

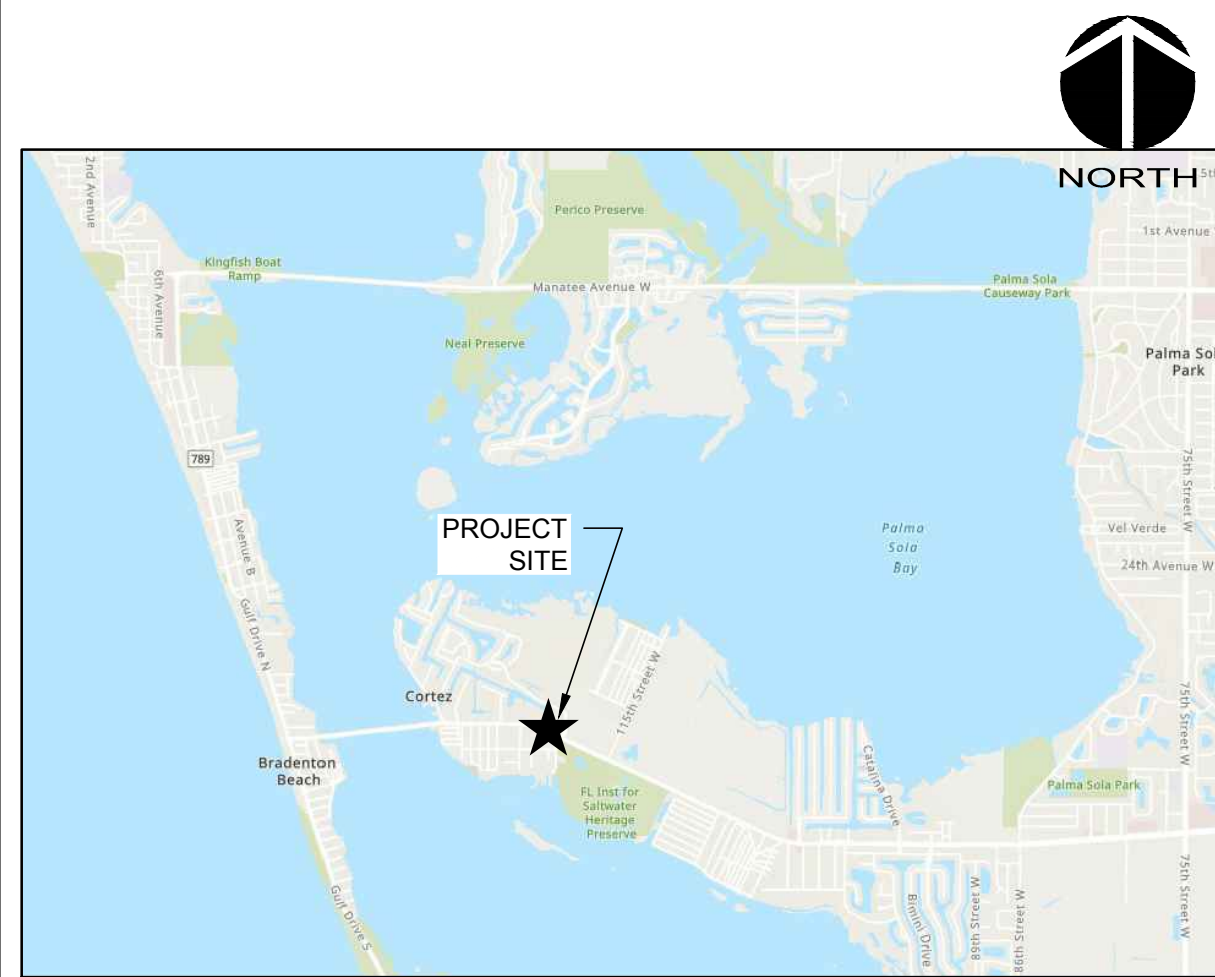
# CONTRACT DRAWINGS

# CORTEZ BOOSTER PUMP STATION UPGRADES

COUNTY PROJ. NO. 6050771

OCTOBER 2022

ISSUED FOR BID



VICINITY MAP

NOT TO SCALE

PROJECT NAME: CORTEZ BOOSTER PUMP STATION UPGRADES

OWNER/DEVELOPER:  
MANATEE COUNTY  
1112 MANATEE AVE. W., SUITE 803  
BRADENTON, FL. 34205  
(941) 749-3014

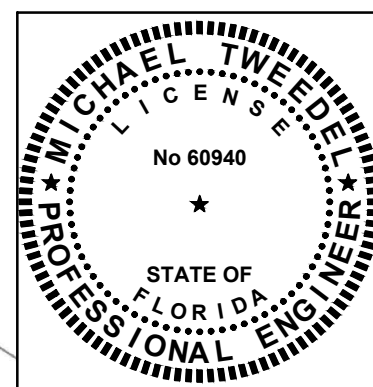
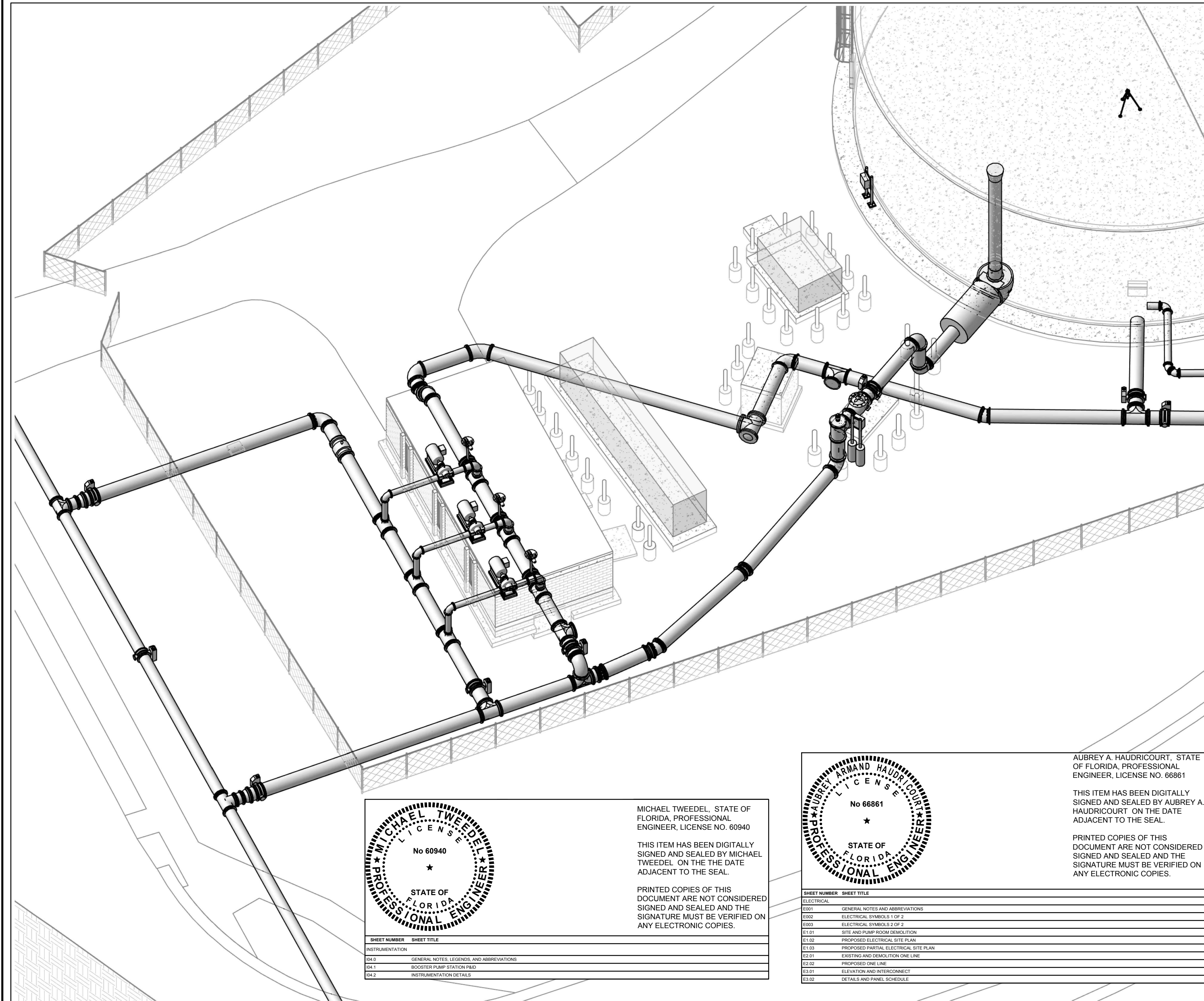
WWW.MYMANATEE.ORG



1365 Hamlet Avenue  
Clearwater, Florida 33756-3331  
Phone: (727) 442-7196, Fax: (727) 461-3827

CA Lic. No. 29588  
www.mckimcreed.com

PROJECT INFORMATION

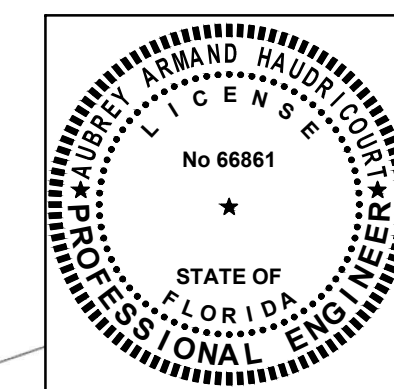


MICHAEL TWEEDL, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 60940

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SHEET NUMBER	SHEET TITLE
GEN-1	COVER SHEET
GEN-2	GENERAL NOTES
GEN-3	LEGENDS AND ABBREVIATIONS
GEN-4	EXISTING SITE SUE & SURVEY
GEN-5	PROCESS FLOW
CIV-1	EXISTING SITE AND DEMO PLAN
CIV-2	PROPOSED SITE PLAN
M-1	EXIST PUMP STATION
M-2	PROPOSED MECHANICAL PLAN
M-3	PROPOSED MECHANICAL RISER SECTION
E-1	GENERAL NOTES AND ABBREVIATIONS
E-2	ELECTRICAL SYMBOLS 1 OF 2
E-3	ELECTRICAL SYMBOLS 2 OF 2
E-1.01	SITE AND PUMP ROOM DEMOLITION PLAN
E-1.02	PROPOSED ELECTRICAL SITE PLAN
E-1.03	PROPOSED PARTIAL ELECTRICAL SITE PLAN
E-2.01	EXISTING & DEMOLITION ONE LINE
E-2.02	PROPOSED ONE LINE
E-3.01	ELEVATION AND INTERCONNECT
E-3.02	DETAILS
I-1	GENERAL NOTES, LEGENDS, AND ABBREVIATIONS
I-2	BOOSTER PUMP STATION P&ID
I-3	INSTRUMENTATION DETAILS
D-1	CIVIL DETAIL SHEET
D-2	CIVIL DETAIL SHEET
D-3	ERRORSION



AUBREY A. HAUDRICOURT, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 66861

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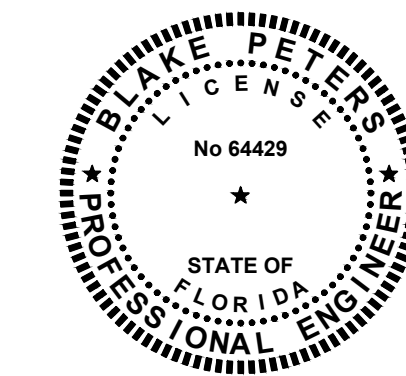
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E-2.02	PROPOSED ONE LINE
E-3.01	ELEVATION AND INTERCONNECT
E-3.02	DETAILS AND PANEL SCHEDULE

SCALE: 1" = 500'

SITE MAP

## Sheet List Table

Sheet Number	Sheet Title
GENERAL	
G-1	COVER SHEET
G-2	GENERAL NOTES
G-3	LEGENDS AND ABBREVIATIONS
G-4	EXISTING SITE SUE & SURVEY
G-5	PROCESS FLOW
CIVIL	
C-1	EXISTING SITE AND DEMO PLAN
C-2	PROPOSED SITE PLAN
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E3.02	DETAILS
INSTRUMENTATION	
I04.0	GENERAL NOTES, LEGENDS, AND ABBREVIATIONS
I04.1	BOOSTER PUMP STATION P&ID
I04.2	INSTRUMENTATION DETAILS
DETAILS	
D-1	CIVIL DETAIL SHEET
D-2	CIVIL DETAIL SHEET
D-3	ERRORSION



BLAKE PETERS, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 64429

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D-2	CIVIL DETAIL SHEET
D-3	ERRORSION



Know what's below.  
Call before you dig.

SHEET INDEX

PROJ. NO. 01024-0193 CORTEZ BOOSTER PUMP STATION UPGRADES

SUBMITTAL DATE: OCTOBER 2022

### GENERAL NOTES

- THESE PLANS ARE SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE EXISTING CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK. CONTRACTORS ARE DIRECTED TO CONDUCT WHATEVER INVESTIGATION THEY DEEM NECESSARY, PRIOR TO BIDDING, TO DETERMINE THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED.
- LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) AFFECTING HIS WORK.
- CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN WRITTEN CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.
- CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, STORM DRAINS, SEWERS, UTILITIES, AND OTHER FACILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR ANY DAMAGES DUE TO HIS CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER.
- WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURERS' MAXIMUM RECOMMENDED DEFLECTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE EXISTING DRAINAGE SYSTEM WITHIN THE LIMITS OF THE PROJECT AREA FOR THE DURATION OF THE PROJECT.
- CONTRACTOR SHALL PROVIDE CERTIFIED RECORD DRAWINGS AS OUTLINED IN THE SPECIFICATIONS. RED-LINE DRAWINGS SHALL BE CURRENT WITH EACH PAY APPLICATION SUBMITTED AND WILL BE CHECKED AS PART OF THE PAY APPLICATION REVIEW PROCESS. PAYMENT WILL NOT BE MADE TO CONTRACTOR WITHOUT APPROVED RED-LINE DRAWINGS.
- FIELD CONDITIONS MAY NECESSITATE ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED PIPELINES TO AVOID CONFLICTS. NO ADDITIONAL PAYMENT SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND THE OWNER'S ENGINEER.
- CONTRACTOR SHALL INCLUDE IN HIS BID; BY-PASS PUMPING FACILITIES, PUMPS, FITTINGS, LABOR, ETC, AS NECESSARY, BASED ON METHOD AND SEQUENCE OF CONSTRUCTION TO COMPLETE ALL WORK WHILE MAINTAINING THE EXISTING POTABLE WATER DISTRIBUTION SYSTEM OPERATIONS AT ALL TIMES.
- ALL PROPOSED WORK SHALL BE COORDINATED WITH THE MANATEE COUNTY UTILITIES DEPARTMENT AT LEAST TWO WEEKS IN ADVANCE OF PROPOSED CONSTRUCTION.
- CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL OF ALL PIPE CONNECTIONS, TRANSITIONS, AND SPECIALS PRIOR TO FABRICATION OR DELIVERY TO THE JOB SITE.
- CONNECTIONS TO EXISTING FACILITIES SHALL BE ACCOMPLISHED IN A NEAT WORKMANLIKE MANNER. WHEN FIELD CONDITIONS INDICATE ANY VARIANCE FROM DETAILED METHODS, THE CONTRACTOR SHALL PROVIDE COMPREHENSIVE AND DETAILED DRAWINGS FOR OWNER REVIEW AND APPROVAL PRIOR TO MAKING THE CONNECTIONS.
- UNLESS OTHERWISE INDICATED OR APPROVED, ALL BELOW GROUND DUCTILE IRON PIPE SHALL HAVE PUSH-ON OR MECHANICAL JOINTS, AND ALL ABOVE GROUND DUCTILE IRON PIPE SHALL HAVE FLANGED JOINTS.
- ALL PIPELINES SHALL HAVE A MINIMUM COVER OF 36" BELOW EXISTING GRADE UNLESS OTHERWISE NOTED OR DIRECTED.
- WATER SHALL NOT BE PERMITTED IN EXCAVATIONS AND TRENCHES DURING CONSTRUCTION. DEWATERING IS REQUIRED TO A MINIMUM OF 18" BELOW BOTTOM OF EXCAVATION.
- ALL EXPOSED PIPING SHALL BE PAINTED WITH DESIGNATED COLORS ASSOCIATED WITH THEIR USAGE AS PROVIDED IN THE SPECIFICATIONS.
- ALL NEW PIPELINES SHALL BE FLUSHED, PRESSURE TESTED, AND APPROVED PRIOR TO TIE-INS TO EXISTING FACILITIES. THE CONTRACTOR WILL BE ALLOWED TO USE TEMPORARY PLUGS FOR PRESSURE TESTING.
- ALL CONCRETE THRUST BLOCKS INSTALLED FOR TESTING PURPOSES AND NOT REQUIRED FOR THE PIPELINE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE.
- CONTRACTOR SHALL PROVIDE PROTECTIVE MATTING, FUEL CONTAINMENT AND ALL OTHER MATERIALS, EQUIPMENT AND LABOR TO PROTECT THE STAGING AREA DURING CONSTRUCTION.
- CONTRACTOR SHALL, PRIOR TO BEGINNING CONSTRUCTION, SUBMIT A "FUELING SPILL PREVENTION PLAN" THAT SHALL CLEARLY INDICATE HOW FUEL SPILLS WILL BE PREVENTED WHEN FUELING BOTH WITHIN AND OUTSIDE OF THE STAGING AREA.
- CONTRACTOR SHALL SUBMIT A DEWATERING PLAN FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH THE BMP'S IDENTIFIED IN CHAPTER 4, 4.40 "DEWATERING" OF "THE FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL".
- CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR, LICENSED IN THE STATE OF FLORIDA TO PERFORM CONSTRUCTION STAKING IN ACCORDANCE WITH RULE 61G17-6.004 (3) OF THE FLORIDA ADMINISTRATIVE CODE.
- AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA AT 1-800-432-4770 OR THE NATIONAL 811 ONE CALL NUMBER WHEN APPLICABLE FOR UTILITY LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITIES FOR THE POSSIBLE RELOCATION OR THE TEMPORARY MOVEMENT OF ANY EXISTING UTILITIES WITHIN THE RIGHTS-OF-WAY.

### GENERAL NOTES CONT.

- CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE FLORIDA TRENCH SAFETY ACT, 90-96, LAWS OF FLORIDA EFFECTIVE OCTOBER 1, 1990 AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION EXCAVATION SAFETY STANDARDS, 29 CFR 1926.650, SUBPART P, AS AMENDED. THE CONTRACTOR SHALL INCLUDE IN THE TOTAL BID PRICE ALL COSTS FOR COMPLIANCE WITH THESE REGULATIONS.
- CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND UTILITIES, POWER LINES, ETC.
- ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO WITHIN THE MANATEE COUNTY RIGHT-OF-WAY AND/OR EASEMENTS SHOWN ON THE DRAWINGS. THE PROJECT IS LOCATED AT 11850 CORTEZ ROAD WEST, BRADENTON, FLORIDA 34210
- CONTRACTOR SHALL USE APPROPRIATE TECHNIQUES, AS APPROVED, RECOMMENDED OR OFFERED BY FLORIDA POWER AND LIGHT TO PREVENT UNDERMINING OF POWER POLES DURING CONSTRUCTION. IF HOLDING OF POWER POLES IS RECOMMENDED OR REQUIRED BY THE UTILITY, THE CONTRACTOR SHALL COORDINATE THIS ACTIVITY WITH THE UTILITY AND BEAR ALL RELATED COSTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES FOR THE RELOCATION AND ADJUSTMENT OF ALL UTILITIES, INCLUDING, ANY EXISTING POWER POLES AND/OR UTILITY CONDUITS WITHIN RIGHT-OF-WAY.
- JOINT RESTRAINT SHALL BE INSTALLED AS NECESSARY TO PREVENT MOVEMENT OF EXISTING UNRESTRAINED PRESSURE PIPE AT ALL TIE-IN LOCATIONS WHETHER SPECIFICALLY IDENTIFIED ON THE PLANS OR NOT.
- ALL WORK, EQUIPMENT AND MATERIALS SHALL MEET OR EXCEED CURRENT MANATEE COUNTY STANDARDS, UNLESS OTHERWISE STATED IN CONTRACT DOCUMENTS.
- PIPE LENGTHS SHOWN ON PLAN VIEW DRAWINGS ARE IN LINEAR FEET AND DO NOT TAKE INTO ACCOUNT VERTICAL ELEVATION CHANGES, DEFLECTIONS, BENDS, ETC.
- ALL CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH MANATEE COUNTY PROJECT MANAGEMENT DIVISION. THE PROJECT MANAGER IS ALBERT ROSENSTEIN (941-708-7450; EXT. 7219).

### RESTORATION AND MISCELLANEOUS NOTES

- CONTRACTOR SHALL PROVIDE AN ASPHALT PATCH FOR TRENCH AREAS CONSTRUCTED IN EXISTING ROADWAYS. ADJUST ALL CASTINGS TO MATCH NEW PAVEMENT SURFACE.
- CONTRACTOR SHALL REPLACE ALL EXISTING PAVING, STABILIZED EARTH, CURBS, SIDEWALKS, FENCES, LANDSCAPING AND OTHER IMPROVEMENTS WITH THE SAME OR BETTER TYPE OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
- ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS OTHERWISE NOTED.
- ALL EXISTING FENCES DISTURBED DURING CONSTRUCTION SHALL BE REPLACED AND REINSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER UNLESS SHOWN TO BE REMOVED ON CONSTRUCTION PLANS.
- CONTRACTOR SHALL RESTORE ALL IRRIGATION SYSTEM COMPONENTS TO PRE-CONSTRUCTION CONDITIONS.
- CONTRACTOR SHALL RESTORE GRADE TO PRECONSTRUCTION ELEVATIONS UNLESS OTHERWISE NOTED.

### SIDEWALK NOTES

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

### UTILITY NOTES

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

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



CHARTER COMMUNICATIONS  
MICHAEL DEGRON  
(727) 329-2951

FRONTIER COMMUNICATIONS  
TONI CANNON - (AFTER HRS)  
toni.cannon@ftr.com  
(813) 875-1014

FLORIDA POWER & LIGHT - MANATEE  
JOEL BRAY  
(386) 586-6403

MCI-NATIONAL FIBER SECURITY DEPARTMENT  
(800) 624-9675

MANATEE COUNTY TRANSPORTATION DEPARTMENT  
KATHY McMAHON  
(941) 792-8811 (EXT. 5002)

MANATEE COUNTY UTILITY OPERATIONS  
KATHY McMAHON  
(941)-792-8811 (EXT. 5002)

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

### SOIL EROSION & SEDIMENTATION CONTROL NOTES

- ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE START OF ANY CONSTRUCTION, DEMOLITION, DEWATERING, OR MOBILIZATION ACTIVITIES, MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL WORK IS COMPLETE.
- CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES THROUGHOUT DEMOLITION AND CONSTRUCTION.
- HAY BALES AND/OR SILT SCREENS SHALL BE INSTALLED ADJACENT TO THE WORK AREAS TO PREVENT SEDIMENT TRANSPORT PRIOR TO THE COMMENCEMENT OF WORK.
- INLET PROTECTION SHALL BE PLACED AT ALL INLETS IN OR ADJACENT TO THE PROJECT AREA.
- AS SOON AS PRACTICAL, ALL DRESSED SLOPES AND DISTURBED AREAS SHALL BE SODDED OR SEEDDED AND MULCHED TO PREVENT EROSION.
- NO EXCAVATION SHALL EXTEND BELOW THE DEPTHS/ELEVATIONS SHOWN ON THE DRAWINGS OR IN THE SPECIFICATIONS WITHOUT PRIOR APPROVAL.
- CONTRACTOR SHALL PREPARE AND SUBMIT A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES AND PROVIDE APPROVED FDEP NOI TO COUNTY.
- CONTRACTOR SHALL PREPARE AND SUBMIT A DISPOSAL PLAN FOR EXCAVATION MATERIAL INCLUDING THE LOCATION OF DISPOSAL SITE(S) AND DISPOSAL PLANS SHOWING APPLICABLE BEST MANAGEMENT PRACTICES FOR REVIEW AND APPROVAL PRIOR TO ANY EARTHWORK ACTIVITIES.
- CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR ALL SURFACE WATER DRAINAGE STRUCTURES AND DITCHES DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL BE REQUIRED TO INSTALL ALL EROSION, SEDIMENT AND TURBIDITY CONTROL MEASURES PRIOR TO CONSTRUCTION OF ANY COMPONENTS ASSOCIATED WITH THE PROJECT. SEDIMENT CONTROL INCLUDES SILT DAMS, TRAPS, EROSION PROTECTION, AND ANY OTHER APPURTENANCES NEEDED BUT NOT NECESSARILY SHOWN ON THESE DRAWINGS.

REV. NO.	DESCRIPTION	DATE
REVISIONS		

SEAL  
  
BLAKE PETERS, P.E.  
No. 64429

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**CORTEZ BOOSTER PUMP STATION  
UPGRADES**

GENERAL  
GENERAL NOTES

PROJ. START DATE: **MAR. 2020**  
MCE PROJ. # **01024-0193**

DRAWN	DES
DESIGNED	NAM
CHECKED	MAC
PROJ. MGR.	NAM

SCALE  
HORIZONTAL: **G-2**  
AS SHOWN  
VERTICAL:  
AS SHOWN

STATUS: **ISSUED FOR BID**

**ABBREVIATION LEGEND**

ASPH	ASPHALT
AVG	AVERAGE
BPP	BLACK PLASTIC PIPE
C/L	CENTERLINE
C	CALCULATED
CBC	CONCRETE BOX CULVERT
CLF	CHAIN LINK FENCE
CLP	CONCRETE LIGHT POLE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CPB	CONDOMINIUM PLAT BOOK
D	CENTRAL ANGLE
DIP	DUCTILE IRON PIPE
DEP	DEPRESSED (CURB)
DL	DRAIN LINE
EL	ELEVATION
EP	EDGE OF PAVEMENT
EOW	EDGE OF WATER
ERCPC	ELLIPTICAL REINFORCED CONCRETE PIPE
FCM	FOUND CONC MONUMENT
FIR	FOUND IRON ROD
FIRC	FOUND IRON ROD & CAP
FF	FINISH FLOOR ELEVATION
FND	FOUND NAIL & DISK
FM	FORCE MAIN
FIP	FOUND IRON PIPE
FO	FIBER OPTIC
FOP	FOUND OPEN PIPE
FPP	FOUND PINCH PIPE
HH	HAND HOLE
HDPE	HIGH DENSITY POLYETHYLENE
IE	INVERT ELEVATION
L	LENGTH
LF	LINEAR FEET
LSA	LANDSCAPE AREA
MISC	MISCELLANEOUS
MP	METAL PIPE
ND	NOT DETERMINED
OF	OVERFLOW
OHL	OVERHEAD LINE
OR	OFFICIAL RECORD BOOK
PB	PLAT BOOK
PG	PAGE
PP	PLASTIC PIPE
PRM	PERMANENT REFERENCE MARKER
PVC	POLYVINYL CHLORIDE
R	RADIUS
RGE	RANGE
IRC	IRON ROD AND CAP
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT OF WAY
RLS	REGISTERED LAND SURVEYOR
SEC	SECTION
STA	STATION
TOB	TOP OF BANK
TOS	TOP OF SLOPE
T.O.C.	TOP OF CONDUIT
T.O.N.	TOP OF NUT
T.O.P.	TOP OF PIPE
T.O.W.	TOP OF WALL
TWN	TOWNSHIP
UD	UNDERDRAIN
VERT	VERTICAL
VCP	VITRIFIED CLAY PIPE
VVH	VERIFIED VERTICAL AND HORIZONTAL
WPP	WOOD POWER POLE

**LINE & SYMBOL LEGEND**

(A)	AIR RELEASE VALVE	(CPB)	COMMUNICATION PULLBOX	(Red Flag)	RED FLAG
(C)	COMMUNICATION MANHOLE	(C)	COMMUNICATION PEDESTAL	(White Flag)	WHITE FLAG
(E)	ELECTRICAL MANHOLE	(EPB)	ELECTRICAL PULLBOX	(Blue Flag)	BLUE FLAG
(U)	UNKNOWN TYPE MANHOLE	(CC)	COMMUNICATION CABINET	(Yellow Flag)	YELLOW FLAG
(S)	SANITARY MANHOLE	(EC)	ELECTRICAL CABINET	(Orange Flag)	ORANGE FLAG
(D)	STORM MANHOLE	(TC)	TRAFFIC CABINET	(Green Flag)	GREEN FLAG
YD	YARD DRAIN	(MV)	COMMUNICATION VAULT	(Purple Flag)	PURPLE FLAG
(H)	CATCH BASIN	(MH)	COMMUNICATION HANDHOLE	(Blue Paint)	BLUE PAINT MARKS
(I)	CURB INLET	(EH)	ELECTRIC HANDHOLE	(Red Paint)	RED PAINT MARKS
CO	CLEANOUT	(U)	UNKNOWN HANDHOLE	(Green Paint)	GREEN PAINT MARKS
ICV	IRRIGATION CONTROL VALVE	(TS)	TRAFFIC SIGNAL PULLBOX	(Orange Paint)	ORANGE PAINT MARKS
SV	SANITARY VALVE	(FOPB)	FIBER OPTIC PULLBOX	(Purple Paint)	PURPLE PAINT MARKS
WV	WATER VALVE	FO	FIBER OPTIC MARKER	(Red Paint)	RED PAINT MARKS
RCWV	RECLAIMED WATER VALVE	GM	GAS MARKER	(Green Paint)	GREEN PAINT MARKS
GAS	NATURAL GAS VALVE	G.T. BOX	GAS TEST BOX	(Orange Paint)	ORANGE PAINT MARKS
(R)	RECLAIMED WATER METER	(R)	UNKNOWN RISER BOX	(Purple Paint)	PURPLE PAINT MARKS
(W)	WATER METER	(TRANS)	ELECTRIC TRANSFORMER	(White Paint)	WHITE PAINT MARKS
(WW)	DOUBLE WATER METER	EB	ELECTRIC BOX	(Yellow Paint)	YELLOW PAINT MARKS
BFP	BACK FLOW PREVENTER	EM	ELECTRIC METER	(Overhead Wire)	OVERHEAD WIRE
(CVA)	CHECK VALVE ASSEMBLY	KP	KEY PAD	(Right-of-Way Line)	RIGHT-OF-WAY LINE
(FH)	FIRE HYDRANT	(ELEC PANEL)	ELECTRICAL PANEL	(Landscape Area)	LANDSCAPE AREA
(FDC)	FIRE DEPT. CONNECTION	(A)	ANTENNA	(Subsurface Electrical - Level B)	SUBSURFACE ELECTRICAL - LEVEL B
(W)	WATER WELL	(S)	SPRINKLER HEAD	(Subsurface Electrical - Level B)	SUBSURFACE ELECTRICAL - LEVEL B
(MW)	MONITORING WELL	(TL)	TRASH CAN	(Subsurface Fiber Optic - Level B)	SUBSURFACE FIBER OPTIC - LEVEL B
(WSL)	WOOD STREET LIGHT	(GL)	GROUND LIGHT	(Buried Telephone)	BURIED TELEPHONE
(CSL)	CONC STREET LIGHT	(WP)	WOOD POST	(Buried Telephone - Level B)	BURIED TELEPHONE - LEVEL B
(MSL)	METAL STREET LIGHT	(EO)	ELECTRIC OUTLET	(Subsurface Electrical)	SUBSURFACE ELECTRICAL
(WUP)	WOOD UTILITY POLE	(S)	SIGN	(Subsurface Fiber Optic)	SUBSURFACE FIBER OPTIC
(CUP)	CONCRETE UTILITY POLE	(M)	GUY WIRE ANCHOR	(Subsurface Force Main)	SUBSURFACE FORCE MAIN
(WLP)	WOOD LIGHT POLE	(D)	MAILBOX	(Subsurface Force Main - Level B)	SUBSURFACE FORCE MAIN - LEVEL B
(MLP)	METAL LIGHT POLE	(D)	DIAMETER	(Gas Main)	GAS MAIN
(CLP)	CONCRETE LIGHT POLE	(LR)	LARGE ROCK	(Gas Main - Level B)	GAS MAIN - LEVEL B
(GWP)	GUY WIRE POLE	(PM)	PARKING METER	(Overhead Line)	OVERHEAD LINE
(PSP)	PEDESTRIAN SIGNAL POLE	(X)	EXISTING ELEVATION	(Subsurface Reclaimed Water Main)	SUBSURFACE RECLAIMED WATER MAIN
(EMP)	ELECTRIC METER POLE	(SC)	SITE CONTROL	(Subsurface Reclaimed Water Main - Level B)	SUBSURFACE RECLAIMED WATER MAIN - LEVEL B
(DLP)	DECORATIVE LIGHT POST	(FPC)	FOUND PROPERTY CORNER	(Subsurface Sanitary Sewer Pipe - Level B)	SUBSURFACE SANITARY SEWER PIPE - LEVEL B
		(FSC)	FOUND SECTION CORNER	(Subsurface Sanitary Sewer Pipe)	SUBSURFACE SANITARY SEWER PIPE
				(Subsurface Traffic Fiber)	SUBSURFACE TRAFFIC FIBER
				(Subsurface Water Main - Level B)	SUBSURFACE WATER MAIN - LEVEL B
				(Subsurface Water Main)	SUBSURFACE WATER MAIN
				(Subsurface Storm Drainage Pipe)	SUBSURFACE STORM DRAINAGE PIPE
				(Subsurface Storm Drainage Pipe - Level B)	SUBSURFACE STORM DRAINAGE PIPE - LEVEL B
				(Guard Rail)	GUARD RAIL
				(Flag Pole)	FLAG POLE
				(Proposed Piping Above Ground)	PROPOSED PIPING (ABOVE GROUND)
				(Proposed Piping Below Ground)	PROPOSED PIPING (BELOW GROUND)
				(Existing Piping)	EXISTING PIPING
				(Proposed Butterfly Valve)	PROPOSED BUTTERFLY VALVE
				(Existing Butterfly Valve)	EXISTING BUTTERFLY VALVE
				(Existing Gate Valve)	EXISTING GATE VALVE
				(Proposed Pressure Sustaining Valve)	PROPOSED PRESSURE SUSTAINING VALVE
				(Existing Check Valve)	EXISTING CHECK VALVE
				(Proposed Motor Actuated Valve)	PROPOSED MOTOR ACTUATED VALVE
				(Proposed Pneumatic Actuated Valve)	PROPOSED PNEUMATIC ACTUATED VALVE
				(Existing Flow Meter)	EXISTING FLOW METER
				(Casing Pipe)	CASING PIPE

**TREE & LANDSCAPE LEGEND**

00"	- ACACIA	00"	- UNKNOWN	00"	- CITRUS	00"	- PINE
00"	- PALM SPECIES	00"	- BOTTLEBRUSH	00"	- CACTUS		- HEDGE
00"	- BANANA	00"	- MAPLE	00"	- MANGO		- BUSH
00"	- FICUS	00"	- MAHOGANY	00"	- PAPAYA		- PLANT
00"	- SEAGRAPE	00"	- OAK	00"	- CYPRESS		
00"	- GUMBO-LIMBO	00"	- SCHEFFLERA	MULTI	- ORNAMENTAL MULTI-TRUNK		

INDICATES TRUNK DIAMETER

NOTE: VERIFICATION OF TREE SPECIES SHOULD BE CONDUCTED BY A PROFESSIONAL ENGAGED IN THE FIELD OF NATURAL SCIENCE.

