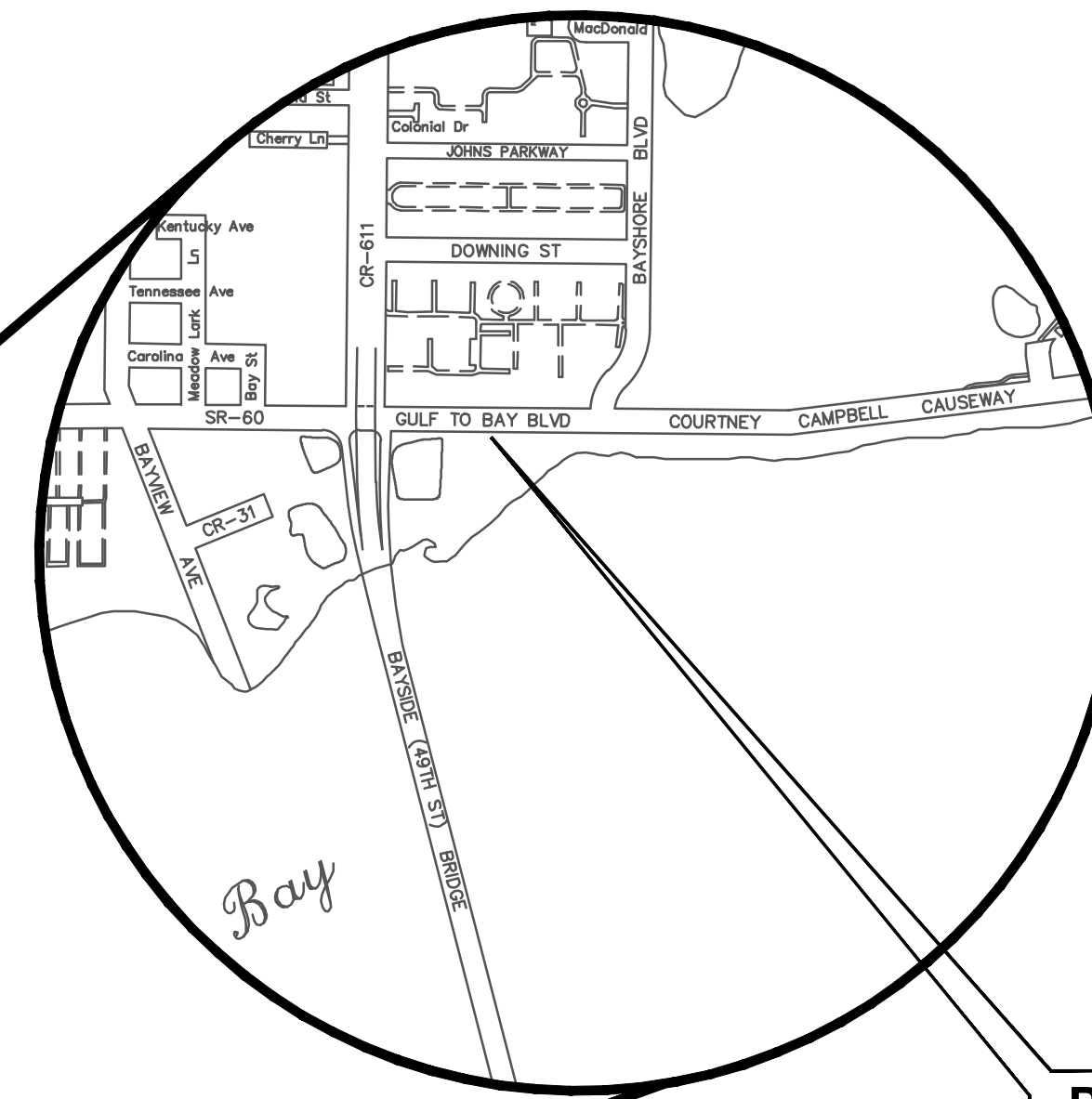
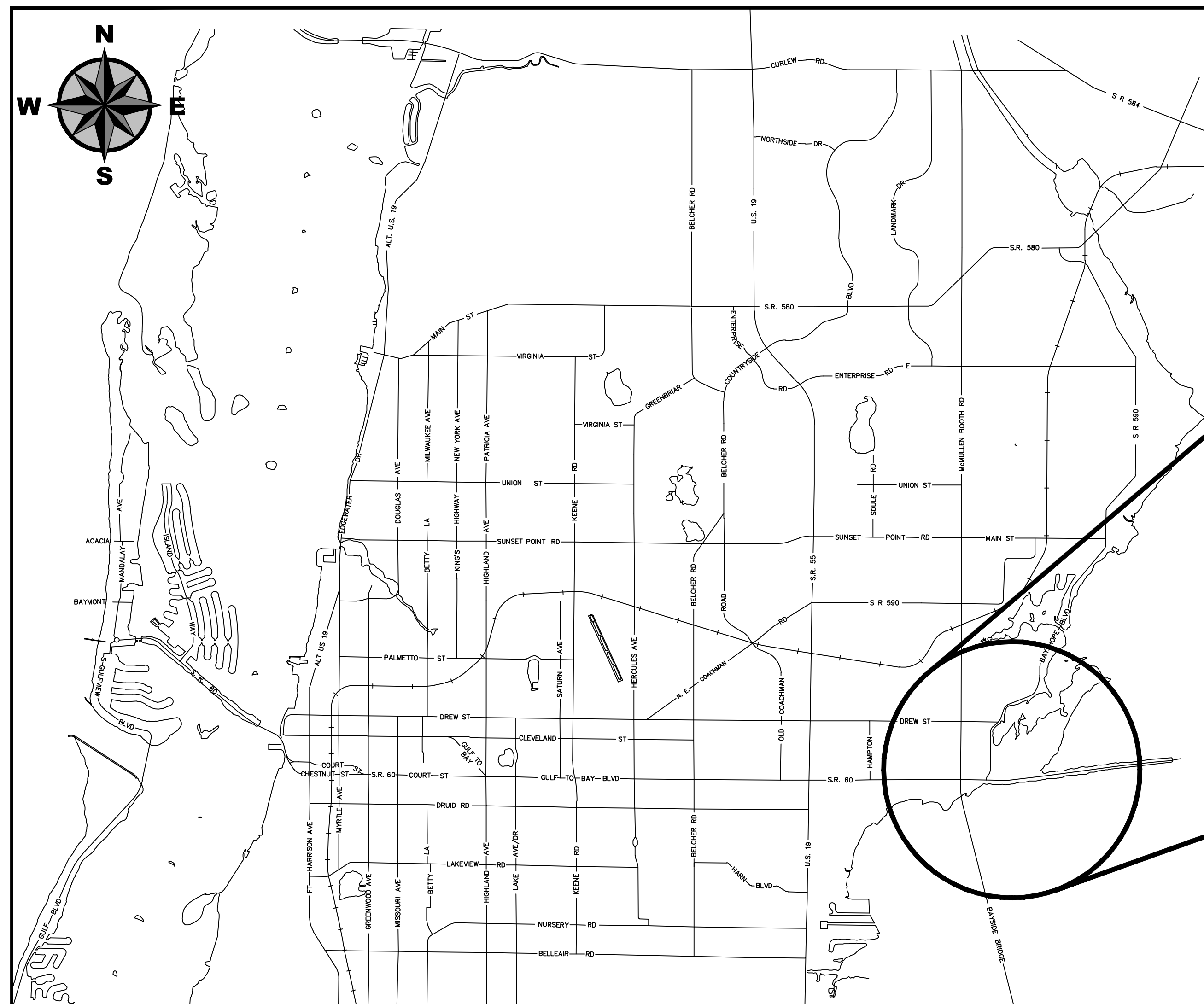




CLEARWATER
BRIGHT AND BEAUTIFUL · BAY TO BEACH



EAST WRF INFLUENT PUMP STATION REHABILITATION PROJECT



Project Location

CITY OFFICIALS

Brian J. Augst Sr.
Mark Bunker
Kathleen Beckman
David Allbritton
Lina Teixeira
Jennifer Poirrier

Mayor
Councilmember
Councilmember
Councilmember
City Manager

Tara L. Kivett, P.E.
City Engineer

Approved For Construction

CITY ENGINEER Tara L. Kivett, P.E. #86611

Date Approved



4921 Memorial Highway
One Memorial Center, Suite 300
Tampa, Florida 33634
Phone: (813) 880-8881
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This item has been digitally signed and sealed by Loc P. Truong, P.E. on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

BID DOCUMENTS
City Project No. 13-0016-UT
City Plan Set No. 2022022

ABBREVIATIONS

ACT	ACTIVATED	RED	REDUCER
AL	ALUMINUM	RED ELL	REDUCER ELBOW
ALT	ALTERNATE	REQ'D	REQUIRED
APP	APPARENT	RNG	RANGE
ARV	AIR RELEASE VALVE	R/W	RIGHT OF WAY
AVE	AVENUE	S	SOUTH
BFV	BUTTERFLY VALVE	SANT/SAN	SANITARY
BLDG	BUILDING	SCH	SCHEDULE
BLVD	BOULEVARD	SEW	RAW SEWAGE
CIPP	CURED-IN-PLACE-PIPE	SHT	SHEET
CLR	CLEARANCE/CLEAR	SOD	SODIUM
CO	CLEAN OUT	SS	STAINLESS STEEL
CONC	CONCRETE	STD	STANDARD
CP	CONCRETE PIPE	TBM	TEMPORARY BENCHMARK
CV	CHECK VALVE	TEMP	TEMPORARY
DECHLOR	DECHLORINATION	THK	THICK
DEPT	DEPARTMENT	TOB	TOP OF BANK
DEW	DRAIN EFFLUENT WATER	TOS	TOE OF SLOPE
DI	DUCTILE IRON	TWN	TOWNSHIP
DIA	DIAMETER	TYP	TYPICAL
DIM	DIMENSION	UP	UTILITY POLE
DISCH	DISCHARGE	W	WEST
DIP	DUCTILE IRON PIPE	W/	WITH
DR	DRIVE	WAS	WASTE ACTIVATED SLUDGE
DWG	DRAWING	WM	WATER MAIN
E	EAST		
EAV	ELECTRIC ACTUATED VALVE		
EAV	ELECTRIC ACTUATED VALVE		
ECC	ECCENTRIC		
EFFL	EFFLUENT		
EFW	EFFLUENT WATER PIPE		
EL	ELEVATION		
EMERG	EMERGENCY		
EX	EXISTING		
EXP	EXPANSION		
FCA	FLANGED COUPLING ADAPTER		
FD	FLOOR DRAIN		
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION		
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION		
FIN	FINISH		
FIR	FOUND IRON ROD		
FL	FLANGED		
FM	FORCE MAIN		
FOC	FIBER OPTIC CABLE		
FRP	FIBRE REINFORCED PLASTIC		
GAL	GALLON		
GALV	GALVANIZED		
GEN	GENERATOR		
GP	GUY WIRE POLE		
GRD	GROUND		
GV	GATE VALVE		
H	HIGH		
HB	HOSE BIB		
HDPE	HIGH DENSITY POLYETHYLENE		
HDWL	HEADWALL		
HYP	HYPO-CHLORITE		
INFL	INFLUENT		
INV	INVERT ELEVATION		
JD	JURISDICTIONAL		
LA	LANE		
MAG	MAGNETIC		
MAX	MAXIMUM		
MCC	MOTOR CONTROL CENTER		
MH	MANHOLE		
MIN	MINIMUM		
MJ	MECHANICAL JOINT		
N	NORTH		
NO	NUMBER		
NTS	NOT TO SCALE		
OC	OFF CENTER		
PC	PRECAST		
PE	PLAIN END		
PL	PLACE		
PLC	PROGRAMMABLE LOGIC CONTROLLER		
PLCS	PLACES		
PV	PLUG VALVE		
PVC	POLYVINYL CHLORIDE		
PRESS	PRESSURE		
PRV	PRESSURE RELIEF VALVE		
PW	POTABLE WATER		
RAS	RETURN ACTIVATED SLUDGE		
RCP	REINFORCED CONCRETE PIPE		
RD	ROAD		

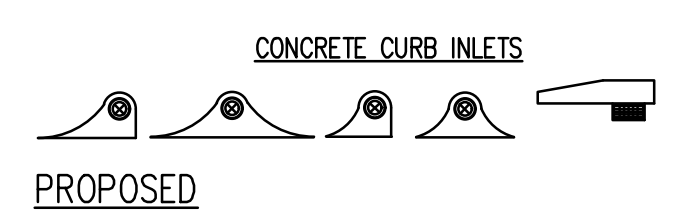
LEGEND

	= RIGHT OF WAY LINE
	= PROPERTY LINE
	= JURISDICTIONAL LINE
	= STAKED SILT FENCE
	= TURBIDITY BARRIER
	= EDGE OF PAVEMENT
	= CHAIN-LINK FENCE
	= SILT FENCE
	= EXISTING WATER MAIN
	= EXISTING SEWER
	= EXISTING PIPE (UNDER GROUND)
	= EXISTING PIPE (ABOVE GROUND)
	= EXISTING OVERHEAD UTILITY LINE
	= PROPOSED PIPE
	CONC = CONCRETE
	= CONCRETE MITERED END SECTION
	= CONCRETE FLARED END SECTION
	= ELECTRIC BOX
	= ELECTRIC METER
	= ELECTRIC TRANSFORMER
	= FIRE DEPARTMENT CONNECTION
	= FIRE DEPARTMENT WATER VALVE
	= FIRE HYDRANT
	= GRATE INLET
	= GUY POLE
	= GUY WIRE
	= IRRIGATION CONTROL VALVE
	= LIGHT POLE
	= MAIL BOX
	= METER POLE
	= SIGN
	= TELEPHONE UTILITY BOX
	= TRAFFIC SIGNAL POLE
	= TRAFFIC SIGNAL UTILITY BOX
	= UNDERGROUND CABLE TELEVISION MARKER
	= UNDERGROUND GAS LINE MARKER
	= UNDERGROUND TELEPHONE CABLE ROUTE SIGN
	= UNDERGROUND FIBER OPTIC MARKER
	= UTILITY MANHOLE
	= UTILITY POLE
	= UTILITY & LIGHT POLE
	= UTILITY HANDHOLE
	= WATER BACKFLOW PREVENTER
	= WATER BLOW OFF VALVE
	= TBM = TEMPORARY BENCHMARK
	= HAND AUGER BORING
	= SPT BORING
	= X-CUT = FOUND OR SET X-CUT (AS SHOWN)
	= FCM = FOUND CONCRETE MONUMENT
	= FIP = FOUND IRON PIPE
	= FIR = FOUND IRON ROD
	= FND = FOUND NAIL & DISK (TYPE AND IDENTIFICATION AS SHOWN)

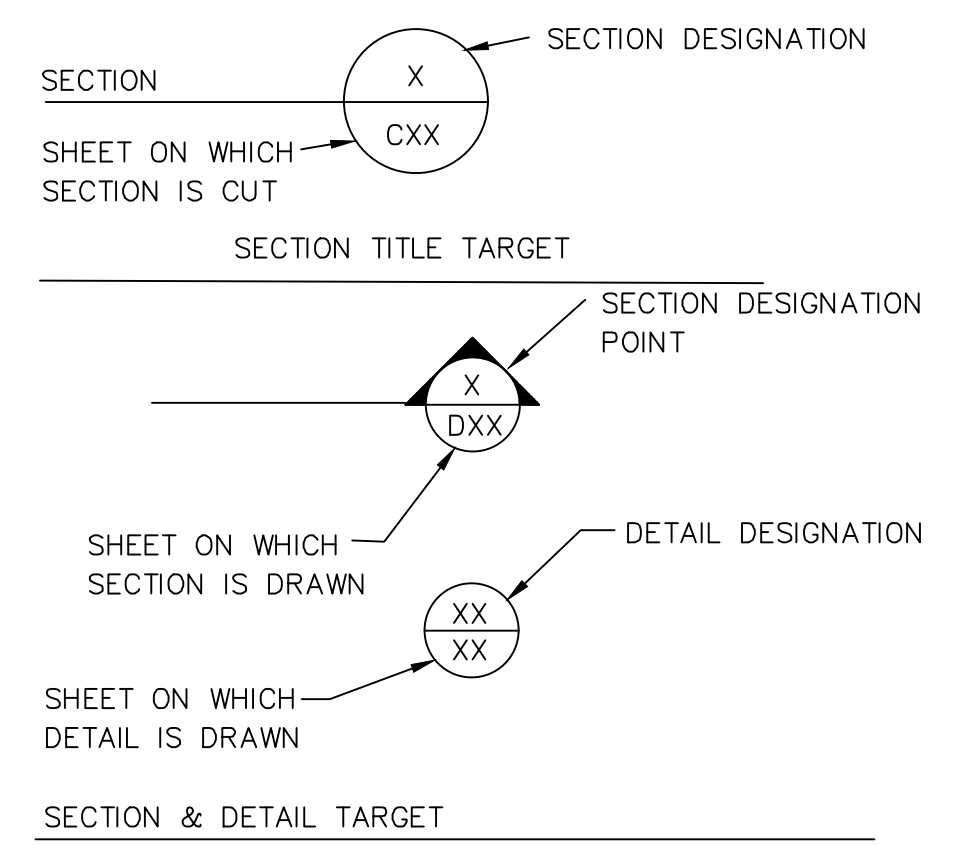
TREE LEGEND

	= 12" UNKNOWN TYPE
	= 12" CHERRY LAUREL
	= 12" WILLOW
	= 12" HOLLY
	= 12" DEAD
	= 12" TALLOW
	= 12" CHINABERRY
	= 12" OAK
	= 12" JACARANDA
	= 12" MULBERRY
	= 12" PALM
	= 12" BAY
	= 12" MAGNOLIA
	= 12" CITRUS
	= 12" PECAN
	= 12" EUCALYPTUS
	= 12" CAMPHOR
	= 12" SYCAMORE
	= 12" PINE
	= 12" AUSTRALIAN PINE
	= 12" CEDAR
	= 12" ELM
	= 12" MAPLE
	= 12" MYRTLE
	= 12" PUNK
	= 12" CYPRESS
	= 12" EAR
	= 12" SWEET GUM
	= 12" BIRCH
	= 12" HICKORY
	= 12" BANYON
	= TREE HAVING ONE TRUNK AT BREAST HEIGHT, 12" IN DIA.
	= TREE HAVING MULTIPLE TRUNKS AT BREAST HEIGHT 12", 13" AND 5" IN DIA.
	= REPRESENTS TREE CANOPY
	= REPRESENTS POTENTIAL TREE TO BE REMOVED, SEE SECTION 00120

	TOP OF CURB 8.22
	FLOWLINE OF CURB 7.90
	EDGE OF PAVEMENT 7.91
	TOP OF CURB 8.22
	EDGE OF PAVEMENT 7.91
	GROUND ELEVATIONS 6.3, 6.3



SECTION DESIGNATION



SHEET INDEX

SHEET NUMBER	SHEET TITLE
GENERAL	
1.	G0.00 COVER
2.	G1.00 ABBREVIATIONS, SYMBOLS & LEGENDS
3.	G1.01 SURVEYOR'S REPORT & GENERAL NOTES
CIVIL	
4.	C1.00 OVERALL PROJECT SITE PLAN
5.	C1.01 KEY MAP
6.	C1.02 CIVIL SITE DEMOLITION
7.	C1.03 INFLUENT METER ASSEMBLY DEMOLITION
8.	C1.04 INFLUENT PUMP STATION DEMOLITION
9.	C1.05 SLUDGE HANDLING BUILDING BLOWER ROOM DEMOLITION
10.	C2.00 PROPOSED SITE PLAN AND YARD PIPING
11.	C2.01 BYPASS PUMPING SITE PLAN (1) AND BYPASS MANHOLE
12.	C2.02 BYPASS PUMPING SITE PLAN (2)
13.	C2.03 BY-PASS PUMPING SECTION PLAN
DETAIL	
14.	C3.00 CIVIL DETAILS (1)
15.	C3.01 CIVIL DETAILS (2)
MECHANICAL	
16.	M1.01 PROPOSED INFLUENT ASSEMBLY
17.	M1.02 PROPOSED INFLUENT PUMP STATION (1)
18.	M1.03 M1.03 - PROPOSED INFLUENT PUMP STATION (2)
19.	M1.04 PROPOSED LARGE BUBBLE MIXING SYSTEM LAYOUT SCHEMATIC
20.	M1.05 PROPOSED SLUDGE HANDLING BUILDING BLOWER ROOM IMPROVEMENTS (1)
21.	M1.06 PROPOSED SLUDGE HANDLING BUILDING BLOWER ROOM IMPROVEMENTS (2)
22.	M3.00 MECHANICAL DETAILS (1)
23.	M3.01 MECHANICAL DETAILS (2)
24.	M3.02 MECHANICAL DETAILS (3)
STRUCTURAL	
25.	S0.00 STRUCTURAL GENERAL NOTES
26.	S1.01 HEADWORKS INFLUENT STRUCTURE PIPE SUPPORTS
27.	S1.02 HEADWORKS INFLUENT STRUCTURE PIPE SUPPORTS
28.	S1.03 BYPASS MANHOLE PLAN AND SECTION
ELECTRICAL	
29.	E1.00 ELECTRICAL SYMBOL, LEGEND & NOTES
30.	E2.00 ELECTRICAL SITE PLAN
31.	E3.00 INFLUENT PUMP STATION ELECTRICAL PLANS
32.	E3.01 ELECTRICAL PLAN - SLUDGE HANDLING BLDG.
33.	E4.00 PARTIAL POWER ONE-LINE DIAGRAM
34.	E4.01 POWER ONE-LINE DIAGRAM (MCC-2000)
35.	E5.00 ELECTRICAL DETAILS
36.	E6.00 PARTIAL INFLUENT ELECTRICAL LAYOUT
INSTRUMENTATION	
37.	I1.00 INSTRUMENTATION LEGENDS, SYMBOLS & ABBREVIATIONS I
38.	I1.01 INSTRUMENTATION LEGENDS, SYMBOLS & ABBREVIATIONS I
39.	I1.02 INFLUENT PUMP STATION P&ID
40.	I1.03 MISCELLANEOUS INSTRUMENTATION DETAILS

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RECORD DRAWINGS		BID DOCUMENTS		LPT	09/28/23
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REVIEWED BY:					
APPROVED BY:	PROJECT ENGINEER	DATE			
	ENGINEER	DATE	REVISION	BY	DATE

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**EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT
ABBREVIATIONS, SYMBOLS & LEGENDS**

DWG NAME: <u>General-100.dwg</u>	FIELD BOOK:	SURVEYED BY:	SCALE: <u>N/A</u>
CONTRACT NO.:	DATE DRAWN: <u>9/28/2023</u>	DRAWN BY: <u>AT</u>	VERT. <u>AS SHOWN</u>
JOB NO.: <u>2018-1721-01</u>	DESIGNED BY: <u>VH</u>	CHECKED BY: <u>LPT</u>	SHEET NO.: <u>2</u> OF <u>40</u>
APPROVED FOR CONSTRUCTION			

**EAST WRF INFL PUMP STA REHAB
JOB NUMBER 2110-211-000
SURVEYOR'S REPORT**

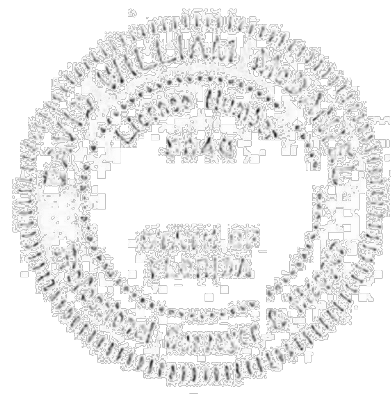
NOTES

SURVEYOR'S REPORT:

1. TYPE OF SURVEY: TOPOGRAPHIC AND SPECIFIC PURPOSE SURVEY PER THE STANDARDS OF PRACTICE AS SET FORTH IN FLORIDA ADMINISTRATIVE CODE CHAPTER 5J-17.050, 5J-17.051 AND 5J-17.052, PURSUANT TO CHAPTER 472 OF THE FLORIDA STATUTES. THE INTENT OF THIS TOPOGRAPHIC SURVEY IS TO SHOW THE SPATIAL RELATIONSHIP OF EXISTING VISIBLE ABOVE GROUND FEATURES AND TREES OF A SPECIFIED SIZE TO THE PROPERTY AND RIGHT-OF-WAY LINE TO AN ESTABLISHED VERTICAL DATUM WITHIN A CLIENT SPECIFIED PROJECT AREA. THE SPECIFIC INTENT OF THE SPECIFIC PURPOSE PORTION OF THE SURVEY IS TO PROVIDE THE RELATIONSHIP OF RIGHT-OF-WAY LINES DEVELOPED FROM RECORDED DOCUMENTS (AS SHOWN ON THE SURVEY) TO EXISTING FOUND MONUMENTS.
2. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE INSURANCE COMMITMENT.
3. NO INSTRUMENTS OF RECORD REFLECTING EASEMENTS, RIGHTS-OF-WAY, AND/OR OWNERSHIP WERE FURNISHED TO OR PURSUED BY THE UNDERSIGNED OTHER THAN THOSE SHOWN HEREON. EASEMENTS OR RESTRICTIONS OF RECORD OTHER THAN THOSE SHOWN HEREON MAY EXIST.
4. THE ACCURACY STANDARD USED FOR THIS SURVEY, AS CLASSIFIED IN THE STANDARDS OF PRACTICE (5J-17 FLORIDA ADMINISTRATIVE CODE) IS "COMMERCIAL/HIGH RISK". CONTROL POSITIONS WERE DERIVED BY GLOBAL POSITIONING SYSTEM (GPS) OBSERVATIONS UTILIZING A REAL TIME TECHNOLOGY SOLUTION AND IS THE PRODUCT OF REDUNDANT OBSERVATION SESSIONS CONSISTING OF AT LEAST 60 EPOCHS EACH. THE MAXIMUM POSITIONAL UNCERTAINTY OF THE PHYSICAL CONTROL POINTS IS COMPUTED TO BE 0.050 FEET USING THE ALGEBRAIC SUM MEAN OF THE PROCESSED POSITIONS.
5. GRID BEARINGS SHOWN HEREON ARE FIELD MEASURED UNLESS OTHERWISE NOTED AND ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM 1983/1999 ADJUSTMENT (NAD 83/99) WITH LOCALIZATION TIES TO CONTROL MONUMENT, CITY OF CLEARWATER (COC) E-17 AND THE FIELD POSITIONS OF FOUND CORNER MONUMENTS GENERATED FROM DEEDS AND ALIGNED TO MATCH THE COORDINATE VALUES REPORTED ON CERTIFIED CORNER RECORD NUMBERS 090349 AND 090350 AS PUBLISHED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION. MORE SPECIFICALLY THE SURVEY BASELINE HAVING A GRID BEARING OF NORTH 83°15'46" EAST.
6. CONTROL ELEVATIONS FOR THIS SURVEY ARE DERIVED USING DIFFERENTIAL LEVELING TECHNIQUES. CLOSURE ACHIEVED IS 0.001 FEET ERROR IN A 0.315-MILE LOCALIZATION LENGTH WHICH EXCEEDS THE MINIMUM ACCURACY REQUIREMENT CALCULATED AT A MAXIMUM MIS-CLOSURE OF 0.0281 FEET.
7. CONTROL ELEVATIONS SHOWN HEREON ARE IN FEET AND ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 ADJUSTMENT (NAVD 88). CONTROL MONUMENT UTILIZED FOR THIS SURVEY WAS (a) CITY OF CLEARWATER (COC), E-17, STAMPED E-17, ELEVATION 6.651'.
8. NO EXCAVATION WAS PERFORMED TO VERIFY THE LOCATION OR EXISTENCE OF ANY UNDERGROUND IMPROVEMENTS, STRUCTURES, OR FOUNDATIONS. UNDERGROUND UTILITIES SHOWN HEREON ARE SHOWN PER ABOVE GROUND EVIDENCE AND/OR RECORD DRAWINGS OR MUNICIPAL ATLAS INFORMATION AND THE LOCATION OF ALL UNDERGROUND UTILITY LINES ARE APPROXIMATE ONLY. THIS DOCUMENT SHALL NOT BE RELIED UPON FOR EXCAVATION OR CRITICAL DESIGN FUNCTIONS WITHOUT FIELD VERIFICATION OF UNDERGROUND UTILITY LOCATIONS. UTILITIES OTHER THAN THOSE SHOWN HEREON MAY EXIST.
9. ADJOINING PROPERTY OWNERS SHOWN HEREON ARE BASED ON INFORMATION OBTAINED FROM THE COUNTY PROPERTY APPRAISER WEB SITE AND IS FOR INFORMATIONAL PURPOSES ONLY.
10. THIS REPORT IS INTENDED TO ACCOMPANY A DIGITAL DRAWING FILE NAMED EAST PLANT TOPO BASE.DWG. THE DRAWING IS INTENDED TO DISPLAY AT A SCALE OF 1"=10'. THE ABBREVIATION AND SYMBOLS LEGEND IS CONTAINED WITHIN THE DIGITAL DRAWING FILE. THE REPORT AND THE DIGITAL DRAWING FILE ARE NOT FULL AND COMPLETE WITHOUT ONE AND THE OTHER.
11. DISTANCES SHOWN HEREON ARE IN U.S. SURVEY FEET.
12. USE OF THIS SURVEY FOR PURPOSES OTHER THAN WHICH IT WAS INTENDED, WITHOUT WRITTEN VERIFICATION, WILL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO THE SURVEYOR. NOTHING HEREIN SHALL BE CONSTRUED TO GIVE ANY RIGHTS OR BENEFITS TO ANYONE OTHER THAN THOSE CERTIFIED TO.
13. UNLESS IT BEARS THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER THIS DRAWING, SKETCH, PLAT OR MAP IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT VALID.
14. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
15. LAST DATE OF FIELD SURVEY: 02/01/2016

KING ENGINEERING ASSOCIATES, INC.
4921 MEMORIAL HIGHWAY,
TAMPA, FL 33634
PH: 813-880-8881 FAX: 813-880-8882
CERTIFICATE OF AUTHORIZATION NUMBER LB2610

DAVID WILLIAM McDANIEL, PSM
FLORIDA LICENSE - LS5840



1. BASE DRAWINGS PROVIDED BY THE CITY OF CLEARWATER. BASE DRAWINGS PER 1992 PROJECT NO. 87072-2 RECORD DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND ELEVATION OF ALL UNDER GROUND/ABOVE GROUND STRUCTURES, PIPING, FITTINGS, CONDUITS AND WIRE PRIOR TO BIDDING.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS AND MATERIALS OF CONSTRUCTION PRIOR TO ORDERING ANY MATERIALS OR EQUIPMENT.
3. THE WASTEWATER TREATMENT PLANT MUST REMAIN IN OPERATION AND IN COMPLIANCE WITH THE FDEP PERMITS AT ALL TIMES. THE CONTRACTOR'S WORK SCHEDULE MAY BE IMPACTED BY OPERATION'S REQUIREMENTS THROUGHOUT THE PROJECT.
4. CONTRACTOR IS HEREBY NOTIFIED THAT SPILLS ARE STRICTLY PROHIBITED DURING THE PROJECT. ANY FINES INCURRED AS A RESULT OF SPILLS WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

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RECORD DRAWINGS		BID DOCUMENTS		LPT	09/28/23
SURVEYED BY:	DRAWN BY:				
REVIEWED BY:	PROJECT ENGINEER	DATE			
APPROVED BY:	ENGINEER	DATE	REVISION	BY	DATE

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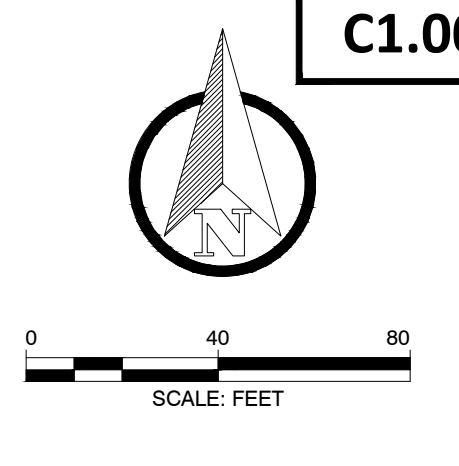


**EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT
SURVEYOR'S REPORT & GENERAL NOTES**



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2018-1721-01			3 OF 40
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GULF TO BAY BLVD (S.R. 60)

PROJECT AREA

SLUDGE HOLDING BLDG.

ADMIN BLDG.

CLARIFIER #1

CLARIFIER #2

INFLUENT PUMP STATION

STAGING AREA

OXIDATION REACTOR

HEADWORKS

OLD TAMPA BAY

CHLORINE STORAGE BLDG.

FILTERS

CHLORINE CONTACT CHAMBER



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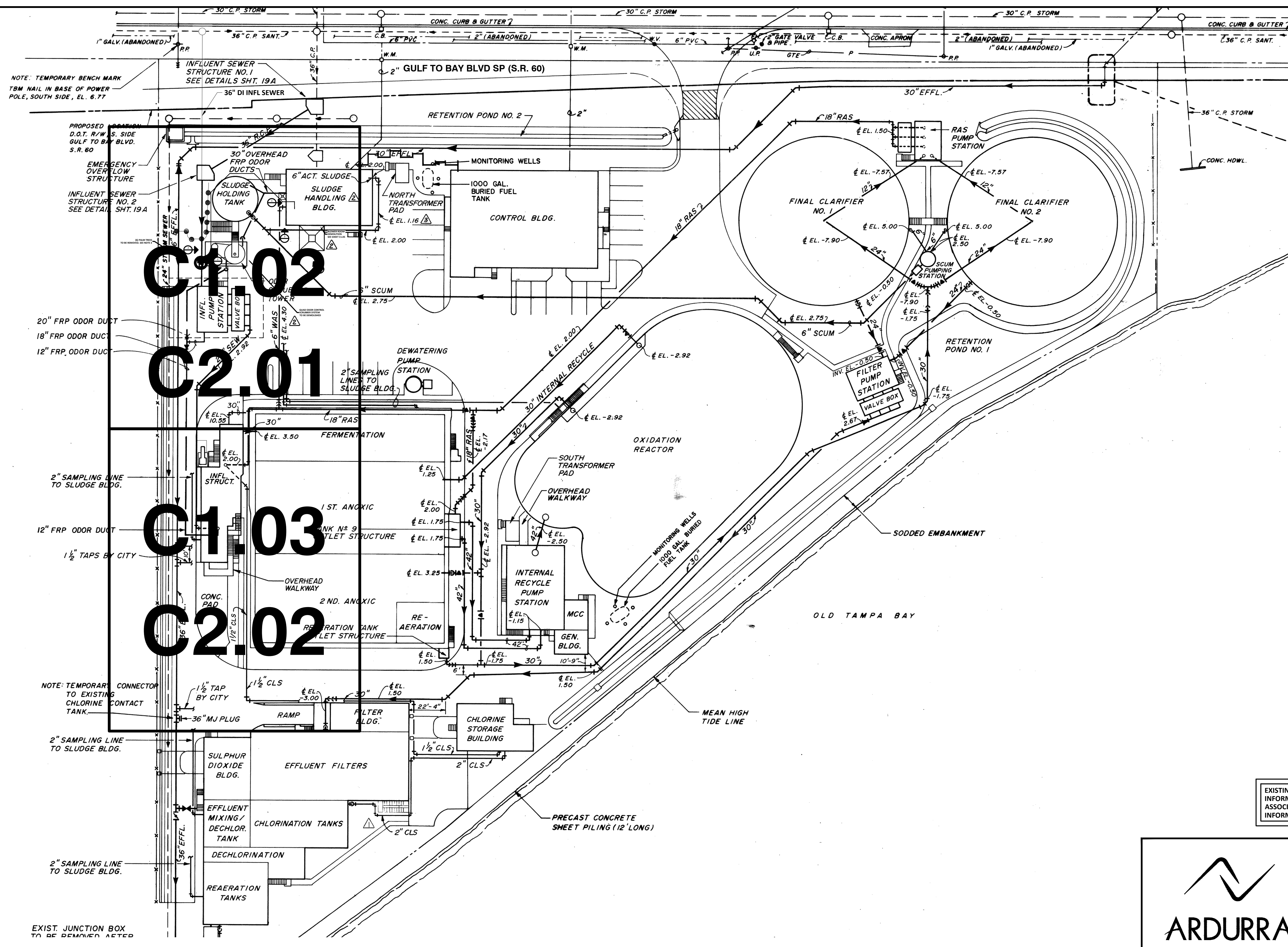
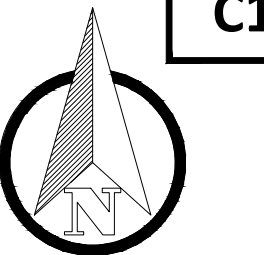
RECORD DRAWINGS		BID DOCUMENTS		LPT	09/28/23
SURVEYED BY:	DRAWN BY:				
REVIEWED BY:					
APPROVED BY:	PROJECT ENGINEER	DATE			
	ENGINEER	DATE	REVISION	BY	DATE

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EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT
OVERALL PROJECT SITE PLAN

DWG NAME: C1.00.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.:	DATE DRAWN: 9/28/2023	DRAWN BY: AT	HORIZ. AS SHOWN
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2018-1721-01			4 OF 40
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C1.02

C2.01

C1.03

C2.02

EXISTING EAST PLANT BACKGROUND INFORMATION BASED ON BRILEY, WILD & ASSOCIATES RECORD DRAWINGS FOR INFORMATION ONLY.



