

CONSTRUCTION PLANS

FOR

UTILITIES, INC. OF FLORIDA

TIERRA VERDE LIFT STATION

SECTION 17, TOWNSHIP 32S , RANGE 16E

OCTOBER 2019

PINELLAS COUNTY, FLORIDA

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PROJECT VICINITY MAP

PREPARED BY
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Drawing name: K:\STP_Civil\140056 - Utilities, Inc. of Fla\014_Tierra Verde LS\CADD\PlanSheets\GENERAL NOTES - SURVEY - GEOTECH.dwg - SURVEY - GEOTECH.dwg
 Oct. 22, 2019 10:46am
 by: kyle.mcthenry
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ELECTICAL	E-01	ELECTRICAL LEGEND
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	E-07	LIFT STATION ELECTRICAL DETAILS

LEGEND

EX. WATER MAIN	
EX. FORCE MAIN	
EX. SANITARY SEWER	
EX. TELEPHONE	
EX. UNDERGROUND CONDUIT	
EX. RECLAIMED WATER	
EX. CHAIN LINK FENCE	
EX. OVERHEAD WIRE	
EX. ASPHALT PAVEMENT	
EX. CONCRETE SURFACE	
PROPOSED DEMOLITION	
EX. STORM DRAIN MANHOLE	
EX. SANITARY MANHOLE	
EX. TELEPHONE MANHOLE	
EX. SIGN	
PROPOSED FORCE MAIN	
PROPOSED SANITARY SEWER	
PROPOSED RECLAIMED WATER	
RIGHT-OF-WAY LINE	
PROPERTY LINE	
EX. RECLAIMED WATER METER	
EX. WATER METER	
EX. CABLE PEDESTAL	
EX. TELEPHONE PEDESTAL	
EX. ELECTRIC PEDESTAL	
EX. SERVICE POWER POLE	
EX. WATER GATE VALVE	
EX. RECLAIMED WATER GATE VALVE	
EX. IRRIGATION CONTROL VALVE	
EX. FIRE HYDRANT	

GENERAL PROJECT DATA

FOR IDENTIFICATION OF CONTRACTUAL AGREEMENTS, THE ENGINEERING PLANS SHALL BE DATED. ANY REVISIONS THEREAFTER WILL BE NOTED AND DATED ON THE AFFECTED DRAWING(S).

EXISTING UTILITY LOCATION

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 WORK. CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATION NECESSARY TO DETERMINE THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED.

LOCATION, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN TO 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.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SURVEY THE LIMITS OF CONSTRUCTION AND DEFINE RIGHT OF WAY. ANY CONFLICTS IDENTIFIED BY THIS SURVEY SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY TO DETERMINE THE COURSE OF ACTION.

THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION BEFORE COMMENCING.

PERMITS AND PERMIT REQUIREMENTS

STATE, COUNTY, CITY, AND ALL OTHER REGULATORY AGENCY PERMITS SHALL BE OBTAINED BY THE OWNER/DEVELOPER. A COPY OF ALL PERMITS SHALL BE PROVIDED TO THE UTILITY PRIOR TO ANY CONSTRUCTION ACTIVITY.

QUALITY CONTROL TESTING REQUIREMENTS

ALL TESTING RESULTS FOR NEW CONSTRUCTION SHALL BE PROVIDED TO THE UTILITY. TESTING REQUIREMENTS ARE TO BE IN ACCORDANCE WITH THE UTILITIES' SPECIFICATIONS AND REQUIREMENTS. ALL TEST RESULTS SHALL BE PROVIDED (PASSING AND FAILING) ON A REGULAR AND IMMEDIATE BASIS. NO TESTING TO BE SCHEDULED ON MONDAY OR FRIDAY.

SHOP DRAWINGS

SHOP DRAWINGS AND CERTIFICATIONS FOR ALL WATER SYSTEM, AND SEWER SYSTEM MATERIALS AND STRUCTURES ARE REQUIRED. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE TO ENGINEER FIRST FOR APPROVAL, THEN TO THE UTILITY FOR APPROVAL PRIOR TO ORDERING THE MATERIALS REQUIRED FOR CONSTRUCTION.

NOTICE OF APPLICABILITY

WHEREVER STATE, COUNTY, CITY OR LOCAL STANDARD SPECIFICATIONS DIFFER FROM THOSE CONTAINED HEREIN: THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND UTILITY FOR CERTIFICATION. TYPICALLY THE MORE STRINGENT SHALL GOVERN.

PRE-CONSTRUCTION CONFERENCE

A PRE-CONSTRUCTION CONFERENCE SHALL BE REQUIRED WITH THE UTILITY, ENGINEER, AND CONTRACTOR IN ATTENDANCE. THE CONTRACTOR SHALL SCHEDULE, WITH ALL PARTIES, THE TIME AND PLACE OF MEETING PRIOR TO ANY CONSTRUCTION COMMENCEMENT. ALL JURISDICTIONAL PERMITS, APPROVED SHOP DRAWINGS, AND CONNECTION FEES SHALL BE IN PLACE PRIOR TO PRE-CONSTRUCTION CONFERENCE SCHEDULING. THE UTILITY REQUIRES AT LEAST 72 HOURS NOTICE FOR SCHEDULING OF PRE-CONSTRUCTION CONFERENCE.

GENERAL CONSTRUCTION REQUIREMENTS

EROSION CONTROL

EROSION AND SILTATION CONTROL MEASURES ARE TO BE PROVIDED AND INSTALLED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. THESE MEASURES ARE TO BE INSPECTED BY THE CONTRACTOR ON A REGULAR BASIS AND ARE TO BE MAINTAINED OR REPAIRED ON AN IMMEDIATE BASIS, AS REQUIRED. LOCAL AND STATE JURISDICTIONAL AGENCY REQUIREMENTS SHALL BE REFERRED TO AND IMPLEMENTED DURING ALL CONSTRUCTION.

LIMITS OF DISTURBANCE

AT NO TIME SHALL THE CONTRACTOR DISTURB SURROUNDING PROPERTIES OR TRAVEL ON SURROUNDING PROPERTIES WITHOUT WRITTEN CONSENT FROM THE PROPERTY OWNER. REPAIR OR RECONSTRUCTION OF DAMAGED AREAS ON SURROUNDING PROPERTIES SHALL BE PERFORMED BY THE CONTRACTOR ON AN IMMEDIATE BASIS. ALL COSTS FOR REPAIRS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WITH NO COMPENSATION FROM THE UTILITY.

FILL MATERIAL

ALL FILL MATERIALS SHALL NOT CONTAIN ANY MUCK, STUMPS, ROOTS, BRUSH, VEGETATIVE MATTER, RUBBISH OR OTHER MATERIAL THAT WILL NOT COMPACT INTO A SUITABLE AND ENDURING BACKFILL. FILL SHALL BE CLEAN, NON-ORGANIC, GRANULAR MATERIAL WITH NOT MORE THAN 10% PASSING THE NO. 200 SIEVE.

COMPACTION

FILL MATERIALS PLACED UNDER ROADWAYS SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. ALL OTHER FILL AREAS ARE TO BE COMPACTED TO AT LEAST 95% MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. FILL MATERIALS SHALL BE PLACED AND COMPACTED IN A MAXIMUM OF 12" LIFTS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER AND OWNER WITH ALL (PASSING AND FAILING) TESTING RESULTS. RESULTS SHALL BE PROVIDED ON A TIMELY AND REGULAR BASIS PRIOR TO CONTRACTOR'S PAY REQUEST SUBMITTAL.

FORCE MAIN

OWNER/OPERATOR

WHERE THE UTILITY WILL OWN, OPERATE AND MAINTAIN THE FORCE MAIN CONSTRUCTION, THE CONTRACTOR SHALL BE EXPECTED TO MEET ALL THE REQUIREMENTS OF THE UTILITY AND JURISDICTIONAL AGENCIES.

MATERIALS

SANITARY SEWER FORCE MAIN SHALL BE POLYVINYL CHLORIDE PLASTIC PIPE (PVC) AND SHALL CONFORM TO ASTM D2241 PLASTIC PIPE (SD PR & CLASS T), ASTM 1784, TYPE I, 2000 PSI DESIGN STRESS. THE PIPE SHALL BE ANSI/AWWA C900 WITH MARKINGS ON EACH SECTION SHOWING CONFORMANCE WITH THE ABOVE SPECIFICATION. JOINTS SHALL BE OF THE PUSH ON TYPE AND COUPLINGS CONFORMING TO ASTM D3139 DR18 PIPE.

COMPACT FITTINGS FOR FORCE MAIN SHALL BE MECHANICAL JOINT, DUCTILE IRON CONFORMING TO ANSI/AWWA C143/A21.53 (LATEST EDITION) 350 PSI MINIMUM PRESSURE RATING. FITTINGS SHALL BE POLYETHYLENE LINED (MIN. 30 MILS CONFORMING TO ASTM D-1248).

ALL PLUGS, CAPS, TEES, VALVES, BENDS, ETC., SHALL BE RESTRAINED JOINTS OR THRUST BLOCKED (RESTRAINED JOINTS PREFERRED) PER UTILITY DETAILS. THREE FOOT MINIMUM COVER OVER FORCE MAIN.

VALVES

STANDARD PLUG VALVES SHALL BE MANUFACTURED BY DEZURIK CORP., PRATT, DRESSER, HOMESTEAD INDUSTRIES.

CHECK VALVES SHALL BE OF THE WEIGHT AND LEVER TYPE, RESILIENT DISC, GRAY IRON, AND BRONZE TRIM, HORIZONTAL MOUNTED. VALVES SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA C508 WITH FLANGED CONNECTIONS. VALVES SHALL HAVE A WORKING PRESSURE OF 200 PSI FOR VALVES 2"-12". VALVES SHALL BE DEZURIK, MUELLER.

VALVES SHALL BE FURNISHED WITH REPLACEABLE CHEVRON PACKING, CAPABLE OF BEING REPACKED WITH THE LINE UNDER PRESSURE.

VALVES 4 INCHES IN DIAMETER AND SMALLER SHALL BE WRENCH NUT OPERATED. VALVES LARGER THAN 4 INCHES SHALL BE WORM GEAR OPERATED.

VALVE BOX PADS SHALL BE 4" THICK CONCRETE WITH #4 REINFORCING BARS. PAD IS TO BE SET AT FINISH GRADE.

MAXIMUM LENGTH BETWEEN VALVES SHALL BE 1000 LINEAR FEET. UNDERGROUND VALVE IDENTIFICATION (UVI) MARKERS SHALL BE PROVIDED AT EACH VALVE LOCATION. MARKERS SHALL BE 3" DIA. 1/8" THICK SOLID HARD BRASS WITH 1/4" ROD ANCHOR WITH "TAMPER-PROOF" HOOK END. SURFACE SHALL BE ENGRAVED WITH 1/4" TO 3/8" CAPITAL LETTERS APPROXIMATELY .015" DEPTH - HAND PUNCHED LETTERS NOT ACCEPTABLE. FOR MARKER TEXT, REFER TO UNDERGROUND VALVE MARKER DETAIL. SURFACE GROUND SMOOTH AND EPOXY COATED TO PREVENT TARNISHING. MARKERS ARE TO BE WAGCO MARKERS.

UVI MARKERS SHALL BE INSTALLED IN THE VALVE PAD IN UNPAVED AREAS, IN CONCRETE ADJACENT TO VALVE BOX COVER IN SIDEWALK OR DRIVEWAY AREAS, AND IN CONCRETE CURB ADJACENT TO VALVE IN PAVED AREAS. UVI'S PLACED IN CURB FOR VALVES IN PAVED AREAS SHALL BE INSTALLED WITH THE SAME LOCATION ARRANGEMENT AS THE VALVES. (REFER TO PLACEMENT DETAIL.)

AIR RELEASE VALVES

AIR RELEASE VALVE DESIGNED FOR SEWAGE SERVICE SHALL BE INSTALLED IN THE TOPS OF PIPES AS INDICATED ON THE DRAWINGS. VALVES SHALL BE DESIGNED TO PERMIT MANUAL RELEASE OF AIR FROM AN EMPTY PIPE DURING FILLING AND SHALL BE CAPABLE OF DISCHARGING ACCUMULATED AIR IN THE LINE WHILE THE LINE IS IN OPERATION AND UNDER PRESSURE. VALVES SHALL BE CAPABLE OF WITHSTANDING OPERATING PRESSURES OF 150 PSI. VALVES SHALL BE VENTED TO THE ATMOSPHERE. THE VALVES SHALL BE VALMATIC.

CONSTRUCTION METHODS

TRENCHING SHALL BE IN ACCORDANCE WITH THE TRENCHING DETAILS PROVIDED ON THE CONSTRUCTION PLANS.

COMPACTED BACKFILL FOR ALL PIPES SHALL BE TO 98% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 FOR UNDER ROADWAYS. OTHER COMPACTION OF BACKFILL SHALL BE TO THE 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.

INSTALLATION OF THE SANITARY SEWER FORCE MAIN SHALL BE IN CONFORMANCE WITH ASTM D2774-72 (LATEST EDITION).

MINIMUM COVER OVER ALL PIPES SHALL BE 36" FROM TOP OF PIPE TO FINISHED GRADE. SEE PLAN AND PROFILE SHEETS FOR REQUIRED DEPTH.

THE FORCE MAIN SHALL BE INSTALLED AS NOTED ON THE PLANS. WHERE APPLICABLE, A HORIZONTAL SEPARATION OF AT LEAST 10' SHALL BE MAINTAINED BETWEEN WATER AND SEWER LINES. WHEN WATER AND SEWER LINES CROSS WITH LESS THAN AN 18" VERTICAL SEPARATION, THE PVC SEWER LINE SHALL BE ENCASED IN CONCRETE OR DUCTILE IRON PIPE USED IN LIEU OF PVC PIPE FOR A DISTANCE OF 10' EITHER SIDE OF THE CROSSING.

ALL PLUGS, CAPS, TEES, BENDS, VALVES, ETC., SHALL BE PROVIDED WITH RESTRAINED JOINTS OR THRUST BLOCKS (RESTRAINED JOINTS PREFERRED). FOR THRUST BLOCK OR RESTRAINED JOINT CONSTRUCTION DETAILS, REFER TO THE UTILITY DETAILS AND TABLES.

GREEN INDICATOR TAPE SHALL BE BURIED IN THE FORCE MAIN TRENCH 18" DIRECTLY ABOVE THE FORCE MAIN. A CONTINUOUS COPPER DETECTOR WIRE SHALL BE ATTACHED TO THE PIPE AND VALVES UTILITY DETAILS.

TRENCH OR EXCAVATION BOTTOM STABILIZATION MATERIAL

A. SAND

SAND SHALL BE WELL GRADED, ORGANIC FREE, DURABLE, GRANULAR MATERIAL AND SHALL PASS A NO. 4 SIEVE. NOT MORE THAN 10% SHALL PASS A NO. 200 SIEVE.

B. PIT RUN GRAVEL

PIT RUN GRAVEL SHALL BE ORGANIC FREE AND SHALL PASS A 3/4-INCH SIEVE.

C. GRANULAR MATERIAL

GRANULAR MATERIAL SHALL BE WELL GRADED, ORGANIC AND TOPSOIL FREE, DURABLE AGGREGATE AND SHALL PASS A 3/4-INCH SIEVE. NOT MORE THAN 10% SHALL PASS A NO. 200 SIEVE.

TESTING

FORCE MAIN SHALL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD M23. FORCE MAIN SYSTEM SHALL BE TESTED FOR TWO (2) HOURS AT 100 PSI. THE CONTRACTOR SHALL PROVIDE SEVENTY-TWO (72) HOURS WRITTEN ADVANCE NOTIFICATION TO THE UTILITY AND THE ENGINEER. NO TESTING ON MONDAY OR FRIDAY. THE CONTRACTOR SHALL PERFORM SATISFACTORY PRETESTING PRIOR TO NOTIFICATION.

AS-BUILT DRAWINGS

THE CONTRACTOR SHALL PROVIDE VERTICAL AND HORIZONTAL "AS-BUILT" INFORMATION RELATIVE TO ALL CONSTRUCTED UTILITIES AND STRUCTURES.

AS-BUILTS SHALL BE PROVIDED BY THE CONTRACTOR TO THE UTILITY TWO WEEKS PRIOR TO FINAL INSPECTION. ALL AS-BUILT DATA SHALL BE PROVIDED BY A FLORIDA LICENSED SURVEYOR, SIGNED, SEALED, AND DATED BY THE RESPONSIBLE PARTY. SEE INDIVIDUAL SECTIONS (SEWER, WATER SYSTEM, ETC.) FOR ADDITIONAL AS-BUILT REQUIREMENTS.

TRAFFIC CONTROL NOTES

TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH F.D.O.T. DESIGN STANDARDS SERIES 600 DEPENDING ON THE OPERATION BEING PERFORMED. THE CONTRACTOR MAY SUBSTITUTE ANOTHER INDEX WITH APPROVAL BY THE ADMINISTRATOR.

TO AVOID DISRUPTION DUE TO INCLEMENT WEATHER, THE CONTRACTOR SHOULD KEEP THE MILLING AND PAVING OPERATIONS AS CLOSE TOGETHER AS POSSIBLE.

ALL EXISTING PAVEMENT MARKINGS OUTSIDE THE CONSTRUCTION LIMITS THAT HAVE BEEN ALTERED BECAUSE OF CONSTRUCTION OPERATIONS SHALL BE REPLACED UPON THE COMPLETION OF THE PROJECT.

THE EXISTING POSTED SPEED LIMIT SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION, ANY CHANGE SHALL REQUIRE APPROVAL FROM THE ENGINEER.

IF A LANE CLOSURE CAUSES EXTENDED CONGESTION OR DELAY, THE CONTRACTOR SHALL BE DIRECTED TO REOPEN THE CLOSED LANE UNTIL SUCH TIME THAT TRAFFIC FLOW HAS RETURNED TO AN ACCEPTABLE LEVEL. THE CONTRACTOR SHALL SCHEDULE WORK OPERATIONS SO THAT ALL LANES CAN BE OPENED TO TRAFFIC WITHIN A PERIOD OF 24 HOURS IN CASE OF AN EMERGENCY.

PEDESTRIANS, BICYCLES, AND WHEELCHAIRS:

AT THE END OF EACH WORKDAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE, ANY DROP-OFF ADJACENT TO A SIDEWALK SHALL BE BACKFILLED AT A SLOPE NOT TO EXCEED 1:4, OR SHALL BE PROTECTED IN ACCORDANCE WITH STANDARD INDEX 600.

PEDESTRIAN AND WHEELCHAIR TRAFFIC SHALL BE ACCOMMODATED UTILIZING STANDARD INDEX 660.

ONE PORTABLE VARIABLE MESSAGE SIGN SHALL BE USED IN ADVANCE OF EACH LANE CLOSURE. THE FOLLOWING ARE SUGGESTED MESSAGES TO USE IN THE APPROPRIATE SITUATIONS:

- MESSAGE 1
- "RIGHT" OR "CENTER" OR "LEFT"
 - "LANE" "LANE" "LANE"
 - "CLOSED" "CLOSED" "CLOSED"
- MESSAGE 2
- "MERGE" OR "MERGE" OR "MERGE"
 - "RIGHT" "LEFT" "LEFT OR"
 - "RIGHT"

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REMOVAL OF STORMWATER FROM ROADWAYS UTILIZED FOR TRAFFIC CONTROL IN A MANNER APPROVED BY THE ENGINEER.

AT THE END OF EACH WORKING DAY'S ACTIVITY, TEMPORARY PAVEMENT MARKINGS AND TEMPORARY RPM'S SHALL BE INSTALLED PRIOR TO OPENING THE LANES UP FOR TRAFFIC.

ALL PAVEMENT MARKINGS, SIGNS, MARKERS, CHANNELIZATION THAT CAN NOT BE APPLIED WITHIN THE WORK ZONE FOR THE NEXT PHASE ALONG WITH TRAFFIC SHIFTS, SHALL UTILIZE INDICES OF PLACEMENT.

THE CONTRACTOR SHALL RESTRICT THE OPERATIONS SO THAT THE FIRST LIFT OF ASPHALT IS PLACED ON THE SAME DAY THAT THE LANES ARE MILLED, BEFORE OPENING THE LANES TO TRAFFIC. INSTALL TEMPORARY PAVEMENT MARKINGS AFTER THE FIRST LIFT AND PRIOR TO OPENING.

