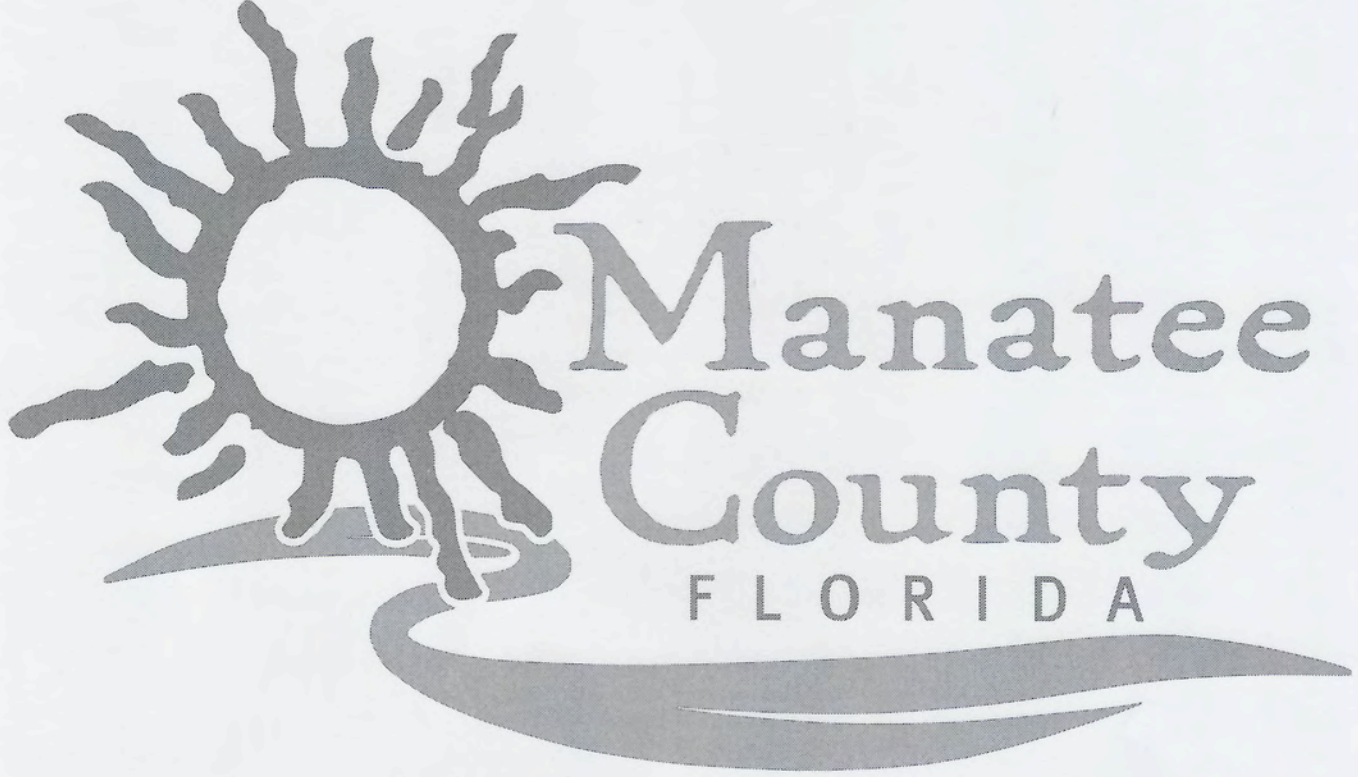
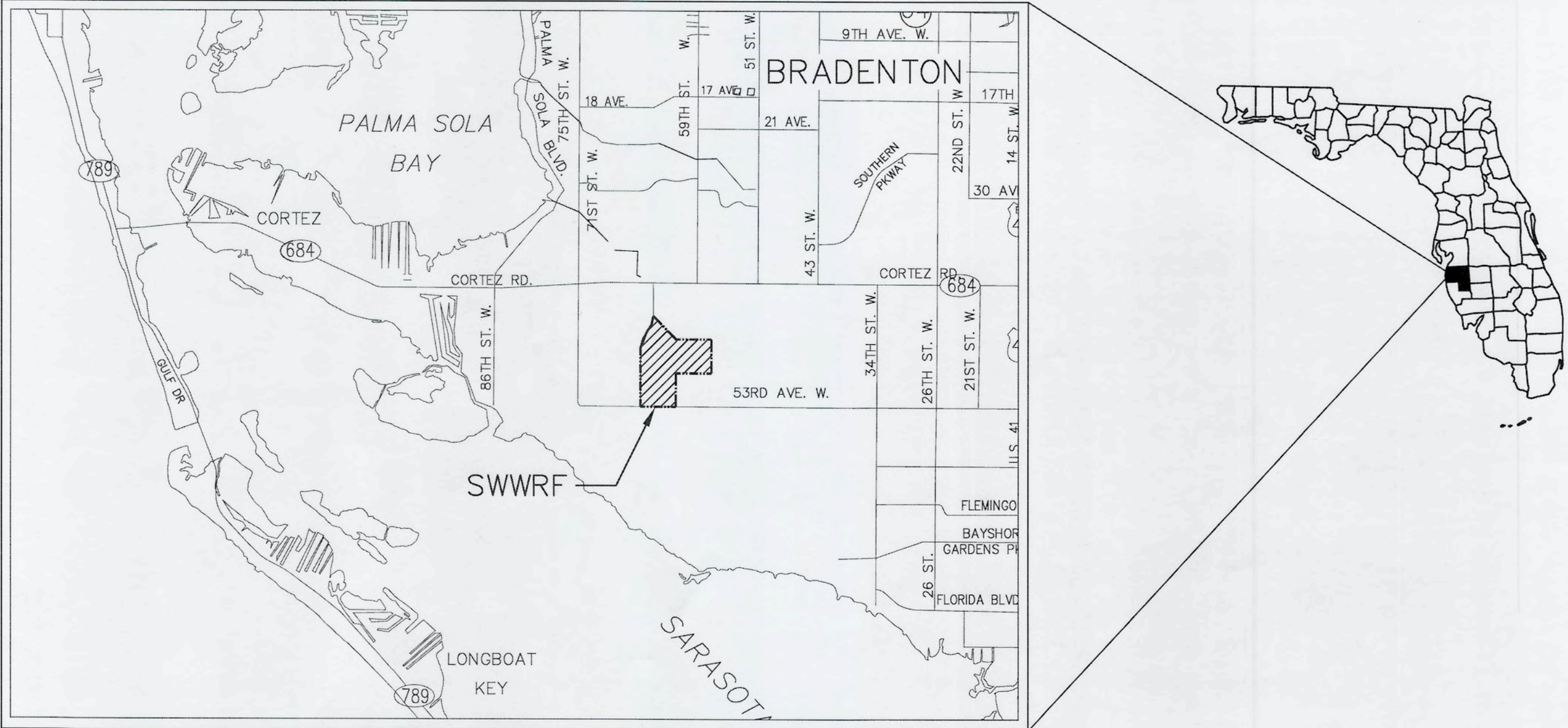


SOUTHWEST WATER RECLAMATION FACILITY CHLORINE CONTACT CHAMBER REHABILITATION AND RECHARGE WELL PUMP STATION

COUNTY PROJECT No. 6091780
ISSUED FOR BID
SEPTEMBER 2019

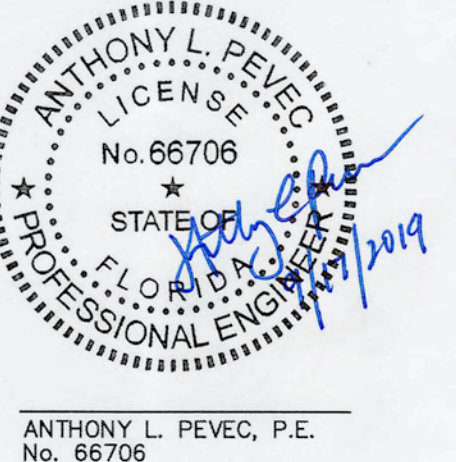


MANATEE COUNTY, FLORIDA



PROJECT VICINITY MAP
SECTION 35S, TOWNSHIP 18E, RANGE 1

MCKIM & CREED
1365 Hamlet Avenue
Clearwater, FL 33756
Phone: (727)442-7196, Fax: (727)461-3827
CA Lic No. 29588
www.mckimcreed.com

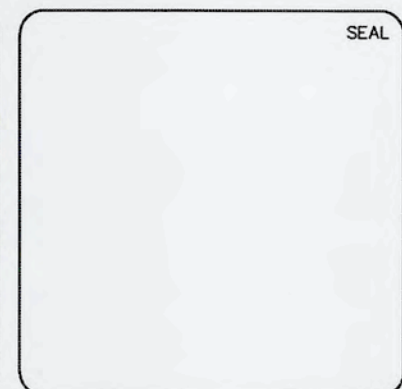
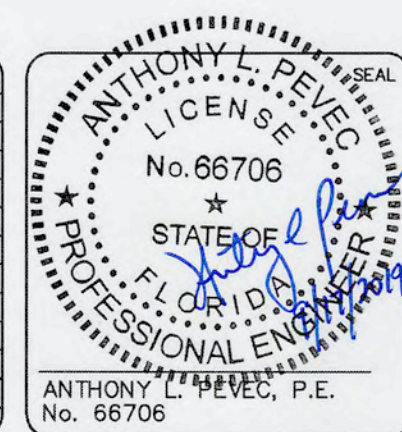


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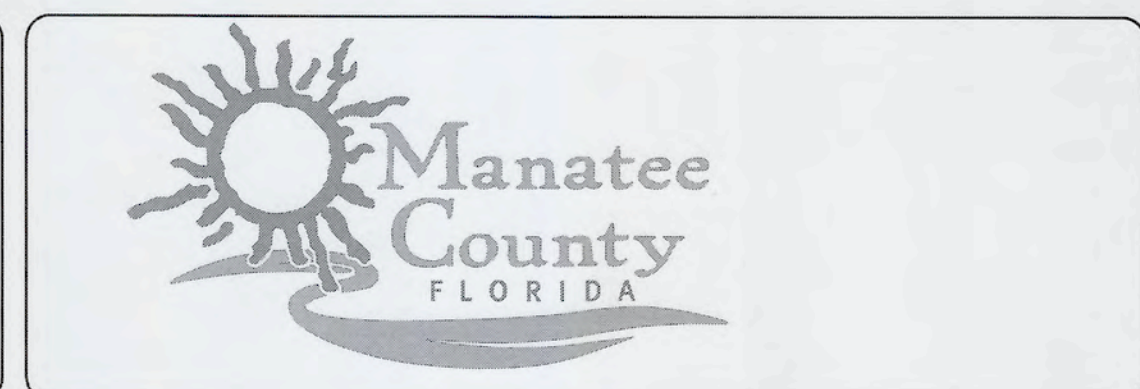
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REV. NO.	DESCRIPTIONS	DATE



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**SWWRF
 CCC REHAB AND
 RECHARGE WELL PS PROJECT**

INDEX OF SHEETS

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: NA	G-02
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR.: TP		

STATUS: ISSUED FOR BID	REVISION
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GENERAL NOTES

- THESE PLANS ARE SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE EXISTING CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK. CONTRACTORS ARE DIRECTED TO CONDUCT WHATEVER INVESTIGATION THEY DEEM NECESSARY, PRIOR TO BIDDING, TO DETERMINE THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED.
- LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) AFFECTING HIS WORK.
- THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN WRITTEN CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, STORM DRAINS, SEWERS, UTILITIES, AND OTHER FACILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR ANY DAMAGES DUE TO HIS CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER.
- WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURERS' MAXIMUM RECOMMENDED DEFLECTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE EXISTING DRAINAGE SYSTEM WITHIN THE LIMITS OF THE PROJECT AREA FOR THE DURATION OF THE PROJECT.
- THE CONTRACTOR SHALL PROVIDE CERTIFIED RECORD DRAWINGS AS OUTLINED IN THE SPECIFICATIONS. RED-LINE DRAWINGS SHALL BE CURRENT WITH EACH PAY APPLICATION SUBMITTED AND WILL BE CHECKED AS PART OF THE PAY APPLICATION REVIEW PROCESS. PAYMENT WILL NOT BE MADE TO CONTRACTOR WITHOUT APPROVED RED-LINE DRAWINGS.
- FIELD CONDITIONS MAY NECESSITATE ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED PIPELINES TO AVOID CONFLICTS. NO ADDITIONAL PAYMENT SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND THE OWNER'S ENGINEER.
- THE CONTRACTOR SHALL INCLUDE IN HIS BID: BY-PASS PUMPING FACILITIES, PUMPS, FITTINGS, LABOR, ETC, AS NECESSARY, BASED ON METHOD AND SEQUENCE OF CONSTRUCTION TO COMPLETE ALL WORK WHILE MAINTAINING THE EXISTING WASTEWATER TREATMENT PLANT OPERATIONS AT ALL TIMES.
- ALL PROPOSED WORK SHALL BE COORDINATED WITH WASTEWATER TREATMENT PLANT PERSONNEL AND MANATEE COUNTY UTILITIES DEPARTMENT AT LEAST TWO WEEKS IN ADVANCE OF PROPOSED CONSTRUCTION.
- THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL OF ALL PIPE CONNECTIONS, TRANSITIONS, AND SPECIALS PRIOR TO FABRICATION OR DELIVERY TO THE JOB SITE.
- CONNECTIONS TO EXISTING FACILITIES SHALL BE ACCOMPLISHED IN A NEAT WORKMANLIKE MANNER. WHEN FIELD CONDITIONS INDICATE ANY VARIANCE FROM DETAILED METHODS, THE CONTRACTOR SHALL PROVIDE COMPREHENSIVE AND DETAILED DRAWINGS FOR OWNER REVIEW AND APPROVAL PRIOR TO MAKING THE CONNECTIONS.
- UNLESS OTHERWISE INDICATED OR APPROVED, ALL BELOW GROUND DUCTILE IRON PIPE SHALL HAVE PUSH-ON OR MECHANICAL JOINTS, AND ALL ABOVE GROUND DUCTILE IRON PIPE SHALL HAVE FLANGED JOINTS. ALL JOINTS SHALL BE FULLY RESTRAINED.
- ALL PIPELINES SHALL HAVE A MINIMUM COVER OF 36" BELOW EXISTING GRADE UNLESS OTHERWISE NOTED OR DIRECTED.
- WATER SHALL NOT BE PERMITTED IN EXCAVATIONS AND TRENCHES DURING CONSTRUCTION. DEWATERING IS REQUIRED TO A MINIMUM OF 18" BELOW BOTTOM OF EXCAVATION.
- THE CONTRACTOR SHALL NOT ALLOW ANY DISCHARGE OF WASTEWATER TO LANDS AND/OR ADJACENT WATER BODIES OR STORM DRAINS. ANY LEAKAGE MUST BE CONTAINED AND TRANSFERRED BY THE CONTRACTOR TO THE PLANT DRAIN PUMP STATION AT THE WASTEWATER TREATMENT PLANT.
- ALL EXPOSED PIPING SHALL BE PAINTED WITH DESIGNATED COLORS ASSOCIATED WITH THEIR USAGE AS PROVIDED IN THE SPECIFICATIONS.
- ALL NEW PIPELINES SHALL BE FLUSHED, PRESSURE TESTED, AND APPROVED PRIOR TO TIE-INS TO EXISTING FACILITIES. THE CONTRACTOR WILL BE ALLOWED TO USE TEMPORARY PLUGS FOR PRESSURE TESTING.
- ALL CONCRETE THRUST BLOCKS INSTALLED FOR TESTING PURPOSES AND NOT REQUIRED FOR THE PIPELINE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE.
- CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR ALL SURFACE WATER DRAINAGE STRUCTURES AND DITCHES DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL BE REQUIRED TO INSTALL ALL EROSION, SEDIMENT AND TURBIDITY CONTROL MEASURES PRIOR TO CONSTRUCTION OF ANY COMPONENTS ASSOCIATED WITH THE PROJECT. SEDIMENT CONTROL INCLUDES SILT DAMS, TRAPS, EROSION PROTECTION, AND ANY OTHER APPURTENANCES NEEDED BUT NOT NECESSARILY SHOWN ON THESE DRAWINGS.
- CONTRACTOR SHALL PROVIDE PROTECTIVE MATTING, FUEL CONTAINMENT AND ALL OTHER MATERIALS, EQUIPMENT AND LABOR TO PROTECT THE STAGING AREA DURING CONSTRUCTION.
- CONTRACTOR SHALL, PRIOR TO BEGINNING CONSTRUCTION, SUBMIT A "FUELING SPILL PREVENTION PLAN" THAT SHALL CLEARLY INDICATE HOW FUEL SPILLS WILL BE PREVENTED WHEN FUELING BOTH WITHIN AND OUTSIDE OF THE STAGING AREA.
- CONTRACTOR SHALL SUBMIT A DEWATERING PLAN FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH THE BMPS IDENTIFIED IN CHAPTER 4, 4.40 "DEWATERING" OF "THE FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL".
- CONTRACTOR SHALL COORDINATE WORK SUCH THAT THE PLANT SHALL STAY IN OPERATION AT ALL TIMES.
- LINE INACTIVATIONS SHALL BE CONCLUDED AT OFF PEAK TIMES AS DICTATED BY PLANT OPERATIONS STAFF.
- CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR, LICENSED IN THE STATE OF FLORIDA TO PERFORM CONSTRUCTION STAKING IN ACCORDANCE WITH RULE 61G17-6.004 (3) OF THE FLORIDA ADMINISTRATIVE CODE.

RESTORATION AND MISCELLANEOUS NOTES

- THE CONTRACTOR SHALL PROVIDE AN ASPHALT PATCH FOR TRENCH AREAS CONSTRUCTED IN EXISTING ROADWAYS. ADJUST ALL CASTINGS TO MATCH NEW PAVEMENT SURFACE.
- THE CONTRACTOR SHALL REPLACE ALL EXISTING PAVING, STABILIZED EARTH, CURBS, SIDEWALKS, FENCES, LANDSCAPING AND OTHER IMPROVEMENTS WITH THE SAME OR BETTER TYPE OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
- ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS OTHERWISE NOTED.
- ALL EXISTING FENCES DISTURBED DURING CONSTRUCTION SHALL BE REPLACED AND REINSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER UNLESS SHOWN TO BE REMOVED ON CONSTRUCTION PLANS.
- LIMITS OF PROPOSED ROADWAY OVERLAY SHOWN ARE APPROXIMATE. CONTRACTOR SHALL OVERLAY ALL DISTURBED AREAS OF ACCESS ROAD AS PART OF THIS PROJECT IN ACCORDANCE WITH THE DETAILS.
- CONTRACTOR SHALL RESTORE ALL IRRIGATION SYSTEM COMPONENTS TO PRE-CONSTRUCTION CONDITIONS.
- THE CONTRACTOR SHALL RAISE EXISTING MANHOLE FRAMES AND COVERS TO MATCH FINAL GRADE.
- CONTRACTOR SHALL RESTORE GRADE TO PRECONSTRUCTION ELEVATIONS UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE A 10'x20' TEMPORARY STORAGE UNIT ONSITE 30 DAYS PRIOR TO COMMENCING ANY MODIFICATION TO THE PROPOSED ELECTRICAL ROOM. STORAGE UNIT SHALL REMAIN ONSITE DURING ACTIVE CONSTRUCTION PERIOD.

SIDEWALK NOTES

- ALL SIDEWALKS SHALL BE CONSTRUCTED WITH 4 INCH THICK 3000 PSI CLASS I CONCRETE REINFORCED WITH 6X6 NO. 10 MESH.
- SIDEWALKS SHALL BE CONSTRUCTED TO THE SPECIFICATIONS OF THE MANATEE COUNTY DEVELOPMENT STANDARDS AND A MINIMUM OF FIVE (5) FEET WIDE.
- THE CONCRETE SHALL BE GIVEN A BROOM FINISH. THE SURFACE VARIATIONS SHALL NOT BE MORE THAN 1/2 INCH UNDER A TEN-FOOT STRAIGHTEDGE, NOR MORE THAN 1/8 INCH ON A FIVE-FOOT TRAVERSE SECTION. THE EDGE OF THE SIDEWALK SHALL BE CAREFULLY FINISHED WITH AN EDGING TOOL HAVING A RADIUS OF 1/2 INCH.
- EXPANSION JOINT: EXPANSION JOINTS BETWEEN THE SIDEWALK AND DRIVEWAYS OR AT FIXED OBJECTS AND SIDEWALK INTERSECTIONS SHALL BE 1/2 INCH JOINTS.
- CONTRACTION JOINTS: FIXED OPEN-TYPE CONTRACTION JOINTS SHALL BE FORMED BY STAKING A METAL BULKHEAD IN PLACE AND DEPOSITING THE CONCRETE ON BOTH SIDES. AFTER THE CONCRETE HAS SET SUFFICIENTLY TO PRESERVE THE WIDTH AND SHAPE OF THE JOINT, THE BULKHEAD SHALL BE REMOVED. AFTER THE SIDEWALK HAS BEEN FINISHED OVER THE JOINT, THE SLOT SHALL BE EDGED WITH A TOOL HAVING A 1/2 INCH RADIUS. SAWED JOINTS: A SLOT APPROXIMATELY 3/16 INCH WIDE AND NOT LESS THAN 1-1/2 INCHES DEEP SHALL BE CUT WITH A CONCRETE SAW AFTER THE CONCRETE HAS SET.

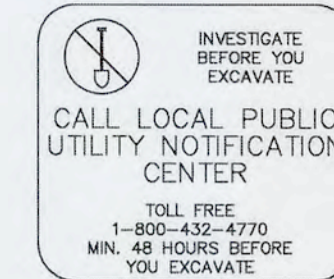
SURVEY NOTES

- THIS SURVEY IS REFERENCED TO A GRID PROJECTION OF THE STATE PLANE COORDINATE SYSTEM OF FLORIDA WEST ZONE (NAD 83/11 ADJUSTMENT).
- THE FOLLOWING NGS VERTICAL CONTROL POINT WAS RECOVERED AND UTILIZED FOR THE ELEVATIONS INDICATED HEREON: "SABAL PALM" NAVD 1988 ELEVATION 14.62'.
- THIS IS NOT A BOUNDARY SURVEY.
- THIS SURVEY IS SUBJECT TO PERTINENT EASEMENTS, ADDITIONAL RIGHTS-OF-WAY AND RESTRICTIONS OF RECORD, IF ANY.
- THIS SURVEY DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF THE PARTY OR PARTIES CERTIFIED TO BELOW FOR THE EXPRESS PURPOSE STATED HEREON AND/OR CONTAINED IN THE CONTRACT BETWEEN HYATT SURVEY SERVICES, INC. AND THE CLIENT FOR THIS PROJECT. COPYING, DISTRIBUTING AND/OR USING THIS DRAWING, IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN ORIGINALLY INTENDED WITHOUT WRITTEN CONSENT FROM HYATT SURVEY SERVICES, INC IS STRICTLY PROHIBITED AND RENDERS THE SURVEYOR'S CERTIFICATION, SIGNATURE AND SEAL NULL AND VOID. ANY QUESTIONS CONCERNING THE CONTENT OR PURPOSE OF THIS DRAWING SHOULD BE DIRECTED TO HYATT SURVEY SERVICES, INC.
- ELEVATIONS SHOWN ARE BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). CONTRACTOR SHALL NOTE THAT ELEVATIONS ON RECORD DRAWINGS FOR THIS FACILITY MAY BE BASED ON NATIONAL GEODETIC VERTICAL DATUM, 1929 (NGVD 1929). THE CONVERSION OF VERTICAL DATUM FOR THIS SITE IS NGVD=NAVD 88+0.99 FT.

UTILITY NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE FOLLOWING JURISDICTIONAL BODIES AND UTILITY COMPANIES:

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



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT SARASOTA SERVICE OFFICE
STEVE LOPEZ
6750 FRUITVILLE ROAD
SARASOTA, FL 34240
(941) 377-3722
FAX: (941) 373-7660

FLORIDA GAS TRANSMISSION
7804 ANDERSON ROAD
TAMPA, FL 33634
CHAD HARRREL
PH: (813) 466-3327
E-mail: chadharrel@sug.com

CHARTER COMMUNICATION
5413 E. STATE ROAD 64
BRADENTON, FL 34208-5535
TOM WRIGHT
(941) 748-3816 EXT. 21348
tom.wright@charter.com

PARAGON CABLE - BRIGHTHOUSE NETWORK, LLC
WALTER KRROL
5413 S.R. 64 E
BRADENTON, FL 34208
(941) 748-3816 EXT. 24053

MANATEE COUNTY PUBLIC WORKS DEPT.
1022 26TH AVENUE EAST
BRADENTON, FL 34208
SCOTT MAY, P.E.
(941) 708-7450 EXT. 7650
FAX: (941) 708-7415

TECO/PEOPLES GAS CO.
8261 VCO COURT
SARASOTA, FL 34240
(941) 342-4030
DAN SHANAHAN
FAX: (941) 342-4011
EMERGENCY: 1-877-832-6911

ATMS
2101 47TH TERRACE EAST
BRADENTON, FL 34203
VISHAL KAKAAD, P.E.
(941) 749-3500 EXT. 7812
FAX: (941) 749-3571
vishal.kakaad@mymanatee.org

PEACE RIVER ELECTRIC COOPERATIVE, INC.
P.O. BOX 1310
WACHULA, FL 33873
KENDELL COCKER
(863) 767-4660
kendell.coker@preco.coop

MANATEE COUNTY TRANSPORTATION DEPARTMENT
ALLEN BRENTLEY
2904 12TH STREET COURT E
BRADENTON, FL 33208
(941) 708-7509

FRONTIER
1701 RINGLING BLVD.
SARASOTA, FL 34236
JOHN PLOTT
(941) 906-6707
FAX: (941) 906-6708
john.plott@tr.com

FLORIDA POWER & LIGHT
1253 12TH AVENUE EAST
PALMETTO, FL 34221
GREG COCKER
(941) 723-4430
FAX: (941) 723-4444
EMERGENCY: 1-800-4-OUTAGE
greg_coker@fpl.com

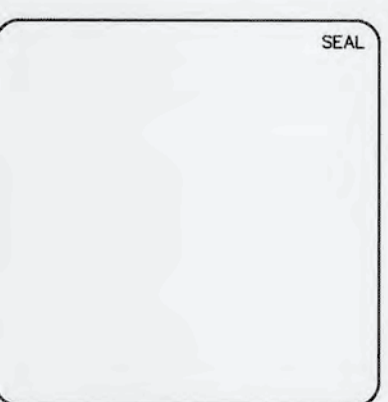
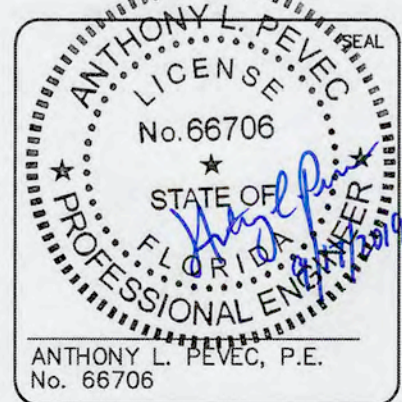
MANATEE COUNTY HEALTH DEPT.
410 6TH AVENUE EAST
BRADENTON, FL 34208
(941) 748-0747 EXT. 1355
FAX: (941) 750-9364

DEPARTMENT OF ENVIRONMENTAL PROTECTION
13051 N. TELECOM PKWY.
TEMPLE TERRACE, FL 33637
ED WATSON
PH: (813) 470-5875
FAX: (813) 470-5993

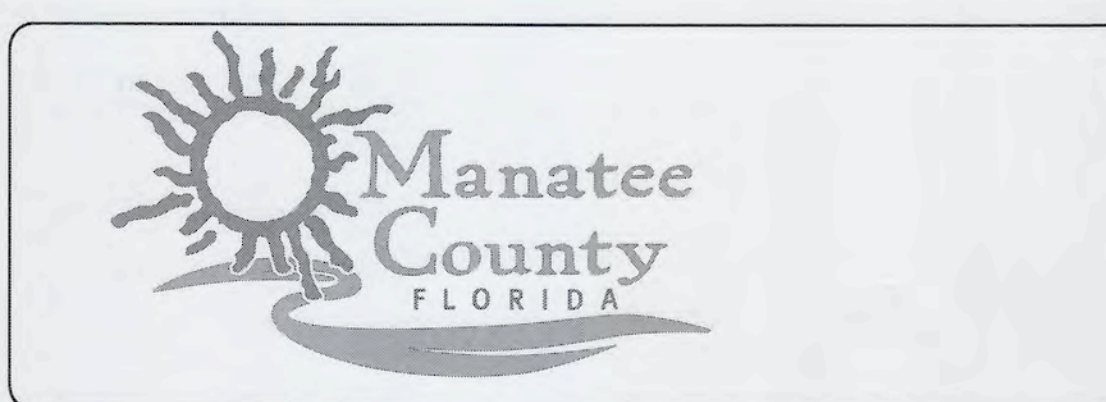
MANATEE COUNTY UTILITIES OPERATION
KATHY MAMAHON
4422-C 66TH STREET W.
BRADENTON, FL 34210

- ALL UTILITY CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE LATEST VERSION OF THE MANATEE COUNTY UTILITY STANDARDS.
- ALL BELOW GROUND DUCTILE IRON PIPE SHALL BE ENCASED IN A POLYETHYLENE WRAP IN ACCORDANCE WITH AWWA STANDARDS.
- ALL VALVE BOX COVERS SHALL BE PAINTED TO INDICATE THEIR TYPE OF SERVICE.
- ALL TEST POINT TAPPING SHALL BE CUT LOOSE FROM THE CORPORATION STOP AND COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE. THE CORPORATION STOP SHALL BE CAPPED AND REMAIN IN PLACE.

REVNO.	DESCRIPTIONS	DATE



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Clearwater, Florida 33756
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**SWWRF
CCC REHAB AND
RECHARGE WELL PS PROJECT**

GENERAL NOTES

DATE: SEPTEMBER, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. # 1024-0171	HORIZONTAL:	G-03
DRAWN CN	VERTICAL:	
DESIGNED TP		
CHECKED JV		
PROJ. MGR. TP		

STATUS: **ISSUED FOR BID** REVISION

GENERAL ABBREVIATIONS

ABW	AT	LN.	LANE
A/C	AUTOMATIC BACKWASH	LP	LIGHT POLE
AC	AIR CONDITIONER UNIT	LS	LICENSED SURVEYOR
AC	ACRES	MAS	MASONRY
AC	ASPHALTIC CONCRETE	MAX.	MAXIMUM
ABD	ABANDONED	MCC	MOTOR CONTROL CENTER
AL./ALUM.	ALUMINUM	MES	MITERED END SECTION
ANCH.	ANCHOR	MG	MILLION GALLONS
APPROX.	APPROXIMATE	MGD	MILLION GALLONS PER DAY
BLDG.	BUILDING	MES	MITERED END SECTION
BM.	BEAM	MHW	MEAN HIGH WATER
BOT./BOTT.	BOTTOM	MON.	MONUMENT
(C)	CALCULATED DATA	NG	NATURAL GROUND
C	CHANNEL	N.T.S.	NOT TO SCALE
C.	CONDUIT	NO.	NUMBER
C.B.	CATCH BASIN	NP	NORMAL POOL
CCR	CERTIFIED CORNER RECORD	Ø	DIAMETER/PHASE
CHEM	CHEMICAL	O/A	OVERALL
CHKR	CHECKERED	OPNG.	OPENING
CIR.	CIRCLE	OR	OFFICIAL RECORDS BOOK
CLF	CHAIN LINK FENCE	(P)	PLAT BOOK
CL	CENTERLINE	PCCP	PRE-STRESSED CYLINDRICAL CONCRETE PIPE
CMP	CORRUGATED METAL PIPE	PG	PAGE
COL.	COLUMN	PLCS.	PLACES
CONN.	CONNECTOR/CONNECTION	PLS	PROFESSIONAL LAND SURVEYOR
CONC.	CONCRETE	POB	POINT OF BEGINNING
COR	CORNER	POC	POINT OF COMMENCEMENT
CPB	CONDOMINIUM PLAT BOOK	POT	POTABLE
C/T	CURB TIE	PP	POWER POLE
CU.	COPPER	PRM	PERMANENT REFERENCE MONUMENT
(D)	DEED DATA	PROP.	PROPOSED
D.	DEEP/DRAIN	PSM	PROFESSIONAL SURVEYOR & MAPPER
DB	DEED BOOK	P/T	PAVEMENT TIE
DBL.	DOUBLE	P.V.	PLUG VALVE
DHW.	DESIGN HIGH WATER	PVMT	PAVEMENT
DISCH.	DISCHARGE	R.	RADIUS/RISER/RELAY
DN.	DOWN	RCP	REINFORCED CONCRETE PIPE
DRWY	DRIVEWAY	REF.	REFERENCED
E.W.	EACH WAY	REINF.	REINFORCED/REINFORCING
EA.	EACH	REQ'D	REQUIRED
ECMP	ELLIPTICAL CORRUGATED METAL PIPE	RESTR.	RESTRAINED
EL./ELEV.	ELEVATION	RLS	REGISTERED LAND SURVEYOR
ELEC.	ELECTRICAL CONDUIT	RW/R/W	RIGHT-OF-WAY
EP	EDGE OF PAVEMENT	SAN.	SANITARY
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE	SEC.	SECTION
ETC.	AND SO FORTH	SGL	SINGLE
EXIST.	EXISTING	SHW	SEASONAL HIGH WATER
EXP.	EXPANSION	SIR	SET IRON ROD 1/2" LB 6113
(F)	FIELD DATA	SND	SET NAIL & DISC LB 6113
FCM	FOUND CONCRETE MONUMENT	SPRK	SPRINKLER
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	SQ.	SQUARE
FF	FINISHED FLOOR	SN.	SIGN
FIR	FOUND IRON ROD	SR	STATE ROAD
FND	FOUND NAIL & DISC	SSMH	SANITARY SEWER MANHOLE
FOP	FOUND OPEN PIPE	S/T	SIDEWALK TIE
FRP	FIBERGLASS REINFORCED PLASTIC	STL.	STEEL
FRRS	FOUND RAILROAD SPIKE	STY	STORY
F/T	FENCE TIE	S/W;SWK	SIDEWALK
FT.	FOOT	SYM.	SYMBOL
FTG.	FOOTING	TBM	TEMPORARY BENCH MARK
FXC	FOUND X-CUT	TOB	TOP OF BANK
GALV.	GALVANIZED	T.&B.	TOP & BOTTOM
GDRL	GUARDRAIL	TEL.	TELEPHONE
GE	GRATE ELEVATION	TEMP.	TEMPORARY
GEN	GENERATOR	THK	THICK
GI	GRATED INLET	TOS	TOE OF SLOPE
GPM	GALLONS PER MINUTE	TYP.	TYPICAL
GRTG.	GRATING	UG	UNDERGROUND GAS
G.S.	GALVANIZED STEEL	UP	UTILITY POLE
GST	GROUND STORAGE TANK	UT	UNDERGROUND TELEPHONE
GR./GRD.	GRADE	VCP	VITRIFIED CLAY PIPE
GWP	GUY WIRE POLE	VERT.	VERTICAL
HDWALL	HEADWALL	W	WIDE FLANGE/WIDE/WATT
H.R.	HANDRAIL	W/	WITH
HWL	HIGH WATER LEVEL	WF	WOOD FENCE
IE	INVERT ELEVATION	W/L	WATER LINE
IN.	INCH	W.L.	WATER LEVEL
INJ.	INJECTOR/INJECTION	W/M	WATER MAIN
INV.	INVERT	W.M.	WATER METER
IP	IRON PIPE	WRF	WATER RECLAMATION FACILITY
IR	IRON ROD	W.P.	WEATHER PROOF
J.B.	JUNCTION BOX	W.S.	WALL SLEEVE/WATER STOP/WATER SERVICE
JT.	JOINT	W/T	WALL TIE
(L)	LEGAL DESCRIPTION DATA	WTR.	WATER
LAS	LIQUID AMMONIUM SULFATE		
LB	LICENSED BUSINESS		
LG.	LONG		

FLOW ABBREVIATIONS

AL	ALUM SOLUTION
AB	AERATION BASIN
AD	AEROBIC DIGESTER
AX	ANOXIC BASIN
BA	BLOWER AIR
BP	BYPASS
BW	BACKWASH
CA	COMPRESSED AIR
CCC	CHLORINE CONTACT CHAMBER
CCE	CHLORINATED EFFLUENT
CF	CLOTH FILTER
CLE	CLARIFIER EFFLUENT
CLG	CLORINE GAS
CLS/CL2S	CHLORINE SOLUTION
D/DR	DRAIN
DAF	DISSOLVED AIR FLOTATION
DF	NEW CLOTH FILTER
DS	DEWATERED SLUDGE
EFF	EFFLUENT
EXP	EXPANSION
FBW	FILTER BACKWASH
FC	FINAL CLARIFIER
FE	FILTER EFFLUENT
FLE	FILTERED LAKE EFFLUENT
FLW	FLOCCULATED WATER
FM	FLOW METER
FW	FILTERED WATER
GBT	GRAVITY BELT THICKENER
GR	GRIT
HDW	HEADWORKS
INF	INFLEUNT
IR	INTERNAL RECYCLE
HSBFP	HIGH SOLIDS BELT FILTER PRESS
ML	MIXED LIQUOR
NRCY	NITROGEN RECYCLE
OF	OVERFLOW
P	POLYMER
PD	PLANT DRAIN
PDFM	PLANT DRAIN FORCE MAIN
PS	PUMP STATION
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RCW	RECLAIMED WATER
REJ	REJECT
RJ	REJECT
RML	RECIRCULATED MIXED LIQUOR
RS	RAW SEWAGE
RW	REUSE WATER
SAM	SAMPLE
SB	SPLITTER BOX
SC	SCUM
SDR	STORMWATER DRAINAGE
SE	SECONDARY EFFLUENT
SL	SAMPLE LINE
SN	SUPERNATANT
SPW	STORAGE POND WATER
SRS	STORED RAW SEWAGE
SS	SANITARY SEWER
TS	THICKENED SLUDGE
WAS	WASTE ACTIVATED SLUDGE
WBW	WASTE BACKWASH WATER
WW	WASTEWATER

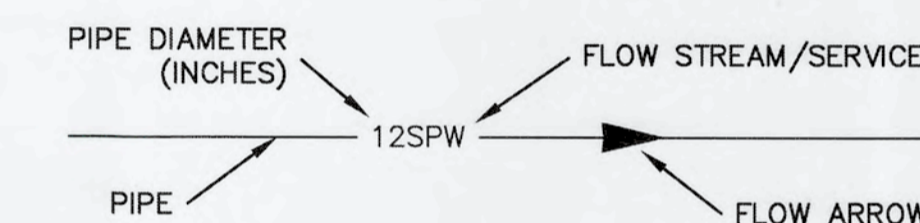
PIPING ABBREVIATIONS

ARV	AIR RELEASE VALVE
ABD	ABANDONED
BP	BYPASS
BFV	BUTTERFLY VALVE
BV	BALL VALVE
CB	CATCH BASIN
CL2	CHLORINE
CO	CLEANOUT
CORP	CORPORATION
CV	CHECK VALVE
D	DRAIN
D.I.	DUCTILE IRON
DIA	DIAMETER
D.I.P.	DUCTILE IRON PIPE
DR	PLANT DRAIN FORCE MAIN
ELEC.	ELECTRICAL
EXIST.	EXISTING
FHA	FIRE HYDRANT ASSEMBLY
FL	FLANGED
GS	GALVANIZED STEEL
GV	GATE VALVE
HB	HOSE BIBB
HDPE	HIGH DENSITY POLYETHYLENE
MH	MANHOLE
MJ	MECHANICAL JOINT
NRCY	NITROGEN RECYCLE
PE	PLAIN END
PS	PUMP STATION
PV	PLUG VALVE
PVC	POLYVINYLCHLORIDE
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RCW	RECLAIMED WATER
RED.	REDUCER
SCH	SCHEDULE
SDR	DIAMETER RATIO
SHC	SODIUM HYPOCHLORITE
SS.	STAINLESS STEEL
SS	SANITARY SEWER
TBR	TO BE REMOVED
UE	UNDERGROUND ELECTRIC
VERT.	VERTICAL
WM	WATER METER

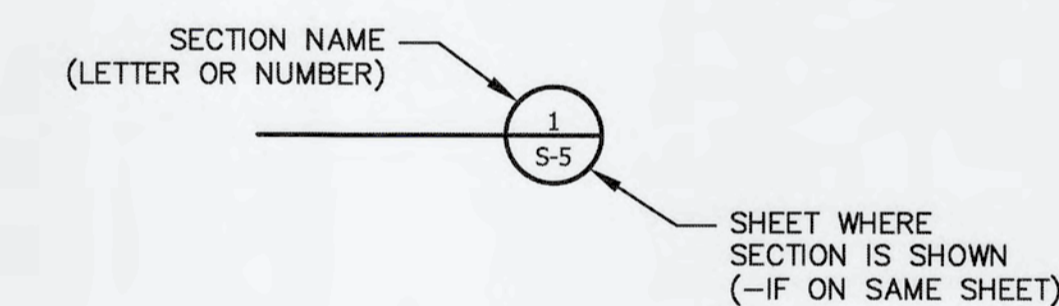
LEGEND

EXISTING		PROPOSED
	PIPE 12" OR LARGER (ABOVE GROUND)	
	PIPE 12" OR LARGER (UNDERGROUND)	
	PIPE SMALLER THAN 12" (ABOVE GROUND)	
	PIPE SMALLER THAN 12" (UNDERGROUND)	
	GATE VALVE	
	BUTTERFLY VALVE	
	CHECK VALVE	
	BALL VALVE	
	PLUG VALVE	
	REDUCER	
	MANHOLE	
	CATCH BASIN	
	TOP OR TOE OF BANK	
	PIPING, STRUCTURES OR EQUIPMENT TO BE REMOVED	
	CONTOURS	

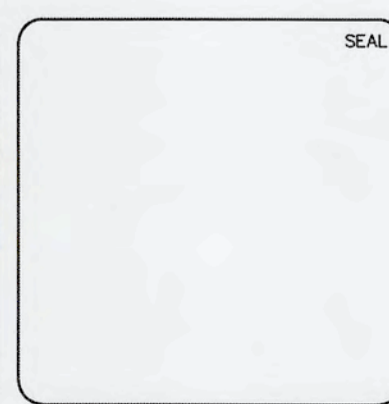
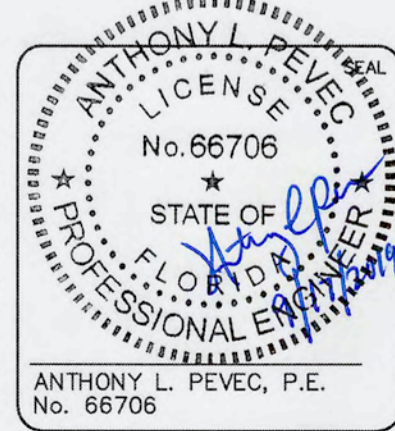
PIPE IDENTIFICATION



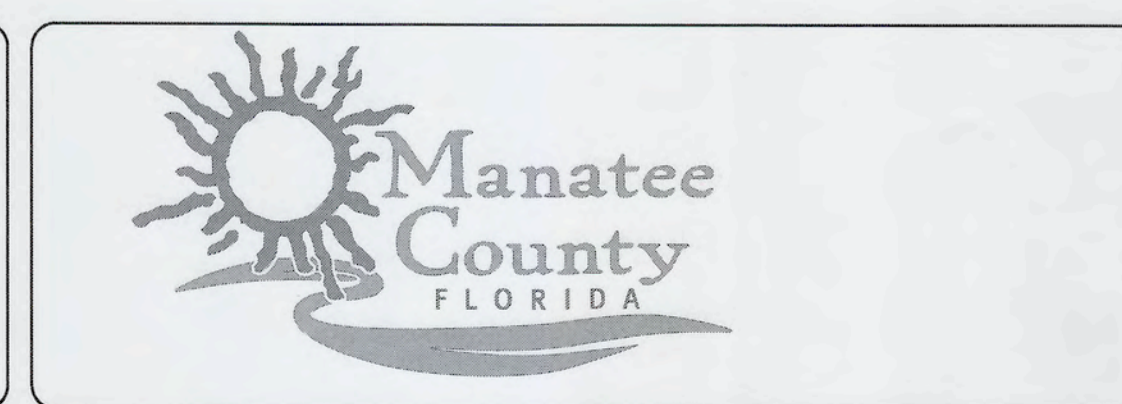
SECTION DESIGNATION



REV. NO.	DESCRIPTIONS	DATE



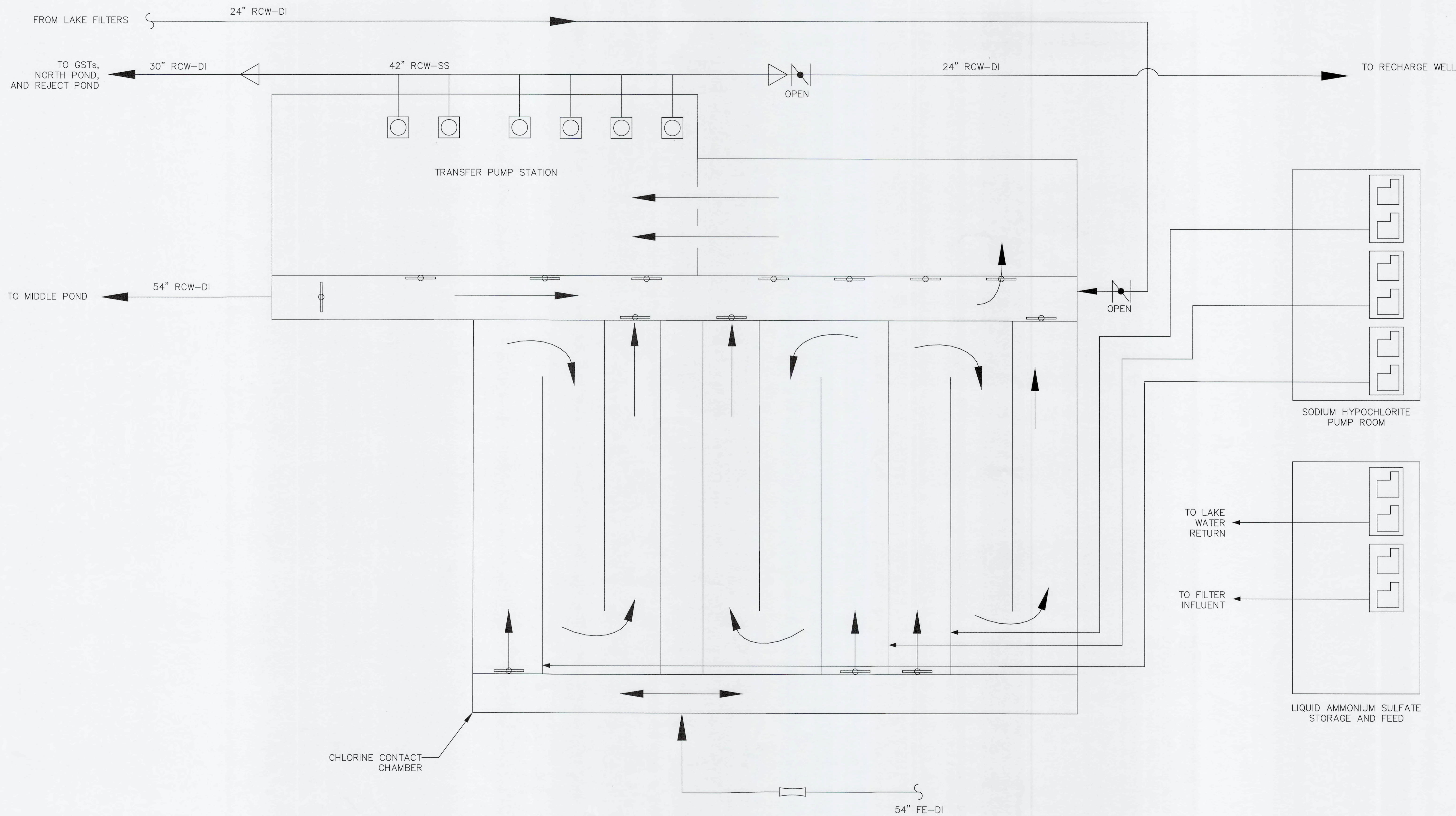
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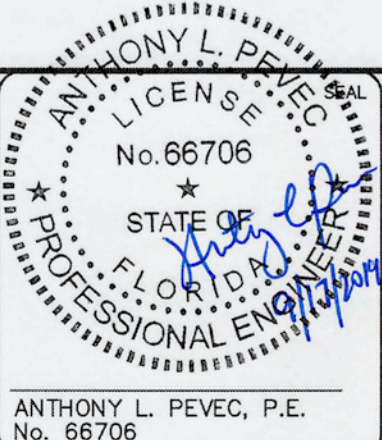
SYMBOLS AND ABBREVIATIONS

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
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DRAWN: CN	VERTICAL: NA	
DESIGNED: TP	STATUS:	REVISION
CHECKED: JV	ISSUED FOR BID	
PROJ. MGR.: TP		



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REVNO.	DESCRIPTIONS	DATE



SEAL

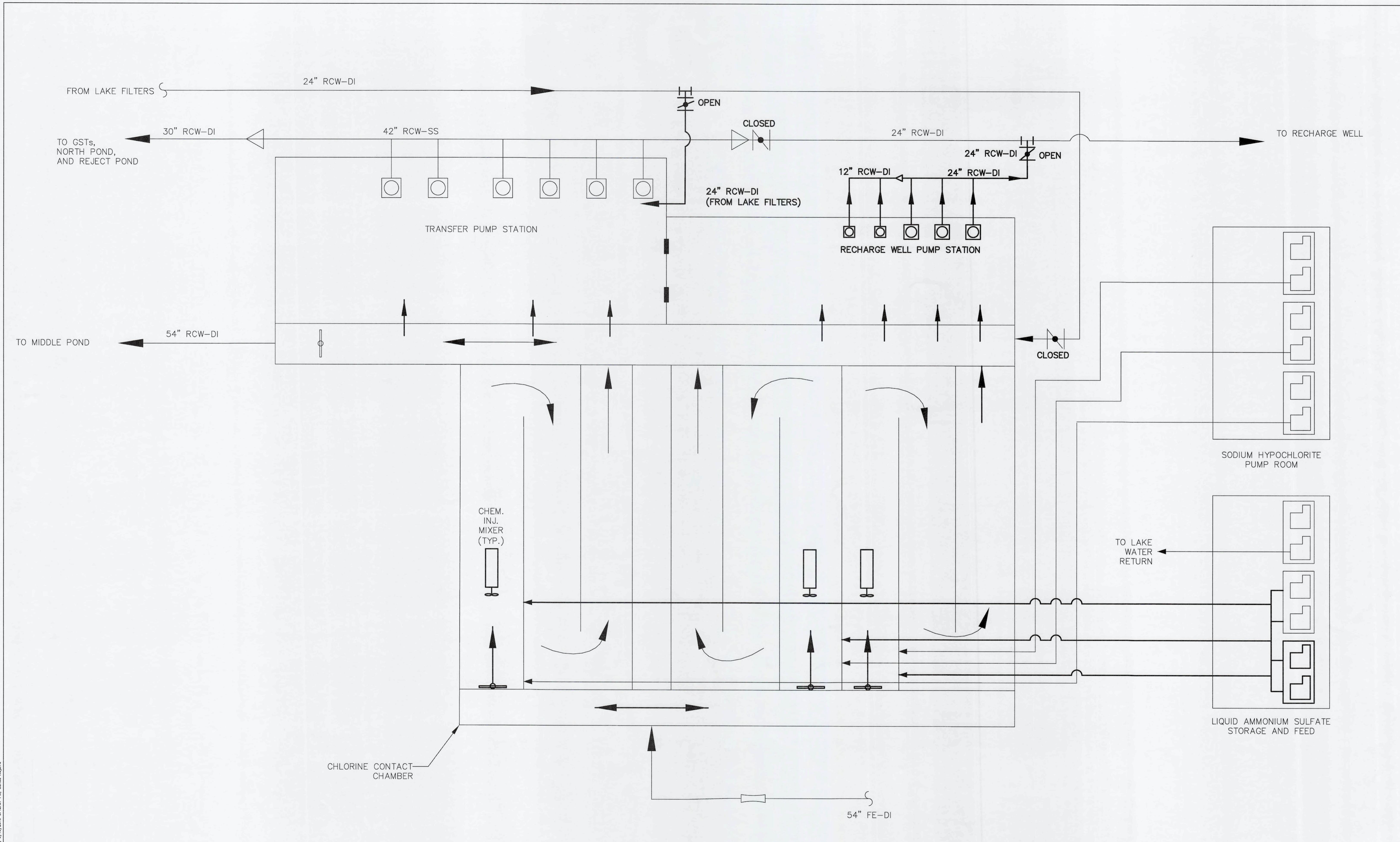
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**EXISTING CCC AND EFFLUENT
 PROCESS FLOW DIAGRAM**

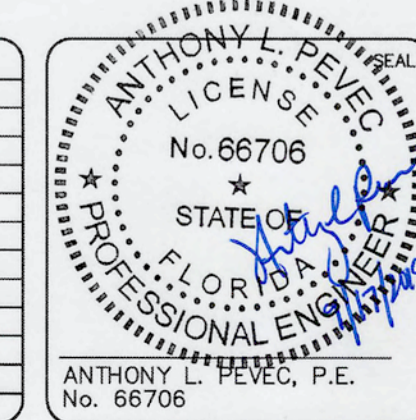
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DRAWN: CN	VERTICAL: NA
DESIGNED: TP	
CHECKED: JV	
PROJ. MGR.: TP	

DRAWING NUMBER
G-05
 REVISION
ISSUED FOR BID



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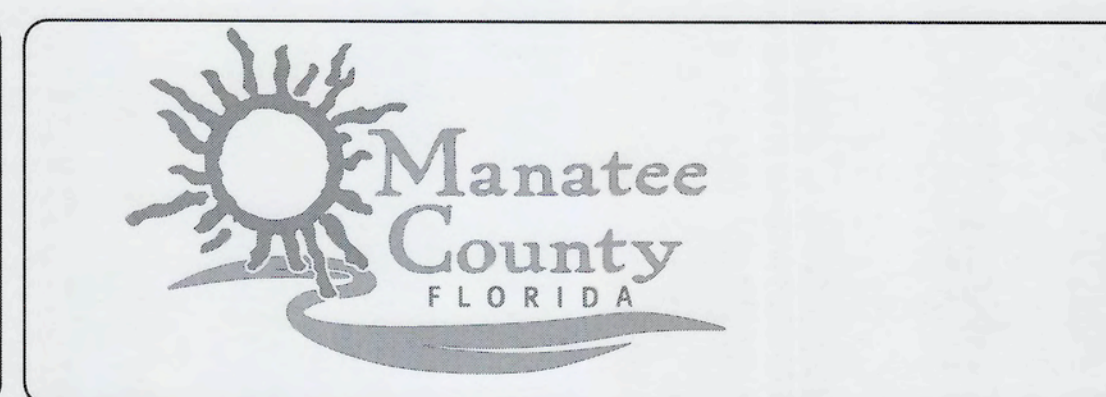
REVNO.	DESCRIPTIONS	DATE



SEAL

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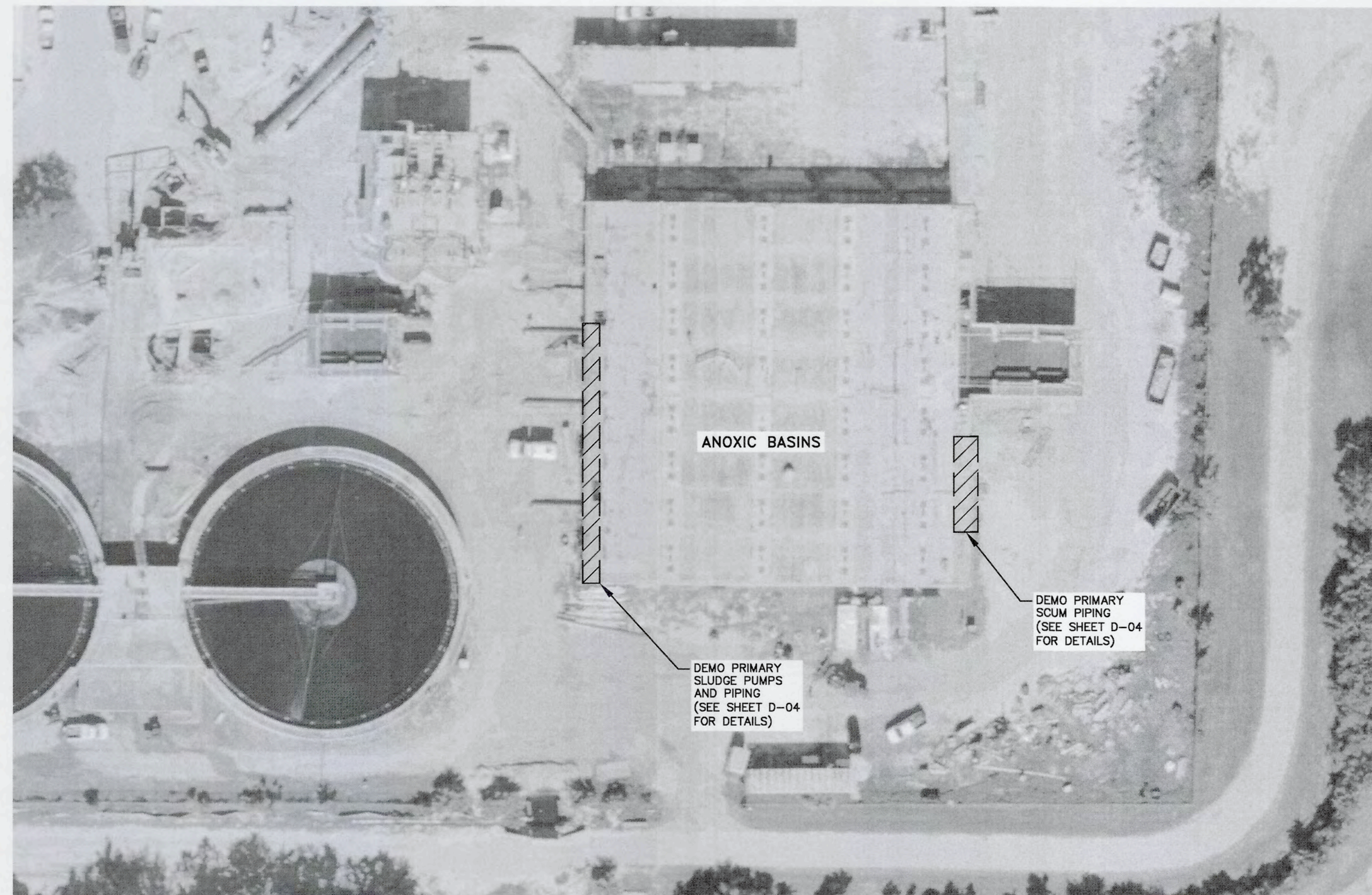
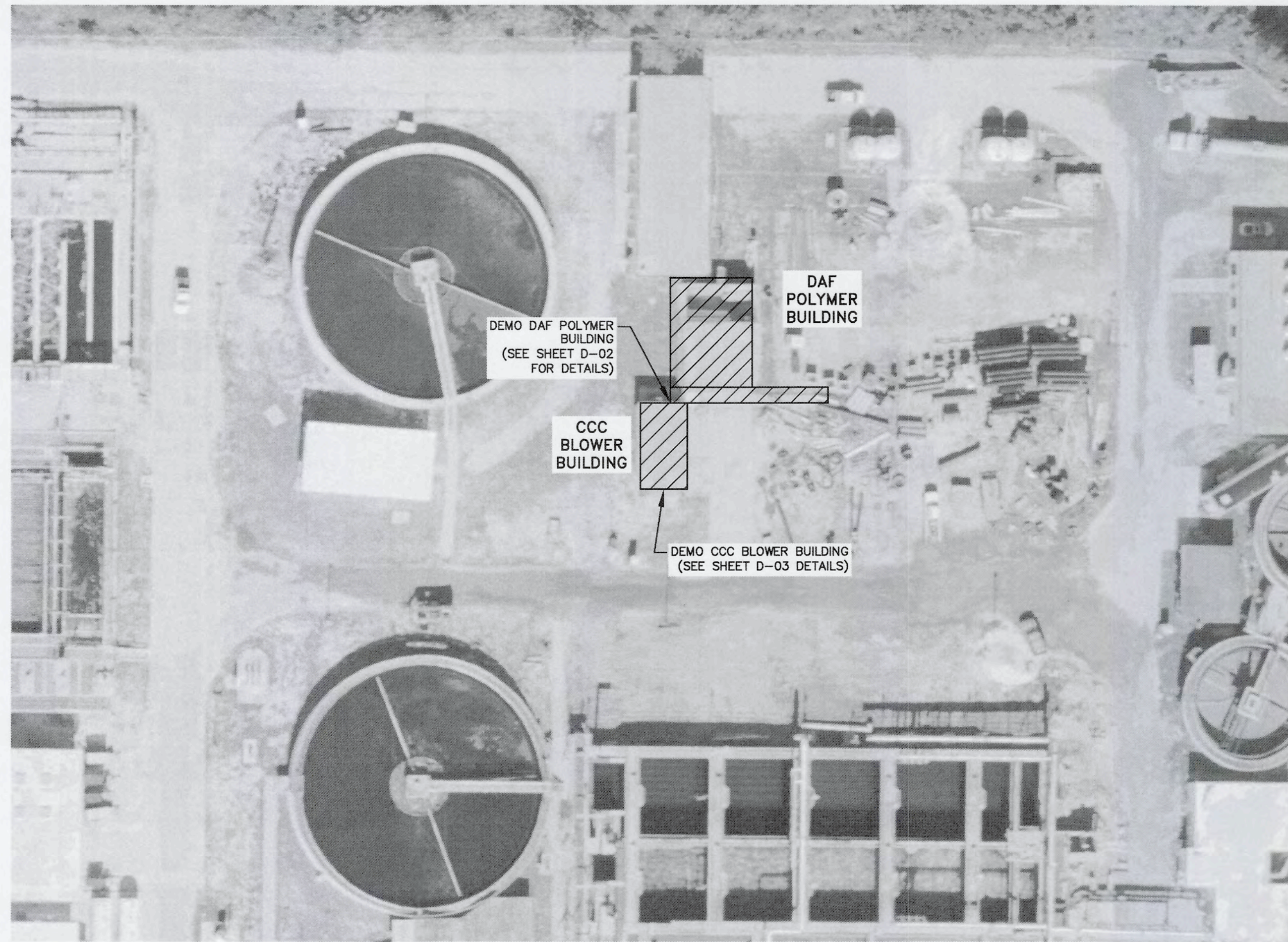
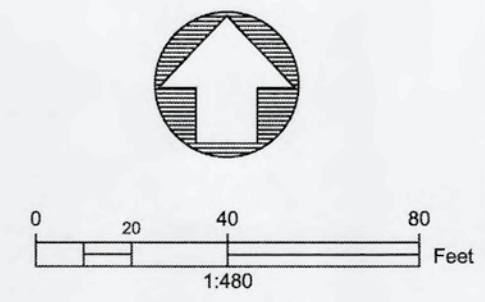


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**PROPOSED CCC AND EFFLUENT
PROCESS FLOW DIAGRAM**

DATE:	SEPTEMBER, 2019
MCE PROJ. #	1024-0171
DRAWN	CN
DESIGNED	TP
CHECKED	JV
PROJ. MGR.	TP

SCALE	DRAWING NUMBER
HORIZONTAL: NA	G-06
VERTICAL: NA	
STATUS: ISSUED FOR BID	REVISION



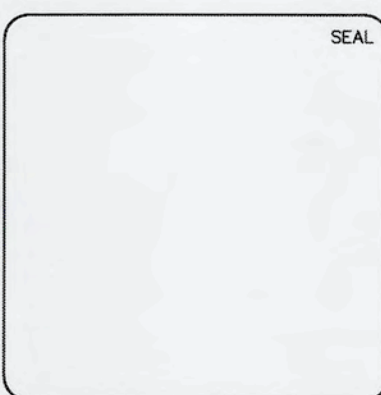
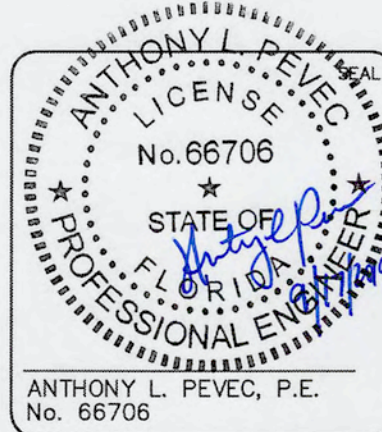
NOTE:

1. AREAS TO BE SODDED AFTER DEMOLITION.

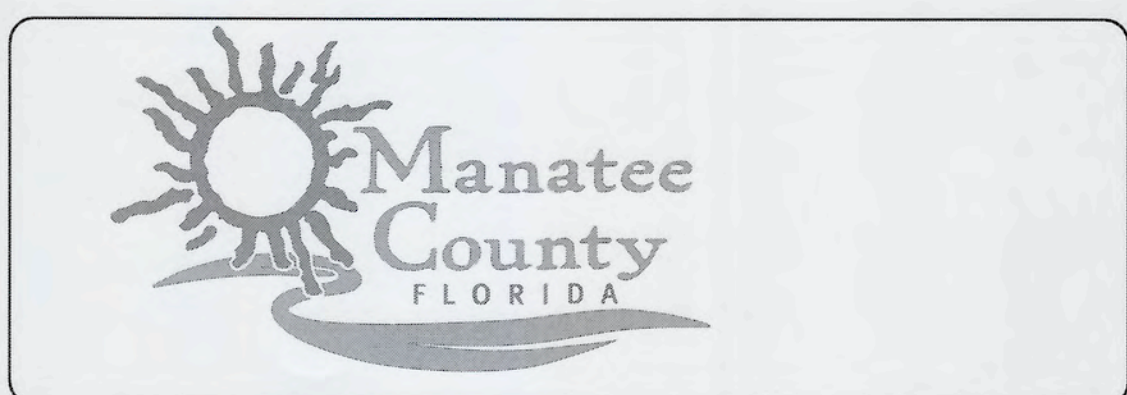
SITE PLAN
SCALE: 1" = 40'

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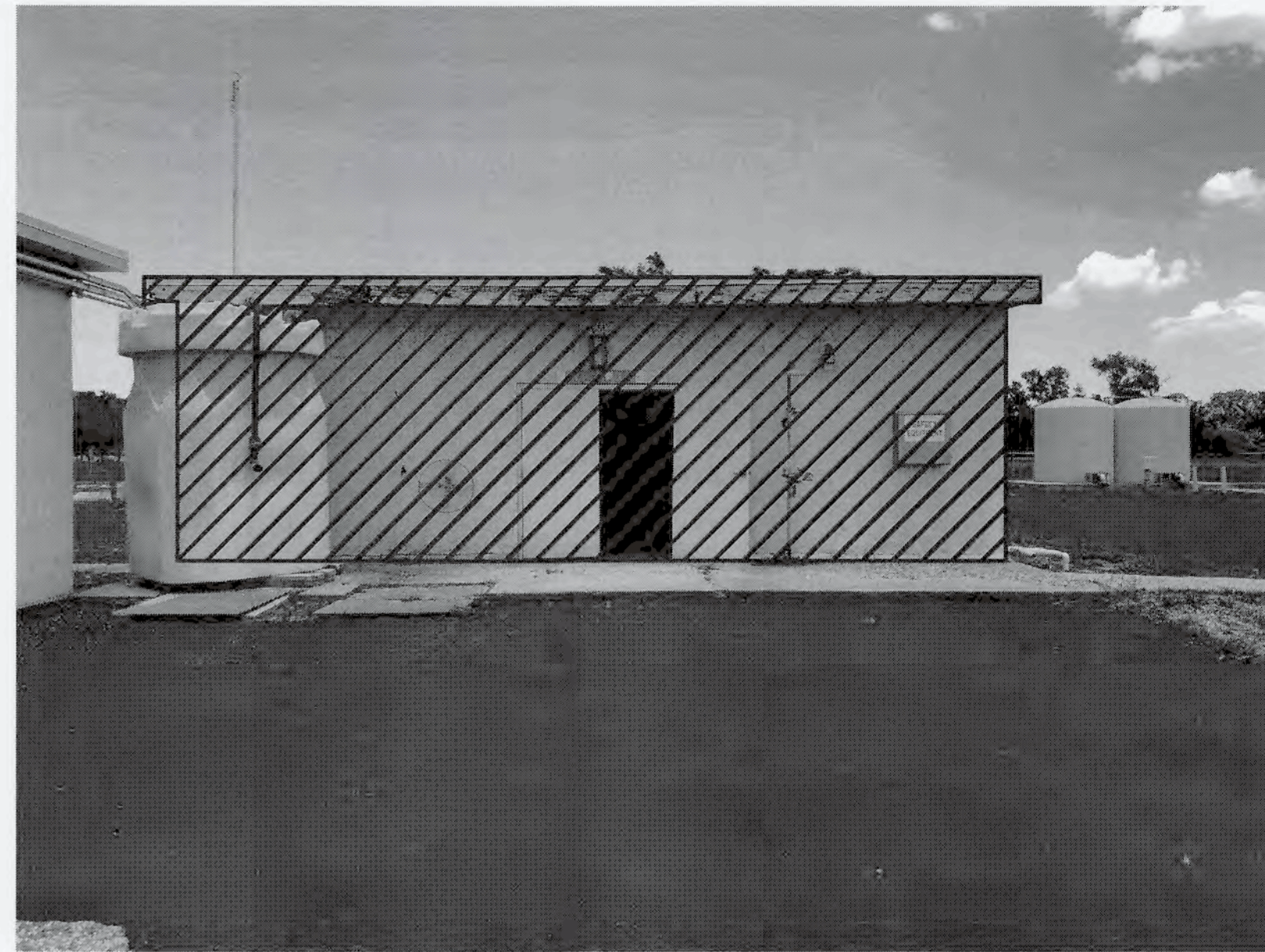


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DEMOLITION SITE PLAN

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: NA	D-01
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR.: TP		

STATUS: ISSUED FOR BID REVISION



SOUTH ELEVATION



NORTH ELEVATION



EAST ELEVATION



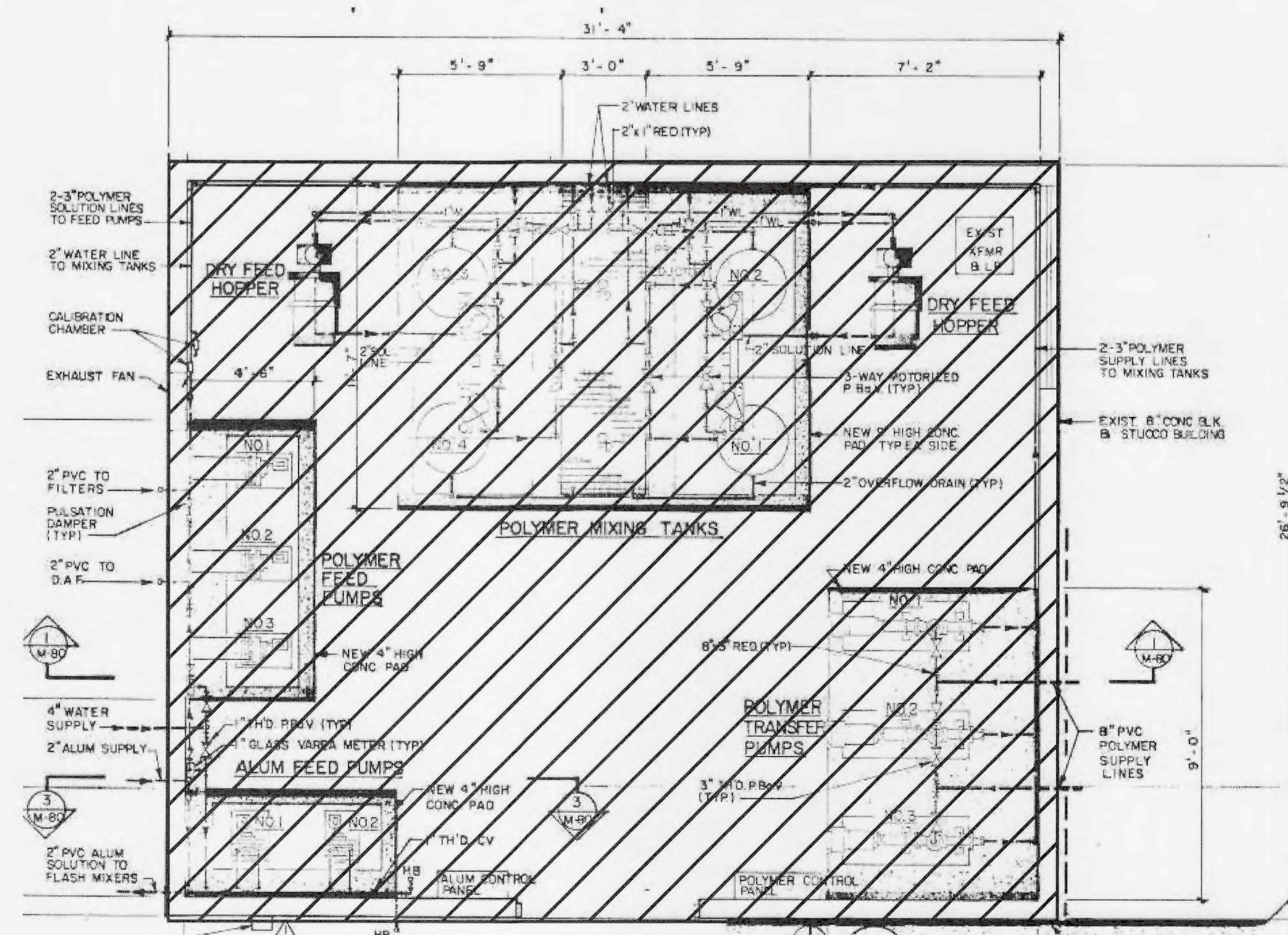
WEST ELEVATION

DEMO 20'x31'
BLOCK ENCLOSURE (TYP.)

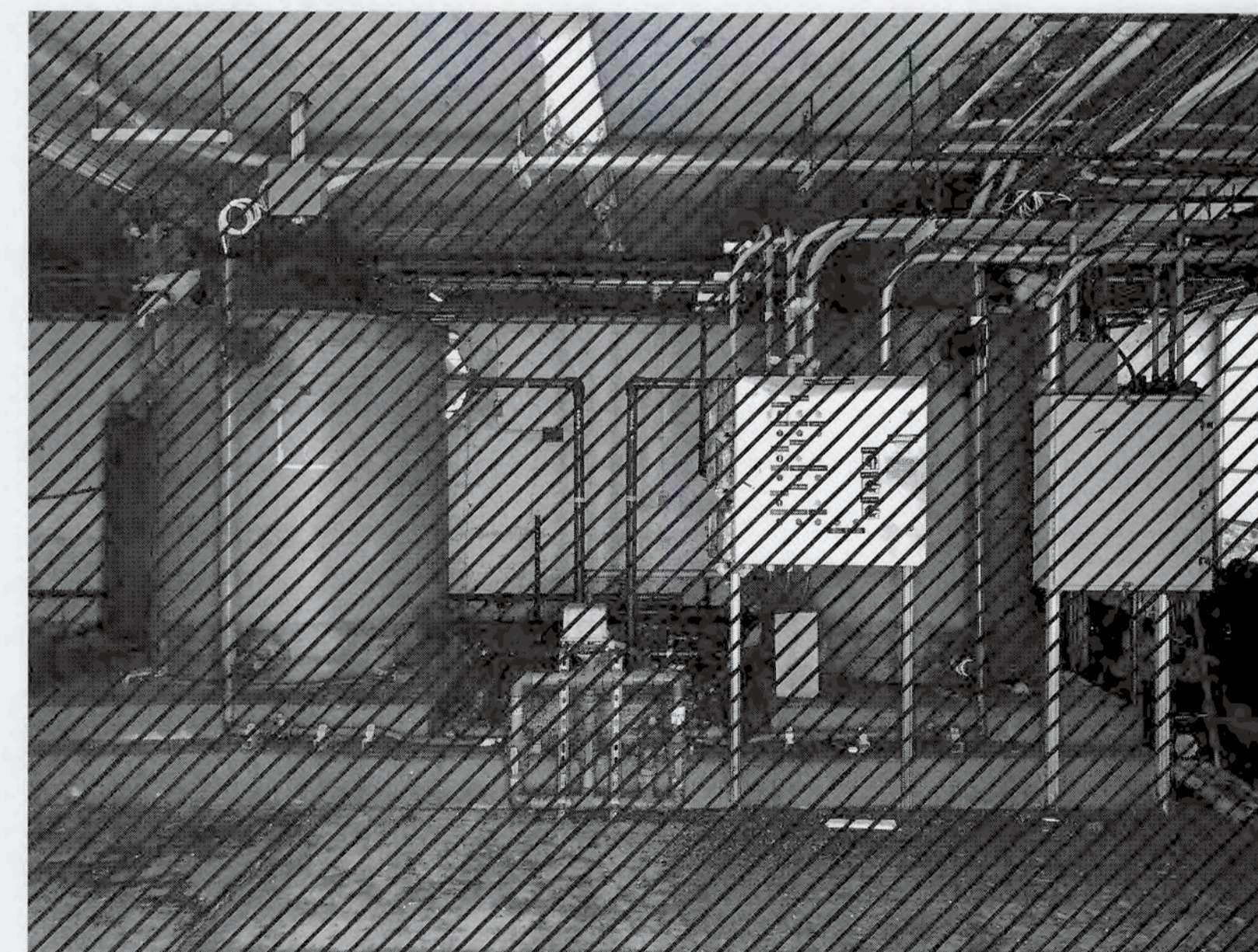
DEMO DAF
POLYMER BUILDING

NOTES:

1. CONTRACTOR SHALL DEMOLISH DAF POLYMER BUILDING AND BLOCK ENCLOSURE TO ITS ENTIRETY. DEMOLITION INCLUDES ALL SLABS, WALLS, ROOF, EQUIPMENT, PIPING ELECTRICAL.
2. FOR ELECTRICAL FEEDS FROM OTHER BUILDINGS, REMOVE FEED WIRING FROM ITS SOURCE. SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION, ON DEMOLITION OF CONDUITS AND WIRING.
3. ALL PVC LINES WITHIN BUILDING'S FOOTPRINT SHALL BE CUT 1-FT. BELOW FINISHED GRADE AND CAPPED.
4. SEE INSTRUMENTATION DRAWINGS AND SPECIFICATIONS FOR DEMOLITION WORK RELATED TO PANEL SP-2.



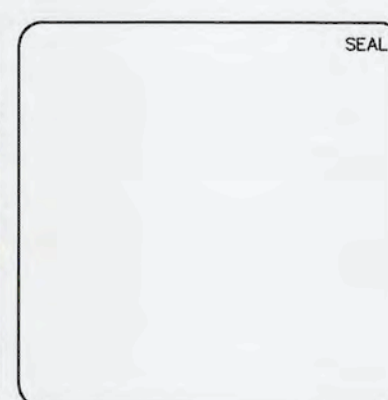
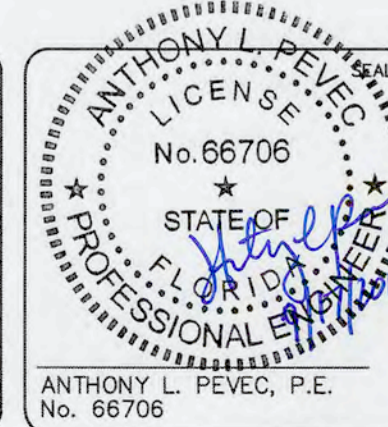
PLAN VIEW



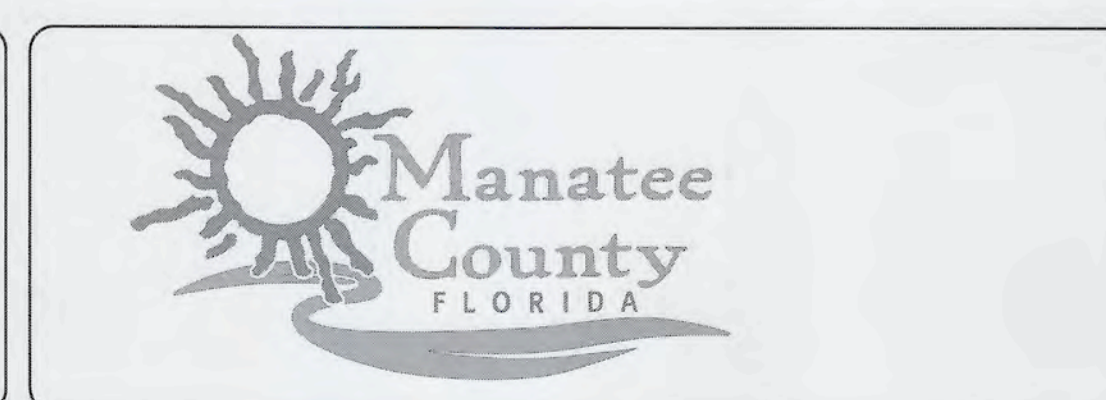
PANEL SP-2
SEE NOTE 4

S:\026\071\00-Drawing\026\071.dwg, 9/16/2019, 3:43:03 PM, Corina Nolasco

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DAF POLYMER BUILDING - DEMOLITION

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: NA	D-02
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR.: TP		REVISION

STATUS: ISSUED FOR BID



SOUTH ELEVATION



NORTH ELEVATION



EAST ELEVATION



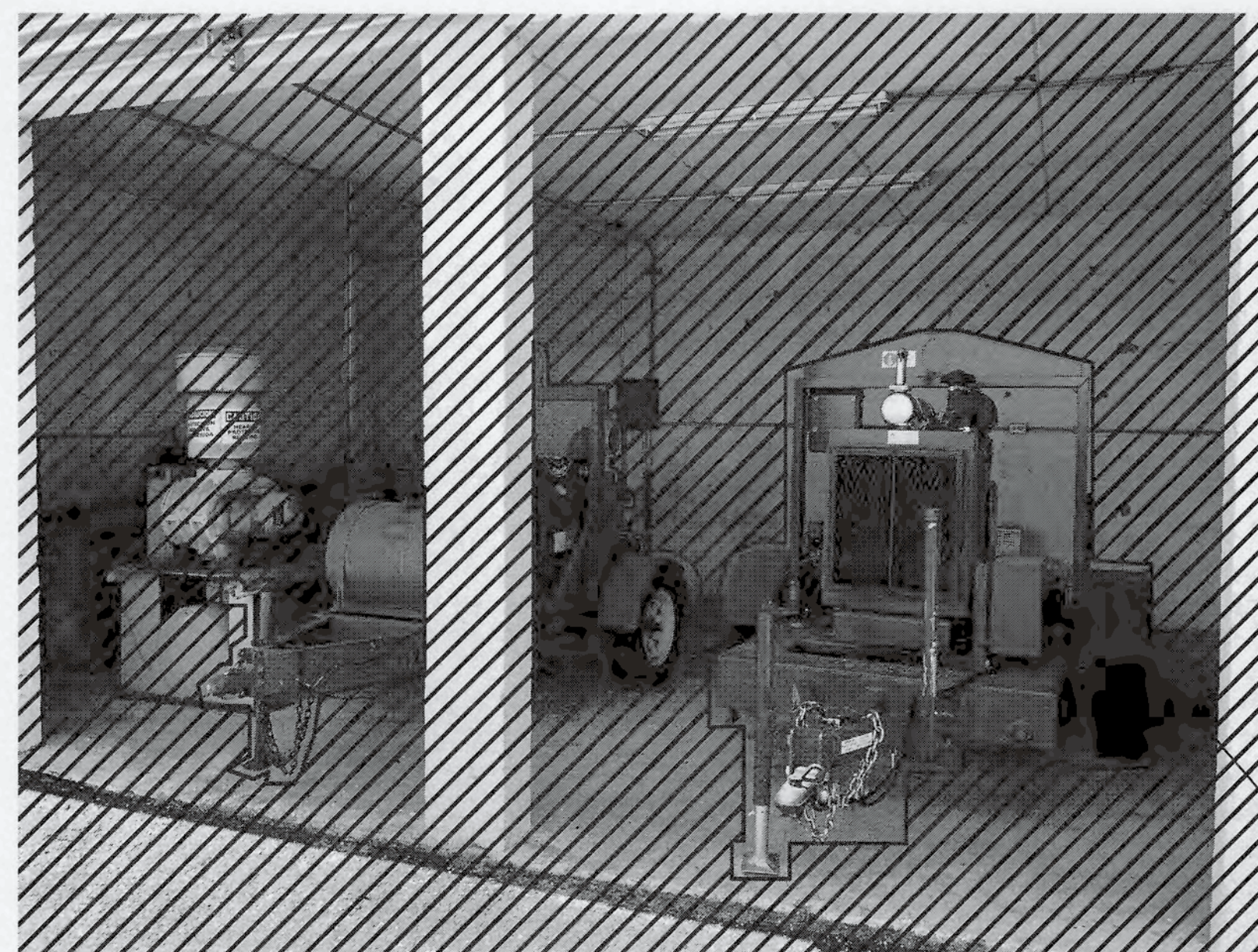
WEST ELEVATION

DEMO 40'Lx26'Wx12'H
CMU STRUCTURE (TYP.)

DEMO CCC
BLOWER BUILDING

NOTES:

1. CONTRACTOR SHALL DEMOLISH CCC BLOWER BUILDING AND BLOCK ENCLOSURE TO ITS ENTIRETY. DEMOLITION INCLUDES ALL SLABS, WALLS, ROOF, EQUIPMENT, PIPING ELECTRICAL.
2. FOR ELECTRICAL FEEDS FROM OTHER BUILDINGS, REMOVE FEED WIRING FROM ITS SOURCE. SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION, ON DEMOLITION OF CONDUITS AND WIRING.
3. ALL PVC LINES WITHIN BUILDING'S FOOTPRINT SHALL BE CUT 1-FT. BELOW FINISHED GRADE AND CAPPED.
4. SEE INSTRUMENTATION DRAWINGS AND SPECIFICATIONS FOR DEMOLITION WORK RELATED TO PANEL SP-2.
5. CONTRACTOR SHALL MOVE PORTABLE COMPRESSORS ON SITE BEFORE COMMENCING WITH DEMOLITION WORK. COORDINATE LOCATION WITH OWNER.
6. REMOVE 12" DI AIR LINE. CUT TO 2-FT BELOW FINISHED GRADE AND GROUT FILL (1.5 CY GROUT).



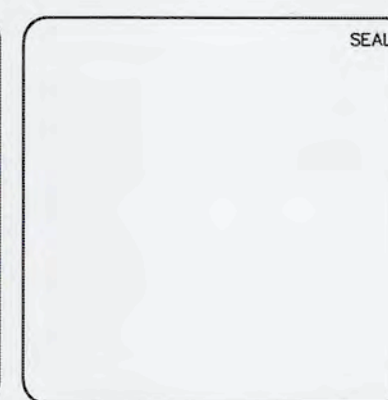
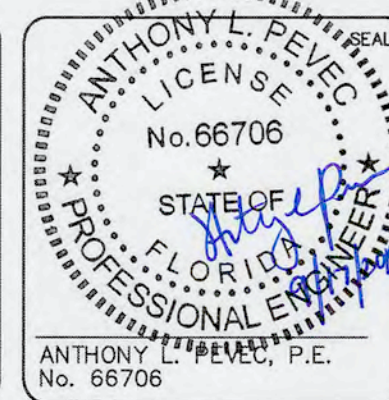
PORTABLE
COMPRESSORS
SEE NOTE 5.



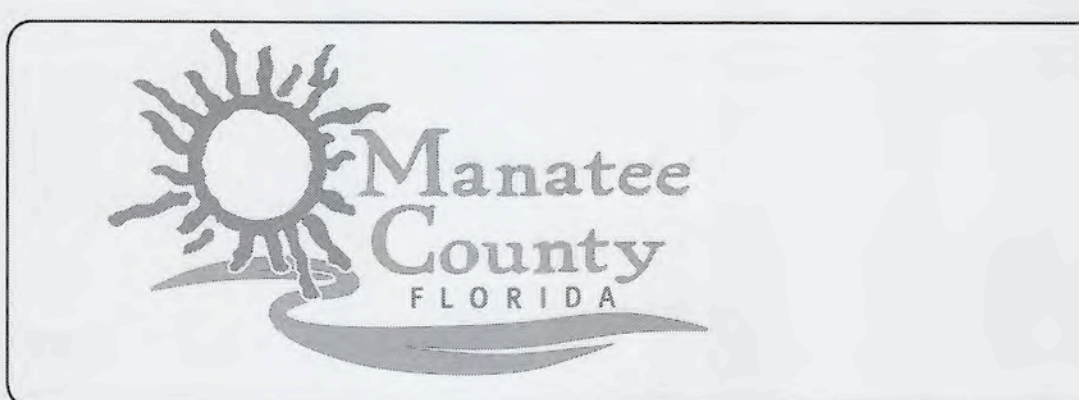
PORTABLE
COMPRESSORS
SEE NOTE 5.

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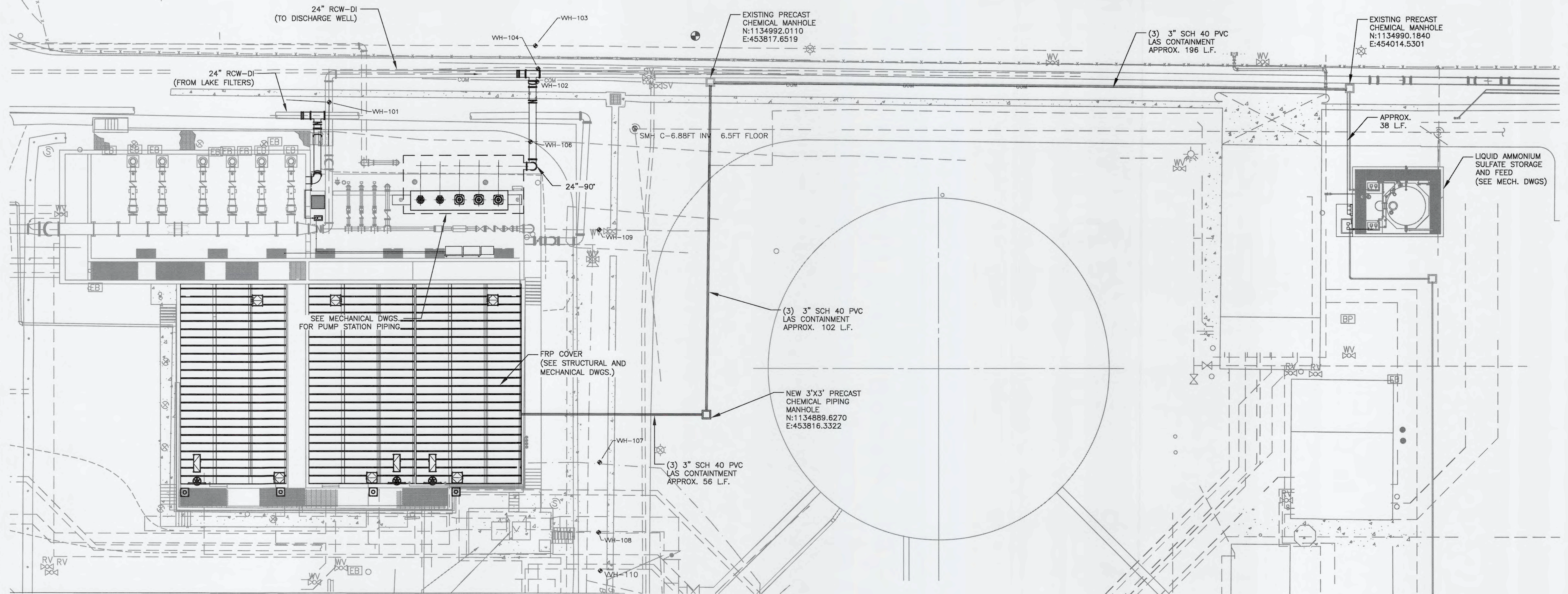
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CCC BLOWER BUILDING DEMOLITION

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
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DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR: TP		
STATUS: ISSUED FOR BID		REVISION



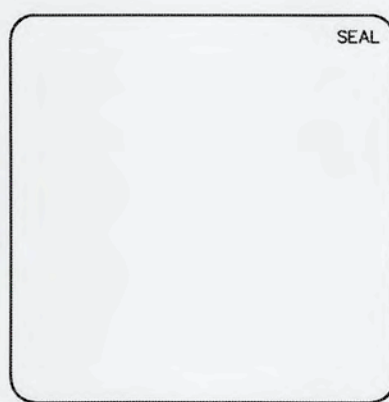
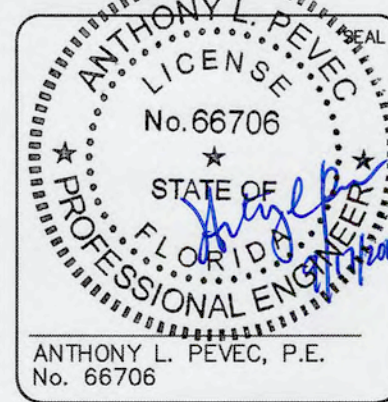
0 7.5 15 30
1:180
Feet



TEST HOLE NUMBER	NORTHING	EASTING	GROUND ELEVATION	DEPTH/COVER	TYPE	SIZE	MATERIAL	NOTE
MH	1134977.70	453794.32	16.15					PIPE INVERT 6.88'
VVH-101	1134985.75	453700.31	16.04	3.82'	RCW	24"	ST	
VVH-102	1134991.98	453764.32	15.98	1.96'	COMM	2"	PVC	
VVH-103	1135003.06	453763.81	15.61	2.66'	WL	6"	PVC	
VVH-104	1134996.01	453764.63	15.91	3.68'	RCW	24"	DI	
VVH-105								NO UTILITY FOUND
VVH-106	1134973.49	453762.29	17.17	2.70'	SAMPLE	3"	PVC	
VVH-107	1134874.87	453783.47	16.60	2.36'	SHC	4"	PVC	
VVH-108	1134853.46	453783.16	16.43	4.00'	FE	54"	ST	
VVH-109	1134946.35	453783.42	16.29	2.34'	RCW	10"	ST	
VVH-110	1134841.60	453783.65	16.44	2.20'	UNK	8"	ST	

ENLARGED SITE PLAN
SCALE: 1" = 15'

REV.	DESCRIPTION	DATE



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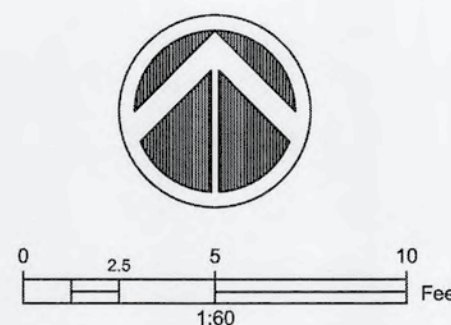
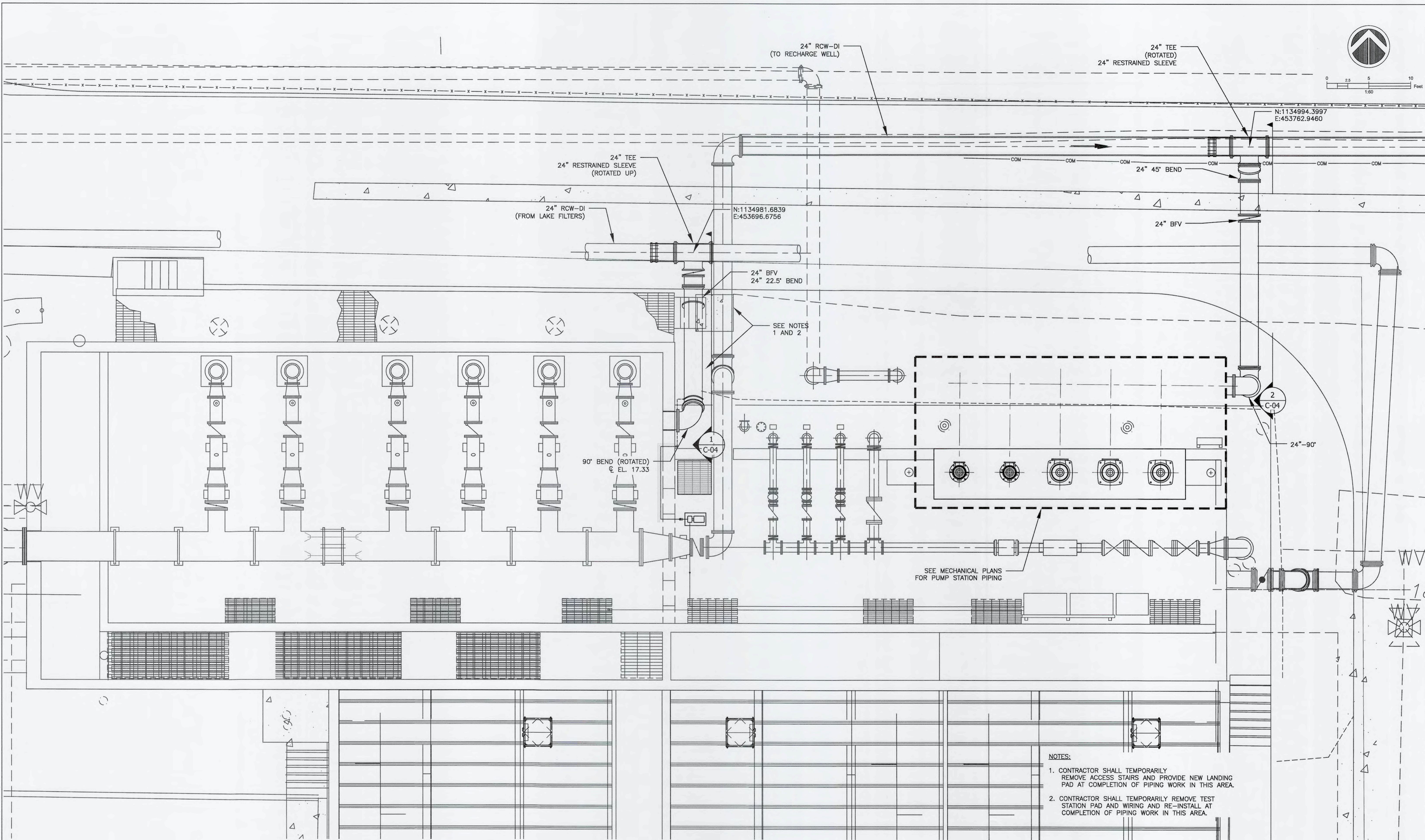


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YARD PIPING PLAN

DATE: SEPTEMBER, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. # 1024-0171	HORIZONTAL: NA	C-02
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR.: TP		
STATUS: ISSUED FOR BID		REVISION:

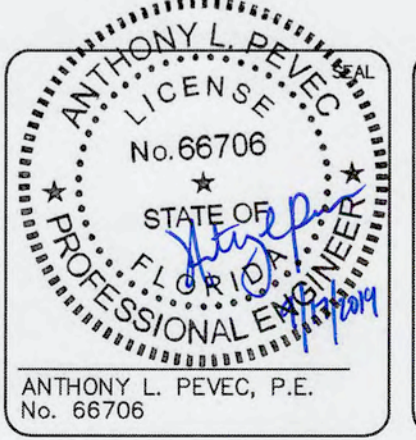
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PARTIAL SITE PLAN
SCALE: 1" = 5'

- NOTES:
- CONTRACTOR SHALL TEMPORARILY REMOVE ACCESS STAIRS AND PROVIDE NEW LANDING PAD AT COMPLETION OF PIPING WORK IN THIS AREA.
 - CONTRACTOR SHALL TEMPORARILY REMOVE TEST STATION PAD AND WIRING AND RE-INSTALL AT COMPLETION OF PIPING WORK IN THIS AREA.

