

MANATEE COUNTY
SOUTHEAST SUBREGIONAL WASTEWATER
TREATMENT FACILITIES

Pump Stations And Force Mains
Phase II - Segment A

BOARD OF COUNTY COMMISSIONERS

Westwood H. Fletcher, Jr.
Chairman of the Board

Patricia M. Glass
Commissioner

Edward W. Chance
Commissioner

Kent G. Chetlain, Jr.
Commissioner

Maxine M. Hooper
Commissioner

Ronald Rabun
Administrator

R. B. "Chips" Shore
Clerk of Circuit Court

Richard A. Wilford
Public Works Director

Al Cogan
Acting Utilities Director

EPA C-120540060 (STEP 3)
MAY 1985
(REVISED JULY 1986)

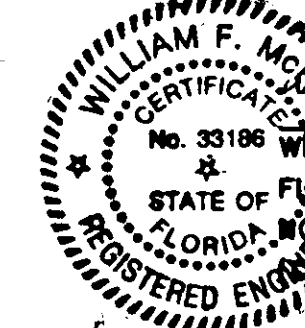
ADDENDUM NO. 1 8/7/86
ADDENDUM NO. 2 8/13/86
CONFORMED 10/1/86
RECORD DRAWING 10-12-88



C.E. BAILEY, P.E.
FLORIDA PROFESSIONAL ENGINEER
NO. 6985
(ELECTRICAL WORK)



LANE R. SMITH, P.E.
FLORIDA PROFESSIONAL ENGINEER
NO. 36536
(STRUCTURAL WORK)



WILLIAM F. MCHIE, P.E.
FLORIDA PROFESSIONAL ENGINEER
NO. 33186
(MECHANICAL & ELECTRICAL WORK)

CAMP DRESSER & MCKEE INC.

environmental engineers, scientists,
planners, & management consultants

CDM

NOTE:
THESE RECORD DRAWINGS ARE
BASED ON INFORMATION PROVIDED
BY MANATEE COUNTY & THE
CONTRACTOR.

T-90
28-06

SHEET NUMBER	TITLE
	COVER SHEET
G-1	INDEX TO SHEETS & UTILITY SERVICES, VICINITY MAP & GENERAL NOTES
G-2	LOCATION MAP
G-3	LEGEND
G-4	ABBREVIATIONS
M-1	NEW 10" FORCE MAIN STA. 0+00 TO STA. 10+70 NEW 16" FORCE MAIN STA. 0+00 TO STA. 5+30 NEW 18" FORCE MAIN STA. 5+30 TO STA. 35+00
M-2	NEW 18" FORCE MAIN STA. 35+00 TO STA. 46+80 NEW 18" FORCE MAIN STA. 0+00 TO STA. 29+45
M-3	NEW 18" FORCE MAIN STA. 0+00 TO STA. 9+00 NEW 20" FORCE MAIN STA. 4+25 TO STA. 14+00
M-4	NEW 20" FORCE MAIN STA. 14+00 TO STA. 67+00
M-5	NEW 20" FORCE MAIN STA. 67+00 TO STA. 91+20
M-6	NEW 6" FORCE MAIN STA. 0+00 TO STA. 44+00
M-7	NEW 6" FORCE MAIN STA. 44+00 TO STA. 61+95 NEW 10" FORCE MAIN STA. 0+00 TO STA. 21+00
M-8	NEW 10" FORCE MAIN STA. 21+00 TO STA. 58+00
M-9	NEW 10" FORCE MAIN STA. 58+00 TO STA. 93+90
S-1	PUMP STATION NOS. 14, 18, and 19
S-2	PUMP STATION NO. 17
S-3	PUMP STATION NO. 20
S-4	PUMP STATION NO. 20
P-1	SUBMERSIBLE PUMP STATION - DETAILS LINGER LODGE - 14
P-2	SUBMERSIBLE PUMP STATION - DETAILS BRADEN RIVER ROAD - 17
P-3	SUBMERSIBLE PUMP STATION - DETAILS BRADEN WOODS - 18
P-4	SUBMERSIBLE PUMP STATION - DETAILS CHAMPION HOMES - 19
P-5	SUBMERSIBLE PUMP STATION - DETAILS TARA - 20
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E-1	ELECTRICAL SITE PLANS
E-2	CONTROL DIAGRAMS & DETAILS
D-1	MISCELLANEOUS DETAILS
D-2	MISCELLANEOUS DETAILS
D-3	MISCELLANEOUS DETAILS
D-4	MISCELLANEOUS DETAILS

Florida Department of Transportation	Manatee County Department
Contact: Mr. Angelo Boyas	of Transportation
301 North Desoto Road	Contact: Mr. Harry Ely
<u>Sarasota, Florida</u>	<u>County Engineer</u>
PH - 813-355-7106	226 - 6th Avenue East
	Bradenton, Florida 33508
	PH - 813-748-4501
Florida Power & Light Co.	
Contact: Mr. Ken Slack	
819 West U.S. 301 Blvd.	
Bradenton, Florida 33505	
PH - 813-749-6263	
CONTACT CANDY (1-800-282-8881) FOR:	
General Telephone Company	Florida Gas Transmission
Contact: Mr. Don C. Poston	Contact: Mr. Larry F. R
1320 - 8th Avenue East	1544 North Combee Road
Bradenton, Florida 33508	Lakeland, Florida 33801
PH - 813-746-5191	PH - 813-665-0973
Manatee County Public Utilities	Group W Cable
Department	Contact: Fred Moser
Contact: Mr. John Drake	3301-14th Street
6615 Cortez Road	Bradenton, Florida
Caller Service 25010	PH - 813-748-1810
Bradenton, Florida	
PH - 813-792-8811	

1. ALL ELEVATIONS ARE REFERRED TO NGVD 1929 DATUM OF THE NATIONAL OCEAN SURVEY.
2. TRAFFIC MUST BE MAINTAINED AT ALL TIMES AS PER F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
3. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY AND AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING HIS WORK. ANYTHING NOT SHOWN ON THIS DRAWING SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND SHALL NOT CONSTITUTE AN EXTRA, UNLESS APPROVED BY THE ENGINEER.
4. THE CONTRACTOR SHALL CONTACT THE ENGINEER'S OFFICE IMMEDIATELY ON ANY CONFLICTS ARISING DURING CONSTRUCTION OF ANY IMPROVEMENTS SHOWN ON THESE DRAWINGS.
5. THE CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE VARIOUS UTILITY COMPANIES IN ORDER TO PERMIT THE LOCATION OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT HORIZONTAL AND VERTICAL TRANSITION OF PIPELINE BY DEFLECTION OF PIPE JOINTS USING 75% OF THE MAXIMUM RECOMMENDED BY THE MANUFACTURER. SHOP DRAWINGS SHALL BE FURNISHED TO THE ENGINEER FOR APPROVAL OF ALL PIPE CONNECTIONS, TRANSITIONS AND SPECIALS PRIOR TO FABRICATION OR DELIVERY TO JOB SITE.
7. ALL JOINTS, WHERE REQUIRED, SHALL BE RESTRAINED AS SHOWN ON THE DRAWINGS AND THE CONTRACT DOCUMENTS.
8. THE CONTRACTOR SHALL REPLACE ALL PAVING, STABILIZED EARTH, CURBS, DRIVEWAYS, SIDEWALKS, FENCES, ETC., WITH THE SAME TYPE OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR UNDER THE APPROPRIATE BID ITEM.
9. ALL FITTINGS FOR PVC/D.I. SHALL BE CAST IRON/DUCTILE IRON, SHORT BODY WITH MECHANICAL JOINTS, HIGH STRENGTH CORROSION RESISTANT ALLOY AND T-HEAD BOLTS, SUBJECT TO THE APPROVAL OF THE ENGINEER.
10. STATIONING FOR AIR RELEASE & VACUUM VALVES ARE APPROXIMATE. THE CONTRACTOR SHALL LOCATE AIR RELEASE & VACUUM VALVE IN THE FIELD AT THE HIGHEST POINT BEFORE THE DOWNWARD BREAK IN THE VICINITY OF THE STATION INDICATED. ALL LOCATIONS MUST BE APPROVED BY THE ENGINEER.
11. WITHIN THE FLORIDA DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY, THE FOLLOWING SHALL ALSO APPLY:
 - A. THE PIPELINE TRENCH SHALL BE BACK FILLED DURING PERIODS WHEN NO CONSTRUCTION IS IN PROGRESS.
 - B. ALL SUITABLE MATERIAL NOT REQUIRED FOR FILL SHALL BE STOCKPILED IN AREAS DESIGNATED BY AND REMAIN THE PROPERTY OF F.D.O.T. ALL UNSUITABLE MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR.
 - C. ALL DISTURBED AREAS SHALL RECEIVE GRASSING (SEEDING) OR SODDING MATERIALS IN ACCORDANCE WITH F.D.O.T. SPECIFICATIONS. THOSE AREAS THAT ARE CLASSIFIED AS DRAINAGE DITCHES SHALL RECEIVE FULL SOLID SOD.
12. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
13. AERIAL PHOTOGRAMMETRY PERFORMED BY HAMRICK AERIAL SURVEYS OF CLEARWATER, FLORIDA ON JANUARY 1985 THROUGH MARCH 1985.
14. ALL FIELD TOPOGRAPHIC SURVEYS SHOWN ON DRAWINGS WERE DERIVED FROM A SURVEY PERFORMED BY R. J. LOMBARDO & ASSOCIATES, INC., P.O. BOX 188, PALMETTO, FLORIDA 33561, JANUARY 1985 THROUGH MARCH 1985, PROJECT NO. 4016.
15. ALL SOILS EXPLORATION WORK IS BY ARDAMAN & ASSOCIATES, INC. SARASOTA, FLORIDA FILE NO. 85-7244 FEBRUARY 1985. THE SUBSURFACE INVESTIGATIONS AND ANALYSIS THAT HAVE BEEN ACCOMPLISHED ARE AVAILABLE FOR REVIEW AS IN THE SPECIFICATIONS. THE SOILS EXPLORATION WORK IS SOLELY TO ASSIST BIDDERS IN ASSESSING THE NATURE AND EXTENT OF TESTING PROCEDURES REQUIRED TO MAKE THEIR OWN DETERMINATION OF ACTUAL CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THIS 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.

NOTE:
• THESE RECORD DRAWINGS ARE
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BY MANATEE COUNTY & THE
CONTRACTOR.

PROJECT NO.
6049-32

SHEET NO.
D-1

MANATEE COUNTY, FLORIDA

CDM
CONSULTING DESIGN & MANAGEMENT

T91

SOUTHWEST SUBREGIONAL WASTEWATER TREATMENT FACILITIES

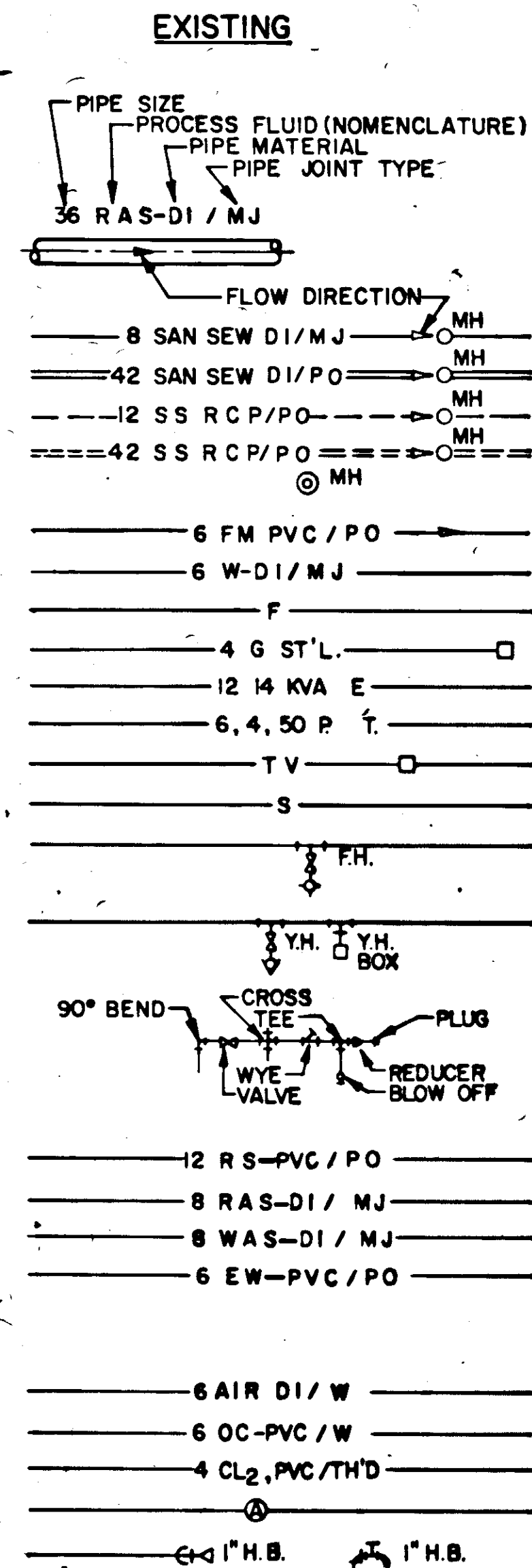
INDEX TO SHEETS & UTILITY SERVICES

VICINITY MAP & GENERAL NOTES

CAMP DRESSER & MCKEE INC.

DESIGNED BY	G.E.K.	REV NO	DATE	DRWN	CHKD	REMARKS
DRAWN BY	<i>LDL</i>	—	10/86	S.D.A.	G.E.K.	CONFORMED
CHECKED BY	<i>G.E.K.</i>					
APPROVED BY	<i>LDL</i>					
DATE	<i>MAY 1985</i>					

LEGEND **SYMBOLS, STRUCTURES & FEATURES**



DESCRIPTION

TYPICAL PIPE IDENTIFICATION

36 RAS-DI/MJ

8 SAN SEW DI/MJ

42 SAN SEW DI/PO

12 SS RCP/PO

42 SS RCP/PO

6 FM PVC/PO

6 W-DI/MJ

4 G ST'L

12 14 KVA E

6, 4, 50 P T

TV

S

F.H.

Y.H. Y.H. BOX

90° BEND

CROSS TEE

PLUG

WYE VALVE

REDUCER

BLOW OFF

12 RS-PVC/PO

8 RAS-DI/MJ

8 WAS-DI/MJ

6 EW-PVC/PO

6 AIR DI/W

6 OC-PVC/W

4 CL₂-PVC/TH'D

1" H.B.

M.B.

W.M.

G.T.E.

BORING

T.B. II

S.P.

NO. OF BORING

B.M.

