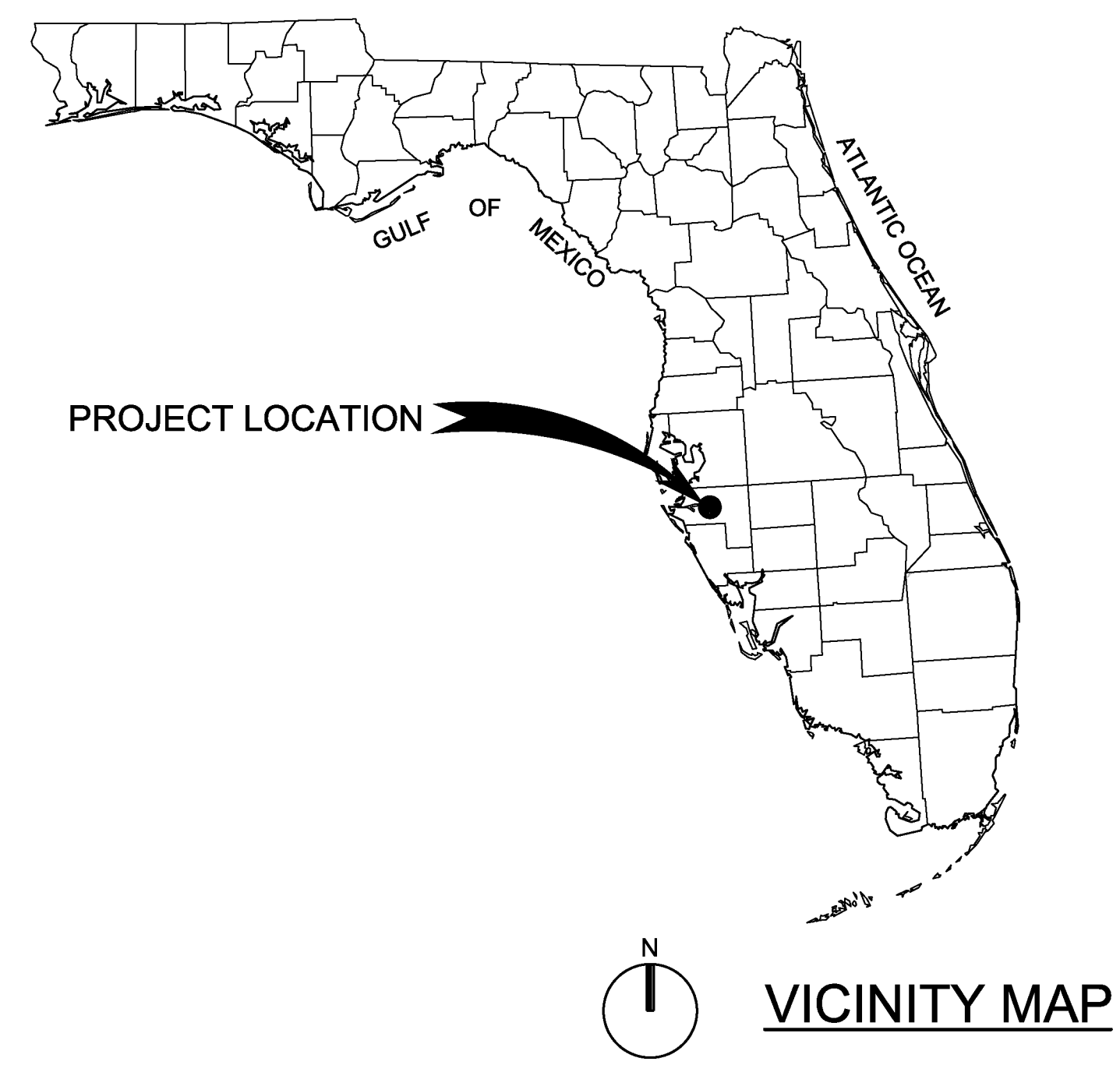


CONTRACT DOCUMENTS

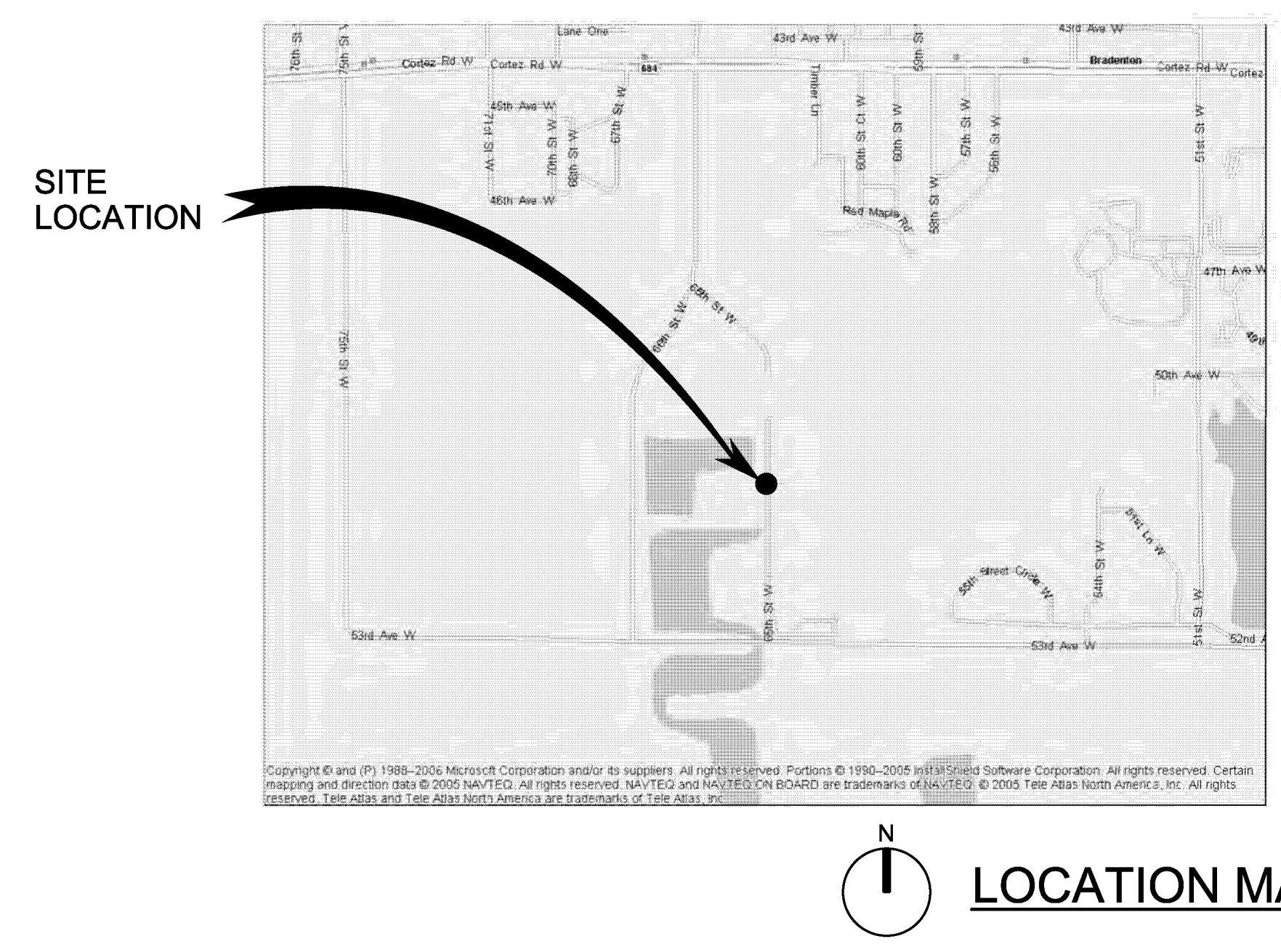
FOR THE CONSTRUCTION OF

SWWRF ABW FILTER REHAB



INDEX OF DRAWINGS

- COVER SHEET AND INDEX OF DRAWINGS
- D-01 FILTERS OVERALL PLAN
 - D-02 FILTERS 3, 4, AND 5 PLAN
 - D-03 FILTERS SECTION AND DETAIL
 - S-01 FILTERS SECTION AND DETAILS
 - S-02 FILTERS PHOTOS
 - S-03 STANDARD DETAILS
 - E-01 RISER DIAGRAM, TYPICAL FILTER PANEL CONTROL & POWER WIRING
 - E-02 TYPICAL CONTROL PANEL LAYOUT - EXISTING FILTERS 6 & 7 CONTROLS MODIFICATIONS (SKIMMER)
 - E-03 TYPICAL CONTROL PANEL SCHEMATIC - EXISTING FILTERS 6 & 7 CONTROLS MODIFICATIONS (SKIMMER) SHEET 1 OF 3
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 - E-06 TYPICAL THREE LINE DIAGRAM - EXISTING FILTERS 6 & 7 CONTROLS UPGRADE
 - E-07 TYPICAL POWER & CONTROL INTERCONNECTING DIAGRAM FILTERS 6 & 7 SKIMMER UPGRADE
 - E-08 GROUNDING PLAN AND DETAIL



PREPARED FOR
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- REFERENCE DRAWINGS
- R-01 BRIDGE & ACCESSORIES
 - R-02 BASIN PLAN
 - R-03 BRIDGE ASSEMBLY
 - R-04 BRIDGE MECHANISM
 - R-05 BASIN ACCESSORIES
 - R-06 CONTROL PANEL LAYOUT
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 - R-11 RAIL INSTALLATION
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 - R-13 UNDERDRAIN INSTALLATION DETAILS
 - R-14 UNDERDRAIN INSTALLATION DETAILS
 - R-15 SURVEY

VOLUME 2 OF 2

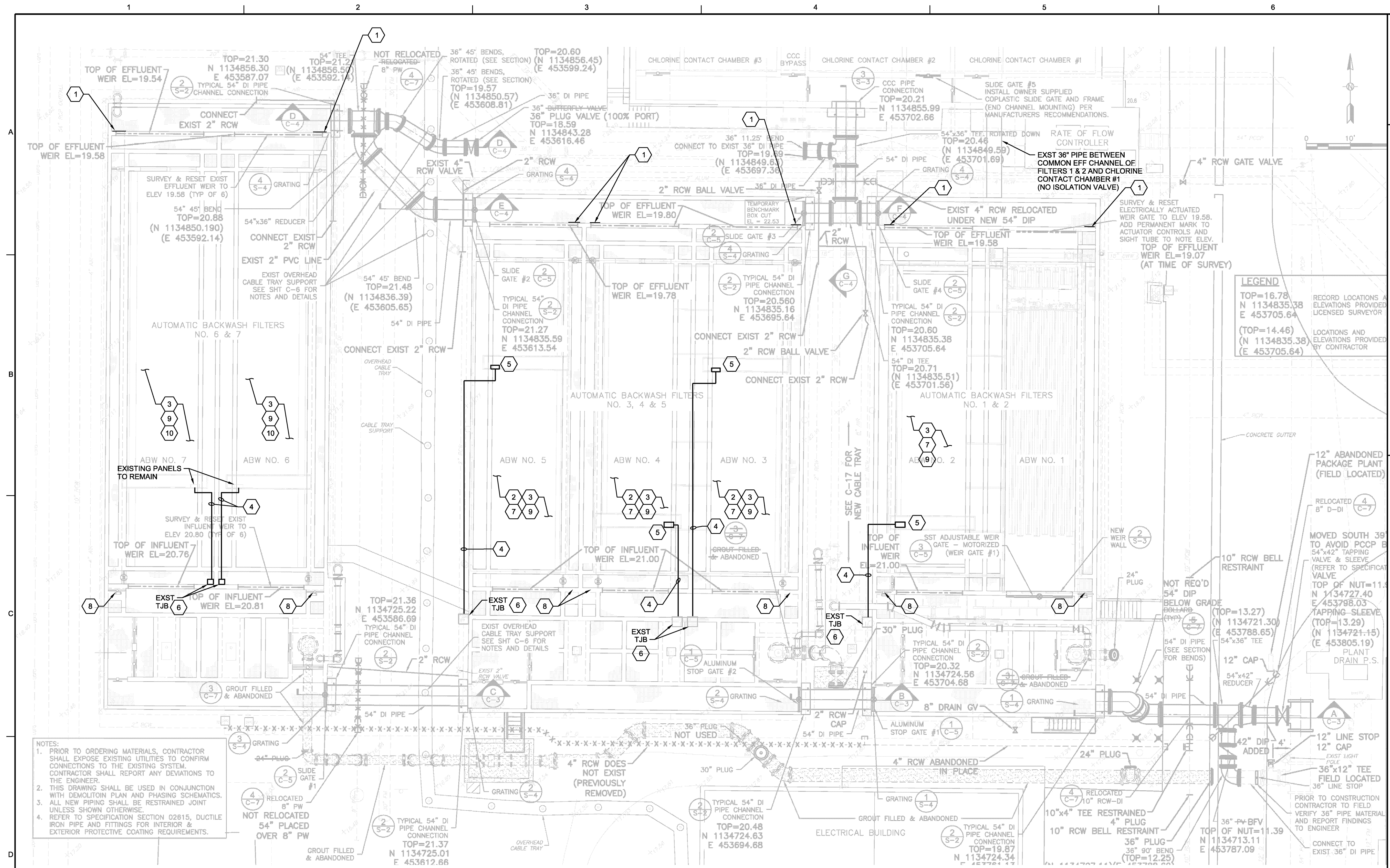
DRAWINGS

For information regarding this project, contact:
NIEL POSTLETHWAIT, P.E.
4350 West Cypress Street
Suite #600
Tampa, FL 33607-4178
(813) 281-7749



Project No. 491792
APRIL 2017

RECORD DRAWINGS



NOTES:

- PRIOR TO ORDERING MATERIALS, CONTRACTOR SHALL EXPOSE EXISTING UTILITIES TO CONFIRM CONNECTIONS TO THE EXISTING SYSTEM. CONTRACTOR SHALL REPORT ANY DEVIATIONS TO THE ENGINEER.
- THIS DRAWING SHALL BE USED IN CONJUNCTION WITH DEMOLITION PLAN AND PHASING SCHEMATICS.
- ALL NEW PIPING SHALL BE RESTRAINED JOINT UNLESS SHOWN OTHERWISE.
- REFER TO SPECIFICATION SECTION 02615, DUCTILE IRON PIPE AND FITTINGS FOR INTERIOR & EXTERIOR PROTECTIVE COATING REQUIREMENTS.

LEGEND

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RECORD LOCATIONS & ELEVATIONS PROVIDED BY LICENSED SURVEYOR

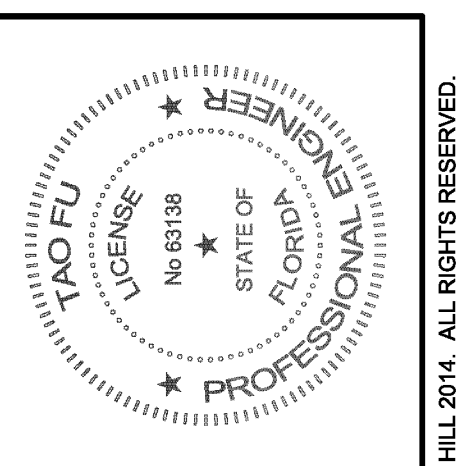
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(E 453705.64)
LOCATIONS AND ELEVATIONS PROVIDED BY CONTRACTOR

- KEYED NOTES**
- INSTALL SST PLATE TO SEAL OFF THE BYPASS CHANNEL (TOTAL OF 7). GROUT ALL 7 BYPASS CHANNELS. SEE D-03.
 - DEMOLISH THE UNDERDRAIN SYSTEM OF FILTERS 3, 4, AND 5.
 - REHABILITATION OF FILTERS 2 THROUGH 7 SHALL BE COMPLETED IN ACCORDANCE TO SPECIFICATION SECTION 44 43 15, AUTOMATIC BACKWASH FILTER REHABILITATION.
 - MANUFACTURER SUPPLIED FLAT FESTOON POWER AND CONTROL CABLE SYSTEMS. FURNISH, INSTALL, TERMINATE AT BOTH ENDS. DETERMINE CABLE LENGTHS IN FIELD (TOTAL OF 6).
 - NEW CONTROL PANEL ON TRAVELING BRIDGE FURNISH, INSTALL, TERMINATE AND TEST (TOTAL OF 4).

- TERMINATE NEW FESTOON CABLES INTO EXISTING TJB. DETERMINE EXACT LOCATION IN FIELD (TOTAL OF 6).
- REMOVE AND REPLACE RAIL AND RAIL CLAMPS FOR FILTERS 2 THROUGH 5.
- DEMOLISH BYPASS CHANNEL GATE ACTUATORS. (TOTAL OF 7).
- INSTALL SKIMMER PUMPS TO FILTERS 2 THROUGH 7, ONE PUMP EACH FILTER. GOULDS 3886 WS.05B SERI. 1/2 HP, 3 PHASE, 460V, 1150 RPM, 50 GPM AT 20FT.
- INSTALL RELAY TO CONTROL PANELS AT FILTERS 6 & 7 FOR SKIMMER PUMP CONTROL.

GENERAL NOTES:

- THE BACKGROUND DRAWINGS ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS, DIRECTIONS AND ORIENTATIONS.



RECORD DRAWINGS
Date: APRIL 2017
Revisions Drawn By: Z BRYAN

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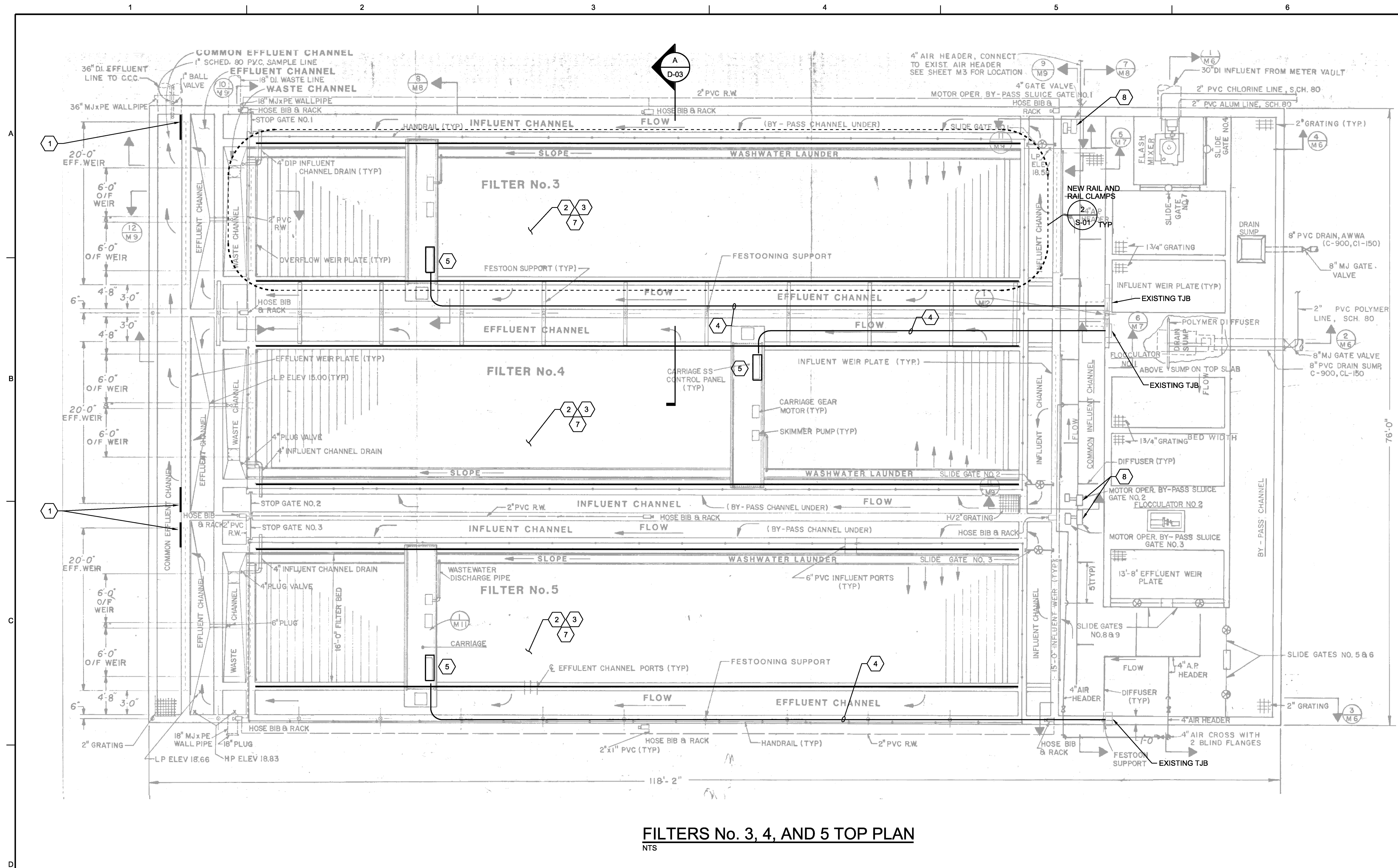
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FILTERS No. 3, 4, AND 5 TOP PLAN
NTS

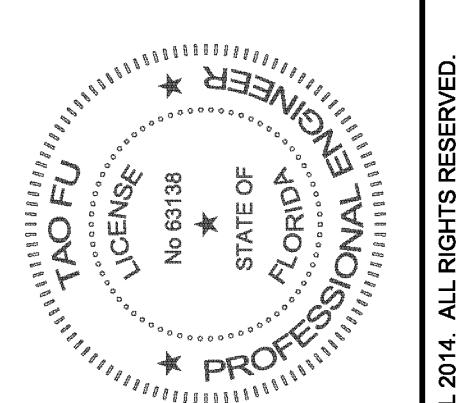
KEYED NOTES

- 1 INSTALL TYPE SST PLATE TO SEAL OFF THE BYPASS CHANNEL. GROUT ALL BYPASS CHANNELS. SEE INSTALLATION DETAIL ON D-03.
- 2 DEMOLISH THE UNDERDRAIN SYSTEM OF FILTERS 3, 4, AND 5.
- 3 REHABILITATION OF FILTERS 2 THROUGH 7 SHALL BE COMPLETED IN ACCORDANCE TO SPECIFICATION SECTION 44 43 15, AUTOMATIC BACKWASH FILTER REHABILITATION.

- 4 MANUFACTURER SUPPLIED FLAT FESTOON POWER AND CONTROL CABLE SYSTEMS. FURNISH, INSTALL, TERMINATE AT BOTH ENDS. DETERMINE CABLE LENGTHS IN FIELD.
- 5 NEW CONTROL PANEL ON TRAVELING BRIDGE FURNISH, INSTALL, TERMINATE AND TEST.
- 6 TERMINATE NEW FESTOON CABLES INTO EXISTING TJB. DETERMINE EXACT LOCATION IN FIELD.
- 7 REMOVE AND REPLACE RAIL AND RAIL CLAMPS FOR FILTERS 2 THROUGH 5.
- 8 DEMOLISH BYPASS CHANNEL GATE ACTUATORS.

GENERAL NOTES:

- 1. THE BACKGROUND DRAWINGS ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS, DIRECTIONS AND ORIENTATIONS.



RECORD DRAWINGS Date: APRIL 2017

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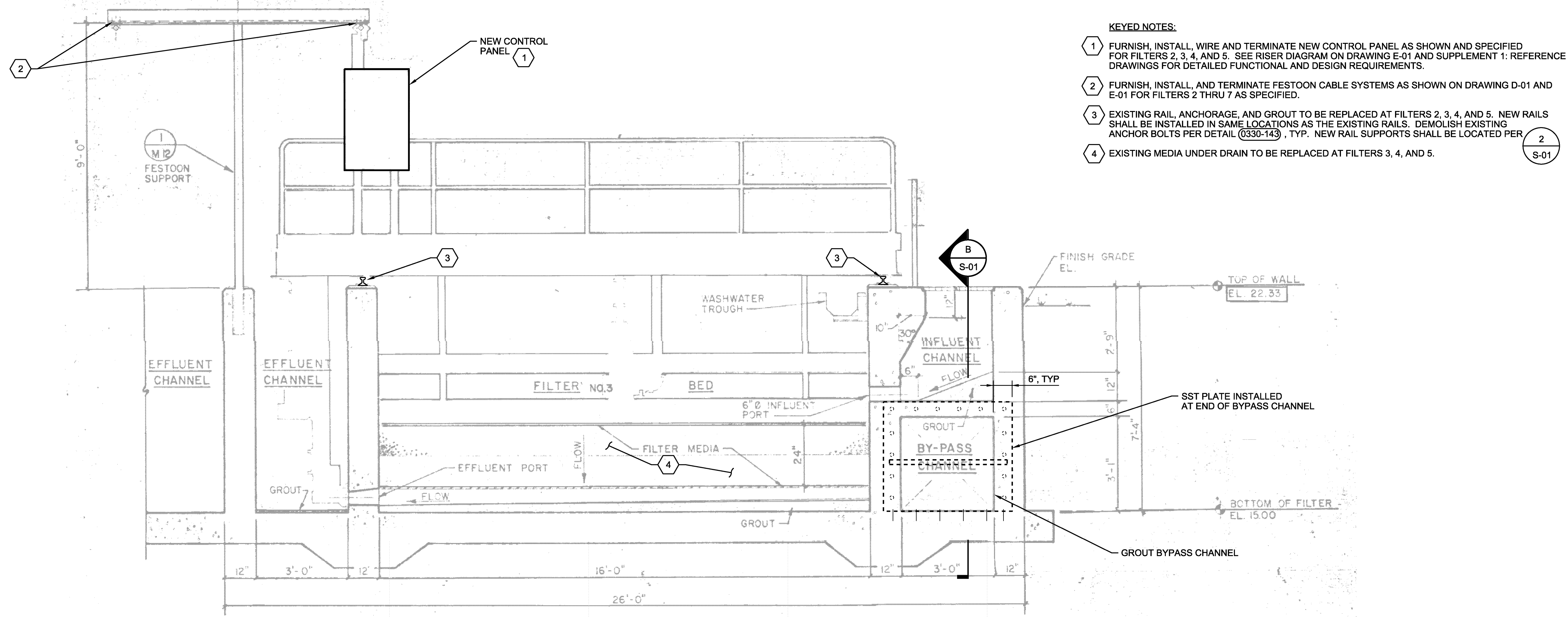
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**FILTERS 3, 4, AND 5
PLAN**

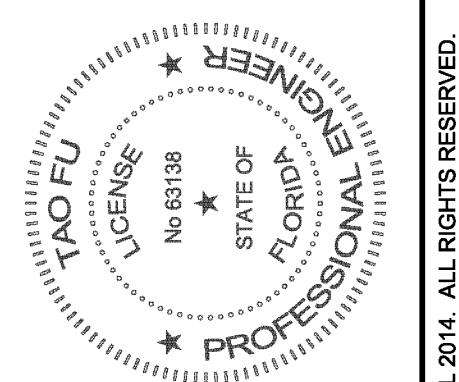
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DWG: D-02
SHEET: ShiNum of ShtTot

DATE	APRIL 2017
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DWG	D-02
SHEET	ShiNum of ShtTot

1 2 3 4 5 6



A TYPICAL FILTER SECTION
 NTS
 D-02



RECORD DRAWINGS
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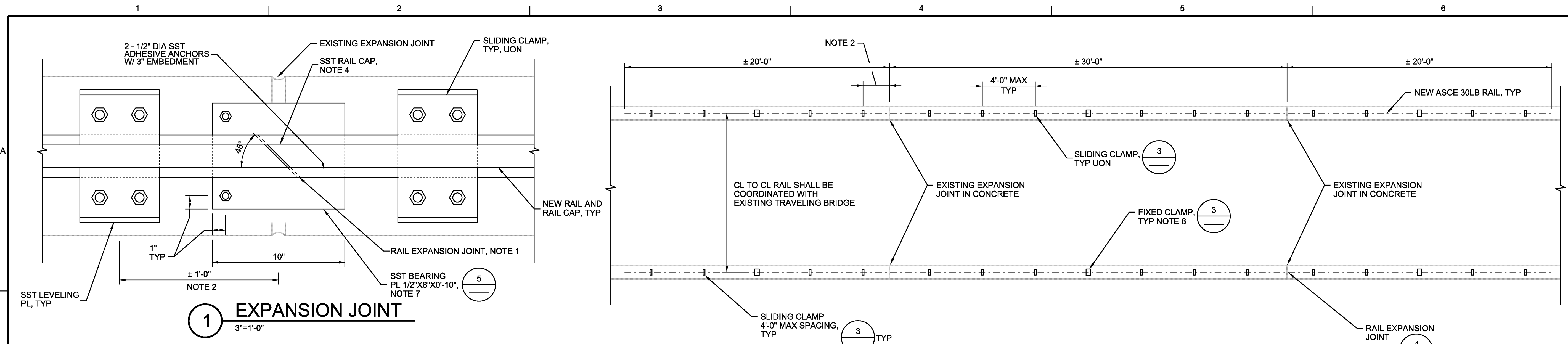
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SHEET	ShNum of ShTot

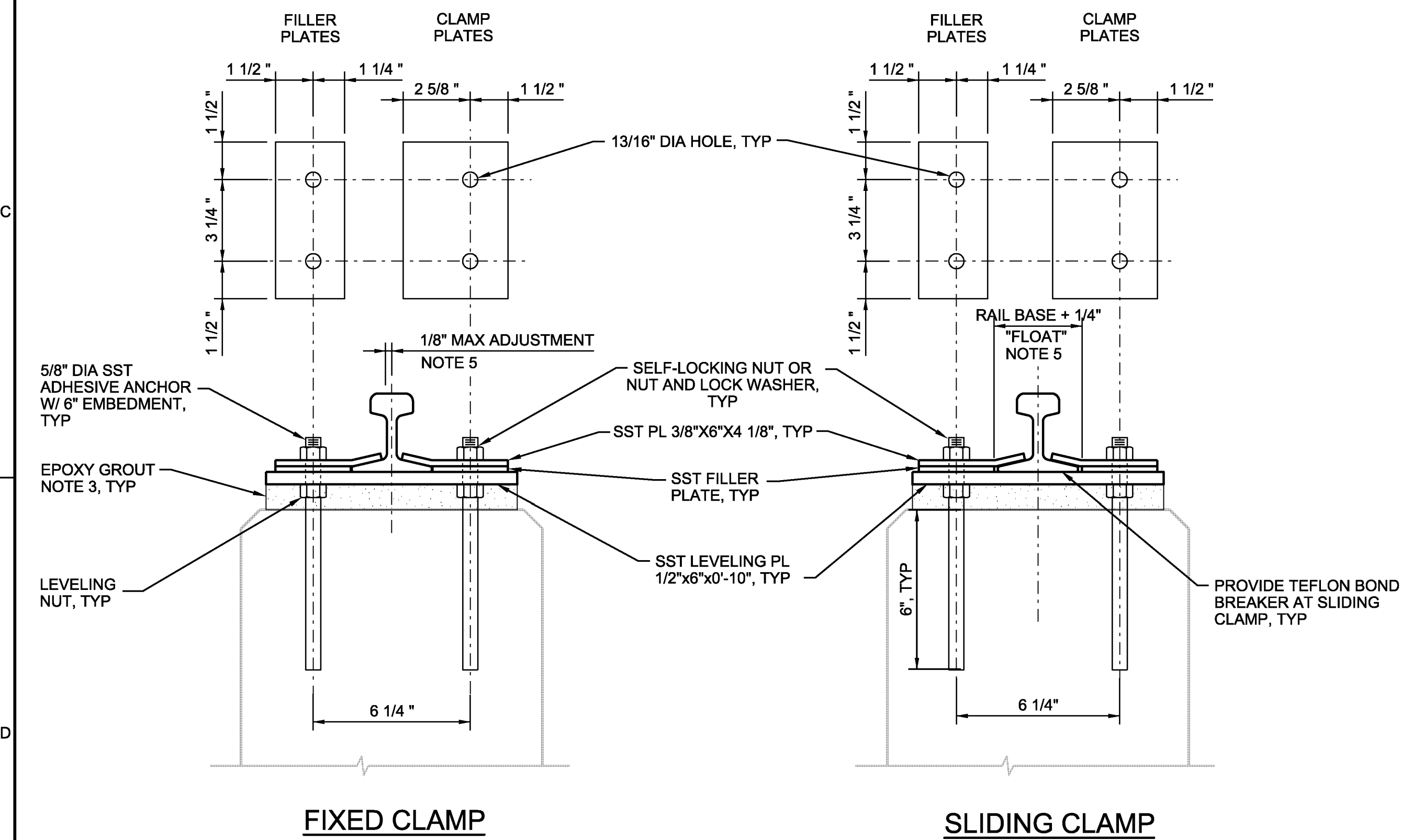
RECORD DRAWINGS



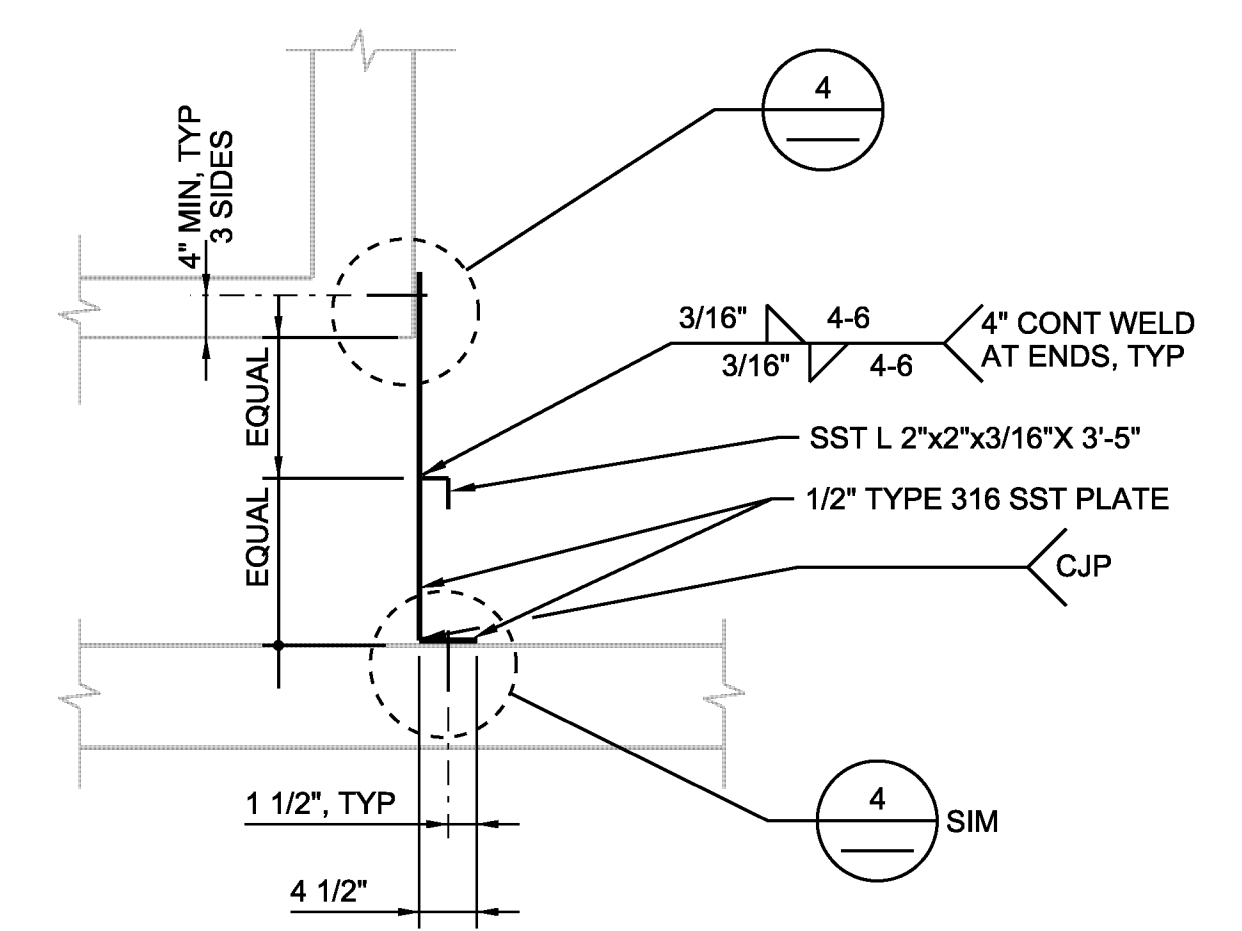
1 EXPANSION JOINT
3" = 1'-0"

2 RAIL SUPPORT LOCATION PLAN
NTS

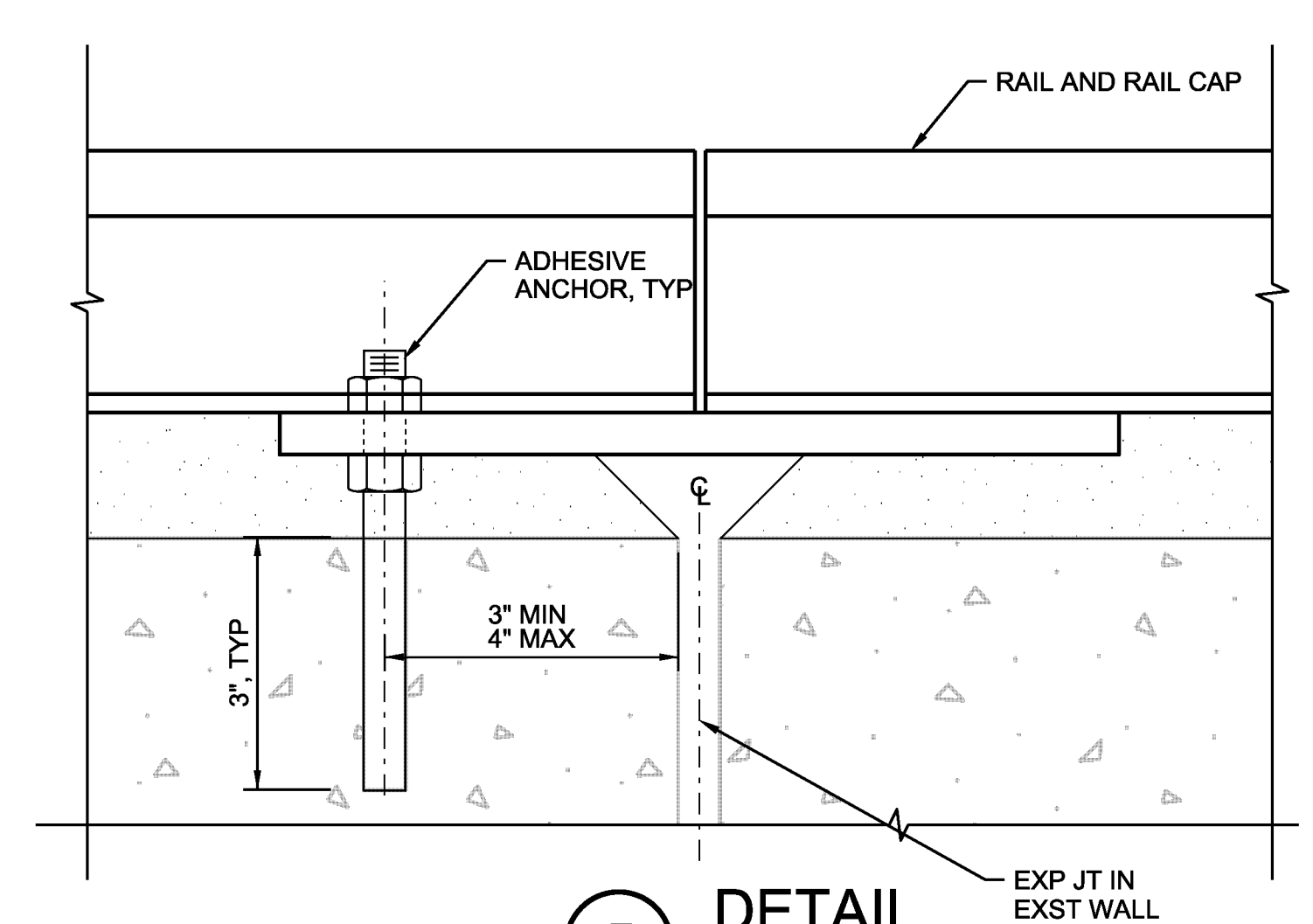
- NOTES:**
1. PROVIDE 3/16" GAP BETWEEN END OF RAIL SECTIONS TO ALLOW EXPANSION AT EXISTING CONCRETE EXPANSION JOINTS. INSTALLATION TEMPERATURE OF RAIL SHALL BE 75°F ± 15°F.
 2. LOCATE SLIDING CLAMP MIN 1'-0" FROM EXPANSION JOINT OR MIN 8" FROM EXISTING ANCHOR BOLTS.
 3. GROUT LEVELING PLATE, BEARING PLATE, AND RAIL FULL LENGTH WITH EPOXY GROUT SIKADUR 42 GROUT-PAK OR APPROVED EQUAL. INSTALL PER GROUT MANUFACTURER RECOMMENDATION.
 4. PROVIDE 3/16" GAP IN RAIL CAP AT EXPANSION JOINT.
 5. COORDINATE RAIL INSTALLATION TOLERANCE WITH FILTER MANUFACTURER AND CONTRACTOR TO PROVIDE SURVEY.
 6. NO NEW ANCHOR SHALL BE WITHIN 6" OF EXISTING ANCHOR BOLT.
 7. PROVIDE BEARING PLATE AT EXPANSION JOINTS. SECURE PLATE ON ONE END.
 8. FIXED CLAMP SHALL BE LOCATED AT THE CENTER OF EACH RAIL SECTION SPANNING BETWEEN EXISTING CONCRETE EXPANSION JOINTS.



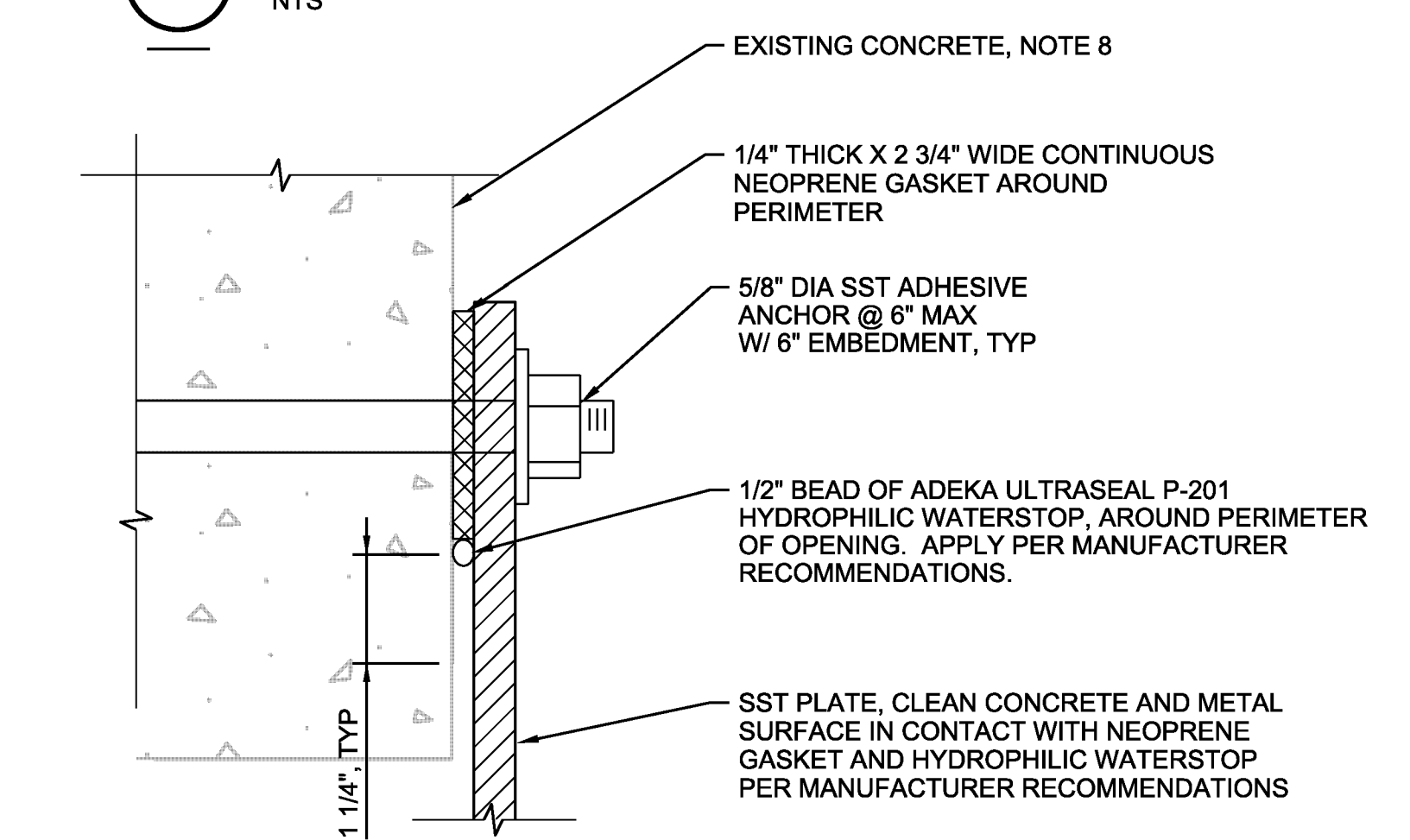
3 RAIL CLAMPS
NTS



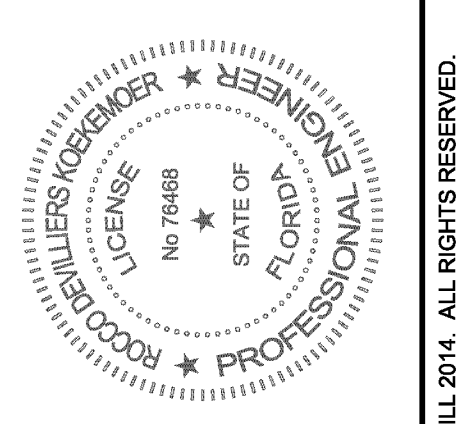
B SECTION
NTS



5 DETAIL
6" = 1'-0"



4 DETAIL
6" = 1'-0"



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1				T. LOOSE	R. KOEKEMOER
2				L. KORBUS	R. KOEKEMOER

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EXISTING RAIL, SUPPORTS, CONCRETE ANCHORS, AND GROUT TO BE REMOVED AND REPLACED, TYP

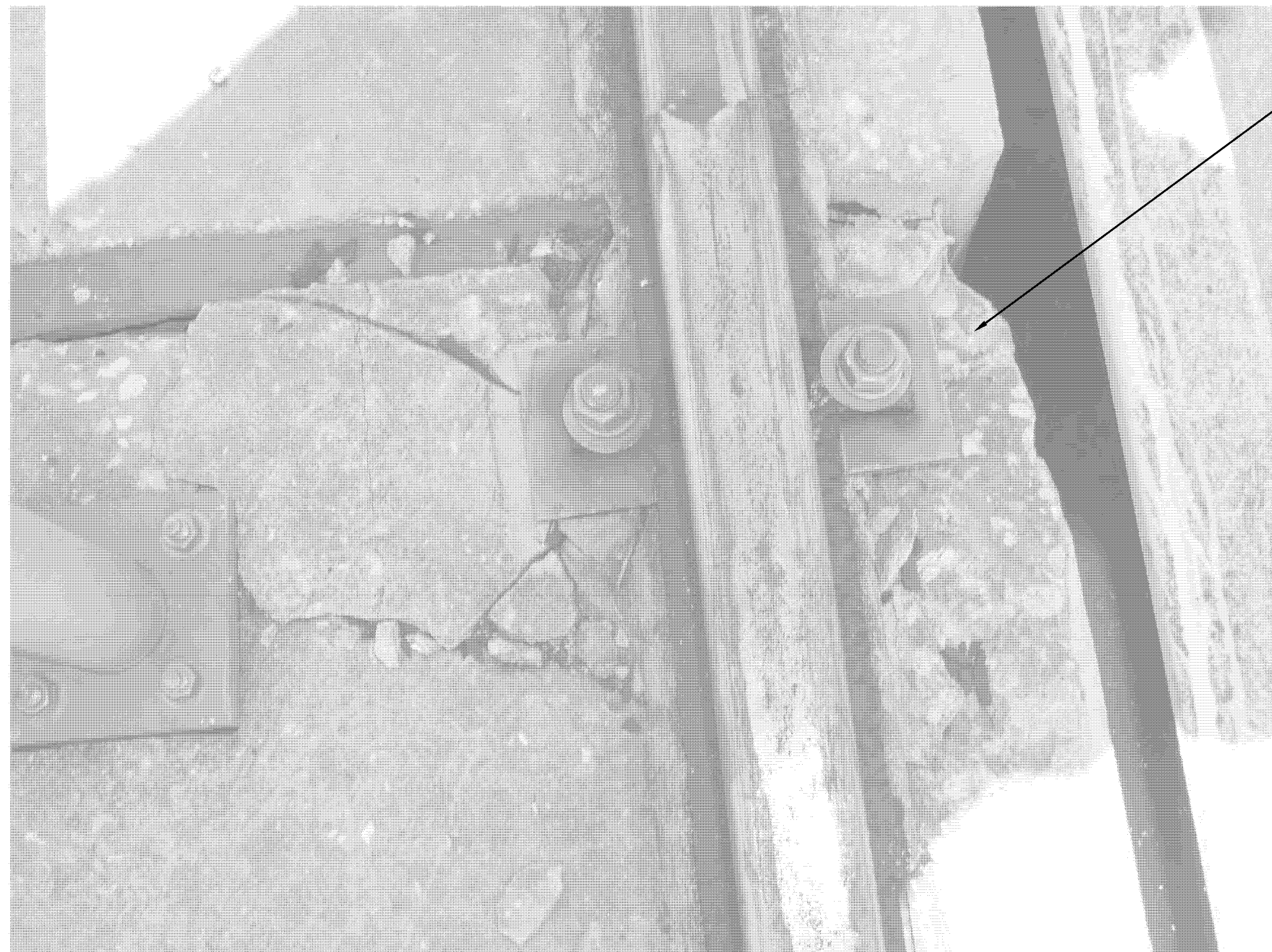
SPALLING CONCRETE AT EXISTING RAIL ANCHORAGE

SPALLING CONCRETE AT EXISTING RAIL ANCHORAGE



1 PHOTO
NTS
S-01

2 PHOTO
NTS
S-01

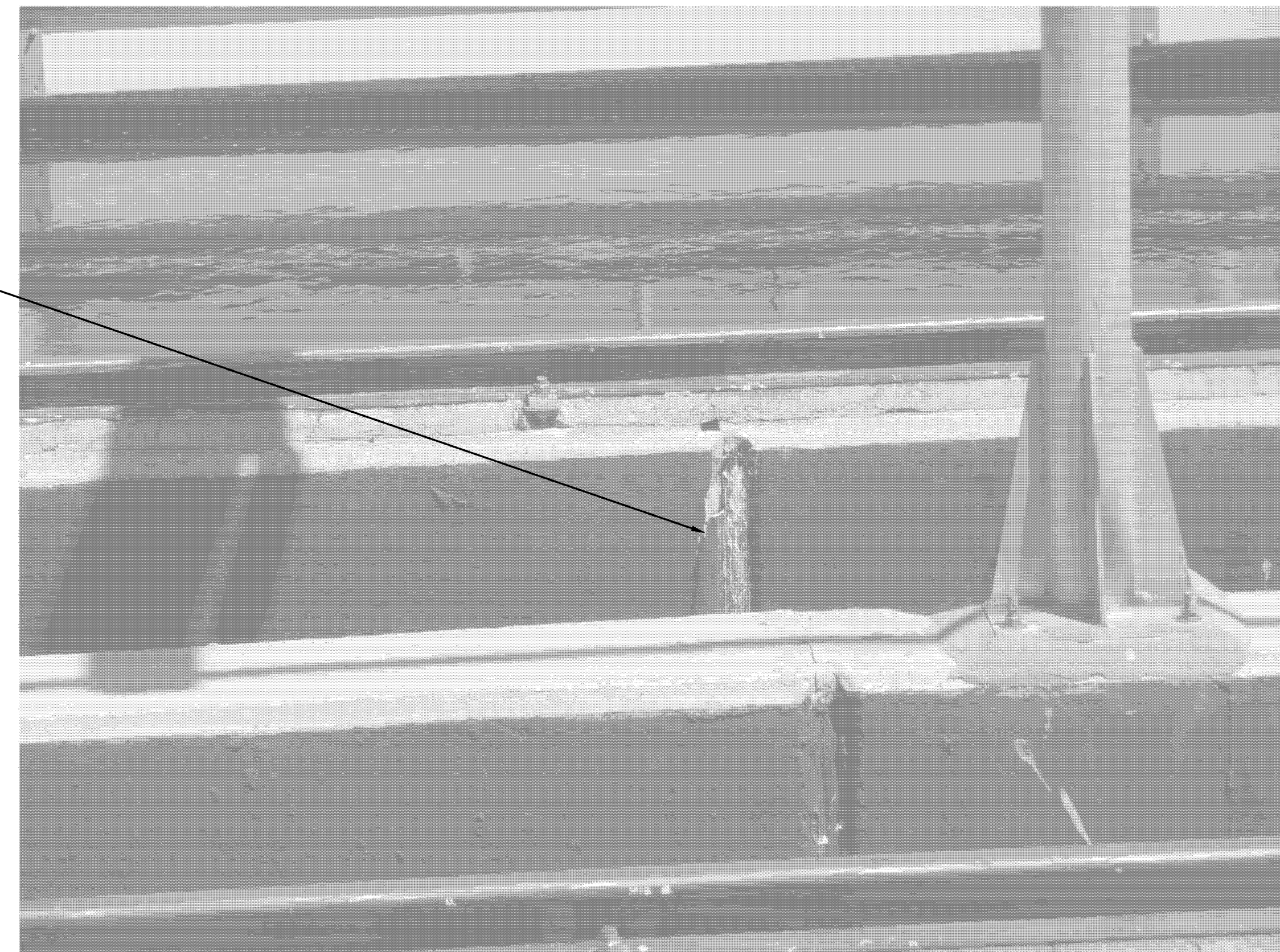


SPALLING CONCRETE AT EXISTING CONCRETE EXPANSION JOINT

SPALLING CONCRETE AT EXISTING CONCRETE EXPANSION JOINT

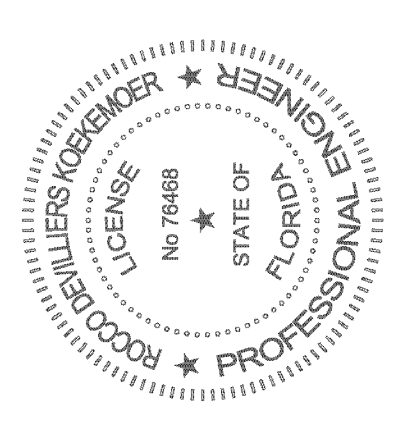
NOTES:

1. PICTURES REPRESENT EXAMPLES OF TYPICAL CONCRETE AREAS TO BE REPAIRED. CONTRACTOR SHALL FIELD VERIFY QUANTITIES AND EXISTING CONDITIONS.
2. CONCRETE REPAIRS SHALL BE PERFORMED PER 03 01 32, REPAIR CONCRETE SURFACES.
3. CONCRETE EXPANSION JOINTS SHALL BE SEALED PER (0315-229) AFTER CONCRETE REPAIRS ARE COMPLETED.
4. REPAIR CONCRETE COATING AFTER CONCRETE REPAIRS ARE COMPLETED.
5. REMOVE EXISTING CONCRETE 1" PAST THE LIMITS OF DETERIORATED CONCRETE.



3 PHOTO
NTS
S-01

4 PHOTO
NTS
S-01



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RECORD DRAWINGS

EXPANSION JOINT TREATMENT
NTS

0315-229

NOTES:

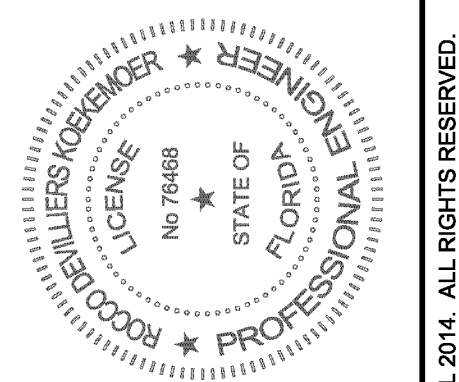
1. REPLACE PREMOLDED JOINT FILLER AS REQUIRED.
2. REMOVE EXISTING SEALANT AND BACKER MATERIAL. CLEAN CONCRETE SURFACES PER SEALANT MANUFACTURER RECOMMENDATIONS.
3. SEALANT SHALL BE SIKAFLEX 1a. INSTALL PER MANUFACTURER RECOMMENDATIONS.
4. SEALANT SHALL EXTEND ACROSS TOP OF WALL TO AVOID WATER INTRUSION BEHIND SEALANT.

CONCRETE DEMOLITION
NTS

0330-143

NOTES:

1. REMOVE CONCRETE OUT TO SOUND CONCRETE.
2. IF CHIPPING INTO THE SURFACE OF THE EXISTING SLAB OR WALL TO REMAIN IS REQUIRED, MAKE EDGES PERPENDICULAR TO THE SURFACE. DO NOT FEATHER EDGES.
3. FILL DEFECTIVE AREA WITH APPROVED PREPACKAGED PATCHING MATERIAL TO MATCH APPEARANCE OF ADJACENT CONCRETE SURFACES.
4. USE APPROVED BONDING AGENT ON SURFACES TO BE PATCHED PRIOR TO PLACING EPOXY GROUT.
5. DEMONSTRATE METHODS FOR REPAIR USING ACTUAL MATERIALS, METHODS, AND CURING PROCEDURES REQUIRED BY MATERIAL MANUFACTURERS. CONSULT WITH BONDING AGENT MANUFACTURER AND NON-SHRINK GROUT MANUFACTURER ON TECHNIQUES.



RECORD DRAWINGS Date: APRIL 2017

Revisions Drawn By: Z BRYAN

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DR		CHK	L KORBUS
APVD		CHK	T LOOSE
APVD		CHK	R KOEKEMORE

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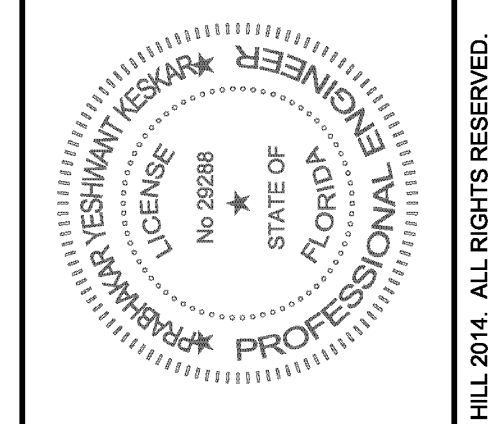
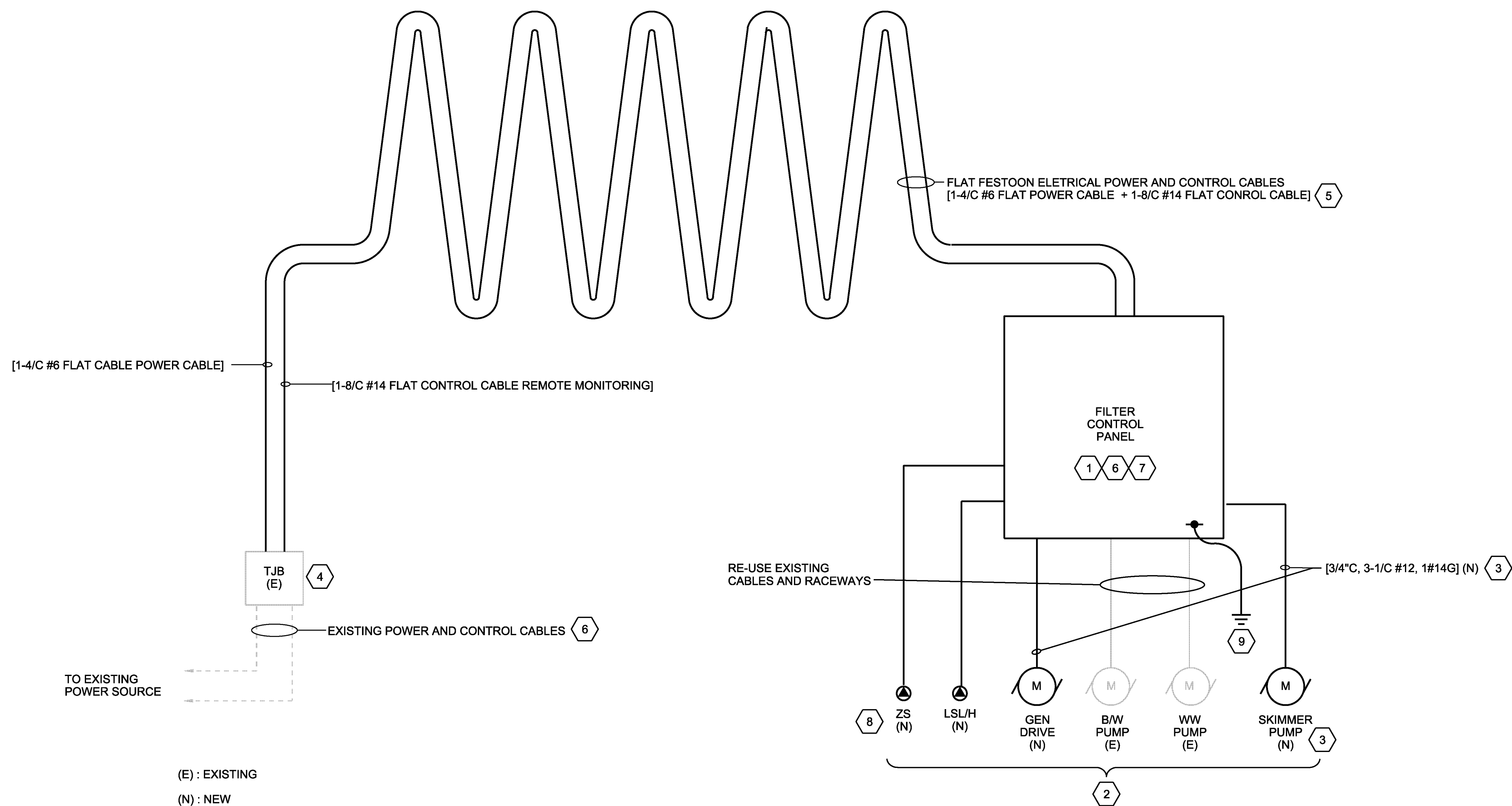
VERIFY SCALE

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DWG	S-03
SHEET	ShNum of ShtTot

RECORD DRAWINGS

- NOTES:**
- 1 FURNISH, INSTALL, WIRE, TERMINATE AND TEST NEW CONTROL PANEL FOR FILTERS 2, 3, 4, AND 5. SEE REFERENCE DRAWINGS R-03, R0-4, R-06 & R-08 IN SUPPLEMENT -1 FOR ADDITIONAL REQUIREMENTS.
 - 2 EXISTING MOTORS FOR FILTERS 2, 3, 4, AND 5 TO BE WIRED TO NEW PANEL. RE-USE EXISTING CABLES AND RACEWAYS.
 - 3 FOR FILTERS 2 THRU 7 REPLACE SKIMMER PUMP. FOR FILTERS 3, 4, 5 REPLACE CARRIAGE DRIVE. WIRE MOTOR TO CONTROL PANEL USING NEW RACEWAY AND CABLE. REMOVE EXISTING RACEWAY AND CABLE.
 - 4 EXISTING TJB TO REMAIN IN PLACE.
 - 5 FOR FILTERS 2 THRU 7, REPLACE EXISTING FLAT FESTOON ELECTRICAL CABLE WITH SIMILAR NEW CABLE. AS SHOWN, TWO SEPARATE MULTI CONDUCTOR FLAT CABLES ARE REQUIRED FOR CONTROL AND POWER. CABLE LENGTHS SHALL BE BASED ON FIELD MEASUREMENTS BUT NOT LESS THAN 125' (FEET).
 - 6 CONTRACTOR SHALL CONDUCT PERFORMANCE TESTS ON ALL FILTER CONTROL PANELS 2 THRU 7 TO SHOW SATISFACTORY OPERATION OF THE FILTER CONTROL AND POWER SYSTEM INCLUDING REMOTE MONITORING SYSTEM.
 - 7 FOR FILTERS 6 & 7 MODIFY & RE-USE EXISTING PANEL. SEE DWGS E-02 THROUGH E-07 FOR MODIFICATIONS REQUIRED TO UPGRADE SKIMMER POWER & CONTROLS.
 - 8 INSTALL NEW LEVEL AND LIMIT SWITCHES FOR FILTERS 2, 3, 4 AND 5. INSTALL NEW LIMIT SWITCHES FOR FILTERS 6 AND 7. USE NEW RACEWAY AND CABLE. REMOVE EXISTING SWITCHES, RACEWAY AND CABLE.
 - 9 CONNECT PANEL GROUND TO THE CARRIAGE AND THE CARRIAGE RAIL TO THE GROUND ROD AT ONE END AS SHOWN IN THE PLANK DETAIL SHOWN ON E-08.



RECORD DRAWINGS Date: APRIL 2017

Revisions Drawn By: Z BRYAN

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NO.	DATE	REVISION	BY	APVD
1		CHK	PY KESKAR	APVD
2		DR	P OAKES	APVD
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3011 S.W. WILLISTON ROAD
GAINESVILLE, FLORIDA 32608
EBR0000072 AAC001892
Prabhakar Yeshwant Keskhar PE 29288

SWWRFBW FILTER REHAB
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FLORIDA

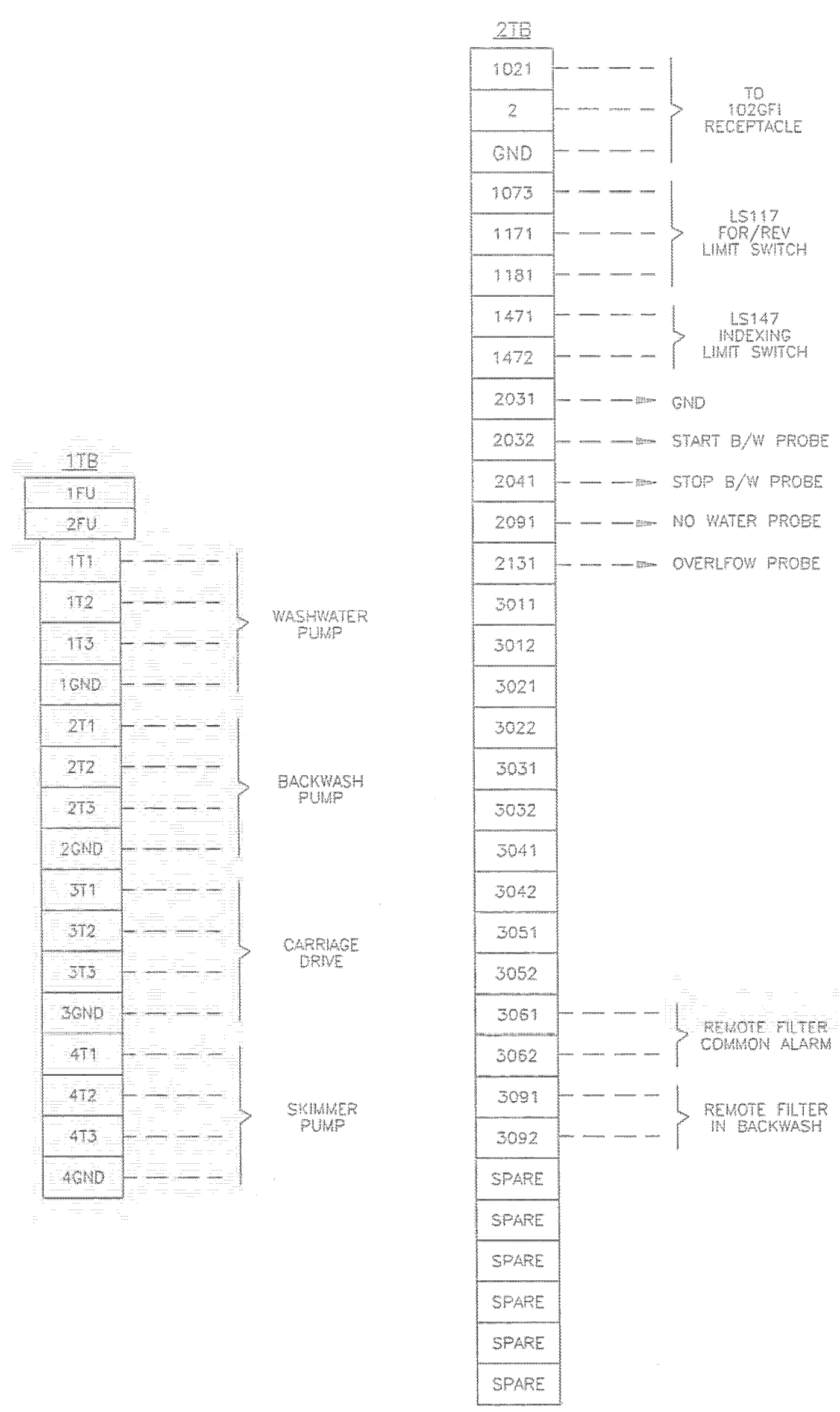
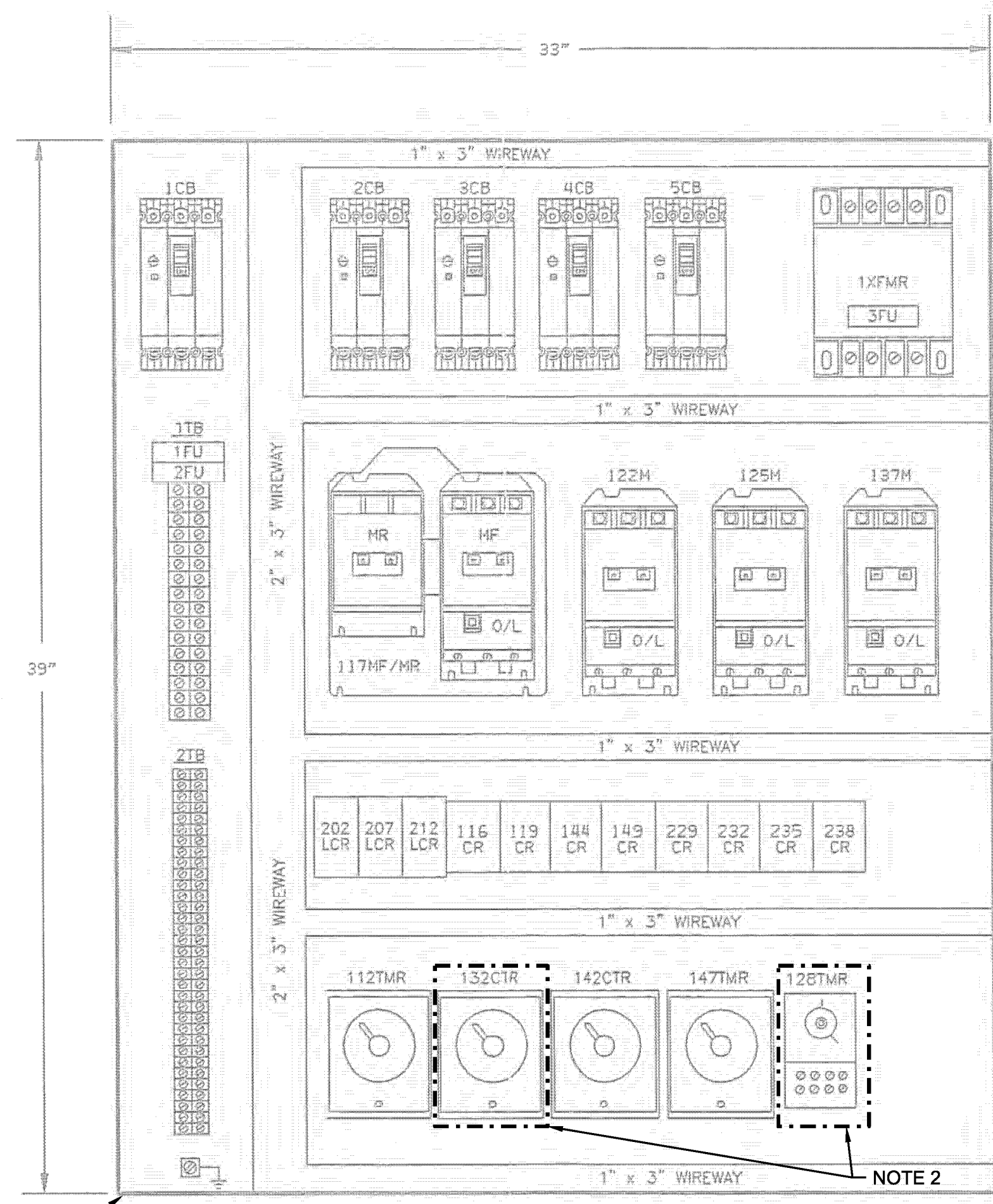
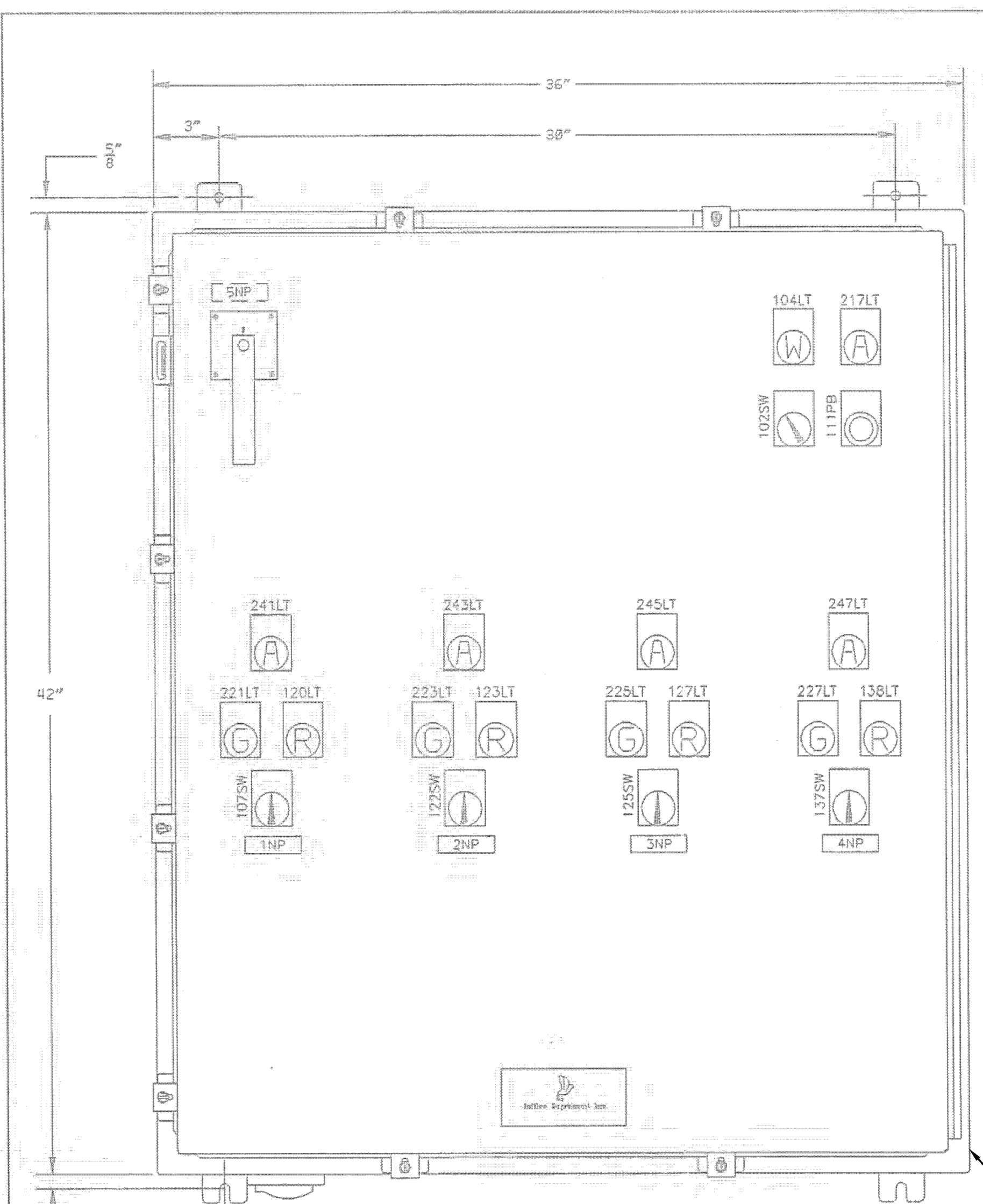
CH2MHILL®
ELECTRICAL
RISER DIAGRAM
TYPICAL FILTER PANEL
CONTROL & POWER WIRING

NTS
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE	APRIL 2017
PROJ	491792
DWG	E-01
SHEET	ShNum of ShTot

RECORD DRAWINGS

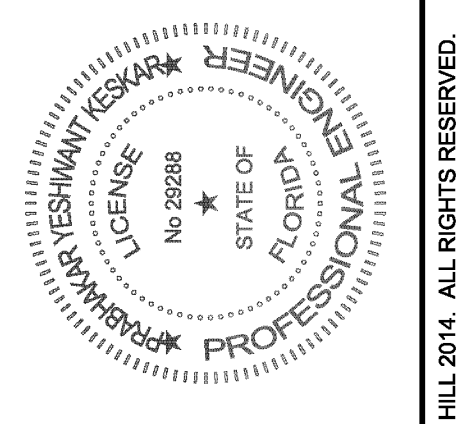
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- NOTES:**
- FOR FILTER #6 & #7 THE ELECTRICAL CONTRACTOR SHALL REPLACE & RE-WIRE SKIMMER TIMER & COUNTER IN FIELD TO MAKE SKIMMER CONTROLS OPERATIONAL. EXISTING PANEL TO REMAIN IN PLACE.
 - TEST THE ENTIRE PANEL CONTROLS FOLLOWING THE CONTROLS MODIFICATIONS AND SKIMMER PUMP INSTALLATION AND WIRING TO SHOW THAT THE CONTROLS MEET THE FUNCTIONAL REQUIREMENTS.

- NOTES:**
- ENCLOSURE SHALL BE HOFFMAN NEMA 4X 316 STAINLESS STEEL 42"H x 36"W x 8"D.
 - SNP SHALL READ : 460 VOLT, 3 PHASE, 60 HZ. POWER, TOTAL H.P. = 7 1/4.
 - PROVIDE THE FOLLOWING SIZE CONDUIT OPENINGS ON THE BOTTOM OF THE ENCLOSURE:
(1) 2" DIAMETER AND (1) 1" DIAMETER.
 - PLUG CONDUIT OPENINGS WITH HOFFMAN S.S. PLUGS CAT. NO. AS-200.
 - FOR SCHEMATIC WIRING SEE DWG. D98659-04-201, 202 & 203.
 - FOR POWER WIRING SEE DWG. D98659-04-204.
 - FOR NAMEPLATE & LEGEND PLATE DETAILS SEE DWG. D98659-04-205.
 - MOTOR STARTER RESETS TO BE CENTERED OVER O/L RESET BUTTON ON MOTOR STARTERS.

THIS IS AN IDI SHOP DRAWING OF EXISTING FILTER #6 & #7 CONTROL PANELS. ACCURACY OF THIS DWG IS NOT KNOWN. FIELD VERIFY ALL INFORMATION



RECORD DRAWINGS
Date: APRIL 2017
Revisions Drawn By: Z BRYAN

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NO.	DATE	DR	REVISION	BY	APVD
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100			APVD		

Revisions Drawn By: Z BRYAN
Date: APRIL 2017

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NO. DATE DR REVISION BY APVD

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3011 S.W. WILLISTON ROAD
GAINESVILLE, FLORIDA 32608
EIN0000072 AAC001882
Prabhatkar Yeshwant Keshkar PE 29288

SWWRFBW FILTER REHAB
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FLORIDA

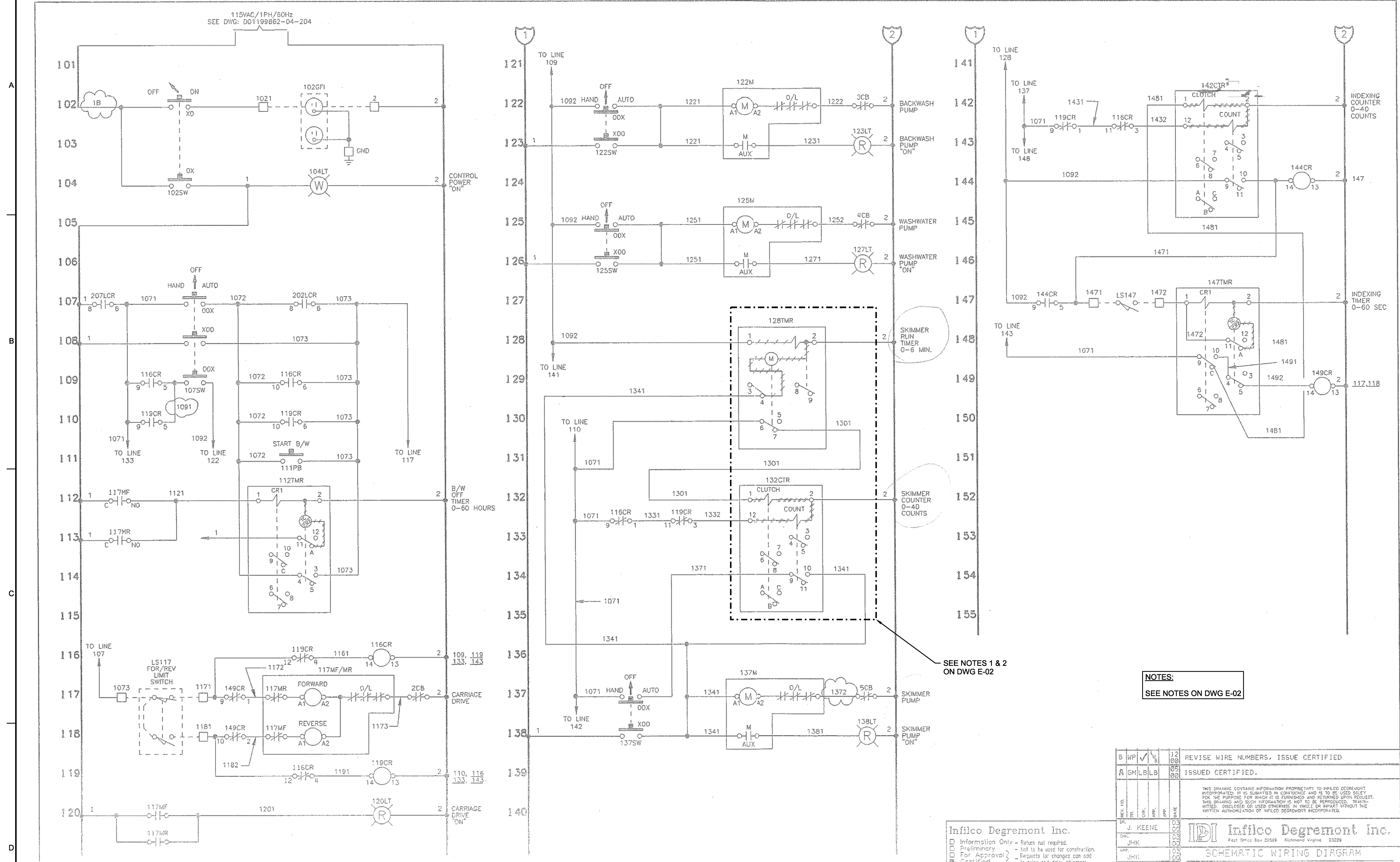
CH2MHILL®
ELECTRICAL
TYPICAL CONTROL PANEL LAYOUT
EXISTING FILTERS 6 & 7 CONTROLS
MODIFICATIONS (SKIMMER)

NTS
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE: APRIL 2017
PROJ: 491792
DWG: E-02
SHEET: ShiNum of ShtTot

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THIS IS AN IDI SHOP DRAWING OF THE EXISTING FILTERS #6 & #7 CONTROL SCHEMATIC. ACCURACY OF THIS DWG IS NOT KNOWN. FIELD VERIFY ALL INFORMATION

NOTES:
SEE NOTES ON DWG E-02

SEE NOTES 1 & 2 ON DWG E-02

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 Certified
 For MANATEE COUNTY SWRTP
 MANATEE COUNTY, FL
 Cust. Ord. No. 815-002
 Infilco Degremont Inc. No. 01199862
 Date 12/8/08 Item No. 0401

REV. NO.	DATE	BY	CHKD.	APP.	DATE
01	03/08	J. KEENE			
02	03/08	JHK			
03	03/08	JHK			
04	03/08	JHK			

REVISE WIRE NUMBERS, ISSUE CERTIFIED

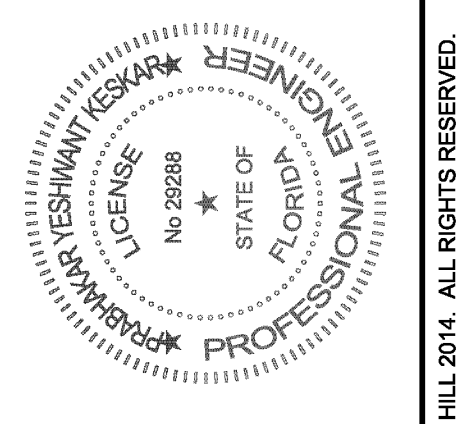
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 Post Office Box 20569 Richmond Virginia 23229

SCHEMATIC WIRING DIAGRAM
ABW FILTER
WITH SKIMMER & INDEXING

SCALE: 1" = 1'-0"
 SHEET: 01199862-04-201 B



RECORD DRAWINGS Date: APRIL 2017
 Revisions Drawn By: Z BRYAN
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NO.	DATE	DSGN	DR	REVISION	CHK	APVD	BY	APVD

3011 S.W. WILLISTON ROAD
 GAINESVILLE, FLORIDA 32608
 EBR0000072 AAC001982
 Prabhatkar Yeshwant Keshkar PE 29288

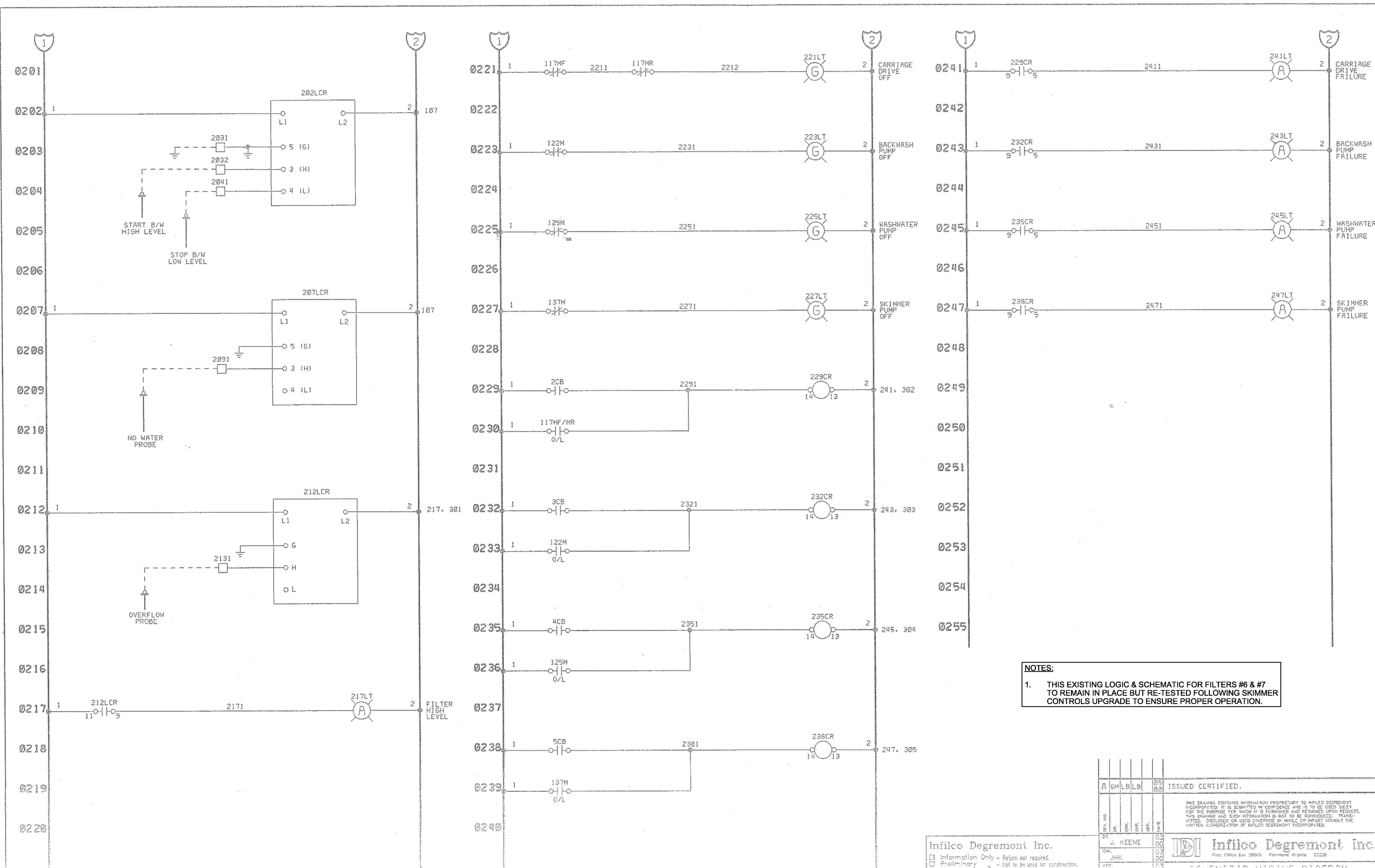
SWWRF ABW FILTER REHAB
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FLORIDA

CH2MHILL
 ELECTRICAL
TYPICAL CONTROL PANEL SCHEMATIC
EXISTING FILTERS 6 & 7 CONTROLS
MODIFICATIONS (SKIMMER) SHEET 1 OF 3

NTS
 VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE: APRIL 2017
 PROJ: 491792
 DWG: E-03
 SHEET: ShiNum of ShtTot

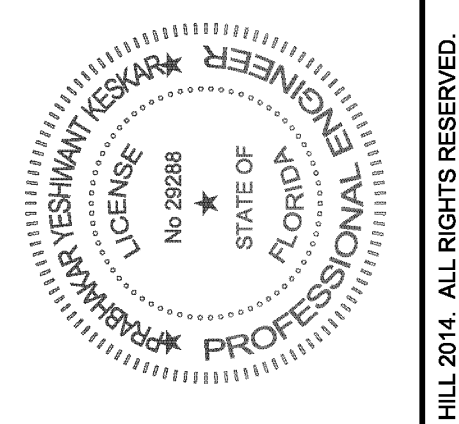
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NOTES:
1. THIS EXISTING LOGIC & SCHEMATIC FOR FILTERS #6 & #7 TO REMAIN IN PLACE BUT RE-TESTED FOLLOWING SKIMMER CONTROLS UPGRADE TO ENSURE PROPER OPERATION.

Infilco Degremont Inc. 3011 S.W. WILLISTON ROAD GAINESVILLE, FLORIDA 32608 EB0000072 AAC001892 Prabhakar Yeshwant Keskara PE 29288		ISSUED CERTIFIED. THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO INFILCO DEGREMONT INCORPORATED. IT IS SUBMITTED IN CONFIDENCE AND IS TO BE USED SOLELY FOR THE PURPOSE FOR WHICH IT IS FURNISHED AND RETURNED UPON PROJECT. THIS DRAWING AND SUCH INFORMATION IS NOT TO BE REPRODUCED, TRANSMITTED, DISCLOSED OR USED OTHERWISE IN WHOLE OR IN PART WITHOUT THE WRITTEN AUTHORIZATION OF INFILCO DEGREMONT INCORPORATED.	
J. KEENE CHK. JHK APP. JHK	DATE NO. 86204202.DWG ASSEMBLY INTELLECT SHEETS	Infilco Degremont Inc. P.O. Box 20000 Richmond Virginia 23220 SCHEMATIC WIRING DIAGRAM ABW FILTER WITH SKIMMER & INDEXING	REV. 05/15/08 Item No. 0401 01199862-24-202 A

THIS IS AN IDI SHOP DRAWING OF FILTER #6 & #7 CONTROL SCHEMATIC. ACCURACY OF THIS DRAWING IS NOT KNOWN. FIELD VERIFY ALL INFORMATION



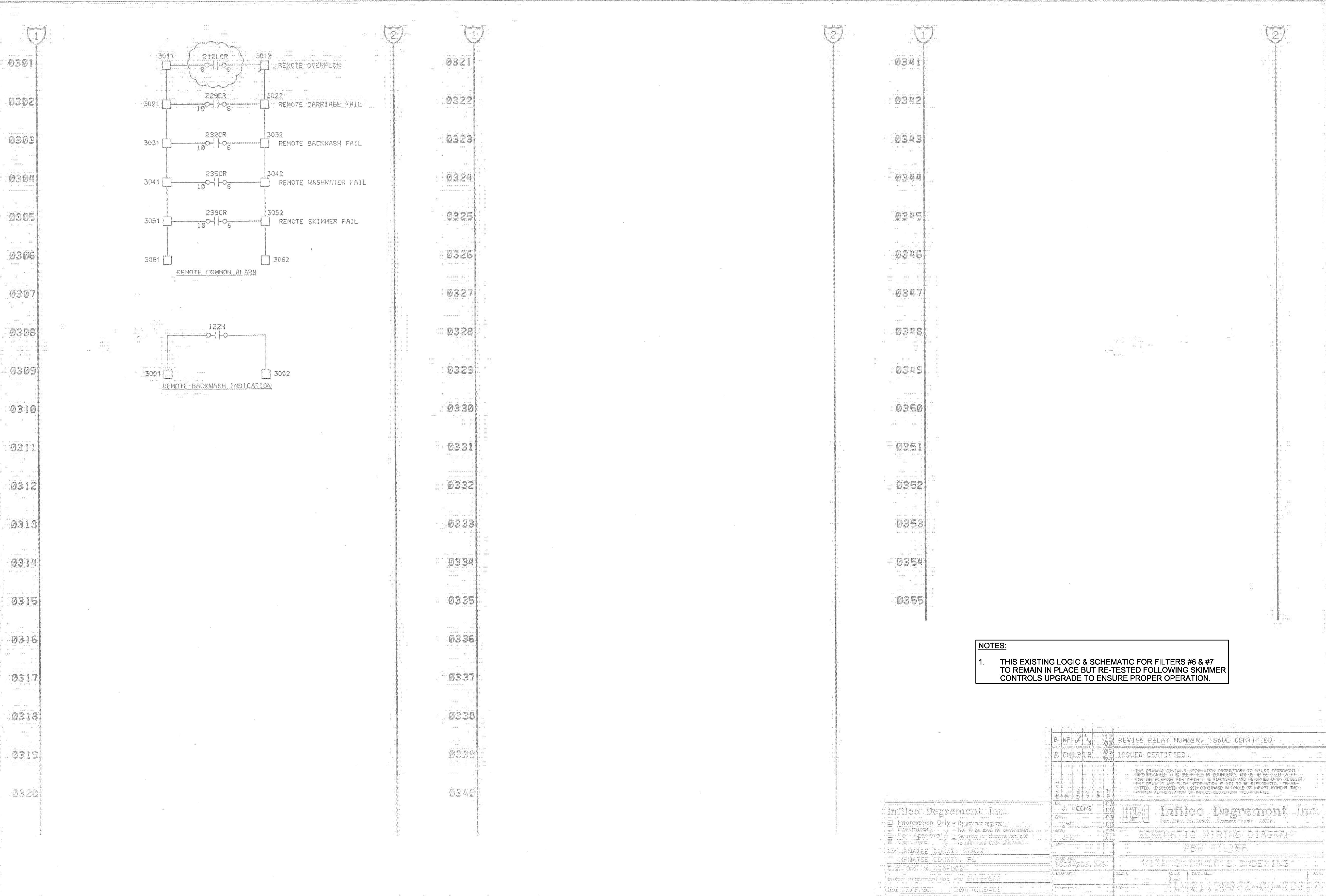
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 Revisions Drawn By: Z BRYAN Date: APRIL 2017
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NO.	DATE	REVISION	BY	APVD
DR			AL CLOUGH	A INNISS
DSGN			PY KESKAR	PY KESKAR
CHK				

3011 S.W. WILLISTON ROAD
 GAINESVILLE, FLORIDA 32608
 EB0000072 AAC001892
 Prabhakar Yeshwant Keskara PE 29288
 SWWRF ABW FILTER REHAB
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FLORIDA

CH2MHILL®
 ELECTRICAL
**TYPICAL CONTROL PANEL SCHEMATIC
 EXISTING FILTERS 6 & 7 CONTROLS
 MODIFICATIONS (SKIMMER) SHEET 2 OF 3**

NTS
 VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING.
 DATE: APRIL 2017
 PROJ: 491792
 DWG: E-04
 SHEET: ShNum of ShtTot



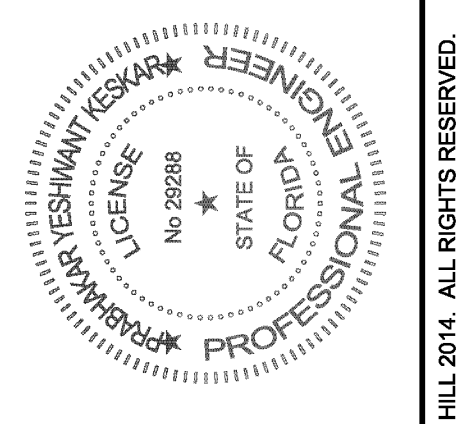
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NOTES:
1. THIS EXISTING LOGIC & SCHEMATIC FOR FILTERS #6 & #7 TO REMAIN IN PLACE BUT RE-TESTED FOLLOWING SKIMMER CONTROLS UPGRADE TO ENSURE PROPER OPERATION.

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 MANATEE COUNTY, FLORIDA
 MANATEE COUNTY, FL
 Cust. Ord. No. 215-003
 Infilco Degremont Inc. No. 0718982
 Date 02/08/08 Item No. 2401

REV. NO.	DATE	BY	CHKD.	DATE
1	03/08	J. KEENE		
2	03/08	J. KEENE		
3	03/08	J. KEENE		
4	03/08	J. KEENE		
5	03/08	J. KEENE		
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8	03/08	J. KEENE		
9	03/08	J. KEENE		
10	03/08	J. KEENE		

REVISE RELAY NUMBER, ISSUE CERTIFIED
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IDI Infilco Degremont Inc.
 P.O. Box 1000, Richmond, Virginia 23260
 SCHEMATIC WIRING DIAGRAM
 ABW FILTER
 WITH SKIMMER & INDICATING
 Scale: 1" = 1'-0"



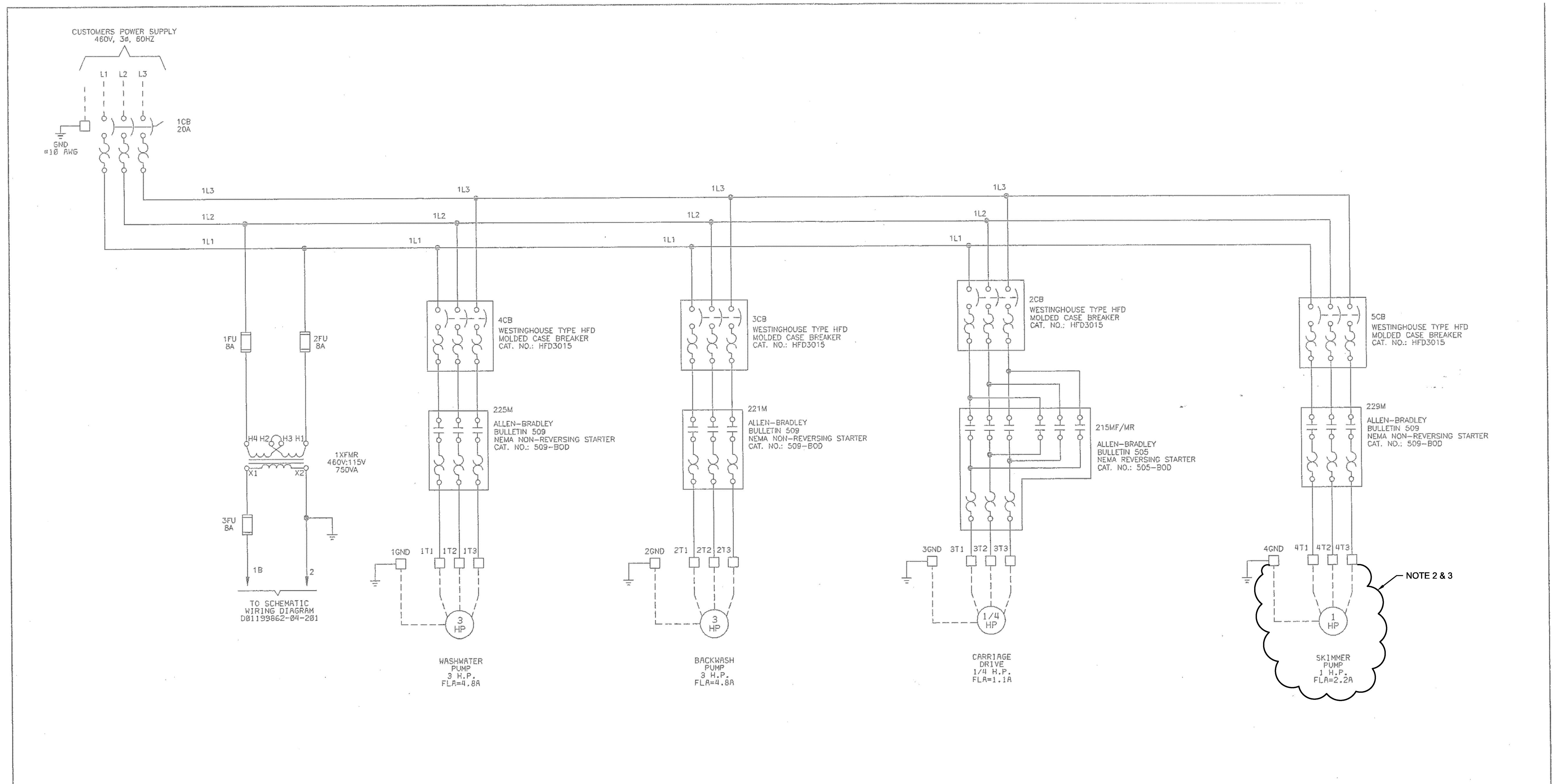
RECORD DRAWINGS
 Revisions Drawn By: Z BRYAN Date: APRIL 2017
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 DSGN DR CHK APVD BY APVD
 PY KESKAR AL CLOUGH A INMISS PY KESKAR
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 EBR0000072 AAC001892
 Prabhakar Yeshwant Kesar PE 29288
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 MANATEE COUNTY, FLORIDA

CH2MHILL®
 ELECTRICAL
**TYPICAL CONTROL PANEL SCHEMATIC
 EXISTING FILTERS 6 & 7 CONTROLS
 MODIFICATIONS (SKIMMER) SHEET 3 OF 3**

NTS
 VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING.
 DATE: APRIL 2017
 PROJ: 491792
 DWG: E-05
 SHEET: ShNum of ShTot

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TO SCHEMATIC WIRING DIAGRAM D01199862-04-201

- NOTES:**
- FOR FILTERS #6 & #7 CONTROL PANELS ALL EXISTING MOTOR CONTROL EQUIPMENT TO REMAIN IN PLACE. EXISTING PANELS TO BE MODIFIED & RE-USED.
 - PROVIDE NEW CABLES & RACEWAY.
 - FOLLOWING COMPLETION OF SKIMMER CONTROL & ELECTRICAL UPGRADE TEST THE ENTIRE FILTER SYSTEM FOR PROPER OPERATION.

THIS IS AN IDI SHOP DRAWING OF FILTER #6 & #7 ELECTRICAL SYSTEM. ACCURACY OF THIS DRAWING IS NOT KNOWN. FIELD VERIFY ALL INFORMATION

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 For Approval - Requests for changes can add.
 Certified - to price and order shipment.
 For MANATEE COUNTY SWWRF
 Cust. Ord No. 117-003
 Infilco Degremont Inc. No. 0199862
 Date 05/19/00 Item No. 0401

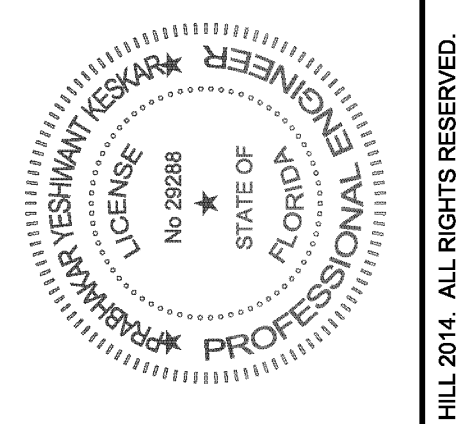
REV. NO.	DATE	BY	APP.	DATE
1	05/19/00	JHK	JHK	05/19/00
2	05/24/04	DWE	DWE	05/24/04

ISSUED CERTIFIED.

Infilco Degremont Inc.
 Post Office Box 20070 Richmond Virginia 23220

POWER DISTRIBUTION DIAGRAM
 5BW FILTER
 WITH SKIMMER & INDEXING

SCALE: 1" = 12" (ELECTRICAL)
 SHEET: 01199862-04-204 A



RECORD DRAWINGS
 Revisions Drawn By: Z BRYAN Date: APRIL 2017
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NO.	DATE	REVISION	BY	APVD
1		CHK	AL CLOUGH	APVD
2		DR	PY KESKAR	APVD
3		CHK	A INNISS	APVD
4		CHK	PY KESKAR	APVD

3011 S.W. WILLISTON ROAD
 GAINESVILLE, FLORIDA 32608
 EB0000072 AAC001802
 Prabhatkar Yeshwant Keshkar PE 29288

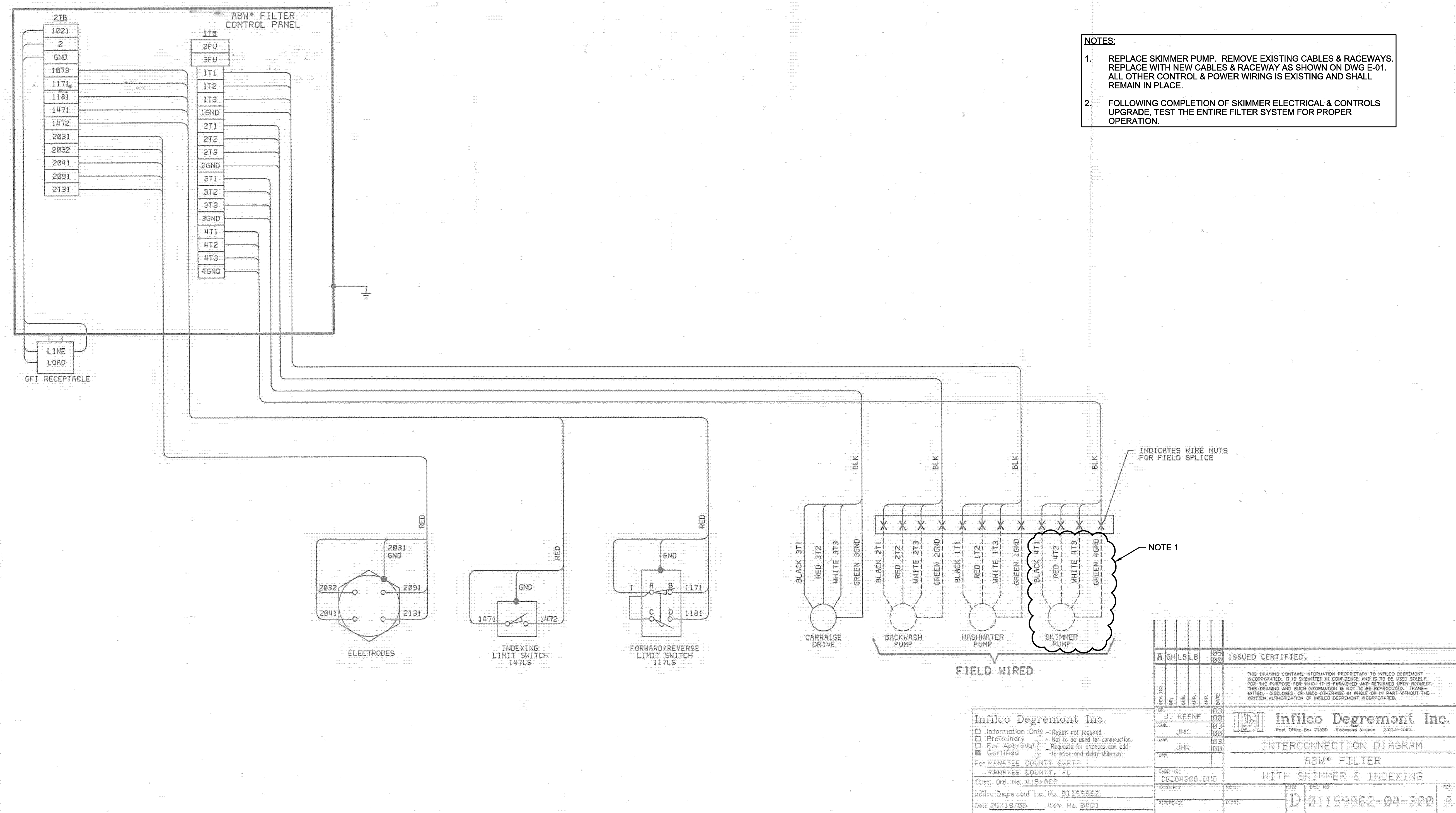
SWWRF ABW FILTER REHAB
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FLORIDA

CH2MHILL®
 ELECTRICAL
**TYPICAL THREE LINE DIAGRAM
 EXISTING FILTERS 6 & 7 CONTROLS
 UPGRADE**

NTS
 VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING.
 DATE: APRIL 2017
 PROJ: 491792
 DWG: E-06
 SHEET: ShNum of ShtTot

NOTES:
 1 - ALL WIRING, CONDUIT AND INSTALLATION OF SAME MUST CONFORM TO N.E.C.
 2 - REMOTE SIGNAL TERMINALS ARE NOT SHOWN FOR CLARITY.

NOTES:
 1. REPLACE SKIMMER PUMP. REMOVE EXISTING CABLES & RACEWAYS. REPLACE WITH NEW CABLES & RACEWAY AS SHOWN ON DWG E-01. ALL OTHER CONTROL & POWER WIRING IS EXISTING AND SHALL REMAIN IN PLACE.
 2. FOLLOWING COMPLETION OF SKIMMER ELECTRICAL & CONTROLS UPGRADE, TEST THE ENTIRE FILTER SYSTEM FOR PROPER OPERATION.