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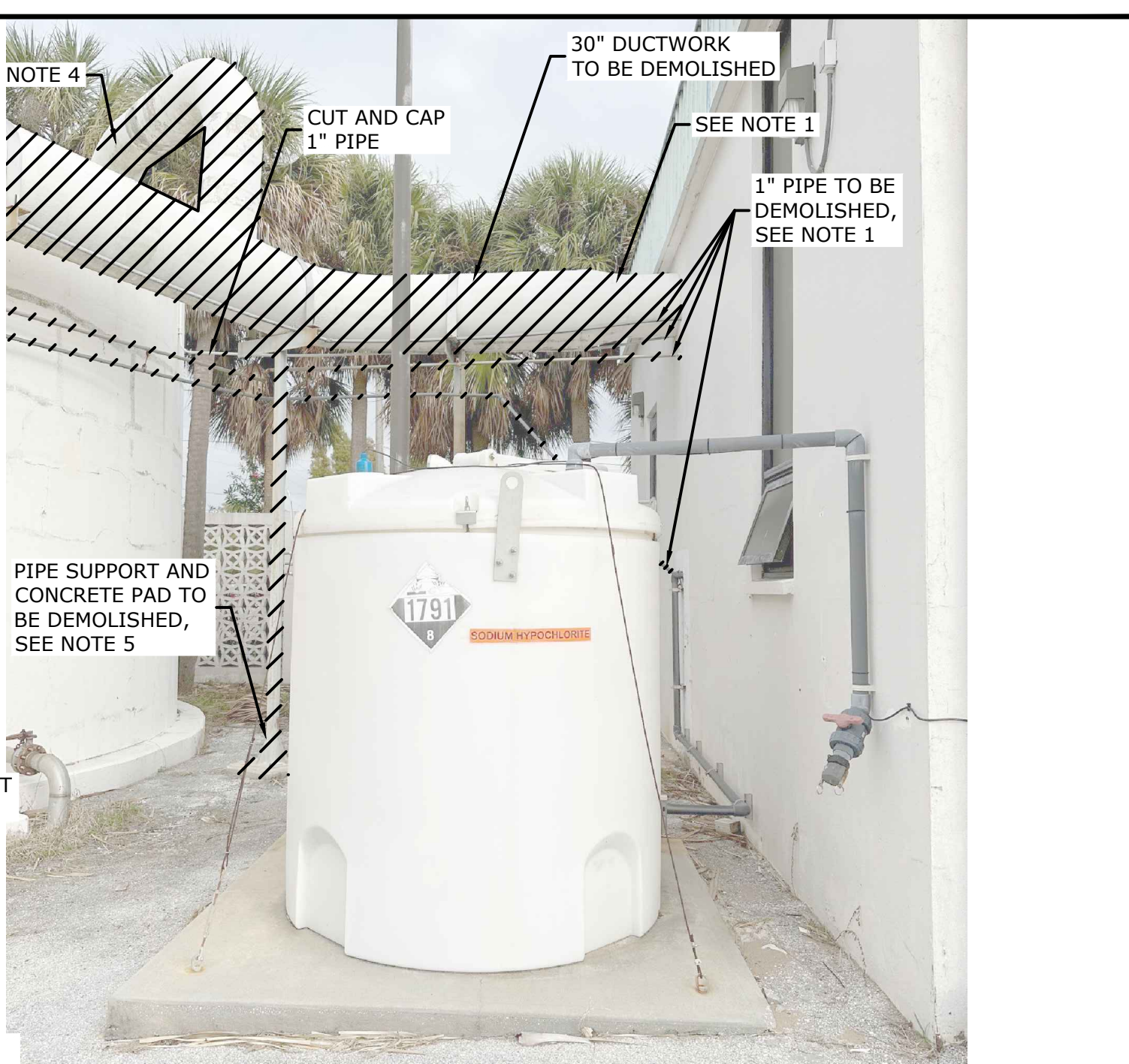
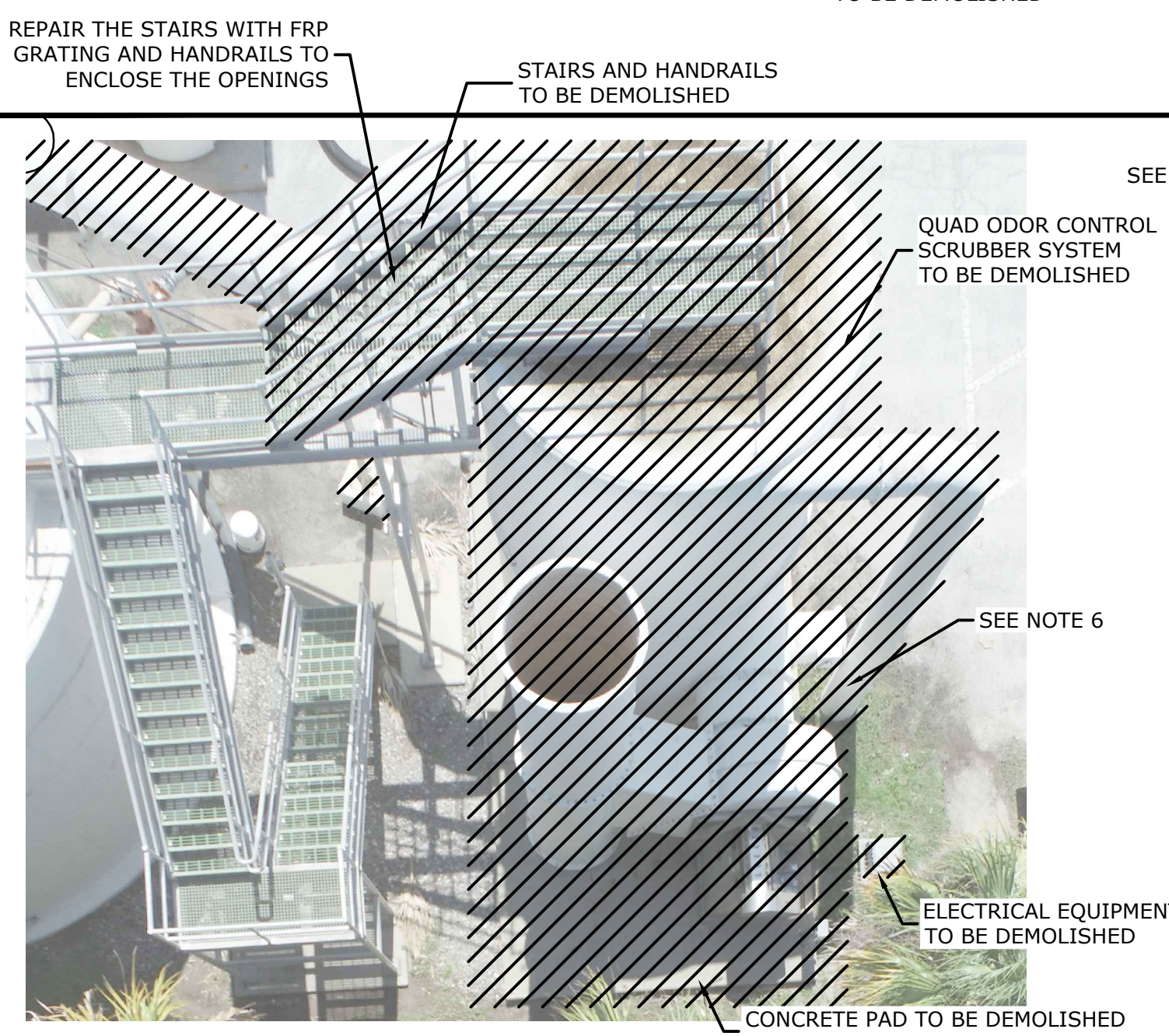
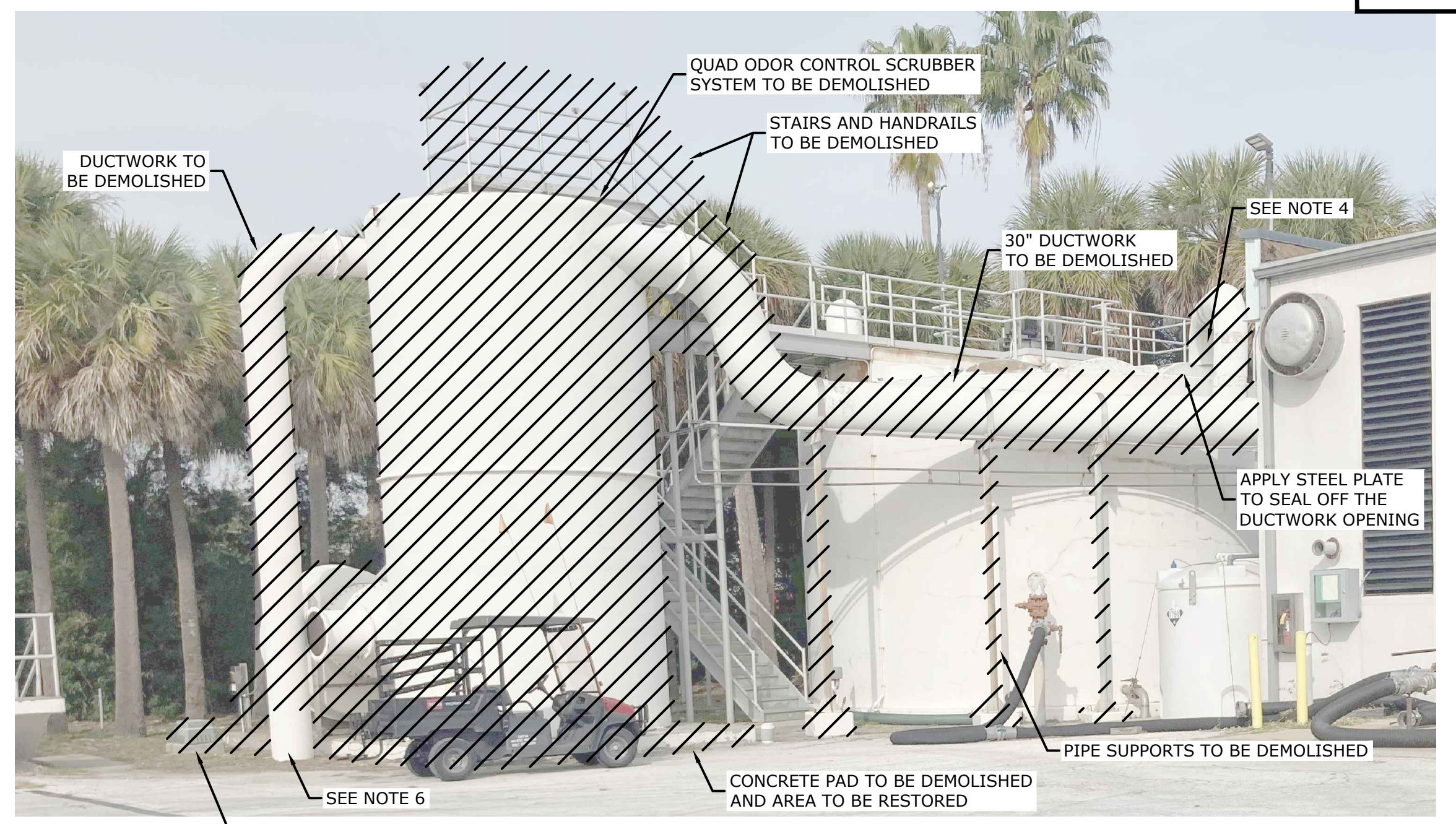
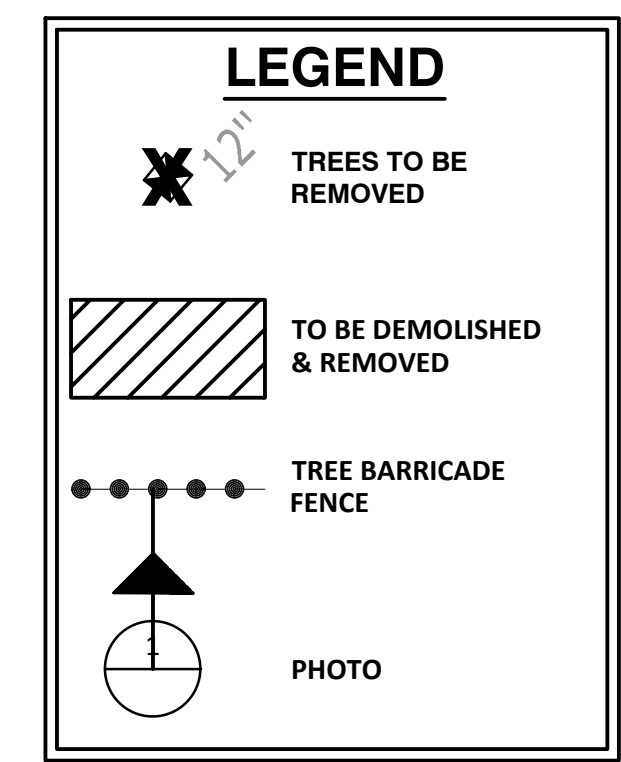
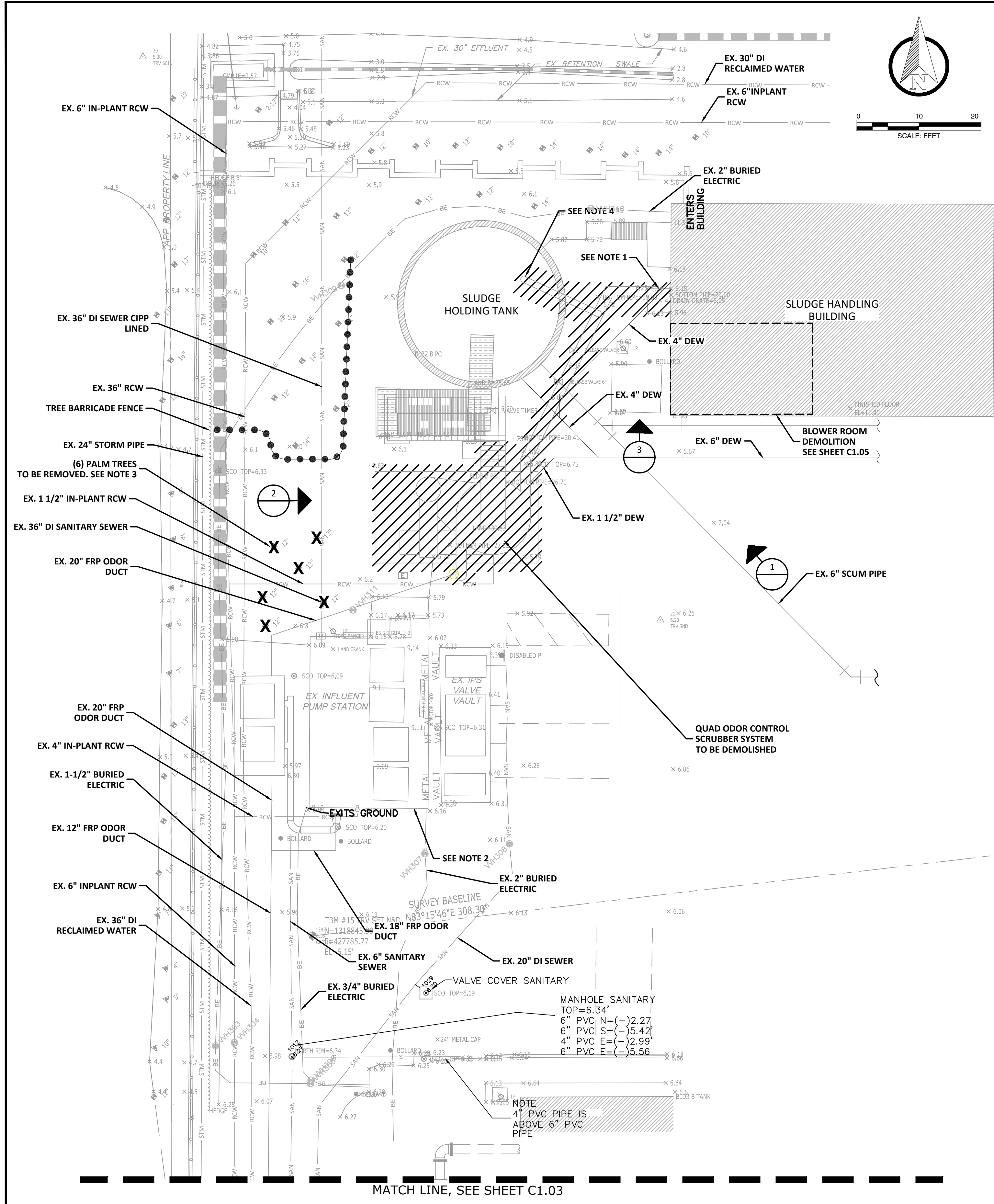
RECORD DRAWINGS		BID DOCUMENTS		LPT	09/28/23
SURVEYED BY:	DRAWN BY:				
REVIEWED BY:					
APPROVED BY:	PROJECT ENGINEER	DATE			
ENGINEER		DATE			
REVISION		BY	DATE		

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CLEARWATER, FL 33756



EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT
KEY MAP

DWG NAME: Civil-100.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.:	DATE DRAWN: 9/28/2023	DRAWN BY: AT	HORIZ. AS SHOWN
JOB NO.:	DESIGNED BY: VH	CHECKED BY: LPT	SHEET NO.: 5 OF 40
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- NOTES:
- DEMOLITION OF DUCTWORK, FOUR 1" PIPES, AND ASSOCIATED PIPE SUPPORTS UP TO THE SLUDGE THICKENING BUILDING. INSTALL 28"x28" 316 SS PLATE TO COVER DUCTWORK WALL PENETRATION, GROUT FILL THE OTHER 1" PIPE WALL PENETRATIONS PAINT THE SUBJECT WALL AREA TO MATCH THE BUILDING COLOR.
 - REFER TO C1.04 FOR INFLUENT PUMP STATION DEMOLITION.
 - REMOVE SIX EXISTING PALM TREES. CONTRACTOR SHALL MARK THE PALM TREES TO BE REMOVED IN THE FIELD AND NOTIFY THE CITY 48 HOURS IN ADVANCE OF ANY REMOVAL OF TREES. CONTRACTOR SHALL PROVIDE ONE CONTINUOUS BARRICADE TO PROTECT THE TREES THAT ARE TO REMAIN. REPLACEMENT TREES SHALL BE PLANTED PER CITY'S DESIRED LOCATIONS. REFER TO C3.00 FOR PLANTING DETAILS.
 - DEMOLITION OF DUCTWORK TO THE SLUDGE HOLDING TANK. INSTALL 20" FRP BLIND FLANGE TO COVER DUCTWORK OPENING.
 - DEMOLITION OF PIPE SUPPORTS AND CONCRETE PADS, REPAIR AND RESTORE ASPHALT AREA.
 - DEMOLISH FRP DUCTWORK TO 2 FT ABOVE THE GROUND. INSTALL 24" FRP BLIND FLANGE TO COVER DUCTWORK OPENING.
 - CONTRACTOR TO FIELD VERIFY EXISTING PIPE SIZES TO BE DEMOLISHED. MAKE INSTALLATION ADJUSTMENT WHEN NECESSARY.

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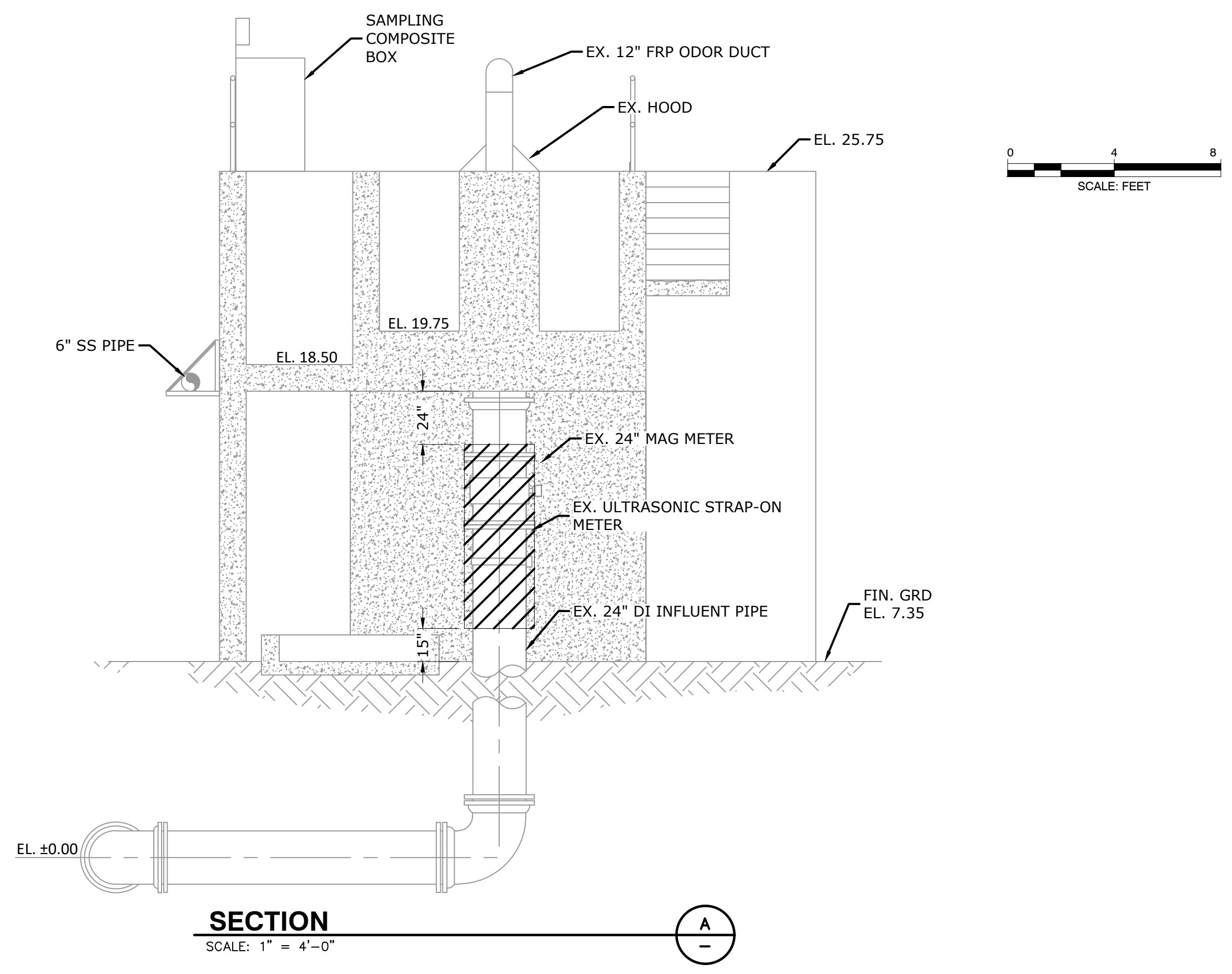
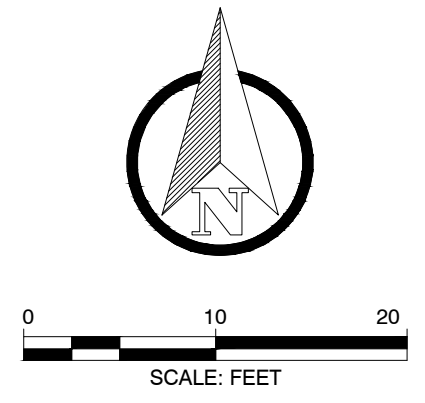
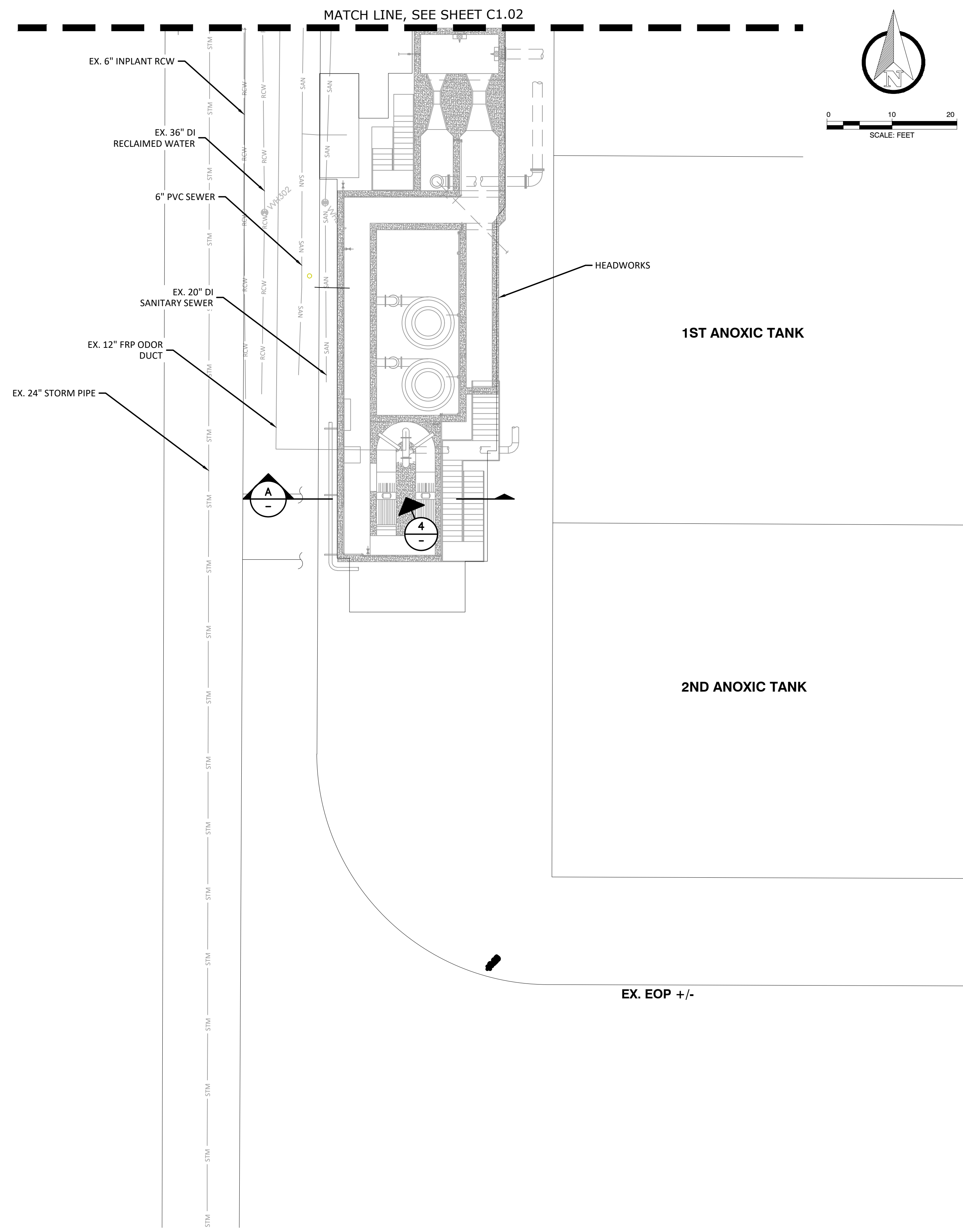
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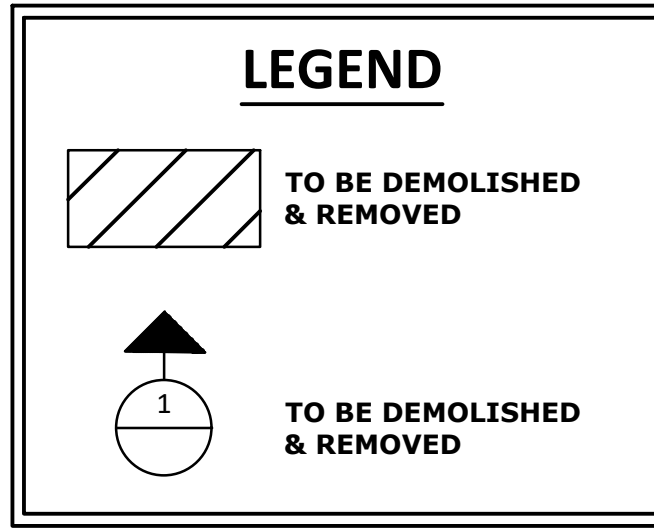
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EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT
CIVIL SITE DEMOLITION

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- NOTES:**
- CONTRACTOR SHALL COORDINATE WITH PROPOSED INFLUENT METER ASSEMBLY, SHOWN ON M1.01, TO FIELD ADJUST THE ACTUAL LENGTH OF THE EXISTING PIPE THAT SHALL REMAIN IN PLACE.
 - ODOR CONTROL SYSTEM FOR THE HEADWORKS IS OFFLINE. CONTRACTOR MAY TEMPORARILY REMOVE THE 12\"/>



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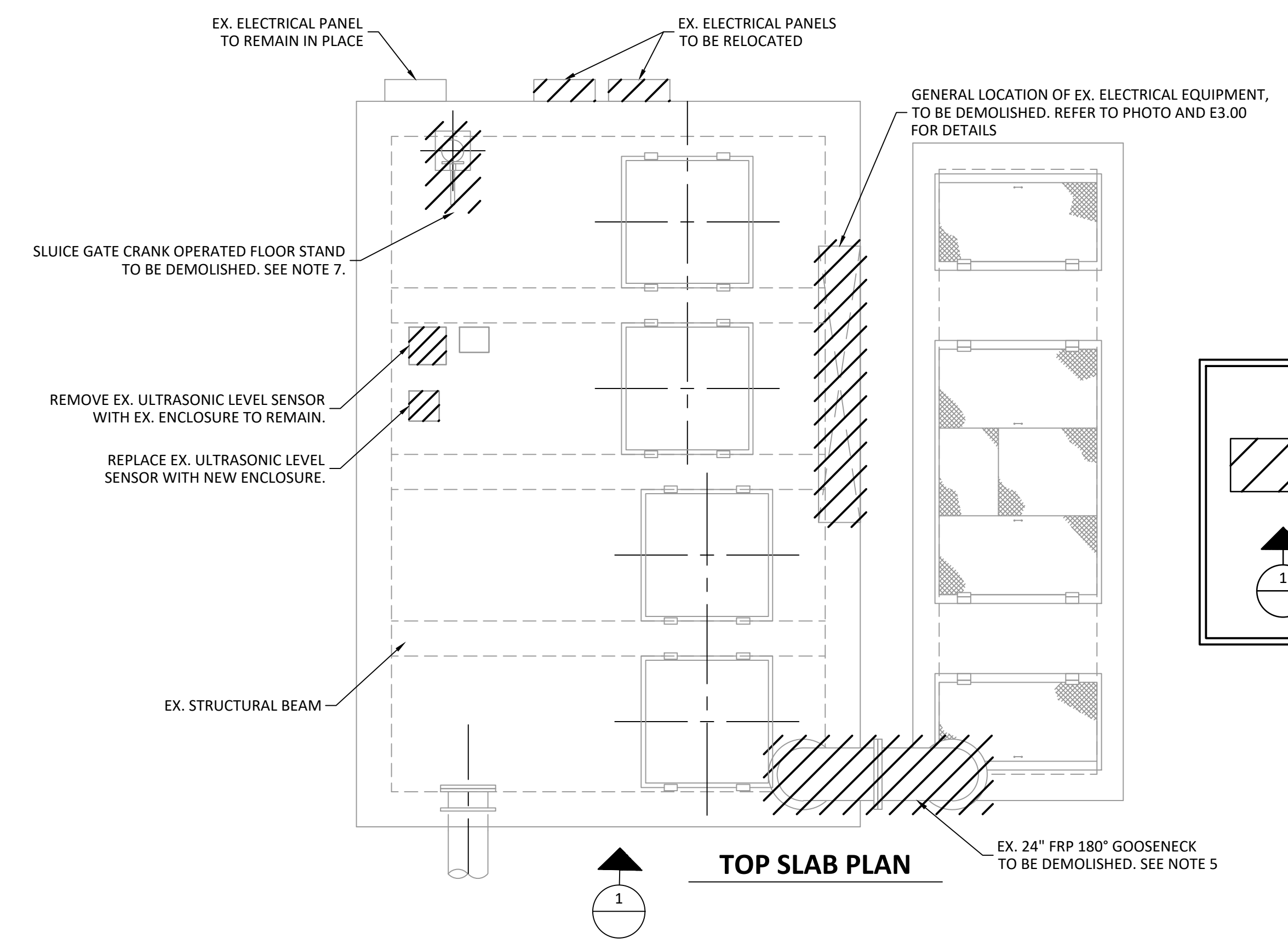
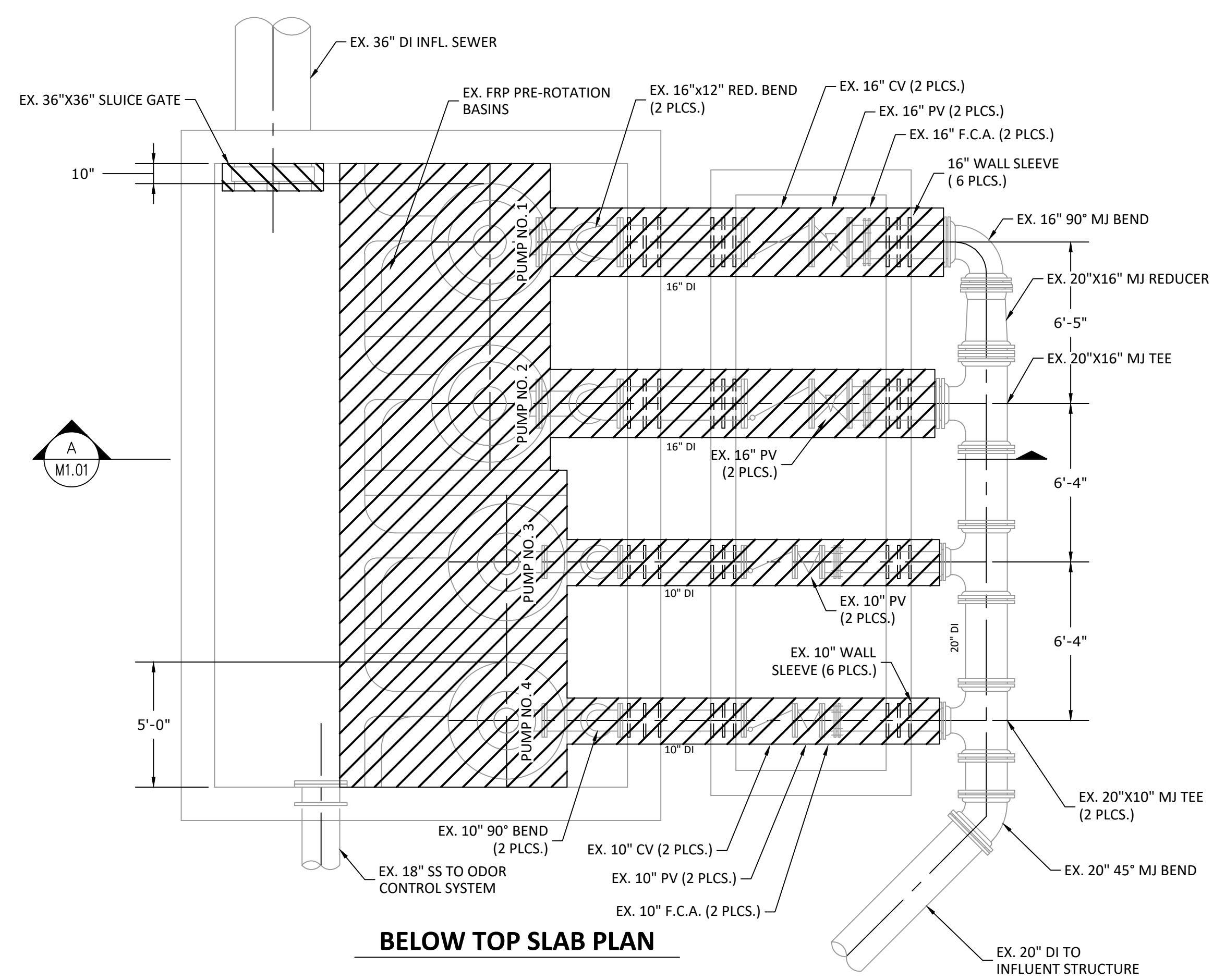
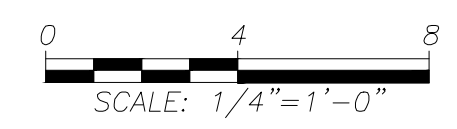
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REVIEWED BY:					
APPROVED BY:	PROJECT ENGINEER	DATE			
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 INFLUENT METER ASSEMBLY DEMOLITION