REVNO.	DESCRIPTIONS	DATE



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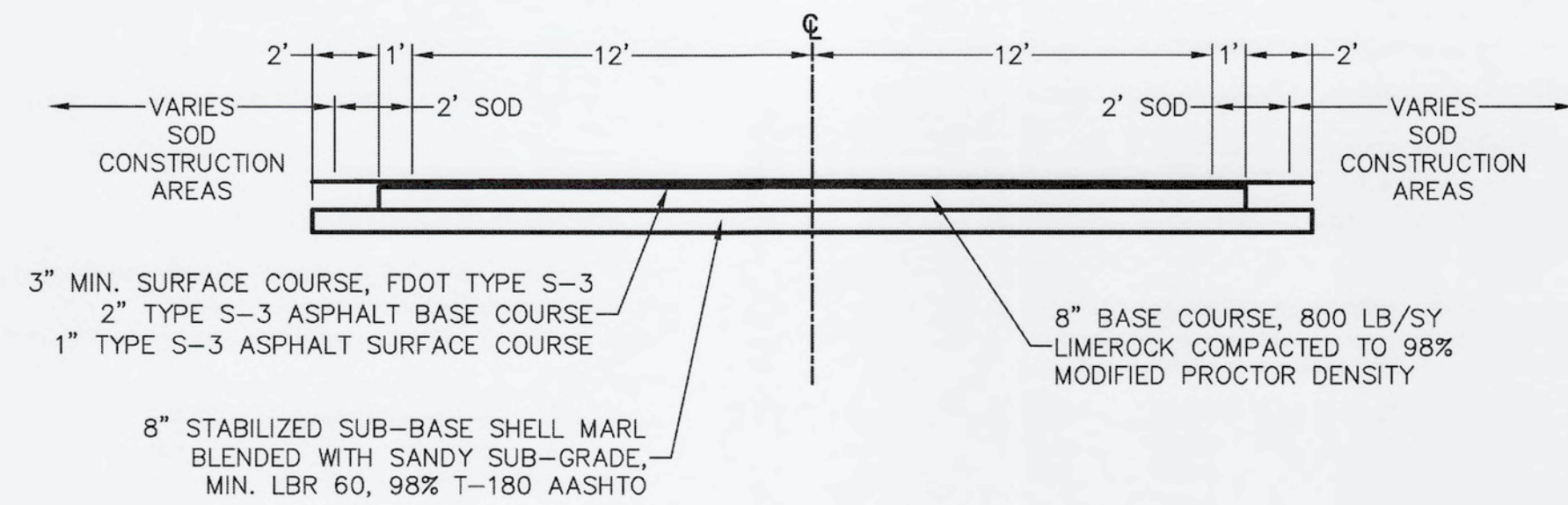


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 CCC REHAB AND
 RECHARGE WELL PS PROJECT**

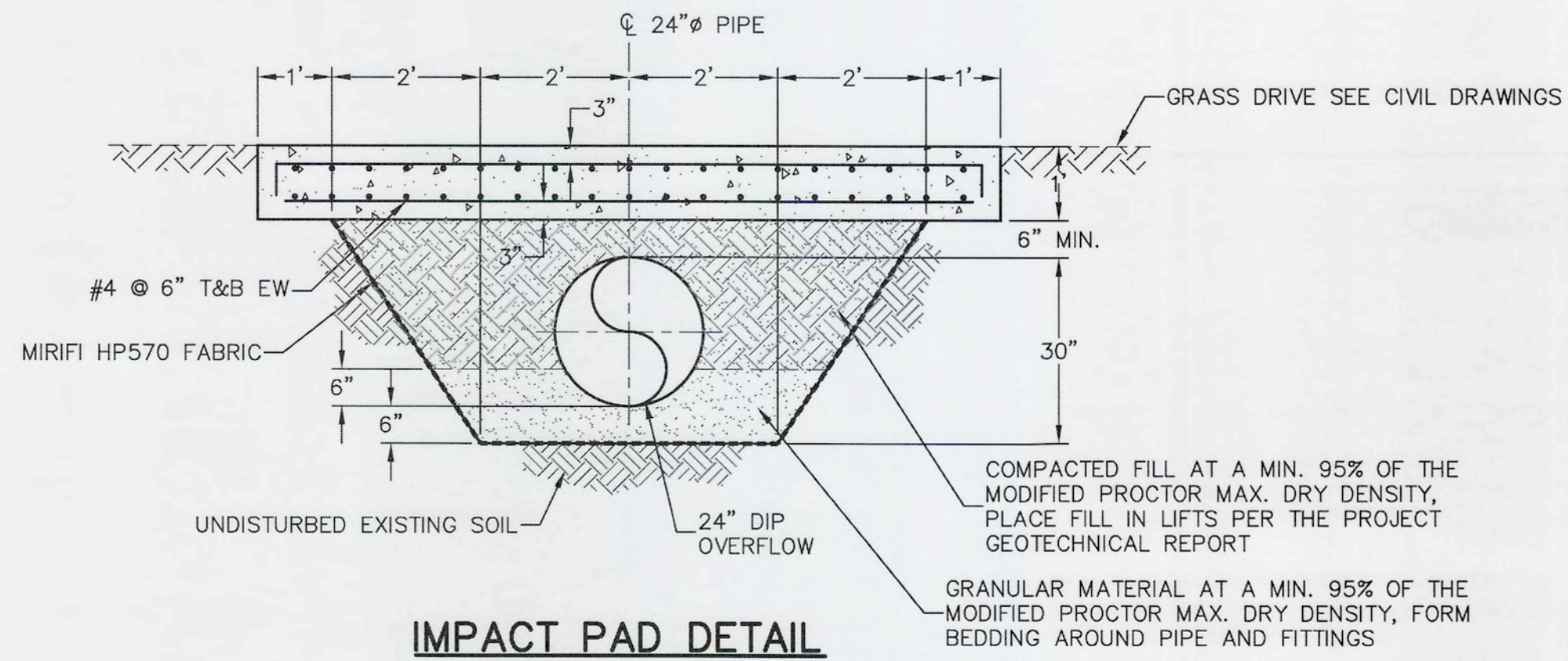
YARD PIPING PLAN-CCC

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: NA	C-03
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR.: TP		REVISION
STATUS: ISSUED FOR BID		

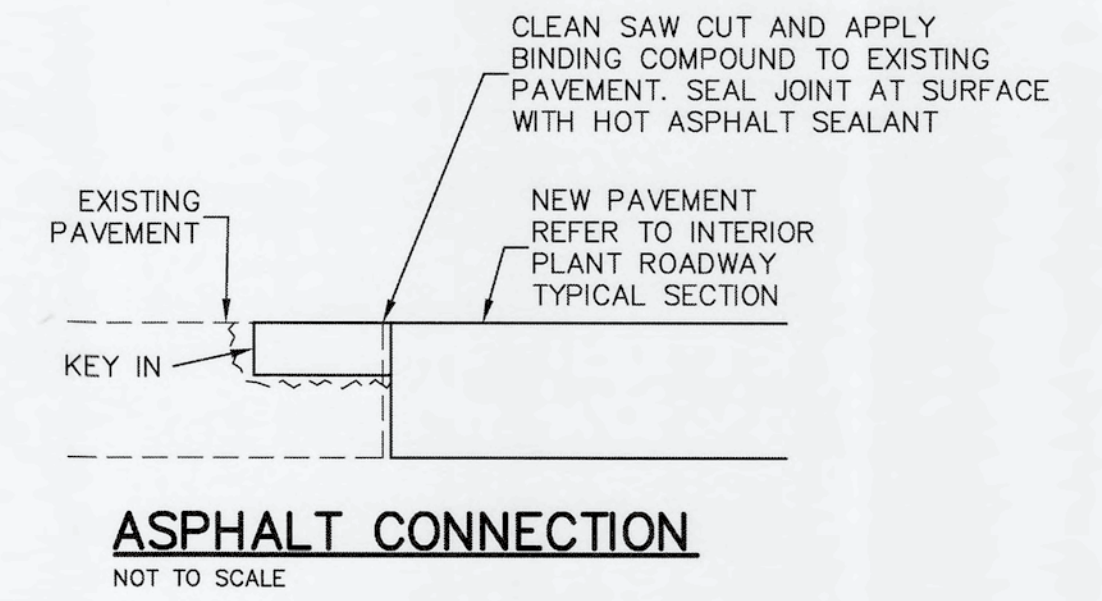
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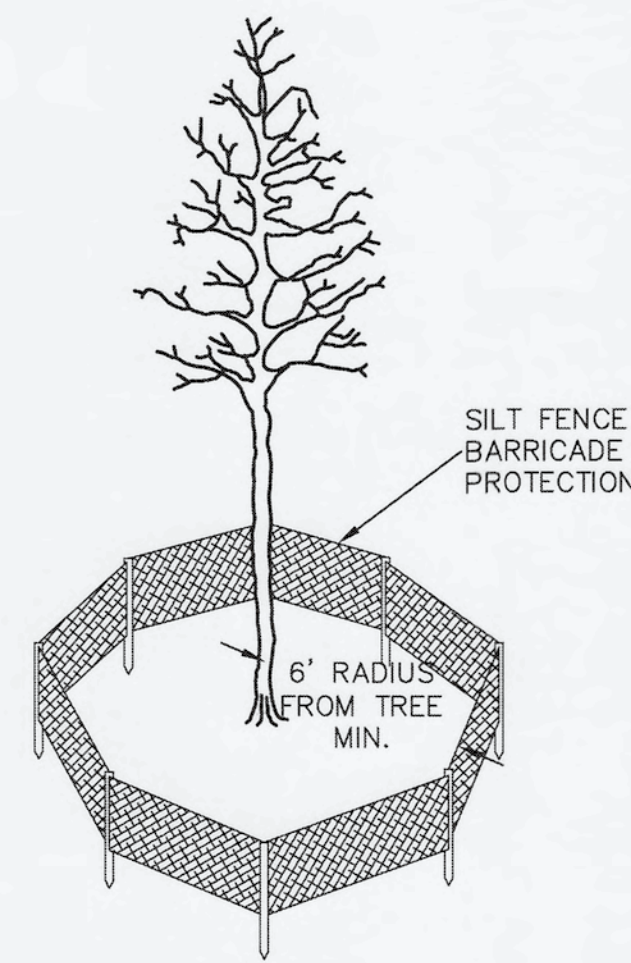
INTERIOR PLANT ROADWAY TYPICAL SECTION
NOT TO SCALE



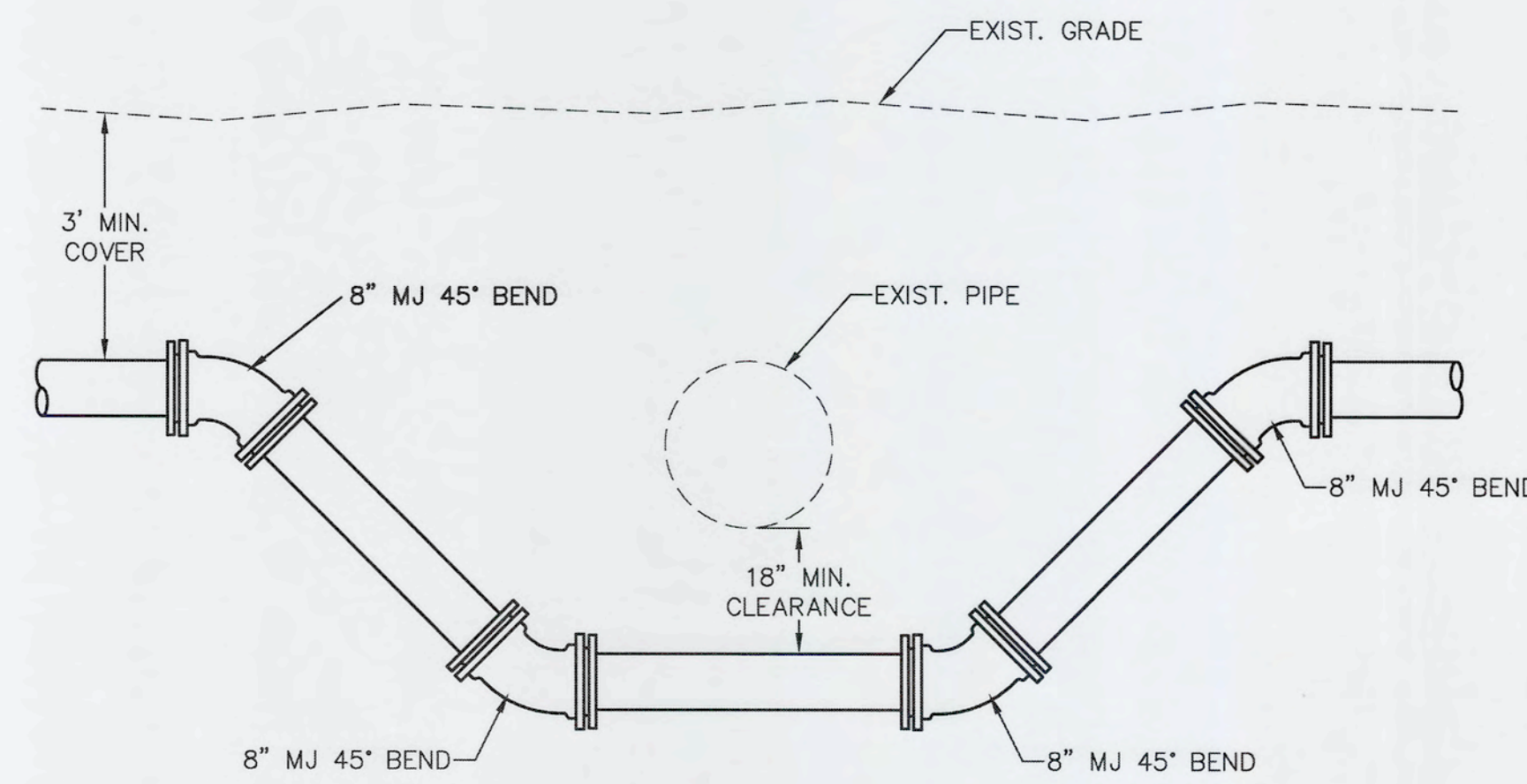
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ASPHALT CONNECTION
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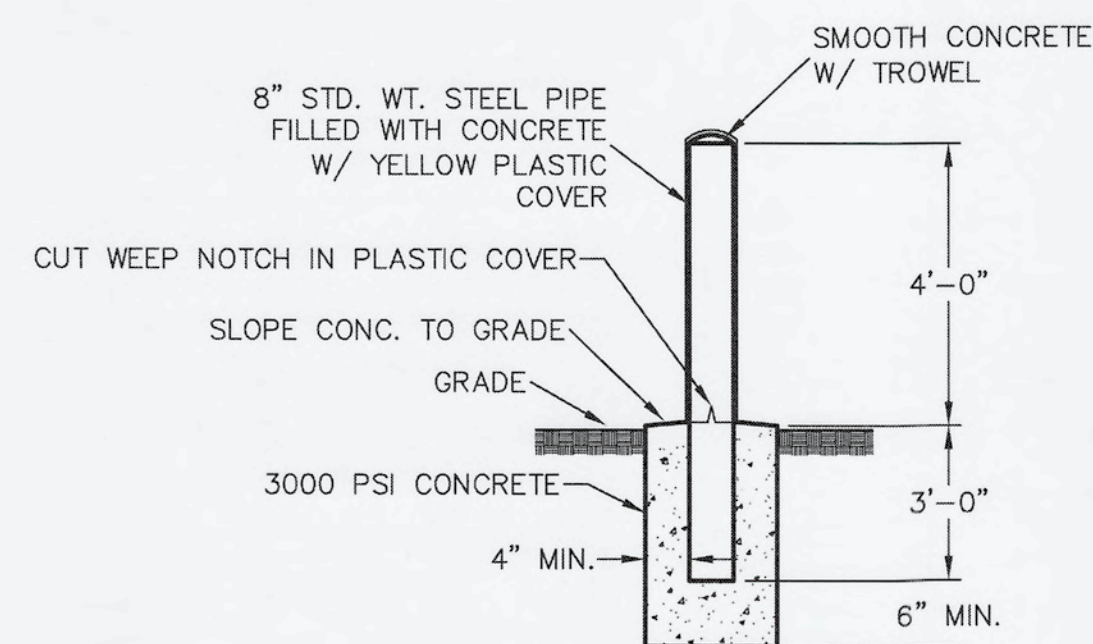


TREE PROTECTION DETAIL
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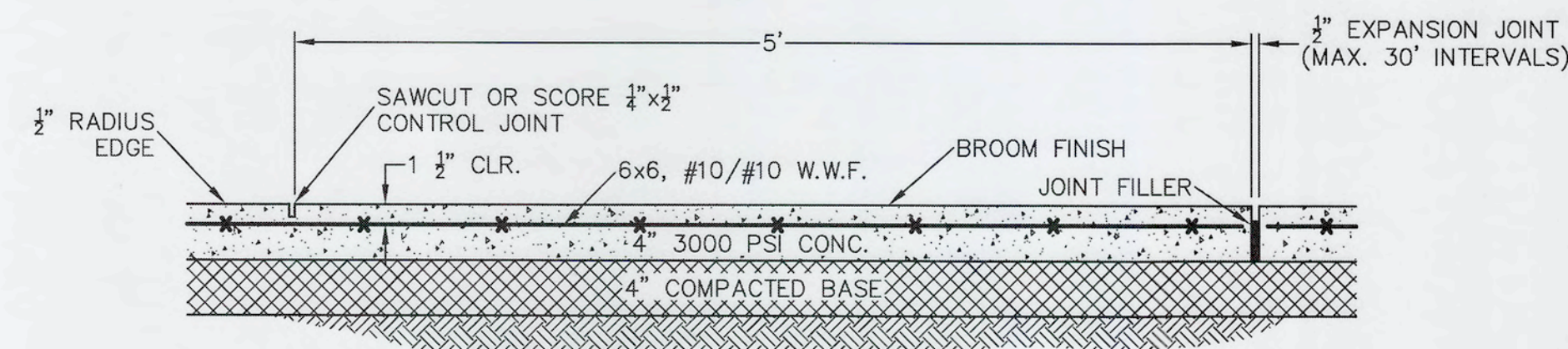


UTILITY CROSSING DETAIL
NOT TO SCALE

NOTE:
1. REDUCED CROSSING CLEARANCES MAY BE APPROVED BY ENGINEER.



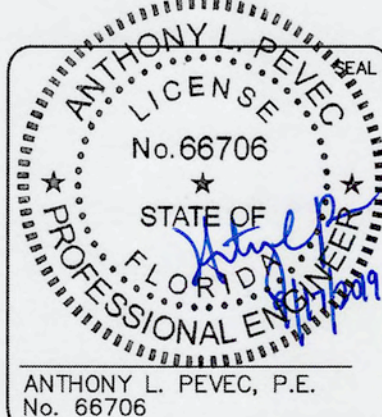
BOLLARD DETAIL
NOT TO SCALE



TYPICAL SIDEWALK DETAIL
NOT TO SCALE

S:\DATA\0171\00-Drawing\0171-UC-05-C-05 10240171.dwg, 9/16/2019 3:44:42 PM, Corbin Roberts

REV. NO.	DESCRIPTIONS	DATE



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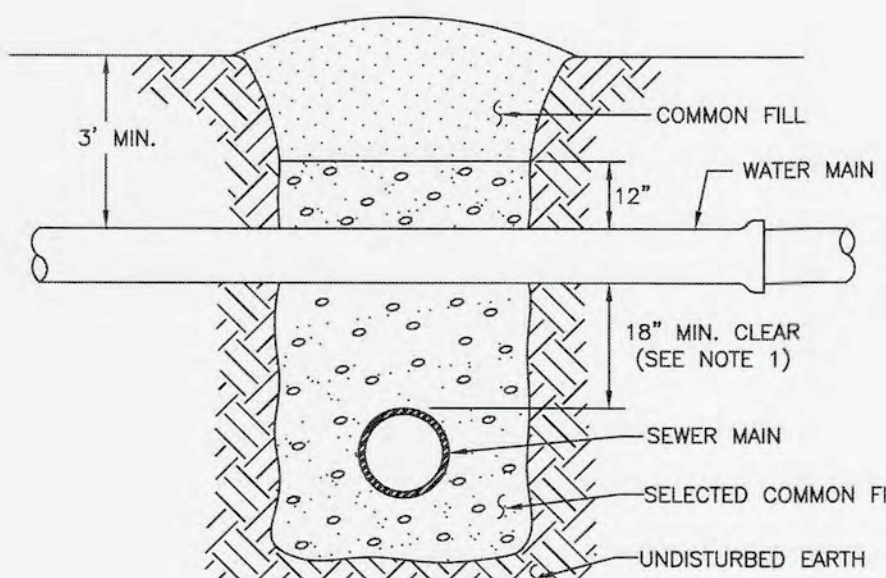
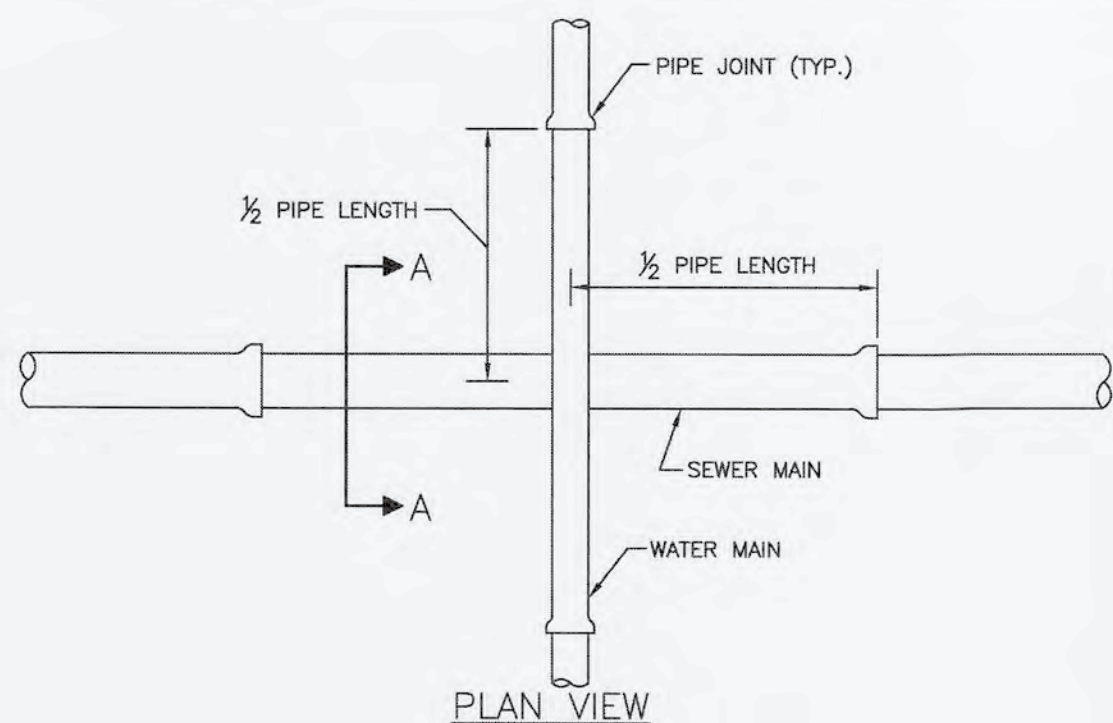
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RECHARGE WELL PS PROJECT**

CIVIL DETAILS

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: NA	C-05
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR. TP		
STATUS: ISSUED FOR BID		REVISION



- NOTES:**
- CLEARANCE MAY BE REDUCED TO 6" FOR GRAVITY SEWER WHERE WATER MAIN IS DUCTILE IRON OR 3" FOR FORCE MAIN WHERE FORCE MAIN IS ENCASED A MINIMUM OF 10" EACH SIDE OF CROSSING.
 - WHERE NO ENCASEMENT IS REQUIRED, PIPE SECTIONS SHALL BE FULL-LENGTH AND SHALL BE ADJUSTED HORIZONTALLY SO THAT THE CROSSING IS AT EACH PIPE SECTION'S MIDPOINT REGARDLESS OF THE VERTICAL CLEARANCE.
 - REFER TO THE JACK & BORE CROSSING DETAIL FOR CASING AND SPACER REQUIREMENTS.

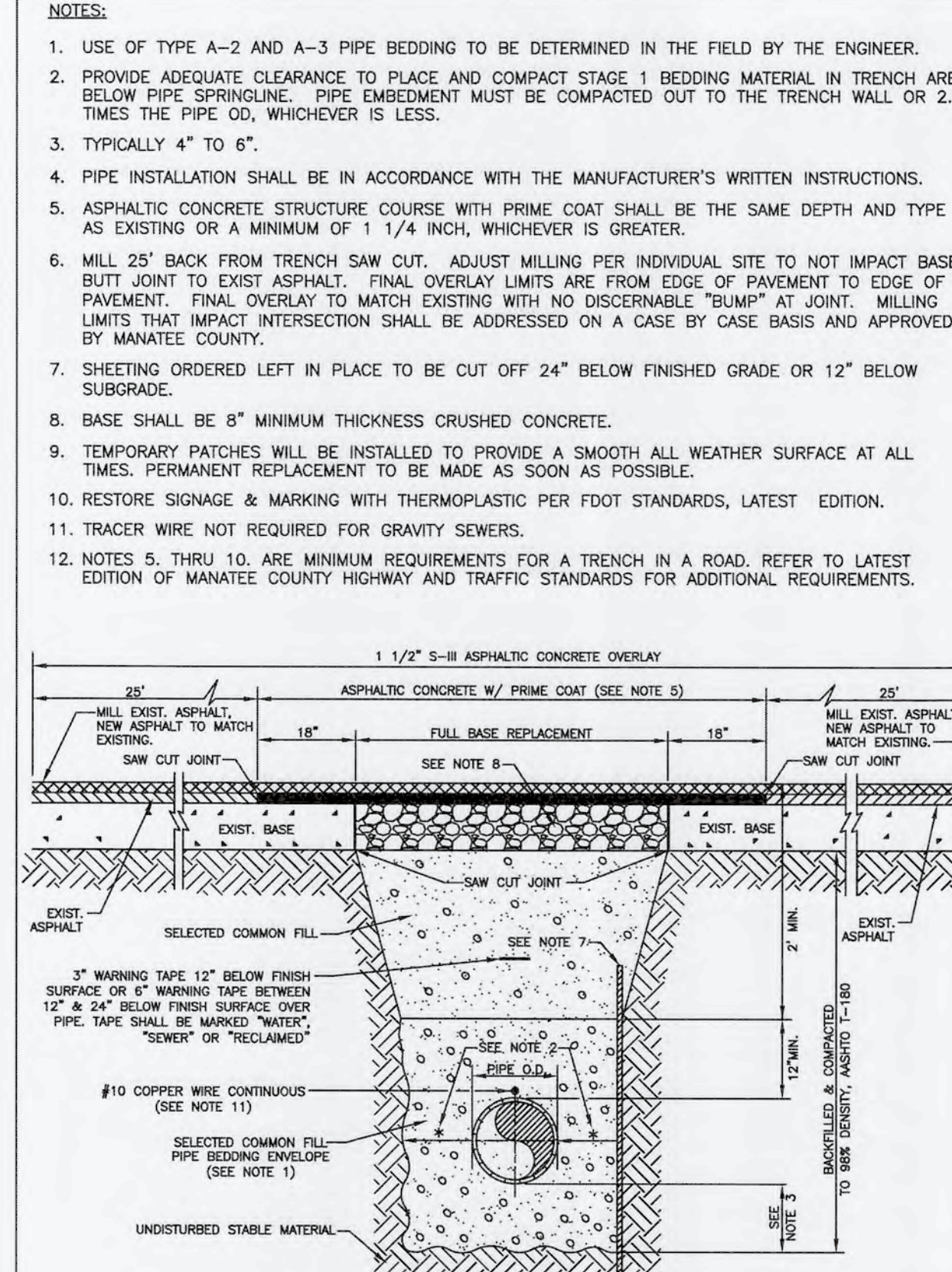
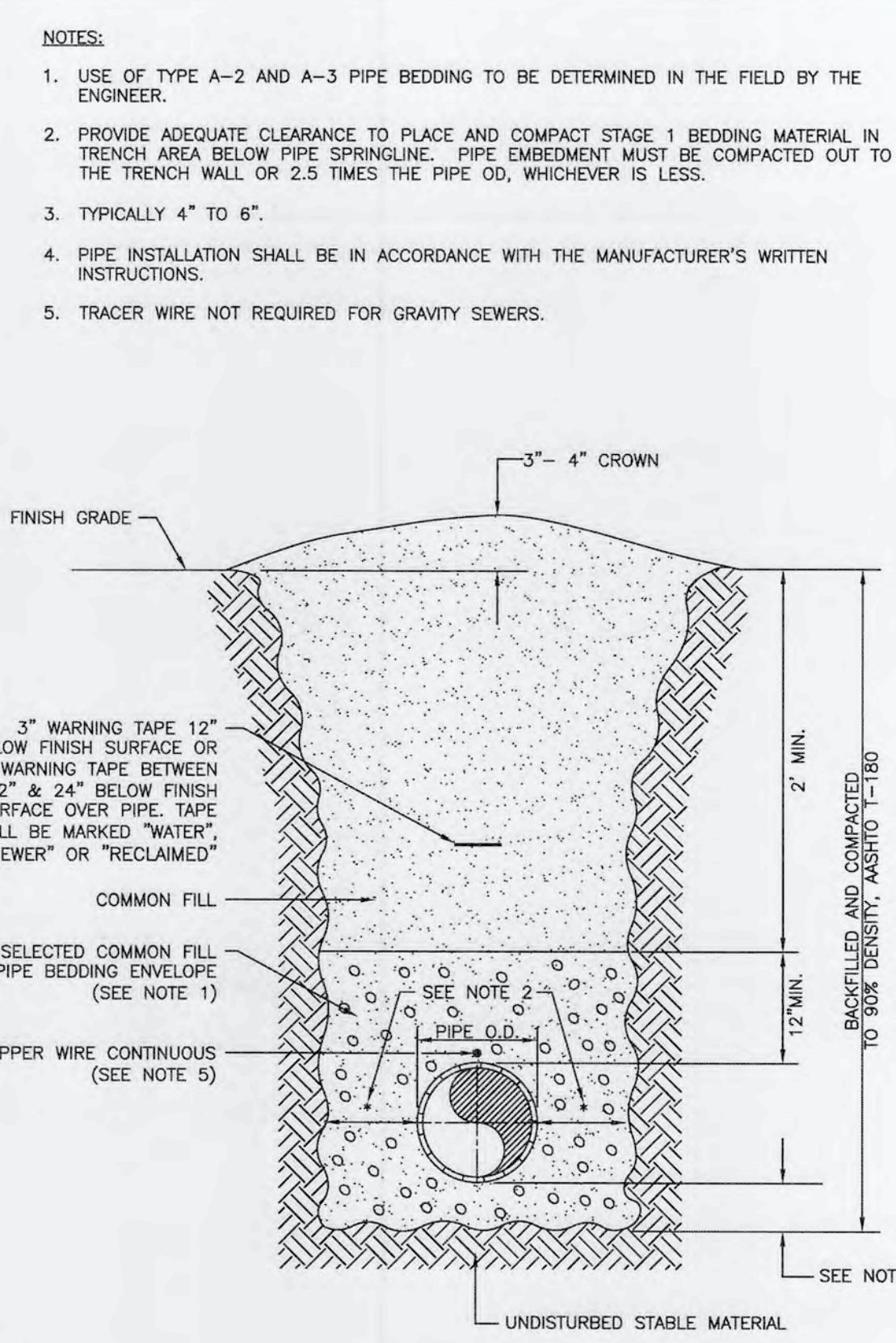
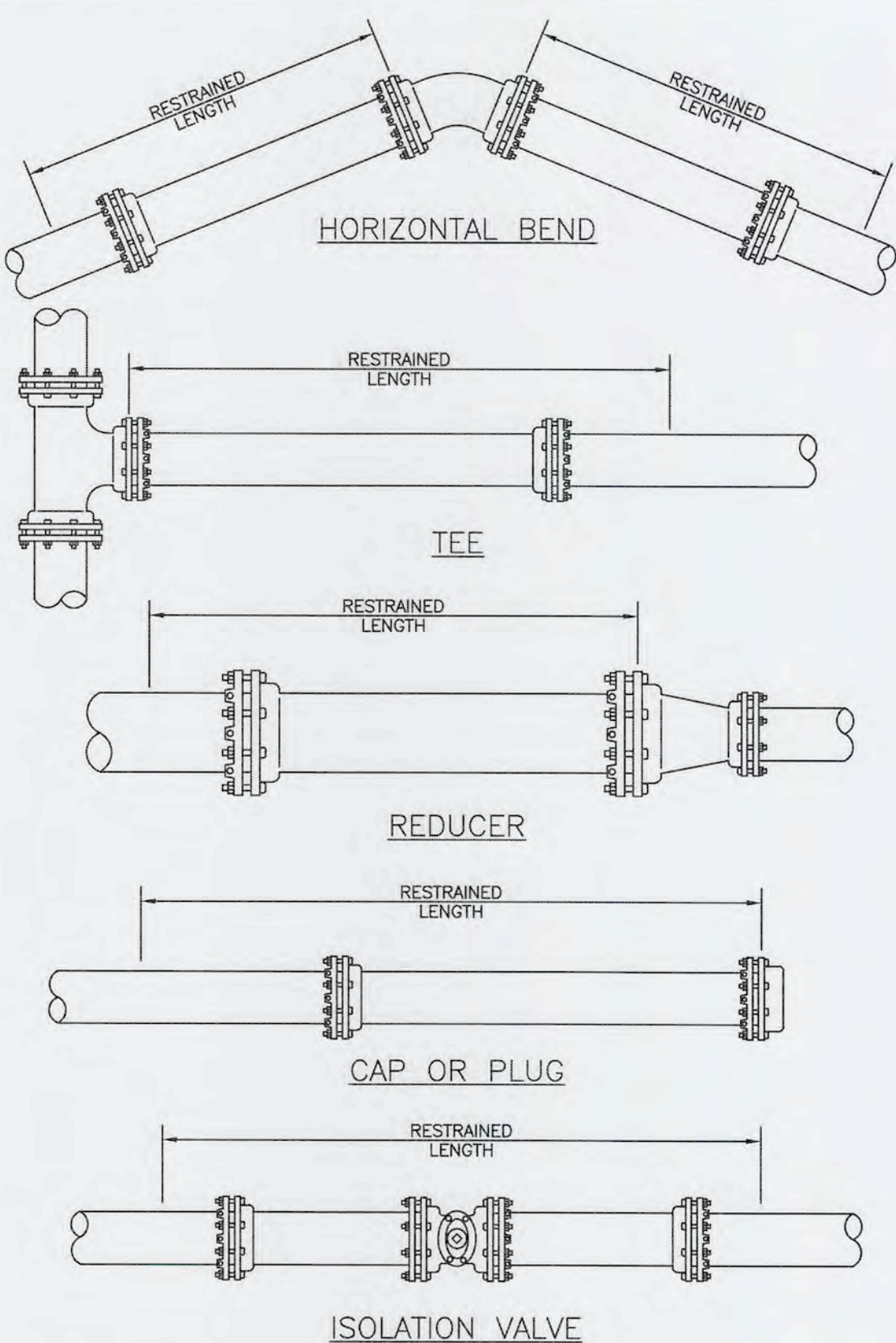
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS	TEES										REDUCERS										PLUGS & VALVES	
		SIZE		LENGTH		SIZE		LENGTH		SIZE		LENGTH		SIZE		LENGTH							
36	142	59	28	x38	x30	x24	x20	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	453
30	124	51	25	x30	x24	x20	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	391	
24	106	44	21	x24	x20	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	327		
20	92	38	18	x20	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	280			
16	77	32	15	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	231				
12	61	25	12	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	181					
10	52	22	10	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	153						
8	44	18	9	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	128							
6	34	14	7	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	98								
4	24	10	5	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	69									

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS	TEES										REDUCERS										PLUGS & VALVES	
		SIZE		LENGTH		SIZE		LENGTH		SIZE		LENGTH		SIZE		LENGTH							
36	100	42	20	x36	x30	x24	x20	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	198
30	88	37	18	x30	x24	x20	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	162	
24	75	31	15	x24	x20	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	135		
20	65	27	13	x20	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	116			
16	54	22	11	x16	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	96				
12	43	18	8	x12	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	75					
10	37	15	7	x10	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	63						
8	30	13	6	x8	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	53							
6	24	10	5	x6	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	41								
4	17	7	3	x4	x30	x24	x20	x16	x12	x10	x8	x6	x4	29									

NOTE:
SEE RESTRAINED LENGTHS FOR PVC PIPE DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV. BY: CLB/BR DATE: 11/10 DATE OF APPROVAL: MAY 10, 2011

TYPICAL NEW WATER & SEWER LINE CROSSING

UG-2 PAGE 102

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV. BY: CLB/BR DATE: 11/10 DATE OF APPROVAL: MAY 10, 2011

RESTRAINED LENGTHS FOR DIP

UG-9 PAGE 109

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV. BY: CLB/BR DATE: 11/10 DATE OF APPROVAL: MAY 10, 2011

RESTRAINED LENGTHS FOR PIPE

UG-10 PAGE 110

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV. BY: WRT/KE DATE: 03/11 DATE OF APPROVAL: MAY 10, 2011

TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING

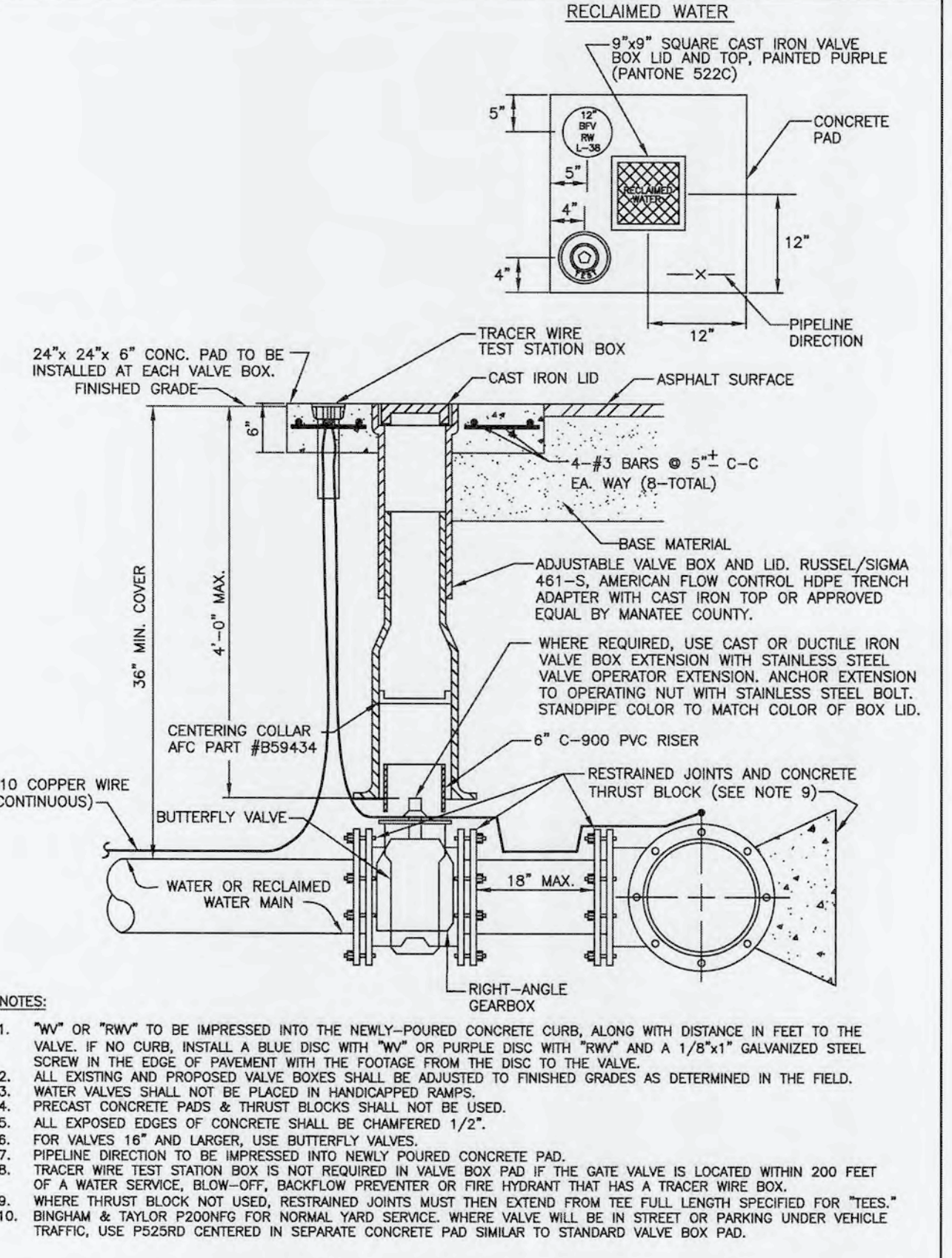
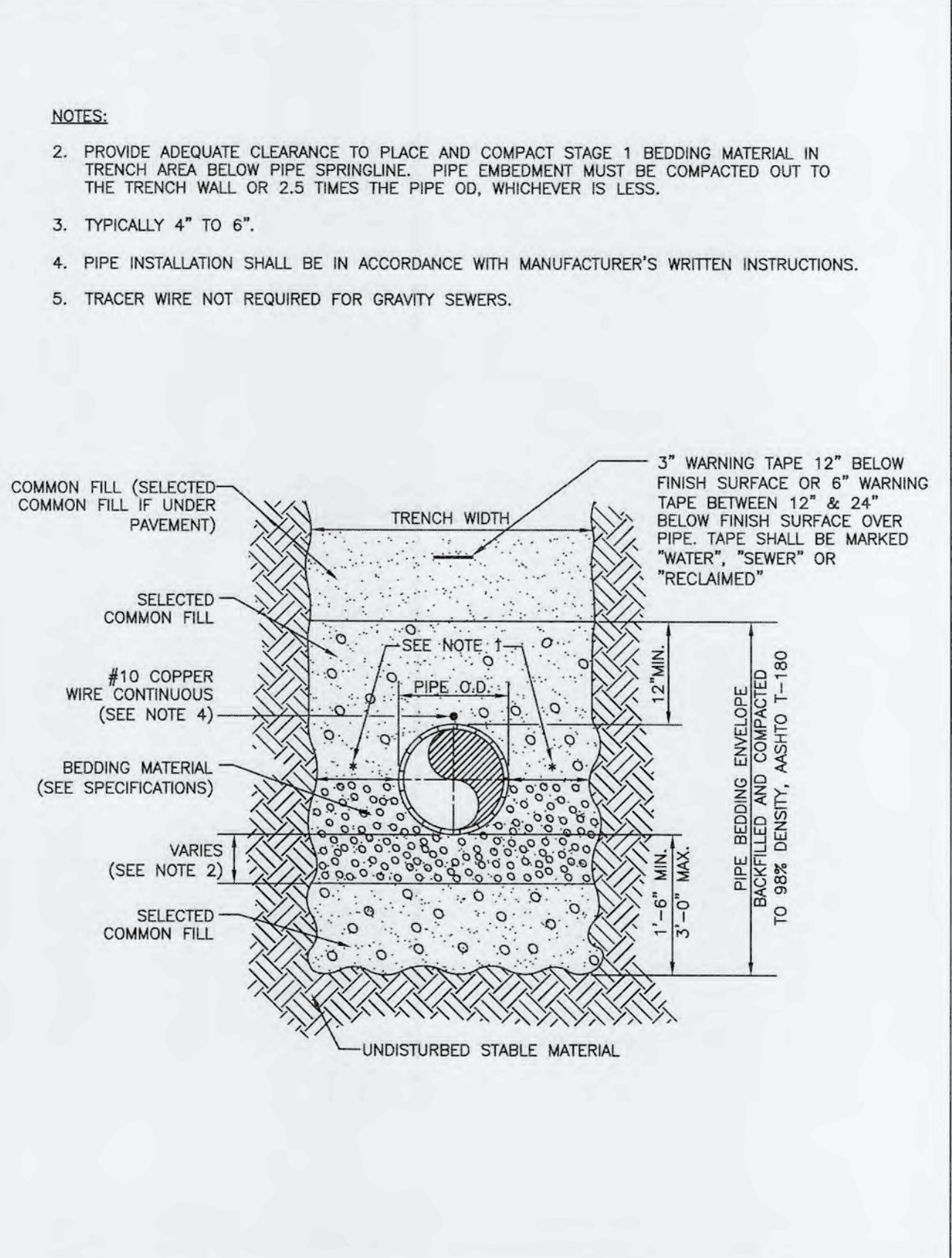
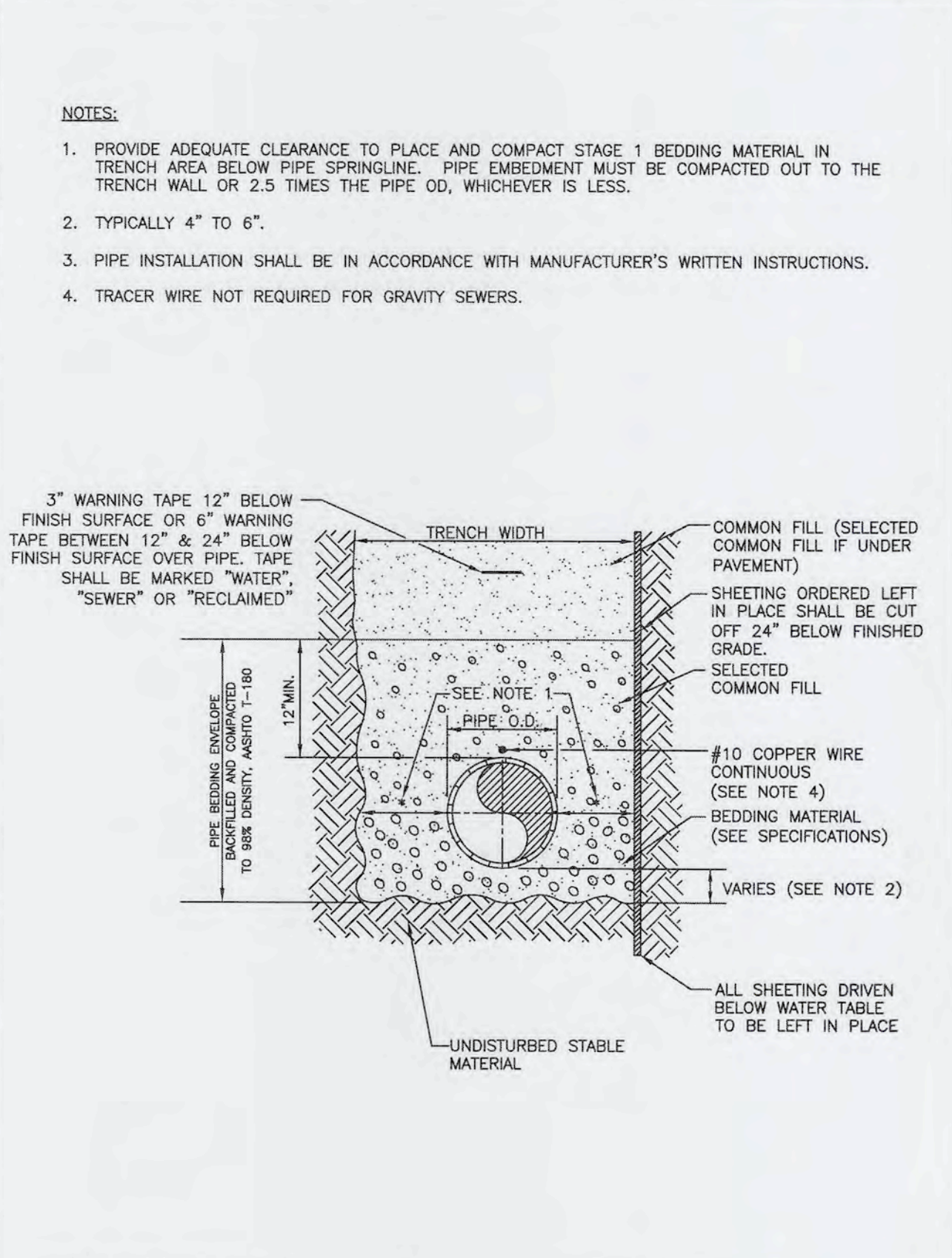
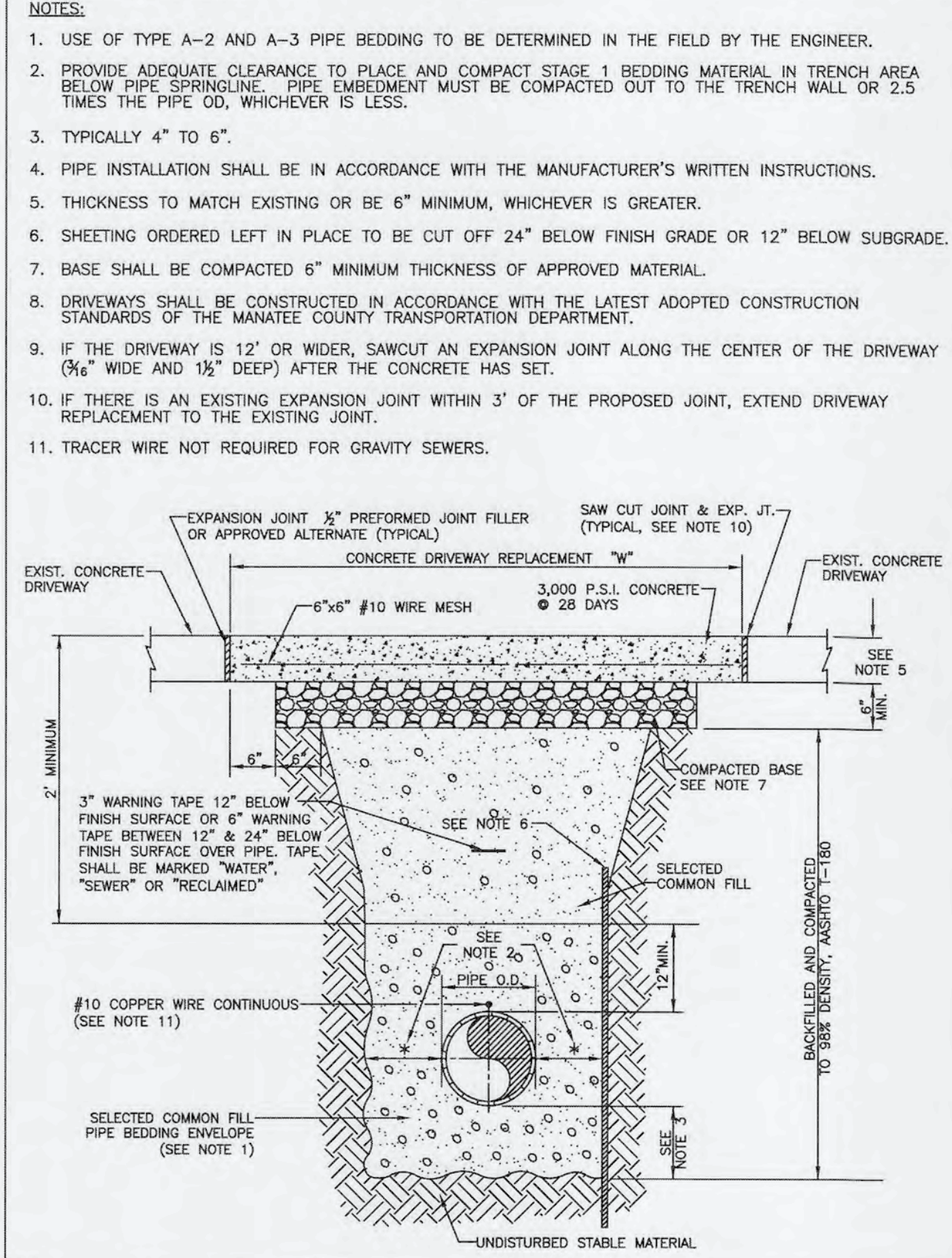
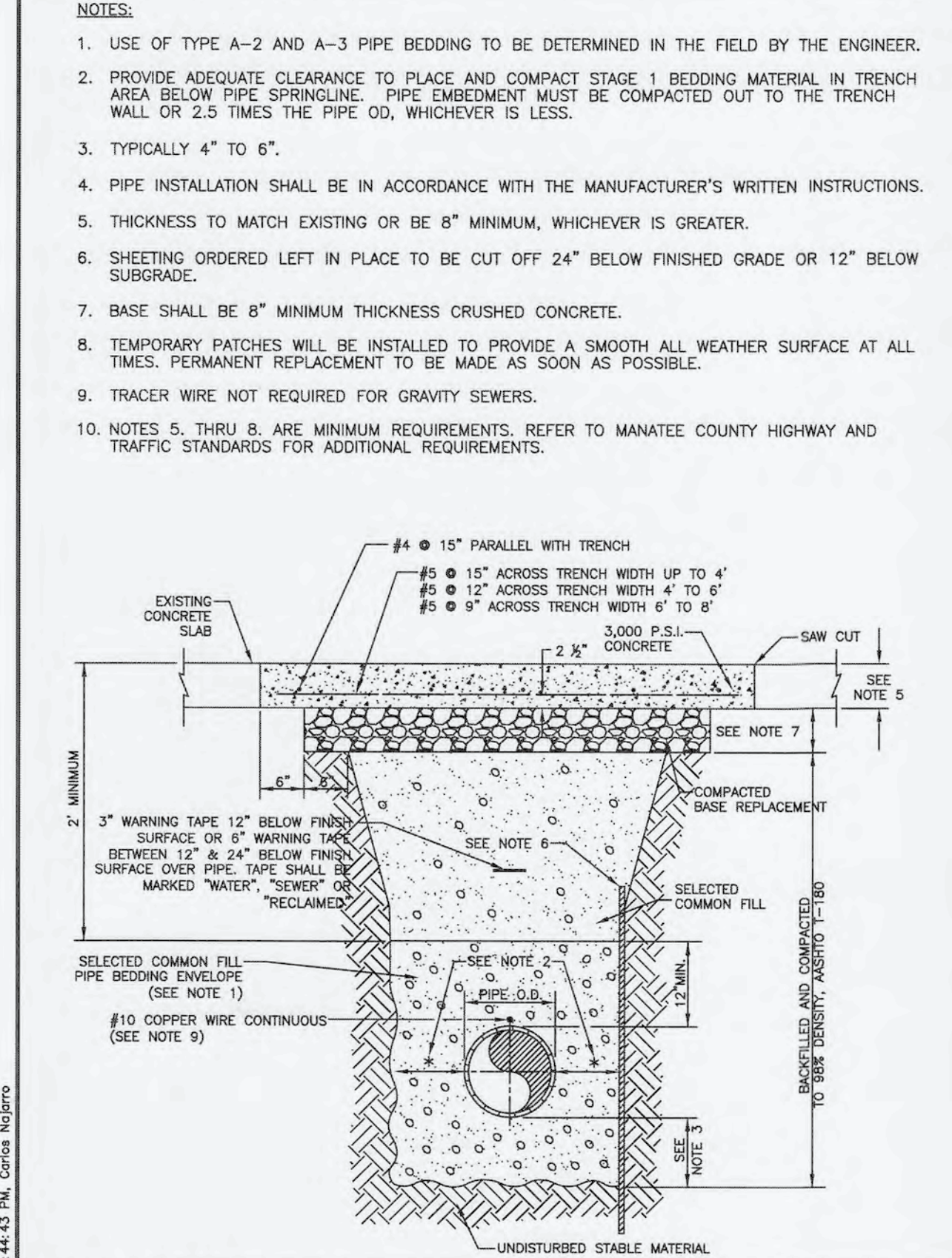
UG-11 PAGE 111

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV. BY: WRT/KE DATE: 03/11 DATE OF APPROVAL: MAY 10, 2011

TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING

UG-12 PAGE 112



MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV. BY: CLB/BR DATE: 11/10 DATE OF APPROVAL: MAY 10, 2011

TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A-1 PIPE BEDDING

UG-13 PAGE 113

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV. BY: CLB/BR DATE: 11/10 DATE OF APPROVAL: MAY 10, 2011

TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING

UG-14 PAGE 114

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV. BY: CLB/BR DATE: 11/10 DATE OF APPROVAL: MAY 10, 2011

TRENCH WITH TYPE A-2 PIPE BEDDING

UG-15 PAGE 115

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV. BY: CLB/BR DATE: 11/10 DATE OF APPROVAL: MAY 10, 2011

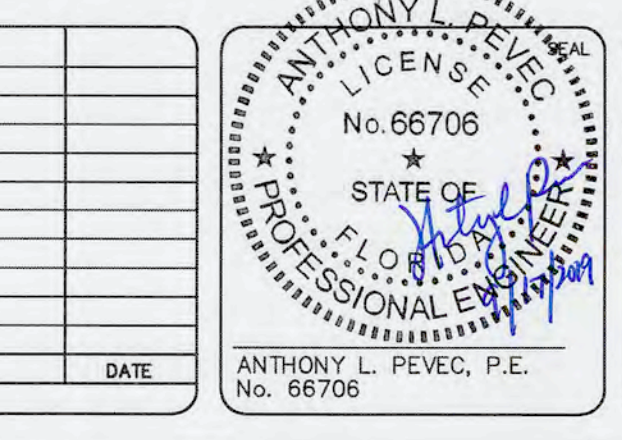
TRENCH WITH TYPE A-3 PIPE BEDDING

UG-16 PAGE 116

BUTTERFLY VALVE, BOX, LID AND TAG

UG-17 PAGE 117

REV. NO.	DESCRIPTIONS	DATE



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SWRF CCC REHAB AND RECHARGE WELL PS PROJECT

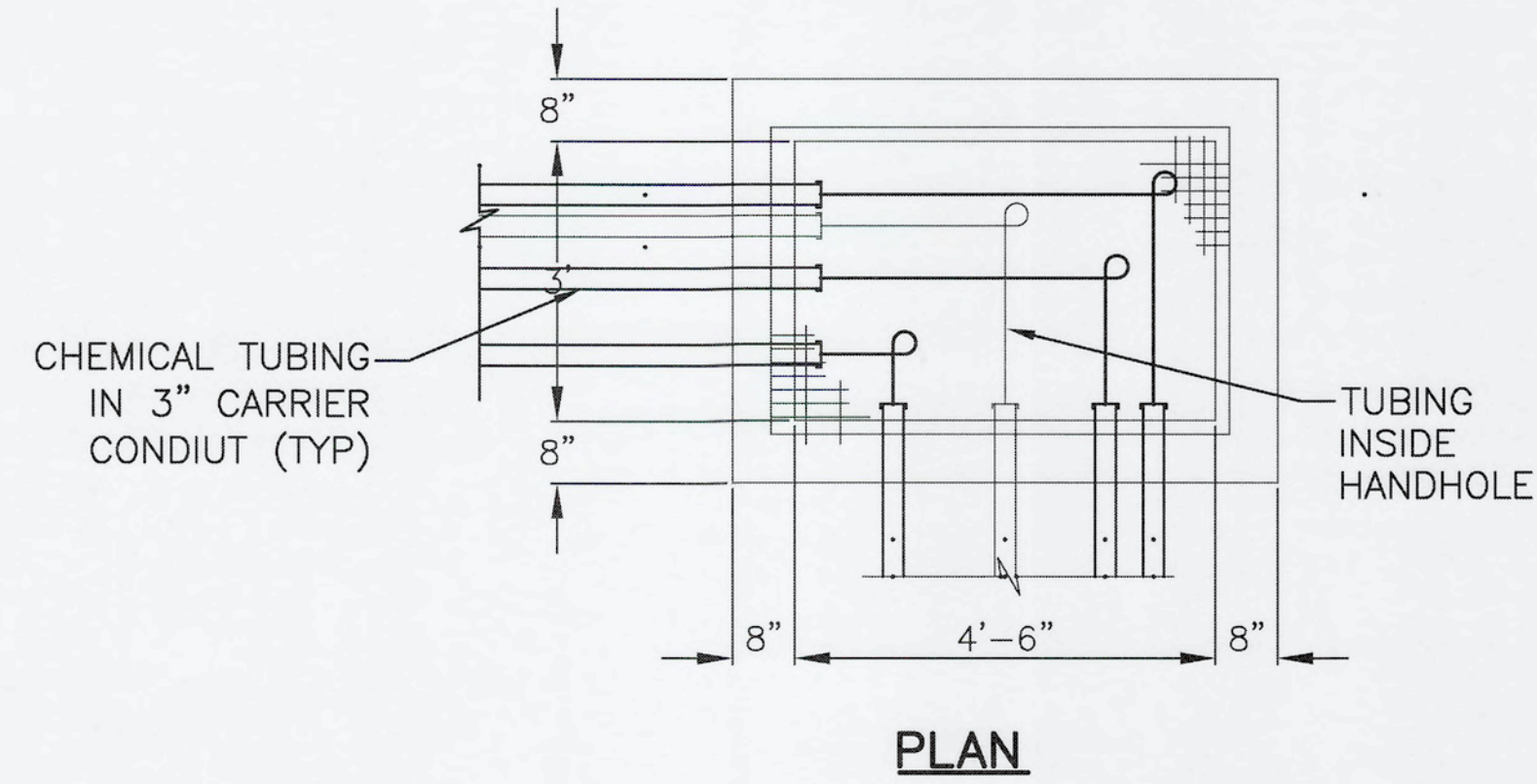
CIVIL DETAILS

DATE: SEPTEMBER, 2019
MCE PROJ. # 1024-0171
DRAWN: CN
DESIGNED: TP
CHECKED: JV
PROJ. MGR. TP

SCALE: HORIZONTAL: NA VERTICAL: NA

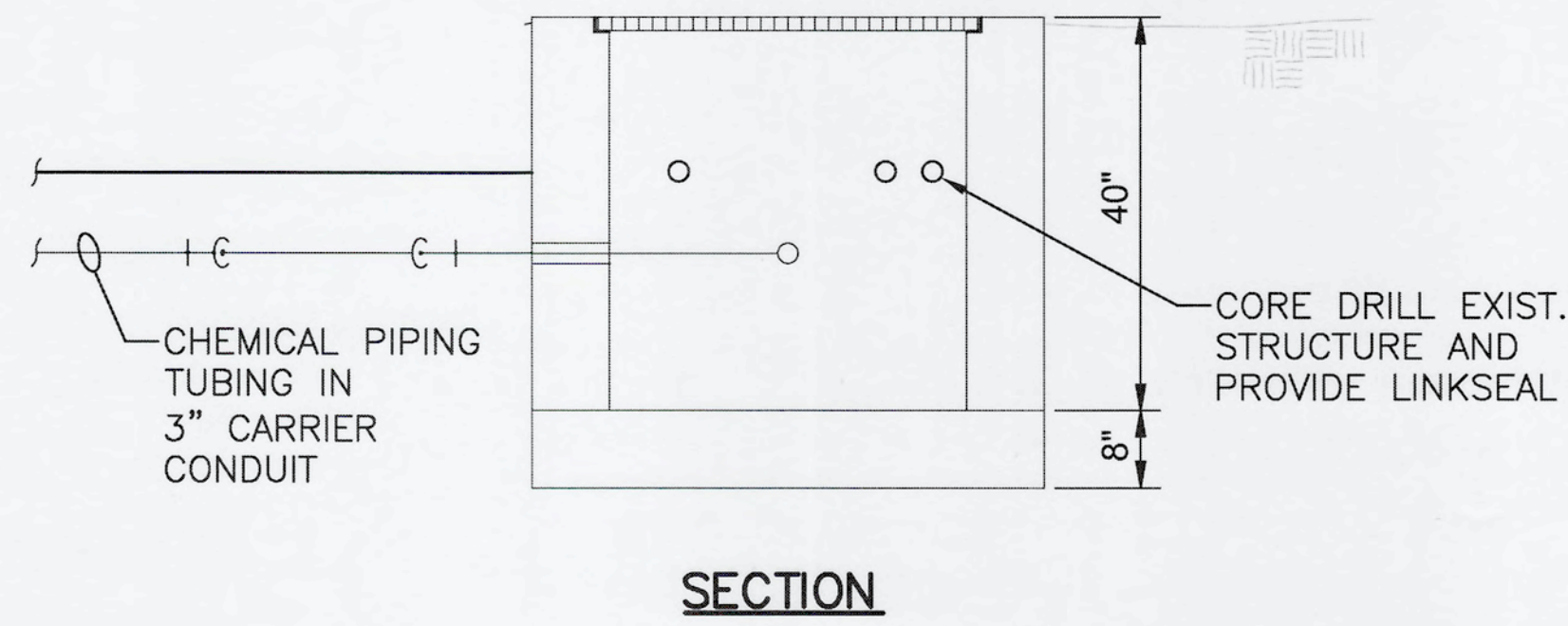
DRAWING NUMBER: **C-06**

STATUS: **ISSUED FOR BID**

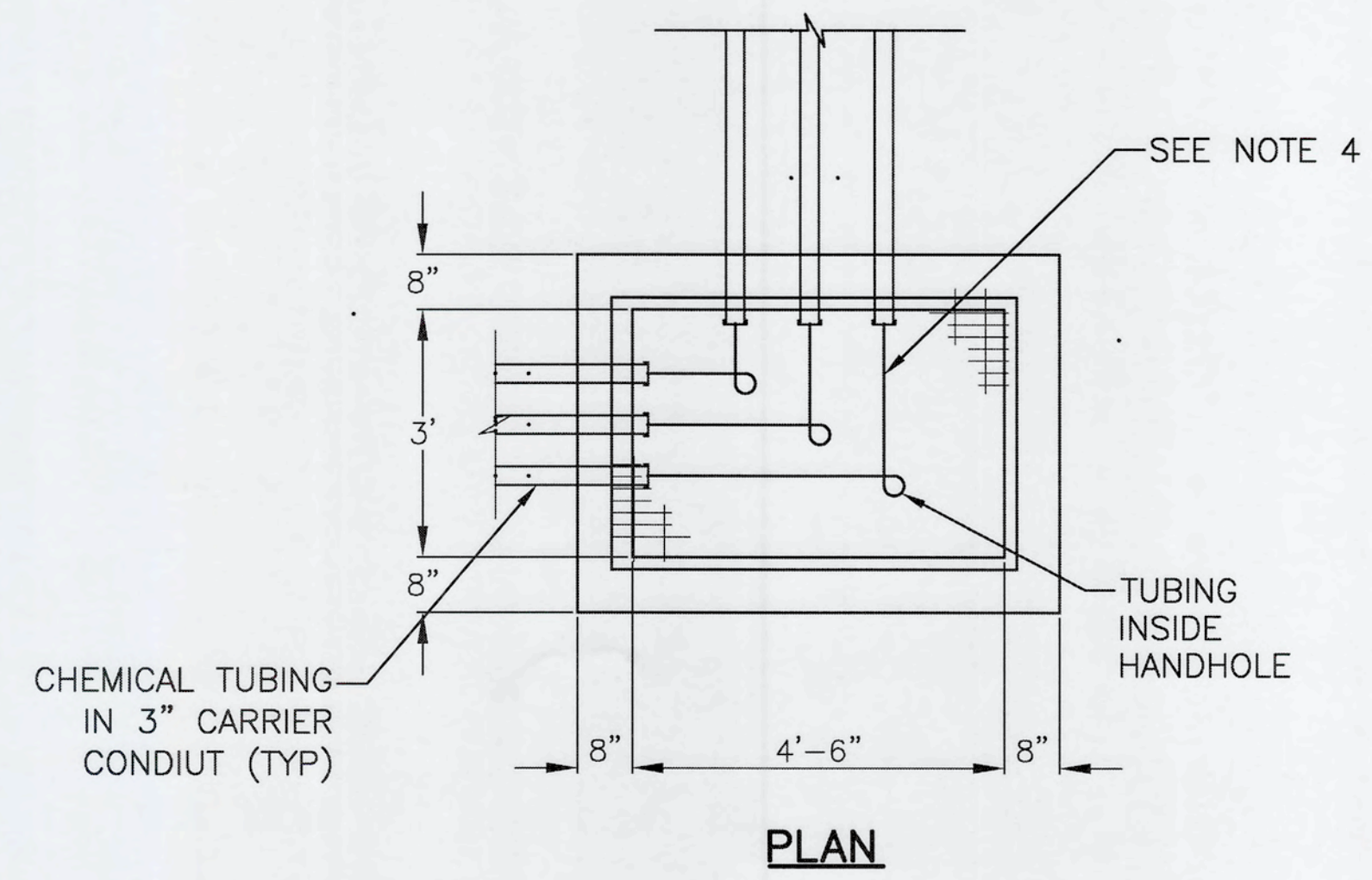


NOTES:

1. HANDHOLES SHOWN ON DRAWINGS MAY DIFFER IN ACTUAL PIPING ARRANGEMENT. HANDHOLE SHOWN FOR PURPOSES OF CONSTRUCTION.
2. ALL ANCHORS SHALL BE 316 SST. ALL MACHINED BOLTS SHALL BE 18-8 SST.
3. PIPING SHALL BE 3" SCH. 40 PVC. TUBING SHALL BE 1/2" I.D. CHEMFLUR 367. SEE SPECIFICATIONS.
4. PROVIDE 5-FEET MIN. ADDITIONAL TUBING LOOPED IN MANHOLE.

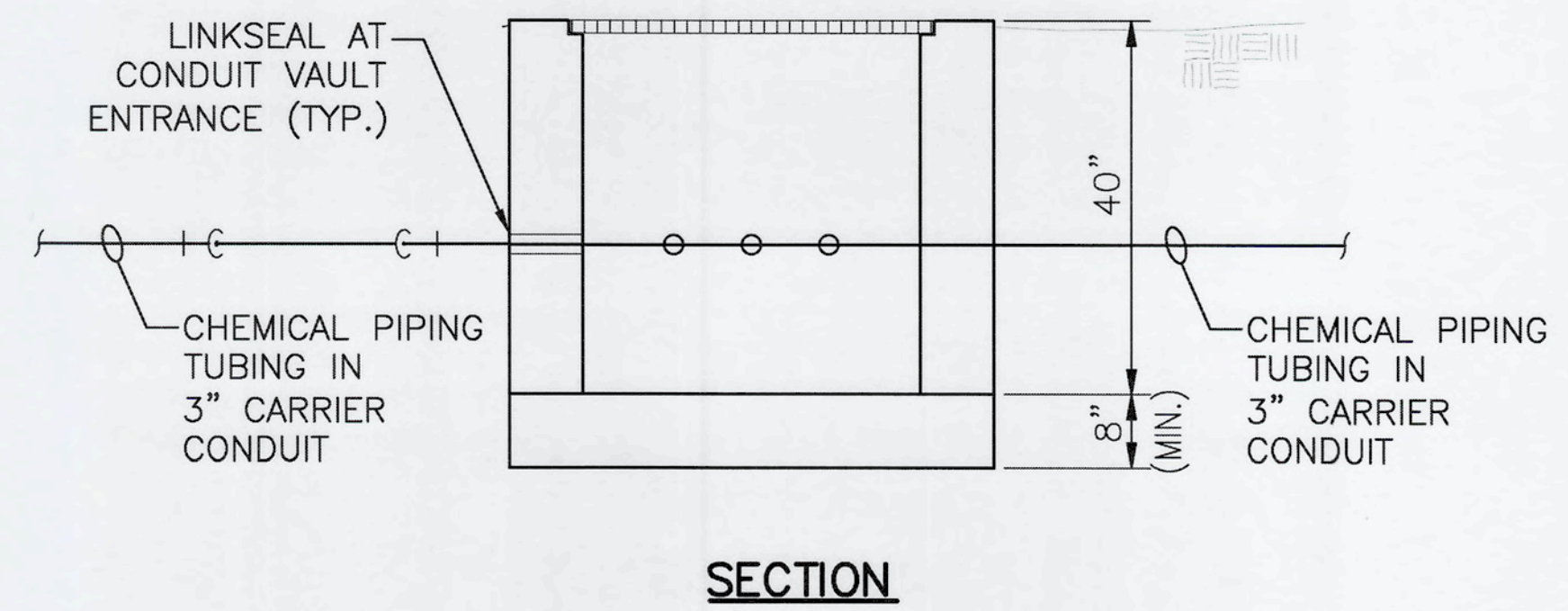


EXISTING CHEMICAL PIPING MANHOLE
NOT TO SCALE



NOTES:

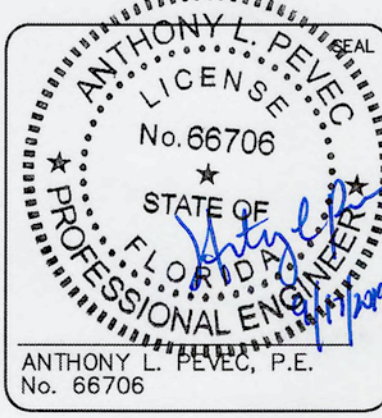
1. HANDHOLES SHOWN ON DRAWINGS MAY DIFFER IN ACTUAL PIPING ARRANGEMENT. HANDHOLE SHOWN FOR PURPOSES OF CONSTRUCTION.
2. ALL ANCHORS SHALL BE 316 SST. ALL MACHINED BOLTS SHALL BE 18-8 SST.
3. PIPING SHALL BE 3" SCH. 40 PVC. TUBING SHALL BE 1/2" I.D. FLUOROPOLYMER SEE SPECIFICATIONS.
4. PROVIDE 5-FEET MIN. ADDITIONAL TUBING LOOPED IN MANHOLE.
5. PROVIDE REINFORCING AS REQUIRED FOR HS-20 LOADING.
6. PROVIDE HOT-DIPPED GALVANIZED STEEL TRAFFIC DUTY GRATE AND FRAME RATED FOR HS-20 LOADING.



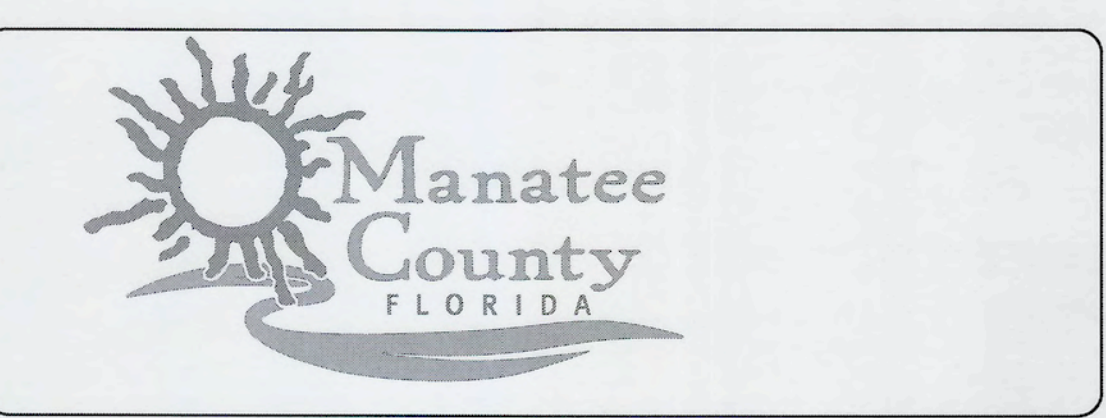
NEW CHEMICAL PIPING MANHOLE
NOT TO SCALE

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REV. NO.	DESCRIPTIONS	DATE



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**SWWRF
 CCC REHAB AND
 RECHARGE WELL PS PROJECT**

CIVIL DETAILS

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: NA	C-07
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR.: TP		
STATUS: ISSUED FOR BID		

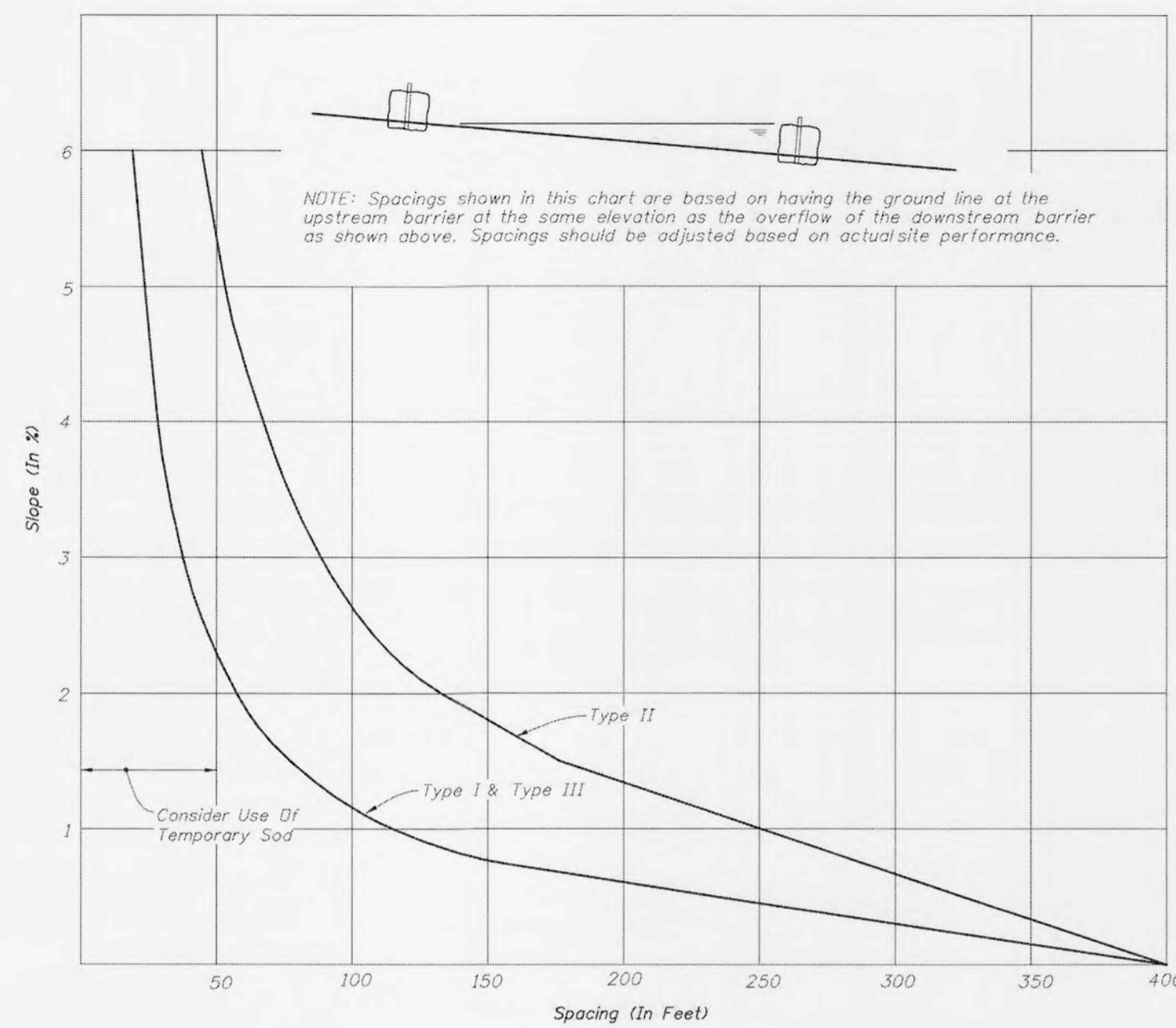
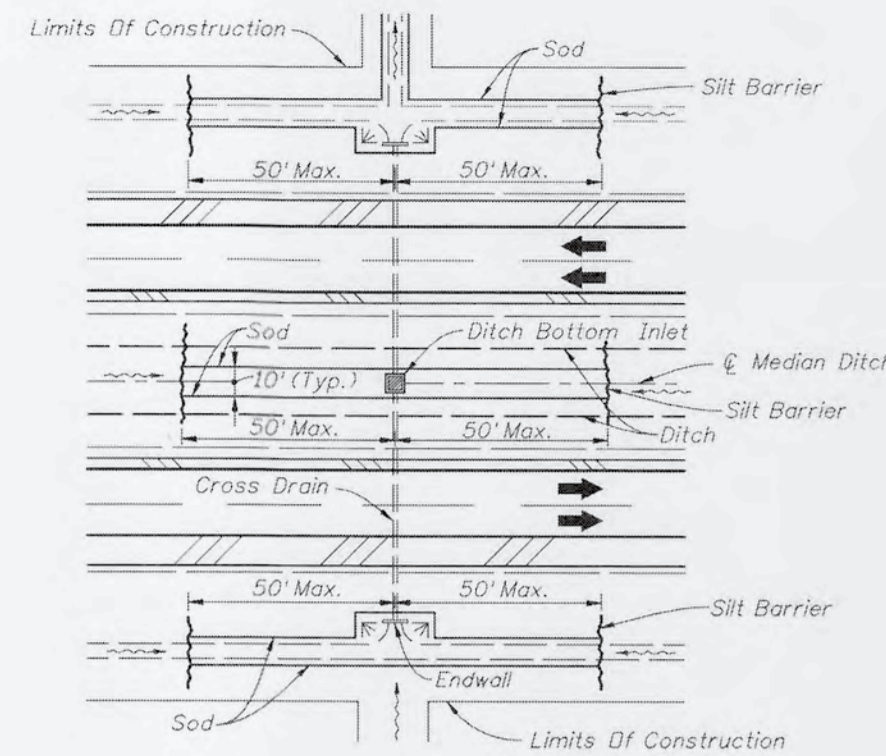
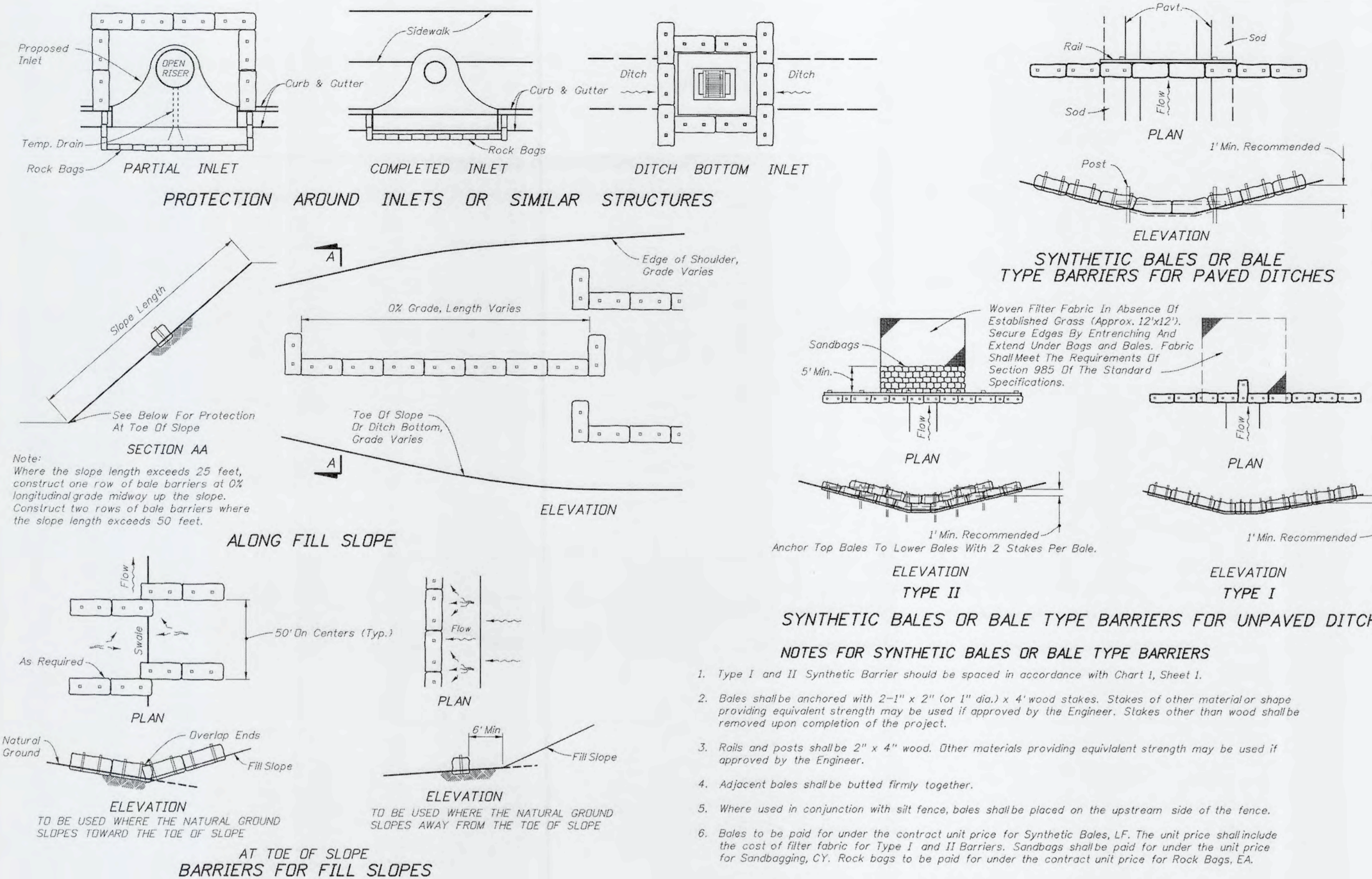


CHART I
RECOMMENDED SPACING FOR SYNTHETIC BALES OR BALE TYPE BARRIERS AND TYPE III SILT FENCE



DITCH INSTALLATIONS AT DRAINAGE STRUCTURES



PROTECTION AROUND INLETS OR SIMILAR STRUCTURES

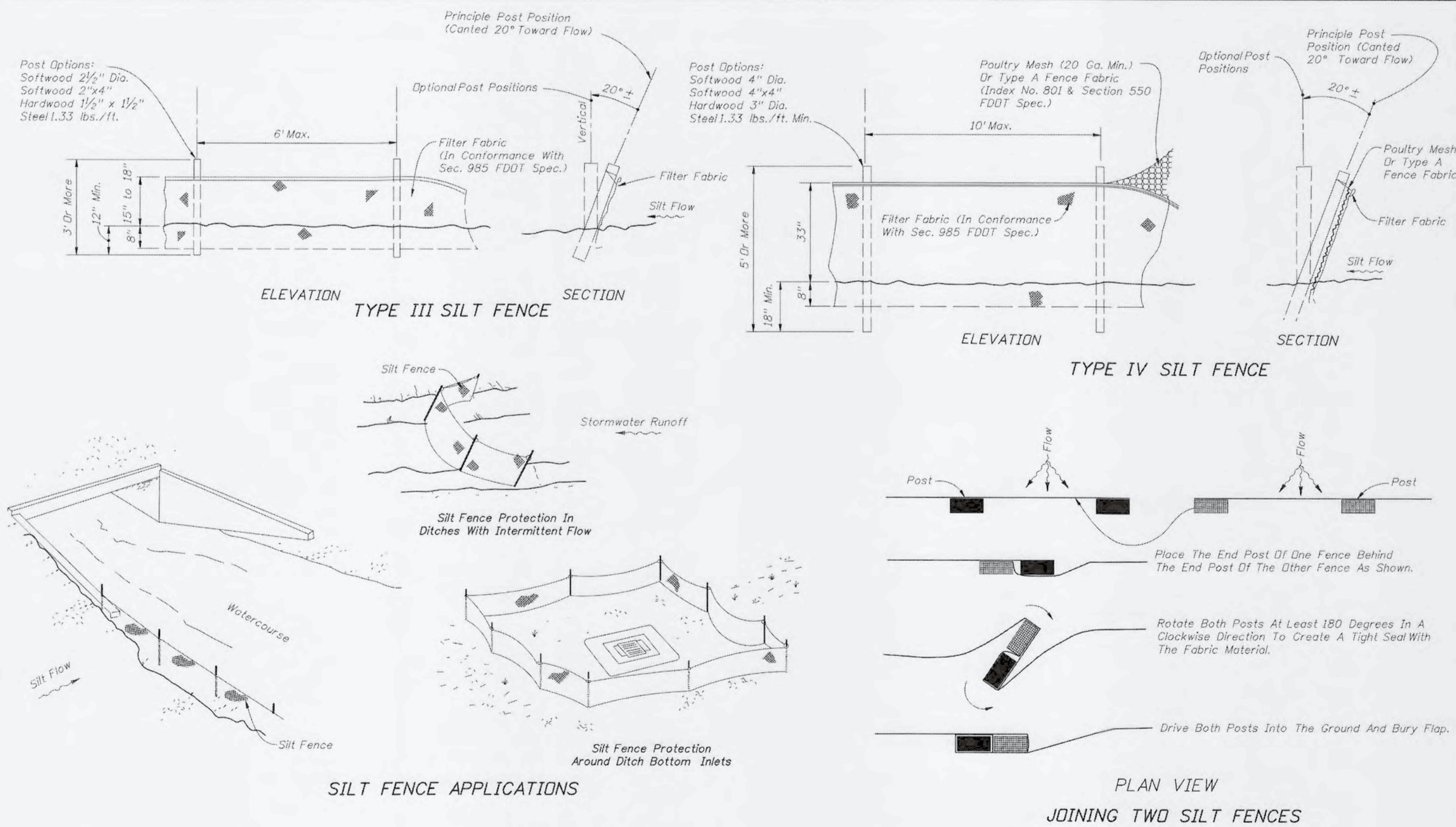
SYNTHETIC BALES OR BALE TYPE BARRIERS FOR UNPAVED DITCHES

NOTES FOR SYNTHETIC BALES OR BALE TYPE BARRIERS

- Type I and II Synthetic Barrier should be spaced in accordance with Chart I, Sheet 1.
- Bales shall be anchored with 2"-1" x 2" (or 1" dia.) x 4' wood stakes. Stakes of other material or shape providing equivalent strength may be used if approved by the Engineer. Stakes other than wood shall be removed upon completion of the project.
- Rolls and posts shall be 2" x 4" wood. Other materials providing equivalent strength may be used if approved by the Engineer.
- Adjacent bales shall be butted firmly together.
- Where used in conjunction with silt fence, bales shall be placed on the upstream side of the fence.
- Bales to be paid for under the contract unit price for Synthetic Bales, LF. The unit price shall include the cost of filter fabric for Type I and II Barriers. Sandbags shall be paid for under the unit price for Sandbagging, CY. Rock bags to be paid for under the contract unit price for Rock Bags, EA.

2010 FDOT Design Standards
TEMPORARY EROSION AND SEDIMENT CONTROL
 Last Revision: 07/01/07
 Sheet No. 1 of 3
 Index No. 102

2010 FDOT Design Standards
TEMPORARY EROSION AND SEDIMENT CONTROL
 Last Revision: 07/01/09
 Sheet No. 2 of 3
 Index No. 102



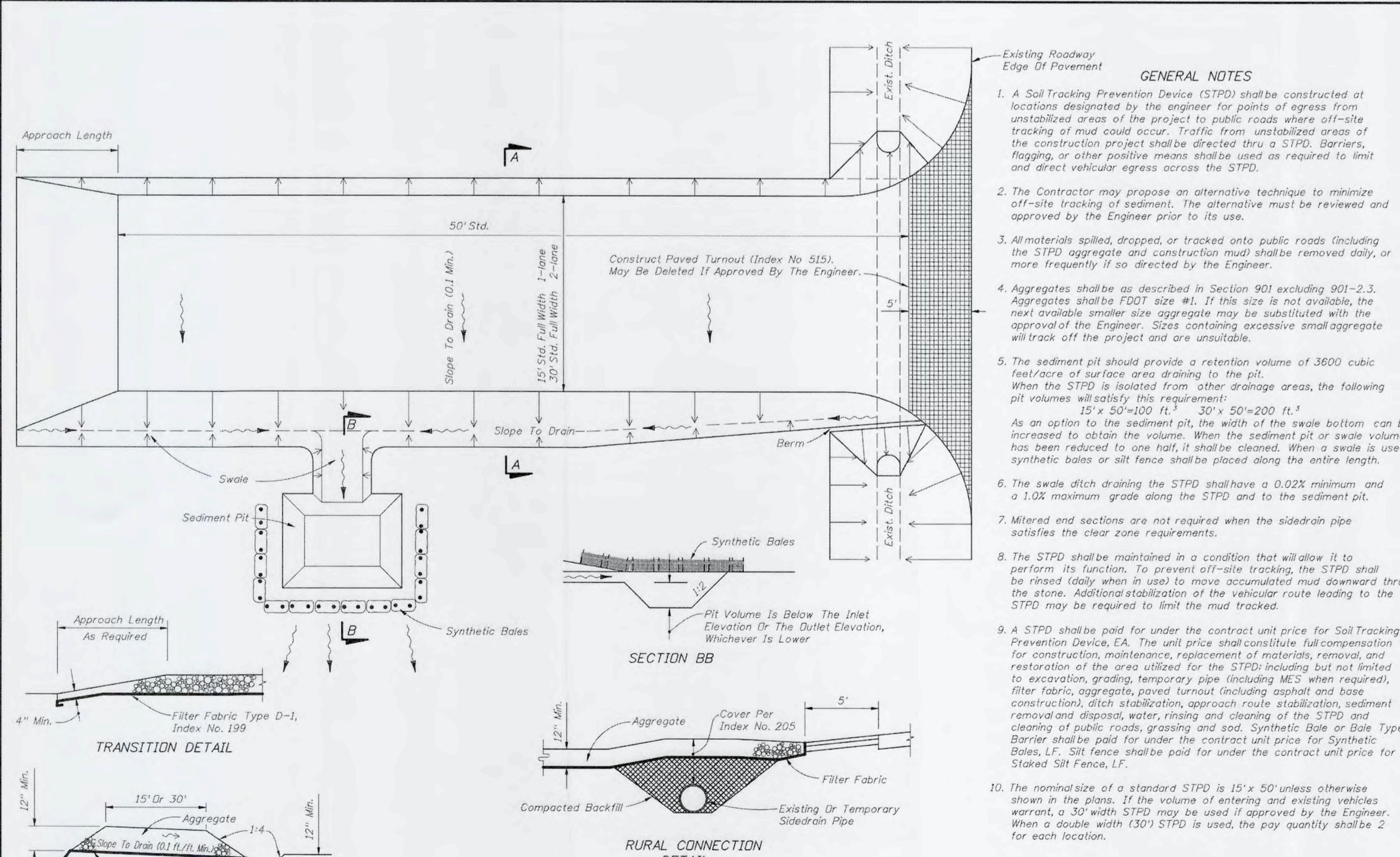
SILT FENCE APPLICATIONS

PLAN VIEW
JOINING TWO SILT FENCES

NOTES FOR SILT FENCES

- Type III Silt Fence to be used at most locations. Where used in ditches, the spacing for Type III Silt fence shall be in accordance with Chart I, Sheet 1.
- Type IV Silt Fence to be used where large sediment loads are anticipated. Suggested use where fill slope is 1:2 or steeper and length of slope exceeds 25 feet. Avoid use where the detained water may back into travelways on off the right of way.
- Do not construct silt fences across permanent flowing watercourses. Silt fences are to be at upland locations and turbidity barriers used at permanent bodies of water.
- Where used as slope protection, Silt Fence is to be constructed on 0% longitudinal grade to avoid channelizing runoff along the length of the fence.
- Silt Fence to be paid for under the contract unit price for Staked Silt Fence, (L.F.).

2010 FDOT Design Standards
TEMPORARY EROSION AND SEDIMENT CONTROL
 Last Revision: 07/01/05
 Sheet No. 3 of 3
 Index No. 102



GENERAL NOTES

- A Soil Tracking Prevention Device (STPD) shall be constructed at locations designated by the engineer for points of egress from unstabilized areas of the project to public roads where off-site tracking of mud could occur. Traffic from unstabilized areas of the construction project shall be directed thru a STPD. Barriers, flagging, or other positive means shall be used as required to limit and direct vehicular egress across the STPD.
- The Contractor may propose an alternative technique to minimize off-site tracking of sediment. The alternative must be reviewed and approved by the Engineer prior to its use.
- All materials applied, dropped, or tracked onto public roads (including the STPD aggregate and construction mud) shall be removed daily, or more frequently if so directed by the Engineer.
- Aggregates shall be as described in Section 901 excluding 901-2.3. Aggregates shall be FDOT size #1. If this size is not available, the next available smaller size aggregate may be substituted with the approval of the Engineer. Sizes containing excessive small aggregate will track off the project and are unsuitable.
- The sediment pit should provide a retention volume of 3600 cubic feet/acre of surface area draining to the pit. When the STPD is isolated from other drainage areas, the following pit volumes will satisfy this requirement:
 15' x 50' x 100 ft. = 30' x 50' x 200 ft.
 As an option to the sediment pit, the width of the swale bottom can be increased to obtain the volume. When the sediment pit or swale volume has been reduced to one half, it shall be cleaned. When a swale is used, synthetic bales or silt fence shall be placed along the entire length.
- The swale ditch draining the STPD shall have a 0.02% minimum and a 1.0% maximum grade along the STPD and to the sediment pit.
- Mitered end sections are not required when the side drain pipe satisfies the clear zone requirements.
- The STPD shall be maintained in a condition that will allow it to perform its function. To prevent off-site tracking, the STPD shall be rinsed (daily when in use) to move accumulated mud downward thru the stone. Additional stabilization of the vehicular route leading to the STPD may be required to limit the mud tracked.
- A STPD shall be paid for under the contract unit price for Soil Tracking Prevention Device, EA. The unit price shall constitute full compensation for construction, maintenance, replacement of materials, removal, and restoration of the area utilized for the STPD including but not limited to excavation, grading, temporary pipe (including MCS when required), filter fabric, aggregate, paved turnout (including asphalt and base construction), ditch stabilization, approach route stabilization, sediment removal and disposal, water, rinsing and clearing of the STPD and cleaning of public roads, grassing and sod. Synthetic Bale or Bale Type Barrier shall be paid for under the contract unit price for Synthetic Bales, LF. Silt fence shall be paid for under the contract unit price for Staked Silt Fence, LF.
- The nominal size of a standard STPD is 15' x 50' unless otherwise shown in the plans. If the volume of entering and existing vehicles warrant, a 30' width STPD may be used if approved by the Engineer. When a double width (30') STPD is used, the pay quantity shall be 2 for each location.

2010 FDOT Design Standards
SOIL TRACKING PREVENTION DEVICE TYPE A
 Last Revision: 07/01/07
 Sheet No. 1 of 1
 Index No. 106

REVNO.	DESCRIPTIONS	DATE

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 No. 66706
 PROFESSIONAL ENGINEER
 STATE OF FLORIDA

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 www.mckimcreed.com

Manatee County
 FLORIDA

**SWRF
 CCC REHAB AND
 RECHARGE WELL PS PROJECT**
CIVIL DETAILS

DATE: SEPTEMBER, 2019
 MCE PROJ. # 1024-0171
 DRAWN: CN
 DESIGNED: TP
 CHECKED: JV
 PROJ. MGR.: TP
 SCALE: HORIZONTAL: NA, VERTICAL: NA
 STATUS: ISSUED FOR BID

DRAWING NUMBER: **C-08**
 REVISION:

1.0 GENERAL

1.1 ALL WORK IS TO BE PERFORMED IN A GOOD, WORKMANLIKE AND PROFESSIONAL MANNER.

1.2 ALL CONSTRUCTION SHALL BE IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, 2017 EDITION, OR LOCAL BUILDING CODE REQUIREMENTS IF MORE STRINGENT.

1.3 THESE DRAWINGS DO NOT SHOW PROVISIONS FOR SAFETY DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THE REQUIRED BRACING, SHORING, AND SAFETY DEVICES THROUGHOUT THE CONSTRUCTION OF THIS PROJECT.

2.0 COORDINATION

2.1 STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH AND COORDINATED WITH, CIVIL, ELECTRICAL, HVAC, AND MECHANICAL DRAWINGS, INCLUDING VENDOR SUBMITTAL DRAWINGS AND OTHER CONTRACT DOCUMENTS.

2.2 COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES AND OPENINGS THROUGH WALLS OR CONCRETE SLABS WITH, CIVIL, ELECTRICAL, HVAC, AND MECHANICAL, INCLUDING VENDOR SUBMITTAL DRAWINGS AND OTHER CONTRACT DOCUMENTS.

2.3 THE CONTRACTOR SHALL SUBMIT COMPOSITE DRAWINGS INDICATING ALL FLOOR AND WALL OPENINGS AND PENETRATIONS THROUGH STRUCTURAL MEMBERS REQUIRED TO ACCOMMODATE ALL OTHER WORK. THE CONTRACTOR SHALL FOLLOW THE TYPICAL DETAILS AT OPENINGS AND SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW.

2.4 ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE SHOWN ON THESE DRAWINGS ARE TO BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER BEFORE WORK PROCEEDS, INCLUDING ORDERING AND FABRICATING MATERIALS.

2.5 INDEPENDENT TESTING OF MATERIALS SHALL BE PROVIDED AS DEFINED IN PROJECT SPECIFICATIONS. IN GENERAL PROJECT INVOLVES THE FOLLOWING:

- A. SOIL/FILL COMPACTION & BEARING.
B. C.I.P., PRE-CAST CONCRETE.
C. STRUCTURAL STEEL.
D. STRUCTURAL ALUMINUM.

2.6 IF COORDINATION OF INFORMATION PRESENTED CONFLICTS W/ THE PROJECT SPECIFICATIONS, THE DRAWINGS WILL TAKE PRECEDENCE.

2.7 IN GENERAL CALL-OUTS ARE FOR NEW CONSTRUCTION U.N.O.. EXISTING CONSTRUCTION CALL-OUTS, ELEVATIONS AND DIMENSIONS OF EXISTING STRUCTURES ARE BASED ON EXISTING RECORD DRAWINGS PROVIDED BY MANATEE COUNTY.

2.8 THE (*) SYMBOL ON INDIVIDUAL DIMENSIONS INDICATES DIMENSION TO BE VERIFIED EITHER BY FIELD MEASUREMENT FOR EXISTING STRUCTURES OR BY SHOP DRAWINGS FOR EQUIPMENT FURNISHED. STRUCTURAL DIMENSIONS NOT SHOWN BUT CONTROLLED BY OR RELATED TO EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR WITH THE MANUFACTURER PRIOR TO CONSTRUCTION.

2.9 EQUIPMENT ANCHOR BOLT SIZES, TYPES AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO INSURE ACCURACY OF PLACEMENT.

2.10 IF A CONFLICT IS FOUND BETWEEN DIFFERENT PORTIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. CONTINUED CONSTRUCTION OF THE AREA IN CONFLICT SHALL BE AT THE CONTRACTOR'S OWN RISK UNTIL THE CONFLICT IS RESOLVED BY THE ENGINEER.

3.0 FOUNDATIONS

3.1 DESIGN ALLOWABLE SOIL BEARING PRESSURE - IS IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AS PREPARED BY DRIGGERS ENGINEERING SERVICES, INC. (PROJECT No. DES 178063). THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THIS VALUE PRIOR TO FOUNDATION CONSTRUCTION. IN AREAS WHERE THE SOIL DOES NOT YIELD THIS BEARING STRESS VALUE, ADJUSTMENT IN THE FOOTING DEPTHS AND FOUNDATION DIMENSION MAY BE MADE BY THE ENGINEER BEFORE WORK PROCEEDS. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY SUCH ADJUSTMENTS.

3.2 PREPARE THE EXISTING SUBGRADE IN ACCORDANCE W/ THE PROJECT GEOTECHNICAL REPORT AS PREPARED BY DRIGGERS ENGINEERING SERVICES, INC. (PROJECT No. DES 178063). IN THE EVENT UNUSUAL SOIL CONDITIONS ARE UNCOVERED, INCLUDING CONDITIONS THAT DEVIATE FROM THOSE DESCRIBED IN THE PROJECT GEOTECHNICAL REPORT, NOTIFY THE OWNER AND ENGINEER PRIOR TO FOUNDATION CONSTRUCTION FOR INSTRUCTIONS HOW TO PROCEED. ADJUSTMENT IN THE FOOTING DEPTHS AND GENERAL FOUNDATION CONSTRUCTION MAY BE MADE BY THE ENGINEER BEFORE WORK PROCEEDS. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY SUCH ADJUSTMENTS.

3.3 FOOTING & BASE SLAB EXCAVATIONS, FORMS AND REINFORCEMENT SHALL BE REVIEWED BY AN OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.

3.4 FOOTING & BASE SLAB ELEVATIONS SHALL NOT BE RAISED OR LOWERED WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.

3.5 ALL EXCAVATIONS SHALL BE ADEQUATELY DEWATERED BEFORE PLACEMENT OF CONCRETE. NO CONCRETE OR CONCRETE FILL SHALL BE PLACED IN STANDING WATER. WATER ACCUMULATION SHALL BE PUMPED OUT.

3.6 ALL FILL BELOW FOUNDATIONS SHALL BE SELECT MATERIAL FREE FROM ROOTS, TRASH WOOD SCRAPS, AND OTHER EXTRANEIOUS MATERIALS. PLACE FILL IN LIFTS NOT EXCEEDING THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT.

3.7 ALL FOOTINGS SHALL BE CENTERED UNDER THE

SUPPORTING MEMBER UNLESS NOTED OTHERWISE.

3.8 CONSTRUCTION JOINTS IN SLABS, WALLS & FOOTINGS SHALL BE MADE AT LOCATIONS SHOWN ON DRAWINGS.

3.9 ANCHOR BOLTS SHALL BE SET BY MEANS OF TEMPLATE. "FLOATING" ANCHOR BOLTS INTO PLACE IS PROHIBITED.

3.10 CONTRACTOR IS TO VERIFY THE ELEVATION AND LOCATION OF ALL EXISTING AND PROPOSED UTILITIES PRIOR TO CONSTRUCTION. UTILITY LINES DAMAGED WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. IF UNDOCUMENTED UTILITY LINES ARE ENCOUNTERED WHEN EXCAVATING THE CONTRACTOR IS TO CEASE ALL EXCAVATION ACTIVITY UNTIL THE ENGINEER AND OWNER ARE NOTIFIED AND INSTRUCTIONS ARE PROVIDED ABOUT HOW TO PROCEED.

3.11 THE CONTRACTOR SHALL OBTAIN THE OWNER'S PERMISSION BEFORE ENCASING OR BACK FILLING AROUND ANY EXISTING UNDERGROUND STRUCTURE, PIPING, ELECTRICAL, OR OTHER UNDERGROUND WORK.

3.12 ALL UTILITIES UNDER FOUNDATION SHALL BE ENCASED IN CONCRETE UP TO 5' BEYOND FOUNDATION EDGE.

4.0 REINFORCING STEEL

4.1 BARS SHALL BE ROLLED FROM NEW BILLET-STEEL OF DOMESTIC MANUFACTURE CONFORMING TO "STANDARD SPECIFICATION FOR DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," ASTM A615, GRADE 60 AND SUPPLEMENTARY REQUIREMENT S-1.

4.2 DETAIL AND FABRICATE REINFORCING STEEL IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "ACI DETAILING MANUAL," LATEST PUBLICATION.

4.3 REINFORCING STEEL PLACING DRAWING AND BAR LISTS SHALL CONFORM TO THE ACI OR CRSI DETAILING MANUAL ALL BAR AND MESH SUPPORTS MUST BE CLEARLY DETAILED.

4.4 REINFORCING STEEL FABRICATION AND PLACEMENT SHALL BE IN ACCORDANCE WITH CRSI MANUAL OF STANDARD PRACTICE AND CRSI PLACING REINFORCING BARS (LATEST EDITIONS).

4.5 REINFORCING STEEL IN PLACE SHALL BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.

4.6 WELDED WIRE FABRIC SHALL CONFORM TO "STANDARD SPECIFICATION FOR WELDED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT," ASTM A185.

4.7 PLACE WELDED WIRE FABRIC AT CENTER OF SLABS-ON-GRADE AND ELEVATED SLAB TOPPINGS, UNLESS NOTED OTHERWISE.

4.8 PROVIDE BARS AT CORNERS AND INTERSECTIONS OF WALLS & FOOTINGS OF THE SAME NUMBER AND SIZE AS LONGITUDINAL BARS, U.N.O. ON THE DRAWINGS.

4.9 FABRICATE CONTINUOUS BARS IN WALLS & FOOTINGS TO THE LONGEST PRACTICABLE LENGTHS.

4.10 REINFORCING STEEL SHALL NOT BE BENT AFTER BEING PARTIALLY EMBEDDED IN HARDENED CONCRETE.

4.11 BARS SHALL BE COLD BENT AND SHALL NOT BE HEATED FOR ANY REASON.

4.12 REINFORCING BARS SHALL NOT BE WELDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

4.13 REFERENCE DRAWINGS FOR REQUIREMENTS FOR LAP SPLICING REINFORCING STEEL IN CONCRETE. ALL SHALL CONFORM TO CLASS B SPLICE CRITERIA.

4.14 LAP SPLICED BARS IN CONCRETE ARE TO BE WIRE TIED.

4.15 LAP SPLICED BARS IN MASONRY ARE TO BE NO FARTHER APART THAN 8".

5.0 CONCRETE

5.1 IN GENERAL CONCRETE SHALL DEVELOP 3,000 TO 4,500 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS. REFERENCE "DESIGN CRITERIA" THIS DWG. & PROJECT SPECIFICATIONS, FOR APPLICATION & SPECIFIC CONCRETE MIX DESIGN REQUIREMENTS. USE TYPE II, ASTM C150 CEMENT WITH MINIMUM 20% BY WEIGHT SLAG AND/OR FLY ASH CONTENT. FLY ASH SHALL BE PER ASTM C618 SLAG SHALL BE PER ASTM C999 GRADE 120.

5.2 CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318-14 & TO "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES", ACI 350-06.

5.3 PLACE 1/2 INCH EXPANSION JOINT MATERIAL BETWEEN EDGES OF SLABS AND VERTICAL SURFACES UNLESS NOTED OTHERWISE.

5.4 PROVIDE CONSTRUCTION OR CONTROL JOINTS IN SLABS & WALLS AT LOCATIONS SHOWN ON DRAWINGS, AT OFFSETS AND CHANGES IN DIRECTION AND AT THIRTY (30) FEET MAXIMUM U.N.O.. GENERAL CONTRACTOR TO PROVIDE CONSTRUCTION JOINT LAYOUT PLAN PER THE PROJECT SPECIFICATIONS PRIOR TO CONSTRUCTION, INCLUDING ORDERING & FABRICATING MATERIALS.

5.5 CHAMFER EXPOSED EDGES OF CONCRETE 3/4 INCH, UNLESS NOTED OTHERWISE.

5.6 CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER CURING OF ALL CONCRETE. CURING METHODS SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318, "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES" ACI 350 AND "STANDARD PRACTICE FOR CURING CONCRETE," ACI 308, LATEST EDITIONS.

5.7 UNLESS NOTED OTHERWISE DOWELS SHALL BE THE SAME NUMBER AND SIZE AS THE LARGEST VERTICAL BAR TO WHICH THEY ARE SPLICED.

5.8 REFERENCE PROJECT SPECIFICATIONS FOR REQUIRED FINISHES.

5.9 CONTRACTOR SHALL SUBMIT REBAR SHOP DRAWINGS FOR APPROVAL TO OWNER PRIOR TO FABRICATION. DO NOT FABRICATE REINFORCING PRIOR TO RECEIPT OF APPROVED SHOP DRAWINGS.