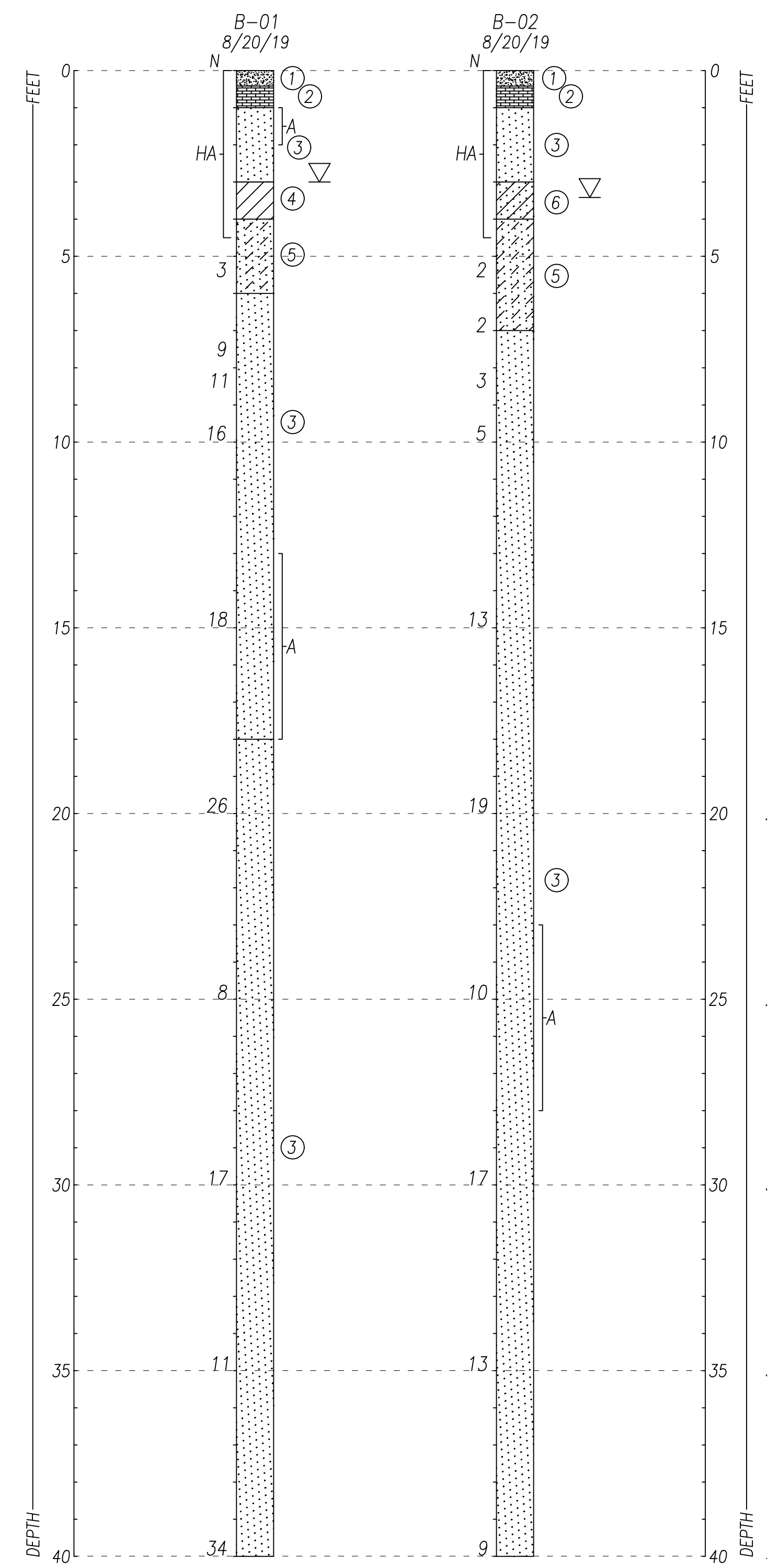
ALL SIGNALS SHALL REMAIN IN THE ACTUATED OPERATION THROUGHOUT THE DURATION OF THE PROJECT. THE CONTRACTOR MAY UTILIZE STANDARD LOOPS, PERFORMED LOOPS, OR AN ALTERNATIVE METHOD. ANY ALTERNATIVE DEVICE MUST BE ON THE APPROVED PRODUCTS LIST AND APPROVED BY THE PROJECT ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER PLACEMENT AND ANY NECESSARY RELOCATION, ADJUSTMENT OR REPLACEMENT OF THOSE DETECTORS AS NECESSARY TO MAINTAIN ACTUATED OPERATION FOR ALL OF THE MAIN STREET, SIDE STREET AND RAMP MOVEMENTS FOR THE DURATION OF THE PROJECT. ALL COSTS OF TEMPORARY VEHICLE DETECTION, INCLUDING DETECTORS, INSTALLATION, RELOCATION, ADJUSTMENT, OR REPLACEMENT SHALL BE INCLUDED IN THE COST OF AND PAID FOR UNDER THE MAINTENANCE OF TRAFFIC PAY ITEM. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANIES AND VERIFY THAT TEMPORARY POLES WILL NOT CONFLICT WITH ANY EXISTING UTILITIES.

GROUNDWATER / Dewatering Note:
 THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.

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		DESIGN ENGINEER: SHELLEY N. HUGHES P.E. FLORIDA REGISTRATION NUMBER: 066419	SCALE: AS NOTED DESIGNED BY: SALE DRAWN BY: KTM CHECKED BY: SNH	DATE: OCTOBER 2019
GENERAL NOTES		UTILITIES, INC. OF FLORIDA TIERRA VERDE LIFT STATION PINELLAS COUNTY FLORIDA		
SHEET NUMBER G-02		PROJECT NO. 140056014		
REVISIONS		DATE		

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- LEGEND**
- ① ASPHALT
 - ② LIMEROCK BASE
 - ③ GRAY TO BROWN FINE SAND (SP)
 - ④ GRAY SILTY CLAY (CL)
 - ⑤ DARK GRAY FINE SAND TO SLIGHTLY CLAYEY FINE SAND (SP/SP-SC) WITH ORGANIC DEBRIS (1/2" DIAMETER STICKS, PEAT)
 - ⑥ GRAY CLAYEY FINE SAND (SC)
- A WITH SHELL FRAGMENTS
 HAMMER TYPE: AUTOMATIC
 RIG TYPE: CME-55
 DRILLED BY: D.P./C.H.
- (SP) UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) SYMBOL
 ▽ GROUNDWATER LEVEL MEASURED ON DATE DRILLED
 N SPT N-VALUE IN BLOWS PER FOOT
 HA HAND AUGER

SOIL BORING PROFILES

Ardaman & Associates, Inc.
 Geotechnical, Environmental and Materials Consultants

PROPOSED LIFT STATION
 TIERRA VERDE, FLORIDA

DRAWN BY: <i>ajd</i>	CHECKED BY: <i>MEM</i>	DATE: 8/30/19
FILE NO. 19-55-9555	APPROVED BY: <i>MC</i>	FIGURE: 2

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 DRZAL, ANDY



TEST LOCATION PLAN

Ardaman & Associates, Inc.
 Geotechnical, Environmental and Materials Consultants

PROPOSED LIFT STATION
 TIERRA VERDE, FLORIDA

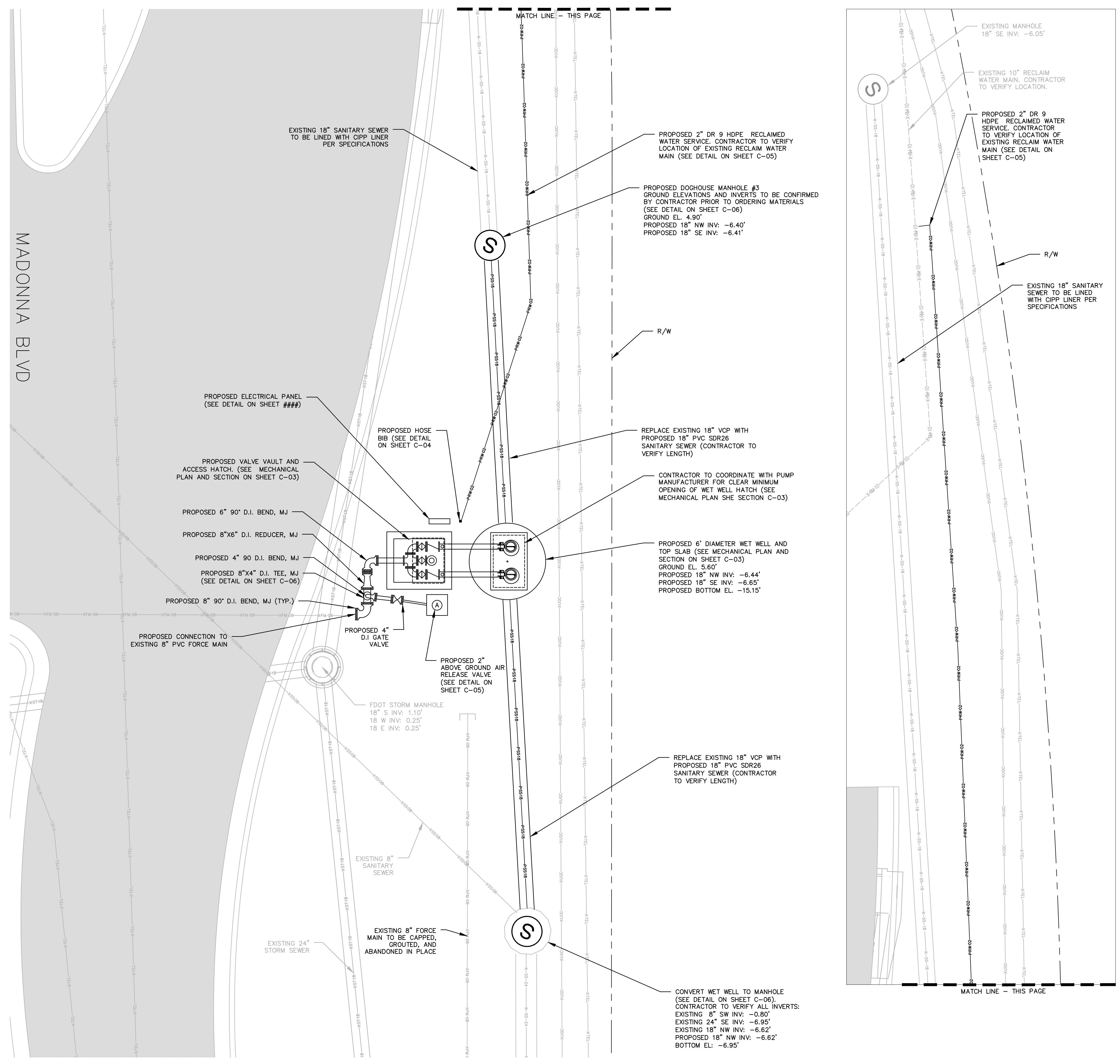
DRAWN BY: <i>ajd</i>	CHECKED BY: <i>MEM</i>	DATE: 8/30/19
FILE NO. 19-55-9555	APPROVED BY: <i>MC</i>	FIGURE: 1

APPROXIMATE SCALE: 1"=5000'



SOIL BORING LOGS	Kimley»Horn <small>© 2019, KIMLEY-HORN AND ASSOCIATES, INC. 100 SECOND AVENUE SOUTH, SUITE 105N ST. PETERSBURG, FL 33701 PHONE: 727-547-3999 WWW.KIMLEY-HORN.COM CA 00000696</small>
UTILITIES, INC. OF FLORIDA TIERRA VERDE LIFT STATION PINELLAS COUNTY FLORIDA	SCALE AS NOTED DESIGNED BY SAE DRAWN BY KTM CHECKED BY SNH
DATE OCTOBER 2019 PROJECT NO. 140056014 SHEET NUMBER G-03	REVISIONS No. DATE BY

Drawing name: K:\STP_Civil\140056 - Utilities, Inc. of Fla\014 Tierra Verde LS\CADD\PlanSheets\SITEPLAN.dwg C-01 SITE PLAN Oct 22, 2019 10:46am by: kyle.matheny
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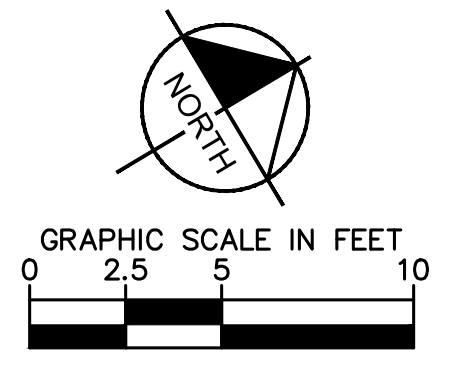
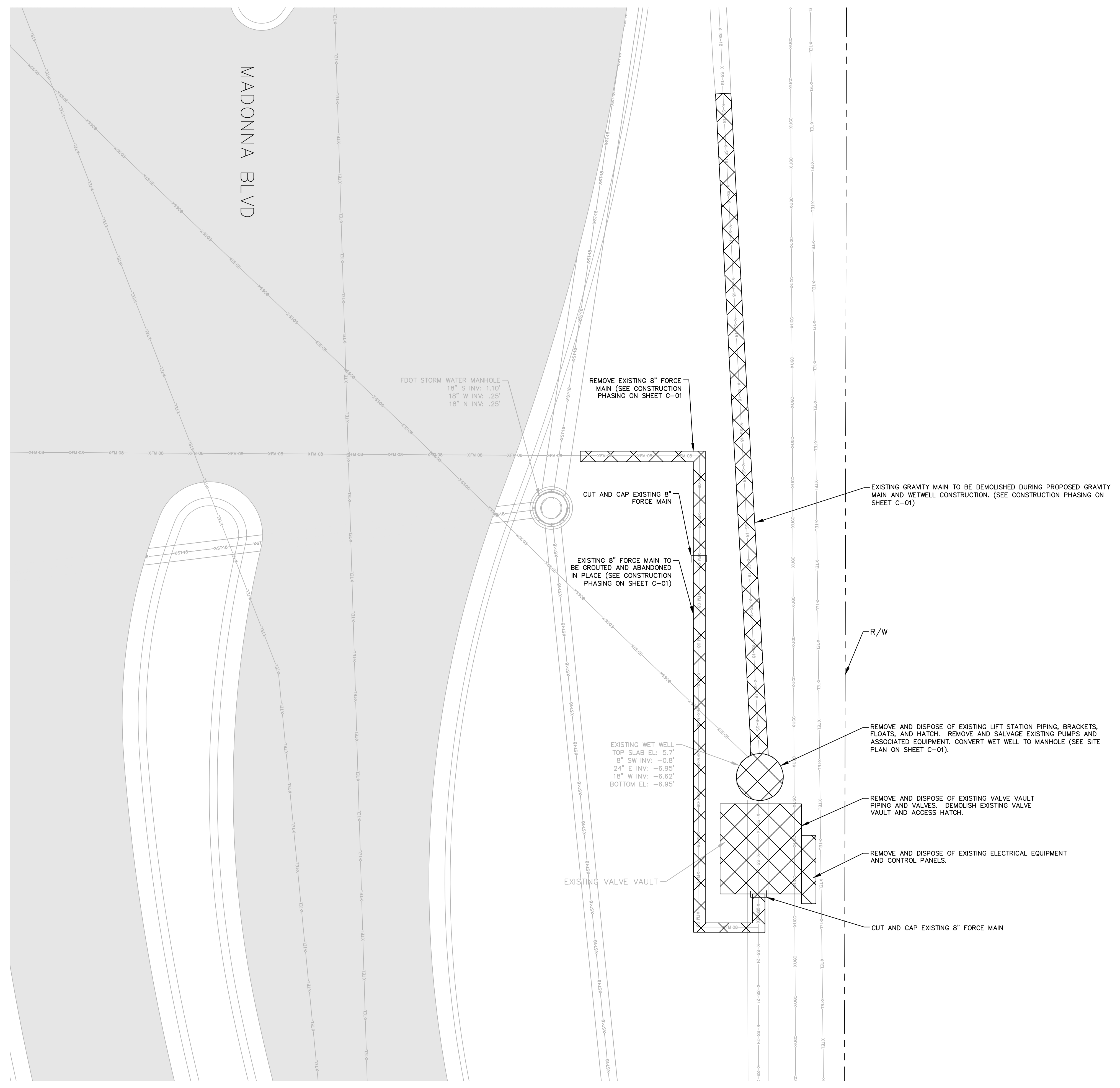


GROUNDWATER / DEWATERING NOTE:
 THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER. PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.



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<p>DESIGN ENGINEER: SHELLEY N. HUGHES P.E. FLORIDA REGISTRATION NUMBER: 866419</p>	<p>SCALE AS NOTED DESIGNED BY: SALE DRAWN BY: KTM CHECKED BY: SNH</p>
<p>SITE PLAN</p>	
<p>UTILITIES, INC. OF FLORIDA TIERRA VERDE LIFT STATION PINELLAS COUNTY FLORIDA</p>	
<p>DATE OCTOBER 2019</p>	<p>PROJECT NO. 140056014</p>
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<p>NO.</p>	<p>REVISIONS</p>
<p>DATE</p>	<p>BY</p>

Drawing name: K:\STP_Civil\140056 - Utilities, Inc. of Fla\014 Tierra Verde LS\CADD\PlanSheets\DEMOLITION PLAN.dwg C-02 DEMOLITION PLAN Oct. 22, 2019 10:46am by: kylematheny
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- NOTES**
1. CONTRACTOR TO VERIFY EXISTING UTILITY LOCATIONS.
 2. CONTRACTOR TO REMOVE AND REPLACE TREES AND LANDSCAPING AS REQUIRED FOR LIFT STATION CONSTRUCTION.

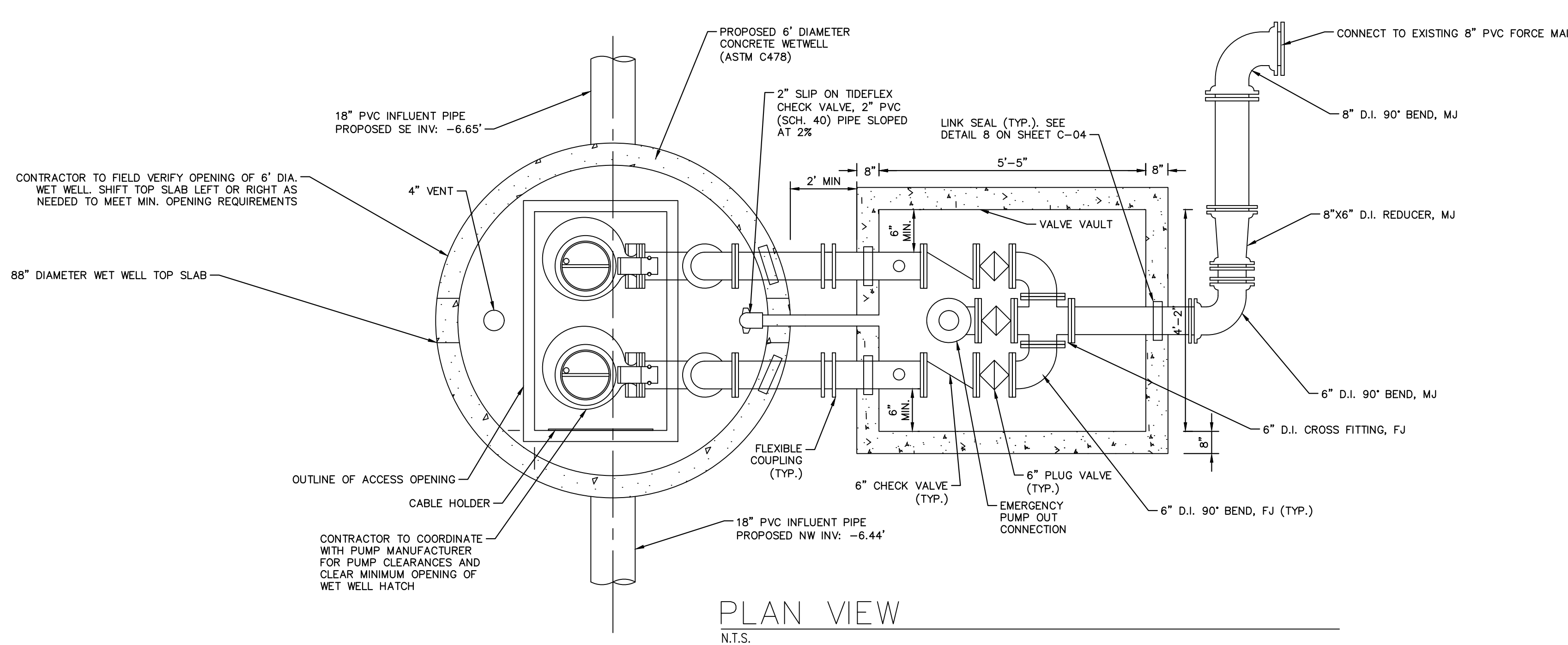
GROUNDWATER / DEWATERING NOTE:
 THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.



