIOR COATING PER SEPCIFICATIONS.
3. REMOVE UPPER PORTION OF PIPE TO ACCOMMODATE BY-PASS PUMPS.
4. CONSTRUCT CONCRETE BENCH.
5. AFTER BY-PASS PUMPS HAVE BEEN DEMOBILIZED, INSTALL TOP SLAB.
6. SEE DETAIL US-3 FOR STANDARD MANHOLE DETAILS.

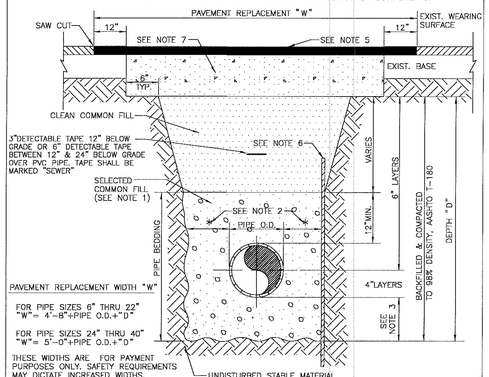
DOGHOUSE MANHOLE BOTTOM SECTION (1)
SCALE: N.T.S.



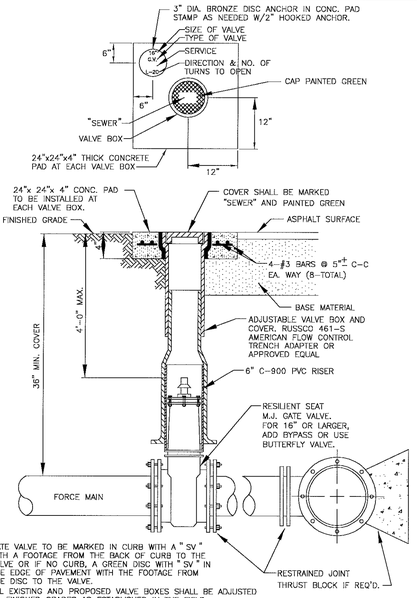
NOTE:
DROP MANHOLES, MANHOLES WITH OPPOSING FLOW (DETAIL E), MANHOLES RECEIVING A FORCE MAIN AND FIRST GRAVITY MANHOLE DOWNSTREAM OF MANHOLES RECEIVING A FORCE MAIN INCLUDING TOP AND BOTTOM SECTIONS SHALL HAVE AN APPROVED LINER.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT			STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR UNDISTURBED FLOW	US-3
REV.BY	DATE	MARCH 18, 1997 DATE OF APPROVAL		
RTH	11/99			

NOTES:
1.) USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2.) 10" MAX. FOR PIPE DIAMETERS LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.
4.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
5.) WEARING SURFACE TO BE SAME TYPE & THICKNESS (1½" MIN.) AS EXISTING PAVEMENT.
6.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE
7.) BASE SHALL BE 6" MINIMUM THICKNESS SAND ASPHALT, 10" MIN. THICKNESS CRUSHED CONCRETE, OR APPROVED EQUAL.
8.) BACKFILL AASHITO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.
9.) TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
10.) NOTES 5.) THRU 9.) ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY TRANSPORTATION DEPARTMENT STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH DETAIL ASPH. PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	US-12
REV.BY	DATE	MARCH 18, 1997 DATE OF APPROVAL		
RTH	11/99			



NOTES:
1. GATE VALVE TO BE MARKED IN CURB WITH A " SV " WITH A FOOTAGE FROM THE BACK OF CURB TO THE VALVE OR IF NO CURB, A GREEN DISC WITH " SV " IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS ESTABLISHED IN THE FIELD.
3. SEWER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".

MANATEE COUNTY PUBLIC WORKS DEPARTMENT			GATE VALVE, BOX, COVER AND TAG	US-16
REV.BY	DATE	MARCH 18, 1997 DATE OF APPROVAL		
RTH	11/99			

NOTE: [0+00, 0.0'R] = RECORD DRAWING INFORMATION
[TOP=0.00] = RECORD DRAWING INFORMATION

Drawing Name: X:\MANATEE PROJECTS\12003357 NRWWTP Lake Filtering System\CADD\YARD PIPING1.dwg
Last Modified: Aug 10, 2005 - 8:24am by dellis
Xrefs: MECHANICAL (G:\WATERWASTE\MANATEE PROJECTS\12003357 NRWTP Lake Filtering System\CADD\MECHANICAL.dwg)

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	T. SONNENBERG	03/01/03
SCALE:	AS SHOWN	
FILE NAME:	SITE PLAN.DWG	

MANATEE COUNTY FLORIDA

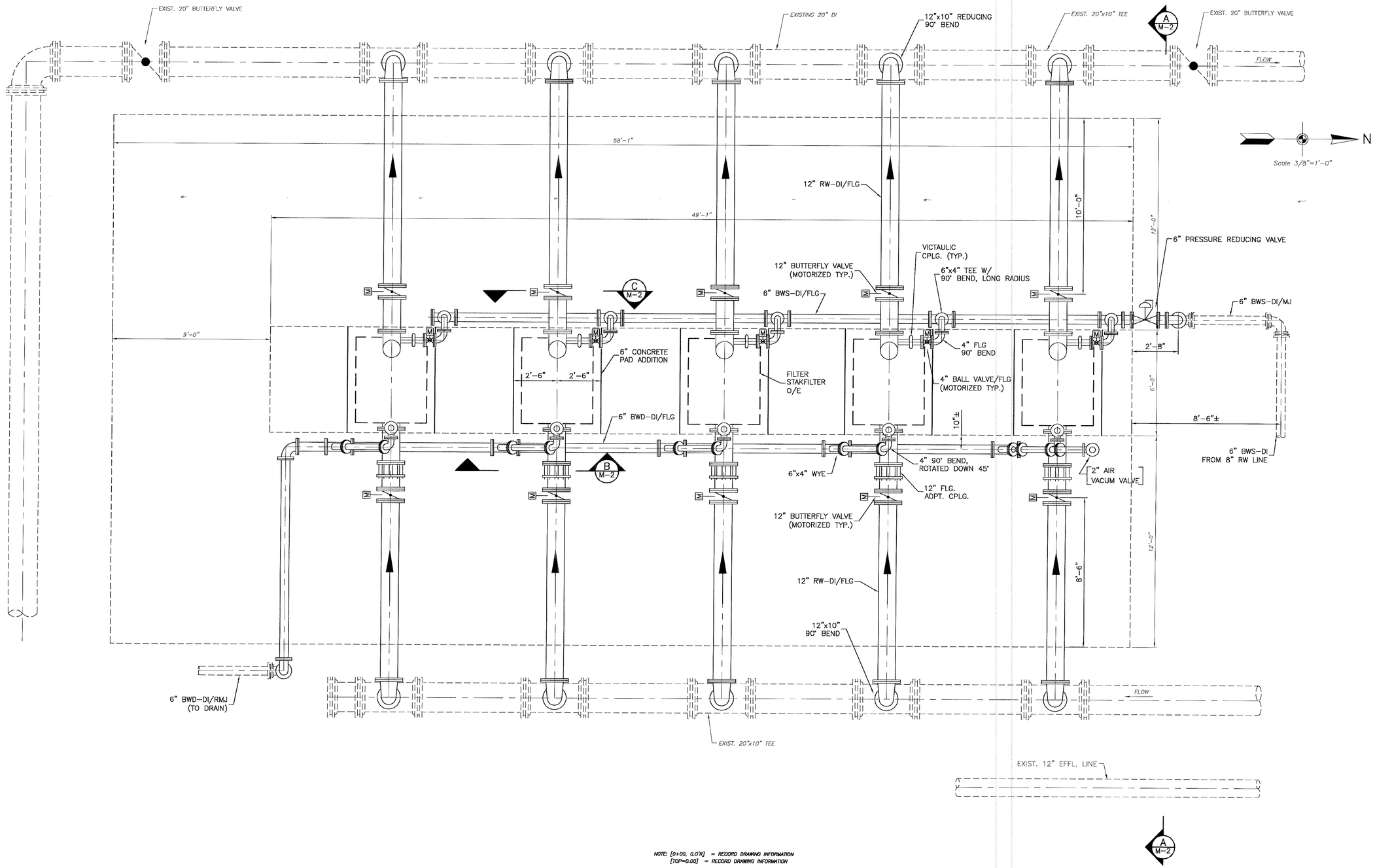
NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY
MANATEE COUNTY, FLORIDA

YARD PIPING
PROFILE AND DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

PROJ. NO: 12003357
DWG DATE: AUGUST 2003
DWG NO:
SHEET: C-2

4438-004



NOTE: [0+00, 0.0'R] = RECORD DRAWING INFORMATION
[TOP=0.00] = RECORD DRAWING INFORMATION

Drawing Name: X:\MANATEE PROJECTS\12003357 NRWWTP Lake Filtering System\CADD\MECHANICAL.dwg
Last Modified: Aug 10, 2005 - 8:25am by dellis
Xrefs:

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	T. SONNENBERG	03/01/03
SCALE:	AS SHOWN	
FILE NAME:	SITE PLAN.DWG	

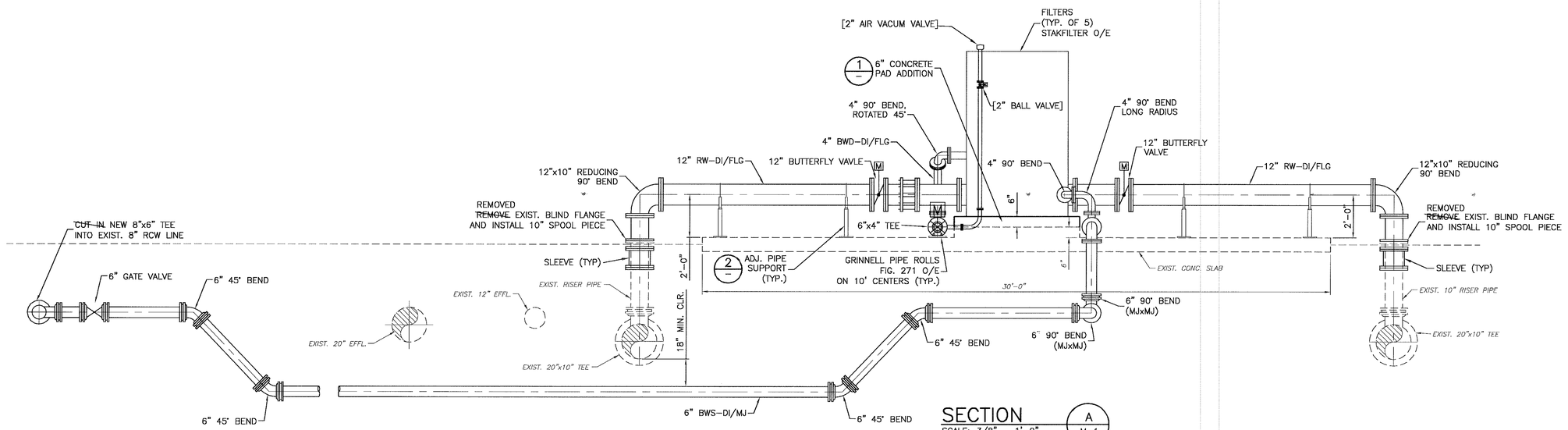
NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY
MANATEE COUNTY, FLORIDA

MECHANICAL PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

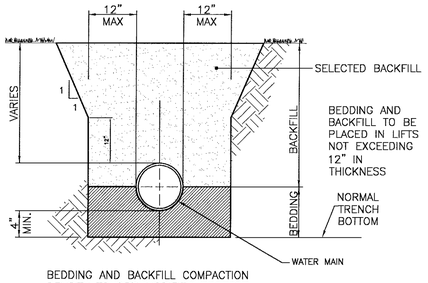
PROJ. NO: 12003357
DWG DATE: AUGUST 2003
DWG NO:
SHEET: M-1

4438.005



SECTION
SCALE: 3/8" = 1'-0"

A / M-1



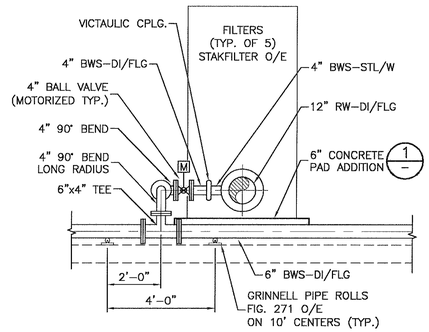
BEDDING AND BACKFILL COMPACTION DENSITY TO 95% MODIFIED PROCTOR A.A.S.H.O. T-180 (ASTM D-1557)

NOTES: FOR BEDDING AND TRENCHING

1. DEPTH FOR REMOVAL FOR UNSUITABLE MATERIAL SHALL BE AS REQUIRED TO REACH SUITABLE FOUNDATION. FOR ROCK OR OTHER NON-CUSHIONING MATERIAL, DEPTH SHALL BE 6" BELOW BOTTOM OF UTILITY.

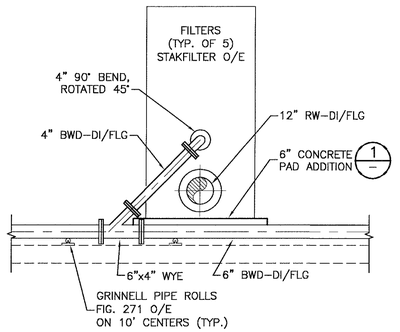
2. ALL BACKFILL AND SELECT MATERIAL UNDER ALL ROADWAYS, DRIVES (INCLUDING DIRT DRIVES), SIDEWALKS AND PARKING AREAS SHALL BE COMPACTED TO 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY, (AASHTO T-180). BACKFILL AND SELECT MATERIAL IN LAWNS AND UNPAVED AREAS UNDER ALL OTHER AREAS SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180).

TYPICAL PIPE TRENCH DETAIL
DETAIL 3 / – — SCALE: NTS



SECTION
SCALE: 3/8" = 1'-0"

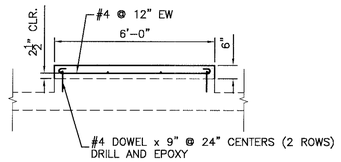
C / M-1



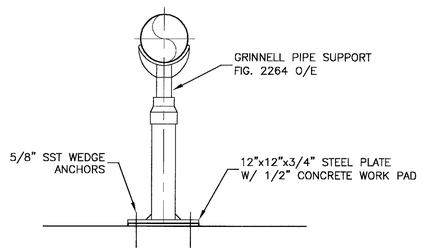
SECTION
SCALE: 3/8" = 1'-0"

B / M-1

NOTE: [0+00, 0.0'R] = RECORD DRAWING INFORMATION
[TOP=0.00] = RECORD DRAWING INFORMATION



CONCRETE PAD ADDITION
DETAIL 1 / – — SCALE: N.T.S.



PIPE SUPPORT
DETAIL 2 / – — SCALE: 1/2" = 1'-0"

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	T. SONNENBERG	03/01/03
SCALE:	AS SHOWN	
FILE NAME:	SITE PLAN.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY
MANATEE COUNTY, FLORIDA

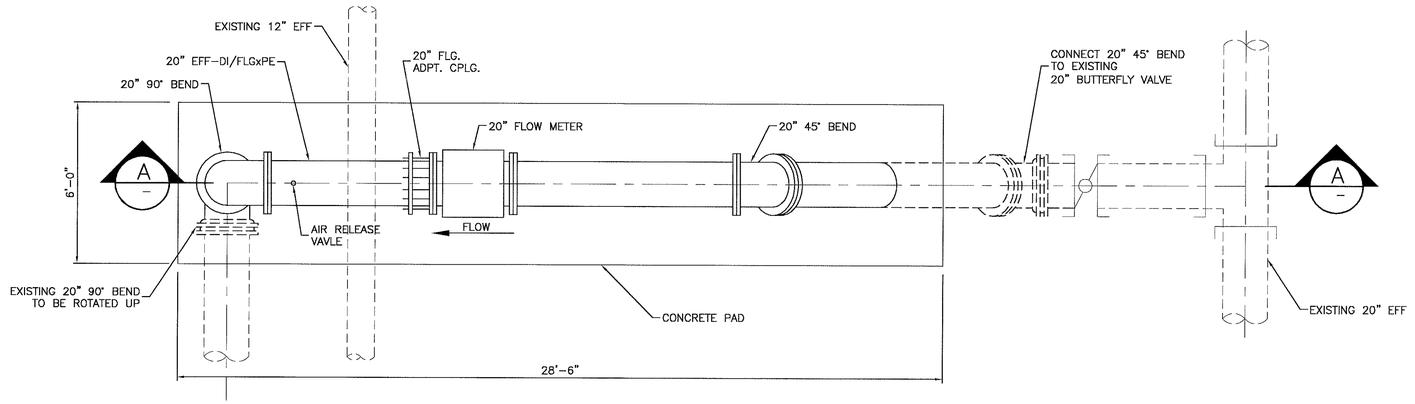
MECHANICAL SECTIONS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

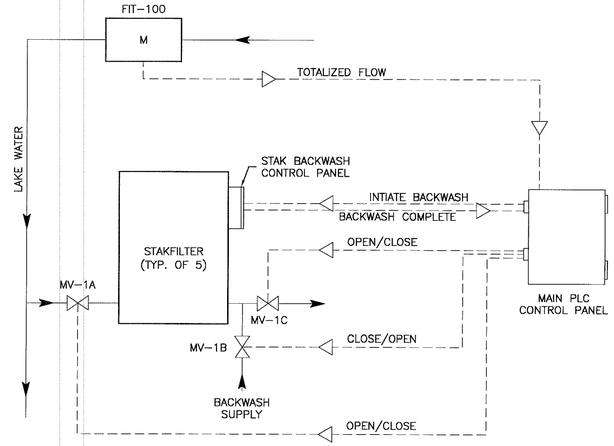
PROJ. NO: 12003357
DWG DATE: AUGUST 2003
DWG NO:
SHEET: M-2

4438.006

Drawing Name: X:\MANATEE PROJECTS\12003357 NRWWTP Lake Filtering System\CADD\MECHANICAL.dwg
Last Modified: Aug 10, 2005 - 8:25am by dellis
Xrefs:

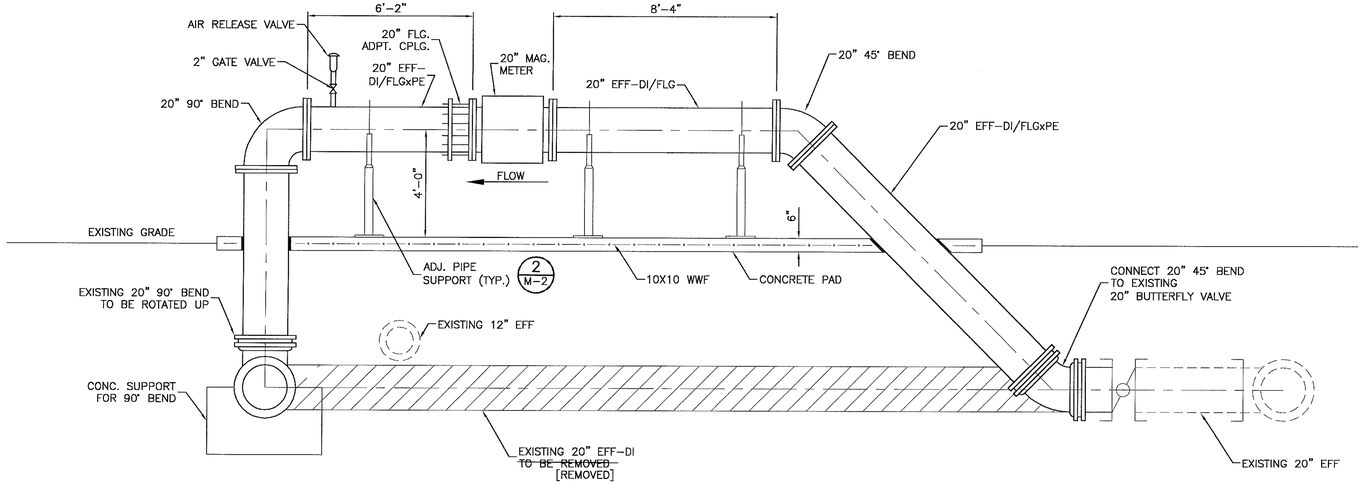


PLAN
SCALE: 3/8" = 1'-0"



(TYPICAL OF 5)

CONTROL LOGIC DIAGRAM
DETAIL A
SCALE: N.T.S.



SECTION A
SCALE: 3/8" = 1'-0"

NOTE: [0+00, 0.0'R] = RECORD DRAWING INFORMATION
[TOP=0.00] = RECORD DRAWING INFORMATION

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Last Modified: Aug 10, 2005 - 8:24am by dellis
Xrefs: MECHANICAL (G:\WATERWASTE\MANATEE PROJECTS\12003357 NRWTP Lake Filtering System\CADD\MECHANICAL.dwg)

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. WILCOX	03/01/03
CHECKED BY:	D. WILCOX	03/01/03
DRAWN BY:	T. SONNENBERG	03/01/03
SCALE:	AS SHOWN	
FILE NAME:	SITE PLAN.DWG	

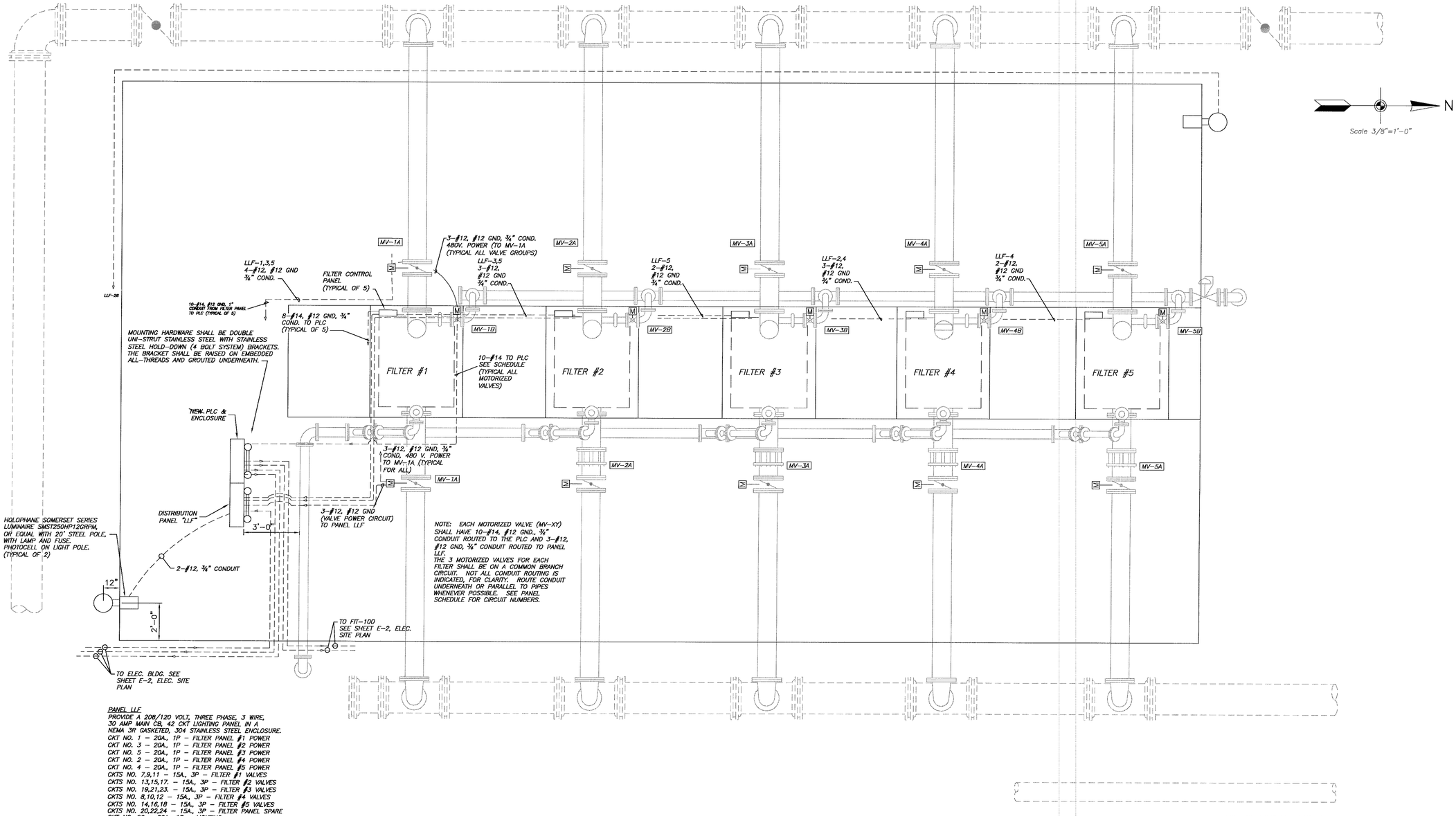
NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY
MANATEE COUNTY, FLORIDA

FLOW METER
PLAN AND SECTION

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

PROJ. NO: 12003357
DWG DATE: AUGUST 2003
DWG NO:
SHEET: M-3

4438.007



PANEL LLF
PROVIDE A 208/120 VOLT, THREE PHASE, 3 WIRE, 30 AMP MAIN CB, 42 CKT LIGHTING PANEL IN A NEMA 3R GASKETED, 304 STAINLESS STEEL ENCLOSURE.
CKT NO. 1 – 20A., 1P – FILTER PANEL #1 POWER
CKT NO. 3 – 20A., 1P – FILTER PANEL #2 POWER
CKT NO. 5 – 20A., 1P – FILTER PANEL #3 POWER
CKT NO. 2 – 20A., 1P – FILTER PANEL #4 POWER
CKT NO. 4 – 20A., 1P – FILTER PANEL #5 POWER
CKTS NO. 7,9,11 – 15A., 3P – FILTER #1 VALVES
CKTS NO. 13,15,17 – 15A., 3P – FILTER #2 VALVES
CKTS NO. 19,21,23 – 15A., 3P – FILTER #3 VALVES
CKTS NO. 8,10,12 – 15A., 3P – FILTER #4 VALVES
CKTS NO. 14,16,18 – 15A., 3P – FILTER #5 VALVES
CKTS NO. 20,22,24 – 15A., 3P – FILTER PANEL SPARE
CKT NO. 26 – 20A., 1P – LIGHTING

VISTA SYSTEMS
P. O. Box 74
Palm Harbor, Florida 34682-0074
(727) 787-8876 Reg. No. 6268
FAX (727) 773-2229

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	06/12/03
CHECKED BY:	R. TOTH	06/12/03
DRAWN BY:	RW	06/12/03
SCALE:	AS SHOWN	
FILE NAME:	E-1 ELECTRIC FILTER	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL FILTER PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

PROJ. NO: 12003357
DWG DATE: AUGUST 2003
DWG NO:
SHEET: E-1

4438.008

Drawing Name: X:\MANATEE PROJECTS\12003357 NRWWTP Lake Filtering System\CADD\E-1 ELECTRICAL FILTER.dwg
Last Modified: Aug 10, 2005 - 8:25am by dellis
Xrefs:

SEE SHEET E-3 FOR CONTINUATION

7-#4, #6 GND, 1½" CONDUIT FROM PANEL LLF

8-#14, #12 GND, 1" COND FROM PLC PANEL TO PANEL C-4

2-2/C #16, 1" CONDUIT FROM PLC TO PANEL I-4

18"x18"x 18" TYPICAL PRC POWER HOMERUNS

PROVIDE UNDERGROUND JUNCTION BOXES EVERY 100 FEET AND/OR AS REQUIRED (TYPICAL)

12"x12"x12" BOX CONTROL & INSTRUMENT

12"x12" UNDERGROUND JUNCTION BOX (TYP)

PANEL C-4

PANEL I-4

1-2/C #16 IN EXISTING CONDUIT (ROUTE UNKNOWN) TO EXISTING CONTROL PANEL

EXISTING DEWATERING BUILDING

EXISTING CHLORINATOR BUILDING

3-#4, #6 GND, 1 ½" CONDUIT FROM PANEL LLF

8-#14, #12 GND, 1" CONDUIT FROM PLC TO PANEL C-4

2 2/C #16, 1" CONDUIT FROM PLC TO PANEL I-4

LAKE FILTERING SYSTEM

PLC

LLF

3-#4, ¾" COUDUIT FIT-100 POWER TO LLF

1-2/C #16 SHIELDED CABLE, ¾" CONDUIT FROM FIT-100 TO PLC CONTROL PANEL

FLOW INDICATOR/TRANSDUCER FIT-100 (LOOP POWERED FROM CONTROL PLC PANEL)

EXISTING AUTOMATIC BACKWASH FILTERS

N

10 5 0 10

Scale 1" = 10'
Scale in feet

VISTA SYSTEMS
P. O. Box 74
Palm Harbor, Florida 34682-0074
(727) 787-8876 Reg. No.
FAX (727) 773-2229 6268

Drawing Name: X:\MANATEE PROJECTS\12003357 NRWWTP Lake Filtering System\CADD\E-2 ELECTRICAL SITE.dwg
Last Modified: Aug 10, 2005 - 8:25am by dellis
Xrefs: MECHANICAL_G:\WATERWASTE\MANATEE PROJECTS\12003357 NRWTP Lake Filtering System\CADD\MECHANICAL.dwg

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	06/12/03
CHECKED BY:	R. TOTH	06/12/03
DRAWN BY:	RW	06/12/03
SCALE:	AS SHOWN	
FILE NAME:	E-2 ELECTRICAL SITE.DWG	

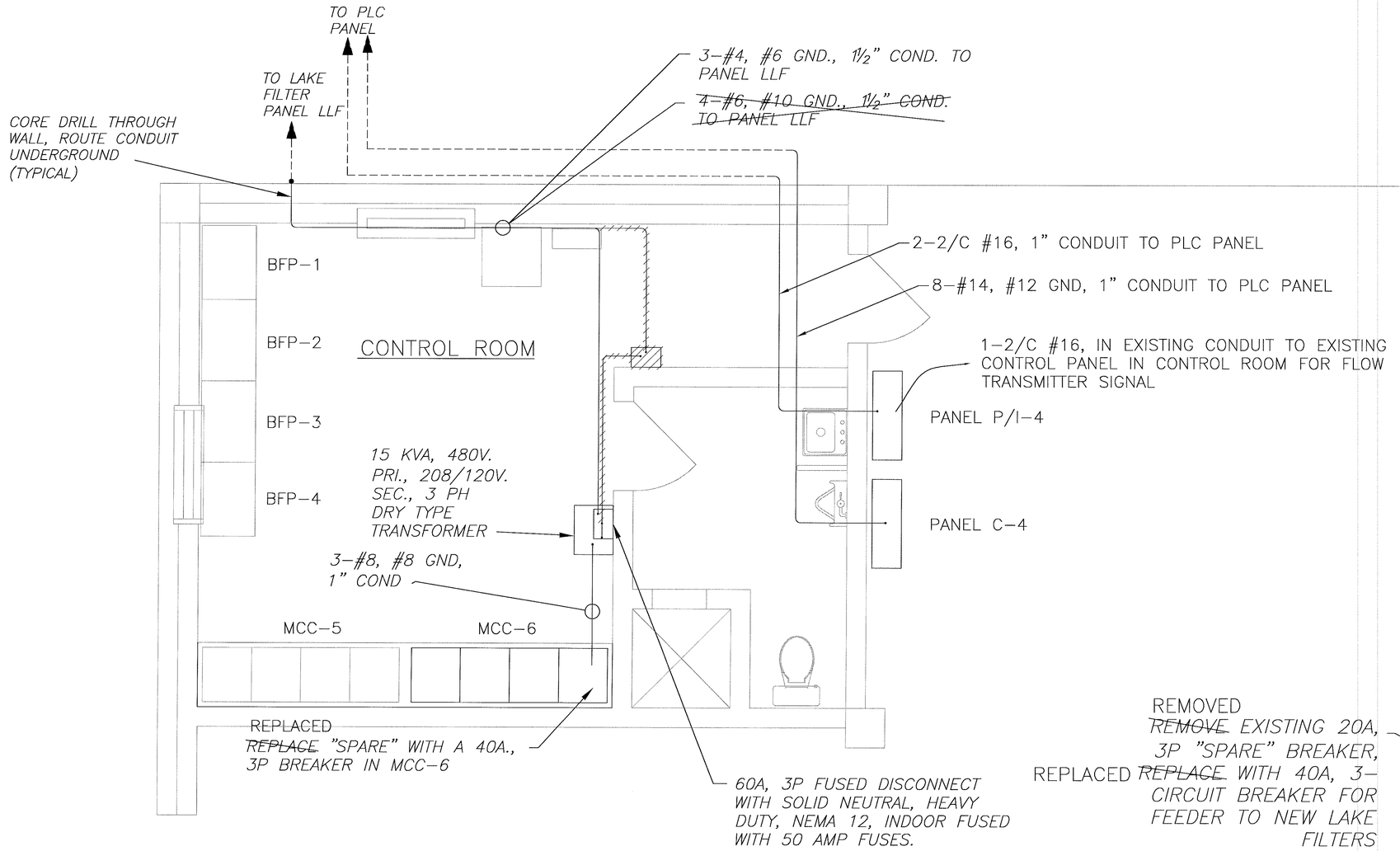
NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL SITE PLAN

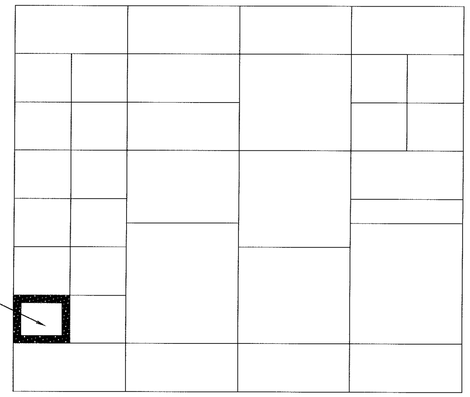
NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

PROJ. NO: 12003357
DWG DATE: AUGUST 2003
DWG NO:
SHEET: E-2

4438-009



BELT FILTER PRESS AREA



MCC-6 OUTLINE

VISTA SYSTEMS
P. O. Box 74
Palm Harbor, Florida 34682-0074
(727) 787-8876 Reg. No.
FAX (727) 773-2229 6268

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	06/12/03
CHECKED BY:	R. TOTH	06/12/03
DRAWN BY:	RW	06/12/03
SCALE:	AS SHOWN	
FILE NAME:	E-3 ELECTRICAL BUILDING	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

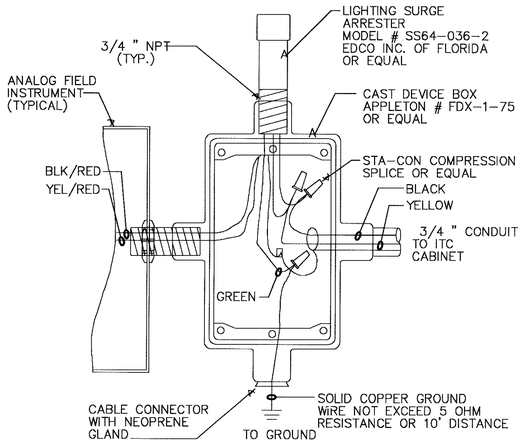
ELECTRICAL ROOM PLAN AT DEWATERING BUILDING

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

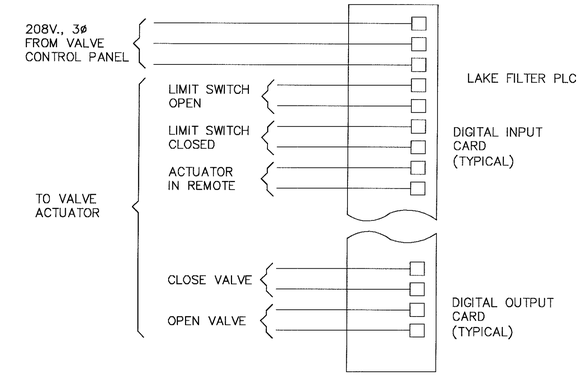
PROJ. NO: 12003357
DWG DATE: OCTOBER 2003
DWG NO:
SHEET: E-3

4438.010

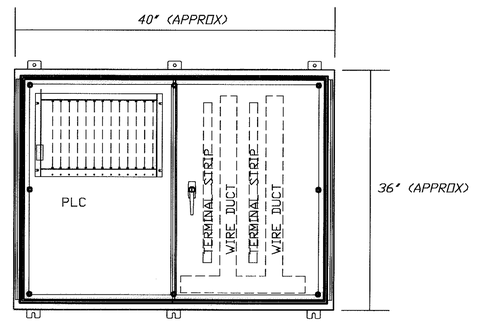
Drawing Name: X:\MANATEE PROJECTS\12003357 NRWWTP Lake Filtering System\CADD\E-3 ELECTRICAL BUILDING.dwg
Last Modified: Aug 09, 2005 - 2:47pm by dellis
Xrefs:



LIGHTNING SURGE ARRESTOR INSTALLATION
4-20mA ANALOG INSTRUMENT - UNGROUNDED



VALVE CONTROLLER CONNECTIONS (TYPICAL)



PLC PANEL

1. SHOWN WITH DOORS OPEN
2. PANEL TO BE NEMA 3R STAINELESS STEEL WITH CONTINUOUS HINGE.

NOTE: THIS DRAWING IS INTENDED AS REFERENCE FINAL LOCATION OF EQUIPMENT BY PANEL BUILDER. PROVIDE ALL REQUIRED TERMINAL STRIPS, WIREWAYS,ETC.

DIGITAL INPUTS

FILTER 1 MV-1A ACTUATOR IN REMOTE
FILTER 1 MV-1A OPEN LIMIT SWITCH
FILTER 1 MV-1A CLOSED LIMIT SWITCH
FILTER 1 MV-1B ACTUATOR IN REMOTE
FILTER 1 MV-1B OPEN LIMIT SWITCH
FILTER 1 MV-1B CLOSED LIMIT SWITCH
FILTER 1 MV-1C ACTUATOR IN REMOTE
FILTER 1 MV-1C OPEN LIMIT SWITCH
FILTER 1 MV-1C CLOSED LIMIT SWITCH
FILTER 2 MV-2A ACTUATOR IN REMOTE
FILTER 2 MV-2A OPEN LIMIT SWITCH
FILTER 2 MV-2A CLOSED LIMIT SWITCH
FILTER 2 MV-2B ACTUATOR IN REMOTE
FILTER 2 MV-2B OPEN LIMIT SWITCH
FILTER 2 MV-2B CLOSED LIMIT SWITCH
FILTER 2 MV-2C ACTUATOR IN REMOTE
FILTER 2 MV-2C OPEN LIMIT SWITCH
FILTER 2 MV-2C CLOSED LIMIT SWITCH
FILTER 3 MV-3A ACTUATOR IN REMOTE
FILTER 3 MV-3A OPEN LIMIT SWITCH
FILTER 3 MV-3A CLOSED LIMIT SWITCH
FILTER 3 MV-3B ACTUATOR IN REMOTE
FILTER 3 MV-3B OPEN LIMIT SWITCH
FILTER 3 MV-3B CLOSED LIMIT SWITCH
FILTER 3 MV-3C ACTUATOR IN REMOTE
FILTER 3 MV-3C OPEN LIMIT SWITCH
FILTER 3 MV-3C CLOSED LIMIT SWITCH
FILTER 4 MV-4A ACTUATOR IN REMOTE
FILTER 4 MV-4A OPEN LIMIT SWITCH
FILTER 4 MV-4A CLOSED LIMIT SWITCH
FILTER 4 MV-4B ACTUATOR IN REMOTE
FILTER 4 MV-4B OPEN LIMIT SWITCH
FILTER 4 MV-4B CLOSED LIMIT SWITCH
FILTER 4 MV-4C ACTUATOR IN REMOTE
FILTER 4 MV-4C OPEN LIMIT SWITCH
FILTER 4 MV-4C CLOSED LIMIT SWITCH
FILTER 5 MV-5A ACTUATOR IN REMOTE
FILTER 5 MV-5A OPEN LIMIT SWITCH
FILTER 5 MV-5A CLOSED LIMIT SWITCH
FILTER 5 MV-5B ACTUATOR IN REMOTE
FILTER 5 MV-5B OPEN LIMIT SWITCH
FILTER 5 MV-5B CLOSED LIMIT SWITCH
FILTER 5 MV-5C ACTUATOR IN REMOTE
FILTER 5 MV-5C OPEN LIMIT SWITCH
FILTER 5 MV-5C CLOSED LIMIT SWITCH
FILTER 1 IN BACKWASH
FILTER 2 IN BACKWASH
FILTER 3 IN BACKWASH
FILTER 4 IN BACKWASH
FILTER 5 IN BACKWASH
BACKWASH CYCLE COMPLETE FILTER 1
BACKWASH CYCLE COMPLETE FILTER 2
BACKWASH CYCLE COMPLETE FILTER 3
BACKWASH CYCLE COMPLETE FILTER 4
BACKWASH CYCLE COMPLETE FILTER 5

DIGITAL OUTPUTS

FILTER 1 MV-1A OPEN VALVE
FILTER 1 MV-1A CLOSE VALVE
FILTER 1 MV-1B OPEN VALVE
FILTER 1 MV-1B CLOSE VALVE
FILTER 1 MV-1C OPEN VALVE
FILTER 1 MV-1C CLOSE VALVE
FILTER 2 MV-2A OPEN VALVE
FILTER 2 MV-2A CLOSE VALVE
FILTER 2 MV-2B OPEN VALVE
FILTER 2 MV-2B CLOSE VALVE
FILTER 2 MV-2C OPEN VALVE
FILTER 2 MV-2C CLOSE VALVE
FILTER 3 MV-3A OPEN VALVE
FILTER 3 MV-3A CLOSE VALVE
FILTER 3 MV-3B OPEN VALVE
FILTER 3 MV-3B CLOSE VALVE
FILTER 3 MV-3C OPEN VALVE
FILTER 3 MV-3C CLOSE VALVE
FILTER 4 MV-4A OPEN VALVE
FILTER 4 MV-4A CLOSE VALVE
FILTER 4 MV-4B OPEN VALVE
FILTER 4 MV-4B CLOSE VALVE
FILTER 4 MV-4C OPEN VALVE
FILTER 4 MV-4C CLOSE VALVE
FILTER 5 MV-5A OPEN VALVE
FILTER 5 MV-5A CLOSE VALVE
FILTER 5 MV-5B OPEN VALVE
FILTER 5 MV-5B CLOSE VALVE
FILTER 5 MV-5C OPEN VALVE
FILTER 5 MV-5C CLOSE VALVE
ENABLE FILTER 1
ENABLE FILTER 2
ENABLE FILTER 3
ENABLE FILTER 4
ENABLE FILTER 5

ANALOG INPUTS

FLOW TRANSMITTER

ANALOG OUTPUTS

FLOW TRANSMITTER

VISTA SYSTEMS
P. O. Box 74
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FAX (727) 773-2229

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R TOTH	03/01/03
CHECKED BY:	R TOTH	03/01/03
DRAWN BY:	RW	03/01/03
SCALE:	AS SHOWN	
FILE NAME:	E-4 ELECTRIC DETAILS 1	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

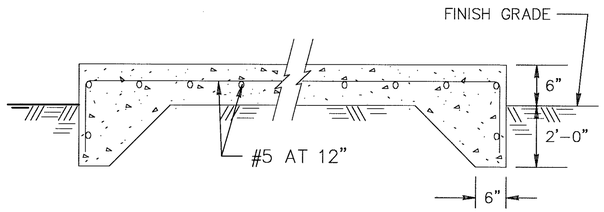
MECHANICAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

PROJ. NO: 12003357
DWG. DATE: AUGUST 2003
DWG NO:
SHEET: E-4

4438.011

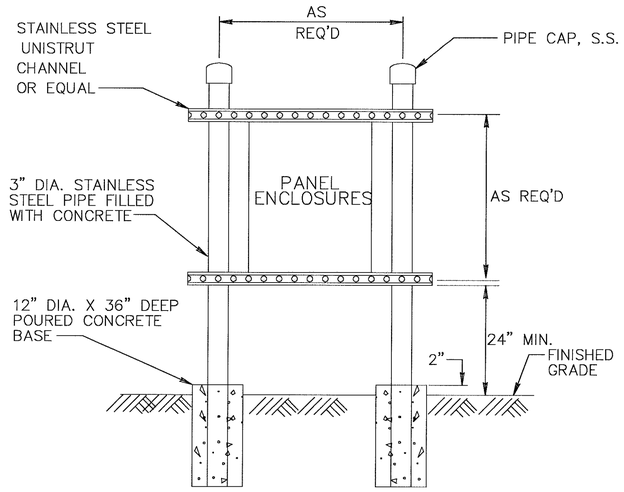
Drawing Name: X:\MANATEE PROJECTS\12003357 NRWWTP Lake Filtering System\CADD\E-4 ELECTRIC DETAILS 1.dwg
Last Modified: Aug 09, 2005 - 9:40am by dells
Xrefs



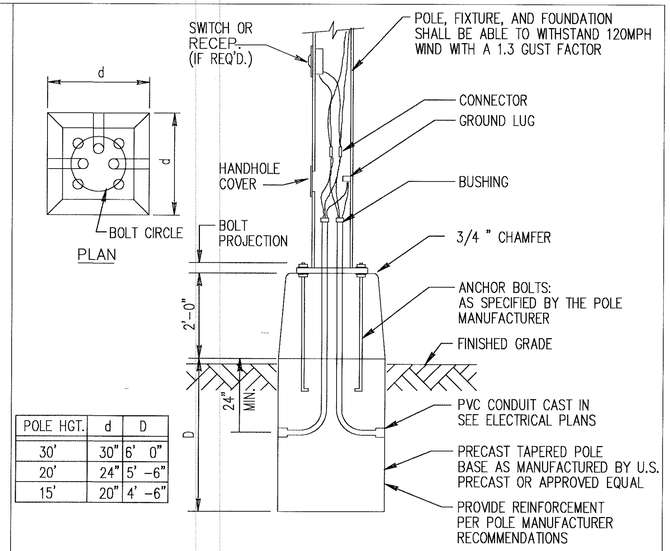
NOTE:

OVERALL PAD DIMENSIONS SHALL BE DETERMINED FROM ELECTRICAL PLANS AND ADJUSTED AS REQ'D. TO SUIT EQUIPMENT FURNISHED.

ELECTRICAL EQUIPMENT PAD

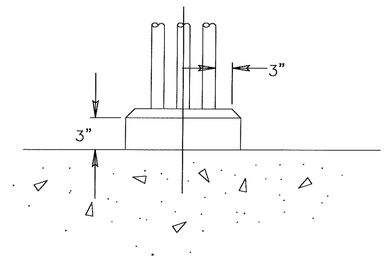


PANEL MOUNTING STAND



POLE HGT.	d	D
30'	30"	6' 0"
20'	24"	5' -6"
15'	20"	4' -6"

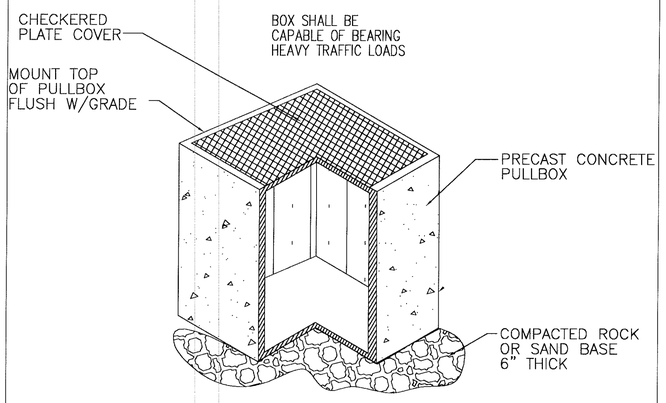
POLE FOUNDATION INSTALLATION



NOTE:

HOUSEKEEPING CURB REQUIRED AT ALL LOCATIONS FOR SINGLE AND MULTIPLE RISERS.

CONCRETE HOUSEKEEPING CURB



PULLBOX

NOT TO SCALE

VISTA SYSTEMS
P. O. Box 74
Palm Harbor, Florida 34682-0074
(727) 787-8876
FAX (727) 773-2229
Reg. No. 6268

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	R. TOTH	07/25/03
CHECKED BY:	R. TOTH	07/25/03
DRAWN BY:	R. WIEGMANN	07/25/03
SCALE:	NONE	
FILE NAME:	E-5 ELECTRIC DETAILS 2	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
LAKE FILTERING SYSTEM
FOR
MANATEE COUNTY UTILITIES DEPARTMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWING	DME	8/9/05

PROJ. NO: 12003357
DWG DATE: AUGUST 2003
DWG NO:
SHEET: E-5

4438.012

Drawing Name: X:\MANATEE PROJECTS\12003357 NRWWTP Lake Filtering System\CADD\E-5 ELECTRIC DETAILS 2.dwg
Last Modified: Aug 09, 2005 - 1:22pm by dellis
Xref's:

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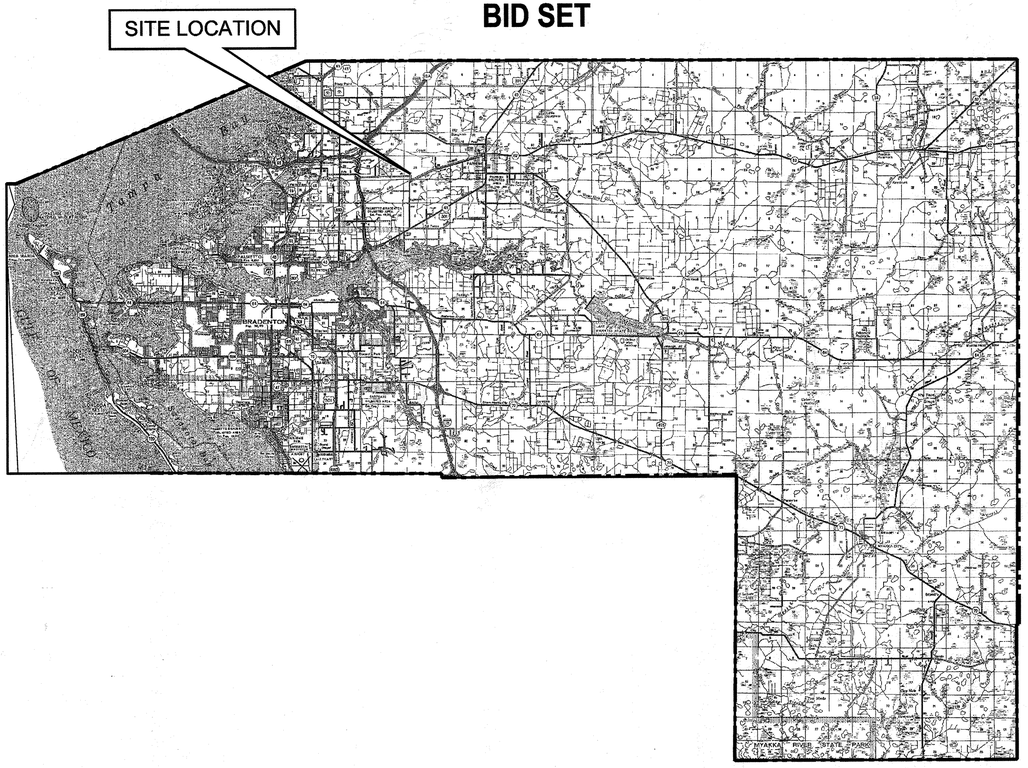
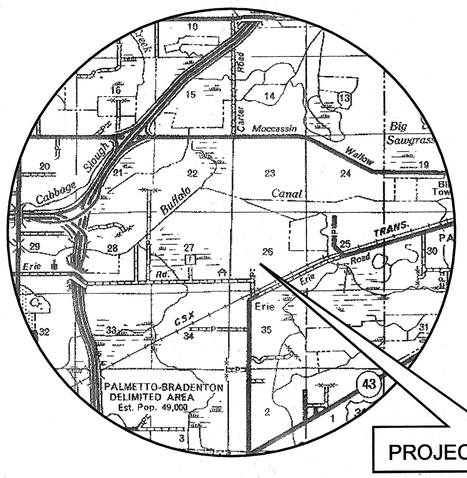
MANATEE COUNTY, FLORIDA
MAINTENANCE BUILDING AT THE
NORTH REGIONAL WATER RECLAMATION FACILITY
PROJECT NO. 6054280

NOVEMBER 2007

BID SET





PROJECT MAP
N.T.S.

RECEIVED
JUN 17 2009
PUBLIC WORKS
ENGINEERING

RECORD DRAWING 06/15/2009

MANATEE COUNTY, FLORIDA
MAINTENANCE BUILDING AT THE NORTH REGIONAL WATER RECLAMATION FACILITY,
PROJECT NO. 6054280, NOVEMBER 2007, BID SET

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER	DAVE WILCOX
JOB NO.	12005555
DSGN:	J. PANTELIS
DRWN:	D. ELLIS
CHKD:	D. WILCOX
APVD:	D. WILCOX
DATE:	January 25, 2008

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Florida Engineering Number: 000002

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

COVER SHEET

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWING
JUNE 2009

G-1

23-27

4987.001

PLOTTED June 16, 2009 7:48 AM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\G-1 COVER.DWG

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PLOTTED June 16, 2009 8:03 AM PLOTTED BY: ELLIS, DAVID
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INDEX TO SHEETS

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M–1	MECHANICAL FLOOR PLAN		
M–2	MECHANICAL SCHEDULES, DETAILS AND LEGEND		

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION

REVISIONS

PROJECT MANAGER
DAVE WILCOX
JOB NO. 12005555
DSGN: J. PANTELIS
DRWN: D. ELLIS
CHKD: D. WILCOX
APVD: D. WILCOX
DATE: June 16, 2009

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

INDEX TO SHEETS

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWING
JUNE 2009

G–2

4987.002

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

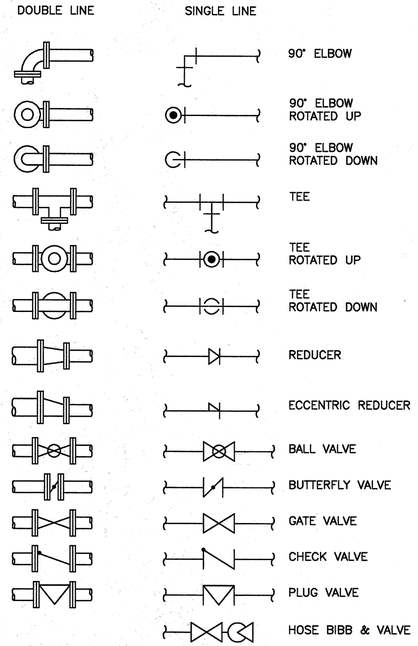
GENERAL NOTES:

1. ALL ELEVATIONS ARE BASED ON THE TBM INDICATED AND ARE SHOWN IN FEET.
2. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR LOCATING AND AVOIDING ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND SURFACE. THE CONTRACTOR SHALL REPAIR ALL DAMAGES RESULTING FROM THE CONTRACTORS FAILURE TO COMPLY WITH THIS REQUIREMENT.
3. THE CONTRACTOR SHALL PROVIDE NO LESS THAN A 6 INCH VERTICAL CLEARANCE BETWEEN ALL UTILITIES.
4. PIPE JOINT DEFLECTION SHALL NOT EXCEED 80% OF THE MAXIMUM ALLOWED BY THE MANUFACTURER FOR THE SIZE AND TYPE OF JOINT.
5. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO REFERENCE AND RESTORE PROPERTY CORNERS AND LANDMARKS THAT MAY BE DISTURBED BY CONSTRUCTION.
6. THE CONTRACTOR SHALL NOTIFY PLANT PERSONNEL NOT LESS THAN (2) TWO WEEKS PRIOR TO THE SHUTDOWN OF ANY PLANT COMPONENTS.
7. CONTRACTOR SHALL REFER TO EQUIPMENT SHOP DRAWINGS FOR SIZE AND POSITION OF ALL OPENINGS IN STRUCTURES REQUIRED BY THE EQUIPMENT. ENGINEERING DRAWINGS ARE APPROXIMATE.

ABBREVIATIONS:

A/C	AIR CONDITIONER
ADPT	ADAPTER
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AL	ALUM SOLUTION
ALUM	ALUMINUM
AM	AMMONIA
BA	BLOWER AIR
BV	BALL VALVE
BFV	BUTTERFLY VALVE
BLDG	BUILDING
CCC	CHLORINE CONTACT CHAMBER
CI	CAST IRON
CL	CENTERLINE
CL2S	CHLORINE SOLUTION
CL2G	CHLORINE GAS
CLW	CLARIFIED WATER
CO	CLEAN OUT
CONC	CONCRETE
CPLG	COUPLING
D	DRAIN
DI	DUCTILE IRON
DIA	DIAMETER
ECC	ECCENTRIC
EFF	EFFLUENT
EL	ELEVATION
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EXIST	EXISTING
FIN	FINISHED
FLG	FLANGE
FLR	FLOOR
FLW	FLOCCULATED WATER
FOT	FLAT ON TOP
FRP	FIBERGLASS REINFORCED PLASTIC
FSB	FLOW SPLITTER BOX
FT	FOOT OR FEET
FW	FILTERED WATER
GAL	GALVANIZED
GV	GATE VALVE
HC	SODIUM HYPOCHLORITE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INF	INFLUENT
JT	JOINT
LF	LINER FEET
MAX	MAXIMUM
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
ML	MIXED LIQUOR
NTS	NOT TO SCALE
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
O/E	OR EQUAL
OVF	OVERFLOW
P	POLYMER
PE	PLAIN END
PO	PUSH ON
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE PIPE
PW	POTABLE WATER
R	RADIUS
RAS	RETURN ACTIVATED SLUDGE
RCW	RECLAIMED WATER
RED	REDUCER
RMJ	RESTRAINED MECHANICAL JOINT
RW	RAW WATER
SAN	SANITARY
SANS	SANITARY SEWER
SC	SCUM
SCH	SCHEDULE
SF	SQUARE FEET
SHWT	SEASONAL HIGH WATER TABLE
SL	SAMPLE LINE
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
STRM	STORM SEWER
SQ	SQUARE
SW	SOLVENT WELD
SWD	SIDE WATER DEPTH
T&B	TOP AND BOTTOM
TBM	TEMPORARY BENCHMARK
THD	THREADED
THK	THICK(NESS)
TS	THICKENED SLUDGE
TYP	TYPICAL
W	WELDED
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WBW	WASTE BACKWASH WATER
WL	WATER LEVEL
WWF	WOVEN WIRE FABRIC
YR	YEAR

PIPE AND FITTING SYMBOLS



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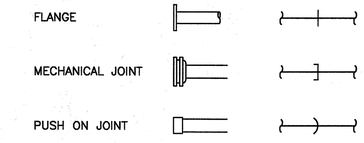
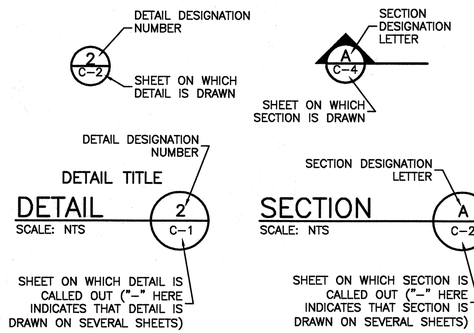


DETAIL & SECTION DESIGNATION



RECORD DRAWING 06/15/2009

PLOTTED June 16, 2009 8:03 AM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\2005555 MAINTENANCE BLDG AT NRWTP\CADD\G-3 GENERAL NOTES.DWG

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. PANTELIS
DRWN: D. ELLIS
CHKD: D. WILCOX
APVD: D. WILCOX
DATE: November 9, 2007

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Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

GENERAL NOTES, SYMBOLS AND ABBREVATIONS

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWING
JUNE 2009

G-3

4987.003

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

GENERAL CONSTRUCTION NOTES

A. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS SPECIFIED BY MANATEE COUNTY, THE ENGINEER, AND THE ARCHITECT. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, AND SCHEDULE ANY NECESSARY INSPECTIONS ACCORDING TO AGENCY INSTRUCTIONS. CONTRACTOR IS RESPONSIBLE FOR GETTING THEIR DEWATERING PLAN APPROVED BY SWFWMD.

B. ALL SPECIFICATIONS AND DOCUMENTS REFERRED TO IN THESE PLANS SHALL BE OF THE LATEST REVISION.

C. ALL WORK PERFORMED SHALL COMPLY WITH THE REGULATIONS AND ORDINANCES OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH MANATEE COUNTY AND FDOT SPECIFICATIONS LATEST EDITION.

D. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRE CAST AND MANUFACTURED ITEMS TO THE OWNER'S ENGINEER FOR APPROVAL. FAILURE TO OBTAIN APPROVAL BEFORE FABRICATION AND/OR INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT CONTRACTOR'S EXPENSE.

E. WORK PERFORMED UNDER THIS CONTRACT SHALL INTERFACE SMOOTHLY WITH ANY OTHER WORK BEING PERFORMED BY OTHERS.

F. IT WILL BE NECESSARY TO EXAMINE, COORDINATE AND ADJUST ACCORDINGLY THE PROPOSED LOCATIONS OF THE VARIOUS COMPONENTS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT COORDINATION DRAWINGS SHOWING PIPE SIZES, STRUCTURES, AND ELEVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SCHEDULING AND COORDINATION OF THE UNDERGROUND WORK ASSOCIATED WITH THIS PROJECT.

G. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR CALLED FOR IN THIS CONTRACT.

H. ALL UNDERGROUND UTILITIES MUST BE IN PLACE AND TESTED OR INSPECTED PRIOR TO BASE AND PAVEMENT CONSTRUCTION.

I. CONTRUCTION SHALL ADHERE TO APPLICABLE AGENCY CRITERIA, PERMIT CONDITIONS, AS WELL AS SPECIFICATIONS PROVIDED BY OWNER.

J. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE OWNER CONCERNING LIMITS OF CONSTRUCTION, TRANSITIONS, ETC WHICH MAY NOT BE SHOWN ON THESE PLANS.

SAFETY NOTES

A. DURING THE CONSTRUCTION AND MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF HIS PERSONNEL.

B. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION.

C. CONTRACTOR SHALL PROVIDE AND MAINTAIN ITS OWN SAFETY EQUIPMENT IN ACCORDANCE WITH ITS HEALTH & SAFETY PROGRAM AND ALL OTHER APPLICABLE LEGAL AND HEALTH AND SAFETY REQUIREMENTS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR PROVIDING ITS EMPLOYEES AND SUB CONTRACTORS WITH ADEQUATE INFORMATION AND TRAINING TO ENSURE THAT ALL EMPLOYEES AND SUB CONTRACTORS AND SUB CONTRACTOR'S EMPLOYEES COMPLY WITH ALL APPLICABLE REQUIREMENTS. CONTRACTOR SHALL REMAIN IN COMPLIANCE WITH ALL OCCUPATION SAFETY AND HEALTH REGULATIONS AS WELL AS THE ENVIRONMENTAL PROTECTION LAWS. THE FOLLOWING IS NOT TO BE PERCEIVED AS THE ENTIRE SAFETY PROGRAM BUT JUST BASIC REQUIREMENTS.

D. ALL EXCAVATIONS BY THE CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF THE DEPARTMENT OF LABOR'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS AND FLORIDA TRENCH SAFETY ACT. PARTICULAR ATTENTION MUST BE PAID TO THE CONSTRUCTION STANDARDS FOR EXCAVATIONS, 29 CFR PART 1926, SUBPART P.

E. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.

F. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE UTILITY COMPANIES PRIOR TO CONSTRUCTION TO OBTAIN FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES. CALL SUNSHINE STATE ONE CALL AT 800-432-4770.

G. INDUSTRIAL WASTES ARE TO BE HANDLED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

PROJECT SPECIFIC NOTES

A. PRIOR TO COMMENCING WORK , THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES NEAR THE LIMITS OF CONSTRUCTION AND NOTIFY OWNER'S ENGINEER OF ANY CONFLICTS OR DISCREPANCIES WITH DESIGN INFORMATION SHOWN IN THESE PLANS. CONTRACTOR SHALL NOTIFY ENGINEER AND THE APPLICABLE AGENCIES AT LEAST 48 HOURS IN ADVANCE OF SCHEDULED WORK.

B. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND INSPECTED BY CONTRACTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

C. THERE CURRENTLY IS NO CERTIFIED BOUNDARY SURVEY FOR THIS SITE. THE BOUND NRWTP AREA OCCUPIES 62 ACRES OF THE 394 ACRE COUNTY OWNED PARCEL (655700109). BOUNDARY INFORMATION SHOWN ON THE DRAWINGS IS FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT CONSTITUTE A LEGAL BOUNDARY SURVEY.

CONTRACTOR SHALL CALL
"SUNSHINE STATE ONE CALL" 1-800-432-4770
A MINIMUM OF 2-DAYS AND
A MAXIMUM OF 5-DAYS PRIOR TO START OF CONSTRUCTION.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. PANTELIS
DRWN: D. ELLIS
CHKD: D. WILCOX
APVD: D. WILCOX
DATE: November 9, 2007

URS
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Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

CIVIL NOTES AND LEGEND

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWING
JUNE 2009

C-1

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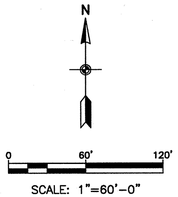

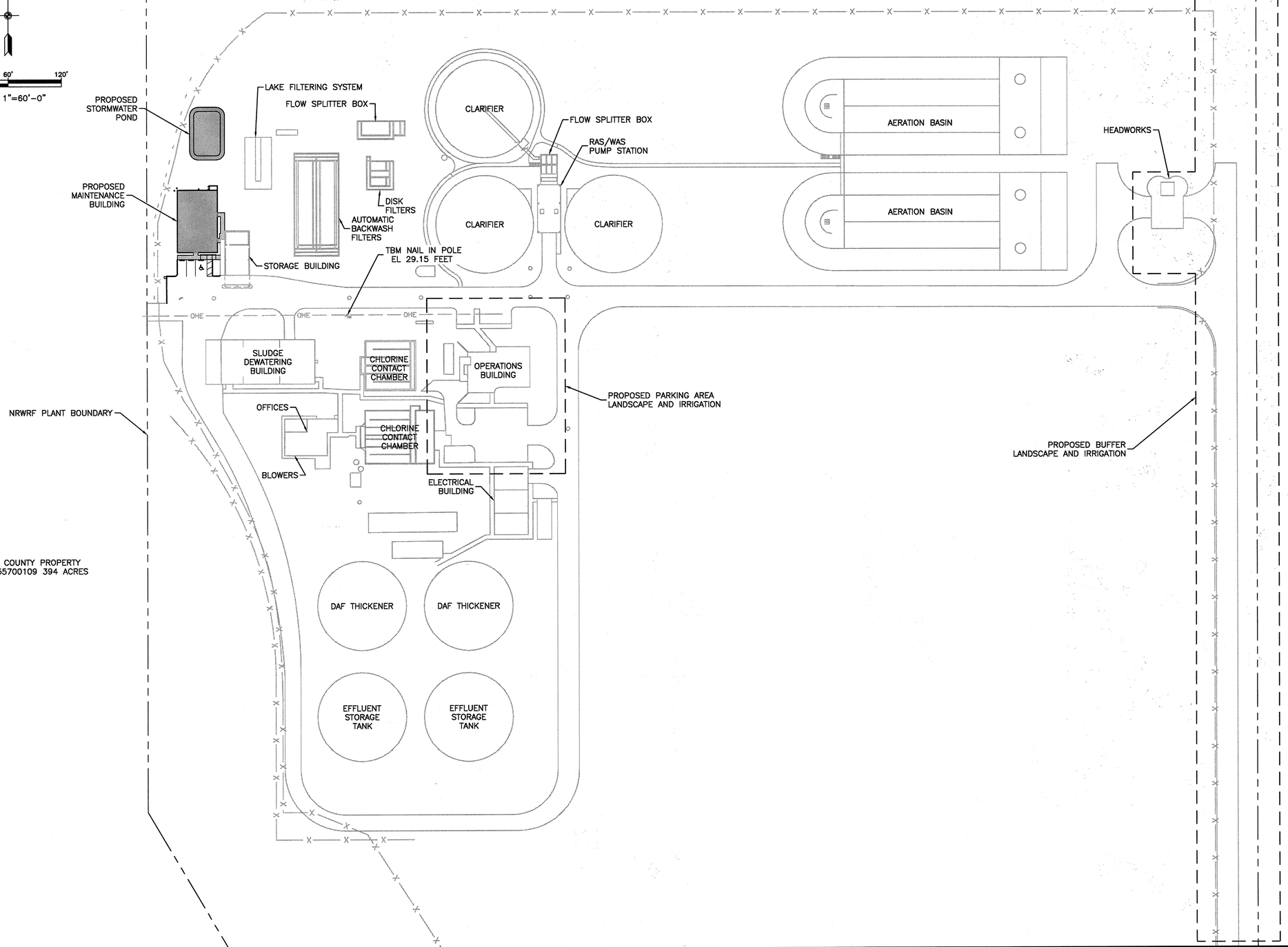

MANATEE COUNTY PROPERTY
PARCEL 655700109 394 ACRES

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER	DAVE WILCOX
JOB NO.	12005555
DSGN:	J. PANTELIS
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APVD:	D. WILCOX
DATE:	June 16, 2009

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Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

OVERALL SITE PLAN

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWING
JUNE 2009

C-2

4987.005

PLOTTED June 16, 2009 8:05 AM PLOTTED BY: ELLIS, DAVID
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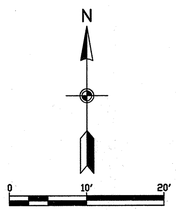

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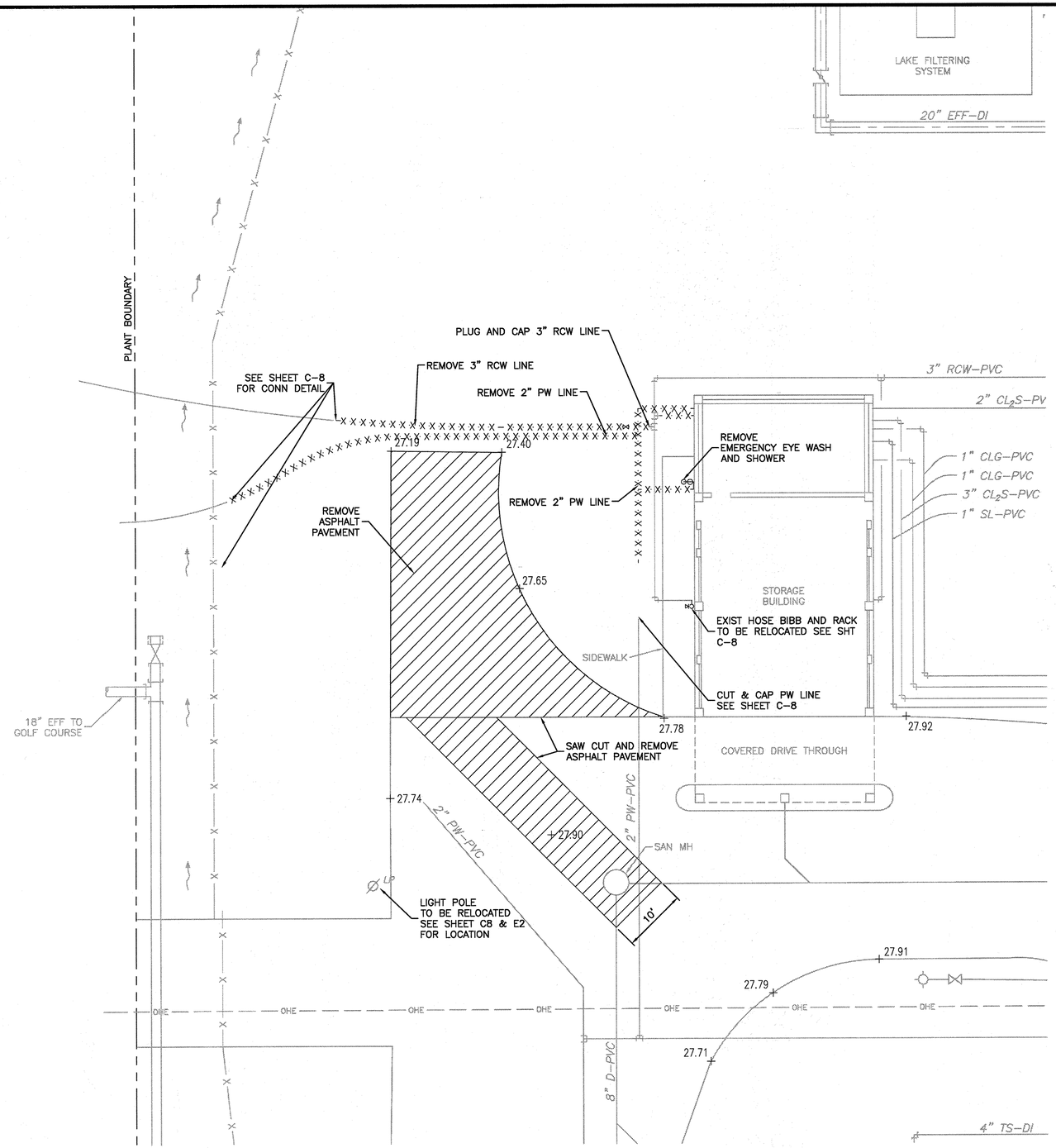

EXISTING SITE DEMOLITION PLAN

SCALE: 1" = 10'-0"

DEMOLITION NOTES:
1. SAW CUT AND REMOVE PAVEMENT.
2. EXISTING LIGHT POLE TO BE RELOCATED.
3. EMERGENCY EYE WASH AND SHOWER TO BE REMOVED AND WATER LINE CAPPED
4. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL REMOVED ITEMS.

LEGEND:

ASPHALT PAVEMENT TO BE REMOVED

- X X X X X- PIPE LINES TO BE REMOVED

RECORD DRAWING 06/15/2009

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

DEMOLITION SITE PLAN

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWING
JUNE 2009

C-3

4987.006

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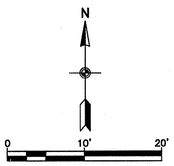
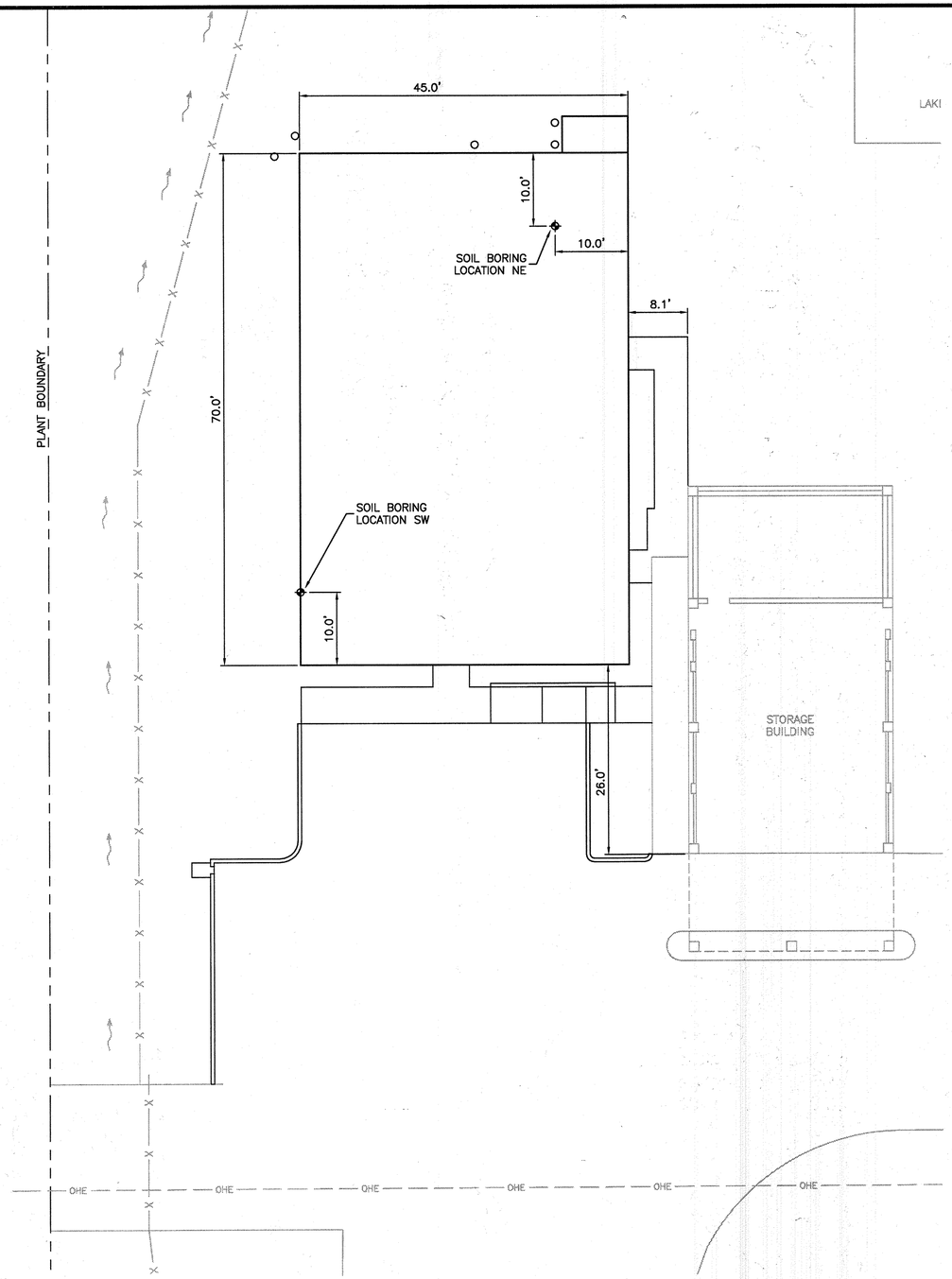
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWFP\CADD\C-3 DEMOLITION SITE PLAN.DWG

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



SCALE: 1'=10'-0"



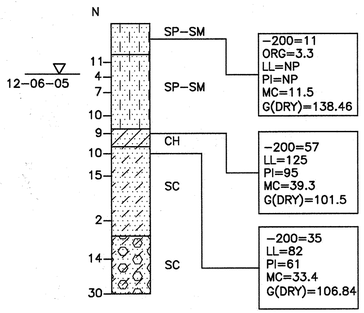
SOIL BORING LOCATIONS

SCALE: 1" = 10'-0"

BORING NE

GSE APPROX. 27.9

GROUNDWATER DEPTH=6.5'

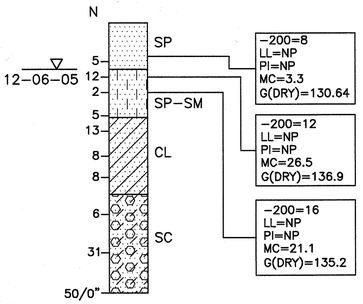


BORING COMPLETED AT 35'

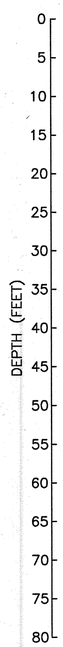
BORING SW

GSE APPROX. 27.7

GROUNDWATER DEPTH=6'



BORING COMPLETED AT 35'



SOIL LEGEND:

- FINE SAND (SP, SP-SM)
- SILTY FINE SAND (SM)
- CLAYEY FINE SAND (SC)
- SANDY CLAY (CL)
- CLAYEY FINE SAND W/CALCEREOUS CLAY NODULES (SC)

APPROXIMATE BORING LOCATION

NOTES

1. BORINGS ARE NOT TO SCALE HORIZONTALLY.
2. HAMMER TYPE: MANUAL
3. DRILL RIG TYPE: CME55

PLAN VIEW IS PRELIMINARY FOR SHOWING BORING LOCATION ONLY AND MAY NOT BE INDICATIVE OF FINAL PLAN.

LEGEND:

-200	% PASSING #200 SIEVE
MC	MOISTURE CONTENT (%)
ORG	ORGANIC CONTENT (%)
LL	LIQUID LIMIT
PI	PLASTICITY INDEX
G(DRY)	DRY UNIT WEIGHT (PCF)
GSE	GROUND SURFACE ELEVATION
▽	WATER LEVEL
N	STANDARD PENETRATION RESISTANCE IN BLOWS/12 IN.
WOH	WEIGHT OF HAMMER
WOR	WEIGHT OF ROD
(SP)	UNIFIED SOIL CLASSIFICATION
W	% LOSS OF CIRCULATION

ENGINEERING CLASSIFICATION

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 5
LOOSE	5 – 10
MEDIUM OR COMPACT	11 – 30
DENSE	31 – 50
VERY DENSE	GREATER THAN 50

SILTS AND CLAYS

CONSISTENCY	N-VALUE
VERY SOFT	LESS THAN 3
SOFT	3 – 4
FIRM	5 – 8
STIFF	9 – 15
VERY STIFF	16 – 30
HARD	GREATER THAN 30

ENVIRONMENTAL CLASSIFICATION

SUBSTRUCTURE: NOT DETERMINED

SUPERSTRUCTURE: NOT DETERMINED

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX

JOB NO.	12005555
DSGN:	K. GIANG
DRWN:	D. ELLIS
CHKD:	C. EVANS
APVD:	D. WILCOX
DATE:	November 13, 2007

URS
7650 West Courtney Campell Causeway, Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

SOIL BORING LOCATIONS AND BORING LOGS

KEITH Q. GIANG
FLORIDA P.E. NO. 49510

PROJECT STATUS
RECORD DRAWING
JUNE 2009

C-4

4987.007

PLOTTED June 16, 2009 8:07 AM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\C-4 SOIL BORING LOCATIONS AND BORING LOGS.DWG

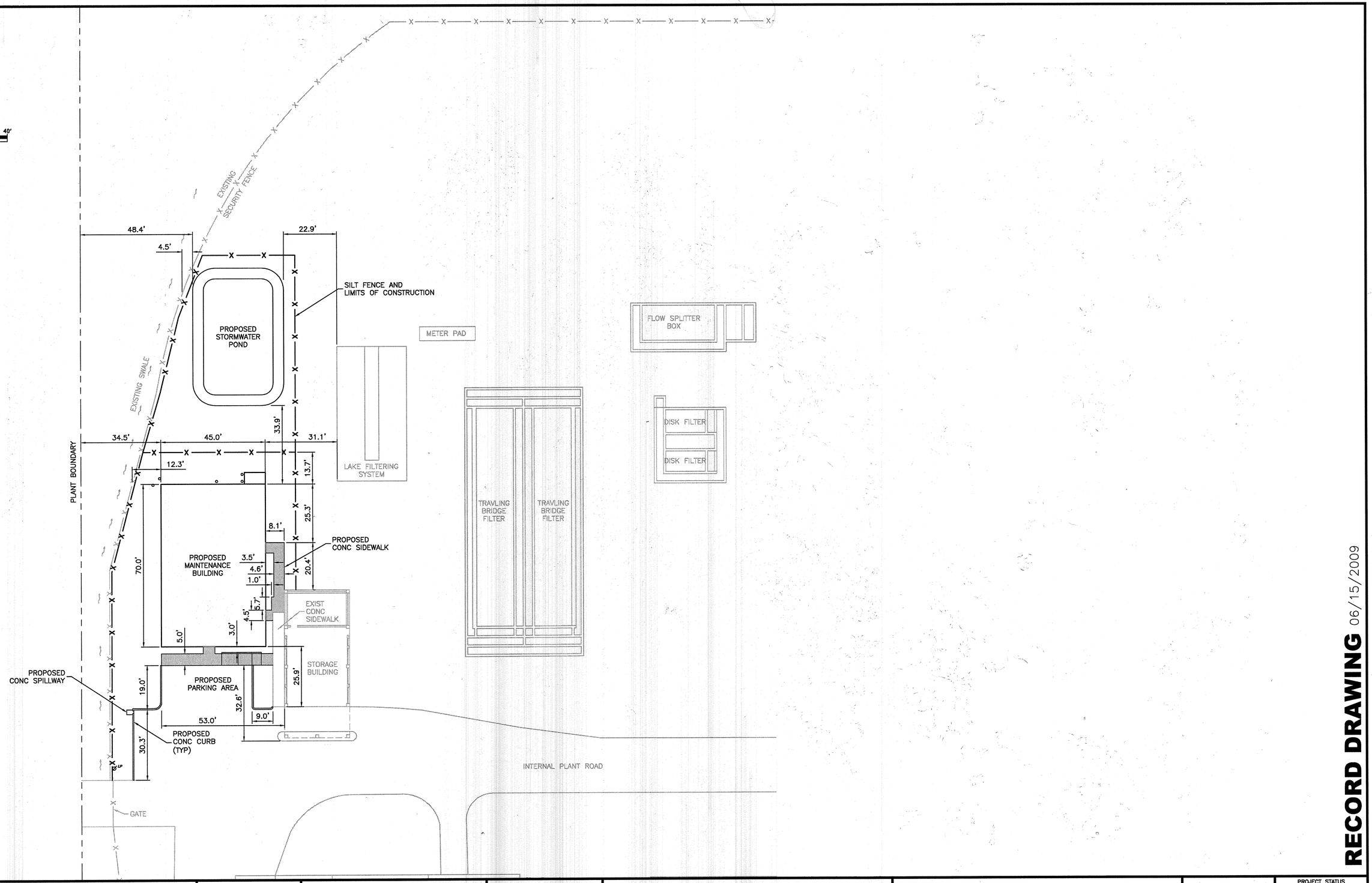
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLOTTED: June 16, 2009 8:07 AM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\C-5 SITE PLAN HORIZONTAL CONTROL.DWG

N

0 20' 40'

SCALE: 1"=20'-0"



RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION

REVISIONS

PROJECT MANAGER	DAVE WILCOX
JOB NO.	12005555
DSGN:	J. PANTELIS
DRWN:	D. ELLIS
CHKD:	D. WILCOX
APVD:	D. WILCOX
DATE:	November 9, 2007

URS
7650 West Courtney Campell Causeway, Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

SITE PLAN HORIZONTAL CONTROL

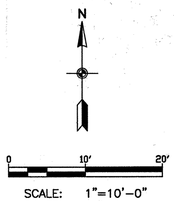
DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWING
JUNE 2009

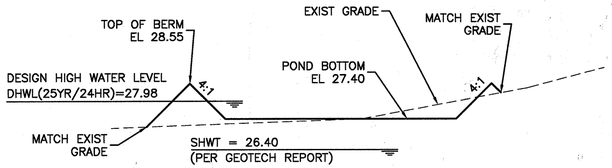
C-5

4987.008

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

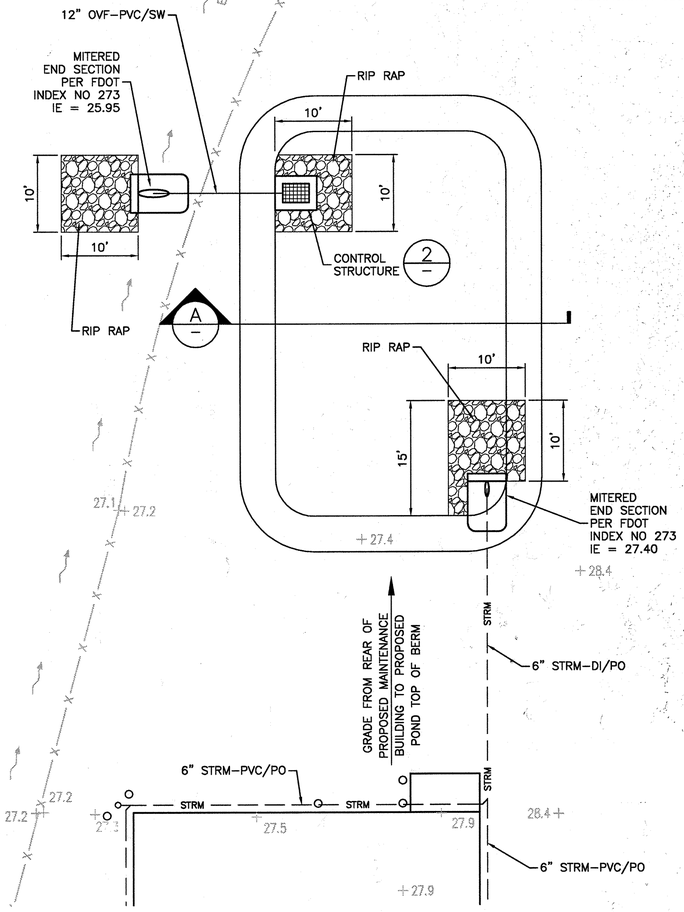


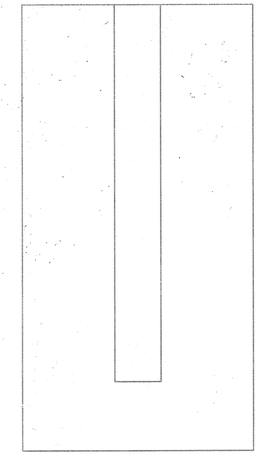
SCALE: 1"=10'-0"

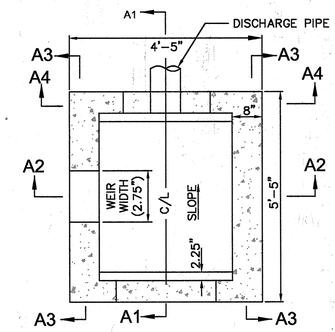


A/– SECTION
SCALE: NTS

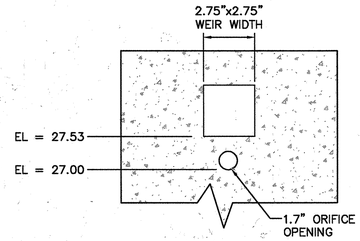
NOTE:
1. POND PERIMETER SLOPES SHALL BE SODDED. BOTTOM OF POND SHALL BE SEEDED. SOD AND SEED SHALL BE IN ACCORDANCE WITH SECTION 02485 OF THE CONTRACT SPECIFICATIONS.
2. RIP RAP SHALL BE IN ACCORDANCE WITH FDOT SPECIFICATION SECTION 530.



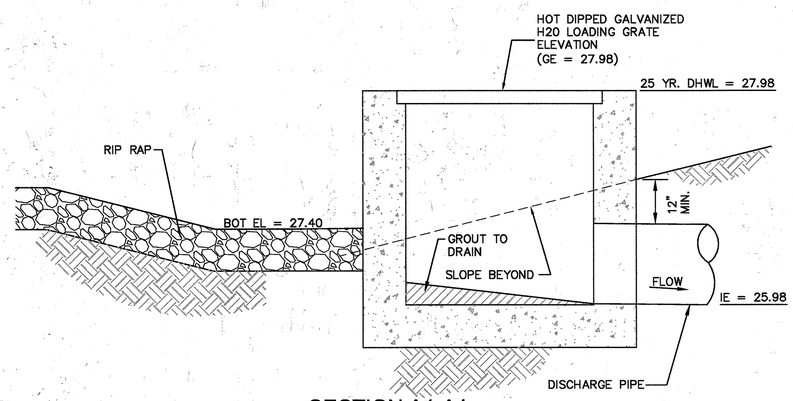




PLAN VIEW
SCALE: NTS



WEIR FACE DETAIL (SECTION A3-A3)
SCALE: NTS



SECTION A1-A1
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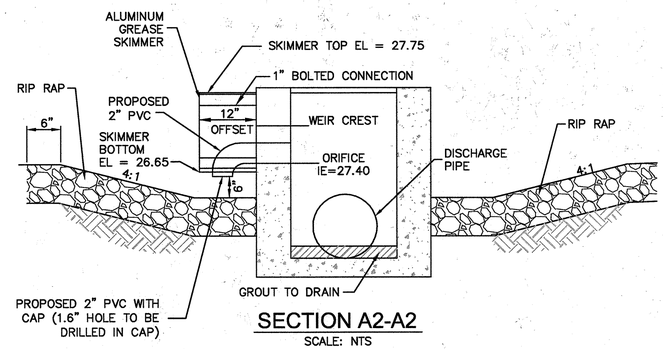


SECTION A2-A2
SCALE: NTS

MODIFIED TYPE 'D' CONTROL STRUCTURE
2/– DETAIL
SCALE: NTS

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER	DAVE WILCOX
JOB NO.	12005555
DSGN:	J. PANTELIS
DRWN:	D. ELLIS
CHKD:	D. WILCOX
APVD:	D. WILCOX
DATE:	November 13, 2007

URS
7650 West Courtney Campell Causeway, Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

STORMWATER POND
PLAN AND DETAILS

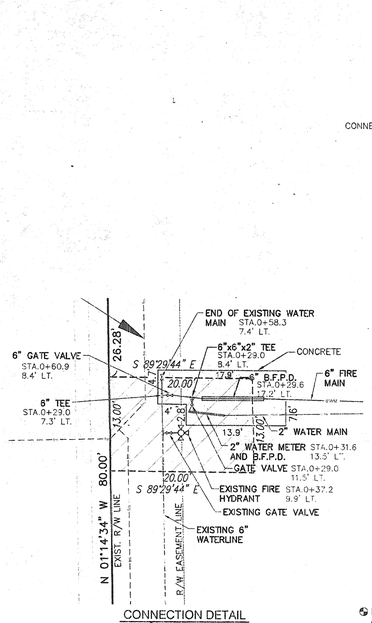
DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWING
JUNE 2009

C-7

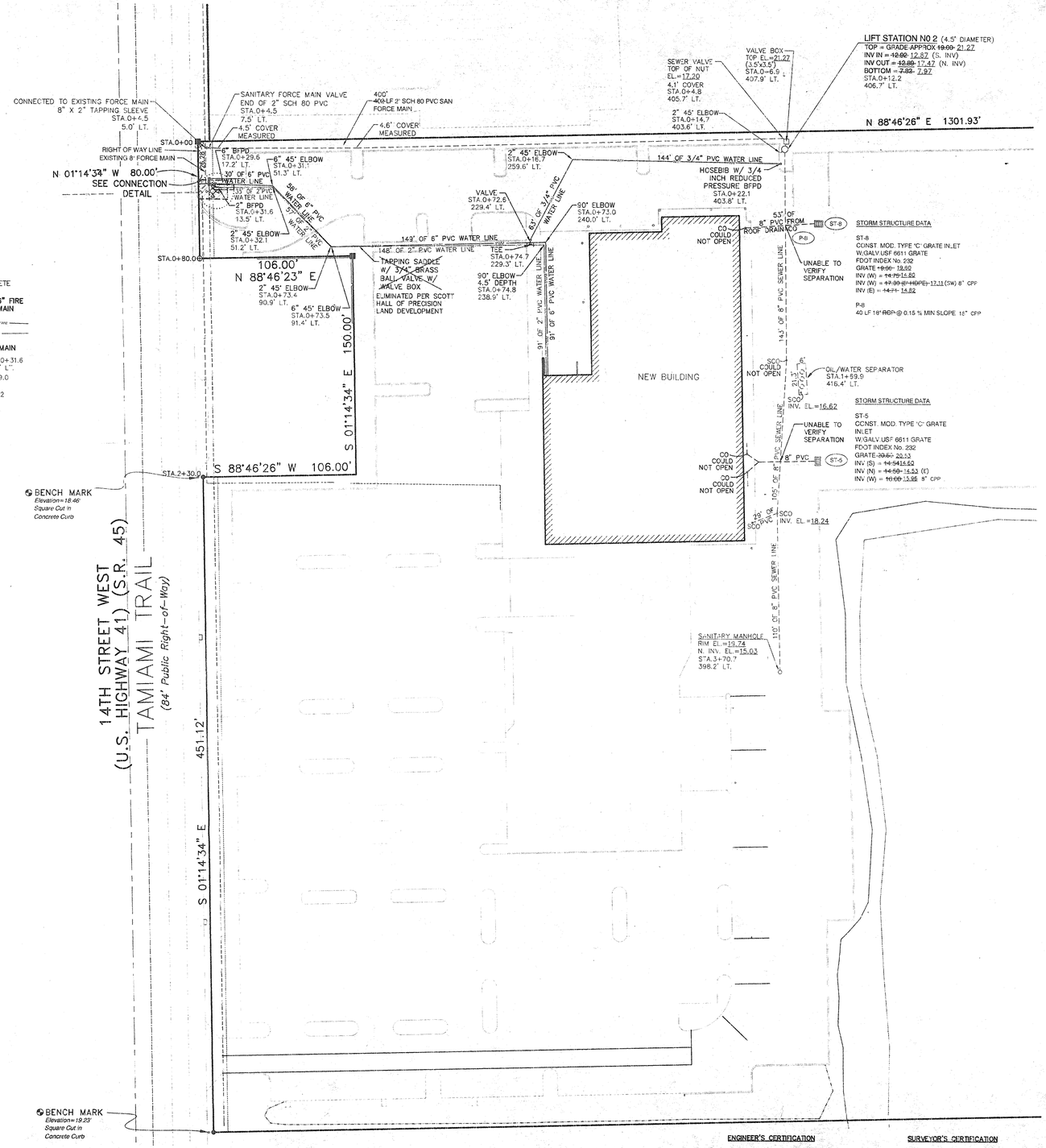
4987.00

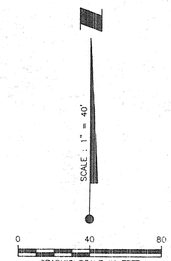
PLOTTED: June 16, 2009 8:08 AM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWFP\CADD\C-7 STORM WATER POND.DWG



CONNECTION DETAIL
SCALE: 1"=10

= UTILITY EASEMENT AREA





LEGEND

•	= IRON ROD FOUND (IRF)
■	= 4" x 4" CONCRETE MONUMENT FOUND
LB	= LICENSED BUSINESS
R/W	= RIGHT-OF-WAY
⊗	= FIRE HYDRANT
⋈	= VALVE
BFPD	= BACK FLOW PREVENTION DEVICE
STA.	= STATION
LT.	= LEFT
CO	= CLEAN OUT
SCO	= SEWER CLEAN OUT
PVC	= POLY-VINYL-CHLORIDE PIPE
CPP	= CORRUGATED PLASTIC PIPE
INV	= INVERT
EL.	= ELEVATION
FM	= FORCE MAIN (SANITARY SEWER)
WM	= WATER MAIN

NOTES:

1. BEARINGS SHOWN HEREON REFER TO THE EAST RIGHT-OF-WAY LINE OF US 41 BEING N 01°14'34" W AS PER THE BOUNDARY SURVEY COMPLETED BY BRITT SURVEYING, INC., JOB #06-01-59 COMPLETED ON 3-14-06.
2. THIS PLAT IS AN AS BUILT/RECORD SURVEY AND IS NOT INTENDED TO BE USED FOR A BOUNDARY SURVEY AS SUCH. MONUMENTATION AND BENCHMARK(S) SHOWN HEREON WERE OBTAINED FROM THE BRITT SURVEY REFERENCED IN NOTE #1.
3. THE PURPOSE OF THIS SURVEY IS TO ESTABLISH LOCATION OF POTABLE WATER SYSTEM AND SANITARY SEWER SYSTEM RECENTLY CONSTRUCTED.
4. THIS SURVEY HAS BEEN PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT AND THEREFORE MAY NOT NECESSARILY INDICATE ALL ENCUMBRANCES ON THE PROPERTY.
5. USE OF THIS SURVEY BY ANYONE OTHER THAN THOSE CERTIFIED TO WILL BE AT THEIR SOLE RISK WITHOUT LIABILITY TO THE SURVEYOR.
6. SUBJECT TO EASEMENTS, DEDICATIONS AND RESTRICTIONS OF RECORD.
7. IMPROVEMENTS SHOWN HEREON ARE OVERLAID ON THE DEVELOPMENT PLANS PROVIDED ELECTRONICALLY TO THIS FIRM BY HOWARD & SHAW CIVIL ENGINEERS, JOB #060331. PROPOSED IMPROVEMENTS OTHER THAN WATER SYSTEM FACILITIES NOT VERIFIED BY THIS FIRM. AS BUILT INFORMATION ON STRUCTURE 8 TAKEN FROM DRAINAGE AS BUILT/RECORD SURVEY COMPLETED ON 5-31-08 BY THIS FIRM.
8. ALL WATER LINES SHOWN HEREON HAVE 4 1/2 FEET OF COVER.
9. ELEVATIONS SHOWN HEREON REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929 AND ARE UNDERLINED.