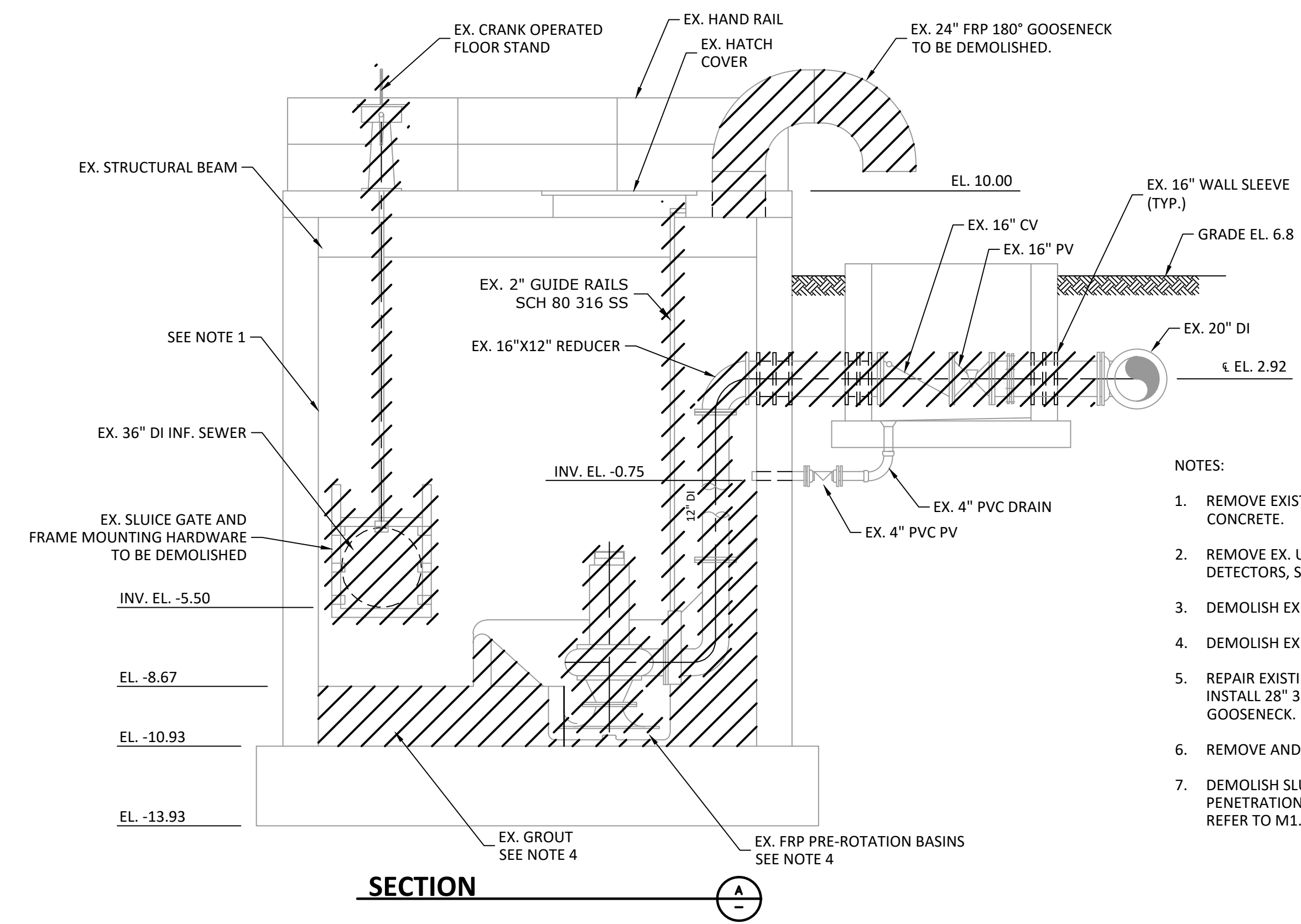
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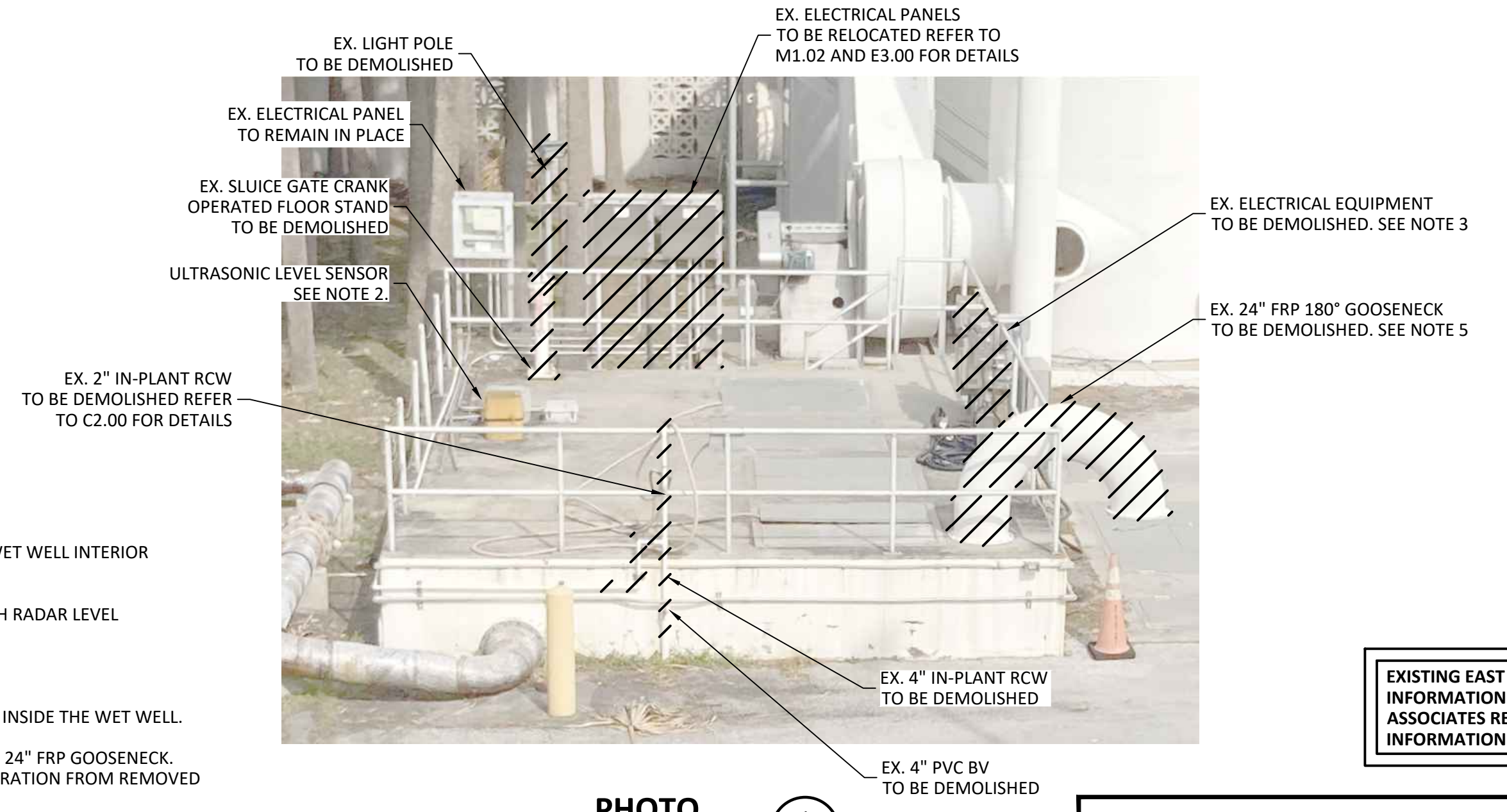
LEGEND

TO BE DEMOLISHED & REMOVED

TO BE DEMOLISHED & REMOVED



- NOTES:**
1. REMOVE EXISTING COATING INSIDE THE WETWELL, REPAIR WET WELL INTERIOR CONCRETE.
 2. REMOVE EX. ULTRASONIC LEVEL SENSORS AND REPLACE WITH RADAR LEVEL DETECTORS, SEE M1.02.
 3. DEMOLISH EXISTING PUMP CONTROL PANELS.
 4. DEMOLISH EXISTING GROUT AND FRP PRE-ROTATION BASINS INSIDE THE WETWELL.
 5. REPAIR EXISTING HANDRAIL AFTER DEMOLITION OF EXISTING 24\"/>



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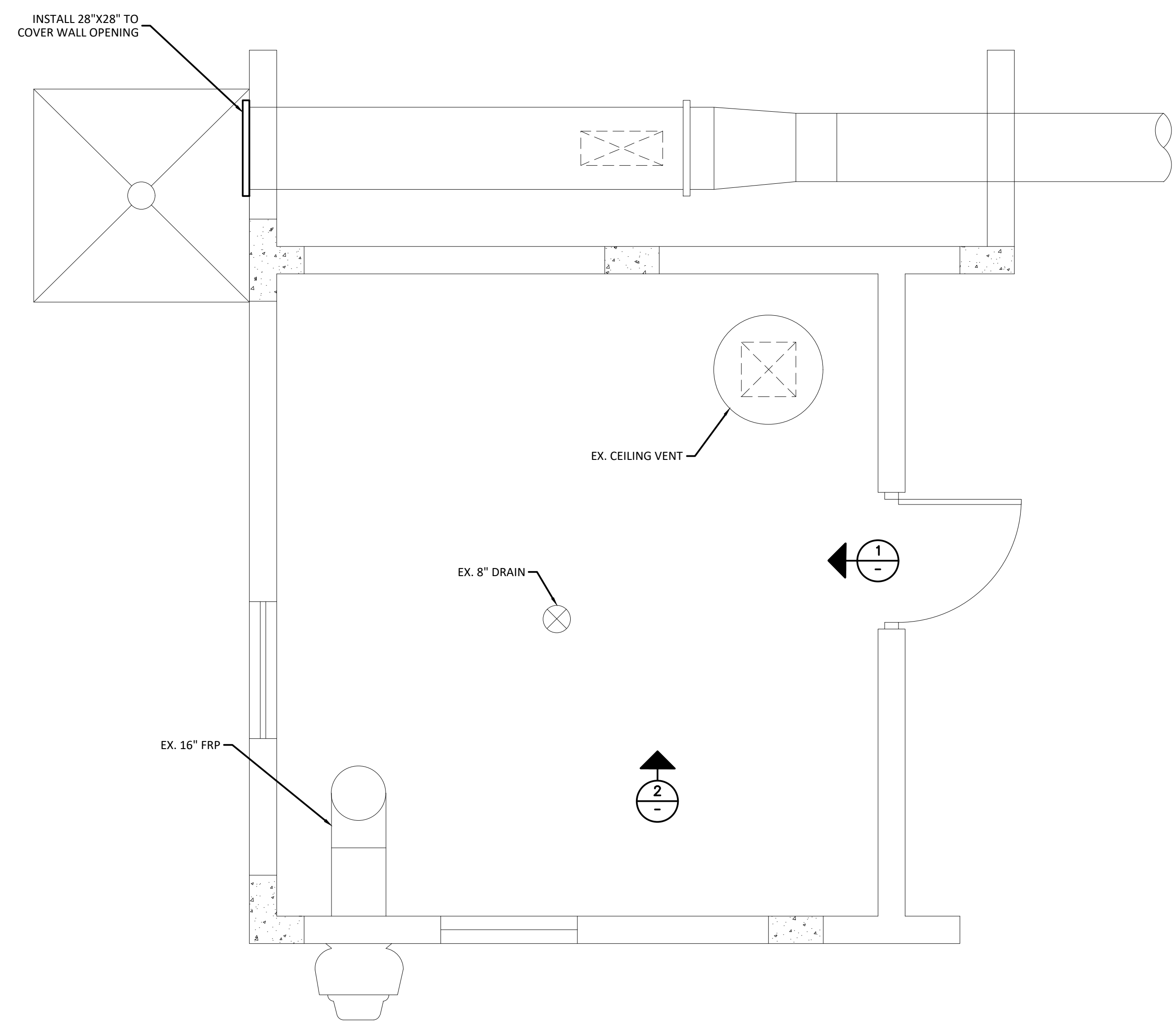
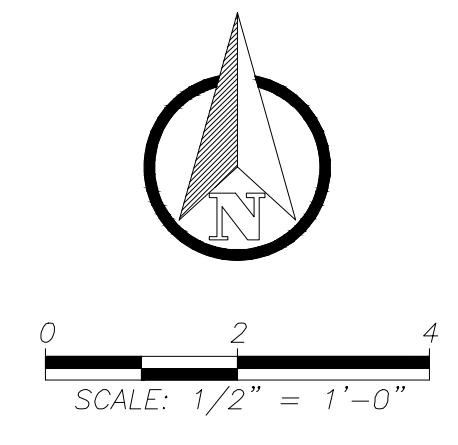
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REHABILITATION PROJECT
INFLUENT PUMP STATION DEMOLITION**

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BLOWER ROOM



PHOTO 1



PHOTO 2

EXISTING EAST PLANT BACKGROUND INFORMATION BASED ON BRILEY, WILD & ASSOCIATES RECORD DRAWINGS FOR INFORMATION ONLY.

- NOTES:
1. CITY TO RELOCATE THE STORED MAINTENANCE EQUIPMENT IN THE EXISTING BLOWER ROOM.

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**EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT
SLUDGE HANDLING BUILDING BLOWER ROOM DEMOLITION**

DWG NAME: C1.04.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
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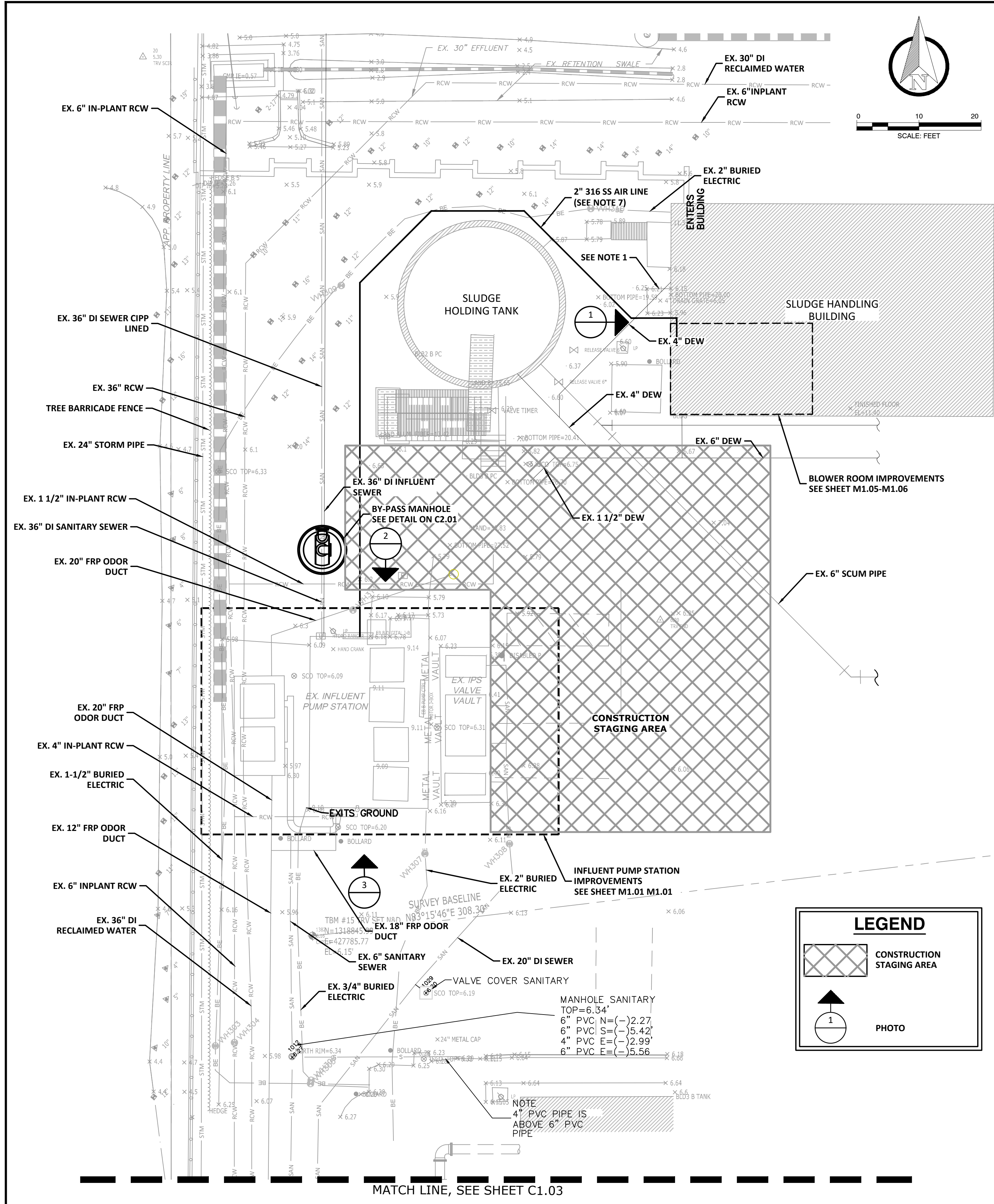


PHOTO 1

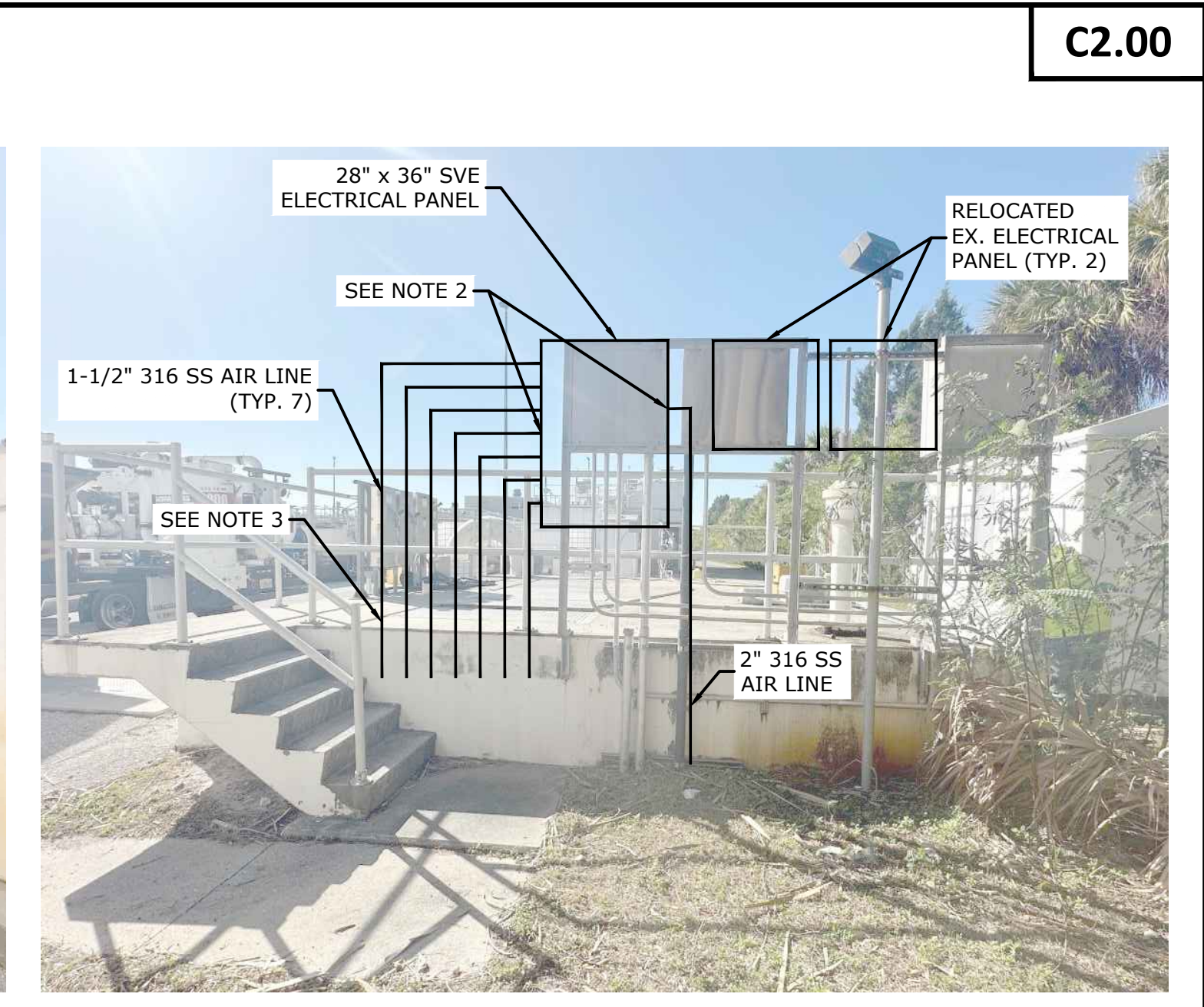


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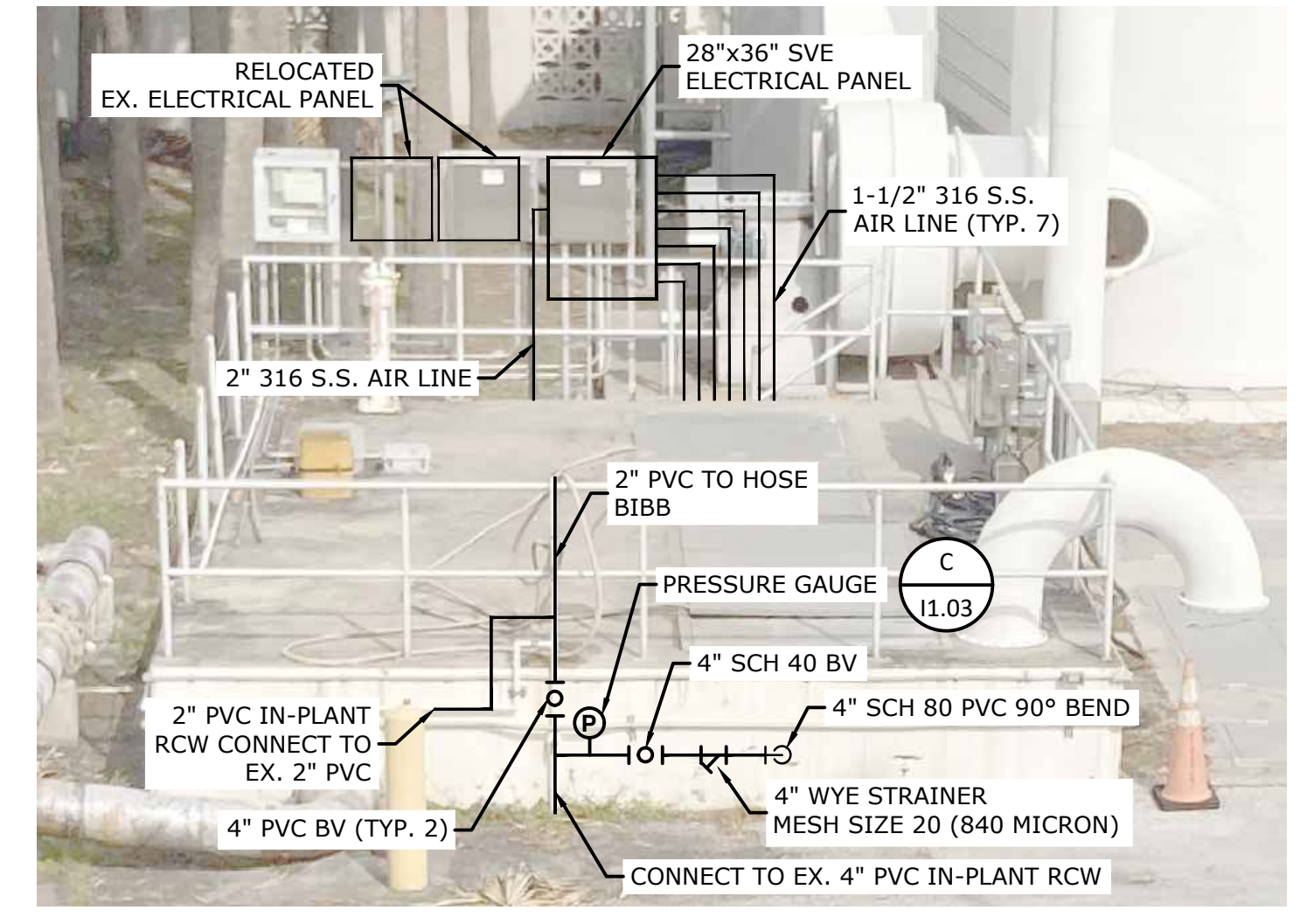


PHOTO 3

- NOTES:
- CONTRACTOR SHALL BE AWARE THE EXISTING PIPE BACKGROUND IS FOR INFORMATION ONLY, NOT ALL PIPES HAVE BEEN LOCATED AND VERIFIED BY SUE. CONTRACTOR SHALL USE CAUTION WHEN DIGGING. FIELD VERIFY ALL EXISTING PIPE SIZES AND LOCATIONS.
 - SVE ELECTRICAL PANEL CONTAINS (1) 2" INLET AND (7) 1-1/2" OUTLETS, PIPE CONNECTING LOCATIONS PER MANUFACTURER REQUIREMENT.
 - CONTRACTOR TO MAINTAIN MINIMUM 3" SEPARATION BETWEEN THE (7) 1-1/2" 316 S.S. AIRLINES PENETRATING THE WET WELL. THE AIR LINE PIPE SCHEMATIC IS FOR DEMONSTRATION ONLY, REFER TO SHEET SX.XX FOR PIPE WALL PENETRATION LOCATIONS. INSTALL LINK SEALS FOR WET WELL WALL PENETRATIONS.
 - CONTRACTOR SHALL INSTALL EQUIPMENT RACKS FOR THE ELECTRICAL PANELS AND AIR PIPES. INSTALL U-BOLT PIPE SUPPORTS EVERY 4' ON CENTER, AND AT 90° BENDS
 - ALL PVC PIPING AND FITTINGS SHALL BE SCH 40, UNLESS SPECIFICALLY NOTED OTHERWISE.
 - ALL SMALL DIAMETER PIPING 4" AND BELOW SHALL BE ADEQUATELY SUPPORTED USING 316 S.S. UNISTRUT AND PIPE CLAMPS.
 - THE 2" 316 S.S. AIR PIPING SHALL BE INSTALLED AT MINIMUM DEPTH OF 36" BELOW GRADE. CONTRACTOR SHALL FURNISH NECESSARY 316 S.S. BENDS TO ROUTE THE AIR PIPING FROM THE AIR COMPRESSOR TO THE SUE PANEL.

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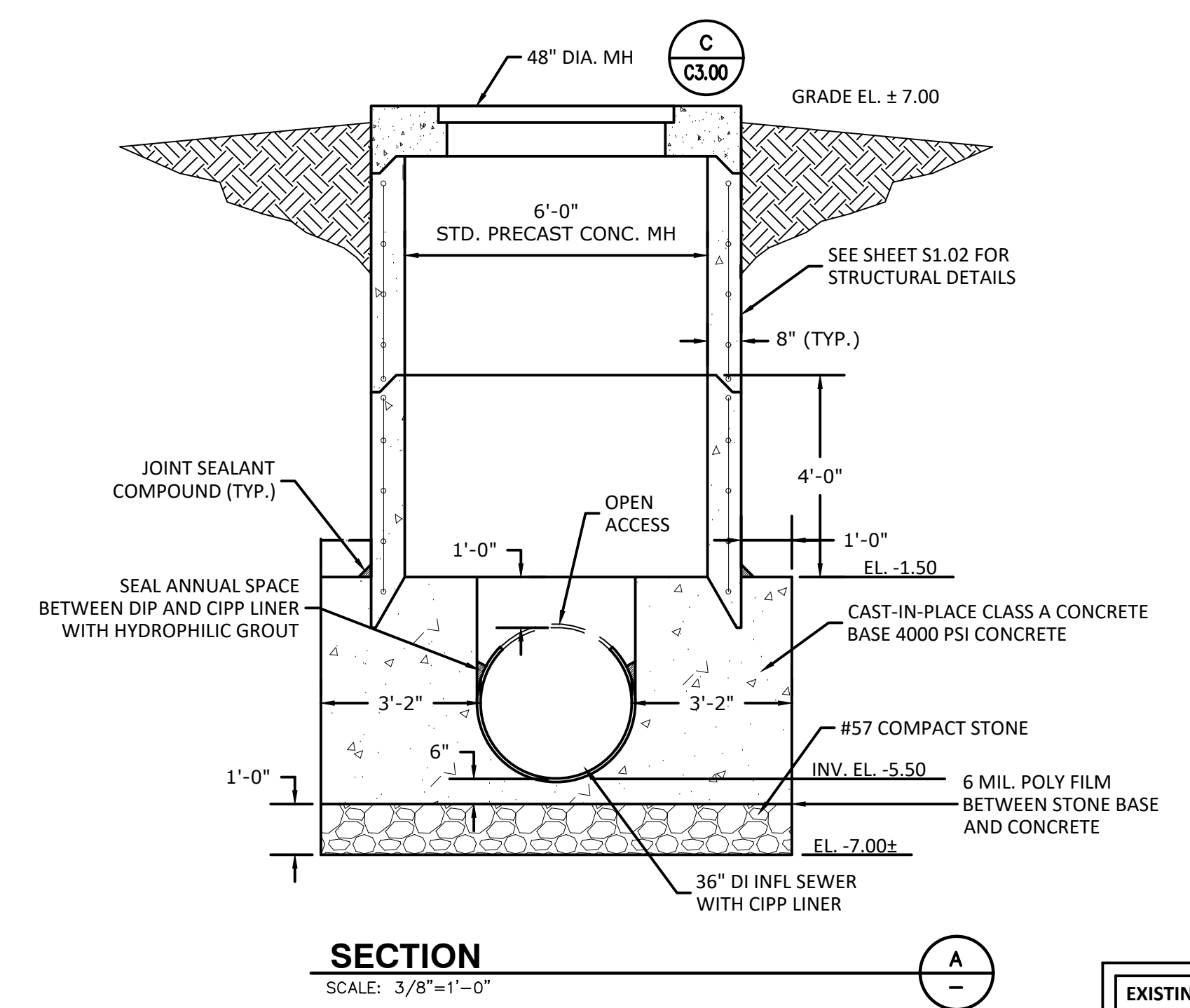
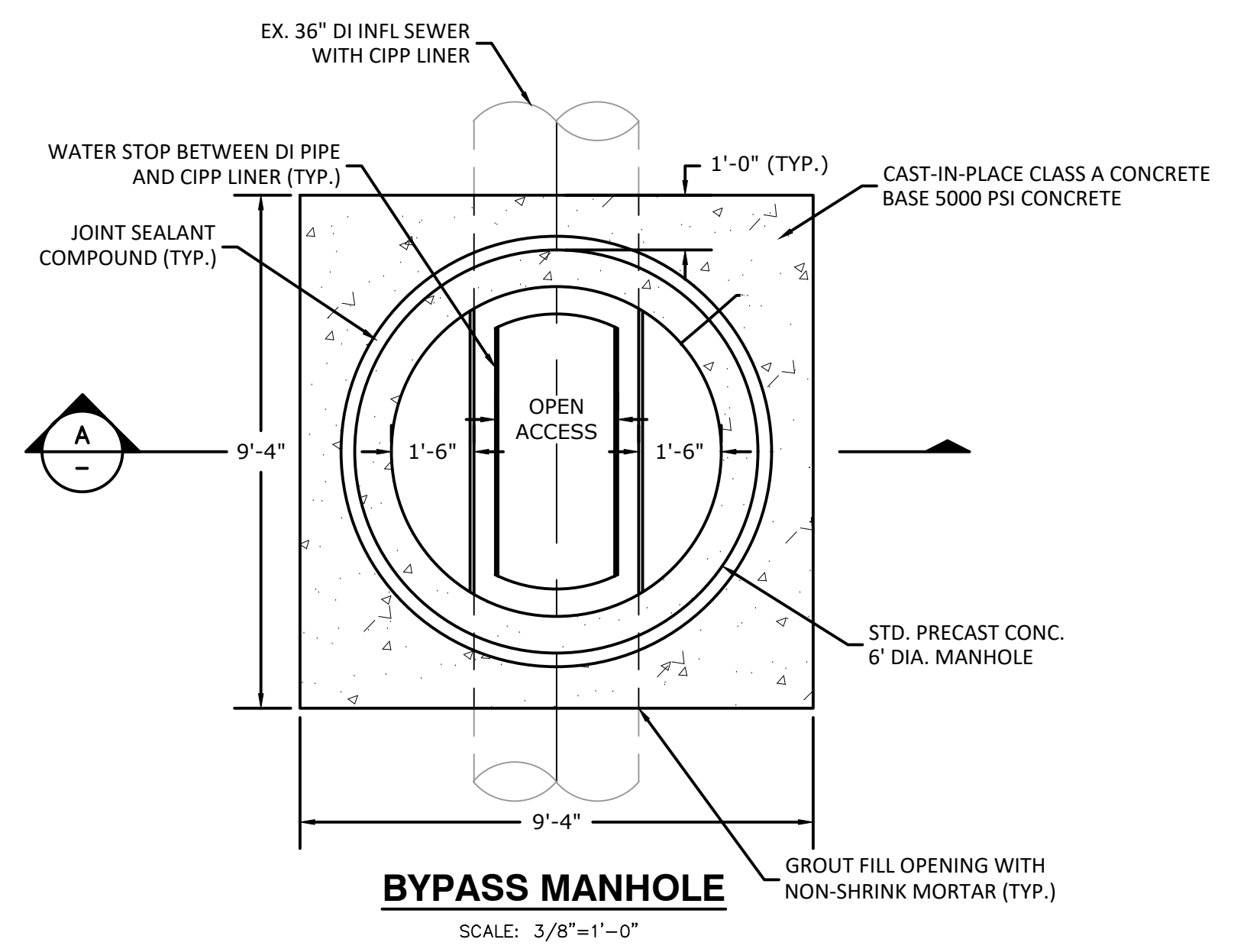
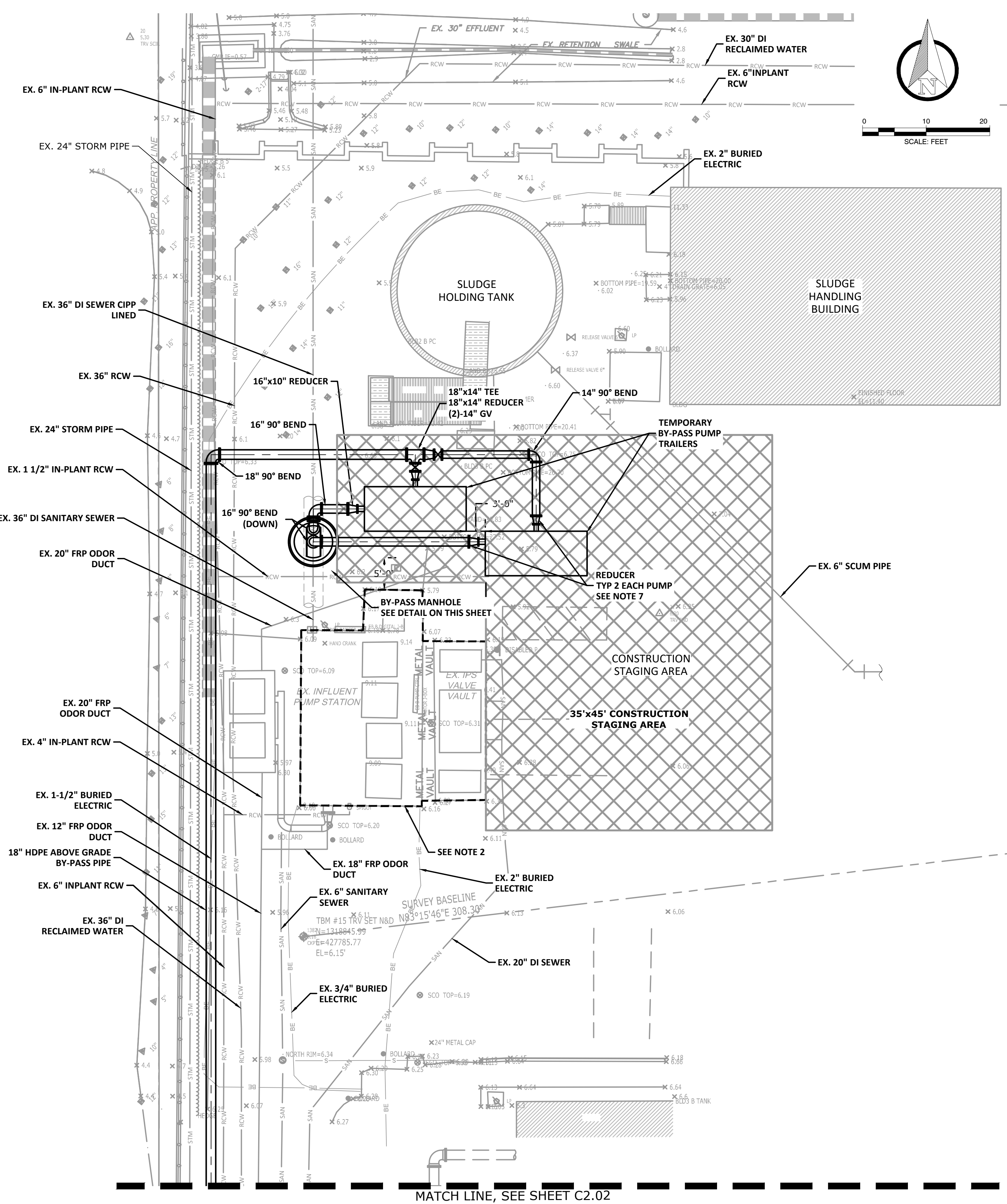
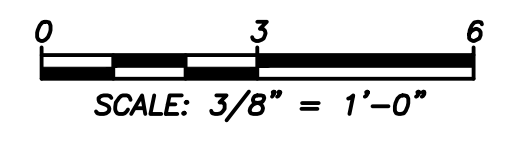
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EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT
PROPOSED SITE PLAN AND YARD PIPING

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NOTES:

1. THE 36" INFLUENT SEWER PIPE WILL REMAIN IN SERVICE DURING THE CONSTRUCTION OF THE BYPASS MANHOLE.
2. CONSTRUCT BYPASS MANHOLE AND COMPLETE COATING OF THE INTERIOR MANHOLE AND THE EXTERIOR PIPE.
3. UPON COMPLETION OF THE BYPASS MANHOLE, CONTRACTOR SHALL REMOVE AND SEAL THE TOP PORTION OF THE 36" INFLUENT PIPE INSIDE THE WETWELL.
4. REFER TO SPECIFICATION 13567 FOR TEMPORARY BYPASS PUMPING AND REQUIREMENTS.
5. REFER TO SECTION AND SPECIFICATION 01016, "CONSTRUCTION PHASING PLAN", FOR THE SEQUENCE OF CONSTRUCTION.
6. ALL FITTINGS ON BYPASS PIPING SHALL BE RESTRAINED, ALTERNATIVELY FUSED HDPE FITTINGS MAY BE USED.
7. CONTRACTOR TO PROVIDE NECESSARY PIPE FITTINGS FOR THE BYPASS PUMP CONNECTIONS.