5.10 CONCRETE MIXES TO BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE. COMPRESSIVE STRENGTH TEST CYLINDERS TO BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE THROUGHOUT CONCRETE CONSTRUCTION OF THE PROJECT.

5.11 ROUGHEN THE "BASE" CONCRETE POUR SURFACE TO A FULL AMPITUDE OF 1/4" MINIMUM, WHERE NOTED ON THE CONSTRUCTION DRAWINGS.

5.12 CONCRETE ACCESSORIES AS FOLLOWS:

- a.) PREFORMED WATERSTOPS SHALL BE PVC IN ACCORDANCE W/ THE PROJECT SPECIFICATIONS.
b.) EXPANSIVE WATERSTOPS SHALL BE ADEKA ULTRA SEAL TYPE MC-2010M. THE WATERSTOPS CAN BE EITHER ADHERED TO THE CONCRETE WITH 3M-2141 BONDING ADHESIVE OR NAILED IN PLACE USING 1.5 INCH SS 316 CONCRETE NAILS 3 TO 6 INCHES APART.
c.) CAULK/SEALANT - IN ACCORDANCE W/ PROJECT SPECIFICATIONS.
d.) BONDING AGENT - SHALL BE STRUCTURAL EPOXY ADHESIVE CONFORMING TO ASTM C-881 TYPE I STRENGTH AND II, GRADE 2, CLASS B AND C WITH A MINIMUM BOND STRENGTH OF 1900 PSI.
1.) SIKKA ARMATEC 110 EpoCem.

5.13 CONCRETE COVER FOR REINFORCING:
A.) UNFORMED SURFACES CAST AGAINST EARTH 3" MIN
B.) ALL OTHER SURFACES, 2" MIN

6.0 GROUT

6.1 PROVIDE NON-SHRINK GROUT UNDER ALL COLUMN BASE PLATES AND BEAM BEARING PLATES AND ELSEWHERE AS INDICATED ON DRAWINGS. NON-SHRINK GROUT SHALL CONFORM TO ASTM C1107.

6.2 GROUT SHALL BE NON-METALLIC AND NON-STAINING AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 7000 psi.

7.0 STRUCTURAL STEEL

7.1 STEEL SHALL CONFORM TO "STANDARD SPECIFICATION FOR STRUCTURAL STEEL," ASTM A36 (Fy=36 ksi) FOR ANGLES, PLATES & CHANNELS. WIDE FLANGE SECTIONS SHALL CONFORM TO ASTM A572 (Fy=50ksi). HOLLOW STEEL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE B (Fy=48 ksi). STEEL PIPE SHALL CONFORM TO ASTM A53, GRADE B, (Fy=35 ksi).

7.2 STEEL WORK SHALL CONFORM TO "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS", OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC., (LATEST EDITION), INCLUDING ALL SUPPLEMENTS AND THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", (LATEST EDITION).

7.3 CONNECTION BOLTS SHALL BE 3/4 INCH DIAMETER CONFORMING TO "STANDARD SPECIFICATION FOR HIGH-STRENGTH BOLTS FOR STRUCTURAL STEEL JOINTS", ASTM A325, UNLESS NOTED OTHERWISE CONNECTIONS ARE BEARING TYPE WITH THREADS EXCLUDED FROM SHEAR PLANES (A325x).

7.4 WELDING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY AWS D1.1 "STRUCTURAL WELDING CODE". WELDING SHALL BE PERFORMED BY CERTIFIED PERSONNEL WHO HAVE BEEN PREVIOUSLY QUALIFIED BY TEST PRESCRIBED IN THE AWS "STRUCTURAL WELDING CODE". ELECTRODES SHALL CONFORM TO AWS E5.5, E70XX.

7.5 LINTELS SHALL BEAR EIGHT (8) INCHES MINIMUM ON MASONRY UNLESS NOTED OTHERWISE.

7.6 THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING, SHORING, AND GUYING OF STEEL FRAMING AGAINST WIND, CONSTRUCTION LOADS, AND OTHER TEMPORARY FORCES UNTIL SUCH PROTECTION IS NO LONGER REQUIRED FOR THE SAFE SUPPORT OF THE FRAMING.

7.7 ALL COPES, BLOCKS, CUTS, CUT-OFFS AND OTHER CUTTING OF STRUCTURAL MEMBERS SHALL HAVE ALL RE-ENTRANT CORNERS SHAPED, AND NOTCH-FREE TO A RADIUS OF AT LEAST 1/2 INCH. THE FILLET AND ITS CONTIGUOUS CUTS SHALL MEET WITHOUT OFFSET OR CUTTING PAST THE POINT OF TANGENCY.

7.8 ANCHOR BOLTS SHALL BE TYPE 316 S.S. & SHALL BE HEADED W/ NUTS TACK WELDED TO BOLTS AS REQUIRED BY THE DRAWINGS. PROVIDE (2) NUTS AND WASHERS WITH EACH ANCHOR BOLT AT COLUMNS.

7.9 OVERSIZED AND SLOTTED HOLES SHALL NOT BE USED FOR BOLTED CONNECTIONS ON THIS PROJECT EXCEPT AT LOCATIONS NOTED ON DRAWINGS.

7.10 SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER, AS TO LOCATION AND TYPE OF SPLICE. ANY MEMBER HAVING A SPLICE NOT SHOWN AND DETAILED ON THE SHOP DRAWINGS SHALL BE REPLACED.

7.11 PRE-GROUTING BASE PLATES IS NOT PERMITTED.

7.12 ALL HOLES IN STRUCTURAL STEEL ARE TO BE PUNCHED OR DRILLED. FLAME CUTTING OF STEEL IS STRICTLY PROHIBITED.

7.13 ALL DESIGN, DETAILING, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION.

7.14 IN GENERAL SHOP CONNECTIONS SHALL BE EITHER WELDED OR BOLTED AND FIELD CONNECTIONS SHALL BE BOLTED UNLESS NOTED OTHERWISE.

7.15 FABRICATOR/CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR OWNER/ENGINEER APPROVAL PRIOR TO FABRICATION. ALL SHOP DRAWINGS MAY BE EXPEDITED IF THE FABRICATOR ADHERES CLOSELY TO THE DETAILS, NOTES, AND INSTRUCTIONS, SHOWN ON THE DRAWINGS.

7.16 ALL GALVANIZED MATERIALS THAT ARE FIELD CUT, FIELD WELDED OR DAMAGED IN SURFACE FINISH SHALL BE CLEANED AND RE-COATED AS CALLED OUT IN THE PROJECT SPECIFICATIONS.

7.17 STRUCTURAL STEEL FRAMING & DECKING ERECTION TO BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE THROUGHOUT CONCRETE & STEEL CONSTRUCTION OF THE PROJECT.

8.0 ALUMINUM

8.1 ALUMINUM FABRICATION SHALL BE IN CONFORMANCE WITH THE ALUMINUM ASSOCIATION, INC. "SPECIFICATIONS FOR ALUMINUM STRUCTURES".

- 8.2 UNLESS NOTED OTHERWISE, MATERIALS SHALL BE:
a. PLATE & SHEET - ASTM B209; 6061-T6, 6061-T651 ALLOY.
b. EXTRUDED SHAPES - ASTM B221; 6061-T6, 6061-T651 ALLOY. PIPE SECTIONS ARE SCHEDULE 40 U.N.O..
c. CASTINGS - ASTM B108; 214 ALLOY.
d. BOLTS - ASTM 276; TYPE 316 STAINLESS STEEL.
e. NUTS - ASTM 276; TYPE 316 STAINLESS STEEL.

8.3 ALUMINUM SHALL BE SEPARATED FROM DIRECT CONTACT WITH OTHER MATERIALS (STEEL, CONCRETE, ETC.) BY PRESSURE SENSITIVE TAPE, BITUMASTIC COATING, OR OTHER PROTECTIVE METHOD SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE.

8.4 CONNECTIONS SHALL HAVE A MINIMUM OF TWO 3/4" DIAMETER TYPE SS316 BOLTS.

8.5 WELDING ALUMINUM SHALL CONFORM TO AWS D1.2 & AWS A5.10 AND THE REQUIREMENTS OF THE ALUMINUM ASSOCIATIONS "ALUMINUM DESIGN MANUAL" (LATEST EDITION) TABLE 7.1-1 FOR WELD FILLERS FOR WROUGHT ALLOYS.

8.6 REFERENCE PROJECT SPECIFICATIONS FOR HANDRAIL & GUARDRAIL REQUIREMENTS.

9.0 PRE-CAST CONCRETE

9.1 PRE-CAST CONCRETE TO BE DESIGNED BY THE PRE-CAST CONCRETE ROOF PANEL MANUFACTURER UTILIZING "DESIGN LOADS" PROVIDED ON THE RESPECTIVE FACILITY STRUCTURAL DRAWINGS. COORDINATE W/ THE BUILDING, ELECTRICAL, HVAC, MECHANICAL PLUMBING AND VENDOR EQUIPMENT DRAWINGS FOR ADDITIONAL MATERIALS REQUIRED FOR CALCULATION OF THE DEAD LOADS, LIVE LOADS AND EQUIPMENT LOADS, THAT MAY BE SUSPENDED FROM THE UNDERSIDE OF THE ROOFING PANELS.

9.2 PRE-CAST CONCRETE ROOF PANEL MANUFACTURER IS REQUIRED TO SUBMIT DRAWINGS AND CALCULATION PACKAGES SEALED, SIGNED AND DATED BY AN ENGINEER CURRENTLY LICENSED BY THE STATE OF FLORIDA. FABRICATION OF THE PRE-CAST ROOF PANELS SHOULD NOT OCCUR UNTIL "FINAL" APPROVAL OF THE MANUFACTURER'S DRAWINGS AND CALCULATIONS SUBMITTALS.

9.3 REFERENCE STRUCTURAL DRAWINGS FOR PRE-CAST CONCRETE ROOF PANEL SYSTEM FOR BEARING ELEVATIONS, DIMENSIONS, ROOF OPENINGS, EAVE HEIGHTS & ROOF SLOPE REQUIREMENTS.

9.4 REFERENCE STRUCTURAL DRAWINGS FOR ALL INTERIOR AND EXTERIOR ROOF PANEL FINISH REQUIREMENTS.

9.5 PRE-CAST ROOF PANELS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5,000 PSI.

9.6 REFERENCE ALL PROJECT SPECIFICATIONS RELATED TO THE PRE-CAST CONCRETE ROOF PANELS FOR ADDITIONAL REQUIREMENTS AND INFORMATION.

9.7 CONSTRUCTION ACTIVITIES RELATED TO THE PRE-CAST ROOF PANEL SHALL BE REVIEWED BY THE THE OWNER'S CONSTRUCTION REPRESENTATIVE.

10.0 ABBREVIATIONS

10.1 THE FOLLOWING LIST OF ABBREVIATIONS IS NOT INTENDED TO REPRESENT ALL THOSE USED ON THE DRAWINGS, BUT TO SUPPLEMENT THE MORE COMMON ABBREVIATIONS USED.

- ADD'L = ADDITIONAL
AL = ALUMINUM
ALT. = ALTERNATE
BLDG. = BUILDING
BLK. = BLOCK
BM. = BEAM
B.O. = BOTTOM OF
BRG. = BEARING
C.I.P. = CAST-IN-PLACE
C.J. = CONTRACTION JOINT
CLR. = CLEAR
CMU = CONC. MASONRY UNIT
COL. = COLUMN
CONC. = CONCRETE
CONN. = CONNECTION
CONST. = CONSTRUCTION
CONT. = CONTINUOUS
COORD. = COORDINATE
CTR. = CENTER
CTR'D. = CENTERED
DBL. = DOUBLE
DIR. = DIRECTION
DWG.'s. = DRAWINGS
EA. = EACH
EL. = ELEVATION
E.O. = EDGE OF
E.Q. EQUIP. = EQUIPMENT
EXIST. = EXISTING
EXP. = EXPANSION
FLG. = FLANGE
FDN. = FOUNDATION
F.S. = FAR SIDE
FT. = FEET
FTG. = FOOTING
GA. = GAGE
GALV. = GALVANIZED
HOOK = HOOK
H.P. = HIGH POINT
I/F. = INSIDE FACE
INFO. = INFORMATION
INTR. = INTERIOR
JST. = JOIST
JT. = JOINT
LLH = LONG LEG HORIZONTAL
LLV = LONG LEG VERTICAL
LP. = LOW POINT
LSL. = LONG SLOTTED
MASONRY = MASONRY
MAT'L. = MATERIAL
MFG. = MANUFACTURER
MIN. = MINIMUM
MTL. = METAL
NOM. = NOMINAL
N.S. = NEAR SIDE
NOT TO SCALE = NOT TO SCALE
O.C. = ON CENTER
O/F. = OUTSIDE FACE
O/H. = OVERHANG
O/O. = OUT TO OUT
OPNG. = OPENING
OPP. = OPPOSITE
ORIENT. = ORIENTATION
PLCS. = PLACES
RAD. = RADIUS
REF. = REFERENCE
REINF. = REINFORCING
REQ'D. = REQUIRED
RET. = RETAINING
ROT. = ROTATE
SIM. = SIMILAR
SPA. = SPACED
S.S. = SPECIFICATIONS
SSL. = STAINLESS STEEL
STD. = STANDARD
STL. = STEEL
T&B = TOP & BOTTOM
T/D. = TURN DOWN
THK. = THICK
THK'D. = THICKENED
T.O. = TOP OF
T.O.S. = TOP OF SLAB
TYP. = TYPICAL
U.N.O. = UNLESS NOTED OTHERWISE
VERT. = VERTICAL
W.A. = WORK POINT

DESIGN LOADS:

- 1. FLOOR LIVE LOAD 250 PSF U.N.O.
2. ROOF LIVE LOAD 30 PSF
3. STAIR, PLATFORMS AND WALKWAYS 100 PSF U.N.O.
4. WIND LOAD:
A. ULTIMATE WIND SPEED 158 MPH
B. EXPOSURE CATEGORY C
C. RISK CATEGORY IV
D. ENCLOSURE CLASSIFICATION: ENCLOSED
E. INTERNAL PRESSURE COEFFICIENT +/- 0.18
F. COMPONENTS AND CLADDING PRESSURE: BY COVER MANUFACTURER
5. DESIGN IN ACCORDANCE WITH ASCE 7-10 AND 2017 FLORIDA BUILDING CODE.

DESIGN CRITERIA:

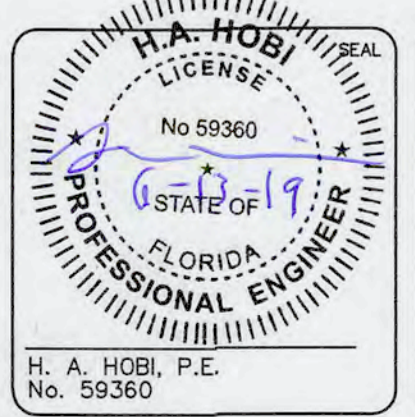
Table with 2 columns: Design Criteria and Values. Includes rows for Concrete 28 Day Compressive Strength, Slab-on-Grade, Equipment Pads, Pipe Encasements, Walls of Liquid Containment Structures (LCS), Slabs of LCS, Footings, Below Grade & Retaining Walls, Sidewalk, Driveaway, Curb & Gutter, Reinforcing Steel, Welded Wire Fabric, Structural Steel, Aluminum, Bolts, Anchor Bolts, Steel Electrodes, Steel Electrodes, Aluminum Weld Fillers, and Soil Bearing Capacity.

LEGEND:

- ENLARGED PLAN AREA, DETAIL = [Symbol]
CONC. MASONRY BLOCK = [Symbol]
CONC. WALL, PAD, ETC. = [Symbol]
GROUT = [Symbol]
GRATING = [Symbol]
DETAIL OR SECTION NO./SHEET NO. REFERENCE = [Symbol]
PROJECT NORTH = [Symbol]
ELEVATION DATUM = [Symbol]
ELEVATION NO./SHEET NO. REFERENCE = [Symbol]

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Table with 3 columns: REV. NO., DESCRIPTIONS, DATE. Contains revision entries.

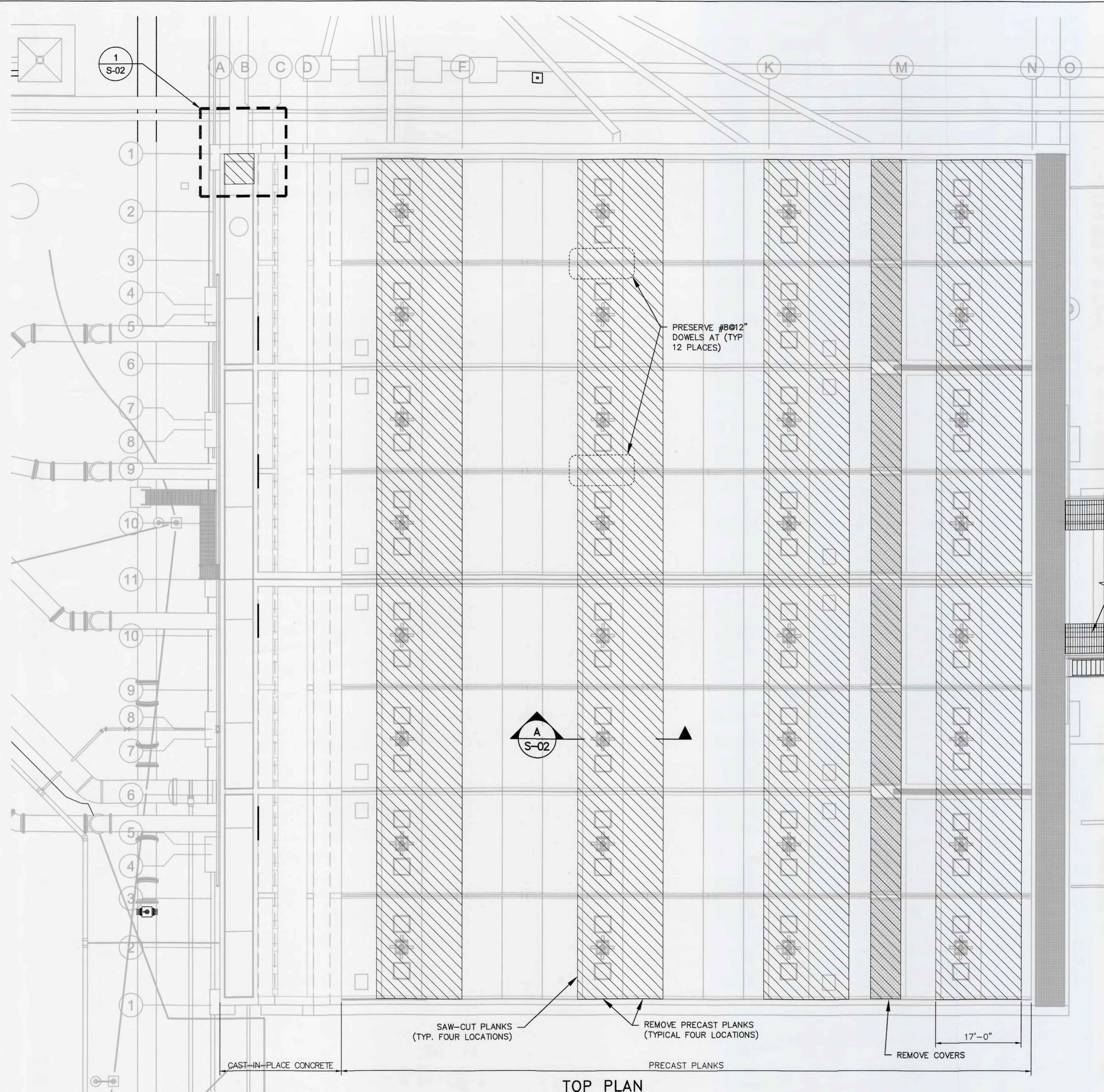


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Manatee County Florida logo with a sun icon.

SWRF CCC REHAB AND RECHARGE WELL PS PROJECT STRUCTURAL NOTES AND LEGEND

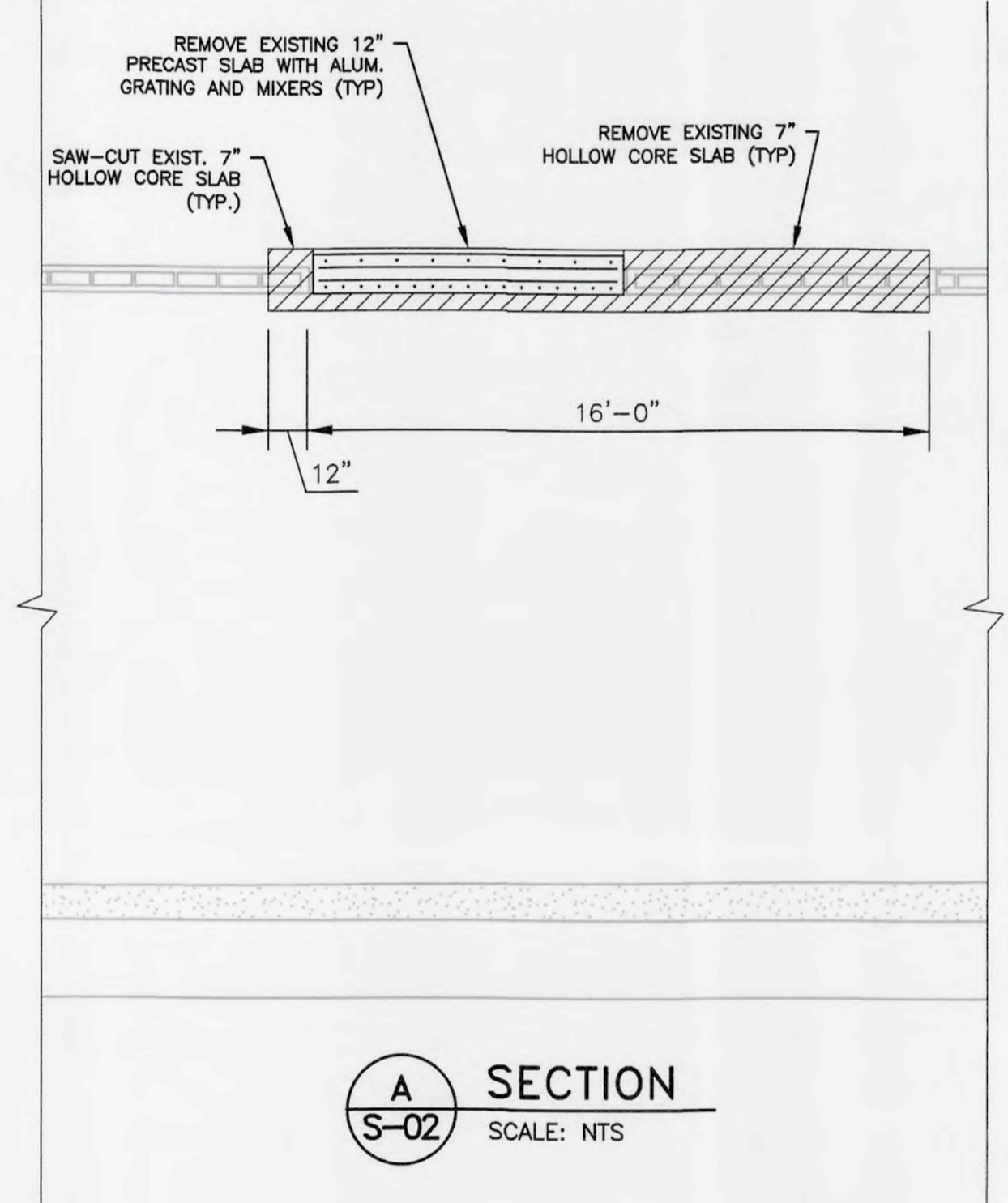
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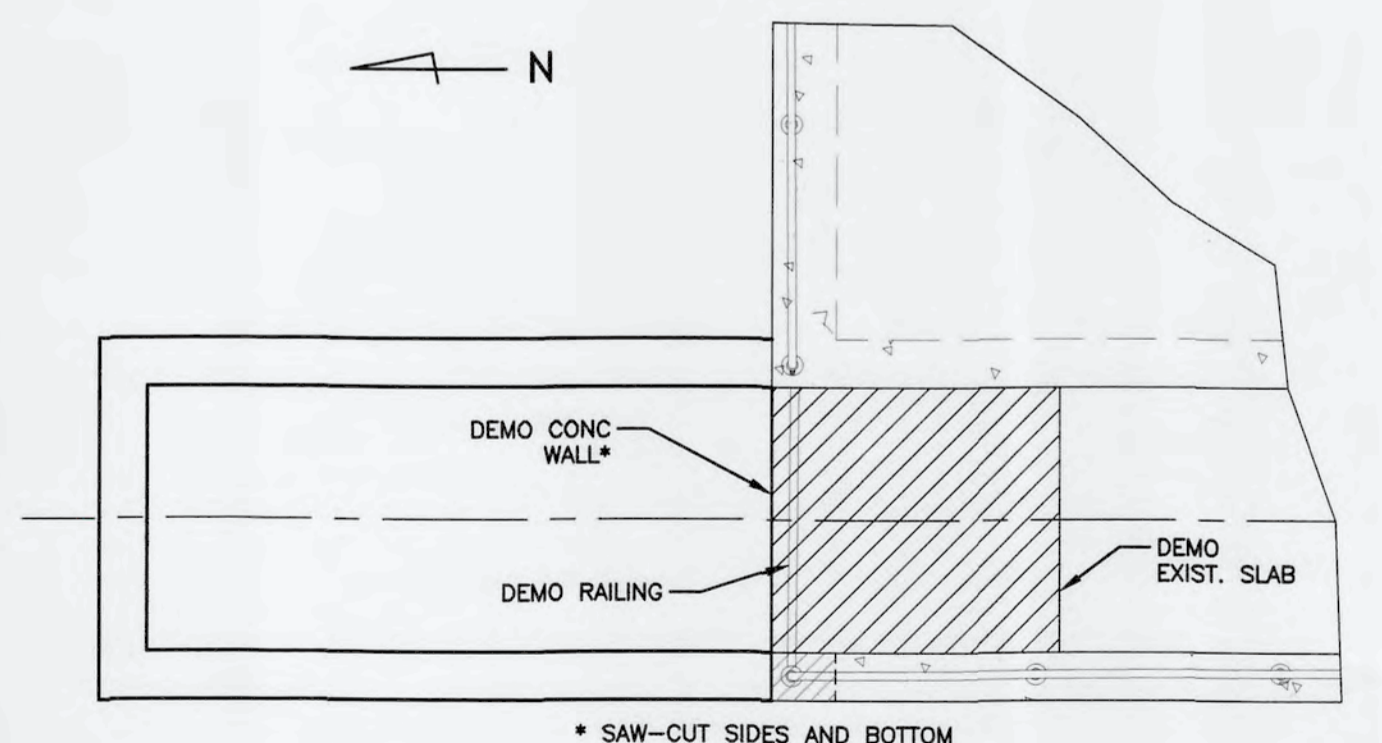
TOP PLAN
SCALE: 3/32" = 1"

DEMOLITION NOTES

1. COMPLETELY REMOVE CONCRETE PLANKS WITHIN DEMOLITION BOUNDARY AND DEMO OTHER CONCRETE AS SHOWN ON THIS DRAWING.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR STABILITY OF EXISTING STRUCTURES DURING DEMO ACTIVITIES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY SHORING IF REQUIRED. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING DESIGN AND CALCULATIONS SIGNED AND SEALED BY A FLORIDA PE FOR REVIEW BY ENGINEER PRIOR TO DEMOLITION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY REMOVAL AND PROPER DISPOSAL OF ALL DEMOLISHED CONCRETE AND ALL OTHER MATERIALS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING EFFECTIVE DUST CONTROL MEASURES DURING DEMOLITION.
6. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH STATE AND LOCAL CODES, SAFETY REGULATIONS AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
7. ALL POWER AND WATER SERVICES SHALL BE DISCONNECTED PRIOR TO START OF DEMOLITION.
8. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, EQUIPMENT AND SERVICES AND PERFORM ALL OPERATIONS REQUIRED FOR DEMOLITION AS SHOWN ON THIS DRAWING.
9. A COPY OF THE RECORD DRAWINGS WILL BE AVAILABLE AS PART OF THE BID DOCUMENTS. THE INFORMATION PROVIDED IS FOR THE CONTRACTOR'S USE AT HIS OR HER SOLE DISCRETION AND MANATEE COUNTY AND MCKIM AND CREED, INC. ASSUME NO RESPONSIBILITY FOR THE ACCURACY AND INFORMATION REFLECTED IN THE DRAWINGS.
10. CUT BACK ALL EXPOSED REINFORCEMENT A MINIMUM ONE INCH AND COAT ALL SURFACES WITH SIKA ARMATIC-110 FILL HOLE WITH EPOXY GROUT SIKAOUR 42 OF EQUAL. THIS APPLIES TO ALL CONCRETE SURFACES WITH EXPOSED REINFORCEMENT.



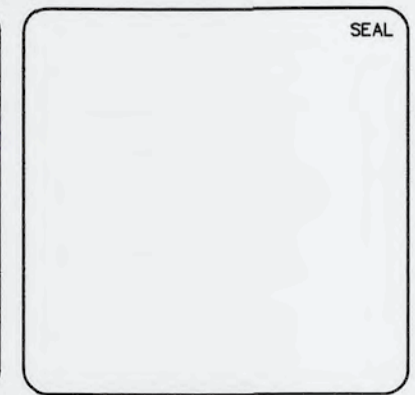
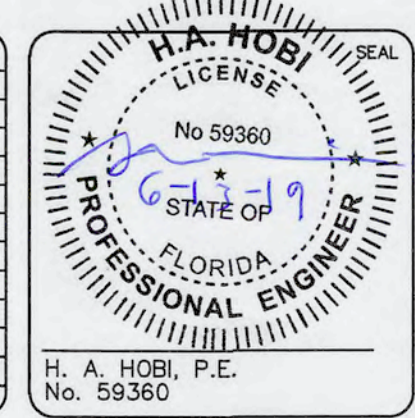
A SECTION
SCALE: NTS



1 CHANNEL WALL DEMO
SCALE: NTS

LEGEND:
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REV. NO.	DESCRIPTIONS	DATE



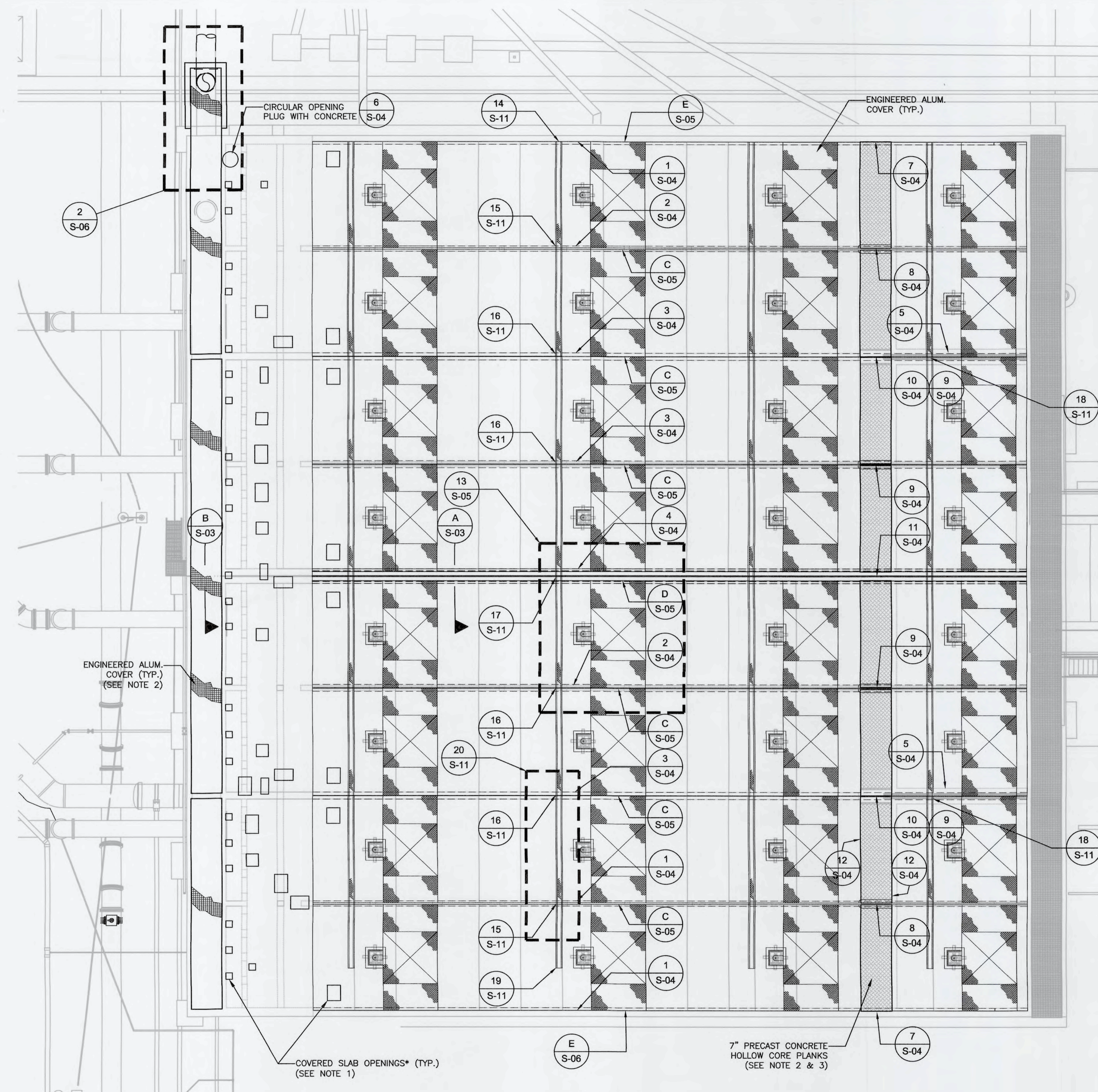
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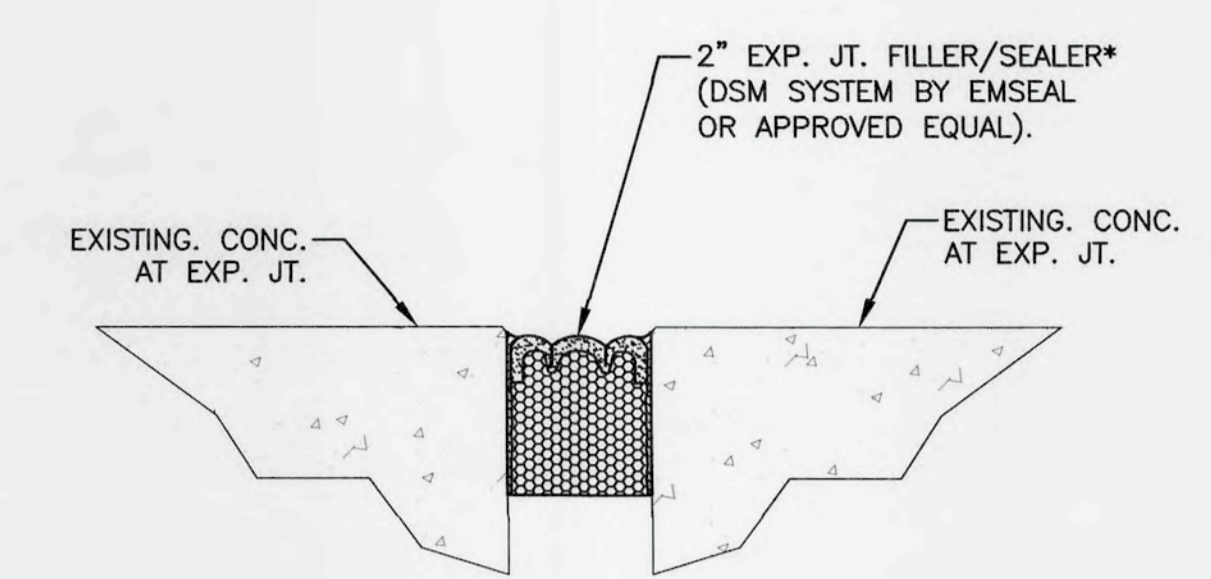
**SWRF
CCC REHAB AND
RECHARGE WELL PS PROJECT**

**ANOXIC BASINS DEMOLITION TOP AND
ENLARGED PLANS**

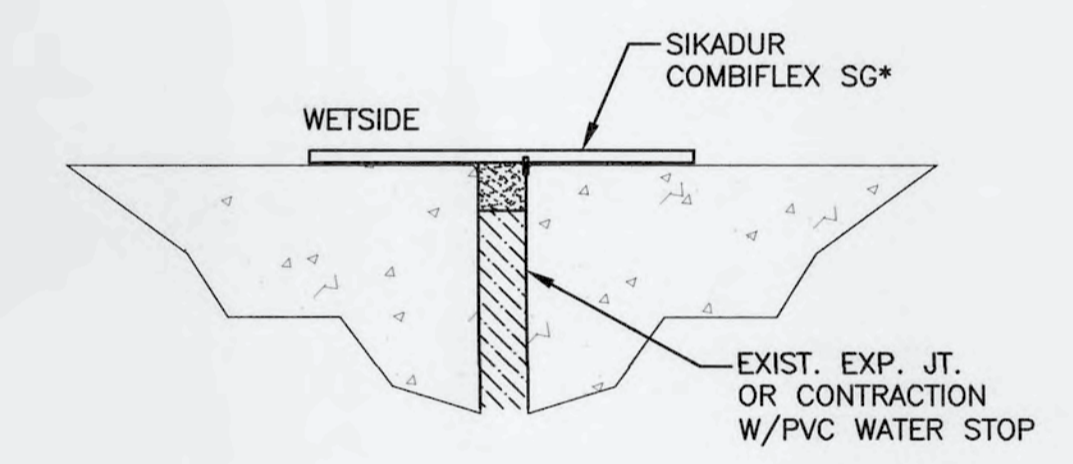
DATE: JUNE, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. # 1024-0171	HORIZONTAL:	S-02
DRAWN: CN	NA	
DESIGNED: HAH	VERTICAL:	
CHECKED: JV	NA	
PROJ. MGR: TP		
STATUS: ISSUED FOR BID		REVISION:



TOP PLAN
SCALE: 3/32" = 1'



A
S-03
CENTER EXPANSION JOINT FILLER/SEALER
SCALE: NTS

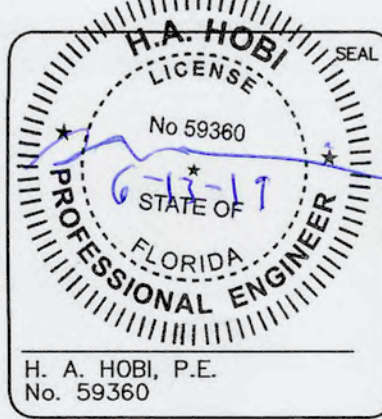


B
S-03
LEAKING JOINT REPAIR DETAIL
SCALE: NTS

- NOTES:
1. USE ENGINEERED ALUMINUM COVERS FOR FLOOR OPENINGS WITH PLATE COVERS.
 2. FLOOR LIVE LOAD 50 PSF.
 3. IF 7" PRECAST CONCRETE HOLLOW CORE PLANKS ARE NOT AVAILABLE USE 8" HOLLOW CORE PLANKS AND MODIFY END SUPPORTS ACCORDINGLY.
 4. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND ELEVATIONS THAT AFFECT NEW CONSTRUCTION PRIOR START OF WORK.
 5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING STRUCTURES DURING CONSTRUCTION.
 6. REFERENCED DETAILS SHOWN AT SECOND LINE OF MIXERS APPLY TO ALL FOUR MIXER LINES.
 7. USE SIKADUR COMBIFLEX SG SYSTEM AT ANY LEAKING EXPANSION OR CONTRACTION JOINT WITH PVC WATER STOP. MANUF. INSTRUCTIONS SHALL BE STRICTLY FOLLOWED.

* OPENING LOCATION AND SIZE SHALL BE VERIFIED.

REV. NO.	DESCRIPTIONS	DATE

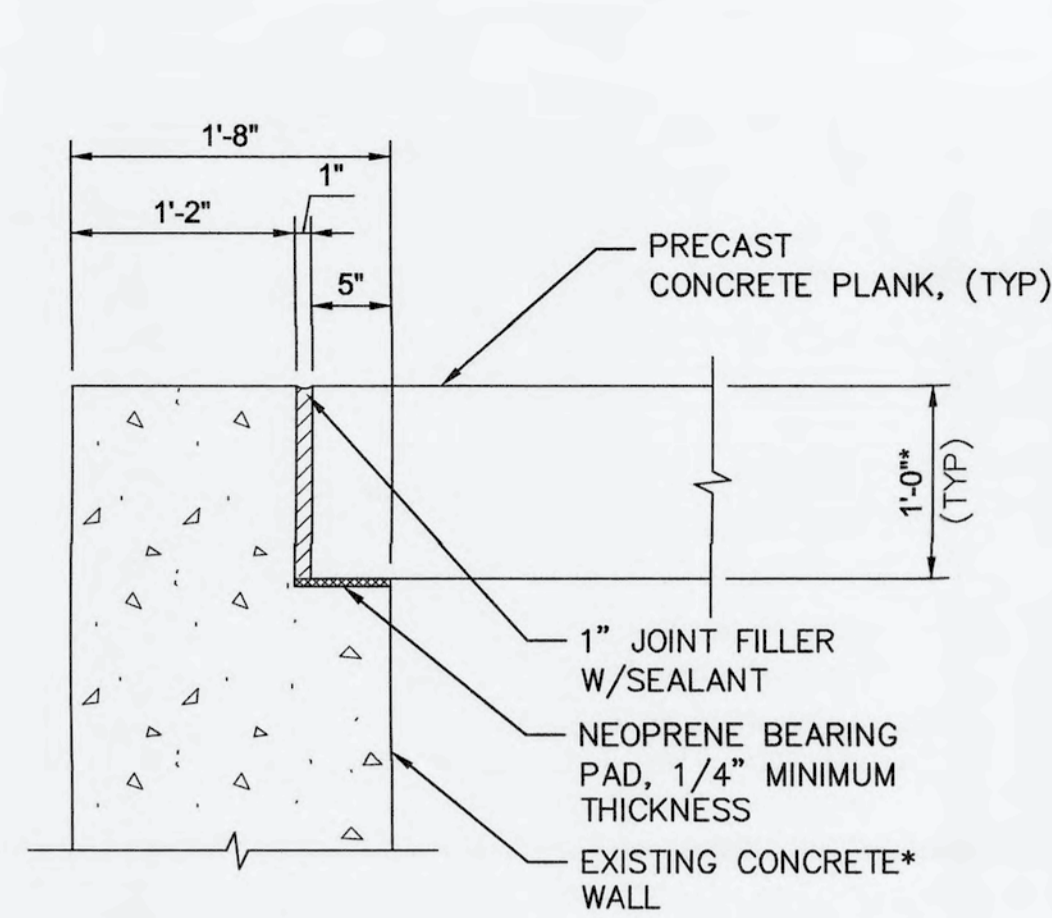


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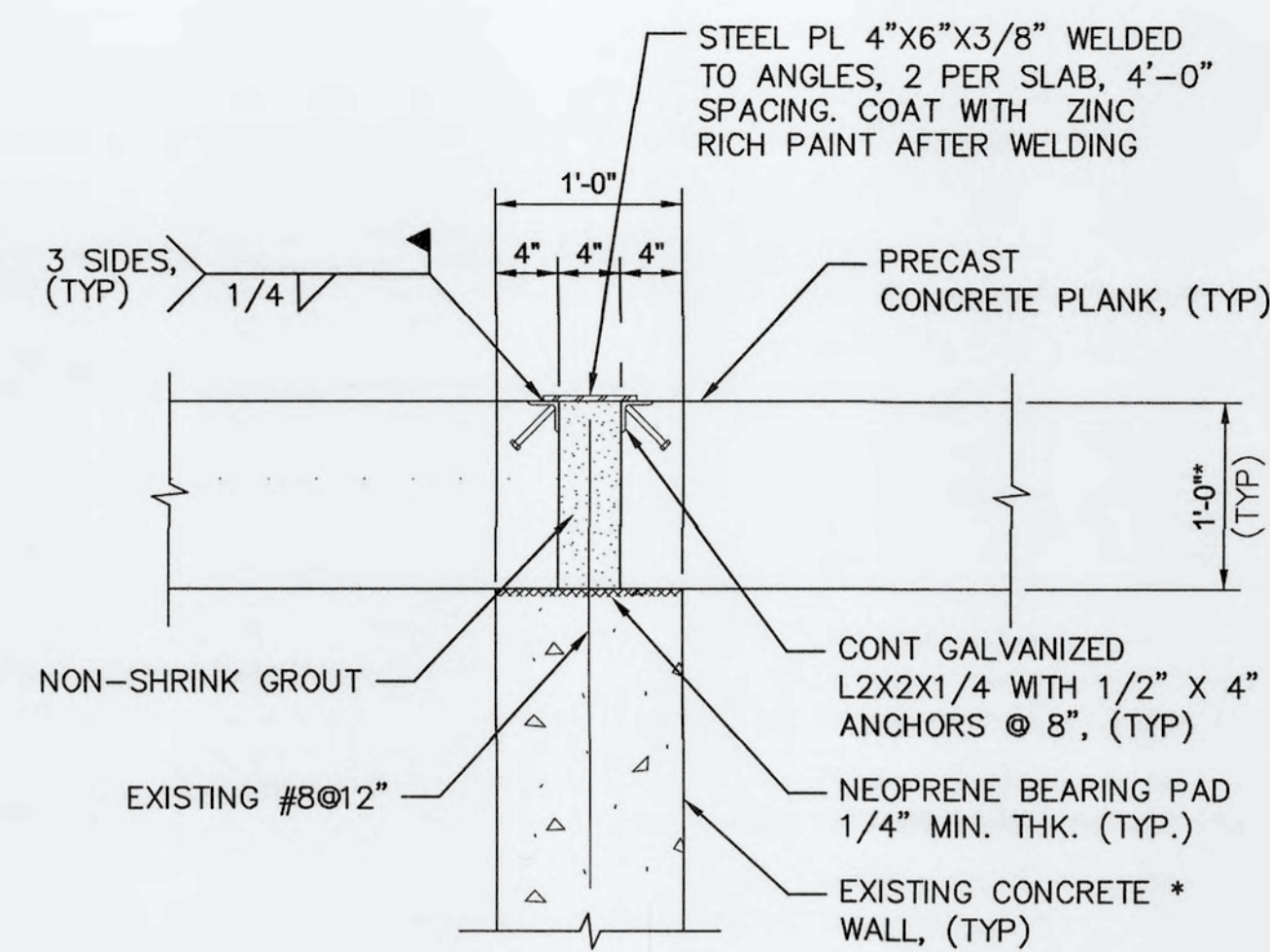
**SWWRF
 CCC REHAB AND
 RECHARGE WELL PS PROJECT**
**ANOXIC BASIN CHANNEL EXTENSION
 AND ANOXIC BASIN TOP PLAN**

DATE: JUNE, 2019	SCALE: HORIZONTAL: NA	DRAWING NUMBER: S-03
MCE PROJ. # 1024-0171	HORIZONTAL: NA	
DRAWN: CN	VERTICAL: NA	
DESIGNED: HAH		
CHECKED: JV		
PROJ. MGR.: TP		
STATUS: ISSUED FOR BID		



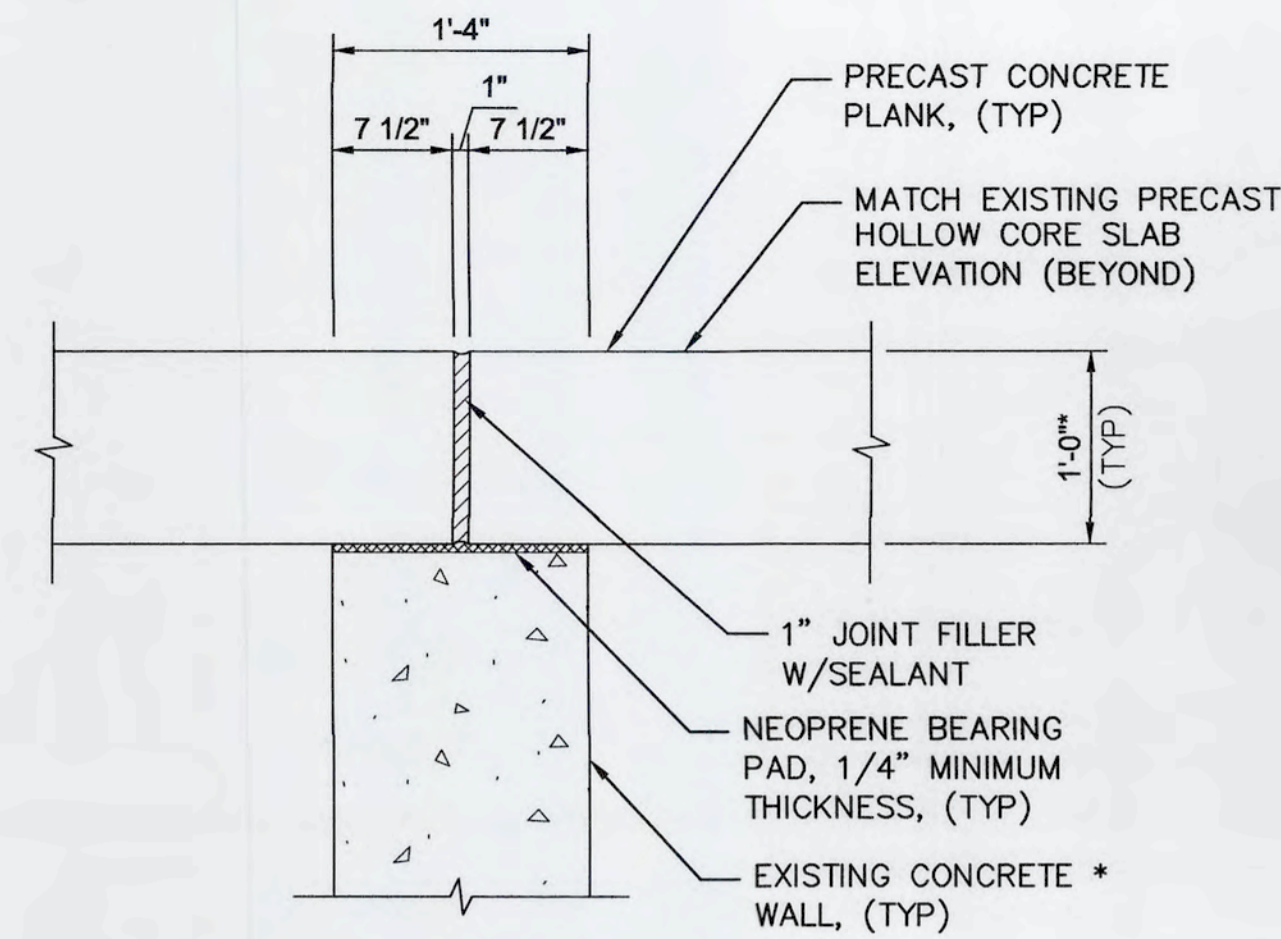
* SAW-CUT SUPPORT WALL AS REQUIRED SO THAT TOP OF PRECAST CONCRETE PLANK MATCHES TOP OF EXISTING WALL.

1
S-03
1"=1'-0"



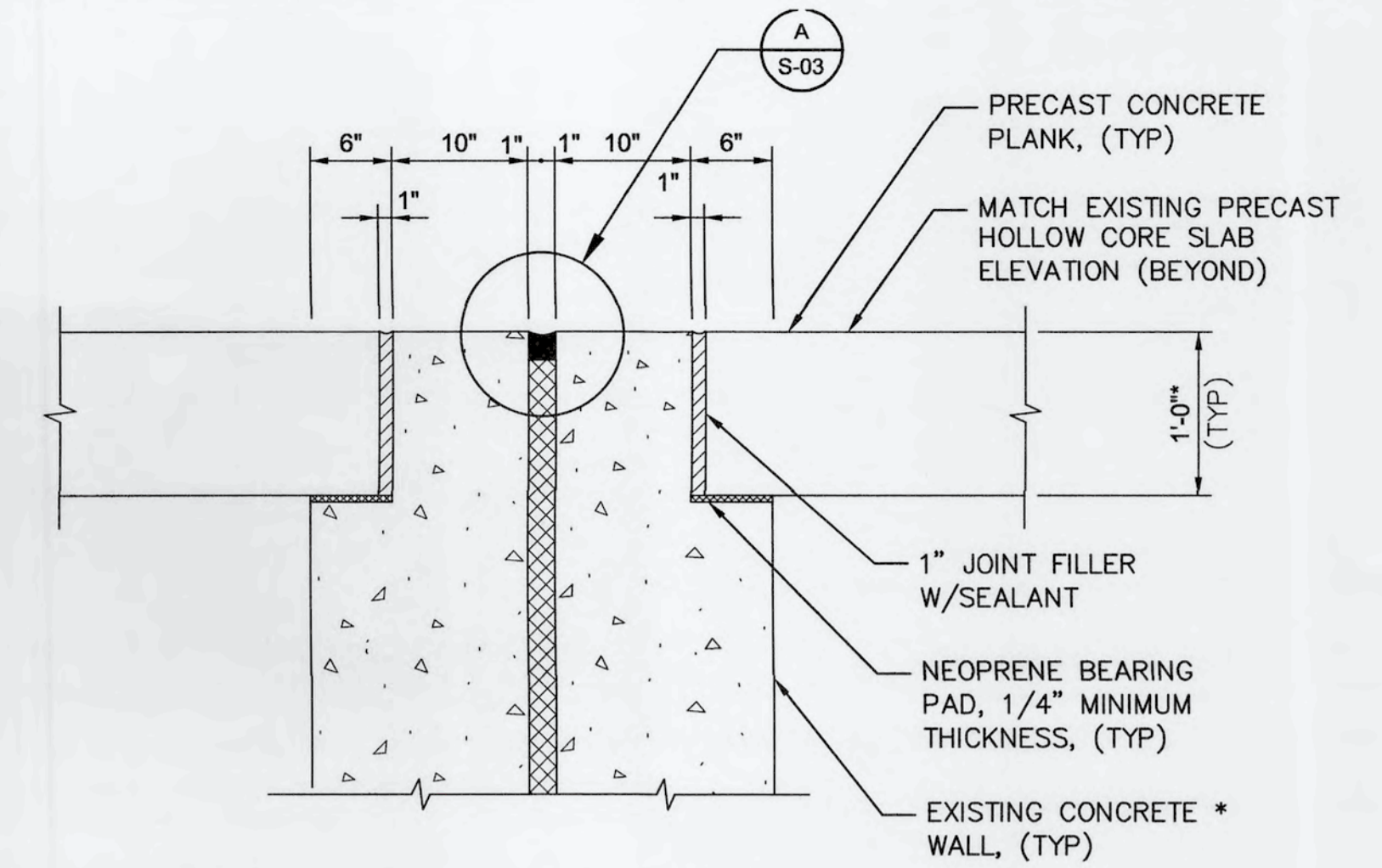
* SAW-CUT SUPPORT WALL AS REQUIRED SO THAT TOP OF PRECAST CONCRETE PLANKS MATCHES TOP OF EXISTING ADJACENT PLANKS.

2
S-03
1"=1'-0"



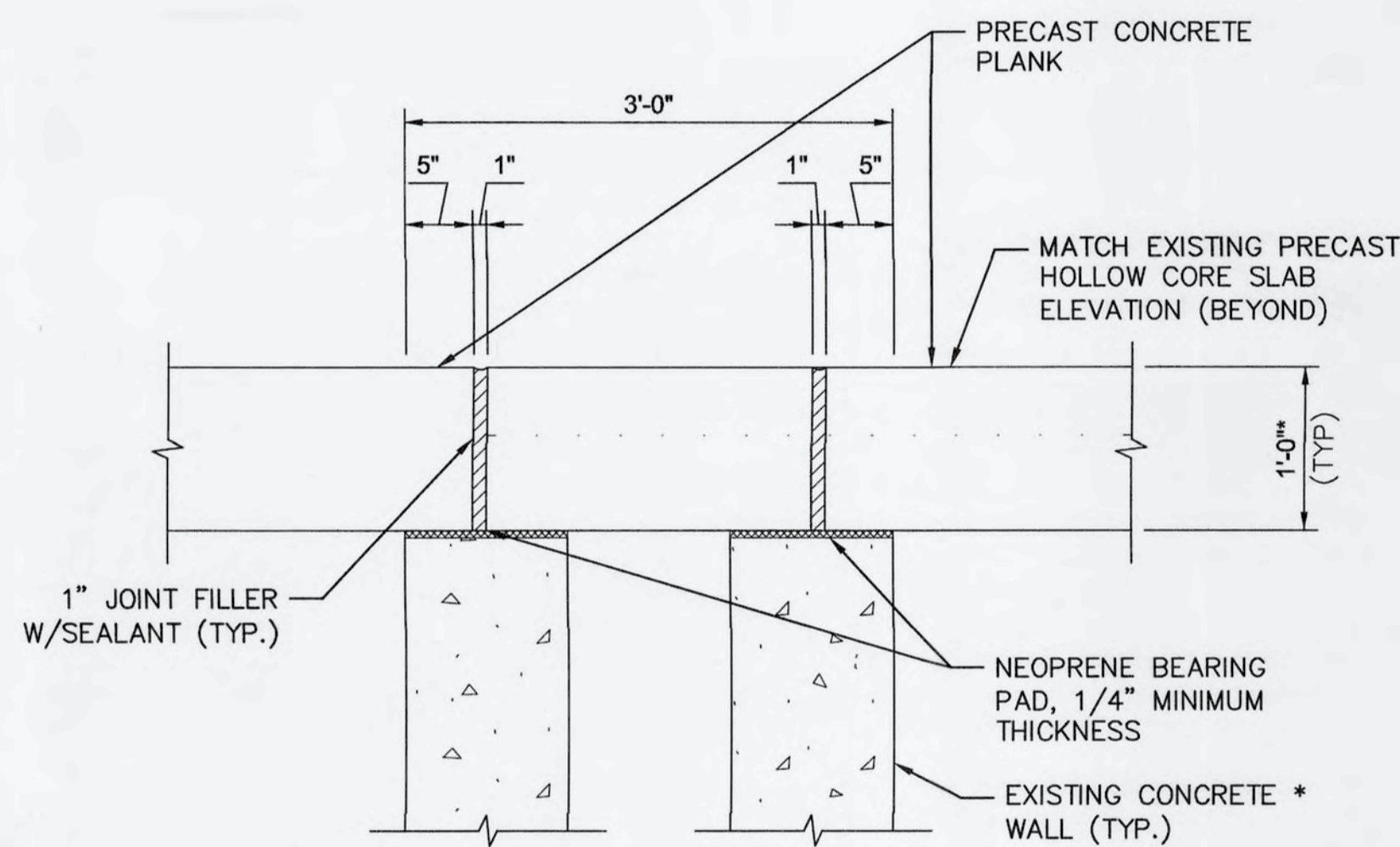
* SAW-CUT TOP OF SUPPORT WALL AS REQUIRED SO THAT TOP OF PRECAST CONCRETE PLANKS MATCHES TOP OF EXISTING ADJACENT PLANKS.

3
S-03
1"=1'-0"



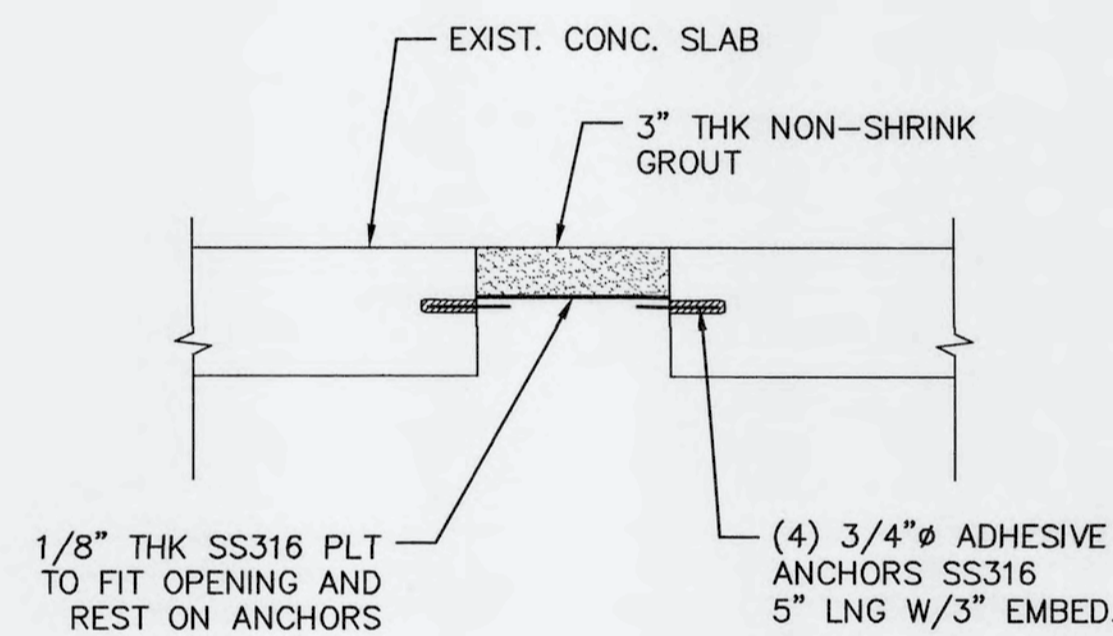
* SAW-CUT SUPPORT WALLS AS REQUIRED SO THAT TOP OF PRECAST CONCRETE PLANKS MATCHES TOP OF EXISTING WALLS.

4
S-03
1"=1'-0"

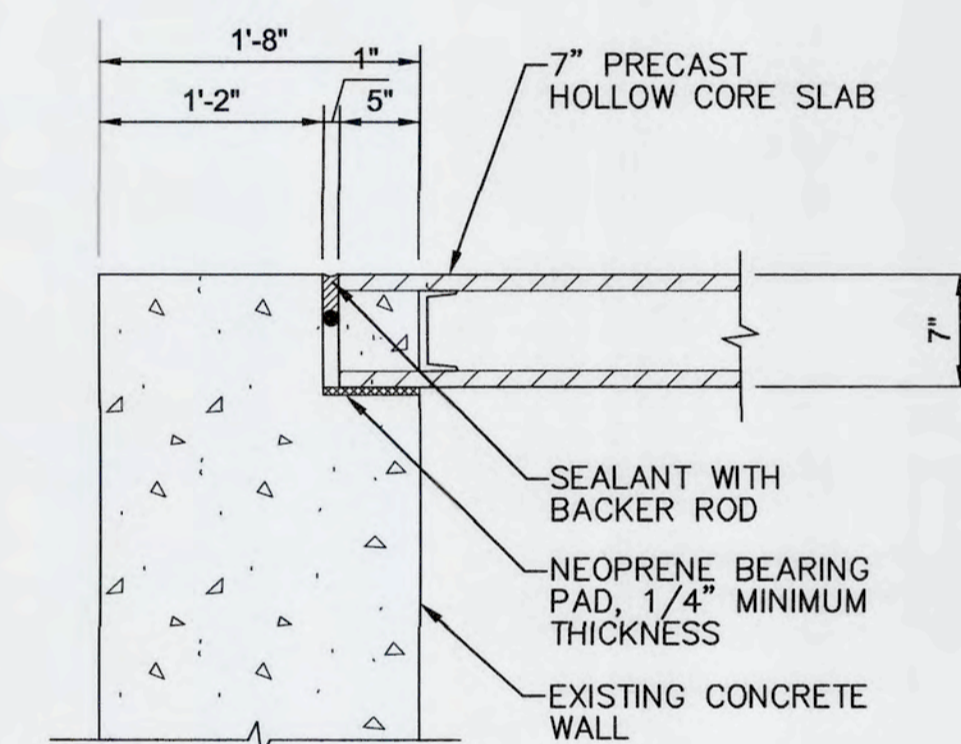


* SAW-CUT SUPPORT WALLS AS REQUIRED SO THAT TOP OF PRECAST CONCRETE PLANKS MATCHES TOP OF EXISTING ADJACENT PLANKS.

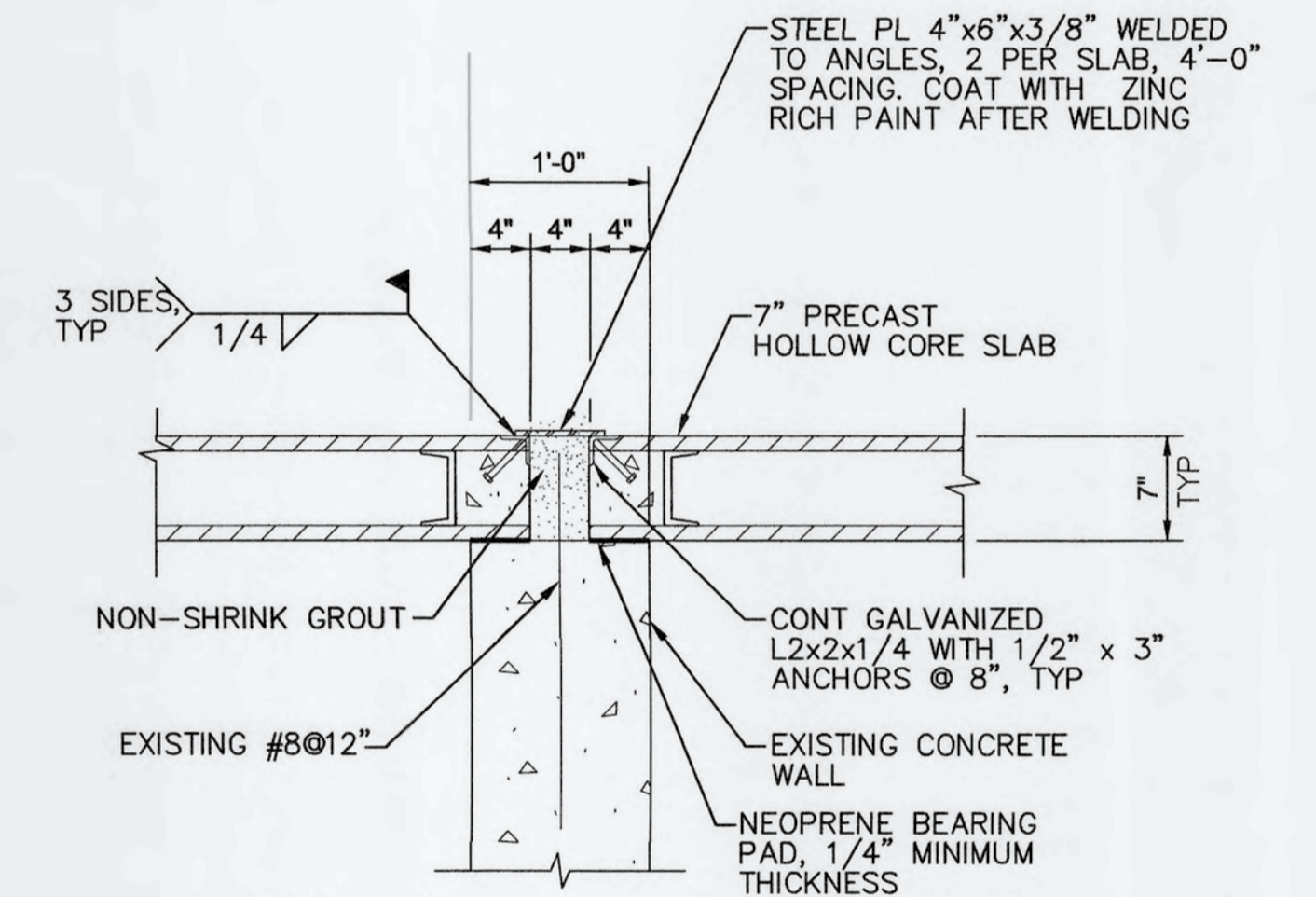
5
S-03
1"=1'-0"



6
S-03
1"=1'-0"

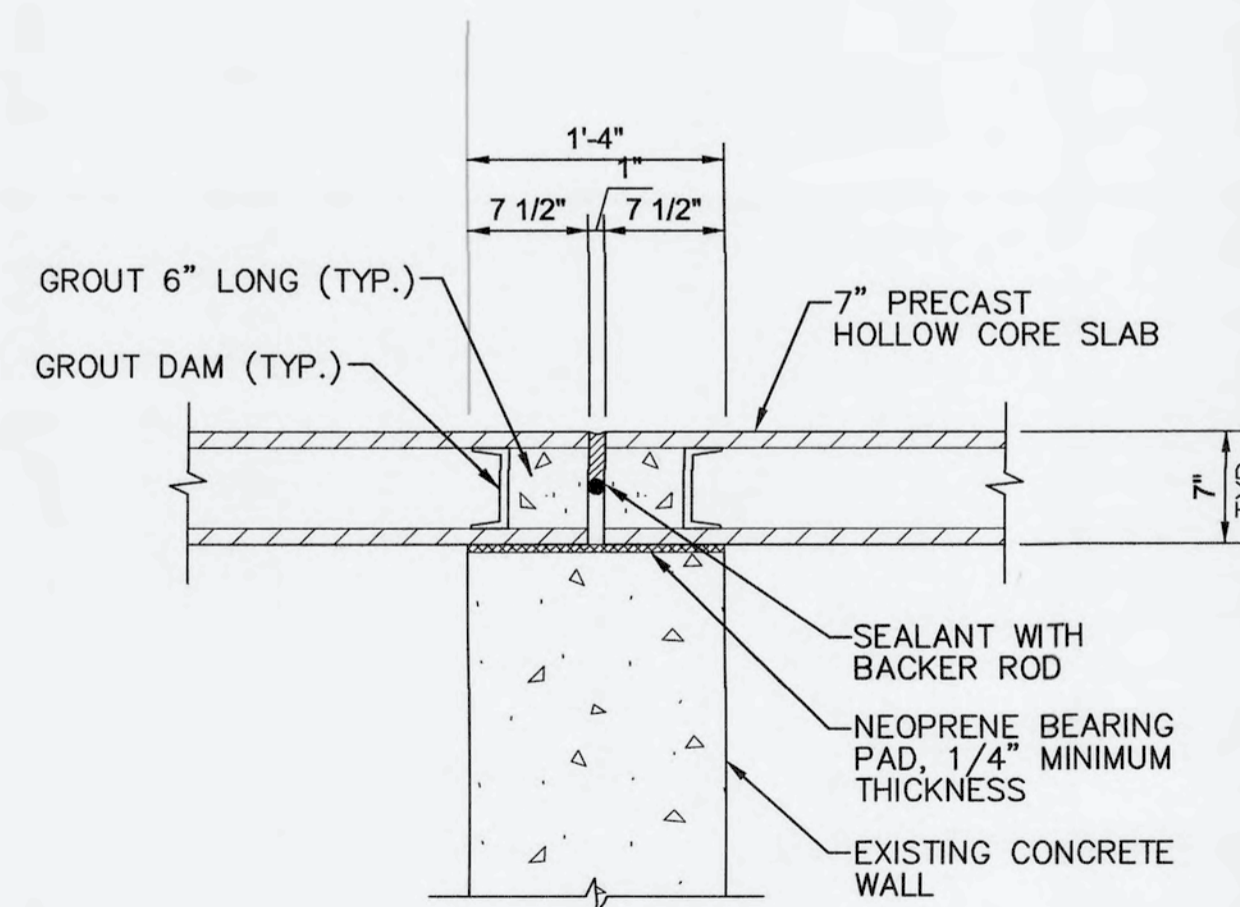


7
S-03
1"=1'-0"

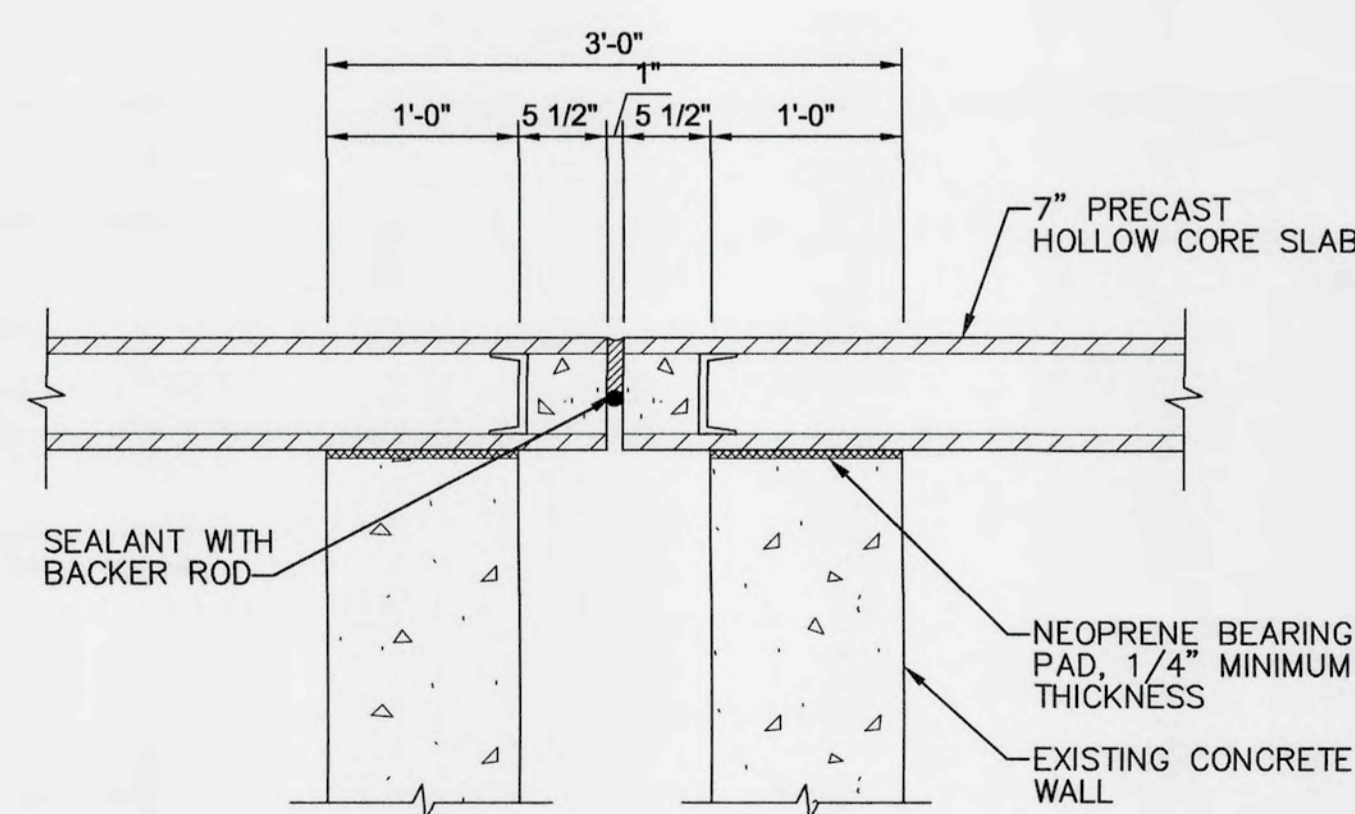


NOTE:
IF CONCRETE PLANKS ARE CAST-IN-PLACE, PLANKS SHALL BE CONTINUOUS OVER SUPPORT. DELETE GROUT AND EMBEDS.

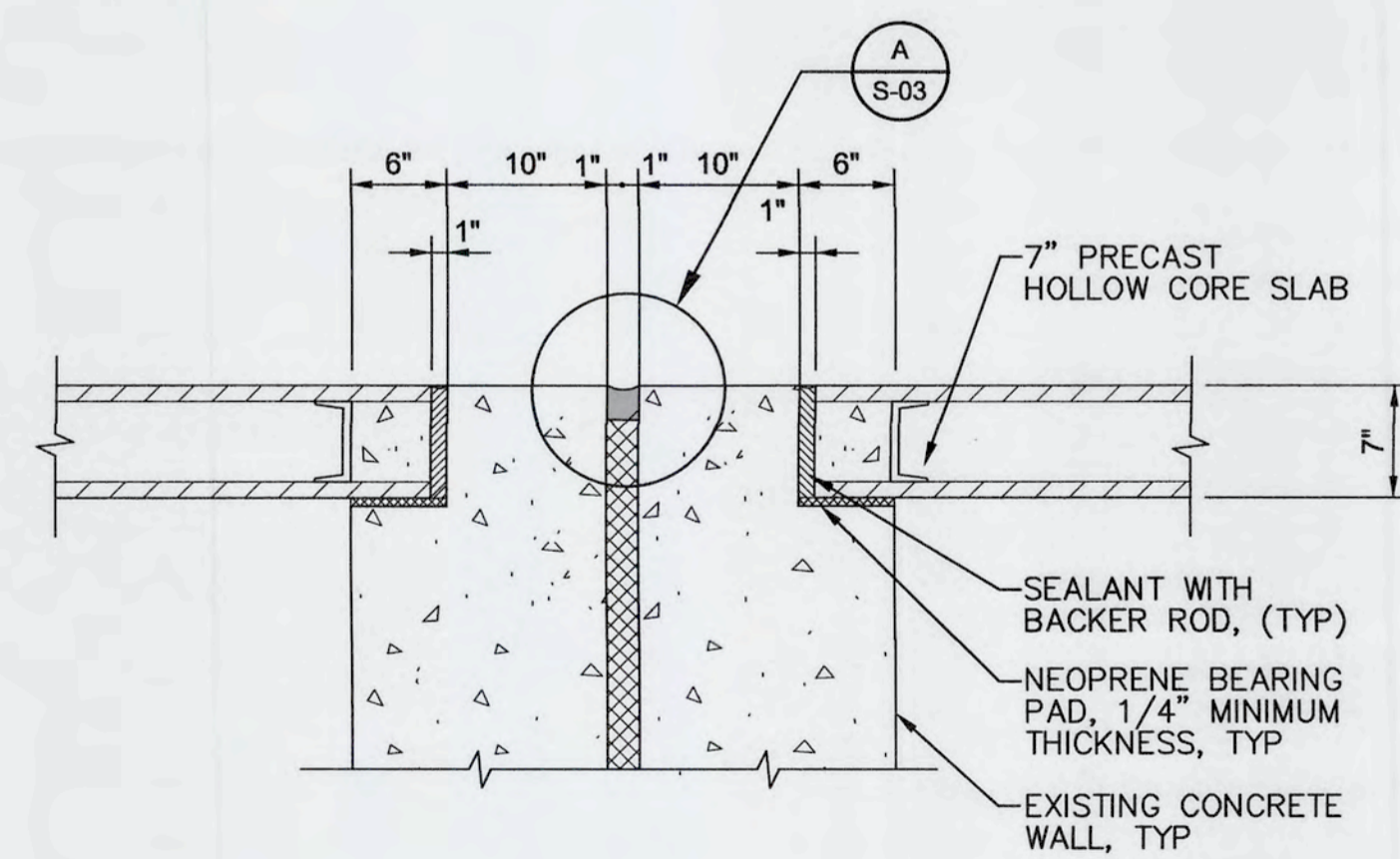
8
S-03
1"=1'-0"



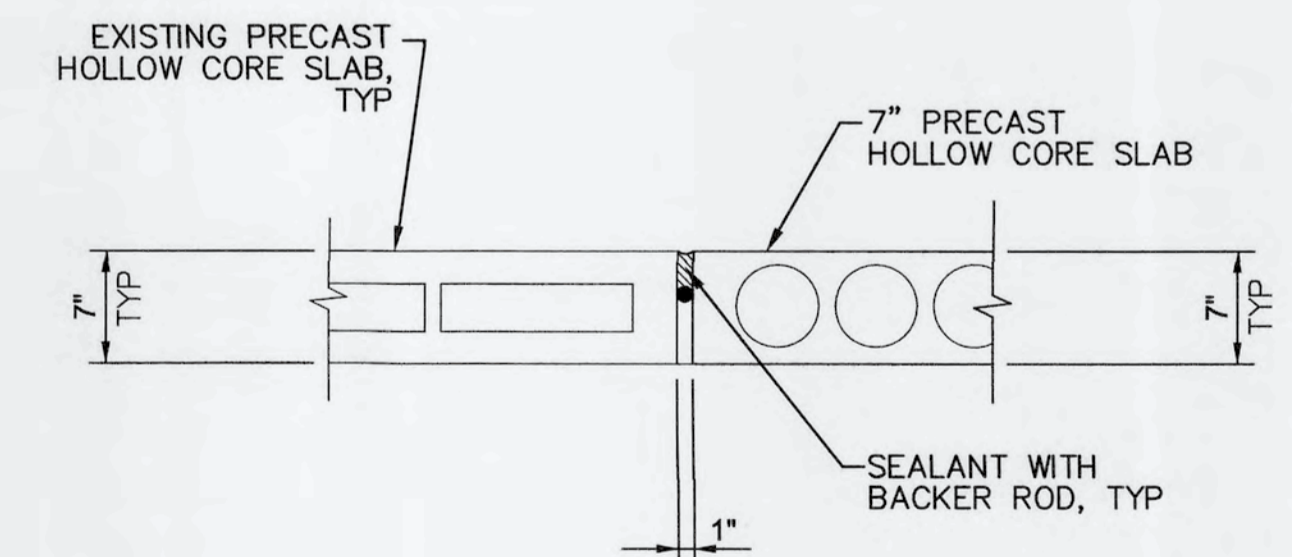
9
S-03
1"=1'-0"



10
S-03
1"=1'-0"

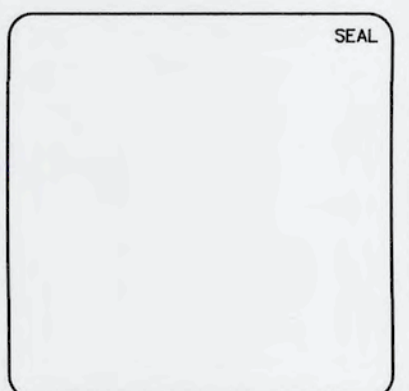
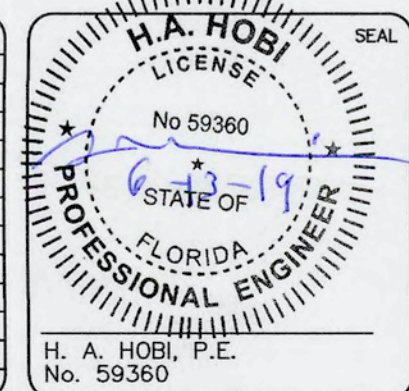


11
S-03
1"=1'-0"



12
S-03
1"=1'-0"

REV. NO.	DESCRIPTIONS	DATE



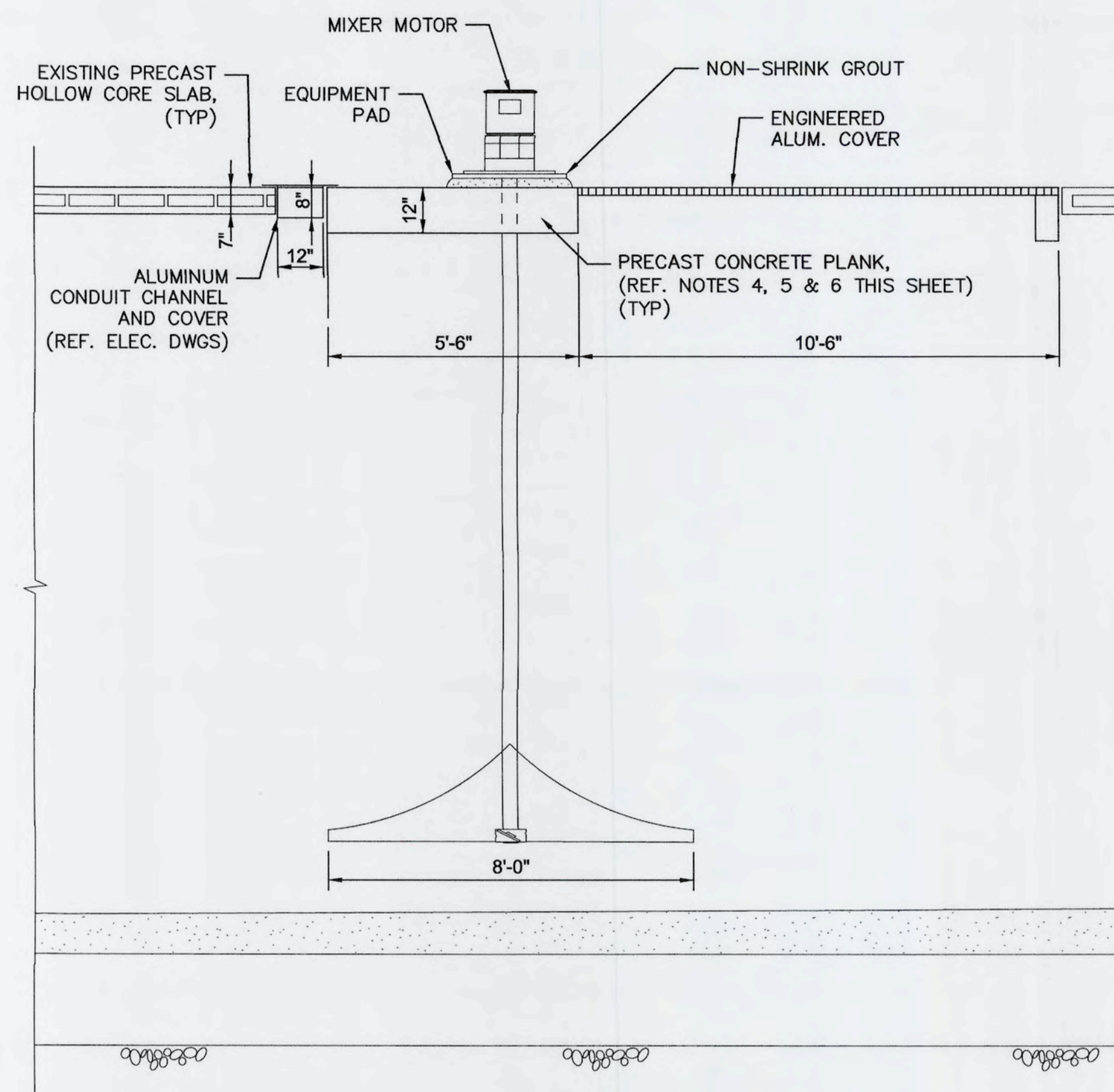
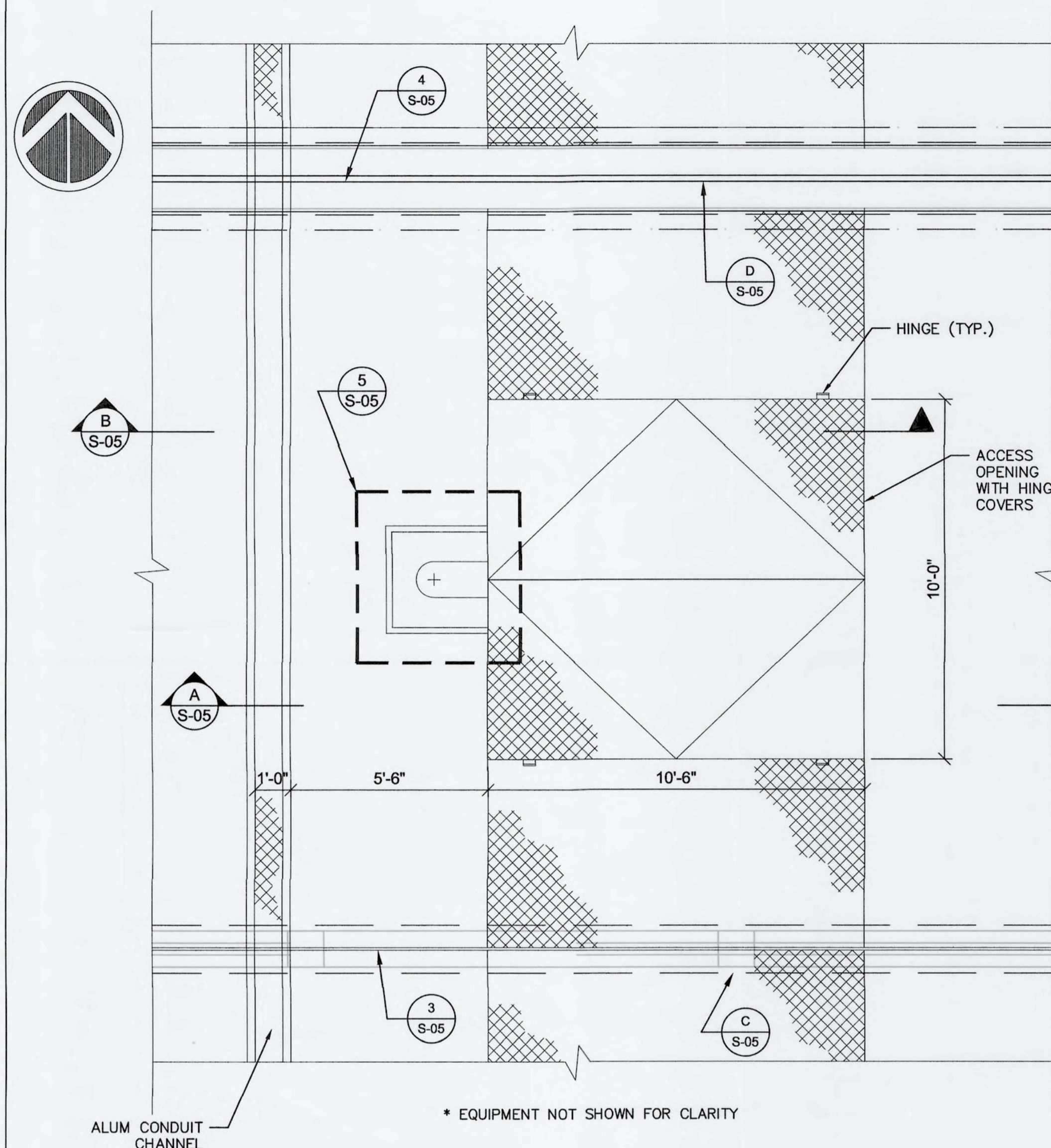
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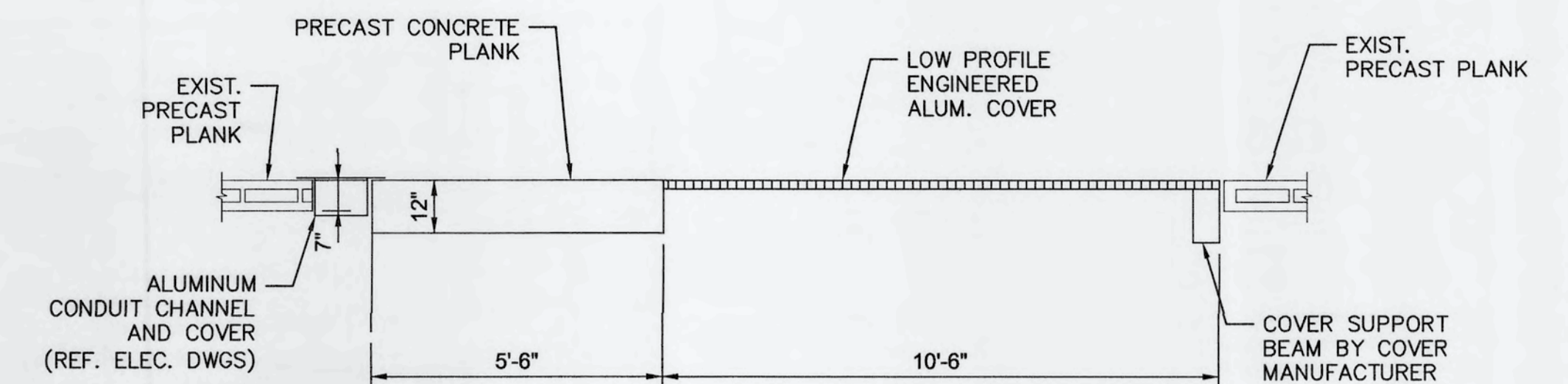
**SWRF
 CCC REHAB AND
 RECHARGE WELL PS PROJECT**

**ANOXIC BASIN
 DETAILS**

DATE: JUNE, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. # 1024-0171	HORIZONTAL: NA	S-04
DRAWN: CN	VERTICAL: NA	
DESIGNED: HAH		
CHECKED: JV		
PROJ. MGR. TP		
STATUS: ISSUED FOR BID		



A SECTION
S-05
3/8"=1'-0"

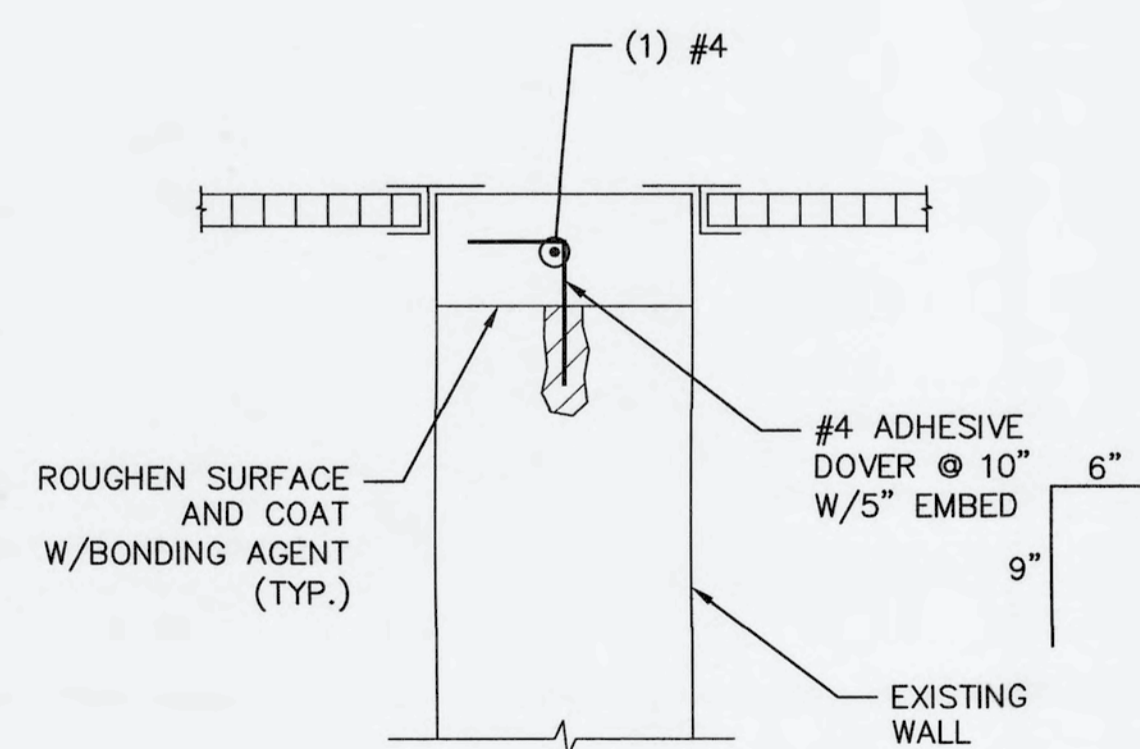


B SECTION
S-05
SCALE: NTS

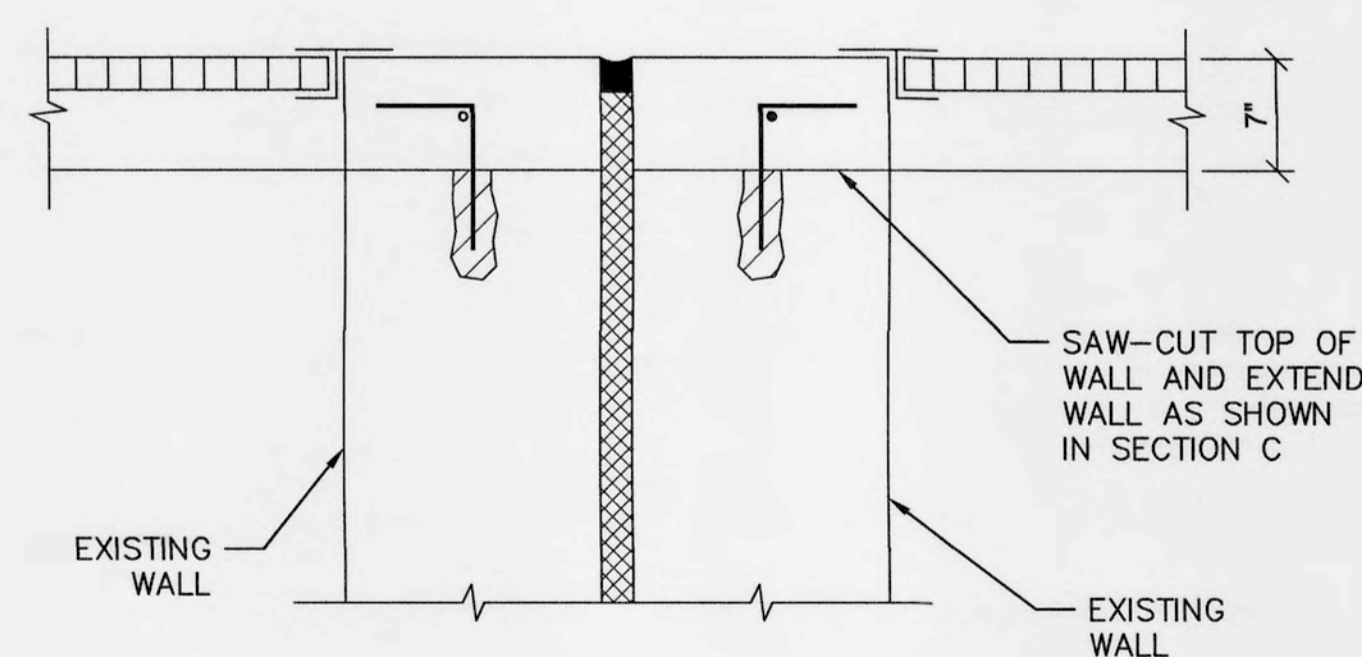
- MIXER LOADS:**
1. TOTAL MIXER WEIGHT 816 LB.
 2. RATED TORQUE 665 LB-FT.
 3. START-UP TORQUE 2259 LB-FT.
 4. STATIC AXIAL FORCE 816 LB.
 5. DYNAMIC AXIAL FORCE 429 LB.

- NOTES:**
1. THE STEEL BASE PLATE SHALL SET BE GALVANIZED AND SET ON NON-SHRINK GROUT.
 2. THE STEEL BASE PLATE SHALL BE FIELD DRILLED AND HOLES THREADED TO ALLOW THE EQUIPMENT BASE PLATE TO BE BOLTED TO IT.
 3. CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EQUIPMENT PAD AND GROUT HEIGHT TO MAINTAIN EXISTING EQUIPMENT ELEVATION.
 4. CONTRACTOR SHALL BE RESPONSIBLE FOR ENGINEERING PRODUCTION AND INSTALLATION OF THE PRECAST CONCRETE PLANKS USED FOR MIXER SUPPORT.
 5. CONTRACTOR SHALL SUBMIT MIXER SUPPORT PRECAST PLANKS SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A FLORIDA PROFESSIONAL ENGINEER FOR REVIEW BY ENGINEER.
 6. THE MIXER SUPPORT PRECAST PLANKS SHALL BE DESIGNED FOR DEAD LOAD AND 50 PSF LIVE LOAD IN ADDITION TO STATIC AND DYNAMIC LOADS GENERATED BY THE MIXER. ALSO, PRECAST PLANKS SHALL BE DESIGNED TO SUPPORT THE DEAD AND LIVE LOADS GENERATED BY THE ENGINEERED ALUMINUM COVERS AND CONDUIT CHANNEL.
 7. STEEL BASE PLATE SHALL ACCOMMODATE EXISTING EQUIPMENT.