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY, BASED UPON THE SURVEY RECORD DRAWINGS INFORMATION, THAT THE WASTEWATER AND WATER SYSTEMS HAVE BEEN CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE PERMITTED CONSTRUCTION PLANS.

TREVOR D. HOWARD, P.E. NO. 59364

DATED:

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THE RECORD DRAWING INFORMATION OF THE WASTEWATER AND WATER SYSTEMS ARE TO THE BEST OF MY KNOWLEDGE AND BELIEF A TRUE REPRESENTATION OF THE IMPROVEMENTS AS SHOWN.

LEO MILLS, JR., FL. PSM #3513

DATED: 7-9-08

AS BUILT/RECORD SURVEY

LYING IN SECTION 14, TOWNSHIP 35 SOUTH, RANGE 17 EAST, MANATEE COUNTY, FLORIDA

FOR: HONDA CARS OF BRADENTON

ADDRESS: 5515 14TH STREET WEST, BRADENTON, FL.

BY: LEO MILLS, JR., REGISTERED STATE OF FLORIDA PROFESSIONAL SURVEYOR AND MAPPER No. 3513.

DATE OF SURVEY: 6/12/08

THIS SURVEY/REPORT IS PROVIDED IN HARD COPY FORMAT ONLY. ALL GRAPHIC AND TEXT DATA IS COPYRIGHTED.

"NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER."

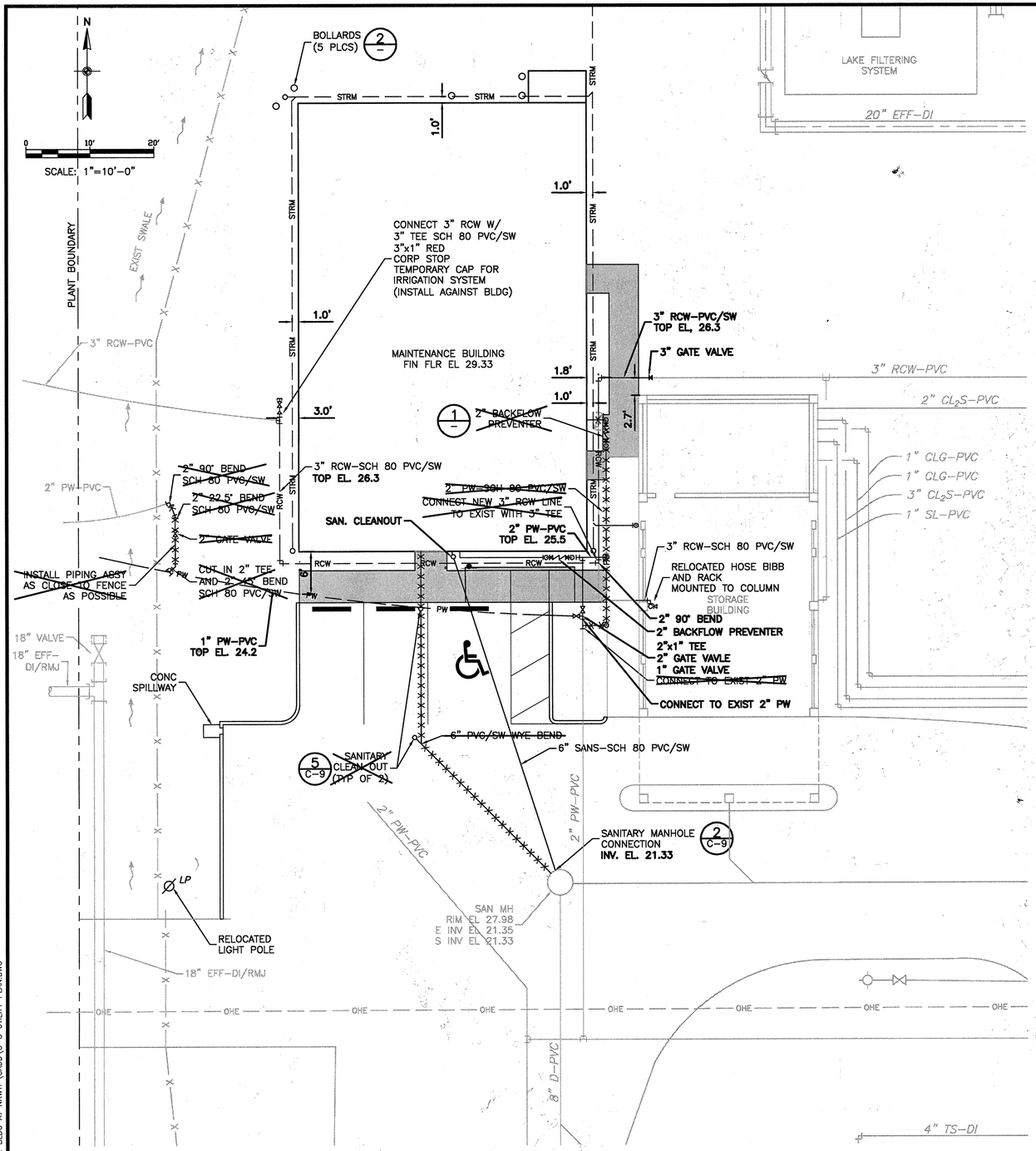
Leo Mills & Associates, Inc.
LICENSED BUSINESS NO. 613 • SURVEYING • LAND PLANNING
620 8th AVENUE WEST, PALMETTO, FL 34221 PHONE: (941)722-2460 FAX: (941)722-9640
22 NORTH POLK AVENUE, ARCADIA, FL 34266 PHONE: (863)993-4

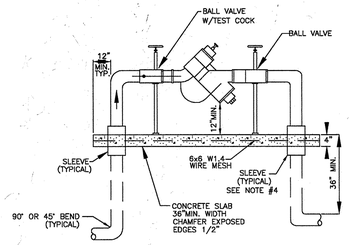
RECEIVED
JUN 30 2009
PUBLIC WORKS ENGINEERING

CERTIFIED TO:
HONDA CARS OF BRADENTON
PRECISION LAND DEVELOPMENT

JOB NO.	C 6475		REVISIONS:		INIT.
DRAWN BY:	LKC	CHECKED BY: JR	FM COVER	6-25-08	LKC
FILE:	C6475-UT-AB.DWG (C-8-UTIL TAB)		RESPONDED TO CO. COMMENTS	7-02-08	LKC
COGO FILE:	C6475-SQ.CGO LKC		(EXCEPT EASEMENT RECRD)		
SCALE:	1" = 40' (SEE GRAPHIC SCALE)		REVS PER CO. 7-9-08		

Dr. 27 # 90

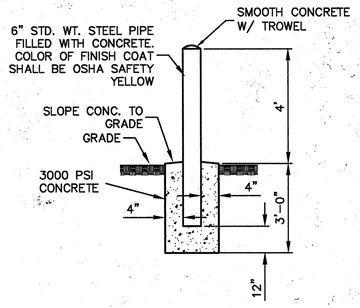




NOTES:

1. BOTTOM OF BACKFLOW DEVICE MUST BE 12" ABOVE FINISHED GRADE.
2. COPPER PIPE TYPE "L" OR "K" OR BRASS PIPE MINIMUM SCHEDULE 40 SHALL BE USED TO A MINIMUM DEPTH OF 36" BELOW GRADE.
3. PIPES PASSING THROUGH OR ENCASED IN CONCRETE MUST BE PROPERLY PROTECTED AND SLEEVED.
4. THE SYSTEM MUST MEET ALL REQUIREMENTS OF THE MANATEE COUNTY PLUMBING CODE (Latest Edition) AND THE MANATEE COUNTY BACKFLOW PREVENTION CODE (Latest Edition).
5. ALL PIPING FROM BACKFLOW DEVICE TO THE FIRST ATMOSPHERIC OPENING OR TO EACH BRANCH VALVE, MUST BE COLOR CODED BLUE.
6. LOCK PACKS AND BRASS NIPPLES WILL BE PROVIDED BY M.C.P.W.D.

2" BACKFLOW PREVENTER
DETAIL 1/-
SCALE: NTS



BOLLARD DETAIL
DETAIL 2/-
SCALE: N.T.S.

NOTES:
1. CONTRACTOR TO VERIFY ALL EXISTING UNDERGROUND UTILITIES BEFORE START OF CONSTRUCTION.

RECORD DRAWING 06/15/2009

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLOTTED June 16, 2009 8:39 AM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\C-8 UTILITY PLAN.DWG

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER	DAVE WILCOX
JOB NO.	12005555
DSGN:	J. PANTELIS
DRWN:	D. ELLIS
CHKD:	D. WILCOX
APVD:	D. WILCOX
DATE:	May 29, 2009

URS
7650 West Courtney Campell Causeway, Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

UTILITY PLAN

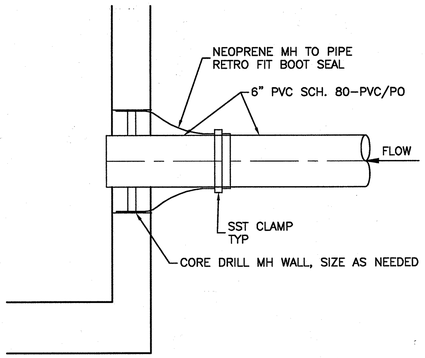
DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWING
JUNE 2009

C-8

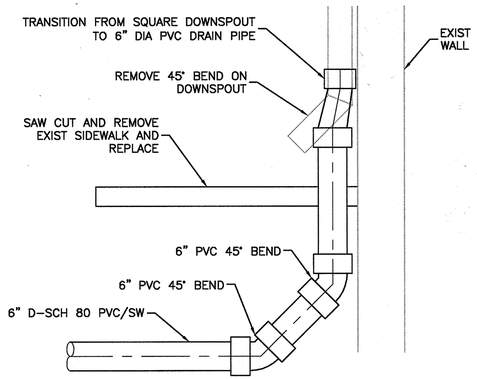
4987.011

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



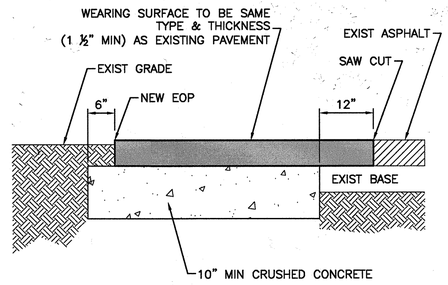
MANHOLE CONNECTION

DETAIL 2 / C–8
SCALE: NTS



EXISTING DOWNSPOUT CONNECTION

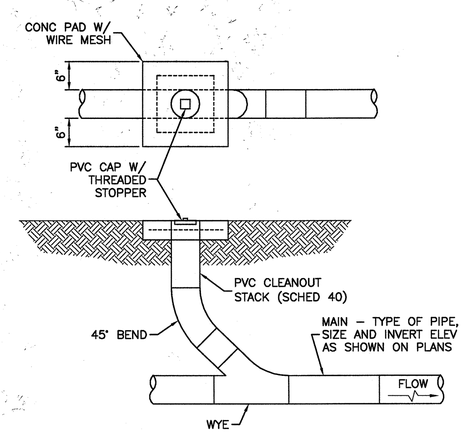
DETAIL 3 / C–6
SCALE: NTS



NOTE:
BASE PREPARATION AND COMPACTION PER SPECIFICATIONS.

ASPHALT PAVEMENT

DETAIL 4 / C–6
SCALE: NTS



TYPICAL CLEANOUT

DETAIL 5 / –
SCALE: NTS

NOTES:

1.) ~~USE OF TYPE A–2 AND A–3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.~~

2.) 10" MAX. FOR PIPE DIAMETERS LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

4.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

5.) WEARING SURFACE TO BE SAME TYPE & THICKNESS (1½" MIN.) AS EXISTING PAVEMENT.

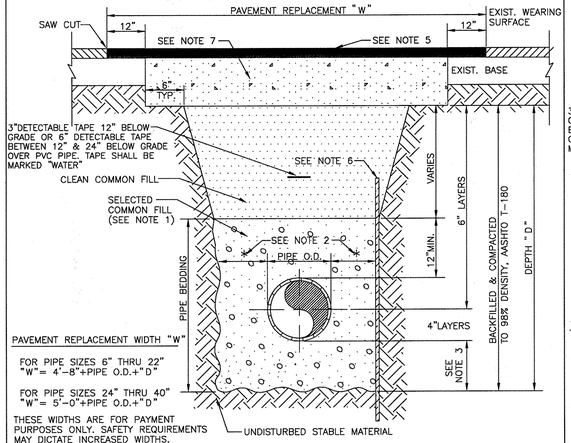
6.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.

7.) BASE SHALL BE 6" MINIMUM THICKNESS SAND ASPHALT, 10" MIN. THICKNESS CRUSHED CONCRETE, OR APPROVED EQUAL.

8.) BACKFILL AASHTO M–145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES, EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T–180 DENSITY.

9.) TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIME. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.

10.) NOTES 5.) THRU 9.) ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY TRANSPORTATION DEPARTMENT STANDARDS FOR ADDITIONAL REQUIREMENTS.



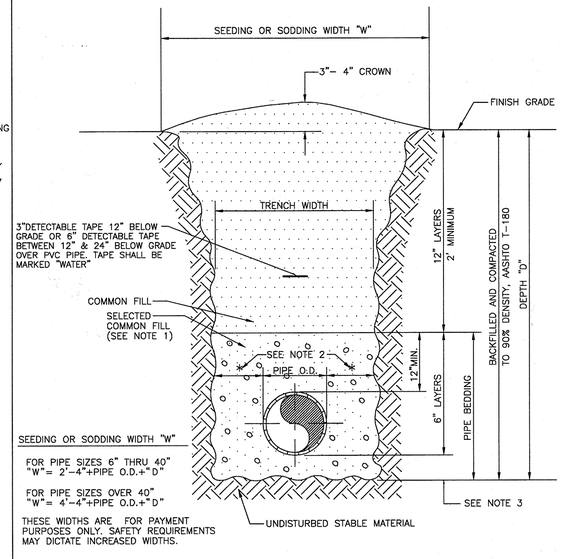
MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH DETAIL	UW–27
REV.BY	DATE	MARCH 18, 1997	ASPH. PAVEMENT SURFACE	
RTH	11/99	DATE OF APPROVAL	TYPE A–1 PIPE BEDDING	

NOTES:

1.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

2.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX FOR PIPE 42" DIAMETER AND LARGER.

3.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH DETAIL	UW–26
REV.BY	DATE	MARCH 18, 1997	UNIMPROVED SURFACE	
RTH	11/99	DATE OF APPROVAL	TYPE A–1 PIPE BEDDING	

DOWNSPOUT CONNECTION

DETAIL 6 / C–6
SCALE: NTS

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION

REVISIONS

PROJECT MANAGER
DAVE WILCOX

JOB NO.	12005555
DSGN:	J. PANTELIS
DRWN:	D. ELLIS
CHKD:	D. WILCOX
APVD:	D. WILCOX
DATE:	November 9, 2007

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

CIVIL DETAILS

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWING
JUNE 2009

C–9

4987.012

PLOTTED June 16, 2009 8:40 AM PLOTTED BY: ELLIS, DAVID
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VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

GOVERNING LOCAL CODES

- FLORIDA BUILDING CODE (FBC) – LATEST EDITION
- AMERICANS WITH DISABILITIES ACT (FBC – CHAPTER 11)
- NATIONAL FIRE PROTECTION ASSOCIATION (NFPA 101) – LATEST EDITION
- FLORIDA PLUMBING CODE – LATEST EDITION
- FLORIDA ELECTRICAL CODE – LATEST EDITION
- FLORIDA ELECTRICAL CODE – LATEST EDITION
- MANATEE COUNTY UTITLITY STANDARDS – LATEST EDITION

GENERAL CONTRACT NOTES

1. GENERAL NOTES APPLY TO ALL DRAWINGS AND SPECIFICATIONS.

2. THE CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS, QUANTITIES, AND DIMENSIONS PRIOR TO COMMENCING ANY WORK AND SHALL BE RESPONSIBLE FOR COORDINATION OF ALL DIMENSIONS, WORK, AND MATERIALS REQUIRED.

3. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ENGINEER BEFORE PROCEEDING.

4. THE CONTRACTOR SHALL REPORT TO THE ENGINEER ANY ERROR, INCONSISTENCY OR OMISSION HE MAY DISCOVER PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY ERROR AFTER THE START OF CONSTRUCTION WHICH HAS NOT PREVIOUSLY BEEN BROUGHT TO THE ATTENTION OF THE ENGINEER. THE MEANS OF CORRECTION SHALL FIRST BE REVIEWED AND APPROVED BY THE ENGINEER.

5. THE CONTRACTOR SHALL BEAR ALL EXPENSE OF, AND RESPONSIBILITY FOR, REPAIR OR REPLACEMENT OF ANY PROPERTY DAMAGE NOT RELATED TO THE WORK CAUSED BY HIS OPERATIONS.

6. THE CONTRACTOR SHALL CONDUCT HIS ACTIVITIES IN A SAFE AND SECURE MANNER.

7. ALL MATERIALS TO BE INSTALLED SHALL CONFORM WITH SPECIFICATIONS AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

8. LIMITS OF WORK SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR AND OWNER PRIOR TO BEGINNING WORK.

9. PROTECTION AND REPAIR OF DAMAGE TO EXISTING FACILITIES: CONTRACTOR SHALL MAINTAIN THESE FACILITIES IN OPERATION AT ALL TIMES (OUTSIDE OF CURRENT WORK PHASE AREA), IF DAMAGE OCCURS TO THESE FACILITIES THE CONTRACTOR SHALL REPAIR SAME TO THE ORIGINAL CONDITION BEFORE THE END OF THAT SHIFT. CONTRACTOR IS SOLELY RESPONSIBLE FOR DAMAGE TO AND REPAIR OF EXISTING FACILITIES.

10. THE CONTRACTOR IS REQUIRED TO WORK WITHIN A LIMITED TIME FRAME AND A SYSTEMATIC MANNER WHILE PROTECTING COUNTY EMPLOYEES FROM ANY HAZARDS DURING THE TIME OF CONSTRUCTION.

11. IT IS THE OWNER'S INTENT TO MAINTAIN DAILY OCCUPANCY FUNCTIONS DURING PROGRESS OF THIS WORK. THE CONTRACTOR SHALL CLOSELY COORDINATE THE WORK TO MINIMIZE ANY INCONVENIENCE THERETO.

12. PROVIDE ALL DEMOLITION, CUTTING, PATCHING AND RESTORATION REQUIRED TO REMOVE, REPLACE, EXTEND, INSTALL OR OTHERWISE PROVIDE THE SYSTEMS INDICATED BY THE PLANS & SPECIFICATIONS.

13. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING ABOVE & BELOW GROUND UTILITIES WITHIN CONTRACT LIMITS & PROTECT THEM FROM DAMAGE DURING THE COURSE OF THIS CONSTRUCTION.

14. THE CONTRACTOR SHALL BEAR ALL EXPENSE OF, AND RESPONSIBILITY FOR, REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGE CAUSED BY HIS OPERATIONS & SUB–CONTRACTORS. UTILITIES DEACTIVATED OR ABANDONED IN PLACE BY THIS PROJECT SHALL BE CAPPED OR SEALED OFF IN ACCORDANCE WITH LOCAL REGULATIONS.

15. ALL CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE CODES AND LOCAL REGULATIONS.

16. ALL WASTE, RUBBLE AND WASTE DEBRIS MATERIALS FROM THE CONSTRUCTION SITE AND BUILDINGS SHALL BE DISPOSED OF OFF THE PROPERTY BY THE CONTRACTOR IN ACCORDANCE WITH STATE AND LOCAL LAWS & REQUIREMENTS.

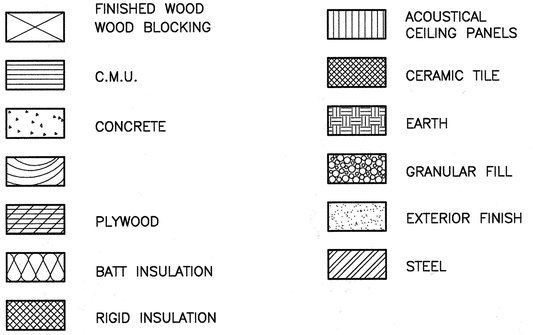
17. CONTRACTOR MUST COORDINATE WITH OWNER FOR ACCESS REQUIREMENTS FOR ALL EMPLOYEES AND EQUIPMENT OF THE CONTRACTOR AND OR SUB–CONTRACTORS.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SECURITY OF THE PORTION OF THE SITE CONTROLLED BY THIS CONTRACT, 24 HOURS PER DAY, WHILE THE JOB IS IN PROGRESS AND UNTIL THE PROJECT IS OFFICIALLY DECLARED SUBSTANTIALLY COMPLETE.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL STATE AND LOCAL PERMITTING AND ASSOCIATED FEES.

20. DO NOT OBSTRUCT STREETS, SIDEWALKS, DRIVEWAYS OR OTHER RIGHT–OF–WAYS WITHOUT FIRST OBTAINING PROPER PERMITS AND NOTIFYING OWNER'S REPRESENTATIVE.

MATERIALS LEGEND



ABBREVIATIONS

ABOVE FINISH FLOOR	AFF	MAXIMUM	MAX
ADDITIONAL	ADDNL	MEAN SEA LEVEL	MSL
ALUMINUM	ALUM	MECHANICAL	MECH
ANCHOR	ANC	MEDIUM	MED
ANCHOR BOLT	AB	METAL	MTL
AT	@	MINIMUM	MIN
AUXILIARY	AUX	MISCELLANEOUS	MISC
AVERAGE	AVG	NORTH/NORTHING	N
BLOCK	BLK	NORTHEAST	NE
BOTTOM	BOT OR B	NORTHWEST	NW
BUILDING	BLDG	NOT APPLICABLE	N/A
BUILDING LINE	BL	NOT IN CONTRACT	NIC
CAST IRON	CI	NOT TO SCALE	NTS
CENTERLINE	CL	NUMBER	NO OR #
CENTER TO CENTER	C TO C	ON CENTER	O/C
CLEARANCE	CLR	OPPOSITE	OPP
COLUMN	COL	OUTSIDE DIAMETER	OD
CONCRETE	CONC	OVERHEAD	OH
CONCRETE MASONRY UNIT	CMU	PANEL	PNL
CONSTRUCTION	CONST	PAVEMENT	PVMT
CONTROL JOINT	C.J.	PLATE	PL
CONTINUOUS	CONT	PLYWOOD	PLYWD
CUBIC INCH	CI	POLYVINYL CHLORIDE	PVC
DETAIL	DET	POUNDS	LBS
DIAMETER	DIA OR ø	POUNDS PER SQUARE INCH	PSI
DIAGONAL	DIAG	PRESSURE TREATED	PT
DIMENSION	DIM	RADIUS	RAD OR R
DISTANCE	DIST	REFERENCE	RE
DOWN	DN	REINFORCING	REINF
DRAWING	DWG	REINFORCING BAR	REBAR
DRIVE	DR	REQUIRED	REQD
EACH	EA	REVISED	REV
EACH WAY	EW	ROOF DRAIN	RD
EAST/EASTING	E	ROADWAY	RDWY
ELEVATION	EL OR ELEV	ROOM	RM
ELECTRICAL	ELEC	SAFETY GLASS	SG
EQUIPMENT	EQUIP	SCHEDULE	SCH
EQUAL	EQ	SECOND	SEC
EXHAUST FAN	EX	SECTION	SECT
EXISTING	EXIST	SHEET	SHT
EXPANSION JOINT	E.J.	SIDEWALK	S/W
EXPOSED STRUCTURE	EXP STR	SIMILAR	SIM
EXTERIOR	EXT	SOUTH	S
FEET	FT	SOUTHEAST	SE
FINISH FLOOR ELEVATION	FFE	SOUTHWEST	SW
FIRE EXTINGUISHER	FE	SPECIFICATION	SPEC
FLOOR	FL	SQUARE	SQ
FOOT	FT	SQUARE FEET	SF
FLOOR DRAIN	FD	STANDARD	STD
FOOTING	FTG	STAINLESS STEEL	SS
FLORIDA POWER & LIGHT	FPL	STEEL	STL
GALVANIZED	GALV	STIRRUP	STR
GLAZING	GLZ	STREET	ST
GROUND	GND	SYMMETRICAL	SYM
GYPSUM BOARD	GYP BD	TANGENT	TAN
HARDWARE	HDW	TELEPHONE	TELE
HEIGHT	HT	TEMPORARY	TEMP
HOLLOW METAL	HM	THICKNESS	THK
HORIZONTAL	HORIZ	TOP AND BOTTOM	T & B
HEIGHT	HT	TOP FACE	T/F
INSIDE DIAMETER	ID	TOP OF CONCRETE	T.O.C.
INCH	IN	TOP OF CURB	TC
INFORMATION	INFO	TOP OF SLAB	T.O.S.
INSIDE DIAMETER	ID	TOP OF STEEL	T.O.S.
INVERT	INV	TYPICAL	TYP.
JOINT	JT	UNLESS NOTED OTHERWISE	UNO
KIPS	K	UNDERWRITERS LABORATORIES INC	UL
KIPS PER SQUARE INCH	KSI	VARIABLE	VAR
LIGHT	LT	VENT THRU ROOF	VTR
LIGHTWEIGHT	LT WT	VERIFY IN FIELD	VIF
LENGTH	L	VERTICAL	VERT
LIGHTING	LTG	WIDTH	W
LINEAR	LIN	WIRE GLASS	WG
LINEAR FEET	LF	WITH	W/
LONG	LG	WITHOUT	W/O
MATERIAL	MATL	WOOD	WD
MANUFACTURER	MANUF		

NOTE: NOT ALL ABBREVIATIONS MAY BE USED IN THESE DOCUMENTS

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION

REVISIONS

PROJECT MANAGER
DAVE WILCOX

JOB NO.	12005555
DSGN:	J. PANTELIS
DRWN:	D. ELLIS
CHKD:	D. WILCOX
APVD:	S. NUTE
DATE:	November 9, 2007

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Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

SUSAN FUNK NUTE
AIA NO. 11913

PROJECT STATUS
RECORD DRAWING
JUNE 2009

A–1

4987.013

PLOTTED June 16, 2009 1:39 PM PLOTTED BY: ELLIS, DAVID
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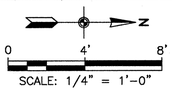

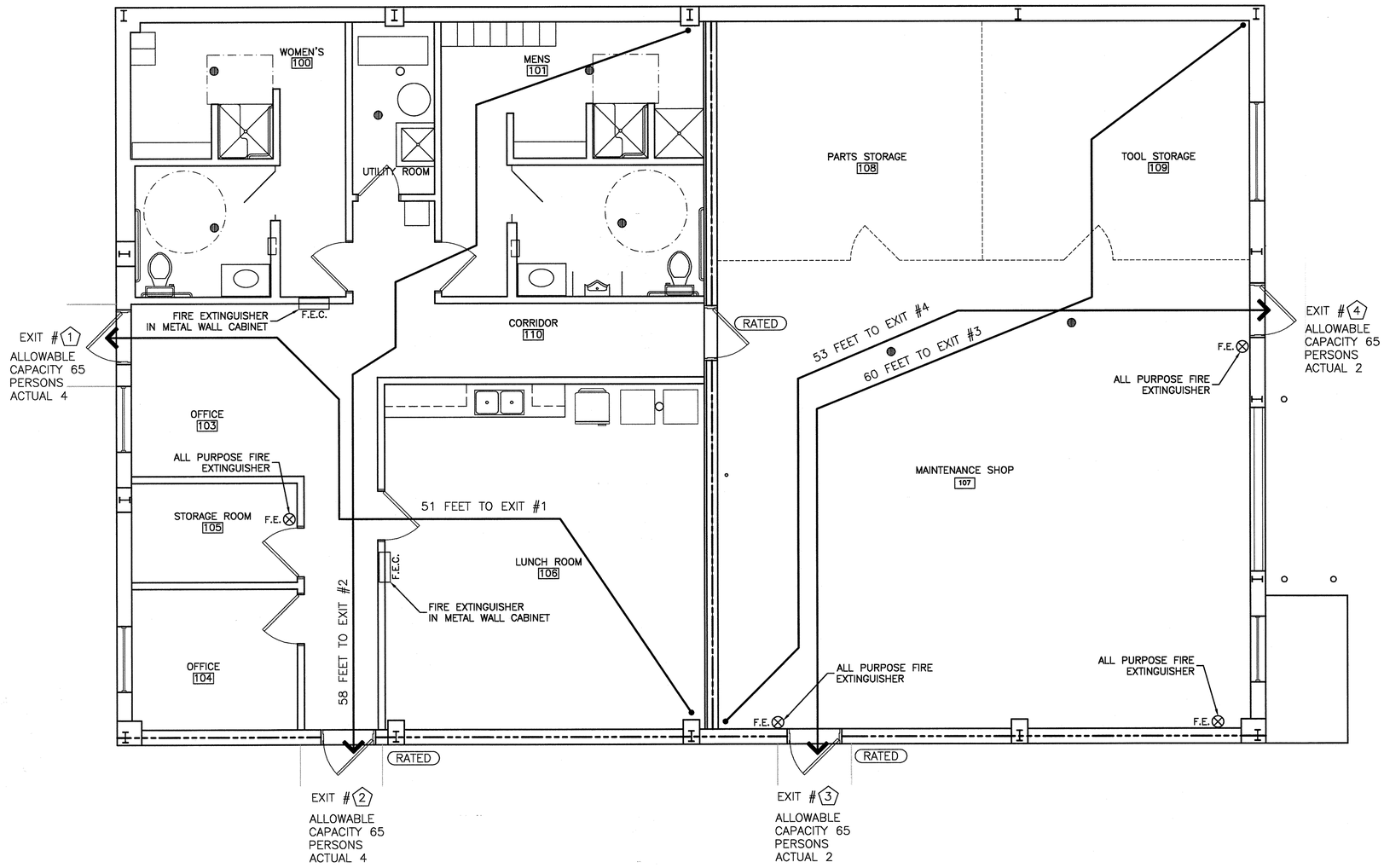

BUILDING CODE SUMMARY AND LIFE SAFETY NOTES

BUILDING TYPE – IIB NON–SPRINKLERED
CLASSIFICATION – MIXED USE: BUSINESS AND STORAGE
ALLOWABLE HEIGHT – 55 FEET
BUILDING HEIGHT – 14 FEET
ALLOWABLE AREA – BUSINESS: 23,000 SQUARE FEET
STORAGE: 17,500 SQUARE FEET
BUILDING AREA – BUSINESS: 1,505 SQUARE FEET
STORAGE: 1,419 SQUARE FEET
MAXIMUM OCCUPANCY PER CODE – BUSINESS: 15
STORAGE: 5
PROJECTED OCCUPANCY – BUSINESS: 4
STORAGE: 2
REQUIRED EXITS – BUSINESS: 2
STORAGE: 2
PROVIDED EXITS – BUSINESS: 2
STORAGE: 2
MAXIMUM TRAVEL DISTANCE – BUSINESS: 200 FEET
STORAGE: 200 FEET
BUILDING TRAVEL DISTANCE – BUSINESS: 58 FEET
STORAGE: 60 FEET

LIFE SAFETY SYMBOLS

: TWO HOUR RATED WALL
: THREE HOUR RATED WALL
: MEANS OF EGRESS PATH W/OCCUPANT LOAD AT EXIT.
F.E. : FIRE EXTINGUISHER ON BRACKET
F.E.C. : FIRE EXTINGUISHER IN CABINET
RATED : FIRE RATED DOOR

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. PANTELIS
DRWN: D. ELLIS
CHKD: D. WILCOX
APVD: S. NUTE
DATE: November 9, 2007

URS
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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

LIFE SAFETY PLAN

SUSAN FUNK NUTE
AIA NO. 11913

PROJECT STATUS
RECORD DRAWING
JUNE 2009

A–1.1

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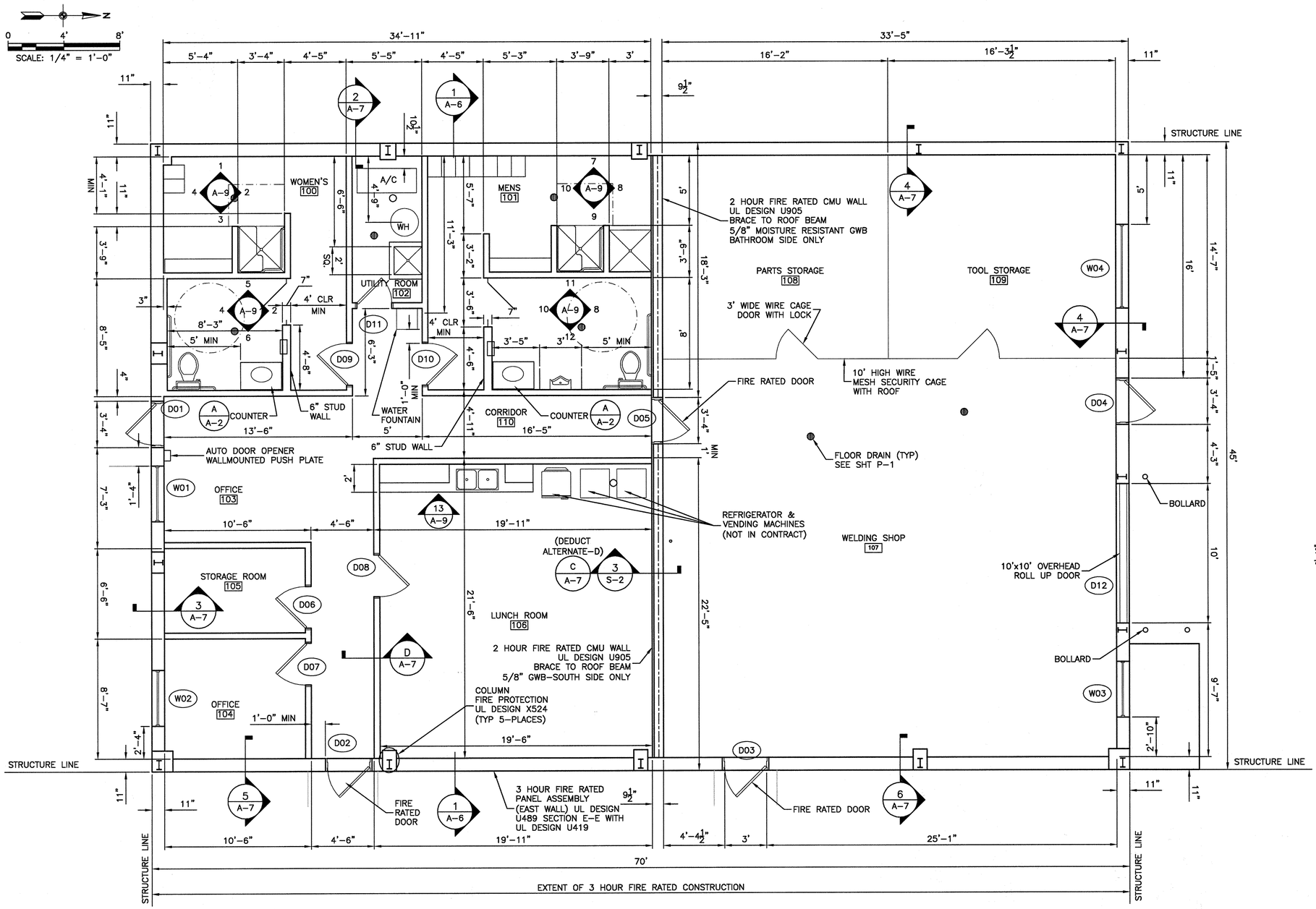
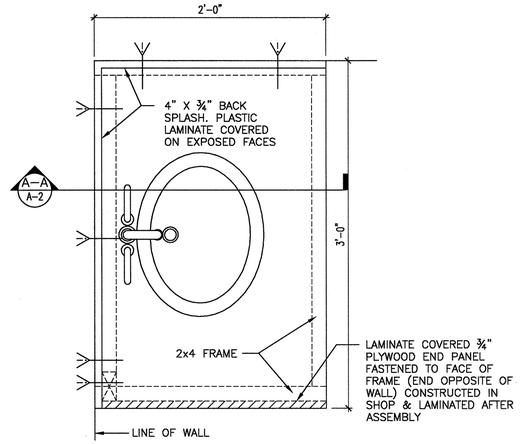
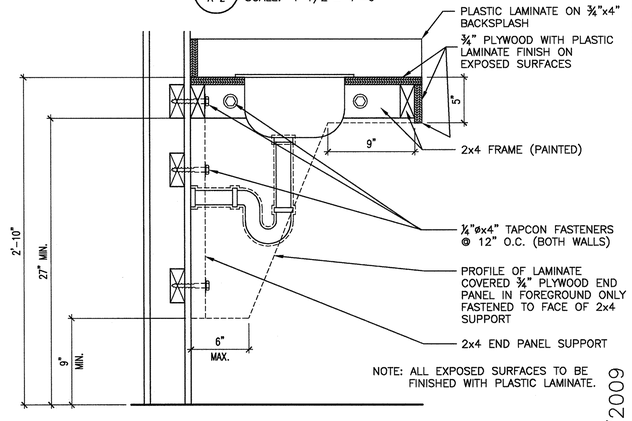




A / A-2 COUNTER - PLAN
SCALE: 1 1/2"= 1'-0"



A-A / A-2 SECTION
SCALE: 1 1/2"= 1'-0"

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER	DAVE WILCOX
JOB NO.	12005555
DSGN:	J. PANTELIS
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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

FLOOR PLAN

SUSAN FUNK NUTE
AIA NO. 11913

PROJECT STATUS
RECORD DRAWING
JUNE 2009

A-2

4987.015

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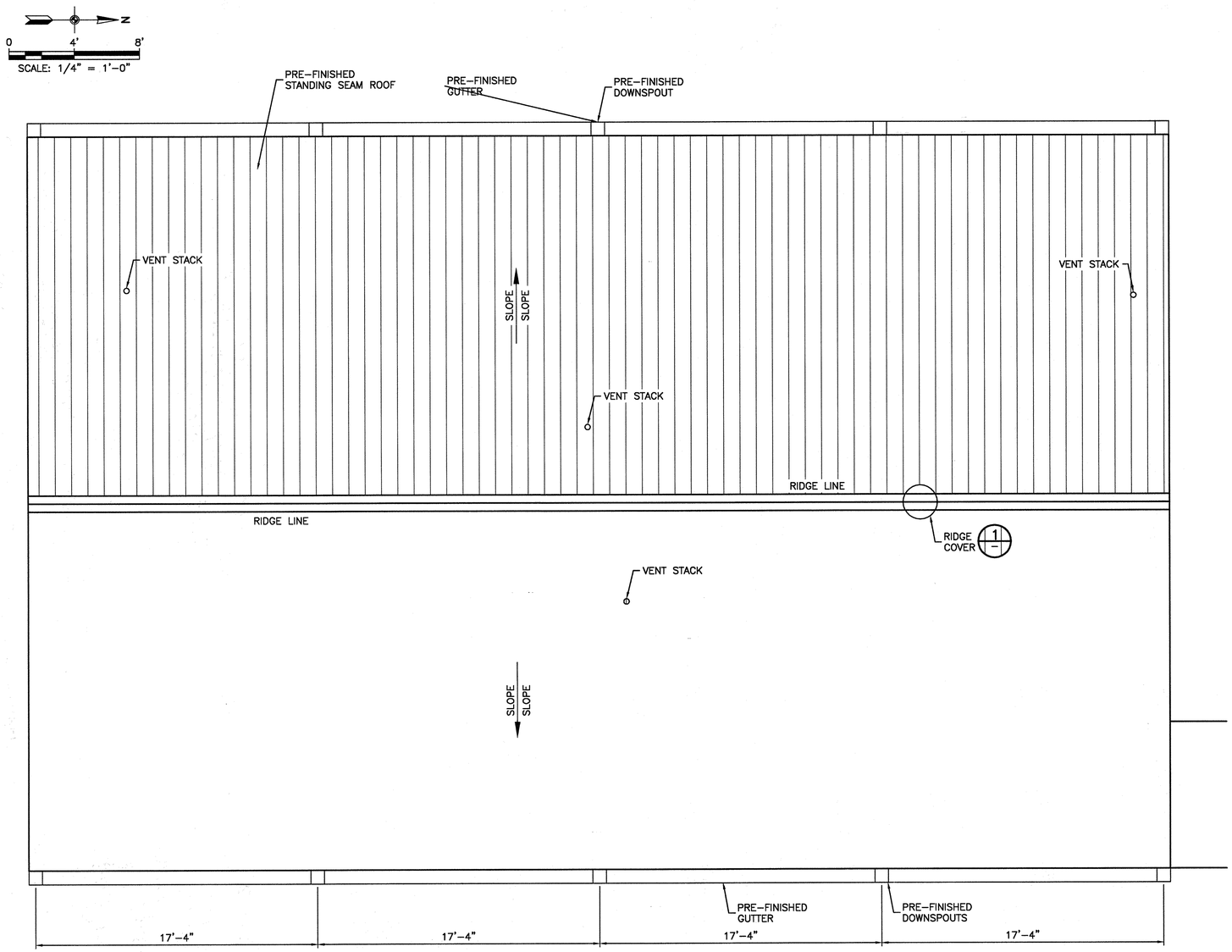
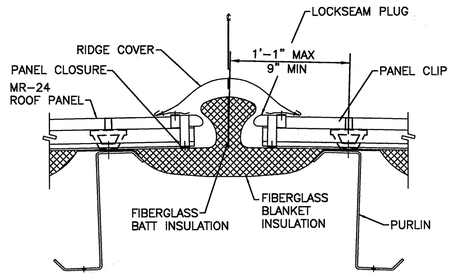


ROOF PLAN
SCALE: 1/4"=1'-0"



RIDGE COVER
DETAIL 1/–
SCALE: 1"=1'-0"

NOTES:
1. ROOF PENETRATION DETAIL PER MANUFACTURER'S STANDARD.
2. THESE DETAILS ARE FOR INFORMATION PURPOSE ONLY. SELECTED BUILDING MANUFACTURER SHALL PROVIDEEE ALL DETAILS DURING SHOP DRAWING PHASE.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER	DAVE WILCOX
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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

ROOF PLAN

SUSAN FUNK NUTE
AIA NO. 11913

PROJECT STATUS
RECORD DRAWING
JUNE 2009

A–3

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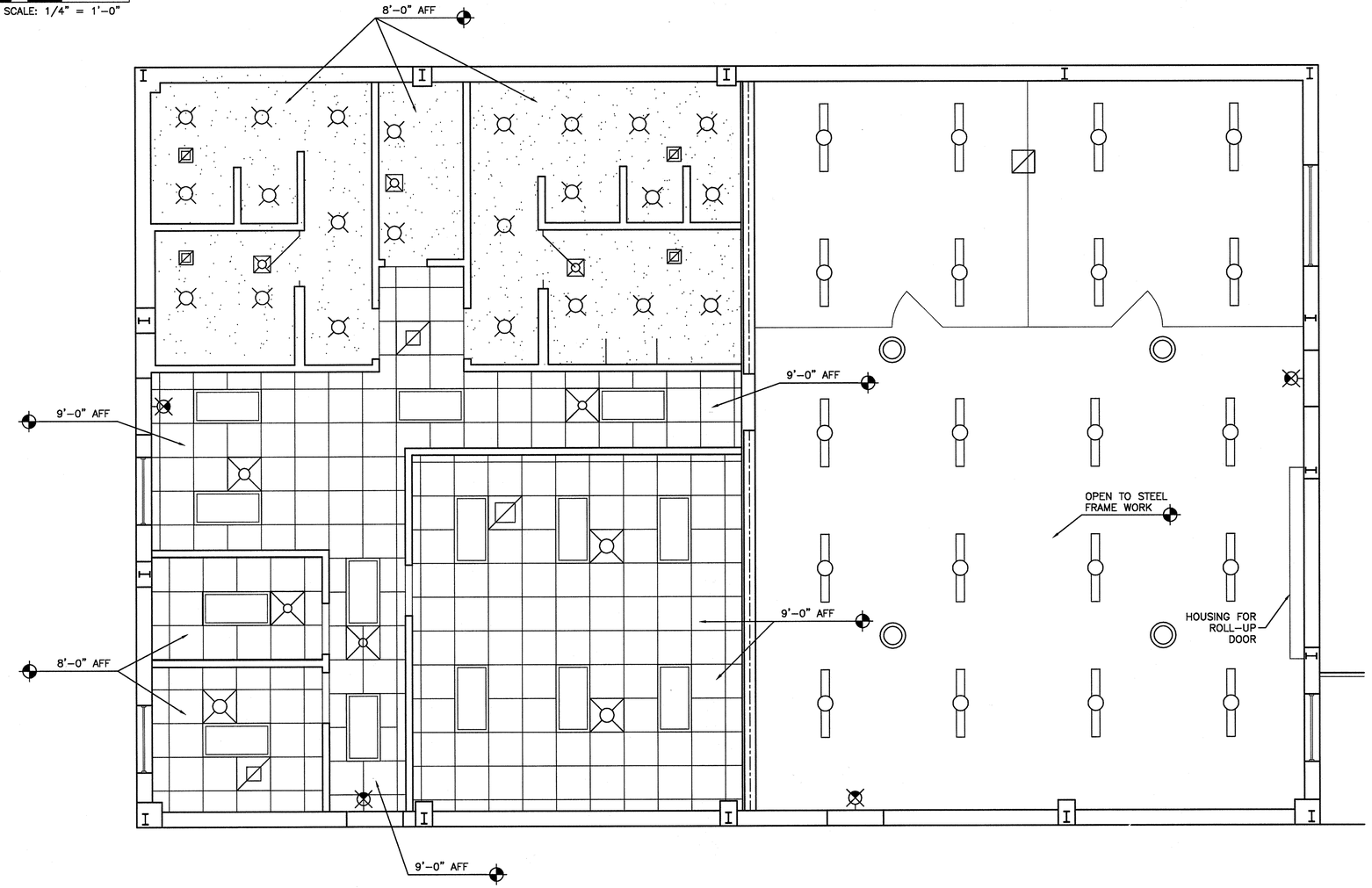
N

0 4' 8'

SCALE: 1/4" = 1'-0"



LEGEND

- STRIP FLUORESCENT LIGHT FIXTURE SEE ELECTRICAL DRAWINGS
- 1x4 LIGHT FIXTURE SEE ELECTRICAL DRAWINGS
- 2X4 LIGHT FIXTURE SEE ELECTRICAL DRAWINGS
- HVAC SUPPLY AIR DIFFUSER SEE MECHANICAL DRAWINGS
- HVAC SUPPLY AIR DIFFUSER SEE MECHANICAL DRAWINGS
- HVAC RETURN AIR OR EXHAUST GRILLE SEE MECHANICAL DRAWINGS
- LIGHT FIXTURE SEE ELECTRICAL DRAWINGS
- EXIT LIGHT SEE ELECTRICAL DRAWINGS
- LAY-IN ACOUSTICAL CEILING
- GYPSUM WALL BOARD CEILING

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION

REVISIONS

PROJECT MANAGER	DAVE WILCOX
JOB NO.	12005555
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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

REFLECTED CEILING PLAN

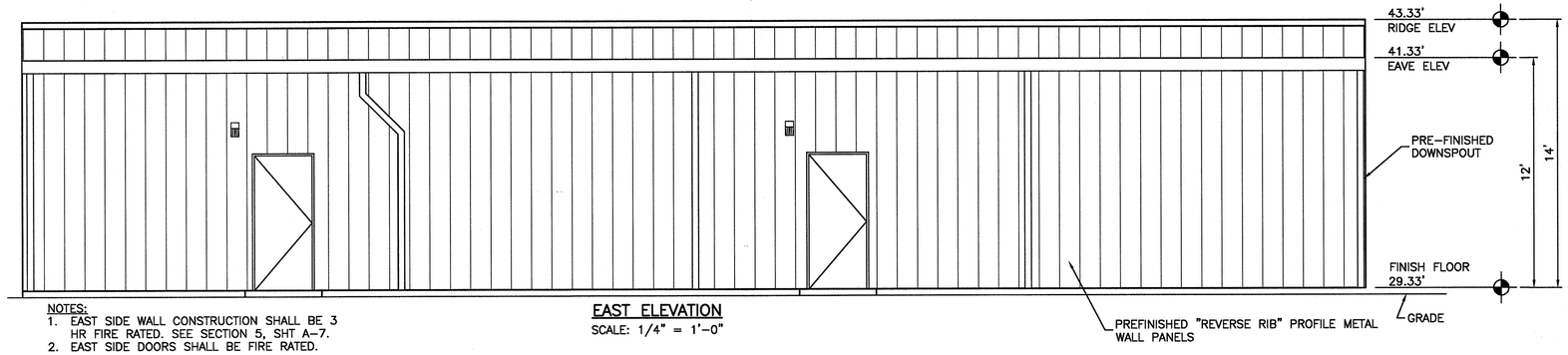
SUSAN FUNK NUTE
AIA NO. 11913

PROJECT STATUS
RECORD DRAWING
JUNE 2009

A-4

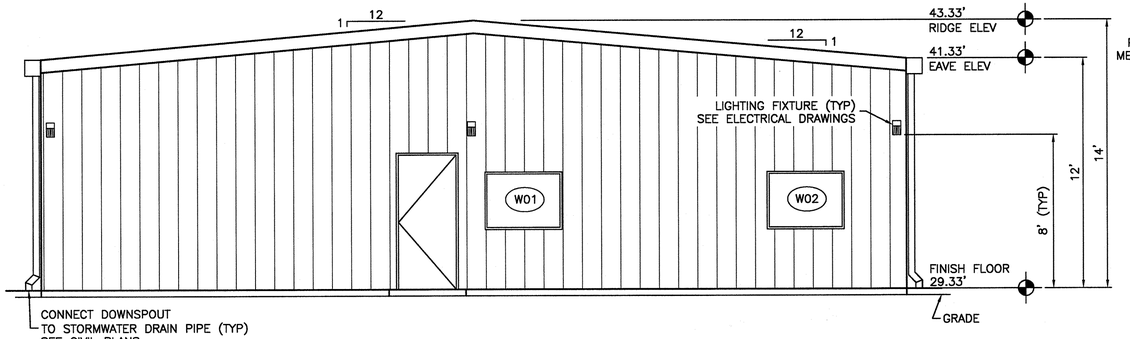
4987.017

PLOTTED June 16, 2009 1:42 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\A-4 REFLECTED CEILING PLAN.DWG

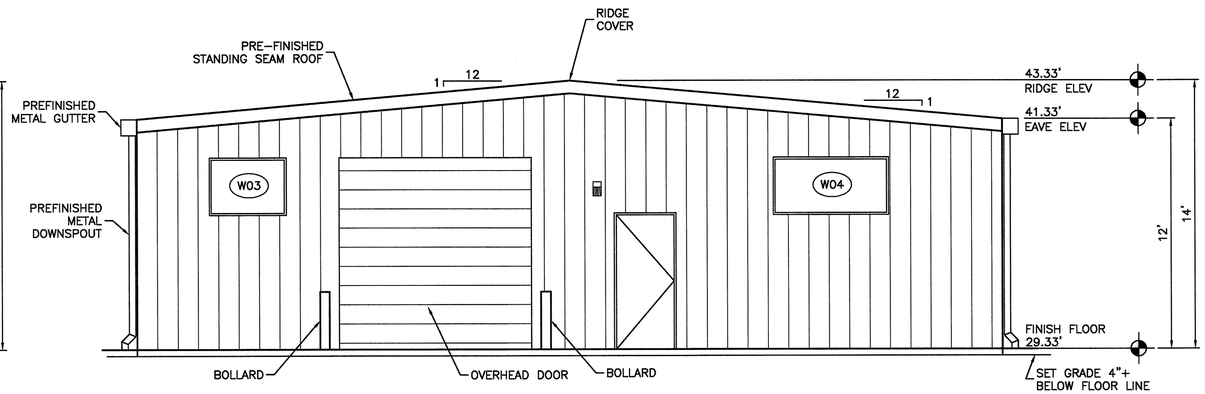


NOTES:
1. EAST SIDE WALL CONSTRUCTION SHALL BE 3 HR FIRE RATED. SEE SECTION 5, SHT A-7.
2. EAST SIDE DOORS SHALL BE FIRE RATED.

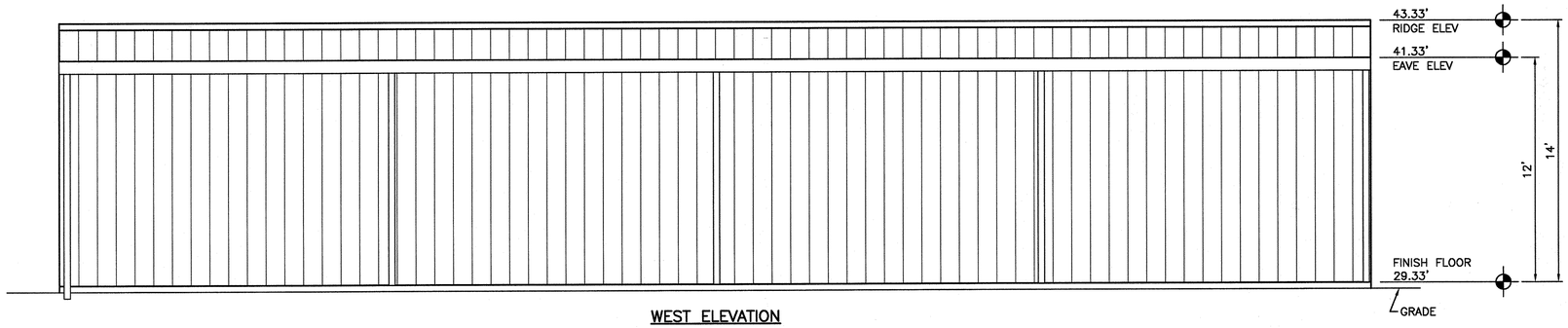
EAST ELEVATION
SCALE: 1/4" = 1'-0"



SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



NORTH ELEVATION
SCALE: 1/4" = 1'-0"



WEST ELEVATION
SCALE: 1/4" = 1'-0"

RECORD DRAWING 06/15/2009

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			REVISIONS

PROJECT MANAGER	DAVE WILCOX
JOB NO.	12005555
DSGN:	J. PANTELIS
DRWN:	D. ELLIS
CHKD:	D. WILCOX
APVD:	S. NUTE
DATE:	November 13, 2007

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Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

EXTERIOR ELEVATIONS

SUSAN FUNK NUTE
AIA NO. 11913

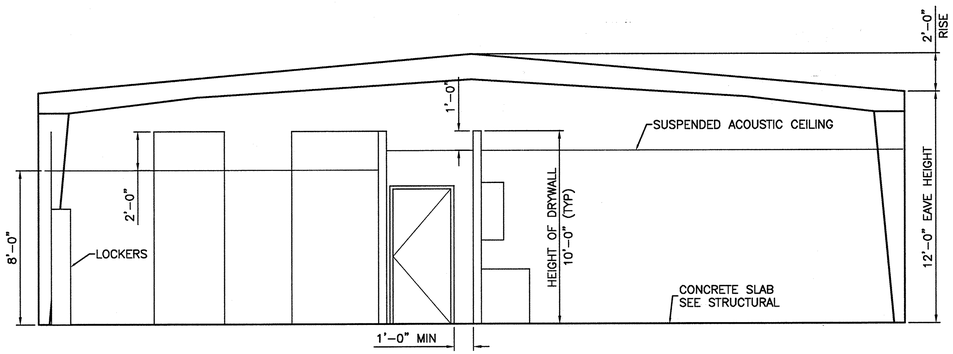
PROJECT STATUS
RECORD DRAWING
JUNE 2009

A-5

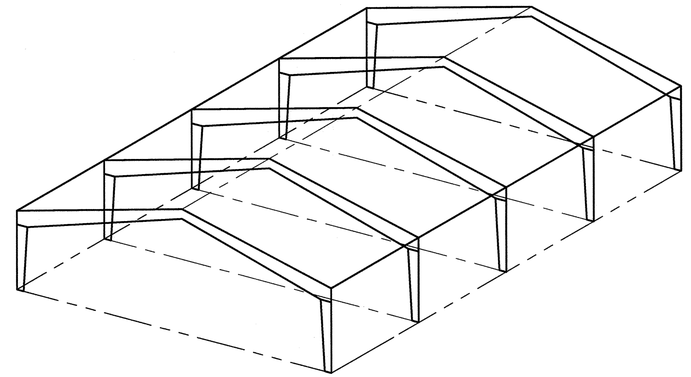
4987.018

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY
PLOTTED June 16, 2009 1:42 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\A-5 EXTERIOR ELEVATIONS.DWG

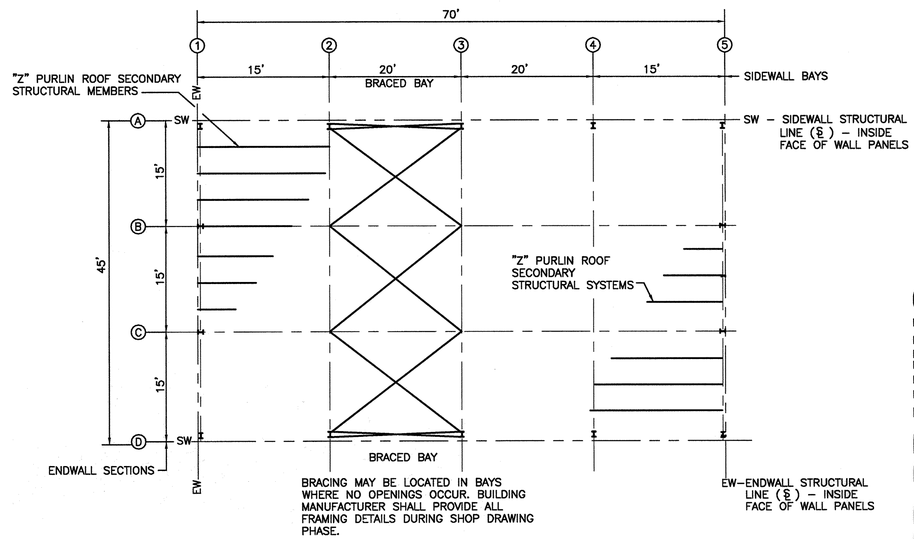
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



SECTION 1 / A-2
SCALE: 1/4"=1'-0"



PRIMARY FRAMING PLAN
DETAIL 1 / –
SCALE: NTS



ROOF FRAMING PLAN
DETAIL 2 / –
SCALE: NTS

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. PANTELIS
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DATE: November 9, 2007

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

BUILDING SECTIONS AND DETAILS

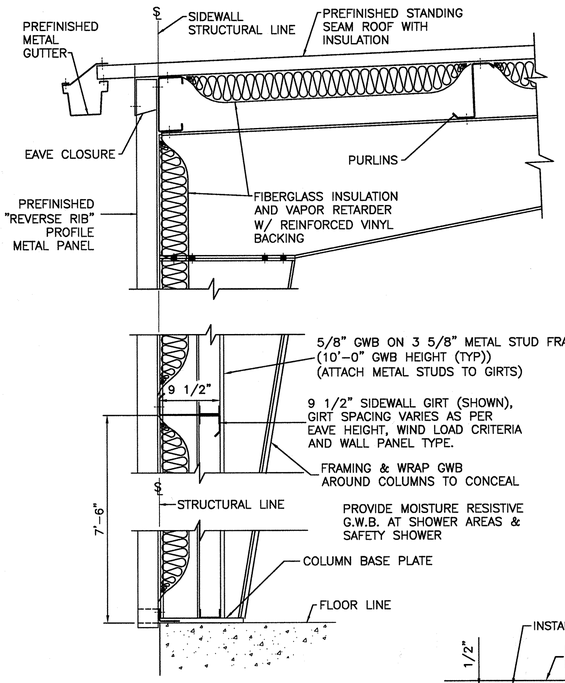
SUSAN FUNK NUTE
AIA NO. 11913

PROJECT STATUS
RECORD DRAWING
JUNE 2009

A-6

4987.019

PLOTTED June 16, 2009 1:42 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\A-6 BUILDING SECTIONS AND DETAILS.DWG



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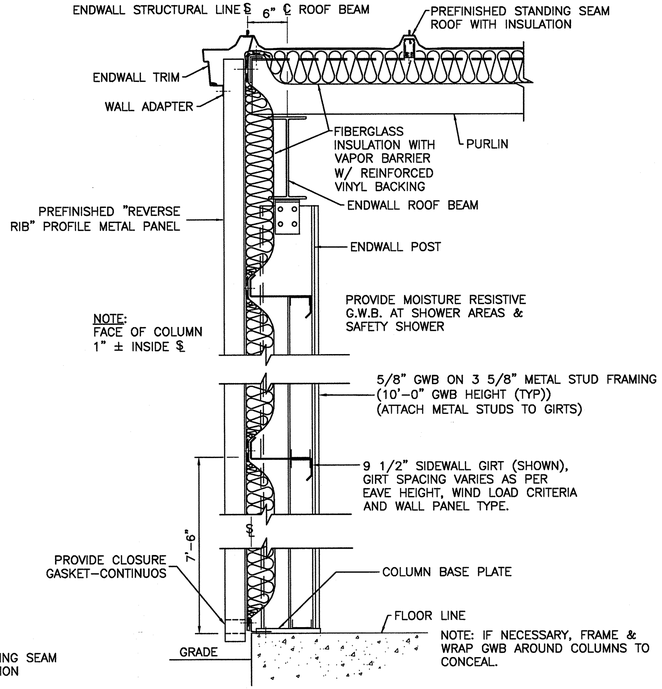

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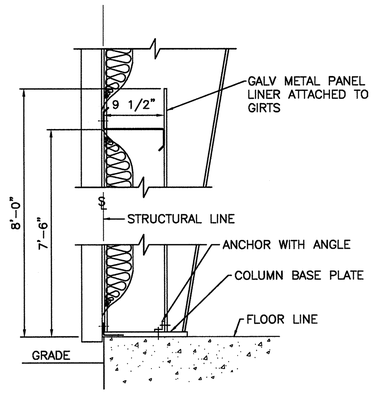
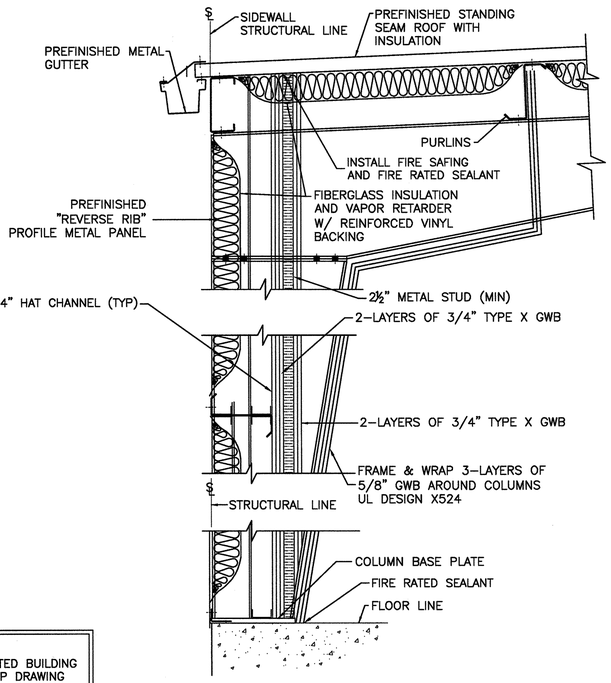


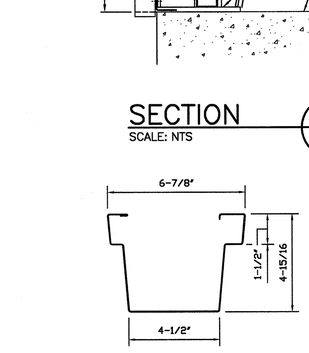
SECTION 4 A-2
SCALE: NTS

NOTE
THESE DETAILS ARE FOR INFORMATION PURPOSES. SELECTED BUILDING MANUFACTURER SHALL PROVIDE ALL DETAILS DURING SHOP DRAWING PHASE.

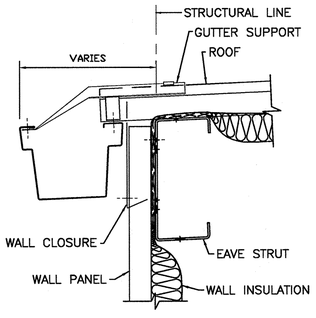


3 HOUR FIRE-RATED WALL (UL-U419)
(EAST SIDE WALL)

SECTION 5 A-2
SCALE: NTS

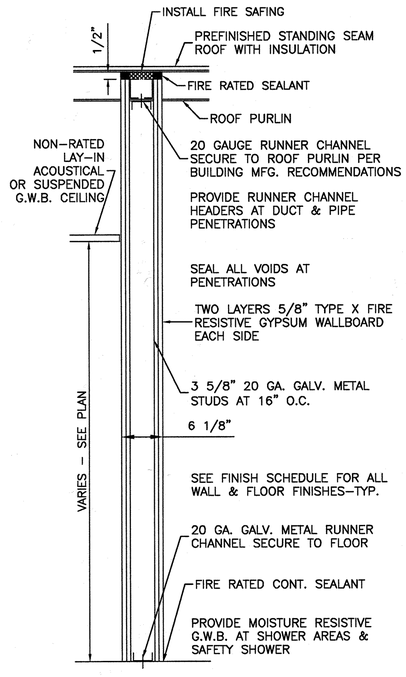


GUTTER CROSS SECTION



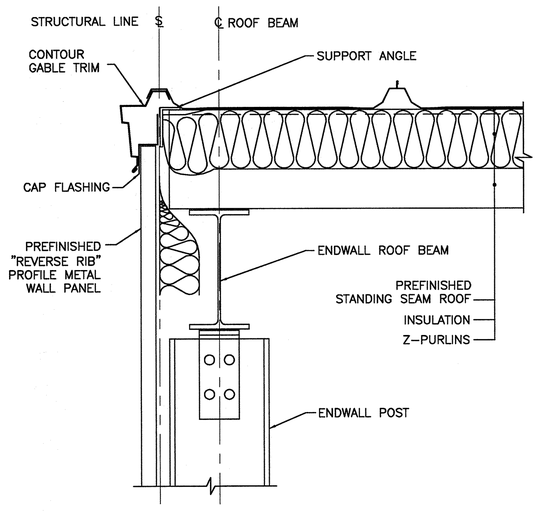
SECTION THRU SIDEWALL GUTTER

DETAIL A –
SCALE: NTS



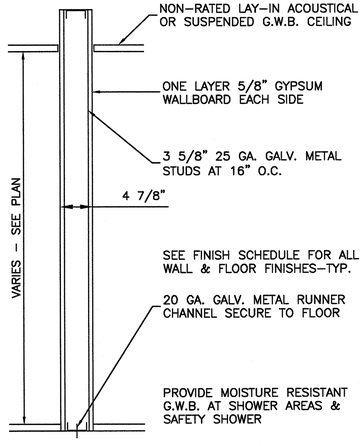
(DEDUCT ALTERNATE - D)
TWO HOUR FIRE RATED INTERIOR PARTITION

DETAIL C A-2
SCALE: NTS



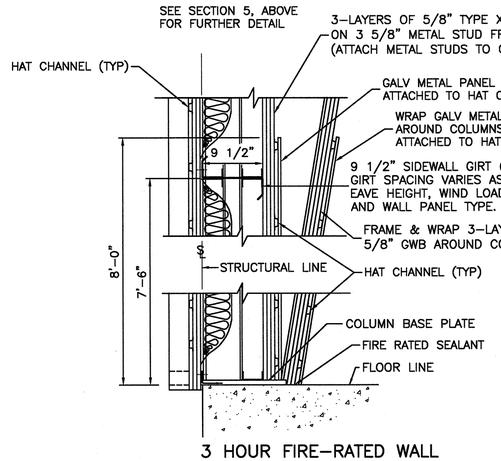
ENDWALL AT GABLE

DETAIL B –
SCALE: NTS



INTERIOR PARTITION

DETAIL D A-2
SCALE: NTS



3 HOUR FIRE-RATED WALL
(EAST SIDE WALL-WELDING SHOP)

SECTION 6 A-2
SCALE: NTS

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. PANTELIS
DRWN: D. ELLIS
CHKD: D. WILCOX
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DATE: May 29, 2009

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

WALL SECTIONS

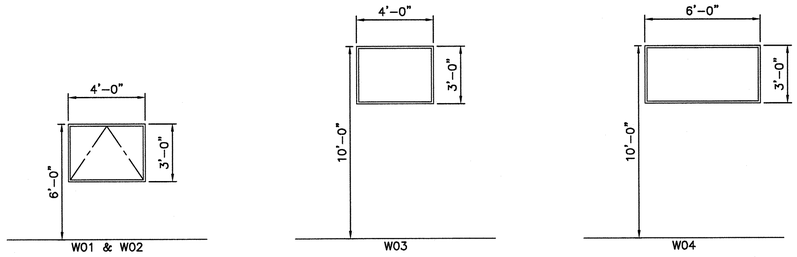
SUSAN FUNK NUTE
AIA NO. 11913

PROJECT STATUS
RECORD DRAWING
JUNE 2009

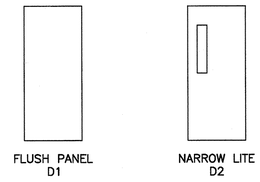
A-7

4987.020

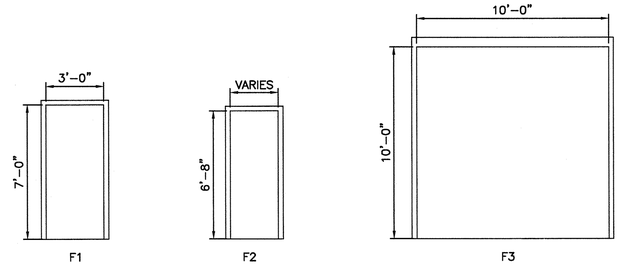
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY
PLOTTED June 16, 2009 1:43 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\A-7 WALL SECTIONS.DWG



ALUMINUM WINDOW FRAME ELEVATION
SCALE: ¼" = 1'-0"



DOOR ELEVATIONS
SCALE: ¼" = 1'-0"



FRAME ELEVATIONS
SCALE: ¼" = 1'-0"

WINDOW SCHEDULE

WINDOW NO.	ROOM NO.	SIZE	TYPE	MAT.	FINISH
01	103	4'-0" X 3'-0"	AWNING	ALUMINUM	ANODIZED
02	104	4'-0" X 3'-0"	AWNING	ALUMINUM	ANODIZED
03	107	4'-0" X 3'-0"	FIXED	ALUMINUM	ANODIZED
04	109	6'-0" X 3'-0"	FIXED	ALUMINUM	ANODIZED

NOTE: ALL WINDOWS MUST MEET MIAMI-DADE NOA WIND AND IMPACT RESISTANT STANDARDS.

DOOR SCHEDULE

DOOR NO.	ROOM NO.	DOOR					FRAME				HARDWARE	GLASS	RATINGS	INSULTATION RATING
		SIZE	THK	TYPE	MAT.	FINISH	SIZE	TYPE	MAT.	FINISH				
01	103	3'-0" x 7'-0"	1 3/4	D2	HM	PAINTED	SEE ELEVATION	F1	HM	PAINTED	HDW-1	WG		
02	106	3'-0" x 7'-0"	1 3/4	D1	HM	PAINTED	SEE ELEVATION	F1	HM	PAINTED	HDW-2		3 HR FIRE	
03	107	3'-0" x 7'-0"	1 3/4	D1	HM	PAINTED	SEE ELEVATION	F1	HM	PAINTED	HDW-2		3 HR FIRE	
04	107	3'-0" x 7'-0"	1 3/4	D2	HM	PAINTED	SEE ELEVATION	F1	HM	PAINTED	HDW-2	WG		
05	110	3'-0" x 6'-8"	1 3/4	D1	HM	PAINTED	SEE ELEVATION	F2	HM	PAINTED	HDW-3		1.5 HR FIRE	
06	105	3'-0" x 6'-8"	1 3/4	D1	HM	PAINTED	SEE ELEVATION	F2	HM	PAINTED	HDW-5			
07	104	3'-0" x 6'-8"	1 3/4	D2	HM	PAINTED	SEE ELEVATION	F2	HM	PAINTED	HDW-5	SG		
08	106	3'-0" x 6'-8"	1 3/4	D2	HM	PAINTED	SEE ELEVATION	F2	HM	PAINTED	HDW-6	SG		
09	100	3'-0" x 6'-8"	1 3/4	D1	HM	PAINTED	SEE ELEVATION	F2	HM	PAINTED	HDW-4			
10	101	3'-0" x 6'-8"	1 3/4	D1	HM	PAINTED	SEE ELEVATION	F2	HM	PAINTED	HDW-4			
11	102	2'-6" x 6'-8"	1 3/4	D1	HM	PAINTED	SEE ELEVATION	F2	HM	PAINTED	HDW-7			
12	107	10'-0" x 10'-0"			STEEL	PAINTED	SEE ELEVATION	F3	STEEL	PAINTED	HDW-8			R8

NOTE: ALL EXTERIOR DOOR INSTALLATIONS SHALL BE DESIGNED TO WITHSTAND 130 MPH WIND LOADS PER MANATEE COUNTY CODES.

RECORD DRAWING 06/15/2009

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLOTTED June 16, 2009 1:43 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\A-8 DOOR AND WINDOW SCHEDULE.DWG

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. PANTELIS
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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

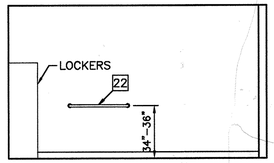
DOOR AND WINDOW SCHEDULE

SUSAN FUNK NUTE
AIA NO. 11913

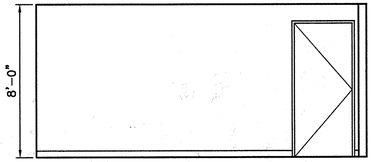
PROJECT STATUS
RECORD DRAWING
JUNE 2009

A-8

4987.021



1 WOMEN'S SHOWER ROOM
Scale: 1/4" = 1'-0"



2 WOMEN'S SHOWER ROOM
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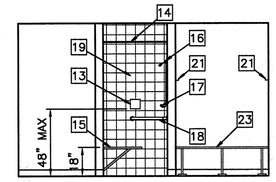

3 WOMEN'S SHOWER ROOM
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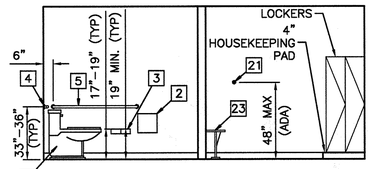

4 WOMEN'S SHOWER ROOM
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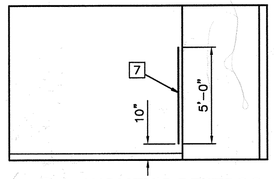
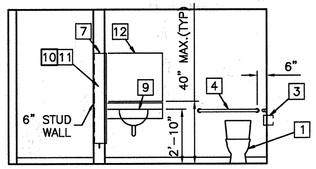


5 WOMEN'S RESTROOM
Scale: 1/4" = 1'-0"



6 WOMEN'S RESTROOM
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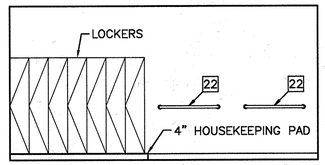

7 MEN'S SHOWER ROOM
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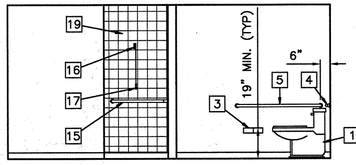

8 MEN'S SHOWER ROOM
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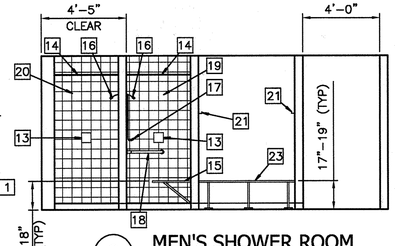

9 MEN'S SHOWER ROOM
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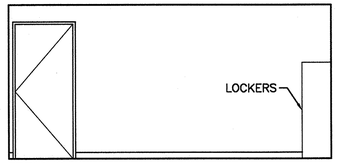

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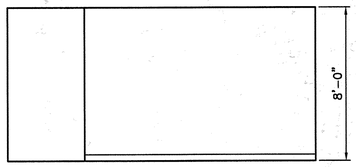

11 MEN'S RESTROOM
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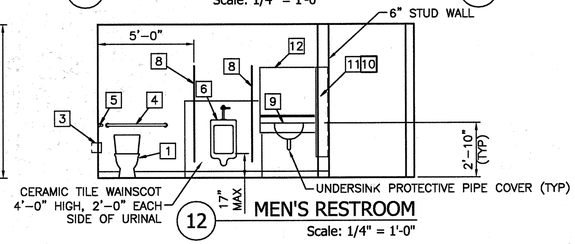

12 MEN'S RESTROOM
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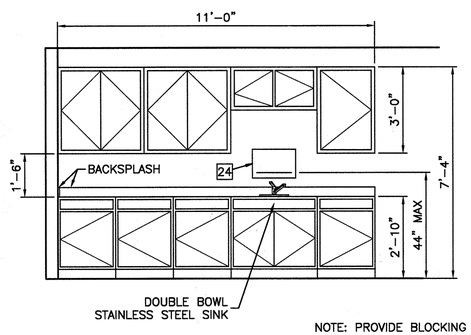
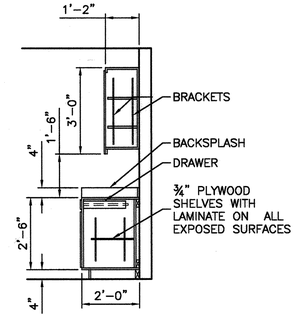


ELEVATION

NOTE: PROVIDE BLOCKING FOR SUPPORT OF ALL WALL MOUNTED EQUIPMENT AS REQUIRED.



SECTION

13 LUNCH ROOM
Scale: 3/8" = 1'-0"

TOILET ACCESSORIES SCHEDULE

MARK	DESCRIPTION	SPEC SECTION
1	FLOOR MOUNTED WATER CLOSET – ADA COMPLIANT	15440
2	RECESSED NAPKIN DISPOSAL	10800
3	RECESSED TOILET TISSUE DISPENSER	10800
4	36" MIN LONG SST GRAB BAR @ 33" TO 36" AFF	10800
5	52" MIN LONG SST GRAB BAR @ 33" TO 36" AFF	10800
6	URINAL	15440
7	SOLID PLASTIC TOILET PARTITION	10155
8	48" SOLID PLASTIC URINAL SCREEN (18" WIDE)	10155
9	ADA COMPLIANT LAVATORY SINK & FAUCET	15440
10	SOAP DISPENSER	10800
11	RECESSED PAPER TOWEL DISPENSER W/ WASTE BIN	10800
12	3'–0"x2'–6" MIRROR VANDAL RESISTANT MOUNT	10800
13	SOAP DISH	10800
14	SHOWER CURTAIN ROD	10800 & 15440
15	BARRIER FREE SHOWER SEAT – FOLDING	15440
16	SHOWER HEAD	15440
17	ADJUSTABLE HANDHELD SPRAY & DIVERTER VALVE	15440
18	L SHAPED GRAB BAR	15440
19	ADA COMPLIANT FIBERGLASS SHOWER STALL (ALT BID C)	15440
20	FIBERGLASS SHOWER STALL (ALT BID C)	15440
21	ROBE HOOK	10800
22	TOWEL BAR – 36"	10800
23	BENCH, PEDESTAL TYPE	10800
24	PAPER TOWEL DISPENSER	10800

NOTES:
1. STRUCTURAL STRENGTH FOR ALL INSTALLED GRAB BARS SHALL BE 250 LB/FT.
2. PROVIDE BLOCKING FOR SUPPORT OF ALL WALL MOUNTED EQUIPMENT AS REQUIRED.

ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS				CEILING		REMARKS
				NORTH	EAST	SOUTH	WEST	FINISH	HEIGHT	
100	WOMEN'S REST ROOM	CT	CT	MR GWB PAINTED	MR GWB PAINTED	MR GWB PAINTED	MR GWB PAINTED	MR GWB PAINTED	8'–0"	CT ON WALL IN SHOWERS
101	MEN'S REST ROOM	CT	CT	MR GWB PAINTED	MR GWB PAINTED	MR GWB PAINTED	MR GWB PAINTED	MR GWB PAINTED	8'–0"	CT ON WALL IN SHOWERS AND BEHIND URINAL
102	UTILITY ROOM	SC	VB	MR GWB PAINTED	MR GWB PAINTED	MR GWB PAINTED	MR GWB PAINTED	MR GWB PAINTED	8'–0"	
103	OFFICE	VCT	VB	GWB PAINTED	GWB PAINTED	GWB PAINTED	GWB PAINTED	ACT	8'–0"	
104	OFFICE	VCT	VB	GWB PAINTED	GWB PAINTED	GWB PAINTED	GWB PAINTED	ACT	8'–0"	
105	STORAGE ROOM	VCT	VB	GWB PAINTED	GWB PAINTED	GWB PAINTED	GWB PAINTED	ACT	8'–0"	
106	LUNCH ROOM	VCT	VB	GWB PAINTED	GWB PAINTED	GWB PAINTED	GWB PAINTED	ACT	9'–0"	
107	WELDING SHOP	SC	–	MTL PNL SYS	GWB / MTL PLN SYS	CB PAINTED	FENCE	EXP STRUCT	VARIES	
108	PARTS STORAGE	SC	–	FENCE	FENCE	CB PAINTED	MTL PNL SYS	EXP STRUCT	VARIES	
109	TOOL STORAGE	SC	–	MTL PNL SYS	FENCE	FENCE	MTL PNL SYS	EXP STRUCT	VARIES	
110	CORRIDOR	VCT	VB	GWB PAINTED	GWB PAINTED	GWB PAINTED	GWB PAINTED	ACT	9'–0"	

ROOM FINISH LEGEND

FLOOR MATERIAL	
VCT	VINYL COMPOSITION TILE
SC	SEALED CONCRETE
CT	CERAMIC TILE
BASE MATERIALS	
VB	VINYL COVE BASE
WALL MATERIALS	
GWB PAINTED	GYPSUM WALL BOARD, PAINTED
MR GWB PAINTED	MOISTURE RESISTANT GYPSUM WALL BOARD, PAINTED
FENCE	WIRE MESH SECURITY CAGE
MTL PNL SYS	METAL PANEL SYSTEM
CEILING MATERIALS	
EXP STRUCT	EXPOSED STRUCTURAL, PAINTED
ACT	ACOUSTICAL CEILING TILE
GWB	GYPSUM WALL BOARD, PAINTED
MR GWB	MOISTURE RESISTANT GYPSUM WALL BOARD, PAINTED

NO.	BY	DATE	DESCRIPTION

REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. PANTELIS
DRWN: D. ELLIS
CHKD: D. WILCOX
APVD: S. NUTE
DATE: November 13, 2007

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Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

INTERIOR ELEVATIONS & FINISH SCHEDULE

SUSAN FUNK NUTE
AIA NO. 11913

PROJECT STATUS
RECORD DRAWING
JUNE 2009

A–9

RECORD DRAWING 06/15/2009

4987.022

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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ROOF SYSTEM

FL #	FL5201
Application Type	New
Code Version	2004
Application Status	Approved
Comments	
Archived	☐
Product Manufacturer	Star Building Systems
Address/Phone/Email	8600 South I-35 Oklahoma City, OK 73143 (405) 636-2271 Kwon.Kim@starbuildings.net
Authorized Signature	James L. Buckner, P.E. @ C-Buck, Inc. jimmy@cbuckinc.net
Technical Representative	Kwon S. Kim
Address/Phone/Email	8600 South I-35 Oklahoma City, OK 73143 kwon.kim@starbuildings.net
Quality Assurance Representative	
Address/Phone/Email	
Category	Structural Components
Subcategory	Roof Deck
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer ☑ Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	James L. Buckner
Florida License	PE-31242
Quality Assurance Entity	Underwriters Laboratories Inc.
Validated By	Warren W. Schaefer, P.E.
Certificate of Independence	

Referenced Standard and Year (of Standard)	**Standard**	**Year**
	UL 580 with 1998 Revisions	1994

Equivalence of Product Standards Certified By	
Sections from the Code	1504.6 (FL 5201.2,3, 1504.7 (FL 5201.2,3, 1507.4
Product Approval Method	Method 2 Option B
Date Submitted	09/02/2005
Date Validated	09/16/2005
Date Pending FBC Approval	09/27/2005
Date Approved	10/11/2005

5201.3	3- "StarShield Roof"	Minimum 24 Gauge Steel, Maximum 24" Wide Panel Attached to Steel Purlins Spaced Maximum 60" o.c. LARGE MISSILE IMPACT RATED

Limits of Use (See Other) **Approved for use in HVHZ:** **Approved for use outside HVHZ:** **Impact Resistant:** **Design Pressure:** +/- **Other:** Design Uplift Pressure = -52.5 psf. The required design wind loads shall be determined for each project. The maximum fastener spacing listed herein shall not be exceeded. All rational analysis computations shall be prepared by a qualified design professional, as required by Florida Building Code, Section 105. This product is not approved for use in the High Velocity Hurricane Zone. Refer to Evaluation Report.	**Installation Instructions** Verified By: **Evaluation Reports**

PANEL WALLS

FL #	FL5202
Application Type	New
Code Version	2004
Application Status	Approved
Comments	
Archived	☐
Product Manufacturer	Star Building Systems
Address/Phone/Email	8600 South I-35 Oklahoma City, OK 73143 (405) 636-2271 Kwon.Kim@starbuildings.net
Authorized Signature	James L. Buckner, P.E. @ C-Buck, Inc. jimmy@cbuckinc.net
Technical Representative	Kwon S. Kim
Address/Phone/Email	8600 South I-35 Oklahoma City, OK 73143 kwon.kim@starbuildings.net
Quality Assurance Representative	
Address/Phone/Email	
Category	Panel Walls
Subcategory	Siding
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer ☑ Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	James L. Buckner
Florida License	PE-31242
Quality Assurance Entity	Underwriters Laboratories Inc.
Validated By	Warren W. Schaefer, P.E.
Certificate of Independence	

Referenced Standard and Year (of Standard)	**Standard**	**Year**
	AISI-NASPEC	2005

Equivalence of Product Standards Certified By	
Sections from the Code	1405.10 2209.1
Product Approval Method	Method 2 Option B
Date Submitted	09/02/2005
Date Validated	09/16/2005
Date Pending FBC Approval	09/27/2005
Date Approved	10/11/2005

5202.4	4- "StarMark Wall"	24 Gauge Steel, 36" Wide Panel Attached to Structural Girts / Framing Members Designed By Others

Limits of Use (See Other) **Approved for use in HVHZ:** **Approved for use outside HVHZ:** **Impact Resistant:** **Design Pressure:** +/- **Other:** For Design Wind Pressures, refer to Page 4 of the Evaluation Report, "Allowable Load (PSF For Nominal Girt Spacing. The required design wind loads shall be determined for each project. Spacing of supports shall be designed based on the loading conditions. Panel attachment to supports must be evaluated by a qualified design professional for web crippling and fastener pullout/pullover per AISI-NASPEC. All rational analysis computations shall be prepared by a qualified design professional, as required by Florida Building Code, Section 105. This product is not approved for use in the High Velocity Hurricane Zone. Refer to Evaluation Report.	**Installation Instructions** Verified By: **Evaluation Reports**

STRUCTURAL WALLS

FL #	FL5203
Application Type	New
Code Version	2004
Application Status	Approved
Comments	
Archived	☐
Product Manufacturer	Star Building Systems
Address/Phone/Email	8600 South I-35 Oklahoma City, OK 73143 (405) 636-2271 Kwon.Kim@starbuildings.net
Authorized Signature	James L. Buckner, P.E. @ C-Buck, Inc. jimmy@cbuckinc.net
Technical Representative	Kwon S. Kim
Address/Phone/Email	8600 South I-35 Oklahoma City, OK 73143 kwon.kim@starbuildings.net
Quality Assurance Representative	
Address/Phone/Email	
Category	Structural Components
Subcategory	Structural Wall
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer ☑ Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	James L. Buckner
Florida License	PE-31242
Quality Assurance Entity	Underwriters Laboratories Inc.
Validated By	Warren W. Schaefer, P.E.
Certificate of Independence	

Referenced Standard and Year (of Standard)	**Standard**	**Year**
	AISI-NASPEC	2004

Equivalence of Product Standards Certified By	
Sections from the Code	2209.1
Product Approval Method	Method 1 Option D
Date Submitted	09/02/2005
Date Validated	09/16/2005
Date Pending FBC Approval	09/27/2005
Date Approved	10/11/2005

5203.1	1- "Z-Section"	Structural Steel Component

Limits of Use (See Other) **Approved for use in HVHZ:** **Approved for use outside HVHZ:** **Impact Resistant:** **Design Pressure:** +/- **Other:** Component member shall be designed within the allowable stresses for the engineering properties listed in Table Z-1 and applied per the Florida Building Code, Chapter 16. The required design wind loads shall be determined for each project. All rational analysis computations shall be prepared by a qualified design professional, as required by Florida Building Code, Section 105. This product is not approved for use in the High Velocity Hurricane Zone. Refer to Evaluation Report.	**Installation Instructions** Verified By: **Evaluation Reports** PTID_5203_T_1-ZSection_EVALREPORT.pdf PTID_5203_T_2-CSection_EVALREPORT.pdf PTID_5203_T_CertOfIndepAndQA.pdf

5203.2	2- "C-Section"	Structural Steel Component

Limits of Use (See Other) **Approved for use in HVHZ:** **Approved for use outside HVHZ:** **Impact Resistant:** **Design Pressure:** +/- **Other:** Component member shall be designed within the allowable stresses for the engineering properties listed in Table Z-1 and applied per the Florida Building Code, Chapter 16. The required design wind loads shall be determined for each project. All rational analysis computations shall be prepared by a qualified design professional, as required by Florida Building Code, Section 105. This product is not approved for use in the High Velocity Hurricane Zone. Refer to Evaluation Report.	**Installation Instructions** Verified By: **Evaluation Reports**

FLORIDA PRODUCT APPROVALS

1. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL PROJECT SYSTEMS AND EXTERIOR BUILDING ENVELOPE COMPONENTS THAT SHALL REQUIRED TESTING, EVALUATION, CERTIFICATION AND FLORIDA PRODUCT APPROVAL).

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION

REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. PANTELIS
DRWN: D. ELLIS
CHKD: D. WILCOX
APVD: S. NUTE
DATE: November 9, 2007

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7650 West Courtney Campell Causeway, Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

NOTICE OF APPROVAL

SUSAN FUNK NUTE
AIA NO. 11913

PROJECT STATUS
RECORD DRAWING
JUNE 2009

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4987.023

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EXTERIOR DOORS AND FRAMES

Product Approval
USER: Public User

Product Approval Menu > Product or Application Search > Application List > **Application Detail**

FL #	FL6087
Application Type	New
Code Version	2004
Application Status	Approved
Comments	
Archived	☐
Product Manufacturer	CURRIES
Address/Phone/Email	1502 12th Street NW Mason City, IA 50401 (641) 423-1334 ext 4168 nelson.kraschel@doorgroup.com
Authorized Signature	Nelson Kraschel nelson.kraschel@doorgroup.com
Technical Representative Address/Phone/Email	Nelson Kraschel 525 9th Street SE Mason City, IA 50401 nelson.kraschel@doorgroup.com
Quality Assurance Representative Address/Phone/Email	
Category	Exterior Doors
Subcategory	Swinging Exterior Door Assemblies
Compliance Method	Test Report
Testing Lab	Architectural Testing, Inc.-Minnesota
Quality Assurance Entity	National Accreditation and Management Institute
Validated By	Architectural Testing, Inc
Certificate of Independence	

Referenced Standard and Year (of Standard)	Standard	Year
	TAS 201	1994
	TAS 202	1994
	TAS 203	1994

Equivalence of Product Standards Certified By	
Sections from the Code	1609.1.4 1609.1.4 1609.1.4
Product Approval Method	Method 1 Option B
Date Submitted	12/31/2005
Date Validated	01/04/2006
Date Pending FBC Approval	01/10/2006
Date Approved	02/07/2006

Summary of Products:

FL #	Model, Number or Name	Description
6087.1	607 707 727 and 747 In - Swinging Doors and ReadySet Frames	Commercial Hollow Metal In-swing Doors in three sided door frames and ReadySet Frames 607, 707, 727, 747
Limits of Use (See Other) **Approved for use in HVHZ:** **Approved for use outside HVHZ:** **Impact Resistant:** **Design Pressure:** +/- **Other:** Design pressure +/-70 psf. Maximum Size: 40" x 86". All product is qualifed for large missle impact. Product may be used in the High Velocity Hurricane Zone (HVHZ).		**Installation Instructions** PTID_6087_I_Curries In-swing Door Installation Drawings - 70 psf .pdf Verified By: **Test Reports** PTID_6087_T_Architectural Testing Test Report 60259.02-201-18-R0.pdf PTID_6087_T_ATI Cert_of_Independence.pdf

WINDOWS

FL #	FL7569
Application Type	New
Code Version	2004
Application Status	Approved
Comments	
Archived	☒
Product Manufacturer	YKK AP America
Address/Phone/Email	332 Firetower Road Dublin, GA 31021 (478) 277-2549 chrismoody@ykk-api.com
Authorized Signature	Chris Moody chrismoody@ykk-api.com
Technical Representative Address/Phone/Email	Jose I Archila 332 Firetower Road Dublin, GA 31021 josearchila@ykk-api.com
Quality Assurance Representative Address/Phone/Email	
Category	Windows
Subcategory	Fixed
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer ☒ Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	Dr. Humayoun Farooq
Florida License	PE-16557
Quality Assurance Entity	Miami-Dade BCCO - QUA
Validated By	Joseph A Reed, PE
Certificate of Independence	FL7569_R0_COI_INDEPENDENCE FX.pdf

Referenced Standard and Year (of Standard)	Standard	Year
	ASTM E283	1999
	ASTM E330	2002
	ASTM E331	2000
	TAS 201	1994
	TAS 202	1994
	TAS 203	1994

Equivalence of Product Standards Certified By	
Sections from the Code	
Product Approval Method	Method 1 Option D
Date Submitted	09/21/2006
Date Validated	09/22/2006
Date Pending FBC Approval	09/27/2006
Date Approved	10/11/2006

Summary of Products

FL #	Model, Number or Name	Description
7569.1	YOW 225H	Non-Thermal Aluminum Fixed Window
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** Yes **Design Pressure:** +100 /-100 **Other:** This approval includes the two versions; the Large Missile Impact Resistant and the Small Missile Impact Resistance; see included drawings. The Max. Design Pressure for the Large Missile Impact Version is +80 / -90 PSF.		**Installation Instructions** FL7569_R0_II_Drawings FX-LMI.pdf FL7569_R0_II_Drawings FX-SMI.pdf Verified By: Dr. Humayoun Farooq PE-16557 **Evaluation Reports** FL7569_R0_AE_Evaluation FX-LMI.pdf FL7569_R0_AE_Evaluation FX-SMI.pdf

FLORIDA PRODUCT APPROVALS

1. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL PROJECT SYSTEMS AND EXTERIOR BUILDING ENVELOPE COMPONENTS THAT SHALL REQUIRED TESTING, EVALUATION, CERTIFICATION AND FLORIDA PRODUCT APPROVAL).