REV. NO.	DESCRIPTION	DATE

SEAL


BLAKE PETERS, P.E.  
No. 64429

**MCKIM & CREED**

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**Manatee County FLORIDA**



**CORTEZ BOOSTER PUMP STATION UPGRADES**

**GENERAL LEGENDS AND ABBREVIATIONS**

PROJ. START DATE:	MAR. 2020
MCE PROJ. #	01024-0193
DRAWN	DES
DESIGNED	NAM
CHECKED	MAC
PROJ. MGR.	NAM

STATUS: ISSUED FOR BID

SCALE

HORIZONTAL: TBD

VERTICAL: TBD

**G-3**

DRAWING NUMBER

REVISION

**SURVEYOR NOTES**

1. THIS SURVEY IS REFERENCED TO A PROJECTION OF THE STATE PLANE COORDINATE SYSTEM OF FLORIDA WEST ZONE (NAD 83/11).
2. THE FOLLOWING NGS VERTICAL CONTROL POINT WAS RECOVERED AND UTILIZED FOR THE ELEVATIONS INDICATED HEREIN:  
"WEST MELBOURNE" (3" DISK) NAVD 1988 ELEVATION 4.30'.
3. THE HORIZONTAL AND VERTICAL COORDINATES OF THE SITE BENCH MARKS WERE DERIVED FROM REDUNDANT RTK GPS OBSERVATIONS AND DIFFERENTIAL LEVELING METHODS.
4. THIS IS NOT A BOUNDARY SURVEY.
5. THIS SURVEY IS SUBJECT TO PERTINENT EASEMENTS, RIGHTS OF WAY AND RESTRICTIONS OF RECORD, IF ANY.
6. THE LOCATION OF UTILITIES, FOUNDATIONS OR STRUCTURES, IF ANY, BENEATH THE SURFACE HAVE NOT BEEN DETERMINED.
7. THE PURPOSE OF THIS SURVEY IS TO SHOW TOPOGRAPHIC AND MARKED UNDERGROUND UTILITY INFORMATION.
8. THIS SURVEY DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF THE PARTY OR PARTIES CERTIFIED TO BELOW FOR THE EXPRESS PURPOSE STATED HEREON AND/OR CONTAINED IN THE CONTRACT BETWEEN HYATT SURVEY SERVICES, INC. AND THE CLIENT FOR THIS PROJECT. COPYING, DISTRIBUTING AND/OR USING THIS DRAWING, IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN ORIGINALLY INTENDED WITHOUT WRITTEN CONSENT FROM HYATT SURVEY SERVICES, INC. IS STRICTLY PROHIBITED AND RENDERS THE SURVEYOR'S CERTIFICATION, SIGNATURE AND SEAL NULL AND VOID. ANY QUESTIONS CONCERNING THE CONTENT OR PURPOSE OF THIS DRAWING SHOULD BE DIRECTED TO HYATT SURVEY SERVICES, INC.

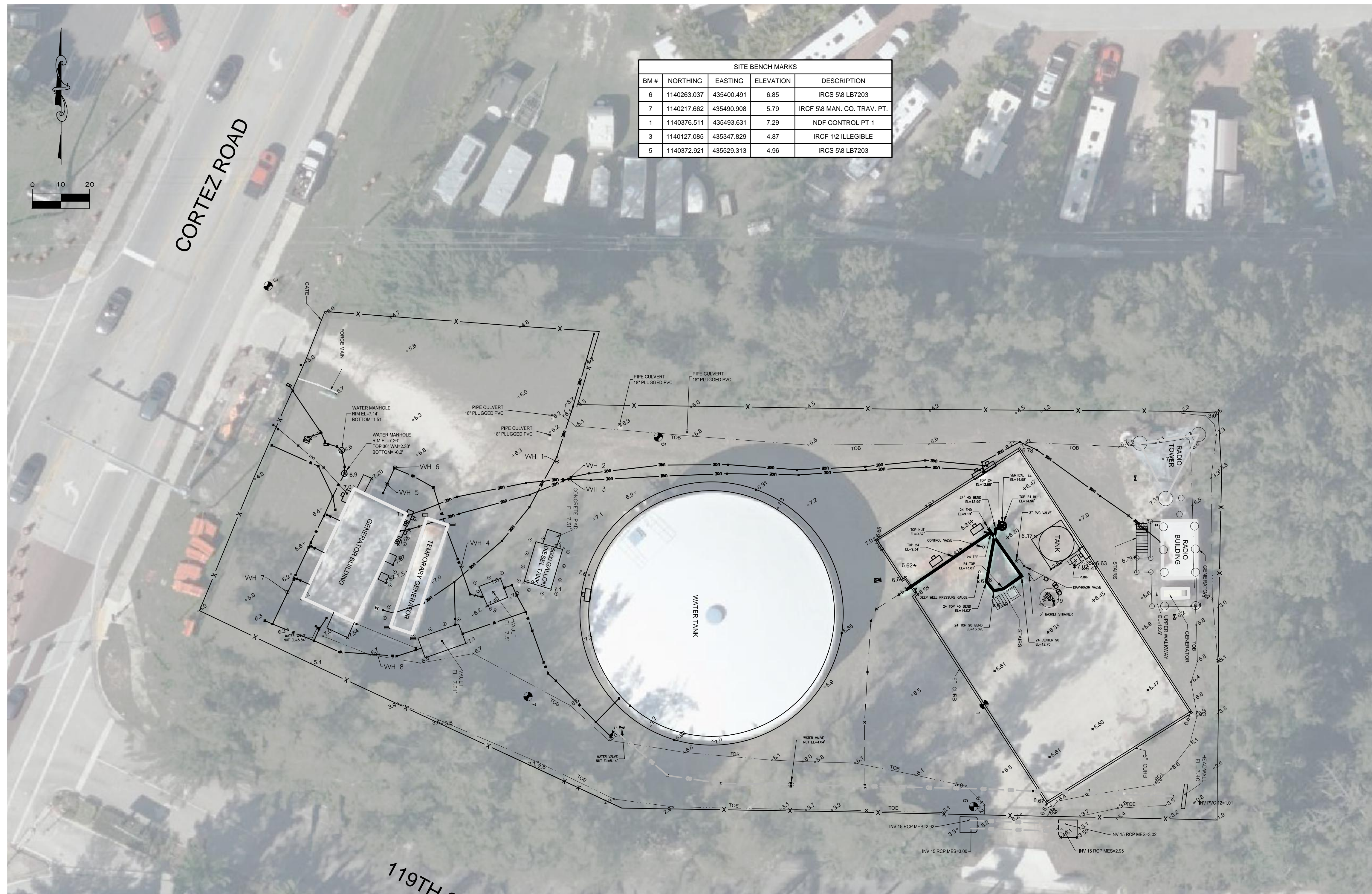
**LEGEND**

● SITE CONTROL POINT	(M) MEASURED DISTANCE/BEARING
■ UNDERGROUND UTILITY MARKER	(P) PLAT DISTANCE/BEARING
△ SIGN	ASPH ASPHALT
⊕ WOOD UTILITY POLE	B/C BACK OF CURB
⊕ CONCRETE UTILITY POLE	BOS BOTTOM OF STRUCTURE
⊕ GUY WIRE	CLF CHAIN LINK FENCE
⊕ WATER METER	CMF CONCRETE MONUMENT FOUND
⊕ WATER VALVE	CO COUNTY
⊕ RECLAIMED WATER VALVE	CONC CONCRETE
⊕ SANITARY MANHOLE	CPP CORRUGATED PLASTIC PIPE
⊕ STORM MANHOLE	D DELTA
⊕ UTILITY MANHOLE	DHF DRILL HOLE FOUND
⊕ GRATE INLET	DIP DUCTILE IRON PIPE
⊕ ANTENNA	DL DRIP LINE (RADIUS)
⊕ BACKFLOW PREVENTER	EL ELEVATION
⊕ UTILITY RISER	ELEV ELEVATION
⊕ UTILITY VAULT	EM ELECTRIC METER
⊕ MAILBOX	E/B EDGE OF BRICK
⊕ BOLLARD	E/P EDGE OF PAVEMENT
⊕ CLEANOUT	FFE FINISHED FLOOR ELEVATION
⊕ FLAGPOLE	GIS GEOGRAPHIC INFORMATION SYSTEM
⊕ TRANSFORMER	INC INCORPORATED
⊕ WELL	INV INVERT
⊕ CABLE SERVICE BOX	IRF IRON ROD FOUND
⊕ TELEPHONE SERVICE BOX	IRS IRON ROD SET
⊕ STREET LIGHT	L LENGTH
⊕ CONCRETE COLUMN	LB LICENSED BUSINESS
⊕ PALM	NAV NAVD
⊕ OAK	NDF NORTH AMERICAN VERTICAL DATUM
⊕ PINE TREE	N&D NAIL & DISK FOUND
⊕ TREE	NDS NAIL & DISK SET
⊕ SHRUB	NGS NATIONAL GEODETIC SURVEY
	NO NUMBER
	N.T.S. NOT TO SCALE
	PID PARCEL IDENTIFICATION NUMBER
	PRM PERMANENT REFERENCE MONUMENT
	PSM PROFESSIONAL SURVEYOR & MAPPER
	PVC POLYVINYL CHLORIDE
	R RADIUS
	RCP REINFORCED CONCRETE PIPE
	RNG RANGE
	SIRC SET IRON ROD & CAP
	SW SIDEWALK
	TWN TOWNSHIP
	# NUMBER
---	FENCE LINE
---	RIGHT OF WAY
---	UNDERGROUND WATER LINE
---	FOC UNDERGROUND FIBER-OPTIC
---	UGE UNDERGROUND ELECTRICAL
---	UGT UNDERGROUND TELEPHONE
---	OHE OVERHEAD ELECTRIC
---	SD STORM DRAINAGE PIPE
---	UNDERGROUND RECLAIMED WATER

SURVEY PERFORMED BY:  
HYATT SURVEY SERVICES, INC.

SUBSURFACE UTILITY ENGINEERING (SUE) PERFORMED BY:  
McKIM & CREED

SITE BENCH MARKS				
BM #	NORTHING	EASTING	ELEVATION	DESCRIPTION
6	1140263.037	435400.491	6.85	IRCS 5/8 LB7203
7	1140217.662	435490.908	5.79	IRCF 5/8 MAN. CO. TRAV. PT.
1	1140376.511	435493.631	7.29	NDF CONTROL PT 1
3	1140127.085	435347.829	4.87	IRCF 1/2 ILLEGIBLE
5	1140372.921	435529.313	4.96	IRCS 5/8 LB7203



**SUE TABLE**

TEST HOLE NUMBER	NORTHING	EASTING	ELEVATION	DEPTH/COVER	TYPE	SIZE	MATERIAL	NOTE
VVH-1	1140227.79	435409.05	6.46	2.40'	BE	2"	PVC	
VVH-2	1140232.05	435414.95	6.53	1.20'	BE	2"	PVC	
VVH-3	1140232.25	435415.31	6.63	1.20'	BE	2"	PVC	
VVH-4	1140194.46	435445.53	6.70	6.20'	WATER	24"	D.I.	TEST HOLE NEXT TO VALVE VAULT, OPENED VAULT TO CONFIRM 24" D.I. PROBED DOWN ON TEST HOLE TO CONFIRM DEPTH.
VVH-5	1140168.41	435416.81	7.16	1.30'	WATER	24"	D.I.	
VVH-6	1140171.24	435411.07	6.15	N/A	WATER	24"	D.I.	CONCRETE DUCT BANK COVERING 24" D.I. VISIBLE ON SURFACE OF GROUND.
VVH-7	1140133.79	435454.51	5.80	3.86'	WATER	24"	D.I.	NO VISUAL, PROBED DOWN TO PIPE WITH AIR LANCE.
VVH-8	1140165.23	435476.28	6.82	4.24'	WATER	24"	D.I.	NO VISUAL, PROBED DOWN TO PIPE WITH AIR LANCE.

REV. NO.	DESCRIPTION	DATE

SEAL  
  
BLAKE PETERS, P.E.  
No. 64429

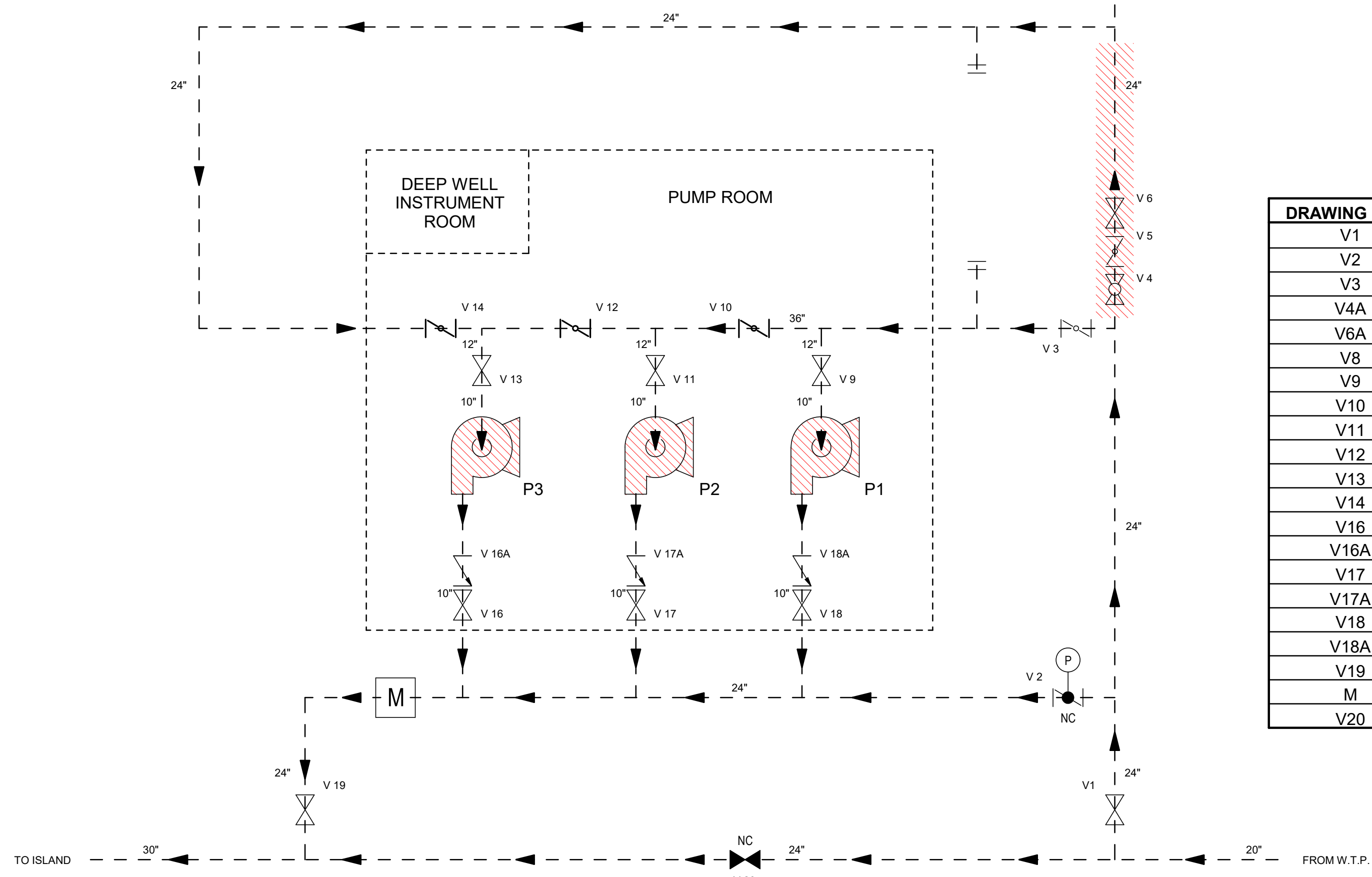
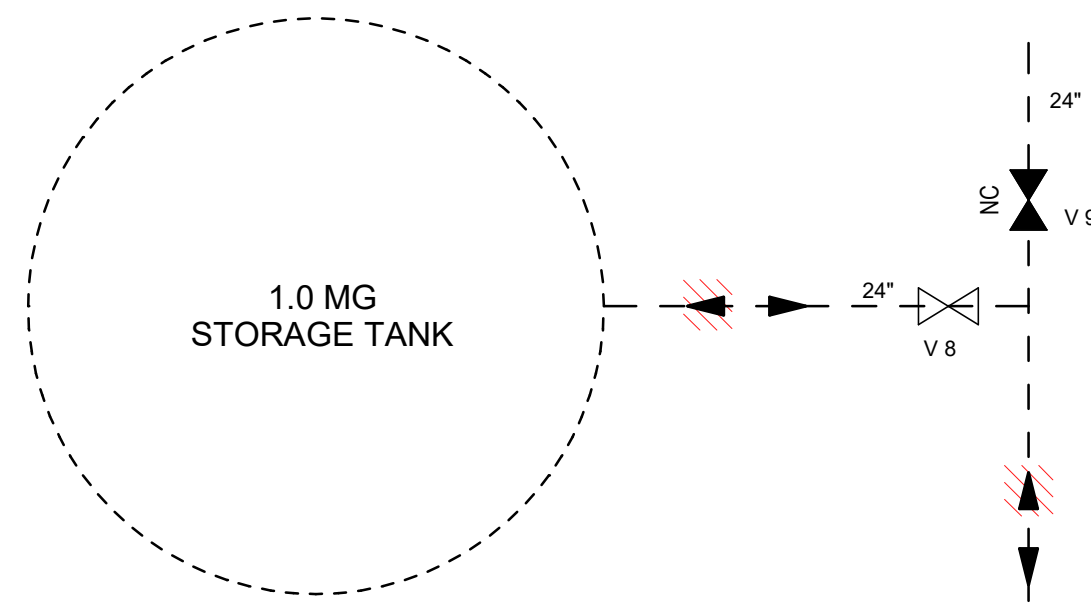
**MCKIM & CREED**  
1365 Hamlet Avenue  
Clearwater, Florida 33756-3331  
Phone: (727) 442-7196, Fax: (727) 461-3827  
  
CA Lic. No. 29588  
www.mckimcreed.com

**Manatee County**  
FLORIDA

**CORTEZ BOOSTER PUMP STATION UPGRADES**  
  
GENERAL  
**EXISTING SITE SUE & SURVEY**

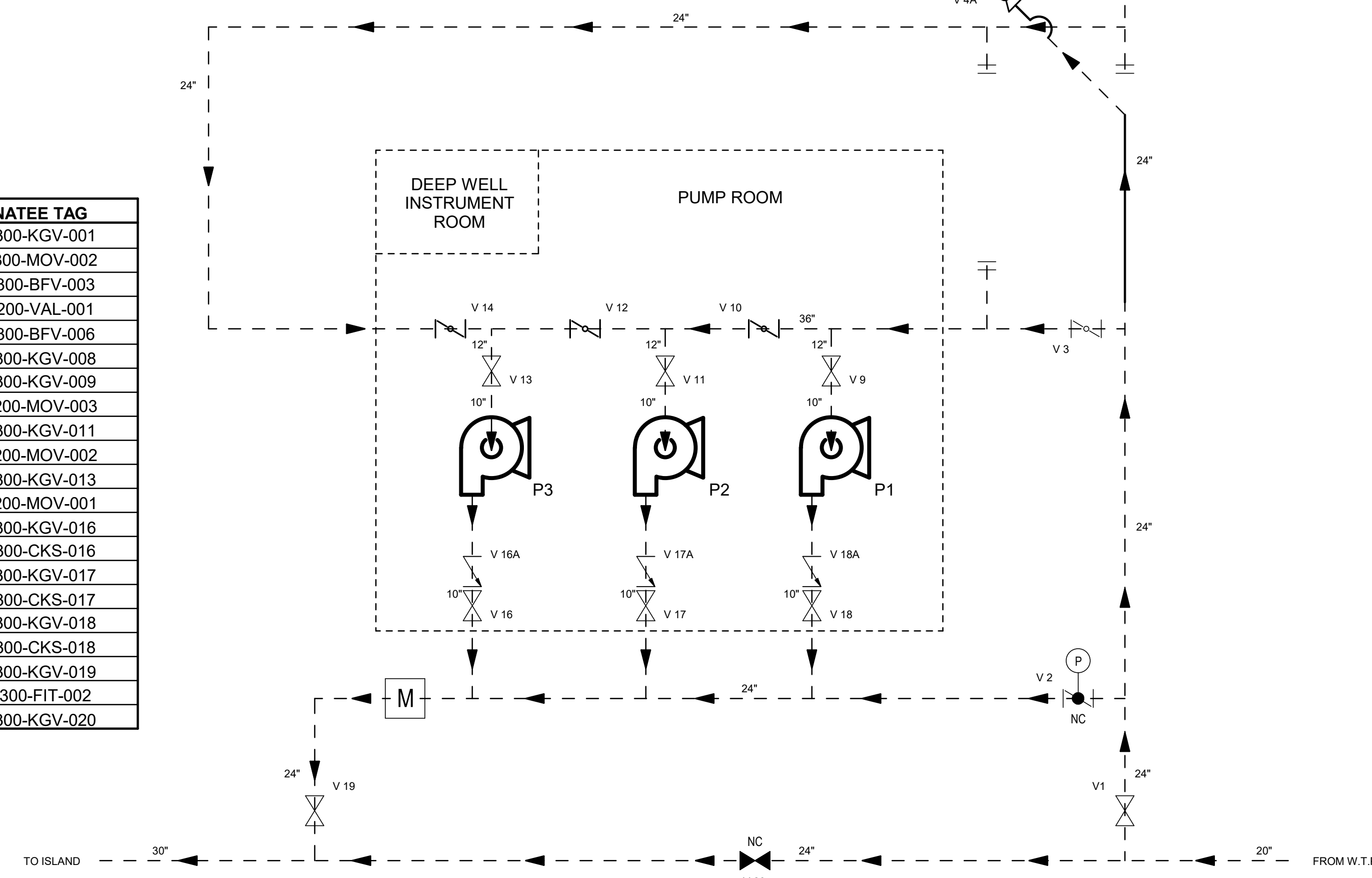
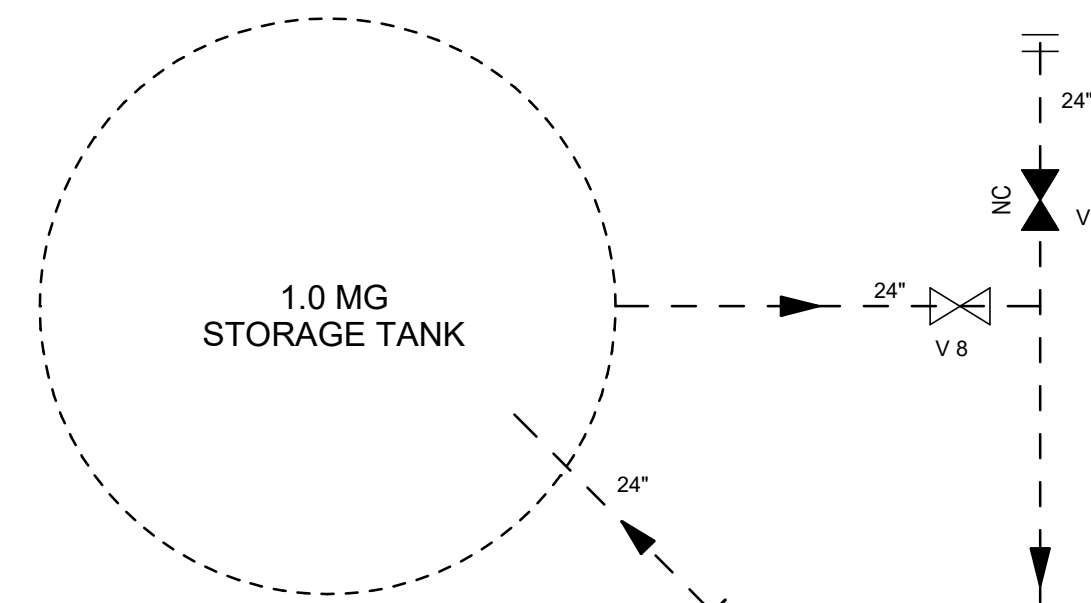
PROJ. START DATE: MAR. 2020	SCALE
MCE PROJ. # 01024-0193	HORIZONTAL: 1" = 20'
DRAWN DES	VERTICAL: TBD
DESIGNED NAM	
CHECKED MAC	
PROJ. MGR. NAM	
STATUS:	

**G-4**  
DRAWING NUMBER  
REVISION  
  
**ISSUED FOR BID**



**EXISTING AND DEMO**

NTS



**PROPOSED**

NTS

DRAWING TAG	LAKE MANATEE TAG
V1	DGS-CBS-300-KGV-001
V2	DGS-CBS-300-MOV-002
V3	DGS-CBS-300-BFV-003
V4A	DGS-CBS-200-VAL-001
V6A	DGS-CBS-300-BFV-006
V8	DGS-CBS-300-KGV-008
V9	DGS-CBS-300-KGV-009
V10	DGS-CBS-200-MOV-003
V11	DGS-CBS-300-KGV-011
V12	DGS-CBS-200-MOV-002
V13	DGS-CBS-300-KGV-013
V14	DGS-CBS-200-MOV-001
V16	DGS-CBS-300-KGV-016
V16A	DGS-CBS-300-CKS-016
V17	DGS-CBS-300-KGV-017
V17A	DGS-CBS-300-CKS-017
V18	DGS-CBS-300-KGV-018
V18A	DGS-CBS-300-CKS-018
V19	DGS-CBS-300-KGV-019
M	DGS-CBS-300-FIT-002
V20	DGS-CBS-300-KGV-020

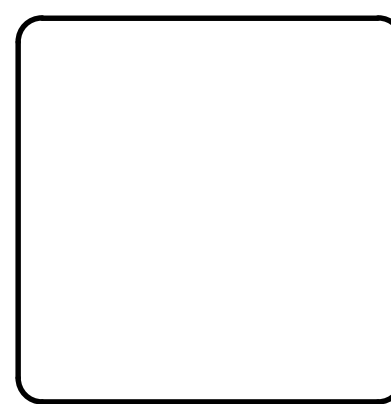
**LEGEND**

--- EXISTING BUILDING	--- PROPOSED PIPING (BURIED)
- - - EXISTING PIPING	— PROPOSED PIPING (ABOVE GROUND)
//// DEMO	
NC [Symbol] PROPOSED BUTTERFLY VALVE	[Symbol] EXISTING PUMP TO BE DEMO
[Symbol] EXISTING BUTTERFLY VALVE	[Symbol] PROPOSED PUMP
[Symbol] EXISTING GATE VALVE	[M] EXISTING FLOW METER
[Symbol] PROPOSED PRESSURE SUSTAINING VALVE	[M] PROPOSED MOTOR ACTUATED VALVE
[Symbol] EXISTING CHECK VALVE	[P] EXISTING PNEUMATIC VALVE

REV. NO.	DESCRIPTION	DATE

REVISIONS

BLAKE PETERS, P.E.  
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**CORTEZ BOOSTER PUMP STATION  
UPGRADES**

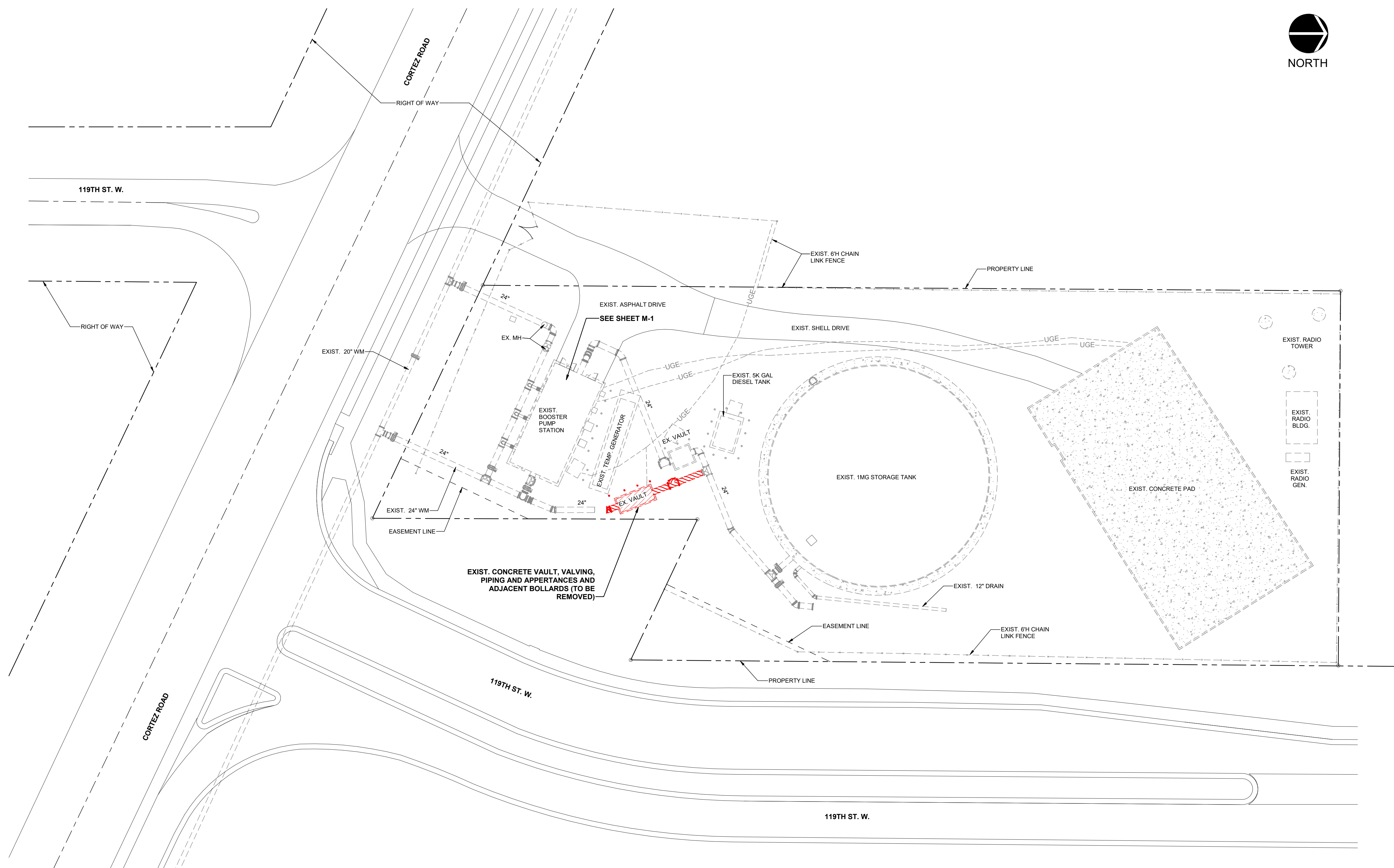
**GENERAL  
PROCESS FLOW**

PROJ START DATE:	AUG 2022
MCE PROJ. #	01024-0193
DRAWN	DES
DESIGNED	NAM
CHECKED	MAC
PROJ. MGR	NAM

SCALE  
As indicated

**G-5**  
DRAWING NUMBER  
REVISION

STATUS: **ISSUED FOR BID**



REV. NO.	DESCRIPTION	DATE

REVISIONS

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**CORTEZ BOOSTER PUMP STATION UPGRADES**

CIVIL

**EXISTING SITE AND DEMO PLAN**

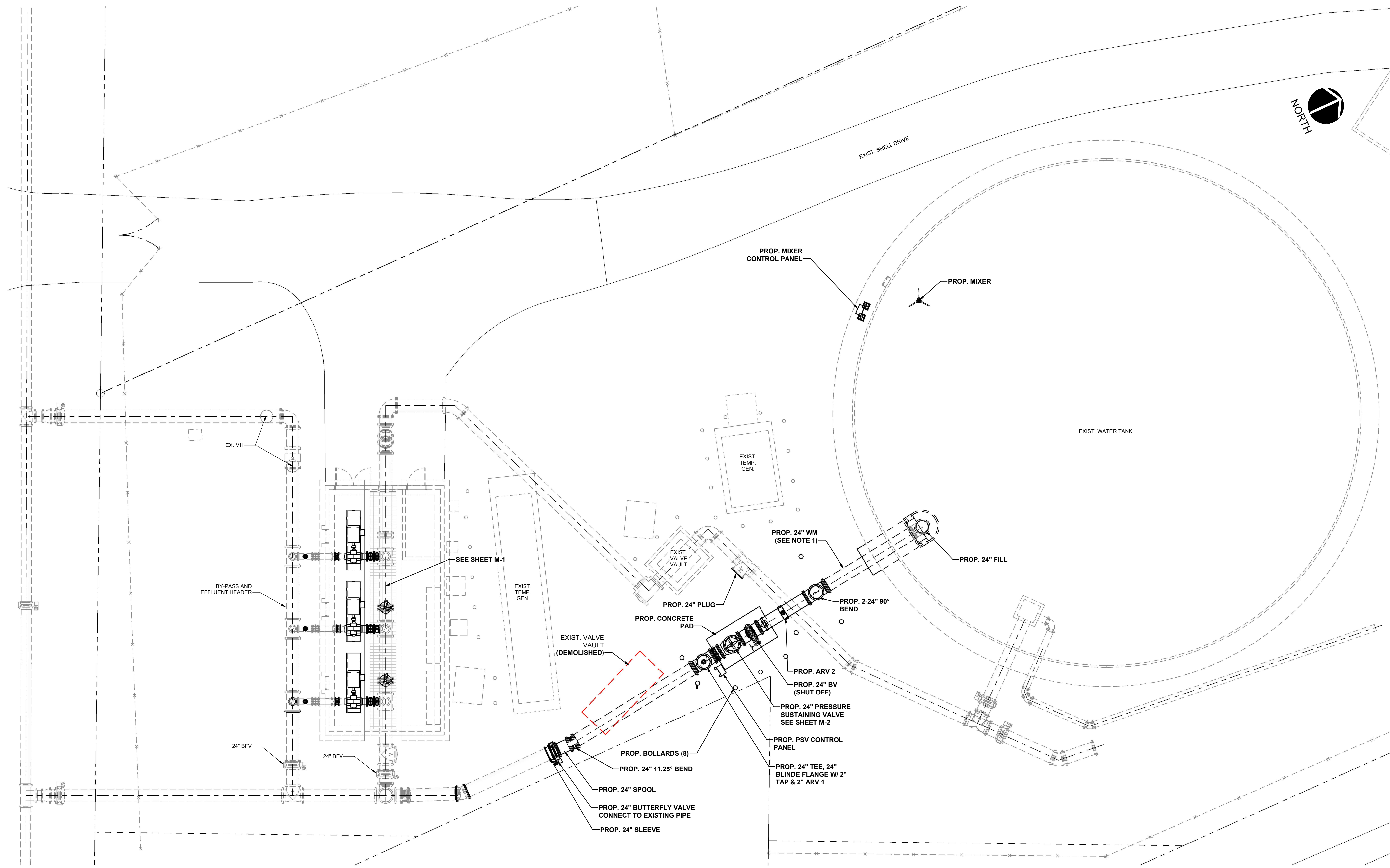
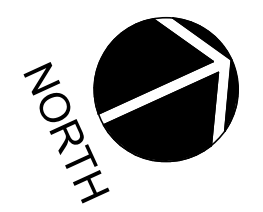
PROJ START DATE: AUG 2022
MCE PROJ. # 01024-0193
DRAWN DES
DESIGNED NAM
CHECKED MAC
PROJ. MGR. NAM

