

CITY OF PELHAM, ALABAMA

BUSINESS CENTER LIFT STATION IMPROVEMENTS

PROJECT #7223004.4

MARCH 2024

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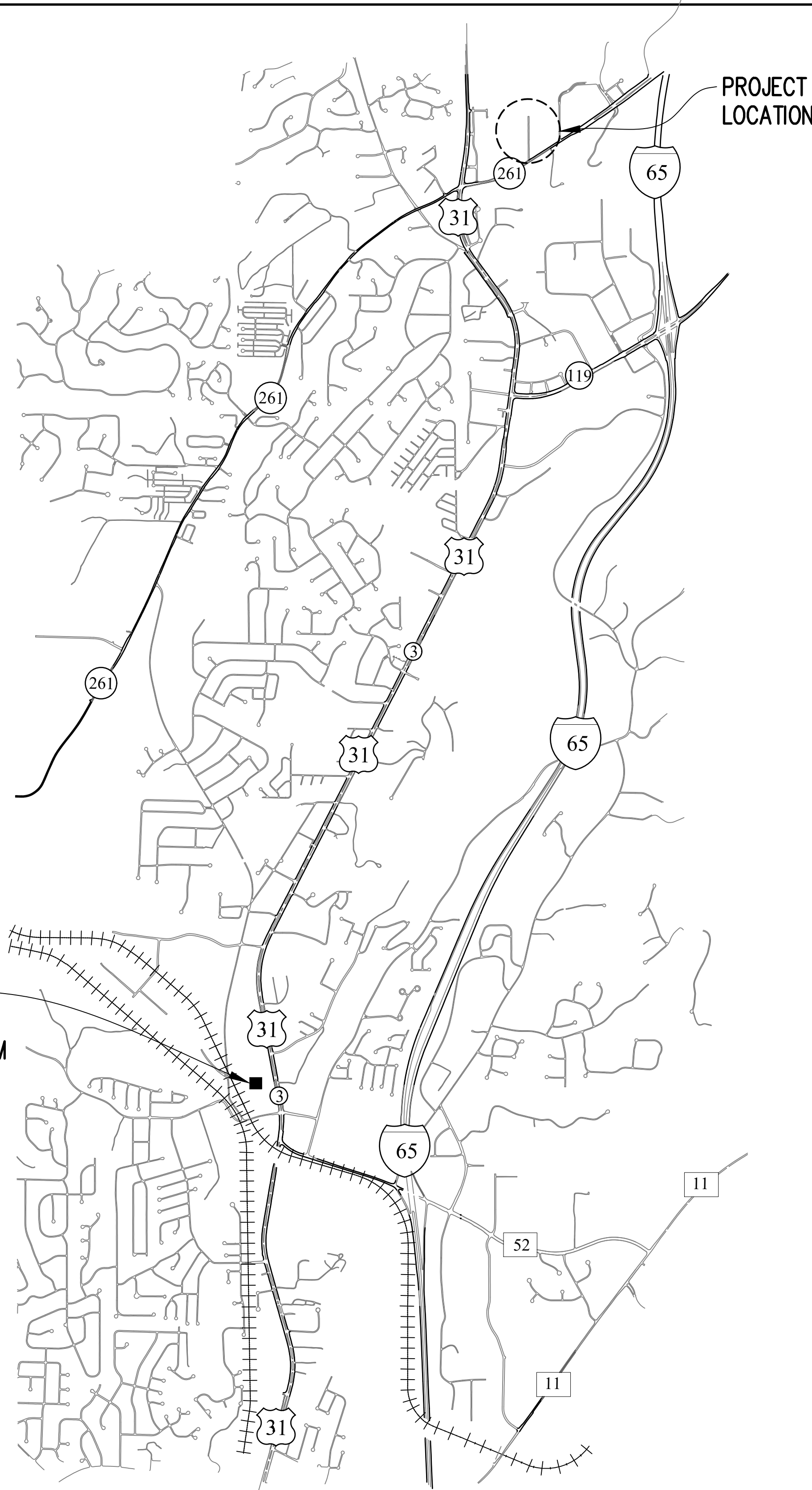
SHEET/DRAWING INDEX

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Municipal
Consultants,
Inc. Birmingham, Alabama



BID SET



BID OPENING LOCATION:
 PELHAM CITY HALL
 DSPW CONFERENCE ROOM
 3162 PELHAM PARKWAY

PARTIAL ANTICIPATED CONSTRUCTION SEQUENCE:

- LOCATE ALL SURROUNDING UTILITIES & PERFORM AS MUCH WORK POSSIBLE BEFORE BYPASSING LIFT STATION WET WELL (E.G. APCO IMPROVEMENTS INCLUDING DUCT BANK, SETTING VALVE PIT, CONSTRUCTING ELECTRICAL RACK, ETC...). CONTRACTOR MAY BE ALLOWED TO TEMPORARILY RELOCATE EXIST. ELECTRICAL AND/OR SCADA IN ORDER TO PERFORM SOME OR ALL OF THIS WORK.
- INSTALL BYPASS PUMPING SYSTEM. SYSTEM SHALL BE TESTED FOR 24 HOURS PRIOR TO TAKING THE STATION OUT OF SERVICE.
- CLEAN WET WELL AND PERFORM MEASUREMENTS WITHIN STATION TO ENSURE NEW BASE ELBOW ANCHORS WILL NOT CONFLICT WITH EXISTING BASE ELBOW ANCHORS. IF SO, FABRICATE BASE PLATES AS REQ'D.
- CLEAN WET WELL AGAIN (IF STATION IS RETURNED TO SERVICE FOR BASE ELBOW PLATE FABRICATION), DEMO EXST. CONTROLS, PUMPS, BASE ELBOWS, ETC. EXISTING CONTROLS AND PUMPS SHALL REMAIN ON-SITE AND PRESERVED IN THE EVENT THAT THEY MUST BE PLACED BACK IN SERVICE IN CASE OF AN EMERGENCY.
- INSTALL NEW ELECTRICAL (REMAINING), WET WELL TOP (IF NOT ALREADY INSTALLED), BASE ELBOWS, AND MODIFY EXST. WET WELL PIPING AS REQUIRED. COORDINATE WITH APCO TO FINALIZE RELOCATION OF EXISTING POWER SERVICE.
- START UP NEW PUMPS. PUMPS AND ELECTRICAL EQUIPMENT SHALL OPERATE FOR 7 DAYS TROUBLE FREE. CONTRACTOR SHALL HAVE EQUIPMENT AND PERSONNEL READILY AVAILABLE IN CASE OF NEW PUMP OR EQUIPMENT FAILURE.

NOTE THAT THIS CONSTRUCTION SEQUENCE IS BASED ON ONE METHOD OF BYPASSING THE LIFT STATION, OTHER METHODS MAY BE ACCEPTABLE. ALSO NOTE THAT THIS SEQUENCE IS NOT INTENDED TO BE A COMPLETE LIST OF WORK. CONTRACTOR SHALL COORDINATE ACTUAL CONSTRUCTION SEQUENCE AND BYPASS METHOD WITH OWNER AND ENGINEER PRIOR TO CONSTRUCTION.

GENERAL NOTES

- SAFETY IS THE RESPONSIBILITY SOLELY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR SAFETY NOR THE MEANS AND METHODS OF THE CONTRACTOR. LIFT STATIONS, MANHOLES, ETC. ARE CONFINED SPACES WITH THE POTENTIAL FOR POISONOUS GASES, ATMOSPHERES DEFICIENT IN OXYGEN, AND OTHER SAFETY HAZARDS. THE CONTRACTOR SHALL TAKE ALL APPROPRIATE SAFETY MEASURES AND FULLY COMPLY WITH ALL OSHA REGULATIONS AND GUIDELINES, ETC. THE CONTRACTOR SHALL THOROUGHLY UNDERSTAND ALL THE DANGERS ASSOCIATED WITH WORK IN LIFT STATIONS AND MANHOLES, ETC.
- UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE/VERIFY LOCATIONS OF PERTINENT SEWER LINES AND FORCE MAINS. ALL SEWER LINES ARE TO REMAIN ACTIVE THROUGHOUT CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF EXISTING LINES DURING CONSTRUCTION.
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PELHAM AND SHELBY COUNTY RULES AND REGULATIONS.

PROJECT NOTES

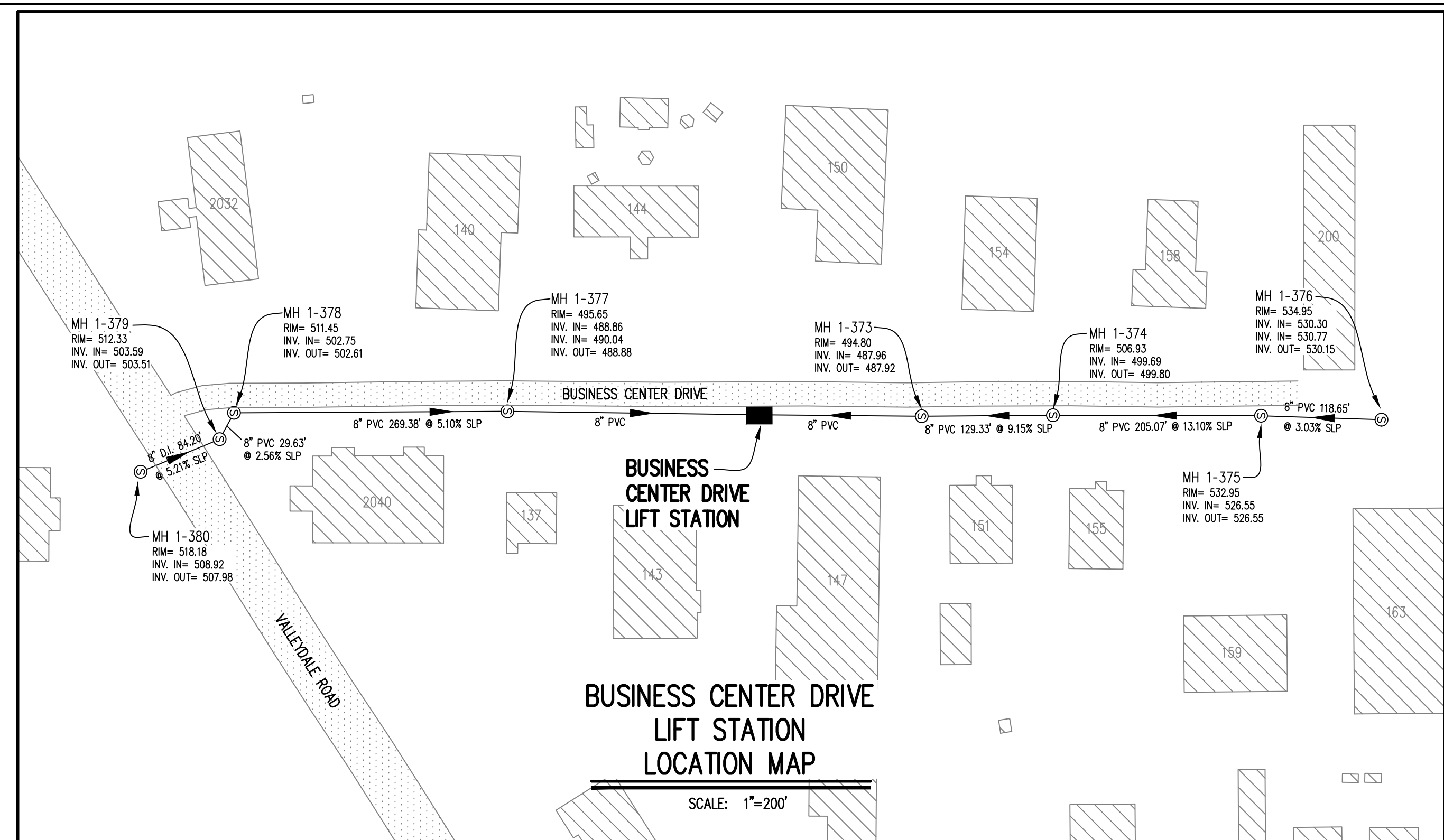
- ALL NUTS, BOLTS, HARDWARE, AND MISCELLANEOUS METALS IN WET WELL AND VALVE PIT SHALL BE TYPE 316 STAINLESS STEEL UNLESS NOTED OTHERWISE. CONTRACTOR SHALL APPLY A GENEROUS AMOUNT OF ANTI-SEIZE SPECIFICALLY DESIGNED FOR STAINLESS STEEL TO ALL S.S. BOLTS, EXCEPT BOLTS AT PUMP BASE ELBOW & S.S. PLATE (WHERE THREAD LOCK ADHESIVE SHALL BE USED).
- ALL MODIFICATIONS MUST BE PERFORMED IN A SEQUENCE TO MINIMIZE THE TIME THAT THE STATION IS OUT OF SERVICE. THE STATION CANNOT BE TAKEN OUT OF SERVICE EXCEPT IN A MANNER, TIME, AND DURATION ACCEPTABLE TO OWNER.
- CONTRACTOR TO SUPPLY BYPASS PUMPING AS REQUIRED. THE CONTRACTOR SHALL EITHER LEAVE ONE EXISTING PUMP IN SERVICE AT ALL TIMES AND PROVIDE A REDUNDANT BACK-UP DRY-PRIME PUMP OR USE FLOW-THROUGH PLUGS AND/OR PLUG UPSTREAM MANHOLES AND FULLY BYPASS THE STATION AT ALL TIMES DURING THE WORK. IF PERFORMING A COMPLETE BYPASS (THE SECOND OF THE TWO OPTIONS JUST DESCRIBED), THE CONTRACTOR MUST ALSO HAVE A STANDBY PUMP CAPABLE OF HANDLING PEAK FLOWS. CONTRACTOR TO MONITOR BYPASS PUMPING WHENEVER ONGOING (24 HOURS IF NECESSARY). CONTRACTOR SHALL PROMPTLY PLACE ONE OF THE TWO SUBMERSIBLE PUMPS INTO SERVICE IF BYPASS PUMP FAILS. BYPASS PUMPS MUST HANDLE RAW, UNSCREENED SEWAGE WHICH WILL CONTAIN RAGS, GREASE, SOLIDS, SANITARY PRODUCTS, TRASH, ETC. NOTE THAT THE FLOWRATE OF SEWAGE INTO THE LIFT STATION WILL VARY WIDELY AND WILL INCREASE GREATLY DURING RAIN EVENTS. THE CONTRACTOR SHALL FULLY TEST THE BYPASS PUMPING SYSTEM BEFORE DEMOLISHING ANY EXISTING PUMPS AND PIPING. THE CONTRACTOR SHALL DESIGN THE BYPASS PUMPING SYSTEM FOR A HEAD THAT VARIES UP TO APPROXIMATELY 65 FEET (ASSUMING 75 GPM AND C=100) AT THE EXISTING SUBMERSIBLE PUMPS. THIS EXCLUDES THE HEADLOSS IN THE CONTRACTOR'S PUMP SUCTION AND DISCHARGE PIPING AND ELEVATION OF THE PUMP RELATIVE TO THE HIGH POINT OF THE FORCE MAIN, WHICH MUST BE TAKEN INTO ACCOUNT FOR SIZING PURPOSES. BYPASS PUMPS SHALL BE SOUND ATTENUATED DUE TO PROXIMITY OF RESIDENCES.

- THE CONTRACTOR SHALL MAKE EXACT MEASUREMENTS PRIOR TO ORDERING MATERIALS. THE CONTRACTOR SHALL HAVE ENOUGH FITTINGS ON HAND TO RECONNECT THE NEW PUMP PIPING TO THE EXISTING DISCHARGE PIPING.
- DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD MEASURE ALL AND MAKE APPROPRIATE ADJUSTMENTS.
- IN THE AREA AROUND THE SITE THERE IS EXISTING UNDERGROUND POWER AND GAS. LOCATION, SIZE, AND ROUTE IS UNKNOWN, CONTRACTOR SHALL VERIFY ALL.
- FOR ALL PUMPS, CAREFULLY COORDINATE WITH PUMP SUBMITTAL AND EXISTING FIELD CONDITIONS FOR THE REQUIRED MOUNTING LOCATION OF THE BASE ELBOW. IF THE BASE ELBOWS ARE NOT SET IN THE CORRECT LOCATION, THE PUMPS MAY NOT CLEAR THE HATCH OPENING. IF THE BASE ELBOWS ARE NOT SET IN THE CORRECT LOCATION, THE WORK WILL NOT BE ACCEPTABLE.
- RESERVED
- CONTRACTOR SHALL PAINT ALL PROPOSED D.I. PIPING, MEGAFLANGES, D.I. FILLER FLANGES, ETC. TO BE INSTALLED IN WET WELL & VALVE PIT PER MCI SPECIFICATIONS.
- CONTRACTOR SHALL COORDINATE EXTENT OF DEMOLITION IN THE FIELD AFTER CONTRACTOR HAS FIELD VERIFIED THE EXACT LOCATION OF THE EXISTING AND PROPOSED PUMP BASE ELBOW. CONTRACTOR SHALL NEATLY SAW CUT EXISTING PIPE AND COAT EXPOSED IRON WITH PROTECTO 401 EPOXY REPAIR KIT.
- WHEN CONCRETE OR GROUT IS REMOVED, CHIP AND (OR GRIND) TO RELATIVELY SMOOTH SURFACE.
- CONTRACTOR SHALL NOTE THAT THIS SITE IS IN A FLOODPLAIN. PUMPS SHALL NOT BE ON SITE UNTIL THEY ARE READY TO BE INSTALLED IN THE WET WELL. KEEP LOOSE END OF PUMP CABLE ABOVE FLOOD ELEVATION AND OUT OF WET WELL AT ALL TIMES.
- AFTER ANY DEMOLITION OF CONCRETE OR GROUT, THE CONTRACTOR SHALL COMPLETELY CLEAN ALL CONCRETE, GROUT, AND DEBRIS FROM THE WET WELL. REMOVE ALL WATER FROM THE WET WELL (VACUUM FINAL AMOUNTS) TO INSURE ALL DEBRIS HAS BEEN REMOVED.
- THIS IS AN OPERATING SEWAGE LIFT STATION. THE CONTRACTOR WILL HAVE TO PROVIDE CONTINUOUS UNINTERRUPTED SERVICE THROUGHOUT THE DURATION OF THIS PROJECT.
- THE EXISTING PUMPS SHALL BE REMOVED AND REPLACED WITHIN A PERIOD OF TIME OF LOW SEWAGE FLOWS TO BE CLOSELY COORDINATED WITH THE ENGINEER AND MUST BE ACCEPTABLE TO THE OWNER. THE EXISTING PUMPS SHALL NOT BE REMOVED UNLESS THERE IS SUFFICIENT TIME TO COMPLETE THE OPERATION. HOWEVER LONG THE CONTRACTOR CALCULATES THE DOWNTIME OF THE PUMP STATION TO BE, THERE SHALL BE AT LEAST ONE EXTRA DAY BEFORE THE NEXT CHANCE OF RAIN.

- WORK TO RETURN THE NEW SEWAGE PUMPS TO OPERATION SHALL BE CONTINUOUS. ONLY ONE OF THE EXISTING PUMPS SHALL BE REMOVED AT A TIME. THE REPLACEMENT PUMP SHALL BE MADE READY FOR OPERATION (I.E. WIRED TO THE NEW PUMP CONTROL PANEL) PRIOR TO THE REMOVAL OF THE NEXT PUMP.
- THE CONTRACTOR SHALL BE ON CALL AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR'S ON-SITE REPRESENTATIVE SHALL BE FULLY CAPABLE OF PROPERLY & IMMEDIATELY OPERATING THE BYPASS PUMPING SYSTEM.
- THE CONTRACTOR SHALL RECOVER ALL MATERIALS REMOVED, CUT, GROUND, ETC. AS PART OF DEMOLITION. IF ANY DEBRIS IS DROPPED INTO THE WET WELL, THE CONTRACTOR MUST RECOVER THAT ITEM IMMEDIATELY. DEBRIS COULD DAMAGE THE PUMPS AS THEY MAY NEED TO BE RETURNED TO SERVICE. THIS APPLIES TO THE EXISTING AND NEW PUMPS.
- ALL ITEMS REMOVED SHALL BE RETURNED TO THE OWNER AT HIS DISCRETION AND HIS LOCATION. ALL ITEMS THE OWNER DOES NOT WANT, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE SUITABLY DISPOSED OF.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY BACKUPS OR OVERFLOWS AND ANY SUBSEQUENT FINES, PENALTIES, AND ALL OTHER COSTS INCURRED.
- CONTRACTOR SHALL SUPPLY EROSION CONTROL BEST MANAGEMENT PRACTICES (BMPs) FOR ANY DISTURBED AREAS. ALL DISTURBED AREAS SHALL BE PERMANENTLY GRASSED AS REQUIRED AND BMPs NOT REMOVED UNTIL GRASSING IS SUFFICIENT.
- THE EXISTING HIGH WATER LEVEL ALARM FROM THE TELEMETRY SYSTEM SHALL REMAIN FUNCTIONAL CONTINUOUSLY THROUGHOUT CONSTRUCTION.
- CONTRACTOR SHALL NOTE THAT MULTIPLE CLEANINGS OF THE WET WELL MAY BE NEEDED AS REQUIRED.