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. PANTELIS
DRWN: D. ELLIS
CHKD: D. WILCOX
APVD: S. NUTE
DATE: November 9, 2007

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Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

NOTICE OF APPROVAL

SUSAN FUNK NUTE
AIA NO. 11913

PROJECT STATUS
RECORD DRAWING
JUNE 2009

A-11

4987.024

PLOTTED June 16, 2009 1:44 PM PLOTTED BY: ELLIS, DAVID
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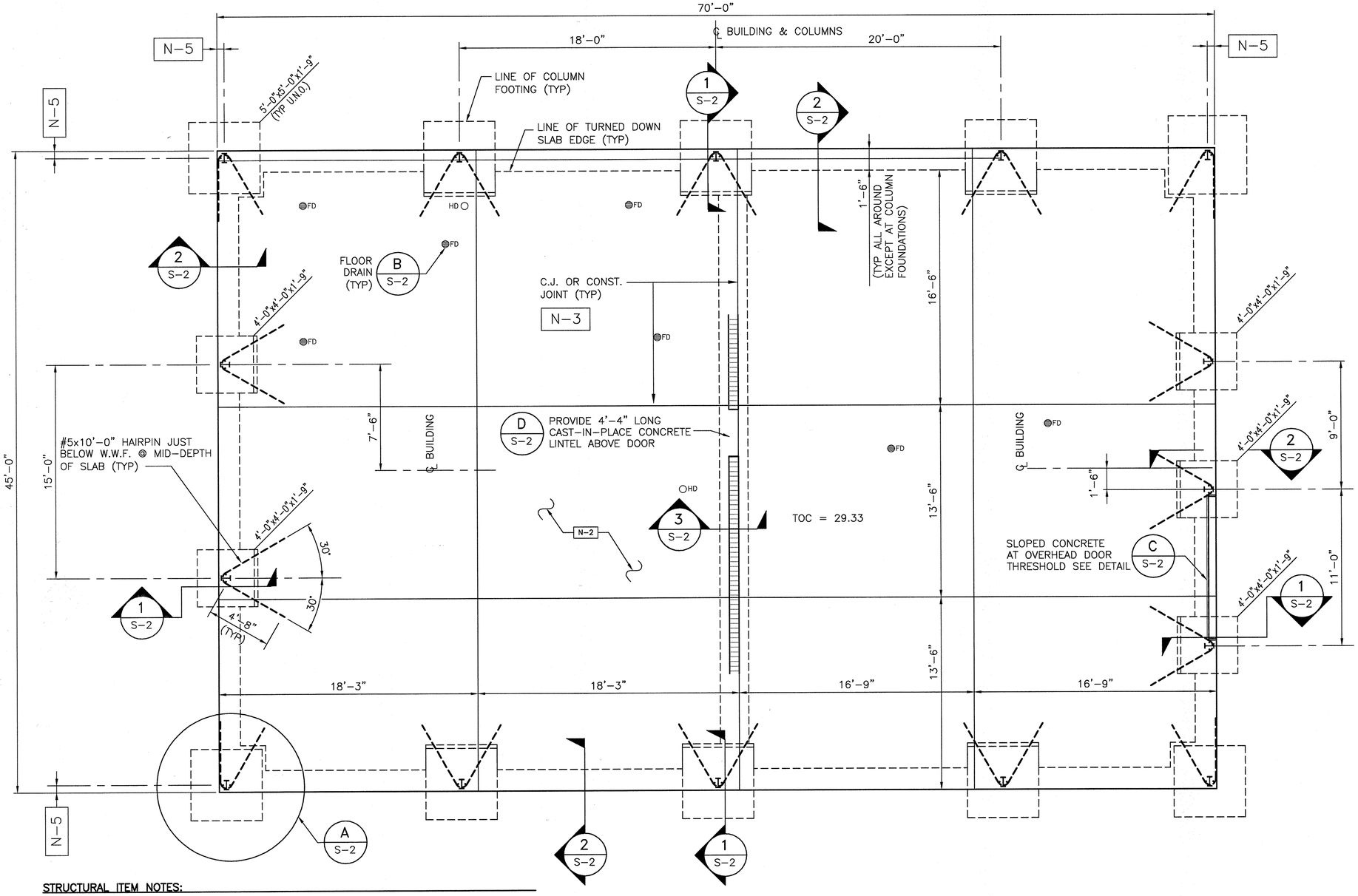
VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



STRUCTURAL ITEM NOTES:

N-1 WORK THIS SHEET WITH ARCHITECTURAL SHEET: FLOOR PLAN.

N-2 5" THICK CONCRETE SLAB, REINFORCED WITH W.W.F. 6 x 6 W2.9 x W2.9 OVER VAPOR BARRIER ON CLEAN COMPACTED FILL. PLACE W.W.F. AT MID-DEPTH OF SLAB.

N-3 REFER TO TYPICAL SLAB JOINT AND SLAB PLACEMENT DETAILS, ON DRAWING S-2.

N-4 REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR LOCATIONS OF FLOOR DRAINS AND SLOPES. REFER TO TYPICAL SLAB AT FLOOR DRAIN DETAIL "B"/ S-2.

N-5 METAL BUILDING MANUFACTURER TO ESTABLISH LOCATION OF COLUMNS AND COLUMN ANCHOR BOLTS.

FOUNDATION / SLAB PLAN

SCALE: N.T.S.

GENERAL NOTES:

A. BUILDING CODES:

1. FLORIDA BUILDING CODE, 2004 EDITION (2005 REVISIONS).
2. ACI 318-99 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
3. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, NINTH EDITION (ASD), AND LRFD – THIRD EDITION.
4. AWS STRUCTURAL WELDING CODE (LATEST EDITION).
5. BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530-02) AND SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1-02).

B. DESIGN CRITERIA:

1. LIVE LOADS:

   ROOF 20 PSF – RISE LESS THAN 4" PER FOOT.

2. WIND LOADS AS PER ASCE 7-98 FOR A BASIC WIND SPEED OF 130 MPH;
   WIND IMPORTANCE FACTOR: 1.0
   BUILDING CATEGORY: II
   ENCLOSED BUILDING
   EXPOSURE "C"
   INTERNAL PRESSURE COEFFICIENT (TABLE 6-7: ±0.18)

   ROOF/WALL COMPONENTS AND CLADDING (ENGINEERED BY OTHERS)

3. ALLOWABLE SOIL PRESSURE – 2000 PSF.

C. CONSTRUCTION MATERIALS:

1. CAST-IN-PLACE CONCRETE COMPRESSIVE STRENGTH:
   4000 PSI AT 28 DAYS.
2. ANCHOR BOLTS ASTM – A 36 OR A 307, GALVANIZED.
3. REINFORCING STEEL – ASTM A 615, GRADE 60 UNCOATED.
4. ALL MISCELLANEOUS STEEL ASTM – A 36, GALVANIZED
5. WELDED STEEL WIRE FABRIC – ASTM A 185.
6. CONCRETE MASONRY UNITS PRISMS F'M=1500 PSI

D. FOUNDATIONS:

1. ALL EARTHWORK AND COMPACTION FOR STRUCTURES SHALL BE AS NOTED IN THE SPECIFICATIONS AND THE GEOTECHNICAL REPORT.

E. MASONRY:

1. MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO ALL REQUIREMENTS OF "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1 / ASCE 6 / TMS 602) PUBLISHED BY ACI.
2. ALL BLOCK SHALL BE 8" HOLLOW LOAD-BEARING (NORMAL WEIGHT) CONCRETE BLOCK, UNLESS NOTED OTHERWISE, CONFORMING TO ASTM C90, GRADE N, TYPE II. ALL MORTAR SHALL CONFORM TO ASTM C270, TYPE S.

F. GENERAL NOTES:

1. ALL CONCRETE EMBEDDED STEEL ANGLES, WELD PLATES, ANCHORAGE DEVICES, ETC., SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123 AND/OR A 153.
2. ALL REINFORCEMENT TO BE DETAILED AND FABRICATED IN ACCORDANCE WITH ACI 315-94. ALL CONSTRUCTION JOINTS, WITH REINFORCING PASSING THROUGH THE JOINT, SHALL BE ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY ¼", UNLESS NOTED OTHERWISE.
3. PROVIDE THE FOLLOWING MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE ON THE PLANS:
   FOOTINGS – – – – – – – – 4"
   SLABS ON GRADE – – – – – CENTERED
4. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4"x3/4" EXCEPT AS NOTED OTHERWISE.
5. CONTRACTOR SHALL VERIFY AND CORRELATE ALL DIMENSIONS BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
6. APPLY FINISH TO ALL CONCRETE AS NOTED IN THE SPECIFICATIONS.

G. COORDINATION:

1. THE CONTRACTOR SHALL COORDINATE ALL PIPE AND CONDUIT PENETRATIONS THROUGH CONCRETE WITH THE CIVIL, MECHANICAL, AND ELECTRICAL SHOP DRAWINGS PRIOR TO PLACING CONCRETE.
2. THE STRUCTURAL SHEETS SHALL BE COORDINATED WITH THE CIVIL,ARCHITECTURAL, MECHANICAL AND ELECTRICAL SHEETS TO PROPERLY LOCATE DRAINS, SLOPES, PIPE SLEEVES, ANCHOR BOLTS, BLOCK-OUTS, ETC. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
3. THE STRUCTURAL SHEETS SHALL BE COORDINATED WITH THE PROJECT SPECIFICATIONS.

H. SUBMITTALS

1. ALL SHOP DRAWINGS MUST BE REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL.
2. THE GENERAL CONTRACTOR SHALL SUBMIT FOR ENGINEER REVIEW SHOP DRAWINGS FOR THE FOLLOWING ITEMS:
   PRE-ENGINEERED METAL BUILDING
   REINFORCING STEEL
   CONCRETE MIX DESIGNS
3. MANUFACTURER'S LITERATURE: SUBMIT TWO COPIES OF MANUFACTURER'S LITERATURE FOR ALL MATERIALS AND PRODUCTS USED IN CONSTRUCTION ON THE PROJECT.
4. DESIGN CALCULATIONS: THE GENERAL CONTRACTOR SHALL SUBMIT FOR ENGINEER REV TWO SETS OF DESIGN CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER REGISTE IN THE STATE OF FLORIDA, FOR THE FOLLOWING ITEMS:
   PRE-ENGINEERED METAL BUILDING
   ROOF DIAPHRAGM CAPABILITY TO RESIST WIND LOADS BY:
   a) ENGINEERED BRACING/GRIDGING,OR
   b) ENGINEERED METAL DECK.
      THE DECK IS COLD-FORMED STRUCTURAL STEEL FORMED FROM CARBON STEEL SHEETS CONFORMING TO ASTM A 653-94, WITH A MINIMUM YIELD STRENGTH OF 33,000 PSI. GALVANIZED COATING SHALL BE IN ACCORDANCE WITH ASTM A 924-94.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER	DAVE WILCOX
JOB NO.	12005555
DSGN:	WILLIAM N. HAUSHEER
DRWN:	EMIL J. CHAVERIAT
CHKD:	WILLIAM N. HAUSHEER
APVD:	D. WILCOX
DATE:	November 9, 2007

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7650 West Courtney Campell Causeway, Suite 700
Tampa, Florida 33607
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Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

GENERAL NOTES AND FOUNDATION AND SLAB PLAN

WILLIAM NICHOLAS HAUSHEER P.E. NO. 31715

PROJECT STATUS
RECORD DRAWING
JUNE 2009

S-1

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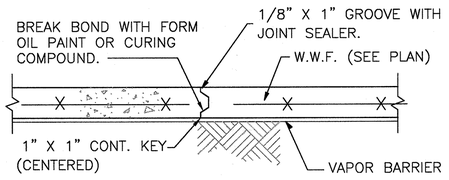
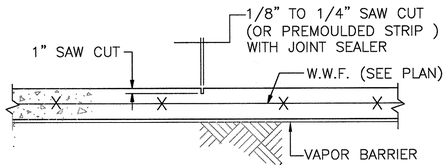
PLOTTED June 16, 2009 1:45 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\S-1 GENERAL NOTES AND FOUNDATION AND SLAB PLAN.DWG



OPTIONAL CONTROL JOINT OR CONSTRUCTION JOINT



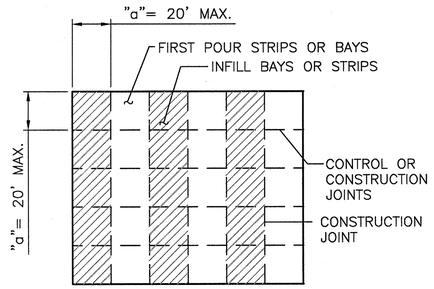
CONTROL JOINT (C.J.)

SAW CONTROL JOINT NOTES:

1. MAKE SAW CUT AS SOON AS SLAB IS ABLE TO SUPPORT WEIGHT OF WORKERS AND SAWING EQUIPMENT WITHOUT DAMAGE TO FINISH SURFACE OF SLAB. BEGIN SAW CUTTING OF SLAB WITHIN 8 HOURS OF SLAB BEING FINISHED.
2. CLEAN JOINT PRIOR TO FILLING, WITH JOINT SEALER

DETAIL – TYPICAL SLAB JOINTS

N.T.S.



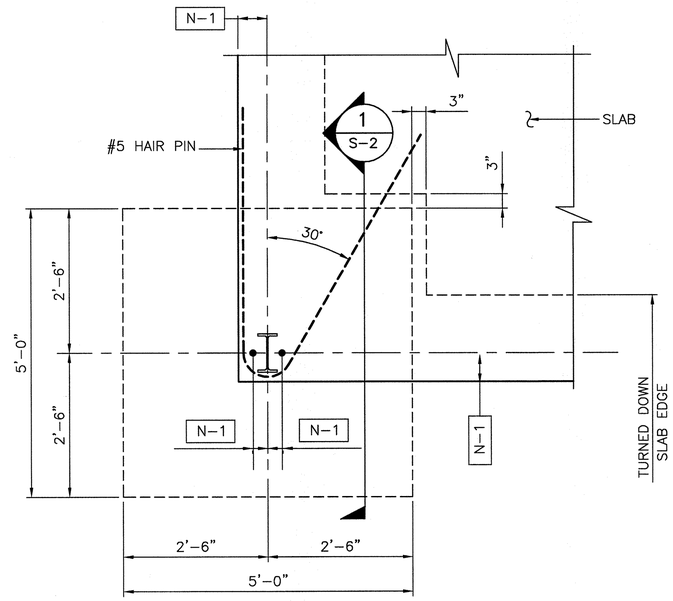
LONG STRIP CONSTRUCTION SCHEMATIC LAYOUT AND CONCRETE PLACING SEQUENCE

JOINT SPACING NOTES

1. PROVIDE CONTROL AND/OR CONSTRUCTION JOINTS AT EVERY COLUMN LINE AND IN BETWEEN THE COLUMN LINES SUCH THAT THE JOINT SPACING DOES NOT EXCEED 20 FEET, UNLESS OTHERWISE SHOWN ON THE DRAWING. MAINTAIN AN ASPECT RATIO: $0.80 \leq A/B \leq 1.25$
2. CONTRACTOR TO SUBMIT CONSTRUCTION AND CONTROL JOINT LAYOUT FOR APPROVAL.

DETAIL – SLAB PLACEMENT SEQUENCE

N.T.S.



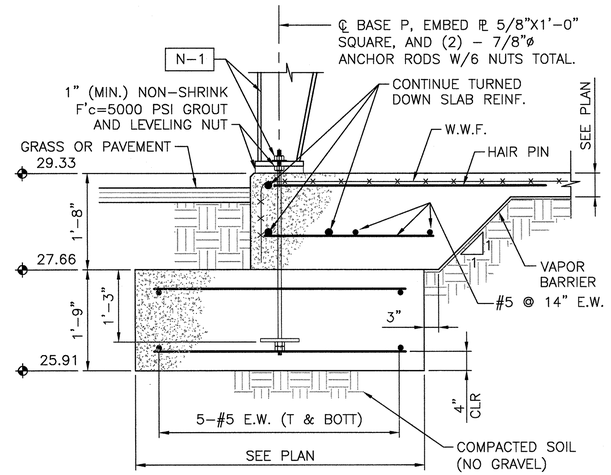
A S-1 DETAIL

SCALE: N.T.S.

STRUCTURAL ITEM NOTES:

N-1 METAL BUILDING MANUFACTURER TO ESTABLISH LOCATION OF COLUMN AND COLUMN ANCHOR BOLTS.

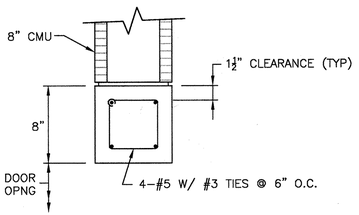
N-2 PROVIDE JOINT REINFORCEMENT (2" LESS THAN WALL WIDTH – 9 GAGE EDGE RODS) WITH 1.5 OZ. HOT DIP GALVANIZED COATING AS PER ASTM A153, CLASS B-2.



NOTES:
1. USE TEMPLATE TO AID IN SETTING ANCHOR BOLTS.
2. CENTER FOOTINGS ON ANCHOR BOLT PATTERN, CENTERLINES.

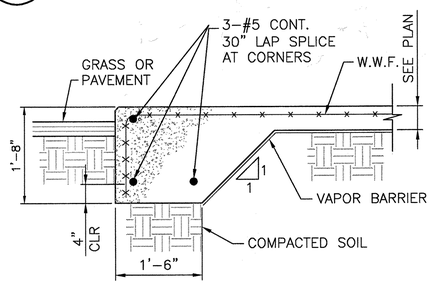
1 S-1 SECTION

SCALE: N.T.S.



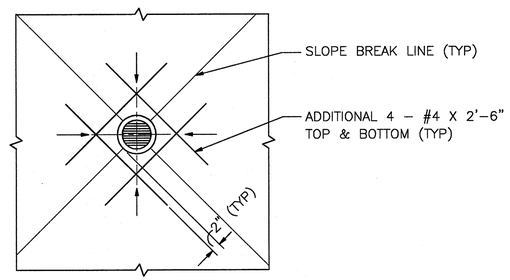
DETAIL – CAST-IN-PLACE CONCRETE LINTEL

D S-1 SCALE: N.T.S.

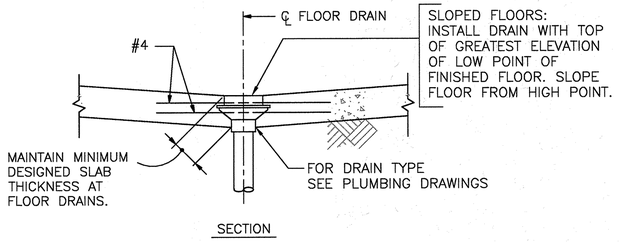


2 S-1 SECTION

SCALE: N.T.S.



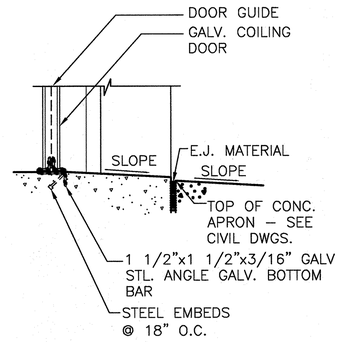
PLAN



SECTION

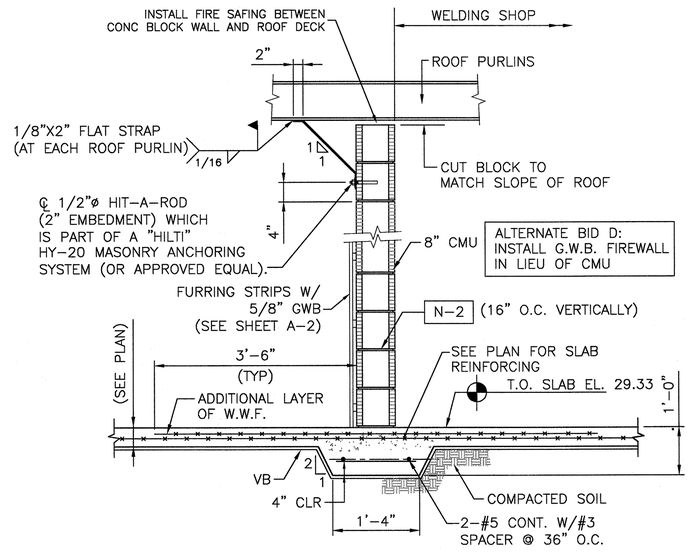
DETAIL – SLAB REINF. AT FLOOR DRAIN

B S-1 SCALE: N.T.S.



DETAIL – THRESHOLD AT O.H. DOOR

C S-1 SCALE: N.T.S.



3 S-1 SECTION

SCALE: N.T.S.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER	DAVE WILCOX
JOB NO.	12005555
DSGN:	WILLIAM N. HAUSHEER
DRWN:	EMIL J. CHAVERIAT
CHKD:	WILLIAM N. HAUSHEER
APVD:	D. WILCOX
DATE:	November 9, 2007

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

SECTIONS & DETAILS

WILLIAM NICHOLAS HAUSHEER P.E. NO. 31715

PROJECT STATUS
RECORD DRAWING
JUNE 2009

S-2

4987.026

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY
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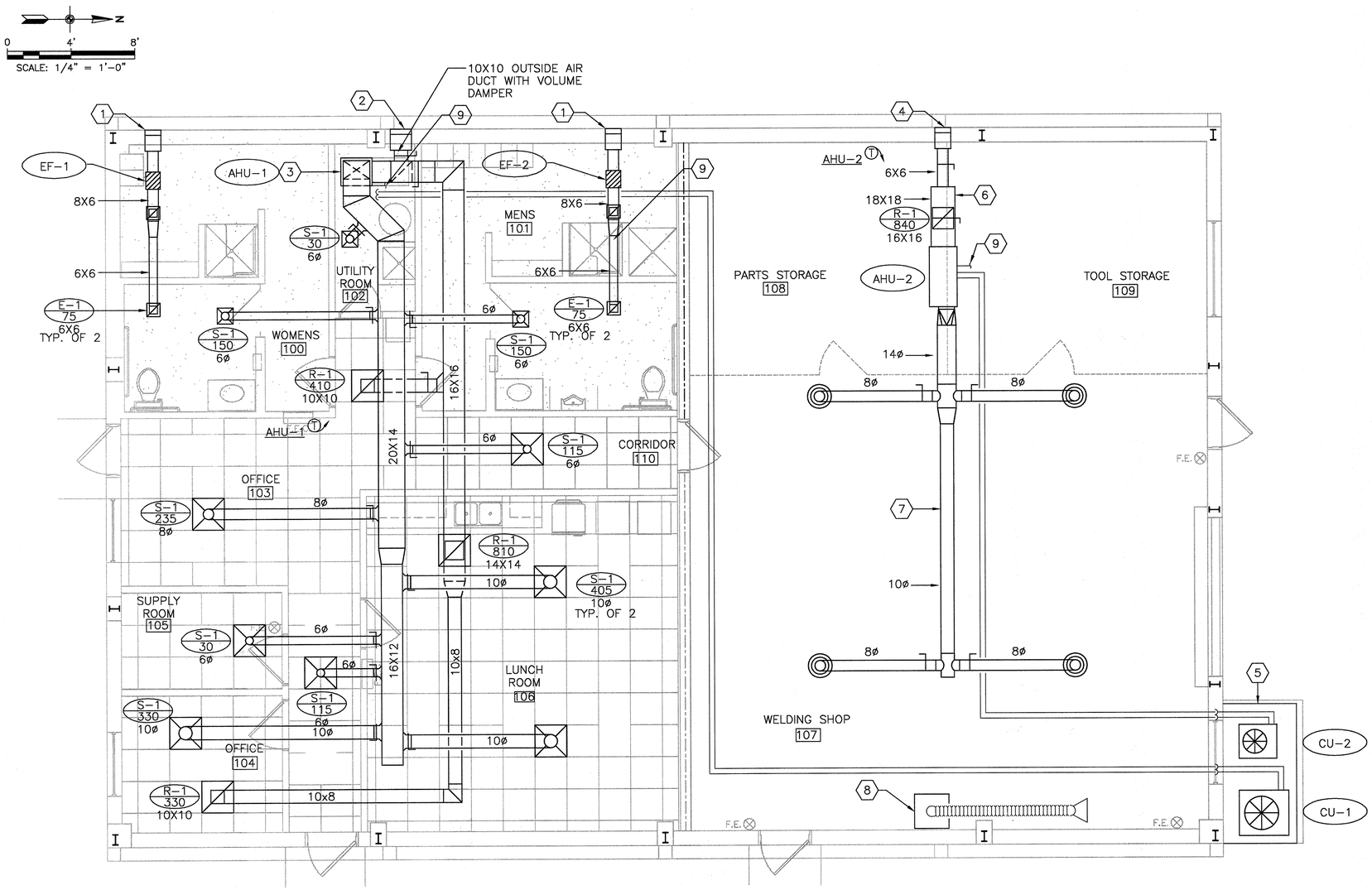

MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

HVAC NOTES:

GENERAL:
THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE METAL BUILDING CONTRACTOR ALL TRUSS SPACING/FRAMING REQUIREMENTS FOR ROUTING OF HVAC DUCT.

1. 1'X1' EXHAUST LOUVER WITH BIRD SCREEN AND FULL SIZE PLENUM. MINIMUM 0.3 SQ.FT. FREE AREA.
2. 16"X16" INTAKE LOUVER WITH BIRD SCREEN AND FULL SIZE PLENUM. MINIMUM 1.0 SQ.FT. FREE AREA.
3. AHU-1 SHALL BE MOUNTED ON RETURN AIR PLENUM WITH ANGLE IRON SUPPORT FRAME. PROVIDE RIGID EXTERNAL INSULATION FOR RETURN AIR PLENUM AND OUTSIDE AIR DUCT.
4. 1'X1' INTAKE LOUVER WITH BIRD SCREEN AND FULL SIZE PLENUM. MINIMUM 0.3 SQ.FT. FREE AREA.
5. 6" HIGH REINFORCED CONCRETE PAD FOR CONDENSING UNITS. PAD TO EXTEND 6" FROM EQUIPMENT ON ALL SIDES.
6. PROVIDE EXTERNAL RIGID INSULATION FOR OUTSIDE AIR DUCT AND RETURN AIR PLENUM.
7. ALL SUPPLY AIR DUCT ASSOCIATED WITH AHU-2 SHALL BE 2" INSULATED DOUBLE WALL SPIRAL LOCKSEAM, UNITED MCGILL ACOUSTI-27 OR EQUAL.
8. PROVIDE PORTABLE HEPA SYSTEM FOR SOURCE CAPTURE AND EXTRACTION OF WELDING SMOKE. MANUFACTURER SHALL BE MONOXIVENT MODEL PHS-10 OR EQUAL.
   MOTOR: 1.5HP, 120/1/60, START-UP REQUIRES 13 AMPS
   FAN: 750 CFM
   ARM: 10 FT. WITH EXTRACTION NOZZLE
9. CONDENSATE DRAIN, REFER TO PLUMBLING DRAWINGS FOR CONTINUATION.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
REVISIONS			

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. RECTOR
DRWN: J. RECTOR
CHKD: R. AVALOS
APVD: D. WILCOX
DATE: November 13, 2007

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

MECHANICAL FLOOR PLAN

JOHN T. RECTOR
FLORIDA P.E. NO. 53292

PROJECT STATUS
RECORD DRAWING
JUNE 2009

M-1

4987.027

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HVAC LEGEND AND SYMBOLS

	SUPPLY/RETURN AIR DUCT METAL EXTERIOR INSULATED
	EXHAUST OR RETURN DUCT SECTION
	SUPPLY DUCT SECTION
T	THERMOSTAT (ELECTRIC)
X–1 / CFM / NK	DIFFUSER TAG NK = NECK SIZE X = S–SUPPLY, X = E–EXHAUST, X = R–RETURN, X = T–TRANSFER
	EQUIPMENT TAG
O/A	OUTSIDE AIR
CU	CONDENSING UNIT
AHU	AIR HANDLER
EF	EXHAUST FAN
	SUPPLY GRILLE
	RETURN/EXHAUST GRILLE
	CEILING MOUNTED EXHAUST FAN
CD	CONDENSATE DRAIN

SPLIT A/C SYSTEM SCHEDULE

AIR HANDLING UNIT			
MARK		AHU–1	AHU–2
TOTAL CAPACITY	BTUH	66,000	30,400
SENSIBLE CAPACITY	BTUH	46,200	21,800
TOTAL SUPPLY AIR	CFM	2,000	940
OUTSIDE AIR	CFM	450	120
ENTERING AIR	DB(°F)/WB(°F)	81.3/68.4	80.9/67.3
ELECTRIC HEATER (MIN)	KW/STEPS	11.53/1	5.76/1
EXTERNAL STATIC PRESSURE	IN W.G.	1.0	1.0
FAN MOTOR	HP	3/4	1/4
ELECTRICAL CHARACTERISTICS	V/PH/HZ	208/3/60	208/1/60
UNIT CHARACTERISTICS	MCA/MOCP	48/50	37/40
MANUFACTURER	–	TRANE	TRANE
MODEL	–	TWE060C15	TWE030P13
CONDENSING UNIT			
MARK		CU–1	CU–2
# OF COMPRESSORS/CIRCUITS	–/–	1/1	1/1
ELECTRICAL SERVICE	V/PH/HZ	208/3/60	208/3/60
UNIT CHARACTERISTICS	MCA/MOCP	26/45	13/20
EER	–	9.65	9.65
MANUFACTURER	–	TRANE	TRANE
MODEL	–	2TTA0072A3000A	2TTA0030A3

NOTES:

① PROVIDE AIR HANDLER/ELECTRIC HEATER WITH SINGLE POINT CONNECTION.

② PROVIDE WITH UNIT MANUFACTURER'S PROGRAMMABLE THERMOSTAT.

FAN SCHEDULE

UNIT NO. (MARK)	CFM	S.P. (IN H20)	MOTOR V/PH/HZ	MOTOR WATTS	RPM	MAX. SONES	DRIVE	TYPE	DESIGN MANUF.	MODEL	NOTES
EF–1	150	0.4	120/1/60	100	1400	3.0	DIRECT	CEILING	GREENHECK	CSP–A190	1,2,3
EF–2	150	0.4	120/1/60	100	1400	3.0	DIRECT	CEILING	GREENHECK	CSP–A190	1,2,3

NOTES:

1. PROVIDE MANUFACTURER'S UNIT MOUNTED DISCONNECT SWITCH.
2. PROVIDE SOLID STATE SPEED CONTROLLER.
3. INTERLOCK WITH AHU–1.

AIR DISTRIBUTION DEVICE SCHEDULE

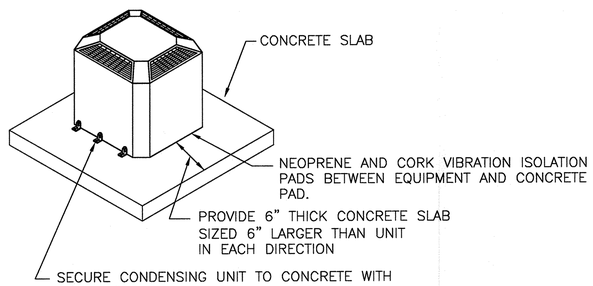
MARK	SERVICE	DESCRIPTION	DESIGN MANUFACTURER	MODEL	NOTES
S–1	SUPPLY	SQUARE CEILING DIFFUSER	TITUS	TDCA–AA	1,2,3
S–2	SUPPLY	ROUND DIFFUSER	TITUS	TMRA–AA	2,3
R–1	RETURN	EGGCRATE	TITUS	50F	2,3
E–1	EXHAUST	EGGCRATE	TITUS	50F	1,2,3

NOTES:

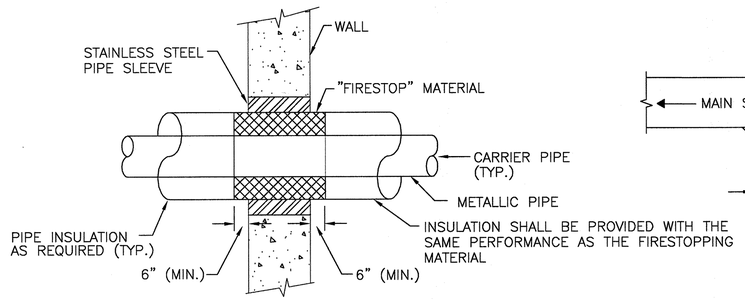
1. PROVIDE 24"x24" CEILING MODULE WHEN INSTALLED IN ACOUSTICAL TILE CEILING.
2. PROVIDE OPPOSED BLADE VOLUME DAMPER.
3. PROVIDE STANDARD #26 WHITE FINISH.

DESIGN CONDITIONS

	SUMMER		WINTER
	DB(°F)	WB(°F)	DB(°F)
OUTDOOR	93	79	39
INDOOR	75	62.6	70

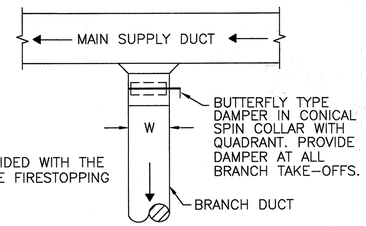


CONDENSING UNIT ANCHORING DETAIL
NOT TO SCALE



NOTE:
PIPE SLEEVE SHALL BE SIZED TO PROVIDE 1/4" ALL AROUND CLEARANCE.

MASONRY WALL PENETRATION DETAIL
N.T.S.



TYPICAL ROUND SUPPLY BRANCH DUCT TAKE–OFF DETAIL
N.T.S.

RECORD DRAWING 06/15/2009

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

MECHANICAL SCHEDULES, DETAILS AND LEGEND

JOHN T. RECTOR
FLORIDA P.E. NO. 53292

PROJECT STATUS
RECORD DRAWING
JUNE 2009

M–2

4987.028

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VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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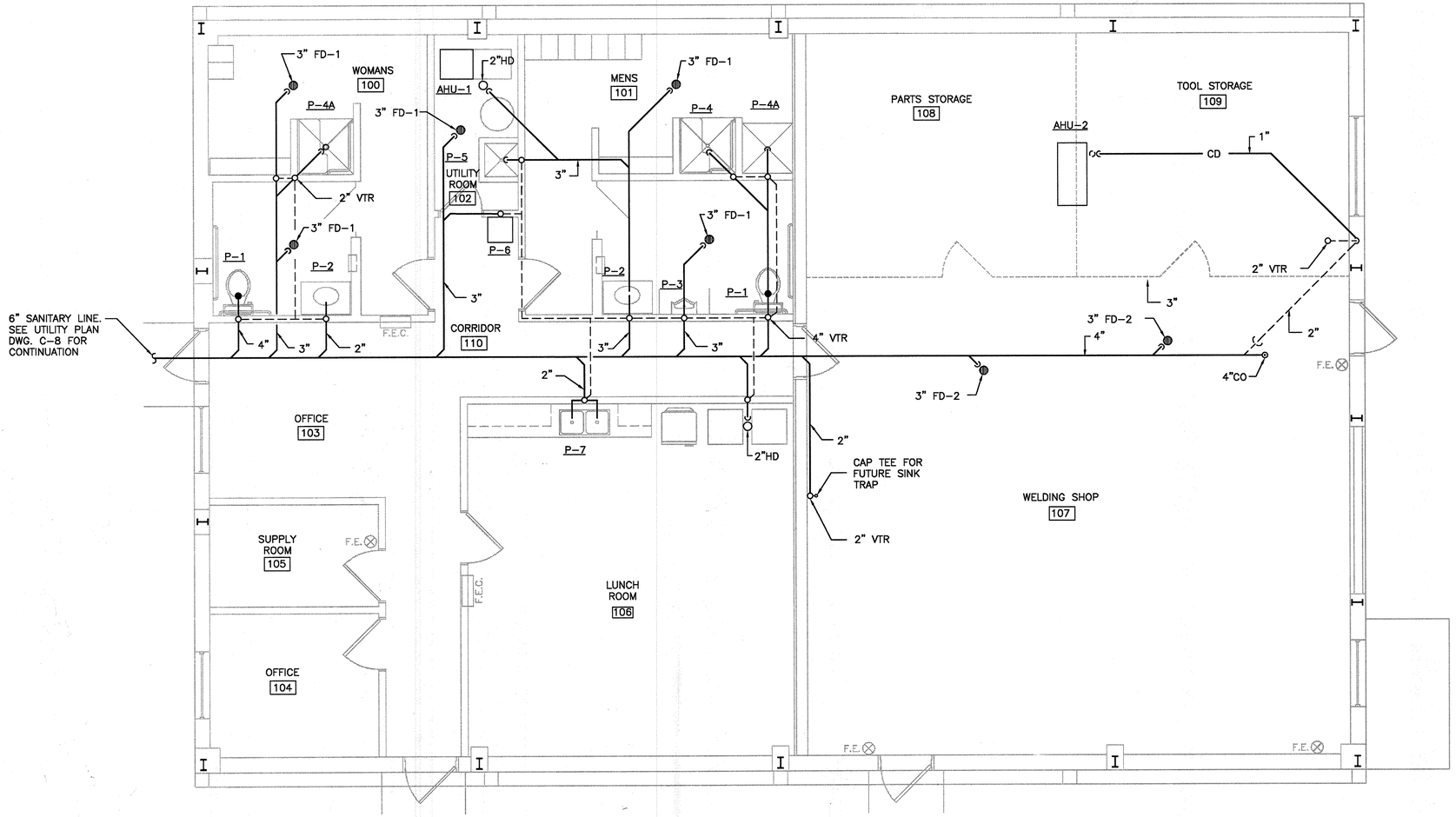
N

0 4' 8'

SCALE: 1/4" = 1'-0"



SANITARY FLOOR PLAN

SCALE: 1/4" = 1'-0"

NOTES:

1. WORK THIS DRAWING WITH P-3 SANITARY WASTE AND VENT RISER DIAGRAM.
2. DRAWINGS ARE FOR GENERAL LAYOUT AND PIPE ROUTING ONLY, PIPE SIZES AND INSTALLATION SHALL COMPLY WITH ALL APPLICABLE PLUMBING CODES HAVING JURISDICTION OVER THIS PROJECT.

LEGEND

———	SANITARY DRAIN LINE
——— CD ———	CONDENSATE DRAIN
- - - - - - - - - - - -	VENT PIPING
FD	FLOOR DRAIN
HD	HUB DRAIN
GPM	GALLONS PER MINUTE
VTR	VENT THROUGH ROOF

RECORD DRAWING 06/15/2009

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

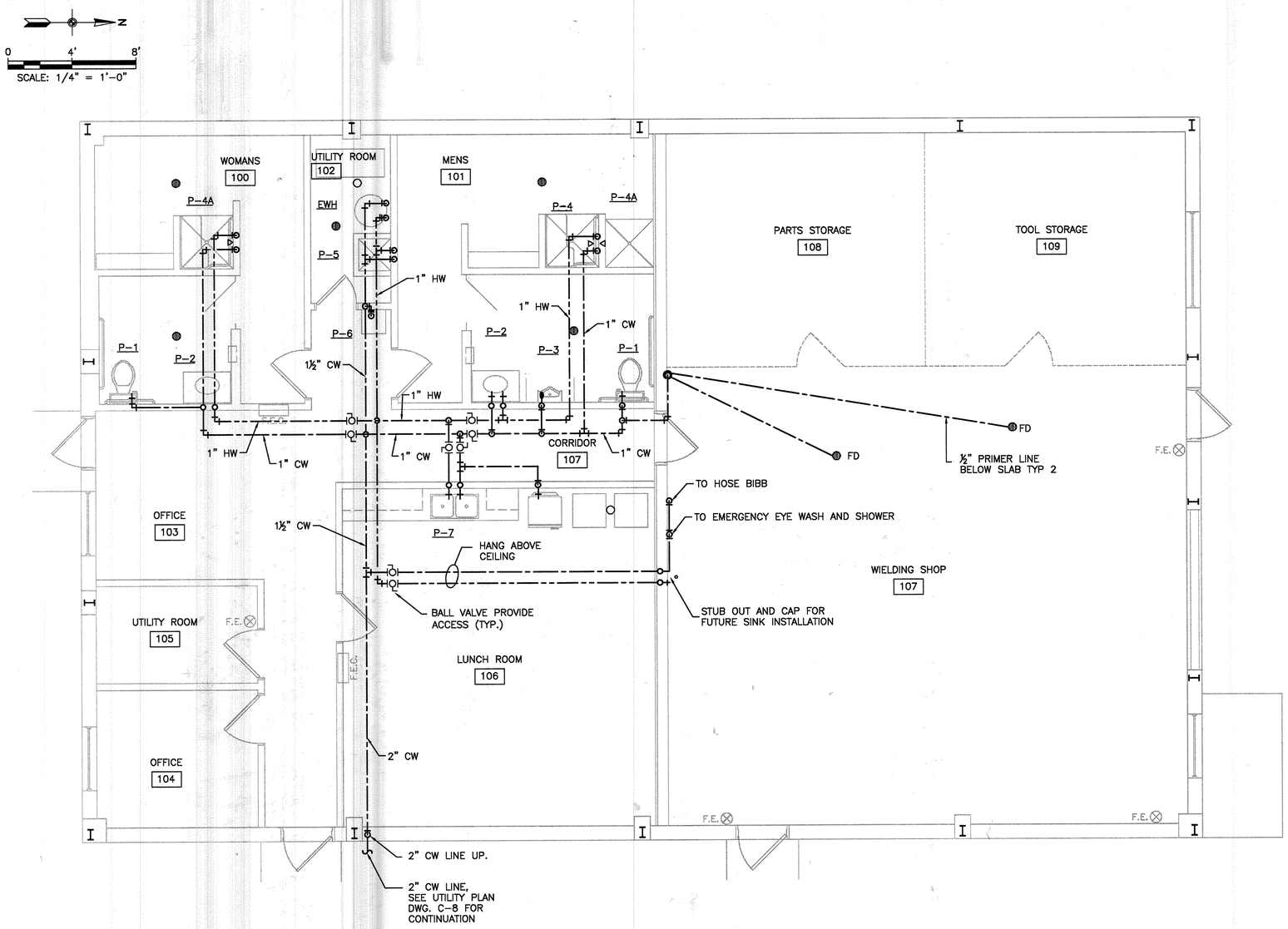
SANITARY WASTE AND VENT PIPING PLAN

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
RECORD DRAWING
JUNE 2009

P-1

4987.029



DOMESTIC WATER FLOOR PLAN
SCALE: 1/4" = 1'-0"

NOTES:

1. REFER TO FIXTURE SCHEDULE FOR CONNECTION SIZES UNLESS NOTED OTHERWISE IN THIS PLAN.
2. EACH FLOOR DRAIN IN THE OFFICE SECTION OF THE BUILDING SHALL BE PROVIDED WITH A TRAP PRIMER AS DETAIL. THE SUPPLY COLD WATER LINE SHALL CONNECT TO THE CLOSEST REGULARLY ACTIVATED FIXTURE. THIS LINE SIZE SHALL BE ½" EITHER OVER HEAD OR UNDER FLOOR (CLOSEST ROUTE). SEE SANITARY PLANS FOR EXACT LOCATION OF FLOOR DRAINS
3. PROVIDE WATER HAMMER ARRESTERS PER PLUMBING CODE.
4. CONTRACTOR TO VERIFY SIZES AND LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING WITH NEW WORK.
5. PROVIDE VERTICAL CLAMPS FOR ALL VERTICAL PIPING INCLUDING SANITARY DRAINS, VENTS AND WATER LINES. INSTALL RISERS SO AS TO ALLOW VERTICAL MOVEMENT OF PIPING, ANCHORING PIPES AT THE BASE OF ALL RISERS.
6. THE VALVES AND SPECIALTY ITEMS MAY NOT BE SHOWN IN EVERY INSTANCE ON THE DRAWINGS, BUT ARE TO BE PROVIDED WHETHER SHOWN OR NOT WHEN NECESSARY FOR PROPER OPERATION AND MAINTENANCE OF THE SYSTEM. UNLESS OTHERWISE NOTED, VALVES AND SPECIALTY ITEMS ARE TO BE RATED AT 125 PSIG. DEVICES AND VALVES 2 ½" AND SMALLER ARE TO HAVE SOLDERED OR SCREWED CONNECTIONS AND THOSE 3" AND LARGER ARE TO HAVE FLANGED CONNECTIONS.
7. WATER HEATER RELIEF VALVE DISCHARGE FULL SIZE TO SAFE PLACE OF DISPOSAL. THE DISCHARGE PIPE SHALL NOT HAVE ANY TRAPPED SECTIONS AND SHALL HAVE A VISIBLE AIR GAP FITTING LOCATED IN THE ROOM OR THE HEATER. THE DISCHARGE SHALL BE INSTALLED IN A MANOR THAT DOES NOT CAUSE PERSONAL INJURY TO OCCUPANTS IN THE IMMEDIATE AREA OR STRUCTURAL DAMAGE TO THE BUILDING.
8. ALL WATER PIPING IS ¾" COPPER TYPE "K" BELOW GROUND AND TYPE "L" ABOVE GROUND UNLESS NOTED OTHERWISE ON THE DRAWINGS.
9. DRAWING IS FOR GENERAL ROUTING AND SIZES. INSTALLATION SHALL COMPLY WITH ALL APPLICABLE PLUMBING CODES HAVING JURISDICTION OVER THIS PROJECT.

LEGEND

HOT WATER LINE	
COLD WATER LINE	
BELOW SLAB COLD WATER LINE	
IQI	BALL VALVE
EWH	ELECTRIC WATER HEATER
FD	FLOOR DRAIN
CW	COLD WATER
GPM	GALLONS PER MINUTE

RECORD DRAWING 06/15/2009

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			REVISIONS

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MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

DOMESTIC WATER PIPING PLAN

DAVID A. WILCOX
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PROJECT STATUS
RECORD DRAWING
JUNE 2009

P-2

4987.030

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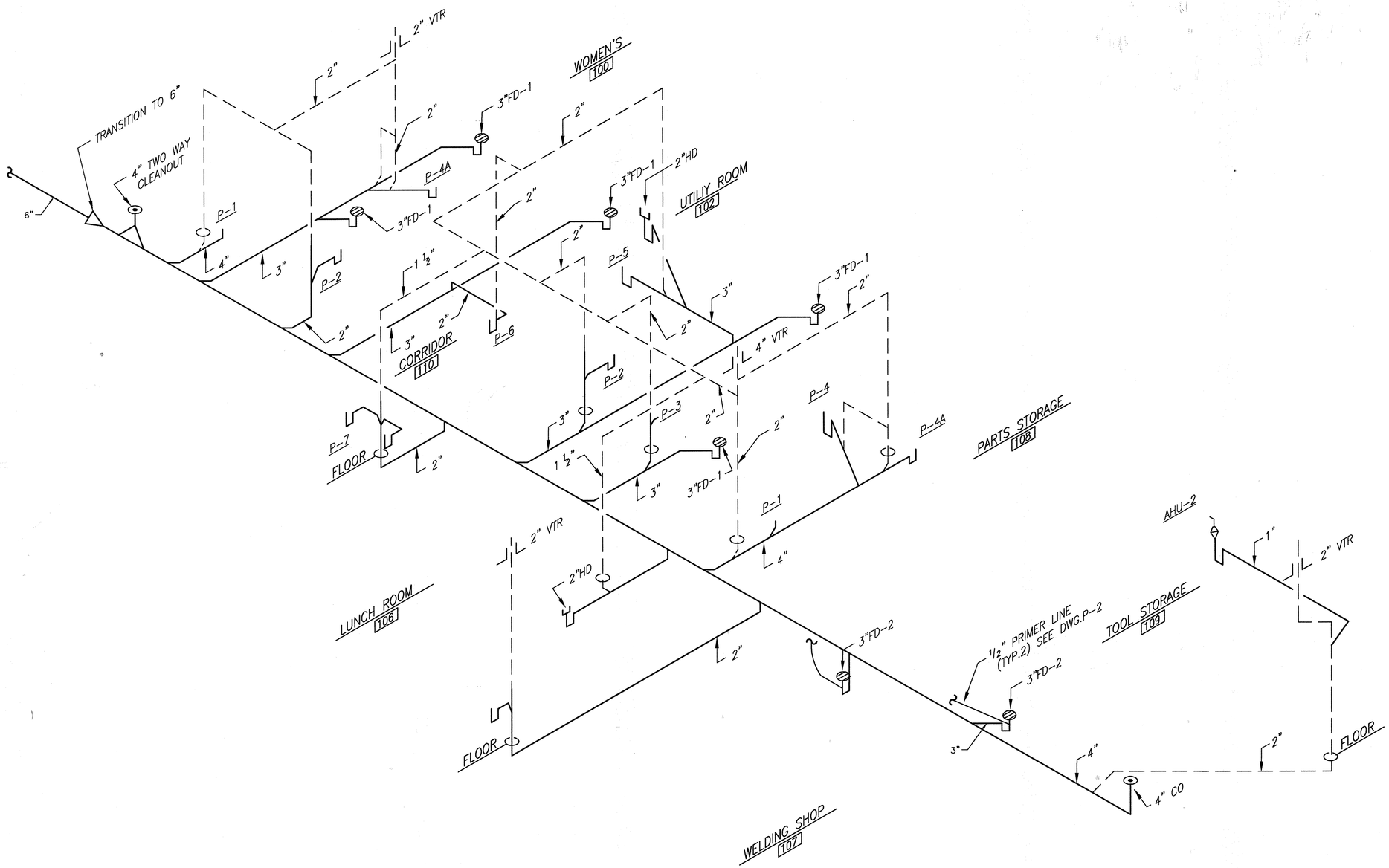

1 SANITARY ISOMETRICS
NTS

RECORD DRAWING 06/15/2009

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			REVISIONS

PROJECT MANAGER
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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
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MANATEE COUNTY, FLORIDA

SANITARY WASTE AND VENT RISER DIAGRAM

DAVID A. WILCOX
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PROJECT STATUS
RECORD DRAWING
JUNE 2009

P-3

4987.03

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VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

SYMBOL	DESCRIPTION
A1	CEILING MOUNTED LIGHTING FIXTURE; LETTER INDICATES FIXTURE TYPE
C1	EXTERIOR WALL MOUNTED LIGHTING FIXTURE; LETTER INDICATES FIXTURE TYPE
A2	2'X4' RECESSED MOUNTED FLOURESCENT LIGHTING FIXTURE; LETTER INDICATES FIXTURE TYPE
D2	1'X4' CEILING MOUNTED FLOURESCENT LIGHT FIXTURE ON; LETTER INDICATES FIXTURE TYPE.
	SINGLE FACE CEILING OR WALL-MOUNTED EXIT SIGN WITH EMERGENCY BATTERY BACKUP.
	WALL-MOUNTED SELF-CONTAINED EMERGENCY LIGHTING UNIT; FIXTURE SHALL MONITOR LIGHTING CIRCUIT IN THE AREA
S	SINGLE-POLE TOGGLE SWITCH.
S_3	THREE-WAY TOGGLE SWITCH
S_4	FOUR-WAY TOGGLE SWITCH
S_M	MANUAL STARTER WITH THERMAL OVERLOAD PROTECTION
WP GFI	DUPLEX RECEPTACLE, "GFI" INDICATES GROUND FAULT CIRCUIT INTERRUPTER, "WP" INDICATES WEATHERPROOF.
	DUPLEX RECEPTACLE, WALL MOUNTED AT 6" ABOVE COUNTER
	277/480 VOLT PANELBOARD, SURFACE MOUNTED
	120/208 VOLT PANELBOARD, SURFACE MOUNTED
T	DRY-TYPE TRANSFORMER W/4" TALL CONCRETE PAD
	NON-FUSED DISCONNECT SWITCH
B	ENCLOSED CIRCUIT BREAKER
	MOTOR
FACP	FIRE ALARM CONTROL PANEL
	MANUAL PULL STATION
S	SMOKE DETECTOR.
H	HEAT DETECTOR, 135° UNO
D	DUCT MOUNTED SMOKE DETECTOR
R	RELAY FOR AHU SHUTDOWN
#S	STROBE, NUMBER INDICATES CANDELLA
	HORN
TS	REMOTE WALL MOUNTED TEST SWITCH FOR DUCT MOUNTED SMOKE DETECTOR
—LP—	LIGHTNING PROTECTION MAIN CONDUCTOR
	GROUND WELL
	GROUND ROD
	BONDING CONNECTIONS
	AIR TERMINAL
	RACEWAY CONCEALED IN WALL OR CEILING
	RACEWAY EXPOSED
	RACEWAY UNDERGROUND
L111-1,3,5	CIRCUIT HOME RUN, MINIMUM 3/4" C. UNO INDICATES CIRCUIT NUMBER(S) INDICATES PANELBOARD

SYMBOL	DESCRIPTION
▼	TELECOMMUNICATIONS OUTLET. PLATE SHALL CONTAIN TWO 6-POSITION 6-CONTACT PUNCHDOWN TERMINATION TYPE VOICE JACKS AND TWO 8-POSITION 8-CONTACT CAT5e COMPLIANT PUNCHDOWN TERMINATION TYPE DATA JACKS. PLATE AND JACK COLOR SHALL BE GRAY. PROVIDE 4" SQUARE RECESSED OUTLET BOX WITH SINGLE GANG DRYWALL RING FOR FLUSH MOUNTED PLATE, MOUNTED WITH BOTTOM 16" ABOVE FINISHED FLOOR. PROVIDE 3/4" CONDUIT CONCEALED WITHIN WALL AND ABOVE SUSPENDED ACOUSTICAL TILE CEILING BETWEEN OUTLET BOX AND TELECOMMUNICATIONS BACKBOARD IN STORAGE ROOM. TERMINATE CONDUIT 1" ABOVE TELECOMMUNICATIONS BACKBOARD USING AN INSULATED THROAT BUSHING. PROVIDE TWO VOICE CABLES AND TWO DATA CABLES IN CONDUIT BETWEEN OUTLET BOX AND TELECOMMUNICATIONS BACKBOARD. INSTALL CABLES CONTINUOUS FROM END TO END WITHOUT INTERMEDIATE SPLICE. VOICE CABLE SHALL BE 3-PAIR #24 AWG COPPER CAT3 UTP. DATA CABLE SHALL BE 4-PAIR #24 AWG COPPER CAT5e UTP. TERMINATE THE VOICE CABLES AT THE TELECOMMUNICATIONS OUTLET END ON THE VOICE JACKS PER THE USOC WIRING CONFIGURATION. TERMINATE THE VOICE CABLES AT THE TELECOMMUNICATIONS BACKBOARD END ON A 66-TYPE PUNCHDOWN BLOCK. TERMINATE THE DATA CABLES AT THE TELECOMMUNICATIONS OUTLET END ON THE DATA JACKS PER THE EIA/TIA 568B WIRING CONFIGURATION. TERMINATE THE DATA CABLES AT THE TELECOMMUNICATIONS BACKBOARD END ON DATA PATCH PANEL JACKS.
▽	TELEPHONE OUTLET. PLATE SHALL CONTAIN ONE 6-POSITION 6-CONTACT PUNCHDOWN TERMINATION TYPE VOICE JACK. PLATE AND JACK COLOR SHALL BE GRAY. PROVIDE 4" SQUARE RECESSED OUTLET BOX WITH SINGLE GANG DRYWALL RING FOR FLUSH MOUNTED PLATE, MOUNTED WITH TOP 54" ABOVE FINISHED FLOOR. PROVIDE 3/4" CONDUIT CONCEALED WITHIN WALL AND ABOVE SUSPENDED ACOUSTICAL TILE CEILING BETWEEN OUTLET BOX AND TELECOMMUNICATIONS BACKBOARD IN STORAGE ROOM. TERMINATE CONDUIT 1" ABOVE TELECOMMUNICATIONS BACKBOARD USING AN INSULATED THROAT BUSHING. PROVIDE ONE VOICE CABLE IN CONDUIT BETWEEN OUTLET BOX AND TELECOMMUNICATIONS BACKBOARD. INSTALL CABLE CONTINUOUS FROM END TO END WITHOUT INTERMEDIATE SPLICE. VOICE CABLE SHALL BE 3-PAIR #24 AWG COPPER CAT3 UTP. TERMINATE THE VOICE CABLE AT THE TELEPHONE OUTLET END ON THE VOICE JACK PER THE USOC WIRING CONFIGURATION. TERMINATE THE VOICE CABLE AT THE TELECOMMUNICATIONS BACKBOARD END ON A 66-TYPE PUNCHDOWN BLOCK.

GENERAL PROJECT NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL SAFETY CODE (NESC) AND SHALL ALSO COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS OF LOCAL AND STATE LAWS AND ORDINANCES.
2. ALL CONDUCTORS INCLUDING CONTROLS FOR HVAC SHALL BE IN MINIMUM 3/4" CONDUIT.
3. ALL CONDUIT INCLUDING CONTROLS SHALL BE INSTALLED PERPENDICULAR AND PARALLEL TO BUILDING STRUCTURE.
4. ALL RACEWAYS SHALL BE CONCEALED IN WALLS, CEILINGS, FLOOR SLABS, ETC.
5. ALL LIGHTING AND POWER BRANCH CIRCUITS SHALL HAVE MINIMUM #12 AWG CONDUCTORS FOR PHASE, NEUTRAL, AND EQUIPMENT GROUND UNLESS NOTED OTHERWISE.
6. PROVIDE SEPARATE NEUTRAL FOR EACH PHASE FOR ALL POWER CIRCUITS.
7. ALL DUPLEX RECEPTACLES WITHIN 6'-0" OF A SINK OR WATER SOURCE SHALL BE OF THE "GFI" TYPE.
8. PROVIDE PULL AND JUNCTION BOXES AS REQUIRED AND SIZE PER THE NEC.
9. UPON COMPLETION OF THE PROJECT, PROVIDE APPROVED FIRESTOP MATERIALS FOR ALL UNUSED CONDUIT RISERS AND OPENINGS.
10. EMPTY CONDUIT SHALL HAVE PULL ROPE SECURELY ATTACHED TO THE CONDUIT. ALL EMPTY CONDUIT SHALL BE PLUGGED AND CAPPED.
11. LABEL EACH RACEWAY AND OUTLET BOXES WITH PANEL AND CIRCUIT NUMBER(S) USING A PERMANENT BLACK PEN. PROVIDE PHENOLIC NAMEPLATE, SELF ADHESIVE TYPE, FOR ALL WIRING DEVICES INDICATING PANEL AND CIRCUIT NUMBER(S).
12. ALL RGSC IN CONTACT WITH EARTH SHALL HAVE TWO COATS OF BITUMINOUS TAR.
13. NO CONDUIT, CABLES, AND ELECTRICAL EQUIPMENT ARE TO BE INSTALLED ALONG THE EXTERIOR SURFACES OF THE BUILDING UNLESS SPECIFICALLY DIRECTED OTHERWISE.
14. ALL RACEWAYS SHALL BE ROUTED OVERHEAD AS MUCH AS POSSIBLE UNLESS ABSOLUTELY NECESSARY TO ROUTE THEM UNDERGROUND.
15. ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT SHALL BE INSTALLED ON MINIMUM 4" TALL CONCRETE PAD UNLESS NOTED OTHERWISE.
16. ALL "EMT" CONDUIT SHALL HAVE COMPRESSION FITTINGS, SET-SCREW IS NOT PERMITTED.

LOAD CALCULATION (BUILDING)

DESCRIPTION	CONNECTED (KVA)	DEMAND FACTOR	DEMAND (KVA)
LIGHTING	3.44	125%	4.30
RECEPTACLE	11.4		
(FIRST 10KVA)	10.0	100%	10.0
REMAINDER	2.40	50%	1.20
HVAC	32.0	100%	32.0
PUMPS P1 & P2	5.00	100%	5.00
EWH	1.60	100%	1.60
FUTURE	10.0	100%	10.0
TOTAL			64.1

INDEX OF ELECTRICAL DRAWINGS

E-1 ELECTRICAL SYMBOLS LEGEND & NOTES
E-2 ELECTRICAL SITE PLAN
E-3 LIGHTING PLAN
E-4 POWER PLAN
E-5 FIRE ALARM SYSTEM PLAN
E-6 LIGHTNING PROTECTION SYSTEM PLAN
E-7 ELECTRICAL DETAILS

NOTE:

PROVIDE THE FOLLOWING ALTERNATE DEDUCTIVE BID ITEMS FOR OWNER TO REVIEW DURING THE BIDDING PROCESS:

A. LIGHTNING PROTECTION SYSTEM.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION

REVISIONS

PROJECT MANAGER: DAVE WILCOX
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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

ELECTRICAL SYMBOLS LEGEND AND NOTES

KATHY WONG GIANG
FLORIDA P.E. NO. 53246

PROJECT STATUS
RECORD DRAWING
JUNE 2009

E-1

4987.032

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY
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X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\E-1 ELECTRICAL SYMBOLS LEGEND AND GENERAL NOTES.DWG

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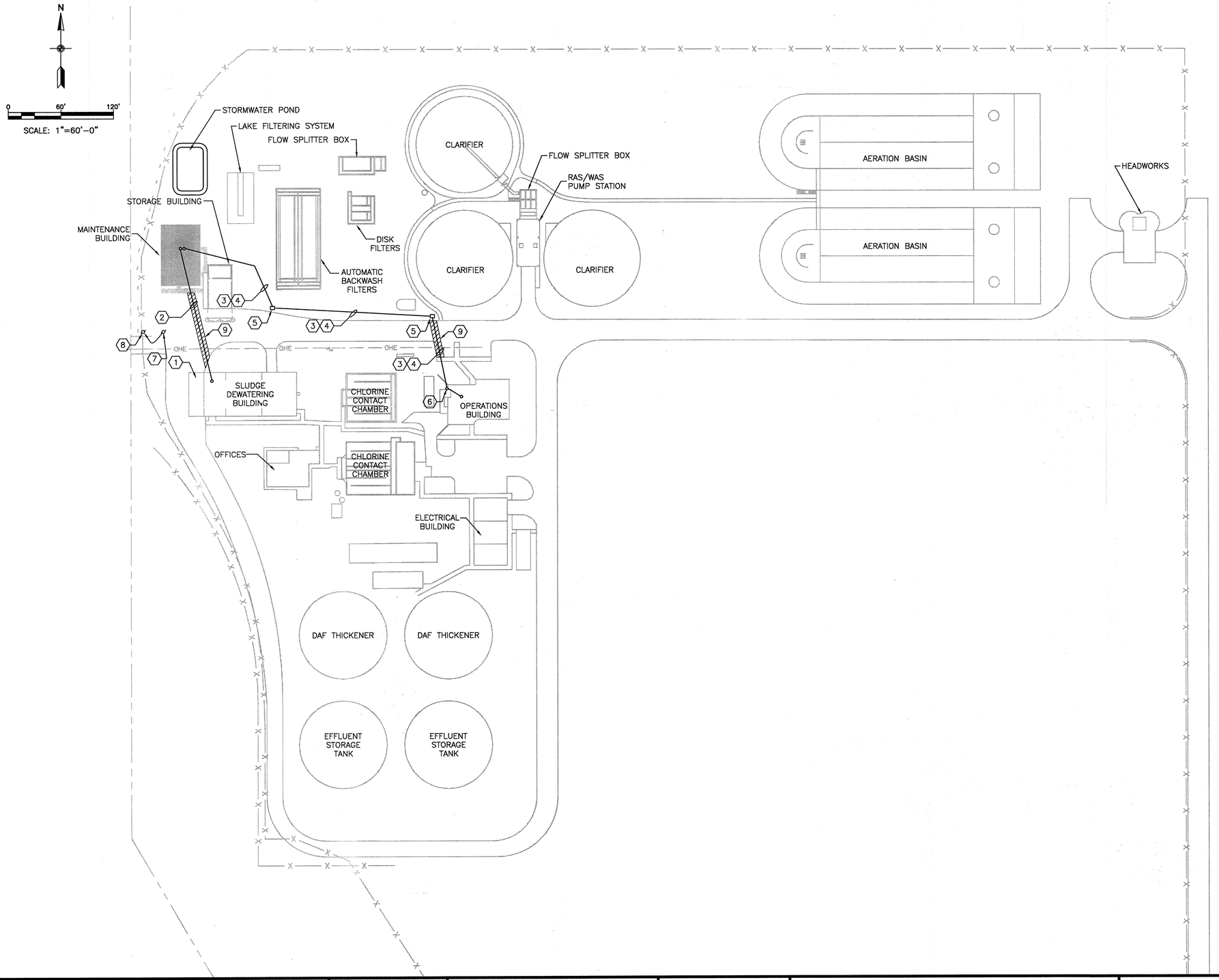
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWRF\CADD\E-2 ELECTRICAL SITE PLAN.DWG



REFERENCE NOTES:

1. APPROXIMATE LOCATION OF EXISTING "MCC-5". PROVIDE 1 – 250 AMP, 3 POLE, 480VAC, 22,000 AIC RATING, BRANCH CIRCUIT BREAKER IN ONE OF THE SPACE OF EXISTING "MCC". EXISTING "MCC" IS MANUFACTURED BY WESTINGHOUSE.
2. PROVIDE FEEDER CONDUIT AND CONDUCTORS, REFER TO ELECTRICAL ONE-LINE DIAGRAM ON DRAWING E-7 FOR DETAILS.
3. PROVIDE 2 – 2" EMPTY CONDUIT WITH PULL ROPE FOR TELEPHONE FROM TELEPHONE TERMINAL BACKBOARD LOCATED IN THE NEW MAINTENANCE BLDG TO EXISTING ELECTRICAL ROOM IN OPERATIONS BLDG. EXACT CONDUIT TERMINATIONS SHALL BE FIELD COORDINATED WITH OWNER.
4. PROVIDE 2 – 2" EMPTY CONDUIT WITH PULL ROPE FOR FIRE ALARM REMOTE MONITORING FROM FIRE ALARM CONTROL PANEL LOCATED IN THE NEW MAINTENANCE BLDG TO EXISTING OPERATOR CONTROL ROOM IN OPERATIONS BLDG. EXACT CONDUIT TERMINATIONS SHALL BE FIELD COORDINATED WITH OWNER.
5. CONCRETE PULL BOX WITH CAST IRON COVER LABEL "COMMUNICATIONS".
6. TRANSITION FROM UNDERGROUND TO OVERHEAD INSTALLATIONS. ROUTE CONDUIT EXPOSED ON EXTERIOR OF BUILDING AND CONCEAL WHEN INSIDE BUILDING.
7. RELOCATE EXISTING LIGHT POLE TO FINAL LOCATION OF RELOCATED POLE. REMOVE EXISTING CONDUCTORS FROM POINT OF ORIGIN TO EXISTING POLE AND INSTALL NEW CONDUCTORS IN MINIMUM 1" CONDUIT FROM POINT OF ORIGIN TO FINAL LOCATION OF RELOCATED POLE. EXISTING CONDUIT MAY REMAIN FOR RE-USE. THERE SHALL BE NO CONDUCTORS SPLICING INSIDE CONDUIT.
8. FINAL LOCATION OF RELOCATED LIGHT POLE.
7. THE EXISTING ASPHALT PAVING SHALL BE SAWCUT, REMOVED AND DISPOSED OF TO INSTALL THE NEW ELECTRICAL CONDUITS. RESTORATION REQUIREMENTS AND LIMITS SHALL BE IN ACCORDANCE WITH UW-27 ON SHEET C-9.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

ELECTRICAL SITE PLAN

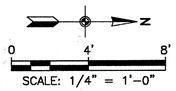
KATHY WONG GIANG
FLORIDA P.E. NO. 53246

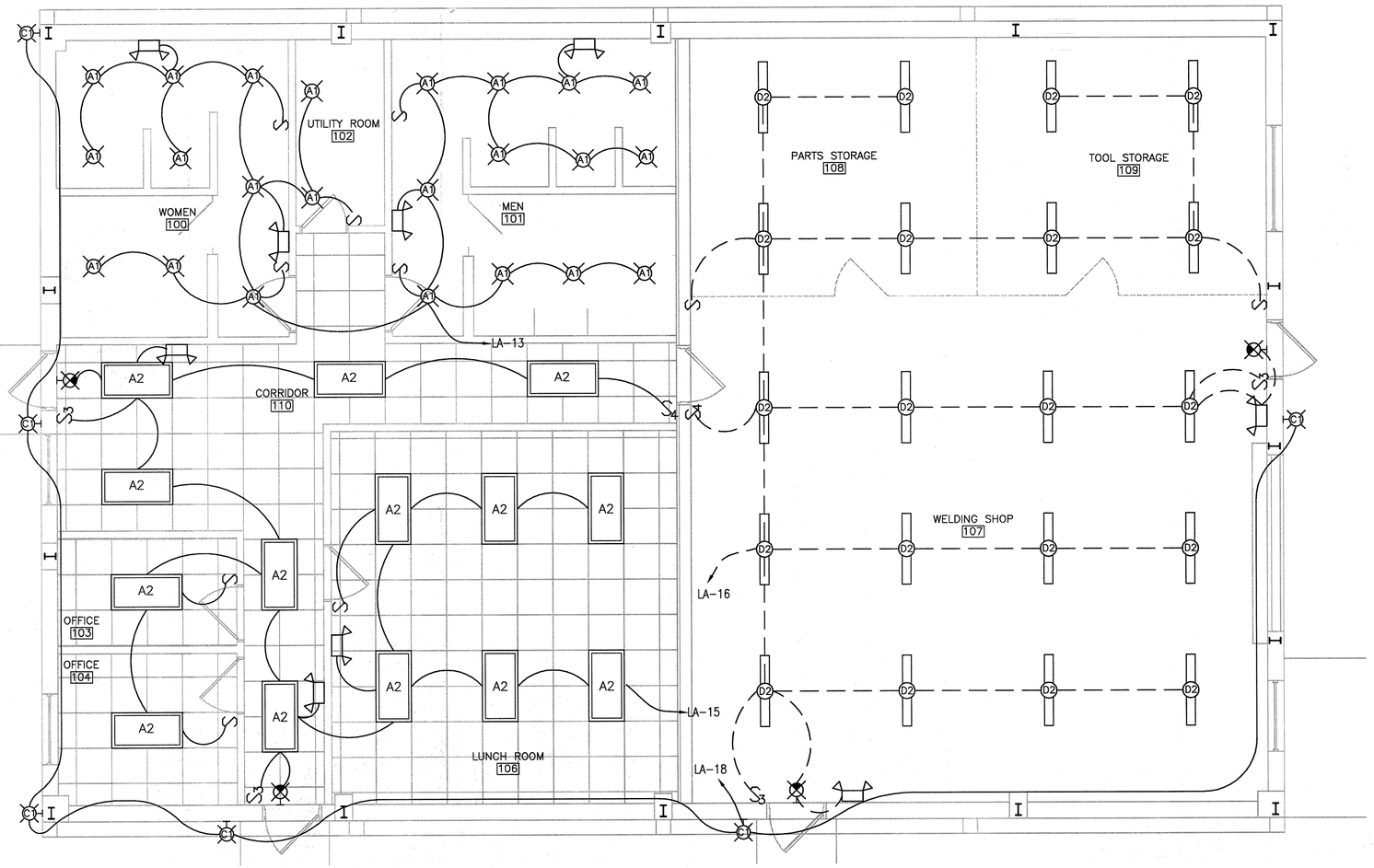
PROJECT STATUS
RECORD DRAWING
JUNE 2009

E-2

4987.033

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY





LIGHTING PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. ALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS SHALL BE CONNECTED TO PANEL AND CIRCUIT NUMBER INDICATED AND AHEAD OF LOCAL TOGGLE SWITCH (UNSWITCHED).
2. HOMERUN FOR LIGHTING CIRCUITS MAY BE CONSOLIDATED INTO A SINGLE CONDUIT AND CONDUIT FILLS SHALL BE SIZED PER NEC.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, DRAWING A-4, FOR EXACT LIGHTING FIXTURE LAYOUT.
4. REFER TO ELECTRICAL DETAILS, DRAWING E-7, FOR LIGHTING FIXTURE SCHEDULE.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER
DAVE WILCOX

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

LIGHTING PLAN

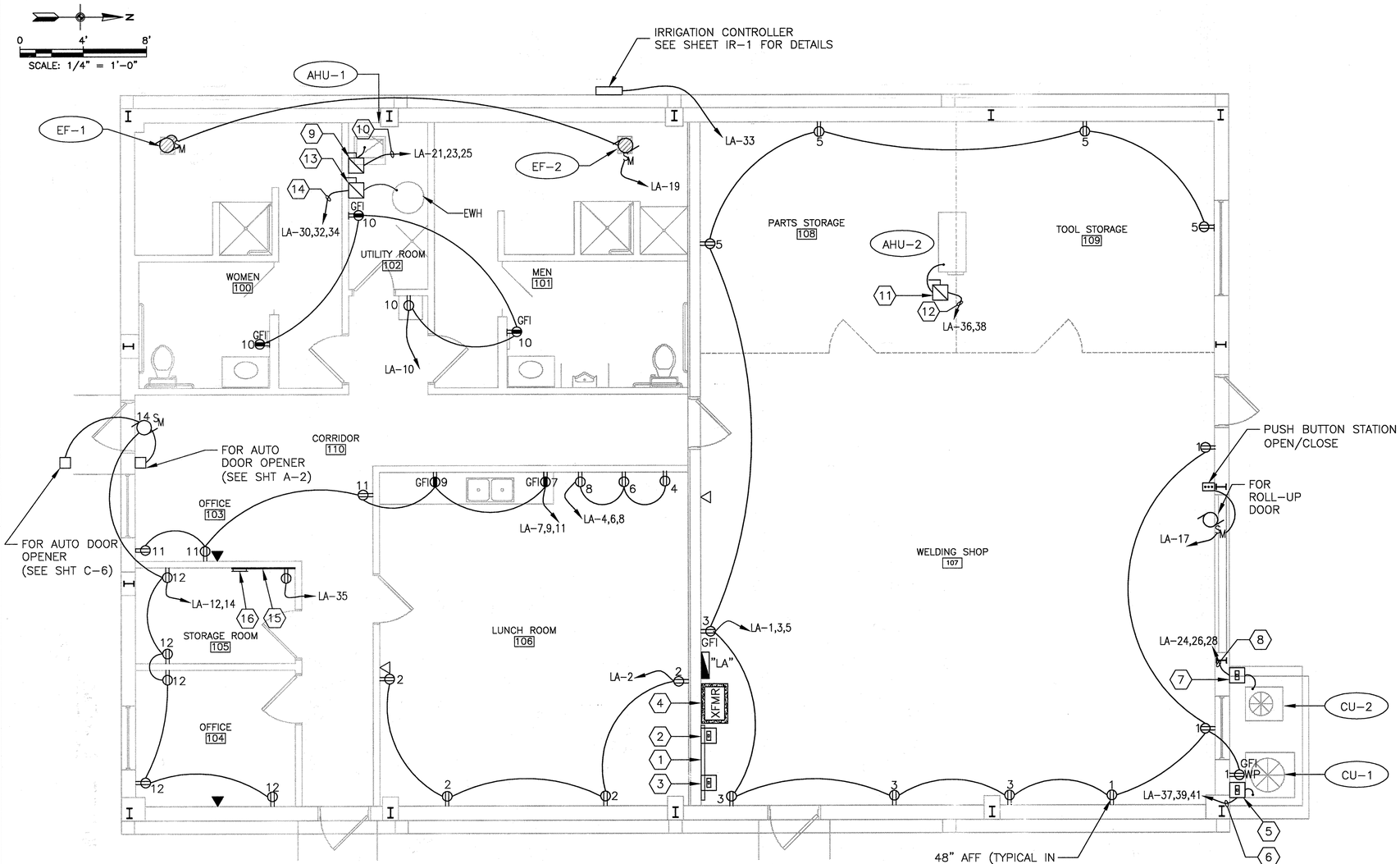
KATHY WONG GIANG
FLORIDA P.E. NO. 53246

PROJECT STATUS
RECORD DRAWING
JUNE 2009

E-3

4987-034

PLOTTED June 16, 2009 1:49 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\E-3 LIGHTING PLAN.DWG



POWER PLAN
SCALE: 1/4" = 1'-0"

REFERENCE NOTES:

1. AUXILIARY GUTTER.
2. ENCLOSED CIRCUIT BREAKER FOR TRANSFORMER, REFER TO ELECTRICAL ONE-LINE DIAGRAM ON DRAWING E-6 FOR DETAILS.
3. ENCLOSED CIRCUIT BREAKER FOR WELDER EQUIPMENT, REFER TO ELECTRICAL ONE-LINE DIAGRAM ON DRAWING E-6 FOR DETAILS. OWNER WILL PROVIDE CONNECTION FROM CIRCUIT BREAKER TO EQUIPMENT.
4. DRY-TYPE TRANSFORMER, REFER TO ELECTRICAL ONE-LINE DIAGRAM ON DRAWING E-6 FOR DETAILS.
5. PROVIDE 45 AMP, 3 POLE, 240VAC, 22,000 AIC RATING, ENCLOSED CIRCUIT BREAKER, NEMA TYPE 3R ENCLOSURE.
6. PROVIDE 3#8 & 1#10 GND IN 3/4" C. PROVIDE LIQUID TIGHT FLEXIBLE CONNECTION TO MOTOR.
7. PROVIDE 20 AMP, 3 POLE, 240VAC, 22,000 AIC RATING, ENCLOSED CIRCUIT BREAKER, NEMA TYPE 3R ENCLOSURE.
8. PROVIDE 3#12 & 1#12 GND IN 3/4" C. PROVIDE LIQUID TIGHT FLEXIBLE CONNECTION TO MOTOR.
9. PROVIDE 60 AMP, 3 POLE, 240VAC, HEAVY-DUTY NON-FUSED DISCONNECT SWITCH, NEMA TYPE 1 ENCLOSURE, UNIT MOUNTED.
10. PROVIDE 3#8 & 1#10 GND IN 1" C. PROVIDE FLEXIBLE CONNECTION TO MOTOR.
11. PROVIDE 60 AMP, 2 POLE, 240VAC, HEAVY-DUTY NON-FUSED DISCONNECT SWITCH, NEMA TYPE 1 ENCLOSURE, UNIT MOUNTED.
12. PROVIDE 2#8 & 1#10 GND IN 1" C. PROVIDE FLEXIBLE CONNECTION TO MOTOR.
13. PROVIDE 30 AMP, 3 POLE, NON-FUSED DISCONNECT SWITCH.
14. PROVIDE 3#12 & 1#12 GND IN 3/4" C.
15. PROVIDE 4'-0" W. BY 8'-0" H. BY 3/4" THK AC PLYWOOD TELECOMMUNICATIONS BACKBOARD ON WALL FOR VOICER AND DATA TERMINATION EQUIPMENT. PAINT BACKBOARD WITH A FIRE RESISTANT PAINT; COLOR TO MATCH ADJACENT WALLS FINISH COLOR. PROVIDE A 6X50 50-PAIR 66-TYPE PUNCHDOWN BLOCK WITH STANDOFF MOUNTING BRACKET, MOUNTED ON THE BACKBOARD FOR TERMINATING THE VOICE HORIZONTAL CABLES; BASIS OF DESIGN SIEMENS S66B3-50 AND SB6 SERIES OR APPROVED EQUAL. PROVIDE A 12-PORT PATCH PANEL WITH TWELVE 8-POSITION 8-CONTACT CAT5e COMPLIANT PUNCHDOWN TERMINATION TYPE JACKS, MOUNTED ON THE BACKBOARD FOR TERMINATING THE DATA HORIZONTAL CABLES; BASIS OF DESIGN SIEMENS HD5-89D-12 SERIES OR APPROVED EQUAL. NEATLY BUNDLE, TRAIN AND ROUTE EXPOSED VOICE AND DATA CABLES. BUNDLE CABLES TOGETHER USING NYLON VELCRO TIE-WRAPS; DO NOT CINCH CABLES TOO TIGHTLY. BUNDLE VOICE CABLES SEPARATE FROM DATA CABLES. TRAIN CABLE BUNDLES USING PLASTIC CABLE MANAGEMENT PRODUCTS (e.g. SPINDLES, LOOPS OR DUCT). ROUTE CABLE BUNDLES PARALLEL AND PERPENDICULAR TO BUILDING SURFACE FEATURES.
16. PROVIDE MIN. 2" W. BY 12" L. BY 1/4" THK SOLID COPPER GROUND BUS WITH UL RECOGNIZED 1000V RATED INSULATED STANDOFFS MOUNTING BRACKETS. GROUND BUS SHALL BE PREDRILLED WITH HOLES FOR THE MOUNTING HARDWARE PLUS NINE 7/16" DIA. HOLES FOR FASTENING GROUND LUGS; BASIS OF DESIGN ERITECH EGBA14212HH SERIES OR APPROVED EQUAL. PROVIDE #6 AWG BARE SOLID COPPER GROUNDING CONDUCTOR IN 3/4" SCH. 40 PVC CONDUIT BETWEEN THIS GROUND BUS AND THE MAIN BUILDING GROUND SYSTEM CONNECTION AT THE BUILDING ELECTRICAL SERVICE EQUIPMENT INSIDE THE WELDING SHOP. BOND THE GROUNDING CONDUCTOR TO THE GROUND BUS USING AN APPROPRIATELY SIZED MECHANICAL COMPRESSION TYPE GROUND LUG.

GENERAL NOTES:

1. ALL DUPLEX RECEPTACLES WITHIN 6'-0" OF A SINK OR WATER SOURCE OR EXPOSED TO WEATHER SHALL BE OF THE "GFI" TYPE. RECEPTACLES EXPOSED TO WEATHER SHALL ALSO BE OF THE "WP" TYPE.
2. WHERE A DUPLEX RECEPTACLE IS ON A DEDICATED 120 VOLT CIRCUIT, PROVIDE GRAY "COLOR" FOR THE WIRING DEVICE.
3. REFER TO MECHANICAL DRAWING FOR EXACT LOCATION OF EXHAUST FANS AND AHU'S.

RECORD DRAWING 06/15/2009

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLOTTED June 16, 2009 1:50 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWRF\CADD\E-4 POWER PLAN.DWG

NO.	BY	DATE	DESCRIPTION
			REVISIONS

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

POWER PLAN

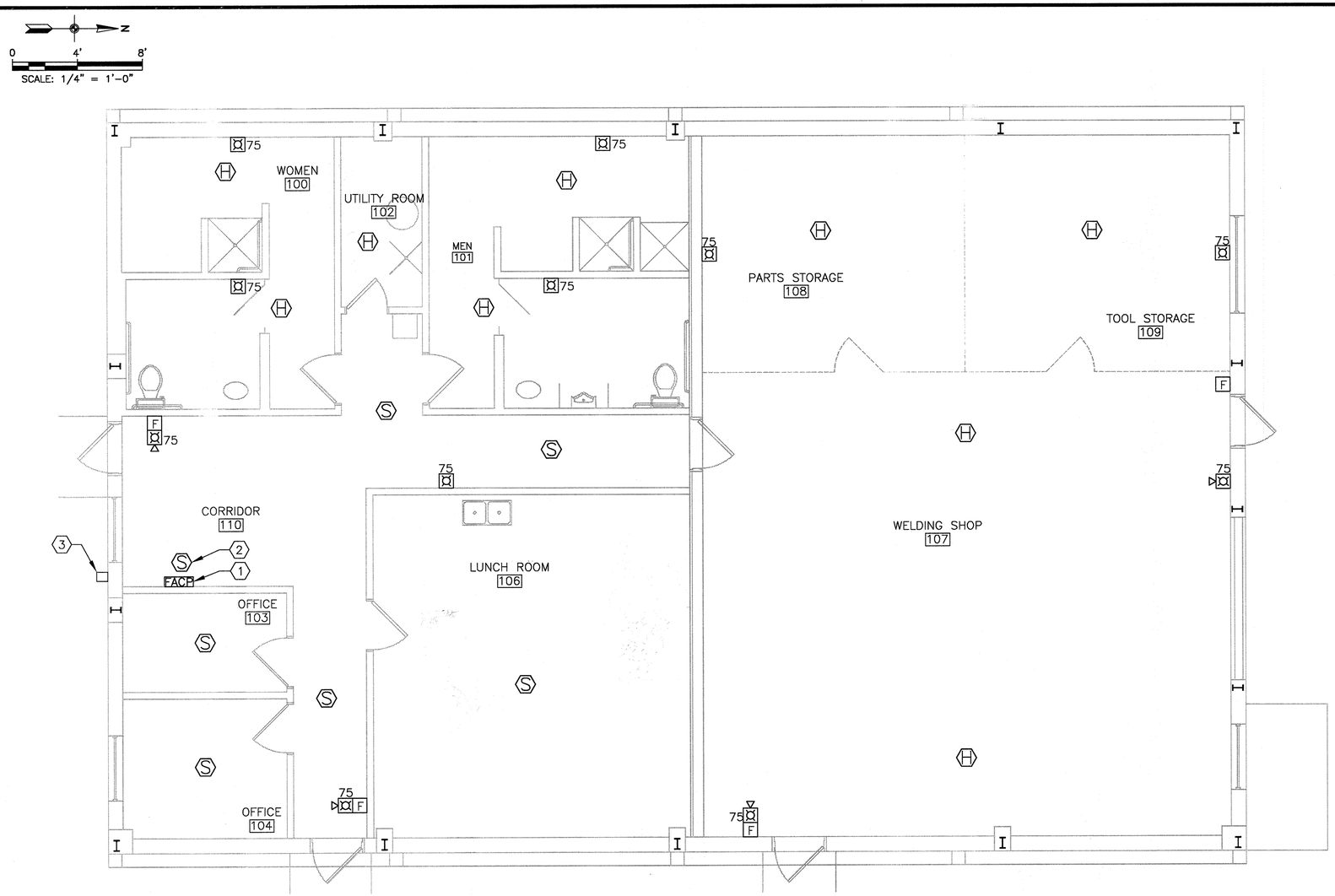
KATHY WONG GIANG
FLORIDA P.E. NO. 53246

PROJECT STATUS
RECORD DRAWING
JUNE 2009

E-4

4987.035

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY



FIRE ALARM SYSTEM PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. REFER TO THIS SHEET FOR FIRE ALARM RISER DIAGRAM AND NOTES.
2. ALL FIRE ALARM SYSTEM MUST BE PERFORMED IN ACCORDANCE WITH NFPA-72 AND BY A LICENSED FIRE ALARM CONTRACTOR WITH A SEPARATE PERMIT AND PLANS.
3. CONTRACTOR SHALL ENSURE THAT THE INSTALLATION OF KNOX BOX FOR FIRE DEPARTMENT ACCESS IS COMPLETE PRIOR TO FINAL FIRE INSPECTION AND CERTIFICATE OF OCCUPANCY.

REFERENCE NOTES:

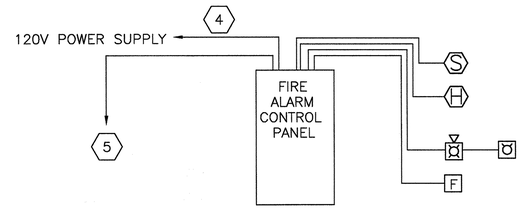
(1) PROPOSED LOCATION OF FIRE ALARM CONTROL PANEL.

(2) LOCATE DETECTOR WITHIN 5'-0" OF PANEL.

(3) PROPOSED LOCATION OF KNOX BOX. COORDINATE EXACT LOCATION WITH FIRE MARSHALL AND OWNER.

(4) PROVIDE 2#12 & 1#12 GND IN 3#4" C. TO PANEL "LA".

(5) PROVIDE 4 PAIR #24 AWG. UTP CABLE, CATEGORY 3, IN 3/4" C. AND TERMINATE CABLE IN TELEPHONE PUNCH BLOCK LOCATED IN THE COMMUNICATIONS ROOM.



FIRE ALARM RISER DIAGRAM
NTS

SYMBOL	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL
F	MANUAL PULL STATION
S	SMOKE DETECTOR.
H	HEAT DETECTOR, 135° UNO
#/#	STROBE, NUMBER INDICATES CANDELLA
	HORN

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

FIRE ALARM SYSTEM PLAN

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FLORIDA P.E. NO. 53246

PROJECT STATUS
RECORD DRAWING
JUNE 2009

E-5

4987.036

PLOTTED June 16, 2009 1:51 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\E-5 FIRE ALARM SYSTEM PLAN.DWG

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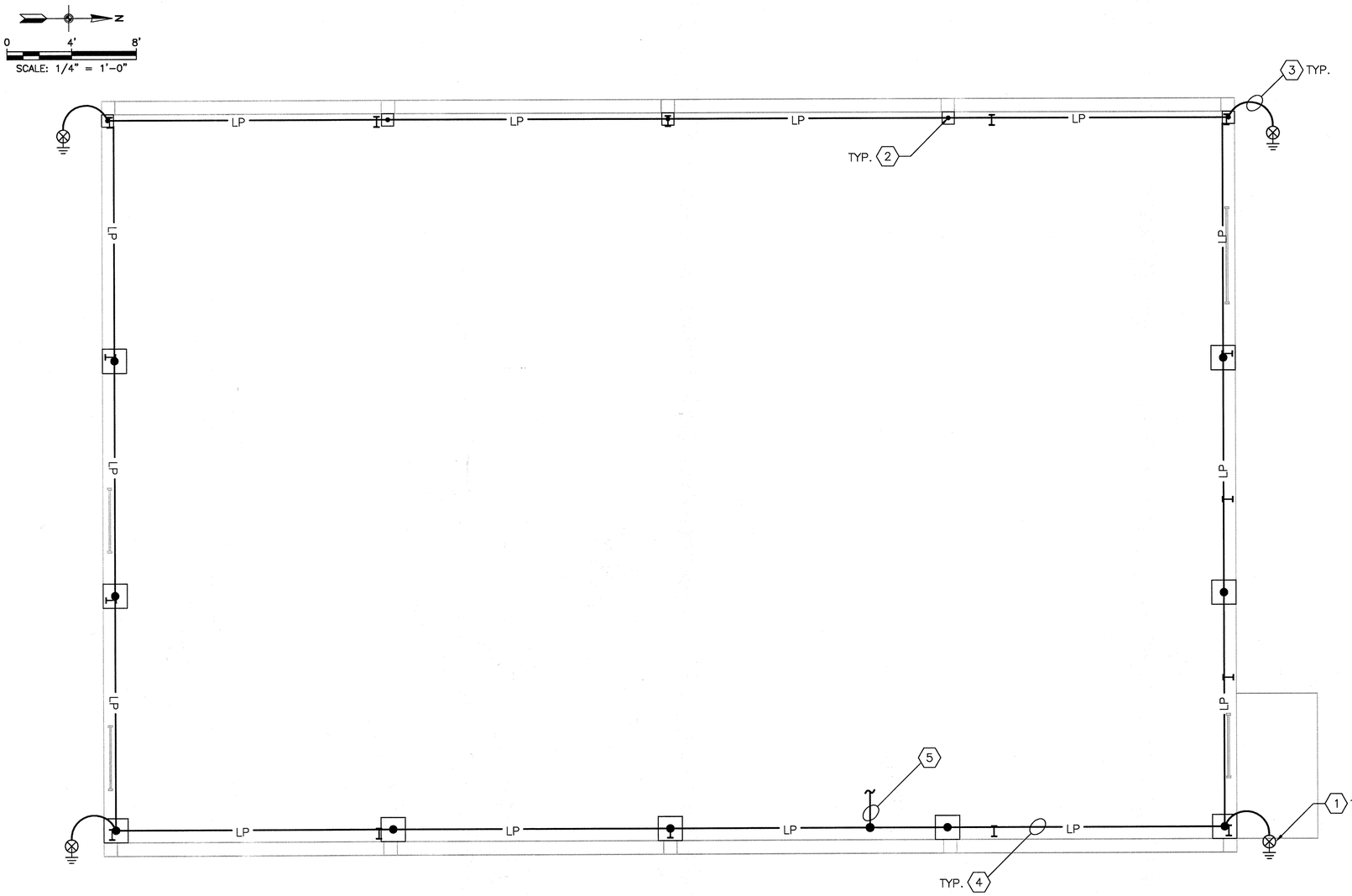

LIGHTNING PROTECTION SYSTEM PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. INSTALLATION OF THE LIGHTNING PROTECTION SYSTEM (LPS) SHALL BE BY A COMPANY QUALIFED BY UL TO INSTALL LPS PER LOCAL INSPECTOR REQUIREMENTS.
2. ALL ROOF CONDUCTORS SHALL BE ROUTED UNDER THE PRE-FINISHED STANDING SEAM METAL ROOF.
3. ROOF PENETRATIONS MUST BE LOCATED BETWEEN (CLEAR OF) STANDING SEAMS ONLY.

REFERENCE NOTES:

1. EXACT LOCATION OF GROUND WELL SHALL BE FIELD DETERMINED BY CONTRACTOR. LOCATE GROUND WELL IN GRASS AREA.
2. COPPER AIR TERMINAL.
3. #1/0 AWG BARE COPPER CONDUCTOR BONDED TO GROUND ROD & WELL.
4. MAIN LIGHTNING PROTECTION CONDUCTOR (TYPICAL). REFER TO SPECIFICATIONS FOR DETAILS.
5. #4 BOND TO BUILDING GROUNDING ELECTRODE SYSTEM.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

LIGHTNING PROTECTION SYSTEM PLAN

KATHY WONG GIANG
FLORIDA P.E. NO. 53246

PROJECT STATUS
RECORD DRAWING
JUNE 2009

E-6

4987.037

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

MAINS RATING: 225A
VOLTAGE: 120/208V, 3ø, 4W

PANEL " LA "
SQUARE "D": NQOD

MOUNTING: SURFACE LOCATION: WELDING SHOP
EACH CB AIC RATING: 22,000

CKT NO	DESCRIPTION	BREAKERS POLE	BREAKERS AMPS	KVA	KVA	BREAKERS POLE	BREAKERS AMPS	DESCRIPTION	CKT NO
1	REC–WELDING SHOP	1	20	0.60	0.80	1	20	REC–LUNCH ROOM	2
3	REC–WELDING SHOP	1	20	0.80	1.20	1	20	REC–VENDING MACHINES	4
5	REC–TOOL/PARTS STORAGE	1	20	0.80	1.20	1	20	REC–VENDING MACHINES	6
7	REC–LUNCH ROOM	1	20	1.50	0.80	1	20	REC–REFRIGERATOR	8
9	REC–LUNCH ROOM	1	20	1.50	0.60	1	20	REC–OFFICE/CORRIDOR/LUNCH ROOMS	10
11	REC–OFFICE, RECEPTION AREA	1	20	0.60	1.00	1	20	REC–OFFICE	12
13	LTG–WOMENS/MENS/UTILITY ROOMS	1	20	0.92	0.67	1	20	AUTO DOOR OPENER	14
15	LTG–OFFICE/CORRIDOR/LUNCH ROOMS	1	20	0.60	1.60	1	20	LTG–WELDING SHOP/TOOL/PARTS STOR.	16
17	ROLL–UP DOOR (WELDING SHOP)	1	20	0.83	0.32	1	20	LTG–BUILDING PERIMETER	18
19	EXHAUST FANS EF–1 &/EF–2	1	20	0.25	0.10	1	20	FACP	20
21	AHU–1 (UTILITY ROOM)	3	50	14.00	---	1	40	SPARE	22
23					3.80	3	20	CU–2 (OUTSIDE NE CORNER)	24
25									26
27	SPARE	3	30	---					28
29					5.00	3	20	HOT WATER HEATER (UTILITY ROOM)	30
31									32
33	IRRIGATION CONTROLLER	1	20	0.20					34
35	REC – TELECOM. BACKBOARD	1	20	1.00	6.50	2	40	AHU–2 (TOOL/PARTS STORAGE)	36
37	CU–1 (OUTSIDE NE CORNER)	3	45	7.50					38
39								SPACE	40
41								SPACE	42

CONNECTED LOAD: 54.69 KVA

GENERAL NOTES (FOR ALL PANELBOARDS):

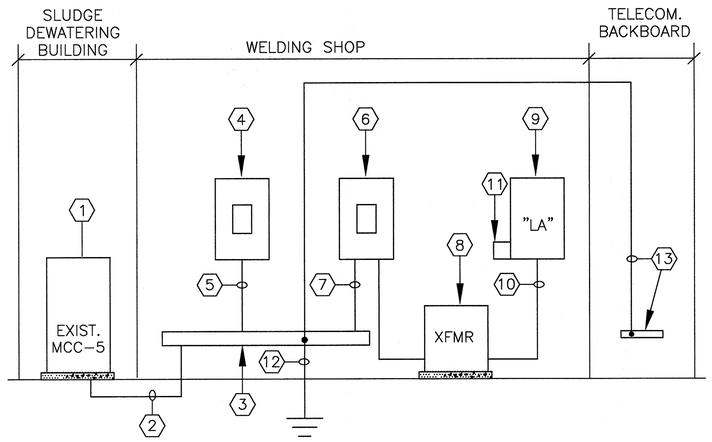
1. PROVIDE HINGED FRONT TRIM TO GAIN ACCESS TO GUTTER WITHOUT REMOVING THE DEAD FRONT.
2. PROVIDE SNAP–ON CIRCUIT NUMBER ID STRIPS TO BE MOUNTED ADJACENT TO EACH BRANCH CIRCUIT BREAKER. ADHESIVE CIRCUIT NUMBER ID STRIPS ARE NOT ACCEPTABLE.
3. ALL SPARE BREAKERS SHALL BE IN THE "OFF" POSITION. PROVIDE TYPE WRITTEN ADHESIVE LABEL FOR ALL SPARE BREAKERS. MOUNT LABEL ADJACENT TO EACH SPARE BREAKER.
4. MULTI–POLE BREAKERS SHALL HAVE SINGLE HANDLE ON THE CENTER. 2 OR 3 SINGLE POLE BREAKERS TIE TOGETHER SHALL NOT BE USED.
5. MAIN CIRCUIT BREAKER SHALL BE TOP OR BOTTOM MOUNTED.
6. ALL BUSES SHALL BE COPPER.
7. PROVIDE CIRCUIT I.D. ON EACH CONDUCTOR (PHASE, NEUTRAL, AND EQUIPMENT GROUND).
8. THERE SHALL BE NO SPLICES INSIDE PANELBOARDS.
9. ALL CONDUCTORS SHALL BE BUNDLE WITH MAXIMUM 3 CIRCUITS PER BUNDLE.
10. TYPE WRITTEN DIRECTORIES SHALL INDICATES PANEL NAME, VOLTAGE, CIRCUIT NUMBERS, DESCRIPTIVE LOAD DESCRIPTIONS AND LOCATIONS AS INDICATED IN THE PANELOBOARD SCHEDULES. UPDATE PANELBOARD DIRECTORIES BASED ON ACTUAL FIELD INSTALLATIONS IF REQUIRED.
11. ALL DISCONNECTS, PANELBOARDS, ENCLOSED CIRCUIT BREAKERS, BRANCH CIRCUIT BREAKERS, ETC., SHALL BE THE RESPONSIBILITY OF A SINGLE MANUFACTURER.
12. PROVIDE PHENOLIC NAMEPLATE BY PANELBOARD'S MANUFACTURER.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMPS	VOLT	MFR	MTG
A1	8" HORIZONTAL TRIPLE TUBE LENSED DOWNLIGHTS, ELECTRONIC BALLAST, IRIDESCENCE SUPPRESSED REFLECTOR FINISH, WIDE DISTRIBUTION, OVERLAP PAINTED WHITE SELF–TRIM, BAR HANGERS, UL LISTED FOR WET LOCATIONS, FUSE KIT INSTALLED AT FACTORY, 8" CLEAR ALZAK CLEAR LENS REFLECTOR, TRIM RING GASKET (FACTORY INSTALLED).	(1) 32W CF	120	PRESCOLITE "CFT8" SERIES	RECESSED MOUNTED
A2	2'x4' STATIC TROFFER LENSED FLUORESCENT LIGHTING FIXTURE, SMOOTH HEMMED SIDES AND SMOOTH, INWARD FORMED END FLANGES, STEEL DOOR FRAME WITH PREMIUM EXTRUDED APPEARANCE AND PRECISION FLUSH MITERED CORNERS, INTEGRAL T–BAR CLIPS, FIVE–STAGE IRON–PHOSPHATE PRETREATMENT, PAINTED PARTS FINISHED WITH HIGH–GLOSS, BAKED WHITE ENAMEL, ELECTRONIC BALLAST, UL LISTED, FLUSH STEEL, WHITE DOOR FRAME, #12 PATTERN ACRYLIC, INTERNAL FAST BLOW FUSE.	(2) 32WT8	120	COLUMBIA "4PS" SERIES	RECESSED MOUNTED
C1	EXTERIOR BUILDING PERIMETER WALL MOUNTED HIGH PRESSURE SODIUM LIGHTING FIXTURE, TEXTURED POLYCARBONATE MOLDED HOUSING IN DARK BRONZE FINISH, "O" RING GASKET SEAL, VANDAL RESISTANT BRASS ACORN NUT ATTACHMENT, PHOTOCELL CONTROL FOR DUSK TO DAWN OPERATION, UL LISTED FOR WET LOCATIONS.	(1) 50W HPS	120	HUBBELL "NRG100" SERIES	WALL MOUNTED
D2	4' STANDARD INDUSTRIAL LIGHTING FIXTURE, DIE EMBOSSED REFLECTOR WITH RIBS, DIE–FORMED COLD ROLLED STEEL HOUSING, FIVE–STAGE IRON PHOSPHATE TREATMENT, REFLECTOR AND CHANNEL FINISHED WITH A HIGH–GLOSS BAKED WHITE ENAMEL, REFLECTOR PAINTED AFTER FABRICATION, ELECTRONIC BALLAST, CEILING SPACER, WIREGUARD, INTERNAL FAST–BLOW FUSE.	(2) 32WT8	120	COLUMBIA "CSR" SERIES	SURFACE MOUNTED
	EXIT SIGN, UNIVERSAL SINGLE OR DOUBLE FACES AS INDICATED, RED LETTER COLOR, BLACK HOUSING FINISH, "SPECTRON" SELF–TESTING/SELF–DIAGNOSTIC ELECTRONICS.	LED	120	COLUMBIA DUAL LITE "LX" SERIES	CEILING/ WALL
	EMERGENCY LIGHTING UNIT, SELF–TESTING/SELF–DIAGNOSTIC ELECTRONICS.	(2) 7.2W	120	COLUMBIA DUAL LITE "EZ" SERIES	WALL MTD AT MIN. 7'–2" AFF

GENERAL NOTES FOR LIGHTING FIXTURES:

1. ALL LIGHTING FIXTURE FINISHES SHALL BE APPROVED BY THE ENGINEER PRIOR TO ORDERING FIXTURES.
2. CONTRACTOR SHALL VERIFY CEILING TYPE PRIOR TO ORDERING LIGHTING FIXTURES.
3. ALL LIGHTING FIXTURES SHALL BE UL LISTED.
4. ALL LIGHTING FIXTURES SHALL HAVE AS A MINIMUM ONE YEAR AGAINST MECHANICAL DEFECTS FROM MANUFACTURE.
5. CONTRACTOR SHALL PROVIDE ALL NECESSARY COMPONENTS FOR EACH LIGHTING FIXTURE AS REQUIRED FOR COMPLETE INSTALLATIONS.
6. ALL LAMPS SHALL BE FACTORY INSTALLED INTEGRAL WITH LIGHTING FIXTURES.
7. ALL FLUORESCENT LAMPS SHALL BE OF THE PROGRAMMED RAPID START TYPE.



