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Please Email ALL Questions:
[MailTo:ContractAdministration@TampaGov.net](mailto:ContractAdministration@TampaGov.net)

City of Tampa
Contract Administration Department
306 E. Jackson St. #280A4N
Tampa, FL 33602
(813)274-8456

CITY of TAMPA



PROJECT LOCATION

ST. ISABEL PUMPING STATION
2913 W. SAINT ISABEL ST.
TAMPA, FL

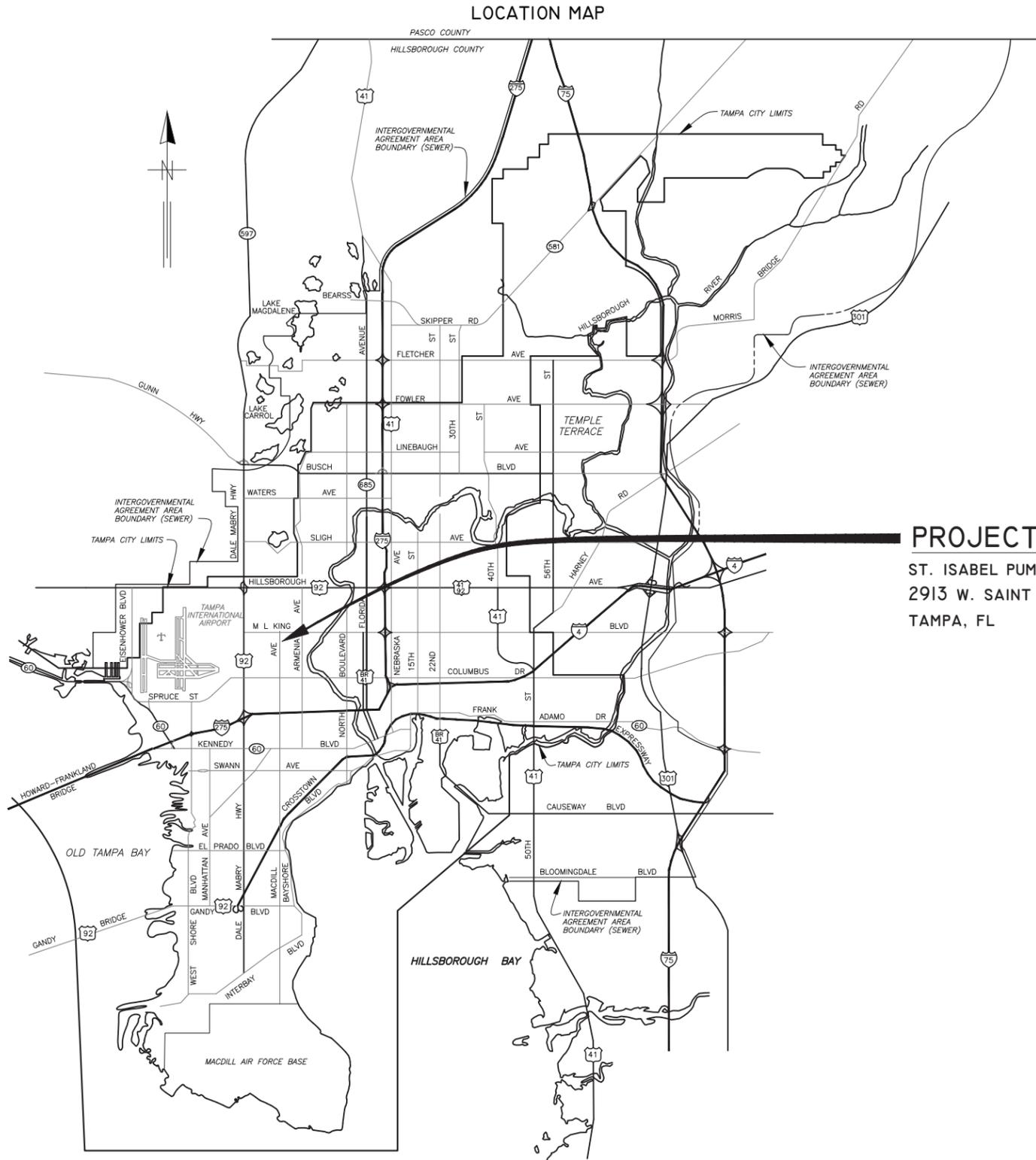
WASTEWATER DEPARTMENT

PLANS FOR

SAINT ISABEL PUMPING STATION REHABILITATION

CONTRACT No.