LIMITED ACCESS RIGHT OF WAY (L.A. R/W)

RIGHT OF WAY (R/W)

PROPERTY LINE (R)

PROPERTY CORNERS: IRON PIPE, IRON ROD, CONCRETE MONUMENT

FENCE, SIZE & TYPE

BUILDING / STRUCTURE

PAVEMENT, SIZE & TYPE

CATCH BASIN

CULVERT OR BRIDGE

RAILROAD TRACKS

SIGNS

POLE, POWER POLE & COMBINATION POLE W/NO.

TREE, SIZE & TYPE

HEDGE

CONTOURS

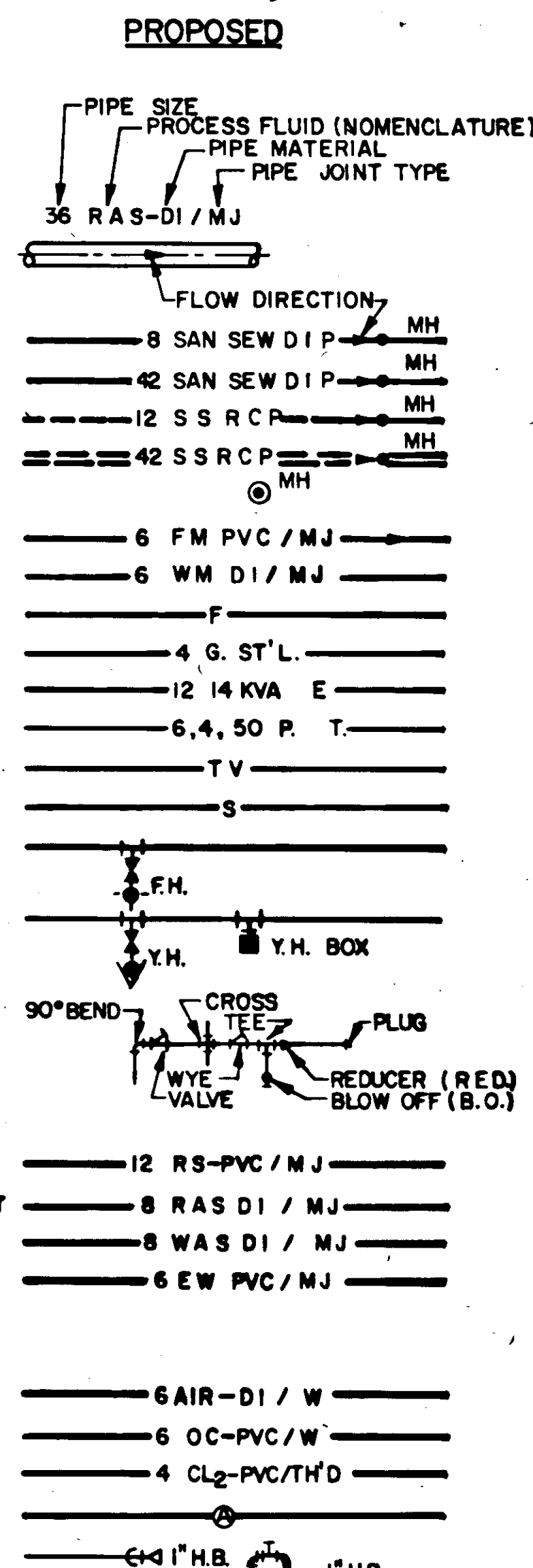
SPOT ELEVATIONS

STORM WATER RUNOFF FLOW DIRECTION

STREAM (SMALL)/DITCH

SHORE LINE

CLEAN OUT C.O.



DESCRIPTION

36 RAS-DI/MJ

8 SAN SEW DI/PO

42 SAN SEW DI/PO

12 SS RCP/PO

42 SS RCP/PO

6 FM PVC/MJ

6 WM DI/MJ

4 G ST'L

12 14 KVA E

6, 4, 50 P T

TV

S

F.H.

Y.H. Y.H. BOX

90° BEND

CROSS TEE

PLUG

WYE VALVE

REDUCER (RED)

BLOW OFF (B.O.)

12 RS-PVC/MJ

8 RAS DI/MJ

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4 CL₂-PVC/TH'D

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CONTOURS

SPOT ELEVATIONS

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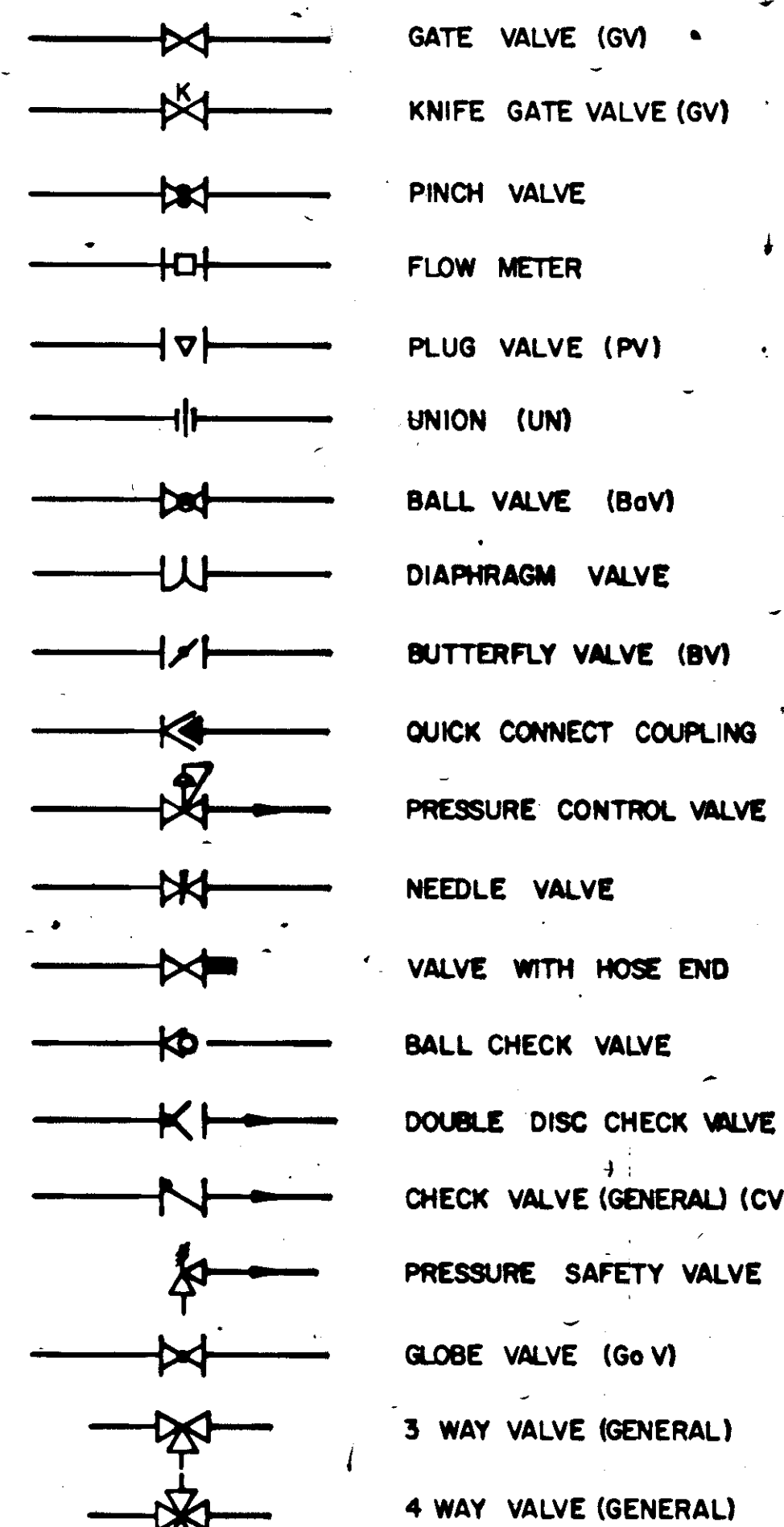
CLEAN OUT C.O.

LEGEND **VALVE, PIPE & FITTING SYMBOLS**

EXISTING & NEW SYMBOLS

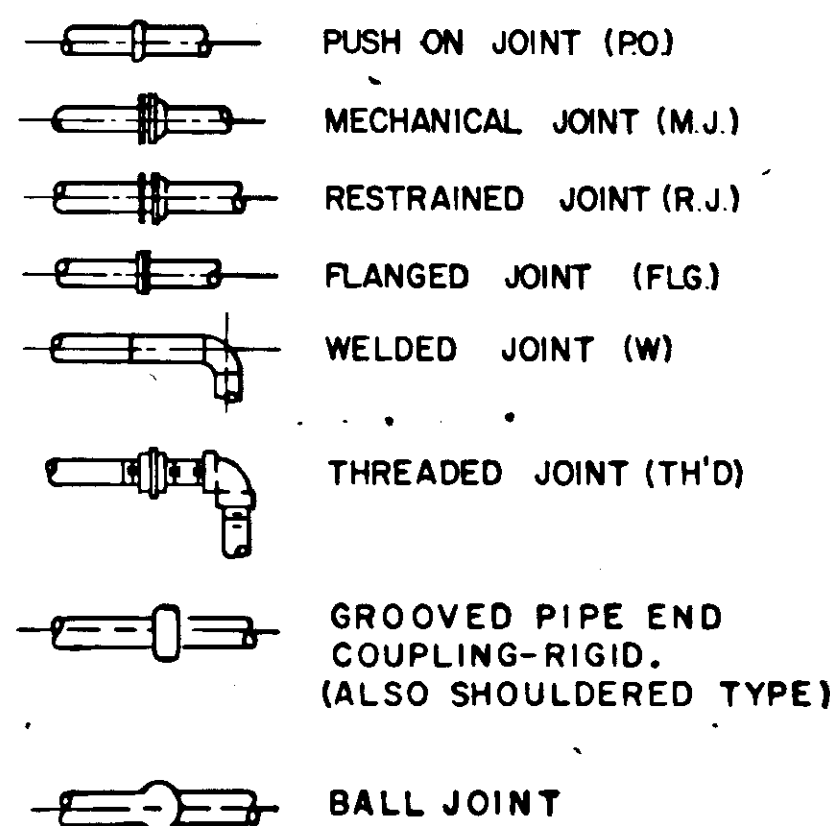
NOTE

PROPOSED PIPING, VALVES FOR NEW CONSTRUCTION SHOWN ON PLANS IN HEAVIER LINE WEIGHTS

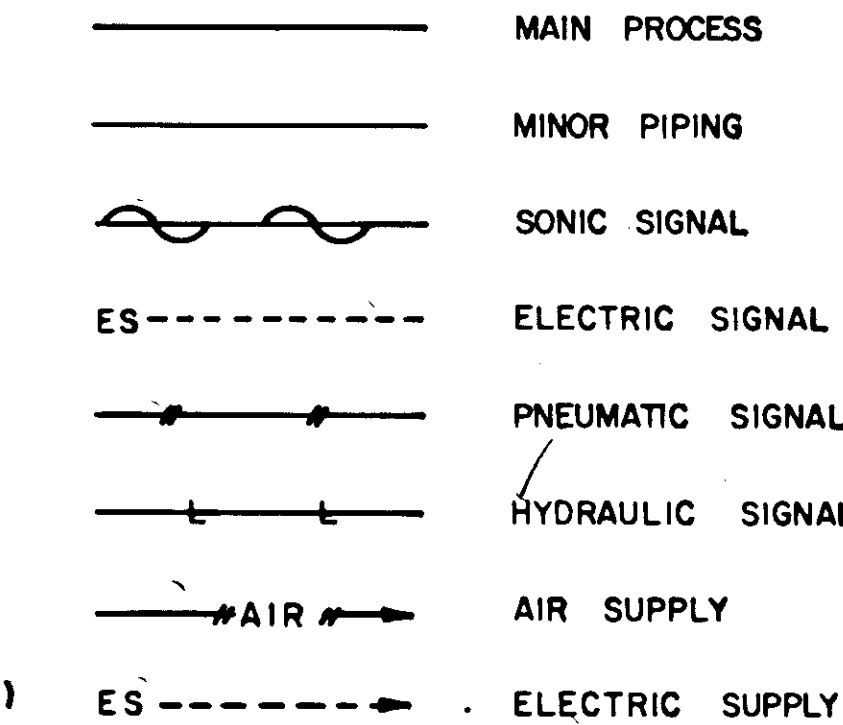


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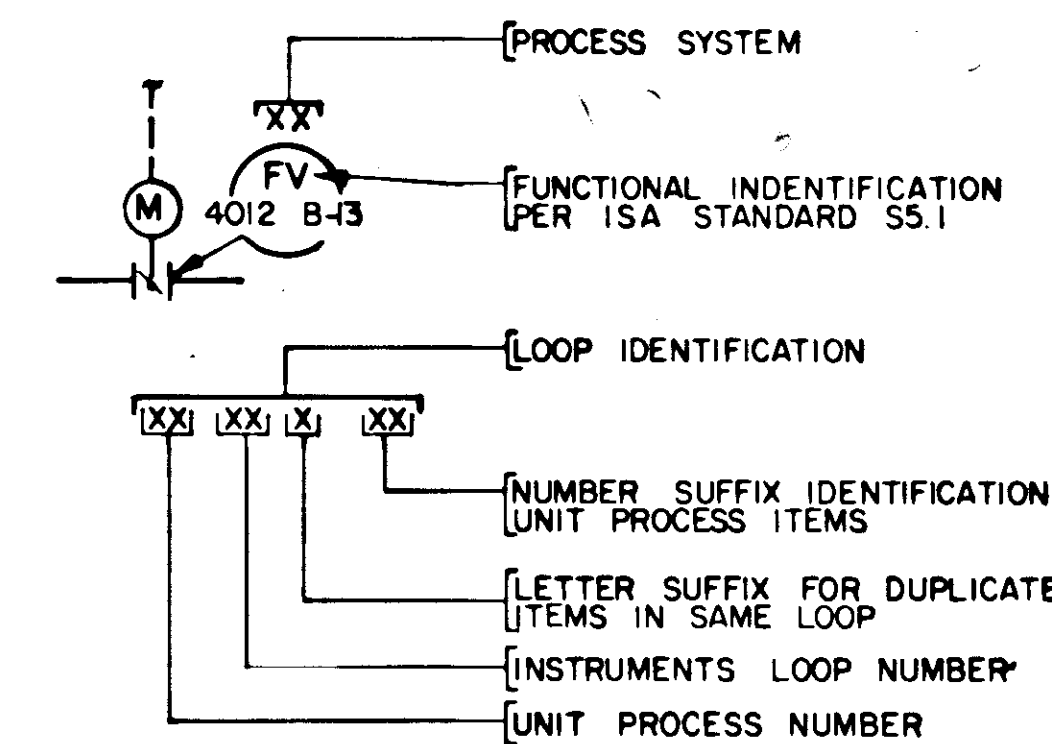
PIPING SYMBOLS