ELECTRICAL ONE–LINE DIAGRAM
NTS

REFERENCE NOTES:

1. EXISTING MOTOR CONTROL CENTER, "MCC–5" LOCATED IN EXISTING SLUDGE DEWATERING BUILDING, REFER TO DRAWING "E–2" FOR APPROXIMATE LOCATION.
2. PROVIDE 3#250KCMIL & 1#4 GND IN 4" C.
3. AUXILLIARY GUTTER WITH CONTINUOUS HINGE COVER AND HASP LOCK FOR SPLICING, MINIMUM 12" SQ. X LENGTH AS REQUIRED (MINIMIZE LENGTH). DO NOT USE GUTTERS FOR ANY OTHER PURPOSE OTHER THAN WHAT IS SHOWN.
4. PROVIDE 100AMP, 3 POLE, 480VAC, 22,000 AIC RATING, ENCLOSED CIRCUIT BREAKER, NEMA TYPE 1 ENCLOSURE FOR WELDER.
5. PROVIDE 3#2 & 1#8 GND 1 1/2" C.
6. PROVIDE 125AMP, 3 POLE, 480VAC, 22,000 AIC RATING, ENCLOSED CIRCUIT BREAKER, NEMA TYPE 1 ENCLOSURE FOR DRY–TYPE TRANSFORMER.
7. PROVIDE 3#1 & 1#6 GND IN 2" C.
8. DRY–TYPE TRANSFORMER, 75KVA, 480V PRIMARY, 120/208V, 3 PH SECONDARY.
9. PANELBOARD, REFER TO PANEL SCHEDULE FOR DETAILS.
10. PROVIDE 4#4/0 & 1#4 GND IN 2 1/2" C.
11. PROVIDE TRANSIENT VOLTAGE SURGE SUPPRESOR.
12. #4 BOND TO BUILDING GROUNDING ELECTRODE SYSTEM.
13. GROUND BUS AND GROUNDING CONDUCTOR. REFER TO DRAWING E–4 FOR SPECIFICATION.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. VOGT
DRWN: H. GRIMALDO
CHKD: K. GIANG
APVD: K. GIANG
DATE: June 16, 2009

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Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL DETAILS

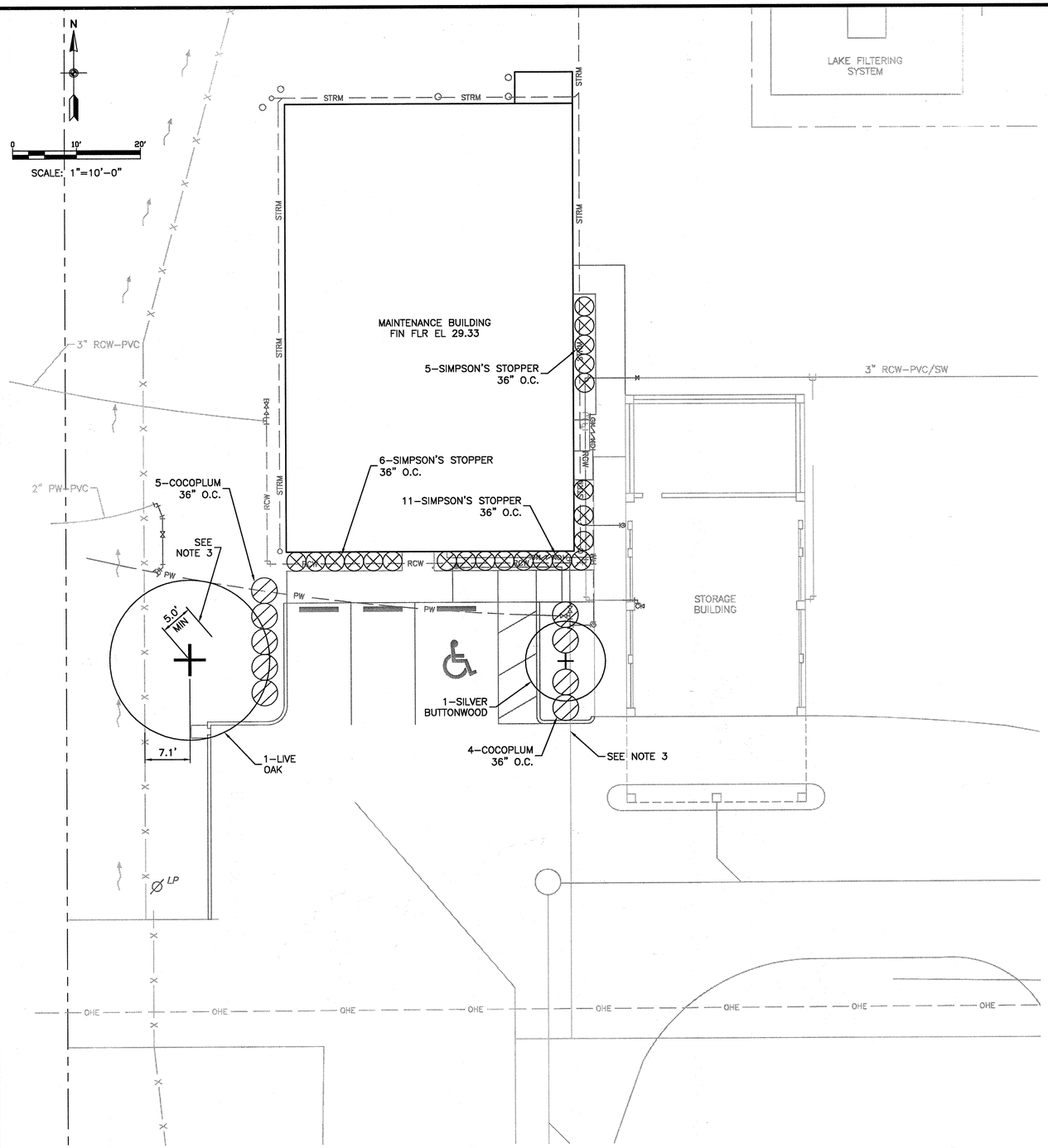
KATHY WONG GIANG
FLORIDA P.E. NO. 53246

PROJECT STATUS
RECORD DRAWING
JUNE 2009

E–7

4987.038

PLOTTED June 16, 2009 1:51 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\E–7 ELECTRICAL DETAILS.DWG



NOTES:

1. CONTRACTOR SHALL RESTORE/REPLACE DAMAGED TURF IN ALL AREAS DISTURBED BY CONSTRUCTION.
2. SEE LANDSCAPE NOTES FOR ADDITIONAL INFORMATION ON SHEET L-4.
3. CONTRACTOR SHALL FIELD VERIFY DEPTH OF UNDERGROUND UTILITY AND NOTIFY THE ENGINEER IF FIELD ADJUSTMENT TO PLANTING LOCATIONS IS REQUIRED.

PLANT LIST

QTY.	COMMON NAME	BOTANICAL NAME	MINIMUM SPECIFICATIONS
	TREES		
1	LIVE OAK	*Quercus virginiana*	45 GAL., 10' HT. x 5' SPR., 3" CAL., 4' C.T.,FL. #1, AS SHOWN
1	SILVER BUTTONWOOD	*Conocarpus erectus 'Sericeus'*	15 GAL., 6' HT. x 2.5' SPR., 1-1/2" CAL., MULTI TRUNK, 3-5 STEMS., FL. #1, AS SHOWN
	SHRUBS		
9	RED TIP COCOPLUM	*Chrysobalanus icaco 'Red Tip'*	5 GAL., 36" HT. x 18" SPR., 36" O.C., FL. #1
22	SIMPSON'S STOPPER (DWARF)	*Mycrianthes fragrans*	3 GAL., 18" HT. x 9" SPR., 36" O.C., FL. #1

LANDSCAPE TABULATIONS

PROPOSED MAINTENANCE BUILDING - 3,150 SF
FOUNDATION LANDSCAPING REQUIRED - 63 SF
FOUNDATION LANDSCAPING PROVIDED - 218 SF

VEHICLE USE AREA (PARKING) - 740 SF, 3 SPACES
VEHICLE USE AREA CANOPY TREES REQUIRED - 1 (4/20 SPACES)
VEHICLE USE AREA CANOPY TREES PROVIDED - 1
VEHICLE USE AREA UNDERSTORY TREES PROVIDED - 1
VEHICLE USE AREA SHRUBS REQUIRED - 4 (20/20 SPACES)
VEHICLE USE AREA SHRUBS PROVIDED - 9
VEHICLE USE AREA PLANTING AREA REQUIRED - 54 SF (360SF/20 SPACES)
VEHICLE USE AREA PLANTING AREA PROVIDED - 182 SF

LEGEND

LIVE OAK
SILVER BUTTONWOOD
RED TIP COCOPLUM
SIMPSON'S STOPPER (DWARF)

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION

REVISIONS

PROJECT MANAGER
DAVE WILCOX
JOB NO. 12005555
DSGN: R. AVALOS
DRWN: T. SONNENBERG
CHKD: D. CRAWLEY
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DATE: June 16, 2009

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

MAINTENANCE BUILDING
LANDSCAPE PLAN

DAVID W. CRAWLEY
FLORIDA L.A. NO. 6666702

PROJECT STATUS
RECORD DRAWING
JUNE 2009

L-1

4987.039

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLOTTED June 16, 2009 1:52 PM PLOTTED BY: ELLIS, DAVID
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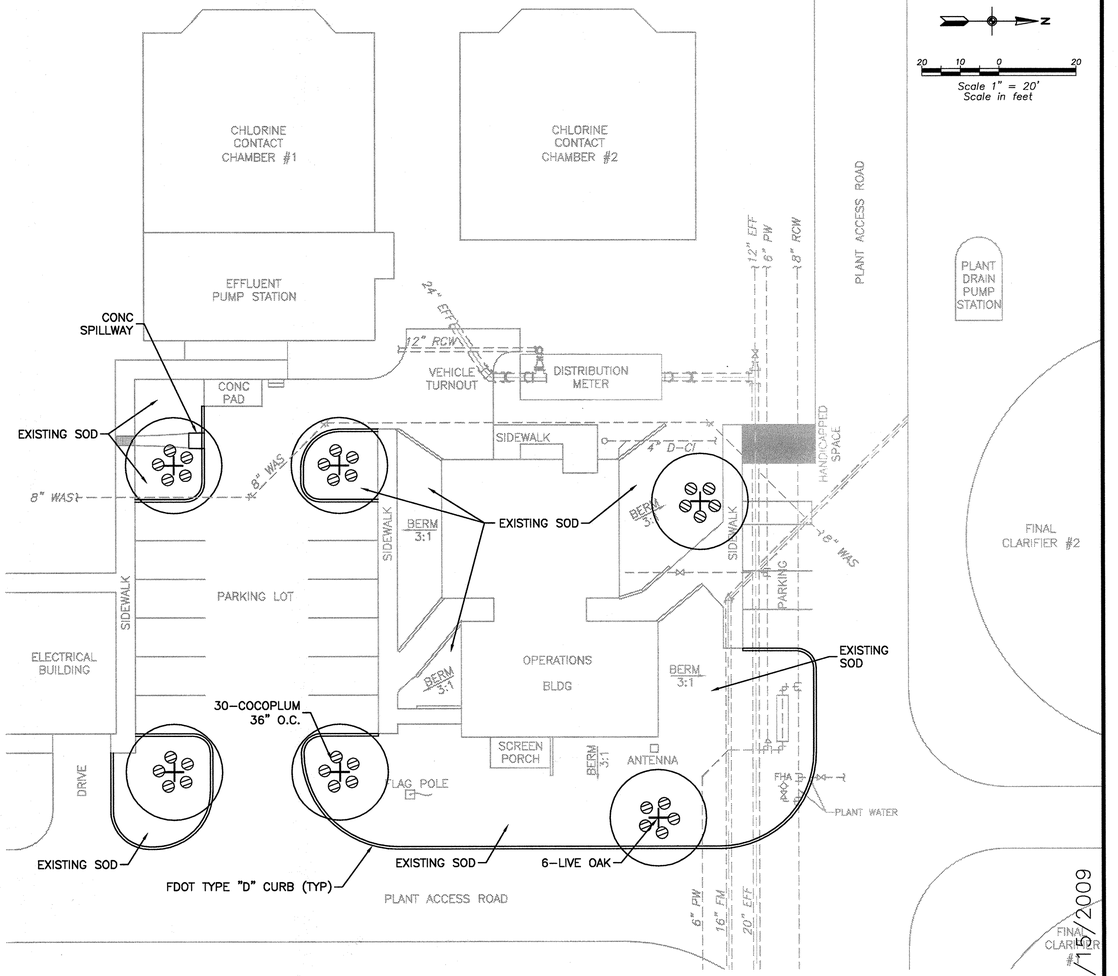
PLANT LIST

QTY.	COMMON NAME	BOTANICAL NAME	MINIMUM SPECIFICATIONS
	TREES		
6	LIVE OAK	*Quercus virginiana*	45 GAL., 10' HT. x 5' SPR., 3" CAL., 4' C.T.,FL. #1, AS SHOWN
	SHRUBS		
30	RED TIP COCOPLUM	*Chrysobalanus icaco 'Red Tip'*	5 GAL., 36" HT. x 18" SPR., 36" O.C., FL. #1

NOTES:

1. CONTRACTOR SHALL REPLACE/RESTORE DAMAGED TURF IN ALL AREAS DISTURBED BY CONSTRUCTION.
2. SEE LANDSCAPE NOTES ON SHEET L-4 FOR ADDITIONAL INFORMATION.



LANDSCAPE TABULATIONS

VEHICLE USE AREA (PARKING) – 4,860 SF, 17 SPACES
VEHICLE USE AREA CANOPY TREES REQUIRED – 4 (4/20 SPACES)
VEHICLE USE AREA CANOPY TREES PROVIDED – 6
VEHICLE USE AREA CANOPY SHRUBS REQUIRED – 20 (20/20 SPACES)
VEHICLE USE AREA CANOPY SHRUBS PROVIDED – 30
VEHICLE USE AREA PLANTING AREA REQUIRED – 360 SF (360SF/20 SPACES)
VEHICLE USE AREA PLANTING AREA PROVIDED – 570 SF

LEGEND

LIVE OAK

RED TIP COCOPLUM

RECORD DRAWING 06/17/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER
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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PARKING AREA
LANDSCAPE PLAN

DAVID W. CRAWLEY
FLORIDA L.A. NO. 6666702

PROJECT STATUS
RECORD DRAWING
JUNE 2009

L-2

4987.040

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY
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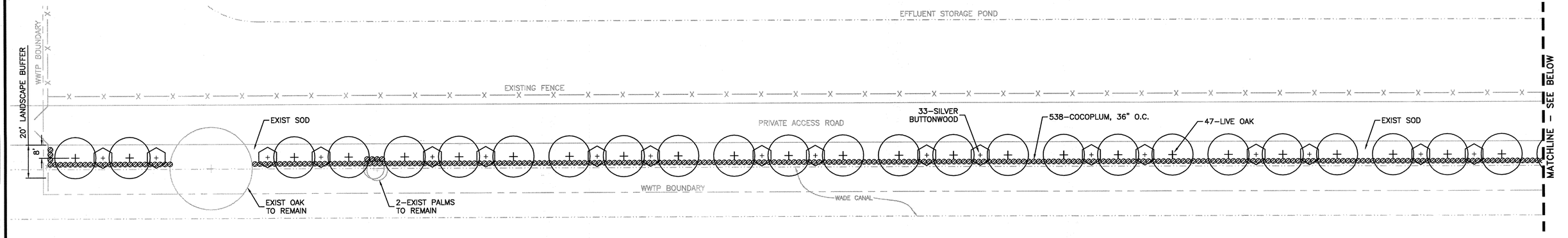

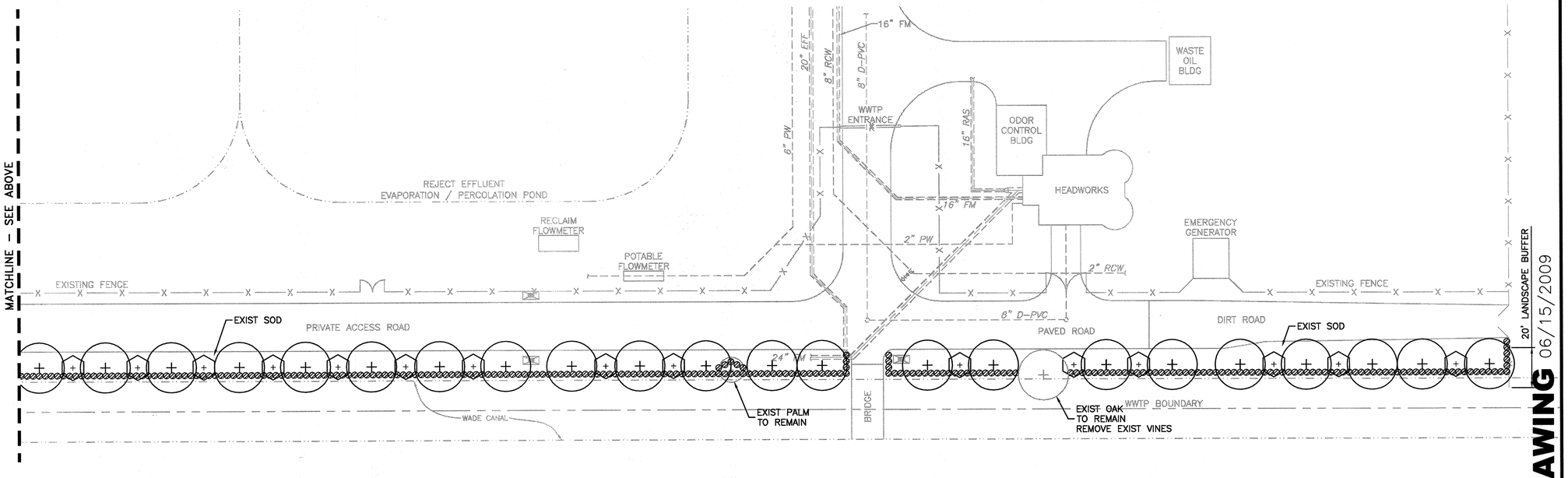

N

30 15 0 30

Scale 1" = 30'
Scale in feet

LEGEND

- + LIVE OAK
- + SILVER BUTTONWOOD
- ⊘ RED TIP COCOPLUM

PLANT LIST

QTY.	COMMON NAME	BOTANICAL NAME	MINIMUM SPECIFICATIONS
	TREES		
47	LIVE OAK	*Quercus virginiana*	45 GAL., 10' HT. x 5' SPR., 3" CAL., 4' C.T.,FL. #1, AS SHOWN
33	SILVER BUTTONWOOD	*Conocarpus erectus 'Sericeus'*	15 GAL., 6' HT. x 2.5' SPR., 1-1/2" CAL., MULTI TRUNK, 3-5 STEMS., FL. #1, AS SHOWN
	SHRUBS		
538	RED TIP COCOPLUM	*Chrysobalanus icaco 'Red Tip'*	5 GAL., 36" HT. x 18" SPR., 36" O.C., FL. #1

LANDSCAPE TABULATIONS

BUFFER LENGTH - 1630 LF
BUFFER CANOPY TREES REQUIRED - 49 (3 TREES/100LF)
BUFFER CANOPY TREES PROVIDED - 47 (PLUS 2 EXIST. OAKS)
BUFFER UNDERSTORY TREES REQUIRED - 33 (2 TREES/100LF)
BUFFER UNDERSTORY TREES PROVIDED - 33
BUFFER 5 GAL. SHRUBS REQUIRED - 538 (33 5 GAL. SHRUBS/100 LF) @ 36" O.C.
BUFFER 5 GAL. SHRUBS PROVIDED - 538

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: R. AVALOS
DRWN: T. SONNENBERG
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APVD: D. WILCOX
DATE: June 16, 2009

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

BUFFER
LANDSCAPE PLAN

DAVID W. CRAWLEY
FLORIDA L.A. NO. 6666702

PROJECT STATUS
RECORD DRAWING
JUNE 2009

L-3

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PLOTTED June 16, 2009 2:21 PM PLOTTED BY: ELLIS, DAVID
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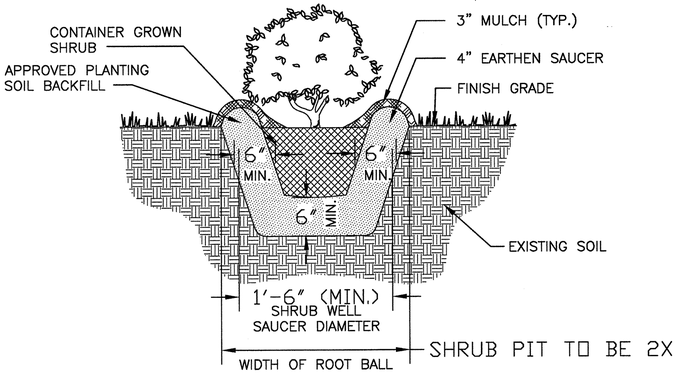
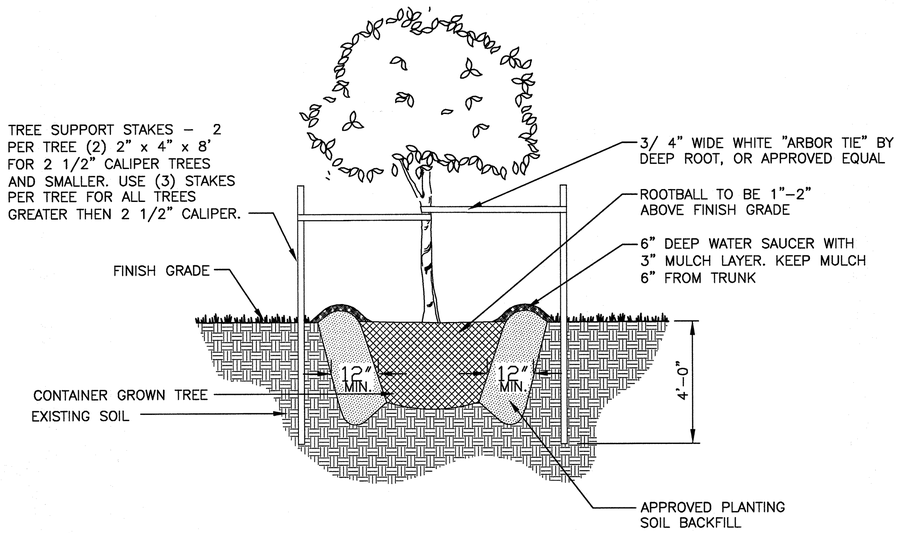
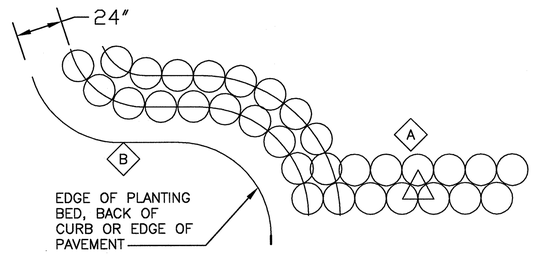


1 SHRUB PLANTING DETAIL
NTS



2 TREE PLANTING DETAIL
NTS



A SHRUBS & GROUNDCOVERS ADJACENT TO STRAIGHT EDGES SHALL BE TRIANGULAR SPACED IN ROWS PARALLEL TO THE STRAIGHT EDGE.

B SHRUBS & GROUNDCOVERS ADJACENT TO CURVED EDGES SHALL BE PLANTED IN ROWS PARALLEL TO THE CURVED EDGE.

3 SHRUB LAYOUT DETAIL
NTS

LANDSCAPE NOTES

1. THE WORK CONSISTS OF THE COMPLETE PLANT MATERIAL INSTALLATION AS SHOWN ON THE DRAWINGS AND AS HEREIN SPECIFIED. THIS WORK SHALL INCLUDE BUT IS NOT LIMITED TO THE SUPPLYING OF ALL PLANT MATERIAL SPECIFIED, THE FURNISHING OF LABOR, EQUIPMENT, AND MATERIALS CALLED FOR, AND PERFORMING ALL OPERATIONS IN CONNECTION WITH THE LANDSCAPE INSTALLATION AS SHOWN ON THESE PLANS. FURTHER, THE WORK SHALL INCLUDE THE MAINTENANCE OF ALL PLANTS AND PLANTING AREAS UNTIL ACCEPTANCE BY THE OWNER AND THE FULFILLING OF GUARANTEE PROVISIONS SPECIFIED HEREIN.

2. THE CONTRACTOR SHALL BE FULLY ACQUAINTED WITH THE RELATED PAVING, SITE GRADING, WATER SUPPLY, ELECTRICAL SUPPLY, AND OTHER UTILITIES TO PREVENT ANY MISUNDERSTANDING AND TO FACILITATE A TROUBLE FREE INSTALLATION. CALL THE SUNSHINE STATE ONE CALL 1–800–432–4770 PRIOR TO ANY CONSTRUCTION FOR UTILITY COORDINATION. IN ADDITION, NOTIFY THE OWNER A MINIMUM OF 72 HOURS IN ADVANCE OF CONSTRUCTION TO IDENTIFY UTILITY LINE LOCATIONS.

3. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGES TO EXISTING FACILITIES THAT MAY RESULT FROM WORK PERFORMED BY THE CONTRACTOR. THE WORK PERFORMED UNDER THIS CONTRACT WILL INTERFACE WITH OTHER WORK BEING PERFORMED BY OTHER CONTRACTORS. IT WILL BE NECESSARY FOR THE CONTRACTOR TO COORDINATE AND SCHEDULE ACTIVITIES WITH OTHER CONTRACTORS AND THEIR SUBCONTRACTORS.

4. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE, PRIOR TO INSTALLATION OF SUCH MATERIALS. SUBMIT SUBSTITUTION REQUESTS IN WRITING FOR APPROVAL BY OWNER'S REPRESENTATIVE.

5. IN THE EVENT DISCREPANCIES ARE NOTED BETWEEN THE PLANT LIST AND THE ACTUAL NUMBER OF PLANTS SHOWN ON THE PLANS, THE PLANS SHALL CONTROL.

6. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE A MINIMUM OF 48 HOURS PRIOR TO THE DELIVERY OF ANY PLANT MATERIAL. THE PLANT MATERIAL SHALL BE INSPECTED BY THE OWNER'S REPRESENTATIVE PRIOR TO THE UNLOADING OF ANY PLANTS.

7. PLANT MATERIALS WILL BE INSPECTED AT THE JOB SITE BY THE OWNER'S REPRESENTATIVE. WHEN INSPECTION WORK DOES NOT COMPLY WITH PROJECT REQUIREMENTS, CONTRACTOR SHALL REPLACE REJECTED WORK AND CONTINUE SPECIFIED MAINTENANCE UNTIL WORK IS REINSPECTED AND FOUND TO BE ACCEPTABLE. REMOVE REJECTED PLANTS AND MATERIALS FROM THE SITE WITHIN 48 HOURS AND REPLACE WITH ACCEPTABLE MATERIALS.

8. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO DIRECT THE REMOVAL AND REPLACEMENT OF ANY ITEMS WHICH DO NOT REPRESENT SUCH AN INSTALLATION.

9. ALL PLANT MATERIALS SHALL BE GRADE FLORIDA NO. 1 OR BETTER AS OUTLINED UNDER GRADES AND STANDARDS FOR NURSERY PLANTS, LATEST EDITION, FLORIDA DIVISION OF PLANT INDUSTRY, FLORIDA DEPT. OF AGRICULTURE, AND SHALL CONFORM TO ANSI STANDARDS FOR NURSERY STOCK (ANSI Z60.1–1990).

10. ALL PLANTING BEDS SHALL BE MULCHED WITH A THREE (3") INCH LAYER OF FLORIMULCH, IN ACCORDANCE WITH THE PLANTING DETAILS.

11. APPLY "CHIPCO RONSTAR G" PRE–EMERGENT WITH A PROPERLY CALIBRATED GRANULAR APPLICATOR AFTER INITIAL PLANTINGS HAVE BEEN COMPLETED. APPLY AT A RATE OF 4 LBS PER 1000 SQ. FT. OF PLANTED AREA SPECIFIED. DO NOT APPLY PRE–EMERGENT CHEMICAL DIRECTLY ON PLANT MATERIAL.

12. PLANTING SOIL FOR TREE AND SHRUB MATERIALS SHALL CONSIST OF TWO (2) PARTS TOPSOIL, ONE (1) PART CLEAN SAND AND ONE (1) PART COMMERCIAL COMPOST (CONSOLIDATED RESOURCE RECOVERY SCREENED YARD MULCH FINES OR EQUAL). PLANTING SOIL MIXTURE SAMPLES MUST BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL. NO PLANTING SHALL OCCUR UNTIL PLANTING SOIL IS APPROVED.

13. ALL TREES SHRUBS, AND GROUNDCOVER MATERIALS SHALL BE WATERED BY THE CONTRACTOR FROM PLANTING TIME TO 90 DAYS PAST FINAL ACCEPTANCE AS NECESSARY.

14. ALL SOD (GRASS) DAMAGED BY THE CONTRACTOR THAT HAS BEEN DESIGNATED TO REMAIN SHALL BE REPLACED WITH LIKE TYPE BY CONTRACTOR AT THE CONTRACTOR'S EXPENSE. SOD SHALL BE WATERED BY THE CONTRACTOR FROM PLANTING TIME TO 120 DAYS PAST FINAL ACCEPTANCE AS NECESSARY.

15. SOD TYPE SHALL BE ARGENTINE BAHIA AND SHALL BE WELL MATTED WITH ROOTS. THE SOD SHALL BE TAKEN UP IN RECTANGLES PREFERABLY 12" X 24" AND SHALL BE LIVE, FRESH AND UNINJURED AT THE TIME OF PLANTING. SOD SHALL BE REASONABLY FREE OF WEEDS AND OTHER GRASS AND SHALL HAVE A SOIL MAT OF SUFFICIENT THICKNESS ADHERING FIRMLY TO THE ROOTS TO WITHSTAND ALL NECESSARY HANDLING. THE SOD SHALL BE SHADED AND KEPT MOIST UNTIL IT IS PLANTED. DUMPING FROM VEHICLES WILL NOT BE PERMITTED. DAMAGED SOD WILL BE REJECTED. REPLANTING SHALL BE DONE WITHIN 48 HOURS AFTER TIME OF HARVESTING OR SOD SHALL BE KEPT DAMP UNTIL PLANTED.

16. SODDING SCHEDULE:
A. SOFT SPOTS AND INEQUITIES IN GRADE SHALL BE CORRECTED BEFORE BEGINNING SOD WORK.
B. GROUND SHALL BE SUFFICIENTLY MOIST PRIOR TO LAYING OF SOD. CONTRACTOR SHALL WATER AS NEEDED PRIOR TO LAYING SOD.
C. LAY SOD WITHOUT VOIDS, TAMP OR ROLL. SOD SHALL BE THOROUGHLY WATERED. THE SURFACE SHALL BE TRUE TO FINISHED GRADE LINES; EVEN AND FIRM AT ALL POINTS.
D. PLACE SOD WITH STAGGERED JOINTS CLOSELY BUTTED, TAMPED OR ROLLED TO AN EVEN SURFACE TO THE REQUIRED FINISHED GRADE. AVOID CONTINUOUS SEAMS ALONG LINES OF WATER FLOW IN SWALES. PLACE SOD IN ROWS AT RIGHT ANGLES TO SLOPE.
E. FERTILIZE.

17. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY CONFLICT OR DISCREPANCY IN PLANS PRIOR TO PERFORMING ANY WORK IN THE AFFECTED AREA.

18. CONTRACTOR SHALL CLEAN UP AND REMOVE ALL SURPLUS AND DISCARDED MATERIALS AND RUBBISH FROM HIS CONSTRUCTION. ON A DAILY BASIS.

19. ALL GROWN PLANT MATERIAL SHALL BE GUARANTEED FOR ONE (1) YEAR AND ALL SOD SHALL BE GUARANTEED FOR 90 DAYS AFTER FINAL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.

20. FINAL INSPECTION WILL NOT TAKE PLACE UNTIL ALL MATERIALS ARE PLANTED/INSTALLED CORRECTLY. CONTRACTOR SHALL REQUEST A FINAL INSPECTION BY OWNER'S REPRESENTATIVE IN WRITING.

21. CONTRACTOR WILL BE NOTIFIED BY LETTER OF FINAL ACCEPTANCE WITHIN TEN DAYS AFTER FINAL INSPECTION OR TEN DAYS AFTER REINSPECTION.

22. UPON NOTICE OF FINAL ACCEPTANCE, THE OWNER WILL ASSUME MAINTENANCE AND THE CONTRACTOR'S WARRANTY PERIOD BEGINS.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: R. AVALOS
DRWN: T. SONNENBERG
CHKD: D. CRAWLEY
APVD: D. WILCOX
DATE: November 9, 2007

URS
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Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

LANDSCAPE DETAILS

DAVID W. CRAWLEY
FLORIDA L.A. NO. 6666702

PROJECT STATUS
RECORD DRAWING
JUNE 2009

L–4

4987.042

PLOTTED June 16, 2009 1:53 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWF\CADD\L–4 LANDSCAPE DETAILS.DWG

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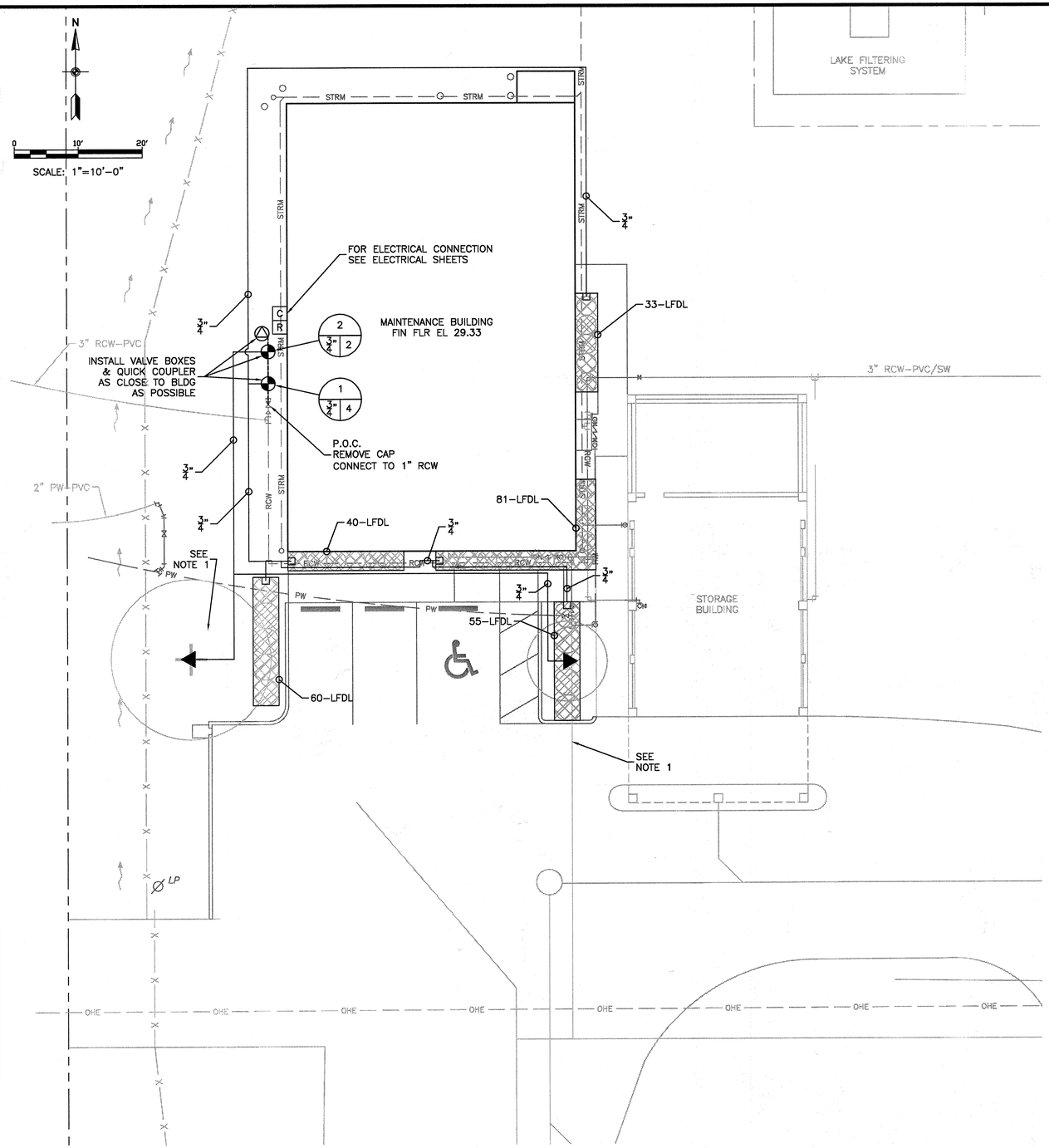

LEGEND

- PVC SCH 80 SLEEVE, (SEE PLAN FOR SIZES)
- PVC SCH 40 MAIN, (SEE PLAN FOR SIZES)
- PVC CLASS 200 LATERAL, (SEE PLAN FOR SIZES)
- P.O.C. — POINT OF CONNECTION TO 8" RECLAIMED WATERLINE. INSTALL 3"x1" TEE W/ CORP STOP.
- [C] — RAIN BIRD ESP-LX PLUS SERIES (INSTALL ON WEST EXTERIOR WALL OF OPERATIONS BUILDING)
- [R] — HUNTER MINI-CLIK RAIN SENSOR
- ▲ — RAIN BIRD 1400 SERIES BUBBLER – 1402 (0.5 GPM) (TWO BUBBLERS PER SYMBOL LOCATION AS SHOWN ON PLAN)
- RAIN BIRD PESB-PRS-D SERIES REMOTE CONTROL VALVE WITH PRESSURE REGULATING MODULE IN CONCRETE VALVE BOX WITH CAST IRON COVER
- BRASS GATE VALVE IN CONCRETE VALVE BOX WITH CAST IRON COVER. (LINE SIZE)
- RAIN BIRD QUICK COUPLER IN CONCRETE VALVE BOX WITH CAST IRON COVER
- □ — PVC LATERAL LINE CONNECTION TO PVC HEADER MANIFOLD
- NETAFIM TLDL-9-12-XXX DRIPLINE (12" EMITTER SPACING, 16" ROW SPACING)

ZONE NUMBER — VALVE SIZE — GALLONS PER MINUTE

LFDL = LINEAR FEET OF DRIPLINE

VALVE TABLE

ZONE #	VALVE SIZE	GPM	TYPE
1	¾"	4	DRIP
2	¾"	2	BUBBLER

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY DEPTH OF UNDERGROUND UTILITY AND NOTIFY THE ENGINEER IF FIELD ADJUSTMENT TO PLANTING LOCATIONS IS REQUIRED.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: R. AVALOS
DRWN: T. SONNENBERG
CHKD: D. CRAWLEY
APVD: D. WILCOX
DATE: June 16, 2009

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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

MAINTENANCE BUILDING IRRIGATION PLAN

DAVID W. CRAWLEY
FLORIDA LA. NO. 6666702

PROJECT STATUS
RECORD DRAWING
JUNE 2009

IR-1

4987.043

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY
PLOTTED June 16, 2009 1:53 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\IR-1 MAINTENANCE BUILDING IRRIGATION PLAN.DWG

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

LEGEND

----------	PVC SCH 80 SLEEVE, (SEE PLAN FOR SIZES)
----------	PVC SCH 40 MAIN, (SEE PLAN FOR SIZES)
————	PVC CLASS 200 LATERAL, (SEE PLAN FOR SIZES)
P.O.C.	POINT OF CONNECTION TO 8" RECLAIMED WATERLINE. INSTALL 8"x2" SADDLE TAP & TEE W/ CORP STOP.
C	RAIN BIRD ESP-LX PLUS SERIES (INSTALL ON WEST EXTERIOR WALL OF OPERATIONS BUILDING)
R	HUNTER MINI-CLIK RAIN SENSOR
▲	RAIN BIRD 1400 SERIES BUBBLER – 1402 (0.5 GPM) (TWO BUBBLERS PER SYMBOL LOCATION AS SHOWN ON PLAN)
	RAIN BIRD PESB-PRS-D SERIES REMOTE CONTROL VALVE WITH PRESSURE REGULATING MODULE IN CONCRETE VALVE BOX WITH CAST IRON COVER
	BRASS GATE VALVE IN CONCRETE VALVE BOX WITH CAST IRON COVER. (LINE SIZE)
	RAIN BIRD QUICK COUPLER IN CONCRETE VALVE BOX WITH CAST IRON COVER
□	PVC LATERAL LINE CONNECTION TO PVC HEADER MANIFOLD

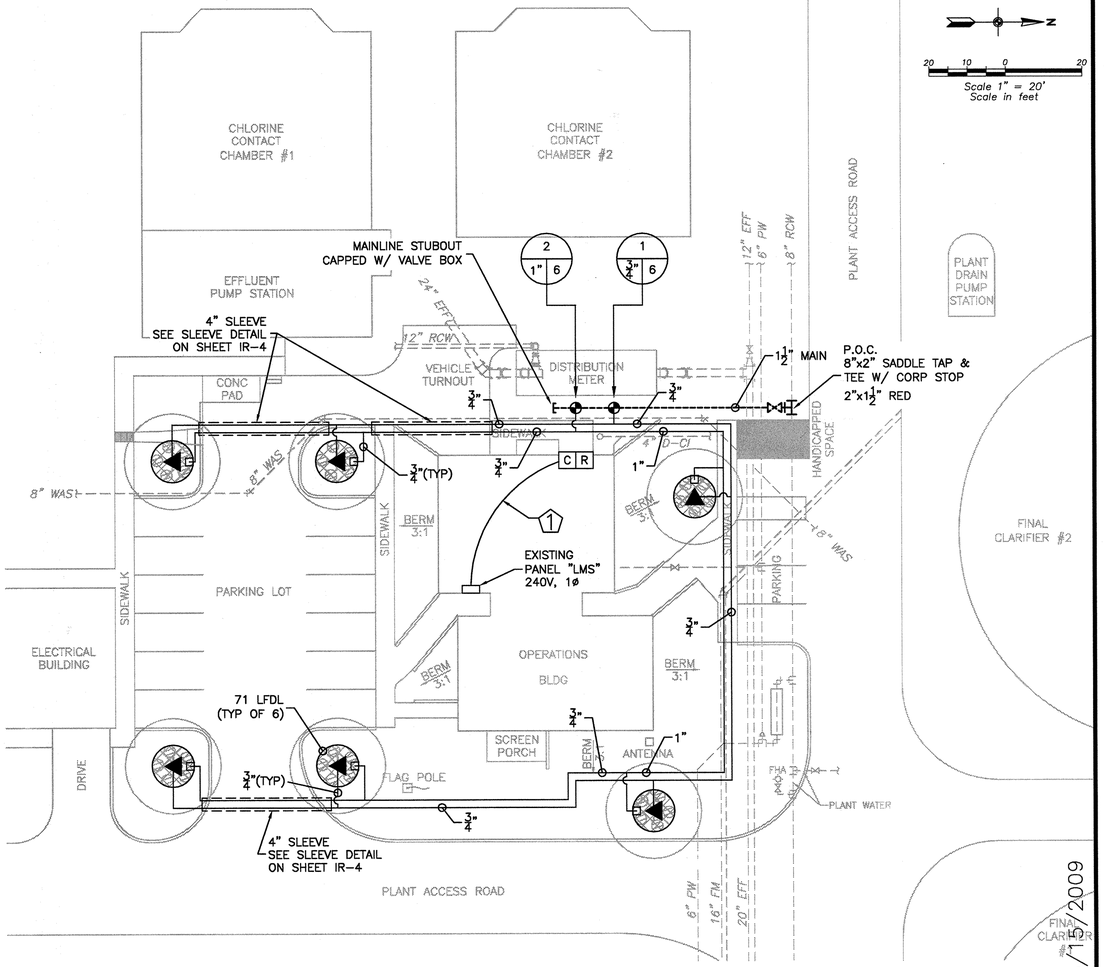
NETAFIM TLDL-9-12-XXX DRIPLINE
(12" EMITTER SPACING, 16" ROW SPACING)

ZONE NUMBER
VALVE SIZE — GALLONS PER MINUTE

LFDL = LINEAR FEET OF DRIPLINE

VALVE TABLE

ZONE #	VALVE SIZE	GPM	TYPE
1	¾"	6	BUBBLER
2	1"	6	DRIP



NOTES:
1. HOMERUN 2#12AWG PHASE & NEUTRAL & 1#12AWG GND. IN ¾" PVC CONDUIT TO PANEL "LMS"-27,29, PROVIDE A 20AMP SINGLE POLE BREAKER MATCHING EXISTING IN TYPE, KAIC, VOLTAGE, ETC.

RECORD DRAWING 06/15/2009

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			REVISIONS

PROJECT MANAGER: DAVE WILCOX
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Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

PARKING AREA IRRIGATION PLAN

DAVID W. CRAWLEY
FLORIDA L.A. NO. 6666702

PROJECT STATUS
RECORD DRAWING
JUNE 2009

IR-2

4987.044

PLOTTED: June 16, 2009 2:22 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\IR-2 PARKING AREA IRRIGATION PLAN.DWG

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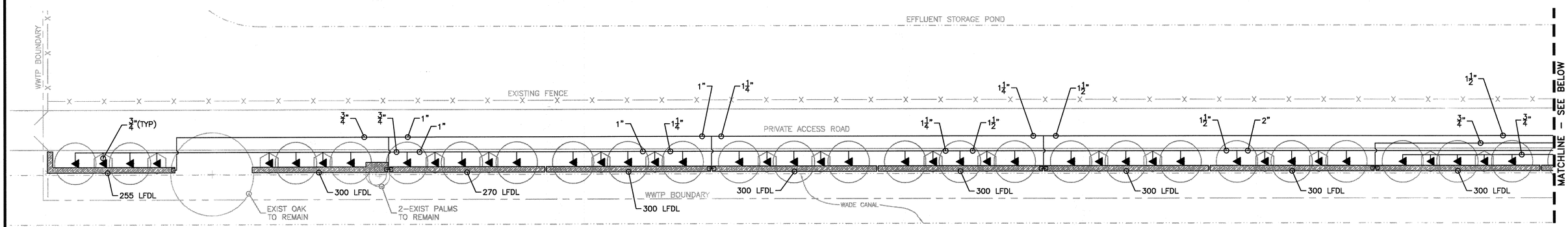
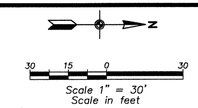




LEGEND

- PVC SCH 80 SLEEVE, (SEE PLAN FOR SIZES)
- PVC SCH 40 MAIN, (SEE PLAN FOR SIZES)
- PVC CLASS 200 LATERAL, (SEE PLAN FOR SIZES)

P.O.C. — POINT OF CONNECTION TO 2" RECLAIMED WATERLINE. CUT IN 2"x2" TEE W/ CORP STOP.

[C] — RAIN BIRD ESP–LX PLUS SERIES (INSTALL ON SE EXTERIOR WALL OF HEADWORKS BUILDING)

[R] — HUNTER MINI–CLIK RAIN SENSOR

▲ — RAIN BIRD 1400 SERIES BUBBLER – 1402 (0.5 GPM) (TWO BUBBLERS PER SYMBOL LOCATION AS SHOWN ON PLAN)

⊕ — RAIN BIRD PESB–PRS–D SERIES REMOTE CONTROL VALVE WITH PRESSURE REGULATING MODULE IN CONCRETE VALVE BOX WITH CAST IRON COVER

⋈ — BRASS GATE VALVE IN CONCRETE VALVE BOX WITH CAST IRON COVER. (LINE SIZE)

⊘ — RAIN BIRD QUICK COUPLER IN CONCRETE VALVE BOX WITH CAST IRON COVER

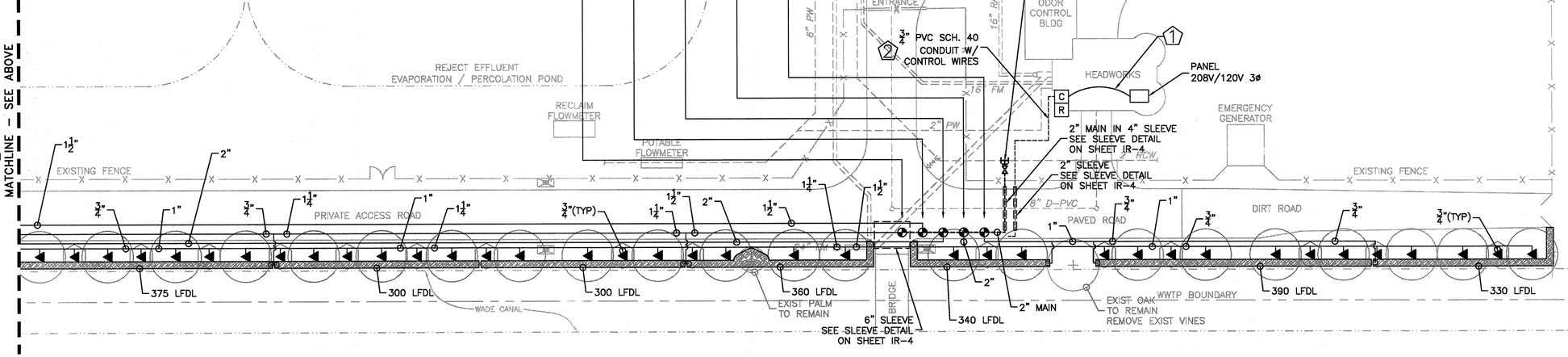
□ — PVC LATERAL LINE CONNECTION TO PVC HEADER MANIFOLD

NETAFIM TLDL–9–12–XXX DRIPLINE (12" EMITTER SPACING, 16" ROW SPACING)

ZONE NUMBER / VALVE SIZE / GALLONS PER MINUTE

LFDL = LINEAR FEET OF DRIPLINE

MATCHLINE – SEE ABOVE



NOTE:
VALVE BOXES SHALL BE PLACED MIN 24" FROM EDGE OF PAVEMENT.

5	4	3	2	1
1½" 29	1½" 30	2" 38	2" 42	1" 14

VALVE TABLE

ZONE #	VALVE SIZE	GPM	TYPE
1	1"	14	DRIP
2	2"	42	BUBBLER
3	2"	38	BUBBLER
4	1½"	30	DRIP
5	1½"	29	DRIP

NOTES:

① HOMERUN 2#12AWG PHASE & NEUTRAL & 1#12AWG GND. IN 3/4" PVC CONDUIT TO PANEL "LMS"–27,29, PROVIDE A 20AMP SINGLE POLE BREAKER MATCHING EXISTING IN TYPE, KAIC, VOLTAGE, ETC.

② RUN CONTROL WIRES FROM IRRIGATION CONTROLLER TO EAST SIDE OF ROAD IN A 3/4" PVC SCH. 40 CONDUIT.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION

REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: R. AVALOS
DRWN: T. SONNENBERG
CHKD: D. CRAWLEY
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Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

BUFFER IRRIGATION PLAN

DAVID W. CRAWLEY
FLORIDA L.A. NO. 6666702

PROJECT STATUS
RECORD DRAWING
JUNE 2009

IR–3

4987.045

PLOTTED June 16, 2009 2:23 PM PLOTTED BY: ELLIS, DAVID
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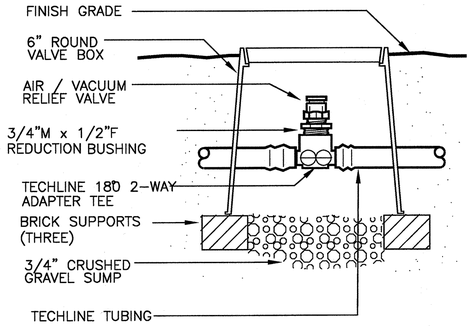
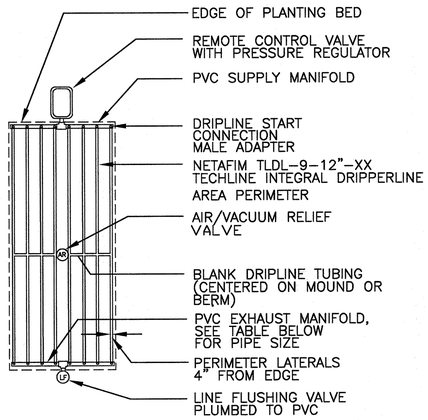


1 NETAFIM AR VACUUM
NOT TO SCALE



4 END FEED LAYOUT
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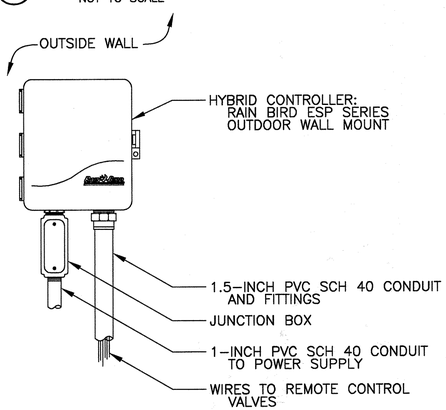

7 HYBRID CONTROLLER
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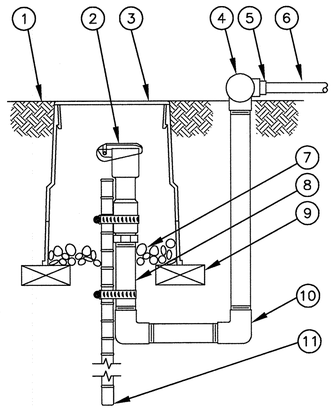
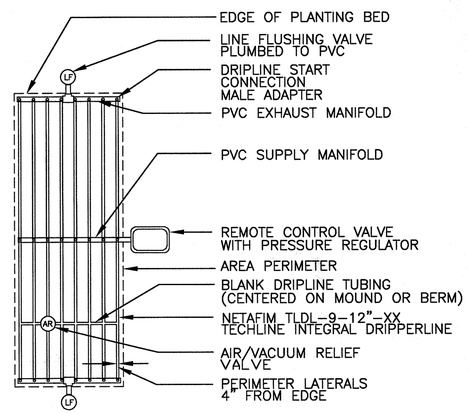


1. FINISH GRADE/TOP OF MULCH
2. QUICK-COUPLING VALVE: RAIN BIRD MODEL 33DNP
3. RECTANGULAR VALVE BOX WITH PURPLE COVER: 6-INCH SIZE
4. PVC SCH 40 SOC X SOC X 3/4-INCH FIPT ON PVC DISTRIBUTION MANIFOLD
5. 1/2-INCH COMP X 3/4-INCH MPT ADAPTER
6. NETAFIM TECHLINE INTEGRAL DRIPPERLINE
7. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
8. PVC SCH 80 NIPPLE (1 OF 3, LENGTH AS REQUIRED)
9. BRICK (1 OF 2)
10. PVC SCH 40 ELL (1 OF 2)
11. #4 REBAR STAKE WITH STAINLESS STEEL GEAR CLAMPS OR APPROVED EQUAL SUPPORT SYSTEM (30-INCH MIN. LENGTH)

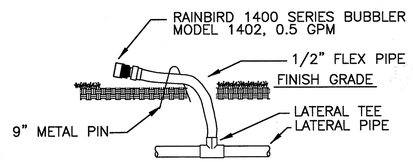
NOTE:
1. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.
2. IF POLYETHYLENE IS USED FOR DISTRIBUTION MANIFOLD, SUBSTITUTE 3/4 – INCH FIPT INSERT TEE FOR SCH 40 TEE.

2 LANDSCAPE DRIPLINE FLUSH POINT
NOT TO SCALE



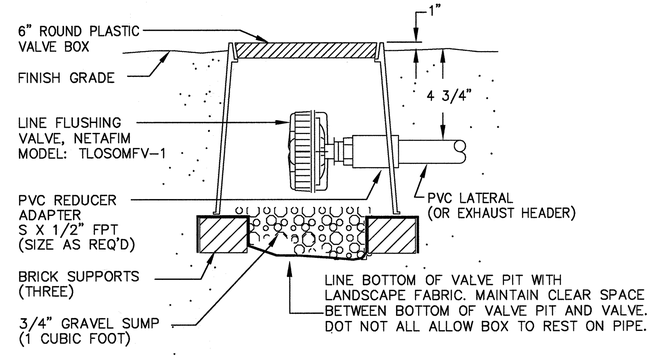
5 CENTER FEED LAYOUT
NOT TO SCALE

NOTE: INSTALL TWO BUBBLERS PER TREE ON TOP OF ROOT BALL. BUBBLERS TO BE LOCATED 180° APART, EQUALLY SPACED.

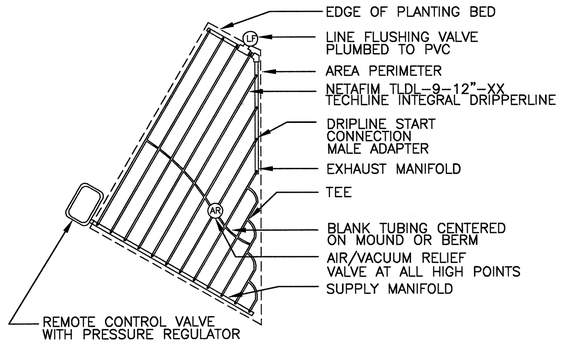


8 RAIN BIRD 1400 SERIES BUBBLER
NOT TO SCALE

NOTE: MAXIMUM VALVE FLOW RATE, 15 GPM. USE MULTIPLE FLUSH VALVES AS ZONE FLOW RATE REQUIRES. REFER TO PLANS FOR TOTAL ZONE FLOW RATES.

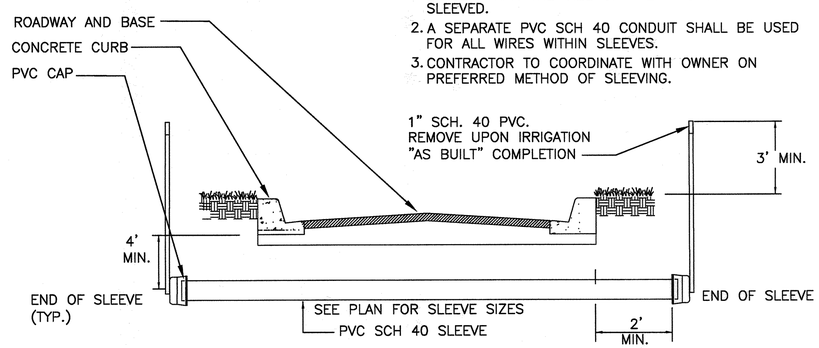


3 LINE FLUSHING VALVE
NOT TO SCALE



6 IRREGULAR AREAS: TRIANGULAR
NOT TO SCALE

NOTE:
1. SLEEVES SHALL BE A MINIMUM OF TWO TIMES LARGER THAN THE SIZE OF THE PIPE BEING SLEEVED.
2. A SEPARATE PVC SCH 40 CONDUIT SHALL BE USED FOR ALL WIRES WITHIN SLEEVES.
3. CONTRACTOR TO COORDINATE WITH OWNER ON PREFERRED METHOD OF SLEEVING.



9 SLEEVE DETAIL
NOT TO SCALE

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER	DAVE WILCOX
JOB NO.	12005555
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MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

IRRIGATION DETAILS

DAVID W. CRAWLEY
FLORIDA L.A. NO. 6666702

PROJECT STATUS
RECORD DRAWING
JUNE 2009

IR-4

4987.046

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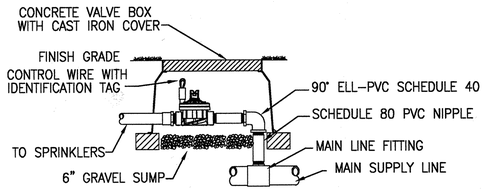
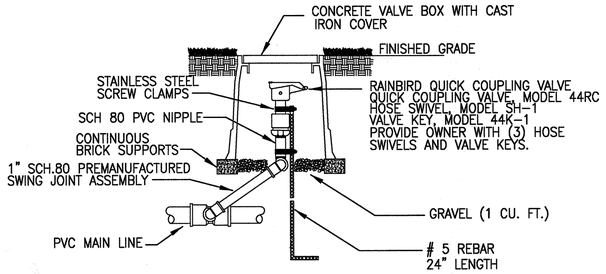
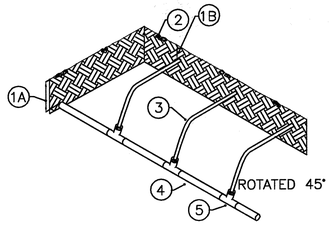


10 RAIN BIRD 100–PRS–D SERIES CONTROL VALVE
NOT TO SCALE



11 RAIN BIRD QUICK COUPLING VALVE
NOT TO SCALE



1A 12"
1B 2"
2 FINISHED GRADE
3 NETAFIM TECHLINE (TYP.)
4 PVC SUPPLY/EXHAUST MANIFOLD
5 PVC TEE TO TECHLINE COMPRESSION ADAPTERS

12 SUPPLY / EXHAUST MANIFOLD
NOT TO SCALE

IRRIGATION NOTES

1) IRRIGATION SYSTEM IS 100% AUTOMATIC AND INCLUDES A RAIN SENSOR WITH A SHUT–OFF DEVICE.
2) THE IRRIGATION WATER SOURCE IS RECLAIMED WATER PRODUCED AT THE PLANT.
3) VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF IRRIGATION SYSTEM. MAINLINE SHALL NOT BE LOCATED WITHOUT PRIOR APPROVAL OF THE PROJECT MANAGER AND THE LANDSCAPE ARCHITECT. ALL UTILITIES AND STRUCTURES MAY NOT BE SHOWN ON THESE PLANS–CONTRACTOR SHALL VERIFY.
4) ALL PRESSURE MAINLINES UNDER ASPHALT PAVEMENT SHALL BE WITHIN SLEEVES AS NOTED. WHERE ELECTRIC VALVE CONTROL LINES PASS THROUGH A SLEEVE WITH OTHER MAIN OR LATERAL LINES THEY SHALL BE CONTAINED WITHIN A SEPARATE, SMALLER CONDUIT.
5) MAINLINE AND VALVES ARE SHOWN IN SCHEMATIC FORM. LOCATE AS NOTED ON PLANS.
6) LOCATE ALL VALVES A MINIMUM OF 24" FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS NOTED OTHERWISE.
7) CONTRACTOR SHALL PROVIDE AN AS–BUILT DRAWING TO THE OWNER'S REPRESENTATIVE PRIOR TO FINAL ACCEPTANCE. AS–BUILT IS INCLUDED IN PRICE BID FOR IRRIGATION. ALL SLEEVES UTILIZED BY THE IRRIGATION CONTRACTOR, WHETHER INSTALLED BY HIM OR NOT, SHALL BE LOCATED ON THE "AS–BUILT" DRAWINGS. THE DEPTH BELOW FINISH GRADE, TO THE NEAREST FOOT OF EACH END OF EACH SLEEVE SHALL BE NOTED AT EACH SLEEVE LOCATION ON THE "AS–BUILT" DRAWINGS.
8) ALL UNSIZED PIPE SHALL BE 3/4" UNLESS OTHERWISE NOTED.
9) ALL CONTROL VALVES AND QUICK COUPLER VALVES SHALL BE INSTALLED IN CONCRETE VALVE BOXES WITH CAST IRON COVER.
10) IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON–SITE. COPIES OF THE PERMITS SHALL BE SENT TO MANATEE COUNTY AND THE GENERAL CONTRACTOR.
11) VERIFY LOCATION OF CONTROLLER AND MAINLINE POINT OF CONNECTION AT PROJECT SITE WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
12) ELECTRIC SERVICE TO THE CONTROLLER SHALL BE PROVIDED BY THE IRRIGATION CONTRACTOR. ELECTRICAL INSTALLATION SHALL PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.
13) ALL 24 VAC WIRING SHALL BE Of DIRECT BURIAL COPPER WIRE AS FOLLOWS: CONTROL WIRES – 14 GAUGE RED COLOR COMMON WIRES – 12 GAUGE WHITE COLOR SPARE WIRES – 14 GAUGE BLACK COLOR
14) INSTALLATION OF WORK SHALL BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON THE SITE.
15) RESTORE ALL DISTURBED AREAS. SEED AREAS WITH ARGENTINA BAHIA GRASS THAT ARE LESS THAN 12" WIDE AT THE RATE OF 10 LBS. PER 1000 SQUARE FEET. SOD AREAS 12" OR WIDER WITH ARGENTINA BAHIA GRASS SOD. PROVIDE A SMOOTH TRANSITION BETWEEN THE REPAIRED DISTURBED AREAS AND THE UNDISTURBED AREAS.

RECORD DRAWING 06/15/2009

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: R. AVALOS
DRWN: T. SONNENBERG
CHKD: D. CRAWLEY
APVD: D. WILCOX
DATE: November 9, 2007

URS
7650 West Courtney Campell Causeway, Suite 700
Tampa, Florida 33607
Ph: (813) 286–1711 Fax: (813) 286–6587
Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

IRRIGATION DETAILS

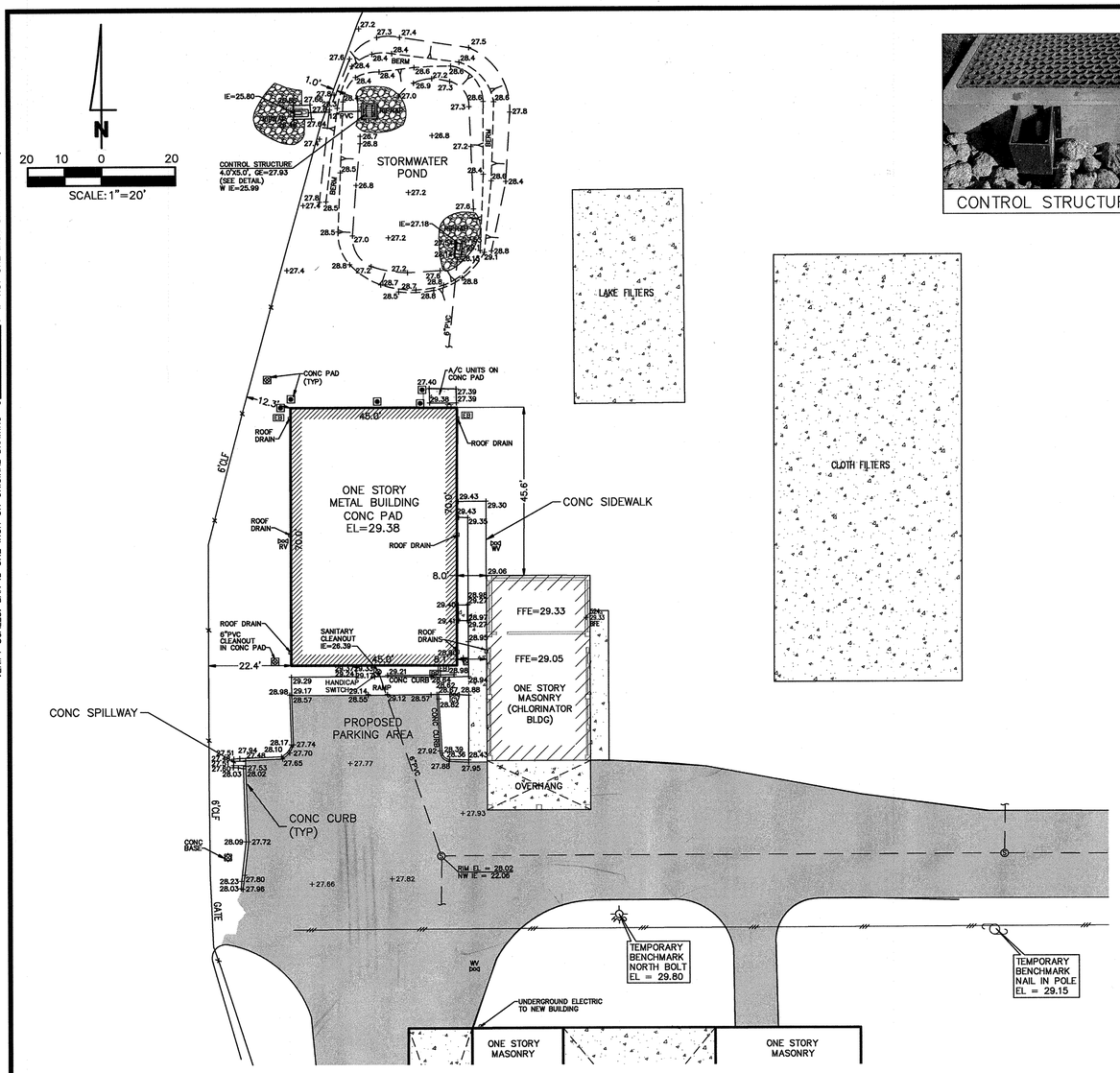
DAVID W. CRAWLEY
FLORIDA L.A. NO. 6666702

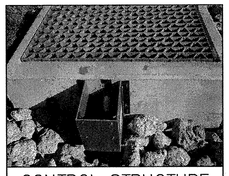
PROJECT STATUS
RECORD DRAWING
JUNE 2009

IR–5

4987.047

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY
PLOTTED June 16, 2009 1:55 PM PLOTTED BY: ELLIS, DAVID
X:\MANATEE PROJECTS\12005555 MAINTENANCE BLDG AT NRWTP\CADD\IR–5 IRRIGATION DETAILS.DWG




CONTROL STRUCTURE

LEGEND

A/C = AIR CONDITIONER UNIT
BLDG = BUILDING
(C) = CALCULATED DATA
CCR = CERTIFIED CORNER RECORD
CLF = CHAIN LINK FENCE
CMP = CORRUGATED METAL PIPE
CONC = CONCRETE
COR = CORNER
CPB = CONDOMINIUM PLAT BOOK
C/T = CURB TIE
(D) = DEED DATA
DB = DEED BOOK
DIP = DUCTILE IRON PIPE
ECMP = ELLIPTICAL CORRUGATED METAL PIPE
EL = ELEVATION
EP = EDGE OF PAVEMENT
ERCP = ELLIPTICAL REINFORCE CONCRETE PIPE
(F) = FIELD DATA
FCM = FOUND CONCRETE MONUMENT
FDOT = FLORIDA DEPARTMENT OF TRANSPORTATION
FIR = FOUND IRON ROD
FND = FOUND NAIL & DISC
FOP = FOUND OPEN PIPE
FPP = FOUND PINCHED PIPE
FRRS = FOUND RAILROAD SPIKE
F/T = FENCE TIE
FXC = FOUND X-CUT
GE = GRATE ELEVATION
IE = INVERT ELEVATION
(L) = LEGAL DESCRIPTION DATA
LB = LICENSED BUSINESS
LS = LICENSED SURVEYOR
MAS = MASONRY
MHW = MEAN HIGH WATER
NP = NORMAL POOL
O/A = OVERALL
OR = OFFICIAL RECORDS BOOK
(P) = PLAT DATA
PB = PLAT BOOK
PG = PAGE
PLS = PROFESSIONAL LAND SURVEYOR
POB = POINT OF BEGINNING
POC = POINT OF COMMENCEMENT
PRM = PERMANENT REFERENCE MONUMENT
PSM = PROFESSIONAL SURVEYOR & MAPPER
P/T = PAVEMENT TIE
PVC = POLY VINYL CHLORIDE
RCP = REINFORCE CONCRETE PIPE
RLS = REGISTERED LAND SURVEYOR
R/W = RIGHT-OF-WAY
SEC = SECTION
SHW = SEASONAL HIGH WATER
SIR = SET IRON ROD 1/2" LB 6113
SND = SET NAIL & DISC LB 6113
SR = STATE ROAD
S/T = SIDEWALK TIE
STY = STORY
SW = SIDEWALK
TBM = TEMPORARY BENCH MARK
(TYP) = TYPICAL
VCP = VITRIFIED CLAY PIPE
W/ = WITH
WF = WOOD FENCE
W/T = WALL TIE
+ 25.25 = POINT OF ELEVATION
25.2' = DIMENSION FROM BUILDING TO BOUNDARY / RIGHT-OF-WAY LINE

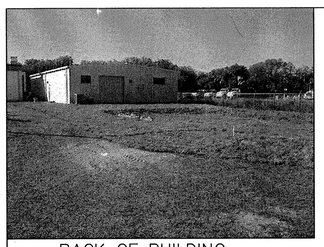
BP = BACKFLOW PREVENTER
● = BOLLARD or POST
CB = BOX, CABLE TELEVISION
EB = BOX, ELECTRIC UTILITY
△ = BOX, ELECTRIC UTILITY (TRANSFORMER)
TB = BOX, TELEPHONE
= DECORATIVE LIGHT POLE
= ELECTRIC OUTLET
= FIRE HYDRANT
= FLAGPOLE
= FLARED END SECTION
= GRATE INLET
= GROUND LIGHT
= GUY ANCHOR
= LIGHT POLE, CONCRETE
= LIGHT POLE, METAL
= LIGHT POLE, WOOD
MB = MAILBOX
= MANHOLE, ELECTRIC
= MANHOLE, GREASE TRAP
= MANHOLE, SANITARY SEWER
= MANHOLE, STORM SEWER
= MANHOLE, TELEPHONE
GM = METER, GAS
RM = METER, RECLAIMED WATER
WM = METER, WATER
= MITERED END SECTION
MW = MONITORING WELL
= PEDESTRIAN CROSSING SIGN
= SANITARY CLEANOUT
= SCHEDULE B-2 ITEM
= TELEPHONE RISER
= TRAFFIC SIGN
TSB = TRAFFIC SIGNAL BOX
TSP = TRAFFIC SIGNAL POLE
= UNDERGROUND CABLE TELEVISION MARKER
UCWS = UNDERGROUND CABLE TELEVISION WARNING SIGN
= UNDERGROUND ELECTRIC MARKER
UEWS = UNDERGROUND ELECTRIC WARNING SIGN
= UNDERGROUND FIBER OPTIC MARKER
UFWS = UNDERGROUND FIBER OPTIC WARNING SIGN
= UNDERGROUND FORCEMAIN MARKER
UFWS = UNDERGROUND FORCEMAIN WARNING SIGN
= UNDERGROUND GAS MARKER
UGWS = UNDERGROUND GAS WARNING SIGN
= UNDERGROUND RECLAIMED WATER MARKER
URWS = UNDERGROUND RECLAIMED WATER WARNING SIGN
= UNDERGROUND SANITARY SEWER MARKER
USWS = UNDERGROUND SANITARY SEWER WARNING SIGN
= UNDERGROUND TELEPHONE MARKER
UTWS = UNDERGROUND TELEPHONE WARNING SIGN
= UNDERGROUND WATER MARKER
UWWS = UNDERGROUND WATER WARNING SIGN
= UTILITY POLE, CONCRETE
= UTILITY POLE, METAL
= UTILITY POLE, WOOD
GV box = VALVE, GAS
IRV box = VALVE, IRRIGATION
RV box = VALVE, RECLAIMED WATER
SV box = VALVE, SANITARY
WV box = VALVE, WATER
W = WELL

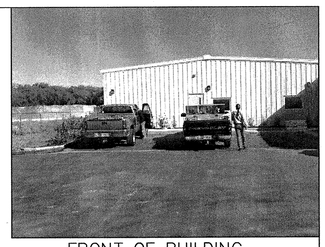
STORM CURB INLETS

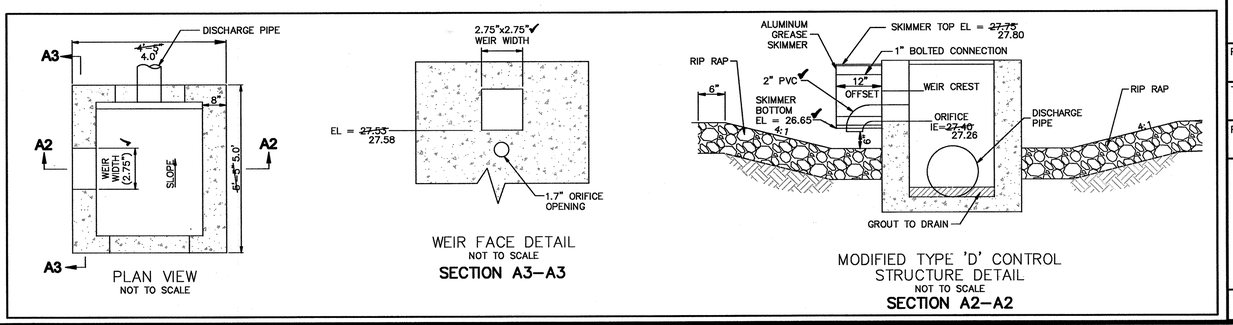
= CONCRETE
= ASPHALT
= CONCRETE PAVERS
= BRICK

52.15 = BACK OF CURB
51.61 = FLOWLINE
51.63 = EDGE OF PAVEMENT

= TOP OF BANK
= TOE OF SLOPE or CENTER LINE OF DITCH
= 6' CHAIN LINK FENCE UNLESS OTHERWISE NOTED
= OVERHEAD UTILITY LINES
G = APPROXIMATE LOCATION OF UNDERGROUND GAS LINE
W = APPROXIMATE LOCATION OF UNDERGROUND WATER LINE
F = APPROXIMATE LOCATION OF UNDERGROUND FORCEMAIN
R = APPROXIMATE LOCATION OF UNDERGROUND RECLAIMED WATER LINE
12" PVC = APPROXIMATE LOCATION OF UNDERGROUND SANITARY SEWER LINE
24" RCP = APPROXIMATE LOCATION OF UNDERGROUND STORM SEWER LINE


BACK OF BUILDING


FRONT OF BUILDING



PLAN VIEW
NOT TO SCALE

WEIR FACE DETAIL
NOT TO SCALE
SECTION A3-A3

MODIFIED TYPE 'D' CONTROL STRUCTURE DETAIL
NOT TO SCALE
SECTION A2-A2

SECTION 26, TOWNSHIP 33 S, RANGE 18 E,

MANATEE COUNTY, FLORIDA

NOTES

1. SURVEY MAP AND REPORT OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED.
2. NO EXCAVATION WAS PERFORMED TO VERIFY THE LOCATION OR EXISTENCE OF ANY UNDERGROUND UTILITIES, ENCROACHMENTS, IMPROVEMENTS, STRUCTURES OR FOUNDATIONS. UNDERGROUND UTILITY LINE LOCATIONS (IF SHOWN HEREON) ARE BASED UPON UTILITY PROVIDER ATLASES AND VISIBLE SURFACE EVIDENCE.
3. RE-USE OF THIS SURVEY FOR PURPOSES OTHER THAN WHICH IT WAS INTENDED, WITHOUT WRITTEN VERIFICATION, WILL BE AT THE RE-USERS SOLE RISK AND WITHOUT LIABILITY TO THE SURVEYOR. NOTHING HEREIN SHALL BE CONSTRUED TO GIVE ANY RIGHTS OR BENEFITS TO ANYONE OTHER THAN THOSE TO WHOM CERTIFIED.
4. ALL FOUND POINTS ARE UNMARKED UNLESS OTHERWISE NOTED. ALL PERIMETER BEARINGS AND DISTANCES ARE ALSO FIELD MEASURED UNLESS NOTED.
5. THIS SURVEY IS NOT INTENDED TO SHOW THE LOCATION OR EXISTENCE OF ANY JURISDICTIONAL, HAZARDOUS OR ENVIRONMENTALLY SENSITIVE AREAS.
6. THE SITE APPEARS TO BE IN FLOOD ZONE X AND AE (BFE=24), ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 120153 0205 C, MAP REVISED DATE JULY 15, 1992. POLARIS ASSOCIATES, INC. AND THE SIGNING SURVEYOR HEREON ASSUMES NO LIABILITY FOR THE ACCURACY OF THIS DETERMINATION. THE AUTHOR OF THE MAP, THE FEDERAL EMERGENCY MANAGEMENT AGENCY, OR THE LOCAL GOVERNMENTAL AGENCY HAVING JURISDICTION OVER SUCH MATTERS SHOULD BE CONTACTED PRIOR TO ANY JUDGMENTS BEING MADE FROM THIS INFORMATION. THE ABOVE REFERENCED MAP STATES IN THE NOTES TO THE USER THAT "THIS MAP IS FOR USE IN ADMINISTERING THE NATIONAL FLOOD INSURANCE PROGRAM" AND "THAT BASE FLOOD ELEVATIONS (BFEs) SHOWN REPRESENT ROUNDED WHOLE-FOOT ELEVATIONS AND THEREFORE MAY NOT EXACTLY REFLECT THE FLOOD ELEVATION DATA PRESENTED IN THE FLOOD INSURANCE STUDY (FIS) REPORT". THE FIS REPORT WAS NOT CONSULTED FOR THIS SURVEY.
7. ANY ZONING INFORMATION SHOWN OR NOTED HEREON IS BASED ON INFORMATION AVAILABLE DURING THE PREPARATION OF THE SURVEY. THIS INFORMATION SHOULD BE VERIFIED WITH THE GOVERNING AUTHORITY PRIOR TO ANY DETERMINATIONS OR DESIGN.
8. SHOWN ANYWHERE ON THIS SURVEY, THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF A PROFESSIONAL OPINION BASED UPON THE SURVEYOR'S BEST KNOWLEDGE, INFORMATION AND BELIEF, AND THAT IT THUS CONSTITUTES NEITHER A GUARANTEE NOR A WARRANTY.
9. UNLESS OTHERWISE INDICATED, THE PROPERTY DESCRIPTION AND EASEMENTS SHOWN WERE FURNISHED TO POLARIS ASSOCIATES, INC. AND ARE PRESUMED TO BE CORRECT. NO SEARCH OF ANY PUBLIC RECORDS, FOR EASEMENTS, DEEDS, ETC., WAS PERFORMED BY THIS FIRM FOR THE COMPLETION OF THIS SURVEY AND THERE MAY BE ADDITIONAL RESTRICTIONS THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
10. ELEVATIONS ARE BASED ON MANATEE COUNTY BENCHMARK 133-2, A DISK AND RIVET ON TOP OF THE NORTH 6" CURB, AT A BRIDGE OVER A CANAL THAT RUNS NORTH AND SOUTH AND IS EAST OF THE TREATMENT PLANT, 50'+/- EAST OF THE INTERSECTION OF THE ENTRANCE ROAD AND THE ROAD THAT LEADS TO THE TREATMENT PLANT ADMINISTRATION BUILDING, HAVING AN ELEVATION OF 28.866, NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).
11. THE PURPOSE OF THIS SURVEY IS TO RECORD THE ASBUILT ELEVATIONS AND HORIZONTAL LOCATIONS OF THE NEW MAINTENANCE BUILDING, STORM WATER POND AND ASSOCIATED APPARATUS.

DATE	NUMBER	REVISIONS	BY
03-19-09	1	CORRECTED INVERT ELEVATION FOR MES AT NW CORNER OF POND	JT

CERTIFICATION

CERTIFIED TO: D.E. MURPHY CONSTRUCTORS, INC

I HEREBY CERTIFY THAT THE SURVEY REPRESENTED HEREON MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027 FLORIDA STATUTES.

FEBRUARY 24, 2009
DATE OF SURVEY

DANIEL D. FERRANS
PROFESSIONAL LAND SURVEYOR
LICENSE NUMBER LS 3885
STATE OF FLORIDA

PROJECT:
N.R.W.R.F. MAINTENANCE BUILDING

TYPE OF SURVEY:
RECORD SURVEY

PREPARED FOR:
D.E. MURPHY CONSTRUCTORS, INC

POLARIS ASSOCIATES INC.
PROFESSIONAL SURVEYING LB 6113
18850 U.S. HIGHWAY 19 SUITE 500
CLEARWATER, FLORIDA 33764
(727) 524-6500

SAVED: 3/19/2009 12:03 PM
PLOTTED: 3/19/2009 12:04 PM

CHECKED BY:	SCALE:	DRAWN BY:	JOB NO.	DRAWING PATH:	SHEET
DDF	1"=20'	JT	3093-03	H:\JN\3093\DWG\3093A.DWG	1 OF 1

NO.	BY	DATE	DESCRIPTION
			REVISIONS

PROJECT MANAGER: DAVE WILCOX
JOB NO. 12005555
DSGN: J. PANTELIS
DRWN: D. ELLIS
CHKD: D. WILCOX
APVD: D. WILCOX
DATE: June 9, 2008

URS
7650 West Courtney Campell Causeway, Suite 700
Tampa, Florida 33607
Ph: (813) 286-1711 Fax: (813) 286-6587
Florida Engineering Number: 000002

MANATEE COUNTY FLORIDA

MAINTENANCE BUILDING AT NRWRF

FOR

MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

SITE PLAN

DAVID A. WILCOX
FLORIDA P.E. NO. 34942

PROJECT STATUS
BID SET
NOVEMBER 2007

C-5

4987.048

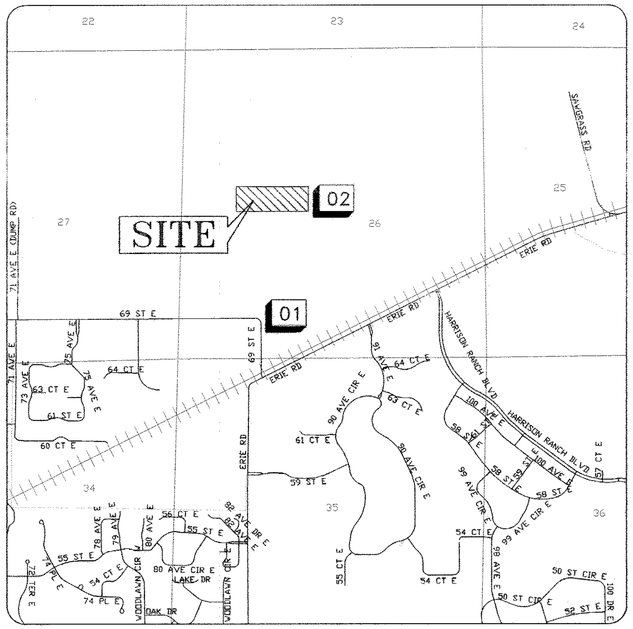
RECEIVED
JUL 02 2009
PUBLIC WORKS ENGINEERING

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLOTTED March 19, 2009 12:04 PM PLOTTED BY: J THOMAS
H:\JN\3093\DWG\3093A.DWG

Record Drawing

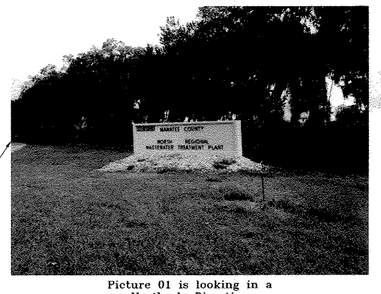
of the North County Maintenance Facility
In Sections 26, Township 33 South, Range 18 East
Manatee County, Florida



Location Site Map

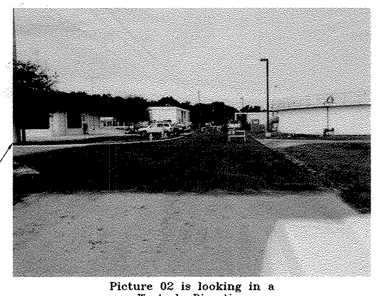
Surveyor Notes:

1. Unless noted, locations limited to – observable, above ground improvements, no underground improvements have been located except those shown hereon. some features may be exaggerated for clarity. dimensions shown supersede scaled dimensions.
2. This survey does not certify or warranty: title, zoning, easements, or freedom of encumbrances.
3. No instruments of record reflecting easements, rights–of–way and/or ownership are known by, or were furnished this surveyor except as shown hereon.
4. This survey meets the requirements of Chapter 5J–17, Florida Administrative Code, as it pertains to Asbuilt Surveys.
5. This drawing is not valid without the original raised seal and signature of the Florida Registered Surveyor & Mapper shown hereon. an electronic copy of this drawing must be verified with a signed and sealed drawing of the same.
6. Any additions or deletions to this sketch of survey by other than the signing party without written consent of the signing party is prohibited.
7. Subject to easements, dedications and restrictions of record not provided to the surveyor and mapper.
8. This survey does not reflect or determine ownership.
9. All measurements shown hereon are ground field measured unless specifically annotated, noted or otherwise stated on this sketch of survey.
10. The Basis of Bearings for this Survey is the traverse line shown hereon, which bears N02°44'48"E (Grid), derived using Real Time Kinematics methods and the Florida Department of Transportation's Permanent Reference Network. The datum for the values is the North American Datum 1983 (1999 Adjustment) Florida West Zone. The published values of "GIS 009" (NGS PID AG9114) were used to validate the project coordinates. However, these values are not to be considered geodetic control.
11. The Elevations shown hereon are based on Manatee County Benchmark 133–29–05, published Elevation 31.969', National Geodetic Vertical Datum 1929 (NGVD29), and checked against Benchmark 133–29–06, published Elevation 28.866', (NGVD29). Conversion to North American Vertical Datum 1988 (NAVD88) via Corpscon is minus 0.961'.
12. Parcel information shown hereon was gathered from the Manatee County Geographic Information Systems property locator web site.
13. This survey is intended to be plotted at a scale: 1"=30' on a 22"x34" or scale: 1"=60' on a 11"x17".



01

Picture 01 is looking in a Northerly Direction



02

Picture 02 is looking in a Westerly Direction

I, Todd E. Boyle – RSM 6047, certify that the measurements shown hereon were obtained by employees of Manatee County's Property Management Department, Survey Division. These employees are under my direct supervision and the measurements and drawings accurately depict the horizontal and vertical improvements shown hereon. The last date of field measurements were taken on December 03, 2013. This Record Drawings meets the requirements of Chapter 5J–17, Florida Administrative Code. This drawing is not valid without the original raised seal and signature of The Florida Registered Surveyor & Mapper shown hereon. An electronic copy of this drawing must be verified with a signed and sealed drawing of the same.

Todd E. Boyle – RSM 6047 — Date: 4/9/2014

The Engineer of Record certifies that these record drawings adequately depict the water service, and force main constructed and these facilities have been constructed in substantial conformance with the approved plans. I have relied upon the surveyors data in making this certification.