SCALE  
1" = 20'-0"

**C-1**  
DRAWING NUMBER  
REVISION

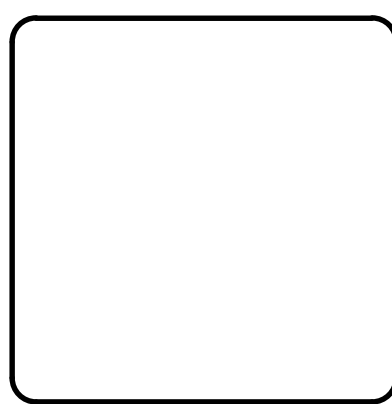
STATUS: **ISSUED FOR BID**

C:\Users\CParini\Documents\Cortez PS-Site\_CParini\WUFL2.rvt



REV. NO.	DESCRIPTION	DATE

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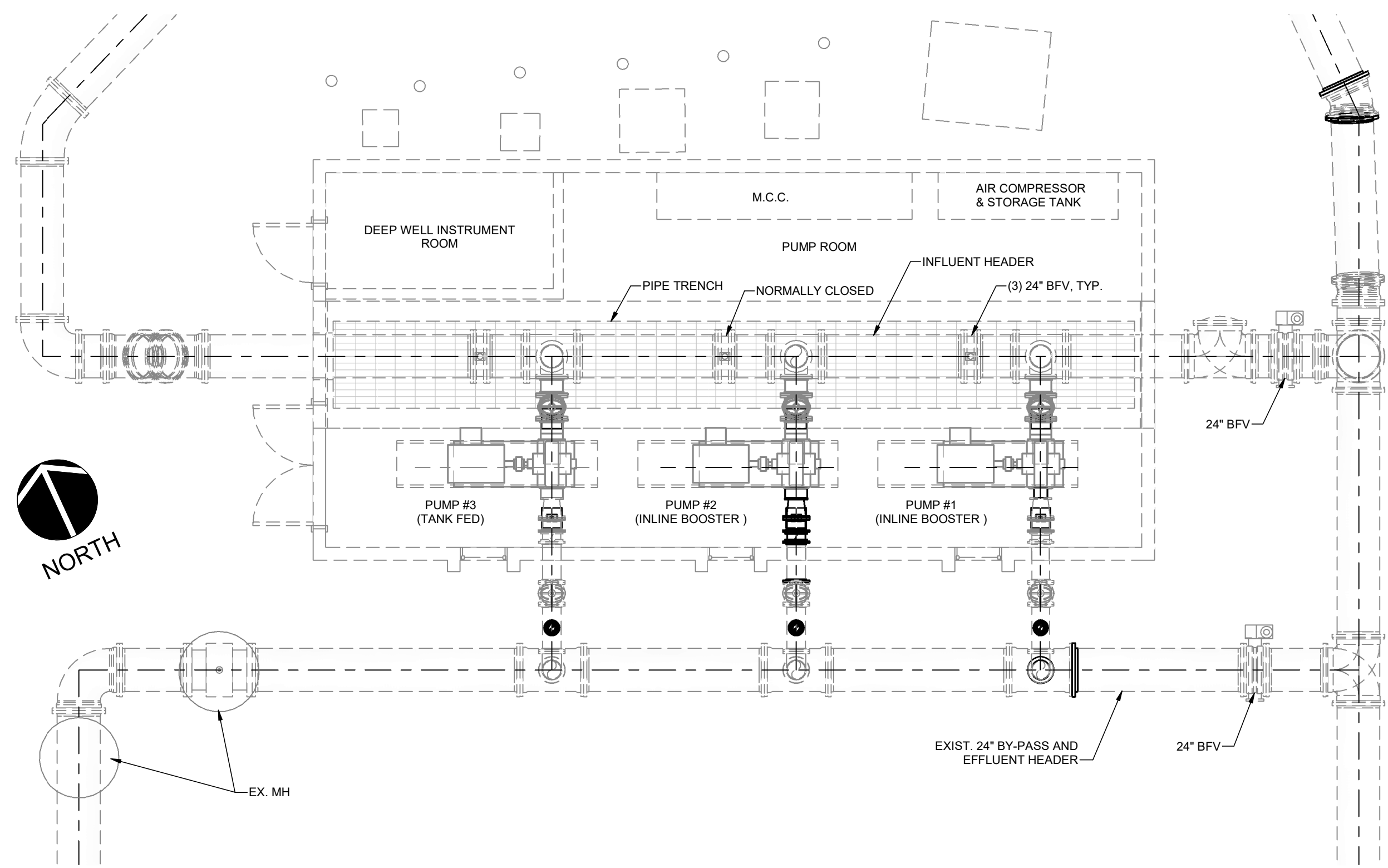
**CORTEZ BOOSTER PUMP STATION  
UPGRADES**

CIVIL  
**PROPOSED SITE PLANS**

PROJ. START DATE:	AUG. 2022
MCE PROJ. #	01024-0193
DRAWN	DES
DESIGNED	NAM
CHECKED	MAC
PROJ. MGR.	NAM
STATUS:	ISSUED FOR BID

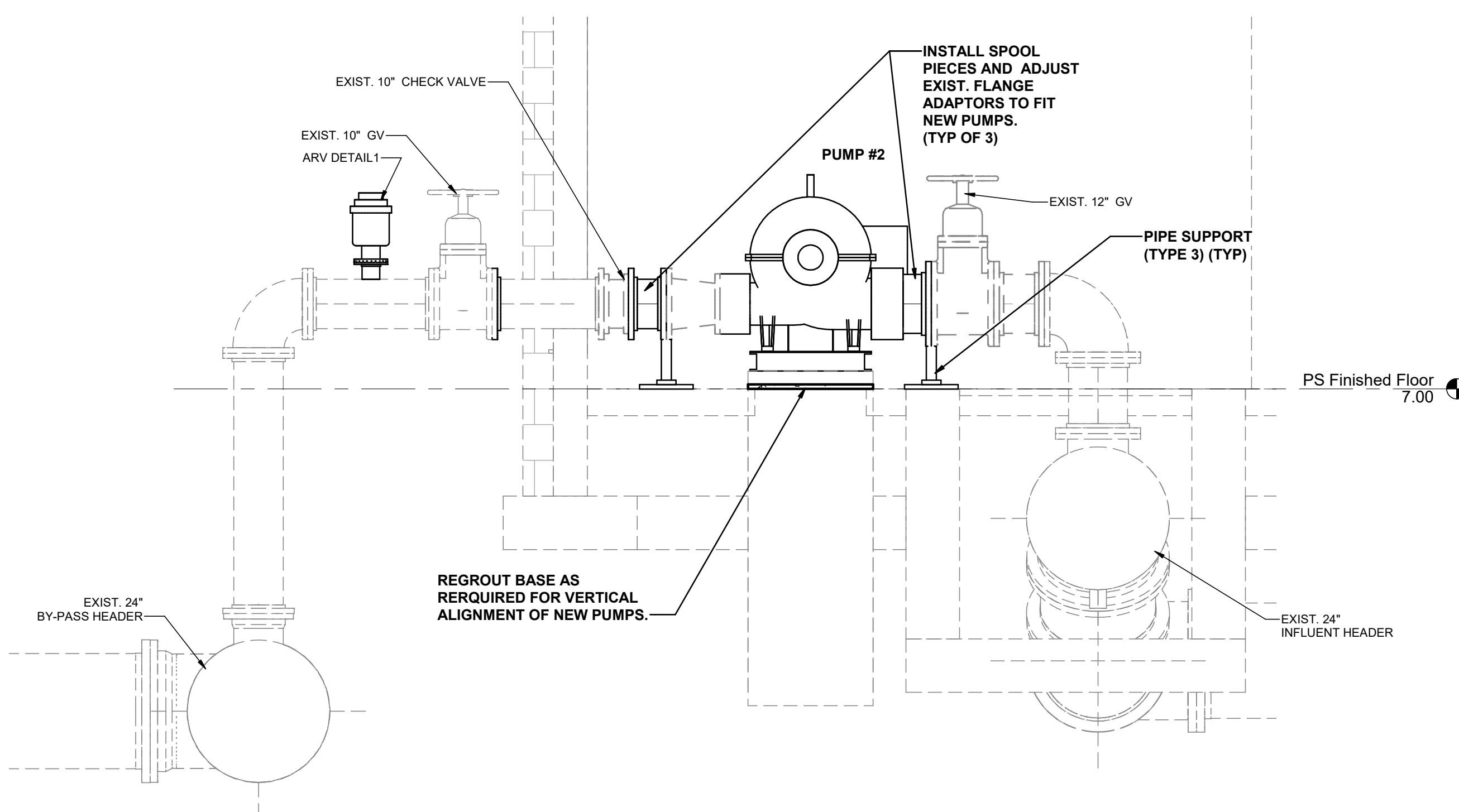
SCALE  
1/8" = 1'-0"

**C-2**  
DRAWING NUMBER  
REVISION



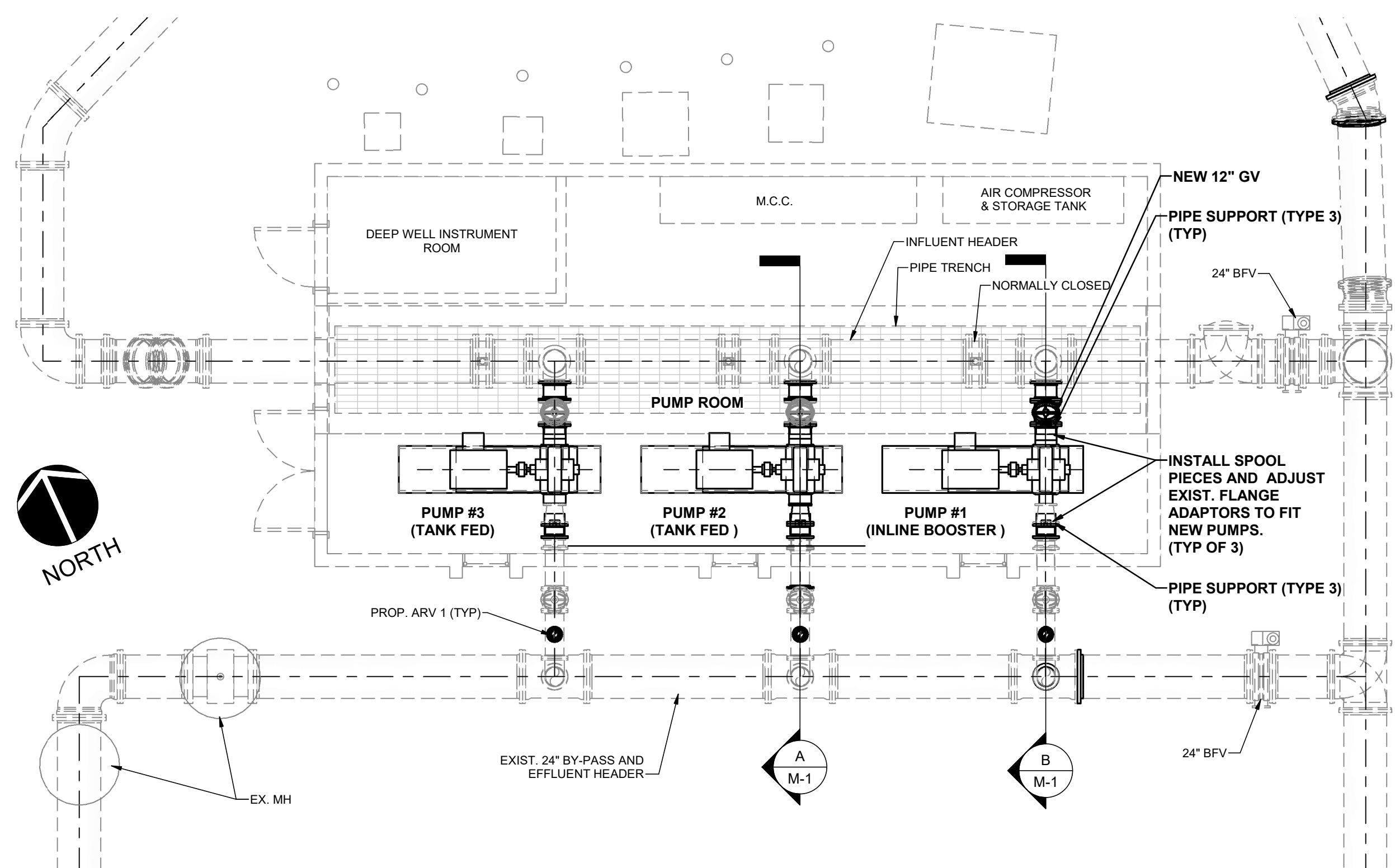
**EXISTING PUMP STATION MECHANICAL**

3/16" = 1'-0"



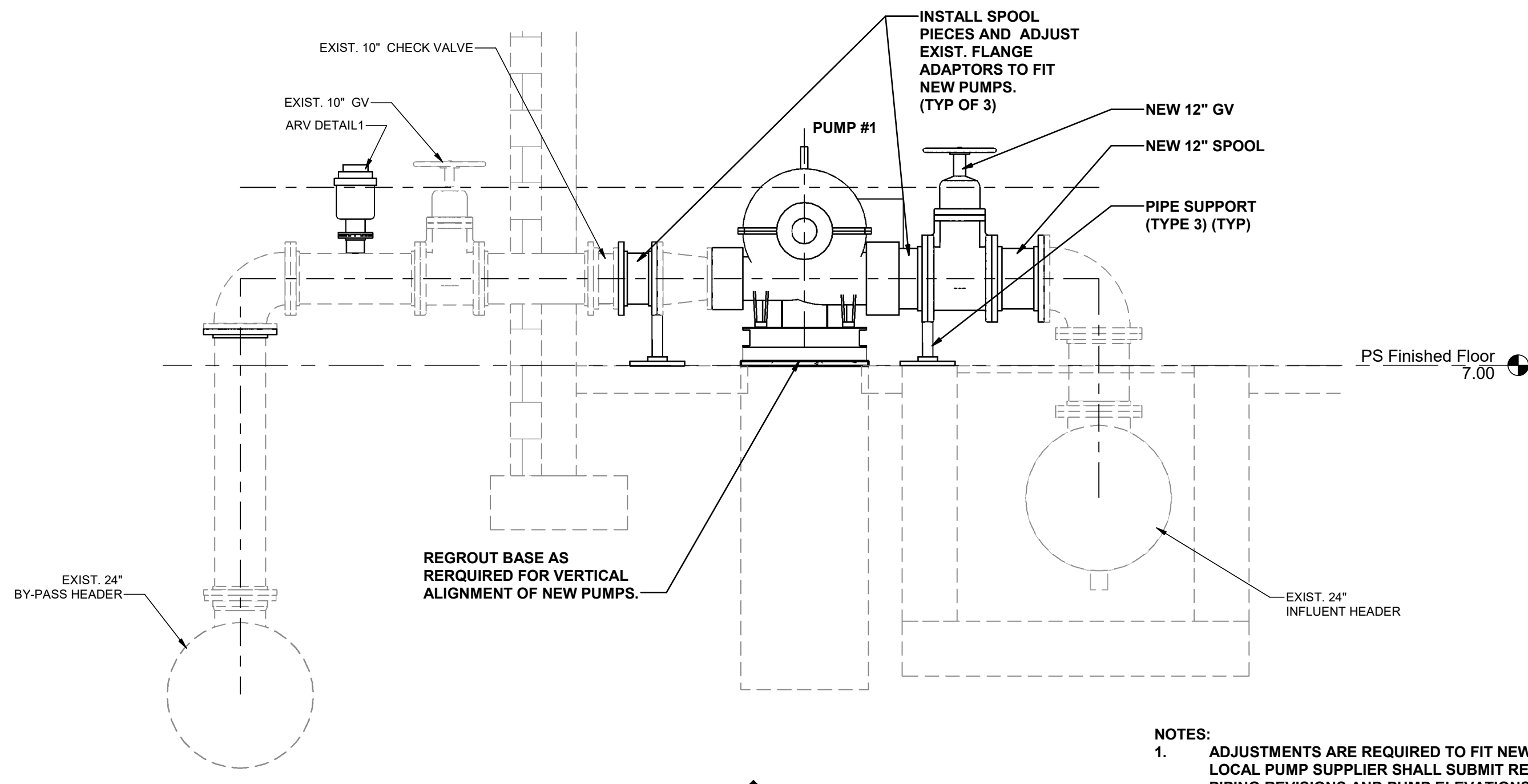
**SECTION**

1/2" = 1'-0"



**PROPOSED PUMP STATION MECHANICAL**

3/16" = 1'-0"



**SECTION**

1/2" = 1'-0"

- NOTES:**
- ADJUSTMENTS ARE REQUIRED TO FIT NEW PUMPS. LOCAL PUMP SUPPLIER SHALL SUBMIT RECOMMENDED PIPING REVISIONS AND PUMP ELEVATIONS TO ACCOMMODATE THE NEW PUMPS. LOCAL PUMP VENDOR SHALL ALSO PERFORM THE WORK WITH EXCEPTION OF ELECTRICAL AND INSTRUMENTATION.

REV. NO.	DESCRIPTION	DATE

REVISIONS

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**CORTEZ BOOSTER PUMP STATION UPGRADES**

MECHANICAL

**PUMP STATION PLAN AND SECTIONS**

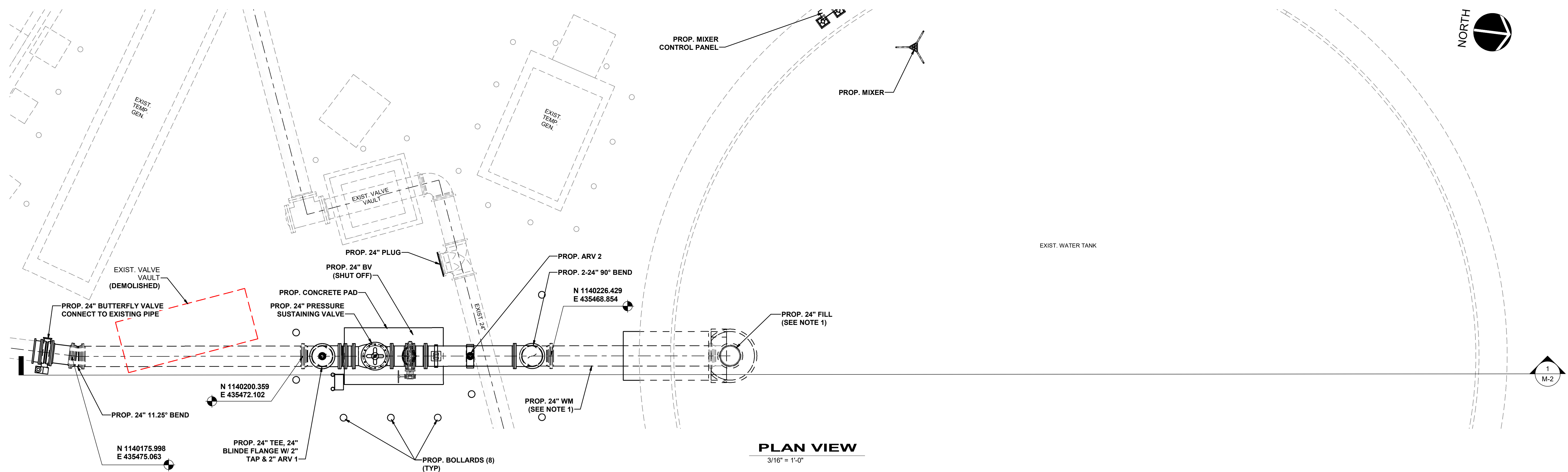
PROJ. START DATE:	AUG. 2022
MCE PROJ. #	01024-0193
DRAWN	DES
DESIGNED	NAM
CHECKED	BP
PROJ. MGR.	NAM

SCALE	As indicated
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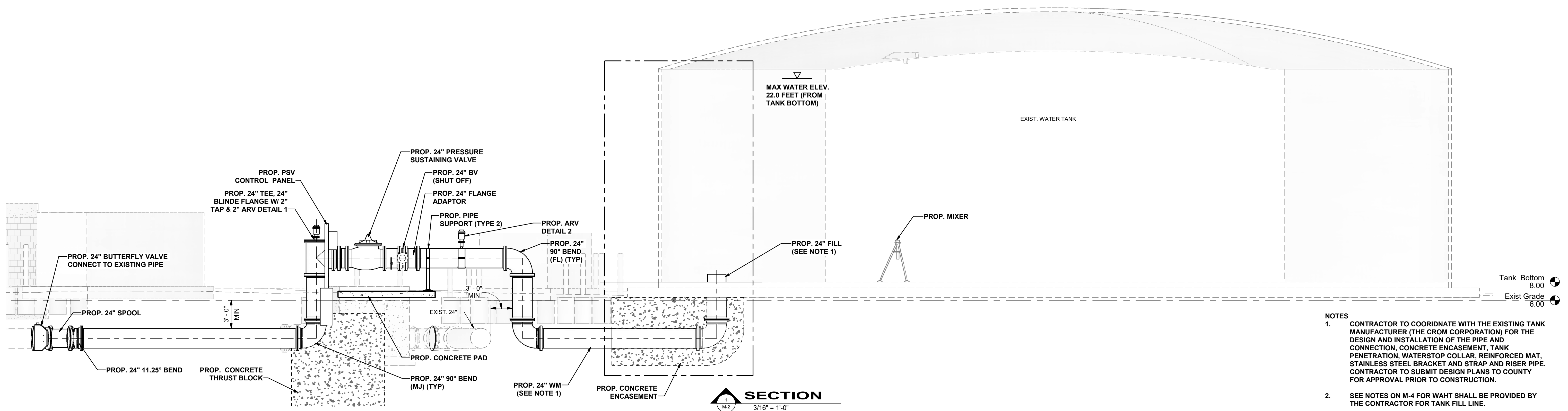
<b>M-1</b>	DRAWING NUMBER
	REVISION

STATUS: **ISSUED FOR BID**





**PLAN VIEW**  
3/16" = 1'-0"



**SECTION**  
3/16" = 1'-0"

- NOTES**
- CONTRACTOR TO COORDINATE WITH THE EXISTING TANK MANUFACTURER (THE CROM CORPORATION) FOR THE DESIGN AND INSTALLATION OF THE PIPE AND CONNECTION, CONCRETE ENCASMENT, TANK PENETRATION, WATERSTOP COLLAR, REINFORCED MAT, STAINLESS STEEL BRACKET AND STRAP AND RISER PIPE. CONTRACTOR TO SUBMIT DESIGN PLANS TO COUNTY FOR APPROVAL PRIOR TO CONSTRUCTION.
  - SEE NOTES ON M-4 FOR WAHT SHALL BE PROVIDED BY THE CONTRACTOR FOR TANK FILL LINE.

REV. NO.	DESCRIPTION	DATE

REVISIONS

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**CORTEZ BOOSTER PUMP STATION UPGRADES**

MECHANICAL

**PROPOSED MECHANICAL PLAN AND SECTION**

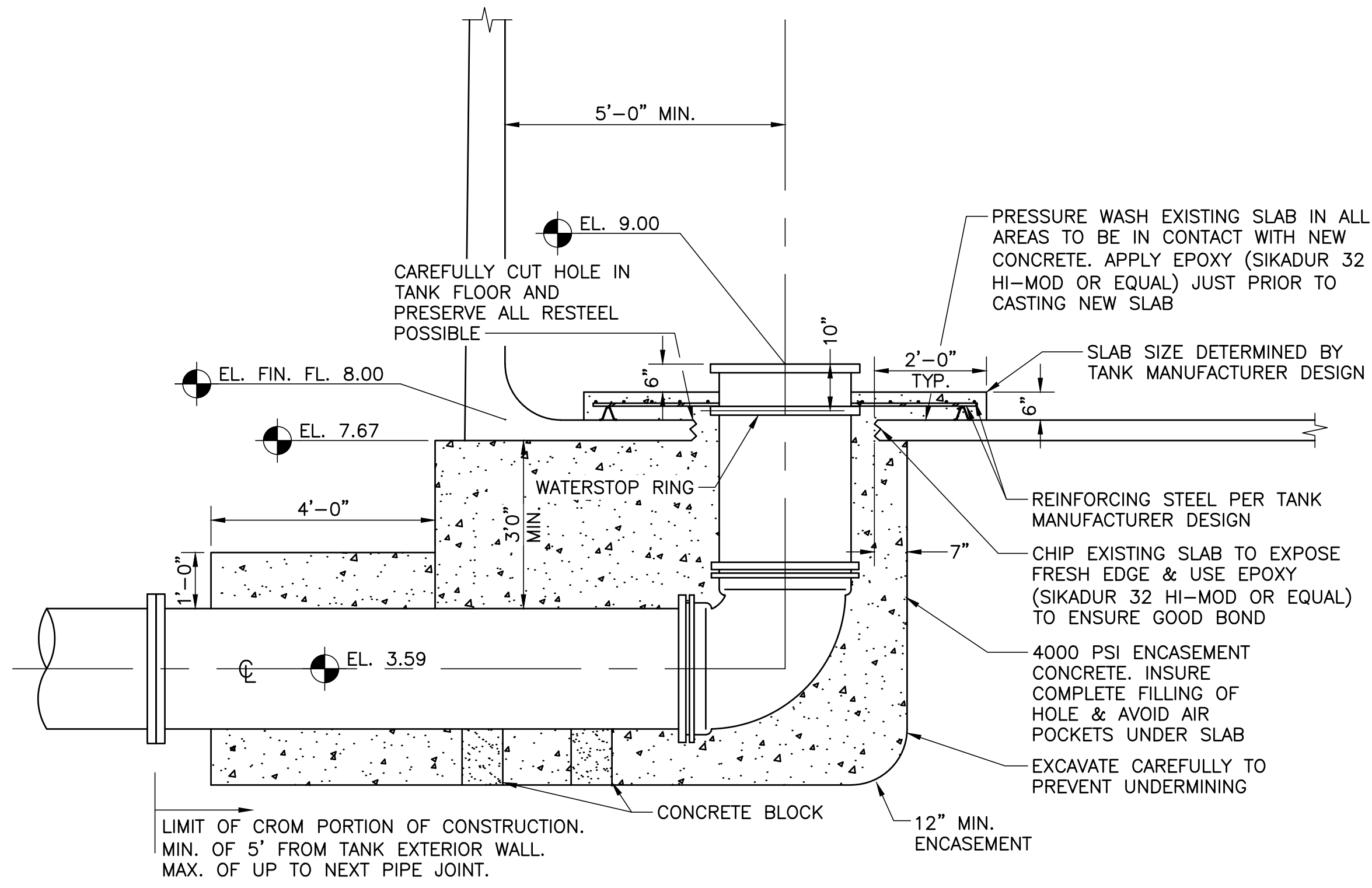
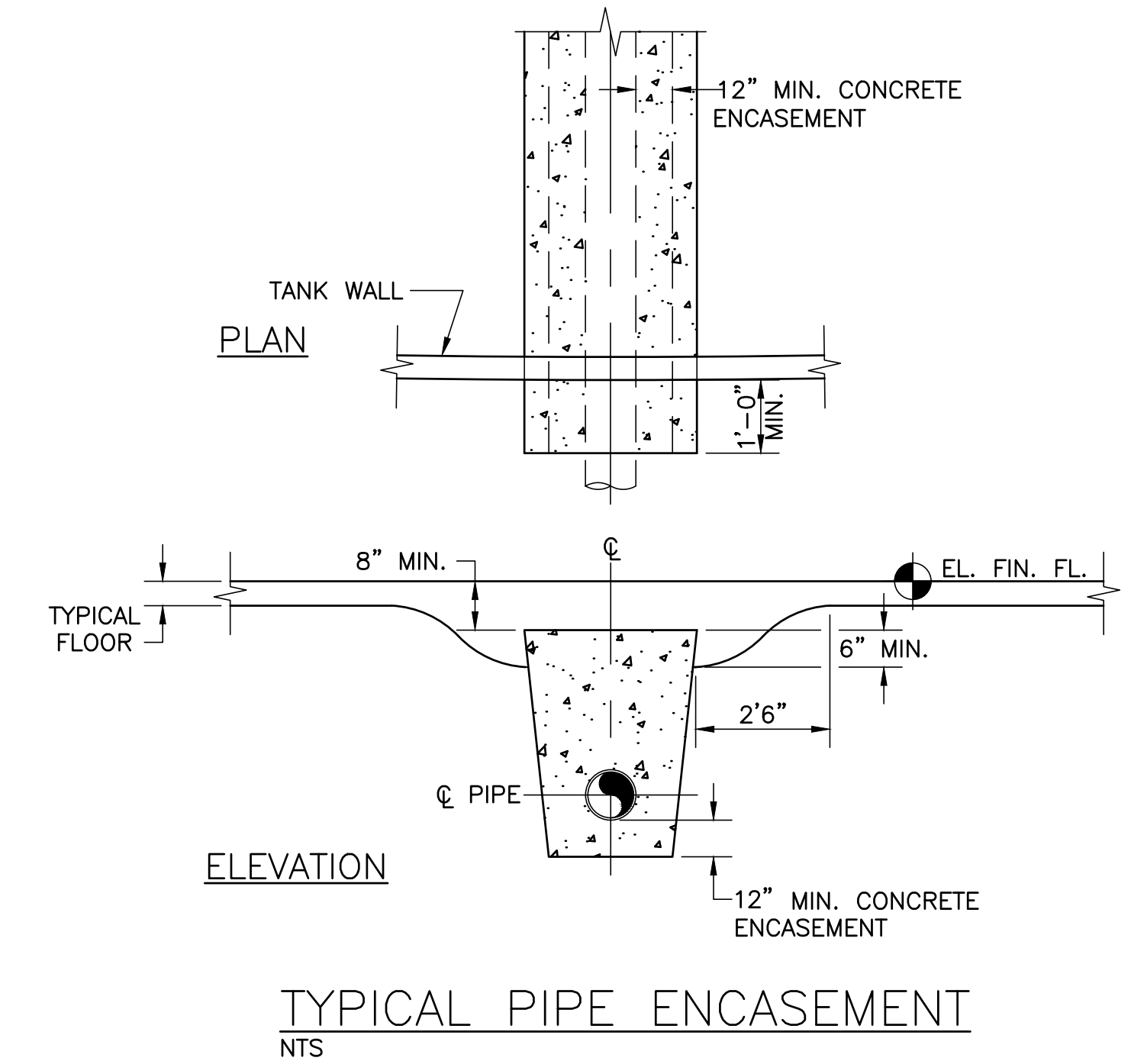
PROJ START DATE:	AUG. 2022
MCE PROJ. #	01024-0193
DRAWN	DES
DESIGNED	NAM
CHECKED	MAC
PROJ. MGR.	NAM

SCALE	M-2
3/16" = 1'-0"	DRAWING NUMBER
	REVISION

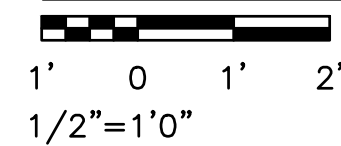
STATUS: **ISSUED FOR BID**

NOTES:

1. DESIGN AND CONSTRUCTION OF BELOW-GRADE PIPE ADDITION THROUGH TANK FLOOR TO BE BY TANK MANUFACTURER, THE CROM CORPORATION.
2. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING TO SUPPORT CROM'S WORK:
  - A. DISPOSAL IF ANY SILT/SEDIMENT ON THE BOTTOM OF THE TANK.
  - B. UTILITY LOCATES FOR CROM'S EXCAVATIONS.
  - C. EXCAVATION, DEWATERING AND SHORING FOR CROM'S UNDERGROUND IMPROVEMENTS.
  - D. POWER SUPPLY FOR CROM'S ACTIVITIES.
  - E. EXTERIOR TANK CLEANING SHALL BE BY THE CONTRACTOR.