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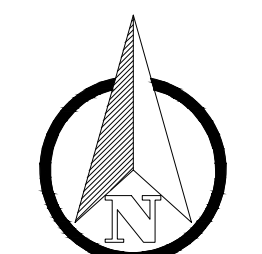
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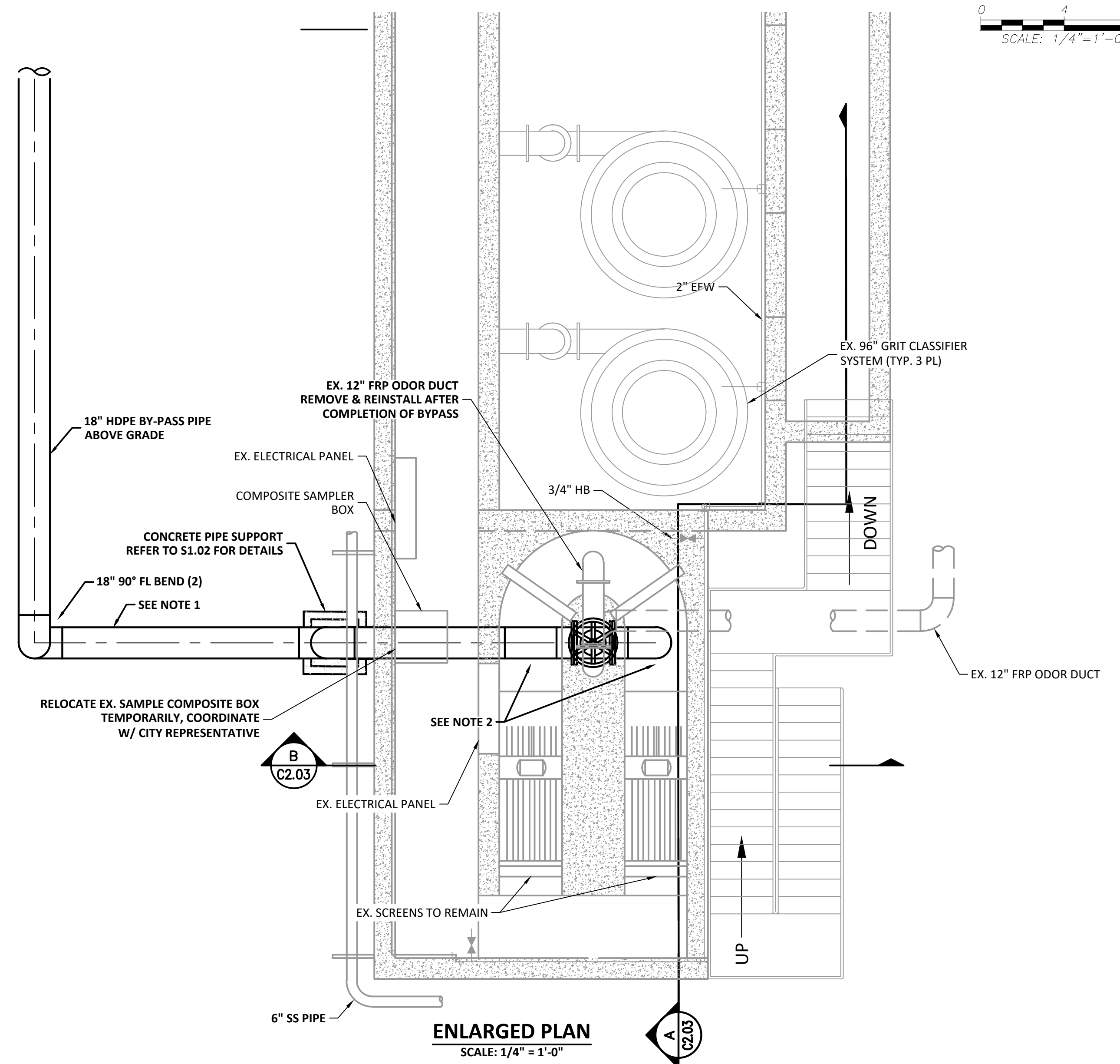
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**EAST WRF INFLUENT PUMP STATION
 REHABILITATION PROJECT
 BYPASS PUMPING SITE PLAN (1) AND BYPASS MANHOLE**

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



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

NOTE:

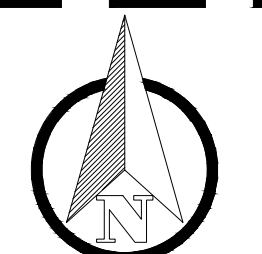
1. MAINTAIN PLANT TRAFFIC AT ALL TIMES USING PIPE TRENCH WITH SUFFICIENT PROTECTION. REPAIR AND RESTORE ROAD AFTER TEMPORARY BYPASS PIPING IS REMOVED.
2. REMOVE EXISTING FRP GRATING PRIOR TO INSTALLATION OF BYPASS DISCHARGE PIPING. PLYWOOD WITH MIN. 3/4" THICKNESS SHALL BE USED TO COVER FLOOR OPENINGS AFTER BYPASS PIPING IS INSTALLED.
3. ALL FITTINGS ON BYPASS PIPING SHALL BE RESTRAINED. ALTERNATIVELY FUSED HDPE FITTINGS MAY BE USED.
4. ENSURE HEADWORKS SLUICE GATES ARE WATER TIGHT WHEN CLOSED, APPLY HYDRAULIC GROUT MATERIAL TO SEAL ANY LEAKS AROUND THE GATES PRIOR TO THE START OF THE BYPASS WORK. COORDINATE WITH CITY OPERATIONS STAFF.
5. REFER TO SPECIFICATION 13567 TEMPORARY BYPASS PUMPING PROVISIONS FOR BYPASS PUMPING REQUIREMENTS.
6. REFER TO SPECIFICATION 01016, CONSTRUCTION PHASING PLAN, FOR THE SEQUENCE OF CONSTRUCTION.
7. CONTRACTOR SHALL WORK WITH THE CITY TO RELOCATE THE EXISTING COMPOSITE SAMPLER BOX.

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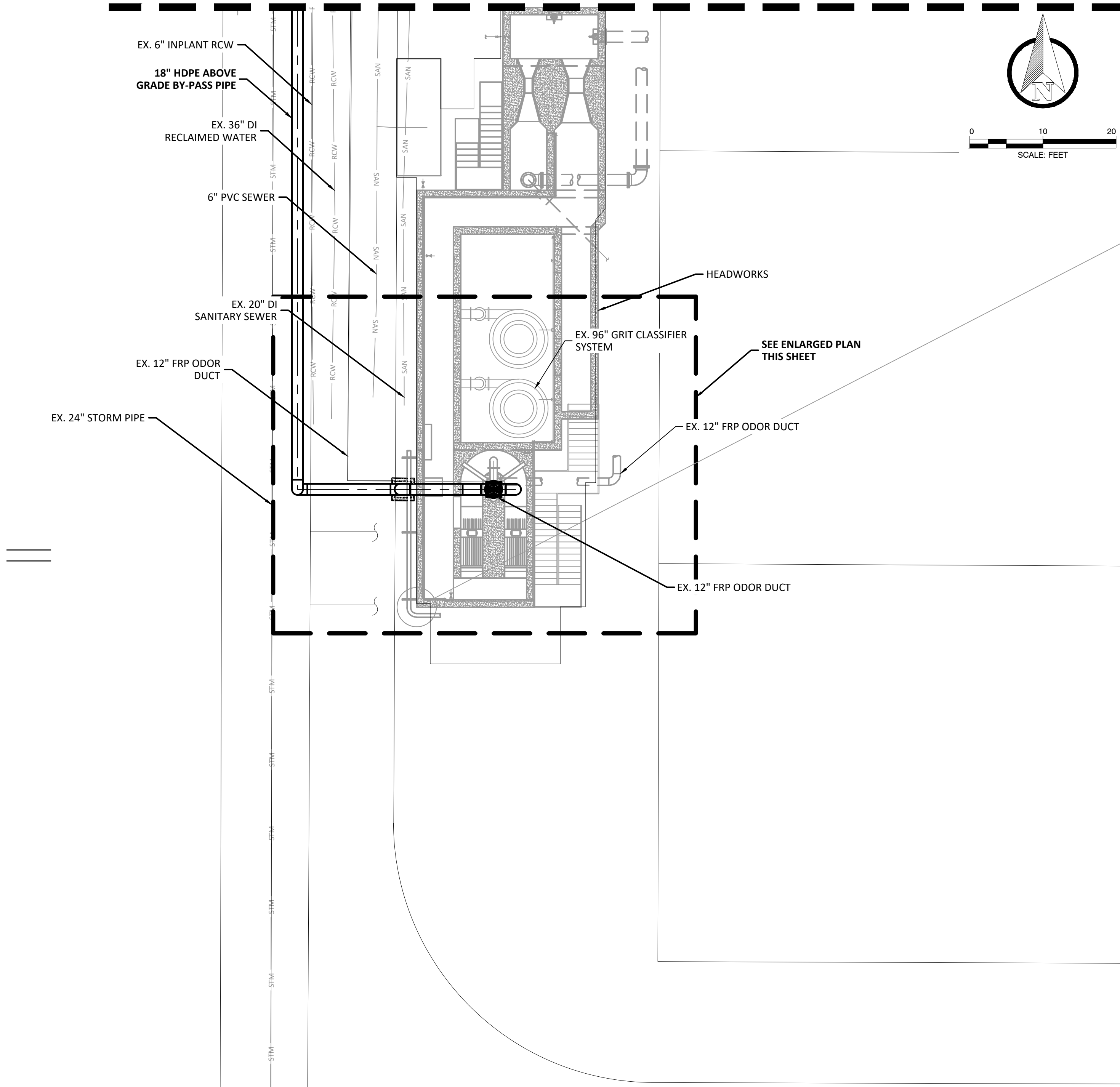


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MATCH LINE, SEE SHEET C2.01



SCALE: FEET



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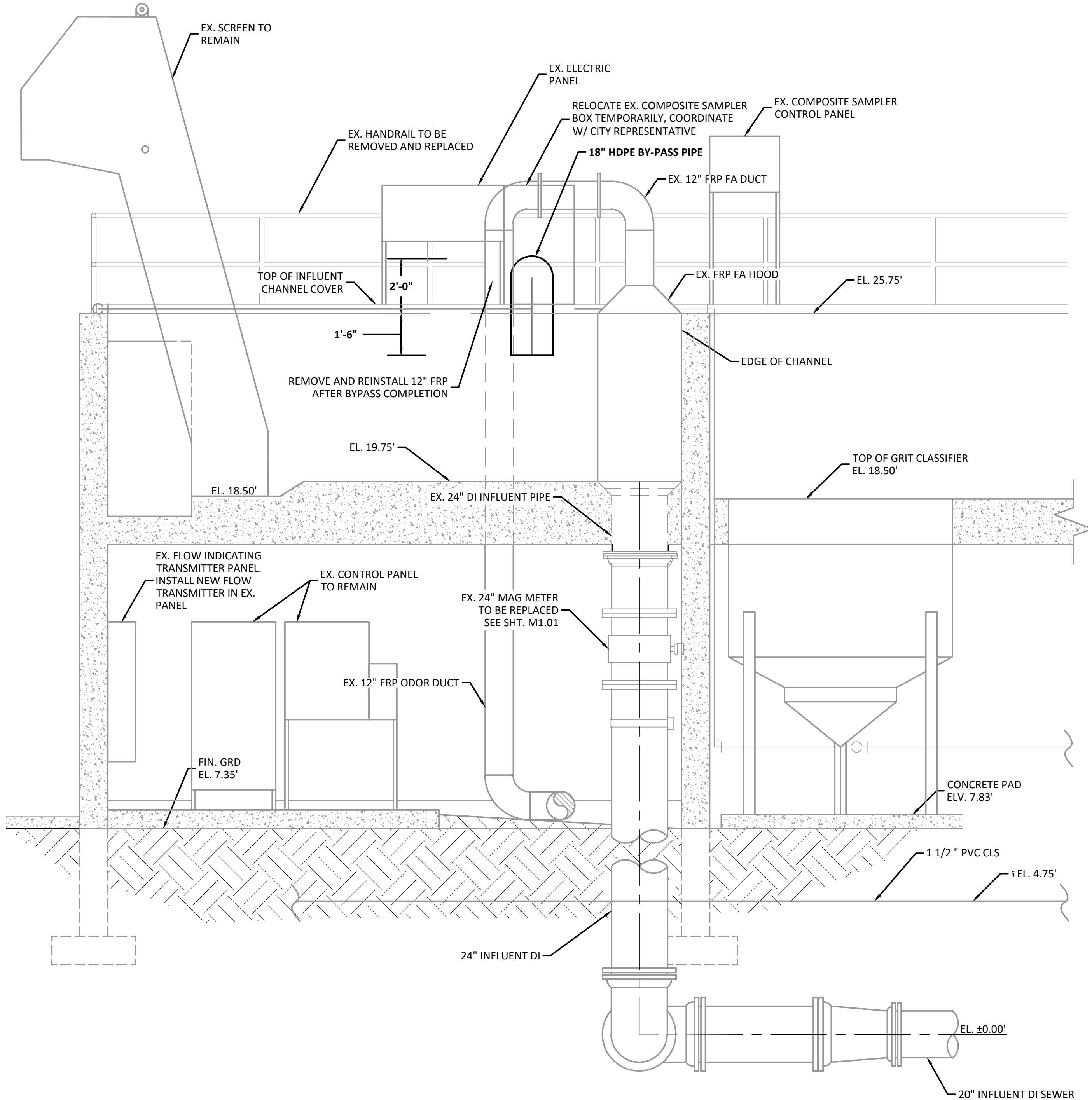
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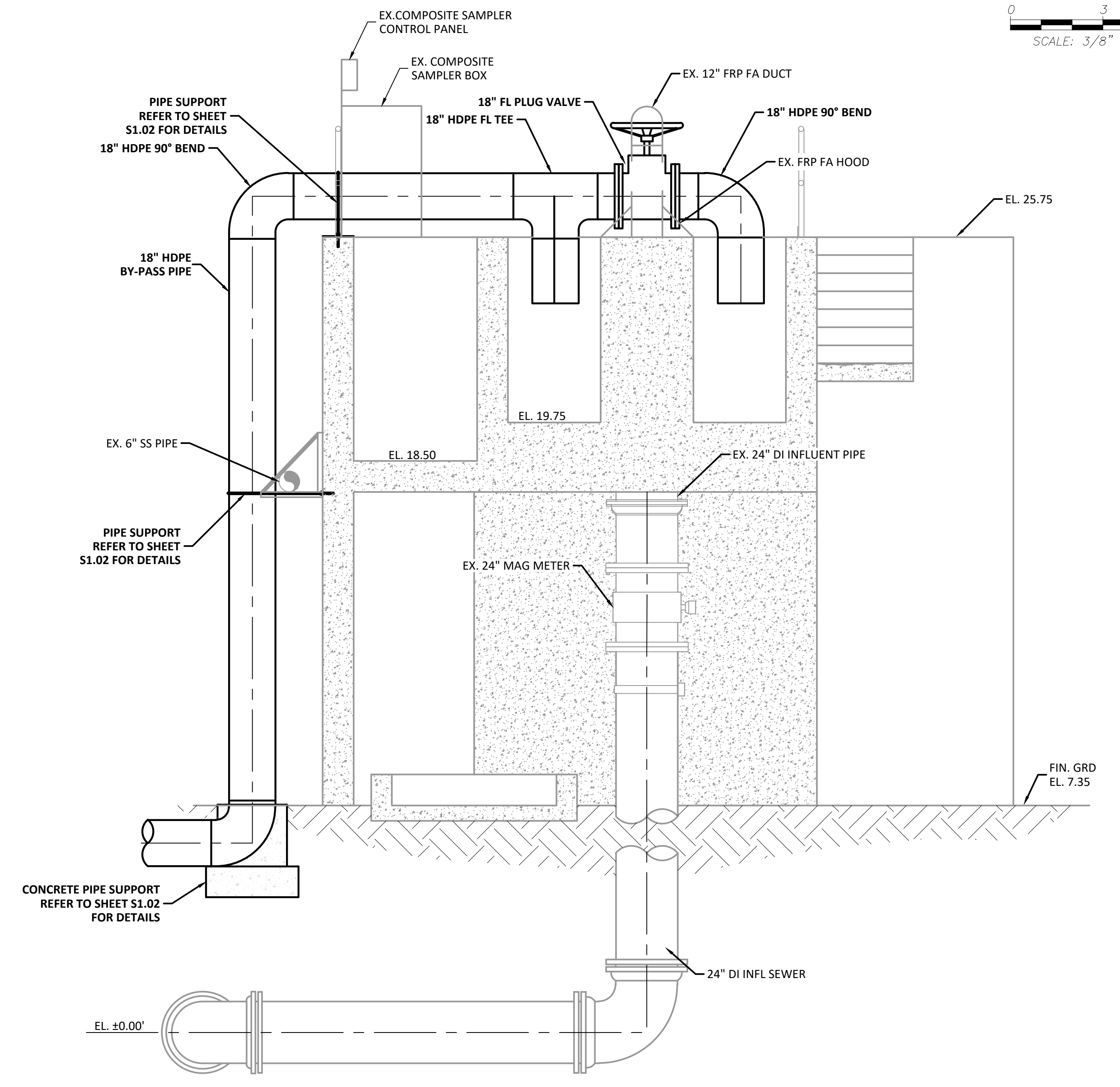
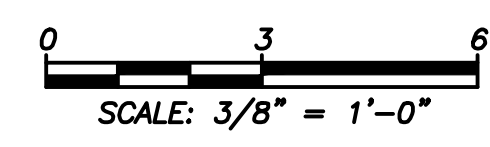
**EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT
BYPASS PUMPING SITE PLAN (2)**

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- NOTE:
- CONTRACTOR TO REMOVE EXISTING FRP GRATING TO INSTALL BYPASS DISCHARGE. PLYWOOD SHALL BE USED TO COVER ANY OPEN SECTIONS OF CHANNEL AFTER THE BYPASS PIPING IS INSTALLED.
 - ALL FITTINGS ON BYPASS PIPING SHALL BE RESTRAINED. ALTERNATIVELY FUSED HDPE FITTINGS MAY BE USED

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



- NOTE:
- SECURE TEMP BYPASS PIPING TO EXISTING DECK USING TEMPORARY HARNESSES AND STRAPS.

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

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**EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT
BY-PASS PUMPING SECTION PLAN**

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GENERAL LANDSCAPE NOTES

1. The Landscape Contractor shall grade planting beds, as required, to provide positive drainage and promote optimum plant growth.
2. All recommended trees and plant materials will be graded as Nursery Grade No. 1 or better as outlined by the Florida Department of Agriculture and Consumer Services, Division of Plant Industry "Grades and Standards for Nursery Plants", 7th Edition, 1998 as revised from time to time.
3. All planting shall be done in accordance with the Florida Nurserymen's and Grower's Associations approved practices.
4. All plants shall be fertilized with Agriform 20-10-5 tablets as per the manufacturers specifications in conjunction with note # 5.
5. The planting soil shall be the approximate proportions as follows: 50% sand and 50% organic material consisting of native peat, well-decomposed sawdust, leaf mold and top soil. It shall provide a good pliable and thoroughly mixed medium with adequate aeration, drainage and water-holding capacity. It shall also be free of all extraneous debris, such as roots, stones, weeds, etc.
6. All planting areas shall receive a 3" layer of recycled hardwood log mulch, which is to be watered-in after installation.
7. The plant material schedule is presented for the convenience of the Landscape Contractor. In the event of a discrepancy between the plan and the plant key, the plan shall prevail.
8. Plants shall meet size, container, and spacing specifications. Any material not meeting specifications shall be removed and replaced at the contractor's expense.
9. All tree and shrub locations are subject to change. All locations shall be approved by the City Project Manager prior to planting.
10. The Landscape Contractor shall be responsible for examining fully both the site and the bid documents. Discrepancies in the documents or the actual site conditions shall be reported to the City Project Manager in writing at the time of bidding or discovery. No account shall be made after contract completion for failure to report such condition, or for errors on the part of the Landscape Contractor at the time of bidding.
11. The Landscape Contractor shall be responsible for securing all necessary applicable permits and licenses to perform the work set forth in this plan set and the specifications.
12. Plant material shall be bid as specified unless unavailable, at which time the City Project Manager will be notified by telephone and in writing of intended changes.
13. Any and all questions concerning the plan set and/or specifications shall be directed to the City Project Manager at (727) 562-4737.
14. There shall be no additions, deletions or substitutions without the written approval of the City Project Manager.
15. The Landscape Contractor shall guarantee, in writing, plant survivability for a period of twelve (12) months from final acceptance by the City Project Manager.
16. All dimensions to be field-checked by the Landscape Contractor prior to landscape material installation. Discrepancies shall be reported immediately to the City Project Manager.
17. All materials must be as specified on the landscape plan. If materials or labor do not adhere to specifications, they will be rejected by the City Project Manager with proper installation carried out by Landscape Contractor at no additional cost.
18. All permits necessary are to be provided by the installing contractor unless otherwise specifically stated in the specifications.
19. No contractor identification signs shall be permitted on the project, except for the project information signs.
20. Existing sod shall be removed as necessary to accommodate new plantings.
21. Any existing sod areas that are unnecessarily disturbed during the landscape installation shall be resodded to match existing.
22. The Landscape Contractor will be responsible for the collection, removal, and proper disposal of any and all debris generated during the installation of this project.

5/17/12	DEPARTMENT NAME	TLM	CITY OF CLEARWATER	GENERAL LANDSCAPING	INDEX NO.	PAGE NO.
DATE	REVISION DESCRIPTION	APP	ENGINEERING DEPARTMENT	NOTES	906	1 OF 3
			LANDSCAPE DETAILS		LATEST REVISION	2/22/2016

FERTILIZATION NOTES

SHRUBS AND TREES

All trees and shrubs shall be fertilized with "Agriform" 20-15-5 planting tablets at time of installation and prior to completion of pit backfilling. Tablets shall be placed uniformly around the root mass at a depth that is between the middle and bottom of the root mass.

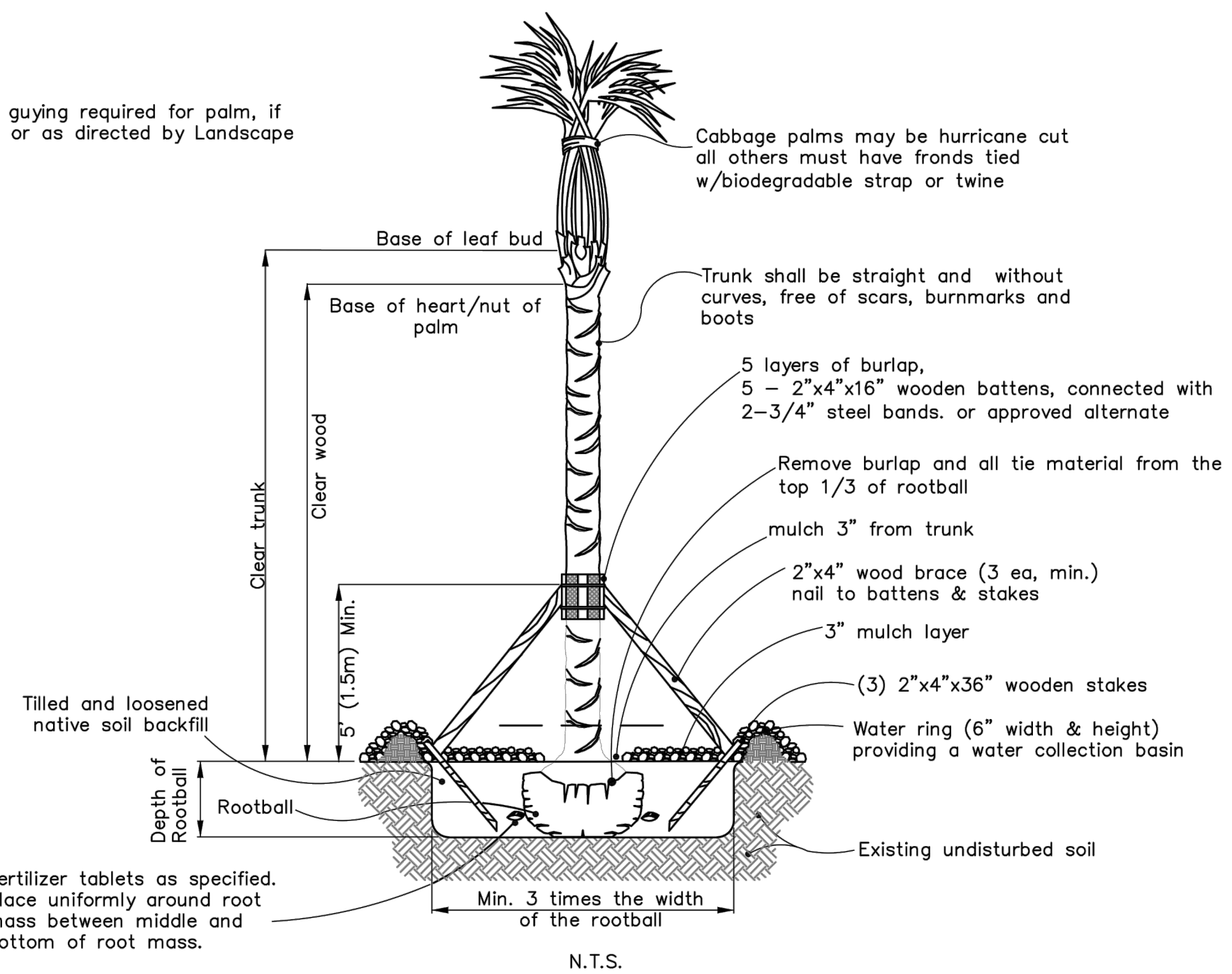
- APPLICATION RATE:**
- 1 Gallon can: 1 - 21 gram tablet
 - 3 Gallon can: 2 - 21 gram tablets
 - 5 Gallon can: 3 - 21 gram tablets
 - 7 Gallon can: 4 - 21 gram tablets
- Trees:
 caliper: 3 - 21 gram tablets each 1/2" of
 Palms: 7 - 21 gram tablets

GROUND COVER AREAS

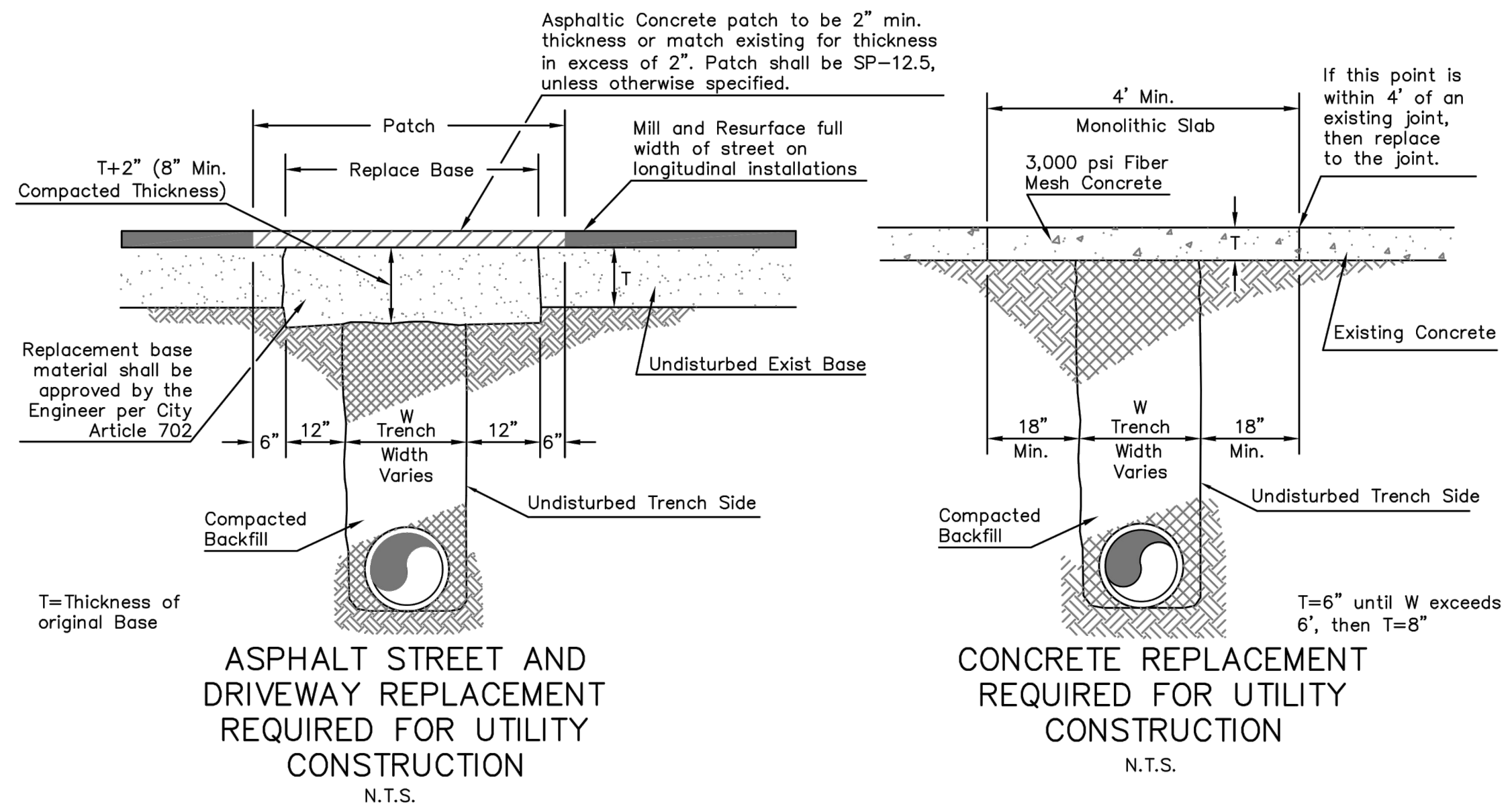
All groundcover areas shall receive fertilization with "Ozmocote" time release fertilizer as per manufacturer's specifications.

5/17/12	DEPARTMENT NAME	TLM	CITY OF CLEARWATER	FERTILIZATION	INDEX NO.	PAGE NO.
DATE	REVISION DESCRIPTION	APP	ENGINEERING DEPARTMENT	NOTES	906	3 OF 3
			LANDSCAPE DETAILS		LATEST REVISION	2/22/2016

NOTE:
 Staking & guying required for palm, if necessary, or as directed by Landscape Architect.