James D. Stockwell
FL PE #67198 — Date: 4/9/2014

MANATEE COUNTY
PROPERTY MANAGEMENT DEPARTMENT
SURVEY DIVISION

1112 MANATEE AVENUE WEST
BRADENTON, FL 34205
(941) - 748 - 4501

RECORD DRAWING
of North County Maintenance Facility
County Maintained Water & Sewer lines

PROJECT# 485–6083800–6083800 WO# 00000

As–Built Survey North County Maintenance Facility (Water and Force Main) In Sections 26, 27 & 35, Township 33 South, Range 18 East Manatee County, Florida	Field Date: 04/07/14
	DWG. Date: 04/08/14
	DWG. Path: S:\SURVEY\2013 jobs\08_Aug 13\20130801_ 69th Street East Topo for Fiber Optics\CAD_DWG's\Asbuilts
	Sheet: 1 of 2
	Checked By: TEB
	Drawn By: PRS

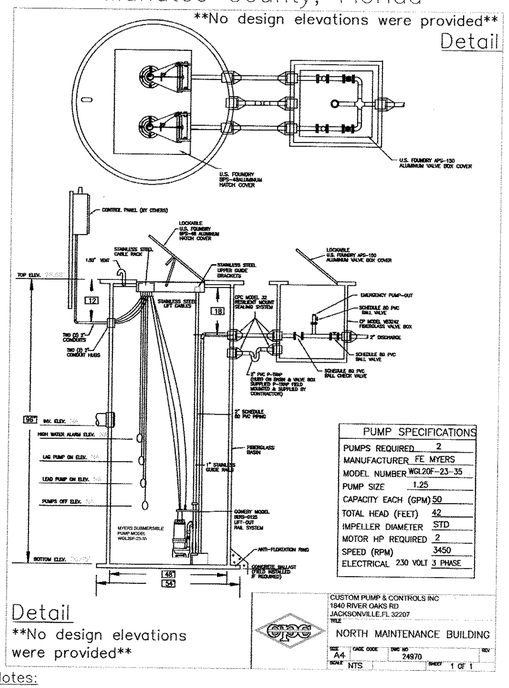
5769.001

Record Drawing

of the North County Maintenance Facility
In Sections 26, Township 33 South, Range 18 East
Manatee County, Florida

No design elevations were provided

Detail



PUMP SPECIFICATIONS	
PUMPS REQUIRED	2
MANUFACTURER	FE MYERS
MODEL NUMBER	WGL20F-23-35
PUMP SIZE	1.25
CAPACITY EACH (GPM)	50
TOTAL HEAD (FEET)	42
IMPELLER DIAMETER	STD
MOTOR HP REQUIRED	2
SPEED (RPM)	3450
ELECTRICAL	230 VOLT 3 PHASE

Detail
No design elevations were provided

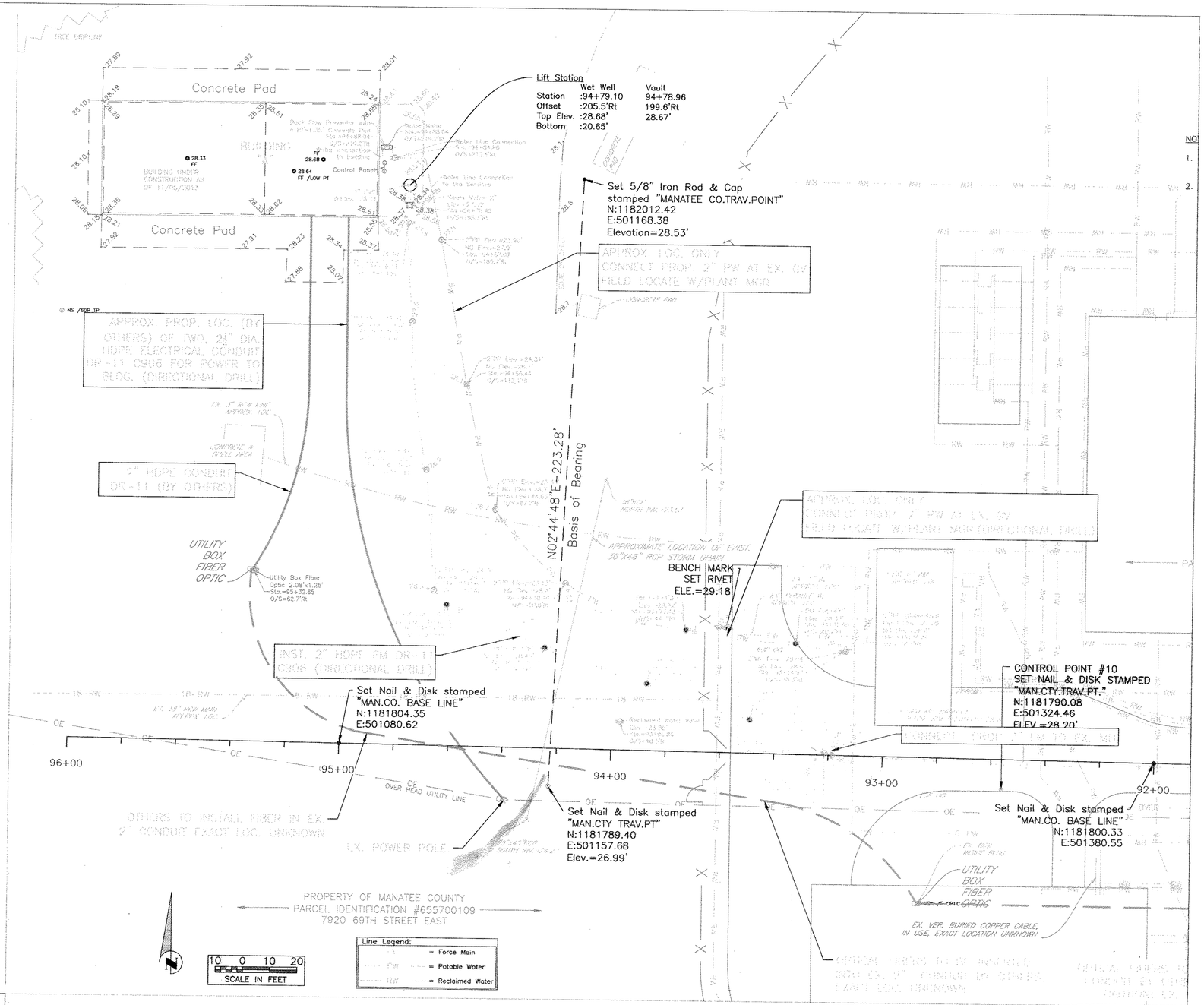
CUSTOM PUMP & CONTROLS INC
1840 RIVER OAKS RD
JACKSONVILLE,FL 32207
TITLE: NORTH MAINTENANCE BUILDING
SIZE A4 | CAGE CODE | DWG NO 24970 | REV
SCALE NTS | SHEET 1 OF 1

Record Notes:

1. Tracer wire was installed and successfully tested on 02/12/14 by Manatee County. Per Joshua Fields via email on 03/31/14.
2. Installed Pipes were HDPE DR-9 (2" Water and 2" FM). Per Joshua Fields via email on 03/31/14.
3. At the manhole, Manatee County created a p-trap in the line by bending the pipe, a common practice. This bend in the 2" poly tubing is similar to an installed p-trap and will work the same way, trapping water to prevent the sewer gases from traveling back up the line. Per Joshua Fields 04/01/14.
4. The backflow preventer is a 1" Apollo RP4A (serial number 457711), installed 03/21/2014 per Al Meronek.
5. Point of connection for the Waterline was a 2" TEE (Galvanized Pipe).
6. Design of Lift Station is by the manufacture and not certified by James Stockwell, FL PE #67198

Notes:

– See Sheet 1 of 2
For Surveyor's Notes



Legend:

BWF	= Barbed Wire Fence	NMF/S	= No Monument Found/Set
CL	= Centerline	O/S	= Offset
CLF	= Chain Link Fence	OE	= Overhead Utility Line
Elev.	= Elevation	PM	= Paintmark
EP	= Edge of Asphalt Pavement	PP	= Poly Pipe (size noted)
FM	= Force Main	R/W	= Right-of-Way
FCM	= Found Concrete Monument	Rt.	= Right Side
FIP	= Found Iron Pipe	Sta.	= Station
FIR	= Found Iron Rod		= Fire Hydrant
FND	= Found Nail and Disk		= Guy Anchor
Inv.	= Invert		= Wood Utility Pole
Lt.	= Left Side		= Water Meter
NDS	= Nail and Disk Set		= Wood Bollards(Sizes Vary)
NG	= Natural Ground		

MANATEE COUNTY
PROPERTY MANAGEMENT DEPARTMENT
SURVEY DIVISION
1112 MANATEE AVENUE WEST
BRADENTON, FL 34205
(941) - 748 - 4501

RECORD DRAWING

of North County Maintenance Facility
County Maintained Water & Sewer lines

PROJECT# 485-6083800-6083800 WO# 00000

As-Built Survey

North County Maintenance Facility (Water and Force Main) In Sections 26, 27 & 35, Township 33 South, Range 18 East Manatee County, Florida

Field Date:	04/07/14
DWG. Date:	04/08/14
DWG. Path:	S:\SURVEY\2013 jobs\08_Aug 13\20130801_ 69th Street East Topo for Fiber Optics\CAD_DWG's\Asbuilts
Sheet:	2 of 2
Checked By:	TEB
Drawn By:	PRS

5769.002

NOTES:

1. THIS AS-BUILT SURVEY IS PREPARED FOR THE PURPOSE OF LOCATING THE HORIZONTAL POSITION OF FIXED IMPROVEMENTS ALONG ROADWAYS WITHIN THE NORTH REGIONAL WASTE WATER TREATMENT FACILITY.

2. BASELINE STATIONS SHOWN HEREON ARE TAKEN FROM PLANS PREPARED FOR MANATEE COUNTY FOR THE NORTH REGIONAL WASTE WATER TREATMENT PLANT SECURITY SYSTEM BY ASH ENGINEERING, INC., PROJECT NUMBER 0019702/5000804.

LEGEND

- = NAIL AND TAB SET (REFERENCE) – LB 613
- WWTP = WASTE WATER TREATMENT PLANT
- ℄ = CENTER LINE
- STA = STATION
- CONC. = CONCRETE
- PVC = POLY VINYL CHLORIDE

CERTIFICATIONS:
* MANATEE COUNTY
* USA STEEL FENCE

CONC. BLOCK BUILDING

PULL BOX STA 10+30.64 S / STA 57+91.73 W

2" PVC CONDUIT

PULL BOX STA 10+24.31 S / STA 56+05.69 W

PULL BOX STA 10+24.53 S / STA 55+06.16 W

PULL BOX STA 10+24.06 S / STA 54+06.63 W

PULL BOX STA 10+24.50 S / STA 53+06.44 W

PULL BOX STA 10+23.91 S / STA 52+06.50 W

PULL BOX STA 10+24.15 S / STA 51+06.60 W

CONCRETE BASE FOR CAMERA STA 10+16.92 S / STA 51+11.19 W

FENCE CORNER STA 10+25.41 S / STA 50+99.52 W

CODE AND SPEAKER BOX STA 10+12.09 S / STA 50+86.67 W

FENCE CORNER STA 10+25.97 S / STA 50+56.87 W

FENCE CORNER STA 10+59.72 S / STA 50+21.57 W

STA 58+00

STA 57+00

STA 56+00

STA 55+00

STA 54+00

STA 53+00

STA 52+00

STA 51+00

STA 10+00 S / STA 50+00 W

BASELINE "B" ASSUMED "WEST" FOR PURPOSES OF THIS SURVEY

℄ W W T P E N T R A N C E R O A D

24'

SLIDE GATE

STA 9+82.19 S CONCRETE BASE / STA 50+99.78 W FOR GATE OPENER

STA 9+62.22 S FENCE / STA 50+98.31 W CORNER

STA 9+62.40 S FENCE / STA 50+22.99 W CORNER

STA 9+19.42 S FENCE / STA 50+22.31 W POST

SWING GATE

STA 8+99.14 S FENCE / STA 50+22.00 W POST

STA 8+47.06 S FENCE / STA 50+21.29 W CORNER

STA 8+37.22 S / STA 50+36.64 W

CONC. BLOCK BUILDING

STA 8+11.89 S / STA 50+36.94 W

STA 7+99.88 S / STA 50+20.76 W

STA 6+80.64 S FENCE CORNER / STA 50+19.67 W

EXISTING FENCE

STA 12+89.33 S FENCE POST / STA 50+17.46 W

STA 12+77.02 S FENCE POST / STA 50+17.36 W

STA 12+18.11 S POINT ON FENCE LINE / STA 50+17.32 W

STA 11+27.73 S POINT ON FENCE LINE / STA 50+18.93 W

SWING GATE

STA 23+42.57 S FENCE CORNER / STA 50+17.30 W

EXISTING FENCE

NEW 6' CHAIN LINK FENCE WITH 3 STRANDS BARB WIRE

℄ W W T P A C C E S S R O A D 1100.00'

BASELINE "A" ASSUMED "NORTH" FOR PURPOSES OF THIS SURVEY 200.00'

℄ W W T P A C C E S S R O A D

24'

STA 23+00 | STA 22+00 | STA 21+00 | STA 20+00 | STA 15+00 | STA 14+00 | STA 13+00 | STA 12+00 | STA 11+00 | STA 9+00 | STA 8+00 | STA 7+00

GRAPHIC SCALE IN FEET: 40 0 40

SCALE : 1" = 40'

AS BUILT SURVEY

FOR MANATEE COUNTY GOVERNMENT

LYING IN SECTION 26 TOWNSHIP 33 SOUTH, RANGE 18 EAST, MANATEE COUNTY, FLORIDA.

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

BY: LEO MILLS JR.: REGISTERED STATE OF FLORIDA PROFESSIONAL SURVEYOR AND MAPPER No. 3613

DATE: 05/25/04 | JOB NO. C-3658
SCALE: 1" = 40' | REVISIONS:
DRAWN BY: MAD
CHECKED BY: MLM Jr.

Leo Mills & Associates, Inc.
LICENSED BUSINESS #813
SURVEYING – LAND PLANNING
620 8th AVENUE, PALMETTO, FL 34221, (941) 722-2460
22 NORTH POLK AVENUE, ARCADIA, FL 34266, (863) 993-4141

FILE: C3658.DWG STA:4 COGO: C3658.COGO STA. 2

Dr. 23 # 125

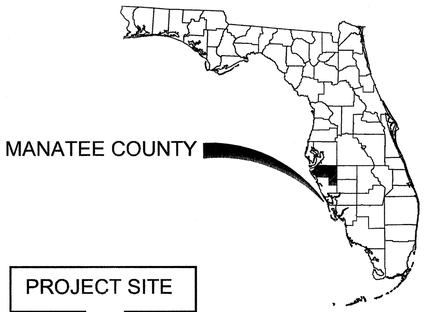
23-10

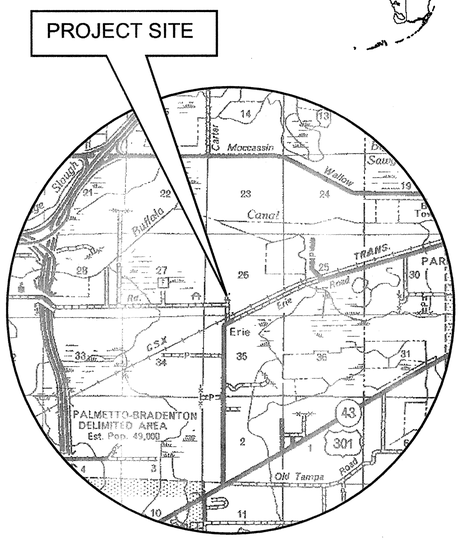
4274.001

RECORD DRAWINGS

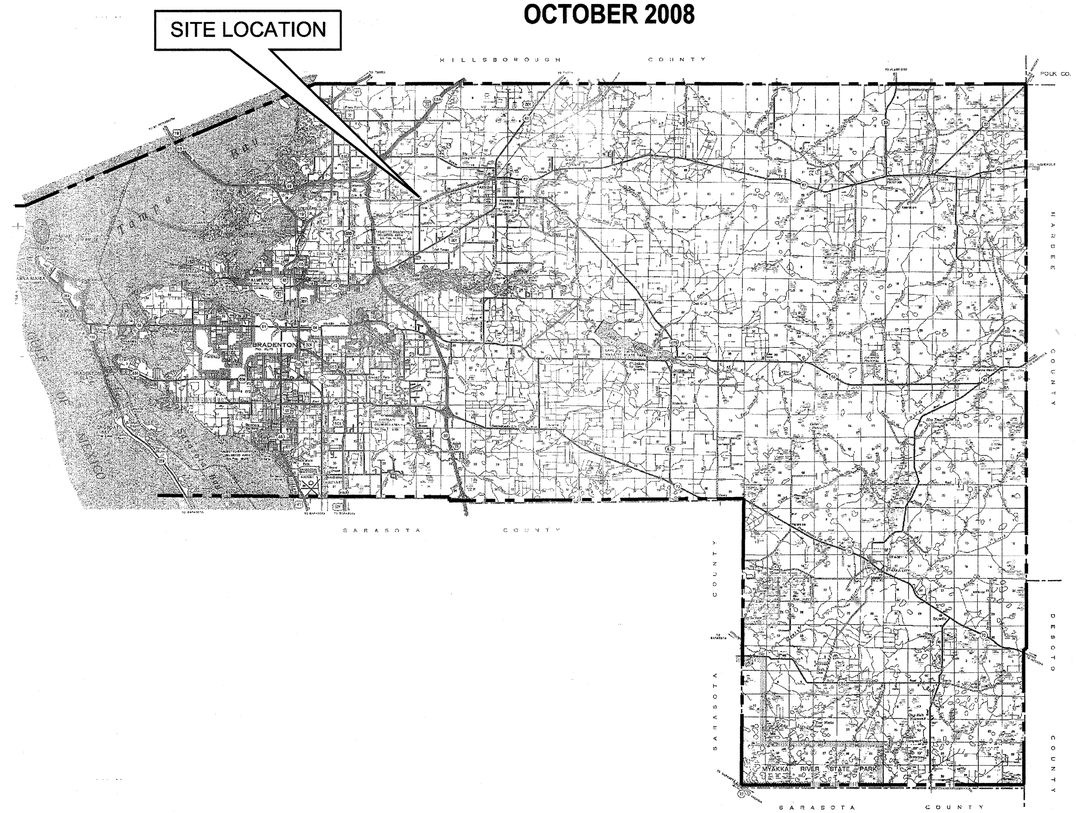
MANATEE COUNTY, FLORIDA
NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
PROJECT NO. 6038080

OCTOBER 2008





PROJECT MAP
N.T.S.



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C-3	YARD PIPING DETAIL PLANS
C-4	YARD PIPING DETAILS
C-5	REPORT OF CORE BORINGS
C-6	GEOTECHNICAL DETAILS
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RECEIVED
NOV 20 2008
PUBLIC WORKS
ENGINEERING

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	T. SONNENBERG	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	COVER SHEET.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

COVER SHEET

NO.	REVISION DESCRIPTION	BY	DATE
	BID SET		
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: May 2006
DWG NO:
SHEET: G-1

31-08

4924.001

PLOTTED --- --- --- PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\COVER SHEET.DWG

NORTH REGIONAL WASTEWATER TREATMENT PLANT THIRD CLARIFIER, MANATEE COUNTY, PROJECT NO. 6038080, OCTOBER 2008, RECORD DRAWINGS

GENERAL NOTES:

1. ALL ELEVATIONS ARE BASED ON THE TBM INDICATED AND ARE SHOWN IN FEET.

2. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR LOCATING AND AVOIDING ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND SURFACE. THE CONTRACTOR SHALL REPAIR ALL DAMAGES RESULTING FROM THE CONTRACTORS FAILURE TO COMPLY WITH THIS REQUIREMENT.

3. THE CONTRACTOR SHALL PROVIDE NO LESS THAN A 6 INCH VERTICAL CLEARANCE BETWEEN ALL UTILITIES.

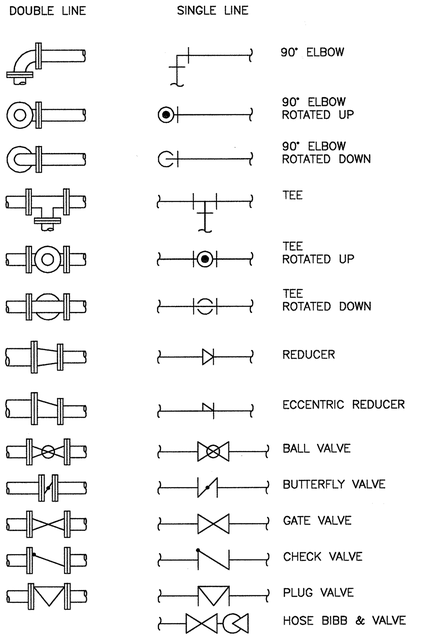
4. PIPE JOINT DEFLECTION SHALL NOT EXCEED 80% OF THE MAXIMUM ALLOWED BY THE MANUFACTURER FOR THE SIZE AND TYPE OF JOINT.

5. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO REFERENCE AND RESTORE PROPERTY CORNERS AND LANDMARKS THAT MAY BE DISTURBED BY CONSTRUCTION.

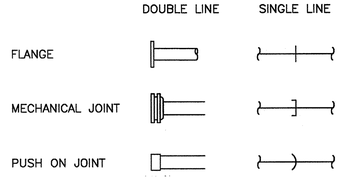
6. THE CONTRACTOR SHALL NOTIFY PLANT PERSONNEL NOT LESS THAN (2) TWO WEEKS PRIOR TO THE SHUTDOWN AND BYPASSING OF UNIT PROCESS TANKAGE.

7. CONTRACTOR SHALL REFER TO EQUIPMENT SHOP DRAWINGS FOR SIZE AND POSITION OF ALL OPENINGS IN STRUCTURES REQUIRED BY THE EQUIPMENT. ENGINEERING DRAWINGS ARE APPROXIMATE.

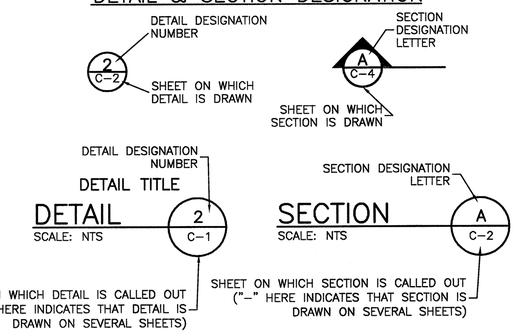
PIPE AND FITTING SYMBOLS



FITTING TYPE SYMBOLS



DETAIL & SECTION DESIGNATION



ABBREVIATIONS:

A/C	AIR CONDITIONER
ADPT	ADAPTER
ADJ	ADJUSTABLE
AL	ALUM SOLUTION
ALUM	ALUMINUM
AM	AMMONIA
BA	BLOWER AIR
BV	BALL VALVE
BFV	BUTTERFLY VALVE
BLDG	BUILDING
CCC	CHLORINE CONTACT CHAMBER
CI	CAST IRON
CL	CENTERLINE
CL2S	CHLORINE SOLUTION
CL2G	CHLORINE GAS
CLW	CLARIFIED WATER
CONC	CONCRETE
CPLG	COUPLING
D	DRAIN
DI	DUCTILE IRON
DIA	DIAMETER
ECC	ECCENTRIC
EFF	EFFLUENT
EL	ELEVATION
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EXIST	EXISTING
FLG	FLANGE
FLW	FLOCCULATED WATER
FOT	FLAT ON TOP
FRP	FIBERGLASS REINFORCED PLASTIC
FSB	FLOW SPLITTER BOX
FT	FOOT OR FEET
FW	FILTERED WATER
GAL	GALVANIZED
GV	GATE VALVE
HC	SODIUM HYPOCHLORITE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INF	INFLUENT
JT	JOINT
LF	LINER FEET
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MJ	MECHANICAL JOINT
ML	MIXED LIQUOR
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
O/E	OR EQUAL
OVF	OVERFLOW
P	POLYMER
PE	PLAIN END
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE PIPE
PW	POTABLE WATER
R	RADIUS
RAS	RETURN ACTIVATED SLUDGE
RCW	RECLAIMED WATER
RED	REDUCER
RMJ	RESTRAINED MECHANICAL JOINT
RW	RAW WATER
SC	SCUM
SCH	SCHEDULE
SL	SAMPLE LINE
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
SW	SOLVENT WELD
SWD	SIDE WATER DEPTH
T&B	TOP AND BOTTOM
TBM	TEMPORARY BENCHMARK
THD	THREADED
THK	THICK(NESS)
TS	THICKENED SLUDGE
TYP	TYPICAL
W	WELDED
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WBW	WASTE BACKWASH WATER
WL	WATER LEVEL
WWM	WOVEN WIRE MESH

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	T. SONNENBERG	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	GEN-NOTES.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

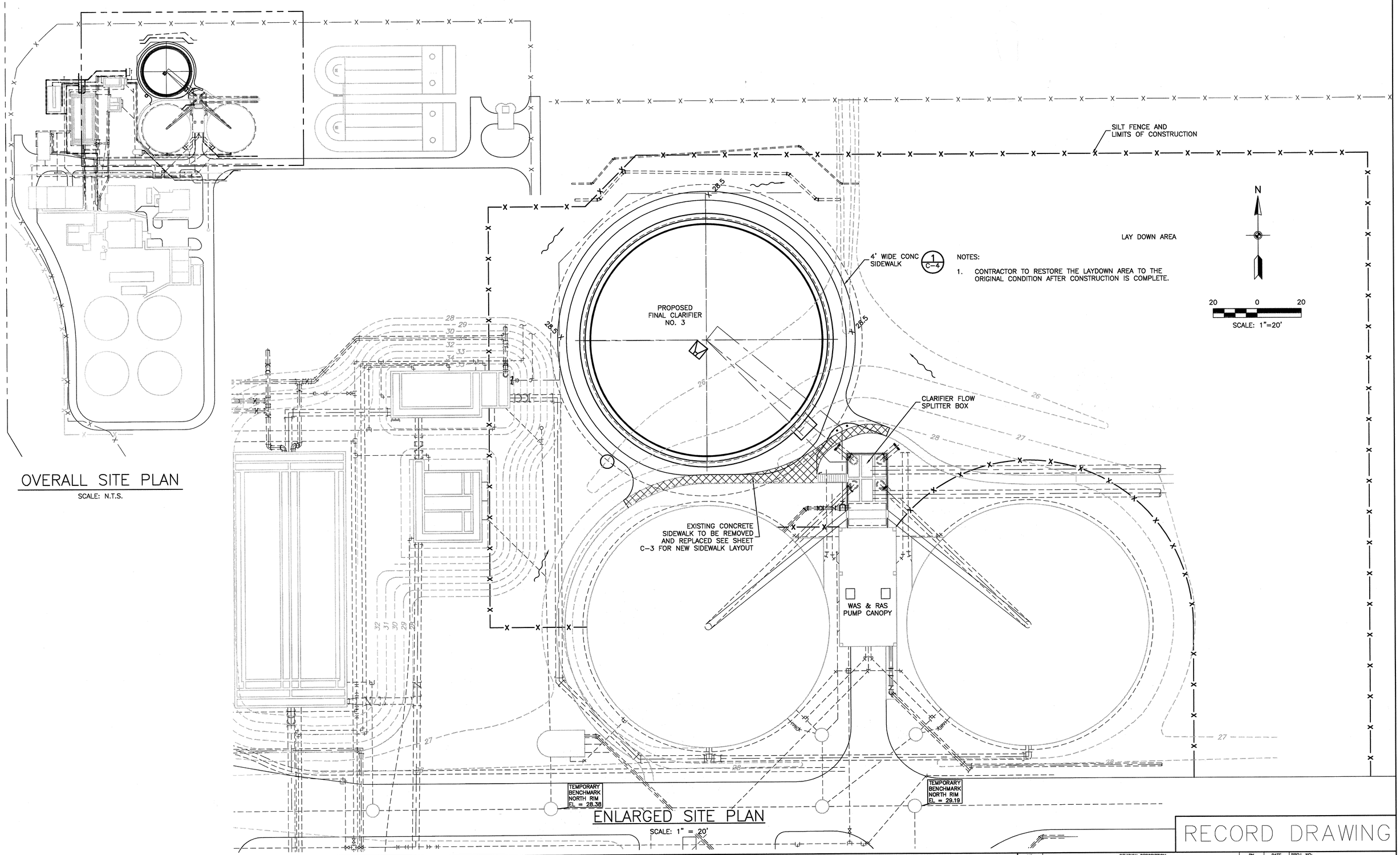
GENERAL NOTES, ABBREVIATIONS, SYMBOLS

NO.	REVISION DESCRIPTION	BY	DATE
	BID SET		
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: May 2006
DWG NO:
SHEET: G-2

4924.002

PLOTTED ---- ---- PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\GEN-NOTES.DWG



NOTES:

1. CONTRACTOR TO RESTORE THE LAYDOWN AREA TO THE ORIGINAL CONDITION AFTER CONSTRUCTION IS COMPLETE.

OVERALL SITE PLAN

SCALE: N.T.S.

ENLARGED SITE PLAN

SCALE: 1" = 20'

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	D. ELLIS	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	GEN-NOTES.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

OVERALL SITE PLAN & PAVING, GRADING & DRAINAGE PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: C-1

4924.003

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N

20 10 0 10

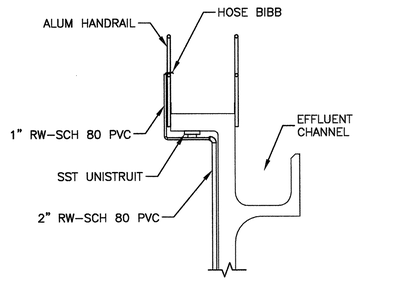
EXST. 6" WM
36" 45° RMJ BEND
EXST. 12" WM
36" CLW-DI/RMJ
32'-0"
36"x30" TEE RMJ
36"x30" REDUCER PExRMJ
30'-0"
30" BFV RMJ W/30" PLUG FOR FUTURE EXPANSION
30" CLW-DI/RMJ
30" 90° FLG BEND
30" 90° RMJ BEND
11'-8"
40'-0"
17'-3"
15' WORK ZONE
4' WIDE CONC SIDEWALK
CLARIFIER EFFLUENT BOX 6/S-3
36" 45° RMJ BEND
WALKWAY ON TOP OF CLARIFIER
7'-10"
R57'-6"
R55'

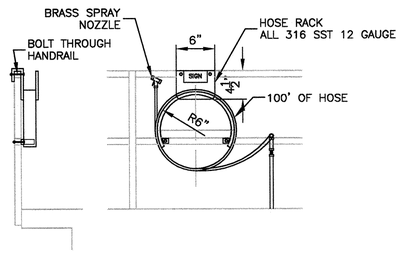
PROPOSED
FINAL CLARIFIER
(SEE SHEET M-1 FOR DETAILS)

12" 45° RMJ BEND ROTATED UP 45°
12" EFF FM-DI/RMJ
EXIST 12" 45° BEND TO BE ROTATED 45°
55'-0"
11'-8"
HOSE BIBB AND RACK TYP OF 4 AT EACH QUADRANT 1/-
63'
8'-0"
REMOVE EXISTING PLUG AND INSTALL NEW 36"
2" AL-PVC
8" RW-PVC
SEE SHEET C-4 FOR DETAIL
8" SLUDGE WITHDRAWAL
1" RW-COPPER/W MOUNTED TO WALKWAY
16" RAS-DI/RMJ
36" ML-DI/RMJ
40°
45°
WALKWAY
51'-6"
SEE SHEET C-3 FOR DETAIL PLAN
36" 90° RMJ BEND
2-36" 45° RMJ BEND
36" BFV RMJ
5/M-2 TANK DRAIN ASSEMBLY
8" RMJ TEE
4" PVC
8" D-DI/RMJ
SEE DETAILED SITE PLAN ON SHEET C-3
SHORE EXISTING PIPE TO PREVENT MOVEMENT DURING EXCAVATION AND INSTALLATION OF THE NEW PIPE
6" D-DIP/PO
8" 45° RMJ BEND
4" RW-PVC/SW
8/M-2 CLARIFIER DRAIN MANHOLE
6" MJ SOLID SLEEVE
6" MJ WYE CUT INTO EXIST 6" D-DI
4" RW-PVC
8" WAS-DI/RMJ
4" RW-PVC
4" GATE VALVE & TEE
CONTRACTOR TO KEEP EXIST 4" RW LINE IN SERVICE AND SUPPORT AS NECESSARY
6" MJ GATE VALVE
8" SDR-DI
6" RAS-DI
36" ML-DI
8" WAS-DI
42" ML-DI
36" ML-RCP

EXISTING CONCRETE SIDEWALK
EXISTING FLOW SPLITTER BOX
EXISTING SLUDGE WETWELL
EXISTING RAS/WAS PUMP STATION
EXISTING FINAL CLARIFIER #2
EXISTING FINAL CLARIFIER #1
EXISTING FLOW SPLITTER BOX
DISK FILTERS
2" CL2S-PVC
6" D-DI
8" PVC-DR25
12" EFF FM-DI
36" CLW-RCP

NOTE:
COPPER PIPE SHALL BE TYPE "K"
BRASS PIPE SHALL BE ASTM B43 SEAMLESS RED BRASS





HOSE BIB AND RACK
DETAIL 1/-
SCALE: NTS

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	04/01/04
CHECKED BY:	D. WILCOX	DATE
DRAWN BY:	T. SONNENBERG	04/01/04
SCALE:	AS SHOWN	
FILE NAME:	YARD PIPING.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

YARD PIPING PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: C-2

4924.004

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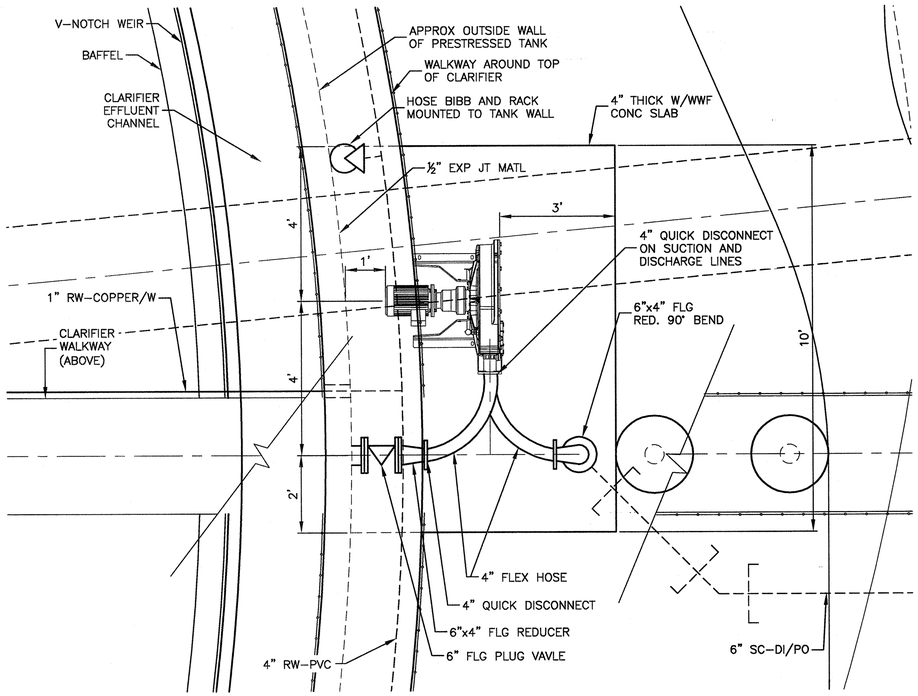
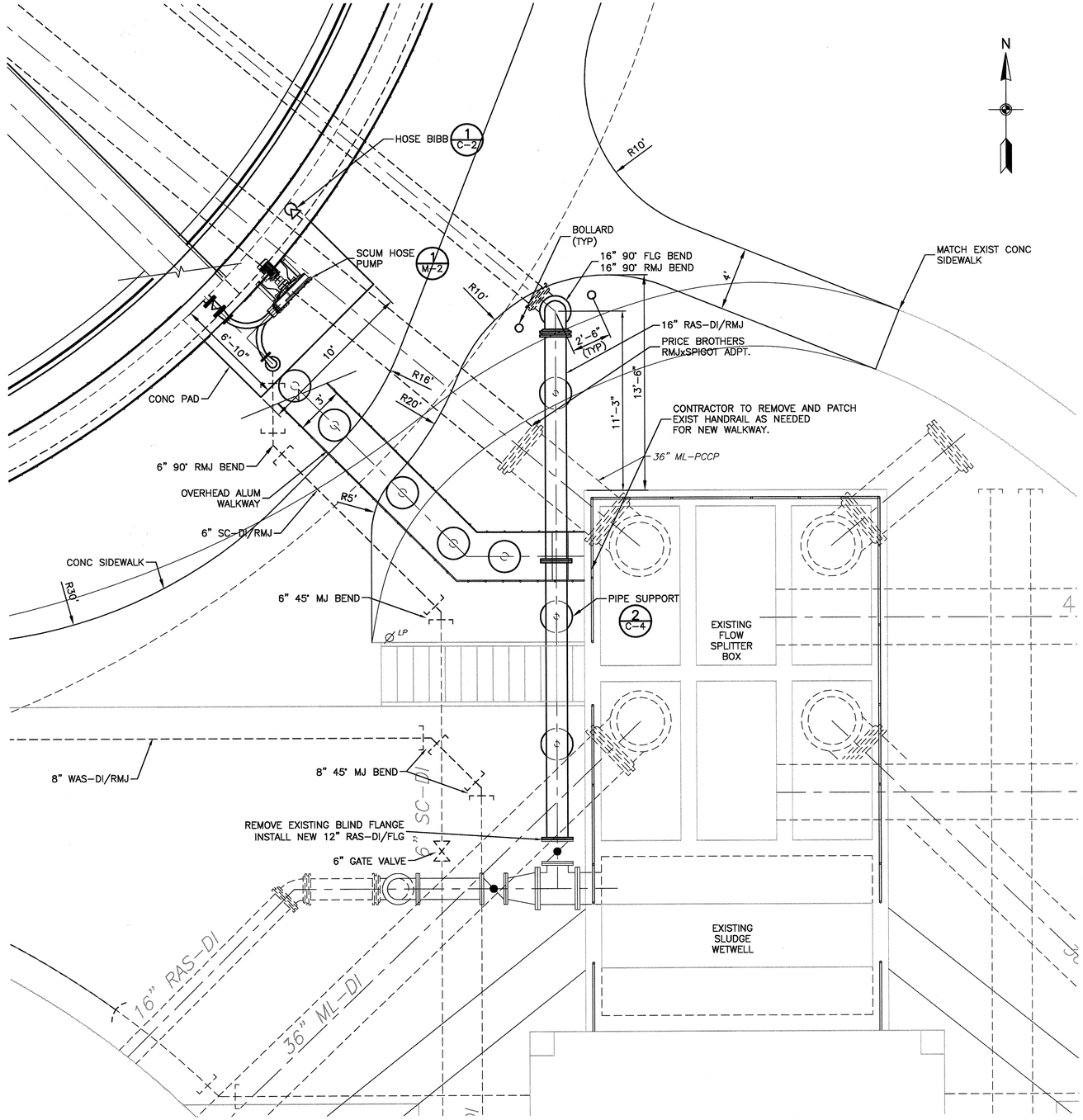
X:\MANATEE PROJECTS\12004319 & 12003300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\YARD PIPING.DWG



HOSE PUMP

SCALE: 1"=2'-0"



DETAILED SITE PLAN

SCALE: 1"=4'-0"

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	T. SONNENBERG	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	YARD PIPING.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

YARD PIPING DETAIL PLANS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: C-3

4924.005

PLOTTED ---- ---- PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\YARD PIPING.DWG

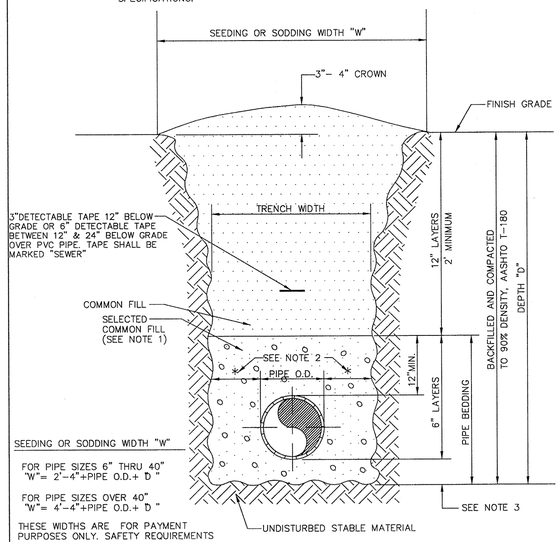
NOTES:

1.) USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

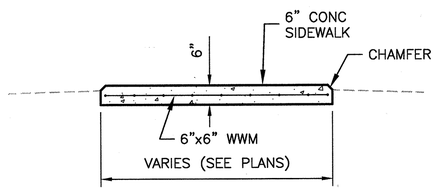
2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX FOR PIPE 42" DIAMETER AND LARGER.

4.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

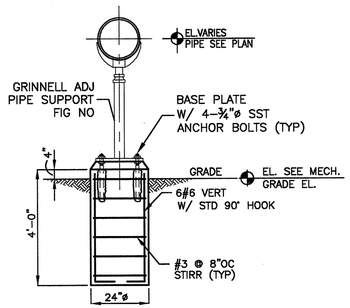


MANATEE COUNTY PUBLIC WORKS DEPARTMENT			
REV.BY	DATE	TRENCH DETAIL UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	US-11
RTH	11/99		
		MARCH 18, 1997 DATE OF APPROVAL	



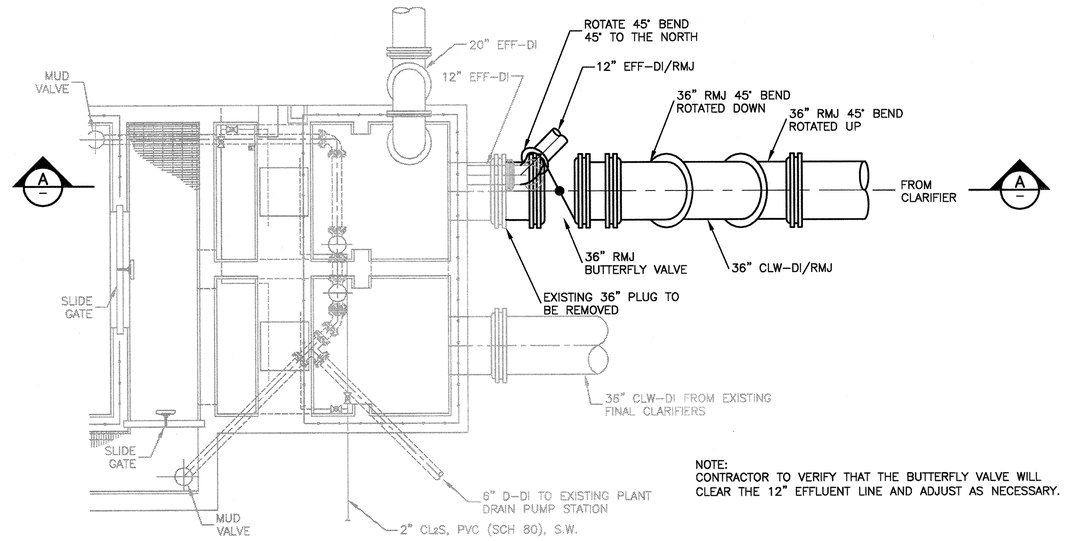
TYPICAL CONCRETE SIDEWALK

DETAIL 1 / C-1
SCALE: NTS



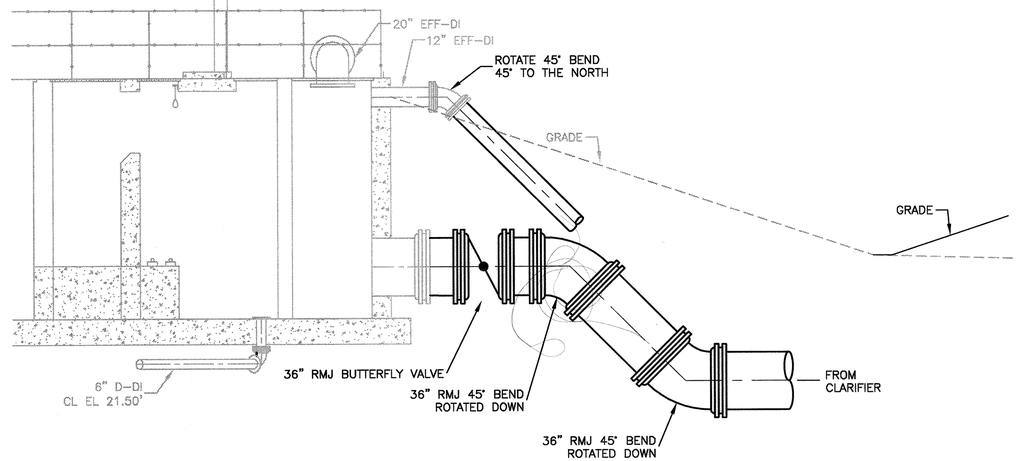
TYPICAL PIPE SUPPORT

DETAIL 2 / –
SCALE: N.T.S.



NOTE:
CONTRACTOR TO VERIFY THAT THE BUTTERFLY VALVE WILL CLEAR THE 12" EFFLUENT LINE AND ADJUST AS NECESSARY.

PLAN
SCALE: 1/4"=1'-0"



SECTION A / –
SCALE: 1/4"=1'-0"

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	T. SONNENBERG	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	YARD PIPING.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

YARD PIPING DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: C-4

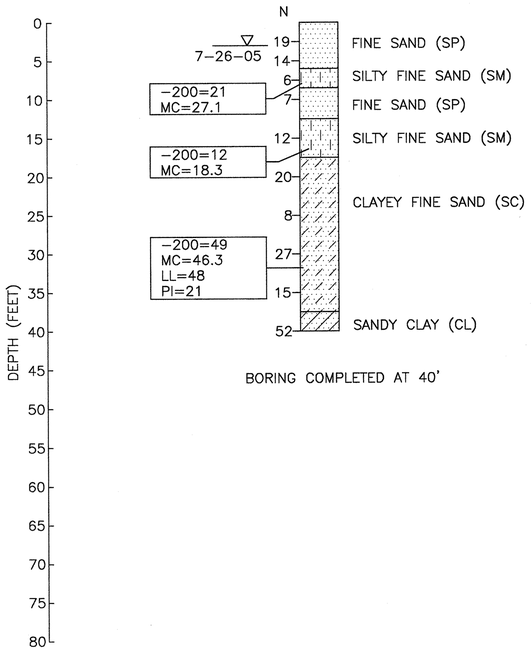
4924.006

PLOTTED ---- ---- PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12003300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\YARD PIPING.DWG

BORING B–1

GSE APPROX. 28.0

GROUNDWATER DEPTH=3'

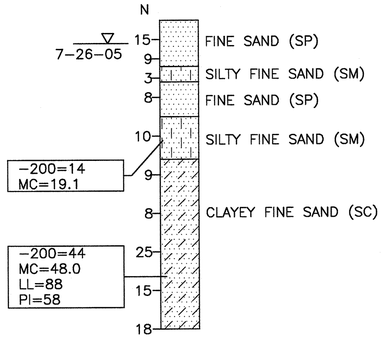


BORING COMPLETED AT 40'

BORING B–2

GSE APPROX. 26.6

GROUNDWATER DEPTH=3'

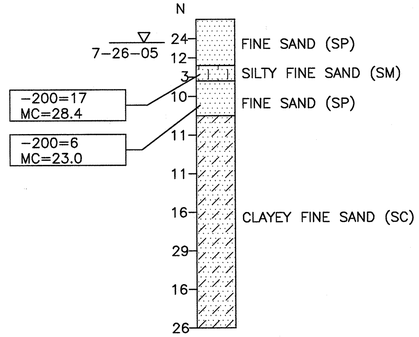


BORING COMPLETED AT 40'

BORING B–3

GSE APPROX. 28.3

GROUNDWATER DEPTH=3'

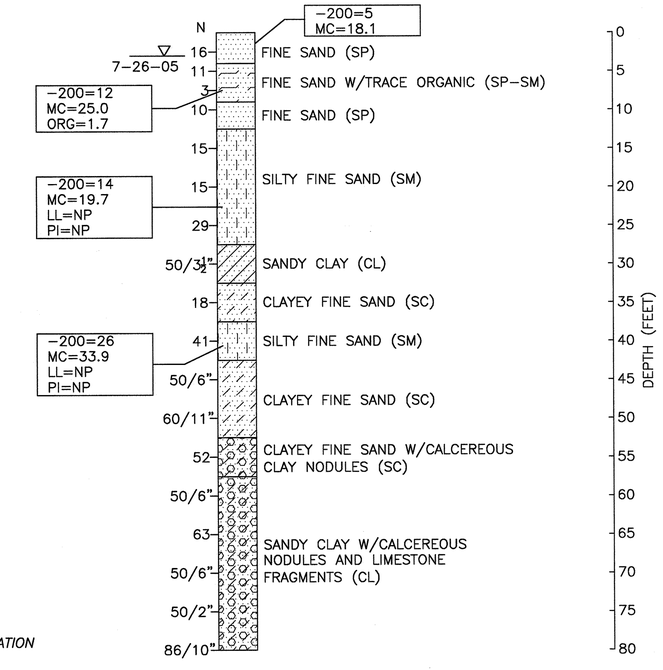


BORING COMPLETED AT 40'

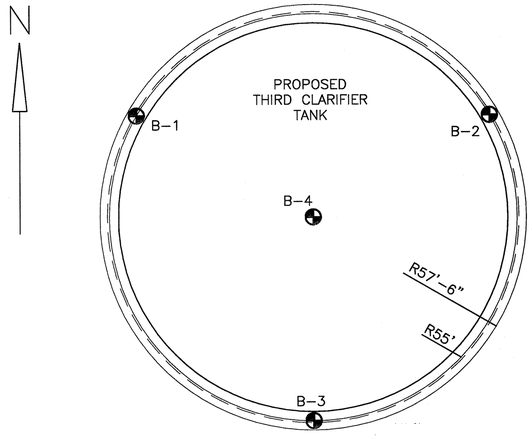
BORING B–4

GSE APPROX. 27.7

GROUNDWATER DEPTH=3'



BORING COMPLETED AT 80'



BORING LOCATIONS
(NOT TO SCALE)

SOIL LEGEND:

- FINE SAND (SP)
- SILTY FINE SAND (SM)
- CLAYEY FINE SAND (SC)
- SANDY CLAY (CL)
- FINE SAND W/TRACE ORGANIC (SP)
- CLAYEY FINE SAND W/CALCEREOUS CLAY NODULES (SC)
- SANDY CLAY W/CALCEREOUS NODULES AND LIMESTONE FRAGMENTS (CL)

NOTES

1. BORINGS ARE NOT TO SCALE HORIZONTALLY.
2. HAMMER TYPE: MANUAL
3. DRILL RIG TYPE: CME55

PLAN VIEW IS PRELIMINARY FOR SHOWING BORING LOCATION ONLY AND MAY NOT BE INDICATIVE OF FINAL PLAN.

LEGEND:

- –200 — % PASSING #200 SIEVE
- MC — MOISTURE CONTENT (%)
- ORG — ORGANIC CONTENT (%)
- LL — LIQUID LIMIT
- PI — PLASTICITY INDEX
- GSE — GROUND SURFACE ELEVATION
- ▽ — WATER LEVEL
- N — STANDARD PENETRATION RESISTANCE IN BLOWS/12 IN.
- WOH — WEIGHT OF HAMMER
- WOR — WEIGHT OF ROD
- (SP) — UNIFIED SOIL CLASSIFICATION
- W — % LOSS OF CIRCULATION

APPROXIMATE BORING LOCATION

ENGINEERING CLASSIFICATION

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOR)
VERY LOOSE	LESS THAN 5
LOOSE	5 – 10
MEDIUM OR COMPACT	11 – 30
DENSE	31 – 50
VERY DENSE	GREATER THAN 50

SILTS AND CLAYS

CONSISTENCY	N–VALUE
VERY SOFT	LESS THAN 3
SOFT	3 – 4
FIRM	5 – 8
STIFF	9 – 15
VERY STIFF	16 – 30
HARD	GREATER THAN 30

ENVIRONMENTAL CLASSIFICATION

SUBSTRUCTURE: NOT DETERMINED

SUPERSTRUCTURE: NOT DETERMINED

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	K. GIANG	DATE
CHECKED BY:	C. EVANS	DATE
DRAWN BY:	N. HENRIQUEZ	DATE
SCALE:	AS SHOWN	
FILE NAME:	MCBORING.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

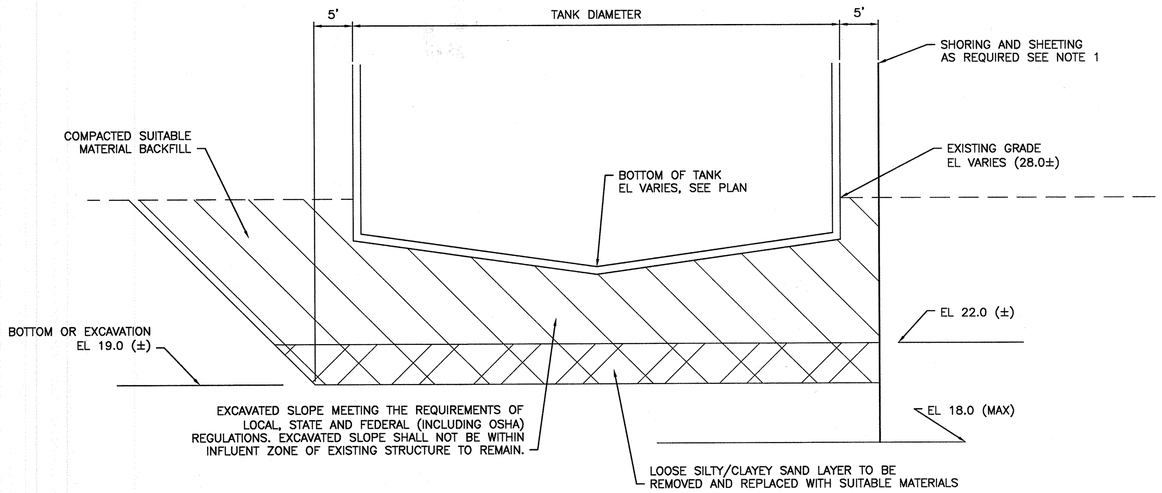
REPORT OF CORE BORINGS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: C–5

4924.007

PLOTTED ---- ---- PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\MCBORING.DWG

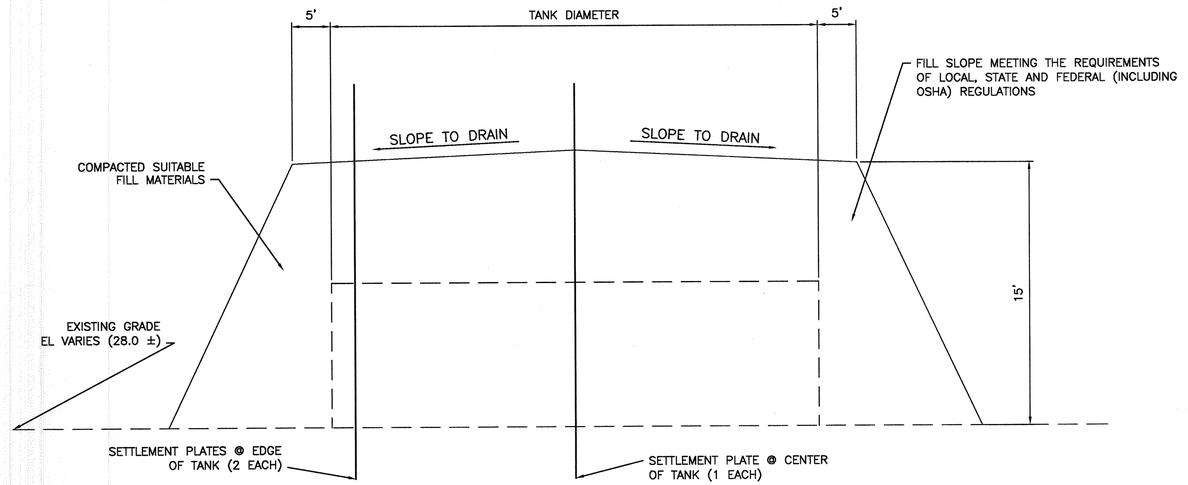


NOTES:
1. TEMPORARY SHORING AND SHEETING, WHERE REQUIRED , SHALL BE DESIGNED BY A CERTIFIED GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.
2. TANK SECTION IS SCHEMATIC FOR SHOWING EARTHWORK RECEUIRION. SEE CONTRACT DOCUMENTS FOR ACTUAL TANK.

REMOVAL AND REPLACEMENT OPTION

DETAIL 1/–

SCALE: N.T.S.



PRE–LOADING OPTION

DETAIL 2/–

SCALE: N.T.S.

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	K. GIANG	DATE
CHECKED BY:	C. EVANS	DATE
DRAWN BY:	N. HENRIQUEZ	DATE
SCALE:	AS SHOWN	
FILE NAME:	MCBORING.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

GEOTECHNICAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: C–6

4924-008

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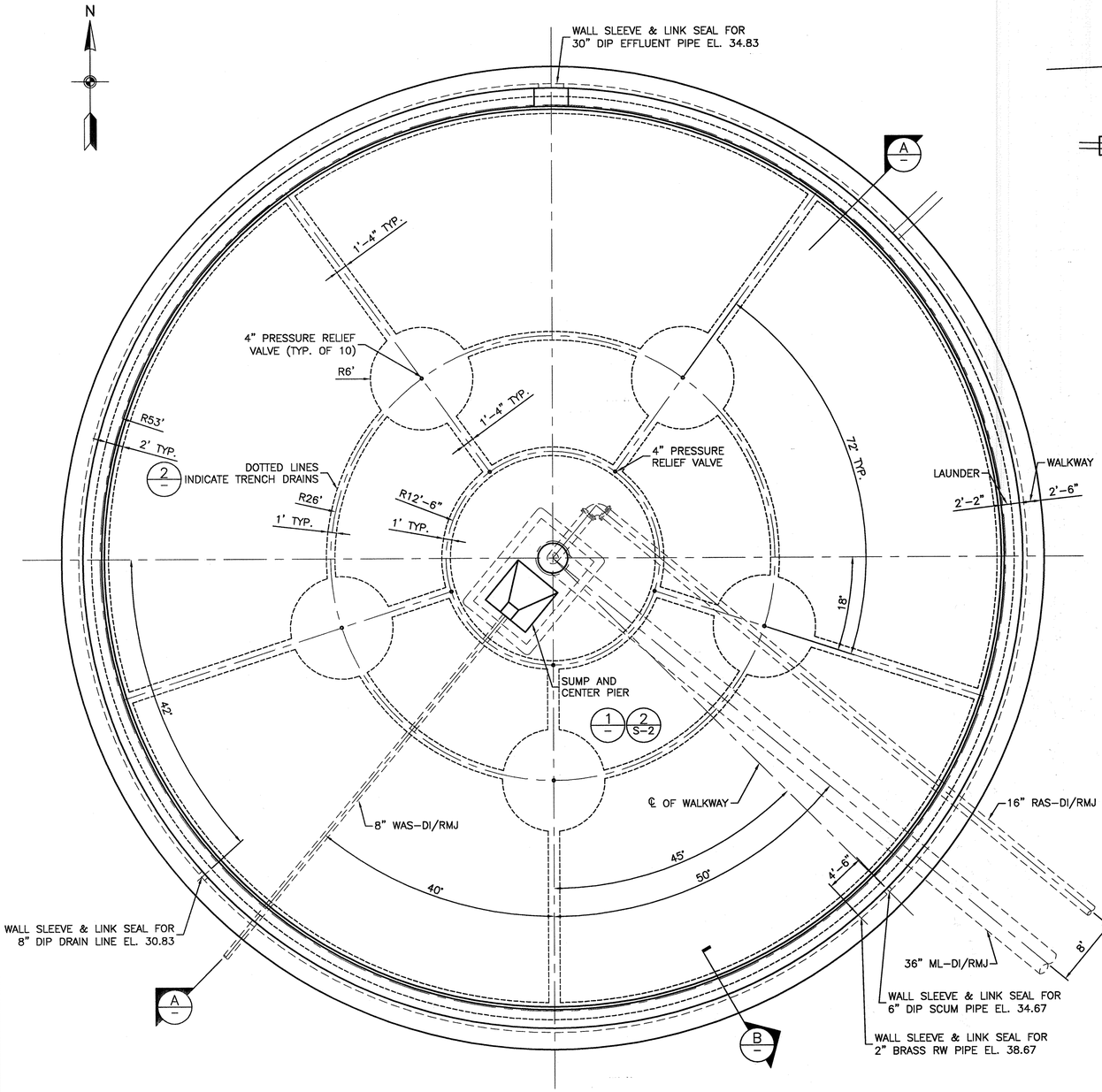
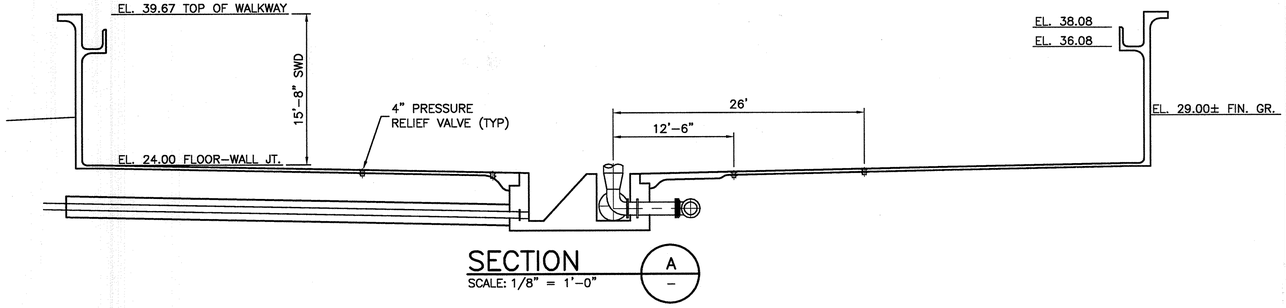
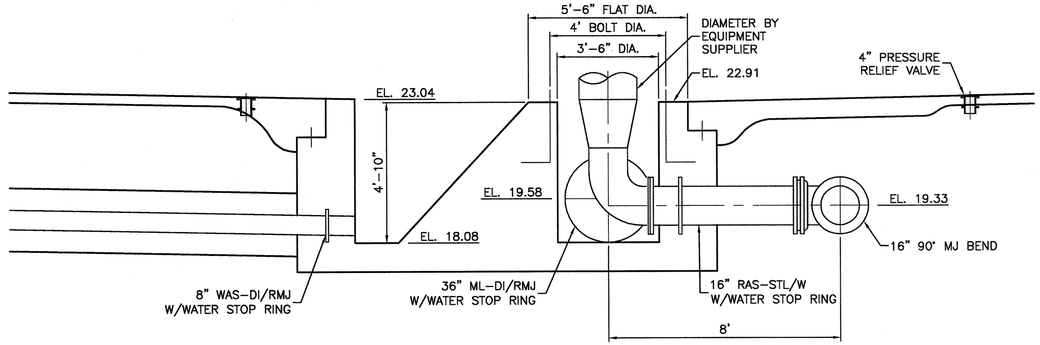
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\MCBORING.DWG



CLARIFIER NO. 3 PLAN
SCALE: 1/8" = 1'-0"

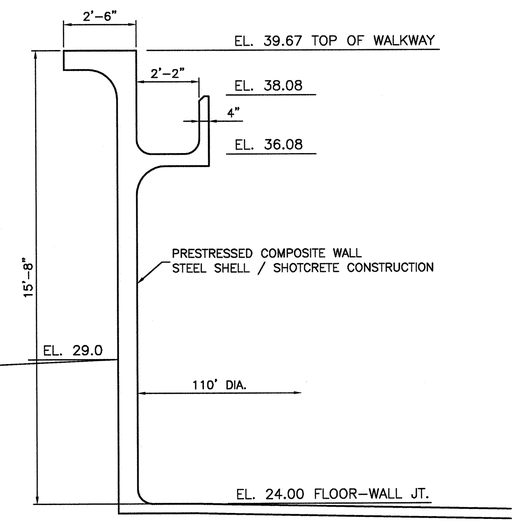


SECTION A
SCALE: 1/8" = 1'-0"

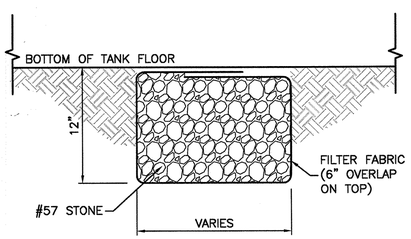


SUMP DETAIL

DETAIL 1
SCALE: 3/8"=1'-0"



TYPICAL WALL SECTION B-B
SCALE: 3/8" = 1'-0"



TRENCH DRAIN

DETAIL 2
SCALE: NTS

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	D. ELLIS	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	CROM TANK.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

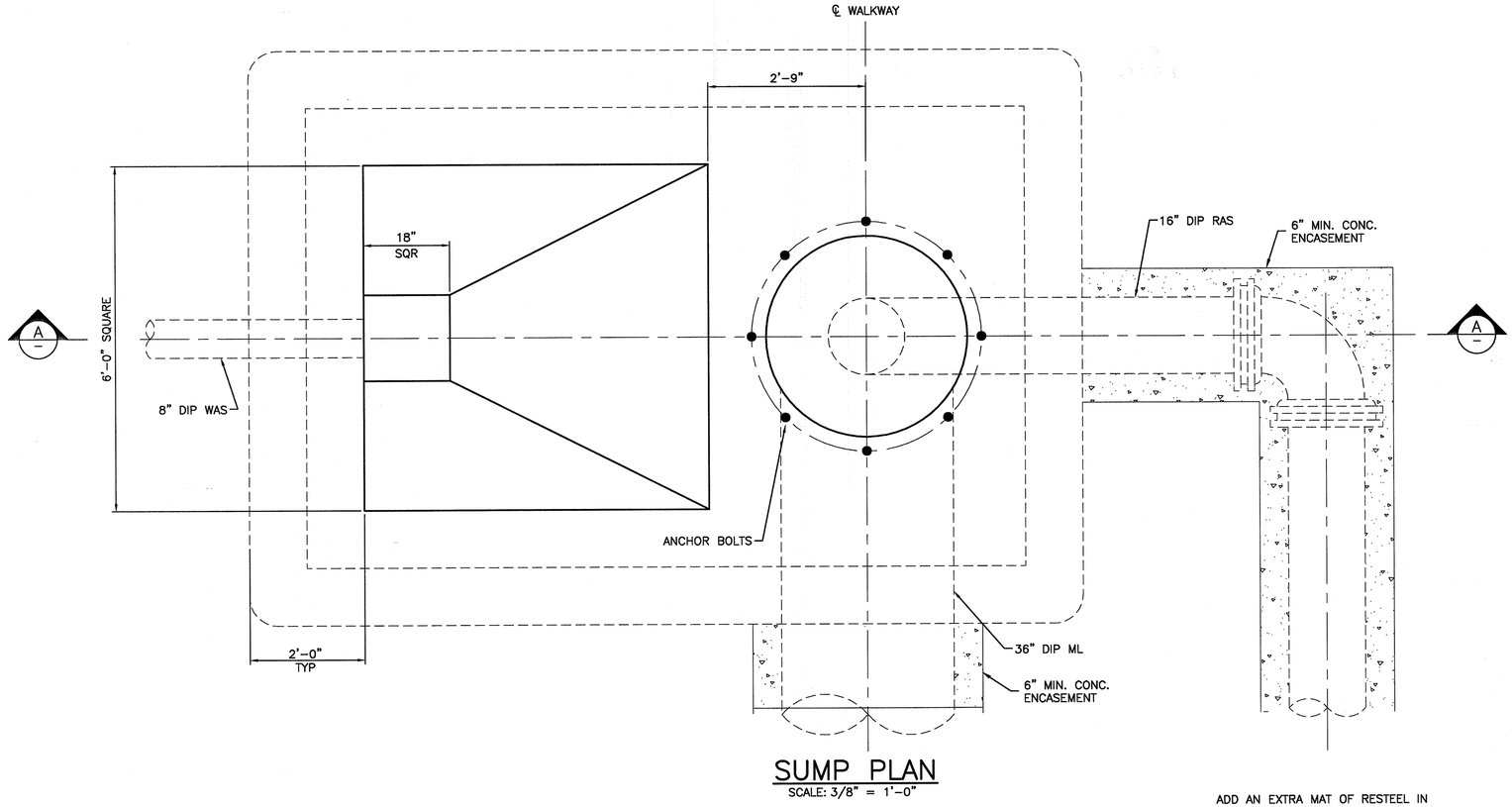
CLARIFIER PLAN AND SECTIONS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: S-1

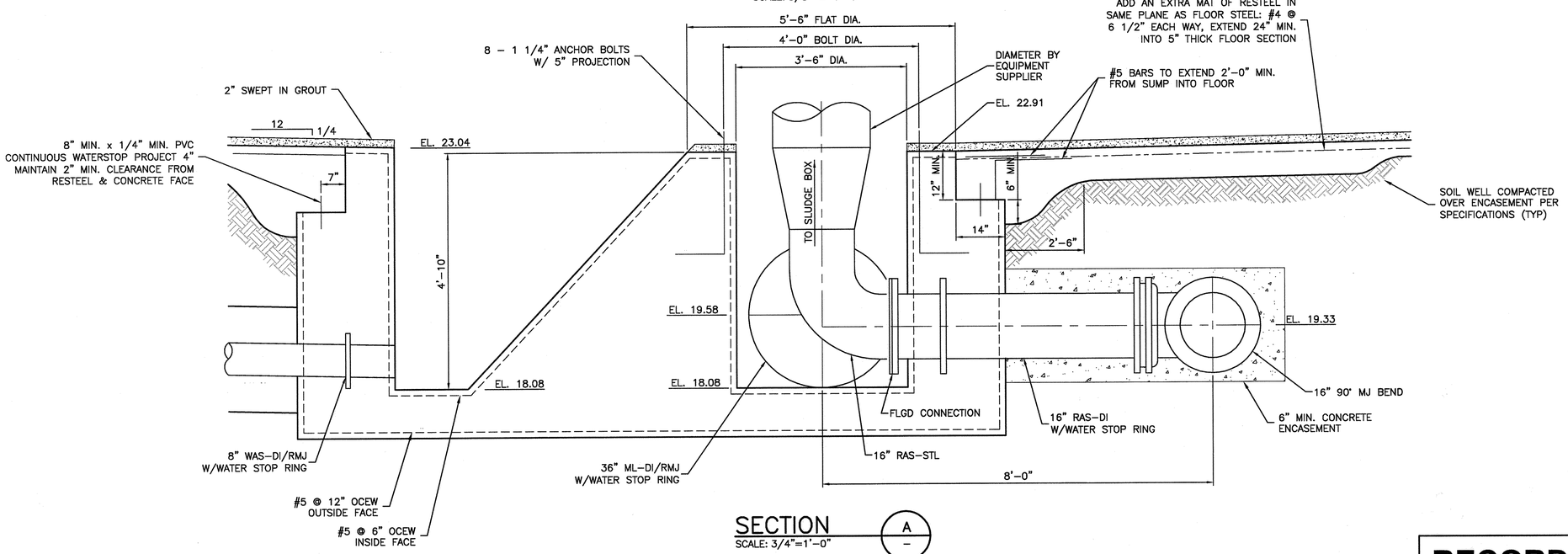
4924.009

PLOTTED ---- ---- PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\CROM TANK.DWG



SUMP PLAN

SCALE: 3/8" = 1'-0"



SECTION A

SCALE: 3/4"=1'-0"

RECORD DRAWING

PLOTTED ---- ---- PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\CROM TANK.DWG

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	D. ELLIS	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	CROM TANK.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT THIRD CLARIFIER

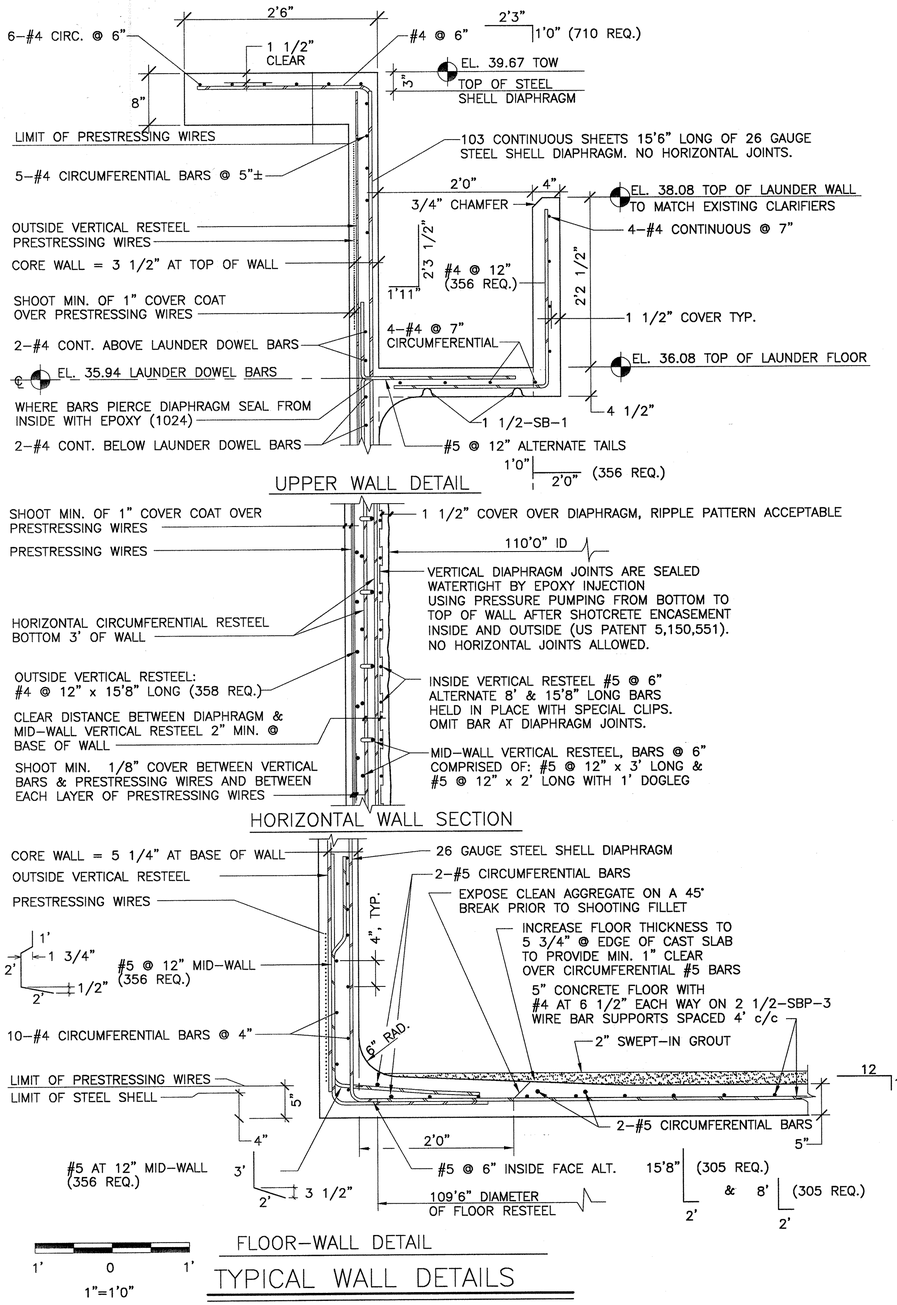
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

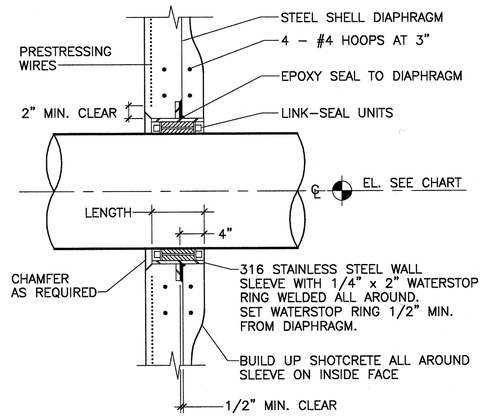
CLARIFIER DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: S-2

4924.010

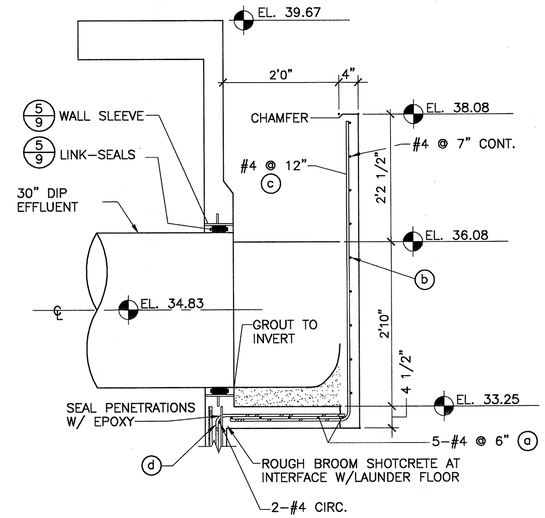




PIPE DESCRIPTION	OD	℄ EL.	LINK–SEAL/#	SLEEVE:		
				ID	WALL	LENGTH
30" DIP EFFLUENT	32.00"	19.58	LS–400–S/29	35.25"	0.375"	8"
6" DIP SCUM LINE	6.90"	34.67	LS–400–S/7	10.02"	0.365"	8"

TYPICAL WALL SLEEVE

NTS



6/– SECTION

RECORD DRAWING

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	D. ELLIS	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	CROM TANK.DWG	

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

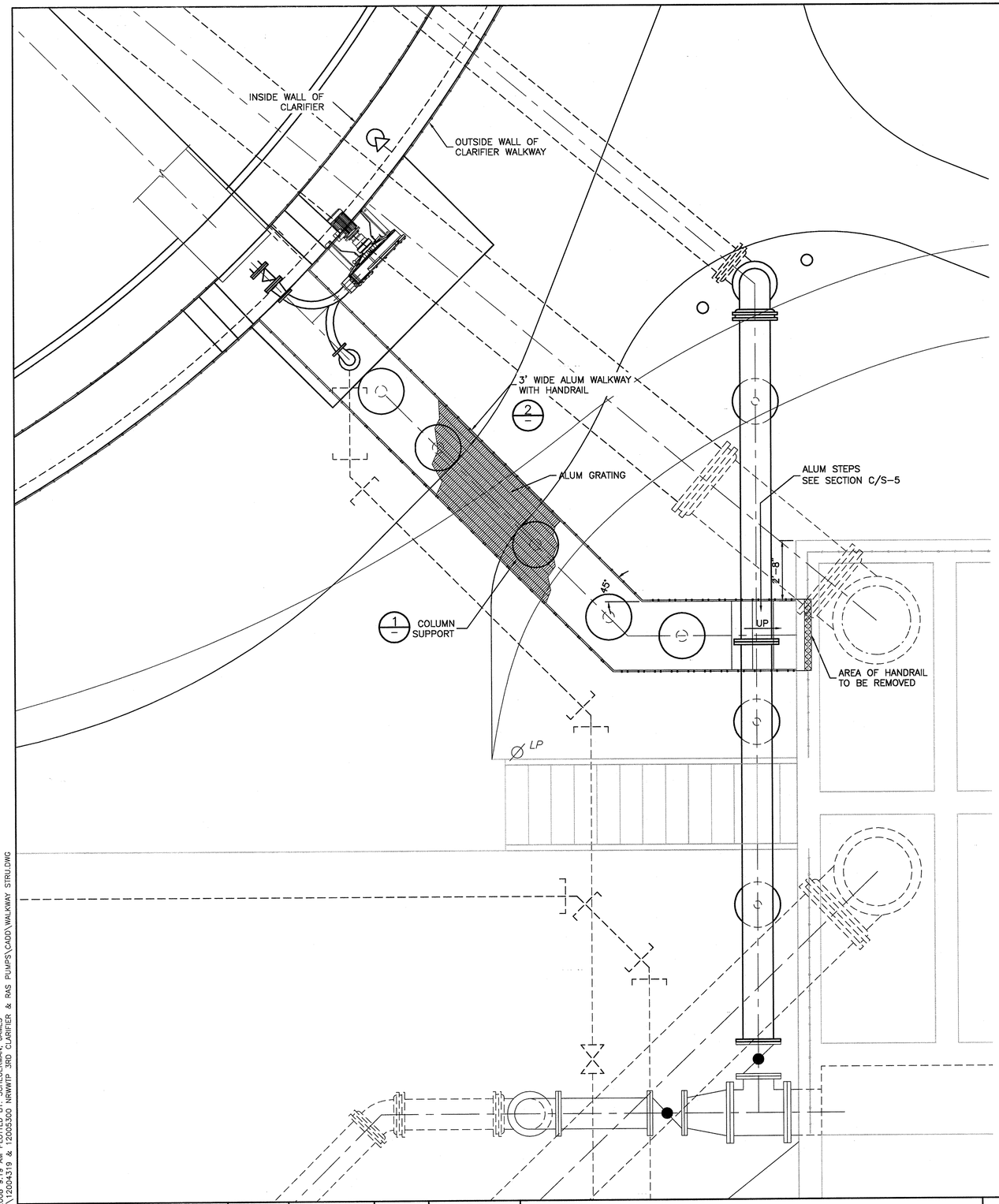
CLARIFIER DETAILS

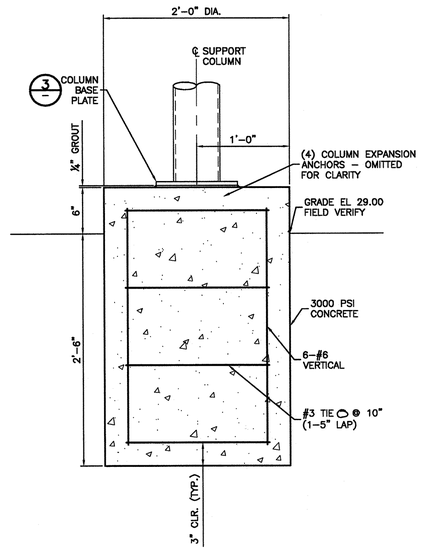
NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: S–3

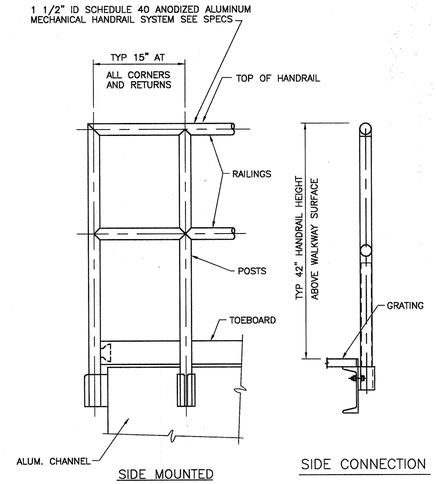
4924.01

PLOTTED ---- ---- PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\CROM TANK.DWG

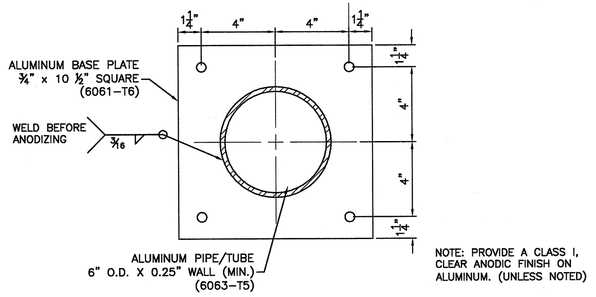




SUPPORT COLUMN
DETAIL 1
SCALE: N.T.S.



HANDRAIL
DETAIL 2
SCALE: N.T.S.



COLUMN BASE PLATE
DETAIL 3
SCALE: N.T.S.

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	T. SONNENBERG	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	WAS PUMP.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

WALKWAY PLAN AND DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

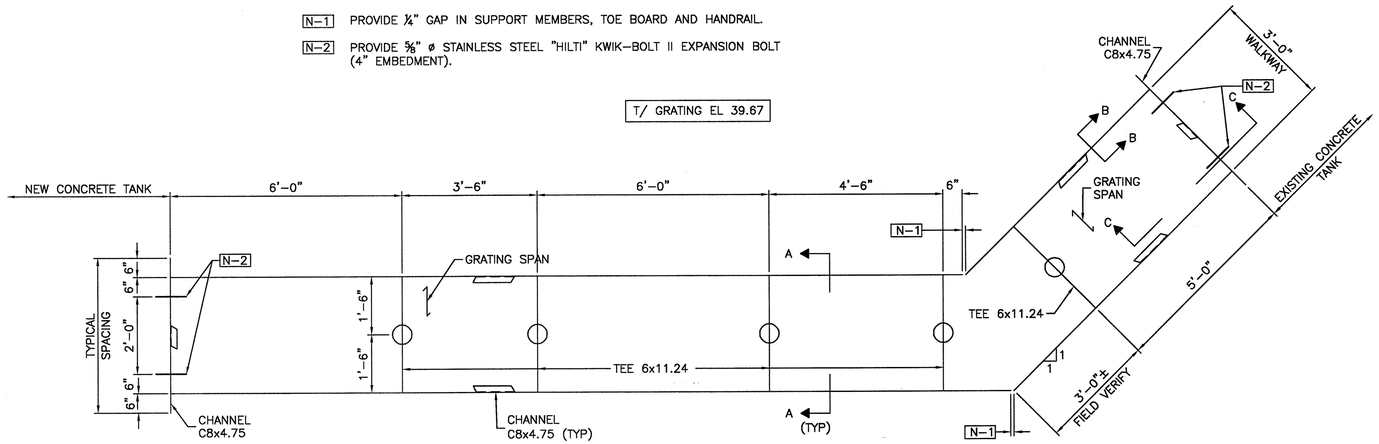
PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: S-4

4924.012

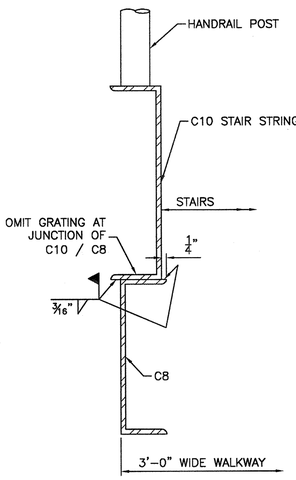
PLOTTED October 9, 2008 9:19 AM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\WALKWAY STRU.DWG

N-1 PROVIDE ¼" GAP IN SUPPORT MEMBERS, TOE BOARD AND HANDRAIL.

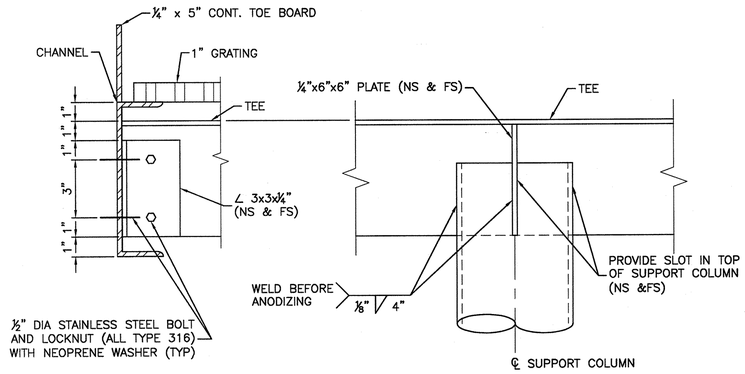
N-2 PROVIDE ⅝" ø STAINLESS STEEL "HILTI" KWIK-BOLT II EXPANSION BOLT (4" EMBEDMENT).



WALKWAY PLAN
SCALE: NTS

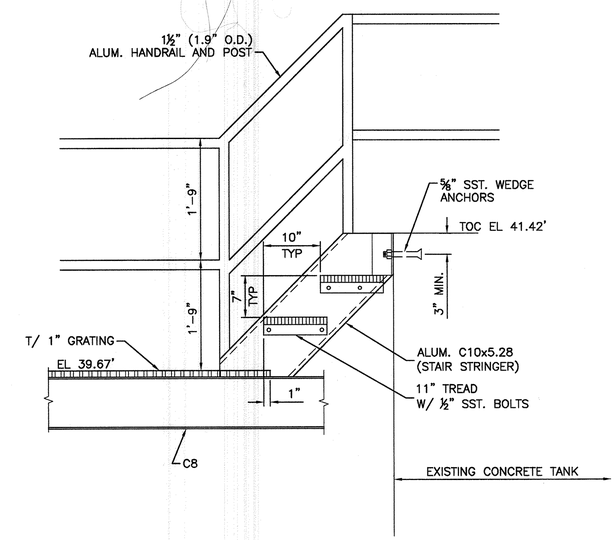


SECTION B
SCALE: NTS



ALL MATERIAL, EXCEPT GRATING AND BOLTS, IS ALUMINUM 6061-T6

SECTION A
SCALE: NTS



NOTE:
USE ⅝"ø "HILTI" KWIK-BOLT II STAINLESS STEEL WEDGE ANCHORS (PROVIDE 2 ¾" MINIMUM EMBEDMENT INTO CONCRETE).

PLATES, STAIR TREADS SUPPORT ANGLES: ALUM ALLOY 6061-T6

STAIR TREADS: ALUMINUM BEARING BAR WITH CORRUGATED ANGLE NOSING. BEARING BARS 1½" x 3/16" (MIN.); ALUM. ALLOY 6063

BOLTS, NUTS AND WASHERS: ½"ø STAINLESS STEEL, TYPE 316.

GRATING: 1" ALUM; 1"x3/16" BEARING BARS AT 1 3/16" O.C. WITH CROSS BARS AT 4" O.C.; ALUM. ALLOY 6063

GASKETS: NEOPRENE. USE BETWEEN ALL STEEL / ALUMINUM CONTACT SURFACES.

SECTION C
SCALE: NTS

CONCRETE WORK NOTES:
1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH:
   ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK"
   ACI 304 "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE"
   ACI 309 "CONSOLIDATION OF CONCRETE"
2. THE PROPOSED CONCRETE MIX WITH CERTIFIED TEST RESULTS, SHALL BE SUBMITTED FOR THE OWNER'S APPROVAL AT LEAST 15 WORKING DAYS PRIOR TO ITS USE. PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. ANY DEFECTS IN WORKMANSHIP SHALL BE REPAIRED OR REPLACED TO THE OWNER'S SATISFACTION AT CONTRACTORS EXPENSE.
3. ALL REINFORCEMENT TO BE DETAILED AND FABRICATED IN ACCORDANCE WITH ACI 315-94.

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	T. SONNENBERG	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	WAS PUMP.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

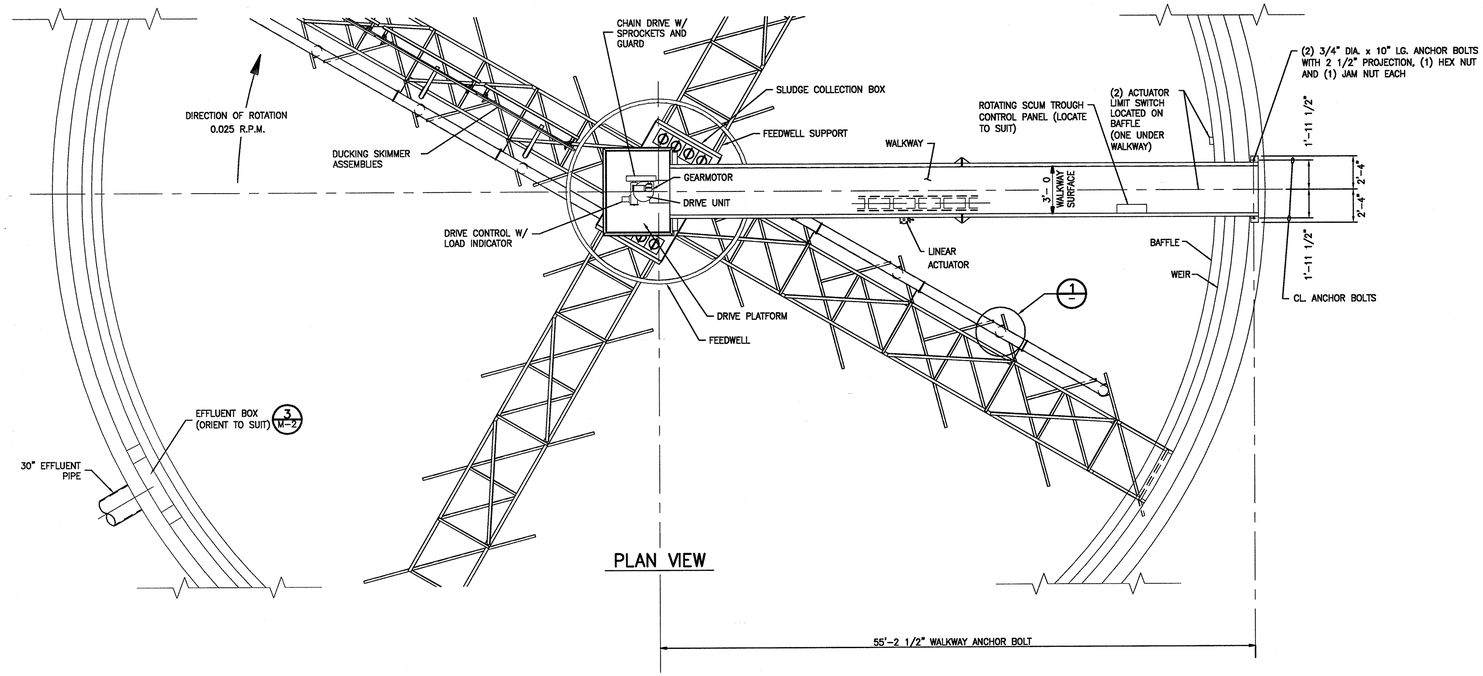
WALKWAY DETAILS

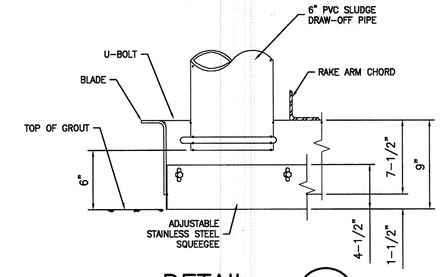
NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: S-5

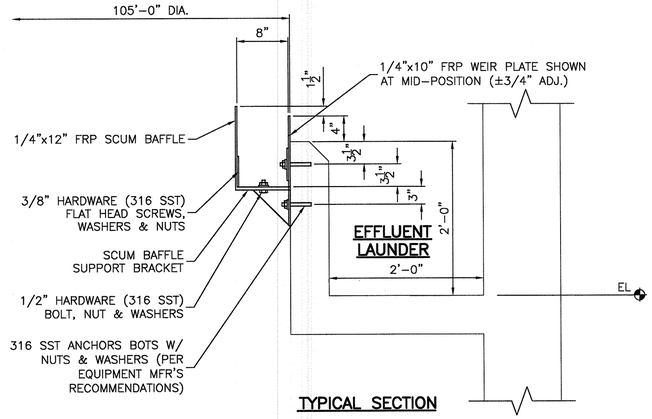
4924.013

PLOTTED October 9, 2008 9:19 AM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\WALKWAY STRU.DWG





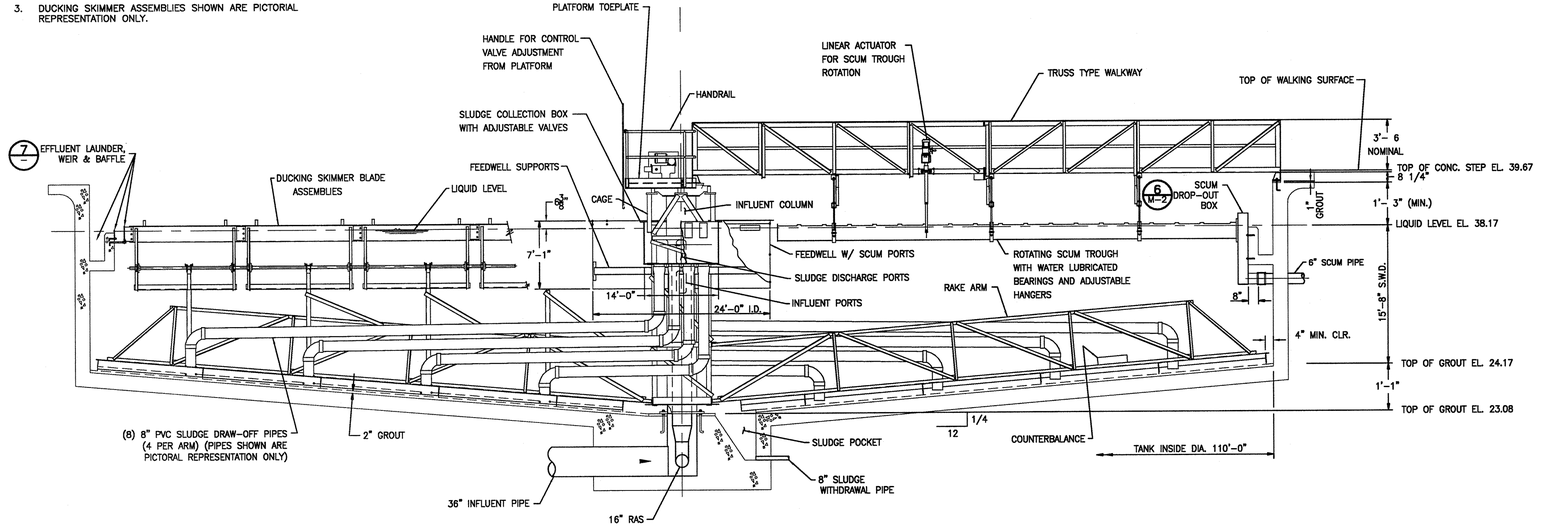
DETAIL 1 / – SCALE: N.T.S.



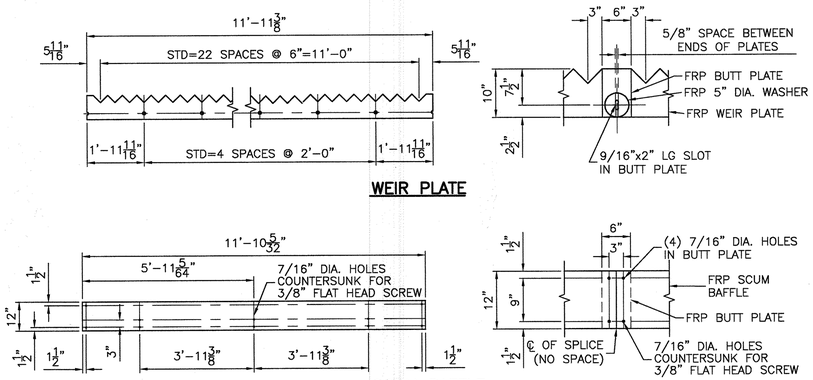
TYPICAL SECTION

NOTES:

1. ALL SUBMERGED FABRICATED STEEL IS 1/4" THICK MINIMUM EXCEPT FEEDWELL MATERIAL WHICH IS 3/16" THICK.
2. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.
3. DUCKING SKIMMER ASSEMBLIES SHOWN ARE PICTORIAL REPRESENTATION ONLY.



ILLUSTRATIVE SECTION



WEIR PLATE

SCUM BAFFLE

LAUNDER, WEIR & BAFFLE DETAIL

DETAIL 7 / – SCALE: N.T.S.