THIS IS AN IDI SHOP DRAWING OF FILTER #6 & #7. ACCURACY OF THIS DRAWING IS NOT KNOWN. FIELD VERIFY ALL INFORMATION

REV. NO.	REV. BY	CHK.	APP.	DATE	DESCRIPTION
01	J. KEENE	JHK	JHK	04/01/17	ISSUED CERTIFIED.
02	JHK	JHK	JHK	04/01/17	
03	JHK	JHK	JHK	04/01/17	
04	JHK	JHK	JHK	04/01/17	

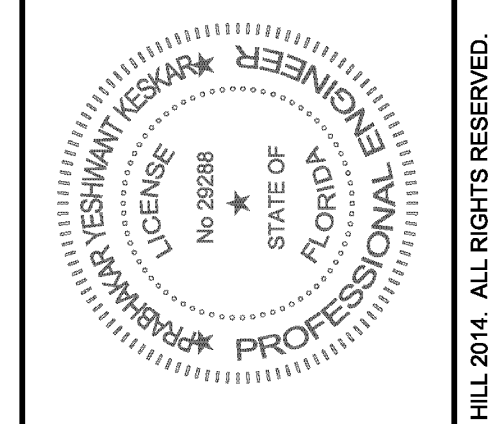
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Infilco Degremont Inc.
 Part Office Bldg 71300 Richmond Virginia 23255-1300

INTERCONNECTION DIAGRAM
 ABW* FILTER
 WITH SKIMMER & INDEXING

DATE NO: 86204300.DWG
 SCALE: 1"=1'-0"
 REFERENCE: D 01199862-04-300 A

Infilco Degremont Inc.
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 For Approval - Requests for changes can add its price and delay shipment.
 Certified
 For MANATEE COUNTY SUEP
 MANATEE COUNTY, FL
 Cust. Ord. No. 412-802
 Infilco Degremont Inc. No. 01199862
 Date 05/19/00 Item No. 0401



RECORD DRAWINGS
 Revisions Drawn By: Z BRYAN Date: APRIL 2017
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NO.	DATE	REVISION	CHK	BY	APVD
DSGN					
DR					

3011 S.W. WILLISTON ROAD
 GAINESVILLE, FLORIDA 32608
 EB0000072 AAC001892
 Prabhakar Yeshwant Keskar PE 29288

SWMRF ABW FILTER REHAB
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FLORIDA

CH2MHILL®
 ELECTRICAL
TYPICAL POWER & CONTROL INTERCONNECTING DIAGRAM FILTERS 6 & 7 SKIMMER UPGRADE

NTS
 VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING.
 DATE: APRIL 2017
 PROJ: 491792
 DWG: E-07
 SHEET: ShNum of ShtTot

RECORD DRAWINGS

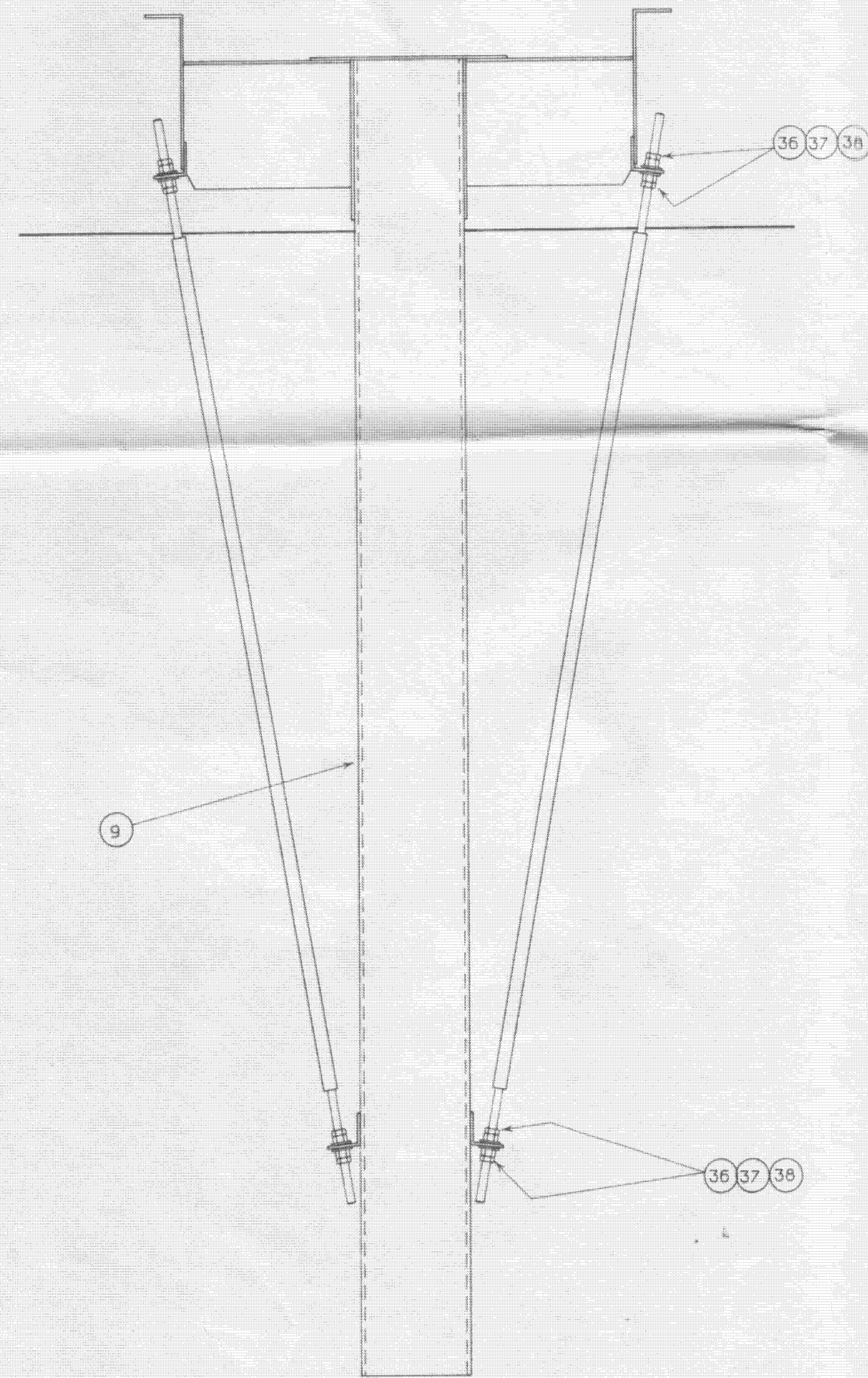
SUPPLEMENT - 1
REFERENCE DRAWINGS (R-01 THRU R-14) FOR FILTERS 2, 3, 4, AND 5
(FIELD VERIFY ALL INFORMATION SHOWN ON THESE REFERENCE DRAWINGS)

NO.	DATE	DR	REVISION	BY
DSGN		NA	CHK	APVD
			T LOOSE	NA

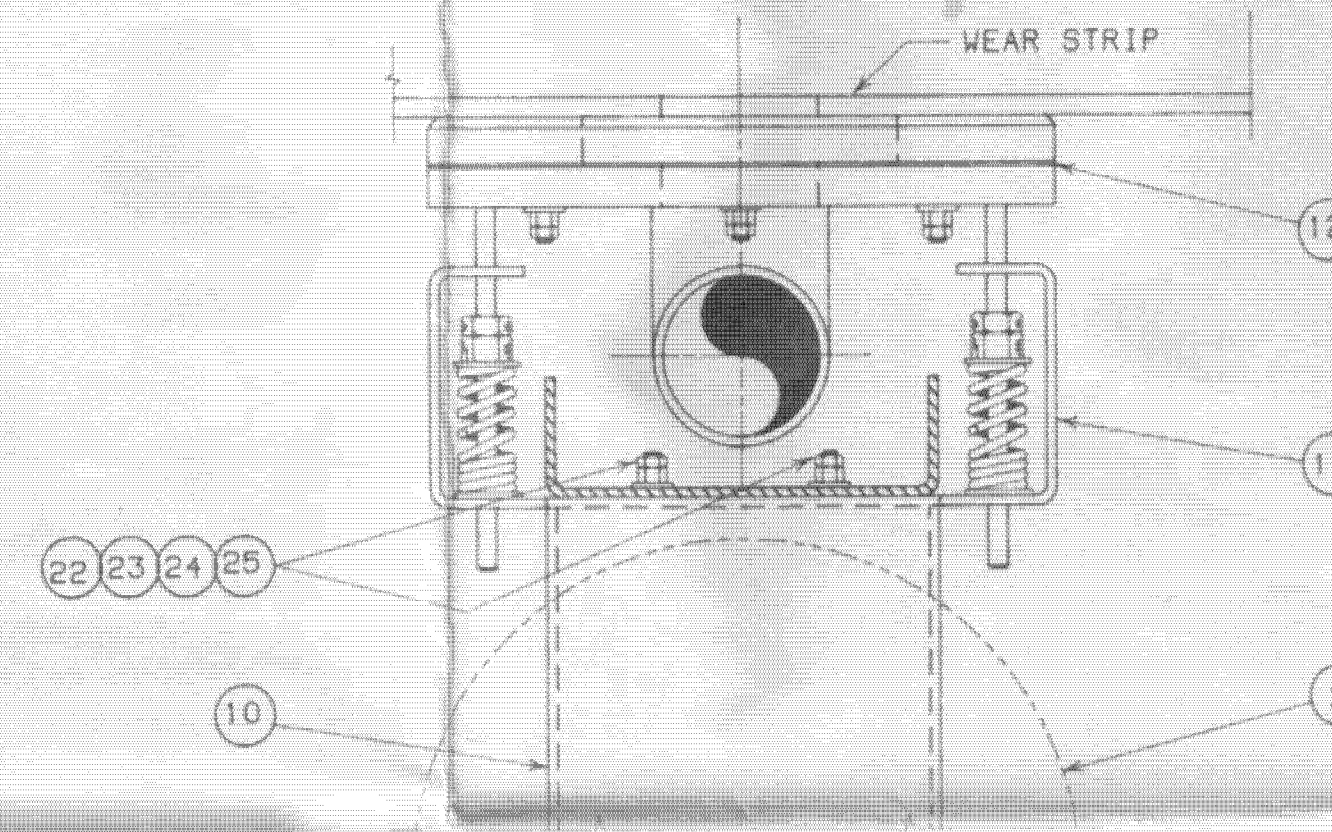
SWWRF ABW FILTER REHAB
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FLORIDA

REFERENCE ONLY

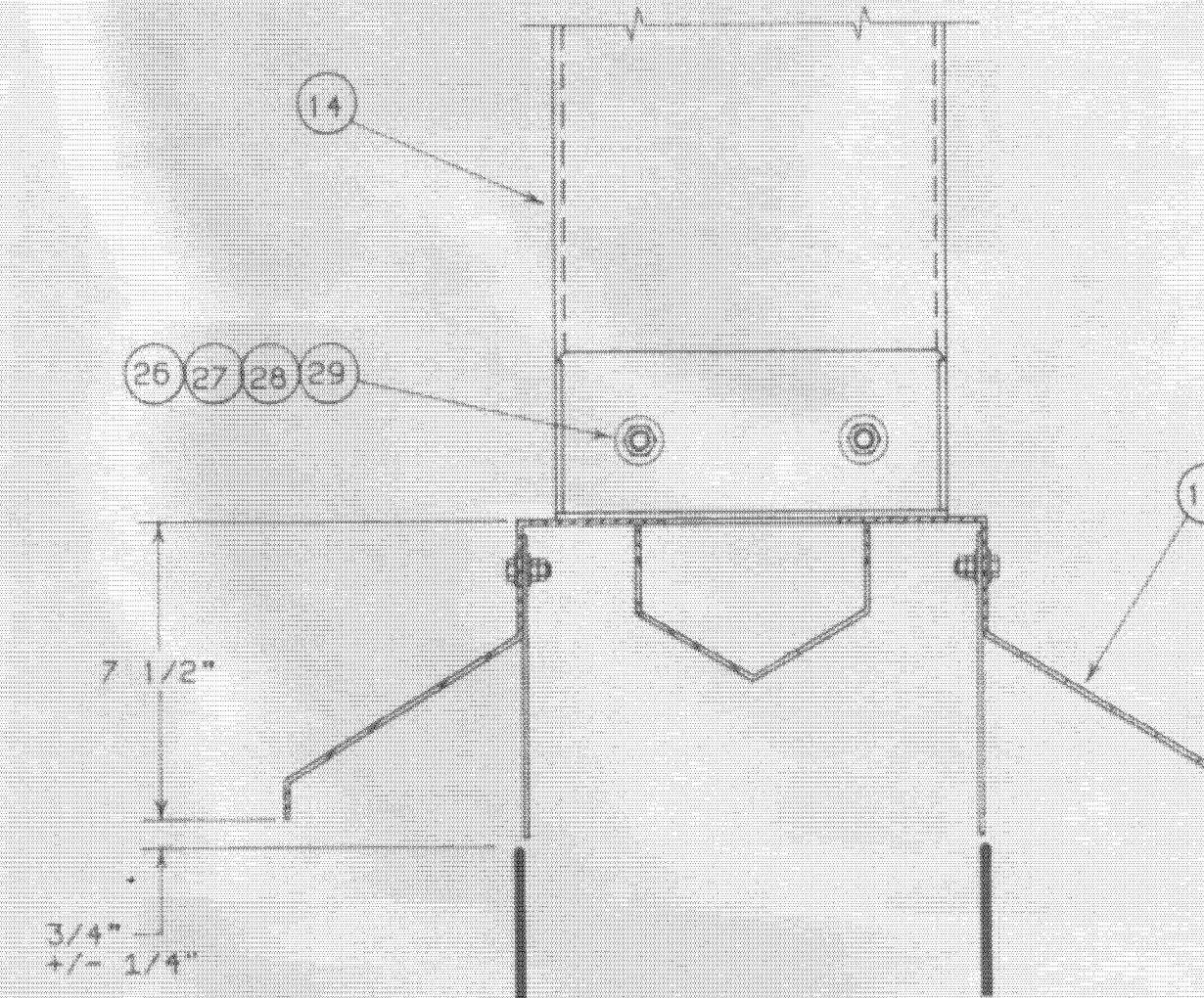
DATE	APRIL 2017
PROJ	491792
DWG	R-00
SHEET	ShtNum of ShtTot



BACKWASH BRACE ASSEMBLY



BACKWASH SHOE PLAN VIEW



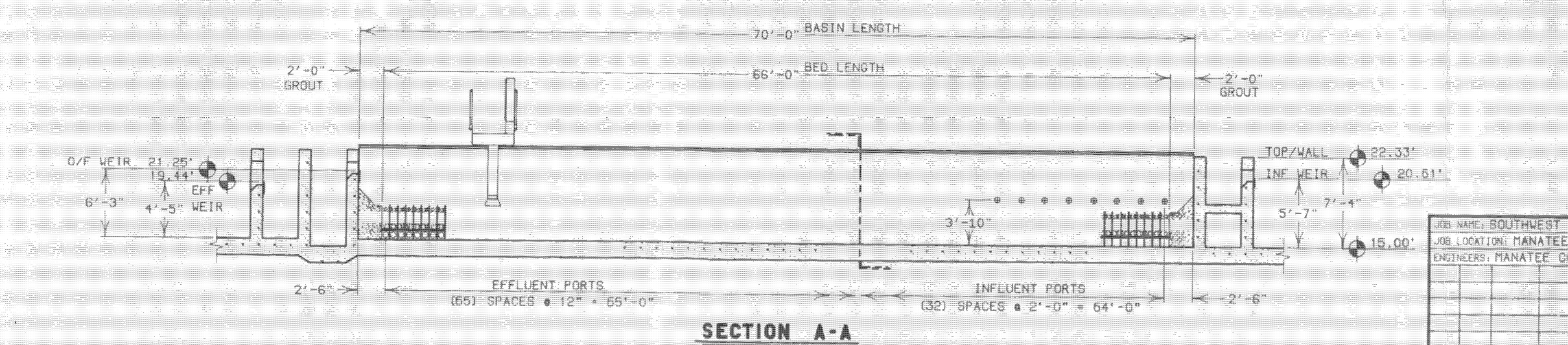
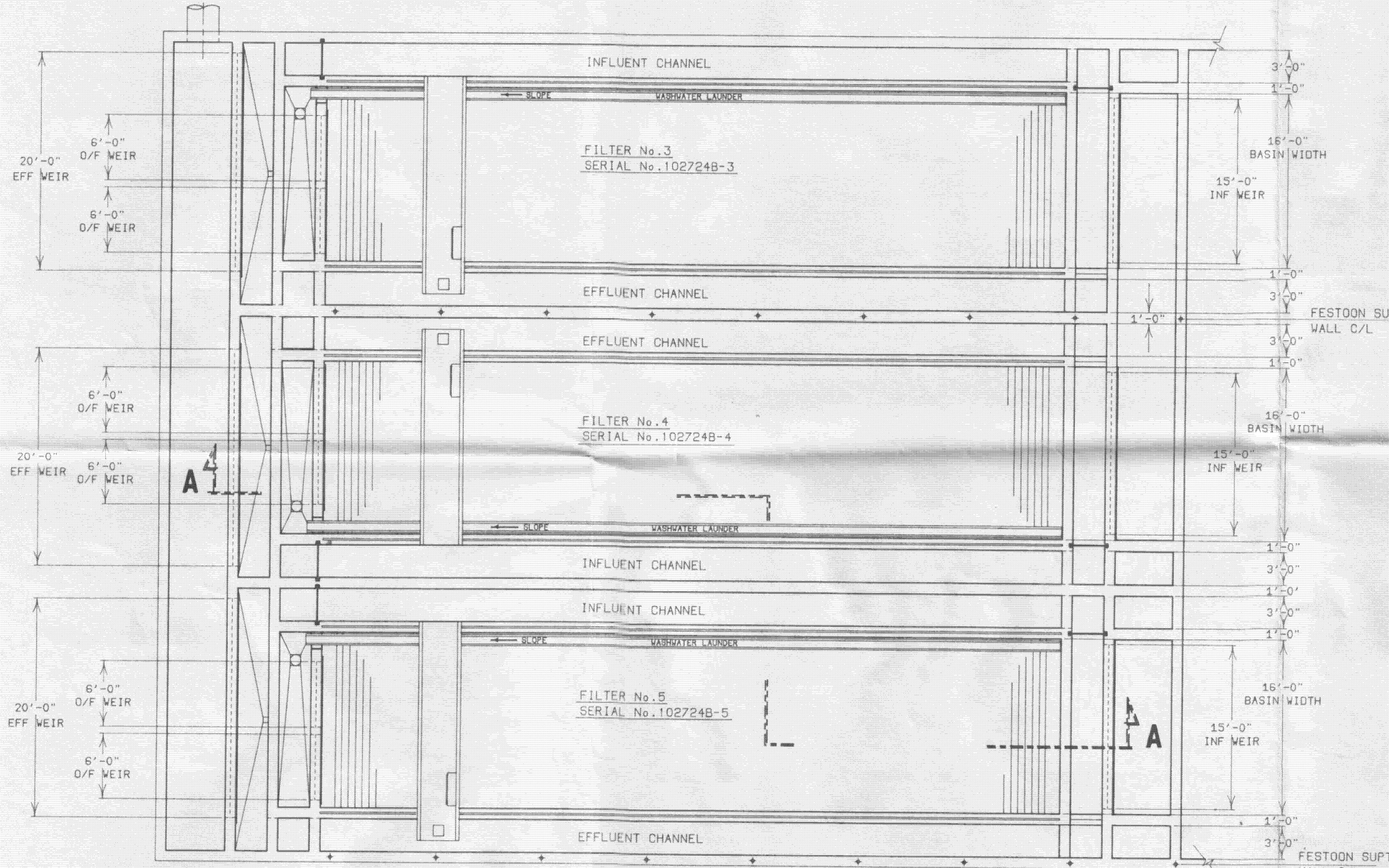
JOB NAME: SOUTHWEST REGIONAL WWTP		RM CODE:		AQUA-AEROBIC SYSTEMS, INC.	
JOB LOCATION: MANATEE COUNTY, FLORIDA		ACT. WT:	NOM. WT:	MANUFACTURERS OF WASTEWATER TREATMENT EQUIPMENT	
ENGINEERS:		ASS'Y NO:		NAME: BRIDGE & ACCESSORIES	
		DO NOT SCALE DRAWING		ABF	
		DRN BY: LZ	DATE: 7-25-91		
		CKD BY:	APP. BY:		
		SCALE:			
		HP/SIZE:		SHEET 2 OF 2	
REF. ECO. DATE BY REVISION		TYPE: J:\MANATEE\92724B11		PART NO. 92724B12	

NO. DSGN	DATE	DR	REVISION	CHK	APVD	BY	APVD
			T. LOOSE				NA

SWWRF ABW FILTER REHAB
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FLORIDA

REFERENCE ONLY
 BRIDGE AND ACCESSORIES

DATE	APRIL 2017
PROJ	491792
DWG	R-01
SHEET	ShNum of ShTot



CLEAN WATER HEAD LOSS					
FLOW RATE PER SQ. FT. OF BED AREA	Q ² FLOW	HEAD ABOVE EFF. WEIR (FT.)	EL. OF WATER LEVEL EFF. CHAMBER	EL. OF WATER LEVEL FILTER TANK	DRIVING HEAD (FT.)
0	0	0	19.44'	19.44'	0
2 GPM	2112	0.16	19.60'	19.87'	0.27
3 GPM	3168	0.23	19.67'	20.08'	0.41

JOB NAME: SOUTHWEST REGIONAL WTP		RR CODE:	AQUA-AEROBIC SYSTEMS, INC. MANUFACTURERS OF WASTEWATER TREATMENT EQUIPMENT			
JOB LOCATION: MANATEE COUNTY, FLORIDA		ACT. WT:				
ENGINEERS: MANATEE COUNTY PW DEPT		NOM. WT:	NAME: BASIN PLAN			
		ASS'Y NO:				
		DO NOT SCALE DRAWING				
		DRN BY: LZ	DATE: 7-9-91			
		CKD BY:	APP. BY:			
		SCALE:	ABF-1556			
		HP/SIZE: 16 X 66	SHEET 1 OF 3			
REF.	ECO	DATE	BY	REVISION	TYPE: J:MANATESW/10456101	PART NO. 92724B06

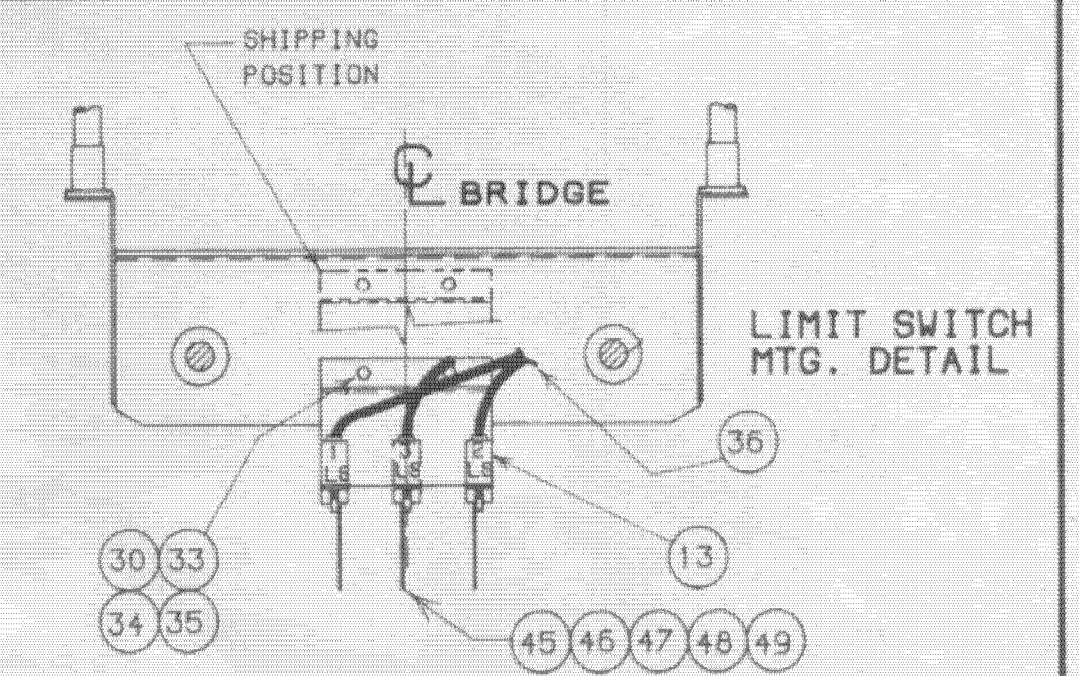
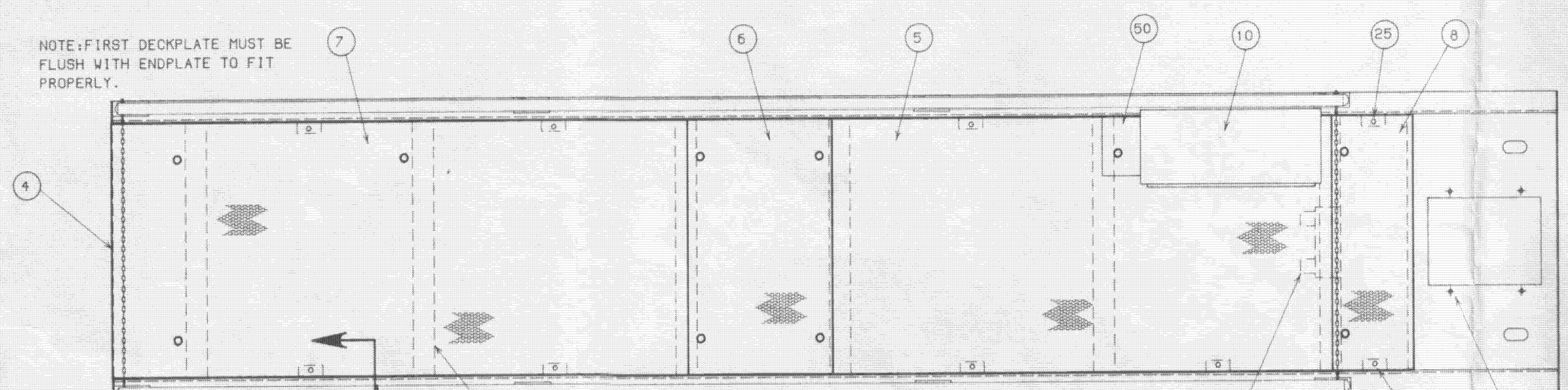
NO.	DATE	DR	NA	REVISION	CHK	APVD	NA
DSGN				T	LOOSE		
						BY	APVD
							NA

SWWRF ABW FILTER REHAB
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FLORIDA

REFERENCE ONLY
BASIN PLAN

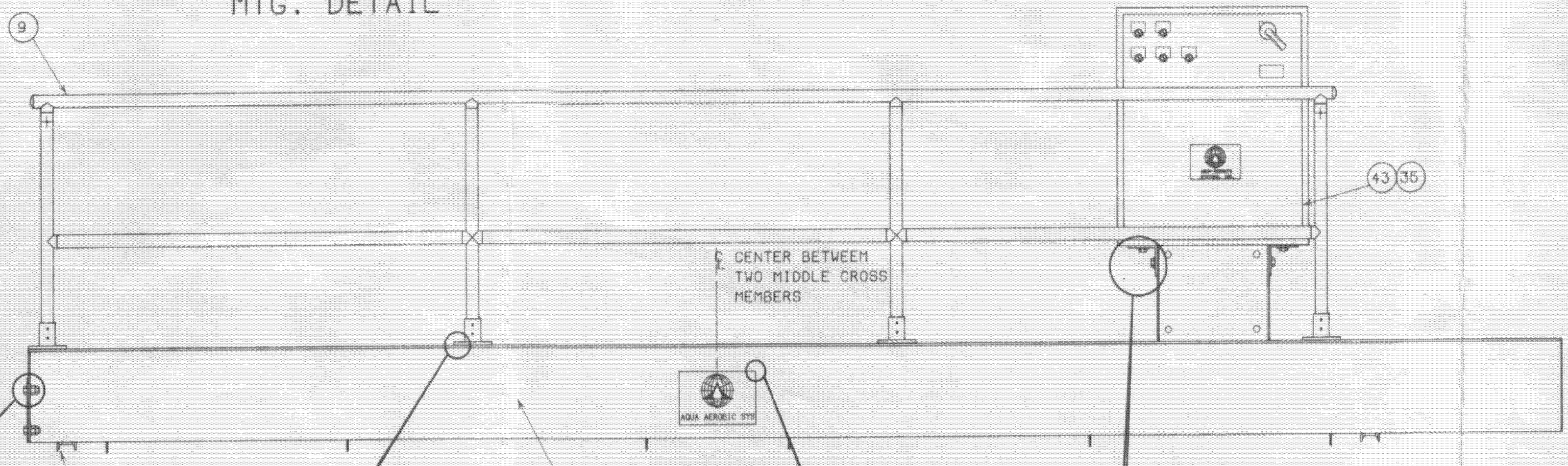
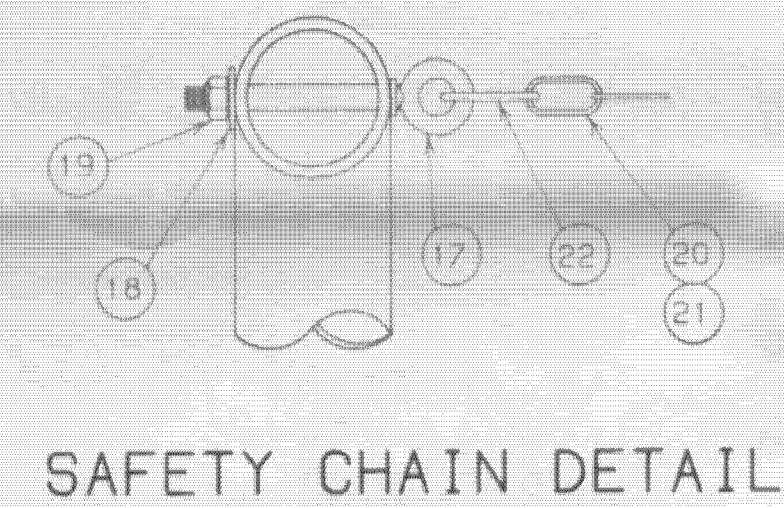
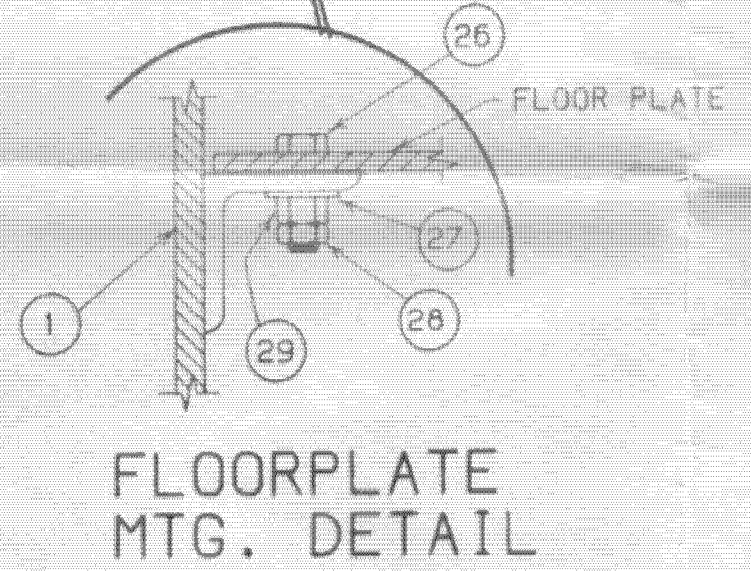
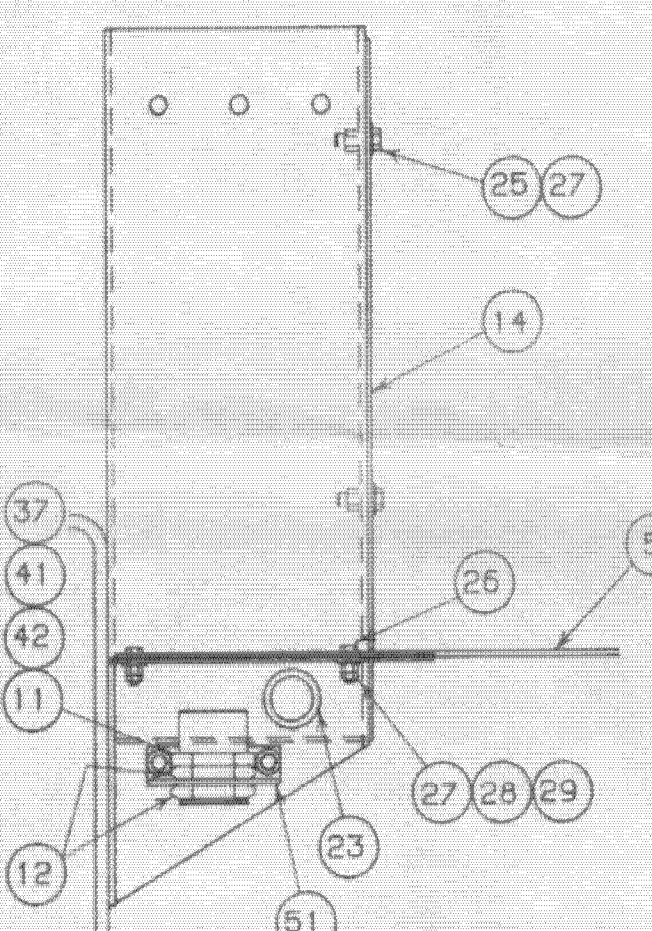
DATE	APRIL 2017
PROJ	491792
DWG	R-02
SHEET	ShNum of ShTot

NOTE: FIRST DECKPLATE MUST BE FLUSH WITH ENDPLATE TO FIT PROPERLY.

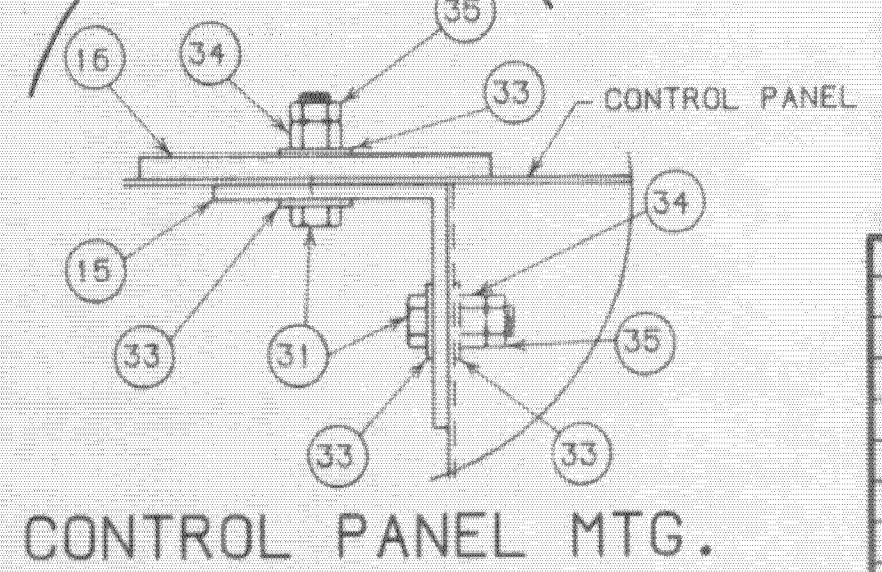
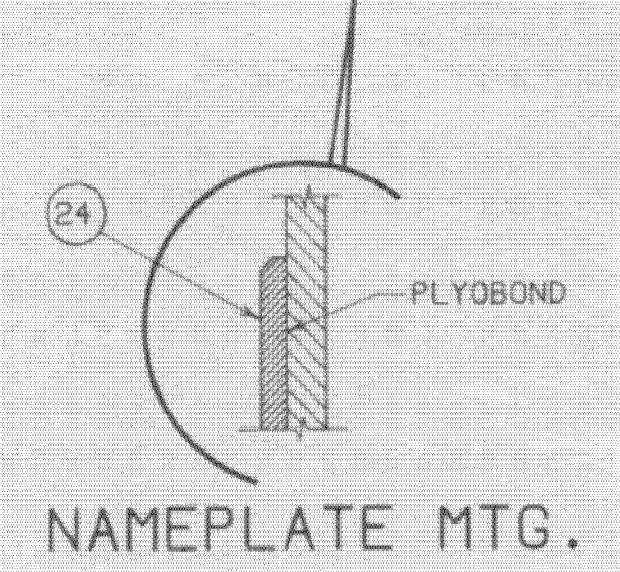
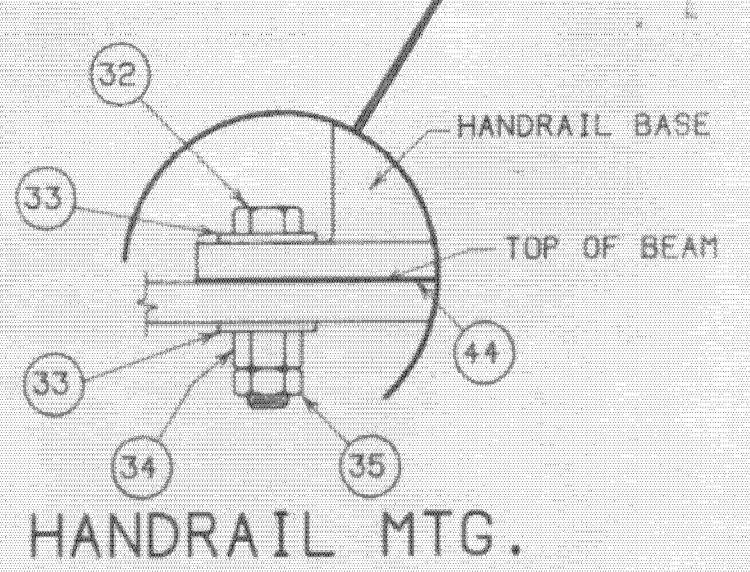
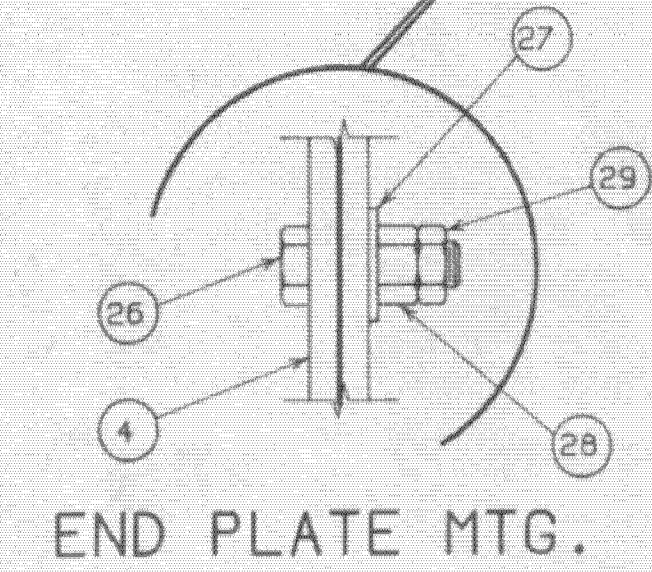


NOTE: LOCATE 1-LS ON CONTROL PANEL SIDE OF BRIDGE. EACH LIMIT SWITCH MUST BE WIRED COMPLETELY, WITH ALL FOUR CONDUCTORS PROVIDED IN CABLE. 1-N.D. CONTACT & 1-N.C., WHICH IS AN EXTRA CONTACT NOT TO BE WIRED TO TERMINALS AT THIS TIME.

ITEM	QUAN.	PART NO.	DESCRIPTION	UOW
52	1		ELEC. CABLE-#16 AWG-4C	LIMIT SWITCH
51	1	2504952	BRACKET - PROBE HOLDER	B
50	1	2505933	COVER	A
49	2	2602272	NUT - HEX #10-32NF	
48	2	2602476	WASHER - #10 FLAT	
47	2	2602271	RHMS - #10-32NF X 2"LG	
46	1	2600926	L/S LEVER	
45	1	2602776	LIMIT SWITCH #LSYPB1A	
44	1	2960030	ISOLATION KIT	C
43	2	2600041	CORD GRIP, .7 x 3/4" NPT	B/W & W/L PUMPS
42	1	2602151	BUSHING-REDUC. 3/4" x 1/2"	PROBE HOLDER
41	1		ELEC. CABLE-#16 AWG-4C	PROBE
40	1		ELEC. CABLE-#12 AWG-4C	MOTOR
39	1	2602532	ENLARGER-1/2" x 3/4"	MOTOR
38	2	2600041	CORD GRIP, .6-.7 x 3/4" NPT	MOTOR
37	2	2602851	CORD GRIP, .5-.6 x 1/2" NPT	PROBE
36	4	2600273	CORD GRIP, .4-.5 x 1/2" NPT	L/S & BRKMR
35	30	2600234	NUT-HEX JAM. 1/2"-13	SS
34	30	2600517	NUT-HEX FULL. 1/2"-13	SS
33	60	2600426	WASHER-FLAT. 1/2"	SS
32	16	2600348	HHCS, 1/2"-13 x 2" LG.	
31	12	2603242	HHCS, 1/2"-13 x 1 3/4" LG.	
30	2	2600278	HHCS, 1/2"-13 x 1 1/2" LG.	
29	15	2600403	NUT-HEX JAM. 3/8"-16	SS
28	15	2600481	NUT-HEX FULL. 3/8"-16	SS
27	26	2600361	WASHER-FLAT. 3/8"	SS
26	18	2602257	HHCS, 3/8"-16 x 1 1/4" LG.	SS
25	6	2600231	HHCS, 3/8"-16 x 1" LG.	SS
24	2	2603290	NAMEPLATE	
23	20	2604137	GROMMET	
22	2	2603280	SNAP HOOK	
21	2	2603279	CONNECTOR LINK	
20	1	2604129	CHAIN - 8MM X 8FT LG	
19	4	2600275	NUT-FLEXLOCK, 5/16"-18	SS
18	4	2600951	WASHER-FLAT, 5/16"	SS
17	2	2600519	EYEBOLT, 5/16"-18 x 2 7/16"	SS
16	2	2504454	PLATE- CONTROL PANEL MOUNTING	SS A
15	2	2504400	ANGLE - CONTROL PANEL MOUNTING	SS A
14	1	2505339	DOOR - CONTROL PANEL BASE	SS B
13	1	2903478	SWITCH ASSEMBLY - LIMIT	A
12	2	2603220	NUT - 3" CONDUIT	GALV
11	1	2603251	ELECTRODE HOLDER, E-5	CI
10	1	8104581	CONTROL PANEL- SERIAL #102724B-5	
9	2	2901950	HANDRAIL ASSEMBLY	B
8	1	2504992	FLOOR PLATE - EFFLUENT END	A
7	1	2505205	FLOOR PLATE - INFLUENT	B
6	1	2504769	FLOOR PLATE - CENTER	A
5	1	2505935	FLOOR PLATE - EFFLUENT	B
4	1	2504016	END PANEL	B
3	1	2902606	DRIVE ASSEMBLY (1500:1)	C
2	1	2902436	IDLER ASSEMBLY	B
1	1	2910047	BRIDGE WELDMENT - L.H.	D



NOTE: APPLY "ANTI-SIEZE" TO ALL FASTENERS PRIOR TO ASS'Y.



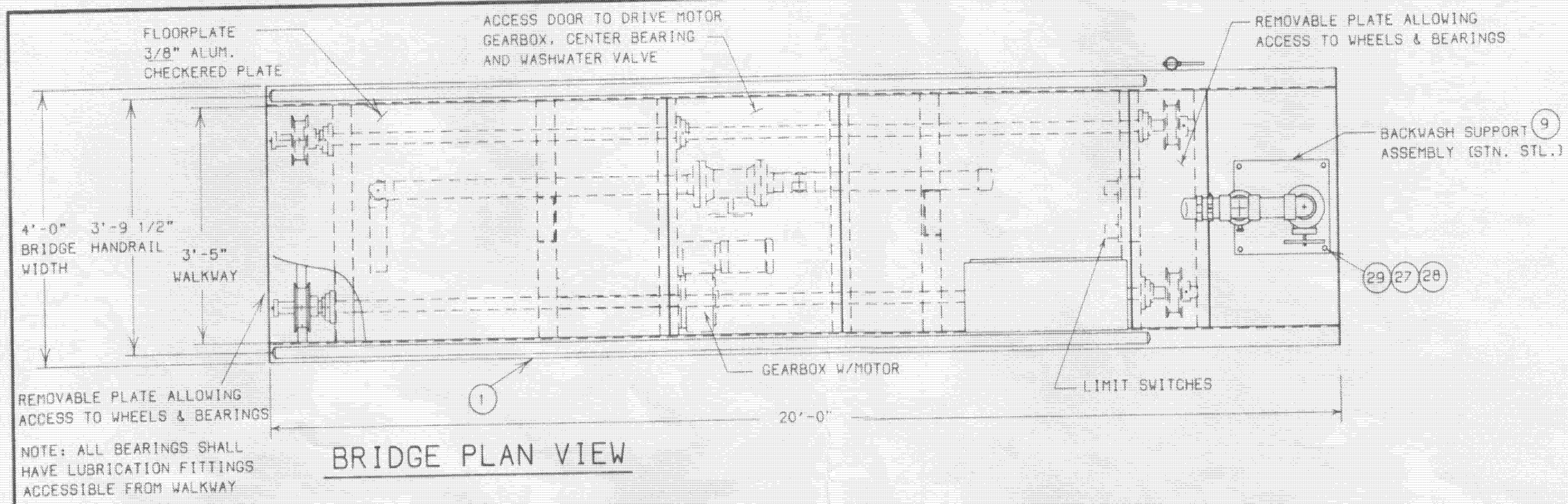
JOB NAME: SOUTHWEST REGIONAL WWTP		R/S CODE:		AQUA-AEROBIC SYSTEMS, INC. MANUFACTURERS OF WASTEWATER TREATMENT EQUIPMENT
JOB LOCATION: MANATEE COUNTY, FLORIDA		ACT. WT. NOR. WT.		
ENGINEERS:		ASS'Y NO.		NAME: BRIDGE ASSEMBLY 16 FT. L.H. EFF. ABF
		DO NOT SCALE DRAWING		
DRN BY: FLR		DATE: 7-17-91		SHEET 1 OF 1
CKD BY:		APP. BY:		
SCALE:		HP/SIZE:		PART NO. 92724B15
TYPE: J:\MANATEE\92724B15				

NO.	DATE	DR	NA
DSGN			
REVISION	CHK	NA	
BY	APVD	NA	
	APVD	NA	
		T	LOOSE

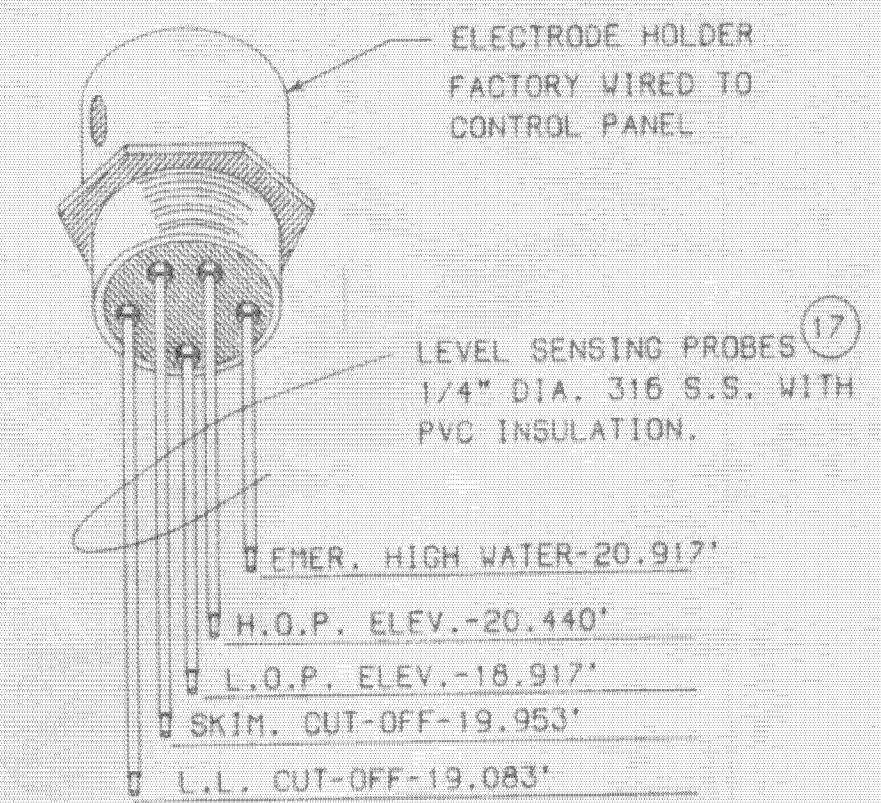
SWWRFB ABW FILTER REHAB
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FLORIDA

REFERENCE ONLY
BRIDGE ASSEMBLY

DATE	APRIL 2017
PROJ	491792
DWG	R-03
SHEET	ShNum of ShTot



BRIDGE PLAN VIEW



LIQUID LEVEL PROBES

ITEM	QUAN.	PART NO.	DESCRIPTION	DWG.
38	8	2600496	NUT - HEX FULL 3/4-10NC	316
37	8	2602560	WASHER - 5/8" FLAT	316
36	2	2903295-3	BRACE WELD'T (78"LG)	B
35				
34				
33				
32				
31				
30	20	2600286	TY-RAP	BLK NY -
29	16	2600302	NUT - HEX JAM 5/8"-11	316
28	16	2600301	NUT - HEX FULL 5/8"-11	316
27	30	2602498	WASHER - FLAT 5/8" X 1 1/2"OD	316
26	12	2600269	HHCS 5/8-11 X 2"LG	316
25	10	2600234	NUT - HEX JAM 1/2"-13	316
24	10	2600517	NUT - HEX FULL 1/2"-13	316
23	30	2600426	WASHER - 1/2" X 1 1/4"OD	316
22	10	2600348	HHCS 1/2-13 X 2"LG	316
21	8	2604069	HHCS - M12 X 1.75 X 35 (PUMP/ADAP)	-
20	8	2603755	HHCS - M12 X 1.75 X 25 (PUMP/BRKT)	-
19			=====	
18				
17	5	2901243	6 FT ELECTRODE ROD	A
16	2	2603652	PIPE 2" S80 PVC X 36"LG (HOOD VENT)	-
15	1	2603304	PLATE - PUMP ADAPTER	B
14	2	2504203-53	CHANNEL - U/W HOOD SUPT	B
13	1	2903628	HOOD ASS'Y - WASHWATER	B
12	1	2903296	SHOE ASS'Y - BACKWASH	B
11	1	2902222	BRACKET ASS'Y - SHOE TENSIONING	B
10	1	2902427	BRACKET - BACKWASH PUMP	B
9	1	2902575-22	BACKWASH SUPT WELD'T	C
8	1	2963727	TURBILITE ASS'Y	B
7	1	2960026	WALL SPRAY ASS'Y	C
6	1	2960024	SKIMMER ASS'Y	C
5	1	2903601	BACKWASH PIPING ASS'Y	B
4	1	92724816	WASHWATER PIPING ASS'Y	C
3	2	2605115	PUMP - #3102	A
2				
1	1	92724814	BRIDGE ASS'Y SER# 1027248-4 BASIN#3	C

JOB NAME: SOUTHWEST REGIONAL WWTP
 JOB LOCATION: MANATEE COUNTY, FLORIDA
 ENGINEERS: MANATEE COUNTY PW DEPT.

ACT. WT: _____ NOM. WT: _____
 ASS'Y NO: _____

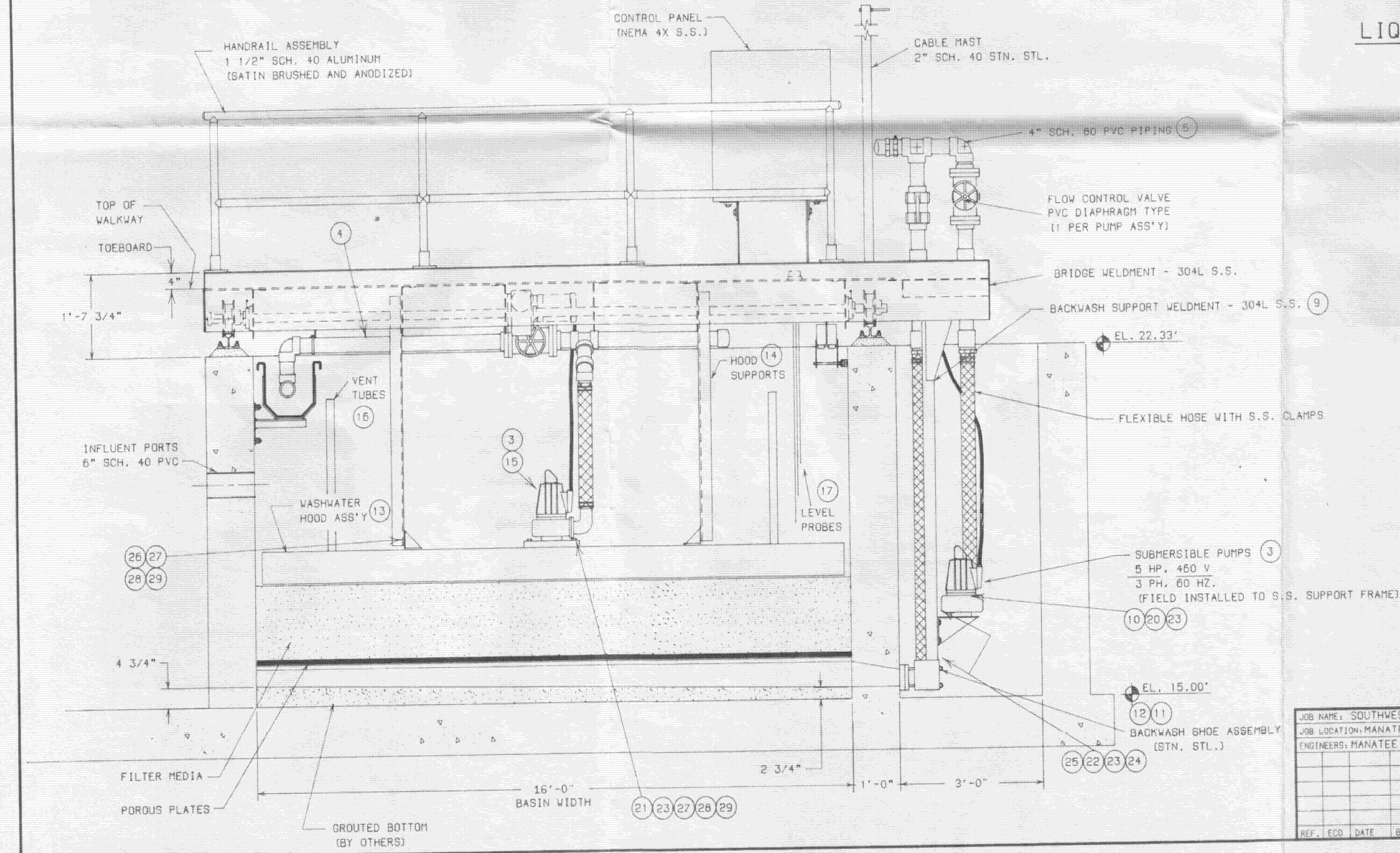
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 DRN BY: LZ DATE: 7-25-91
 CKD BY: _____ APP. BY: _____
 SCALE: _____
 HP/SIZE: _____

TYPE: MANATEESW\92724812

AQUA-AEROBIC SYSTEMS, INC.
 MANUFACTURERS OF QUALIFIED TREATMENT EQUIPMENT

NAME: BRIDGE MECHANISM
 BASIN #4
 SHEET 1 OF 2
 PART NO. 92724812

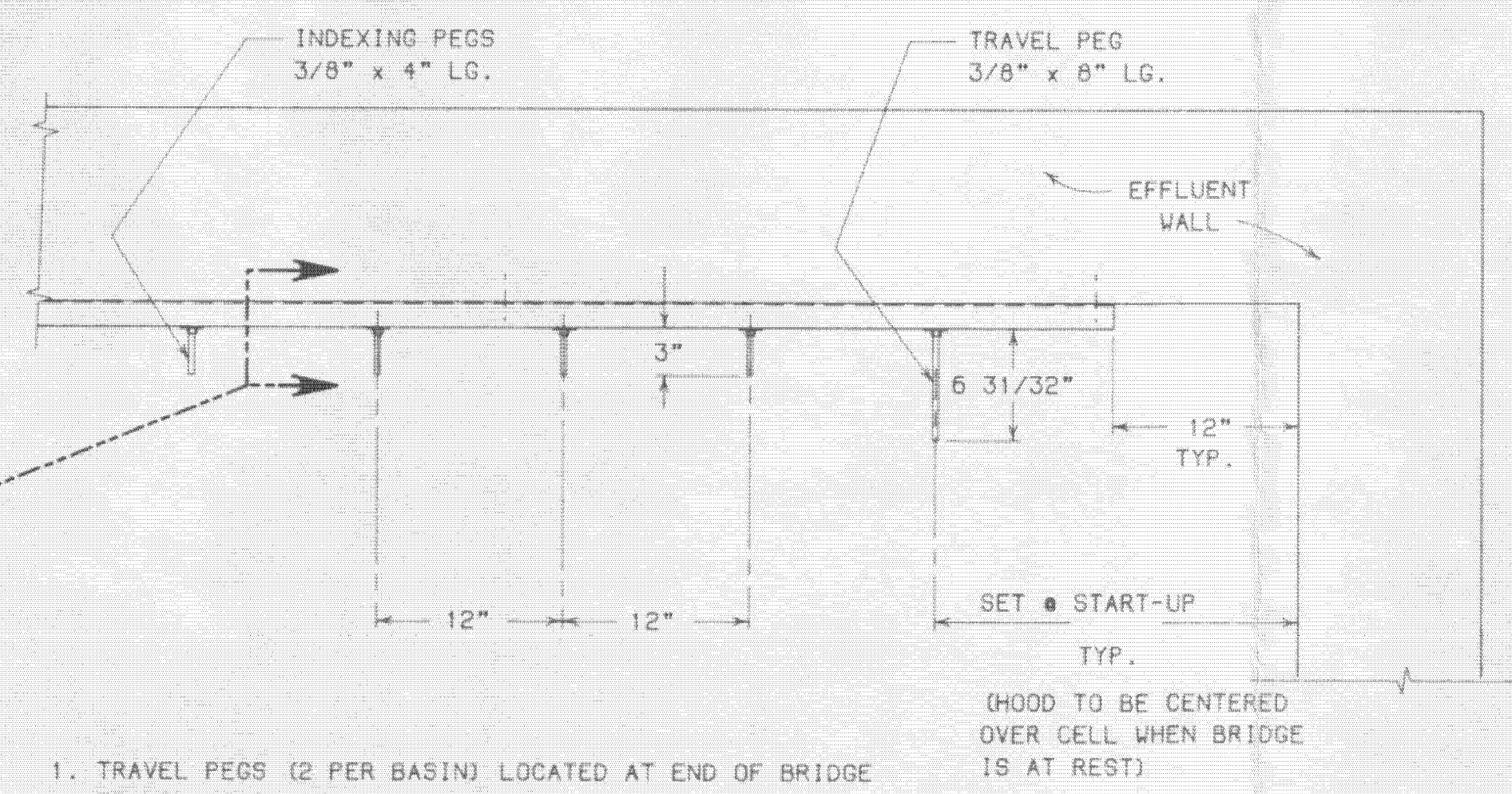
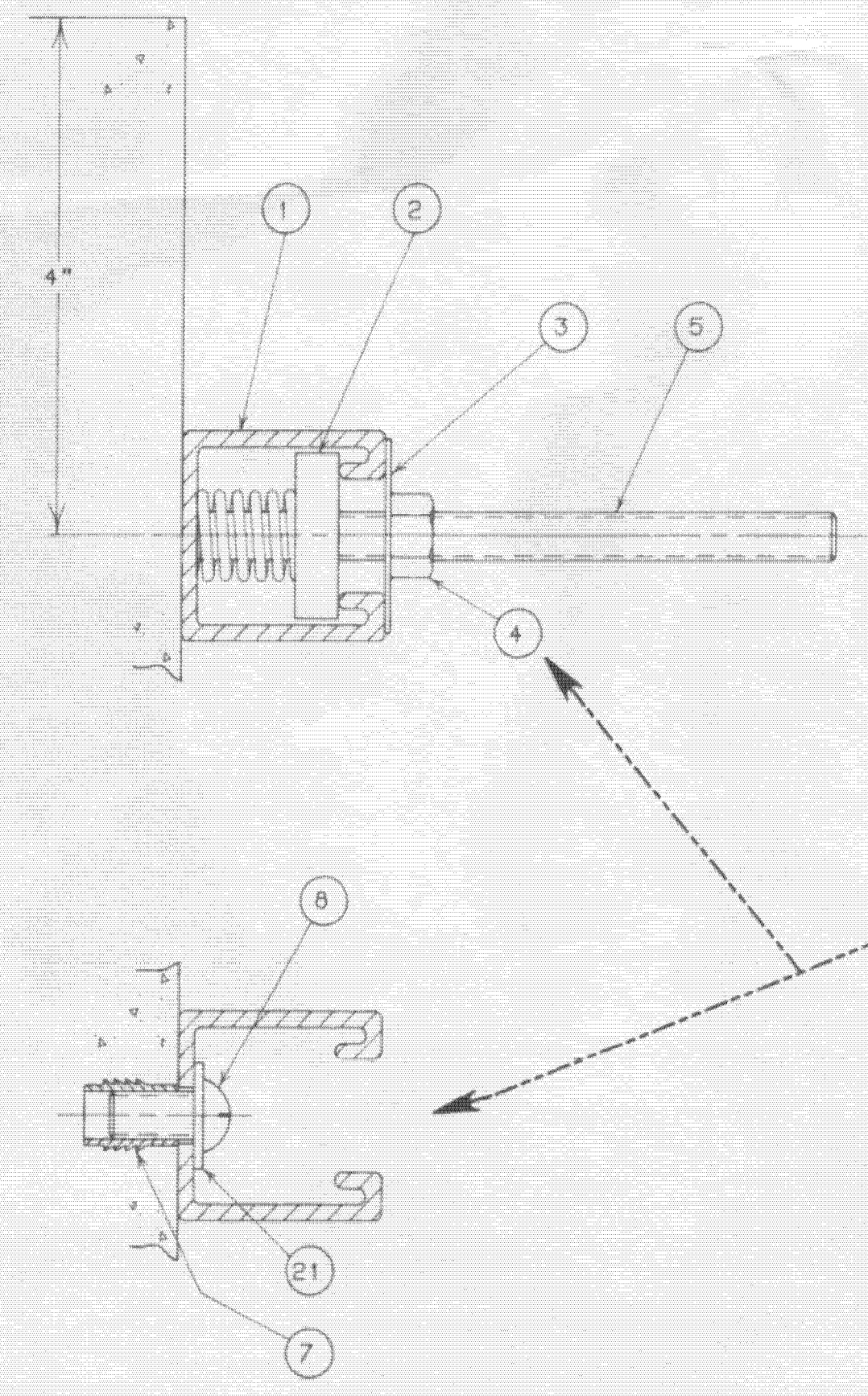
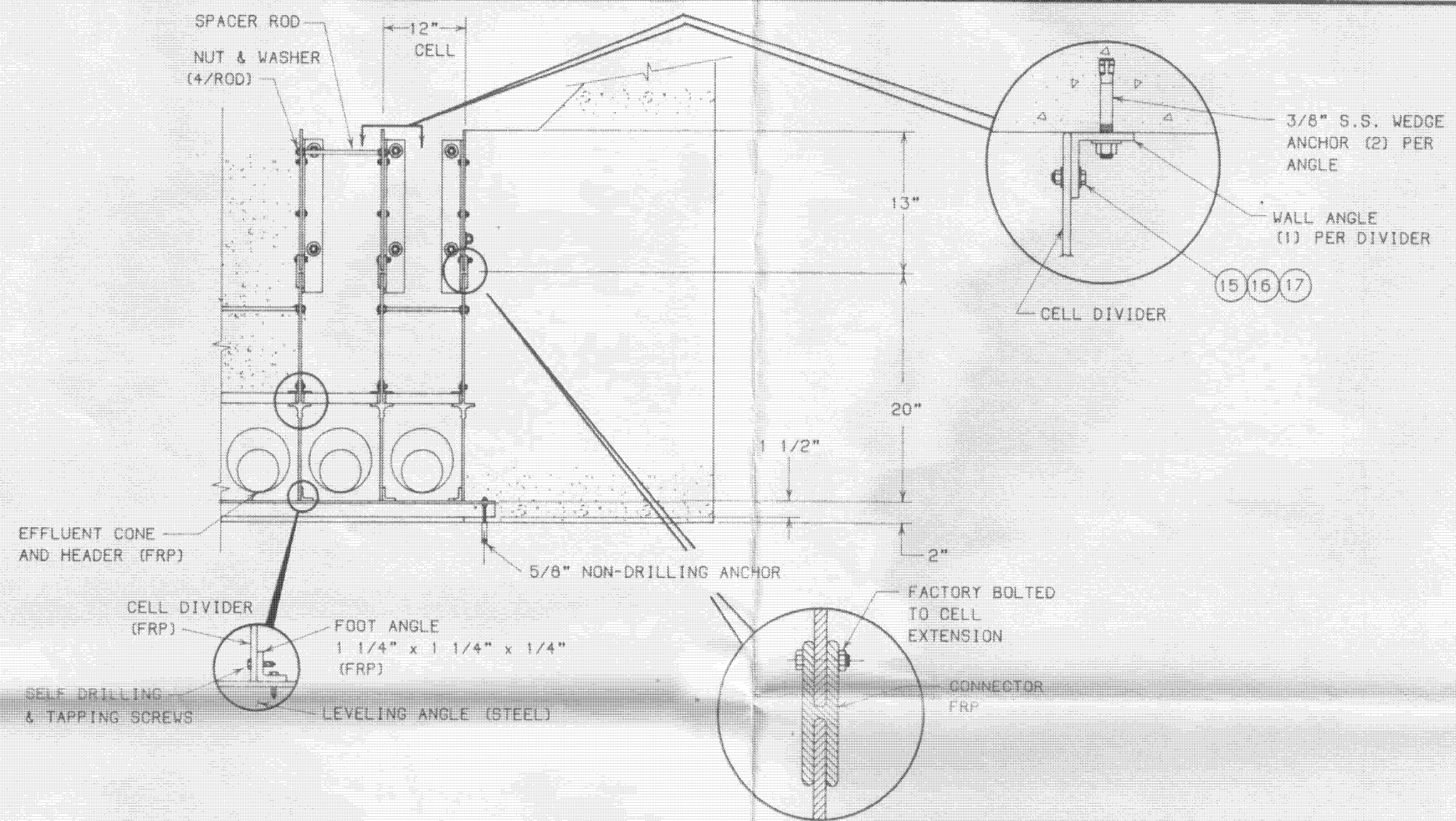
REF. ECO DATE BY REVISION



NO.	DATE	DR	REVISION	BY
DSGN		NA	CHK	APVD
		NA		NA
			T. LOOSE	

SWWRF ABW FILTER REHAB
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FLORIDA

REFERENCE ONLY
BRIDGE MECHANISM



1. TRAVEL PEGS (2 PER BASIN) LOCATED AT END OF BRIDGE TRAVEL DISTANCE.
2. INDEXING PEGS (64 PER BASIN) LOCATED ON 12" CENTERS OVER EACH CELL.
3. ANCHOR BOLTS TO BE SPACED ON 2'-0" CENTERS.

JOB NAME: SOUTHWEST REGIONAL WWTP		RM CODE:	AQUA-AEROBIC SYSTEMS, INC.
JOB LOCATION: MANATEE COUNTY, FLORIDA		ACT. WT:	MANUFACTURERS OF WASTEWATER TREATMENT EQUIPMENT
ENGINEERS:		ASS'Y NO.:	NAME: BASIN ACCESSORIES
		DO NOT SCALE DRAWING	
		DRN BY: LZ	DATE: 7-9-91
		CKD BY:	APP. BY:
		SCALE:	ABF-1666
		HP/SIZE:	SHEET 3 OF 3
REF. ECD DATE BY REVISION		TYPE: J:\MANATESW\10456115	PART NO. 92724805

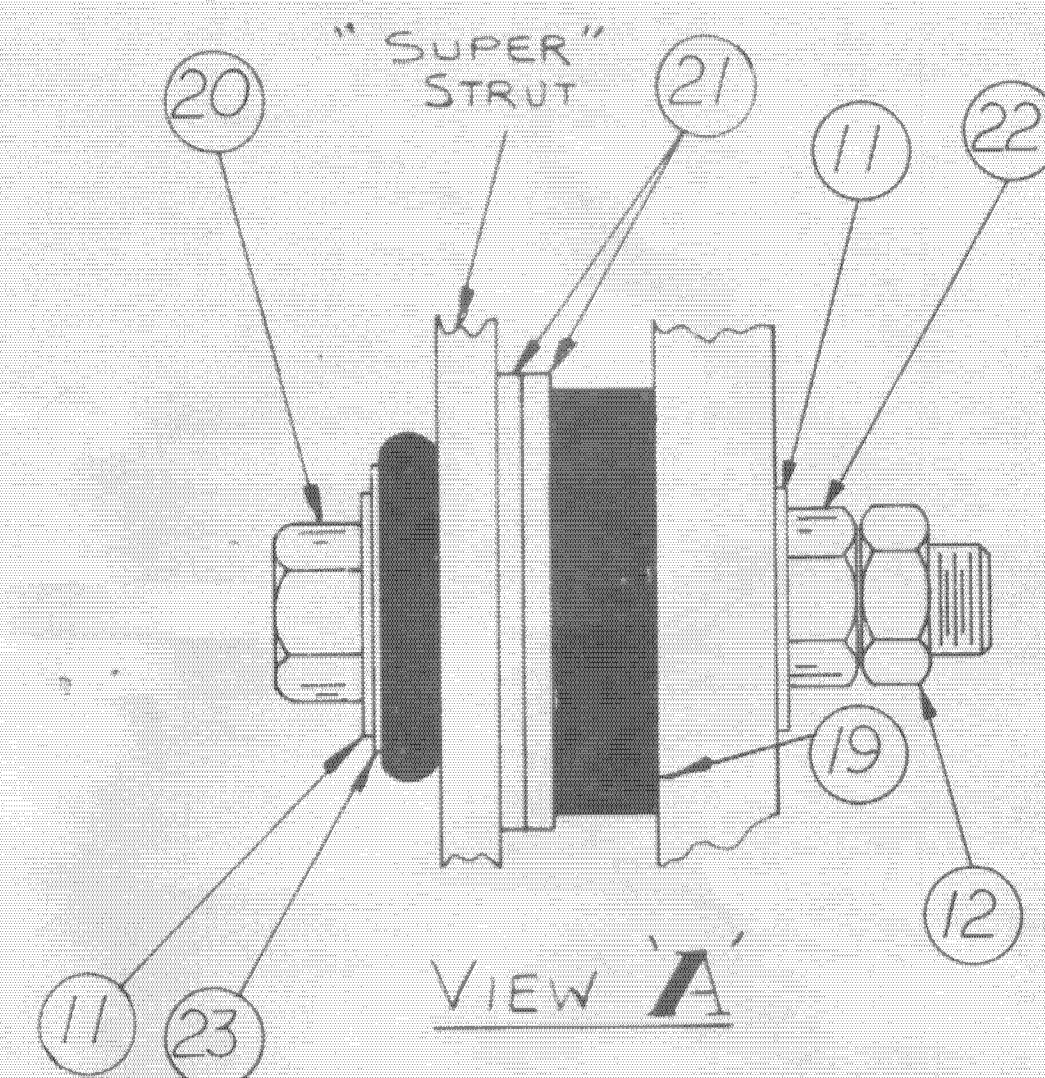
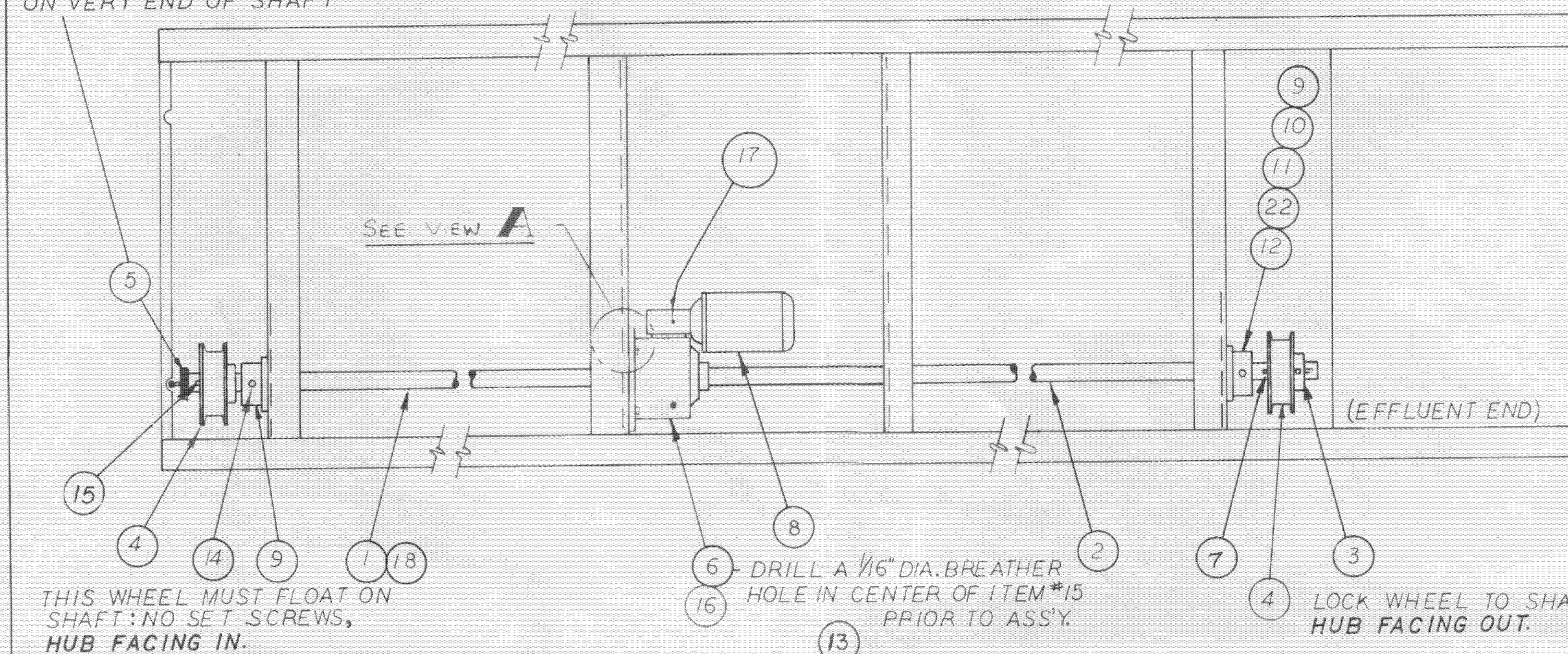
NO. DSGN	DATE	DR	REVISION	BY
			CHK	APVD
			T. LOOSE	NA

SWWRF ABW FILTER REHAB
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FLORIDA

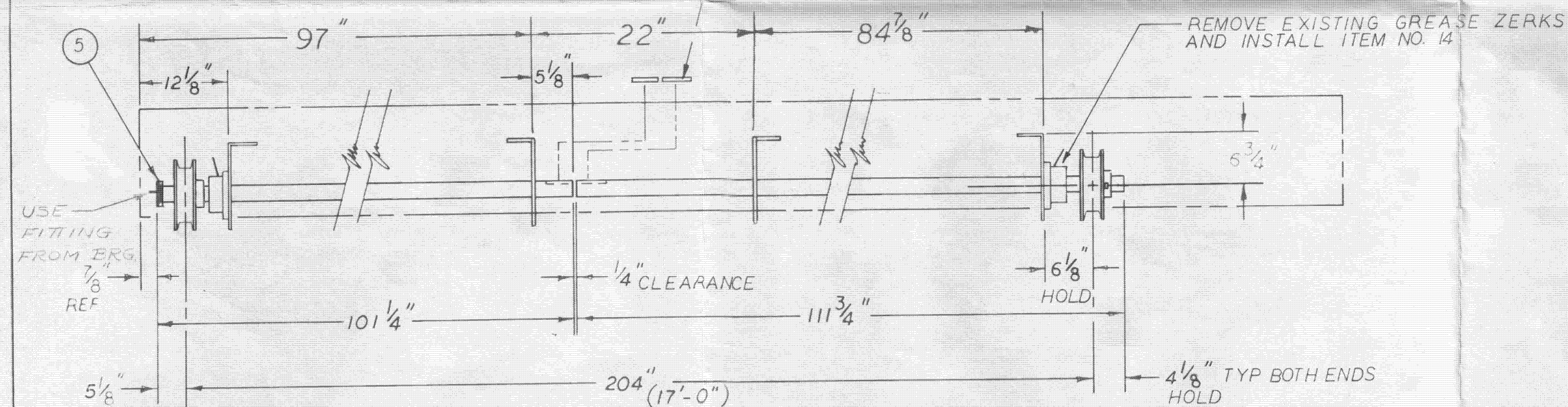
REFERENCE ONLY
BASIN ACCESSORIES

DATE	APRIL 2017
PROJ	491792
DWG	R-05
SHEET	ShNum of ShtTot

"SHAFT COLLAR" SECURE AND LOCK ON VERY END OF SHAFT



NOTE:
 1.) CONDENSATE DRAIN HOLES OF MOTOR MUST BE LOCATED AT BOTTOM
 2.) MOTOR, GEARBOX, BRG'S & COLLARS' PER PAINT SCHEDULE.



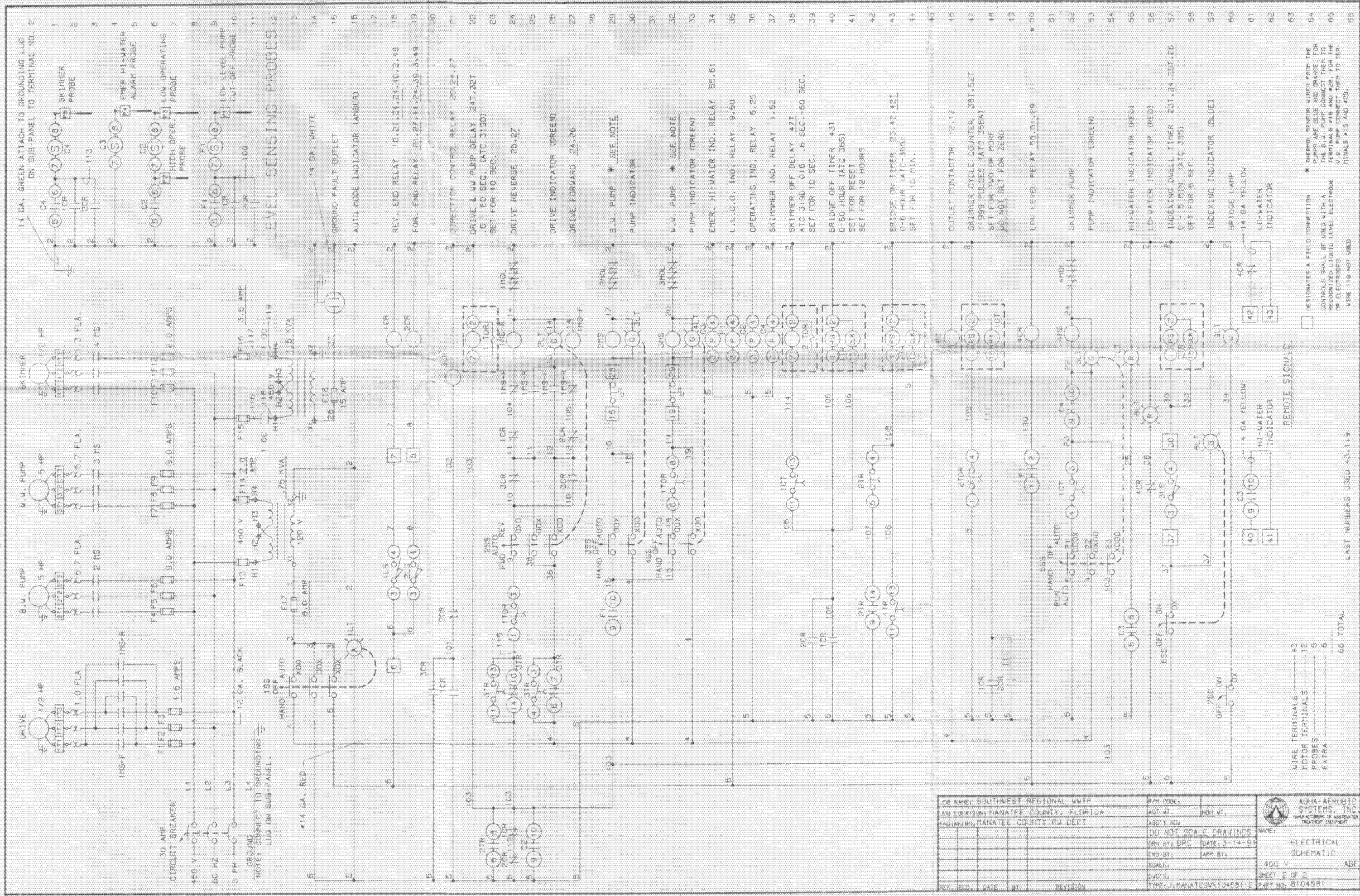
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JOB NAME: _____ R.M. CODE: _____ JOB LOCATION: _____ ACT. WT: _____ NOM. WT: _____ ENGINEERS: _____ ASSY. NO: _____ DO NOT SCALE DRAWING DRN. BY: <i>DCS</i> DATE: 1-8-86 CKD. BY: _____ APP. BY: _____ SCALE: <i>1/4"</i> H.P./SIZE: _____ SHEET 1 OF 1 TYPE: _____ PART NO. 2902606		
AQUA-AEROBIC SYSTEMS, INC. <small>MANUFACTURERS OF WASTE WATER CONTROL EQUIPMENT</small>		
DRIVE ASSEMBLY 16 FT. UNIT HOLLOW SHAFT BOX		

NO. DATE DSGN	DR NA	REVISION (CHK T. LOOSE)	APVD NA	BY APVD NA
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SWWRF ABW FILTER REHAB
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FLORIDA

REFERENCE ONLY
DRIVE ASSEMBLY

DATE	APRIL 2017
PROJ	491792
DWG	R-07
SHEET	ShNum of ShTot

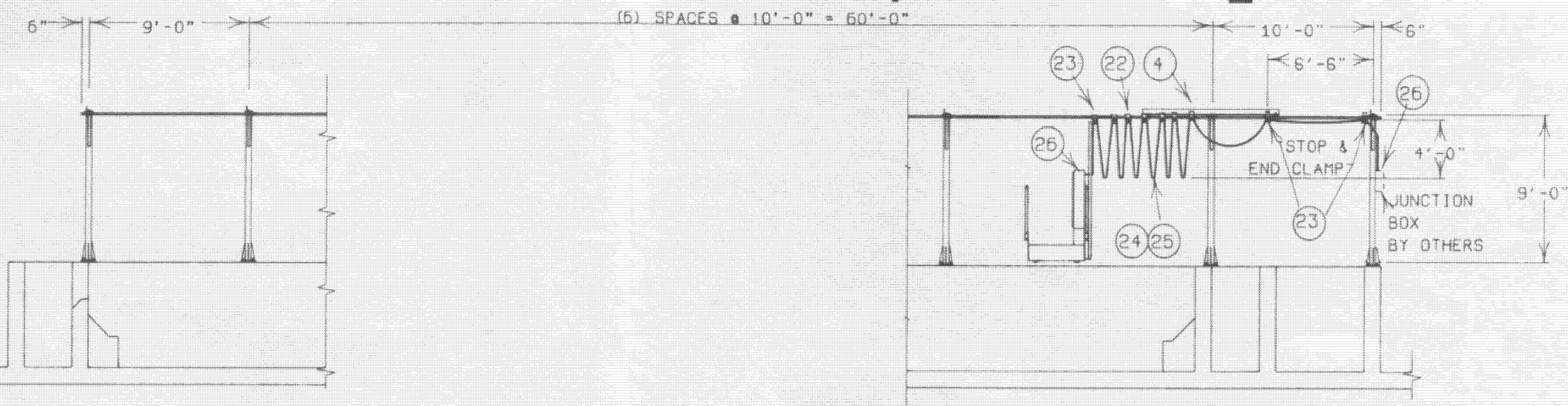
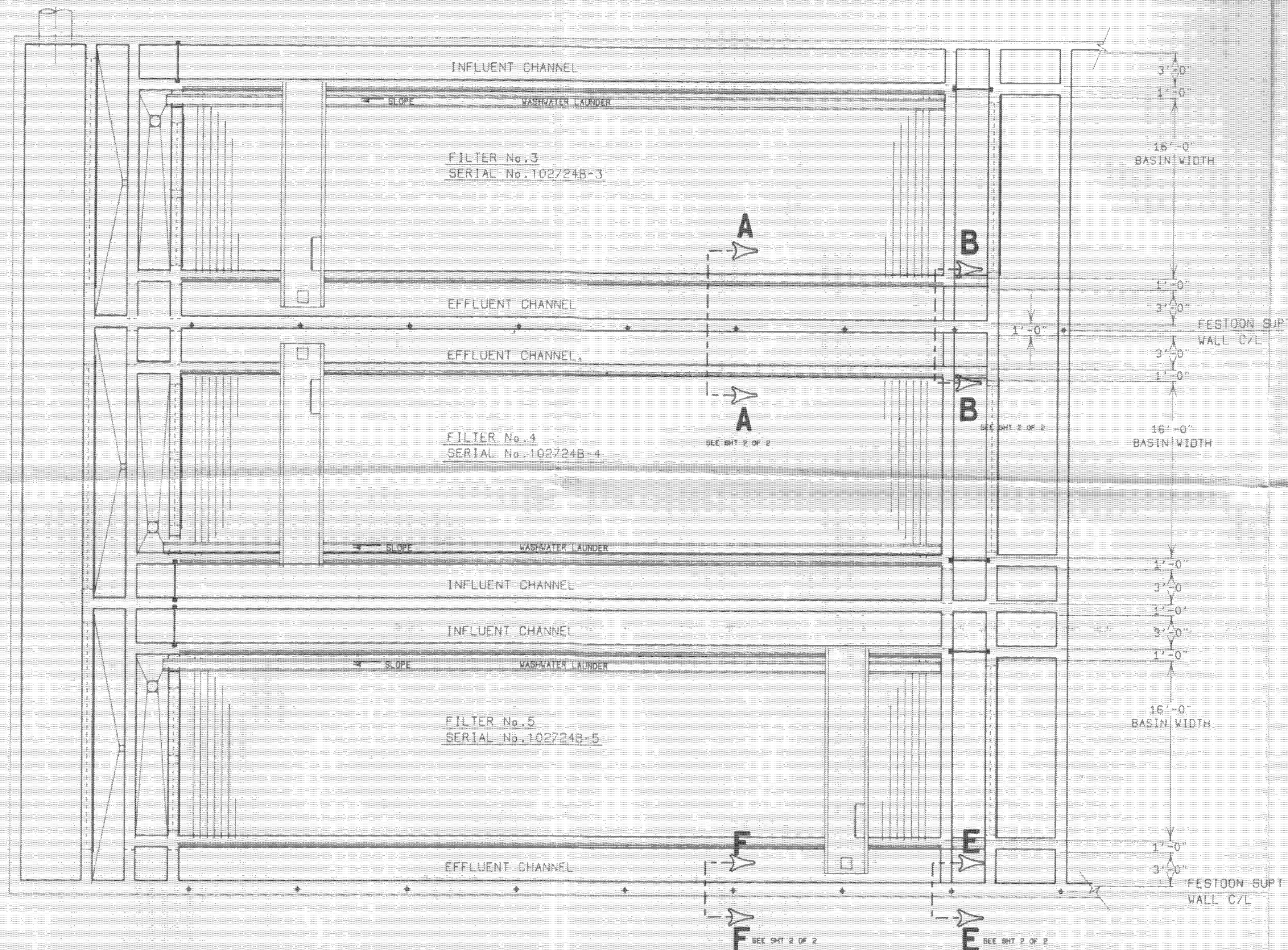


JOB NAME: SOUTHWEST REGIONAL WWP		R/M CODE:	
JOB LOCATION: MANATEE COUNTY, FLORIDA		ACT. WT.	NOI. WT.
ENGINEERS: MANATEE COUNTY PW DEPT		ASST. NO.	
DO NOT SCALE DRAWINGS		NAME:	
DRN BY: DRC	DATE: 3-14-91	ELECTRICAL SCHEMATIC	
CKD BY:	APP BY:	SCALE: 460 V ABF	
DWG'S:	SHEET 2 OF 2	PART NO: 8104581	
REF. EOD. DATE BY	REVISION	TYPE: J:\MANATEE\810458112	

WIRE TERMINALS 43
 MOTOR TERMINALS 12
 PROBES 5
 EXTRA 6
 66 TOTAL

LAST NUMBERS USED 43.1.19

REFERENCE ONLY		SWWRFB ABW FILTER REHAB	
ELECTRICAL SCHEMATIC		MANATEE COUNTY UTILITIES MANATEE COUNTY, FLORIDA	
DATE	APRIL 2017	NO. DATE	DR NA
PROJ	491792	REVISION	CHK NA
DWG	R-08	BY	APVD NA
SHEET	ShNum of ShTot		



ITEM	QUAN.	PART NO.	DESCRIPTION	DWG.
33	6	2604105	U-BOLT - 2" X 3/8-16NC CABLE MAST TO BRIDGE	-
32	12	2600403	NUT - HX JAM 3/8-16NC	-
31	12	2600481	NUT - HX FULL 3/8-16NC	-
30	24	2600381	WASHER - 3/8" FLAT	-
29	12	2602257	HHCS - 3/8-16NC X 1 1/4" LG	-
28	3	92724810	CABLE MAST MOUNT ON BRIDGE	B
27	3	2910044	TOW ARM MOUNT ON CABLE MAST	B
26	12	2605173	BUSHING - CABLE #03147 AT CONTROL PANEL	-
25	3	2605177	CABLE - 12C/14AWG X 120FT #21813	-
24	3	2605906	CABLE - 4C/6AWG X 120FT #21814	-
23	6	2603554	CLAMP - END #28548	-
22	27	2603563	CARRIER #28622	-
21	3	2603562	CARRIER - LEAD #28621	-
20	70	2603011	NUT - HX JAM 1/4-20NC	-
19	70	2600476	NUT - HX FULL 1/4-20NC	-
18	140	2600224	WASHER - 1/4" FLAT	-
17	70	2600230	HHCS - 1/4-20NC X 1" LG TRACK HANGER TO ANGL.	-
16	33	2603565	HANGER - TRACK #27846	-
15	1	2603568	DRILL FIXTURE - #25728	-
14	9	2603567	COUPLER - SO TRACK #27845	-
13	240FT	2603561	TRACK - #27843 20FT LENGTHS	-
12	74	2603544	ADHESIVE CAPSULE	-
11	74	2504920	ANCHOR STUD - 1/2-13 X 7" LG POST TO WALL	A
10	80	2600234	NUT - HX JAM 1/2-13NC	-
9	160	2600517	NUT - HX FULL 1/2-13NC	-
8	395	2600426	WASHER - 1/2" FLAT	-
7	85	2603242	HHCS - 1/2-13NC X 1 3/4" LG	-
6	8	92724808	ANGLE - TRACK SUPT BASIN 5	10# B
5	8	2505928	ANGLE - TRACK SUPT BASIN 3 & 4	16# B
4	3	2505929	ANGLE - TRACK SUPT STARTING POST	15# B
3	1	92724809	ANGLE WELDMENT (2" NO POST FROM SO END)	16# B
2	1	2910041	ANGLE WELDMENT (2" NO POST FROM SO END)	22# B
1	18	2910040	POST WELDMENT (2" NO POST FROM SO END)	49# C

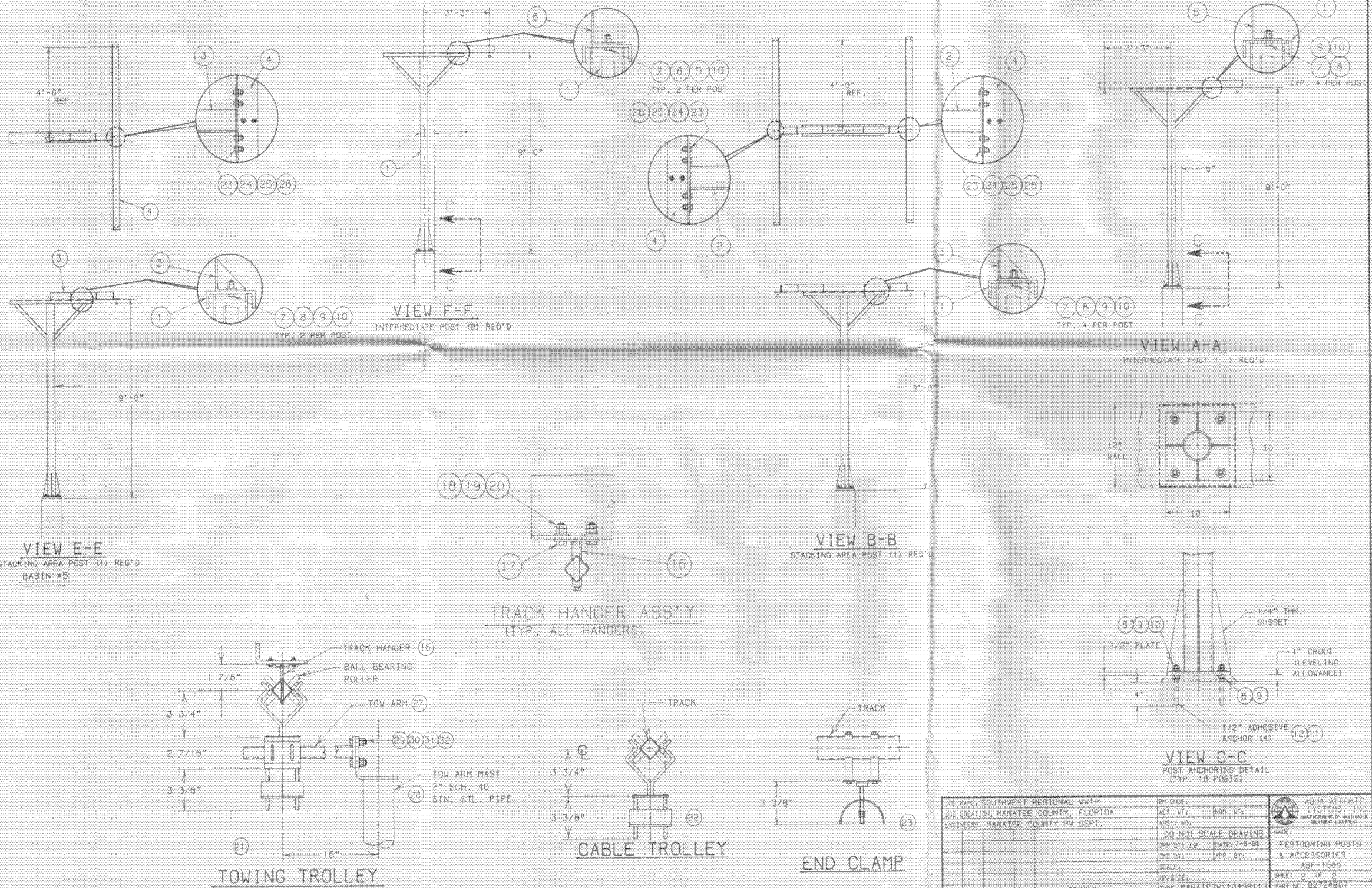
JOB NAME: SOUTHWEST REGIONAL WWTP
 JOB LOCATION: MANATEE COUNTY, FLORIDA
 ENGINEERS:

RM CODE:
 ACT. WT.:
 ASS'Y NO.:
 DO NOT SCALE DRAWING
 DRN BY: LZ DATE: 7-9-91
 CKD BY: APP. BY:
 SCALE:
 HP/SIZE: 16 X 66
 TYPE: J:\MANATEE\10450114

AQUA-AEROBIC SYSTEMS, INC.
 MANUFACTURERS OF WASTEWATER TREATMENT EQUIPMENT

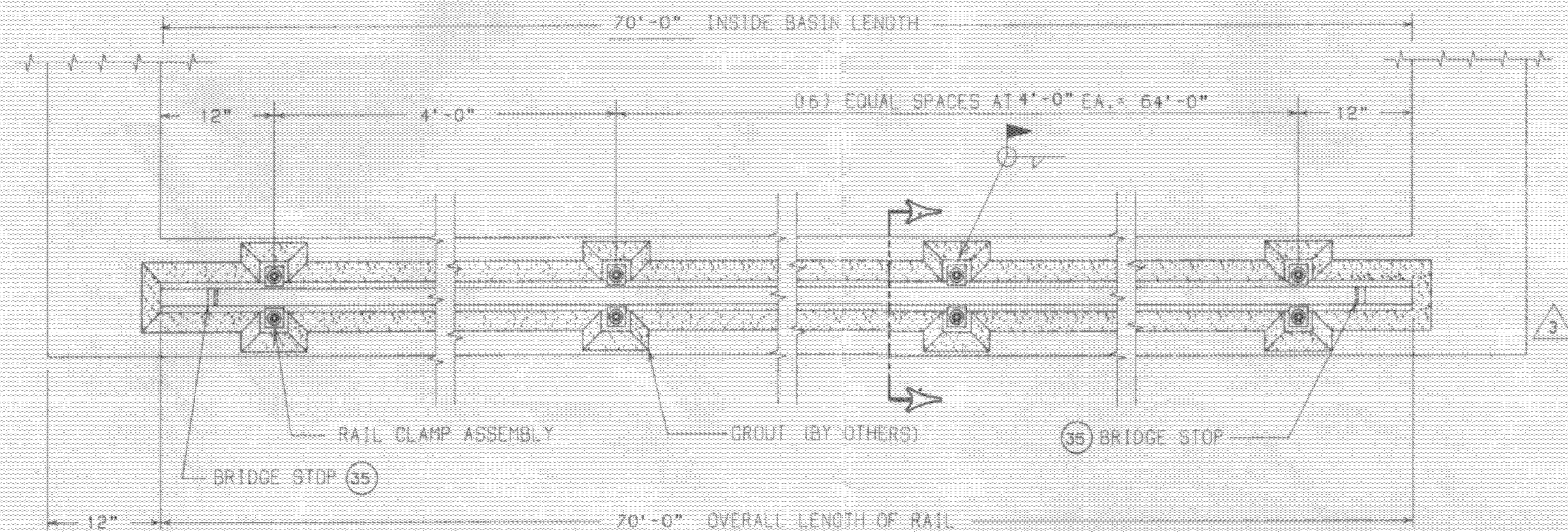
NAME: FESTOON SYSTEM
 ABF-1666
 SHEET 1 OF 2
 PART NO. 92724807

NO. DATE DSGN	DR NA	REVISION (CHK)	APVD NA	BY APVD NA
SWWRF ABW FILTER REHAB		MANATEE COUNTY UTILITIES		MANATEE COUNTY, FLORIDA
REFERENCE ONLY		FESTOON SYSTEM		
DATE	APRIL 2017	PROJ	491792	DWG
SHEET	R-09	ShNum of ShtTot		

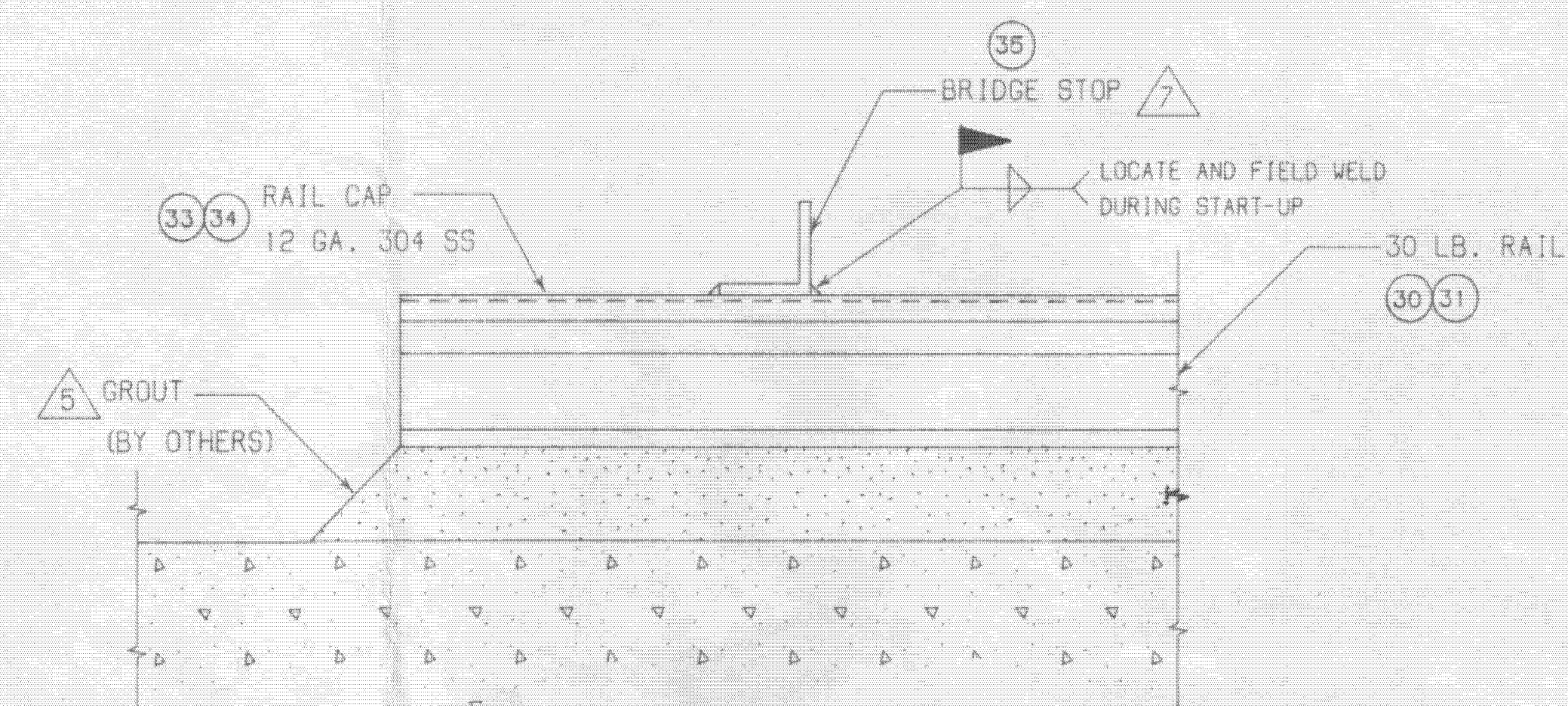


JOB NAME: SOUTHWEST REGIONAL WWT		RM CODE:	AQUA-AEROBIC SYSTEMS, INC.	
JOB LOCATION: MANATEE COUNTY, FLORIDA		ACT. WT:	MANUFACTURERS OF WASTEWATER TREATMENT EQUIPMENT	
ENGINEERS: MANATEE COUNTY PW DEPT.		INH. WT:	NAME:	
		ASS'Y NO.:	FESTOONING POSTS & ACCESSORIES	
		DO NOT SCALE DRAWING	ABF-1666	
DRN BY: L2	DATE: 7-9-91	SCALE:	SHEET 2 OF 2	
APP. BY:		HP/SIZE:	PART NO. 32724807	
TYPE: MANATESW\10458113				
REF. ECO DATE BY REVISION				

SWWRF ABW FILTER REHAB		MANATEE COUNTY UTILITIES MANATEE COUNTY, FLORIDA	
NO. DATE DSGN	REVISION (CHK T. LOOSE)	BY APVD	NA
REFERENCE ONLY		FESTOONING POSTS & ACCESSORIES	
DATE	APRIL 2017	DWG	R-10
PROJ	491792	SHEET	ShNum of ShTot



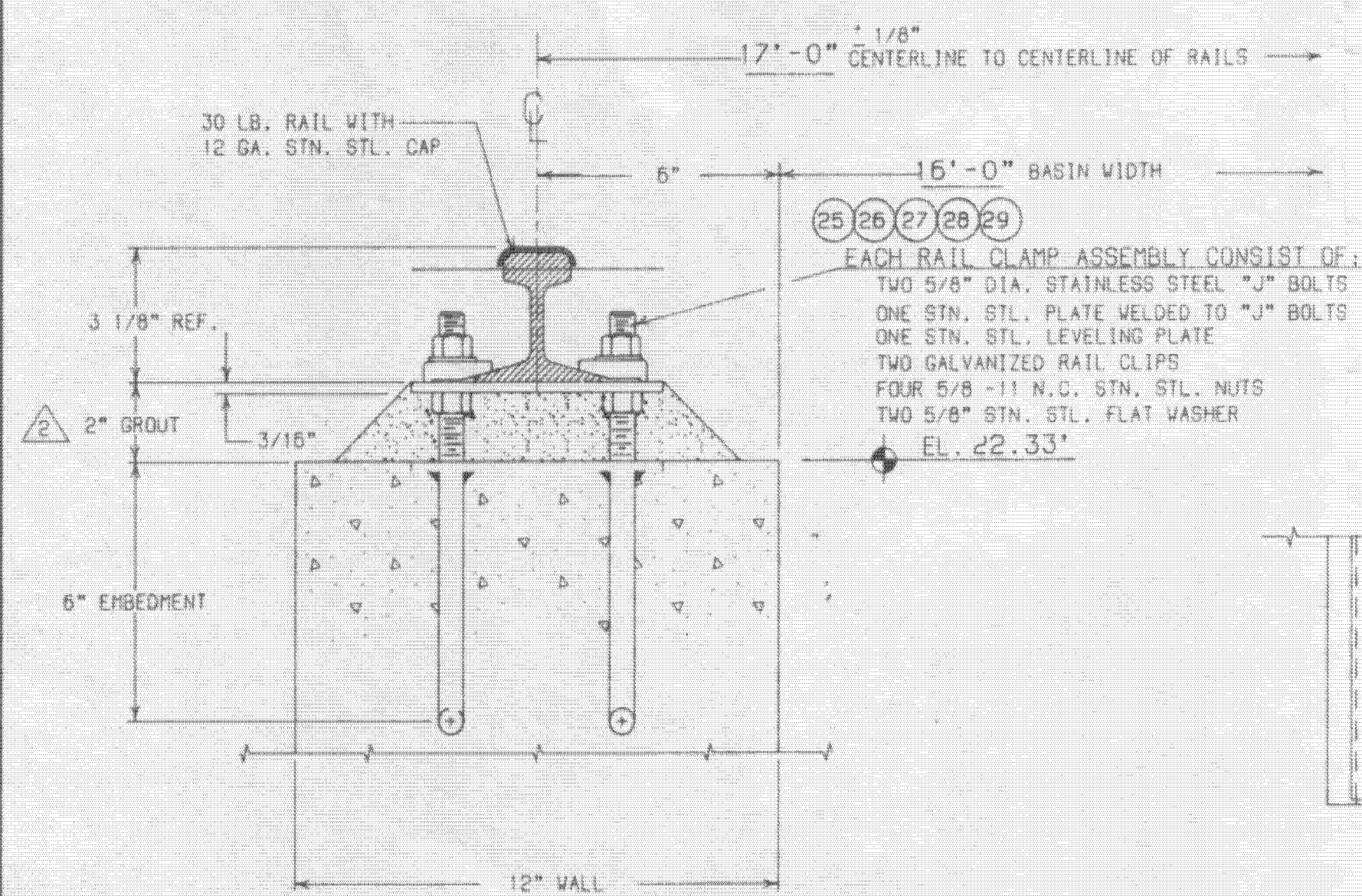
RAIL ANCHOR SPACING DETAIL



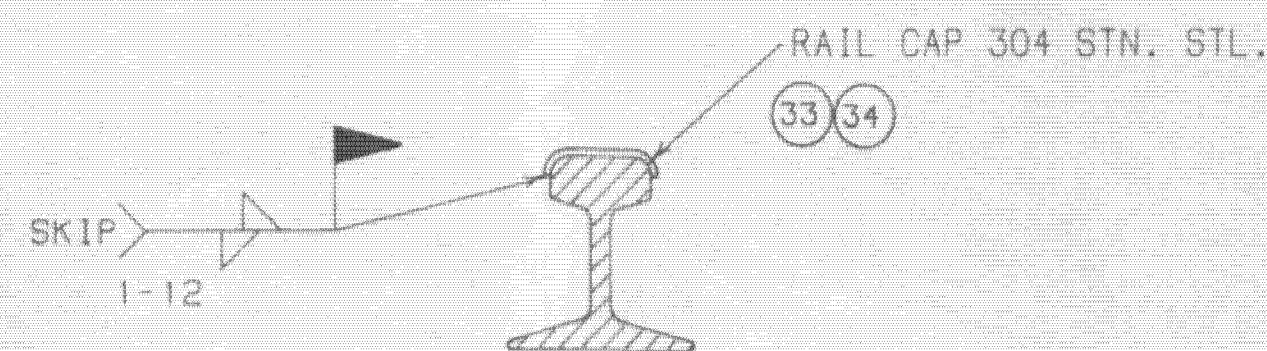
BRIDGE STOP DETAIL

NOTES

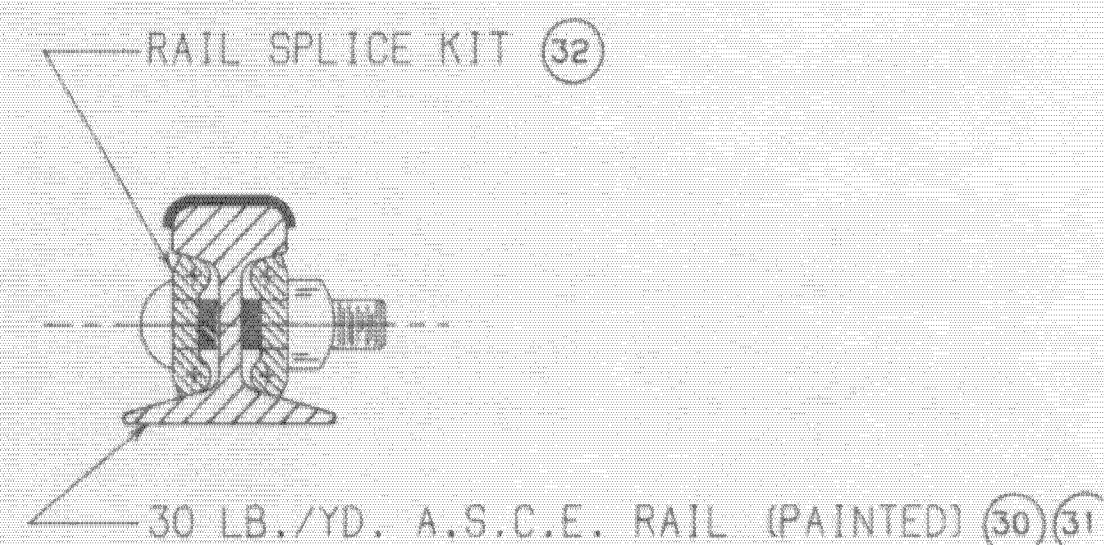
1. LOCATE FIRST RAIL ANCHOR ASSEMBLY 12" FROM END WALL OF BASIN. CONTINUE ON 48" CENTERS. (TYPICAL 6 LOCATIONS)
2. RAIL ANCHORS MUST BE HELD IN LINE $\pm 1/8"$ ACROSS BASIN, AND INSTALLED STRAIGHT TO $\pm 1/8"$ OVER ENTIRE LENGTH OF BASIN.
3. INSTALL RAILS PARALLEL WITH EACH OTHER $\pm 1/8"$. RAILS MUST BE LEVEL WITHIN $\pm 1/8"$
4. BEFORE GROUTING WELD BOTH RAIL CLIPS OF RAIL CLAMP ASSEMBLY, CLOSEST TO CENTER OF BASIN, TO THE RAIL, INSTALL AND TACK WELD RAIL CAP (SEE DETAIL). (TYPICAL 6 WALLS.)
5. GROUT UNDER RAIL ANCHORS AND ENTIRE LENGTH OF RAIL AS SHOWN ON THE DETAIL PLAN. GROUT NOT SUPPLIED BY AQUA-AEROBIC SYSTEMS.
6. RAIL AND RAIL SPLICE KITS SHALL BE SHOP PRIMED WITH TNEPEC SERIES 37 CHEM-PRIME. RAIL CLIPS WILL BE HOT-DIPPED GALVANIZED. RAIL ANCHORS ARE STAINLESS STEEL.
7. BRIDGE STOPS ARE SHOWN FOR REFERENCE ONLY, AND WILL BE INSTALLED AT TIME OF START-UP.