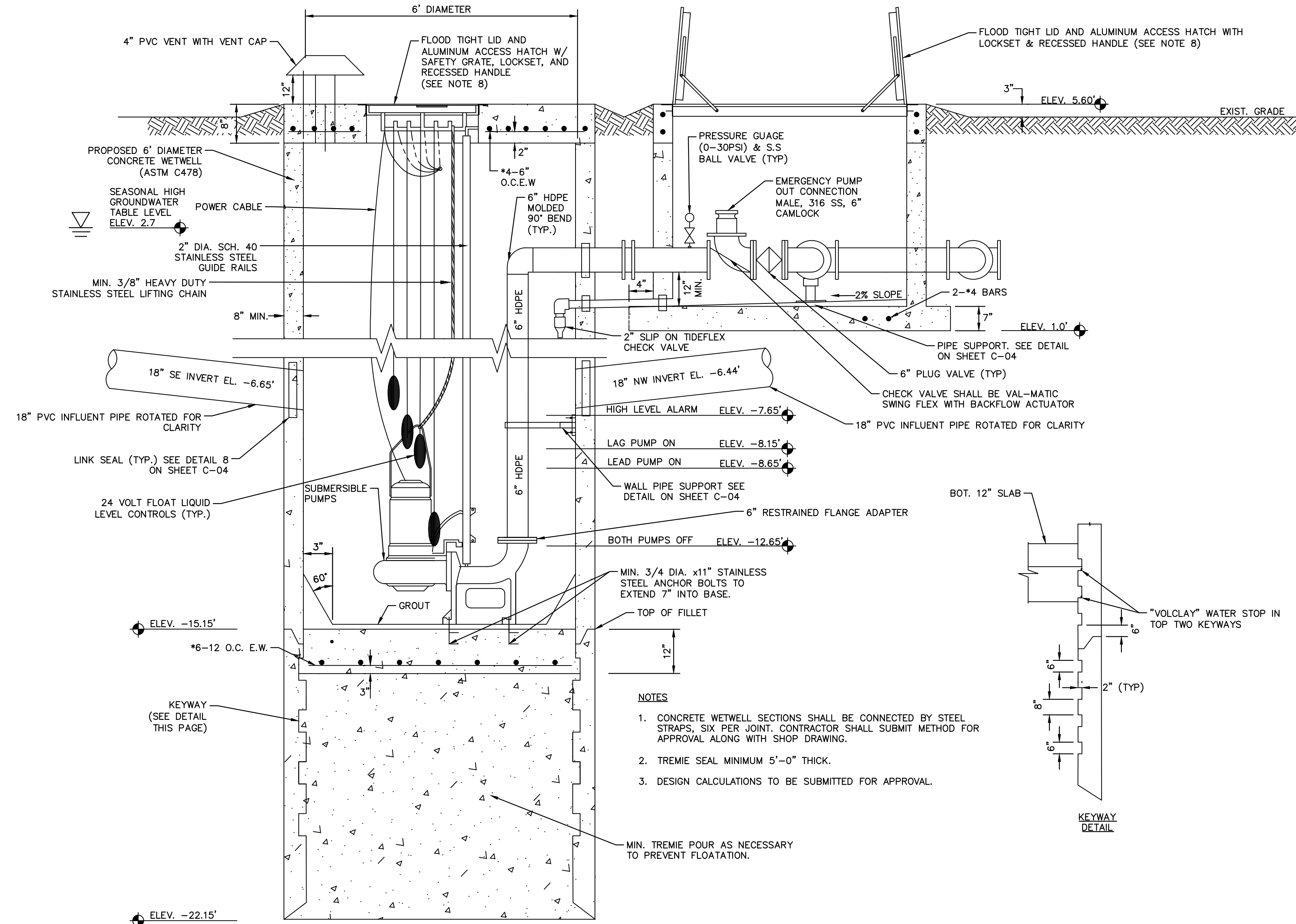
SCALE AS NOTED		DESIGNED BY	SAE	DESIGN ENGINEER:	SHELBY N. HUGHES P.E.
DRAWN BY		KTM	FLORIDA REGISTRATION NUMBER:	86419	
CHECKED BY		SNH	DATE:		
DEMOLITION PLAN		UTILITIES, INC. OF FLORIDA			
		TIERRA VERDE LIFT STATION			
		PINELLAS COUNTY	FLORIDA		
DATE		OCTOBER 2019			
PROJECT NO.		140056014			
SHEET NUMBER		C-02			
No.	REVISIONS	DATE	BY		

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Drawing name: K:\STP_Civil\140056 - Utilities, Inc. of Fla\014 Tierra Verde\CADD\Plansheets\MECHANICAL PLAN AND SECTION.dwg C-03 MECHANICAL PLAN AND SECTION Oct 22, 2019 10:47am by kyle.matheny
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- NOTES**
1. CONTRACTOR TO VERIFY EXISTING UTILITY LOCATIONS.
 2. CONTRACTOR TO REMOVE AND REPLACE TREES AND LANDSCAPING AS REQUIRED FOR LIFT STATION CONSTRUCTION.



- GENERAL NOTES:**
1. ALL EXPOSED METAL SHALL BE PAINTED WITH 2 COATS OF EXTERIOR ENAMEL PAINT.
 2. VALVE VAULT SHALL BE COATED WITH COAL TAR INSIDE AND OUT. (TWO COATS, 9 MILS EACH.)
 3. BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
 4. VALVE VAULT SHALL BE SIZED TO PERMIT EASY REMOVAL OF CHECK VALVE SPINDLES WITH MINIMUM CLEARANCES AS SHOWN FOR 6" DIAMETER PIPE AND SMALLER. CLEARANCES SHALL INCREASE AS REQUIRED FOR LARGER PIPE SIZES.
 5. VALVE VAULT SHALL HAVE SLOPE BOTTOM AND DRAIN PIPE ROUTED BACK TO WET WELL.
 6. ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE MADE WATERTIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT. ALL ELECTRICAL CONDUITS IN WELL TO BE SEALED.
 7. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN WET WELL. ALL ELECTRICAL CABLES SHALL BE CONTINUOUS TO CONTROL PANEL OR BOX.
 8. WET WELL AND VALVE VAULT COVERS SHALL BE ALUMINUM WITH 316 S.S. HARDWARE AND LOCK BRACKET. SIZE AS REQUIRED BY PUMP MANUFACTURER AND APPROVED BY UTILITIES, INC.
 9. FLEXIBLE COUPLING SHALL BE SLEEVE TYPE.
 10. PUMPS SHALL BE:
 MANUFACTURER: FLYGT ; MODEL: NP 3127 MT 3 ; IMP: HARD-IRON ; DIA: 188 MM ;
 MM, SPEED: 1750 RPM; DISCHARGE SIZE: 6 IN.; VOLTAGE: 230V ;
 HZ.: 60 ; PHASE: 3 ; H.P.: 7.5 ;
 11. OPERATING CONDITIONS SHALL BE 575 GPM AT 31 FEET TDH.
 12. ALL HARDWARE IN WET WELL AND VALVE BOX TO BE 316 STAINLESS STEEL.
 13. CONTRACTOR MUST INSTALL A TIDAL FLEX PINCH VALVE TRAP BETWEEN THE VALVE VAULT AND WET WELL.
 14. DISCHARGE PIPING TO BE 6" HDPE.
 15. ALL INTERIOR SURFACES OF THE WETWELL SHALL BE LINED WITH A RAVEN 405 EPOXY LINER PER SPECIFICATIONS.
 16. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING LIFT STATION EQUIPMENT AND MATERIALS, PREPARE AND LINE WET WELL INTERIOR WITH A RAVEN 405 EPOXY LINER PER SPECIFICATIONS, AND REPLACE THE TOP SLAB WITH MANHOLE FRAME AND COVER.
 17. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING PIPES, VALVES, AND FITTINGS IN EXISTING VALVE VAULT; REMOVE EXISTING VALVE VAULT TOP AND WALLS TO ELEVATION THREE (3) FEET BELOW GRADE; AND BACKFILL AS SPECIFIED.

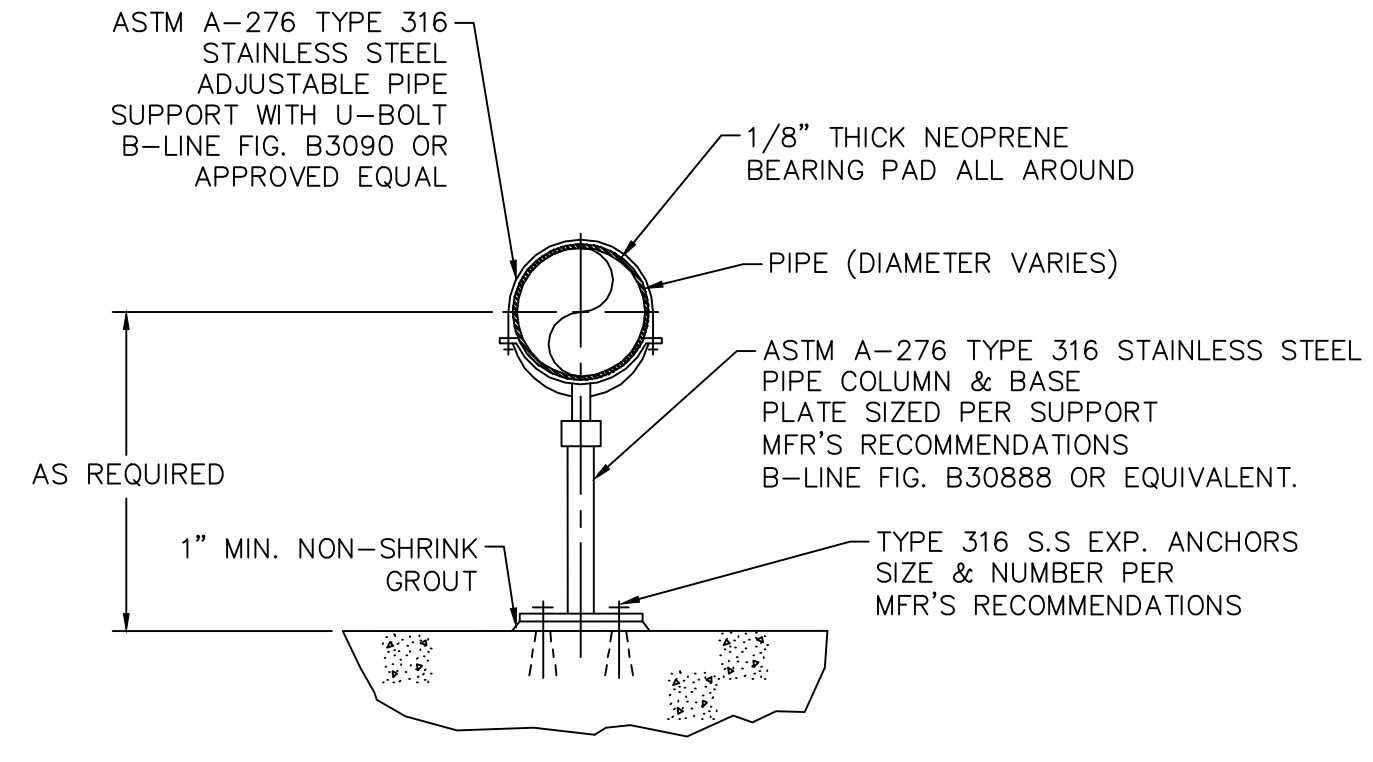
- NOTES**
1. CONCRETE WETWELL SECTIONS SHALL BE CONNECTED BY STEEL STRAPS, SIX PER JOINT. CONTRACTOR SHALL SUBMIT METHOD FOR APPROVAL ALONG WITH SHOP DRAWING.
 2. TREMIE SEAL MINIMUM 5'-0" THICK.
 3. DESIGN CALCULATIONS TO BE SUBMITTED FOR APPROVAL.

GROUNDWATER / DEWATERING NOTE:
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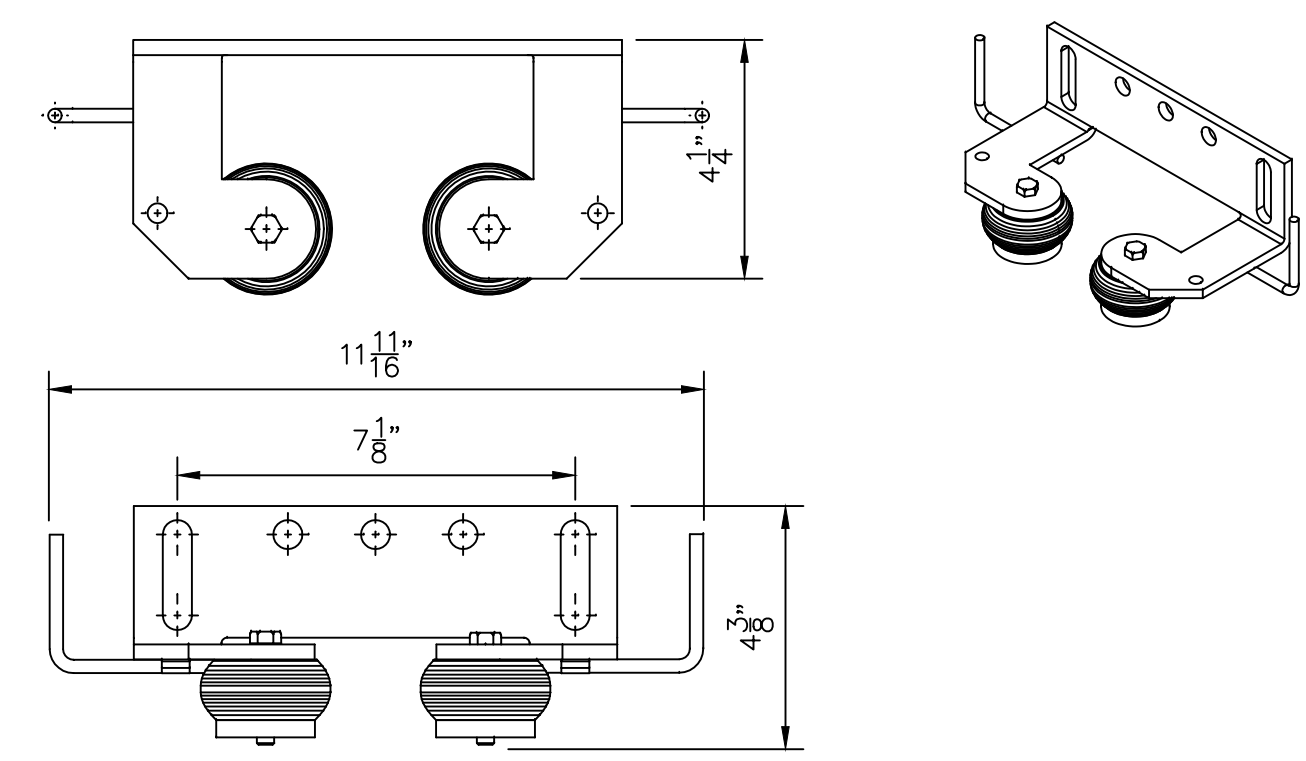


		DESIGN ENGINEER: SHELLEY N. HUGHES P.E. FLORIDA REGISTRATION NUMBER: 86419	
SCALE: AS NOTED	DESIGNED BY: SAE	DRAWN BY: KTM	CHECKED BY: SNH
MECHANICAL PLAN AND SECTION		UTILITIES, INC. OF FLORIDA TIERRA VERDE LIFT STATION PINELLAS COUNTY FLORIDA	
DATE: OCTOBER 2019 PROJECT NO: 140056014		REVISIONS: [Table with columns for No., DATE, BY]	
SHEET NUMBER: C-03		WWW.KIMLEY-HORN.COM CA 00000696	

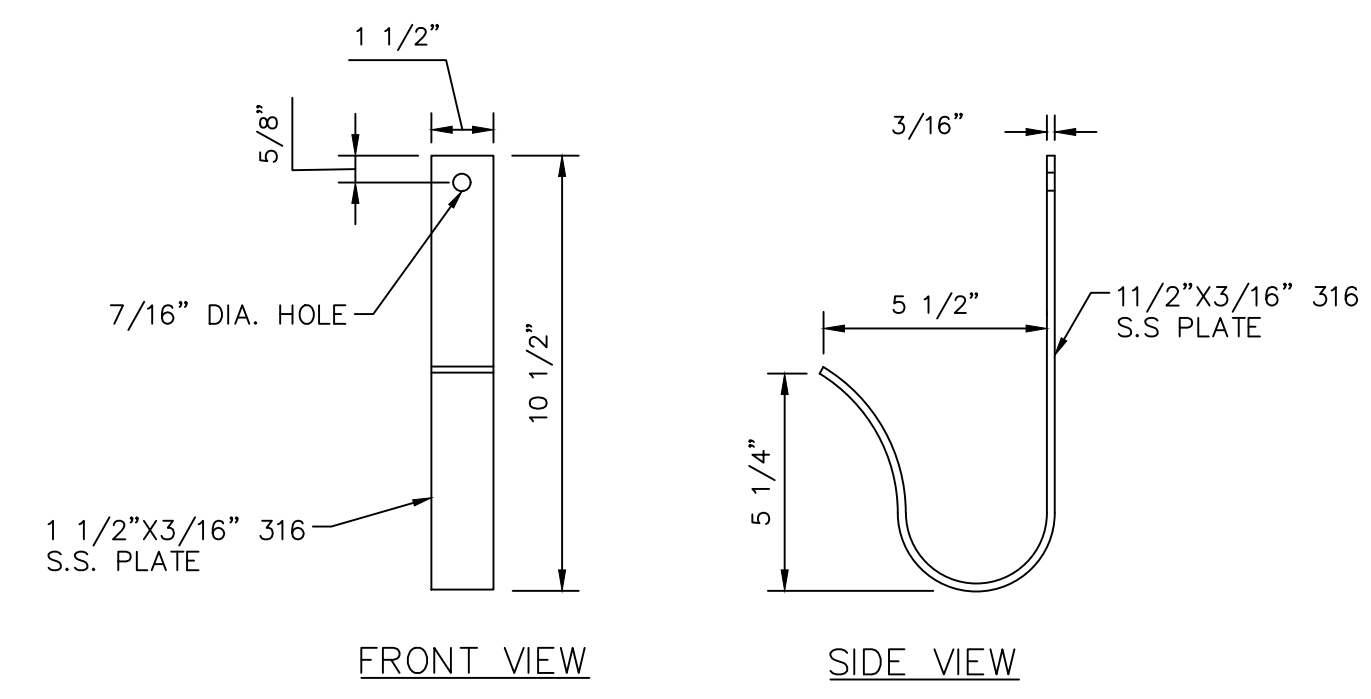
Drawing name: K:\STP_Civil\140056 - Utilities, Inc. of Fla\014 Tierra Verde LS\CADD\PlanSheets\DETAILS.dwg C-04 CONSTRUCTION DETAILS Oct 22, 2019 10:47am by: kyle.matthey
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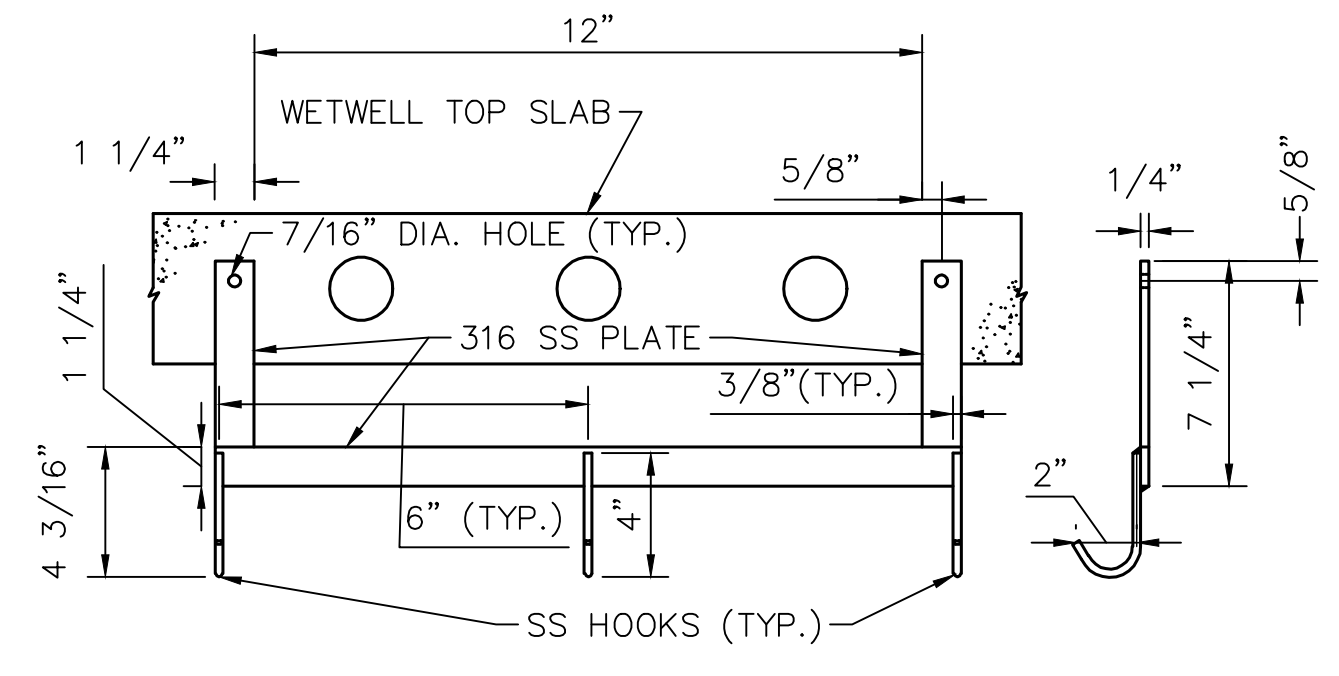
COLUMN PIPE SUPPORT
N.T.S.