STANDARD DETAIL FOR NEW UNDER FLOOR 24" DIP TO EXISTING TANK



REV. NO.	DESCRIPTION	DATE

SEAL

BLAKE PETERS, P.E.  
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**CORTEZ BOOSTER PUMP STATION UPGRADES**

**MECHANICAL**

**PROPOSED MECHANICAL RISER SECTION**

PROJ. START DATE: MAR. 2020
MCE PROJ. # 01024-0193
DRAWN IAP
DESIGNED IAP
CHECKED BP
PROJ. MGR. NAM

SCALE

HORIZONTAL: M-3

TBD

VERTICAL: TBD

DRAWING NUMBER

REVISION

STATUS: ISSUED FOR BID



**1 GENERAL ELECTRICAL SYMBOLS**

	LIGHTING, INSTRUMENT OR RECEPTACLE PANELBOARD
	POWER PANELBOARD
	CONTROL PANEL
	MOTOR CONTROL CENTER
	POWER MONITOR
	AMMETER
	AMMETER SWITCH
	VOLTMETER
	VOLTMETER SWITCH
	FLOAT/FLOW SWITCH
	LIMIT SWITCH
	PRESSURE SWITCH
	THERMOSTAT
	JUNCTION BOX, SIZE PER NEC
	ELECTRICAL EQUIPMENT CONNECTION
	ELECTRICAL MANHOLE / HANDHOLE AND THE LETTERS INDICATE THE TYPE OF THE HOLE
	RACEWAY SYSTEM CALL-OUTS: CT - CABLE TRAY BD - BUS DUCT DB - DUCTBANK EC - EXPOSED CONDUIT WW - WIRE WAY/TROUGH
	RACEWAY AND/OR CABLE ID NUMBER
	RACEWAY HOMERUN TO EQUIPMENT ID TAG AS SHOWN. LINE TYPE DESIGNATES CONCEALED, EXPOSED, ETC. NUMBERS/TEXT DESIGNATE HOMERUN EQUIPMENT (I.E. PANEL BOARD CIRCUIT NUMBER).
	TO PLC-1 CONDUCTOR/CABLE CALL-OUT WITHIN RACEWAY 9#14 #12G 0.75°C
	CONCEALED CONDUIT IN FLOOR SLAB, UNDERGROUND, ETC.
	EXISTING CABLE OR CONDUIT
	CONDUIT TURNED DOWN
	CONDUIT TURNED UP
	CONDUIT TURNED UP
	CONDUIT TURNED UP
	SITE ELECTRICAL
	EXISTING SITE ELECTRICAL
	SITE TELEPHONE
	EXISTING SITE TELEPHONE
	OVERHEAD ELECTRICAL UTILITY
	OVERHEAD TELEPHONE UTILITY
	UNDERGROUND ELECTRICAL UTILITY
	UNDERGROUND TELEPHONE UTILITY
	SITE GROUND
	EXISTING SITE GROUND

**2 POWER SYMBOLS**

	CLASS 1/2 DIVISION III CONDUIT SEAL-OFF FITTING		TRANSFORMER, POWER TYPE AND RATINGS AS NOTED ON THE DRAWINGS
	LOCAL CONTROL STATION WITH THREE OR MORE SELECTOR/PUSH SWITCHES LOWER-RIGHT SYMBOL INDICATES MOUNTING LOCATION		TRANSFORMER, SHIELDED ISOLATION TYPE AND RATINGS AS NOTED ON THE DRAWINGS
	LOCAL CONTROL STATION WITH TWO SELECTOR/PUSH SWITCHES LOWER-RIGHT SYMBOL INDICATES MOUNTING LOCATION		TRANSFORMER, CURRENT 'CT' TYPE AND RATINGS AS NOTED ON THE DRAWINGS
	LOCAL CONTROL STATION WITH ONE SELECTOR/PUSH SWITCH LOWER-RIGHT SYMBOL INDICATES MOUNTING LOCATION		TRANSFORMER, POTENTIAL 'PT' OR 'VT' TYPE AND RATINGS AS NOTED ON THE DRAWINGS
	LOCATED AT FIELD DEVICE		AUTOMATIC OR MANUAL TRANSFER SWITCH, STAND-ALONE TYPE AND RATINGS AS NOTED ON THE DRAWINGS
	LOCATED AT MAIN CONTROL PANEL		SAFETY / DISCONNECT SWITCH TOP NUMBER DENOTES FUSE SIZE (NF=NON-FUSED) BOTTOM NUMBER DENOTES NEMA ENCLOSURE RATING
	LOCATED AT LOCAL CONTROL PANEL		MOTOR CONTROLLER, STAND-ALONE WITH EXTERNAL DISCONNECT: UPPER LEFT NUMBER DENOTES NEMA FRAME SIZE UPPER RIGHT NUMBERS DENOTE AMPERE AND FRAME RATINGS CENTER RIGHT NUMBER DENOTES NEMA ENCLOSURE RATING LETTERS WITHIN THE SYMBOL DENOTE THE FOLLOWING: FVNR FULL VOLTAGE NON-REVERSE FVR FULL VOLTAGE REVERSIBLE TS1W TWO SPEED - SINGLE WINDING TS2W TWO SPEED - DUAL WINDING RVSS REDUCED VOLTAGE SOFT STARTER RVAT REDUCED VOLTAGE AUTO TRANSFORMER VFD VARIABLE FREQUENCY DRIVE
	MOUNTED ON DOOR		MOTOR CONTROLLER, FULL-VOLTAGE MCC UNIT: UPPER LEFT NUMBER DENOTES NEMA FRAME SIZE LETTERS WITHIN THE SYMBOL DENOTE THE FOLLOWING: FVNR FULL VOLTAGE NON-REVERSE FVR FULL VOLTAGE REVERSIBLE
	DRAW-OUT POWER CIRCUIT BREAKER WITH PROGRAMMABLE SOLID STATE RELAY 'EO' DENOTES ELECTRICALLY OPERATED		MOTOR CONTROLLER, PART-WINDING MCC UNIT: UPPER LEFT NUMBER DENOTES NEMA FRAME SIZE LETTERS WITHIN THE SYMBOL DENOTE THE FOLLOWING: TS1W TWO SPEED - SINGLE WINDING TS2W TWO SPEED - DUAL WINDING
	FIXED-MOUNT POWER CIRCUIT BREAKER WITH ADJUSTABLE SOLID STATE RELAY		MOTOR CONTROLLER, REDUCED-VOLTAGE MCC UNIT: UPPER LEFT NUMBER DENOTES NEMA FRAME SIZE LETTERS WITHIN THE SYMBOL DENOTE THE FOLLOWING: RVSS REDUCED VOLTAGE SOFT STARTER RVAT REDUCED VOLTAGE AUTO TRANSFORMER
	CIRCUIT BREAKER, GENERIC FIXED-MOUNT 'TMTU' THERMAL-MAGNETIC TRIP UNIT 'ELTU' ELECTRONIC TRIP UNIT		MOTOR CONTROLLER, VARIABLE FREQUENCY DRIVE, MCC UNIT: UPPER LEFT NUMBER DENOTES NEMA FRAME SIZE LETTERS WITHIN THE SYMBOL DENOTE THE FOLLOWING: VFD VARIABLE FREQUENCY DRIVE
	CIRCUIT BREAKER, GENERIC		LINE OR LOAD REACTOR CENTER RIGHT NUMBER DENOTES PERCENT IMPEDANCE
	CIRCUIT BREAKER, THERMAL		MOTOR PROTECTION FILTER
	CIRCUIT BREAKER, MOTOR CIRCUIT PROTECTOR		AC MOTOR SINGLE OR THREE PHASE AS NOTED
	CIRCUIT BREAKER, THERMAL ENCLOSED TOP NUMBER DENOTES TRIP BOTTOM NUMBER DENOTES FRAME SIZE UPPER LEFT NUMBER DENOTES NEMA ENCLOSURE RATING		CABLE-TRAY TYPE AS NOTED ON THE DRAWINGS
	FUSE, GENERIC		
	FUSE, GENERIC TOP NUMBER DENOTES TRIP BOTTOM NUMBER DENOTES VOLTAGE CLASS MIDDLE NUMBER DENOTES TYPE		
	WIRING DEVICE, POWER RECEPTACLE WITH INTEGRAL DISCONNECT / LOAD BREAK NEMA CONFIGURATION SHOWN LOWER RIGHT		
	WIRING DEVICE, POWER RECEPTACLE NEMA CONFIGURATION SHOWN LOWER RIGHT		

NOTES:  
ALL SYMBOLS MAY NOT BE UTILIZED FOR THIS PROJECT.  
ADDITIONAL SYMBOLS NOT SHOWN ON THIS DRAWING MAY BE SHOWN ELSEWHERE ON THE ELECTRICAL DRAWINGS. IF REQUIRED, IEC RATINGS WILL INCLUDE THE "IEC" AND "IP" PREFIX.

**3 SCHEMATIC SYMBOLS**

	MOMENTARY PUSH BUTTON NORMALLY OPENED		CONTROL RELAY, GENERIC DESIGNATIONS: CR CONTROL RELAY MX AUXILIARY RELAY TR TIMING RELAY AR ALARM RELAY RR READY RELAY
	MOMENTARY PUSH BUTTON NORMALLY CLOSED		CONTROL RELAY, LATCHING
	MUSHROOM PUSH BUTTON NORMALLY OPENED		CONTACT, NORMALLY OPENED TOP ID TAG DENOTES PARENT RELAY
	MUSHROOM PUSH BUTTON NORMALLY CLOSED		CONTACT, NORMALLY CLOSED TOP ID TAG DENOTES PARENT RELAY
	TOGGLE SWITCH NORMALLY OPENED		SOLENOID, GENERIC
	TOGGLE SWITCH NORMALLY CLOSED		HEATING ELEMENT, GENERIC
	TWO-POSITION SWITCH NORMALLY OPENED		ELAPSED TIME METER, ELECTRONIC
	THREE-POSITION BUTTON NORMALLY OPENED		HORN, ALARM
	LIMIT SWITCH NORMALLY OPENED		HORN, ALARM AUDIO AND VISUAL ANNUNCIATION
	LIMIT SWITCH NORMALLY CLOSED		TRANSFORMER, CONTROL POWER RATINGS AS NOTED ON THE DRAWINGS
	LIMIT SWITCH HELD OPENED		BATTERY OR DC POWER SOURCE
	LIMIT SWITCH HELD CLOSED		MOTOR ACTUATED VALVE M MODULATING O/C OPEN/CLOSE
	TEMPERATURE SWITCH NORMALLY OPENED		MOTOR ACTUATED VALVE M MODULATING O/C OPEN/CLOSE
	TEMPERATURE SWITCH NORMALLY CLOSED		MOTOR ACTUATED VALVE M MODULATING O/C OPEN/CLOSE
	FLOAT SWITCH NORMALLY OPENED		
	FLOAT SWITCH NORMALLY CLOSED		
	FLOW SWITCH NORMALLY OPENED		
	FLOW SWITCH NORMALLY CLOSED		
	PRESSURE SWITCH NORMALLY OPENED		
	PRESSURE SWITCH NORMALLY CLOSED		
	ON DELAY TIME RELAY NORMALLY OPENED TIMED CLOSED NCTC		
	ON DELAY TIME RELAY NORMALLY CLOSED TIMED OPENED NCTO		
	OFF DELAY TIME RELAY NORMALLY OPENED TIMED OPENED NOTO		
	OFF DELAY TIME RELAY NORMALLY CLOSED TIMED CLOSED NCTC		
	INDICATION LIGHT W - WHITE G - GREEN A - AMBER R - RED B - BLUE C - CLEAR		
	INDICATION LIGHT, PUSH-TO-TEST W - WHITE G - GREEN A - AMBER R - RED B - BLUE C - CLEAR		

NOTES:  
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REV. NO.	DESCRIPTION	DATE

SEAL

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**CORTEZ BOOSTER PUMP STATION UPGRADES**

**ELECTRICAL**

**ELECTRICAL SYMBOLS 1 OF 2**

PROJ. START DATE: <b>MAR. 2020</b>	SCALE	<b>E002</b> DRAWING NUMBER
MCE PROJ. # <b>01024-0193</b>	HORIZONTAL: <b>TBD</b>	
DRAWN: <b>JG</b>	VERTICAL: <b>TBD</b>	REVISION
DESIGNED: <b>AAH</b>		
CHECKED: <b>MAC</b>		
PROJ. MGR: <b>BP</b>		

STATUS: **ISSUED FOR BID**

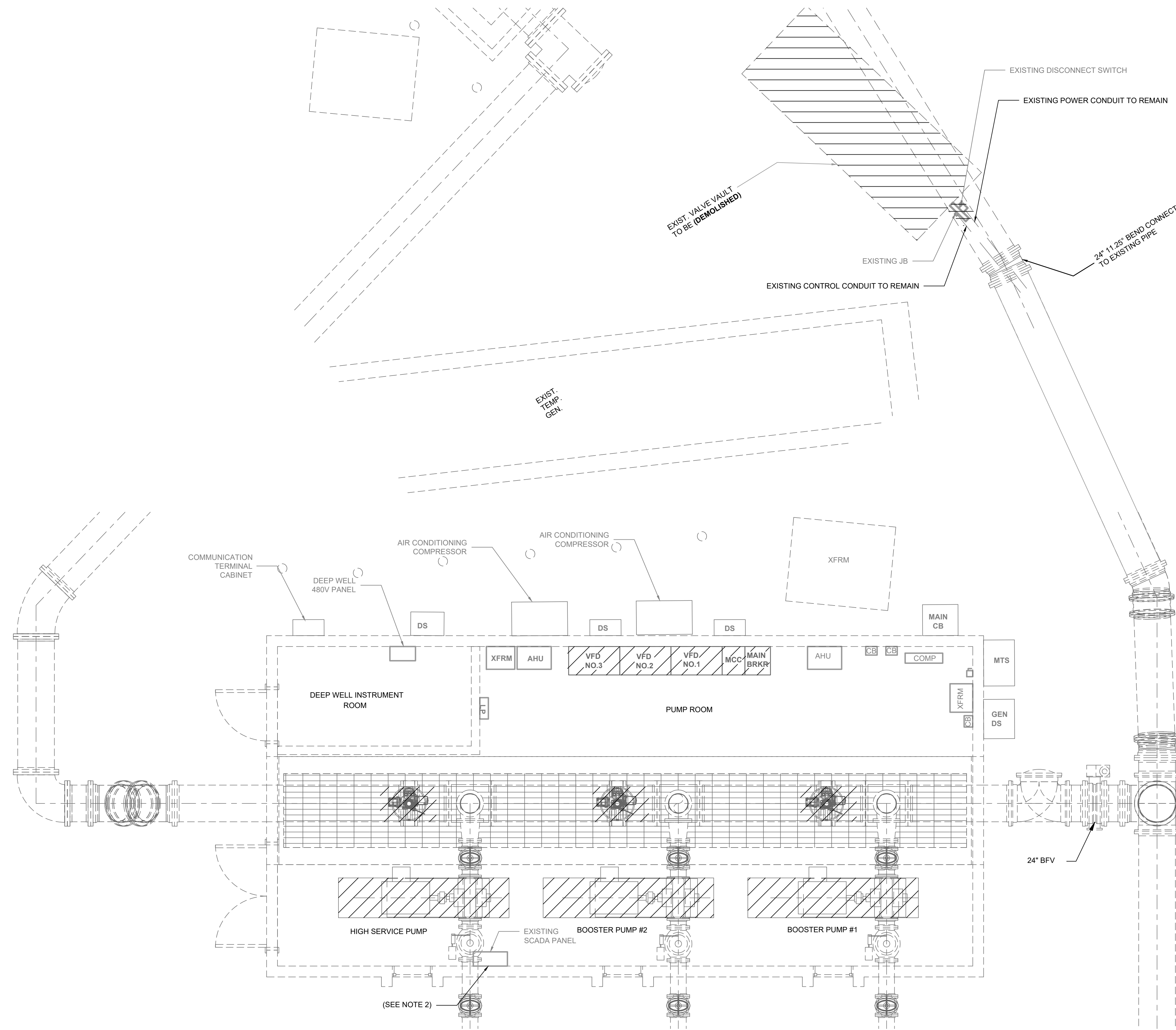
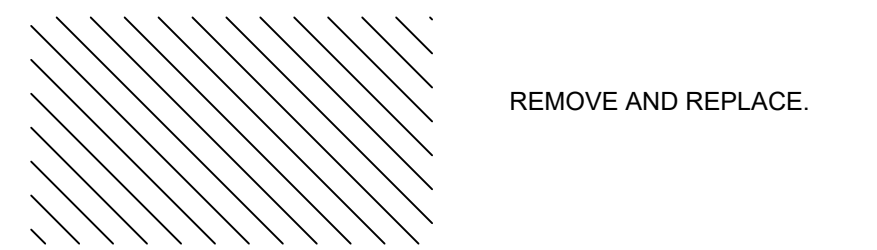




20 0 20 40  
SCALE: 1" = 40'

- NOTES:**
- CONTRACTOR TO PROVIDE TEMPORARY POWER FOR PUMP #1 (125HP) USING TEMPORARY MOTOR STARTER. USE ACROSS THE LINE STARTER.
  - SCADA PANEL TO BE REMOVED AND REPLACED AS PART OF SEPARATE CONTRACT IN NEW LOCATION SEE E1.02.

**DEMOLITION LEGEND**



REV. NO.	DESCRIPTION	DATE

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**CORTEZ BOOSTER PUMP STATION UPGRADES**

**ELECTRICAL**

**SITE AND PUMP ROOM DEMOLITION PLAN**

PROJ. START DATE: MAR. 2020
MCE PROJ. # 01024-0193
DRAWN JG
DESIGNED AAH
CHECKED MAC
PROJ. MGR. BP

SCALE

HORIZONTAL: TBD

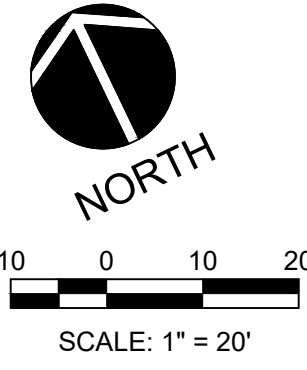
VERTICAL: TBD

**E1.01**  
DRAWING NUMBER

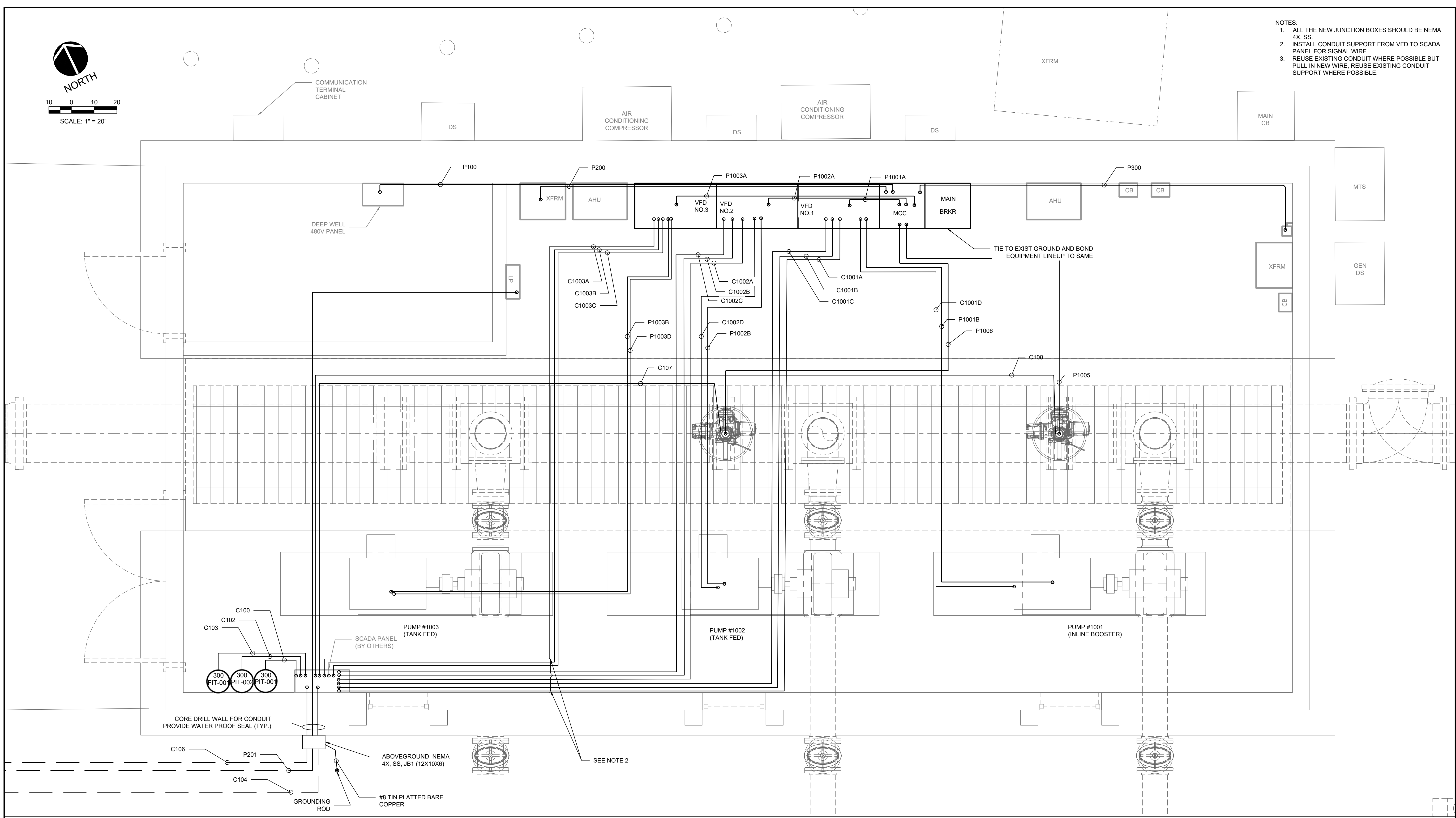
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REVISION

STATUS:

**ISSUED FOR BID**



- NOTES:
1. ALL THE NEW JUNCTION BOXES SHOULD BE NEMA 4X, SS.
  2. INSTALL CONDUIT SUPPORT FROM VFD TO SCADA PANEL FOR SIGNAL WIRE.
  3. REUSE EXISTING CONDUIT WHERE POSSIBLE BUT PULL IN NEW WIRE, REUSE EXISTING CONDUIT SUPPORT WHERE POSSIBLE.

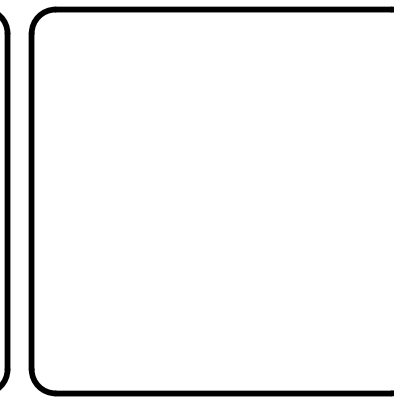


PROPOSED ELECTRICAL PUMP ROOM PLAN  
SCALE: 1"=20'-0"

REV. NO.	DESCRIPTION	DATE

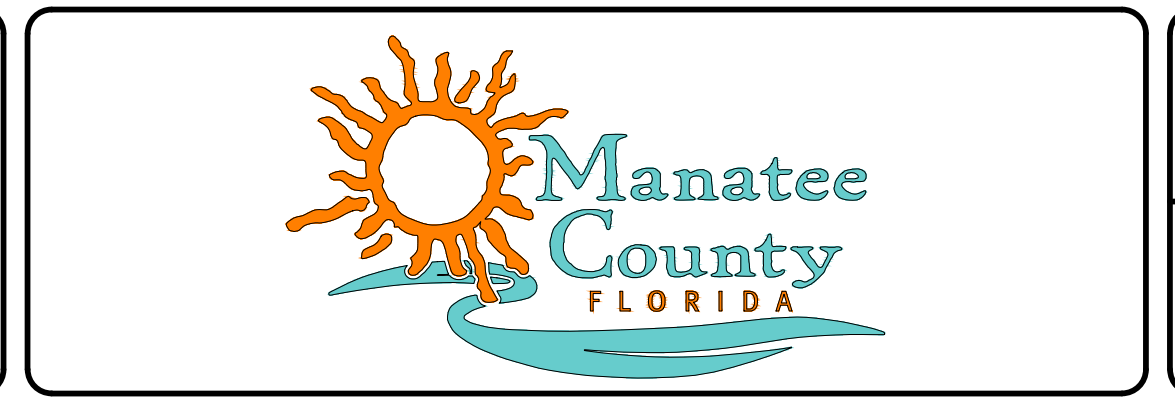
REVISIONS

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**CORTEZ BOOSTER PUMP STATION UPGRADES**

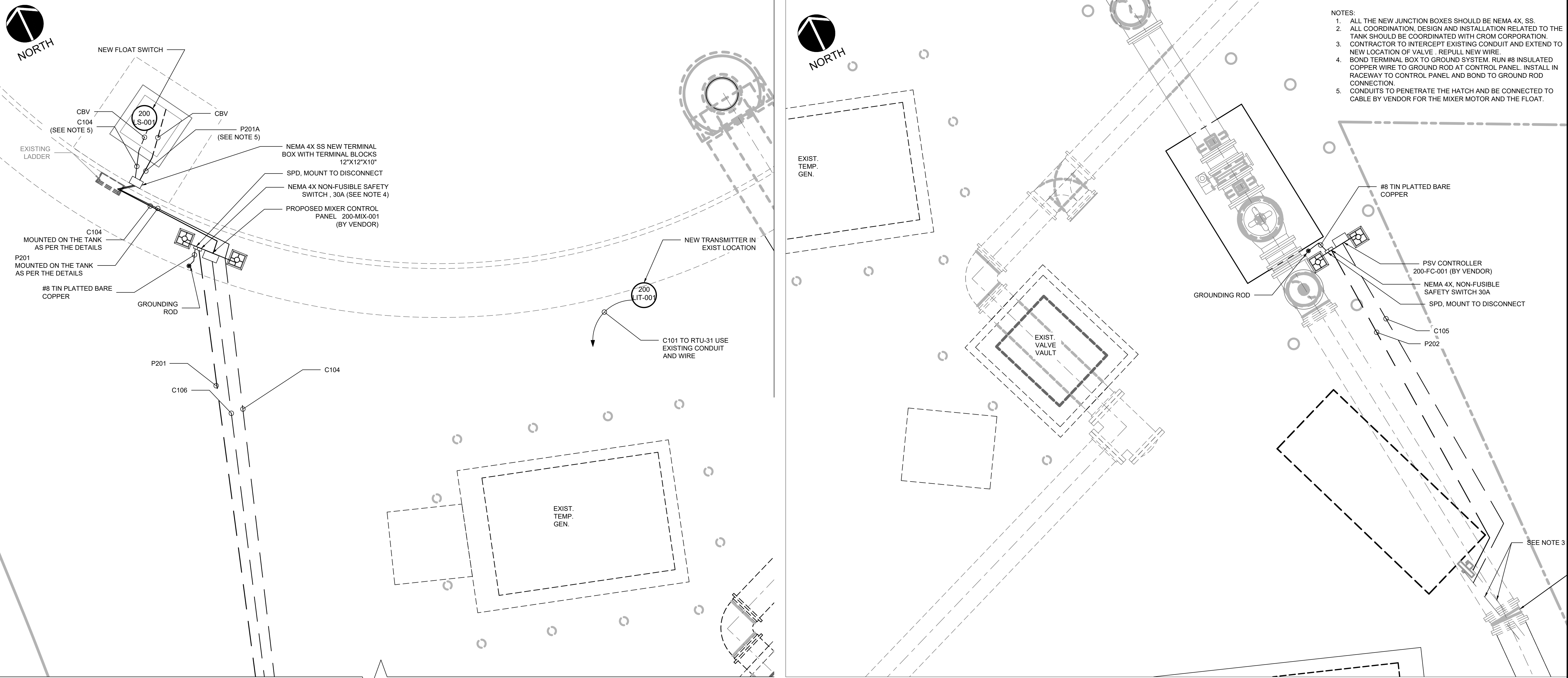
**ELECTRICAL**

**PROPOSED ELECTRICAL SITE PLAN**

PROJ. START DATE: MAR. 2020
MCE PROJ. # 01024-0193
DRAWN JG
DESIGNED AAH
CHECKED MAC
PROJ. MGR. BP

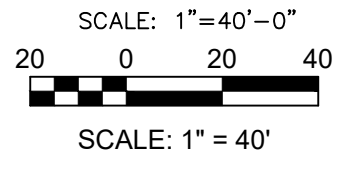
STATUS: ISSUED FOR BID

SCALE	<b>E1.02</b>
HORIZONTAL: TBD	
VERTICAL: TBD	
DRAWING NUMBER	
REVISION	----

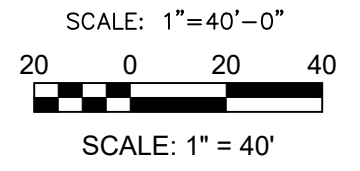


- NOTES:**
1. ALL THE NEW JUNCTION BOXES SHOULD BE NEMA 4X, SS.
  2. ALL COORDINATION, DESIGN AND INSTALLATION RELATED TO THE TANK SHOULD BE COORDINATED WITH CROM CORPORATION.
  3. CONTRACTOR TO INTERCEPT EXISTING CONDUIT AND EXTEND TO NEW LOCATION OF VALVE - REPULL NEW WIRE.
  4. BOND TERMINAL BOX TO GROUND SYSTEM. RUN #8 INSULATED COPPER WIRE TO GROUND ROD AT CONTROL PANEL. INSTALL IN RACEWAY TO CONTROL PANEL AND BOND TO GROUND ROD CONNECTION.
  5. CONDUITS TO PENETRATE THE HATCH AND BE CONNECTED TO CABLE BY VENDOR FOR THE MIXER MOTOR AND THE FLOAT.

PROPOSED PARTIAL ELECTRICAL SITE PLAN 1



PROPOSED PARTIAL ELECTRICAL SITE PLAN 2



REV. NO.	DESCRIPTION	DATE

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**CORTEZ BOOSTER PUMP STATION  
 UPGRADES**

ELECTRICAL  
**PROPOSED PARTIAL ELECTRICAL SITE  
 PLAN**

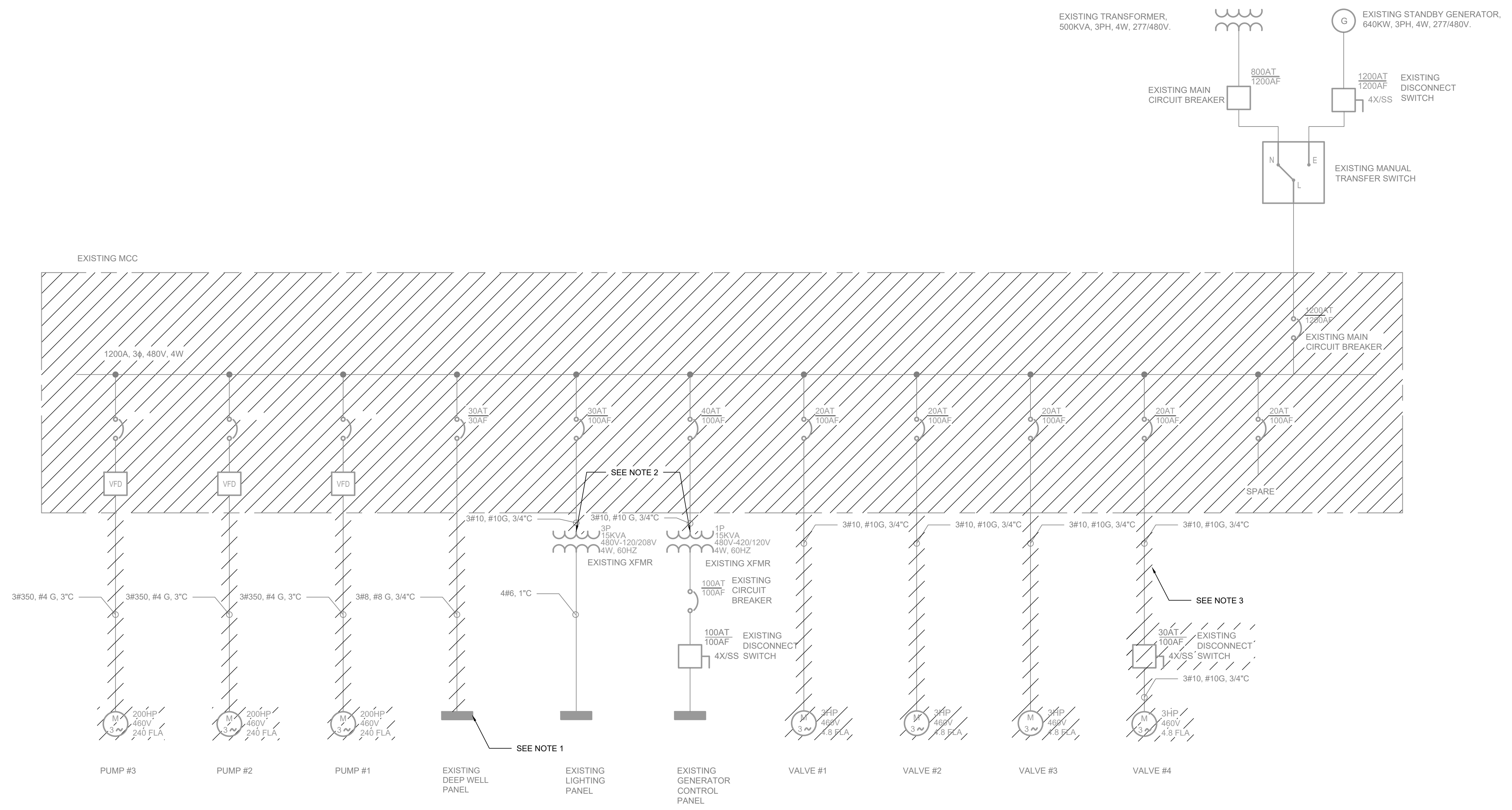
PROJ. START DATE:	MAR. 2020
MCE PROJ. #	01024-0193
DRAWN	JG
DESIGNED	AAH
CHECKED	MAC
PROJ. MGR.	BP

SCALE	HORIZONTAL: <b>E1.03</b>
	TBD
REVISION	VERTICAL: TBD
	TBD

STATUS: ISSUED FOR BID



- NOTES:
- PANEL TO REMAIN. REUSE THE EXISTING CONDUIT.
  - XFMR TO REMAIN. REUSE THE EXISTING CONDUIT.
  - CONDUIT TO REMAIN. REPULL NEW WIRE. REFER TO SHEET E0.1 FOR ADDITIONAL INFORMATION.