19-C-00034



No.	DATE	REVISIONS
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JACINTO CARLOS FERRAS, P.E.
#49454 DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

ROMAN D. KORCHAK, P.E., #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

DES: JH
DRN: MRL
CKD: JF
DATE:

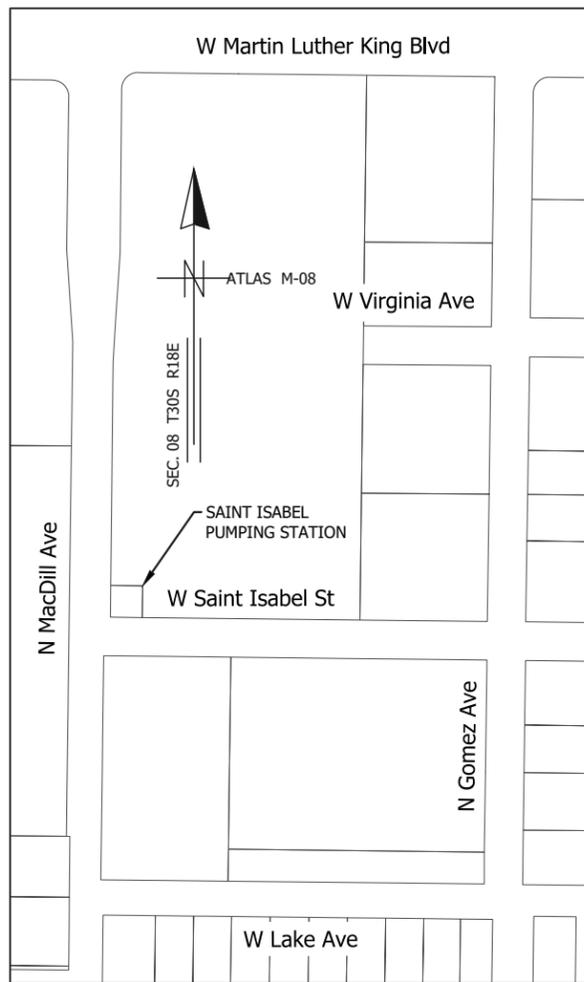
CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION REHABILITATION
COVER

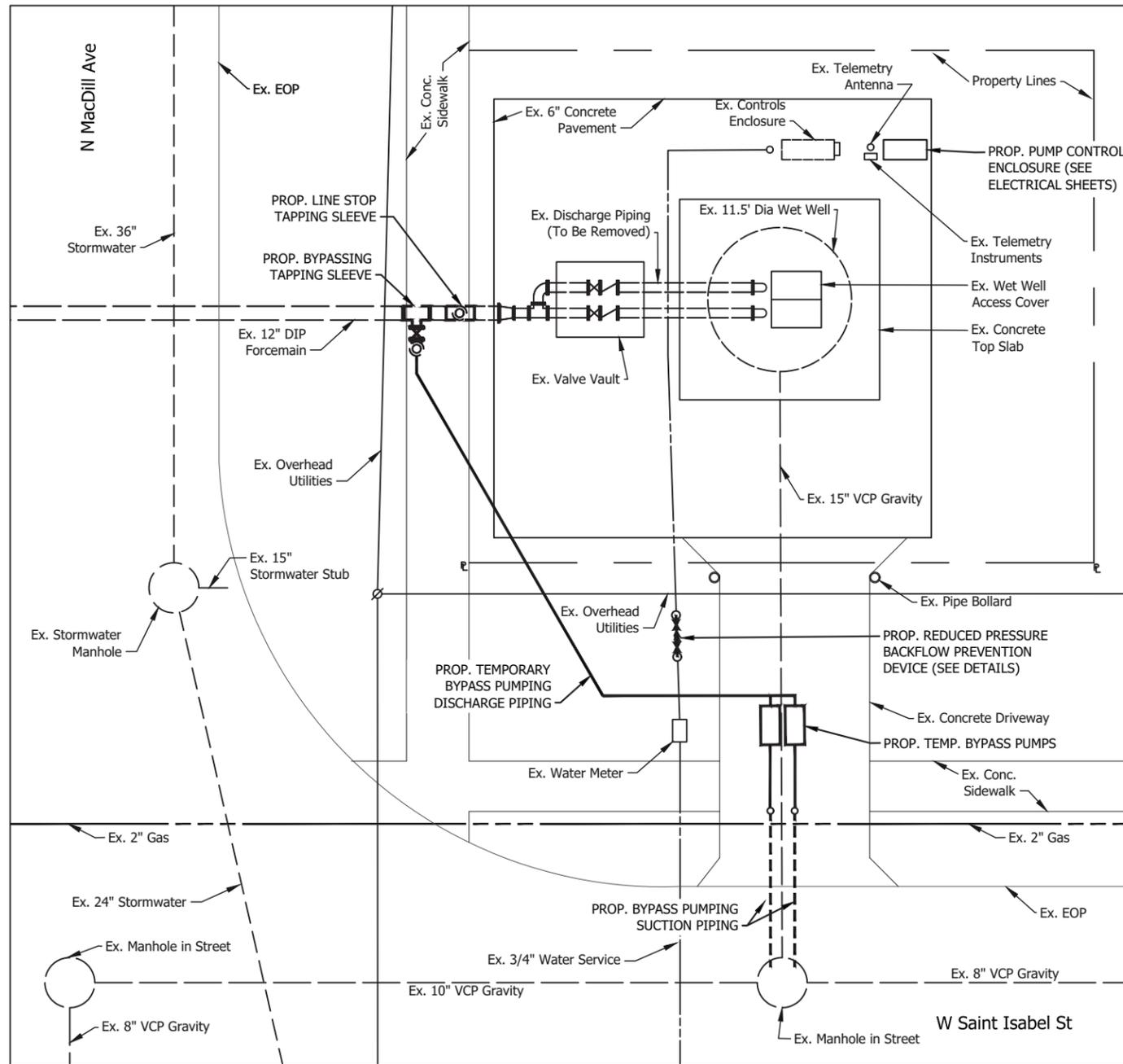
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PROJECT LOCATION
(N.T.S.)