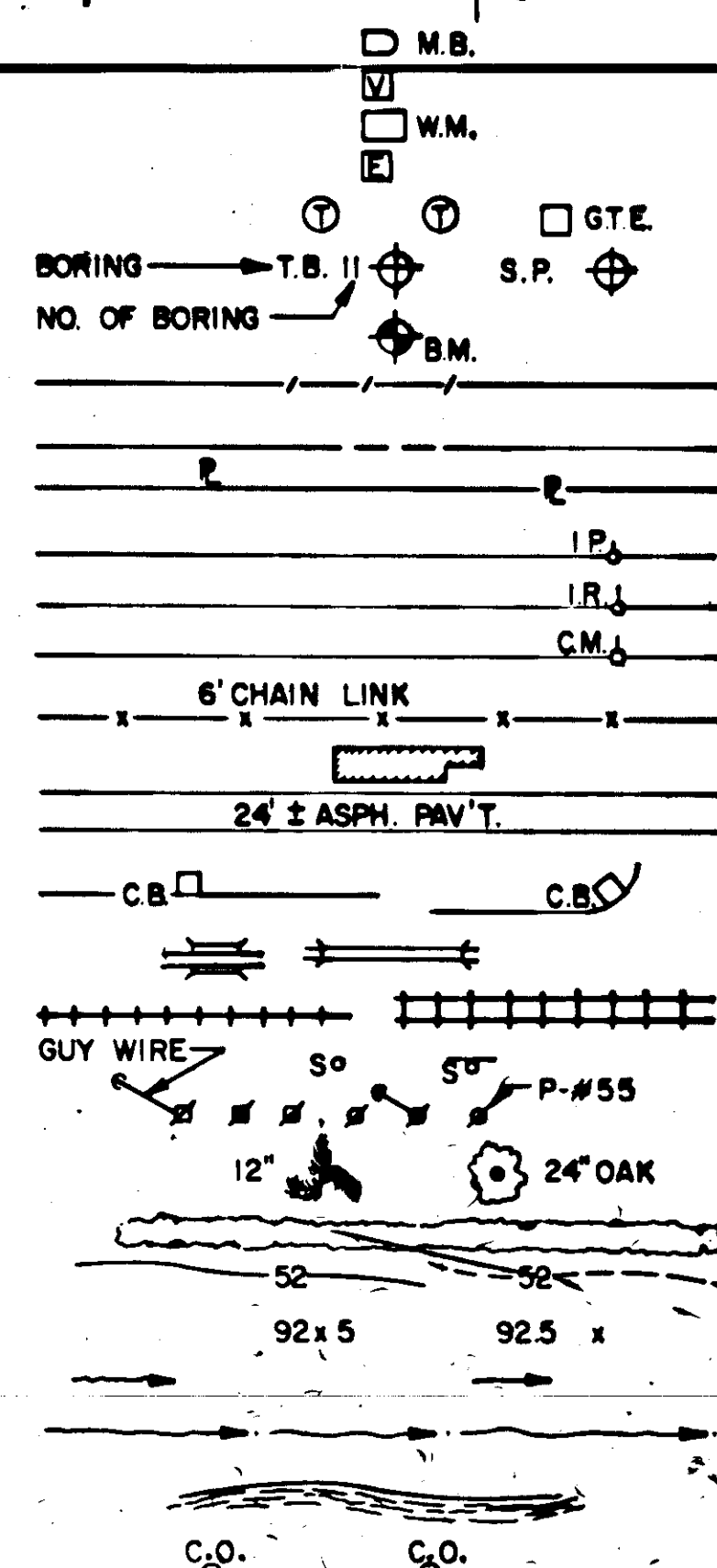
LEGEND **PROCESS SYMBOLS**



TAGGING SYSTEM FOR INSTRUMENTS AND CONTROL VALVES



TAGGING SYSTEM FOR PROCESS VALVES



DESCRIPTION

36 RAS-DI/MJ

8 SAN SEW DI/PO

42 SAN SEW DI/PO

12 SS RCP/PO

42 SS RCP/PO

6 FM PVC/PO

6 W-DI/MJ

4 G ST'L

12 14 KVA E

6, 4, 50 P T

TV

S

F.H.

Y.H. Y.H. BOX

90° BEND

CROSS TEE

PLUG

WYE VALVE

REDUCER

BLOW OFF

12 RS-PVC/PO

8 RAS-DI/MJ

8 WAS-DI/MJ

6 EW-PVC/PO

6 AIR-DI/W

6 OC-PVC/W

4 CL₂-PVC/TH'D

1" H.B.

M.B.

W.M.

G.T.E.

BORING

T.B. II

S.P.

NO. OF BORING

B.M.

LIMITED ACCESS RIGHT OF WAY (L.A. R/W)

RIGHT OF WAY (R/W)

PROPERTY LINE (R)

PROPERTY CORNERS: IRON PIPE, IRON ROD, CONCRETE MONUMENT

FENCE, SIZE & TYPE

BUILDING / STRUCTURE

PAVEMENT, SIZE & TYPE

CATCH BASIN

CULVERT OR BRIDGE

RAILROAD TRACKS

SIGNS

POLE, POWER POLE & COMBINATION POLE W/NO.

TREE, SIZE & TYPE

HEDGE

CONTOURS

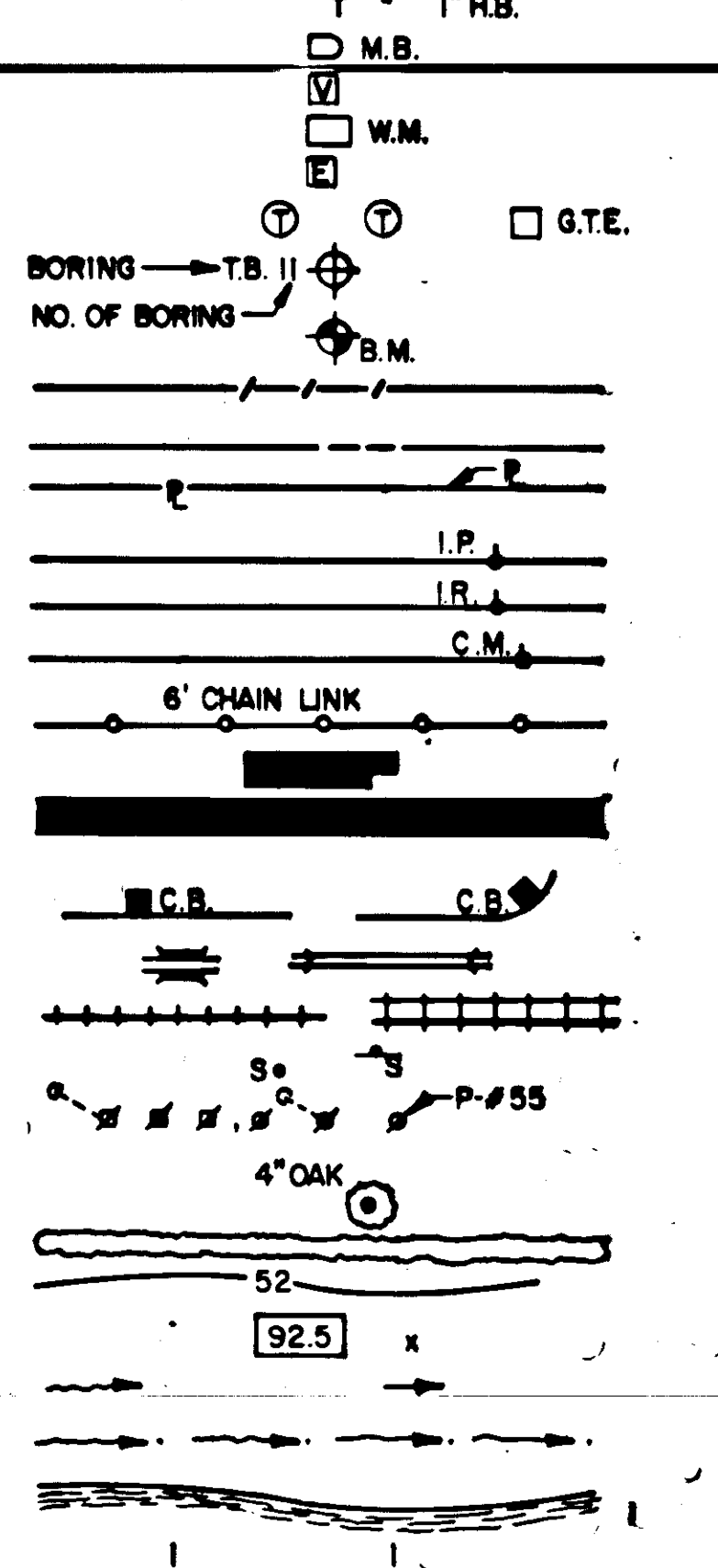
SPOT ELEVATIONS

STORM WATER RUNOFF FLOW DIRECTION

STREAM (SMALL)/DITCH

SHORE LINE

CLEAN OUT C.O.



DESCRIPTION

36 RAS-DI/MJ

8 SAN SEW DI/PO

42 SAN SEW DI/PO

12 SS RCP/PO

42 SS RCP/PO

6 FM PVC/MJ

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S

F.H.

Y.H. Y.H. BOX

90° BEND

CROSS TEE

PLUG

WYE VALVE

REDUCER (RED)

BLOW OFF (B.O.)

12 RS-PVC/MJ

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CONTOURS

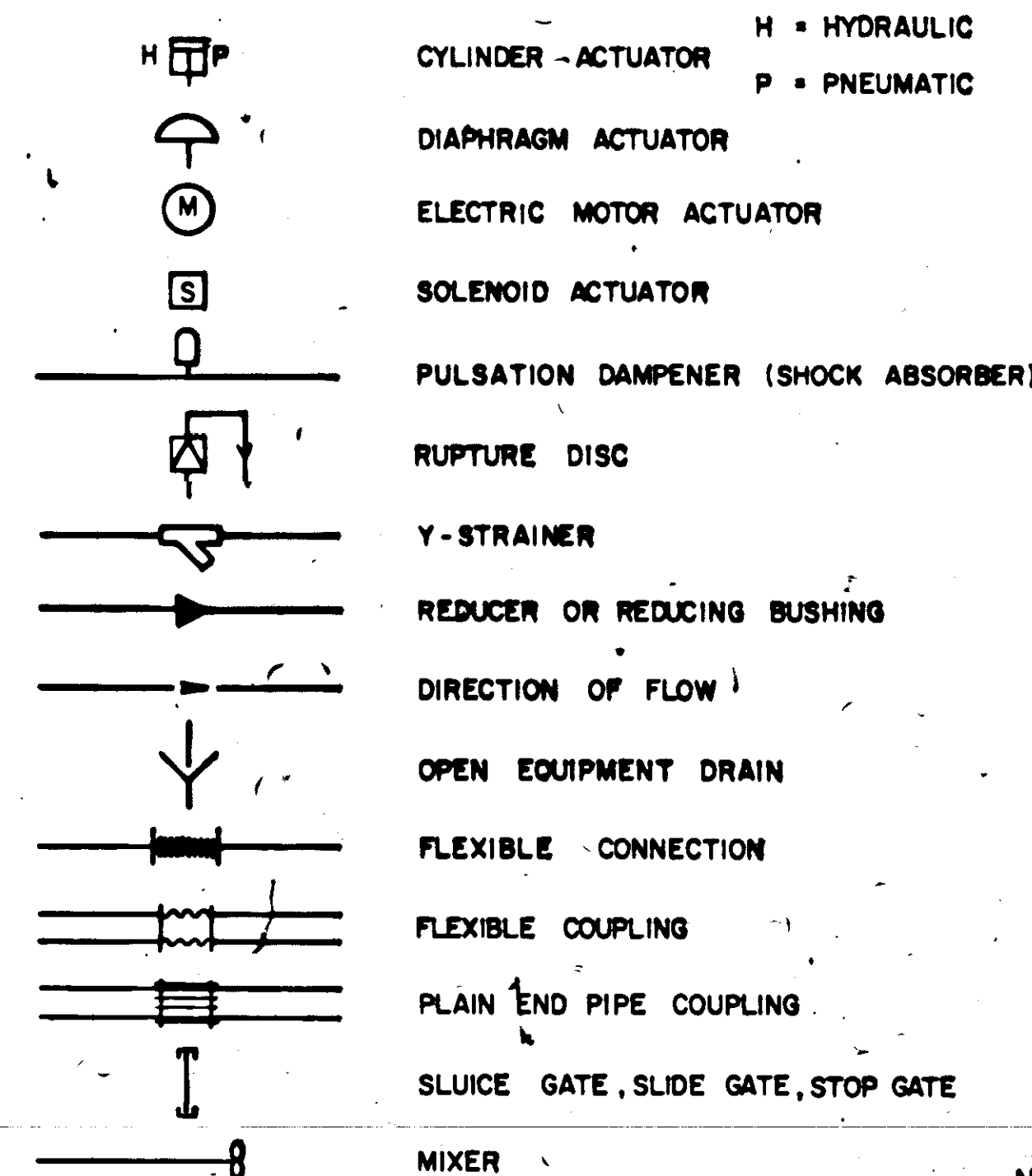
SPOT ELEVATIONS

STORM WATER RUNOFF FLOW DIRECTION

STREAM (SMALL)/DITCH

SHORE LINE

CLEAN OUT C.O.