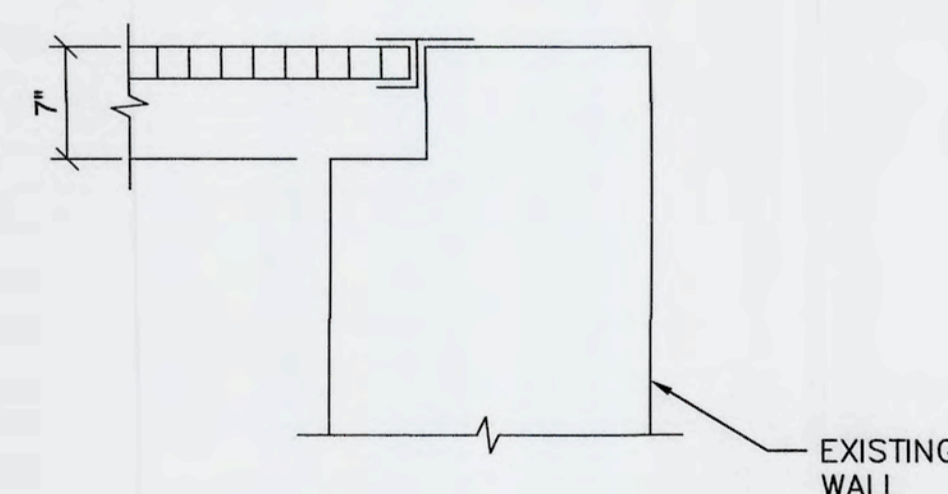
13 DETAIL
S-03
SCALE: NTS



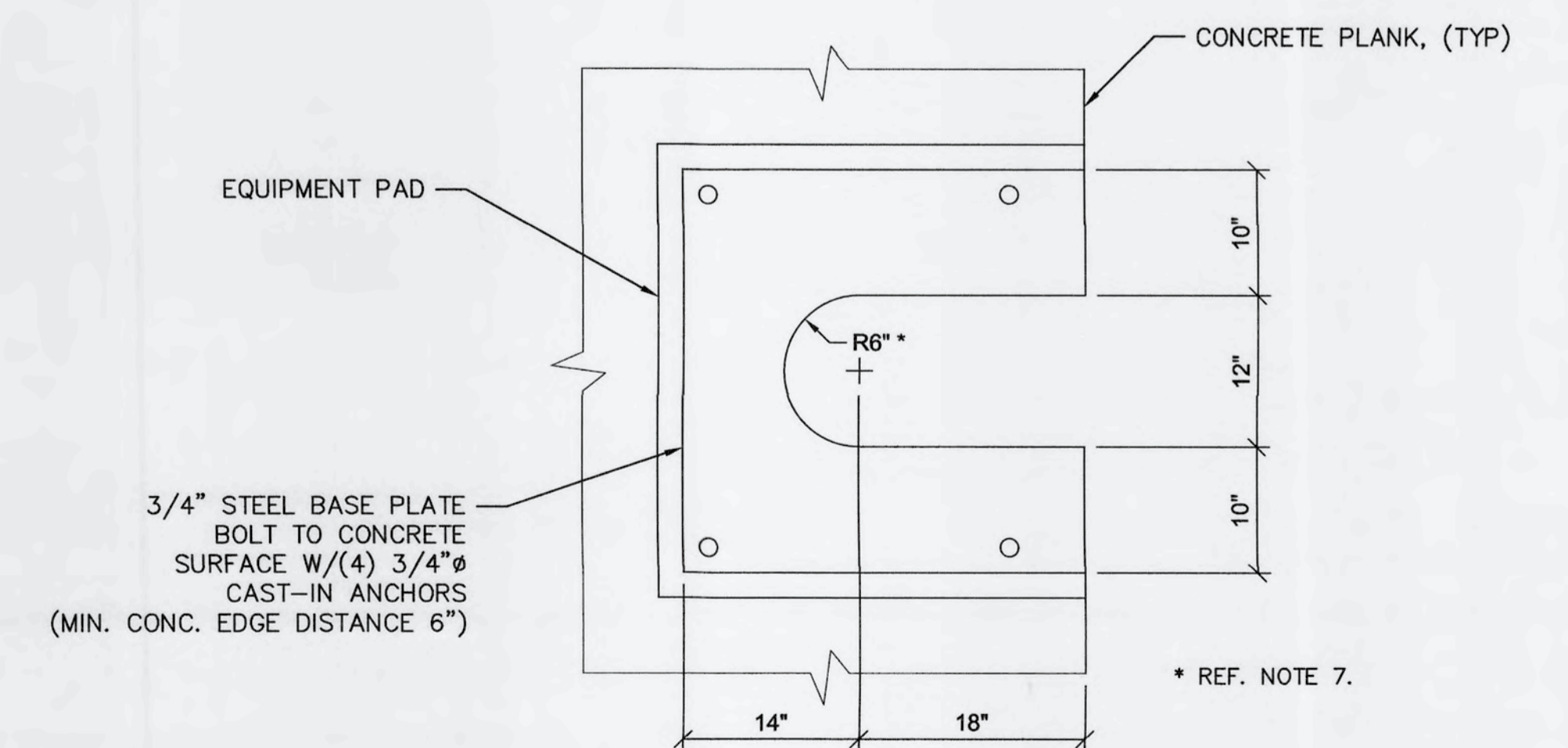
C SECTION
S-03
SCALE: NTS



D SECTION
S-03
SCALE: NTS

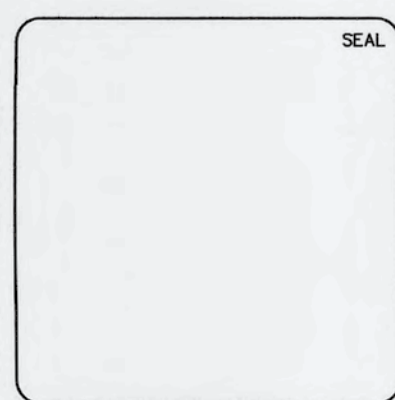
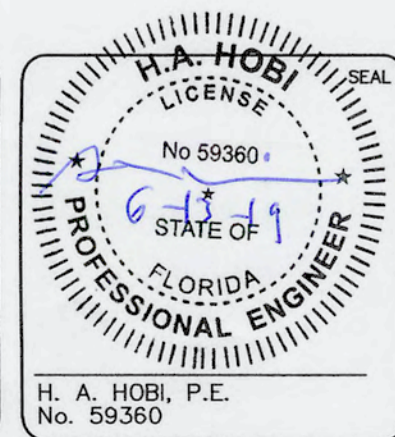


E SECTION
S-03
SCALE: NTS



5 MIXER SHAFT CUT-OUT
S-05
1"=1'-0"

REV. NO.	DESCRIPTIONS	DATE

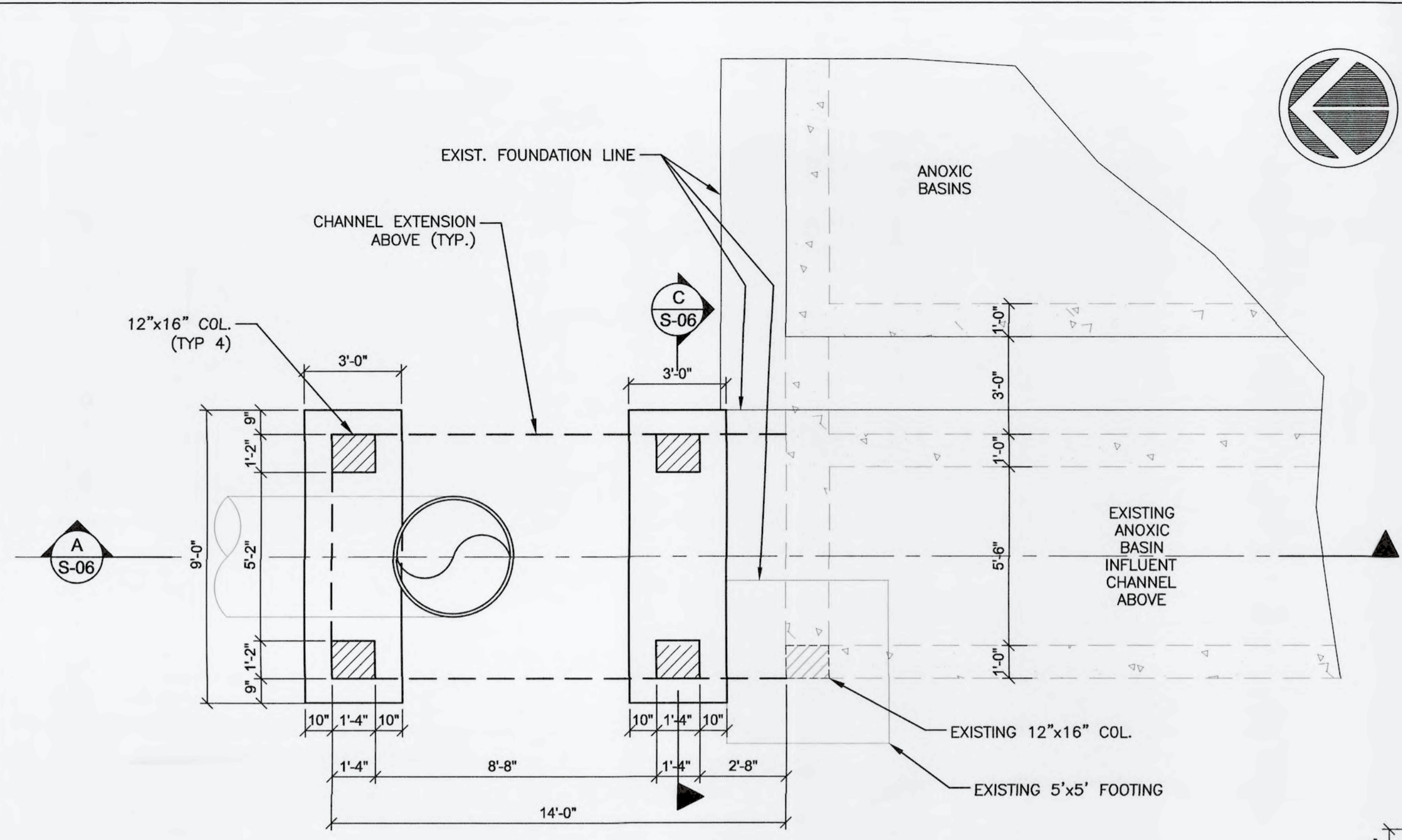


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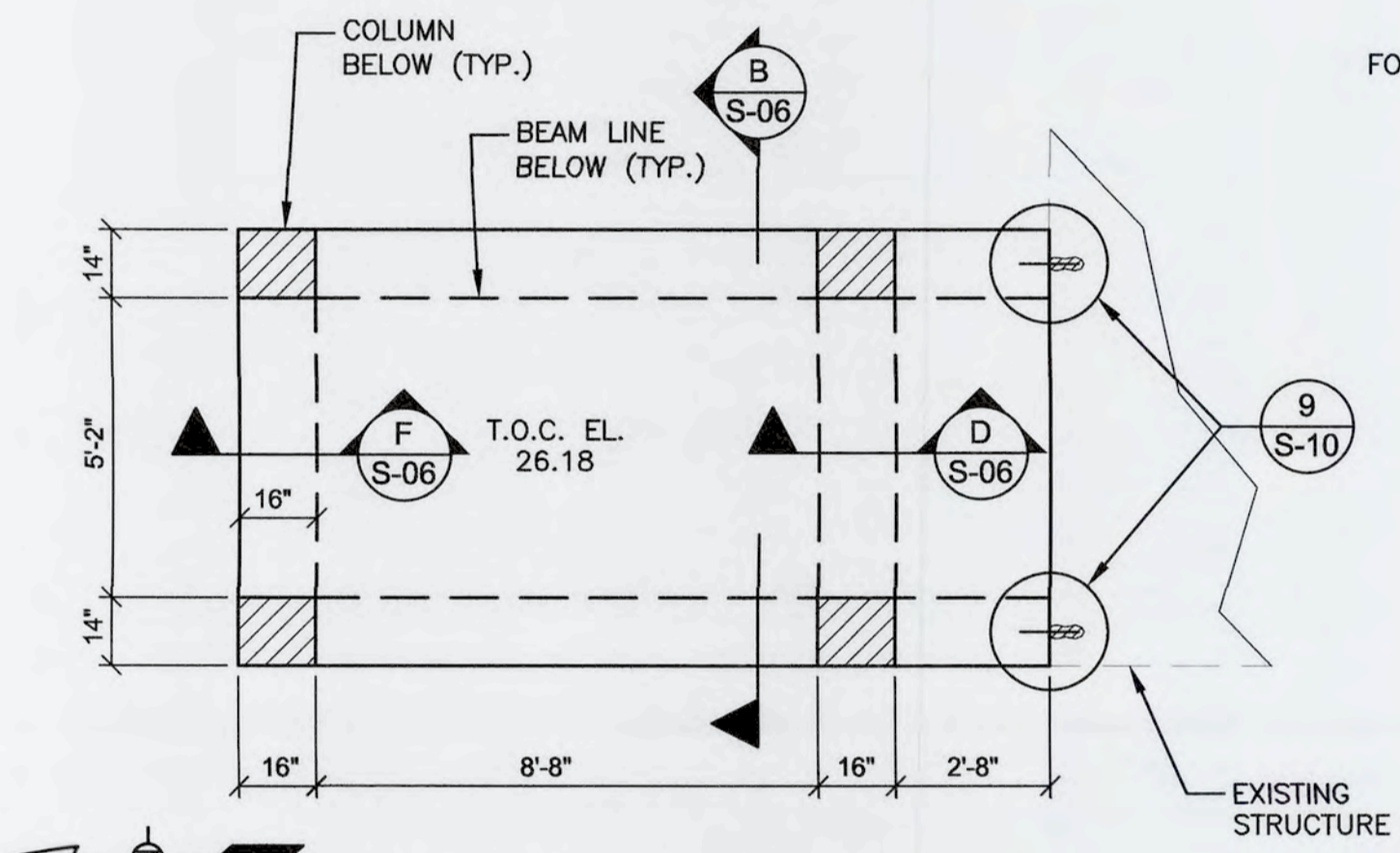
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CCC REHAB AND
RECHARGE WELL PS PROJECT**
**ANOXIC BASIN MIXER SHAFT OPENING
PLAN SECTIONS AND DETAILS**

DATE: JUNE, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. # 1024-0171	HORIZONTAL:	S-05
DRAWN: CN	VERTICAL:	
DESIGNED: HAH		
CHECKED: JP		
PROJ. MGR.: TP		
STATUS: ISSUED FOR BID	REVISION:	

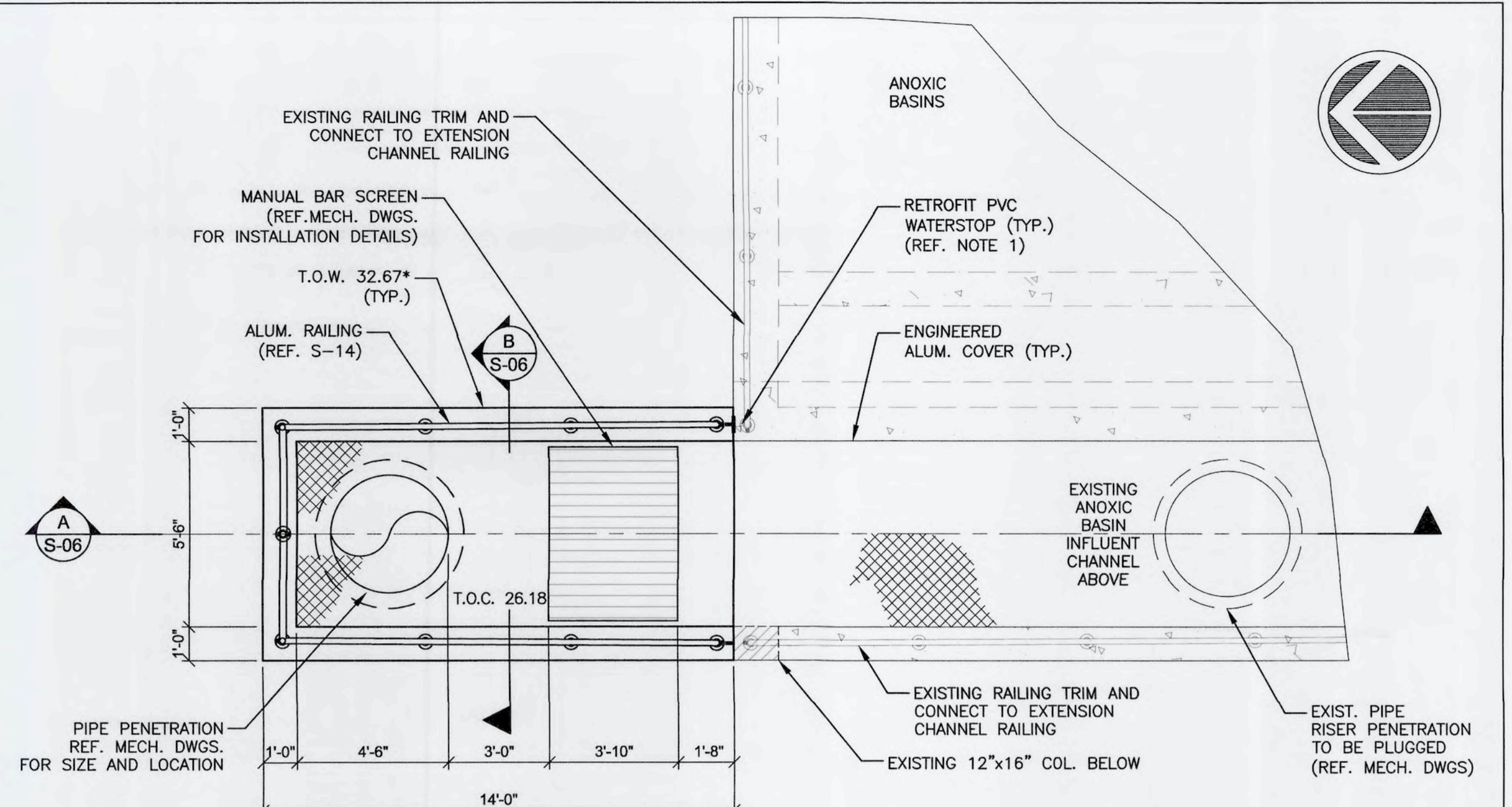


1 CHANNEL EXTENSION FOUNDATION PLAN
S-06 SCALE: 5/16" = 1'

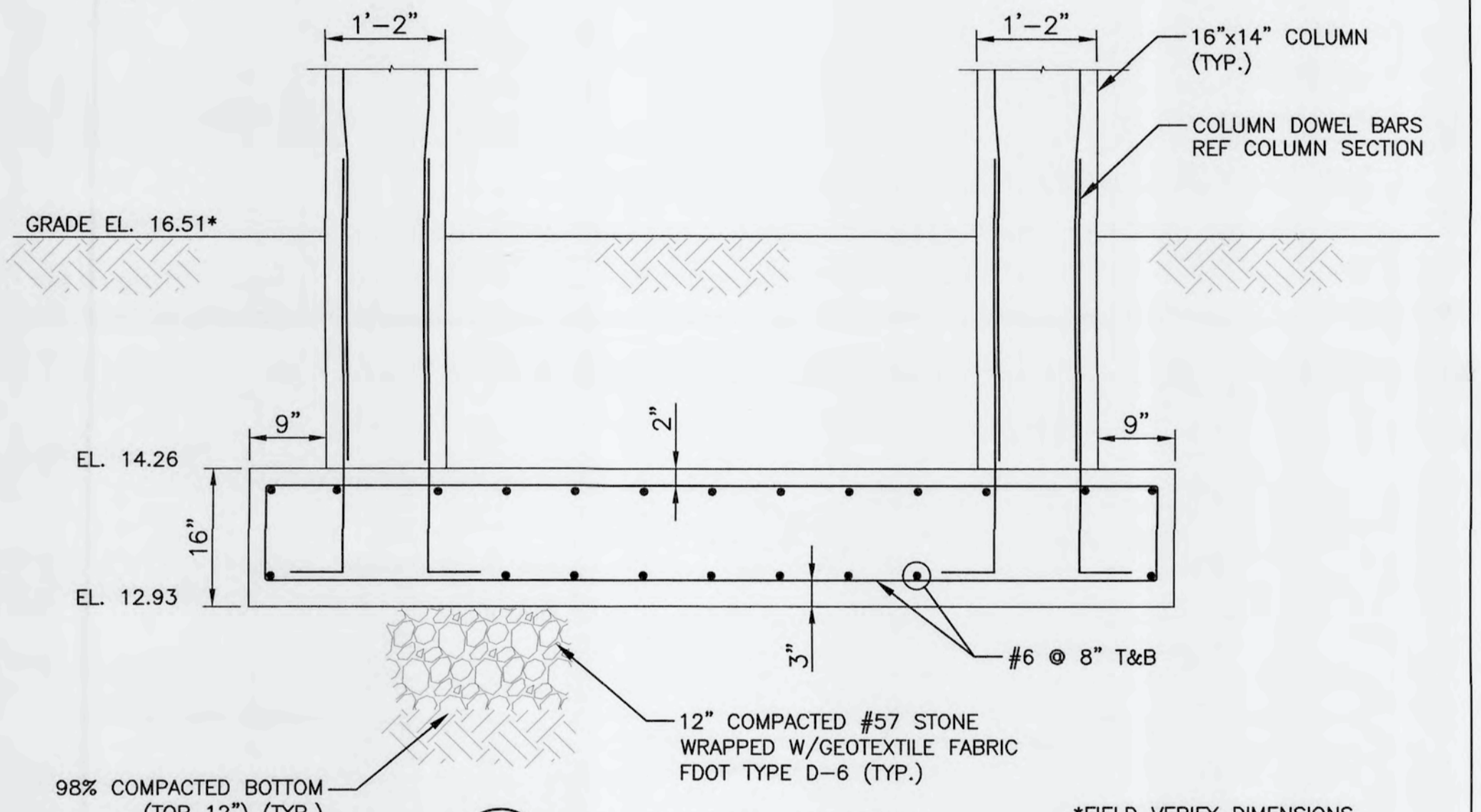
- NOTES:
1. USE GREEN STREAK 609 RETROFIT PVC WATER STOP OR APPROVED EQUAL.
 2. USE RETROFIT PVC WATERSTOP AND SMOOTH DOWELS AT WALLS AND SLAB JOINTS.
 3. PROVIDE 3" CONC COVER OVER REINF. AT PVC WATERSTOP LOCATIONS.
 4. REFERENCE DRAWINGS S-10 THROUGH S-14 FOR TYPICAL REINFORCING AND RAILING DETAILS.
 5. CHANNEL EXTENSIONS ON TOP OF WALL AND BOTTOM OF CHANNEL ELEVATIONS SHALL MATCH EXISTING CHANNEL ELEVATIONS.
 6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS THAT AFFECT NEW CONSTRUCTION PRIOR TO START WORK.
 7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING STRUCTURES DURING CONSTRUCTION.
 8. CONCRETE STRENGTH $f'_c=4500$ PSI W/TYPE II, ASTM C150 CEMENT AND MAXIMUM 20% BY WEIGHT SLAG AND/OR FLY ASH CONTENT.



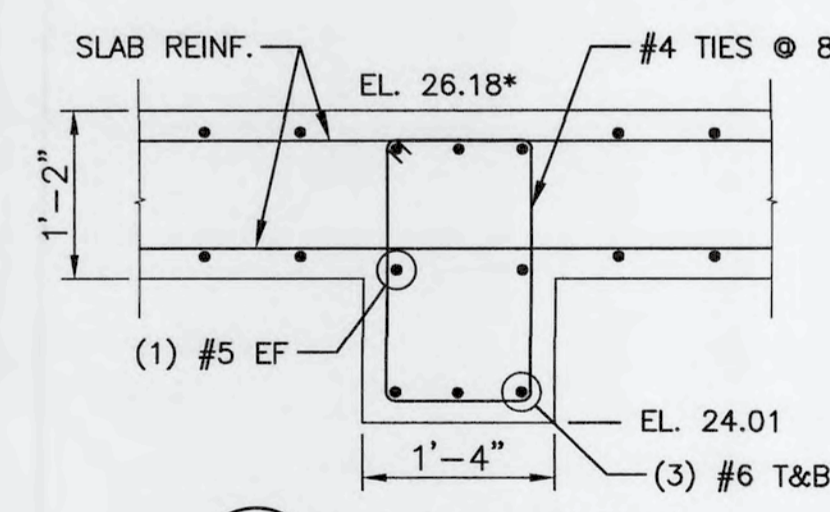
ELEVATED SLAB PLAN AT EL 27.17
SCALE: NTS



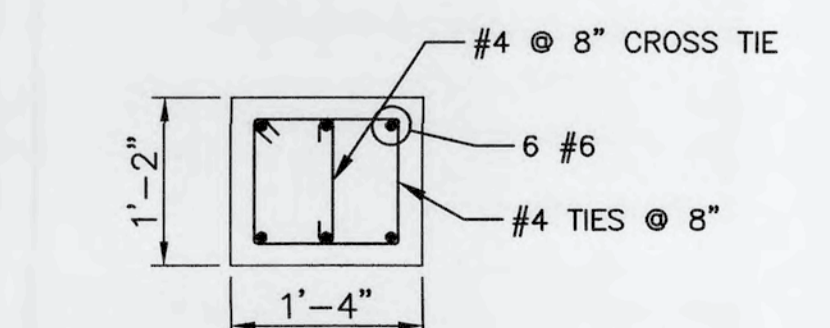
2 CHANNEL EXTENSION PLAN
S-03 SCALE: 5/16" = 1'



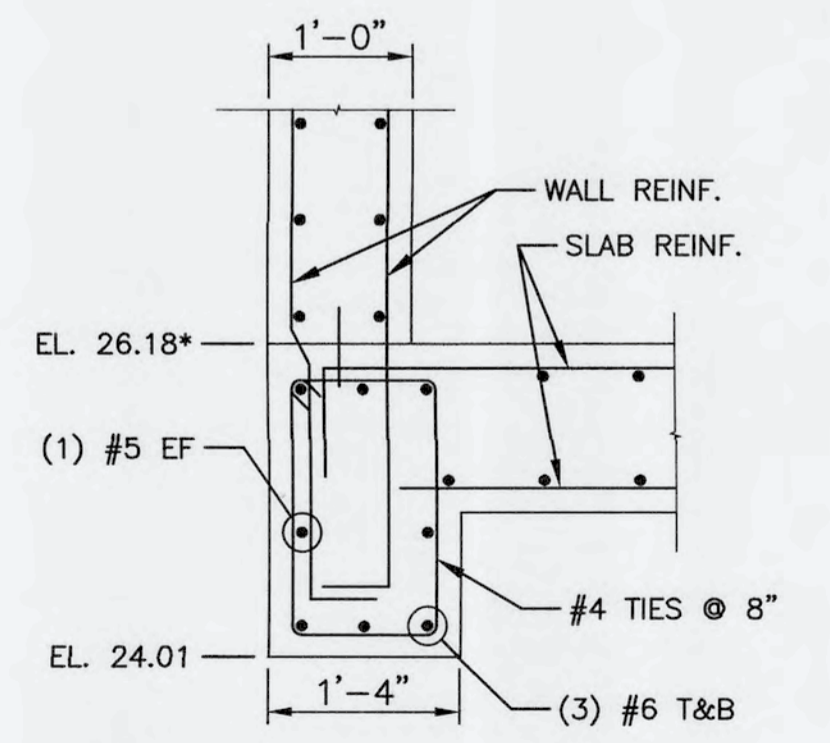
C TYP. FOOTING SECTION
S-06 SCALE: NTS



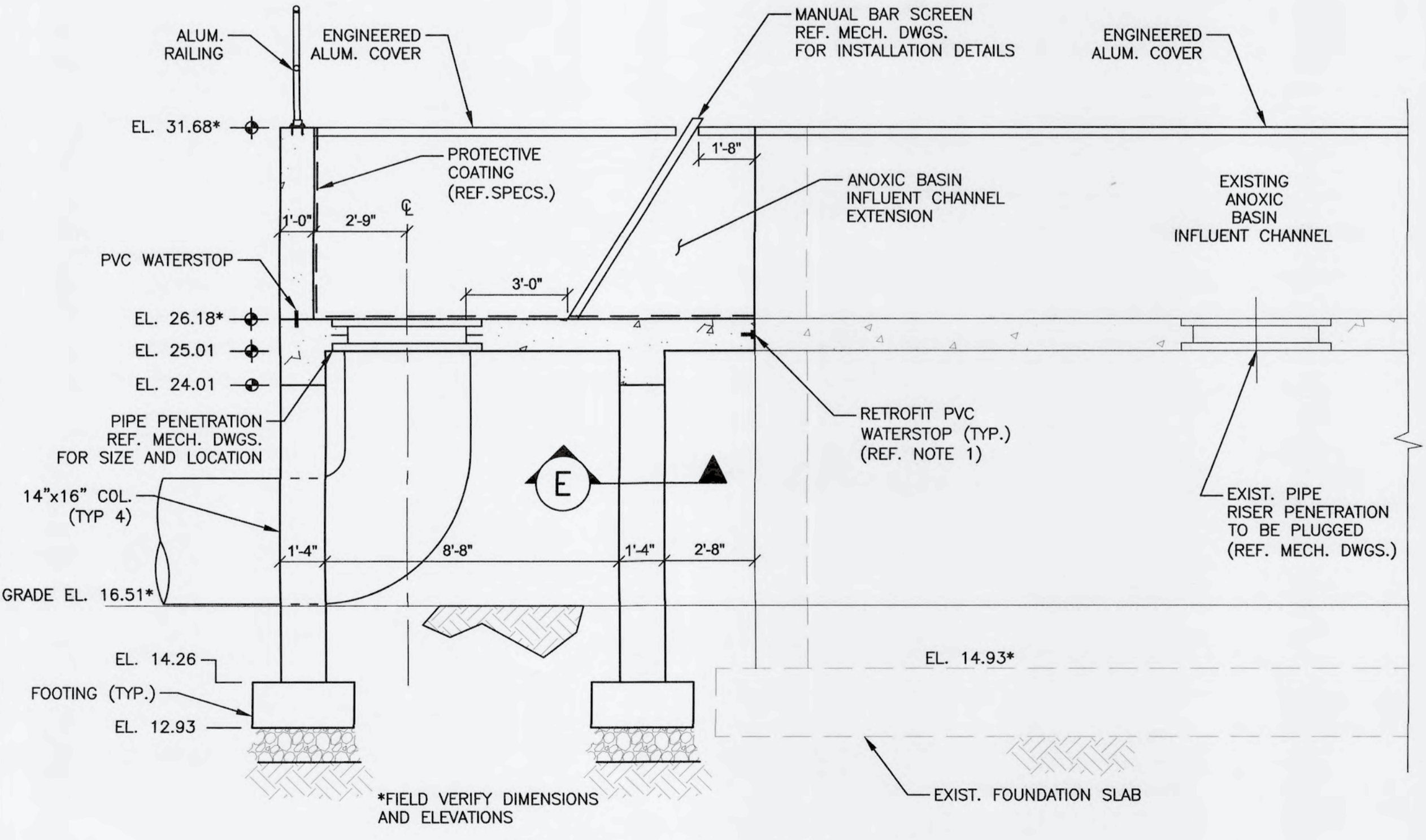
D BEAM SECTION
S-06 SCALE: NTS



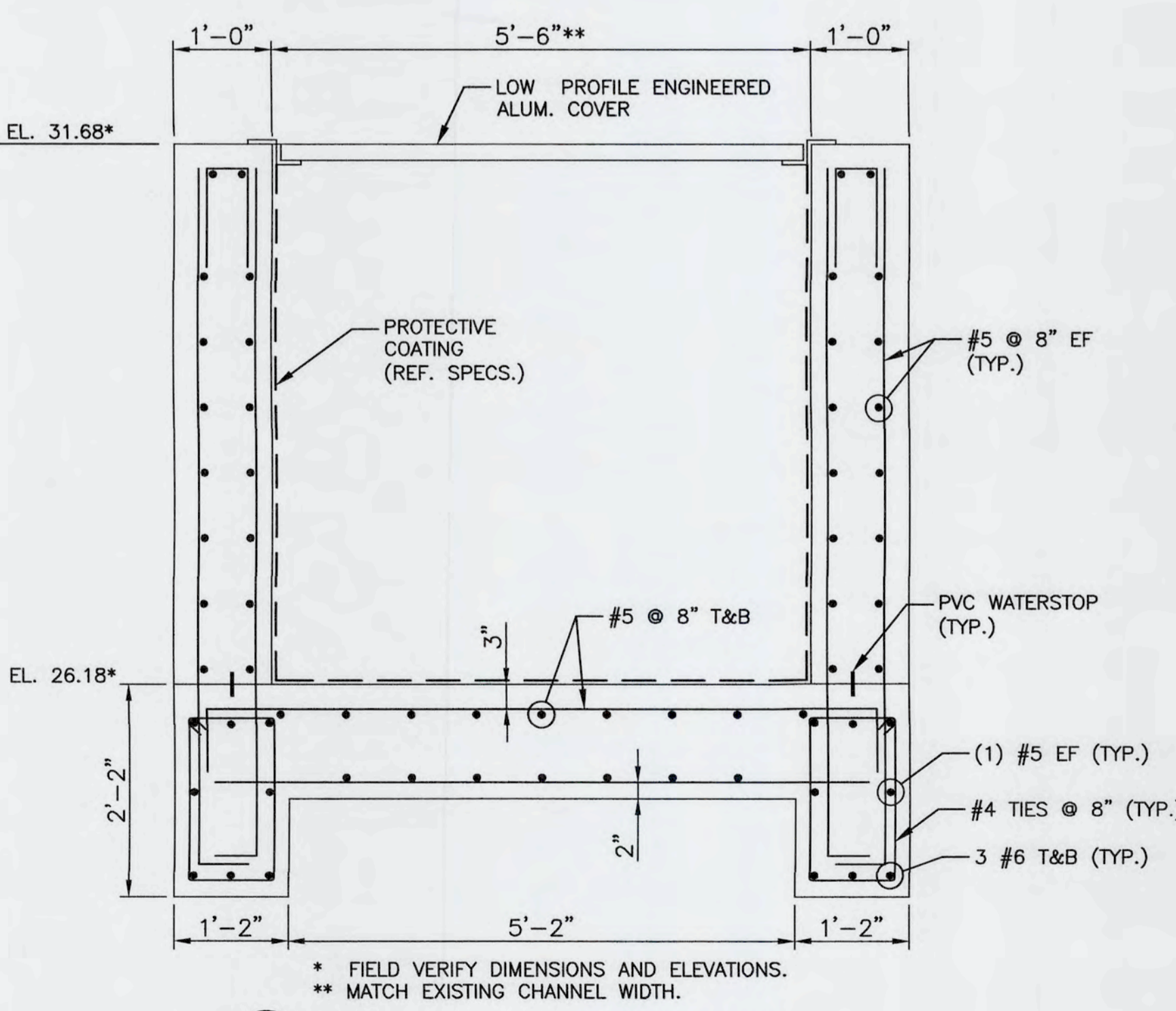
E TYP. COLUMN SECTION
S-06 SCALE: NTS



F END BEAM SECTION
S-06 SCALE: NTS

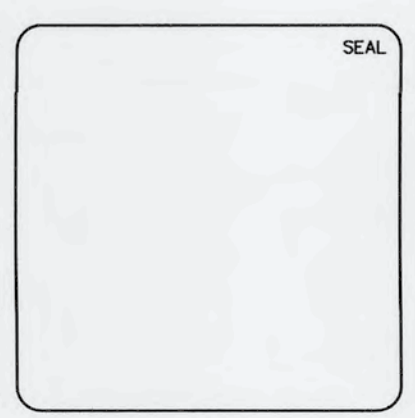
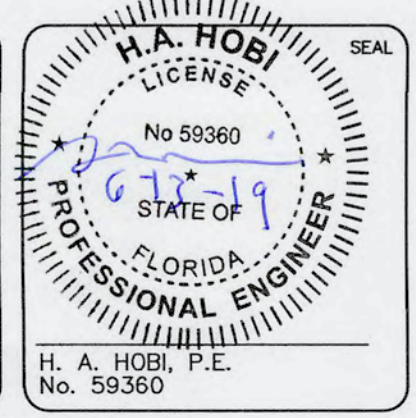


A CHANNEL EXTENSION SECTION
S-06 SCALE: 5/16" = 1'



B CHANNEL EXTENSION SECTION
S-06 SCALE: NTS

REV. NO.	DESCRIPTIONS	DATE



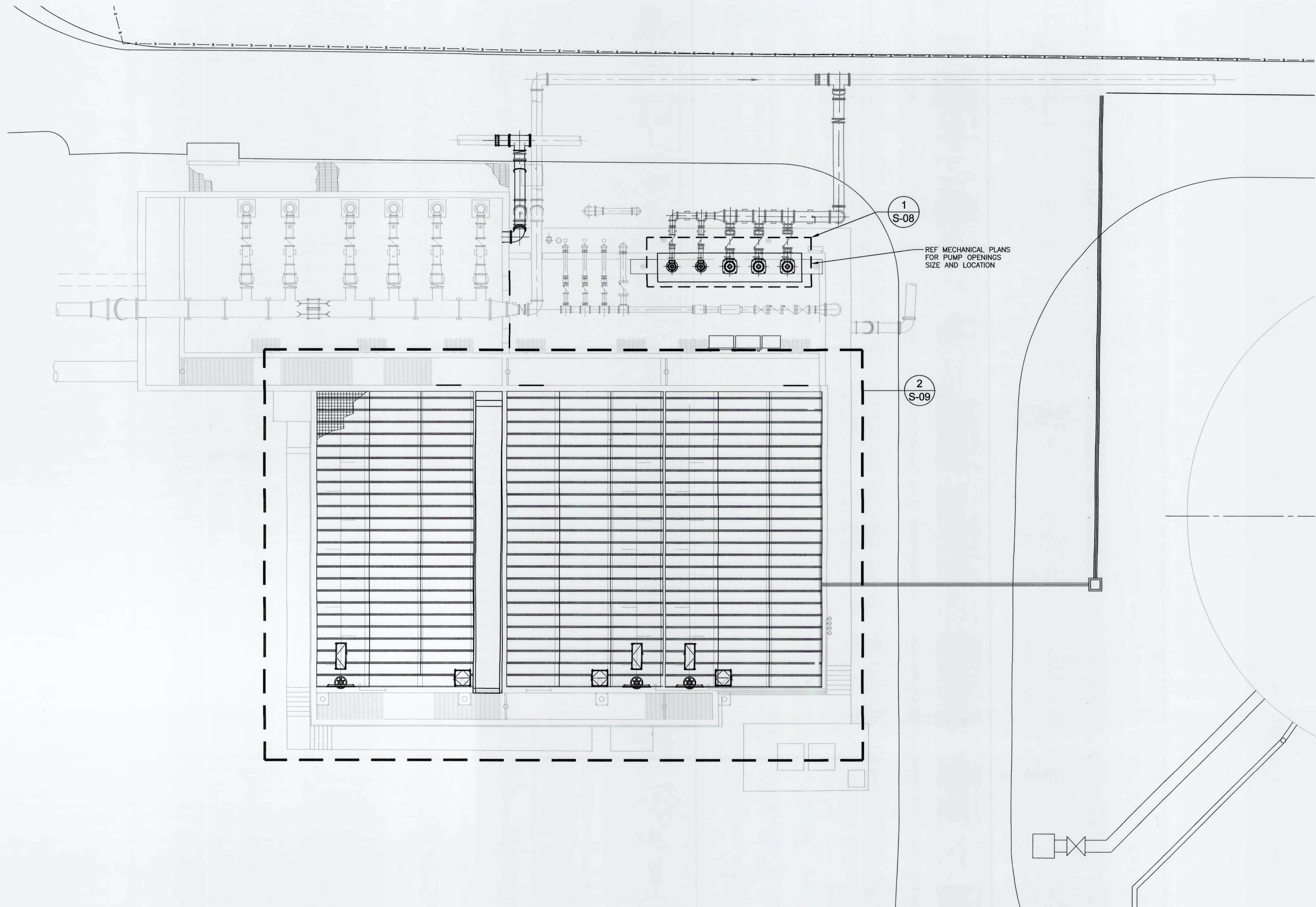
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**SWRF
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**ANOXIC BASIN CHANNEL
EXTENSION PLANS AND SECTIONS**

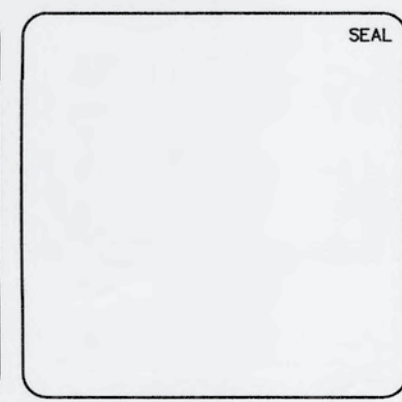
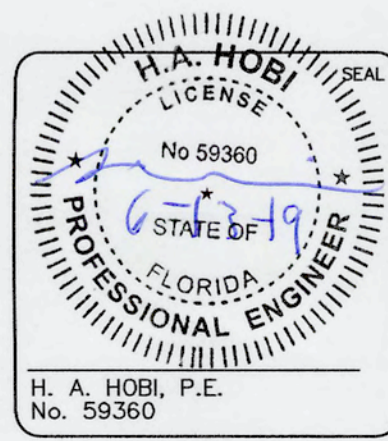
DATE: JUNE, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. # 1024-0171	HORIZONTAL: NA	S-06
DRAWN: CN	VERTICAL: NA	
DESIGNED: HAH		
CHECKED: JV		
PROJ. MGR.: TP		
STATUS: ISSUED FOR BID	REVISION:	



**CCC COVER PLAN AND RECHARGE WELL PUMP
STATION PLAN**
SCALE: 1" = 10'

\\mckimcreed.com\manateecounty\manateecounty\Projects\1024\1024-0171\1024-0171-01\1024-0171-01.dwg, 6/17/2019 2:31:05 PM, Carlos Nigrens

REV. NO.	DESCRIPTIONS	DATE



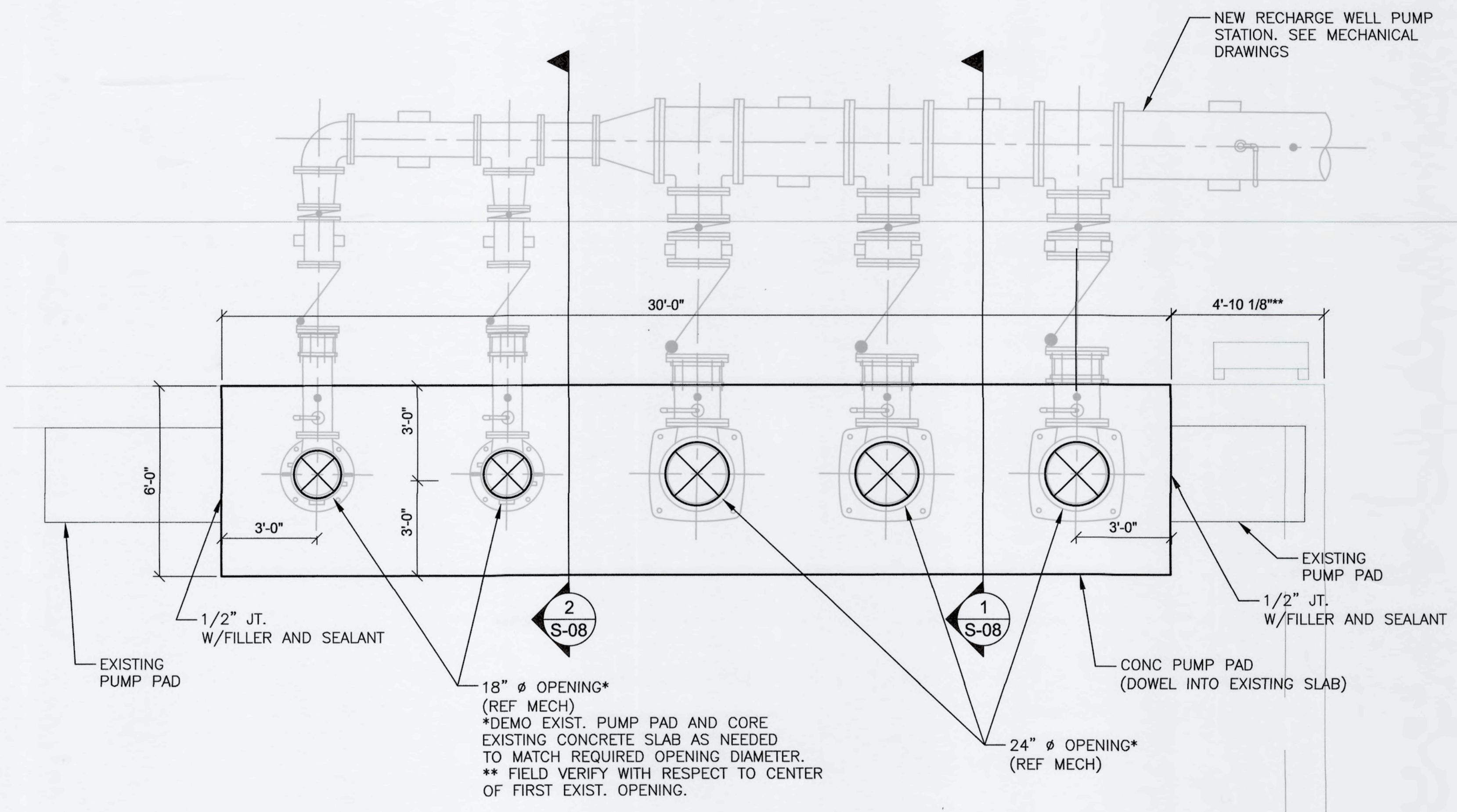
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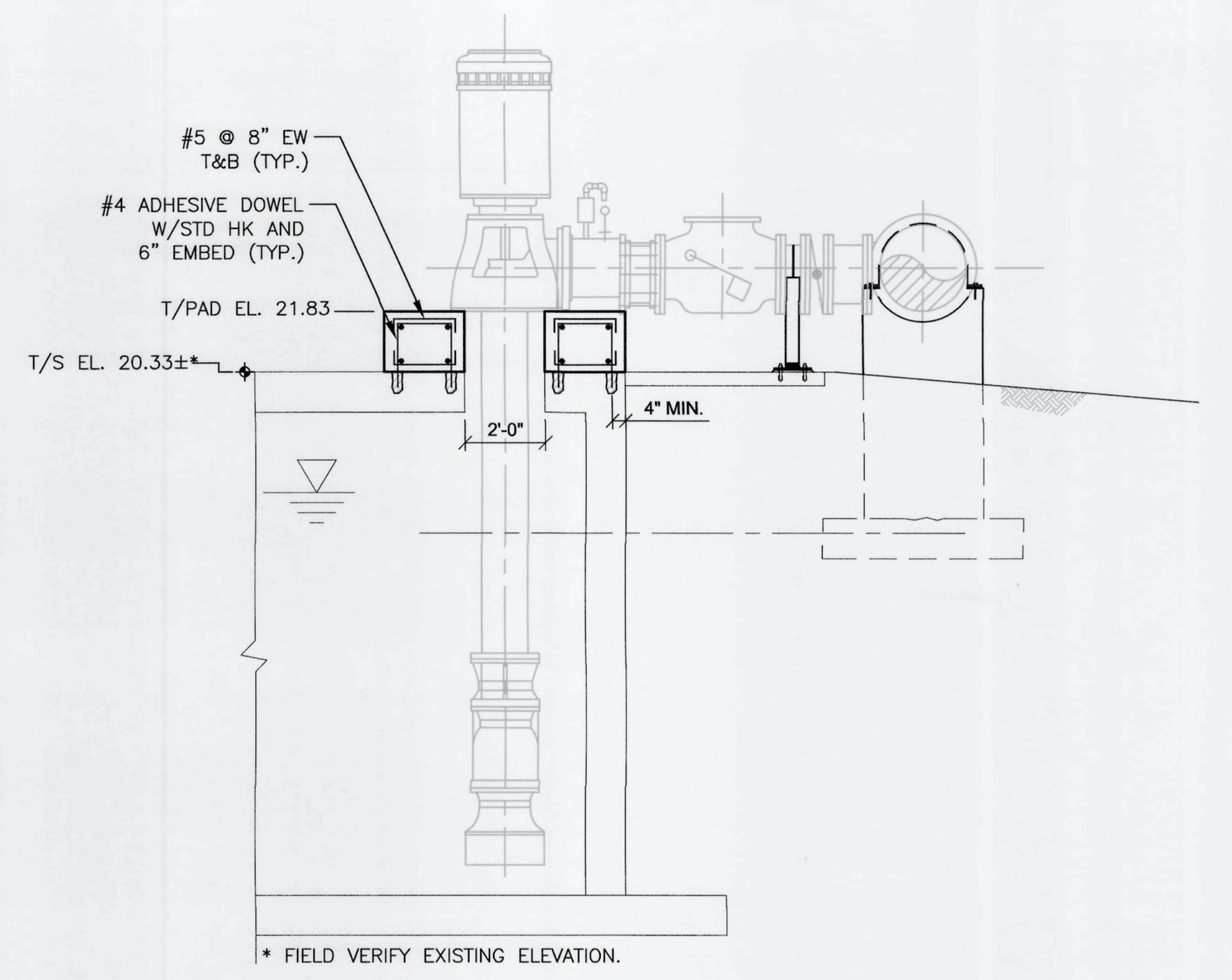
**SWRF
CCC REHAB AND
RECHARGE WELL PS PROJECT**

**CCC COVER PLAN AND RECHARGE
WELL PUMP STATION PLAN**

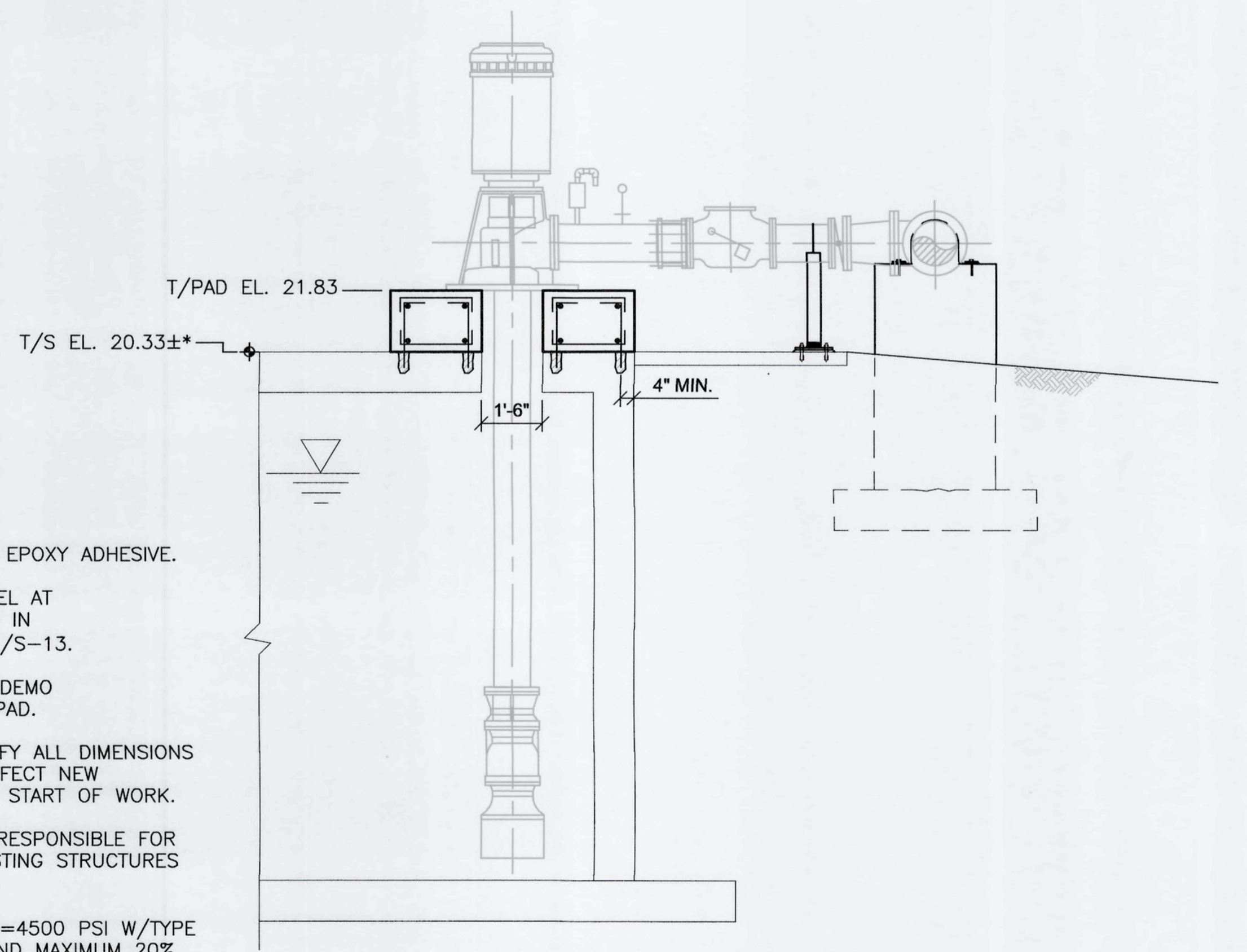
DATE: JUNE, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. # 1024-0171	HORIZONTAL: NA	S-07
DRAWN: CN	VERTICAL: NA	
DESIGNED: HAH		
CHECKED: JV		
PROJ. MGR.: TP		
STATUS: ISSUED FOR BID		REVISION:



1
S-07 RECHARGE WELL PUMP STATION PLAN
SCALE: 3/8" = 1'-0"



1
S-08 SECTION
SCALE: 3/8" = 1'-0"

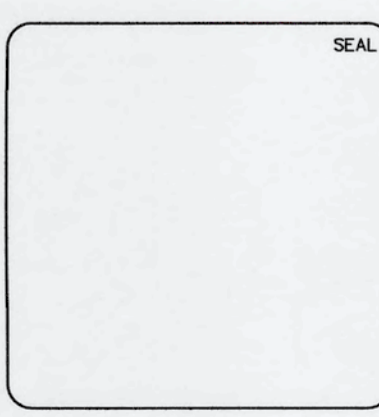
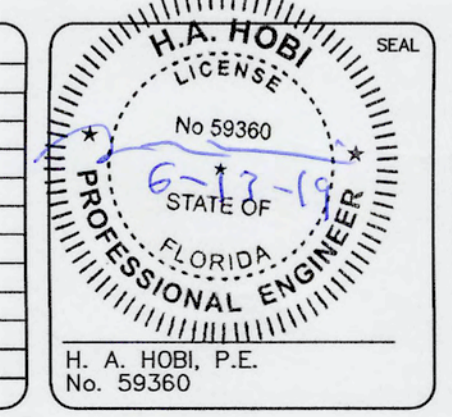


2
S-08 SECTION
SCALE: 3/8" = 1'-0"

- NOTES:
1. USE HILT HIT-RE 500V3 EPOXY ADHESIVE.
 2. PROVIDE ADDITIONAL STEEL AT ALL CONCRETE OPENINGS IN PUMP PAD PER DETAIL 1/S-13.
 3. REF. MECH. DWGS. FOR DEMO OF EXIST. CONC. PUMP PAD.
 4. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS THAT AFFECT NEW CONSTRUCTION PRIOR TO START OF WORK.
 5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING STRUCTURES DURING CONSTRUCTION.
 6. CONCRETE STRENGTH F'c=4500 PSI W/TYPE II, ASTM C150 CEMENT AND MAXIMUM 20% BY WEIGHT SLAG AND/OR FLY ASH CONTENT.
 7. MINIMUM ANCHOR BOLT CONCRETE EDGE DISTANCE 4".

\\mckimcreed.com\Users\hobbi\p1\Server_Data\PM\Projects\024\0171\Wb-Drawing\STRUCT\08\08-S-08 10240171.dwg, 6/13/2019, 2:51:17 PM, Carlos Najera

REV. NO.	DESCRIPTIONS	DATE

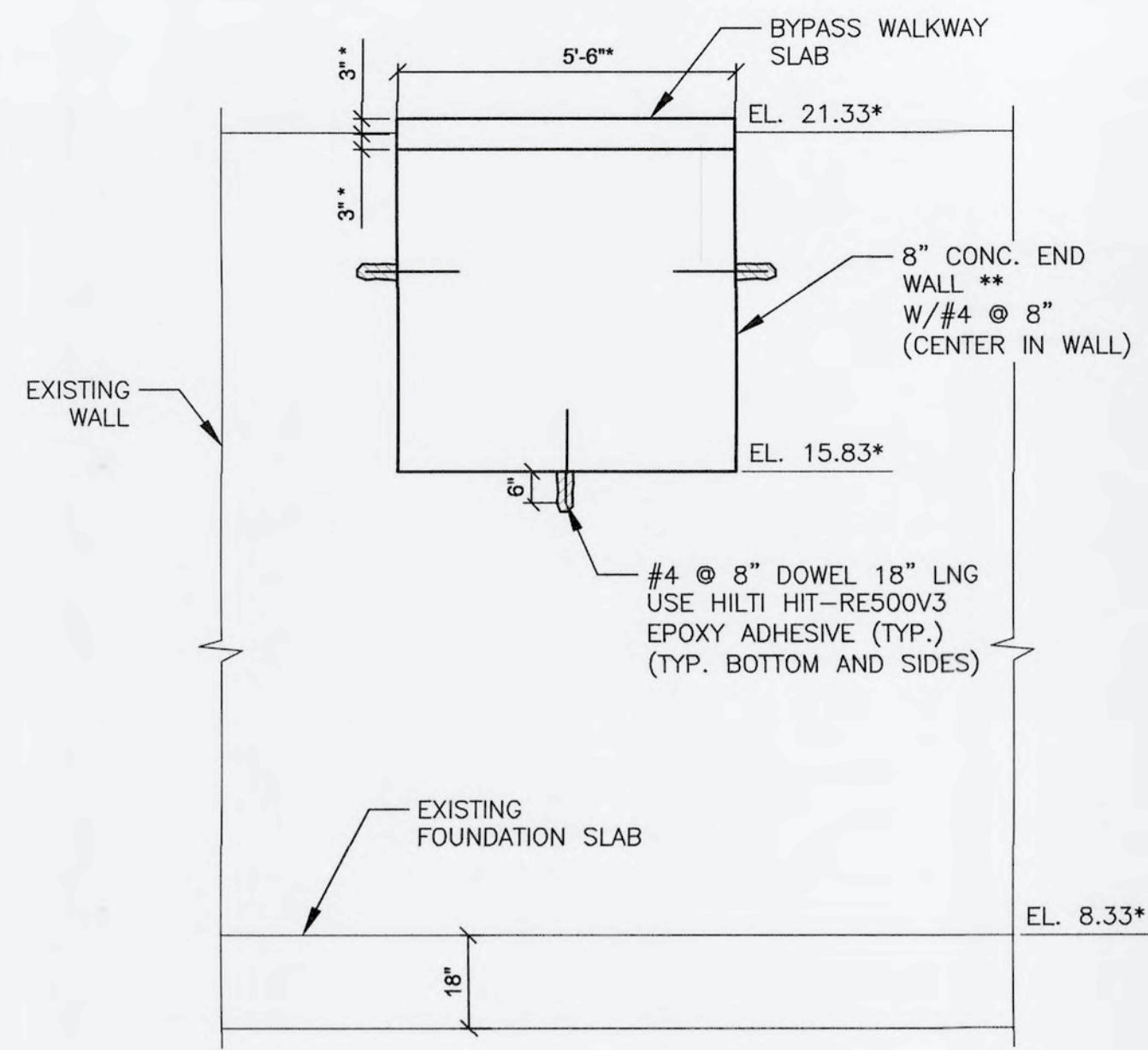


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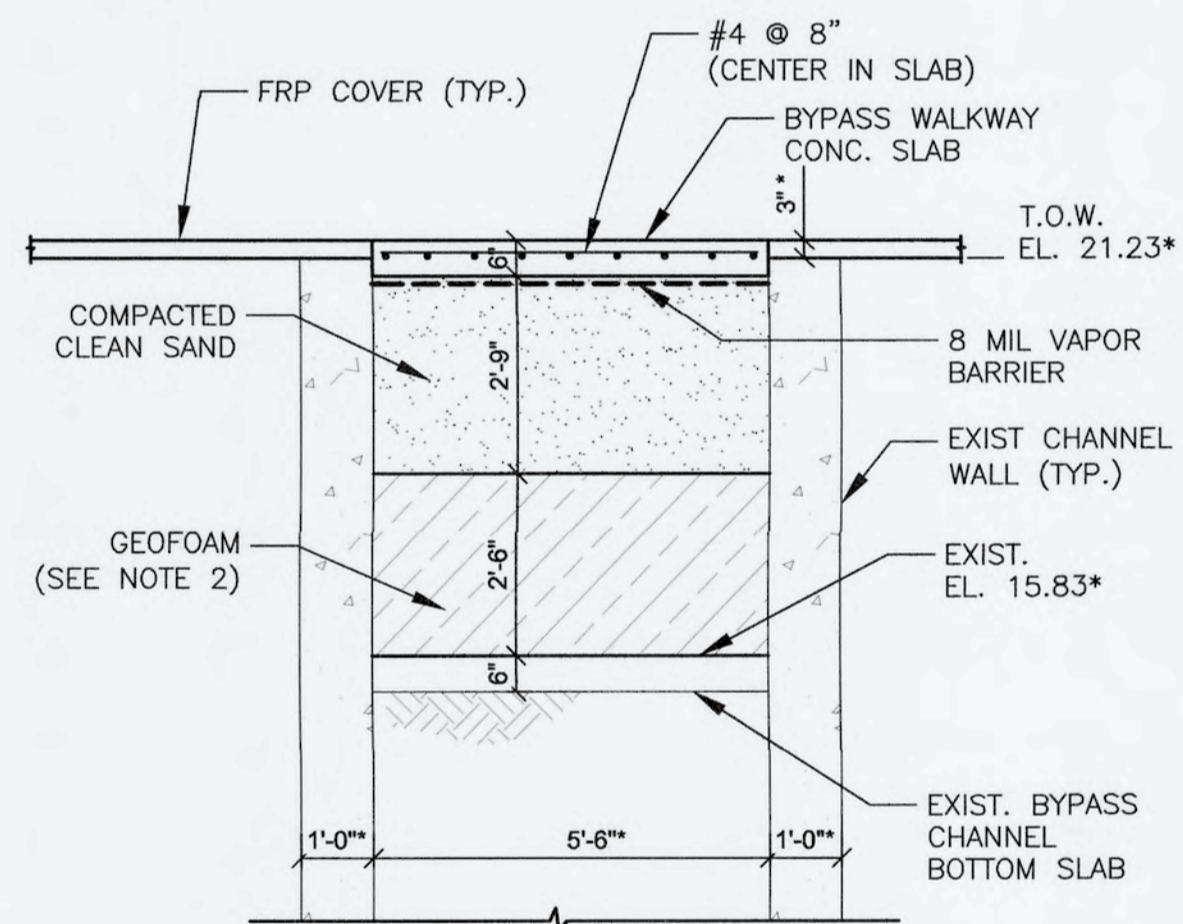
**SWWRF
 CCC REHAB AND
 RECHARGE WELL PS PROJECT**
**RECHARGE WELL PUMP STATION PAD
 PLAN AND SECTIONS**

DATE: JUNE, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. # 1024-0171	HORIZONTAL: NA	S-08
DRAWN: CN	VERTICAL: NA	REVISION:
DESIGNED: HAH		
CHECKED: JV		
PROJ. MGR: TP		
STATUS: ISSUED FOR BID		



- NOTES:
- * VERIFY ALL DIMENSIONS AND ELEVATIONS
 - ** USE SYNKO FLEX WATER STOP ALL AROUND.
1. REMOVE SLIDE GATE AND FRAME AT BOTH ENDS OF BYPASS CHANNEL.
 2. TRIM AND FINISH RAILING AT BOTH ENDS OF BYPASS WALKWAY FOR ACCESS TO WALKWAY.

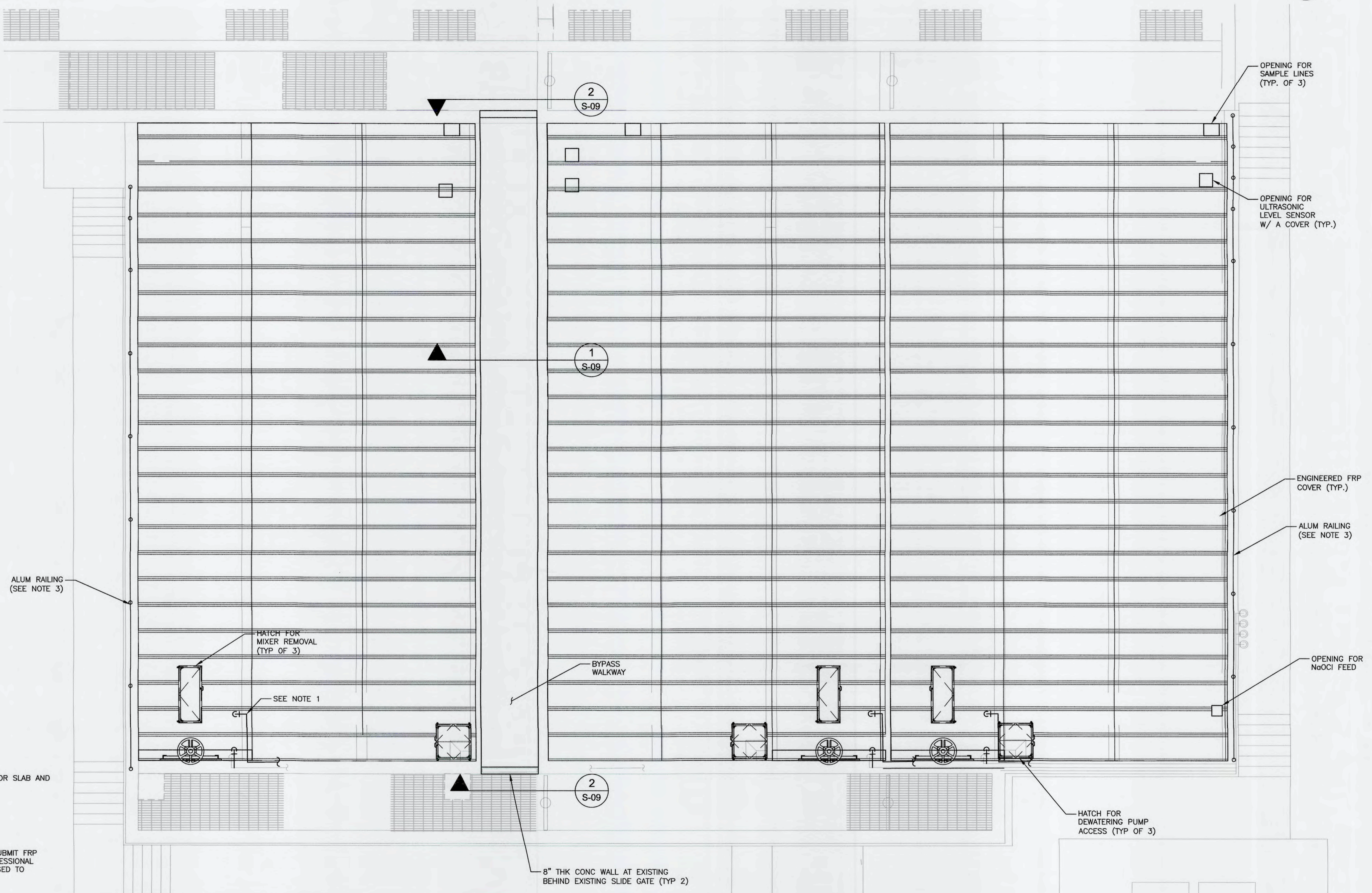
2 END OF BYPASS CHANNEL WALL
SCALE: 3/8" = 1'-0"



* FIELD VERIFY ELEVATION AND DIMENSIONS

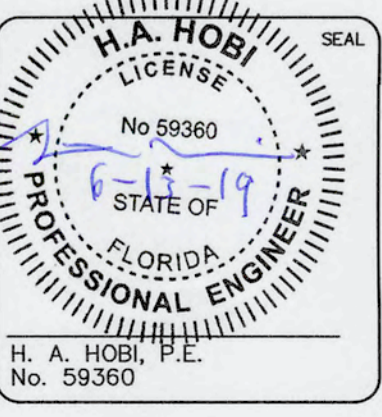
1 BYPASS CHANNEL WALKWAY SECTION
SCALE: 3/8" = 1'-0"

- NOTES:
1. SEE MECHANICAL SHEETS FOR CHEMICAL PIPING DETAILS.
 2. GEOFOAM SHALL BE ASTM D6817 TYPE EPS 15 (0.90 LB/FT) BOND GEOFOAM BLOCK TO FLOOR SLAB AND TO EACH OTHER.
 3. ADD ALUM. RAILING TO ALL LOCATIONS WITH A VERTICAL DROP OF 18" OR MORE.
 4. DESIGN LIVE LOAD FOR FRP COVER AND HATCHES SHALL BE 50PSF.
 5. REF. RECORD DRAWINGS FOR DIMENSIONS AND GEOMETRY NOT SHOWING ON THIS DRAWING.
 6. COVER SYSTEM DESIGN SHALL MEET ALL CURRENT APPLICABLE CODES, CONTRACTOR SHALL SUBMIT FRP COVER SYSTEM SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A FLORIDA PROFESSIONAL ENGINEER FOR REVIEW BY ENGINEER PRIOR TO FABRICATION. EXISTING CCC WALLS MAY BE USED TO SUPPORT THE COVER AND IT'S SUPPORT MEMBERS AND CONCRETE ANCHORS.
 7. FRP COVER SYSTEM SHALL INCLUDE ALL THE HATCH COVERS SHOWN ON THE DRAWING.
 8. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND ELEVATIONS THAT AFFECT NEW CONSTRUCTION PRIOR START OF WORK.
 9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING STRUCTURES DURING CONSTRUCTION.
 10. CONCRETE STRENGTH $f'_c=4500$ PSI W/TYPE II, ASTM C150 CEMENT AND MAXIMUM 20% BY WEIGHT SLAG AND/OR FLY ASH CONTENT.
 11. REFERENCE MECH. DWGS FOR SIZE AND LOCATION FOR ALL FRP COVER OPENINGS.



2 CCC FRP COVER VIEW
SCALE: 1" = 5'

REVNO.	DESCRIPTIONS	DATE

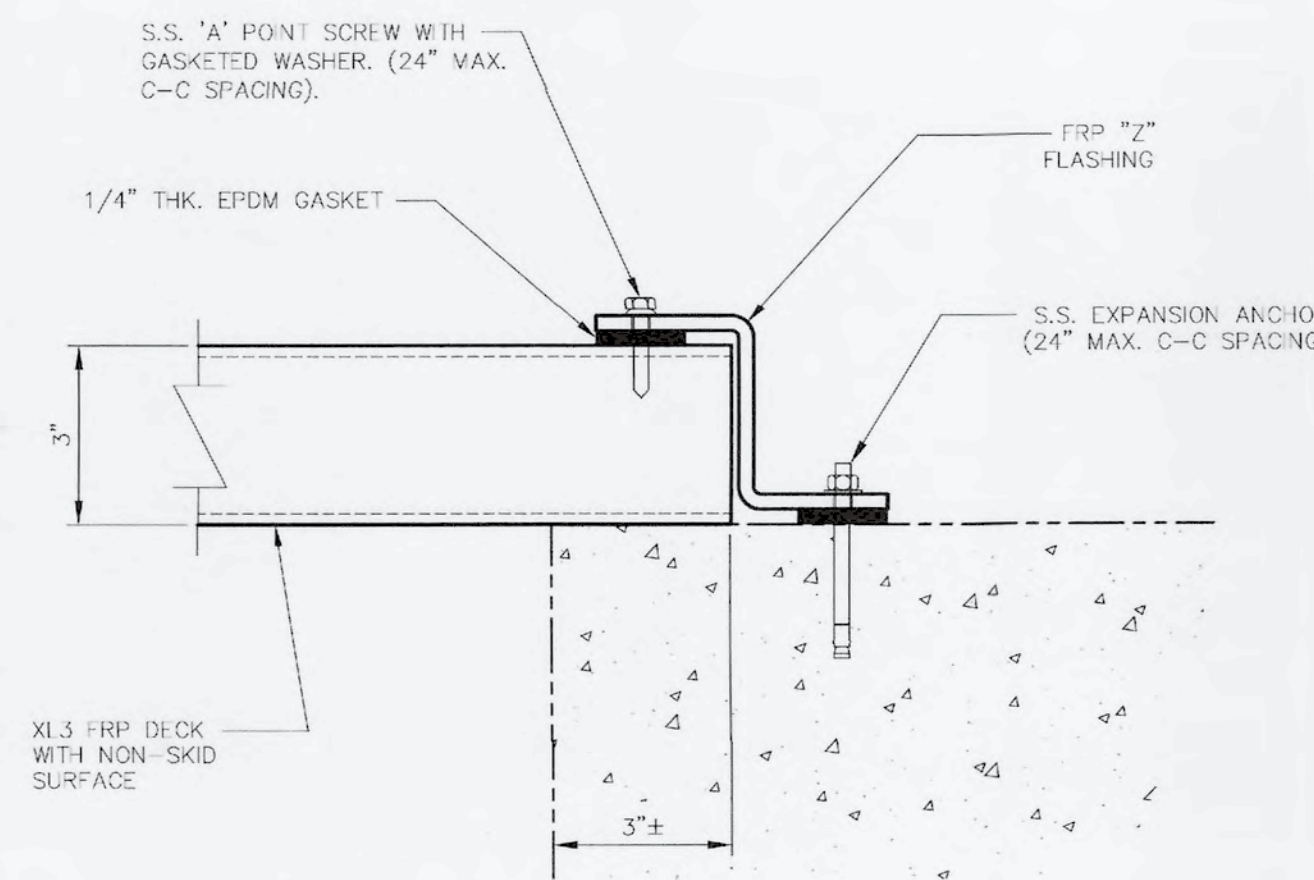


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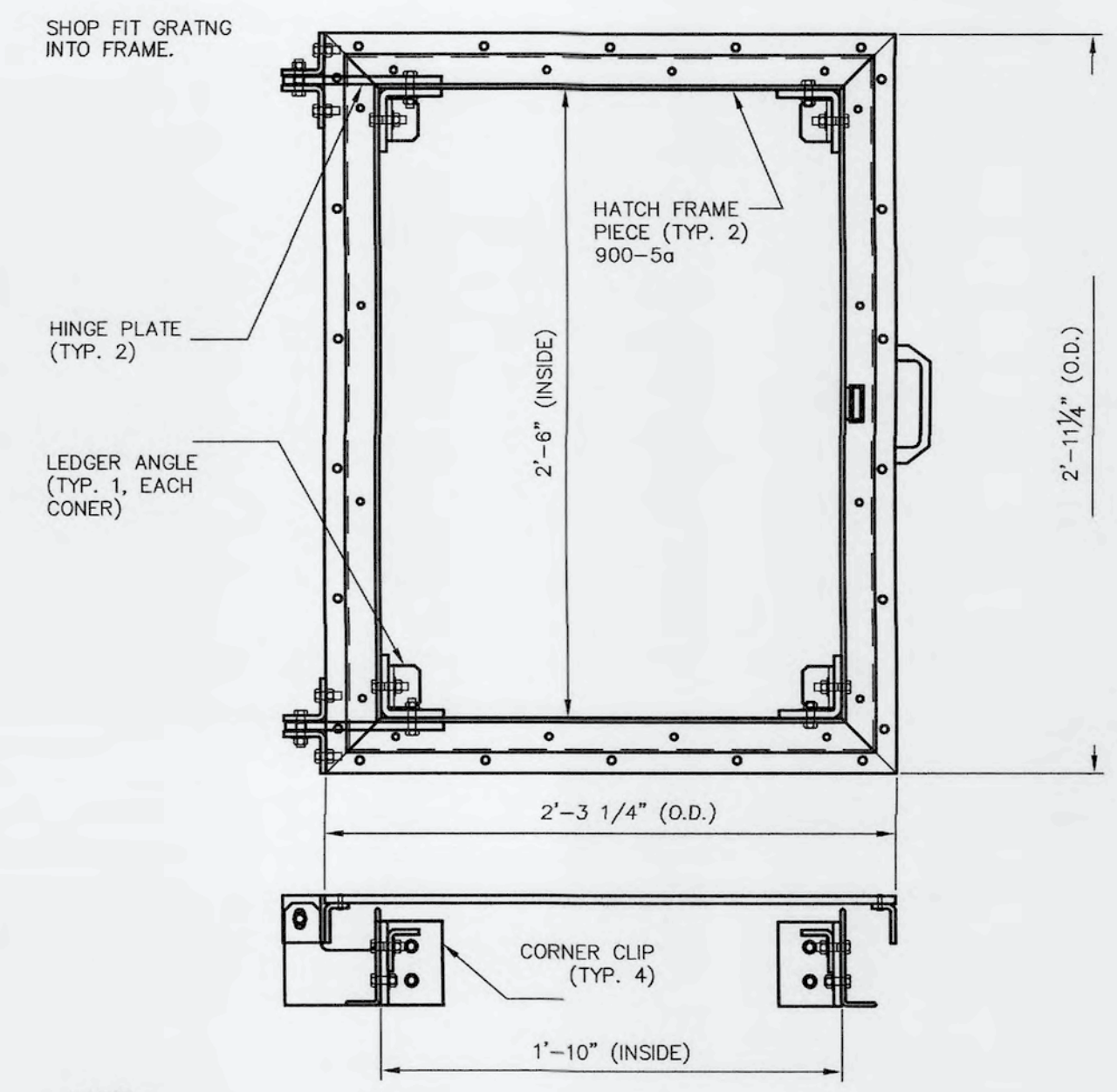


**SWWRF
CCC REHAB AND
RECHARGE WELL PS PROJECT**
**CCC COVER PLAN AND BYPASS
WALKWAY DETAILS**

DATE: JUNE, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: NA	S-09
DRAWN: CN	VERTICAL: NA	
DESIGNED: HAH		
CHECKED: JV		
PROJ. MGR: TP		
STATUS: ISSUED FOR BID		

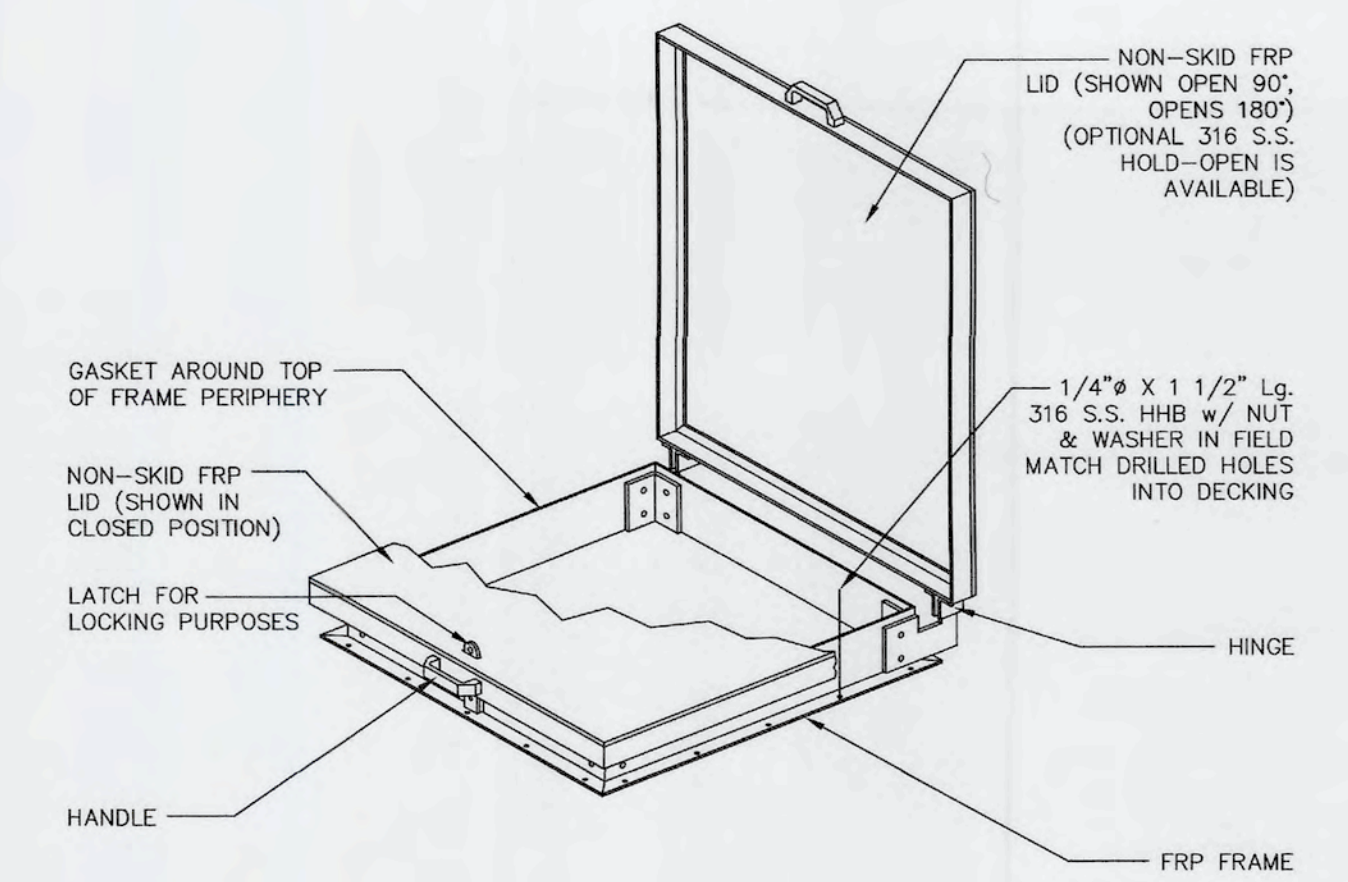


FRP COVER TOP MOUNT DECK CONNECTION DETAIL
SCALE: N.T.S.

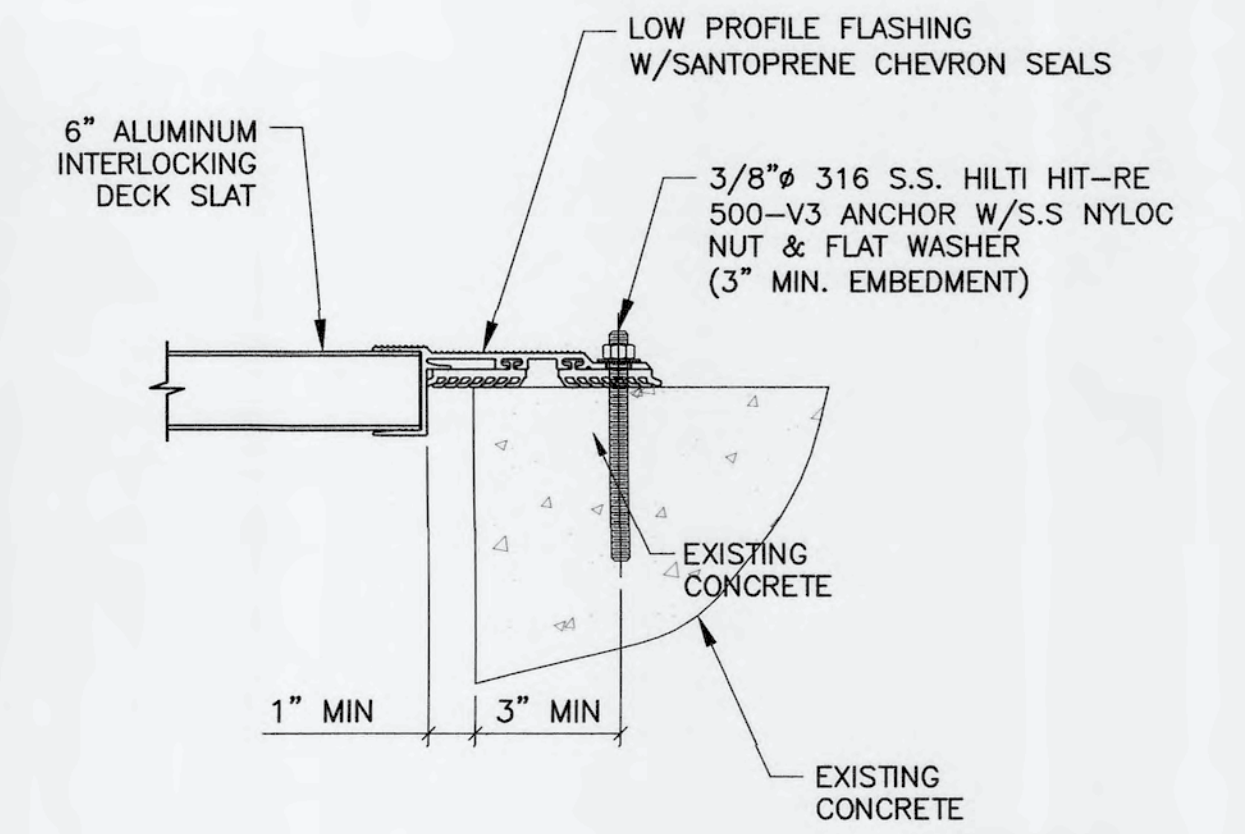


- NOTES:
 1. MATERIAL: FRP AND S.S.
 2. RESIN SYSTEM: PE
 3. COLOR: GRAY
 4. TOLERANCE: (U.N.O.) ± 1/16"
 5. BILL PG. NO.:
 PC. MK.: TOTAL QTY.:

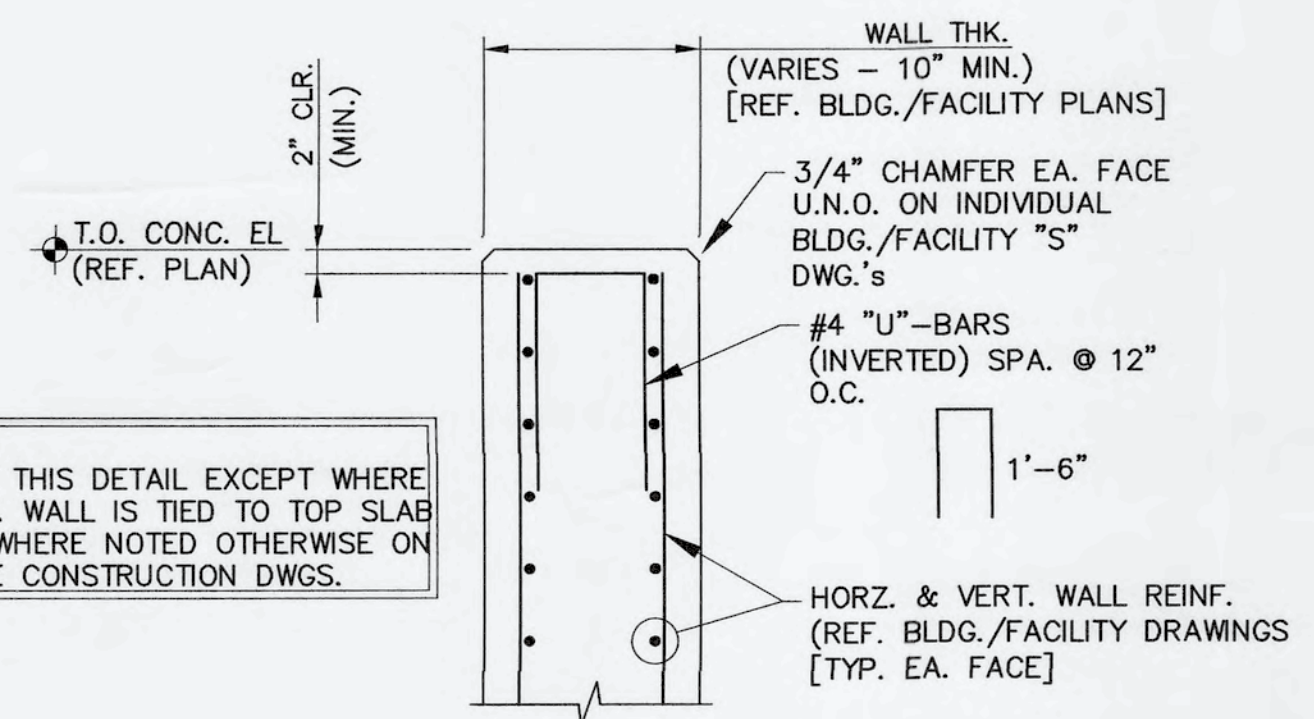
XL6 FRP FLAT OPENING COVER
SCALE: N.T.S.



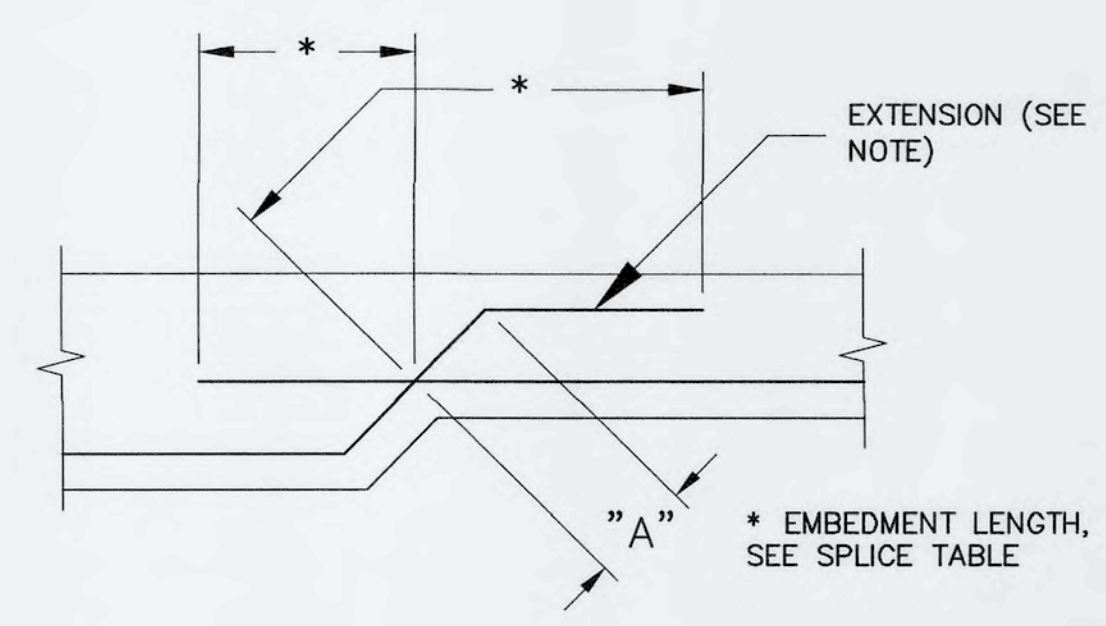
FRP SQ. ACCESS HATCH COVER
SCALE: N.T.S.



LOW PROFILE ENGINEERED ALUMINUM COVER
SCALE: N.T.S.

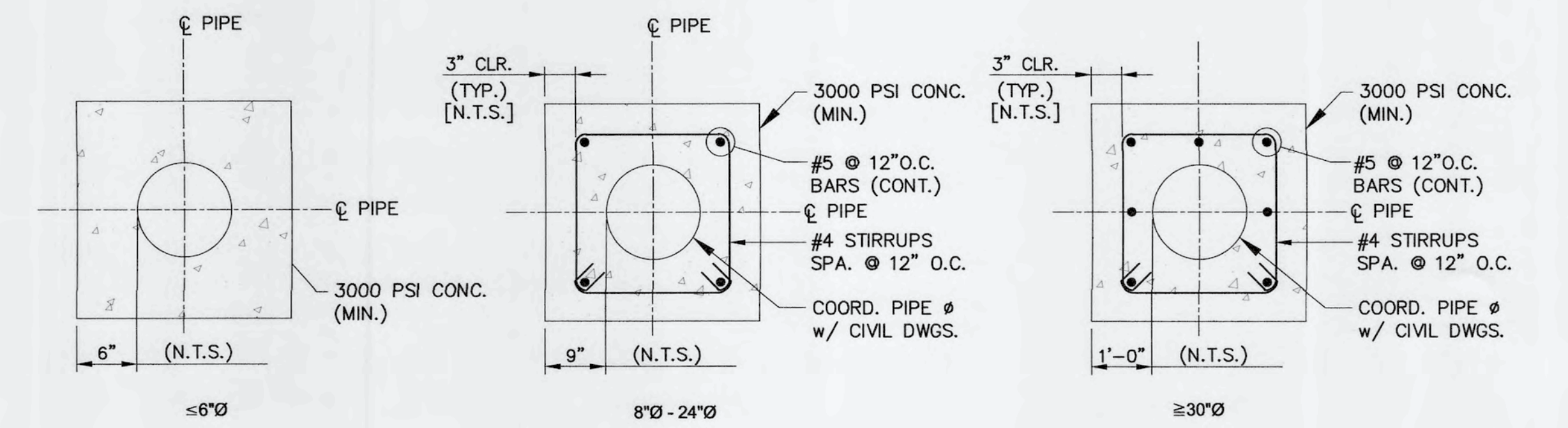


1 - DETAIL - TYP. T.O. WALL REINF.
SCALE: N.T.S.

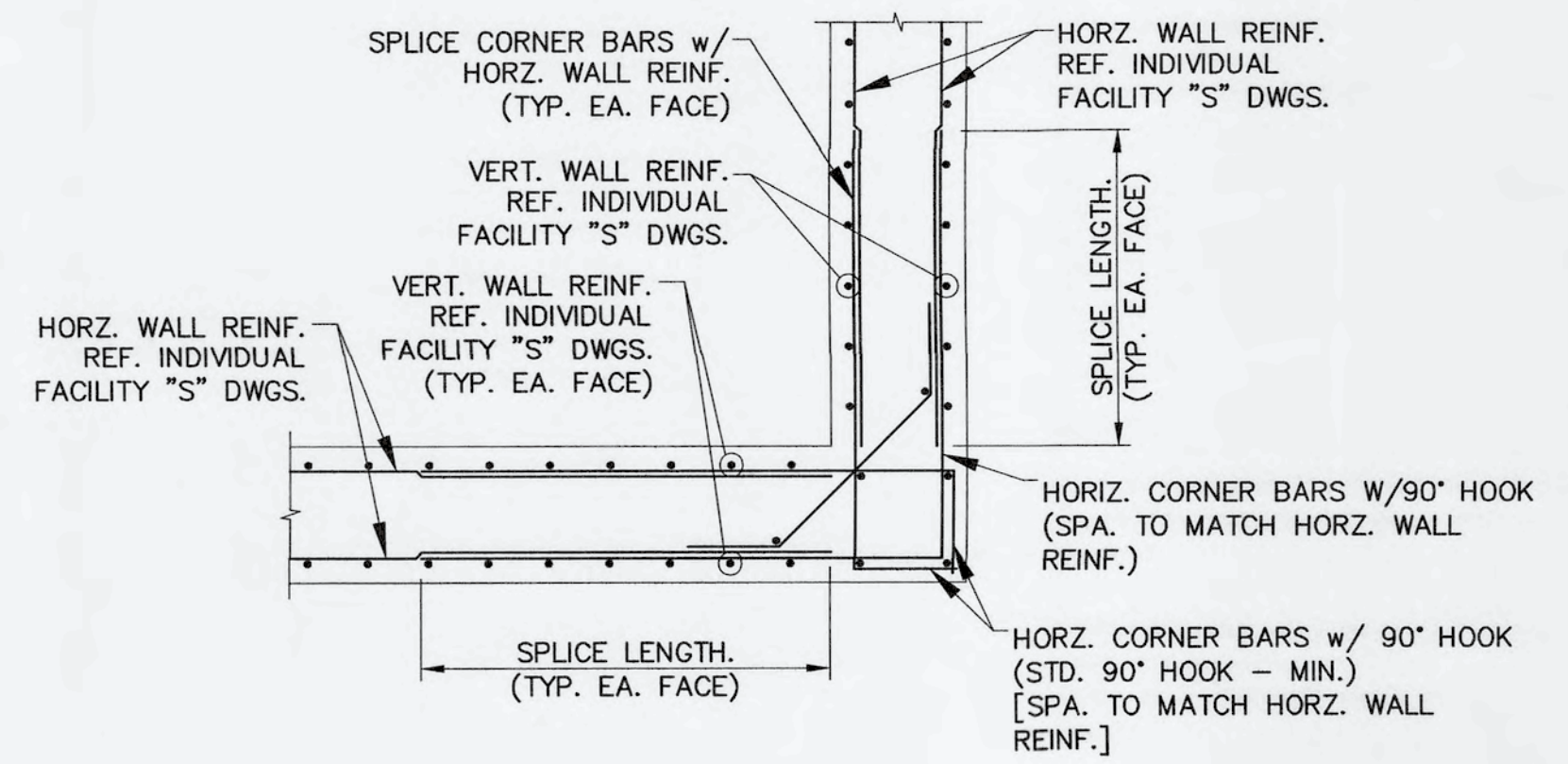


NOTE:
 EXTENSION SHOWN IS REQUIRED (12\"/>

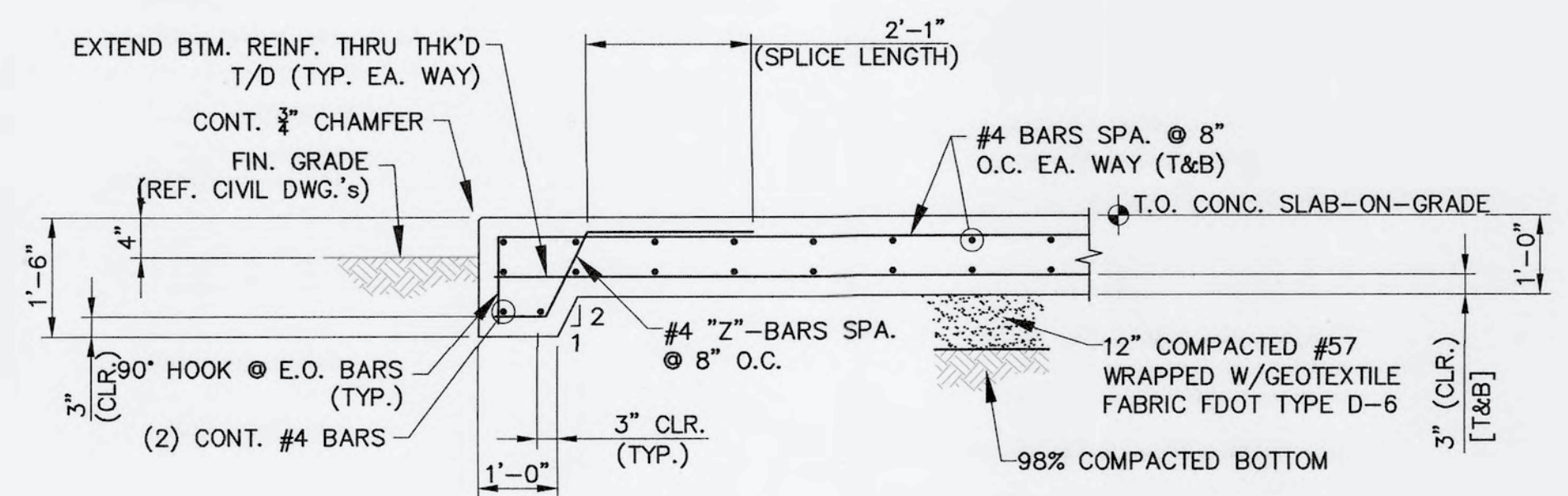
5 - DETAIL - SPLICE LENGTH OF DIAGONAL REINFORCEMENT
SCALE: N.T.S.



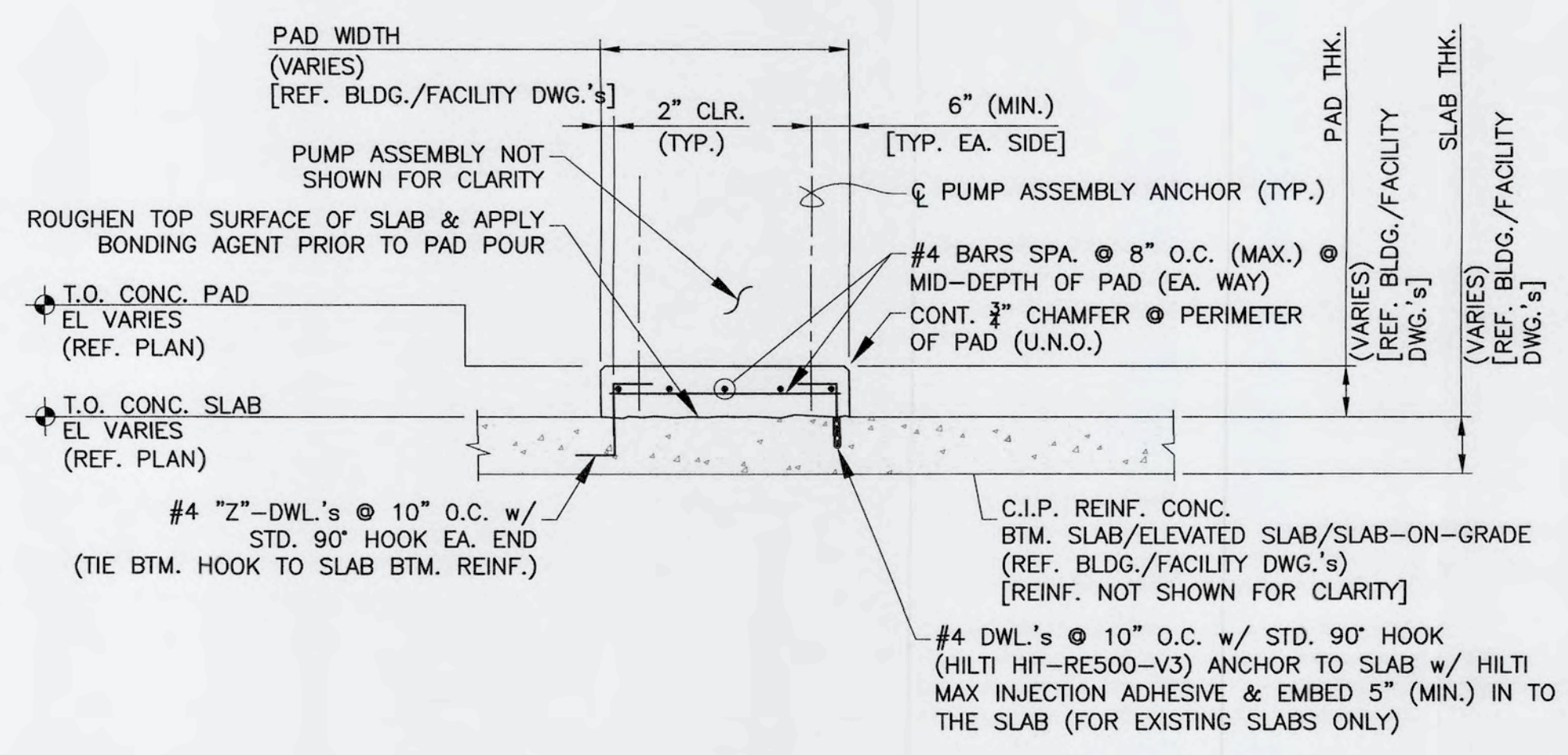
6 - DETAIL - TYP. CONC. PIPE ENCASING
SCALE: N.T.S.



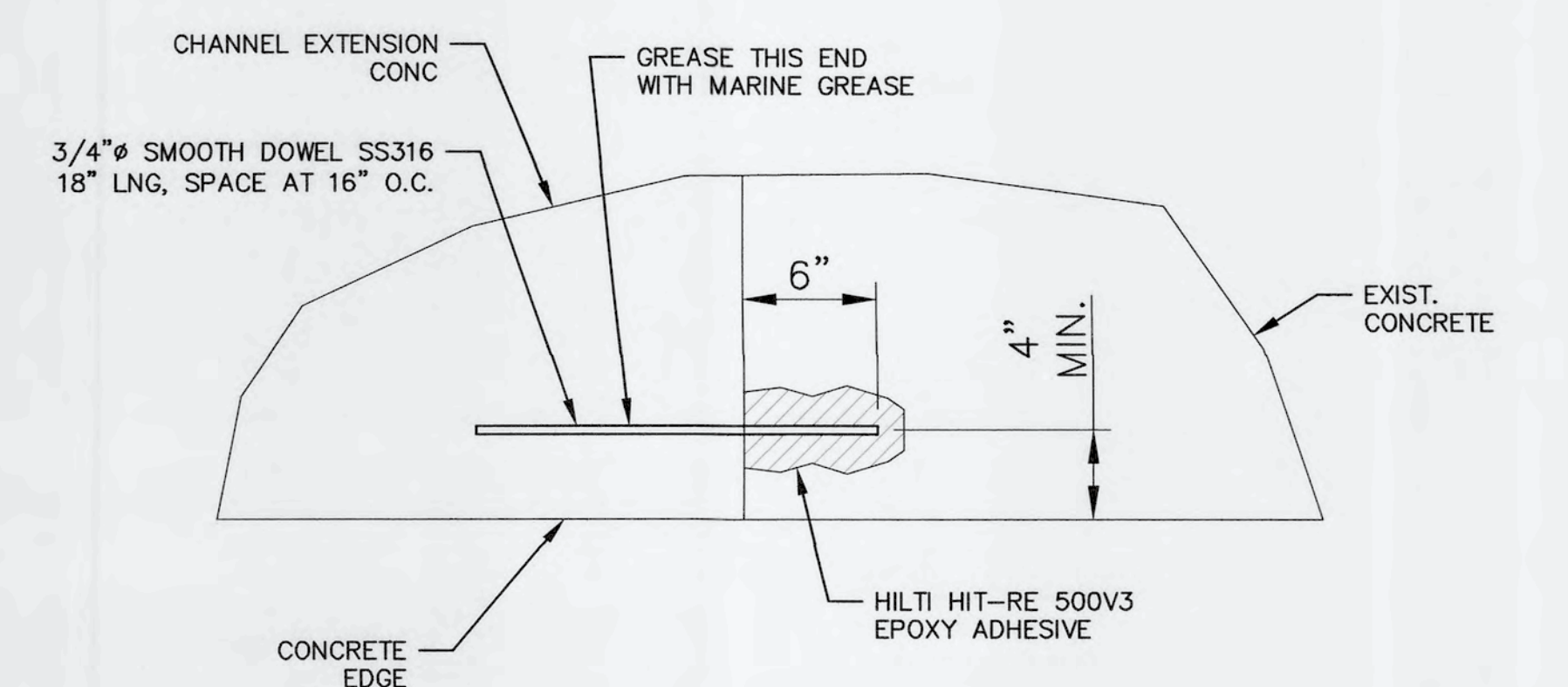
2 - DETAIL - TYP. CORNER BAR REINF.
SCALE: N.T.S.



7 - SECTION - TYP. EQUIPMENT PAD
SCALE: 1/2\"/>

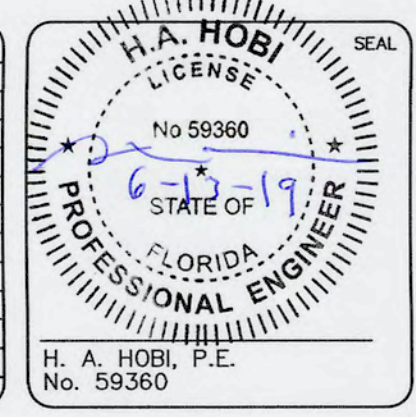


8 - DETAIL - TYP. CONC. HOUSEKEEPING PAD
SCALE: 1/2\"/>

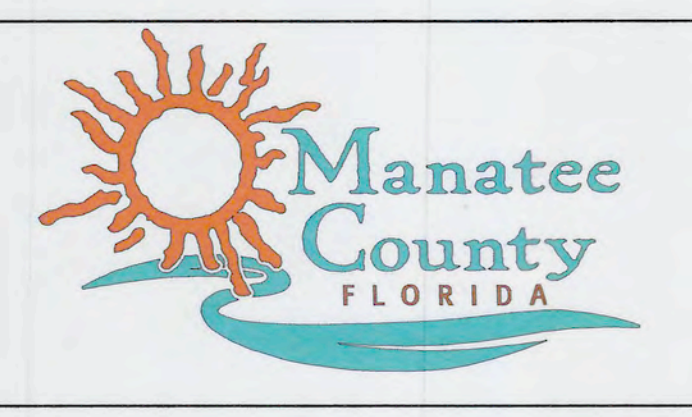


9 - DETAIL - WALL AND SLAB JOINT DOWEL
SCALE: N.T.S.