ABBREVIATIONS

AL	ALUM	ALUMINUM	EA	EACH	LEN	LENGTH	OC	ON CENTER	SCH	SCHEDULE	W/	WITH
APPROX	APPROX	APPROXIMATE	EF	EACH FACE	MAX	MAXIMUM	OD	OUTSIDE DIAMETER	SECT	SECTION	W/O	WITHOUT
CL	CEN	CENTER LINE	ELEC	ELECTRICAL	MGD	MILLION GALLONS PER DAY	OF	OUTSIDE FACE	SF	SQUARE FEET	W/F	WELDED WIRE FABRIC
CONC	CON	CONCRETE	EL	ELEVATION	MH	MANHOLE	PE	PLAIN END	SHT	SHEET	W/TP	WASTEWATER TREATMENT PLANT
CONN	CON	CONNECTION	EQ	EQUAL	MIN	MINIMUM	PL, PLS	PLATE, PLACES	SO	SPECIFICATIONS	X	BY
CONT	CON	CONTINUOUS	EW	EACH WAY	MISC	MISCELLANEOUS	PSI	POUNDS PER SQUARE INCH	STA	STATION		
			EXEXIST	EXISTING	MJ	MECHANICAL JOINT	PVC	POLYVINYL CHLORIDE	STD	STANDARD		
			FL	FLANGED	N	NORTH	REC'D	RECEIVED	ST STL,SS	STAINLESS STEEL		
DIA	DIA	DIAMETER	FT	FOOT	NIC	NOT IN CONTRACT	RED	REDUCER	SS	SANITARY SEWER		
DI	DIP	DUCTILE IRON	ID	INSIDE DIAMETER	NO.#	NUMBER	REINF	REINFORCING	TBM	TEMPORARY BENCHMARK		
DIP	DIP	DUCTILE IRON PIPE	IN	INCHES	NTS	NOT TO SCALE	REIN	REINFORCING	TEMP	TEMPORARY, TEMPERED		
DWG	DWG	DRAWING	INV	INVERT			REOD	REQUIRED	THK	THICKNESS		
							RJ	RESTRAINED JOINT	TYP	TYPICAL		



NOTES:
 1. ELEVATIONS PROVIDED ARE APPROXIMATE, FIELD VERIFY AS REQ'D. 2. BYPASS NOTES ARE BASED ON ANTICIPATED METHOD OF BYPASSING LIFT STATION. CONTRACTOR MAY CHOOSE TO USE ANOTHER METHOD OF BYPASSING PROVIDED IT IS ACCEPTABLE TO THE OWNER AND ENGINEER, SEE ADDITIONAL NOTES REGARDING BYPASS PUMPING.

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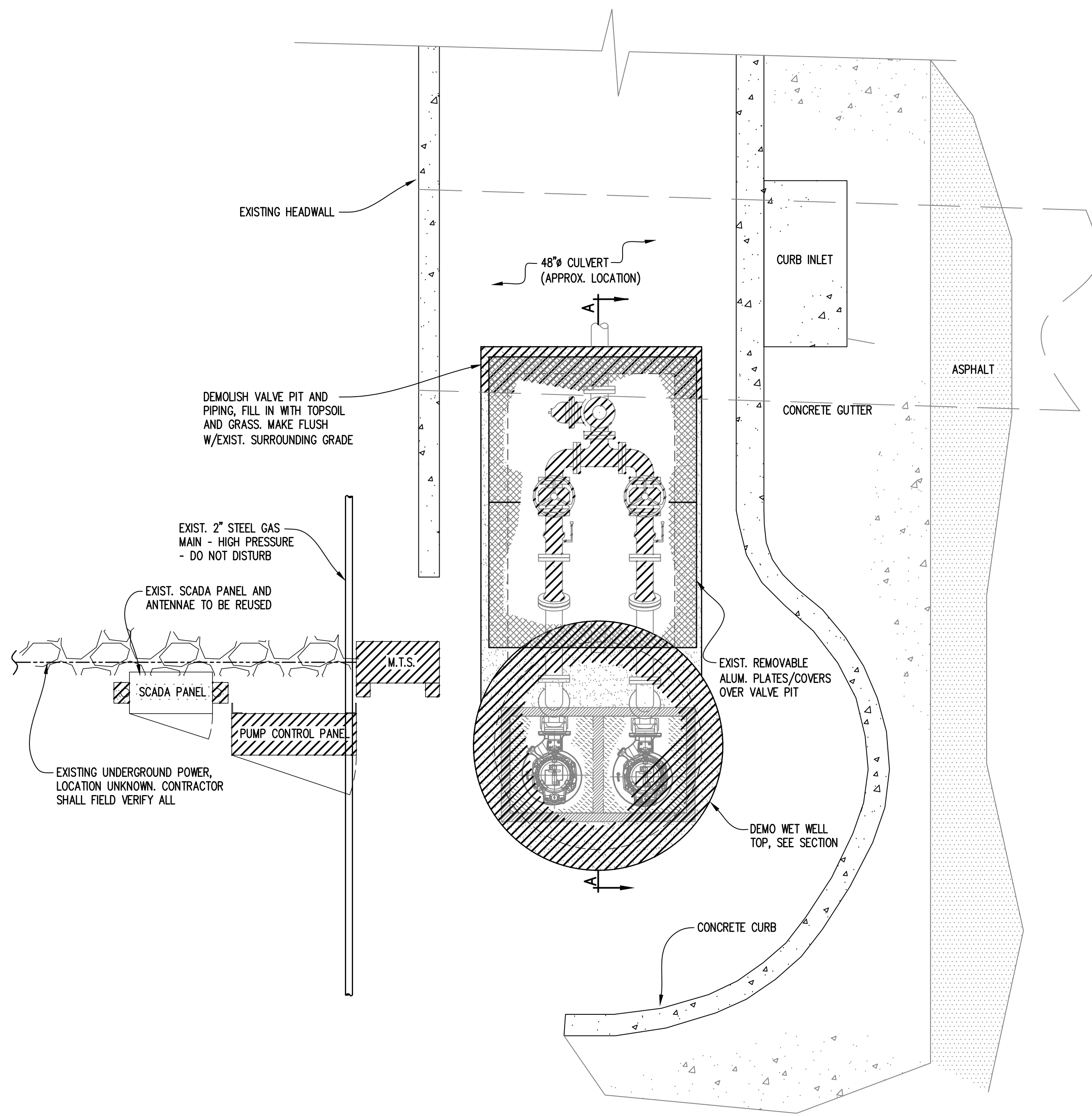
CITY OF PELHAM, ALABAMA
 BUSINESS CENTER LIFT STATION
 UPGRADES
 2024
 GRETCHEN DIFANTE, CITY MANAGER

Professional Engineer
 Andrew G. Golden
 No. 38301
 4-2-2024
 NOT VALID WITHOUT SIGNATURE

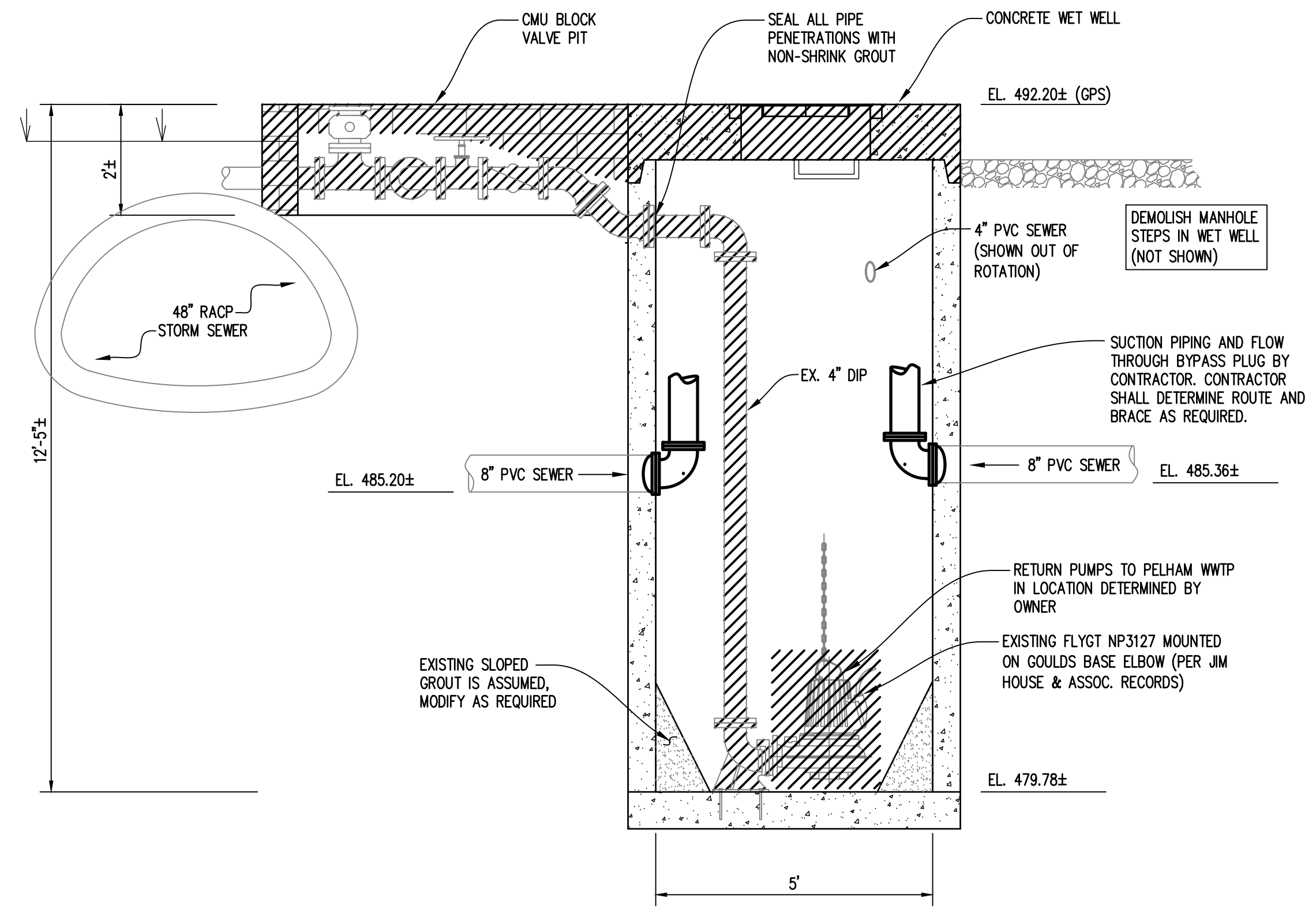
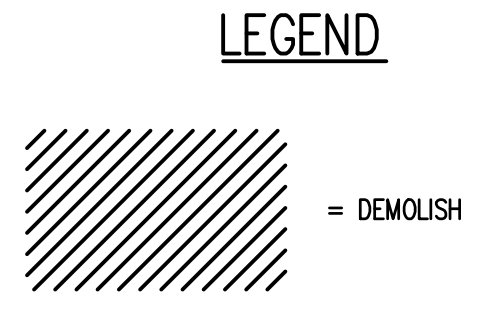
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Drawing	Title		
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Date 3 - 2024	DEMO		
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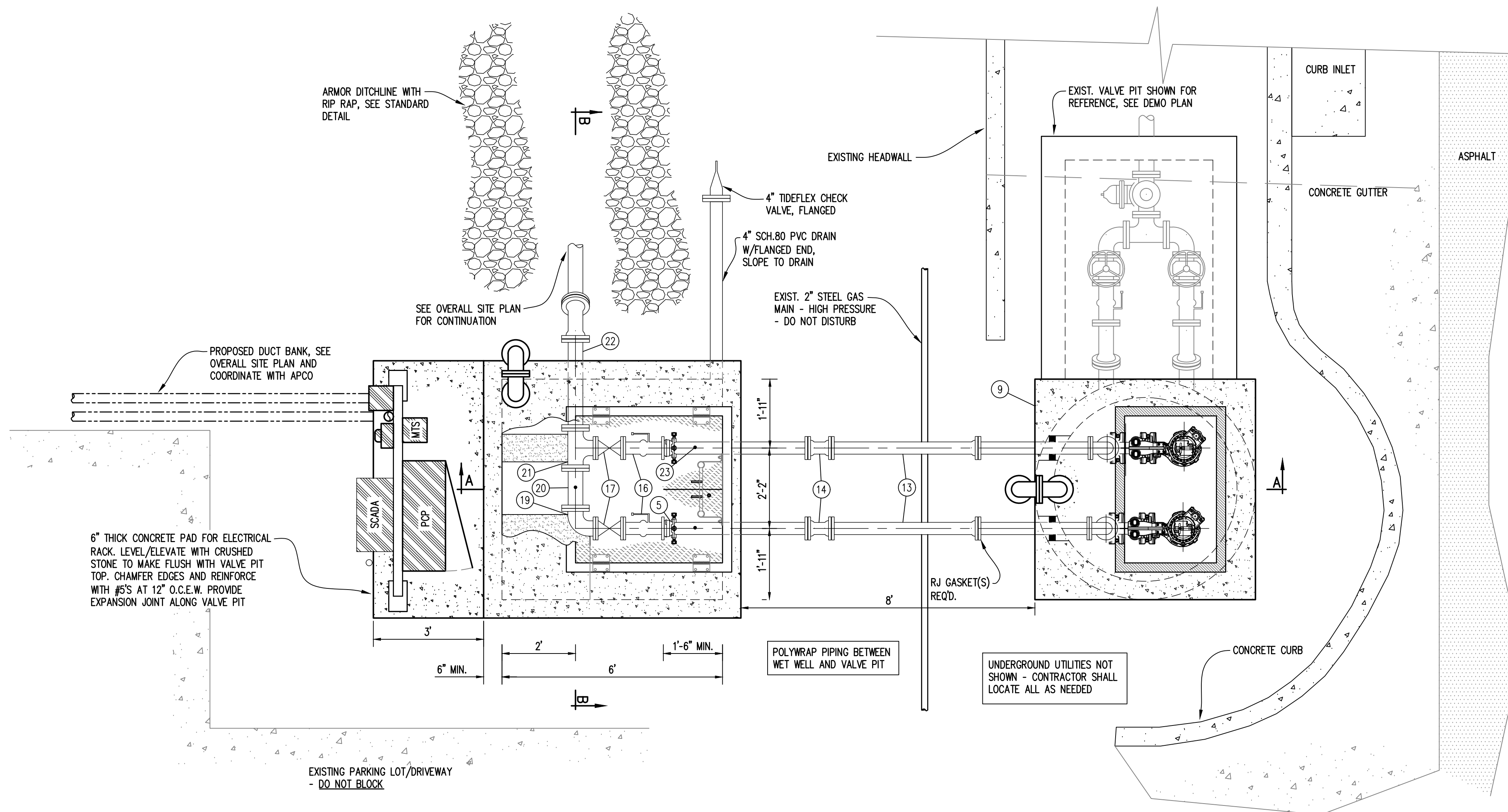


BUSINESS CENTER LIFT STATION
 SCALE: 1/2" = 1'-0"

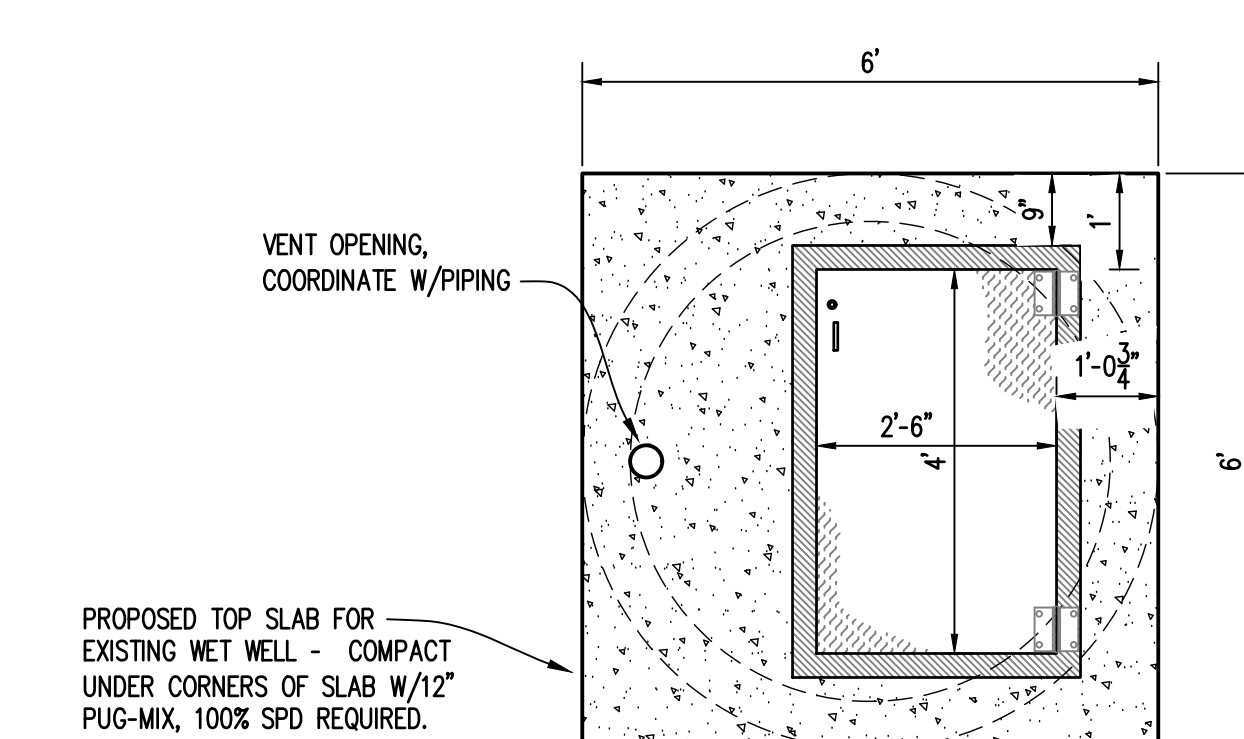


SECTION "A"
 SCALE: 1/2" = 1'-0"

BAR = 1"



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



WET WELL TOP SLAB
SCALE: 1/2" = 1'-0"

- WET WELL TOP REPLACEMENT NOTES:**
- TOPS SHALL BE PRECAST, ASTM C-478 WITH HATCHES CAST INTO SLAB, SEE PARTIAL MATERIAL LIST FOR HATCH REQUIREMENTS.
 - ALL CEMENT SHALL BE RATED FOR HIGH SULFATE RESISTANCE.
 - LOAD RATING OF PRECAST TOPS SHALL BE 300 PSF, MIN.
 - CONTRACTOR SHALL SET NEW TOPS ONTO EXISTING STRUCTURES WITH NEW, DOUBLE STRIP OF MASTIC AND THEN GROUT IN PLACE. CONTRACTOR SHALL ALSO STRAP TOP TO STRUCTURE WITH MIN. OF 2 - BITUMASTIC COATED STEEL STRAPS AND ANCHORS ON EXTERIOR OF STRUCTURE (SEE TYP. MANHOLE STRAP DETAIL). CONTRACTOR SHALL MAKE CONNECTION AS WATER TIGHT AS POSSIBLE.

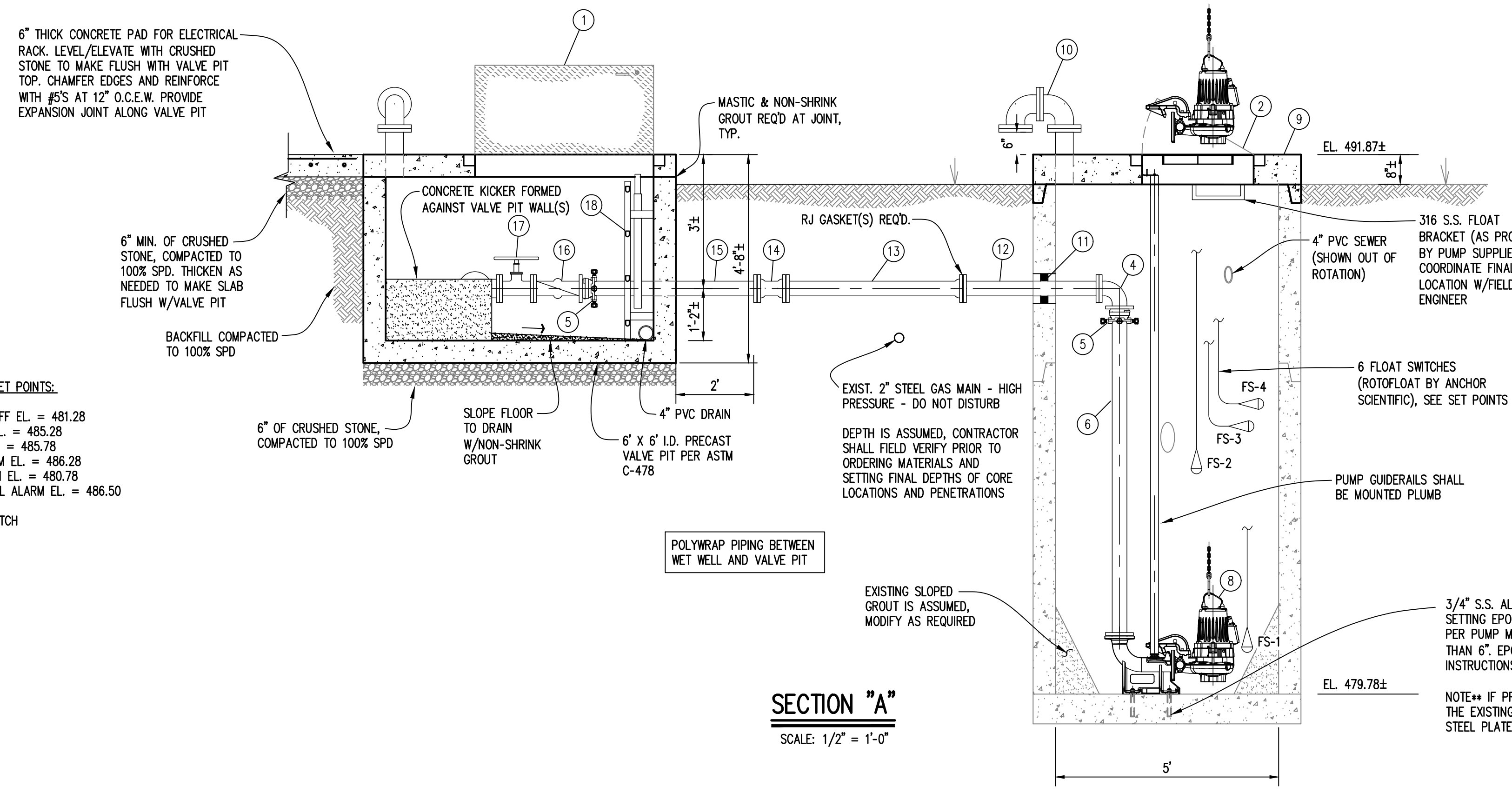
PUMP CRITERIA

PUMP	FLOW	HEAD
FLYGT NP3102	125 GPM	83' TDH

PARTIAL MATERIAL LIST

NOTE: ALL MATERIALS SHOWN MAY NOT APPEAR ON THIS SHEET. SEE OTHER SHEETS.