RECORD DRAWING

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	T. SONNENBERG	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	CLARIFIER.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

CLARIFIER PLAN, SECTION AND DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: M-1

4924.014

PLOTTED November 11, 2008 3:04 PM PLOTTED BY: SCHEUERMAN, JAMES
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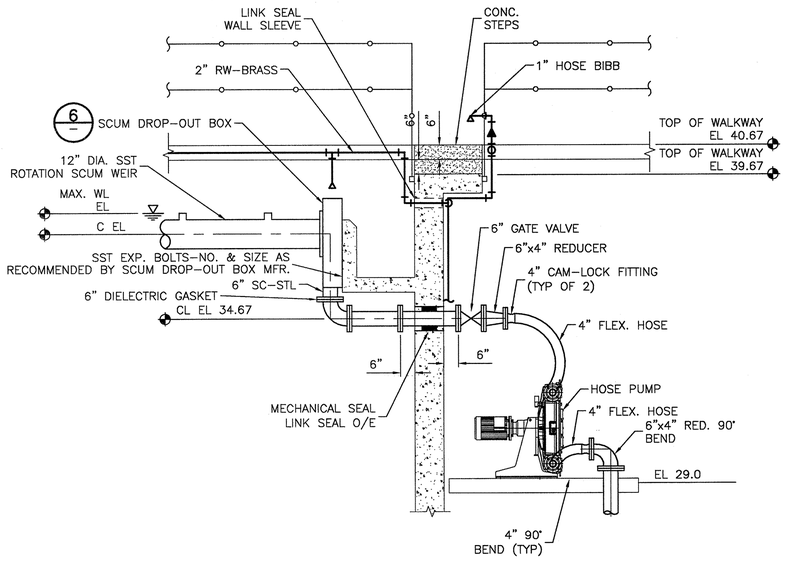
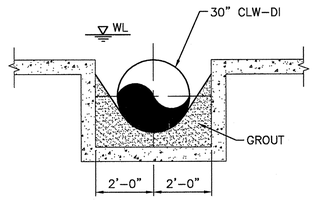


SCUM PUMP

DETAIL 1 / C–1

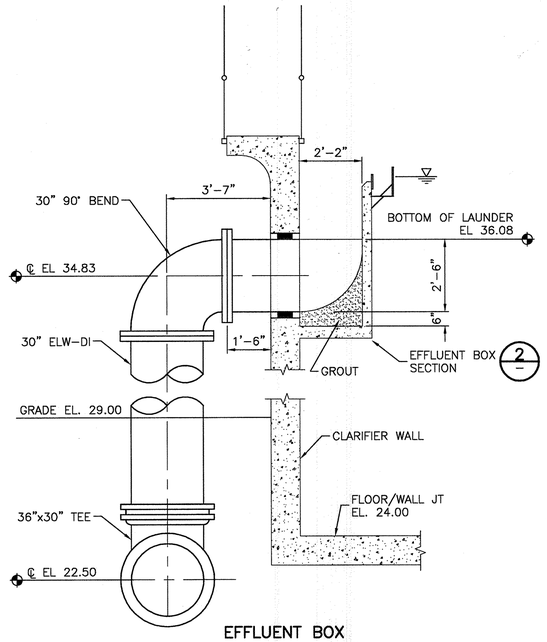
SCALE: 3/8"=1'–0"



EFFLUENT BOX SECTION

DETAIL 2 / –

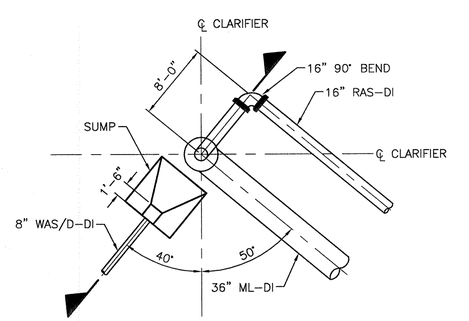
SCALE: 3/8"=1'–0"



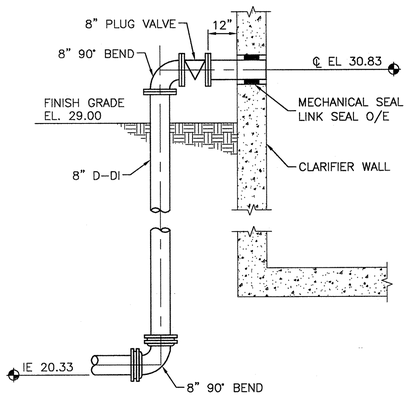
EFFLUENT BOX

DETAIL 3 / M–1

SCALE: 3/8"=1'–0"



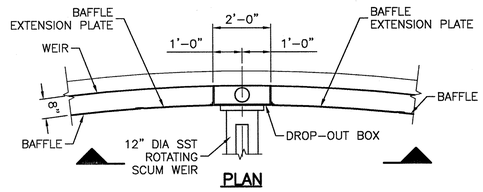
PLAN



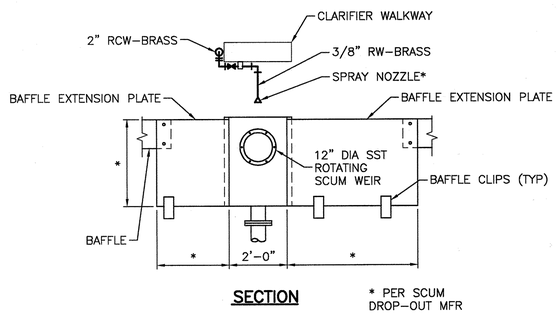
DRAIN ASSEMBLY

DETAIL 5 / C–2

SCALE: 3/8"=1'–0"



PLAN



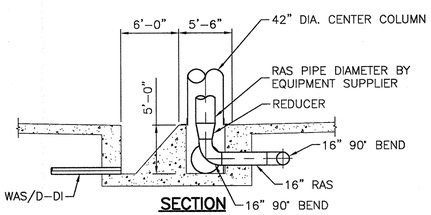
SECTION

* PER SCUM DROP–OUT MFR

SCUM DROP–OUT BOX

DETAIL 6 / M–1

SCALE: 3/8"=1'–0"

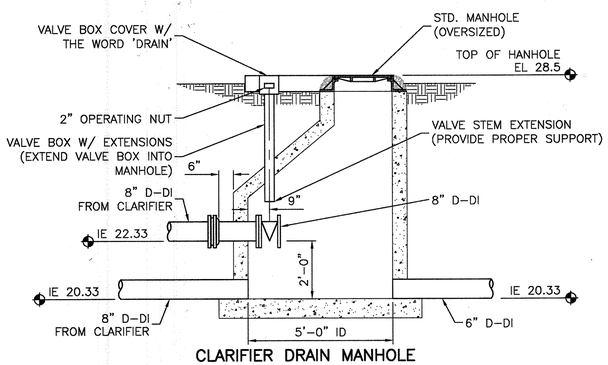


SECTION

CENTER PIER & SUMP DETAIL

DETAIL 4 / –

SCALE: 1/8"=1'–0"



CLARIFIER DRAIN MANHOLE

DETAIL 8 / C–2

SCALE: 3/8"=1'–0"

RECORD DRAWING

PLOTTED ---- ---- PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\CLARIFIER DETAILS.DWG

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	T. SONNENBERG	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	CLARIFIER.DWG	

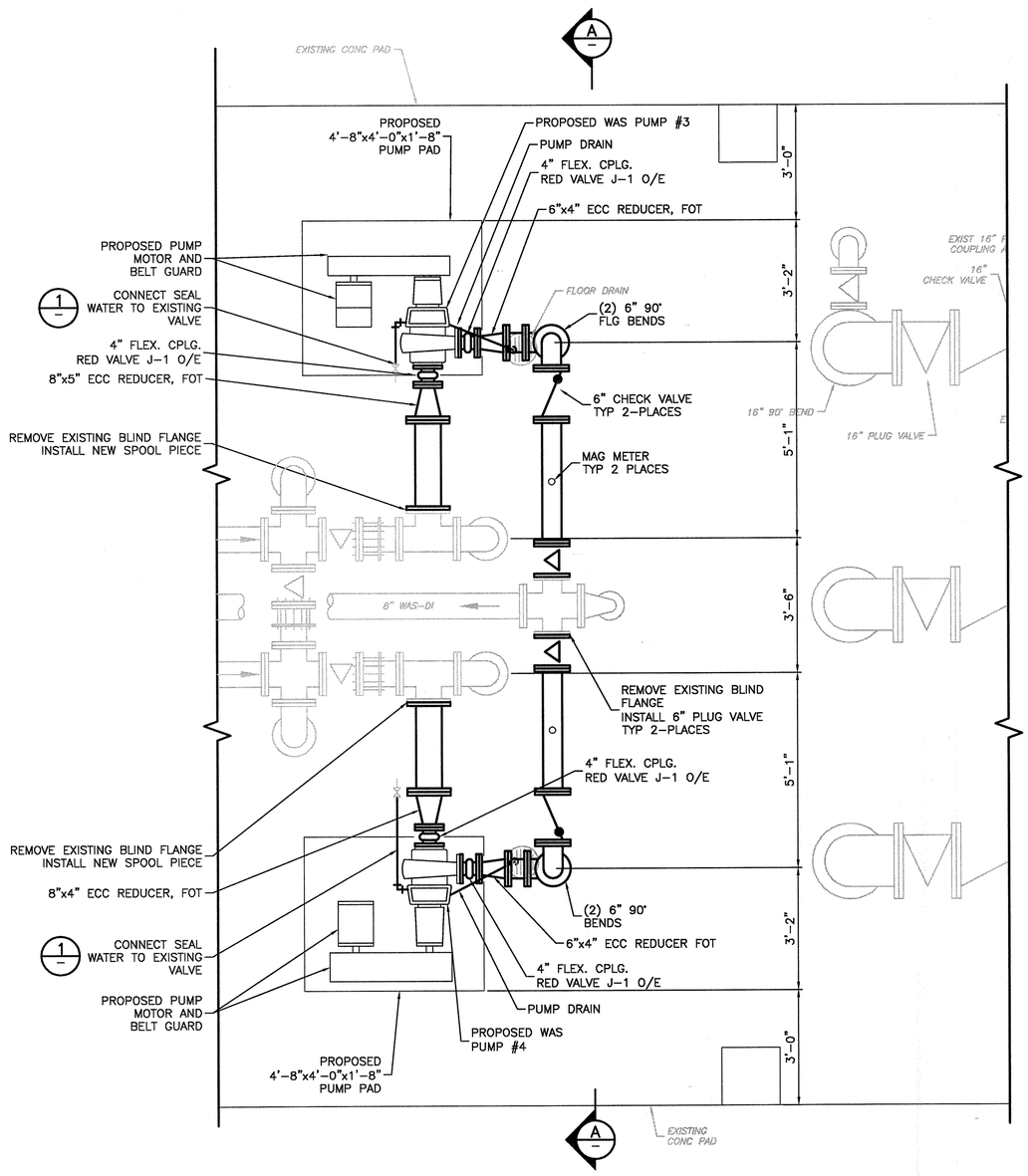
NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

CLARIFIER DETAILS

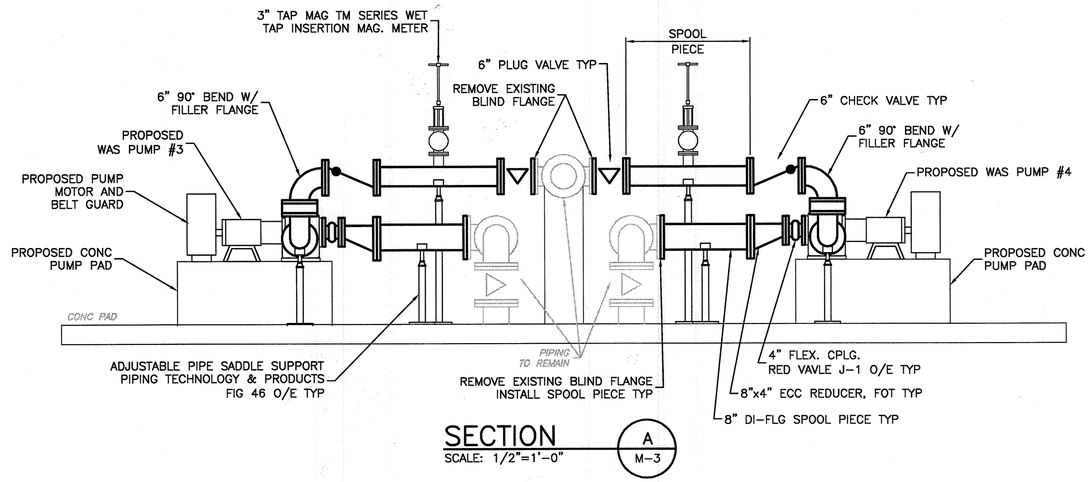
NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: M–2

4924.015

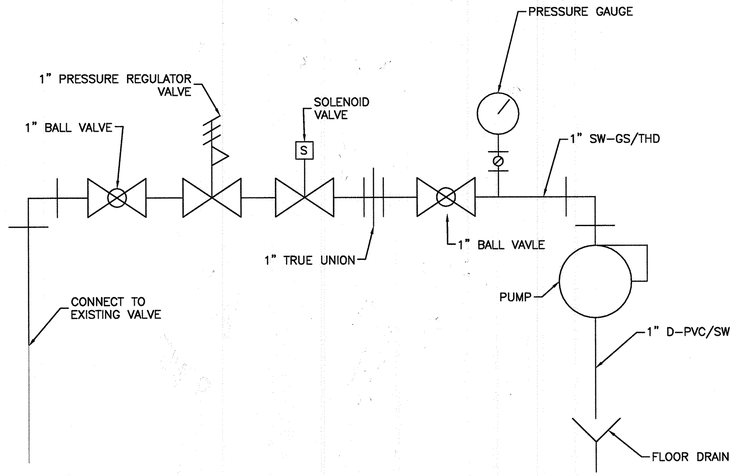


PLAN
SCALE: 1/2"=1'-0"



SECTION
SCALE: 1/2"=1'-0"
A / M-3

NOTE:
1. MAGNETIC METER TO BE MAG TM SERIES WET TAP INSERTION TYPE MAGNETIC FLOW METER.



SEAL WATER SYSTEM
DETAIL
SCALE: N.T.S.
1 / -

NOTES:
1) PIPING UNDER GRADE NOT SHOWN FOR CLARITY.

RECORD DRAWING

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	T. SONNENBERG	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	WAS PUMP.DWG	

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

WAS PUMP PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: M-3

4924.016

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ABBREVIATIONS:

A	AMPS, AMPERE
AC	ALTERNATING CURRENT
AF	AMP FRAME, AMP FUSE
AFF	ABOVE FINISHED FLOOR
AL	ALUMINUM
ALT.	ALTERNATE
AM	AMMETER
AMPS	AMPERES
APPROX.	APPROXIMATE
ASPH.	ASPHALT
AST	ABOVE-GROUND STORAGE TANK
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUX.	AUXILIARY
AUTO.	AUTOMATIC
AVG.	AVERAGE
AWG	AMERICAN WIRE GAUGE
&	AND
@	AT
BATT.	BATTERY
BC	BARE COPPER, BOLT CIRCLE
BET.	BETWEEN
BIS	BITS PER SECOND
BIL	BASIC IMPULSE LEVEL
BLDG	BUILDING
BKR	BREAKER
BNC	BAYONET-NIELL-CONCELMAN
BOT.	BOTTOM
C	CONDUIT, CONDUCTOR
CAB.	CABINET
CAT.	CATALOG
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER, CATCH BASIN
CEM.	CEMENT
CF	CUBIC FOOT
CIP	CAST-IN-PLACE
CKT	CIRCUIT
CLR	CLEAR
CL	CLASS, CENTERLINE, CURRENT LIMITING
CLG	CEILING
COL.	COLUMN
CMH	COMMUNICATIONS MANHOLE
COMM.	COMMUNICATION(S)
CONC.	CONCRETE
COND.	CONDUIT
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUED
CONTR	CONTRACTOR
COORD.	COORDINATE
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CRS	PVC COATED RIGID STEEL CONDUIT
CS	CONTROL STATION
CT	CURRENT TRANSFORMER
CTR	CENTER
CTRL	CONTROL
CU	COPPER
DB	DIRECT BURIED
dB	DECIBELS
DC	DIRECT CURRENT
DED.	DEDICATED
DEG.	DEGREES
DET.	DETAIL
DIA.	DIAMETER
DIV.	DIVISION
DIFF.	DIFFERENTIAL
DIM.	DIMENSIONS
DWG.	DRAWING
EA.	EACH
ELEC.	ELECTRIC, ELECTRICAL
EL.	ELEVATION
EMBT	EMBEDMENT
EMT	ELECTRICAL METALLIC TUBING
ENCL.	ENCLOSURE, ENCLOSED
ENGR	ENGINEER
EPA	EFFECTIVE PROJECTED AREA
EPR	ETHYLENE PROPYLENE RUBBER
EQ.	EQUAL
EQUIP.	EQUIPMENT
EQUIV.	EQUIVALENT

ABBREVIATIONS CONT. . .

EXIST.	EXISTING
EXP.	EXPOSED
EXT.	EXTERIOR
F	FUSE
FA	FIRE ALARM
FAA	FUTURE FORCED AIR
FACP	FIRE ALARM CONTROL PANEL
FACS	FIRE ALARM CONTROL SYSTEM
FC	FOOTCANDLE
FND	FOUNDATION
FDR	FEEDER
FHP	FRACTIONAL HORSEPOWER
FIN.	FINISHED
FIN. FL.	FINISHED FLOOR
FIXT.	FIXTURE
FLEX.	FLEXIBLE
FLR	FLOOR
FLUOR.	FLUORESCENT
FO	FIBER OPTIC
FT	FOOT, FEET
FTG	FOOTING
FU	FUSE
FUT.	FUTURE
FV	FULL VOLTAGE
FVR	FULL VOLTAGE REVERSING
FVNR	FULL VOLTAGE NON-REVERSING
GA	GAUGE
GALV.	GALVANIZED
GEN.	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL CONDUIT
H	HEIGHT
HD	HEAVY DUTY
HDPE	HIGH DENSITY POLYETHYLENE
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HORIZ.	HORIZONTAL
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HR	HOUR
HZ	HERTZ
I.D.	INSIDE DIMMENSION
IE	INVERT ELEVATION
IEEE	INSTITUTE OF ELECTRICAL & ELECTRONIC ENGINEERS
IES	ILLUMINATING ENGINEERING SOCIETY (OF NORTH AMERICA)
IN.	INCH(ES)
INCL.	INCLUDING
INST.	INSTANTANEOUS
INSTR.	INSTRUMENT, INSTRUMENTATION
IMH	INSTRUMENTATION MANHOLE
INV.	INVERT
J, JB	JUNCTION BOX
JCT	JUNCTION
JT	JOINT
K	KIRK KEY INTERLOCK
KA	KILO AMPERES
KAIC	KILO AMPS INTERUPTING CAPACITY
KCMIL	ONE THOUSAND CIRCULAR MILS
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES REACTIVE
KW	KILOWATTS
KWH	KILOWATT HOURS
KWHD	KILOWATT HOURS DEMAND
L	LENGTH
LB	POUND
LBS	POUNDS
LC	LOAD CENTER
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET
LIN.	LINEAR
LOC	LOCATIONS
LS	LIMIT SWITCH
LT	LIGHT
LTG	LIGHTING
LTS	LIGHTS
LV	LOW VOLTAGE
LVMH	LOW VOLTAGE MANHOLE
L-G	LINE-TO-GROUND
L-L	LINE-TO-LINE

ABBREVIATIONS CONT. . .

M	MOTOR
MAX.	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCM	ONE THOUSAND CIRCULAR MILS
MCOV	MAXIMUM CIRCUIT OPERATING VOLTAGE
MECH.	MECHANICAL
MEMB.	MEMBRANE
MFR	MANUFACTURER
MH	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MOV	METAL OXIDE VARISTOR
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTR	MOTOR
MV	MEDIUM VOLTAGE
MVA	MEGAVOLT AMPERES
N	NEUTRAL
NC	NORMALLY CLOSED
NE	NORTH EAST
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NEUT.	NEUTRAL
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NPT	NOMINAL PIPE THREAD
NTS	NOT TO SCALE
O.C.	ON CENTER(S)
O.D.	OUTSIDE DIAMETER
OH	OVERHEAD
OL	OVERLOADS
OPP.	OPPOSITE
OPER.	OPERATOR
OWS	OIL WATER SEPERATOR
P	POLE
PB	PULL BOX, PUSH BUTTON
PE	PHOTOELECTRIC DEVICE
PF	POWER FACTOR
PH OR ø	PHASE
PLC	PROGRAMABLE LOGIC CONTROLLER
PLCS	PLACES
PM	POWER METER
PMH	PRIMARY MANHOLE
PNL	PANEL
PNLBD	PANELBOARD
PR	PAIR
PRI.	PRIMARY
PROJ.	PROJECT
PS	PRESSURE SENSOR, POWER SUPPLY
PSI	POUNDS PER SQUARE INCH
PT	POTENTIAL TRANSFORMER, PRESSURE TRANSMITTER
PVC	POLYVINYL CHLORIDE
PWR	POWER
%	PERCENT
QTY	QUANTITY
RECP.	RECEPTACLE
REF.	REFERENCE
REINF.	REINFORCEMENT
REQD	REQUIRED
REV.	REVISION, REVISED
RF	RATING FACTOR
RMC	RIGID METAL CONDUIT (GALVANIZED)
RMS	ROOT-MEAN-SQUARE
RVAT	REDUCED VOLTAGE AUTO TRANSFORMER
RVNR	REDUCED VOLTAGE NON-REVERSING
R/W	RIGHT-OF-WAY
SA	SURGE ARRESTER
SCH.	SCHEDULE
SEC.	SECONDARY, SECOND(S)
SECT.	SECTION
SF	SQUARE FOOT, SQUARE FEET
SHLD	SHIELDED
SHT	SHEET
SI	SQUARE INCH, SQUARE INCHES
SIM.	SIMILAR
SMH	SECONDARY MANHOLE
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION(S)
SQ.	SQUARE
SS	STAINLESS STEEL
ST.	STREET

ABBREVIATIONS CONT. . .

STA.	STATION
STD	STANDARD
STL	STEEL
STR	STRANDED
SV	SOLENOID VALVE
SW.	SWITCH
SWBD	SWITCHBOARD
SYM.	SYMMETRICAL
SYNC.	SYNCHRONOUS
SY	SQUARE YARD, SQUARE YARDS
SYS.	SYSTEM
TB	TERMINAL BLOCK
TBD	TO BE DETERMINED
TD	TIME DELAY
TELE.	TELEPHONE
TEMP.	TEMPORARY, TEMPERATURE
TERM.	TERMINAL
THHN	HEAT RESISTANT THERMOPLASTIC INSULATION
THK	THICK
THWN	HEAT AND MOISTURE RESISTANT THERMOPLASTIC INSULATION
THRU	THROUGH
T.O.S.	TOP OF STEEL, TOP OF SLAB
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TWSH	TWISTED SHEILDED
TYP.	TYPICAL
UBC	UNIFORM BUILDING CODE
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
UVIR	ULTRAVIOLET INFRARED
V	VOLTS, VOLTAGE
VAR	VOLT AMPERES REACTIVE
VERT.	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLT METER
VOL.	VOLUME
VT	VOLTAGE TRANSFORMER
W	WATT, WIDE, WIDTH, WIRE
WF	WASTE FUEL
WH	WATTHOUR
WM	WATTHOUR METER
W/O	WITHOUT
WP	WEATHERPROOF
WT	WEIGHT
WWF	WELDED WIRE FABRIC
W/	WITH
X	REACTANCE
XFER	TRANSFER
XFMR	TRANSFORMER
XHHW	HEAT AND MOISTURE RESISTANT CROSS LINKED SYNTHETIC POLYMER
XP	EXPLOSIONPROOF
Z	IMPEDANCE

LEGEND:

- (#) KEYED NOTE TAG.
- (#) FEEDER LEGEND TAG.
- ——— CONDUIT INSTALLED EXPOSED.
- – – – – CONDUIT INSTALLED UNDERGROUND.
- • CONNECTION POINT.
- GROUND.
- TRANSFORMER.
- CIRCUIT BREAKER.
- SWITCH.
- FUSE.
- (#) MOTORIZED EQUIPMENT. "#" INSIDE SYMBOL INDICATES MOTOR HP.
- NF — DISCONNECT. NF: NON-FUSED F: FUSED CB: ENCLOSED CIRCUIT BREAKER.
- 20A DUPLEX RECEPTACLE 48" AFF, UON.
- WP,GFI — 100W, 208V HPS POLE MOUNTED ALUMINUM FIXTURE WITH FLAT GLASS IMPACT RESISTANT LENS, AND ALUMINUM SUPPORT ARM. WEATHERPROOF DARK BRONZE FINISHING, KIM LIGHTING EKG401 SERIES OR APPROVED EQUAL. FIXTURE MOUNTED ON 12' SEAMLESS SQUARE ALUMINUM POLE WITH HANDHOLE GASKETED COVER, GROUND LUG, AND A 20A, 125V GFI DUPLEX RECEPTACLE WITH A GASKETED SELF-CLOSING COVER AND LOCKING BRACKET MOUNTED OPPOSITE TO THE HAND HOLE. POLE SHALL BE KIM LIGHTING PSA SERIES OR APPROVED EQUAL.
- CIRCUIT HOME RUN, 2#12 & 1#12 GROUND IN 1/2" C, UON.
- LA-1,3,5 — INDICATES CIRCUIT NUMBER(S) / INDICATES PANELBOARD
- VFD — VARIABLE FREQUENCY DRIVE (VFD), 15HP, 460VAC, VARIABLE TORQUE, NEMA 12 ENCLOSURE. SQUARE D CLASS 8839 ECONOFLEX DRIVE WITH EXTERNAL HEAT SINK AND FANS, BYPASS PACKAGE WITH HAND-OFF-AUTO SELECTOR SWITCH AND SPEED POTENTIOMETER, FAULT AND RUN CONTACTS, FIRE FREEZE STAT INTERLOCK, ANALOG CARD 4-20mA, CATALOG # 883958EJA4VYA07H09.
- T / M — AFTCO 4" DELTA KIT, UNI-MAG FLOW METER, MICRO PULSE TRANSMITTER 120VAC AND EDCO SURGE PROTECTOR 120VAC/4-20mA, NEMA 4X. FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR. COORDINATE POWER AND CONTROL CONDUITS AND WIRING WITH MECHANICAL.
- (SV) — LIMIT TORQUE ACTUATED SOLENOID VALVE. FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR. COORDINATE POWER AND CONTROL CONDUITS AND WIRING WITH MECHANICAL.

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
Jose A. Gonzalez, P.E. 58896

	NAME	DATE
DESIGNED BY:	J. GONZALEZ	07/27/05
CHECKED BY:	F. FRIAR	07/27/05
DRAWN BY:	J. GONZALEZ	07/27/05
SCALE:	AS SHOWN	
FILE NAME:		

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

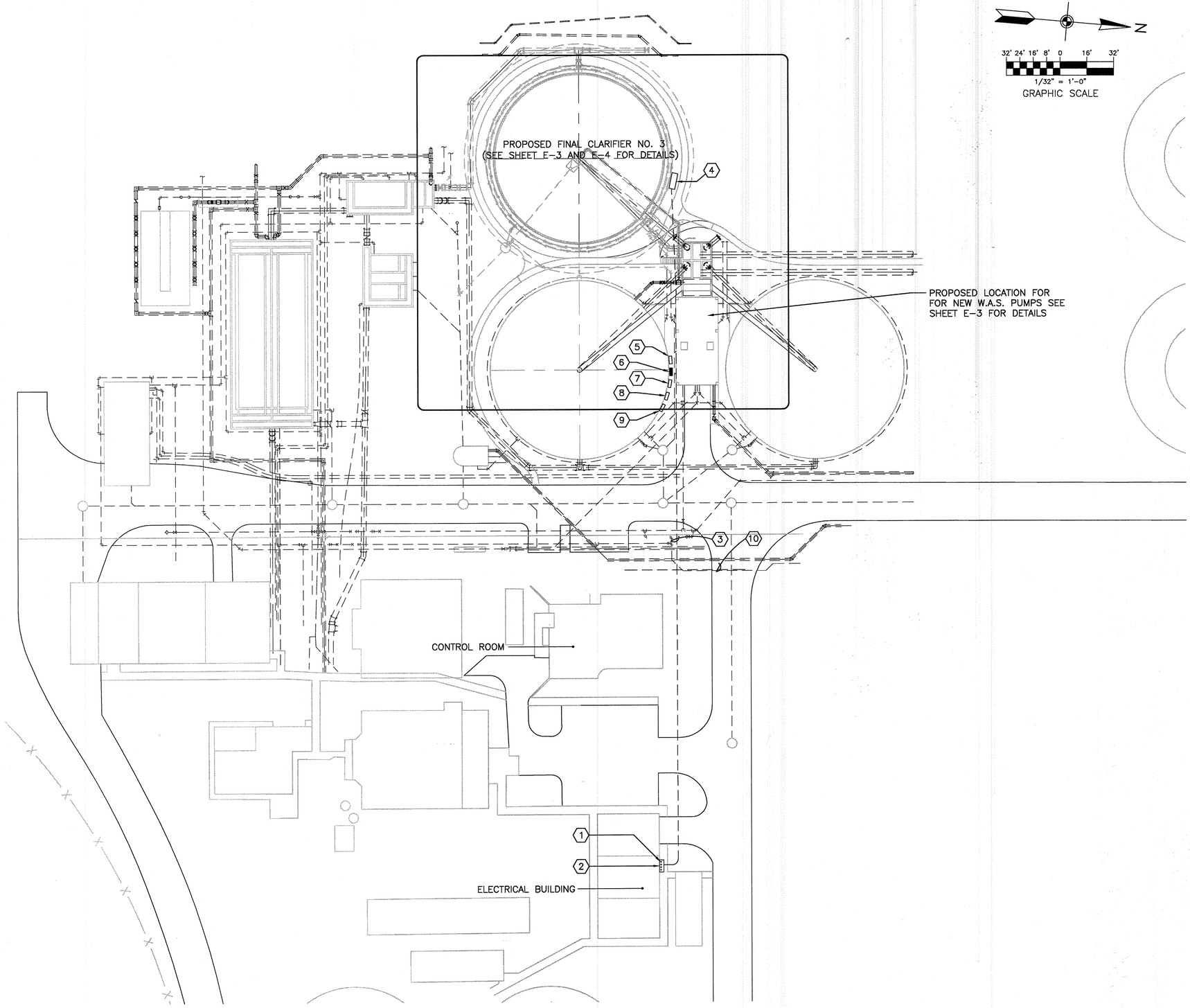
ELECTRICAL LEGEND

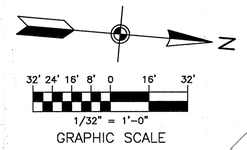
NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: E-1

4924.017

PLOTTED October 9, 2008 9:21 AM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\E-1 ELECTRICAL LEGEND.DWG





GENERAL NOTES:

1. REFER TO MECHANICAL DRAWINGS FOR SPECIFICATIONS AND WIRING ASSOCIATED WITH CONTROL AND INSTRUMENTATION SYSTEM. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING THE RACEWAYS FOR CONTROL SYSTEM, CONNECTION OF ELECTRICAL POWER TO SUCH EQUIPMENT, AND 120V CIRCUITS TO CONTROL DEVICES, INCLUDING MOTOR OPERATED VALVES, PLC CABINET AND CONTROL PANELS. PLC CABINET, CONTROL PANELS AND DEVICES ARE PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR AND/OR EQUIPMENT SUPPLIER AND ARE INDICATED AT APPROXIMATE LOCATIONS. CONTROL DEVICES LOCATED IN CONTROL PANELS MAY ACTUALLY BE INTEGRAL TO OTHER MECHANICAL EQUIPMENT AT RACKS.
2. UTILIZE PVC SCHEDULE 80 CONDUIT AND FITTINGS FOR ALL UNDERGROUND INSTALLATIONS AND ALUMINUM CONDUIT AND FITTINGS FOR ALL EXTERIOR ABOVE GROUND INSTALLATIONS.
3. UTILIZE STAINLESS STEEL 316 FOR ALL EXTERIOR ENCLOSURES, JUNCTION BOXES, SUPPORTS AND HARDWARE.
4. THE LOCATION OF EXISTING FACILITIES, UTILITIES, ELECTRICAL AND MECHANICAL EQUIPMENT, AS SHOWN ON THESE PLANS, ARE APPROXIMATE AND ARE SHOWN AS NOTICE TO THE CONTRACTOR THAT UNDERGROUND UTILITIES EXIST AND TO SHOW THE APPROXIMATE LOCATIONS OF THE ELECTRICAL AND MECHANICAL EQUIPMENT THAT WILL BE AFFECTED. ALL MEASUREMENTS AND LOCATIONS OF EXISTING AND NEW EQUIPMENT MUST BE FIELD VERIFIED AND COORDINATED WITH THE OWNERS REPRESENTATIVE.
5. MANDREL TEST AND CLEAN ALL EXISTING CONDUITS TO BE WIRED INCLUDING BUT NOT LIMITED TO THE 1" PVC CONDUITS FROM THE ELECTRICAL BUILDING TO WAS PUMP #3 AND #4 PRIOR TO INSTALLING THE DUCT BANK SHOWN ON THIS SHEET, KEY NOTE #3. COORDINATE WITH THE OWNER OR HIS REPRESENTATIVE THE ADDITION OF CONDUITS TO THE DUCT BANK IF REQUIRED AND MATCH ALL REQUIREMENTS, SPACING AND/OR CLEAREANCES SHOWN ON THE DUCT BANK CROSS SECTION DETAIL ON SHEET E-6.
6. VERIFY CIRCUIT SPACES AND SPARE BREAKERS TO BE USED FOR THE FINAL THIRD CLARIFIER CONSTRUCTION, AS SHOWN ON THESE ELECTRICAL DRAWINGS. COORDINATE WITH THE OWNER OR HIS REPRESENTATIVE FOR FINAL CIRCUIT DESIGNATIONS IN EXISTING PANELS AND MCCS.

KEYED NOTES FOR E-2:

(1) CONDUITS INSTALLED SURFACE MOUNTED ON WALL SUPPORTED ON UNISTRUT CHANNELS, PENETRATING THE EXTERIOR WALL WITH APPROVED METHODS UTILIZING FIRE PROOF SLEEVES. INSTALL CONDUITS AS HIGH AS POSSIBLE IN THE ELECTRICAL BUILDING AT THE APPROXIMATE LOCATION SHOWN. COORDINATE EXACT LOCATION WITH OWNER OR HIS REPRESENTATIVE. CAP END OF SPARE CONDUITS AND IDENTIFY THE LOCATION OF THE OTHER END OF SPARE CONDUITS. SEE SHEET E-5 FOR DETAILS.

(2) JUNCTION BOX 30"X 30" X6" DEEP, WITH A PADLOCKABLE CONTINUOUS HINGED COVER, SURFACE MOUNTED 5 FEET ABOVE FINISHED GRADE, NEMA 4X, COORDINATE EXACT LOCATION WITH OWNER OR HIS REPRESENTATIVE.

(3) ELECTRICAL DUCT BANK. CONTRACTOR SHALL TRACE, IDENTIFY, AND LOCATE ALL UNDERGROUND UTILITIES BEFORE EXCAVATING AND DIG BY HAND TO AVOID DAMAGING ANY EXISTING UNDERGROUND DUCT BANKS, UTILITIES, ETC. COORDINATE WITH OWNER OR HIS REPRESENTATIVE. SEE TYPICAL DUCT BANK CROSS SECTION DETAIL ON SHEET E-6.

(4) PROPOSED RACK HOLDING ELECTRICAL EQUIPMENT AS SHOWN ON SHEET E-6 RACK DETAIL. COORDINATE EXACT LOCATION WITH THE OWNER OR HIS REPRESENTATIVE.

(5) EXISTING PANEL PFC.

(6) EXISTING PANEL LFC.

(7) EXISTING TERMINAL CABINET P/I-3.

(8) EXISTING INTERCOME TERMINAL CABINET I3.

(9) EXISTING CONTROL TERMINAL CABINET C3.

(10) APPROXIMATE LOCATION OF EXISTING UNDERGROUND FIBER OPTIC LINES.

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
Jose A. Gonzalez, P.E. 58896

	NAME	DATE
DESIGNED BY:	J. GONZALEZ	07/27/05
CHECKED BY:	F. FRIAR	07/27/05
DRAWN BY:	J. GONZALEZ	07/27/05
SCALE:	AS SHOWN	
FILE NAME:		

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL SITE PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: E-2

4924.018

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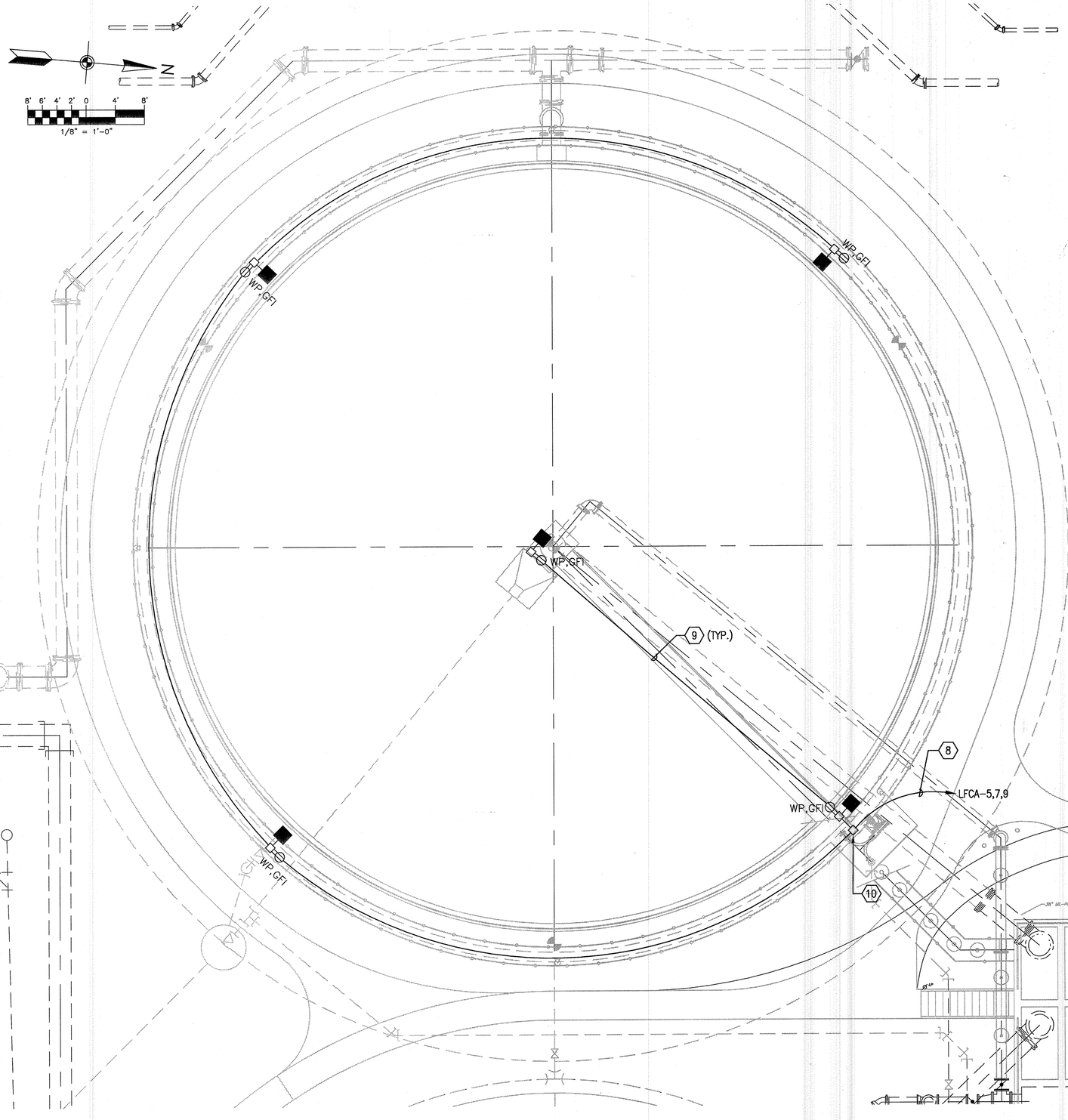


GENERAL NOTE:

1. REFER TO MECHANICAL DRAWINGS FOR SPECIFICATIONS AND WIRING ASSOCIATED WITH CONTROL AND INSTRUMENTATION SYSTEM. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING THE RACEWAYS FOR CONTROL SYSTEM, CONNECTION OF ELECTRICAL POWER TO SUCH EQUIPMENT, AND 120V CIRCUITS TO CONTROL DEVICES, INCLUDING MOTOR OPERATED VALVES, PLC CABINET AND CONTROL PANELS. PLC CABINET, CONTROL PANELS AND DEVICES ARE PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR AND/OR EQUIPMENT SUPPLIER, AND ARE INDICATED AT APPROXIMATE LOCATIONS. CONTROL DEVICES LOCATED IN CONTROL PANELS MAY ACTUALLY BE INTEGRAL TO OTHER MECHANICAL EQUIPMENT AT RACKS.

KEYED NOTES FOR E-3:

(1) EXISTING 1" CONDUIT TO MCC-1, WIRE WITH 3#10 & 6#14 CONDUCTORS, OR AS SHOWN IN MECHANICAL DRAWINGS AND SPECIFICATIONS.

(2) EXISTING 1" CONDUIT TO MCC-2, WIRE WITH 3#10 & 6#14 CONDUCTORS, OR AS SHOWN IN MECHANICAL DRAWINGS AND SPECIFICATIONS.

(3) FURNISH AND INSTALL 12" X 12" X 4" DEEP JUNCTION BOX, NEMA 4X, ON A STAINLESS STEEL UNISTRUT RACK. COORDINATE EXACT LOCATION WITH OWNER OR HIS REPRESENTATIVE.

(4) FURNISH AND INSTALL VFD'S FOR WAS PUMPS # 3 AND # 4. INSTALL PER MANUFACTURERS INSTRUCTIONS, SEE ALSO SPECIFICATIONS AND MECHANICAL DRAWINGS FOR FURTHER DETAILS. COORDINATE EXACT LOCATION WITH OWNERS REPRESENTATIVE. TRACE AND IDENTIFY EXISTING WAS PUMPS POWER AND CONTROL CONNECTIONS AS REQUIRED, AND MATCH CONFIGURATION OF EXISTING WAS PUMP FOR NEW WAS PUMPS #3 AND #4, FOR A COMPLETE OPERATIONAL SYSTEM AS REQUIRED BY THE OWNER.

(5) FURNISH AND INSTALL 1" CONDUIT FROM LIMIT TORQUE ACTUATED VALVE TO WAS VALVE CONTROL PANEL AND WIRE AS SPECIFIED IN THE MECHANICAL DRAWINGS AND SPECIFICATIONS OR PER MANUFACTURER'S INSTRUCTIONS.

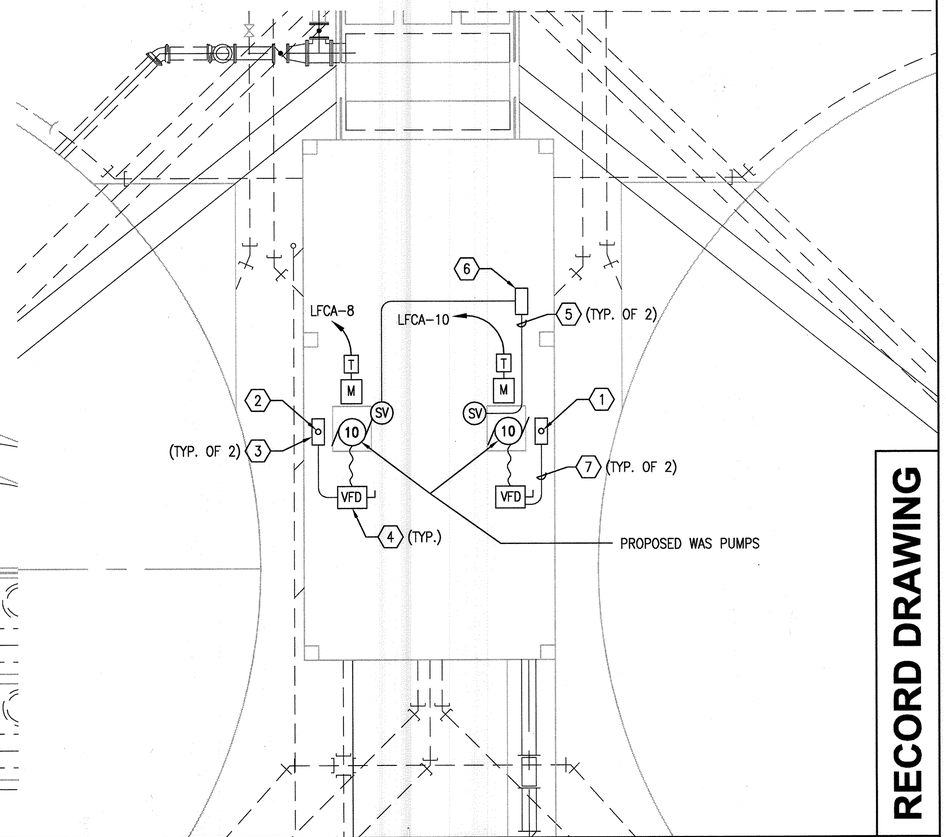
(6) EXISTING WAS VALVE CONTROL PANEL.

(7) FURNISH AND INSTALL 1" CONDUIT FROM THE VFD TO PULL BOX, SEE KEY NOTE # 4.

(8) 1" CONDUIT CONTAINING 2#10 PHASE FOR LIGHTS, 1#10 PHASE & 1#10 NEUTRAL FOR RECEPTACLES AND 1#10 GROUND CONDUCTORS.

(9) 1" CONDUIT CONTAINING 2#10 PHASE FOR LIGHTS, 1#12 PHASE & 1#12 NEUTRAL FOR RECEPTACLES AND, 1#10 GROUND CONDUCTORS.

(10) FURNISH AND INSTALL JUNCTION BOX PROPERELY SIZED PER NEC AND PROVIDE SPACE FOR FUTURE 1" CONDUIT TO FEED FINAL CLARIFIER NO. 4 EXTERIOR LIGHTS AND RECEPTACLES.



RECORD DRAWING

URS Corporation
7650 West Courtney
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Tampa, FL 33607-1462
Jose A. Gonzalez, P.E. 58896

	NAME	DATE
DESIGNED BY:	J. GONZALEZ	07/27/05
CHECKED BY:	F. FRIAR	07/27/05
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SCALE:	AS SHOWN	
FILE NAME:		

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: E-3

4924.019

PLOTTED: October 9, 2008 9:21 AM PLOTTED BY: SCHEUERMAN, JAMES
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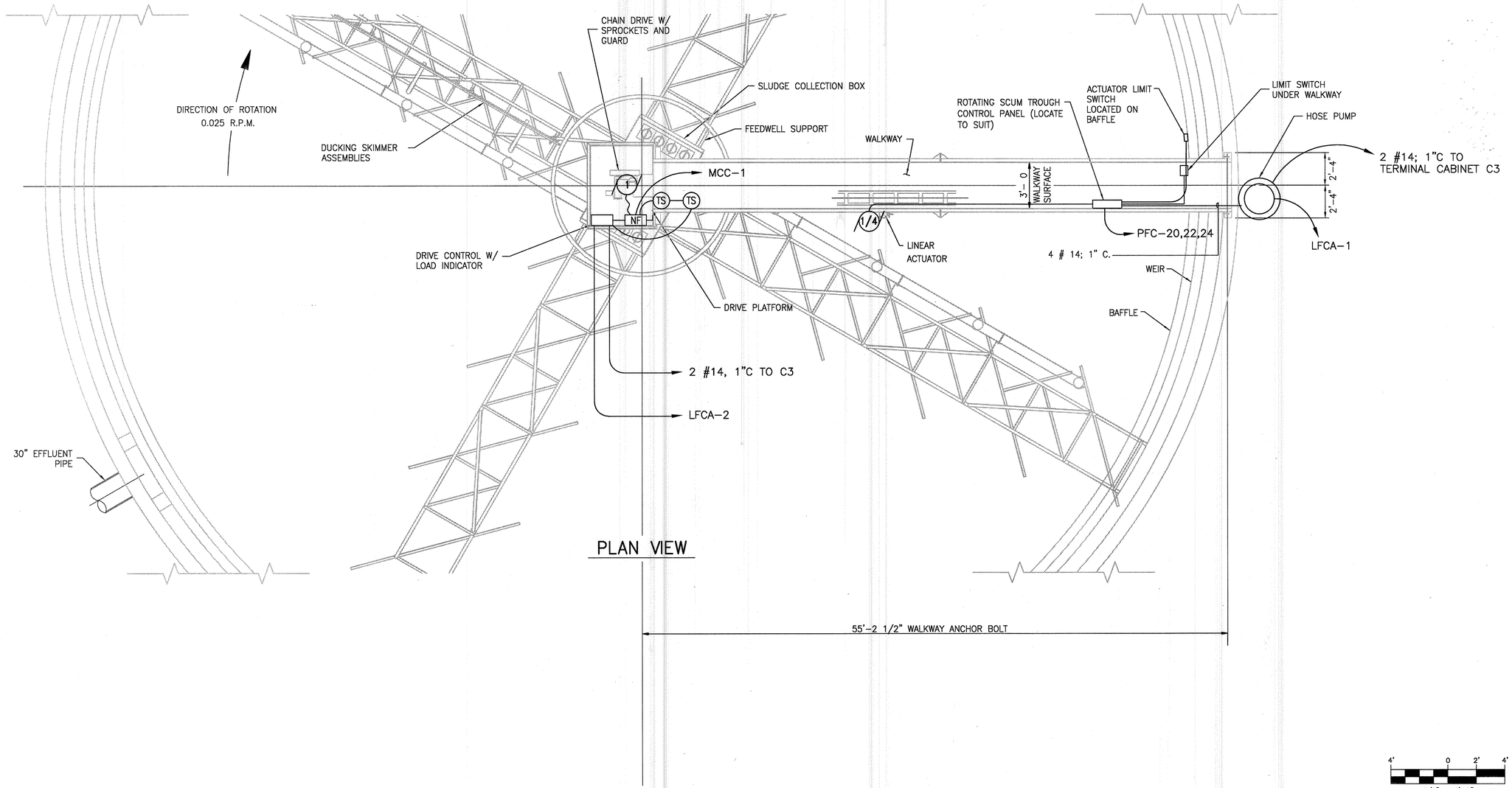
GENERAL NOTE:

1. REFER TO MECHANICAL DRAWINGS FOR SPECIFICATIONS AND WIRING ASSOCIATED WITH CONTROL AND INSTRUMENTATION SYSTEM. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING THE RACEWAYS FOR CONTROL SYSTEM, CONNECTION OF ELECTRICAL POWER TO SUCH EQUIPMENT, AND 120V CIRCUITS TO CONTROL DEVICES, INCLUDING MOTOR OPERATED VALVES, PLC CABINET AND CONTROL PANELS. PLC CABINET, CONTROL PANELS AND DEVICES ARE PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR AND/OR EQUIPMENT SUPPLIER AND ARE INDICATED AT APPROXIMATE LOCATIONS. CONTROL DEVICES LOCATED IN CONTROL PANELS MAY ACTUALLY BE INTEGRAL TO OTHER MECHANICAL EQUIPMENT AT RACKS.



PLAN VIEW

4' 0 2' 4'
1/4" = 1'-0"

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
Jose A. Gonzalez, P.E. 58896

	NAME	DATE
DESIGNED BY:	J. GONZALEZ	07/27/05
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DRAWN BY:	J. GONZALEZ	07/27/05
SCALE:	AS SHOWN	
FILE NAME:		

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: E-4

4924.020

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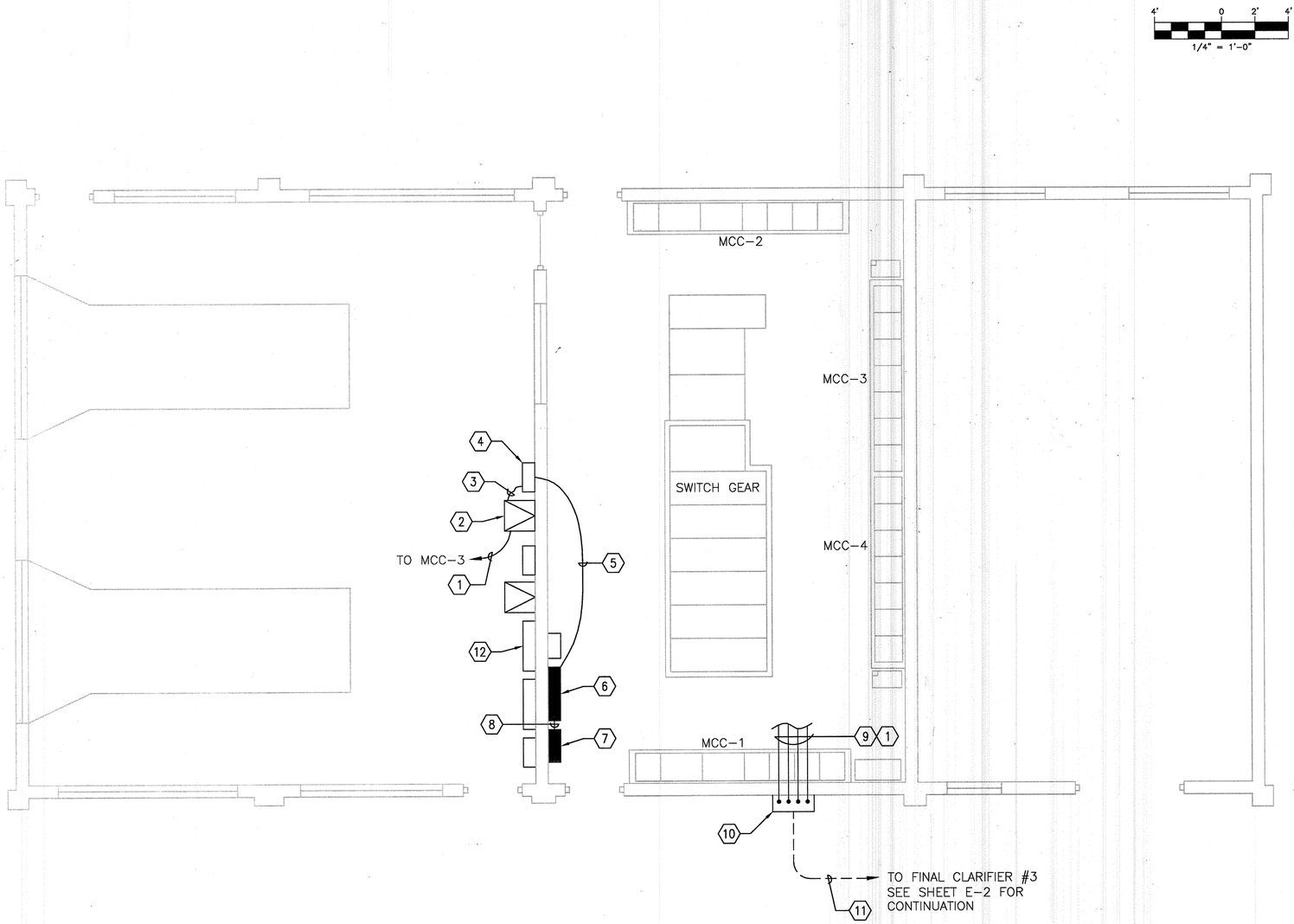
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\E-4 ELECTRICAL PLAN.DWG



EXISTING ELECTRICAL BUILDING

1/4" = 1'-0"

KEYED NOTES FOR E-5:

1. 1" CONDUIT CONTAINING 3#6 PHASE AND 1#8 GND. CONDUCTORS TO MCC-3. FURNISH AND INSTALL NEW 70 AMP & ONE 20 AMP THREE POLE BREAKERS MATCHING EXISTING BREAKER'S CHARACTERISTICS FEEDING MST-3. ONE FOR TRANSFORMER & ONE FOR SCUM HOSE PUMP. COORDINATE MCC-3 SPACES WITH MR. EDWIN T. HOLMAN, UTILITIES OPERATIONS DEPARTMENT, SENIOR INDUSTRIAL ELECTRICIAN TEL. 941-792-8811 EXT. 5178.
2. FURNISH AND INSTALL DRY TYPE TRANSFORMER 45 KVA, 480V PRIMARY, 208/120V SECONDARY ON A CONCRETE PAD 4" HIGH OR SIMILAR TO EXISTING PAD OR AS REQUESTED BY THE OWNER'S REPRESENTATIVE.
3. FURNISH AND INSTALL 2" CONDUIT CONTAINING 3#2 PHASE, 1#2 NEUTRAL, AND 1#6 GND. CONDUCTORS TO NEW PANEL "LEA".
4. FURNISH AND INSTALL PANEL "LEA", MB 125AMPS., 3 PHASE, 120/208V, NEMA 1, SURFACE MOUNTED, COPPER BUS. SEE PANEL BOARD SCHEDULE ON SHEET E-6.
5. FURNISH AND INSTALL 2" CONDUIT CONTAINING 3#8 PHASE, 1#8 NEUTRAL, AND 1#8 GND. REPLACEMENT CONDUCTORS TO PANEL PC/TC-1. DISCONNECT EXISTING CONDUCTORS FEEDING PANEL PC/TC-1 FROM EXISTING PANEL "LE" AND REMOVE CONDUCTORS AFTER REPLACEMENT CONDUCTORS ARE INSTALLED AND IN OPERATING CONDITIONS TO MINIMIZE THE DOWN TIME. COORDINATE WITH OWNER OR HIS REPRESENTATIVE.
6. EXISTING PANEL "PC/TC-1".
7. EXISTING PANEL "LE"
8. EXISTING CONDUIT CONTAINING CONDUCTORS FEEDING PANEL "PC/TC-1". REMOVE CONDUCTORS AFTER NEW REPLACEMENT CONDUCTORS ARE INSTALLED AND IN OPERATING CONDITIONS.
9. INTERIOR CONDUIT RACK CONSISTING OF FOUR 1" CONDUITS AND TWO 2" CONDUITS. CAP SPARE CONDUITS AT LEAST FIVE FEET FROM WALL AND IDENTIFY THE LOCATION OF THE OTHER END OF CONDUITS. COORDINATE EXACT LOCATION AND ROUTING OF CONDUITS WITH THE OWNER OR HIS REPRESENTATIVE.
10. JUNCTION BOX 30"X 30" X6" DEEP, WITH PADLOCKABLE CONTINUOUS HINGED COVER, STAINLESS STEEL NEMA 4X, SURFACE MOUNTED 5 FEET ABOVE FINISHED GRADE TO CENTER LINE. COORDINATE EXACT LOCATION WITH OWNER OR HIS REPRESENTATIVE.
11. UNDER GROUND DUCT BANK CONSISTING OF TWO 2" AND FOUR 1" PVC SCH. 80 CONDUITS. ONE 2" CONDUIT FROM NEW PANEL "LEA" TO NEW EXTERIOR PANEL "LFCA" CONTAINING 3 #6 AWG PHASE, 1 #6 AWG NEUTRAL, AND 1 #8 AWG GND. CONDUCTORS, THE OTHER 2" CONDUIT SPARE, ONE 1" CONDUIT FROM "MCC-1" TO FINAL CLARIFIER NO. 3 CONTAINING 3 #10 AWG PHASE AND 1 #10 AWG GND. CONDUCTORS, ONE 1" CONDUIT FROM "MCC-3" TO FINAL CLARIFIER NO. 3 SCUM HOSE PUMP CONTROL PANEL CONTAINING 3 #10 AWG PHASE & 1 #10 AWG GND CONDUCTORS (SEE KEY NOTE 1), ONE CONDUIT FROM "MCC-2" TO EXTERIOR J/B #1 FOR FUTURE FINAL CLARIFIER NO. 4, ONE 1" CONDUIT SPARE.
12. EXISTING CONTROL TERMINAL CABINET "C1". MECHANICAL CONTRACTOR SHALL USE EXISTING CONTROL WIRING AND CONDUITS FROM "C1" TO "MCC-1,2,3 & 4" AS REQUIRED BY MECHANICAL DRAWINGS AND SPECIFICATIONS AND AS REQUIRED BY EQUIPMENT MANUFACTURER. COORDINATE WITH THE OWNER OR HIS REPRESENTATIVE.

RECORD DRAWING

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
Jose A. Gonzalez, P.E. 58896

	NAME	DATE
DESIGNED BY:	J. GONZALEZ	07/27/05
CHECKED BY:	F. FRIAR	07/27/05
DRAWN BY:	J. GONZALEZ	07/27/05
SCALE:	AS SHOWN	
FILE NAME:		

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

ELECTRICAL BUILDING PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: E-5

4924.021

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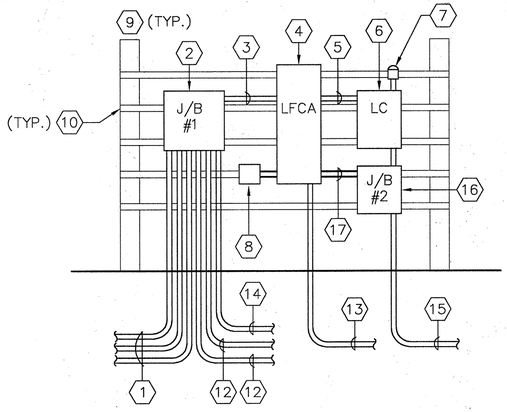


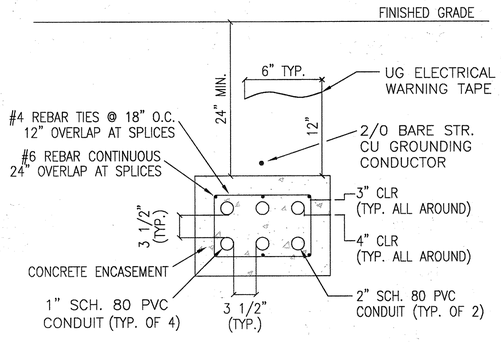
RACK DETAIL
NOT TO SCALE

120/208V.,3Ø,4W — PANEL "LEA" SCHEDULE — 125A, MAIN CKT. BKR. SURFACE MOUNTED NEMA TYPE 1

CKT. NO.	KVA	BKR	WIRE SIZE	CON DUIT	LOAD	CKT. NO.	KVA	BKR	WIRE SIZE	CON DUIT	LOAD
1	–	–	–	–	PANEL PC/TC-1	2	–	–	–	–	PANEL LFCA
3	–	40/3	#8	2"	PANEL PC/TC-1	4	–	40/3	#6	2"	PANEL LFCA
5	–	–	–	–	PANEL PC/TC-1	6	–	–	–	–	PANEL LFCA
7	–	20/1	–	–	SPARE	8	–	20/1	–	–	SPARE
9	–	–	–	–	SPACE	10	–	–	–	–	SPACE
11	–	–	–	–	SPACE	12	–	–	–	–	SPACE
13	–	–	–	–	SPACE	14	–	–	–	–	SPACE
15	–	–	–	–	SPACE	16	–	–	–	–	SPACE
17	–	–	–	–	SPACE	18	–	–	–	–	SPACE
19	–	–	–	–	SPACE	20	–	–	–	–	SPACE
21	–	–	–	–	SPACE	22	–	–	–	–	SPACE
23	–	–	–	–	SPACE	24	–	–	–	–	SPACE
25	–	–	–	–	SPACE	26	–	–	–	–	SPACE
27	–	–	–	–	SPACE	28	–	–	–	–	SPACE
29	–	–	–	–	SPACE	30	–	–	–	–	SPACE

120/208V.,3Ø,4W — PANEL "LFCA" SCHEDULE — 40A, MAIN CKT. BKR. SURFACE MOUNTED NEMA TYPE 4X

CKT. NO.	KVA	BKR	WIRE SIZE	CON DUIT	LOAD	CKT. NO.	KVA	BKR	WIRE SIZE	CON DUIT	LOAD
1	–	–	–	–	SPACE	2	–	20/1	#12	1"	DRIVE CNTL PNL 3RD C.
3	–	–	–	–	SPACE	4	–	–	–	–	FUTURE 4TH C.
5	–	30/2	#10	1"	3RD & 4TH C. LIGHTS	6	–	15/1	#14	1"	LC COIL
7	–			–	3RD & 4TH C. LIGHTS	8	–	–	–	–	SPACE
9	–	20/1	#10	1"	REC. 3RD & 4TH C.	10	–	–	–	–	SPACE
11	–	20/1	–	–	SPARE	12	–	30/2			SPARE
13	–	–	–	–	SPACE	14	–				SPARE
15	–	–	–	–	SPACE	16	–	–	–	–	SPACE
17	–	–	–	–	SPACE	18	–	–	–	–	SPACE
19	–	–	–	–	SPACE	20	–	–	–	–	SPACE
21	–	–	–	–	SPACE	22	–	–	–	–	SPACE
23	–	–	–	–	SPACE	24	–	–	–	–	SPACE
25	–	–	–	–	SPACE	26	–	–	–	–	SPACE
27	–	–	–	–	SPACE	28	–	–	–	–	SPACE
29	–	–	–	–	SPACE	30	–	–	–	–	SPACE



TYPICAL DUCT BANK CROSS SECTION DETAIL
NOT TO SCALE

GENERAL NOTES:

1. COORDINATE EXACT LOCATION OF VFD'S, DISCONNECT SWITCHES, JUNCTION BOXES, DEVICES, ETC. WITH MECHANICAL DRAWINGS AND OWNER'S REPRESENTATIVE.
2. UTILIZE STAINLESS STEEL HARDWARE FOR ALL OUTDOOR APPLICATIONS.
3. RACK DETAIL IS TYPICAL. VARY WIDTH AS REQUIRED FOR ACTUAL QUANTITY OF EQUIPMENT. CONTRACTOR SHALL LAY OUT ITEMS TO BE MOUNTED ON THE RACK WITH SUFFICIENT SPACE BETWEEN ITEMS. COORDINATE WITH MECHANICAL DRAWINGS AND OWNER'S REPRESENTATIVE.
4. WIRING FOR SENSORS/CONTACTS INTEGRAL TO MOTOR SHALL BE RUN IN CONDUIT WITH MOTOR POWER WIRING, WITH 600V INSULATION.
5. REFER TO MECHANICAL DOCUMENTS FOR SPECIFICATIONS AND WIRING ASSOCIATED WITH CONTROL AND INSTRUMENTATION SYSTEMS. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVISION OF RACEWAY SYSTEM FOR CONTROLS AND INSTRUMENTATION, AND CONNECTION OF ELECTRICAL POWER TO SUCH EQUIPMENT. PLC CABINET, CONTROL PANELS, AND OTHER CONTROL SPECIFIC EQUIPMENT IS PROVIDED, AND INSTALLED BY OTHERS.

KEYED NOTES:

(1) DUCT BANK CONDUITS, SEE SHEET E-5 AND THIS SHEET FOR DETAILS.
(2) STAINLESS STEEL JUNCTION BOX NEMA 4X, 30"X 30"X 6"DEEP, WITH PADLOCKABLE CONTINUOUS HINGED COVER.
(3) 2" CONDUIT CONTAINING 4#6 AND 1#8 GND. CONDUCTORS.
(4) PROPOSED NEW LFCA PANEL BOARD.
(5) TWO 1" CONDUITS ONE CONTAINING 2#10 PHASE (LIGHTING), 1 #12 PHASE, AND 1 #12 NEUTRAL (LC'S COIL), AND 1 #10 GND. CONDUCTORS.
(6) NEW LIGHTING CONTACTOR, NEMA 4X ENCLOSURE, 120V COIL, WITH 6 N.O. CONTACTS RATED FOR 30AMPS. @ 208V.
(7) 1800 VA PHOTOELECTRIC CONTROL.
(8) TVSS.
(9) CONCRETE POST IN POURED CONCRETE FOOTING.
(10) STAINLESS STEEL STRUT.
(11) 1" CONDUIT TO FINAL CLARIFIER NO. 3.
(12) FUTURE 1" CONDUIT TO FINAL CLARIFIER NO. 4.
(13) 1" CONDUIT TO FINAL CLARIFIER NO. 3 DRIVE CONTROL PANEL.
(14) 1" CONDUIT TO SCUM HOSE PUMP CONTROL PANEL.
(15) 1" CONDUIT TO FINAL CLARIFIER NO. 3 LIGHT POLES AND RECEPTACLES.
(16) J/B SIZED PER NEC FOR FINAL CLARIFIER LIGHT POLES AND RECEPTACLES CIRCUITS.
(17) 1" CONDUIT CONTAINING FINAL CLARIFIER NO. 3 RECEPTACLES CIRCUIT.

RECORD DRAWING

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
Jose A. Gonzalez, P.E. 58896

	NAME	DATE
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CHECKED BY:	F. FRIAR	07/27/05
DRAWN BY:	J. GONZALEZ	07/27/05
SCALE:	AS SHOWN	
FILE NAME:		

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

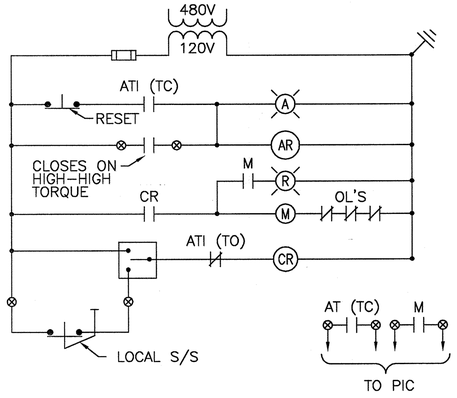
ELECTRICAL DETAILS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

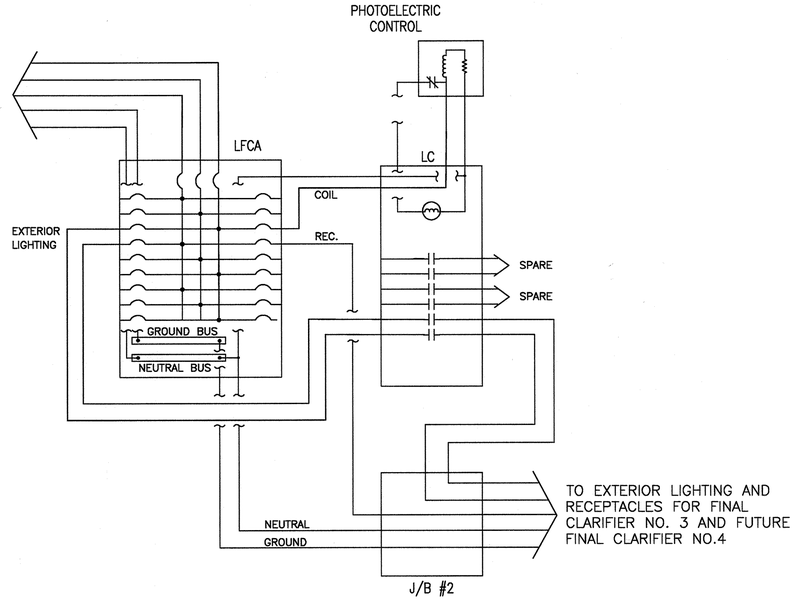
PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: E-6

4924.022

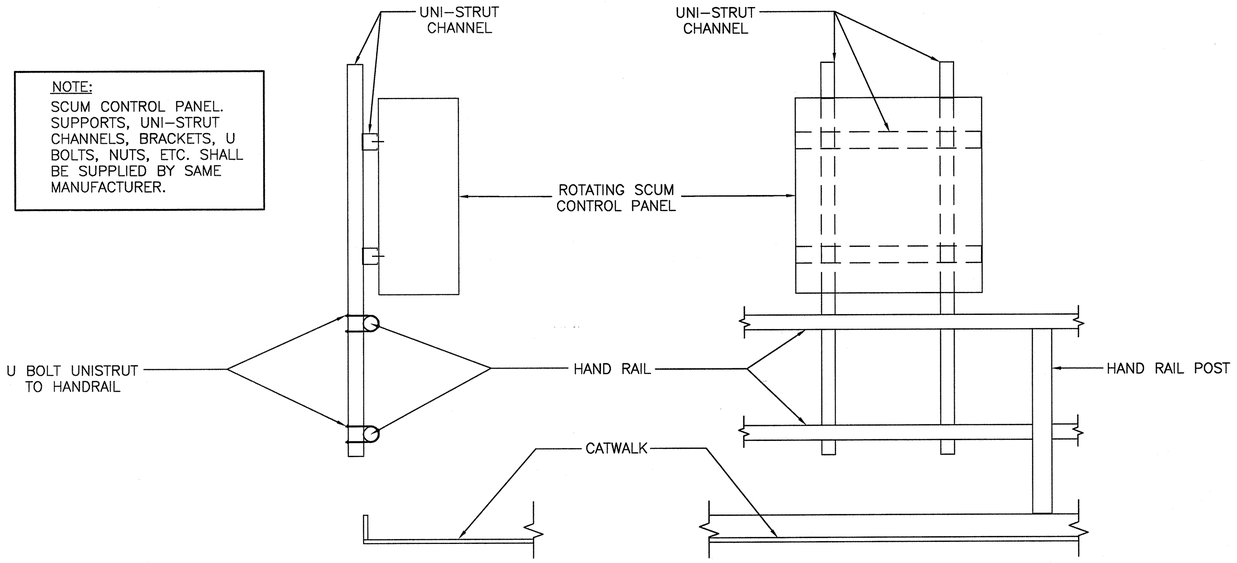
PLOTTED October 9, 2008 9:21 AM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\E-6 ELECTRICAL DETAILS.DWG



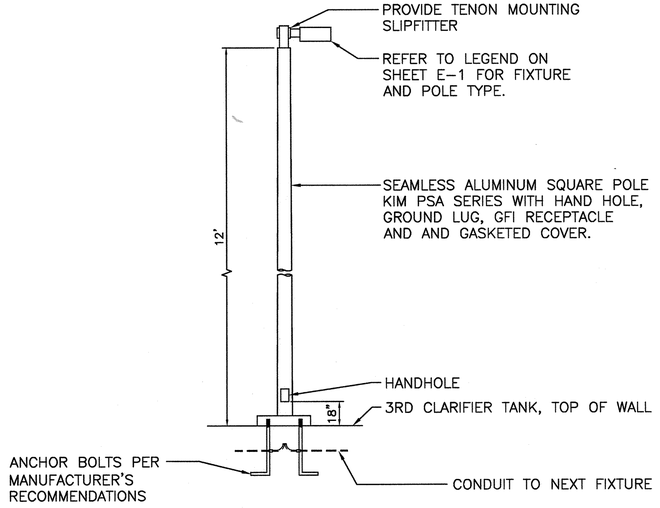
FINAL CLARIFIERS
N.T.S.



LIGHT POLES AND RECEPTACLES WIRING DIAGRAM
N.T.S.



TYPICAL ROTATING SCUM CONTROL PANEL MOUNTING DETAIL
N.T.S.



NOTE:
ALL POLE INSTALLATIONS SHALL BE SUITABLE FOR 120 MPH WIND WITH A 1.3 GUST FACTOR. THE CONTRACTOR SHALL INCLUDE WITH THE SHOP DRAWING SUBMITTAL, A POLE WIND LOADING CALCULATION SEALED BY A STRUCTURAL ENGINEER REGISTERED IN FLORIDA SHOWING THAT THE PROPOSED INSTALLATIONS WILL MEET THE GIVEN WIND LOADING REQUIREMENT.

EXTERIOR LIGHTING DETAIL
N.T.S.

RECORD DRAWING

URS Corporation
7650 West Courtney Campbell Causeway
Tampa, FL 33607-1462
Jose A. Gonzalez, P.E. 58896

	NAME	DATE
DESIGNED BY:	J. GONZALEZ	07/27/05
CHECKED BY:	F. FRIAR	07/27/05
DRAWN BY:	J. GONZALEZ	07/27/05
SCALE:	AS SHOWN	
FILE NAME:		

NORTH REGIONAL WASTEWATER TREATMENT PLANT
THIRD CLARIFIER
FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

WIRING DIAGRAMS

NO.	REVISION DESCRIPTION	BY	DATE
	RECORD DRAWINGS	JRS	8/08

PROJ. NO: 12004319
DWG DATE: August 08
DWG NO:
SHEET: E-7

4924.023

PLOTTED October 9, 2008 9:21 AM PLOTTED BY: SCHEUERMAN, JAMES
X:\MANATEE PROJECTS\12004319 & 12005300 NRWWTP 3RD CLARIFIER & RAS PUMPS\CADD\E-7 ELECTRICAL ONE-LINE DIAGRAM.DWG

PIPE FITTING TIES TABLE							
FROM\FITTING	1	2	3	4	5	6	7
BLD COR 1	77.5'	64.8'	63.7'	56.5'	55.5'	16.2'	23.0'
BLD COR 2	68.2'	55.5'	53.4'	52.3'	50.6'	21.6'	27.4'

FROM\FITTING	8	9	10	11	12	13	14
BLD COR 1	36.1'	56.1'	92.0'	97.0'	111.7'	108.6'	99.6'
BLD COR 2	45.9'	71.7'	107.1'	112.6'	127.0'	123.4'	114.2'

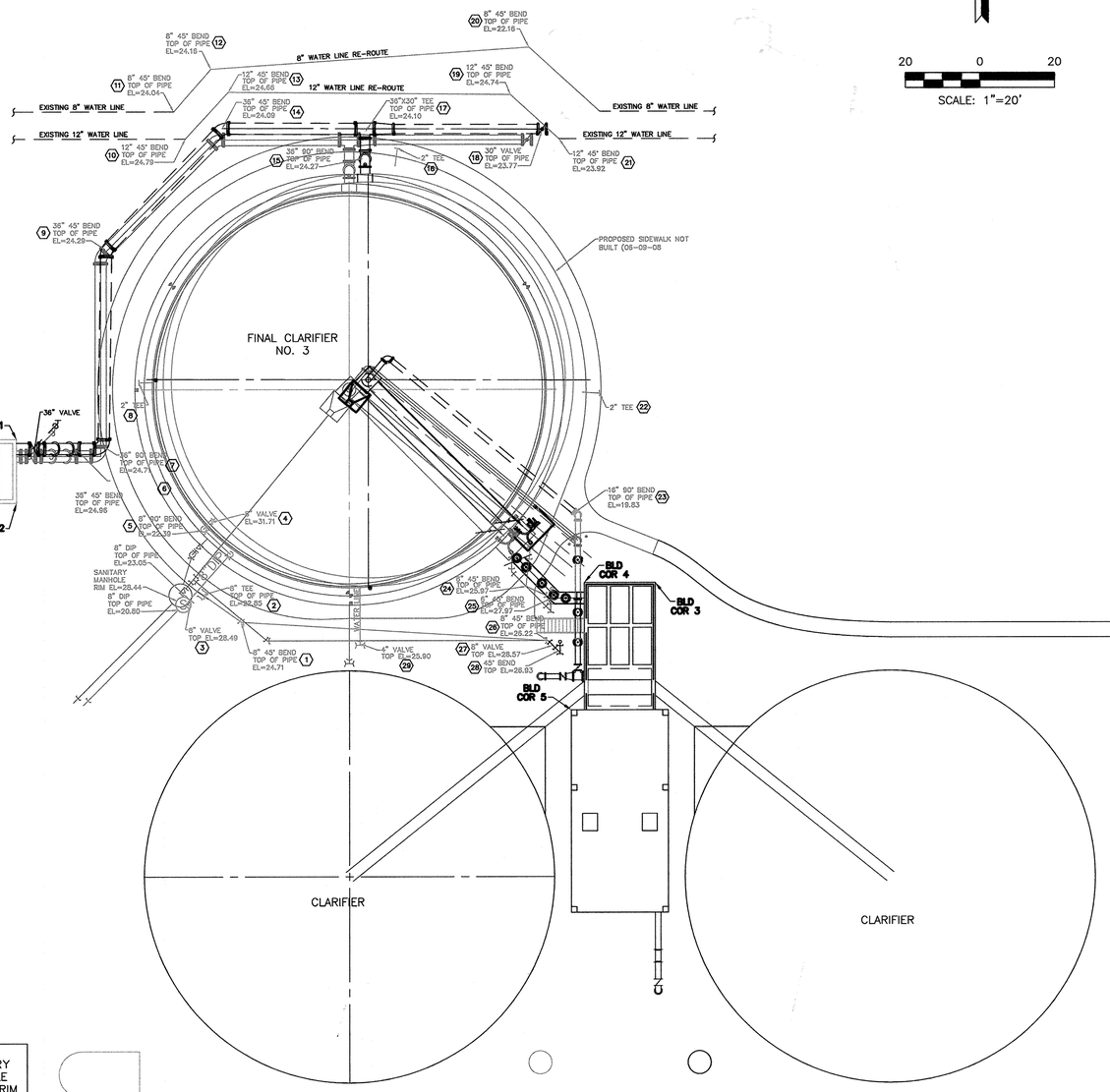
⟨15⟩ 4.1' FROM TANK WALL AT CENTERLINE OF TANK

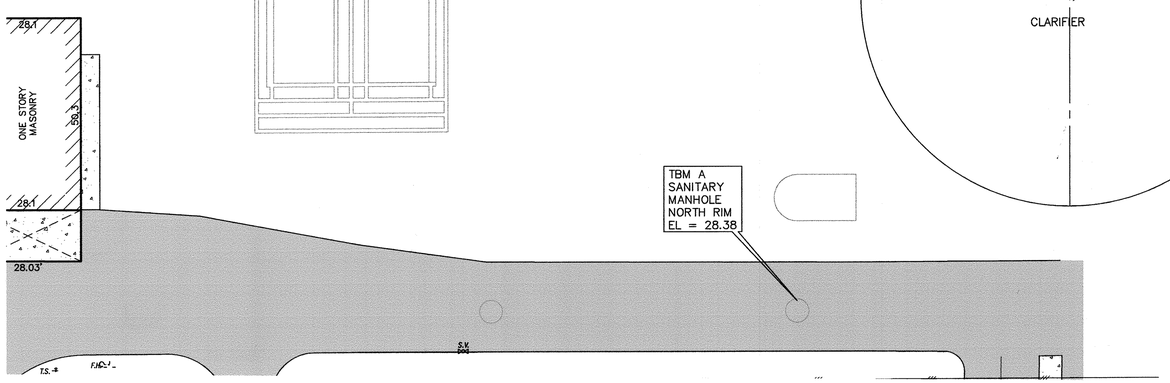
⟨16⟩ 47.2' FROM FITTING #14
39.1' FROM FITTING #18

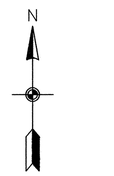
⟨17⟩ 12.0' FROM TANK WALL AT CENTERLINE OF TANK

FROM\FITTING	18	19	20	21	22	23
BLD COR 3	124.7'	135.9'	146.9'	121.2'	52.7'	28.0'
BLD COR 4	121.5'	131.7'	143.7'	118.6'	50.7'	18.6'

FROM\FITTING	24	25	26	27	28	29
BLD COR 4	15.6'	9.6'	18.2'	18.7'	19.7'	62.3'
BLD COR 5	35.2'	30.3'	19.5'	18.1'	15.6'	59.3'







20 0 20

SCALE: 1"=20'

SECTION 26, TOWNSHIP 33 S, RANGE 18 E,

MANATEE COUNTY, FLORIDA

SURVEY NOTES

1. SURVEY MAP AND REPORT OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED.
2. NO EXCAVATION WAS PERFORMED TO VERIFY THE LOCATION OR EXISTENCE OF ANY UNDERGROUND UTILITIES, ENCROACHMENTS, IMPROVEMENTS, STRUCTURES OR FOUNDATIONS. UNDERGROUND UTILITY LINE LOCATIONS (IF SHOWN HEREON) ARE BASED UPON UTILITY PROVIDER ATLASES AND VISIBLE SURFACE EVIDENCE.
3. RE-USE OF THIS SURVEY FOR PURPOSES OTHER THAN WHICH IT WAS INTENDED, WITHOUT WRITTEN VERIFICATION, WILL BE AT THE RE-USERS SOLE RISK AND WITHOUT LIABILITY TO THE SURVEYOR. NOTHING HEREIN SHALL BE CONSTRUED TO GIVE ANY RIGHTS OR BENEFITS TO ANYONE OTHER THAN THOSE TO WHOM CERTIFIED.
4. ALL FOUND POINTS ARE UNMARKED UNLESS OTHERWISE NOTED. ALL PERIMETER BEARINGS AND DISTANCES ARE ALSO FIELD MEASURED UNLESS NOTED.
5. THIS SURVEY IS NOT INTENDED TO SHOW THE LOCATION OR EXISTENCE OF ANY JURISDICTIONAL, HAZARDOUS OR ENVIRONMENTALLY SENSITIVE AREAS.
6. ANY ZONING INFORMATION SHOWN OR NOTED HEREON IS BASED ON INFORMATION AVAILABLE DURING THE PREPARATION OF THE SURVEY. THIS INFORMATION SHOULD BE VERIFIED WITH THE GOVERNING AUTHORITY PRIOR TO ANY DETERMINATIONS OR DESIGN.
7. SHOWN ANYWHERE ON THIS SURVEY, THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF A PROFESSIONAL OPINION BASED UPON THE SURVEYOR'S BEST KNOWLEDGE, INFORMATION AND BELIEF, AND THAT IT THUS CONSTITUTES NEITHER A GUARANTEE NOR A WARRANTY.
8. UNLESS OTHERWISE INDICATED, THE PROPERTY DESCRIPTION AND EASEMENTS SHOWN WERE FURNISHED TO POLARIS ASSOCIATES, INC. AND ARE PRESUMED TO BE CORRECT. NO SEARCH OF ANY PUBLIC RECORDS, FOR EASEMENTS, DEEDS, ETC., WAS PERFORMED BY THIS FIRM FOR THE COMPLETION OF THIS SURVEY AND THERE MAY BE ADDITIONAL RESTRICTIONS THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
9. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND MAY BE SUBJECT TO EASEMENTS, RESTRICTIONS, RIGHTS-OF-WAY AND OTHER MATTERS OF RECORD.
10. ELEVATIONS ARE BASED ON TEMPORARY SITE BENCHMARKS, BEING THE NORTH RIM OF A SANITARY MANHOLE (TBM A), HAVING AN ELEVATION OF 28.38 AND THE NORTH RIM OF A SANITARY MANHOLE (TBM B), HAVING AN ELEVATION OF 29.19, NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

LEGEND

DIP = DUCTILE IRON PIPE
EL = ELEVATION
LB = LICENSED BUSINESS
TBM = TEMPORARY BENCH MARK

+ 25.25 = POINT OF ELEVATION
[. . .] = CONCRETE

DATE	NUMBER	REVISIONS	BY
10-29-08	2	ADDED SIZES TO ASBUILT FITTINGS (BENDS)	JT
10-03-08	1	ADDED TIES TO ASBUILT FITTINGS	JT

CERTIFICATION

CERTIFIED TO: BRANDES DESIGN BUILD, INC.

I HEREBY CERTIFY THAT THE SURVEY REPRESENTED HEREON MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027 FLORIDA STATUTES.

JUNE 9, 2008
DATE OF SURVEY

DANIEL D. FERRANS
PROFESSIONAL LAND SURVEYOR
LICENSE NUMBER LS 3885
STATE OF FLORIDA

DANIEL D. FERRANS CERTIFICATE 3885 STATE OF FLORIDA

PROJECT: N.R.W.W.T.P. CLARIFIER NO. 3

TYPE OF SURVEY: RECORD SURVEY

PREPARED FOR: BRANDES DESIGN BUILD, INC.

POLARIS ASSOCIATES INC.
PROFESSIONAL SURVEYING LB 6113
18850 U.S. HIGHWAY 19 SUITE 500
CLEARWATER, FLORIDA 33764
(727) 524-6500

SAVED:10/29/2008 11:44 AM
PLOTTED:10/29/2008 1:01 PM

CHECKED BY:	SCALE:	DRAWN BY:	JOB NO.	DRAWING PATH:	SHEET
DDF	1"=30'	JT	3093-02	H:\JN\3093\DWG\AB-CLARIFIER.DWG	1 OF 1

URS Corporation
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

	NAME	DATE
DESIGNED BY:	D. ELLIS	07/19/05
CHECKED BY:	J. PANTELIS	07/20/05
DRAWN BY:	D. ELLIS	07/19/05
SCALE:	AS SHOWN	
FILE NAME:	GEN-NOTES.DWG	

MANATEE COUNTY FLORIDA

NORTH REGIONAL WASTEWATER TREATMENT PLANT THIRD CLARIFIER

FOR
MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

MANATEE COUNTY PROJECT NO.: 6038080

OVERALL SITE PLAN & PAVING, GRADING & DRAINAGE PLAN

NO.	REVISION DESCRIPTION	BY	DATE
	BID SET		

PROJ. NO: 12004319
DWG DATE: May 2006
DWG NO:
SHEET: C-1

4924.024

PLOTTED October 29, 2008 1:01 PM PLOTTED BY: J THOMAS
H:\JN\3093\DWG\AB-CLARIFIER.DWG

DESIGN SURVEY
MANATEE WRF
FOR
MANATEE COUNTY
SWWRF, SEWRF, AND NWRF

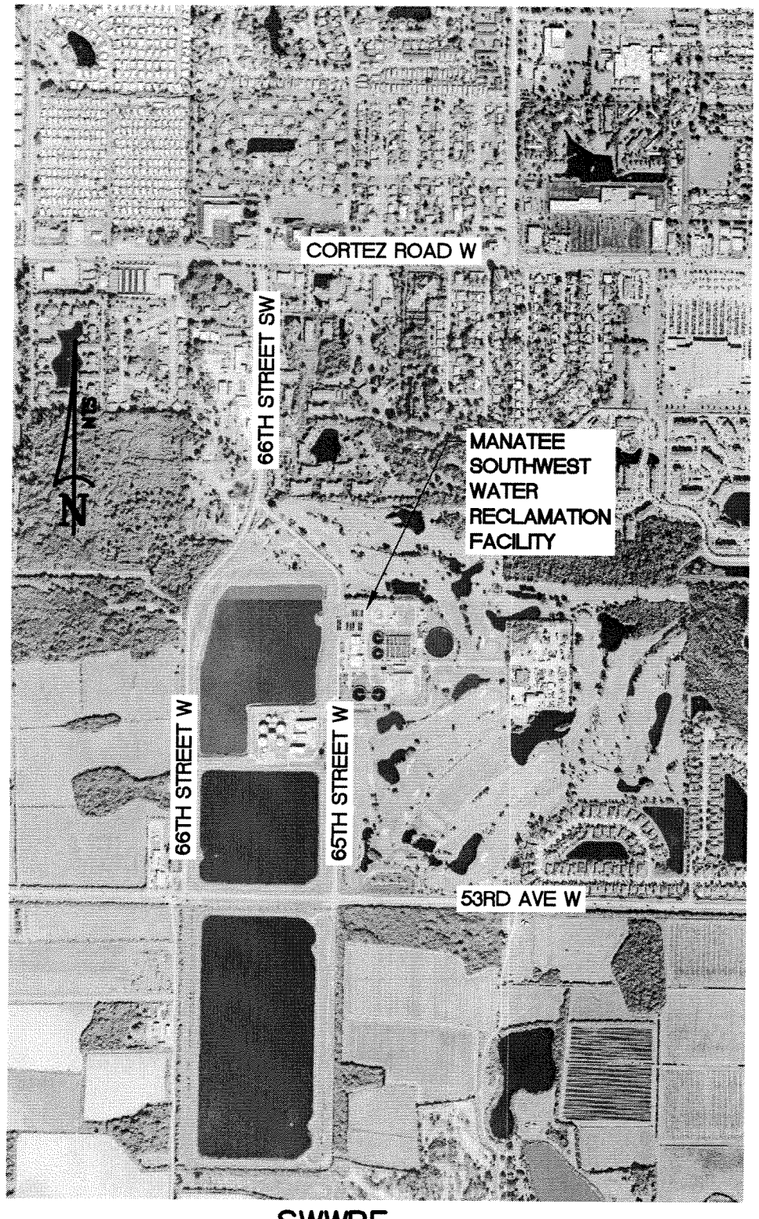
DATE:	4/28/10
MCE PROJ. #	1024-0134
DRAWN	CRF
CHECKED	JMA
F.B. MC-NTA-20	
SHEET 1 OF 5	

REVISIONS

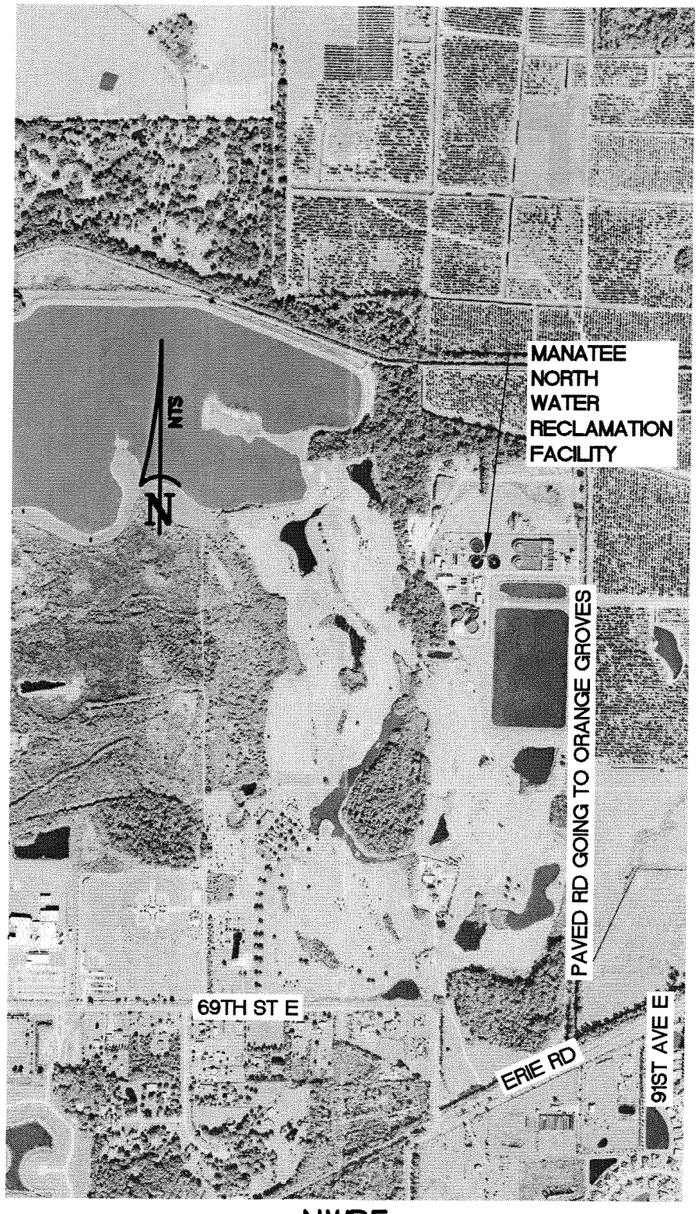
McKIM & CREED
North Village Professional Center
3802 Ehrlich Road, Suite 306
Phone: (813)549-3740, Fax: (813)549-3744
Tampa, Florida, 33624
LB #6566

5174.001

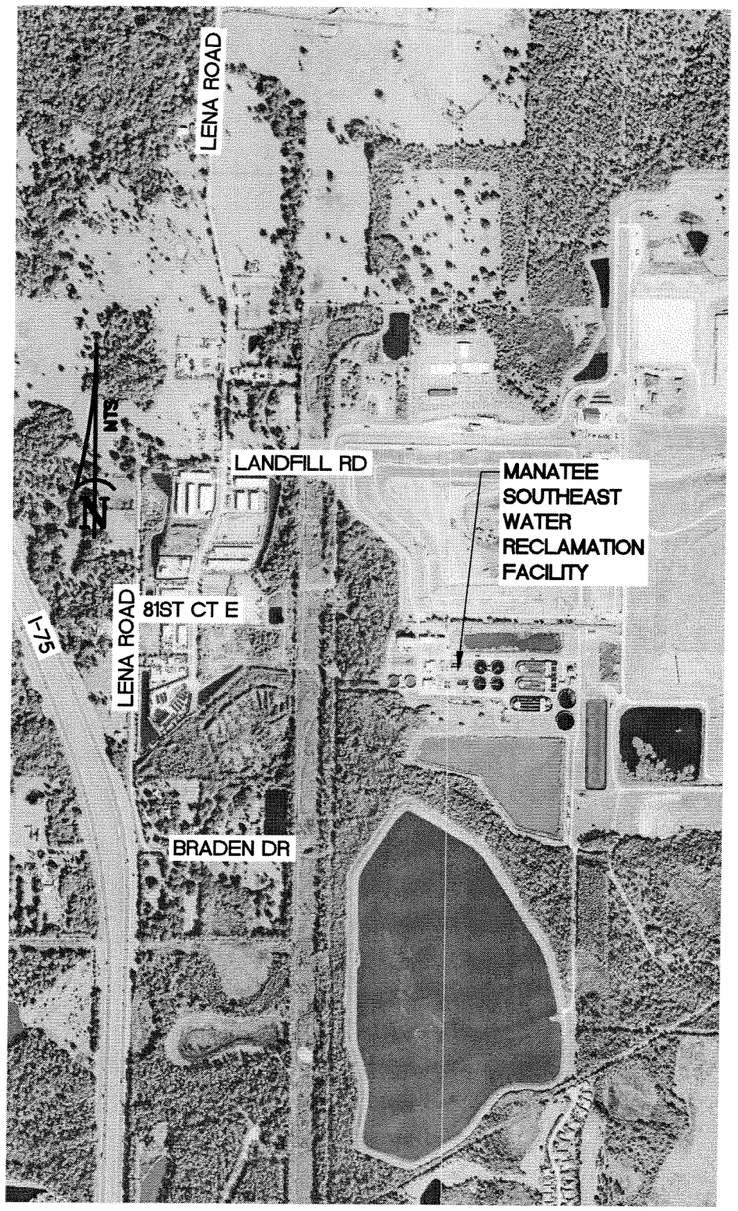
MANATEE WRF
VICINITY MAP



SWWRF
VICINITY MAP



NWRF
VICINITY MAP

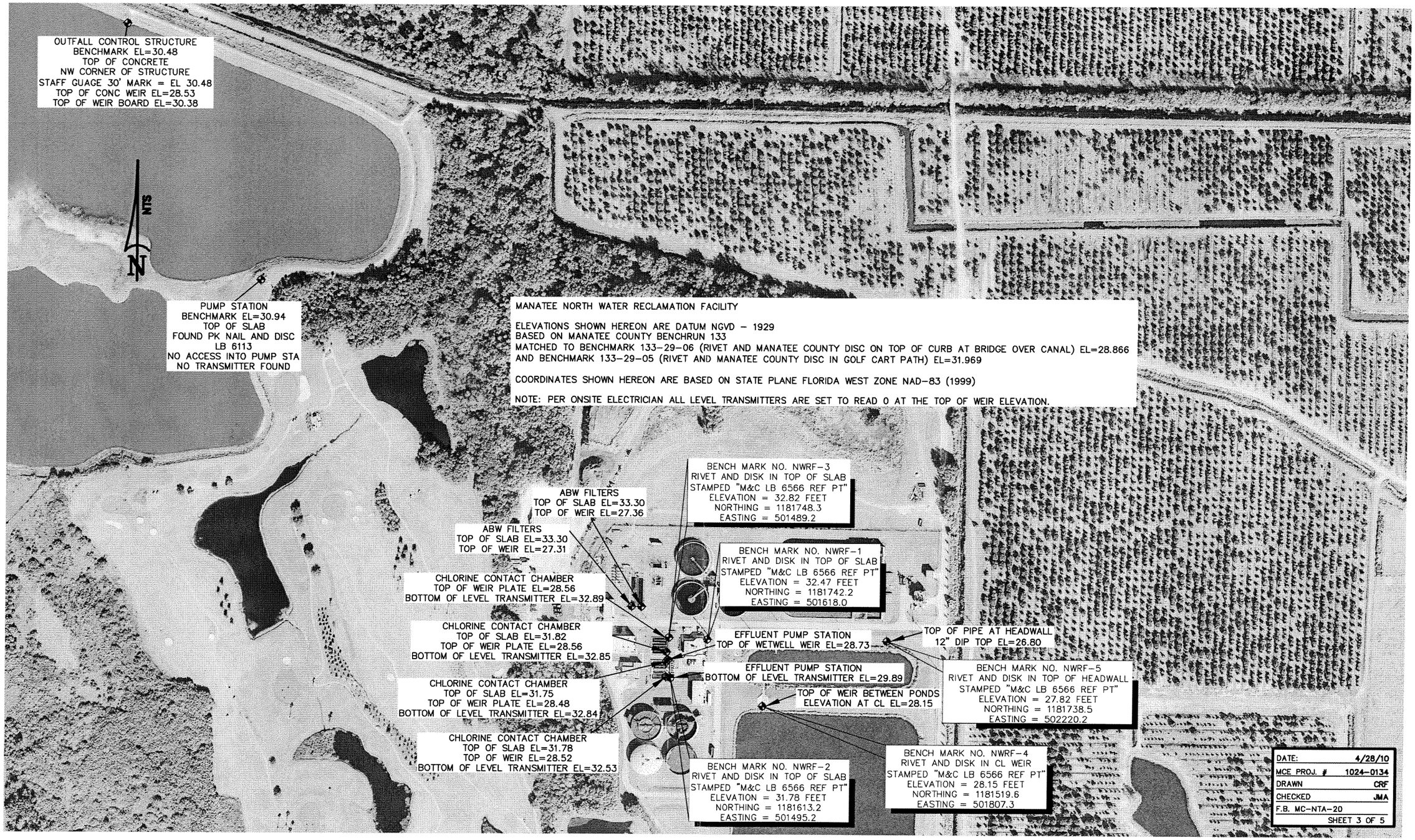


SEWRF
VICINITY MAP

DATE:	4/28/10
MCE PROJ. #	1024-0134
DRAWN	CRF
CHECKED	JMA
F.B. MC-NTA-20	
	SHEET 2 OF 5

5174.002

MANATEE NWRF



5174.003

MANATEE SWWRF

NTS

BENCH MARK NO. SWWRF-1
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 21.10 FEET
NORTHING = 1134929.7
EASTING = 453760.2

CHLORINE CONTACT CHAMBER
TOP OF WEIR EL=17.81
TOP OF WEIR PLATE EL=18.06
BOTTOM OF LEVEL
TRANSMITTER EL=21.08

CHLORINE CONTACT CHAMBER
TOP OF WEIR EL=18.06
BOTTOM OF LEVEL TRANSMITTER EL=21.09

BENCH MARK NO. SWWRF-2
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 22.11 FEET
NORTHING = 1134838.4
EASTING = 453759.3

ABW FILTERS
TOP OF WEIR EL=18.81(NO PLATE)

ABW FILTERS
TOP OF WEIR EL=19.08
TOP OF WEIR PLATE EL=19.15

CHLORINE CONTACT CHAMBER
TOP OF WEIR EL=17.79
TOP OF WEIR PLATE EL=18.07
BOTTOM OF LEVEL TRANSMITTER EL=21.09

ABW FILTERS
TOP OF WEIR EL=19.32
TOP OF WEIR PLATE EL=19.57

ABW FILTERS
TOP OF WEIR EL=19.36
TOP OF WEIR PLATE EL=19.61

ABW FILTERS
TOP OF WEIR EL=19.33
TOP OF WEIR PLATE EL=19.58

BENCH MARK NO. SWWRF-3
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 22.34 FEET
NORTHING = 1134839.8
EASTING = 453616.9

ABW FILTERS
TOP OF WEIR EL=19.34
TOP OF WEIR PLATE EL=19.58

ABW FILTERS
TOP OF WEIR EL=19.31
TOP OF WEIR PLATE EL=19.58

BENCH MARK NO. SWWRF-5
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 31.03 FEET
NORTHING = 1134837.3
EASTING = 453392.4

EFFLUENT PUMP STATION
BOTTOM OF LEVEL TRANSMITTER EL=31.18

BENCH MARK NO. SWWRF-4
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 22.34 FEET
NORTHING = 1134860.0
EASTING = 453584.3

EFFLUENT PUMP STATION
WETWELL TOP OF WEIR EL=16.47
TOP OF WEIR PLATE EL=16.69
BOTTOM OF LEVEL TRANSMITTER EL=19.95

BENCH MARK NO. SWWRF-8
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 19.05 FEET
NORTHING = 1132642.5
EASTING = 453370.8

BENCH MARK NO. SWWRF-9
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 18.89 FEET
NORTHING = 1133684.3
EASTING = 452972.8

BENCH MARK NO. SWWRF-6
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 27.04 FEET
NORTHING = 1133706.4
EASTING = 452640.9

CONTROL STRUCTURE
TOP OF WEIR (WEST) EL=18.54 (WITH GATE)
TOP OF WEIR (EAST) EL=18.52 (WITH GATE)

OUTFALL CONTROL STRUCTURE
TOP OF SLAB/ GRATE EL=16.51
BOTTOM LEVEL TRANSMITTER 0.20 FEET
ABOVE TOP OF SLAB EL=16.71

FLOW CONTROL STRUCTURE
TOP OF SLAB EL=19.05
BOTTOM OF LEVEL TRANSMITTER 0.20 FEET ABOVE
TOP OF SLAB EL=19.25

BENCH MARK NO. SWWRF-7
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 20.59 FEET
NORTHING = 1132883.5
EASTING = 452430.3

EFFLUENT PUMP STATION
BOTTOM OF TRANSMITTER EL=19.52

BENCH MARK NO. SWWRF-10
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 20.41 FEET
NORTHING = 1132103.3
EASTING = 453380.8

EFFLUENT PUMP STATION
TOP OF SLAB EL=20.41
BOTTOM OF LEVEL TRANSMITTER EL=19.39

BENCH MARK NO. SWWRF-11
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 20.24 FEET
NORTHING = 1130648.0
EASTING = 453358.7

EFFLUENT PUMP STATION
BOTTOM OF LEVEL TRANSMITTER EL=19.21

BENCH MARK NO. SWWRF-12
RIVET AND DISK IN TOP OF SLAB
STAMPED "M&C LB 6566 REF PT"
ELEVATION = 16.37 FEET
NORTHING = 1130371.7
EASTING = 452514.2

OUTFALL CONTROL STRUCTURE
CONCRETE WEIR ON NORTH TOP EL=14.87
METAL PLATE OVER CONC WEIR TOP EL=17.87
BOTTOM OF LEVEL TRANSMITTER EL=19.30
TOP OF WEIR BETWEEN 2 SIDES EL=13.29

MANATEE SOUTHWEST WATER RECLAMATION FACILITY

ELEVATIONS SHOWN HEREON ARE DATUM NGVD – 1929
BASED ON MANATEE COUNTY BENCHRUN 50
MATCHED TO BENCHMARK 50-29-10 (RIVET AND MANATEE COUNTY DISC CL ENTRANCE TO ADMIN BUILDING) EL=17.820
NOTE: BENCHMARK 50-29-11 (RIVET AND MANATEE COUNTY DISC ON MITERED END SECTION AT 66TH AND 65TH
WAS DETERMINED TO BE DISTURBED) RECORD EL=15.671 FIELD MEASURED EL=15.526.