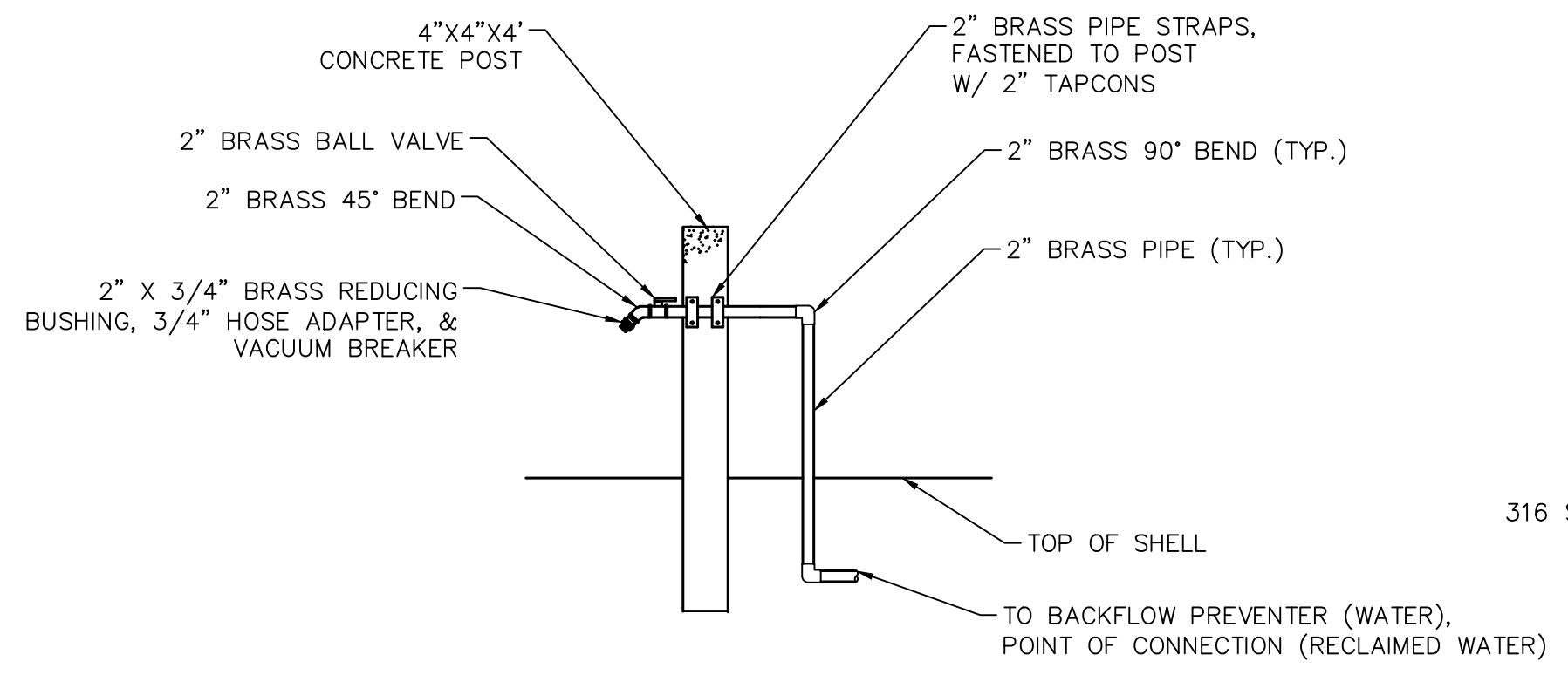
2" UPPER GUIDE BRACKET DETAIL
N.T.S.



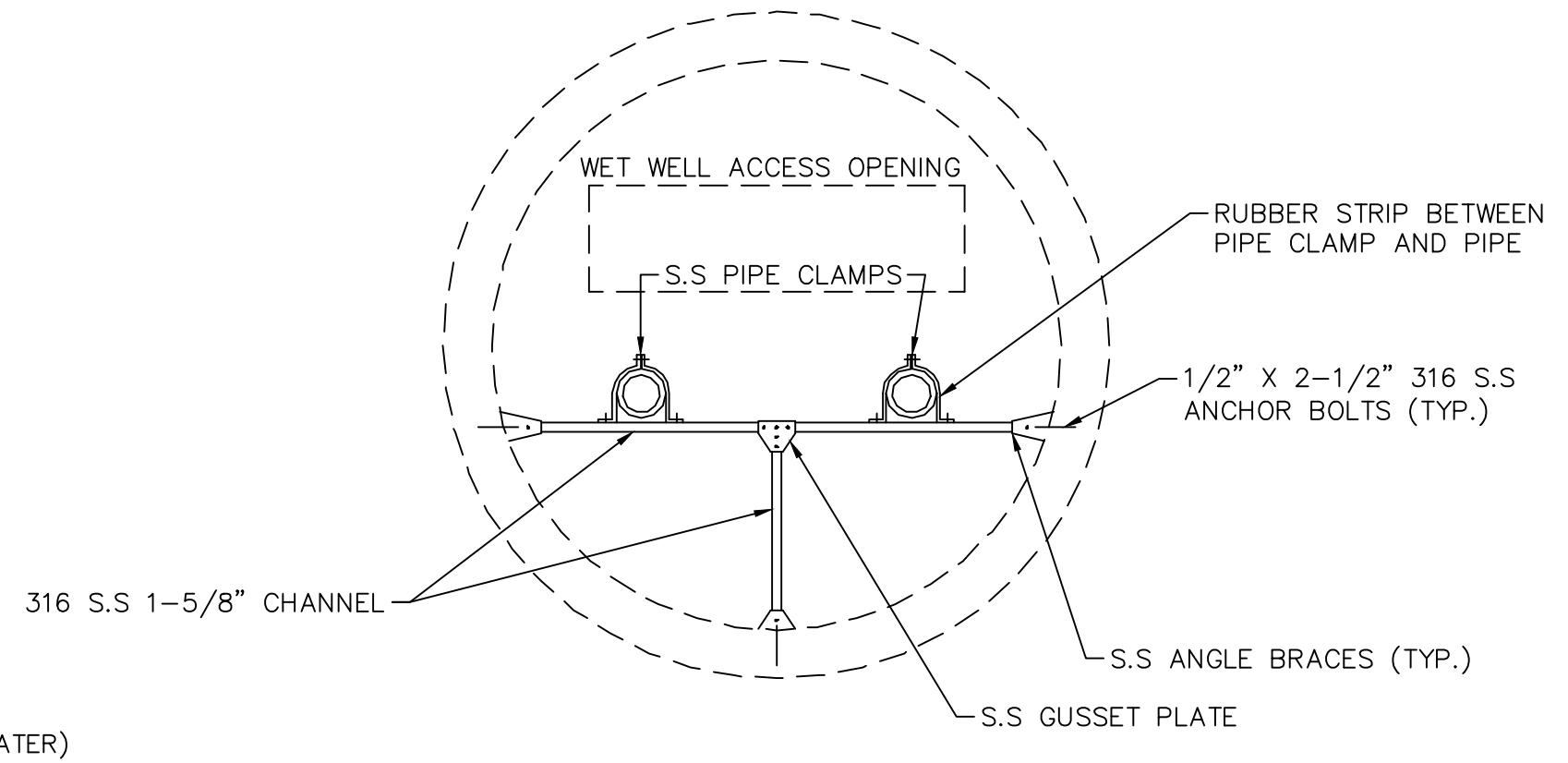
POWER AND TRANSDUCER CABLE HOOK
N.T.S.



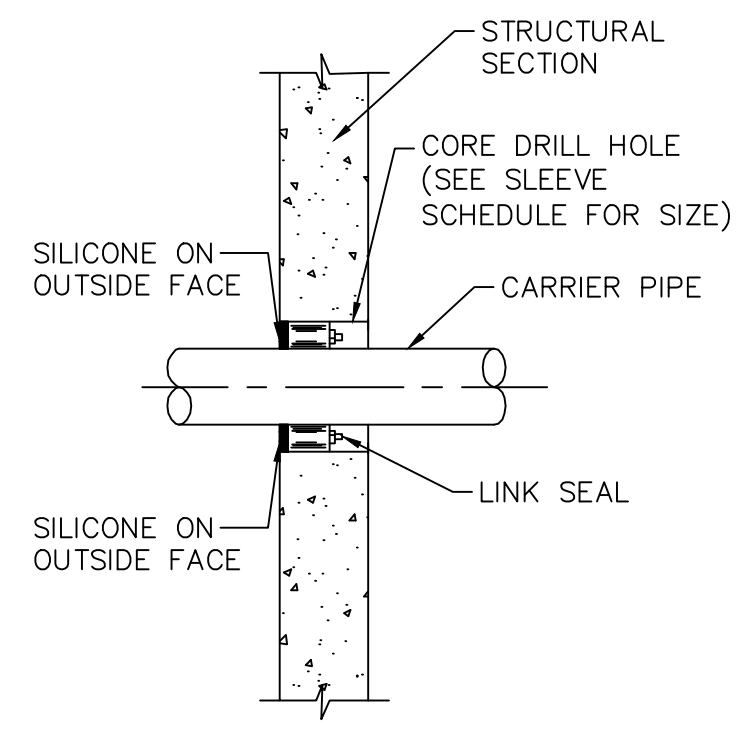
CABLE HOLDER DETAIL
N.T.S.



HOSE BIB DETAIL
N.T.S.



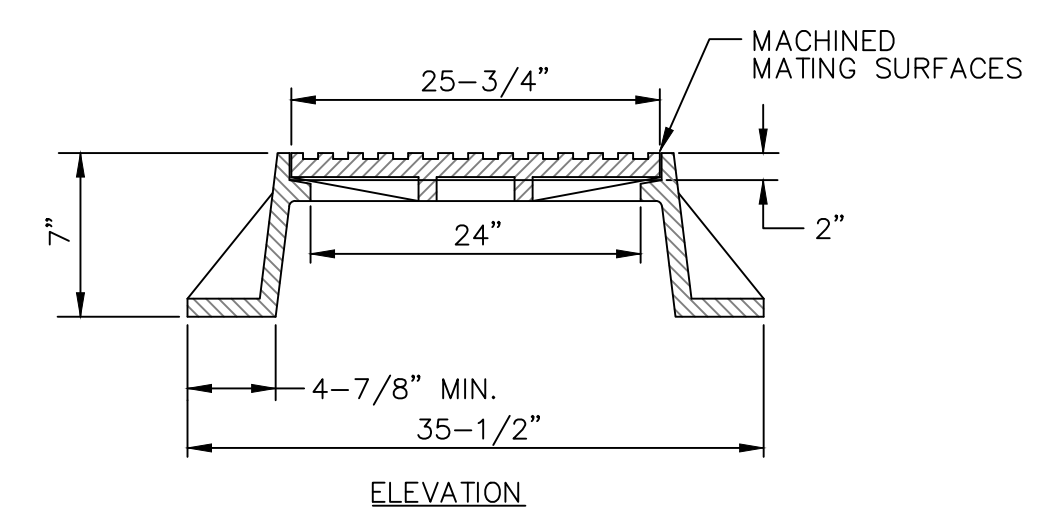
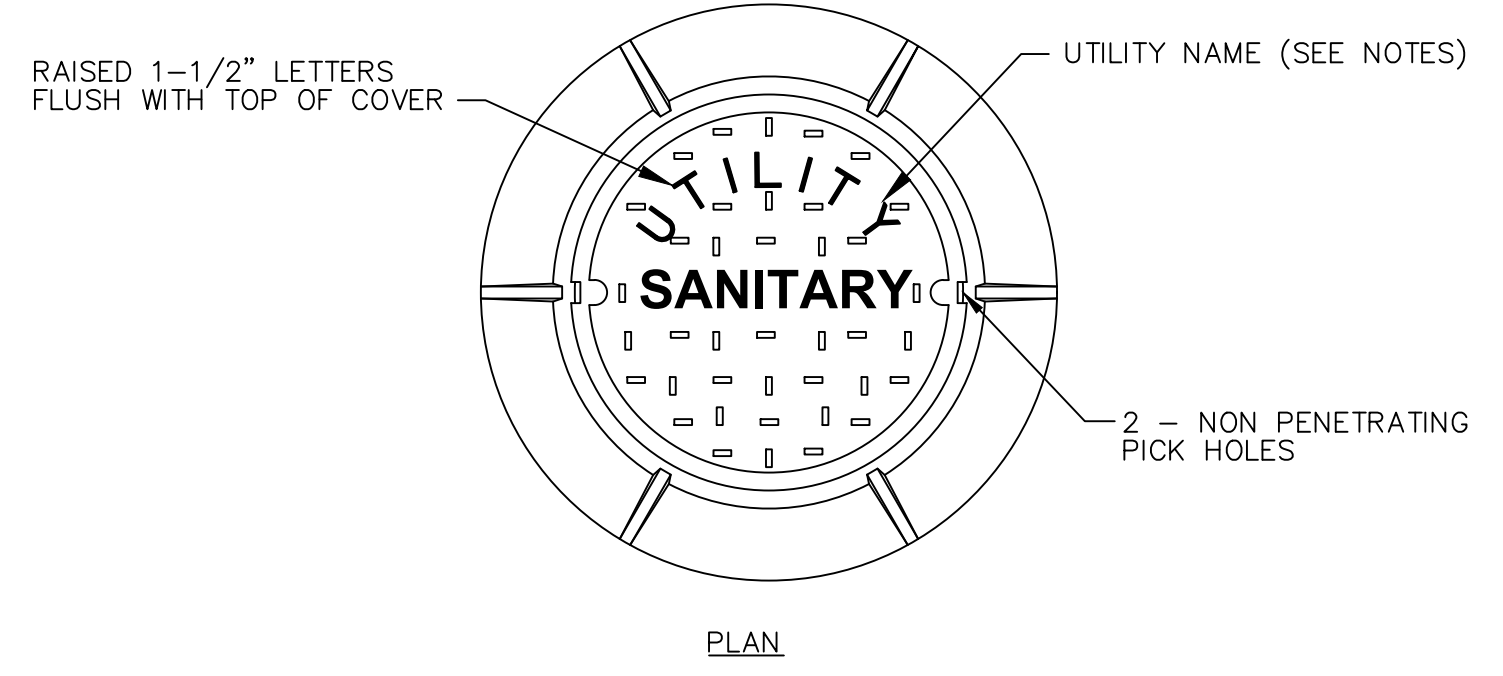
WET WELL PIPE BRACING
N.T.S.



SLEEVE SCHEDULE		
CARRIER PIPE		
NOMINAL DIAMETER INCHES	MATERIAL	OUTSIDE DIAMETER INCHES
1/2	SCH. 80 PVC	.84
3/4	SCH. 80 PVC	1.05
1	SCH. 80 PVC	1.315
1 1/2	SCH. 80 PVC	1.90
2	SCH. 80 PVC	2.38
3	SCH. 80 PVC	3.5
4	SCH. 80 PVC	4.5
6	D.I.	6.90
8	D.I.	9.05
10	D.I.	11.10
12	D.I.	13.20
4	HDPE	4.80
6	HDPE	6.90
18	PVC C900-16	19.5
24	PVC C900-16	25.8

PIPE PENETRATION
N.T.S.

NOTE:
INSTALL SEALS FROM DRY SIDE OF PENETRATION. WET SIDE FILLED WITH WATERPROOF NON-SHRINK GROUT.



- NOTES:
- MANHOLE FRAME AND COVER SHALL BE USF 227 AS ORS (410 LBS. TOTAL WEIGHT FOR FRAME AND COVER) OR APPROVED EQUAL.
 - UTILITY NAME SHALL BE THE NAME OF THE UTILITY PROVIDING SERVICE DETAIL SHALL BE SUBMITTED WITH SHOP DRAWINGS FOR UTILITY APPROVAL.

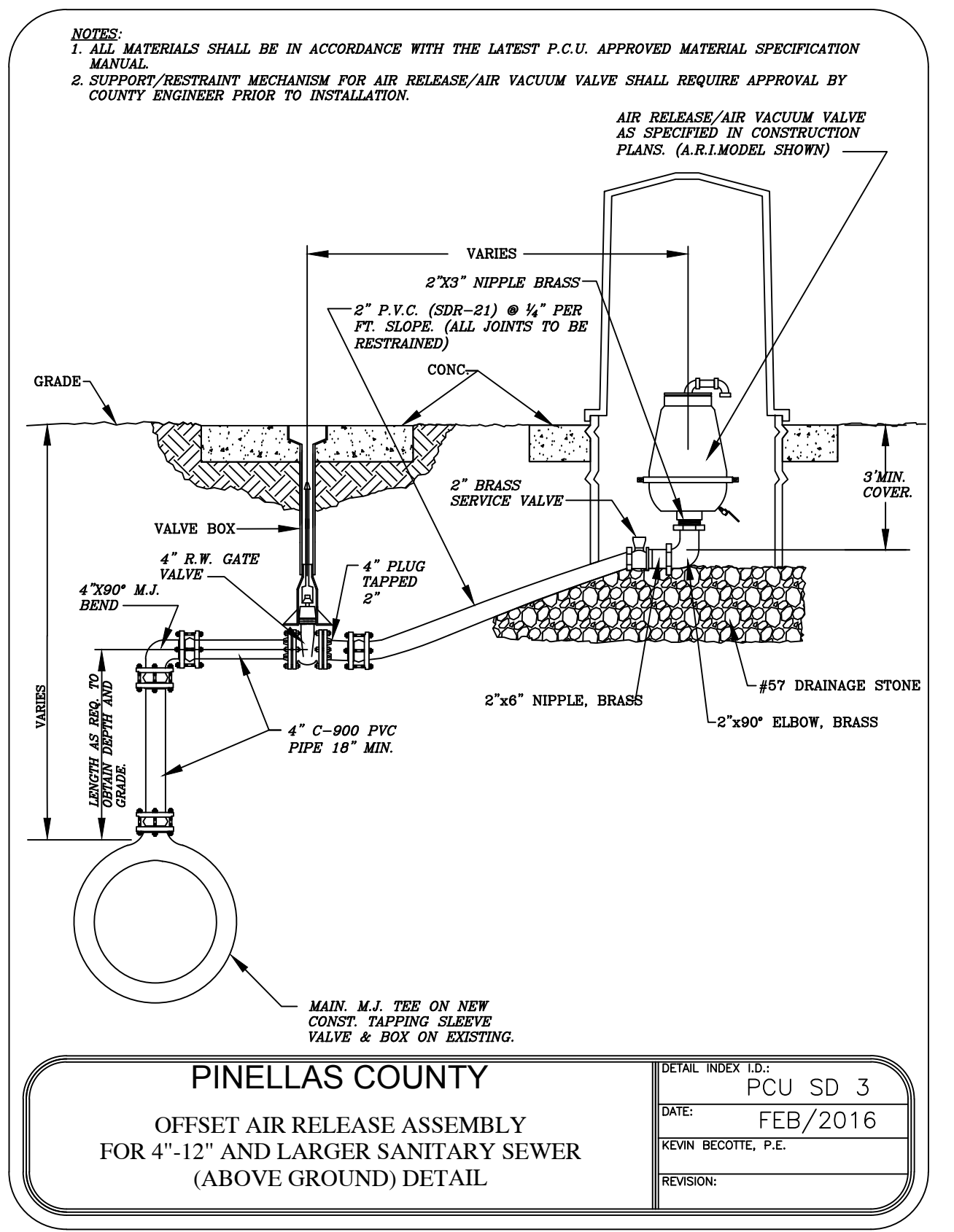
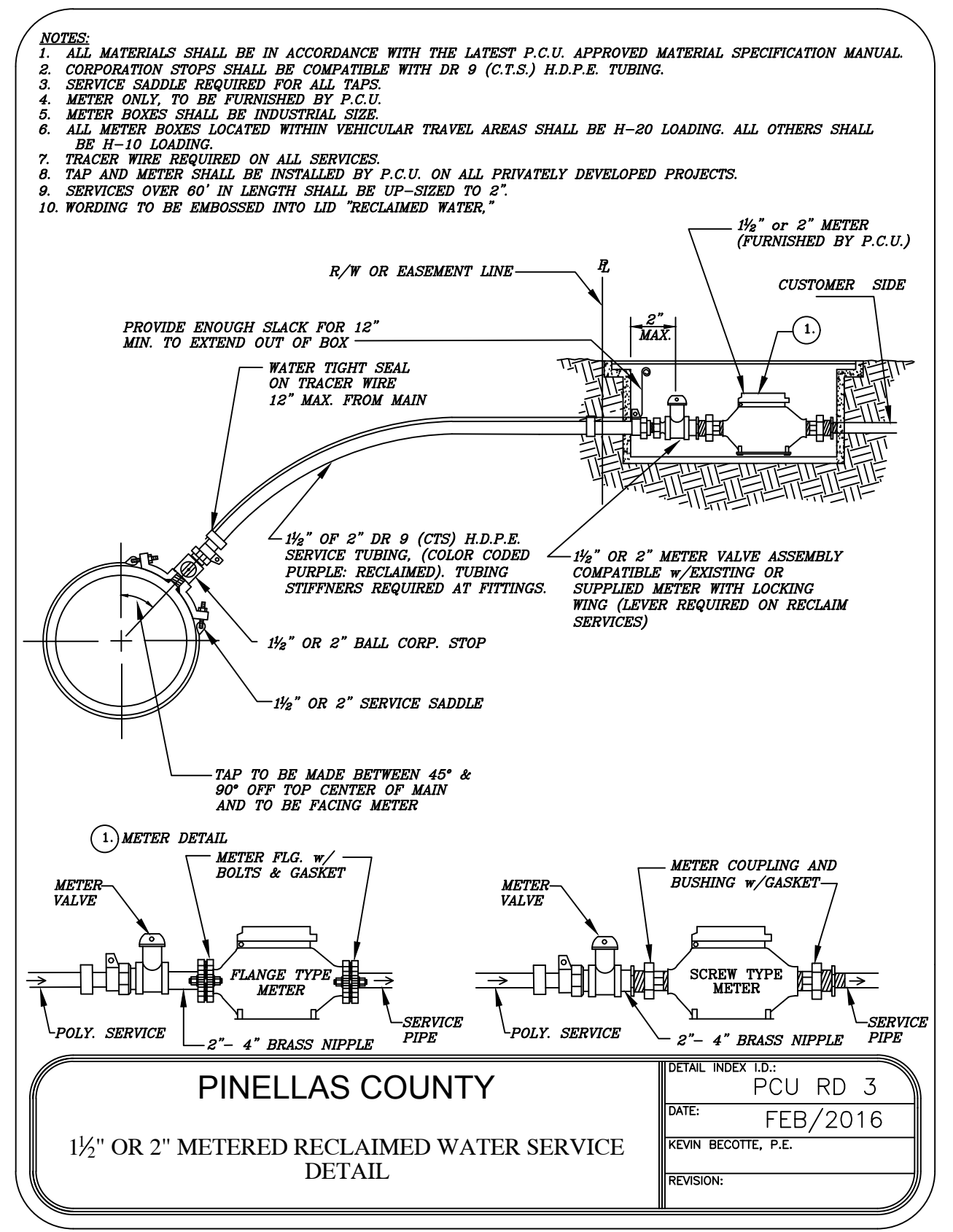
STANDARD MANHOLE FRAME AND COVER
N.T.S.