EXISTING SITE PLAN WITH PROPOSED BYPASS PUMPING LAYOUT,
PROP. BACKFLOW PREVENTER AND CONTROLS ENCLOSURE
(N.T.S.)

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CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION REHABILITATION
LOCATION, INDEX AND SITE INFORMATION

SHEET
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Layout: Apr 30, 2019 - 6:00am

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NOTES

GENERAL NOTES

- G-1. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH WASTEWATER INSPECTOR, WASTEWATER PERSONNEL AND PUMPING STATION OPERATIONS. UPON THE CITY'S NOTICE TO PROCEED, CONTRACTOR SHALL CONTACT MARK JOHNSON AT (813) 393-6736 TO SCHEDULE A PRECONSTRUCTION MEETING.
- G-2. NORMAL WORKING HOURS SHALL BE WEEKDAYS FROM 7:00 AM TO 3:30 PM UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- G-3. NO NEW PUMPS SHALL BE SUPPLIED FOR THIS PROJECT. BOTH EXISTING PUMP BASE ELBOWS SHALL BE REPLACED. BOTH PROPOSED PUMP BASES SHALL BE 6" x 8" DISCHARGE ELBOWS, PART #4447106, AS MADE BY ITT FLYGT WATER AND WASTEWATER. UPPER & INTERMEDIATE GUIDE RAIL BRACKETS SHALL ALSO BE SUPPLIED FOR EACH PUMP.
- G-4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE (FBC) 6TH EDITION (2017), THE NATIONAL ELECTRIC CODE (NEC) 2014 EDITION AND CHAPTER 5 OF THE CITY OF TAMPA CODE.
- G-5. CONTRACTOR SHALL VERIFY QUANTITIES OF ALL NECESSARY REDUCERS, FITTINGS, SUPPORTS, AND ANY MISCELLANEOUS BRACKETS.
- G-6. DIMENSIONS SHOWN ARE NOT NECESSARILY ACCURATE TO THE DEGREE REQUIRED FOR FABRICATION. EXISTING DIMENSIONS AND VIEWS ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE. CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT DIMENSIONS AND REFLECT THEM ON DETAILED SHOP DRAWINGS FOR APPROVAL BEFORE ANY FABRICATION.
- G-7. SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED BY THE CITY FOR ALL PROPOSED ITEMS. ALL SUBMITTALS AND SHOP DRAWINGS SHALL BE ORIGINALS OR HIGH QUALITY COPIES (EASILY READABLE). NO FAXED SHEET OR POOR QUALITY COPIES WILL BE ACCEPTED FOR SUBMITTAL REVIEW.
- G-8. ALL EXISTING DIP DISCHARGE PIPING IN WET WELL IS TO BE REPLACED WITH 8" SCHEDULE 40, T-316 STAINLESS STEEL WITH WELDED OR FLANGED JOINTS. STAINLESS STEEL FLANGES SHALL BE PER ANSI B-16.5, CLASS 150.
- G-9. PLUG VALVES SHALL BE 8-INCH DEZURIK, PEF 100% PORT, ECCENTRIC PLUG VALVES. THIS EQUIPMENT IS A STANDARDIZED ITEM AT THIS FACILITY AND NO "OR EQUAL" SUBMITTALS WILL BE CONSIDERED.