VALVE ACTUATORS

H = HYDRAULIC
P = PNEUMATIC

CYLINDER - ACTUATOR

DIAPHRAGM ACTUATOR

ELECTRIC MOTOR ACTUATOR

SOLENOID ACTUATOR

PULSATION DAMPENER (SHOCK ABSORBER)

RUPTURE DISC

Y-STRAINER

REDUCER OR REDUCING BUSHING

DIRECTION OF FLOW

OPEN EQUIPMENT DRAIN

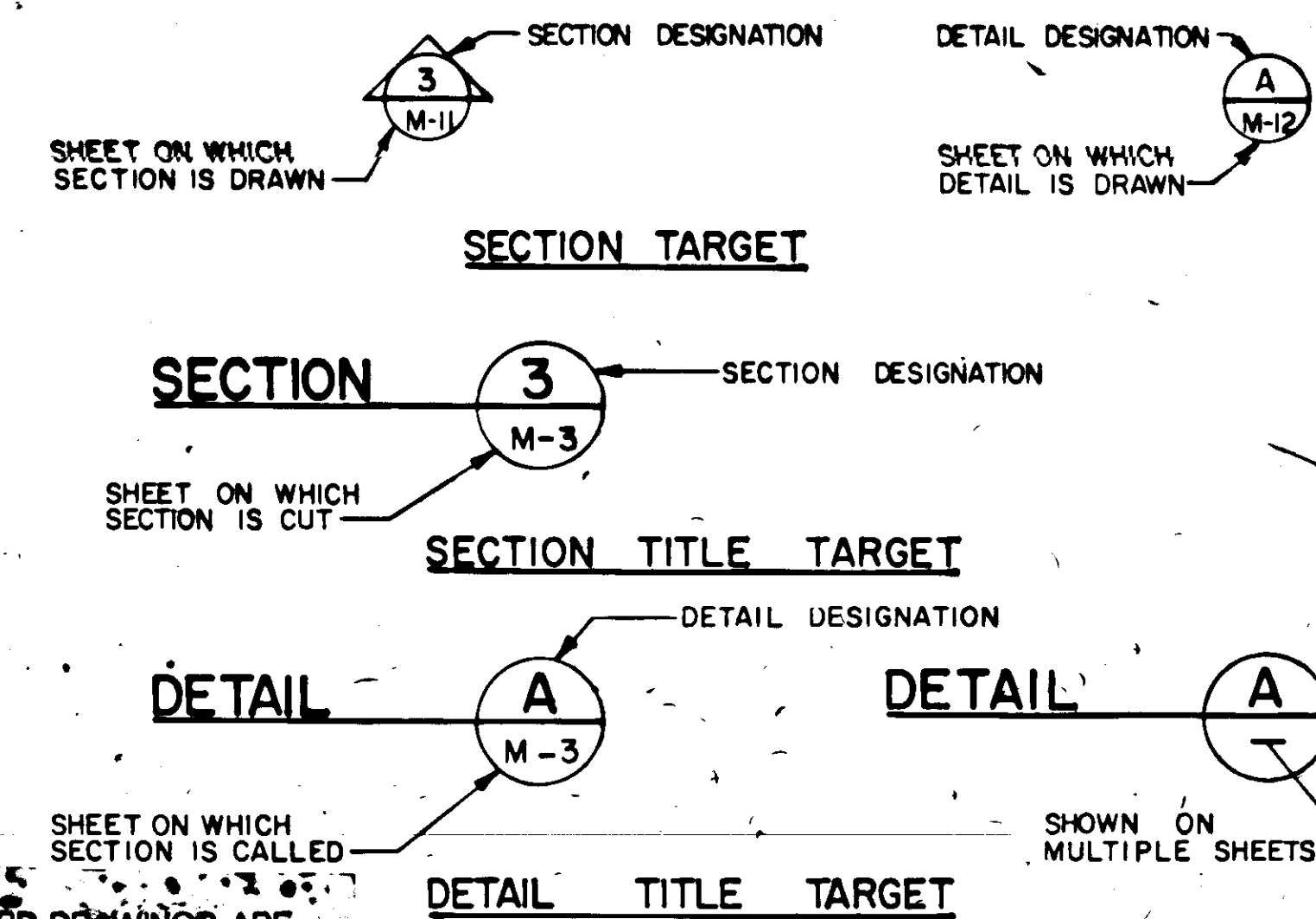
FLEXIBLE CONNECTION

FLEXIBLE COUPLING

PLAIN END PIPE COUPLING

SLUICE GATE, SLIDE GATE, STOP GATE

MIXER



NOTE: THESE RECORD DRAWINGS ARE BASED ON INFORMATION PROVIDED BY MANATEE COUNTY & THE CONTRACTOR.

DESIGNED BY C.J.F.	DATE 1/1/88	REMARKS
DRAWN BY J.L.A.	DATE 1/1/88	CONFORMED
CHECKED BY G.E.K.	DATE 1/1/88	
APPROVED BY J.P.M.	DATE 1/1/88	
SOUTHEAST SUBREGIONAL WASTEWATER TREATMENT FACILITIES		
LEGEND		
MANATEE COUNTY, FLORIDA		
T93		
PROJECT NO 6049-32		
SHEET NO G-3		

ABBREVIATIONS

PROCESS FLUID NOMENCLATURE

AL ALUM SOLUTION
AL.VT. ALUM VENT
AS ACTIVATED SILICA
ASPH. ASPHALT
ASV. ACTIVATED SILICA VENT

BA BLOWER AIR

CAP CORE AIR PURGE
CCW CLOSED LOOP COOLING WATER
CCWF CLOSED LOOP COOLING WATER FILL
CCWR CLOSED LOOP COOLING WATER RETURN
CHW CHEMICALLY CONDITIONED WATER (CLARIFIER INF)
CL2G CHLORINE (GAS)
CL2L CHLORINE (LIQUID)
CL2S CHLORINE SOLUTION
CL2V CHLORINE VENT
CLW CLARIFIED WATER (CLARIFIER EFF)
CR CORE RETURN
CS CONDITIONED SLUDGE
CW COLD WATER (POTABLE)
CWD COLD WATER DRAIN
CWP CORE WASH PURGE

D DRAIN
DA COMPRESSED DRIED AIR
DAL DISSOLVED ALUM
DAP DIAPHRAGM AIR PURGE
DAV DIAPHRAGM AIR VENT
DR DRIVE
DSS DILUTED SODIUM SILICATE

EV EVAPORATOR VENT

F FILTRATE
FAP FILTRATE AIR PURGE
FDV FLUORIDE DUST COLLECTOR VENT
FNW FINISH WATER
FO FUEL OIL
FOV FUEL OIL VENT
FS FLUORIDE SOLUTION
FV FLUORIDE VENT
FW FILTERED WATER

HPW HOT PLANT WATER (PROTECTED)

L.D. LIME (DRY)
LS LIME SLURRY
LV LIME VENT

NW RAW WATER (NON-POTABLE)

OA OZONATED AIR
OG OFF-GAS
OGE OFF-GAS EXHAUST
ORW OZONATED RAW WATER (RAPID MIX INF)
OVF OVER FLOW
OW OZONATED WATER

PA PURGE AIR (LIME SILOS)
PWD PLANT WATER DRAIN
PWW PLATE WASH WATER

RBA REGENERATION BLOWER AIR
RBE REGENERATION BLOWER EXHAUST
RW PLANT WATER (PROTECTED) REUSE WATER

SL SAMPLE LINE
SPW SPRAY WATER
SSF SODIUM SILICATE TANK FILL TANK
SSI SODIUM SILICATE
SV SODIUM SILICATE VENT
SW SQUEEZE WATER
SWR SQUEEZE WATER RETURN

TD TANK DRAIN
TS THICKENED SLUDGE

VA VENT AIR

WBW WASTE BACKWASH WATER
WS WASTE SLUDGE
WW WASTE WATER

PROCESS SYSTEMS

AL ALUM SYSTEM
AS ACTIVATED SILICA SYSTEM

BA BLOWER AIR SYSTEM

CC CLOSED LOOP COOLING SYSTEM
CH CHLORINE SYSTEM

DA COMPRESSED DRY AIR SYSTEM
DR DESICCANT REGENERATION SYSTEM

EG EMERGENCY GENERATION SYSTEM

FP FILTER PRESS SYSTEM
FS FLUORIDE SYSTEM

LS LIME SYSTEM

NW RAW WATER SYSTEM (NON POTABLE)

OA OZONATED AIR SYSTEM
OG OFF-GAS SYSTEM
OM OZONE MONITORING SYSTEM
OW OZONATED WATER SYSTEM

PR PRETREATED WATER SYSTEM

RW PLANT WATER SYSTEM (REUSE)

SL SLUDGE SYSTEM
SO SODIUM SILICATE SYSTEM

GENERAL

ADJ ADJUSTABLE
ADPT ADAPTER
A/C AIR CONDITIONING UNIT
ALUM ALUMINUM
L ANGLE
APPROX. APPROXIMATELY
AR ACID RESISTANT

A.B. ANCHOR BOLT
AND

@ AT
AUTO. AUTOMATIC
AUX. AUXILIARY

BFP BACKFLOW PREVENTER
BLDG. BUILDING
BLK. BLOCK
BM. BENCH MARK
BOT. BOTTOM
BTWN. BETWEEN

CAP CAPACITY
CAT CATALOG
CC CENTER TO CENTER
CFM. CUBIC FEET PER MINUTE
CFS. CUBIC FEET PER SECOND
CL CENTERLINE
CL2 CHLORINE
CL3 CEILING
CLR. CLEAR
C.M. CONCRETE MONUMENT
C.O. CLEAN OUT
COL. COLUMN
CONC. CONCRETE
CONST. CONSTRUCTION
CONT. CONTINUOUS
CPLG. COUPLING
CU. CUPPER
CU.FT. CUBIC FEET
CU.IN. CUBIC INCH
C.W. COLD WATER
CONN. CONNECTION
D DEPTH
DHW. DESIGN HIGH WATER
DIA. DIAMETER
DIAG. DIAGONAL
DIFF. DIFFUSER
DIM. DIMENSION
DISCH. DISCHARGE
DN. DOWN
DNG. DRAWING

E ELECTRIC UNDERGROUND
E.A. EACH
ECC. ECCENTRIC
ED EQUIPMENT DRAIN (FLUSH TYPE)
EF EACH FACE
EFF EFFLUENT
EL ELEVATION
ELEC. ELECTRIC
E.O.P. EDGE OF PAVEMENT
EQ. EQUAL
EQUIP. EQUIPMENT
ES EMERGENCY SHOWER
ET ELAPSED TIME
EW EACH WAY
EWU EYE WASH UNIT
EX EXHAUSTER
EXIST EXISTING
EXP EXPANSION

FD FLOOR DRAIN
FIG. FIGURE
FIN FINISHED
FIN GR. FINISHED GRADE
FLEX. FLEXIBLE
FLR FLOOR
FM FORCE MAIN
FNDN FOUNDATION
FT FEET
FTG. FOOTING

GA GAUGE
GALV. GALVANIZED
G.P.D. GALLONS PER DAY
G.P.H. GALLONS PER HOUR
G.P.M. GALLONS PER MINUTE
GSKT. GASKET
GYR. GYPSUM

H. HEIGHT
H.B. HOSE BIBB
H.P. HIGH POINT
HEX. HEXAGON
HGR. HANGER
H.O.A. HAND OFF-AUTOMATIC
HORIZ. HORIZONTAL
HS. HIGH SERVICE
HW. HOT WATER (POTABLE)
HWA. HIGH WATER ALARM
H.W.L. HIGH WATER LEVEL

I.D. INSIDE DIAMETER
IN. INCH
INFL. INFLUENT
INS. INSULATION
INST. INSTRUMENTATION
INV. INVERT
I.P. IRON PIPE
I.R. IRON ROD
JAN. JANITOR CLOSET
JCT. JUNCTION
JT. JOINT

K.U. KITCHEN UNIT
K.W. KEYWAY

L. LENGTH

LAB. LABORATORY
LAM. LAMINATED
LAV. LAVATORY
LB. POUND
L.F. LINEAL FEET
L.G. LONG
L.P. LOW POINT
LT. LIGHT
LWA. LOW WATER ALARM
LWL. LOW WATER LEVEL
L.S. LUMP SUM

MAT'L. MATERIAL
MAX. MAXIMUM
MCC. MOTOR CONTROL CENTER
MECH. MECHANICAL
MFD. MANUFACTURED
MFG. MANUFACTURING
MFR. MANUFACTURER
MGD. MILLION GALLONS PER DAY
MG/L. MILLIGRAMS PER LITER
MH. MANHOLE
MIN. MINIMUM
MISC. MISCELLANEOUS
MON. MONUMENT
MPH. MILES PER HOUR
MTD. MOUNTED
MWL. MEAN WATER LEVEL

NEC. NATIONAL ELECTRIC CODE
N.I.C. NOT IN CONTRACT
NO. NUMBER
NOM. NOMINAL
N.O.S. NATIONAL OCEANOGRAPHIC SERVICE
NTS. NOT TO SCALE

O.D. OUTSIDE DIAMETER
O/E OR EQUAL
OPNG. OPENING
OPP. OPPOSITE
OPT. OPTION

P. PIPE
PAV'T. PAVEMENT
P.C. POINT OF CURVE
PERF. PERFECTED
P.I. POINT OF INTERSECTION
PL. PLATE
PPM. PARTS PER MILLION
PRES. PRESSURE
P.S. PUMP STATION
P.S.F. POUNDS PER SQUARE FOOT
P.T. POINT OF TANGENCY
P.P. POWER POLE

R. RADIUS
RAS. RETURN ACTIVATED SLUDGE
R.D. ROOF DRAIN
REINF. REINFORCING
REQ'D. REQUIRED
RM. ROOM
RD. ROAD
R.P.M. REVOLUTIONS PER MINUTE
RR. RAILROAD
R/W. RIGHT OF WAY

SAN. SANITARY
S/W. SIDEWALK
SEC. SECTION
SHT. SHEET
SL. SLUDGE
SLV. SLEEVE
SPEC. SPECIFICATIONS
SQ. SQUARE
SQ. FT. SQUARE FEET
SQ. IN. SQUARE INCHES
S.S. STAINLESS STEEL
STA. STATION
ST.D. STANDARD
STL. STEEL
STRUCT. STRUCTURAL
SYMM. SYMMETRICAL
S.P. STANDARD PENETRATION

T. TELEPHONE UNDERGROUND CABLE
TAN. TANGENT
T.B. TOP OF BERM/BANK
T.B.B. TOP AND BOTTOM
TECH. TECHNICAL
TEL. TELEPHONE
TEMP. TEMPORARY
T.B.G. TONGUE & GROOVE
THK. THICK
TM. TELEMETER
TRANS. TRANSFER/TRANSFORMER
TV. TELEVISION
T.W.A.S. THICKENED WASTE ACTIVATED SLUDGE
TYP. TYPICAL
T.O.P. TOP OF PIPE

VAC. VACUUM
VAR. VARIOUS/VARIABLE
VB. VACUUM BREAKER
VERT. VERTICAL
VOL. VOLUME
V.S. VARIABLE SPEED
V.S.D. VARIABLE SPEED DRIVE
VT. VENT
V.T.R. VENT THRU ROOF
W. WIDTH
W/ WITH
W.A.S. WASTE ACTIVATED SLUDGE
WC. WATER CLOSET
WH. WATER HEATER
W.L. WATER LEVEL
W.M. WATER MAIN (POTABLE)
W/O. WITHOUT
WPF. WEATHERPROOF
WS. WATERSTOP
W.T.P. WATER TREATMENT PLANT
W.W.M. WELDED WIRE MESH
W.W.T.P. WASTEWATER TREATMENT PLANT
YD. YARD
YR. YEAR

PIPE MATERIALS

ACP. ABESTOS CEMENT PIPE
BSP. BLACK STEEL PIPE
C.S. CARBON STEEL
C.I. CAST IRON
C.I.P. CAST IRON PIPE
C.I.S.P. CAST IRON SOIL PIPE
C.M.P. CORRUGATED METAL PIPE
C.P.P. CONCRETE PRESSURE PIPE
Cu.P. COPPER PIPE
D.I. DUCTILE IRON
D.I.P. DUCTILE IRON PIPE
FR.P. FIBERGLASS REINFORCED PIPE
G.S.P. GALVANIZED STEEL PIPE
M.R.P.P. METAL REINFORCED PLASTIC PIPE
PE.P. POLYETHYLENE PIPE
P.P. POLYPROPYLENE
P.V.C. POLYVINYL CHLORIDE
UP.V.C. UN-PLASTICIZED POLYVINYL CHLORIDE
R.C.P. REINFORCED CONCRETE PIPE
ST.L.P. STEEL PIPE
S.S.P. STAINLESS STEEL PIPE
V.C.P. VITRIFIED CLAY PIPE
P.C.C.P. PRESSURE CONCRETE CYLINDER PIPE

VALVES, FITTINGS, & JOINTS

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

NOTE:
THESE RECORD DRAWINGS ARE
BASED ON INFORMATION PROVIDED
BY MANATEE COUNTY & THE
CONTRACTOR.