GROUNDWATER / DEWATERING NOTE:
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		DESIGN ENGINEER: SHELLEY N. HUGHES P.E. FLORIDA REGISTRATION NUMBER: 86419
SCALE: AS NOTED DESIGNED BY: SALE DRAWN BY: KTM CHECKED BY: SNH	DATE: OCTOBER 2019	REVISIONS No. DATE BY
CONSTRUCTION DETAILS		
UTILITIES, INC. OF FLORIDA TIERRA VERDE LIFT STATION		PINELLAS COUNTY FLORIDA
SHEET NUMBER C-04		PROJECT NO. 140056014

Drawing name: K:\STP_Civil\140056 - Utilities, Inc. of Fla\014 Tierra Verde LS\CADD\PlanSheets\DETAILS.dwg C-05 CONSTRUCTION DETAILS II Oct 22, 2019 10:47am by: kylermatheny
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LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (2)	Water Main 3 ft. minimum	Water Main 12 inches is the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 3 ft. minimum Water Main
Vacuum Sanitary Sewer	Water Main 10 ft. preferred 3 ft. minimum	Water Main 12 inches preferred 6 inches minimum	Alternate 3 ft. minimum Water Main
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)	Water Main 10 ft. preferred 6 ft. minimum (3)	Water Main 12 inches is the minimum, except for gravity sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 6 ft. minimum Water Main
On-Site Sewage Treatment & Disposal System	10 ft. minimum	--	--

(1) Water main should cross above other pipe. When water main must be below other pipe, the minimum separation is 12 inches.
 (2) Reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
 (3) 3 ft. for gravity sanitary sewer where the bottom of the water main is laid at least 6 inches above the top of the gravity sanitary sewer.
 (4) Reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

Disclaimer - This document is provided for your convenience only. Please refer to F.A.C. Rule 62-555.314 for additional construction requirements.

F.A.C. RULE 62-55.314 MAIN CLEARANCES DETAIL
 N.T.S.

GROUNDWATER / DEWATERING NOTE:
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DESIGN ENGINEER: SHELLEY N. HUGHES, P.E.
 FLORIDA REGISTRATION NUMBER: 86419

SCALE: AS NOTED
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 DRAWN BY: KTM
 CHECKED BY: SNH

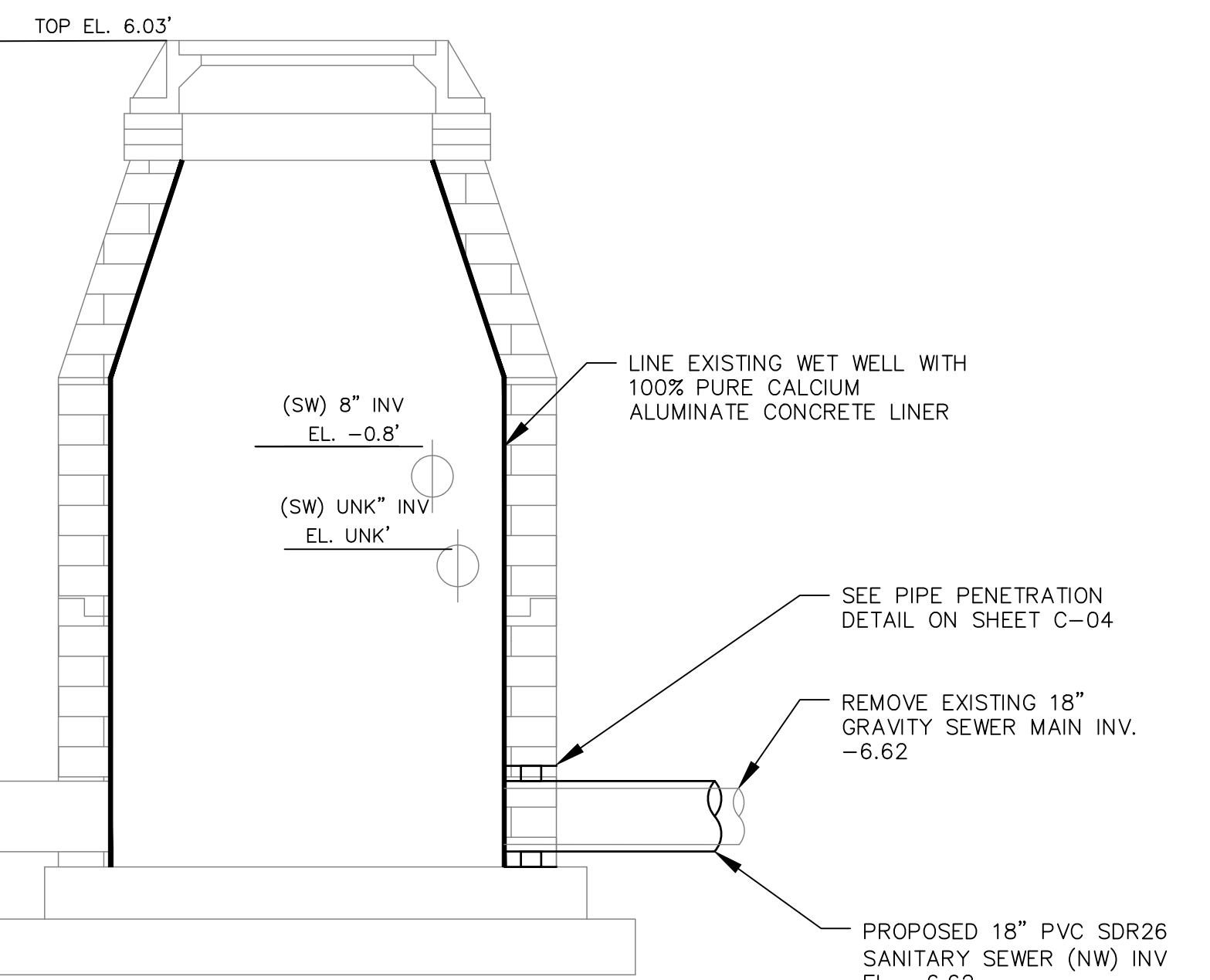
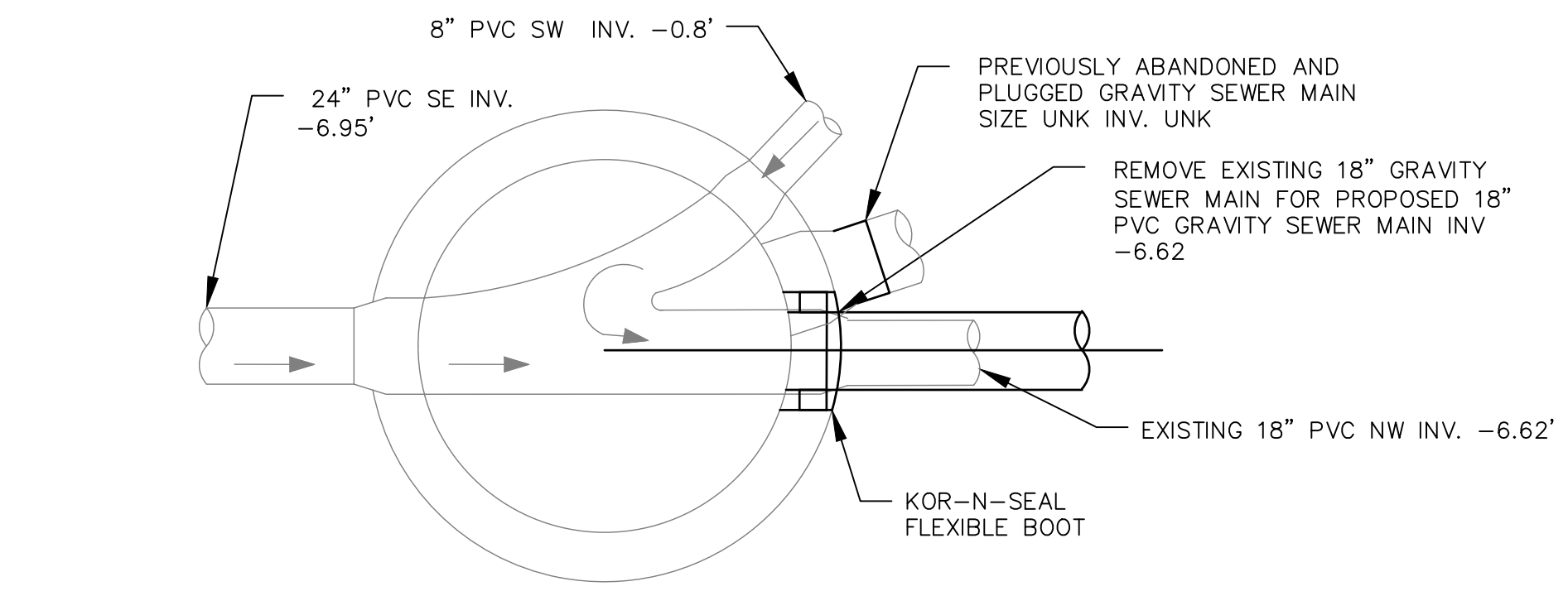
CONSTRUCTION DETAILS II

UTILITIES, INC. OF FLORIDA
 TIERRA VERDE LIFT STATION
 PINELLAS COUNTY FLORIDA

DATE: OCTOBER 2019
 PROJECT NO.: 140056014
 SHEET NUMBER: C-05

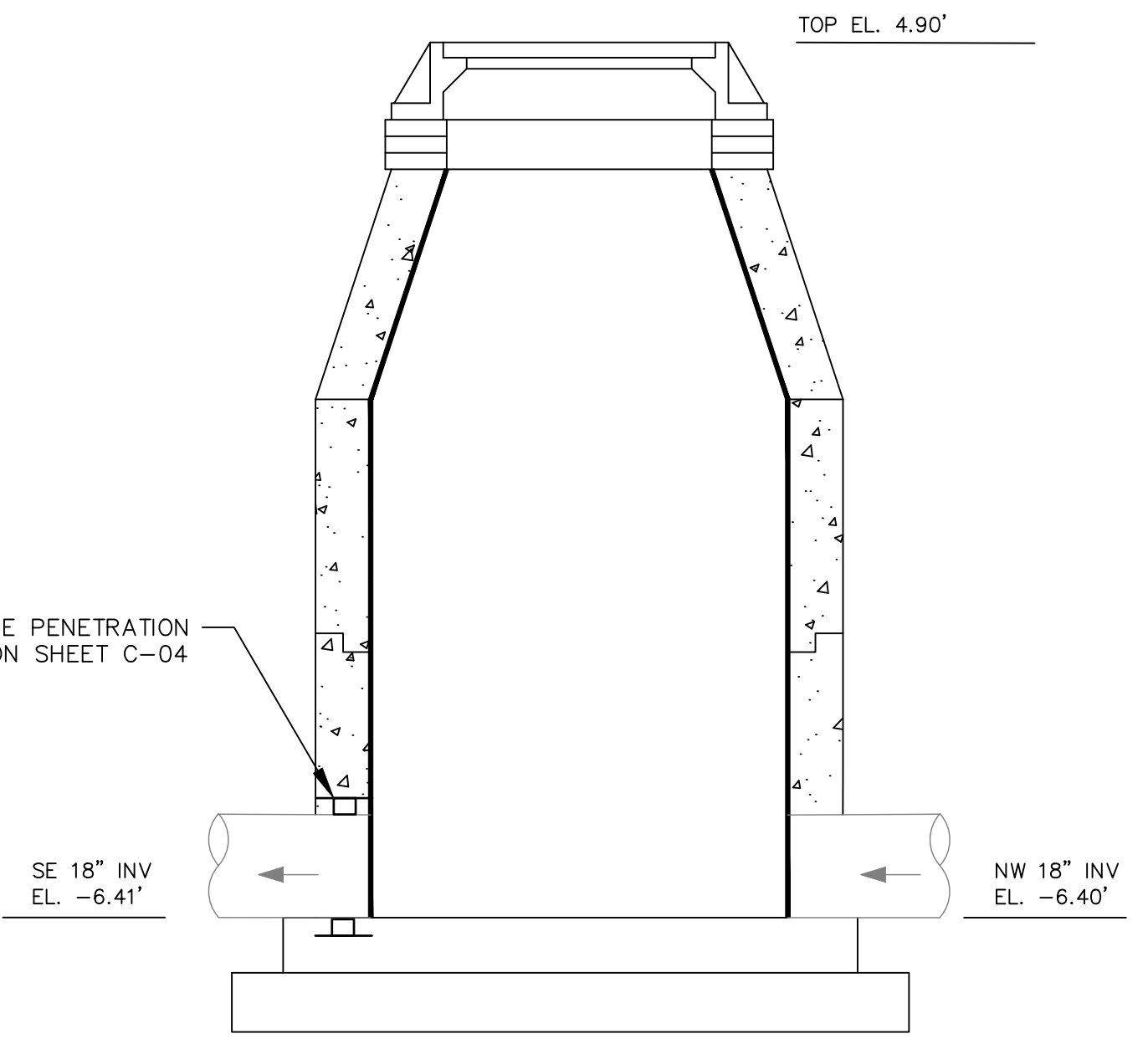
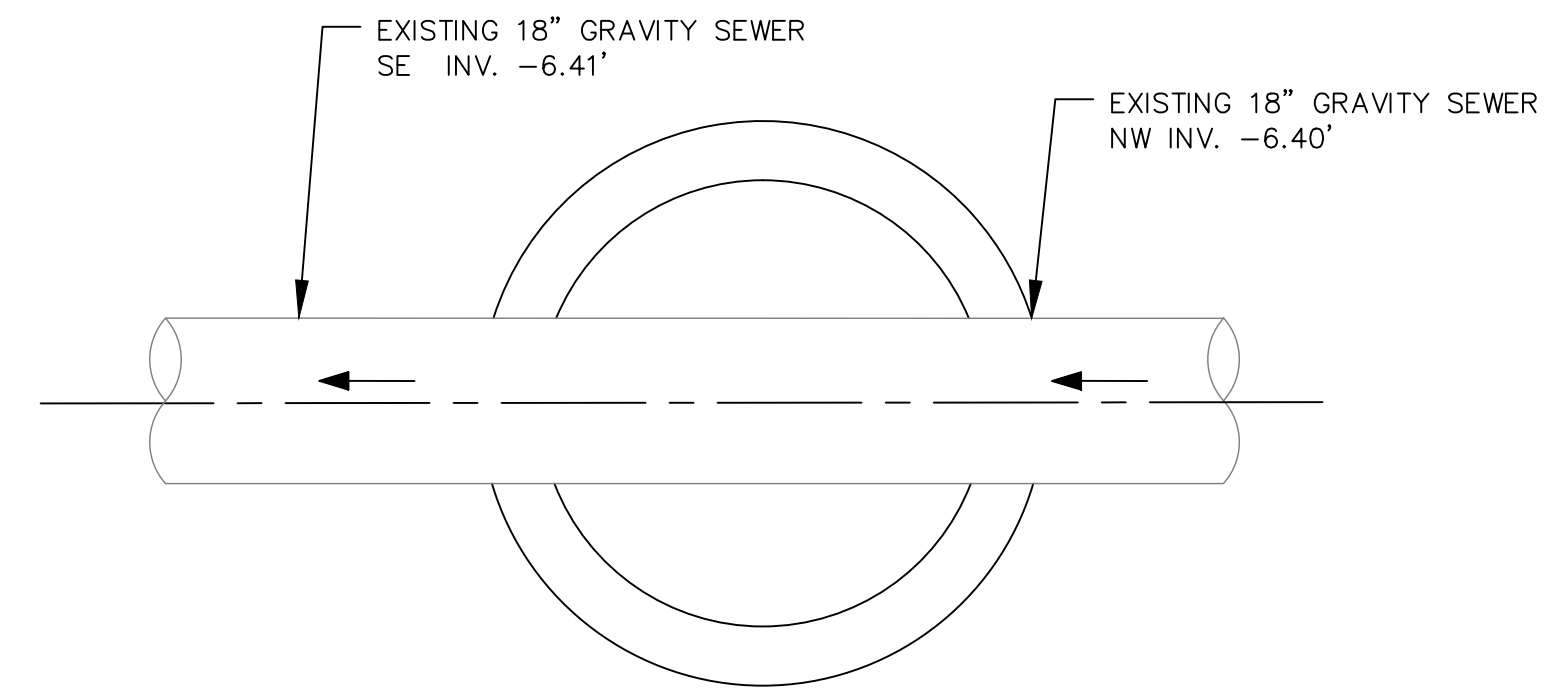
No. _____ REVISIONS _____ DATE _____ BY _____

Drawing name: K:\STP_Civil\140056 - Utilities, Inc. of Fla\014_Tierra Verde LS\CADD\PlanSheets\STEP\PLAN.dwg C-06 CONSTRUCTION DETAILS III Oct 22, 2019 10:47am by: kyle.mothery
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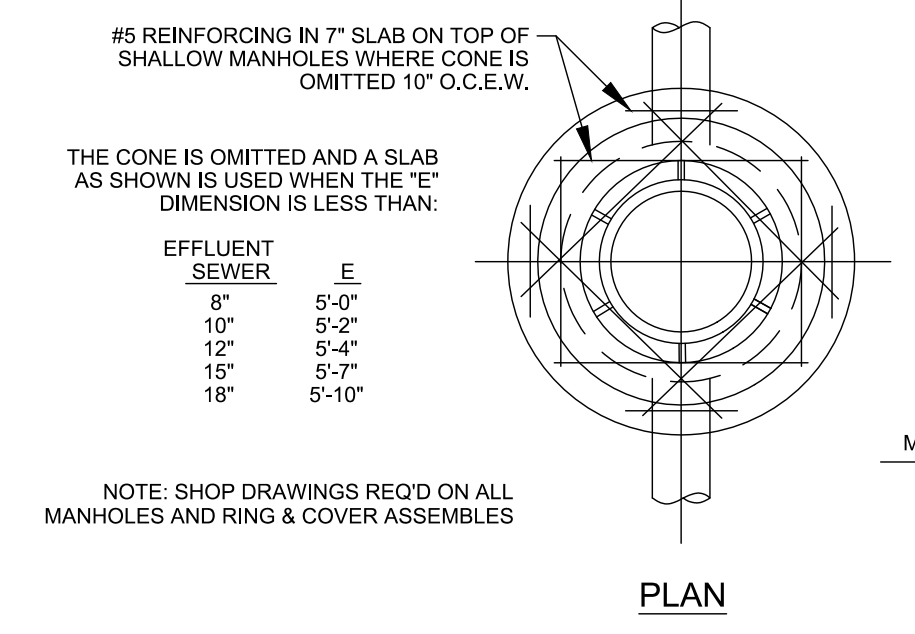
- NOTES:**
1. GRAVITY MAIN ORIENTED TO FACILITATE FLOW AND SHALL ENTER MANHOLE BELOW INVERT OF THE INFLUENT PIPES.
 2. RE-FOUR BENCH AS REQUIRED FOR EFFLUENT GRAVITY MAIN.
 3. ALL INTERIOR SURFACES (INCLUDING BENCH & TROUGH) OF MANHOLES TO BE PREPARED AND COATED WITH SEWERCOAT PER MANUFACTURERS REQUIREMENTS.
 4. MANHOLE SHALL BE REPAIRED AND COATED PER SPECIFICATIONS.
 5. CONTRACTOR SHALL VERIFY ALL INVERTS AND MAINTAIN MINIMUM SLOPE REQUIREMENTS PER FDEP.