- G-10. CHECK VALVES SHALL BE 8-INCH APCO RUBBER FLAPPER SWING CHECK VALVES, SERIES 100. THIS EQUIPMENT IS A STANDARDIZED ITEM AT THIS FACILITY AND NO "OR EQUAL" SUBMITTALS WILL BE CONSIDERED.
- G-11. ALL HARDWARE, UNLESS OTHERWISE NOTED, SHALL BE TYPE 316 STAINLESS STEEL.
- G-12. PIPE SUPPORTS SHALL BE CONSTRUCTED AS SHOWN IN THE PIPE SUPPORT DETAILS (SEE DETAILS ON SHEET 9 & 10).
- G-13. ALL CEMENTITIOUS CONCRETE AND GROUT, UNLESS OTHERWISE NOTED, SHALL BE CLASS "B", 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. ALL REINFORCING STEEL SHALL BE GRADE 60.
- G-14. DURING THE REHABILITATION PROCESS, THE STRUCTURES SHALL BE ADEQUATELY VENTILATED AND HYDROGEN SULFIDE LEVELS SHALL BE CONTINUOUSLY MONITORED. THE CONTRACTOR MAY ALSO UTILIZE FORCED AIR.
- G-15. OSHA STANDARD SAFETY EQUIPMENT SUCH AS SAFETY HARNESSSES, GAS MONITORS, LOWER EXPLOSIVE LIMIT (LEL) DETECTORS, BREATHING APPARATUS, ETC. SHALL BE UTILIZED WHERE THE WORK DICTATES THEIR USE.
- G-16. TESTING OF THE NEW DISCHARGE PIPES WILL BE ACCOMPLISHED BY OPERATING EACH PUMP FOR MINIMUM 12-HOUR DURATION AND OBSERVING FOR ANY LEAKS. ANY MANUAL PUMP OPERATION OR SWITCHING PUMPS MUST BE PERFORMED BY CITY PERSONNEL.
- G-17. BACKFILL (NO CLAY OR CLAYEY MATERIAL) SHALL BE COMPACTED IN 12-INCH LAYERS TO 98% MAXIMUM DRY DENSITY OF MODIFIED PROCTOR IN CONFORMANCE WITH AASHTO T-180, METHOD A.
- G-18. CONTRACTOR SHALL INSTALL TWO STAINLESS STEEL J-HOOK RACKS ON SIDE OF ACCESS OPENING WITH PUMP GUIDE RAIL BRACKETS TO SUPPORT PUMP LIFTING CHAINS. CONTRACTOR SHALL ALSO INSTALL A STAINLESS STEEL RACK WITH FIVE J-HOOKS, AS SHOWN IN DETAILS, ON OPPOSITE SIDE TO SUPPORT VARIOUS CABLES. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL.
- G-19. CONTRACTOR TO SUBMIT METHOD AND MATERIALS FOR MAKING STRUCTURALLY SOUND, LEAK-PROOF REPAIRS AT THE EXISTING (AND PROPOSED) FIBERGLASS WET WELL PENETRATIONS. CONTRACTOR SHALL ALSO SUBMIT METHOD AND MATERIALS FOR ATTACHING PROPOSED PIPE SUPPORT BRACKETS ONTO THE EXISTING FIBERGLASS WET WELL WALL.
- G-20. ALL STAINLESS STEEL PARTS TO BE WELDED SHALL BE THE LOW-CARBON VERSION OF THE GRADE OF STAINLESS STEEL THAT IS CALLED FOR, SUCH AS: T-316L OR T-304L.
- G-21. CONTRACTOR SHALL REPLACE ALL CONCRETE FILLET, AT THE BOTTOM OF THE WET WELL, WHICH HAS BEEN REMOVED DURING CONSTRUCTION OPERATIONS, WITH CLASS "D" (2,000 PSI @ 28-DAYS) CONCRETE.
- G-22. CONTRACTOR SHALL CALL SUNSHINE (811) AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION WORK.
- G-23. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHT-OF-WAY AND ROAD CLOSURE PERMITS FOR THE PUMPING STATION WORK.