RAIL ANCHOR DETAIL



RAIL CAP WELDING DETAIL



RAIL SPLICE DETAIL

ITEM	QUAN.	PART NO.	DESCRIPTION	DWG.
41				
40				
39	270	2605857	ANCHOR-WEDGE 3/8" X 2 1/4" LG	316
38	135	2603300	ANGLE-WALL 2" X 14" LG	FRP C
37	67	2602360	EXTENSION ASS'Y-C/D 16FT LG X 13" HI FRP B	
36	1	2603195	GUN-CAULKING	
35	4	2604284	BRIDGE STOP (ANGLE 2"x2" LG)	
34	2	2604380	CAP-30# RAIL X 2FT LG	
33	34	2604379	CAP-30# RAIL X 4FT LG	
32	4		SPLICE KIT-30# RAIL	PNT'D
31	2		RAIL-30#/YD 10FT LG HOE	PNT'D
30	4		RAIL-30#/YD 30FT LG HBE	PNT'D
29	75	2604218	CLIP-30# RAIL	GALV A
28	75	2602498	WASHER-FLAT 5/8"	316
27	150	2600301	NUT-HEX FULL 5/8-11	316
26	36	2605778	LEVELING PLATE-30# RAIL ANCHOR	A
25	36	2903796	ANCHOR WELD-T-30# RAIL	A
24	33	2603321	INF PORT 5" DIA X 12" LG	PVC
23	2200	2600391	WASHER-FLAT 3/8	316
22	2200	2600481	NUT-HEX FULL 3/8-16	316
21	540	2605556	STUD-SPACER 3/8-16 X 13 1/4" LG	316 A
20	134	2602951	ANGLE-P/P RET'G 1" X 191" LG	FRP B
19	30	2605085	SEALANT SIKKA #201	
18	1100	2602979	SCREW-HEX WSHR 1/4-14 X 1" LG	
17	67	2603116	FOOT ANGLE 1 1/2" X 10FT LG	FRP
16	67	2602947	CELL DIVIDER 16FT LG 20" HI	FRP B
15	275	2603402	FHMS 3/8-16 X 1.25LG	
14	275	2604144	INSERT ANCHOR 3/8"	
13	9	2603203	WEAR STRIP-12" SPC X 8FT LG	POLY B
12	1	2603303	WEAR STRIP-STARTER 12" SPC X 3FT LG	PLY B
11	1	2603309	HEADER-EFF 12" SPC X 20" HI X 2FT LG	FRP C
10	16	2604125	HEADER-EFF 12" SPC X 20" HI X 4FT LG	FRP D
9	1	2603308	HEADER-INFL 12" SPC X 20" HI X 2FT LG	FRP C
8	16	2604126	HEADER-INFL 12" SPC X 20" HI X 4FT LG	FRP D
7	150	2602498	WASHER-FLAT 5/8"	316
6	150	2600301	NUT-HEX FULL 5/8"-11	316
5	75	2605775	STUD 5/8"-11 X 6" LG	316
4	75	2602844	ANCHOR-NONDRILL'G 5/8"	
3	3	2604189-2	ANGLE-LEVELING 10'-0" LG	B
2	3	2604189-1	ANGLE-LEVELING 16'-8" LG	B
1	6	2602126	ANGLE-LEVELING 20'-0" LG	B

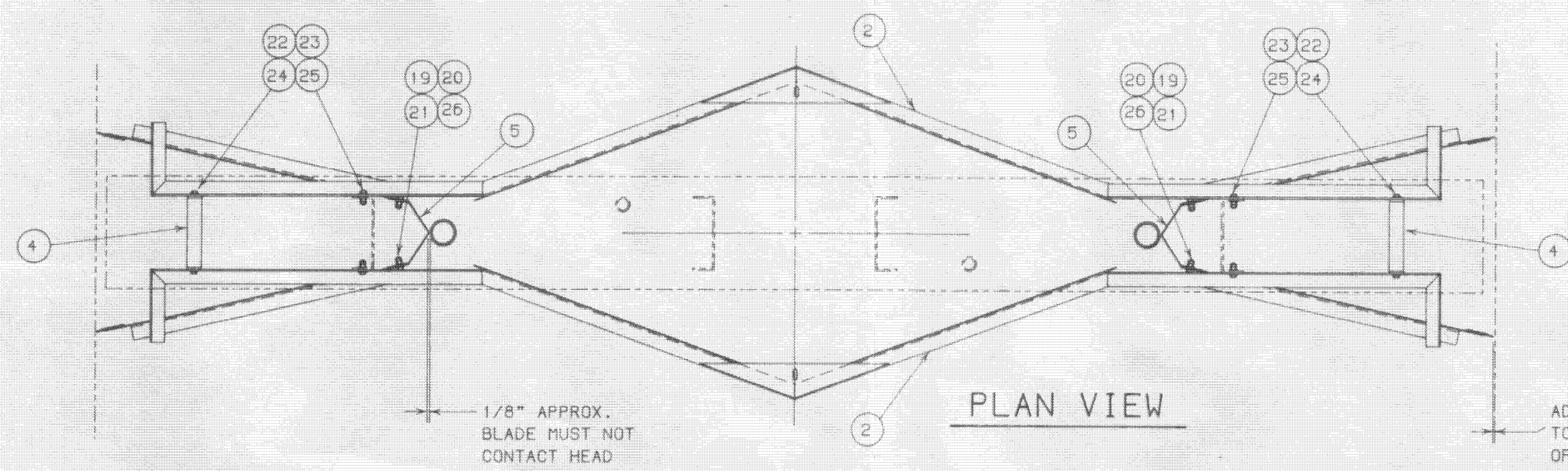
JOB NAME: SOUTHWEST REGIONAL WTP		RM CODE:	AQUA-AEROBIC SYSTEMS, INC.
JOB LOCATION: MANATEE COUNTY, FLORIDA		ACT. WT:	MANUFACTURER OF WASTEWATER TREATMENT EQUIPMENT
ENGINEERS:		ASS'Y NO:	NAME:
		DO NOT SCALE DRAWING	RAIL INSTALLATION DETAILS
		DRN BY: LZ DATE: 3-21-91	-EMBEDDED ITEMS-
		CRD BY: APP. BY:	SHEET 3 OF 3
		SCALE:	PART NO. 92724B01
		HP/SIZE: 16 X 66	
REF.	ECO	DATE	BY
			REVISION
			TYPE: J:\MANATEE\92724B01

NO.	DATE	DR	NA
DSGN			
REVISION	CHK	NA	
BY	APVD	NA	

SWWRF ABW FILTER REHAB
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FLORIDA

REFERENCE ONLY
RAIL INSTALLATION DETAILS

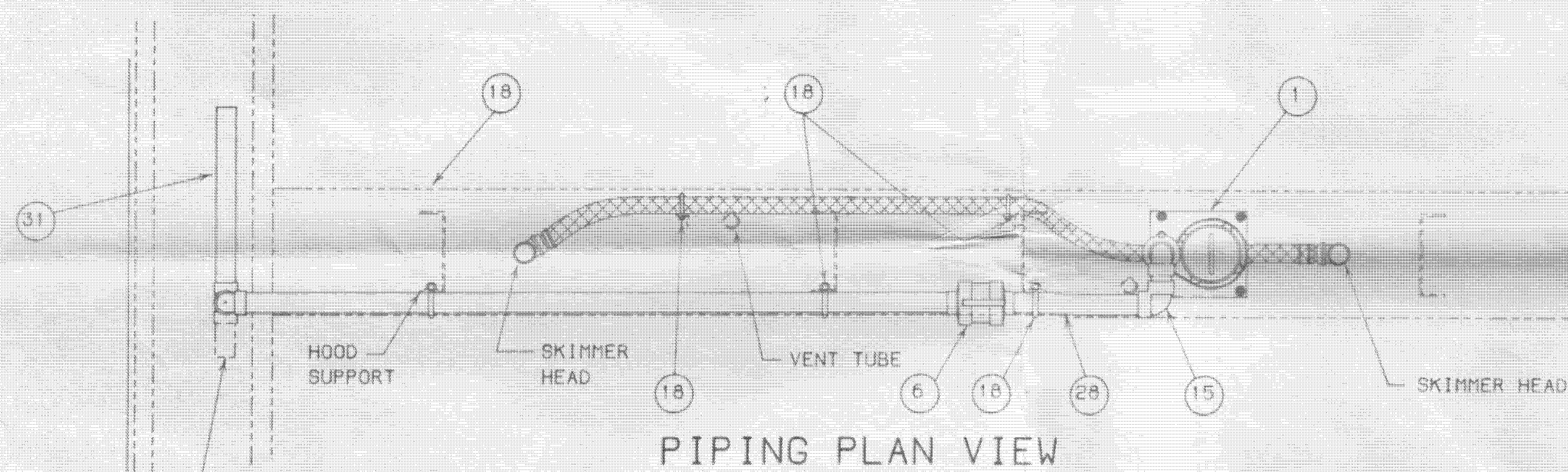
DATE	APRIL 2017
PROJ	491792
DWG	R-11
SHEET	ShNum of ShTot



PLAN VIEW

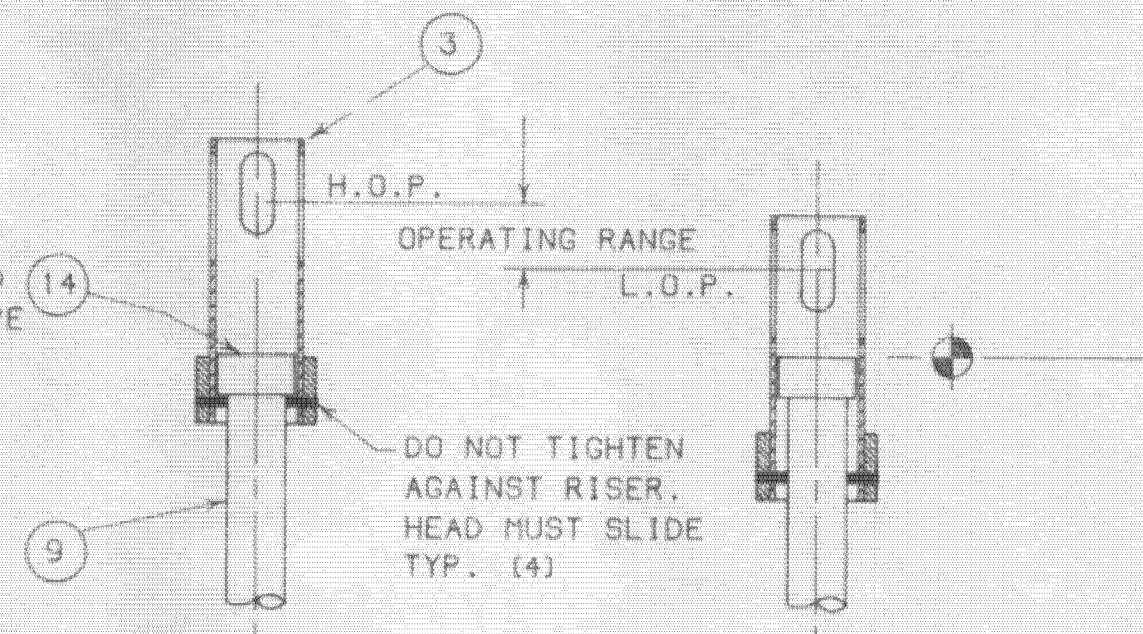
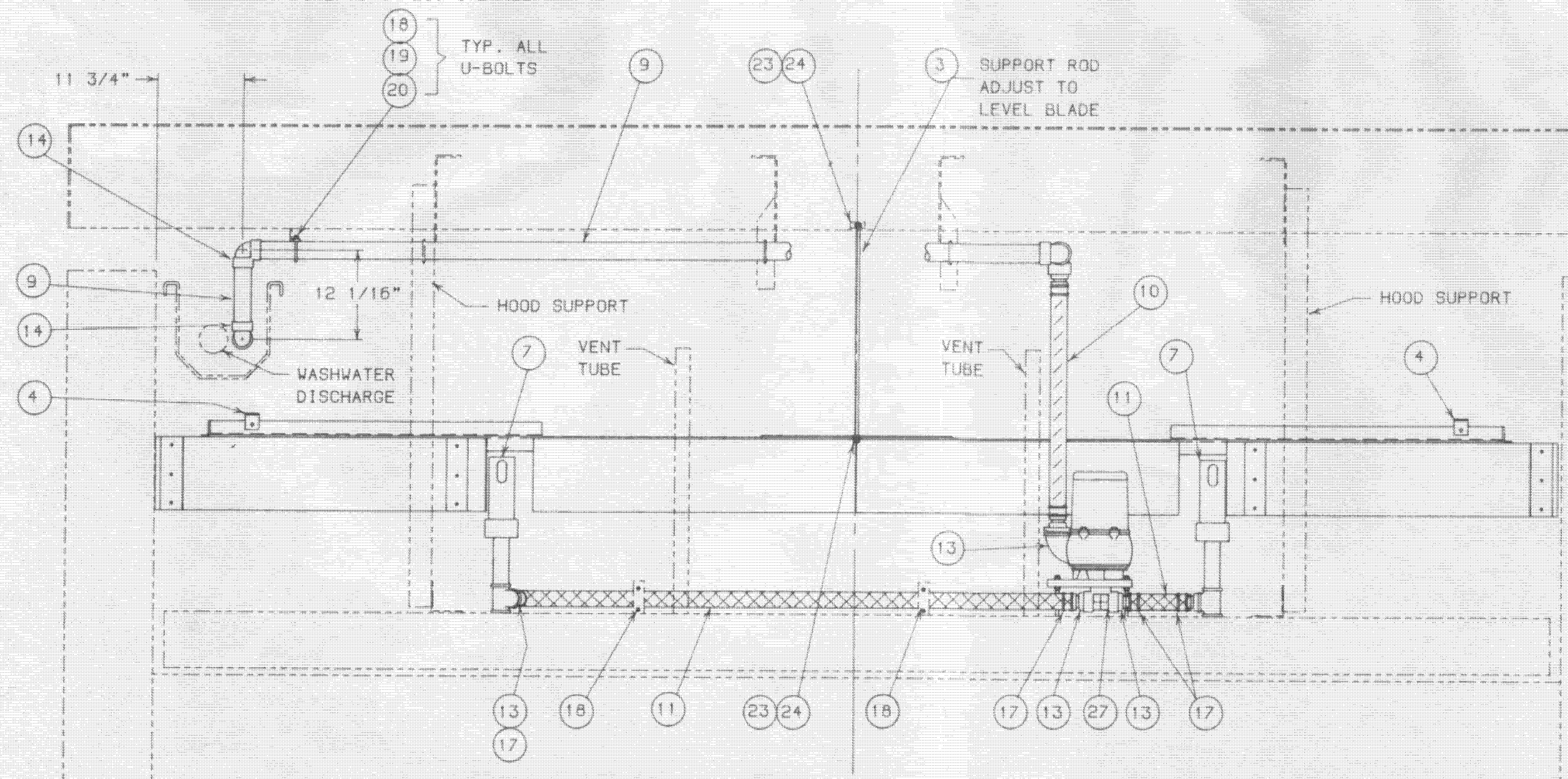
1/8" APPROX. BLADE MUST NOT CONTACT HEAD

ADJUST WIPERS TO WITHIN 1/16" OF WALL. TYP. (4)



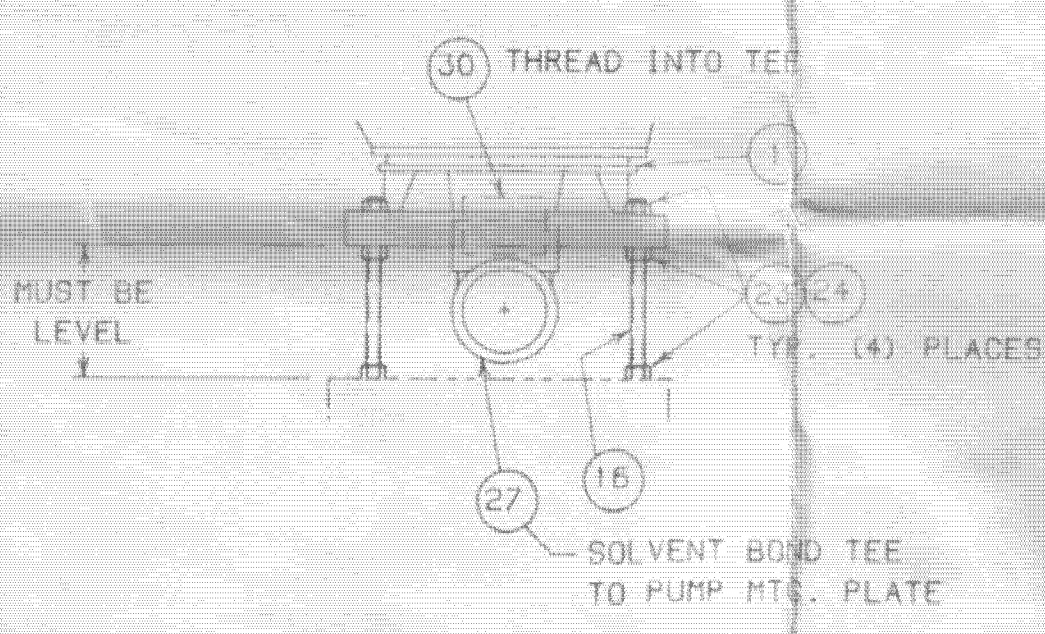
PIPING PLAN VIEW

31 WHEN DISCHARGE PIPE MUST BE ASSEMBLED IN THIS DIRECTION CUT PIPE TO 4" LG. OVERALL



FLOATING HEAD DETAIL

H.O.P.
OPERATING RANGE
L.O.P.
DO NOT TIGHTEN AGAINST RISER. HEAD MUST SLIDE TYP. (4)
SOLVENT BOND TO RISER PIPE



DETAIL "A"

- NOTES:
1. DISCHARGE PIPING MUST BE INSTALLED FACING THE OPEN END OF THE TROUGH.
 2. CUT PIPE TO SUIT AT ASSEMBLY.
 3. APPLY NEVER-SEIZE COMPOUND TO ALL THREADED FASTENERS.
 4. USE PETROLEUM JELLY ON HOSE CONNECTIONS.
 5. USE TEFLON TAPE ON ALL THREADED CONNECTIONS.
 6. SOLVENT BOND ALL SOCKET PIPE CONNECTIONS. SEE O&M MANUAL FOR INSTRUCTIONS.

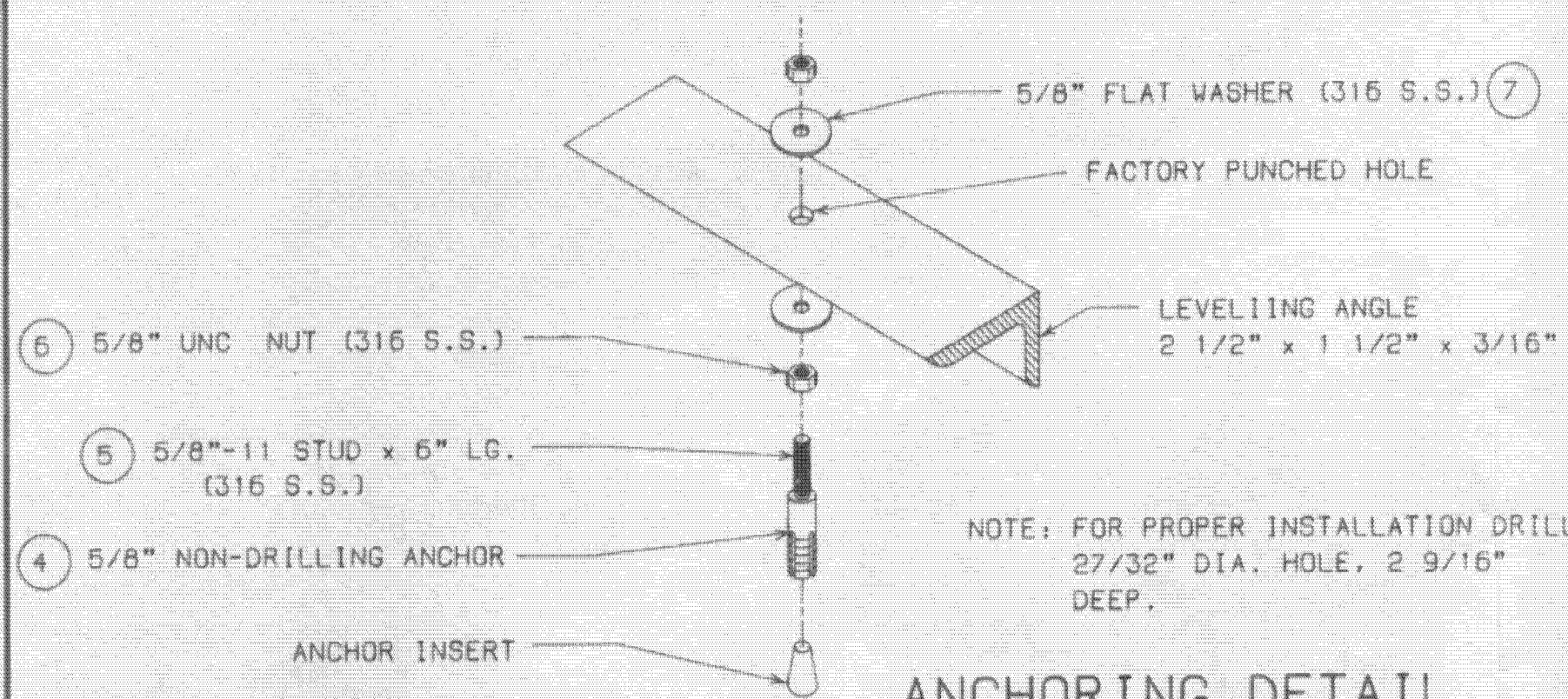
ITEM	QUAN.	PART NO.	DESCRIPTION	DWG.
31	1	----	PIPE- 2" SCH80 x 23" LG.	PVC
30	1	----	PIPE- 2" SCH80 x 1 1/2" LG. TOE	PVC
29	1	2605259	NIPPLE - 2" SCH80 SHORT	PVC
28	1	----	PIPE - 2" SCH80 x 36" LG. TOE	PVC
27	1	2603062	TEE - 2" SCH80 THD.	PVC
26	24	2600403	NUT-HX. JAM. 3/8"-16	SS
25	8	2600234	NUT-HX. JAM. 1/2"-13	SS
24	28	2600517	NUT-HX. FULL. 1/2"-13	SS
23	32	2600426	WASHER-FLAT. 1/2"	SS
22	8	2600278	HHCS. 1/2"-13 x 1 1/2" LG.	SS
21	24	2600231	HHCS. 1/2"-13 x 1" LG.	SS
20	30	2600481	NUT-HX. FULL. 3/8"-16	SS
19	60	2600381	WASHER-FLAT. 3/8"	SS
18	6	2603294	U-BOLT, 2" 3/8"-16	SS
17	12	2600930	CLAMP-2" HOSE	SS
16	4	2605085	THD. ROD. 1/2"-13 x 10" LG.	SS
15	2	2602924	ELBOW-2" SCH80, 90° THD.	PVC
14	2	2602923	ELBOW-2" SCH80, 90° SOC.	PVC
13	6	2604083	NIPPLE-COMBO. .2" HOSE x 2" NPTM	PVC
12	1	2505967	COUPLING-SPECIAL. 2" SCH40 SOC.	PVC A
11	10'	2603903	HOSE-KOROBRAID 2"	
10	5'	----	HOSE-DISCHARGE 2" (YELLOW)	
9	12'	----	PIPE-2" SCH80	PVC
8	2	----	PIPE-2" SCH80 x 16" LG. TOE	PVC
7	2	2960052	SKIMMER HEAD ASSEMBLY	B
6		2603299	VALVE-SINGLE UNION. 2", BALL. SOC.	PVC
5	2	2604693	DEFLECTOR	POLY B
4	2	291004'	BRACE WELDMENT	B
3	2	----	THD'D ROD. 1/2"-13 x 48" LG.	SS
2	2	2960022	BLADE ASSEMBLY	C
1	1	2960011	PUMP & MOUNT ASSEMBLY-1/2 HP	C

JOB NAME:		RM CODE:		AQUA-AEROBIC SYSTEMS, INC.	
JOB LOCATION:		ACT. WT.:		MANUFACTURERS OF WASTEWATER TREATMENT EQUIPMENT	
ENGINEERS:		ASS'Y NO.:		NAME: SKIMMER ASSEMBLY	
		DO NOT SCALE DRAWING		16 FT. BASIN	
DRN BY: DRT		DATE: 5-20-91		(304L SS FRAME)	
CHK BY: APP. BY:		HP/SIZE:		SHEET 1 OF 1	
SCALE: 1:12		TYPE: S:\STD\29\2960024		PART NO. 2960024	
1415 9-26-91 DRT REVISED PER ECO					
REF. ECO DATE BY REVISION					

NO.	DATE	DR	REVISION	BY
DSGN	NA	NA	CHK	APVD
			T LOOSE	NA

SWWRF ABW FILTER REHAB
MANATEE COUNTY UTILITIES
MANATEE COUNTY, FLORIDA

REFERENCE ONLY
SKIMMER ASSEMBLY

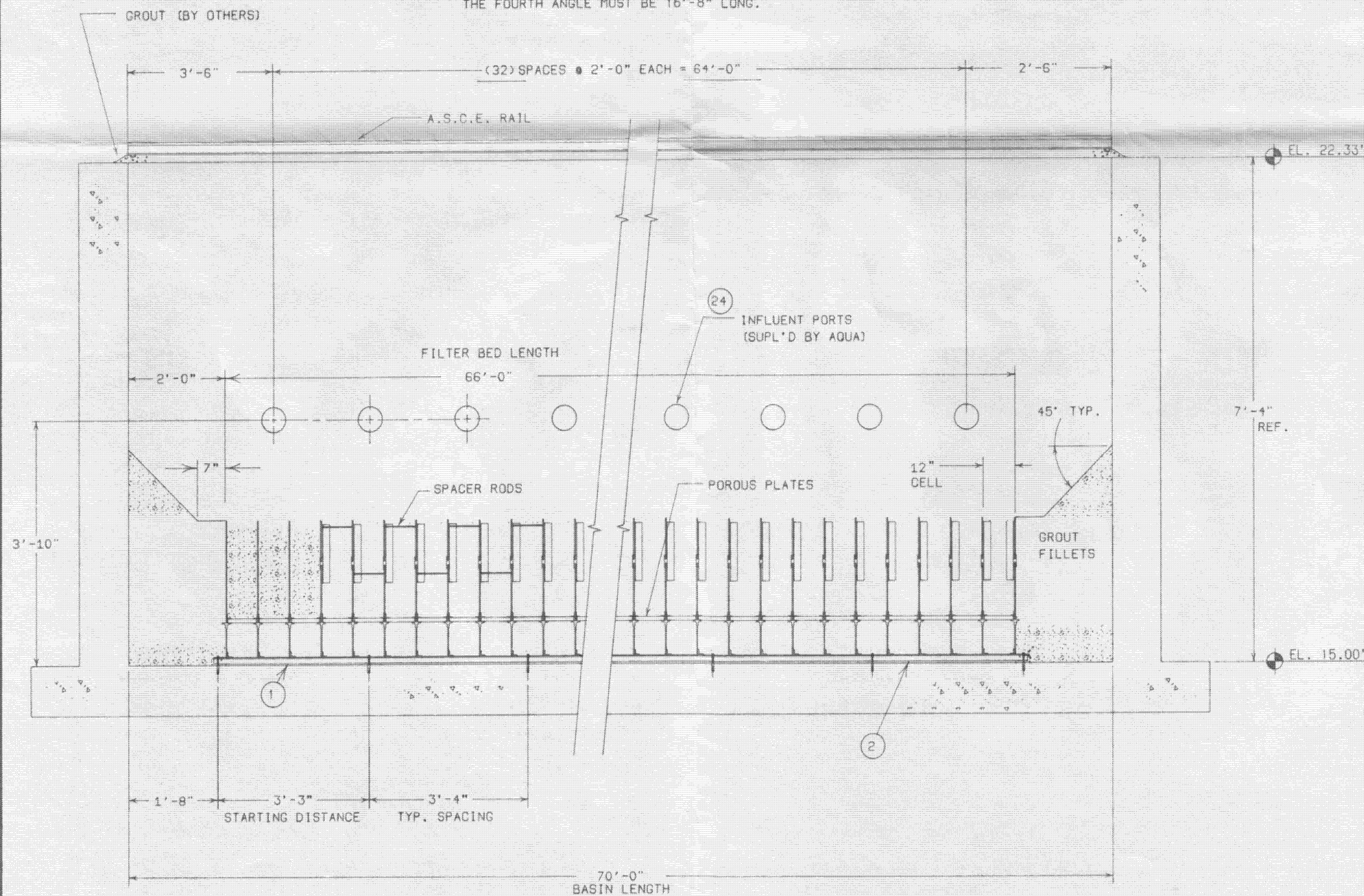


ANCHORING DETAIL

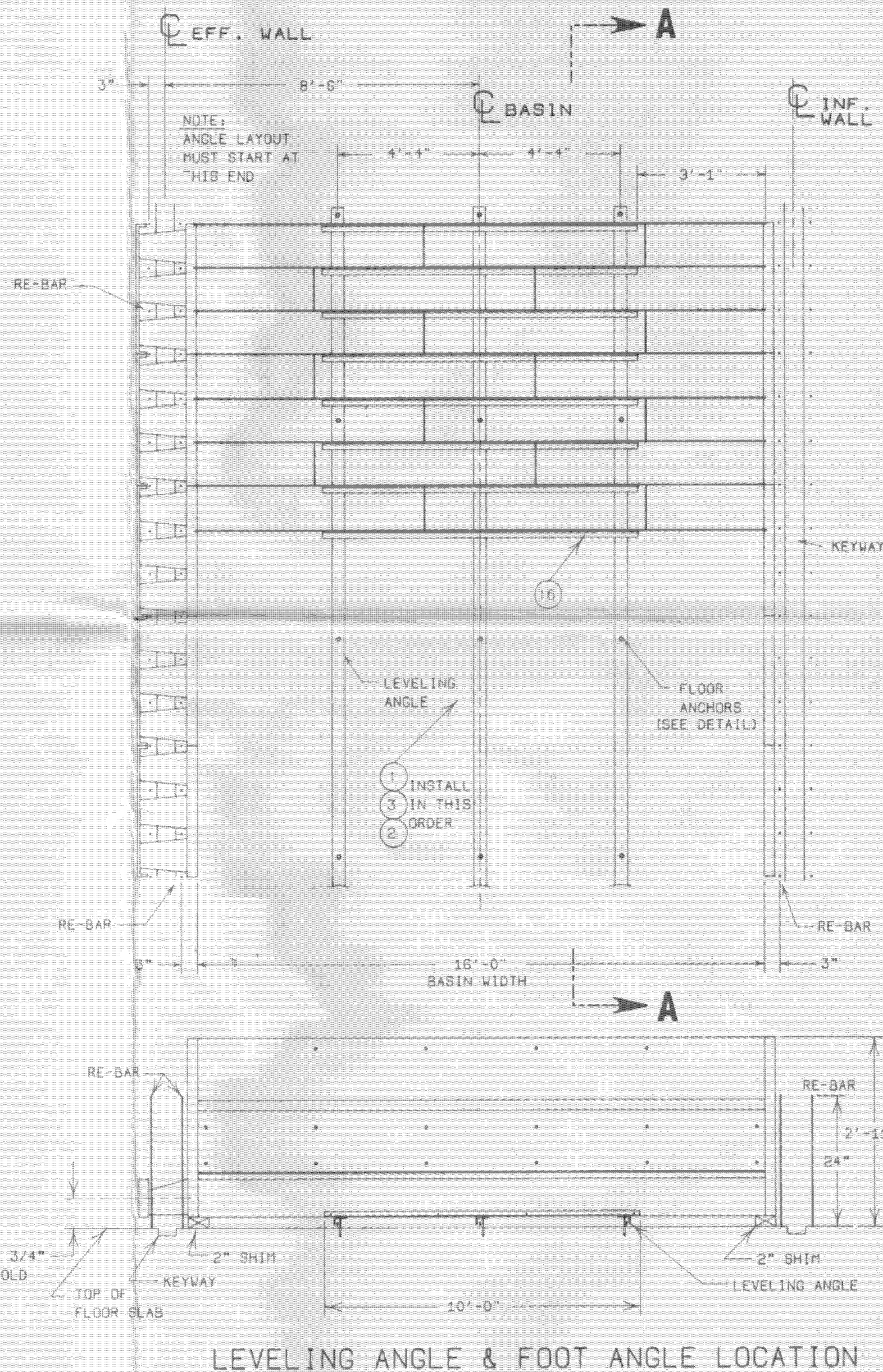
NOTE: FOR PROPER INSTALLATION DRILL 27/32" DIA. HOLE, 2 9/16" DEEP.
 NOTE: FOR INSTALLATION OF UNDERDRAIN FLOOR ANCHORS USE LEVELING ANGLE AS TEMPLATE FOR LOCATION OF HOLES. THE FIRST & SECOND ANGLES USED MUST BE 20'-0" LONG, THE THIRD ANGLE MUST BE 10'-0" LONG, THE FOURTH ANGLE MUST BE 16'-8" LONG.

NOTES:

- 1) IT IS RECOMMENDED THAT THE INSTALLING CONTRACTOR/ OWNER FAMILIARIZE THEMSELVES WITH THE INSTALLATION PROCEDURES SUPPLIED IN EACH MANUAL, BEFORE STARTING ANY CIVIL CONSTRUCTION ON THE FILTER SYSTEM.
- 2) AQUA-AEROBIC SYS. WILL FURNISH A PNEUMATIC CAULKING GUN. GUN INCLUDES 10 FT. HOSE ASSEMBLY AND HAS A PRESSURE OF 70 PSI. OPERATING PRESSURE APPROXIMATE 50 PSI.
- 3) SEE UNDERDRAIN MANUAL FOR COMPLETE INSTALLATION INSTRUCTIONS.



VIEW A-A



LEVELING ANGLE & FOOT ANGLE LOCATION

JOB NAME: SOUTHWEST REGIONAL WWTP		RM CODE:	AQUA-AEROBIC SYSTEMS, INC.
JOB LOCATION: MANATEE COUNTY, FLORIDA		ACT. WT:	MANUFACTURERS OF WASTEWATER TREATMENT EQUIPMENT
ENGINEERS: MANATEE COUNTY PW DEPT.		ASS'Y NO.:	
		DO NOT SCALE DRAWING	
DRN BY: DRT	DATE: 3-15-91	NAME: UNDERDRAIN	
CKD BY:	APP. BY:	INSTALLATION	
SCALE:		DETAILS ABF-1666	
HP/SIZE:		SHEET 1 OF 3	
TYPE: MANATESW\10458102		PART NO. 92724801	
REF. ECO DATE BY	REVISION		

NO.	DATE	DR	NA	REVISION	CHK	APVD	NA

SWWRF ABW FILTER REHAB
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FLORIDA

UNDERDRAIN INSTALLATION DETAILS

REFERENCE ONLY

DATE	APRIL 2017
PROJ	491792
DWG	R-13
SHEET	ShNum of ShTot

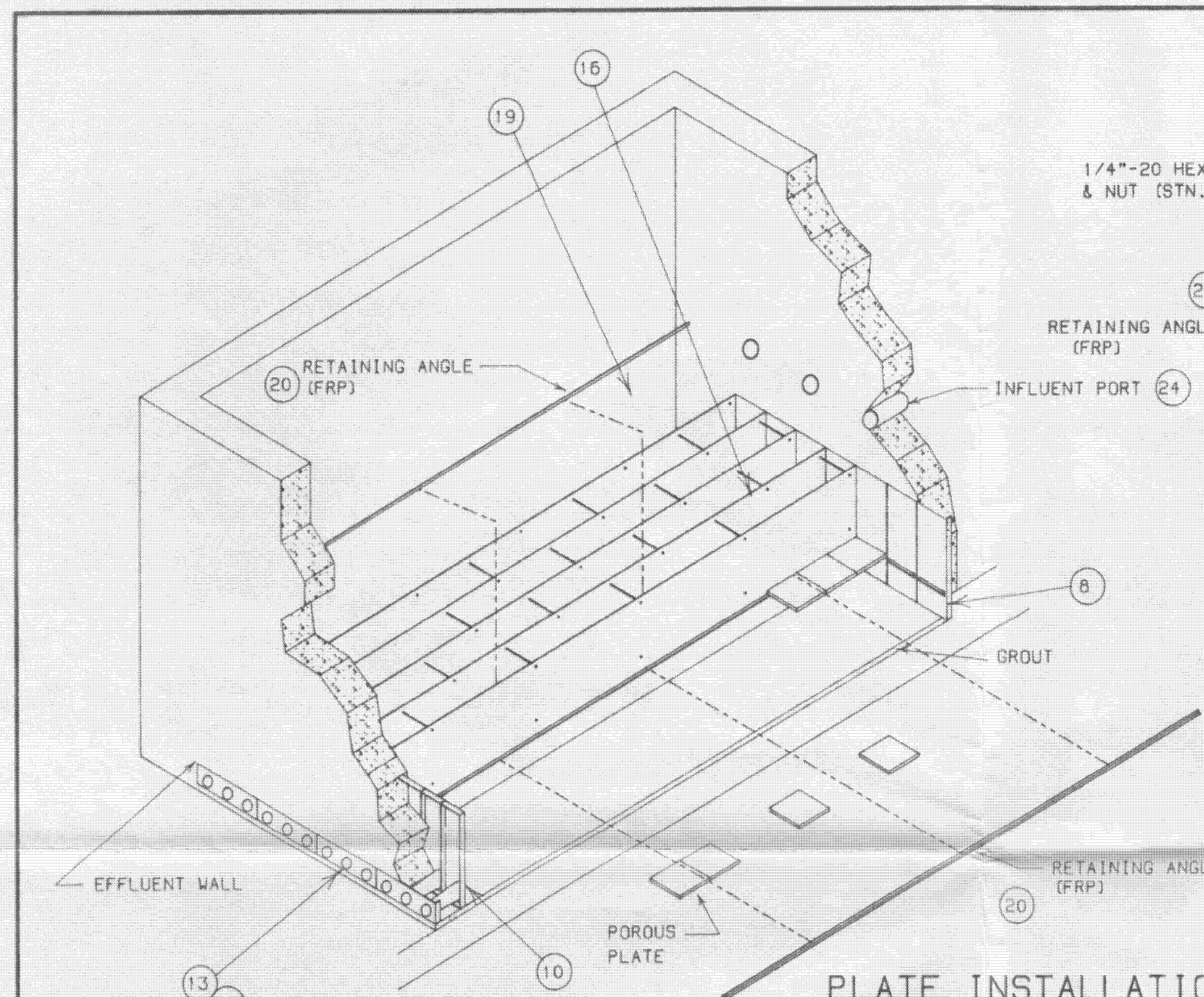
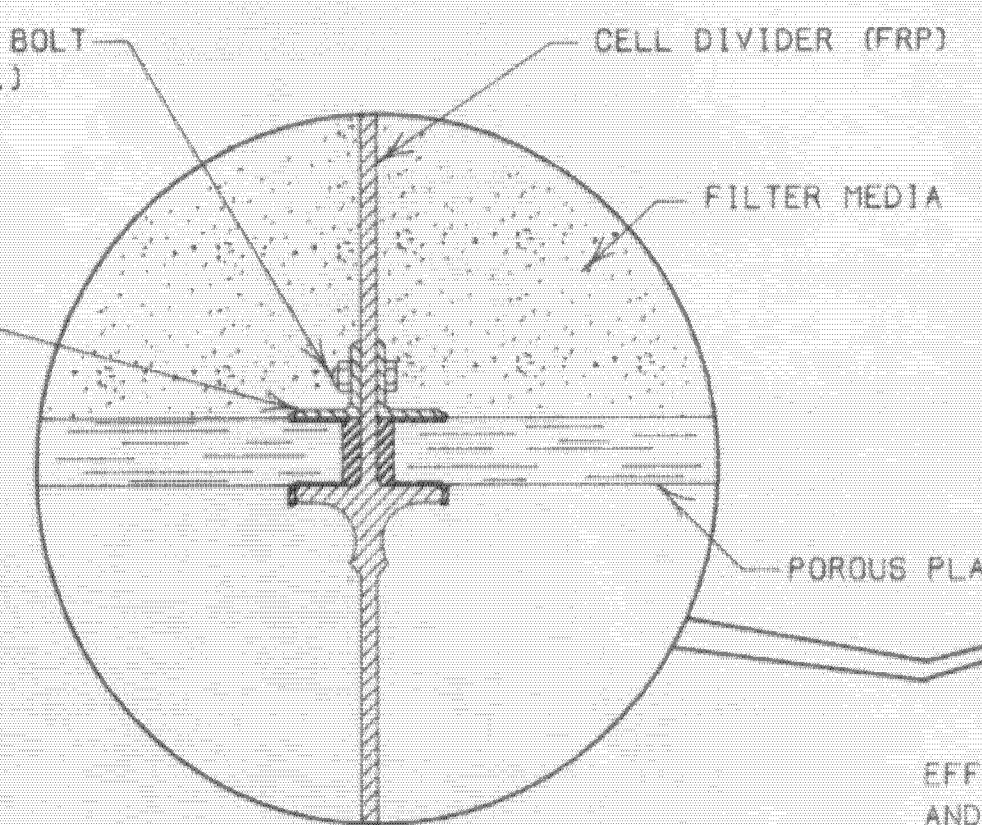


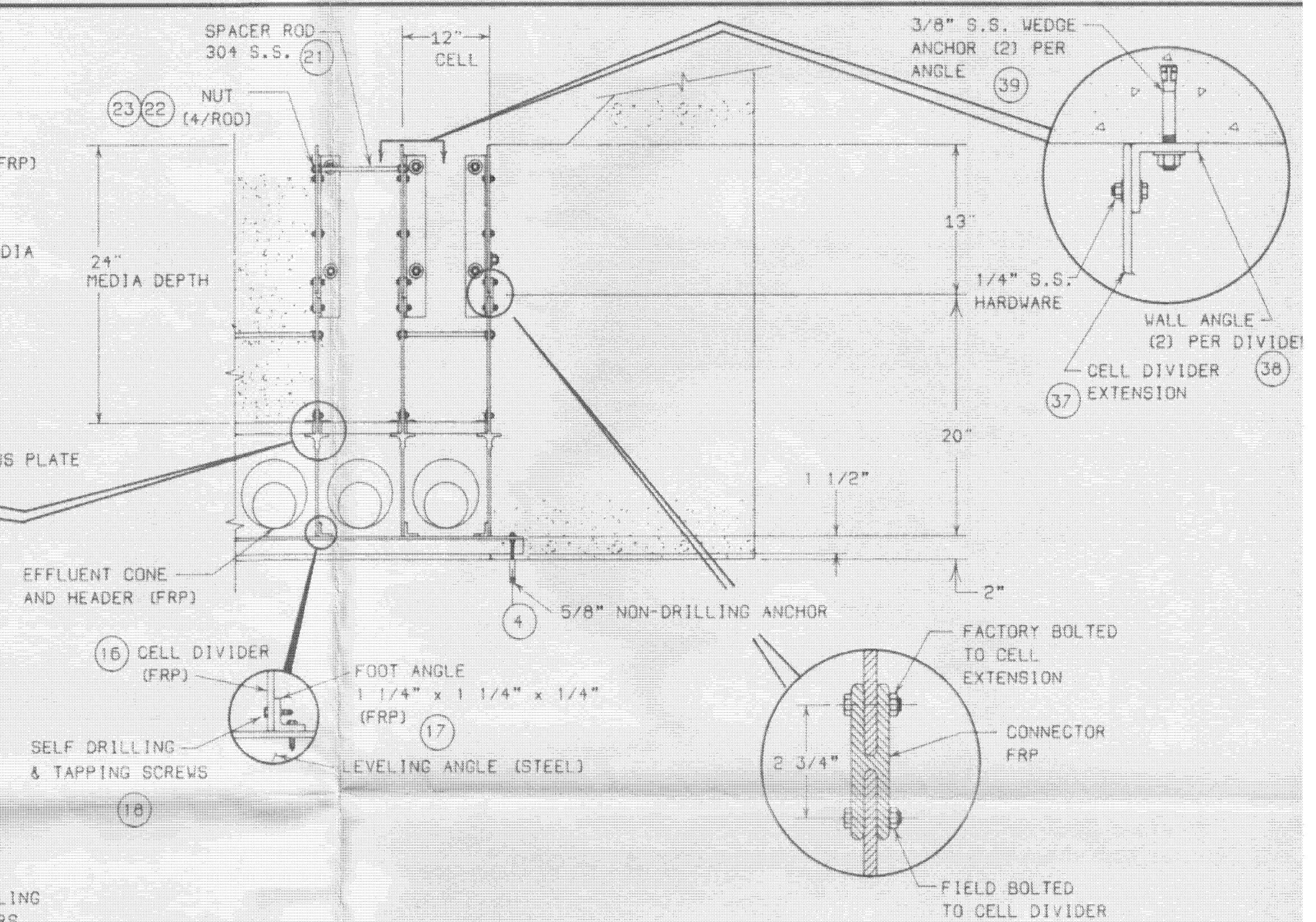
PLATE INSTALLATION



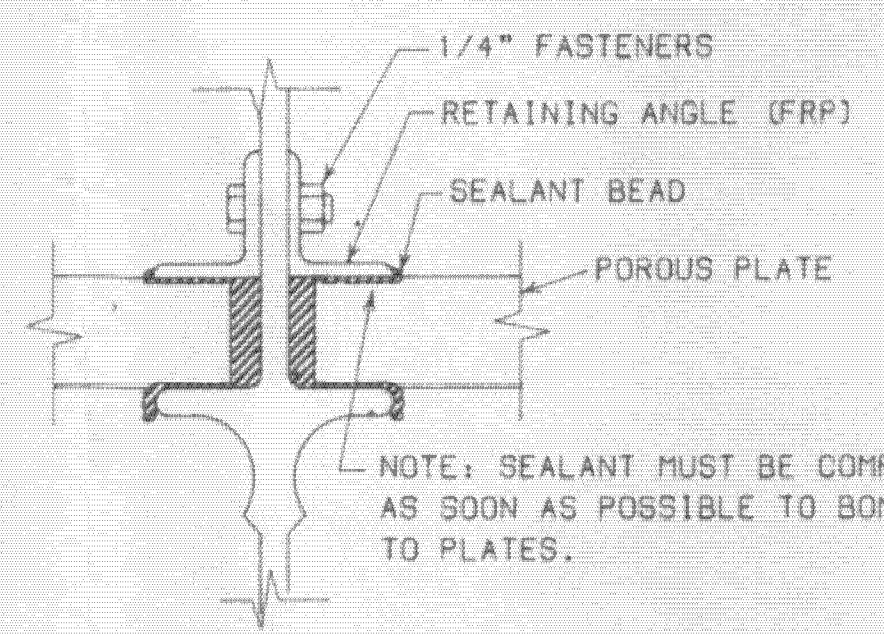
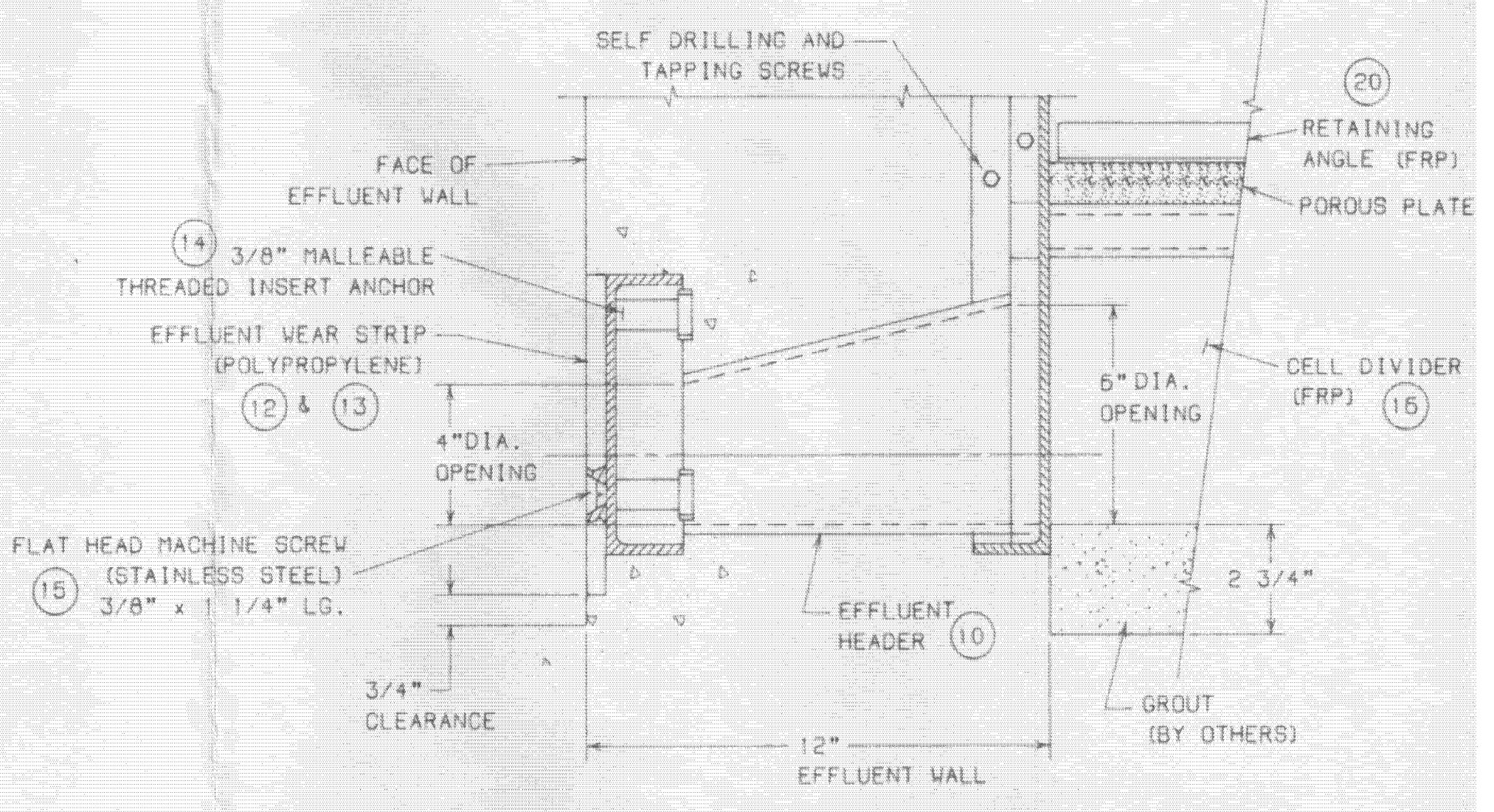
SEALING DETAIL

UPON RECEIPT OF APPROVALS THE CONTRACTOR WILL RECEIVE SIX COPIES OF UNDERDRAIN INSTALLATION PROCEDURES AND CAULKING INSTRUCTIONS. THESE PROCEDURES MUST BE FOLLOWED COMPLETELY TO INSURE A PROPERLY SEALED UNDERDRAIN SYSTEM. POLYURETHANE SEALANT FURNISHED IN 11 OZ. TUBES.

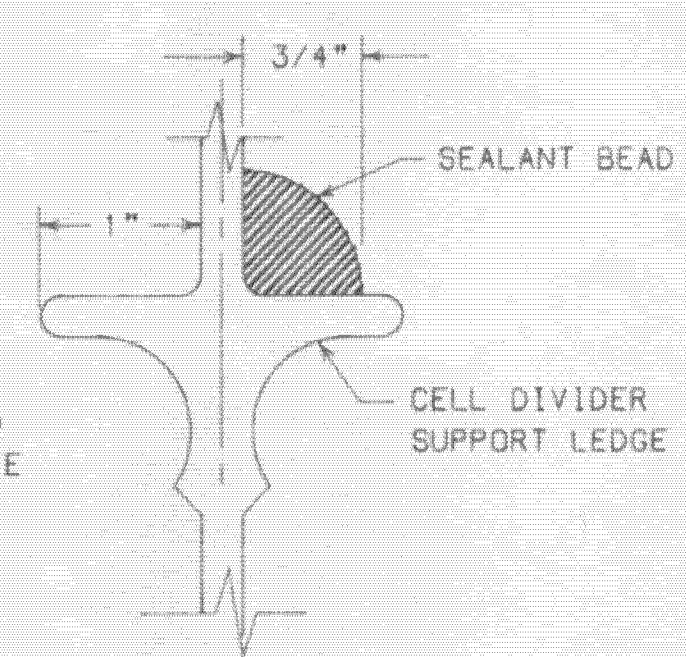
NOTE: SPECIAL CARE MUST BE TAKEN WHEN INSTALLING MEDIA. MEDIA MUST BE INSTALLED IN LAYERS (MAX. 3") FOR ENTIRE BED LENGTH UNTIL EACH CELL HAS PROPER MEDIA DEPTH.



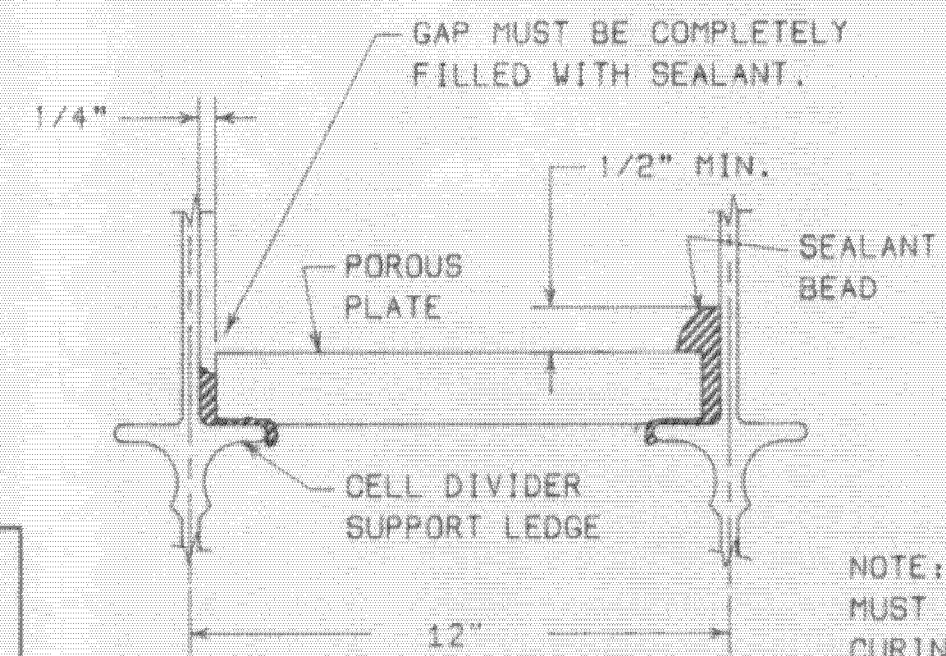
EFFLUENT HEADER



NOTE: SEALANT MUST BE COMPRESSED AS SOON AS POSSIBLE TO BOND ANGLE TO PLATES.



NOTE: SEALED UNDERDRAIN SYS. MUST BE ALLOWED A MIN. 7 DAYS CURING TIME PRIOR TO INSTALLING FILTER MEDIA.



NOTES:

- A. AQUA-AEROBIC SYSTEMS, INC. WILL NOT ASSUME ANY RESPONSIBILITY FOR FAILURE OF PLATE SEALS, AND IT IS VERY IMPORTANT THAT THE INSTALLING WORKMEN USE CAUTION DURING INSTALLATION TO ASSURE A TOTALLY SEALED UNDERDRAIN SYSTEM.
- B. REFER TO UNDERDRAIN INSTALLATION MANUAL FOR COMPLETE INSTRUCTIONS.

STORAGE:
UPON ARRIVAL AT THE SITE OF INSTALLATION, POROUS PLATES SHALL BE CAREFULLY UNLOADED AND INSPECTED FOR DAMAGE. IF INSTALLATION IS NOT IMMEDIATE, PLATES SHALL BE STORED IN A WEATHERPROOF BUILDING RAISED UP OFF THE FLOOR.

JOB NAME: SOUTHWEST REGIONAL WWTP		RM CODE:	AQUA-AEROBIC SYSTEMS, INC.	
JOB LOCATION: MANATEE COUNTY, FLORIDA		ACT. WT:	NOM. WT:	MANUFACTURER OF WASTEWATER TREATMENT EQUIPMENT
ENGINEERS: MANATEE COUNTY PW DEPT.		ASS'Y NO.:	NAME: UNDERDRAIN INSTALLATION DETAILS ABF-1666	
		DO NOT SCALE DRAWING		
		DRN BY: DRT	DATE: 3-15-91	
		CKD BY:	APP. BY:	
		SCALE:	SHEET 2 OF 3	
		HP/SIZE:	PART NO. 92724B01	
		TYPE: MANATESW\10458103		
REF.	ECO	DATE	BY	REVISION

NO.	DATE	DR	REVISION	BY
DSGN	NA	NA	CHK	APVD
			T LOOSE	NA

REFERENCE ONLY

SWWRF ABW FILTER REHAB

MANATEE COUNTY UTILITIES

MANATEE COUNTY, FLORIDA

UNDERDRAIN INSTALLATION DETAILS

DATE	APRIL 2017
PROJ	491792
DWG	R-14
SHEET	ShNum of ShtTot

SYMBOL LEGEND

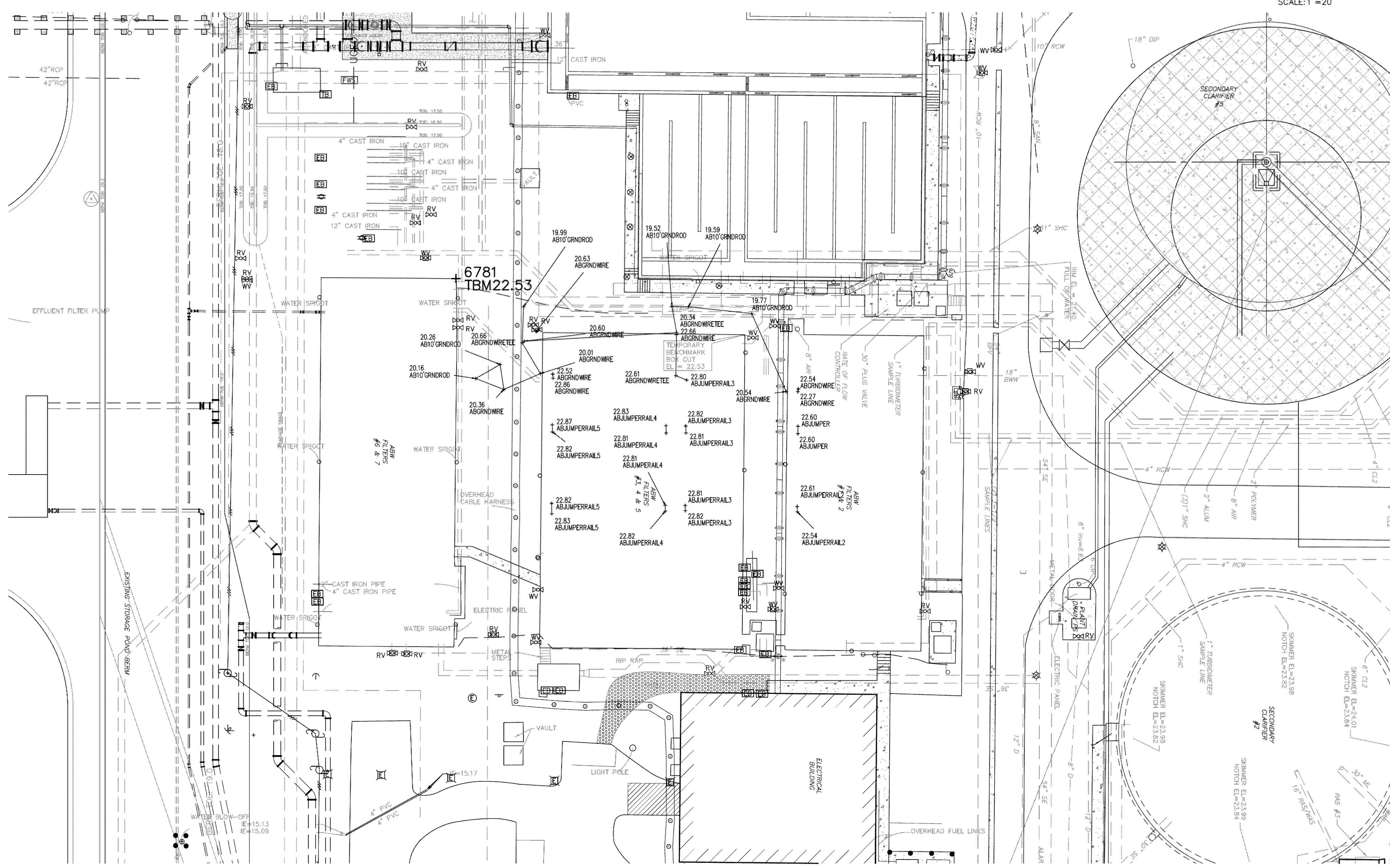
- | | | | |
|---|---|--|---|
| <ul style="list-style-type: none"> + 25.25 = POINT OF ELEVATION 25.2' = DIMENSION FROM BUILDING TO BOUNDARY / RIGHT-OF-WAY LINE ○ = BACKFLOW PREVENTER ● = BOLLARD or POST □ = BOX, CABLE TELEVISION □ = BOX, ELECTRIC UTILITY □ = BOX, ELECTRIC UTILITY (TRANSFORMER) □ = BOX, TELEPHONE ⊕ = DECORATIVE LIGHT POLE ⊕ = ELECTRIC OUTLET ⊕ = FIRE HYDRANT — = FLAGPOLE | <ul style="list-style-type: none"> □ = FLARED END SECTION □ = GROUND LIGHT ⊕ = GUY ANCHOR ⊕ = LIGHT POLE, CONCRETE ⊕ = LIGHT POLE, METAL ⊕ = LIGHT POLE, WOOD ⊕ = MAILBOX ⊕ = MANHOLE, ELECTRIC ⊕ = MANHOLE, GREASE TRAP ⊕ = MANHOLE, SANITARY SEWER ⊕ = MANHOLE, STORM SEWER ⊕ = MANHOLE, TELEPHONE ⊕ = METER, ELECTRIC ⊕ = METER, GAS ⊕ = METER, RECLAIMED WATER ⊕ = METER, WATER ⊕ = MITERED END SECTION ⊕ = MONITORING WELL ⊕ = PEDESTRIAN CROSSING SIGNAL ⊕ = SANITARY CLEANOUT ⊕ = SCHEDULE B-2 ITEM ⊕ = TELEPHONE RISER ⊕ = TRAFFIC SIGN ⊕ = TRAFFIC SIGNAL BOX ⊕ = TRAFFIC SIGNAL POLE | <ul style="list-style-type: none"> — = UNDERGROUND CABLE TELEVISION MARKER — = UNDERGROUND CABLE TELEVISION WARNING SIGN — = UNDERGROUND ELECTRIC MARKER — = UNDERGROUND ELECTRIC WARNING SIGN — = UNDERGROUND FIBER OPTIC MARKER — = UNDERGROUND FIBER OPTIC WARNING SIGN — = UNDERGROUND FORDHAM MARKER — = UNDERGROUND FORDHAM WARNING SIGN — = UNDERGROUND GAS MARKER — = UNDERGROUND GAS WARNING SIGN — = UNDERGROUND RECLAIMED WATER MARKER — = UNDERGROUND RECLAIMED WATER WARNING SIGN — = UNDERGROUND SANITARY SEWER MARKER — = UNDERGROUND SANITARY SEWER WARNING SIGN — = UNDERGROUND TELEPHONE MARKER — = UNDERGROUND TELEPHONE WARNING SIGN — = UNDERGROUND WATER MARKER — = UNDERGROUND WATER WARNING SIGN — = UTILITY POLE, CONCRETE — = UTILITY POLE, METAL — = UTILITY POLE, WOOD ⊕ = VALVE, GAS ⊕ = VALVE, RECLAIMED WATER ⊕ = VALVE, SANITARY ⊕ = VALVE, WATER ⊕ = WELL | <p>STORM CURB INLETS</p> <ul style="list-style-type: none"> — = CONCRETE — = ASPHALT — = CONCRETE PAVERS — = BRICK — = BACK OF CURB — = EDGE OF PAVEMENT |
|---|---|--|---|

SECTION 8, TOWNSHIP 35 S., RANGE 17 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 ATLAS 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 THIS 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 SITE DATUM NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).
11. THIS SURVEY IS BASED ON U.S. FEET.
12. THE PURPOSE OF THIS SURVEY IS TO SHOW THE NEWLY CONSTRUCTED POWER LINES.



CERTIFICATION

CERTIFIED TO: BRANDIES 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 53-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027 FLORIDA STATUTES.

1-17-2017
 DATE OF SURVEY

Dan Rizzo
 DAN H. RIZZUTO
 PROFESSIONAL LAND SURVEYOR
 LICENSE NUMBER LS 5227
 STATE OF FLORIDA

PROJECT: **SOUTHWEST WATER RECLAIMED FACILITY**
 TYPE OF SURVEY: **RECORD SURVEY**
 PREPARED FOR: **BRANDIES DESIGN BUILD**

POLARIS ASSOCIATES, INC.
 PROFESSIONAL SURVEYING LB 6113
 2165 SUNNYDALE BOULEVARD, SUITE D
 CLEARWATER, FLORIDA 33765
 (727) 461-6113

DATE OF SURVEY: 1-17-2017

CHECKED BY: JDF DRAWN BY: JDF JOB NO: 04-3022 DRAWING PATH: H:\N\3022\DWG\3022 YARD PIPE ASBUILT REV1.DWG SHEET 1 OF 1

LEGEND

- | | | | | | |
|---|---|---|--|---|---|
| <ul style="list-style-type: none"> 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 CPI = CONDOMINIUM PLAT BOOK C/T = CURB TIE (D) = DEED DATA (D) = DEED BOOK DIP = DUCTILE IRON PIPE | <ul style="list-style-type: none"> ECMP = ELLIPTICAL CORRUGATED METAL PIPE EL = ELEVATION EP = EDGE OF PAVEMENT ERCP = ELLIPTICAL REINFORCE CONCRETE PIPE (F) = FIELD DATA FOM = FOUND CONCRETE MONUMENT FOT = FLORIDA DEPARTMENT OF TRANSPORTATION FIR = FOUND IRON ROD FND = FOUND NAIL & DISC FOP = FOUND OPEN PIPE FFF = FOUND FINCHED PIPE FPS = FOUND RAILROAD SPIKE F/T = FENCE TIE | <ul style="list-style-type: none"> 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 (P) = OFFICIAL RECORDS BOOK (P) = PLAT DATA SEC = SECTION SHW = SEASONAL HIGH WATER | <ul style="list-style-type: none"> PG = PAGE PLS = PROFESSIONAL LAND SURVEYOR PDB = 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 (R) = RAILROAD SEC = SECTION SHW = SEASONAL HIGH WATER | <ul style="list-style-type: none"> SIR = SET IRON ROD 1/2" LB 6113 SND = SET NAIL & DISC LB 6113 SR = STATE ROAD ST = SIDEWALK TIE STY = STORY SW = SIDEWALK TBM = TEMPORARY BENCH MARK (TYP) = TYPICAL RCF = REINFORCE CONCRETE PIPE RLS = REGISTERED LAND SURVEYOR R/W = RIGHT-OF-WAY W = WITH WF = WOOD FENCE W/T = WALL TIE | <ul style="list-style-type: none"> — = 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 FORDHAM — = APPROXIMATE LOCATION OF UNDERGROUND RECLAIMED WATER LINE — = APPROXIMATE LOCATION OF UNDERGROUND SANITARY SEWER LINE — = APPROXIMATE LOCATION OF UNDERGROUND STORM SEWER LINE |
|---|---|---|--|---|---|

DATE	NUMBER	REVISIONS	BY
9-29-15	4	ADD ADDITIONAL AS-BUILT INFORMATION	JDF
5-15-15	3	ADD ADDITIONAL AS-BUILT INFORMATION	JDF
2-17-15	2	ADD ADDITIONAL AS-BUILT INFORMATION	JDF
10-9-14	1	ADD ADDITIONAL AS-BUILT INFORMATION	RED

NO.	DATE	DR	REVISION	CHK	APVD	BY	APVD

SWWRFB ABW FILTER REHAB
 MANATEE COUNTY UTILITIES
 MANATEE COUNTY, FLORIDA

REFERENCE ONLY
SURVEY

DATE: APRIL 2017
 PROJ: 491792
 DWG: R-15
 SHEET: ShtNum of ShtTot

H:\N\3022\DWG\3022 YARD PIPE ASBUILT REV1.DWG, 3/1/2017 9:07:52 AM, JDF

09/20/98 12:57:48 AD-12

DRAWINGS FOR

MANATEE COUNTY, FLORIDA

PUBLIC WORKS DEPARTMENT

SOUTHWEST REGIONAL WASTEWATER TREATMENT PLANT

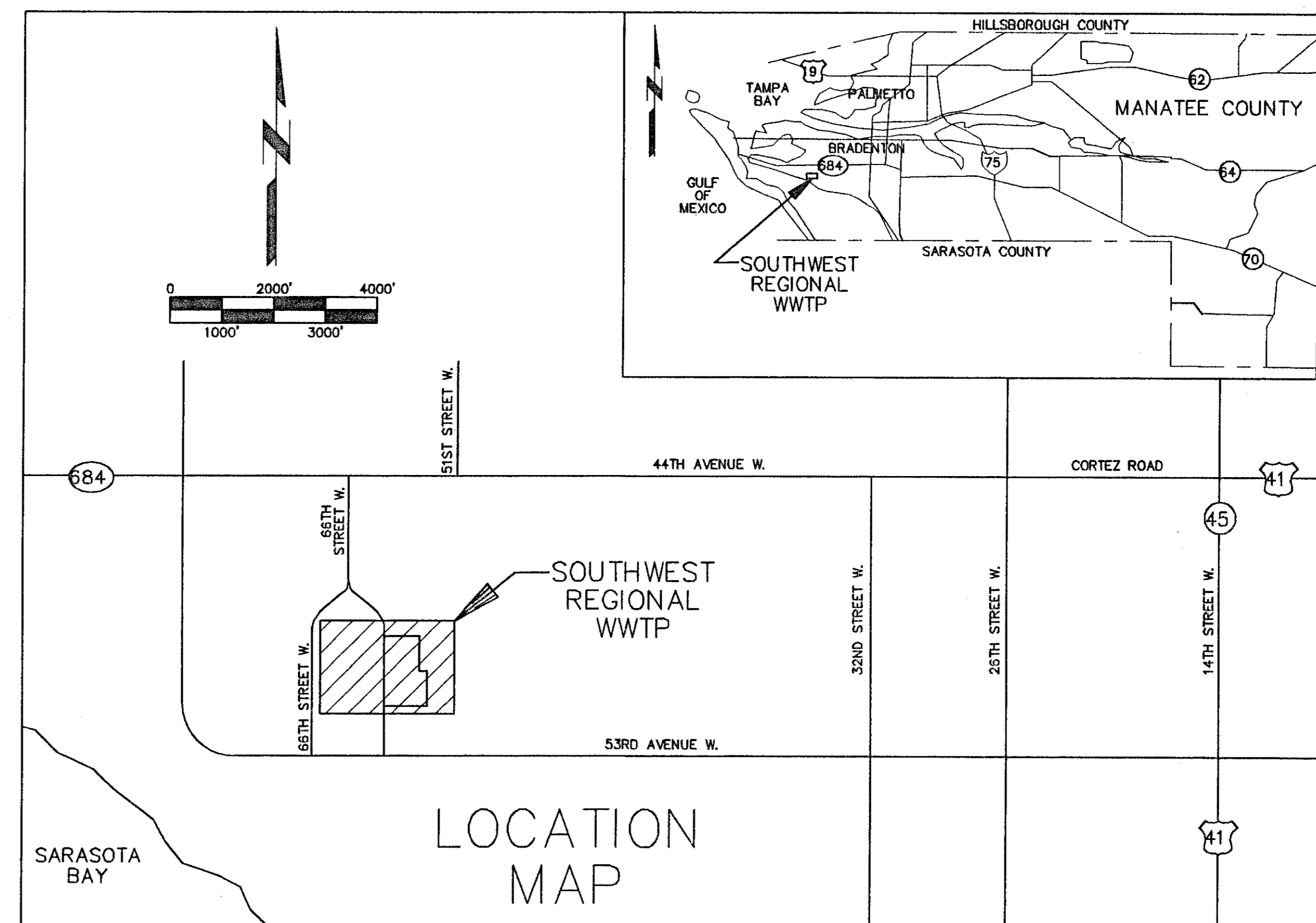
AUTOMATIC BACKWASH FILTERS ADDITION

MAY, 1996



CONFORMED TO CONSTRUCTION RECORDS

Andrew A. Westfield
11-5-01

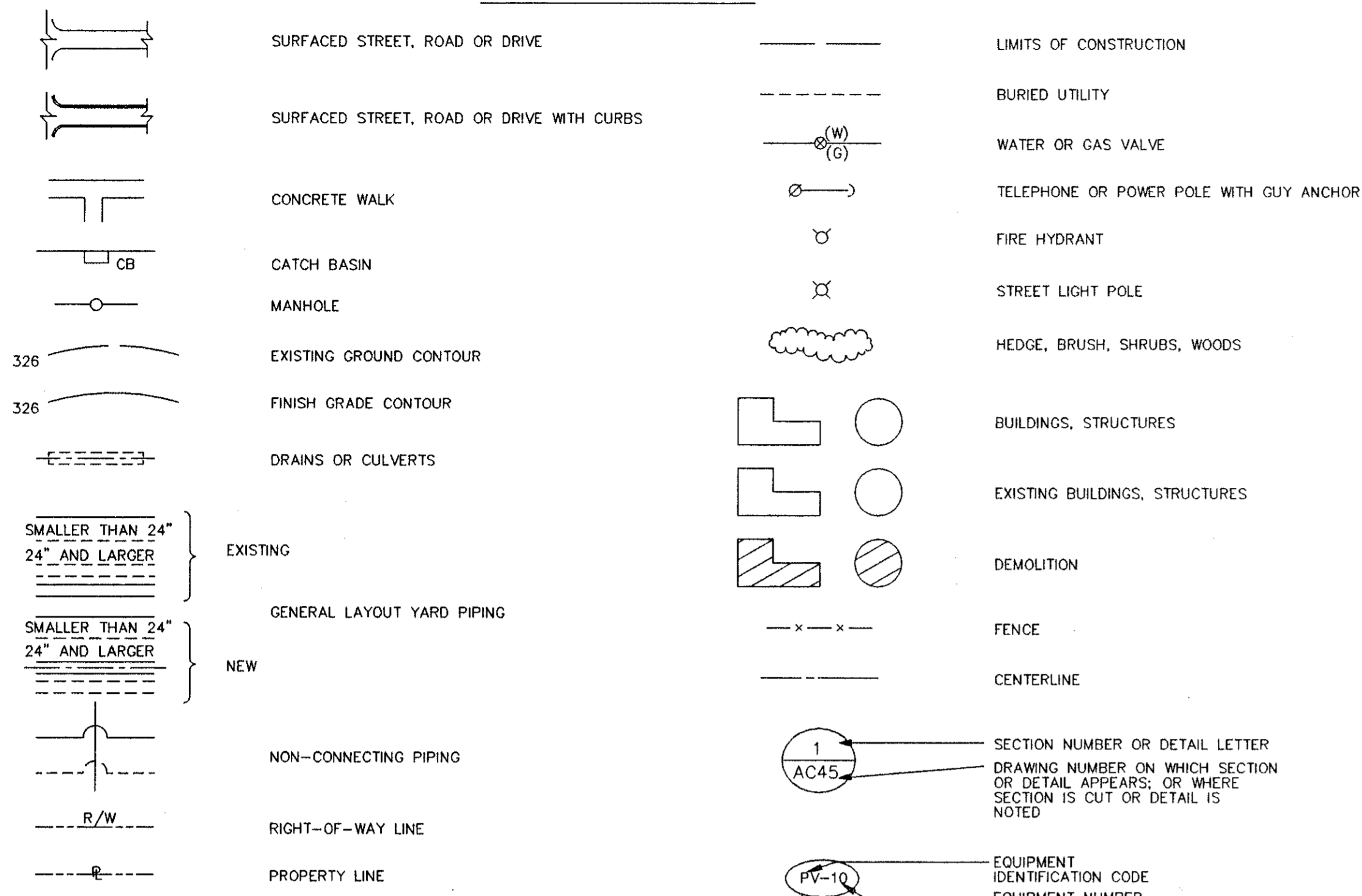


Andrew A. Westfield
11-5-01

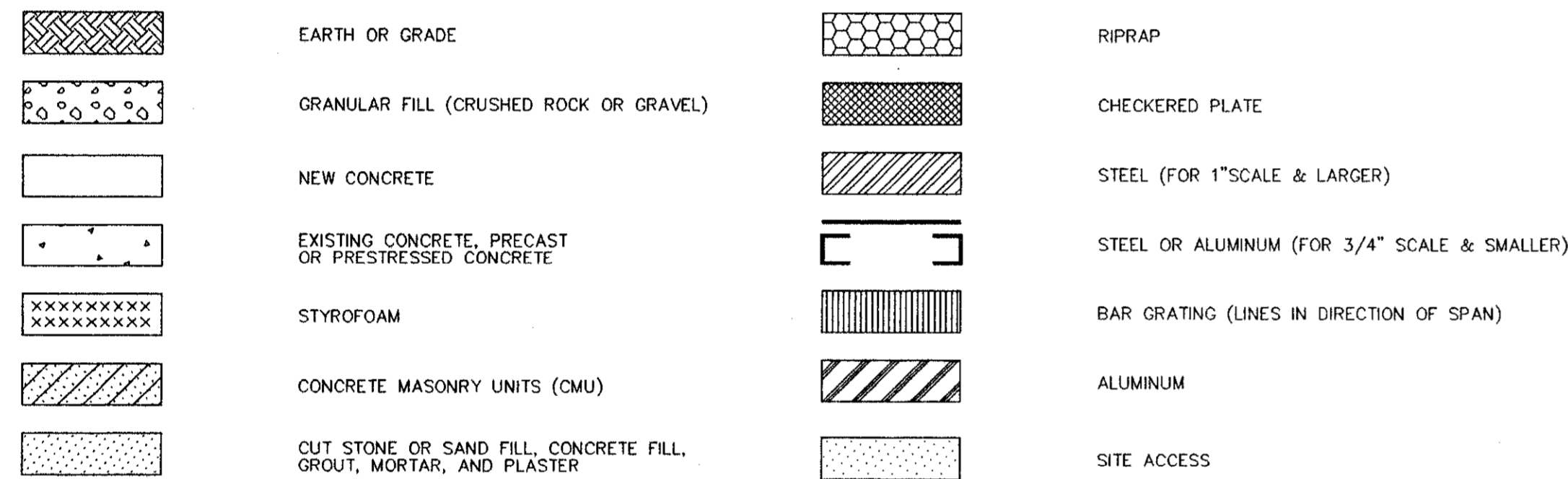
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GENERAL LEGEND

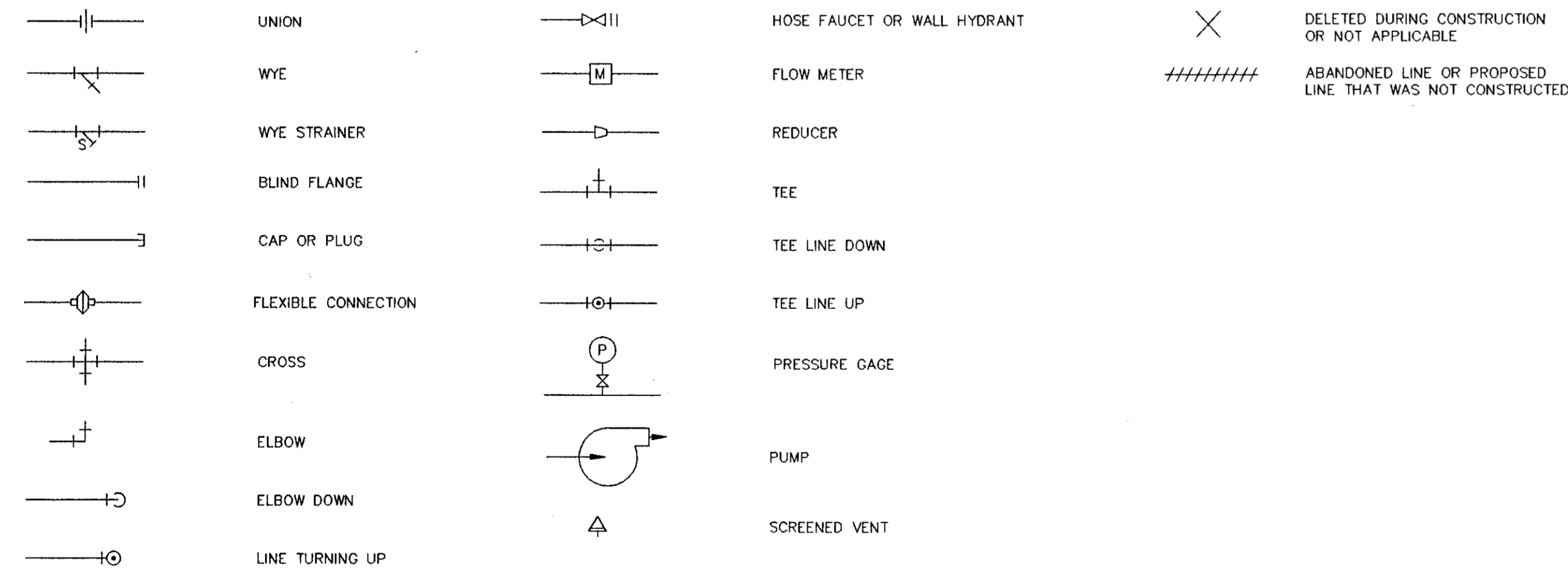
GENERAL LEGEND



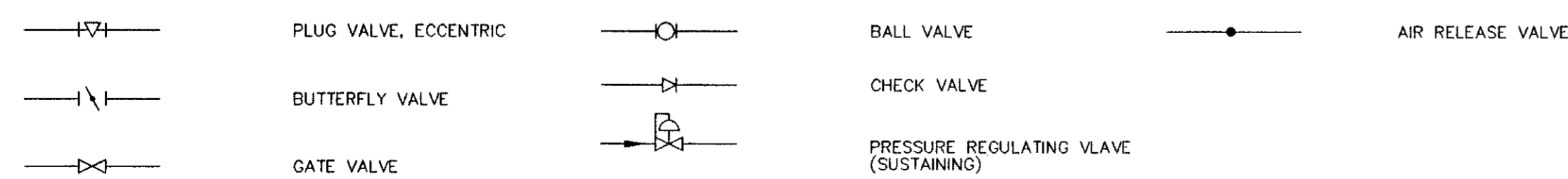
MATERIALS LEGEND



PIPING ACCESSORIES LEGEND



VALVE LEGEND



OPERATOR LEGEND



DESIGNATION

TITLE 1

- COVER SHEET
- G-1 SHEET LIST, ABBREVIATIONS
- G-2 GENERAL NOTES AND
- C-1 OVERALL SITE PLAN
- C-2 SITE PLAN
- C-2a SITE PLAN
- C-2b SITE PLAN
- C-2c SITE PLAN
- C-3 ENLARGED SITE PLAN
- C-3a ENLARGED SITE PLAN
- MARS-1 SITE PLAN
- MARS-2 SITE PLAN
- M-1 NEW AUTOMATIC BACKWASH FILTERS
- M-1A NEW AUTOMATIC BACKWASH FILTERS
- M-2 NEW AUTOMATIC BACKWASH FILTERS
- M-3 NEW AUTOMATIC BACKWASH FILTERS
- M-4 NEW AUTOMATIC BACKWASH FILTERS
- M-5 NEW METERING VAULT AND
- M-6 PLANT DRAIN PUMPING STATION AND
- M-7 NEW DISC FILTERS AND
- M-8 CHLORINE FEED SYSTEM AND
- M-9 NEW EFFLUENT FILTERS PUMPING STATION
- D-1 MISCELLANEOUS DETAILS
- D-2 MISCELLANEOUS DETAILS
- D-3 MISCELLANEOUS DETAILS
- D-4 STANDARD CONCRETE DETAILS
- E-1 ELECTRICAL
- E-2 ELECTRICAL
- E-3 ELECTRICAL
- E-4 ELECTRICAL
- E-5 ELECTRICAL
- E-6 ELECTRICAL
- E-7 ELECTRICAL
- E-8 ELECTRICAL
- E-9 ELECTRICAL
- E-10 ELECTRICAL
- E-11 ELECTRICAL
- 9/11 LANDSCAPE PLAN

SHEET LIST

TITLE 2

AND GENERAL LEGEND
EFFLUENT FILTRATION FLOW SCHEMATIC

ENLARGED SECTION
ENLARGED SECTION
ENLARGED SECTION

SITE PLAN & DETAILS
SITE PLAN & DETAILS
STRUCTURAL AND MECHANICAL
STRUCTURAL AND MECHANICAL
STRUCTURAL AND MECHANICAL
STRUCTURAL AND MECHANICAL
NEW OUTFALL JUNCTION BOX
ABW FILTER WEIR PLATE
CHLORINE CONTACT CHAMBERS DRAIN PUMP
ALUM FEED SYSTEM
STRUCTURAL AND MECHANICAL

LEGEND AND ABBREVIATIONS

SITE PLAN
ONE-LINES
SCHEMATICS
ABW FILTER NO. 6 & 7
POWER AND LIGHTING PLANS
POWER PLANS
EXISTING ELECTRICAL BUILDING PLAN
CIRCUIT SCHEDULE
DUCT BANK SECTIONS
PANELBOARD & LIGHTING FIXTURE

TITLE 3

ASBUILT PIPE & FITTING PLAN
ASBUILT PIPE & FITTING PLAN
ASBUILT PIPE & FITTING PLAN

TOP PLAN
SECTIONAL PLAN
SECTIONS
SECTIONS
SECTIONS
PLANS AND SECTIONS
MODIFICATIONS
PLANS AND SECTIONS
MODIFICATIONS
PLAN AND SECTION

LIGHTING AND POWER PLAN

AND RACEWAY SCHEDULE
SCHEDULES AND DETAILS

ABBREVIATIONS

ABW	AUTOMATIC BACKWASH FILTER	GV	GATE VALVE
ADMIN	ADMINISTRATION	HWL	HIGH WATER LEVEL
APPROX	APPROXIMATE	INF	INFLUENT
ARV	AIR RELEASE VALVE	INV	INVERT
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	JT	JOINT
BE	BURIED ELECTRIC	LB	POUND
BF	BLIND FLANGE	LWL	LOW WATER LEVEL
BFV	BUTTERFLY VALVE	MAINT	MAINTENANCE
BLDG	BUILDING	MAX	MAXIMUM
BV	BALL VALVE	MFR	MANUFACTURER
CB	CATCH BASIN	MG	MILLION GALLONS
CCC	CHLORINE CONTACT CHAMBER	MGD	MILLION GALLONS PER DAY
CI	CURB INLET	MH	MANHOLE
CL2	CHLORINE	MIN	MINIMUM
CL	CENTERLINE	MJ	MECHANICAL JOINT
CMP	CORRUGATED METAL PIPE	NO	NUMBER
CMU	CONCRETE MASONRY UNIT	OC	ON CENTER
CONC	CONCRETE	OD	OUTSIDE DIAMETER
CONT	CONTINUATION	OH	OVERHEAD
CV	CHECK VALVE	POCP	PRESTRESSED CONCRETE CYLINDER PIPE
CI	CURB INLET	PE	PLAIN END
DAF	DISSOLVED AIR FLOATATION	PL	PLATE
DAFT	DISSOLVED AIR FLOATATION THICKENER	PLCS	PLACES
DI	DIAMETER	PP	POWER POLE
DIA	DIAMETER	PS	PUMP STATION, PIPE SUPPORT
DIP	DUCTILE IRON PIPE	PV	PLUG VALVE
DISCH	DISCHARGE	PVC	POLYVINYL CHLORIDE
DWGS	DRAWINGS	PW	POTABLE WATER
DWLS	DOWELS	R/W	RIGHT-OF-WAY
EA	EACH	RAS	RETURN ACTIVATED SLUDGE
EA	EACH FACE	RCP	REINFORCED CONCRETE PIPE
EFF	EFFLUENT	REINF	REINFORCING
EL	ELEVATION	REOD	REQUIRED
ELEC	ELECTRIC	RW	REUSE WATER
ELECT	ELECTRICAL	SCH	SCHEDULE
EOP	EDGE OF PAVEMENT	SG	SLIDE GATE
EQUIP	EQUIPMENT	SH	SHEET
EW	EACH WAY	SLG	SLUICE GATE
EXIST	EXISTING	SN	SIGN
EXP JT	EXPANSION JOINT	SQ	SQUARE
FD	FLOOR DRAIN	SS	STAINLESS STEEL
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	STD	STANDARD
FH	FIRE HYDRANT	THD	THREADED
FHMS	FLAT HEAD MACHINE SCREW	TWAS	THICKENED WASTE ACTIVATED SLUDGE
FLG	FLANGE	T&B	TOP & BOTTOM
FM	FORCE MAIN	TYP	TYPICAL
GA	GAGE	WAS	WASTE ACTIVATED SLUDGE
GALV	GALVANIZED	WM	WATER MAIN
GP	GATE POST	W/	WITH

MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWTP
ABW FILTERS ADDITION

SHEET LIST, ABBREVIATIONS,
AND GENERAL LEGEND

G-1

SHEET
1 of 29

CONFORMED TO CONSTRUCTION RECORDS

DESIGNED AAW
 DETAILED RJE
 CHECKED WLK
 APPROVED T.A.CUMMINGS
 DATE 5/25/96



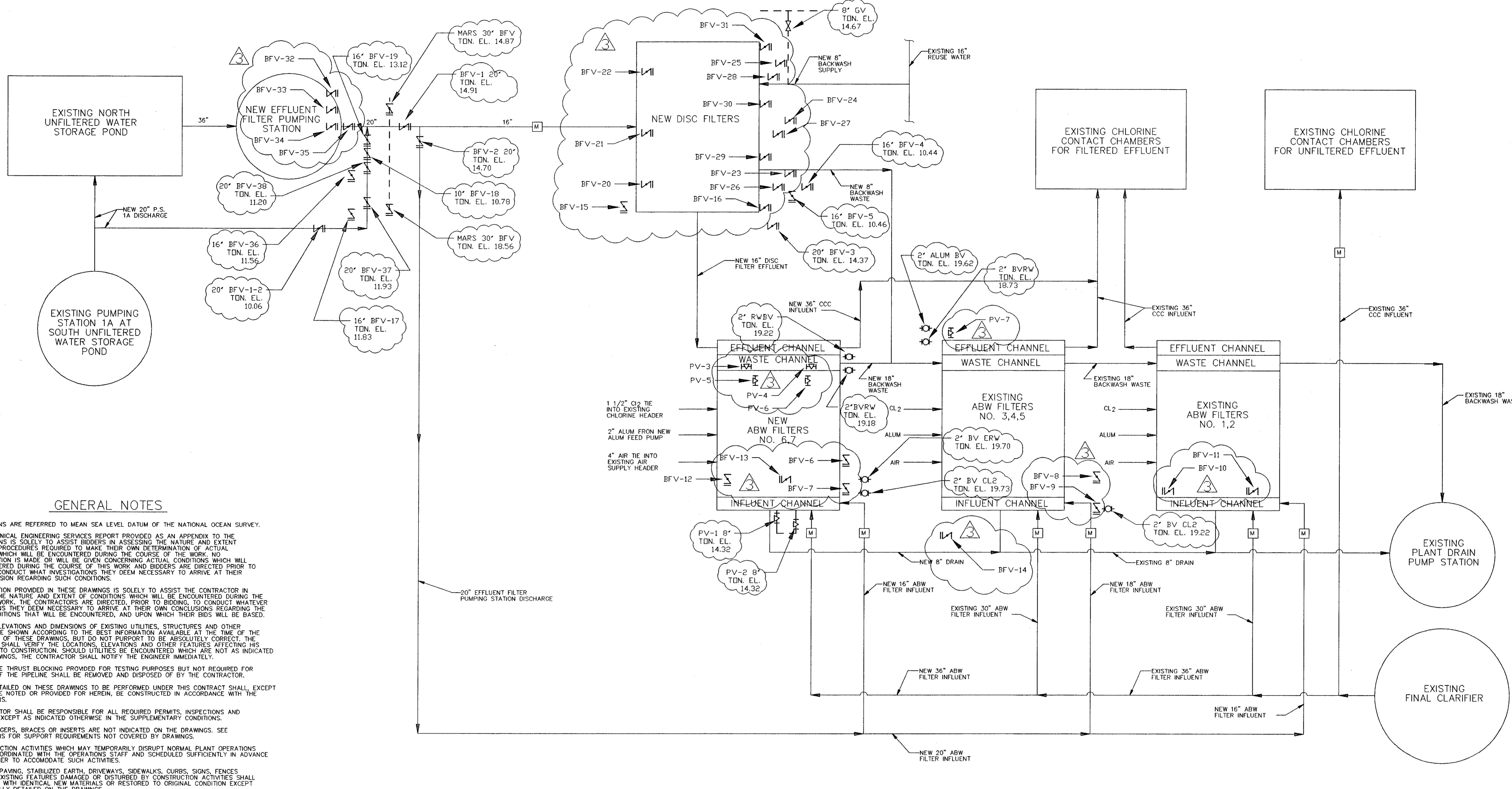
PROJECT NO.

27740

10/01/2001 12:13:55

2533-002

02/11/98 08:44:32 ACD-12.c3



GENERAL NOTES

1. ALL ELEVATIONS ARE REFERRED TO MEAN SEA LEVEL DATUM OF THE NATIONAL OCEAN SURVEY.
2. THE GEOTECHNICAL ENGINEERING SERVICES REPORT PROVIDED AS AN APPENDIX TO THE SPECIFICATIONS 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. THE INFORMATION PROVIDED IN THESE DRAWINGS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF WORK. THE CONTRACTOR IS DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
4. 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 DRAWINGS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS AND OTHER FEATURES AFFECTING HIS WORK PRIOR TO CONSTRUCTION. SHOULD UTILITIES BE ENCOUNTERED WHICH ARE NOT AS INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
5. ALL CONCRETE THRUST BLOCKING PROVIDED FOR TESTING PURPOSES BUT NOT REQUIRED FOR OPERATION OF THE PIPELINE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
6. ALL WORK DETAILED ON THESE DRAWINGS TO BE PERFORMED UNDER THIS CONTRACT SHALL, EXCEPT AS OTHERWISE NOTED OR PROVIDED FOR HEREIN, BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED PERMITS, INSPECTIONS AND APPROVALS EXCEPT AS INDICATED OTHERWISE IN THE SUPPLEMENTARY CONDITIONS.
8. ALL PIPE HANGERS, BRACES OR INSERTS ARE NOT INDICATED ON THE DRAWINGS. SEE SPECIFICATIONS FOR SUPPORT REQUIREMENTS NOT COVERED BY DRAWINGS.
9. ANY CONSTRUCTION ACTIVITIES WHICH MAY TEMPORARILY DISRUPT NORMAL PLANT OPERATIONS SHALL BE COORDINATED WITH THE OPERATIONS STAFF AND SCHEDULED SUFFICIENTLY IN ADVANCE FOR THE OWNER TO ACCOMMODATE SUCH ACTIVITIES.
10. ALL EXISTING PAVING, STABILIZED EARTH, DRIVEWAYS, SIDEWALKS, CURBS, SIGNS, FENCES AND OTHER EXISTING FEATURES DAMAGED OR DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED WITH IDENTICAL NEW MATERIALS OR RESTORED TO ORIGINAL CONDITION EXCEPT AS SPECIFICALLY DETAILED ON THE DRAWINGS.
11. CONTRACTOR SHALL BACKFILL EXCAVATIONS TO MATCH ORIGINAL GRADE EXCEPT WHERE MODIFIED GRADING IS SPECIFICALLY REQUIRED BY THE DRAWINGS.
12. CONTRACTOR SHALL MAINTAIN SURFACE WATER DRAINAGE PATHS THROUGHOUT CONSTRUCTION.
13. ALL BURIED PIPING SHALL HAVE A MINIMUM OF 36-INCHES OF COVER EXCEPT AS OTHERWISE INDICATED ON THE DRAWINGS.
14. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION SHALL NOT EXCEED 50% OF THE MANUFACTURER'S RECOMMENDED DEFLECTION ANGLE.
15. CONTRACTOR SHALL SOD ALL AREAS DISTURBED BY CONSTRUCTION IMMEDIATELY FOLLOWING WORK IN THE AREA AND SHALL MAINTAIN EROSION CONTROL THROUGHOUT CONSTRUCTION.

EFFLUENT FILTRATION FLOW SCHEMATIC

RECORD SURVEY
 RECORD INFORMATION BY
 WESTRA CONSTRUCTION CORP.
 1209 21st STREET, EAST
 PALMETTO, FL 34221 (941) 723-1611
 RICHARD C. MERRYMAN PLS 2827

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
10/09/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	1	AAW	FCG	FCG
3/28/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	2			
2-99	DESIGN UPDATE	1	AAW	FCG	FCG

CONFORMED TO CONSTRUCTION RECORDS
 Andrew Westra
 11-5-01

DESIGNED: AAW
 DETAILED: TCR
 CHECKED: WLK
 APPROVED: T.A. CUMMINGS
 DATE: 5/25/96

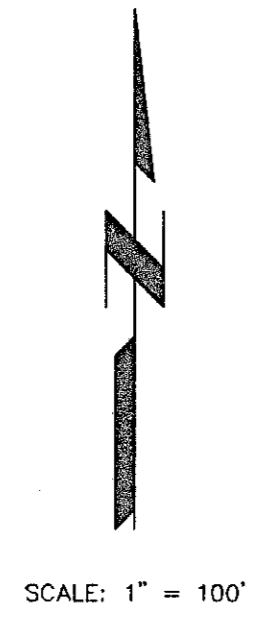


PROJECT NO.
 27740

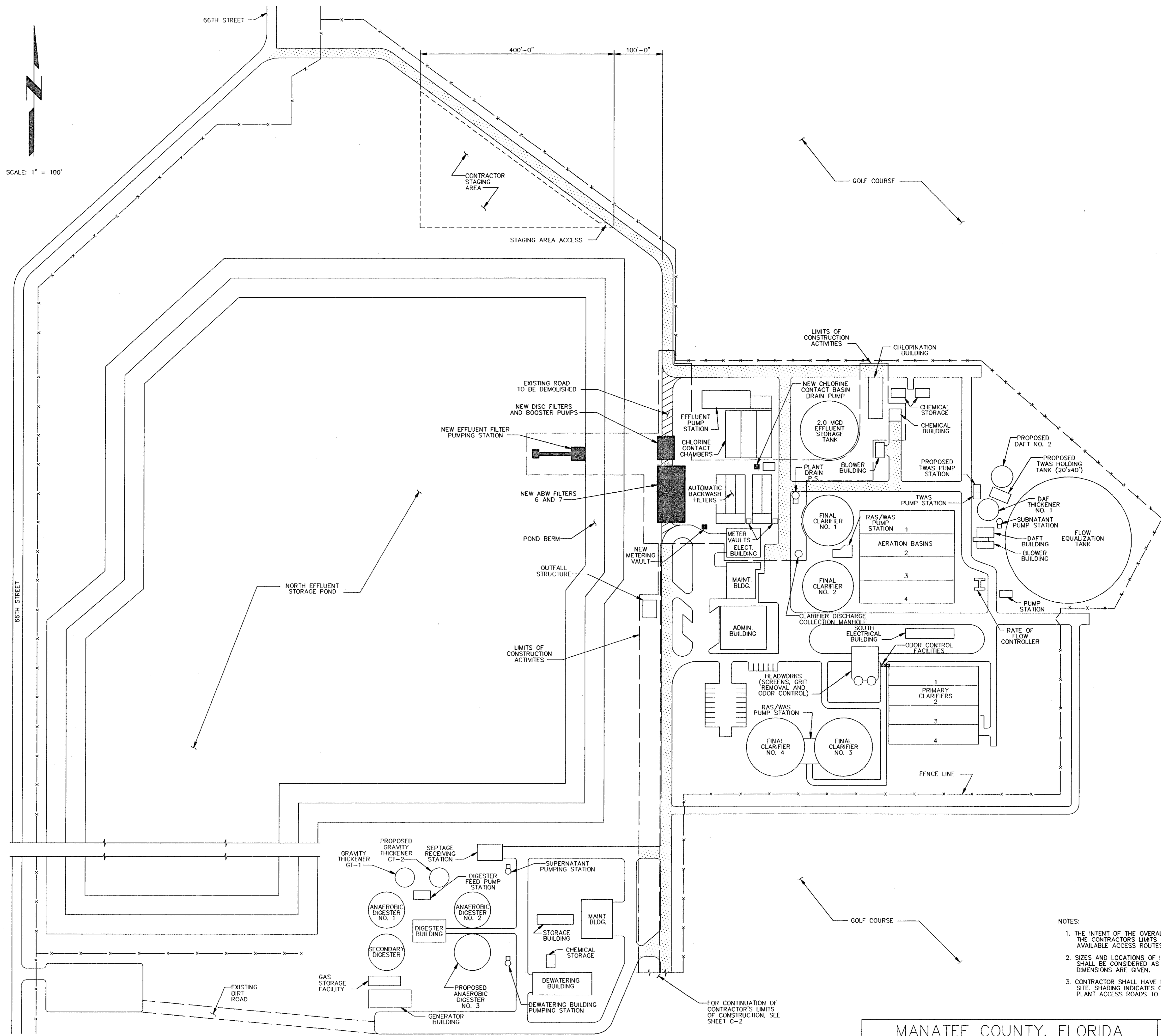
MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWTP ABW FILTERS ADDITION		G-2 SHEET 2 OF 29
GENERAL NOTES AND EFFLUENT FILTRATION FLOW SCHEMATIC		

05/05/96 17:30:01 ACD-12

A B C D E F



SCALE: 1" = 100'



- NOTES:
1. THE INTENT OF THE OVERALL SITE PLAN IS TO DEFINE THE CONTRACTOR'S LIMITS OF CONSTRUCTION ACTIVITIES, AVAILABLE ACCESS ROUTES AND AVAILABLE STAGING AREA.
 2. SIZES AND LOCATIONS OF ITEMS SHOWN ON THIS DRAWING SHALL BE CONSIDERED AS APPROXIMATE, UNLESS SPECIFIC DIMENSIONS ARE GIVEN.
 3. CONTRACTOR SHALL HAVE LIMITED ACCESS TO THE PLANT SITE. SHADING INDICATES CONTRACTOR STAGING AREA AND PLANT ACCESS ROADS TO BE USED TO PERFORM ALL WORK.