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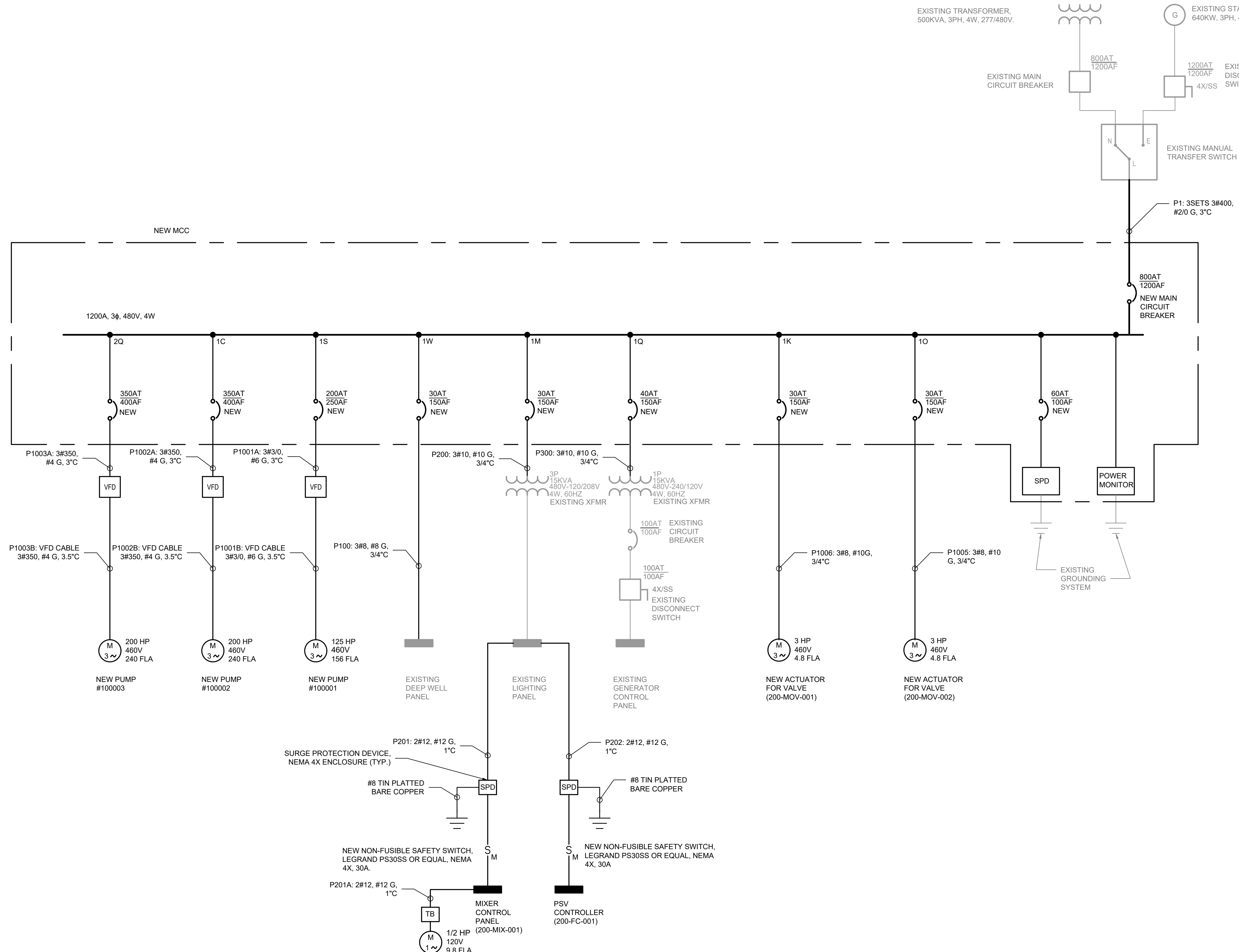
### CORTEZ BOOSTER PUMP STATION UPGRADES

ELECTRICAL

## EXISTING & DEMOLITION ONE LINE

PROJ. START DATE: <b>MAR. 2020</b>	SCALE	<b>E2.01</b> DRAWING NUMBER ----- REVISION
MCE PROJ. # <b>01024-0193</b>	HORIZONTAL: <b>TBD</b>	
DRAWN <b>JG</b>	VERTICAL: <b>TBD</b>	
DESIGNED <b>AAH</b>		
CHECKED <b>MAC</b>		
PROJ. MGR. <b>BP</b>		
STATUS: <b>ISSUED FOR BID</b>		

NOTES:  
 1. ALL THE VFDS ARE SIZED FOR 200HP WITH ADJUSTING SETTINGS FOR 125HP FOR ANY FUTURE UPGRADES.



LOAD TABLE		480V	500 KVA	XFR	108%	
			640 KW	GEN	67%	
MOTOR CONTROL CENTER		3 Ph	800 AT	MCB	81%	
CORTEZ BOOSTER PUMP		3 WIRE	1200 AF	BUSS	54%	
NAME	CONT?	#DUTY	#CON	KVA	HP	FLA
PUMP #2-3	Y	2	2		200.0	480.0
PUMP #1	Y	0	1		125	0.0
XFRM #1	Y	1	1	15		18.0
XFRM #2	Y	1	1	15		18.0
VALVE #1-2	N	2	2		3	9.6
DEEP WELL PANEL	Y	1	1	23		27.6
SUM			DUTY: 0.6843	53.0	546.0	574.2
TOTAL CONNECTED LOAD (A)						574.2
TOTAL RUNNING LOAD				539.8		650.1
			DUTY: 1.132184	NEC 230.42 SE:		710.1 A

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**CORTEZ BOOSTER PUMP STATION UPGRADES**

**ELECTRICAL**

**PROPOSED ONE LINE**

PROJ. START DATE: MAR. 2020

MCE PROJ. # 01024-0193

DRAWN JG

DESIGNED AAH

CHECKED MAC

PROJ. MGR. BP

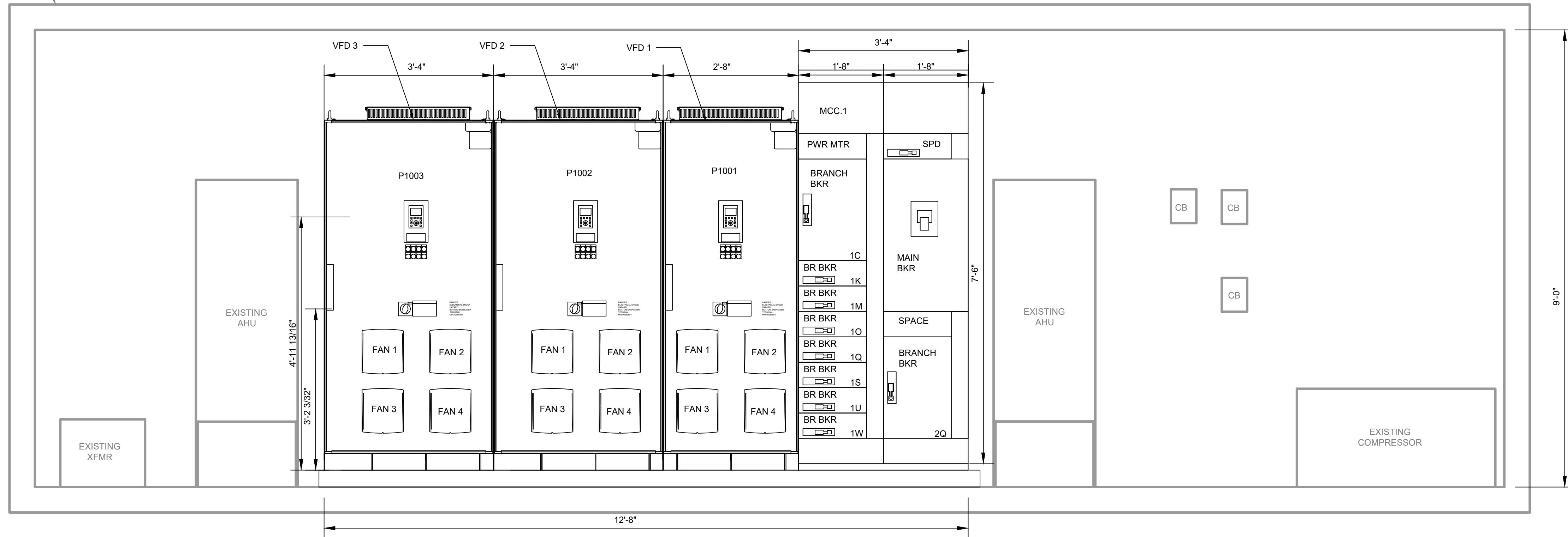
SCALE: HORIZONTAL: E2.02

VERTICAL: TBD

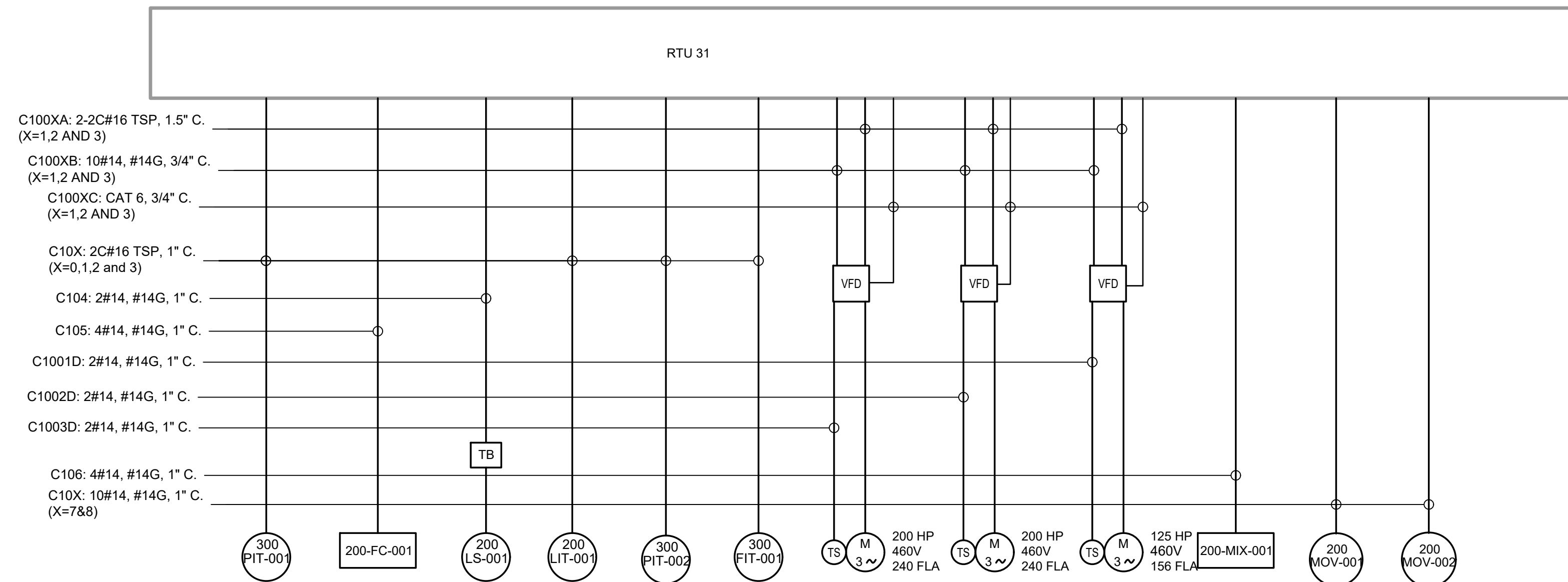
REVISION: ----

STATUS: ISSUED FOR BID

EXISTING PUMP ROOM BUILDING



ELEVATION  
SCALE: 3/4"=1'-0"



ELECTRICAL INTERCONNECTION DIAGRAM  
SCALE: NTS

REV NO.	DESCRIPTION	DATE

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**CORTEZ BOOSTER PUMP STATION  
UPGRADES**

**ELECTRICAL  
ELEVATION AND INTERCONNECT**

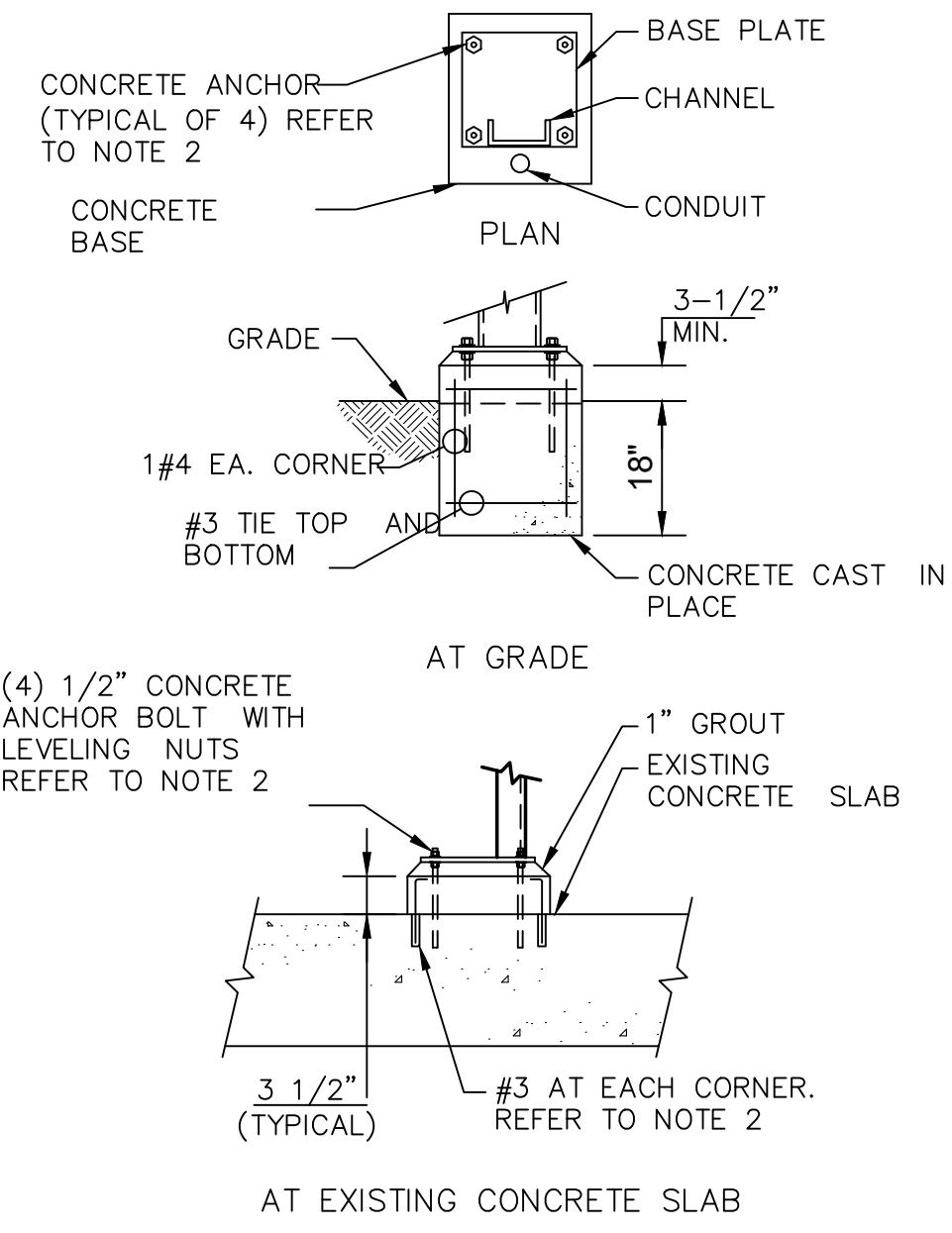
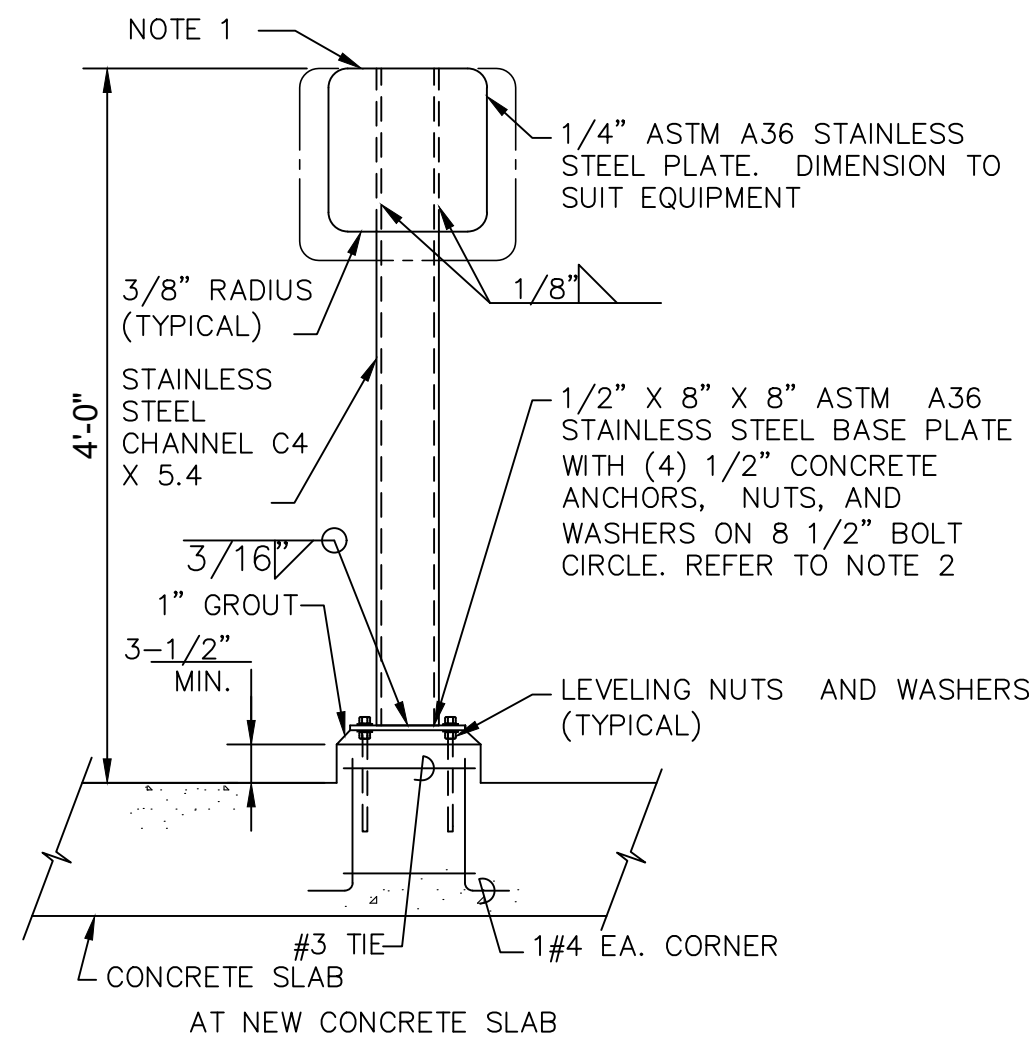
PROJ. START DATE: <b>MAR. 2020</b>
MCE PROJ. # <b>01024-0193</b>
DRAWN: <b>JG</b>
DESIGNED: <b>AAH</b>
CHECKED: <b>MAC</b>
PROJ. MGR: <b>BP</b>

SCALE

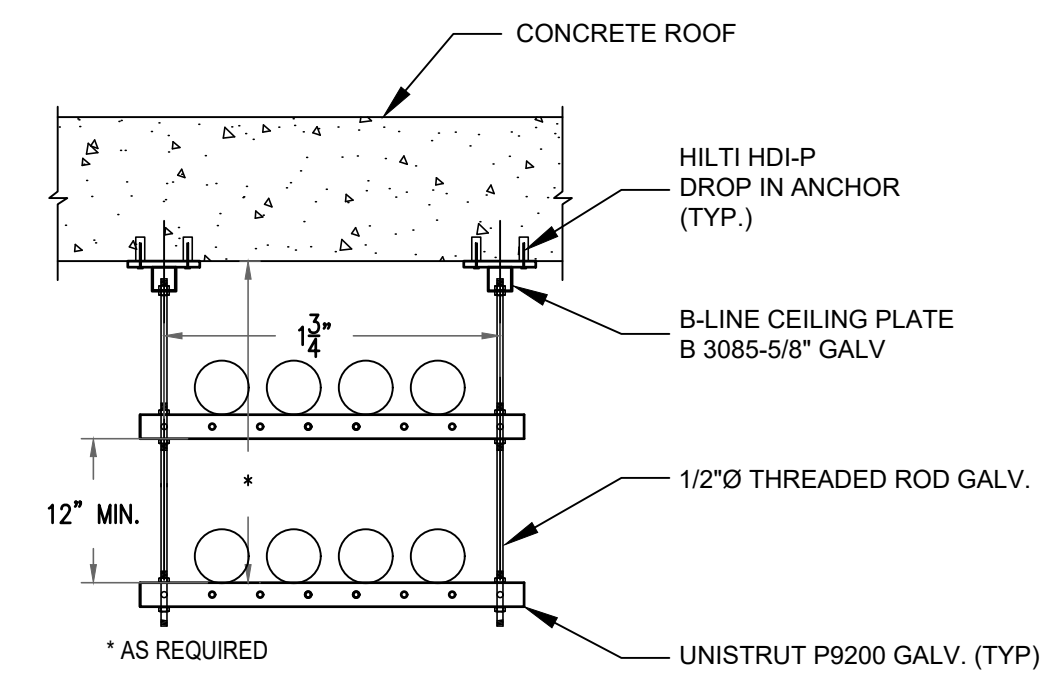
HORIZONTAL: **E3.01**  
DRAWING NUMBER

VERTICAL: **----**  
REVISION

ISSUED FOR BID



- NOTES:
- MOUNTING STAND PLATE: 2'X2' MAXIMUM  
A. DRILL PLATE FOR NUMBER OF HOLES REQUIRED.  
B. REMOVE ALL SHARP EDGES.  
C. CLEAN AND HOT DIP GALVANIZE AFTER FABRICATION.
  - SEE TYPICAL CONCRETE ANCHOR OR THREADED ROD DETAIL FOR CONCRETE ANCHOR REQUIREMENTS.
  - PROVIDE 316 STAINLESS STEEL ANCHOR BOLTS AND HARDWARE
  - ALUMINUM SYSTEM MAY SUBSTITUTE STAINLESS STEEL AS AN ALTERNATE MATERIAL



CONDUIT SUPPORT DETAIL (SUSPENDED SUPPORT)  
SCALE: N.T.S.



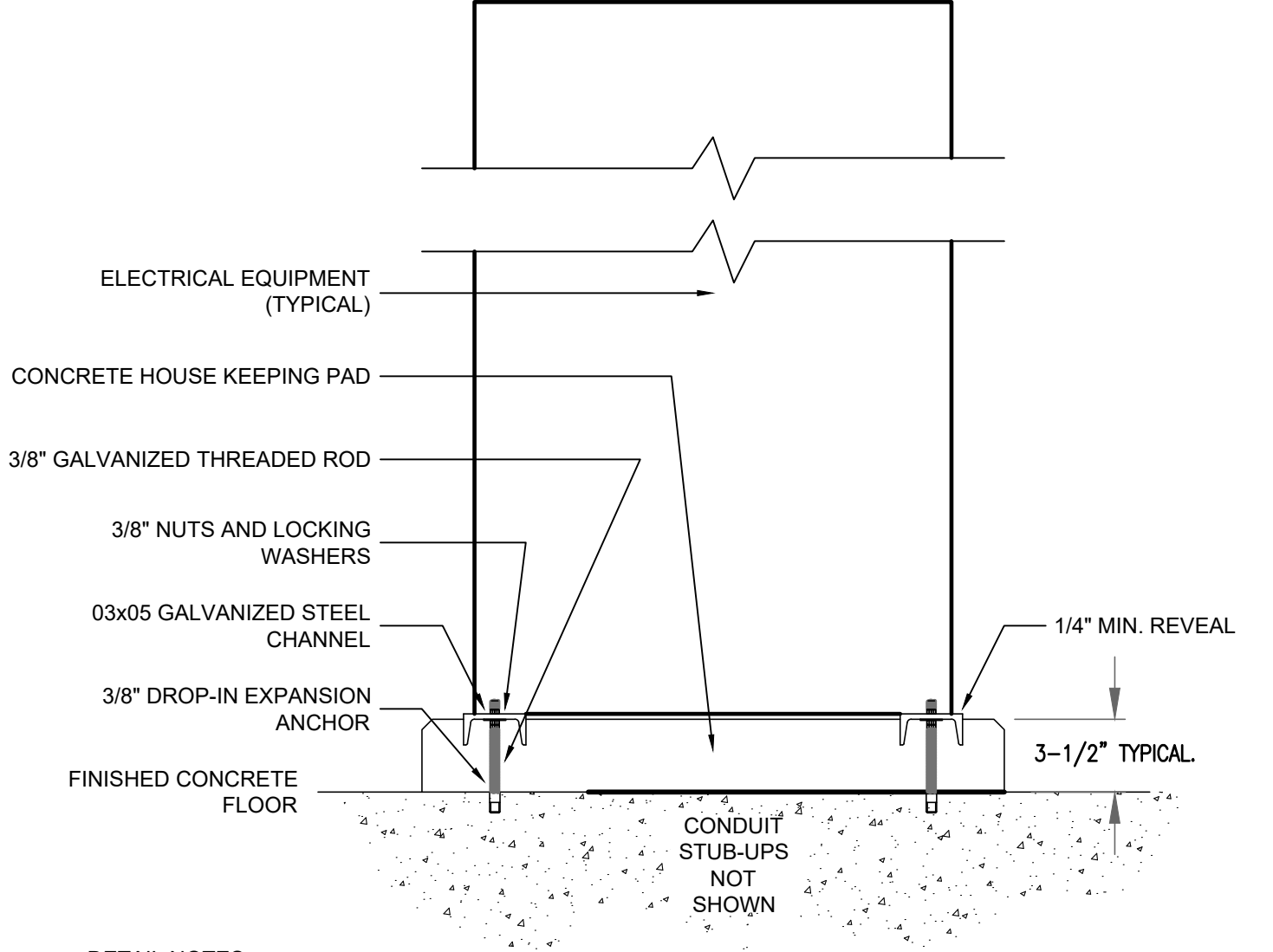
CONDUIT SUPPORT TO THE TANK  
SCALE: N.T.S.

CONTROL STATION OR INSTRUMENT STAND  
SCALE: N.T.S.

DETAIL A TYP

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	KVA PER PHASE			POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	20	CHART REC/RTU	0.18	1.5	1	1.1			1	7.2	0.87	OUTSIDE BYPASS VALVE	20	2
3	50	WELL TRANSFORMER ROOM	3	28.8	2		3.6		1	4.7	0.56	LIGHTS	20	4
			3					3.6	1	4.7	0.56	LIGHTS	20	6
7	50	WELL RW XFMR	3	28.8	2	4.7			1	14.2	1.7	SUMP PUMP REC.	20	8
			3				3.2		1	1.5	0.18	OUTLET WELL ROOM	20	10
11	20	RTU RADIO	0.9	7.5	1			1.4	1	4.2	0.5	LIGHT WELL ROOM	20	12
13	20	VEEDER ROOT	0.9	7.5	1	1.1			1	1.5	0.18	OUTLET EAST & SOUTH WALL	20	14
15	50	AIR HANDLER #1	0.3	2.9	2		0.5		1	1.5	0.18	OUTLET OUTSIDE VAULT'S	20	16
			0.3					1.7	3	11.7	1.4	AIR COMP #1	30	18
19	30	MIXER CONTROL PANEL(200-MIX-001)	0.58	4.8	1	2.0					1.4			
21	30	PSV CONTROLLER (200-FC-001)	0.6	5.0	1	2.0					1.4			
23					1			0.0	1					24
25					1	0.3			2	2.9	0.3	NEW AIR HANDLER	20	26
27					1		0.3				0.3			
29					1			2.1	3	17.5	2.1	NEW COMP	30	30
31					1	2.1					2.1			
33					1		2.1				2.1			
35					1			0.0	1					36
37					1	0.0			1					38
39					1		0.0		1					40

PANEL LP - EXISTING	TOTAL KVA	11.2	11.6	8.8	SERVICE CHARACTERISTICS	
	GRAND CONNECTED TOTAL KVA	31.6			VOLTS: 208/120	0 A MLO
LOCATION				PHASE: 3	150 A MCB	
BUILDING				WIRE: 4		
NOTES:				22K MIN AIC SYMM, FULLY RATED ASSEMBLY		



- DETAIL NOTES:
- CHANNELS SHALL BE MADE CONTINUOUS IN REQUIRED LENGTHS
  - INSTALL CHANNELS PRIOR TO PLACING HOUSE KEEPING CONCRETE
  - INSTALL CHANNELS LEVEL WITHIN (+/-) 1/16" THROUGHOUT SPAN
  - CHANNEL SHALL BE 1/4" MINIMUM ABOVE HOUSE KEEPING CONCRETE FINISH
  - PROVIDE CHANNELS AS REQUIRED TO SUPPORT THE FULL LENGTH AND DEPTH OF EQUIPMENT
  - TOUCH-UP CHANNELS WITH ZINC RICH PAINT PRIOR TO PLACING CONCRETE AND AFTER INSTALLING EQUIPMENT

TYPICAL FLOOR-MOUNTED ELECTRICAL EQUIPMENT PAD DETAIL  
SCALE: N.T.S.

REV. NO.	DESCRIPTION	DATE

SEAL

AUBREY A. HAUDRICOURT, P.E.  
No. 66861

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www.mckimcreed.com

**Manatee County FLORIDA**

**CORTEZ BOOSTER PUMP STATION UPGRADES**

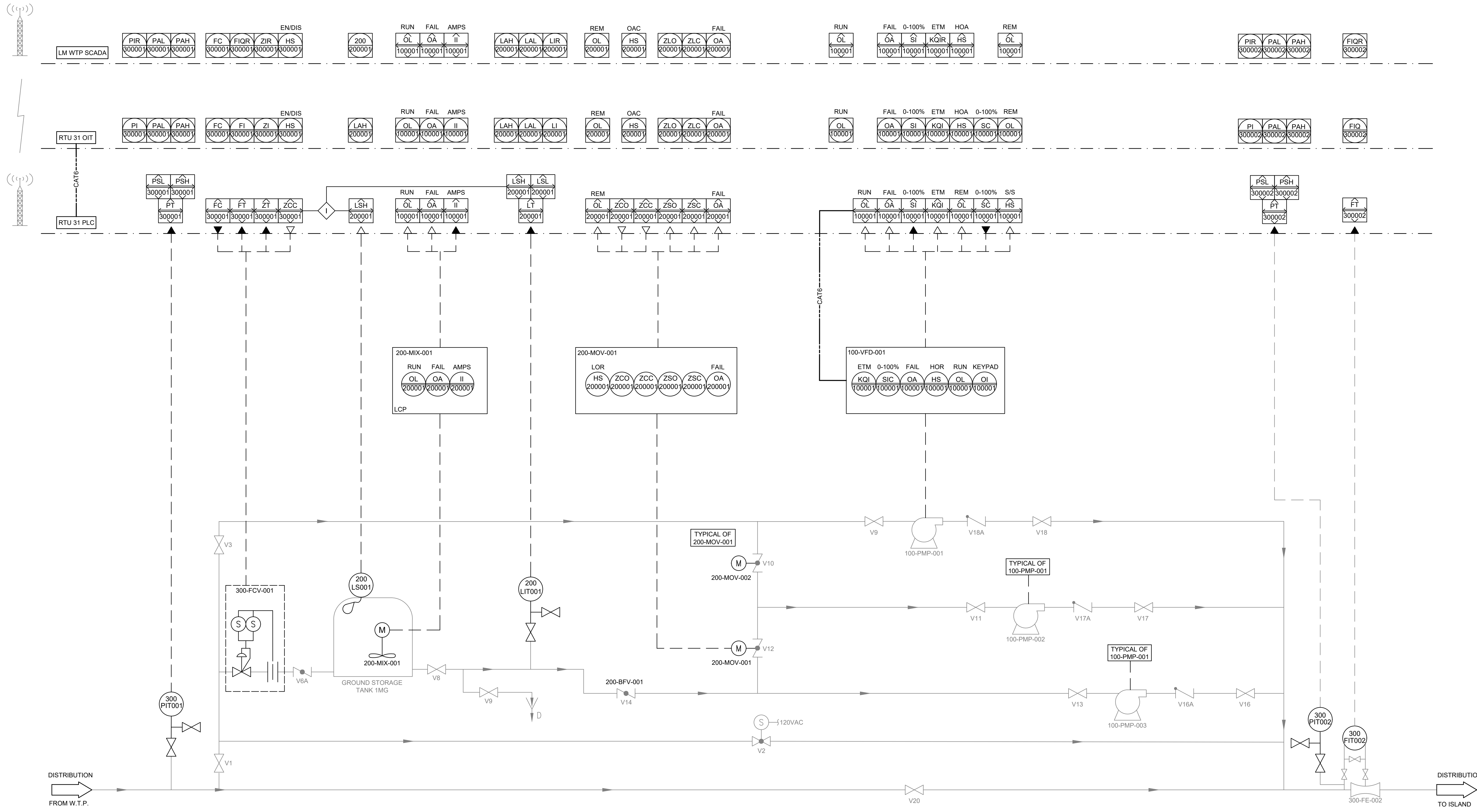
**ELECTRICAL**

**DETAILS AND PANEL SCHEDULE**

PROJ. START DATE: MAR. 2020	SCALE
MCE PROJ. # 01024-0193	HORIZONTAL: E3.02
DRAWN JG	TBD
DESIGNED AAH	VERTICAL: TBD
CHECKED MAC	REVISION
PROJ. MGR. BP	----

ISSUED FOR BID





REV. NO.	DESCRIPTION	DATE

REVISIONS

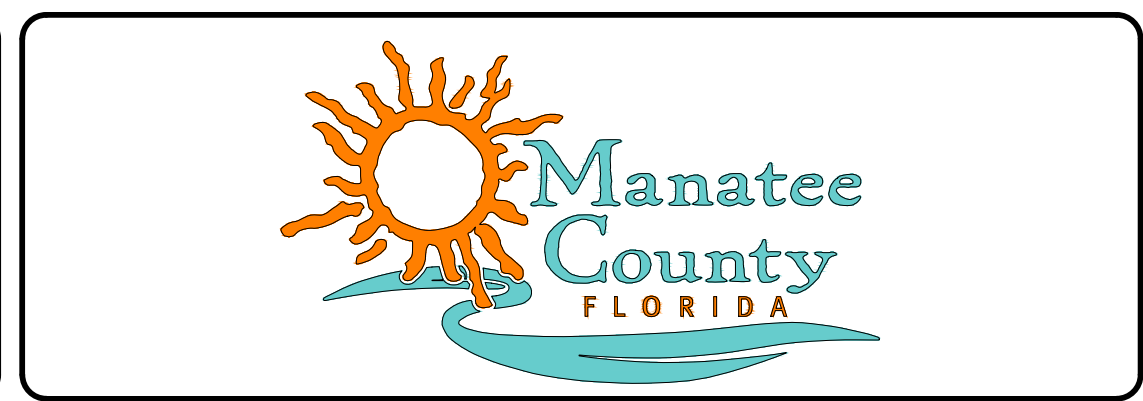
SEAL

MICHAEL TWEDEL, P.E.  
No. 60940

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**CORTEZ BOOSTER PUMP STATION UPGRADES**