- G-24. ALL CONCRETE PAVEMENT, UNLESS OTHERWISE NOTED, SHALL BE MIN 6" THICK CONCRETE WITH 4X4 W6XW6 WWF. CONCRETE SHALL BE CONSTRUCTED ON COMPACTED SUBBASE (MINIMUM 98% MODIFIED PROCTOR) WITH 1.5" DEEP CONTROL JOINTS SAWCUT @ 15' MAX, CUT WITHIN 12 HOURS OF CONCRETE PLACEMENT.
- G-25. CONTRACTOR SHALL INSTALL A REDUCED PRESSURE BACKFLOW-PREVENTION DEVICE IN THE POTABLE WATER SERVICE LINE, AS SHOWN IN DETAILS, AT A PLACE TO BE SPECIFIED DURING CONSTRUCTION. BACKFLOW-PREVENTION DEVICE SHALL BE 1" WILKINS, MODEL #975 XL, OR EQUAL.
- G-26. CONTRACTOR SHALL INSTALL NEW PUMP CONTROLS AND TELEMETRY EQUIPMENT ENCLOSURE NEAR EXISTING TELEMETRY ANTENNA. MAIN CIRCUIT BREAKERS SHALL REMAIN IN EXISTING ELECTRICAL ENCLOSURE. SEE ELECTRICAL SHEETS FOR DETAILS.
- G-27. ALL GASKETS FOR FLANGED FITTINGS, UNLESS OTHERWISE SPECIFIED, SHALL BE NITRILE (BUNA-N) RUBBER FULL FACED GASKETS.
- G-28. FLANGED CONNECTIONS WITH DIFFERENT METALS SHALL BE ELECTRICALLY ISOLATED BY USE OF FLANGE ISOLATION GASKET KITS. ISOLATION KITS SHALL INCLUDE TYPE "E" (FULL FACE) GASKETS AND SHALL BE AS MADE BY SEACO GROUP, ADVANCED PRODUCTS & SYSTEMS (APS), OR EQUAL. CONTRACTOR SHALL SUBMIT ISOLATION KITS FOR APPROVAL.
- G-29. CONTRACTOR SHALL RESTORE THE PAVED ROADWAY AS IS INDICATED IN THE CONTRACT PLANS AND SPECIFICATIONS.

BYPASSING NOTES

- B-1. SEWER SERVICE TO CUSTOMERS SHALL NOT BE DISRUPTED DURING CONSTRUCTION. CONTRACTOR SHALL SUBMIT DETAILED PROPOSAL FOR PUMPING STRATEGY.
- B-2. CONTRACTOR SHALL PROVIDE BACK-UP BYPASS PUMPS DURING ALL PHASES OF BYPASS PUMPING PROCEDURES. CONTRACTOR SHALL SUBMIT BYPASS PUMPING SYSTEM FOR APPROVAL PRIOR TO STARTING BYPASS OPERATIONS. THE BYPASS PUMPS SHALL BE OF THE SELF-PRIMING QUIET FLOW TYPE AND PUMP NOISE SHALL STRICTLY COMPLY WITH ALL LOCAL REGULATIONS AND ORDINANCES COVERING NOISE CONTROL. THIS MAY REQUIRE CONSTRUCTING A SOUND ATTENUATING ENCLOSURE AROUND BYPASS PUMPS.
- B-3. BYPASS PUMPS SHALL BE CAPABLE OF DELIVERING 1,000 GPM AT 40-FEET TDH PLUS ANY LOSSES PRODUCED IN THE TEMPORARY BY-PASS PIPING. THE PUMPS SHALL SUCTION FROM THE MANHOLE DIRECTLY UPSTREAM FROM THE PUMPING STATION WET WELL AND SHALL DISCHARGE INTO THE PROPOSED 8"x12" TAPPING SADDLE DIRECTLY DOWNSTREAM OF THE PROPOSED LINE STOP IN THE EXISTING 12" FORCEMAIN.
- B-4. THE BYPASS PUMPING EQUIPMENT IS TO REMAIN IN PLACE FOR A TWENTY-FOUR (24) HOUR PERIOD AFTER THE PROPOSED EQUIPMENT AND MATERIALS HAVE BEEN INSTALLED AND THE PUMP STATION IS PLACED BACK IN SERVICE. THIS IS TO SERVE THE PURPOSE OF A TWENTY-FOUR HOUR TEST PERIOD FOR THE NEW EQUIPMENT.
- B-5. CONTRACTOR WILL NOTIFY THE ENGINEER AND ARRANGE TO PUT THE STATION BACK ON BYPASS IF A FAILURE OF ANY EQUIPMENT (FOR ANY REASON) OCCURS WITH THE TWENTY-FOUR HOUR TEST PERIOD.
- B-6. CONTRACTOR MAY MODIFY PRECAST MANHOLE (UNLINED) AS NEEDED TO FACILITATE BYPASS INSTALLATION. CONTRACTOR IS RESPONSIBLE IN RESTORING MANHOLE AFTER CONSTRUCTION TO ITS ORIGINAL CONDITION OR BETTER. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING CITY OF TAMPA ROAD CLOSURE PERMITS AND DEVELOPING THE ENGINEERS SIGNED AND SEALED MOT FOR PERMIT APPLICATION.
- B-7. PRIOR TO DISCONNECTING EXISTING FORCEMAIN PIPING, CONTRACTOR SHALL POUR THE 82.5 CUBIC FEET CONCRETE CRADLE AROUND THE PROPOSED TAPPING SLEEVES AS INDICATED. CONCRETE SHALL BE 4,000 PSI HIGH-EARLY MIX AND SHALL CURE FOR A MINIMUM OF 12 HOURS PRIOR TO DISCONNECTING ANY FORCEMAIN PIPING.