5/17/12	DEPARTMENT NAME	TLM	CITY OF CLEARWATER	PALM PLANTING DETAIL	INDEX NO.	PAGE NO.
8/06	ADDITIONS & CORRECTIONS	TLM	ENGINEERING DEPARTMENT		904	1 OF 1
DATE	REVISION DESCRIPTION	APP	LANDSCAPE DETAILS		LATEST REVISION	2/22/2016



3/17/11	DEPARTMENT NAME	D.S.R.	CITY OF CLEARWATER	STREET AND DRIVEWAY REPLACEMENT FOR CONCRETE & ASPHALTIC CONCRETE SURFACES	INDEX NO.	PAGE NO.
DATE	REVISION DESCRIPTION	APP	ENGINEERING DEPARTMENT		104	1 OF 1
			STREET SECTIONS AND DETAILS		LATEST REVISION	2/22/2016

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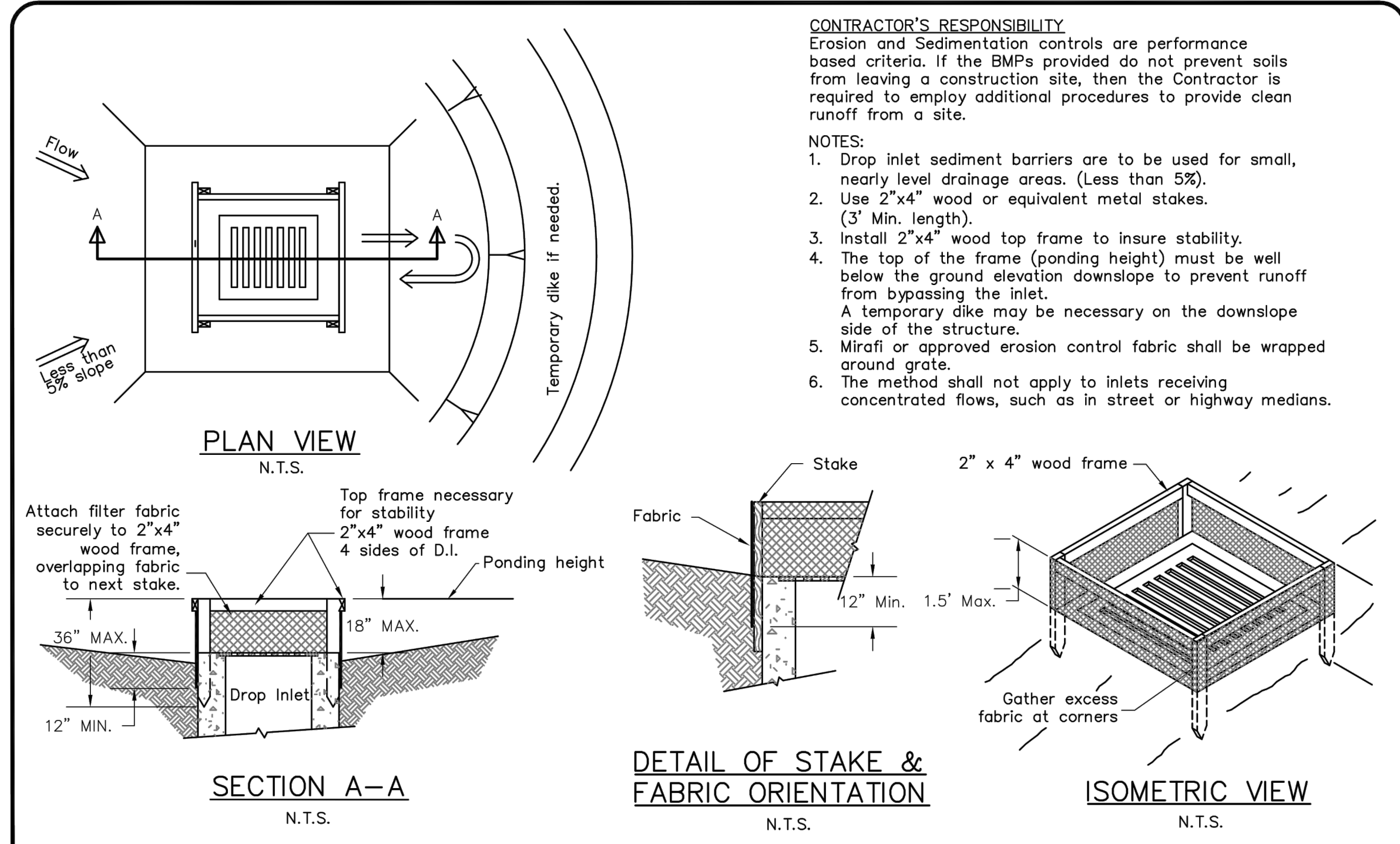
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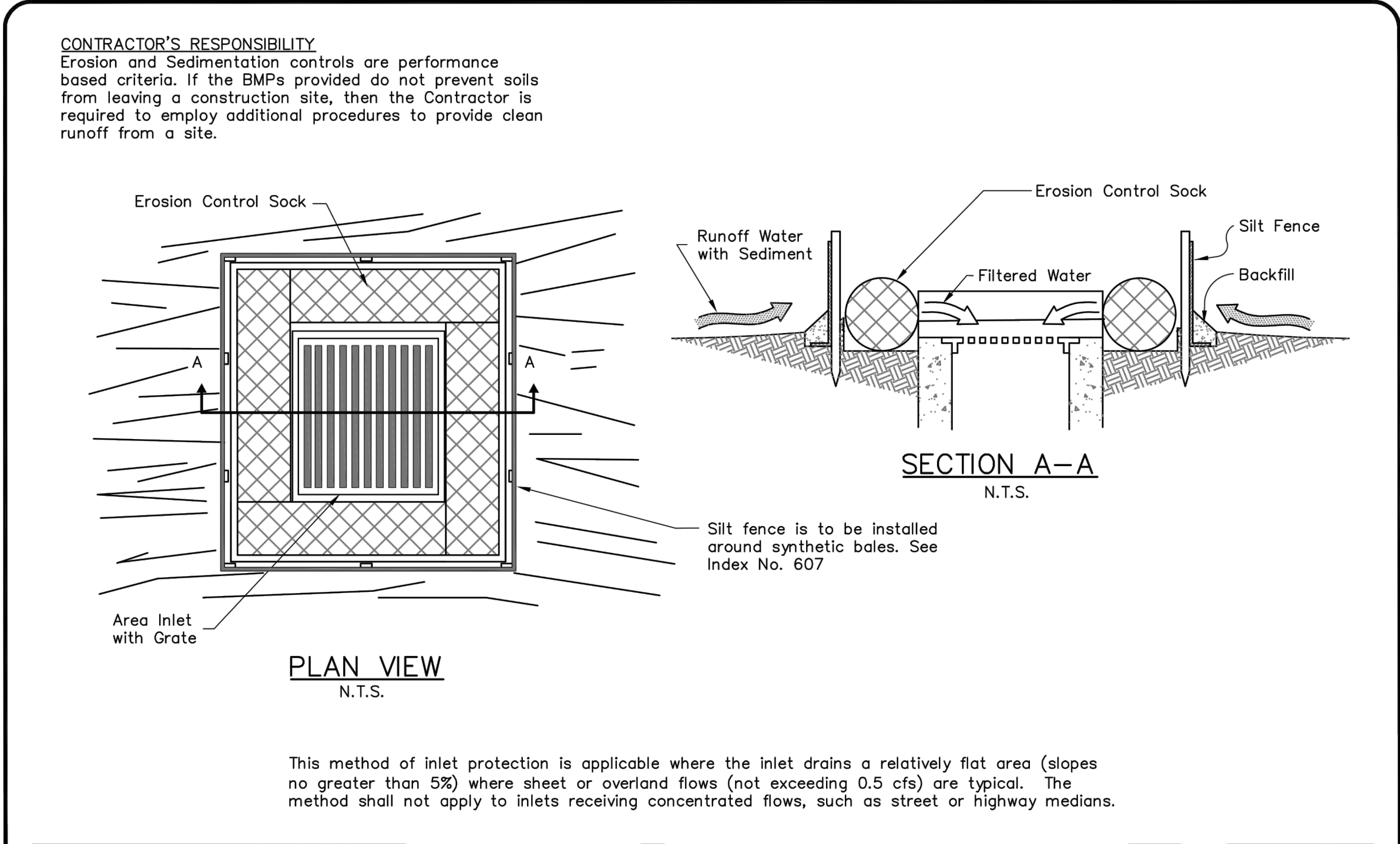
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 CIVIL DETAILS (1)**

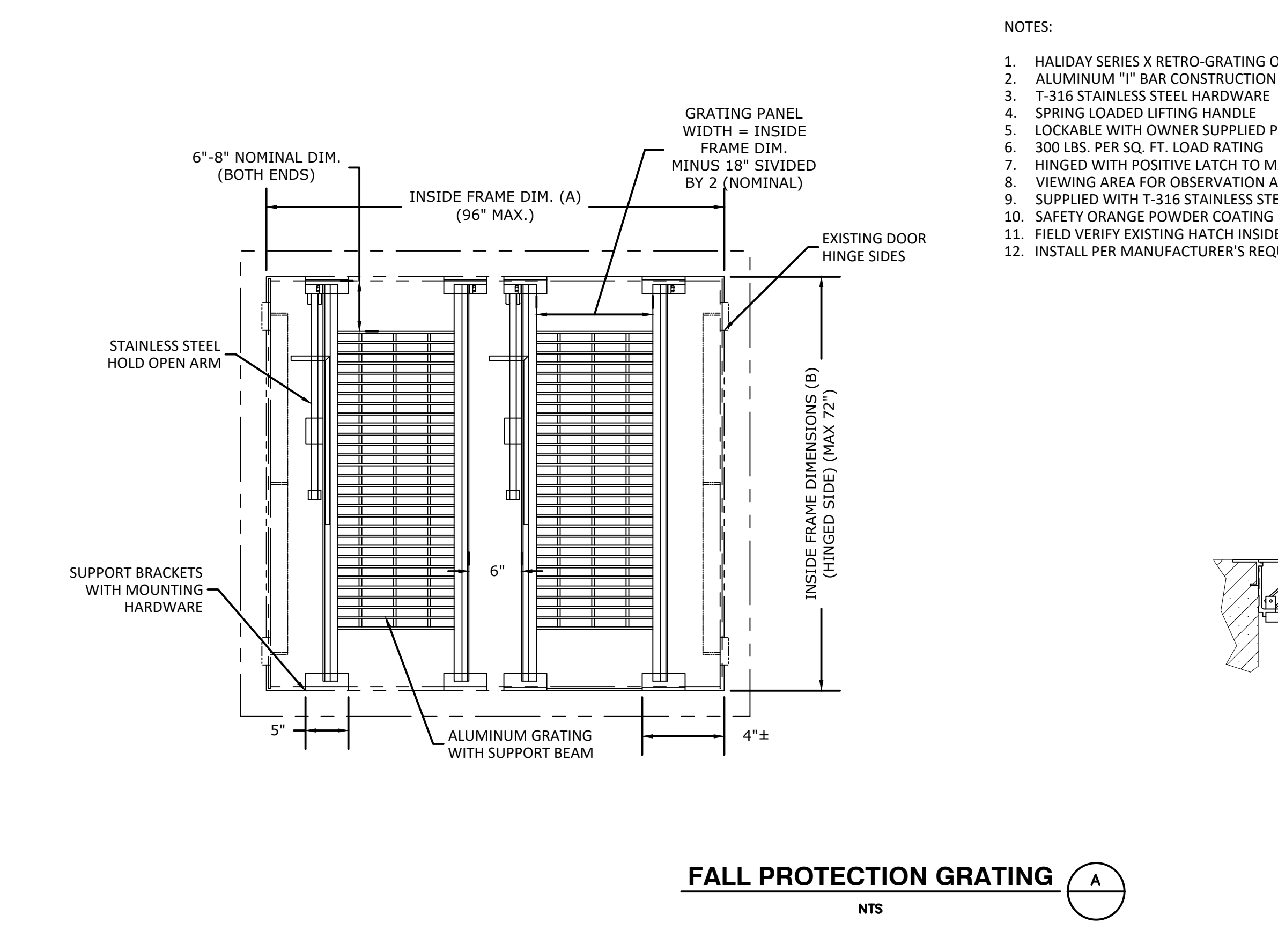
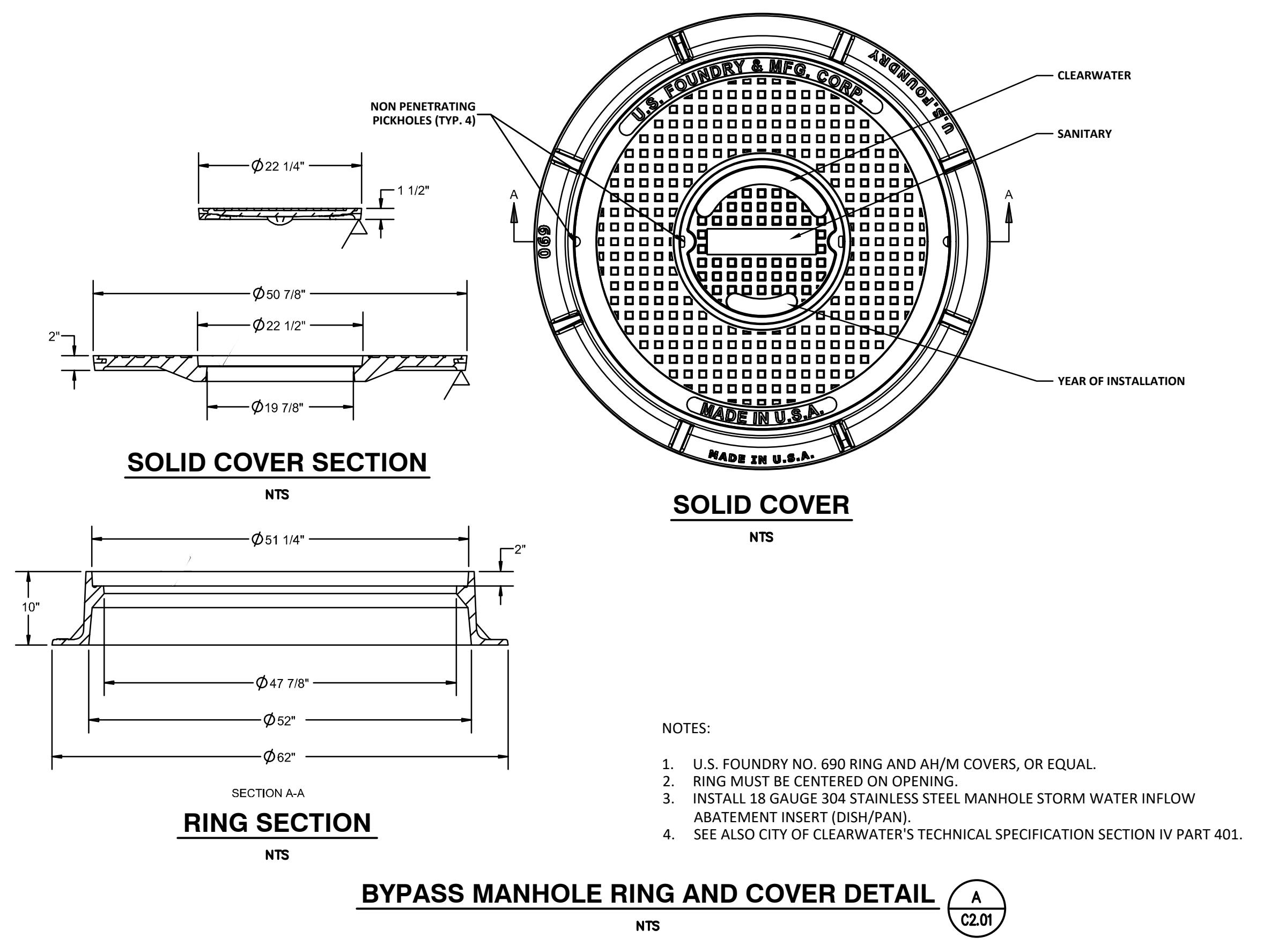
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5/18/15	CONTRACTOR NOTE ADDED	S.R.	CITY OF CLEARWATER ENGINEERING DEPARTMENT EROSION AND SILTATION CONTROL POLICY	TEMPORARY SEDIMENT BARRIER AT A DROP INLET	INDEX NO. 608	PAGE NO. 1 OF 2
DATE	REVISION DESCRIPTION	APP			LATEST REVISION	2/22/2016



5/18/15	CONTRACTOR NOTE ADDED	S.R.	CITY OF CLEARWATER ENGINEERING DEPARTMENT EROSION AND SILTATION CONTROL POLICY	TEMPORARY SEDIMENT BARRIER AT STORM DRAIN DROP INLET	INDEX NO. 608	PAGE NO. 2 OF 2
DATE	REVISION DESCRIPTION	APP			LATEST REVISION	2/22/2016



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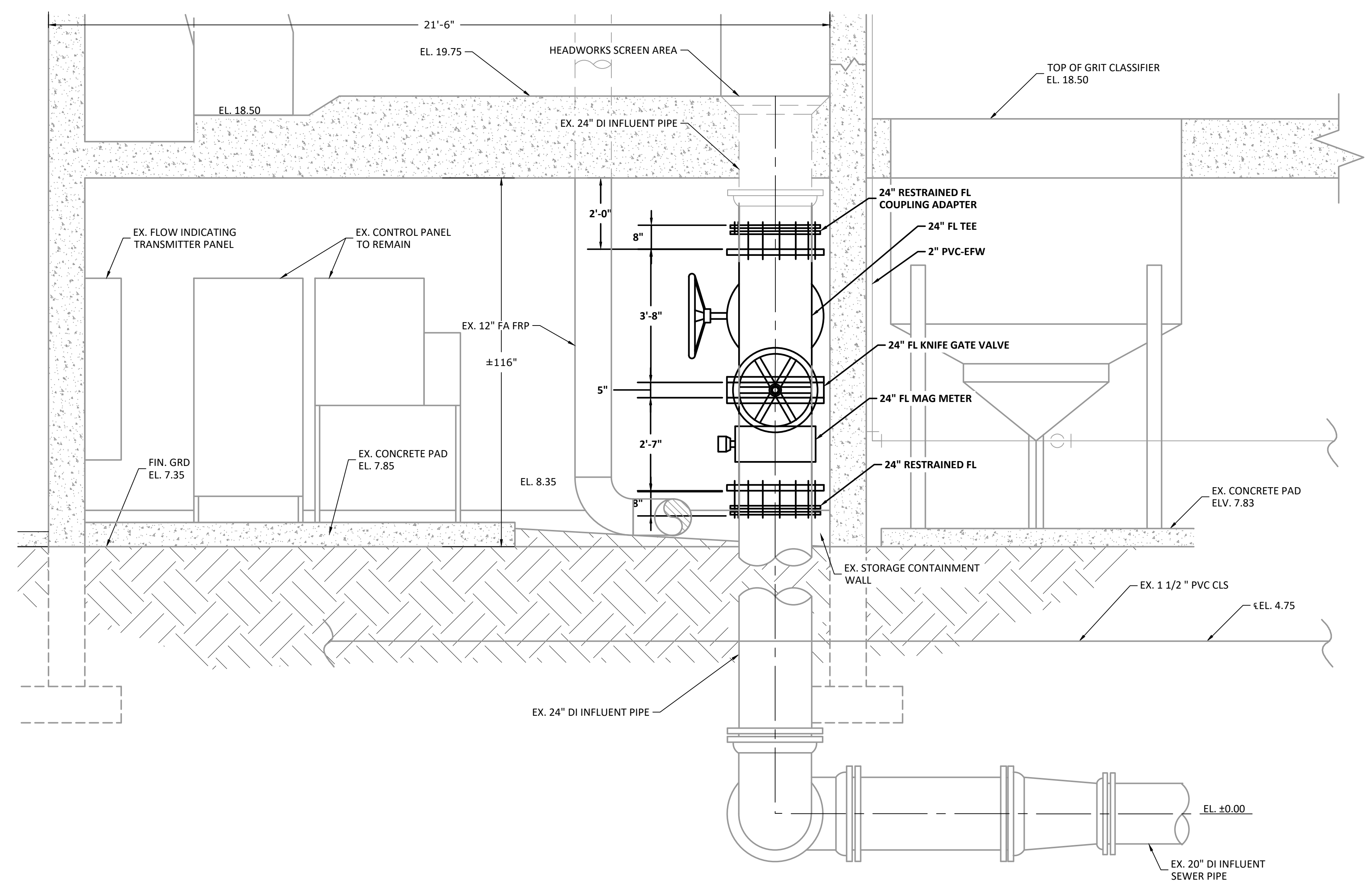
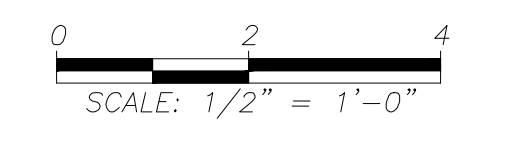
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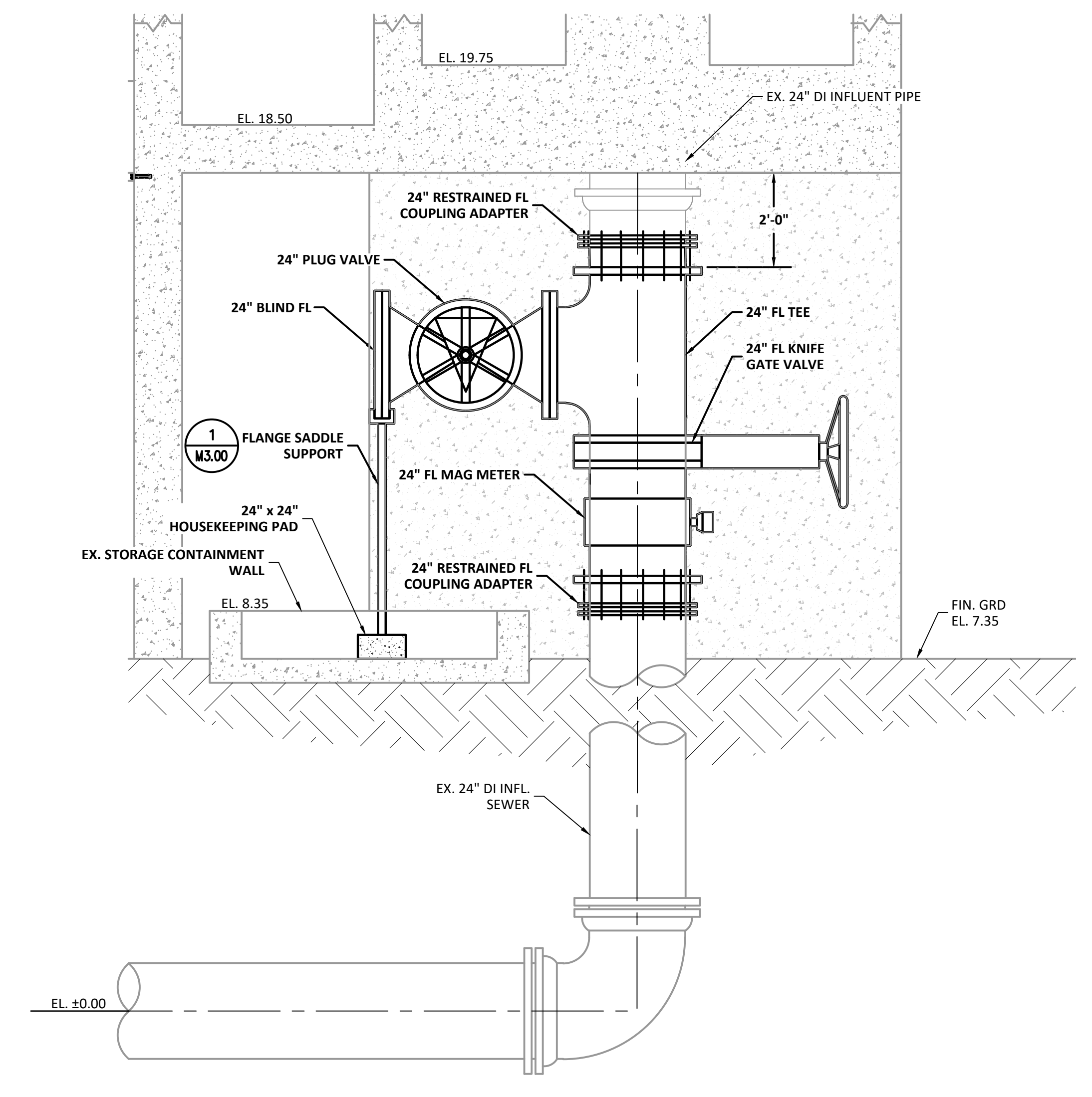
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DWG NAME: Civil-300.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
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JOB NO.:	DESIGNED BY: VH	CHECKED BY: LPT	SHEET NO.:
			15 OF 40
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SECTION
SCALE: 1/2" = 1'-0"
A
C2.02



SECTION
SCALE: 1/2" = 1'-0"
B
C2.02

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REVIEWED BY:					
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	ENGINEER	DATE			
REVISION			BY	DATE	

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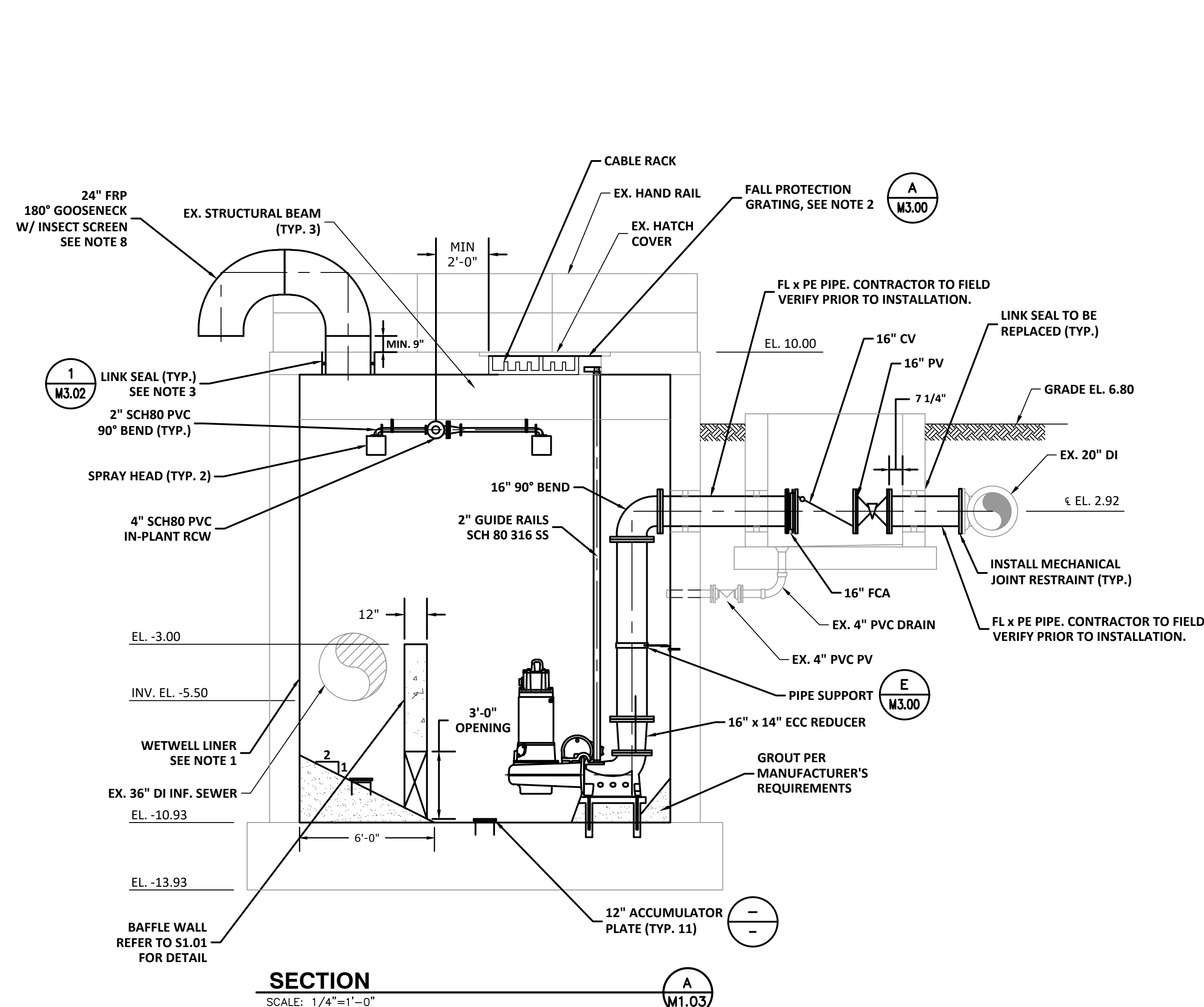
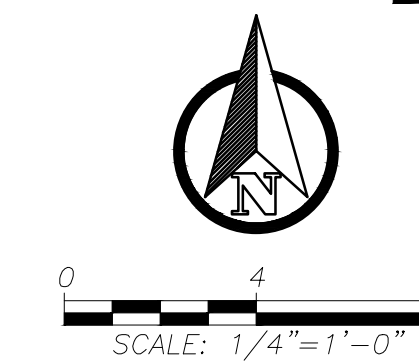


EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT
PROPOSED INFLUENT ASSEMBLY

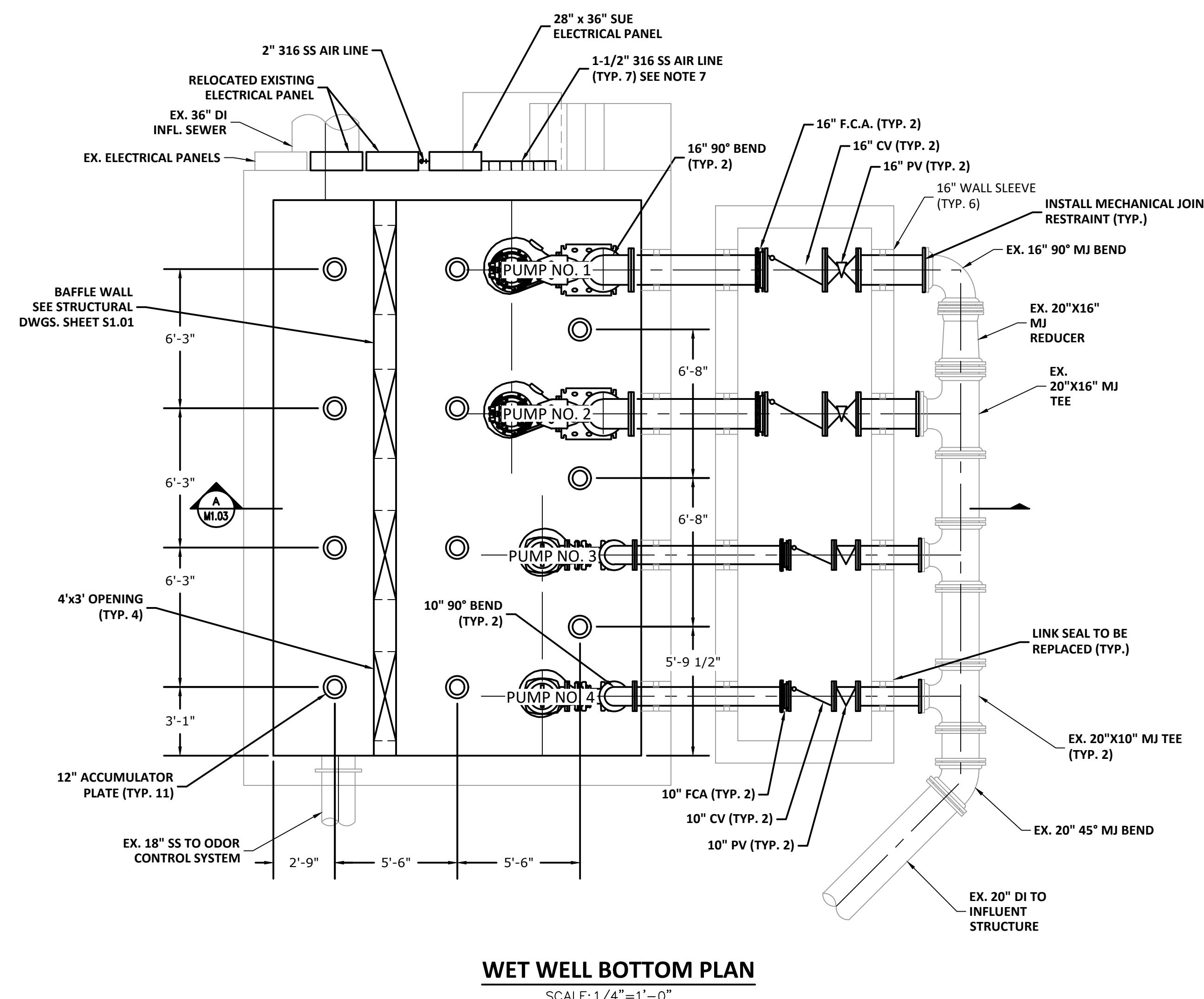


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SECTION
SCALE: 1/4"=1'-0"
A
M1.03



WET WELL BOTTOM PLAN
SCALE: 1/4"=1'-0"

NOTES:

1. CONTRACTOR SHALL CLEAN AND REPAIR EXISTING CONCRETE SURFACE IN WET WELL, PRIOR TO APPLICATION OF CONCRETE COATING/LINER. COATING SHALL BE SPRAY ROC OR RAUEN 405.
2. CONTRACTOR SHALL INSTALL FALL PROTECTION GRATINGS UNDER (4) EXISTING WET WELL HATCH COVERS.
3. CONTRACTOR SHALL INSTALL LINK SEALS AT ALL WALL PENETRATIONS.
4. ALL HARDWARE FOR FLANGED AIR PIPE AND FITTINGS SHALL BE 316 STAINLESS STEEL. ALL HARDWARE FOR TANK SPRAY CLEANING SYSTEM, INCLUDING PIPE AND FITTINGS SHALL BE SCH 80 PVC INSIDE THE WET WELL.
5. TANK SPRAY CLEANING SYSTEM, SPRAY HEAD SHOULD BE MANUFACTURED BY SPRAYING SYSTEMS CO. MODEL TANKJET 180, OR APPROVED EQUAL.
6. CONTRACTOR SHALL INSTALL 316 S.S. PIPE SUPPORTS TO SECURE THE 316 S.S. AIRLINES AND THE TANK SPRAY CLEANING SYSTEM TO THE WET WELL BEAMS AND WALLS. INSTALL PIPE SUPPORTS 4' ON CENTER AND AT FITTINGS.
7. CONTRACTOR TO MAINTAIN MINIMUM 3" SEPARATION BETWEEN THE (7) 1-1/2" 316 SS AIR LINES. REFER TO SHEET S1.01 FOR PIPE WALL PENETRATION DETAILS.
8. CONTRACTOR SHALL COORDINATE WITH S1.01 FOR 24" FRP GOOSENECK CORING LOCATION. GPR THE TOP SLAB PRIOR TO CORING HOLE TO CENTER BETWEEN THE SLAB REINFORCEMENT.
9. ALL PUMP DISCHARGE PIPING AND FITTINGS SHALL BE DIP.

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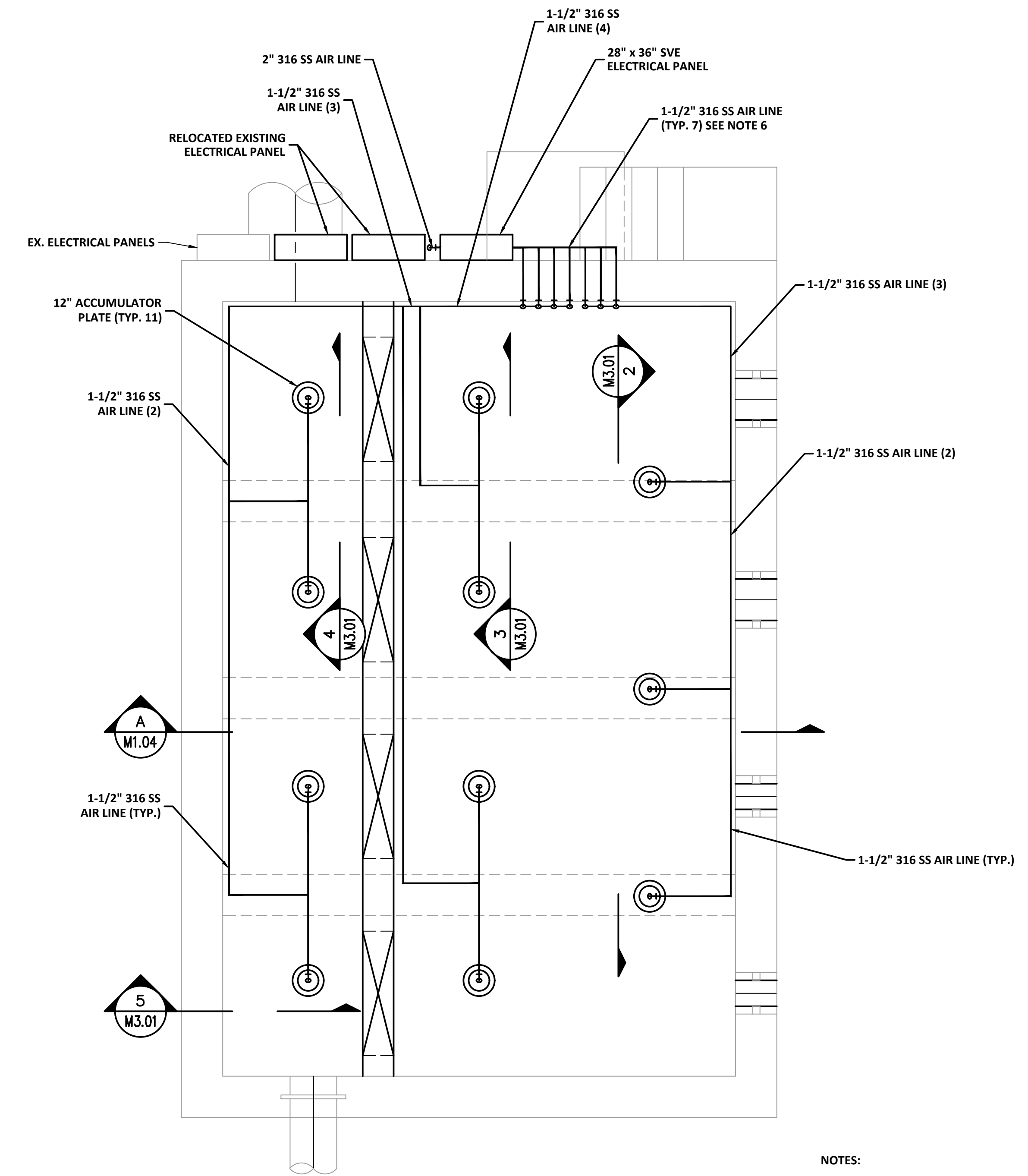
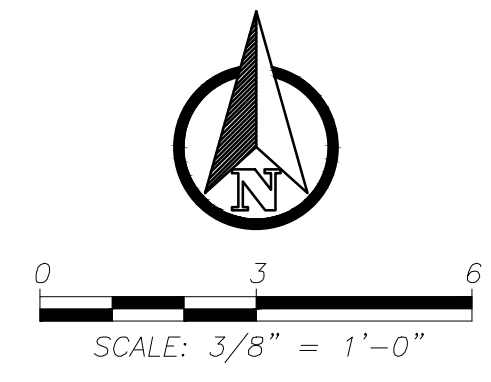
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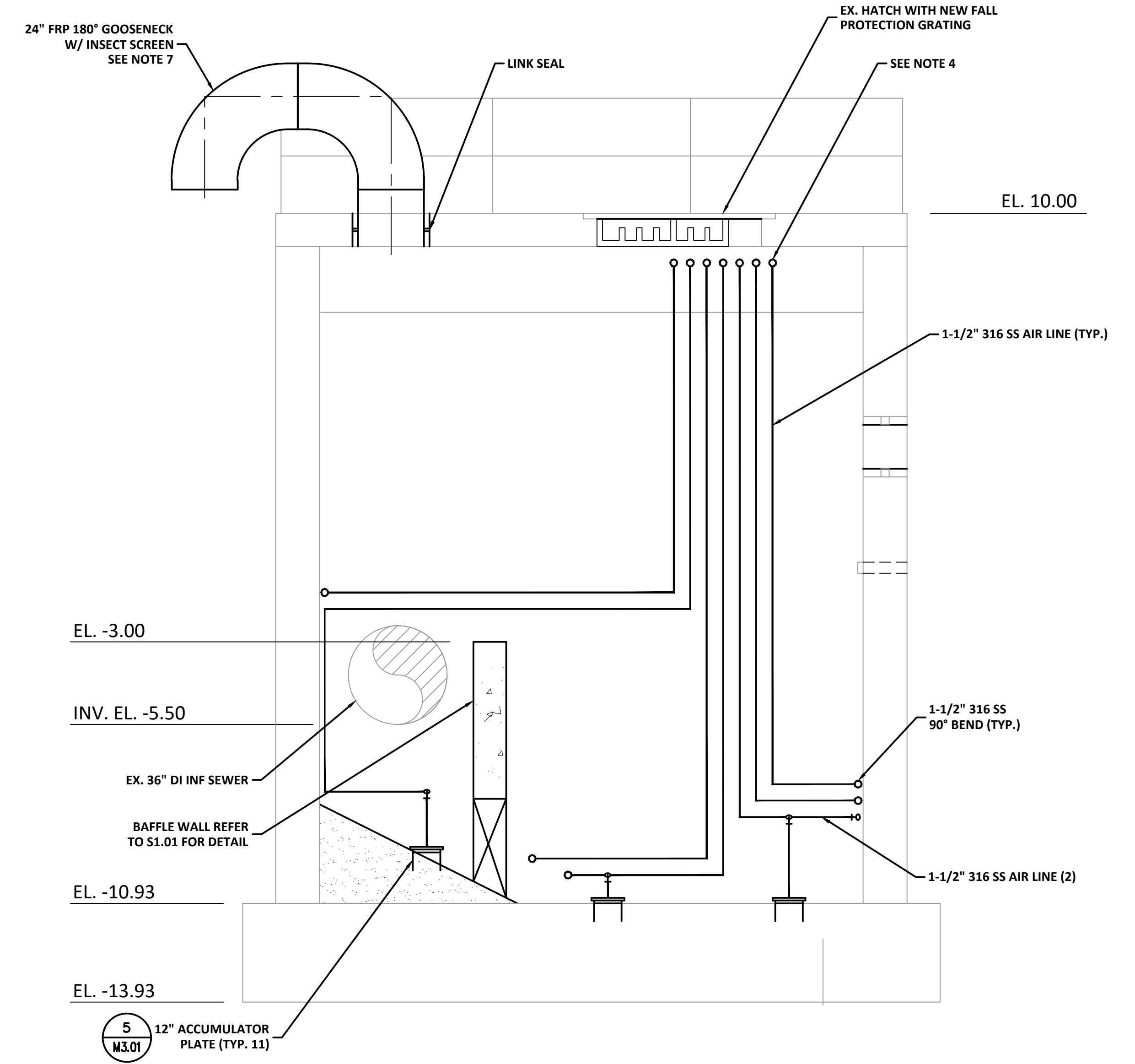


**EAST WRF INFLUENT PUMP STATION
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PROPOSED INFLUENT PUMP STATION (2)**

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BELOW TOP SLAB PLAN
SCALE: 3/8"=1'-0"



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

NOTES:

1. CONTRACTOR SHALL INSTALL LINK SEALS AT ALL WALL PENETRATIONS.
2. ALL HARDWARE FOR FLANGED AIR PIPE AND FITTINGS SHALL BE 316 STAINLESS STEEL. ALL HARDWARE FOR TANK SPRAY CLEANING SYSTEM, INCLUDING PIPE AND FITTINGS SHALL BE SCH 80 PVC INSIDE THE WET WELL.
3. CONTRACTOR SHALL INSTALL 316 S.S. UNISTRUT PIPE SUPPORTS TO SECURE THE 316 S.S. AIRLINES TO THE WALLS AND THE BOTTOM OF THE WET WELL. INSTALL UNISTRUT PIPE SUPPORTS 4' ON CENTER AND AT FITTINGS.
4. CONTRACTOR TO MAINTAIN MINIMUM 3" SEPARATION BETWEEN THE (7) 1-1/2" 316 SS AIR LINES. REFER TO SHEET S1.01 FOR PIPE WALL PENETRATION DETAILS.
5. CONTRACTOR SHALL MAINTAIN MINIMUM 3" SPACING BETWEEN THE 1-1/2" 316 SS AIR LINE, WHEN INSTALLING TO THE WALLS AND THE BOTTOM OF THE WET WELL.
6. THE AIR LINE PIPE LAYOUT INSIDE THE WET WELL IS FOR SCHEMATIC ONLY, NOT DRAWN TO SCALE. CONTRACTOR SHALL COORDINATE AIR PIPING LAYOUT WITH M1.03 TO AVOID CONFLICTS.
7. CONTRACTOR SHALL COORDINATE WITH S1.01 FOR 24" FRP GOOSENECK CORING LOCATION. GPR THE TOP SLAB PRIOR TO CORING HOLE TO CENTER BETWEEN THE SLAB REINFORCEMENT.