**INSTRUMENTATION**

**BOOSTER PUMP STATION P&ID**

PROJ. START DATE:	MAR. 2020
MCE PROJ. #	01024-0193
DRAWN	CJA
DESIGNED	MDT
CHECKED	AAH
PROJ. MGR.	BP

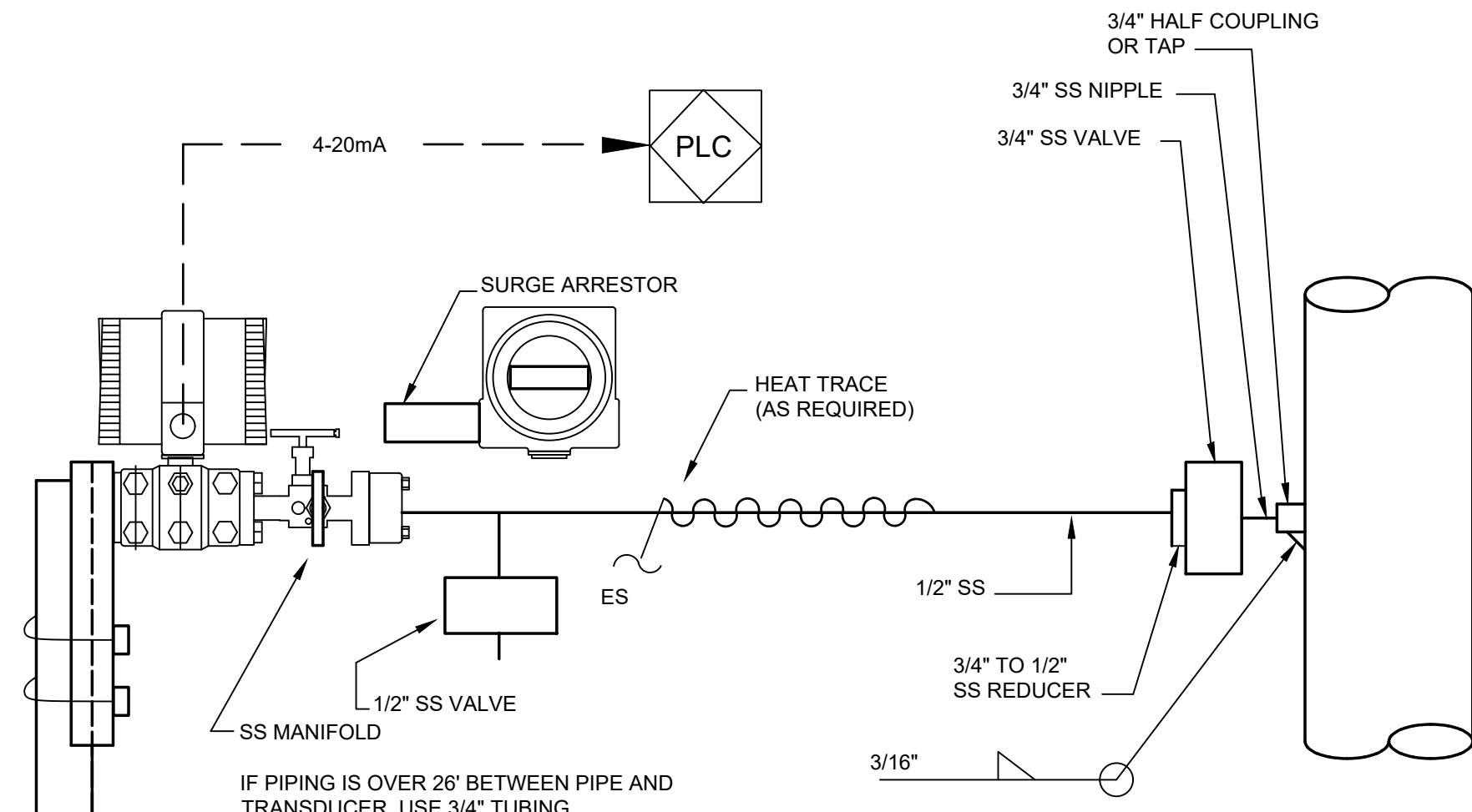
SCALE

HORIZONTAL: **104.1**  
TBD

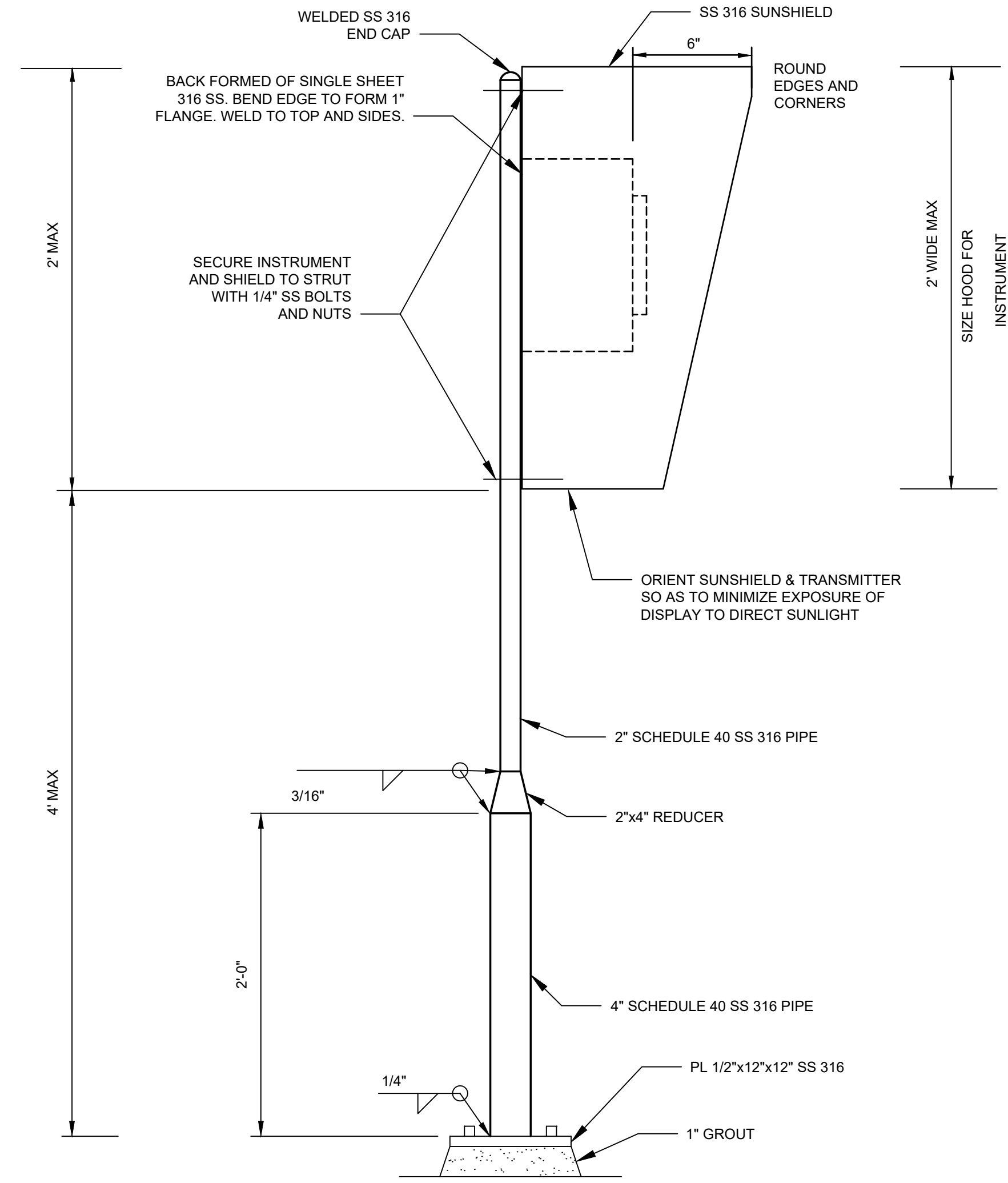
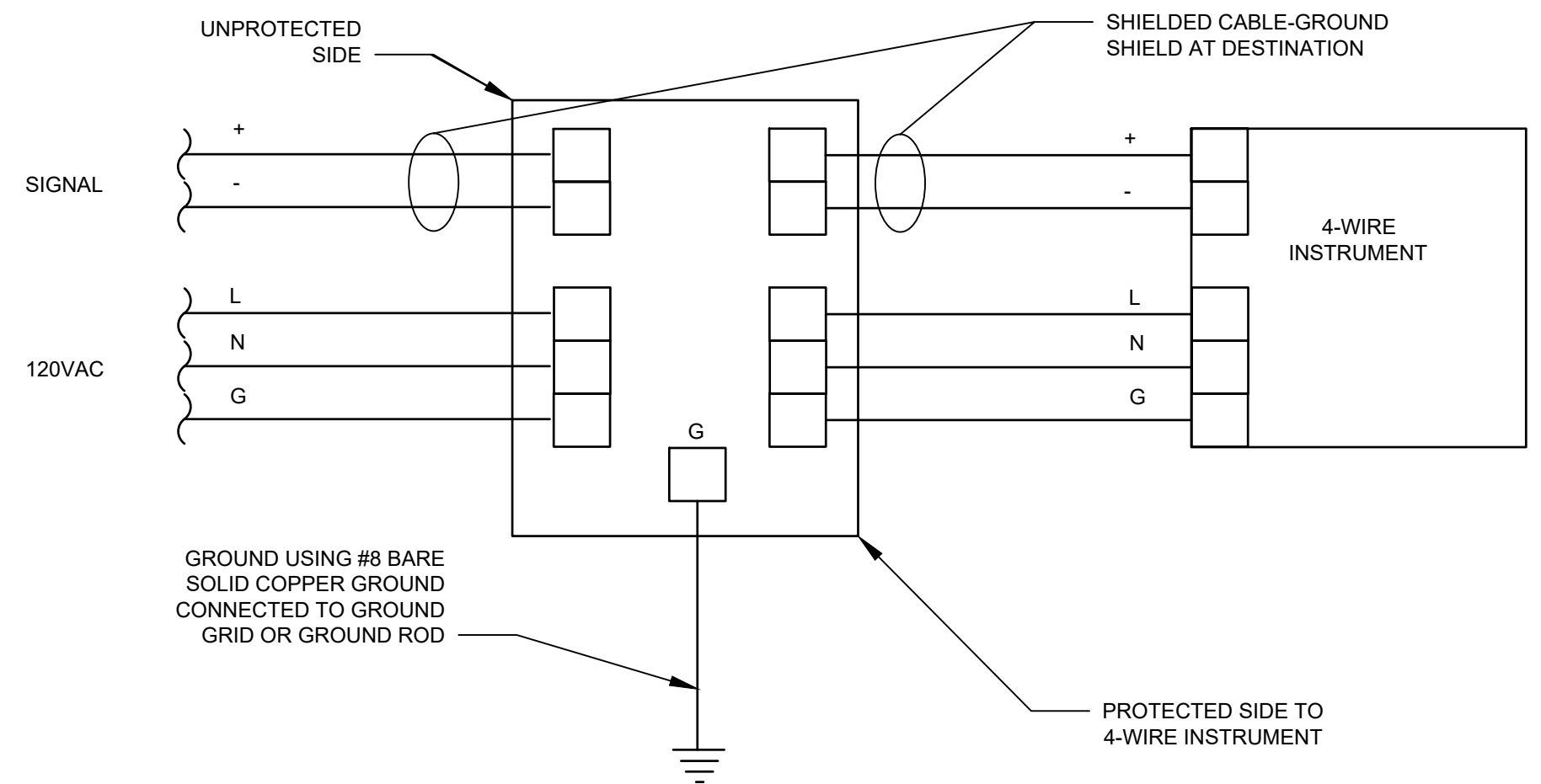
VERTICAL: TBD

REVISION

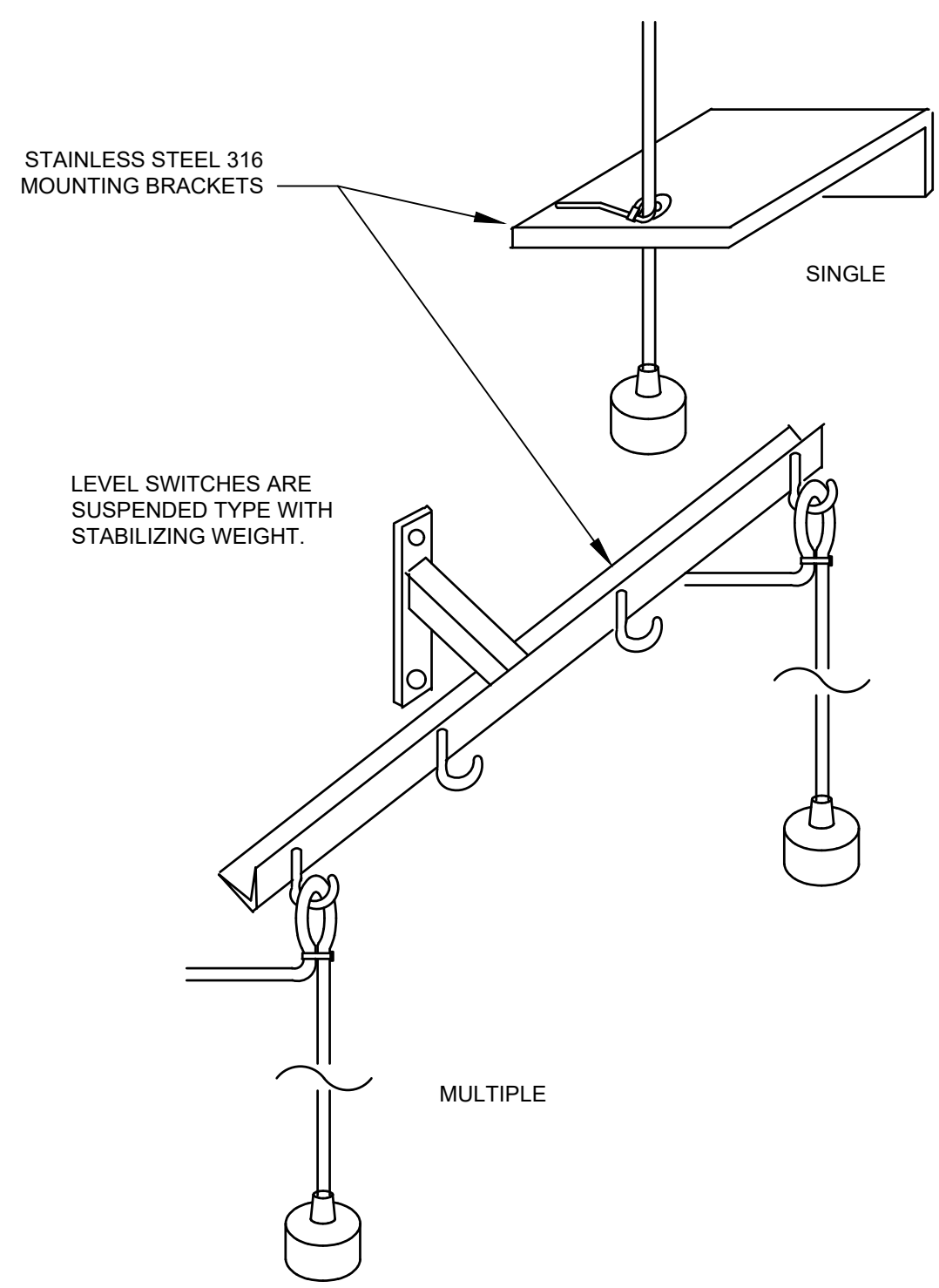
ISSUED FOR BID



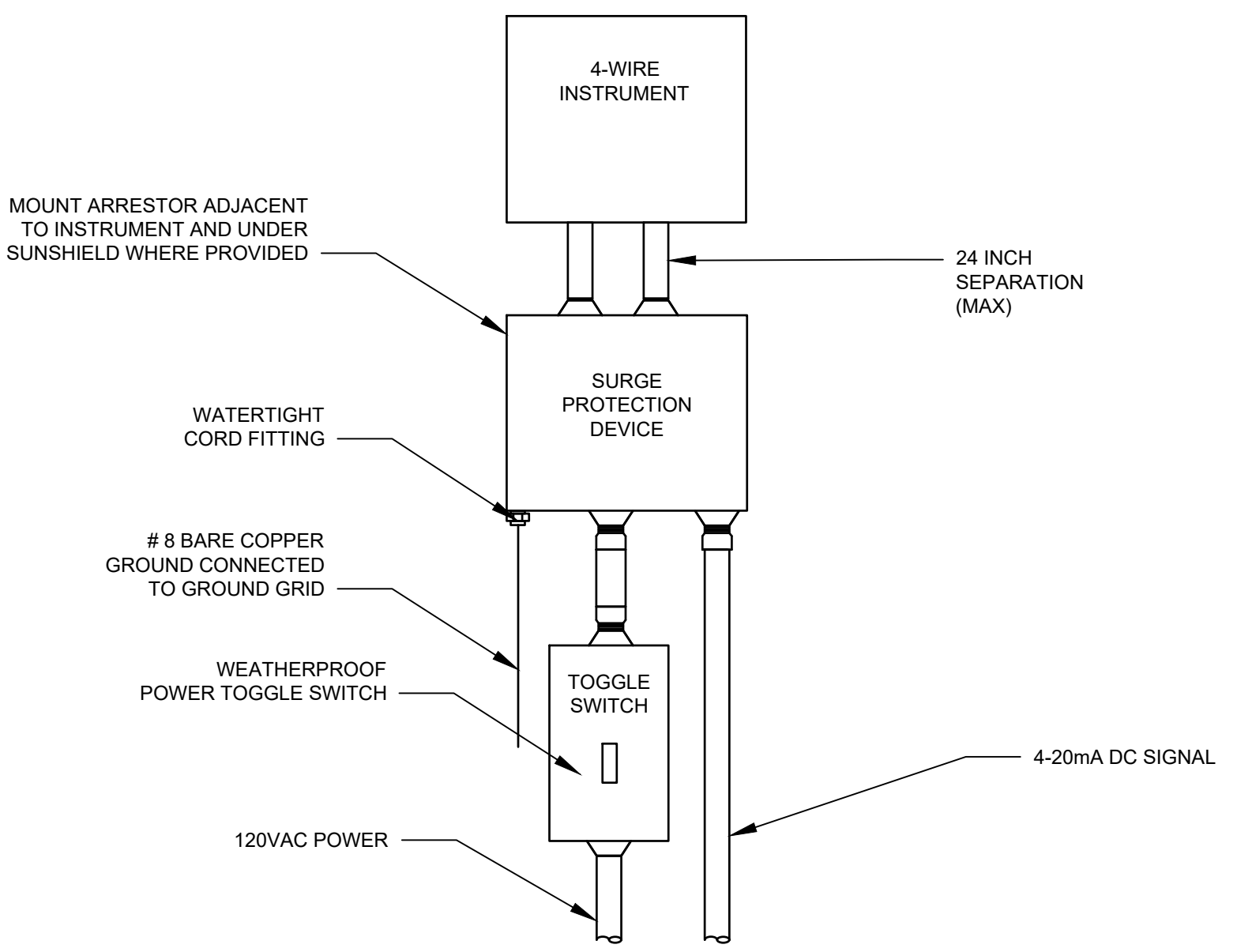
TYPICAL PRESSURE TRANSDUCER PIPING



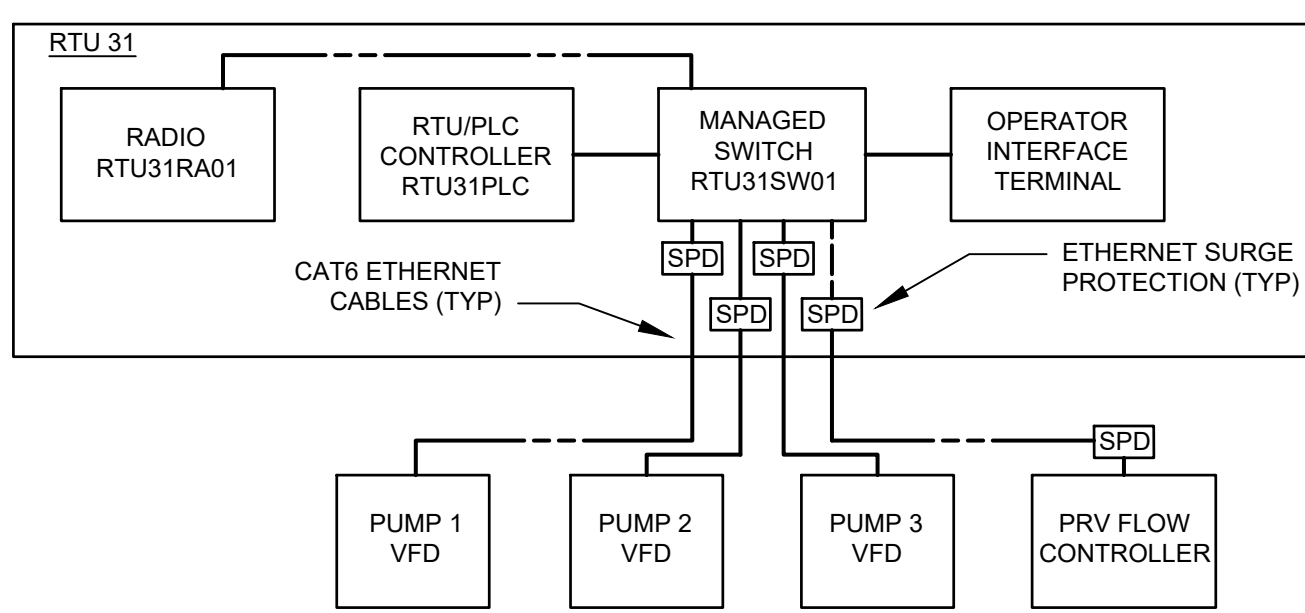
- NOTES:**
1. ALL EXPOSED EDGES TO BE GRIND SMOOTH AND BURR FREE.
  2. MOUNT RAIN HOOD BETWEEN INSTRUMENT AND STANCHION. USE STAINLESS STEEL BOLTS AND INSULATING WASHERS AND SLEEVES.



TYPICAL LEVEL SWITCH MOUNTING DETAIL



4-WIRE INSTRUMENT SURGE ARRESTOR INSTALLATION



COMMUNICATION DETAIL

REV. NO.	DESCRIPTION	DATE

SEAL

MICHAEL TWEDEL, P.E.  
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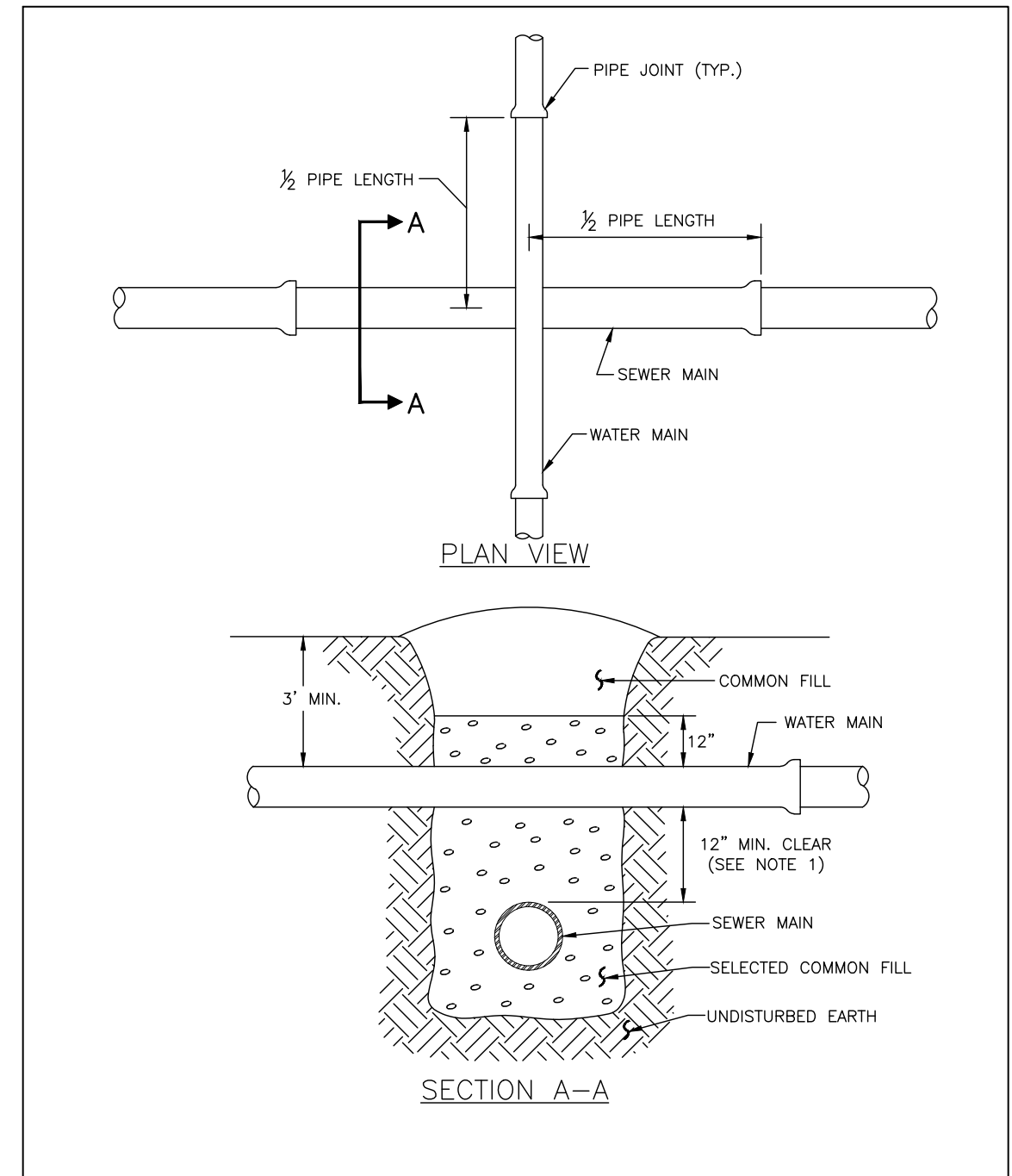
**CORTEZ BOOSTER PUMP STATION UPGRADES**

**INSTRUMENTATION INSTRUMENTATION DETAILS**

PROJ. START DATE: MAR. 2020  
MCE PROJ. # 01024-0193  
DRAWN: CJA  
DESIGNED: MDT  
CHECKED: AAH  
PROJ. MGR.: BP

SCALE: HORIZONTAL: 104.2, VERTICAL: TBD  
REVISION: ISSUED FOR BID

STATUS: ISSUED FOR BID



MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
REVISIONS: February 25, 2020  
TYPICAL NEW WATER & SEWER LINE CROSSING  
UG-2

THRUST BLOCK DIMENSIONS B ft. x d inches  
TABLE with columns: PIPE SIZE (IN.), 90° BEND, 45° BEND, 22.5° BEND, 11.25° BEND, DEAD END & TEE, 45° WYE, and columns B, d. Includes reinforcement mat schedule and notes on cast-in-place blocks and fittings.

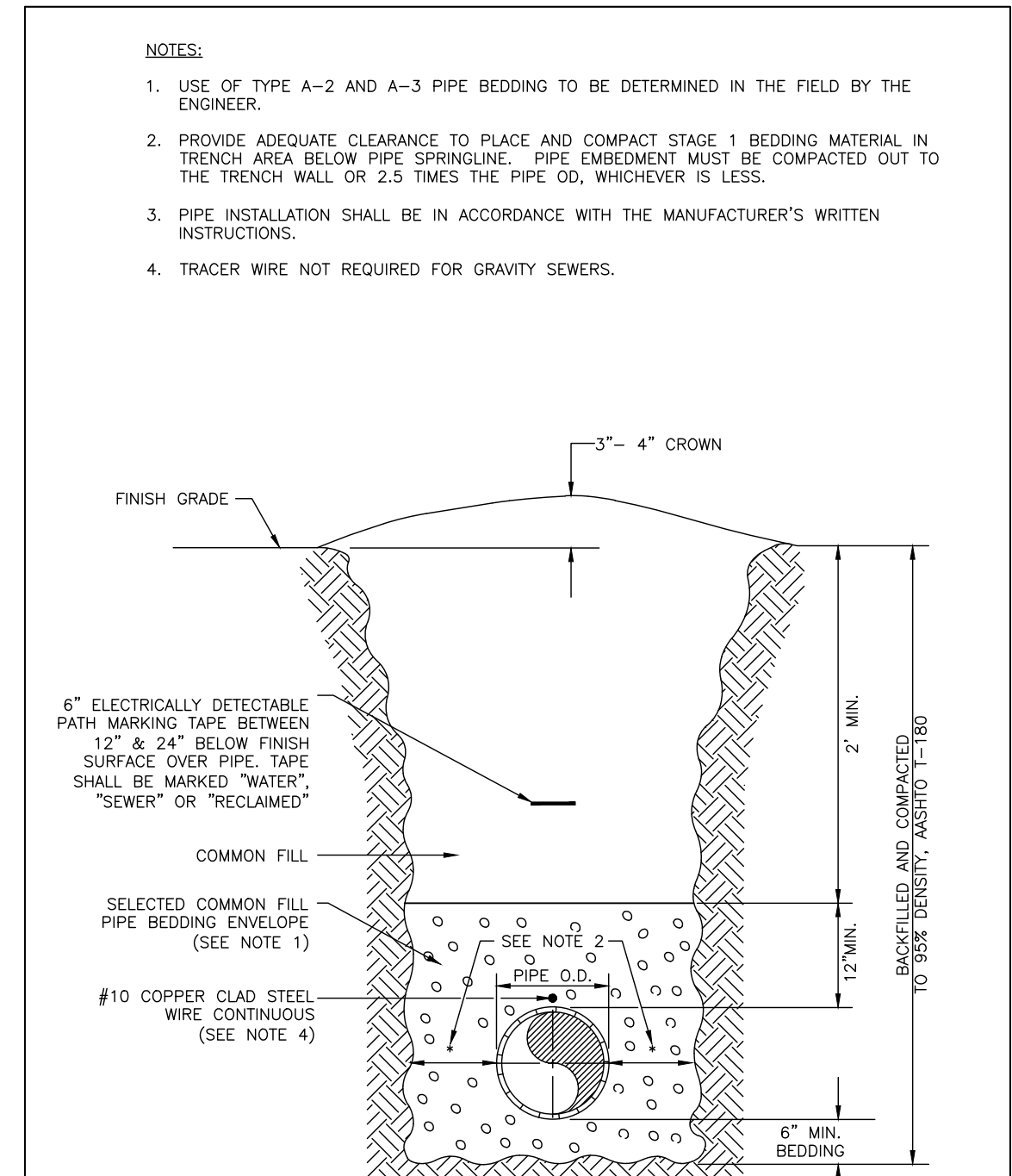
MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
REVISIONS: February 25, 2020  
CONCRETE THRUST BLOCKS  
UG-7

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR C900-16 PVC PIPE (DR-18)  
TABLE with columns: MAIN PIPE SIZE, HORIZ. BENDS, TEES, REDUCERS, PLUGS & VALVES. Includes notes on restraint lengths for various pipe configurations.

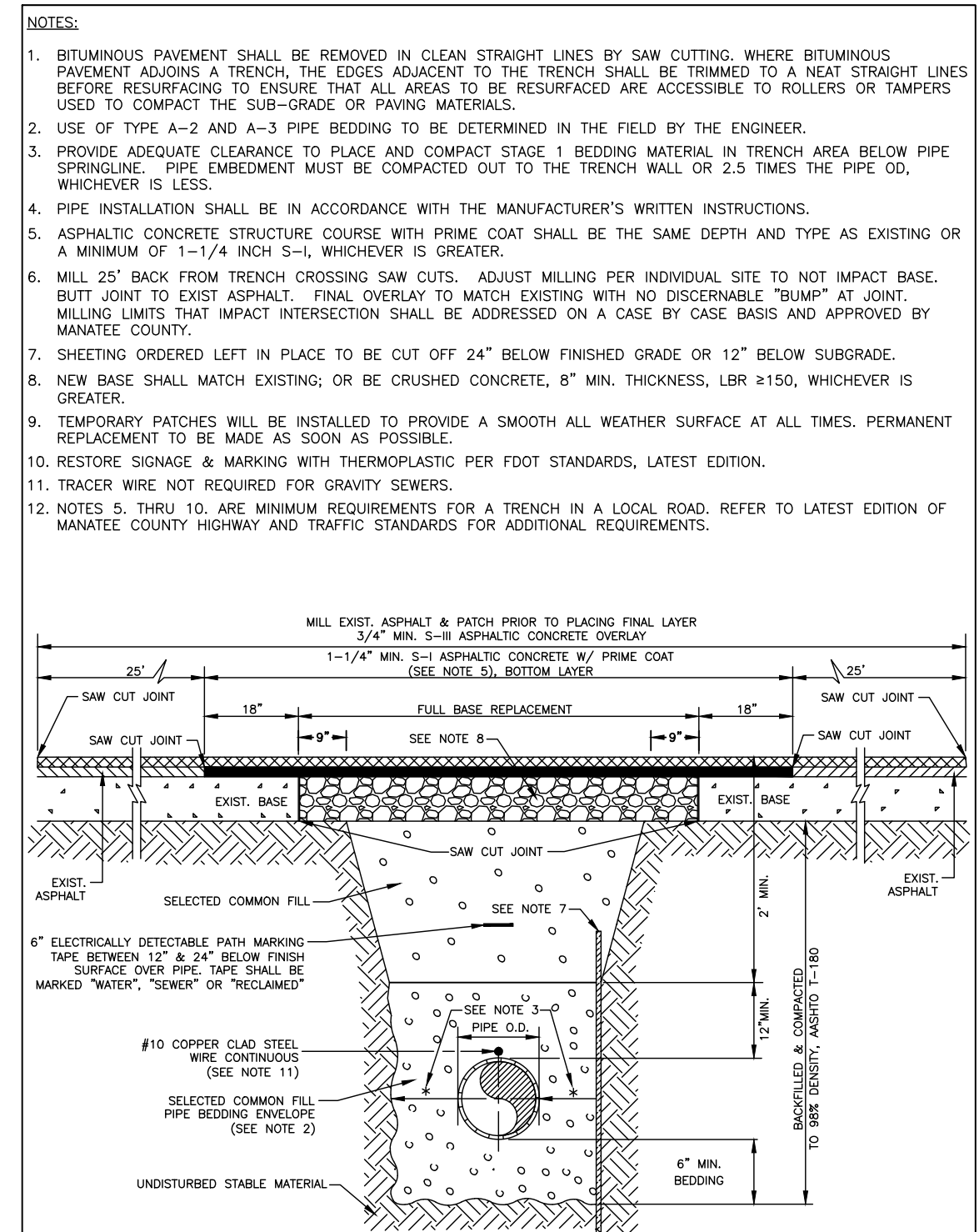
MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
REVISIONS: February 25, 2020  
RESTRAINED LENGTHS FOR PVC PIPE  
UG-8

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)  
TABLE with columns: MAIN PIPE SIZE, HORIZ. BENDS, TEES, REDUCERS, PLUGS & VALVES. Includes notes on restrained lengths for dip pipe.