DEMOLITION NOTES

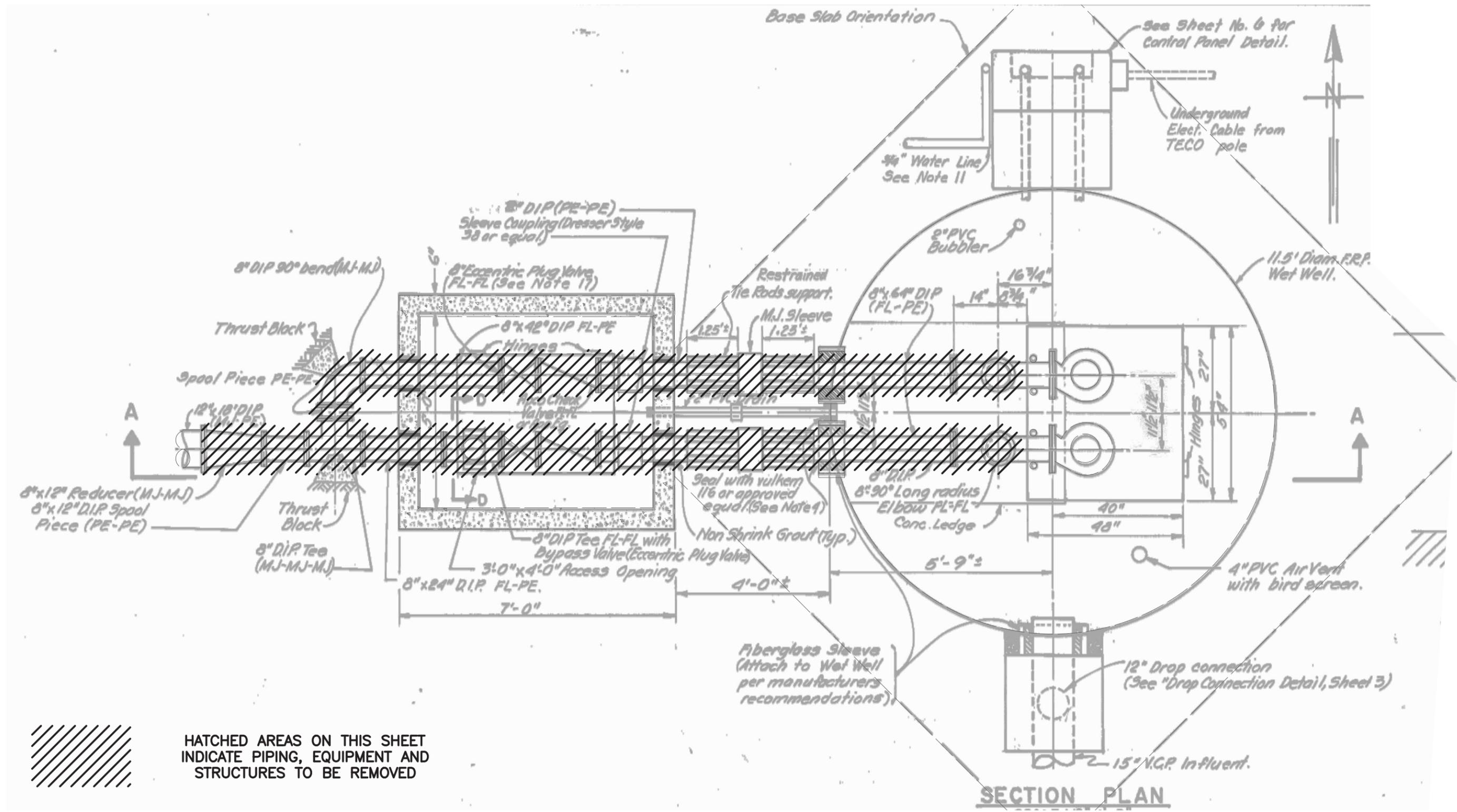
- D-1. SALVAGEABLE MATERIAL, AS DETERMINED BY DEPARTMENT PERSONNEL, SHALL BE DELIVERED TO THE PARTS WAREHOUSE LOCATED ON THE TREATMENT PLANT SITE. NON-SALVAGEABLE MATERIALS ARE TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
- D-2. THE CONSTRUCTION SITE SHALL BE MAINTAINED IN AS NEAT AND ORDERLY CONDITION AS POSSIBLE DURING CONSTRUCTION OPERATIONS. SITE SHALL BE SECURED WITH TEMPORARY FENCING AND STRUCTURES DURING HOURS WHEN CONTRACTOR IS NOT PRESENT TO ENSURE SAFETY OF CITY EMPLOYEES AND THE PUBLIC.
- D-3. CONTRACTOR SHALL RESTORE ALL LANDSCAPING, SODDING, SPRINKLER SYSTEM PIPING AND PAVEMENT THAT MAY HAVE BEEN DAMAGED DURING CONSTRUCTION TO ITS ORIGINAL CONDITION OR BETTER. CONTRACTOR SHALL SOD ALL UNPAVED AREAS.
- D-4. CONTRACTOR SHALL SAW CUT EDGES OF CONCRETE PAVEMENT TO BE REMOVED (AND REPLACED) IN STRAIGHT PERPENDICULAR AND/OR PARALLEL LINES TO EXISTING STRUCTURES.
- D-5. SEE ELECTRICAL SHEETS FOR ELECTRICAL, CONTROLS AND SCADA EQUIPMENT DEMOLITION WORK.