- 48" X 48" (MIN) ALUMINUM HATCH, HALLIDAY OR APPROVED EQUAL, 300 LB/SQFT, PADLOCKABLE, BITUMASTIC COATING ON FRAME & SAFETY GRATE
- 48" X 30" (MIN) ALUMINUM HATCH, HALLIDAY OR APPROVED EQUAL, 300 LB/SQFT, PADLOCKABLE, BITUMASTIC COATING ON FRAME & SAFETY GRATE
- RESERVED
- 3" DI FLANGED 90° BEND, SHORT RADIUS, P401 LINED INTERIOR, PAINT EXTERIOR PER SPECS
- 3" MEGAFANGE ADAPTER (EBAA IRON OR EQUAL), W/316 S.S. HARDWARE AND BOLTS
- 3" D.I. PIPE, FL X PE, P401 LINED INTERIOR, LENGTH AS REQ'D, CUT TO SUIT IN FIELD. PAINT EXTERIOR PER SPECS
- 4" X 3" D.I. FLANGED REDUCER (CONCENTRIC), P401 LINED INTERIOR, PAINT EXTERIOR PER SPECS
- FLYGT NP3102-256SH PUMP WITH 3" FLYGT BASE ELBOW, 2" S.S. GUIDERAILS, AND 316 S.S. LIFTING CHAIN, TYP. OF 2
- CUSTOM CONCRETE TOP SLAB FOR WET WELL, SEE DETAILS
- 4" D.I. VENT PIPING (FLANGED), P401 LINED INTERIOR AND EXTERIOR PAINTED PER SPECS. PROVIDE VARMINIT SCREEN, SEE DETAILS.
- CORE WITH LINKSEAL, SIZE AS REQ'D. (INCLUDE 316 S.S. HARDWARE). SEAL INT. & EXT. W/NON-SHRINK GROUT
- 3" D.I. PIPE, FL X PE, P401 LINED INTERIOR, LENGTH AS REQ'D.
- 3" D.I. PIPE, MJ X PE, P401 LINED INTERIOR, LENGTH AS REQ'D.
- 3" D.I. MJ SLEEVE, P401 LINED INTERIOR
- 3" D.I. PIPE, PE X PE, LENGTH AS REQ'D, P401 LINED INTERIOR
- 3" D.I. SWING CHECK VALVE, LEVER AND WEIGHT, FLANGED
- 3" D.I. PLUG VALVE, FLANGED, DEZURIK OR EQUAL
- 18" WIDE ALUMINUM LADDER W/SAFETY "UP-POST", HALLIDAY OR EQUAL
- 4" X 3" D.I. 90° REDUCING BEND, P401 LINED INTERIOR
- 4" D.I. PIPE, FL X FL, LENGTH AS REQ'D, P401 LINED INTERIOR
- 4" X 3" D.I. TEE, FLANGED, P401 LINED INTERIOR
- 4" D.I. PIPE, FL X PE, LENGTH AS REQ'D, P401 LINED INTERIOR
- 4" D.I. PIPE, FL X PE, LENGTH AS REQ'D, P401 LINED INTERIOR
- PRESSURE GAUGE ASSEMBLY, SEE DETAIL, TYPICAL OF 3



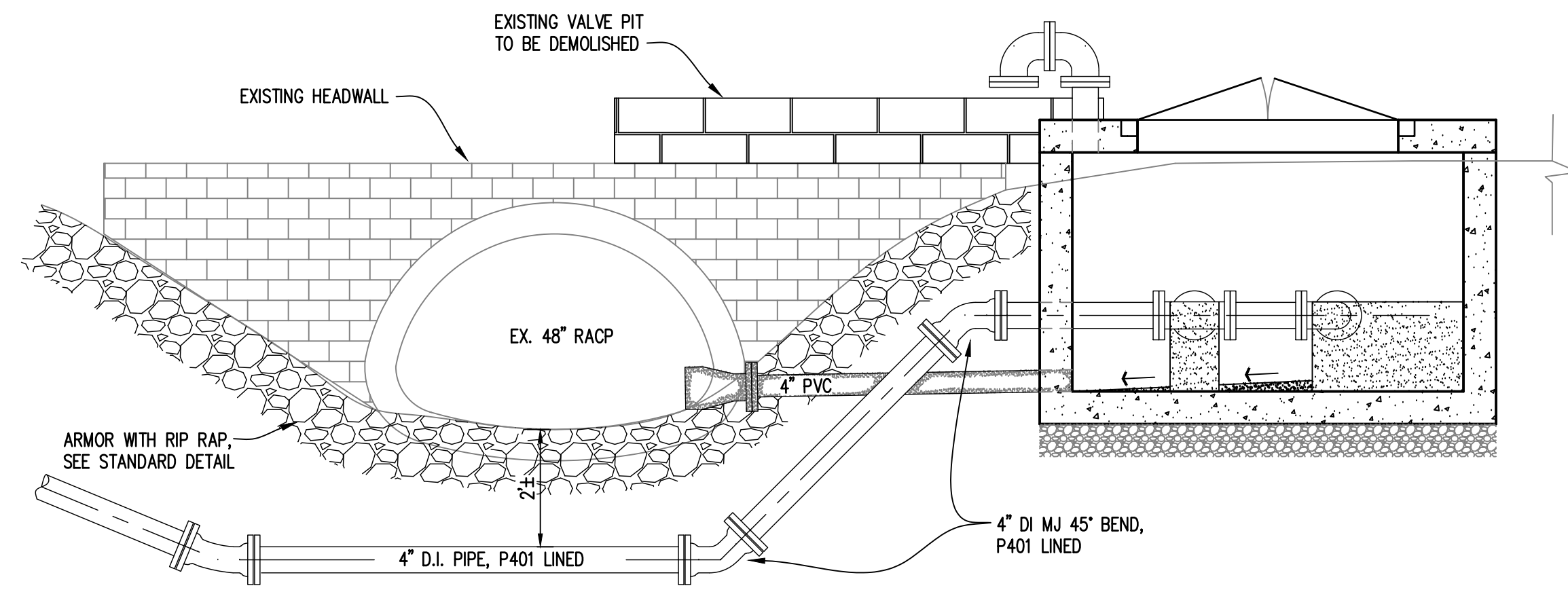
SECTION "A"
SCALE: 1/2" = 1'-0"

- SUGGESTED FLOAT OR SET POINTS:**
- FS-1: LOW LEVEL OUT-OFF EL. = 481.28
 - FS-2: LEAD PUMP ON EL. = 485.28
 - FS-3: LAG PUMP ON EL. = 485.78
 - FS-4: HIGH LEVEL ALARM EL. = 486.28
 - FS-5: LOW LEVEL ALARM EL. = 480.78
 - FS-6: SCADA HIGH LEVEL ALARM EL. = 486.50
- FS: DENOTES FLOAT SWITCH

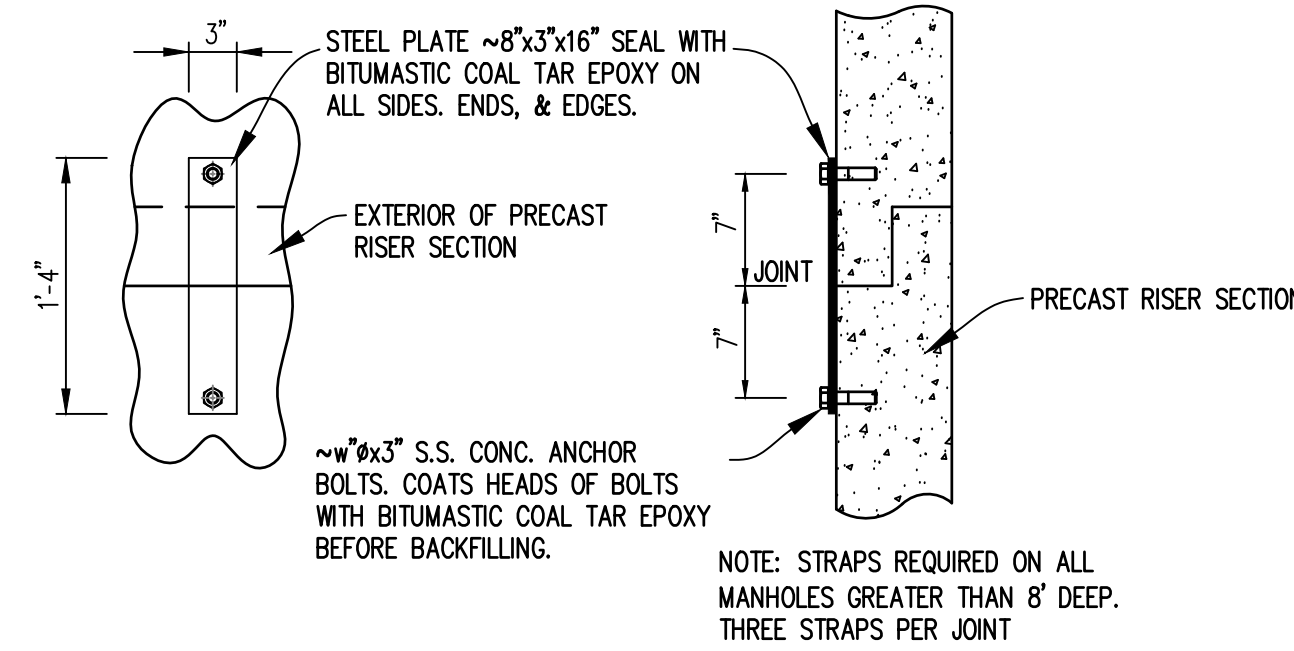


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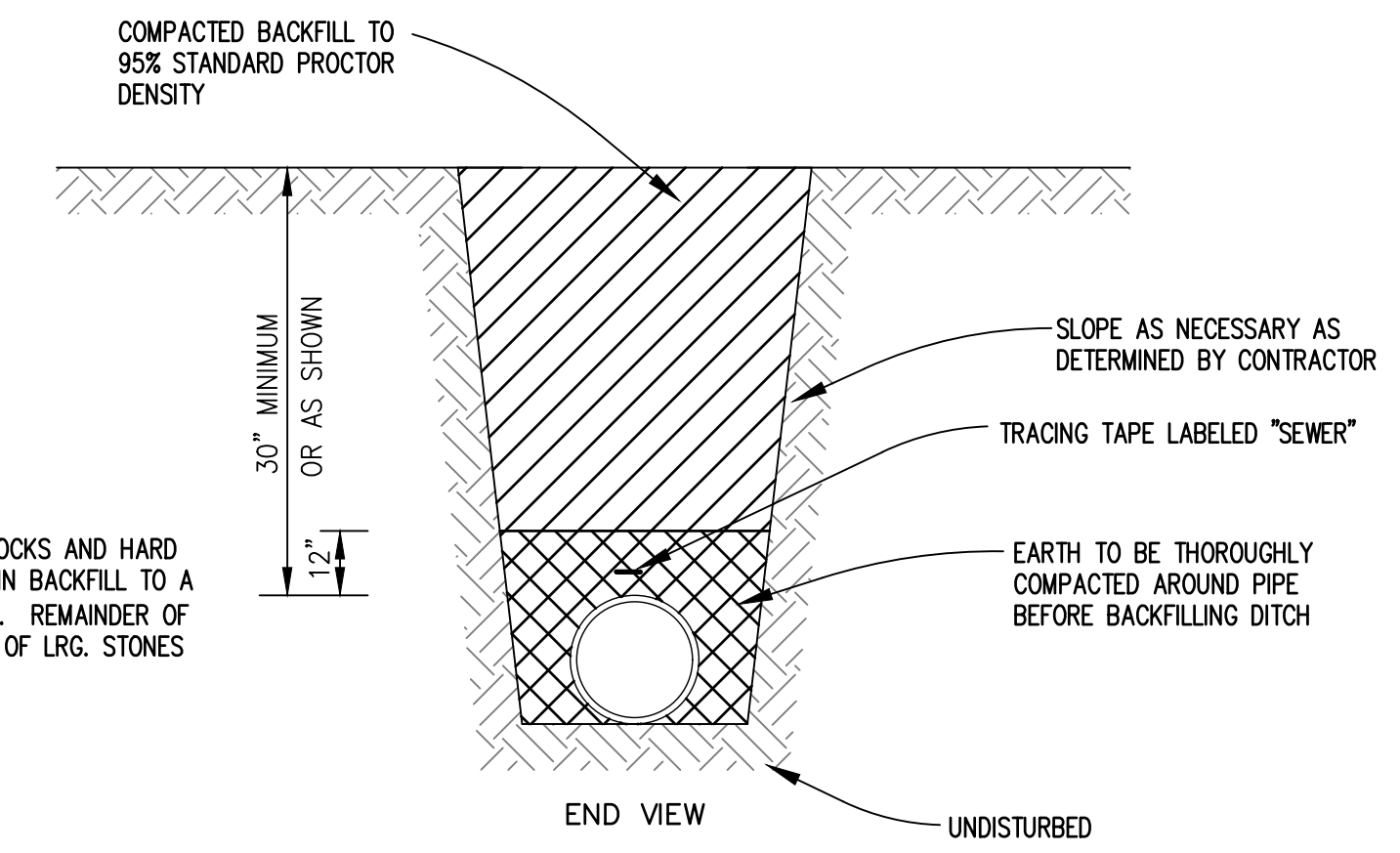
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Project No.	7223004.4
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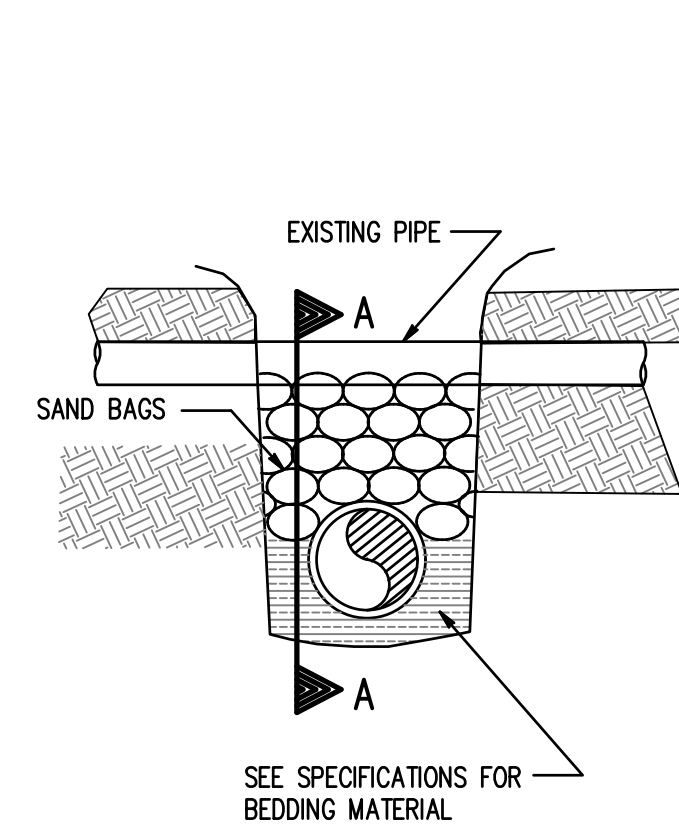
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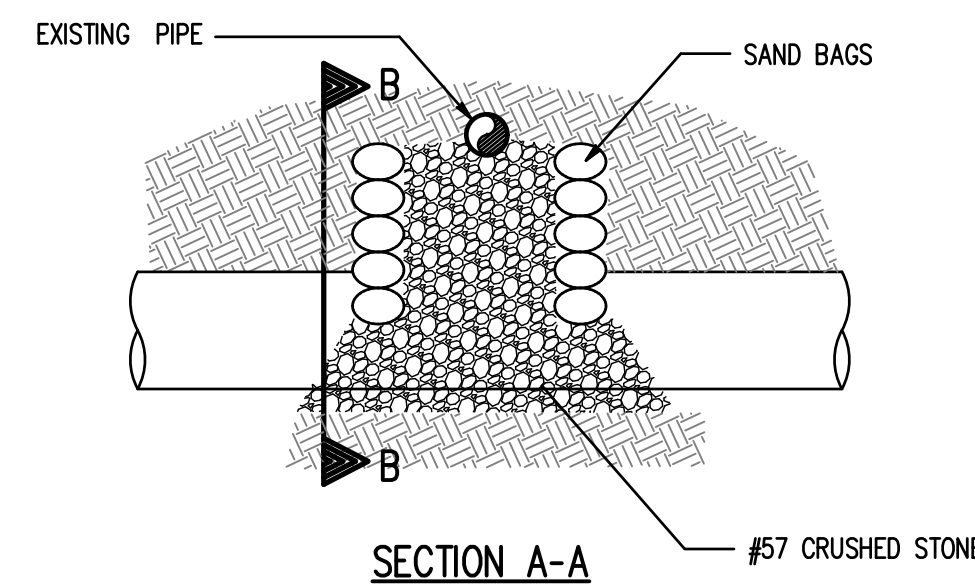
MANHOLE ANCHOR STRAPS
SCALE: N.T.S.



TYP. PRESSURE PIPE INSTALLATION
SCALE: N.T.S.



SECTION B-B



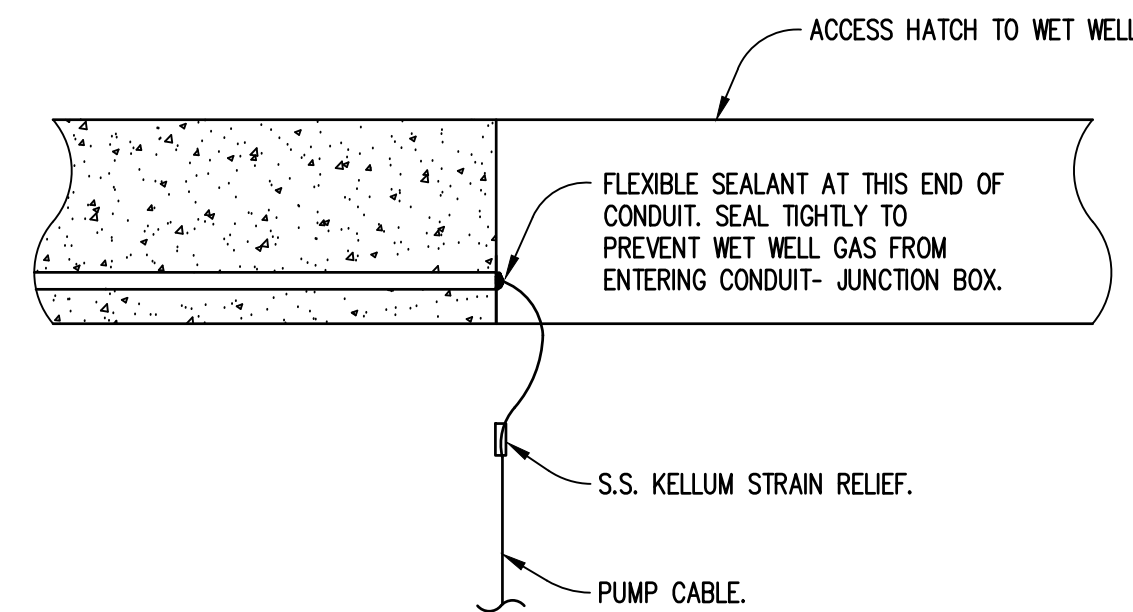
SECTION A-A

TYPICAL METHOD OF PROTECTING UTILITIES OR OTHER PIPE CROSSINGS WHERE NOT LOCATED UNDER PAVING

ALL METHODS RESPONSIBILITY OF CONTRACTOR

EXISTING UTILITY PROTECTION

SCALE N.T.S.