REV. NO.	DESCRIPTIONS	DATE

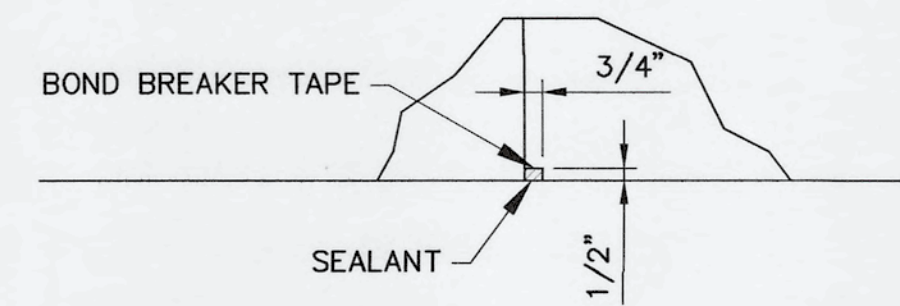


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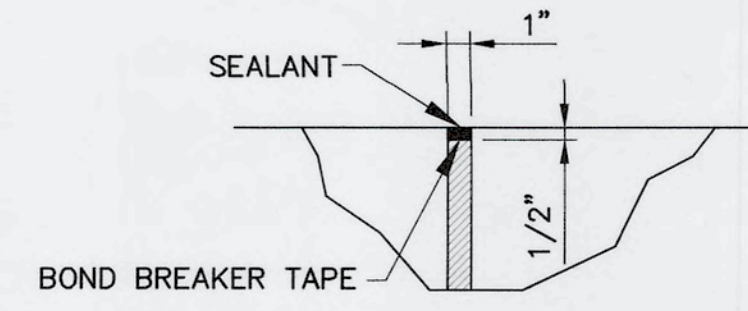


SWRF CCC REHAB AND RECHARGE WELL PS PROJECT
STRUCTURAL DETAILS

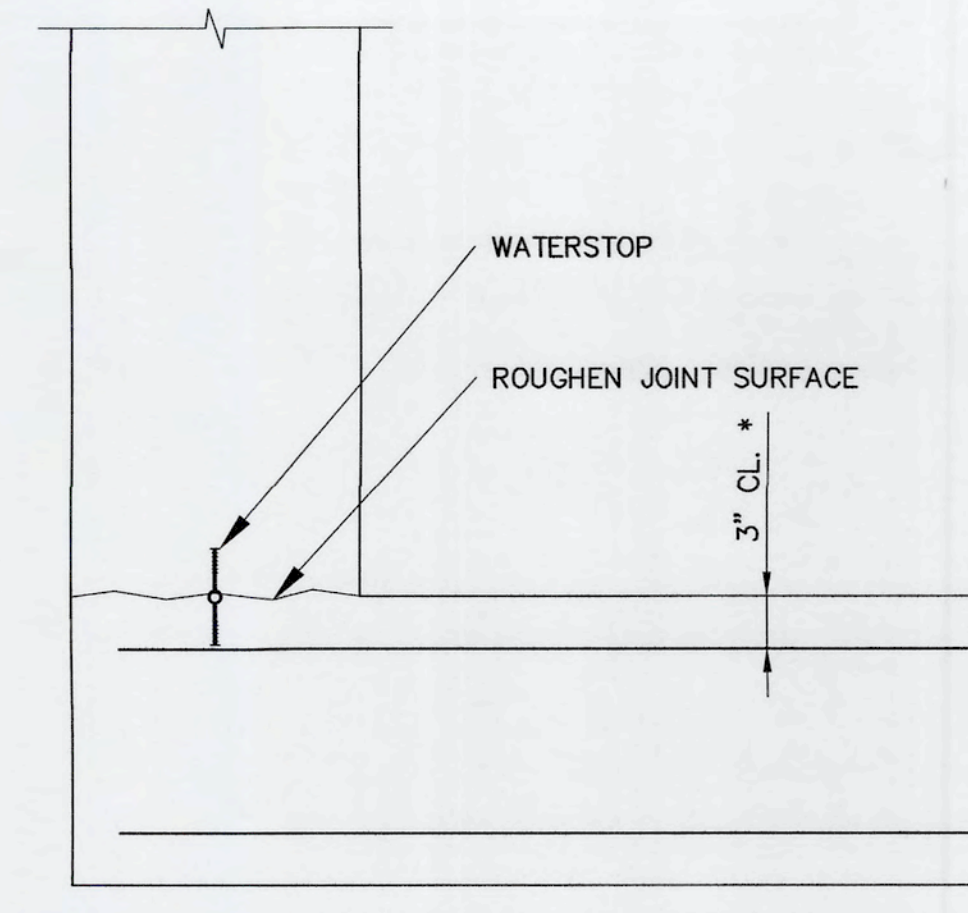
DATE: JUNE, 2019	SCALE: NA	DRAWING NUMBER: S-10
MCE PROJ. # 1024-0171	HORIZONTAL: NA	
DRAWN: CN	VERTICAL: NA	
DESIGNED: HAH		
CHECKED: JV		
PROJ. MGR. TP		
STATUS: ISSUED FOR BID		REVISION:



2 - DETAIL - CONTRACTION JOINT
SCALE: 1 1/2" = 1'-0"

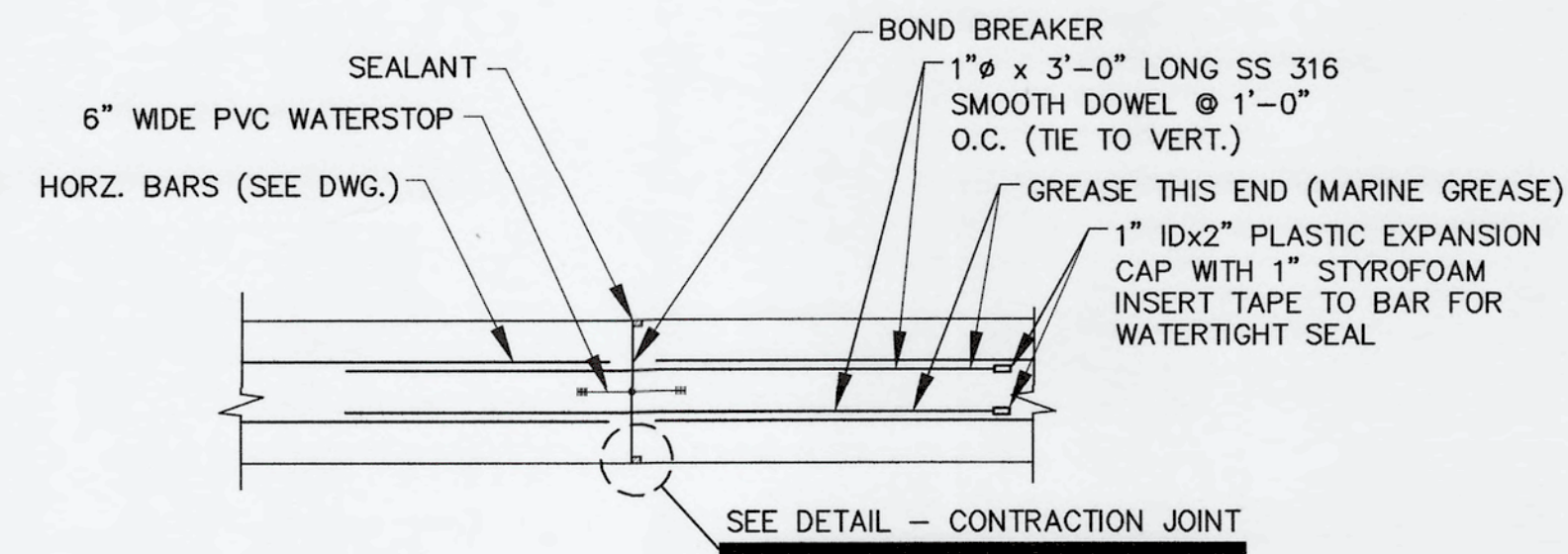


3 - DETAIL - EXPANSION JOINT
SCALE: 1 1/2" = 1'-0"

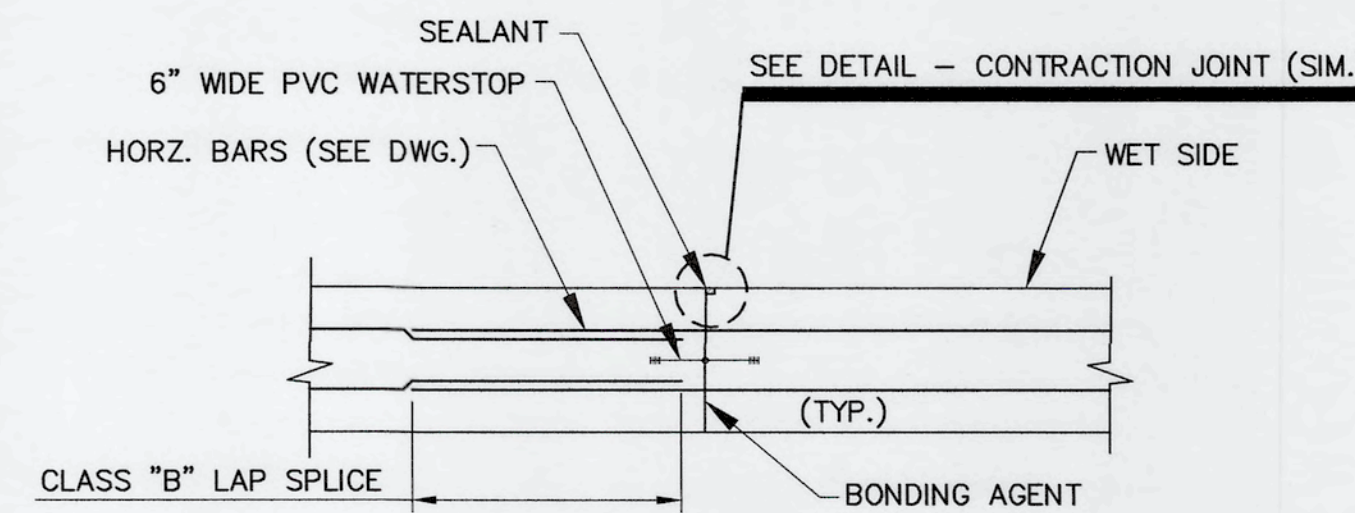


* PROVIDE 3" COVER TO TOP BARS WHERE 6" PVC WATERSTOP IS REQ'D.
WALL AND FLOOR SLAB.

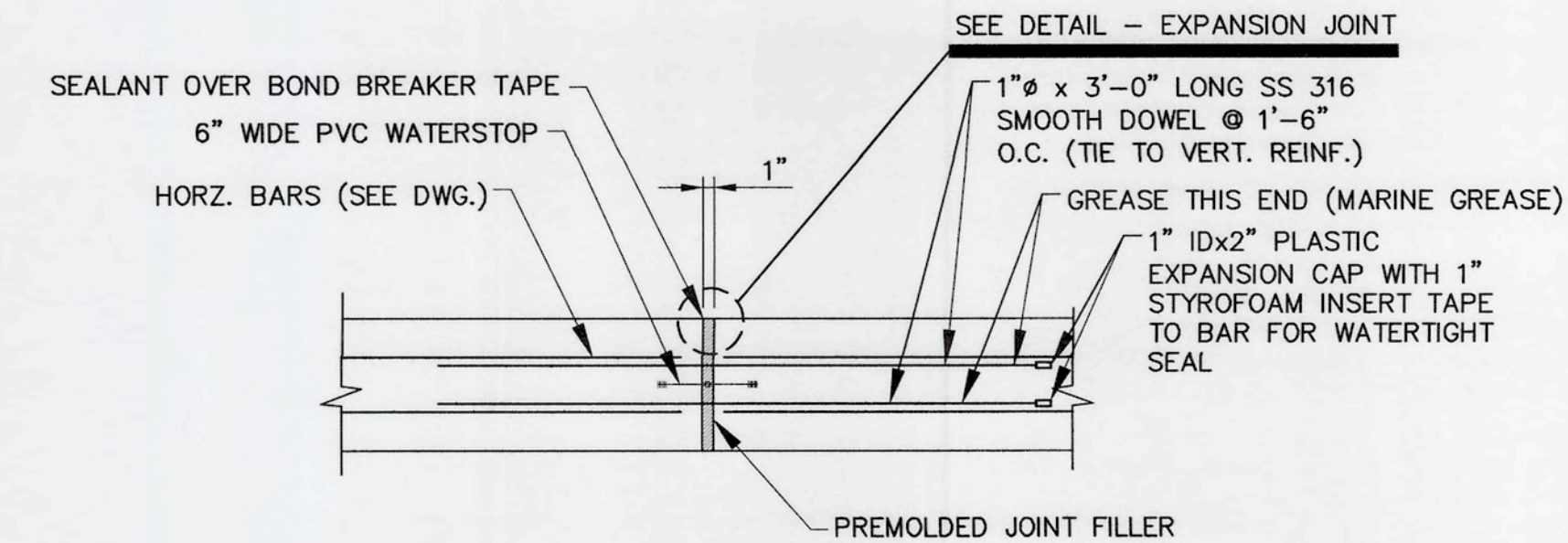
4 - DETAIL - TYP. WALL / FLOOR SLAB CONST. JOINT
SCALE: NTS



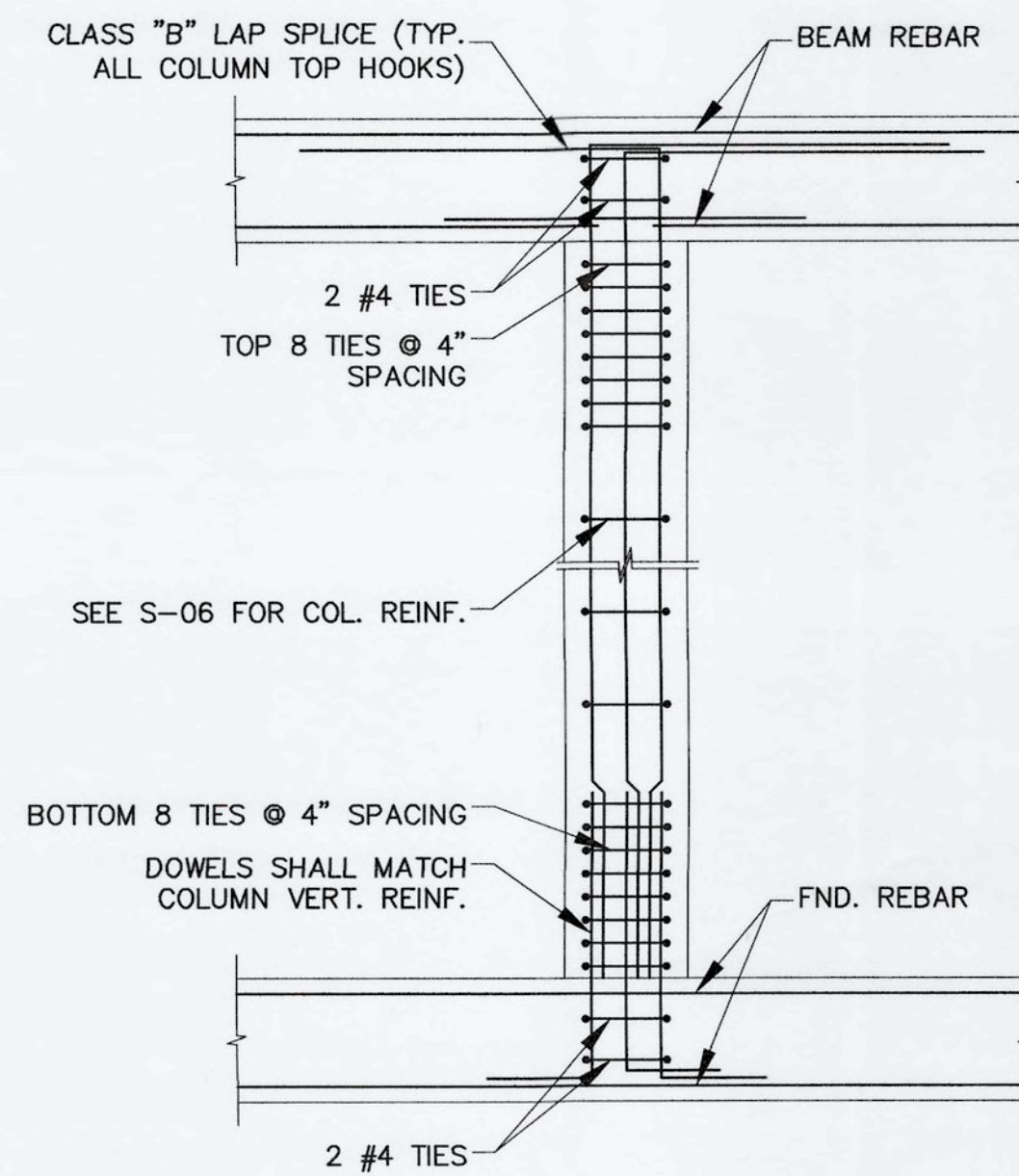
5 - DETAIL - WALL/SLAB CONTRACTION JOINT (CJ)
SCALE: NTS



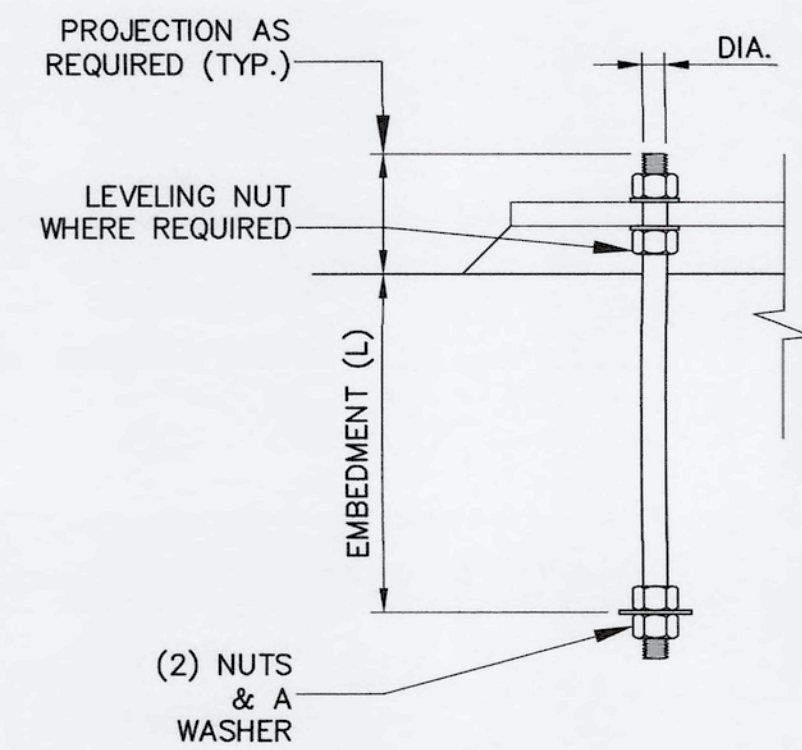
6 - DETAIL - WALL/SLAB CONSTRUCTION JOINT (SJ)
SCALE: NTS



7 - DETAIL - WALL/SLAB EXPANSION JOINT (EJ)
SCALE: NTS



8 - DETAIL - COLUMN ENDS CONNECTION DETAIL
N.T.S.

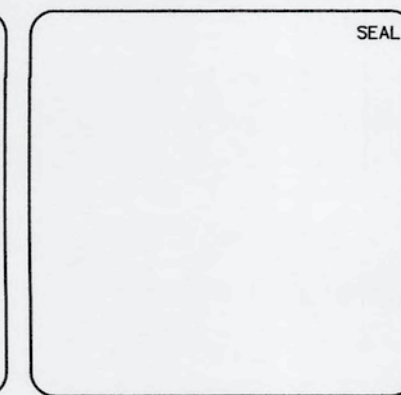
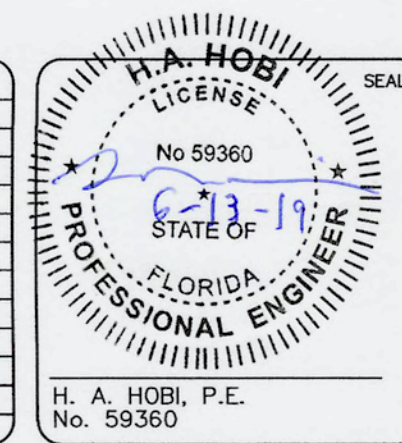


NOTE:
1. REFER TO SPECIFICATIONS FOR ANCHOR BOLT MATERIAL REQUIREMENTS.

9 - TYPICAL ANCHOR BOLT DETAIL
N.T.S.

EMBEDMENT CHART	
BOLT DIA. (IN.)	L (IN.)
	S.S. TYPE 316
1/2	6
5/8	7 1/2
3/4	9
7/8	10 1/2
1	12
1 1/8	13 1/2
1 1/4	15
1 3/8	16 1/2
1 1/2	18

REVNO.	DESCRIPTIONS	DATE

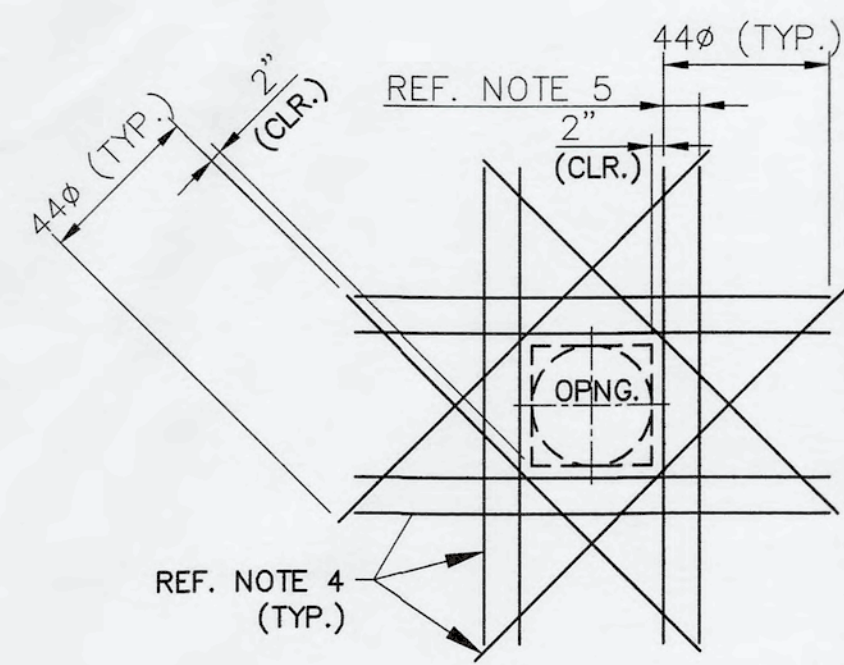


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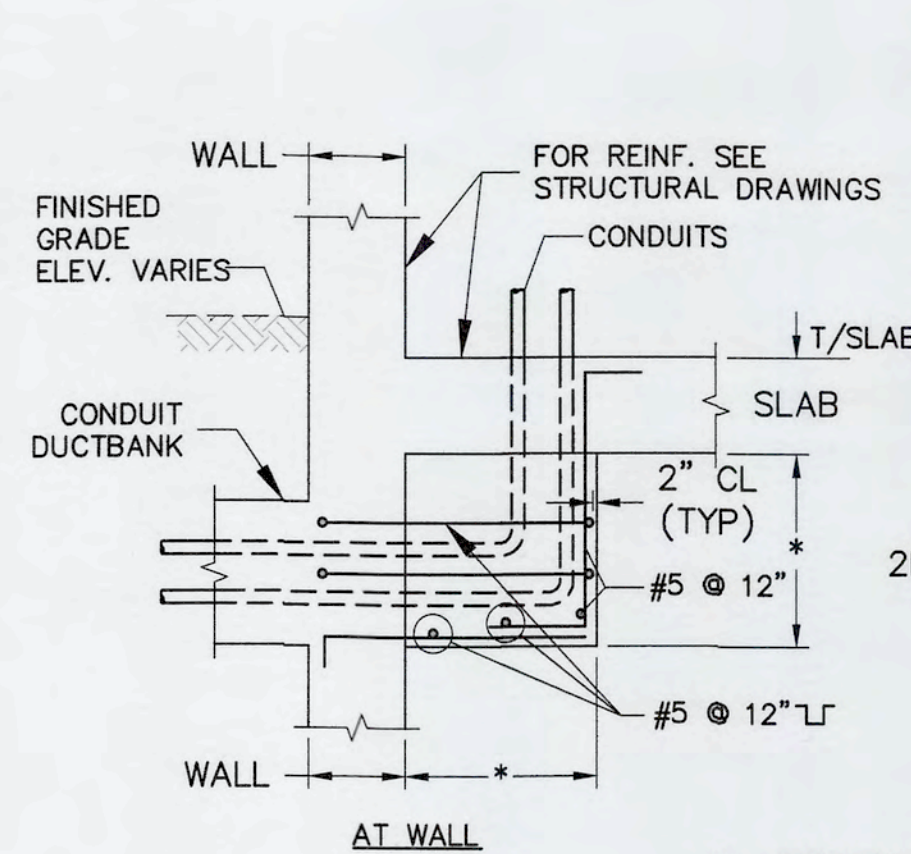
SWWRF
CCC REHAB AND
RECHARGE WELL PS PROJECT
STRUCTURAL DETAILS

DATE: JUNE, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. # 1024-0171	HORIZONTAL:	S-12
DRAWN: CN	VERTICAL:	
DESIGNED: HAH		
CHECKED: JV		
PROJ. MGR.: TP		
STATUS: ISSUED FOR BID		

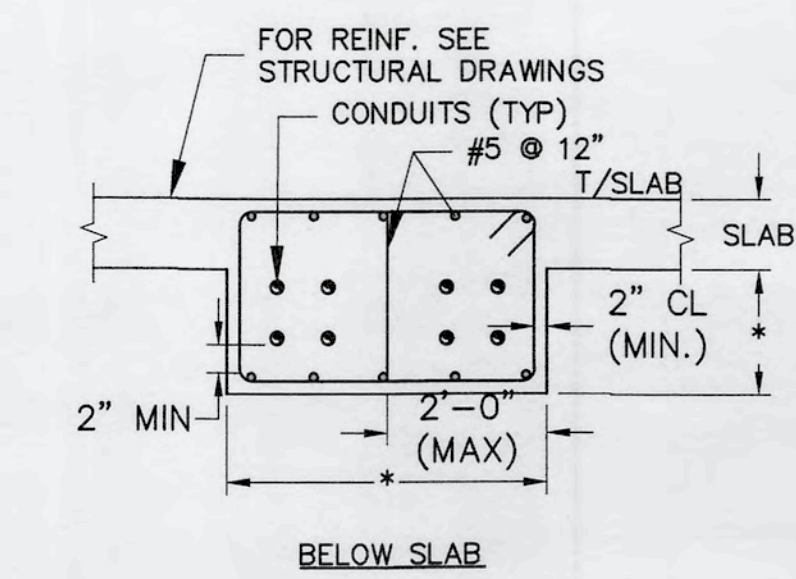


- NOTES:**
1. USE THIS DETAIL FOR PENETRATIONS 8" OR LARGER. FOR SMALLER OPENINGS BEND BARS IN FIELD PER ACI 350 LATEST EDITION.
 2. PLACE EXTRA BARS OF THE SAME SIZE AS THE INTERRUPTED BARS AT EACH SIDE OF OPENINGS. QUANTITY OF EXTRA BARS AT EACH SIDE SHALL EQUAL HALF THE QUANTITY OF INTERRUPTED BARS, EXCEPT WHERE NOTED OTHERWISE. PROVIDE ONE DIAGONAL BAR EACH SIDE OF OPENING. SIZE TO BE EQUAL TO MAIN REINFORCING. (TYP. EA. FACE).
 3. φ SYMBOL = BAR DIAMETERS.
 4. WHERE BAR IS INTERRUPTED BY A CJ OR CONC. EDGE BEND BAR PARALLEL TO THE JOINT EDGE & PROVIDE BAR LEG LENGTH TO DEVELOP PER CLASS B DEVELOPMENT LENGTH FOR BARS IN TENSION.
 5. SPACE THE ADD'L BARS @ 1/2 THE REQ'D BAR SPACING.

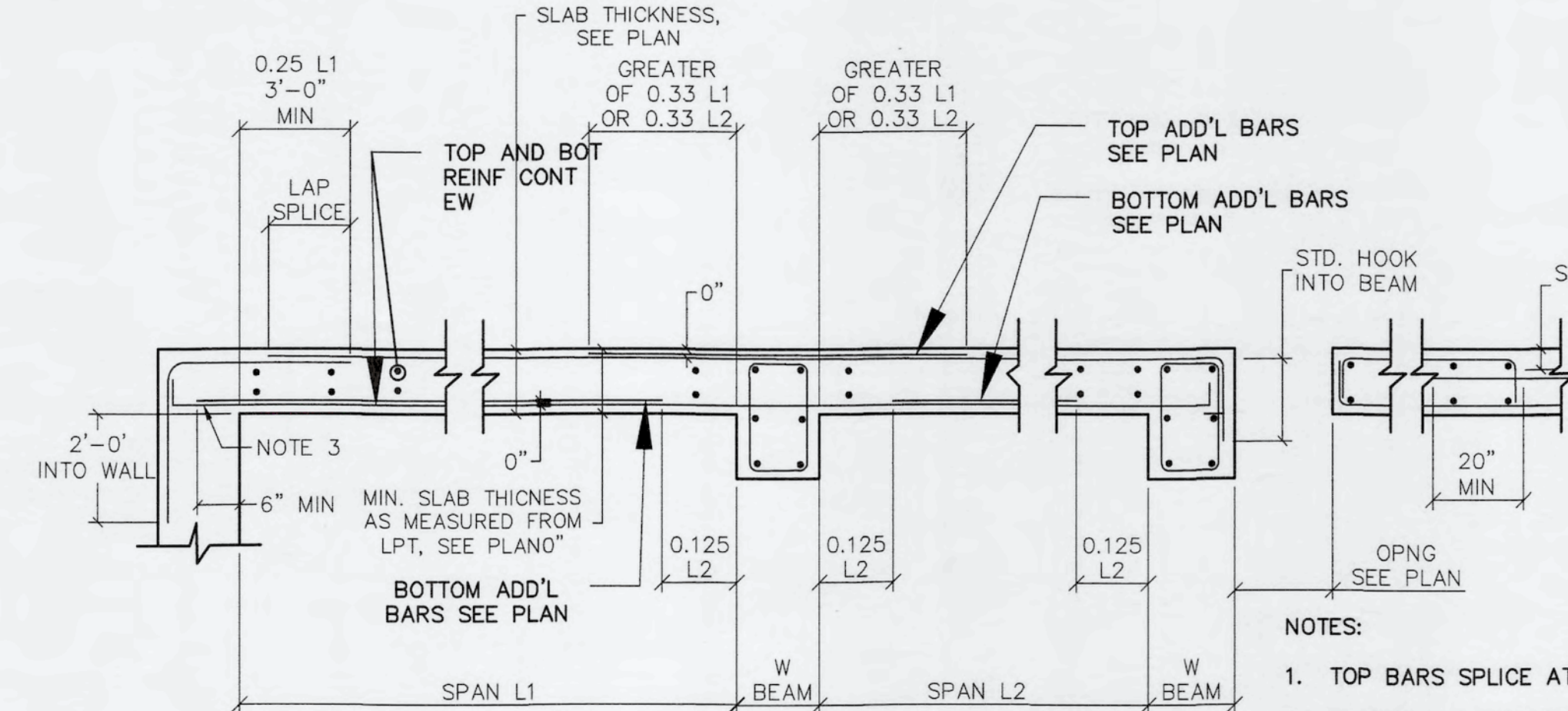
1 - DETAIL - TYP. REINF. @ SLAB / WALL OPNG.'s & PIPE PEN.'s
SCALE: 3/8" = 1'-0"



- NOTES:**
1. * INDICATES DIMENSIONS TO BE DETERMINED BY EQUIPMENT FURNISHED.
 2. D = PIPE OR CONDUIT O.D.

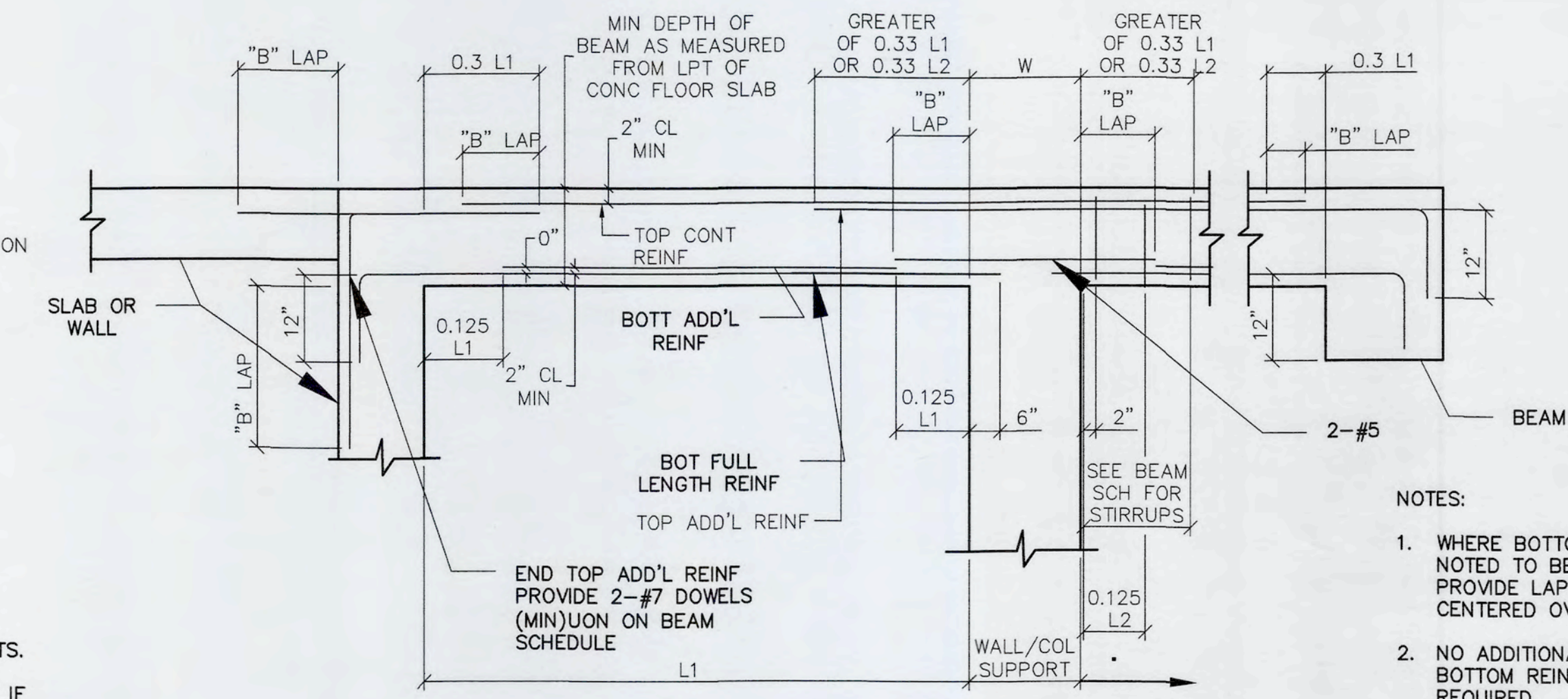


2 - DETAIL - TYP. CONDUIT ENCASEMENT DETAIL
SCALE: N.T.S.



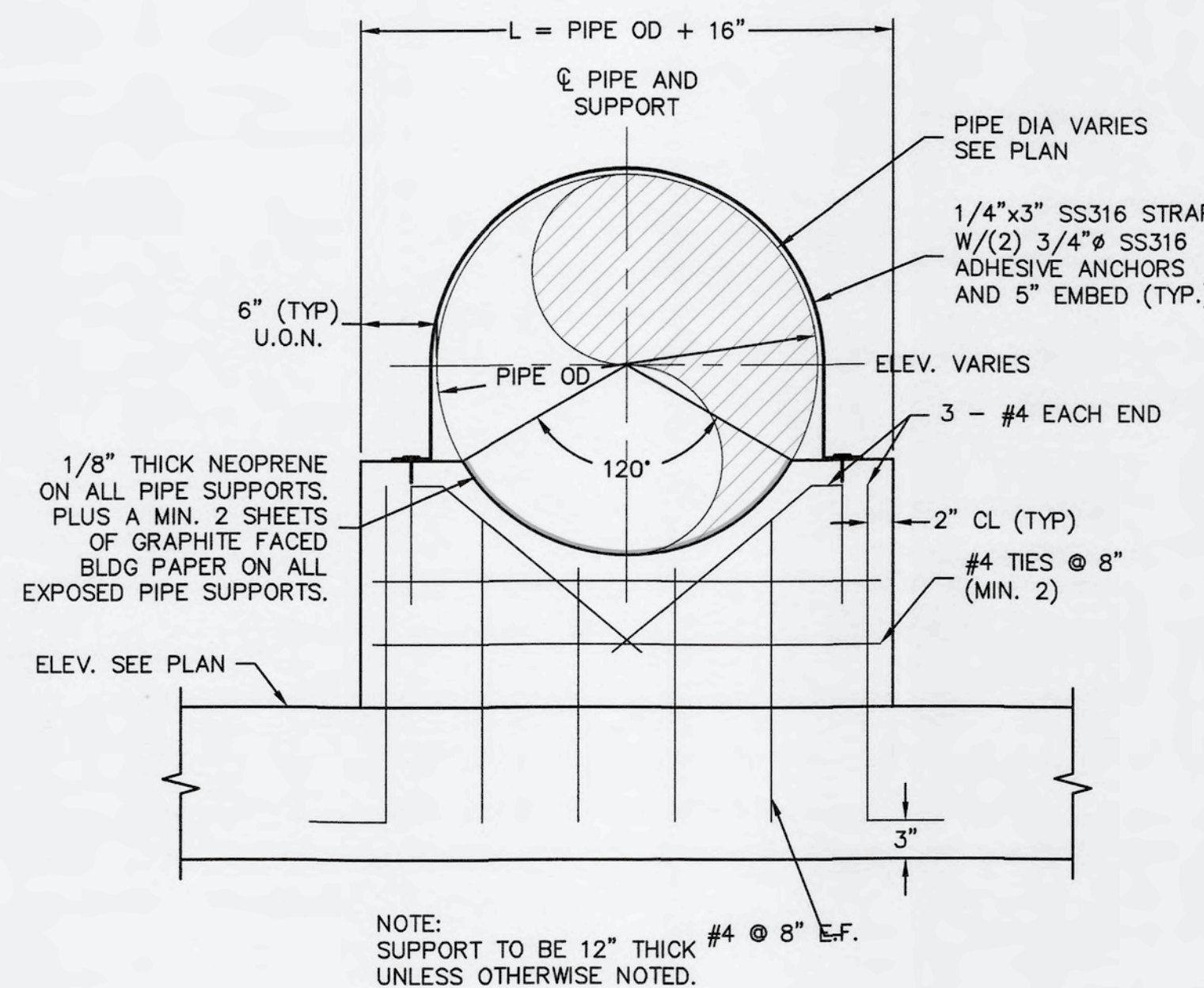
- NOTES:**
1. TOP BARS SPLICE AT MID-SPAN.
 2. BOTTOM BARS SPLICE AT SUPPORTS.
 3. HOOK BOTTOM CONTINUOUS BARS. IF STD. HOOK DOES NOT FIT, ROTATE HOOK TO FIT AND/OR USE 180° HOOK.
 4. NO ADDITIONAL TOP OR BOTTOM REINFORCEMENT REQUIRED.

3 - TYPICAL CONCRETE SLAB DETAIL
SCALE: N.T.S.

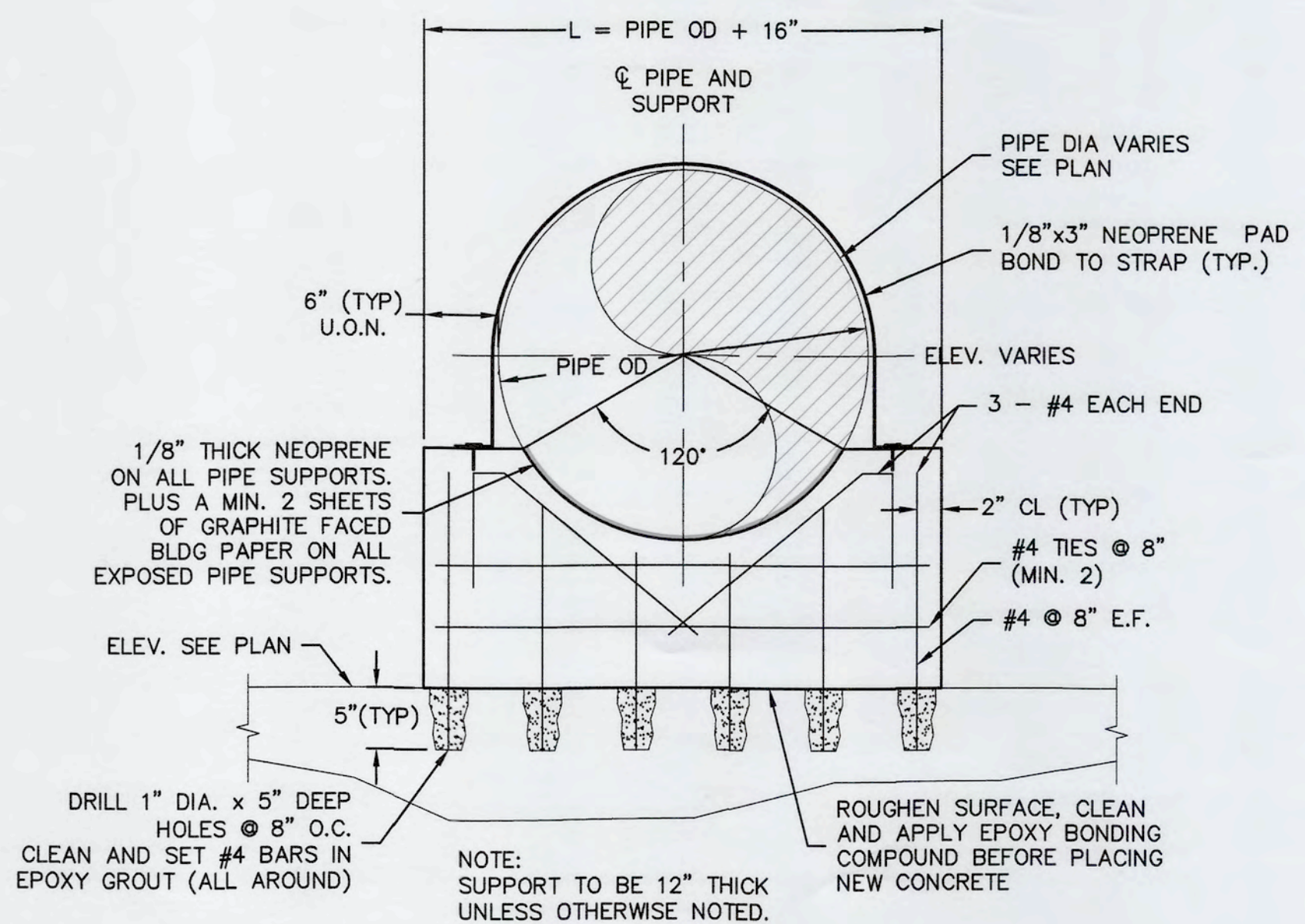


- NOTES:**
1. WHERE BOTTOM BARS ARE NOTED TO BE CONTINUOUS, PROVIDE LAP SPLICE CENTERED OVER SUPPORT.
 2. NO ADDITIONAL TOP OR BOTTOM REINFORCEMENT REQUIRED.

4 - TYPICAL REINFORCED CONCRETE BEAM DETAIL
SCALE: N.T.S.



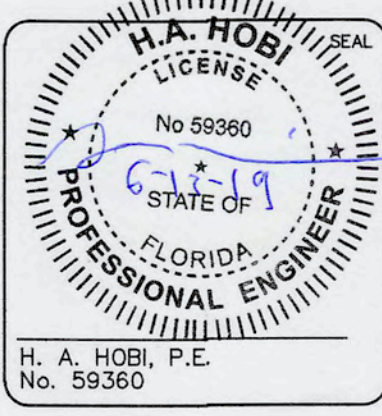
NOTE: SUPPORT TO BE 12" THICK #4 @ 8" E.F. UNLESS OTHERWISE NOTED.



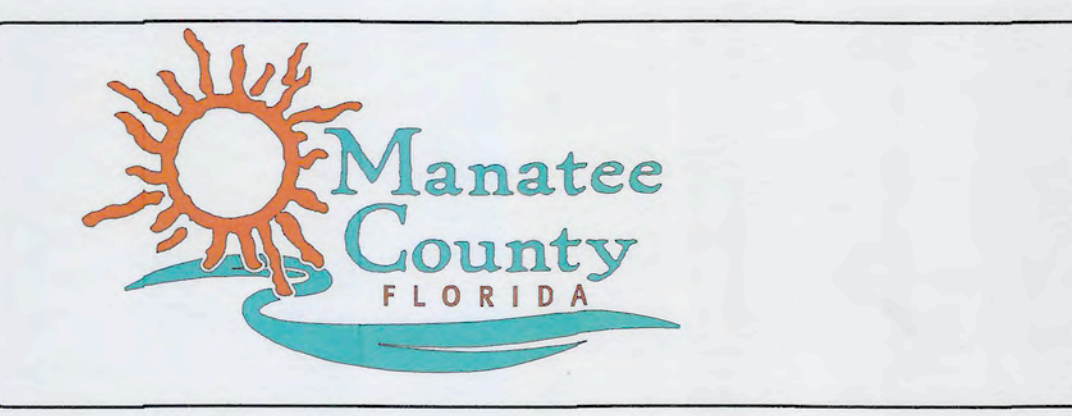
NOTE: SUPPORT TO BE 12" THICK UNLESS OTHERWISE NOTED.

5 - TYPICAL CONCRETE SUPPORT DETAIL
SCALE: N.T.S.

REVNO.	DESCRIPTIONS	DATE



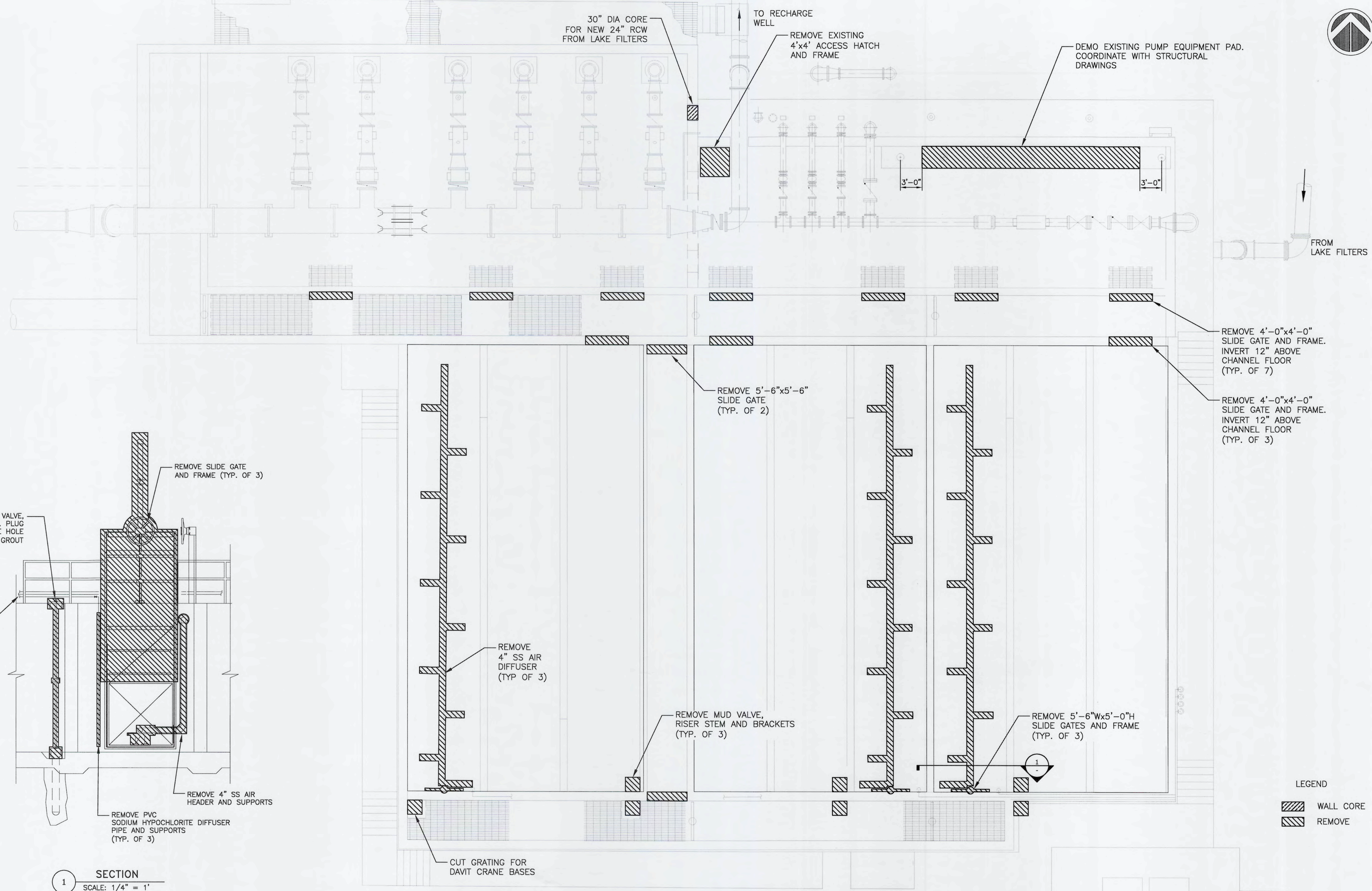
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STRUCTURAL DETAILS

DATE: JUNE, 2019	SCALE: NA	DRAWING NUMBER: S-13
MCE PROJ. # 1024-0171	HORIZONTAL: NA	REVISION: ISSUED FOR BID
DRAWN: CN	VERTICAL: NA	
DESIGNED: HAH		
CHECKED: JV		
PROJ. MGR: TP		



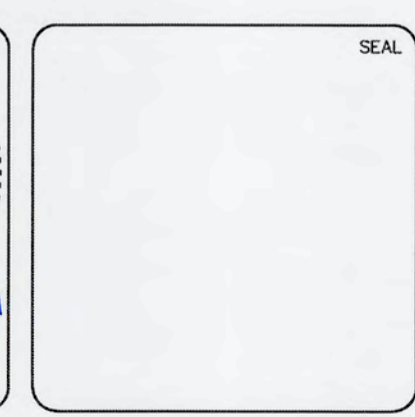
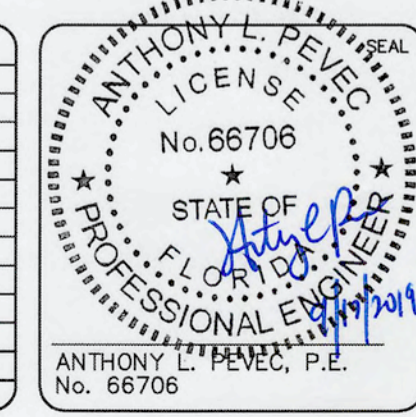
1 SECTION
SCALE: 1/4" = 1'

PLAN
SCALE: 5/32" = 1'

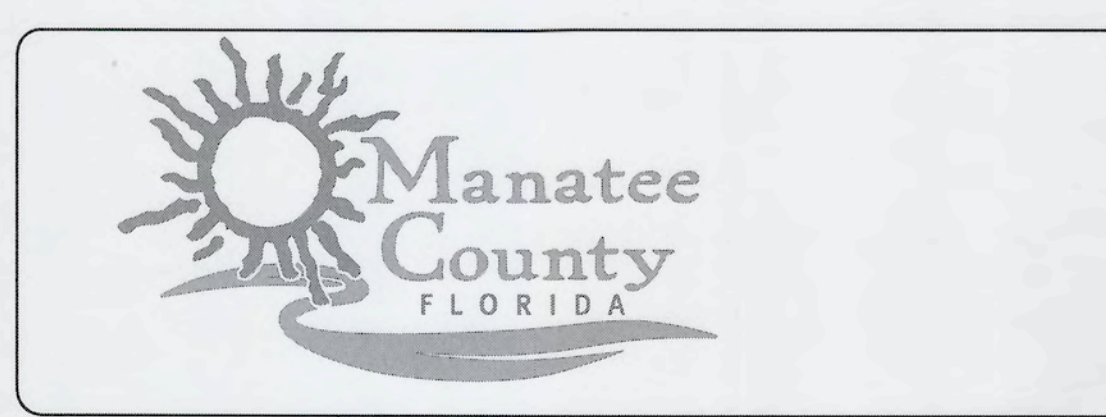
LEGEND
[Hatched Box] WALL CORE
[Cross-hatched Box] REMOVE

S:\024\0171\00 - Drawings\MCH\MCAL\14-c1 10240171.dwg, 9/16/2019, 3:44:38 PM, Carlos Najera

REV. NO.	DATE	DESCRIPTIONS	REVISIONS



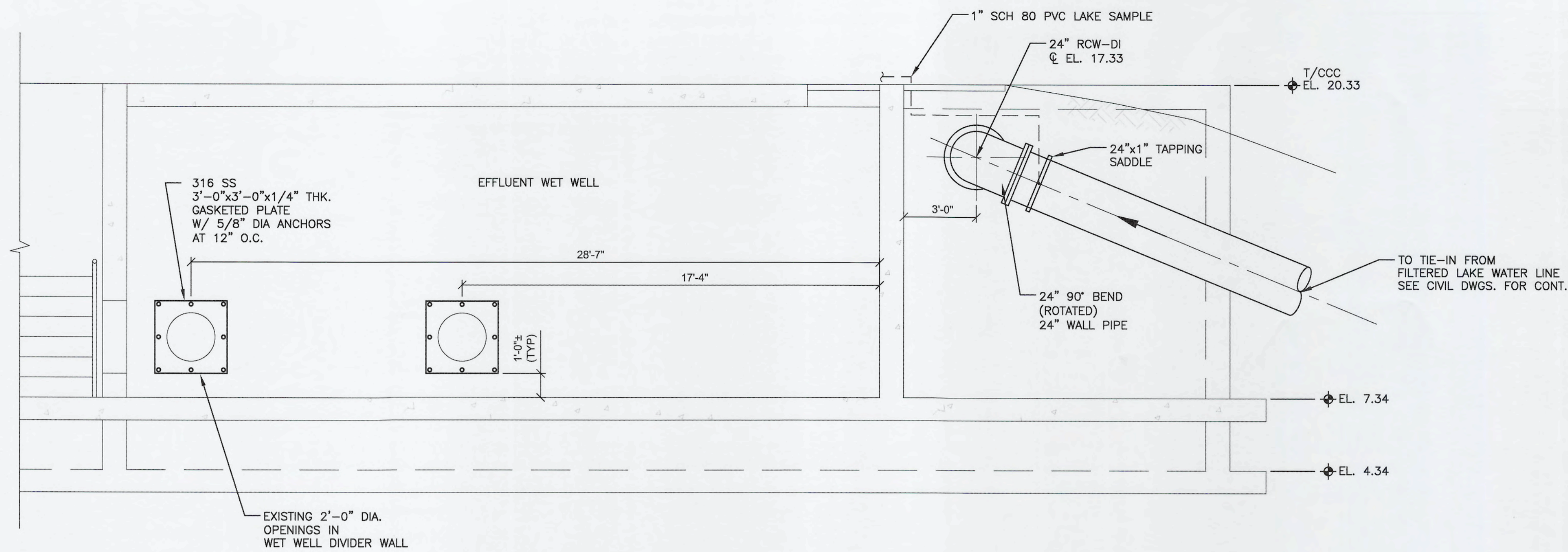
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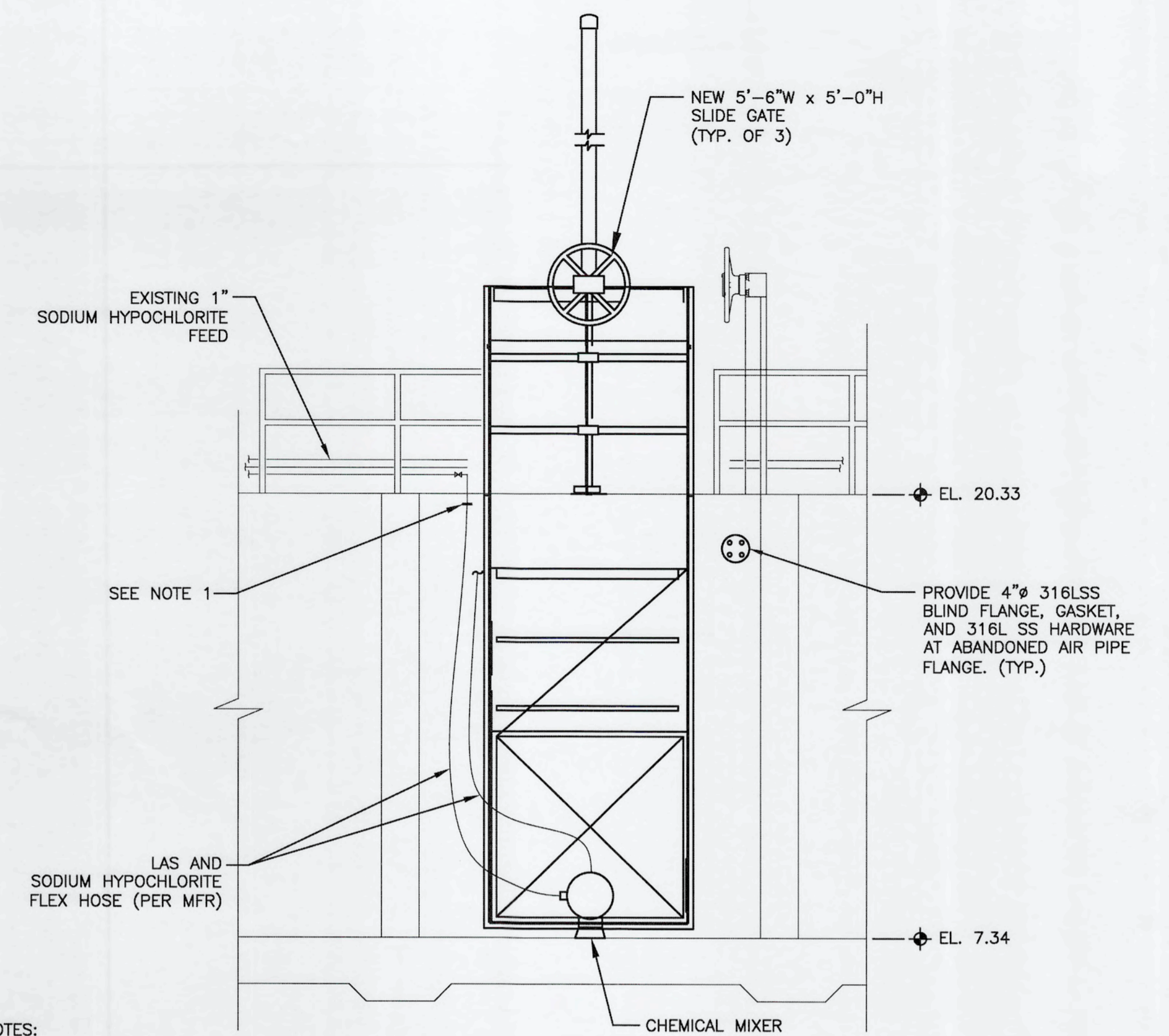
**SWWRF
 CCC REHAB AND
 RECHARGE WELL PS PROJECT**

CCC DEMOLITION PLAN

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: NA	M-01
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP	STATUS: ISSUED FOR BID	REVISION
CHECKED: JV		
PROJ. MGR.: TP		

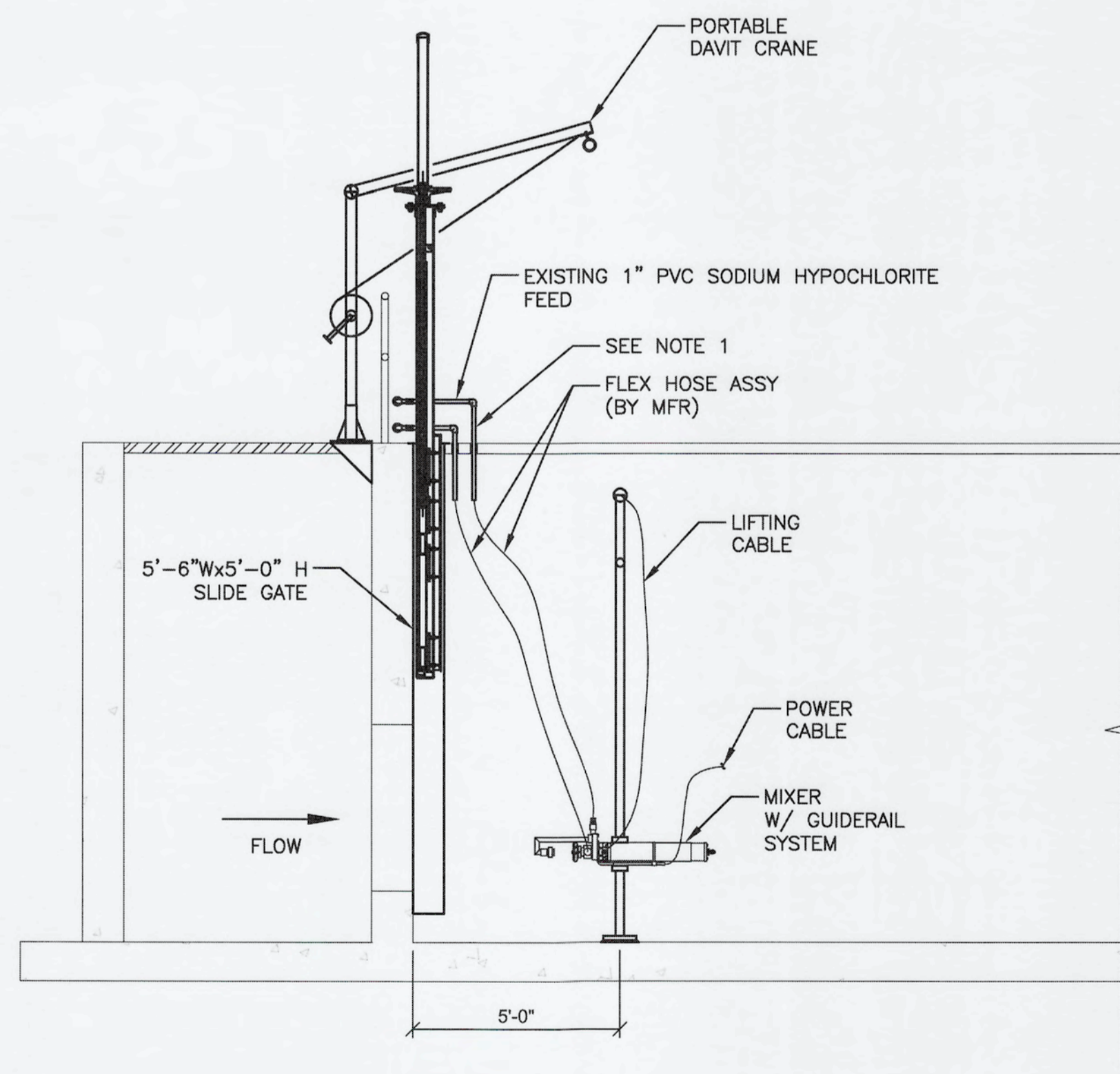


SECTION 1
SCALE: 5/16" = 1'



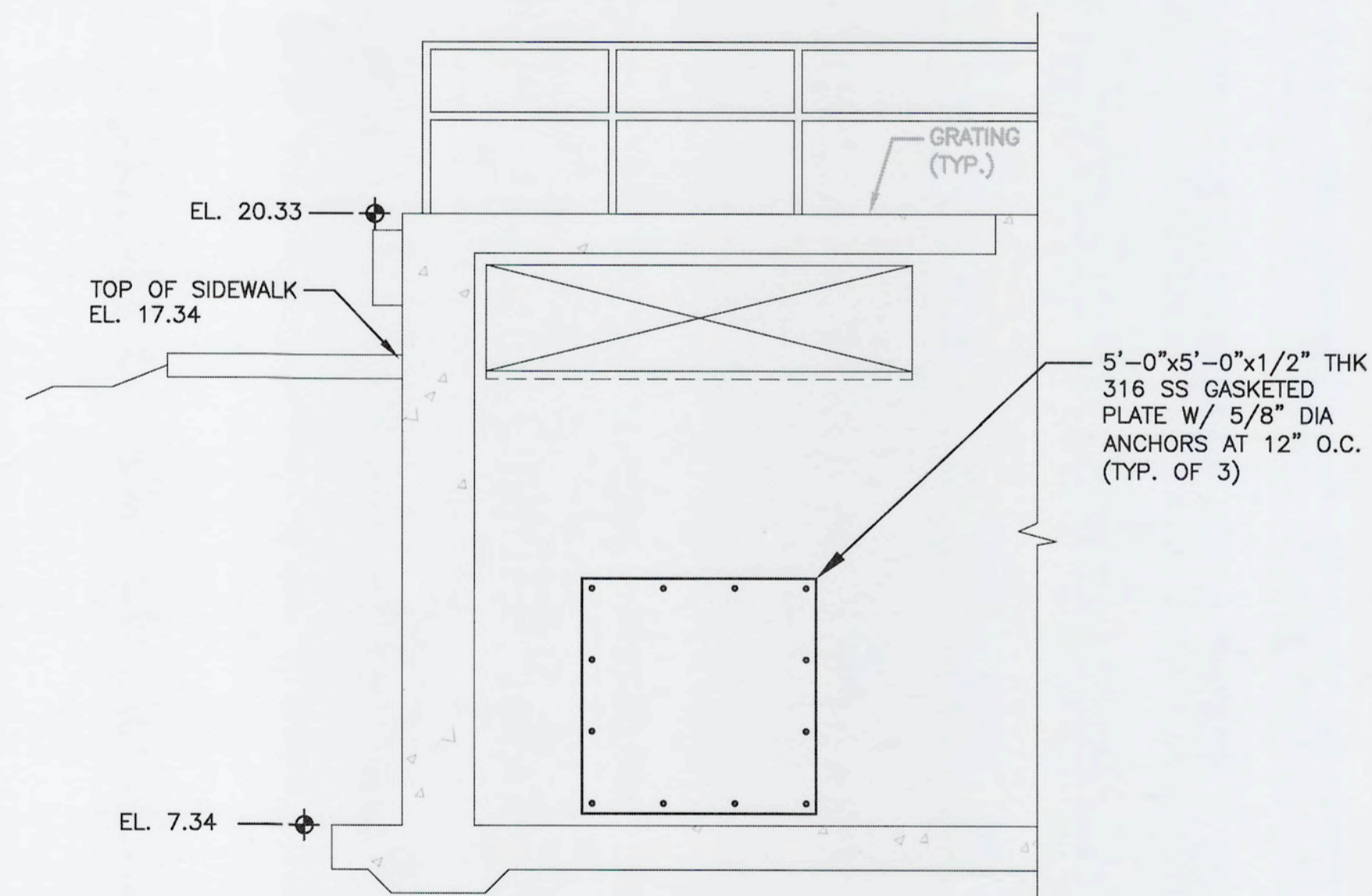
- NOTES:
1. FLEX HOSE/CAM LOCK CONNECTIONS PER MFR.
 2. CONNECTION TO MIXER BODY INJECTION FITTING PER MIXER MFG.

SECTION 2
SCALE: 5/16" = 1'



SECTION 3
SCALE: 5/16" = 1'

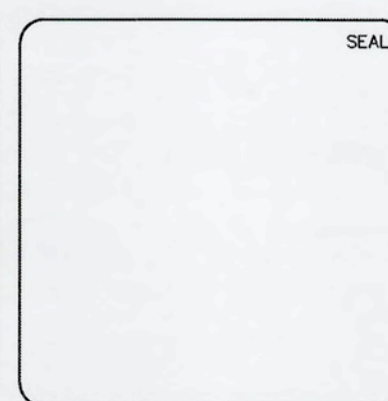
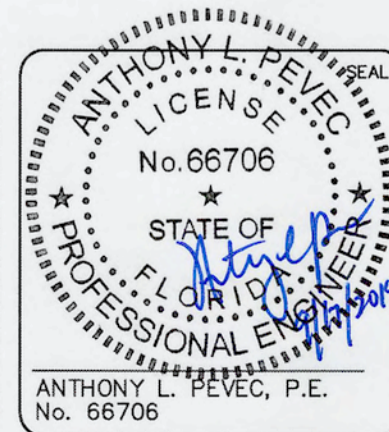
- NOTES:
1. PROVIDE VITON-GROMMETED PASSAGES THROUGH FRP COVERS FOR CHEMICAL LINE PENETRATIONS. (TYP.)



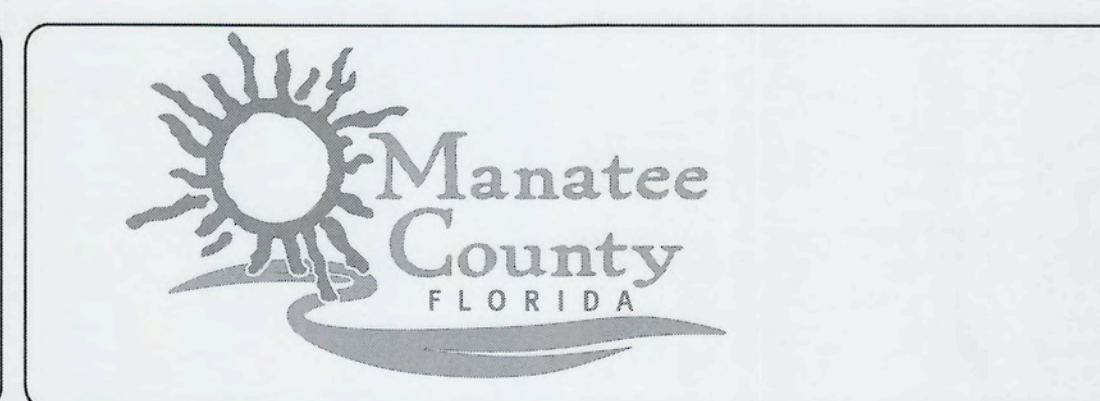
SECTION 4
SCALE: 5/16" = 1'

S:\02A\07171\00-Drawing\Mechanical\03-1024071.dwg, 9/10/2019 3:45:26 PM, Carlos Nolasco

REVNO.	DATE	DESCRIPTIONS	REVISIONS



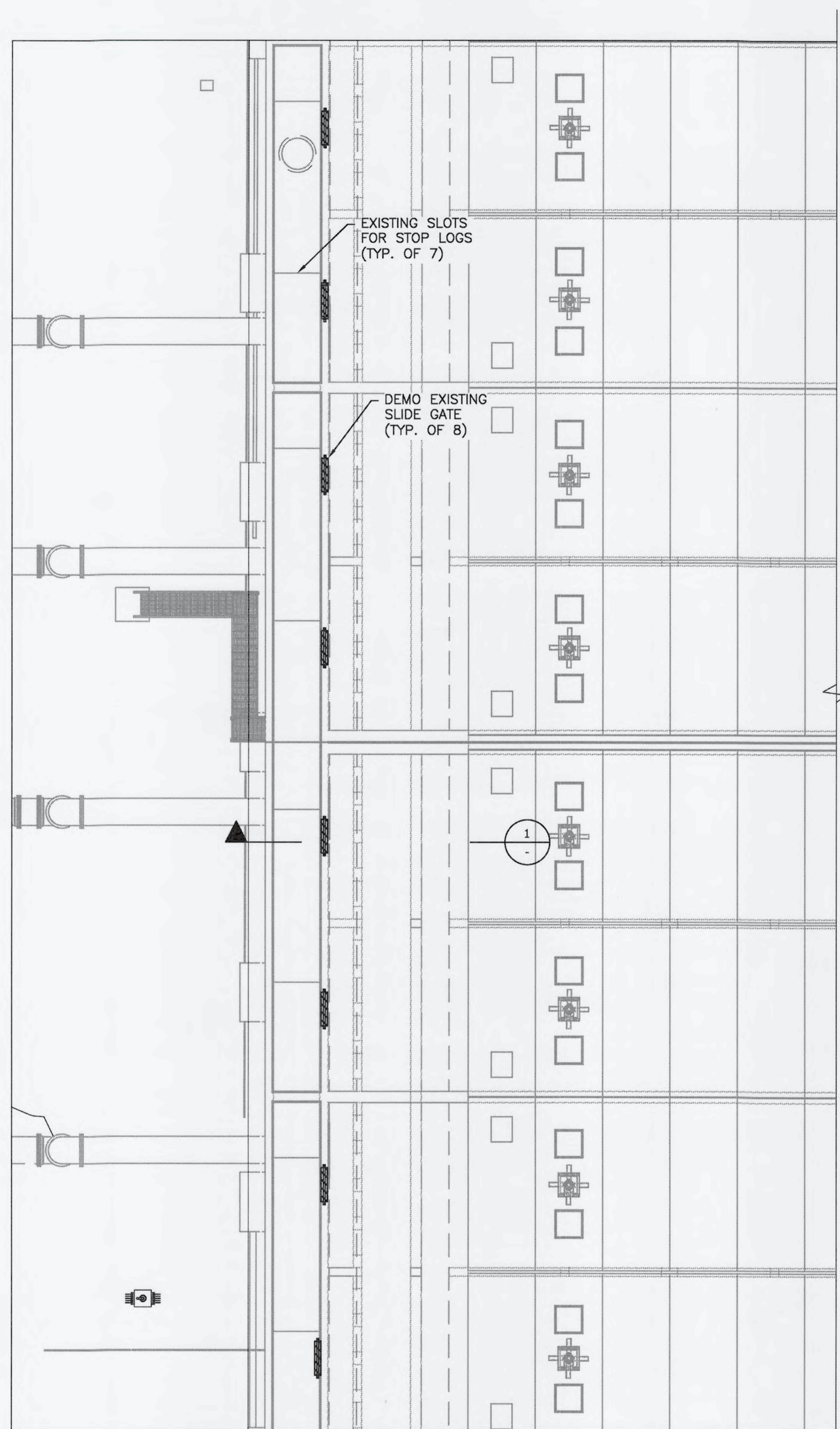
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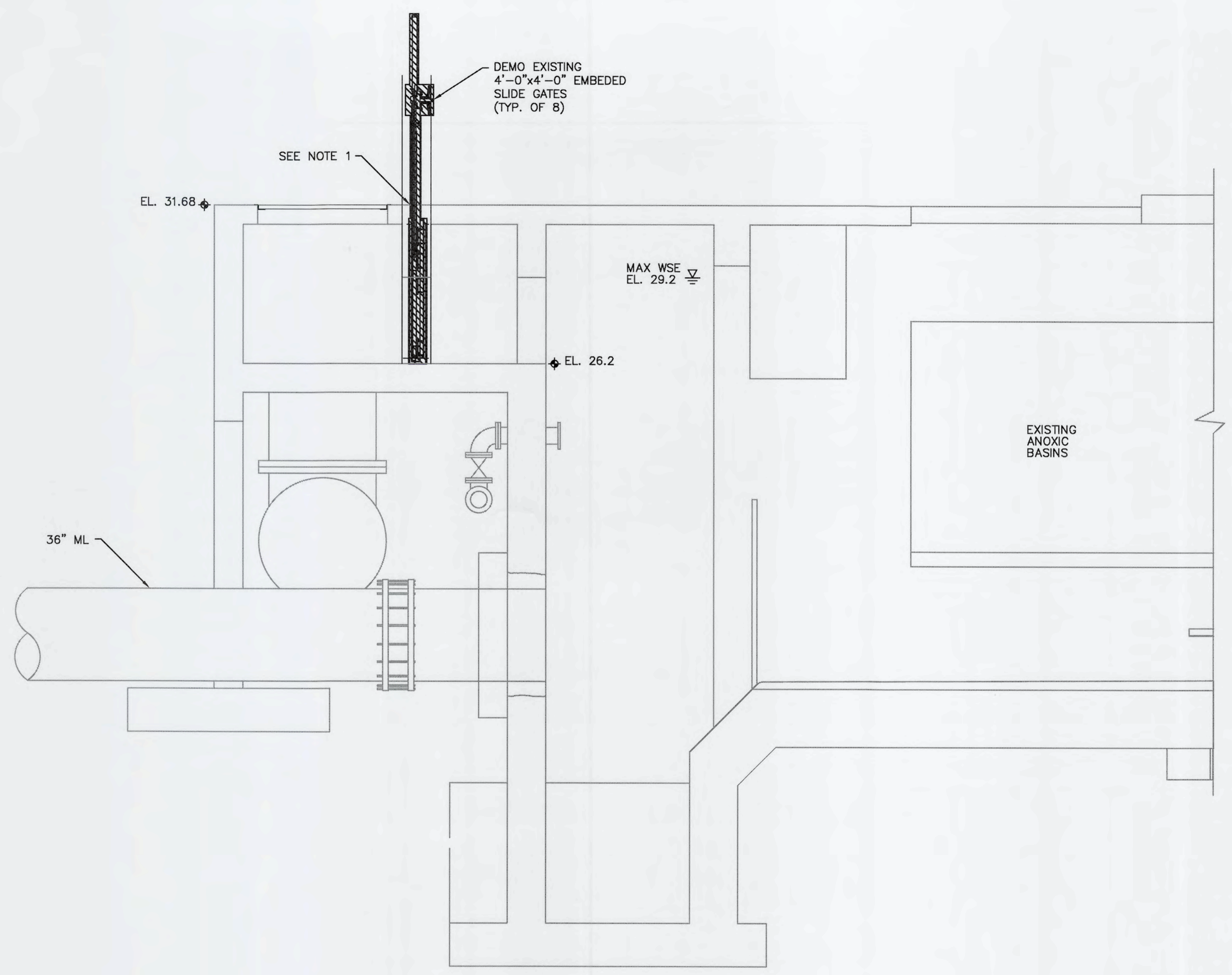
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CCC SECTIONS

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: NA	M-03
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR.: TP		
STATUS: ISSUED FOR BID		



TOP PARTIAL PLAN
SCALE: 3/32" = 1'



SECTION 1
SCALE: 3/8" = 1'



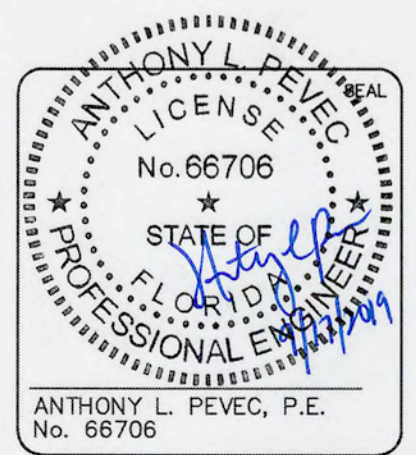
ELEVATION
NTS

- NOTES:
- CONTRACTOR SHALL CUT SLIDE GATE FRAME FLUSH W/ T/CONCRETE

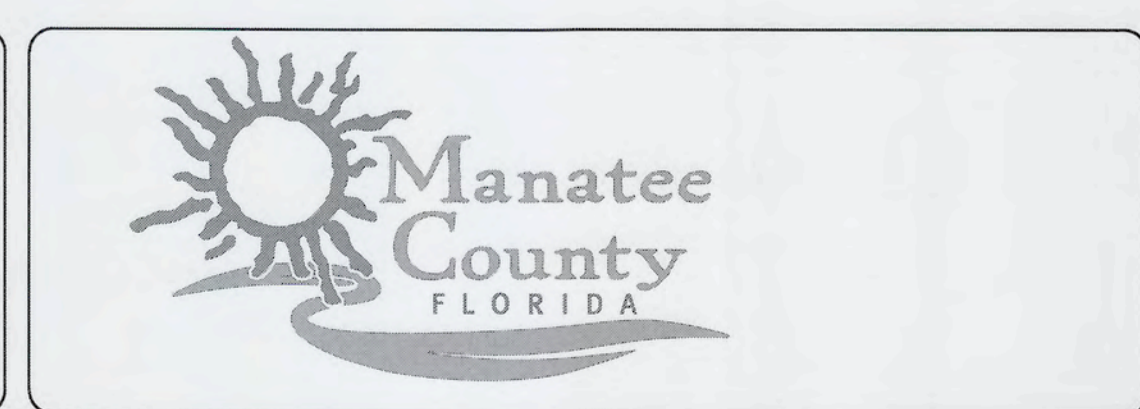
- NOTES:
- SEE STRUCTURAL DRAWINGS FOR ADDITIONAL DEMO WORK IN THIS AREA.

S:\VDA\0717\WB-Drawing\MCHANICAL\1-05 10240171.dwg, 9/16/2019, 3:45:47 PM, Carlos Negrero

REV. NO.	DESCRIPTIONS	DATE



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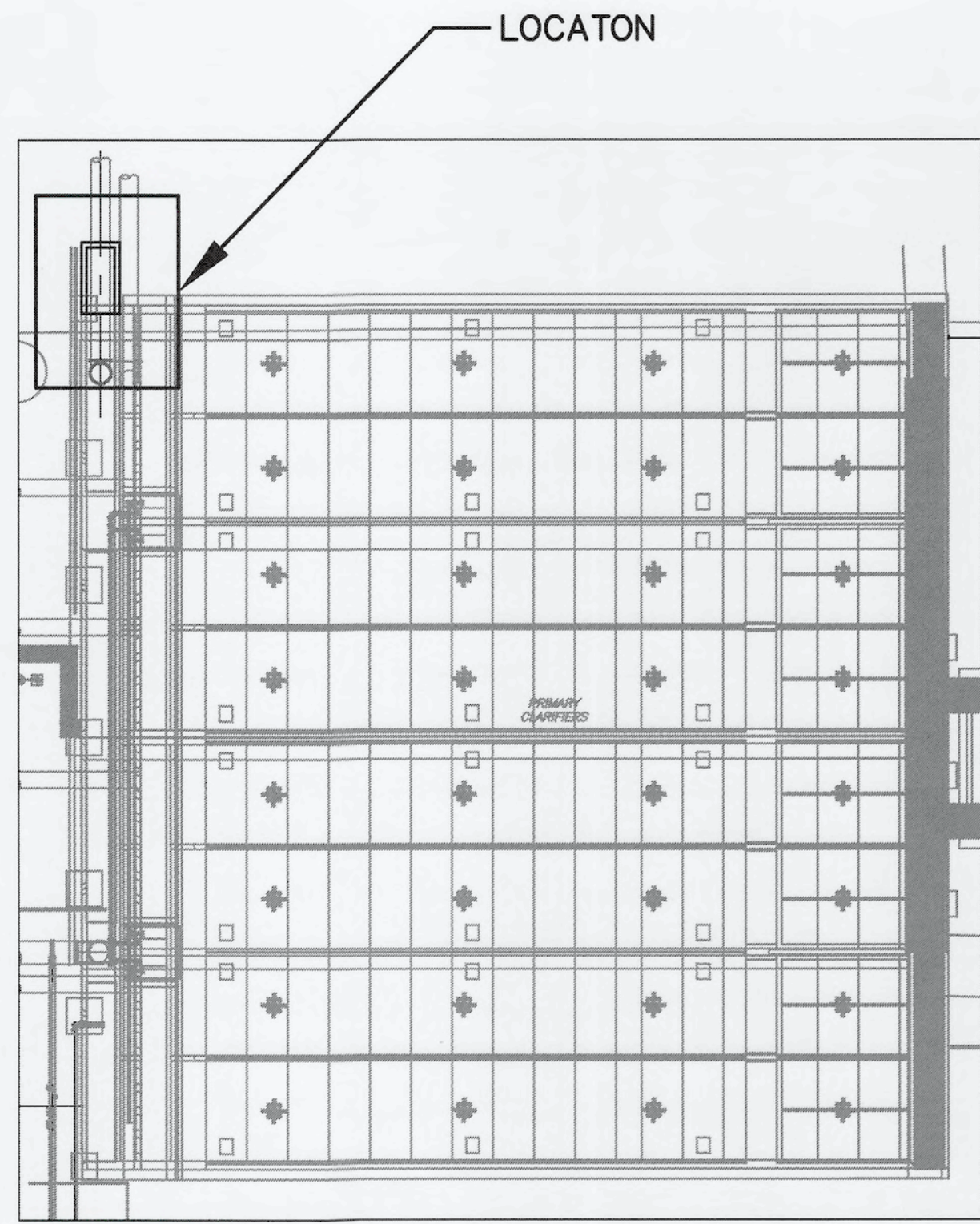


**SWRF
 CCC REHAB AND
 RECHARGE WELL PS PROJECT**

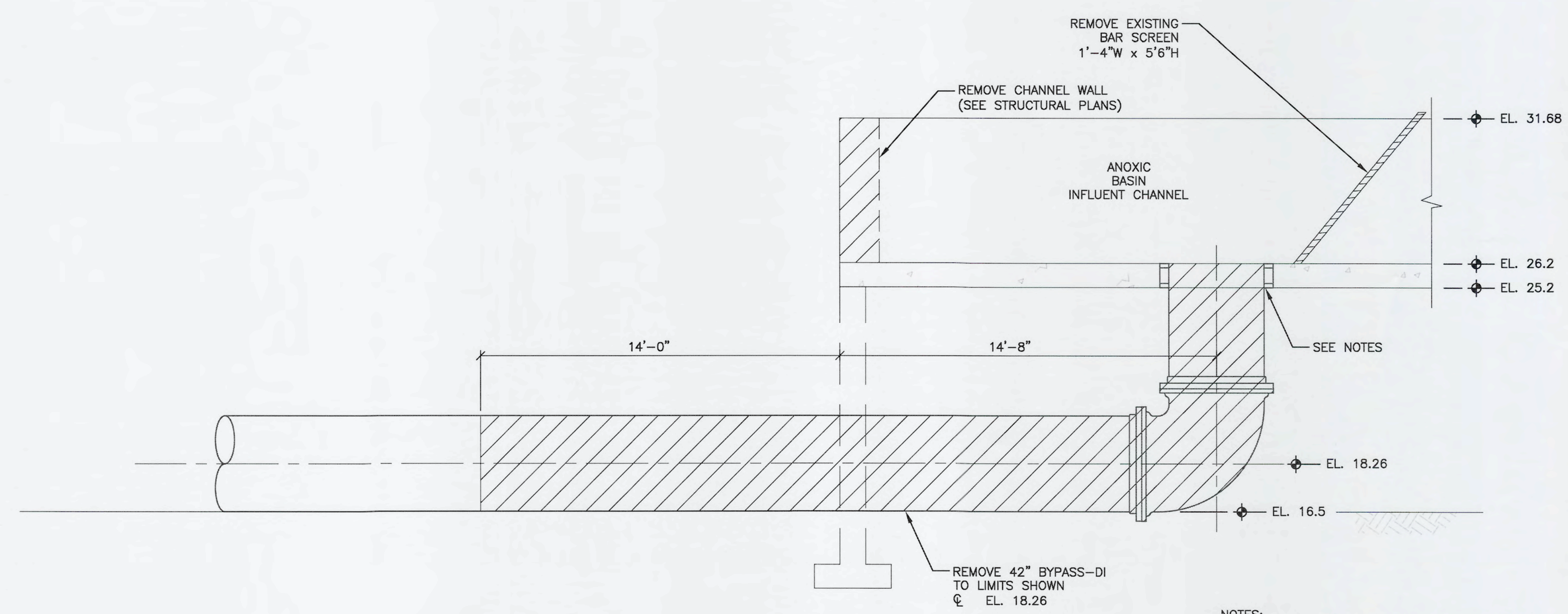
ANOXIC BASIN DEMOLITION PLAN

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: NA	M-05
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR.: TP		

STATUS: ISSUED FOR BID

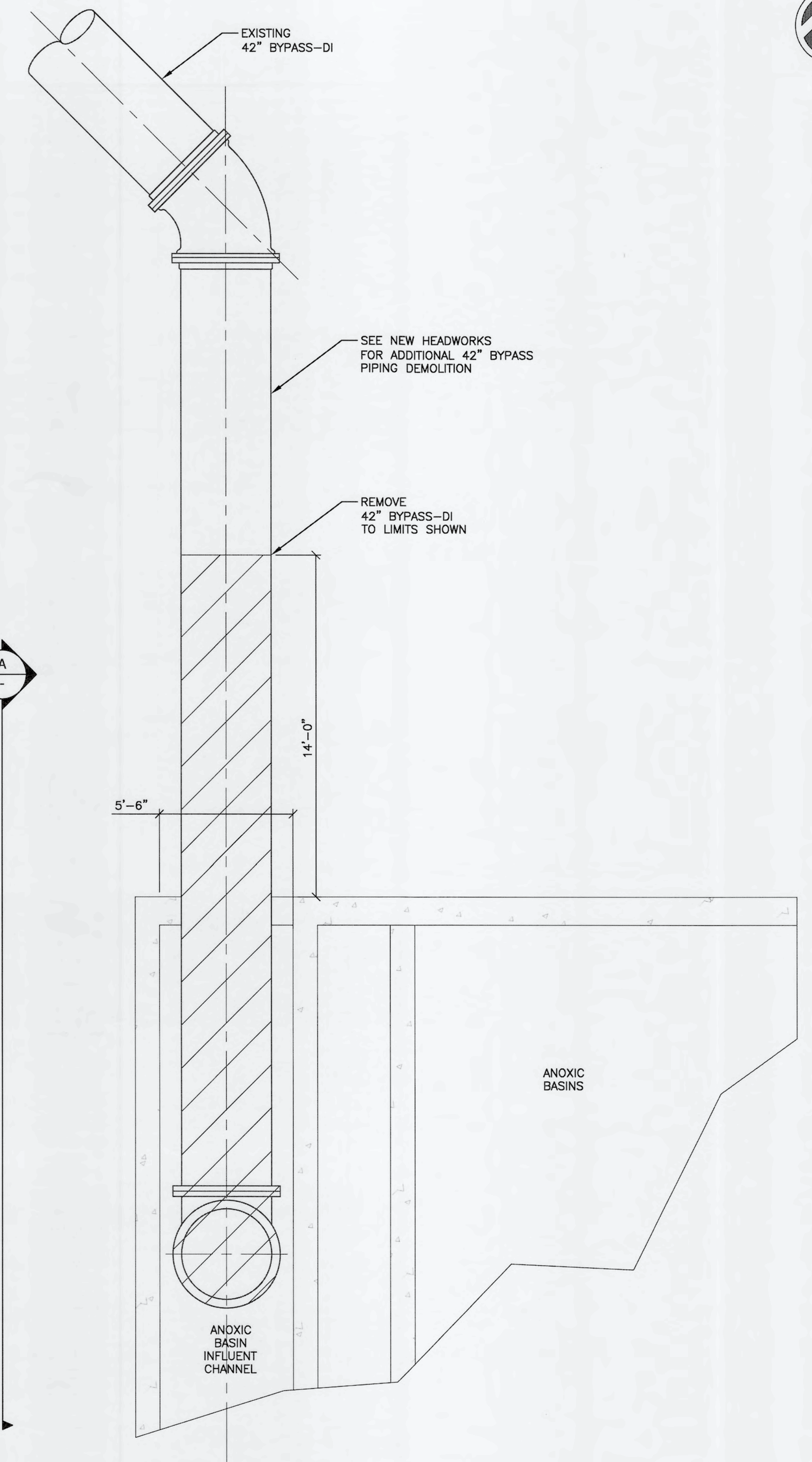


KEY PLAN
SCALE: 1" = 30'



SECTION A
SCALE: 5/16" = 1'

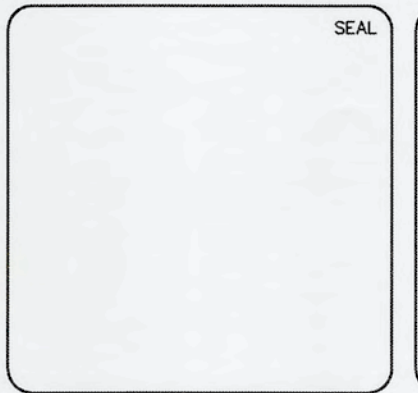
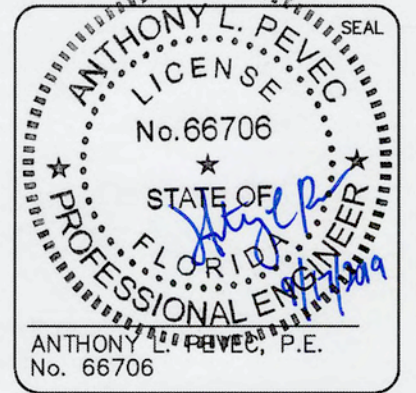
- NOTES:
1. DRILL AND EPOXY NO. 5 REBAR DOWELS AT CENTER OF SLAB EVERY 45 DEGREES. PROVIDE 5" EMBEDMENT AND 12" LAP MINIMUM.
 2. PROVIDE HYDROPHILIC STICK-ON WATERSTOP AROUND CIRCUMFERENCE OF OPENING.
 3. FILL HOLE IN SLAB WITH NON-SHRINK GROUT PER DRAWINGS SPECIFICATIONS.



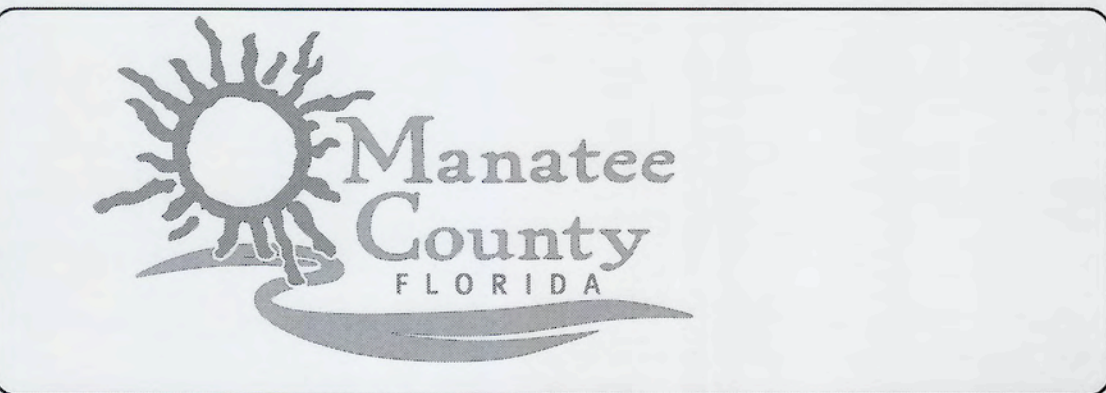
PARTIAL PLAN
SCALE: 5/16" = 1'

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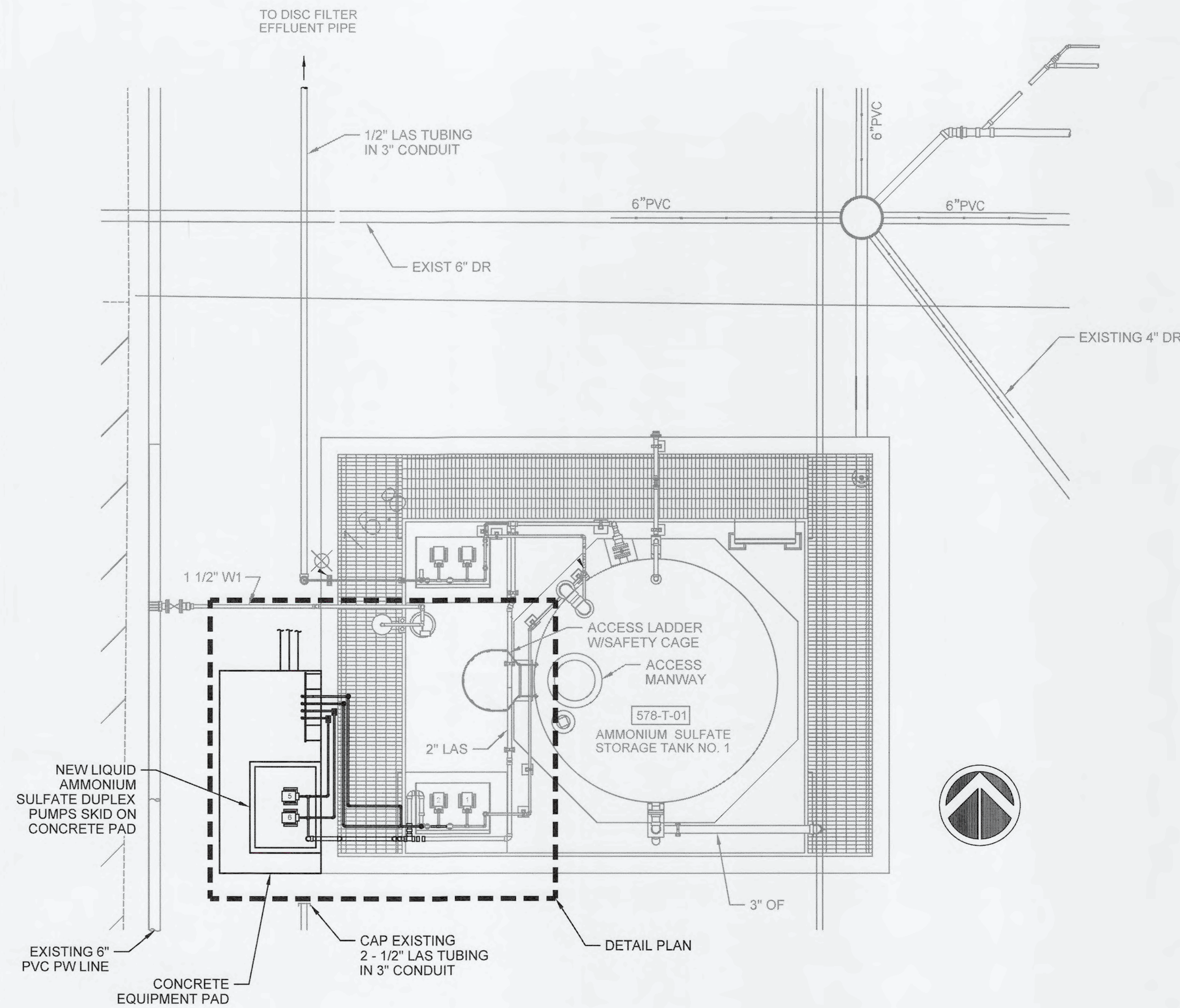
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**ANOXIC BASIN INFLUENT CHANNEL
DEMOLITION PLAN AND SECTION**

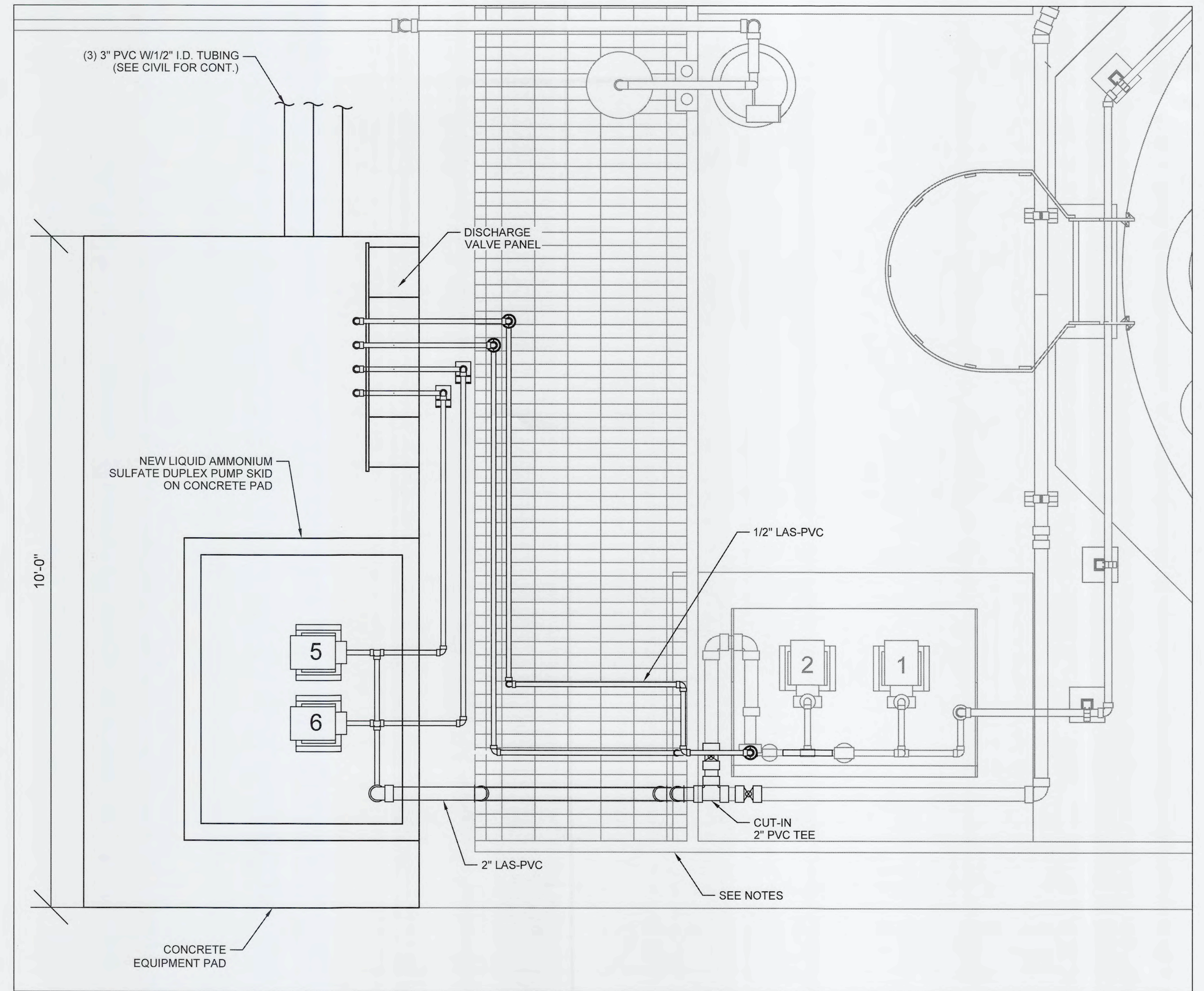
DATE: SEPTEMBER, 2019	SCALE: NA	DRAWING NUMBER: M-07
MCE PROJ. # 1024-0171	HORIZONTAL: NA	REVISION: ISSUED FOR BID
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR.: TP		

DATE: SEPTEMBER, 2019	SCALE: NA	DRAWING NUMBER: M-07
MCE PROJ. # 1024-0171	HORIZONTAL: NA	REVISION: ISSUED FOR BID
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR.: TP		



LAS STORAGE AND FEED SYSTEM VIEW

1/4"=1'-0"



DETAIL PLAN

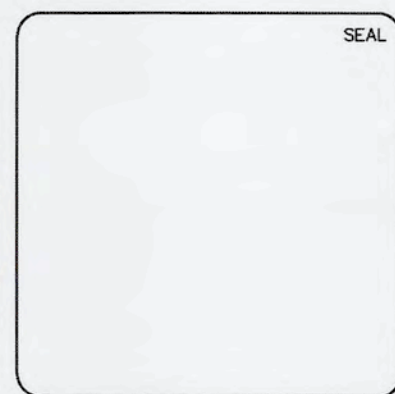
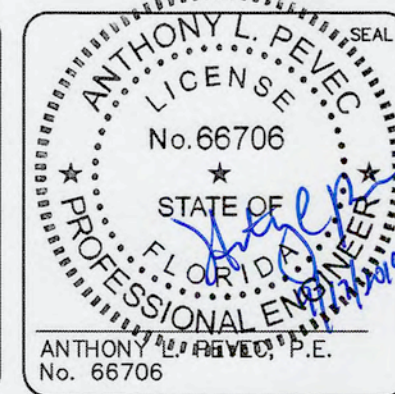
1"=1'-0"

NOTES:

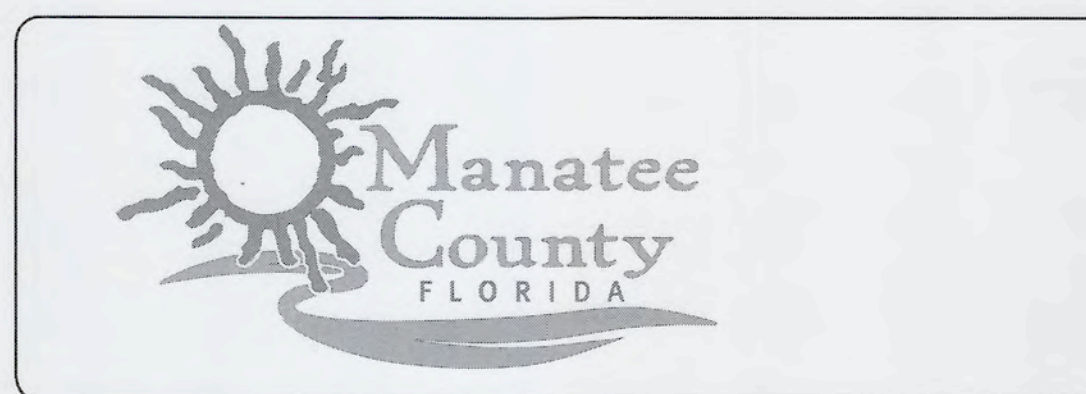
1. ROUTE PIPING BENEATH EXISTING GRATING.
2. LIMIT CUTTING OF EXISTING GRATING FOR NEW PIPING.
3. SUPPORT GRATING AROUND NEW GRATING PENETRATIONS WITH FRP ANGLE AND 31LSS ANCHORS.