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JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: JH	WASTEWATER DEPARTMENT	SAINT ISABEL PUMPING STATION REHABILITATION GENERAL NOTES	SHEET 3
	3			DRN: MRL			
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 Layout: Apr 29, 2019 - 3:18pm



HATCHED AREAS ON THIS SHEET INDICATE PIPING, EQUIPMENT AND STRUCTURES TO BE REMOVED

SECTION PLAN

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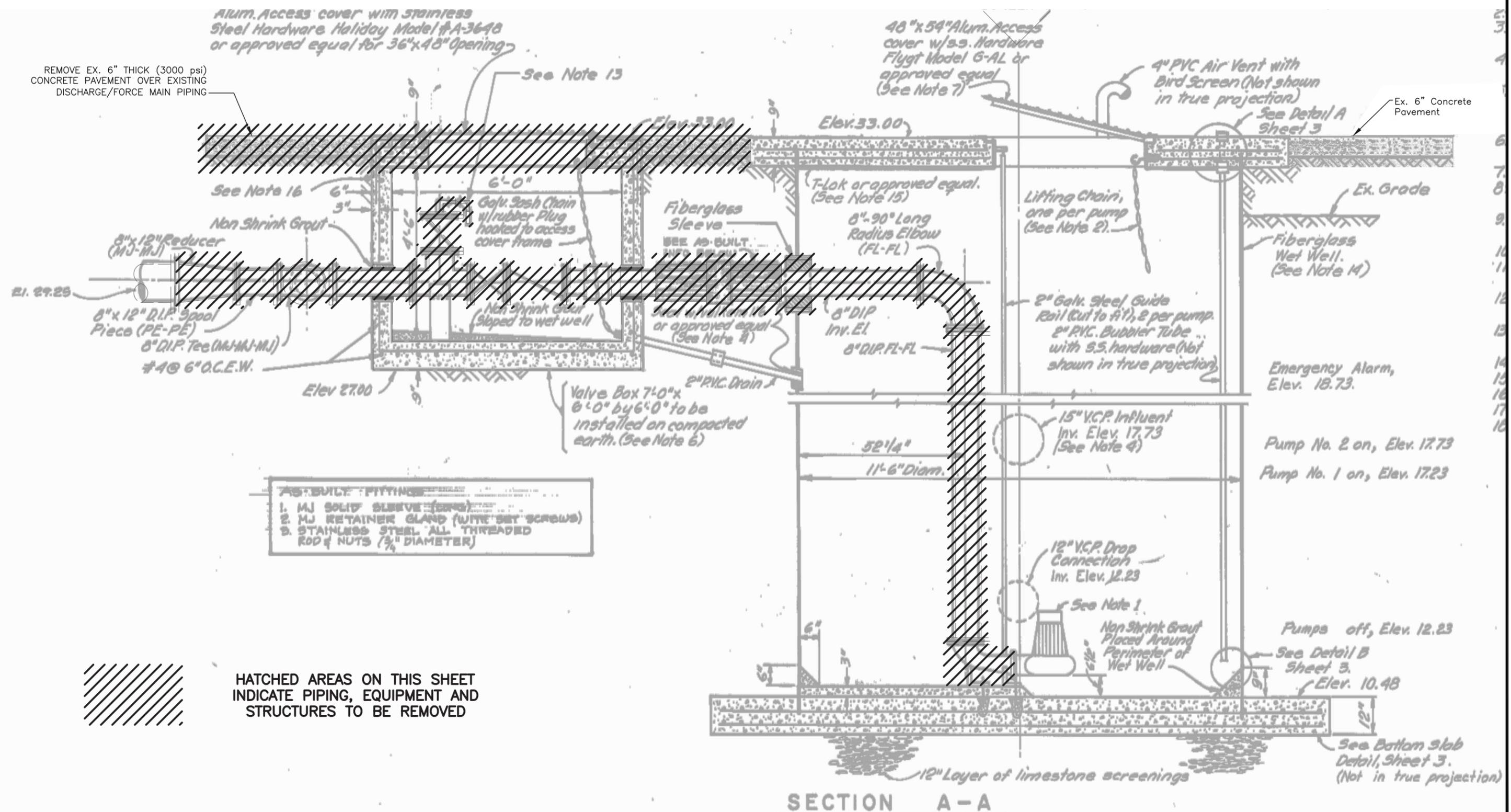
CITY of TAMPA
 WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION REHABILITATION
 DEMOLITION PLAN