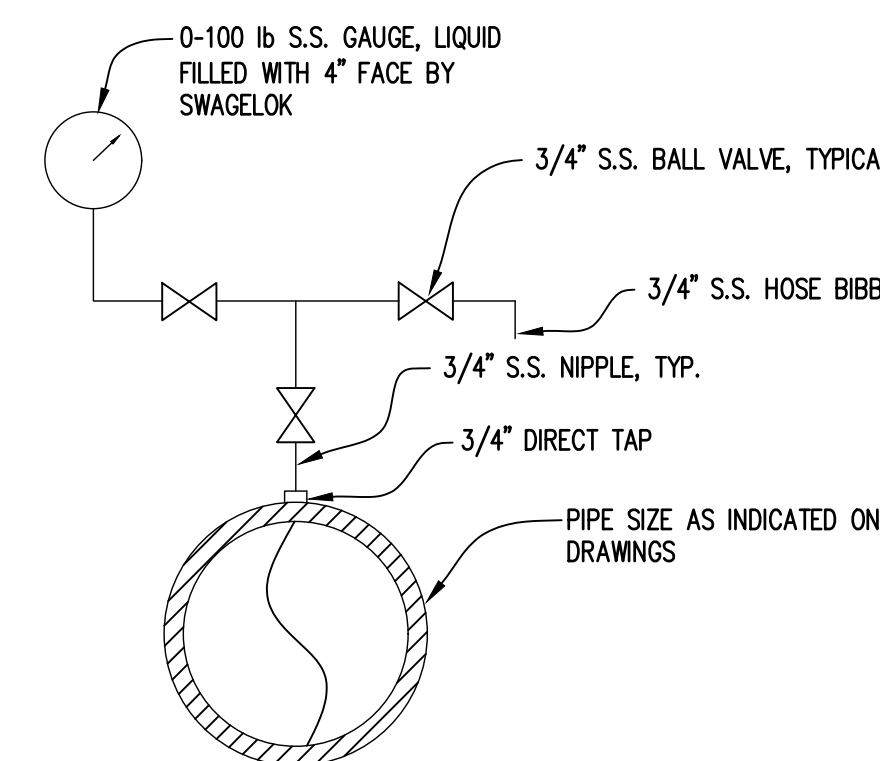


PUMP CABLE ATTACHMENT DETAIL

SCALE: N.T.S.

NOTES:

1. PROPERLY SUPPORT CABLE(S) EXITING CONDUIT SUCH THAT CABLE DOES NOT GET DAMAGED.
2. END OF CONDUIT SHOULD BE INSTALLED WITH FITTING THAT HAS SMOOTH EDGES.

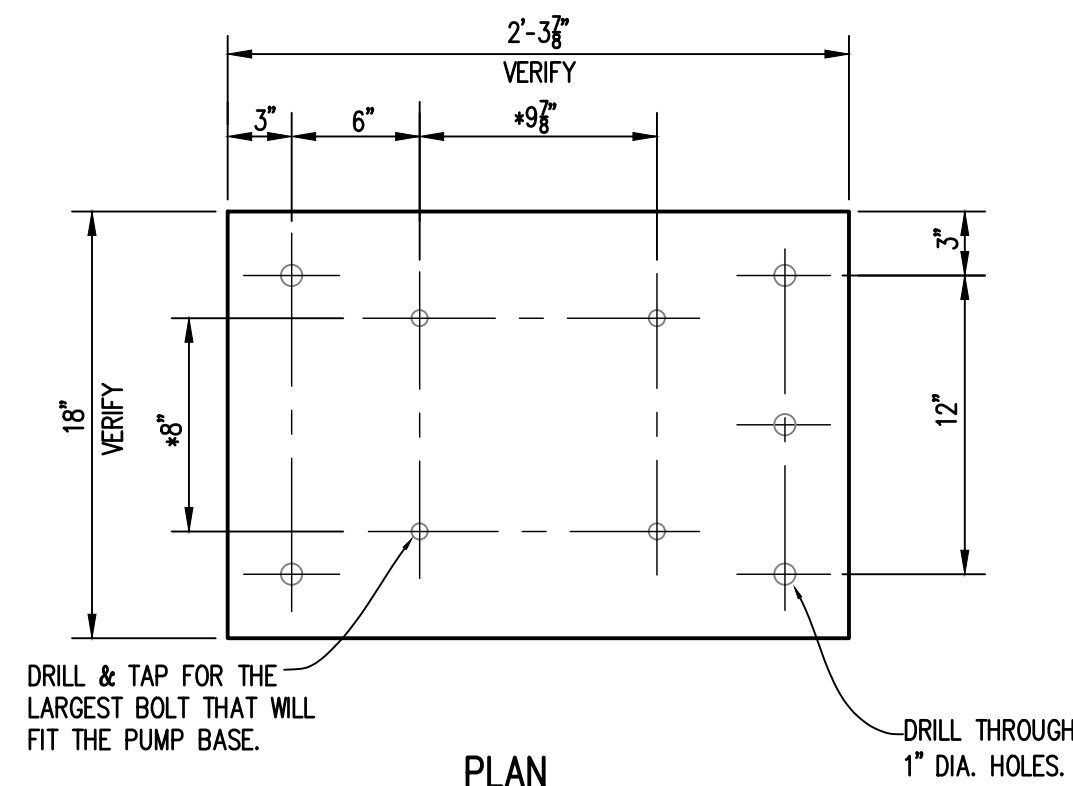


PRESSURE GAUGE ASSEMBLY

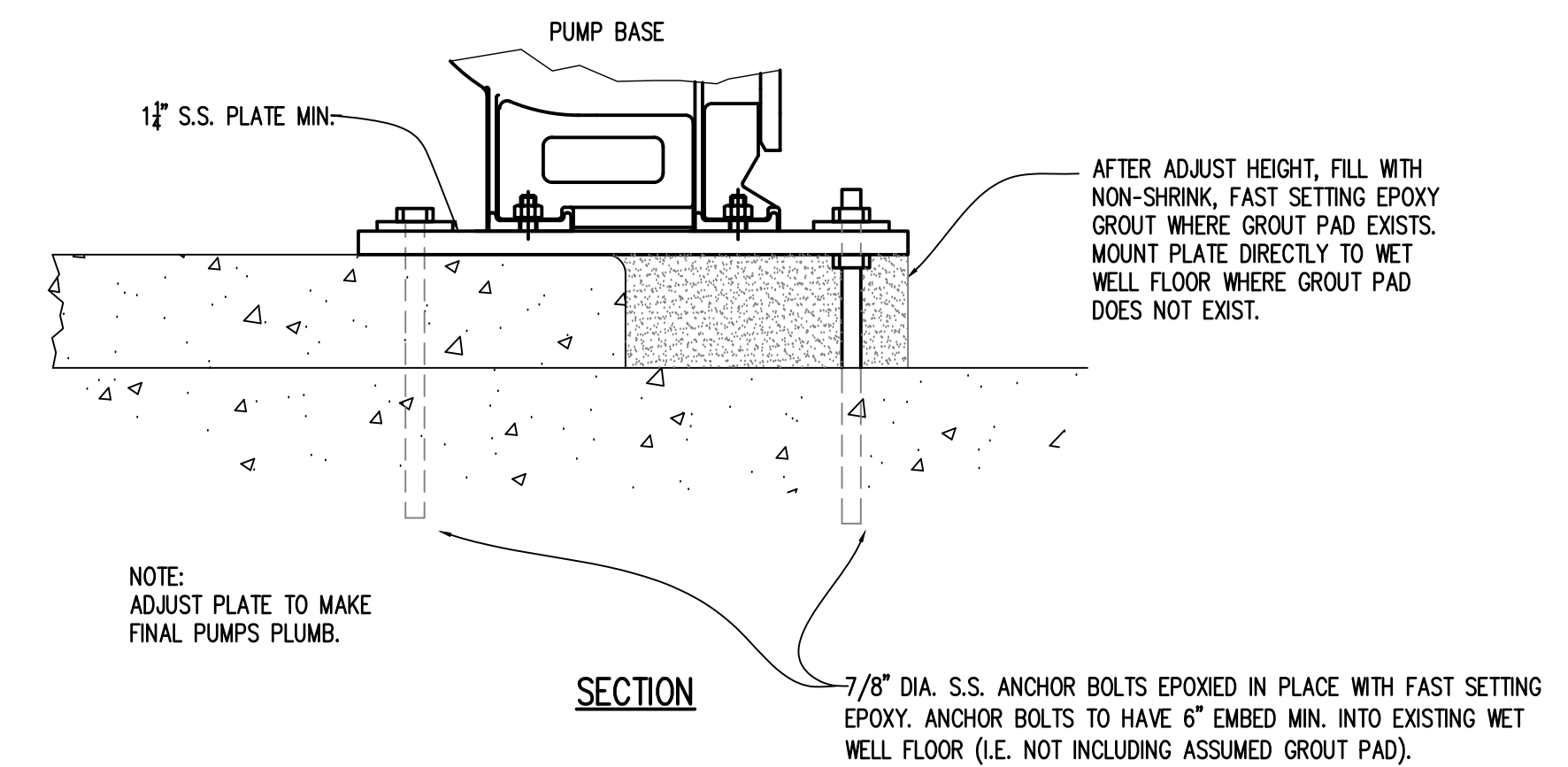
SCALE: N.T.S.

PUMP BASE NOTES:

1. * DENOTES BOLT HOLES FOR PUMP BASE ATTACHMENT (VERIFY).
2. PUMP BASE ELBOW IS TO BE ATTACHED TO STAINLESS STEEL PLATE. CONTRACTOR TO MATCH PUMP BASE TO STEEL PLATE AS SHOWN. CONTRACTOR MAY MAKE THE PLATE THICKER AND LARGER THAN SHOWN TO ACCOMMODATE THE NEW PUMP AND PUMP BASE.
3. ALL BOLTS TO BE HIGH GRADE S.S. THREADED BOLTS TO BE S.S. & HAVE THREAD LOCK ADHESIVE.
4. BASE PLATE MAY BE FABRICATED IN FIELD TO SUIT. CONTRACTOR IS TO FIELD VERIFY ALL DIMENSIONS BEFORE ORDERING MATERIAL.
5. ATTACH PUMP BASE TO PLATE PRIOR TO FINAL SET. VERIFY PUMP ATTACHMENT BOLTS DO NOT INTERFERE WITH EXISTING CONCRETE PAD. USE SS BOLTS.



PLAN



STAINLESS STEEL BASE PLATE FOR PUMP BASE

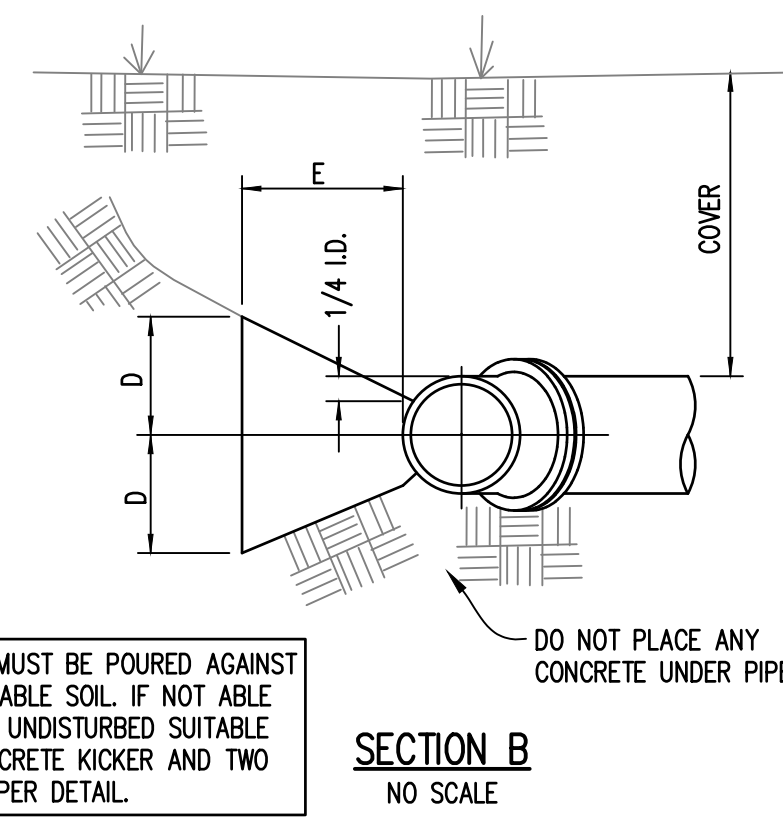
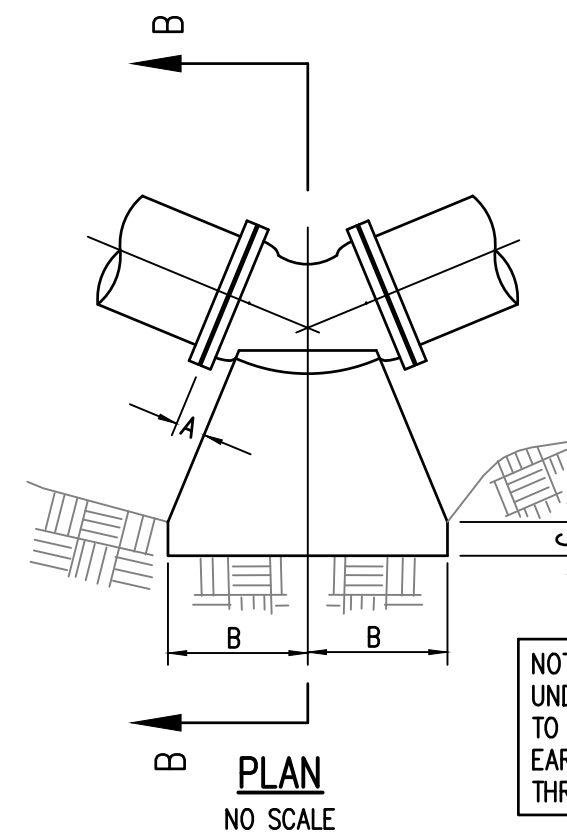
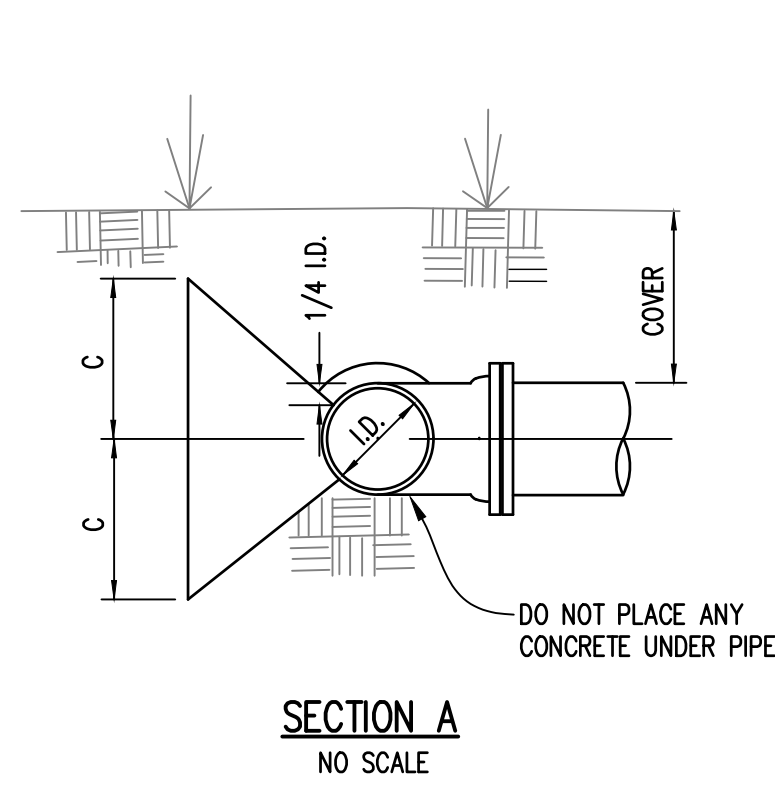
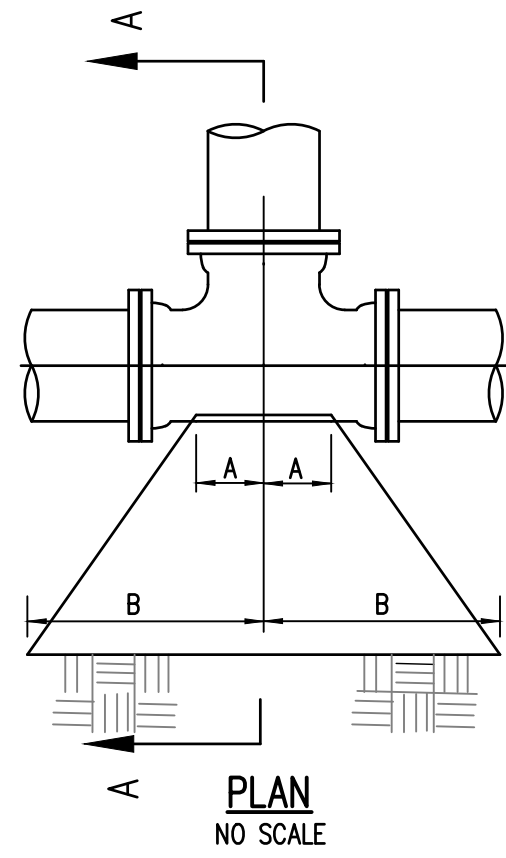
SCALE N.T.S.

NOTE: PUMP BASE PLATE IS ONLY REQUIRED IF NECESSARY TO AVOID CONFLICT WITH EXISTING PUMP BASE ELBOW ANCHORS.



BAR = 1"

Drawing	Title		Sheet	
	DETAILS			
	BID SET			
	Project No. 7223004.4	Date 3 - 2024		Scale 1/2" = 1'
				5



NOTE: CONCRETE MUST BE POURED AGAINST UNDISTURBED SUITABLE SOIL. IF NOT ABLE TO POUR AGAINST UNDISTURBED SUITABLE EARTH, POUR CONCRETE KICKER AND TWO THRUST COLLARS PER DETAIL.

- GENERAL NOTES:
- GENERAL DIMENSIONS SHALL BE CONSIDERED AS MINIMUMS. CONTRACTOR SHALL BE RESPONSIBLE FOR INCREASING DIMENSIONS AS REQUIRED FOR ACTUAL FIELD CONDITIONS ENCOUNTERED. CONTRACTOR TO ENSURE ALL THRUST RESTRAINT IS ADEQUATE.
 - ALL CONCRETE FOR THRUST RESTRAINT SHALL BEAR AGAINST FIRM UNDISTURBED SOILS.
 - CONTRACTOR SHALL WRAP ALL ACCESSORIES BOLTS, NUTS, CONNECTIONS, ETC. IN PLASTIC SUCH THAT THEY CAN BE REMOVED WITHOUT THE NEED FOR CONCRETE REMOVAL.
 - UNLESS INDICATED OTHERWISE IN PLANS, ALL FITTINGS SHALL BE MJ WITH RESTRAINING FOLLOWER GLANDS. RESTRAINING FOLLOWER GLANDS SHALL BE MEGA-LUG OR EQUAL. RETAINER GLANDS NOT ALLOWED.