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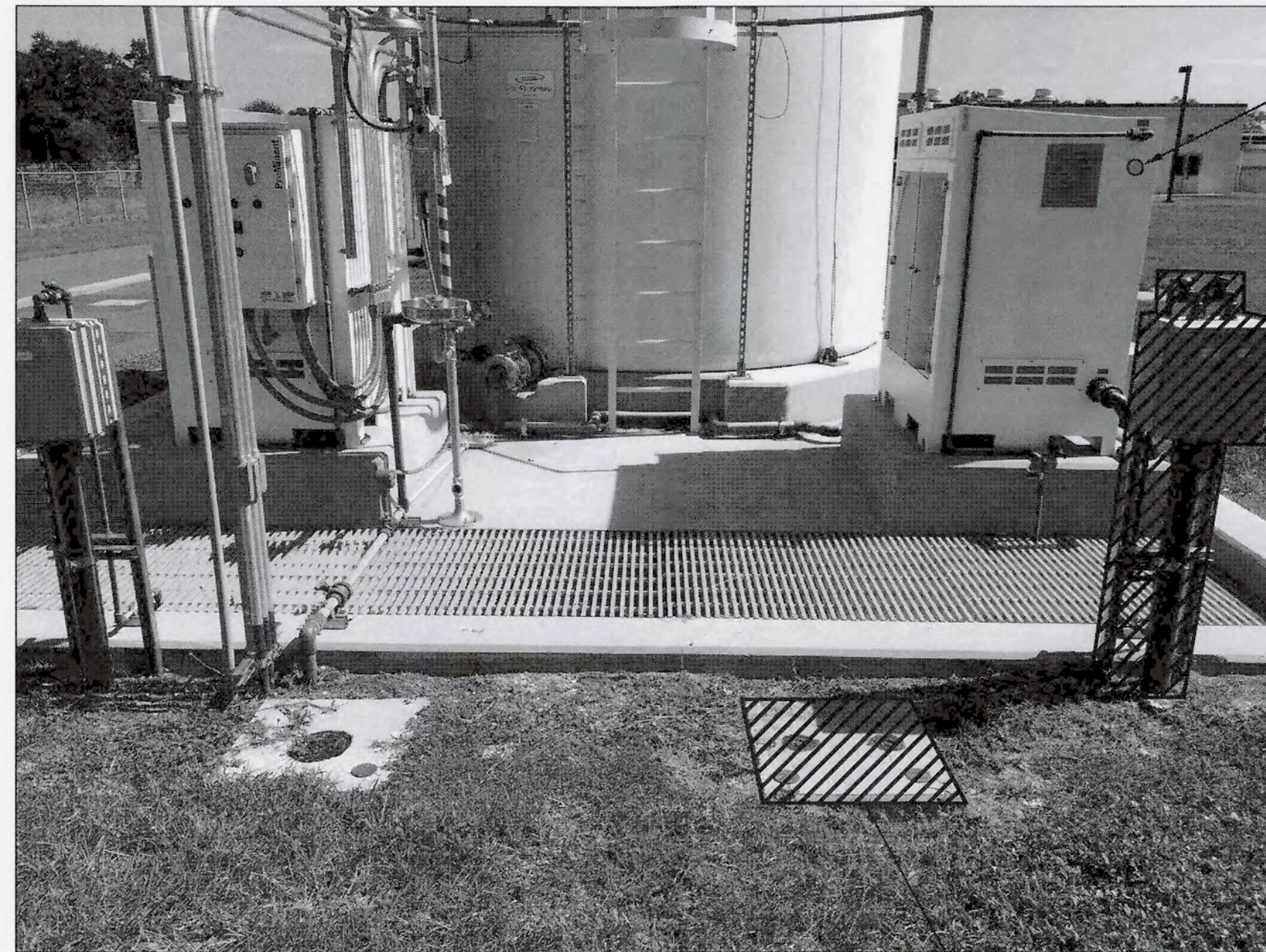


**SWWRF
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 RECHARGE WELL PS PROJECT**

**LIQUID AMMONIUM SULFATE (LAS)
 STORAGE AND FEED SYSTEM PLAN VIEW**

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: NA	M-09
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR.: TP		

STATUS: **ISSUED FOR BID**



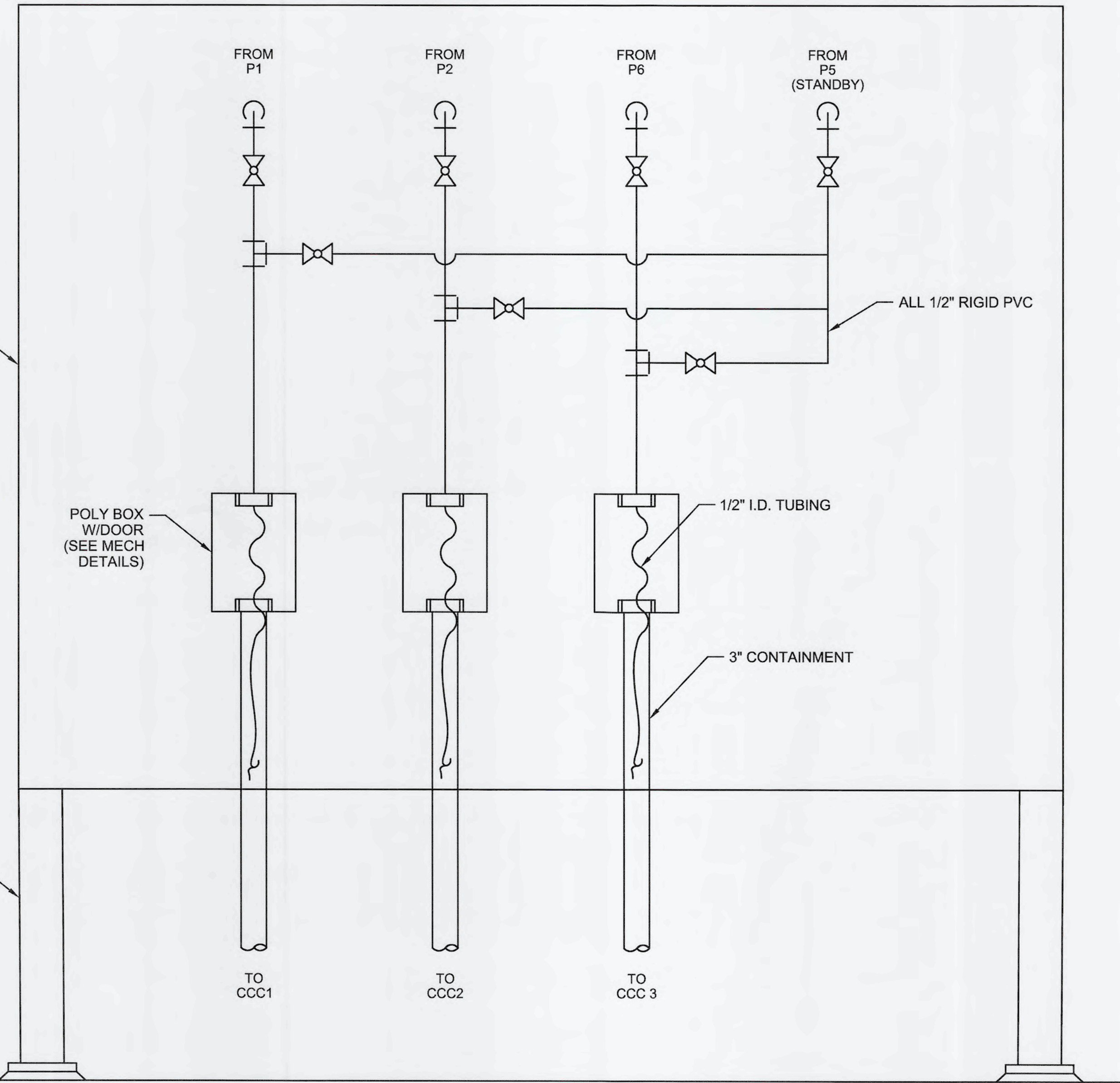
LAS SYTEM ELEVATON
NOT TO SCALE

REMOVE TRACER WIRE TEST STATION

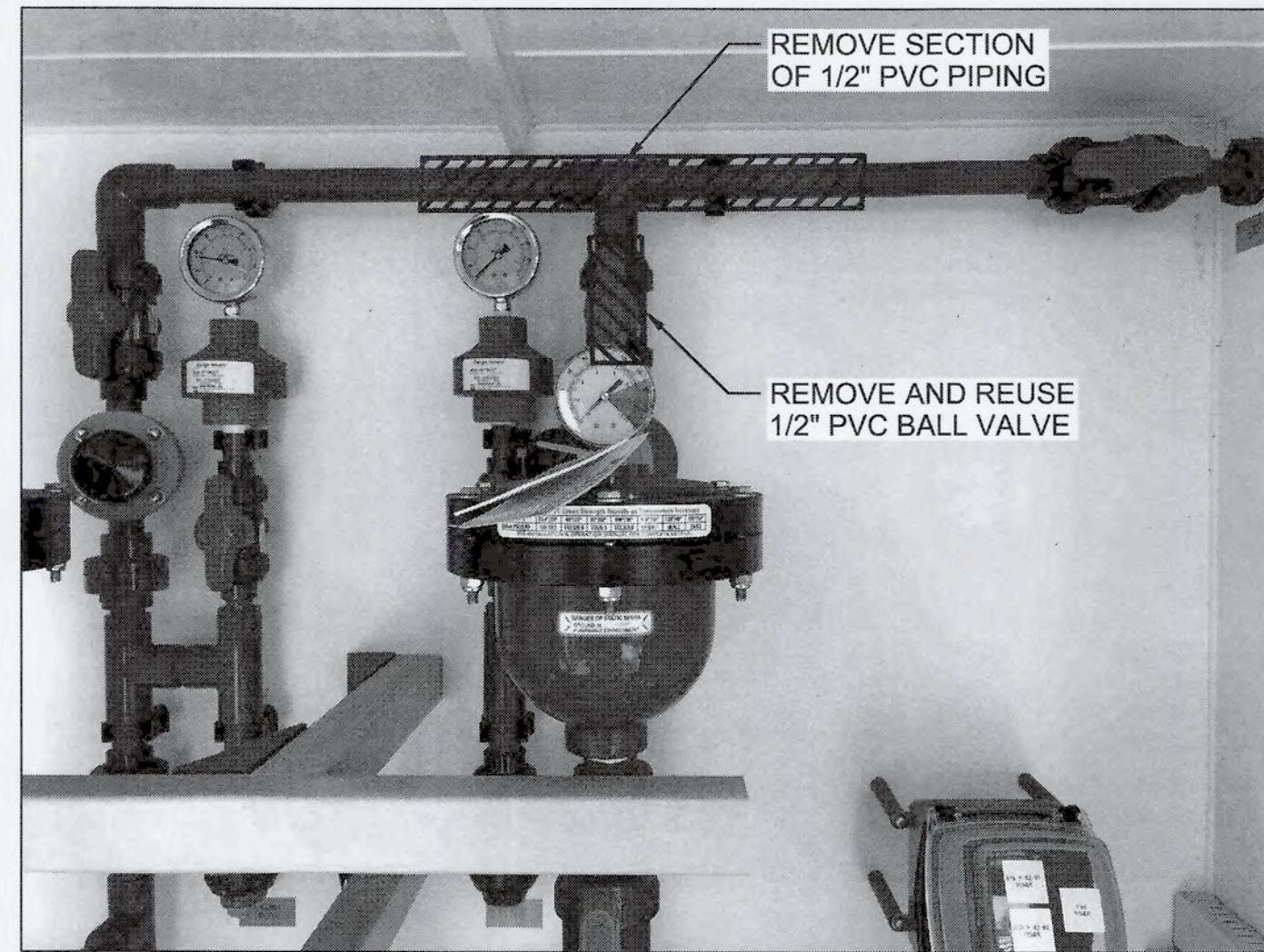
CUT HOLE IN SKID HOUSING FOR SECOND DISCHARGE LINE

REMOVE EXISTING SECONDARY CONTAINMENT TRANSITION BOX, SUPPORTS, AND PIPING

3/4" THK WHITE PVC SHEET 4'WX3'H (APPROX.)



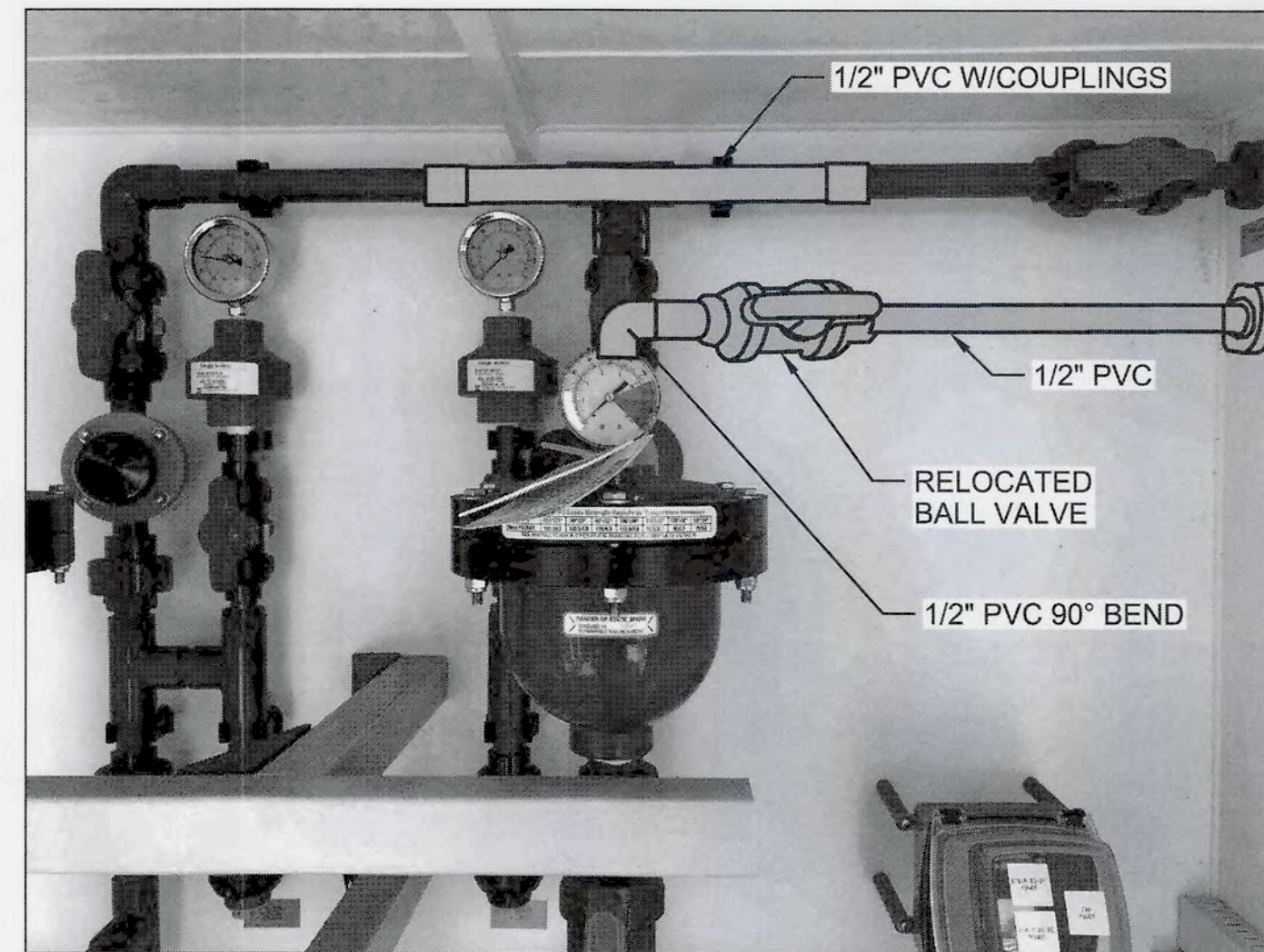
LAS DISCHARGE VALVE PANEL
NOT TO SCALE



SKID PIPING DEMO
NOT TO SCALE

REMOVE SECTION OF 1/2" PVC PIPING

REMOVE AND REUSE 1/2" PVC BALL VALVE



SKID PIPING NEW
NOT TO SCALE

1/2" PVC W/COUPLINGS

1/2" PVC

RELOCATED BALL VALVE

1/2" PVC 90° BEND

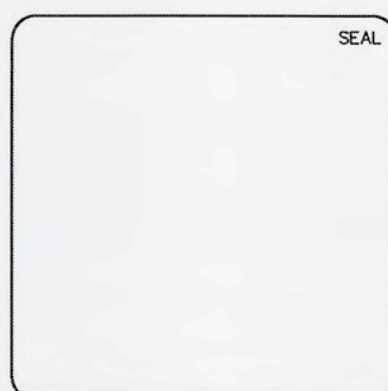
SEE NOTE 1

NOTES:

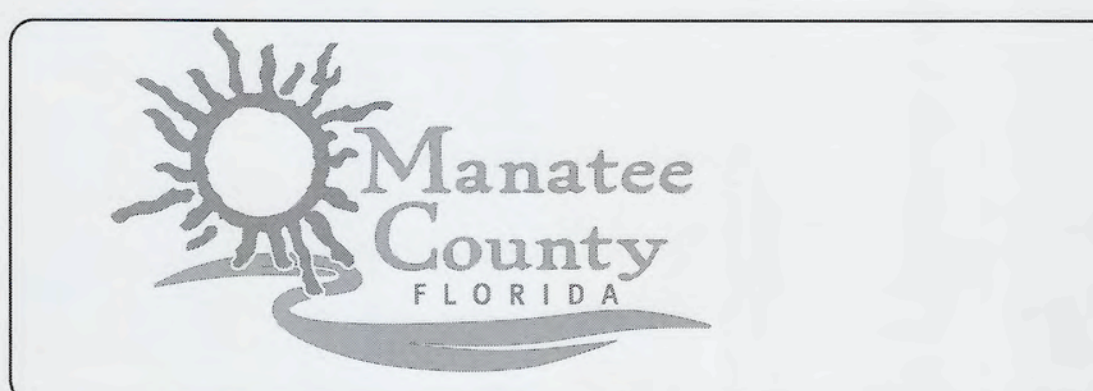
1. CORE SKID ENCLOSURE AND PROVIDE 1/2" PVC/VITON NPT BULKHEAD TO MATCH EXISTING PENETRATION.
2. LEG HEIGHT SHALL BE THE FULL PVC SHEET HEIGHT. AFFIX PVC SHEET TO FRP LEGS WITH 316L SS HARDWARE.

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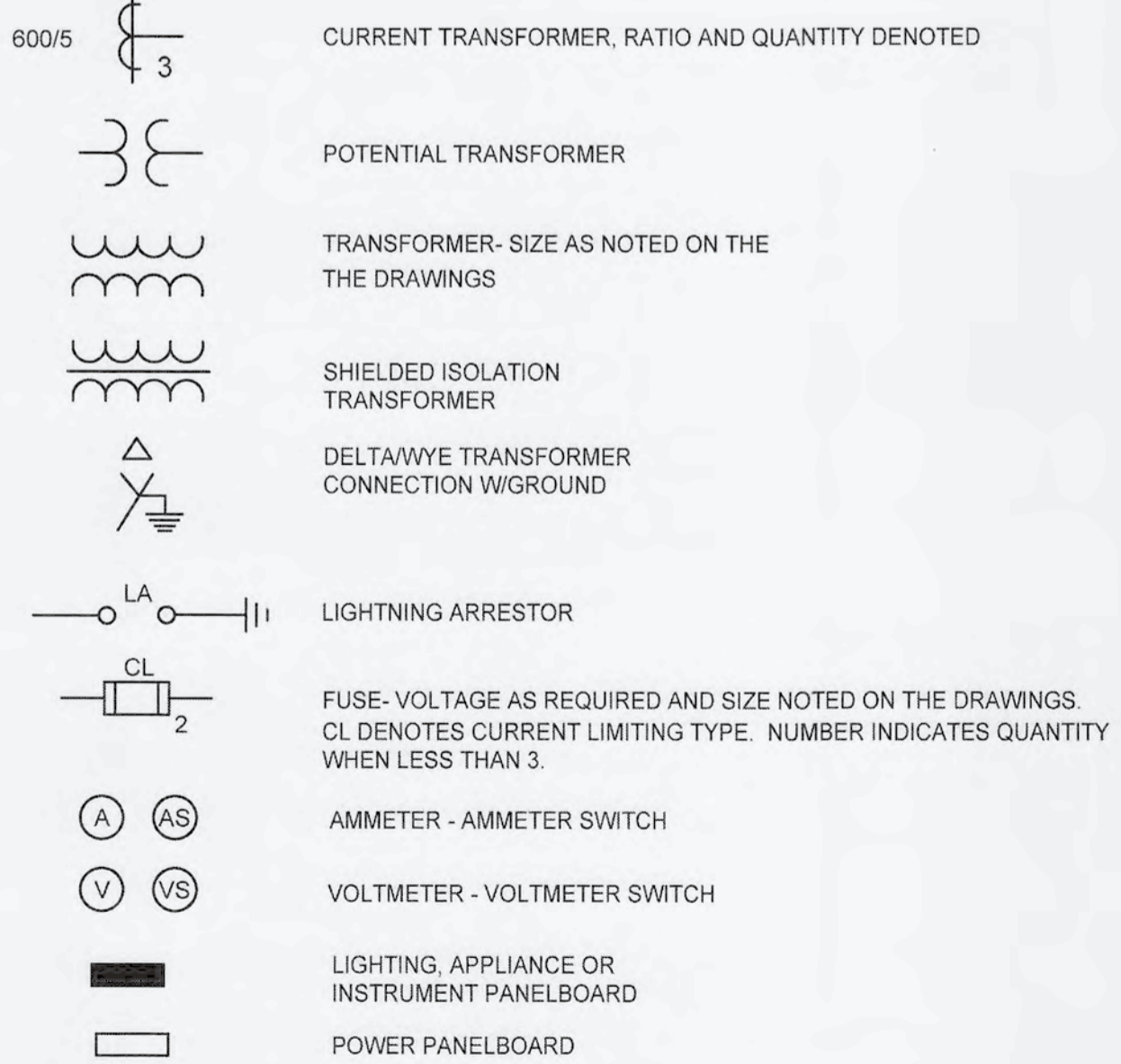
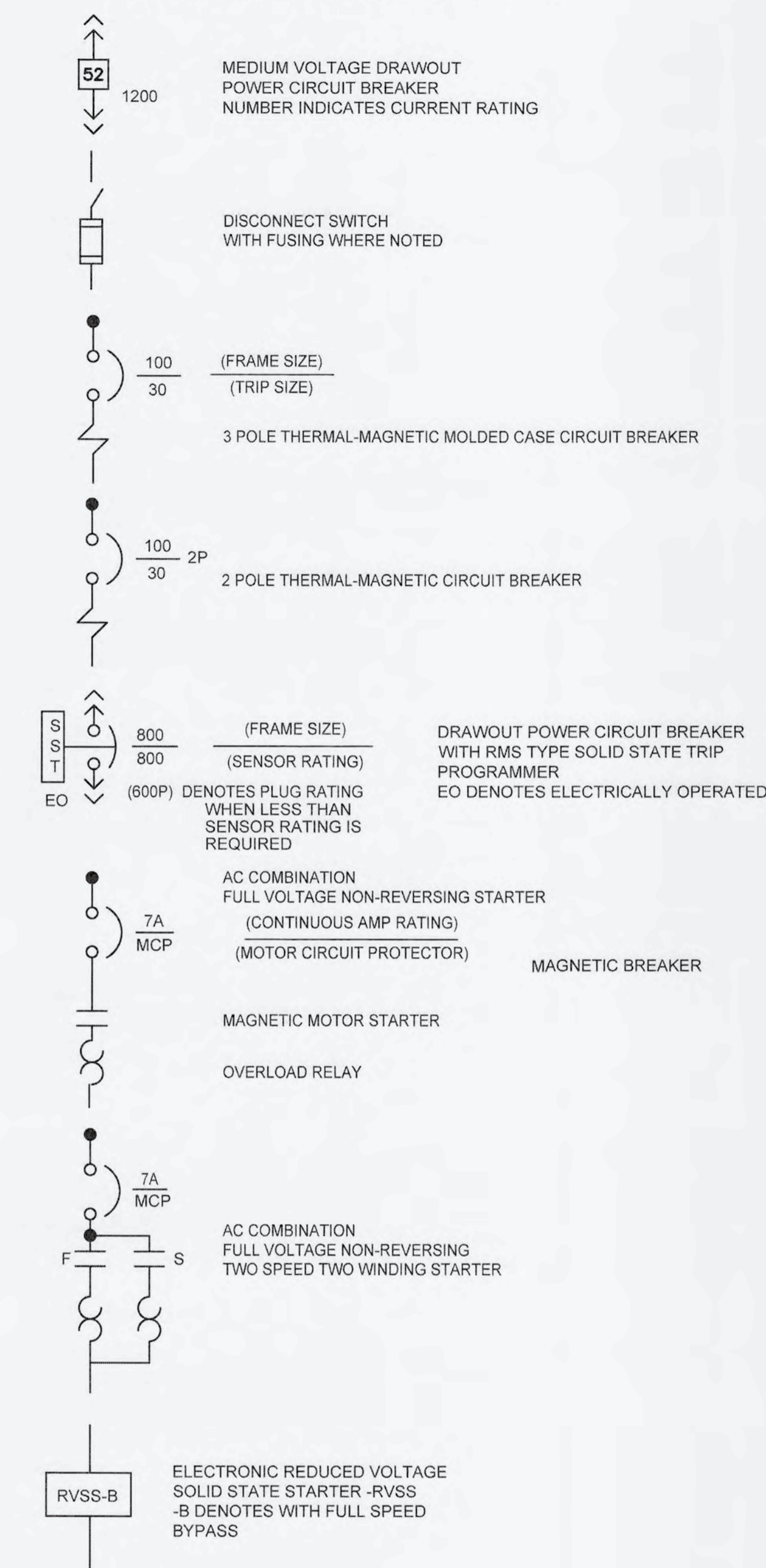


**SWWRF
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**LIQUID AMMONIUM SULFATE (LAS)
 FEED SYSTEM MODIFICATION DETAILS**

DATE: SEPTEMBER, 2019	SCALE: NA	DRAWING NUMBER: M-10
MCE PROJ. # 1024-0171	HORIZONTAL: NA	REVISION: ISSUED FOR BID
DRAWN: CN	VERTICAL: NA	
DESIGNED: TP		
CHECKED: JV		
PROJ. MGR. TP		
STATUS: ISSUED FOR BID		

POWER DISTRIBUTION SYSTEM



	CP - CONTROL PANEL
	MOTOR CONTROL CENTER
	VARIABLE FREQUENCY DRIVE - VFD -B WHEN INDICATED DENOTES WITH STARTING AND FULL SPEED BYPASS
	SELECTOR SWITCH
	INDICATING LIGHT
	EMERGENCY STOP MAINTAINED CONTACT PUSH BUTTON
	DISCONNECT SWITCH - 480V 3POLE UNFUSED OR FUSED F DENOTES FUSING, ONLY WHERE INDICATED FIRST NUMBER DENOTES SWITCH AMP RATING SECOND NUMBER DENOTES FUSE SIZE WHEN PROVIDED.
	JUNCTION BOX, SIZE AS REQUIRED BY N.E.C.
	TERMINAL BOX, SIZE AS REQUIRED BY N.E.C. AND TO ACCOMMODATE ALL TERMINATIONS ON TERMINAL BLOCKS. TERMINATIONS TO INCLUDE SPARE WIRING.
	PULL BOX, SIZE AS REQUIRED BY N.E.C.
	MOTOR STARTER/CONTROLLER (NON-COMBINATION - COMBINATION - MANUAL) RV DENOTES REDUCED VOLTAGE
	ELECTRIC MOTOR (NUMBER INDICATES HORSEPOWER).
	ELECTRIC NON-MOTOR LOAD (NUMBER INDICATES KVA).
	MOTORIZED VALVE WITH CONTROLLER BY VENDOR
	MOTORIZED VALVE
	ZONE INTERLOCK
	METER FUNCTIONS
	LIMIT SWITCH CLOSED
	PRESSURE TRANSMITTER (I DENOTES INDICATING TYPE, AND PE DENOTES PRESSURE ELEMENT)
	LEVEL TRANSMITTER (LE DENOTES LEVEL ELEMENT)
	FLOW TRANSMITTER (FE DENOTES FLOW ELEMENT)
	TEMPERATURE SWITCH (TSH DENOTES TEMPERATURE SWITCH HIGH AND TSL DENOTES TEMPERATURE SWITCH LOW)
	LEVEL SWITCH (LSH DENOTES LEVEL SWITCH HIGH AND LSL DENOTES LEVEL SWITCH LOW. LE DENOTES LEVEL ELEMENT)
	STROKE POSITIONER

LIGHTING SYSTEM

	LED LIGHTING FIXTURE - SURFACE OR PENDANT MOUNTED. FIRST NUMERAL DENOTES LIGHTING PANEL (LP1), SECOND NUMBER DENOTES BRANCH CIRCUIT NUMBER. LOWER CASE LETTER DENOTES SWITCHED CIRCUIT.
	LED LIGHTING FIXTURE WITH BATTERY PACK SURFACE OR PENDANT.
	PENDANT OR CEILING MOUNTED LIGHTING FIXTURE.
	WALL MOUNTED LIGHTING FIXTURE.
	POLE OR STANCHION MOUNTED LIGHTING FIXTURE.
	TWO (2) POLE OR STANCHION MOUNTED LIGHTING FIXTURES
	POLE MOUNTED FIXTURE WITH GF RECEPTACLE
	EXIT SIGN WALL MOUNTED (SINGLE FACE WITH INDICATING ARROWS) WITH BATTERY PACK ARROW INDICATES DIRECTION OF EXIT DOOR

	10'-0" AFF
	I-2
	GF/SS
	SINGLE POLE SWITCH - LOWER CASE LETTER DENOTES SWITCHING.
	TWO POLE SWITCH
	THREE-WAY SWITCH
	FOUR-WAY SWITCH
	BRANCH CIRCUIT HOME RUN TO PANELBOARD LETTERS AND NUMERALS INDICATE PANEL AND CIRCUIT NUMBER. AS A MINIMUM, ALL WIRING SHALL BE #12 AWG IN 3/4" CONDUIT. #10 AWG WIRE SHALL BE USED FOR RUNS BETWEEN PANEL AND FIRST LIGHTING FIXTURE OR RECEPTACLE EXCEEDING 50 FEET, UNLESS OTHERWISE NOTED ON DRAWING.
	LETTERS AND NUMBERS INDICATE PANEL AND CIRCUIT NUMBER (LP1-2). CROSS LINES INDICATE NUMBER OF CONDUCTORS. HALF HASH MARKS INDICATES NEUTRAL. NUMBER (10) DENOTES WIRE SIZE WHEN NOT #12 AWG. CONTINUE CONDUIT AND WIRE RUN FROM BOX TO DEVICE IN ROOM OR AREA AS NOTED BY BRANCH CIRCUIT NUMBER. #10 AWG WIRING SHALL BE USED FOR RUNS BETWEEN PANEL AND FIRST LIGHTING FIXTURE OR RECEPTACLE EXCEEDING 50 FEET, UNLESS OTHERWISE NOTED ON DRAWING.
	INDICATES GROUND CONDUCTOR
	INDICATES HOMERUN AND CONDUIT TAG
	LIGHTNING AIR TERMINAL

CONTROL DIAGRAM

	GROUND TEST POINT
	GROUND ROD
	GROUND GRID CABLE CONNECTION
	GROUND
	DEVICE LOCATED IN FIELD AT OR NEAR MOTOR
	DEVICE LOCATED IN CONTROL PANEL
	INDICATING LIGHT, PT-DENOTES PUSH TO TEST TYPE. ABBREVIATION INDICATES LENS COLOR
	SWITCH - TOGGLE OPEN
	MAINTAINED CONTACT PUSH BUTTON NORMALLY OPEN
	MAINTAINED CONTACT PUSH BUTTON NORMALLY CLOSED
	SWITCH - TEMPERATURE NORMALLY CLOSED. OPENS ON RISING TEMPERATURE
	SWITCH - TEMPERATURE NORMALLY OPEN. CLOSURES ON RISING TEMPERATURE
	SWITCH - LIMIT NORMALLY OPEN
	NORMALLY OPEN CONTACT, NUMBER INDICATES RELAY.
	NORMALLY CLOSED CONTACT
	THERMALLY ACTUATED MOTOR OVERLOAD RELAY, LATCHES CLOSED ON OVERLOAD
	THERMALLY ACTUATED MOTOR OVERLOAD RELAY, LATCHES OPEN ON OVERLOAD

	NORMALLY OPENED CONTACT - TIMED CLOSED TIME DELAY AFTER COIL ENERGIZED
	NORMALLY CLOSED CONTACT - TIMED OPEN TIME DELAY AFTER COIL ENERGIZED
	MOTOR STARTER CONTACTOR COIL COIL DESIGNATION: M-COIL
	CONTROL RELAY COIL DESIGNATION: CR-CONTROL RELAY MX-AUXILIARY RELAY TR-TIMING RELAY AR-ALARM RELAY RR-READY RELAY
	SELECTOR SWITCH, 2 POSITION MAINTAINED CONTACT (O X) DENOTES CONTACT BLOCK CONFIGURATION X INDICATES CONTACT CLOSED, O DENOTES CONTACT OPEN.
	SELECTOR SWITCH, 3 POSITION MAINTAINED CONTACT
	ELECTRIC SPACE HEATER ELEMENT
	ELAPSED TIME METER
	MANUAL SPEED CONTROL

FIRE ALARM SYSTEM

	FIRE ALARM CONTROL PANEL
	HORN
	MANUAL PULL STATION
	SMOKE DETECTOR, MULTISENSOR

ABBREVIATIONS

A	AMPERES	LV	LOW VOLTAGE
AC	ALTERNATING CURRENT	mA	MILLIAMPERE
AMB	AMBER	M	MOTOR
BKR	BREAKER	MCC	MOTOR CONTROL CENTER
BLU	BLUE	MDP	MAIN DISTRIBUTION PANEL
C, CND	CONDUIT	MFR	MANUFACTURER
CA	CONDUIT, ANALOG	MIN	MINIMUM
CB	CIRCUIT BREAKER	MTG	MOUNTING
CBV	CABLE BY VENDOR, INSTALLED BY CONTRACTOR	MV	MEDIUM VOLTAGE
CLG	CEILING	N/A	NOT APPLICABLE
CTRL	CONTROL	NC	NORMALLY CLOSED
CP	CONTROL PANEL	NO	NORMALLY OPEN
CPB	CONTROL PULL BOX (-X DISCRETE, -XA ANALOG)	NEC	NATIONAL ELECTRIC CODE
CS	CONTROL STATION	NTS	NOT TO SCALE
DC	DIRECT CURRENT	OL	OVERLOAD RELAY
DWG	DRAWING	PB	PULL BOX
EC	EMPTY CONDUIT	PLC	PROGRAMMABLE LOGIC CONTROLLER
EHH	ELECTRICAL HANDHOLE	PMS	PAD MOUNTED SWITCH, 5KV TYP. PANEL
EL, ELEV	ELEVATION	PNL	PANEL
EMH	ELECTRICAL MANHOLE	PRI	PRIMARY
EMT	ELECTRICAL METALLIC TUBING	PS	PRESSURE SWITCH
EXIST	EXISTING	PT	POTENTIAL TRANSFORMER
FDR	FEEDEE	PVC	POLYVINYL CHLORIDE
FIXT	FIXTURE	RECP	RECEPTACLE
FS	FLOW SWITCH	RGS	RIGID GALVANIZED STEEL
FT	FEET OR FOOT	REQ'D	REQUIRED
FUT	FUTURE	SEC	SECONDARY
FVNR	FULL VOLTAGE NON-REVERSING	SP	SPARE
GALV	GALVANIZED	SPD	SURGE PROTECTION DEVICE
GEO	GROUNDING ELECTRODE CONDUCTOR	SS, SST	STAINLESS STEEL
G, GND	GROUND	SWBD	SWITCHBOARD
GF, GFI	GROUND FAULT INTERRUPTER	SWGR	SWITCHGEAR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TEMP	TEMPERATURE
GRN	GREEN	TEW	THERMOCOUPLE EXTENSION WIRE
HH	HAND HOLE	TS	TEMPERATURE SWITCH
HOA	HAND/OFF/AUTO	TSP	TWISTED SHIELDED PAIR
HOR	HAND/OFF/REMOTE	TYP	TYPICAL
HTR	HEATER	UG	UNDERGROUND
IN, "	INCHES	UNON	UNLESS OTHERWISE NOTED
JB	JUNCTION BOX	UPS	UNINTERRUPTIBLE POWER SUPPLY
KAIC	THOUSAND AMPERES INTERRUPTING CURRENT	V	VOLTS
KCMIL	THOUSAND CIRCULAR MILS	VAC	VOLTS ALTERNATING CURRENT
KVA	THOUSAND VOLT AMPERES	VFD	VARIABLE FREQUENCY DRIVE
KW	KILOWATTS	WHI	WHITE
LA	LIGHTNING ARRESTOR	WP	WEATHERPROOF
LCP	LOCAL CONTROL PANEL	XFMR	TRANSFORMER
LS	LEVEL SWITCH	XP	EXPLOSION PROOF
LTG	LIGHTING		

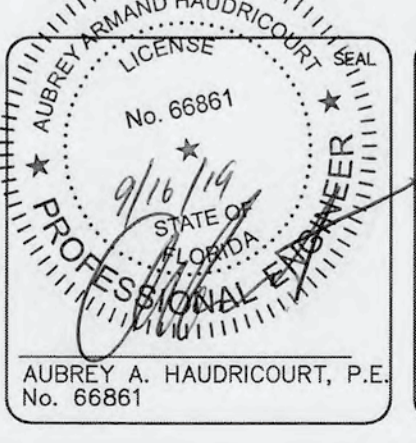
- GENERAL NOTES:**
- THE SYMBOLS AND ABBREVIATIONS LIST ON THIS SHEET IS A COMPREHENSIVE STANDARD GUIDE INTENDED FOR GENERAL USE ON ALL PROJECTS. THEREFORE NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY.
 - THE CONTRACTOR SHALL READ AND UNDERSTAND THE ENTIRE SET OF CONSTRUCTION DOCUMENTS. THIS INCLUDES BUT IS NOT LIMITED TO THE PLANS AND SPECIFICATIONS FOR ALL DISCIPLINES. THIS WILL ENSURE THAT HE/SHE UNDERSTANDS THE FULL SCOPE OF WORK AND IS ABLE TO CONVEY THE REQUIRED MATERIALS AND METHODS OF INSTALLATION TO HIS ESTIMATORS, SUPPLIERS AND INSTALLERS.
 - THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS.
 - PROVIDE MEANS TO FURNISH AND INSTALL.
 - COORDINATE ANY AND ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION IN ORDER TO AVOID CONFLICTS DURING CONSTRUCTION.
 - THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. DO NOT SCALE FROM THESE DRAWINGS.
 - WHERE JOB CONDITIONS REQUIRE CHANGES FROM THE CONTRACT DOCUMENTS THAT DO NOT CHANGE THE SCOPE OF INSTALLATION OR NATURE OF THE WORK REQUIRED, THE CONTRACTOR SHALL MAKE SUCH CHANGES WITHOUT ANY ADDITIONAL COST TO THE OWNER. NO OTHER CHANGES MAY BE MADE WITHOUT WRITTEN CONSENT FROM THE ENGINEER AND OWNER.
 - ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ENFORCED EDITION OF THE NATIONAL ELECTRIC CODE, NATIONAL ELECTRIC SAFETY CODE, LIFE SAFETY CODE, FLORIDA BUILDING CODE AND ALL LOCAL AND STATE CODES AND REGULATIONS. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
 - MOUNTING HEIGHTS INDICATED ARE TO THE CENTER OF THE DEVICE U.O.N.
 - ALL CIRCUIT BREAKERS SHALL BE 100% RATED.
 - ALL CABLE AND POWER CIRCUIT TERMINATIONS SHALL BE 75°C RATED.

LINE WEIGHT DESIGNATIONS

	EXISTING ABOVE GROUND
	EXISTING UNDER GROUND
	NEW ABOVE GROUND
	NEW UNDER GROUND
	FUTURE
	DEMO

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**SWRF
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**ELECTRICAL NOTES,
 ABBREVIATIONS AND LEGEND**

DATE: SEPTEMBER, 2019	SCALE: HORIZONTAL: NA	DRAWN: LCB	DESIGNED: MAH	CHECKED: JAG/ JV	PROJ. MGR.: TP	DRAWING NUMBER: E-01
STATUS: ISSUED FOR BID						REVISION:



PROPOSED RECHARGE WELL PUMP STATION, SEE SHEET E-09.

CHEMICAL AREA, SEE SHEET E-11 FOR DEMO AND MODIFICATIONS.

CCC BASIN MODIFICATIONS, SEE SHEET E-10.

LV DUCTBANKS, SEE SHEET E-07 FOR DETAILS.

EXISTING OVERHEAD CABLE TRAY, SEE NOTE 3 ON SHEET E-02.

MV-JB-209, SEE DETAIL SHEET E-04
NORTH BLOWER BUILDING MODIFICATIONS, SEE SHEET E-11.

MV-HH-208
PMS-5A, SEE NOTE 2
PMS-5B, SEE NOTE 2

EXISTING UNDERGROUND LV DUCTBANK AND PULL BOXES TO REMAIN.

NEW AND EXISTING CABLE TRAY, SEE SHEET E-15 FOR DETAILS.

MAIN ELECTRICAL ROOM, SEE SHEET E-08.

EXISTING MV SWITCHGEAR

OVER HEAD CONDUITS

EXISTING CONTROL CONSOLE

MV-JB-200 (TERMINATE SPARES)

MV-HH-205

MV-HH-201

EXISTING MV DUCTBANK, SEE NOTE 1, SHEET E-02

MV-HH-204, INTERCEPT EXISTING SPARE CONDUITS TO PMS-3A & PMS-3B. PULL ALL NEW WIRE TO SWITCHES.

EXISTING OVERHEAD CABLE TRAY, APPROXIMATELY 200'. SEE NOTE 3 ON SHEET E-02.

SOUTH BLOWER BUILDING MODIFICATIONS, SEE SHEET E-05

PMS-4A
PMS-4B

EXISTING FIBER DEADEND

MV-HH-202

MV-HH-203

PULL NEW WIRE IN EXISTING MV DUCTBANK FROM PMS-3A,3B TO PMS-4A,4B

EXISTING COMMUNICATION DUCTBANK

C-HH-2
LV-HH-2

OLD HEADWORKS BUILDING

LV-HH-1
C-HH-1

ANOXIC BASIN MODIFICATIONS, SEE SHEET E-17.

NEW HEADWORKS BUILDING

MEDIUM VOLTAGE SITE PLAN

SCALE: 1" = 30'-0"

SCALE: 1" = 30'

NOTES:

- LOCATION OF PROPOSED DUCTBANK AND ELECTRICAL MANHOLES ARE APPROXIMATE. CONTRACTOR SHALL PROVIDE SURVEYED LAYOUT DRAWING W/ PROPOSED ROUTE IDENTIFYING POTENTIAL CONFLICT RESOLUTIONS PRIOR TO STARTING ELECTRICAL SITE WORK.
- INSTALL (2) NEW MIN. 12" LONG, 4" TRADE SIZE CONDUIT STUB-OUTS IN PMS-5A AND PMS-5B FOR FUTURE UNDERGROUND CONDUIT DUCTBANK CONNECTION, AS SHOWN ON SHEET E-02. CAP AND SEAL ALL UNUSED CONDUIT PENETRATIONS.
- MEDIUM VOLTAGE CONDUITS SHALL ENTER THE NORTH BLOWER BUILDING APPROXIMATELY 9' AFG.
- CUT AND CAP EXISTING CONDUITS FOR MV FEEDERS BELOW GRADE. REMOVE EXISTING WIRING TO PMS-3A & PMS-4A IN ITS ENTIRETY
- RE-LABEL EXISTING SUBSTATION MV SWITCHES AND TRANSFORMERS 3B AND 4A AS SHOWN SHEET E-02. MODIFY EXISTING LABELS FOR ALL OTHER EQUIPMENT CONNECTED TO SUBSTATION 3B AND 4A AS REQUIRED TO REFLECT NEW EQUIPMENT DESIGNATIONS.
- CONTRACTOR TO PROVIDE SHUTDOWN PLAN FOR EACH MAJOR SHUTDOWN 72 HOURS BEFORE SCHEDULED SHUTDOWN. PLAN TO BE REVIEWED AND ACCEPTED BY ENGINEER AND PLANT PERSONNEL.

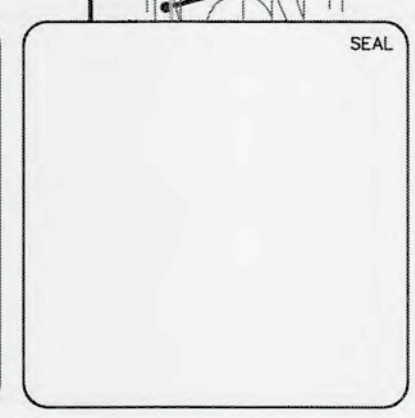
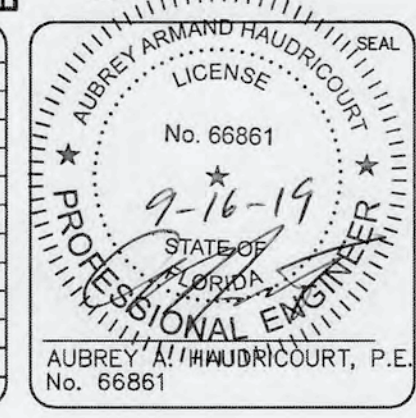
SHUTDOWNS:

COORDINATE WITH PLANT OPERATIONS TO CLOSE TIE BREAKERS THROUGH-OUT PLANT TO ENERGIZE SWITCHGEAR AND MCC BUS, SCHEDULED AT A TIME THAT PROVIDES THE LEAST IMPACT TO PLANT OPERATIONS. PROVIDE ANY TEMPORARY POWER NEEDED TO KEEP CRITICAL LOADS ENERGIZED THAT ARE IDENTIFIED BY COUNTY STAFF.

- MAIN SWITCHGEAR: RELAY AND METER MODIFICATIONS:
 - ONE HALF OF MV-SWGR OUTAGE AT A TIME. ASSIST SCHNEIDER ELECTRIC FOR METERING AND RELAY MODIFICATIONS TO MV-SWGR. SHUTDOWNS SHALL BE
- NORTH/SOUTH BLOWER "B" BUS (MAX 4 HOURS)
 - DISCONNECT NORTH AND SOUTH ENDS OF FEEDER FROM SUBSTATION 6 TO NORTH BLOWER BUILDING MCLU-1 BUS B MAIN BREAKER. RECONNECT CRITICAL LOADS ON MCC-B2 AND MCC-B4
- NORTH/SOUTH BLOWER "A" BUS (MAX 4 HOURS)
 - DISCONNECT NORTH AND SOUTH ENDS OF FEEDER FROM SUBSTATION 5 TO NORTH BLOWER BUILDING MCLU-1 BUS A MAIN BREAKER. RECONNECT CRITICAL LOADS ON MCC-1, MCC-B1 AND MCC-B3.
- CABLE TERMINATIONS (POSSIBLE SERVICE DISRUPTION) (MAX 2 DAYS)
 - TERMINATE CABLE FOR P002 AT PMS-3B.
 - DEMO EXISTING CABLE BETWEEN PMS-3B AND PMS-4B.
- CABLE TERMINATIONS (POSSIBLE SERVICE DISRUPTION) (MAX 2 DAYS)
 - TERMINATE CABLE FOR P001 AT PMS-3A.
 - DEMO EXISTING CABLE BETWEEN PMS-3A AND PMS-4A.

S:\1024 - Manatee Co\0717\03-Drawing\ELECTRICAL\E-03-10240011 - MV SITE PLAN.dwg, 8/16/2019 3:22:14 PM, Aubrey Haudricourt

REVNO.	DESCRIPTIONS	DATE

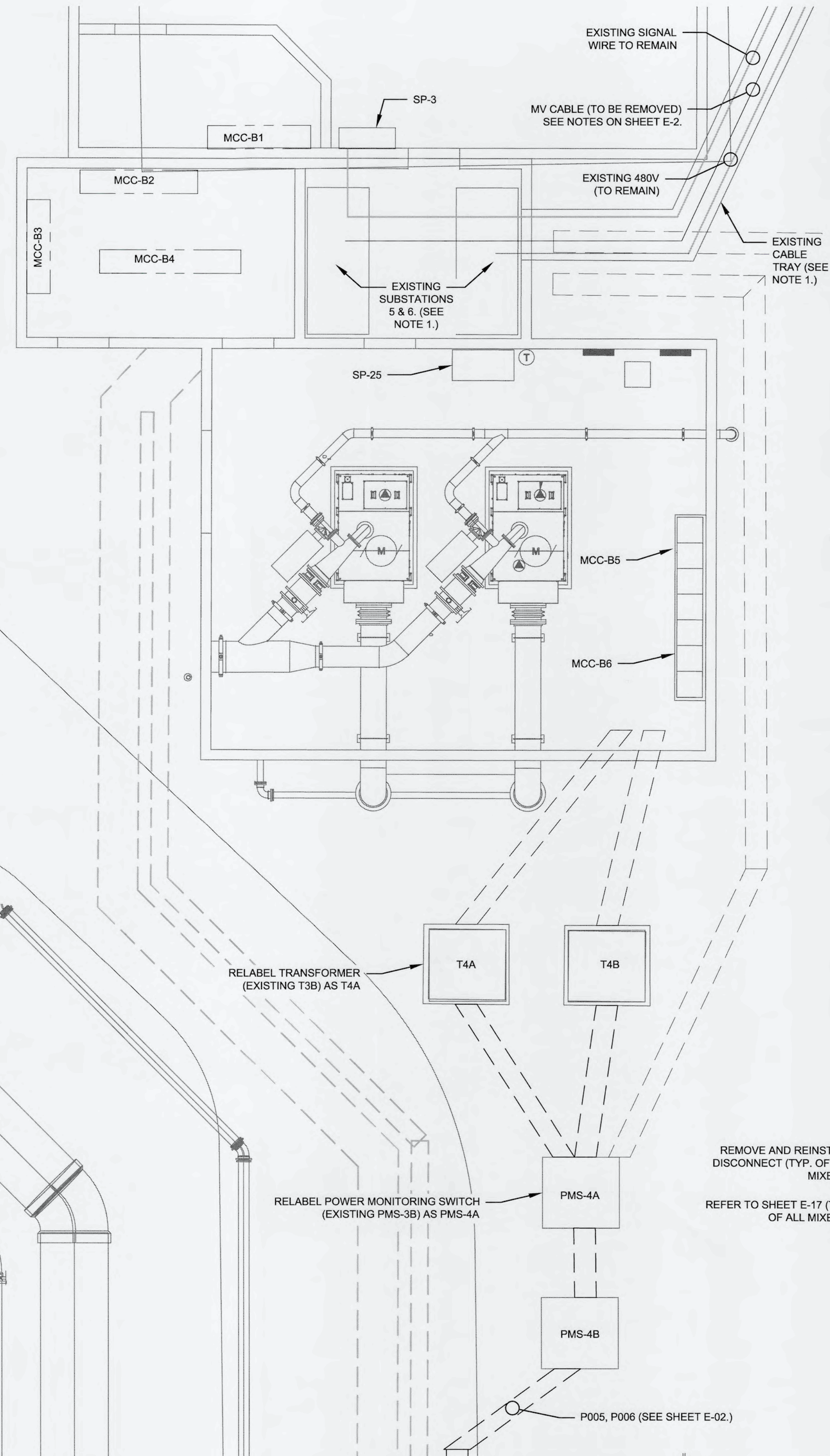


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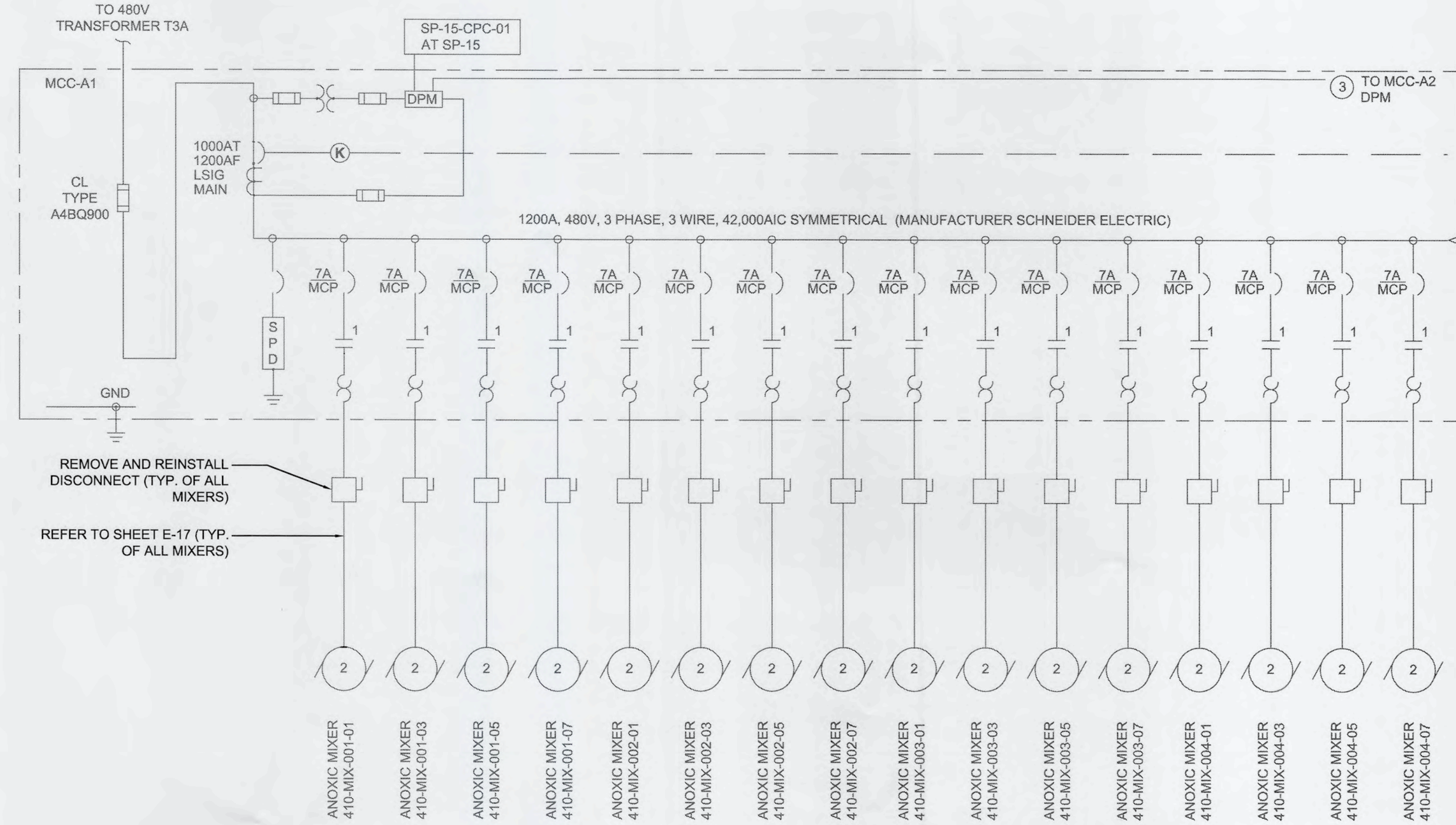
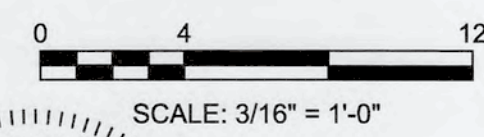


**SWRF
 CCC REHAB AND
 RECHARGE WELL PS PROJECT**
**MEDIUM VOLTAGE SITE
 PLAN**

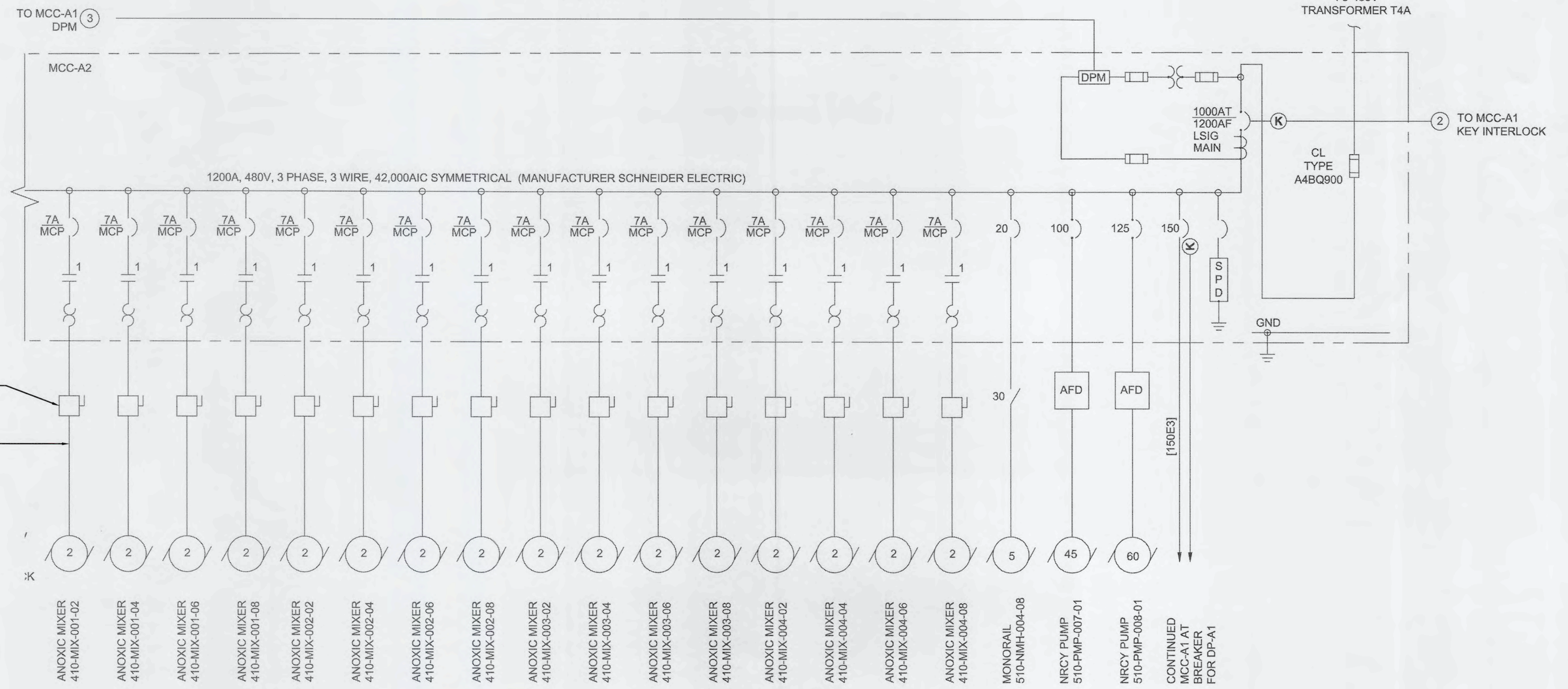
DATE: SEPTEMBER, 2019	SCALE: HORIZONTAL: 1" = 30'-0"	DRAWING NUMBER: E-03
MCE PROJ. # 1024-0171	VERTICAL: NA	REVISION: ISSUED FOR BID
DRAWN: LLS	DESIGNED: AAH	CHECKED: JAG/JV
PROJ. MGR. TP	STATUS: ISSUED FOR BID	REVISION: ISSUED FOR BID



PARTIAL SITE PLAN SOUTH BLOWER BLDG
SCALE: 3/16" = 1'-0"



ANOXIC MCC-A1 SINGLE LINE
SCALE: NTS

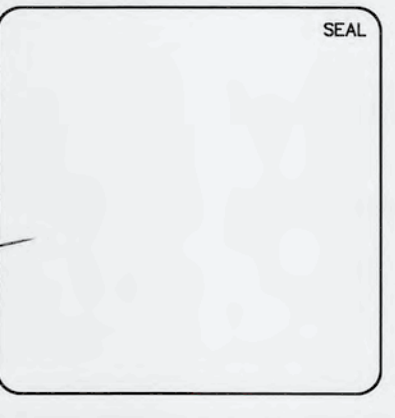
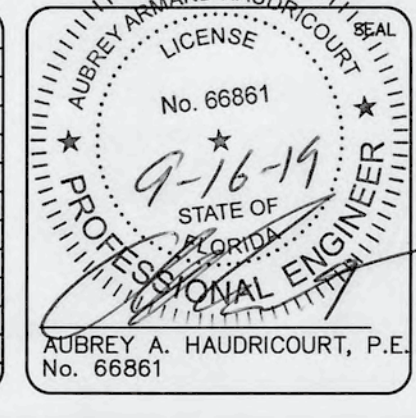


ANOXIC MCC-A2 SINGLE LINE
SCALE: NTS

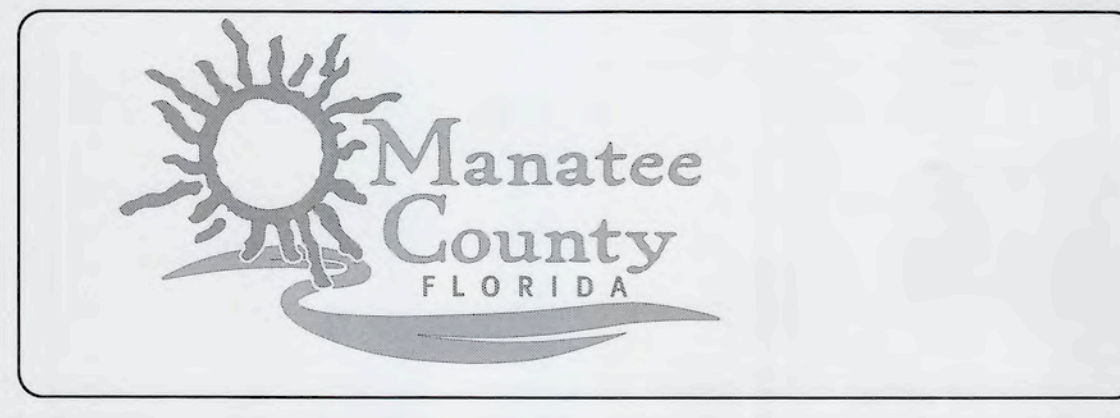
- NOTES:**
- DISCONNECT MV FEEDERS BETWEEN SUBSTATIONS 5, 6 AND NORTH BLOWER BUILDING MV MCC. REMOVE EXISTING MV CABLE FROM CABLE TRAY. COORDINATE ALL SHUTDOWNS WITH COUNTY.
 - SEE NOTE 3 ON SHEET E-02 FOR DETAILS.

S:\1024 - Manatee County\SWRF-Recharge\ELECTRICAL\E-05-1024071 - SOUTH BLOWER BUILDING PLAN.dwg, 9/17/2019 4:46:20 PM, Lucinda Voth

REV. NO.	DESCRIPTION	DATE



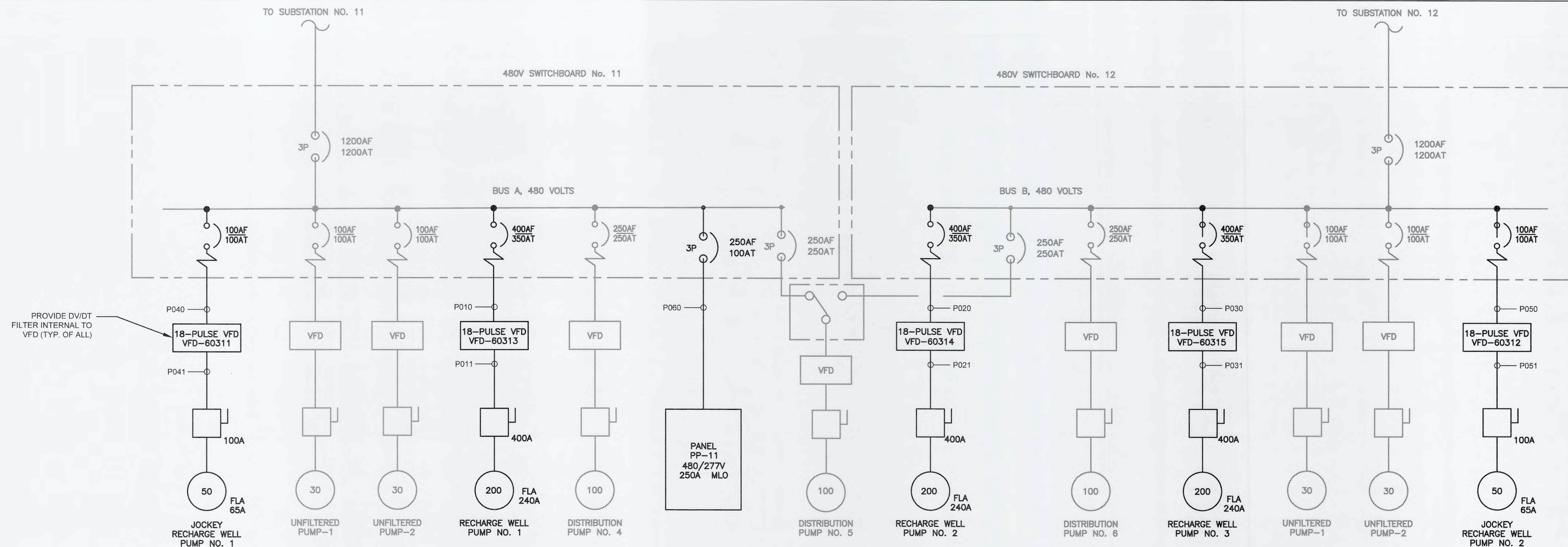
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**SWRF
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**SOUTH BLOWER BUILDING ELECTRICAL
PLAN AND ANOXIC SINGLE LINES**

DATE: SEPTEMBER, 2019	SCALE: HORIZONTAL: AS SHOWN VERTICAL: NA
MCE PROJ. # 1024-0171	DRAWN: ILLS
DESIGNED: AAH	CHECKED: JAG/JV
PROJ. MGR. TP	STATUS: ISSUED FOR BID

DRAWING NUMBER: **E-05**
REVISION:



SINGLE LINE DIAGRAM:
SCALE: NTS

SWITCHBOARD NO. 11 LOAD TABLE				
EQUIPMENT	HP/KVA	QUANTITY	COMBINED FLA	REMARKS
JOCKEY RECHARGE WELL PUMP NO. 1	50	1	65	PROPOSED
UNFILTERED PUMPS	30	2	80	EXISTING
RECHARGE WELL PUMP NO. 1	200	1	240	PROPOSED
DISTRIBUTION PUMPS	100	2	248	EXISTING
NEW PANEL PP-11	15	4	44	SEE PANEL SCHEDULE
25% OF LARGEST MOTOR	200	0.25	60	PER NEC 430.24
COMBINED TOTAL	310		677	EXISTING SUBSTATION 11 IS 750KVA

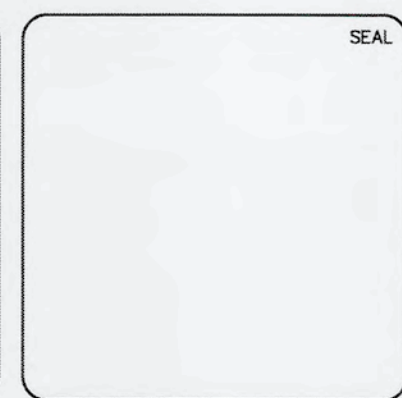
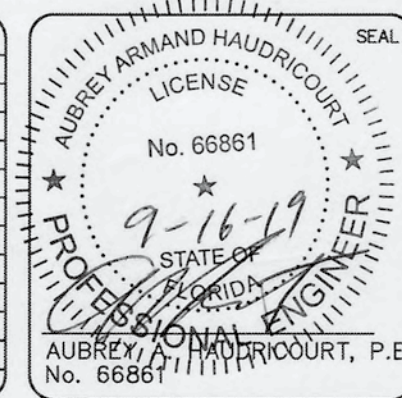
SWITCHBOARD NO. 12 LOAD TABLE				
EQUIPMENT	HP/KVA	QUANTITY	COMBINED FLA	REMARKS
JOCKEY RECHARGE WELL PUMP NO. 2	50	1	96	PROPOSED
UNFILTERED PUMPS	30	2	80	EXISTING
DISTRIBUTION PUMPS	100	1	124	EXISTING
RECHARGE WELL PUMPS NO. 2 & 3	200	2	480	PROPOSED
25% OF LARGEST MOTOR	200	0.25	60	PER NEC 430.24
COMBINED TOTAL	210		780	EXISTING SUBSTATION 12 IS 750KVA

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	KVA PER PHASE			POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	30	CCC MIXER NO. 1 STARTER/CONTROL PANEL LCP-MX60111	7.5	9.0	3	5.0	5.0	5.0	3	9.0	7.5	CCC MIXER NO. 2 STARTER/CONTROL PANEL LCP-MX60121	30	2
7	30	CCC MIXER NO. 3 STARTER/CONTROL PANEL LCP-MX60131	7.5	9.0	3	5.0	5.0	5.0	3	9.0	7.5	CCC RECEPTACLES/STARTERS FOR PORTABLE DEWATERING PUMP	30	8
13	30	LAKE FILTER SAMPLE PUMP STARTER/CONTROL PANEL LCP-60050	0.5	0.6	3	0.2	0.2	0.2	3			SPARE	30	14
19	20	SPARE			3	0.0	0.0	0.0	3			SPARE	20	20
25		SPACE			3	0.0	0.0	0.0	3			SPACE		26
31		SPACE			3	0.0	0.0	0.0	3			SPACE		32
37	40	SURGE PROTECTION DEVICE			3	0.0	0.0	0.0	3			SPACE		38
PANEL PP-11 LOCATION MANATEE COUNTY SWWRF BUILDING MAIN ELECTRICAL BUILDING NOTES: NEW NEMA 12, STAINLESS STEEL PANEL FED FROM SWGR NO. 11						TOTAL KVA 10.2 10.2 10.2			SERVICE CHARACTERISTICS VOLTS: 480Y/277 PHASE: 3 WIRE: 4 65,000 MIN AIC SYMM, FULLY RATED ASSEMBLY					
GRAND CONNECTED TOTAL KVA						30.5			250 A MLO A MCB					

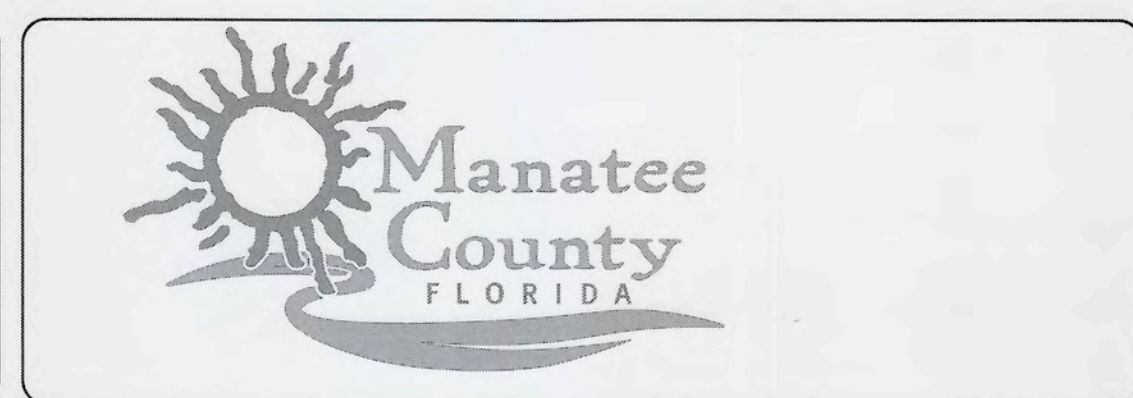
CCC SINGLE LINE DIAGRAMS AND PANEL SCHEDULES
SCALE: NTS

S:\1024 - Manatee Co\0171\00-Drawings\ELECTRICAL\06-1024071 - SINGLE LINE.dwg, 9/16/2019 3:07:32 PM, Adeley Houdoucourt

REV. NO.	DESCRIPTIONS	DATE



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**SWWRF
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**CCC SINGLE LINE DIAGRAMS
 AND PANEL SCHEDULES**

DATE: SEPTEMBER, 2019	SCALE: NA
MCE PROJ. # 1024-0171	HORIZONTAL: NA
DRAWN: LLS	VERTICAL: NA
DESIGNED: AAH	
CHECKED: JAG/MAC	
PROJ. MGR. TP	

DRAWING NUMBER: **E-06**
 STATUS: **ISSUED FOR BID**
 REVISION:



NORTH

NEW UPPER LEVEL
CABLE TRAY, SEE
NOTE 4.

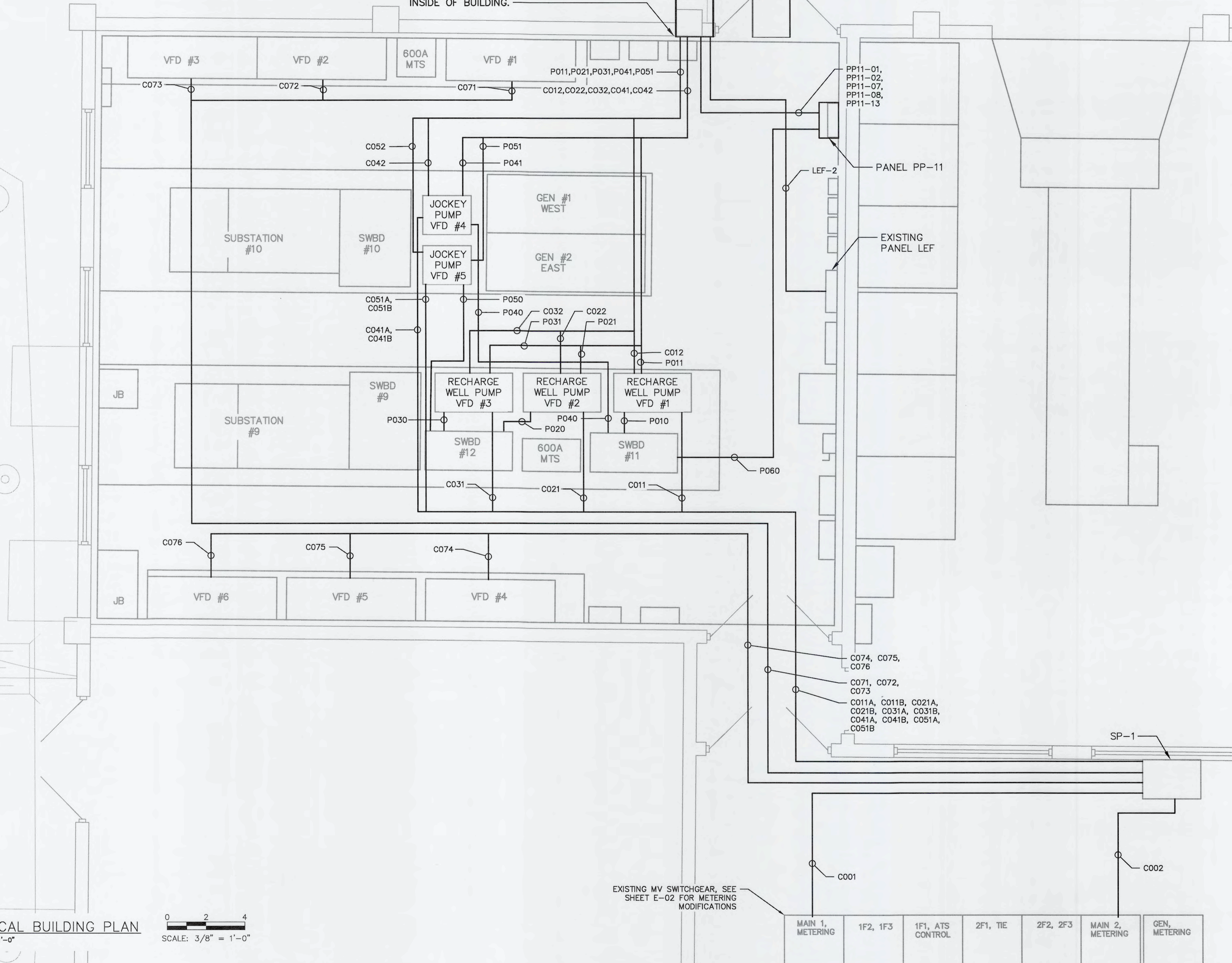
SEE SHEET E-07
FOR CONTINUATION

CUT AND PATCH CONCRETE WALL AND
INSTALL WATERPROOF FIRE STOP
MATERIAL AROUND TRAY AND WIRE. PAINT
TO MATCH. TRANSITION TO CONDUIT
INSIDE OF BUILDING.

EXISTING LOWER
LEVEL CABLE TRAY

NOTES:

1. CUT AND PATCH EXISTING CONCRETE AS REQUIRED FOR NEW UNDERGROUND CONDUIT DUCTBANK.
2. CONDUITS IN ELECTRICAL BUILDING SHALL BE ROUTED ABOVE DROP CEILING, PER NEC REQUIREMENTS.
3. SEE SHEET E-14 FOR RECHARGE WELL PUMP VARIABLE FREQUENCY DRIVE ELECTRICAL SCHEMATICS.
4. NEW CABLE TRAY FROM CONTACT CHAMBER SHALL BE MOUNTED ABOVE EXISTING TRAY WITH OFFSET ENTRY INTO ELECTRICAL BUILDING. SEE SHEET E-16 FOR CABLE TRAY DETAILS.

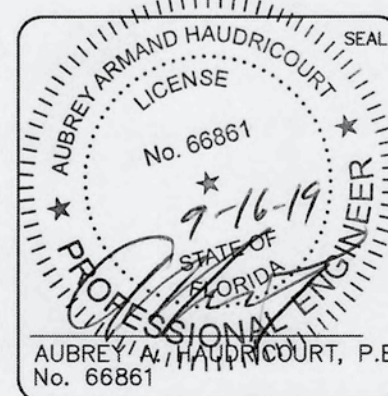


ELECTRICAL BUILDING PLAN
SCALE: 3/8" = 1'-0"

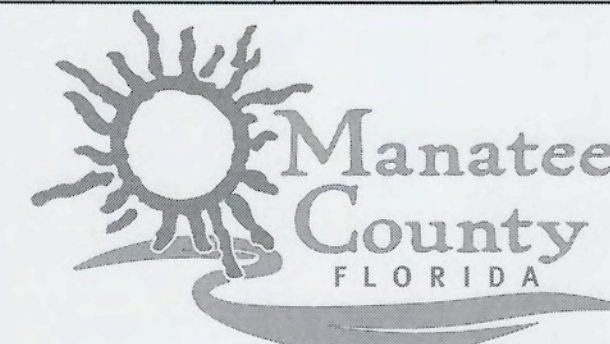
SCALE: 3/8" = 1'-0"

EXISTING MV SWITCHGEAR. SEE
SHEET E-02 FOR METERING
MODIFICATIONS

REV. NO.	DESCRIPTIONS	DATE



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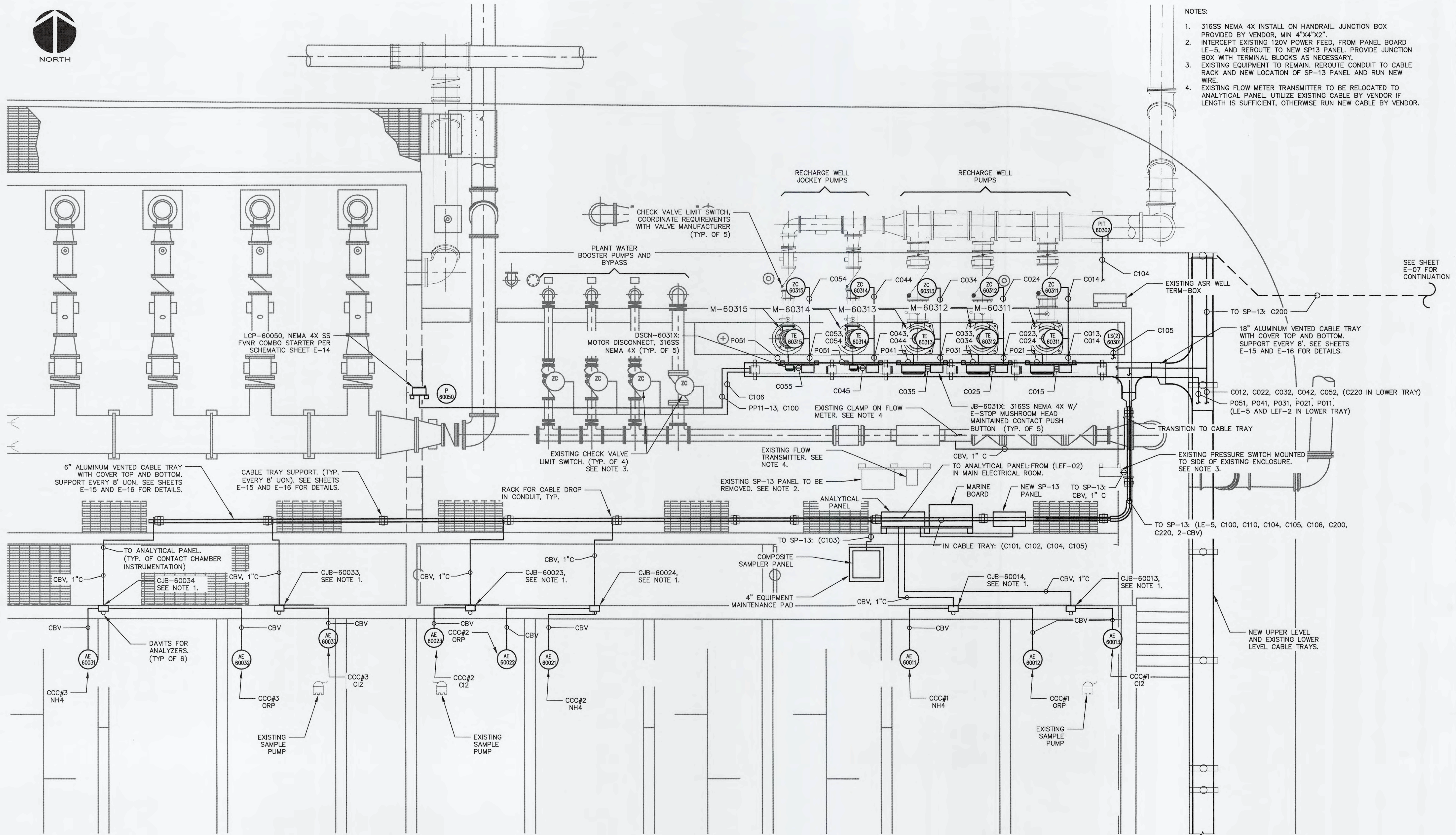
ELECTRICAL BUILDING PLAN

DATE: SEPTEMBER, 2019	SCALE: 3/8" = 1'-0"	DRAWING NUMBER: E-08
MCE PROJ. # 1024-0171	HORIZONTAL: 3/8" = 1'-0"	REVISION
DRAWN: LLS	VERTICAL: NA	
DESIGNED: AAH		
CHECKED: JAG/JV		
PROJ. MGR. TP		
STATUS: ISSUED FOR BID		

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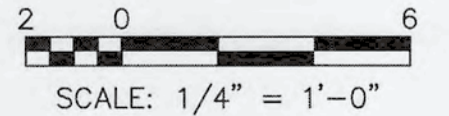


- NOTES:
1. 316SS NEMA 4X INSTALL ON HANDRAIL. JUNCTION BOX PROVIDED BY VENDOR, MIN 4"x4"x2".
 2. INTERCEPT EXISTING 120V POWER FEED, FROM PANEL BOARD LE-5, AND REROUTE TO NEW SP13 PANEL. PROVIDE JUNCTION BOX WITH TERMINAL BLOCKS AS NECESSARY.
 3. EXISTING EQUIPMENT TO REMAIN. REROUTE CONDUIT TO CABLE RACK AND NEW LOCATION OF SP-13 PANEL AND RUN NEW WIRE.
 4. EXISTING FLOW METER TRANSMITTER TO BE RELOCATED TO ANALYTICAL PANEL. UTILIZE EXISTING CABLE BY VENDOR IF LENGTH IS SUFFICIENT, OTHERWISE RUN NEW CABLE BY VENDOR.



RECHARGE WELL PUMP STATION ELECTRICAL PLAN

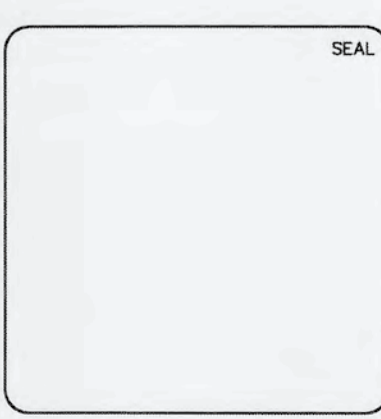
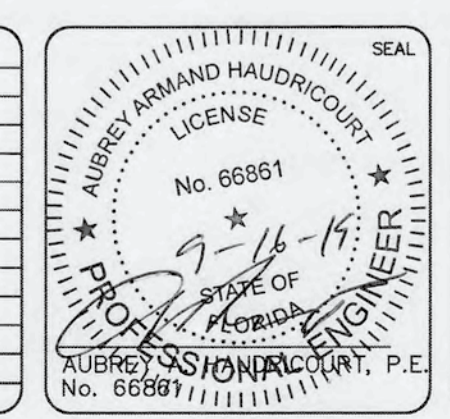
SCALE: 1/4" = 1'-0"



SEE SHEET E-07 FOR CONTINUATION

S:\2024 - Manatee County\Drawings\ELECTRICAL\09-10240171 - DETAIL-AREA1.dwg, 9/16/2019, 3:31:20 PM, Aubrey Headcount

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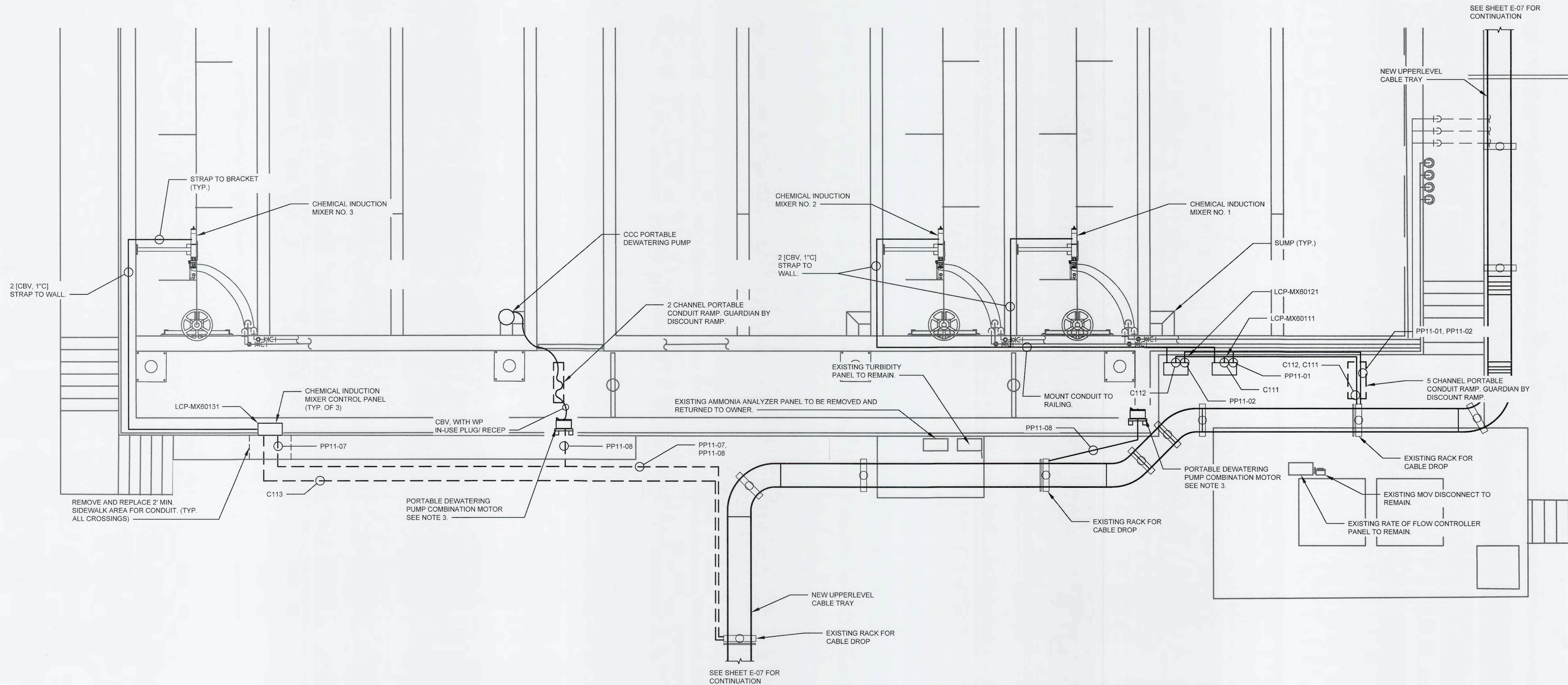
**RECHARGE WELL PUMP STATION
ELECTRICAL PLAN**

DATE: SEPTEMBER, 2019	SCALE: HORIZONTAL: 1/4" = 1'-0" VERTICAL: NA	DRAWING NUMBER: E-09
MCE PROJ. # 1024-0171	DESIGNED: AAH	REVISION:
DRAWN: LLS	CHECKED: JAG/JV	ISSUED FOR BID
PROJ. MGR.: TP		

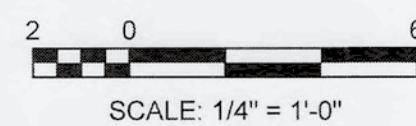


NOTES:

1. ROUTE NEW CONDUIT OVERHEAD UTILIZING EXISTING CABLE TRAY SUPPORT. CUT AND PATCH EXISTING CONCRETE AS REQUIRED FOR TRANSITION ABOVE GRADE.
2. SEE SHEET E-14 FOR CHEMICAL INDUCTION MIXER CONTROL PANEL ELECTRICAL SCHEMATICS.
3. PORTABLE DEWATERING PUMP COMBINATION MOTOR STARTER WITH START/STOP PUSH BUTTON AND RUN/STOP FAIL PILOT LIGHTS WITH RESET. 316SS NEMA 4X W/480V MELTRIC PLUG AND RECEPTACLE. CONTRACTOR TO CONNECT PLUG TO VENDOR CABLE.

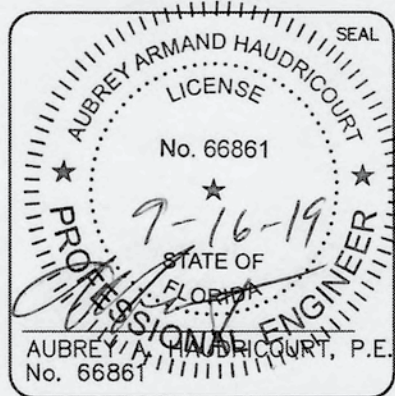


CHLORINE CONTACT CHAMBER ELECTRICAL PLAN
 SCALE: 1/4" = 1'-0"



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REV. NO.	DESCRIPTIONS	DATE



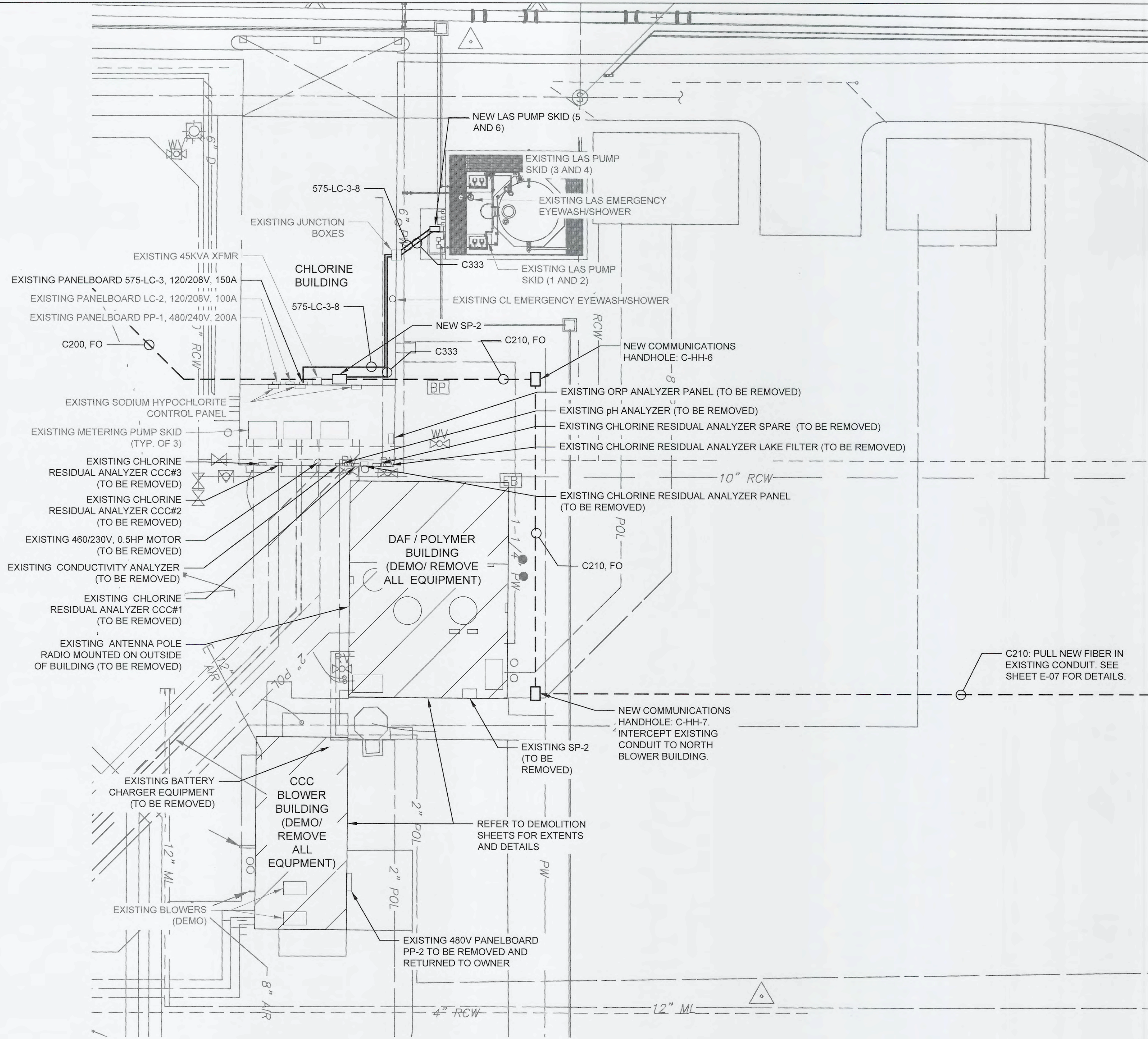
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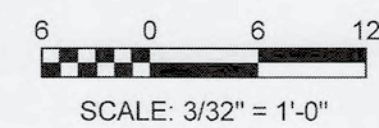
**CHLORINE CONTACT CHAMBER
 ELECTRICAL PLAN**

DATE: SEPTEMBER, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. # 1024-0171	HORIZONTAL: AS SHOWN	E-10
DRAWN: LLS	VERTICAL: NA	
DESIGNED: AAH		
CHECKED: JAG/JV		
PROJ. MGR: TP		
STATUS: ISSUED FOR BID		

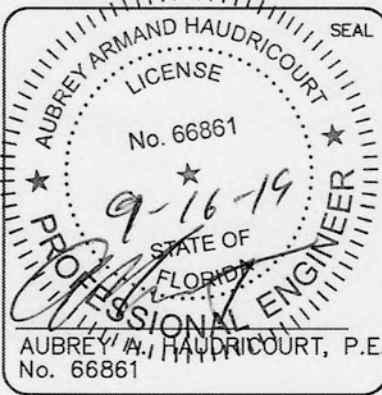


- NOTES:
- REFER TO INTERCONNECT SHEET E-13 FOR DEMO INSTRUMENTATION DEVICES. RETURN INSTRUMENTS TO OWNER.
 - INTERCEPT EXISTING CONDUIT, EXTEND AND REFULL ALL NEW FIBER FROM SOUTH BLOWER BUILDING TO NEW SP-2. INSTALL ADDITIONAL HAND HOLES AND PULL BOXES AS REQUIRED.
 - INTERCEPT AND EXTEND TO NEW SP-2 EXISTING CONTROL CONDUIT FOR CHLORINE METERING PUMPS, EFFLUENT ANALYZER CIRCUITS AND ANY OTHER REMAINING SIGNAL CONNECTIONS. PULL ALL NEW WIRE TO EXISTING INSTRUMENTATION. COORDINATE FINAL CONNECTIONS WITH CONTROL SYSTEM INTEGRATOR.
 - EXISTING ETHERNET RADIO TO BE RELOCATED TO NEW FREE STANDING MAST. COORDINATE MOUNTING LOCATION WITH COUNTY.
 - SEE DEMOLITION SHEETS FOR ADDITIONAL ELEVATIONS AND DETAILS.
 - EXISTING EQUIPMENT LISTED AS TO BE REMOVED SHALL BE RETURNED TO OWNER. IF OWNER DECIDES NOT TO KEEP ANY OF THE ITEMS LISTED FOR REMOVAL, THEN CONTRACTOR SHALL DISPOSE OF ALL SUCH ITEMS OFF SITE.