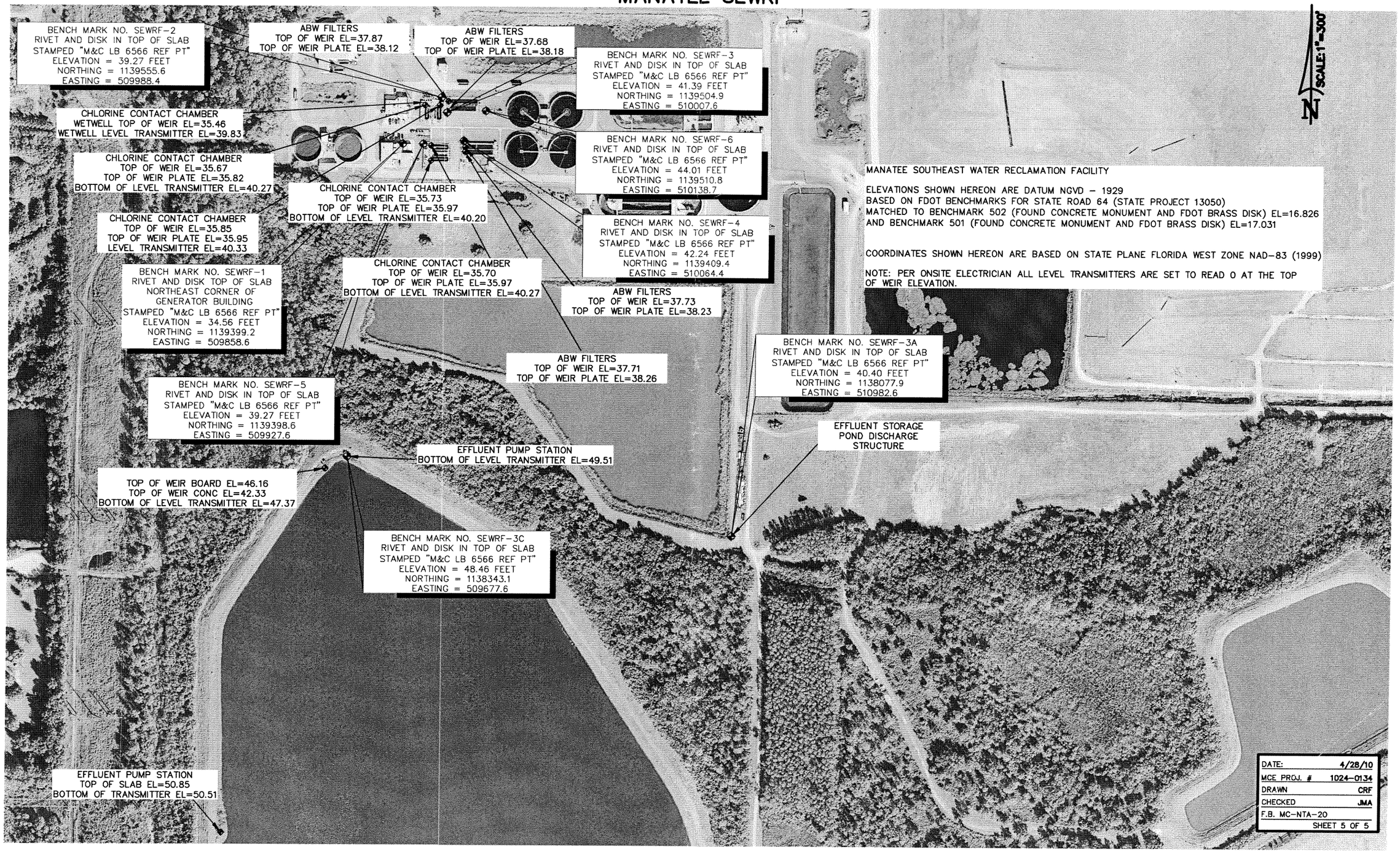
COORDINATES SHOWN HEREON ARE BASED ON STATE PLANE FLORIDA WEST ZONE NAD-83 (1999)

NOTE: PER ONSITE ELECTRICIAN ALL LEVEL TRANSMITTERS ARE SET TO READ 0 AT THE WEIR ELEVATION.

DATE:	4/28/10
MCE PROJ. #	1024-0134
DRAWN	CRF
CHECKED	JMA
F.B.	MC-NTA-20
	SHEET 4 OF 5

5174.004

MANATEE SEWRF



MANATEE SOUTHEAST WATER RECLAMATION FACILITY

ELEVATIONS SHOWN HEREON ARE DATUM NGVD – 1929
BASED ON FDOT BENCHMARKS FOR STATE ROAD 64 (STATE PROJECT 13050)
MATCHED TO BENCHMARK 502 (FOUND CONCRETE MONUMENT AND FDOT BRASS DISK) EL=16.826
AND BENCHMARK 501 (FOUND CONCRETE MONUMENT AND FDOT BRASS DISK) EL=17.031

COORDINATES SHOWN HEREON ARE BASED ON STATE PLANE FLORIDA WEST ZONE NAD–83 (1999)

NOTE: PER ONSITE ELECTRICIAN ALL LEVEL TRANSMITTERS ARE SET TO READ 0 AT THE TOP OF WEIR ELEVATION.

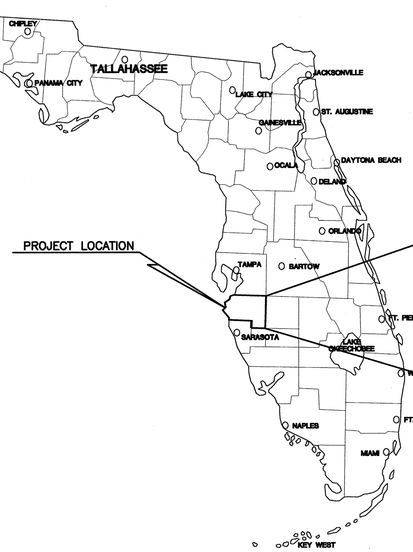
DATE:	4/28/10
MCE PROJ. #	1024-0134
DRAWN	CRF
CHECKED	JMA
F.B.	MC-NTA-20
	SHEET 5 OF 5

5174.005

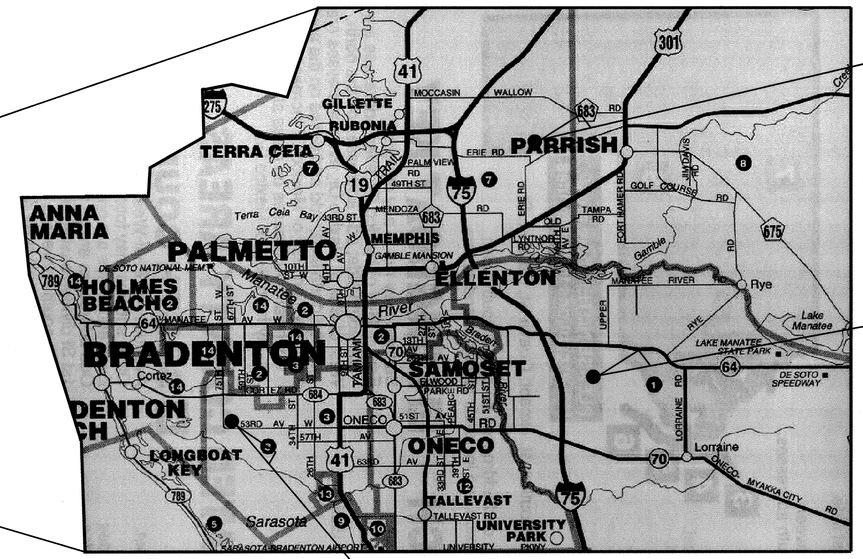
MANATEE COUNTY

NORTH, SOUTHEAST AND SOUTHWEST SUBREGIONAL WWTF'S SOLIDS HANDLING UPGRADE BELT PRESS, POLYMER TRANSFER/MIX SYSTEM PROJECT NOS. 5103580, 5103680 AND 5106380

State of Florida



Manatee County



100% PLANS

INDEX OF SHEETS

1	.....	COVER
2	.....	LOCATION MAP & NOTES
3	.....	MECHANICAL PLAN POLYMER FEED SYSTEMS
4	.....	MECHANICAL PLAN POLYMER FEED SYSTEMS
5	.....	ELECTRICAL PLAN POLYMER FEED SYSTEMS
6	.....	ELECTRICAL PLAN POLYMER FEED SYSTEMS

PLANS PREPARED FOR:

MANATEE COUNTY
1026 26TH AVE. EAST
BRADENTON, FL 34208
PHONE: (941) 708-7450
FAX: (941) 708-7549

PLANS PREPARED BY:

ASH ENGINEERING, INC.
4902 Eisenhower Blvd, Suite 380
Tampa, FL 33634-6323 CA#6603
813.290.8899 Fax: 813.290.8891
www.ashengineering.com

RECORD DRAWING
INFORMATION SUPPLIED BY:
U.S. WATER
☐ REVISIONS ☒ NO REVISIONS
DATE: 12/12/07
RECORD DRAWING SHOWING THOSE CHANGES MADE DURING THE CONSTRUCTION PROCESS BASED ON THE BEST AVAILABLE INFORMATION PROVIDED BY THE CONTRACTOR

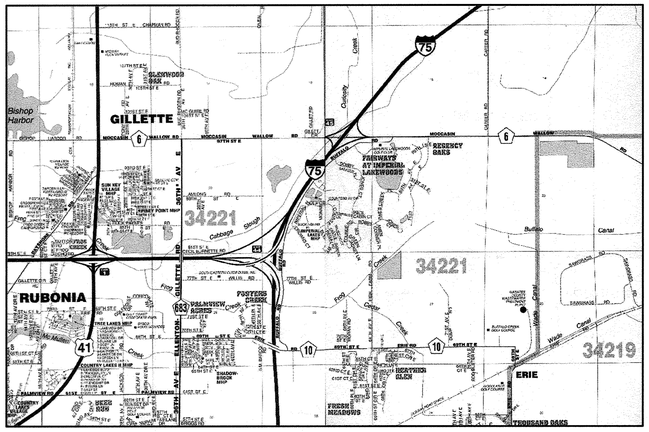
RECEIVED
AUG 2006

Signature

Date

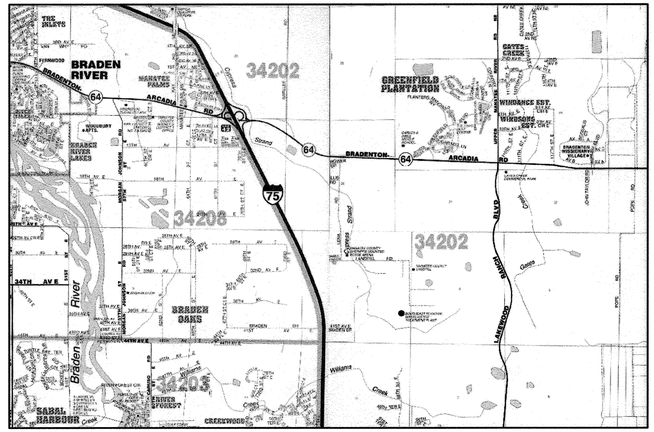
EUGENE R. MASTERS
FLA. P.E. NO. 27568

5054.001



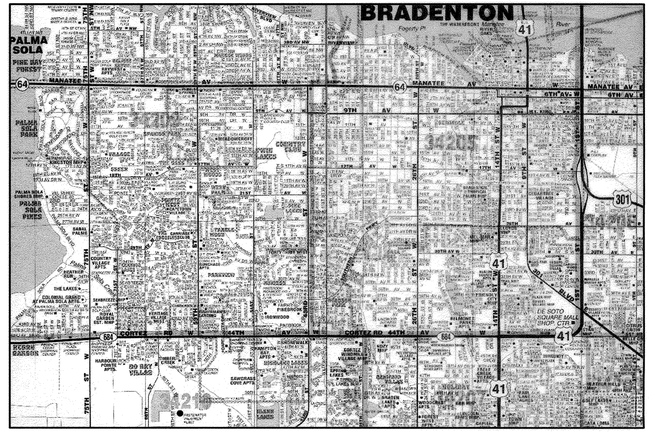
NORTH REGIONAL WWTF

NTS



SOUTHEAST REGIONAL WWTF

NTS



SOUTHWEST REGIONAL WWTF

NTS

GENERAL NOTES

1. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS ARE BASED.
2. THE CONTRACTOR SHALL CONTACT THE ENGINEER'S OFFICE IMMEDIATELY ON ANY CONFLICTS BETWEEN WHAT IS SHOWN HEREIN AND ACTUAL CONDITIONS DISCOVERED DURING CONSTRUCTION OF ANY IMPROVEMENTS SHOWN ON THE DRAWINGS.
3. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION SAFETY. SPECIAL PRECAUTIONS MAY BE REQUIRED IN THE VICINITY OF POWER LINES AND OTHER UTILITIES.
4. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THIS EXCLUSION DOES NOT ALLEVIATE THE CONTRACTOR FOR PROVIDING A CONTINUOUS SAFE WORKSPACE.
5. ALL WORK PERFORMED SHALL COMPLY WITH THE REGULATIONS, PERMIT REQUIREMENTS AND ORDINANCES OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.
6. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO ITS ORIGINAL OR BETTER CONDITION.
7. CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL UTILITY CONNECTION POINTS PRIOR TO CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOUND.
8. THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.
9. NO WORK, EXCEPT FOR EMERGENCY TYPE SHALL BE PERFORMED AFTER SUNDOWN AND BEFORE SUNRISE.

RECORD DRAWING
INFORMATION SUPPLIED BY:
☐ DRAWINGS ☒ NO REVISIONS
DATE: 12/12/07
RECORD DRAWING CERTIFIED THESE CHANGES MADE DURING THE CONSTRUCTION PROCESS BASED ON THE BEST AVAILABLE INFORMATION PROVIDED BY THE CONTRACTOR

100% PLANS

MANATEE COUNTY
1026 26th Ave. East
Bradenton, FL 34208

ASH ENGINEERING, INC.
4902 Eisenhower Blvd, Suite 380
Tampa, FL 33634-6323 CA#6603
813.290.8899 Fax: 813.290.8891
www.ashengineering.com

LOCATION MAP & NOTES

NORTH, SOUTHEAST & SOUTHWEST REGIONAL WWTF SOLIDS HANDLING UPGRADE BELT PRESS, POLYMER TRANSFER/MIX SYSTEM

EUGENE R. MASTERS
FLA. PE NO. 27568

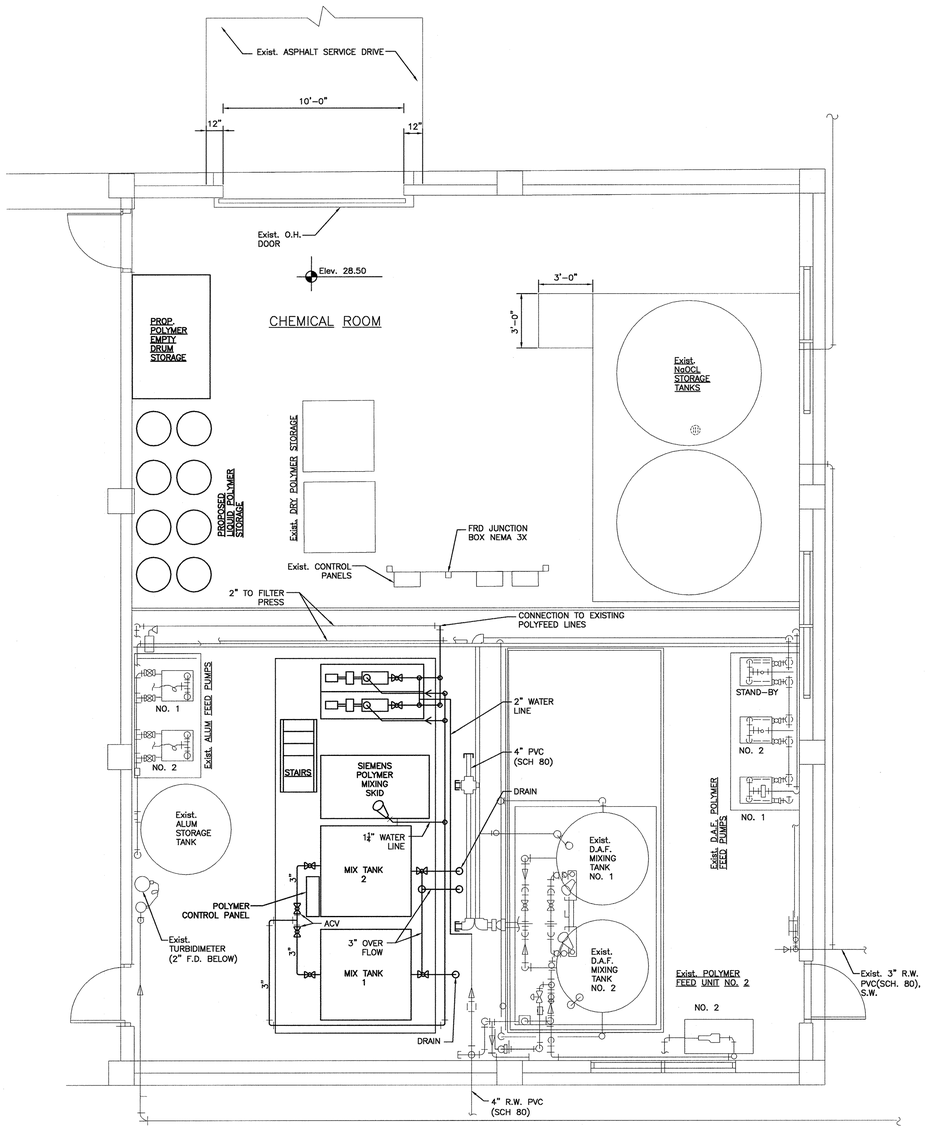
NTS

No.	Date	REVISION	By
Approved		Date	

Des: JHC
Dwn: MTO
Ckd: WEW

DATE: 09/04 | File:
PROJECT NUMBER | CADD FILE NAME
5103580-5103680-5106380 | 02103V-LOCATION MAPS
SHEET 2 OF 6

5054.002

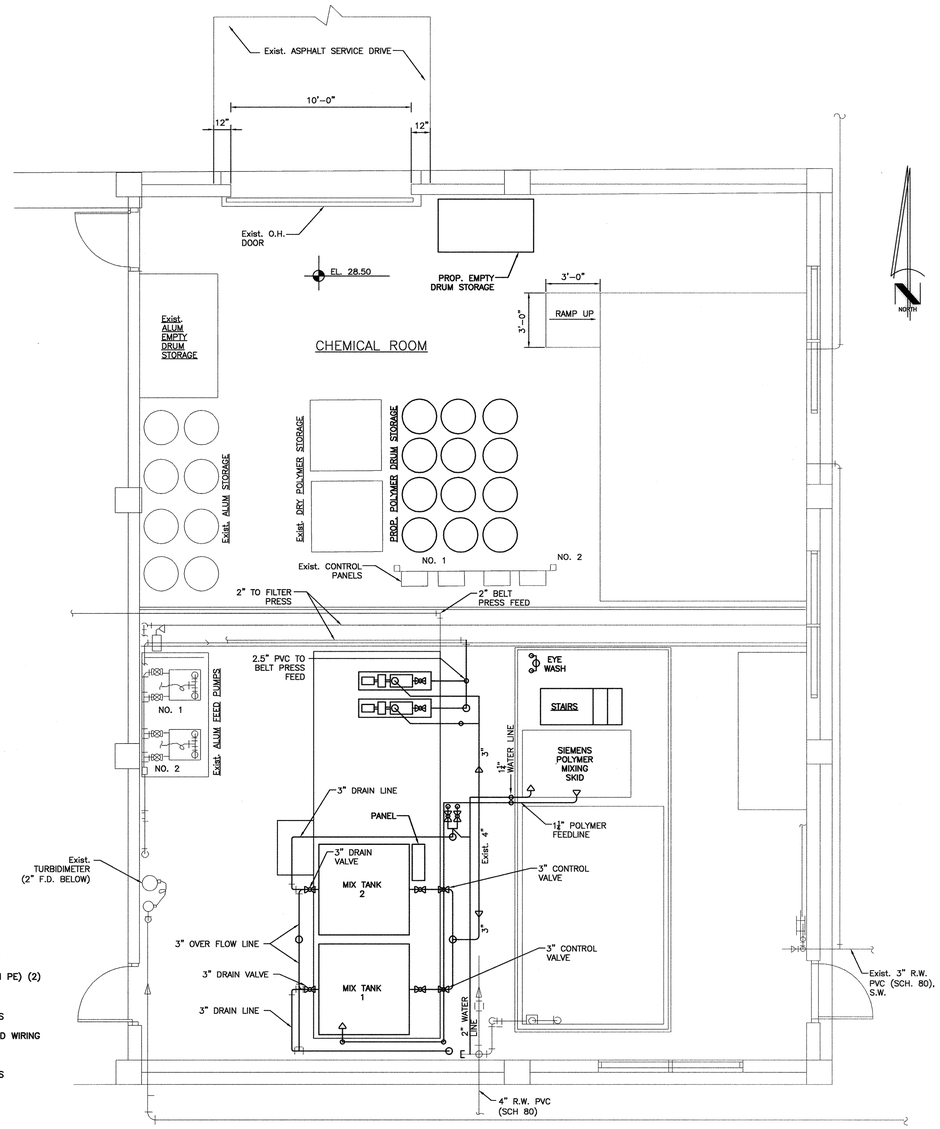


NORTH REGIONAL WWTF
PLAN POLYMER FEED SYSTEMS
SCALE: 1" = 40'-0"

NOTES:

CONTRACTOR TO REMOVE THE FOLLOWING EXISTING EQUIPMENTS:

1. MIXING/AGING TANKS (525 gal PE) (2)
2. MIXERS (2)
3. ASSOCIATED PIPING & FITTINGS
4. CONTROL PANEL & ASSOCIATED WIRING
5. DRY POLYMER FEED UNIT
6. ASSOCIATED PIPING & FITTINGS



SOUTHEAST REGIONAL WWTF
PLAN POLYMER FEED SYSTEMS
SCALE: 1" = 40'-0"

RECORD DRAWING
INFORMATION SUPPLIED BY: U.S. WATER
☒ REVISIONS ☐ NO REVISIONS
DATE: 12/12/07
RECORD DRAWING NOTED THOSE CHANGES MADE DURING THE CONSTRUCTION PROCESS BASED ON THE BEST AVAILABLE INFORMATION PROVIDED BY THE CONTRACTOR

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PLAN POLYMER FEED SYSTEMS

NORTH & SOUTHEAST REGIONAL WWTF'S SOLIDS HANDLING UPGRADE BELT PRESS, POLYMER TRANSFER/MIX SYSTEM

EUGENE R. MASTERS
FLA. PE NO. 27568

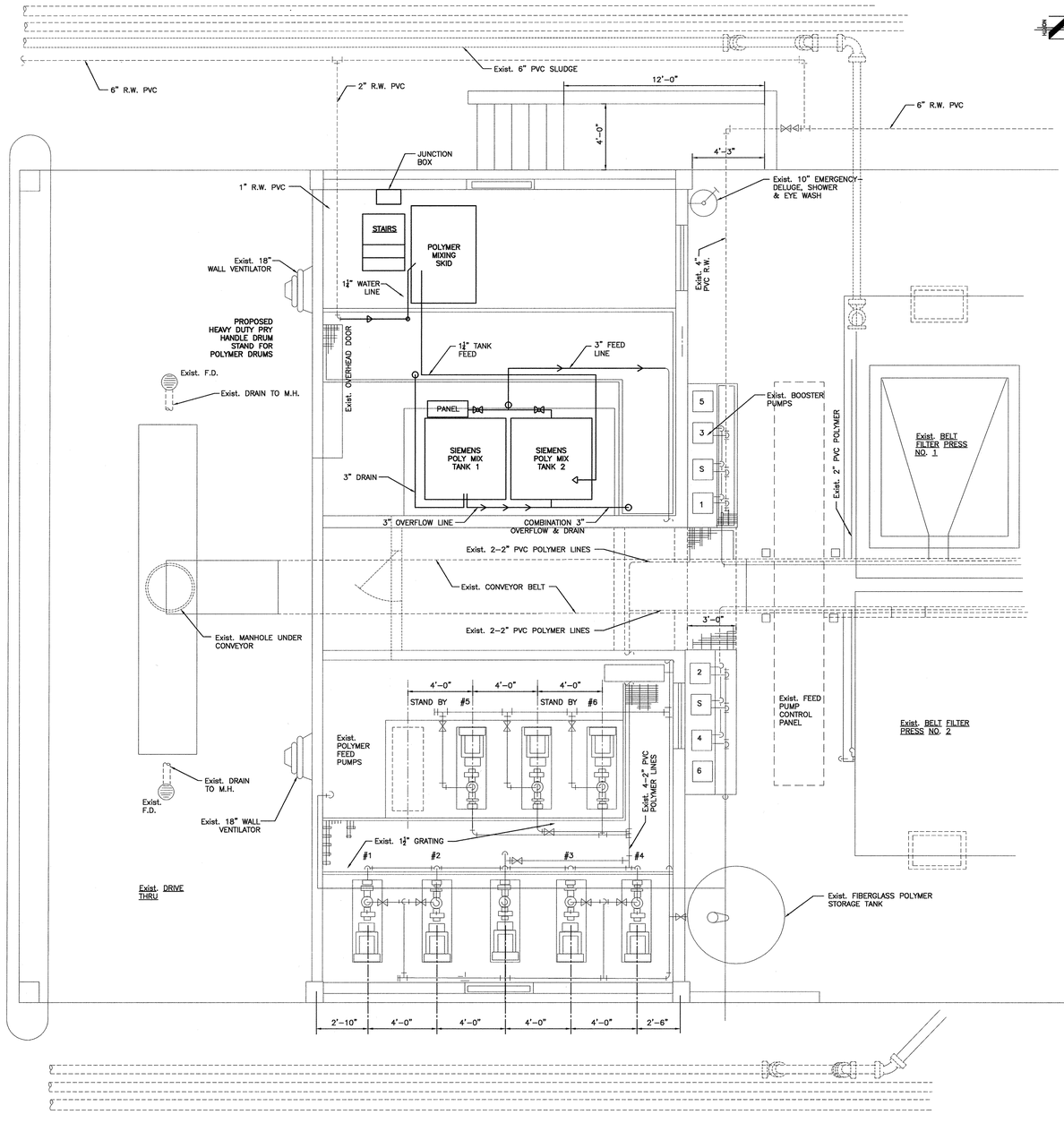
0 4 8 12 FT
1"=40'-0"

No.	Date	REVISION	By
Approved		Date	

Des: JHC
Dwn: MTO
Ckd: WEW

DATE: 09/04	File:
PROJECT NUMBER	CADD FILE NAME
5103580-5103680-5106380	02103V-PLANS
SHEET 3 OF 6	

5054.003



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2. MIXERS (2)
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4. CONTROL PANEL & ASSOCIATED WIRING
5. DRY POLYMER FEED UNIT
6. ASSOCIATED PIPING & FITTINGS

RECORD DRAWING
INFORMATION SUPPLIED BY:
U.S. Water
☒ NO CHANGES ☐ NO CHANGES
DATE: 12/13/07
RECORD DRAWING SHOWING THOSE CHANGES MADE DURING THE CONSTRUCTION PROCESS BASED ON THE BEST AVAILABLE INFORMATION PROVIDED BY THE CONTRACTOR

SOUTHWEST REGIONAL WWTF
PLAN POLYMER FEED SYSTEMS
SCALE: 1" = 40'-0"

100% PLANS

MANATEE COUNTY
1026 26th Ave. East
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PLAN POLYMER FEED SYSTEMS

SOUTHWEST REGIONAL WWTF SOLIDS HANDLING UPGRADE BELT PRESS, POLYMER TRANSFER/MIX SYSTEM

EUGENE R. MASTERS
FLA. PE NO. 27568

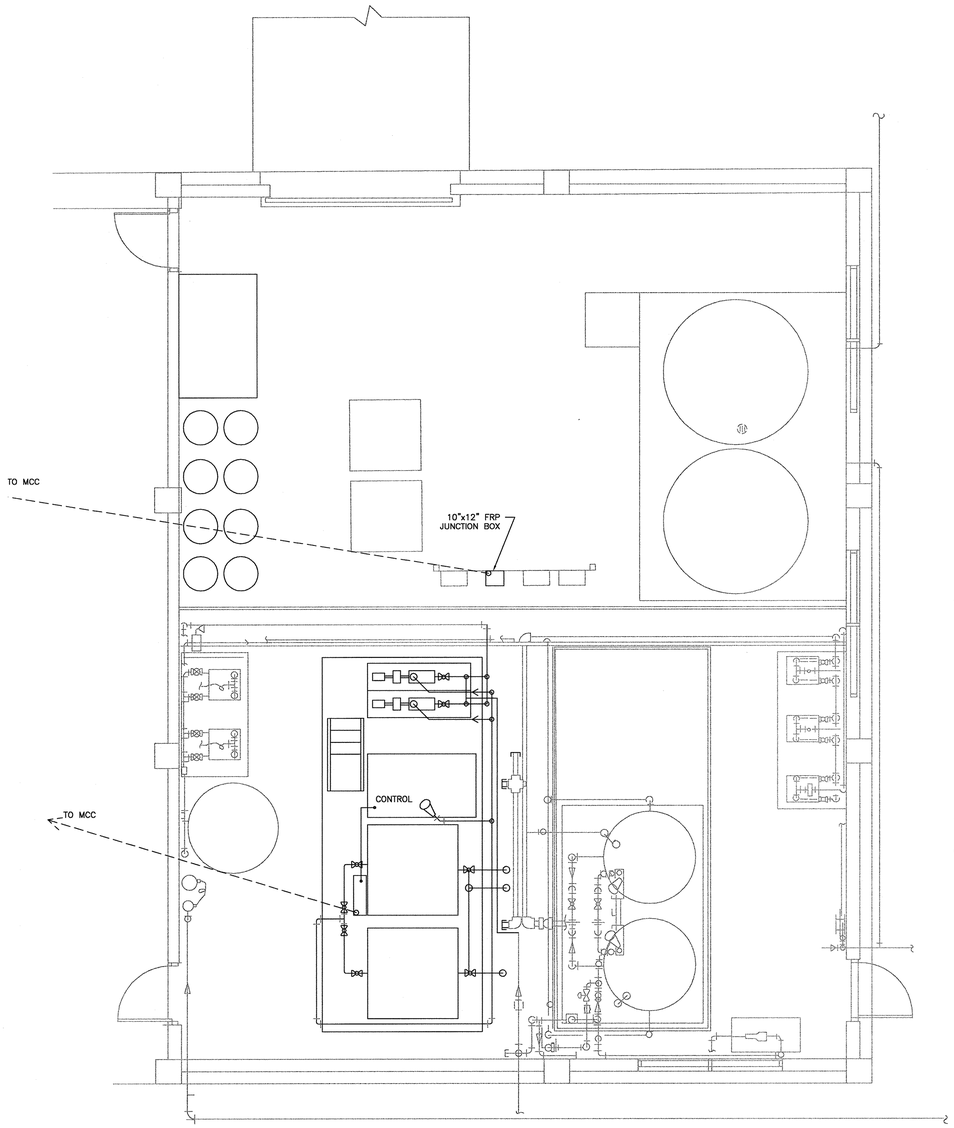
0 4 8 12 FT
1"=40'-0"

No.	Date	REVISION	By
Approved		Date	

Des: JHC
Dwn: MTO
Ckd: WEW

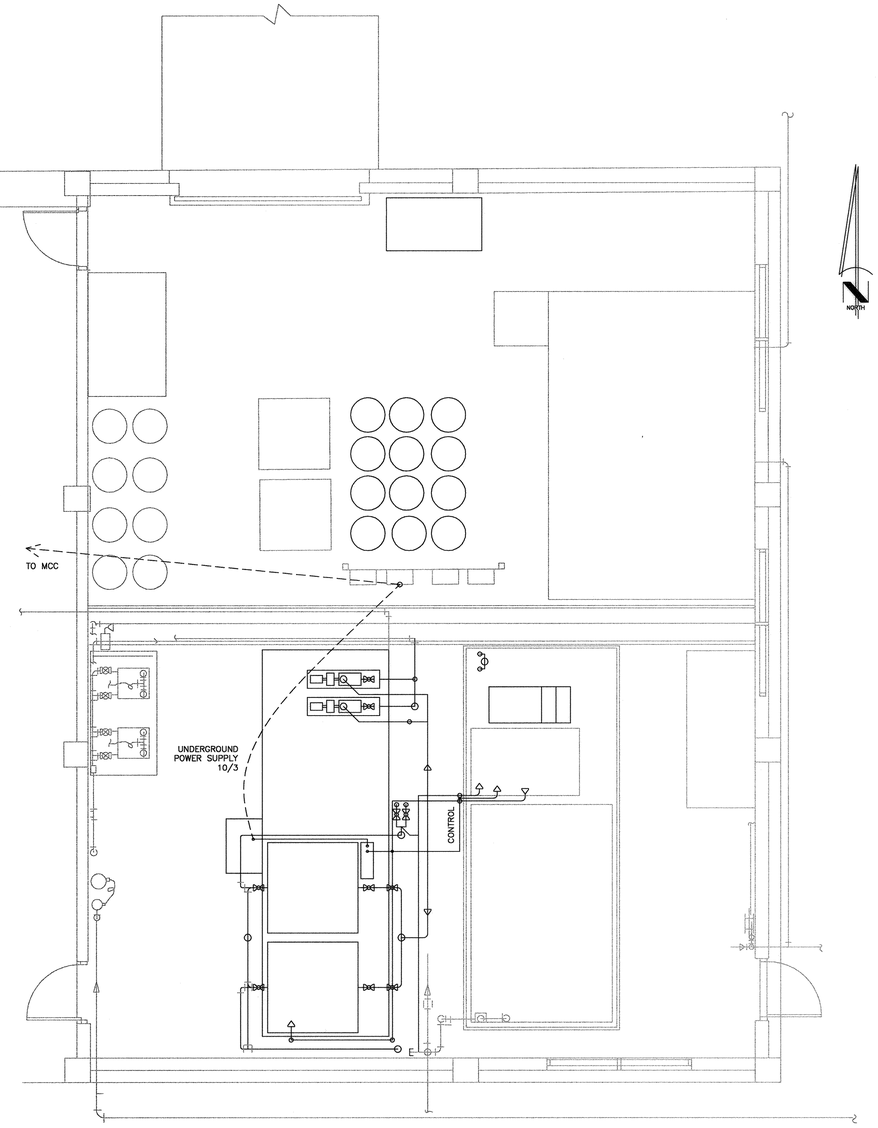
DATE: 09/04
PROJECT NUMBER: 5103580-5103680-5106380
File: CADD FILE NAME: 02103V-PLANS
SHEET 4 OF 6

5054.054



NORTH REGIONAL WWTF
PLAN POLYMER FEED SYSTEMS
SCALE: 1" = 40'-0"

1. EXISTING BFP MIXING/POLYMER CONTROL PANEL IS TO BE REMOVED. THE ELECTRICAL FEED TO THIS PANEL WAS 3-#10, 3/4" CONDUIT FROM A 30 AMP CIRCUIT BREAKER IN MCC-6. REUSE THE BREAKER AND CONDUIT. REMOVE EXISTING CONDUCTORS. REPLACE THE CONTROL PANEL WITH A 6"x6" PULL BOX AND TERMINATE CONDUIT RUN INTO THIS BOX. CONTINUE FROM THIS BOX WITH 3/4" CONDUIT TO THE PROPOSED POLYMER CONTROL PANEL AS INDICATED. PULL 3-#10, #12 GND FROM THE EXISTING CIRCUIT BREAKER TO THE PANEL VIA THE CONDUIT AND JUNCTION BOX AND TERMINATE.
2. 3-#12, #12 GND.3/4" CONDUIT FROM POLYMER TRANSFER PUMPS TO POLYMER CONTROL PANEL
3. 3-#12, #12 GND.3/4" CONDUIT FROM POLYMER MIXERS TO POLYMER CONTROL PANEL
4. 3-#12, #12 GND.3/4" CONDUIT FROM DRY LIQUID POLYMER FEED UNIT TO POLYMER CONTROL PANEL
5. 8-#14, #12 GND, 3/4" CONDUIT TO POLYMER CONTROL PANEL.
6. 1-2/C SHIELDED CABLE FROM LEVEL SENSOR TO POLYMER CONTROL PANEL.
7. PROVIDE A 1" CONDUIT FROM PROPOSED POLYMER CONTROL PANEL TO A JUNCTION BOX LOCATED ON CEILING ABOVE MIXER VALVES TO BE USED BY POLYMER SUPPLIER.
8. CONTRACTOR SHALL MAKE ALL TERMINATIONS.
9. CONDUIT RUNS ARE DIAGRAMMATIC.
10. RIGID METAL CONDUIT SHALL BE ALUMINUM, SEE SPECIFICATION 16110. INSTRUMENTATION (SIGNAL) WIRE SHALL BE INSTALLED IN RIGID ALUMINUM CONDUIT.
11. ALL CONDUITS, BOXES, FITTINGS, FIXTURES, SUPPORTS, HANGING SYSTEM (CHANNEL, CLIPS, CLAMPS, STRAPS, HARDWARE, ETC.) SHALL BE STAINLESS STEEL OR RIGID ALUMINUM, SUITABLE FOR EXTREMELY CORROSIVE ENVIRONMENTS.



SOUTHEAST REGIONAL WWTF
PLAN POLYMER FEED SYSTEMS
SCALE: 1" = 40'-0"

RECORD DRAWING
INFORMATION SUPPLIED BY:
U.S. WATER
☒ REVISIONS ☐ NO REVISIONS
DATE: 12/13/07
RECORD DRAWING SHOWS THOSE CHANGES MADE DURING THE CONSTRUCTION PROCESS BASED ON THE BEST AVAILABLE INFORMATION PROVIDED BY THE CONTRACTOR

ELECTRICAL ENGINEER:
VISTA SYSTEMS
P. O. Box 74
Palm Harbor, Florida 34682-0074
(727) 787-8876
FAX (727) 773-2229

100% PLANS

MANATEE COUNTY
1026 26th Ave. East
Bradenton, FL 34208

ASH ENGINEERING, INC.
4902 Eisenhower Blvd, Suite 380
Tampa, FL 33634-6323 CA#6603
813.290.8899 Fax: 813.290.8891
www.ashengineering.com

ELECTRICAL
POLYMER FEED SYSTEMS

NORTH & SOUTHEAST REGIONAL WWTF'S SOLIDS HANDLING UPGRADE BELT PRESS, POLYMER TRANSFER/MIX SYSTEM

ROBERT L. TOTH
FLA. PE NO. 36541

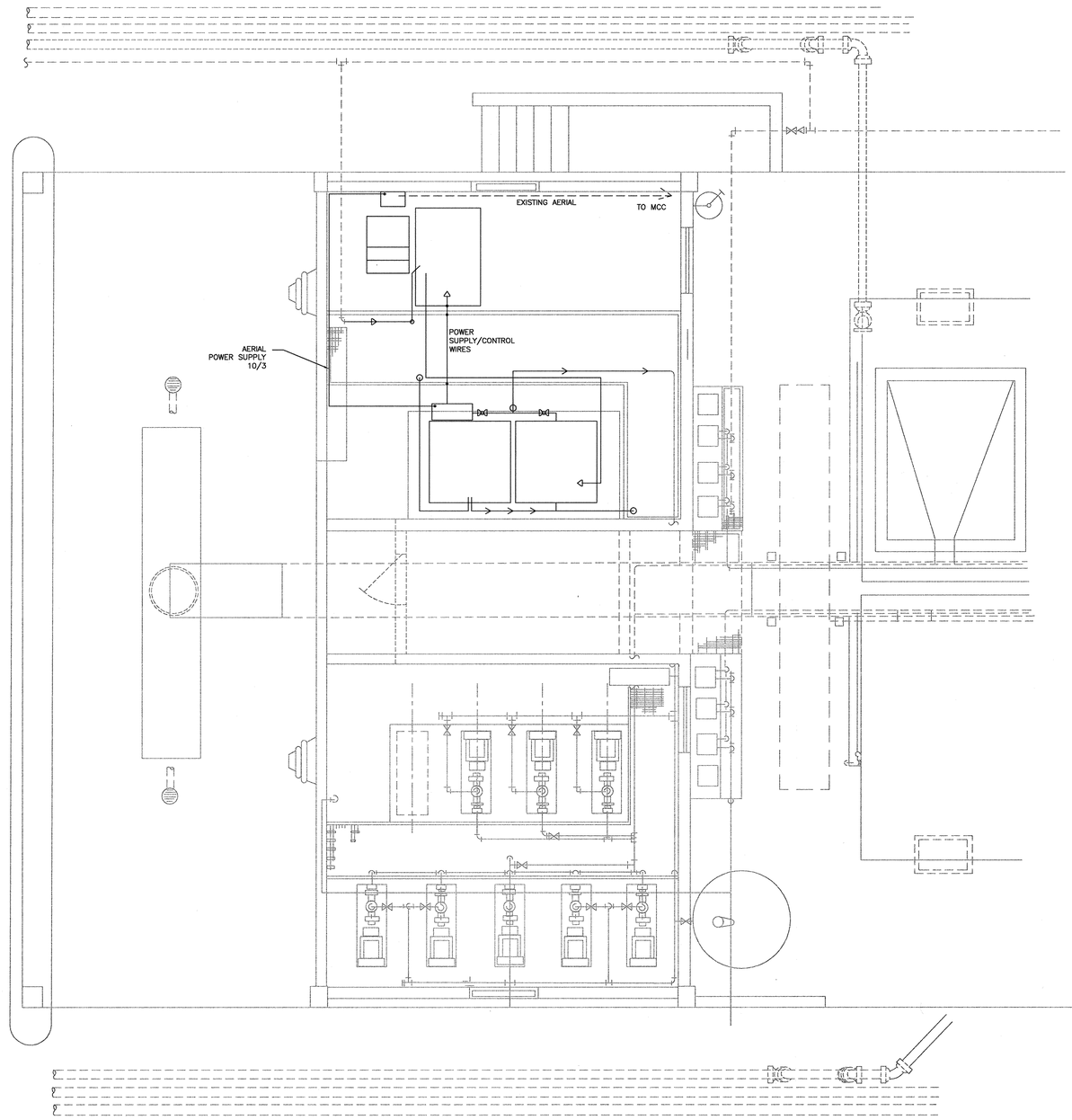
0 4 8 12 FT
3"=1'-0"

No.	Date	REVISION	By
Approved		Date	

Des: RLT
Dwn: MTO
Ckd: WEW

DATE: 09/04 | File:
PROJECT NUMBER | CADD FILE NAME
5103580-5103680-5106380 | 02103V-ELECTRICAL PLANS
SHEET 5 OF 6

5054.005



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SOUTHWEST REGIONAL WWTF
PLAN POLYMER FEED SYSTEMS
SCALE: 1" = 40'-0"

ELECTRICAL ENGINEER:
VISTA SYSTEMS
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ELECTRICAL
POLYMER FEED SYSTEMS

SOUTHWEST REGIONAL WWTF
SOLIDS HANDLING UPGRADE BELT PRESS,
POLYMER TRANSFER/MIX SYSTEM

ROBERT I. TOTH
FLA. PE NO. 36541

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3"=1'-0"

No.	Date	REVISION	By
		Approved	Date

Des: RLT
Dwn: MTO
Ckd: WEW

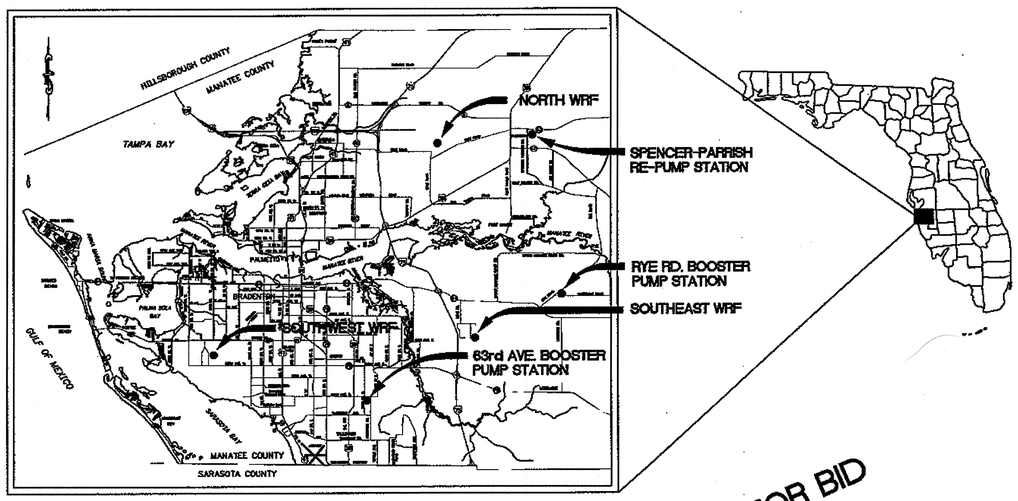
DATE: 09/04 | File:
PROJECT NUMBER | CADD FILE NAME
5103580–5103680–5106380 | 02103V–ELECTRICAL PLANS
SHEET 6 OF 6

5054.006

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

COUNTY PROJECT # 60420

MANATEE COUNTY, FLORIDA



PROJECT LOCATIONS

ISSUE FOR BID
MAY, 2006

RECEIVED
FEB 26 2009
PUBLIC WORKS ENGINEERING

RECEIVED
FEB 26 2009
PUBLIC WORKS ENGINEERING

McKIM & CREED
1365 Hamlet Avenue
Clearwater, FL 33756
Phone: (727)442-7196, Fax: (727)461-3827
AA0002657 EB0006691
www.mckimcreed.com

Record Drawing

24-18

4945.001

GENERAL ABBREVIATIONS

@	AT	HWL	HIGH WATER LEVEL
AC	ACRES	HDWL	HEADWALL
ABND	ABANDONED	HR	HANDRAIL
AFF	ABOVE FINISHED FLOOR	IN	INCH
ALUM	ALUMINUM	INV	INVERT
ANCH	ANCHOR	ID	INSIDE DIAMETER
APPROX	APPROXIMATE	INFL	INFLUENT
ARV	AIR RELEASE VALVE	INT	INTERIOR
ASPH	ASPHALT	INV	INVERT
AVE	AVENUE	IP	IRON PIN
BFV	BUTTERFLY VALVE	IR	IRON ROD
BLDG	BUILDING	JB	JUNCTION BOX
BO	BLOW-OFF	JT	JOINT
BLVD	BOULEVARD	LG	LONG/LENGTH
BM	BENCHMARK	LN	LANE
BOT/BOTT	BOTTOM	LP	LIGHT POLE
BRG	BEARING	LT	LEFT
BV	BALL VALVE	LS	LIFT STATION
C	CONDUIT	LTG	LIGHTING
CATV	CABLE TELEVISION	LWL	LOW WATER LEVEL
CB	CATCH BASIN	MAX	MAXIMUM
CIR	CIRCLE	MB	MAILBOX
CLF	CHAIN LINK FENCE	MES	MITERED END SECTION
CLG	CEILING	MFR	MANUFACTURER
℄	CENTERLINE	MH	MANHOLE
CMP	CORRUGATED METAL PIPE	MIN	MINIMUM/MINUTE
CMU	CONCRETE MASONRY UNIT	MJ	MECHANICAL JOINT
CO	CLEAN OUT	MO	MASONRY OPENING/MOTOR OPERATED
COL	COLUMN	MON	MONUMENT
CONN	CONNECTOR/CONNECTION	No	NUMBER
CONC	CONCRETE	NTS	NOT TO SCALE
CONT	CONTINUOUS	NWL	NORMAL WATER LEVEL
CORP	CORPORATION	⌀	DIAMETER
CV	CHECK VALVE	OC	ON CENTER
D	DEEP/DRAIN	OD	OUTSIDE DIAMETER
DBL	DOUBLE	OHE	OVERHEAD ELECTRIC
DEMO	DEMOLITION	OHT	OVERHEAD TELEPHONE
DIA OR ⌀	DIAMETER	OHW	OVERHEAD WIRE
DIM	DIMENSION	OPNG	OPENING
DIP	DUCTILE IRON PIPE	PE	PLAIN END
DHW	DESIGN HIGH WATER	P	PROPERTY LINE
DISCH	DISCHARGE	PNL	PANEL
DLW	DESIGN LOW WATER	POT	POTABLE
DN	DOWN	PP	POWER POLE
DO	DOOR OPENING/DISSOLVED OXYGEN	PROP	PROPOSED
DR	DRIVE	PSI	POUNDS PER SQUARE INCH
DRWY	DRIVEWAY	PS	PUMP STATION
DWG	DRAWING	PVC	POLYVINYL CHLORIDE
EA	EACH	PV	PLUG VALVE
EF	EACH FACE	PVMT	PAVEMENT
EFF	EFFLUENT	R	RADIUS/RISER/RELAY
EJ	EXPANSION JOINT	RAD	RADIUS
EL/ELEV	ELEVATION	RCP	REINFORCED CONCRETE PIPE
ELEC/E	ELECTRICAL	RED	REDUCER
EQPT	EQUIPMENT	REF	REFERENCE
ETC	AND SO FORTH	REINF	REINFORCED/REINFORCING
EW	EACH WAY	REQ'D	REQUIRED
EXF	EXHAUST FAN	RESTR	RESTRAINED
EXIST	EXISTING	RT	RIGHT
EXL	EXHAUST LOUVER	R/W	RIGHT OF WAY
EXP	EXPANSION	SAN	SANITARY
EXT	EXTERIOR	SCH	SCHEDULE
FT	FOOT	SD	STORM DRAIN
FDN	FOUNDATION	SEC	SECTION
FH	FIRE HYDRANT	SPEC	SPECIFICATION
FLG	FLANGE	SQ	SQUARE
FLR	FLOOR	SS	SANITARY SEWER/STAINLESS STEEL
FD	FLOOR DRAIN	ST	STREET
FM	FORCE MAIN	STA	STATION
FRP	FIBERGLASS REINFORCED PLASTIC PIPE	STD	STANDARD
		STL	STEEL
FF	FINISHED FLOOR	S/W	SIDEWALK
FTG	FOOTING	TOB	TOP OF BANK (DITCH)
G	GAS	T&B	TOP & BOTTOM
GAL	GALLON	TEL/T	TELEPHONE
GALV	GALVANIZED	TEMP	TEMPORARY
GDRL	GUARDRAIL	THK	THICK
GEN	GENERATOR	TOS	TOE OF SLOPE (DITCH)
GI	GRATED INLET	TBR	TO BE REMOVED
GPM	GALLONS PER MINUTE	TYP	TYPICAL
GRTG	GRATING	UGE	UNDERGROUND ELECTRIC
GR/GRD	GRADE	UGT	UNDERGROUND TELEPHONE
GV	GATE VALVE	VAR	VARIES
GWP	GUY WIRE POLE	VERT	VERTICAL
HB	HOSE BIBB	W	WATER/WIDE
HORIZ	HORIZONTAL	W/	WITH
HP	HORSEPOWER	WL	WATER LEVEL
HT	HEIGHT	WM	WATER METER
HVAC	HEATING/VENTILATION/ AIR CONDITIONING	WS	WALL SLEEVE/WATER STOP/ WATER SERVICE

NOTE:
STANDARD ABBREVIATIONS ARE FOR REFERENCE ONLY. NOT ALL ABBREVIATIONS ARE USED IN THESE CONTRACT DRAWINGS.

LEGEND

EXISTING		PROPOSED
BO	BLOW-OFF VALVE	BO
FH	FIRE HYDRANT	FH
WM	WATER METER	WM
Ⓓ	STORM SEWER MANHOLE	●
□	CATCH BASIN	■
	MITERED END SECTION	
Ⓢ	SANITARY SEWER MANHOLE	●
CO	CLEANOUT	CO
Ⓐ	AIR RELEASE VALVE	Ⓐ
⋈	GATE VALVE	⋈
⋈	BUTTERFLY VALVE	⋈
⋈	CHECK VALVE	⋈
⋈	BALL VALVE	⋈
⋈	PLUG VALVE	⋈
▷	REDUCER	▶
◎	SOIL BORING	◎
●	BOLLARD	●
	TREE	
	BRUSH LINE	
	BENCH MARK	
	IRON PIN SET	●
○	IRON PIN FOUND	
△	TRAVERSE POINT	
□ C.M.	CONCRETE MONUMENT	
□ MBOX	MAILBOX	
GM	GAS METER	
Ⓣ	TELEPHONE MANHOLE	
T	TELEPHONE BOX	
CATV	CABLE TV BOX	
E	ELECTRIC BOX	
Ⓔ	ELECTRIC MANHOLE	
☼	LIGHT POLE	
	UTILITY POLE	
*	SPRINKLER	
	SIGN (SN)	
8"SD	STORM DRAIN	8"SD
8"SS	SANITARY SEWER	8"SS
8"FM	FORCE MAIN	8"FM
8"RCW	RECLAIMED WATER	8"RCW
8"W	POTABLE WATER	8"W
	FENCE	
	R/W OR PROPERTY LINE	
	EASEMENT LINE	
	TO BE REMOVED	
	SILT FENCE	
	LIMITS OF CONSTRUCTION	
8"G	GAS	
UGE	ELECTRICAL	
UGT	TELEPHONE	
CATV	CABLE TV	
OHW	OVERHEAD WIRE	
	TOP OR TOE OF BANK	
	DITCH OR FLOWLINE	

NOTE:
THIS LEGEND IS GENERAL IN NATURE SOME DESIGNATIONS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS.

INDEX OF DRAWINGS

SHEET NUMBER	DRAWING TITLE
COV	COVER
G1	INDEX OF DRAWINGS, LEGEND AND ABBREVIATIONS
G2	MISCELLANEOUS DETAILS
	PUMPING STATIONS
I-100	63rd. AVE. RYE ROAD AND SPENCER PARRISH PUMP STATIONS ELECTRICAL FLOOR PLANS
I-101	COUNTY SCADA SCHEMATIC
	SOUTHEAST WATER RECLAMATION FACILITY
I-200	ENTRANCE ROAD FIBER OPTIC PLAN
I-201	ENTRANCE ROAD FIBER OPTIC PLAN
I-202	CONTROL ROOM PLAN AND CONSOLE DETAIL
I-203	FIBER OPTIC LAYOUT
	SOUTHWEST WATER RECLAMATION FACILITY
I-300	OVERALL SITE PLAN
I-301	ELECTRICAL BUILDING POWER PLAN
I-302	MISCELLANEOUS CONTROL ROOMS PLANS
I-303	MISCELLANEOUS CONTROL ROOMS PLANS
I-304	7-BAY CONSOLE DETAILS
I-305	COMMUNICATIONS MANHOLE PLANS AND PICTURES
I-306	PROCESS & INSTRUMENTATION DIAGRAM
I-307	FIBER OPTIC LAYOUT
	NORTH WATER RECLAMATION FACILITY
I-400	OVERALL SITE PLAN
I-401	ELECTRICAL BUILDING PLAN
I-402	MISCELLANEOUS CONTROL ROOMS FLOOR PLANS
I-403	CONTROL ROOM 5 BAY CONSOLE DETAILS
I-404	PROCESS & INSTRUMENTATION DIAGRAM
I-405	FIBER OPTIC LAYOUT

Record Drawing

REV.NO.	DESCRIPTIONS	DATE
2	RECORD DRAWING	08-25-08
1	AS BUILT	05-22-08

REVISIONS

SEAL

DANIEL H COTE, P.E.
No. 17650

SEAL

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Clearwater, FL 33756
Phone: (727)442-7196, Fax: (727)461-3827
AA0002667 EB0006691
www.mckimcreed.com

MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

INDEX OF DRAWINGS, LEGEND AND ABBREVIATIONS

DATE:	MAY, 2008
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

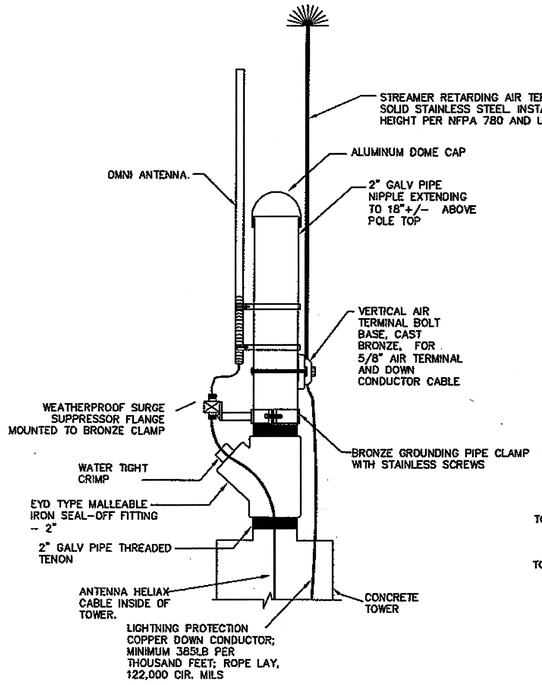
SCALE
HORIZONTAL: NA
VERTICAL: NA

MAC FILE NUMBER

DRAWING NUMBER
G-1

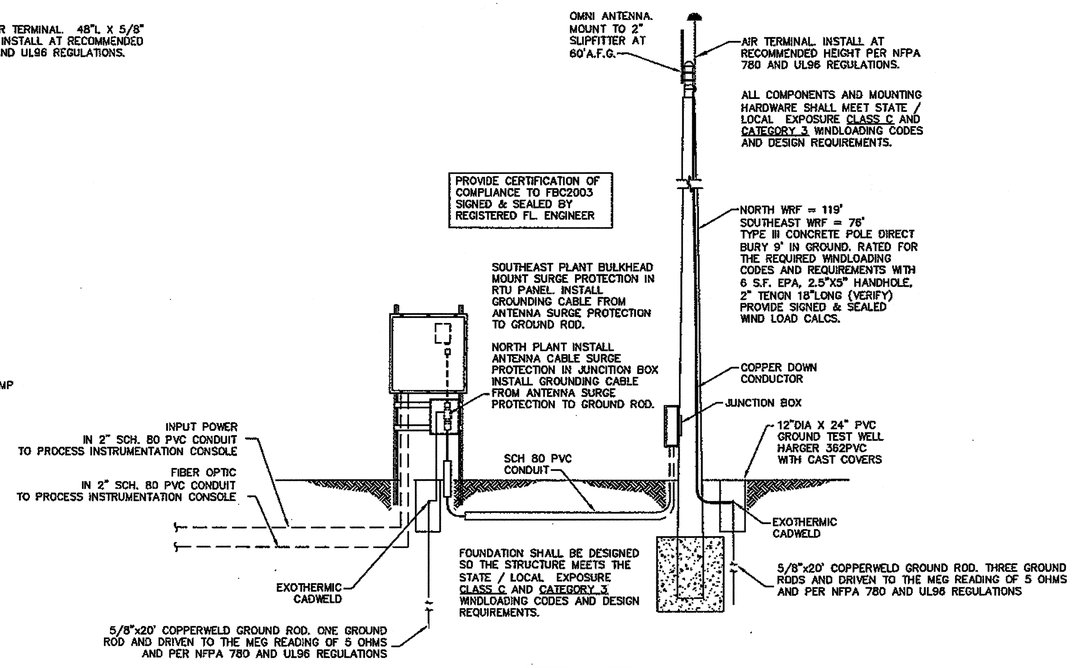
STATUS: ISSUE FOR BID
REVISION

4945.002



CONCRETE POLE TOP MOUNTING DETAIL

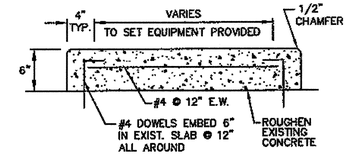
NO SCALE



MASTER ANTENNA MOUNTING DETAIL

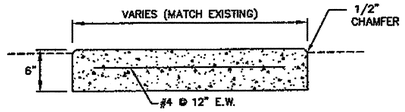
NO SCALE

B



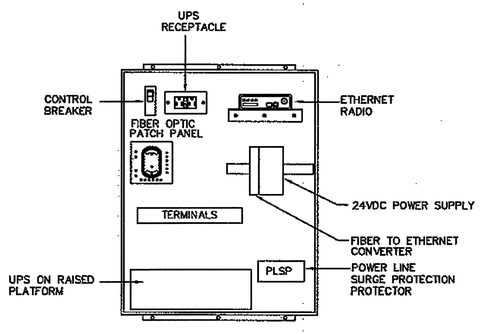
CONCRETE EQUIPMENT PAD DETAIL

NO SCALE



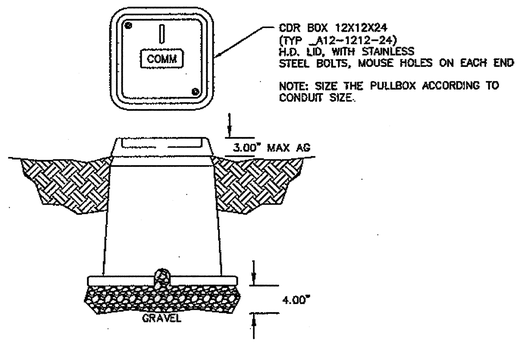
TYPICAL CONCRETE SIDEWALK DETAIL

NO SCALE



RADIO TELEMETRY PANEL DETAIL

NO SCALE



PULL BOX DETAIL

NO SCALE

C
I-200

Record Drawing

REVISIONS		
NO.	DESCRIPTIONS	DATE
1	AS BUILT	05-22-08
2	RECORD DRAWING	05-25-08

SEAL

DANIEL H CDTE, P.E.
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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

MISCELLANEOUS DETAILS

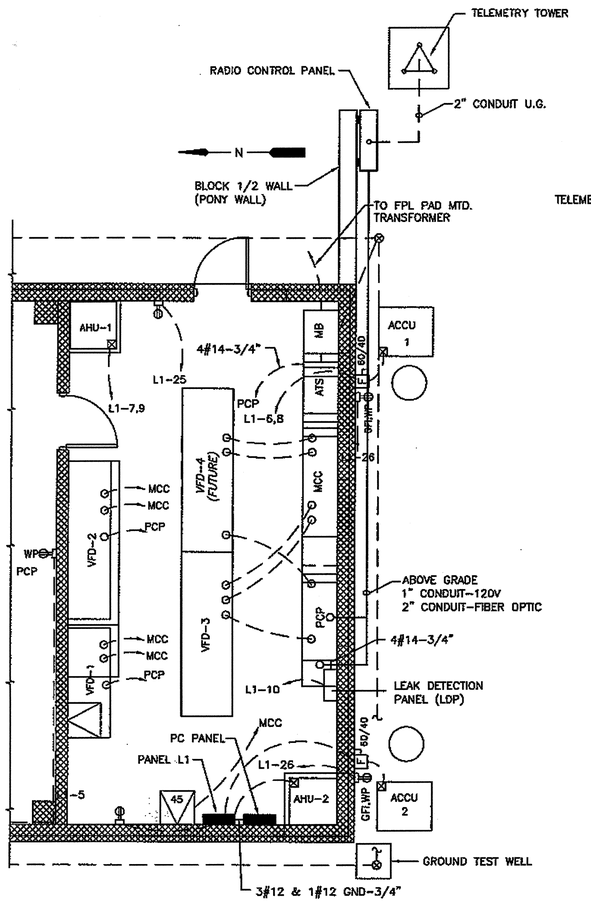
DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DIW
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

MMC FILE NUMBER
DRAWING NUMBER
G-2

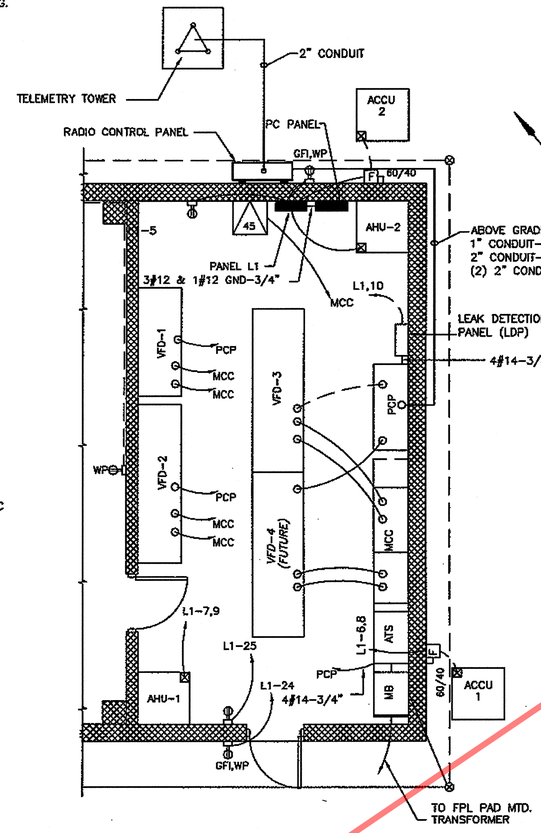
STATUS: ISSUE FOR BID
REVISION

4945.003



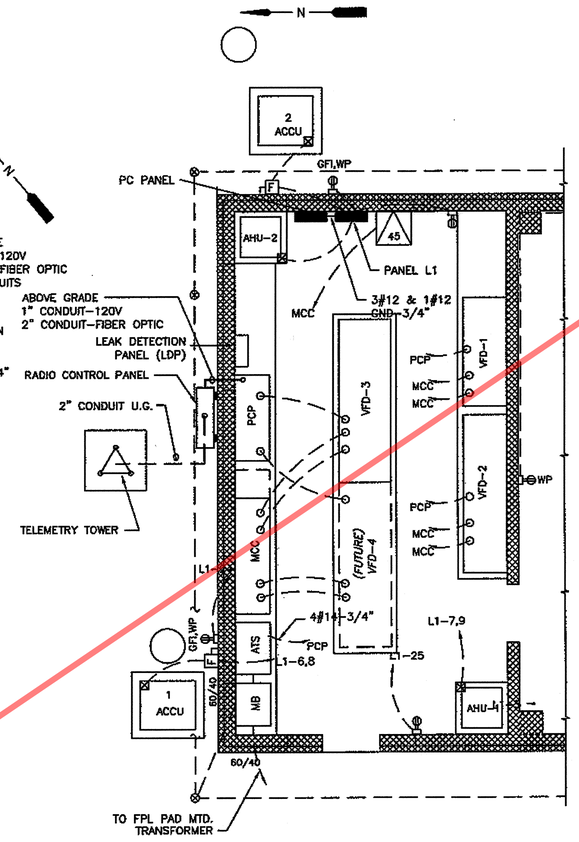
63rd AVE BOOSTER PUMP STATION PARTIAL PLAN

SCALE: 1/4" = 1'-0"



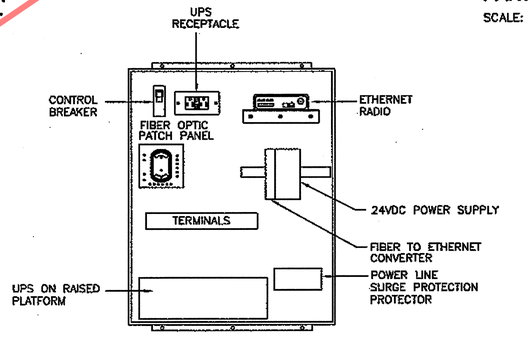
RYE RD. BOOSTER PUMP STATION PARTIAL PLAN

SCALE: 1/4" = 1'-0"



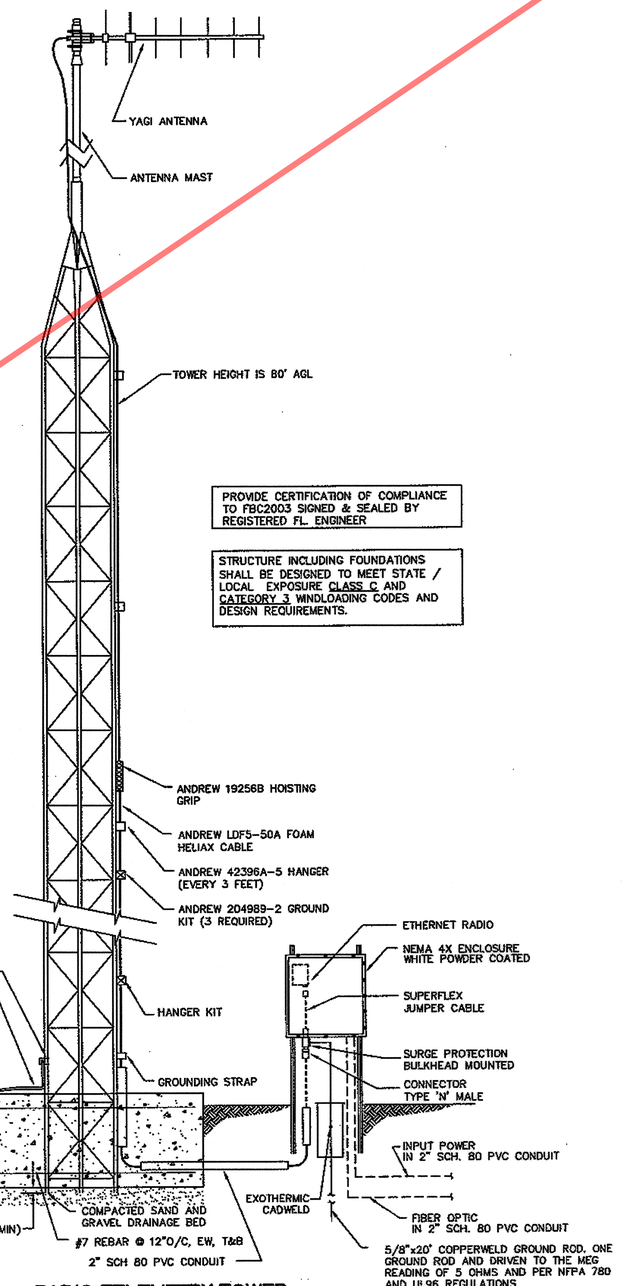
SPENCER PARRISH RE-PUMP STATION PARTIAL PLAN

SCALE: 1/4" = 1'-0"



RADIO TELEMETRY PANEL DETAIL

SCALE: NTS



PROVIDE CERTIFICATION OF COMPLIANCE TO FBC2003 SIGNED & SEALED BY REGISTERED FL. ENGINEER

STRUCTURE INCLUDING FOUNDATIONS SHALL BE DESIGNED TO MEET STATE / LOCAL EXPOSURE CLASS C AND CATEGORY 3 WINDLOADING CODES AND DESIGN REQUIREMENTS.

RADIO TELEMETRY TOWER DETAIL

SCALE: NTS

Record Drawing

REVISIONS		
DESCRIPTIONS		DATE
1	AS BUILT	05-22-08
2	RECORD DRAWING	08-25-08

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM

63rd AVE, RYE RD. AND SPENCER PARRISH PUMP STATIONS ELECTRICAL FLOOR PLANS

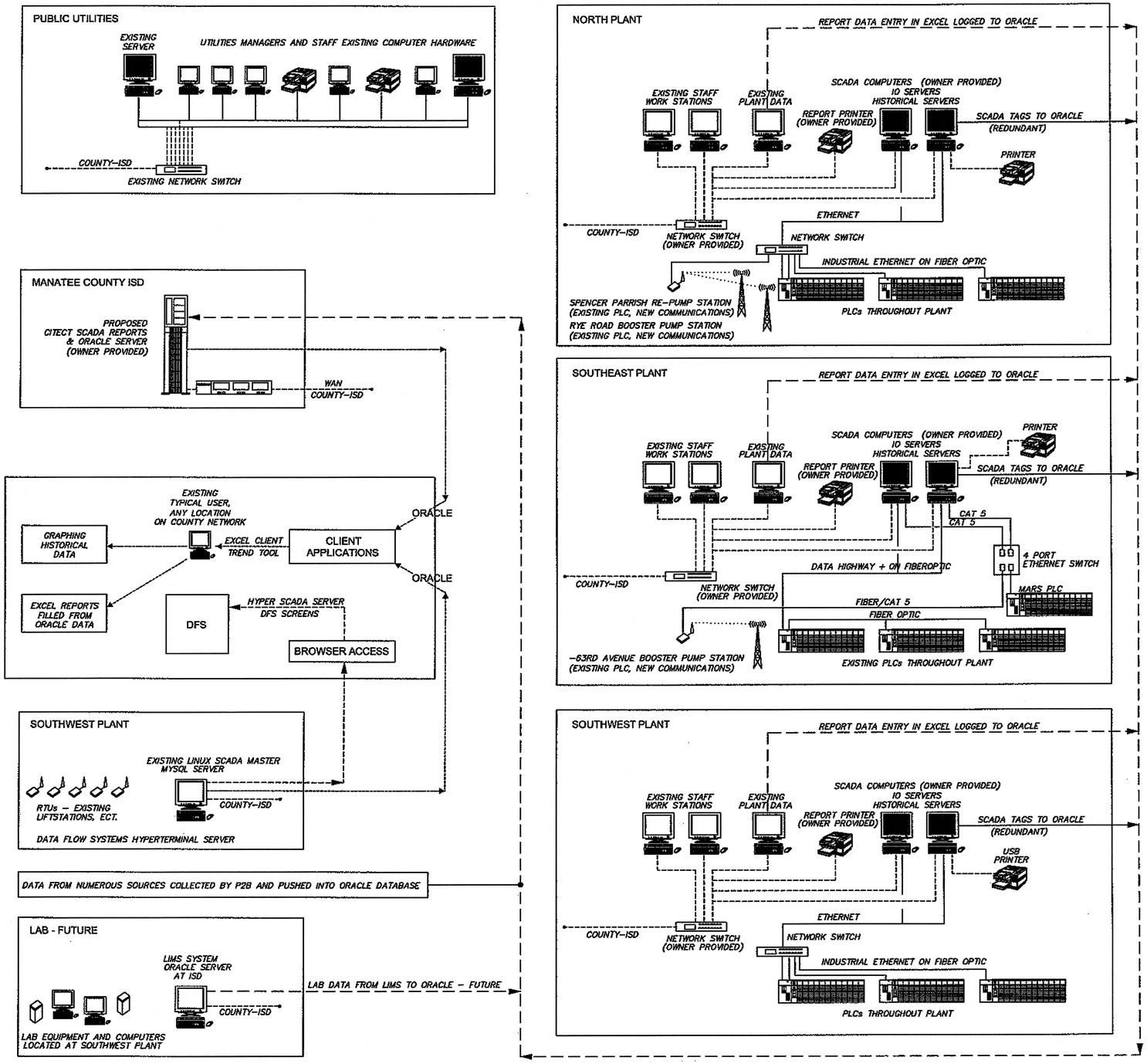
DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

MAC FILE NUMBER
DRAWING NUMBER
I-100

STATUS: ISSUE FOR BID
REVISION

4945.004



Record Drawing

REV.NO.	DESCRIPTIONS	DATE
2	RECORD DRAWING	09-25-08
1	AS BUILT	05-22-08

REVISIONS

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM

COUNTY SCADA SCHEMATIC

DATE:	MAY, 2008
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

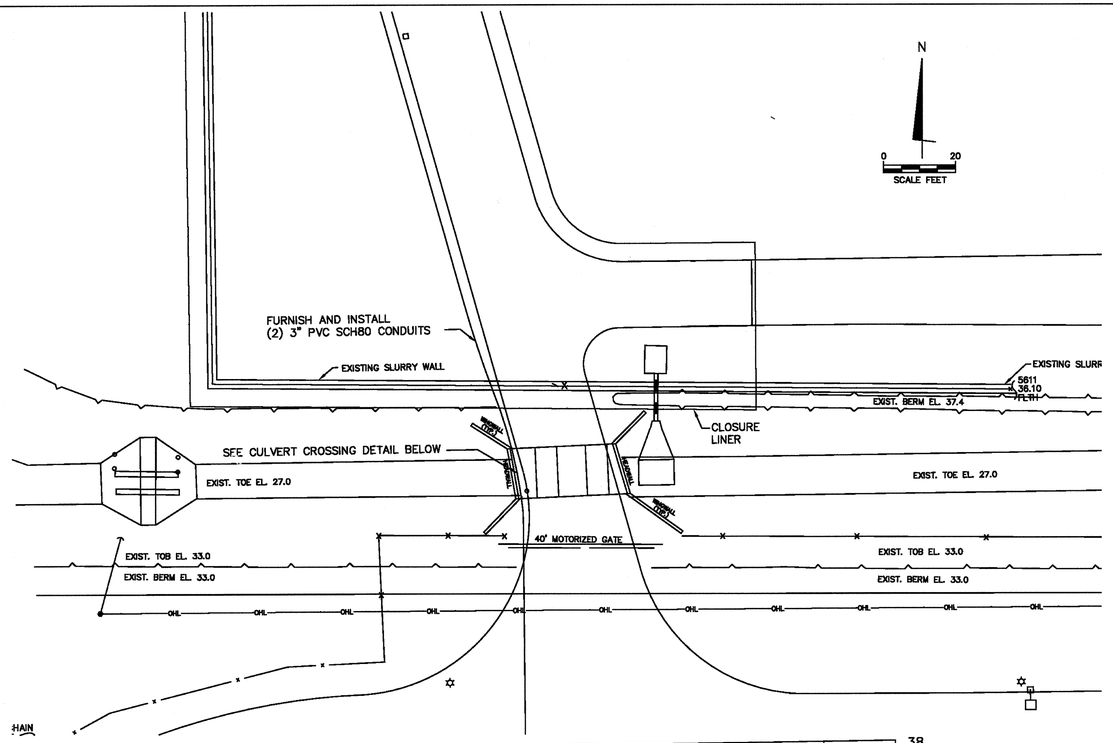
MAC FILE NUMBER

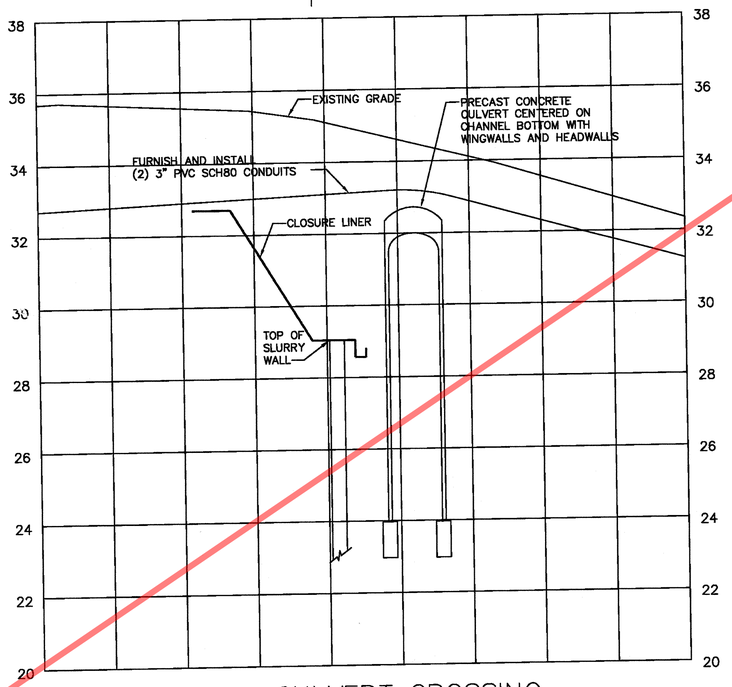
DRAWING NUMBER
I-101

STATUS: ISSUE FOR BID

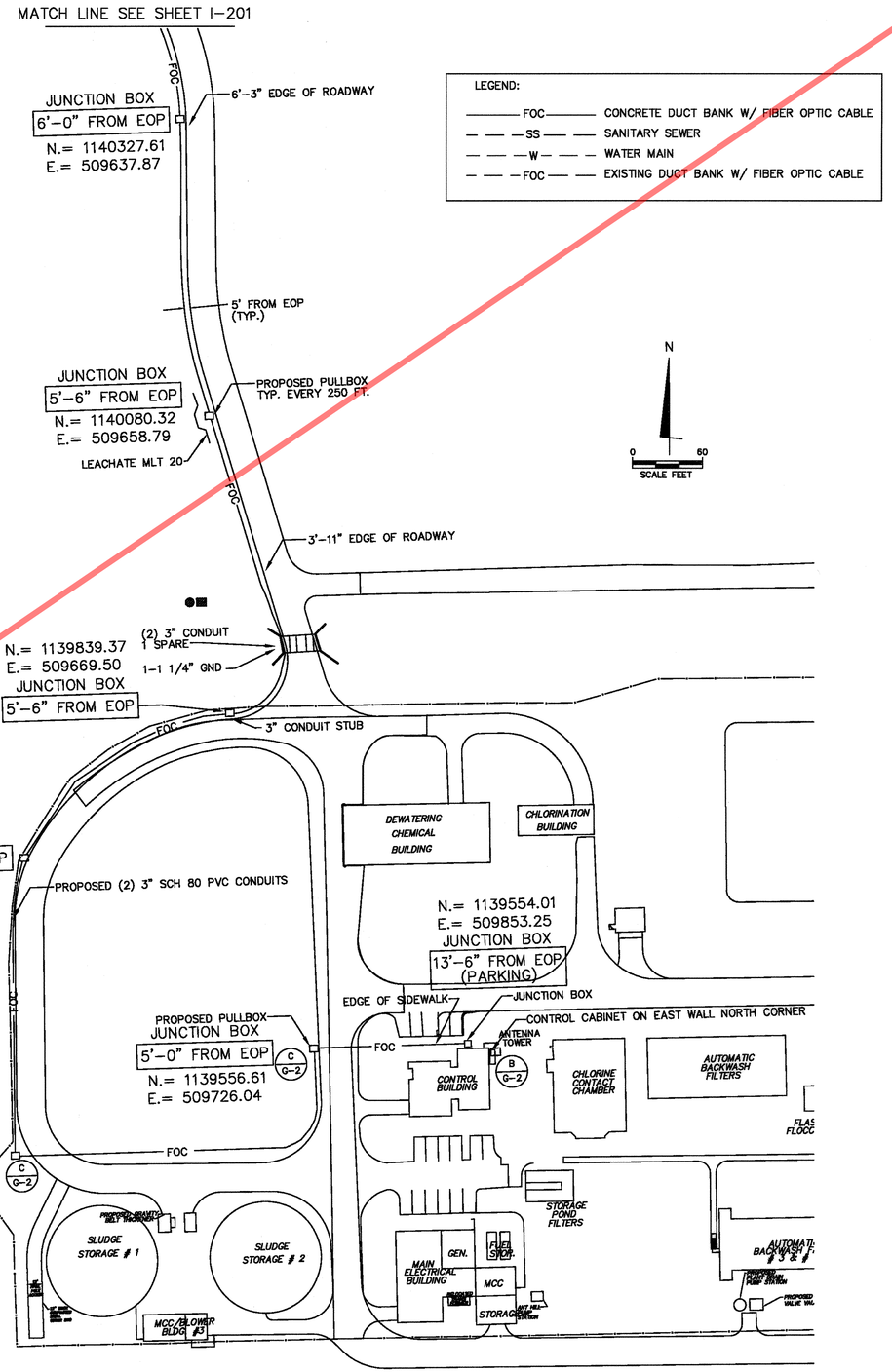
REVISION

4945.005





CULVERT CROSSING
PLAN AND PROFILE
1"=20' HORIZ.
1"=2' VERT.



NOTE:
COORDINATE VALUES DEPICTED HEREON ARE BASED UPON STATE PLANE COORDINATE SYSTEM, FLORIDA WEST ZONE, NAD 83/90 ADJUSTMENT DERIVED FROM DGPS POSITIONS ON 1/14/09.