EXISTING WET WELL REHAB CONNECTION DETAIL
NTS



- DOGHOUSE MANHOLE NOTES:**
1. MANHOLE SHALL BE COATED AS SPECIFIED (SEE TYPICAL MANHOLE NOTE).
 2. OPENING IN PRECAST MANHOLES ARE TO BE 4" MINIMUM TO 8" MAXIMUM LARGER THAN THE OUTSIDE DIAMETER FOR THE EXISTING PIPE.
 3. MORTAR AND BRICK SHALL BE USED TO CLOSE OPENING AROUND AND BELOW EXISTING PIPE.
 4. CONTRACTOR SHALL VERIFY ALL INVERTS AND MAINTAIN MINIMUM SLOPE REQUIREMENTS PER FDEP.

PROPOSED DOGHOUSE MAINHOLE #3
NTS



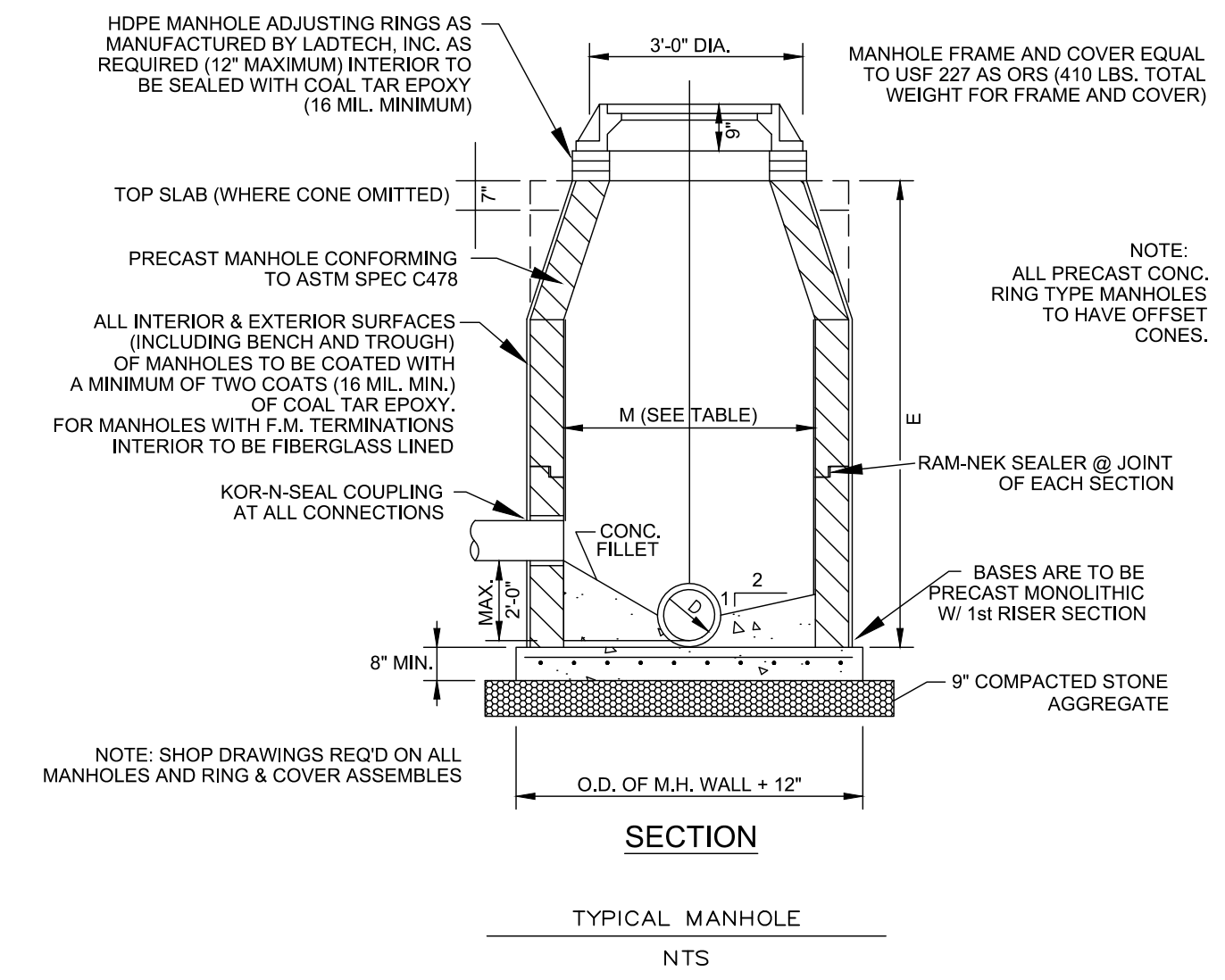
THE CONE IS OMITTED AND A SLAB AS SHOWN IS USED WHEN THE "E" DIMENSION IS LESS THAN:

EFFLUENT SEWER	E
8"	5'-0"
10"	5'-2"
12"	5'-4"
15"	5'-7"
18"	5'-10"

NOTE: SHOP DRAWINGS REQ'D ON ALL MANHOLES AND RING & COVER ASSEMBLES

M.H. DIAMETER TABLE

MANHOLE DIA "M"	PIPE DIA "D"
4'-0"	8" - 24"
5'-0"	27" - 36"
SPECIAL M.H.	> 36"



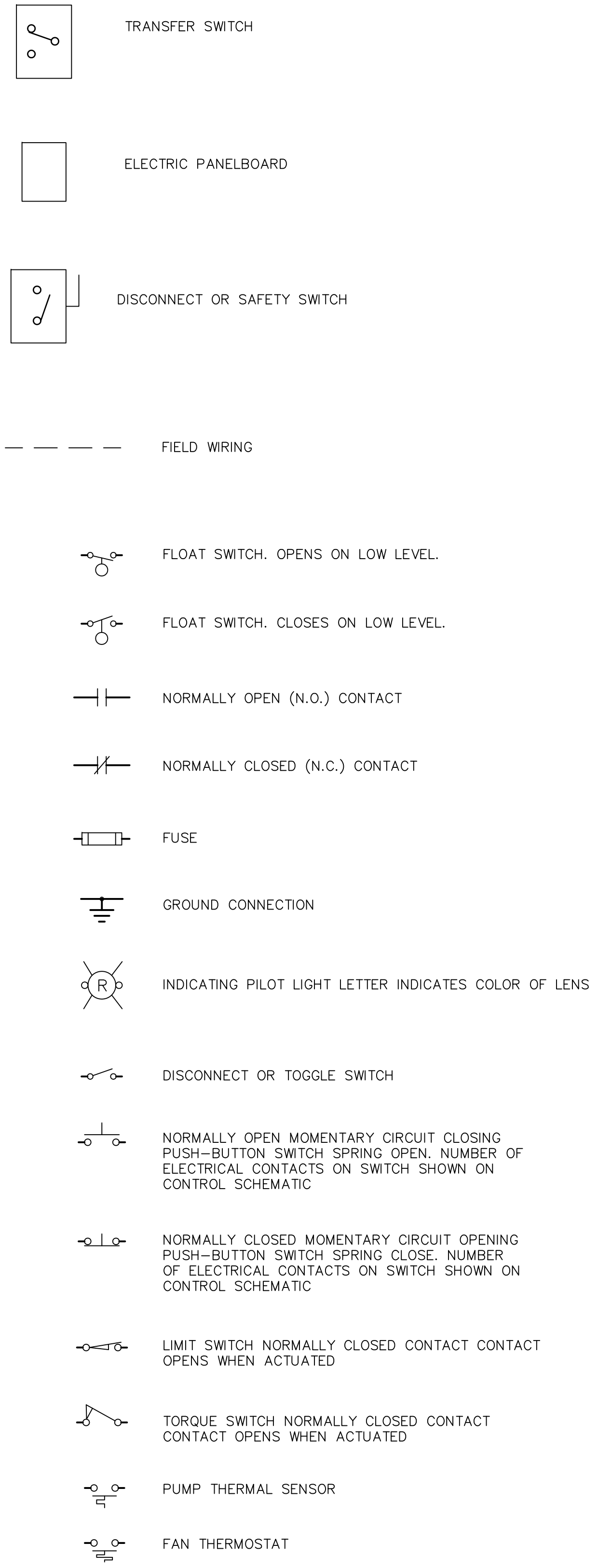
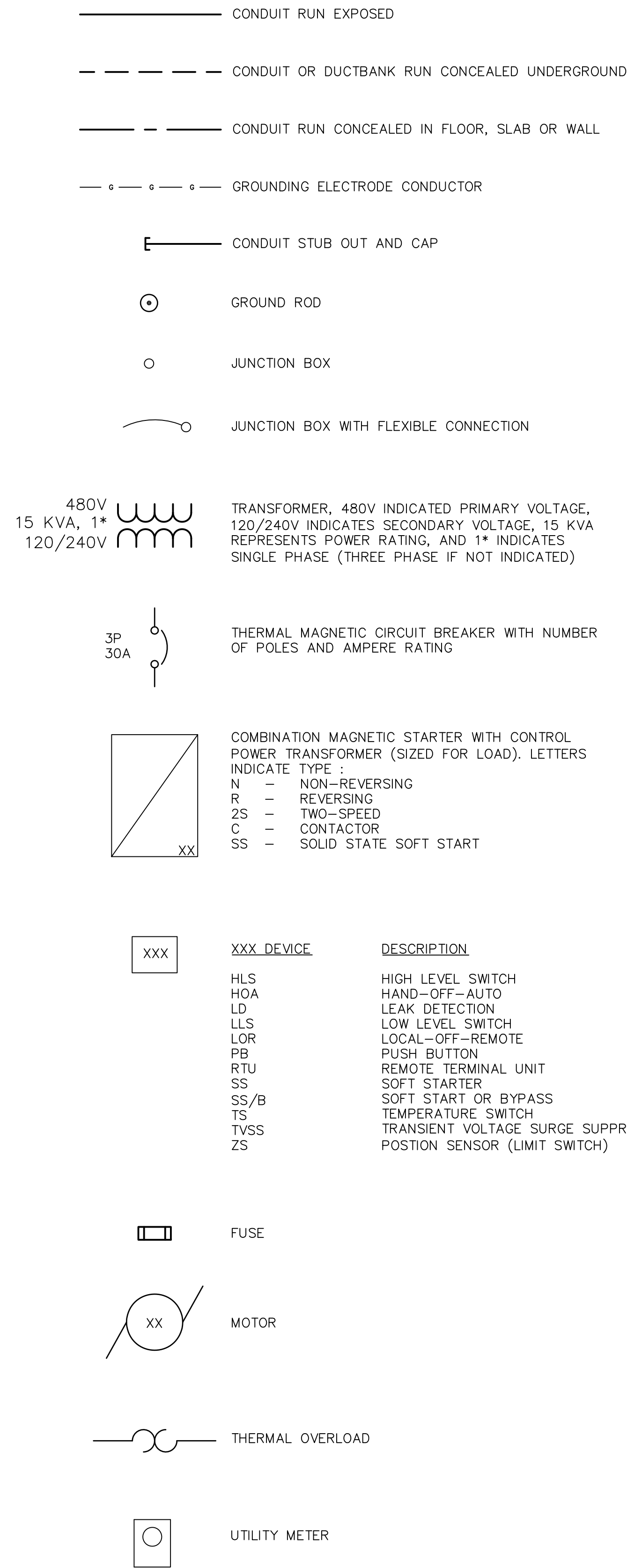
NOTE: SHOP DRAWINGS REQ'D ON ALL MANHOLES AND RING & COVER ASSEMBLES

TYPICAL MANHOLE
NTS

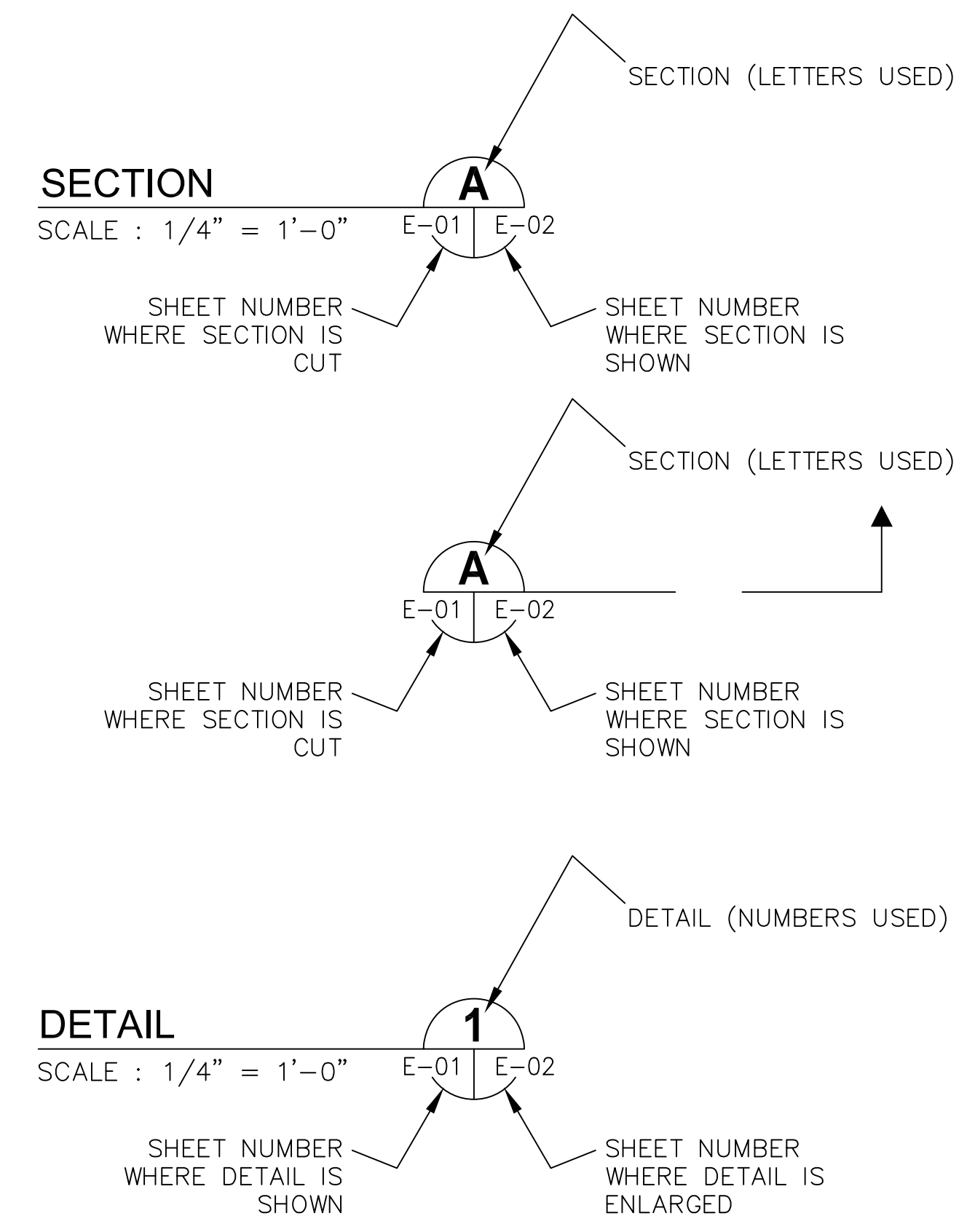
GROUNDWATER / DEWATERING NOTE:
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		DESIGN ENGINEER: SHELLEY N. HUGHES P.E. FLORIDA REGISTRATION NUMBER: 86419	SCALE AS NOTED DESIGNED BY SAE DRAWN BY KTM CHECKED BY SNH	DATE:
CONSTRUCTION DETAILS III		UTILITY, INC. OF FLORIDA TIERRA VERDE LIFT STATION	PINELLAS COUNTY FLORIDA	REVISIONS No. DATE BY
DATE OCTOBER 2019		PROJECT NO. 140056014	SHEET NUMBER C-06	No. DATE BY



EXAMPLE OF SECTION CUT AND DETAIL



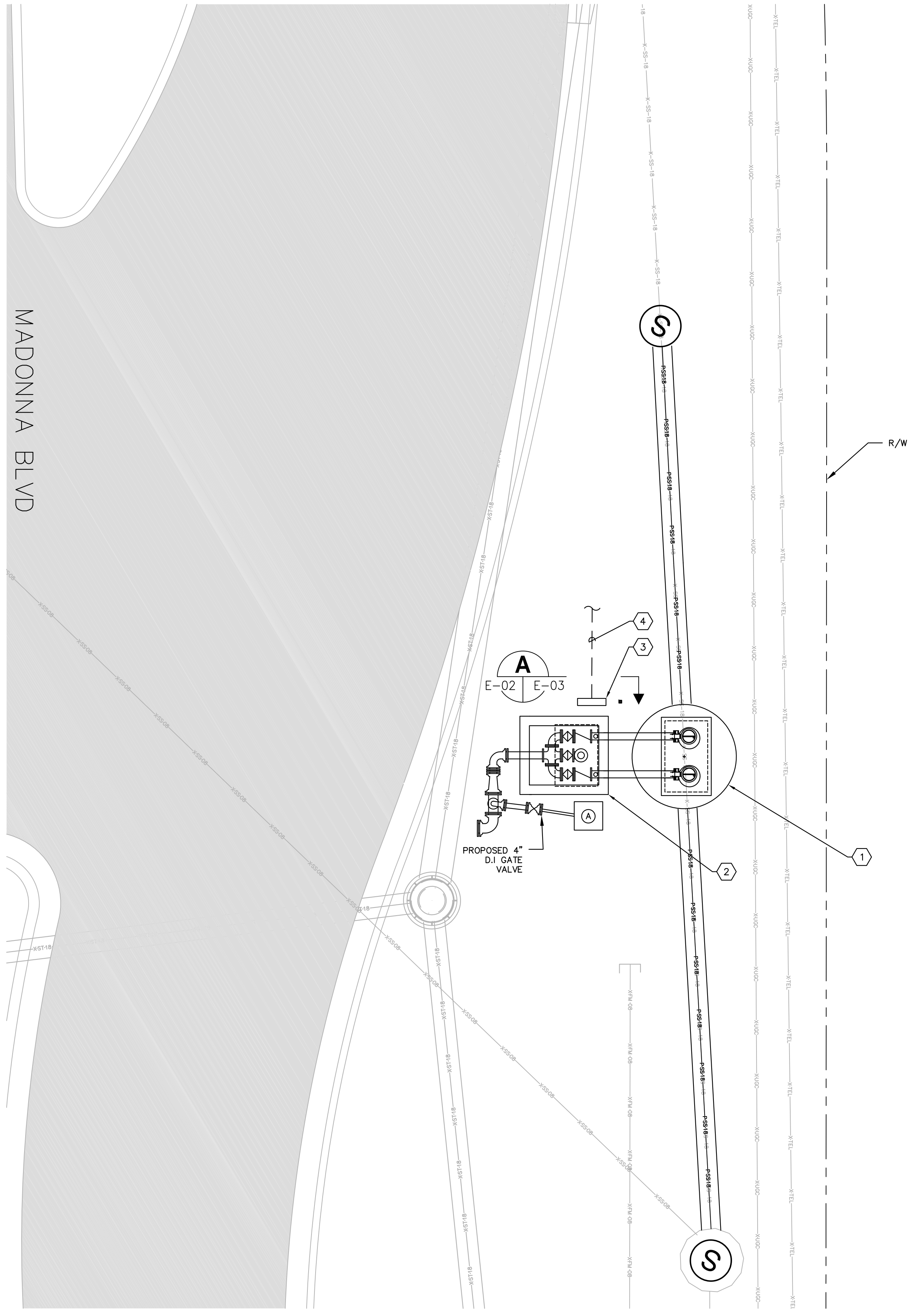
ABBREVIATIONS:

A	AMPS
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
C	CONDUIT
DFS	DATA FLOW SYSTEMS
DIA	DIAMETER
EX	EXISTING
ELEC	ELECTRICAL
GFI	GROUND FAULT INTERRUPTER
GND	GROUNDING CONDUCTOR
HP	HORSEPOWER
HZ	HERTZ
IG	ISOLATED GROUND
KVA	KILOVOLT AMPERES
KW	KILOWATTS
MAX	MAXIMUM
MIN	MINIMUM
N/A	NOT APPLICABLE
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
RECP	RECEPTACLE
RPM	REVOLUTIONS PER MINUTE
RTU	REMOTE TERMINAL UNIT
SPD	SURGE PROTECTION DEVICE
SS	STAINLESS STEEL
TYP	TYPICAL
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
XFMR	TRANSFORMER