RECORD SURVEY
 RECORD INFORMATION BY
 WESTRA CONSTRUCTION CORP.
 1209 21st STREET, EAST
 PALMETTO, FL 34221 (941) 723-1611
Richard C. Merryman 10/11/01
 RICHARD C. MERRYMAN PLS 2827

CONFORMED TO CONSTRUCTION RECORDS
Andrew Westfall
 11-5-01

DESIGNED: AAW
 DETAILED: RJE
 CHECKED: WLK
 APPROVED: _____
 DATE: _____



PROJECT NO.
 27740

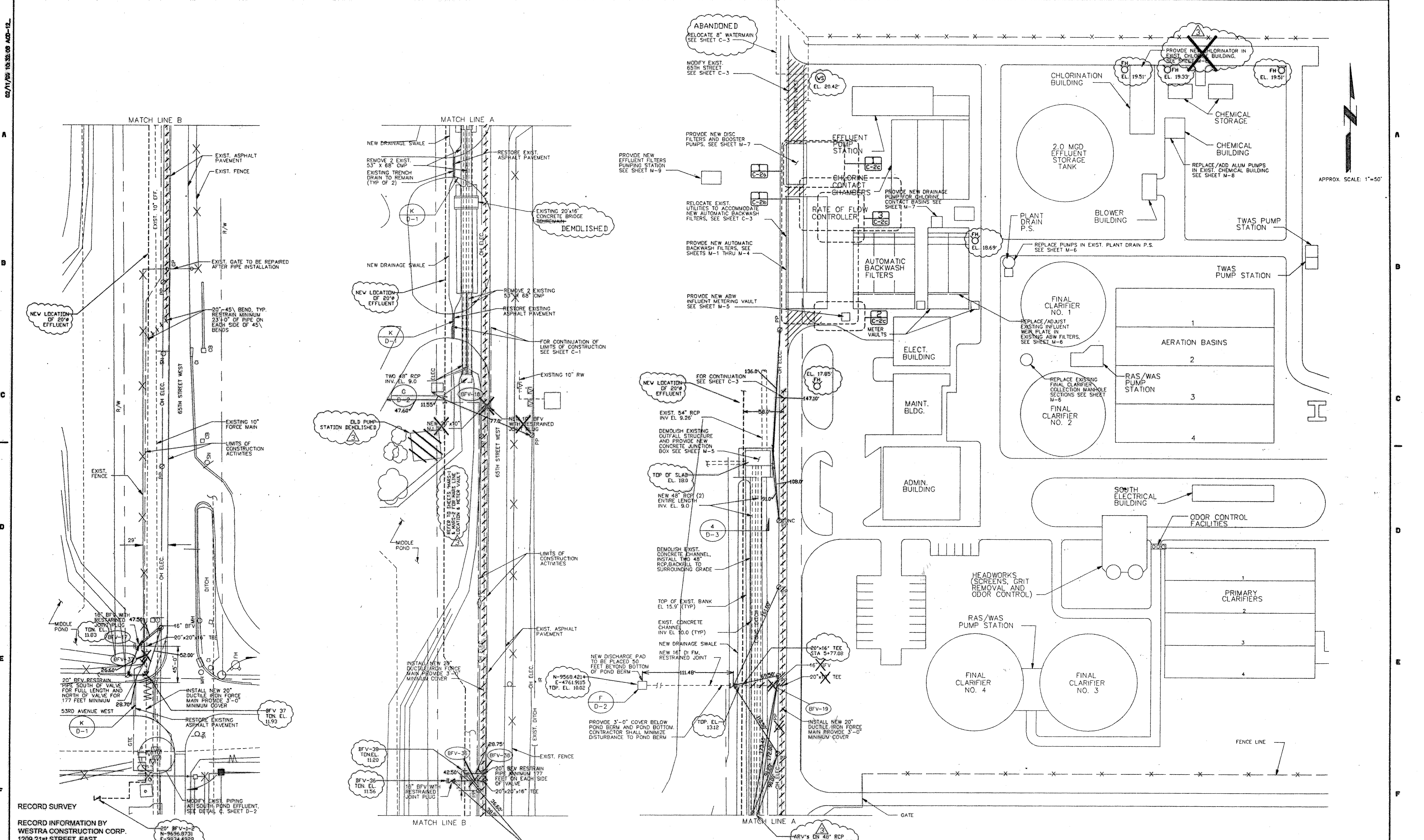
MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWTP ABW FILTERS ADDITION		C-1
OVERALL SITE PLAN		SHEET 3 OF 29

GTU27
FG27740

NO.	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

02/11/2016 10:50:00 A09-12

1 2 3 4 5 6 7 8 9 10



RECORD SURVEY

RECORD INFORMATION BY
 WESTRA CONSTRUCTION CORP.
 1209 21st STREET, EAST
 PALMETTO FL 34221 (941) 723-1611
 RICHARD C. MERRYMAN/RLS 2827

NOTES:
 1. PROVIDE MIN 3'-0" COVER OVER 15" DUCTILE IRON FORCE MAIN
 2. ALL PIPING HAS 3' COVER UNLESS OTHERWISE NOTED

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
8/28/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	1			
3/28/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	2			
2-99	DESIGN UPDATE	1	AAW	PCG	PCG

CONFORMED TO CONSTRUCTION RECORDS

Andreas Albert
11-5-01

DESIGNED	AAW
DETAILED	R.E.D.J.
CHECKED	W.K.
APPROVED	T.A. CHAMBERS
DATE	6/23/09



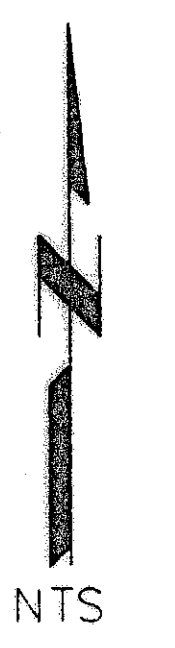
PROJECT NO.
27740

MANATEE COUNTY, FLORIDA
 SOUTHWEST REGIONAL WWTW
 ABW FILTERS ADDITION

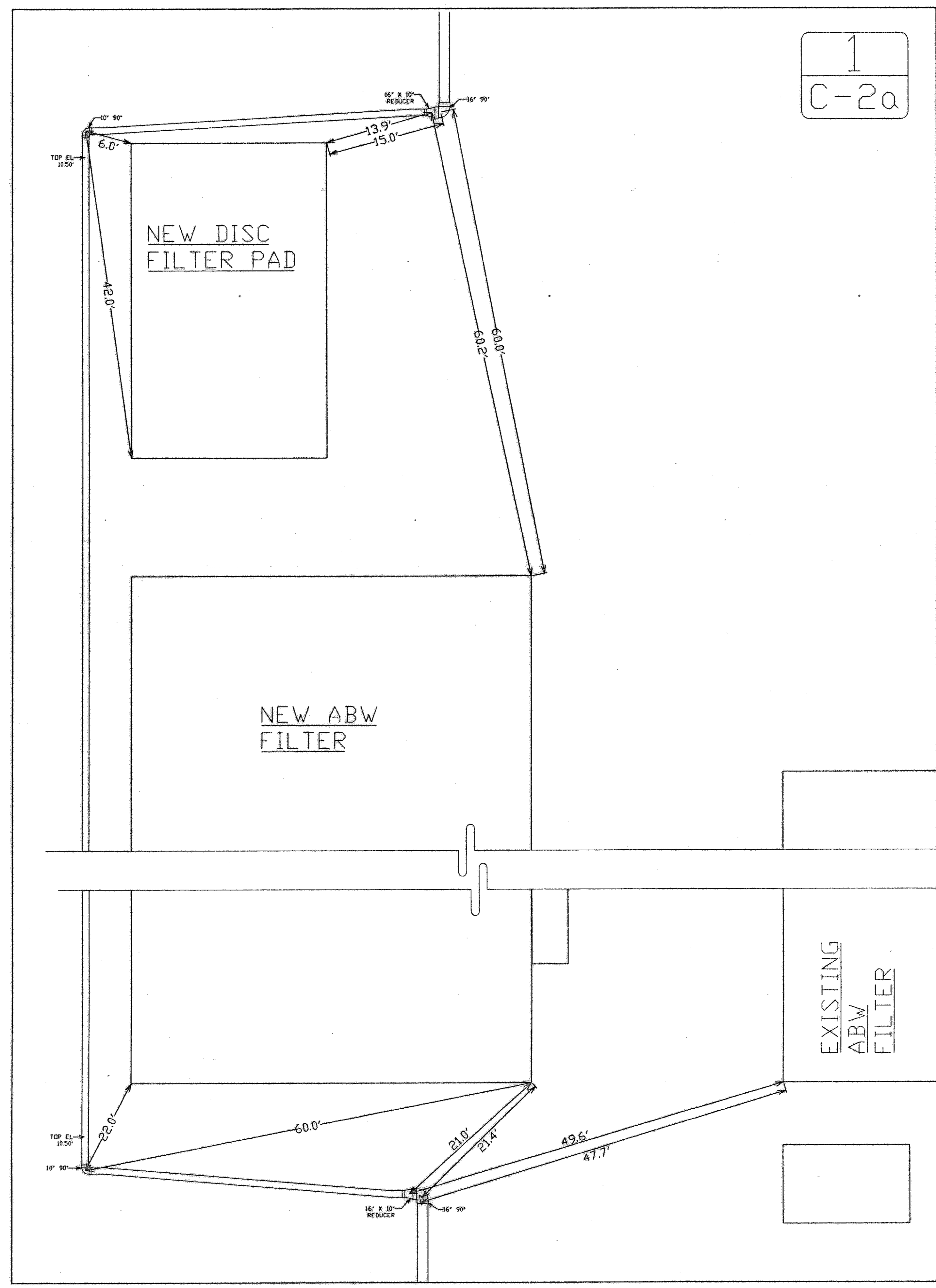
SITE PLAN

C-2
 SHEET
 4 of 28

2533-005



1
C-2a



ASBUILT OF NEW 10" DI RW

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
9/04/01	AS BUILT DETAILS by GLASER DESIGNS 941-755-0656	1			

RECORD SURVEY

RECORD INFORMATION BY
 WESTRA CONSTRUCTION CORP.
 1209 21st STREET, EAST
 PALMETTO, FL 34221 (941) 723-1611
 RICHARD C. MERRYMAN RLS 2827

CONFORMED TO CONSTRUCTION RECORDS

Andrew A. Westfield
 11-5-01

MANATEE COUNTY, FLORIDA
 SOUTHWEST REGIONAL WWTP
 ABW FILTERS ADDITION

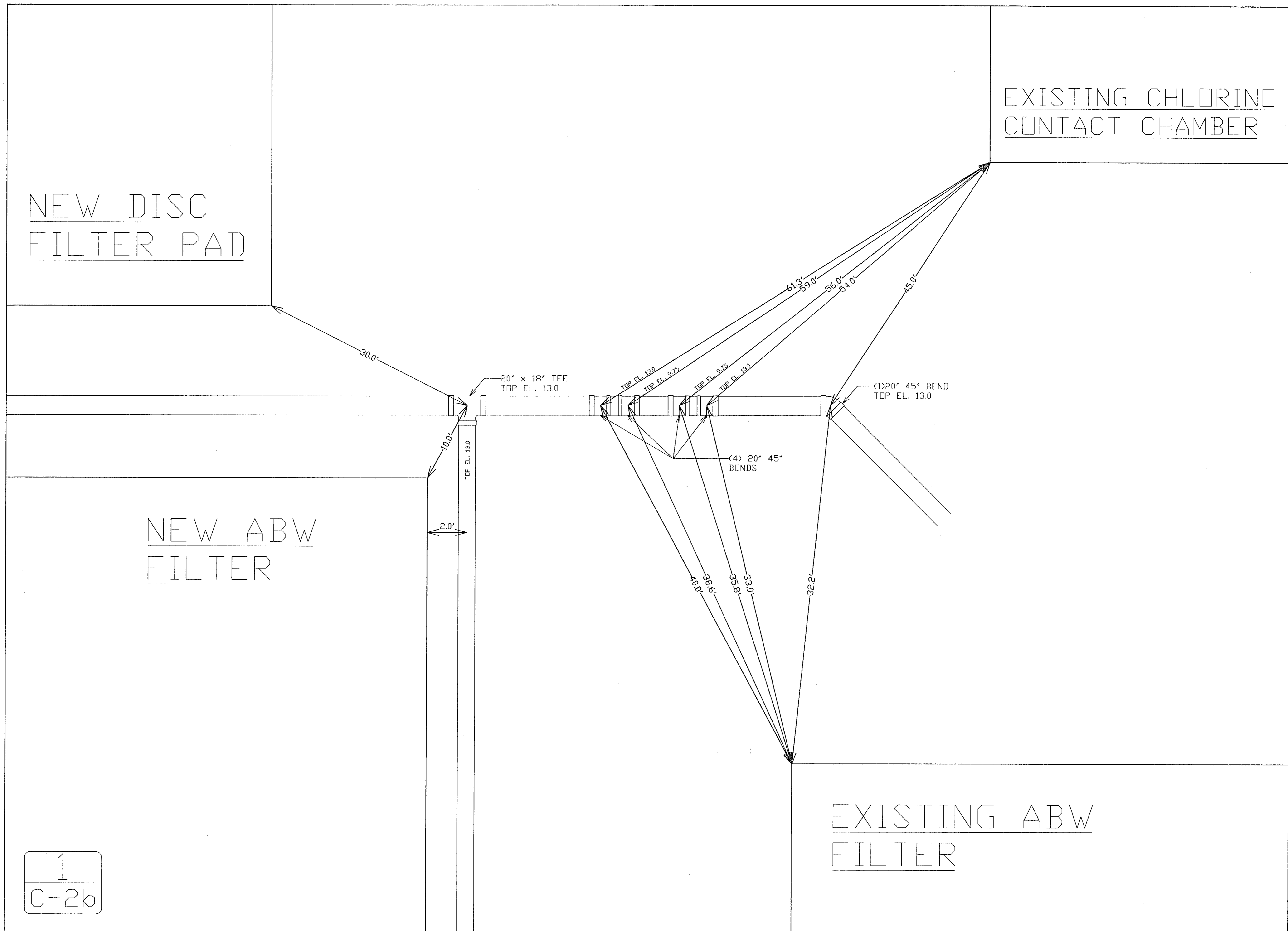
PIPING & FITTING LOCATIONS

C-2a

SHEET
4a OF 28

1 2 3 4 5 6 7 8 9 10

A
B
C
D
E
F



1
C-2b

ASBUILT OF 20" DI EFFLUENT @DIRVERSION UNDER EXISTING 30"Ø

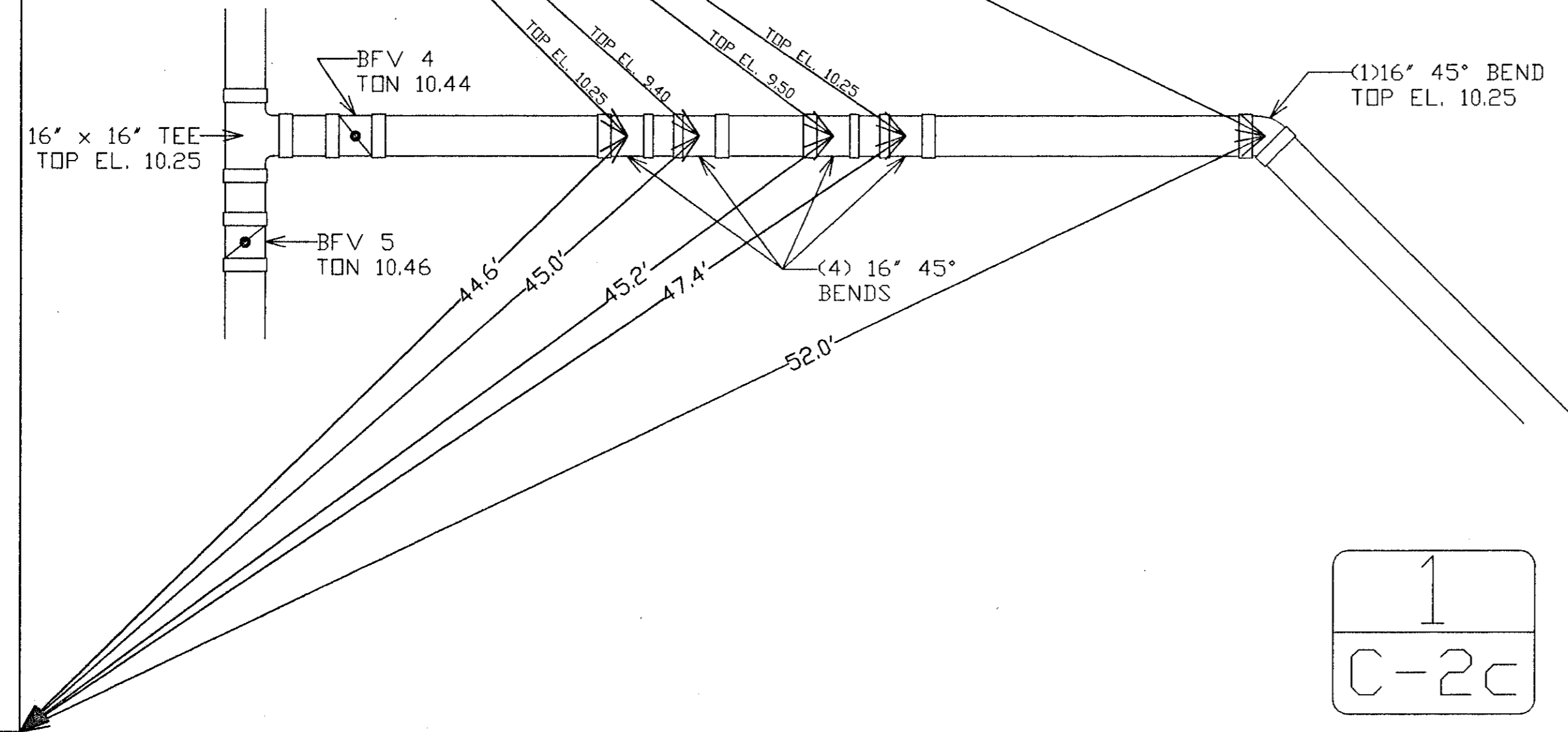
RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
Richard C. Merryman 10/11/01
RICHARD C. MERRYMAN PLS 2827

NO.	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
1	9/04/01	AS BUILT DETAILS by GLASER DESIGNS 941-755-0656				

CONFORMED TO CONSTRUCTION RECORDS
Andrew A. Hoff
11-5-01

MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWTP ABW FILTERS ADDITION	C-2b SHEET 4b OF 28
PIPING & FITTING LOCATIONS	

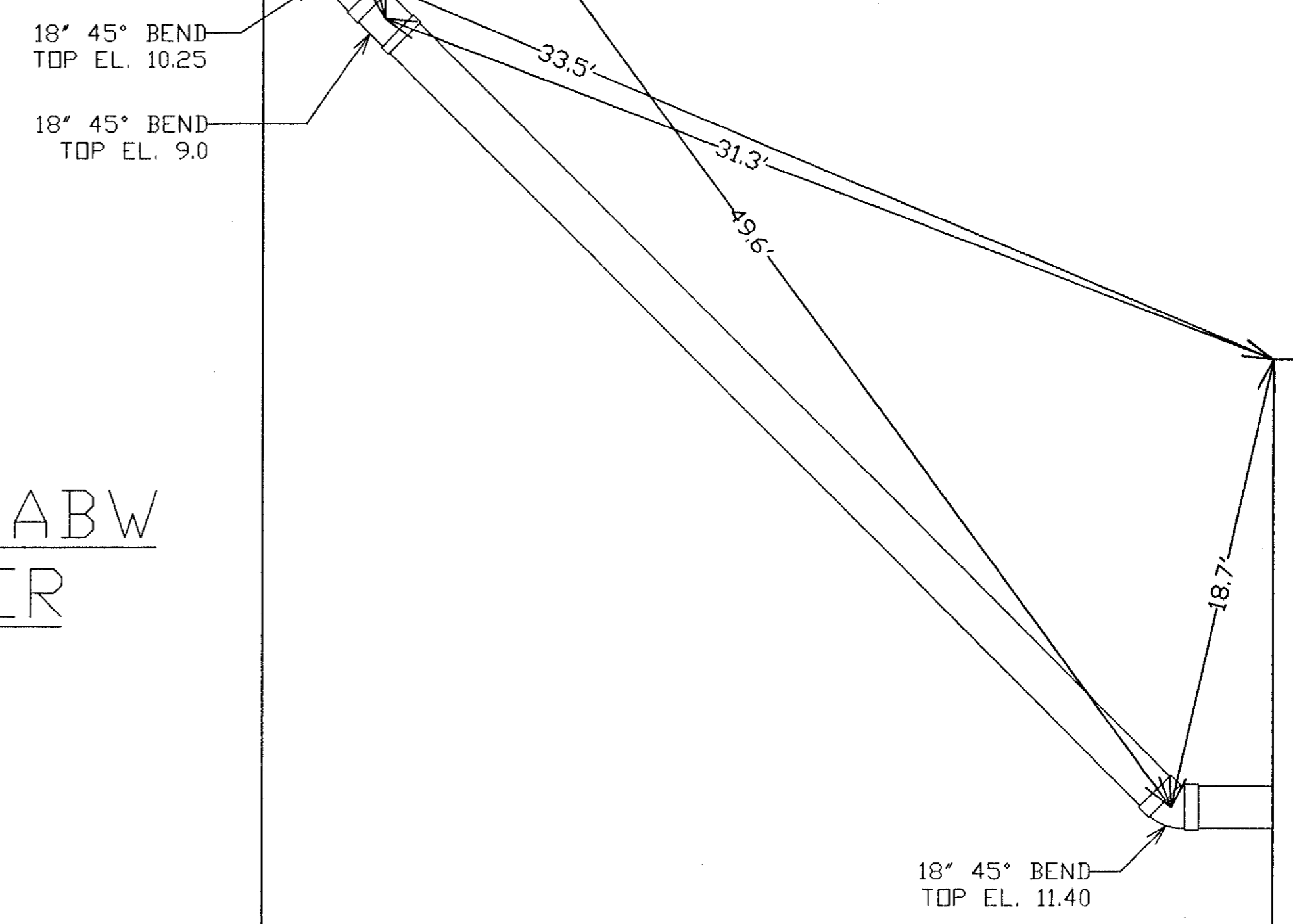
NEW DISC
FILTER PAD



1
C-2c

ASBUILT OF 16" DI DISC FILTER EFFLUENT UNDER EXISTING 30"

NEW ABW
FILTER

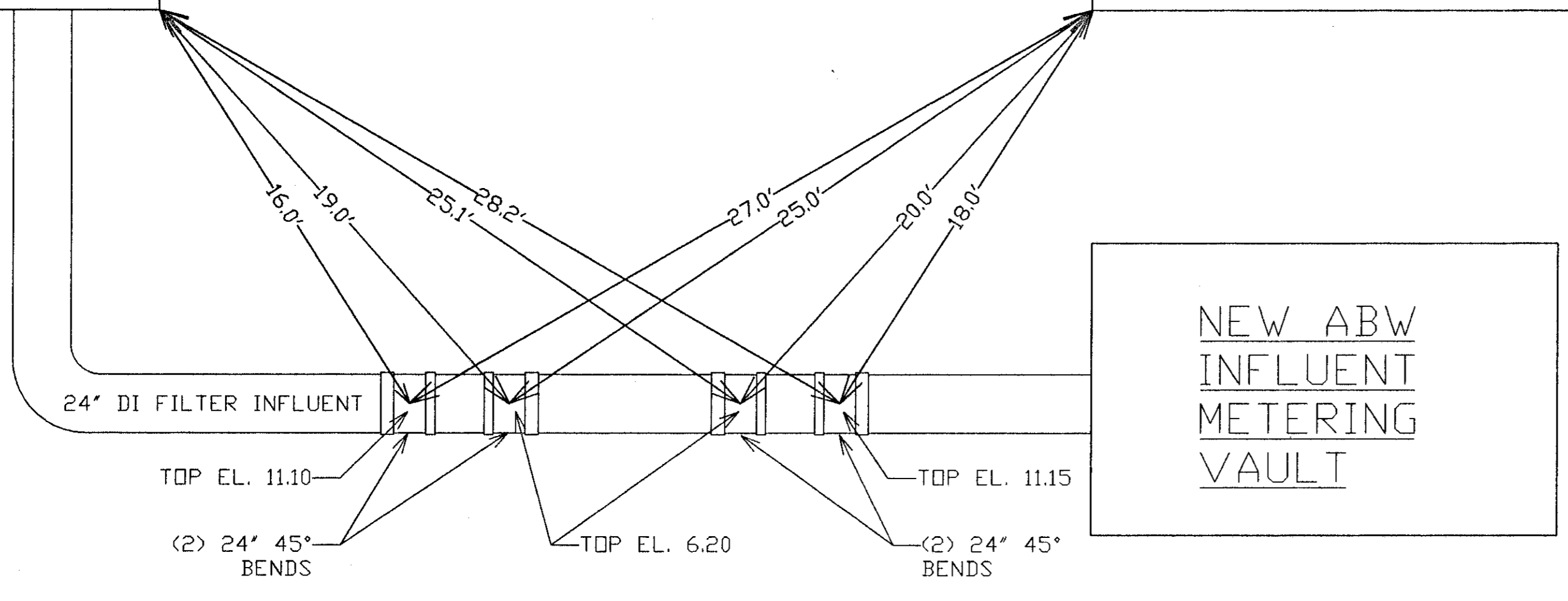


3
C-2c

ASBUILT OF 18" BACKWASH WASTE UNDER EXISTING 30"

NEW ABW
FILTER

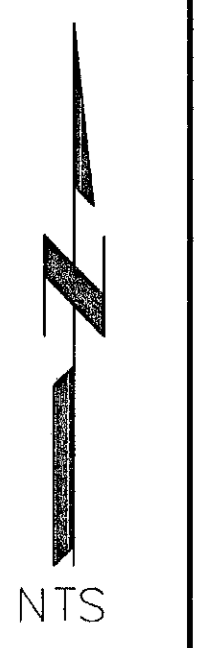
EXISTING ABW
FILTER



2
C-2c

ASBUILT OF 24" DI FILTER INFLUENT UNDER 30" FM

EXISTING ABW FILTER



RECORD SURVEY

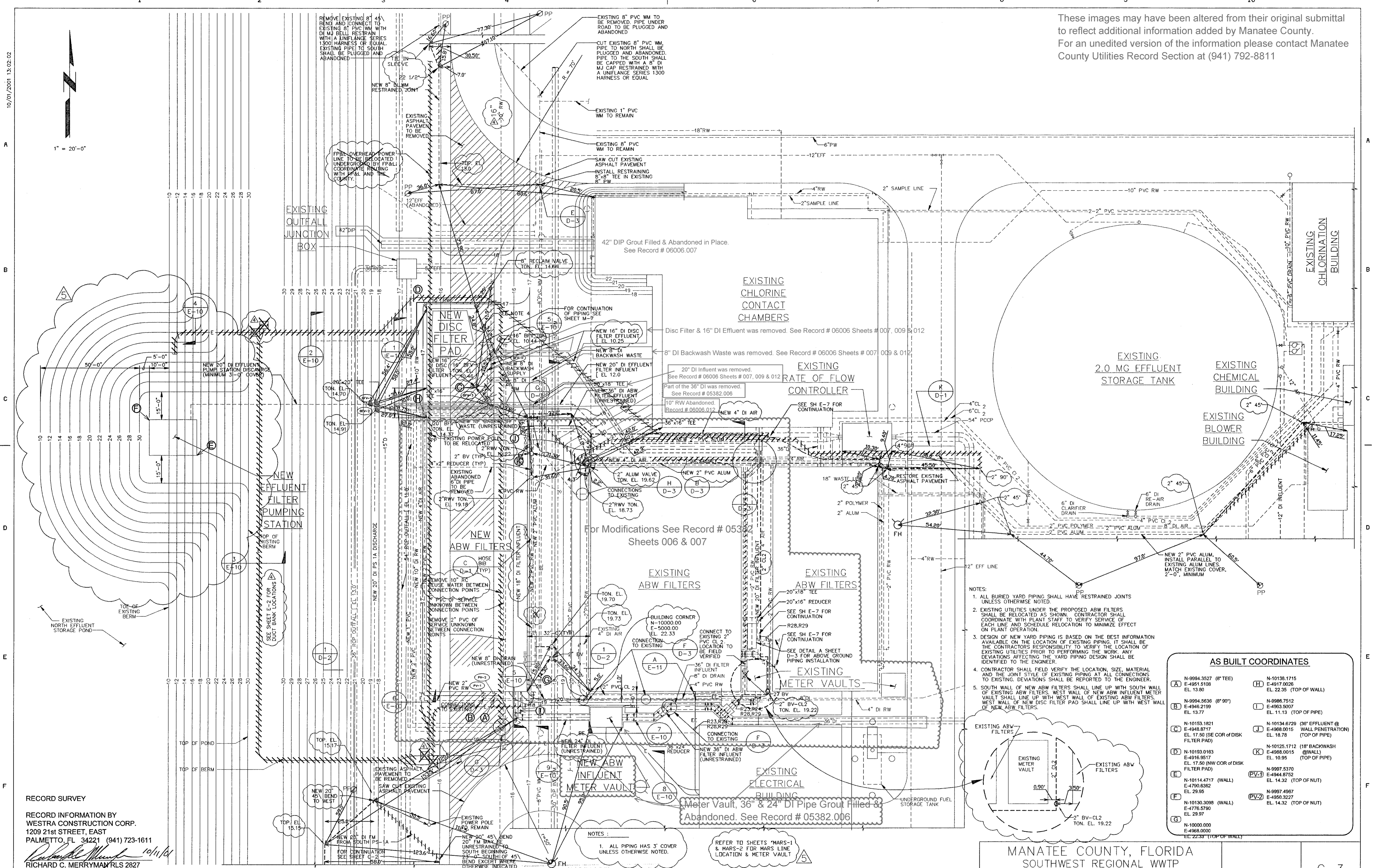
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
RICHARD C. MERRYMAN RLS 2827

CONFORMED TO CONSTRUCTION RECORDS

Andrew A. Westfall
11-5-01

NO.	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
1	9/04/01	AS BUILT DETAILS by GLASER DESIGNS 941-755-0656	1			

MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWTP ABW FILTERS ADDITION	C-2c
PIPING & FITTING LOCATIONS	SHEET 4c OF 28



These images may have been altered from their original submittal to reflect additional information added by Manatee County. For an unedited version of the information please contact Manatee County Utilities Record Section at (941) 792-8811

10/01/2001 13:02:02

RECORD SURVEY
 RECORD INFORMATION BY
 WESTRA CONSTRUCTION CORP.
 1209 21st STREET, EAST
 PALMETTO, FL 34221 (941) 723-1611
Richard C. Merryman 10/11/01
 RICHARD C. MERRYMAN RLS 2827

- NOTES:
1. ALL BURIED YARD PIPING SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE NOTED.
 2. EXISTING UTILITIES UNDER THE PROPOSED ABW FILTERS SHALL BE RELOCATED AS SHOWN. CONTRACTOR SHALL COORDINATE WITH PLANT STAFF TO VERIFY SERVICE OF EACH LINE AND SCHEDULE RELOCATION TO MINIMIZE EFFECT ON PLANT OPERATION.
 3. DESIGN OF NEW YARD PIPING IS BASED ON THE BEST INFORMATION AVAILABLE ON THE LOCATION OF EXISTING PIPING. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO PERFORMING THE WORK. ANY DEVIATIONS AFFECTING THE YARD PIPING DESIGN SHALL BE IDENTIFIED TO THE ENGINEER.
 4. CONTRACTOR SHALL FIELD VERIFY THE LOCATION, SIZE, MATERIAL AND THE JOINT STYLE OF EXISTING PIPING AT ALL CONNECTIONS TO EXISTING UTILITIES. DEVIATIONS SHALL BE REPORTED TO THE ENGINEER.
 5. SOUTH WALL OF NEW ABW FILTERS SHALL LINE UP WITH SOUTH WALL OF EXISTING ABW FILTERS. WEST WALL OF NEW ABW INFLUENT METER VAULT SHALL LINE UP WITH WEST WALL OF EXISTING ABW FILTERS.

AS BUILT COORDINATES	
A N-9994.3527 (8" TEE) E-4951.5108 EL. 13.80	H N-10138.1715 E-4917.0026 EL. 22.35 (TOP OF WALL)
B N-9994.5636 (8" 90°) E-4946.2199 EL. 13.77	I N-9986.7512 E-4963.5007 EL. 11.13 (TOP OF PIPE)
C N-10153.1821 E-4948.8717 EL. 17.50 (SE COR OF DISK FILTER PAD)	J N-10134.6729 (30" EFFLUENT @ WALL PENETRATION) E-4968.0015 EL. 18.78
D N-10193.0183 E-4916.9517 EL. 17.50 (NW COR OF DISK FILTER PAD)	K N-10125.1712 (18" BACKWASH @ WALL) E-4968.0015 EL. 10.95 (TOP OF PIPE)
E N-10114.4717 (WALL) E-4790.6362 EL. 29.95	PV-1 N-9997.5370 E-4944.8752 EL. 14.32 (TOP OF NUT)
F N-10130.3098 (WALL) E-4776.5790 EL. 29.97	PV-2 N-9997.4967 E-4950.3227 EL. 14.32 (TOP OF NUT)
G N-10000.0000 E-4968.0000 EL. 22.33 (TOP OF WALL)	

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/28/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	1			
5/30/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	3			
3/28/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	2			
10/09/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	4			
2-99	DESIGN UPDATE	1	AAW	FCG	FCG

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

CONFORMED TO CONSTRUCTION RECORDS
Andrew A. West
 11-5-01

DESIGNED: AAW/MBS
 DETAILED: JAC/DMD
 CHECKED: WLK
 APPROVED: T.A. CUMMINGS
 DATE: 5/25/96



PROJECT NO.
27740

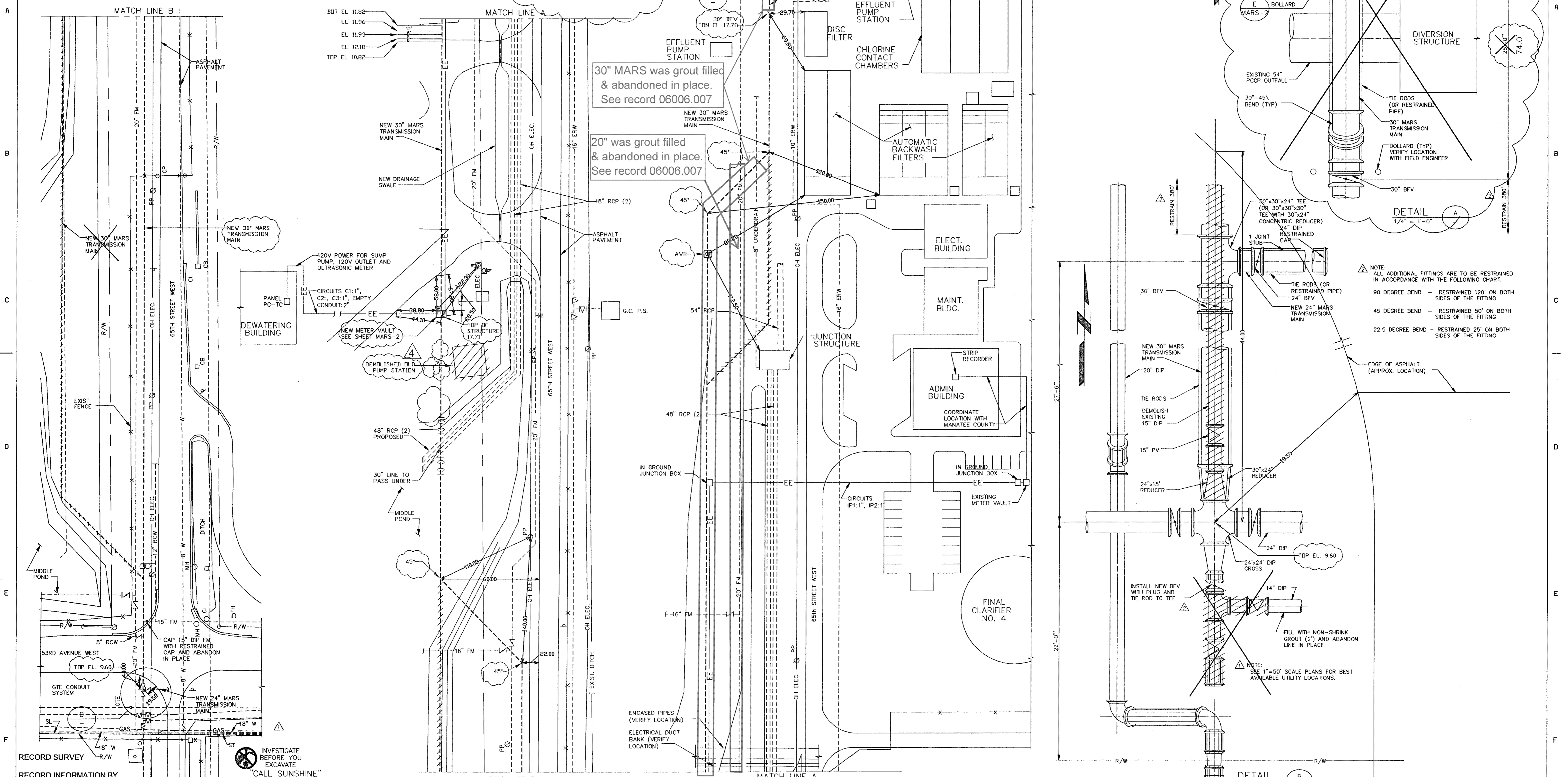
MANATEE COUNTY, FLORIDA
 SOUTHWEST REGIONAL WWTW
 ABW FILTERS ADDITION
 ENLARGED SITE PLAN

C-3
 SHEET
 5 OF 29

2533-009

11/13/2000 13:32:22 ACD

APPROX. SCALE: 1"=50'



30" MARS was grout filled & abandoned in place. See record 06006.007

20" was grout filled & abandoned in place. See record 06006.007

NOTE: ALL ADDITIONAL FITTINGS ARE TO BE RESTRAINED IN ACCORDANCE WITH THE FOLLOWING CHART:

90 DEGREE BEND	RESTRAINED 120' ON BOTH SIDES OF THE FITTING
45 DEGREE BEND	RESTRAINED 50' ON BOTH SIDES OF THE FITTING
22.5 DEGREE BEND	RESTRAINED 25' ON BOTH SIDES OF THE FITTING

NOTES:
1. ALL PIPING HAS 3' COVER UNLESS OTHERWISE NOTED.

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RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34224 (941) 723-1611
RICHARD C. MERRYMAN R/S 2827

INVESTIGATE BEFORE YOU EXCAVATE
"CALL SUNSHINE"
1-800-432-4770
TOLL FREE
FL STATE BOARD OF PROFESSIONAL ENGINEERS
MIN. OF 3 DAYS AND MAX. OF 5 DAYS
WORK BEFORE YOU DIG

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/29/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS	941-755-0656			
5/30/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS	941-755-0656			
8/14/00	INCREASED RESTRAINT TO 360'. ADDED 14" BFV TO SOUTH END OF DETAIL "B"		MCO	MCO	MCO
8/3/00	UTILITY INFORMATION ADDITION		MCO	MCO	MCO

CONFORMED TO CONSTRUCTION RECORDS
Anchur A. [Signature]
11-5-01

DESIGNED MCO, SLC, BMV
DETAILED RJE
CHECKED
APPROVED
DATE

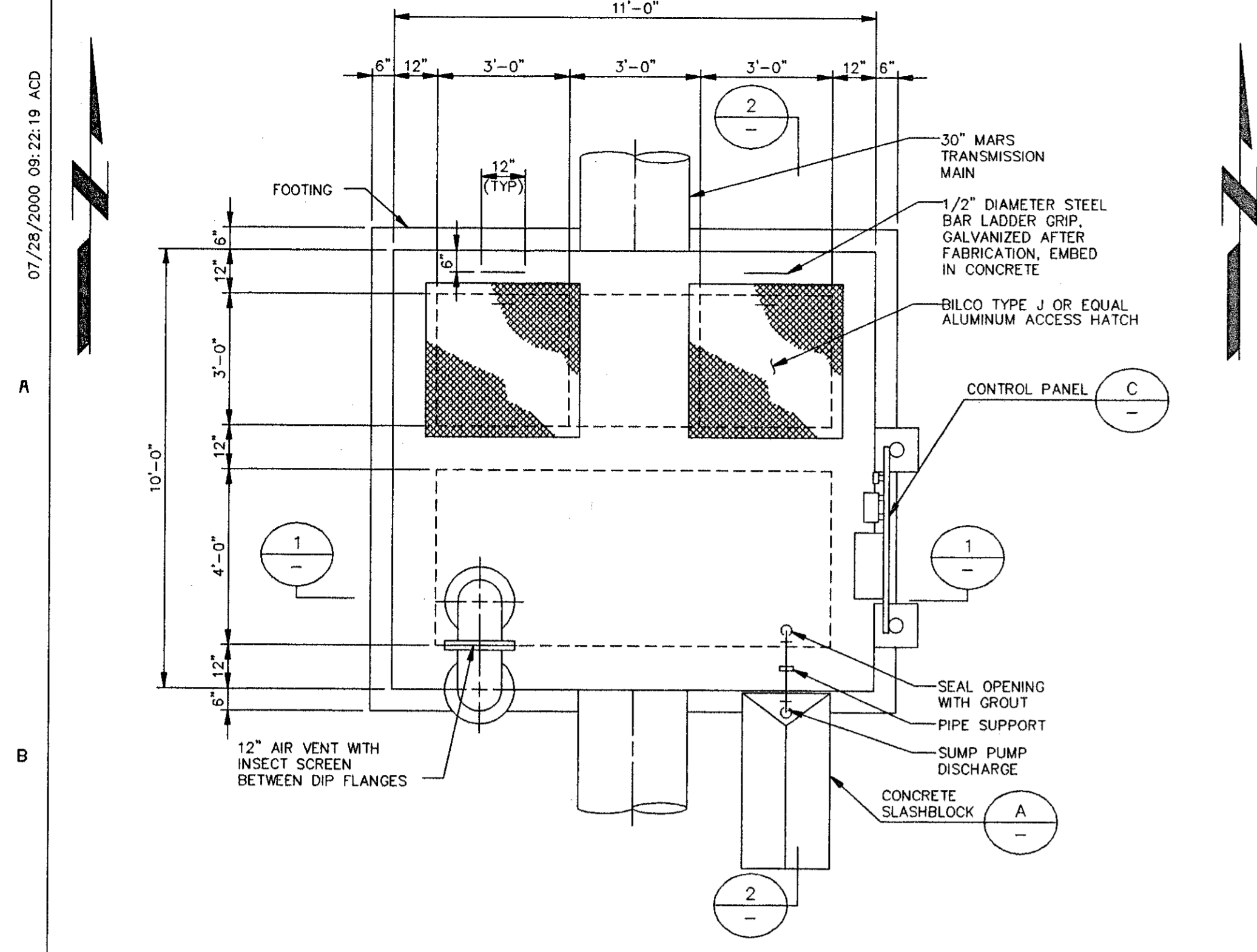


PROJECT NO.
27740

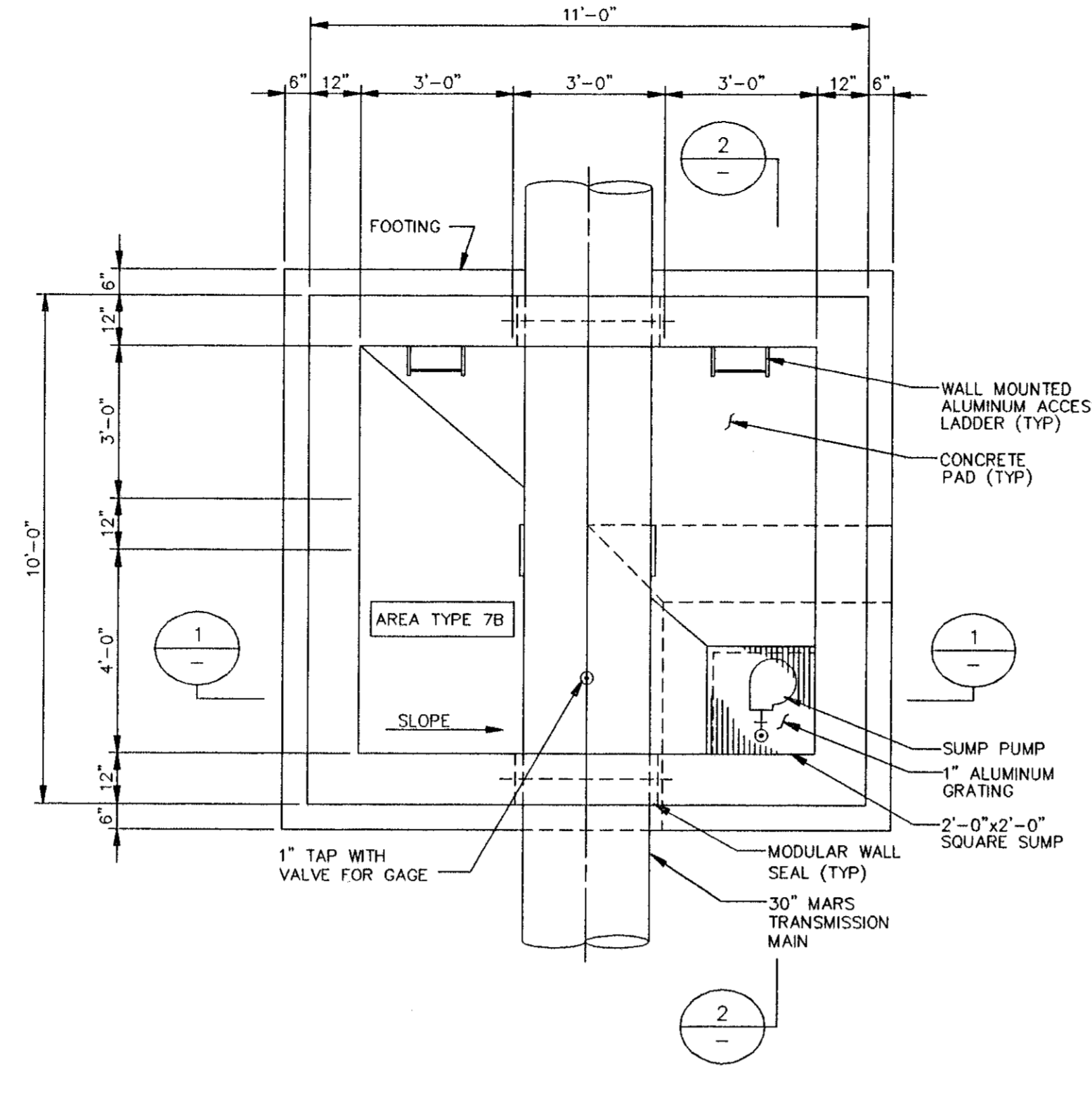
MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWT
ABW FILTERS ADDITION
MARS
MANATEE AGRICULTURAL REUSE SUPPLY
SITE PLAN AND DETAILS

MARS-1
SHEET
1 OF 2

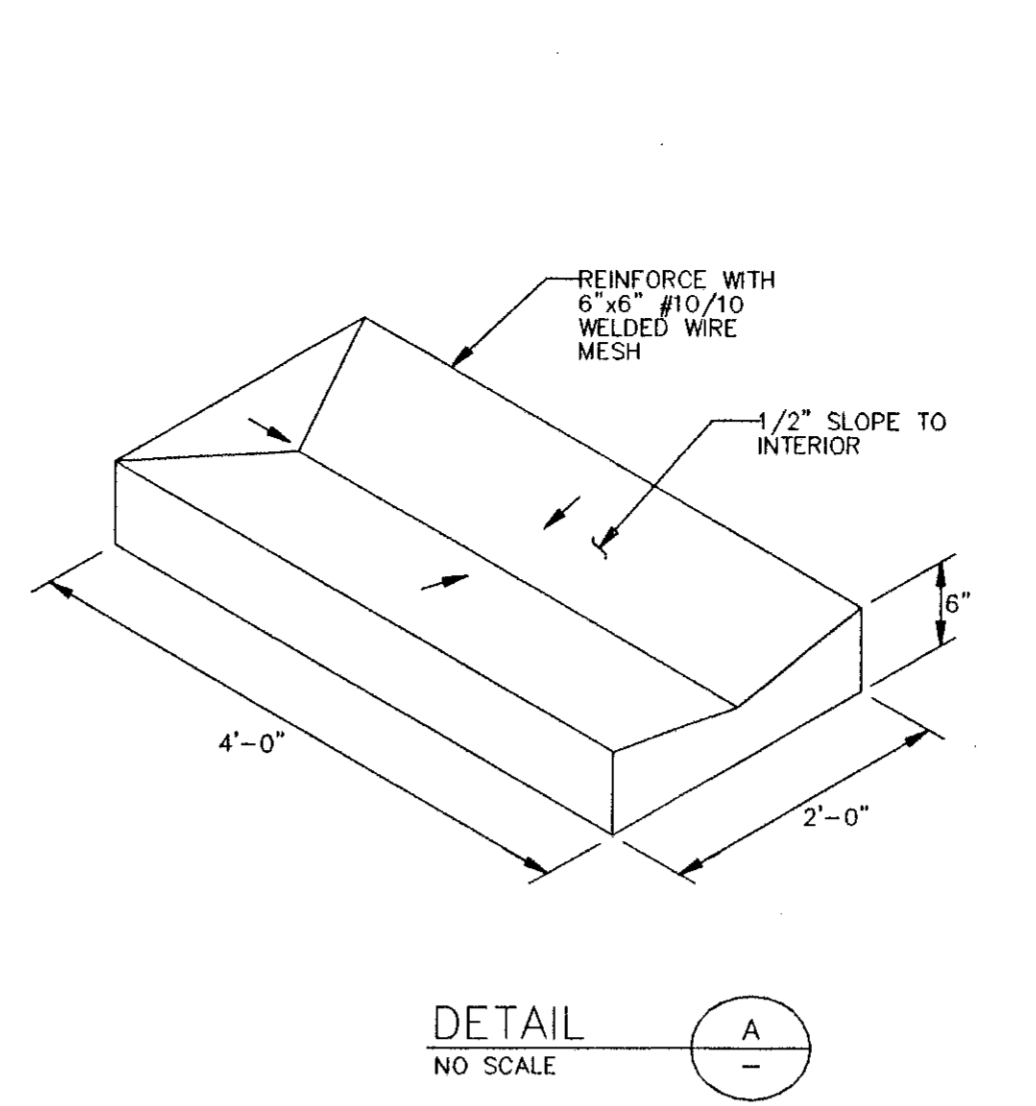
2533.011



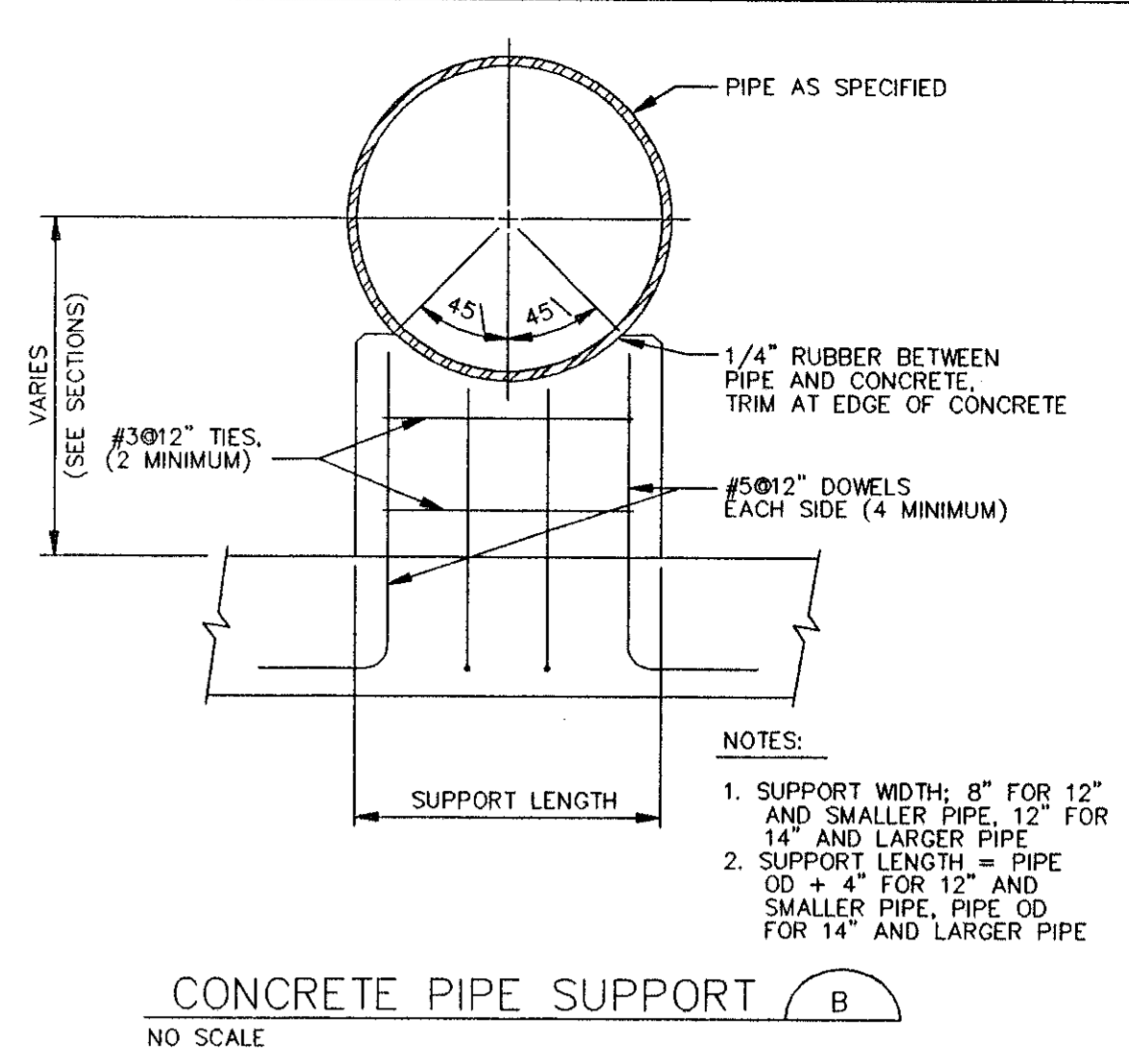
METERING VAULT PLAN
3/8" = 1'-0"



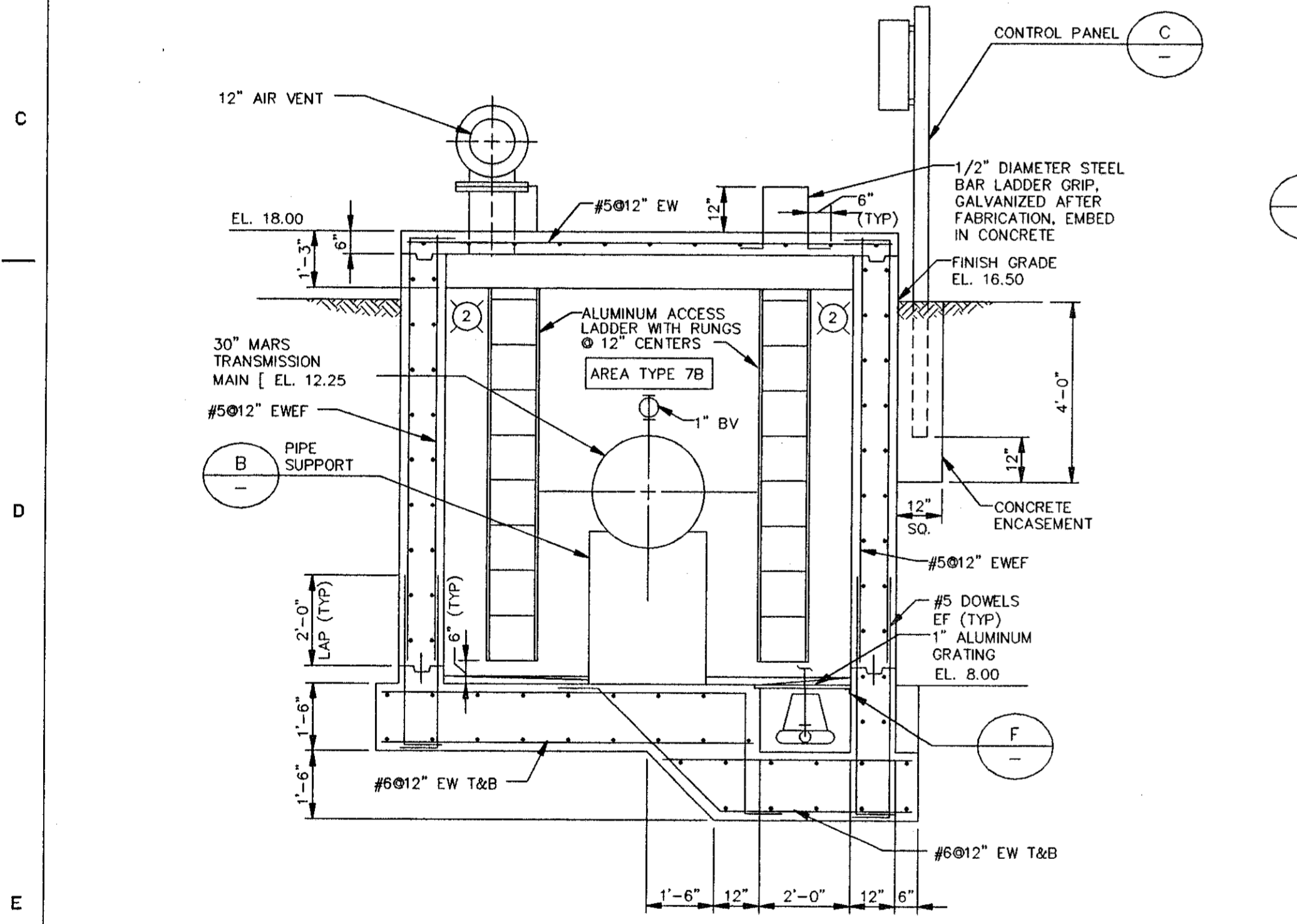
METERING VAULT SECTIONAL PLAN
3/8" = 1'-0"



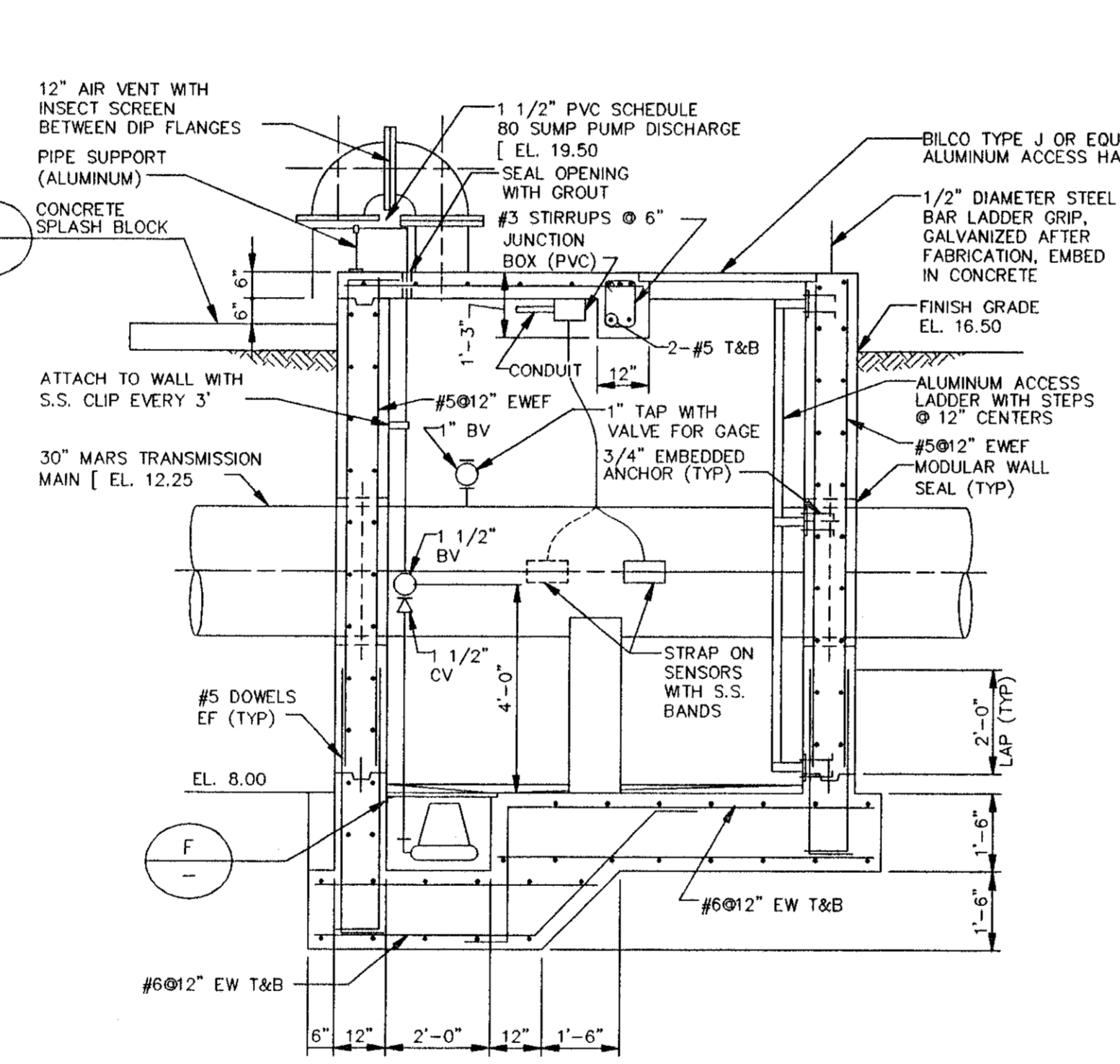
DETAIL A
NO SCALE



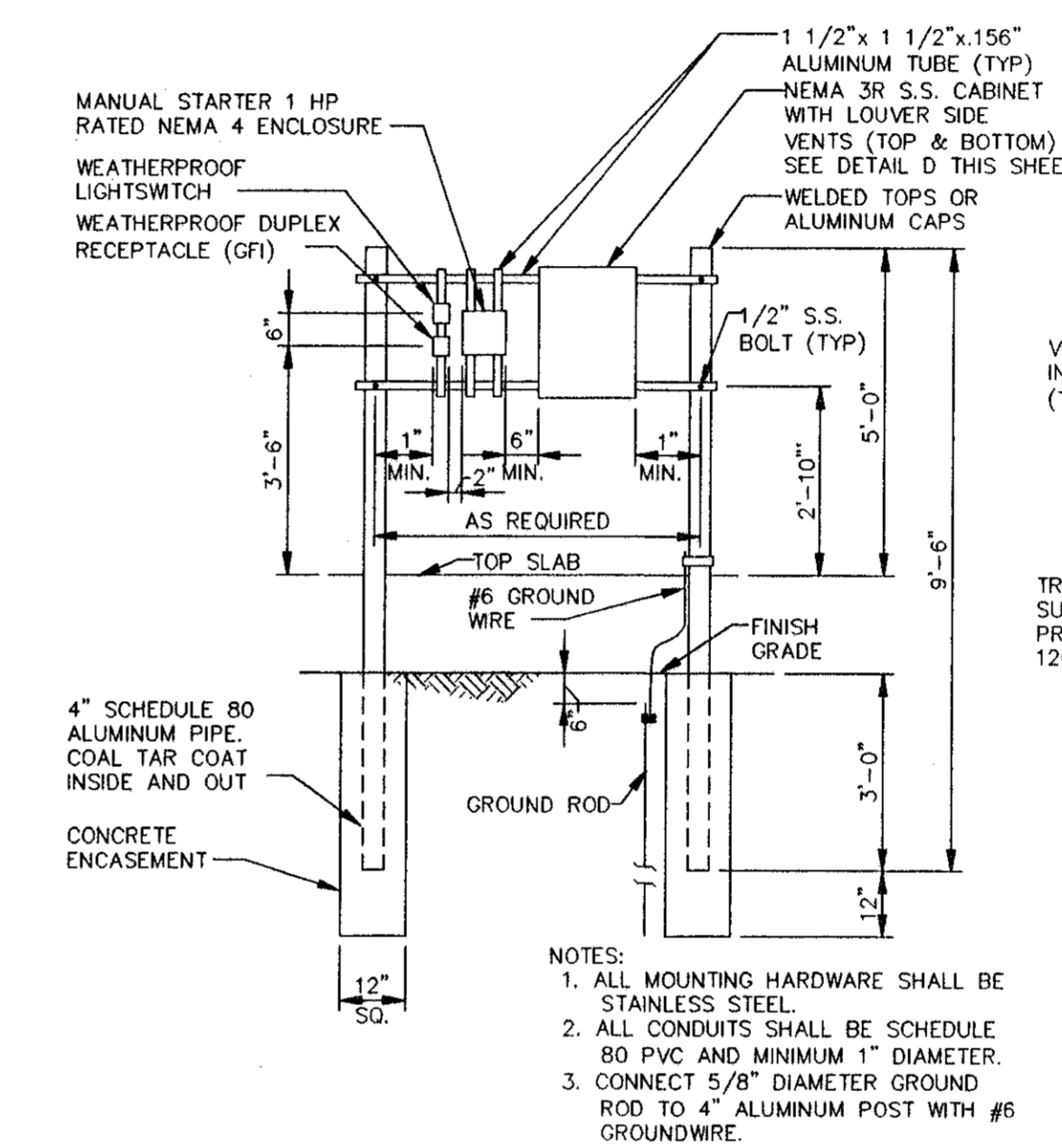
CONCRETE PIPE SUPPORT B
NO SCALE



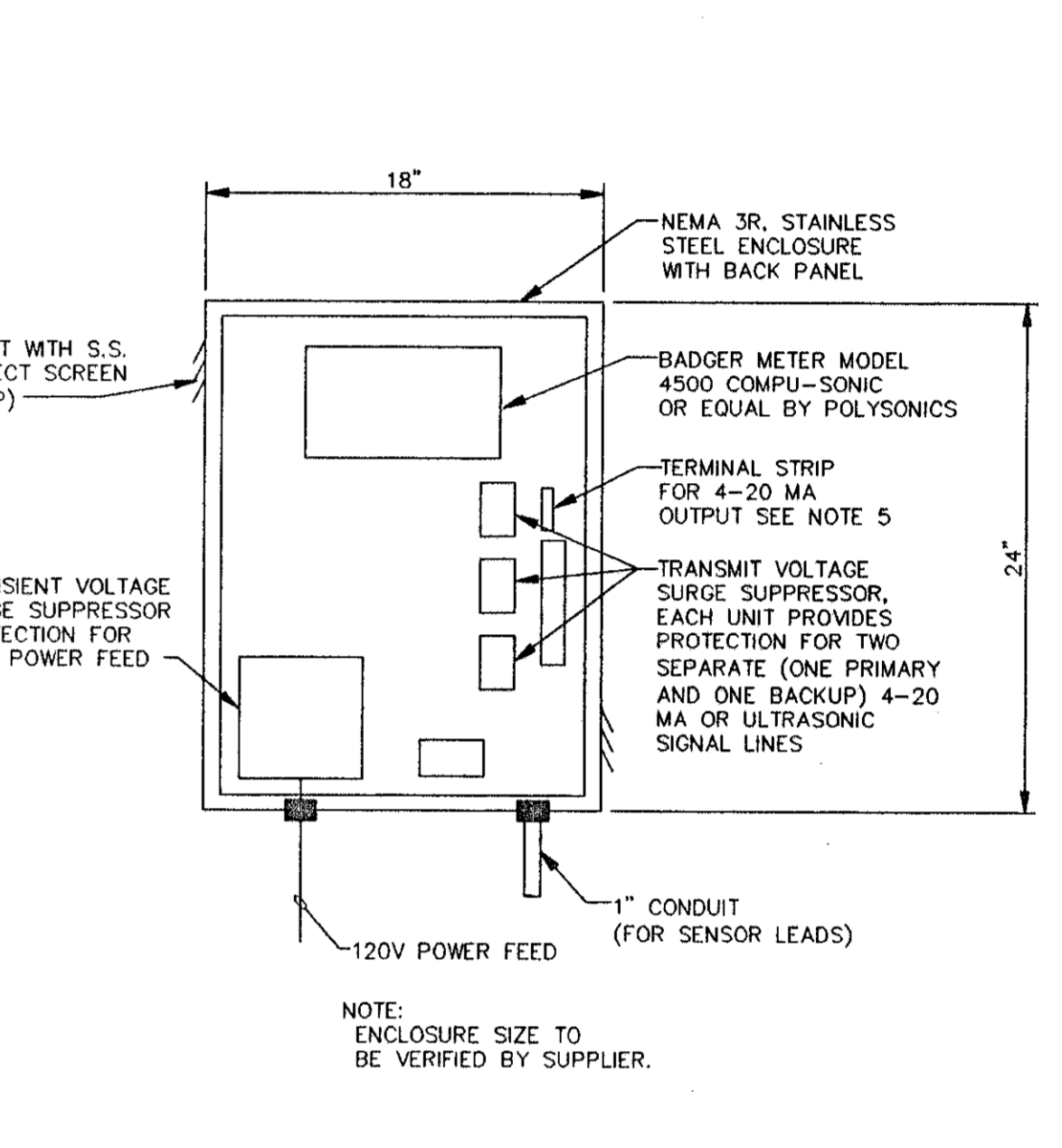
SECTION 1
3/8" = 1'-0"



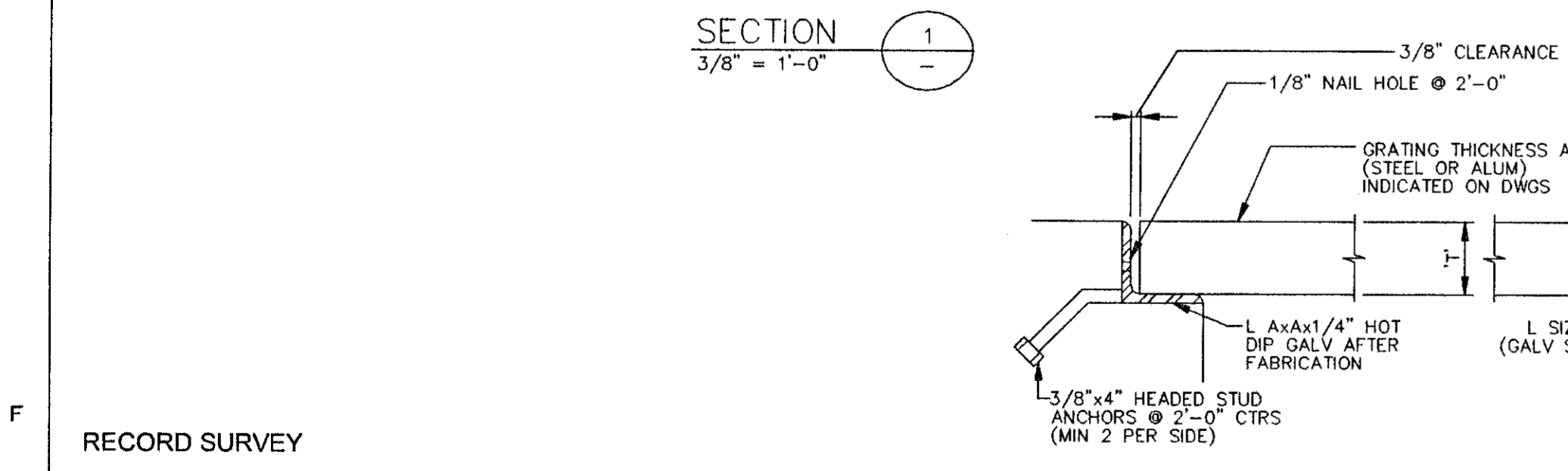
SECTION 2
3/8" = 1'-0"



CONTROL PANEL DETAIL C
NO SCALE



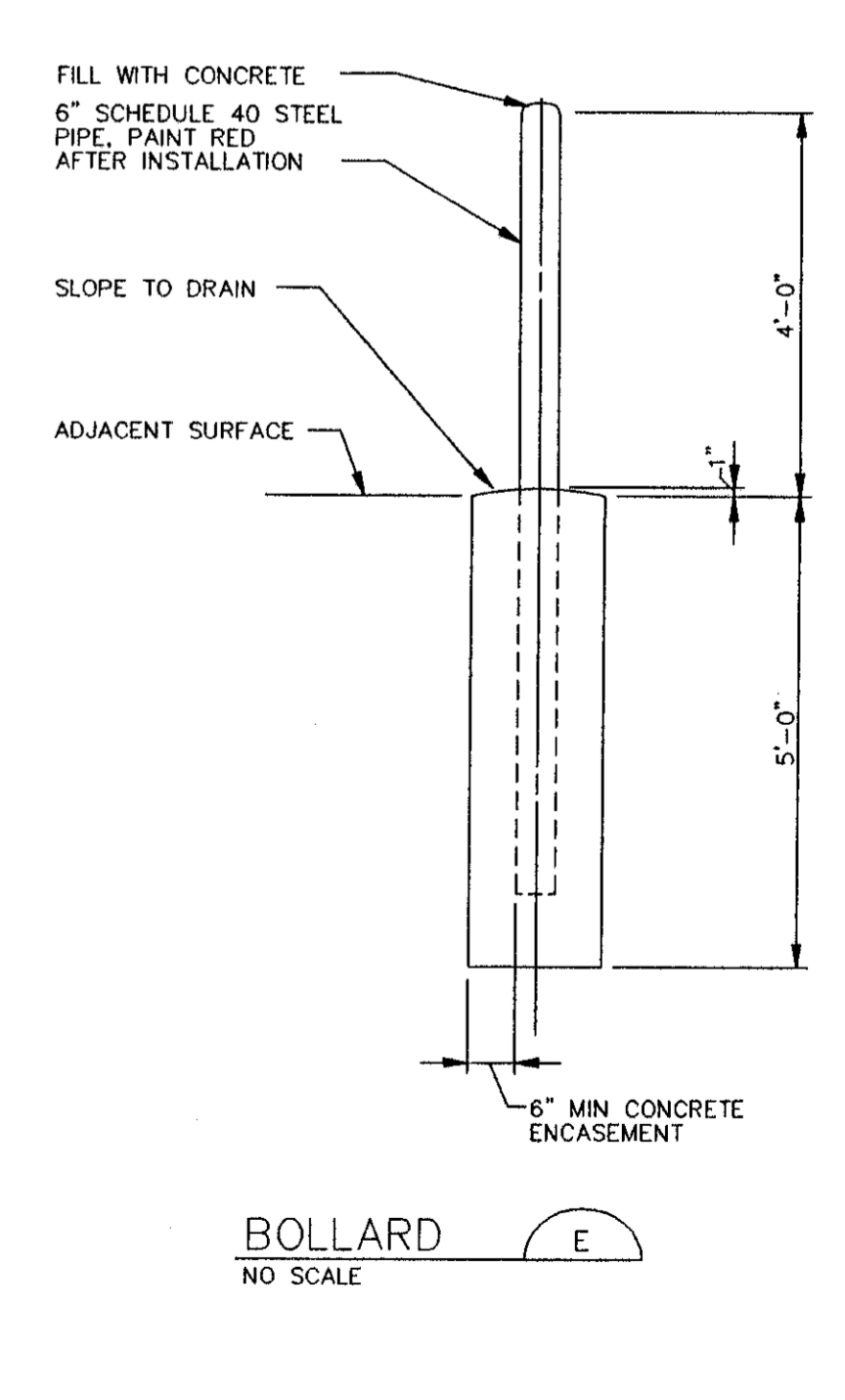
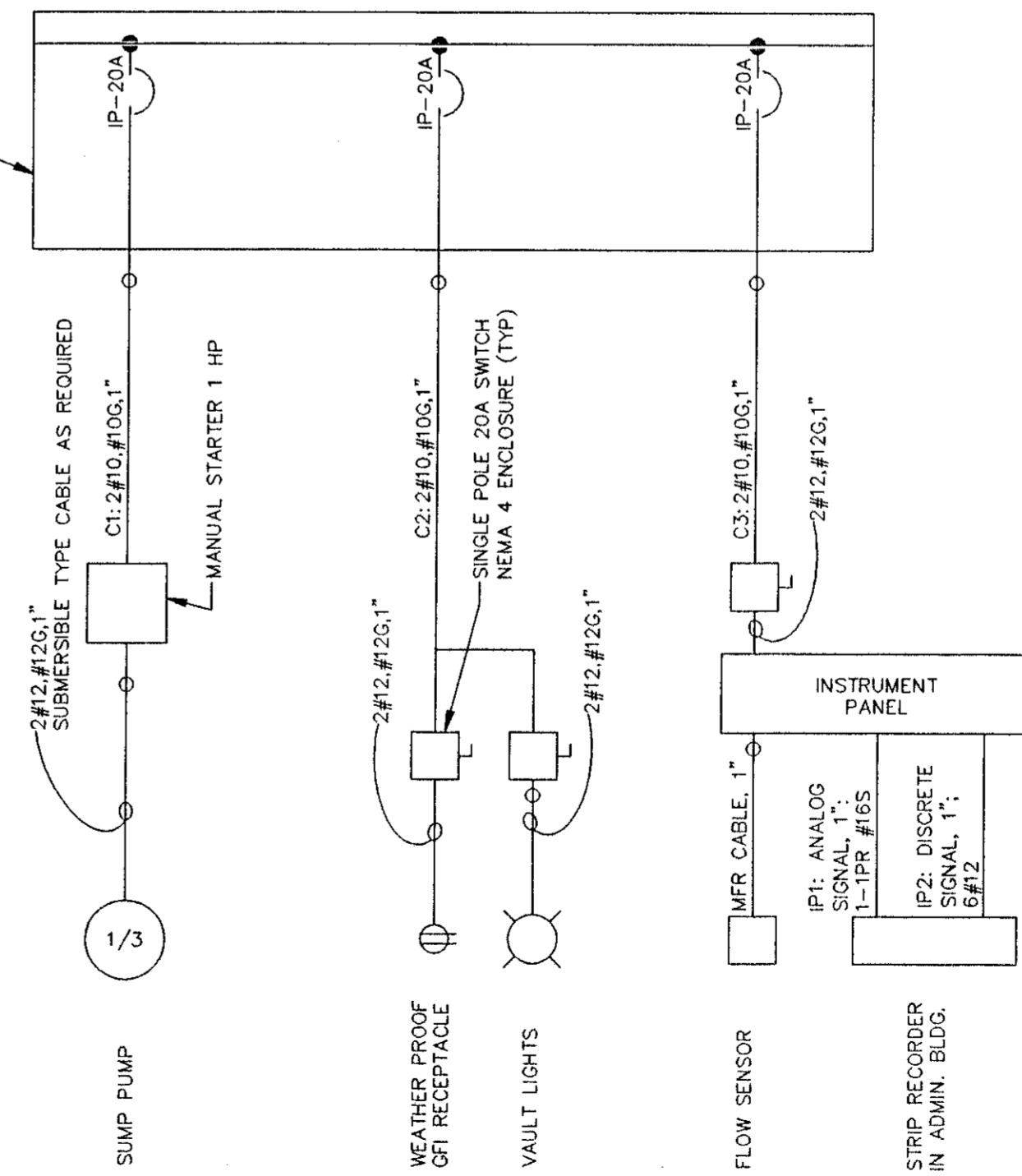
DETAIL D
NO SCALE



GRATING SUPPORT F
3/8" = 1'-0"

GRATING THICKNESS (T)	L SIZE AxAx1/4	L SIZE B	C EXP ANCHOR
1	1 1/4x1 1/4	2 1/2x2 1/2x1/4	1/2" 4 1/8"

- ELECTRICAL NOTES:
- ALL CONDUIT SHALL BE SCHEDULE 80 PVC.
 - ALL UNDERGROUND CONDUIT SHALL BE 1" MINIMUM.
 - ONE EMPTY 2 INCH CONDUIT SHALL BE RUN FROM THE DEWATERING BUILDING TO THE NEW METERING VAULT. CAP AT ENDS.
 - IN GROUND JUNCTION BOXES SHALL BE FURNISHED AS REQUIRED FOR UNDERGROUND CIRCUIT INSTALLATION.
 - CIRCUITS C2 AND C3 SHALL BE RUN IN 1 CONDUIT FROM THE DEWATERING BUILDING TO THE NEW METER VAULT.
 - TWO CONDUITS SHALL BE FURNISHED AND INSTALLED FROM THE INSTRUMENT PANEL TO THE STRIP RECORDER. IF THERE IS ONLY AN ANALOG SIGNAL FROM THE INSTRUMENT PANEL TO THE RECORDER THEN ONLY ONE CONDUIT NEED TO BE INSTALLED.



BOLLARD E
NO SCALE

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
RICHARD C. MERRYMAN RLS 2827

CONFORMED TO CONSTRUCTION RECORDS

DESIGNED MCO,SLC,BWV
DETAILED RJE
CHECKED
APPROVED
DATE

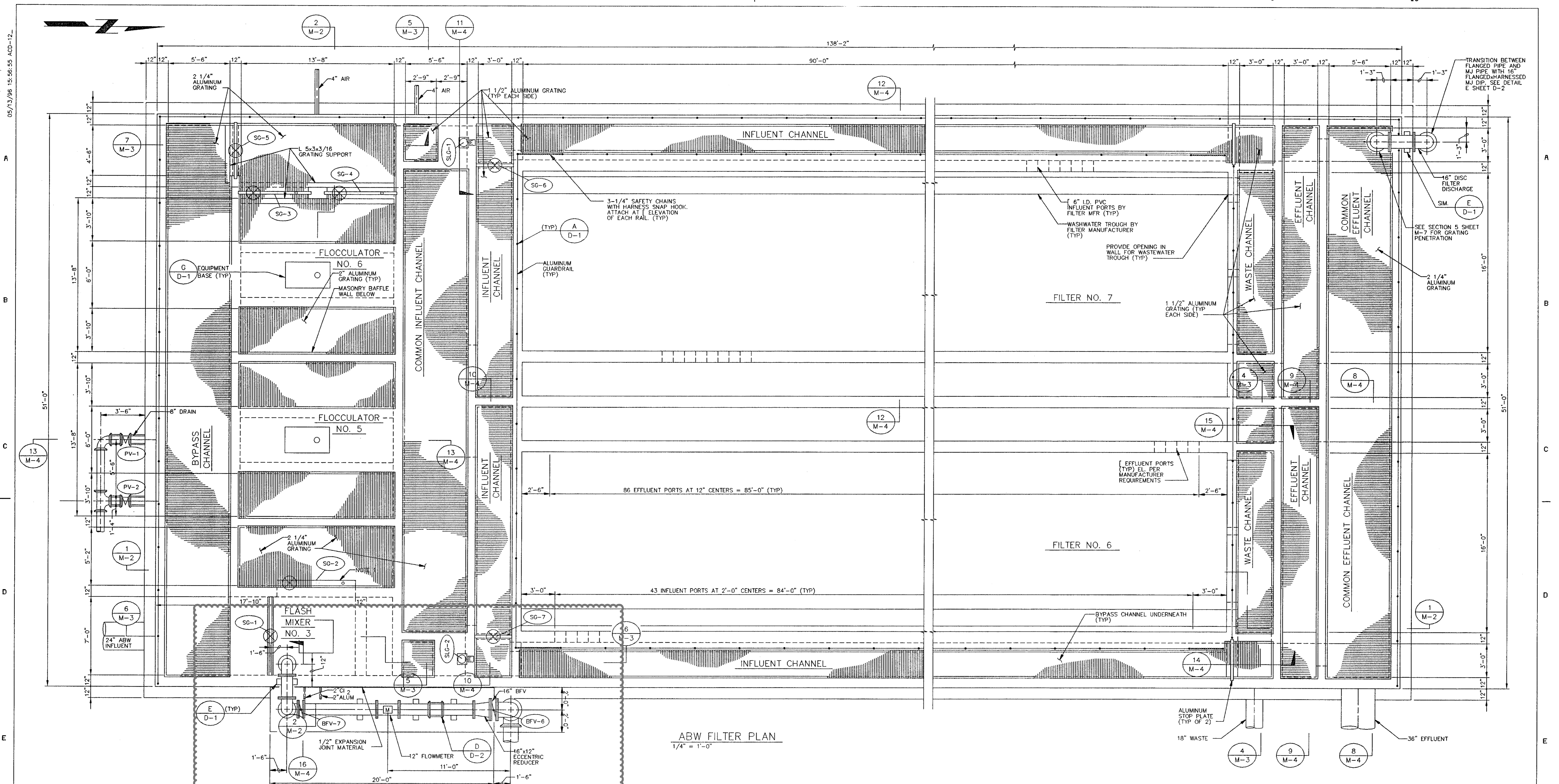


PROJECT NO.
27740

MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWP
ABW FILTERS ADDITION
MARS
MANATEE AGRICULTURAL REUSE SUPPLY
PLANS, SECTIONS AND DETAILS

MARS-2
SHEET
2 OF 2

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP



See Records # 05382 Sheets # 005 & 007 & 06006.028

NOTES:

1. PROVIDE OPENINGS IN GRATINGS FOR SLIDE GATE FRAMES AND OPERATORS, STOP PLATE HANDLES, AND VALVE OPERATING KEYS AS REQUIRED.
2. SEE SECTIONAL PLAN, SECTIONS, AND DETAILS FOR LOCATIONS OF CONSTRUCTION JOINTS.
3. RUNS OF HANDRAIL SHALL BE INTERRUPTED TO ACCOMMODATE INSTALLATION OF LIGHT POSTS. SEE ELECTRICAL SHEETS FOR POST LOCATIONS.

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1111
Richard C. Merryman R/C 2827 10/11/01

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DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

CONFORMED TO CONSTRUCTION RECORDS
Andrew A. Westfall
11-5-01

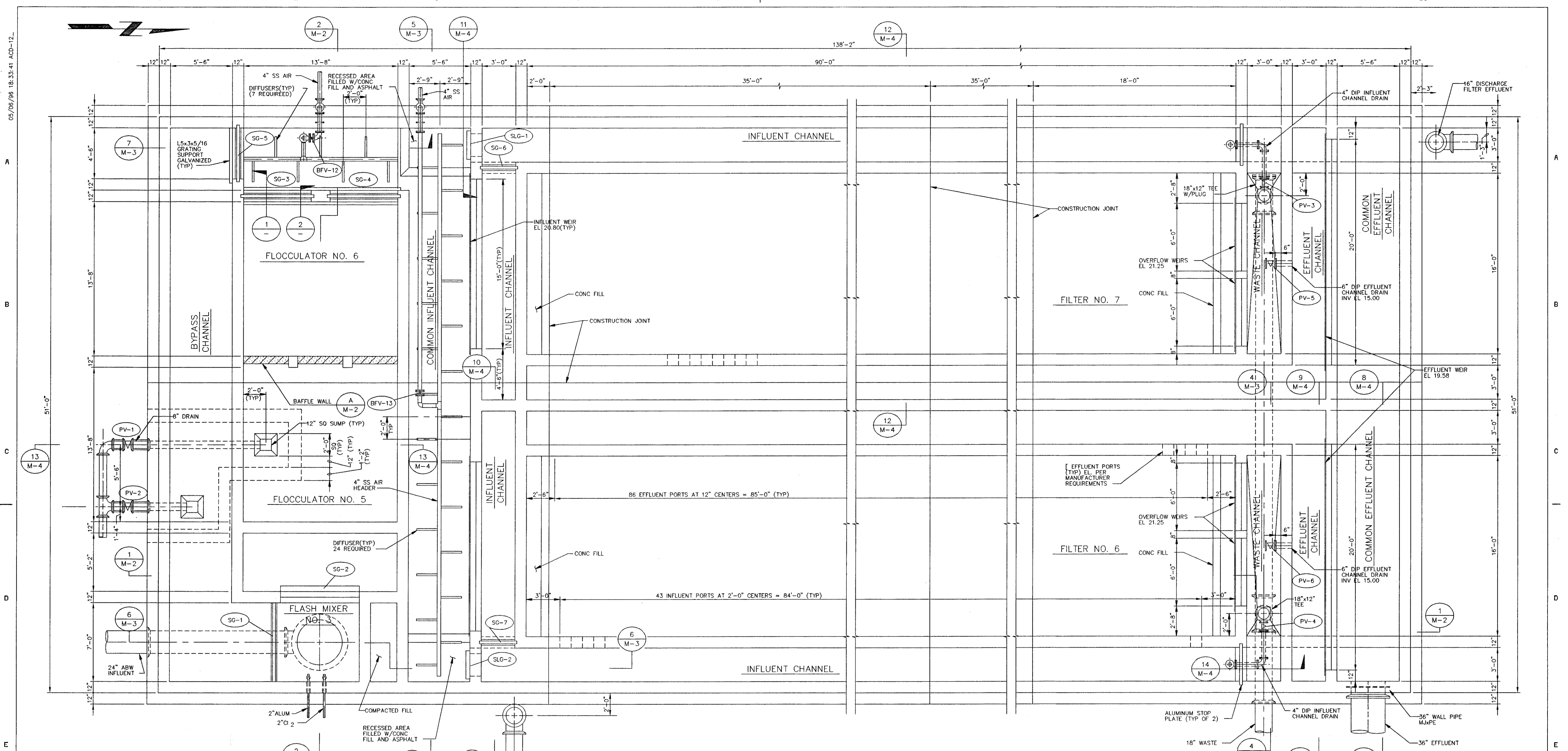
DESIGNED: AAW,MBS
DETAILED: RJE,DMD,RAR
CHECKED: WLK
APPROVED: _____
DATE: _____



PROJECT NO.
27740

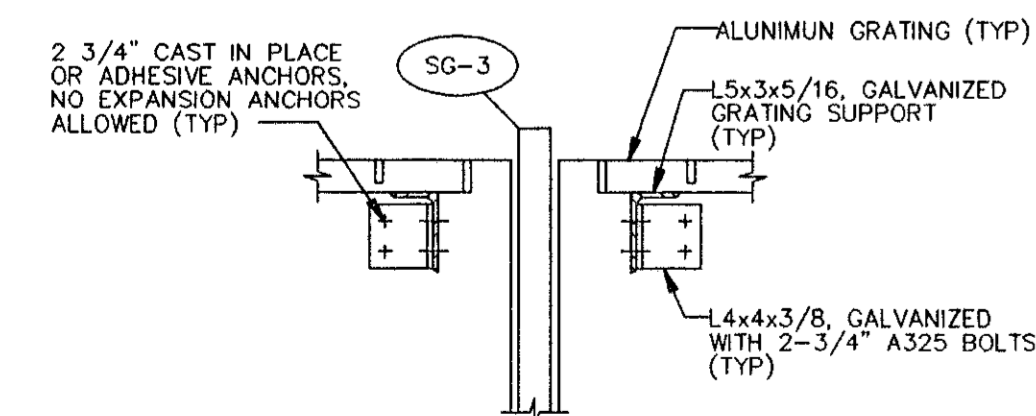
MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWTP ABW FILTERS ADDITION		M-1
NEW AUTOMATIC BACKWASH FILTERS STRUCTURAL AND MECHANICAL TOP PLAN		SHEET 6 OF 29

05/06/95 18:33:41 ACD-12

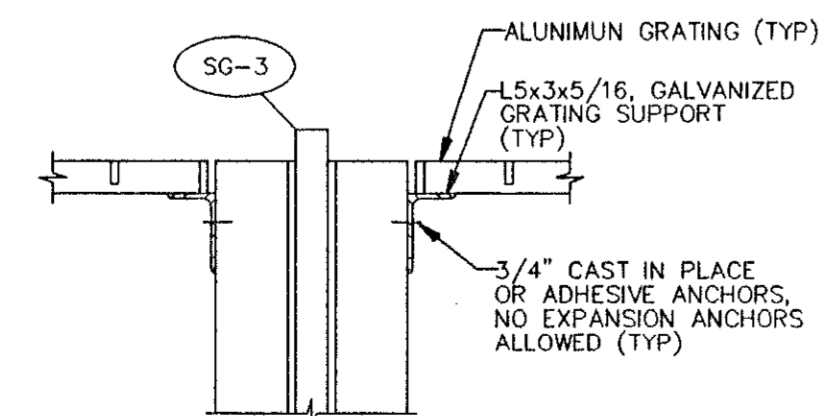


SECTIONAL PLAN-EL 20.83

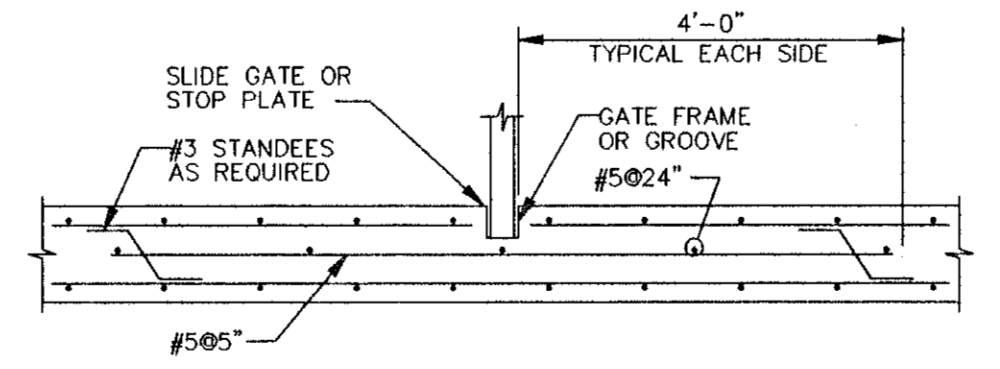
1/4" = 1'-0"



SECTION 1
1" = 1'-0"



SECTION 2
1" = 1'-0"



TYPICAL HORIZONTAL REINFORCEMENT AT GATE FRAME DETAIL
NO SCALE

RECORD SURVEY
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 WESTRA CONSTRUCTION CORP.
 1209 21st STREET, EAST
 PALMETTO, FL 34221 (941) 723-1611
 RICHARD C. MERRYMAN RLS 2827

NO.	BY	CK	APP	DATE	REVISIONS AND RECORD OF ISSUE

CONFORMED TO CONSTRUCTION RECORDS
Andrew A. West
 11-5-01

DESIGNED: AAW/MBS
 DETAILED: ABW
 CHECKED: WLK
 APPROVED: _____
 DATE: _____



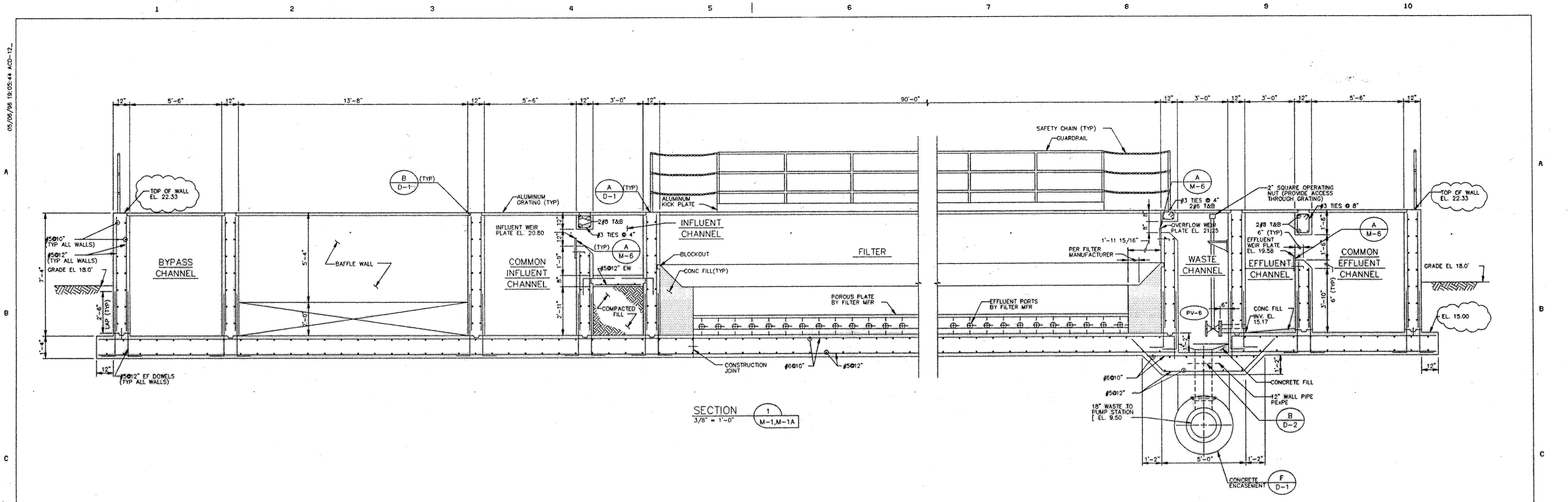
PROJECT NO.
27740

MANATEE COUNTY, FLORIDA
 SOUTHWEST REGIONAL WWTP
 ABW FILTERS ADDITION

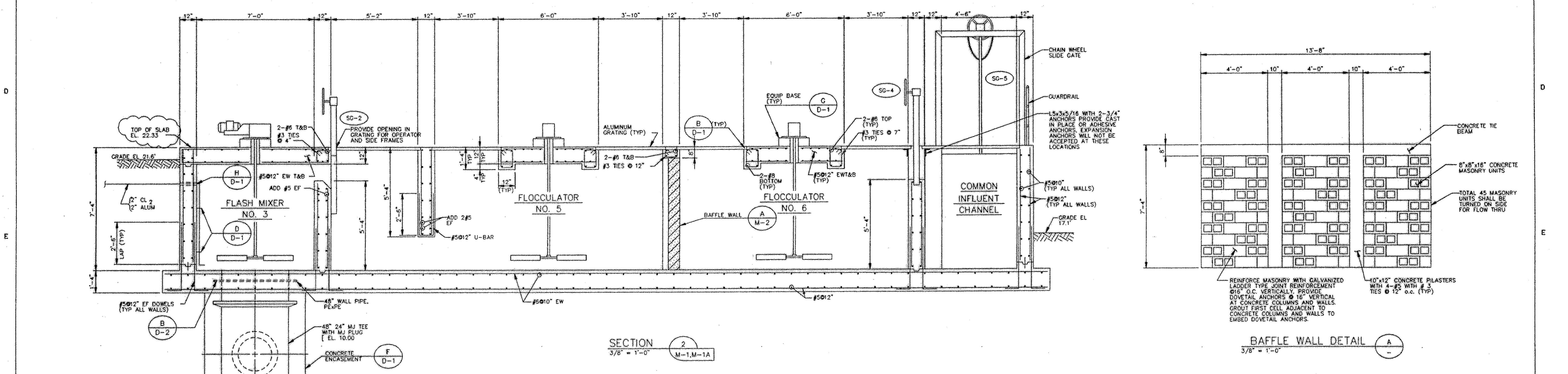
NEW AUTOMATIC BACKWASH FILTERS
 STRUCTURAL AND MECHANICAL
 SECTIONAL PLAN

M-1A
 SHEET
 7 OF 29

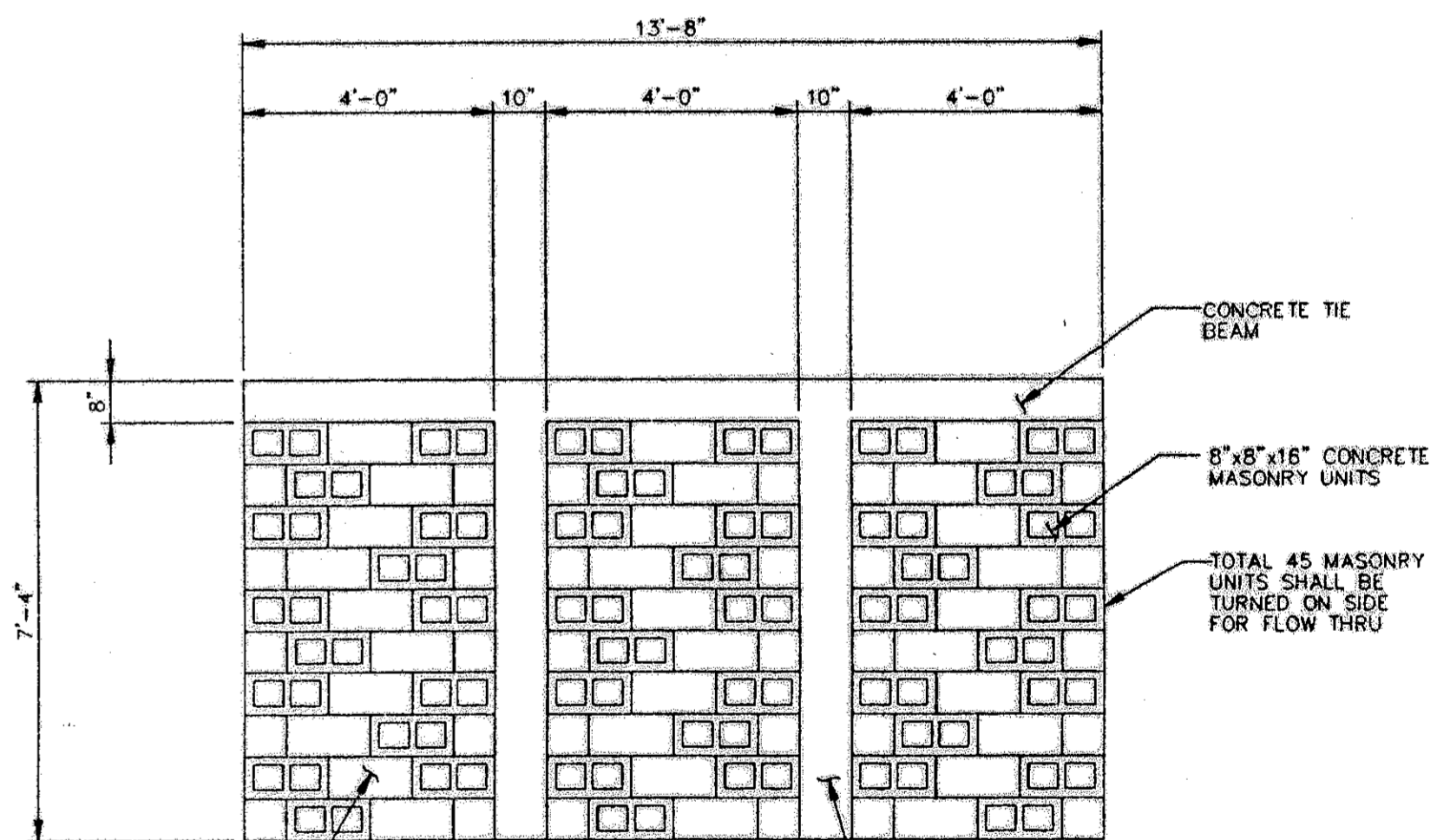
2533.014



SECTION 1
3/8" = 1'-0" M-1, M-1A



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



BAFFLE WALL DETAIL A
3/8" = 1'-0"

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
RICHARD C. MERRYMAN RLS 2827

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
3/28/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	1			

CONFORMED TO CONSTRUCTION RECORDS

DESIGNED: AAW/MBS
 DETAILED: RJE
 CHECKED: WLK
 APPROVED: _____
 DATE: _____

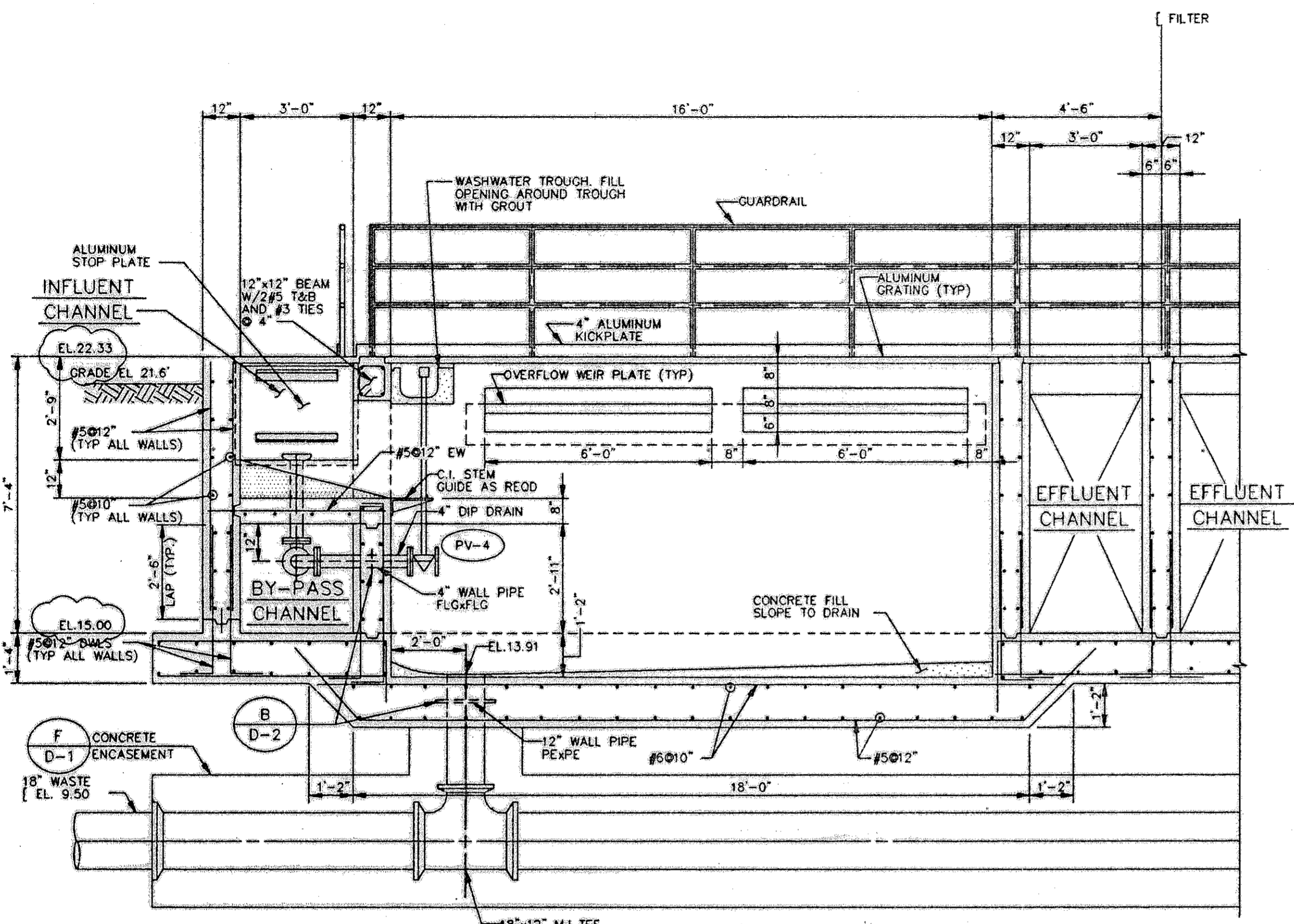


PROJECT NO.
27740

MANATEE COUNTY, FLORIDA
 SOUTHWEST REGIONAL WWTP
 ABW FILTERS ADDITION
 NEW AUTOMATIC BACKWASH FILTERS
 STRUCTURAL AND MECHANICAL
 SECTIONS

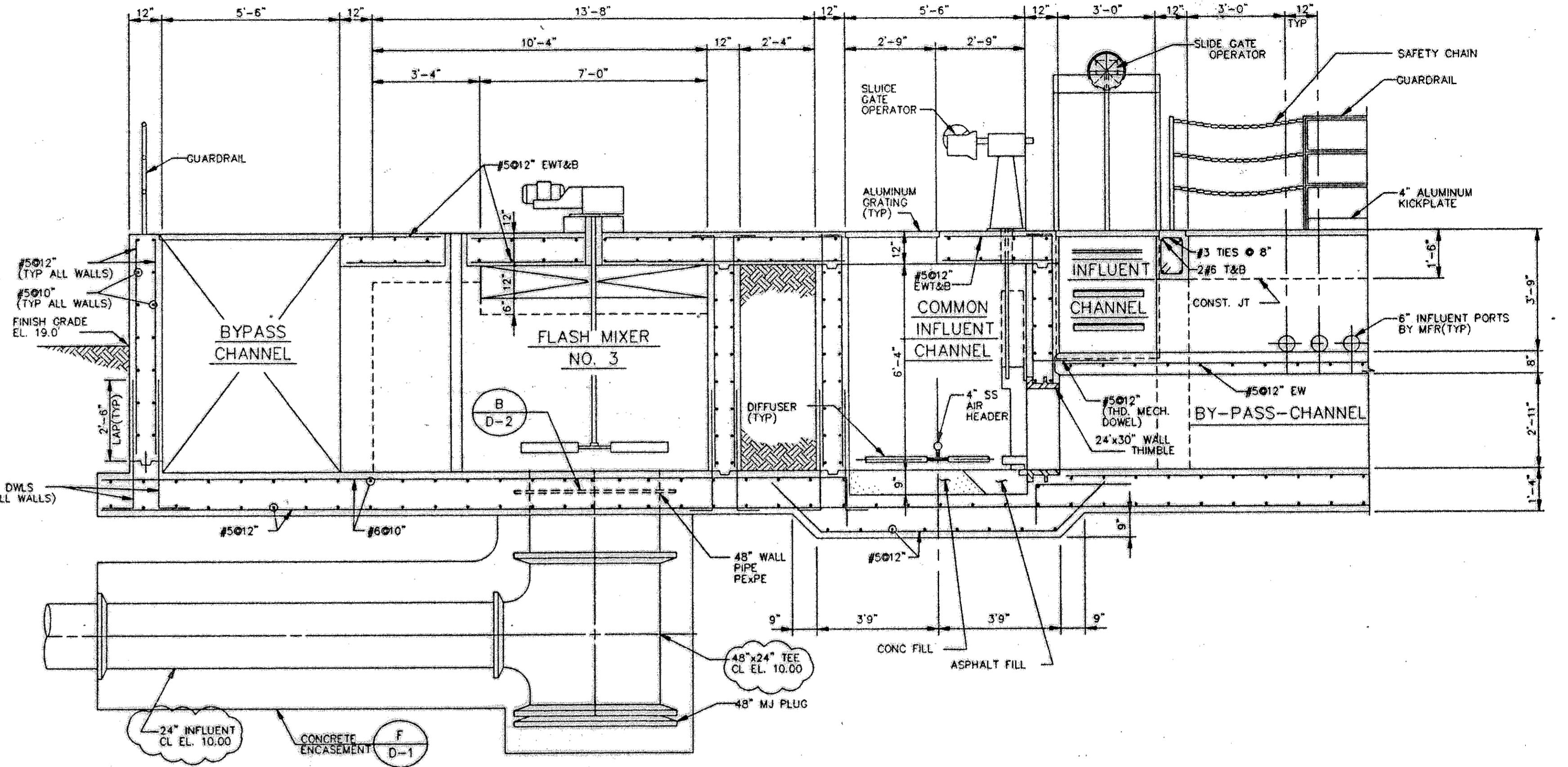
M-2
 SHEET
 8 OF 29

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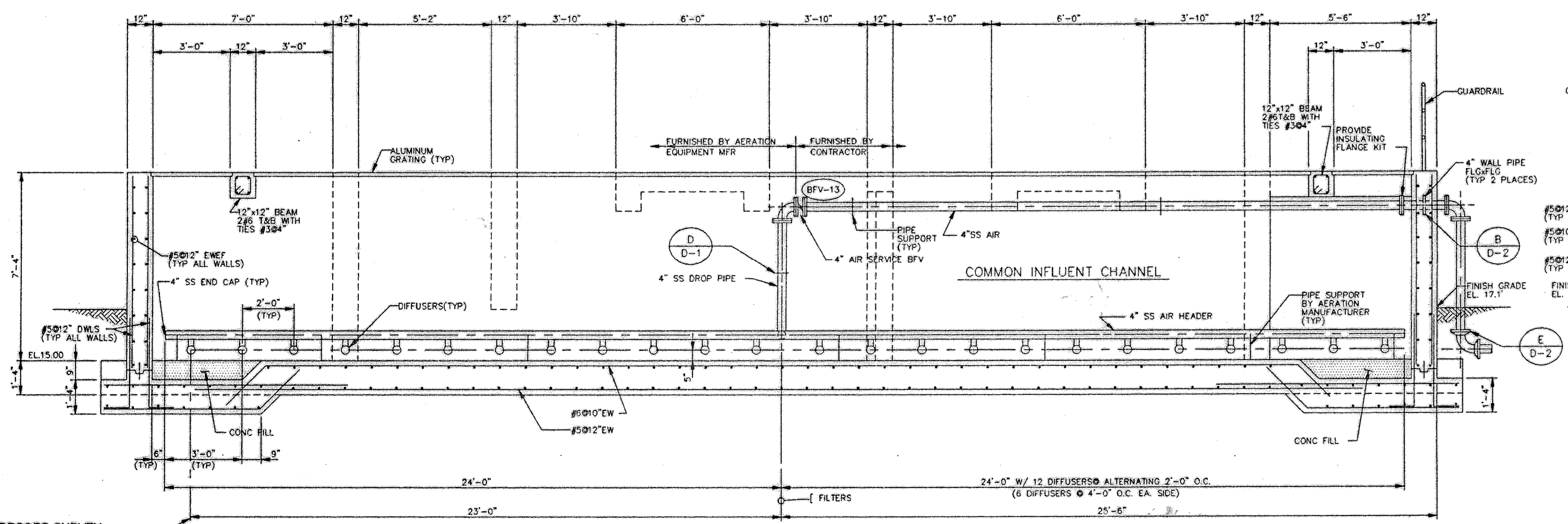


SECTION 4
3/8" = 1'-0"
M-1, M-1A

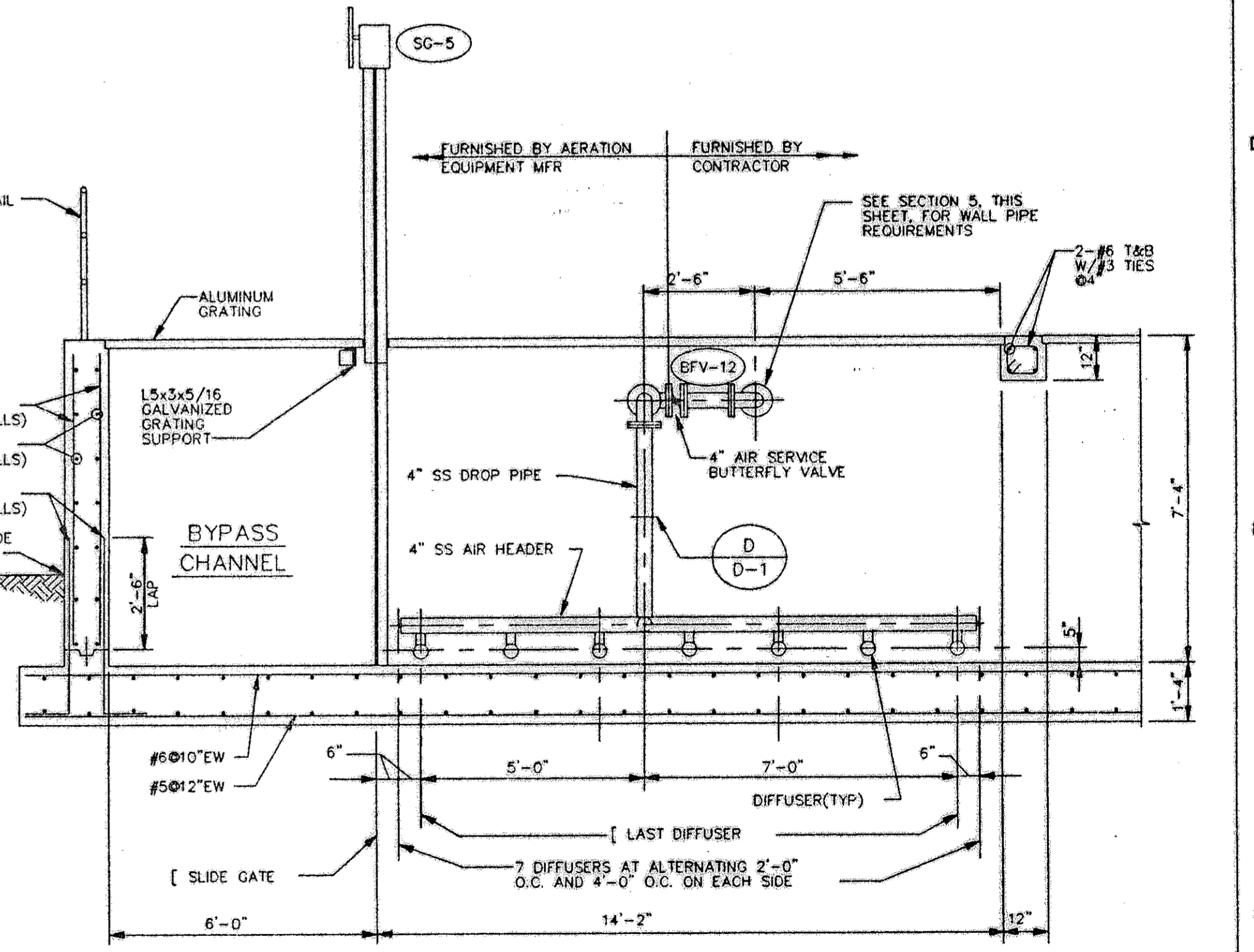
NOTE:
FILTER IS APPROXIMATELY
SYMMETRICAL ABOUT THE
CENTERLINE.