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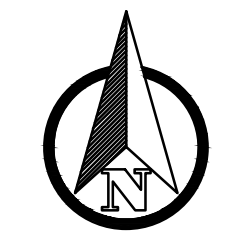
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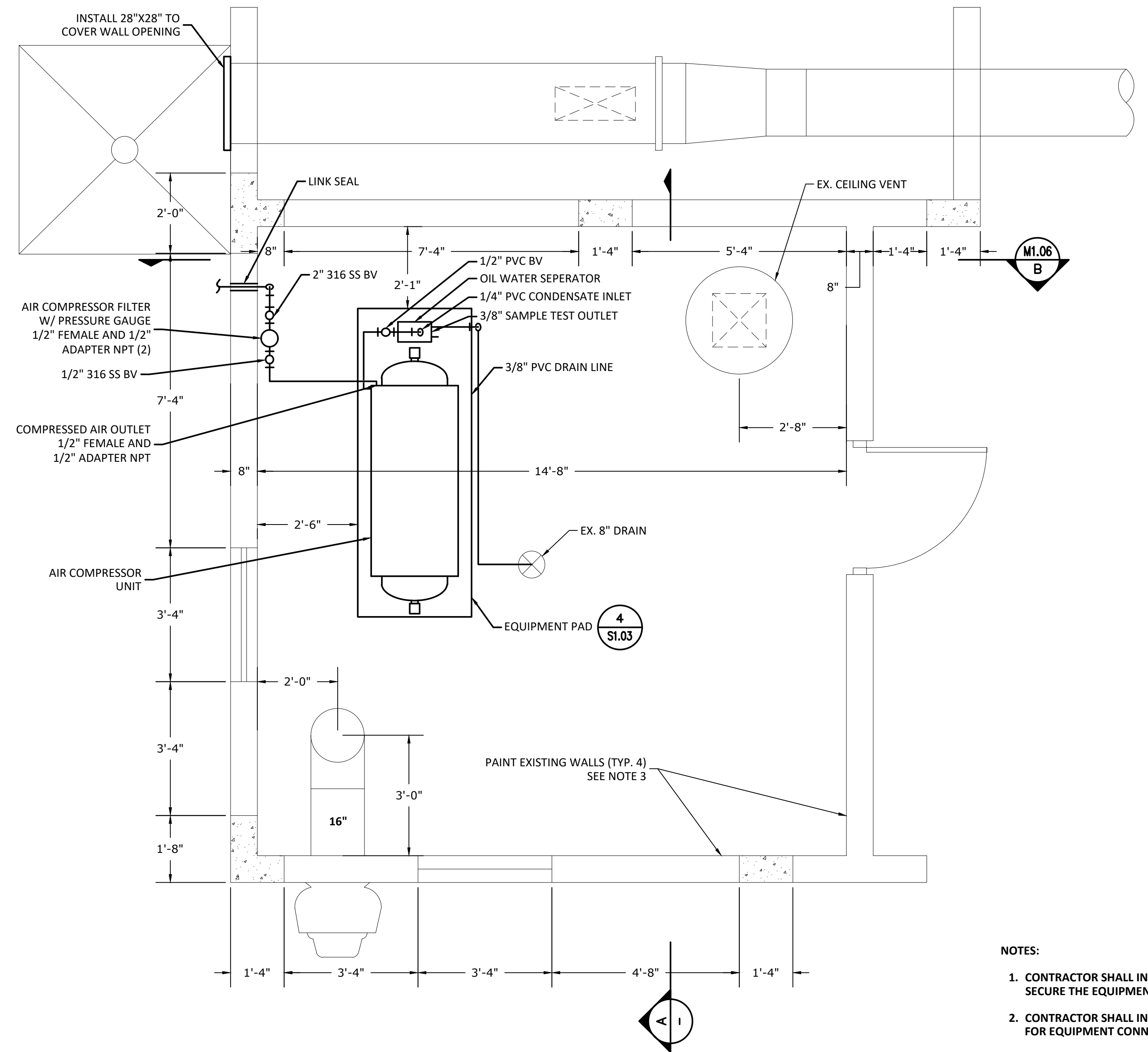
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**EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT**
PROPOSED LARGE BUBBLE MIXING SYSTEM LAYOUT SCHEMATIC

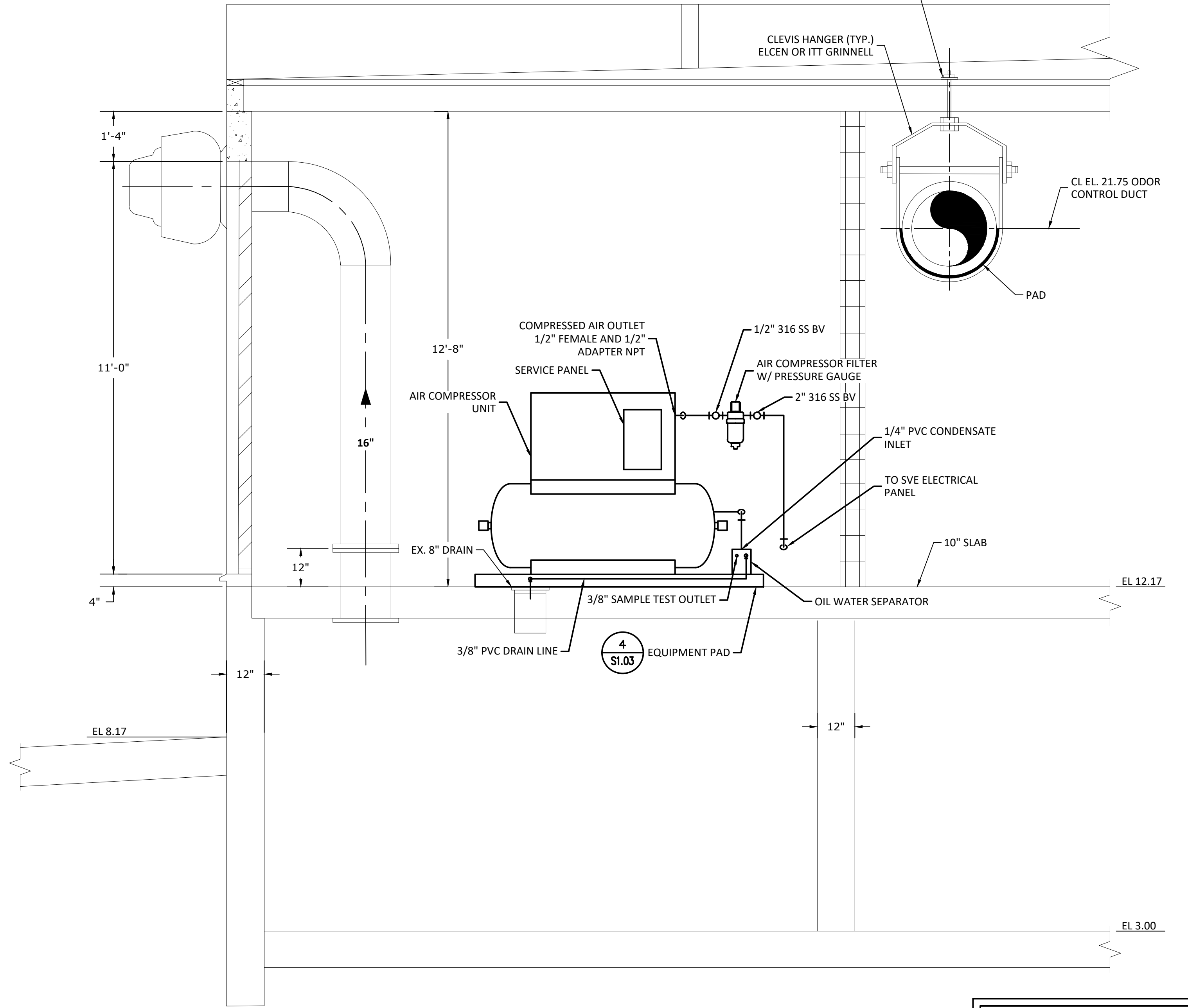
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SCALE: 1/2" = 1'-0"



BLOWER ROOM PLAN



SECTION A

EXISTING EAST PLANT BACKGROUND INFORMATION BASED ON BRILEY, WILD & ASSOCIATES RECORD DRAWINGS FOR INFORMATION ONLY.

- NOTES:**
1. CONTRACTOR SHALL INSTALL 316 S.S. U BOLT PIPE SUPPORTS TO SECURE THE EQUIPMENT AND PIPING TO THE WALL.
 2. CONTRACTOR SHALL INSTALL PROPER PIPE FITTINGS AND HARDWARE FOR EQUIPMENT CONNECTIONS.
 3. CONTRACTOR SHALL PAINT THE INTERIOR OF THE BLOWER ROOM AFTER CONSTRUCTION IS COMPLETED.
 4. ALL PVC PIPE SHALL BE SCH80 UNLESS SPECIFIED OTHERWISE.
 5. CONTRACTOR SHALL PROVIDE AIR COMPRESSOR CUT SHEETS, SPECIFICATIONS, AND O&M MANUAL AS DEFERRED SUBMITTAL TO THE CITY'S BUILDING DEPARTMENT FOR REVIEW AND APPROVAL.



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	ENGINEER	DATE	REVISION	BY	DATE

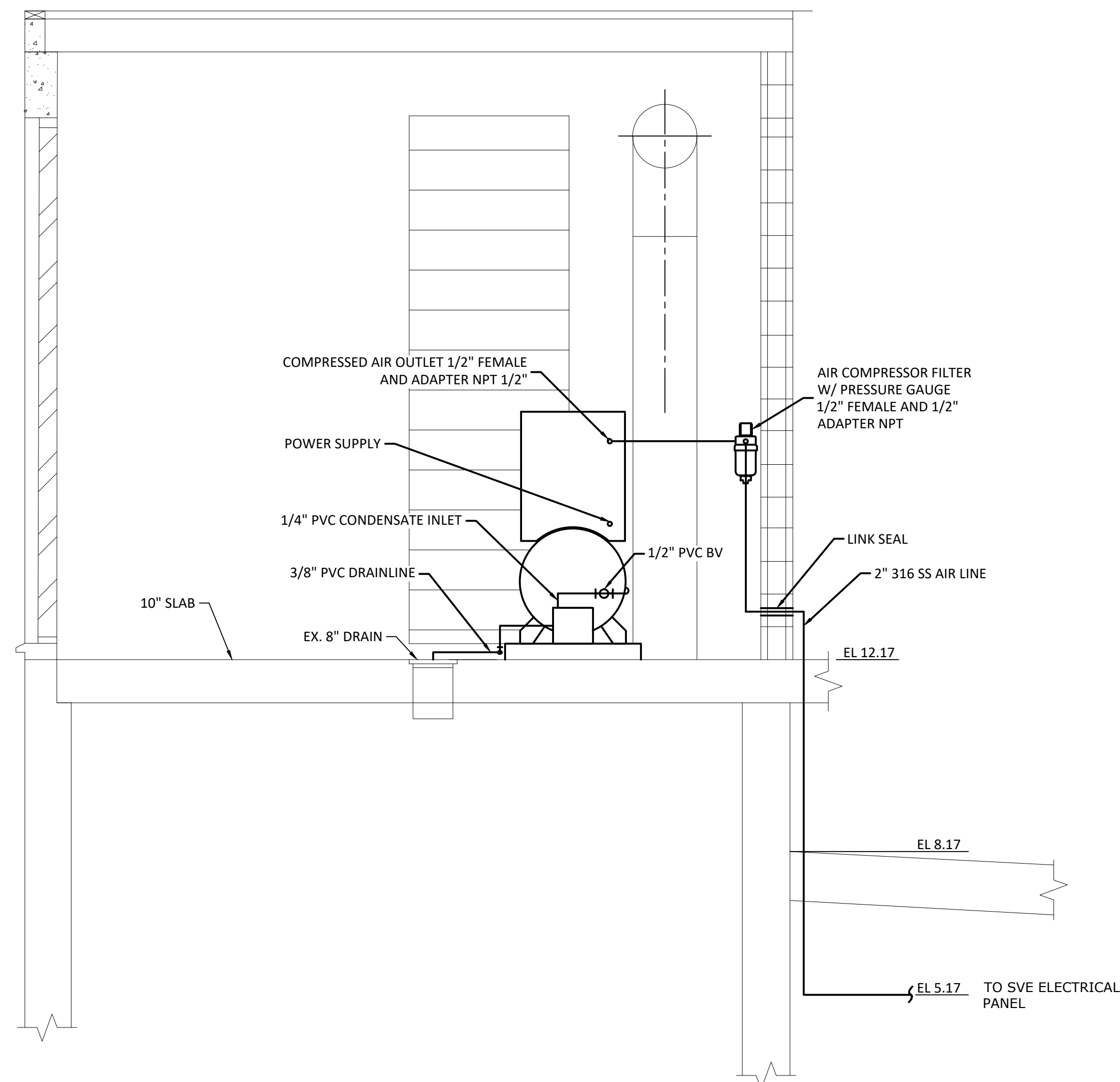
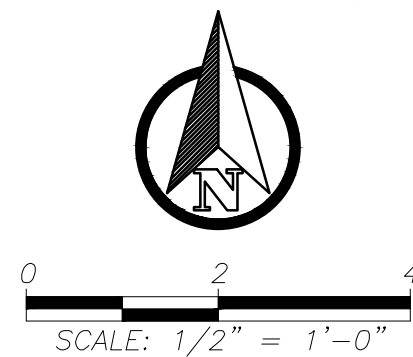
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 PROPOSED SLUDGE HANDLING BUILDING BLOWER ROOM IMPROVEMENTS (1)

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2018-1721-01			20 OF 40

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SECTION B

NOTES:

1. CONTRACTOR SHALL INSTALL U BOLT PIPE SUPPORTS TO SECURE THE EQUIPMENT AND PIPING TO THE WALL.
2. CONTRACTOR SHALL INSTALL PROPER PIPE FITTINGS AND HARDWARE FOR EQUIPMENT CONNECTIONS.
3. CONTRACTOR SHALL PAINT THE INTERIOR OF THE BLOWER ROOM AFTER CONSTRUCTION IS COMPLETED.
4. ALL PVC PIPE SHALL BE SCH80 UNLESS SPECIFIED OTHERWISE.

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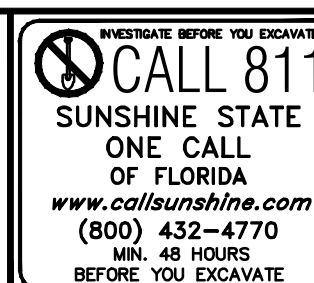


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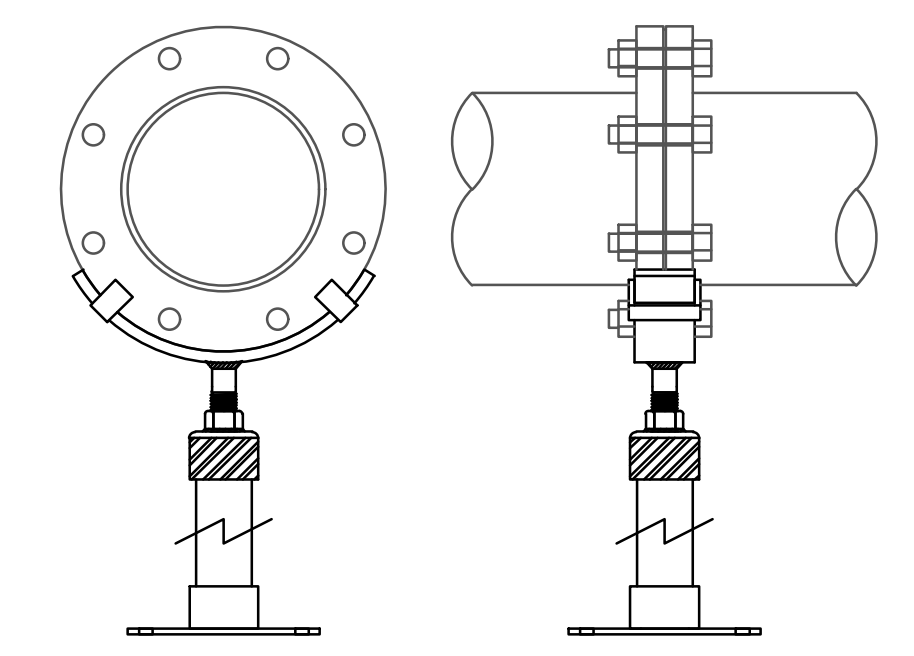
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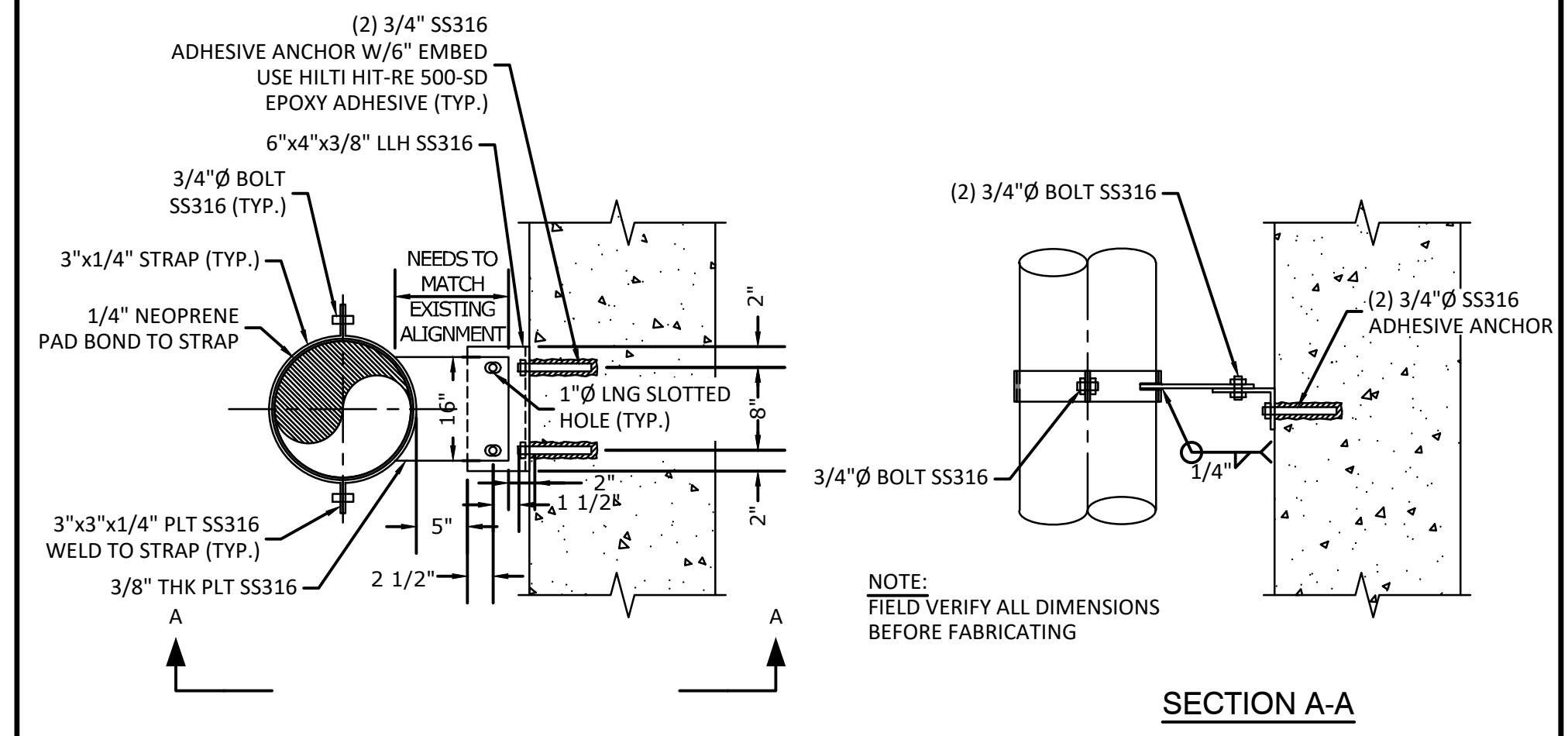
EAST WRF INFLUENT PUMP STATION
 REHABILITATION PROJECT
 PROPOSED SLUDGE HANDLING BUILDING BLOWER ROOM IMPROVEMENTS (2)

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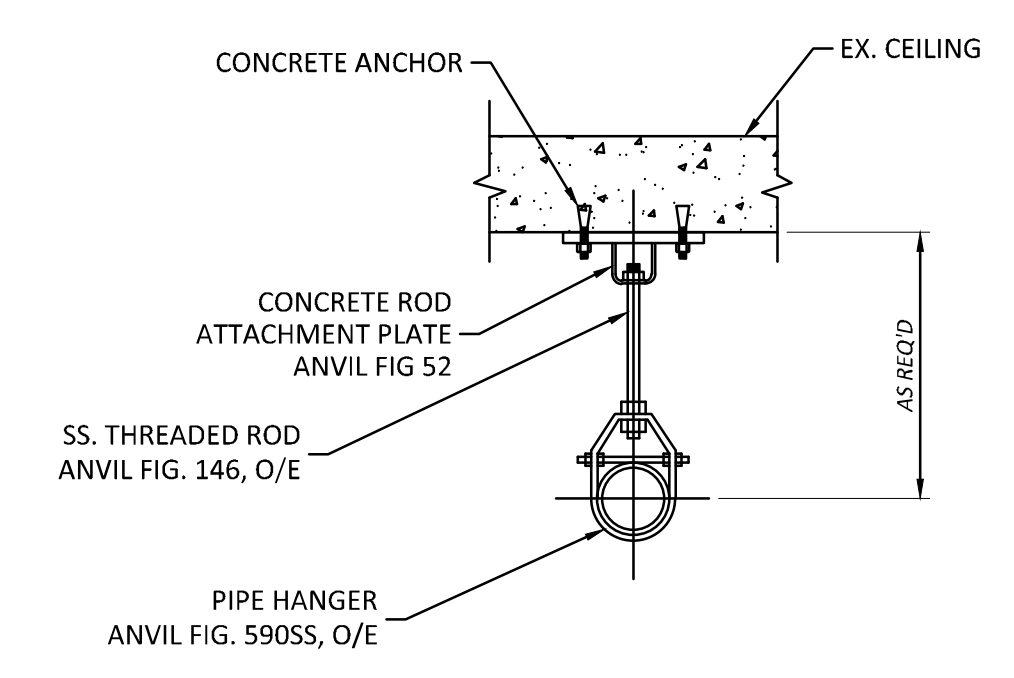
Saddle supports are to be factory fabricated units. No contractor fabricated supports are allowed. Material to be A36 steel with a galvanized finish unless indicated otherwise in specifications. Saddle to encompass 120° of pipe circumference. Saddle is to be formed to actual pipe diameter, and include two centering tabs. A neoprene liner is required when supporting steel or PVC pipe. Support design shall have been tested to withstand a minimum of 10,000 pounds compressive load. Test certification must be available. Supports shall be STANDON MODEL S96 as manufactured by - MATERIAL RESOURCES INC., FOREST GROVE, OR. 503-533-5256p, 503-533-5501f



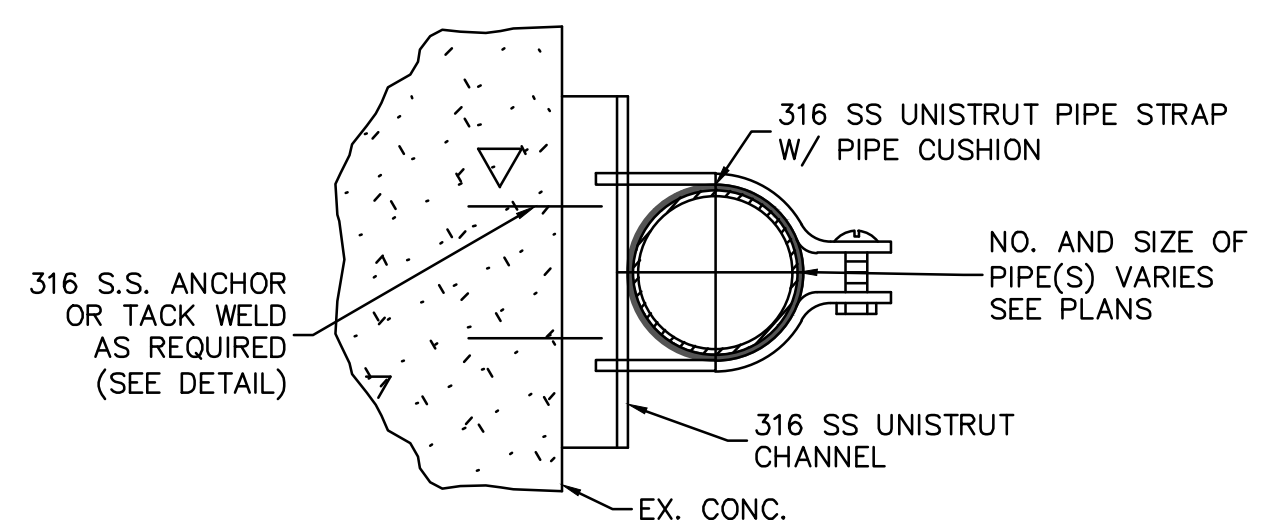
FLANGE SADDLE SUPPORT DETAIL (1) NTS



PIPE WALL BRACKET DETAIL @ 5' O.C. (2) NTS

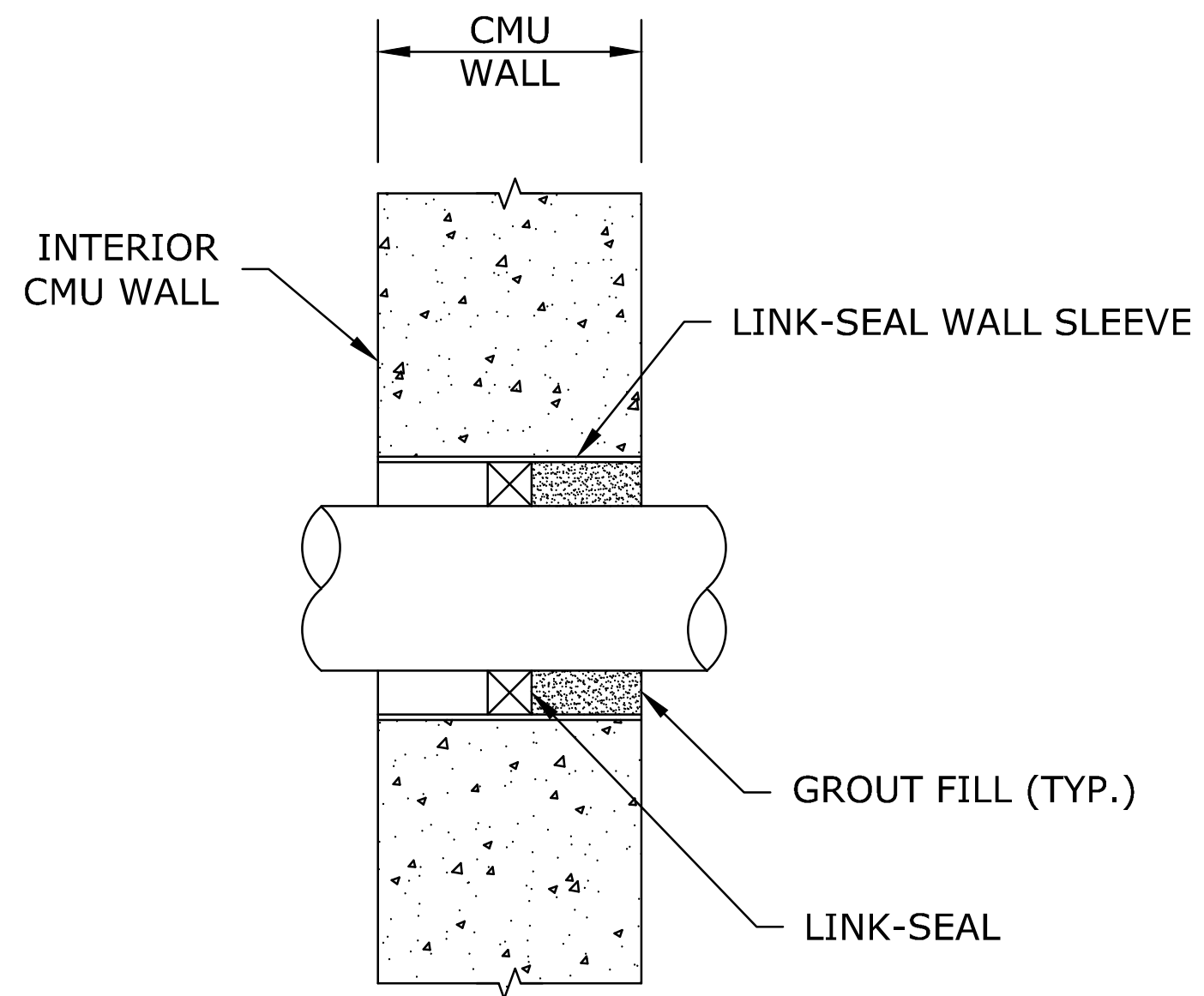


PIPE HANGER DETAIL (3) NTS

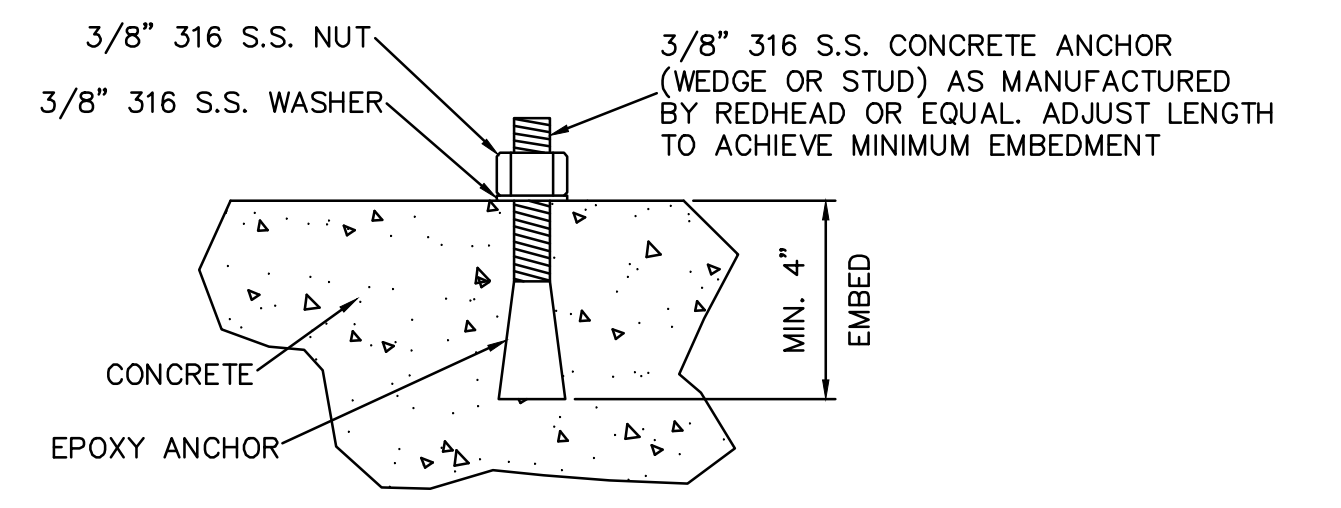


NOTE:
 1. PIPES DIAMETER SHALL BE SUPPORTED @ 48" O.C. IN THE HORIZONTAL, @ 36" O.C. IN THE VERTICAL.
 2. THE EDGES/CORNERS OF ALL CUT UNISTRUT/METAL SHALL BE FILED SMOOTH.