REMARKS

CONFORMED

CHD

DATE

DESIGNED BY

DRAWN BY

CHECKED BY

APPROVED BY

DATE

CAMP DRESSER & MCKEE INC.

FACILITIES

SOUTHEAST SUBREGIONAL WASTEWATER TREATMENT

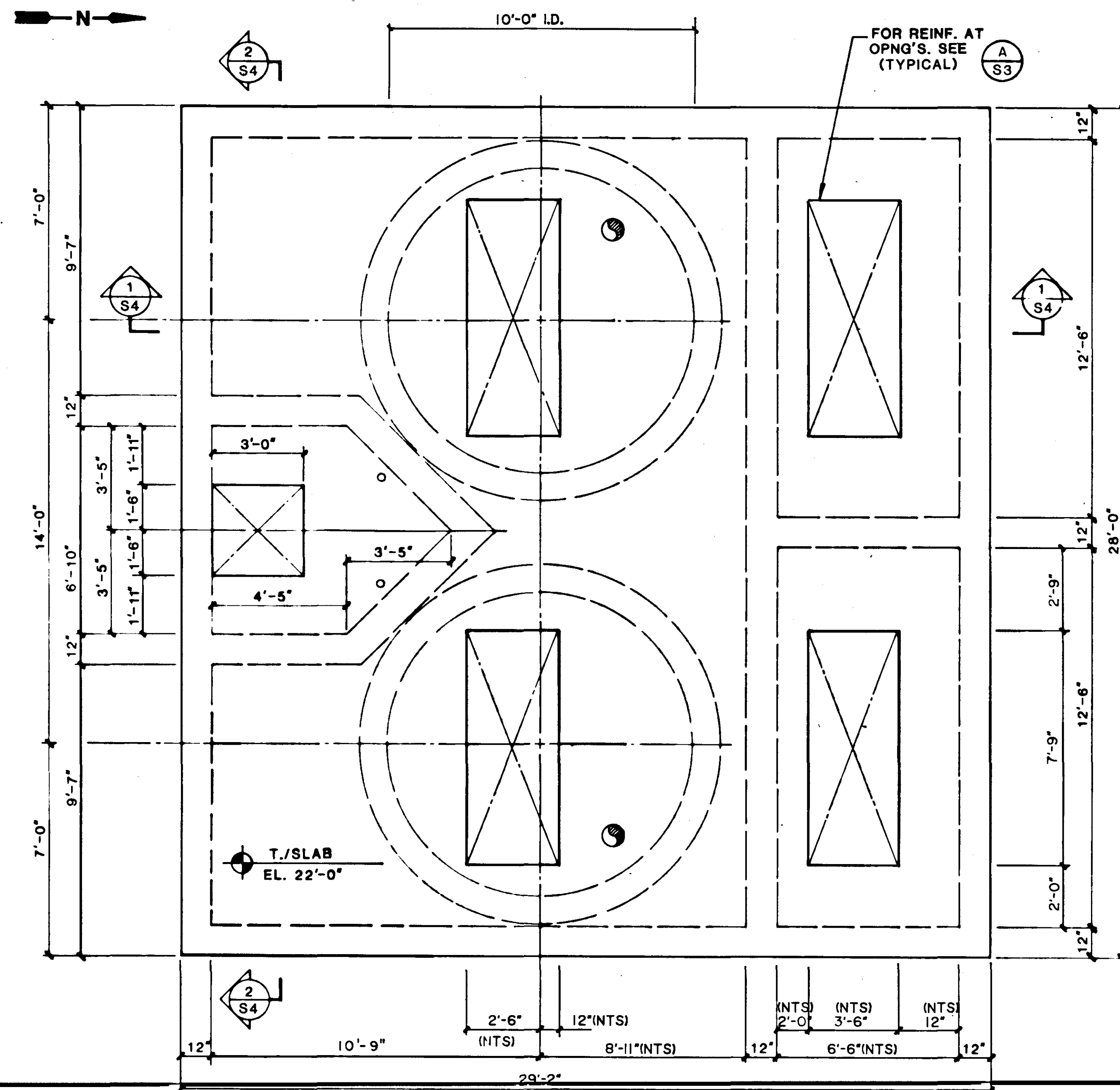
ABBREVIATIONS

MANATEE COUNTY, FLORIDA

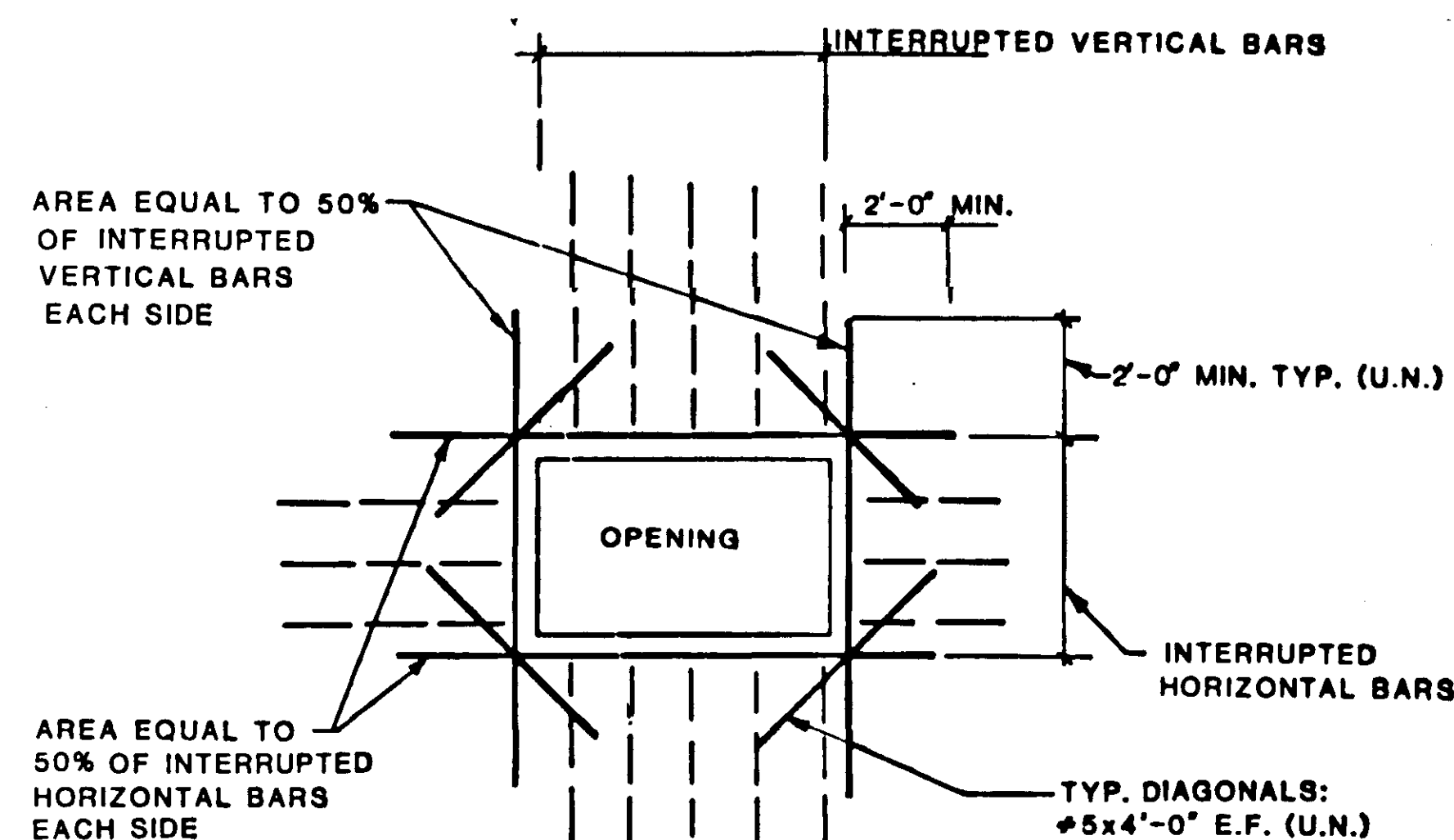
PROJECT NO
6049-32

SHEET NO

G-4

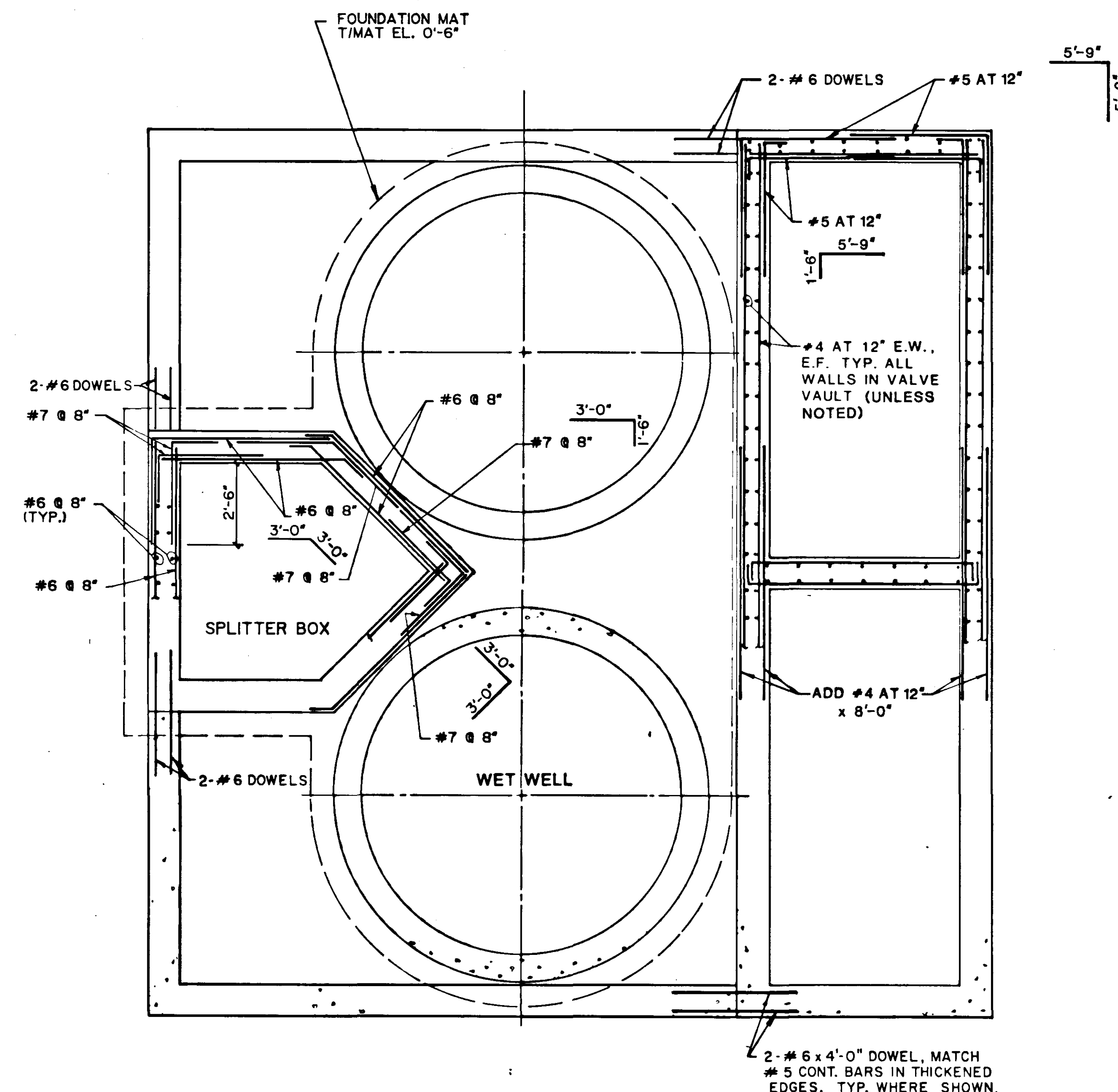


PLAN AT TOP OF STRUCTURE
SCALE: 3/8" = 1'-0"



REINF. AT RECTANGULAR OPENINGS A
FOR OPENINGS GREATER THAN 12"
N.T.S.

LIDS TO ALL STRUCTURES
WERE PRECAST

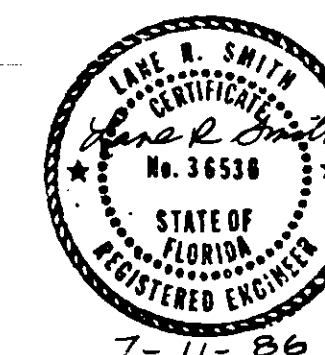


PLAN AT ELEVATION 21'-0"
SCALE: 3/8" = 1'-0"

NOTES:

- 1) FOR SIZE AND LOCATION OF ALL OPENINGS SEE MECH. DWG'S.
- 2) FOR ADDED REINF. AT OPENINGS SEE DETAIL A ON THIS DWG. & DETAILS A & B ON DWG. S4.
- 3) FOR GROUT LOCATIONS AND LIMITATIONS SEE MECH. DWG'S.

NOTE:
THESE RECORD DRAWINGS ARE
BASED ON INFORMATION PROVIDED
BY MANATEE COUNTY & THE
CONTRACTOR.