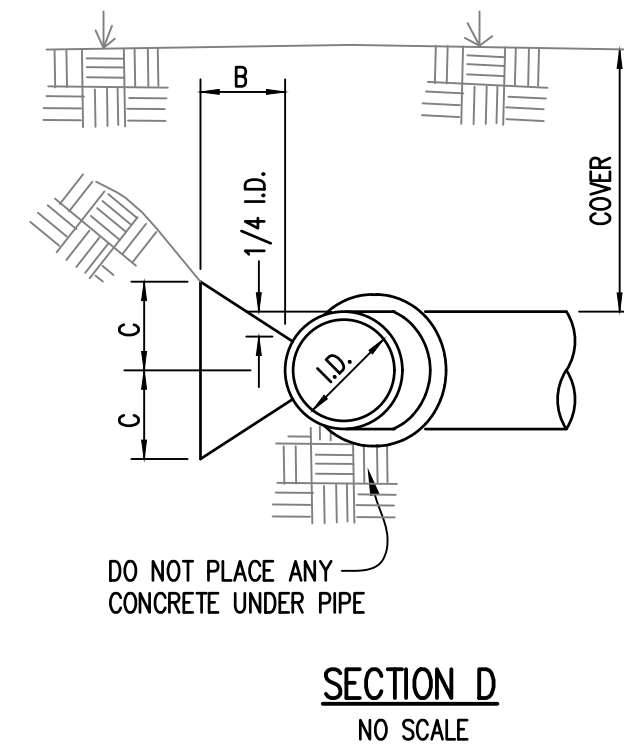
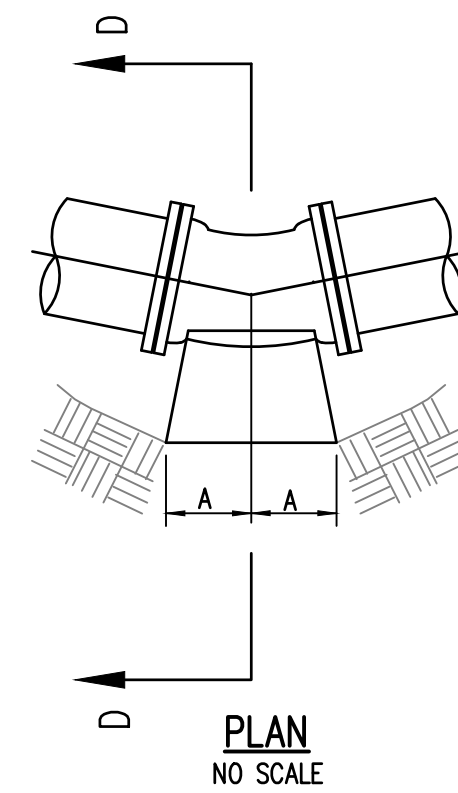
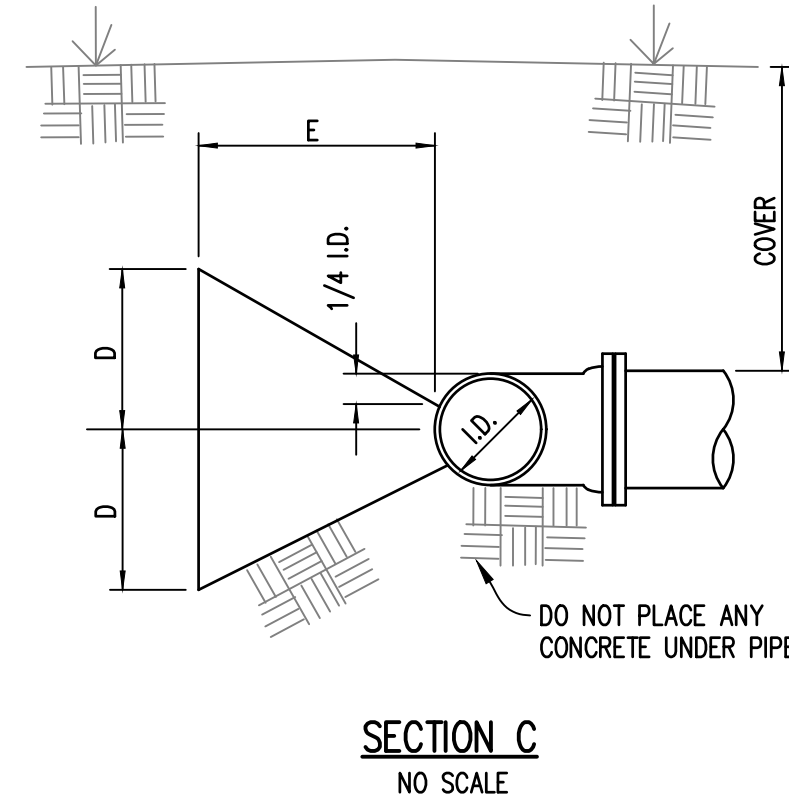
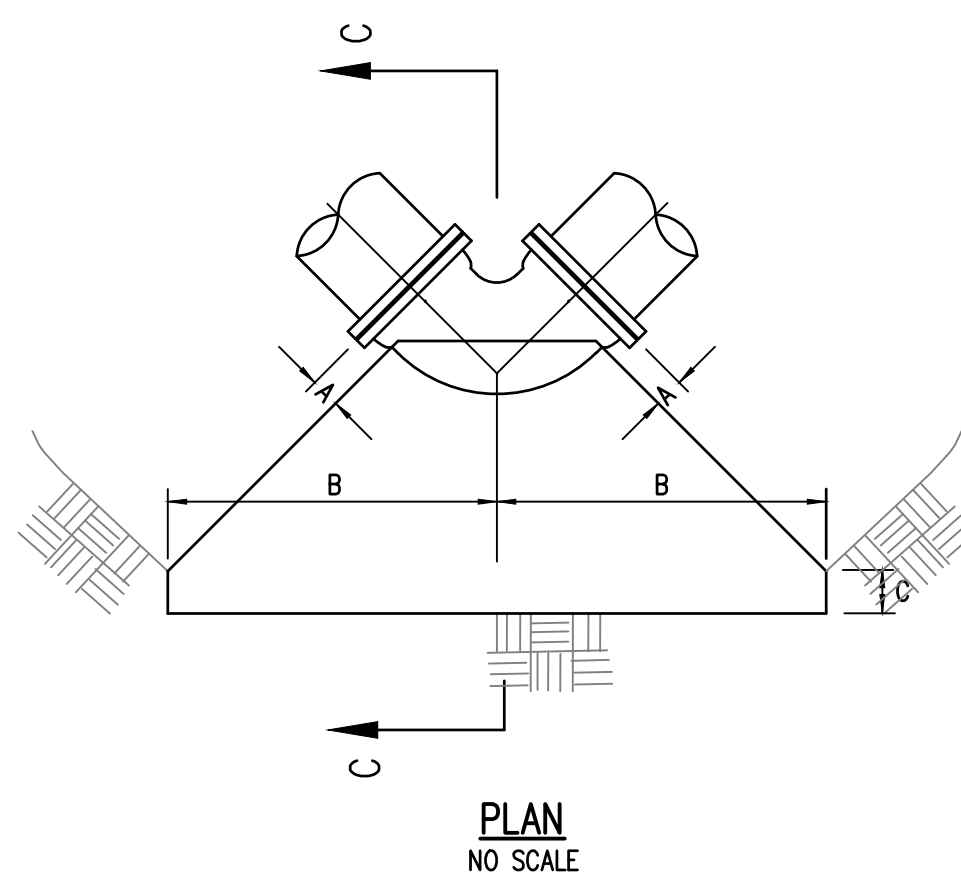
TYPICAL CONCRETE BRACING FOR TEES

PIPE DIA.	A	B	C	MIN. COVER
4"	5"	1'-0"	1'-0"	2'-6"
6"	6"	1'-0"	1'-0"	2'-6"
8"	8"	1'-6"	1'-6"	2'-6"
10"	10"	2'-0"	2'-0"	3'-0"
12"	10"	2'-0"	2'-0"	3'-0"
14"	1'-0"	2'-6"	2'-6"	3'-0"
16"	1'-0"	3'-0"	3'-0"	3'-0"
18"	1'-2"	3'-6"	3'-6"	3'-6"
20"	1'-4"	3'-6"	3'-6"	3'-6"
24"	1'-7"	4'-6"	3'-6"	3'-6"

TYPICAL CONCRETE BRACING FOR 45° BENDS

PIPE DIA.	A	B	C	D	E	MIN. COVER
4"	4 1/2"	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"
6"	4 1/2"	1'-0"	9"	1'-0"	1'-2"	2'-6"
8"	4 1/2"	1'-6"	3"	1'-0"	1'-2"	2'-6"
10"	4 1/2"	1'-6"	-	1'-6"	1'-6"	3'-0"
12"	6"	2'-0"	-	2'-0"	2'-0"	3'-0"
14"	6"	2'-6"	-	2'-0"	2'-0"	3'-0"
16"	6"	2'-6"	-	2'-6"	2'-0"	3'-0"
18"	6"	3'-0"	-	2'-6"	2'-6"	3'-6"
20"	6"	3'-0"	-	3'-0"	2'-6"	3'-6"
24"	7"	3'-6"	-	3'-6"	2'-10"	3'-6"

NOTE: ENSURE ALL THRUST COLLARS ARE POURED AGAINST FIRM UNDISTURBED SOILS. HAND EXCAVATED AREA OCCUPIED BY CONCRETE, TYPICAL WHEN IN ROCK, CONTRACTOR SHALL REMOVE ROCK SUFFICIENTLY TO KEY IN THRUST COLLARS. COORDINATE WITH FIELD ENGINEER.

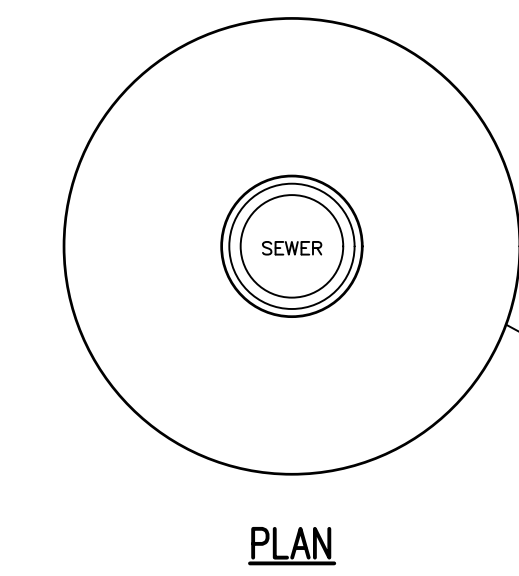


TYPICAL CONCRETE BRACING FOR 90° BENDS

PIPE DIA.	A	B	C	D	E	MIN. COVER
4"	4-1/2"	1'-0"	1'-8"	1'-0"	2'-0"	2'-6"
6"	4-1/2"	1'-6"	1'-7"	1'-0"	2'-0"	2'-6"
8"	4-1/2"	2'-0"	1'-6"	1'-6"	2'-6"	2'-6"
10"	4-1/2"	2'-0"	1'-1"	2'-0"	2'-6"	3'-0"
12"	4-1/2"	2'-6"	1'-0"	2'-6"	2'-6"	3'-0"
14"	6"	3'-0"	1'-2"	2'-6"	2'-6"	3'-0"
16"	6"	3'-6"	1'-0"	3'-0"	2'-6"	3'-0"
18"	6"	4'-0"	10"	3'-6"	3'-0"	3'-6"
20"	6"	4'-6"	11"	3'-6"	3'-0"	3'-6"
24"	7"	5'-6"	8"	3'-6"	3'-0"	3'-6"

TYPICAL CONCRETE BRACING FOR 11 1/4° & 22 1/2° BENDS

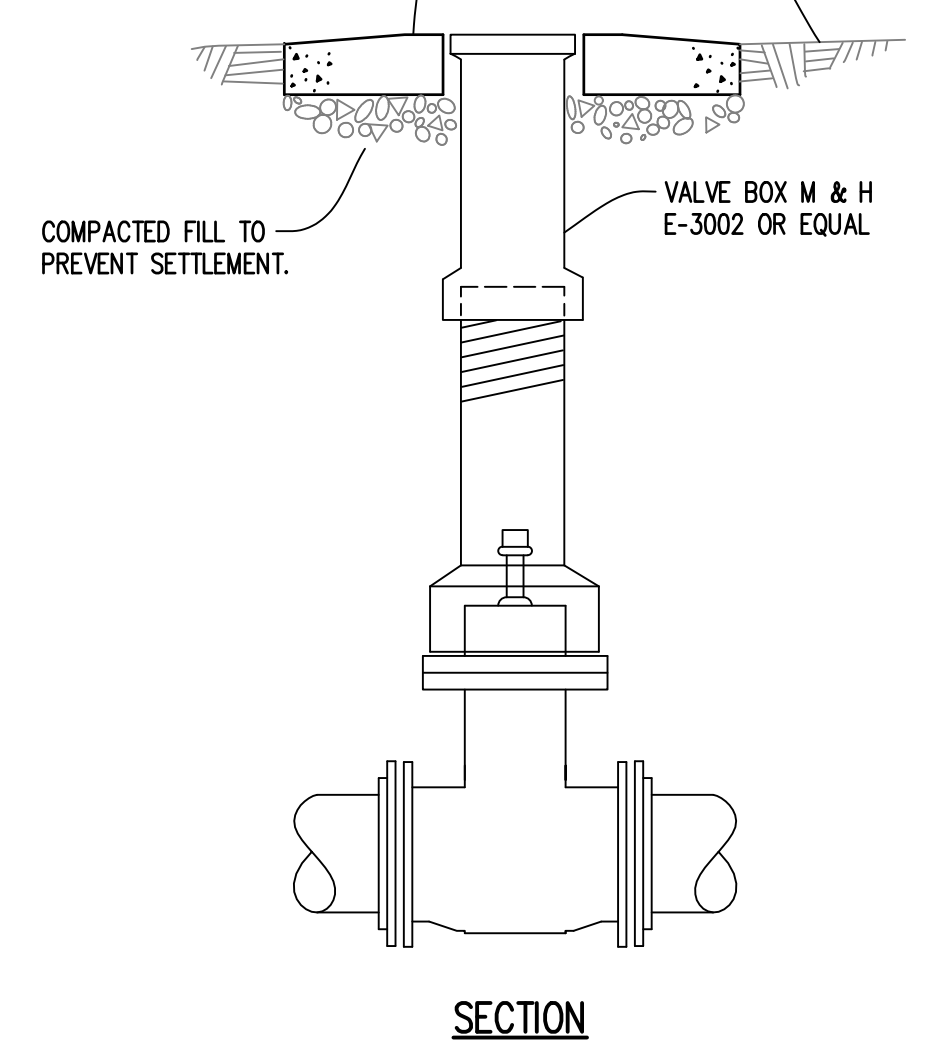
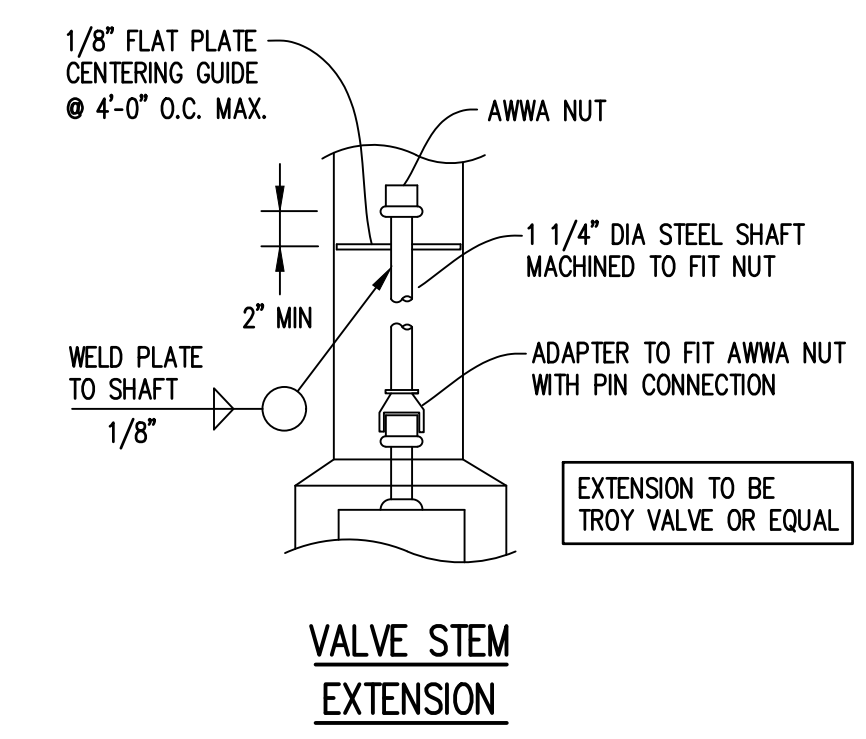
PIPE DIA.	22 1/2° BENDS				11 1/4° BENDS			
	A	B	C	MIN. COVER	A	B	C	MIN. COVER
4"	6"	1'-0"	6"	2'-6"	6"	1'-0"	6"	2'-6"
6"	1'-0"	1'-0"	6"	2'-6"	1'-0"	1'-0"	6"	2'-6"
8"	1'-0"	1'-0"	1'-0"	2'-6"	1'-0"	1'-0"	1'-0"	2'-6"
10"	1'-0"	1'-6"	1'-0"	3'-0"	1'-0"	1'-0"	1'-0"	3'-0"
12"	1'-6"	2'-0"	1'-0"	3'-0"	1'-0"	1'-6"	1'-0"	3'-0"
14"	1'-6"	2'-0"	1'-6"	3'-0"	1'-6"	1'-6"	1'-0"	3'-0"
16"	2'-0"	2'-0"	1'-6"	3'-0"	1'-6"	1'-6"	1'-0"	3'-0"
18"	2'-0"	2'-6"	2'-0"	3'-6"	1'-6"	2'-0"	1'-6"	3'-6"
20"	2'-6"	2'-6"	2'-0"	3'-6"	1'-6"	2'-0"	1'-6"	3'-6"
24"	2'-6"	3'-0"	2'-6"	3'-6"	2'-0"	2'-0"	2'-0"	3'-6"



16" CIRCULAR PRE-POURED LIGHTWEIGHT CONCRETE VALVE BOX PAD. PROVIDED BY CROSS CONNECTION OF LEEDS, ALA. OR EQUAL.

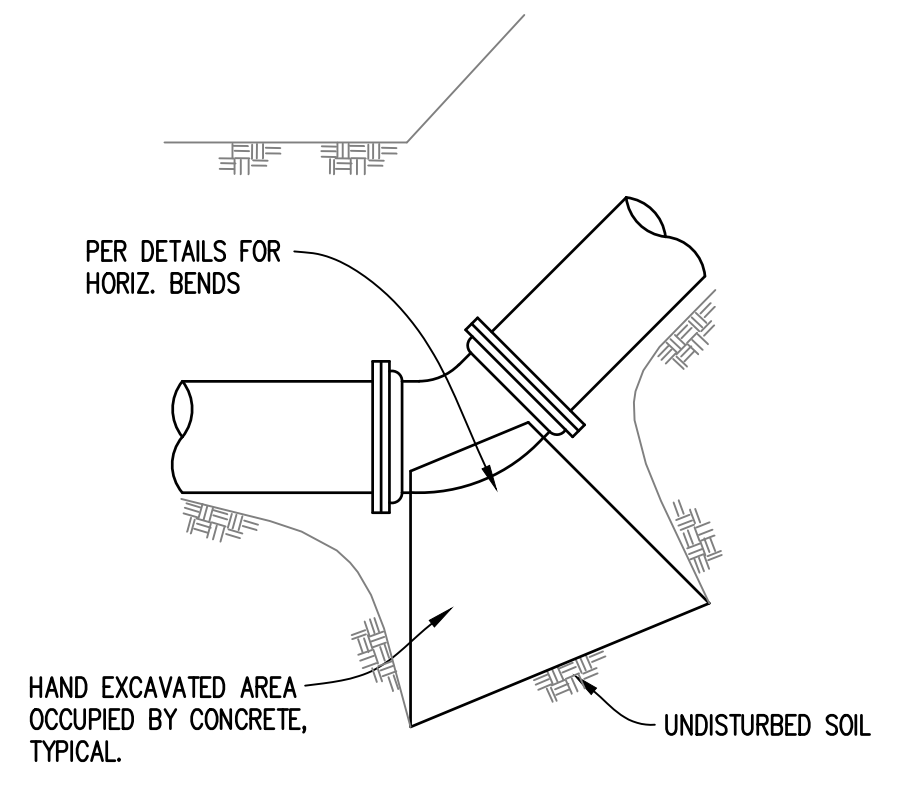
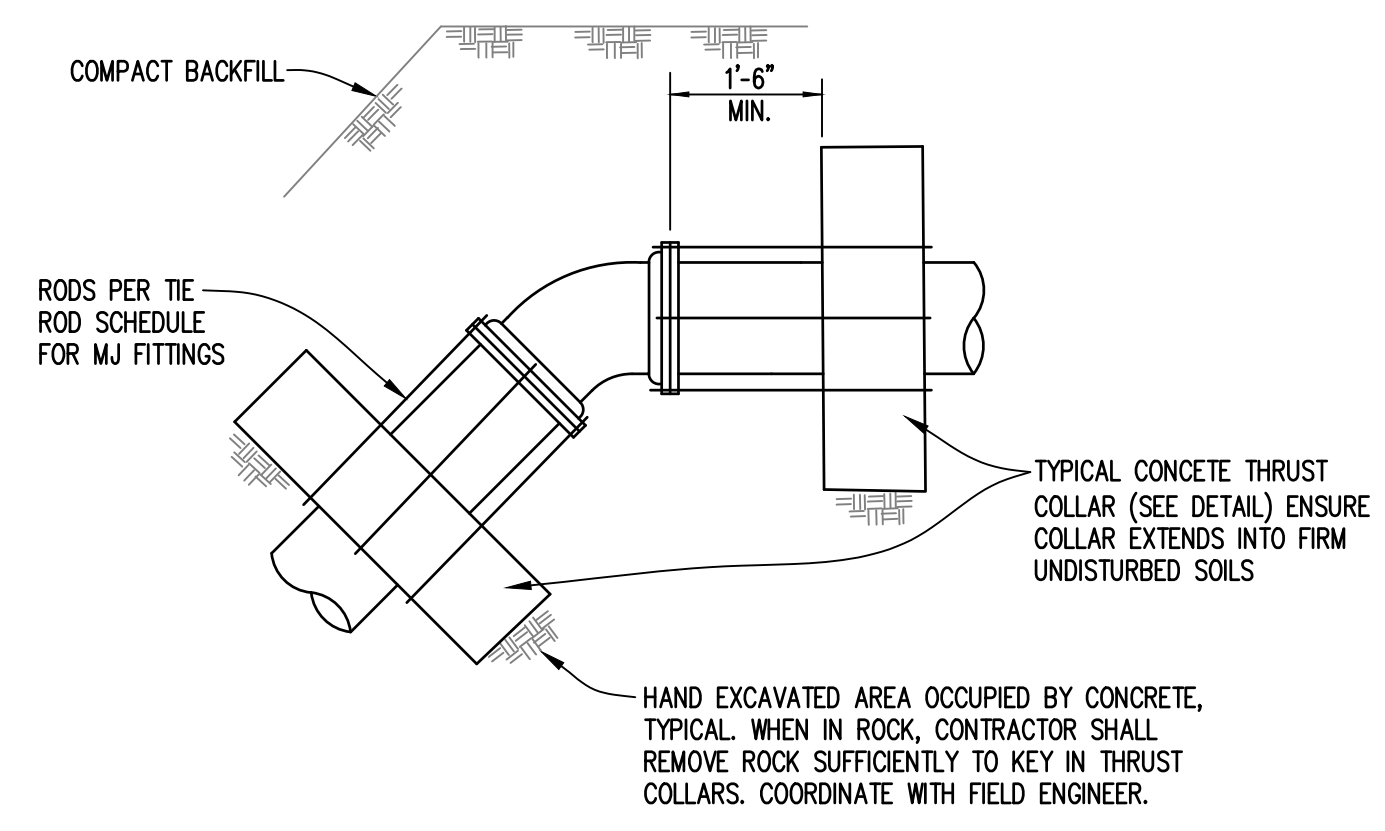
CONTRACTOR SHALL PROVIDE GRASSING, MULCH, LANDSCAPING, ETC. TO MATCH SURROUNDING AREA.