DESIGNED BY	TIMOTHY THOMAS, P.E.	DATE	
FLORIDA REGISTRATION NUMBER:	47079	REVISIONS	
SCALE AS NOTED	TDT	No.	
DESIGNED BY	JLH	DATE	
DRAWN BY	JLH		
CHECKED BY	GSW		
ELECTRICAL LEGEND			
UTILITIES, INC. OF FLORIDA		FLORIDA	
TIERRA VERDE LIFT STATION		PINELLAS COUNTY	
DATE	OCTOBER 2019		
PROJECT NO.	140056014		
SHEET NUMBER	E-01		

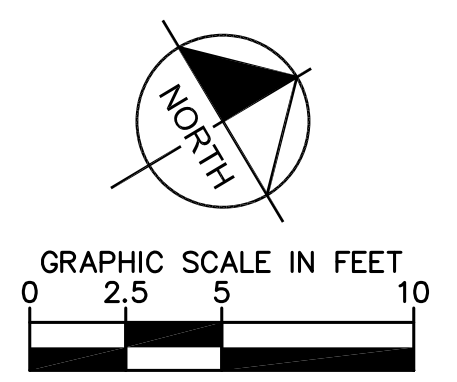
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ELECTRICAL SITE PLAN
SCALE: AS SHOWN

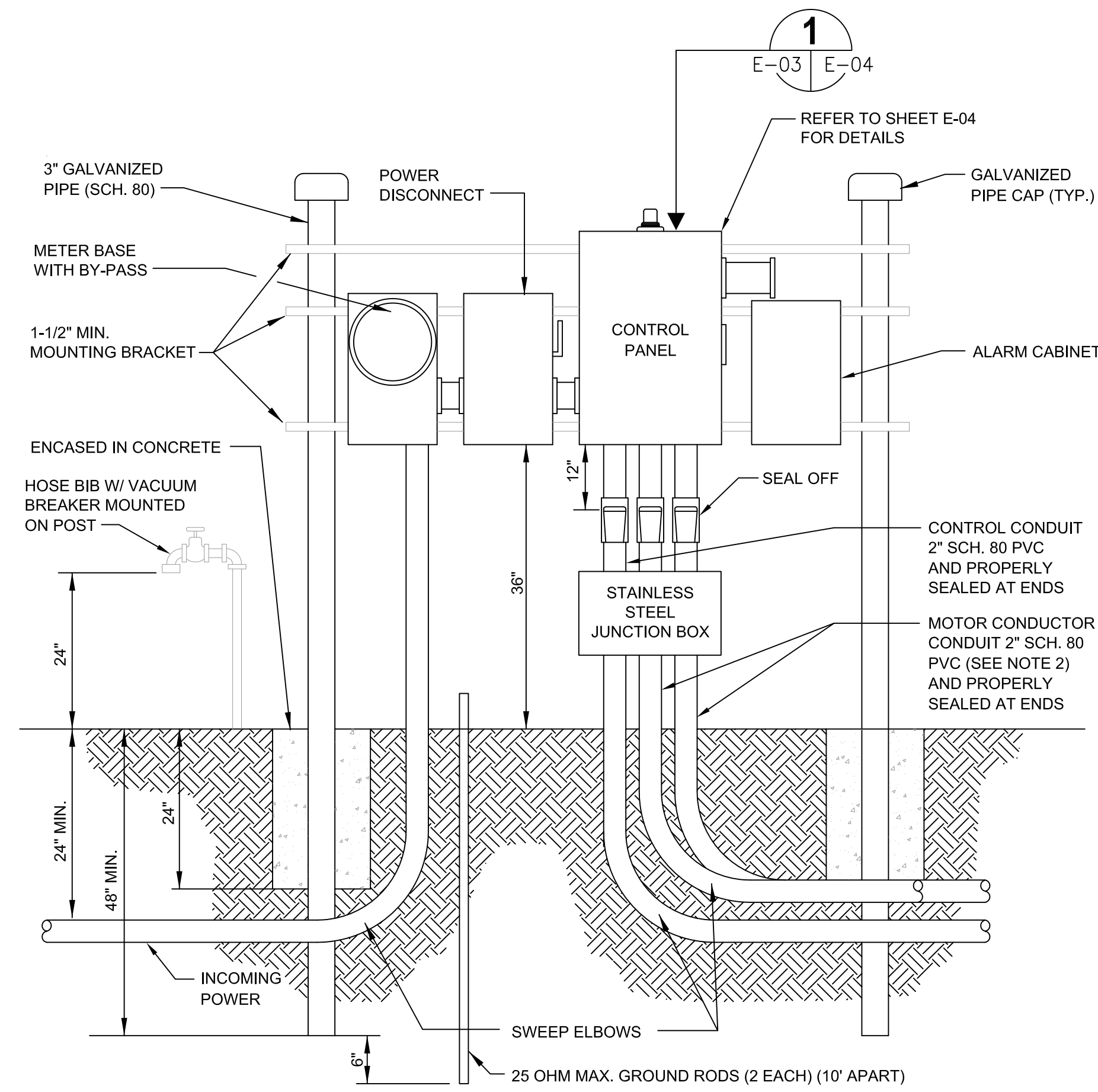
KEY NOTES

- ① PROPOSED WET WELL. REFER TO CIVIL SHEETS FOR DETAILS.
- ② PROPOSED VALVE VAULT. REFER TO CIVIL SHEETS FOR DETAILS.
- ③ PROPOSED LIFT STATION ELECTRICAL RACK. REFER TO ELEVATION ON SHEET E-03 FOR DETAILS.
- ④ PROVIDE AND INSTALL NEW 3-#3 THWN CU + 1-#3 THWN CU NEUTRAL IN 1-1/2" CONDUIT FROM NEW METER TO NEW DUKE TRANSFORMERS. COORDINATE ALL REQUIREMENTS WITH DUKE ENERGY.



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<p>SCALE AS NOTED DESIGNED BY TDT DRAWN BY JLH CHECKED BY GSW</p>	<p>DESIGN ENGINEER: TIMOTHY THOMAS, P.E. FLORIDA REGISTRATION NUMBER: 47079</p>
<p>ELECTRICAL SITE PLAN</p>	
<p>UTILITIES, INC. OF FLORIDA TIERRA VERDE LIFT STATION PINELLAS COUNTY FLORIDA</p>	
<p>DATE OCTOBER 2019</p>	
<p>PROJECT NO. 140056014</p>	
<p>SHEET NUMBER E-02</p>	
<p>REVISIONS</p>	<p>DATE BY</p>





ELECTRICAL EQUIPMENT RACK ELEVATION **A**
 SCALE: NOT TO SCALE E-02 | E-03

NOTES:

1. DRAWING IS SHOWN FOR 230 VOLT POWER SUPPLY.
2. WHEN TWO (2) SEPARATE CONDUCTOR-TYPE MOTORS ARE USED, CONDUIT SHALL BE INCREASED TO 3".
3. POWER SUPPLY SHALL BE UNDERGROUND ON THE LIFT STATION SITE AND SHALL BE 3 PHASE FROM A 3 PHASE SOURCE ONLY.
4. PROVIDE TELEPHONE SERVICE LINE.
5. NO WIRING SPLICES ARE ALLOWED WITH THE EXCEPTION OF THE JUNCTION BOX.
6. A MANUAL GENERATOR TRANSFER SWITCH SHALL BE PLACED BETWEEN THE METER BASE AND CONTROL BOX, SIZED FOR 100 AMP PUMP MINIMUM.
7. LIGHTNING ARRESTOR SHALL BE LOCATED AHEAD OF CONTROL PANEL (GE OR EQUAL).
8. ALARM CABINET SHALL BE CNA SYSTEMS DIGITAL PACKET SYSTEM (NO SUBSTITUTES).
9. LIFT STATIONS 47 H.P. AND ABOVE SHALL BE EQUIPPED WITH ON-SITE GENERATOR.
10. ADD SOFT START 20 H.P. AND ABOVE.



No.	REVISIONS	DATE	BY

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DESIGN ENGINEER: TIMOTHY THOMAS, P.E.
 FLORIDA REGISTRATION NUMBER: 47079
 DATE:

SCALE: AS NOTED
 DESIGNED BY: TDT
 DRAWN BY: JLH
 CHECKED BY: GSW

LIFT STATION ELECTRICAL RACK ELEVATION

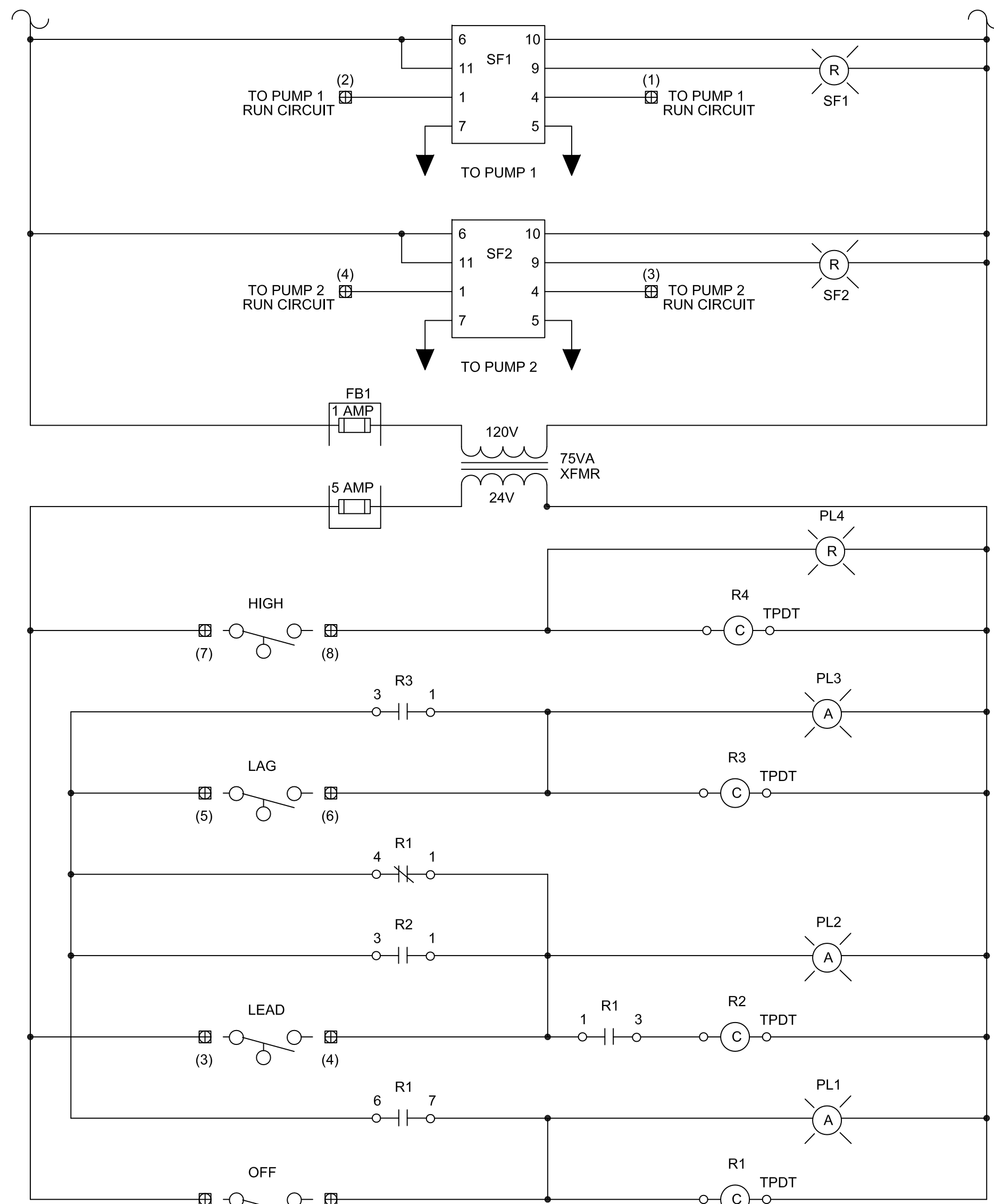
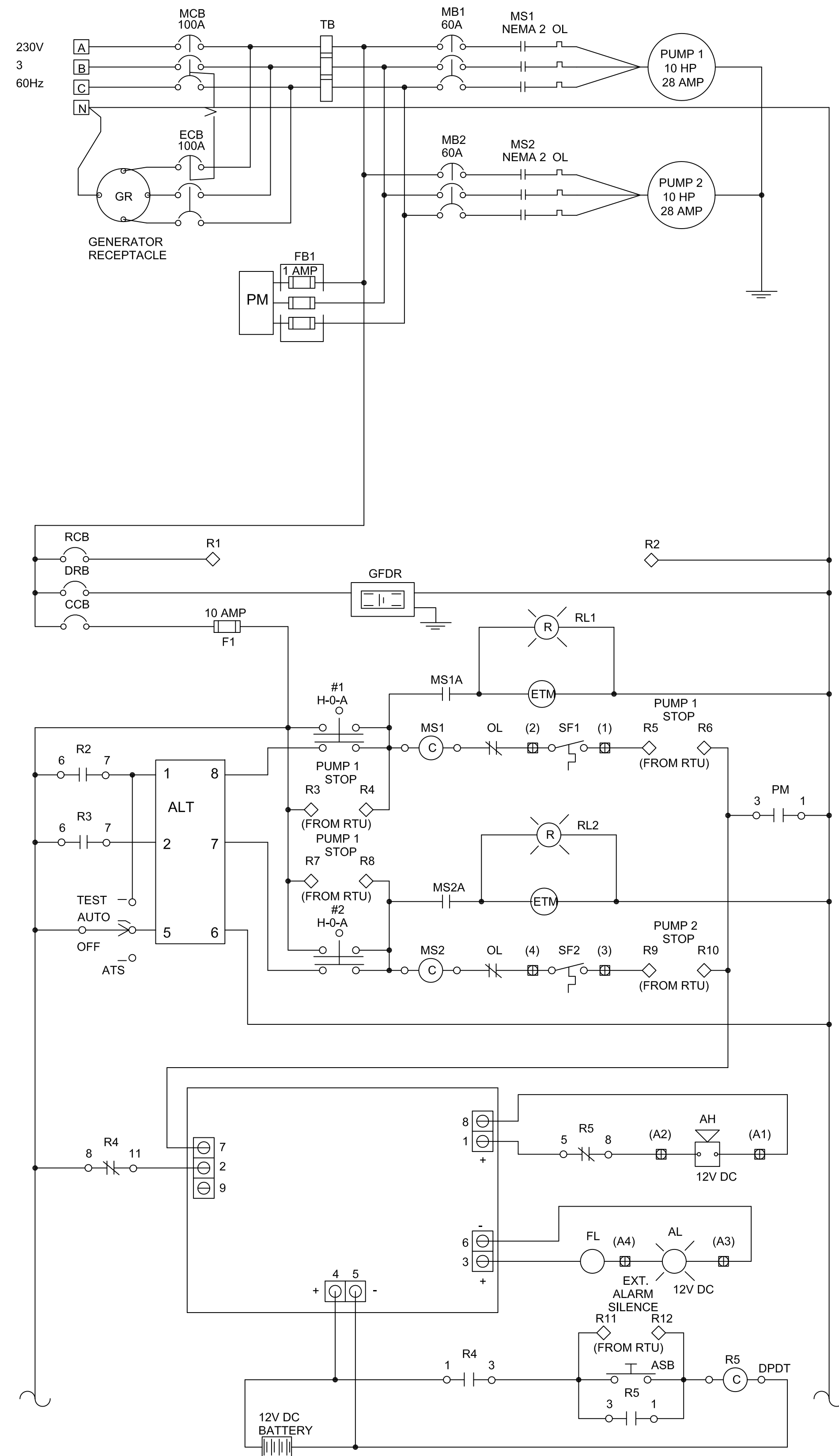
UTILITIES, INC. OF FLORIDA
 TIERRA VERDE LIFT STATION
 PINELLAS COUNTY FLORIDA

DATE: OCTOBER 2019

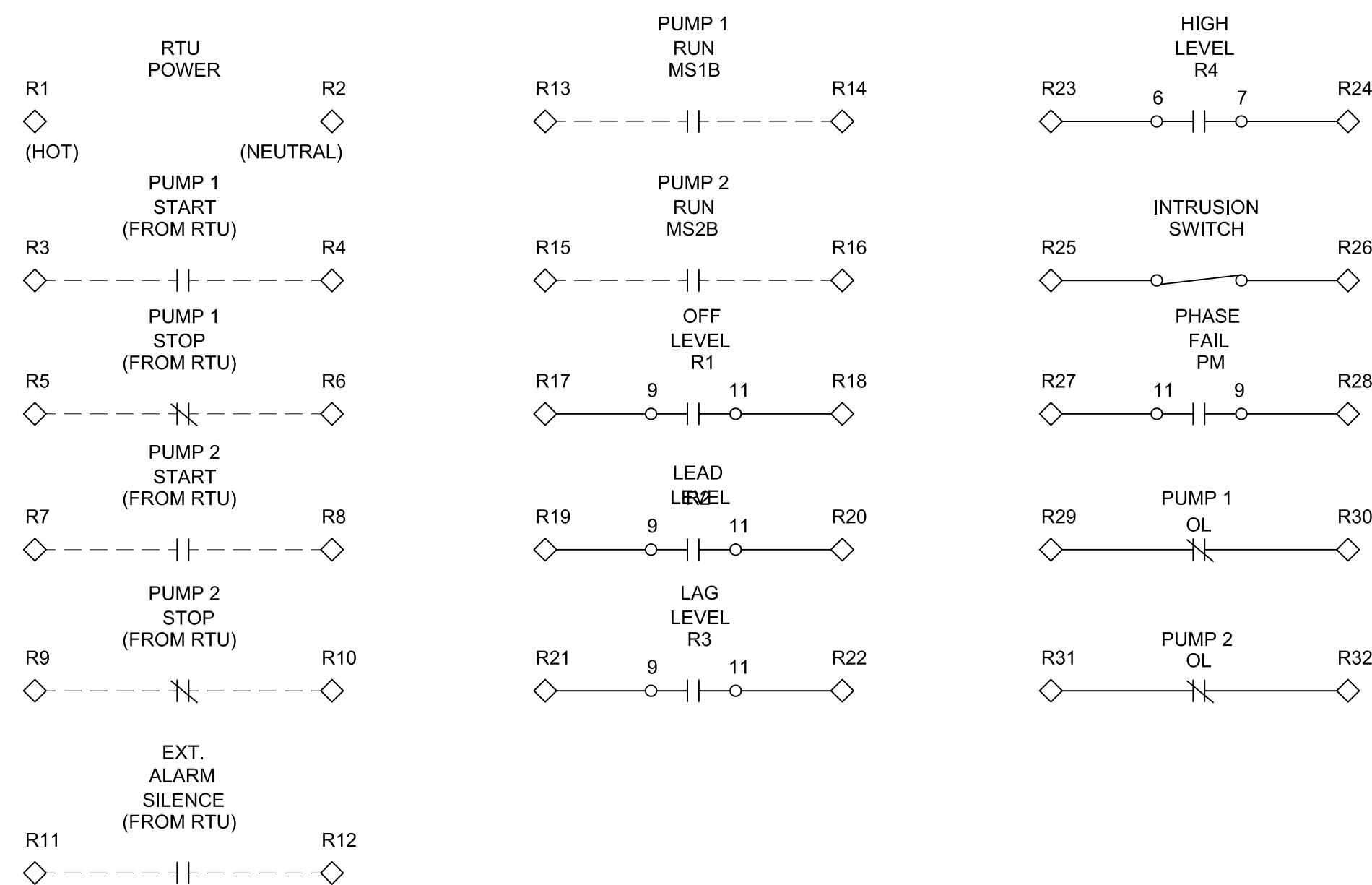
PROJECT NO.: 140056014

SHEET NUMBER

E-03



RTU TERMINAL BLOCK



COMPONENT LEGEND

- AB ALARM BELL
- ACFL AIR COMPRESSOR FAIL LIGHT
- ACR AIR COMPRESSOR RESET
- ACTS
- AH ALARM HORN
- AL ALARM LIGHT
- ALT ALTERNATOR
- AMS ALTERNATOR MODE SWITCH
- ASB ALARM SILENCE BUTTON
- ATS ALTERNATOR TEST SWITCH
- AV AIR VENT
- CCB CONTROL CIRCUIT BREAKER
- CT CURRENT TRANSFORMER
- CVLS CHECK VALVE LIMIT SWITCH
- DPDT DOUBLE-POLE, DOUBLE-THROW
- DR DISABLE RELAY
- DRB DUPLEX RECEPTACLE BREAKER
- DS DOOR SWITCH
- ECB EMERGENCY CIRCUIT BREAKER
- ETM EMERGENCY TIME METER
- F FUSE
- FB FUSE BLOCK
- FL FLASHER
- FR FLOAT REGULATOR
- FS FLOW SWITCH
- FTS FLOAT TEST SWITCH
- GFDR GFCI RECEPTACLE
- GND EARTH GROUND
- GR GENERATOR RECEPTACLE
- HLA HIGH LEVEL ALARM
- HLR HIGH LEVEL RESET
- HOA HAND OFF AUTO SWITCH
- ISR INTRINSICALLY SAFE RELAY
- LA LIGHTNING ARRESTOR
- LLR LOW LEVEL RESET
- LTB LAMP TEST BUTTON
- MB MOTOR BREAKER
- MC MINICAS
- MCB MAIN CIRCUIT BREAKER
- MD MOISTURE DETECTOR
- MS MOTOR STARTER
- NO NORMALLY OPENED
- OL OVERLOAD
- PCU PUMP CONTROL UNIT
- PFL PUMP FAIL LIGHT
- PFT PUMP FAIL TIMER
- PL PILOT LIGHT
- POL POWER ON LIGHT
- PM PHASE MONITOR
- PS PRESSURE SWITCH
- R RELAY
- RCB REMOTE TELEMETRY CIRCUIT BREAKER
- RL RUNNING LIGHT
- RTU REMOTE TELEMETRY UNIT
- SC SURGE CAPACITOR
- SDR STATION DISABLE RELAY
- SF XYLEM MINICAS SEAL/TEMP RELAY
- SMC SMART MOTOR CONTROL
- SPM SINGLE PHASE MODULE
- SS SAFETY SWITCH
- SSOL SOLID-STATE OVERLOAD
- T TERMINAL
- TB TERMINAL BLOCK
- TD TIME DELAY
- TDODE TIME DELAY ON DE-ENERGIZE
- TDOE TIME DELAY ON ENERGIZE
- TDR TIME DELAY RELAY
- TL TROUBLE LIGHT
- TLs TROUBLE LIGHT SWITCH
- TPDT TRIPLE-POLE, DOUBLE THROW
- TTS THERMAL TERMINAL STRIP
- XFMR TRANSFORMER