CHEMICAL BUILDING ELECTRICAL PLAN
SCALE: 3/32" = 1'-0"



REVNO.	DESCRIPTIONS	DATE



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 RECHARGE WELL PS PROJECT**
**CHEMICAL BUILDING ELECTRICAL
 PLAN**

DATE: SEPTEMBER, 2019	SCALE	DRAWING NUMBER
MCE PROJ. # 1024-0171	HORIZONTAL: AS SHOWN	E-11
DRAWN LLS	VERTICAL: NA	
DESIGNED AAH		
CHECKED JAG/JV		
PROJ. MGR. TP		REVISION
STATUS: ISSUED FOR BID		

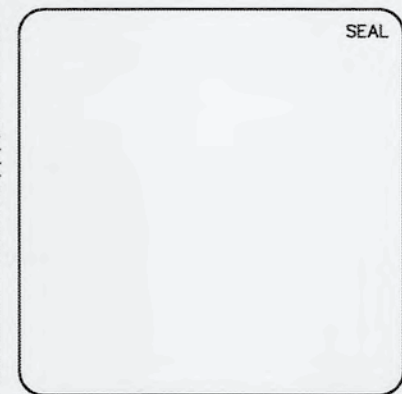
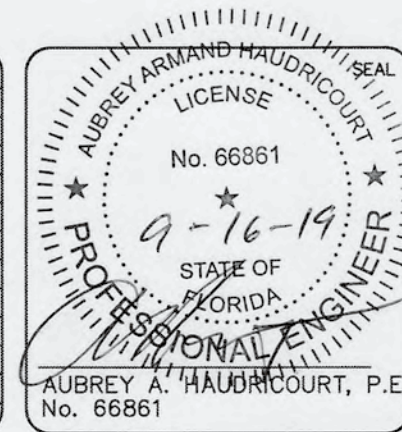
S:\1024 - Manatee County\1024-0171\Drawings\ELECTRICAL\E-11-10240171 - DETAIL-0803.dwg, 9/10/2019, 3:31:52 PM, Aubrey Haubricourt

ID	FROM	TO	SETS	WIRES	WIRE SIZE	EQUIPMENT GROUND	CONDUIT SIZE (MIN)	SPARE?	NOTES	DUCT BANK(S):
MAIN ELECTRICAL BUILDING										
P010	SWBD 11	VFD-60311	(1)	3#	350	3 G	3.0"C		RECHARGE WELL PUMP NO. 1	
P011	VFD-60311	M-60311	(1)	3#	350	3 G	4.0"C	(1)	SHIELDED VFD TRAY CABLE	
C011A	VFD-60311	SP-1	(1)	1#		CAT-6, SH	1.0"C		SHIELDED CAT-6 TRAY CABLE	
C011B	HS-60311	SP-13	(1)	2#	14	14 G	0.75"C		E-STOP	
C012	VFD-60311	HS-60311	(1)	2#	14	14 G	0.75"C	(1)	E-STOP	
C013	VFD-60311	M-60311	(1)	5-PAIR	2C#16 SH	16 G	3.0"C		RTDS: MOTOR WINDING (3) AND MOTOR BEARING (2)	
C014	VFD-60311	CV-60311	(1)	4#	14	14 G	0.75"C		CHECK VALVE OPEN/CLOSED STATUS	
C015	VFD-60311	DSCN-60311	(1)	2#	14	14 G	0.75"C		DISCONNECT STATUS	
P020	SWBD 12	VFD-60312	(1)	3#	350	3 G	3.0"C		RECHARGE WELL PUMP NO. 2	
P021	VFD-60312	M-60312	(1)	3#	350	3 G	4.0"C		SHIELDED VFD CABLE	
C021A	VFD-60312	SP-1	(1)	1#		CAT-6, SH	1.0"C		SHIELDED CAT-6 CABLE	
C021B	HS-60312	SP-13	(1)	2#	14	14 G	0.75"C		E-STOP	
C022	VFD-60312	HS-60312	(1)	2#	14	14 G	0.75"C		E-STOP	
C023	VFD-60312	M-60312	(1)	5-PAIR	2C#16 SH	16 G	3.0"C		RTDS: MOTOR WINDING (3) AND MOTOR BEARING (2)	
C024	VFD-60312	CV-60312	(1)	4#	14	14 G	0.75"C		CHECK VALVE OPEN/CLOSED STATUS	
C025	VFD-60312	DSCN-60312	(1)	2#	14	14 G	0.75"C		DISCONNECT STATUS	
P030	SWBD 12	VFD-60313	(1)	3#	350	3 G	3.0"C		RECHARGE WELL PUMP NO. 3	
P031	VFD-60313	M-60313	(1)	3#	350	3 G	4.0"C		SHIELDED VFD CABLE	
C031A	VFD-60313	SP-1	(1)	1#		CAT-6, SH	1.0"C		SHIELDED CAT-6 CABLE	
C031B	HS-60313	SP-13	(1)	2#	14	14 G	0.75"C		E-STOP	
C032	VFD-60313	HS-60313	(1)	2#	14	14 G	0.75"C		E-STOP	
C033	VFD-60313	M-60313	(1)	5-PAIR	2C#16 SH	16 G	3.0"C		RTDS: MOTOR WINDING (3) AND MOTOR BEARING (2)	
C034	VFD-60313	CV-60313	(1)	4#	14	14 G	0.75"C		CHECK VALVE OPEN/CLOSED STATUS	
C035	VFD-60313	DSCN-60313	(1)	2#	14	14 G	0.75"C		DISCONNECT STATUS	
P040	SWBD 12	VFD-60314	(1)	3#	4	8 G	1.5"C		JOCKEY RECHARGE WELL PUMP NO. 1	
P041	VFD-60314	M-60314	(1)	3#	4	8 G	2.0"C		SHIELDED VFD CABLE	
C041A	VFD-60314	SP-1	(1)	1#		CAT-6, SH	1.0"C		SHIELDED CAT-6 CABLE	
C041B	HS-60314	SP-13	(1)	2#	14	14 G	0.75"C		E-STOP	
C042	VFD-60314	HS-60314	(1)	2#	14	14 G	0.75"C		E-STOP	
C043	VFD-60314	M-60314	(1)	5-PAIR	2C#16 SH	16 G	3.0"C		RTDS: MOTOR WINDING (3) AND MOTOR BEARING (2)	
C044	VFD-60314	CV-60314	(1)	4#	14	14 G	0.75"C		CHECK VALVE OPEN/CLOSED STATUS	
C045	VFD-60314	DSCN-60314	(1)	2#	14	14 G	0.75"C		DISCONNECT STATUS	
P050	SWBD 11	VFD-60315	(1)	3#	4	8 G	2.0"C		JOCKEY RECHARGE WELL PUMP NO. 2	
P051	VFD-60315	M-60315	(1)	3#	4	8 G	2.0"C		SHIELDED VFD CABLE	
C051A	VFD-60315	SP-1	(1)	1#		CAT-6, SH	1.0"C		SHIELDED CAT-6 CABLE	
C051B	HS-60315	SP-13	(1)	2#	14	14 G	0.75"C		E-STOP	
C052	VFD-60315	HS-60315	(1)	2#	14	14 G	0.75"C		E-STOP	
C053	VFD-60315	M-60315	(1)	5-PAIR	2C#16 SH	16 G	3.0"C		RTDS: MOTOR WINDING (3) AND MOTOR BEARING (2)	
C054	VFD-60315	CV-60315	(1)	4#	14	14 G	0.75"C		CHECK VALVE OPEN/CLOSED STATUS	
C055	VFD-60315	DSCN-60315	(1)	2#	14	14 G	0.75"C		DISCONNECT STATUS	
P060	SWBD 11	PP-11	(1)	3#	250	4 G	3.0"C		NEW 480V POWER PANEL	
POWER & LIGHTING PANELS										
PP11-01	PP-11	LCP-MX60111	(1)	3#	10	10 G	0.75"C			
PP11-02	PP-11	LCP-MX60121	(1)	3#	10	10 G	0.75"C			
PP11-07	PP-11	LCP-MX60131	(1)	3#	10	10 G	0.75"C			
PP11-08	PP-11	CCC DEWATER RECEP	(2)	3#	10	10 G	0.75"C			
PP11-13	PP-11	LAKE FILTER SAMPLE PUMP	(1)	3#	12	12 G	0.75"C		2 RECEPTACLES AND FVNR STARTERS	
LEP-02	LEP	AP-60010	(1)	2#	10	10 G	0.75"C		CCC ANALYTICAL PANEL	
LEP-04	LEP	RECEPTACLE	(1)	2#	10	10 G	0.75"C		CONVENIENCE RECEPT AT CCC ANALYTICAL PANEL	
LEP-06	LEP	CS-60043	(1)	2#	10	10 G	0.75"C		CCC COMPOSITE SAMPLER	
MISC. CONTROL WIRING										
C111	SP-13	LCP-MX60111	(1)	8#	14	14 G	1.0"C			
C112	SP-13	LCP-MX60121	(1)	8#	14	14 G	1.0"C			
C113	SP-13	LCP-MX60131	(1)	8#	14	14 G	1.0"C			
C200	SP-13	SP-2	(1)	6-PAIR		FO	1.5"C	(1)	FIBER OPTIC CABLE	9C
C210	SP-2	SP-8	(1)	6-PAIR		FO	1.5"C	(1)	FIBER OPTIC CABLE	10C
C220	SP-1	SP-13	(1)	6-PAIR		FO	1.5"C	(1)	FIBER OPTIC CABLE	
C300	SP-2	CL RESIDUAL PANEL	(1)	7#	2C#16 SH	16 G	3.0"C			
C310	SP-2	ORP ANALYZER PANEL	(1)	4#	2C#16 SH	16 G	2.0"C			
C311	SP-2	ORP #5	(1)	1#	2C#16 SH	16 G	1.0"C			
C321	SP-2	NAOCL PUMP 1&2 CP	(1)	4#	2C#16 SH	16 G	2.0"C			
C322	SP-2	NAOCL PUMP 1&2 CP	(1)	20#	14	14 G	1.5"C			
C323	SP-2	NAOCL PUMP 3&4 CP	(1)	4#	2C#16 SH	16 G	2.0"C			
C324	SP-2	NAOCL PUMP 3&4 CP	(1)	20#	14	14 G	1.5"C			
C325	SP-2	NAOCL PUMP 5&6 CP	(1)	4#	2C#16 SH	16 G	2.0"C			
C326	SP-2	NAOCL PUMP 5&6 CP	(1)	16#	14	14 G	1.25"C			
C331	SP-2	AMN SULF PUMP 1&2 CP	(1)	3#	2C#16 SH	16 G	2.0"C			
C332	SP-2	AMN SULF PUMP 1&2 CP	(1)	16#	14	14 G	1.25"C			
C333	SP-2	AMN SULF PUMP 3&4 CP	(1)	4#	2C#16 SH	16 G	2.0"C			
C334	SP-2	AMN SULF PUMP 3&4 CP	(1)	16#	14	14 G	1.25"C			
C335	SP-2	AMN SULF PUMP 5&6 CP	(1)	4#	2C#16 SH	16 G	2.0"C		NEW AMMONIUM SULFATE PUMPS 5&6	
C336	SP-2	AMN SULF PUMP 5&6 CP	(1)	16#	14	14 G	1.25"C		NEW AMMONIUM SULFATE PUMPS 5&6	
C341	SP-2	BLDG EYEWASH/SHWR	(1)	2#	14	14 G	0.75"C			
C342	SP-2	AMN EYEWASH/SHWR	(1)	2#	14	14 G	0.75"C			
C351	SP-2	AMN SULF TANK LIT	(1)	1#	2C#16 SH	16 G	1.0"C			
C361	SP-2	CL TANK #1 LIT	(1)	1#	2C#16 SH	16 G	1.0"C			
C362	SP-2	CL TANK #2 LIT	(1)	1#	2C#16 SH	16 G	1.0"C			
C363	SP-2	CL TANK #3 LIT	(1)	1#	2C#16 SH	16 G	1.0"C			

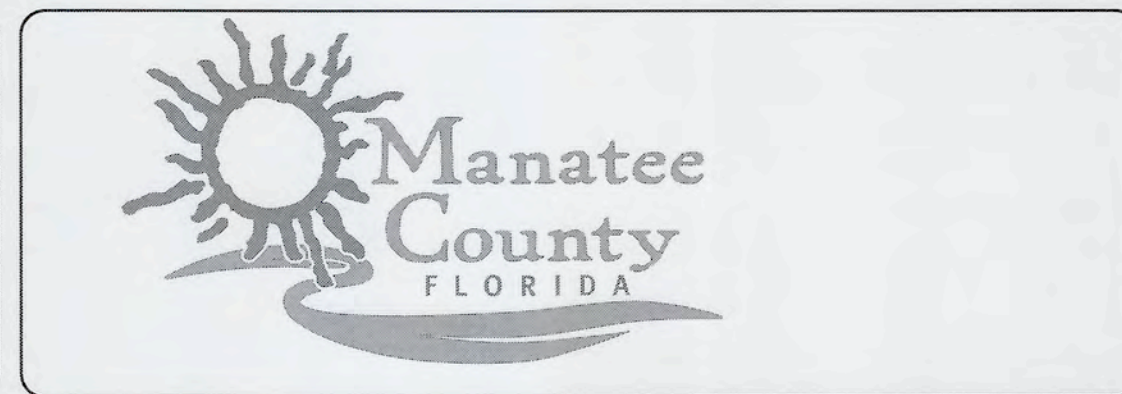
ID	FROM	TO	SETS	WIRES	WIRE SIZE	EQUIPMENT GROUND	CONDUIT SIZE (MIN)	SPARE?	NOTES	DUCT BANK(S):
C071	VFD#1	SP-1	(1)	1#		CAT-6, SH	1.0"C			
C072	VFD#2	SP-1	(1)	1#		CAT-6, SH	1.0"C			
C073	VFD#3	SP-1	(1)	1#		CAT-6, SH	1.0"C			
C074	VFD#4	SP-1	(1)	1#		CAT-6, SH	1.0"C			
C075	VFD#5	SP-1	(1)	1#		CAT-6, SH	1.0"C			
C076	VFD#6	SP-1	(1)	1#		CAT-6, SH	1.0"C			
C100	SP-13	LCP-60050	(1)	4#	14	14 G	0.75"C			
C101	SP-13	AP-60010	(1)	2#		CAT-6, SH	1.0"C			
C102	SP-13	AP-60010	(1)	4#	2C#16 SH	16 G	2.0"C			
C103	SP-13	CS-60043	(1)	1#	2C#16 SH	16 G	1.0"C			
C104	SP-13	PIT-60302	(1)	1#	2C#16 SH	16 G	1.0"C			
C105	SP-13	LS-60301	(1)	2#	14	14 G	0.75"C			
C106	SP-13	EXISTING ZC1-ZC4	(4)	2#	14	14 G	0.75"C			
ANOXIC BASIN CIRCUITS										
P4111	MCC-A1/A2	410-MIX-001-01,02	(1)	6#	12	12 G	1.0"C			EXISTING
P4112	MCC-A1/A2	410-MIX-001-03,04	(1)	6#	12	12 G	1.0"C			EXISTING
P4113	MCC-A1/A2	410-MIX-001-05,06	(1)	6#	12	12 G	1.0"C			EXISTING
P4114	MCC-A1/A2	410-MIX-001-07,08	(1)	6#	12	12 G	1.0"C			EXISTING
P4121	MCC-A1/A2	410-MIX-002-01,02	(1)	6#	12	12 G	1.0"C			EXISTING
P4122	MCC-A1/A2	410-MIX-002-03,04	(1)	6#	12	12 G	1.0"C			EXISTING
P4123	MCC-A1/A2	410-MIX-002-05,06	(1)	6#	12	12 G	1.0"C			EXISTING
P4124	MCC-A1/A2	410-MIX-002-07,08	(1)	6#	12	12 G	1.0"C			EXISTING
P4131	MCC-A1/A2	410-MIX-003-01,02	(1)	6#	12	12 G	1.0"C			EXISTING
P4132	MCC-A1/A2	410-MIX-003-03,04	(1)	6#	12	12 G	1.0"C			EXISTING
P4133	MCC-A1/A2	410-MIX-003-05,06	(1)	6#	12	12 G	1.0"C			EXISTING
P4134	MCC-A1/A2	410-MIX-003-07,08	(1)	6#	12	12 G	1.0"C			EXISTING
P4141	MCC-A1/A2	410-MIX-004-01,02	(1)	6#	12	12 G	1.0"C			EXISTING
P4142	MCC-A1/A2	410-MIX-004-03,04	(1)	6#	12	12 G	1.0"C			EXISTING
P4143	MCC-A1/A2	410-MIX-004-005,06	(1)	6#	12	12 G	1.0"C			EXISTING
P4144	MCC-A1/A2	410-MIX-004-007,08	(1)	6#	12	12 G	1.0"C			EXISTING
LE-5	PANELLE	SP-13	(1)	2#	10	10 G	0.75"C		EXTEND AND REUSE EXISTING CONDUIT	
LEF-2	PANEL LEF	CCC ANALYTICAL PANEL	(1)	2#	10	10 G	0.75"C			
575LC3-8	PANEL 575LC3	AMMONIUM SKID #3	(1)	2#	10	10 G	0.75"C			

WIRE AND CONDUIT SCHEDULE
SCALE: NTS

REV. NO.	DESCRIPTIONS	DATE



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**SWRF
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RECHARGE WELL PS PROJECT**

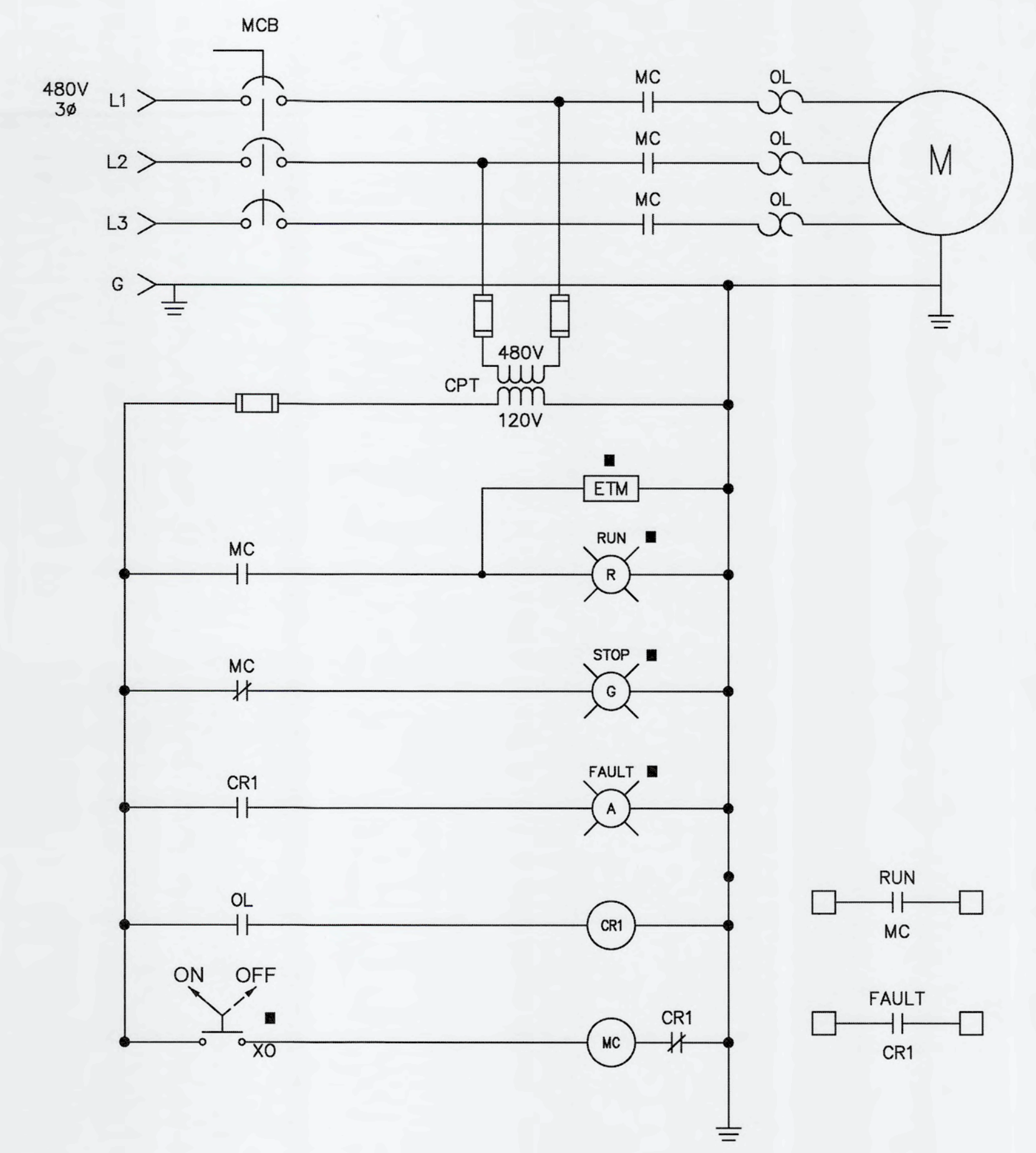
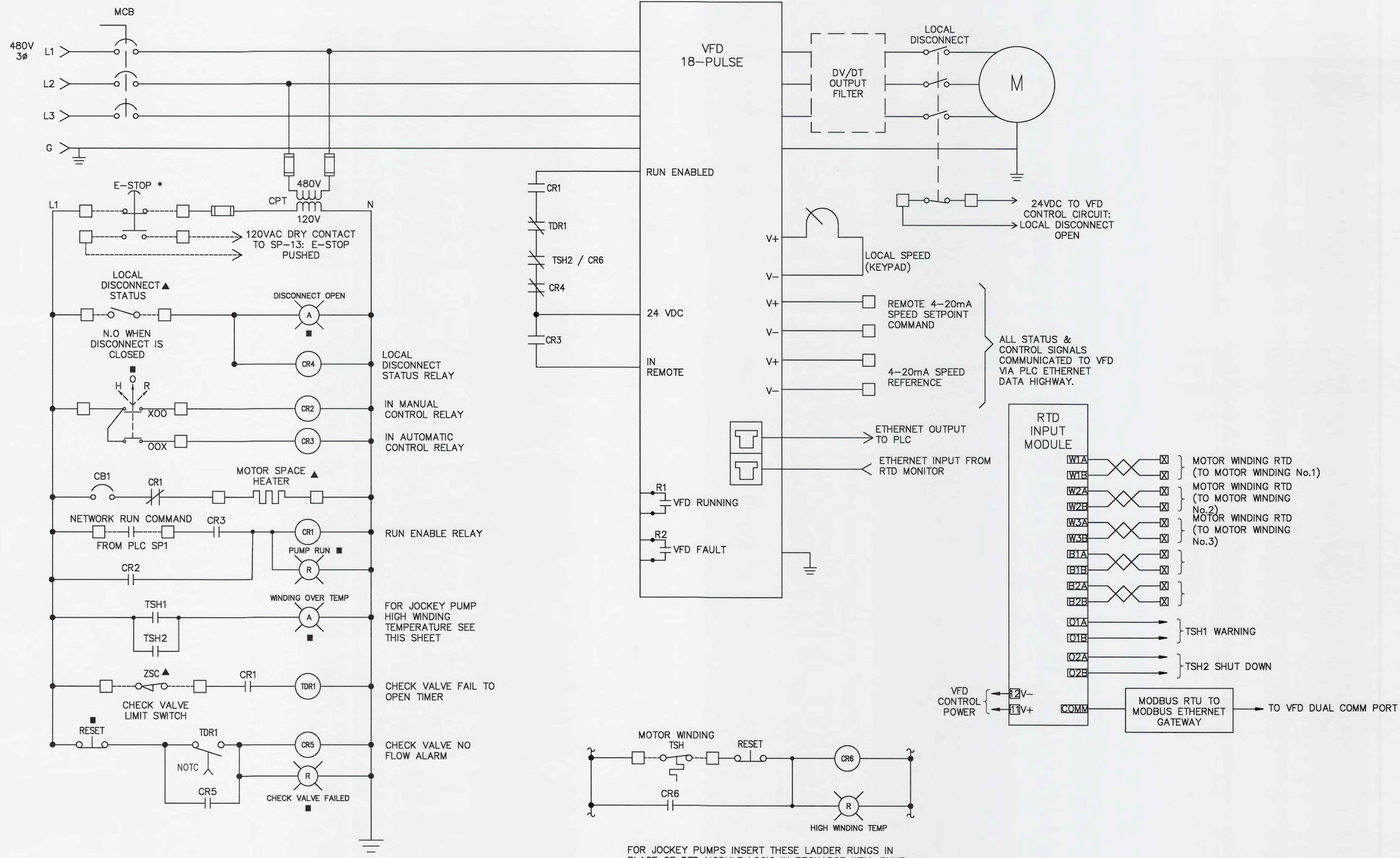
WIRE AND CONDUIT SCHEDULE

DATE: SEPTEMBER, 2019
MCE PROJ. # 1024-0171
DRAWN: LLS
DESIGNED: AAH
CHECKED: JAG/JV
PROJ. MGR: TP

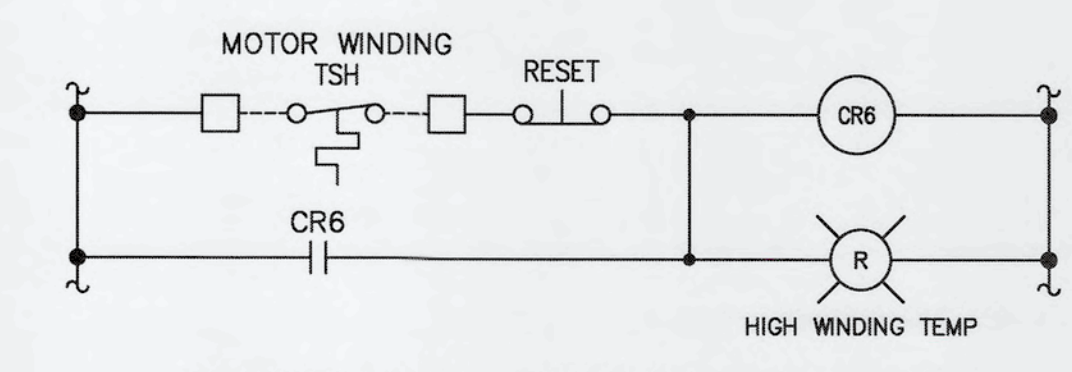
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DRAWING NUMBER: E-12

STATUS: ISSUED FOR BID

S:\1024 - Manatee



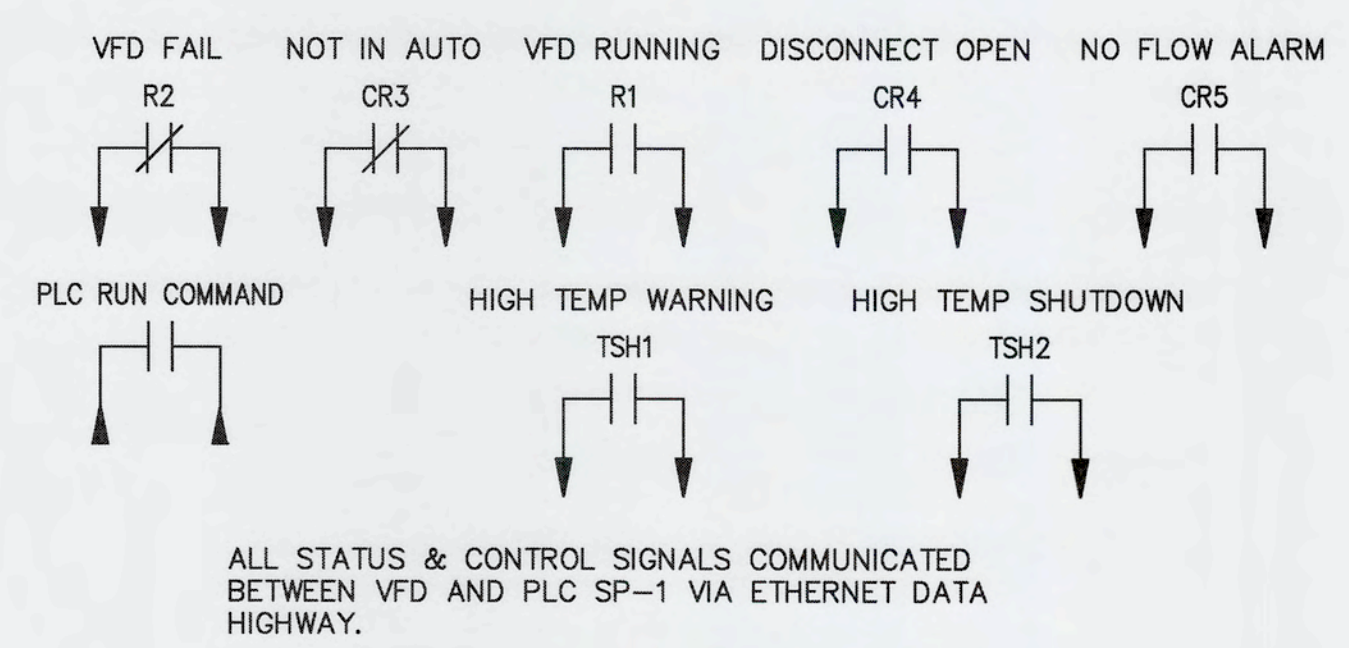
CHEMICAL INDUCTION MIXER LCP-60050 ▲
SCHEMATIC
 SCALE: NTS



FOR JOCKEY PUMPS INSERT THESE LADDER RUNGS IN PLACE OF RTD MODULE LOGIC IN RECHARGE WELL PUMP SCHEMATIC.
JOCKEY PUMP WINDING TEMPERATURE
 SCALE: NTS

- LEGEND**
- * E-STOP SHALL BE MAINTAINED CONTACT PUSH BUTTON MOUNTED NEAR MOTOR.
 - DOOR MOUNT RESET, HOR SWITCH AND PILOT LIGHTS IN FRONT OF MCC.
 - ▲ DEVICE LOCATED AT OR NEAR EQUIPMENT

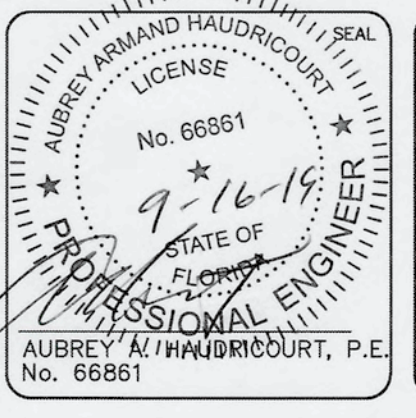
RECHARGE WELL PUMP SCHEMATIC
 SCALE: NTS



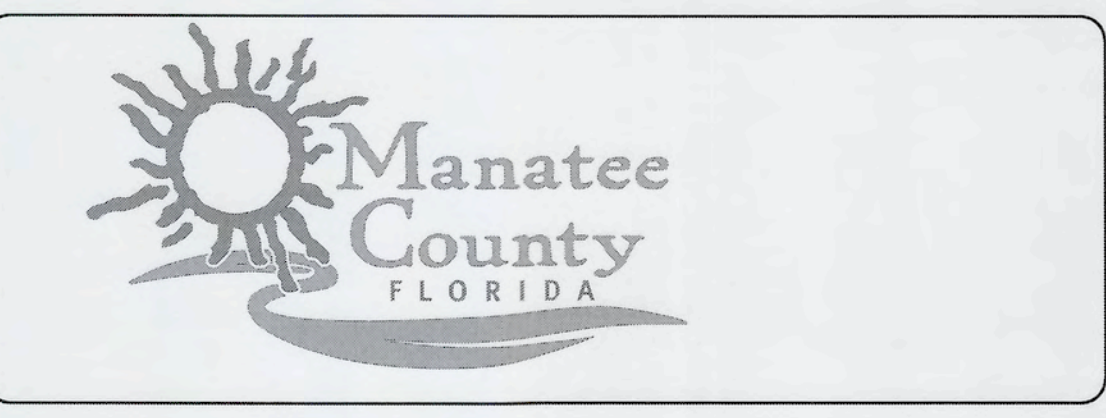
ELECTRICAL CONTROL SCHEMATICS
 SCALE: NTS

S: 1024 - Manatee Co (07/17) VFD-Drumming ELECTRICAL V-14-1024071 - SCHEMATIC.dwg, 9/16/2019, 3:32:15 PM, Aubrey Headcount

REV. NO.	DESCRIPTIONS	DATE

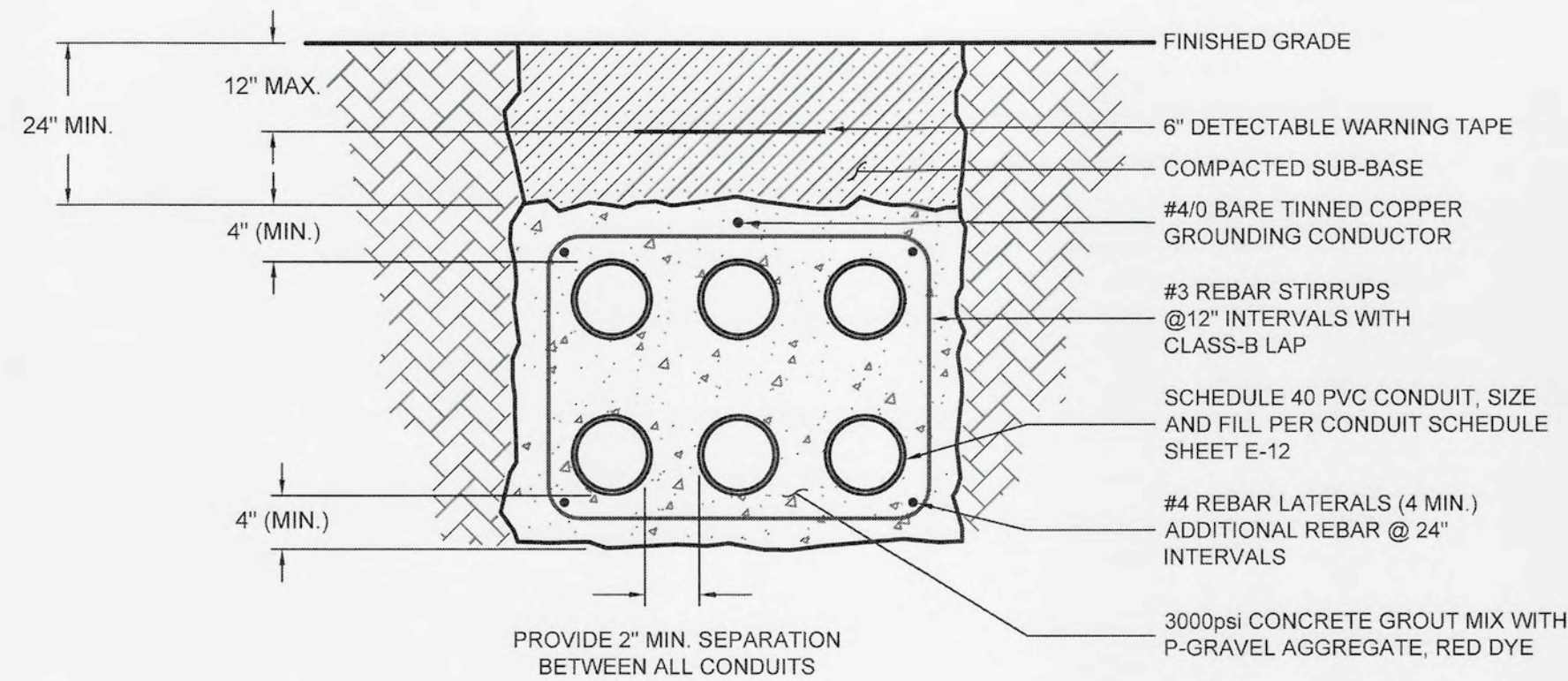


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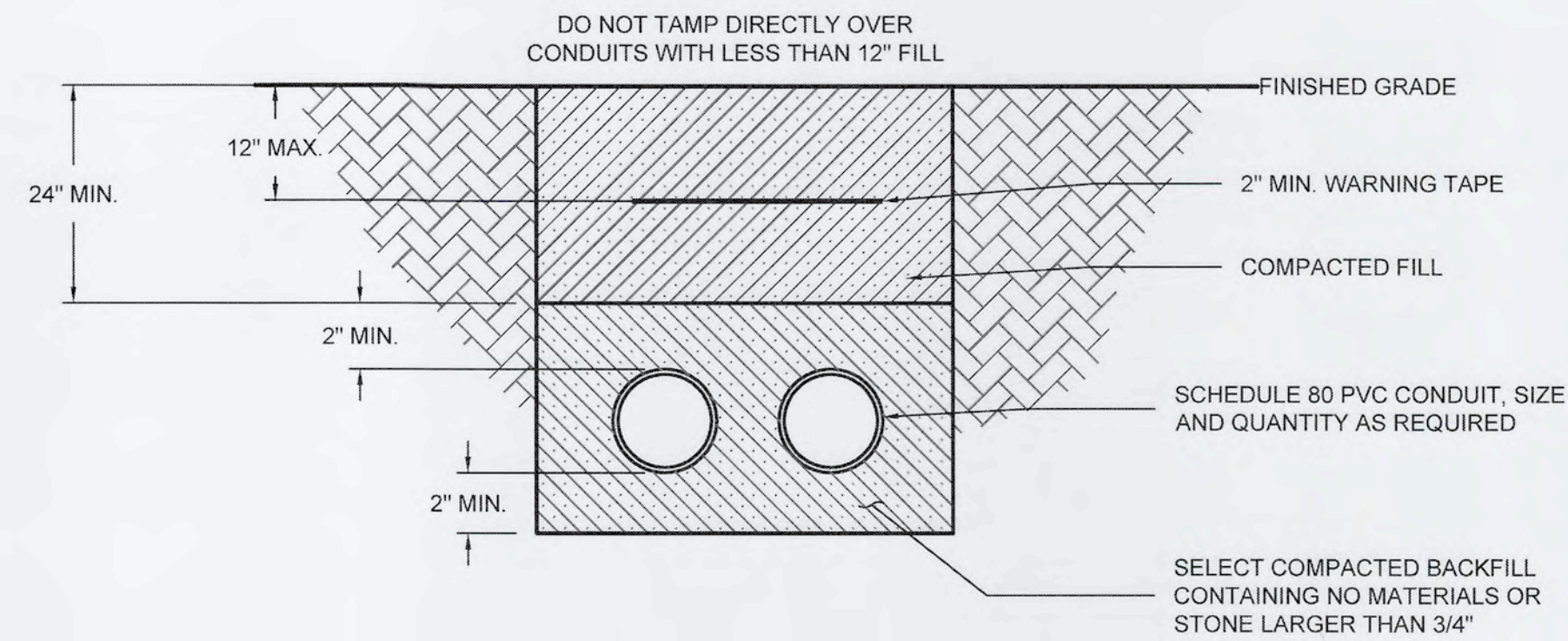


**SWRF
 CCC REHAB AND
 RECHARGE WELL PS PROJECT**
**ELECTRICAL CONTROL
 SCHEMATICS**

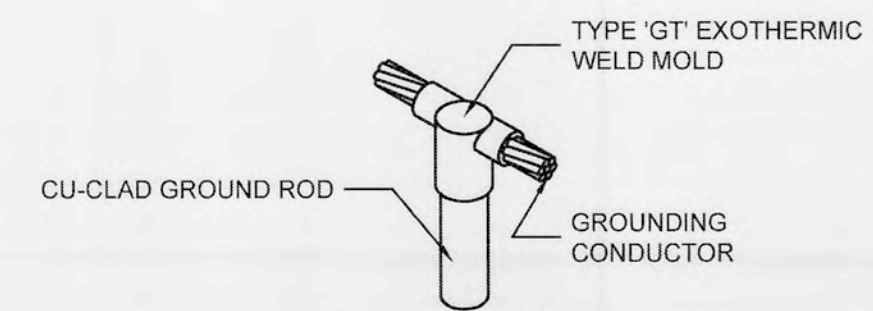
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DRAWN: LLS	VERTICAL: NA	
DESIGNED: AAH		
CHECKED: JAG/JV		
PROJ. MGR: TP		
STATUS: ISSUED FOR BID		



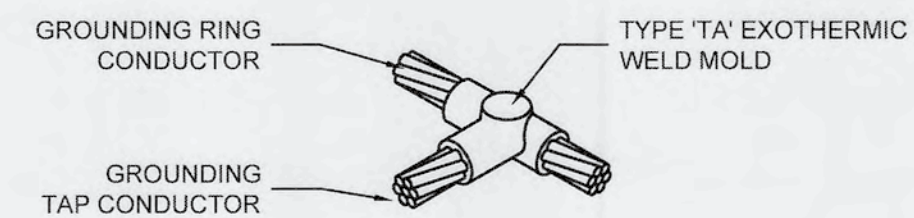
REINFORCED CONCRETE DUCTBANK
SCALE: NTS



DIRECT BURIED DUCTBANK
SCALE: NTS



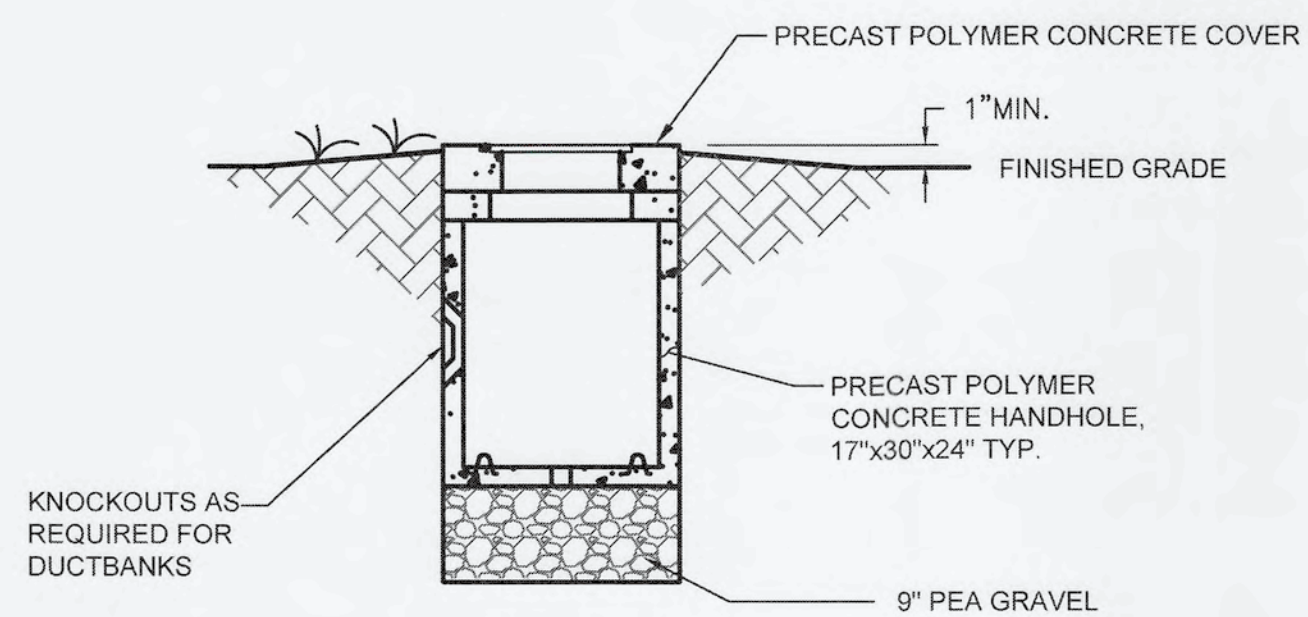
EXOTHERMIC WELD 'GT' CONNECTION
SCALE: NTS



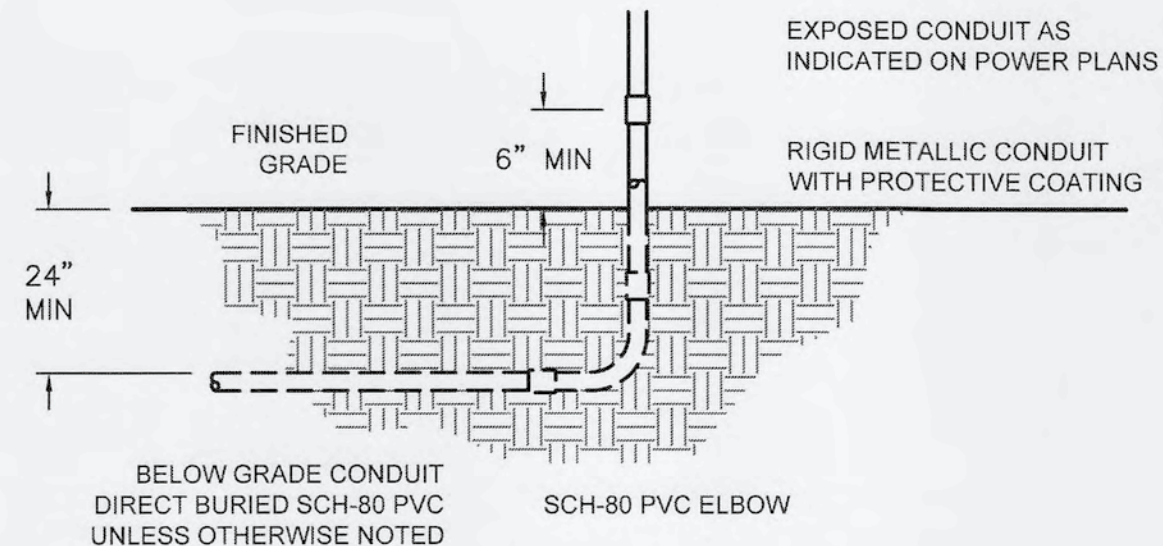
EXOTHERMIC WELD 'TA' CONNECTION
SCALE: NTS

NOTES:

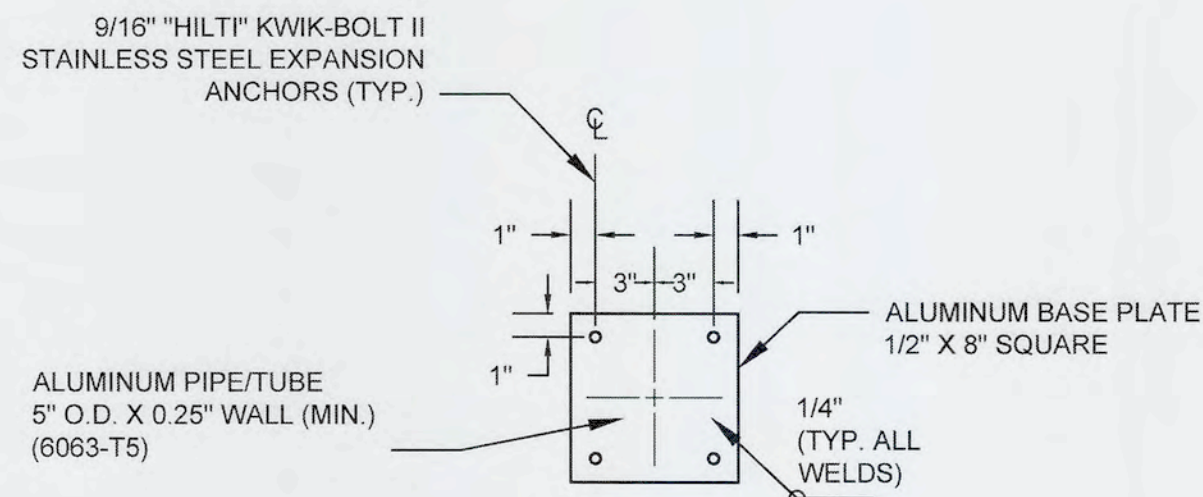
1. CONDUITS IDENTIFIED ON SHEET E-16 AND ALL CONDUIT RUNS UNDERNEATH BUILDINGS SHALL BE IN REINFORCED CONCRETE DUCTBANKS. CONDUIT RUNS LONGER THAN 12' ARE NOT ALLOWED IN STRUCTURAL CONCRETE SLABS. ADDITIONAL UNDERGROUND CONDUIT RUNS NOT SHOWN OR OTHERWISE INDICATED SHALL BE DIRECT BURIED.
2. MINIMUM WIRE SIZE FOR ALL POWER CIRCUITS IS #12AWG CU UNLESS OTHERWISE NOTED.
3. MINIMUM CONDUIT SIZE IS 3/4" TRADE SIZE.
4. CONTRACTOR SHALL EMPLOY THE SERVICES OF A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA TO PROVIDE SIGNED AND SEALED DETAILS AND CALCULATIONS FOR THE NEW CABLE TRAY SUPPORT STRUCTURE. SEE SPECIFICATION 16600 FOR MORE INFORMATION.



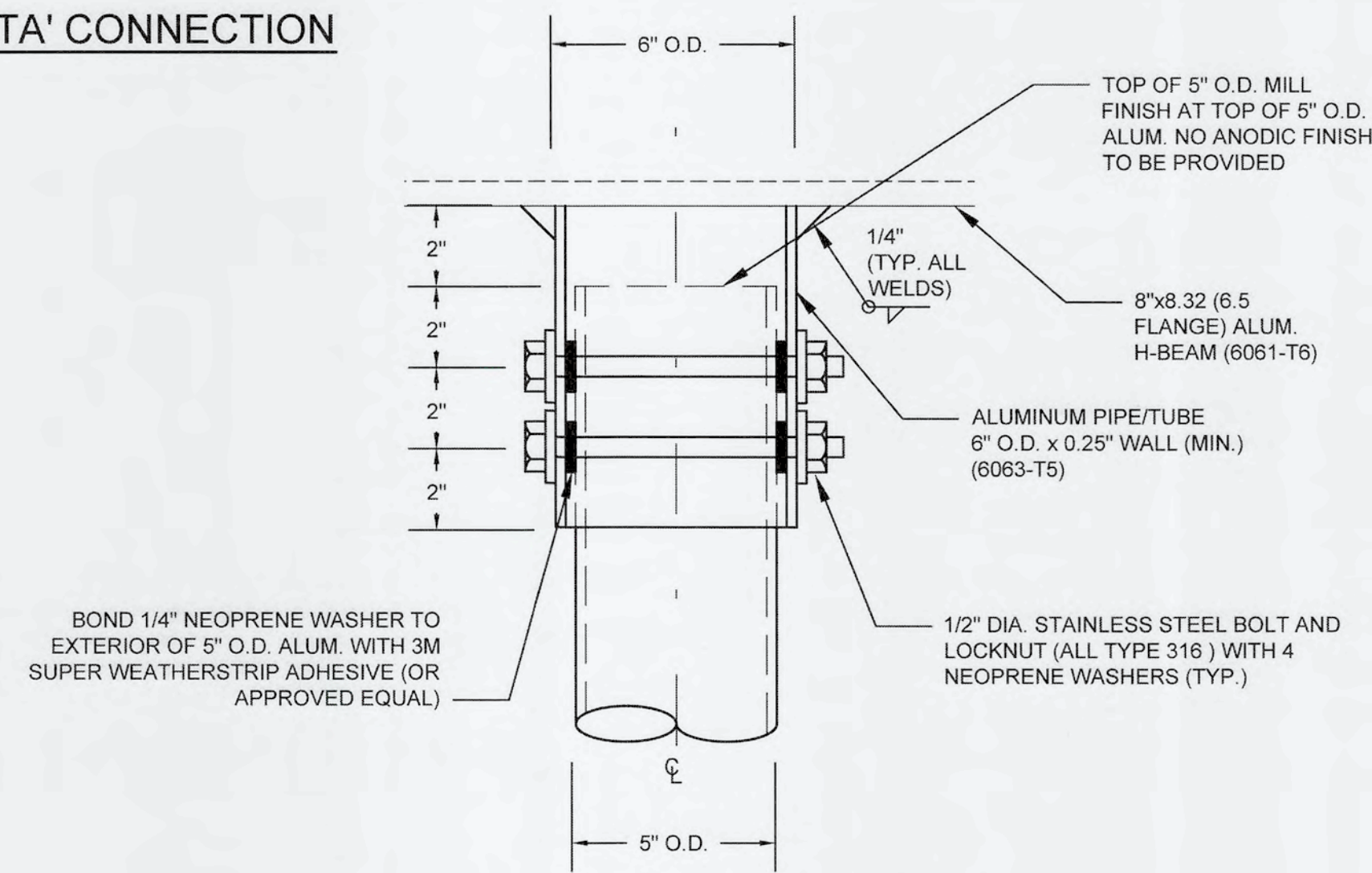
SMALL HANDHOLE DETAIL
SCALE: N.T.S.



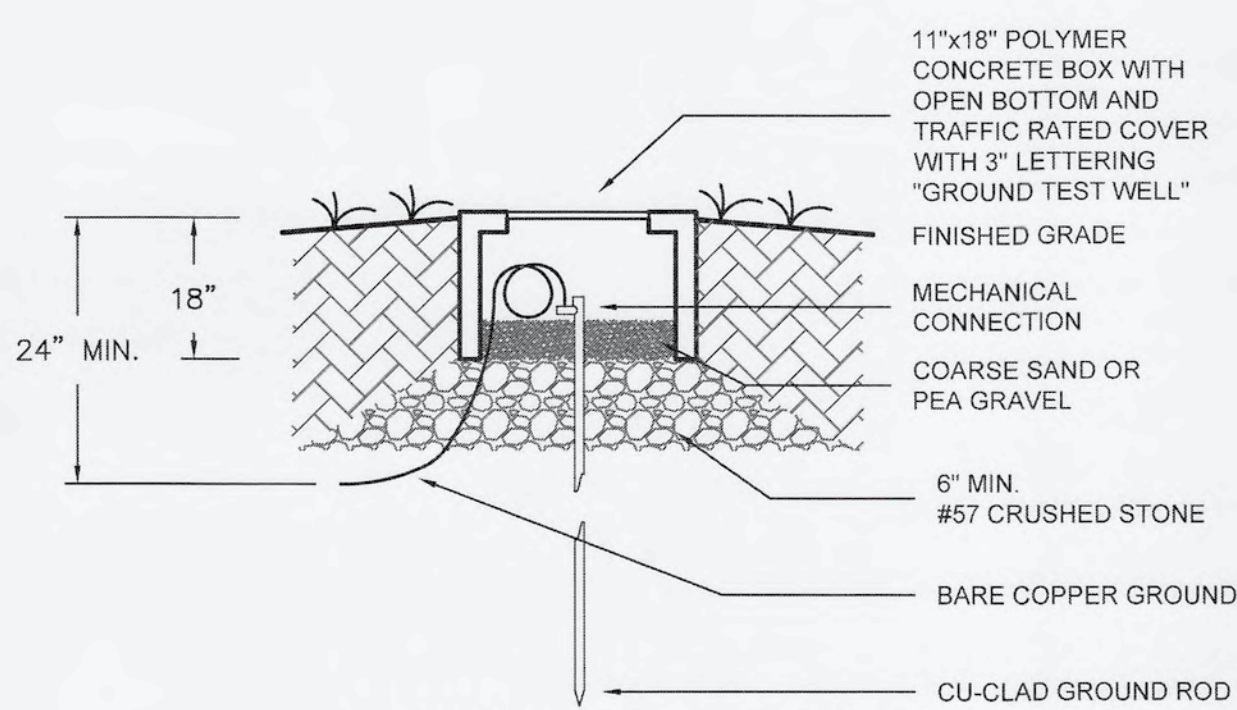
CONDUIT TRANSITION DETAIL
SCALE: NTS



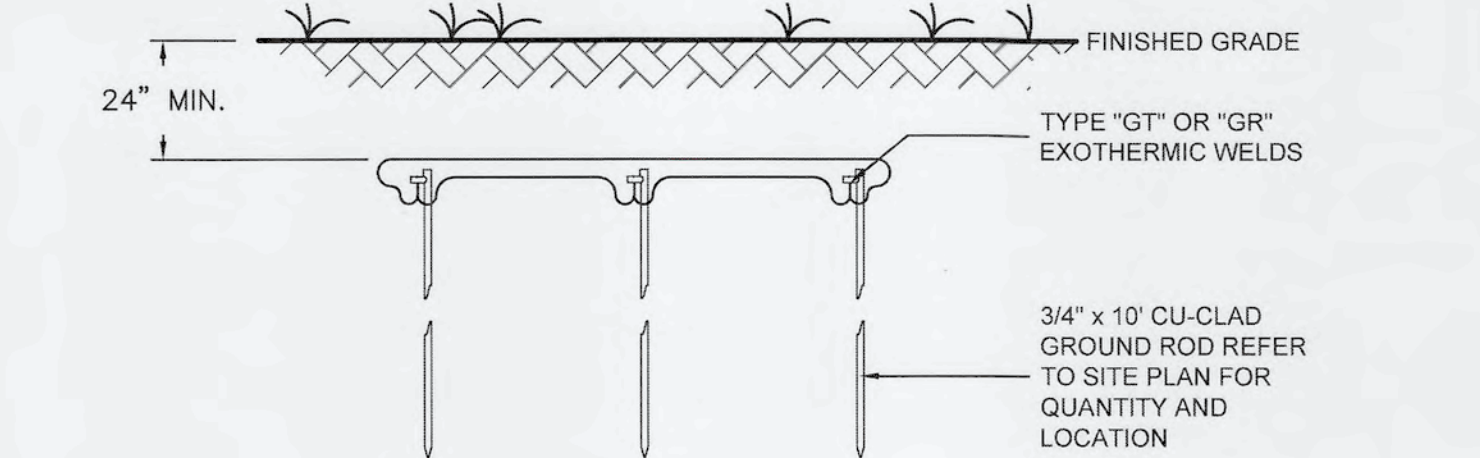
SECTION A
SCALE: NTS



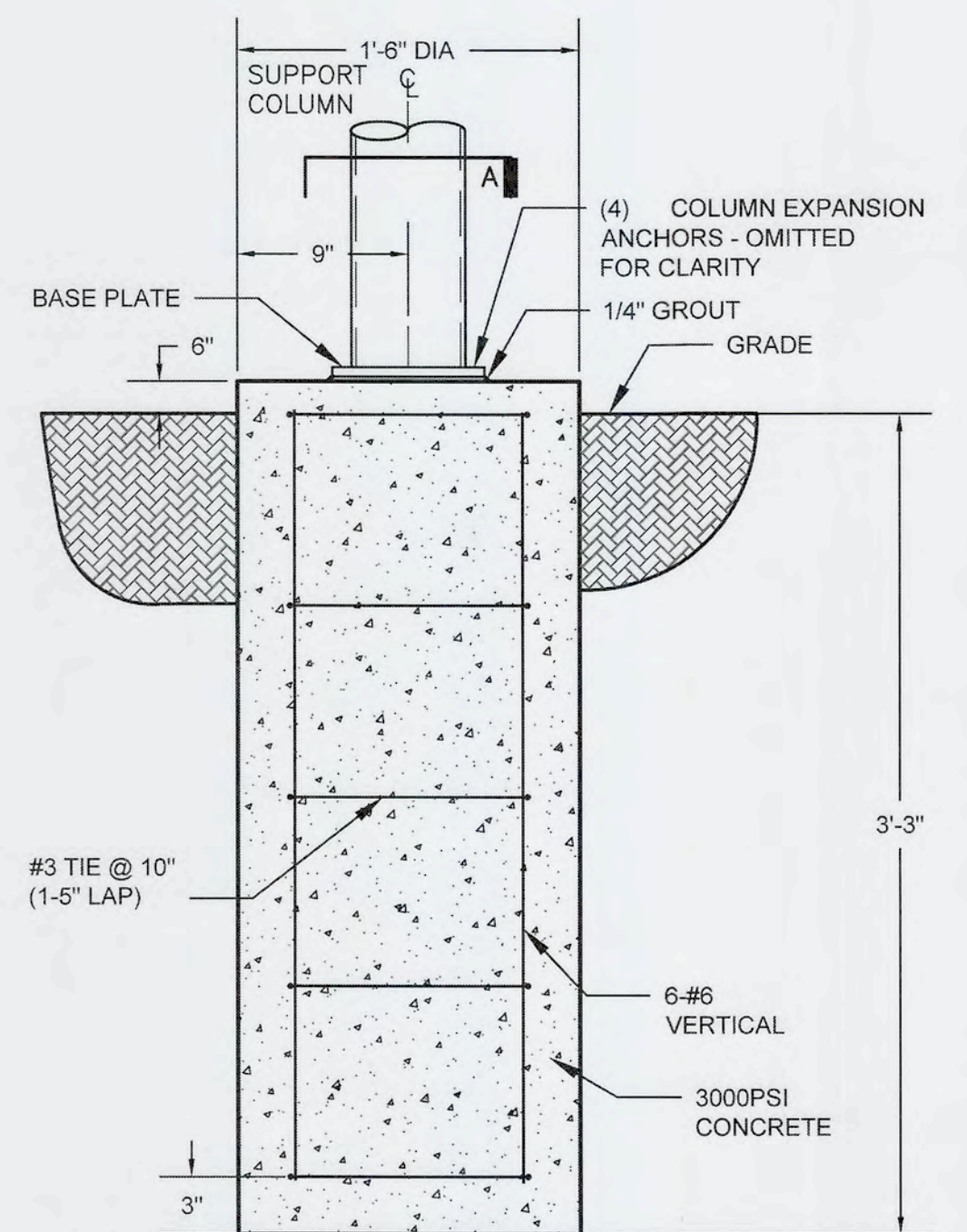
CABLE TRAY SUPPORT DETAIL
SCALE: NTS



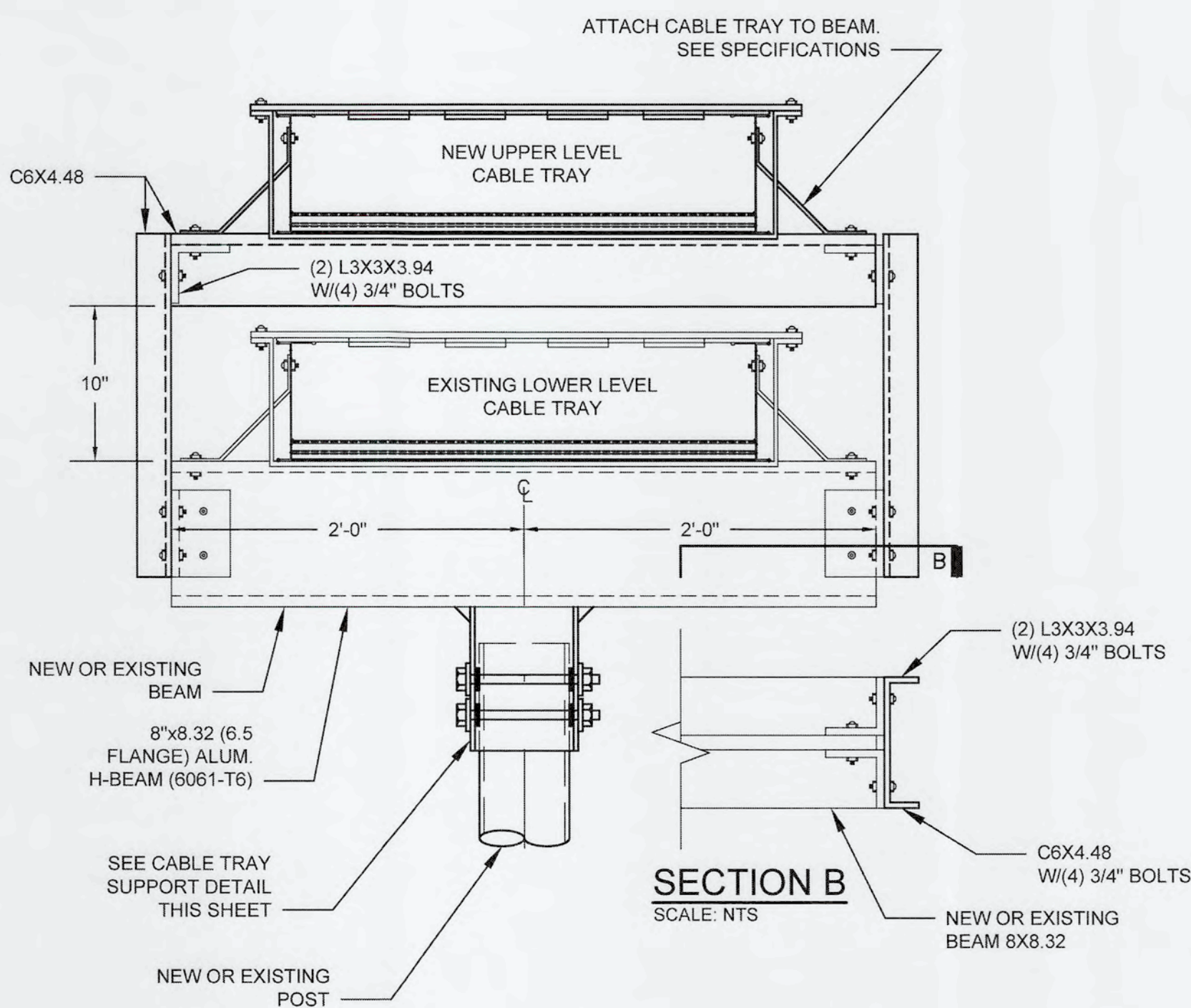
GROUND ROD TEST WELL
SCALE: NTS



BELOW GRADE GROUND ROD/CABLE CONNECTION DETAIL
SCALE: NTS



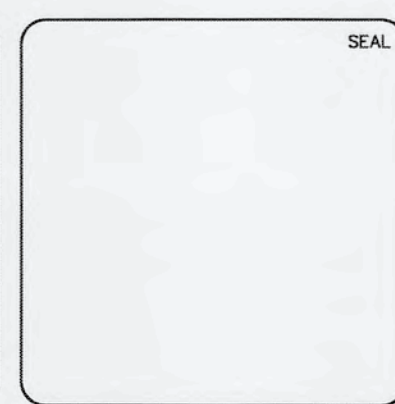
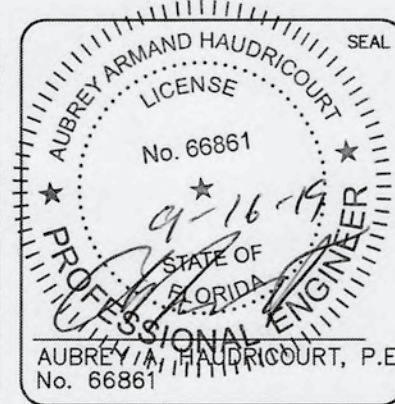
CABLE TRAY POST FOUNDATION DETAIL
SCALE: NTS



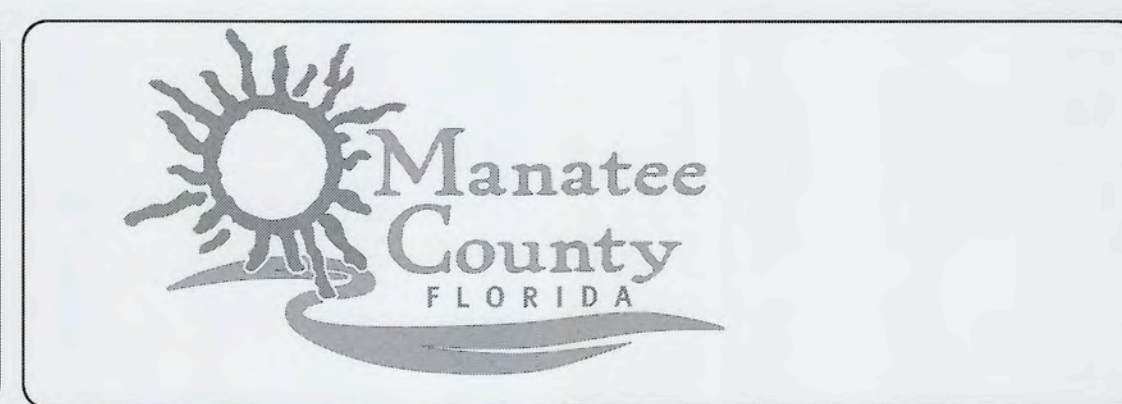
EXISTING AND NEW MOUNTING DETAIL 24\"/>

ELECTRICAL DETAILS I
SCALE: NTS

REV. NO.	DESCRIPTIONS	DATE



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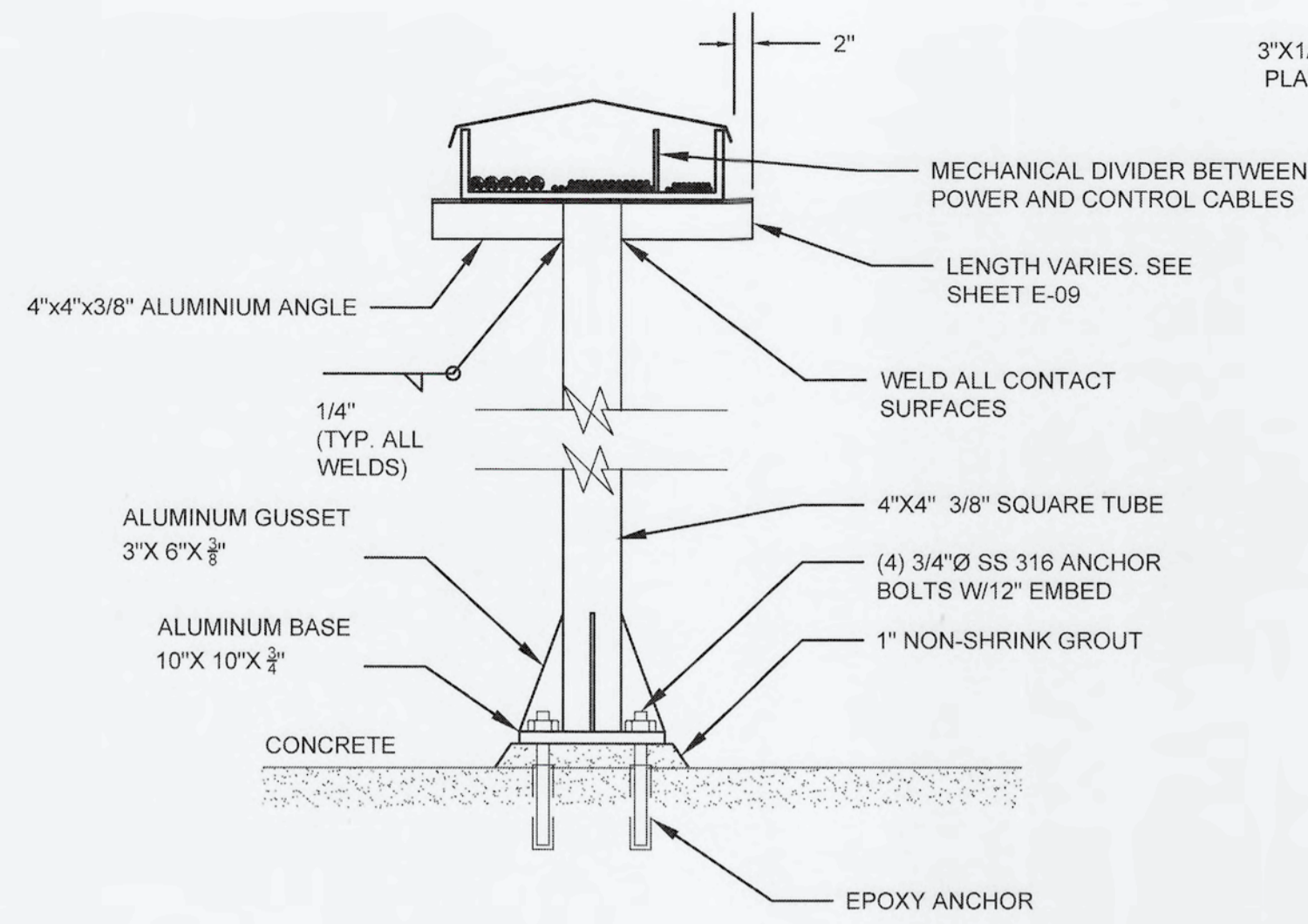


**SWRF
CCC REHAB AND
RECHARGE WELL PS PROJECT**

ELECTRICAL DETAILS I

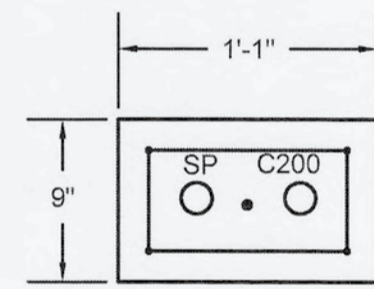
DATE: SEPTEMBER, 2019	SCALE: NA	DRAWING NUMBER: E-15
MCE PROJ. # 1024-0171	HORIZONTAL: NA	REVISION: ISSUED FOR BID
DRAWN: LLS	VERTICAL: NA	
DESIGNED: AAH		
CHECKED: JAG/JV		
PROJ. MGR: TP		

S:\1024 - Manatee\CA\0171\02-Drawing\ELECTRICAL\E-15-10240171 - DETAILS.dwg, 9/16/2019, 3:08:16 PM, Aubrey Haudricourt



6" & 8" - CABLE TRAY SUPPORT DETAIL

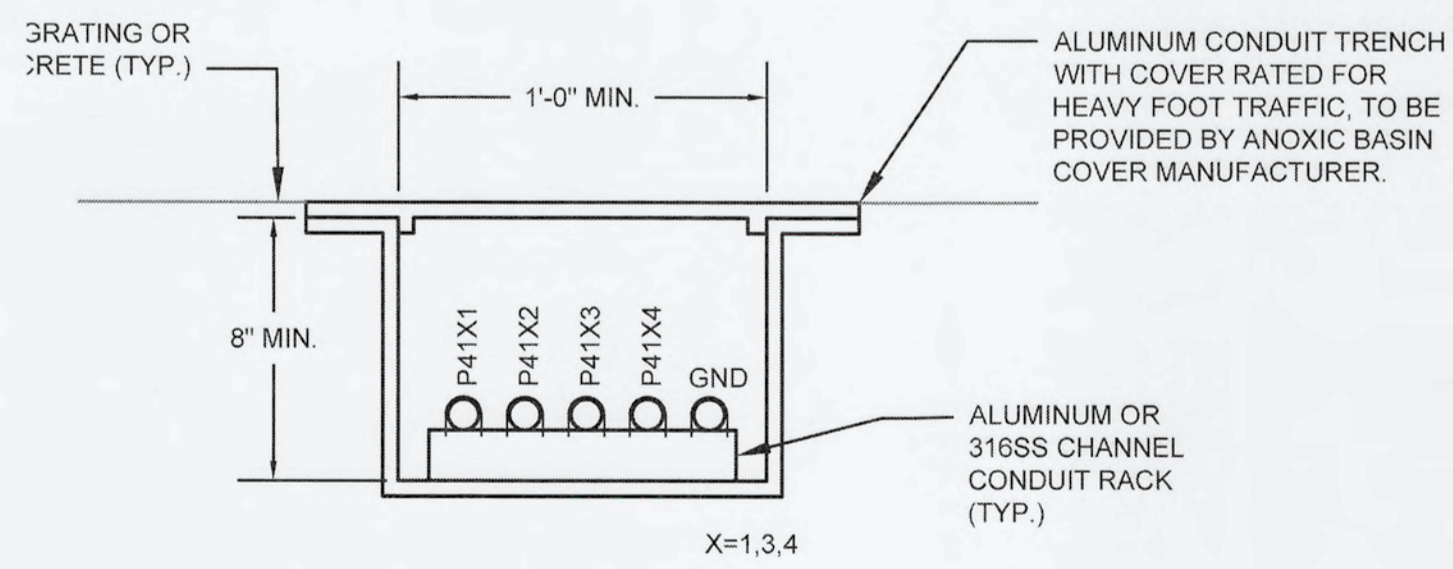
SCALE: NTS



9
E-07/E-16

**DUCTBANK SECTION 9
LV DUCTBANK DETAIL**

SCALE: NTS



12
E-17/E-16

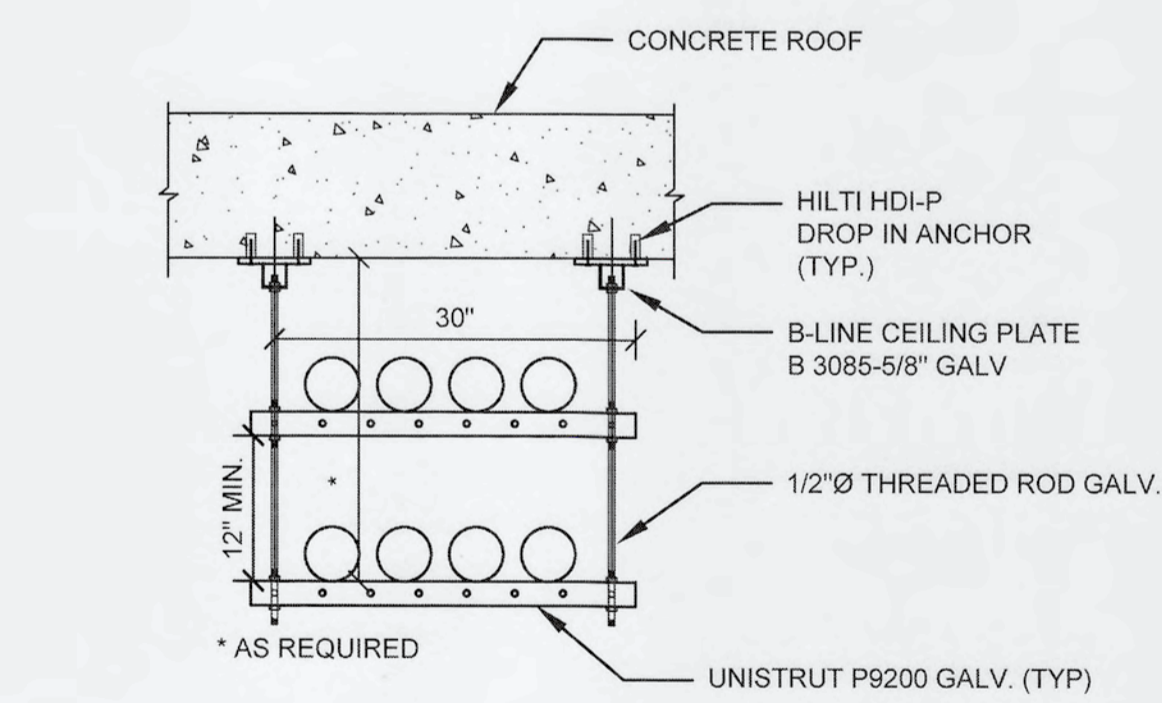
**SECTION 12
CONDUIT TRENCH DETAIL
(REFER TO SHEET S-10)**

SCALE: NTS

10
E-07/E-16

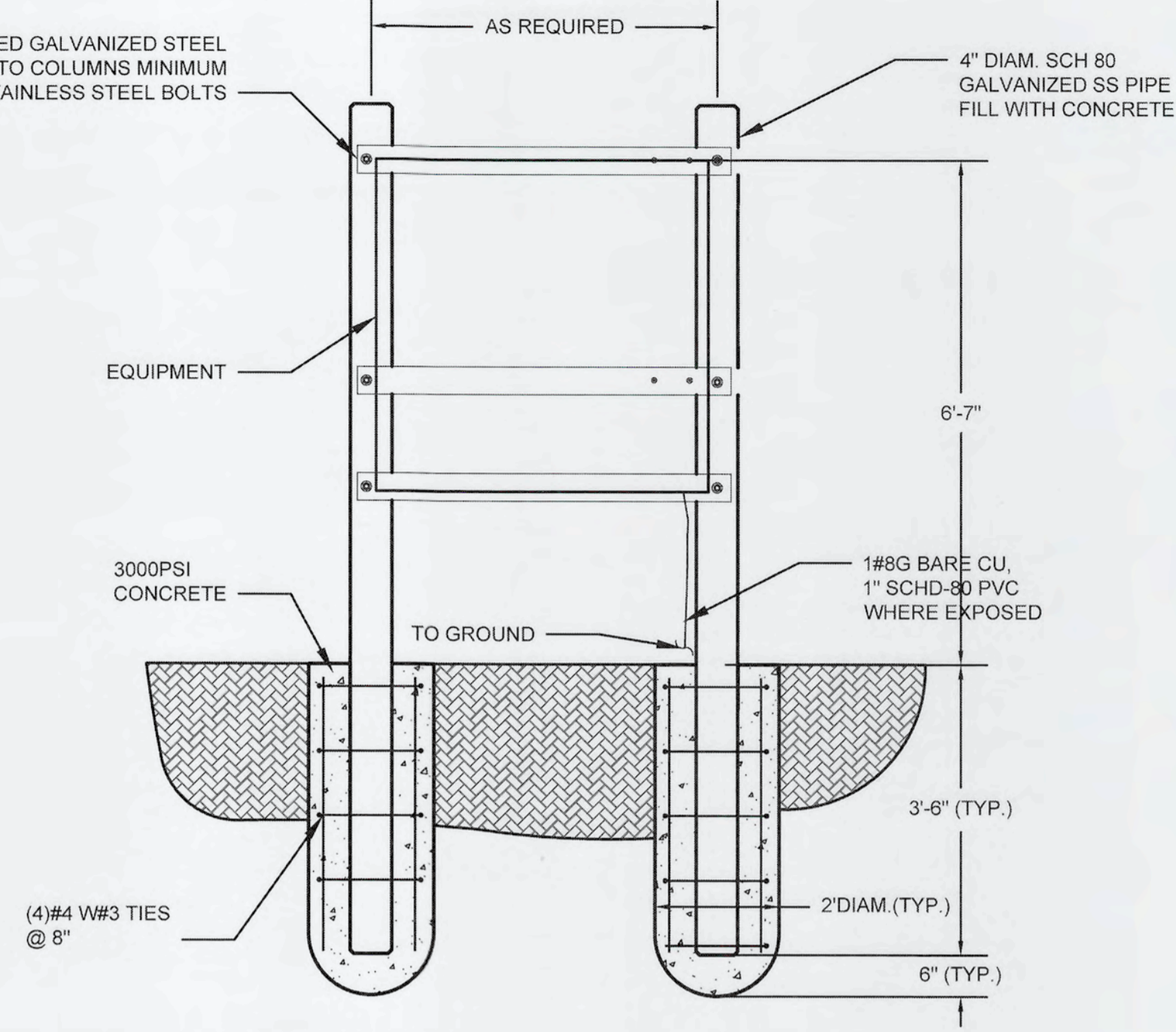
**DUCTBANK SECTION 10
LV DUCTBANK DETAIL**

SCALE: NTS



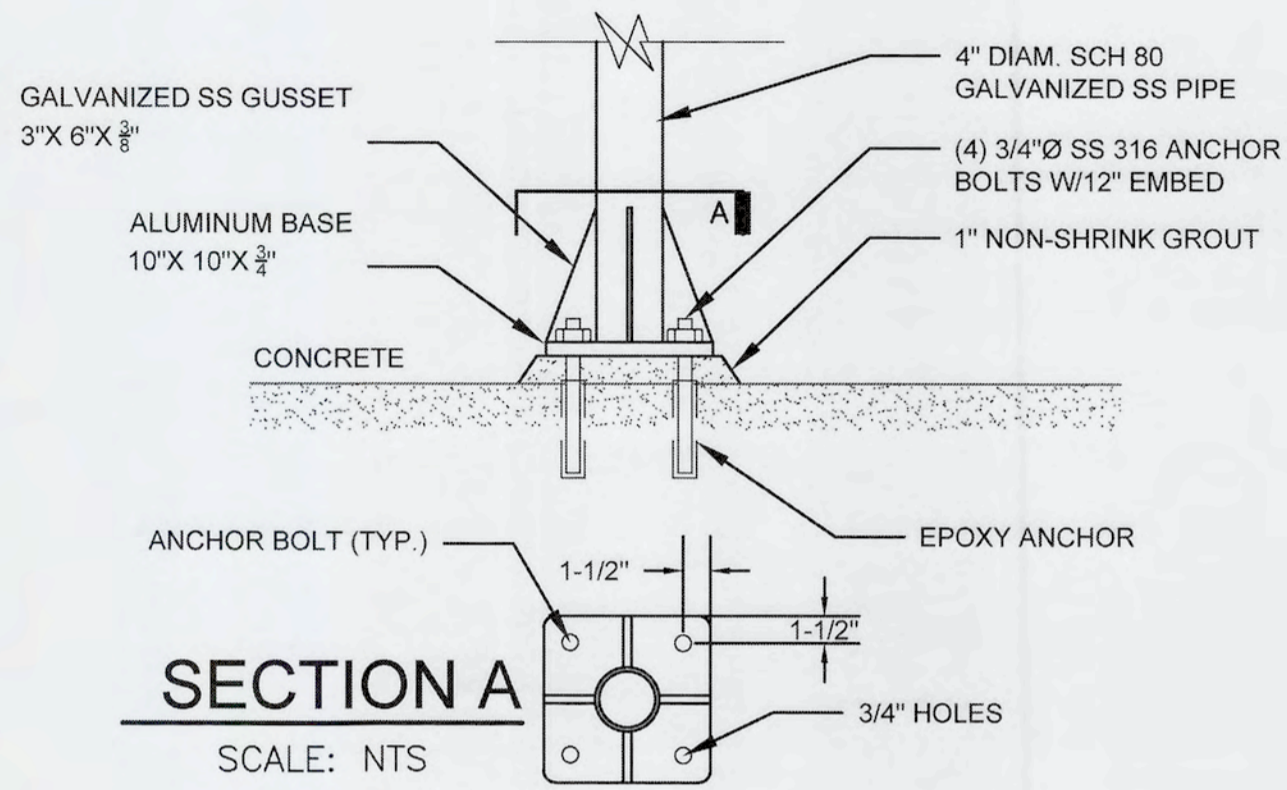
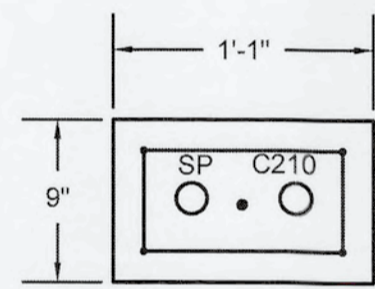
**CONDUIT SUPPORT DETAIL
(SUSPENDED SUPPORT)**

SCALE: NTS



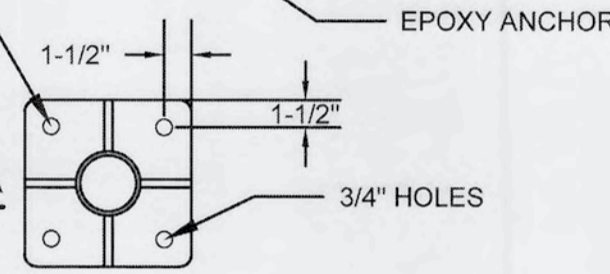
**EQUIPMENT MOUNTING DETAIL
(IN GROUND MOUNT)**

SCALE: NTS



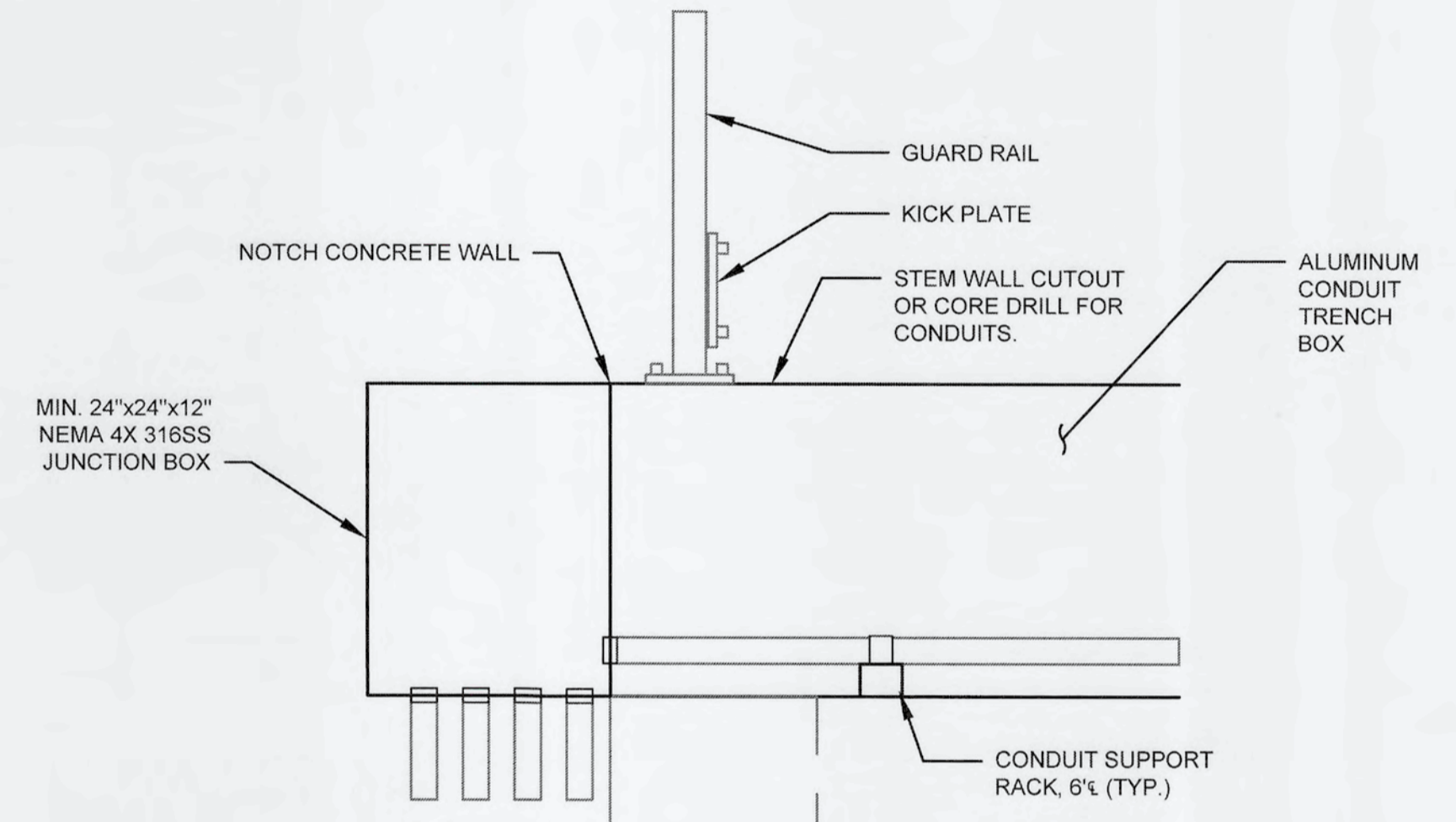
**EQUIPMENT MOUNTING DETAIL
(ON SLAB)**

SCALE: NTS



NOTES:

- SEE SHEET E-15 FOR CONCRETE REINFORCED UNDERGROUND CONDUIT DUCTBANK DETAILS.
- CONTRACTOR SHALL EMPLOY THE SERVICES OF A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA TO PROVIDE SIGNED AND SEALED DETAILS AND CALCULATIONS FOR THE NEW CABLE TRAY SUPPORT STRUCTURE. SEE SPECIFICATION 16800 FOR MORE INFORMATION.



11
E-16/E-16

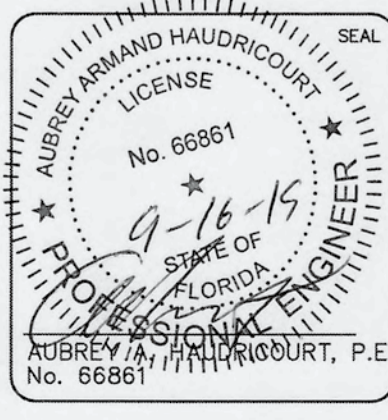
**SECTION 11
CONDUIT TRENCH DETAIL
(REFER TO SHEET S-10)**

SCALE: NTS

ELECTRICAL DETAILS II
SCALE: NTS

S:\11024 - Manatee County\Drawings\ELECTRICAL\E-16-1624071 - DETAILS.dwg, 9/16/2019 3:08:25 PM, Aubrey Haudricourt

REV.	DESCRIPTION	DATE



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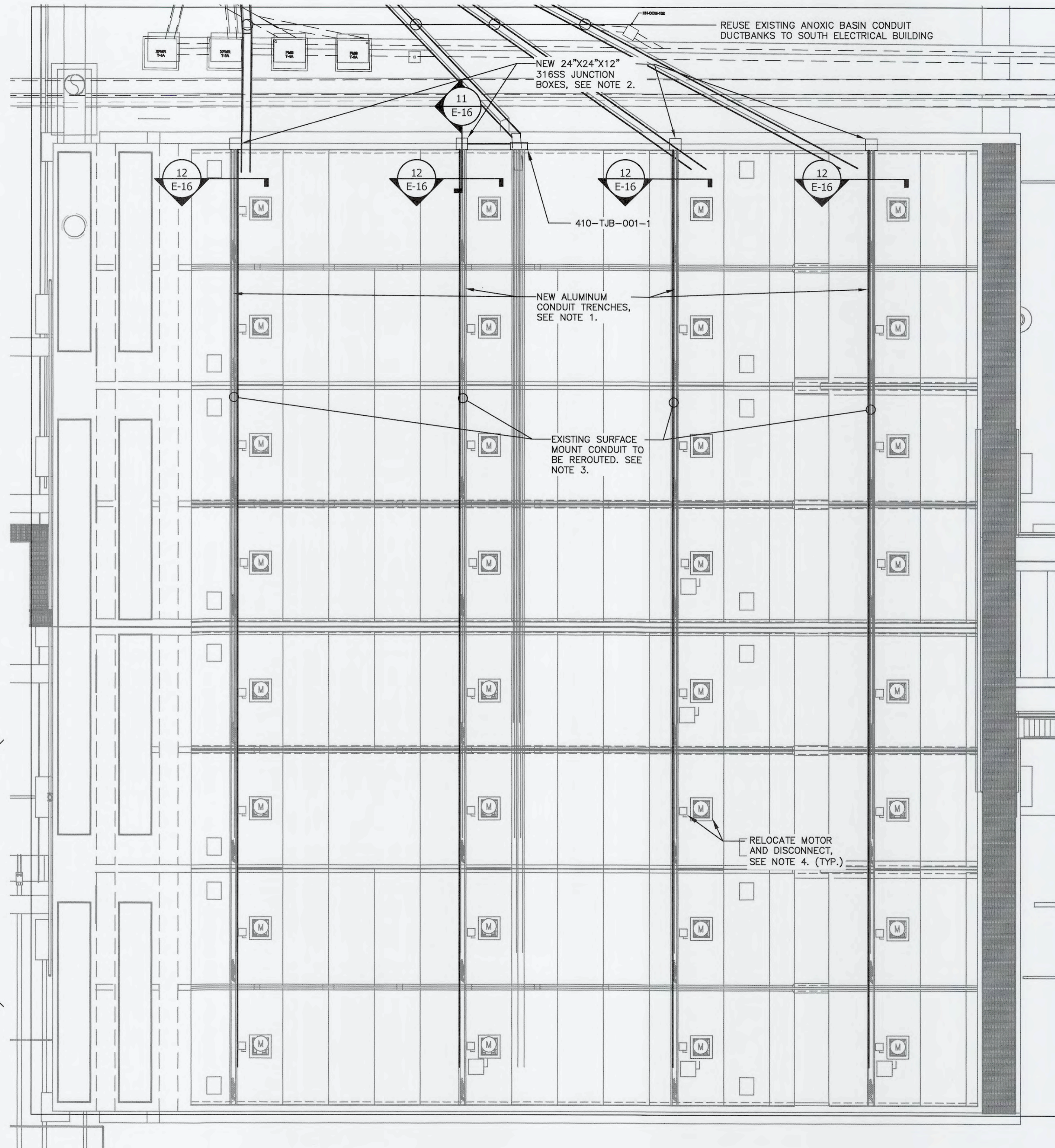


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RECHARGE WELL PS PROJECT**

ELECTRICAL DETAILS II

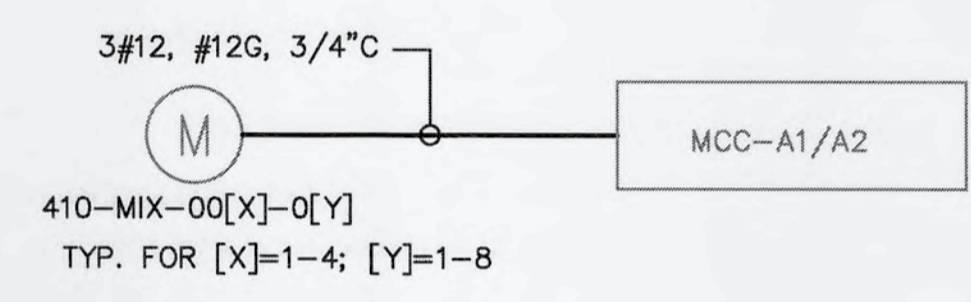
DATE: SEPTEMBER, 2019	SCALE:	DRAWING NUMBER:
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DRAWN: LLS	NA	
DESIGNED: AAH	VERTICAL:	
CHECKED: JAG/JV	NA	
PROJ. MGR. TP		

STATUS: ISSUED FOR BID



NOTES:

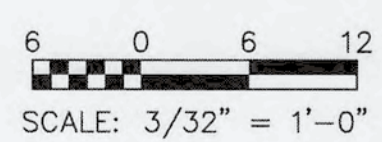
- COVERED ALUMINUM CONDUIT TRENCHES TO BE PROVIDED BY ANOXIC BASIN COVER MANUFACTURER. SEE STRUCTURAL SHEETS FOR ADDITIONAL INFORMATION. PROVIDE MINIMUM OF 6 INCHES OF SEPARATION BETWEEN 480V POWER AND 24VDC/ANALOG CONDUITS. SEE DETAILS SHEET E-16.
- INSTALL NEW WALL MOUNT 316SS JUNCTION BOXES FOR CONSOLIDATION AND EXTENSION OF EXISTING CONDUITS TO EQUIPMENT VIA NEW CONDUIT TRENCHES. PROVIDE SEPARATE BOXES FOR 480V POWER AND 24VDC/ANALOG CABLES.
 - CONTRACTOR TO CUT CONCRETE END TO ACCOMMODATE TRENCH BOX.
 - CABLE/CONDUIT CONSOLIDATION SHALL BE PERFORMED AS FOLLOWS: TWO MIXER POWER CIRCUITS 2x[3#12, 1#12G] PER 1" CONDUIT: P41XY, WHERE X=1,2,3,4 AND Y=1,2,3,4
- RELOCATE AND REUSE EXISTING CONDUIT FOR ANOXIC BASIN CIRCUITS. EXTENDING AS NEEDED. PULL ALL NEW WIRE, AVG 200FT TO MCC-A1, MCC-A2, 410-FAP-001-01 AND SP-15. SEE RISER 1 THIS SHEET, AND SHEET E-05 FOR MCC-A1 AND MCC-A2 SINGLE LINE DIAGRAMS.
- COORDINATE THE RELOCATION AND RECONNECTION OF EXISTING MOTORS AND DISCONNECTS WITH STRUCTURAL MODIFICATIONS TO EXISTING PLATFORMS. INSTALL NEW SUPPORTS FOR EXISTING DISCONNECTS PER DETAIL SHEETS. GROUND AND BOND ALL EQUIPMENT, CONDUIT AND TRENCHES PER NEC.



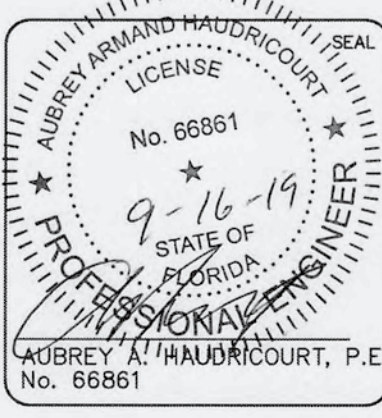
ANOXIC MIXER MOTOR
RISER DIAGRAM 1
 SCALE: NTS

EXISTING ELECTRICAL EQUIPMENT TO BE DEMO, SEE SHEET M-05 FOR DETAILS.