NOTE: VALVE STEM EXTENSION REQUIRED WHERE DEPTH TO OPERATE EXCEEDS 4'-0". FINAL DEPTH OF OPERATOR NUT BELOW FINAL GRADE SHALL NOT EXCEED 4'-0".



TYPICAL CONCRETE KICKER DETAILS

SCALE: N.T.S.



CONCRETE BRACING FOR VERTICAL BENDS DETAIL

SCALE: N.T.S.



Title		DETAILS		BID SET	
Drawing	Project No. 7223004.4	Date	3 - 2024	Scale	N.T.S.
Sheet					6

BMP GENERAL NOTES:

THE FOLLOWING REQUIREMENTS ARE TO BE CONSIDERED MINIMUM STANDARDS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS, CODES AND REGULATIONS. CONTRACTOR SHALL NOTE THAT THE PROJECT IS LOCATED WITHIN THE ENVIRONMENTALLY SENSITIVE CANAHA RIVER WATERSHED. THE CONTRACTOR SHALL OBTAIN AN NPDES PERMIT FOR THE PROPOSED WORK AS REQUIRED BY THE ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (ADEM). BY BIDDING THE PROJECT, THE CONTRACTOR IS CERTIFYING THAT IF AWARDED THE CONTRACT, HE WILL BE THE SOLE PERMITEE ON THIS PERMIT AND THAT HE SHALL INDEMNIFY THE OWNER AGAINST AND SHALL BE SOLELY RESPONSIBLE FOR ANY FINES OR MONETARY DAMAGES ASSOCIATED WITH STORMWATER RUNOFF AND CONTROL.

1. THE CONTRACTOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES (BMP'S) FOR THE PREVENTION AND CONTROL OF NONPOINT SOURCES OF POLLUTANTS DURING AND AFTER PROJECT IMPLEMENTATION. THE CONTRACTOR, AT A MINIMUM, MUST IMPLEMENT BMP'S AS PROVIDED IN THE ALABAMA HANDBOOK FOR EROSION CONTROL, SEDIMENT CONTROL & STORMWATER MANAGEMENT ON CONSTRUCTION SITES & URBAN AREAS, AS AMENDED, AND THE EPA STORMWATER POLLUTION PREVENTION FOR CONSTRUCTION ACTIVITIES-DEVELOPING POLLUTION PREVENTION PLANS AND BEST MANAGEMENT PRACTICES, AS AMENDED. THE EROSION CONTROL DEVICES SHOWN ON THIS PLAN ARE A MINIMUM. ADDITIONAL DEVICES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER AS REQ'D TO PREVENT SILTATION, EROSION, & OTHER DEGRADATION OR POLLUTION TO SITE OR ADJACENT PROPERTIES, STREAMS, DITCHES, PUBLIC ROADWAYS, ETC.

2. SITE GRADING SHALL BE MAINTAINED SO THAT NO UPSLOPE DRAINAGE ENTERS EXCAVATED OR DISTURBED AREAS.

3. TO THE EXTENT PRACTICAL, THE CONTRACTOR SHALL SCHEDULE HIS ACTIVITIES TO MINIMIZE THE AMOUNT OF AREA DISTURBED AT ANY ONE TIME.

4. ALL STOCKPILE EXCAVATED MATERIAL SHALL BE GRASSED OR COVERED WITHIN 72 HOURS OF STOCKPILING. GRASSING AND FERTILIZATION OF STOCKPILED SOILS SHALL BE AS PER THE ALABAMA HANDBOOK FOR EROSION CONTROL, SEDIMENT CONTROL & STORMWATER MANAGEMENT ON CONSTRUCTION SITES & URBAN AREAS. SEED RATES SPECIFIED IN THE MANUAL SHALL BE DOUBLED.

5. CONTRACTOR SHALL AS A MINIMUM INSPECT STORMWATER CONTROLS ONCE EVERY TWO WEEKS AND FOLLOWING A 1/2" OR GREATER RAINFALL IN ANY 24 HOUR PERIOD. SILT FENCING SHALL ALSO BE CHECKED WHEN WIND GUSTS EXCEED 25 MPH. DEFICIENCIES FOUND IN STORMWATER CONTROLS SHALL BE CORRECTED IMMEDIATELY. THE CONTRACTOR SHALL MAINTAIN A LOG OF ALL INSPECTION ACTIVITIES.

6. THE CONTRACTOR SHALL INSTALL SILT FENCING AROUND THE PROJECT PERIMETER PRIOR TO COMMENCING PROJECT. IN THE EVENT THAT THE PROJECT REQUIRES TEMPORARY CHANNELIZATION OF STORMWATER RUNOFF, THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN APPROPRIATE BMP CONTROLS (SETTLING BASINS, CHECK DAMS, ETC.)

7. PERMANENT VEGETATION OF ALL DISTURBED AREAS IS REQUIRED. ONCE ALL LAND DISTURBANCES HAVE CEASED & ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED, EROSION CONTROL DEVICES SHALL BE REMOVED.

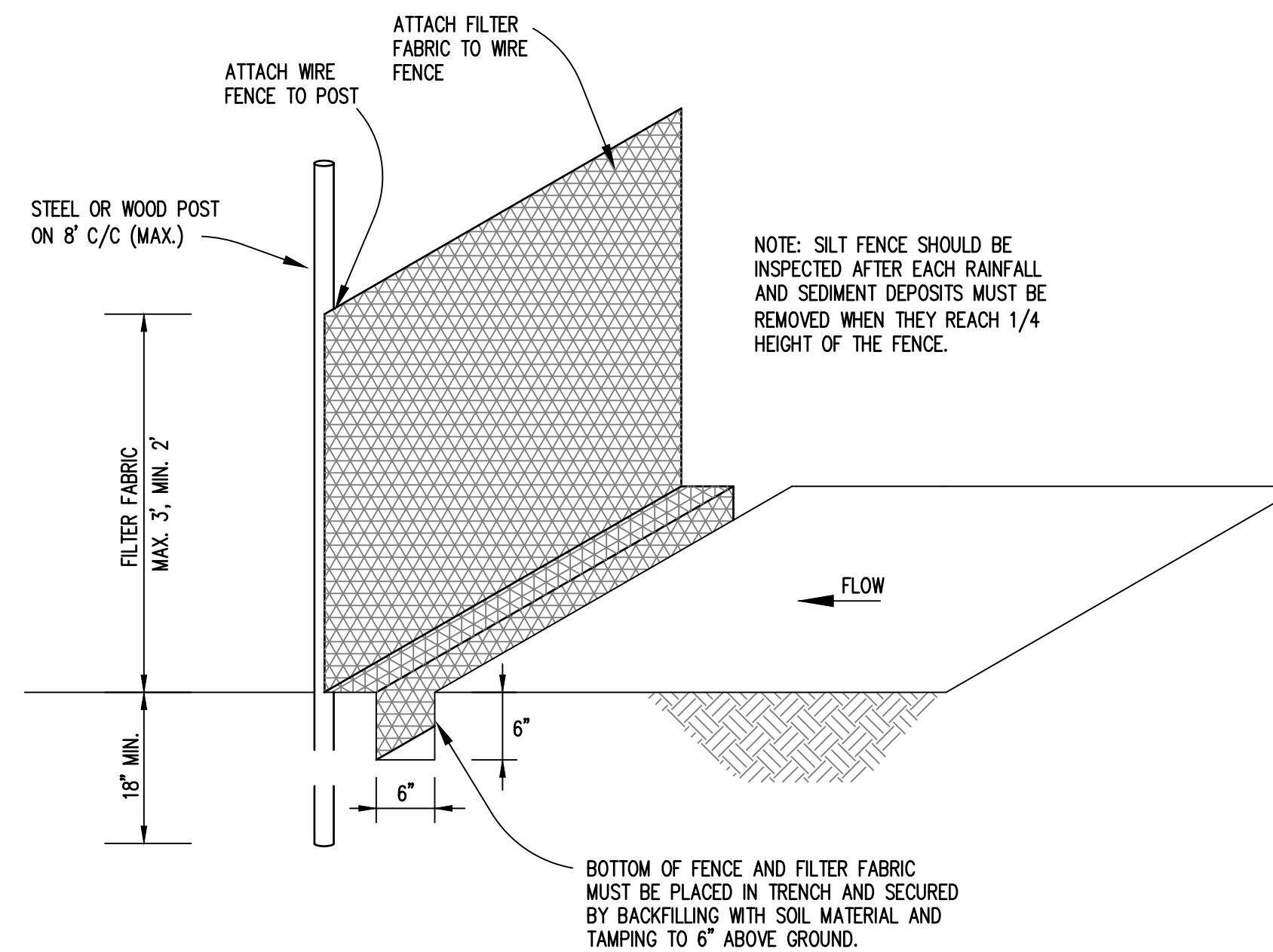
8. THE CONTRACTOR SHALL REMOVE ANY SEDIMENT TRACKED ON PUBLIC ROADWAYS IMMEDIATELY.

9. ALL DISTURBED AREAS LEFT INACTIVE FOR LONGER THAN 13 DAYS SHALL BE TEMPORARILY GRASSED OR COVERED TO PREVENT EROSION.

10. PERMANENT TURF REINFORCEMENT MATS ARE REQUIRED ON ALL SLOPES 2:1 OR STEEPER, AS WELL AS ALL DITCH LINES & SIDES.

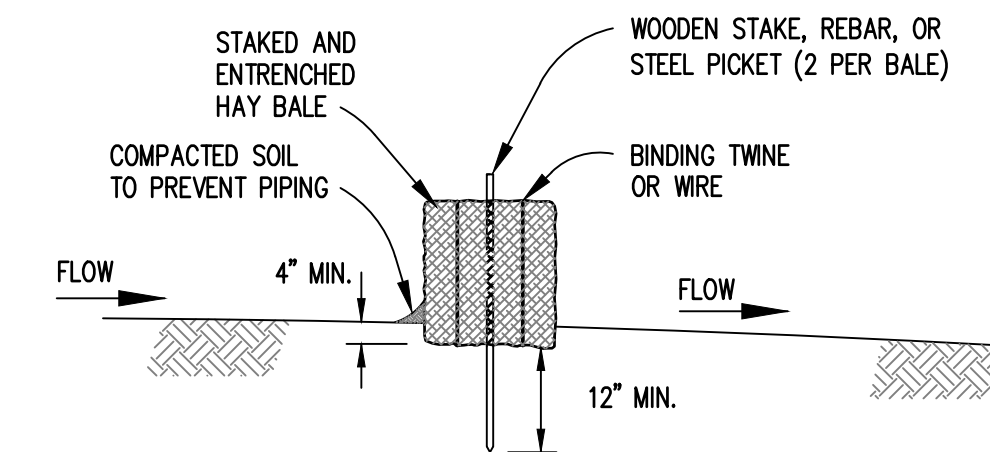
11. BMP MEASURES MAY BE SHOWN OUTSIDE OF CONSTRUCTION LIMITS AND/OR RIGHTS OF WAY FOR CLARITY. CONTRACTOR SHALL NOT INSTALL BMP'S BEYOND PROJECT BOUNDARIES.

12. CONTRACTOR IS RESPONSIBLE FOR THE RENEWAL OF ALL NPDES PERMITS AS REQUIRED FOR THE PROJECT.



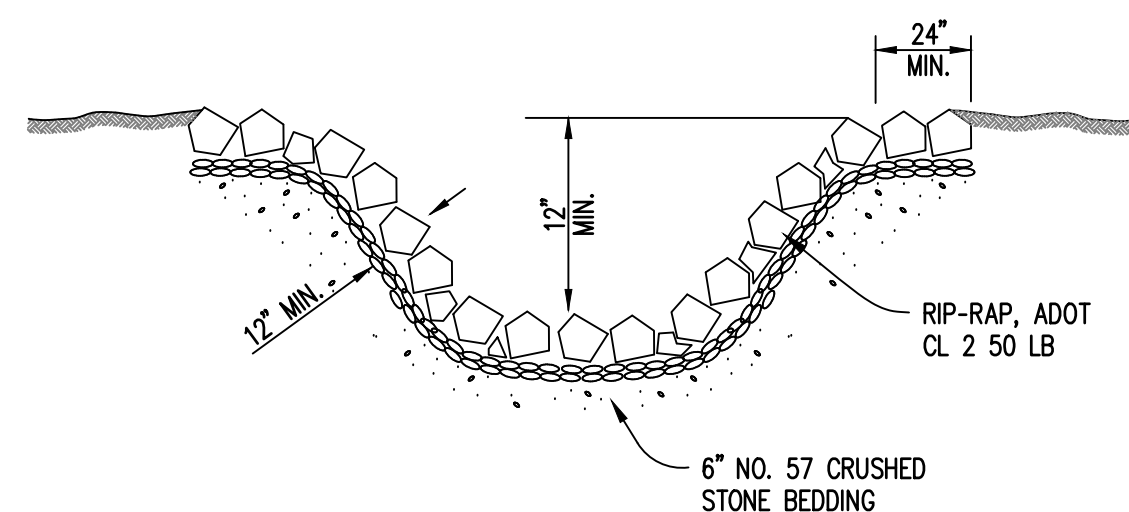
SILT FENCE DETAIL

SCALE: N.T.S.



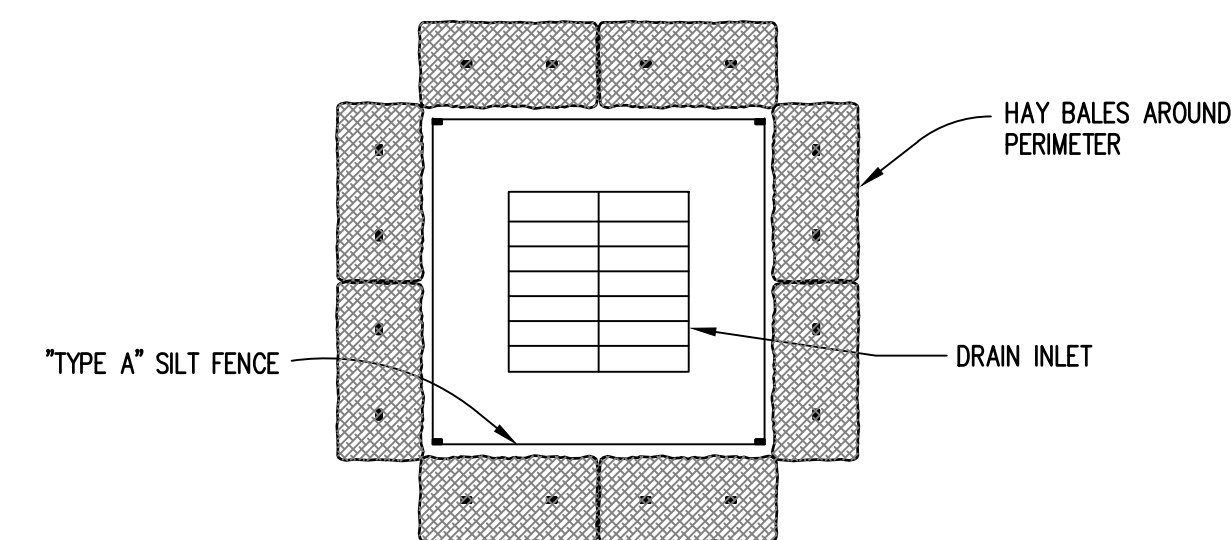
HAY BALE STAKING DETAIL

SCALE: N.T.S.



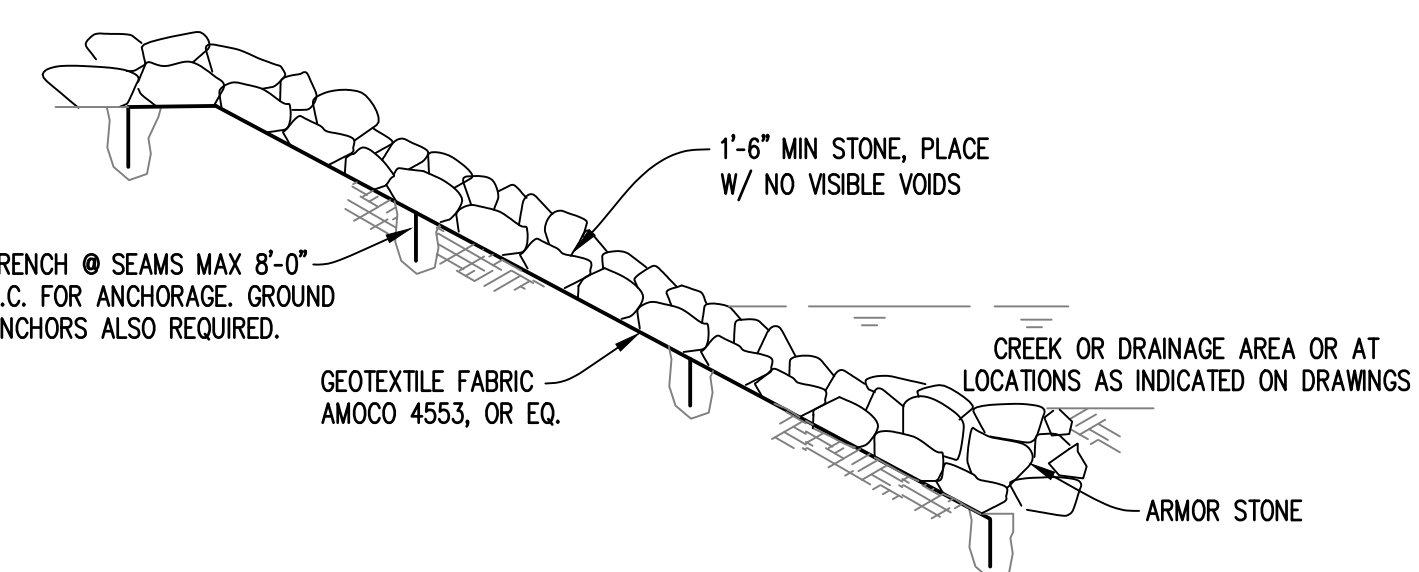
RIP-RAP DITCH SECTION

SCALE: NONE



INLET PROTECTION DETAIL

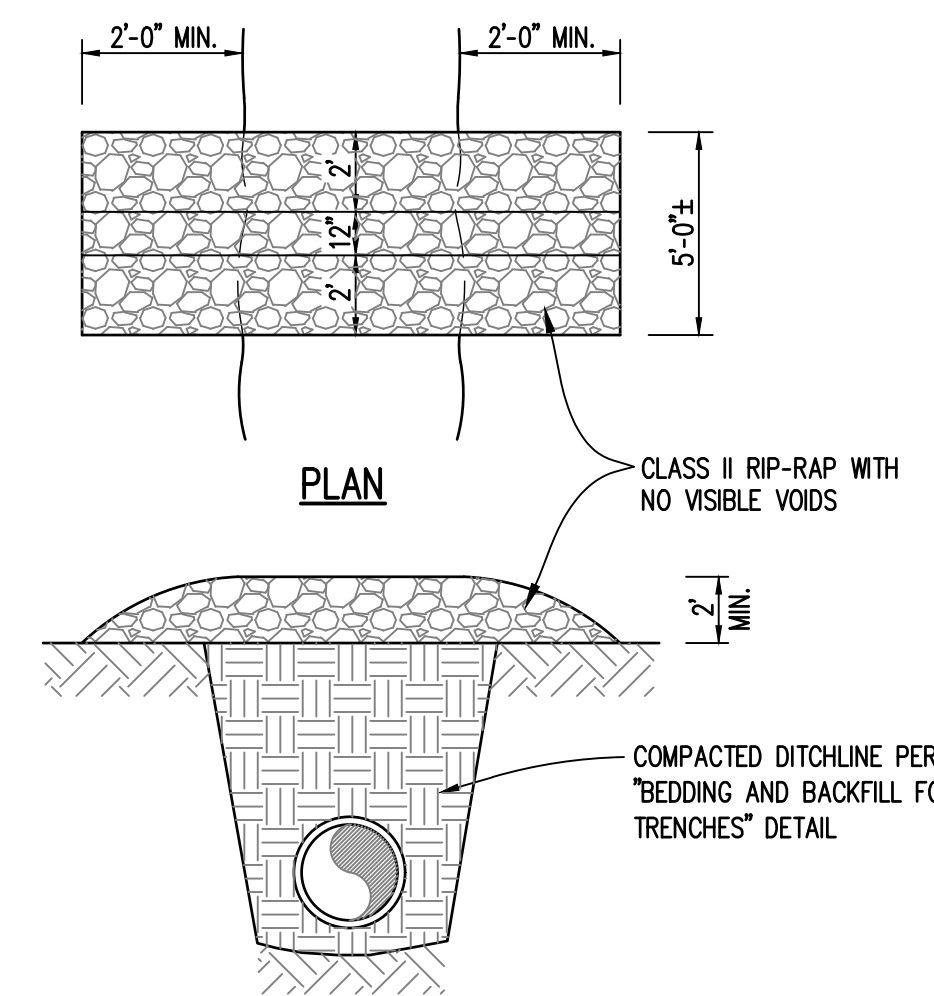
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TYPICAL SLOPE PROTECTION USING RIP-RAP DETAIL