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DESIGN ENGINEER: TIMOTHY THOMAS, P.E.
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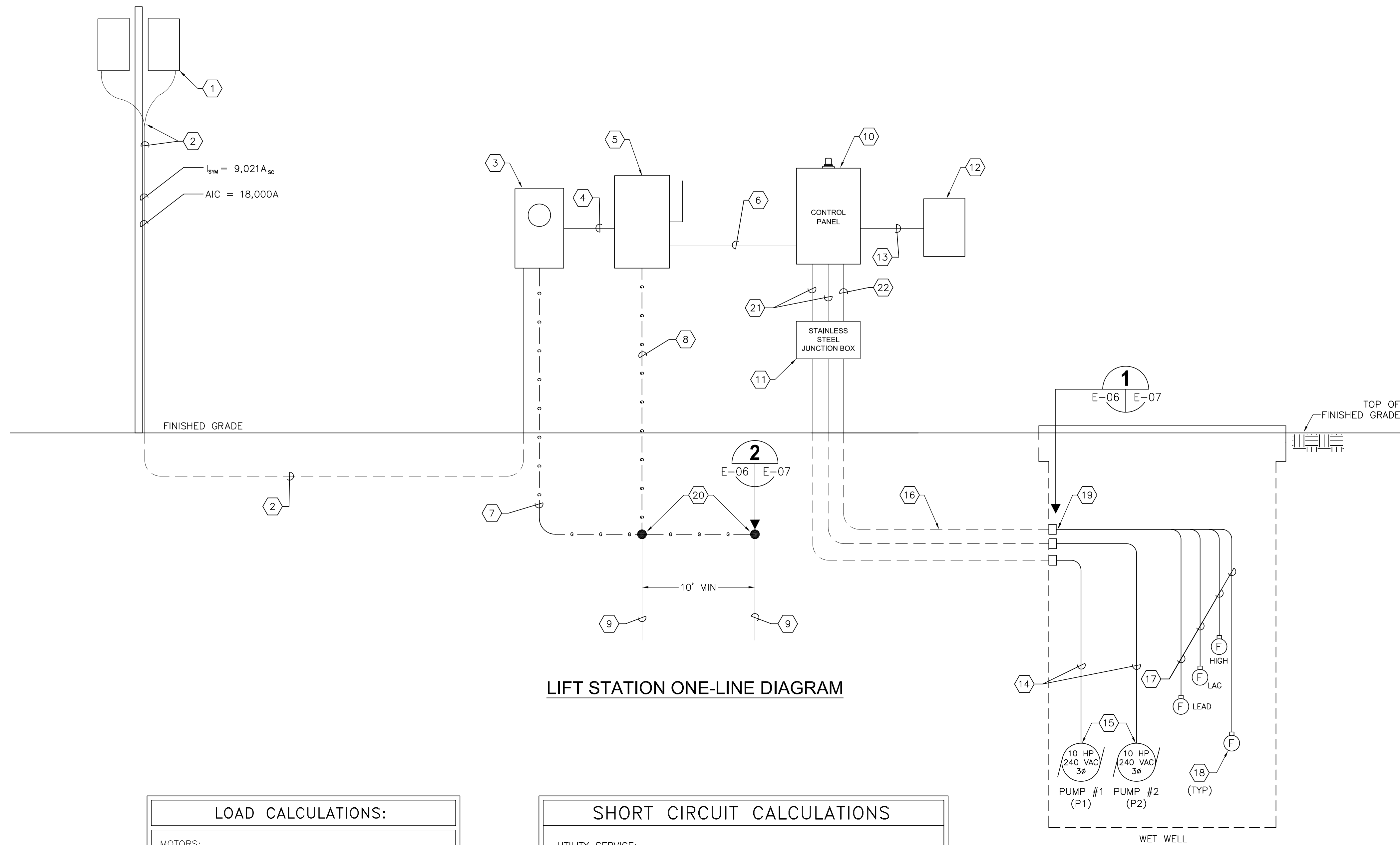
LIFT STATION CONTROL WIRING SCHEMATIC

UTILITIES, INC. OF FLORIDA
 TIERRA VERDE LIFT STATION
 PINELLAS COUNTY FLORIDA



DATE: OCTOBER 2019
 PROJECT NO.: 140056014
 SHEET NUMBER

E-05



LIFT STATION ONE-LINE DIAGRAM

LOAD CALCULATIONS:	
MOTORS:	
PUMP NO. 1:	10.0 HP, 240 VAC, 3 ϕ , 28.0 A
PUMP NO. 2:	10.0 HP, 240 VAC, 3 ϕ , 28.0 A
MOTOR SUB-TOTAL	56.0 A
+ 25% OF LARGEST MOTOR	7.0 A
SUB-TOTAL	63.0 A
AUXILIARY EQUIPMENT	10.0 A
TOTAL MAXIMUM PHASE AMPERES	73.0 A
SERVICE SIZE:	
100 A, 240 VAC, 3 ϕ , 4 - WIRE MINIMUM.	

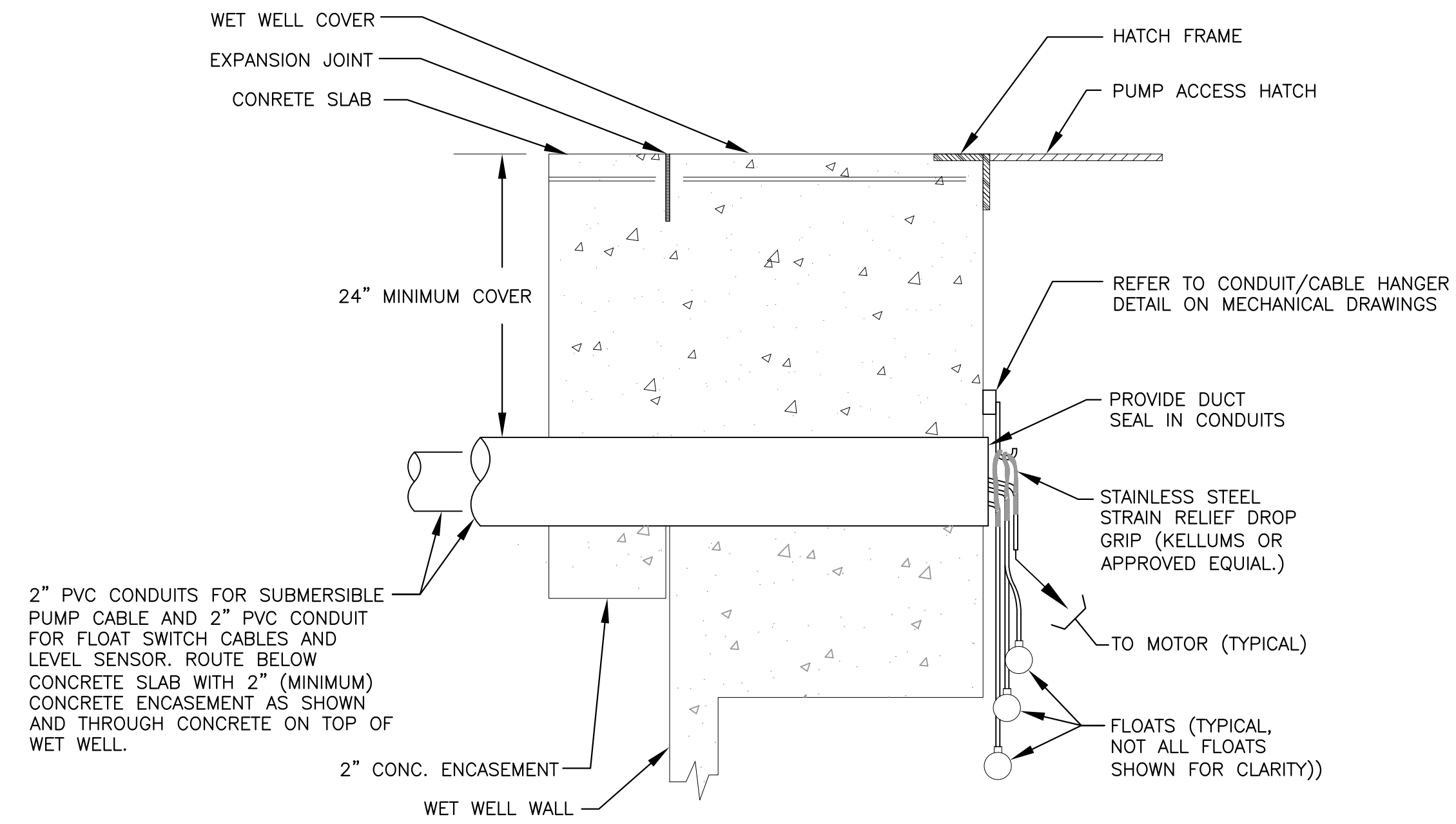
SHORT CIRCUIT CALCULATIONS	
UTILITY SERVICE:	
120/240V, 3 ϕ , 4-WIRE, ELECTRICAL SERVICE. AVAILABLE FAULT CURRENT AT SECONDARY SIDE OF UTILITY TRANSFORMERS: 9,021 AMP RMS SYM. SERVICE CONDUCTOR LENGTH: 75 FEET #3 AWG COPPER SERVICE ENTRANCE	
ISCA AT THE SERVICE DISCONNECT:	
$ISCA = \left[\frac{1}{1 + \left[\frac{(1.73)(75)(9,021)}{(1,940)(240)} \right]} \right] \times (9,021)$	
ISCA = 2,567 AMPS RMS SYM.	
MAIN DISCONNECT FUSED WITH CLASS RK5, 200KAIC FUSES. ALL BREAKERS RATED GREATER THAN 10,000 AIC.	

KEY NOTES

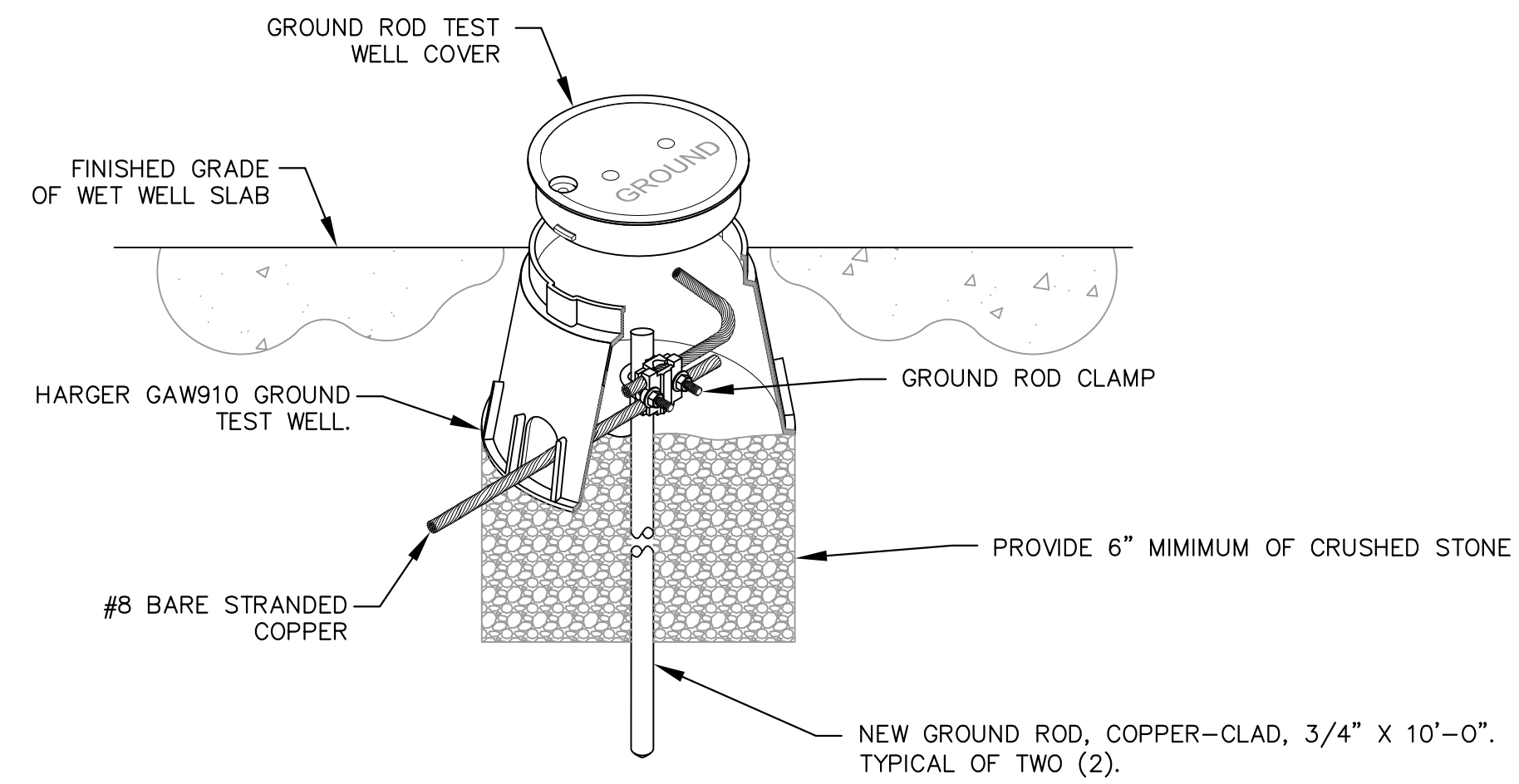
- 1 NEW DUKE ENERGY TRANSFORMERS TO BE LOCATED ON PRIMARY DISTRIBUTION POLE (120/240V, 3 ϕ , 4-WIRE DISTRIBUTION VOLTAGE).
- 2 PROVIDE AND INSTALL NEW 3-#3 THWN CU + 1-#3 THWN CU NEUTRAL IN 1-1/2" CONDUIT FROM NEW METER TO EXISTING DUKE ENERGY POWER DISTRIBUTION POLE. NOTE: CONTRACTOR SHALL INSTALL CONDUCTOR AND CONDUIT UP EXISTING POLE TO NEW DUKE ENERGY TRANSFORMERS. PROVIDE SLACK CONDUCTOR AT TOP OF POWER DISTRIBUTION POLE. COORDINATE ALL REQUIREMENTS WITH DUKE ENERGY.
- 3 PROVIDE AND INSTALL 100A, 240V, 3 ϕ METER SOCKET. COORDINATE REQUIREMENTS ALL METER REQUIREMENTS WITH DUKE ENERGY.
- 4 PROVIDE AND INSTALL 3-#3 THWN CU + 1-#3 THWN CU NEUTRAL IN 1-1/2" CONDUIT.
- 5 PROVIDE AND INSTALL NEW 3-POLE, 100A, 240V, FUSIBLE DISCONNECT WITH SOLID NEUTRAL IN NEMA 4X STAINLESS STEEL ENCLOSURE. FUSE DISCONNECT AT 100 AMPERES WITH CLASS RK5 TIME DELAY FUSES. DISCONNECT SHALL BE SERVICE ENTRANCE RATED.
- 6 PROVIDE AND INSTALL 3-#3 THWN CU + 1-#3 THWN CU NEUTRAL + 1-#8 CU GND IN 1-1/2" CONDUIT. INSTALL CONDUIT NIPPLE BETWEEN BACKSIDE OF DISCONNECT AND BACKSIDE OF PUMP CONTROL CABINET.
- 7 PROVIDE AND INSTALL #8 CU GROUNDING ELECTRODE CONDUCTOR IN 3/4". COORDINATE REQUIREMENTS WITH DUKE ENERGY.
- 8 PROVIDE AND INSTALL #8 CU GROUNDING ELECTRODE CONDUCTOR IN 3/4".
- 9 PROVIDE AND INSTALL 3/4" X 10'-0" GROUNDING ELECTRODE.
- 10 PROVIDE AND INSTALL PUMP CONTROL CABINET. REFER TO DETAILS ON SHEET E-04.
- 11 PROVIDE AND INSTALL NEW NEMA 4X STAINLESS STEEL WETWELL JUNCTION BOX.
- 12 PROVIDE AND INSTALL NEW ALARM CABINET.
- 13 PROVIDE AND INSTALL 20-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT (COUNT INCLUDES SPARES). REFER ALSO TO LIFT STATION CONTROL WIRING SCHEMATIC (SHEET E-05).
- 14 SUBMERSIBLE PUMP POWER CABLES: 3-#8 PHASE CONDUCTORS + 2-#12 (MINI-CAS SEAL/TEMP) + 1-#10 GND. INSTALL IN 2". TO WET WELL. CABLE BY PUMP VENDOR.
- 15 SUBMERSIBLE PUMP MOTOR. 10.0 HP 240 VOLTS, 3 ϕ , 28.0 FLA.
- 16 INSTALL FOUR (4) :: 2/C-#14 FLOAT SWITCH CABLES IN 2". TO WET WELL. CABLES BY FLOAT SWITCH MANUFACTURER.
- 17 2/C-#14 FLOAT SWITCH CABLES. CABLES BY FLOAT SWITCH MANUFACTURER.
- 18 PROVIDE AND INSTALL LEVEL FLOAT.
- 19 REFER TO SHEET E-07 FOR WET WELL CONDUIT DETAIL.
- 20 REFER TO SHEET E-07 FOR GROUND ROD TEST WELL DETAIL.
- 21 PROVIDE AND INSTALL PUMP POWER CABLES: 3-#8 PHASE CONDUCTORS + 2-#12 (MINI-CAS SEAL/TEMP) + 1-#10 GND. INSTALL IN 2". TO CONTROL PANEL.
- 22 PROVIDE AND INSTALL 8-#14 + 1-#14 GND IN 2". TO CONTROL PANEL FOR FLOAT SWITCH SIGNALS.

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<p>SCALE AS NOTED DESIGNED BY TDT DRAWN BY JLH CHECKED BY GSW</p>	<p>DATE: _____</p>
<p>LIFT STATION ONE-LINE DIAGRAM</p>	
<p>UTILITIES, INC. OF FLORIDA TIERRA VERDE LIFT STATION PINELLAS COUNTY FLORIDA</p>	
<p>DATE: OCTOBER 2019 PROJECT NO.: 140056014 SHEET NUMBER: E-06</p>	





WET WELL CONDUIT DETAIL 1
SCALE: NOT TO SCALE E-06 | E-07



GROUND ROD TEST WELL DETAIL 2
SCALE: NOT TO SCALE E-06 | E-07

No.	REVISIONS	DATE	BY

Kimley»Horn
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SCALE AS NOTED	DESIGNED BY	DRAWN BY	CHECKED BY	DATE
TDT	JLH	JLH	GSW	

DESIGN ENGINEER: TIMOTHY THOMAS, P.E.
FLORIDA REGISTRATION NUMBER: 47079

LIFT STATION ELECTRICAL DETAILS

UTILITIES, INC. OF FLORIDA
TIERRA VERDE LIFT STATION
PINELLAS COUNTY FLORIDA

DATE: OCTOBER 2019
PROJECT NO.: 140056014
SHEET NUMBER: E-07



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