ANOXIC BASIN ELECTRICAL PLANS
 SCALE: 3/32" = 1'-0"



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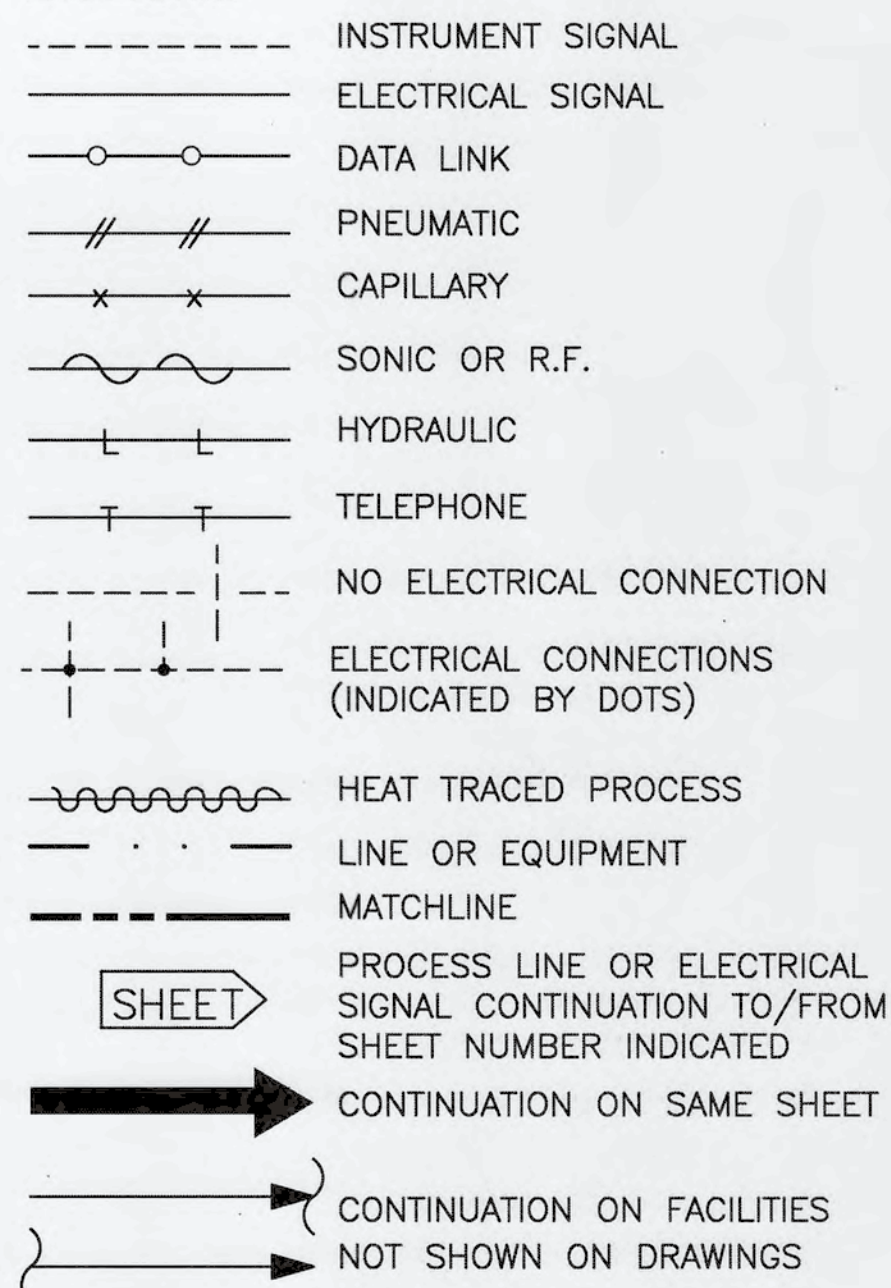
ANOXIC BASIN ELECTRICAL PLANS

DATE: SEPTEMBER, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. # 1024-0171	HORIZONTAL: 3/32" = 1'	E-17
DRAWN: LLS	VERTICAL: NA	REVISION:
DESIGNED: AAH		
CHECKED: JAG/JV		
PROJ. MGR: TP		
STATUS: ISSUED FOR BID		

FUNCTION SYMBOL SCHEDULE

FIRST LETTER		SUCCEEDING-LETTERS		
MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	Analysis	Alarm		
B	Burner, Combustion	Programmer		
C	Conductivity (Electrical)		Control	Closed
D	Density or Specific Gravity	Differential		
E	Voltage	Sensor (Primary Element)	Education	
F	Flow Rate	Ratio (Fraction)		
G	Gaging	Glass, Viewing Device		
H	Hand			High
I	Current (Electrical)	Indicate		
J	Power	Scan		
K	Time, Time Schedule		Control Station	
L	Level	Light (Pilot)		Low
M	Motor			Middle, Intermediate
N	Vibration			
O	Operation	Offset	Orifice, Restriction	Open
P	Pressure, Vacuum		Point (Test) Connection	
Q	Quantity, Event	Integrate, Totalize	Integrate	
R	Radiation		Record, Print	Regulate
S	Speed, Frequency	Safety		Switch
T	Temperature			Transmit
U	Multivariable	Trend	Multifunction	Multifunction
V	Viscosity	Vacuum		Valve, Damper, Louver, Gate
W	Weight, Force, Torque		Well	
X	Unclassified		Unclassified	Unclassified
Y			Relay, Compute, Convert	
Z	Position		Final Control Element	Drive, Actuator, Unclassified Element

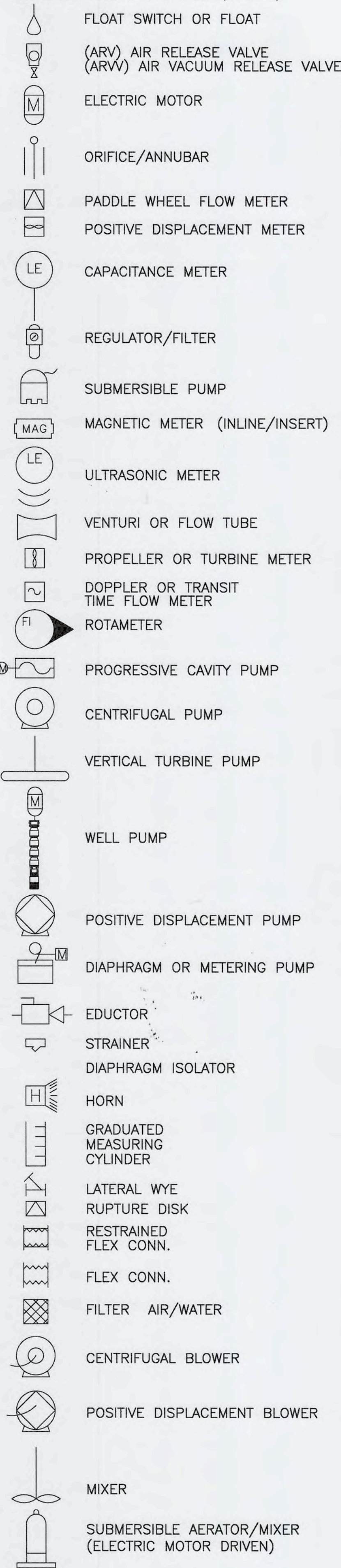
LINE CODES



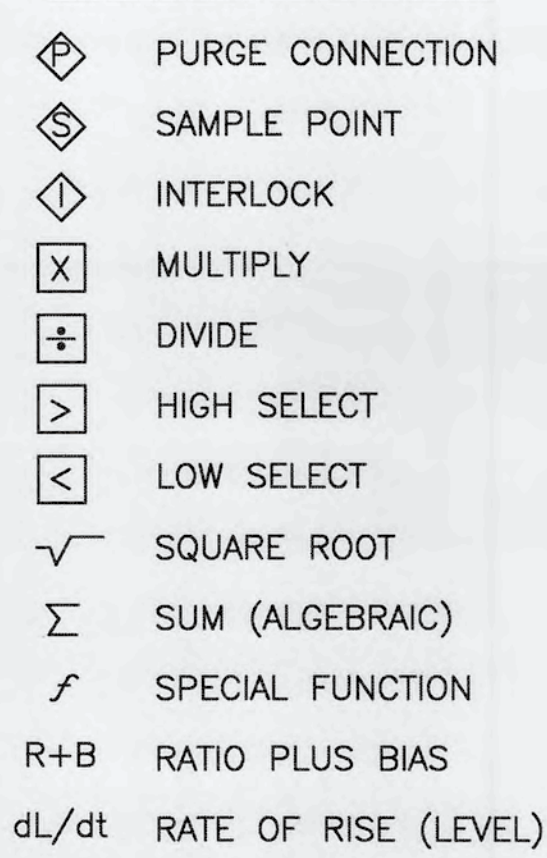
VALVES, PUMPS & METERS



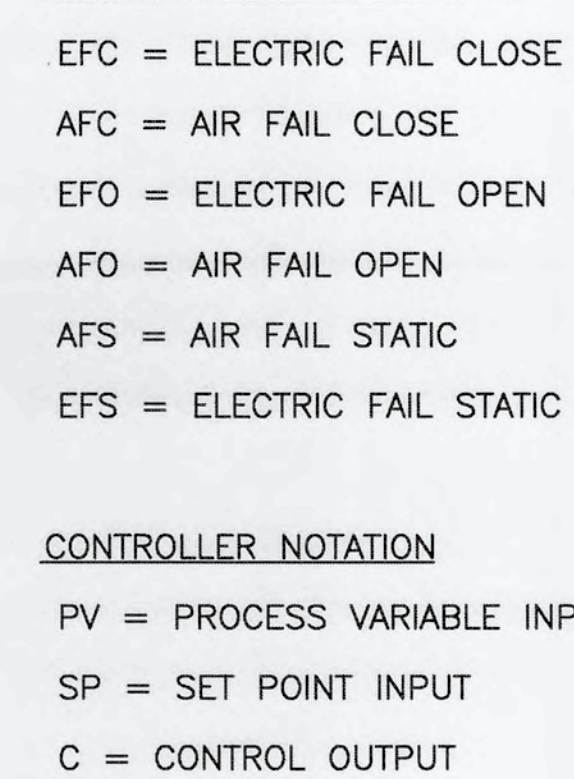
VALVES, PUMPS & METERS (CONT'D)



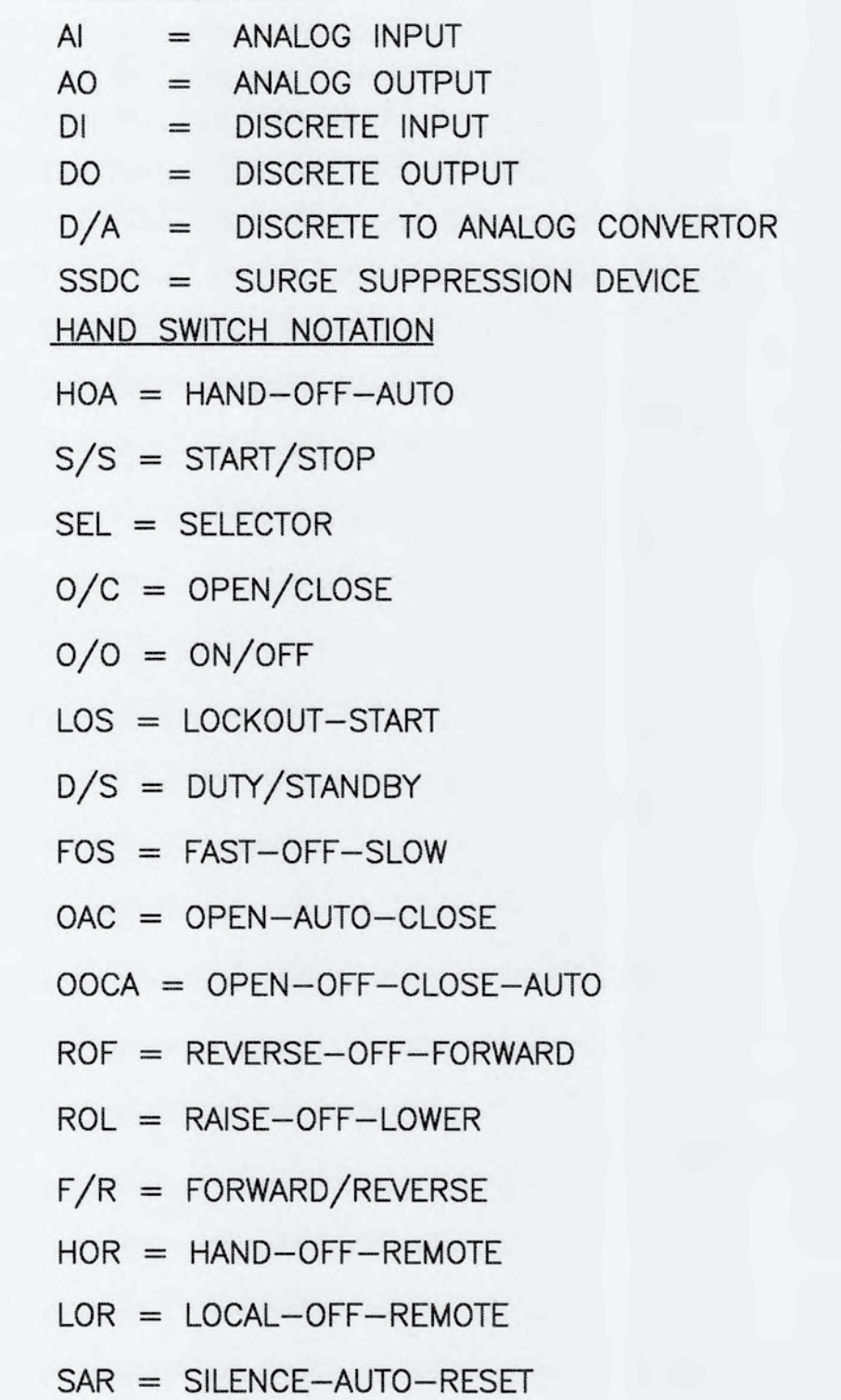
MISCELLANEOUS SYMBOLS



VALVE OPERATION NOTATION



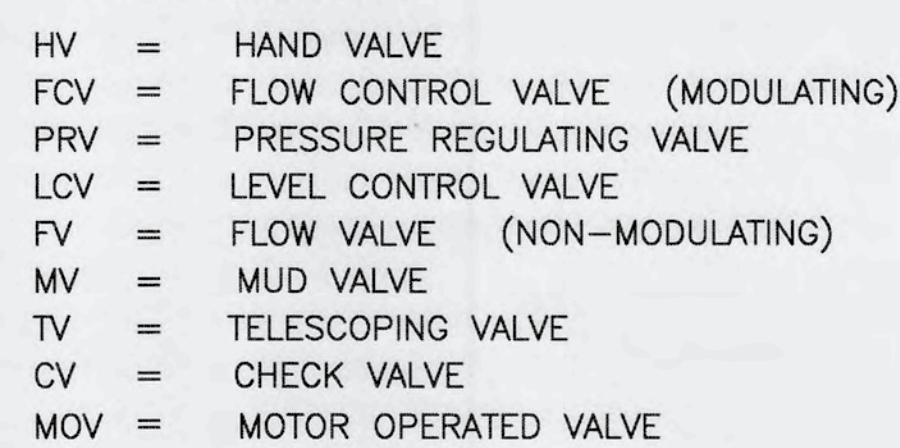
PLC NOTATIONS



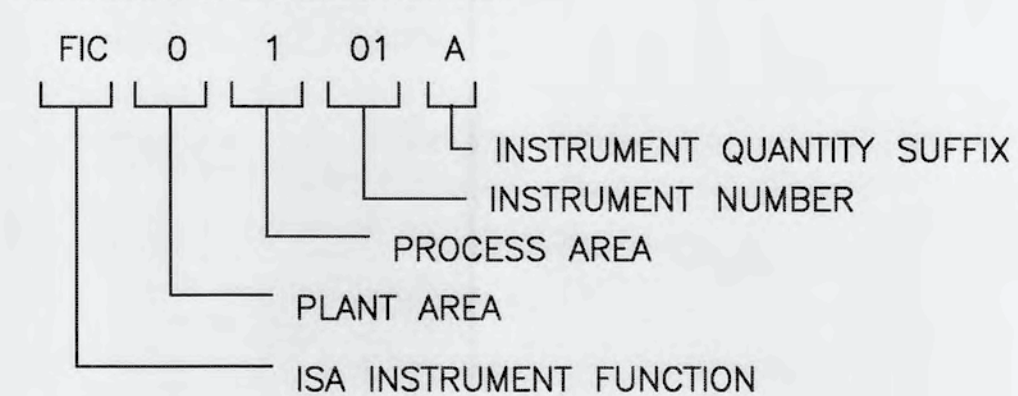
EQUIPMENT NOTATION



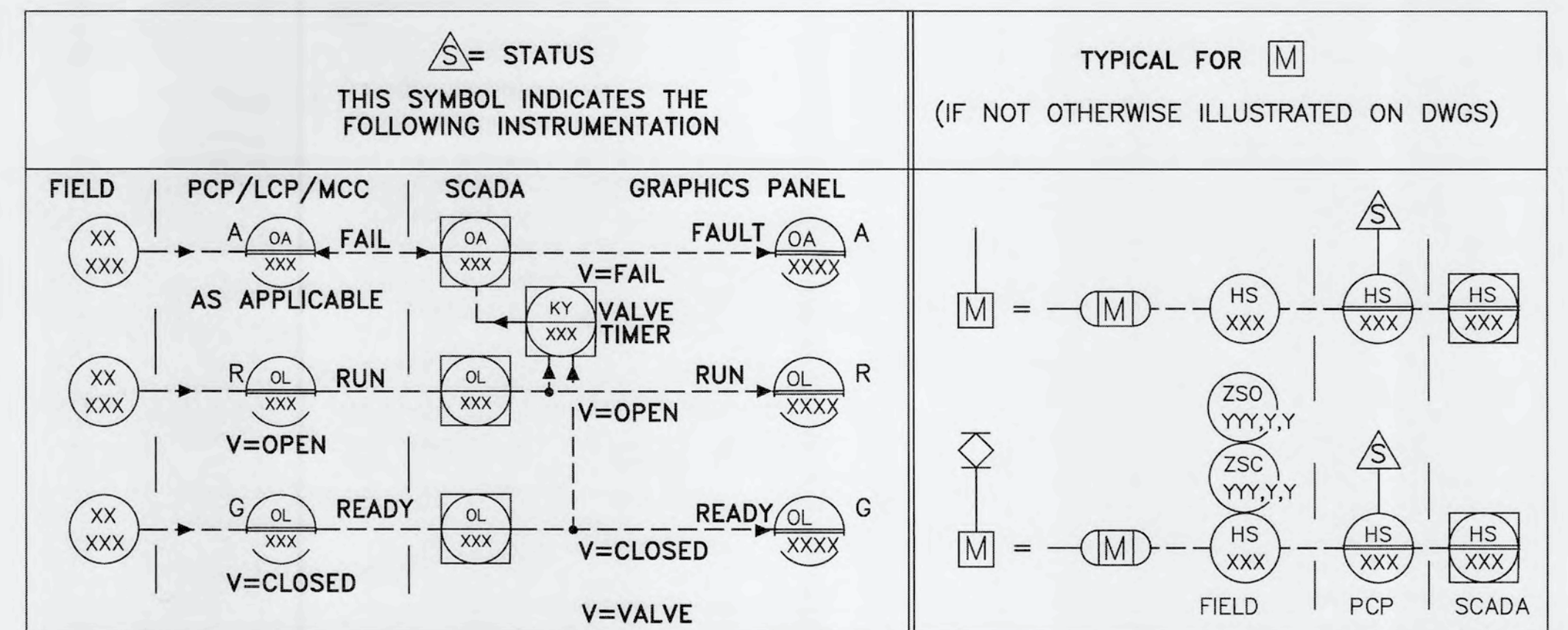
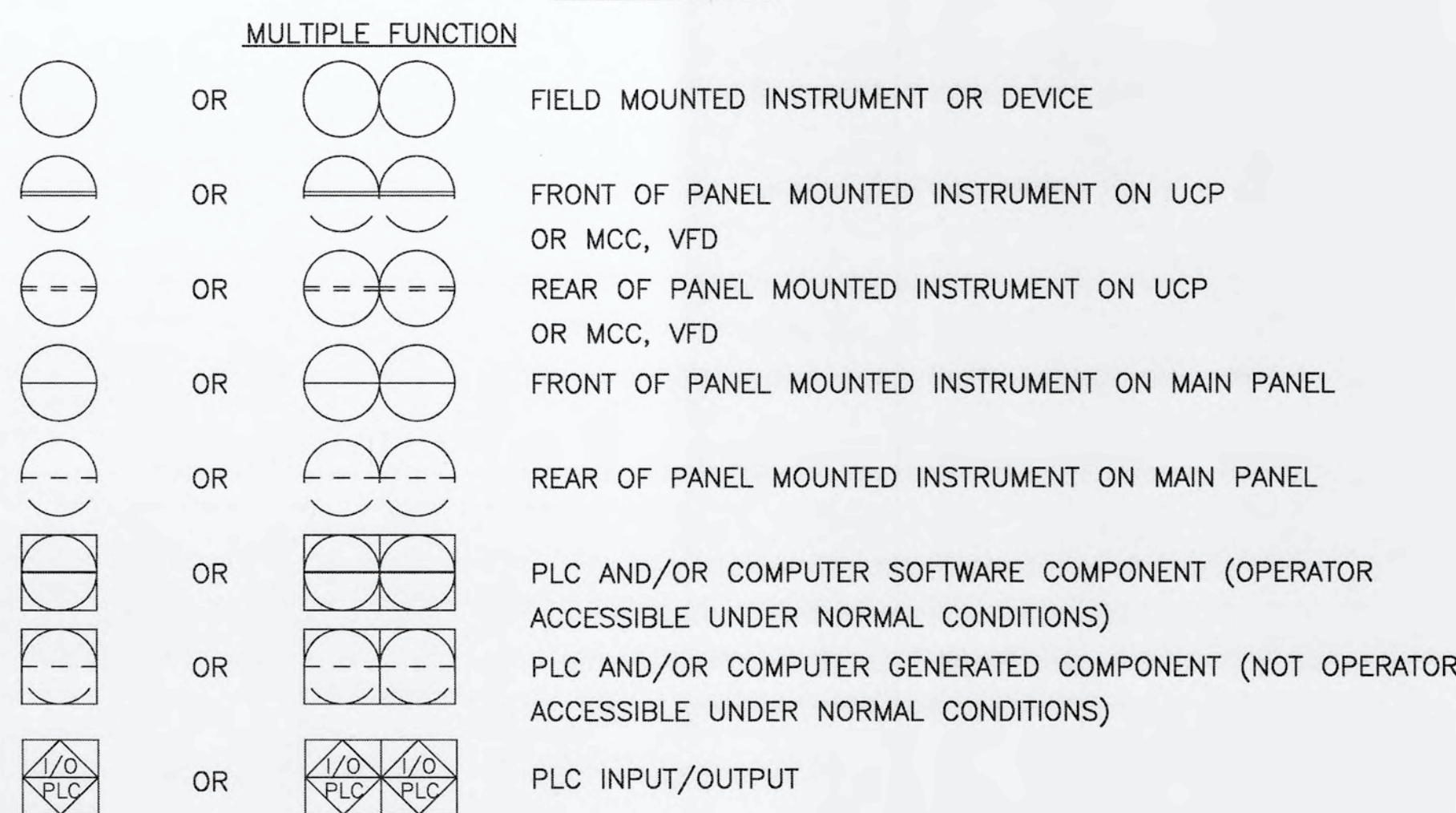
VALVE DESIGNATIONS



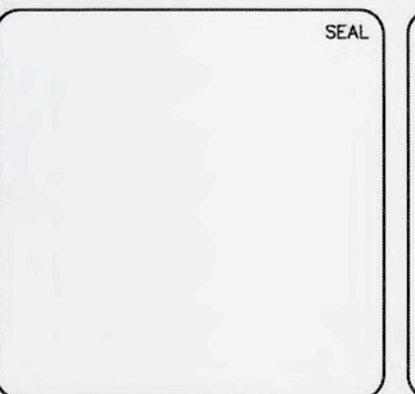
INSTRUMENT TAG NOTATION



BASIC SYMBOLS



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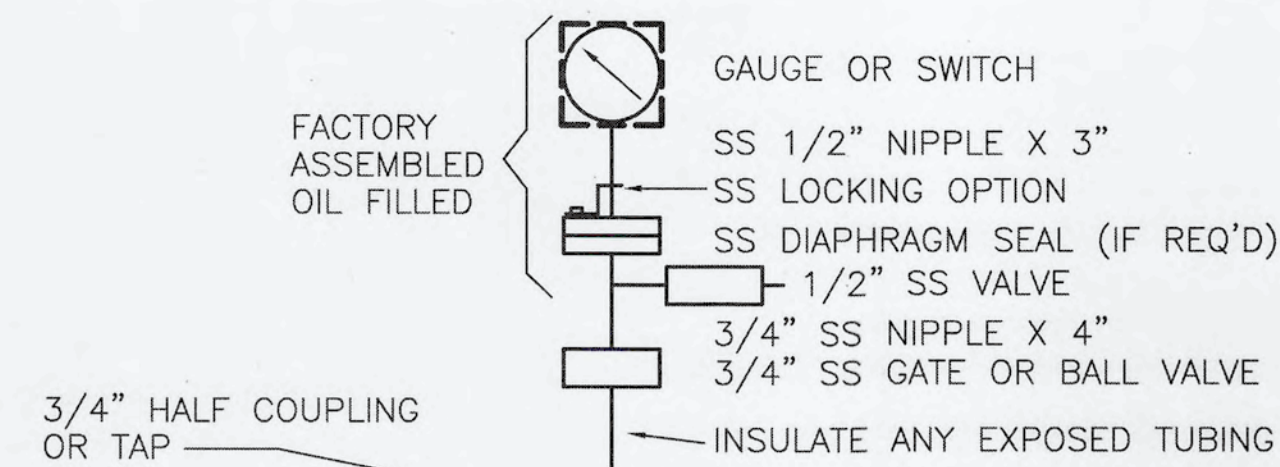


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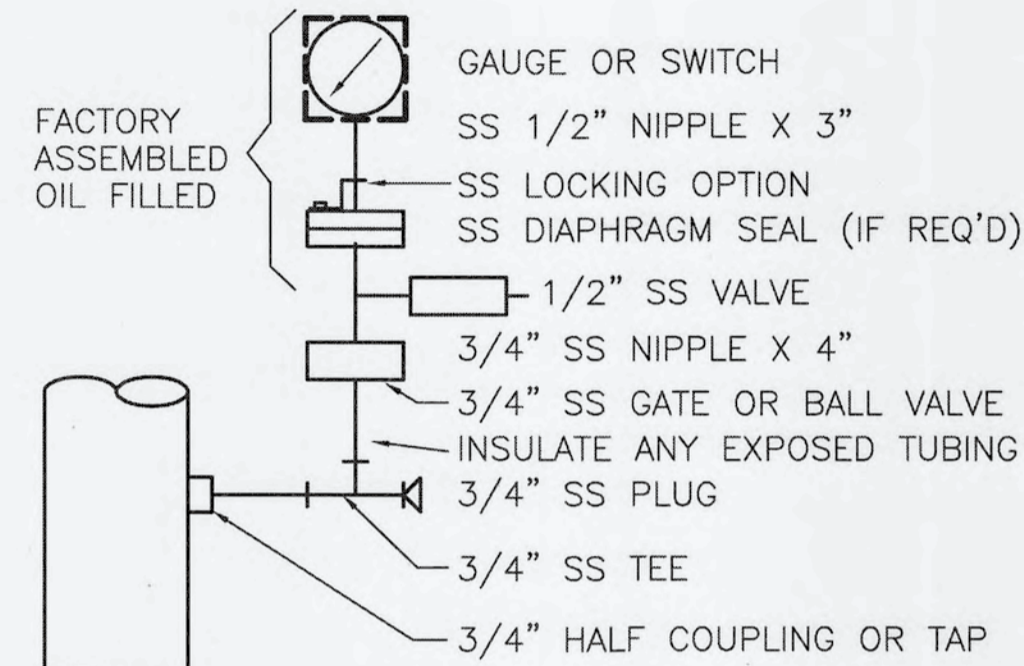


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**PROCESS AND INSTRUMENTATION DIAGRAM
 GENERAL NOTES, LEGEND
 AND ABBREVIATIONS**

DATE: SEPTEMBER, 2019	SCALE: N/A	DRAWING NUMBER: I-01
MCE PROJ. # 1024-0171	HORIZONTAL: N/A	
DRAWN: FEV	VERTICAL: N/A	
DESIGNED: FEV		
CHECKED: MDT		
PROJ. MGR. TLP		
STATUS: ISSUED FOR BID		



HORIZONTAL MOUNTING



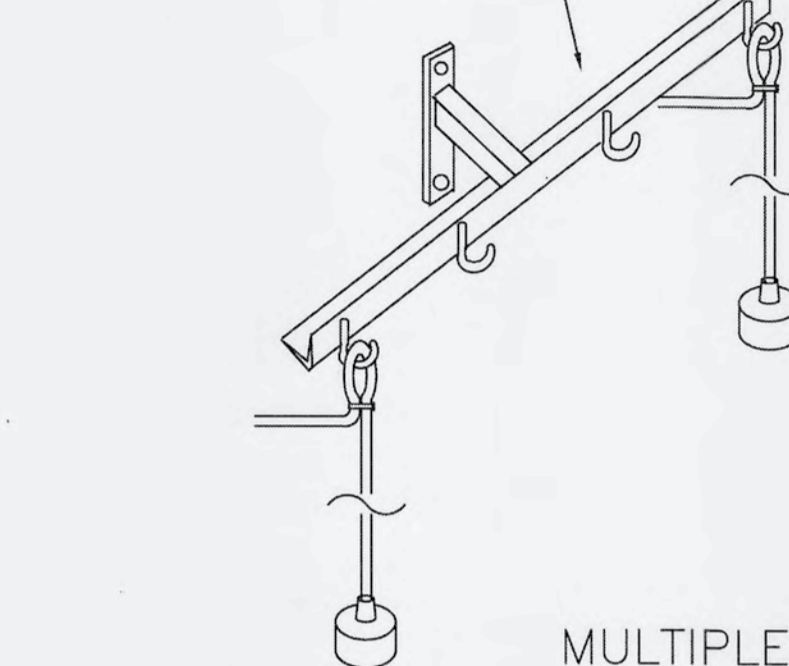
VERTICAL MOUNTING

TYPICAL PRESSURE INDICATOR/
SWITCH DETAIL



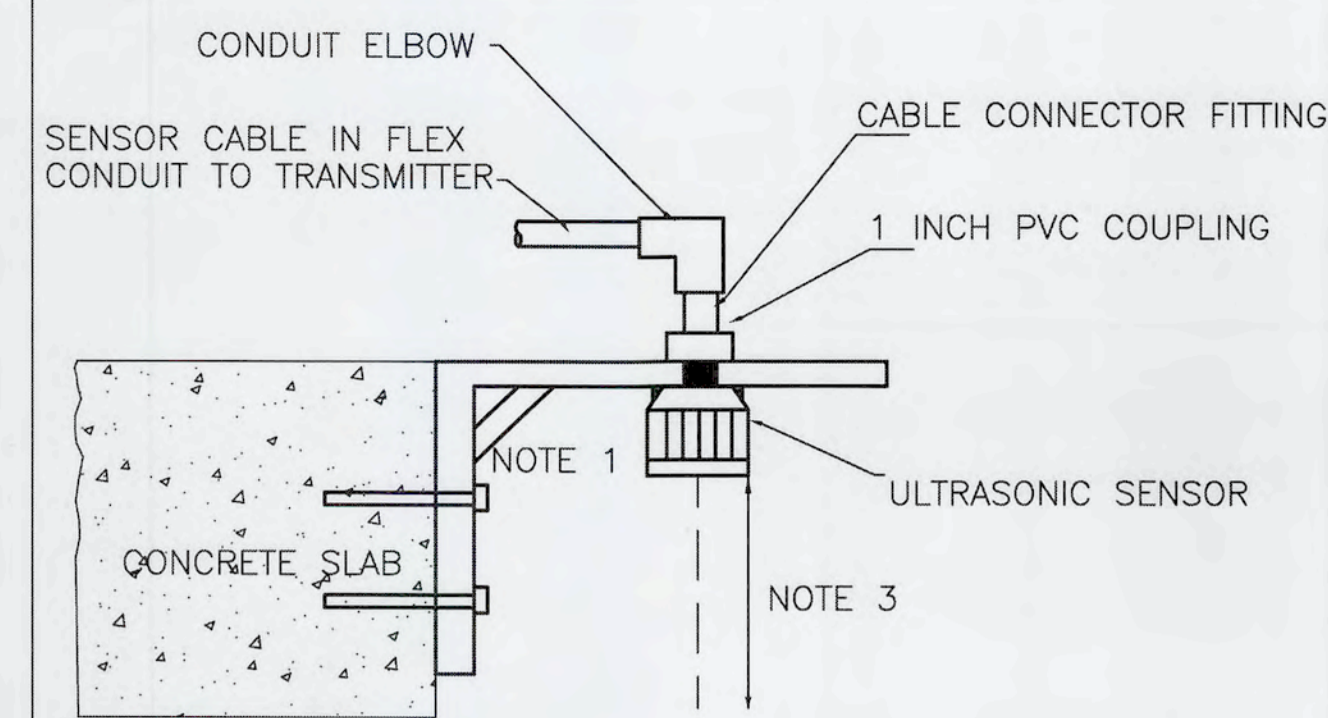
SINGLE

STAINLESS STEEL 316
MOUNTING BRACKETS



MULTIPLE

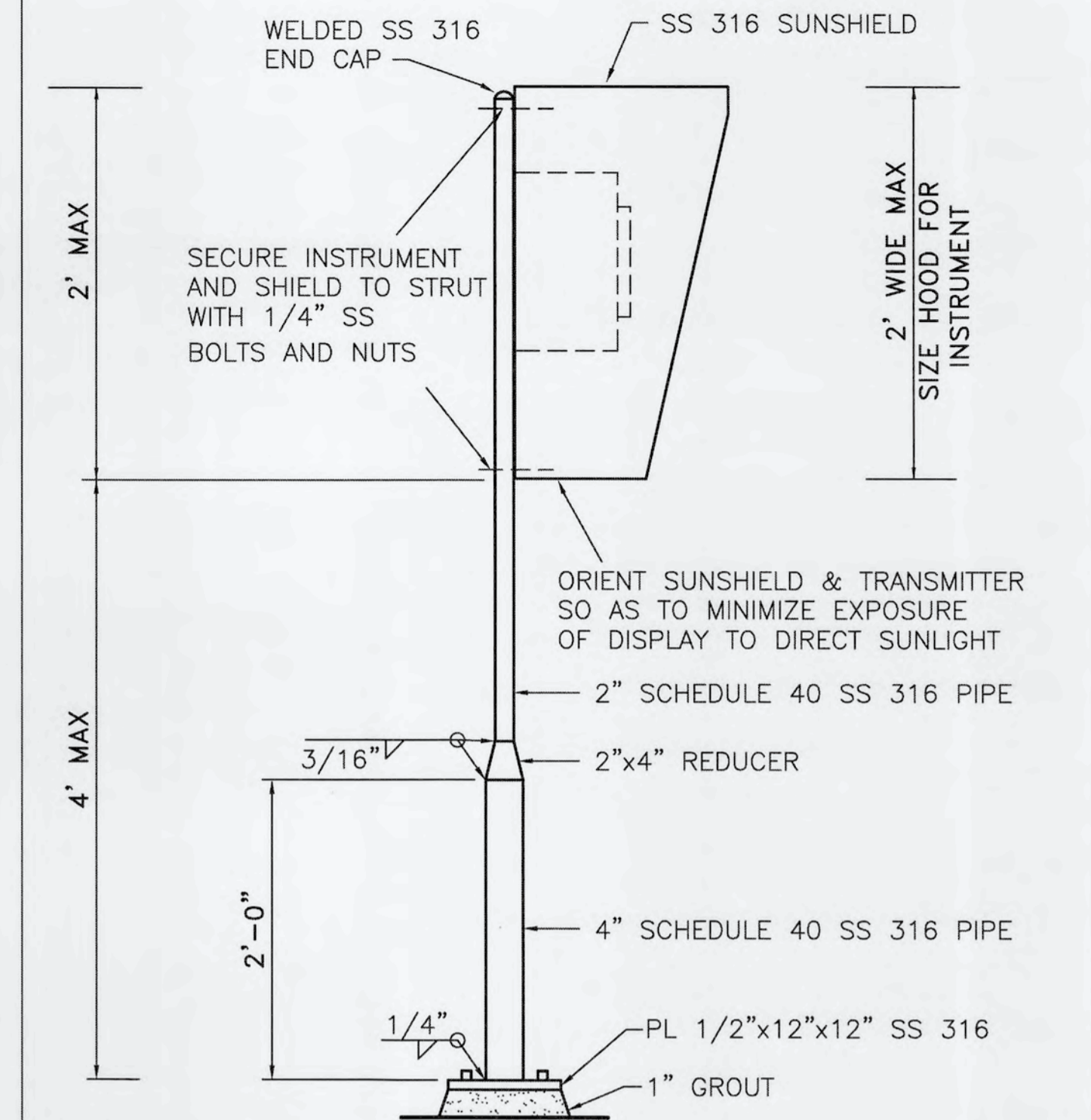
TYPICAL LEVEL SWITCH MOUNTING DETAIL



ULTRASONIC SENSOR
MOUNTING DETAIL

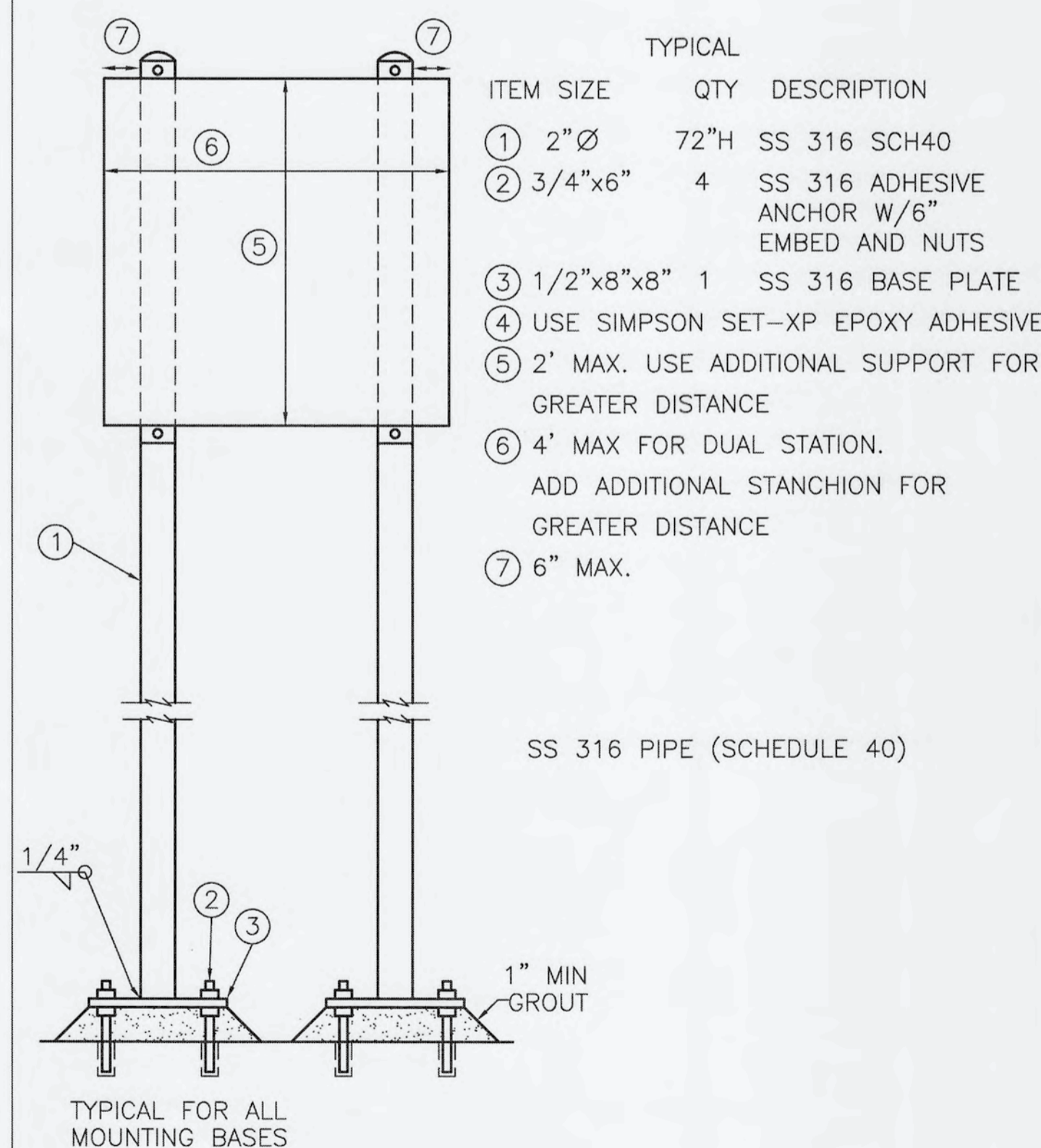
ULTRASONIC SENSOR
MOUNTING DETAIL

NOTES:
1. 316 STAINLESS STEEL
MOUNTING BRACKET
INSTALLATION
2. MANUFACTURER'S MINIMUM
BLANKING DISTANCE TO
MAX HIGH LEVEL.
3. MOUNT SENSOR AWAY
FROM TANK FILL AND
OTHER OBSTRUCTIONS.



1 SECURE TO SLAB WITH (4) 3/4"Ø SS 316 ADHESIVE ANCHOR W/6" EMBED
2 USE SIMPSON SET-XP EPOXY ADHESIVE

SINGLE INSTRUMENT
STANCHION MOUNT DETAIL



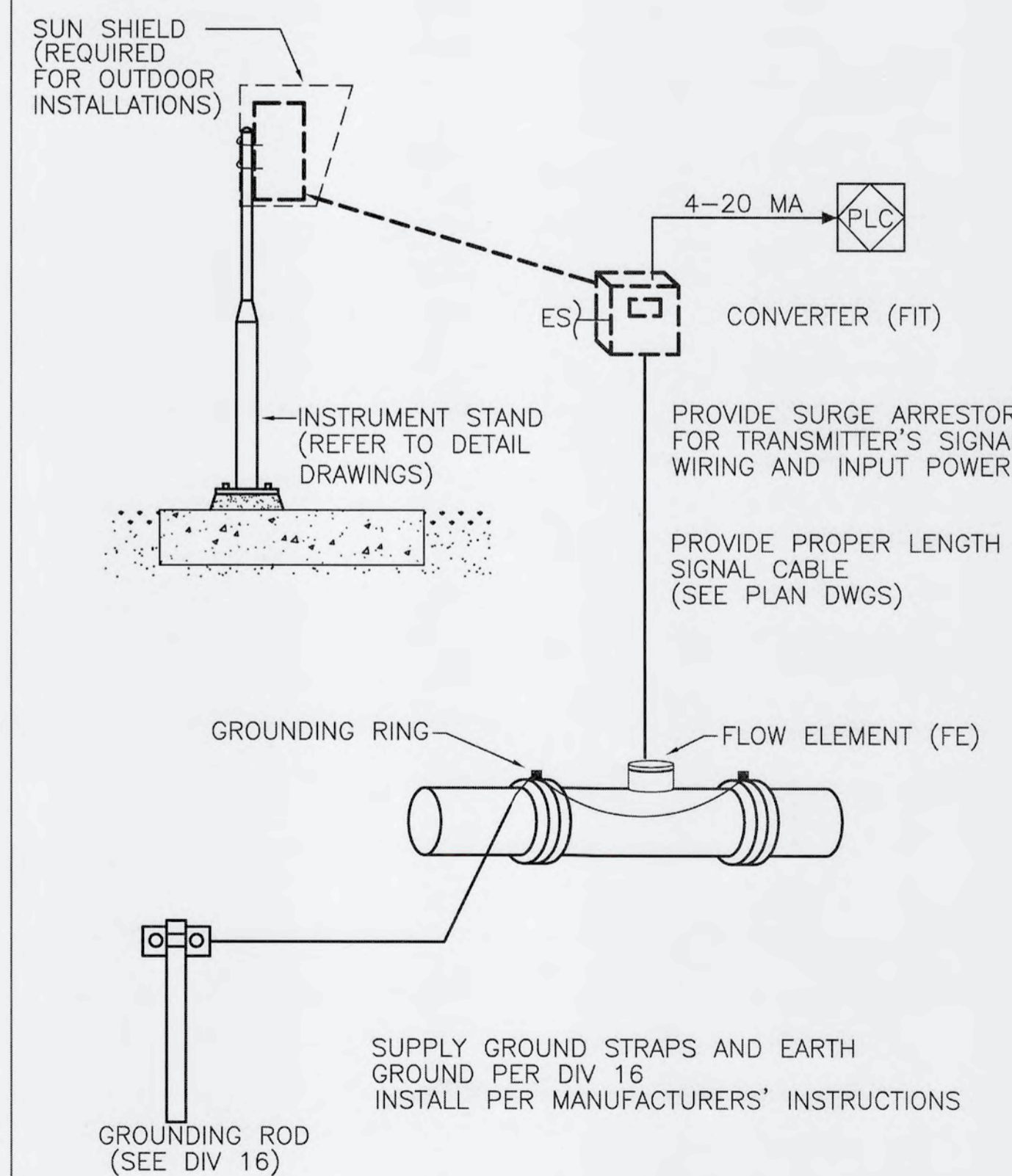
TYPICAL

ITEM	SIZE	QTY	DESCRIPTION
①	2"Ø	72"H	SS 316 SCH40
②	3/4"x6"	4	SS 316 ADHESIVE ANCHOR W/6" EMBED AND NUTS
③	1/2"x8"x8"	1	SS 316 BASE PLATE
④			USE SIMPSON SET-XP EPOXY ADHESIVE
⑤			2' MAX. USE ADDITIONAL SUPPORT FOR GREATER DISTANCE
⑥			4' MAX FOR DUAL STATION. ADD ADDITIONAL STANCHION FOR GREATER DISTANCE
⑦			6" MAX.

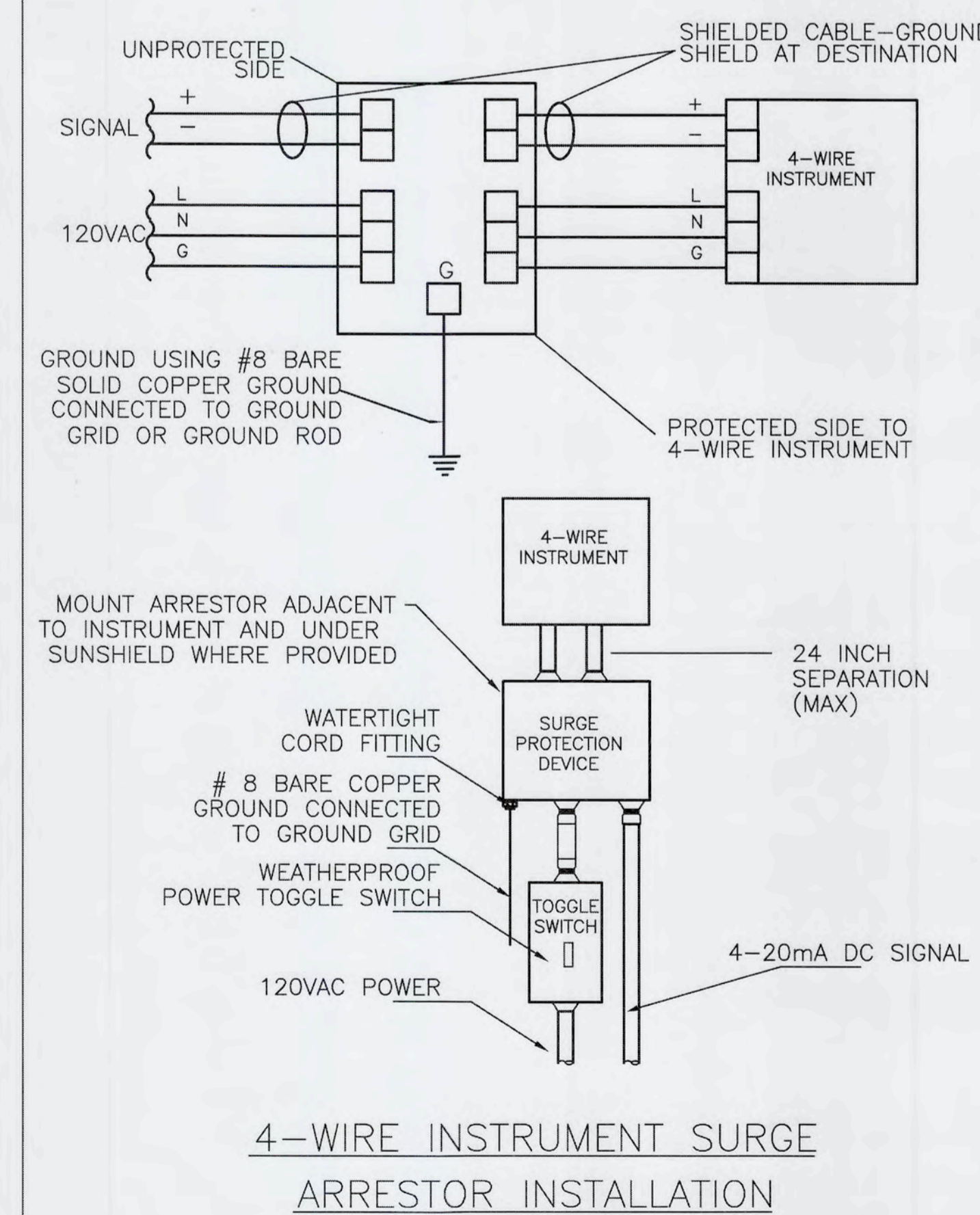
SS 316 PIPE (SCHEDULE 40)

TYPICAL FOR ALL
MOUNTING BASES

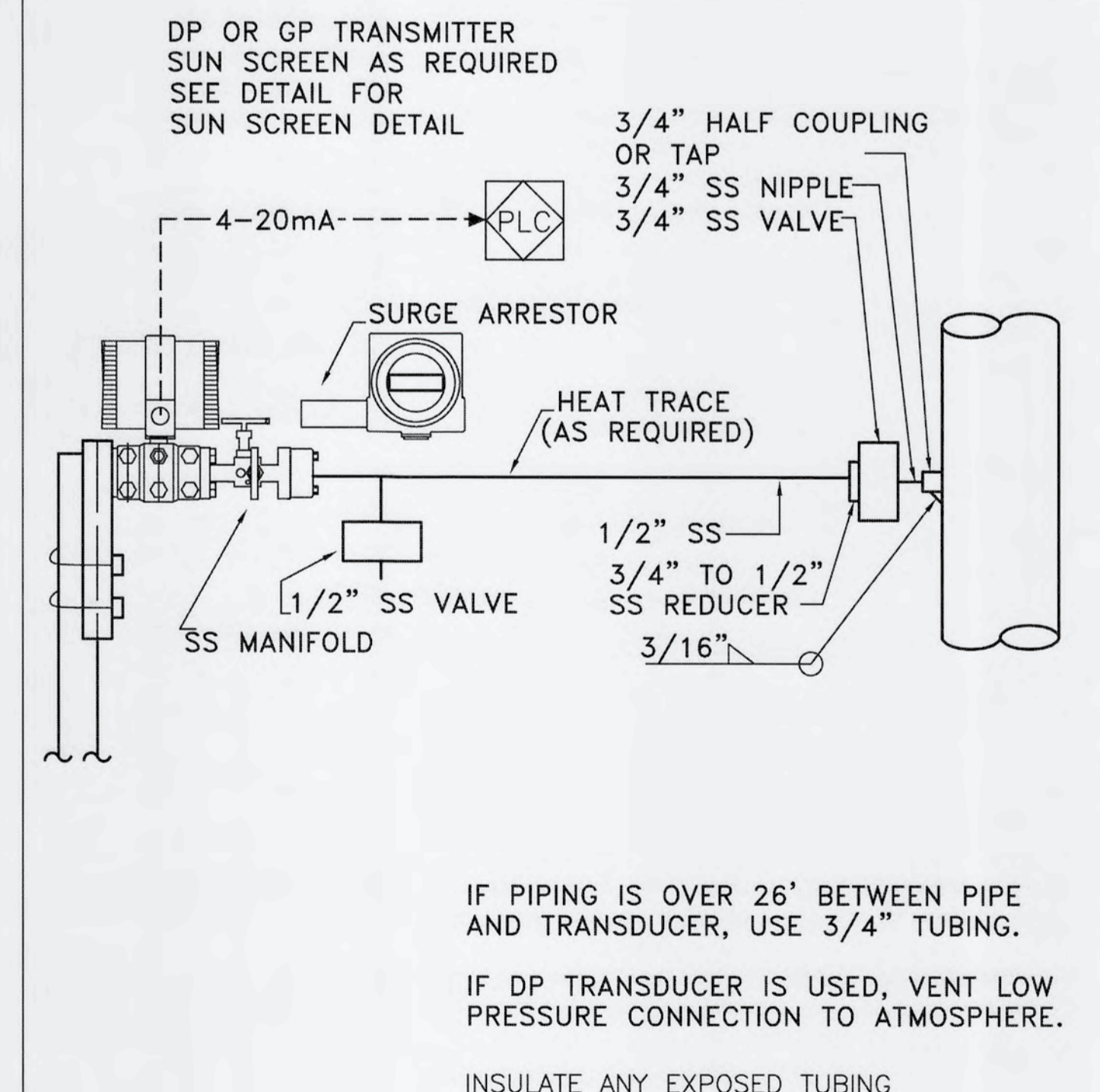
TYPICAL DUAL STANCHION MOUNT



TYPICAL MAGNETIC FLOWMETER INSTALLATION



4-WIRE INSTRUMENT SURGE
ARRESTOR INSTALLATION

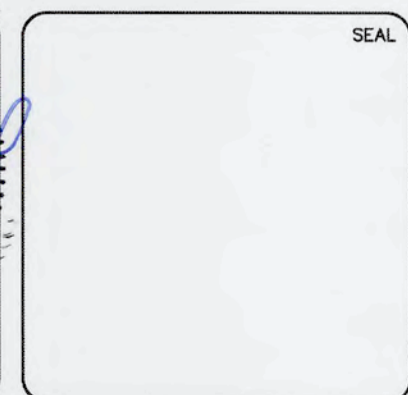
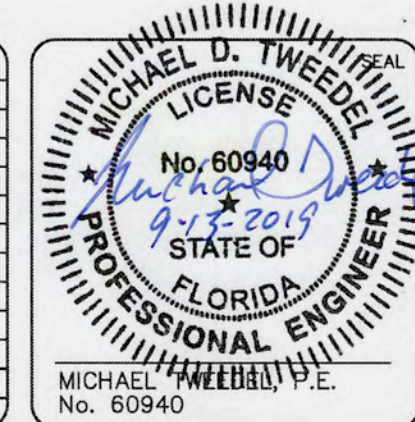


TYPICAL PRESSURE TRANSDUCER PIPING

IF PIPING IS OVER 26' BETWEEN PIPE AND TRANSDUCER, USE 3/4" TUBING.
IF DP TRANSDUCER IS USED, VENT LOW PRESSURE CONNECTION TO ATMOSPHERE.
INSULATE ANY EXPOSED TUBING

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REVNO.	DESCRIPTIONS	DATE
	REVISIONS	



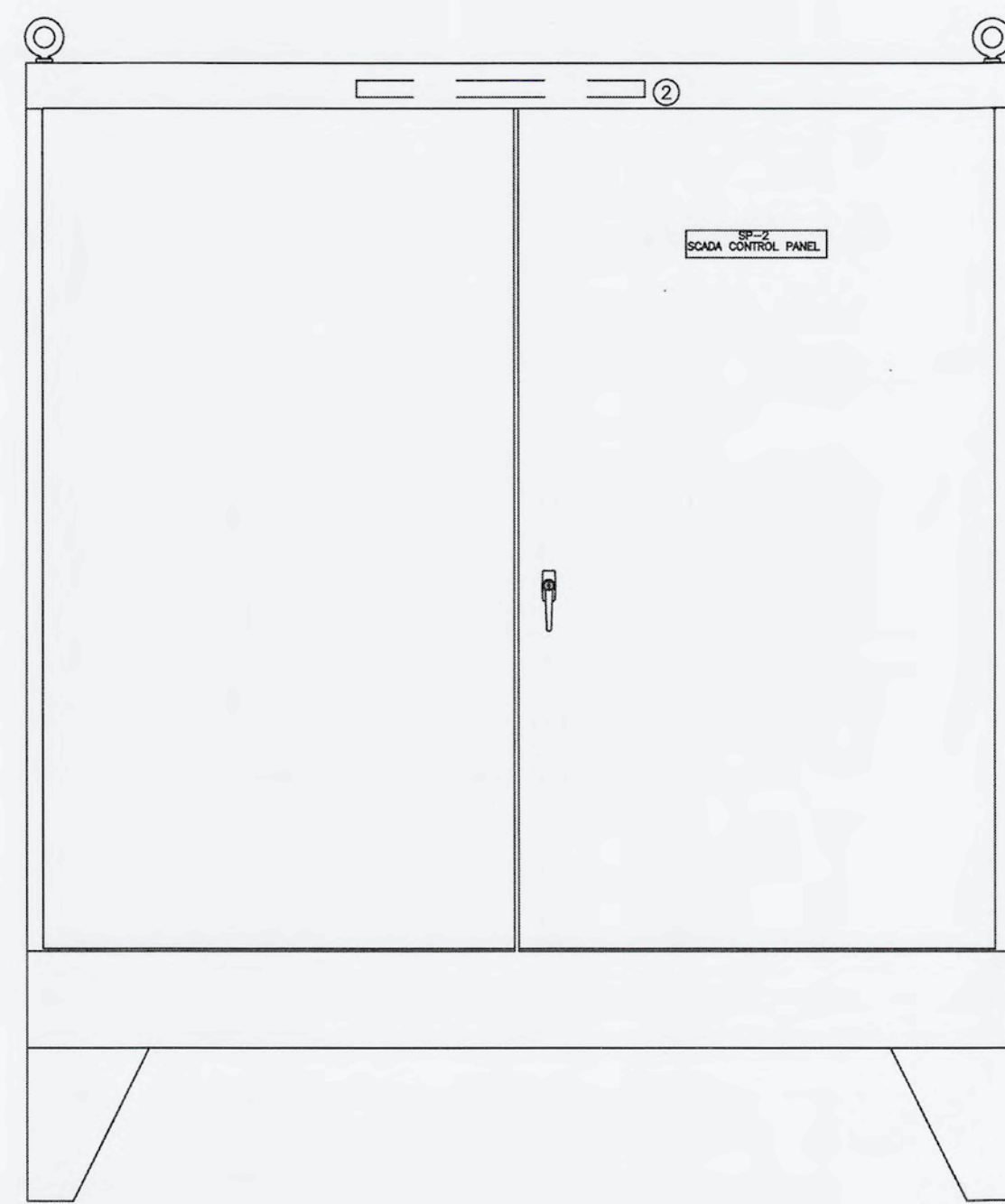
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INSTRUMENTATION DETAILS

DATE: SEPTEMBER, 2019	SCALE: N/A
MCE PROJ # 1024-0171	HORIZONTAL: N/A
DRAWN: FEV	VERTICAL: N/A
DESIGNED: FEV	
CHECKED: MDT	
PROJ. MGR: TLP	

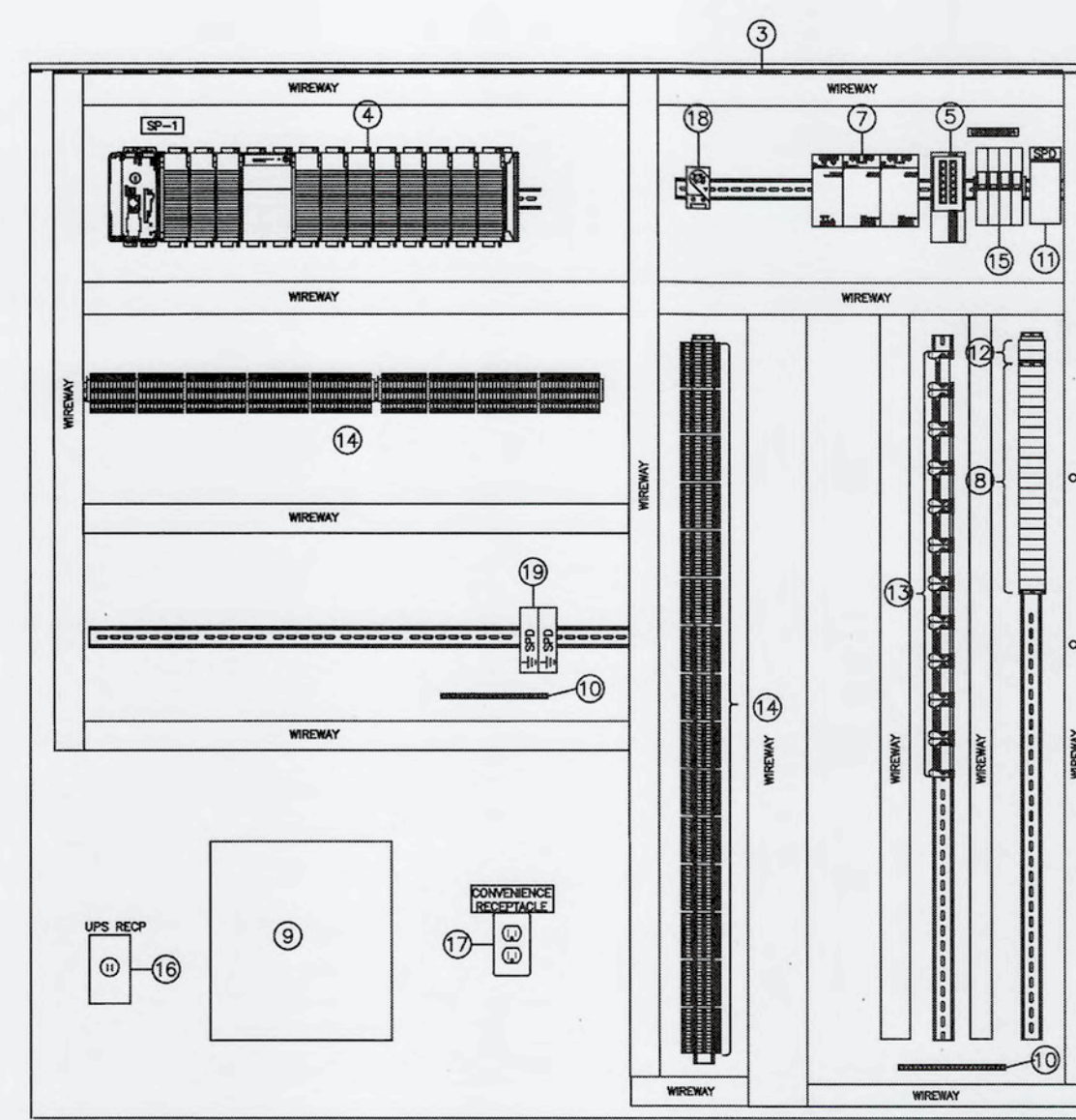
STATUS: ISSUED FOR BID



ENCLOSURE FRONT



ENCLOSURE SIDE

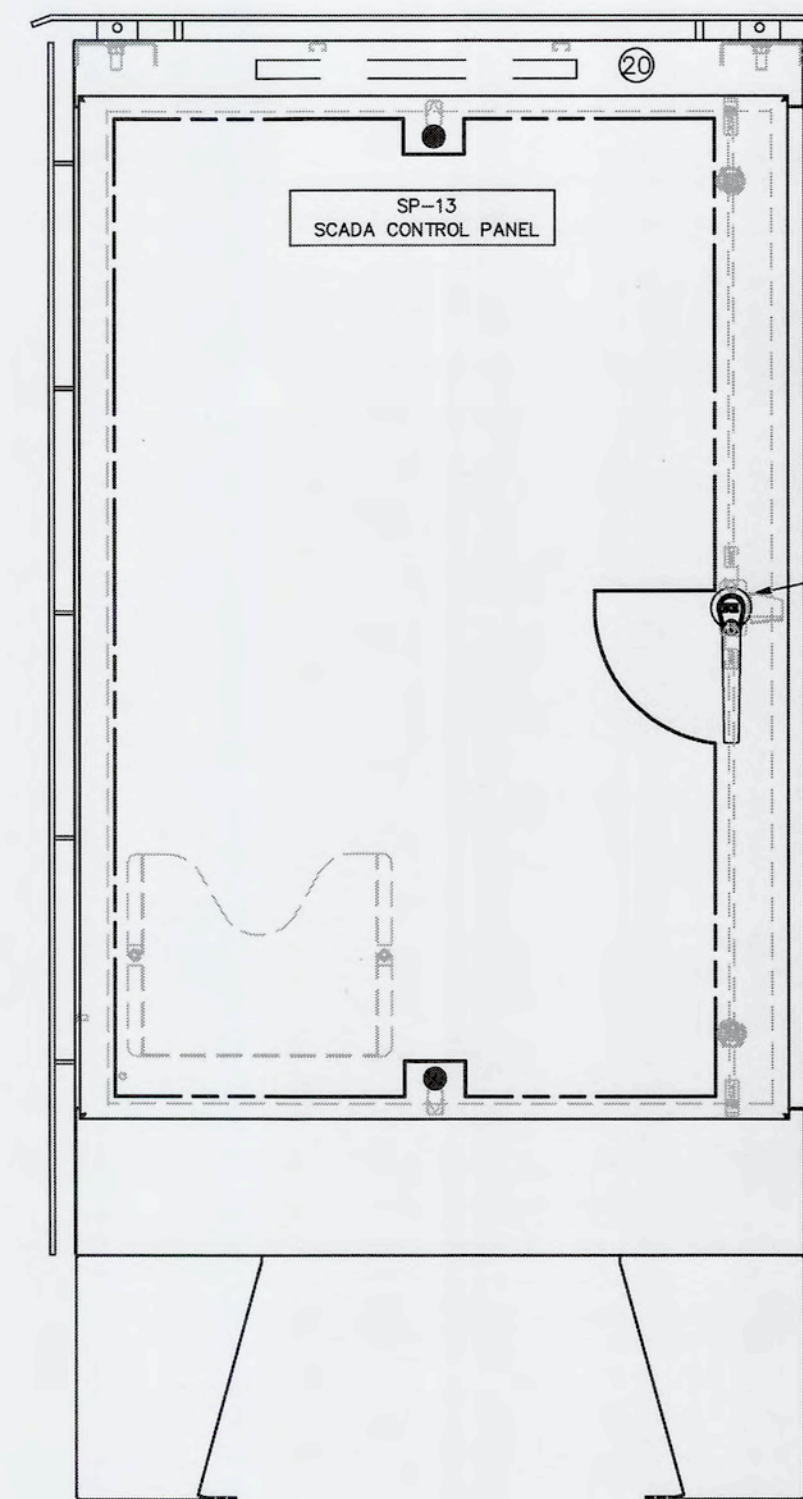


SUBPANEL LAYOUT

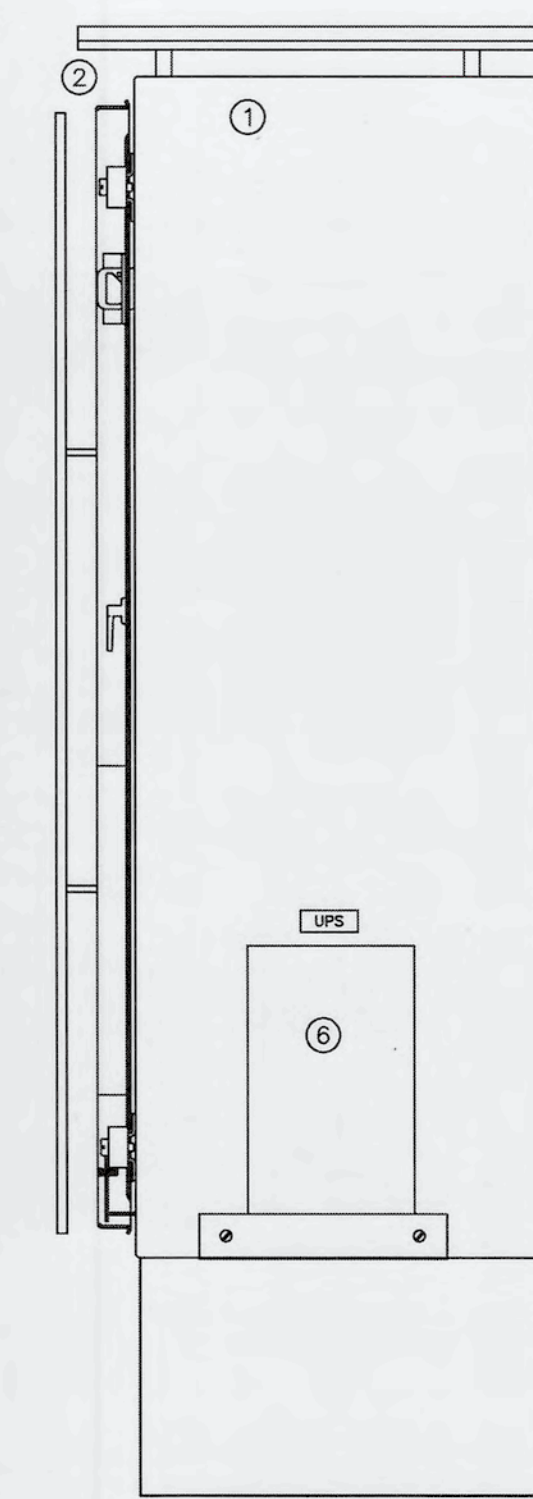
PLANT SCADA CONTROL PANEL (SP2)

NOT TO SCALE

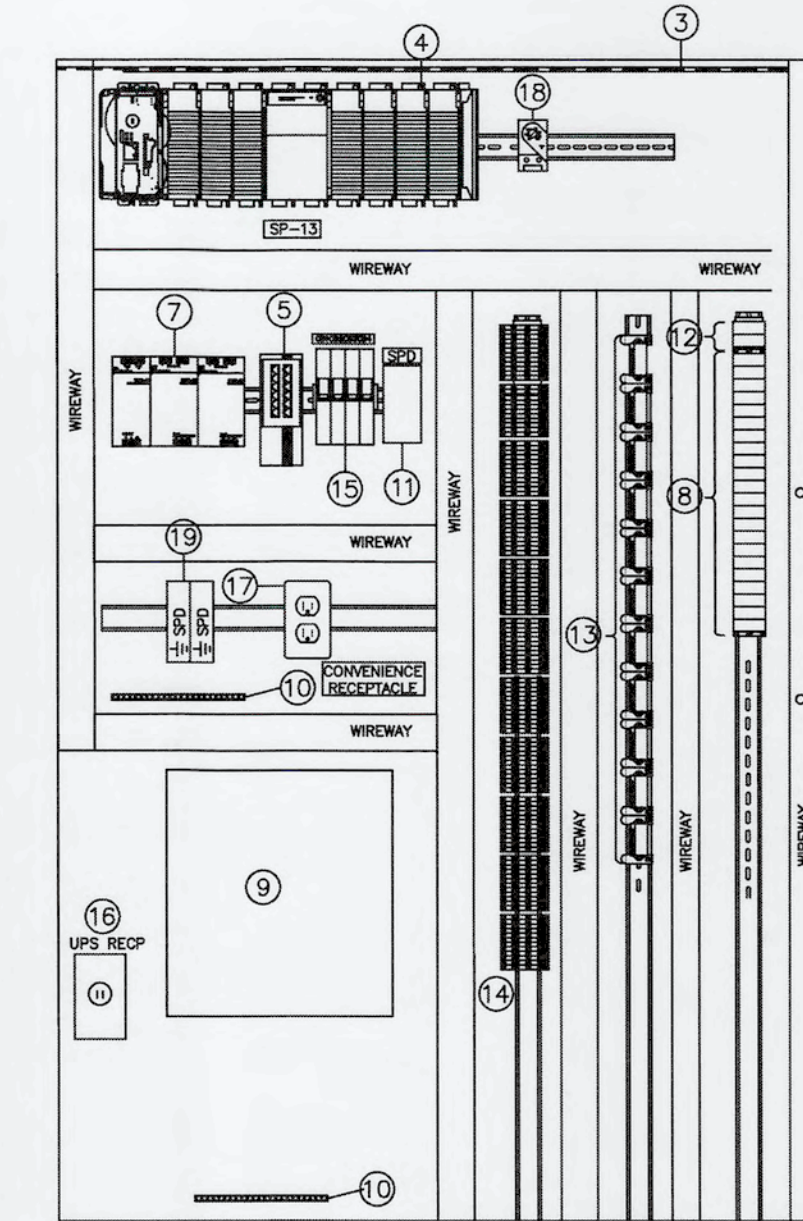
- NOTES:**
- ENCLOSURE W/LEGS, NEMA 4X, STAINLESS STEEL 316 WITH WHITE POWDER EPOXY COATING, 60"H x 60"W x 24"D APPROXIMATE.
 - LED LIGHT
 - ENCLOSURE SUBPANEL, STEEL, PAINTED WHITE
 - PLC HARDWARE
 - MANAGED ETHERNET NETWORK FIBER SWITCH
 - UNINTERRUPTIBLE POWER SUPPLY (UPS)
 - POWER SUPPLY, REDUNDANT, 24VDC @ 10A OUT
 - CONTROL RELAYS, 24VDC COIL, DPDT
 - FIBER OPTIC TERMINATION PATCH PANEL CABLE
 - GROUND CONNECTOR
 - AC LINE SURGE SUPPRESSOR
 - CONTROL RELAYS, 120VAC, COIL, DPDT
 - ANALOG SURGE SUPPRESSORS
 - TERMINALS
 - CIRCUIT BREAKERS
 - UPS RECEPTACLE
 - 120VAC GFCI OUTLET
 - TEMPERATURE SWITCH
 - CAT6 SURGE ARRESTORS



ENCLOSURE FRONT



ENCLOSURE SIDE

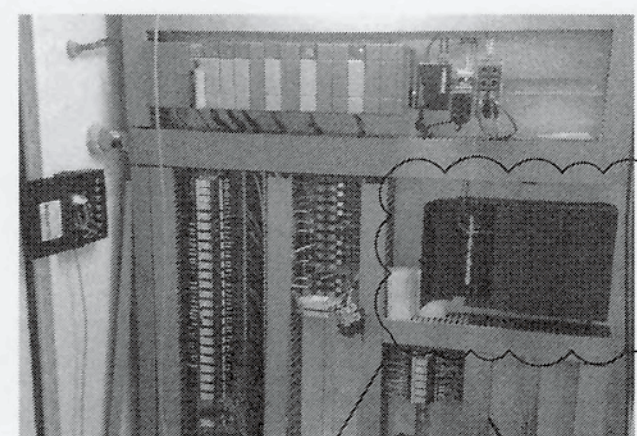


SUBPANEL LAYOUT

PLANT SCADA CONTROL PANEL (SP13)

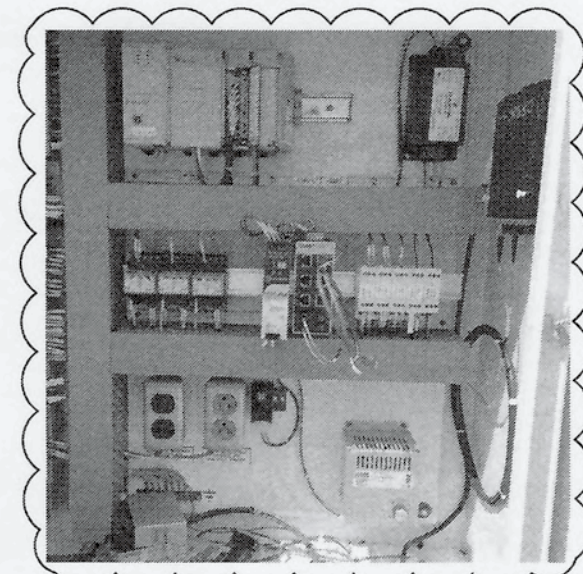
NOT TO SCALE

- NOTES:**
- ENCLOSURE, NEMA 4X, STAINLESS STEEL 316 WITH WHITE POWDER EPOXY COATING, 60"H x 36"W x 18"D APPROXIMATE.
 - SUN SHIELDS (TYPICAL) - STAINLESS STEEL 316 WITH WHITE POWDER EPOXY COATING
 - ENCLOSURE SUBPANEL, STEEL, PAINTED WHITE
 - PLC HARDWARE
 - MANAGED ETHERNET NETWORK FIBER SWITCH
 - UNINTERRUPTIBLE POWER SUPPLY (UPS)
 - POWER SUPPLY, REDUNDANT, 24VDC @ 10A OUT
 - CONTROL RELAYS, 24VDC COIL, DPDT
 - FIBER OPTIC TERMINATION PATCH PANEL CABLE
 - GROUND CONNECTOR
 - AC LINE SURGE SUPPRESSOR
 - CONTROL RELAYS, 120VAC, COIL, DPDT
 - ANALOG SURGE SUPPRESSORS
 - TERMINALS
 - CIRCUIT BREAKERS
 - UPS RECEPTACLE
 - 120VAC GFCI OUTLET
 - TEMPERATURE SWITCH
 - CAT6 SURGE ARRESTORS FOR HARDWARE INSTRUMENT COMMUNICATIONS
 - LED LIGHT



SEE NOTE 5.1 ON SHEET I-06 DRAWING

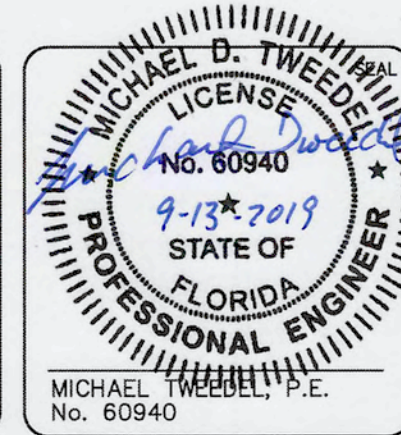
SP-8 MODIFICATIONS



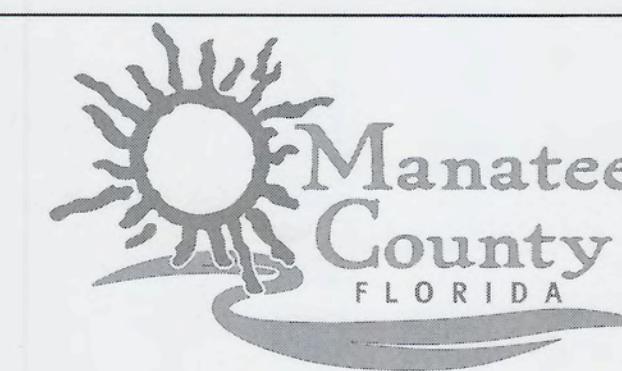
SEE NOTE 4.1 ON SHEET I-06 DRAWING

SP-13 MODIFICATIONS

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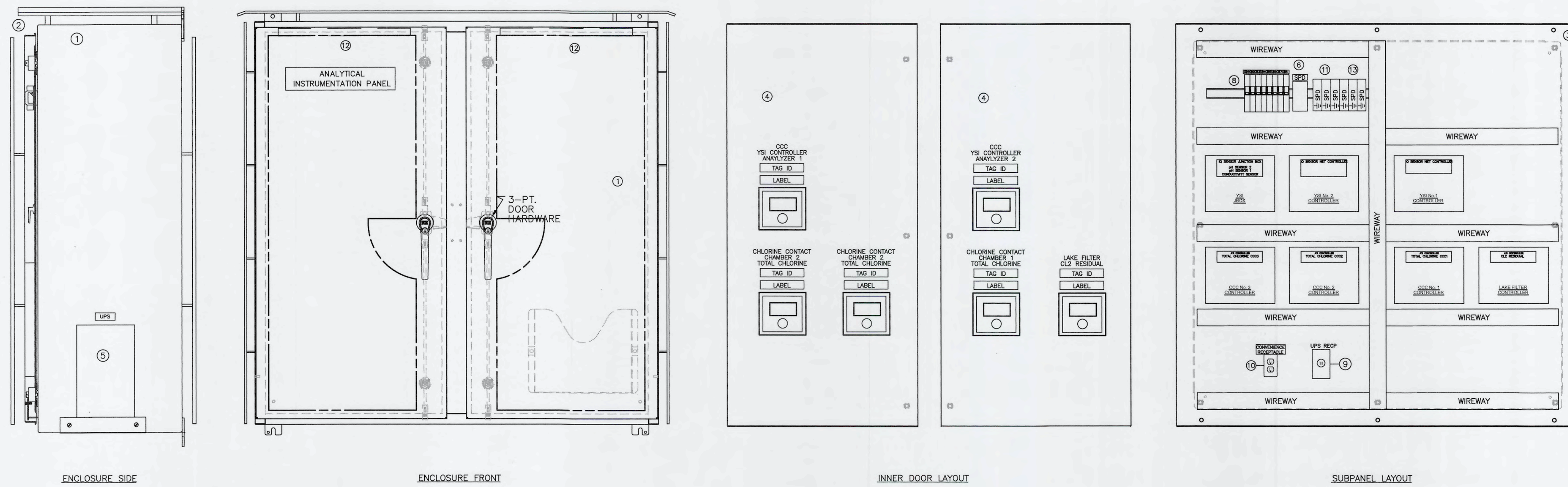


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INSTRUMENTATION AND PANEL DETAILS

DATE: SEPTEMBER, 2019	SCALE: N/A	DRAWING NUMBER: N/A
MCE PROJ. # 1024-0171	HORIZONTAL: N/A	
DRAWN: FEV	VERTICAL: N/A	
DESIGNED: FEV		
CHECKED: MDT		
PROJ. MGR.: TLP		
STATUS: ISSUED FOR BID		

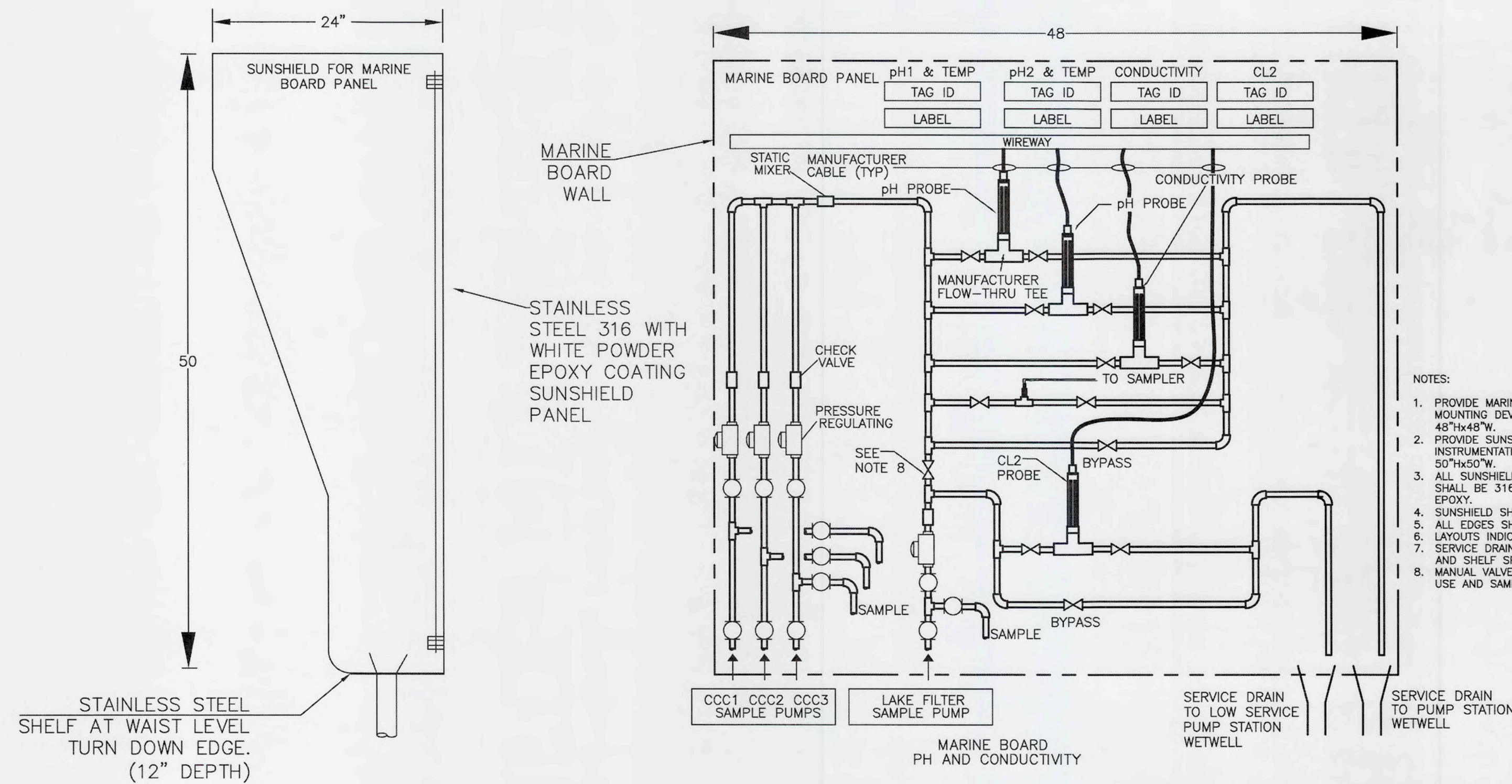
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- NOTES:**
- ENCLOSURE, NEMA 4X, STAINLESS STEEL 316 WITH WHITE POWDER EPOXY COATING, 48"H x 48"W x 16"D APPROXIMATE.
 - SUN SHIELDS (TYPICAL) - STAINLESS STEEL 316 WITH WHITE POWDER EPOXY COATING
 - ENCLOSURE SUBPANEL, STEEL, PAINTED WHITE
 - SWING OUT INNER DOOR FOR INSTRUMENTATION DISPLAY
 - UNINTERRUPTIBLE POWER SUPPLY (UPS)
 - AC LINE SURGE SUPPRESSOR
 - TERMINALS
 - CIRCUIT BREAKERS
 - UPS RECEPTACLE
 - 120VAC GFCI OUTLET
 - CAT6 SURGE ARRESTORS
 - LED LIGHT
 - 4-20 mA SURGE ARRESTORS

CCC ANALYZER PANEL (AP-60010)

NOT TO SCALE



- NOTES:**
- PROVIDE MARINE BOARD FOR INSTRUMENTATION MOUNTING DEVICES. APPROXIMATE DIMENSIONS OF 48"Hx48"W.
 - PROVIDE SUNSHIELD STANCHION MOUNT FOR THE INSTRUMENTATION. APPROXIMATE DIMENSIONS OF 50"Hx50"W.
 - ALL SUNSHIELD AND INSTRUMENT MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL WITH WHITE POWDER EPOXY.
 - SUNSHIELD SHALL BE 1/4" THICK MINIMUM.
 - ALL EDGES SHALL BE ROUNDED AND BURR-FREE.
 - LAYOUTS INDICATED AS GENERAL INFORMATION ONLY.
 - SERVICE DRAIN SHALL BE SUFFICIENT FOR SENSOR FLOW AND SHELF SPILLAGE.
 - MANUAL VALVE TO USE WHEN LAKE FILTERS ARE NOT IN USE AND SAMPLE PUMP IS OFF.

CCC MARINE BOARD (MB-60010)

NOT TO SCALE

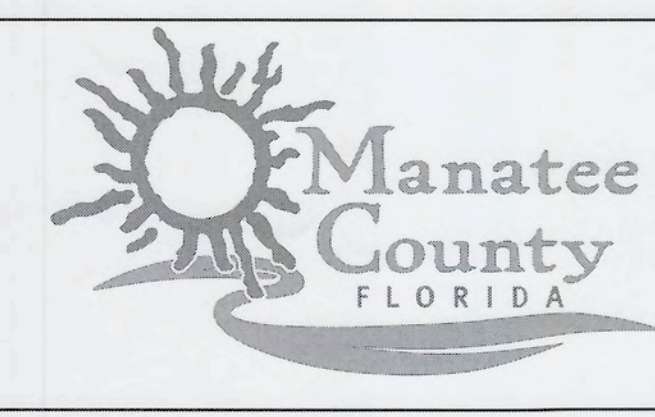
REV. NO.	DESCRIPTIONS	DATE

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 LICENSE
 No. 80940
 9-13-2019
 STATE OF
 FLORIDA
 PROFESSIONAL ENGINEER

MICHAEL TWEDEL, P.E.
 No. 80940

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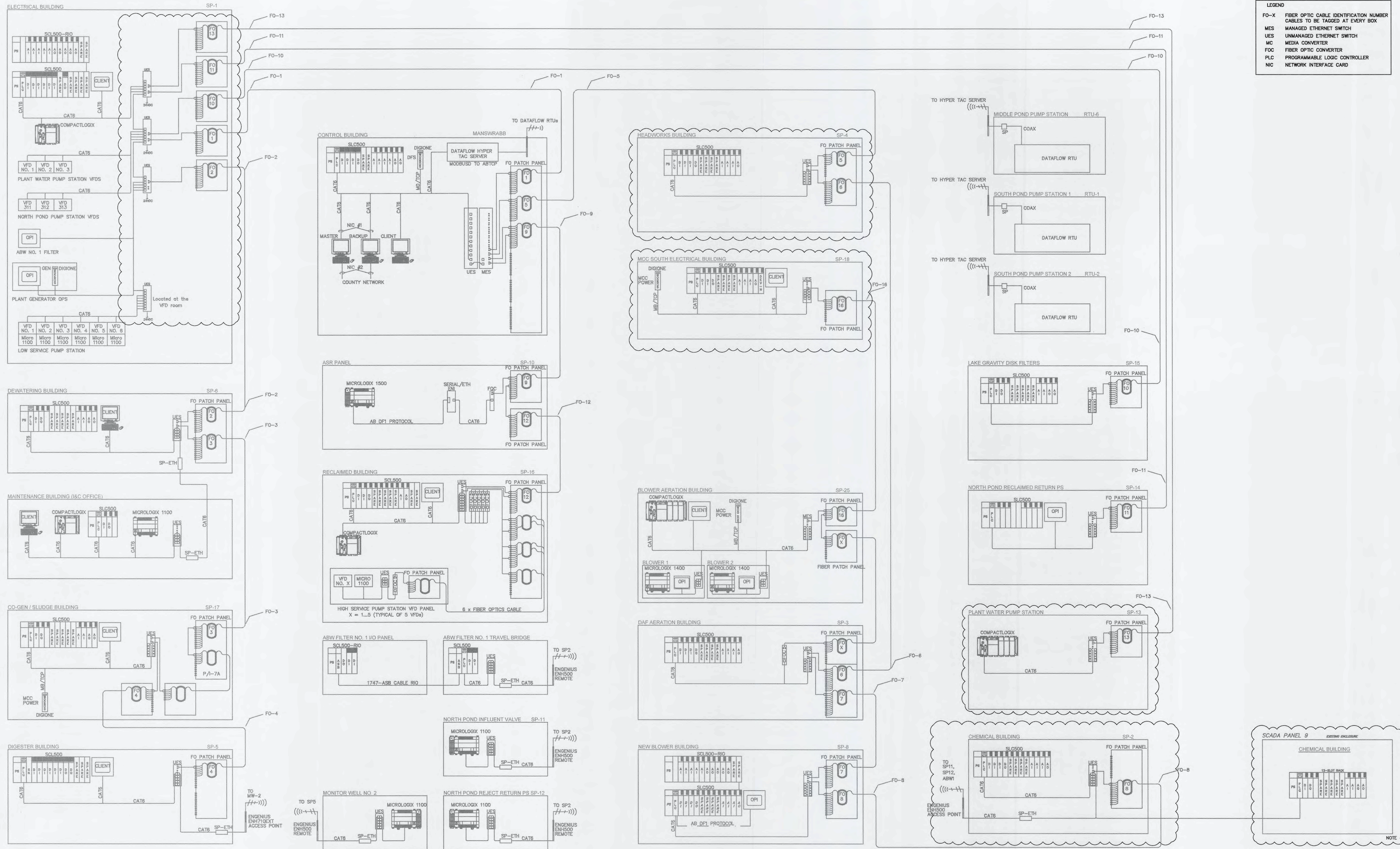
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**INSTRUMENTATION AND PANEL DETAILS
 ANALYZER PANEL**

DATE:	SEPTEMBER, 2019	SCALE:	DRAWING NUMBER:
MCE PROJ. #	1024-0171	HORIZONTAL:	N/A
DRAWN	FEV	VERTICAL:	1-04
DESIGNED	FEV	REVISION	
CHECKED	MDT		
PROJ. MGR.	TLP		
STATUS: ISSUED FOR BID			



LEGEND
 FO-X FIBER OPTIC CABLE IDENTIFICATION NUMBER
 CABLES TO BE TAGGED AT EVERY BOX
 MES MANAGED ETHERNET SWITCH
 UES UNMANAGED ETHERNET SWITCH
 MC MEDIA CONVERTER
 FOC FIBER OPTIC CONVERTER
 PLC PROGRAMMABLE LOGIC CONTROLLER
 NIC NETWORK INTERFACE CARD

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REV. NO.	DESCRIPTION	DATE

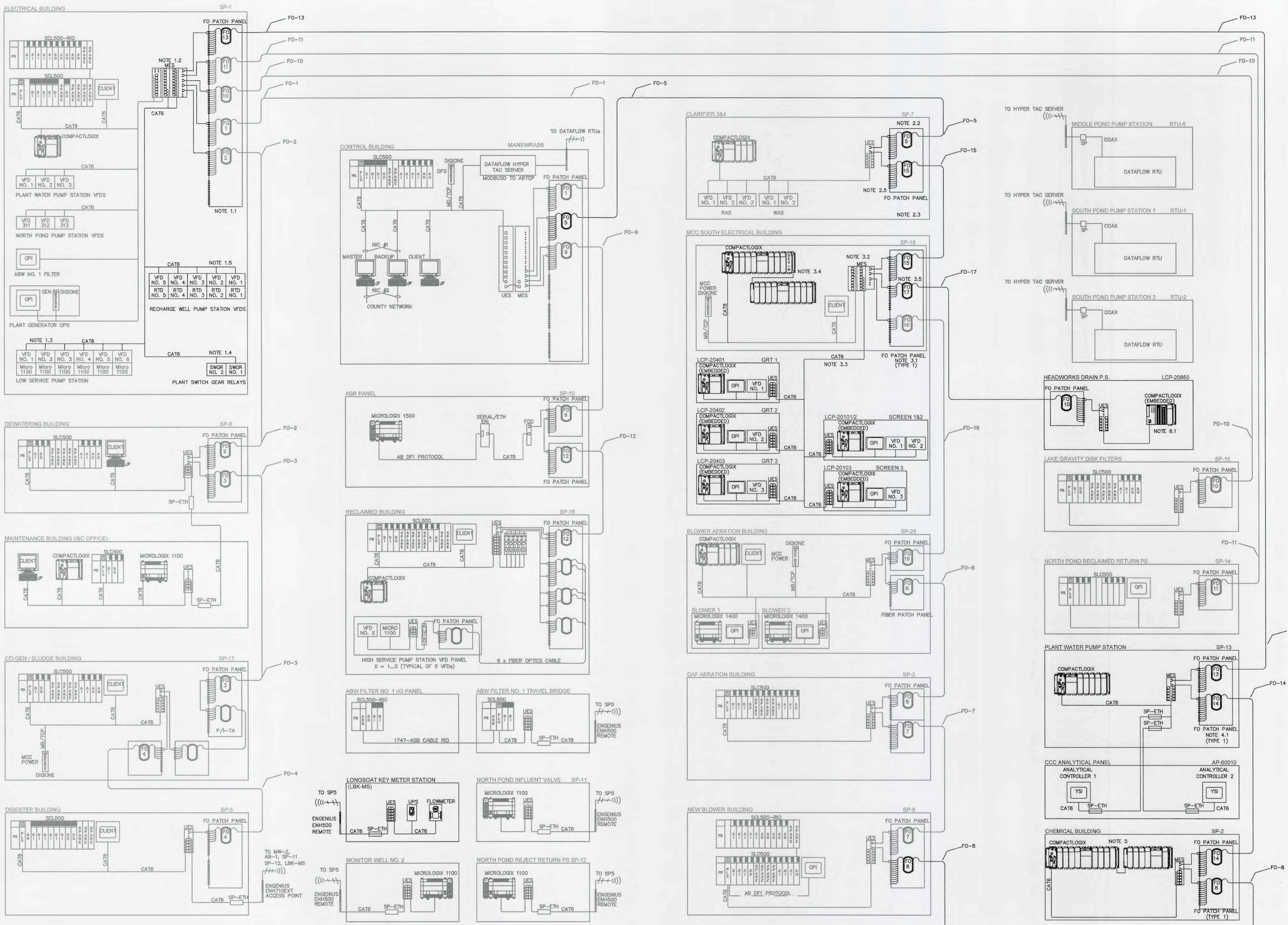
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NETWORK LAYOUT EXISTING

DATE: SEPTEMBER, 2019	SCALE: N/A	DRAWING NUMBER: N/A
MCE PROJ. # 1024-0171	HORIZONTAL: N/A	VERTICAL: N/A
DRAWN: FEV		
DESIGNED: FEV		
CHECKED: MDT		
PROJ. MGR: TLP		
STATUS: ISSUED FOR BID		REVISION:

NOTE 4



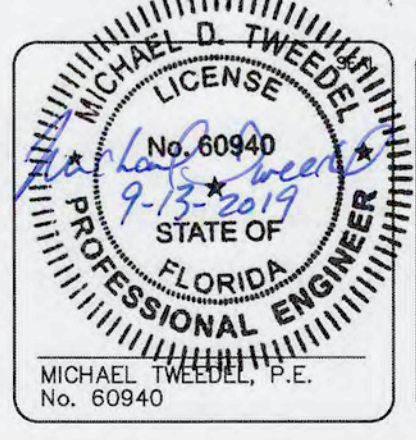
LEGEND

FO-X	FIBER OPTIC CABLE IDENTIFICATION NUMBER
CABLES TO BE TAGGED AT EVERY BOX	
MES	MANAGED ETHERNET SWITCH
UES	UNMANAGED ETHERNET SWITCH
MC	MEDIA CONVERTER
FCC	FIBER OPTIC CONVERTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
NIC	NETWORK INTERFACE CARD

- NOTES:**
- SP-1 (HEADWORKS):
 - PROVIDE AND INSTALL (1) NEW ENCLOSURE WITH 72-STRAND FIBER OPTIC PATCH PANEL OUTSIDE OF SP-1 PANEL, RE-ROUTE EXISTING FIBER CABLES TO NEW PATCH PANEL. LABEL ALL CABLES AND TERMINATE ALL STRANDS. PROVIDE AND INSTALL NEW PATCH CORDS FROM PATCH PANEL TO SP-1 NETWORK SWITCH. COORDINATE LABELS AND LOCATION WITH OWNER.
 - PROVIDE AND INSTALL ONE (1) ALLEN BRADLEY STRATIX 5700 20-PORT MANAGED ETHERNET SWITCH. PROVIDE SIX (6) 100M MULTIMODE FIBER SFP MODULES FOR CONNECTION TO SCADA FIBER OPTICS NETWORK. PROVIDE AND INSTALL TWO (2) ALLEN BRADLEY STRATIX 5700 10-PORT MANAGED ETHERNET SWITCH. SEE SPECIFICATIONS FOR MODEL AND REQUIREMENTS.
 - PROVIDE AND INSTALL NEW CONDUIT AND CAT. 6 NETWORK CABLES TO PROVIDE DIRECT CONNECTIONS BETWEEN THE ELECTRICAL ROOM VFDs AND SP-1. DECOMMISSION THE EXISTING ELECTRICAL ROOM NETWORK SWITCH AND CABINET AFTER TRANSFER OF ALL CONNECTIONS.
 - PROVIDE AND INSTALL CONDUIT AND CAT. 6 NETWORK CABLES FROM THE NEW SWITCHGEAR MONITORING RELAYS TO THE NEW SP-1 NETWORK SWITCH.
 - PROVIDE AND INSTALL CONDUIT AND CAT. 6 NETWORK CABLES FROM THE NEW RECHARGE WELL VFDs TO THE NEW SP-1 NETWORK SWITCH.
 - PROVIDE NEW 24VDC DIGITAL INPUT CARD FOR THE ADDITIONAL SIGNALS LISTED ON THE I/O SCHEDULE. PROVIDE SURGE PROTECTION AND FIELD WIRE TERMINALS FOR NEW DISCRETE INPUTS.
 - SP-4 (HEADWORKS):
 - DECOMMISSION SP-4 CONTROL PANEL AND REMOVE SCADA NETWORK FIBER OPTIC CABLE AS PART OF EXISTING HEADWORKS DEMOLITION.
 - FOR THE ORIGINAL FIBER OPTICS CABLE RUN SP-4 TO CONTROL ROOM, REPLACE THE CONNECTION FROM THE CONTROL BUILDING WITH A NEW CONNECTION TO SP-7.
 - DECOMMISSION ORIGINAL FIBER OPTICS CABLE RUN SP-4 TO SP-3.
 - PROVIDE NEW CONNECTION FROM THE SOUTH ELECTRICAL BUILDING SP-18 TO SP-7.
 - PROVIDE AND INSTALL (1) NEW 24 STRAND FIBER OPTIC PATCH PANEL FOR TERMINATION OF NEW AND EXISTING FIBER OPTIC CABLES. TERMINATE ALL FIBER STRANDS TO THE PATCH PANEL.
 - SP-18 (HEADWORKS):
 - PROVIDE AND INSTALL (1) NEW 24 STRAND FIBER OPTIC PATCH PANEL FOR TERMINATION OF NEW AND EXISTING FIBER OPTIC CABLES. TERMINATE ALL FIBER STRANDS TO THE PATCH PANEL.
 - PROVIDE AND INSTALL ONE (1) ALLEN BRADLEY STRATIX 5700 20-PORT MANAGED ETHERNET SWITCH. PROVIDE FOUR (4) 100M MULTIMODE FIBER SFP MODULES FOR CONNECTION TO SCADA FIBER OPTICS NETWORK. SEE SPECIFICATIONS FOR MODEL AND REQUIREMENTS.
 - PROVIDE AND INSTALL CONDUIT AND CAT6 NETWORKING CABLE FROM THE NEW HEADWORKS EQUIPMENT CONTROL PANELS TO THE NEW SP-18 NETWORK SWITCH.
 - REPLACE EXISTING SLC550 PROCESSOR, INPUTS AND OUTPUTS MODULES, AND DEVICE NETWORK CONNECTION WITH A NEW SP18 PROCESSOR, DIGITAL INPUT CARDS, DIGITAL OUTPUT CARDS, ANALOG INPUT CARDS, ANALOG OUTPUT CARDS, DEVICE NETWORK CARD AND ADDITIONAL HARDWARE. MODIFY EXISTING SP18 PANEL TO PROVIDE SPACE FOR NEW HARDWARE, ADDITIONAL POWER, DISCRETE AND ANALOG SURGE PROTECTIONS, TERMINALS, RELAYS AND CAT6 NETWORKING CABLE. WIRE ALL EXISTING AND NEW SIGNALS TO TERMINALS.
 - PROVIDE AND INSTALL A NEW 6-STRAND FIBER OPTIC CABLE CONNECTION BETWEEN SP-18 AND NEW SP-19. TERMINATE ALL STRANDS AND CONNECT TO THE NEW FIBER OPTICS PATCH PANELS AT EACH END.
 - SP-13 (CCC/RWPS):
 - PROVIDE AND INSTALL NEW SP-13 SCADA CONTROL PANEL. PROVIDE PLC MODULES TO ACCOMMODATE NEW AND EXISTING FIELD SIGNALS PER I/O SCHEDULE. COORDINATE DECOMMISSIONING, SIGNAL TRANSFERS AND COMMUNICATION CONVERSIONS WITH OWNER.
 - PROVIDE AND INSTALL A NEW 12-STRAND FIBER OPTIC CABLE CONNECTION BETWEEN SP-1 AND NEW SP-13. TERMINATE ALL STRANDS AND CONNECT TO THE NEW FIBER OPTICS PATCH PANELS AT EACH END.
 - PROVIDE AND INSTALL A NEW 12-STRAND FIBER OPTIC CABLE CONNECTION BETWEEN THE NEW SP-13 AND THE NEW SP-2. TERMINATE ALL STRANDS AND CONNECT TO THE NEW FIBER OPTICS PATCH PANELS AT EACH END.
 - PROVIDE AND INSTALL CONDUIT, CAT. 6 NETWORKING CABLE AND SURGE PROTECTION DEVICES ON EACH END FROM THE NEW SP-13 TO EACH REDUNDANT ANALYTICAL CONTROLLER IN THE NEW CCC ANALYTICAL PANEL.
 - SP-2 (CCC/RWPS):
 - PROVIDE AND INSTALL NEW SP-2 SCADA CONTROL PANEL. PROVIDE PLC MODULES TO ACCOMMODATE NEW AND EXISTING FIELD SIGNALS PER I/O SCHEDULE. COORDINATE PROCESS CONTROL, SIGNAL TRANSFERS AND COMMUNICATION CONVERSIONS WITH THE OWNER.
 - DECOMMISSION EXISTING SP-2 AND SP-9 AS PART OF DAF POLYMER BUILDING DEMOLITION.
 - PROVIDE AND INSTALL A NEW 12-STRAND FIBER OPTIC CABLE CONNECTION BETWEEN THE NEW SP-2 AND SP-8. TERMINATE ALL STRANDS AND CONNECT TO THE FIBER OPTICS PATCH PANELS AT EACH END.
 - LCP-20850 (HEADWORKS DRAIN PS):
 - PROVIDE AND INSTALL NEW LCP-20850 HEADWORKS DRAIN PS CONTROL PANEL. PROVIDE EMBEDDED I/O AND PLC MODULES TO ACCOMMODATE FIELD SIGNALS PER I/O SCHEDULE.
 - REVIEW NETWORK DIAGRAMS FOR ADDITIONAL COMMUNICATION ADDITIONS AND MODIFICATIONS.
 - COMMUNICATION SYSTEM MODIFICATIONS MUST MAINTAIN ACTIVE COMMUNICATIONS WITH SITE LOCATIONS. SUBMIT AND REVIEW TRANSITION PLANS AS PART OF ICS PROJECT PLAN. COORDINATE ALL TRANSFER AND OUTAGES WITH OWNER BEFORE PROCEEDING.

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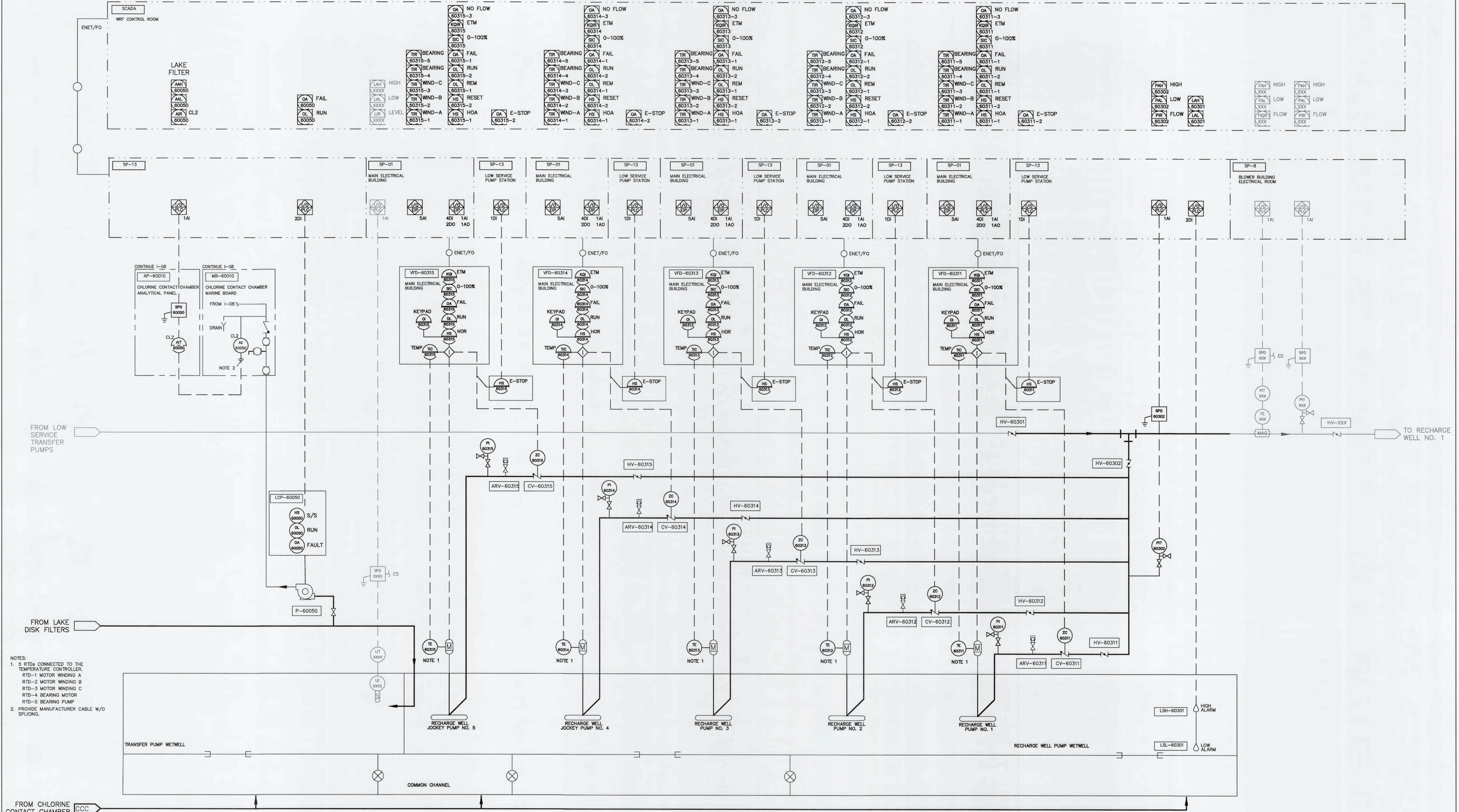


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CCC REHAB AND
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NETWORK LAYOUT MODIFICATIONS

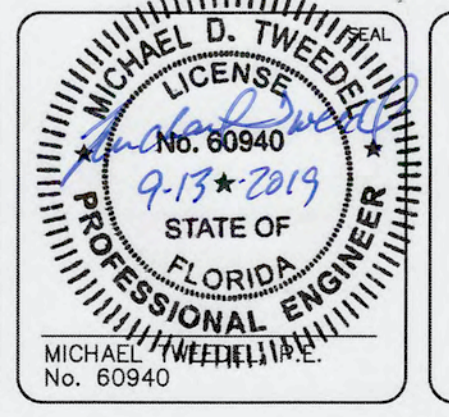
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CHECKED: MDT		
PROJ. MGR. TLP		
STATUS: ISSUED FOR BID		

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- NOTES:
- 5 RTDs CONNECTED TO THE TEMPERATURE CONTROLLER.
 RTD-1 MOTOR WINDING A
 RTD-2 MOTOR WINDING B
 RTD-3 MOTOR WINDING C
 RTD-4 BEARING MOTOR
 RTD-5 BEARING PUMP
 - PROVIDE MANUFACTURER CABLE W/O SPLICING.

REVNO.	DESCRIPTIONS	DATE

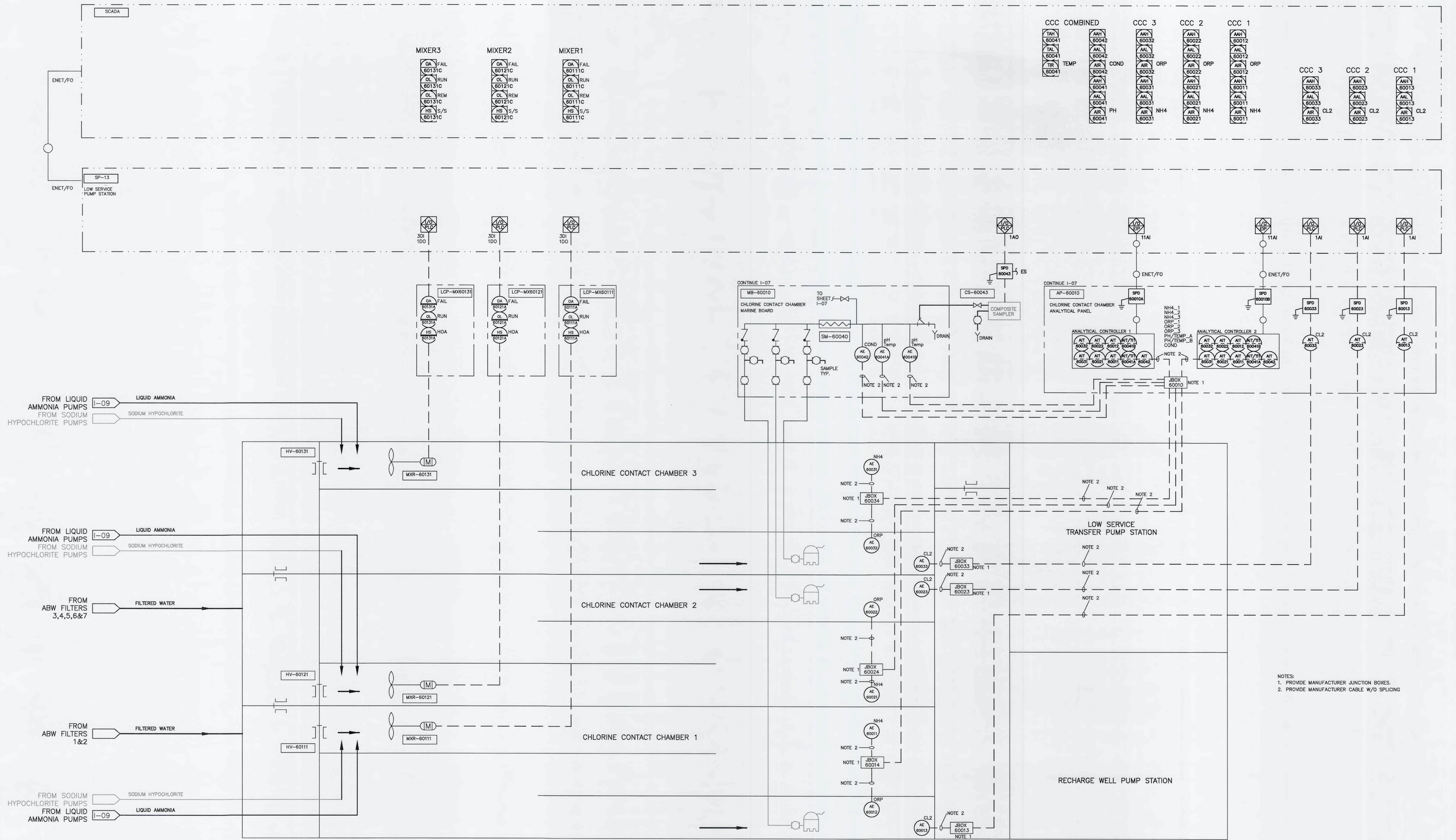


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 PROCESS AND INSTRUMENTATION DIAGRAM
 RECHARGE WELL PUMP STATION

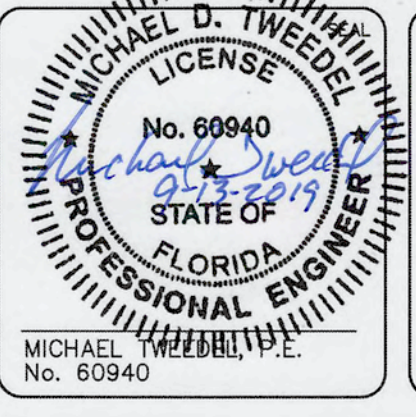
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DRAWN: FEV	VERTICAL: N/A	
DESIGNED: FEV		
CHECKED: MDT		
PROJ. MGR: TLP		



NOTES:
 1. PROVIDE MANUFACTURER JUNCTION BOXES.
 2. PROVIDE MANUFACTURER CABLE W/O SPLICING

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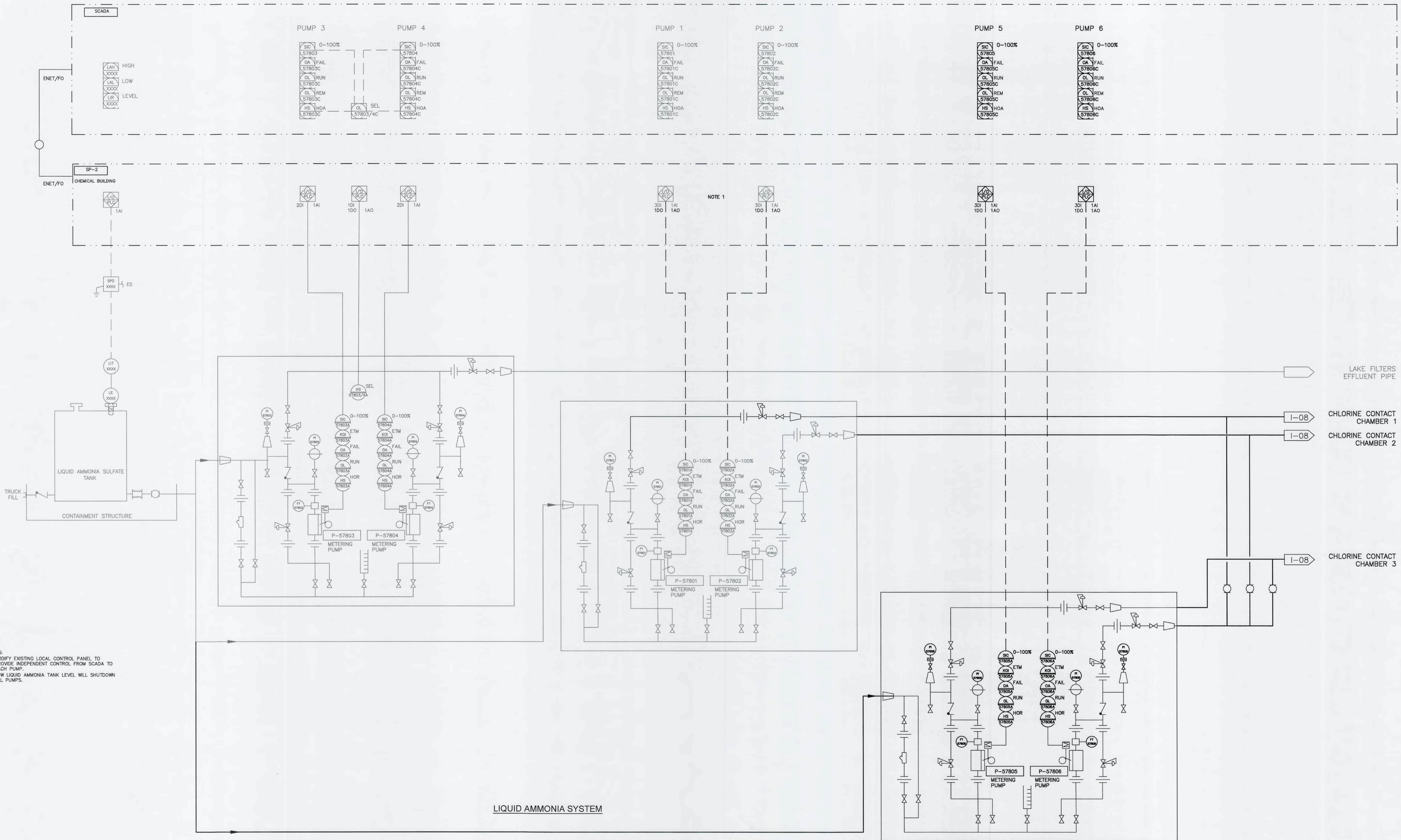
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 PROCESS AND INSTRUMENTATION DIAGRAM
 CHLORINE CONTACT CHAMBER
 MIXERS**

DATE: SEPTEMBER, 2019	SCALE: N/A	DRAWING NUMBER: N/A
MCE PROJ. # 1024-0171	HORIZONTAL: N/A	REVISION:
DRAWN: FEV	VERTICAL: N/A	
DESIGNED: FEV		
CHECKED: MDT		
PROJ. MGR. TLP		
ISSUED FOR BID		



- NOTES:
1. MODIFY EXISTING LOCAL CONTROL PANEL TO PROVIDE INDEPENDENT CONTROL FROM SCADA TO EACH PUMP.
 2. LOW LIQUID AMMONIA TANK LEVEL WILL SHUTDOWN ALL PUMPS.

LIQUID AMMONIA SYSTEM

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PROCESS AND INSTRUMENTATION DIAGRAM
 LIQUID AMMONIUM SULFATE
 PUMPS STORAGE AND FEED

DATE: SEPTEMBER, 2019	SCALE: N/A	DRAWING NUMBER: N/A
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DRAWN: FEV	VERTICAL: N/A	1-09
DESIGNED: FEV		
CHECKED: MDT		
PROJ. MGR.: TLP		
STATUS: ISSUED FOR BID		REVISION:

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