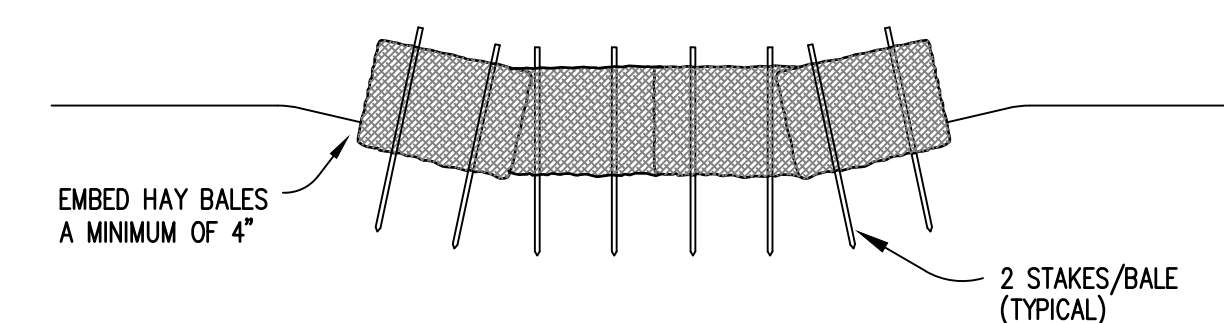
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- NOTES:
1. STONE FOR CHANNEL PROTECTION RIP RAP SHALL BE SELECTED LIMESTONE ROCK CONSISTING OF WELL GRADED STONE WEIGHING FROM 10 POUNDS TO 200 POUNDS EACH WITH AT LEAST 50% WEIGHING OVER 80 POUNDS. BOTH WIDTH AND THICKNESS SHOULD BE 1/3 THE LENGTH FOR EACH STONE. NOT MORE THAN 10% BY TOTAL WEIGHT SHALL WEIGH LESS THAN 10 POUNDS AND NOT MORE THAN 10% BY TOTAL WEIGHT SHALL WEIGH MORE THAN 200 POUNDS.
 2. RIP-RAP ALL DISTURBED AREAS ALONG CREEK BANKS, ANY DRAINAGE AREA WITH SLOPES GREATER THAN 3:1, AND OTHER AREAS AS INDICATED ON THE DRAWINGS.



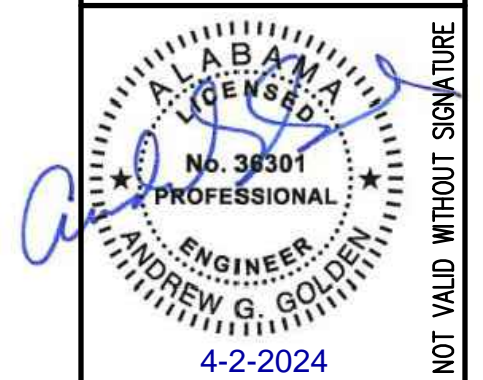
RIP-RAP DITCH CHECK DETAIL

SCALE: N.T.S.



HAY BALE DITCH CHECK DETAIL

SCALE: N.T.S.



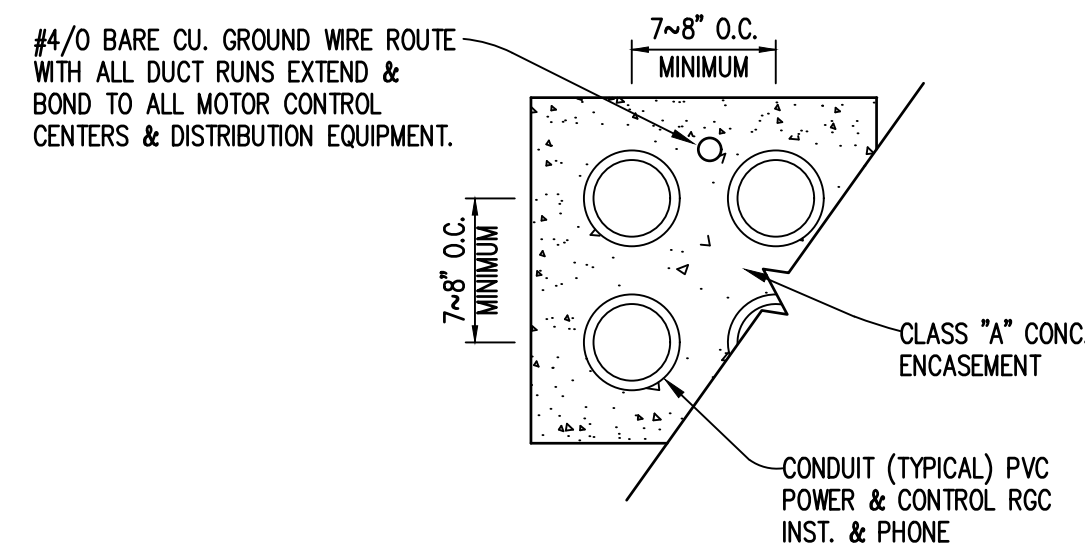
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BAR = 1"

Drawing Project No. 7223004.4	Title DETAILS		Sheet 7
	Date 3 - 2024	Scale N.T.S.	

GENERAL ELECTRICAL, CONTROL, INSTRUMENTATION & SCADA REQUIREMENTS

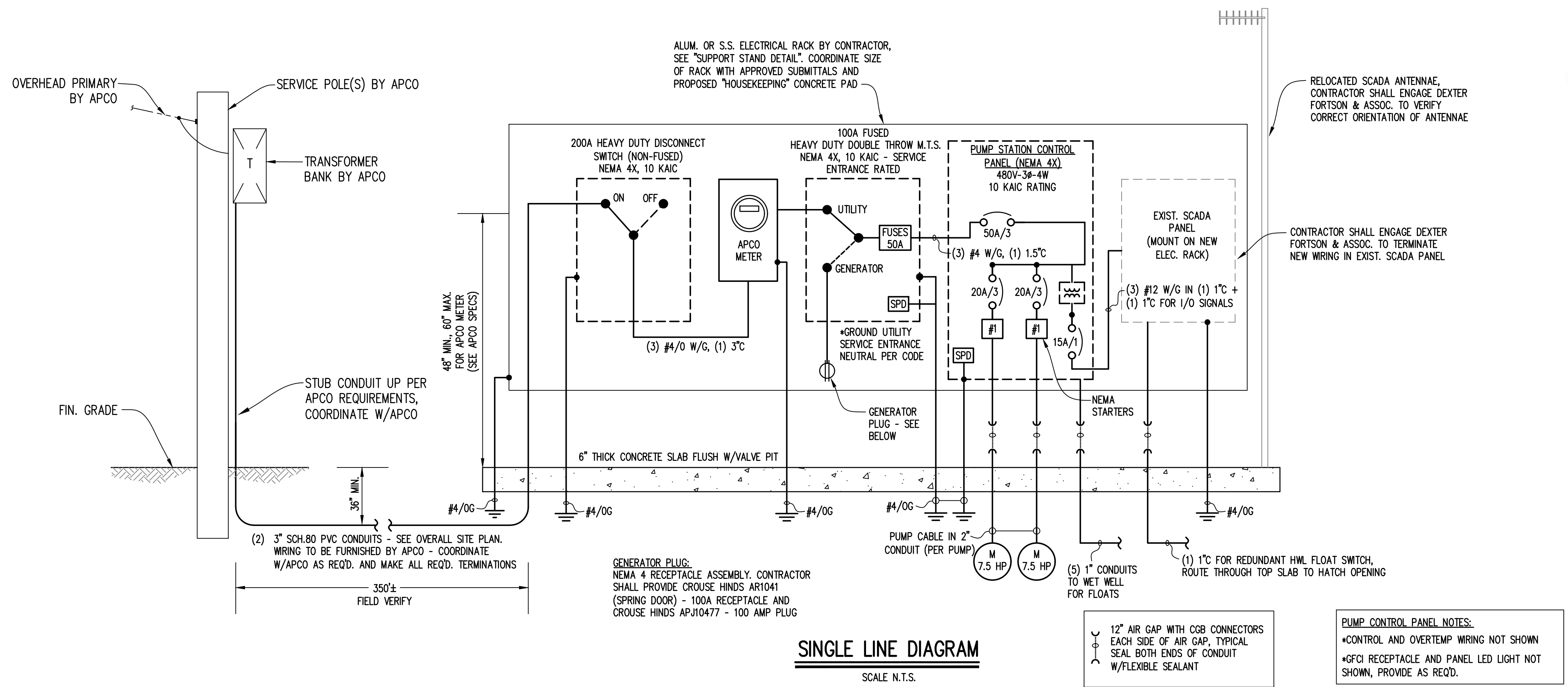
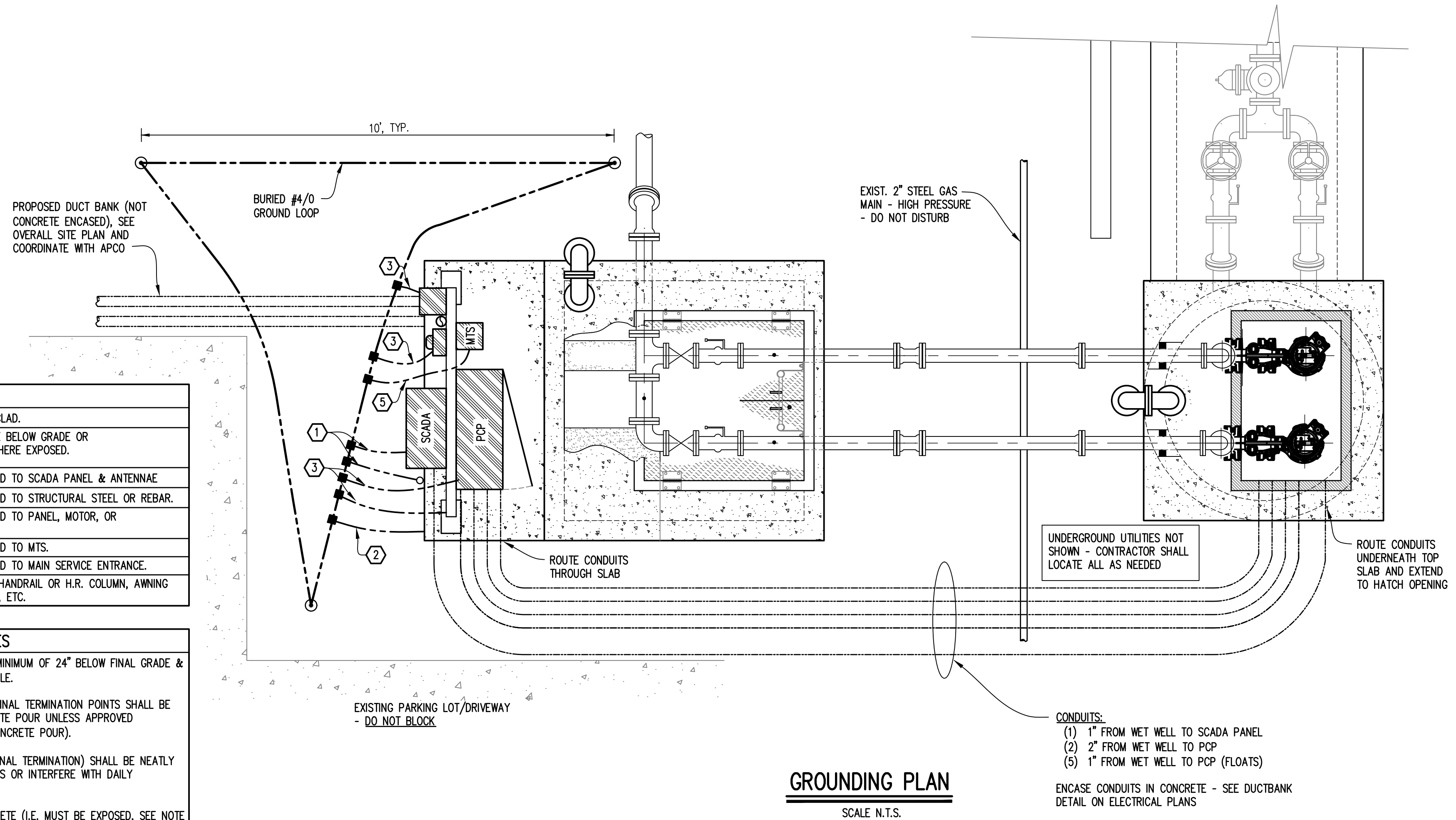
- SAFETY, INCLUDING BUT BY NO MEANS LIMITED TO COORDINATION WITH OTHERS FOR CIRCUITS OR EQUIPMENT THAT IS LIVE OR MAY BECOME LIVE, IS THE RESPONSIBILITY SOLELY OF THE CONTRACTOR. THE OWNER OR THE ENGINEER ARE NOT RESPONSIBLE FOR SAFETY.
- CONTRACTOR SHALL PROVIDE ALL MEANS, METHODS, AND MISCELLANEOUS APPURTENANCES, ETC., AS REQUIRED TO PERFORM AND PROPERLY COMPLETE THE WORK.
- DO ALL WORK IN COMPLIANCE WITH ALL APPLICABLE CODES, LAWS, AND ORDINANCES, THE NATIONAL ELECTRICAL CODE AND THE REGULATIONS OF THE LOCAL UTILITY COMPANIES. OBTAIN AND PAY FOR ANY AND ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES OF INSPECTIONS AND APPROVAL, AND THE LIKE.
- PROVIDE GROUNDING AS REQUIRED BY CODE.
- INSTALL PULL CORD ("PC") IN EMPTY CONDUITS.
- ALL EXPOSED AND/OR VISIBLE CONDUIT, FITTINGS, WIREWAYS, GUTTERS, APPURTENANCES, ETC. SHALL BE ALUMINUM, EXCEPT LOW VOLTAGE CIRCUITS. CONDUIT BETWEEN PANELS MAY BE SEAL TITE FLEX CONDUIT WHERE NECESSARY.
- ALL HANGERS, UNISTRUT, CABLE TRAYS (WHERE AND IF SHOWN ON DRAWINGS), BRACKETS, ATTACHMENTS, CLAMPS, SCREWS, BOLTS, ANCHOR BOLTS, NUTS, WASHERS, HARDWARE, AND APPURTENANCES, ETC., USED SHALL BE STAINLESS STEEL OR ALUMINUM.
- ALL EXTERIOR DISCONNECT SWITCHES, EXTERIOR SAFETY SWITCHES, EXTERIOR LOCAL OPERATING SWITCHES, AND OTHER EXTERIOR DEVICES SHALL BE IN NEMA 4X STAINLESS STEEL ENCLOSURES, UNLESS OTHERWISE SPECIFICALLY CALLED OUT.
- PROVIDE GFCI RECEPTACLES ON ALL CIRCUITS POWERING RECEPTACLES THAT ARE OUTSIDE (INCLUDING THOSE UNDER SHEDS OR PARTIALLY ENCLOSED AREAS, ETC.), IN WET AREAS, OR IN POTENTIALLY WET AREAS, ETC. ALL SUCH RECEPTACLES SHALL BE WATERPROOF.
- THESE PLANS DO NOT, IN GENERAL, SHOW EXACT LOCATIONS OR CONFIGURATIONS OF CONDUIT ROUTING AND METHODS, INCLUDING THE METHOD OF ACCESSING STRUCTURES. THE CONTRACTOR SHALL PROPOSE TO THE ENGINEER AND OWNER HIS REQUESTED ROUTING (FOR BOTH NEW AND EXISTING STRUCTURES) FOR THEIR APPROVAL OR DENIAL OF APPROVAL. ROUTING WILL HAVE TO BE ADJUSTED IN THE FIELD TO AVOID NEW, PROPOSED, OR EXISTING PIPING, STRUCTURES, AND EQUIPMENT CONFLICTS, ETC.
- COORDINATE ALL WORK WITH INSTRUMENTATION AND SCADA.
- NO CONDUIT OR ELECTRICAL FACILITY OR APPURTENANCE SHALL BE INSTALLED IN A MANNER THAT CREATES A POTENTIAL TRIPPING HAZARD OR AN OBSTRUCTION TO PASSAGE OR HEADROOM, ETC.
- PROVIDE O & M MANUALS ON ALL ELECTRICAL GEAR AND CONTROL PANELS, ETC.
- PROPERLY PROTECT ALL CONDUIT AND WIRING FROM CONCRETE OR OTHER CORROSIVE MATERIALS.
- PROVIDE PERMANENT ENGRAVED LABELS ON ALL PANELS MOUNTED TO PANELS WITH S.S. SCREWS. COORDINATE FINAL WORDING OF LABELS WITH ENGINEER. PROVIDE ADDITIONAL WARNING LABELS ON PANELS OR BOXES OR MCC'S, ETC., WHERE POWER IS FED FROM MORE THAN ONE SOURCE OR WHERE TURNING OFF THE MAIN BREAKER OR SWITCH DOES NOT AUTOMATICALLY KILL ALL POWER INSIDE THE PANEL.
- PROVIDE REMOVABLE SEALANT (UNLESS PERMANENT SEALANT CALLED FOR) AT ALL CONDUIT ENTRY POINTS INTO WET WELLS, SUMPS, CHANNELS, TANKS, CHLORINE ROOMS, PANELS WHERE THE CONDUITS CARRY CIRCUITS THAT CONNECT (EITHER DIRECTLY OR INDIRECTLY) FROM SUCH AREAS AS THOSE JUST LISTED, ETC. TYPICAL.
- ALL SYSTEMS, ASSEMBLIES, AND COMPONENTS SHALL BE UL LISTED.
- KEEP FREE ENDS OF CABLE TIGHTLY CLOSED TO PREVENT THE ENTRANCE OF ANY MOISTURE DURING STORAGE AND AT ALL TIMES WHEN CABLE IS NOT BEING PULLED OFF A REEL, ETC.
- MANUFACTURERS OF ELECTRICAL EQUIPMENT, GEAR, CONTROL PANELS, MCC'S, CONTROLS, STARTERS, ETC., SHALL DESIGN AND SELECT THE PROPER TIMERS AND TIMING RELAYS ETC. REQUIRED TO PROVIDE FOR PROPER OPERATION OF ALL CONTROLLED EQUIPMENT AND MOTORS, ETC. TIME DELAYS ON MOTOR RESTARTS SHALL BE ADJUSTABLE UP TO ONE HOUR. LONGER DELAYS SHALL BE PROVIDED ON LARGER MOTORS OR WHERE THE MOTOR MANUFACTURER RECOMMENDS A LONGER PERIOD. THE CONTRACTOR SHALL PROPERLY ADJUST ALL THE TIMERS AT PROJECT STARTUP TO STAGGER EQUIPMENT STARTS AND TO PREVENT PROBLEMS DURING POWER TRANSFERS.
- THE CONTRACTOR SHALL ADJUST ALL EQUIPMENT, CONTROLS, RELAYS, APPURTENANCES, TIMERS, FLOATS, SETPOINTS, AND ALARMS, ETC., PRIOR TO STARTUP SUCH THAT THEY PROPERLY SERVE THEIR INTENDED PURPOSE AND DO NOT RESULT IN NUISANCE TRIPS OR ALARMS. COORDINATE WITH EQUIPMENT MANUFACTURERS AND PROVIDERS, ENGINEER, AND OWNER. ADJUST AS NECESSARY AFTER STARTUP.
- THE LOCATIONS SHOWN ON THE DRAWINGS FOR PANELS, STARTER, DISCONNECTS, AND ALL OTHER ELECTRICAL EQUIPMENT ARE CONCEPTUAL. TYPICAL FOR ALL EQUIPMENT: ACTUAL EQUIPMENT LAYOUT, SIZE, AND ELECTRICAL CONTROL PANEL LOCATION WILL VARY FROM THAT INDICATED. STUB UP ALL CONDUITS PER FINAL APPROVED SUBMITTAL DRAWINGS. THE CONTRACTOR SHALL VERIFY EXACT REQUIREMENTS FOR ALL EQUIPMENT. THE FINAL LOCATION SHALL BE BASED ON THE DIMENSIONS AND LOCATION OF THE ACTUAL EQUIPMENT FURNISHED AND SHALL PROVIDE THE CLEARANCES REQUIRED BY THE CODE, ETC. ALL GEAR AND PANELS, ETC., MUST FIT IN THE SPACE INDICATED ON THE DRAWINGS AND IN THE SPACE AVAILABLE.
- CONNECT SINGLE PHASE AND OTHER LOADS IN A MANNER TO BALANCE PHASE LOADING ON THE PANELS AND TRANSFORMERS.
- CONTROL DIAGRAMS AND SCHEMATICS CONTAINED IN THESE DRAWINGS ARE PROVIDED FOR CONCEPT ONLY. THESE DRAWINGS SHOW ONLY SOME OF THE REQUIREMENTS OF THE PROJECT. ALL DETAILS AND REQUIRED CONTROLS ARE NOT SHOWN. THE PANEL MANUFACTURER SHALL DESIGN THE PANELS AND PROVIDE ADDITIONAL RELAYS, SWITCHES, TIME DELAY RELAYS, AND OTHER COMPONENTS AND CIRCUITRY AS REQUIRED. COORDINATE WITH THE MANUFACTURERS OF ALL CONNECTING OR CONTROLLED EQUIPMENT FOR REQUIRED COMPONENTS. AS A MINIMUM, COORDINATE WITH MOTOR AND EQUIPMENT MANUFACTURERS, SCADA MANUFACTURER, VALVE MANUFACTURER, AND MANUFACTURERS OF INSTRUMENTATION ASSOCIATED WITH EQUIPMENT. THESE DRAWINGS AND THE SPECIFICATIONS SHALL BE USED BY THE STARTER MANUFACTURER TO DESIGN THE CONTROL DIAGRAMS AND WIRING, ETC. THE PANEL MANUFACTURER IS RESPONSIBLE FOR THE DETAILED DESIGN OF THE CONTROL SYSTEMS.