SECTION 6
3/8" = 1'-0"
M-1, M-1A



SECTION 5
3/8" = 1'-0"
M-1, M-1A



SECTION 7
3/8" = 1'-0"
M-1, M-1A

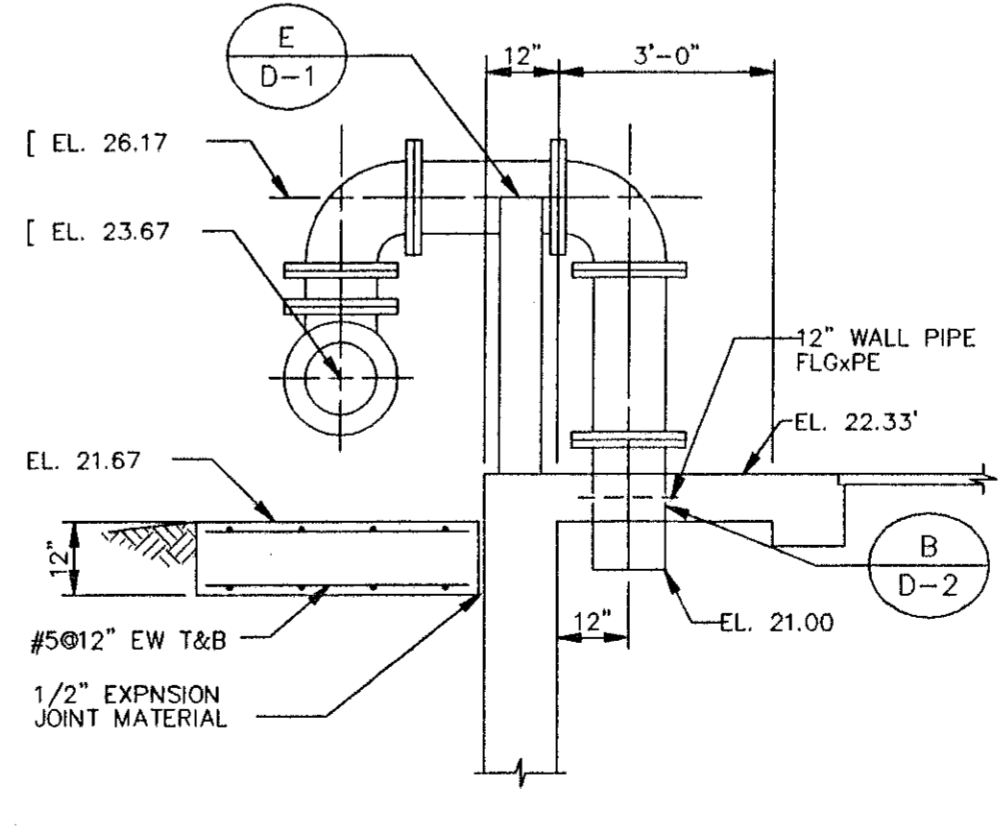
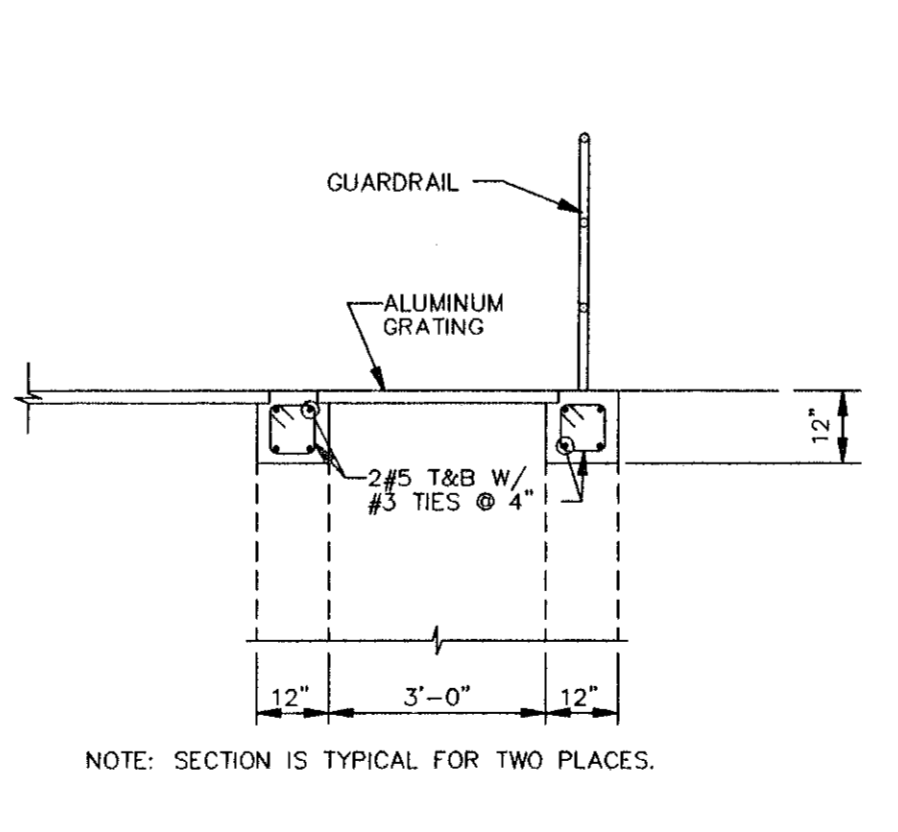
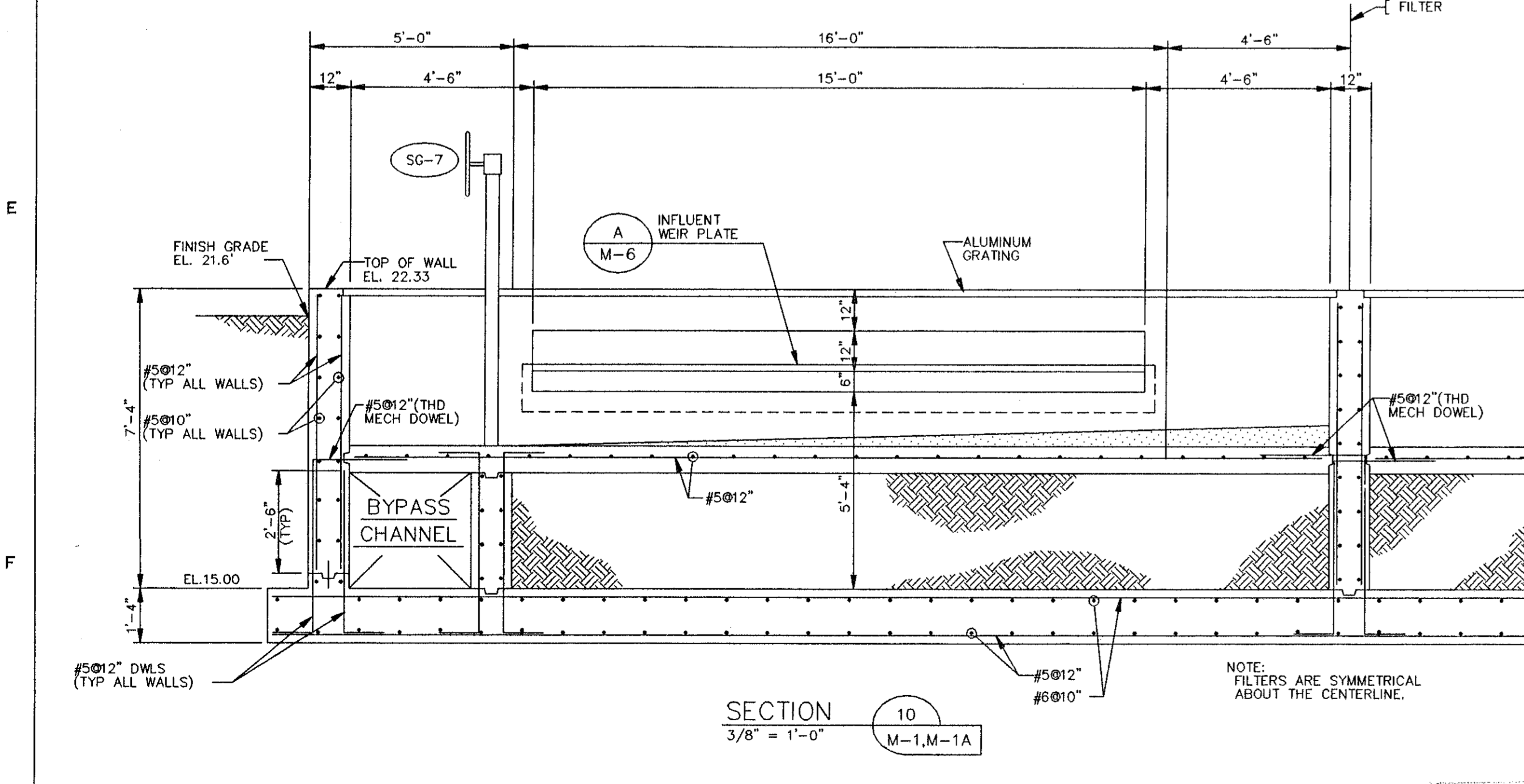
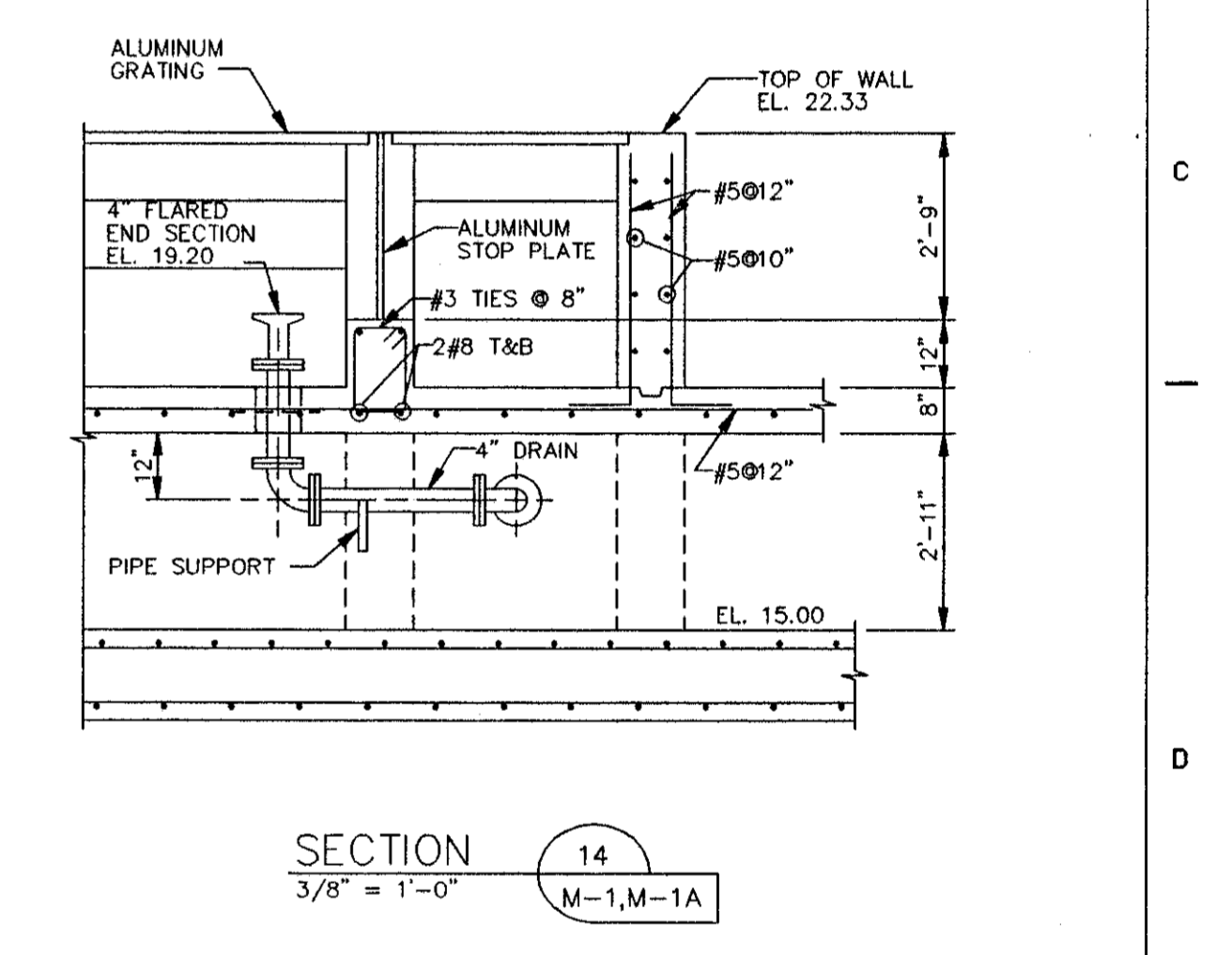
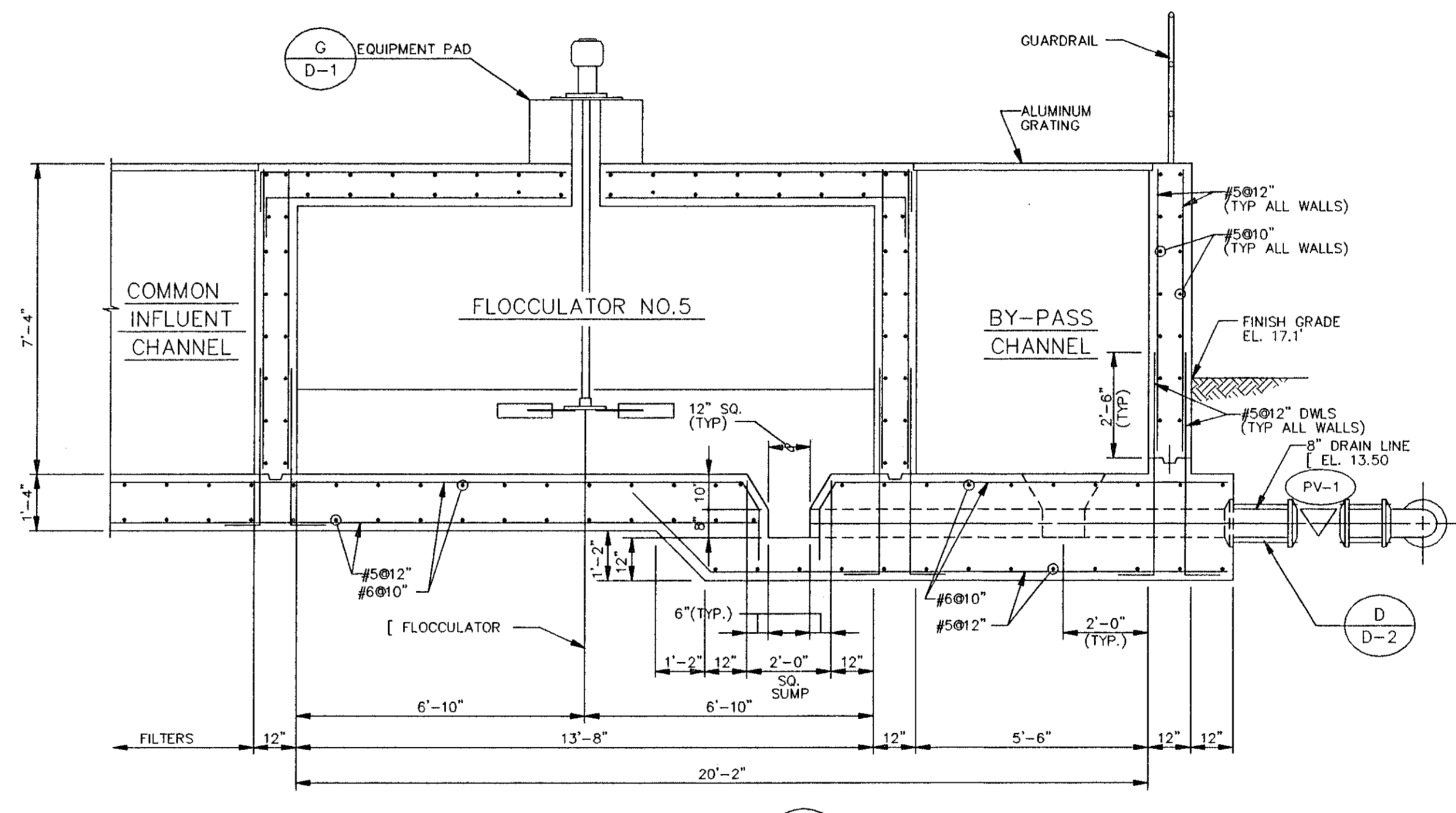
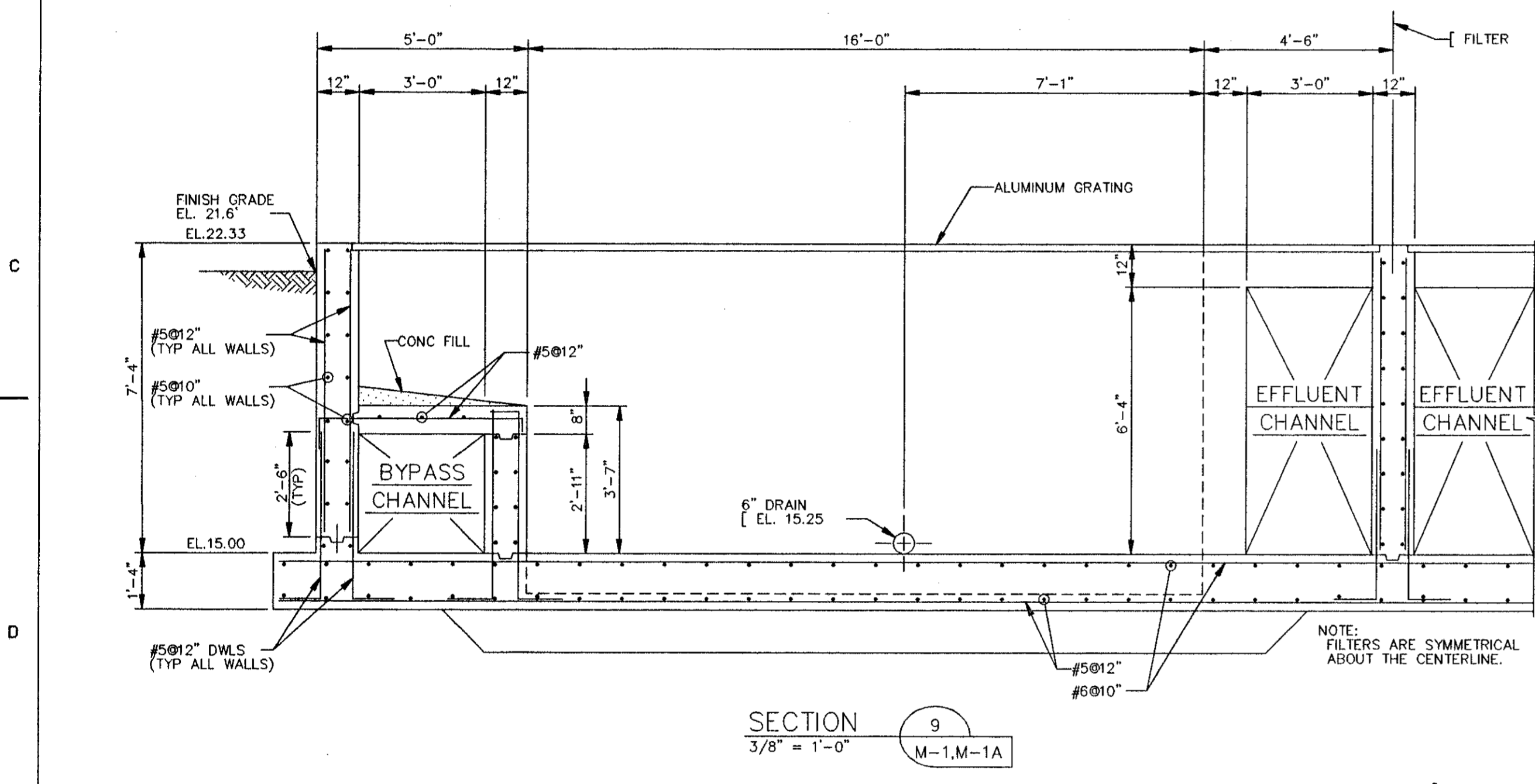
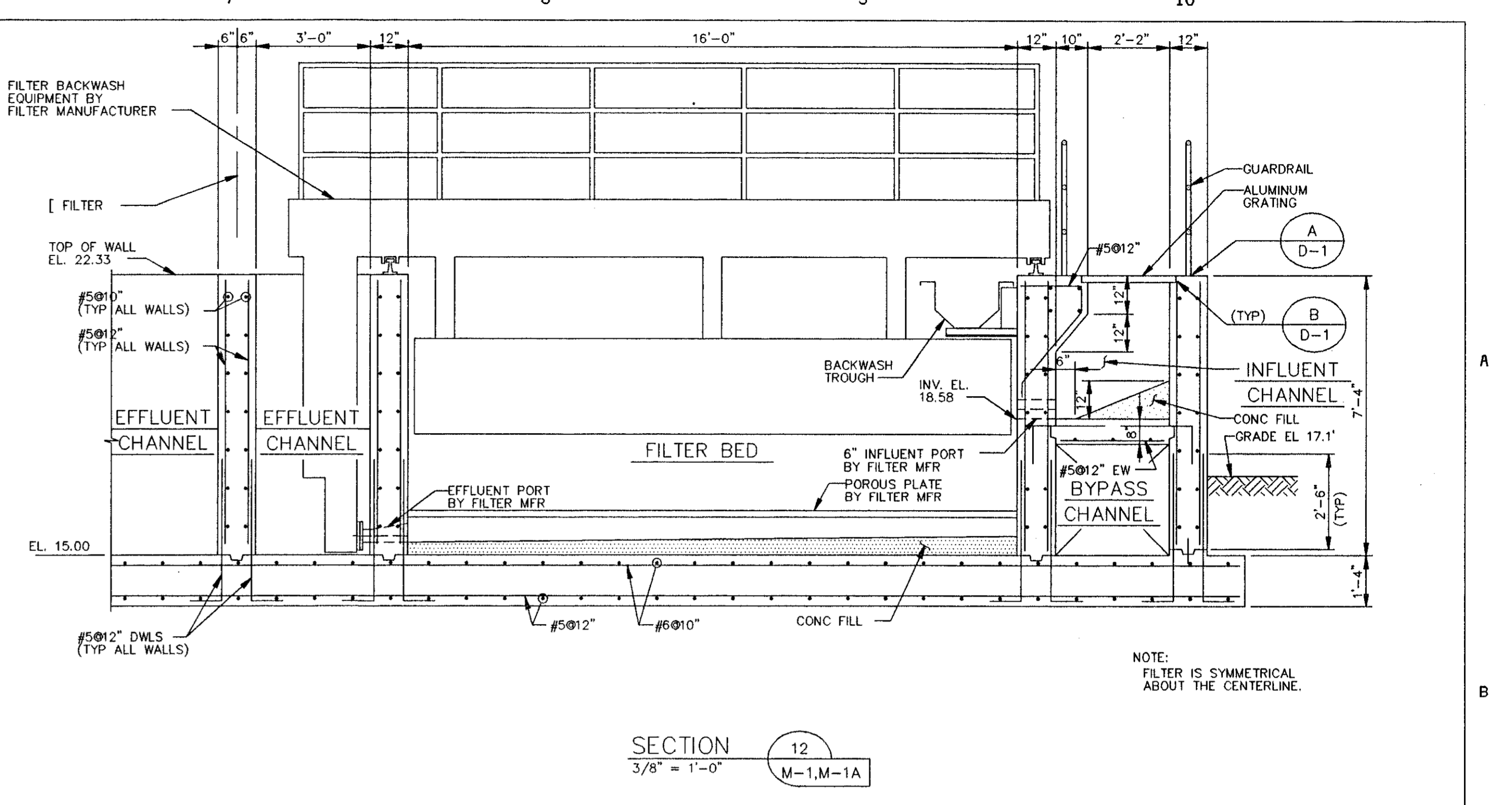
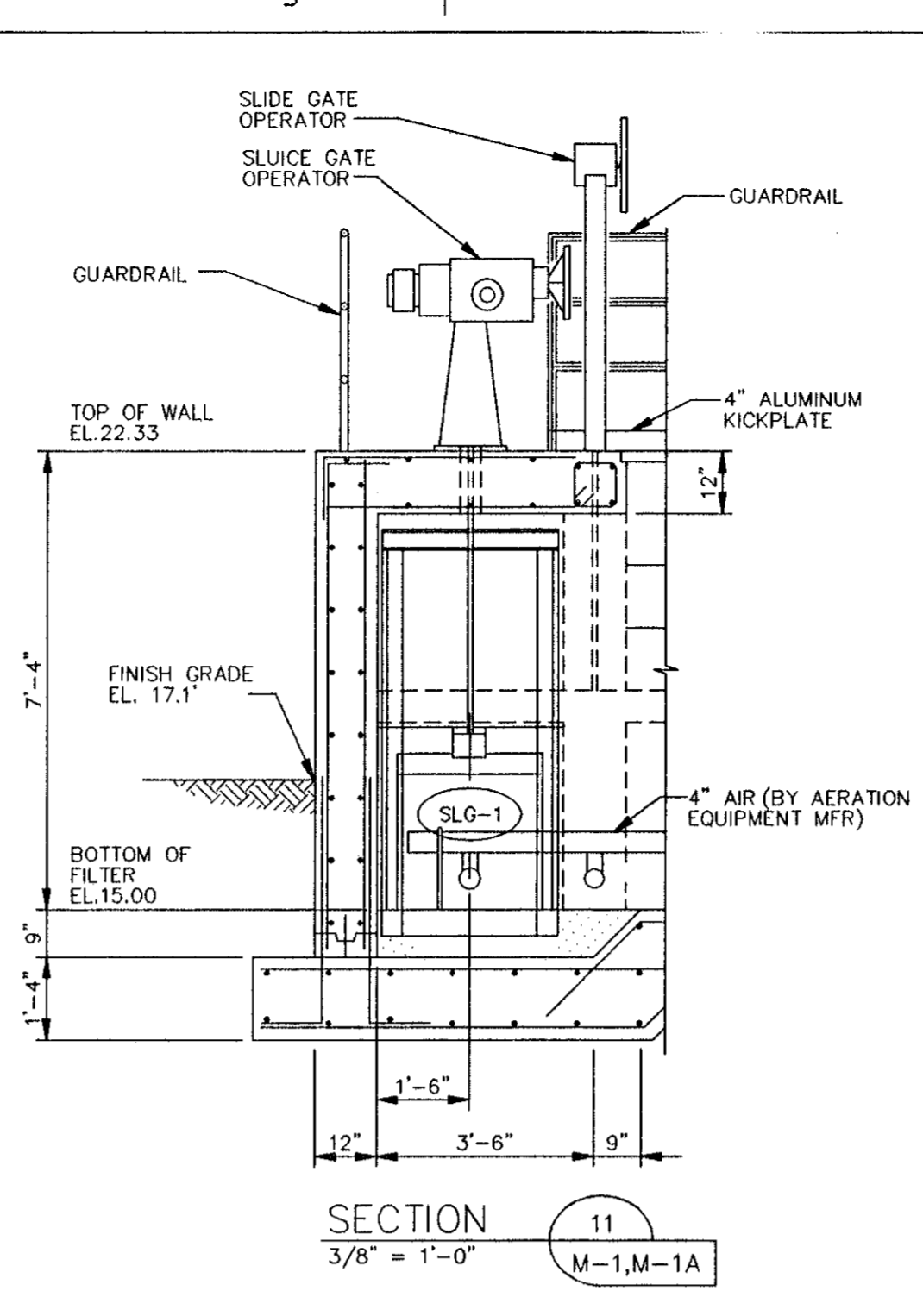
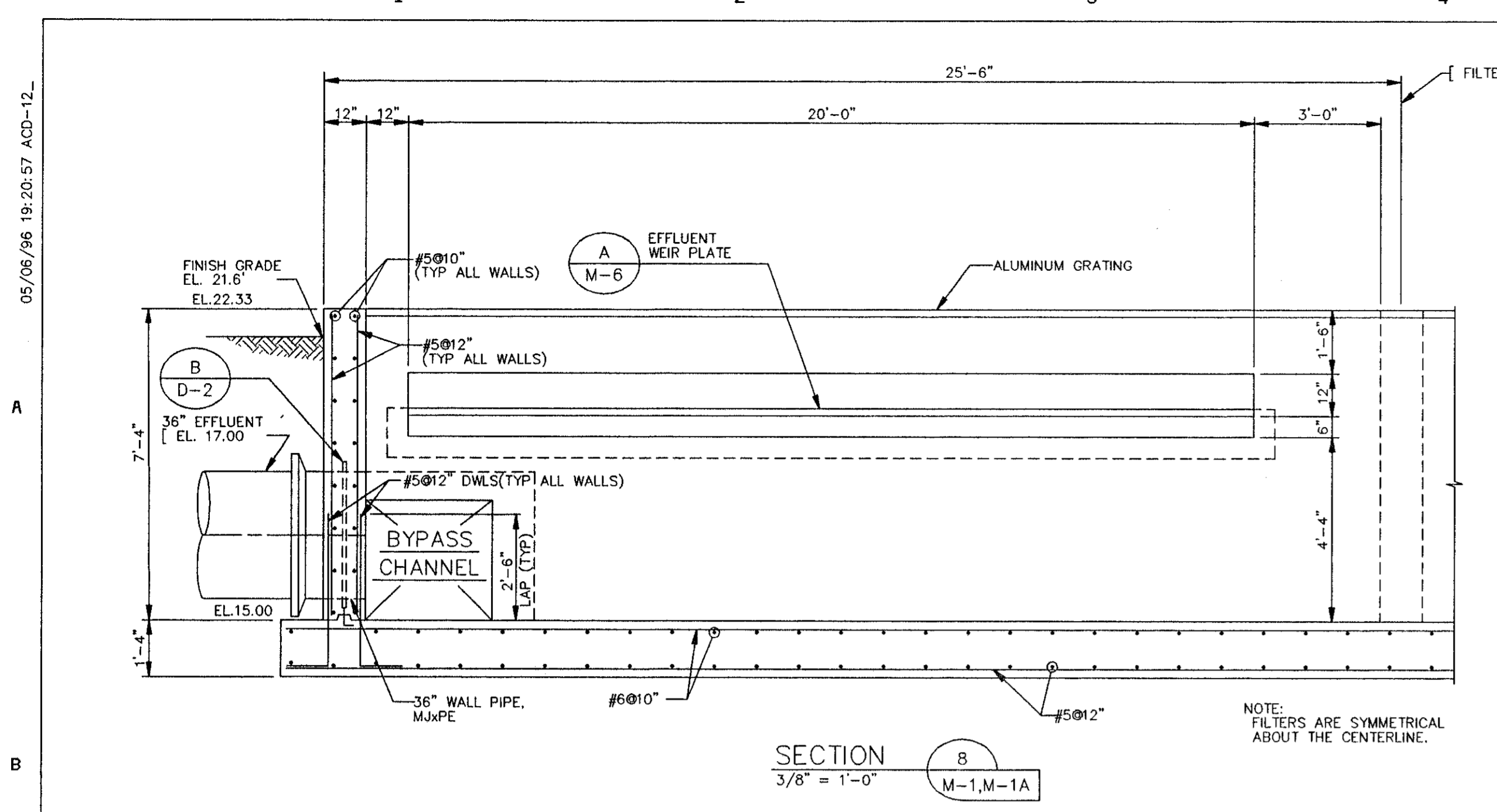
RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
RICHARD C. MERRYMAN RLS 2827

#	DATE	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	NO.	BY	CK	APP
1	3/28/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	1			
REVISIONS AND RECORD OF ISSUE						

CONFORMED TO CONSTRUCTION RECORDS
DESIGNED: AAW/MBS
DETAILED: JAC
CHECKED: WLK
APPROVED: [Signature]
DATE: 11-5-01

PROJECT NO. 27740
Black & Veatch
Tampa, Florida

MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWTP
ABW FILTERS ADDITION
NEW AUTOMATIC BACKWASH FILTERS
STRUCTURAL AND MECHANICAL
SECTIONS
M-3
SHEET 9 OF 29



RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
RICHARD C. MERRYMAN RLS 2827

MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWP ABW FILTERS ADDITION		M-4
NEW AUTOMATIC BACKWASH FILTERS STRUCTURAL AND MECHANICAL SECTIONS		SHEET 10 OF 29

NO.	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

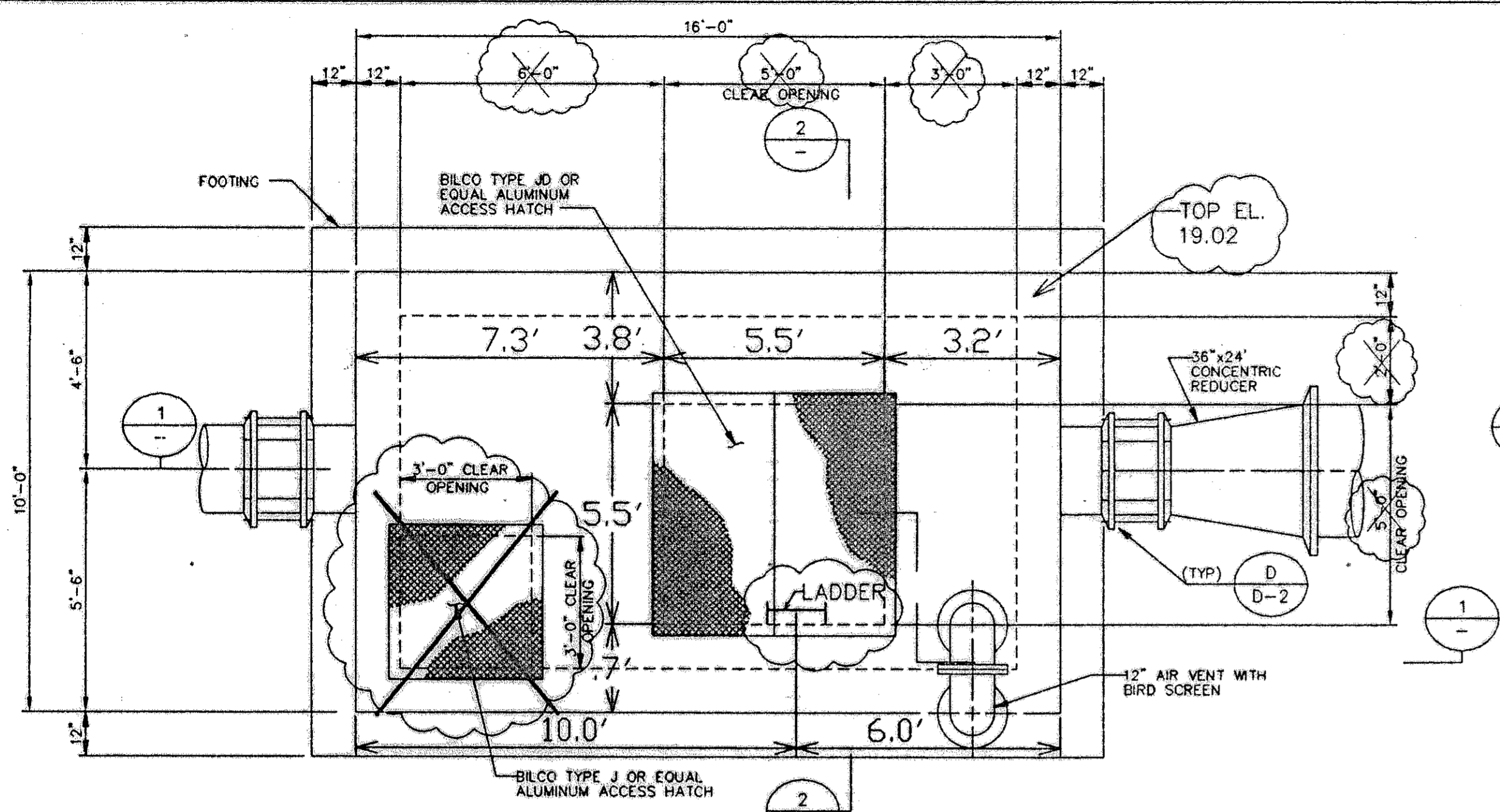
CONFORMED TO CONSTRUCTION RECORDS

DESIGNED: AAW
 DETAILED: JAC
 CHECKED: WLK
 APPROVED: [Signature]
 DATE: 11-5-01

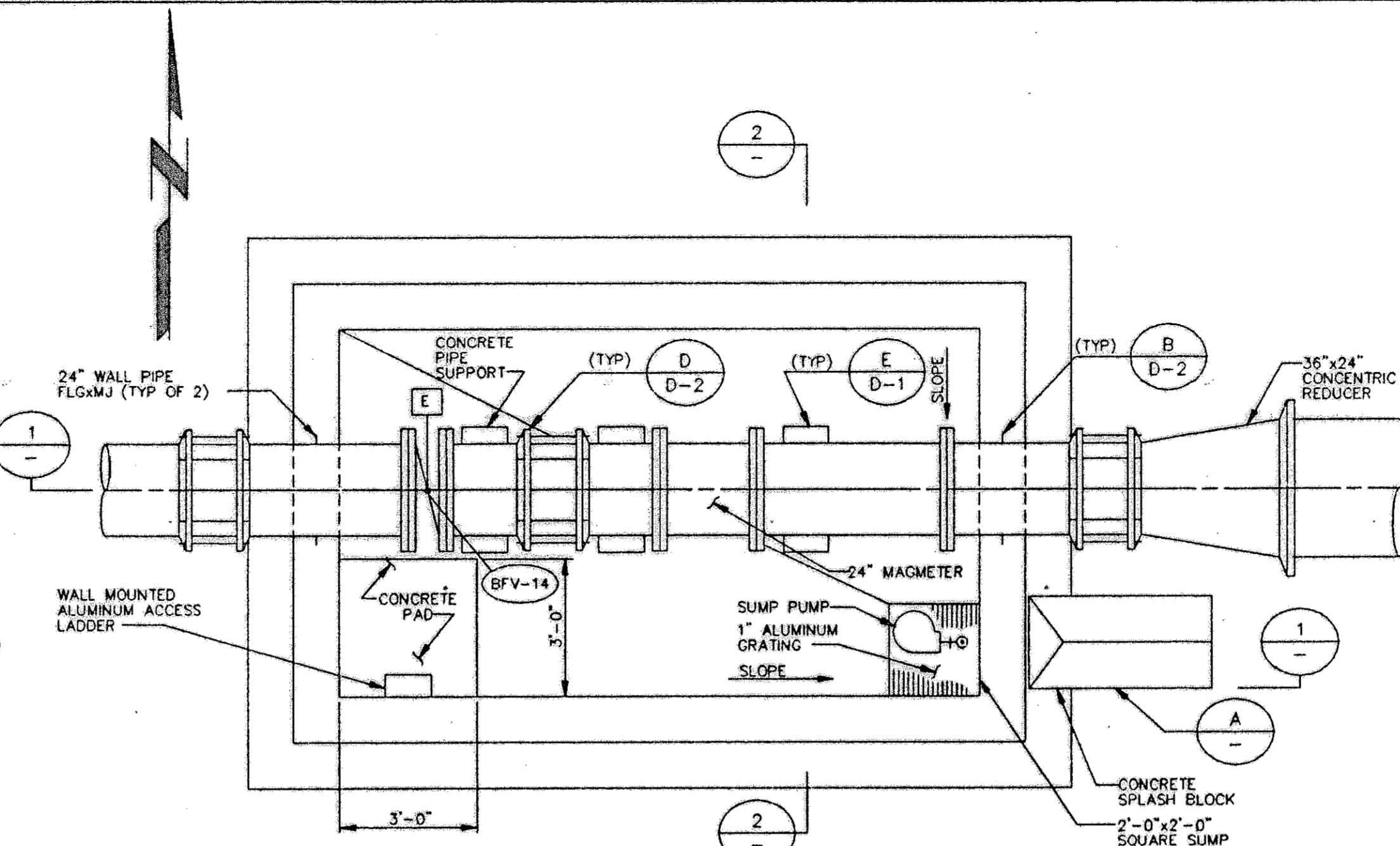
Black & Veatch
Tampa, Florida

PROJECT NO. 27740

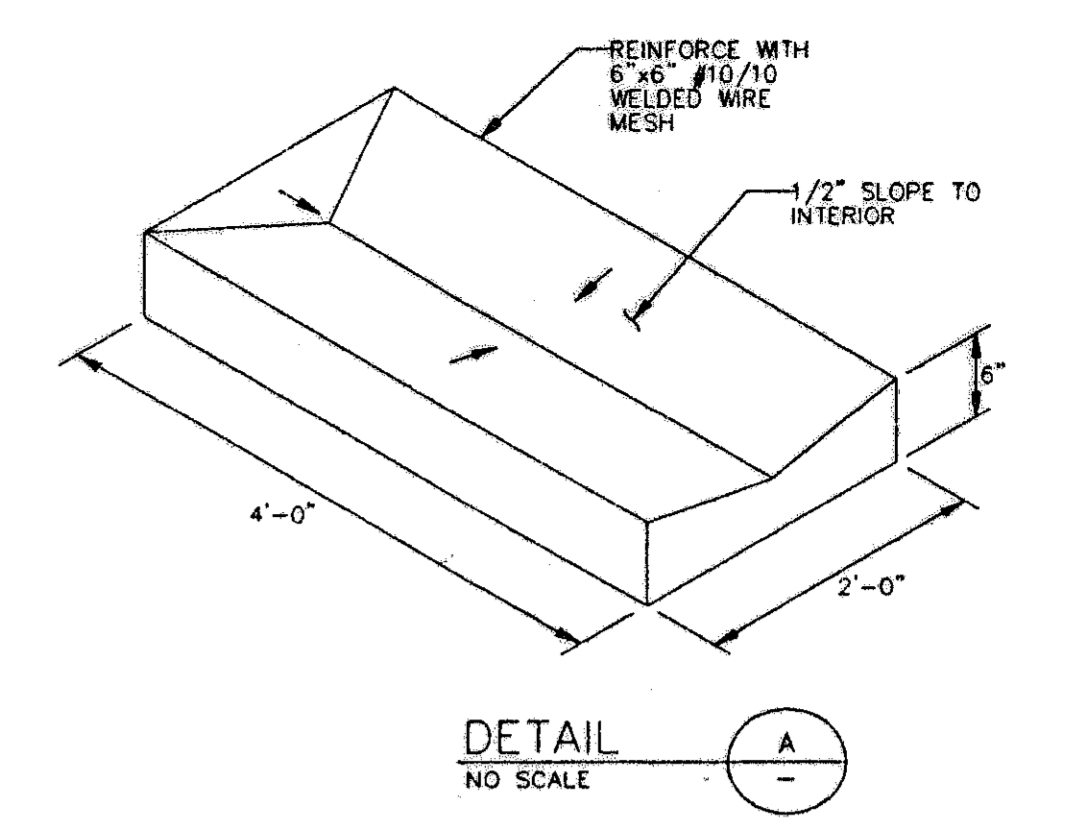
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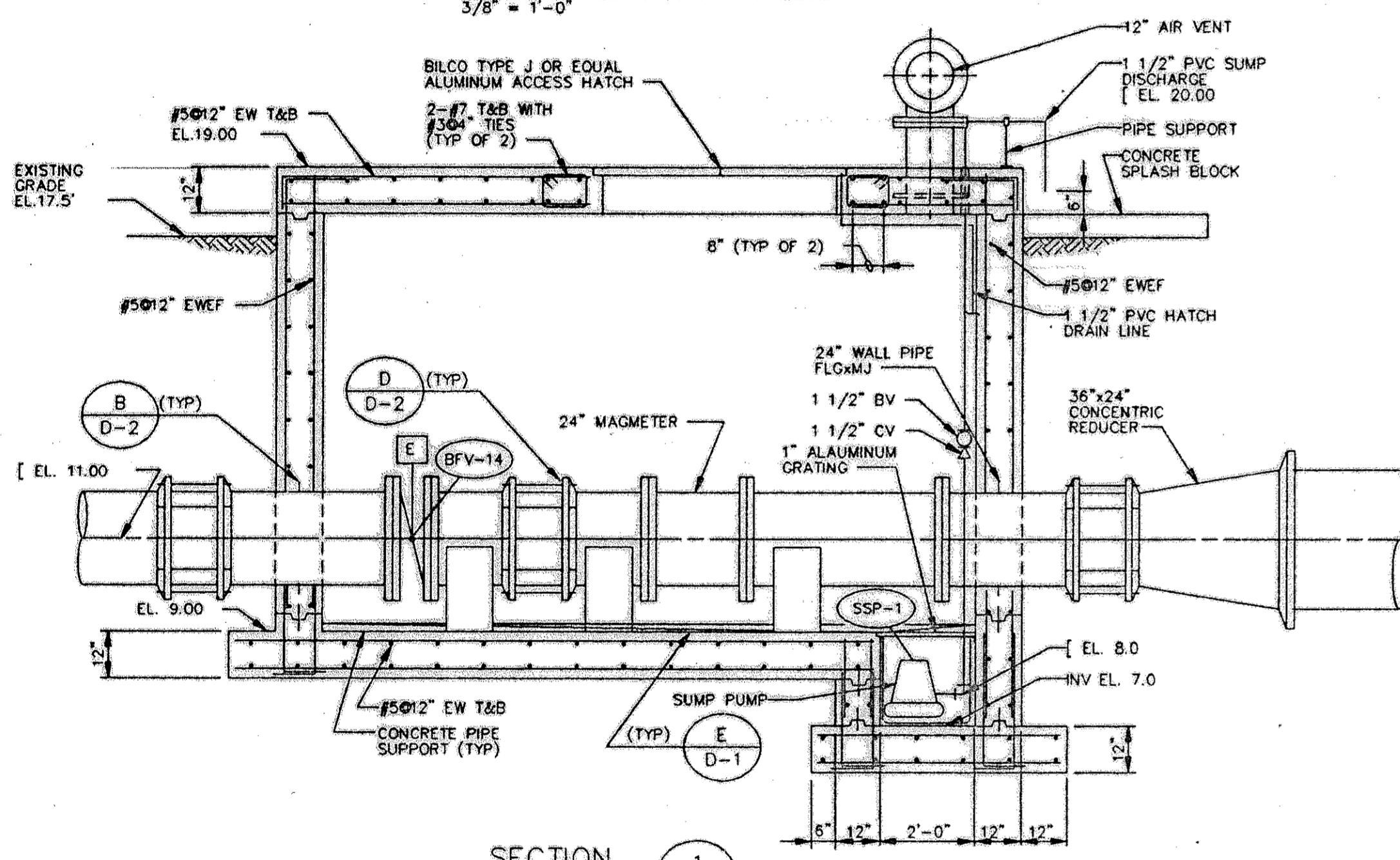
METERING VAULT PLAN
3/8" = 1'-0"



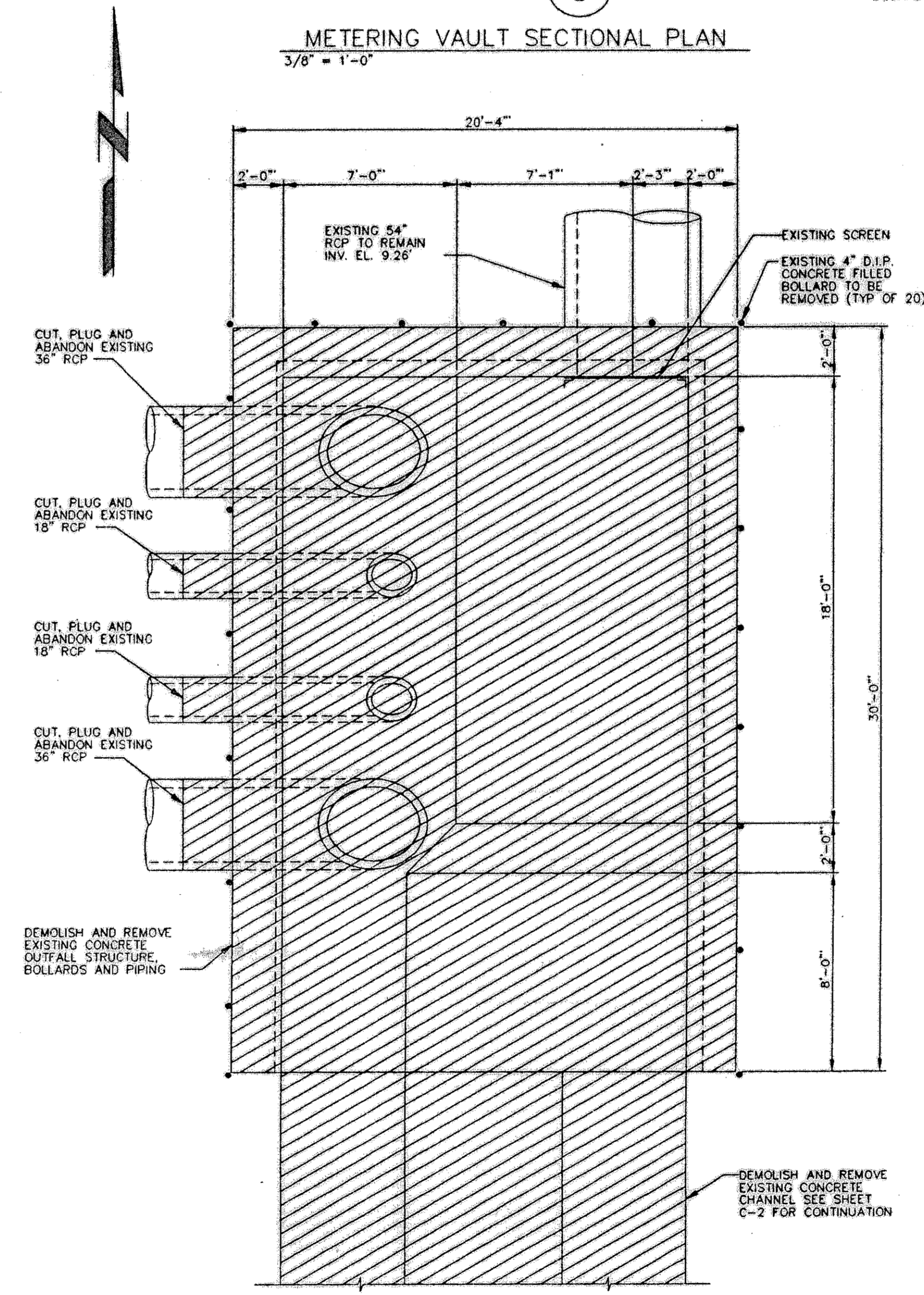
METERING VAULT SECTIONAL PLAN
3/8" = 1'-0"



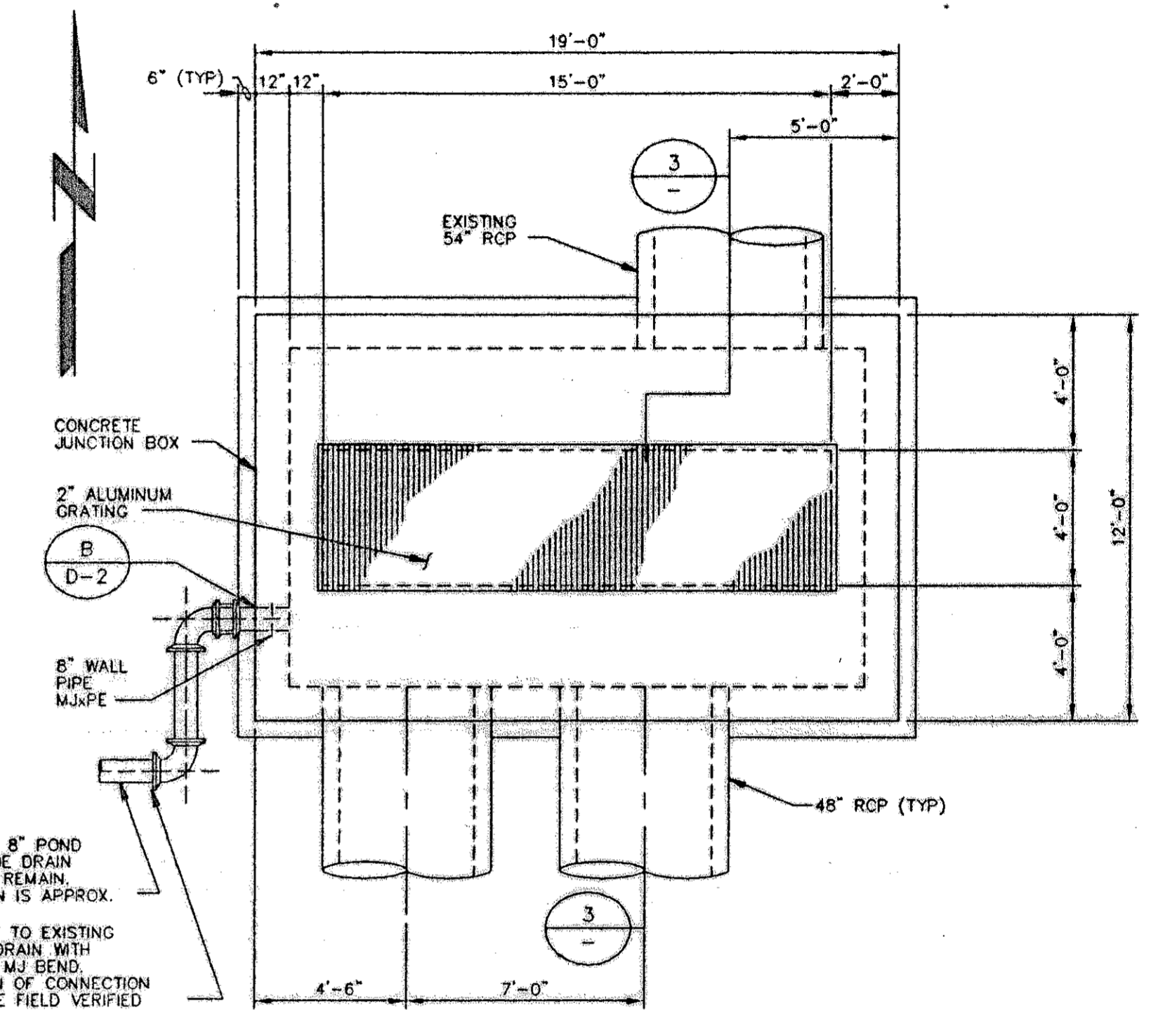
DETAIL A
NO SCALE



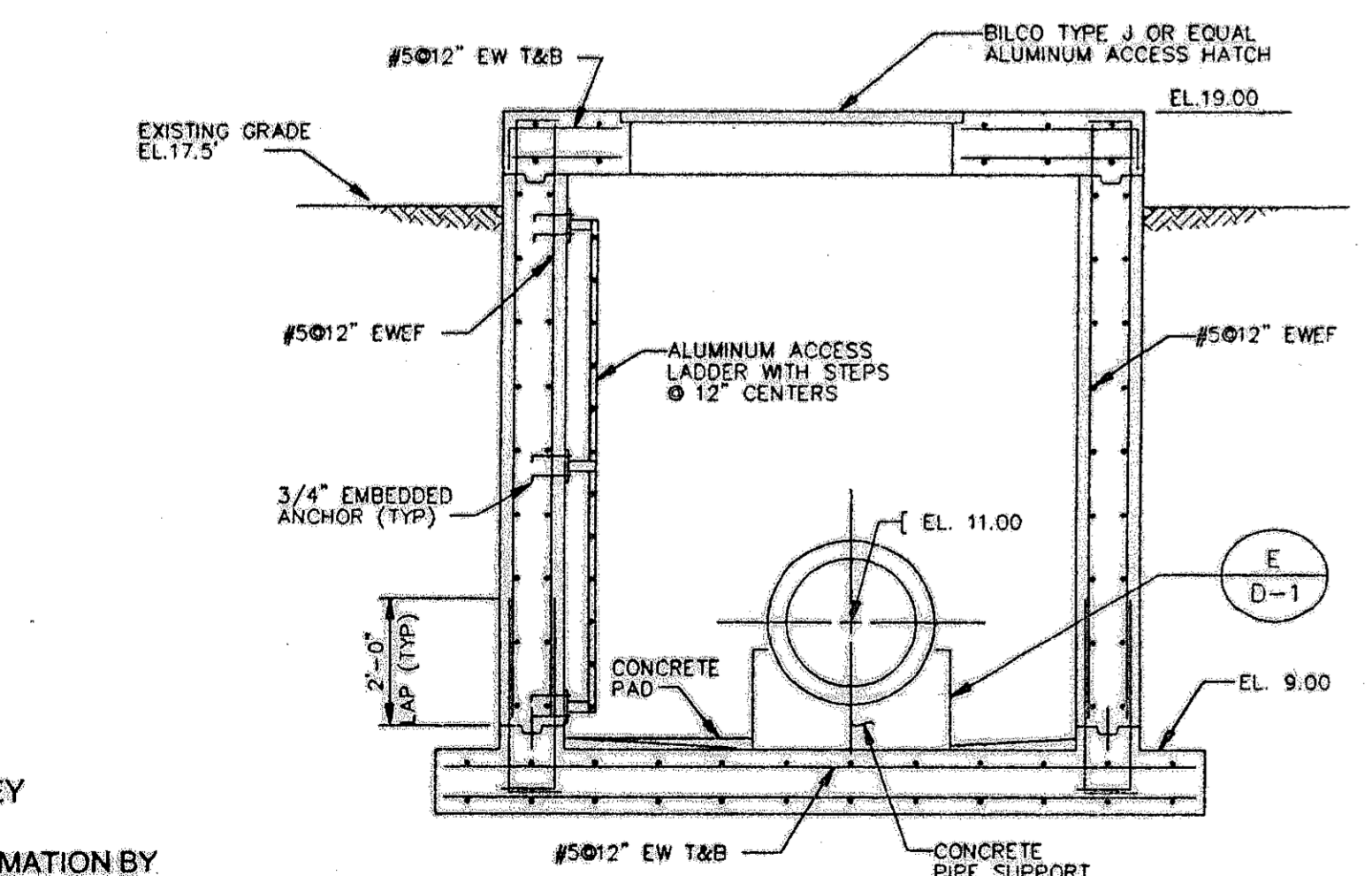
SECTION 1
3/8" = 1'-0"



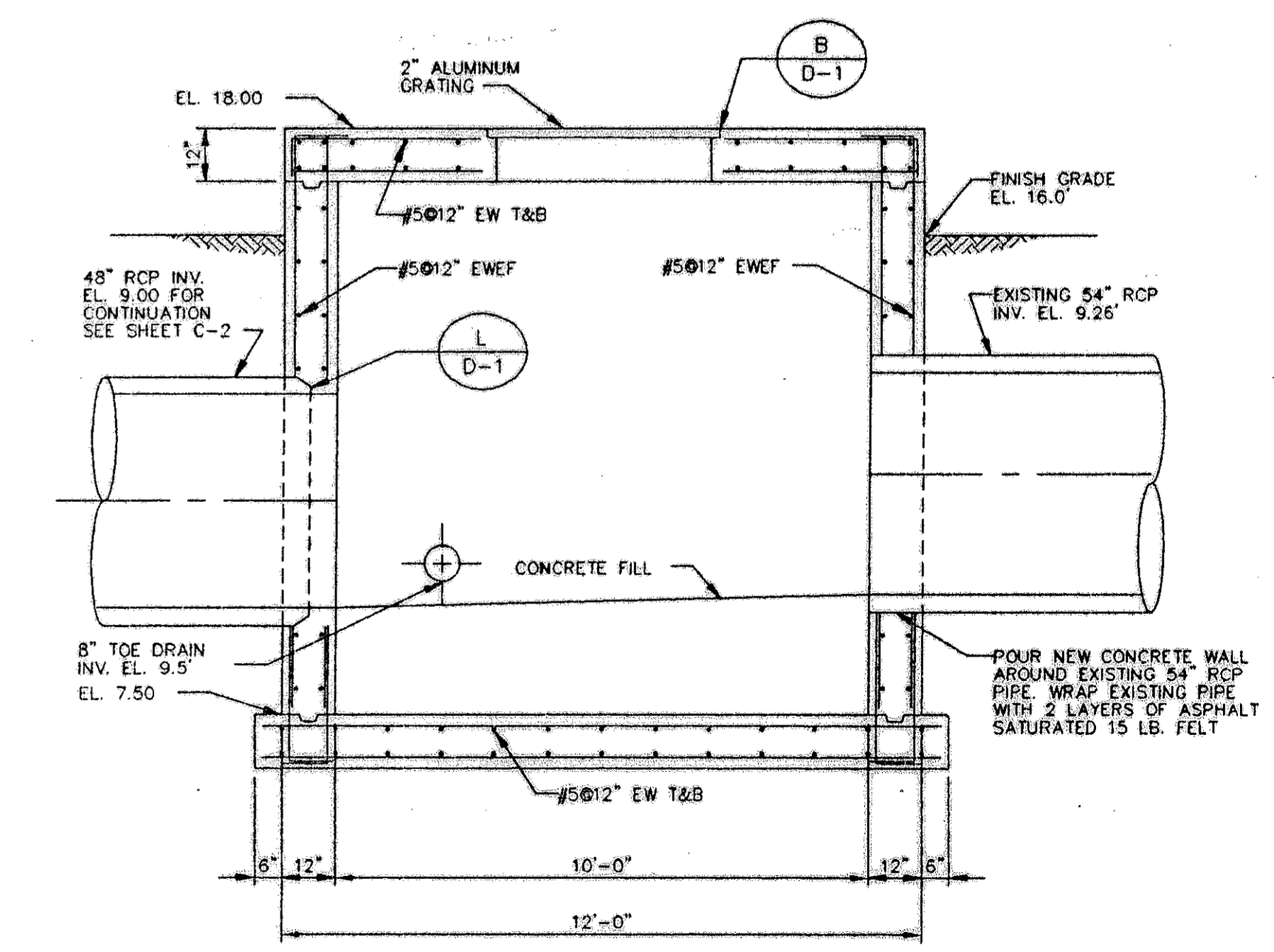
OUTFALL STRUCTURE MODIFICATIONS PLAN
1/4" = 1'-0"



OUTFALL JUNCTION BOX PLAN
1/4" = 1'-0"



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



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

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
RICHARD C. MERRYMAN RLS 2827

NO.	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP
1	5/30/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	1			

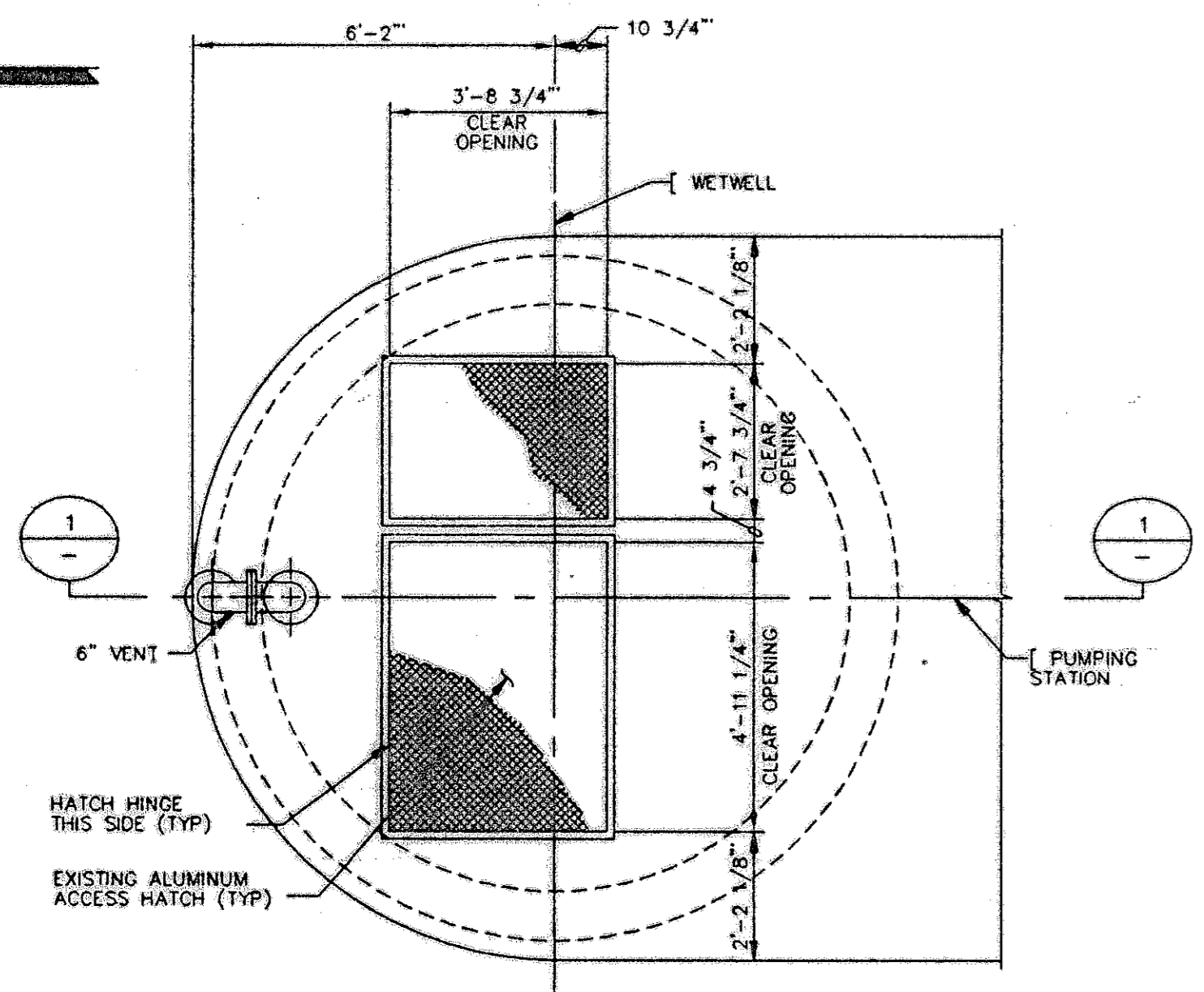
CONFORMED TO CONSTRUCTION RECORDS
DESIGNED: AAW
DETAILED: RJE
CHECKED: WJK
APPROVED: [Signature]
DATE: 11-5-01

Black & Veatch
Tampa, Florida

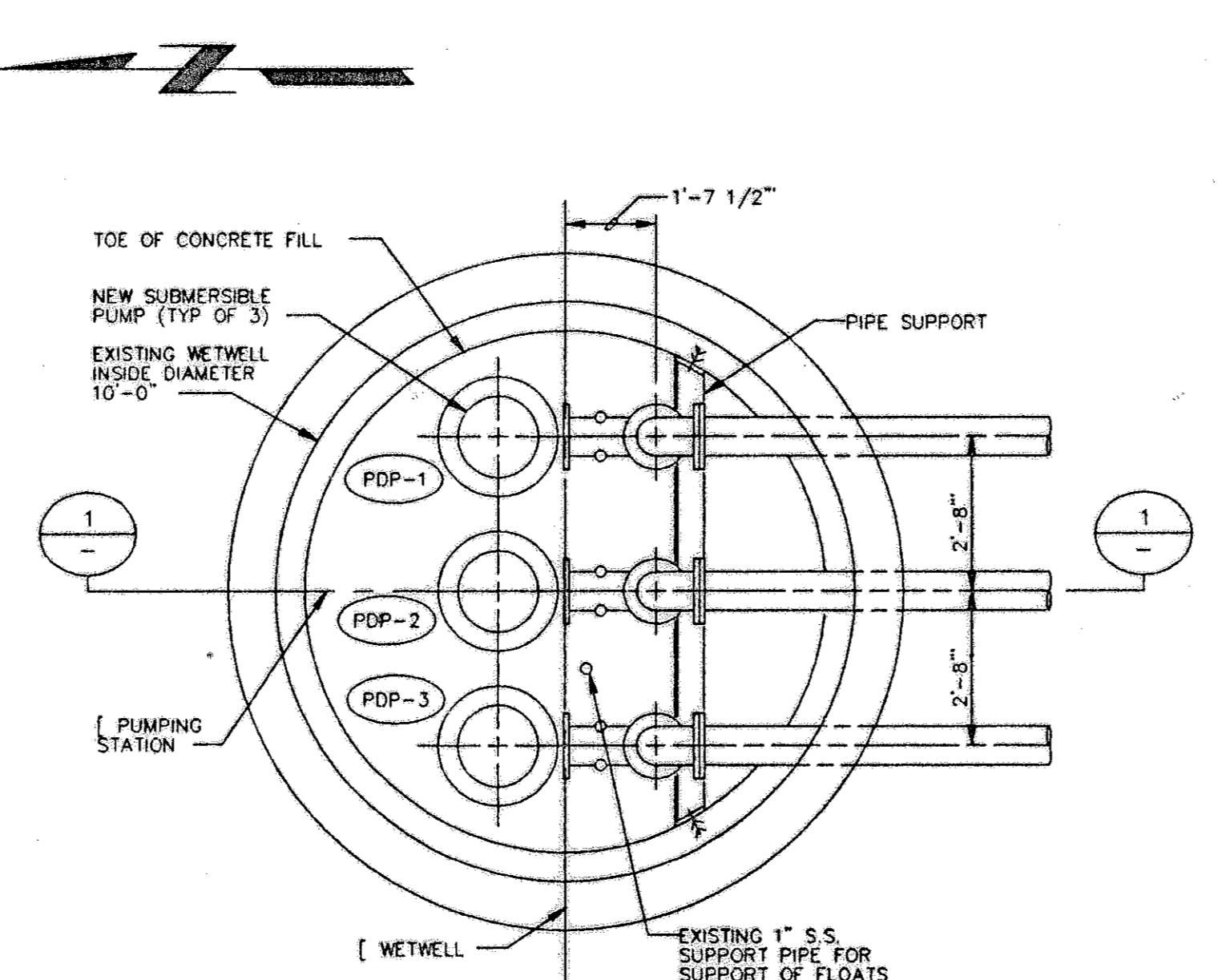
PROJECT NO.
27740

MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWTP
ABW FILTERS ADDITION
NEW METERING VAULT AND
NEW OUTFALL JUNCTION BOX
PLANS AND SECTIONS

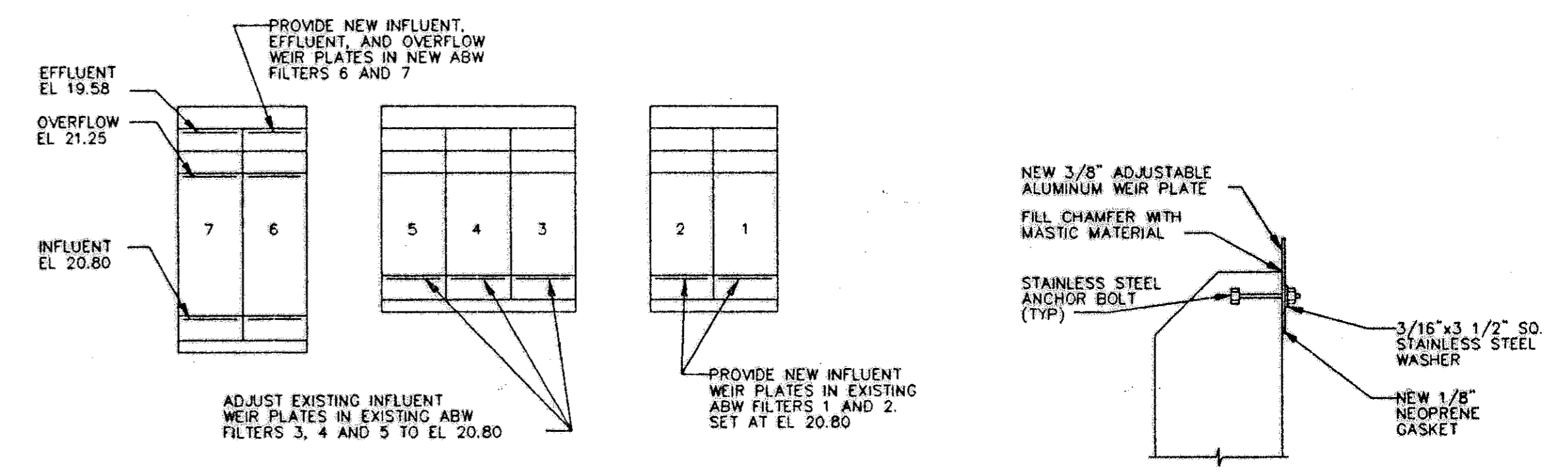
M-5
SHEET
11 OF 29



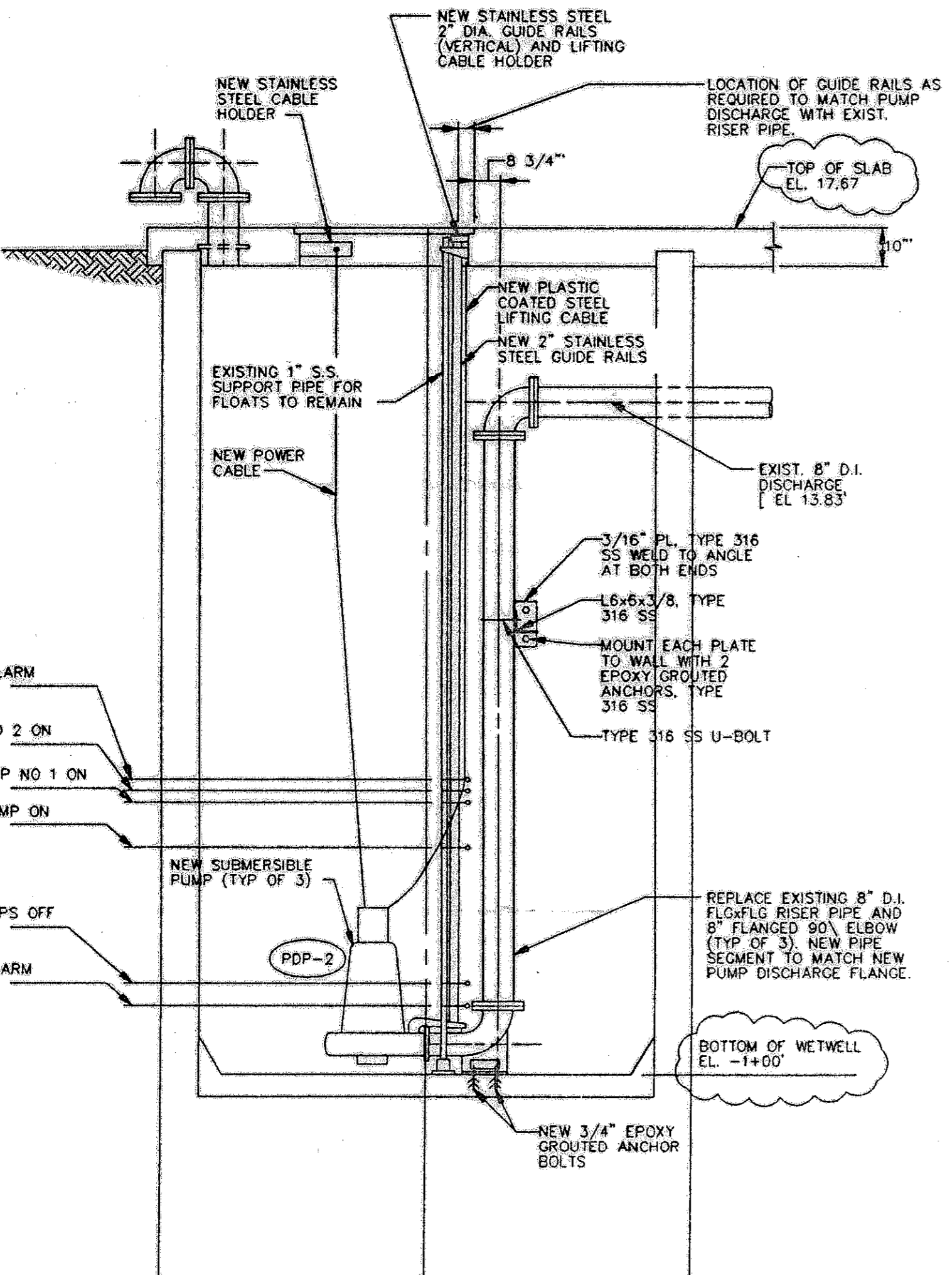
PLANT DRAIN PUMPING STATION TOP PLAN
3/8" = 1'-0"



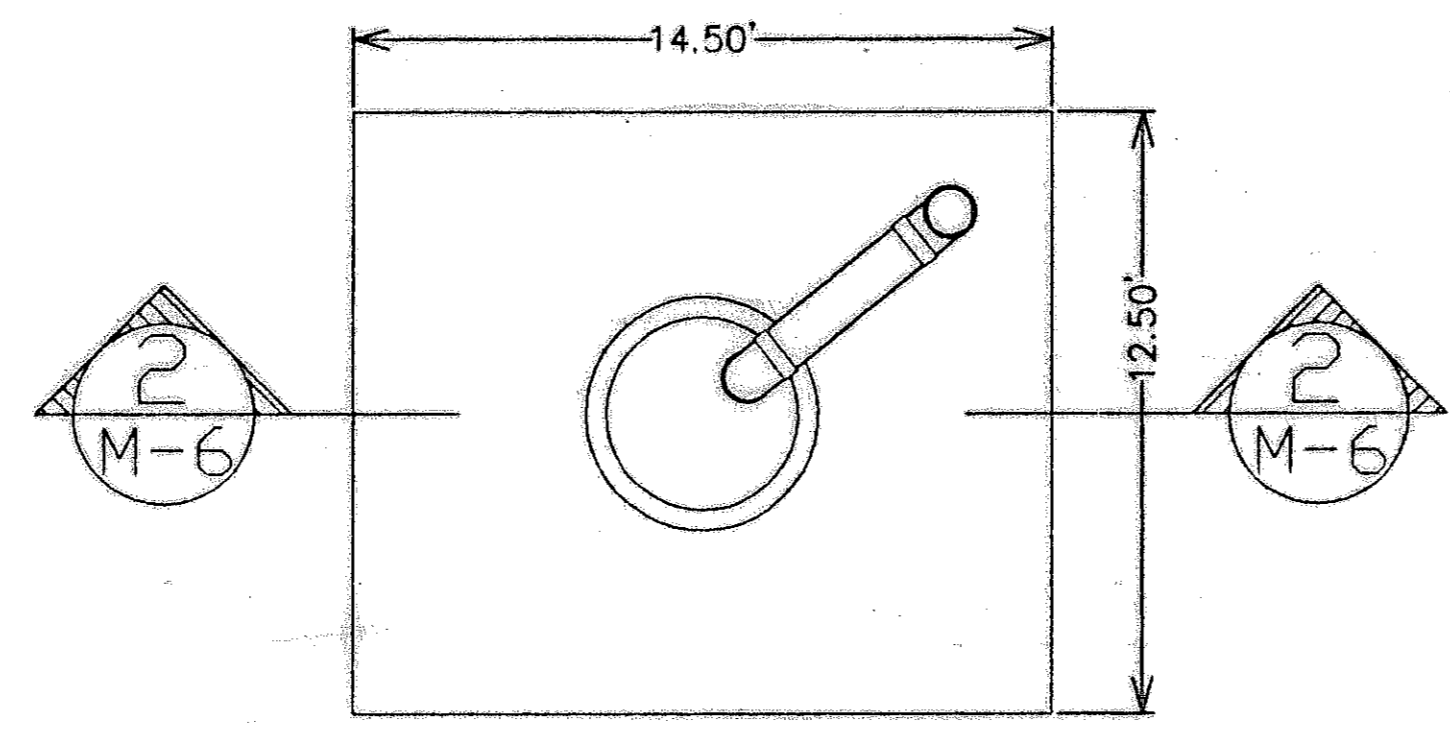
PLANT DRAIN PUMPING STATION SECTIONAL PLAN
3/8" = 1'-0"



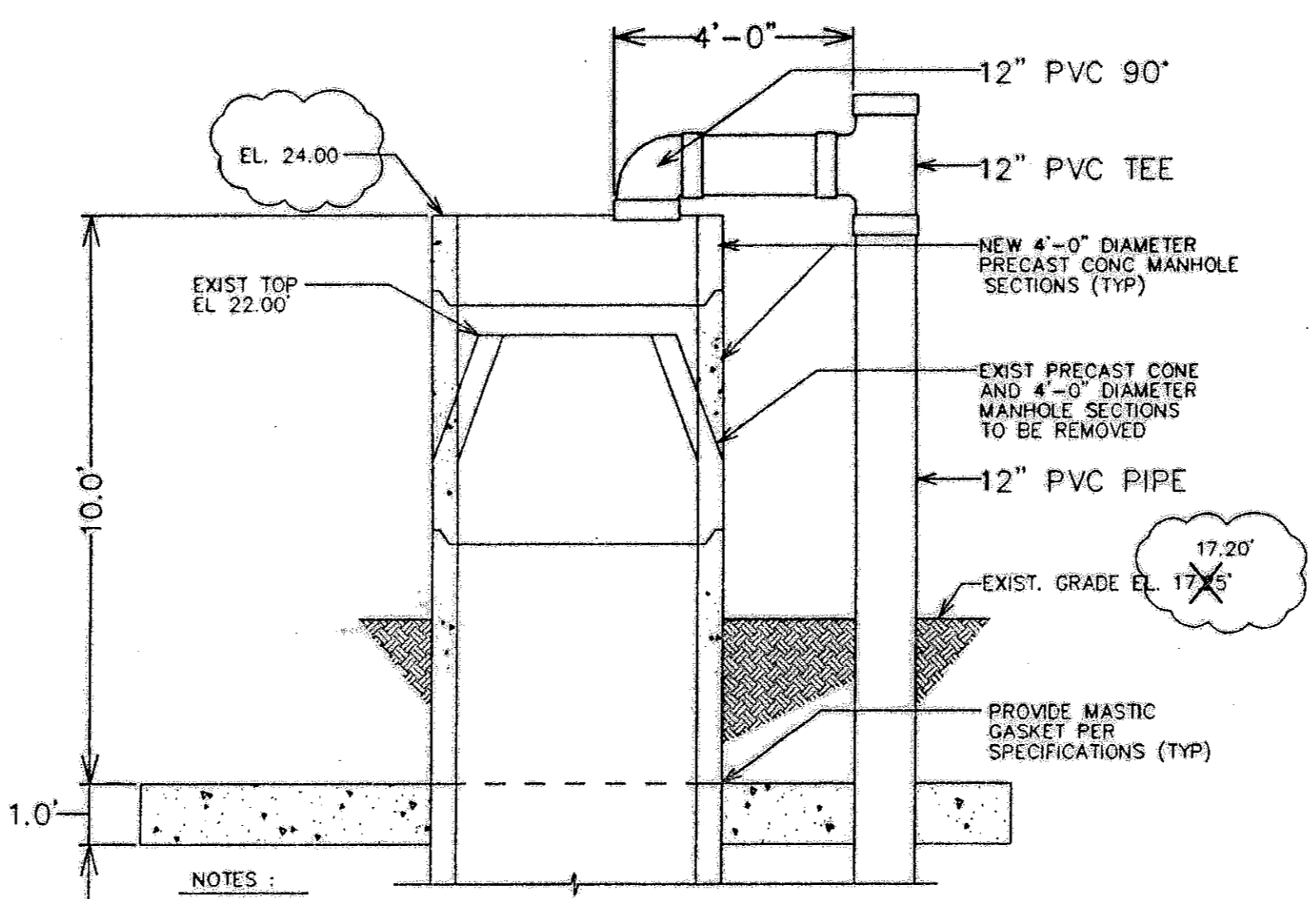
ABW WEIR KEY PLAN
NO SCALE



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

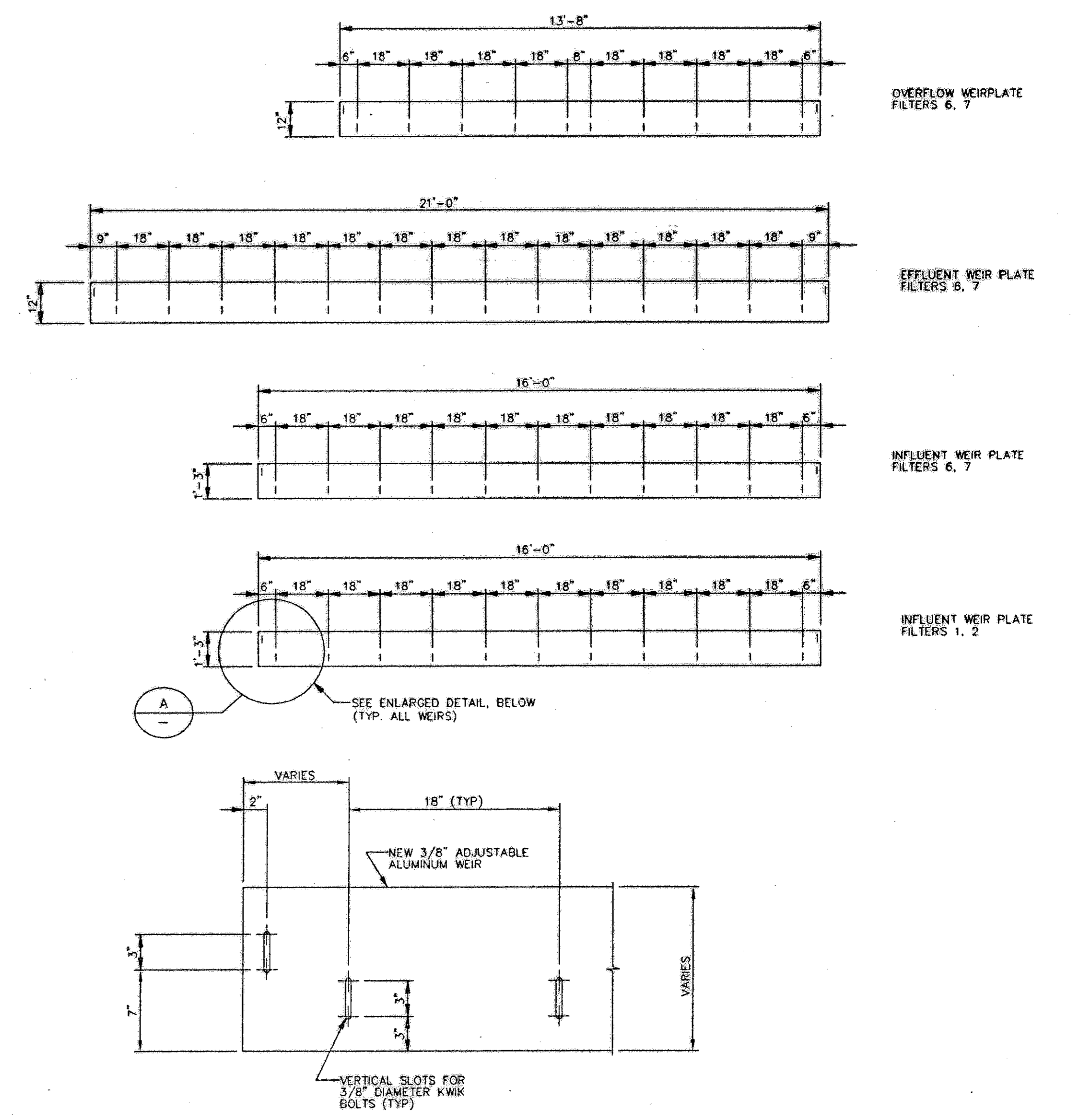


PLAN VIEW
1/4" = 1'-0"



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

FINAL CLARIFIER EFFLUENT COLLECTION MANHOLE REPLACEMENT DETAIL



ENLARGED DETAIL

ABW WEIR PLATE DETAIL A
NO SCALE

NOTES:
1. HORIZONTAL DIMENSIONS SHOWN ARE APPROXIMATE EXISTING DIMENSIONS. CONTRACTOR SHALL PERFORM ANY FIELD MEASUREMENTS NECESSARY TO VERIFY ACTUAL BOLT SPACING PRIOR TO FABRICATING WEIRS.
2. IN EXISTING ABW FILTERS, KWIK BOLTS AND HARDWARE ARE EXISTING AND MAY BE RE-USED

- NOTES:
- CONTRACTOR SHALL REMOVE EXISTING PUMPS, RAILS, LIFTING CABLE, PIPE SUPPORT AND POWER CABLES. REMOVED ITEMS SHALL BE SUBJECT TO THE DEMOLITION AND SALVAGE SECTION OF THE SPECIFICATIONS.
 - CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING DIMENSIONS AND MAKING ANY ADDITIONAL FIELD MEASUREMENTS NECESSARY TO SELECT AND INSTALL COMPATIBLE NEW EQUIPMENT.
 - CONTRACTOR SHALL VERIFY FLOAT SWITCH ELEVATIONS ARE SET AS SHOWN. ADJUSTMENTS SHALL BE MADE AS NECESSARY.
 - INFLUENT PIPING NOT SHOWN.

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
RICHARD C. MERRYMAN/RLS 2827

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/29/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	3			
5/30/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	2			
3/28/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	1			

CONFORMED TO CONSTRUCTION RECORDS
Andreas Westphal
11-5-01

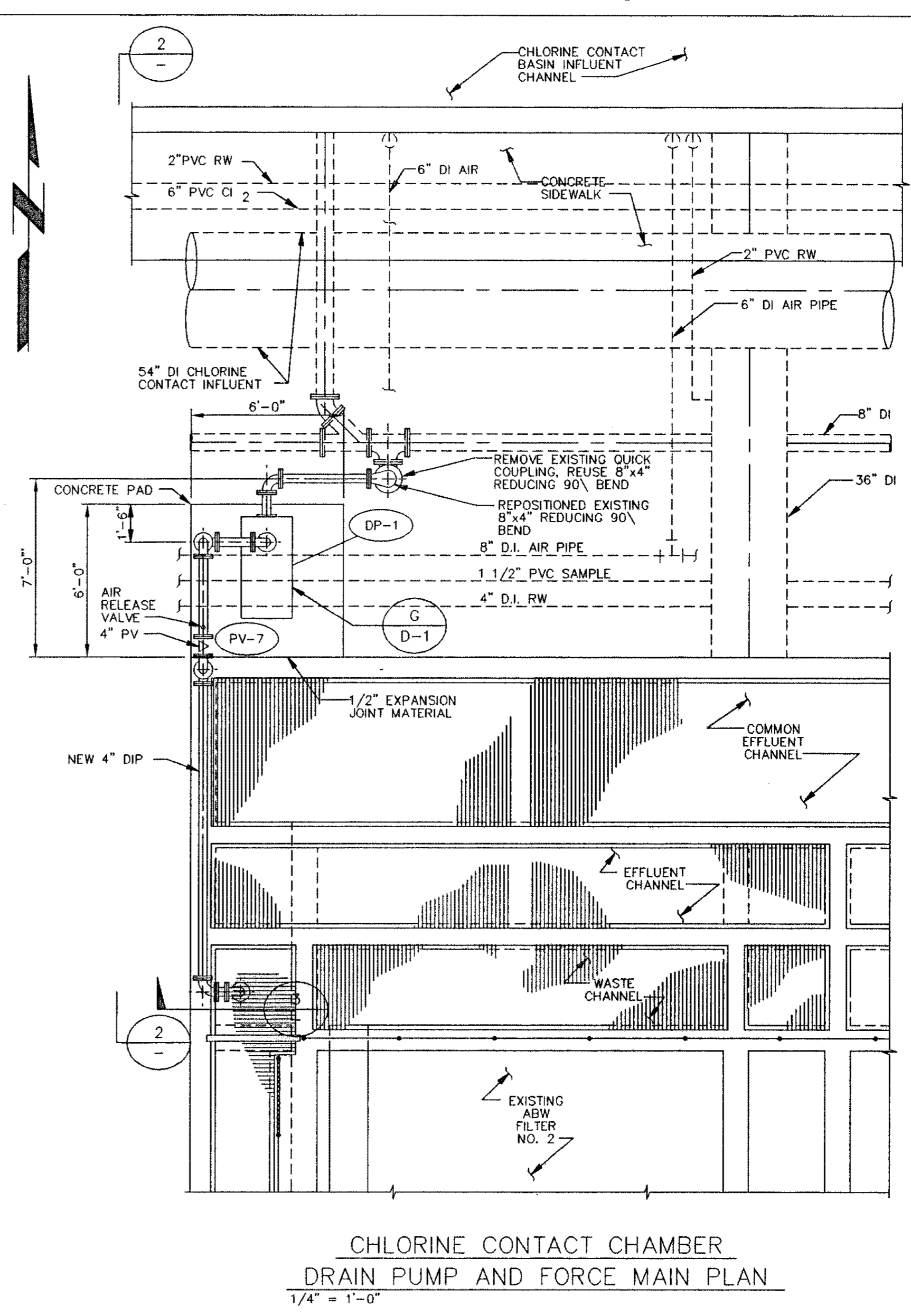
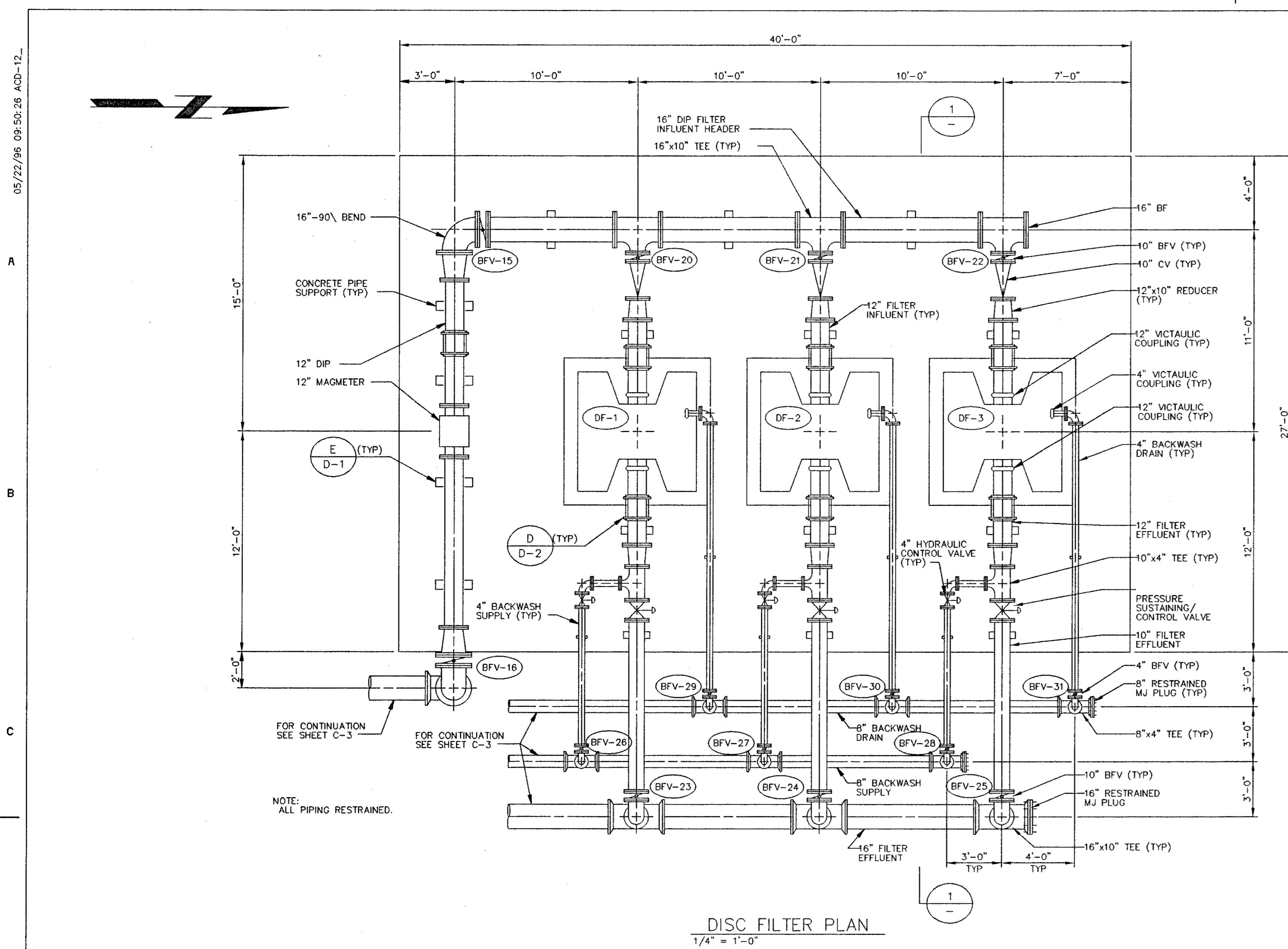
DESIGNED: AAW
DETAILED: RJE
CHECKED: MLK
APPROVED:
DATE:



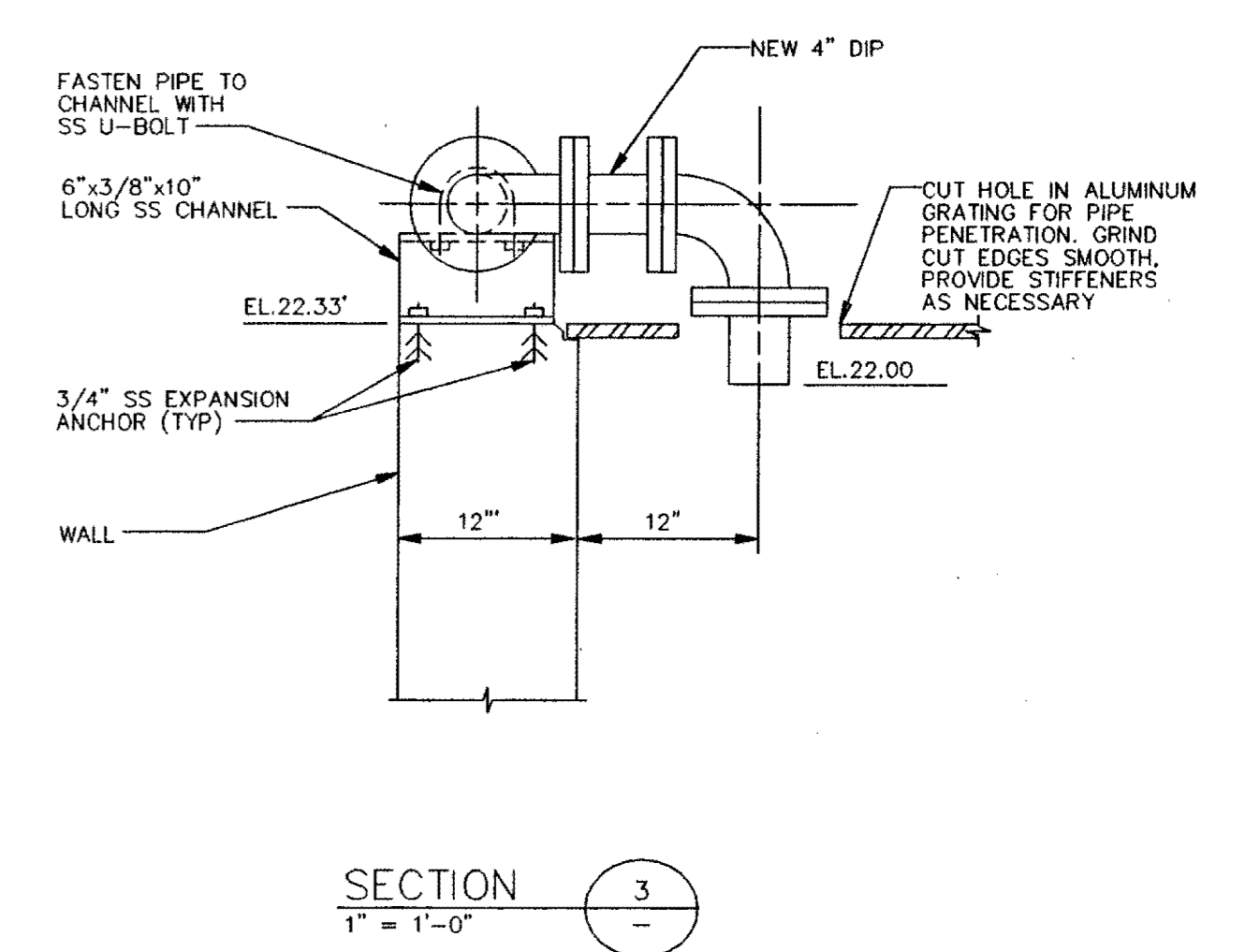
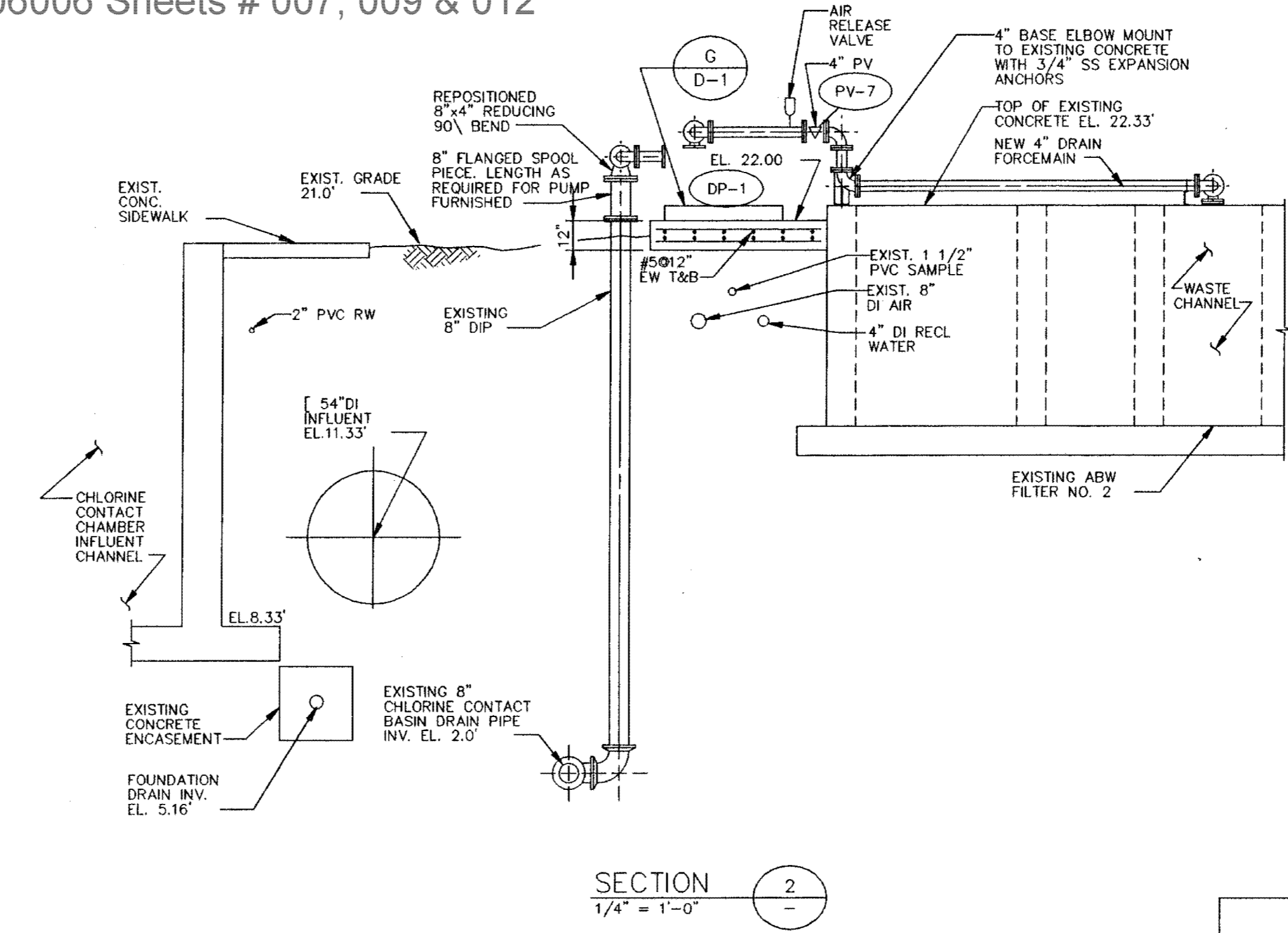
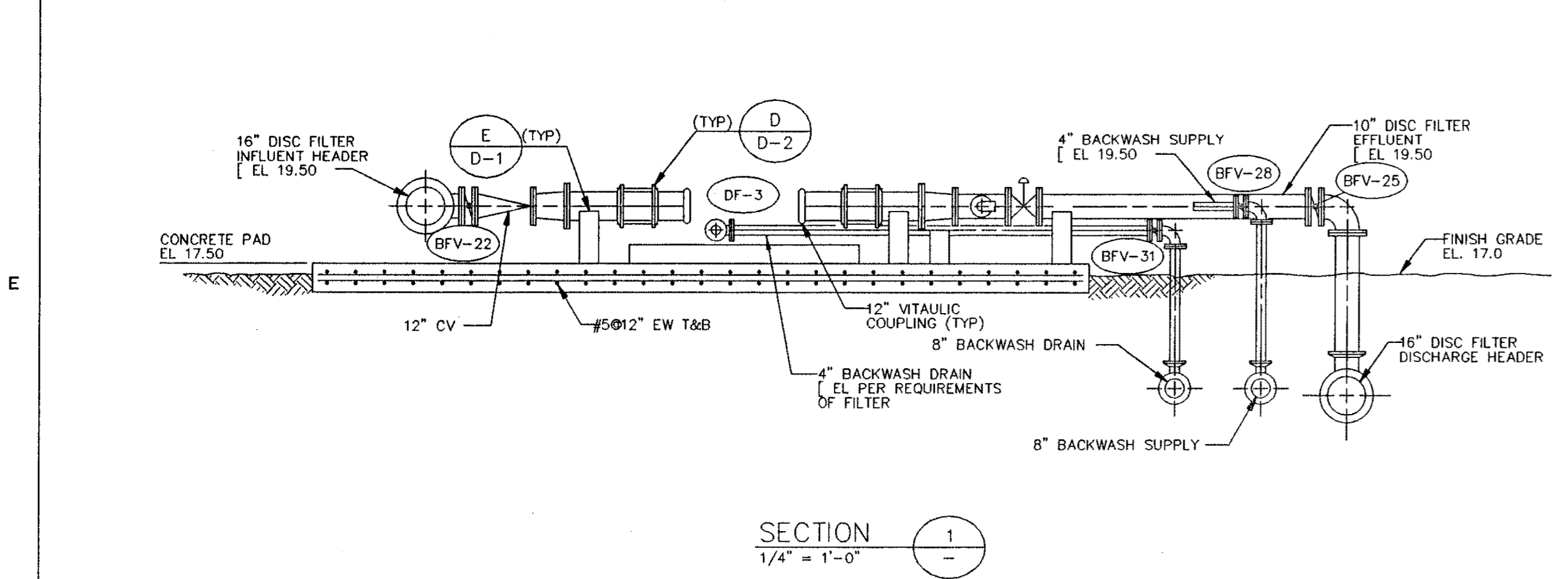
PROJECT NO.
27740

MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWP
ABW FILTERS ADDITION
PLANT DRAIN PUMPING STATION AND
ABW FILTER WEIR PLATE
MODIFICATIONS

M-6
SHEET
12 of 29



Disc Filter & 16" DI Effluent was removed. See Record # 06006 Sheets # 007, 009 & 012



RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
Richard C. Merryman 10/11/01
RICHARD C. MERRYMAN RKS 2827

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For an unedited version of the information please contact Manatee County Utilities Record Section at (941) 792-8811

NO.	BY	CK	APP	DATE	REVISIONS AND RECORD OF ISSUE

CONFORMED TO CONSTRUCTION RECORDS
Andrew A. Westfall
11-5-01

DESIGNED: AAW
DETAILED: DMD
CHECKED: WLK
APPROVED: _____
DATE: _____



PROJECT NO.
27740

MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWTP ABW FILTERS ADDITION	M-7 SHEET 13 OF 29
NEW DISC FILTERS AND CHLORINE CONTACT CHAMBER DRAIN PUMP PLANS AND SECTIONS	

05/06/96 19:43:40 ACD-12

A

B

C

D

E

F

A

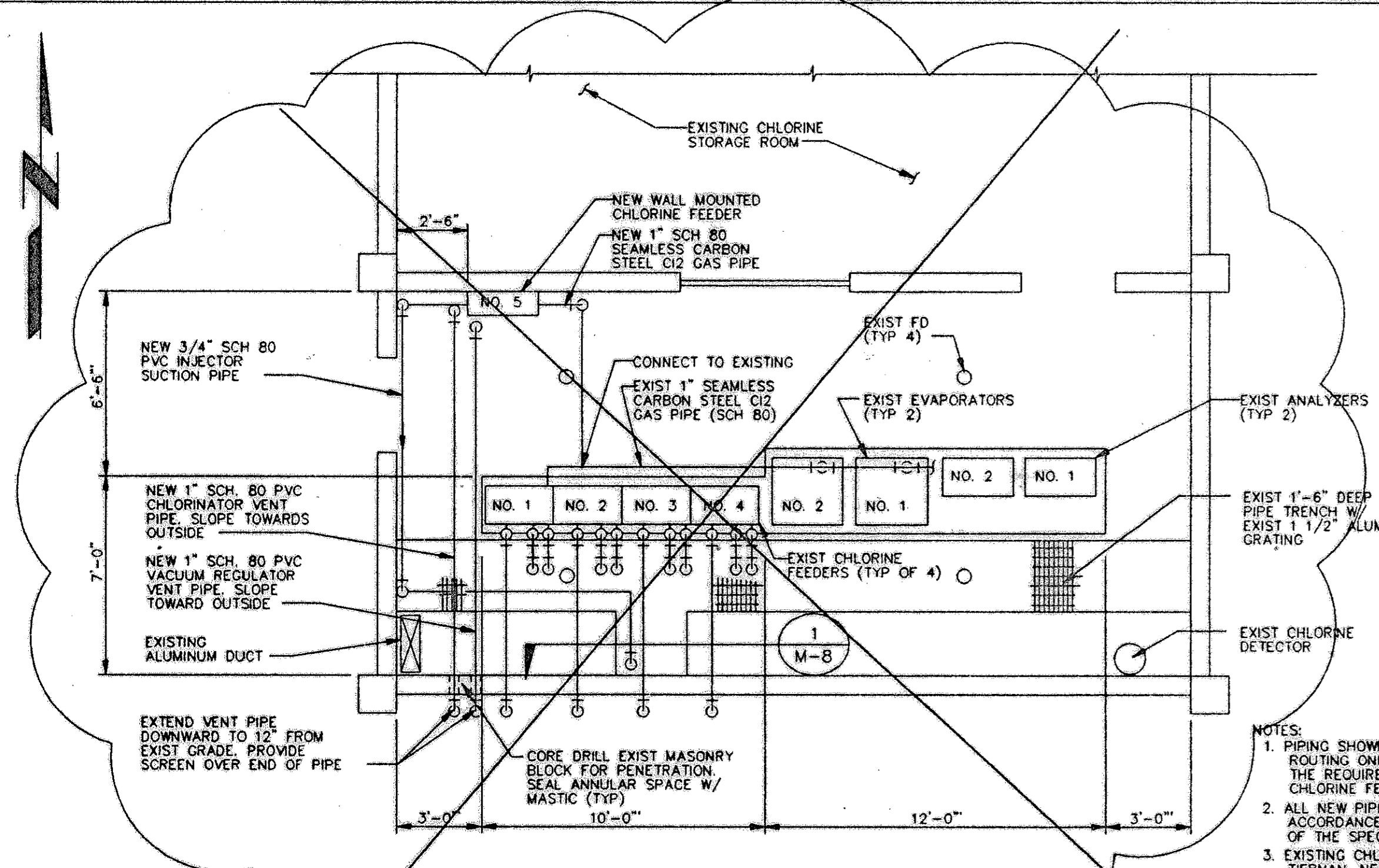
B

C

D

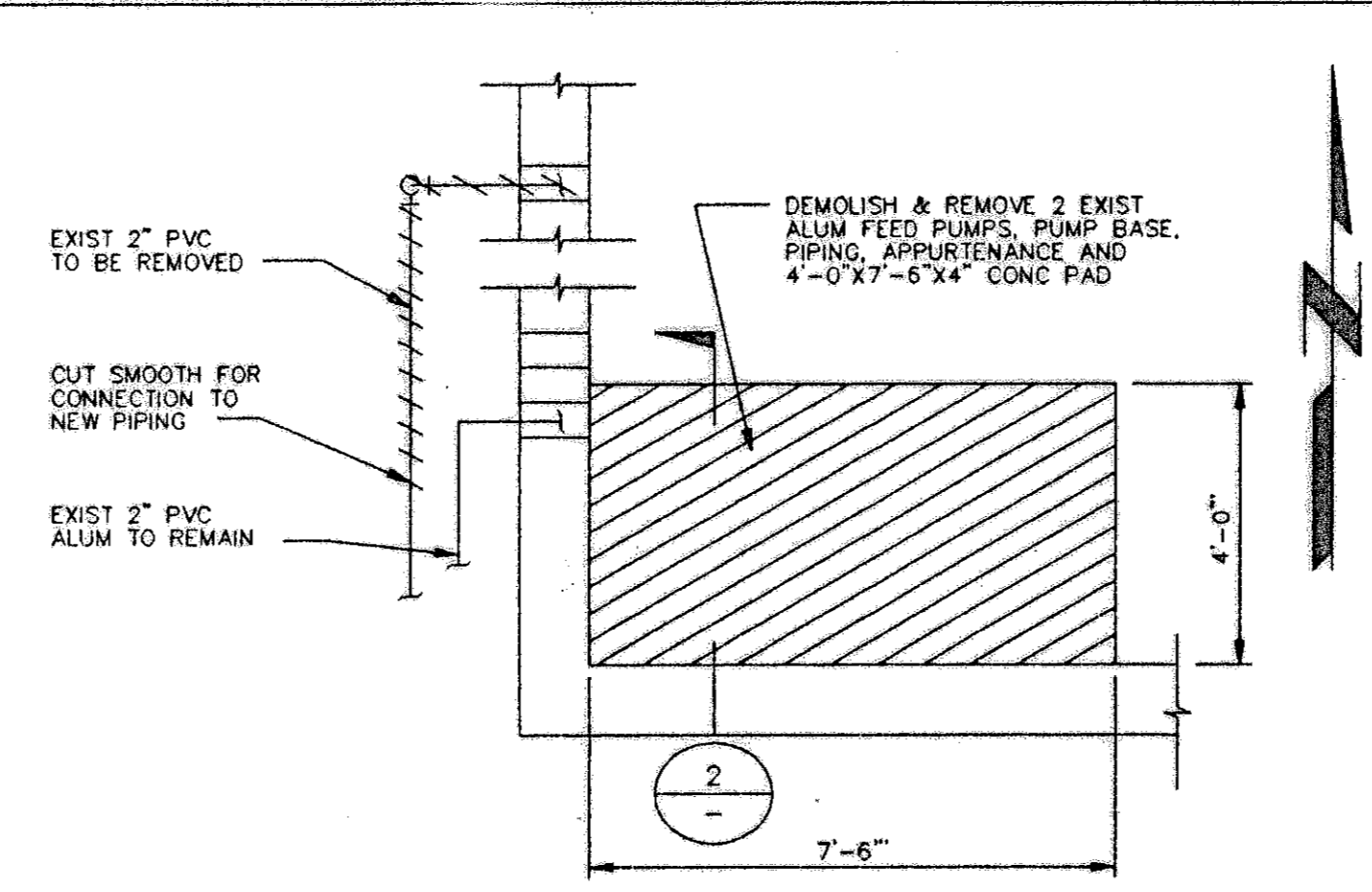
E

F

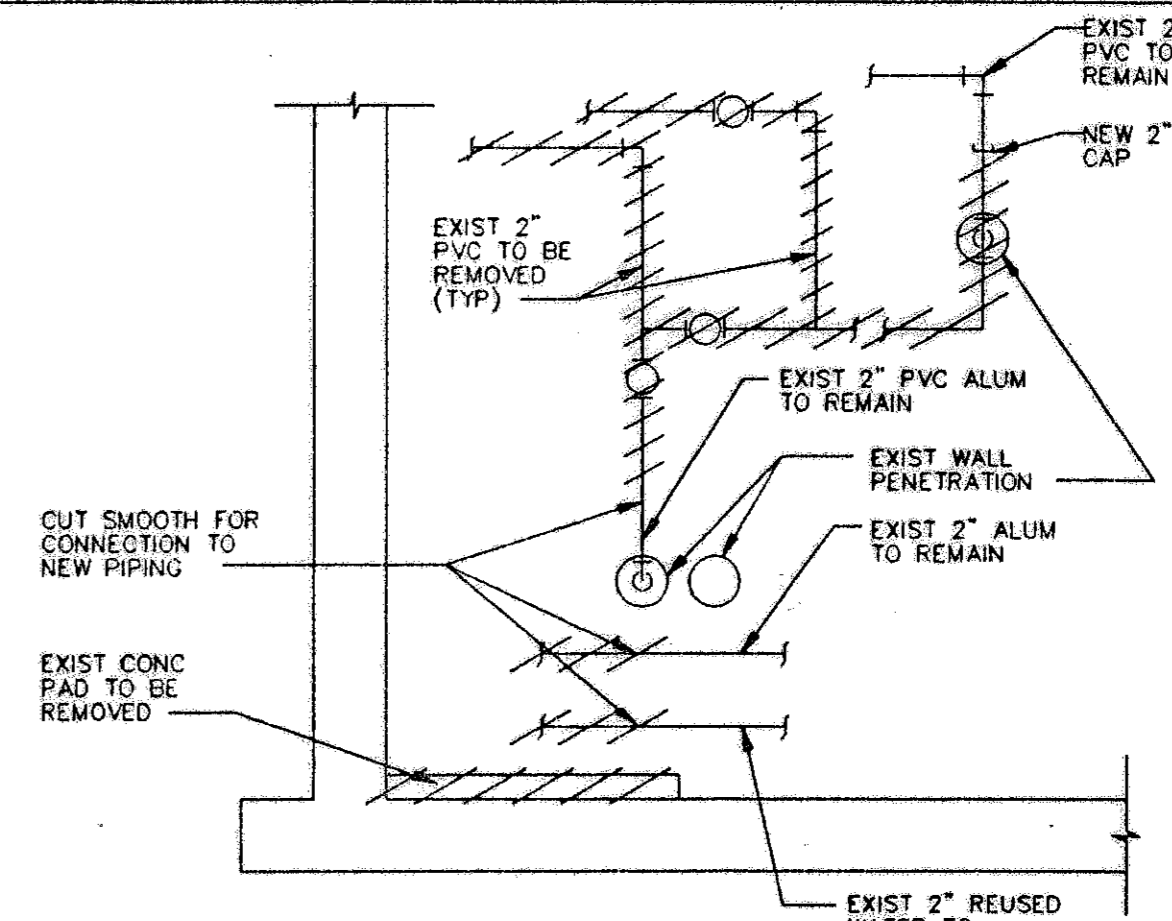


CHLORINE BUILDING MODIFICATIONS PLAN
1/4" = 1'-0"

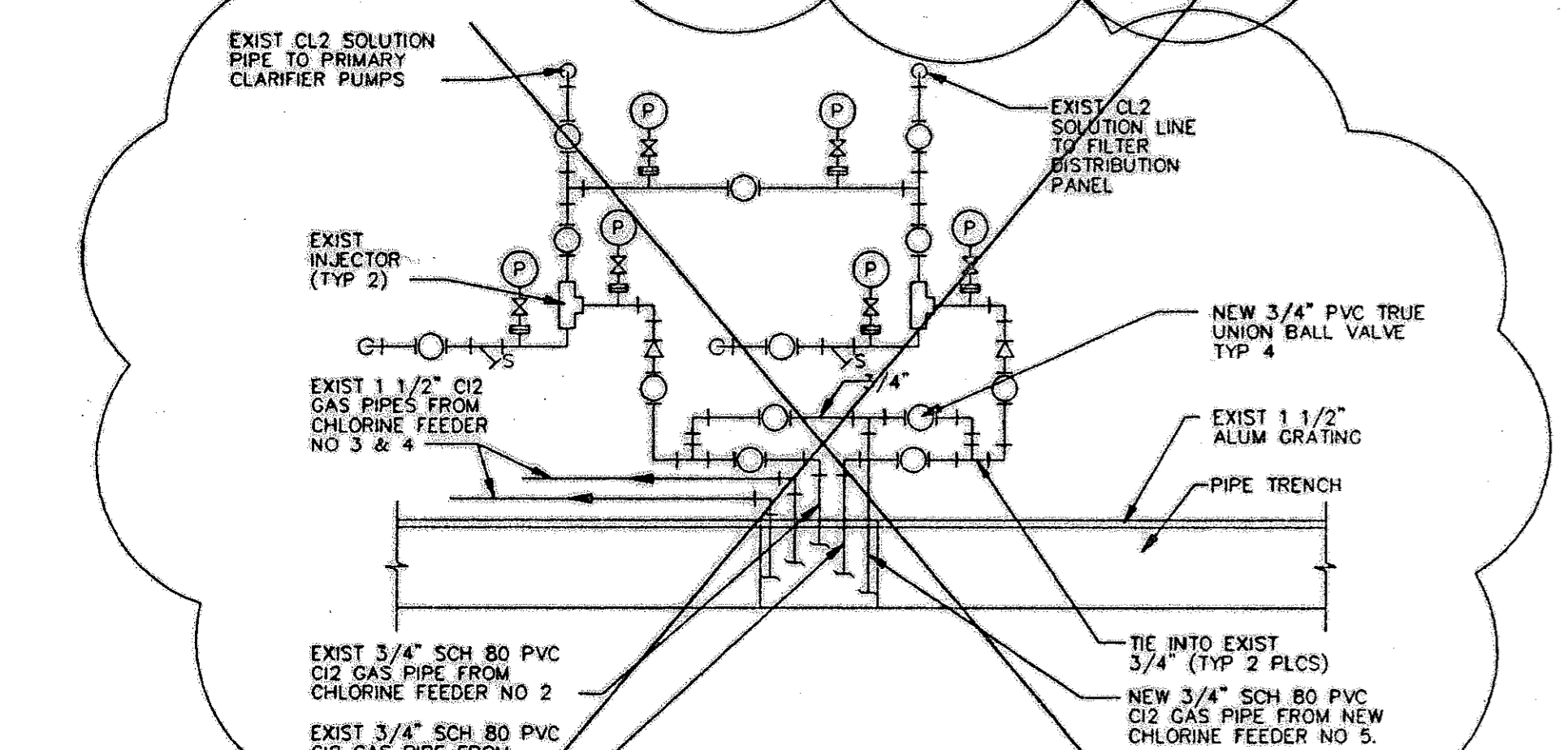
- NOTES:**
1. PIPING SHOWN ON PLAN VIEW IS FOR GENERAL PIPE ROUTING ONLY. FOR A DETAILED ARRANGEMENT OF THE REQUIRED PIPING AND APPURTENANCES, SEE THE CHLORINE FEEDER PIPING SCHEMATIC THIS SHEET.
 2. ALL NEW PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE PIPE SUPPORT SECTION OF THE SPECIFICATIONS.
 3. EXISTING CHLORINE FEEDERS ARE WALLACE AND TIERNAN. NEW CHLORINE FEEDERS SHALL FUNCTION COMPATIBLY WITH THE EXISTING CHLORINE FEED SYSTEM.