UNI-STRUT WALL PIPE SUPPORT DETAIL (4) NTS



WALL PENETRATION DETAIL (5) NTS



CONCRETE ANCHOR DETAIL (6) NTS

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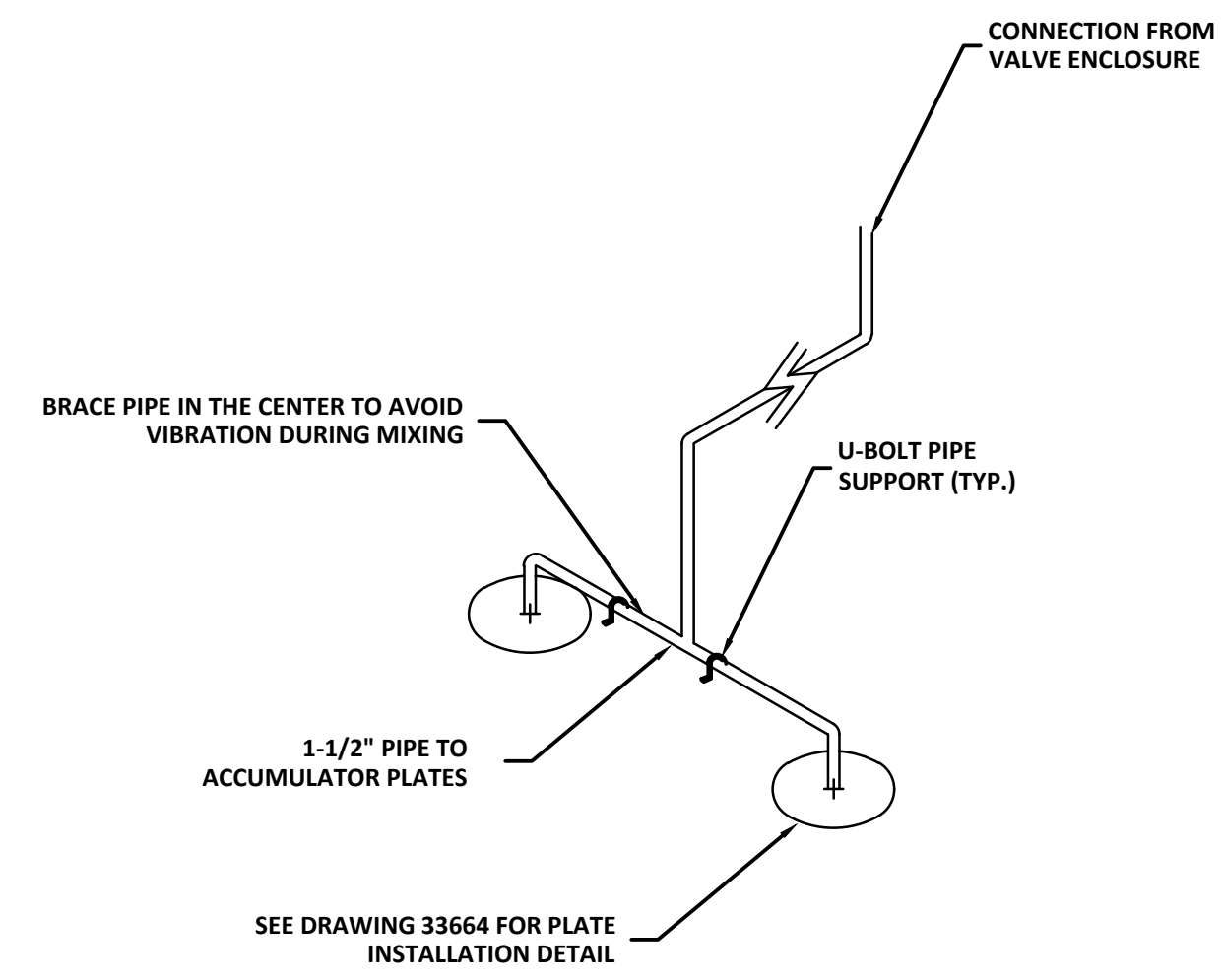
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REVIEWED BY:					
APPROVED BY:	PROJECT ENGINEER	DATE			
	ENGINEER	DATE	REVISION	BY	DATE

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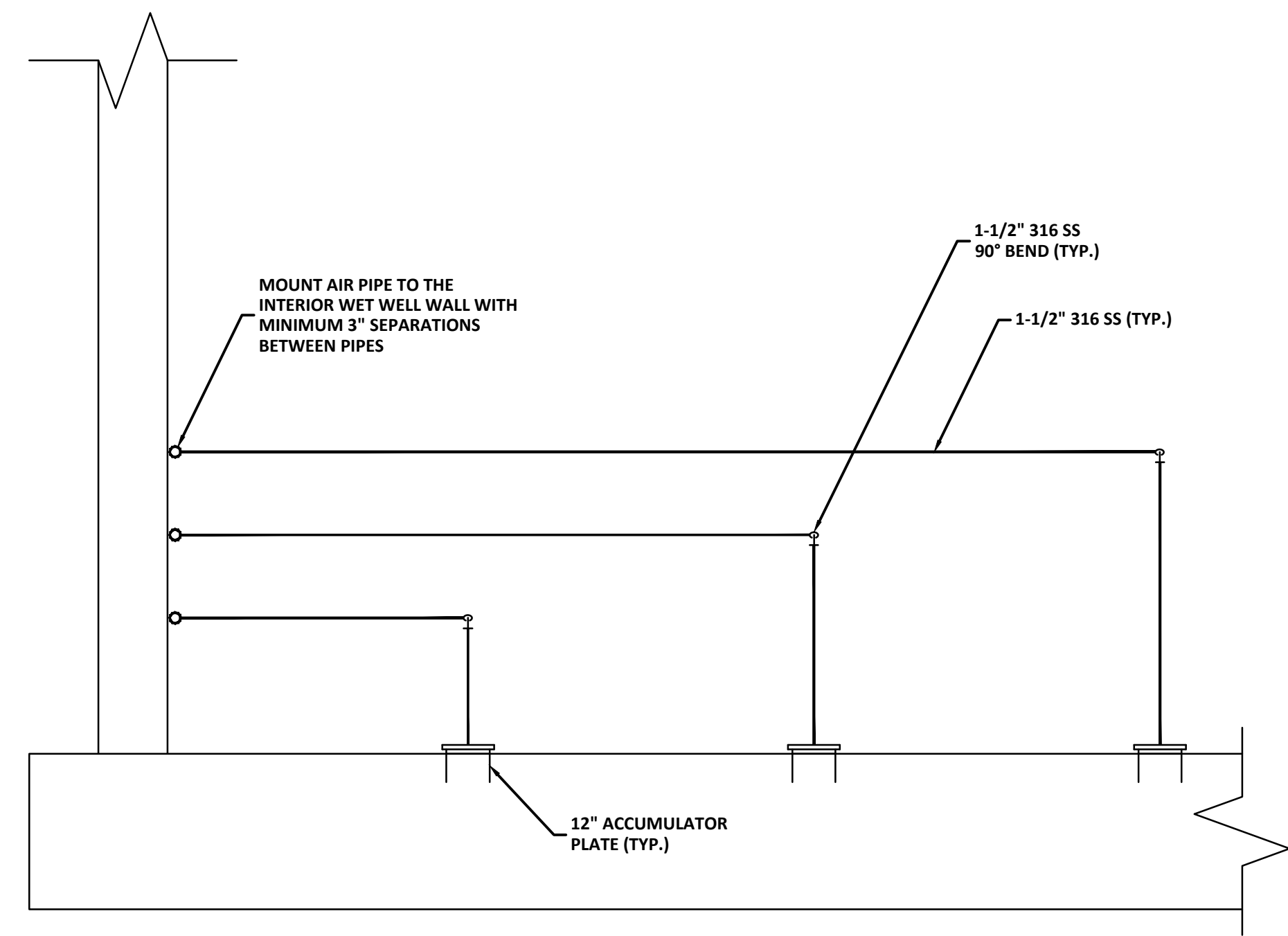
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**EAST WRF INFLUENT PUMP STATION
 REHABILITATION PROJECT
 MECHANICAL DETAILS (1)**

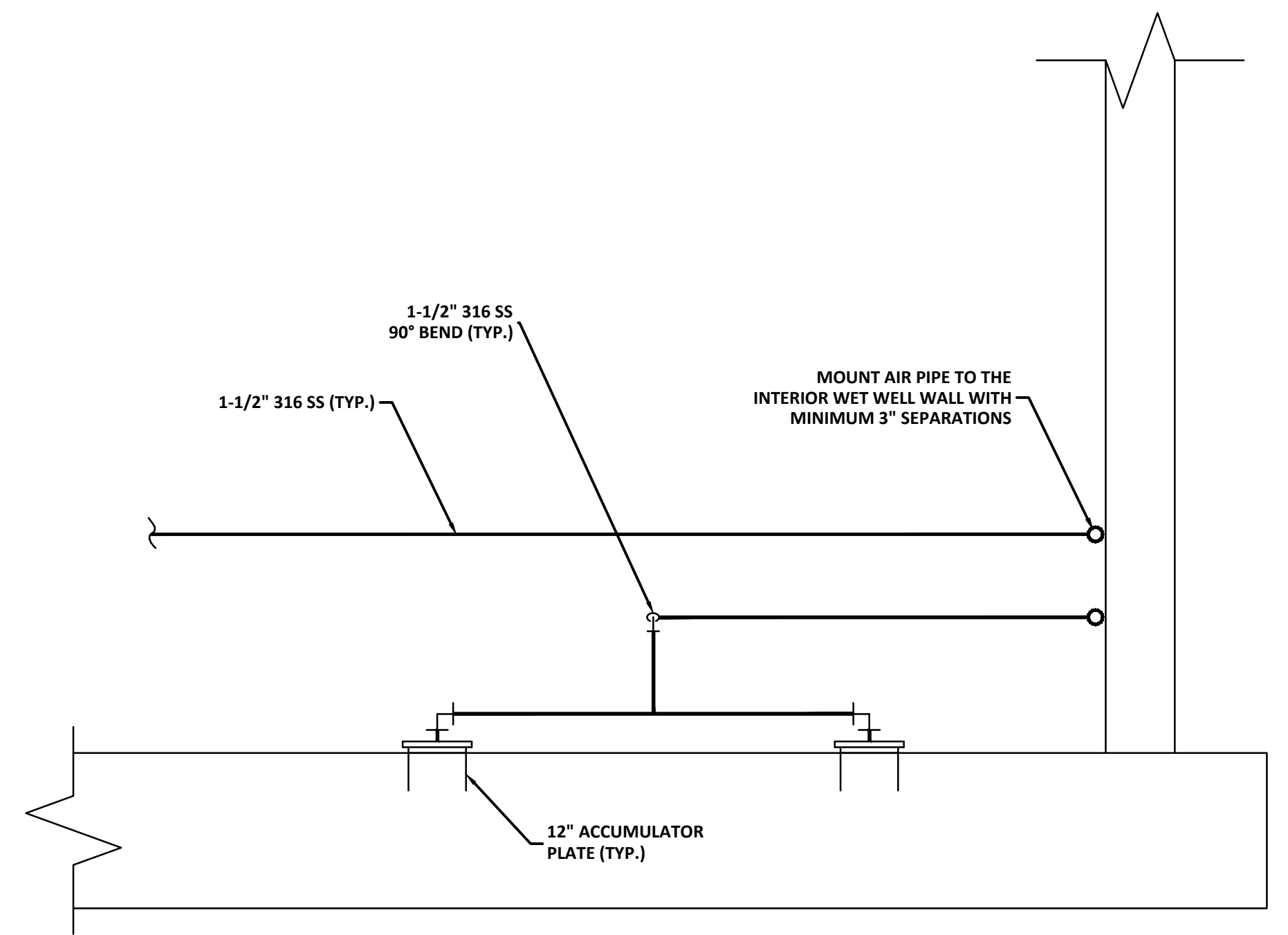
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CONTRACT NO.:	DATE DRAWN: 9/28/2023	DRAWN BY: AT	HORIZ. AS SHOWN
JOB NO.:	DESIGNED BY: VH	CHECKED BY: LPT	SHEET NO.:
2018-1721-01			22 OF 40
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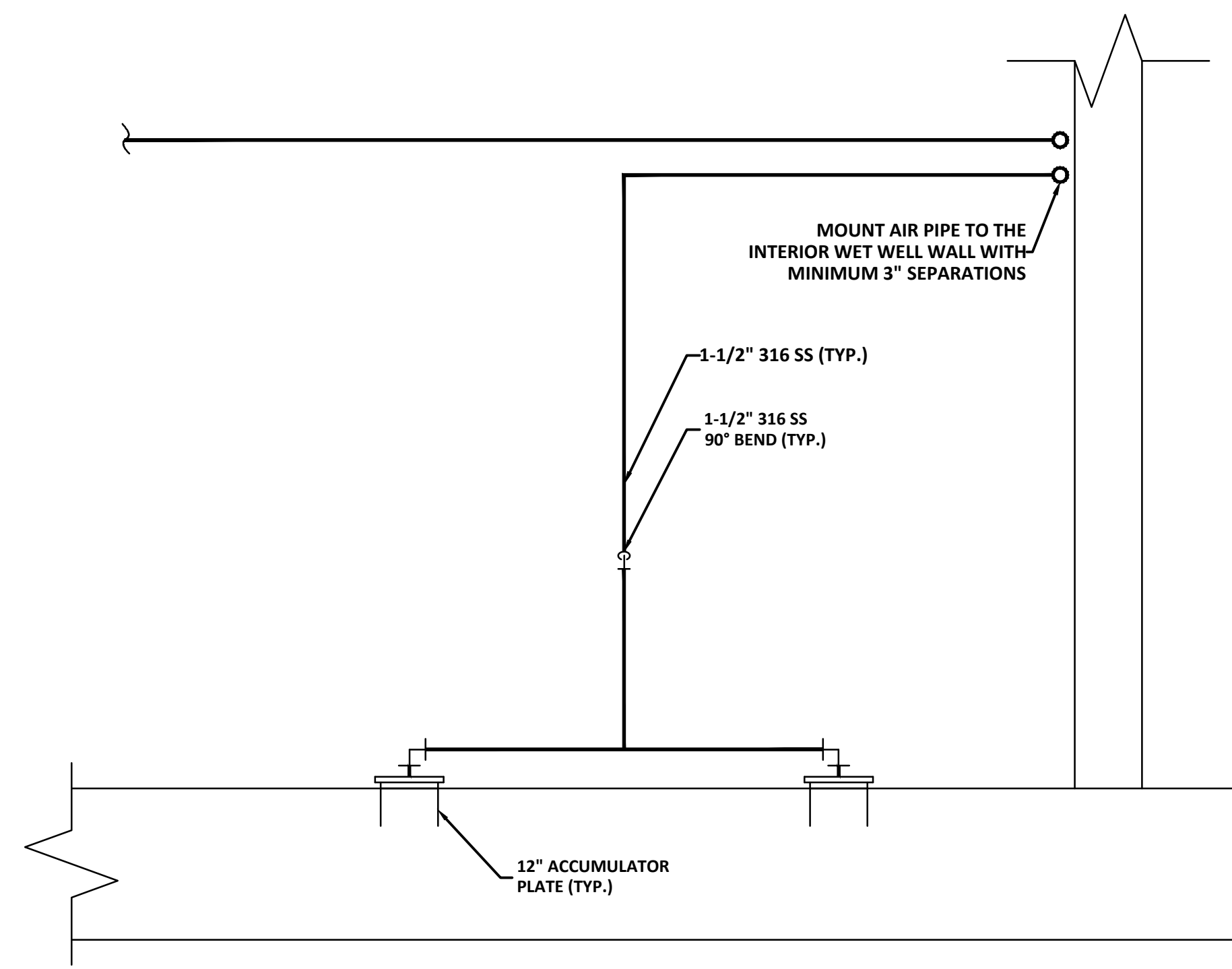
TYPICAL ACCUMULATOR PLUMBING DETAIL
NTS (1) M1.04



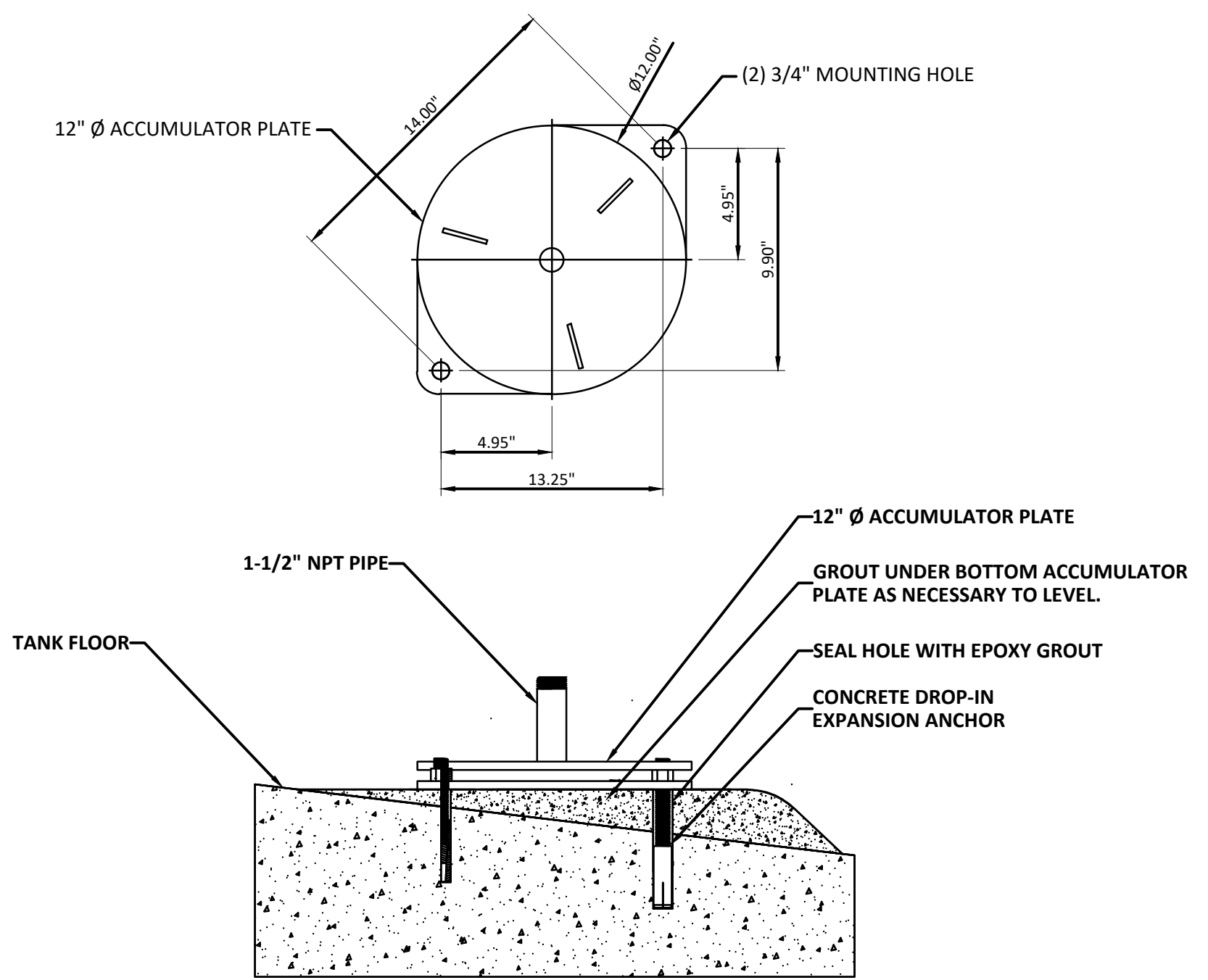
1-1/2" AIR PIPE SECTION DETAIL
NTS (2) M1.04



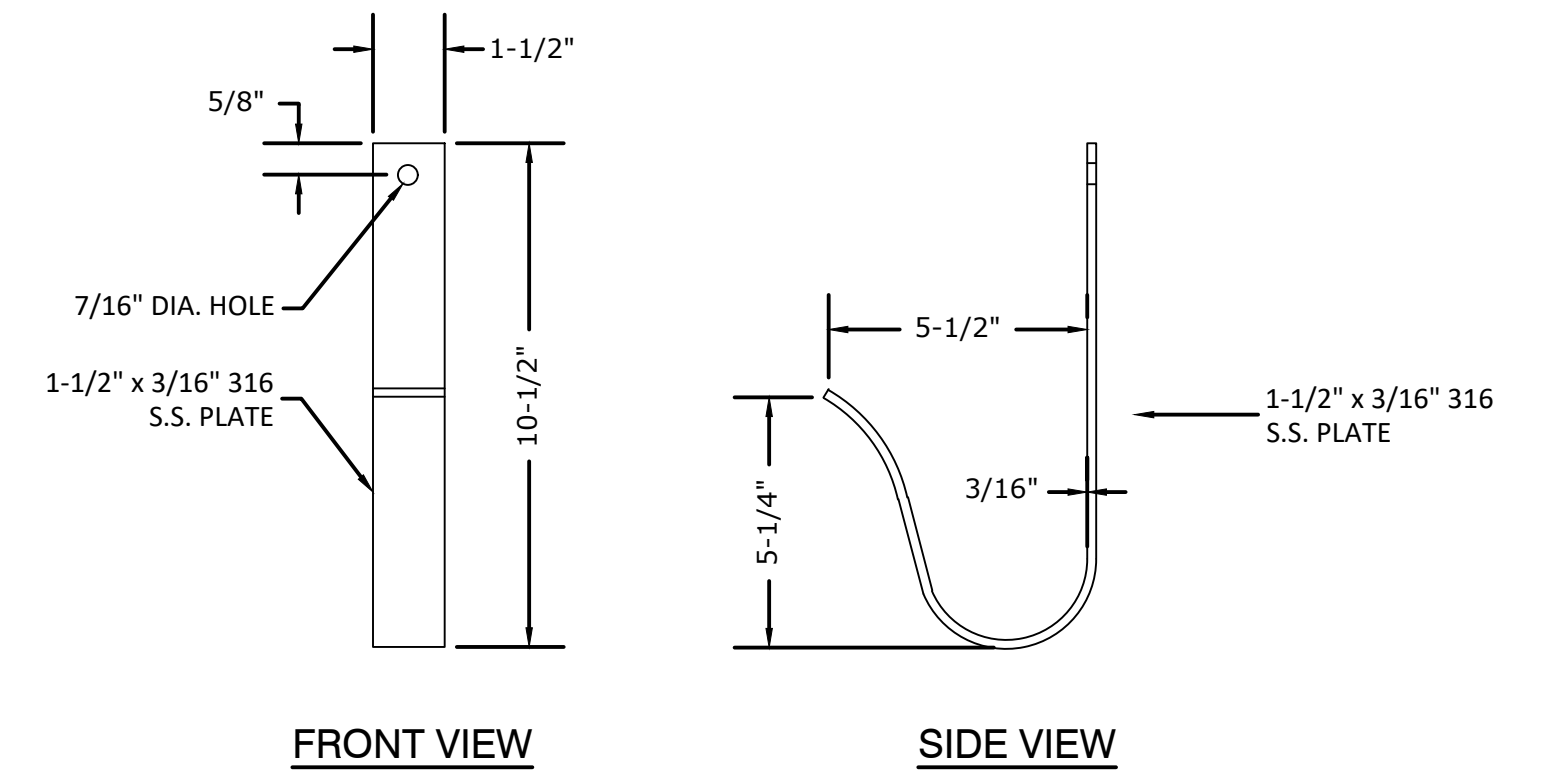
1-1/2" AIR PIPE SECTION DETAIL
NTS (3) M1.04



1-1/2" AIR PIPE SECTION DETAIL
NTS (4) M1.04



TYPICAL ACCUMULATOR PLATE DETAIL
NTS (5) M1.04



ELECTRIC CABLE HANGER DETAIL
NTS (5)

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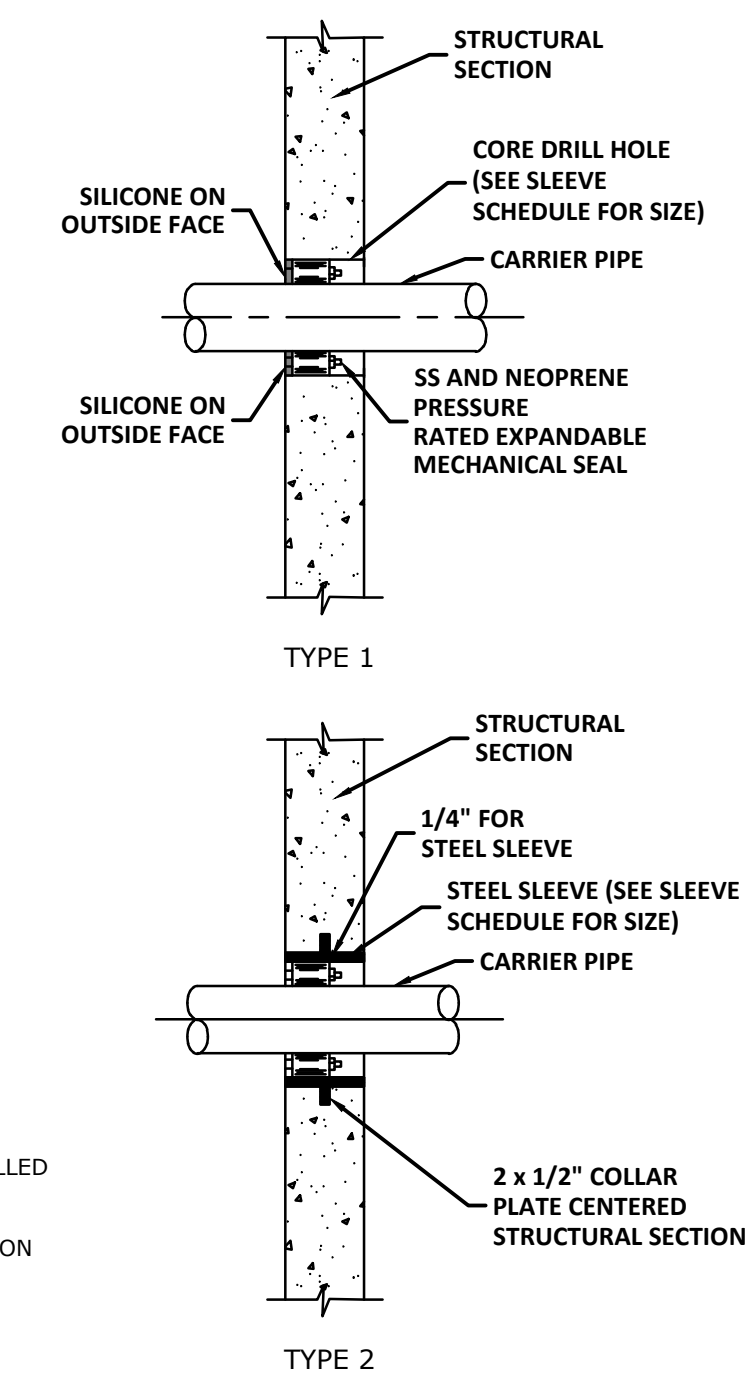


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SLEEVE SCHEDULE				
CARRIER PIPE				
NOMINAL DIAMETER (INCHES)	MATERIAL	OUTSIDE DIAMETER (INCHES)	STEEL SLEEVE INSIDE DIAMETER (INCHES)	CORE DRILLED HOLE INSIDE DIAMETER (INCHES)
1/2	SCH. 80 PVC	0.84	2.067	2
3/4	SCH. 80 PVC	1.05	2.067	3.0
1	SCH. 80 PVC	1.315	2.469	2.5
1 1/4	SCH. 80 PVC	1.90	4.026	4
2	SCH. 80 PVC	2.38	4.026	4
3	SCH. 80 PVC	3.50	5.047	5
4	SCH. 80 PVC	4.5	6.065	6
6	D.I.	9.60	10.02	10
8	D.I.	9.05	12.0	12
10	D.I.	11.10	13.25	14
12	D.I.	13.20	15.25	16
16	D.I.	17.40	19.25	20
18	D.I.	19.50	23.25	24
24	D.I.	25.80	29.25	30
36	D.I.	38.30	43.25	43
42	D.I.	44.50	47.25	48



- NOTES:
- INSTALL SEALS FROM DRY SIDE OF PENETRATION. WET SIDE FILLED WITH WATERPROOF NON-SHRINK GROUT.
 - LINK SEAL SHALL HAVE EPDM SEAL ELEMENTS REINFORCED NYLON POLYMER PRESSURE PLATES AND 316 SS BOLTS AND NUTS AS MANUFACTURED BY PIPELINE SEAL AND INSULATOR, INC. (PSI).

LINK SEAL WALL PENETRATION
NTS

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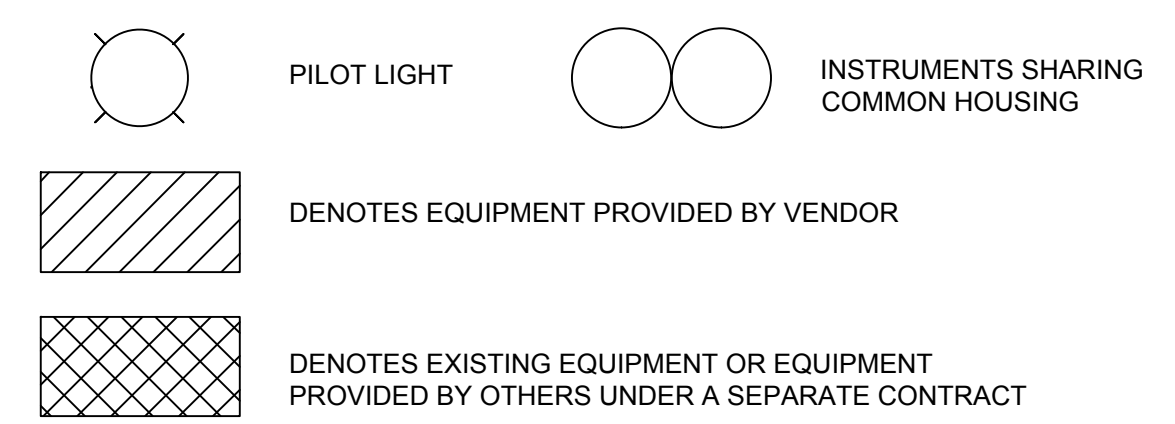
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REHABILITATION PROJECT
MECHANICAL DETAILS (3)

DWG NAME: MECHANICAL.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.:	DATE DRAWN: 9/28/2023	DRAWN BY: AT	HORIZ. AS SHOWN
JOB NO.: 2018-1721-01	DESIGNED BY: VH	CHECKED BY: LPT	SHEET NO.: 24 OF 40
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GENERAL INSTRUMENT OR FUNCTION SYMBOLS

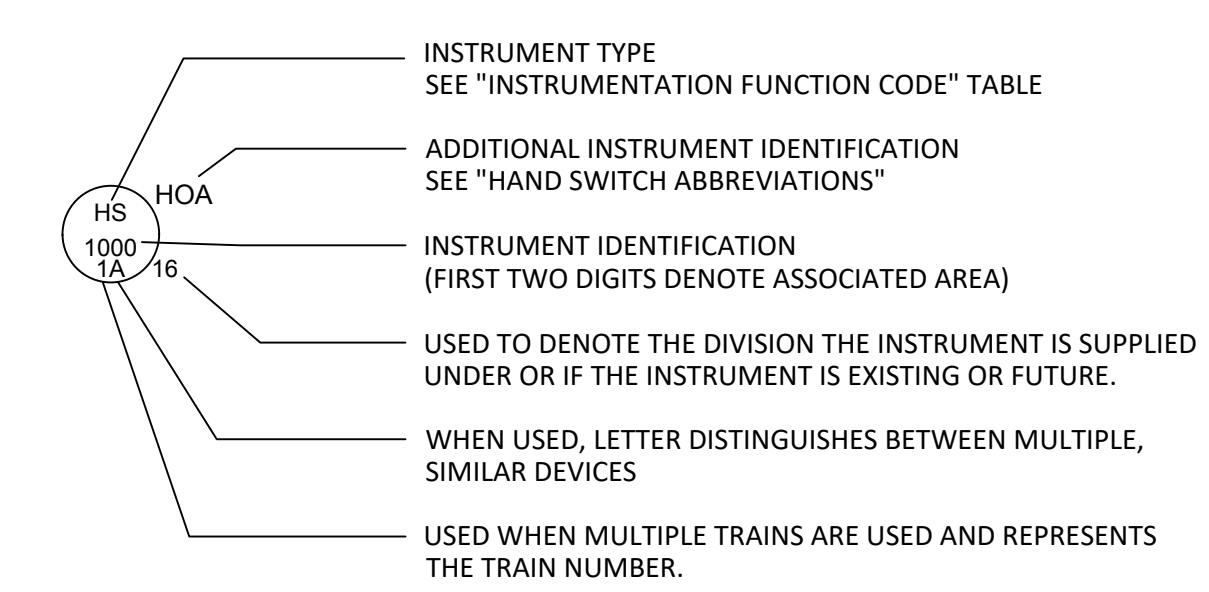
SHARED DISPLAY/ SHARED CONTROL				
PRIMARY CHOICE	SECONDARY CHOICE	COMPUTER SOFTWARE	DISCRETE	LOCATION AND ACCESSIBILITY
				FIELD MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
				PRIMARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
				PRIMARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE
				SECONDARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
				SECONDARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE



GENERAL NOTES

- THIS LEGEND APPLIES TO P&IDS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.
- IN GENERAL THIS LEGEND SHEET AND THE P&IDS ARE BASED ON THE INTERNATIONAL SOCIETY OF AUTOMATION (ISA) STANDARDS FOR PRACTICES FOR INSTRUMENTATION. SOME MODIFICATIONS, ADDITIONS AND ALTERATIONS HAVE BEEN MADE AS REQUIRED TO ACCOMMODATE PROJECT REQUIREMENTS.
- CONTRACTOR SHALL PROCURE THE SERVICES OF A SYSTEM INTEGRATOR TO FURNISH AND INSTALL ALL MATERIALS, EQUIPMENT, LABOR, AND SERVICES, REQUIRED TO ACHIEVE A FULLY INTEGRATED AND OPERATIONAL SYSTEM AS SPECIFIED AND SHOWN ON THE DRAWINGS.
- SEE ELECTRICAL AND MECHANICAL SHEETS AND SPECIFICATIONS FOR ADDITIONAL CONTROL AND INTERLOCK REQUIREMENTS.
- LIGHTER WEIGHT LINES, SHOWN AS _____, INDICATE EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE EXISTING. WEIGHTED LINES, SHOWN AS _____ OR HEAVIER _____, INDICATE EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE NEW. DASHED WEIGHTED LINES, SHOWN AS _____, INDICATED EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE GROUPED AS A PACKAGE.

TYPICAL TAG NUMBERS & DESIGNATION



HAND SWITCH ABBREVIATIONS

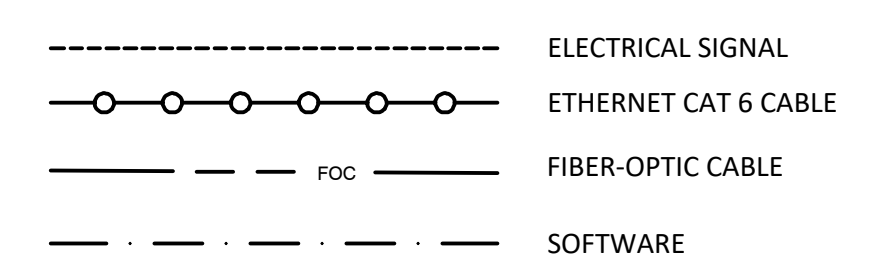
A/O = AUTO/OFF	L/O/R = LOCAL/OFF/REMOTE
A/M = AUTO/MANUAL	L/O/S = LOCKOUT/STOP
C/M = COMPUTER/MANUAL	L/A = LOCAL/AUTO
CL = COMPUTER/LOCAL	L/R = LOCAL/REMOTE
D/S = DUTY/STANDBY	O/C = OPEN/CLOSE
F/R = FORWARD/REVERSE	O/C/A = OPEN/CLOSE/AUTO
F/O/R = FORWARD/OFF/REVERSE	O/O = ON/OFF
F/S = FAST SLOW	O/A/O = ON/AUTO/OFF
F/O/S = FAST/OFF/SLOW	O/S/C = OPEN/STOP/CLOSE
H/O/A = HAND/OFF/AUTO	R/S/L = RAISE/STOP/LOWER
L/L/S = LEAD/LAG/STANDBY	S/S = START/STOP
L/O/C = LOCAL/OFF/COMPUTER	S/O/R = START/OFF/RESET

INSTRUMENTATION FUNCTION CODE

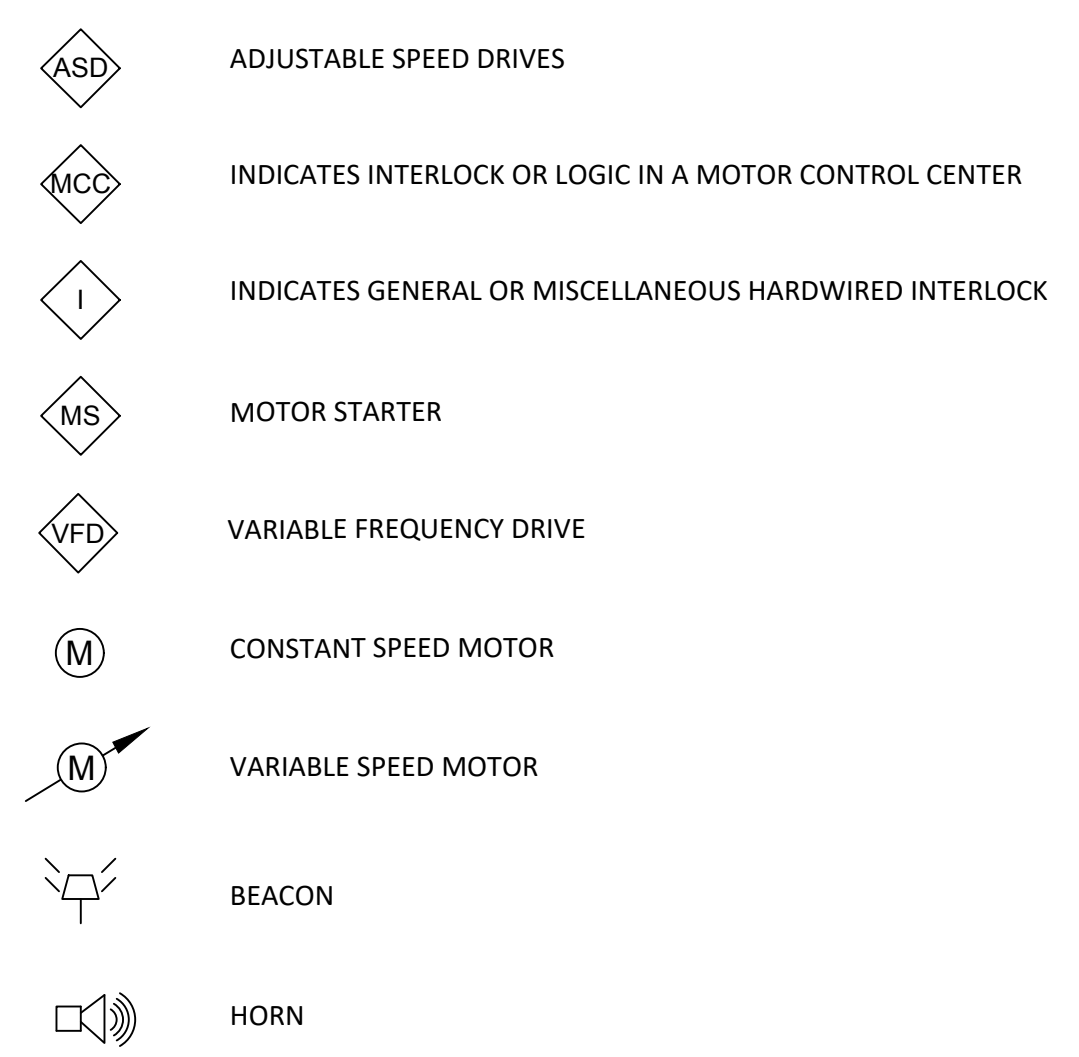
	FIRST LETTERS		SUCCEEDING LETTERS		
	COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
	MEASURE/INITIATING VARIABLE	VARIABLE MODIFIER	READOUT/PASSIVE FUNCTION	OUTPUT/ACTIVE FUNCTION	FUNCTION MODIFIER
A	ANALYSIS		ALARM		
B	BURNER COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	CLOSED
D	USER'S CHOICE	DIFFERENCE DIFFERENTIAL			DEVIATION
E	VOLTAGE		SENSOR, PRIMARY ELEMENT		
F	FLOW, FLOWRATE	RATIO			
G	USER'S CHOICE		GLASS, GAUGE, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATE		
J	POWER		SCAN		
K	TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOISTURE				MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		
R	REDIATION		RECORD		RUN
S	SPEED, FREQUENCY	SAFETY		SWITCH	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	
V	VIBRATION, MECHANICAL, ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL, PROBE		
X	UNCLASSIFIED (1)	X-AXIS	ACCESSORY DEVICES, UNCLASSIFIED (1)	UNCLASSIFIED (1)	UNCLASSIFIED (1)
Y	EVENT, STATE, PRESENCE	Y-AXIS		AUXILIARY DEVICES	
Z	POSITION, DIMENSION	Z-AXIS, SAFETY INSTRUMENT SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED, FINAL CONTROL ELEMENT	

TABLE NOTES:
(1) WHEN USED SYMBOL OR SIGNAL LINE IS ANNOTATED.