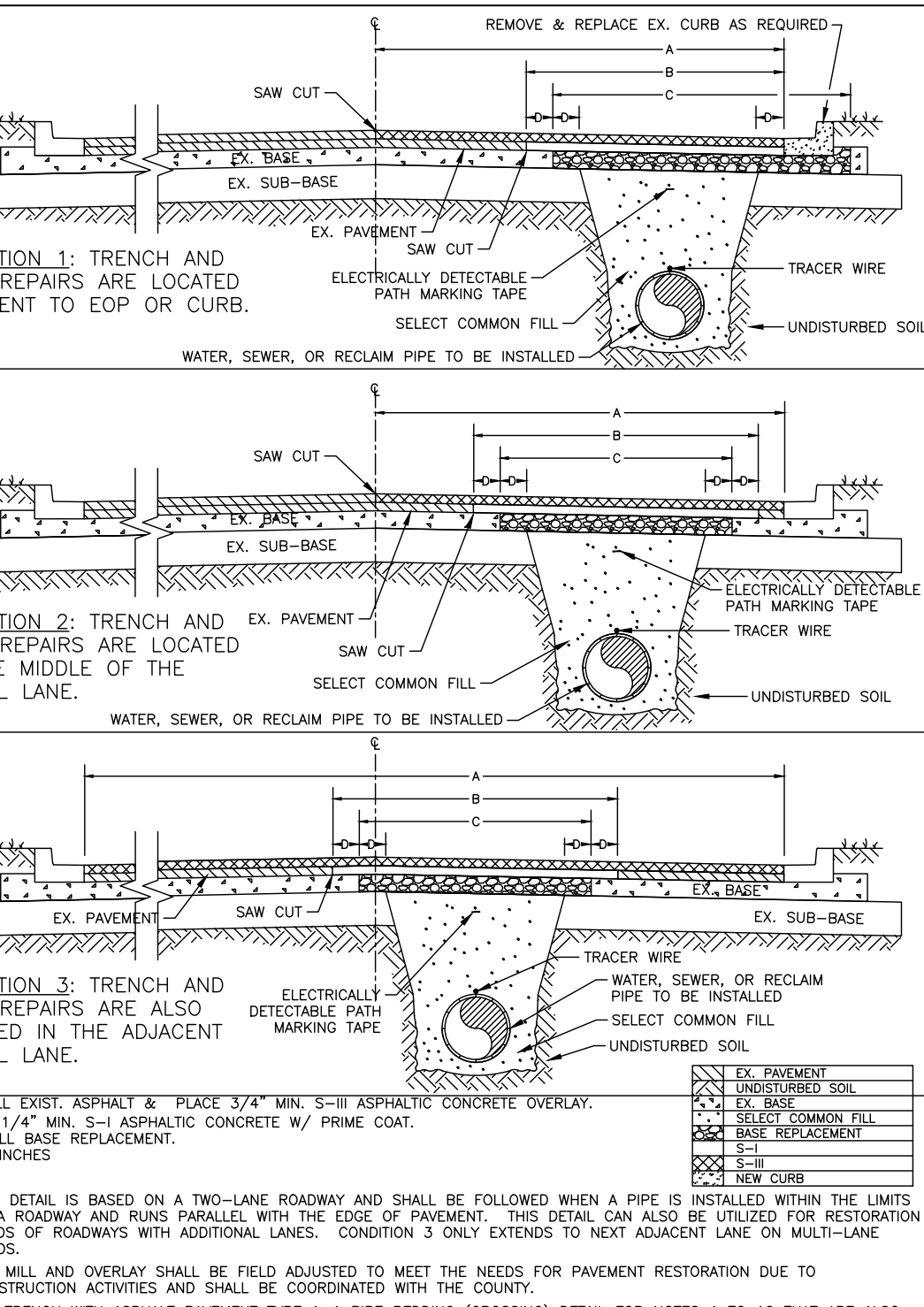
MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
REVISIONS: February 25, 2020  
RESTRAINED LENGTHS FOR DIP  
UG-9



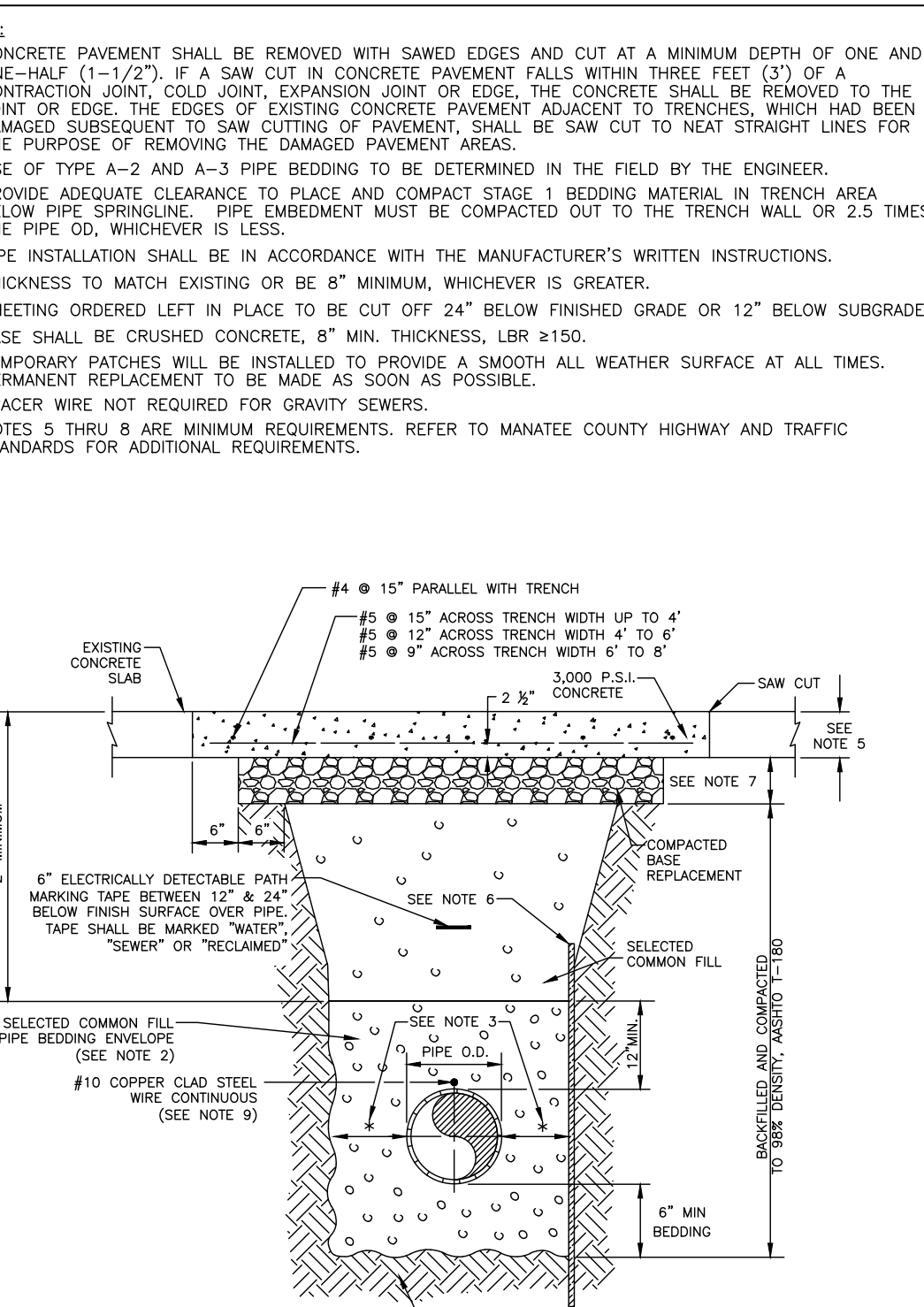
MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
REVISIONS: February 25, 2020  
TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING  
UG-11



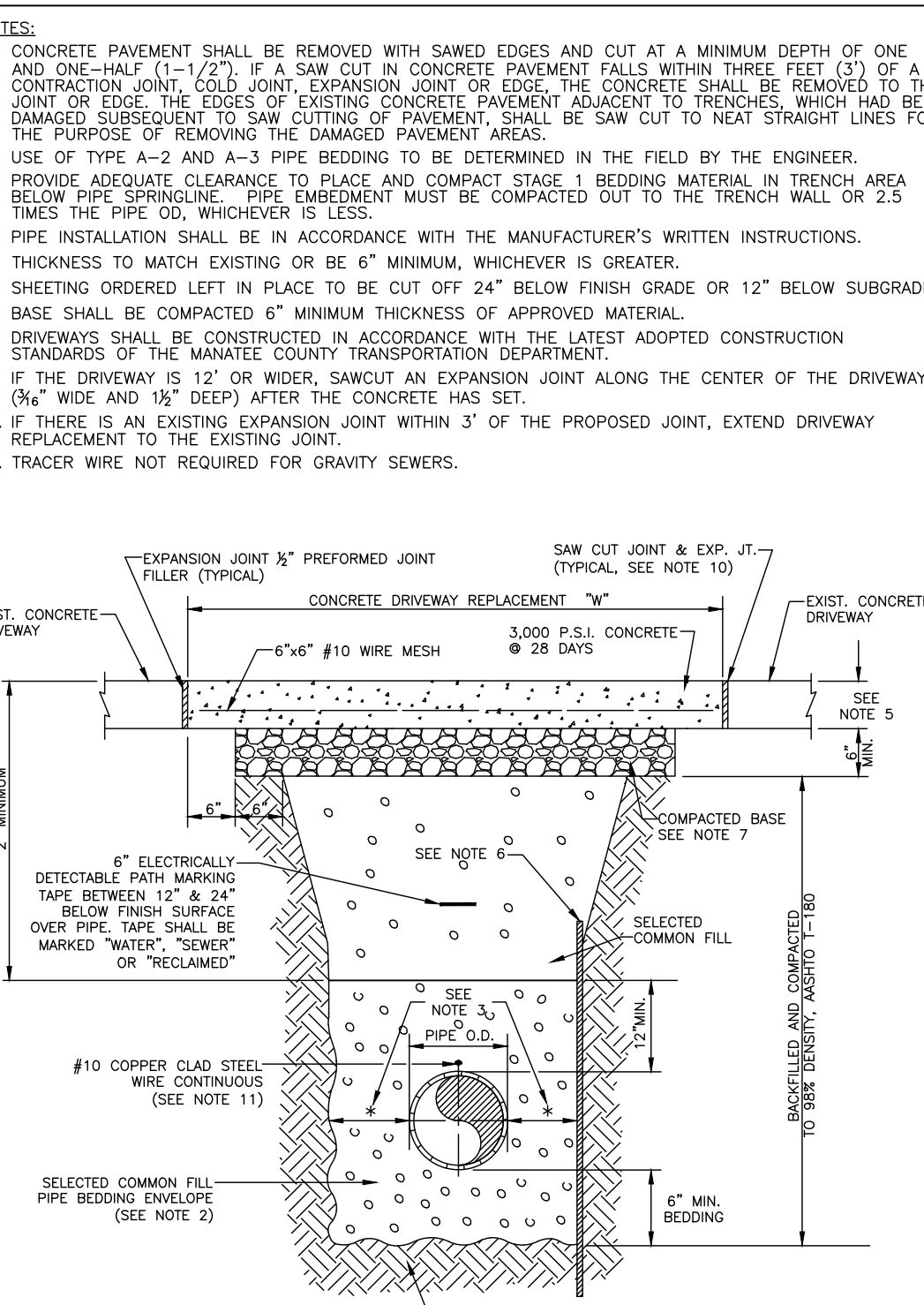
MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
REVISIONS: February 25, 2020  
TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING (CROSSING)  
UG-12



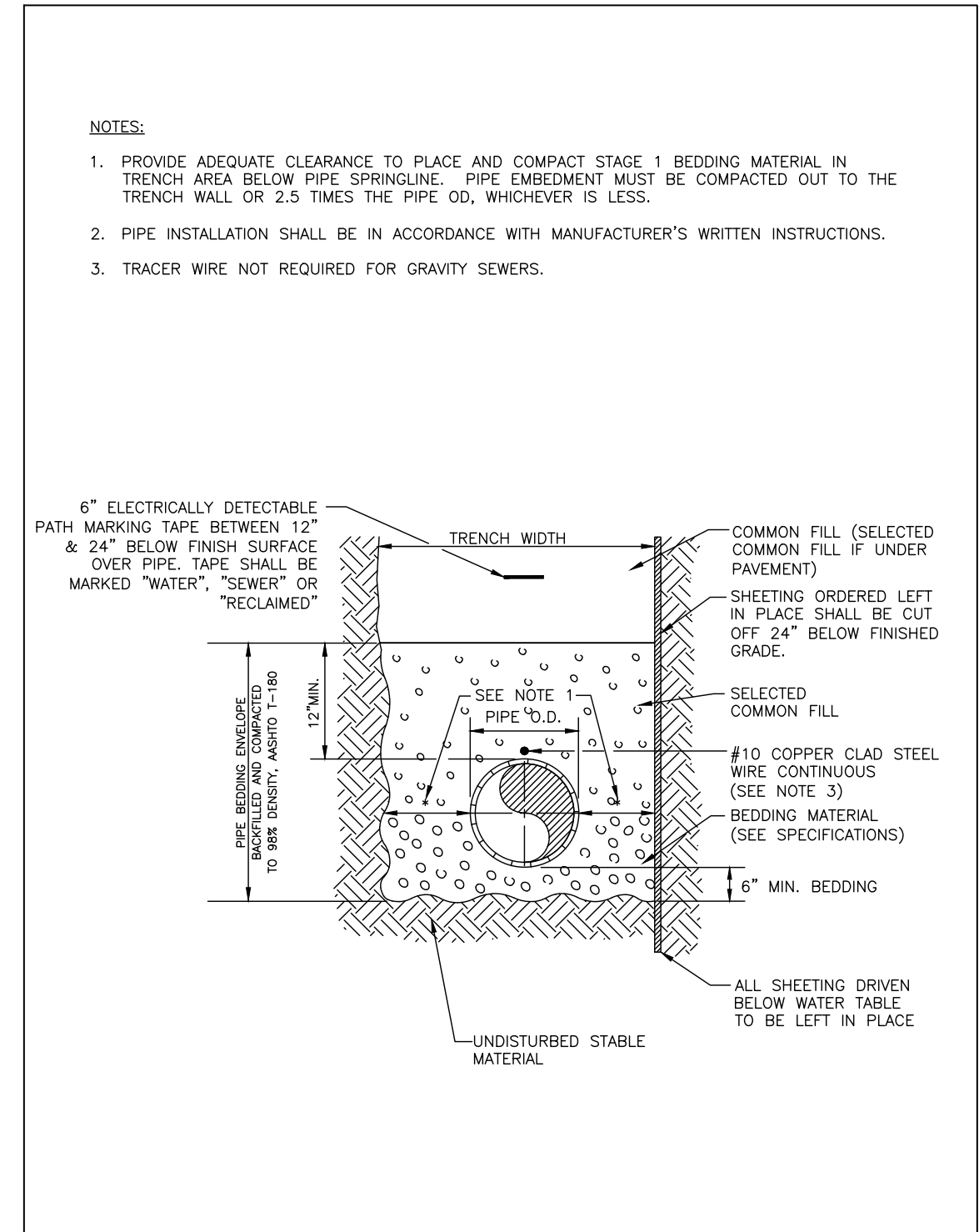
MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
REVISIONS: February 25, 2020  
TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING (LONGITUDINAL)  
UG-12B



MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
REVISIONS: February 25, 2020  
TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A-1 PIPE BEDDING  
UG-13

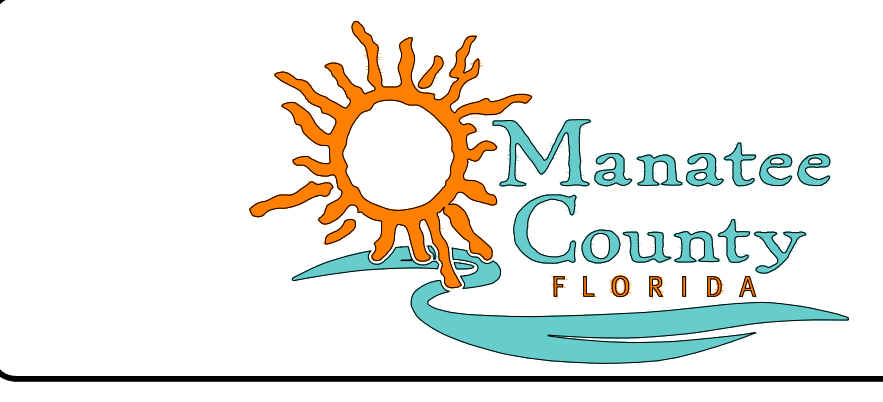


MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
REVISIONS: February 25, 2020  
TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING  
UG-14



MANATEE COUNTY PUBLIC WORKS DEPARTMENT  
REVISIONS: February 25, 2020  
TRENCH WITH TYPE A-2 PIPE BEDDING  
UG-15

REVISIONS table with columns: REV. NO., DESCRIPTION, DATE. Includes a 'SEAL' section and a signature line for Blake Peters, P.E., No. 64429.

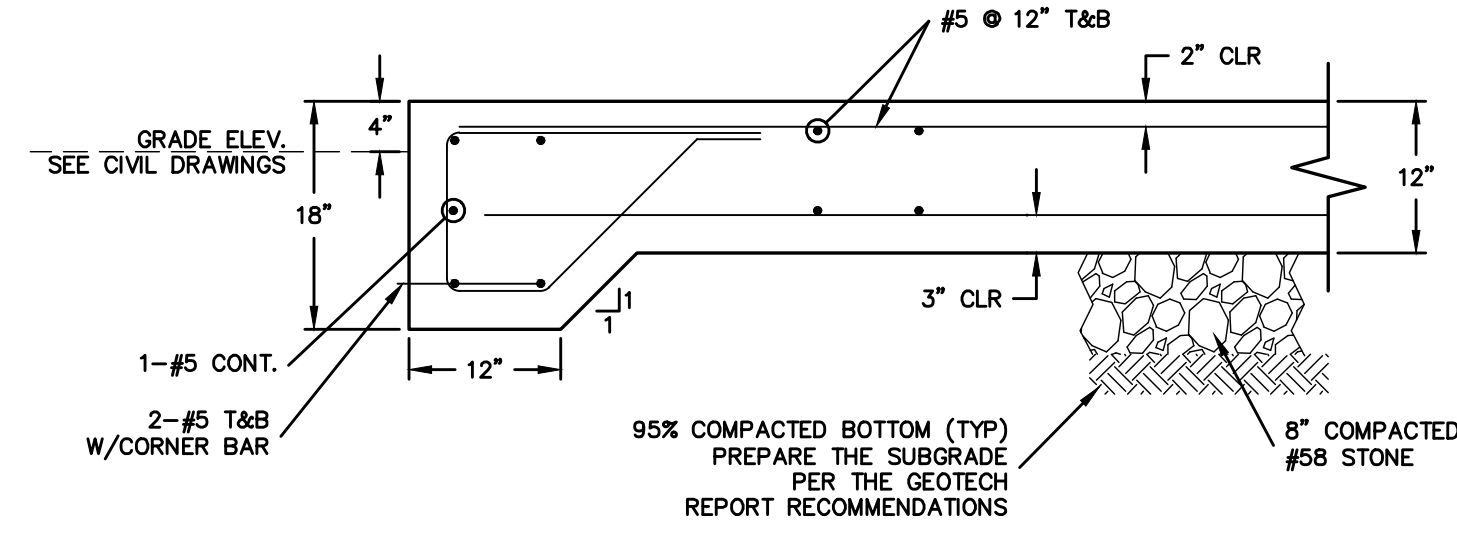
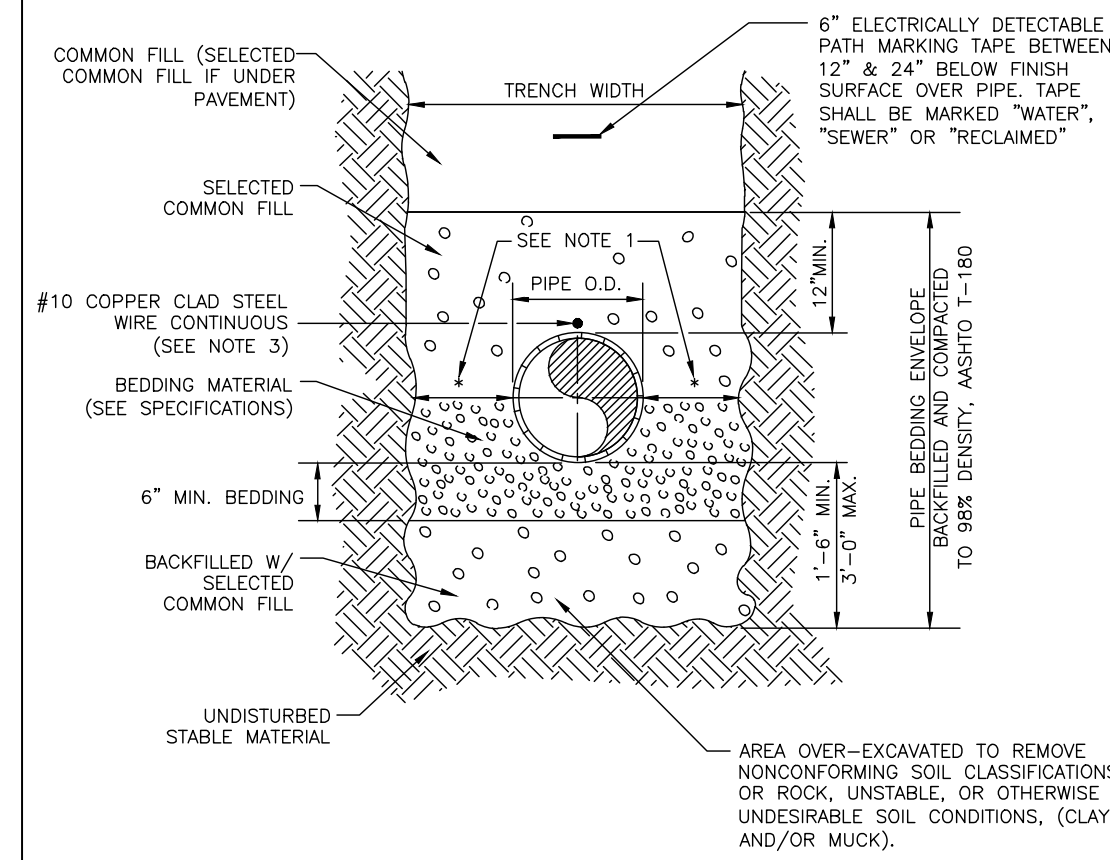


CORTEZ BOOSTER PUMP STATION UPGRADES  
DETAILS CIVIL DETAIL SHEET

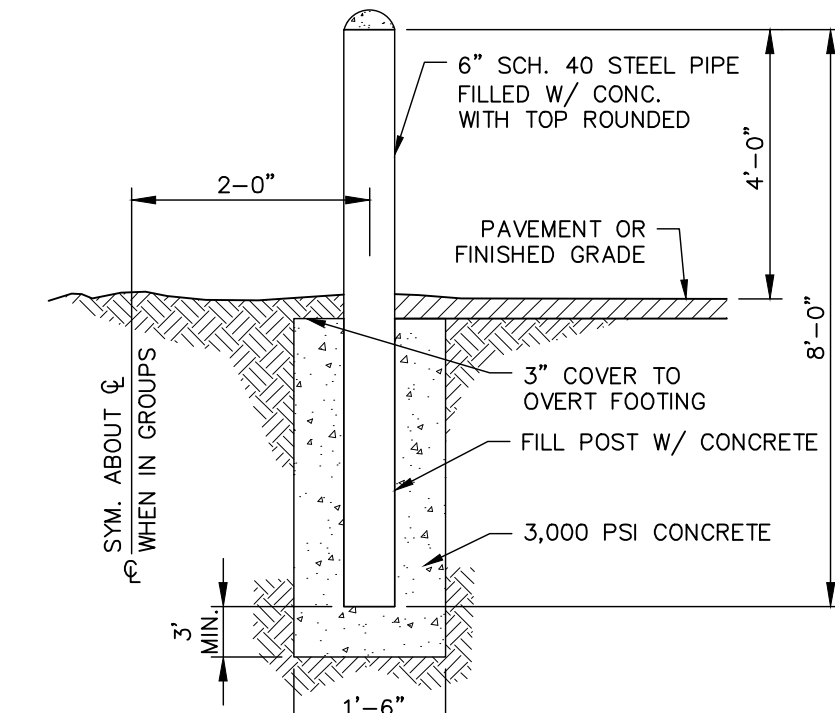
PROJ. START DATE: MAR. 2020  
MCE PROJ. # 01024-0193  
DRAWN DES  
DESIGNED NAM  
CHECKED MAC  
PROJ. MGR. NAM  
SCALE: HORIZONTAL: TBD, VERTICAL: TBD  
D-1 DRAWING NUMBER  
ISSUED FOR BID



- NOTES:
1. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
  2. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
  3. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

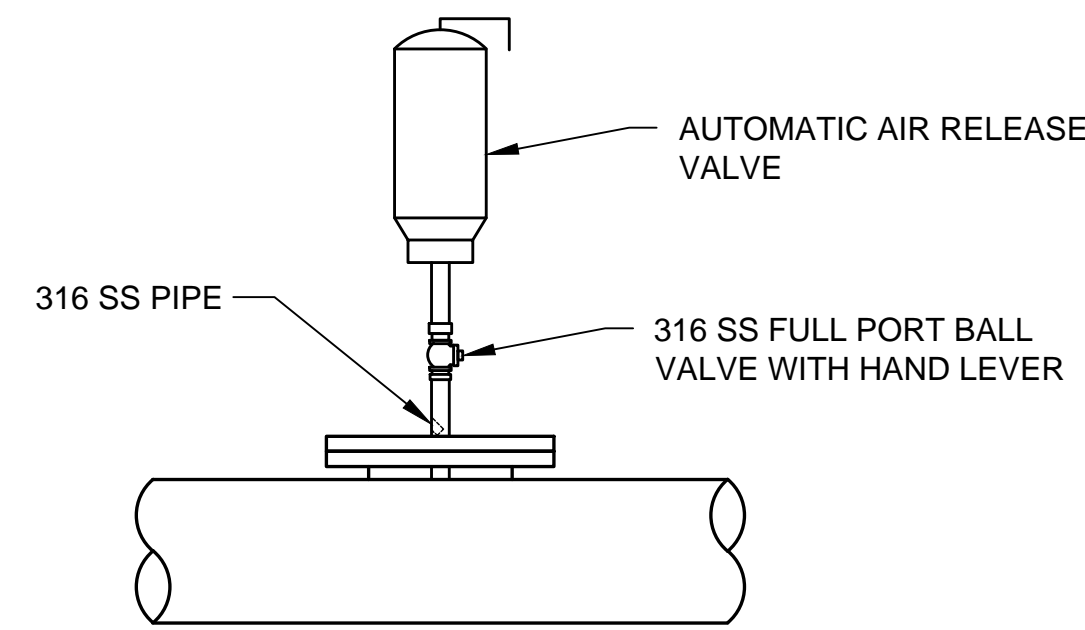


TYP. CONCRETE PAD  
SCALE: NTS

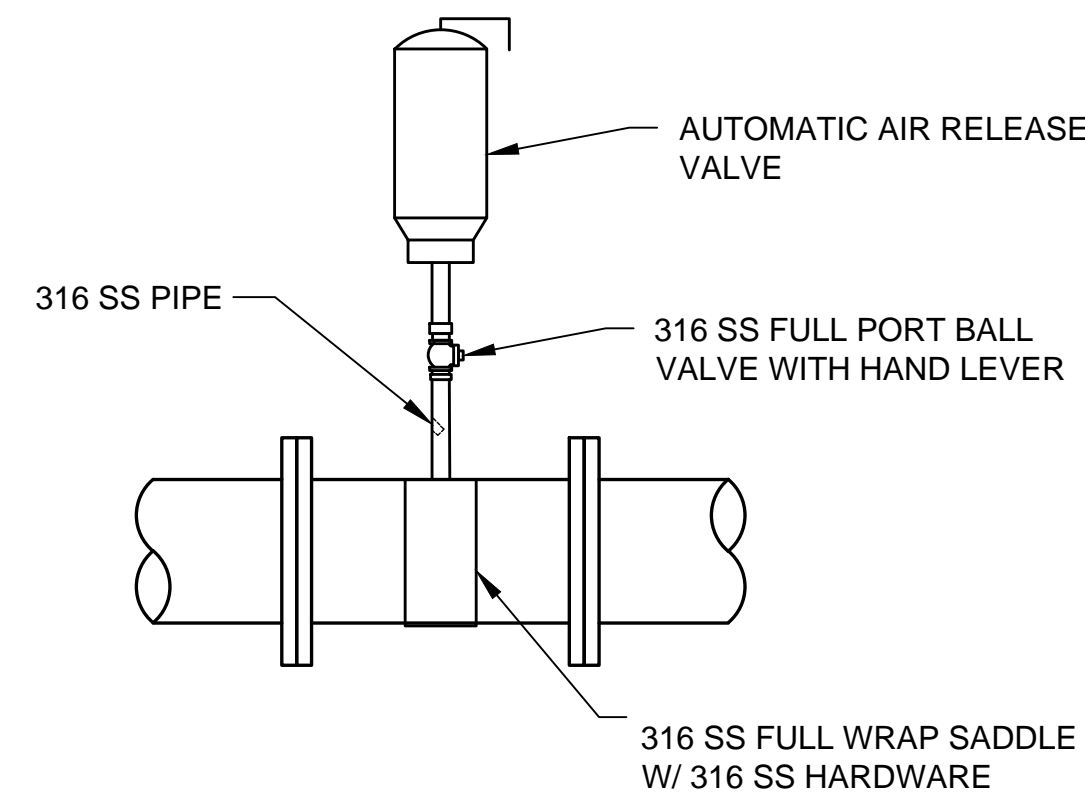


BOLLARD DETAIL  
SCALE: NTS

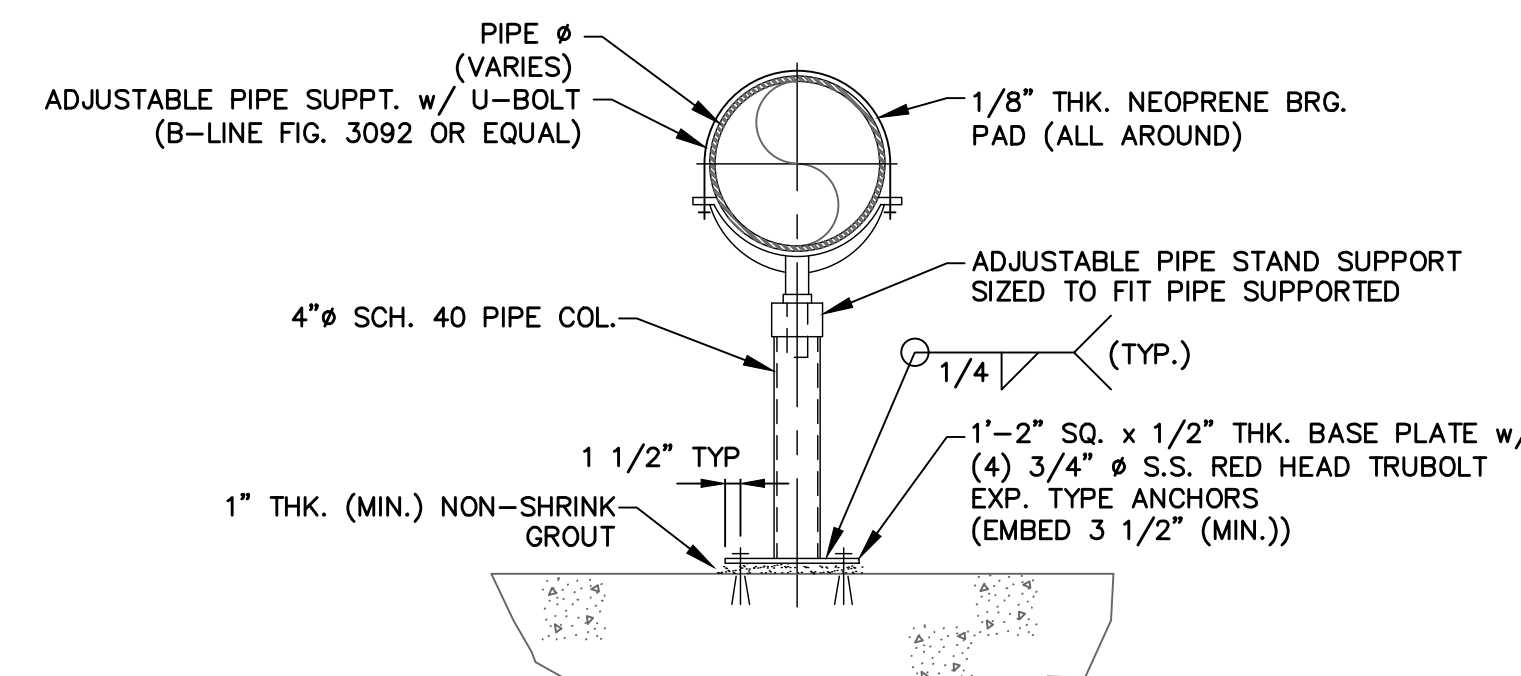
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH TYPE A-3 PIPE BEDDING	UG-16
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		



ARV ASSEMBLY DETAIL 1  
SCALE: NTS

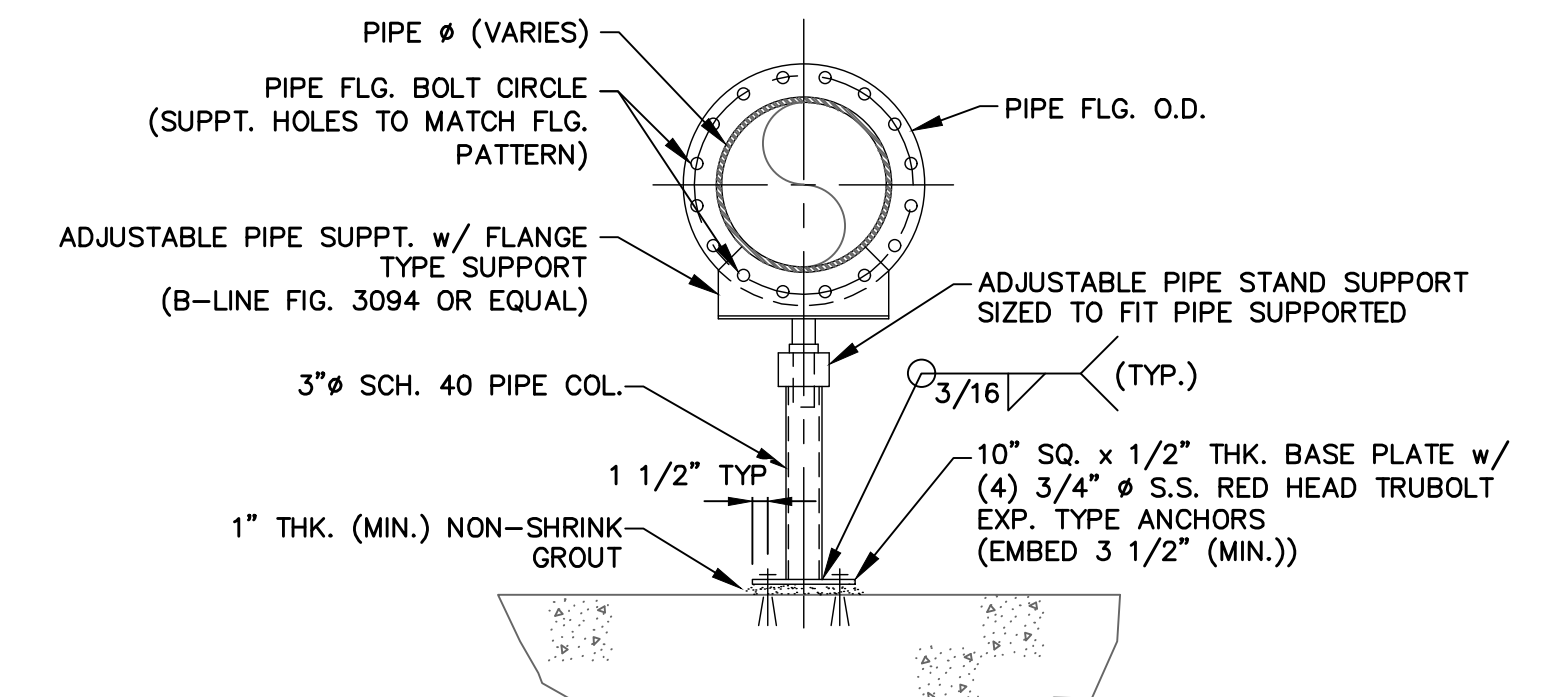


ARV ASSEMBLY DETAIL 2  
SCALE: NTS



NOTE: ALL SUPPORT METAL COMPONENTS SHALL BE FABRICATED IN CONFORMANCE w/ ASTM A276 TYPE 316 S.S. U.N.O.