- SEE PLANS FOR NUMBER OF CONDUITS IN DUCTBANKS.
- ALL BURIED CONDUIT SHALL BE CONCRETE ENCASED AND MARKED WITH BURIED MARKER TAPE.

GROUNDING SYSTEM LEGEND	
⊙	GROUND ROD - 3/4" x 10'-0" COPPER CLAD.
■	GROUND CONNECTION - CADWELDED WHERE BELOW GRADE OR CONCEALED - TWO BOLT LUG BOLTED WHERE EXPOSED.
①	4/0 BARE COPPER GROUND WIRE - BOND TO SCADA PANEL & ANTENNAE
②	4/0 BARE COPPER GROUND WIRE - BOND TO STRUCTURAL STEEL OR REBAR.
③	4/0 BARE COPPER GROUND WIRE - BOND TO PANEL, MOTOR, OR EQUIPMENT FRAME
④	4/0 BARE COPPER GROUND WIRE - BOND TO MTS.
⑤	4/0 BARE COPPER GROUND WIRE - BOND TO MAIN SERVICE ENTRANCE.
⑥	4/0 BARE COPPER GROUND WIRE - TO HANDRAIL OR H.R. COLUMN, AWNING COLUMN, HATCH, LIGHT POLE & FIXTURE, ETC.

ELECTRICAL GROUNDING NOTES	
1.	ALL GROUND WIRES SHALL BE INSTALLED A MINIMUM OF 24" BELOW FINAL GRADE & 3'-0" MINIMUM FROM STRUCTURES WHERE POSSIBLE.
2.	ALL GROUND WIRES FROM FINAL GRADE TO FINAL TERMINATION POINTS SHALL BE ROUTED IN NEW STRUCTURAL REINFORCED CONCRETE POUR UNLESS APPROVED OTHERWISE BY THE ENGINEER (PRIOR TO THE CONCRETE POUR).
3.	GROUND WIRES THAT ARE EXPOSED (NEAR FINAL TERMINATION) SHALL BE NEATLY ROUTED AND SHALL NOT POSE TRIPPING HAZARDS OR INTERFERE WITH DAILY OPERATIONS OR MAINTENANCE.
4.	GROUND WIRE PATHS ALONG EXISTING CONCRETE (I.E. MUST BE EXPOSED, SEE NOTE #3) MAY REQUIRE CORE DRILLED PATHS THROUGH EXISTING CONCRETE (WALLS, ELEVATED CANTILEVERED SLABS, ETC.)



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CITY OF PELHAM, ALABAMA
BUSINESS CENTER LIFT STATION IMPROVEMENTS

2024
GRETCHEN DIFANTE, CITY MANAGER
GARY W. WATERS, MAYOR

Professional Engineer
No. 39301
ANDREW G. GOLDEN
4-2-2024
NOT VALID WITHOUT SIGNATURE

BAR = 1"

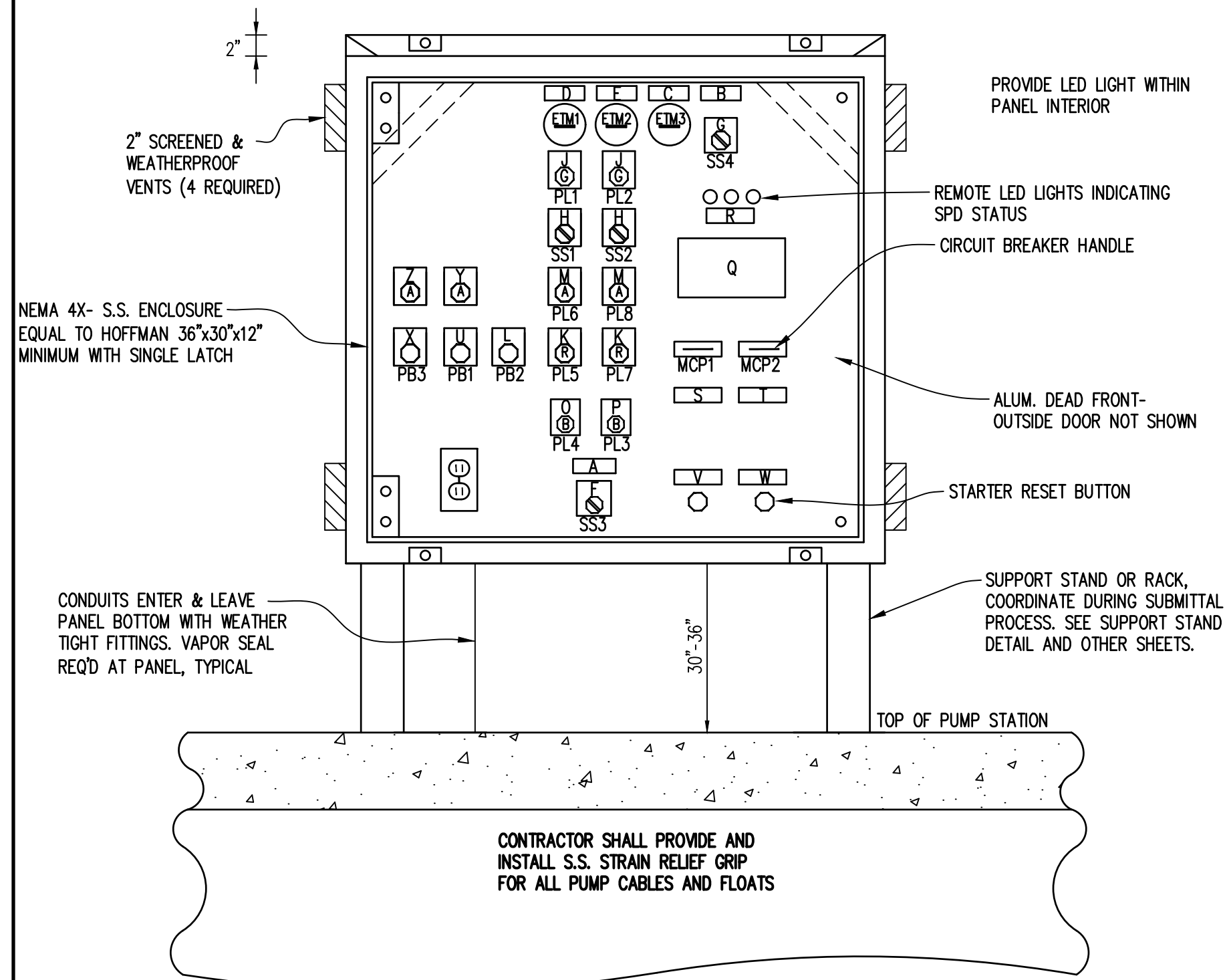
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Drawing: **7223004.4**

Date: **3 - 2024**

Scale: **AS SHOWN**

Sheet: **8**

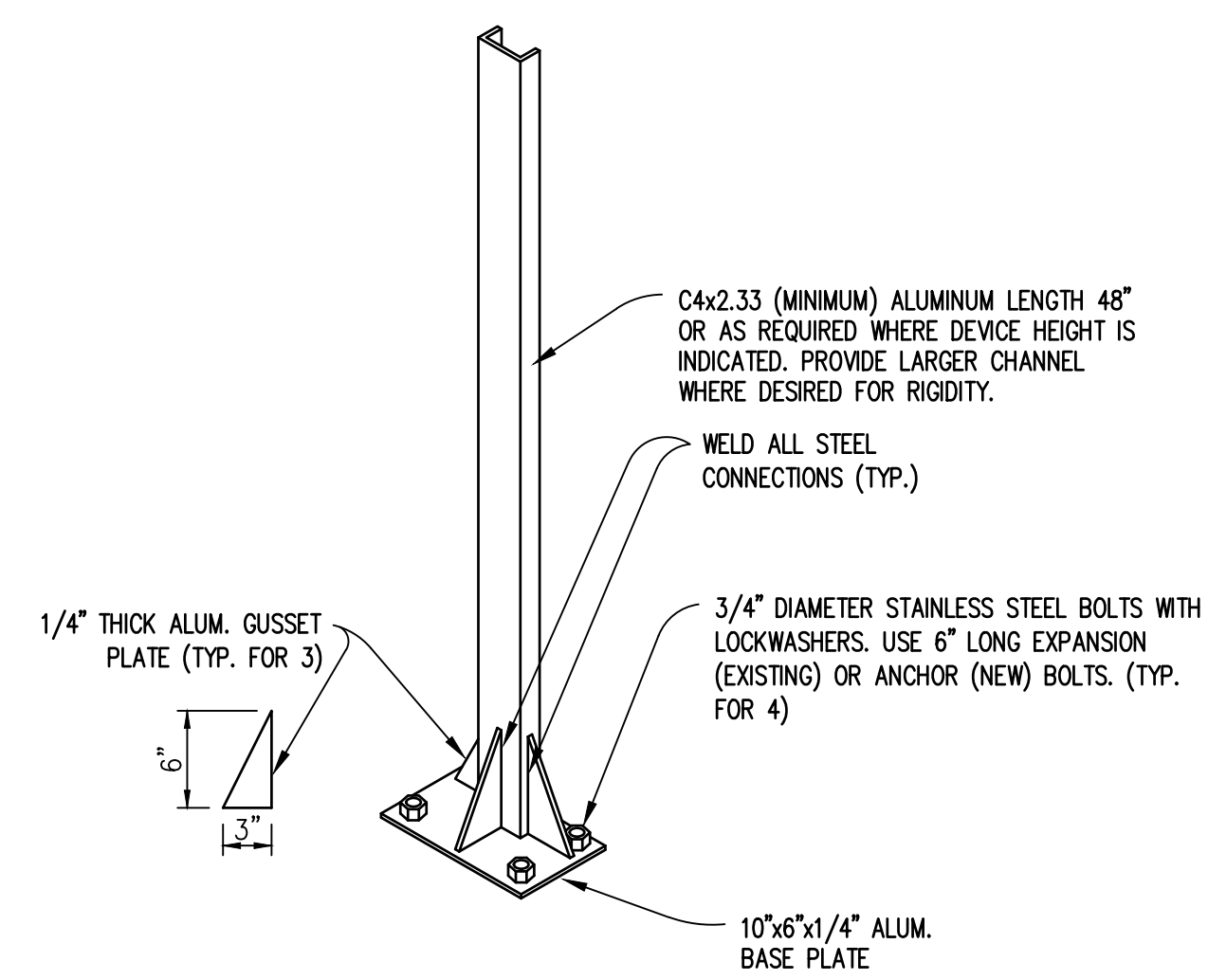


TYPICAL PUMP CONTROL PANEL

SCALE N.T.S.

ID NO.	WORDING
A	LEAD PUMP
B	PFR
C	PUMP 1 AND PUMP 2
D	PUMP NO.1
E	PUMP NO.2
F	NO. 1 - ALT - NO. 2
G	NORMAL
H	EMERGENCY BYPASS
J	HAND/OFF/AUTO
K	RUNNING
L	OVERTEMP
M	OVERTEMP RESET
N	SEAL FAILURE
O	LEAD PUMP CALLED
P	LAG PUMP CALLED
Q	WARNING-WHEN SELECTOR SWITCHES IN HAND POSITION. ALL PROTECTIVE DEVICES EXCEPT BREAKERS AND HEATERS ARE BYPASSED. DO NOT OPERATE IN HAND POSITION WITH STATION UNATTENDED.
R	MAIN SURGE PROTECTOR
S	PUMP NO. 1 BREAKER
T	PUMP NO. 2 BREAKER
U	HIGH LEVEL ALARM RESET
V	PUMP NO. 1 OVERLOAD RESET
W	PUMP NO. 2 OVERLOAD RESET
X	LOW LEVEL ALARM RESET
Y	HIGH WATER LEVEL ALARM
Z	LOW WATER LEVEL ALARM

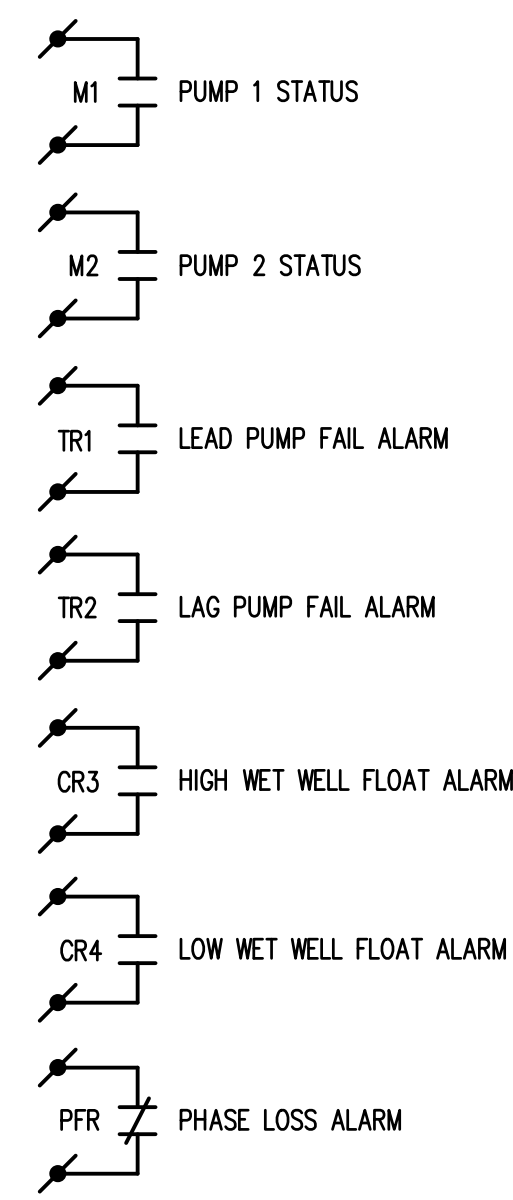
- ADDITIONAL CONTROL PANEL NOTES:**
- RESERVED
 - PANEL COMBINATION HEATER/FAN AND DEDICATED CIRCUIT BREAKER IS NOT SHOWN, PROVIDE AS REQUIRED.
 - ALL LIGHTS SHALL BE INDIVIDUAL LED PUSH TO TEST LIGHTS.
 - ALL POWER WIRING SHALL BE BLACK, ALL CONTROL WIRING SHALL BE RED, NO POWER WIRING LESS THAN #12 GA.
 - ALL PANELS SHALL BE PAD-LOCKABLE.



SUPPORT STAND DETAIL

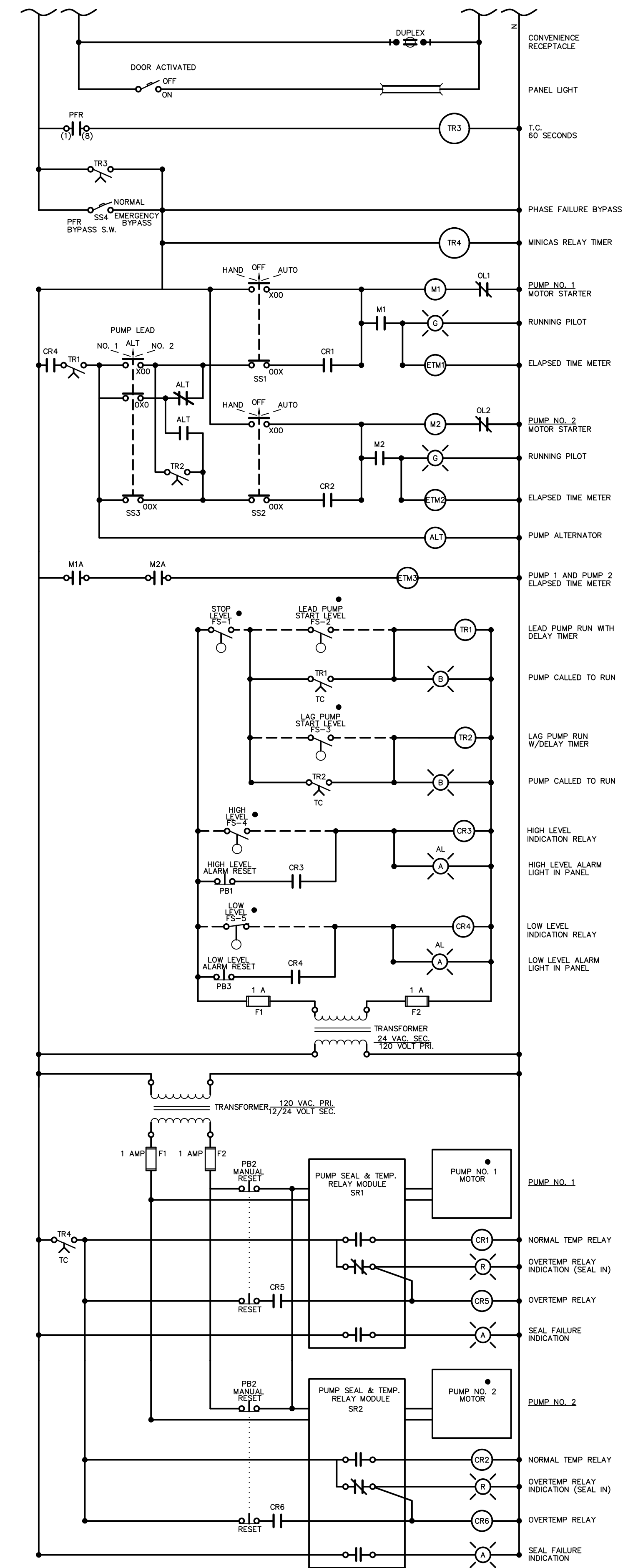
SCALE N.T.S.

- NOTE:**
- DETAIL FOR LOCAL OPERATOR STATIONS, FLOWMETERS, SMALL DISCONNECT SWITCHES, AND OTHER SIMILAR SMALL DEVICES.
 - PROVIDE DUAL SUPPORT STANDS WITH FRAME FOR INSTRUMENTS WHERE LARGER PANELS OR TWO OR MORE DEVICES OR COMPONENTS ARE MOUNTED AT A SINGLE LOCATION, OR WHERE DESIRED FOR RIGIDITY.
 - COORDINATE AND INSTALL CONDUITS AND STANDS, ETC., SUCH THAT NO POTENTIAL TRIPPING HAZARD IS CREATED.
 - NEATLY GRIND SHARP EDGES AND CORNERS OF STANDS AND FRAMES, ETC.
 - PROVIDE ADDITIONAL SUPPORT OR BRACING WHERE NEEDED FOR RIGIDITY. INSTALL IN A MANNER SUCH THAT NO POTENTIAL TRIPPING HAZARD IS CREATED.



SCADA CONTACTS

NOTE: EXISTING SCADA PANEL SHALL BE REUSED. PUMP CONTROL PANEL MANUFACTURER SHALL PROVIDE ALL REQD. LOGIC AND I/O TO MATCH EXISTING SIGNALS. CONTRACTOR SHALL REPLACE ALL CONDUIT AND WIRING BETWEEN RELOCATED SCADA PANEL AND NEW PUMP CONTROL PANEL. COORDINATE W/SCADA PROVIDER, DEXTER FORTSON & ASSOCIATES, FOR ANY MODIFICATIONS NEEDED TO THEIR EQUIPMENT (E.G. RELOCATING ANTENNAE). CONTRACTOR SHALL ENGAGE DEXTER FORTSON & ASSOC. TO TERMINATE NEW WIRING IN EXIST. SCADA PANEL & VERIFY CORRECT INSTALLATION OF ANTENNAE.



CONTROL SCHEMATIC

SCALE N.T.S.



BAR = 1"

Title	ELECTRICAL		BID SET
	Drawing	Project No. 7223004.4	
Date	3 - 2024	Scale	AS SHOWN
Sheet			9