DRAWN	JAM	APPROVED	LRS
CHECKED	LRS	DATE	MAY 1985
SCALE	AS SHOWN	DRAWING NUMBER	85-162S-E3

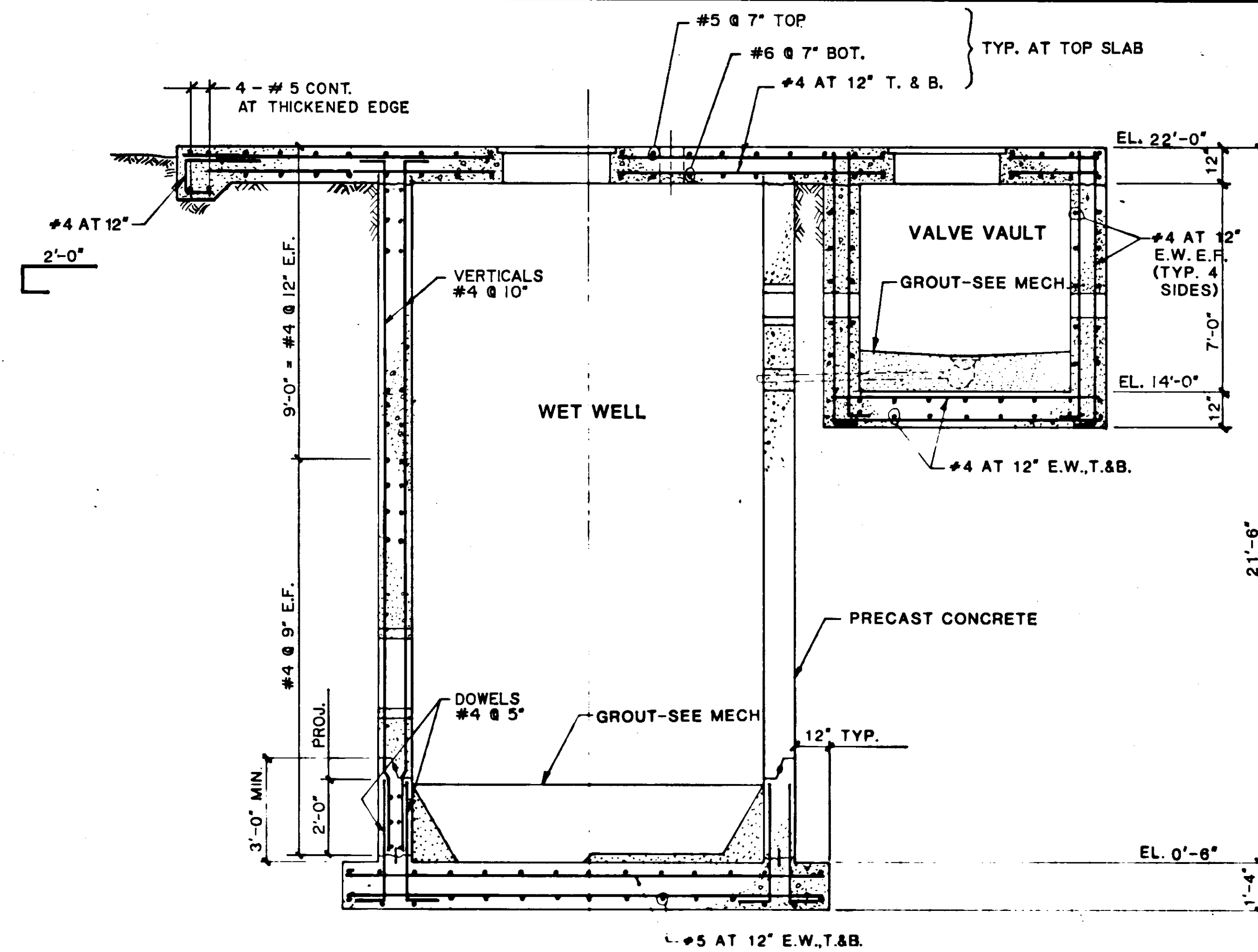
PROJECT NO	6049-32
SHEET NO	S-3

1 SOUTHSEAT SUBREGIONAL WASTEWATER TREATMENT FACILITIES
PUMP STATION #20
MANATEE COUNTY, FLORIDA

CAMP DRESSER & MCKEE INC.
CDM

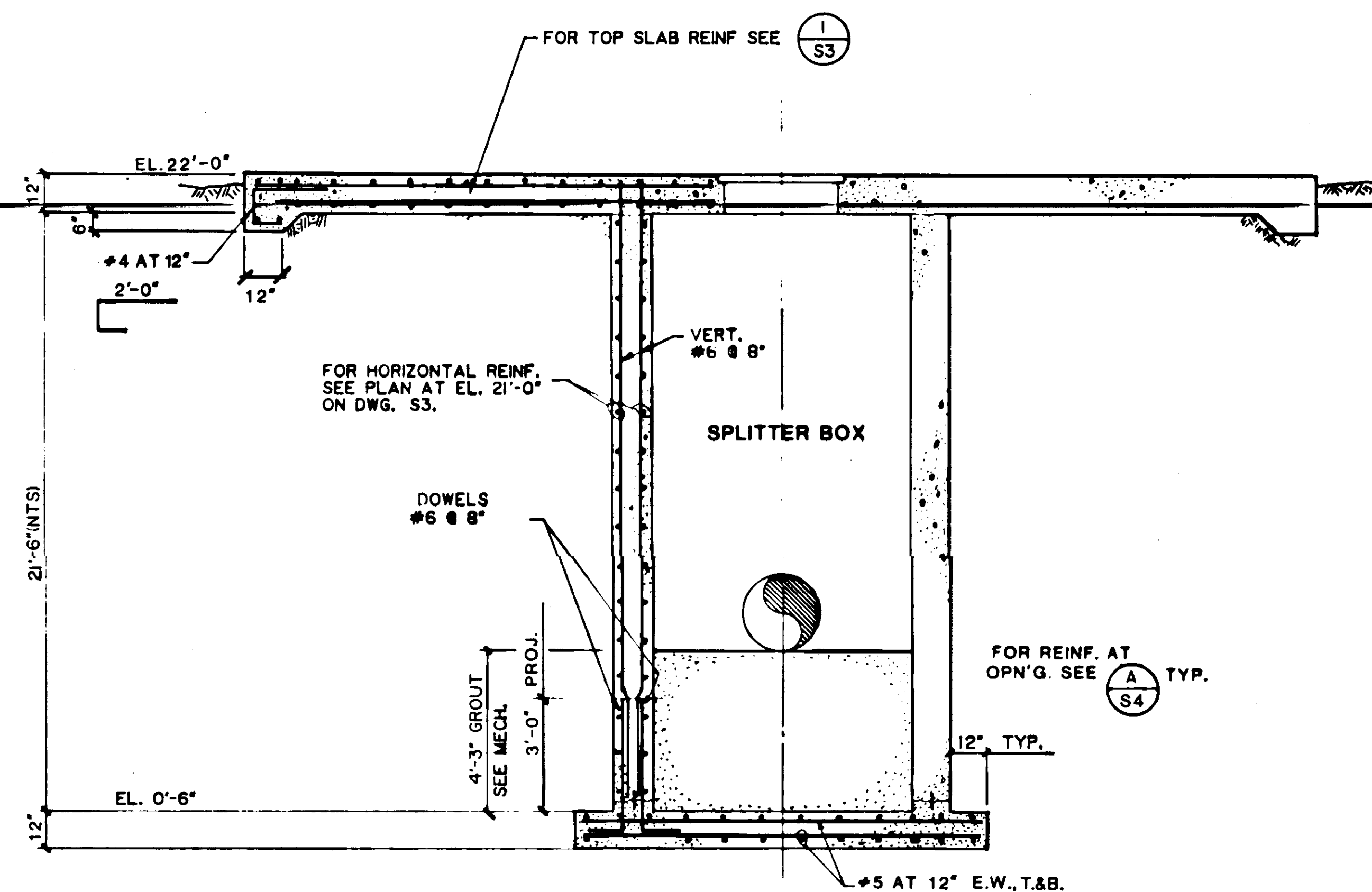
DATE 10/86
S.D.A. G.E.K.
CONFORMED

REMARKS

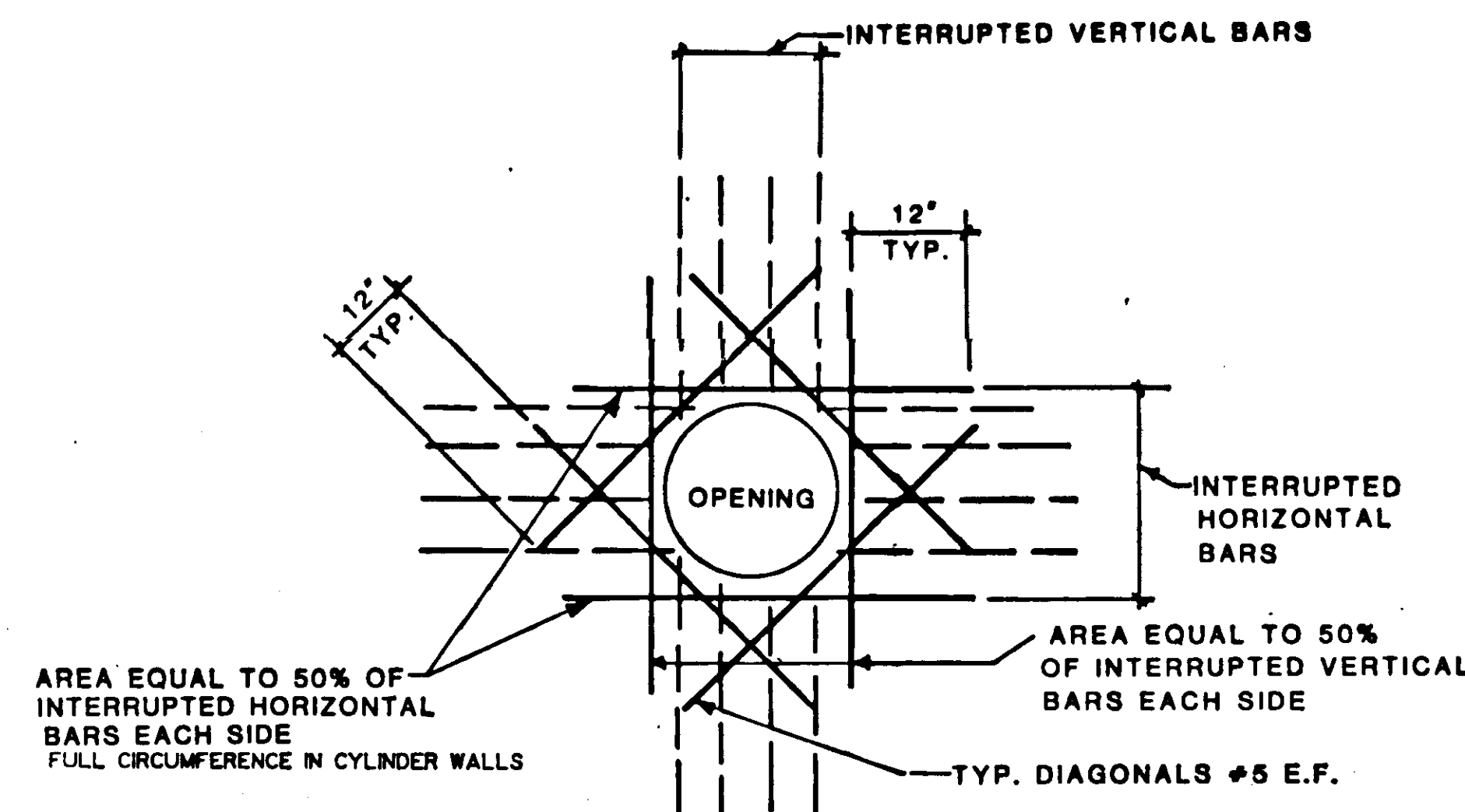


SECTION 1
SCALE: 3/8" = 1'-0"

ALL STRUCTURES ARE PRECAST



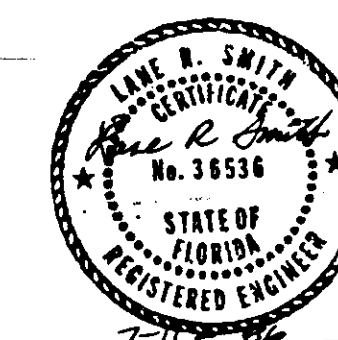
SECTION 2
SCALE: 3/8" = 1'-0"



REIN. AT CIRCULAR OPENINGS
FOR OPENINGS GREATER THAN 12"
N.T.S.

- NOTES:
- 1) FOR SIZE AND LOCATIONS OF ALL OPENINGS SEE MECH. DWG'S.
 - 2) FOR GROUT LOCATIONS AND LIMITATIONS SEE MECH. DWG'S.

NOTE:
THESE RECORD DRAWINGS ARE
BASED ON INFORMATION PROVIDED
BY MANATEE COUNTY & THE
CONTRACTOR.



DRAWN: JAM	APPROVED: LRS
CHECKED: LRS	DATE: MAY, 1985
SCALE: AS SHOWN	DRAWING NUMBER: 85-162S-E4

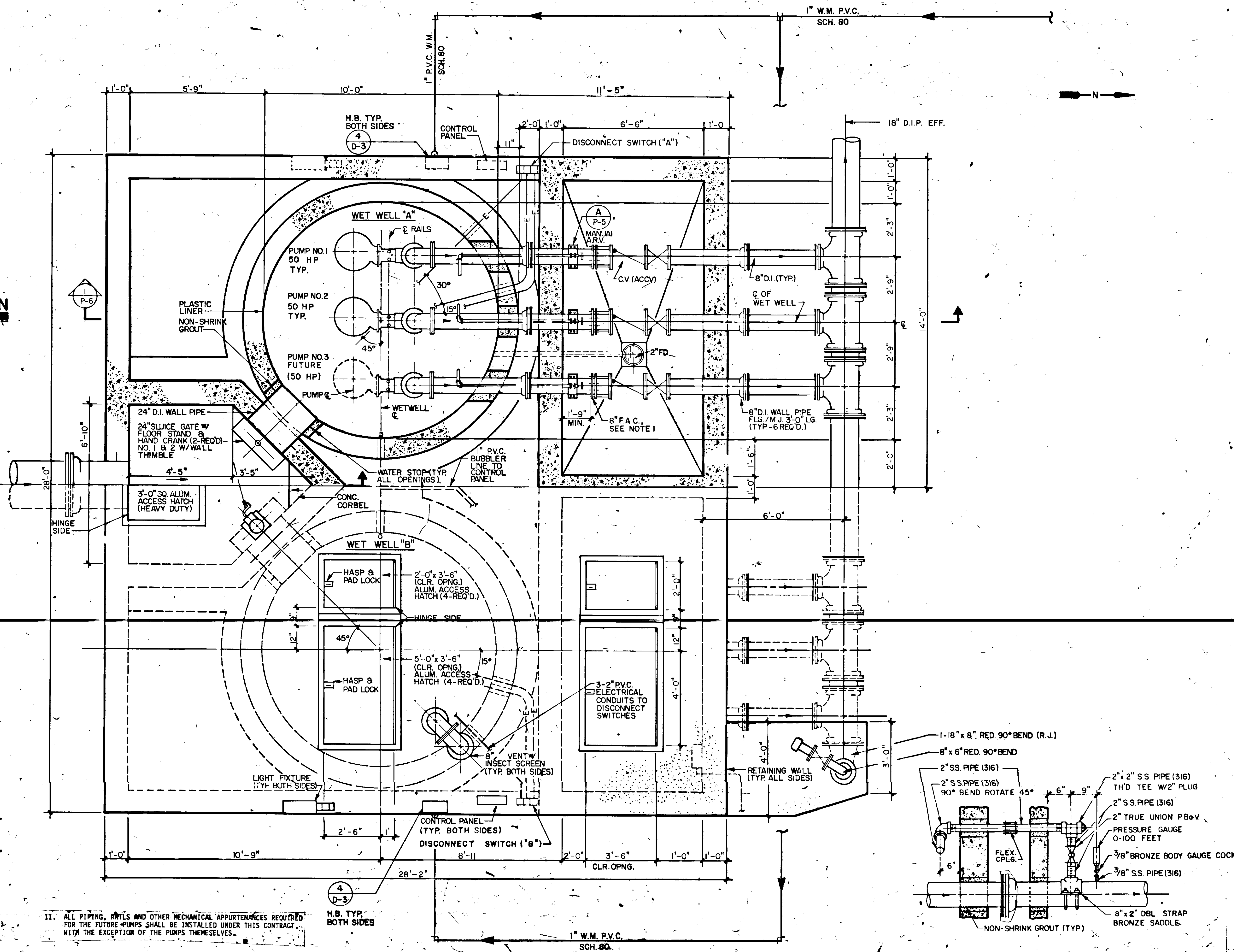
DESIGNED BY	CHECKED BY	APPROVED BY	DATE
DRAWN BY	10/86	SDA	G.E.K.
CONFORMED			
REMARKS			
CAMP DRESSER & MCKEE INC.			
SOUTHEAST SUBREGIONAL WASTEWATER TREATMENT FACILITIES			
PUMP STATION NO. 20			
MANATEE COUNTY, FLORIDA			
PROJECT NO. 6049-32			
SHEET NO. S-4			

1/2" ± 1'-0" (NTS)

PLAN AT
EL. 20.00
PLAN AT
EL. 22.27

1/2" = 1'-0" (N.T.S.)