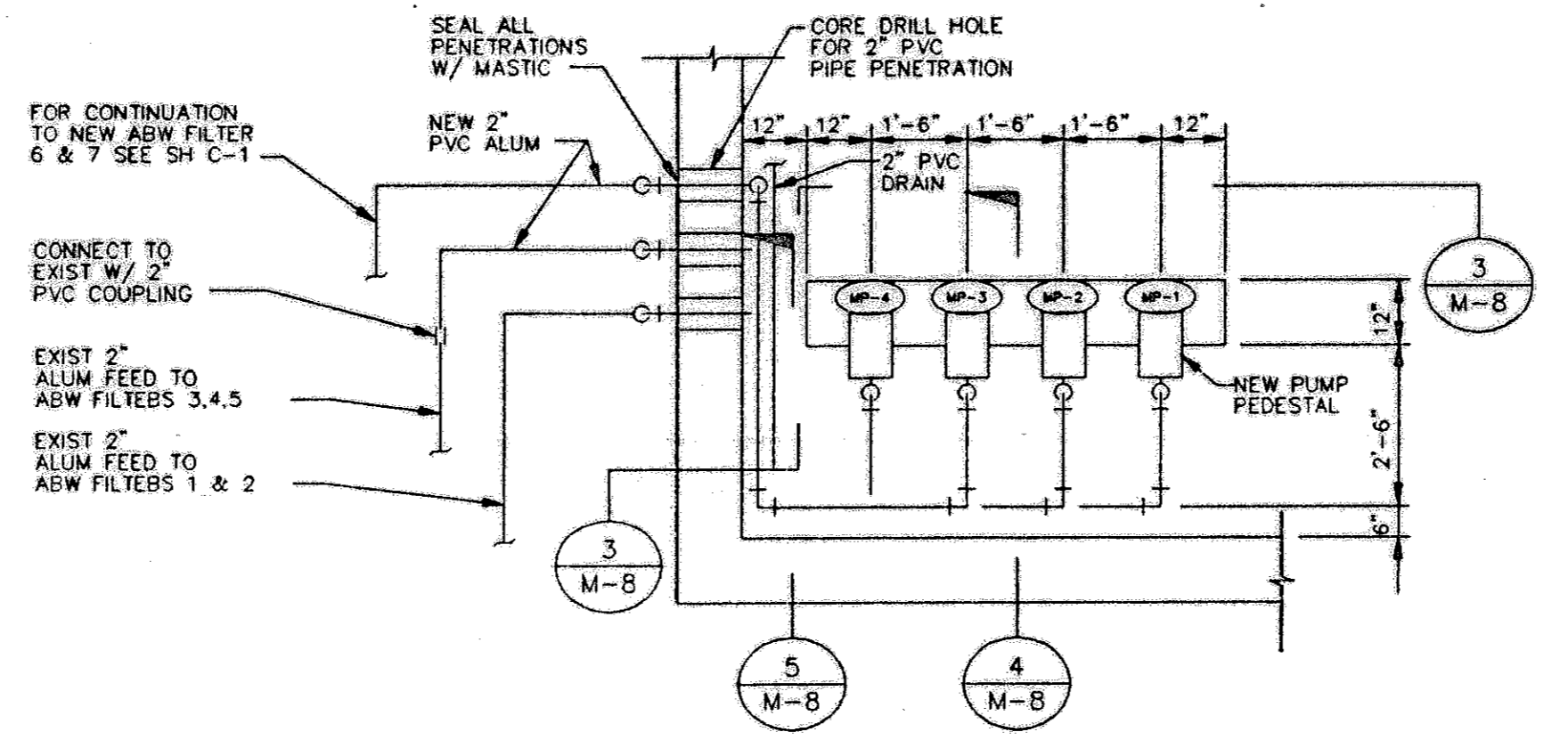
ALUM FEED DEMOLITION PLAN
NO SCALE



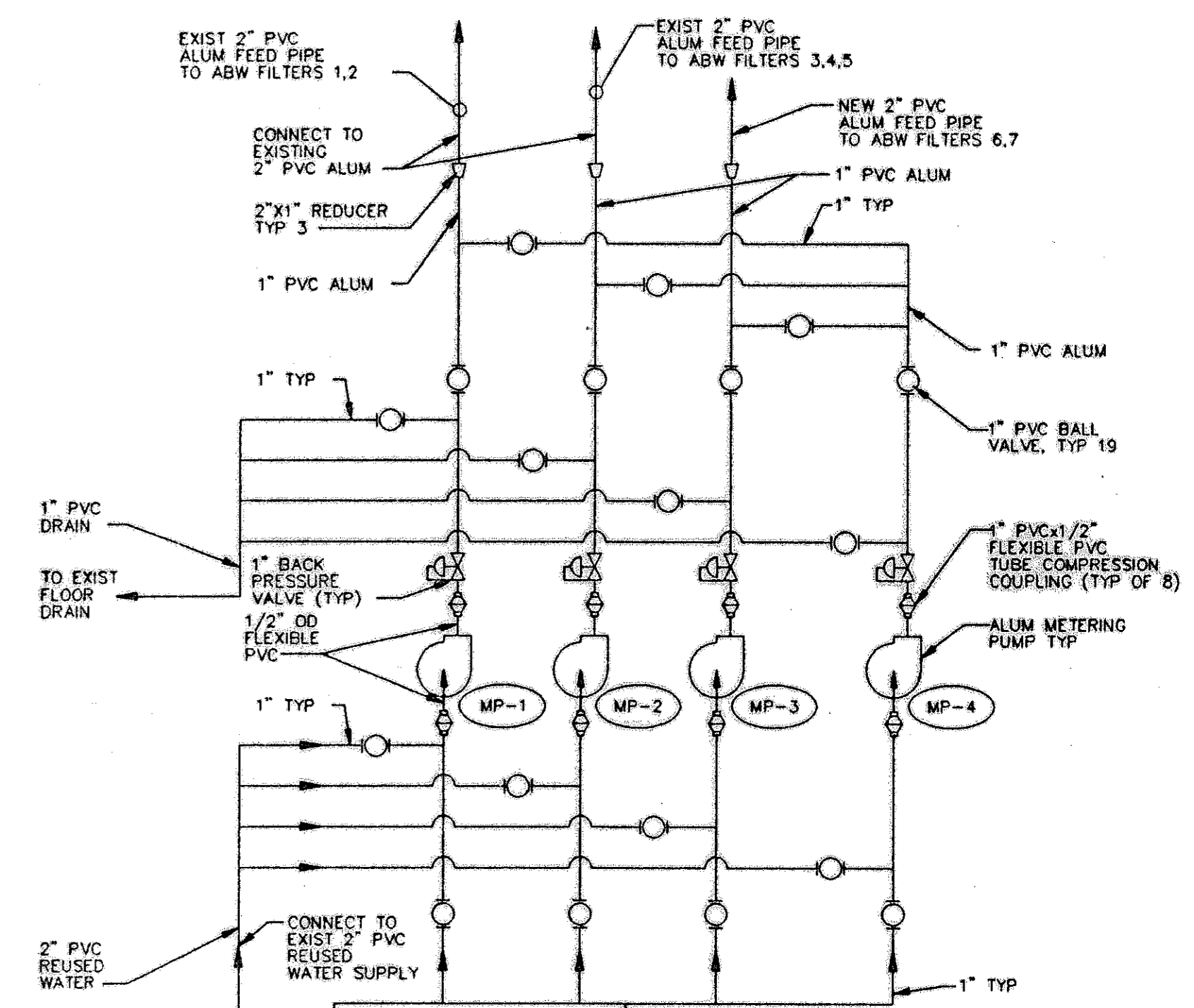
SECTION 2
3/8" = 1'-0" M-8



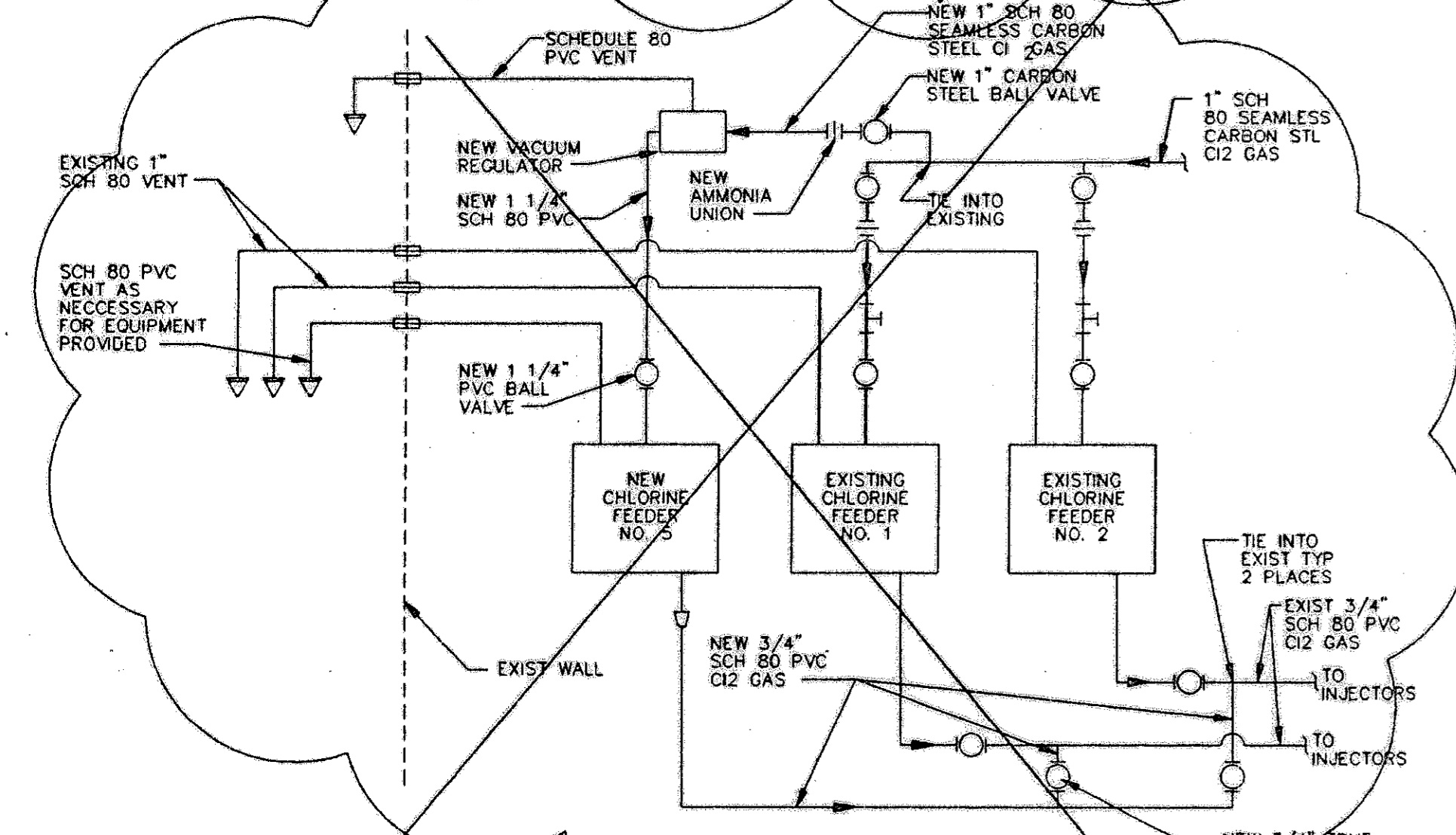
SECTION 1
3/8" = 1'-0" M-8



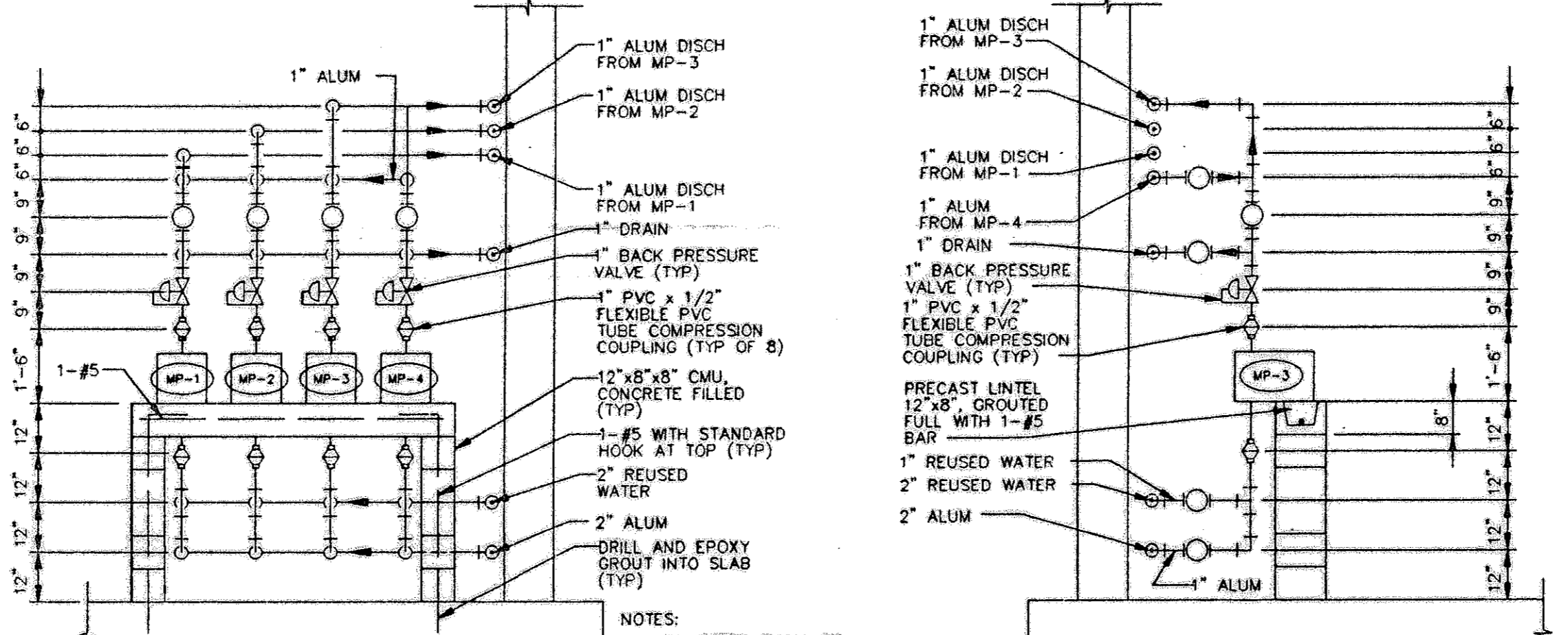
ALUM FEED PUMPS PLAN
3/8" = 1'-0"



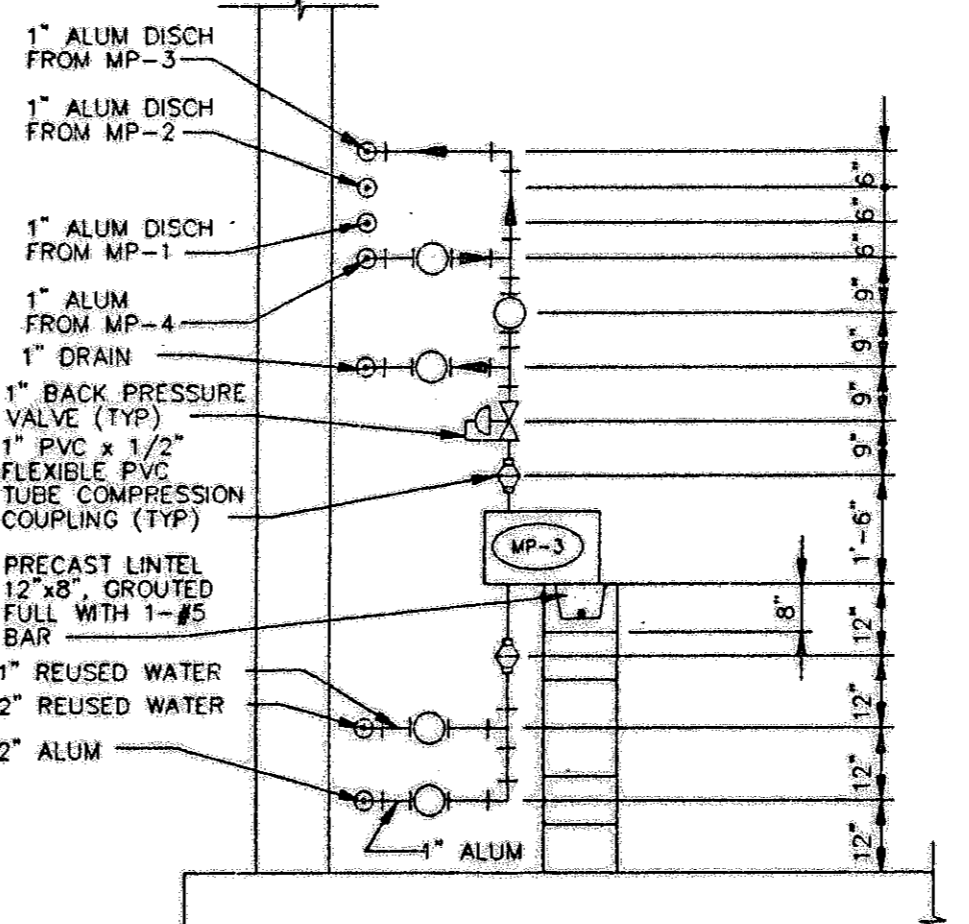
ALUM FEED SYSTEM SCHEMATIC
NO SCALE



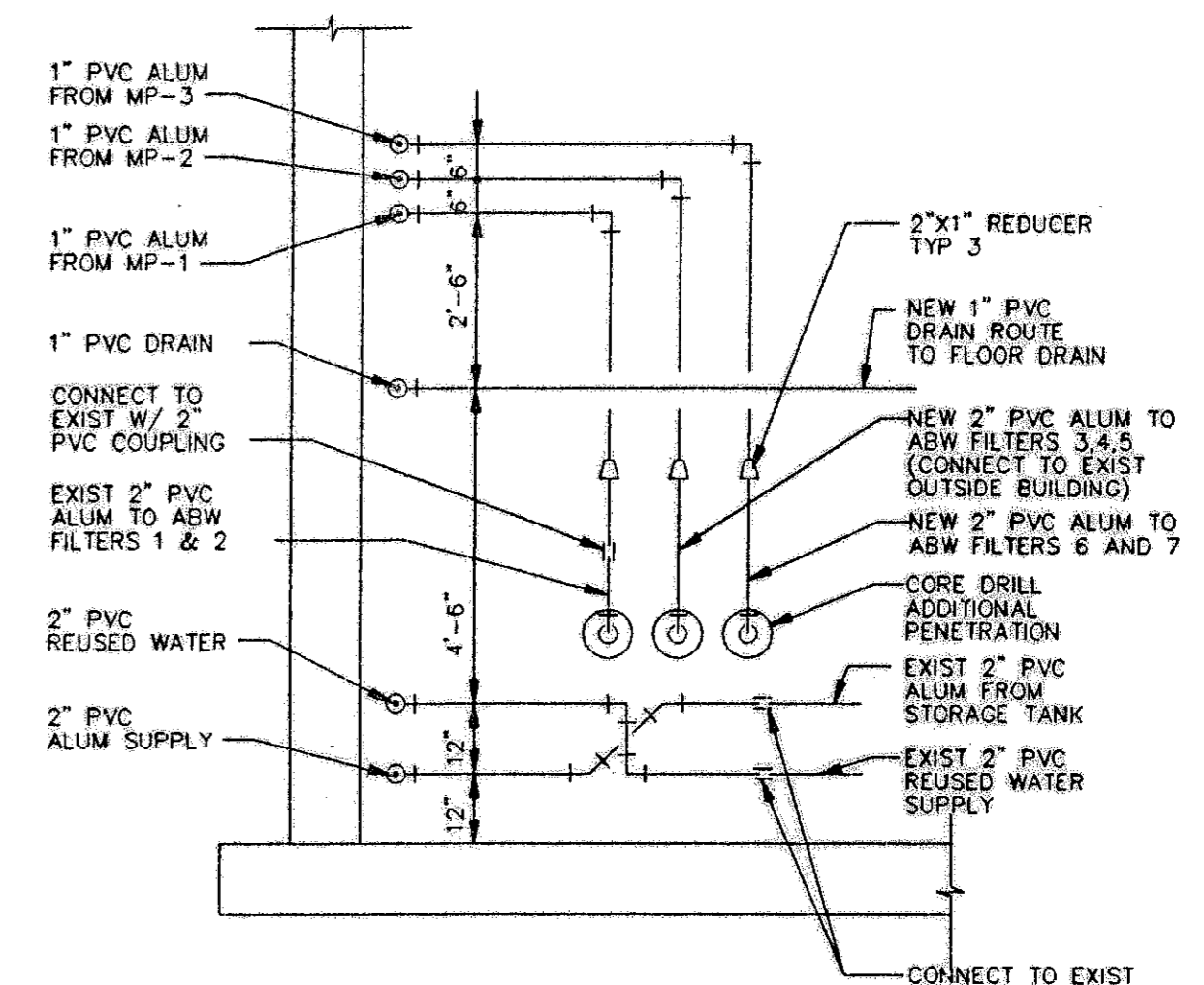
CHLORINE FEED PIPING SCHEMATIC
NO SCALE



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



SECTION 4
3/8" = 1'-0" M-8



SECTION 5
3/8" = 1'-0" M-8

RECORD SURVEY
 RECORD INFORMATION BY
 WESTRA CONSTRUCTION CORP.
 1200 21st STREET, EAST
 PALM BEACH, FL 33411 (561) 723-1611
 RICHARD C. MERRYMAN RLS 1627
 9/5/01

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/29/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	1			
	NO NEW CHLORINATION EQUIPMENT WAS INSTALLED				

CONFORMED TO CONSTRUCTION RECORDS

Andrew A. Westhoff
11-5-01

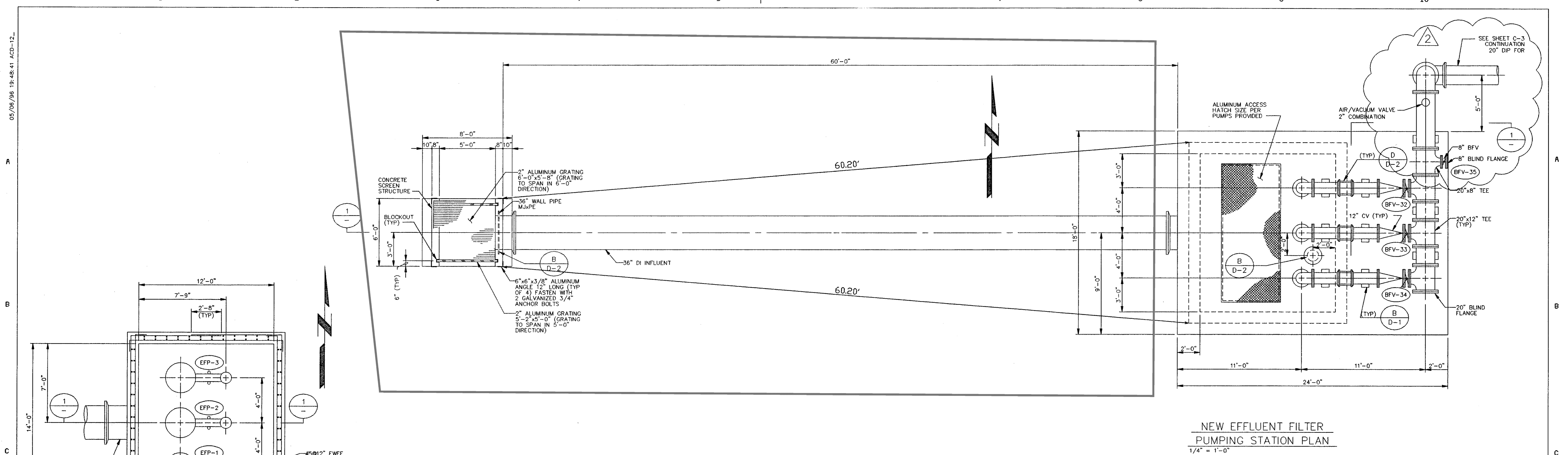
DESIGNED AAW
 DETAILER DKB,RJE
 CHECKED WLK
 APPROVED
 DATE



PROJECT NO.
27740

MANATEE COUNTY, FLORIDA
 SOUTHWEST REGIONAL WWTP
 ABW FILTERS ADDITION
 CHLORINE FEED SYSTEM AND
 ALUM FEED SYSTEM
 MODIFICATIONS

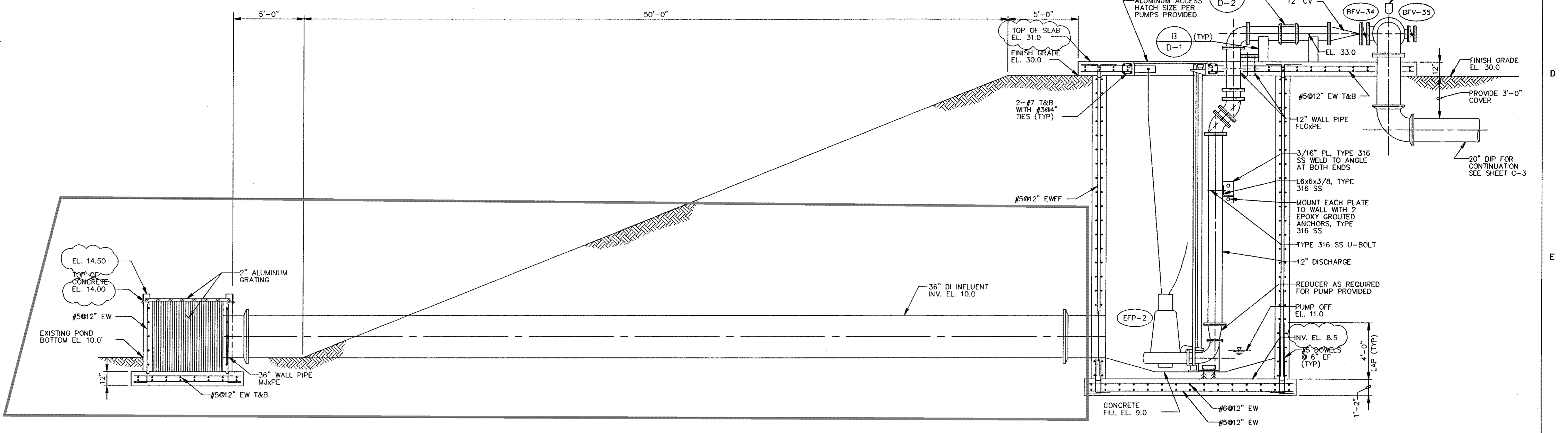
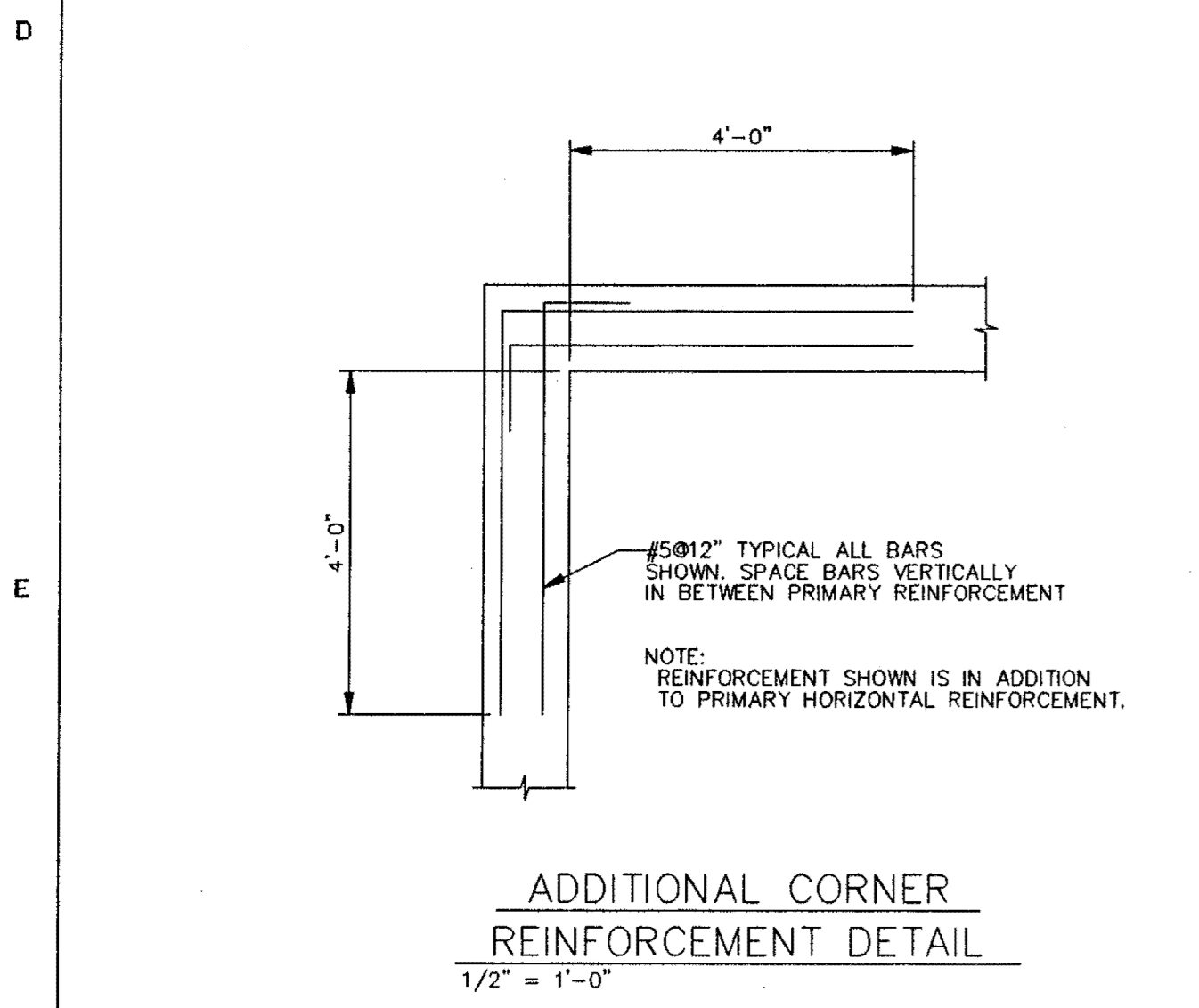
M-8
 SHEET
 14 OF 29



NEW EFFLUENT FILTER
PUMPING STATION PLAN
1/4" = 1'-0"

36" DI Influent & Structure removed. See Record # 06006.009

NEW EFFLUENT FILTER
PUMPING STATION SECTIONAL PLAN
1/4" = 1'-0"



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

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
RICHARD C. MERRYMAN RLS 2827

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DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
10/09/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	1			
3/28/01	AS BUILT CHANGES AS NOTED BY GLASER DESIGNS 941-755-0656	1			

CONFORMED TO CONSTRUCTION RECORDS
Richard A. Westfall
 11-5-01

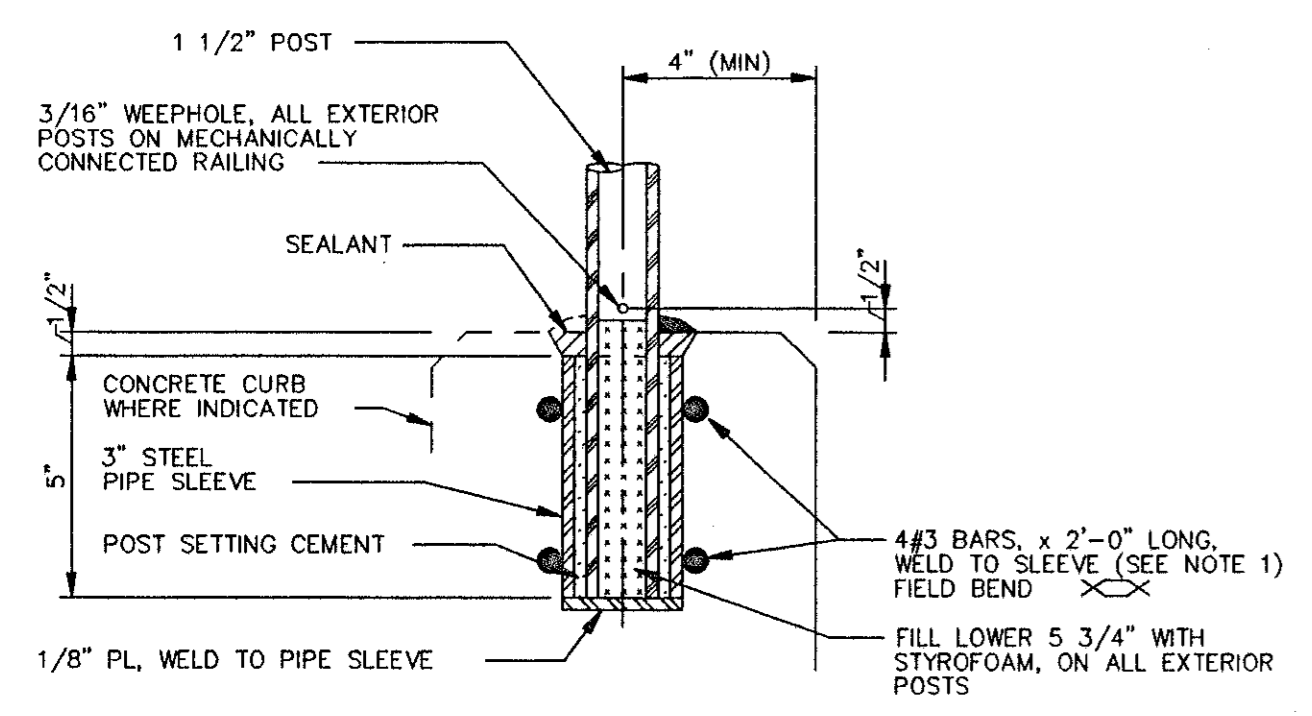
DESIGNED AAW
 DETAILED JRT
 CHECKED WLK
 APPROVED
 DATE



PROJECT NO.
27740

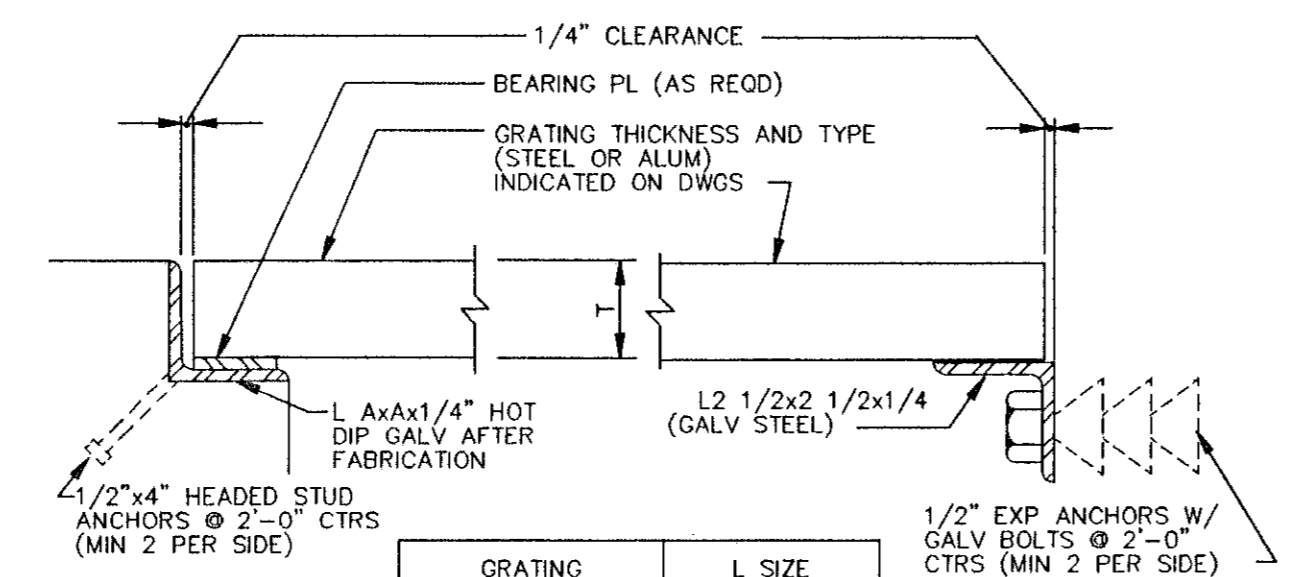
MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWTP ABW FILTERS ADDITION		M-9
NEW EFFLUENT FILTERS PUMPING STATION STRUCTURAL AND MECHANICAL PLAN AND SECTION		SHEET 15 OF 29

05/06/96 16:26:16 ACD-12



- NOTES:
1. AT STAIRS - FIELD BEND BARS TOWARD CENTER OF STAIRS.
 2. PIPE SLEEVE ASSEMBLY SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.

RAILING POST SETTING (A)
NO SCALE

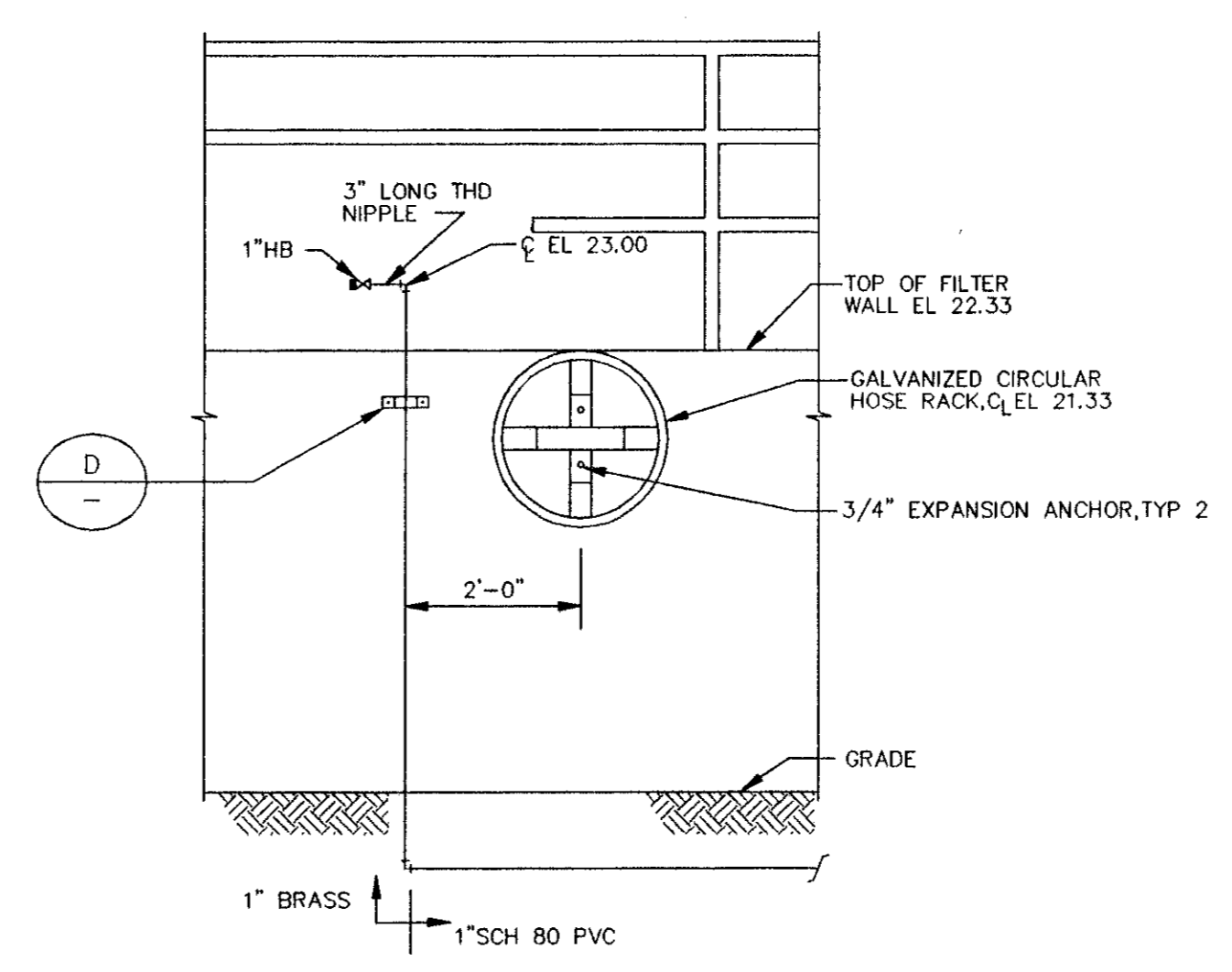


GRATING THICKNESS (T)	L SIZE AxAx1/4
3/4	1x1
1	1 1/4x1 1/4
1 1/4	1 1/2x1 1/2
1 1/2	1 3/4x1 3/4
1 3/4	2x2
2	2 1/2x2 1/2*
2 1/4	2 1/2x2 1/2
2 1/2	3x3*

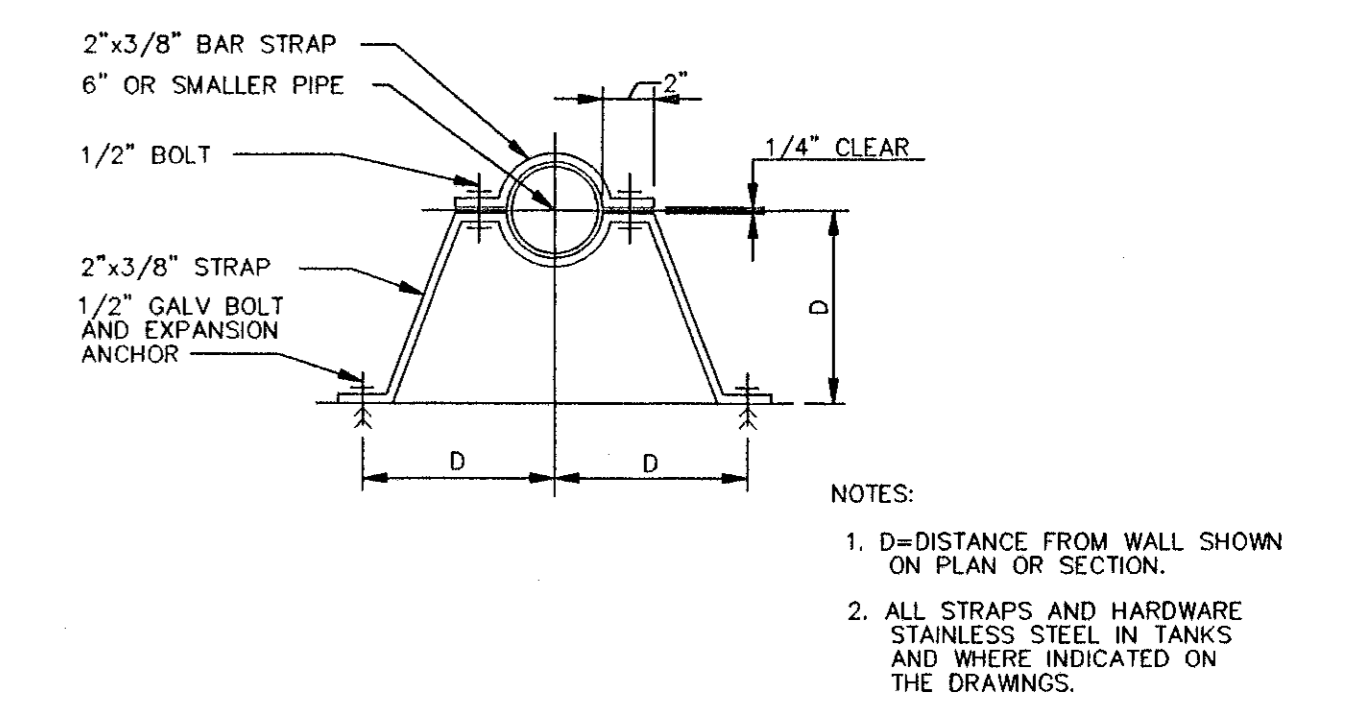
NOTE:
WALL SUPPORT MAY BE CONNECTED W/ 5/8\"/>

* 1/4\"/>

GRATING SUPPORT (B)
NO SCALE

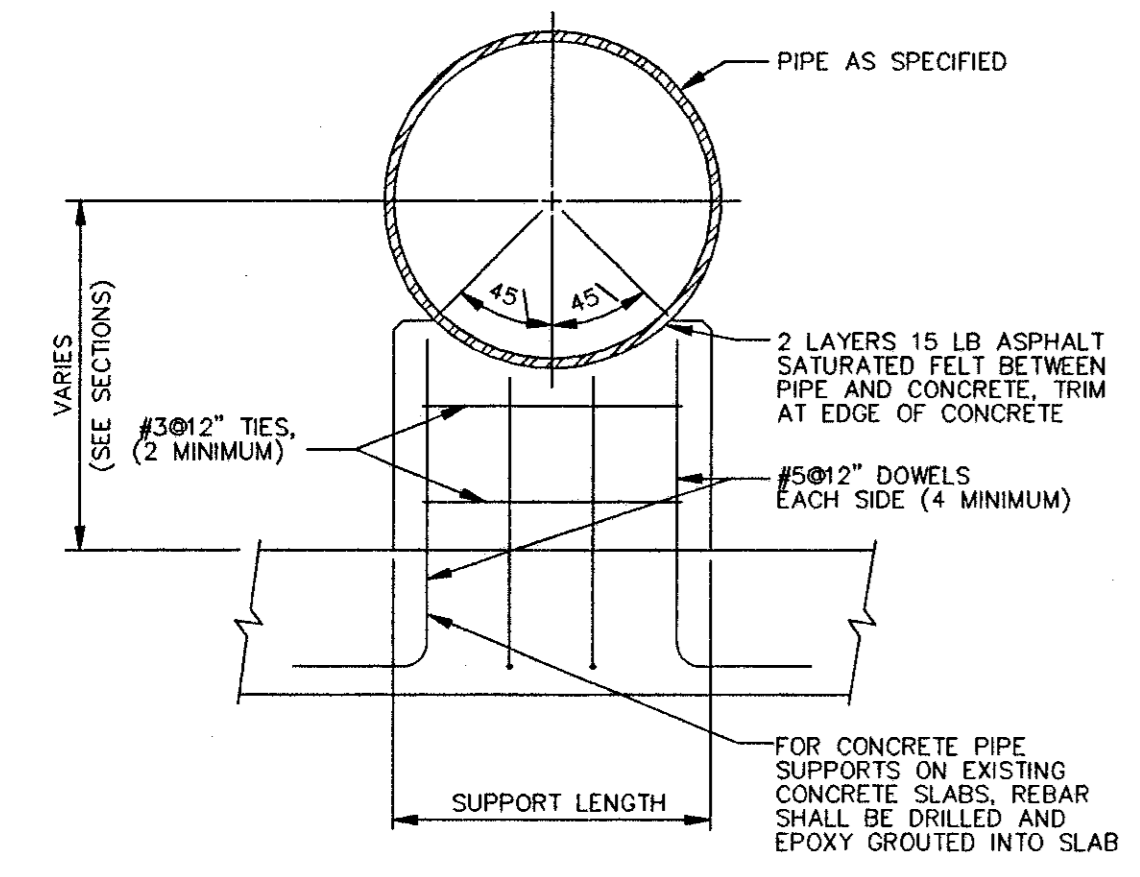


DETAIL (C)
1/2\"/>



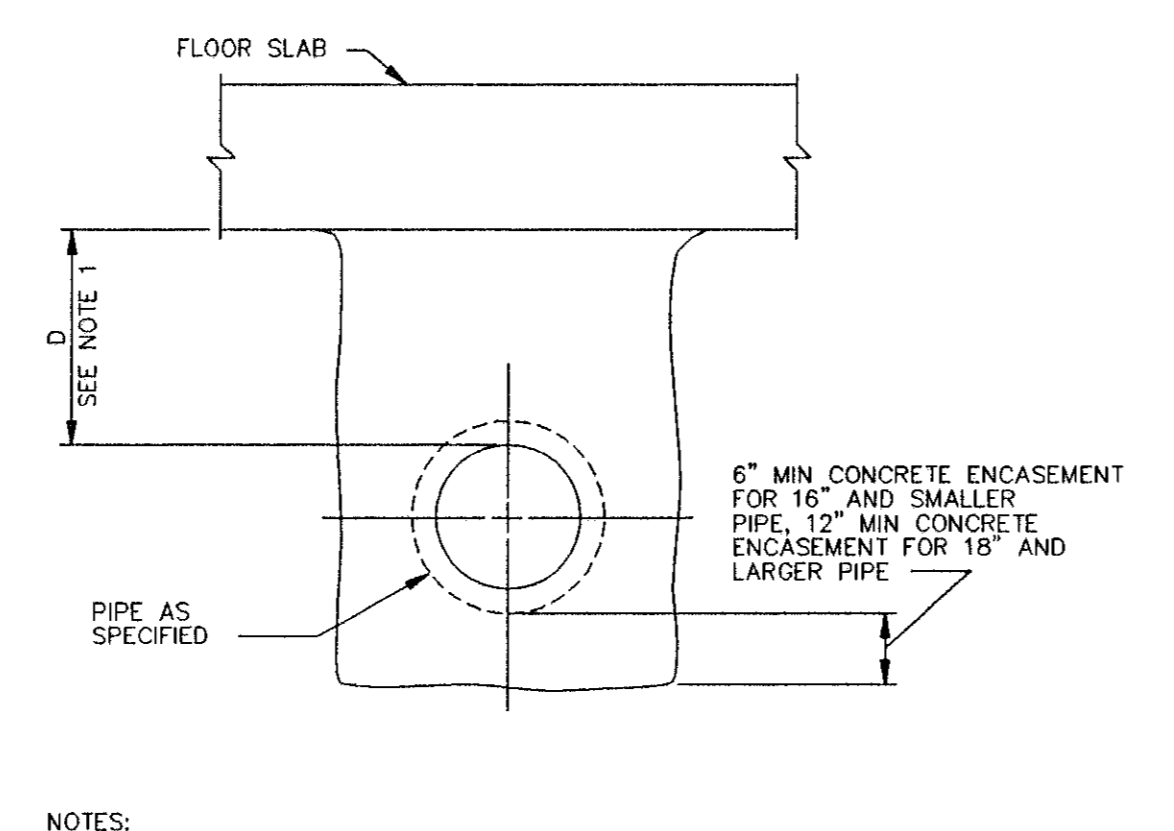
- NOTES:
1. D=DISTANCE FROM WALL SHOWN ON PLAN OR SECTION.
 2. ALL STRAPS AND HARDWARE STAINLESS STEEL IN TANKS AND WHERE INDICATED ON THE DRAWINGS.

VERTICAL PIPE SUPPORT (D)
NO SCALE



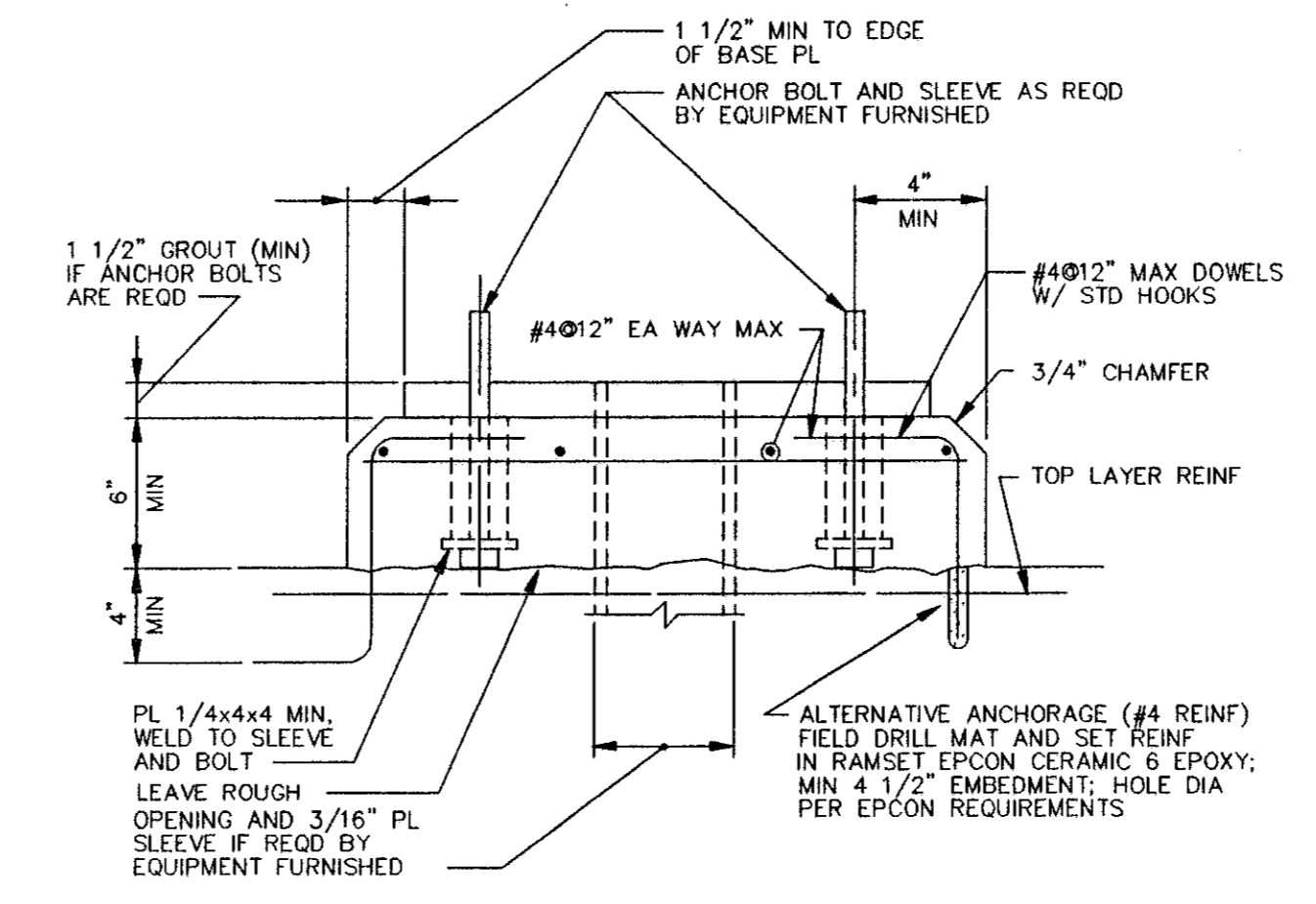
- NOTES:
1. SUPPORT WIDTH: 8\"/>
 2. SUPPORT LENGTH = PIPE OD + 4\"/>

CONCRETE PIPE SUPPORT (E)
NO SCALE



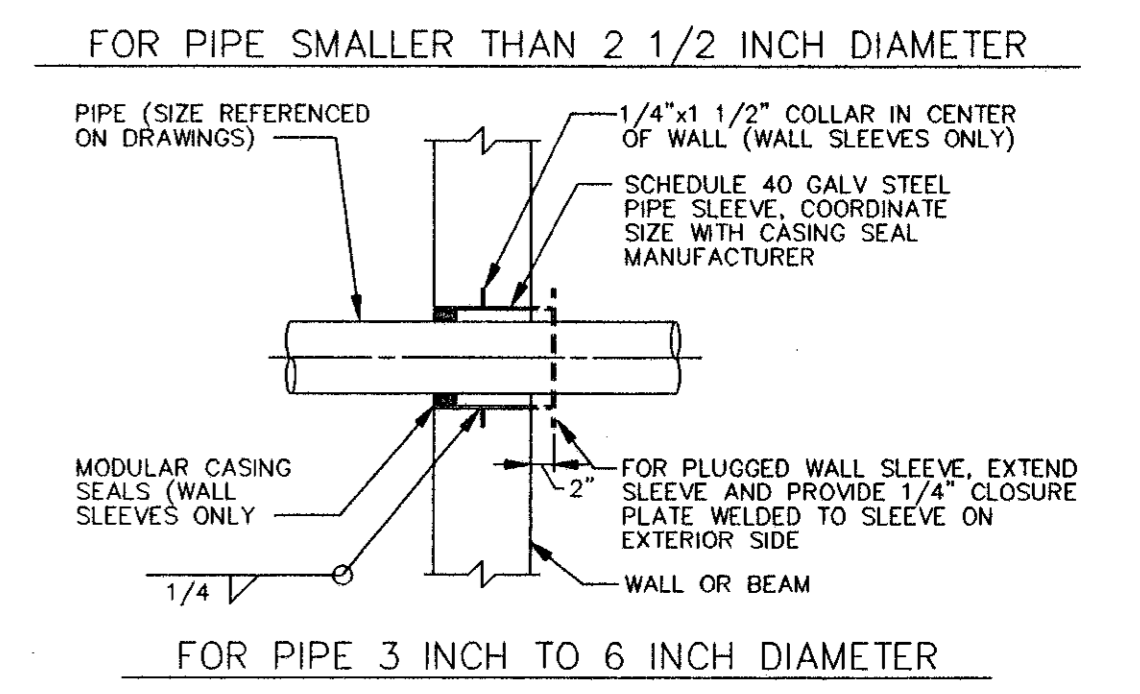
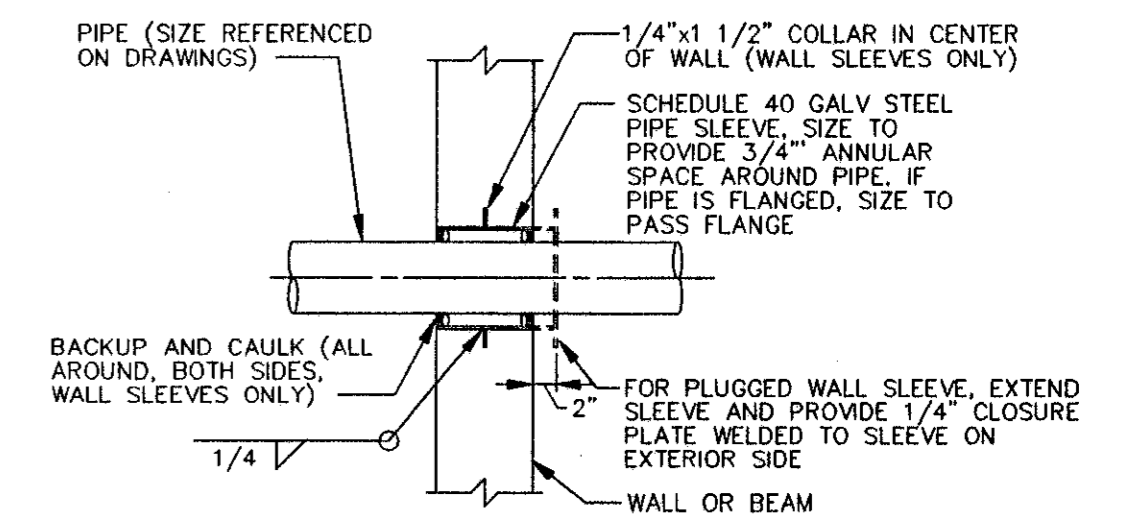
- NOTES:
1. IF D IS LESS THAN 1'-6\"/>

CONCRETE ENCASEMENT FOR PIPE UNDER SLABS (F)
NO SCALE

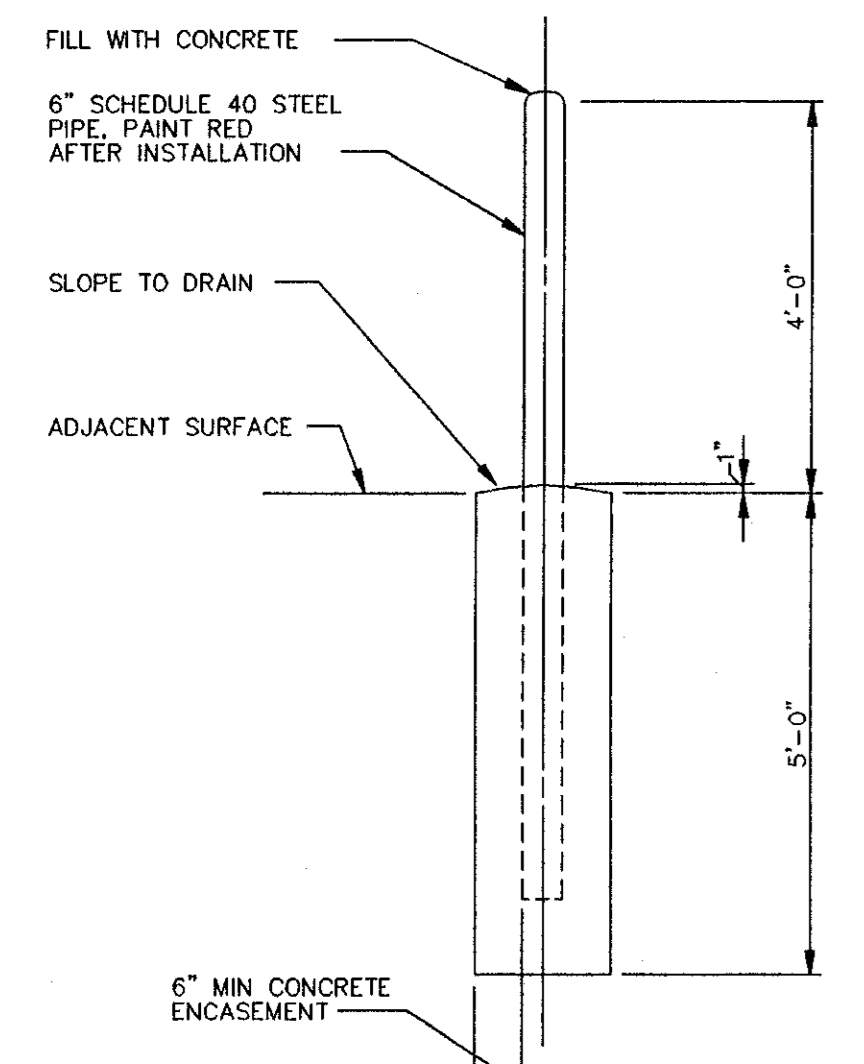


NOTE:
WILSON ANCHOR SLEEVES MAY BE SUBSTITUTED FOR STEEL PIPE SLEEVES

EQUIPMENT BASE (G)
NO SCALE

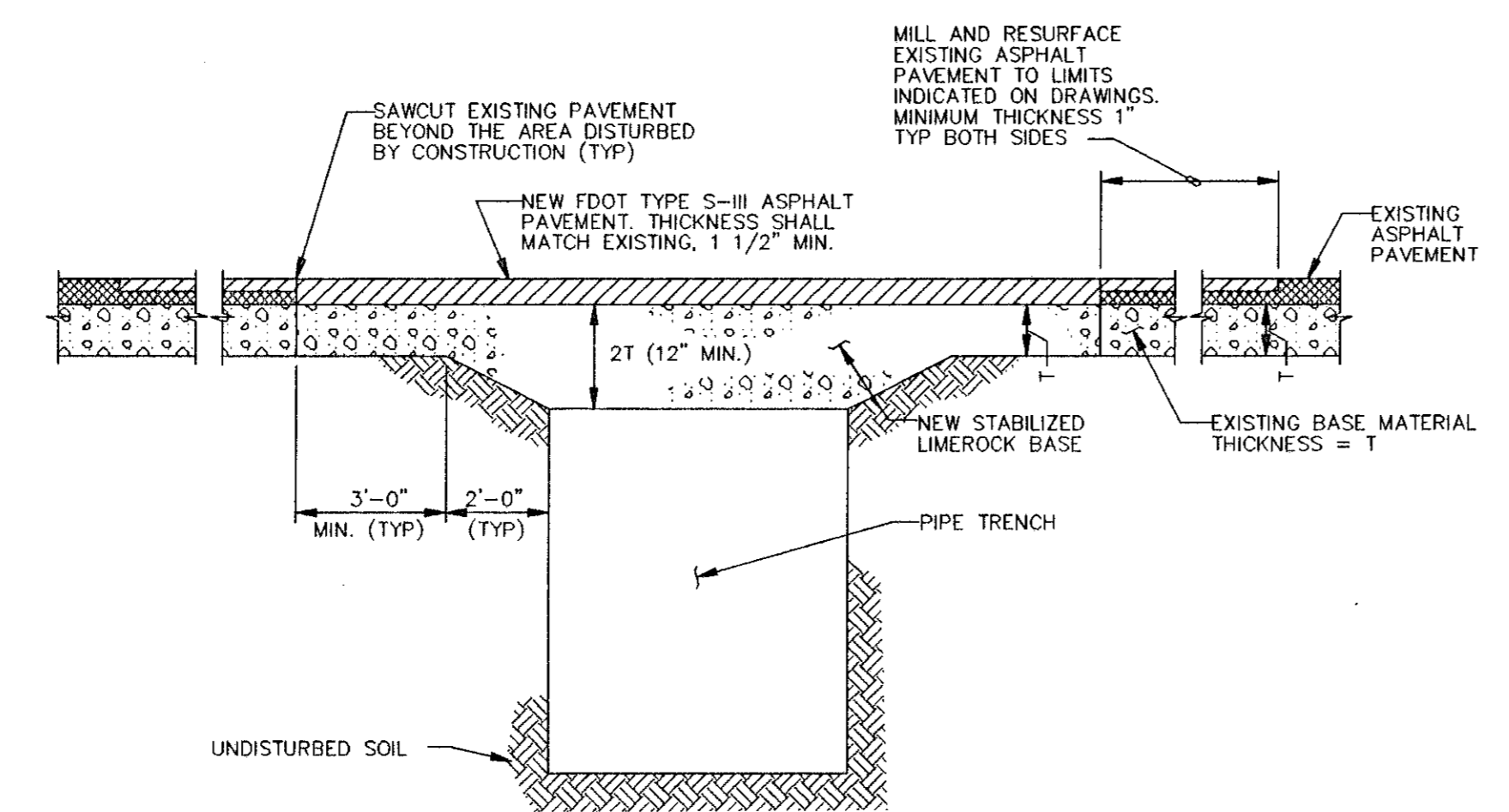


CONCRETE WALL OR BEAM SLEEVE (H)
NO SCALE

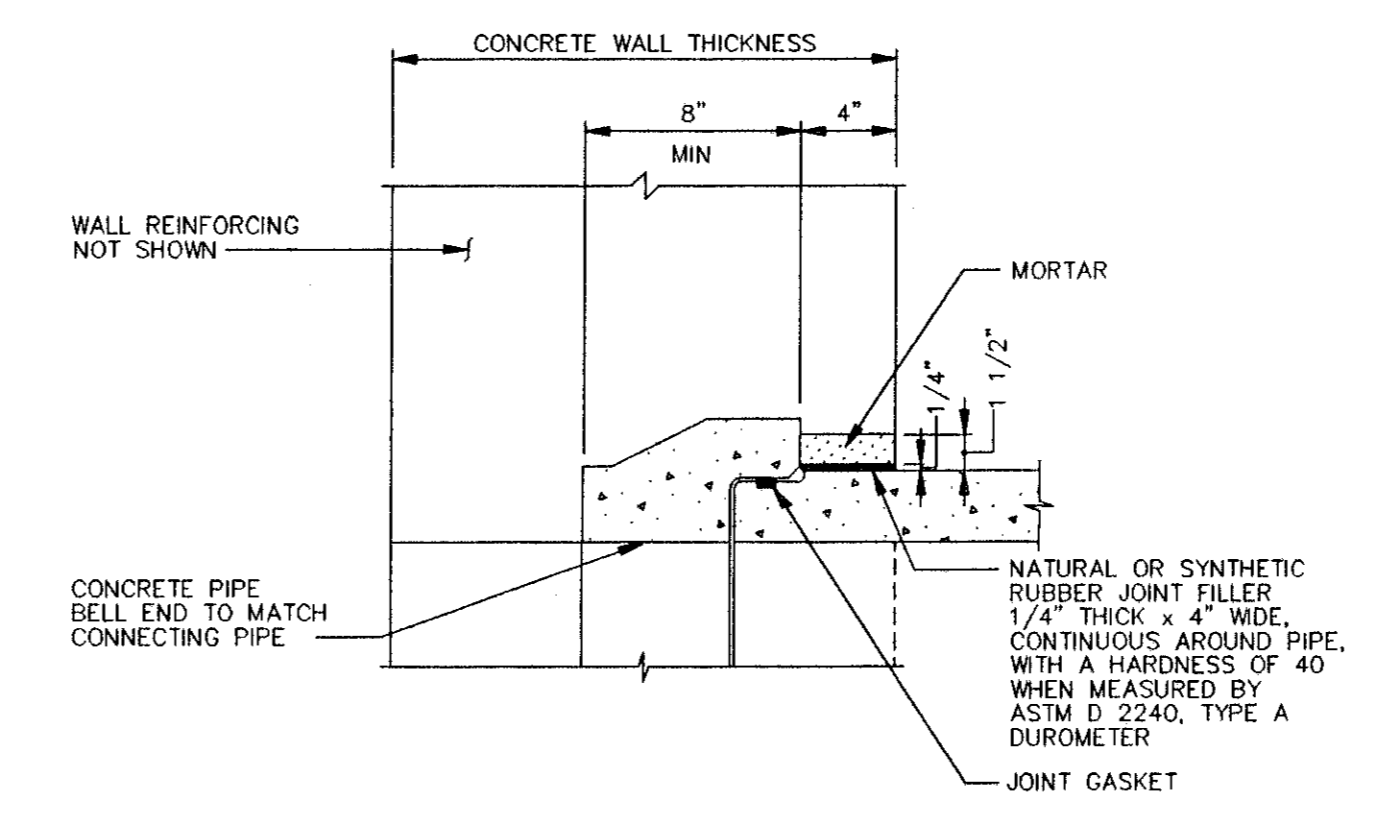


RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
Richard C. Merryman 10/11/01
RICHARD C. MERRYMAN RLS 2627

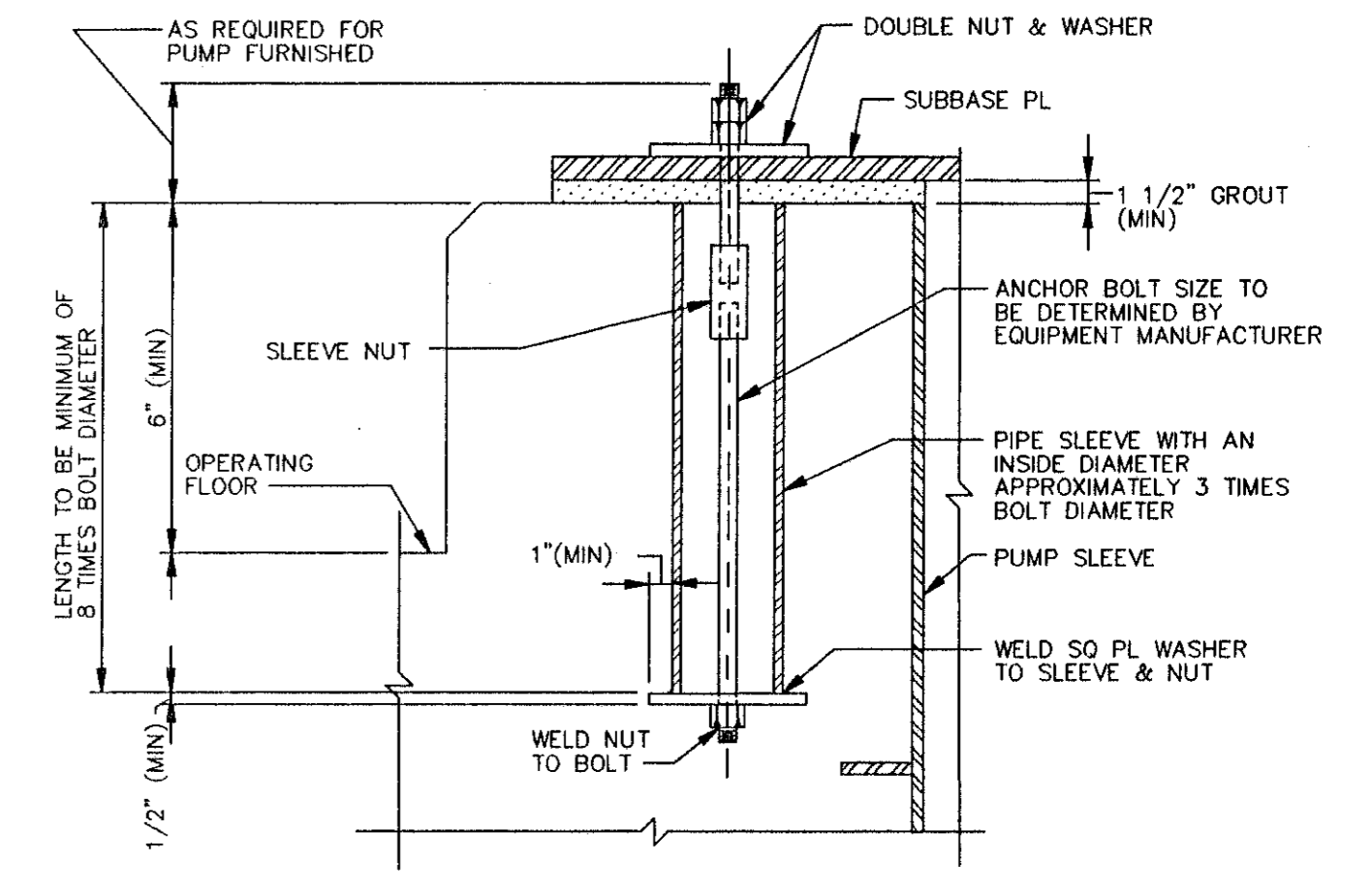
GUARDPOST (J)
NO SCALE



ASPHALT PAVEMENT RESTORATION DETAIL (K)
NO SCALE



CONCRETE PIPE BELL WALL FITTING DETAIL FOR RUBBER AND CONCRETE JOINT (L)
NO SCALE



EQUIPMENT ANCHOR BOLT DETAIL (K)
NO SCALE

NO.	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

CONFORMED TO CONSTRUCTION RECORDS
Andrew A. West
11-5-01

DESIGNED	AAW
DETAILED	RJE
CHECKED	WLK
APPROVED	
DATE	

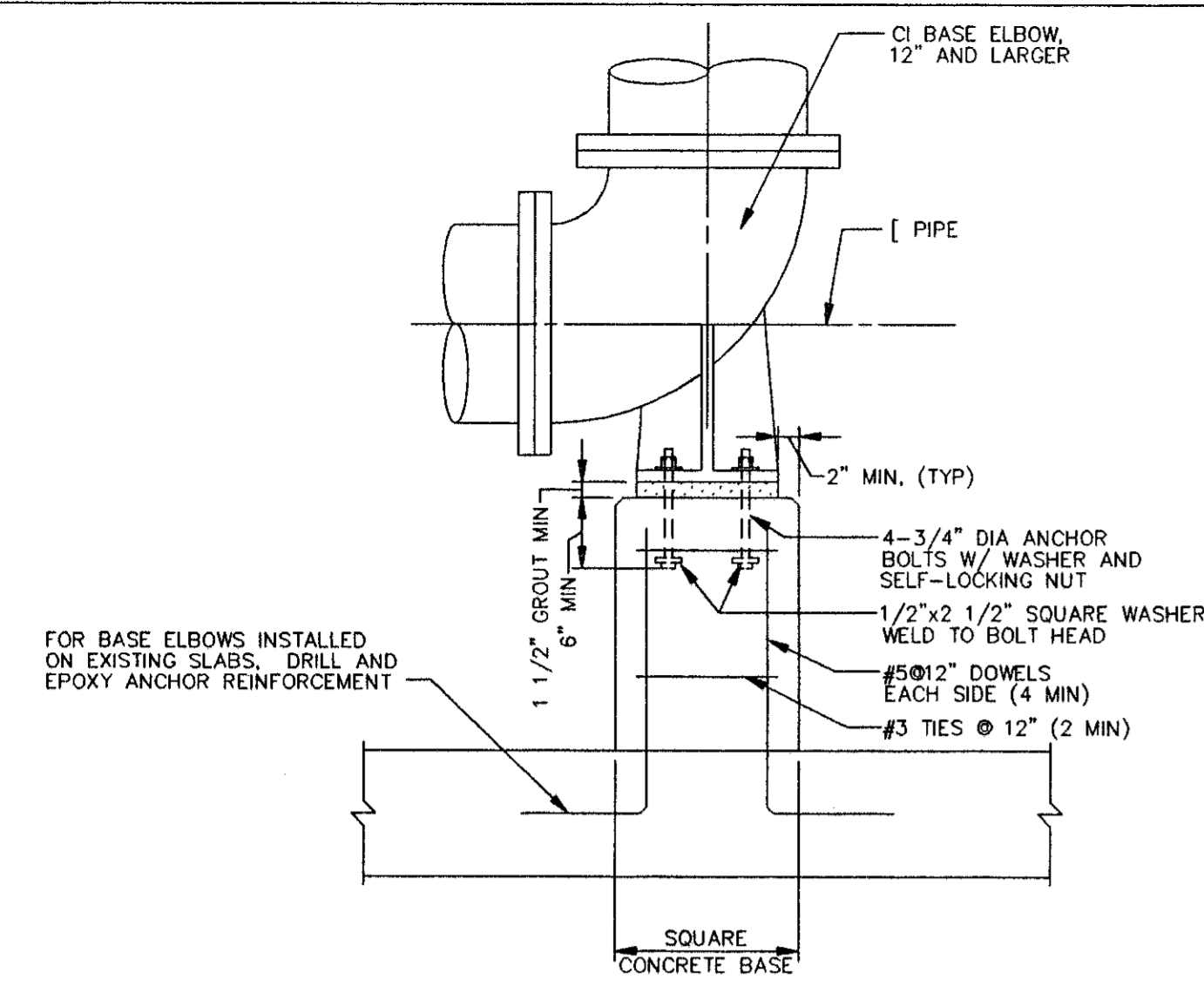


PROJECT NO.
27740

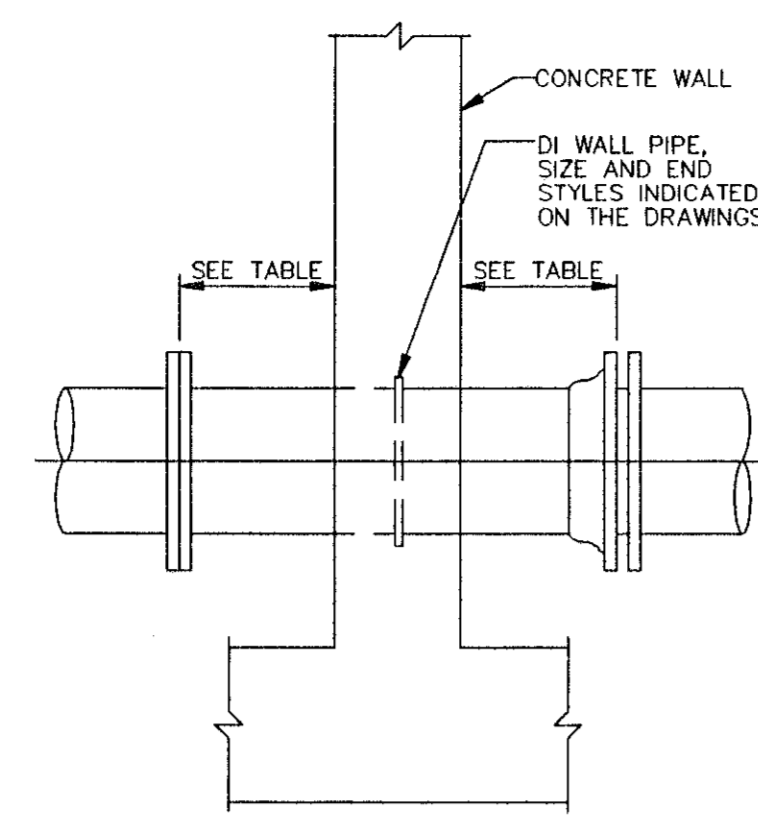
MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWTP ABW FILTERS ADDITION		D-1
MISCELLANEOUS DETAILS		SHEET 16 of 29

2533.023

02/11/99 10:44:31 ACD-12

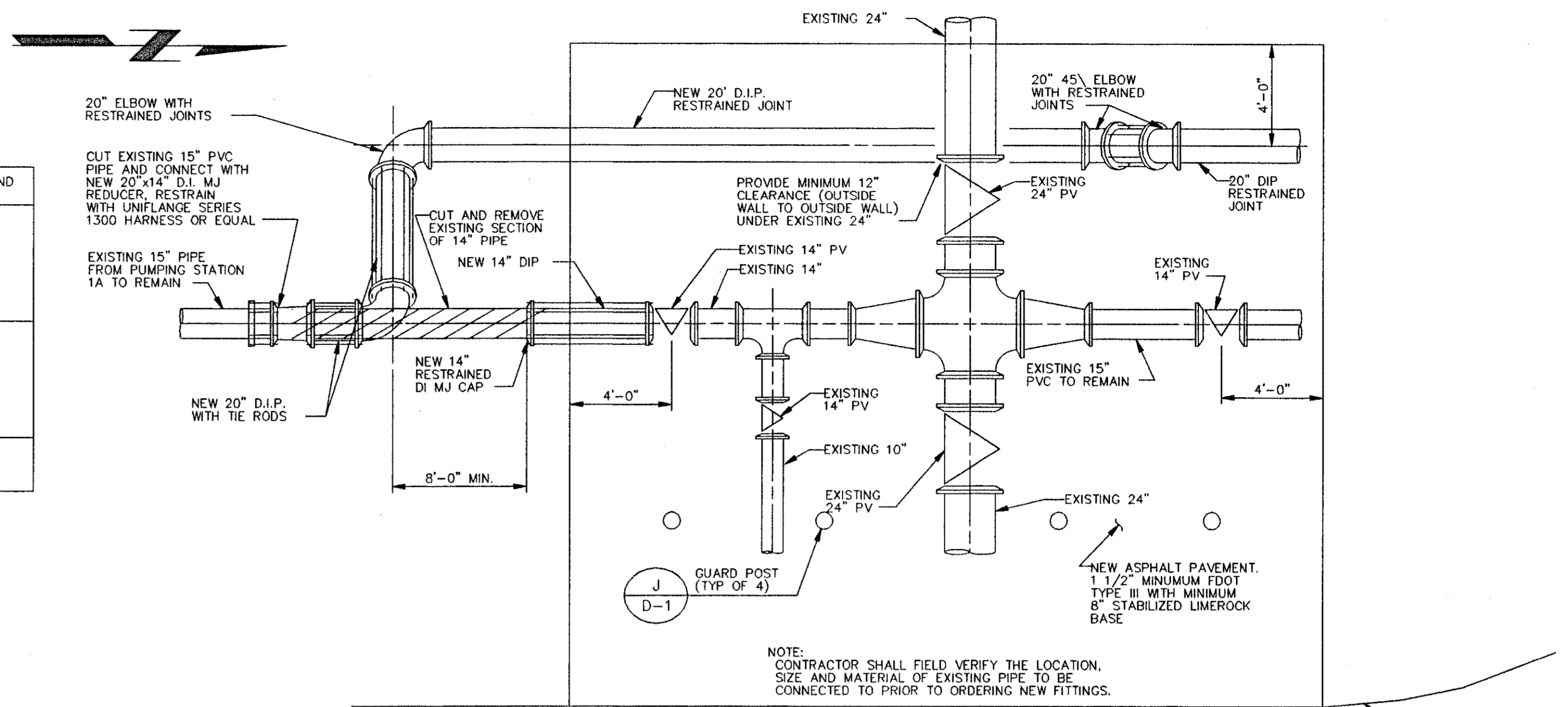


CONCRETE SUPPORT FOR CAST IRON BASE ELBOW
NO SCALE

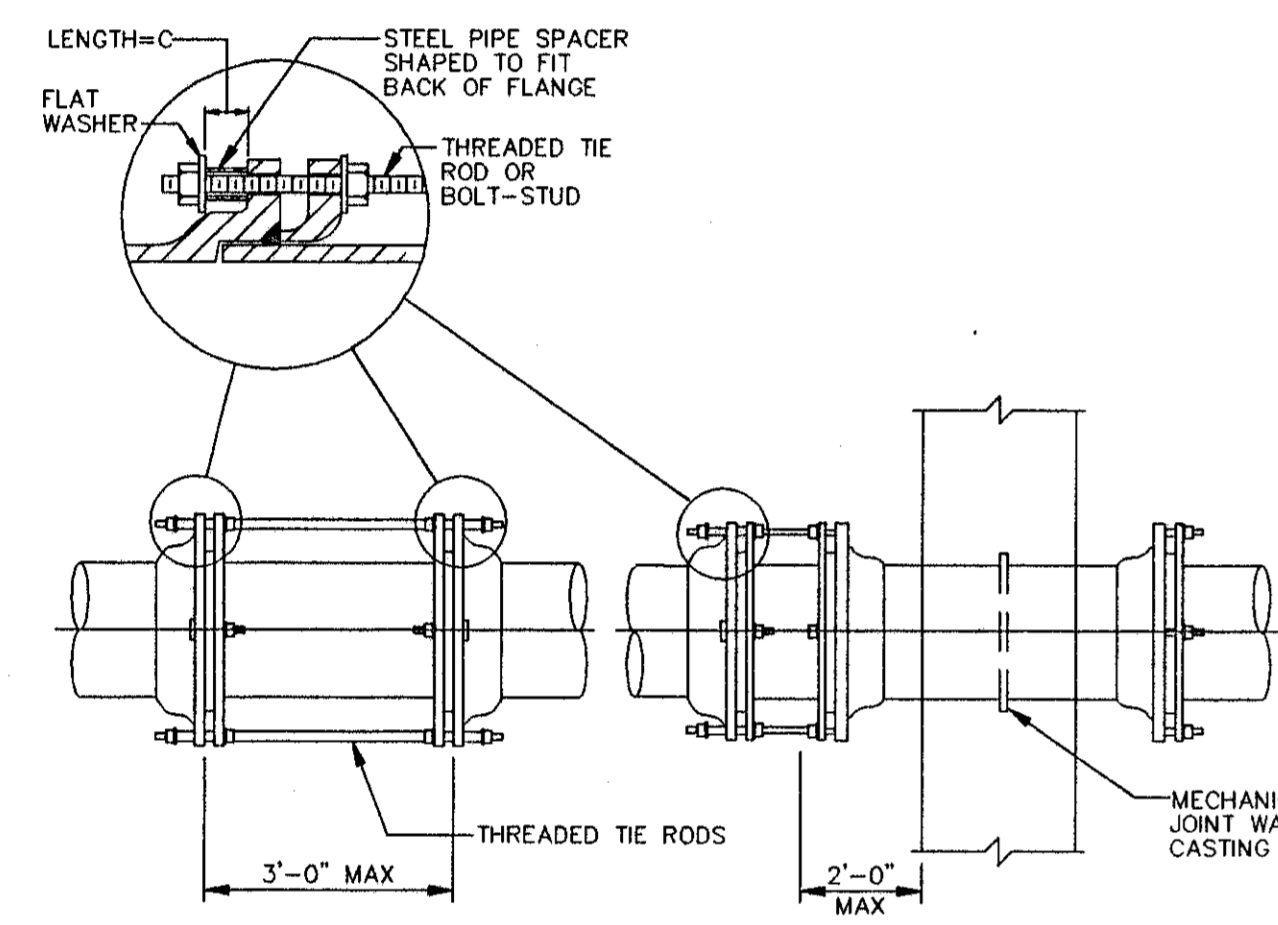


WALL PIPE
NO SCALE

PIPE SIZE, IN.	MECHANICAL JOINT	FLANGE	PLAIN END
4	5 3/4	2 1/4	6
6	5 3/4	2 3/4	6
8	6 1/4	2 3/4	6 1/2
10	6 1/2	3	6 1/2
12	6 1/2	3	6 1/2
14	7	3 1/2	7 3/4
16	7 1/4	3 1/2	7 3/4
18	7 1/2	3 3/4	7 3/4
20	7 1/2	3 3/4	7 3/4
24	8	4	8 1/4
36	9 3/4	5 1/4	9 3/4
48	10	6	10

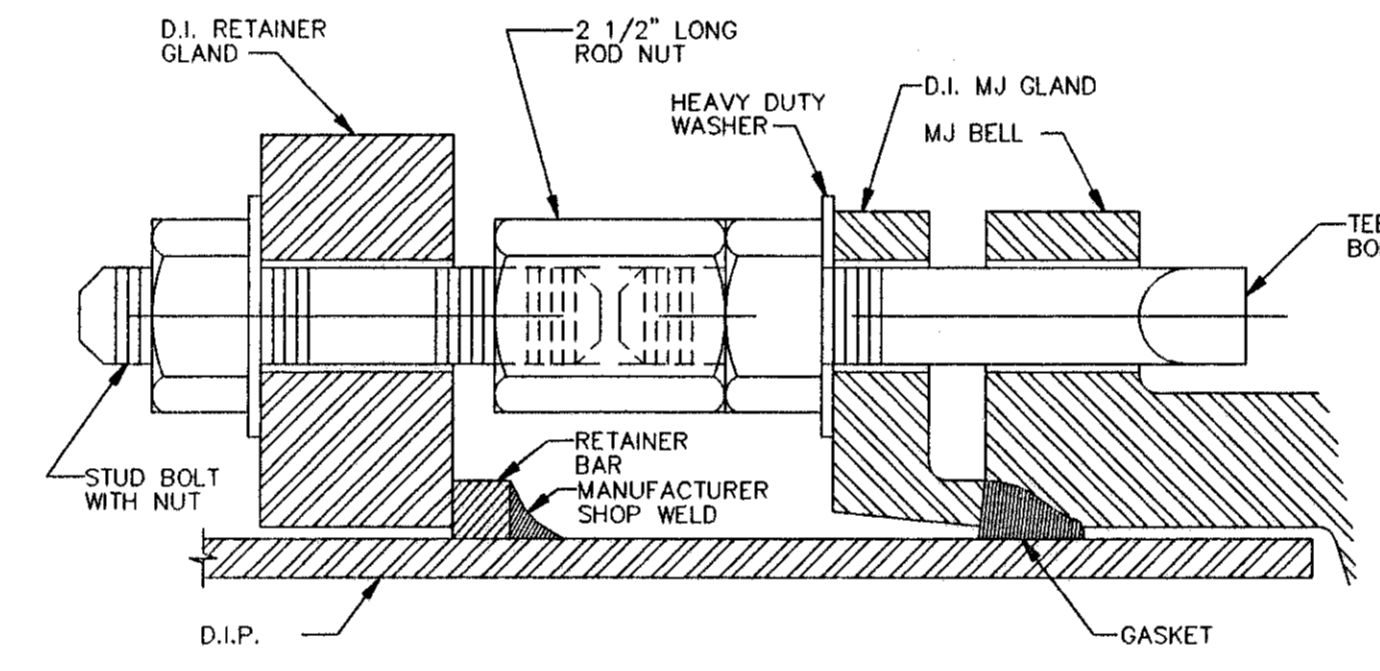


SOUTH POND PIPING MODIFICATION
1/4\"/>

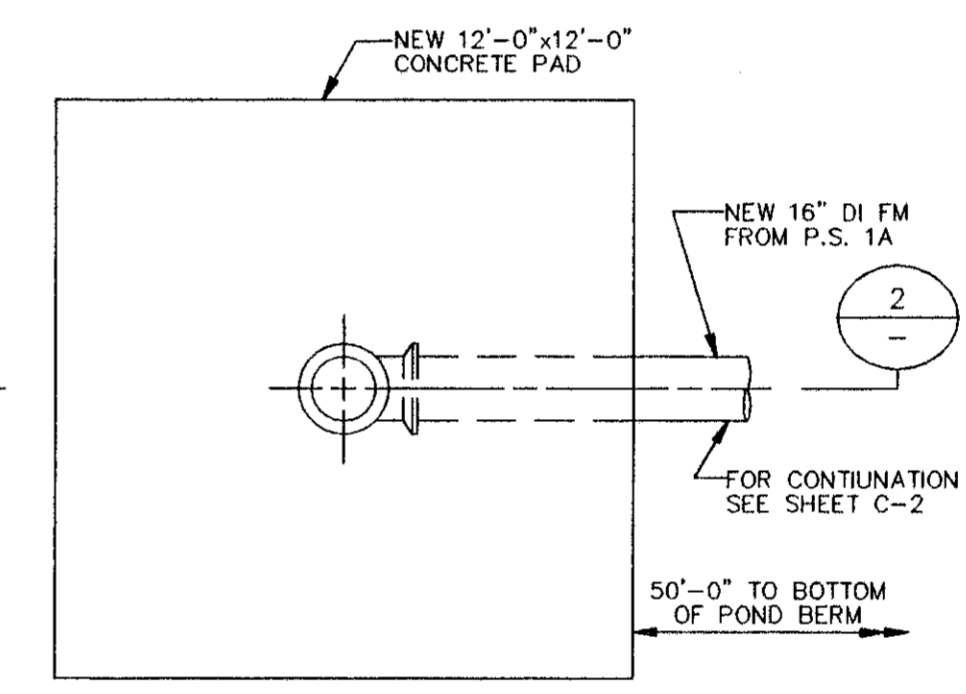


CIP MECHANICAL JOINTS WITH TIE RODS
NO SCALE

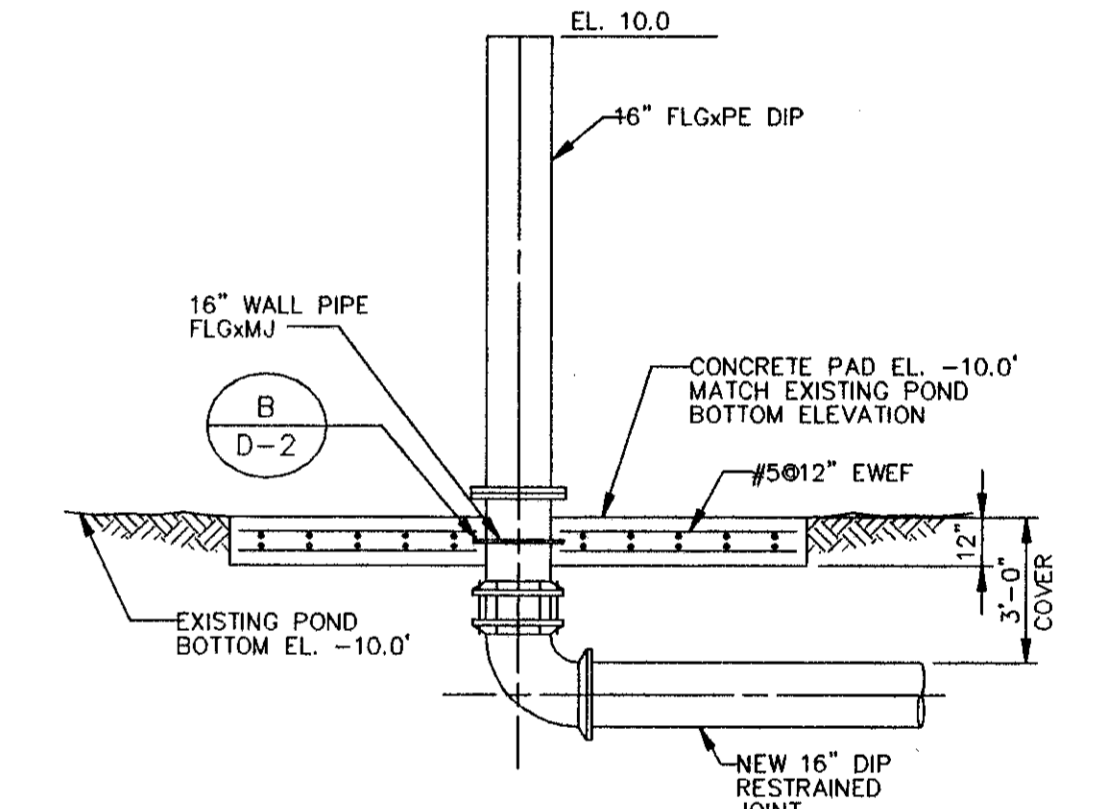
PIPE SIZE (IN)	MAXIMUM PRESSURE (PSI) (NOTE 1)	TIE RODS (NOTE 2)		PIPE SPACERS		
		NO. OF RODS	DIA (IN)	DIA (IN)	LENGTH (IN)	PIPE SCHEDULE
4	350 OR LESS	2	3/4	3/4	2 1/2	40
6	250 OR LESS	2	3/4	3/4	2 1/2	40
8	150 OR LESS	2	3/4	3/4	2 1/2	40
10	200 OR LESS	4	3/4	3/4	2 1/2	40
12	150 OR LESS	4	3/4	3/4	2 1/2	40
14	100 OR LESS	4	3/4	3/4	2 1/2	40
16	150 OR LESS	6	3/4	3/4	2 1/2	40
18	150 OR LESS	4	3/4	3/4	2 1/2	40
20	100 OR LESS	6	3/4	3/4	2 1/2	40
24	100 OR LESS	8	3/4	3/4	2 1/2	40
30	100 OR LESS	8	3/4	1 1/4	4	80
36	100 OR LESS	10	1	1 1/4	4	80
42	100 OR LESS	12	1 1/4	1 1/4	4	80
48	100 OR LESS	16	1 1/4	1 1/2	4	80



MJ BELL RESTRAINT DETAIL
NO SCALE

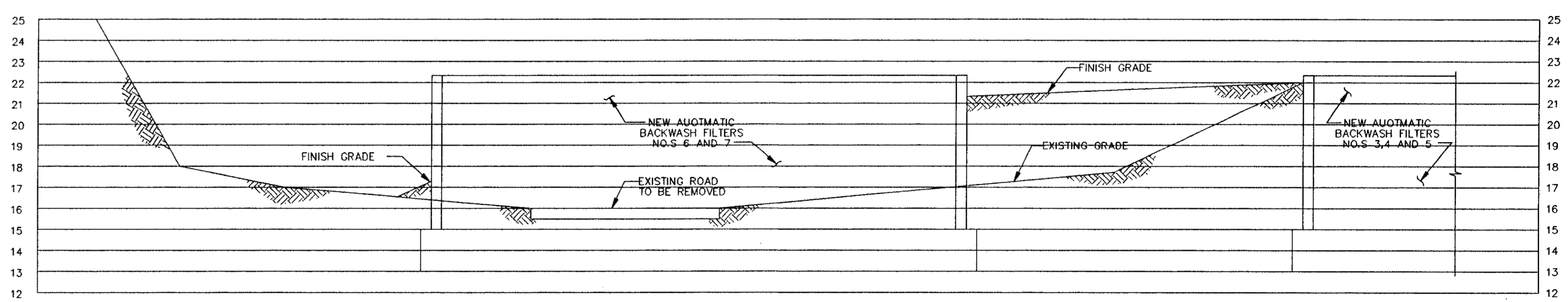


DETAIL
1/4\"/>



SECTION
1/4\"/>

- NOTES:
- PRESSURE SHALL BE THE PRESSURE AT WHICH THE PIPE IS HYDROSTATICALLY TESTED, OR IF THERE IS NO HYDROSTATIC FIELD TEST, IT SHALL BE THE SPECIFIED SHOP TEST PRESSURE.
 - UNLESS OTHERWISE INDICATED, THE RODS SHALL BE SPACED UNIFORMLY AROUND THE PIPE, BEGINNING WITH THE FIRST TWO AT THE HORIZONTAL CENTERLINE OF THE PIPE, SUBJECT TO THE APPROVAL OF THE ENGINEER.
 - EXCEPT WHERE THE RODS ARE REQUIRED, BOLTS FOR FOLLOWER RINGS SHALL BE TEE HEAD BOLTS. WALL PIPES SHALL BE ORIENTED SO THAT THE BOLT HOLES STRADDLE THE TOP (SIDE IN VERTICAL PIPING) CENTERLINE.