TYPE 2 PIPE SUPPORT  
SCALE: NTS



NOTE: ALL SUPPORT METAL COMPONENTS SHALL BE FABRICATED IN CONFORMANCE w/ ASTM A276 TYPE 316 S.S. U.N.O.

TYPE 3 PIPE SUPPORT  
SCALE: NTS

REV. NO.	DESCRIPTION	DATE

SEAL

BLAKE PETERS, P.E.  
No. 64429

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Clearwater, Florida 33756-3331  
Phone: (727) 442-7196, Fax: (727) 461-3827

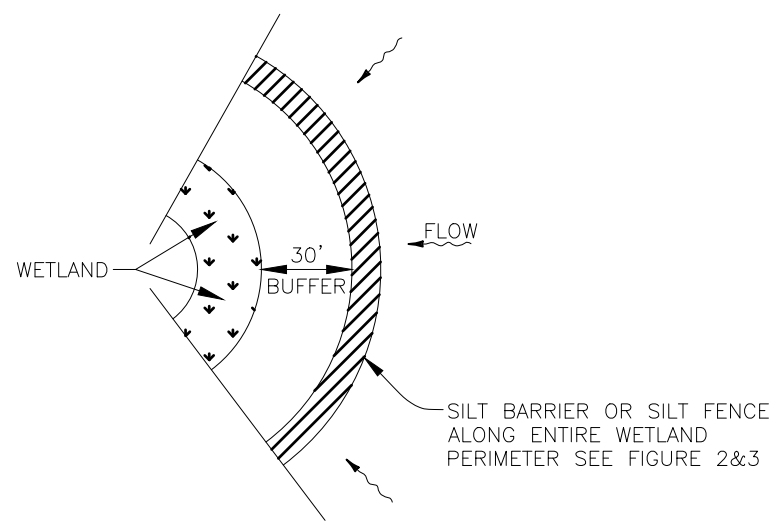
CA Lic. No. 29588  
www.mckimcreed.com

**CORTEZ BOOSTER PUMP STATION UPGRADES**

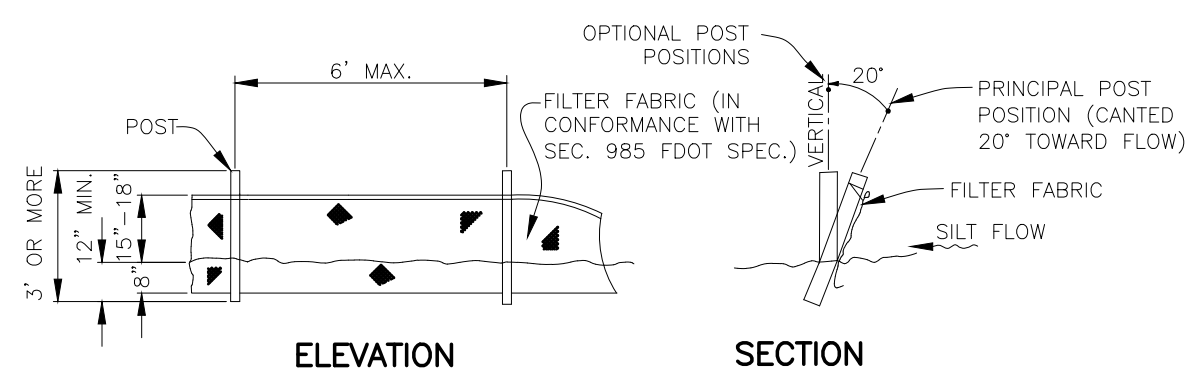
DETAILS  
**CIVIL DETAIL SHEET**

PROJ. START DATE: MAR. 2020	SCALE
MCE PROJ. # 01024-0193	HORIZONTAL: D-2
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DESIGNED NAM	VERTICAL: TBD
CHECKED MAC	TBD
PROJ. MGR. NAM	REVISION

STATUS: ISSUED FOR BID

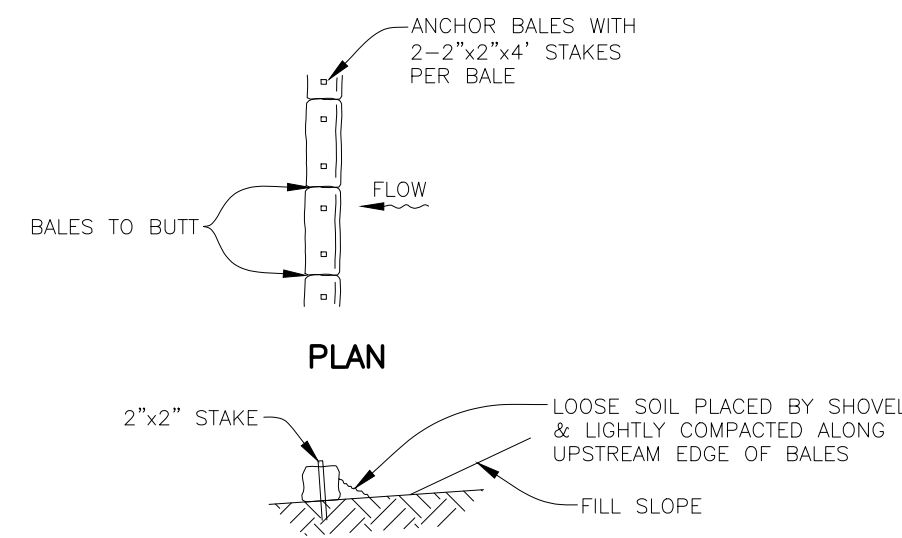


**WETLAND BUFFER**  
FIGURE 1

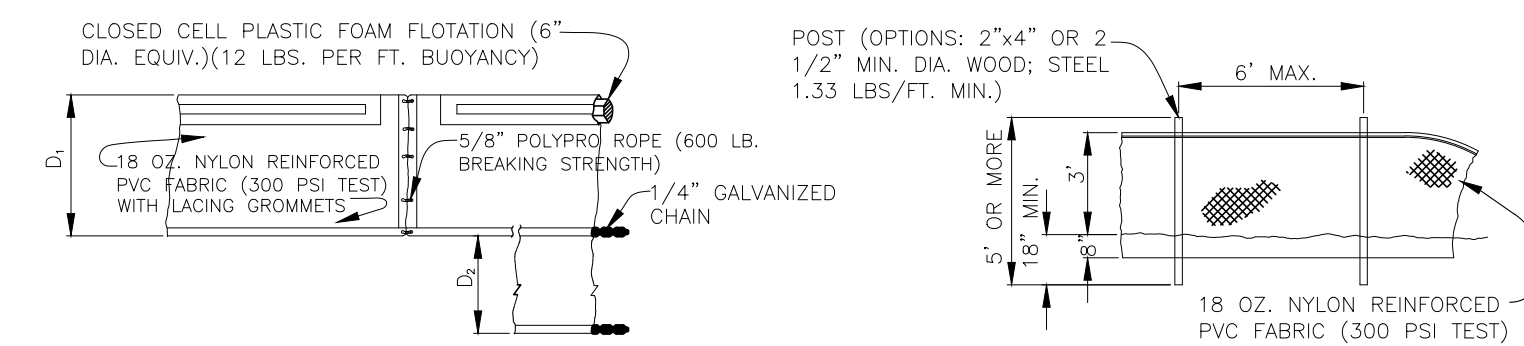


NOTE: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (LF).

**TYPICAL SILT FENCE**  
FIGURE 2



**TYPICAL BALE SILT BARRIER**  
FIGURE 3

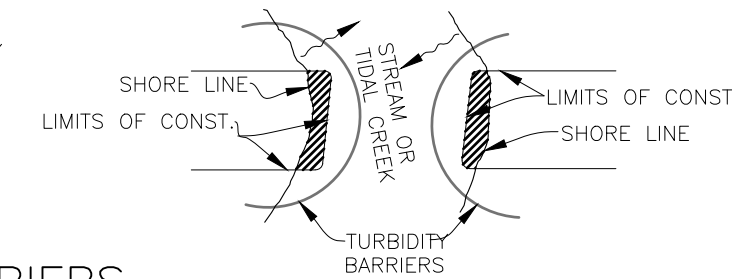


**FLOATING TURBIDITY BARRIERS**

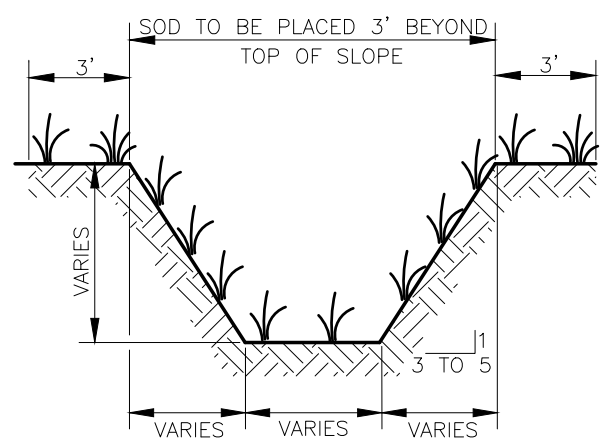
D<sub>1</sub> = 5' STD. (SINGLE PANEL FOR DEPTHS 5' OR LESS). D<sub>2</sub> = 5' STD. (ADDITIONAL PANEL FOR DEPTHS > 5'). CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET. TWO(2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER.

NOTICE: COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

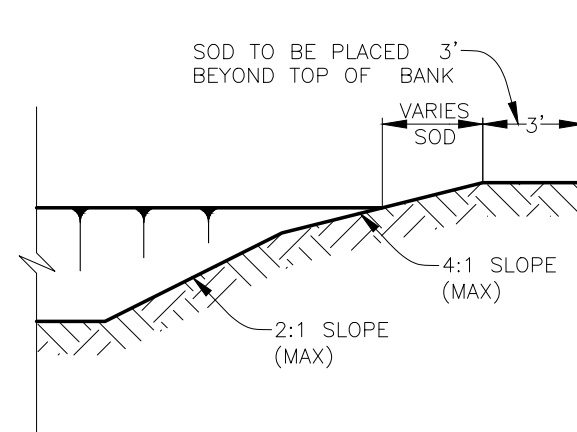
**STAKED TURBIDITY BARRIER**



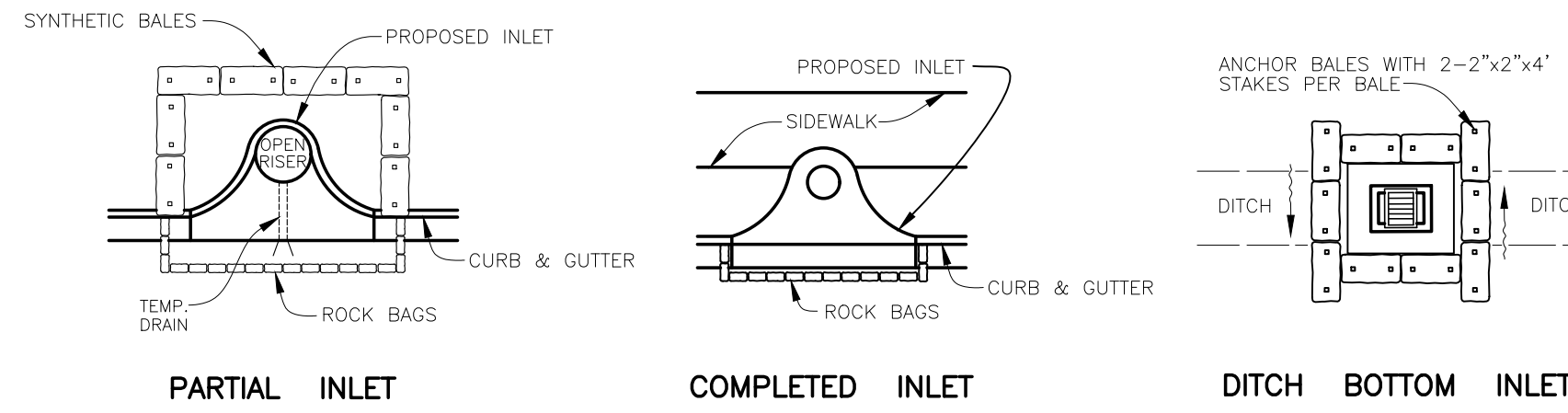
**TURBIDITY BARRIERS**  
FIGURE 4



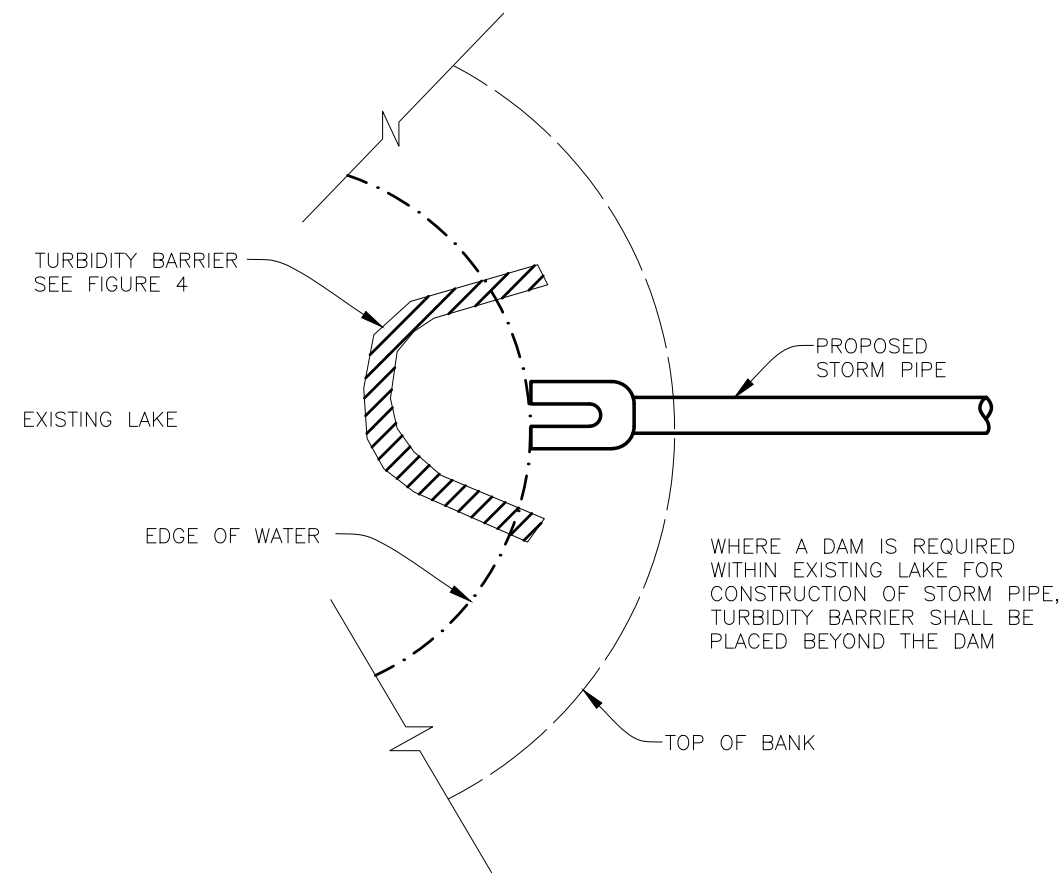
**TYPICAL SWALE SECTION**  
FIGURE 5



**TYPICAL RETENTION/DETENTION POND SECTION**  
FIGURE 6

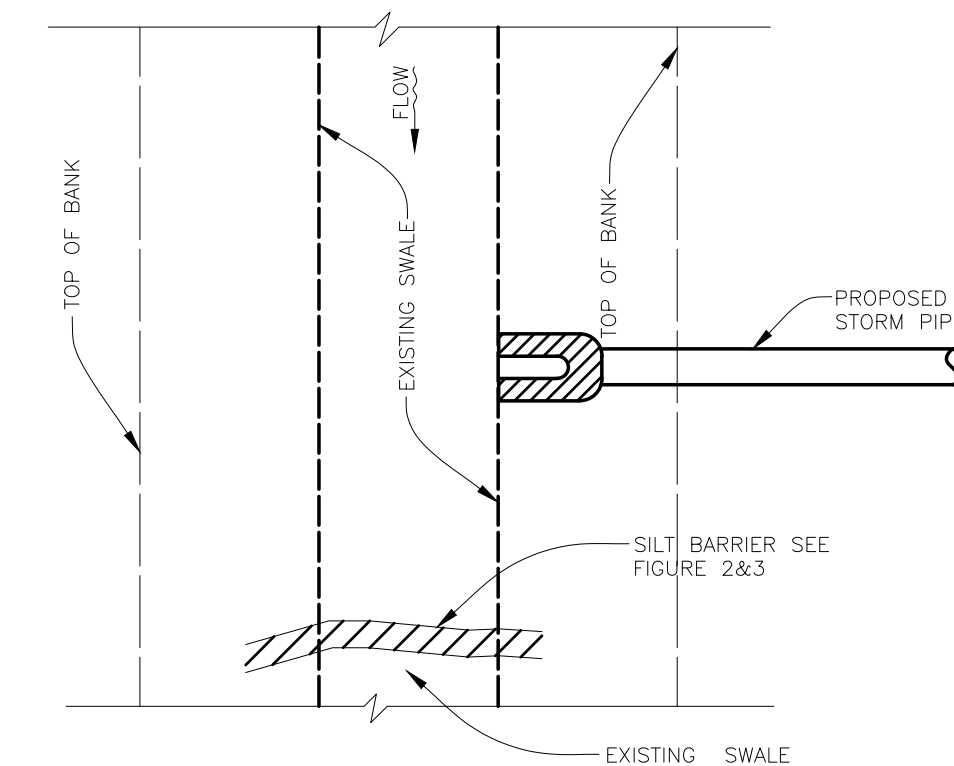


**SYNTHETIC BALE PROTECTION AROUND INLETS OR SIMILAR STRUCTURES**  
FIGURE 7

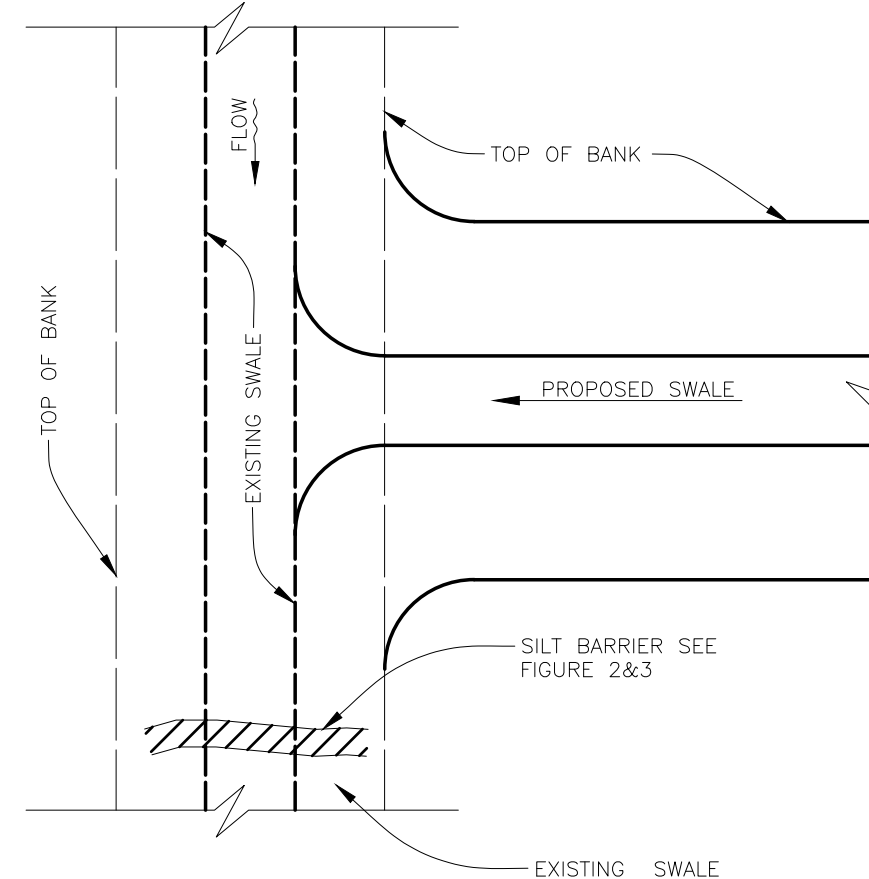


**TURBIDITY BARRIER AT CONNECTION OF STORM PIPE TO EXISTING LAKE**  
FIGURE 9

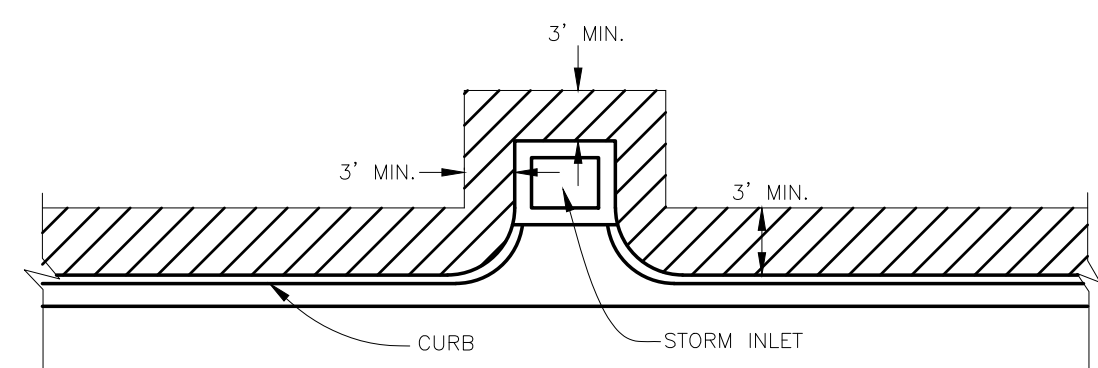
WHERE A DAM IS REQUIRED WITHIN EXISTING LAKE FOR CONSTRUCTION OF STORM PIPE, TURBIDITY BARRIER SHALL BE PLACED BEYOND THE DAM



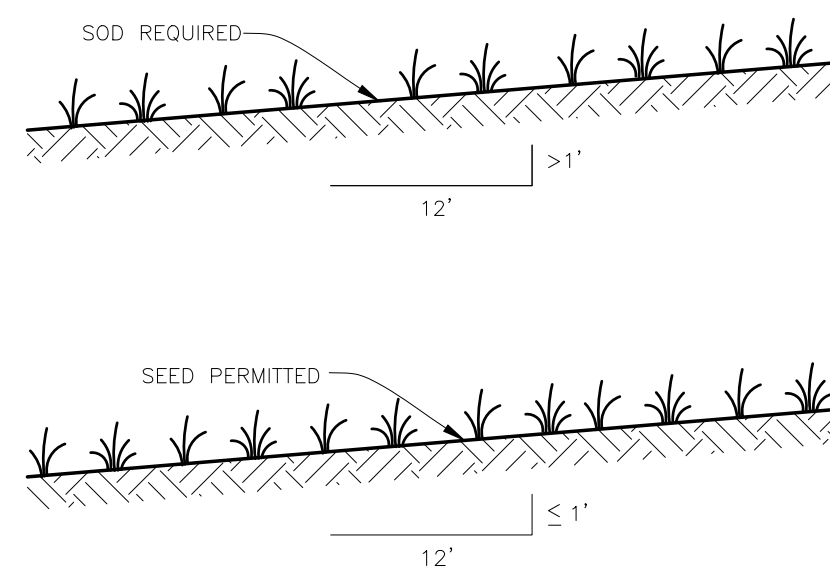
**SILT BARRIER AT CONNECTION OF STORM PIPE TO EXISTING SWALE**  
FIGURE 10



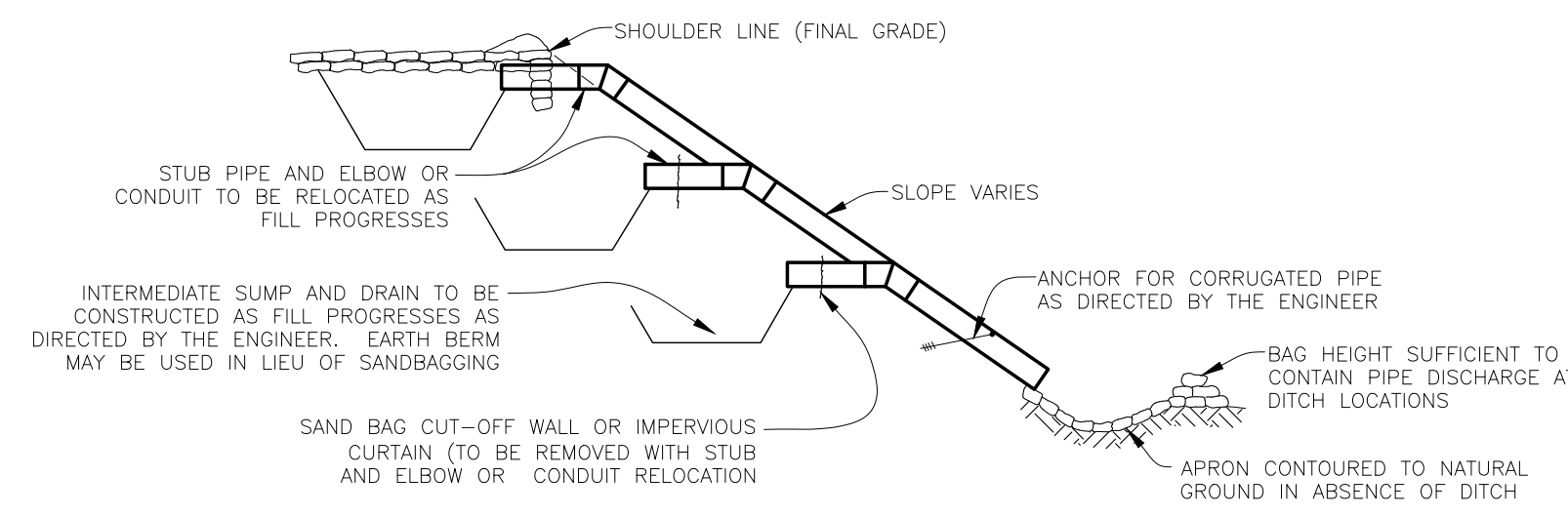
**SILT BARRIER AT CONNECTION OF SWALE TO EXISTING SWALE**  
FIGURE 11



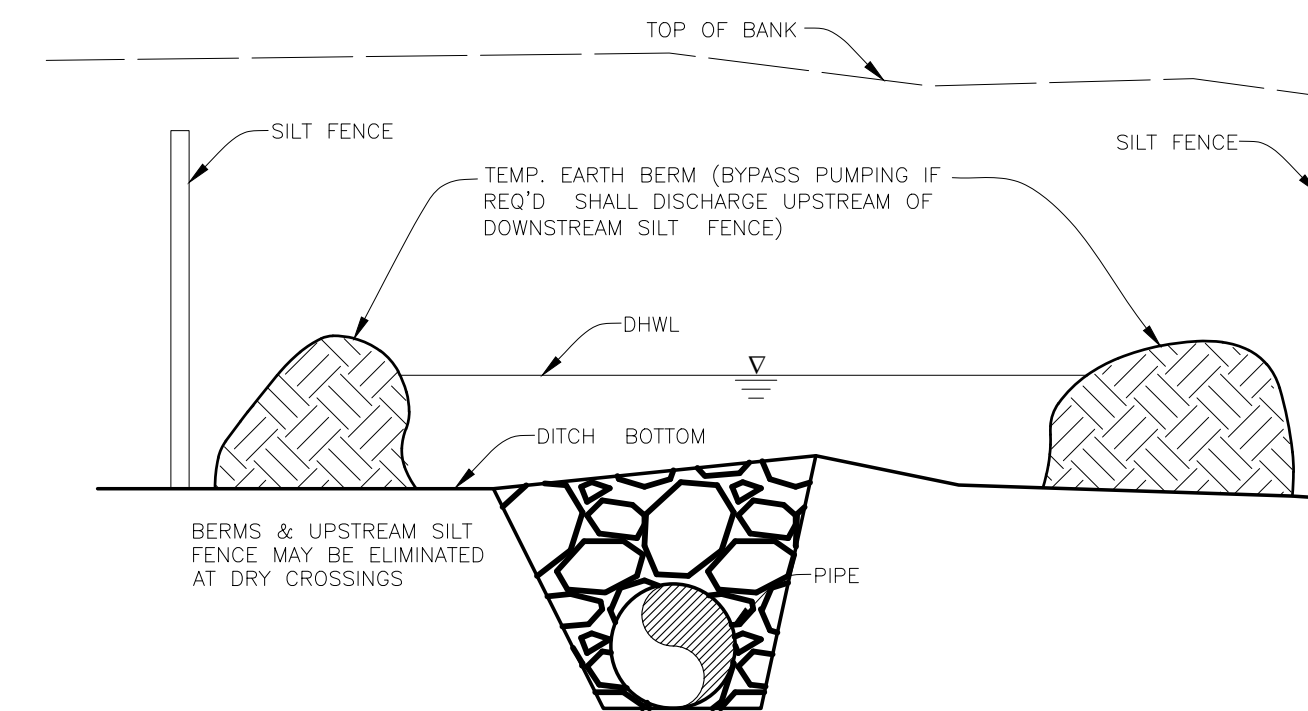
**SOD ALONG CURB AND AROUND INLET**  
FIGURE 14



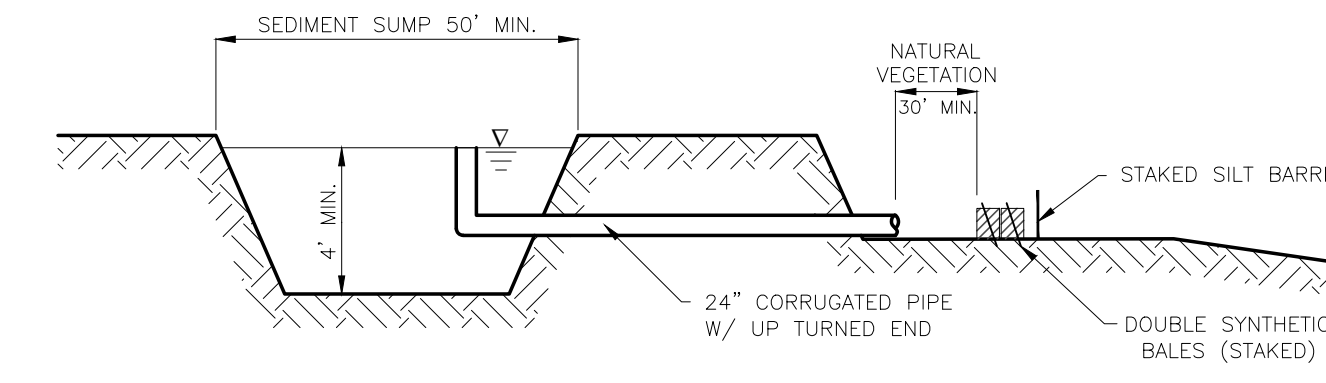
**GRASS SLOPES**  
FIGURE 13



**SECTION AA**  
**TEMPORARY SLOPE DRAIN**  
FIGURE 15



**UNDERGROUND PIPE CROSSING**  
FIGURE 12



**SEDIMENT SUMP SECTION**  
FIGURE 16

NOTE: REFERENCE THE FDOT DESIGN STANDARDS LATEST EDITION FOR ALL TEMPORARY EROSION CONTROL MEASURES.

REV. NO.	DESCRIPTION	DATE

SEAL

BLAKE PETERS, P.E.  
No. 64429

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**Manatee County**  
FLORIDA

**CORTEZ BOOSTER PUMP STATION**  
**UPGRADES**

**DETAILS**  
**ERROSION**

PROJ. START DATE: <b>MAR. 2020</b>	SCALE
MCE PROJ. # <b>01024-0193</b>	HORIZONTAL: <b>D-3</b>
DRAWN <b>DES</b>	VERTICAL: <b>TBD</b>
DESIGNED <b>NAM</b>	TBD
CHECKED <b>MAC</b>	TBD
PROJ. MGR. <b>NAM</b>	REVISION

**D-3**  
DRAWING NUMBER

ISSUED FOR BID