- 1) SMIT: PLAIR (TYPE 913) OR DRESSER (STYLE 127) O/E. C.F. FLA. ADAPTER COUPLINGS AND HARNESSSED WITH A MINIMUM OF 4 LOCKING PINS. TEST PRESSURE RATING, 150 PSI MINIMUM.
- 2) WET WELL SHALL BE CONSTRUCTED OF 6'-0" MAXIMUM SECTIONS OF REINFORCED CONCRETE PIPE, IN ACCORDANCE WITH ASTM C-478, WALL THICKNESS, ASTM C-76, WALL "B." WHENEVER POSSIBLE NO OPENING SHALL BE WITHIN 12" OF THE END OF ANY SECTION.
- 3) ALL COMPACTED BACKFILL WHERE INDICATED SHALL BE COMPACTED IN 12" MAX. LAYERS @ 98% DENSITY OF THE ORIGINAL UNDISTURBED MATERIAL IN CONFORMANCE WITH AASHTO T80.
- 4) ALL EQUIPMENT, ANCHOR BOLT SIZES, LOCATIONS, CLEARANCES, ETC. SHALL BE IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE APPROVED SHOP DRAWINGS.
- 5) ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A BITUMASTIC COATING (2 COATS, 9 MILS EACH COAT).
- 6) ALL PUMPING STATION WORK SHALL CONFORM TO THE APPROPRIATE SECTIONS IN THE SPECIFICATIONS.
- 7) DARLING, MUELLER, CLOW O/E, AIR CUSHION SWING CHECK VALVE, IRON BODY, SPRING MOUNTED WITH OUTSIDE WEIGHTED LEVERS. EQUIPMENT DESIGN OPERATING PRESSURE SHALL BE A MINIMUM 150 PSI. EXTERNAL PARTS FURNISHED SHALL BE TWO (2) FOR RIGHT HAND AND ONE (1) FOR LEFT HAND OPERATOR.
- 8) ALL STRUCTURES EXCEPT WHERE P.V.C. LINER IS SHOWN SHALL BE COATED WITH BITUMASTIC OUTSIDE AND EPOXY INSIDE.
- 9) CONTRACTOR SHALL PROVIDE AND INSTALL ONE ADDITIONAL SPAN 2" CONDUIT FROM EACH WET WELL TO EACH CONTROL PANEL.
- 10) WETWELL "A" & WETWELL "B" ARE THE SAME EXCEPT OPPOSITE HAND.



NOTE: THESE RECORD DRAWINGS ARE BASED ON INFORMATION PROVIDED BY MANATEE COUNTY & THE CONTRACTOR.

NTS

MANATEE COUNTY, FLÓRIDA

SHEET NO
P-5

1

DRAWN BY	B.L.G.	Δ	8/86	S.D.A.	G.E.K.	ADDENDUM NO. 1
CHECKED BY	GEK	Δ	8/86	S.D.A.	G.E.K.	ADDENDUM NO. 2
APPROVED BY	WFM	—	10/86	S.D.A.	G.E.K.	CONFORMED
	MAY 1986					

CDM

environmental engineers scientists

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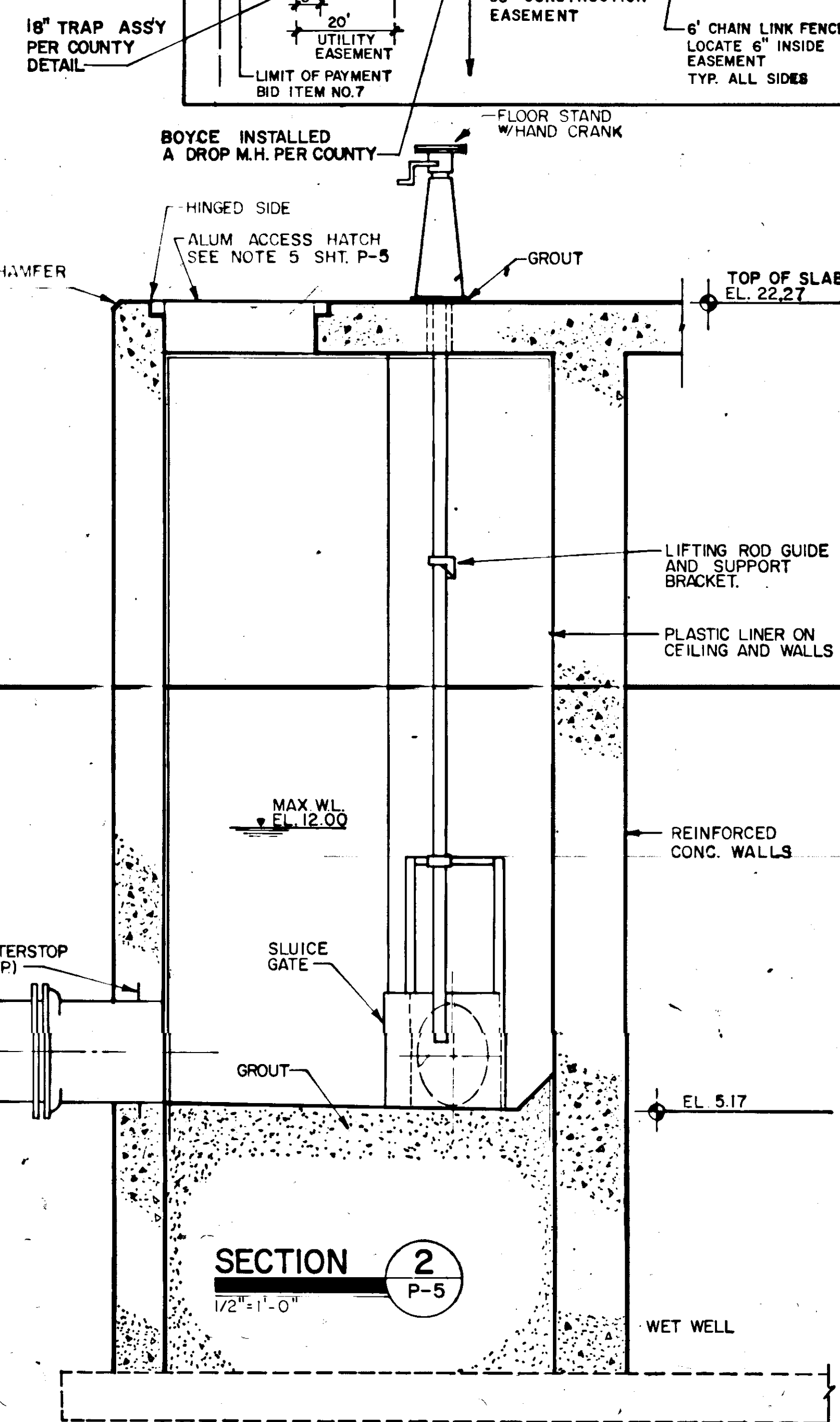
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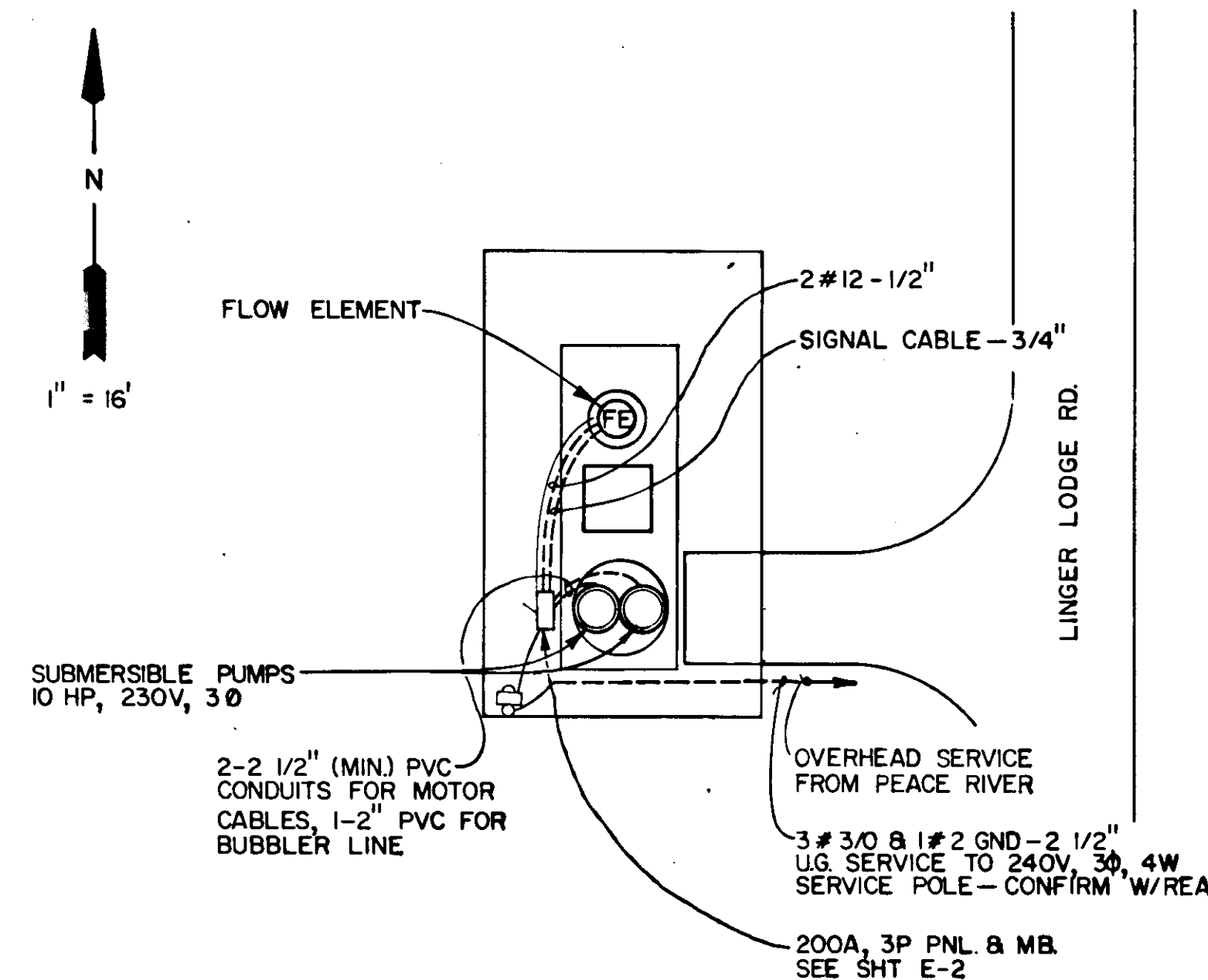
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2. Q.