NOTE: THIS SECTION IS INTENDED TO ILLUSTRATE THE GENERAL GRADING IN THIS AREA. PIPING AND OTHER MECHANICAL FEATURES ARE SHOWN ELSEWHERE.

SECTION
VERT: 1/8\"/>

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
Richard C. Merryman 10/11/01
RICHARD C. MERRYMAN RLS 2827

DETAIL
1/4\"/>

CONFORMED TO CONSTRUCTION RECORDS

DESIGNED: AAW
DETAILED: RJE
CHECKED: WLK
APPROVED: T.A. CUMMINGS
DATE: 5/25/96



PROJECT NO.
27740

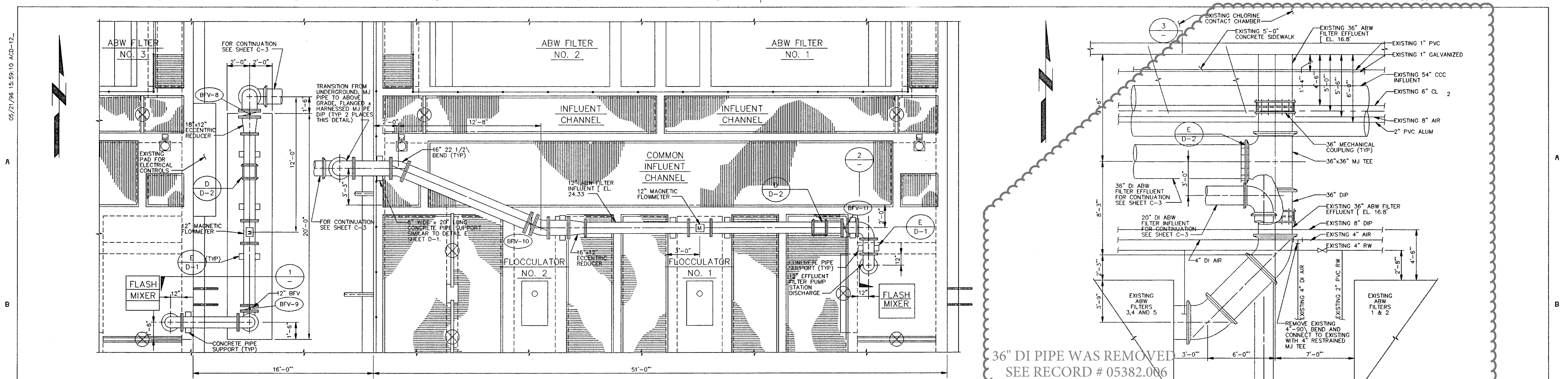
MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWTP
ABW FILTERS ADDITION

MICELLANEOUS DETAILS

D-2

SHEET
17 OF 29

2533.024

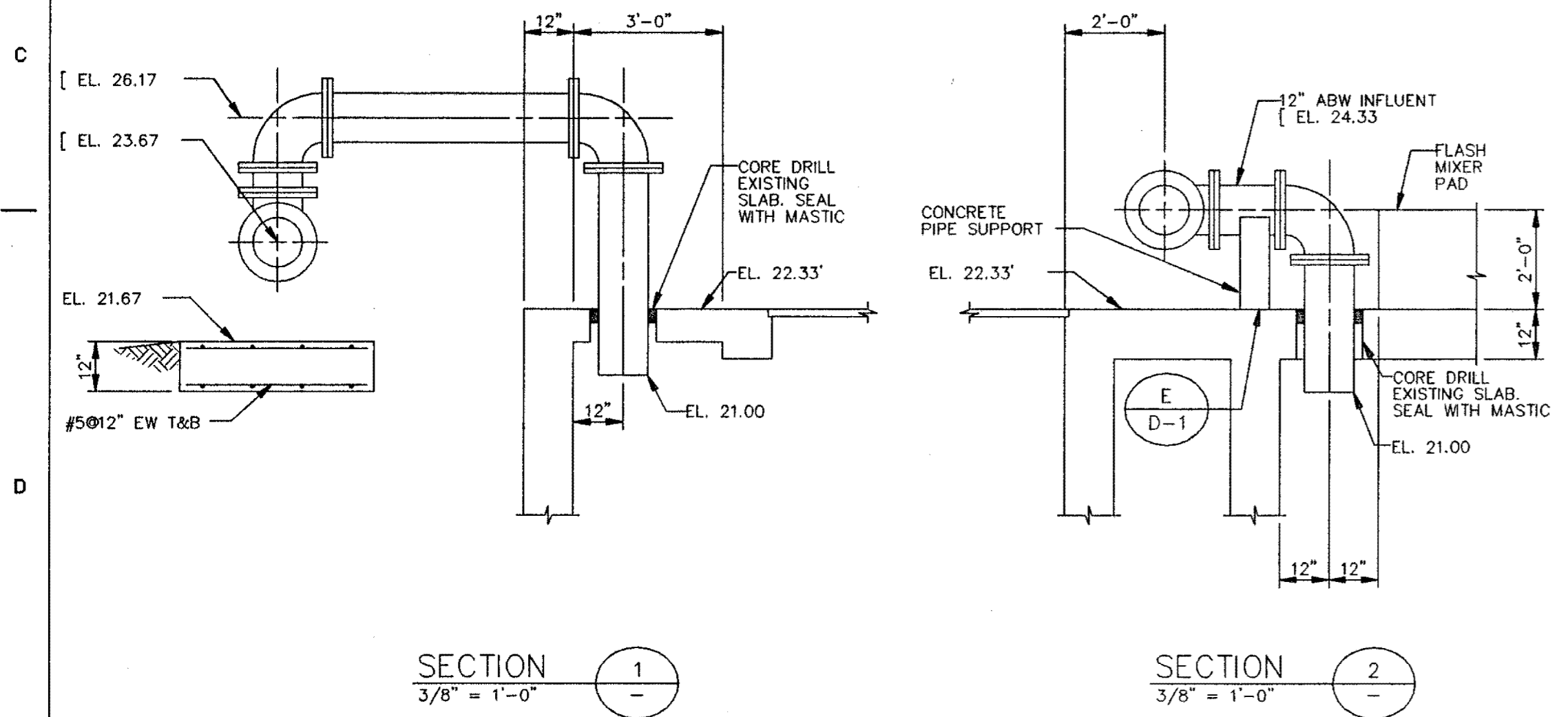


These images may have been altered from their original submittal to reflect additional information added by Manatee County. For an unedited version of the information please contact Manatee County Utilities Record Section at (941) 792-8811

DETAIL A
1/4" = 1'-0"

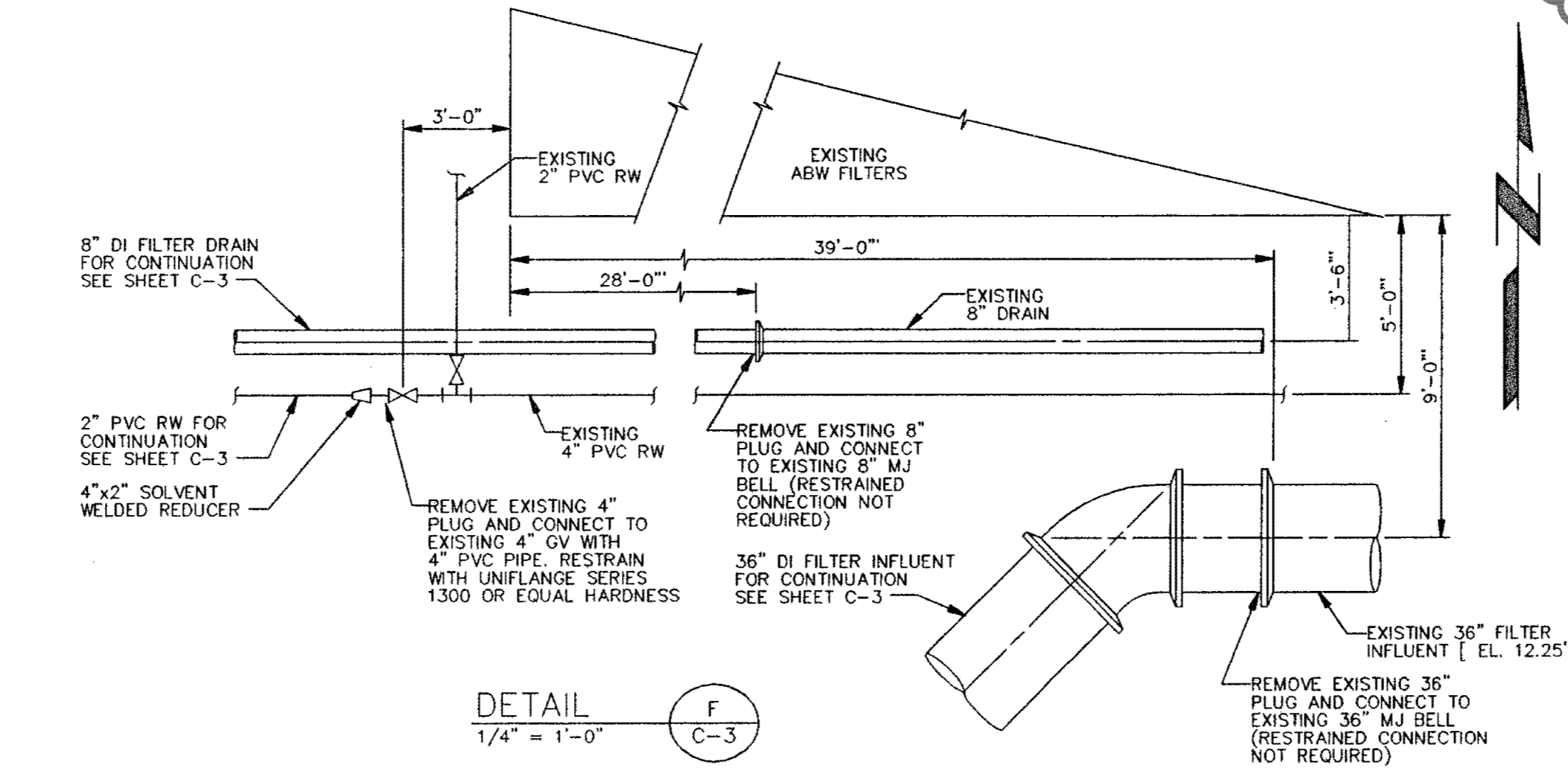
36" DI PIPE WAS REMOVED
SEE RECORD # 05382.006

NOTE:
CUT AND REMOVE EXISTING 36" DIP BETWEEN CONNECTION POINTS.

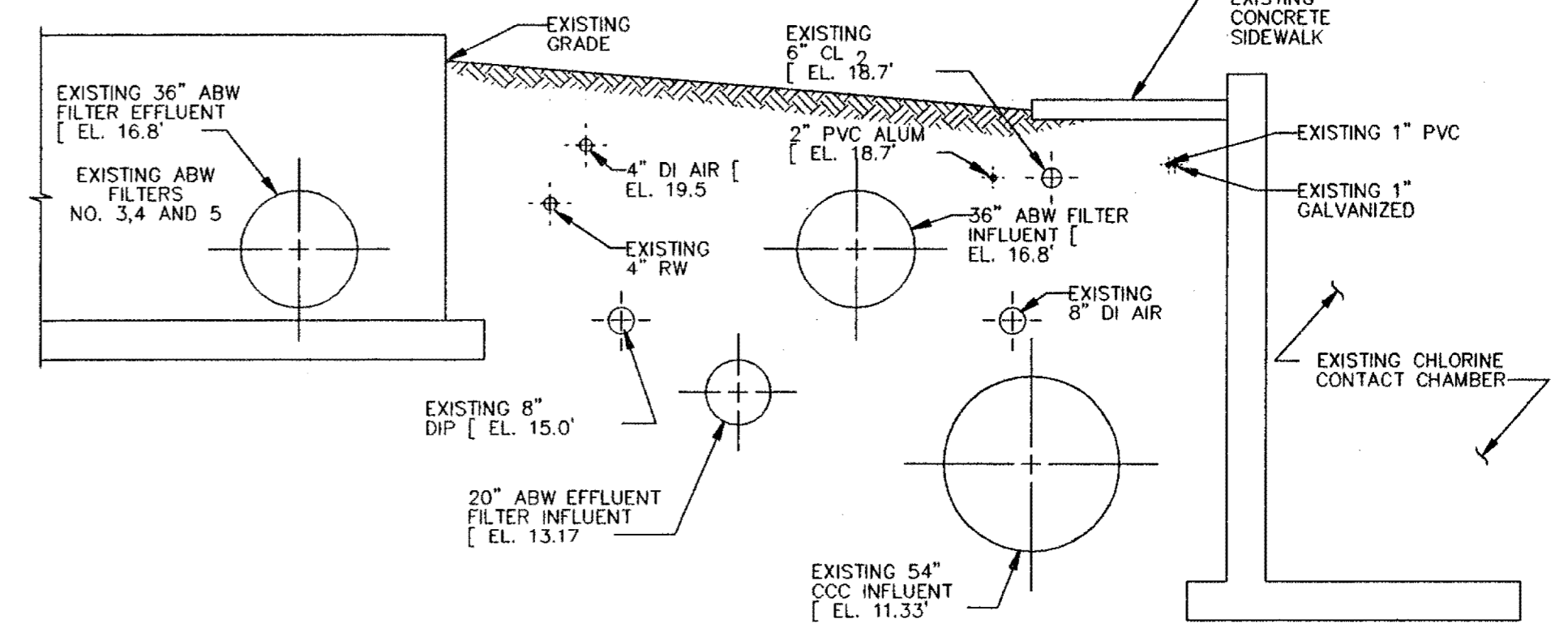


SECTION 1
3/8" = 1'-0"

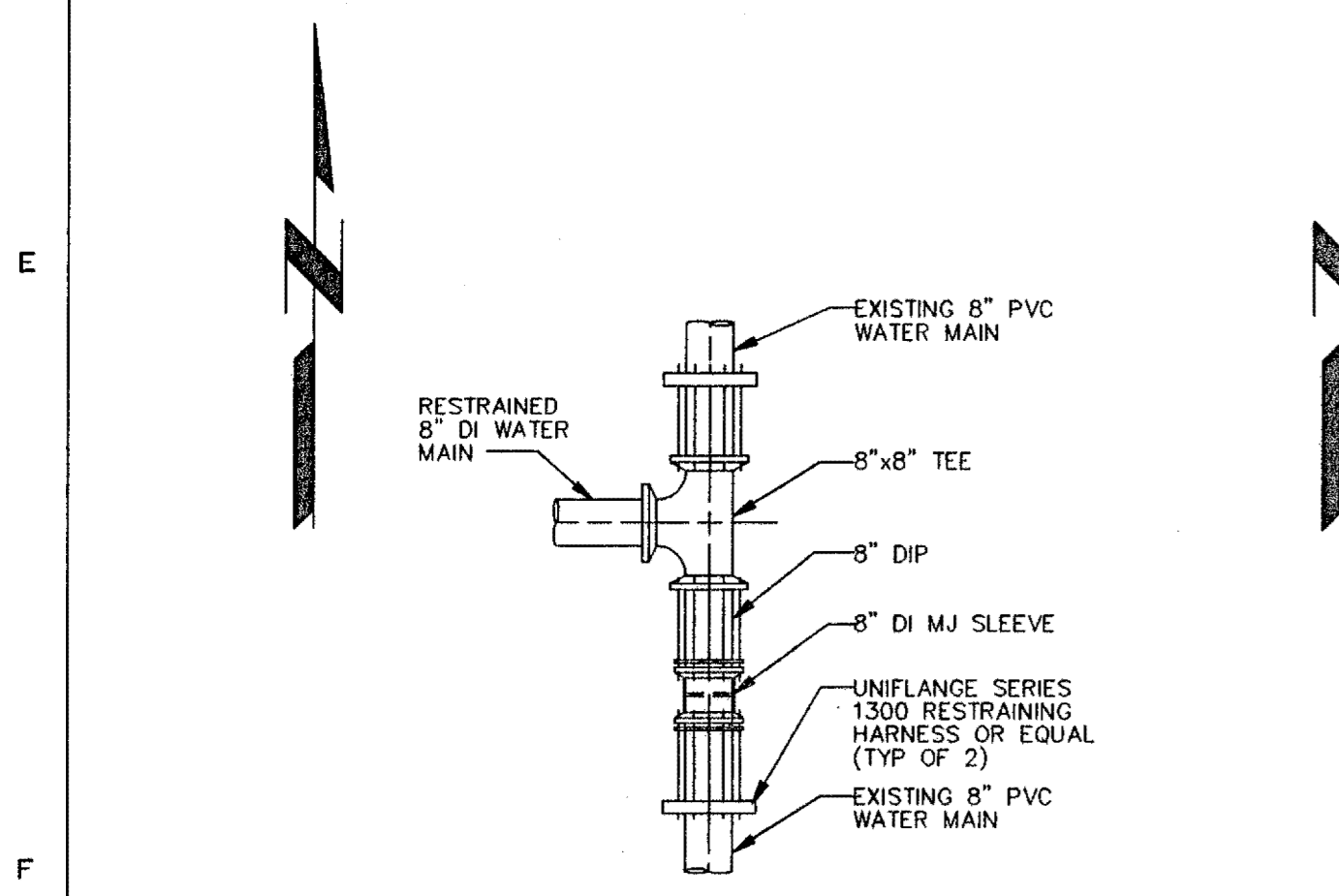
SECTION 2
3/8" = 1'-0"



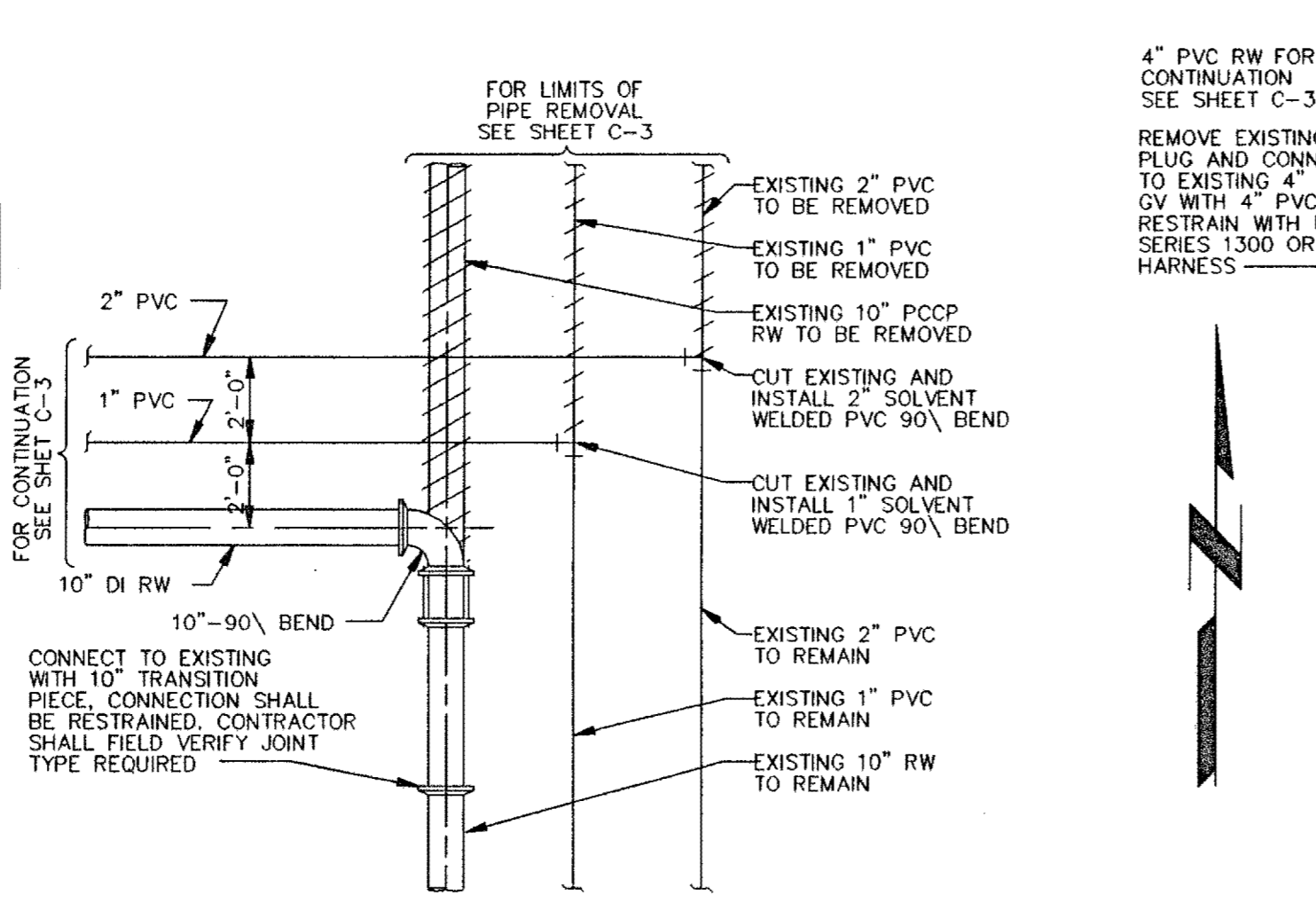
DETAIL C-3
1/4" = 1'-0"



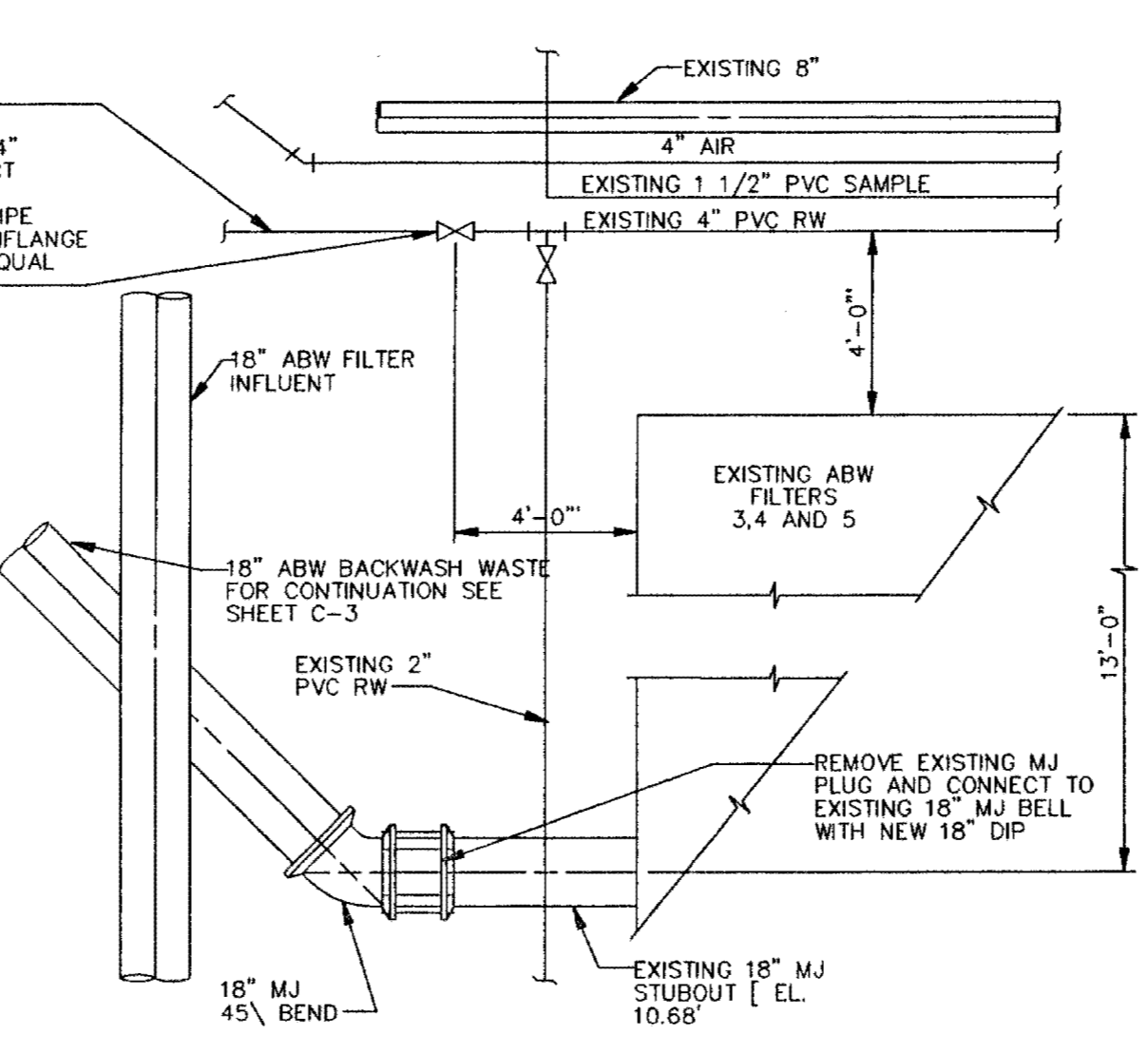
DETAIL B
1/4" = 1'-0"



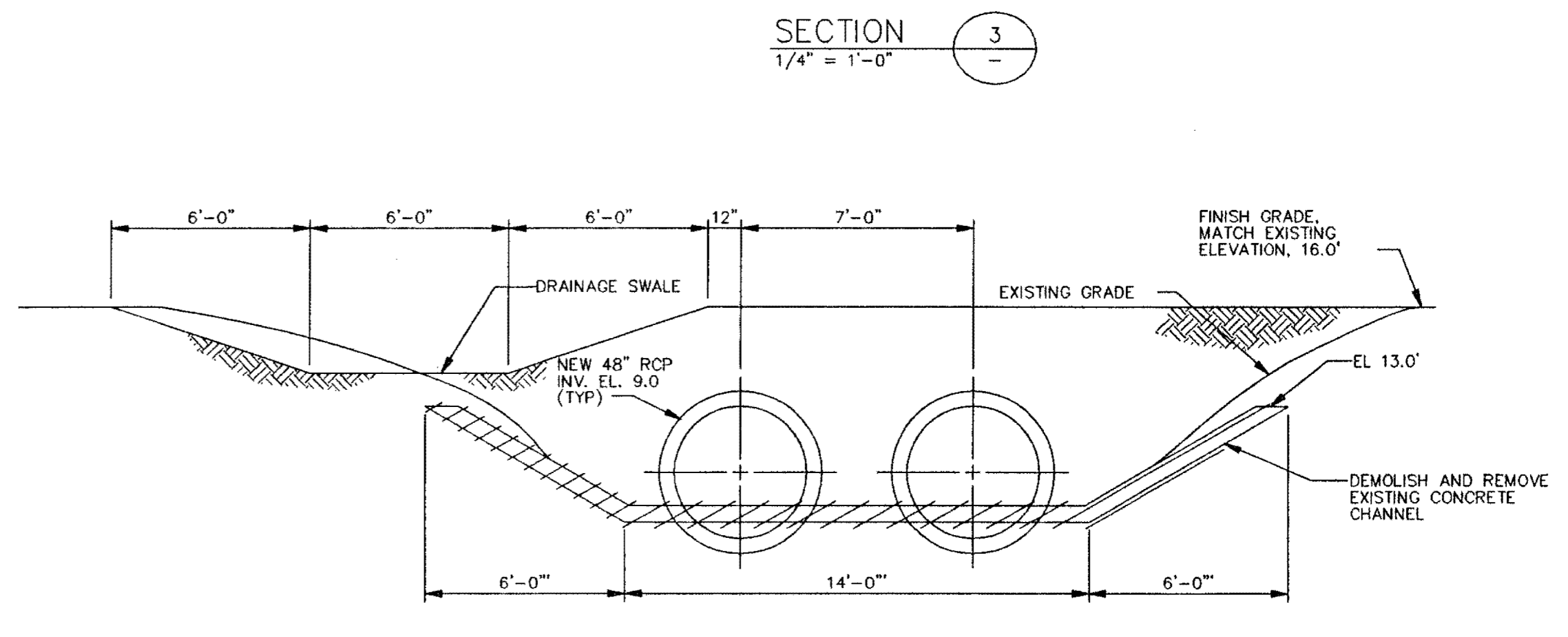
DETAIL E
3/8" = 1'-0"



DETAIL G
1/4" = 1'-0"



DETAIL H
1/4" = 1'-0"



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

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

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 2161 STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
RICHARD C. MERRYMAN RLS 7/27

10/11/01

CONFORMED TO CONSTRUCTION RECORDS

DESIGNED: AAW
DETAILED: RJE
CHECKED: WLK
APPROVED: [Signature]
DATE: 11-5-01



PROJECT NO.

27740

MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWTP
ABW FILTERS ADDITION

MISCELLANEOUS DETAILS

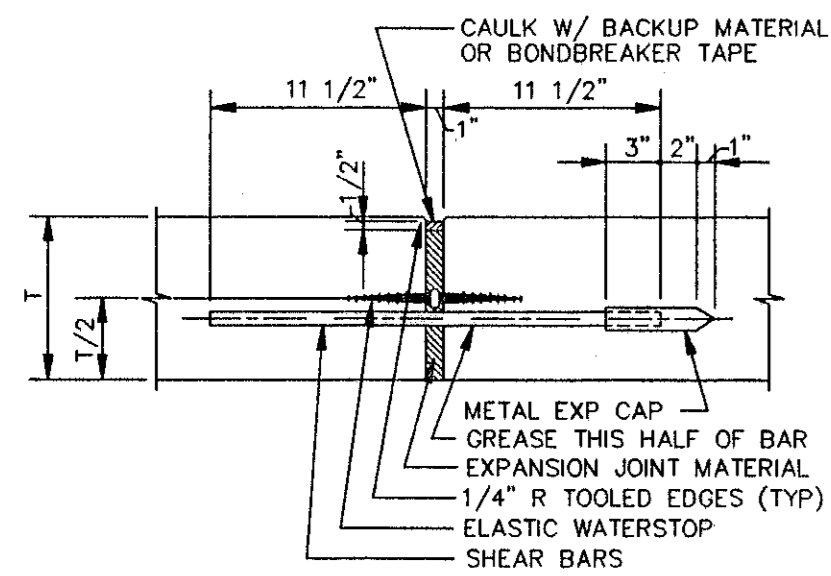
D-3

SHEET 18 OF 29

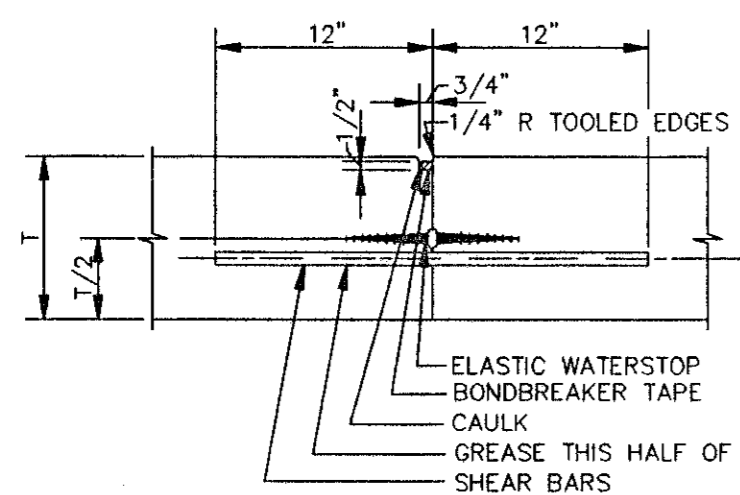
2533-095

NO.	BY	CHK	APP	DATE	REVISIONS AND RECORD OF ISSUE

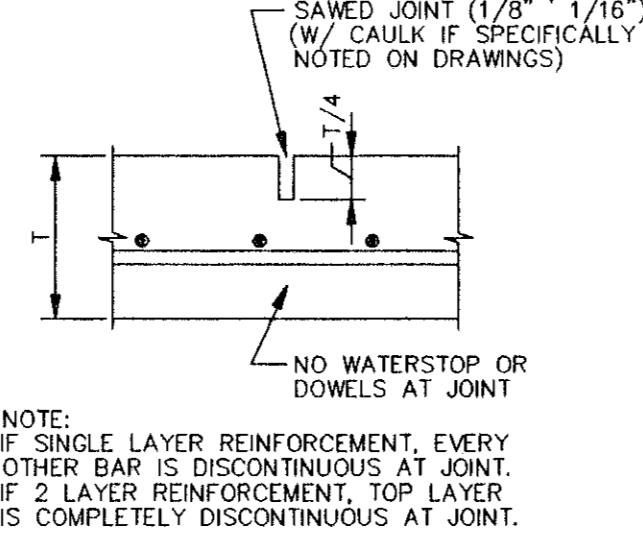
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SLABS



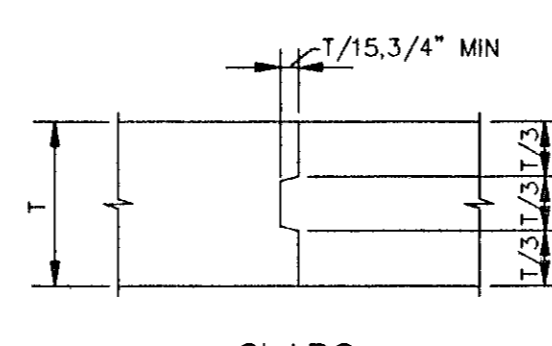
SLABS



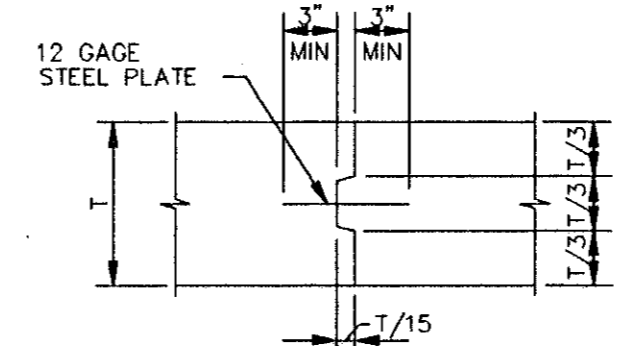
SAWED CONTRACTION JOINT
SLAB-ON-GRADE

NOTE:
IF SINGLE LAYER REINFORCEMENT, EVERY OTHER BAR IS DISCONTINUOUS AT JOINT. IF 2 LAYER REINFORCEMENT, TOP LAYER IS COMPLETELY DISCONTINUOUS AT JOINT.

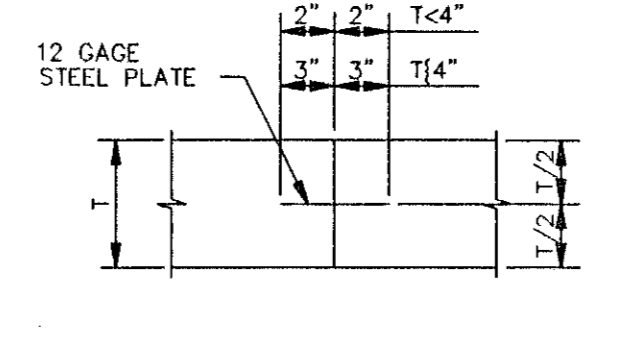
NOTES:
1. TYPICAL CONTROL JOINT NOTES
1 THRU 3 NOT APPLICABLE
2. "S" - NO WATERSTOP
3. JOINT FORMED WITH TOOL OR INSERT STRIP MAY BE SUBSTITUTED FOR SAWED TYPE ONLY WITH PRIOR ACCEPTANCE BY THE ENGINEER.



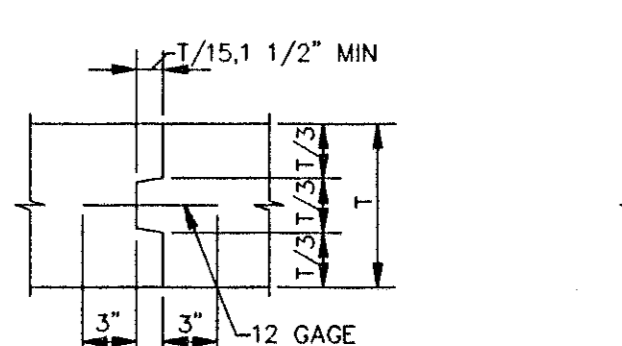
SLABS



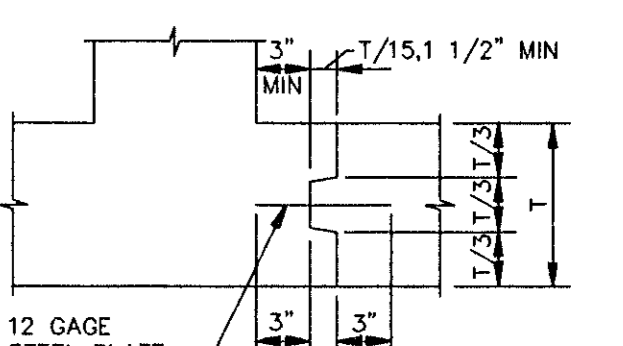
SECTION



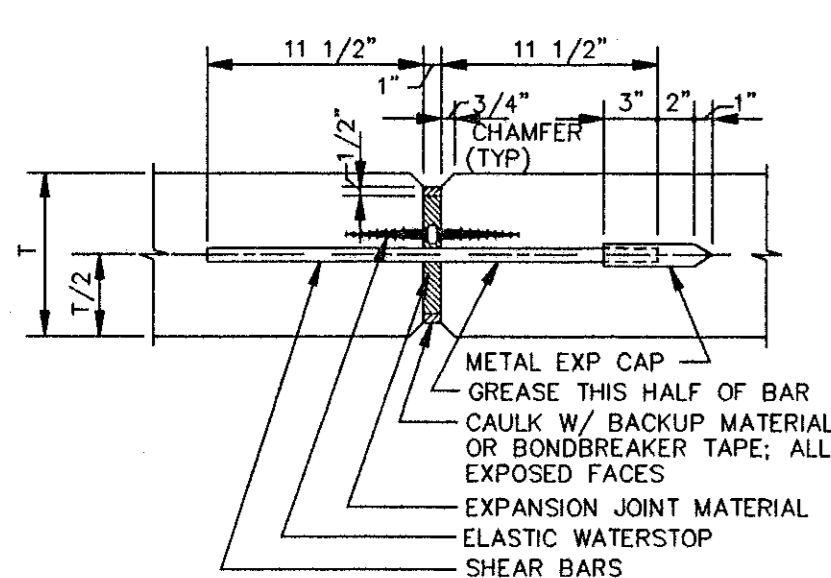
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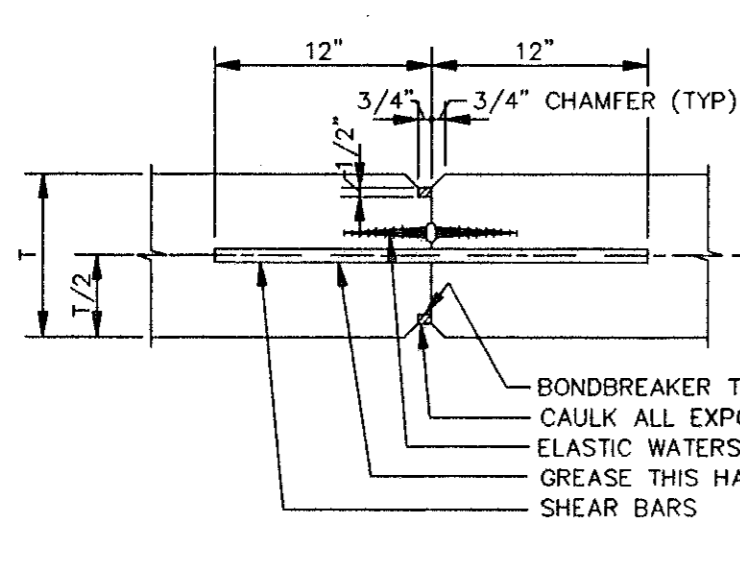
SECTION



SECTION



WALLS



WALLS

EXPANSION JOINTS

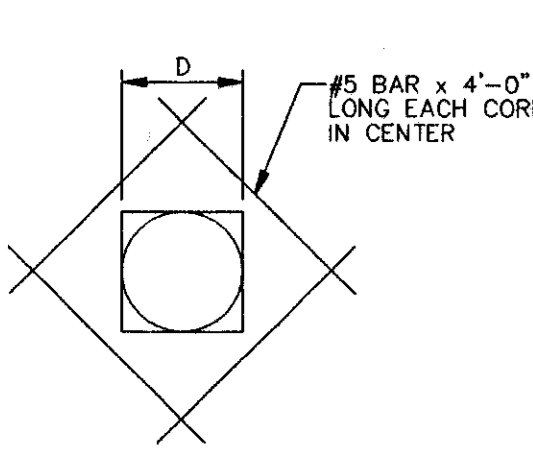
NOTE:
"EJ W/WS" - WITH ELASTIC WATERSTOP
"EJ" - WITHOUT ELASTIC WATERSTOP

CONTRACTION JOINTS

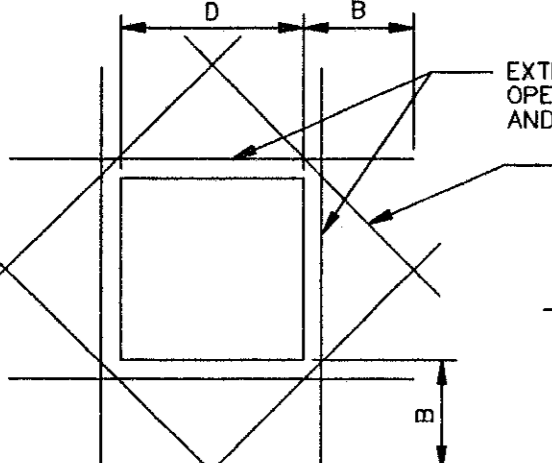
NOTE:
"CJ W/WS" - WITH ELASTIC WATERSTOP
"CJ" - WITHOUT ELASTIC WATERSTOP

TYPICAL CONTROL JOINTS

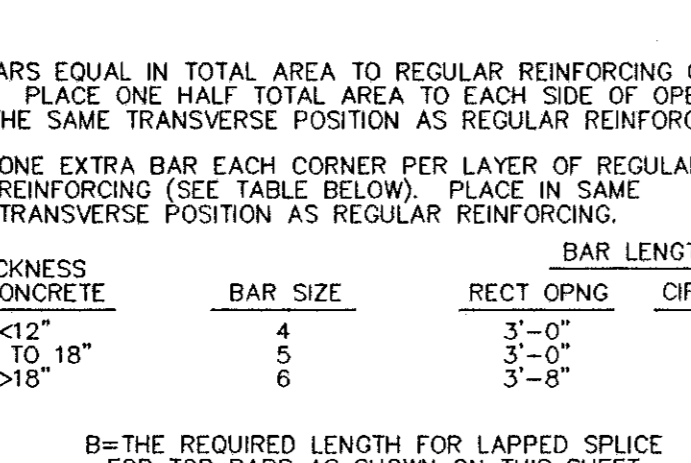
NOTES:
1. PROVIDE 3/4" SHEAR BARS @ 1'-6" CTRS ACROSS JOINT UNLESS NOTED OTHERWISE
2. REINFORCING STEEL SHALL NOT BE EXTENDED ACROSS JOINT UNLESS NOTED OTHERWISE
3. SHEAR BARS SHALL BE SMOOTH, FREE FROM RUST OR SCALE, AND GREASED TO PREVENT BOND (ONE HALF OF BAR ONLY)



FOR OPENINGS
12" } D } 21"
APR 97

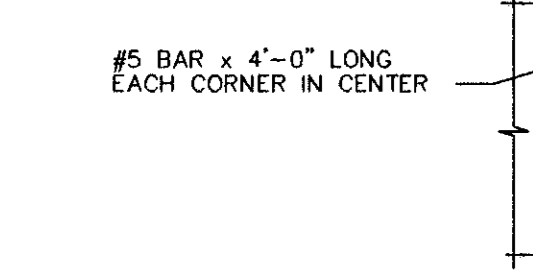


FOR RECTANGULAR OPENINGS
21" < D } 54"
APR 97

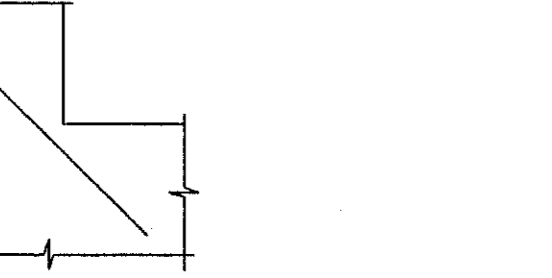


FOR CIRCULAR OPENINGS
21" < D } 54"
APR 97

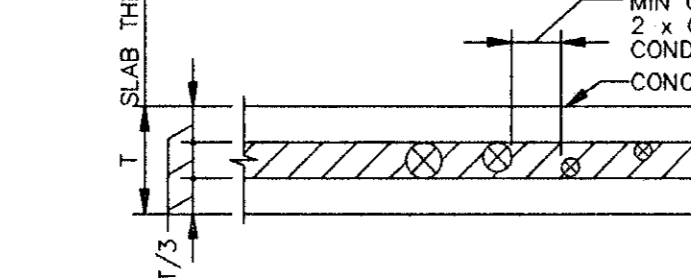
TYPICAL EXTRA REINFORCING AT OPENINGS 12" TO } 54"
(TYPICAL REQUIRED UNLESS ADDITIONAL REINFORCEMENT SPECIFICALLY INDICATED AT OPENINGS ON DRAWINGS)



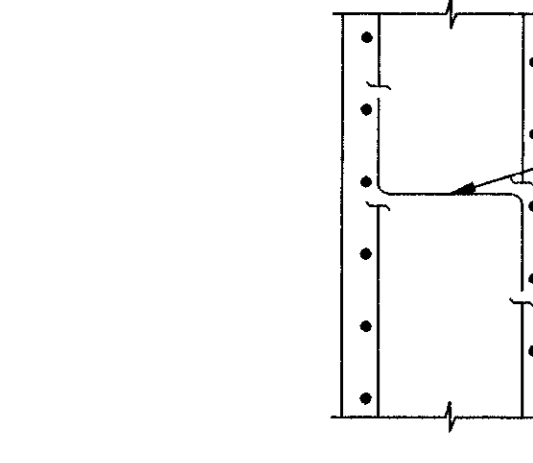
TYPICAL EXTRA REINFORCING
AT ISOLATED RE-ENTRANT CORNERS
(TYPICAL REQUIRED UNLESS ADDITIONAL REINFORCEMENT SPECIFICALLY INDICATED AT OPENINGS ON DRAWINGS)



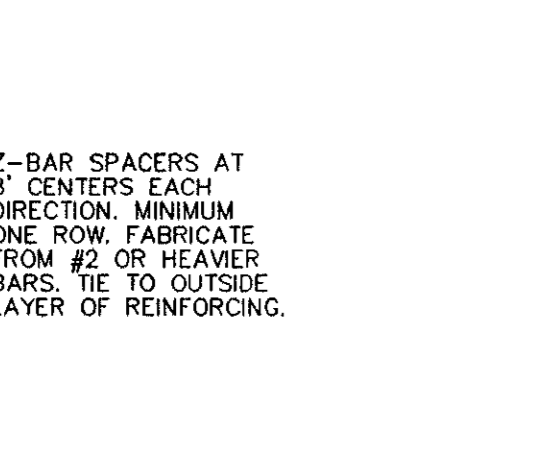
TYPICAL EXTRA REINFORCING
AT ISOLATED RE-ENTRANT CORNERS
(TYPICAL REQUIRED UNLESS ADDITIONAL REINFORCEMENT SPECIFICALLY INDICATED AT OPENINGS ON DRAWINGS)



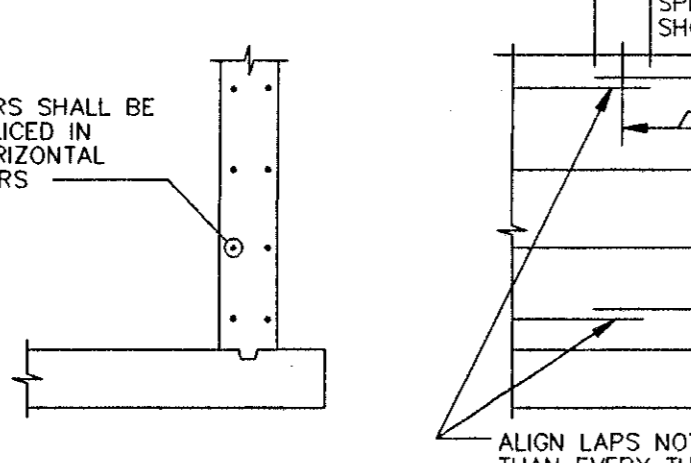
TYPICAL EXTRA REINFORCING
AT ISOLATED RE-ENTRANT CORNERS
(TYPICAL REQUIRED UNLESS ADDITIONAL REINFORCEMENT SPECIFICALLY INDICATED AT OPENINGS ON DRAWINGS)



SPACERS FOR
WALL REINFORCEMENT
JAN 94



TYPICAL RING WALL REINFORCING
SPlice DETAIL
JAN 94



TYPICAL RING WALL REINFORCING
SPlice DETAIL
JAN 94

JOINTS WITHOUT WATERSTOPS

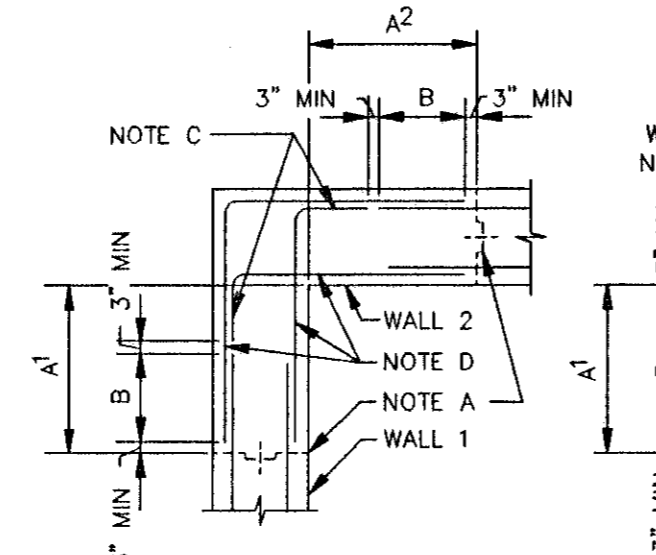
NOTE:
"CJ W/WS" - WITH ELASTIC WATERSTOP
"CJ" - WITHOUT ELASTIC WATERSTOP

JOINTS WITH WATERSTOPS

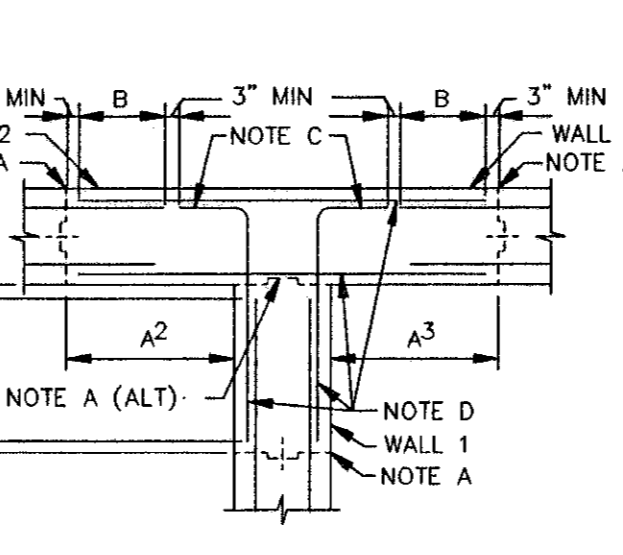
NOTE:
"CJ W/WS" - WITH ELASTIC WATERSTOP
"CJ" - WITHOUT ELASTIC WATERSTOP

TYPICAL CONSTRUCTION JOINTS

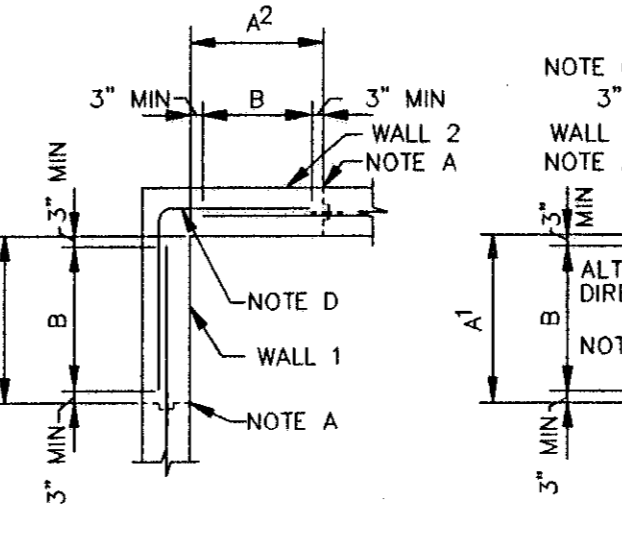
NOTES:
1. REINFORCING STEEL IS CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS
2. "CSJ W/WS" - WITH WATERSTOP
3. "CSJ" - WITHOUT WATERSTOP



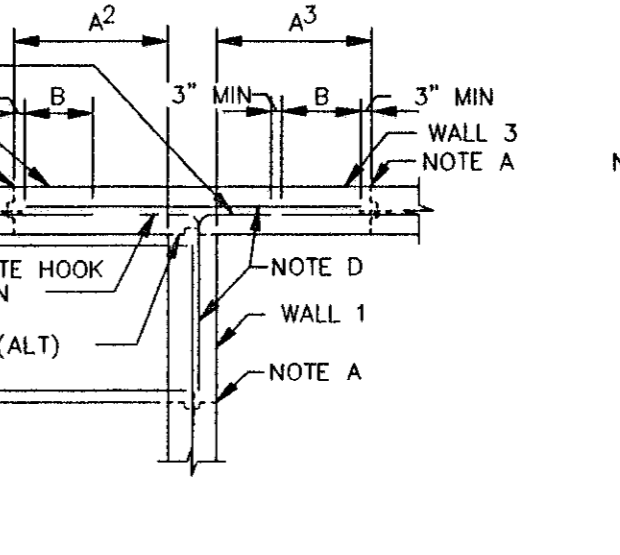
FOR OPENINGS
12" } D } 21"
APR 97



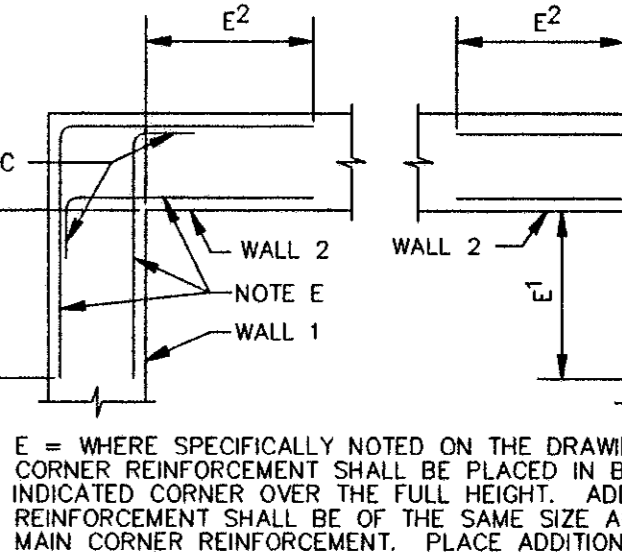
FOR OPENINGS
12" } D } 21"
APR 97



FOR OPENINGS
12" } D } 21"
APR 97



FOR OPENINGS
12" } D } 21"
APR 97



FOR OPENINGS
12" } D } 21"
APR 97

A = VERTICAL CONSTRUCTION JOINT NEAREST TO WALL CORNER.
A(ALT) = ALTERNATE VERTICAL CONSTRUCTION JOINT NEAREST TO WALL CORNER IN T WALL JOINT WHICH DOES NOT REQUIRE WATERSTOP.
A* = DISTANCE FROM INSIDE CORNER FACE TO NEAREST VERTICAL CONSTRUCTION JOINT IN SIMILARLY NUMBERED WALL. A SHALL NOT BE LESS THAN DIMENSIONS INDICATED BY THESE DETAILS; NOR GREATER THAN INDICATED ON PLAN DRAWINGS; BUT IN ANY CASE SHALL NOT EXCEED 30 FEET IN LIQUID CONTAINMENT STRUCTURES OR 40 FEET IN OTHER STRUCTURES. IN T WALL JOINTS WHICH DO NOT REQUIRE WATERSTOP, A MAY BE ZERO.
B = OPTIONAL SPLICE LOCATION UNLESS SPECIFICALLY NOTED ON PLAN DRAWINGS. SPLICE LENGTH SHALL NOT BE LESS THAN THAT REQUIRED FOR TOP BARS AS SHOWN IN TABLE ON THIS SHEET. USE SPLICE LENGTH FOR THE SMALLER OF THE TWO BARS BEING SPLICED.
C = STANDARD HOOK
D = TYPICAL CORNER REINFORCEMENT. SIZE SHALL MATCH LARGEST ADJACENT WALL HORIZONTAL REINFORCEMENT; SPACING SHALL MATCH MINIMUM ADJACENT WALL HORIZONTAL REINFORCEMENT SPACING.
E = WHERE SPECIFICALLY NOTED ON THE DRAWINGS, ADDITIONAL CORNER REINFORCEMENT SHALL BE PLACED IN BOTH FACES OF THE INDICATED CORNER OVER THE FULL HEIGHT. ADDITIONAL CORNER REINFORCEMENT SHALL BE OF THE SAME SIZE AND SPACING AS THE MAIN CORNER REINFORCEMENT. PLACE ADDITIONAL REINFORCEMENT ALTERNATELY WITH, AND EQUAL DISTANCE BETWEEN, MAIN CORNER REINFORCEMENT.
E* = DISTANCE FROM INSIDE CORNER FACE TO TERMINATION OF ADDITIONAL CORNER REINFORCEMENT IN SIMILARLY NUMBERED WALL. E* SHALL NOT BE LESS THAN 0.20 THE CLEAR SPAN DISTANCE MEASURED HORIZONTALLY BETWEEN THIS CORNER AND THE NEXT OR 0.40 THE CLEAR SPAN DISTANCE OR CANTILEVERED DISTANCE MEASURED VERTICALLY, WHICHEVER IS SMALLER, BUT NOT LESS THAN 3'-0".
CONTRACTOR'S OPTION:
E BAR TAILS MAY BE SPLICED USING LAPPED SPLICE LENGTHS FOR TOP BARS. SPLICES SHALL NOT BE LOCATED IN THE CORNER AREA COMMON TO BOTH WALLS AND SHALL CLEAR HOOK ENDS BY 3" MIN.

MAIN REINFORCEMENT FOR ALL STRUCTURES

TYPICAL HORIZONTAL CORNER REINFORCING DETAILS

NOTES:
1. VERTICAL REINFORCING NOT SHOWN
2. THESE DETAILS SHALL BE APPLICABLE TO ALL WALL CORNERS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

		SPLICE & DEVELOPMENT LENGTHS (UNLESS NOTED OTHERWISE ON THE DRAWINGS)											
		BEAMS AND COLUMNS					WALLS, SLABS AND FOOTINGS						
BAR SIZE	LENGTH OF LAPPED SPLICES FOR REINF (INCHES)	LENGTH OF END ANCHORAGE FOR DEVELOPMENT OF REINFORCEMENT (INCHES)		HOOKED BARS	LENGTH OF LAPPED SPLICES FOR REINF (INCHES)		LENGTH OF END ANCHORAGE FOR DEVELOPMENT OF REINFORCEMENT (INCHES)		HOOKED BARS	BAR SIZE			
		*TOP BARS	OTHERS		*TOP BARS	OTHERS	*TOP BARS	OTHERS			MINIMUM COVER		
3	19	16	14	12	6	19	16	14	12	6	3	UNIFORM SURFACES ADJACENT TO EXCAVATION	3"
4	24	19	15	7	24	19	15	7	4	4	FORMED OR TOP SURFACES EXPOSED TO WEATHER OR SATURATED AIR, SUBMERGED OR IN CONTACT WITH EARTH, INCLUDING STIRRUPS, TIES OR SPIRALS	2"	
5	31	24	18	9	31	24	18	9	5	5	OTHER LOCATIONS		
6	40	31	22	10	40	31	22	10	6	6	BARS IN BEAMS OR GIRDERS, INCLUDING STIRRUPS AND COLUMN SPIRALS OR TIES	1 1/2"	
7	54	42	25	12	54	42	25	12	7	7	SLABS, WALLS AND JOISTS #6 AND LARGER	1 1/2"	
8	71	55	30	14	71	55	30	14	8	8	#5 AND SMALLER	3/4"	
9	90	70	38	15	90	70	38	15	9	9			
10	115	88	49	17	115	88	49	17	10	10			
11	141	108	60	19	141	108	60	19	11	11			
14	---	---	105	81	---	---	105	81	14	14			
18	---	---	155	119	---	---	155	119	18	18			

* TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
HORIZONTAL BARS IN WALLS ARE TO BE PROVIDED WITH LAP LENGTHS AS REQUIRED FOR TOP BARS.
VERTICAL BARS MAY BE CONSIDERED AS OTHER BARS.
IN WALLS, SLABS AND FOOTINGS: LAPPED SPLICE LENGTH FOR BARS SIZE 8 THROUGH 11 AND STRAIGHT (NON-HOOKED) END ANCHORAGE DEVELOPMENT LENGTH FOR BAR SIZE 11 (IN TABLE ABOVE) PLACED WITH MORE THAN 2 BAR DIAMETER CLEAR SPACING MAY BE MULTIPLIED BY A FACTOR OF 0.7.
IN BEAMS, COLUMNS, WALLS, SLABS AND FOOTINGS: LAPPED SPLICE LENGTH AND STRAIGHT (NON-HOOKED) END ANCHORAGE DEVELOPMENT LENGTH FOR BARS SIZE 7 THROUGH 11 (IN TABLE ABOVE) PLACED WITH MORE THAN 5 BAR DIAMETER CLEAR SPACING MAY BE MULTIPLIED BY A FACTOR OF 0.8. THE MULTIPLICATION FACTORS OF 0.7 AND 0.8 MAY BE COMBINED ONLY FOR BARS COMMON TO THIS NOTE AND THE NOTE ABOVE.
LAPPED SPLICES SHALL NOT BE MADE AT POINTS OF MAXIMUM STRESS UNLESS OTHERWISE INDICATED ON THE DRAWINGS OR AS DETERMINED BY THE ENGINEER.

CONCRETE COVER FOR REINFORCEMENT	
LOCATION	MINIMUM COVER
UNIFORM SURFACES ADJACENT TO EXCAVATION	3"
FORMED OR TOP SURFACES EXPOSED TO WEATHER OR SATURATED AIR, SUBMERGED OR IN CONTACT WITH EARTH, INCLUDING STIRRUPS, TIES OR SPIRALS	2"
OTHER LOCATIONS	
BARS IN BEAMS OR GIRDERS, INCLUDING STIRRUPS AND COLUMN SPIRALS OR TIES	1 1/2"
SLABS, WALLS AND JOISTS #6 AND LARGER	1 1/2"
#5 AND SMALLER	3/4"

NOTE:
TOLERANCES FOR CONCRETE COVER AND THE FABRICATION AND PLACING OF REINFORCEMENT SHALL CONFORM TO ACI 117.

MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWTP
ABW FILTERS ADDITION

STANDARD CONCRETE DETAILS

D-4

SHEET 18A OF 29

2533-026

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
2-99	DESIGN UPDATE	1	AAW	FCG	FCG

CONFORMED TO CONSTRUCTION RECORDS

DESIGNED: AAW
DETAILED: RJE
CHECKED: WLK
APPROVED: T.A. CUMMINGS
DATE: 5/25/98

PROJECT NO. 27740

Black & Veatch
Tampa, Florida

RECORD SURVEY

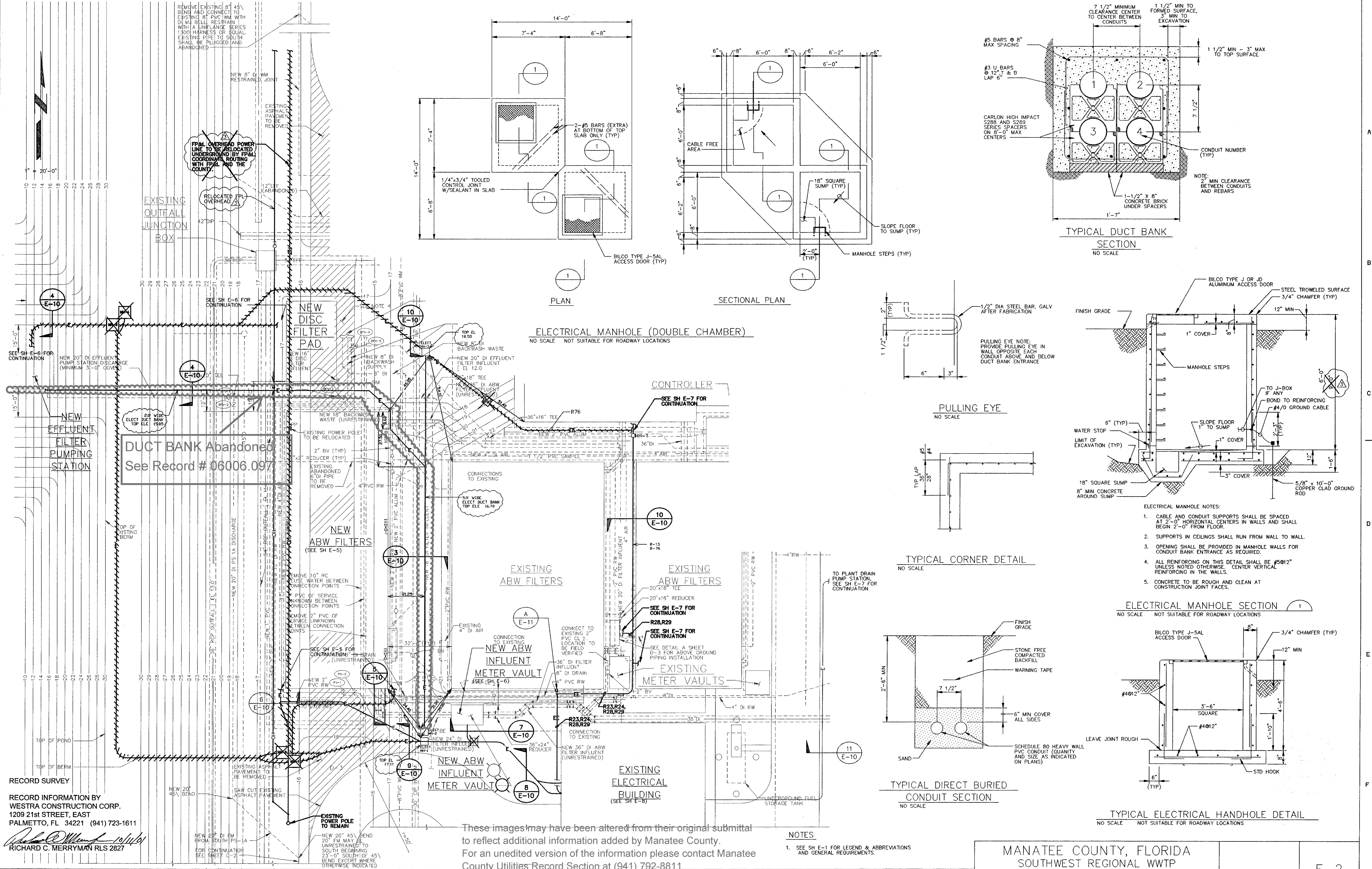
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
600 214 STREET EAST
PALMETTO, FL 34221 (841) 723-8811

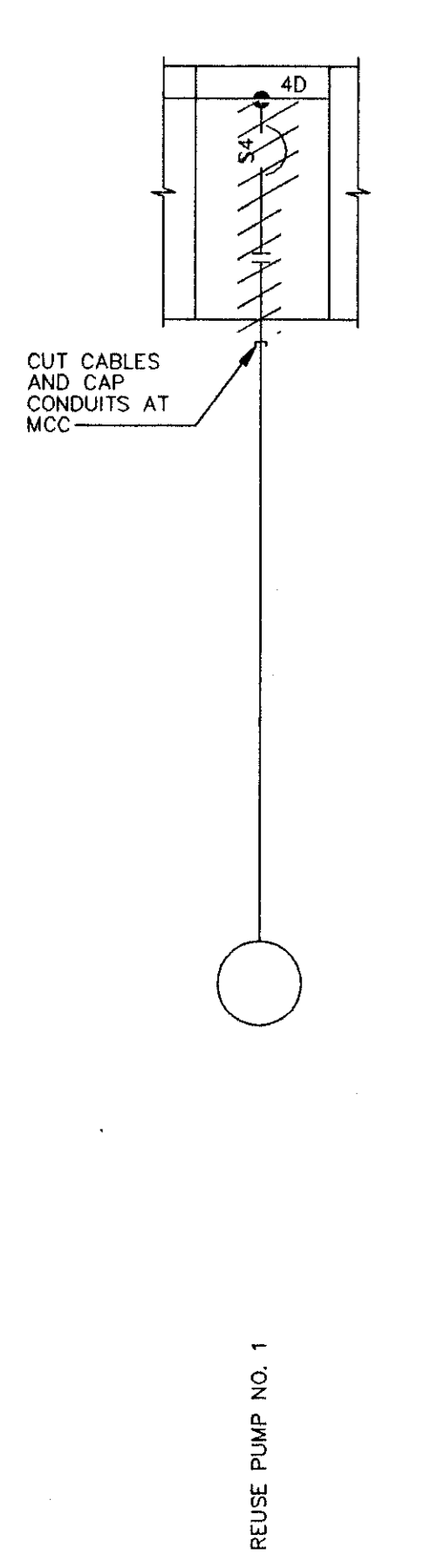
GENERAL NOTE:
DETAILS ON THIS SHEET APPLY TO ALL DRAWINGS UNLESS OTHERWISE NOTED

10/01/2001 11:48:37

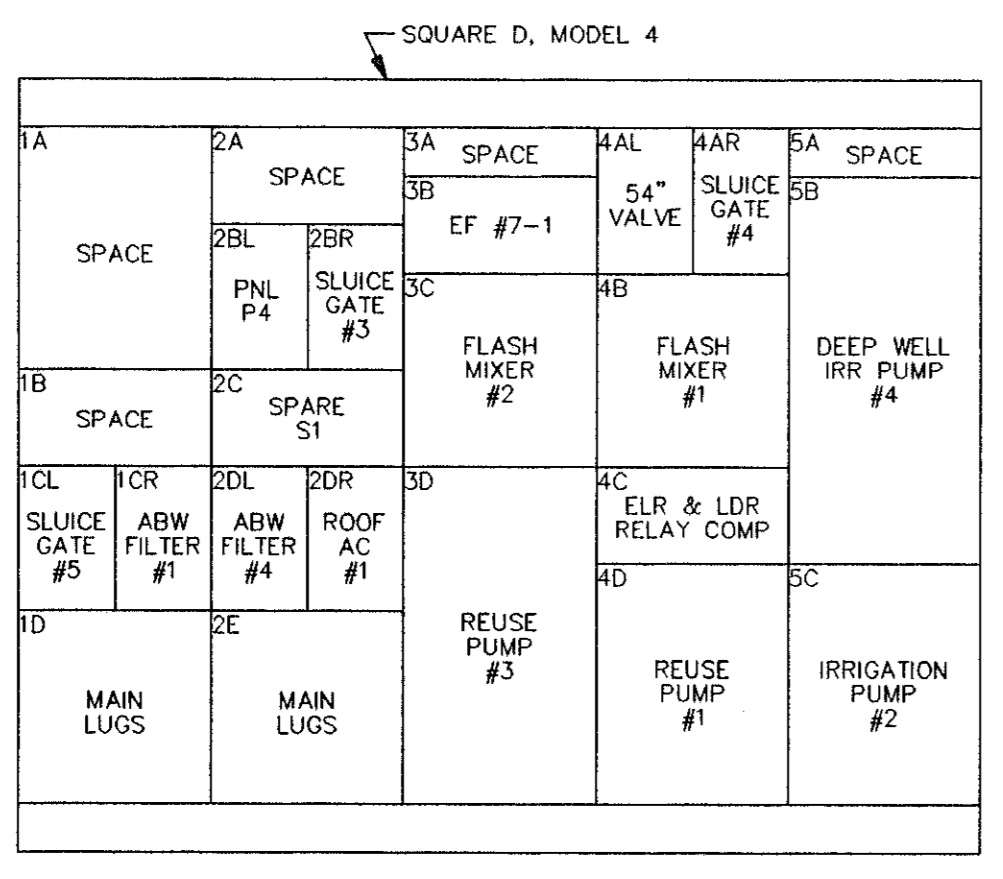
A
B
C
D
E
F

GVUZ/ FG27740

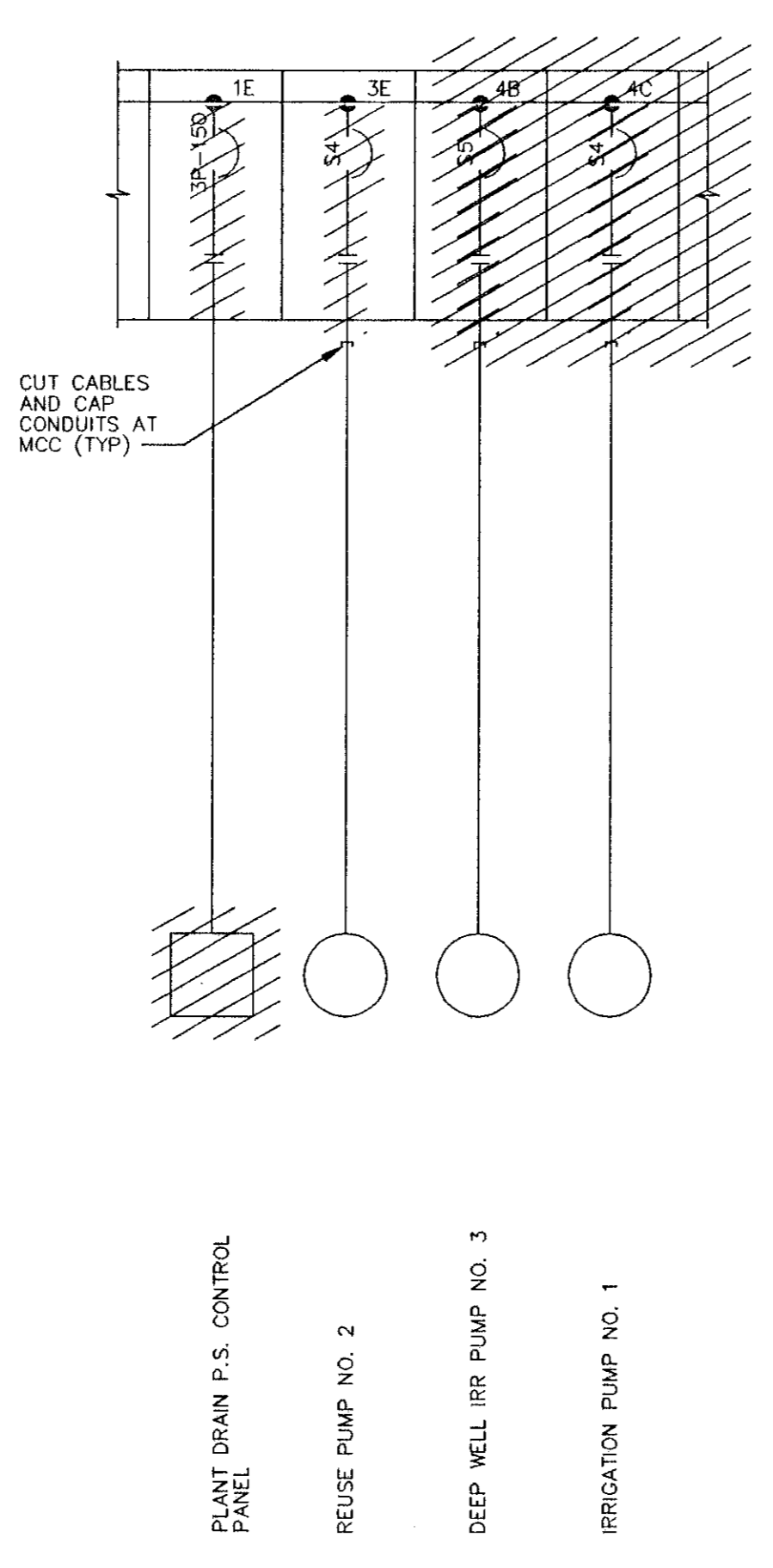




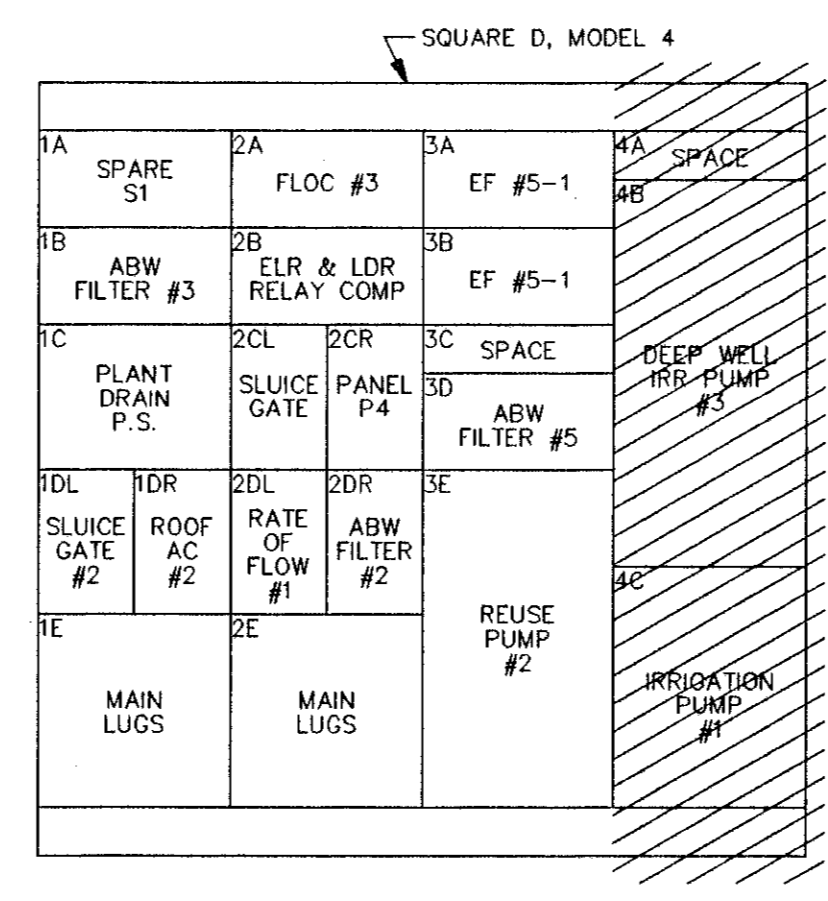
MCC-E1 PARTIAL ONE-LINE (DEMOLITION)



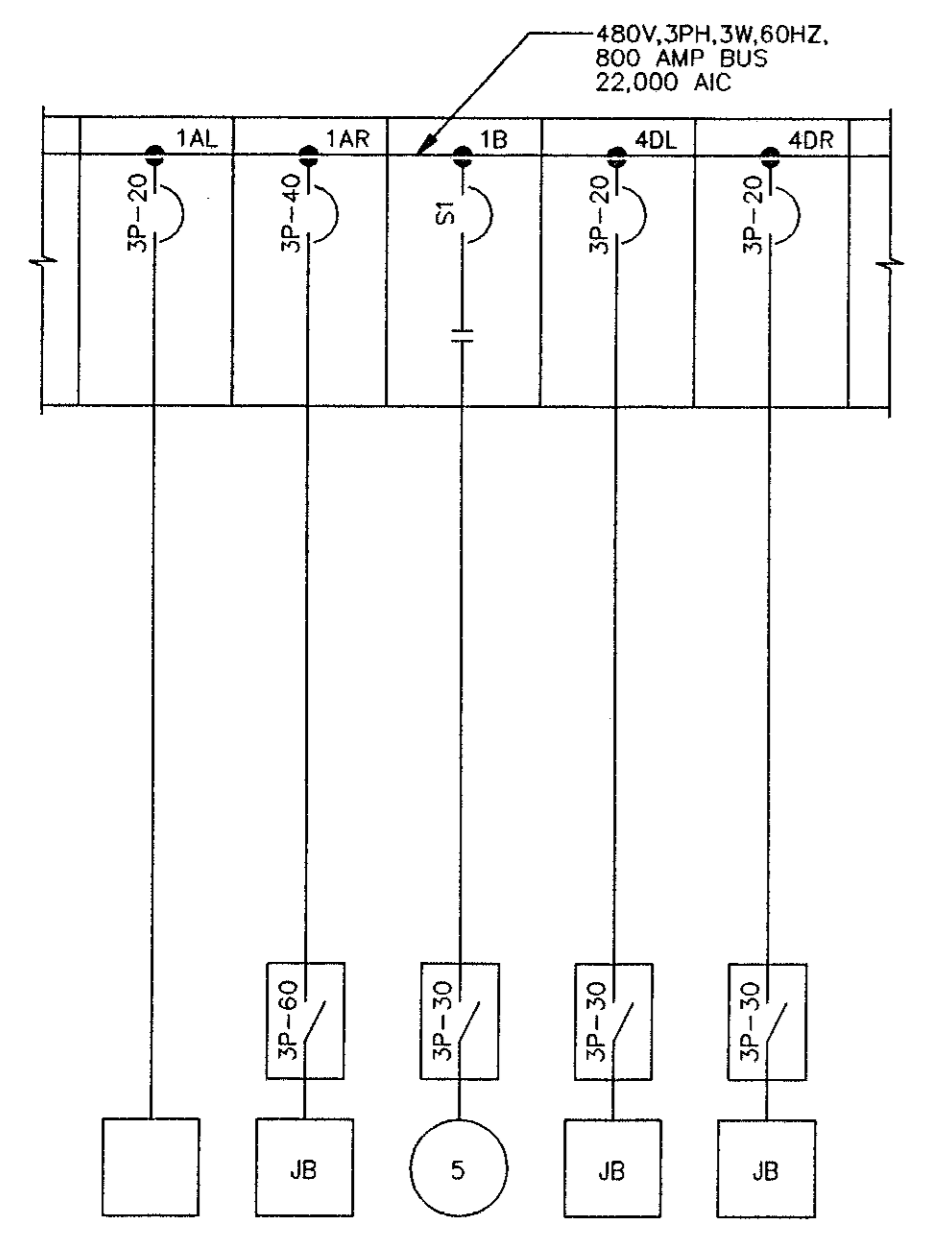
MCC-E1 FRONT VIEW (EXISTING)



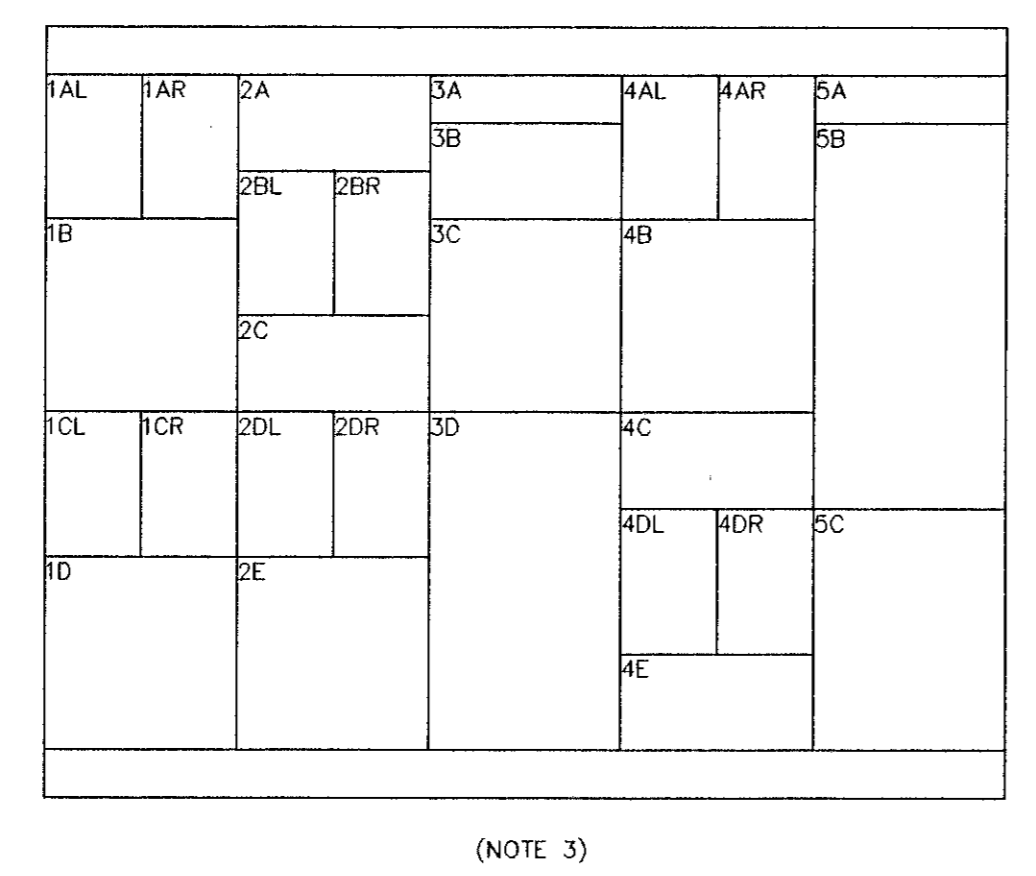
MCC-E2 PARTIAL ONE-LINE (DEMOLITION)



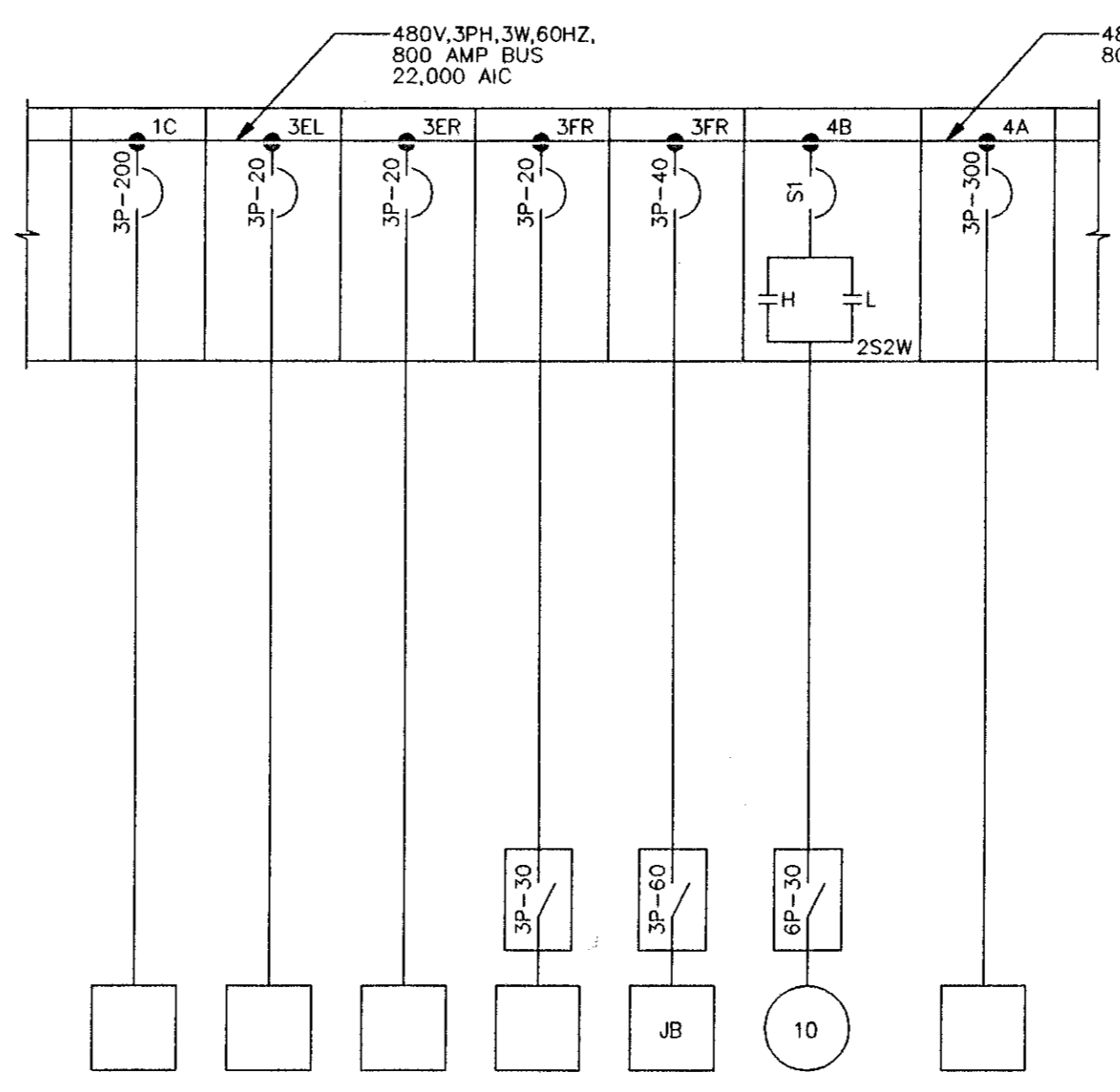
MCC-E2 FRONT VIEW (EXISTING)



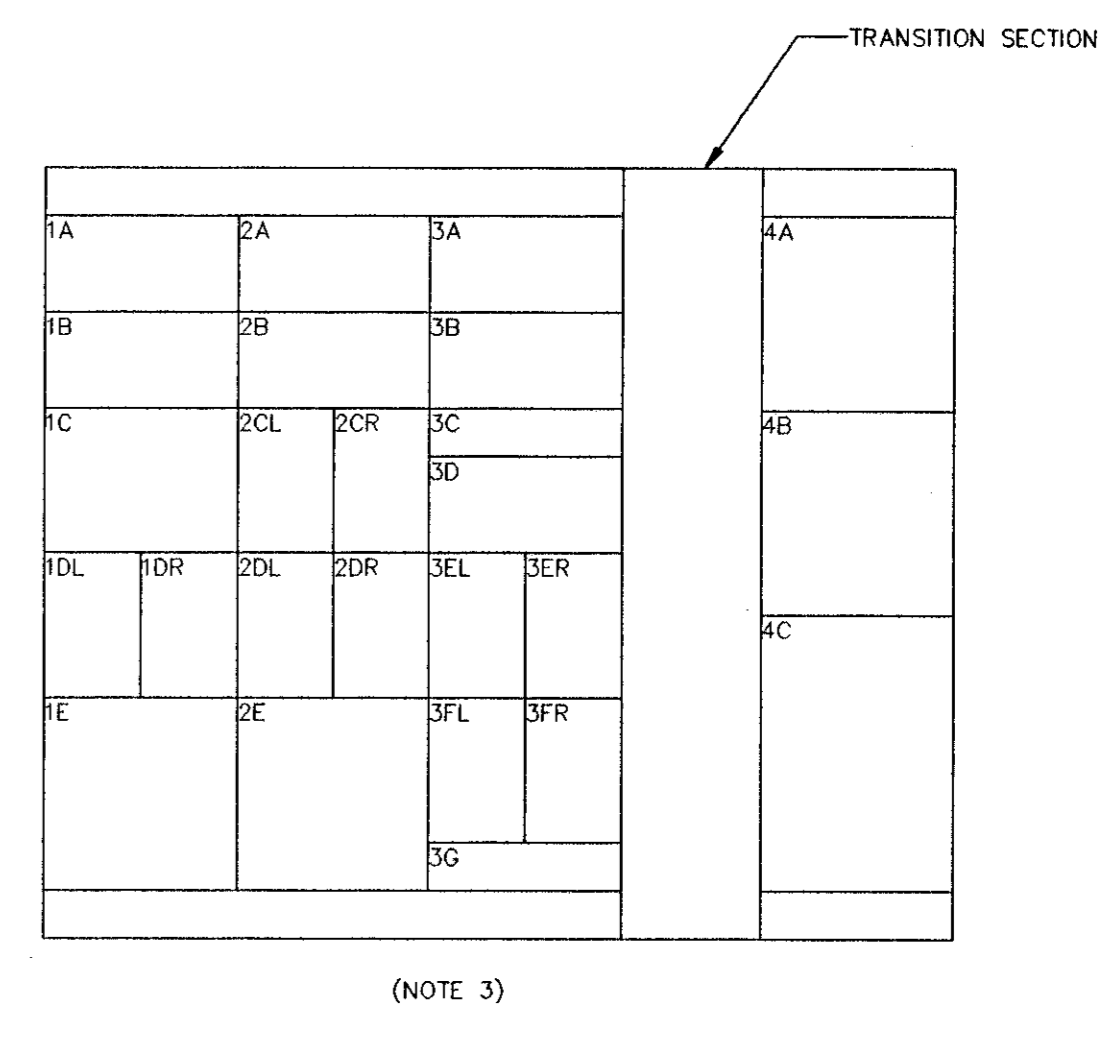
MCC-E1 PARTIAL ONE-LINE (ELECTRICAL BUILDING)



MCC-E1 FRONT VIEW (MODIFIED)



MCC-E2 PARTIAL ONE-LINE (ELECTRICAL BUILDING)



MCC-E2 FRONT VIEW (MODIFIED)

- NOTES
- SEE SH E-1 FOR LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - MCC NAMEPLATES ARE SHOWN IN MARKS ON ONE-LINES.
 - PROVIDE NEW DOORS AND NAMEPLATES FOR ALL MODIFIED CUBICLES IN EXISTING MOTOR CONTROL CENTERS.

RECORD SURVEY
 RECORD INFORMATION BY
 WESTRA CONSTRUCTION CORP.
 1209 21st STREET, EAST
 PALM BEACH, FL 34221 (941) 723-1611
 RICHARD C. MERRYMAN PLS 2827

MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWTP ABW FILTERS ADDITION		E-3
ELECTRICAL ONE-LINES		SHEET 21 OF 29

NO.	BY	CK	APP	DATE	REVISIONS AND RECORD OF ISSUE

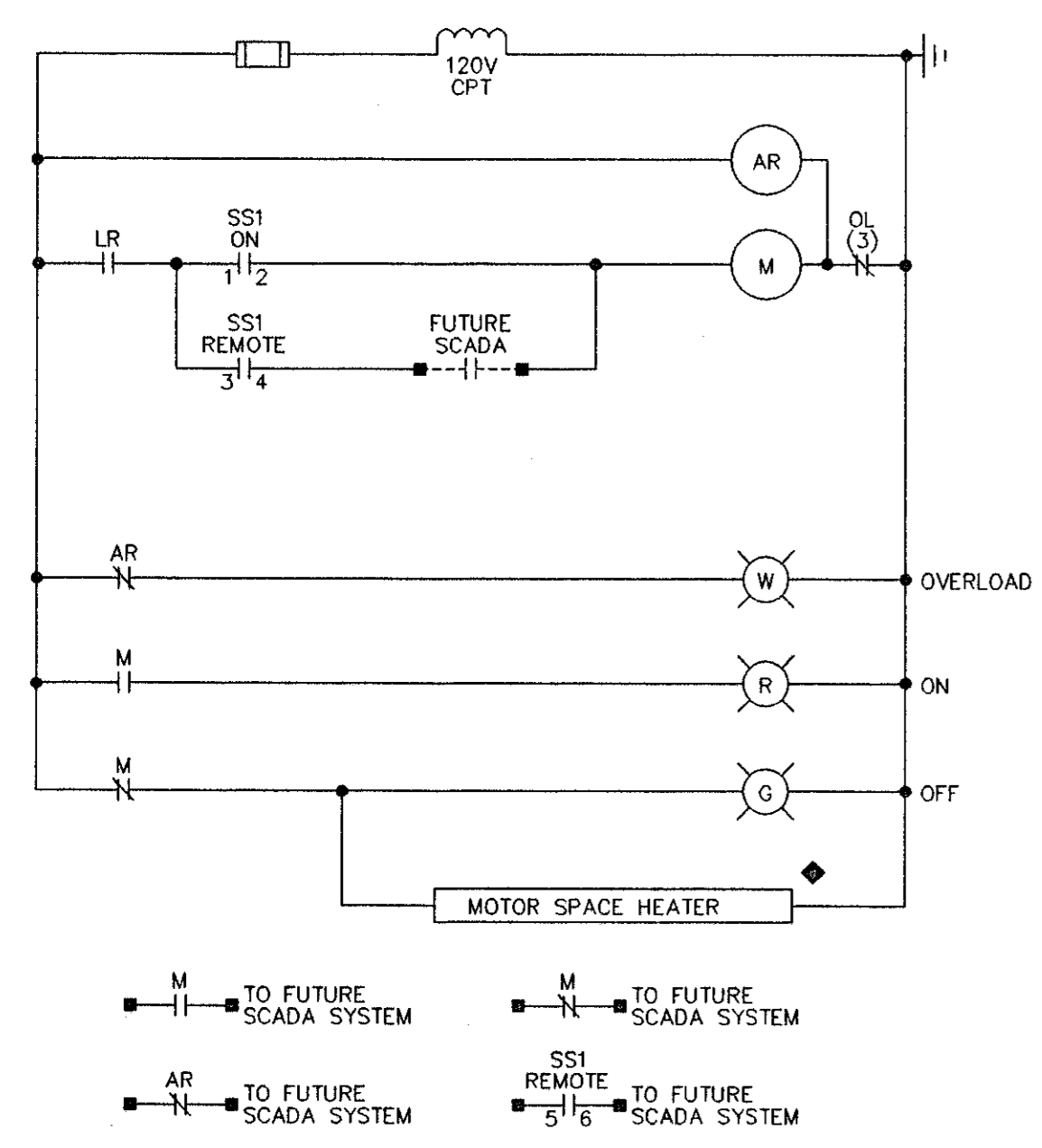
CONFORMED TO CONSTRUCTION RECORDS
Andrew A. Westra
 11-5-A

DESIGNED: STH
 DETAILED: AJM
 CHECKED: JJW
 APPROVED: _____
 DATE: _____



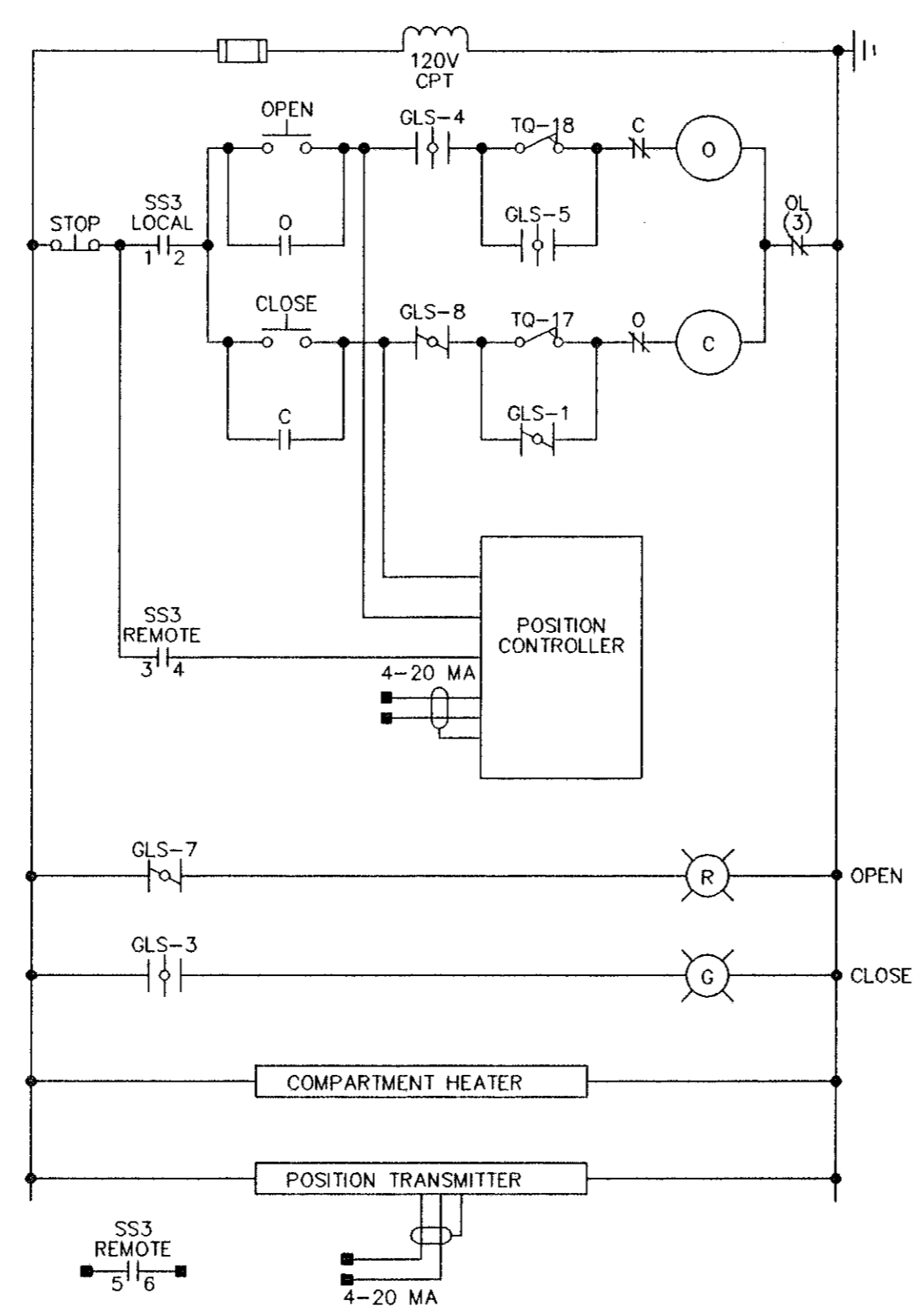
PROJECT NO.
27740

05/23/96 10:06:23 ACD-12

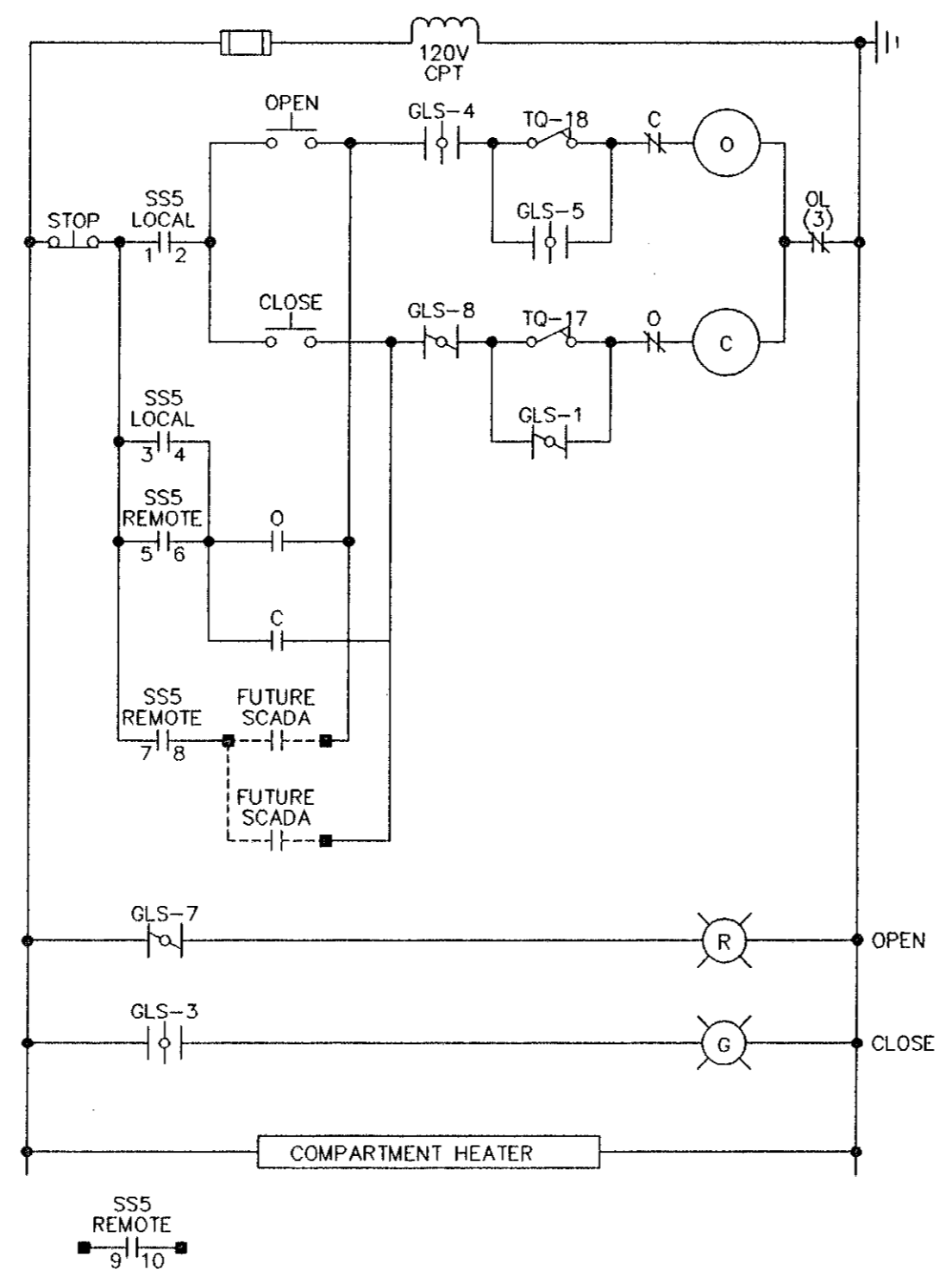


**CHLORINE CONTACT BASIN
DRAIN PUMP, DP-1**

M TO FUTURE SCADA SYSTEM
 AR TO FUTURE SCADA SYSTEM
 SS1 REMOTE TO FUTURE SCADA SYSTEM
 SS1 TO FUTURE SCADA SYSTEM

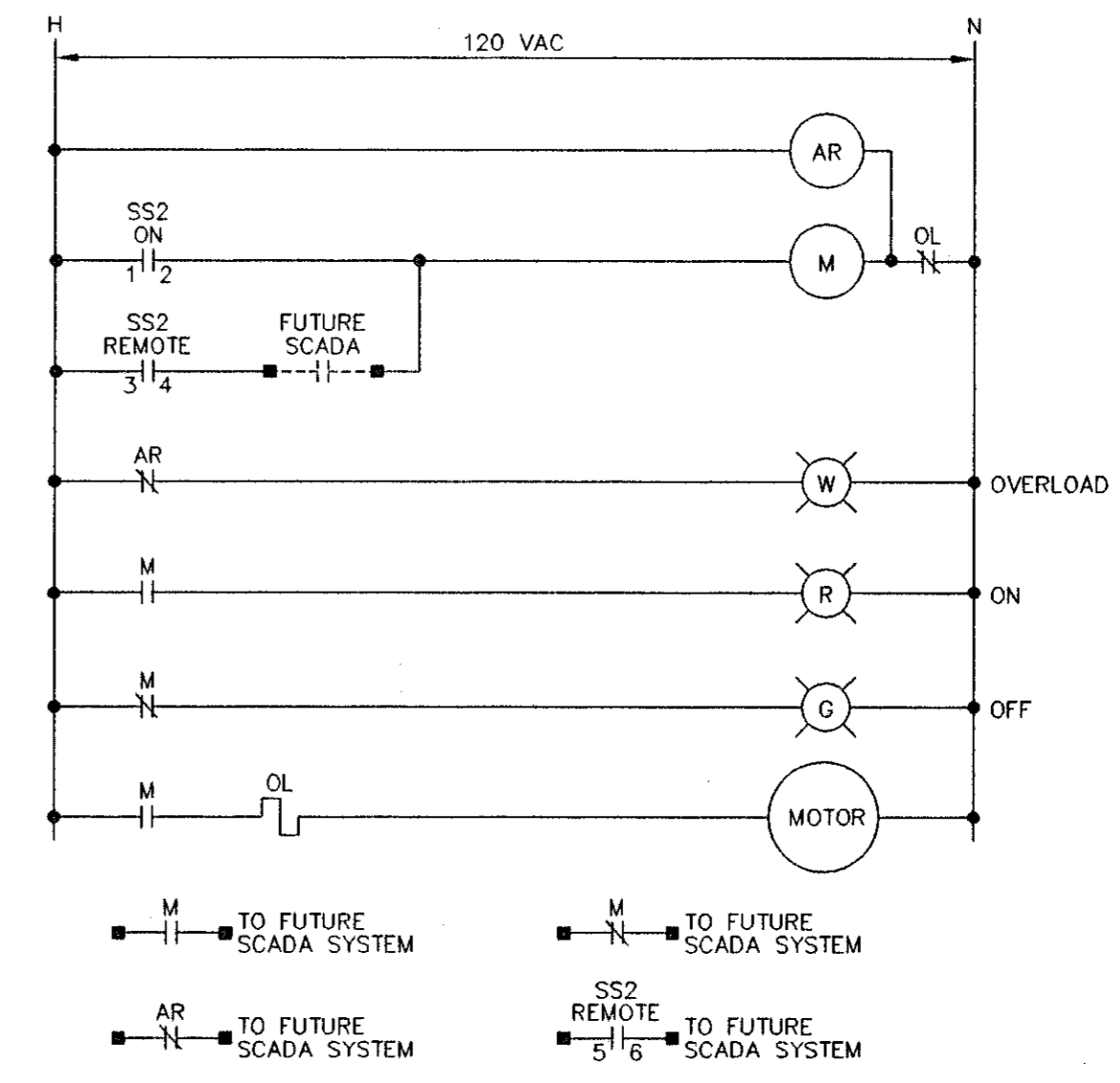


BFV-14



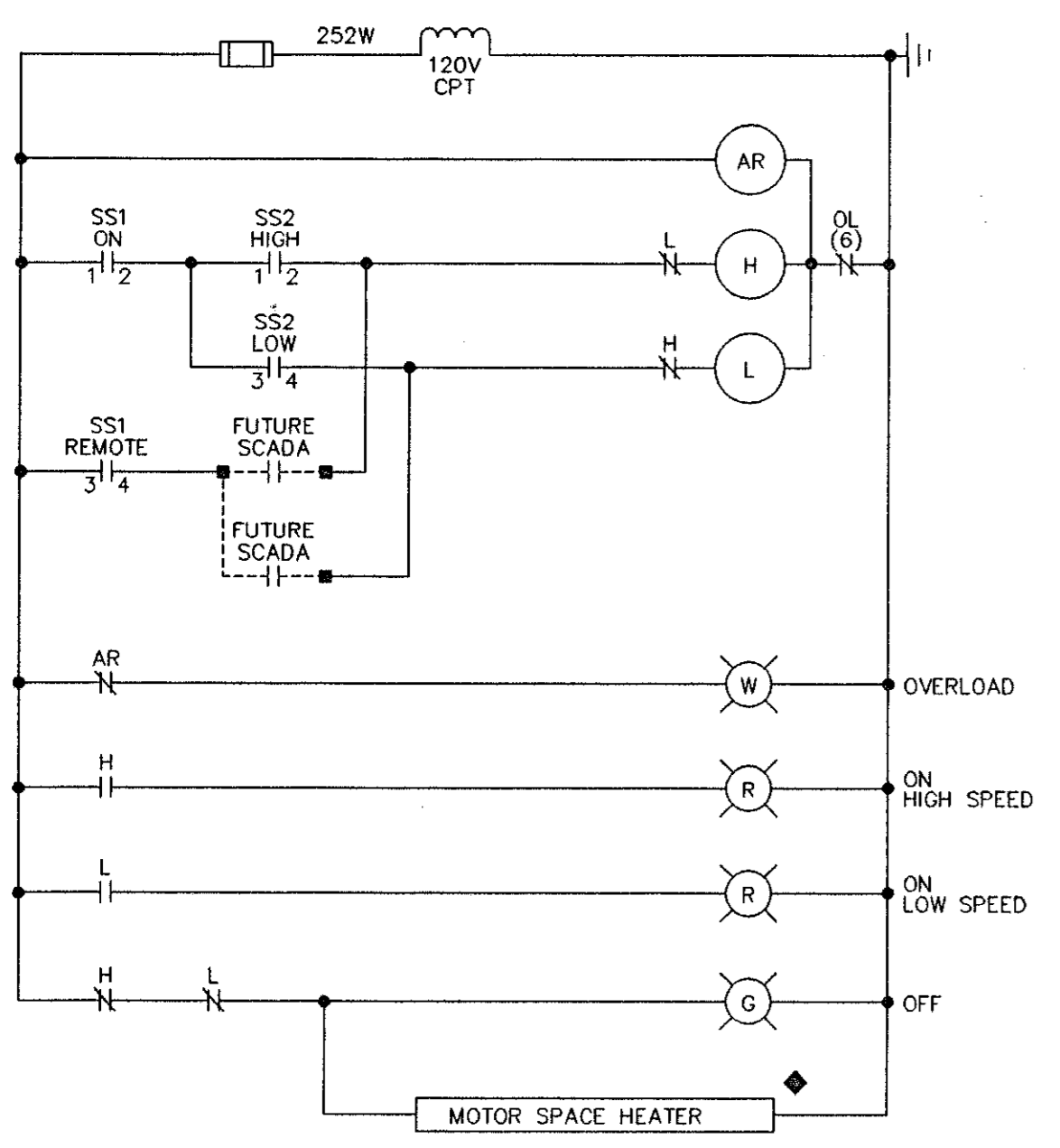
**SLUICE GATE SLG-1
(SIMILAR FOR SLG-2)**

SS5 REMOTE TO FUTURE SCADA SYSTEM
 SS5 LOCAL TO FUTURE SCADA SYSTEM



**FLOCCULATOR NO. 5
(SIMILAR FOR FLOCCULATOR NO. 6)**

M TO FUTURE SCADA SYSTEM
 AR TO FUTURE SCADA SYSTEM
 SS2 REMOTE TO FUTURE SCADA SYSTEM
 SS2 TO FUTURE SCADA SYSTEM



FLASH MIXER

H TO FUTURE SCADA SYSTEM
 L TO FUTURE SCADA SYSTEM
 AR TO FUTURE SCADA SYSTEM
 SS1 REMOTE TO FUTURE SCADA SYSTEM

GEARED LIMIT SWITCH DEVELOPMENT

ROTOR	GLS CONTACT	ACTUATOR POSITION		
		FULL OPEN 0%	INTERMEDIATE POSITION (90%)	FULL CLOSED 100%
1	1			
	2			
	3			
	4			
	5			
2	6			
	7			
	8			
	9			
3	10			
	11			
	12			
	13			
	14			
	15			
	16			

TO/17 OPENS ON HIGH CLOSING TORQUE
TO/18 OPENS ON HIGH OPENING TORQUE
= CONTACT CLOSED

SWITCH DEVELOPMENT

SS1

CONTACTS	POSITION		
	ON	OFF	REMOTE
1-2	X		
3-4			X
5-6			X

SS2

CONTACTS	POSITION		
	HIGH	OFF	LOW
1-2	X		
3-4			X

SS3

CONTACTS	POSITION	
	LOCAL	REMOTE
1-2	X	
3-4		X
5-6		X

SS4

CONTACTS	POSITION	
	LOCAL	REMOTE
1-2	X	
3-4		X
5-6	X	
7-8		X
9-10		X

NOTES

- SEE DRAWING E-1 FOR LEGEND AND ABBREVIATIONS AND GENERAL REQUIREMENTS.
- SPARE CONTACTS SHALL BE PROVIDED FOR EACH STARTER AS DESCRIBED IN THE SPECIFICATIONS.
- UNLESS OTHERWISE NOTED, DEVICES SHOWN ON THIS DRAWING SHALL BE SUPPLIED AS AN INTEGRAL PART OF THE STARTER. DEVICES LOCATED OUTSIDE OR REMOTE FROM THE STARTER SHALL BE IDENTIFIED BY A LOCATION SYMBOL AS DEFINED IN THE SCHEMATIC SYMBOL LEGEND.
- RELAY AND TIMER DESIGNATIONS APPLY TO INDIVIDUAL SCHEMATIC ONLY.