INSTRUMENT LINE SYMBOLS



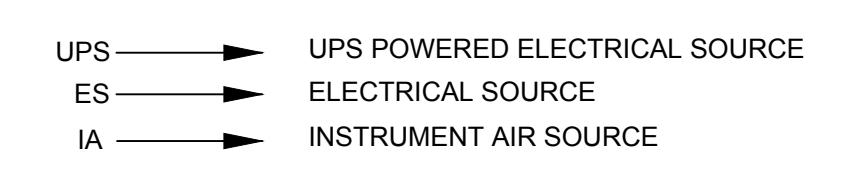
MISCELLANEOUS SYMBOLS



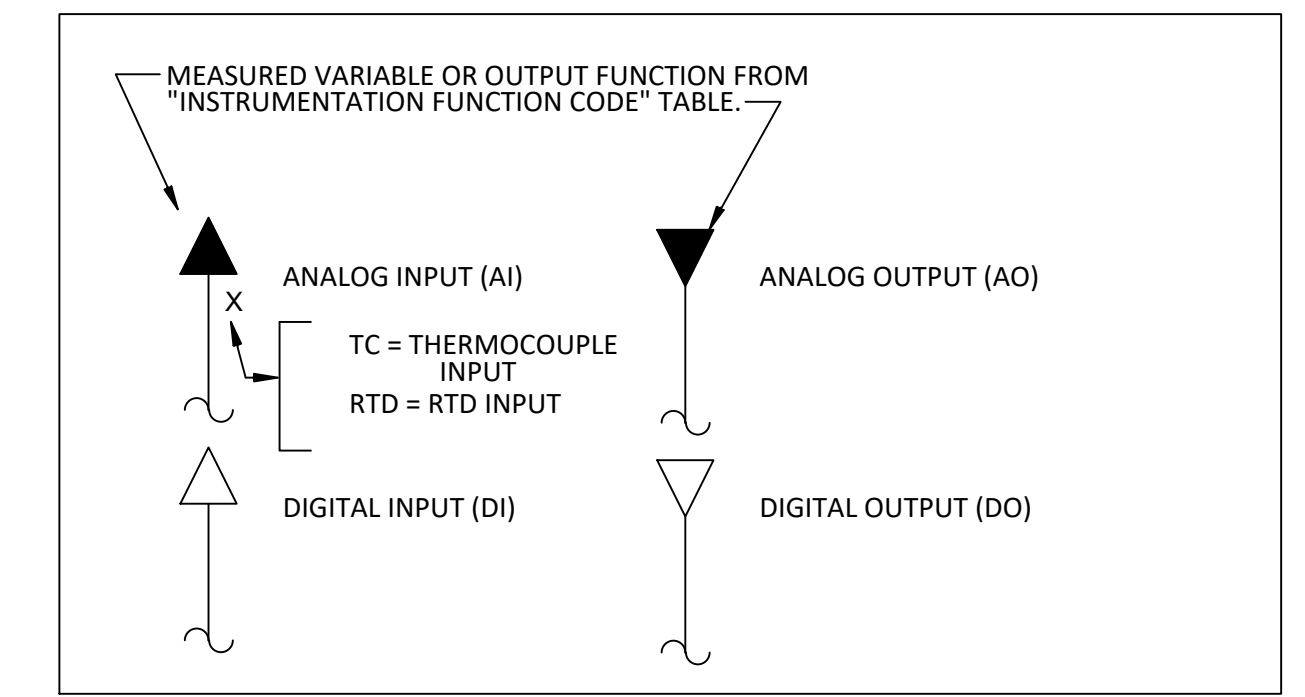
GENERAL ABBREVIATIONS

AI	ANALOG IN
AO	ANALOG OUTPUT
ATC	AUTOMATIC TEMPERATURE CONTROL
B/L	BEYOND LIMITS
CGD	COMBUSTIBLE GAS DETECTOR
CLG	CHLORINE GAS VACUUM
CLS	CHLORINE GAS SOLUTION
CPU	CENTRAL PROCESSING UNIT
CESW	CONTROL ETHERNET SWITCH
DI	DIGITAL OR DISCRETE INPUT
DIV	DIVISION
DO	DIGITAL OUTPUT
DR	DRAIN
ESTOP	EMERGENCY STOP
ESW	ETHERNET SWITCH
FC	FAIL CLOSE
FMM	FLOW METER
FO	FAIL OPEN OR FIBER OPTIC
HMI	HUMAN MACHINE INTERFACE
MCC	MOTOR CONTROL CENTER
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OIT	OPERATOR INTERFACE TERMINAL
OWS	OPERATOR WORKSTATION
P	PUMP
PA	PROCESS AIR
PAC	PROGRAMMABLE AUTOMATION CONTROLLER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PPM	PUMP PROTECTION MODULE
PQM	POWER QUALITY METER
RIO	REMOTE INPUT/OUTPUT
SWGR	SWITCH GEAR
UPS	UNINTERRUPTED POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE

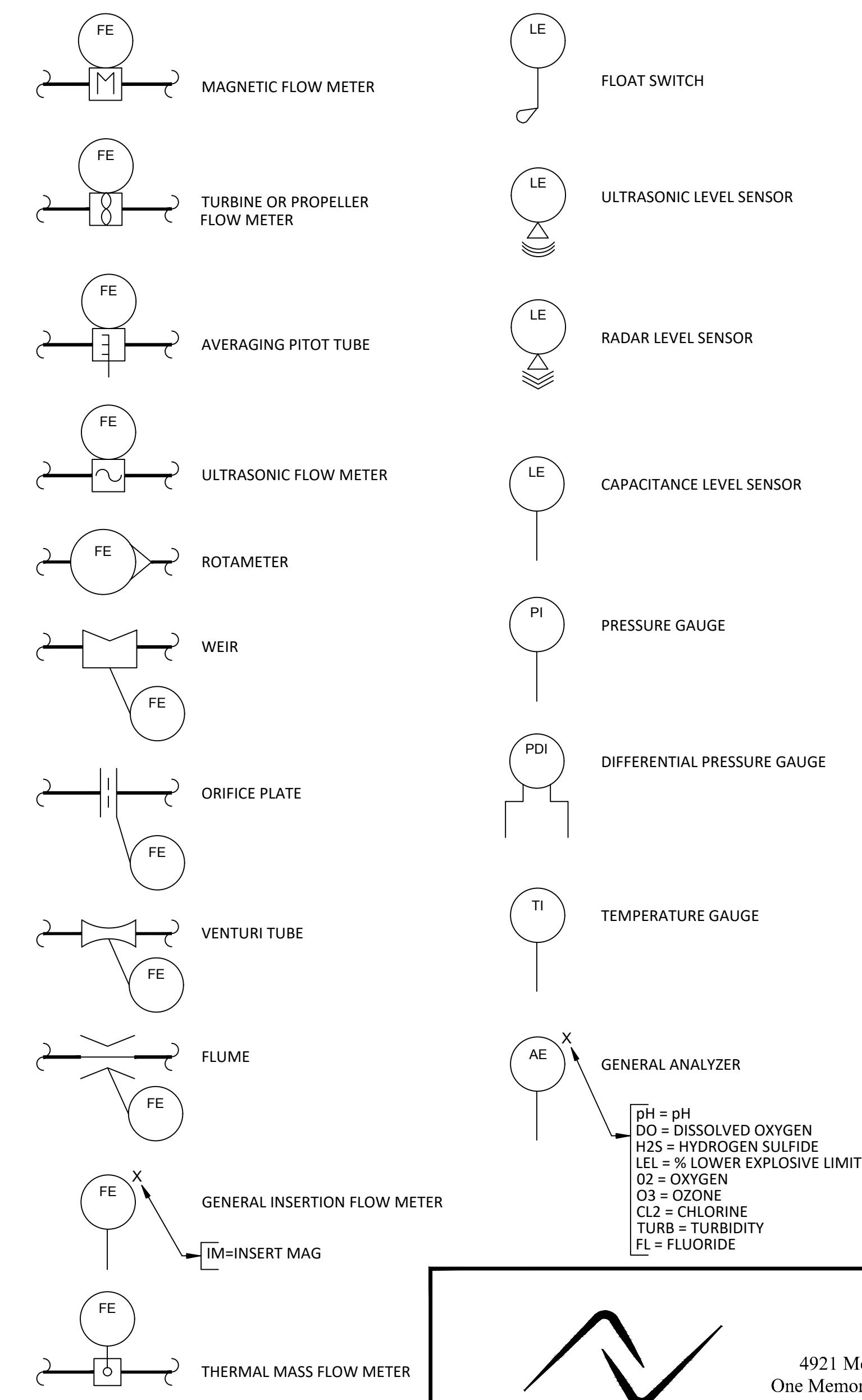
ELECTRICAL / AIR SOURCES



I/O SIGNALS



PRIMARY ELEMENTS



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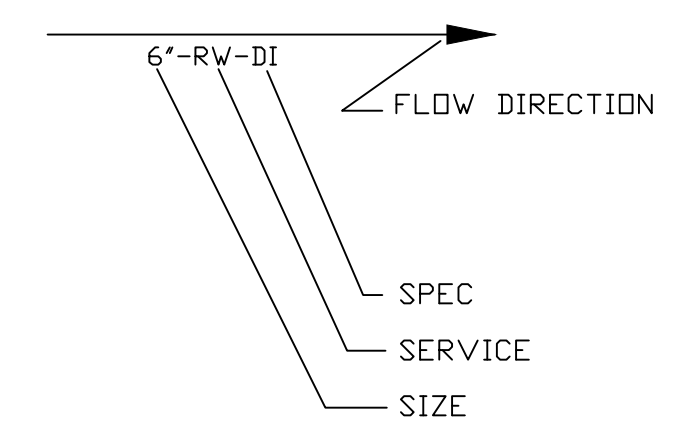
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GENERAL NOTES

1. REFER TO SHEET I-1 FOR ADDITIONAL NOTES

TYPICAL PIPE TAG NUMBERS & DESIGNATION



PIPE LINE SYMBOLS

- PIPE UNION
- FLEXIBLE BELLOWS TYPE COUPLING
- FLEXIBLE COUPLING (GENERAL SYMBOL)
- QUICK CONNECT TYPE COUPLING
- HOSE CONNECTION
- Y-STRAINER
- REDUCER/ENLARGER
- BLIND FLANGE
- CONTINUED PIPE
- CONCENTRIC FLANGE MOUNTED DIAPHRAGM SEAL
- THREADED DIAPHRAGM SEAL
- OPEN EQUIPMENT DRAIN
- DIFFUSER
- BASKET STRAINER
- FILTER
- PULSATION DAMPENERS
- MAJOR PROCESS LINE
- MINOR PROCESS LINE
- DOUBLE WALLED PIPE
- E (S) ELECTRIC (OR STEAM) TRACING
- DWG NO. TO/FROM LOCATION
- BLOWER INLET FILTER / SILENCER
- BLOWER DISCHARGE SILENCER

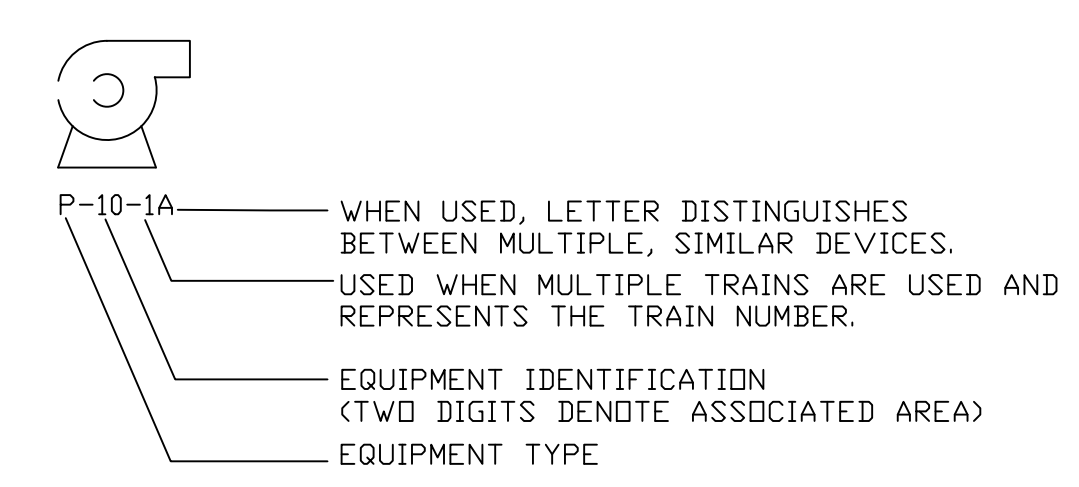
GATE SYMBOLS

- SLUICE GATE (SLG)
- SLIDE GATE (SG)
- WEIR SLIDE GATE (WSG)
- BUTTERFLY GATE
- BULK HEAD GATE/STOP LOG

VALVE ACTUATORS

- HAND (MANUALLY) OPERATED
- DIAPHRAGM, SPRING OPPOSED
- DIAPHRAGM, PRESSURE-BALANCED
- ROTARY MOTOR (SHOWN TYPICALLY WITH ELECTRIC SIGNAL, MAY BE HYDRAULIC OR PNEUMATIC)
- SOLENOID
- ELECTRO HYDRAULIC
- ELECTRO PNEUMATIC
- CYLINDER, SINGLE-ACTING, SPRING OPPOSED WITHOUT POSITIONER OR PILOT.
- CYLINDER, DOUBLE ACTING, WITHOUT POSITIONER OR PILOT
- EXAMPLE OF CYLINDER WITH POSITIONER
- ANY CYLINDER THAT IS ASSEMBLED WITH A PILOT SO THAT ASSEMBLY IS ACTUATED BY ONE CONTROLLED INPUT. PILOT MAY BE POSITIONER, SOLENOID VALVE, SIGNAL CONVERTER, etc.
- FLOAT ACTUATOR

TYPICAL EQUIPMENT TAG NUMBERS & DESIGNATION



VALVE SYMBOLS

- GATE VALVE (GV)
- PLUG VALVE (PV)
- BUTTERFLY VALVE (BFV)
- BALL VALVE (BV)
- GLOBE VALVE (GLV)
- PINCH VALVE (PCHV)
- DIAPHRAGM VALVE (DV)
- SWING CHECK VALVE (CV)
- BALL CHECK VALVE (BCV)
- SOLENOID VALVE (SV)
- NEEDLE VALVE (NV)
- KNIFE VALVE (KNV)
- MUD VALVE (MV)
- PRESSURE REGULATING VALVE (PRGV)
- BACK PRESSURE REGULATING VALVE (BPRV)
- DIFFERENTIAL PRESSURE REGULATING VALVE W/ EXTERIOR TAPS
- SELF-CONTAINED DIFFERENTIAL PRESSURE REGULATING VALVE
- SELF-CONTAINED DIFFERENTIAL PRESSURE REGULATING VALVE (SOLENOID OPERATED)
- PRESSURE RELIEF VALVE (PRV)
- VACUUM RELIEF VALVE (VRV)
- AIR-VACUUM RELEASE VALVE (AVRV)
- BACKFLOW PREVENTER

PROCESS EQUIPMENT

- CENTRIFUGAL PUMP
- PLUNGER / POSITIVE DISPLACEMENT PUMP
- PROGRESSIVE CAVITY PUMP
- DIAPHRAGM METERING PUMP
- AIR OPERATED DIAPHRAGM PUMP
- ROTARY PUMP
- ROTARY BLOWER
- CENTRIFUGAL BLOWER
- BELT CONVEYOR
- SCREW CONVEYOR
- GRINDER
- MIXER
- SUBMERSIBLE PUMP
- BLOWER
- VERTICAL TURBINE / WELL PUMP
- STATIC MIXER
- MANUAL SCREEN
- MECHANICAL SCREEN
- CALIBRATION COLUMN
- CLARIFIER
- EYE WASH / SHOWER

PARTIAL LIST
ADDITIONAL SYMBOLS MAY BE
SHOWN ON THE FLOW DIAGRAMS

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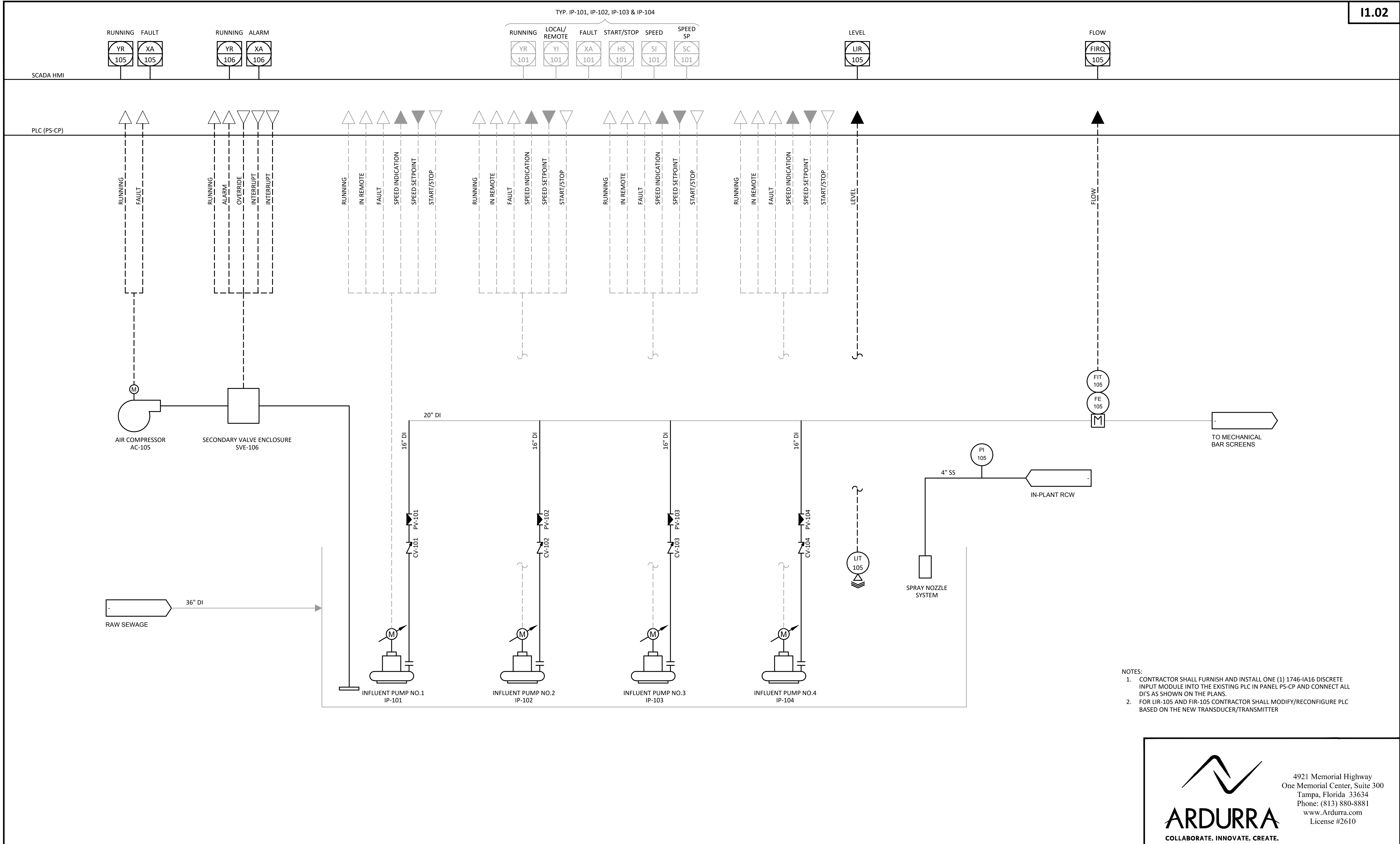
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2018-1721-01			38 OF 40
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TYP. IP-101, IP-102, IP-103 & IP-104



- NOTES:
1. CONTRACTOR SHALL FURNISH AND INSTALL ONE (1) 1746-IA16 DISCRETE INPUT MODULE INTO THE EXISTING PLC IN PANEL PS-CP AND CONNECT ALL DI'S AS SHOWN ON THE PLANS.
 2. FOR LIR-105 AND FIR-105 CONTRACTOR SHALL MODIFY/RECONFIGURE PLC BASED ON THE NEW TRANSDUCER/TRANSMITTER



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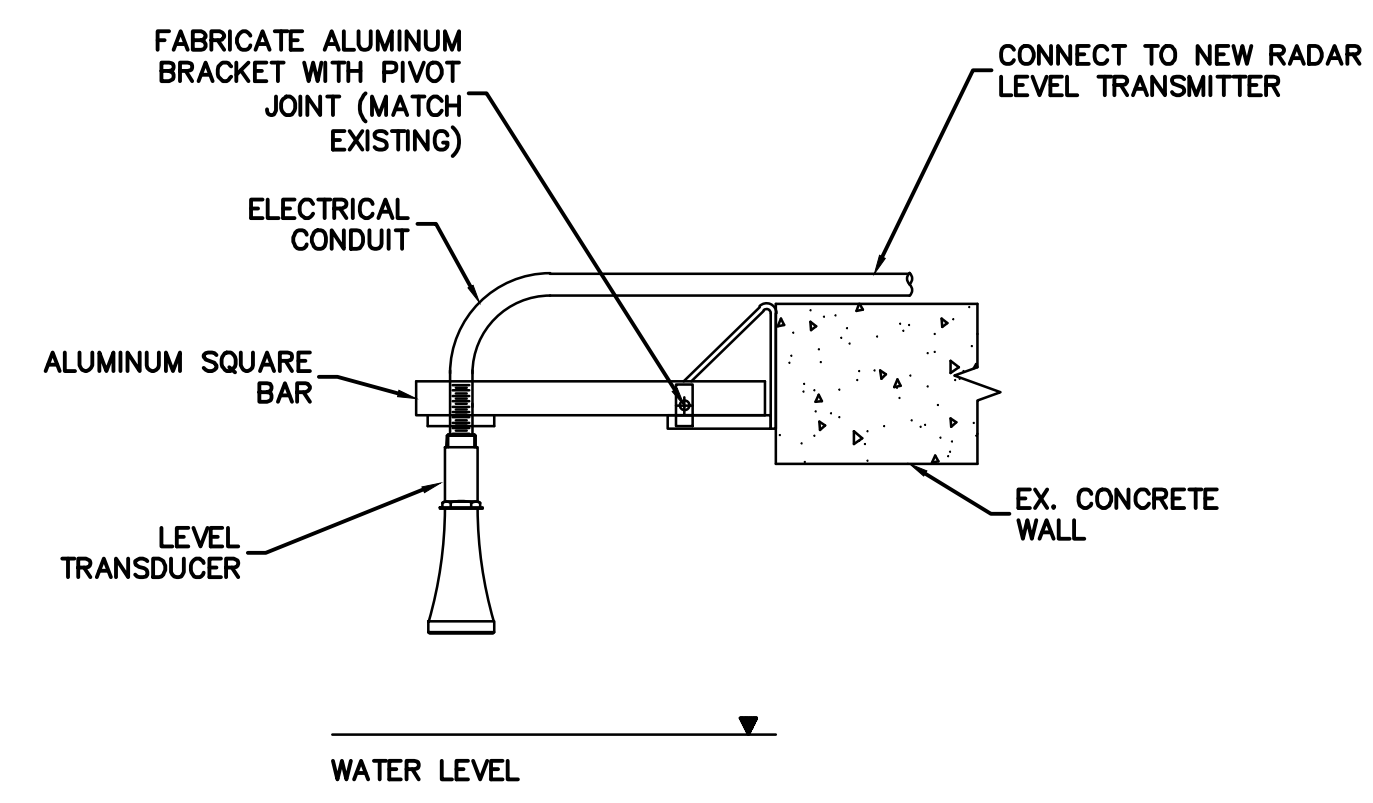
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SURVEYED BY:	DRAWN BY:				
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APPROVED BY:	PROJECT ENGINEER	DATE			
	ENGINEER	DATE			
REVISION				BY	DATE

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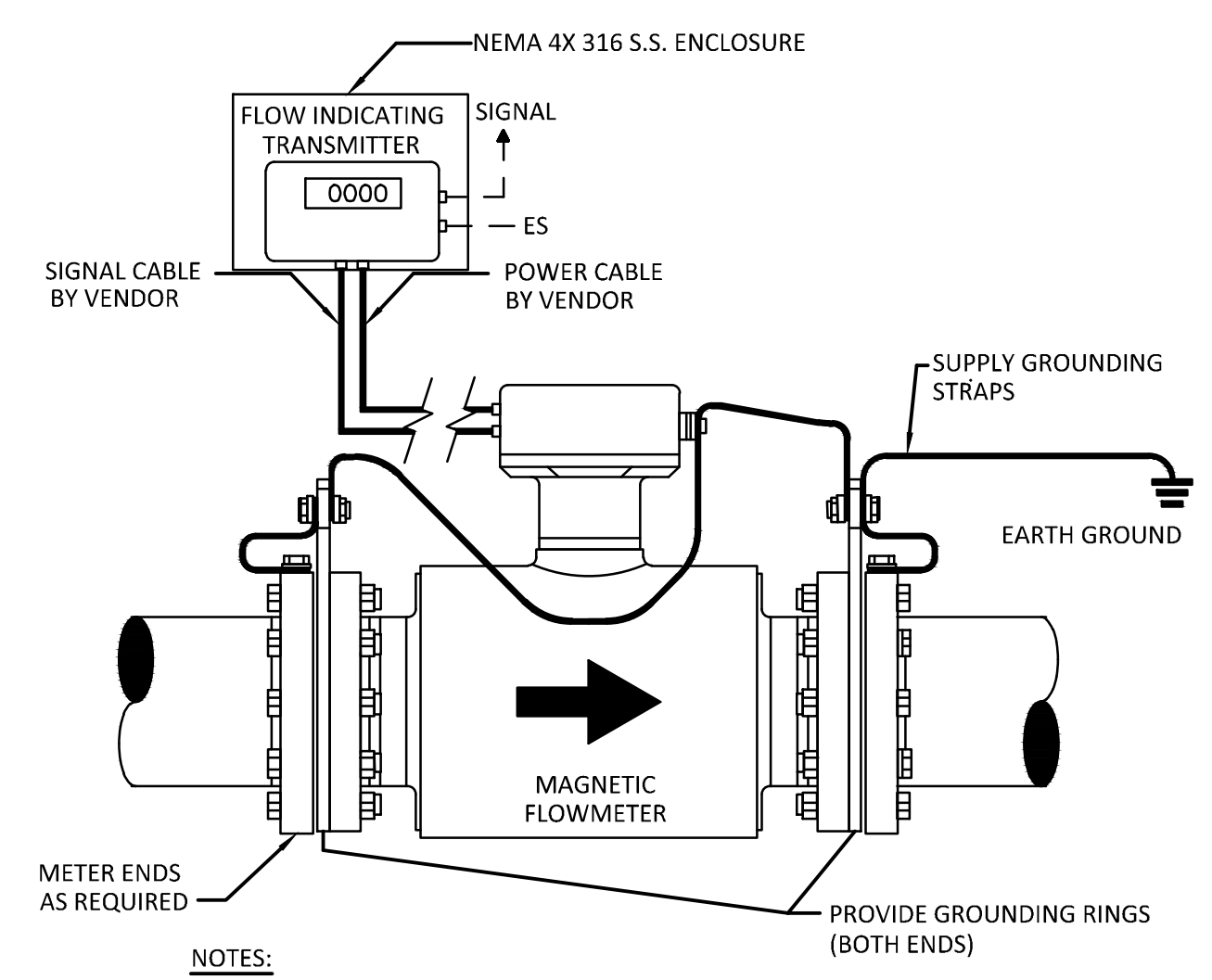
**EAST WRF INFLUENT PUMP STATION
REHABILITATION PROJECT**
INFLUENT PUMP STATION P&ID

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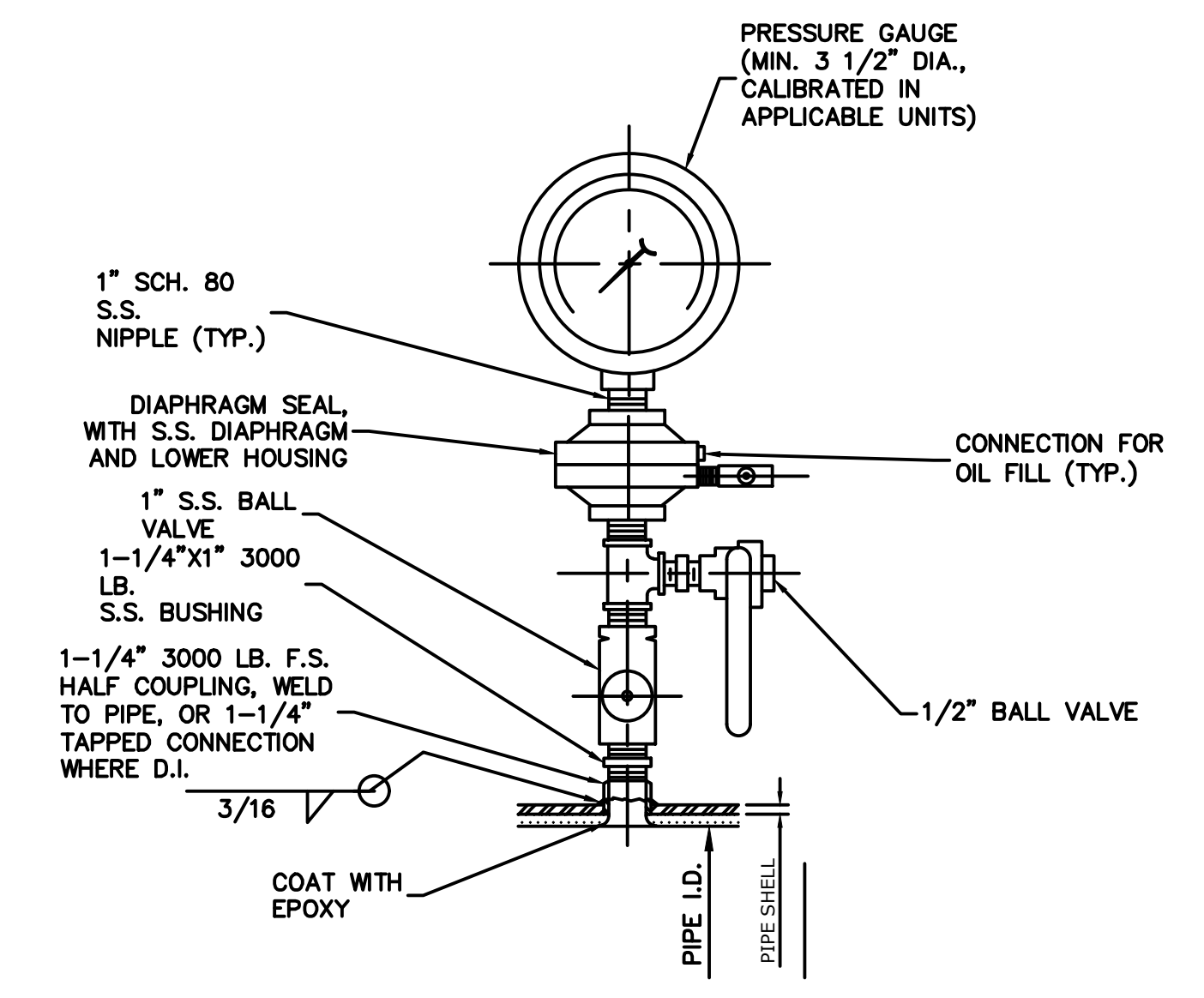
- NOTES:
1. RADAR LEVEL SENSOR SHALL BE INSTALLED PER MANUFACTURER REQUIREMENT.
 2. CONTRACTOR SHALL REPLACE EXISTING ELECTRICAL ENCLOSURE IN KIND.

LEVEL TRANSMITTER DETAIL A
NTS



- NOTES:
1. POWER SUPPLY TO MAGNETIC METER PRIMARY DEVICE AND TRANSMITTER TO BE FROM SAME SOURCE WITH RESPECT TO VOLTAGE, FREQUENCY AND PHASE.
 2. INSTALL TRANSMITTER EQUIPMENT IN THE EXISTING ENCLOSURE REFER TO SHEET EX.XX FOR ENCLOSURE LOCATION.
 3. METER SHALL BE INSTALLED SO THAT IT CAN BE TAKEN OUT OF SERVICE FOR CALIBRATION AND/OR MAINTENANCE WITHOUT DISRUPTING ASSOCIATED PROCESS.
 4. METER SHALL NOT BE LOCATED NEAR HEAVY INDUCTION EQUIPMENT (MIN 20 FEET).
 5. ORIENT THE METER SO THAT THE ELECTRODES LIE IN PLANE PARALLEL TO FLOOR.
 6. WALL MOUNT THE TRANSMITTER WITHIN SITE OF METER.

MAGNETIC FLOW METER INSTALLATION B
NTS



PRESSURE GAUGE W/ DIAPHRAGM SEAL C
SCALE: NTS

9/28/2023 5:10 PM, O:\ENV. ENG\016100047\2018\172101\Production\Drawings\1-100.dwg

RECORD DRAWINGS		BID DOCUMENTS		LPT	09/28/23
SURVEYED BY:	DRAWN BY:				
REVIEWED BY:					
APPROVED BY:	PROJECT ENGINEER	DATE			
	ENGINEER	DATE	REVISION	BY	DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

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DWG NAME: 1-100.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.:	DATE DRAWN: 9/28/2023	DRAWN BY: CW	HORIZ. AS SHOWN
JOB NO.:	DESIGNED BY: ME	CHECKED BY: LPT	SHEET NO.:
2018-1721-01			40 OF 40
APPROVED FOR CONSTRUCTION			