EOP=EDGE OF PAVEMENT **Record Drawing**

REV.NO.	DESCRIPTIONS	DATE
2	RECORD DRAWING	08-25-08
1	AS BUILT	05-22-08

REVISIONS

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM

SOUTHEAST WATER RECLAMATION FACILITY ENTRANCE ROAD FIBER OPTIC PLAN

DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

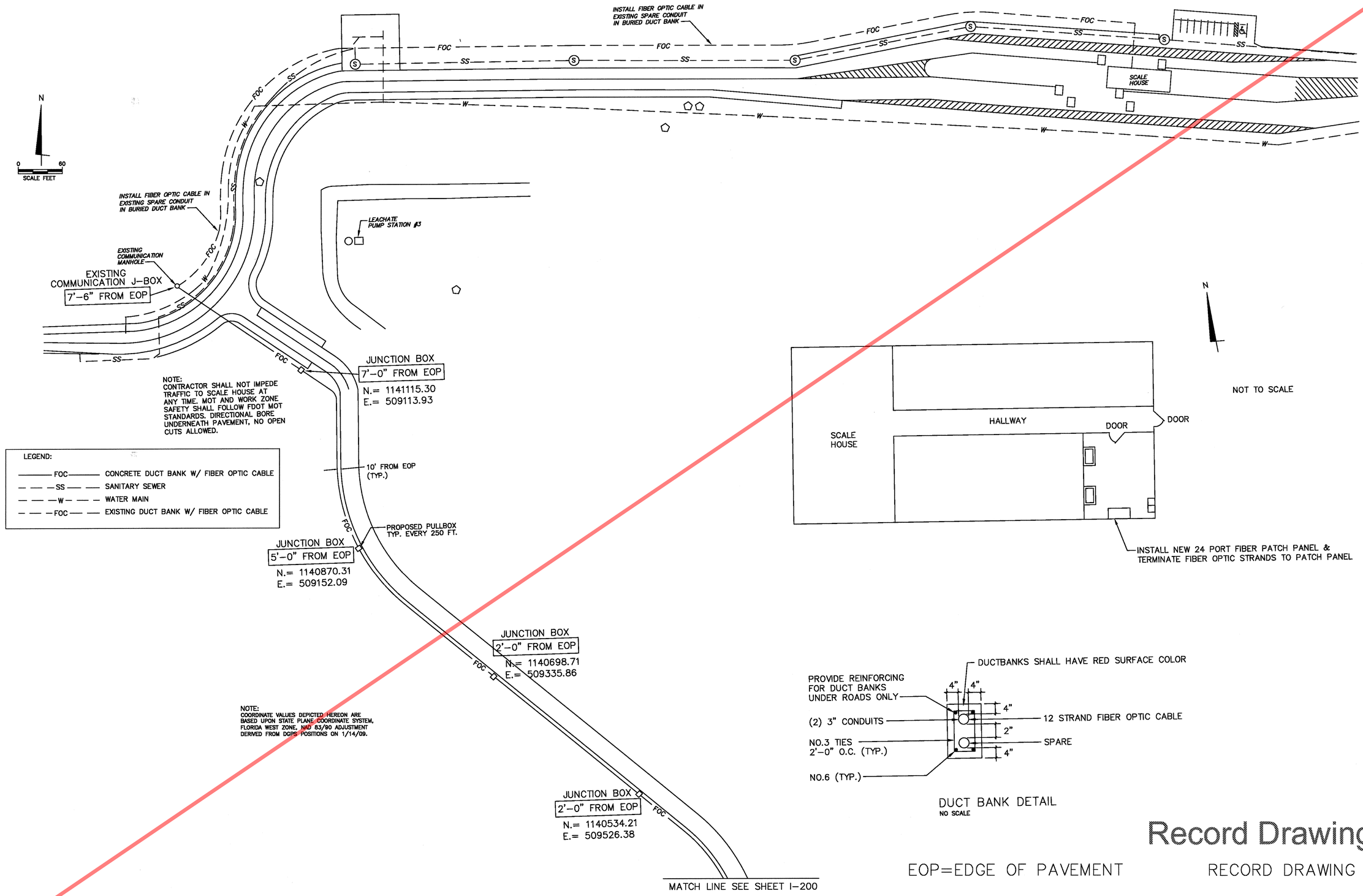
SCALE
HORIZONTAL: 1"=60'
VERTICAL: NA

M&C FILE NUMBER

DRAWING NUMBER
I-200

STATUS: ISSUE FOR BID
REVISION

4945.006



DUCT BANK DETAIL
NO SCALE

Record Drawing

EOP=EDGE OF PAVEMENT

RECORD DRAWING

REV.NO.	DESCRIPTIONS	DATE
2	RECORD DRAWING	08-25-08
1	AS BUILT	5-20-08

REVISIONS

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

SOUTHEAST WATER RECLAMATION FACILITY
ENTRANCE ROAD FIBER OPTIC PLAN

DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: 1"=60'
VERTICAL: NA

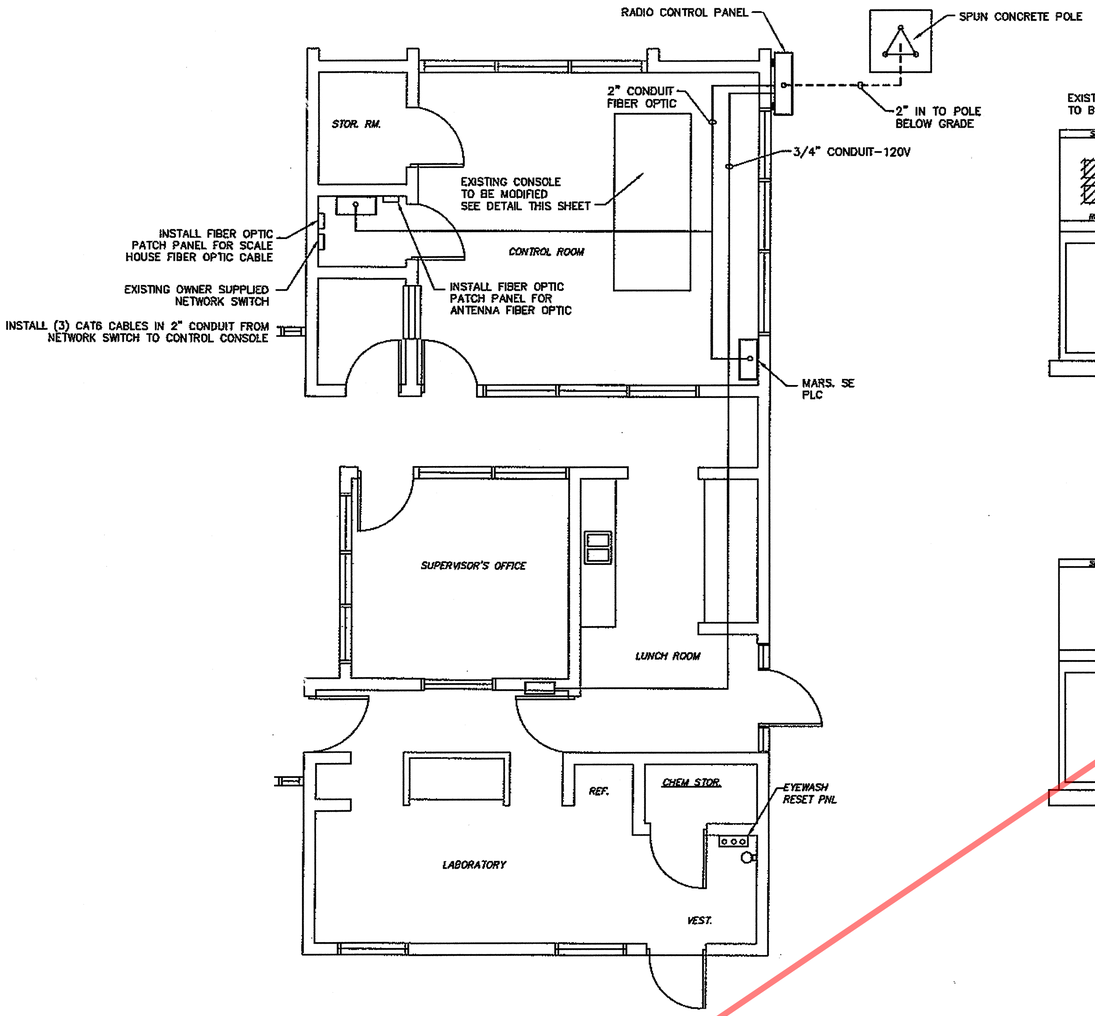
M&C FILE NUMBER

DRAWING NUMBER
I-201

STATUS: ISSUE FOR BID

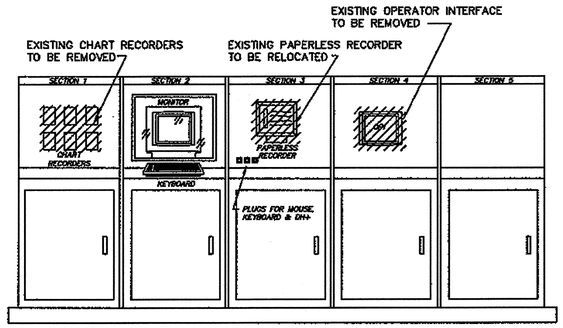
REVISION

4945.007



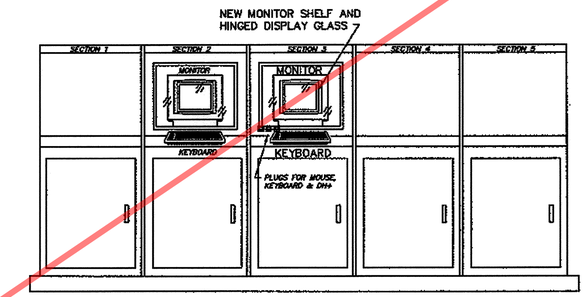
CONTROL BUILDING PARTIAL PLAN

SCALE: 1/4" = 1'–0"



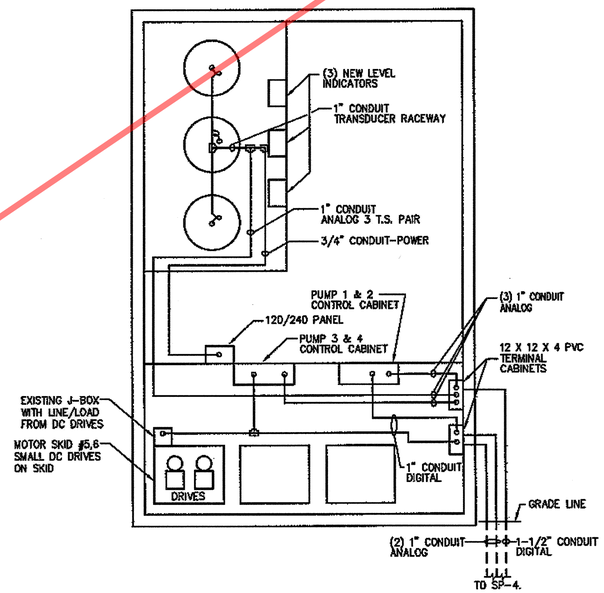
EXISTING CONSOLE FRONT ELEVATION

NOT TO SCALE



MODIFIED CONSOLE FRONT ELEVATION

NOT TO SCALE



SODIUM HYPOCHLORITE BUILDING PLAN

SCALE: NONE

Record Drawing

NO.	DESCRIPTIONS REVISIONS	DATE
2	RECORD DRAWING	06-25-08
1	AS BUILT	05-23-08
REVISIONS		DATE

SEAL

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

SOUTHEAST WATER RECLAMATION FACILITY
CONTROL ROOM PLAN AND CONSOLE DETAIL

DATE:	MAY, 2008
MCE PROJ. #	1024–0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

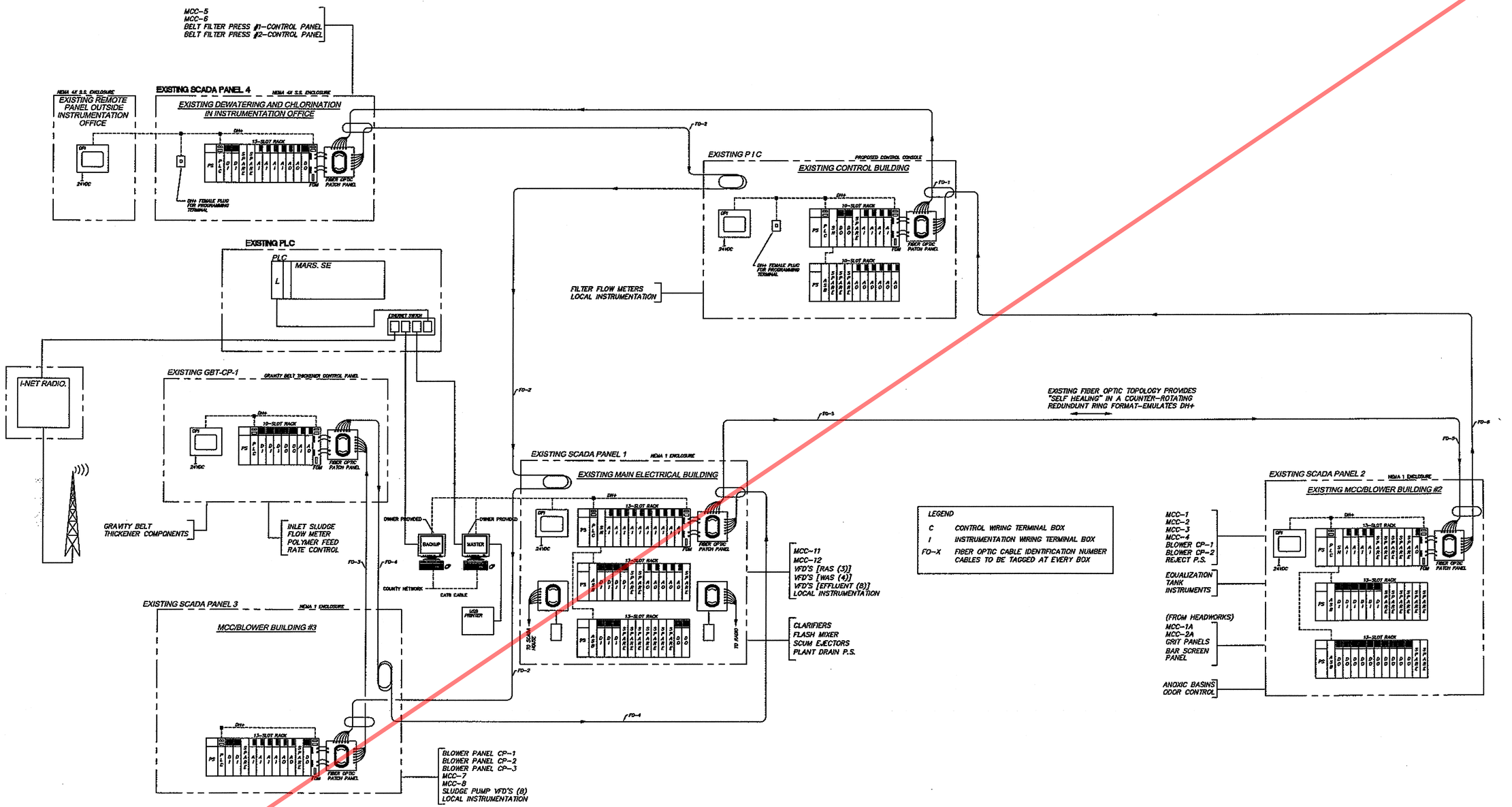
SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

MAC FILE NUMBER

DRAWING NUMBER
I-202

STATUS: ISSUE FOR BID
REVISION

4945.008



Record Drawing

REVISIONS		
REVNO.	DESCRIPTIONS	DATE
1	AS BUILT	08-22-08
2	RECORD DRAWING	09-23-08

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

SOUTHEAST WATER RECLAMATION FACILITY

FIBER OPTIC LAYOUT

DATE:	MAY, 2008
MCE PROJ. #	1024-0030
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: NA
VERTICAL: NA

DRAWING NUMBER
I-203

STATUS: ISSUE FOR BID

4945.009

SCADA PANEL POWER CIRCUIT

Southwest Plant			
DEVICE	POWER PANEL LOCATION	PANEL AND CIRCUIT	NOTES
PIC	CONTROL ROOM	L1; EXISTING CIRCUITS 38-43	1
SP-1	ELECTRICAL \ GENERATOR BUILDING	PC-TC; CIRCUIT 18	1
SP-2	CHEMICAL BUILDING	LCI; CIRCUIT 29	1
SP-3	AERATION BUILDING	LB; CIRCUIT 31	1
SP-4	HEADWORKS BUILDING	LHW; CIRCUIT 33	1
SP-5	DIGESTER BUILDING	LD; CIRCUIT 26	1
SP-6	SLUDGE DEWATERING	LDW; CIRCUIT 50	1
SP-7	CO-GEN BUILDING	LDA; CIRCUIT 26	1
SP-8	NEW BLOWER BUILDING	N/A	

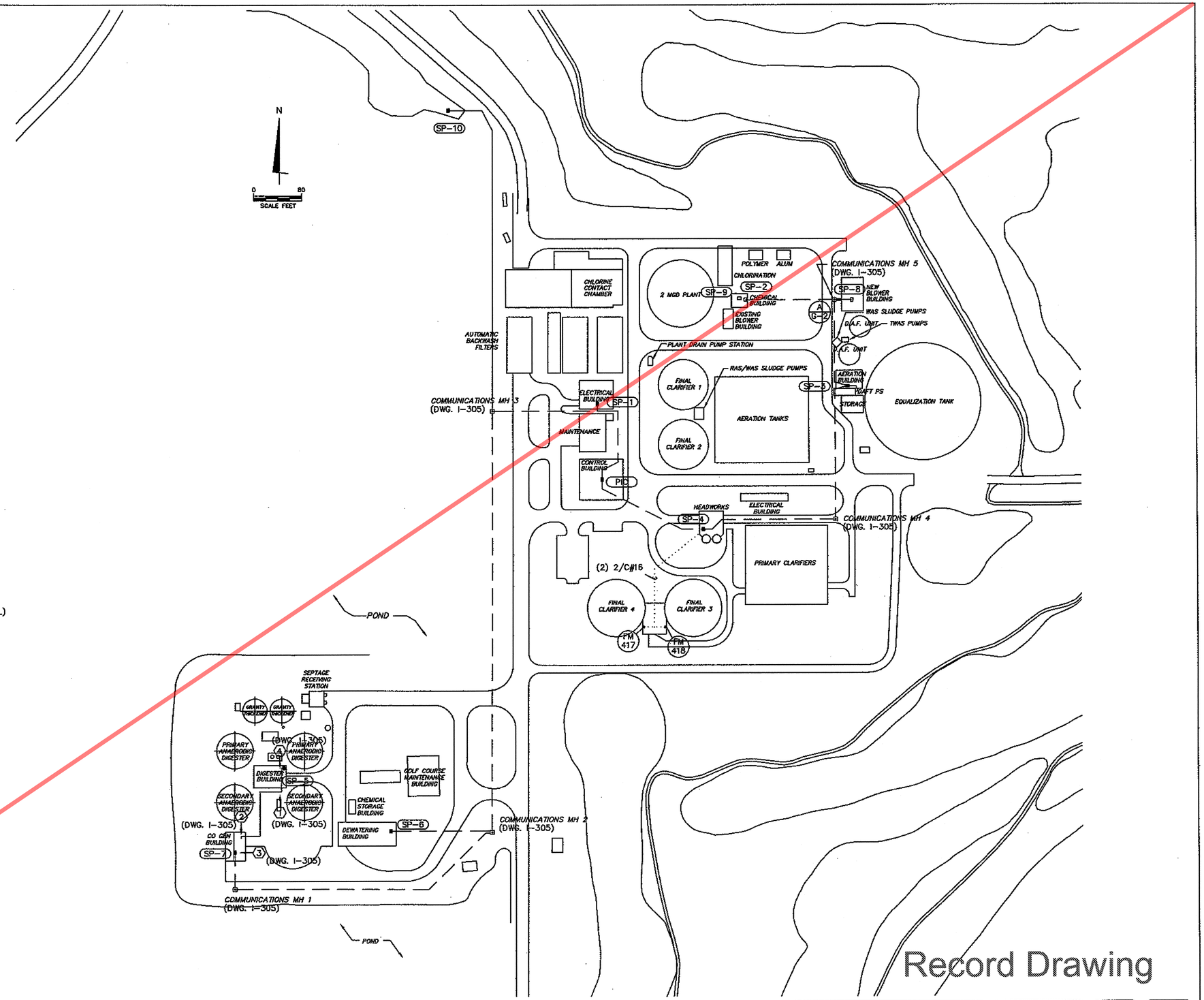
NOTES:
1 - USE EXISTING SPARE 1P/20 AMP BREAKER
2 - PROVIDE 1P/20 AMP BREAKER
3 - USE EXISTING EQUIPMENT BREAKER AND FEED EQUIPMENT FROM SCADA PANEL

LEGEND:

- *EXISTING CONTROL PANEL*
- PROPOSED PLC PANEL
- (1) PICTURE W/ DIRECTION TAKEN
- INSTRUMENTATION
- *EXISTING MANHOLE*
- PROPOSED FIBER OPTIC IN NEW 4" SCH 40 PVC CONDUIT
- PROPOSED FIBER OPTIC CABLE IN *EXISTING CONDUIT*
- PROPOSED 1" SCH 80 PVC CONDUIT

SCADA PANEL SCHEDULE

	NUMBER	LOCATION
PROPOSED	PIC	CONTROL ROOM
PROPOSED	SP-1	ELECTRICAL BUILDING
PROPOSED	SP-2	CHEMICAL BUILDING
PROPOSED	SP-3	AERATION BUILDING
PROPOSED	SP-4	HEADWORKS BUILDING
PROPOSED	SP-5	DIGESTER BUILDING
PROPOSED	SP-6	DEWATERING BUILDING
PROPOSED	SP-7	CO-GEN BUILDING
EXISTING	*SP-8*	NEW BLOWER BUILDING
EXISTING	*SP-9*	CHEMICAL BUILDING (POLYMER MAKEUP PANEL)
PROPOSED	SP-10	ASR WELL



Record Drawing

REV.NO.	DESCRIPTIONS REVISIONS	DATE
2	RECORD DRAWING	09-25-08
1	AS BUILT	05-22-08

SEAL

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

SOUTHWEST WATER RECLAMATION FACILITY

OVERALL SITE PLAN

DATE:	MAY, 2008
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

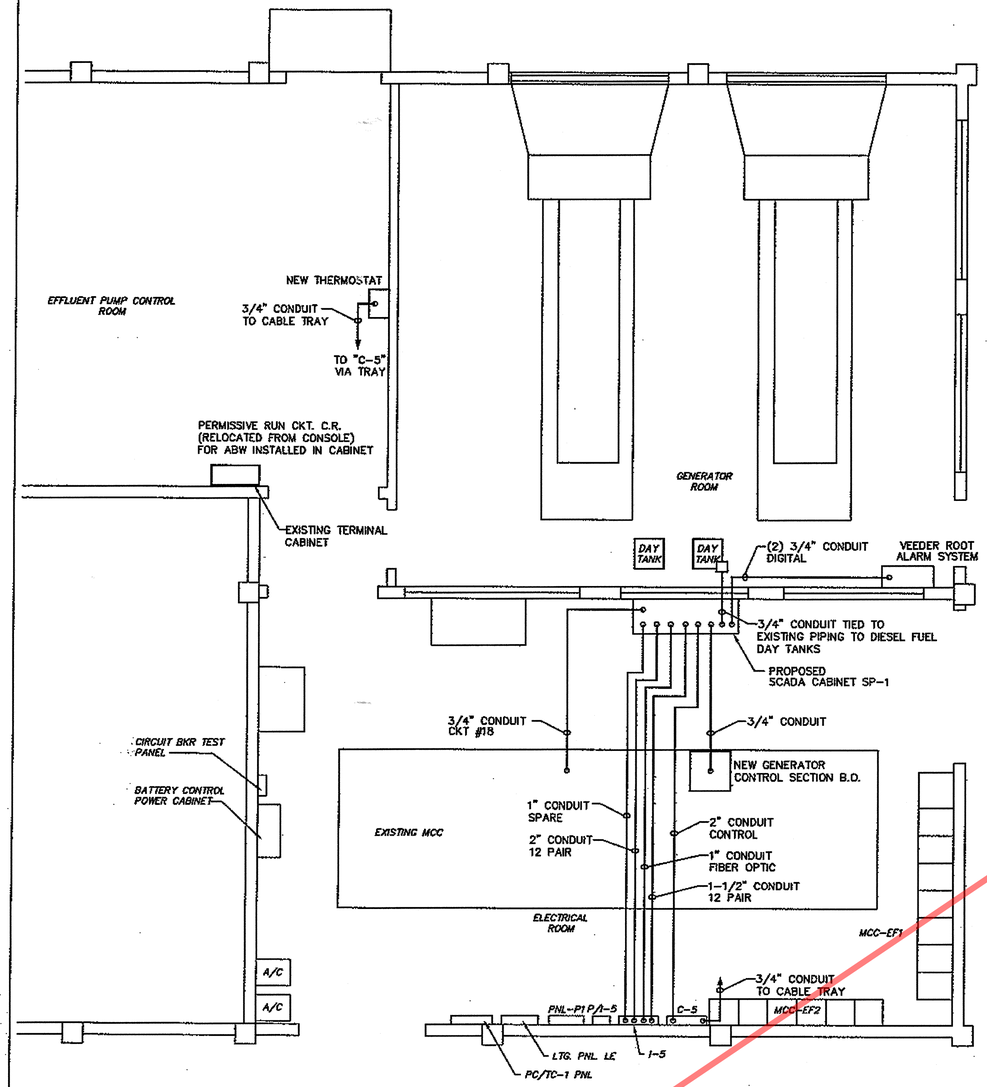
SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

MAC FILE NUMBER

DRAWING NUMBER
I-300

STATUS: ISSUE FOR BID
REVISION

4945.010

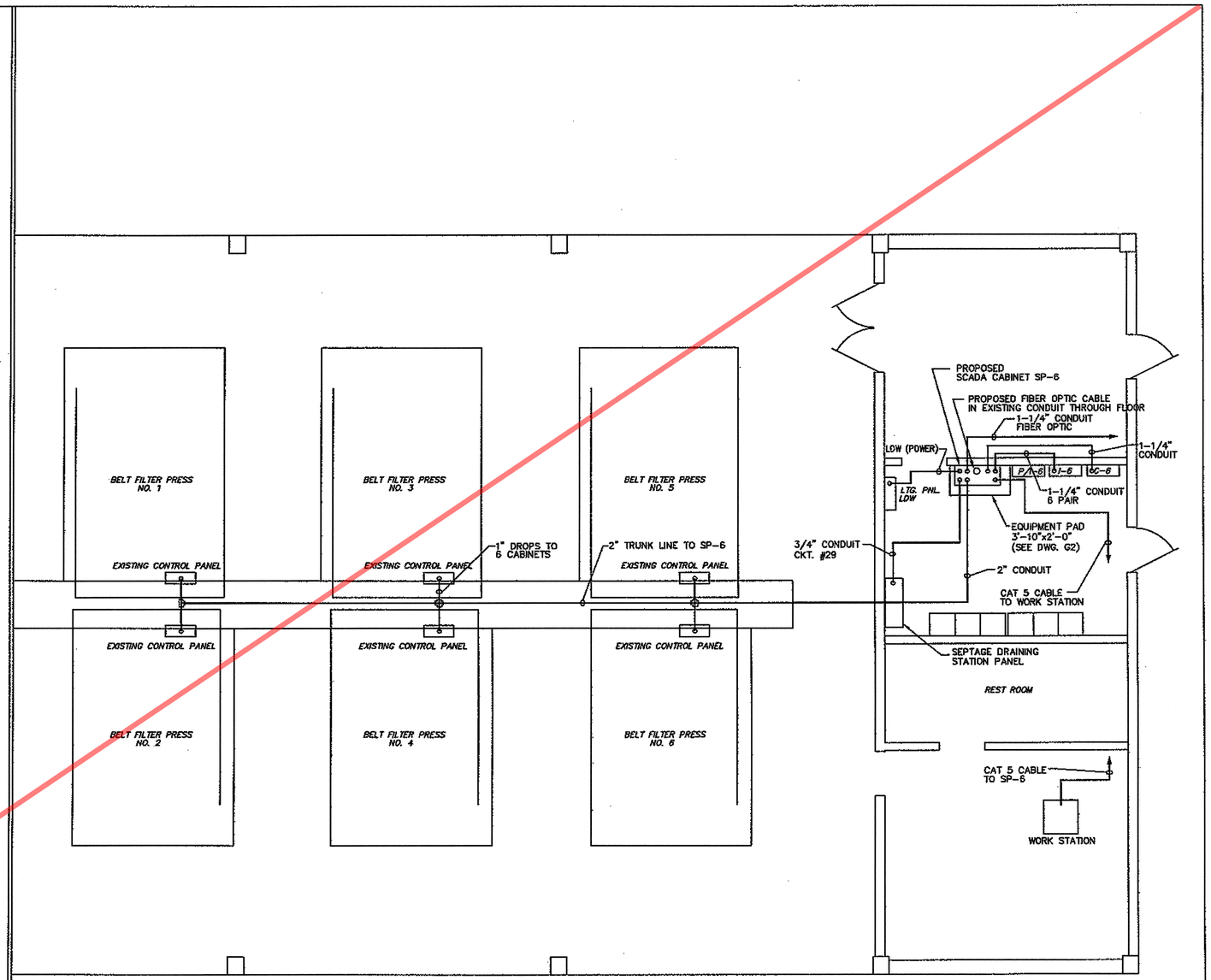


ELECTRICAL FLOOR PLAN

SCALE: 1/4" = 1'-0"

N

ABBREVIATIONS:
B.O. = BY OTHERS



SLUDGE DEWATERING BUILDING PARTIAL PLAN

SCALE: 1/4" = 1'-0"

N

Record Drawing

REVNO.	DESCRIPTIONS REVISIONS	DATE
1	AS BUILT	08-22-06
2	RECORD DRAWING	08-25-06

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM
SOUTHWEST WATER RECLAMATION FACILITY
ELECTRICAL BUILDING
POWER PLAN

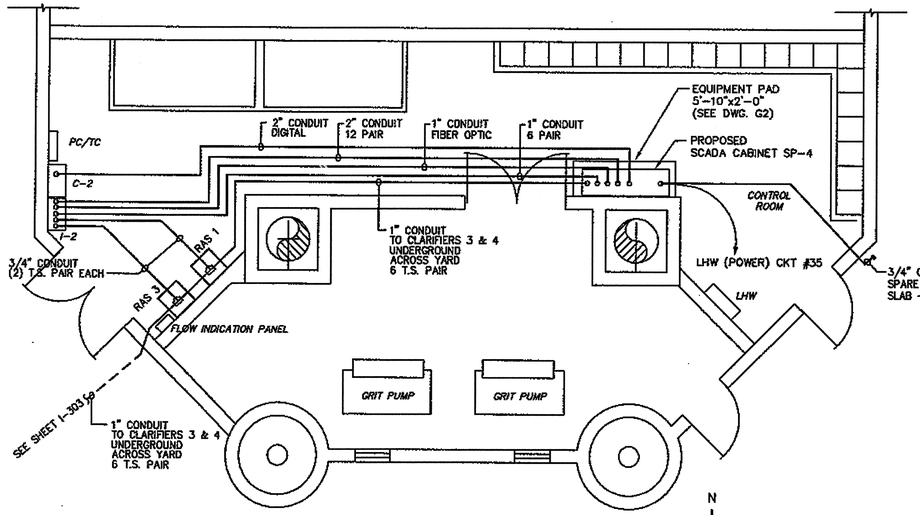
DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	FEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

MMC FILE NUMBER
DRAWING NUMBER
I-301

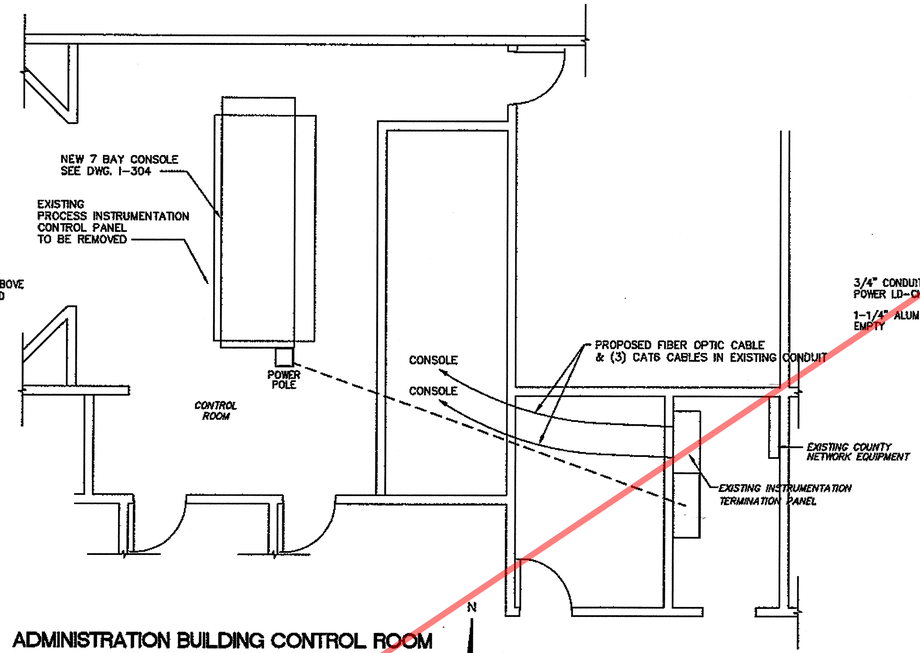
STATUS: ISSUE FOR BID
REVISION

4945.04



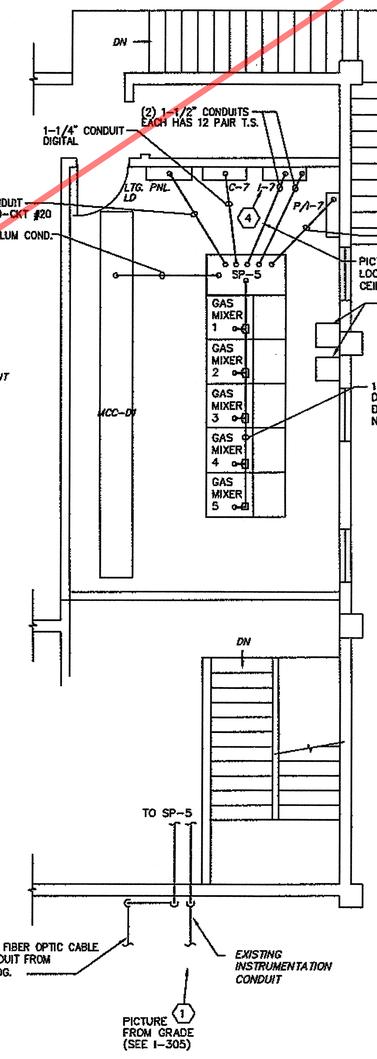
HEADWORKS - LOWER LEVEL PARTIAL PLAN

SCALE: 1/4" = 1'-0"



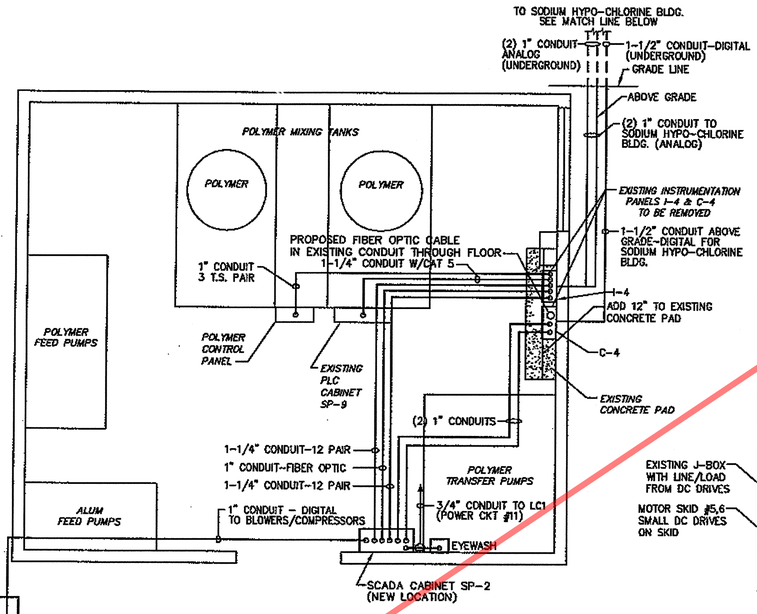
ADMINISTRATION BUILDING CONTROL ROOM PARTIAL PLAN

SCALE: 1/4" = 1'-0"



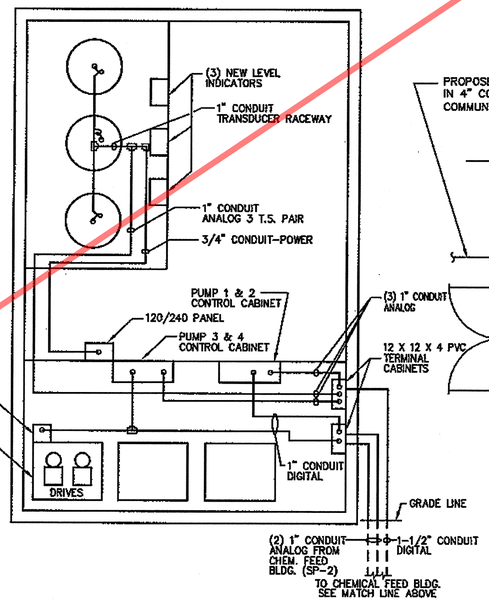
DIGESTER BUILDING - UPPER LEVEL PARTIAL PLAN

SCALE: 1/4" = 1'-0"



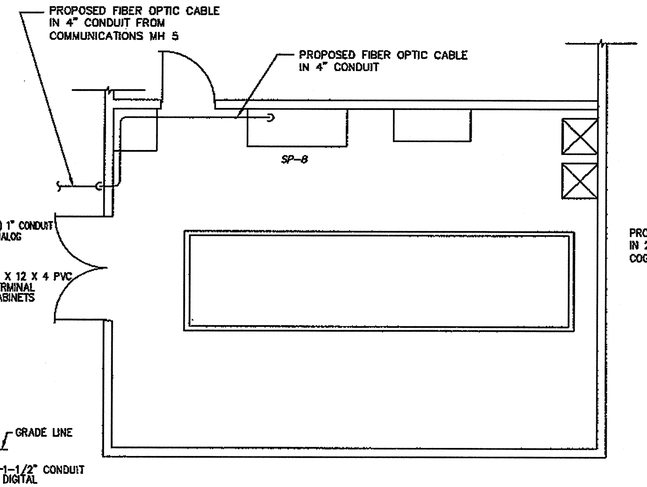
CHEMICAL FEED BUILDING PLAN

SCALE: 1/4" = 1'-0"



SODIUM HYPOCHLORITE BUILDING PLAN

SCALE: NONE



NEW BLOWER BUILDING PARTIAL PLAN

SCALE: 1/4" = 1'-0"

DIGESTER BUILDING - UPPER LEVEL PARTIAL PLAN

SCALE: 1/4" = 1'-0"

Record Drawing

REVISIONS	DESCRIPTIONS	DATE
2	RECORD DRAWING	08-25-08
1	AS BUILT	05-23-08

SEAL

DANIEL H COTE, P.E. No. 17650

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

SOUTHWEST WATER RECLAMATION FACILITY
MISCELLANEOUS
CONTROL ROOMS PLANS

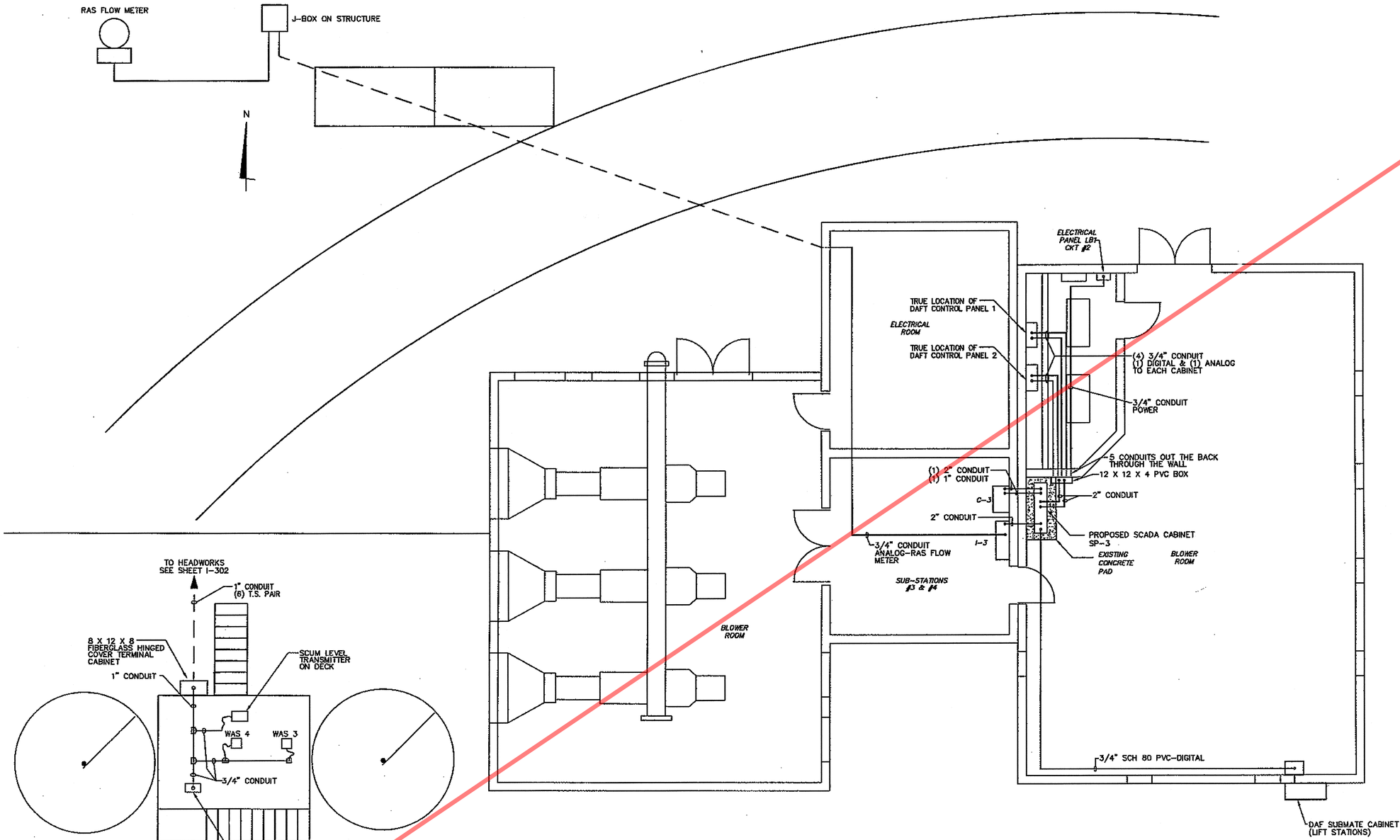
DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASI

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

MMC FILE NUMBER
DRAWING NUMBER I-302

STATUS: ISSUE FOR BID
REVISION

4945.012



CLARIFIERS 3 AND 4 PLAN

SCALE: NONE

AERATION BUILDING PLAN

SCALE: 1/4" = 1'-0"

Record Drawing

REVNO.	DESCRIPTIONS	DATE
2	RECORD DRAWING	05-25-06
1	AS BUILT	05-22-08

REVISIONS

SEAL

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PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

SOUTHWEST WATER RECLAMATION FACILITY
MISCELLANEOUS
CONTROL ROOMS PLANS

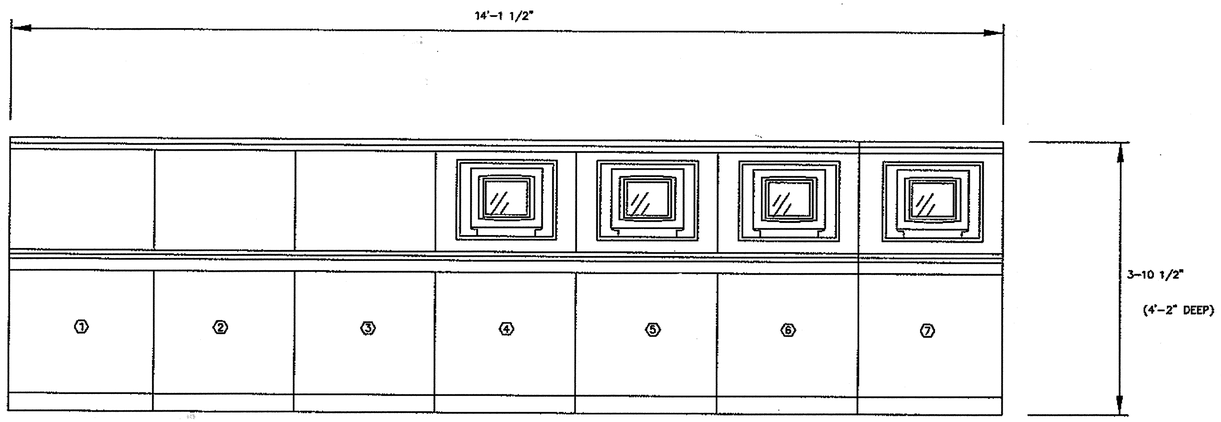
DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: N/A

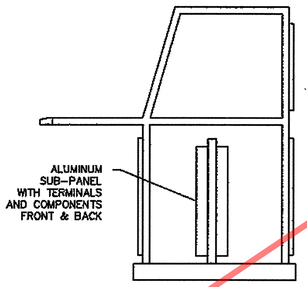
MMC FILE NUMBER
DRAWING NUMBER
I-303

STATUS: ISSUE FOR BID
REVISION

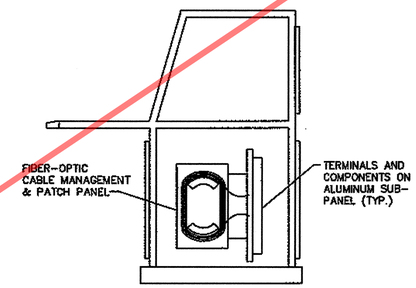
4945.013



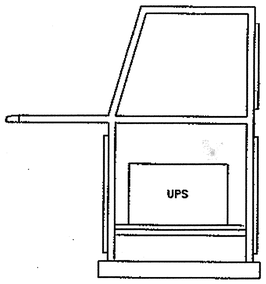
7-BAY CONSOLE
FRONT ELEVATION
NOT TO SCALE



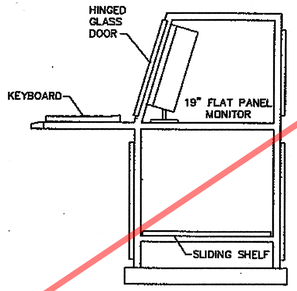
PROFILE OF SECTION 1
NOT TO SCALE



PROFILE OF SECTION 2
NOT TO SCALE



PROFILE OF SECTION 3
NOT TO SCALE



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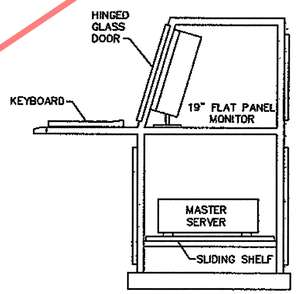
NOT TO SCALE



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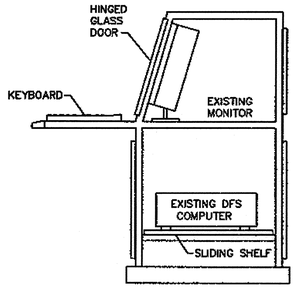
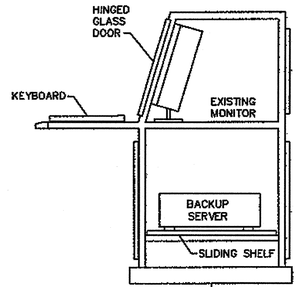
NOT TO SCALE



PROFILE OF SECTION 6
NOT TO SCALE



PROFILE OF SECTION 7
NOT TO SCALE

Record Drawing

REV.NO.	DESCRIPTIONS REVISIONS	DATE
2	RECORD DRAWING	08-25-06
1	AS BUILT	05-22-06

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM
SOUTHWEST WATER RECLAMATION FACILITY
7-BAY CONSOLE
DETAILS

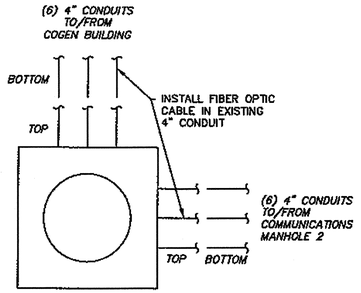
DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: NA
VERTICAL: NA

MAC FILE NUMBER
DRAWING NUMBER
I-304

REVISION
STATUS: ISSUE FOR BID

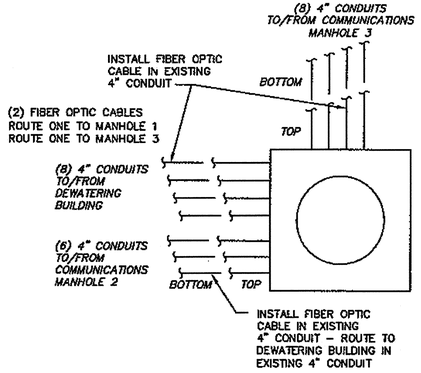
4945.014



N

EXISTING COMMUNICATIONS MANHOLE 1 PLAN

NO SCALE:



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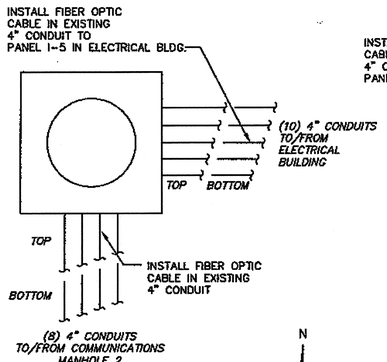
EXISTING COMMUNICATIONS MANHOLE 2 PLAN

NO SCALE:



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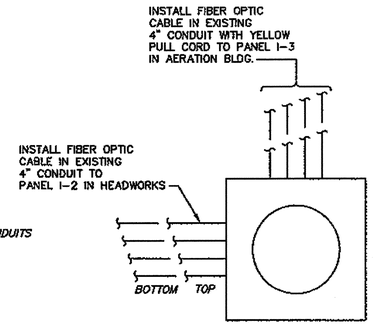
EXISTING COMMUNICATIONS MANHOLE 3 PLAN

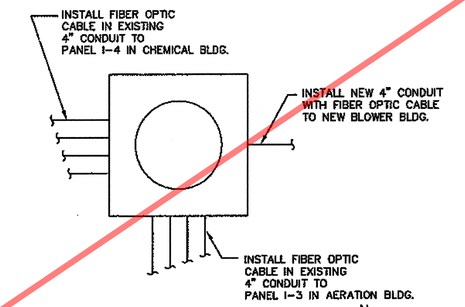
NO SCALE:



N

EXISTING COMMUNICATIONS MANHOLE 4 PLAN

NO SCALE:



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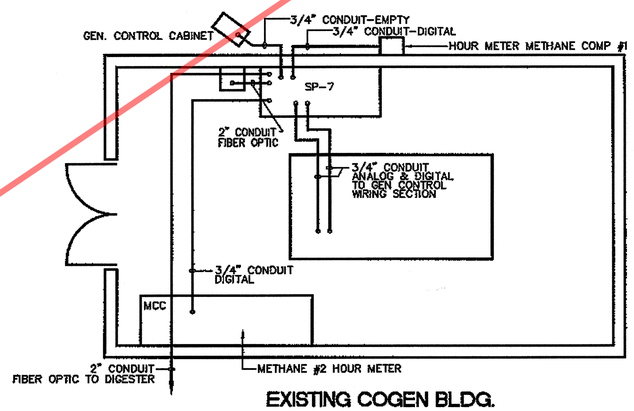
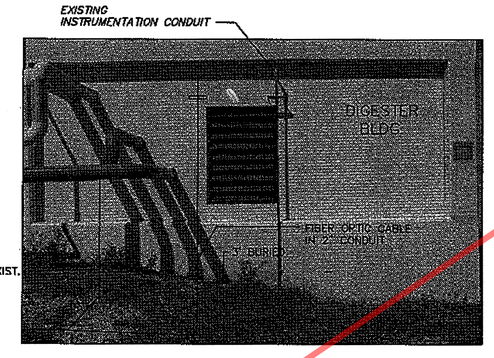
EXISTING COMMUNICATIONS MANHOLE 5 PLAN

NO SCALE:



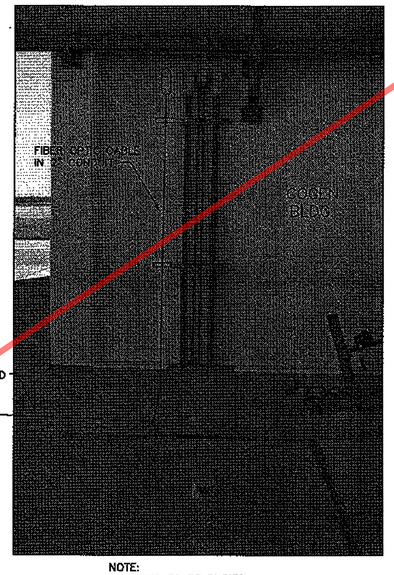
EXISTING COGEN BLDG.

NO SCALE:



PICTURE 1 DIGESTER BUILDING

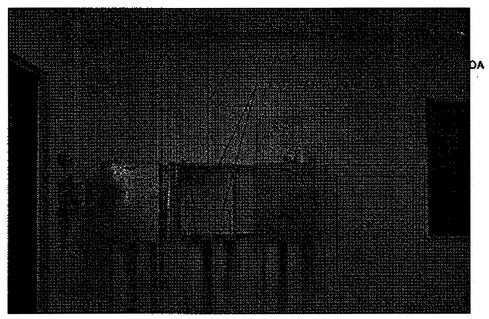
NO SCALE:



NOTE:
CONDUITS TO BE BURIED
3'-0" BELOW GROUND SURFACE

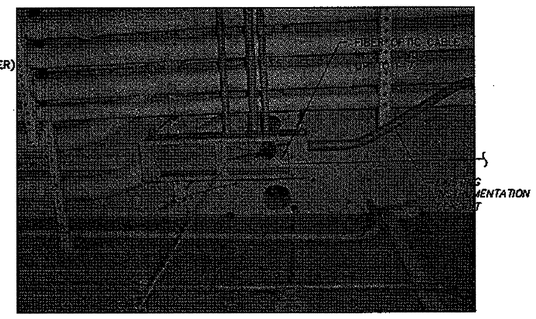
PICTURE 2 COGEN BUILDING

NO SCALE:



PICTURE 3 COGEN BUILDING

NO SCALE:



PICTURE 4 DIGESTER BUILDING

NO SCALE:

Record Drawing

REV.NO.	DESCRIPTIONS REVISIONS	DATE
2	RECORD DRAWING	08-25-06
1	AS BUILT	05-22-06

SEAL

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

SOUTHWEST WATER RECLAMATION FACILITY
EXISTING COMMUNICATIONS
MANHOLE PLANS AND PICTURES

DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

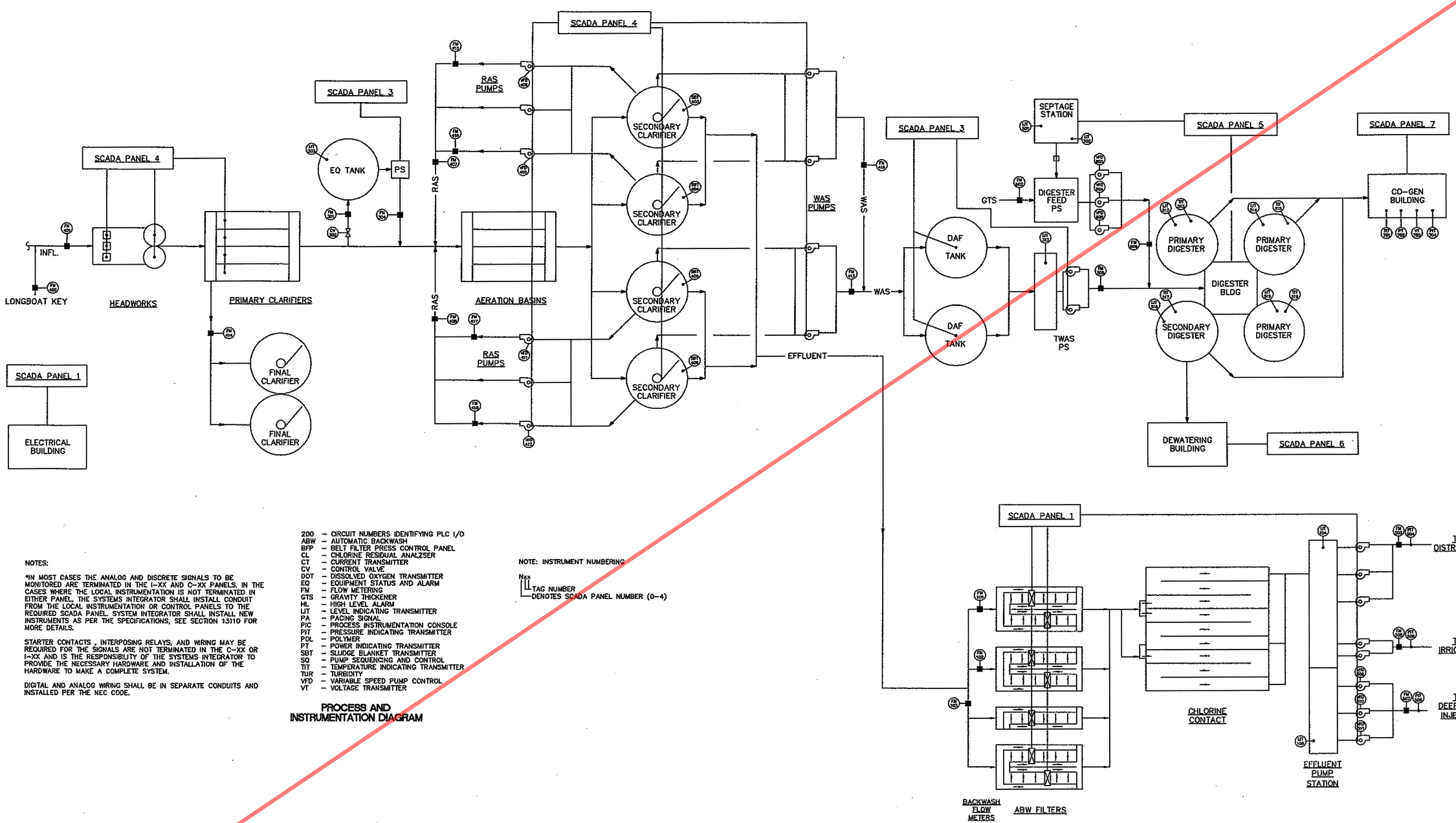
MAC FILE NUMBER

DRAWING NUMBER
I-305

STATUS: ISSUE FOR BID

REVISION

4945.015



NOTES:

*IN MOST CASES THE ANALOG AND DISCRETE SIGNALS TO BE MONITORED ARE TERMINATED IN THE I-XX AND C-XX PANELS. IN THE CASES WHERE THE LOCAL INSTRUMENTATION IS NOT TERMINATED IN EITHER PANEL, THE SYSTEMS INTEGRATOR SHALL INSTALL CONDUIT FROM THE LOCAL INSTRUMENTATION OR CONTROL PANELS TO THE REQUIRED SCADA PANEL. SYSTEM INTEGRATOR SHALL INSTALL NEW INSTRUMENTS AS PER THE SPECIFICATIONS, SEE SECTION 13110 FOR MORE DETAILS.

STARTER CONTACTS , INTERPOSING RELAYS, AND WIRING MAY BE REQUIRED FOR THE SIGNALS ARE NOT TERMINATED IN THE C-XX OR I-XX AND IS THE RESPONSIBILITY OF THE SYSTEMS INTEGRATOR TO PROVIDE THE NECESSARY HARDWARE AND INSTALLATION OF THE HARDWARE TO MAKE A COMPLETE SYSTEM.

DIGITAL AND ANALOG WIRING SHALL BE IN SEPARATE CONDUITS AND INSTALLED PER THE NEC CODE.

200 – CIRCUIT NUMBERS IDENTIFYING PLC I/O
ABW – AUTOMATIC BACKWASH
BFP – BELT FILTER PRESS CONTROL PANEL
CL – CHLORINE RESIDUAL ANALYZSER
CT – CURRENT TRANSMITTER
CV – CONTROL VALVE
DOT – DISSOLVED OXYGEN TRANSMITTER
EQ – EQUIPMENT STATUS AND ALARM
FM – FLOW METERING
GTS – GRAVITY THICKENER
HL – HIGH LEVEL ALARM
LIT – LEVEL INDICATING TRANSMITTER
PA – PACING SIGNAL
PIC – PROCESS INSTRUMENTATION CONSOLE
PIT – PRESSURE INDICATING TRANSMITTER
POL – POLYMER
PT – POWER INDICATING TRANSMITTER
SBT – SLUDGE BLANKET TRANSMITTER
SQ – PUMP SEQUENCING AND CONTROL
TIT – TEMPERATURE INDICATING TRANSMITTER
TUR – TURBIDITY
VFD – VARIABLE SPEED PUMP CONTROL
VT – VOLTAGE TRANSMITTER

NOTE: INSTRUMENT NUMBERING

Nxx
- TAG NUMBER
- DENOTES SCADA PANEL NUMBER (0–4)

PROCESS AND INSTRUMENTATION DIAGRAM

Record Drawing

REVNO.	DESCRIPTIONS REVISIONS	DATE
2	RECORD DRAWING	05-25-06
1	AS BUILT	05-22-06

SEAL

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM
SOUTHWEST
WATER RECLAMATION FACILITY
PROCESS & INSTRUMENTATION DIAGRAM

DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

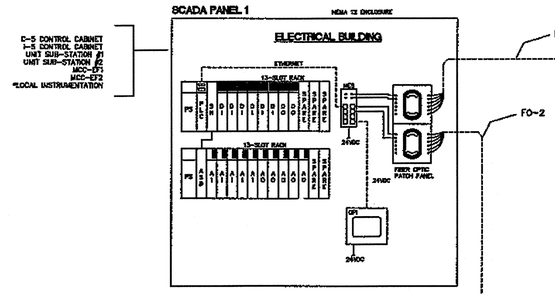
SCALE
HORIZONTAL: NA
VERTICAL: NA

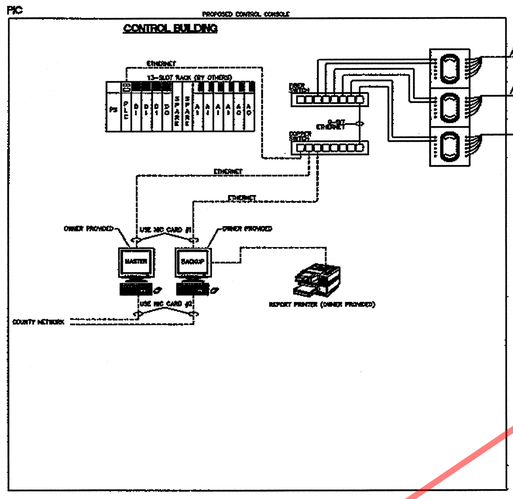
MMC FILE NUMBER
DRAWING NUMBER
I-306

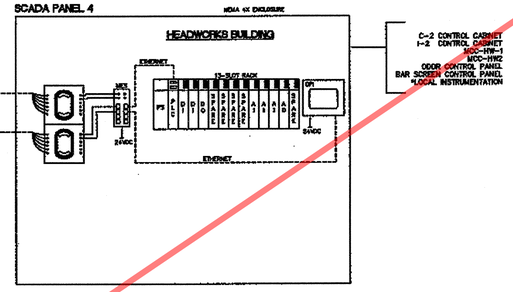
STATUS: ISSUE FOR BID
REVISION

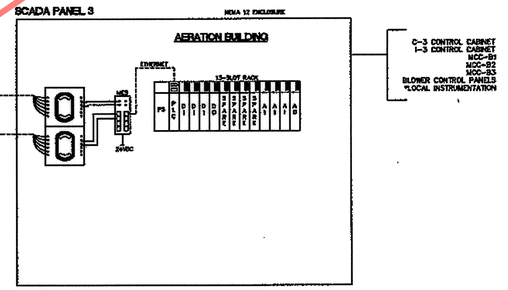
4945.016

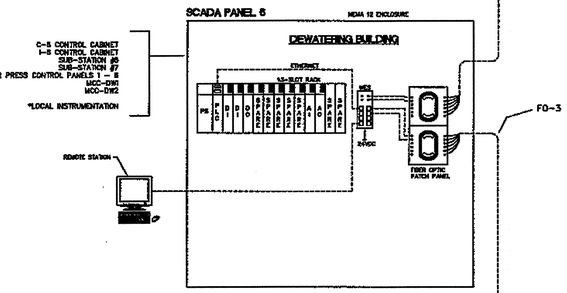
PROVIDE & INSTALL 6-CHANNEL FIBER OPTIC CABLE, USING EXISTING AND PROPOSED CONDUITS. FIBER CABLES SHALL BE INSTALLED UNBROKEN AND UNSPLICED WITH NO INTERMEDIATE JUNCTIONS OR TERMINATIONS EXCEPT AS SHOWN.

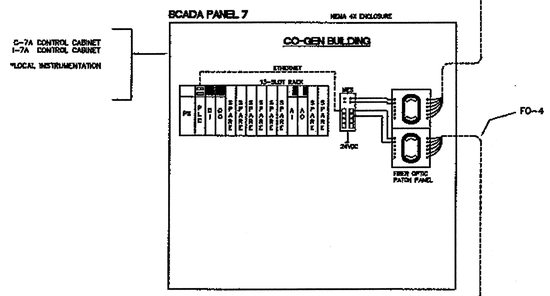


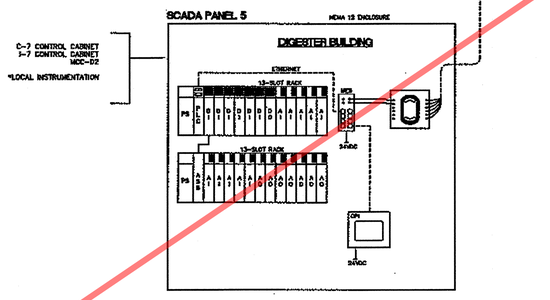












LEGEND	
FO-X	FIBER OPTIC CABLE IDENTIFICATION NUMBER CABLES TO BE TAGGED AT EVERY BOX
UMES	UNMANAGED ETHERNET SWITCH
FOC	FIBER OPTIC CONVERTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
NIC	NETWORK INTERFACE CARD
C-XX	DISCRETE SIGNAL INSTRUMENTATION PANELS
I-XX	ANALOG SIGNAL INSTRUMENTATION PANELS

NOTES:

*IN MOST CASES THE ANALOG AND DISCRETE SIGNALS TO BE MONITORED ARE TERMINATED IN THE I-XX AND C-XX PANELS. IN THE CASES WHERE THE LOCAL INSTRUMENTATION IS NOT TERMINATED IN EITHER PANEL, THE SYSTEMS INTEGRATOR SHALL INSTALL CONDUIT FROM THE LOCAL INSTRUMENTATION OR CONTROL PANELS TO THE REQUIRED SCADA PANEL.

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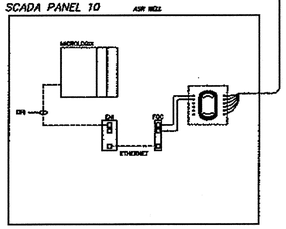
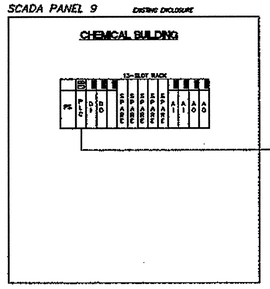
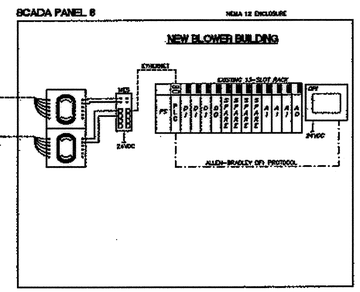
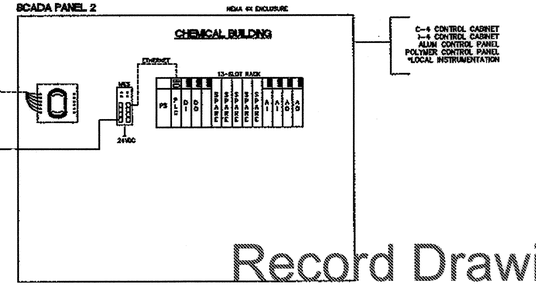
DIGITAL AND ANALOG WIRING SHALL BE IN SEPARATE CONDUITS AND INSTALLED PER THE NEC CODE.









Record Drawing

REVISIONS		
2	RECORD DRAWING	08-25-08
1	AS BUILT	05-22-08
REVISIONS	DESCRIPTIONS	DATE

SEAL

DANIEL H. COTE, P.E.
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www.mckimcreed.com

MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE WASTEWATER TREATMENT PLANT SCADA SYSTEM

SOUTHWEST WATER RECLAMATION FACILITY FIBER OPTIC LAYOUT

DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: NA
VERTICAL: NA

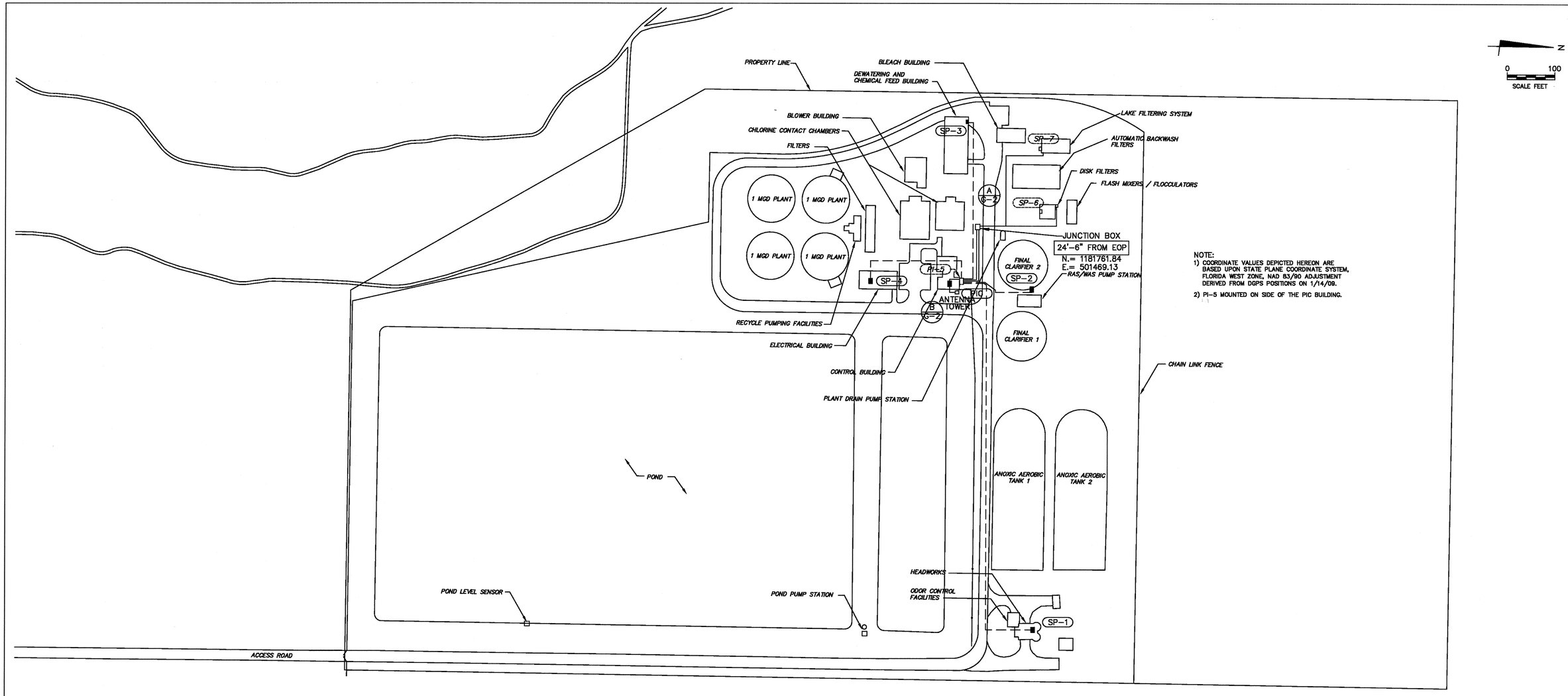
MacC FILE NUMBER

DRAWING NUMBER
I-307

STATUS: ISSUE FOR BID

REVISION

4945.017



NOTE:
1) COORDINATE VALUES DEPICTED HEREON ARE BASED UPON STATE PLANE COORDINATE SYSTEM, FLORIDA WEST ZONE, NAD 83/90 ADJUSTMENT DERIVED FROM DGPS POSITIONS ON 1/14/09.
2) PI-5 MOUNTED ON SIDE OF THE PIC BUILDING.

SCADA PANEL POWER CIRCUIT			
North Plant			
DEVICE	POWER PANEL LOCATION	PANEL AND CIRCUIT	NOTES
PIC	CONTROL ROOM	LC; EXISTING CIRCUIT 33 & 34	1
SP-1	HEADWORKS BUILDING	LHW; CIRCUIT 20	1
SP-2	CLARIFIERS AREA	LC;CIRCUIT 19	1
SP-3	SLUDGE DEWATERING BUILDING	LD; CIRCUIT 29	1
SP-4	ELECTRICAL \ GENERATOR BUILDING	LE; CIRCUIT 2	3

NOTES:
1 - USE EXISTING SPARE 1P/20 AMP BREAKER
2 - PROVIDE 1P/20 AMP BREAKER
3 - USE EXISTING EQUIPMENT BREAKER AND FEED EQUIPMENT FROM SCADA PANEL

LEGEND:

- ▯ *EXISTING CONTROL / PLC PANEL*
- ■ PROPOSED PLC PANEL
- — — — PROPOSED FIBER OPTIC CABLE IN EXISTING CONDUIT
- ——— PROPOSED (2) 2" SCH 80 PVC CONDUIT, 1 SPARE W/ FIBER OPTIC CABLE

PANEL SCHEDULE

	NUMBER	LOCATION
PROPOSED	PIC	CONTROL BUILDING
PROPOSED	SP-1	HEADWORKS BUILDING
PROPOSED	SP-2	FINAL CLARIFIERS
PROPOSED	SP-3	DEWATERING BUILDING
PROPOSED	SP-4	ELECTRICAL BUILDING
EXISTING	*PI-5*	*CONTROL BUILDING (CONSLOE PLC)*
EXISTING	**SP-6*	*DISK FILTERS*
EXISTING	**SP-7*	*LAKE FILTER SYSTEM*

** NOTE- THE LABEL PROVIDED IS THE PROPOSED NAME FOR THE EXISTING PANEL*

EOP=EDGE OF PAVEMENT

Record Drawing

REV.NO.	DESCRIPTIONS	DATE
3	UPDATED DUCT BANK LOCATION	12-01-08
2	RECORD DRAWING	08-25-08
1	AS BUILT	05-22-08

REVISIONS

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

NORTH WATER RECLAMATION FACILITY

OVERALL SITE PLAN

DATE:	MAY, 2008
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

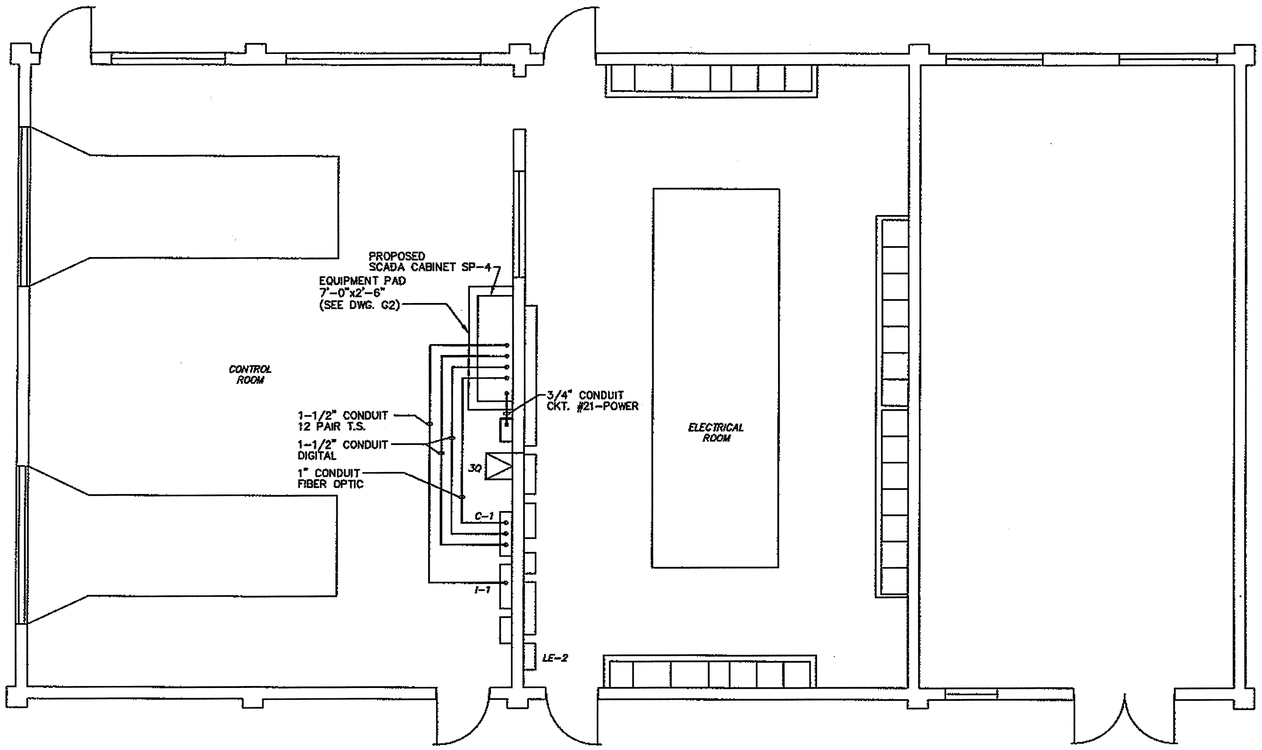
SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

M&C FILE NUMBER

DRAWING NUMBER
I-400

STATUS: ISSUE FOR BID
REVISION

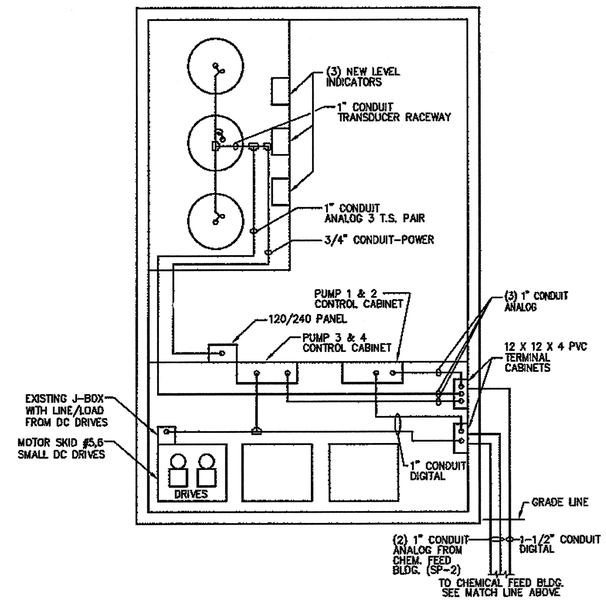
4945.018



ELECTRICAL FLOOR PLAN

SCALE: 1/4" = 1'-0"

N



SODIUM HYPOCHLORITE BUILDING PLAN

SCALE: NONE

Record Drawing

REV.NO.	DESCRIPTIONS REVISIONS	DATE
2	RECORD DRAWING	09-25-08
1	AS BUILT	05-23-08

SEAL

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

NORTH WATER RECLAMATION FACILITY

ELECTRICAL BUILDING PLAN

DATE:	MAY, 2008
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

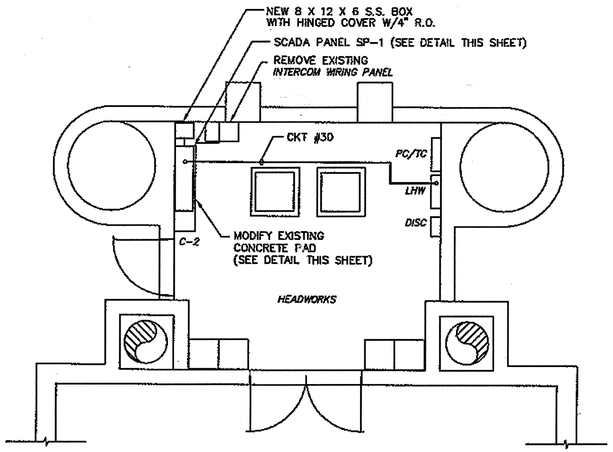
SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

MAC FILE NUMBER

DRAWING NUMBER
I-401

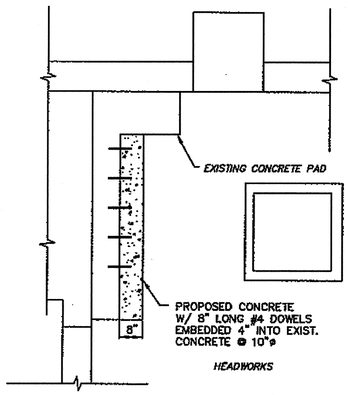
STATUS: ISSUE FOR BID
REVISION

4945.019



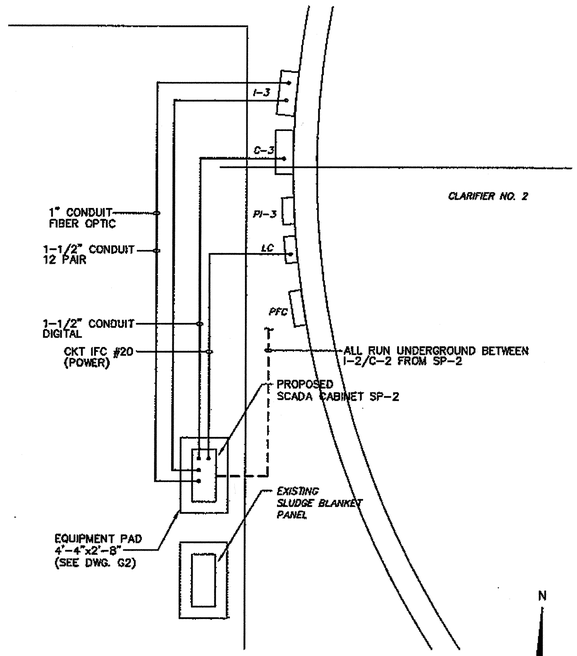
HEADWORKS - LOWER LEVEL PARTIAL PLAN

SCALE: 1/4" = 1'-0"



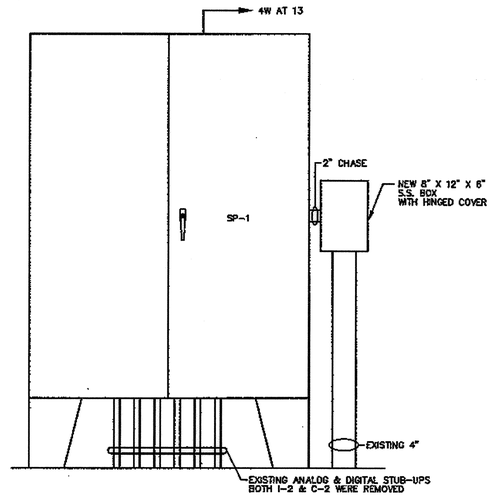
SCADA PANEL SP-1 CONCRETE PAD DETAIL

SCALE: 1/2" = 1'-0"



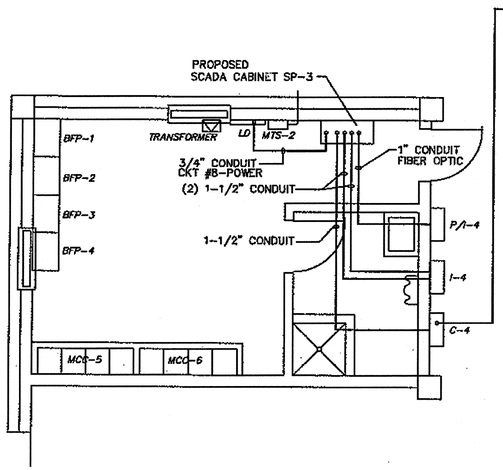
CLARIFIER NO. 2 PARTIAL PLAN

SCALE: 1/4" = 1'-0"



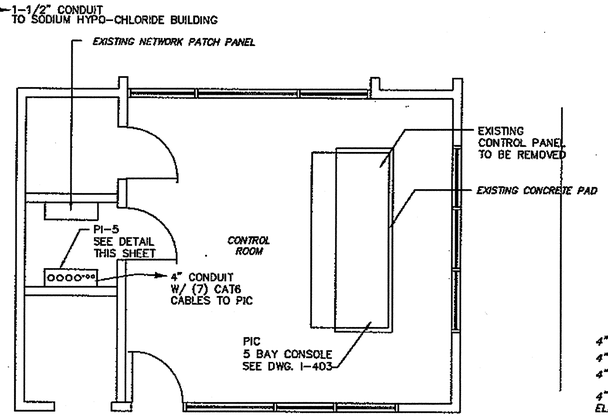
SCADA PANEL SP-1 CONDUIT DETAIL

SCALE: 1" = 1'-0"



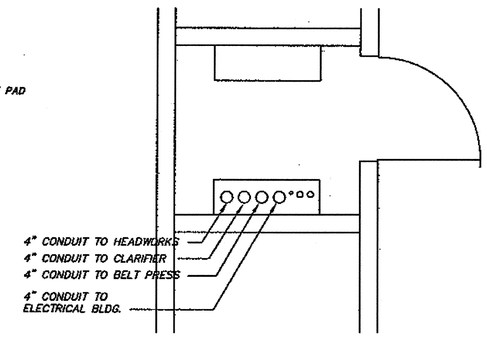
SLUDGE DEWATERING BUILDING PARTIAL PLAN

SCALE: 1/4" = 1'-0"



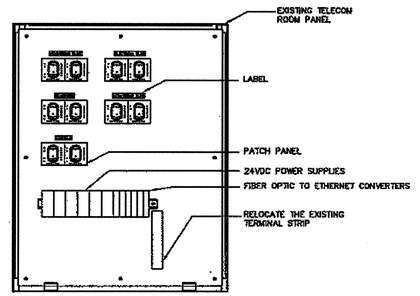
ADMINISTRATION CONTROL BUILDING PARTIAL PLAN

SCALE: 1/4" = 1'-0"



ADMINISTRATION CONTROL BUILDING TELECOMUNICATIONS ROOM DETAIL

SCALE: 1/2" = 1'-0"



ADMINISTRATION CONTROL BUILDING TELECOMUNICATIONS ROOM EXISTING PANEL MODIFICATIONS DETAIL

NOT TO SCALE

Record Drawing

REV.NO.	DESCRIPTIONS REVISIONS	DATE
2	RECORD DRAWING	08-25-08
1	AS BUILT	05-22-08

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

NORTH WATER RECLAMATION FACILITY
MISCELLANEOUS
CONTROL ROOMS PLANS

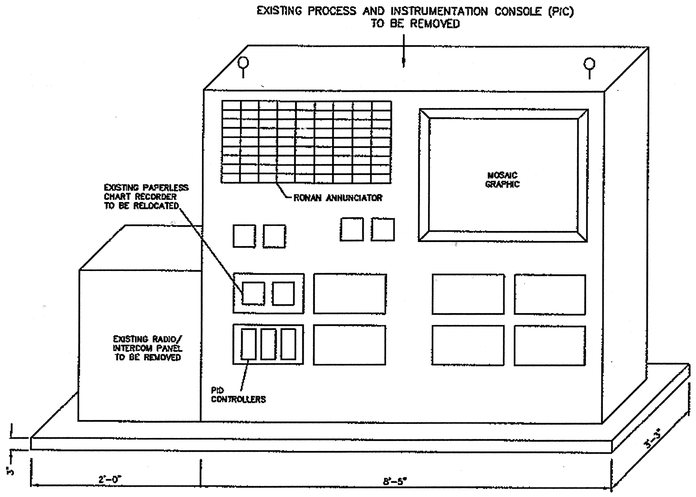
DATE:	MAY, 2005
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

MMC FILE NUMBER
DRAWING NUMBER
I-402

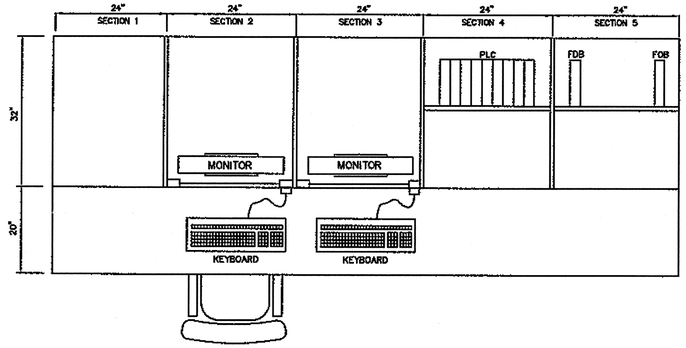
STATUS: ISSUE FOR BID
REVISION

4945.020



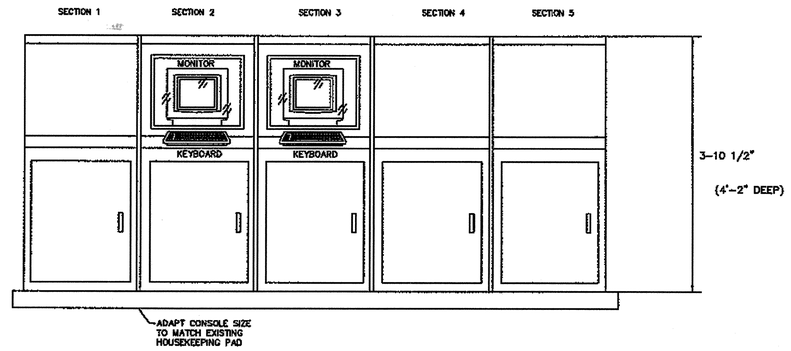
EXISTING CONTROL CONSOLE

NOT TO SCALE



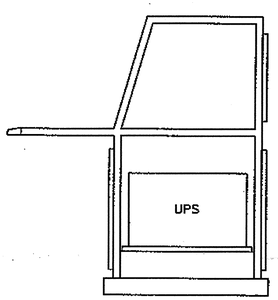
PLAN VIEW

NOT TO SCALE



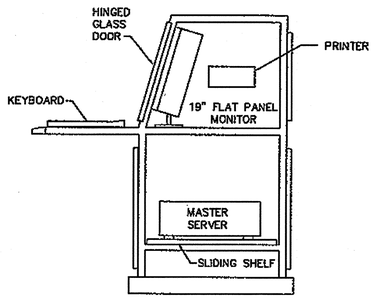
FRONT ELEVATION

NOT TO SCALE



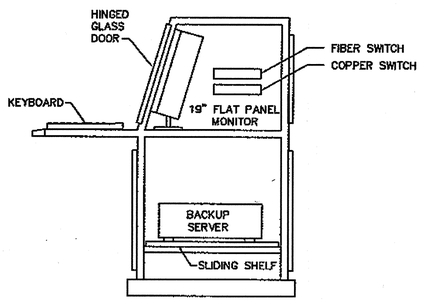
PROFILE OF SECTION 1

NOT TO SCALE



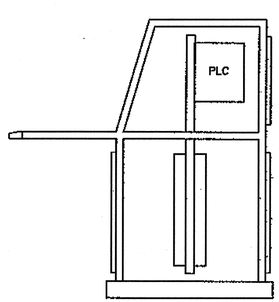
PROFILE OF SECTION 2

NOT TO SCALE



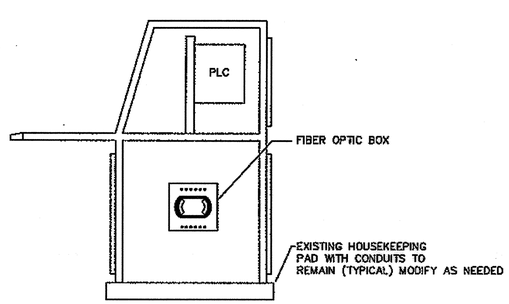
PROFILE OF SECTION 3

NOT TO SCALE



PROFILE OF SECTION 4

NOT TO SCALE



PROFILE OF SECTION 5

NOT TO SCALE

Record Drawing

REVNO.	DESCRIPTIONS	DATE
2	RECORD DRAWING	06-25-08
1	AS BUILT	05-22-08

REVISIONS

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

NORTH WATER RECLAMATION FACILITY
CONTROL ROOM 5 BAY CONSOLE
DETAILS

DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: AS SHOWN
VERTICAL: NA

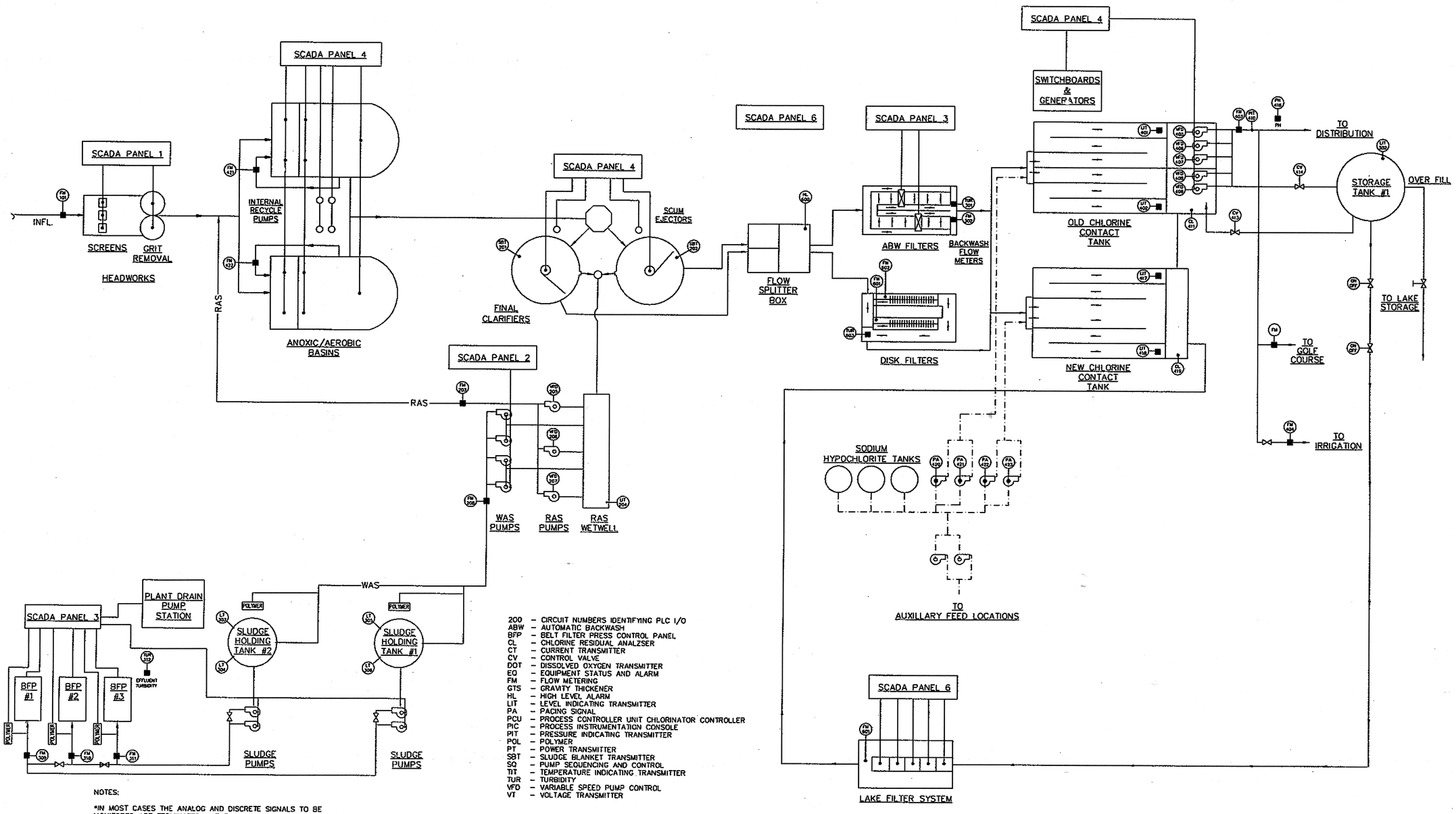
M&C FILE NUMBER

DRAWING NUMBER
I-403

STATUS: ISSUE FOR BID

REVISION

4945-021



200 – CIRCUIT NUMBERS IDENTIFYING PLC I/O
ABW – AUTOMATIC BACKWASH
BFP – BELT FILTER PRESS CONTROL PANEL
CL – CHLORINE RESIDUAL ANALZSER
CT – CURRENT TRANSMITTER
CV – CONTROL VALVE
DOT – DISSOLVED OXYGEN TRANSMITTER
EQ – EQUIPMENT STATUS AND ALARM
FM – FLOW METERING
GTS – GRAVITY THICKENER
HL – HIGH LEVEL ALARM
LIT – LEVEL INDICATING TRANSMITTER
PA – PACING SIGNAL
PCU – PROCESS CONTROLLER UNIT CHLORINATOR CONTROLLER
PIC – PROCESS INSTRUMENTATION CONSOLE
PIT – PRESSURE INDICATING TRANSMITTER
POL – POLYMER
PT – POWER TRANSMITTER
SBT – SLUDGE BLANKET TRANSMITTER
SQ – PUMP SEQUENCING AND CONTROL
TIT – TEMPERATURE INDICATING TRANSMITTER
TUR – TURBIDITY
VFD – VARIABLE SPEED PUMP CONTROL
VT – VOLTAGE TRANSMITTER

NOTES:

*IN MOST CASES THE ANALOG AND DISCRETE SIGNALS TO BE MONITORED ARE TERMINATED IN THE I-XX AND C-XX PANELS. IN THE CASES WHERE THE LOCAL INSTRUMENTATION IS NOT TERMINATED IN EITHER PANEL, THE SYSTEMS INTEGRATOR SHALL INSTALL CONDUIT FROM THE LOCAL INSTRUMENTATION OR CONTROL PANELS TO THE REQUIRED SCADA PANEL. SYSTEM INTEGRATOR SHALL INSTALL NEW INSTRUMENTS AS PER THE SPECIFICATIONS, SEE SECTION 13110 FOR MORE DETAILS.

STARTER CONTACTS , INTERPOSING RELAYS, AND WIRING MAY BE REQUIRED FOR THE SIGNALS ARE NOT TERMINATED IN THE C-XX OR I-XX AND IS THE RESPONSIBILITY OF THE SYSTEMS INTEGRATOR TO PROVIDE THE NECCESSARY HARDWARE AND INSTALLATION OF THE HARDWARE TO MAKE A COMPLETE SYSTEM.

DIGITAL AND ANALOG WIRING SHALL BE IN SEPARATE CONDUITS AND INSTALLED PER THE NEC CODE.

PROCESS AND INSTRUMENTATION DIAGRAM

NOTE: INSTRUMENT NUMBERING

Nxx
TAG NUMBER
DENOTES SCADA PANEL NUMBER (0-4)

Record Drawing

REV.NO.	DESCRIPTIONS	DATE
2	RECORD DRAWING	08-22-08
1	AS BUILT	05-22-08

REVISIONS

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

NORTH WATER RECLAMATION FACILITY

PROCESS & INSTRUMENTATION DIAGRAM

DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE
HORIZONTAL: NA
VERTICAL: NA

MAC FILE NUMBER

DRAWING NUMBER
I-404

STATUS: ISSUE FOR BID
REVISION

4945.022

PROVIDE & INSTALL 6-PAIR FIBER OPTIC CABLE, USING EXISTING AND PROPOSED CONDUITS. FIBER CABLES SHALL BE INSTALLED UNBROKEN AND UNSPLICED WITH NO INTERMEDIATE JUNCTIONS OR TERMINATIONS EXCEPT AS SHOWN.

SCADA PANEL 1 — NEMA 12 ENCLOSURE

HEADWORKS BUILDING

C-2 CONTROL CABINET
I-2 CONTROL CABINET
HEADWORKS MCC-1A
HEADWORKS MCC-1B
GRIT CONTROL PANEL
MECHANICAL BAR SCREEN CONTROL PANEL
*LOCAL INSTRUMENTATION

ETHERNET — 13-SLOT RACK — PS, CPU, DI, DO, RS-422/485, AI, AO, RS-422/485 — MES — 24VDC — FIBER OPTIC PATCH PANEL

FO-1

PIC — PROPOSED CONTROL CONSOLE

CONTROL BUILDING — TELECOM ROOM — CONTROL BUILDING

ETHERNET — 13-SLOT RACK — PS, CPU, DI, DO, RS-422/485, AI, AO, RS-422/485

DISCRETE SWITCH — 5-SLOT ETHERNET — ANALOG SWITCH

ETHERNET — ETHERNET

OWNER PROVIDED — USE NIC CARD #1 — MASTER — BACKUP — USE NIC CARD #2

COUNTY NETWORK

OWNER PROVIDED REPORT PRINTER

FIBER OPTIC PATCH PANEL/PANELS

FO-1, FO-2, FO-3, FO-4, FO-5, FO-6

SCADA PANEL 2 — NEMA 4X ENCLOSURE

CLARIFIERS AREA

C-3 CONTROL CABINET
I-3 CONTROL CABINET
SLUDGE BLANKET DETECTORS CABINET
*LOCAL INSTRUMENTATION

ETHERNET — 13-SLOT RACK — PS, CPU, DI, DO, RS-422/485, AI, AO, RS-422/485 — MES — 24VDC — CP1 — 24VDC — ETHERNET

SCADA PANEL 3 — NEMA 12 ENCLOSURE

SLUDGE DEWATERING BUILDING

C-4 CONTROL CABINET
I-4 CONTROL CABINET
BELT PRESS No. 1,2,3 CONTROL CABINETS
BELT PRESS MCC
POLYMER SYSTEM CONTROL PANEL
ALUM FEED SYSTEM CONTROL PANEL
PLANT DRAIN PUMP CONTROL PANEL
EYEWASH SHOWERS
*LOCAL INSTRUMENTATION

ETHERNET — 13-SLOT RACK — PS, CPU, DI, DO, RS-422/485, AI, AO, RS-422/485 — MES — 24VDC — CP1 — 24VDC — ETHERNET

SCADA PANEL 4 — NEMA 12 ENCLOSURE

ELECTRICAL \ GENERATOR BUILDING

C-1 CONTROL CABINET
I-1 CONTROL CABINET
MCC-1
MCC-2
MCC-3
MCC-4
HIGH SERVICE PUMPS VFDS
DAF THICKENER CONTROL PANEL
GENERATORS CONTROL PANELS
EYEWASH SHOWERS
*LOCAL INSTRUMENTATION

ETHERNET — 13-SLOT RACK — PS, CPU, DI, DO, RS-422/485, AI, AO, RS-422/485 — MES — 24VDC — CP1 — 24VDC — ETHERNET

EXISTING SCADA PANEL 6

DISK FILTERS SYSTEM

DISK FILTERS
FLOW SPLITTER BOX
*LOCAL INSTRUMENTATION

ETHERNET — EXISTING 13-SLOT RACK — PS, CPU, DI, DO, RS-422/485, AI, AO, RS-422/485 — MES — 24VDC — FIBER OPTIC PATCH PANEL — TOUCH SCREEN

FO-6

EXISTING SCADA PANEL 7

LAKE FILTER SYSTEM

LAKE FILTER SYSTEM
*LOCAL INSTRUMENTATION

ETHERNET — EXISTING 13-SLOT RACK — PS, CPU, DI, DO, RS-422/485, AI, AO, RS-422/485 — MES — 24VDC — FIBER OPTIC PATCH PANEL

FO-5

RADIO PANEL

FOC — RADIO — TO ANTENNA

LEGEND	
FO-X	FIBER OPTIC CABLE IDENTIFICATION NUMBER CABLES TO BE TAGGED AT EVERY BOX
MES	MANAGED ETHERNET SWITCH
FOC	FIBER OPTIC CONVERTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
NIC	NETWORK INTERFACE CARD
C-XX	DISCRETE SIGNAL INSTRUMENTATION PANELS
I-XX	ANALOG SIGNAL INSTRUMENTATION PANELS

NOTES:

*IN MOST CASES THE ANALOG AND DISCRETE SIGNALS TO BE MONITORED ARE TERMINATED IN THE I-XX AND C-XX PANELS. IN THE CASES WHERE THE LOCAL INSTRUMENTATION IS NOT TERMINATED IN EITHER PANEL, THE SYSTEMS INTEGRATOR SHALL INSTALL CONDUIT FROM THE LOCAL INSTRUMENTATION OR CONTROL PANELS TO THE REQUIRED SCADA PANEL.

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DIGITAL AND ANALOG WIRING SHALL BE IN SEPARATE CONDUITS AND INSTALLED PER THE NEC CODE.

Record Drawing

REVNO.	DESCRIPTIONS	DATE
2	RECORD DRAWING	08-25-08
1	AS BUILT	05-22-08

REVISIONS

SEAL

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No. 17650

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MANATEE COUNTY, FLORIDA
PROJECT MANAGEMENT DEPARTMENT

MANATEE
WASTEWATER TREATMENT PLANT
SCADA SYSTEM

NORTH WATER RECLAMATION FACILITY
FIBER OPTIC LAYOUT

DATE:	MAY, 2006
MCE PROJ. #	1024-0050
DRAWN	DKM
DESIGNED	EEB
CHECKED	DHC
PROJ. MGR.	ASL

SCALE: HORIZONTAL: NA VERTICAL: NA

MAC FILE NUMBER

DRAWING NUMBER: I-405

REVISION

STATUS: ISSUE FOR BID

4945.023