SYMBOL LEGEND

◆ AT DRIVEN EQUIPMENT

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALM BEACH, FL 34421 (941) 723-1611
Richard C. Merryman
RICHARD C. MERRYMAN RLS 2627

MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWTP
ABW FILTERS ADDITION

E-4

ELECTRICAL
SCHEMATICS

SHEET
22 OF 29

NO.	BY	CK	APP	DATE	REVISIONS AND RECORD OF ISSUE

CONFORMED TO CONSTRUCTION RECORDS
Andrew A. Westfeld
11-5-01

DESIGNED: STH
DETAILED: AJM
CHECKED: JJW
APPROVED: _____
DATE: _____

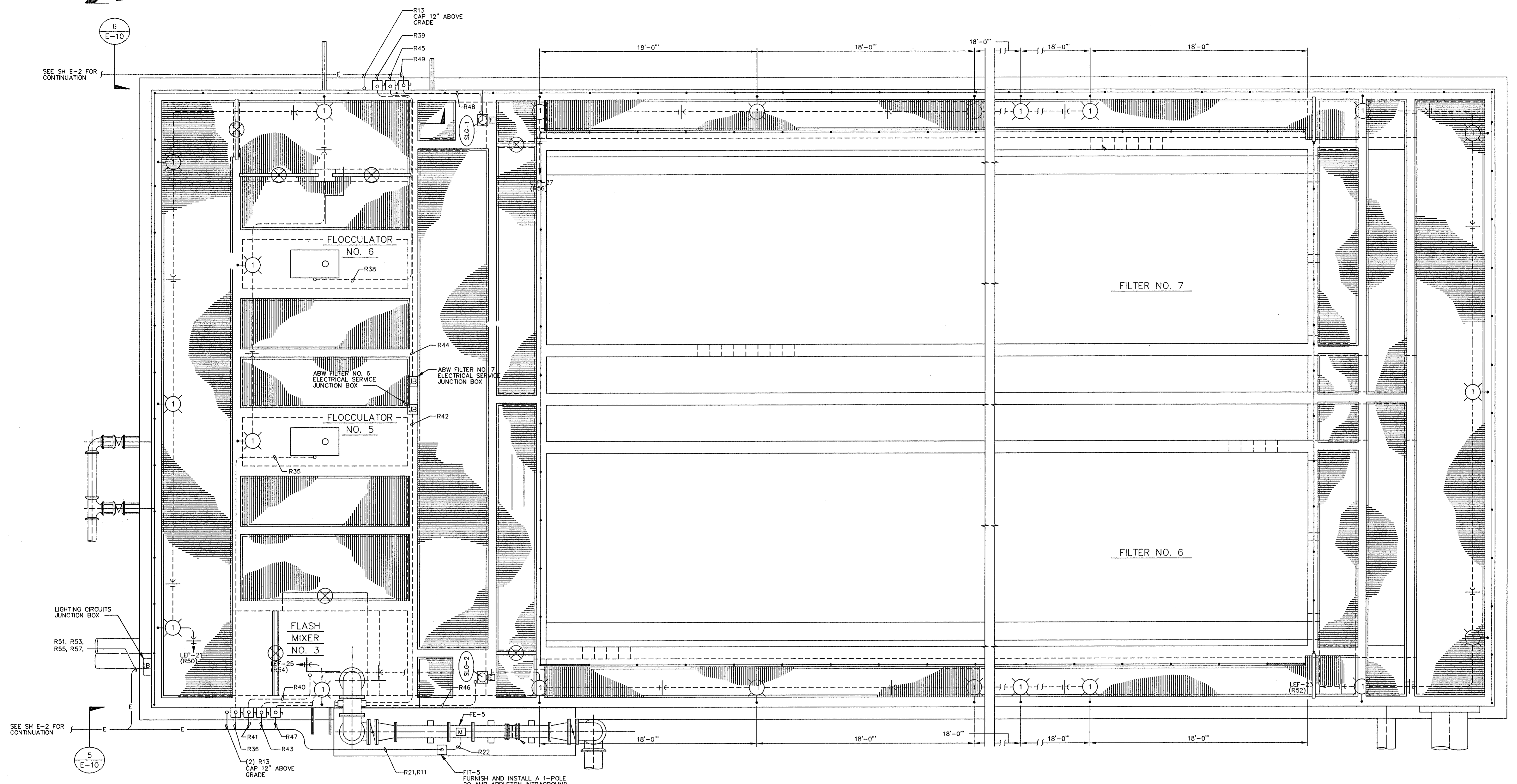


PROJECT NO.
27740

05/23/96 10:10:18 ACD-12

A
B
C
D
E
F

1 2 3 4 5 7 8 9 10



ABW FILTER NO. 6 & 7
1/4" = 1'-0"

- NOTES:
- SEE SHEET E-1 FOR LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - LIGHT POLES SHALL BE INSTALLED PER POLE MANUFACTURER'S RECOMMENDATION USING STAINLESS STEEL ANCHOR BOLTS.

RECORD SURVEY
 RECORD INFORMATION BY
 WESTRA CONSTRUCTION CORP.
 1209 21st STREET, EAST
 PALMETTO, FL 34221 (941) 723-1611
Richard C. Merryman 10/11/04
 RICHARD C. MERRYMAN RLS 2827

GUZ/FG2740

NO.	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

CONFORMED TO CONSTRUCTION RECORDS
Archer A. Westfield
 11-5-04

DESIGNED STH
 DETAILED BAO
 CHECKED JJW
 APPROVED
 DATE



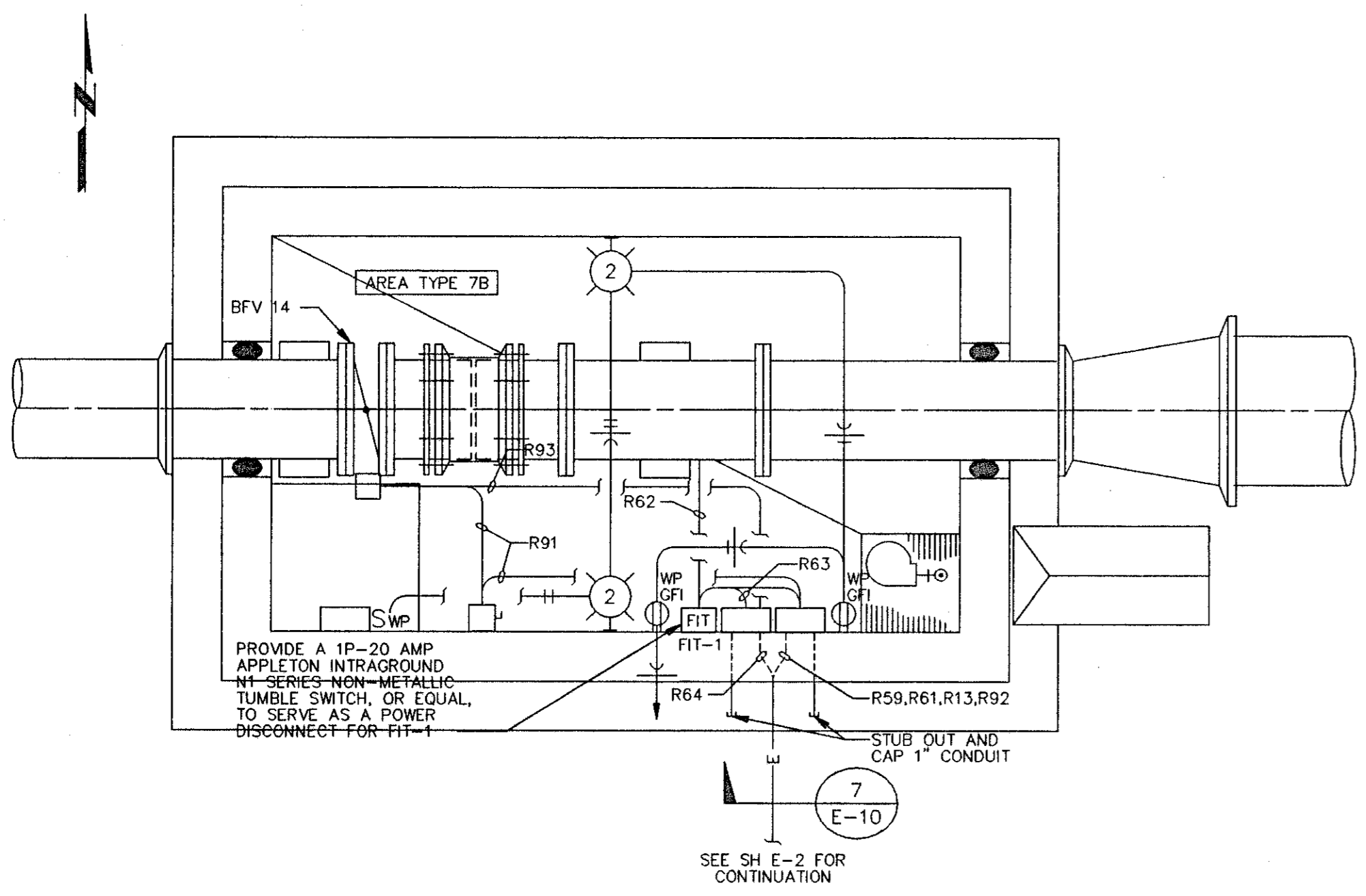
PROJECT NO.
27740

MANATEE COUNTY, FLORIDA
 SOUTHWEST REGIONAL WWTP
 ABW FILTERS ADDITION
 ELECTRICAL
 ABW FILTER NO. 6 & 7
 POWER AND LIGHTING PLAN

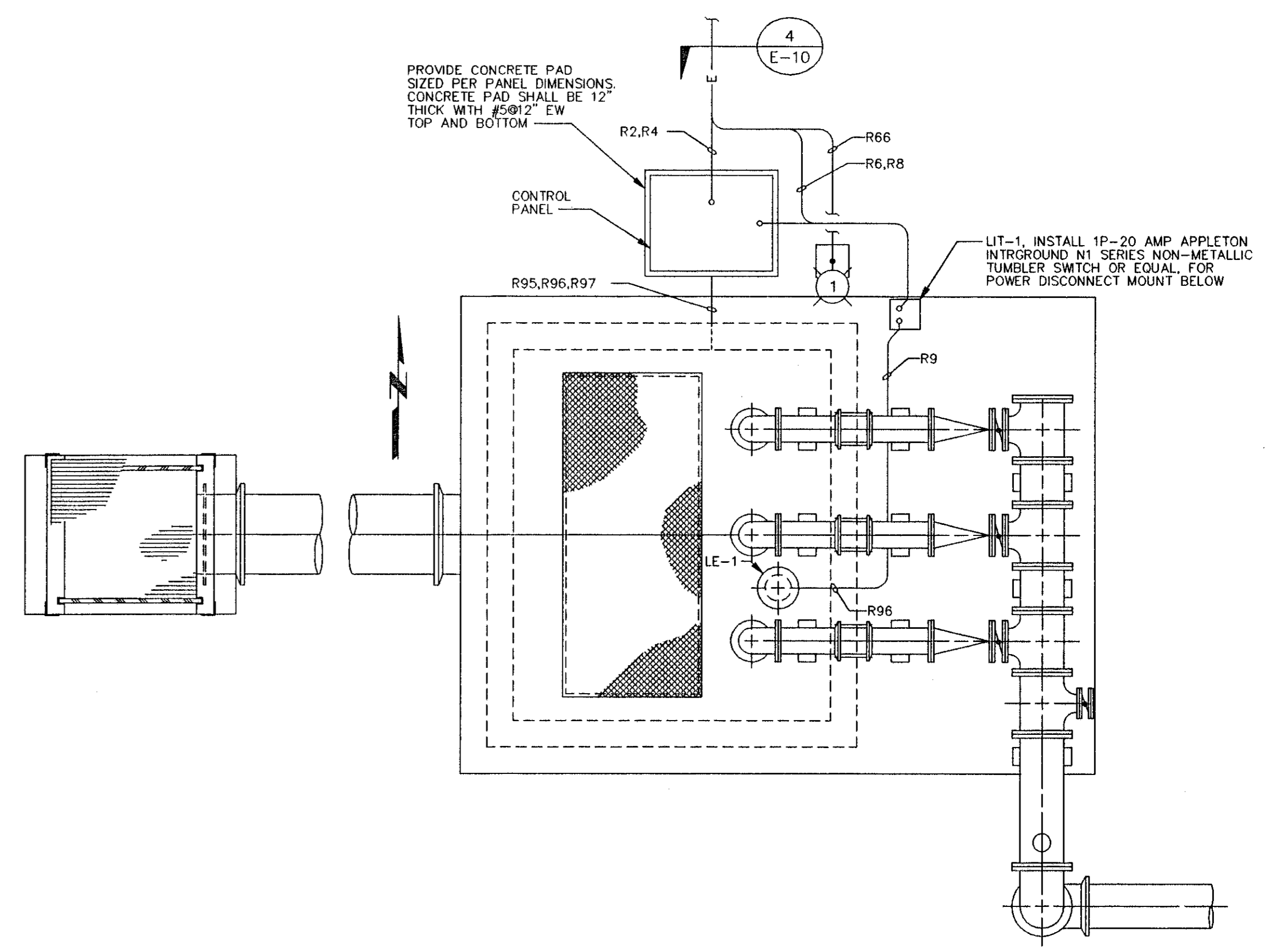
E-5
 SHEET
 23 OF 29

2533.031

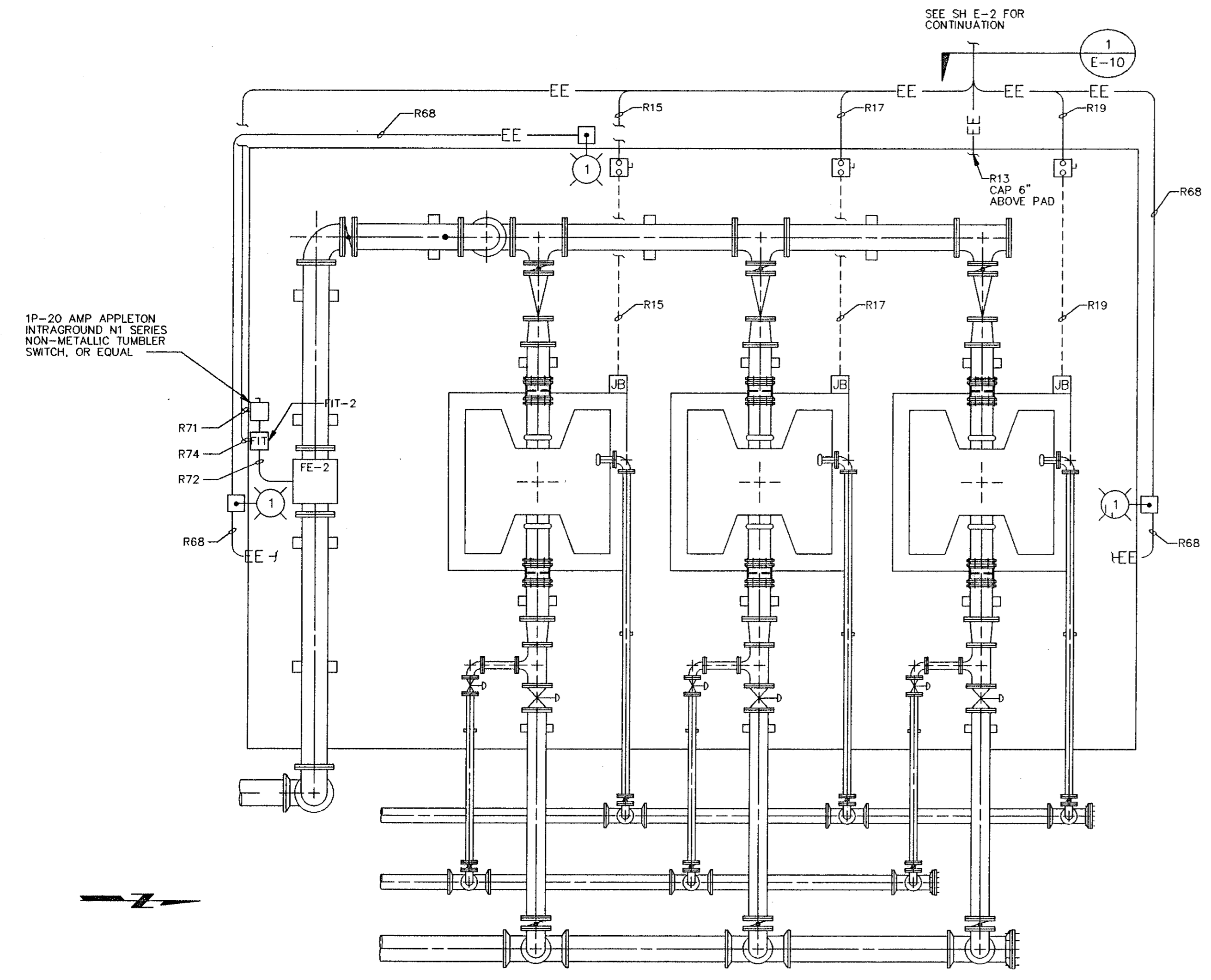
05/23/96 10:14:39 A00-12-



METERING VAULT SECTIONAL PLAN
3/8" = 1'-0"



NEW EFFLUENT FILTER PUMPING STATION PLAN
1/4" = 1'-0"



DISK FILTER PLAN
1/4" = 1'-0"

NOTES
1. SEE SHEET E-1 FOR LEGEND AND ABBREVIATIONS AND GENERAL REQUIREMENTS.

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
Richard C. Merryman 10/11/01
RICHARD C. MERRYMAN FLS 2627

MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWTP ABW FILTERS ADDITION		E-6
ELECTRICAL POWER AND LIGHTING PLANS		SHEET 24 of 29

NO.	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP

CONFORMED TO CONSTRUCTION RECORDS

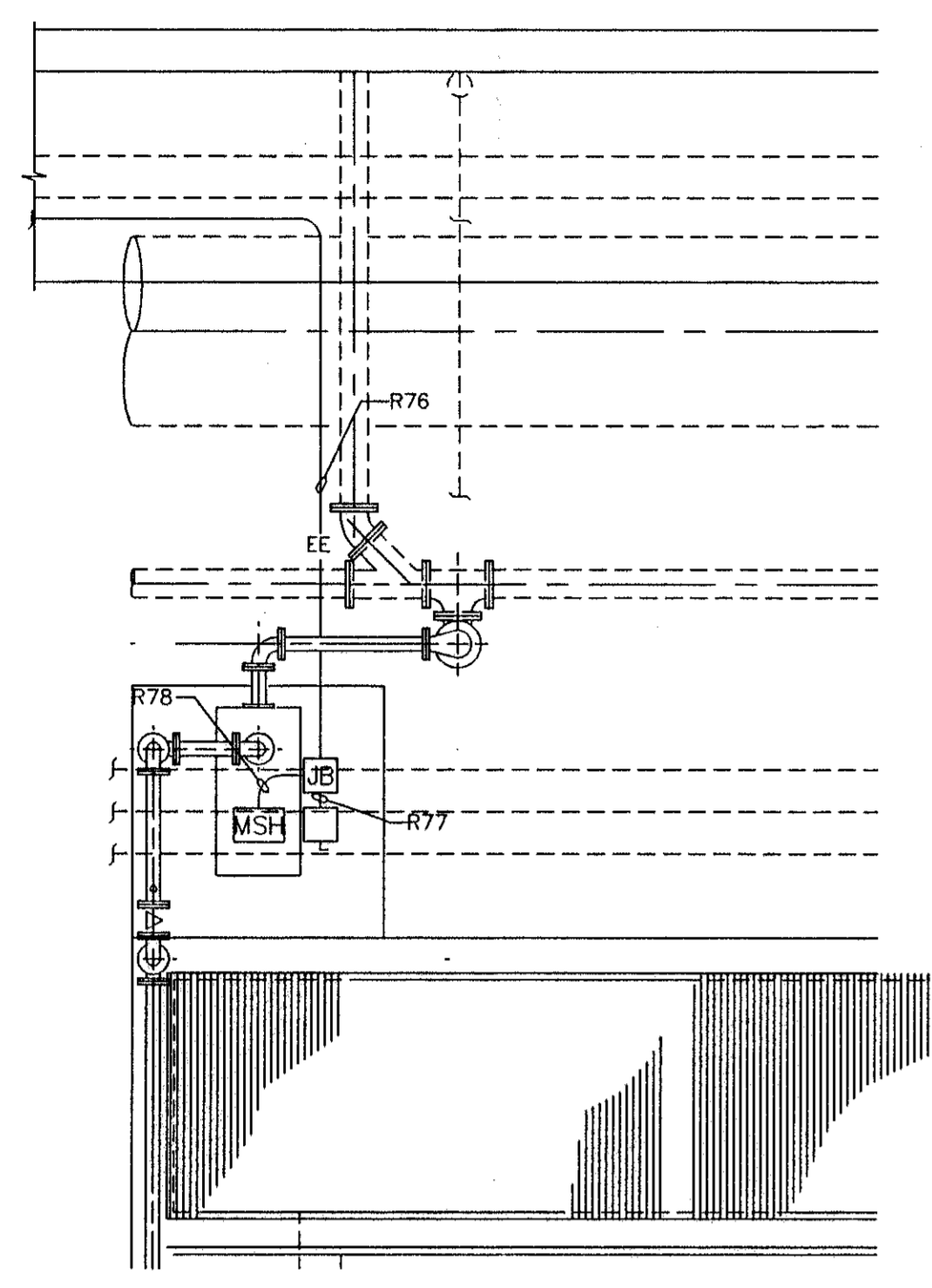
Andrew J. Westfield
11-5-01

DESIGNED	STH
DETAILED	AJM
CHECKED	JJW
APPROVED	
DATE	

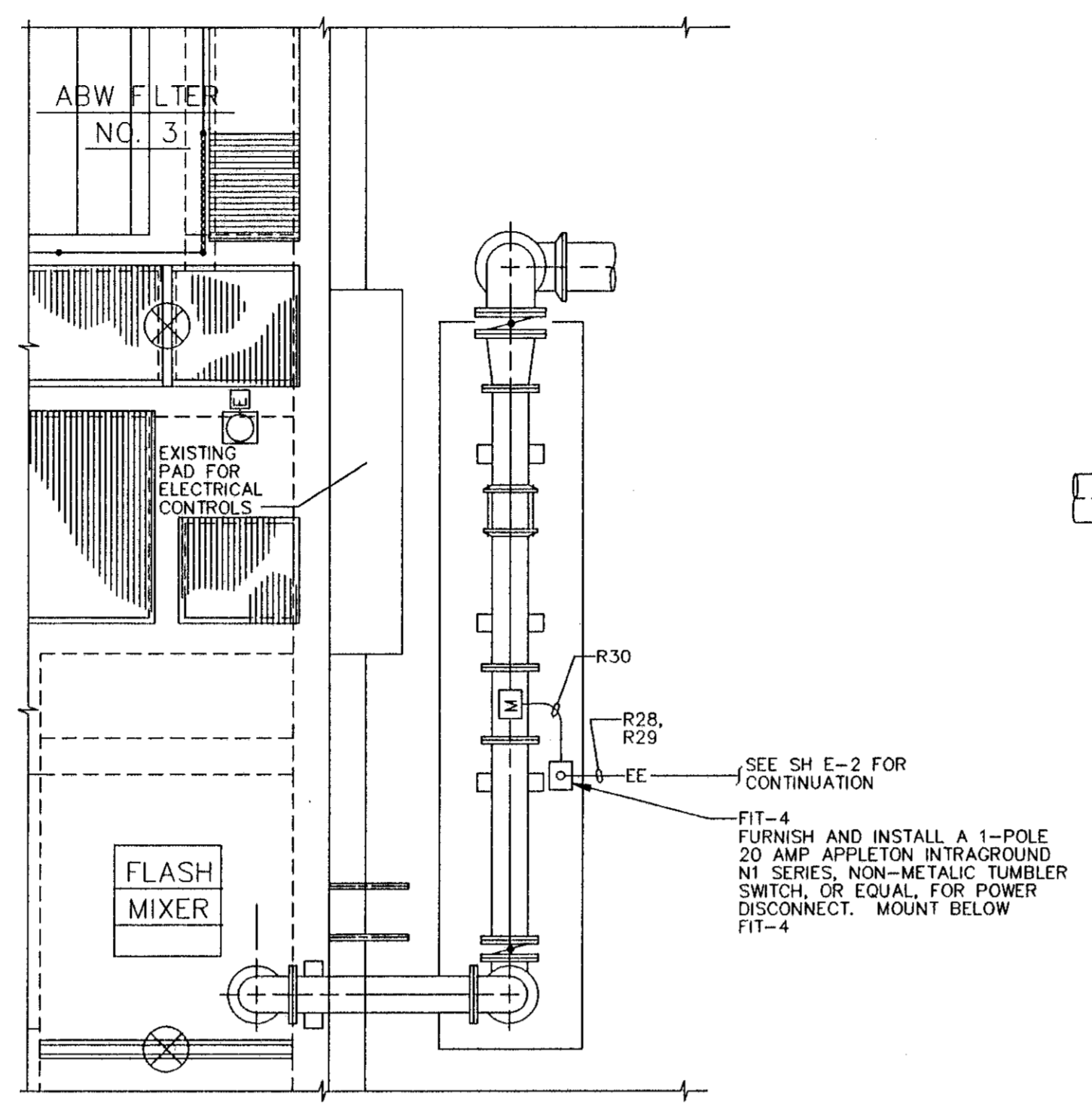


PROJECT NO.
27740

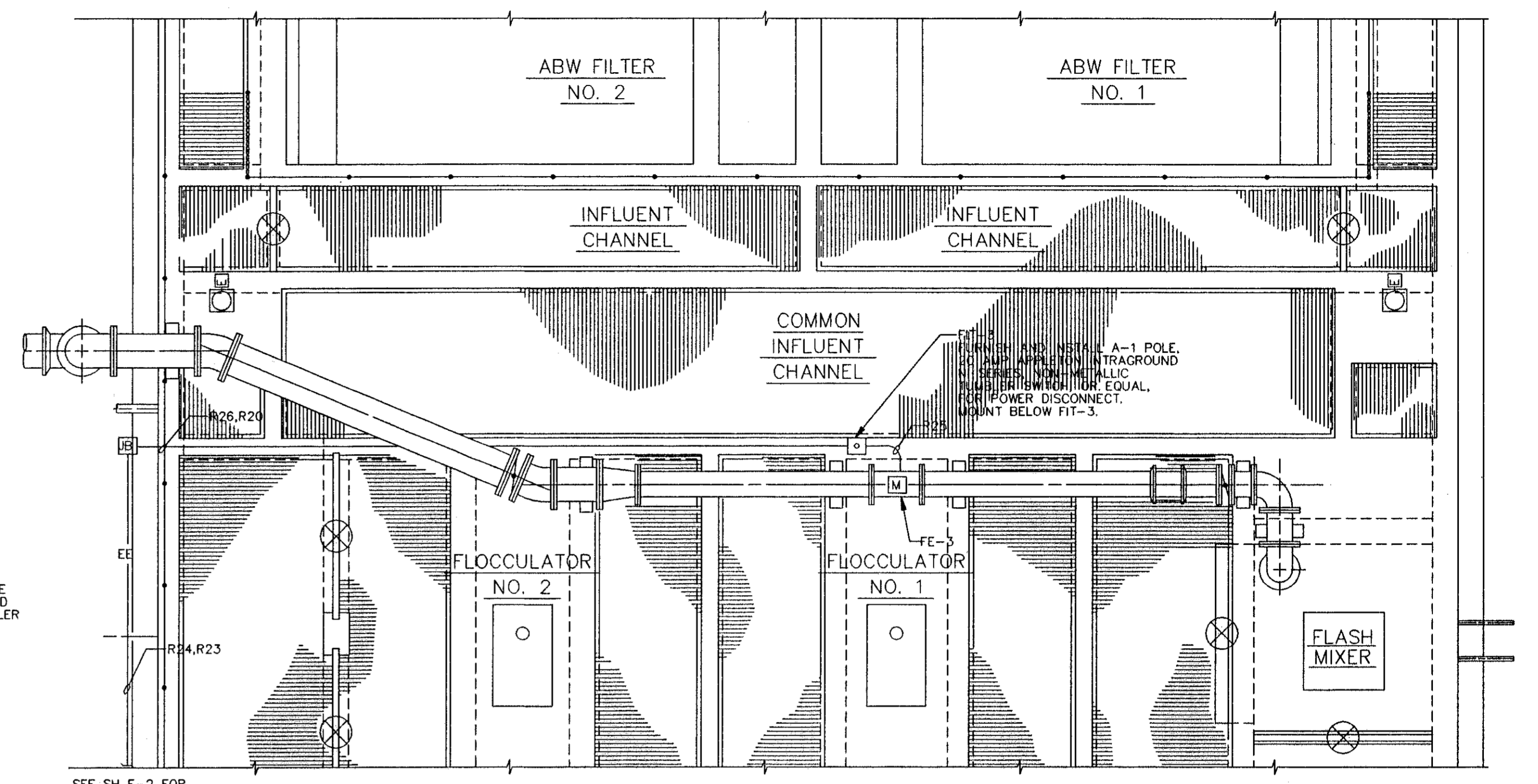
05/23/98 10:19:10 ACD-12



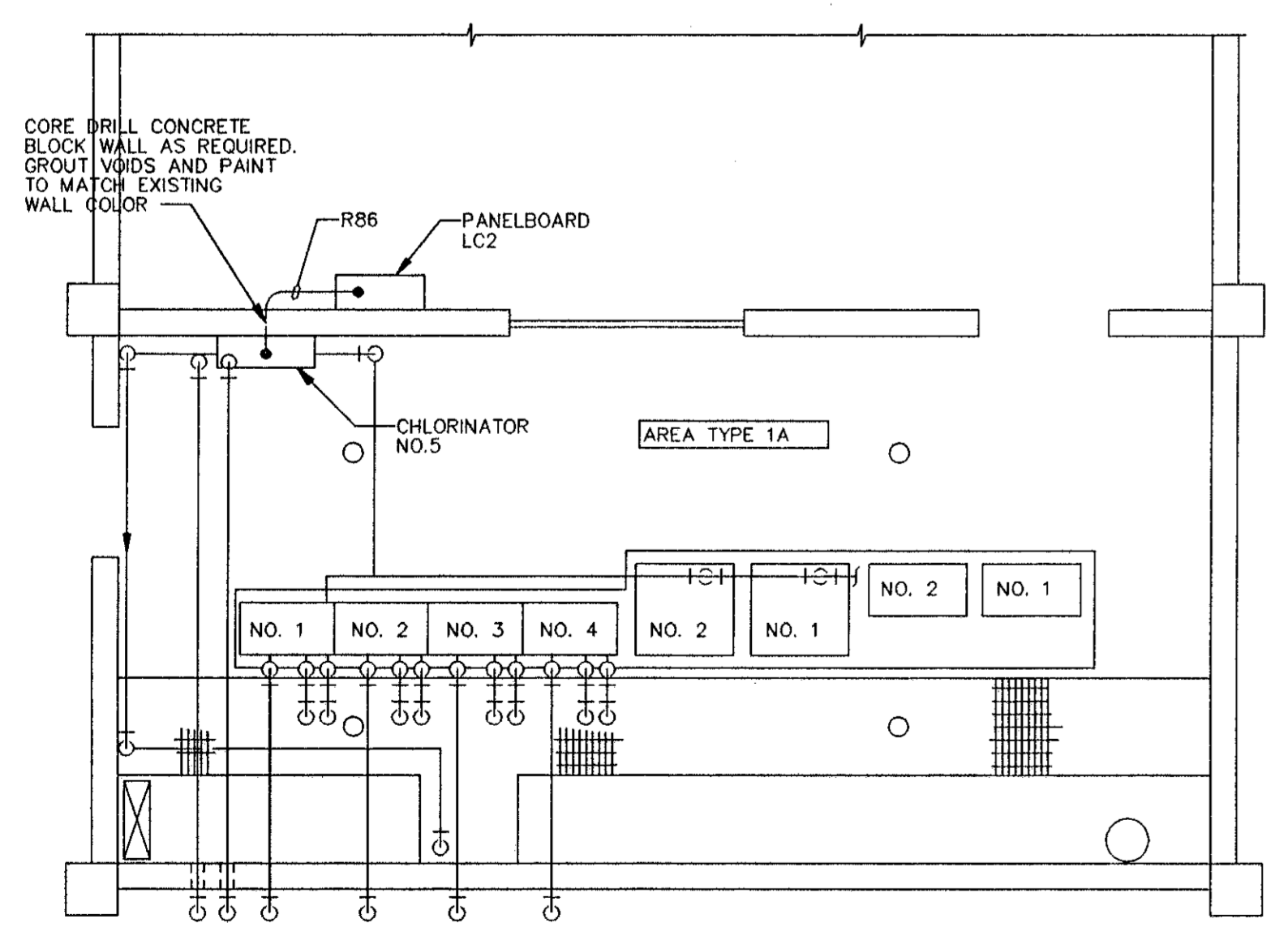
**CHLORINE CONTACT CHAMBER
DRAIN PUMP AND FORCE MAIN PLAN**
1/4" = 1'-0"



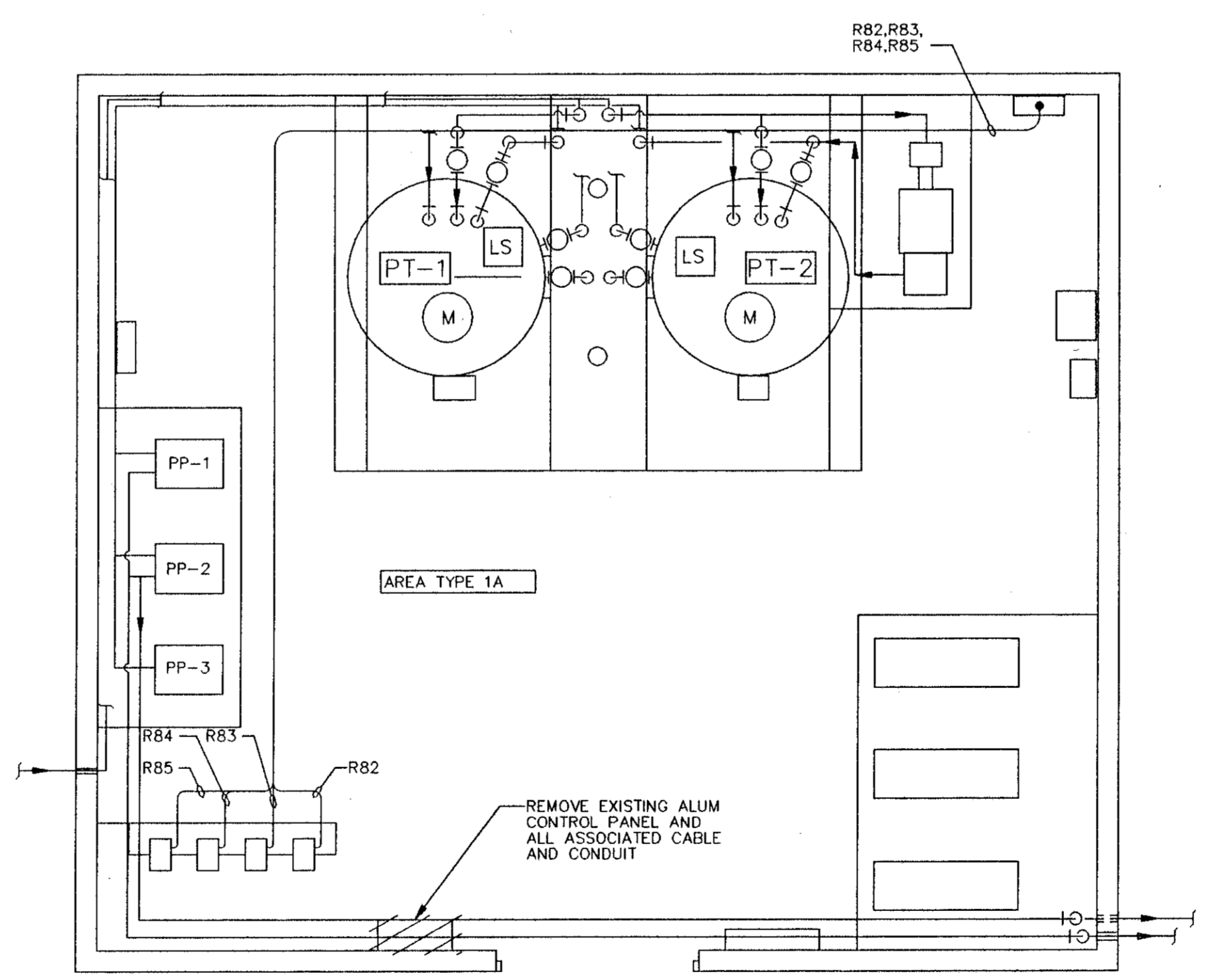
**EXISTING ABW FILTERS NO. 3, 4, & 5
PARTIAL PLAN**
1'-0" = 1'-0"



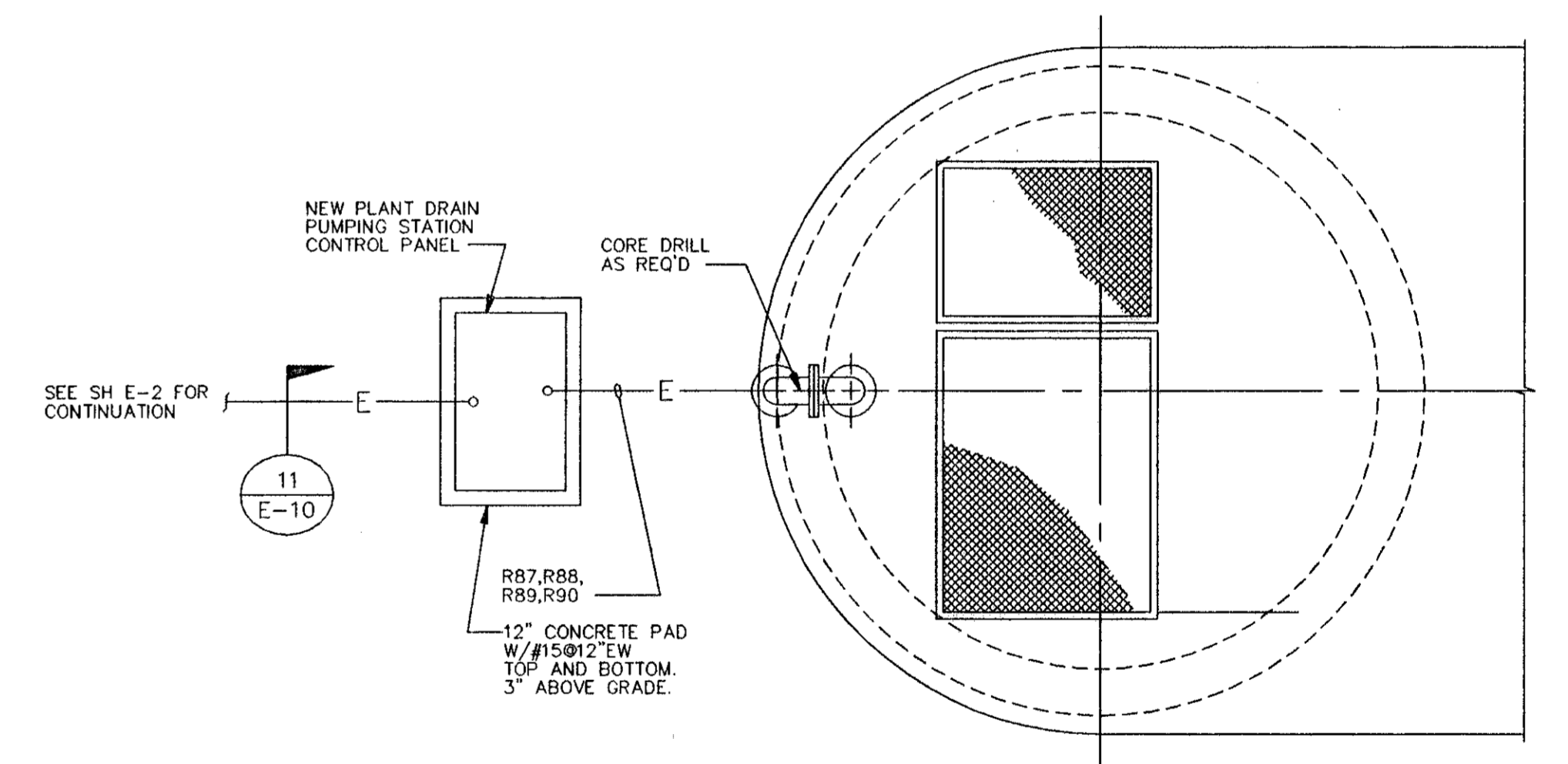
**EXISTING ABW FILTERS NO. 1 & 2
PARTIAL PLAN**



CHLORINE BUILDING MODIFICATIONS PLAN
1/4" = 1'-0"



CHEMICAL FEED BUILDING PLAN
1/4" = 1'-0"
(SEE SHEET C1 FOR SITE LOCATION PLAN)



PLANT DRAIN PUMPING STATION TOP PLAN
3/8" = 1'-0"

- NOTES**
- SEE SHEET E-1 FOR LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (841) 723-1611
Richard C. Merry
RICHARD C. MERRY PLS 2827

NO.	BY	CK	APP	DATE	REVISIONS AND RECORD OF ISSUE

CONFORMED TO CONSTRUCTION RECORDS
Andrew A. West
11-5-01

DESIGNED: STH
DETAILED: A.J.M.
CHECKED: J.J.W.
APPROVED: _____
DATE: _____

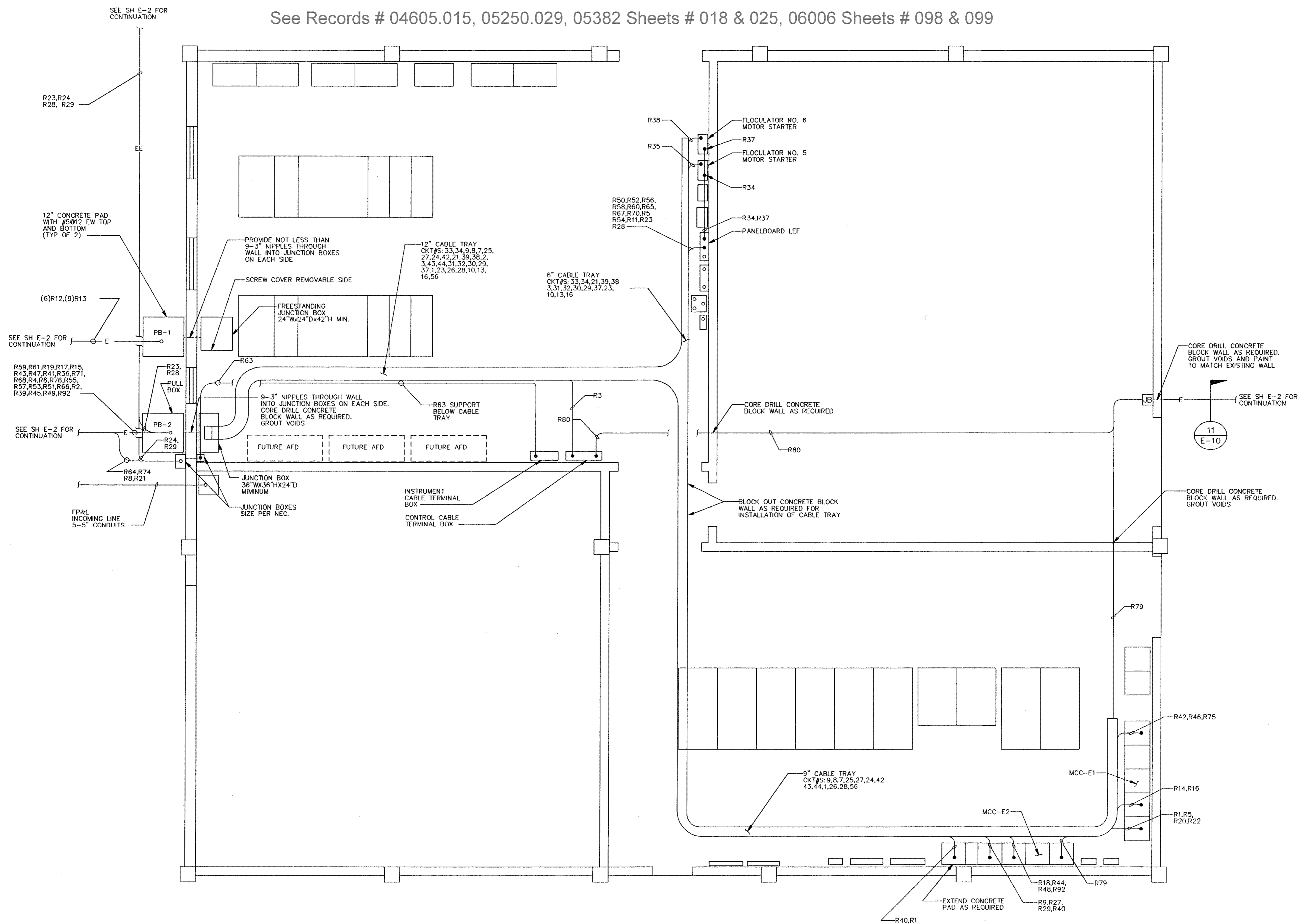


PROJECT NO.
27740

MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWTP
ABW FILTERS ADDITION
ELECTRICAL
POWER PLANS

E-7
SHEET
25 OF 29

See Records # 04605.015, 05250.029, 05382 Sheets # 018 & 025, 06006 Sheets # 098 & 099



ELECTRICAL BUILDING
1/4" = 1'-0"

These images may have been altered from their original submittal to reflect additional information added by Manatee County. For an unedited version of the information please contact Manatee County Utilities Record Section at (941) 792-8811

- NOTES**
- SEE SHEET E-1 FOR LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALM BEACH, FL 34921 (941) 723-1611
Richard C. Merryman
RICHARD C. MERRYMAN PLS 2827

MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWTP
ABW FILTERS ADDITION

ELECTRICAL
EXISTING ELECTRICAL BUILDING PLAN

E-8

SHEET
26 OF 29

CONFORMED TO CONSTRUCTION RECORDS

DESIGNED: STH
 DETAILED: BAO
 CHECKED: JWJ
 APPROVED: _____
 DATE: _____



PROJECT NO.
27740

NO.	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

05/23/96 10:27:54 ACD-12

CIRCUIT SCHEDULE										
CIRCUIT NUMBER	FROM		TO		CABLE		TYPE	FUNCTION	ROUTING	
	EQUIPMENT	LOCATION	EQUIPMENT	LOCATION	NO.	SIZE				
1	MCC-E1	ELEC BLDG	EFP CONTROL PANEL	EFF FLT PS	2	3/C#4/0	PTC	EFP CONTROL PANEL POWER	R1,R2	
2	EFP CONTROL PANEL	EFF FLT PS	CONT TERMINAL BOX	ELEC BLDG	1	7/C#12	TC	EFP CONTROL PANEL ALARM	R3,R4	
3	PANELBOARD LEF	ELEC BLDG	LIT-1	EFF FLT PS	1	3/C#10	TC	LIT-1 POWER	R5,R6	
4	LIT-1	EFF FLT PS	INST TERMINAL BOX	ELEC BLDG	1	1PR#16	I	LIT-1 LEVEL SIGNAL	R8,R63	
5	LIT-1	EFF FLT PS	LE-1	EFF FLT PS	MFR'S CABLE			LIT-1 LEVEL SENSING SIGNAL	R9	
6	LIT-1	EFF FLT PS	EFP CONTROL PANEL	EFF FLT PS	6	2/C#12	TC	LEVEL CONTACTS	R10	
7	MCC-E1	ELEC BLDG	DF-1	DISK FILTERS PAD	1	3/C#10	PTC	DF-1 POWER	R14,R15	
8	MCC-E1	ELEC BLDG	DF-2	DISK FILTERS PAD	1	3/C#10	PTC	DF-2 POWER	R16,R17	
9	MCC-E2	ELEC BLDG	DF-3	DISK FILTERS PAD	1	3/C#10	PTC	DF-3 POWER	R18,R19	
10	PANELBOARD LEF	ELEC BLDG	FIT-5	ABW FLTS 6&7	1	3/C#10	TC	FIT-5 POWER	R7,R11	
11	FIT-5	ABW FLTS 6&7	INST TERMINAL BOX	ELEC BLDG	1	1PR#16	I	FIT-5 FLOW SIGNAL	R21,R63	
12	FIT-5	ABW FLTS 6&7	FE-5	ABW FLTS 6&7	MFR'S CABLE			FIT-5 SENSING SIGNAL	R22	
13	PANELBOARD LEF	ELEC BLDG	FIT-3	ABW FLTS 1&2	1	3/C#10	TC	FIT-3 POWER	R20,R23	
14	FIT-3	ABW FLTS 1&2	INST TERMINAL BOX	ELEC BLDG	1	1PR#16	I	FIT-3 FLOW SIGNAL	R24,R26,R63	
15	FIT-3	ABW FLTS 1&2	FE-3	ABW FLTS 1&2	MFR'S CABLE			FIT-3 SENSING SIGNAL	R25	
16	PANELBOARD LEF	ELEC BLDG	FIT-4	ABW FLTS 3,4&5	1	3/C#10	TC	FIT-4 POWER	R27,R28	
17	FIT-4	ABW FLTS 3,4&5	INST TERMINAL BOX	ELEC BLDG	1	1PR#16	I	FIT-4 FLOW SIGNAL	R29,R31,R63	
18	FIT-4	ABW FLTS 2,4&5	FE-4	ABW FLTS 3,4&5	MFR'S CABLE			FIT-4 SENSING SIGNAL	R30	
19								NOT USED		
20	PANELBOARD LEF	ELEC BLDG	FLOCCULATOR NO.5 MOTOR STARTER	ELEC BLDG	1	3/C#10	TC	FLOC NO. 5 POWER	R34	
21	FLOCCULATOR NO.5 MOTOR STARTER	ELEC BLDG	FLOCCULATOR NO.5	ABW FLT NO.6	1	3/C#10	TC	FLOC NO.5 POWER	R35,R36	
22	PANELBOARD LEF	ELEC BLDG	FLOCCULATOR NO.6 MOTOR STARTER	ELEC BLDG	1	3/C#10	TC	FLOC NO.6 POWER	R37	
23	FLOCCULATOR NO.6 MOTOR STARTER	ELEC BLDG	FLOCCULATOR NO.6	ABW FLT NO.7	1	3/C#10	TC	FLOC NO.6 POWER	R38,R39	
24	MCC-E2	ELEC BLDG	FLASH MIXER NO.3	ABW FLT NO.6	2	3/C#10	PTC	FLASH MIXER NO.3 POWER	R40,R41	
25	MCC-E1	ELEC BLDG	ABW NO.6 POWER JB	ABW FLT NO.6	1	3/C#6 7/C#14	PTC TC	ABW FILTER NO.6 POWER	R42,R43	
26	MCC-E2	ELEC BLDG	ABW NO.7 POWER JB	ABW FLT NO.7	1	3/C#6 7/C#14	PTC TC	ABW FILTER NO.7 POWER	R44,R45	
27	MCC-E1	ELEC BLDG	ABW NO.6 SLUICE GATE	ABW FLT NO.6	1	3/C#10	PTC	SLUICE GATE POWER	R46,R47	
28	MCC-E2	ELEC BLDG	ABW NO.7 SLUICE GATE	ABW FLT NO.7	1	3/C#10	PTC	SLUICE GATE POWER	R48,R49	
29	PANELBOARD LEF	ELEC BLDG	LIGHTS & RECEPTACLES	ABW FLTS NO.6 & 7	1	3/C#10	TC	ABW FLT NO.6 & 7 SOUTH END LIGHTS AND RECEPTACLES	R50,R51	
30	PANELBOARD LEF	ELEC BLDG	LIGHTS & RECEPTACLES	ABW FLTS NO. 6 & 7	1	3/C#10	TC	ABW FLT NO. 6 & 7 NORTH END LIGHTS AND RECEPTACLES	R52,R53	
31	PANELBOARD LEF	ELEC BLDG	LIGHTS & RECEPTACLES	ABW FLTS NO. 6 & 7	1	3/C#10	TC	ABW FLT NO. 6 & 7 EAST SIDE LIGHTS AND RECEPTACLES	R54,R55	
32	PANELBOARD LEF	ELEC BLDG	LIGHTS & RECEPTACLES	ABW FLTS NO. 6 & 7	1	3/C#10	TC	ABW FLT NO. 6 & 7 WEST SIDE LIGHTS AND RECEPTACLES	R56,R57	
33	PANELBOARD LEF	ELEC BLDG	LIGHTS & RECEPTACLES	ABW FLTS 6 & 7 INF METER VAULT	1	3/C#10	TC	ABW FLT NO.6 & 7 INFLUENT METERING VAULT LIGHTS & RECEPTACLES	R58,R59	
34	PANELBOARD LEF	ELEC BLDG	FIT-1	ABW FLTS 6 & 7 INF METER VAULT	1	3/C#10	TC	FIT-1 POWER	R60,R61	
35	FIT-1	ABW FLTS 6 & 7 INF METER VAULT	FE-1	ABW FLTS 6 & 7 INF METER VAULT	MANUFACTURER'S CABLE			ABW 6 & 7 INFLUENT FLOW	R62	
36	FIT-1	ABW FLTS 6 & 7 INF METER VAULT	INST TERMINAL BOX	ELEC BLDG	1	1PR#16	I	ABW 6 & 7 INFLUENT FLOW	R63,R64	
37	PANELBOARD LEF	ELEC BLDG	LIGHT & RECEPTACLE	EFF FILTER PS	1	3/C#10	TC	EFF FLT PS LIGHT & RECP	R65,R66	
38	PANELBOARD LEF	ELEC BLDG	LIGHTS & RECEPTACLES	DISK FILTERS	1	3/C#10	TC	DISK FILTERS LIGHTS & RECP	R67,R68,R69	
39	PANELBOARD LEF	ELEC BLDG	FIT-2	DISK FILTERS	1	3/C#10	TC	FIT-2 POWER	R70,R71	
40	FIT-2	DISK FILTERS	FE-2	DISK FILTERS	MFR'S CABLES			DISK FILTERS INF FLOW	R72	
41	FIT-2	DISK FILTERS	INST TERMINAL BOX	ELEC BLDG	1	1PR#16	I	DISK FILTERS INF FLOW	R63,R74	
42	MCC-E2	ELEC BLDG	FLASH MIXER NO.3 MSH	ABW FILTER NO.6	1	2/C#12	TC	FLASH MIXER NO.3 MSH POWER	R40,R41	
43	MCC-E1	ELEC BLDG	DP-1	CHLORINE CONTACT BASIN AREA	1	3/C#10	PTC	DP-1 POWER	R75,R76,R77	
44	MCC-E1	ELEC BLDG	DP-1 MSH	CHLORINE CONTACT BASIN AREA	1	2/C#12	TC	DP-1 MSH POWER	R75,R76,R78	
45	MCC-E2	ELEC BLDG	PLANT DRAIN PS CONTROL PANEL	PLANT DRAIN PS	1	3/C#4/0	PTC	PLANT DRAIN PS POWER	R79	
46	CONT TERMINAL BOX	ELEC BLDG	PLANT DRAIN PS CONTROL PANEL	PLANT DRAIN PS	1	2/C#12	TC	PLANT DRAIN PS ALARM	R80,R81	
47	PANELBOARD LC1	CHEM FEED BLDG	ALUM MP-1	CHEM FEED BLDG	1	3/C#12	TC	ALUM MP-1 POWER	R82	
48	PANELBOARD LC1	CHEM FEED BLDG	ALUM MP-2	CHEM FEED BLDG	1	3/C#12	TC	ALUM MP-2 POWER	R83	
49	PANELBOARD LC1	CHEM FEED BLDG	ALUM MP-3	CHEM FEED BLDG	1	3/C#12	TC	ALUM MP-3 POWER	R84	
50	PANELBOARD LC1	CHEM FEED BLDG	ALUM MP-4	CHEM FEED BLDG	1	3/C#12	TC	ALUM MP-4 POWER	R85	
51	PANELBOARD LC2	CHLORINE BLDG	CHLORINATOR NO.5	CHLORINE BLDG	1	3/C#12	TC	CHLORINATOR NO.5	R86	

CIRCUIT SCHEDULE										
CIRCUIT NUMBER	FROM		TO		CABLE		TYPE	FUNCTION	ROUTING	
	EQUIPMENT	LOCATION	EQUIPMENT	LOCATION	NO.	SIZE				
52	PLANT DRAIN PS CONT PNL	PLANT DRAIN PS	PDP-1	PLANT DRAIN PS	MFR'S CABLE			PDP-1 POWER & CONTROL	R87	
53	PLANT DRAIN PS CONT PNL	PLANT DRAIN PS	PDP-2	PLANT DRAIN PS	MFR'S CABLE			PDP-2 POWER & CONTROL	R88	
54	PLANT DRAIN PS CONT PNL	PLANT DRAIN PS	PDP-3	PLANT DRAIN PS	MFR'S CABLE			PDP-3 POWER & CONTROL	R89	
55	PLANT DRAIN PS CONT PNL	PLANT DRAIN PS	EXISTING FLOATS	PLANT DRAIN PS	2	7/C#12	TC	PLANT DRAIN PS FLOAT SWITCHES (SPLICE TO EXISTING FLOAT CABLES)	R90	
56	MCC-E2	ELEC BLDG	BFV-14	ABW FLTS 6 & 7 INF METER VAULT	3	3/C#10	PTC	BFV-14 POWER	R91,R92	
57	BFV-14	ABW FLTS 6 & 7 INF METER VAULT	INST TERMINAL BOX	ELEC BLDG	2	1PR#16	I	BFV-14 CONTROL	R93,R64,R63	
58	EFP CONTROL PANEL	EFF FLT PS	EFP-1	EFF FLT PS	MFR'S CABLE			EFP-1 POWER & CONTROL	R95	
59	EFP CONTROL PANEL	EFF FLT PS	EFP-2	EFF FLT PS	MFR'S CABLE			EFP-2 POWER & CONTROL	R96	
60	EFP CONTROL PANEL	EFF FLT PS	EFP-3	EFF FLT PS	MFR'S CABLE			EFP-3 POWER & CONTROL	R97	

NOTES
1. SEE SHEET E-1 FOR LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (841) 723-1611
Richard C. Meryman 10/11/01
RICHARD C. MERRYMAN RLS 2827

CABLE TYPES:
TC - TRAY CABLE
PTC - 600V POWER TRAY CABLE
I - INSTRUMENT CABLE

CONFIRMED TO CONSTRUCTION RECORDS
Andrew A. Westphal
11-5-01

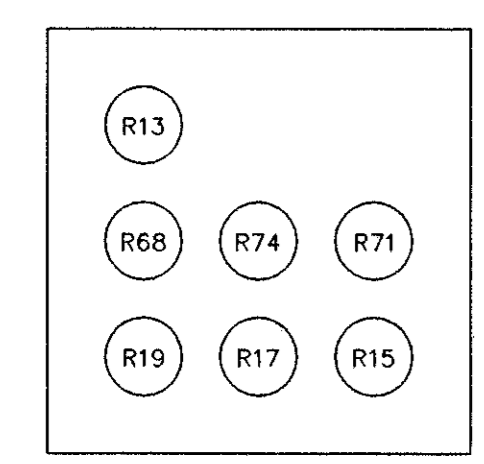


DESIGNED: STH
DETAILED: BAO
CHECKED: JJW
APPROVED: _____
DATE: _____

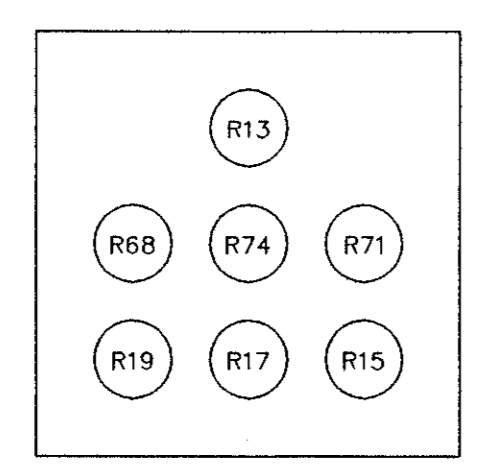
PROJECT NO. 27740	MANATEE COUNTY, FLORIDA SOUTHWEST REGIONAL WWTP ABW FILTERS ADDITION	E-9
	ELECTRICAL CIRCUIT SCHEDULE	SHEET 27 OF 29

0102740

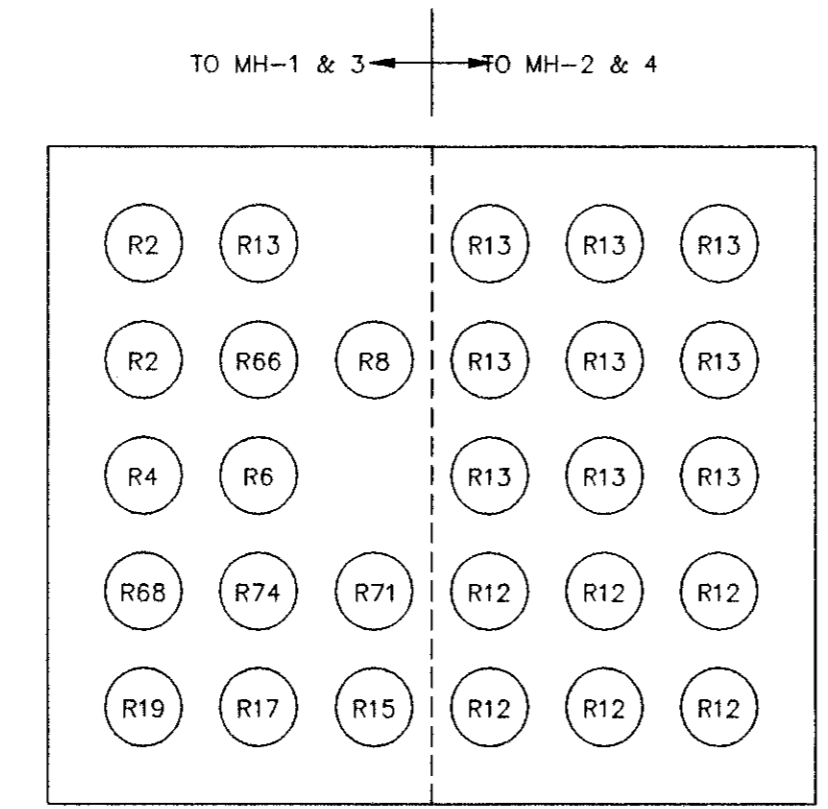
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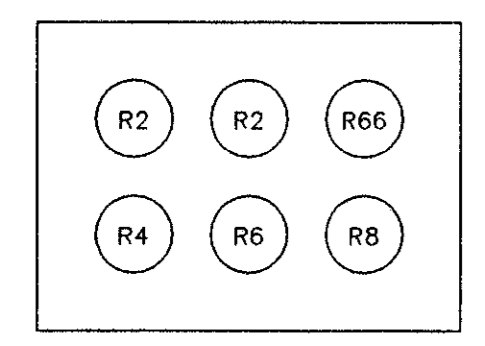
SECTION 1
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E-2, E-6



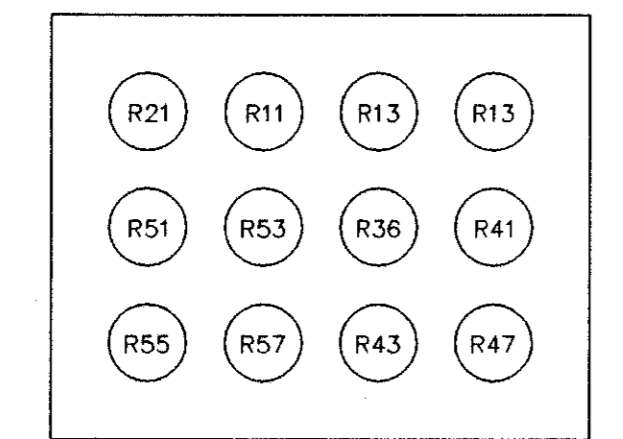
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E-2



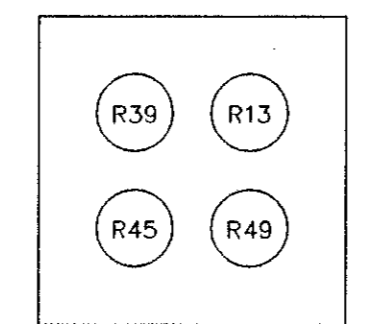
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E-2



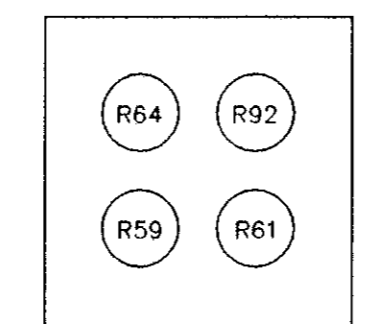
SECTION 4
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E-2, E-6



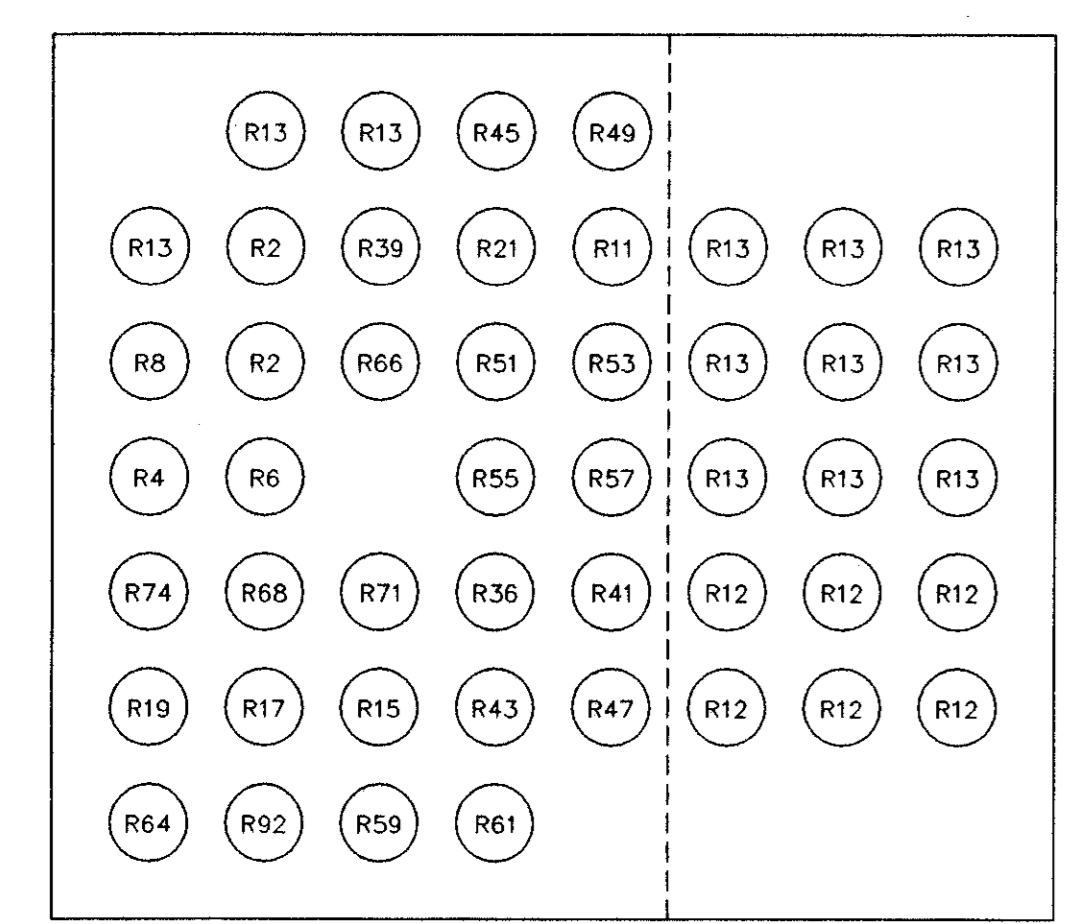
SECTION 5
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E-2, E-5



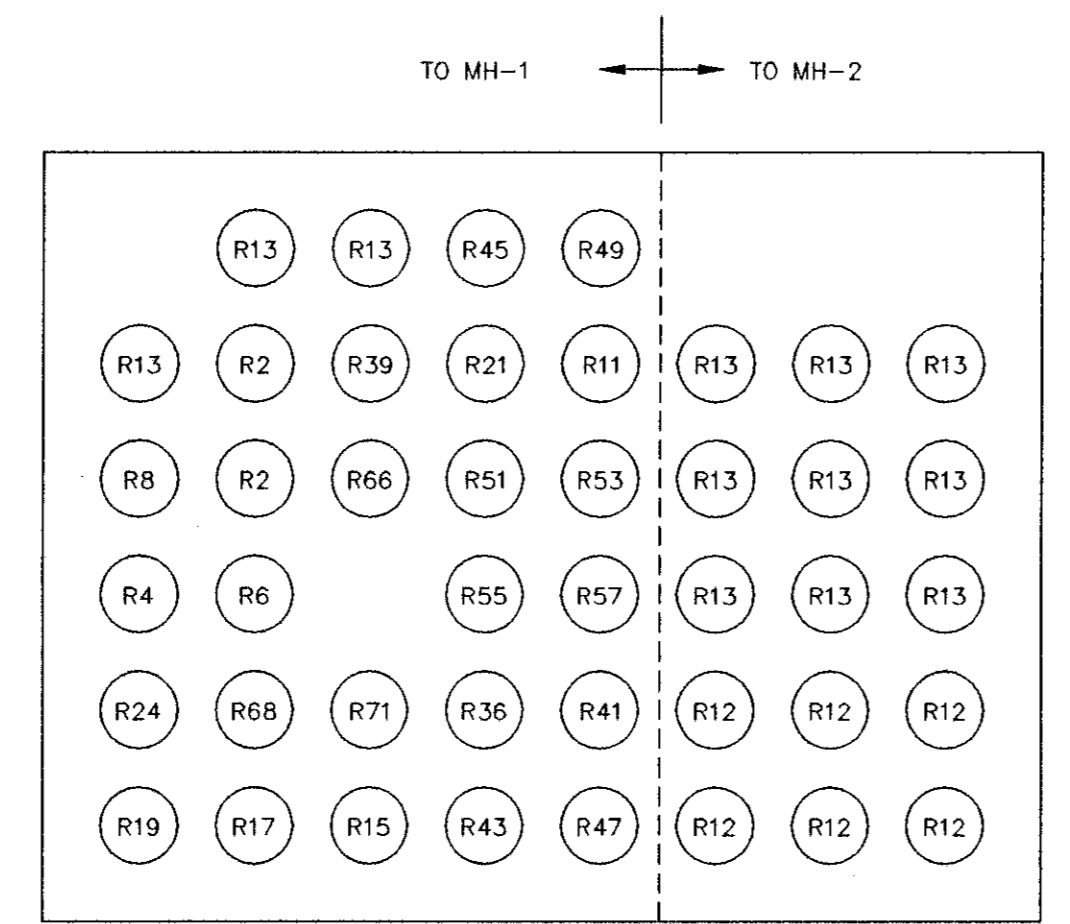
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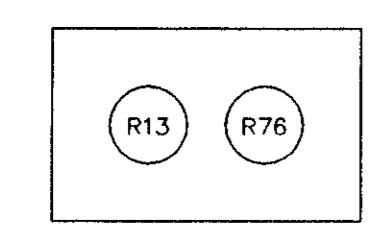
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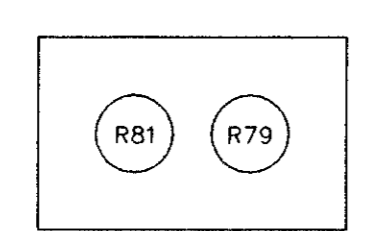
SECTION 8
NO SCALE
E-2



SECTION 9
NO SCALE
E-2



SECTION 10
NO SCALE
E-2



SECTION 11
NO SCALE
E-2, E-7, E-8

RACEWAY NUMBER	CIRCUIT	RACEWAY SIZE
R1	1	2 1/2"
R2	1	3"
R3	2	1"
R4	2	2"
R5	3	3/4"
R6	3	2"
R7	10	3/4"
R8	4	2"
R9	5	1"
R10	6	2"
R11	10	2"
R12	EC	3"
R13	EC	2"
R14	7	3/4"
R15	7	2"
R16	8	3/4"
R17	8	2"
R18	9	3/4"
R19	9	2"
R20	13	3/4"
R21	11	2"
R22	12	1"
R23	13	2"
R24	14	2"
R25	15	1"
R26	14	3/4"
R27	16	3/4"
R28	16	2"
R29	17	2"
R30	18	1"
R31	17	3/4"
R32	NOT USED	
R33	NOT USED	
R34	20	3/4"
R35	21	3/4"
R36	21	2"
R37	22	3/4"
R38	23	3/4"
R39	23	2"
R40	24,42	1-1/2"
R41	24,42	2"
R42	25	1-1/2"
R43	25	2"
R44	26	1-1/2"
R45	26	2"
R46	27	3/4"
R47	27	2"
R48	28	3/4"
R49	28	2"
R50	29	3/4"
R51	29	2"
R52	30	3/4"
R53	30	2"
R54	31	3/4"
R55	31	2"
R56	32	3/4"
R57	32	2"
R58	33	3/4"
R59	33	2"
R60	34	3/4"
R61	34	2"
R62	35	1"
R63	36,41,4,11,14,17,57	1-1/2"
R64	36,57	2"
R65	37	3/4"
R66	37	2"
R67	38	3/4"
R68	38	1"
R69	38	2"

RACEWAY NUMBER	CIRCUIT	RACEWAY SIZE
R70	39	3/4"
R71	39	2"
R72	40	1"
R73	NOT USED	
R74	41	2"
R75	43,44	1 1/2"
R76	43,44	2"
R77	43	3/4"
R78	44	3/4"
R79	45	2"
R80	46	3/4"
R81	46	2"
R82	47	3/4"
R83	48	3/4"
R84	49	3/4"
R85	50	3/4"
R86	51	3/4"
R87	52	3"
R88	53	3"
R89	54	3"
R90	55	3"
R91	56	3/4"
R92	56	2"
R93	57	1"
R94	NOT USED	
R95	58	3"
R96	59	3"
R97	60	3"

NOTES

- SEE SHEET E-1 FOR LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

RECORD SURVEY
 RECORD INFORMATION BY
 WESTRA CONSTRUCTION CORP.
 1209 21st STREET, EAST
 PALMETTO, FL 34221 (941) 723-1811
Richard C. Merriman 10/1/01
 RICHARD C. MERRIMAN PLS 2827

NO.	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
1	2-99	DESIGN UPDATE	RRG	SLC	FCG	

CONFORMED TO CONSTRUCTION RECORDS
Andrew A. West
 11-5-01

DESIGNED: STH
 DETAILED: BAO
 CHECKED: JWW
 APPROVED: T.A. CUMMINGS
 DATE: 5/25/96



PROJECT NO.
27740

MANATEE COUNTY, FLORIDA
 SOUTHWEST REGIONAL WWTP
 ABW FILTERS ADDITION

ELECTRICAL
 DUCT BANK SECTIONS
 AND RACEWAY SCHEDULE

E-10
 SHEET
 28 OF 29

PANELBOARD: LEF		BUS: COPPER		MAINS: 3P-100 AMP CIRCUIT BREAKER		
SERVICE: 120/208V, 3PH, 3W		RATING: 100A		LOCATION: ELECTRICAL BUILDING		
MOUNTING: SURFACE						
LOAD	P	BKR	CKT#	BKR	P	LOAD
LIGHTING	1	20	1	2	20	1 WELL PUMP #1 MOTOR HEATER
LIGHTING	1	20	3	4	20	1 WELL PUMP #2 MOTOR HEATER
RECEPTACLES	1	20	5	6	20	1 ABW E. WALKWAY & N. AREA LIGHTING
ABW #4 & 5 WALKWAY LIGHTING	1	20	7	8	20	1 LIGHTING SOUTH ABW AREA
RECP E. WALKWAY AND N. AREA	1	20	9	10	20	1 RECP E. WALKWAY AND N. AREA
RECP FILTER #4 & 5 WALKWAY	1	20	11	12	20	1 RECP ABW S. AREA
LIGHTS & RECP METER VAULT ABW 3,4,&5	1	20	13	14	20	1 SUMP PUMP METER VAULT ABW 3,4,&5
MAGMETER VAULT ABW 3,4,&5	1	20	15	16	20	1 SCR FLOCC DRIVE CONT #4
SECURITY CAMERA	1	20	17	18	20	1 LIGHTS & RECP ABW 6&7 METER VAULT
ABW 6&7 S. END LIGHTS & RECP	1	20	19	20	20	1 FIT-1 ABW 6&7 METERING VAULT
ABW 6&7 N. END LIGHTS & RECP	1	20	21	22		1 SPACE
ABW 6&7 E. SIDE LIGHTS & RECP	1	20	23	24		1 SPACE
ABW 6&7 W. SIDE LIGHTS & RECP	1	20	25	26		1 SPACE
SPACE	1		27	28		1 SPACE
SPACE	1		29	30		1 SPACE
SPACE	1		31	32		1 SPACE
SPACE	1		33	34		1 SPACE
SPACE	1		35	36		1 SPACE
SPACE	1		37	38	100	1 SPACE
SPACE	1		39	40		1 SPACE
SPACE	1		41	42		1 SPACE

NOTE: NEW BREAKERS D LABELS SHOWN HEAVY.

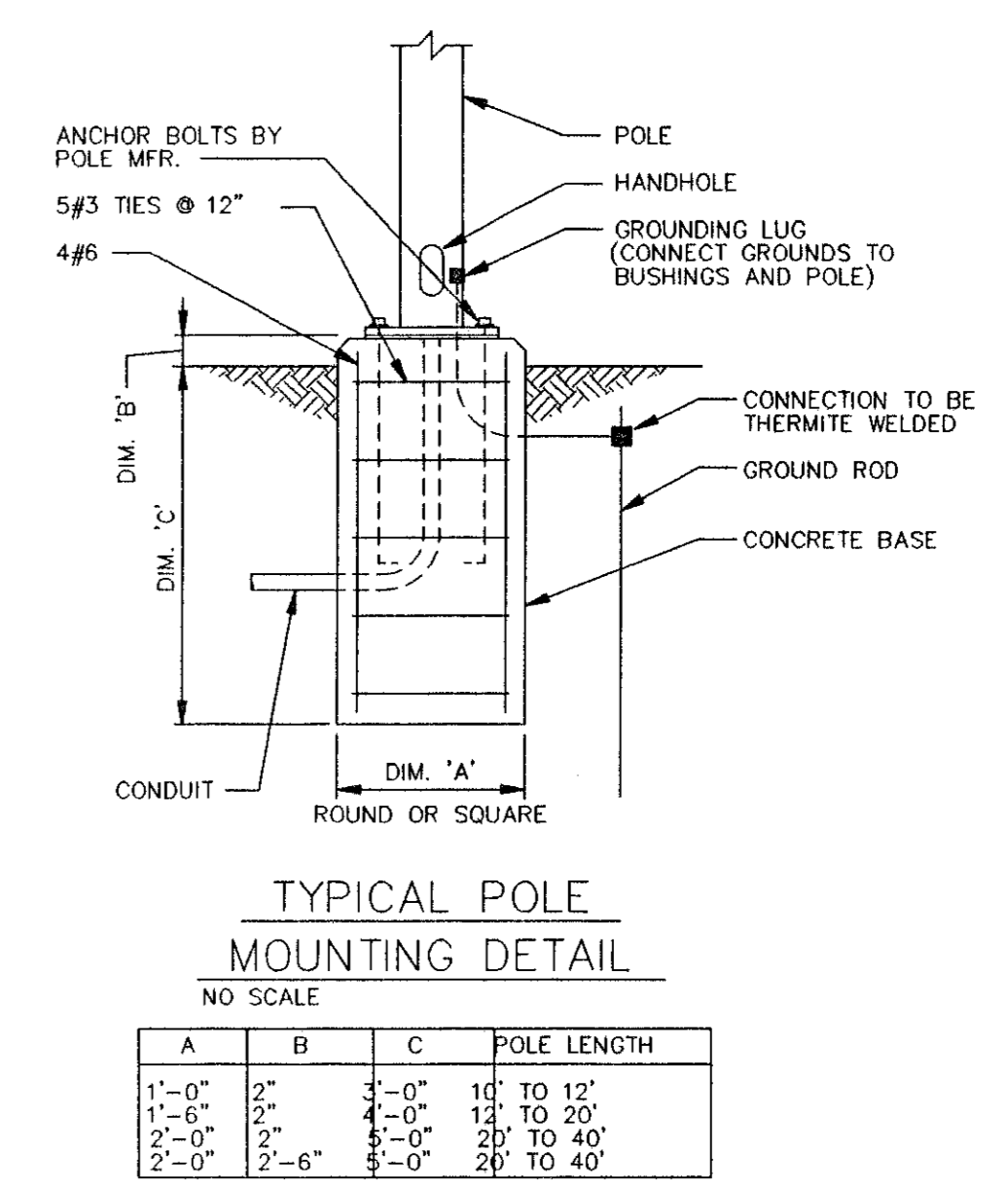
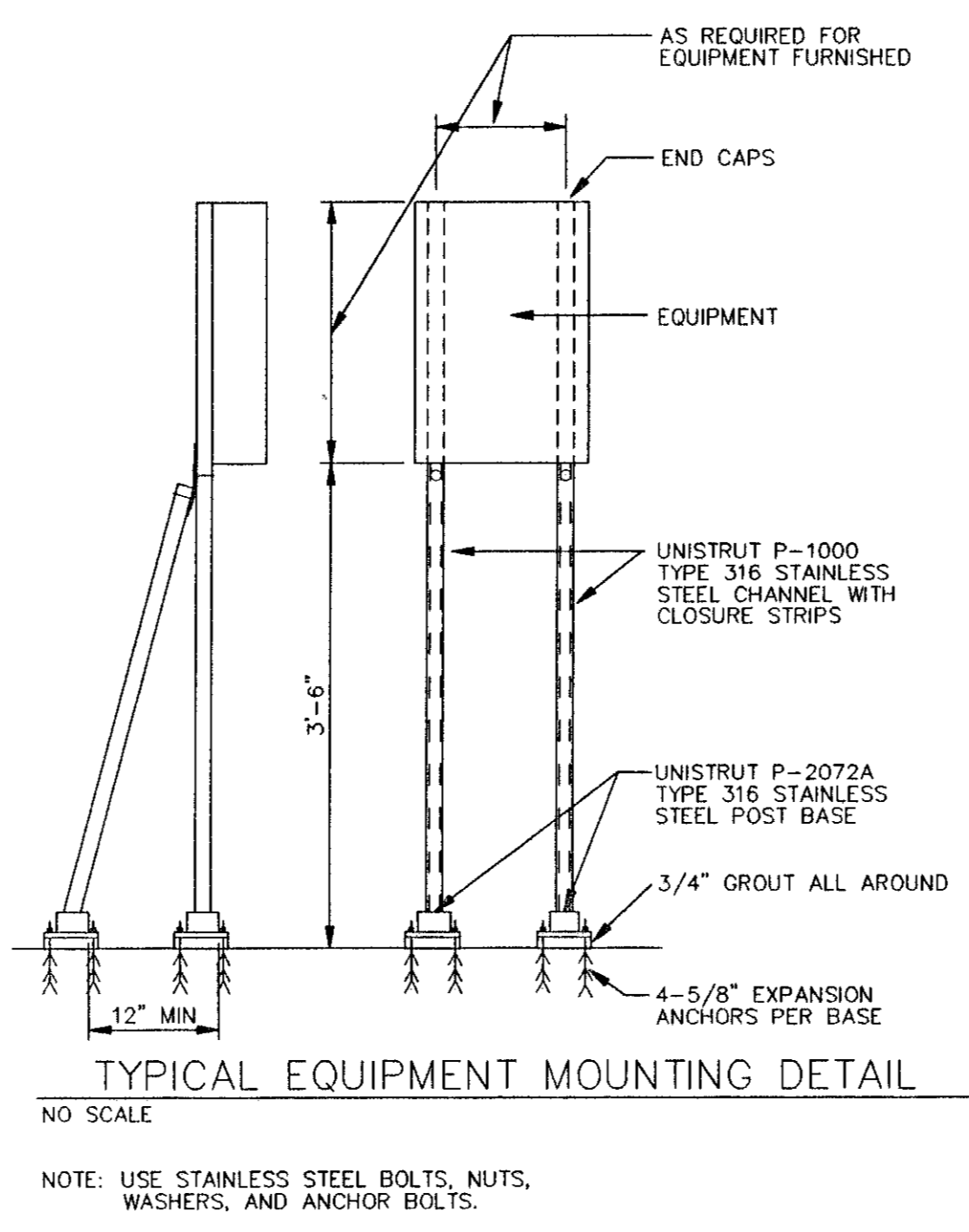
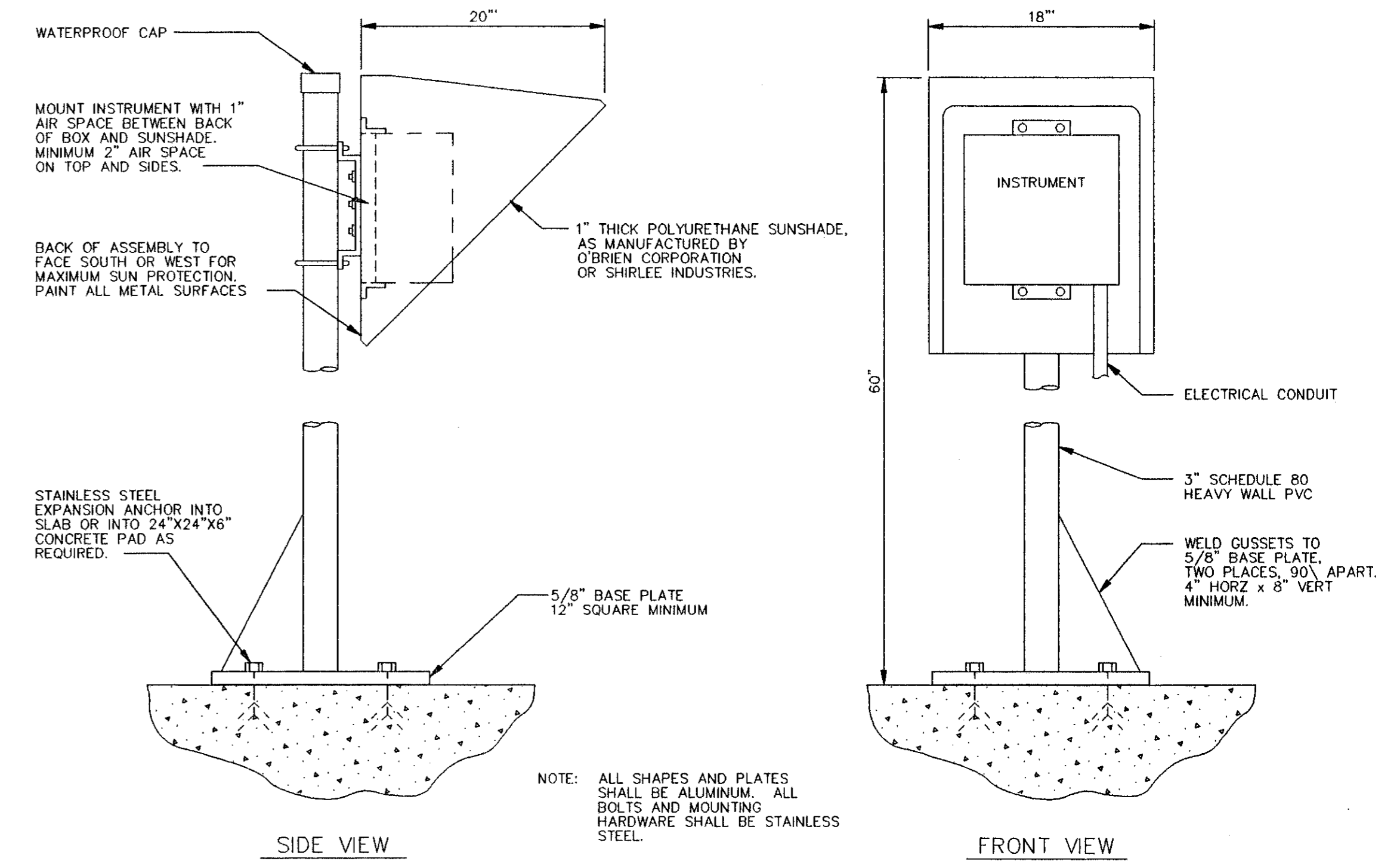
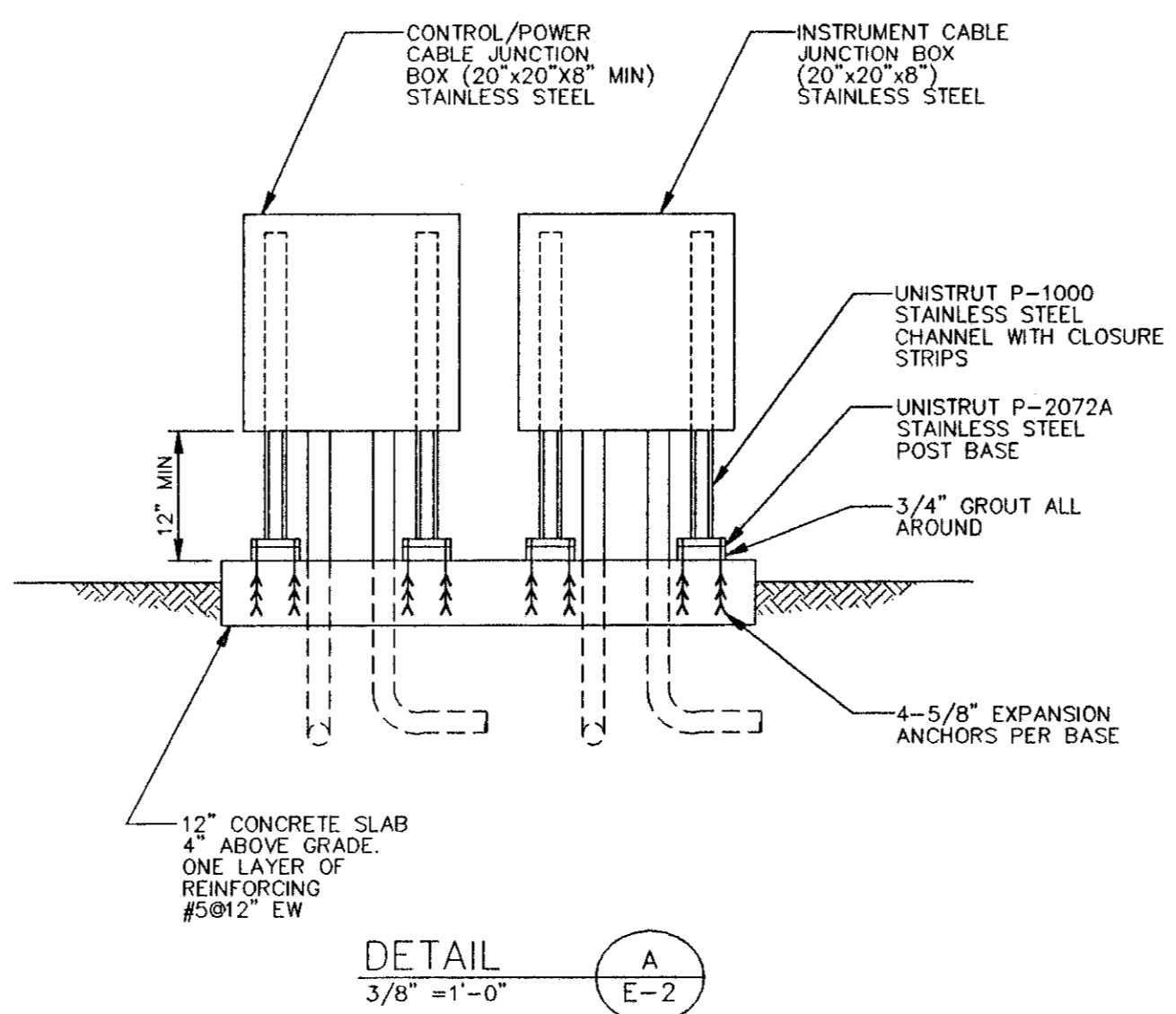
PANELBOARD: PNL LC1		BUS: COPPER		MAINS: LUGS		
SERVICE: 120/208V, 3PH, S/N		RATING: 100A		LOCATION: CHEMICAL BUILDING		
MOUNTING: SURFACE						
LOAD	P	BKR	CKT#	BKR	P	LOAD
RECP N.W.	1	20	1	2	20	1 LIGHTING
RECP E.S.E.	1	20	3	4	20	1 TV CAMERA
RECP E.S.E.	1	20	5	6	20	1 EMERGENCY EYE WASH
EXHAUST FAN	1	20	7	8	20	1 SPARE
18" ALUM VALVE	1	20	9	10	20	1 SPARE
SPARE	1	20	11	12	20	1 18" ALUM VALVE
SPARE	1	20	13	14	20	1 ALUM MP-1
SPARE	1	20	15	16	20	1 ALUM MP-2
SPARE	1	20	17	18	20	1 ALUM MP-3
SPARE	1	20	19	20	20	1 ALUM MP-4
SPARE	1	20	21	22	20	1 SPARE
SPARE	1	20	23	24	20	1 SPARE
EXISTING BLOWER AREA SUB PANEL	2	30	25	26		SPACE
---	---	---	27	28		SPACE
SPACE			29	30		SPACE
SPACE			31	32		SPACE
SPACE			33	34		SPACE
SPACE			35	36		SPACE
SPACE			37	38	100	3 FEED FOR LC-2
SPACE			39	40		---
SPACE			41	42		---

NOTE: NEW BREAKERS D LABELS SHOWN HEAVY.

PANELBOARD: LC-2		BUS: COPPER		MAINS: 3P-100 AMP CIRCUIT BREAKER		
SERVICE: 120/208V, 3PH, 3W		RATING: 100A		LOCATION: CHLORINE BUILDING		
MOUNTING: SURFACE						
LOAD	P	BKR	CKT#	BKR	P	LOAD
EXHAUST FAN	1	20	1	2	20	1 STATUS PANEL
CHANGE OVER PANEL	1	20	3	4	20	1 SPARE
SPARE	1	20	5	6	20	1 SPARE
CHLORINE ROOM LIGHTING	1	20	7	8	20	1 RECEPTACLES
LEAK DETECTOR WEST	1	20	9	10	20	1 LEAK DETECTOR EAST
RECEPTACLES	1	20	11	12	20	1 LIGHTING EAST
LIGHTING NORTH	1	20	13	14	20	1 LIGHTING WEST
SPARE	1	20	15	16	20	1 SPARE
SPARE	1	20	17	18	20	1 SPARE
EVAPORATOR #2	1	20	19	20	20	1 CHLORINATOR #1
EVAPORATOR #1	1	20	21	22	20	1 CHLORINATOR #2
ANALYZER #2	1	20	23	24	20	1 CHLORINATOR #3
LEAK DETECTOR CL ROOM	1	20	25	26	20	1 FIRE ALARM
SPARE	1	20	27	28	20	1 CHLORINATOR #5
ANALYZER #1	1	20	29	30	20	1 CHLORINATOR #4
SPARE	1	20	31	32	20	1 SPARE
SPARE	1	20	33	34	20	1 SPARE
SPARE	1	20	35	36	20	1 SPARE
SPARE	1	20	37	38	20	1 SPARE
SPARE	1	20	39	40	20	1 SPARE
SPARE	1	20	41	42	20	1 SPARE

NOTE: NEW BREAKERS D LABELS SHOWN HEAVY.

SYMBOL	LAMP	MTG HGT	DESCRIPTION	MANUFACTURER
1	LU100 8800 LUMENS	10' SQUARE STRAIGHT ALUMINUM POLE	100 W HIGH PRESSURE SODIUM ARM MOUNTED RECTILINEAR CUTOFF LIGHTING, TYPE IV DISTRIBUTION, DARK MEDIUM BRONZE FINISH, WITH PHOTO-ELECTRIC CONTROL ON 10' HIGH, 4" SQUARE STRAIGHT ALUM. POLE, MEDIUM BRONZE FINISH	LITHONIA KAS1150SR4120- SP12-DMB-PE1 WITH SSA104C-FG-DMB
2	200 W A-21	6'-0" ABOVE FLOOR	150 WATT, INCANDESCENT FIXTURE, ENCLOSED AND GASKETED, GLOBE, GUARD AND 30 DEGREE REFLECTOR, WALL MOUNTED, 120 VOLTS	CROUSE-HINDS VXHBF25GPRA



NOTES
1. SEE SHEET E-1 FOR LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

RECORD SURVEY
RECORD INFORMATION BY
WESTRA CONSTRUCTION CORP.
1209 21st STREET, EAST
PALMETTO, FL 34221 (941) 723-1611
Richard C. Merriman RLS 2827

CONFORMED TO CONSTRUCTION RECORDS

DESIGNED: STH
DETAILED: AJM
CHECKED: JJW
APPROVED: T.A. CUMMINGS
DATE: 5/25/96



PROJECT NO.
27740

MANATEE COUNTY, FLORIDA
SOUTHWEST REGIONAL WWTP
ABW FILTERS ADDITION
ELECTRICAL
PANELBOARD AND LIGHTING FIXTURE
SCHEDULES AND DETAILS

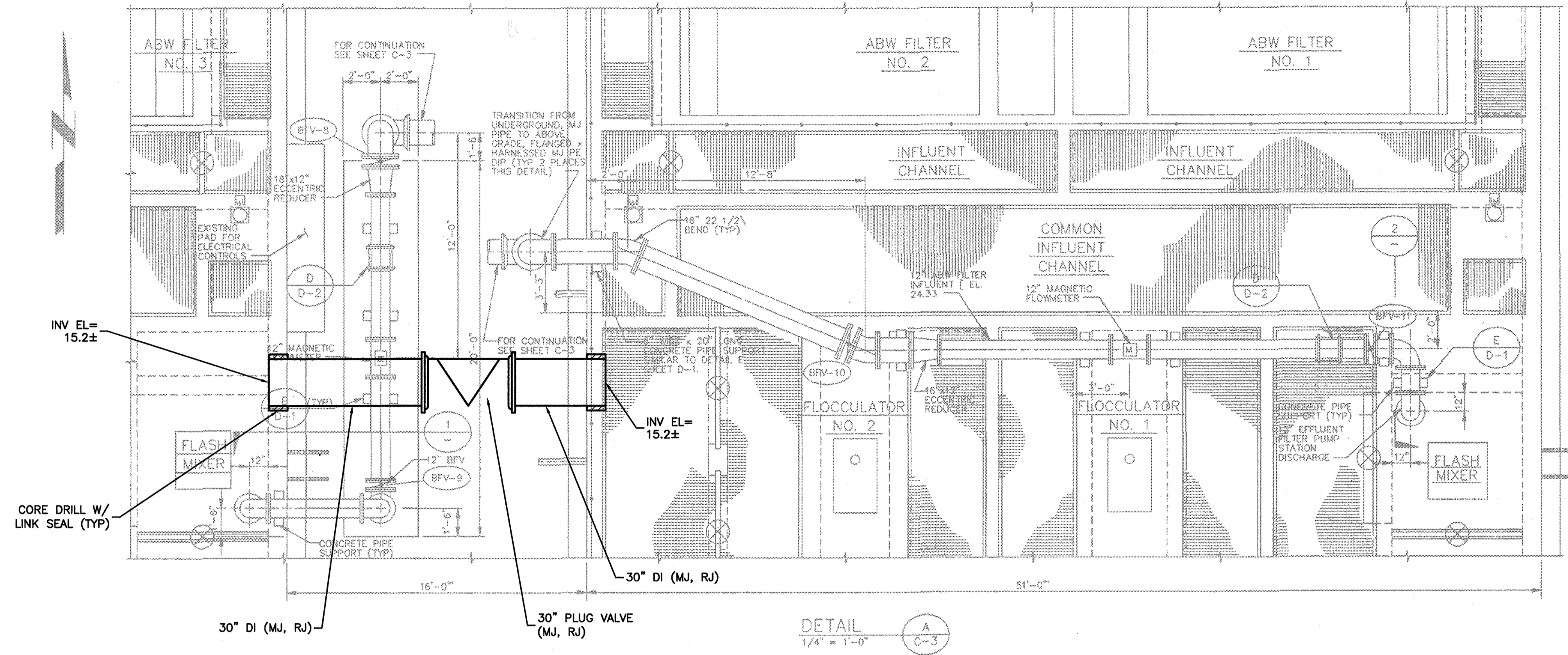
E-11
SHEET
29 OF 29

02/10/99 09:18:47 ACD-12

02/10/99 09:18:47 ACD-12

VERY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

PLOTTED January 13, 2009 10:01 AM PLOTTED BY: SONNENBERG, TERRY
 X:\MANATEE PROJECTS\12006781 - SW EFFL FILTER DESIGN\CADD\30 ABF INTERCONNECT.DWG



EXISTING INFORMATION FROM DRAWING :

PROJECT NAME:
 MANATEE COUNTY, FLORIDA
 SOUTHWEST REGIONAL WWTP
 ABW FILTERS ADDITION

PROJECT NO. 27740

ENGINEERING FIRM: BLACK & VEATCH

SHEET NAME & NO.: MISCELLANEOUS DETAILS, D-3 (SHEET 18 OF 29)

DETAIL A
 1/4" = 1'-0"

RECEIVED
 JAN 15 2009
 INTERCONNECT

RECORD DRAWING

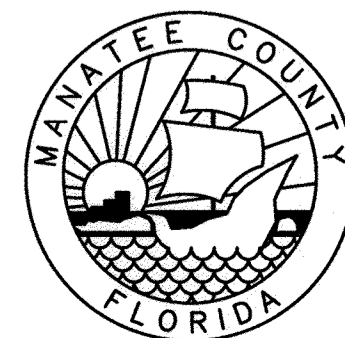


7650 West Courtney Campell Causeway
 Suite 700
 Tampa, Florida 33607
 Ph: (813) 286-1711 Fax: (813) 286-6587
 Florida Engineering Number: 000002

NO.	BY	DATE	DESCRIPTION
TR	01/09	RECORD DRAWING	

URS JOB NUMBER
 12006781
 PM: DAVID WILCOX
 ENG: CRAIG OSMANSKI
 DRW: TERRY SONNENBERG
 FILE SAVE DATE:
 January 13, 2009

CRAIG P. OSMANSKI, PE.
 FLORIDA P.E. NO. 048961



SOUTHWEST REGIONAL WWTP
 EFFLUENT FILTER UPGRADE
 COUNTY PROJECT NO. 6036081
 FOR
 MANATEE COUNTY
 MANATEE COUNTY, FLORIDA

30-INCH INTERCONNECT PIPE
 BETWEEN ABW FILTER NO. 2 AND
 ABW FILTER NO. 3

PROJECT STATUS
 RECORD DRAWINGS
 JANUARY 2009

M-7

4932.001