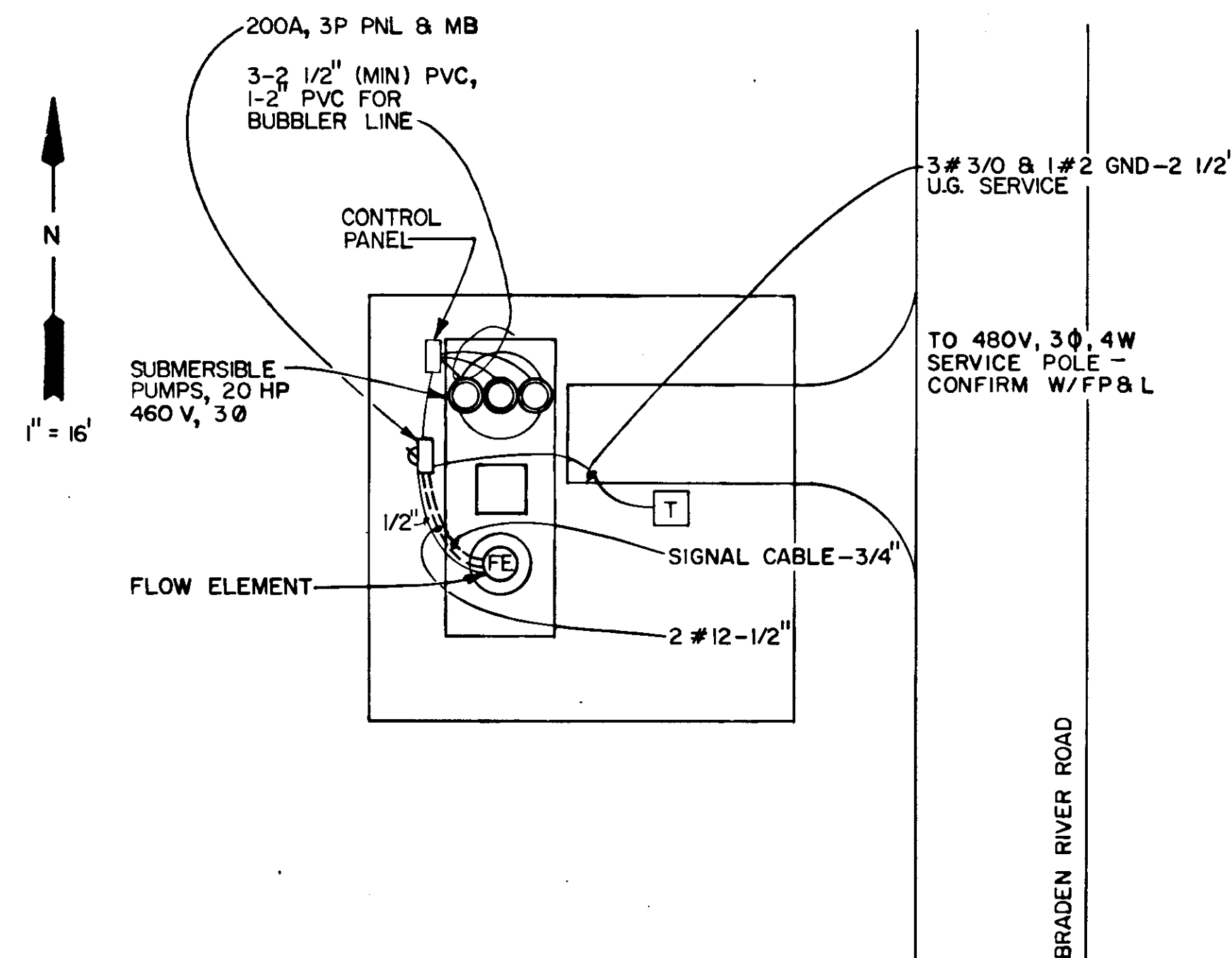
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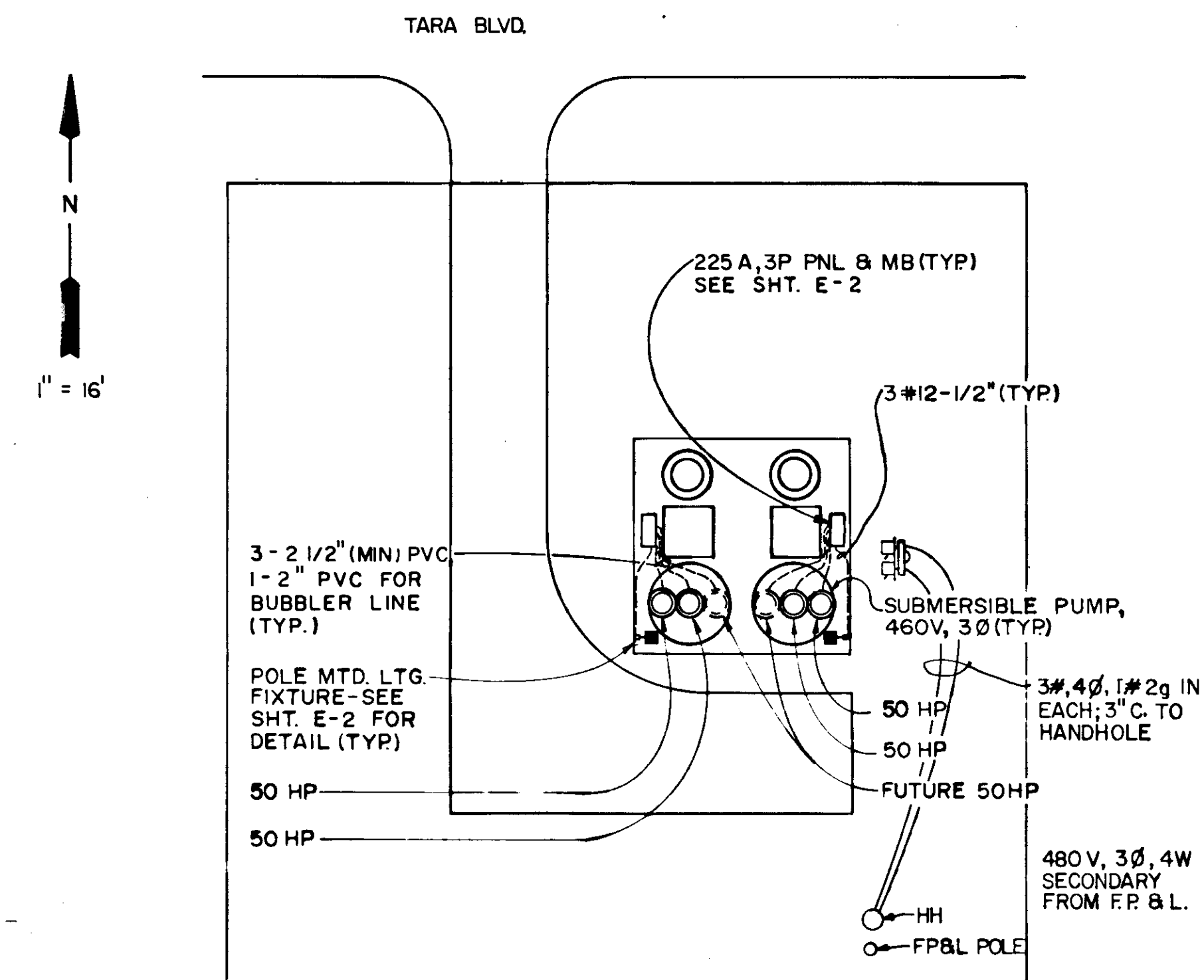
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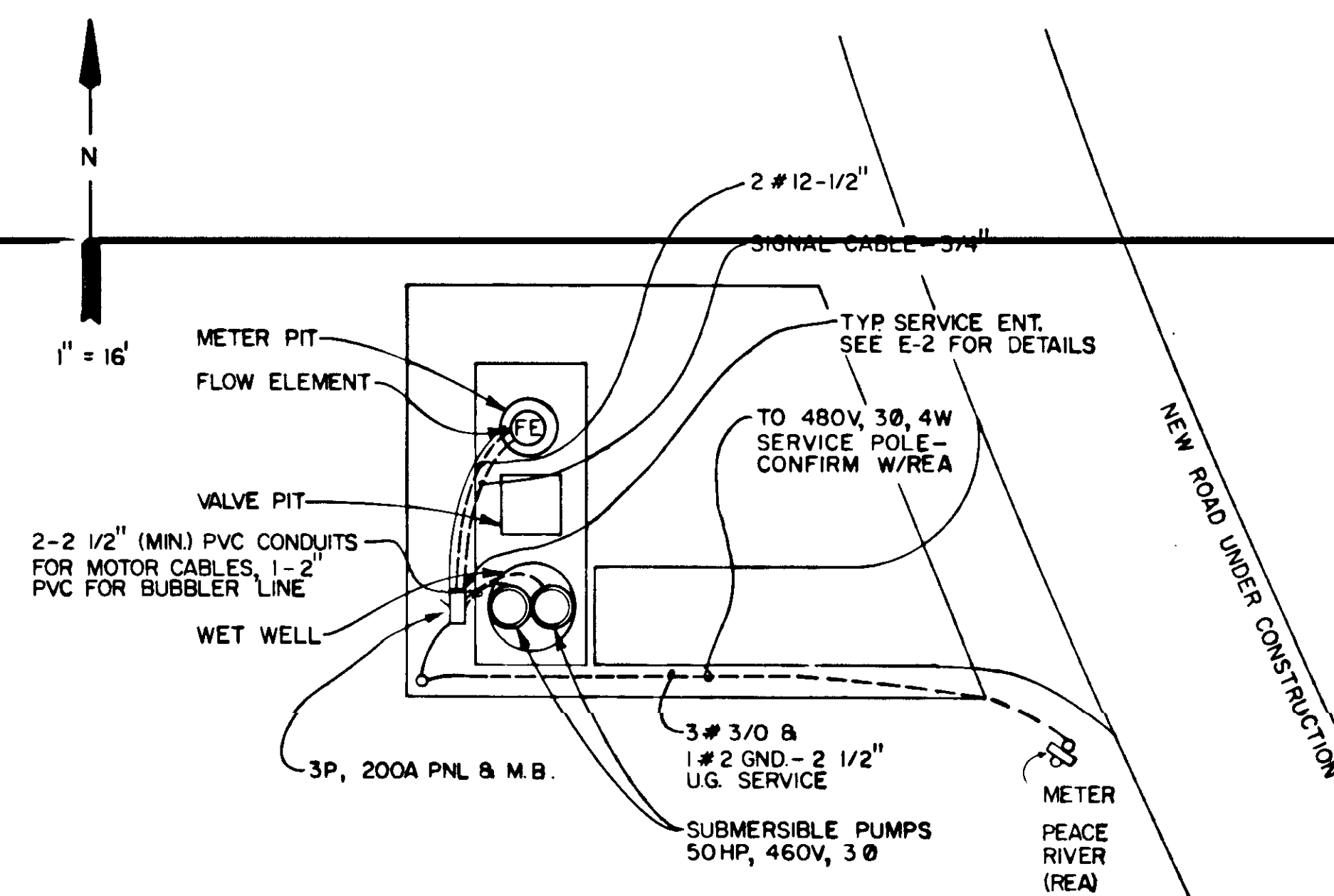
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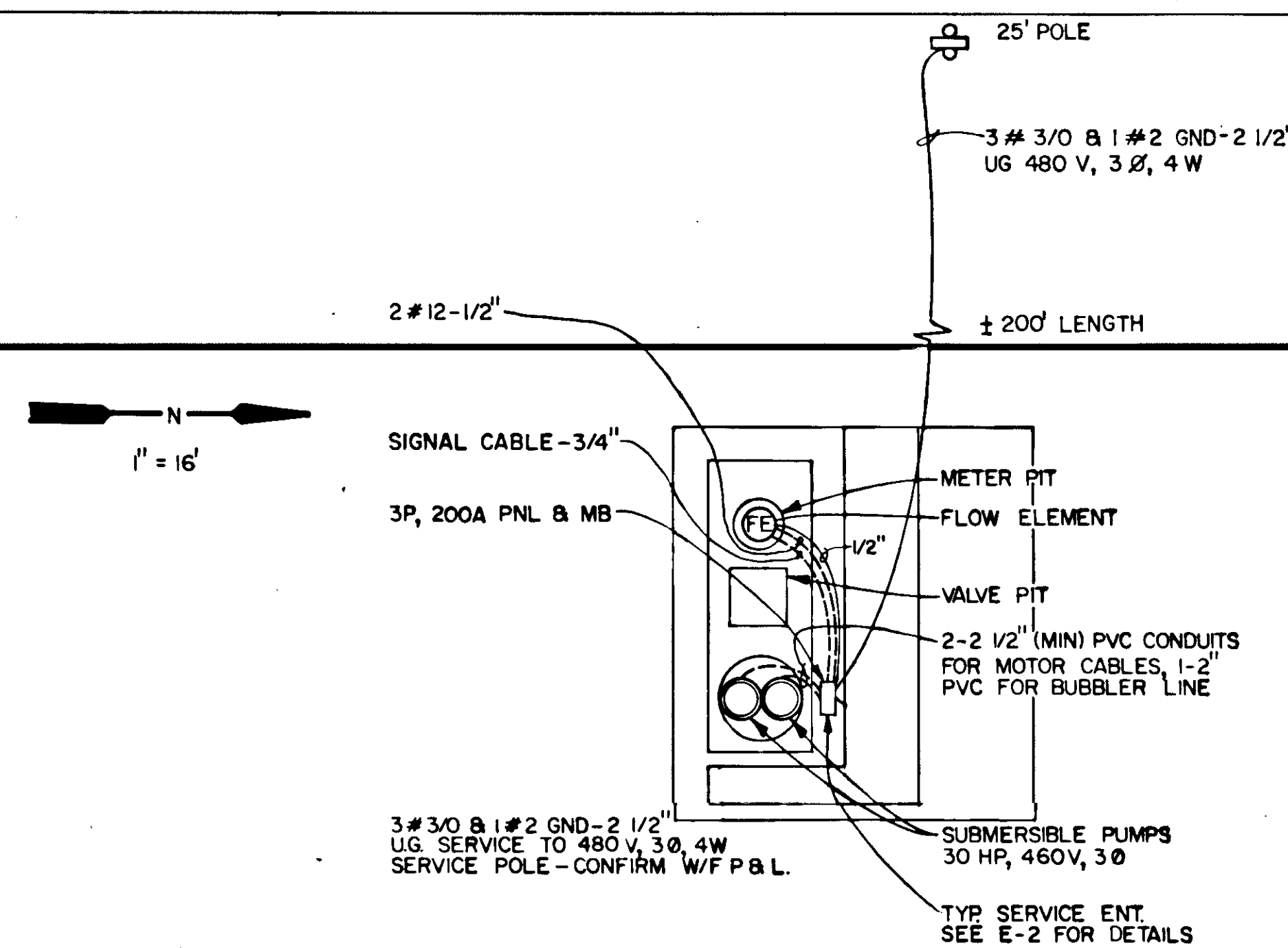
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PUMP STATION NO. 20



PUMP STATION NO. 18



PUMP STATION NO. 19

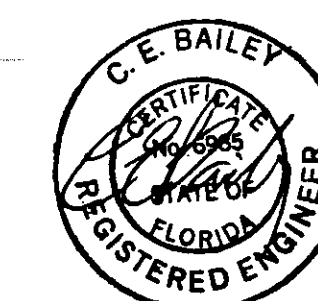
LEGEND

- CONDUIT IN/OR UNDERFLOOR OR UNDERGROUND
- UG UNDERGROUND
- MOTOR
- FE FLOW ELEMENT
- ⌵ MAIN CIRCUIT BREAKER

NOTES

1. DO NOT SCALE THE DRAWINGS. REFER TO THE MECHANICAL, STRUCTURAL DRAWINGS, APPROVED BY THE SHOP DRGWS FOR THE EXACT LOCATION OF ALL EQUIPMENT.
2. ALL WORK SHALL COMPLY WITH N.E.C. AND LOCAL CODES.

NOTE:
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BASED ON INFORMATION PROVIDED
BY MANATEE COUNTY & THE
CONTRACTOR.



C. E. BAILEY & ASSOCIATES, INC.
CONSULTING ENGINEERS
FORT LAUDERDALE, FLORIDA

SOUTHEAST SUBREGIONAL WASTEWATER TREATMENT FACILITIES
SUBMERSIBLE PUMP STATIONS
ELECTRICAL SITE PLANS
MANATEE COUNTY, FLORIDA

T114
PROJECT NO.
6049-32

SHEET NO.
E-1

CAMP DRESSER & MCKEE INC.

DESIGNED BY: RAH
DRAWN BY: TRH
CHECKED BY: CEB
APPROVED BY: [Signature]
DATE: 10/86

REMARKS
ADDENDUM NO. 1
ADDENDUM NO. 2
CONFORMED

CDM
environmental engineers • scientists
planners & management consultants