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 Layout: Apr 29, 2019 - 3:18pm



- AS-BUILT FITTINGS**
1. MJ SOLID SLEEVE (2\"/>

HATCHED AREAS ON THIS SHEET INDICATE PIPING, EQUIPMENT AND STRUCTURES TO BE REMOVED

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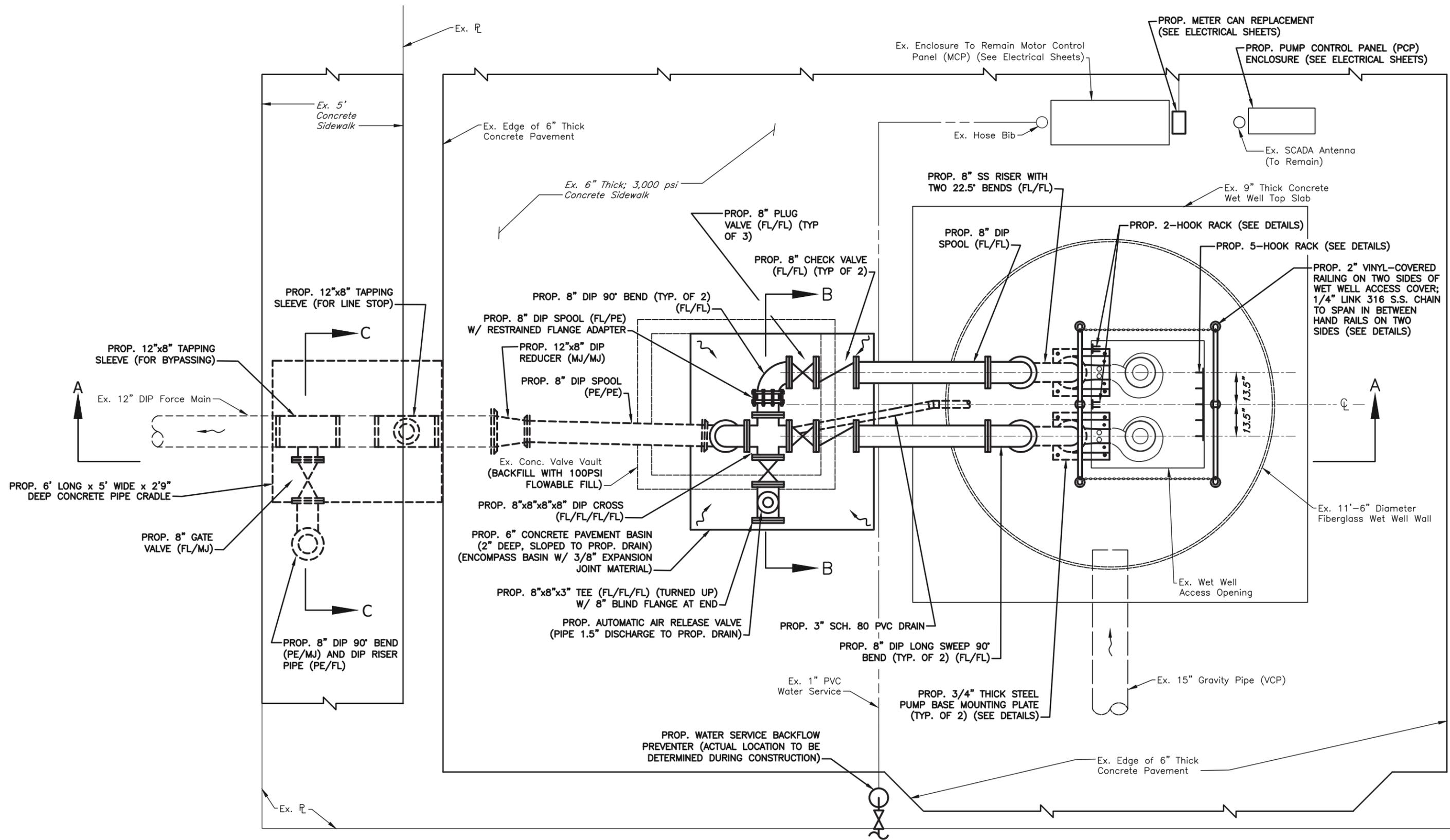
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 WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION REHABILITATION
 DEMOLITION PROFILE

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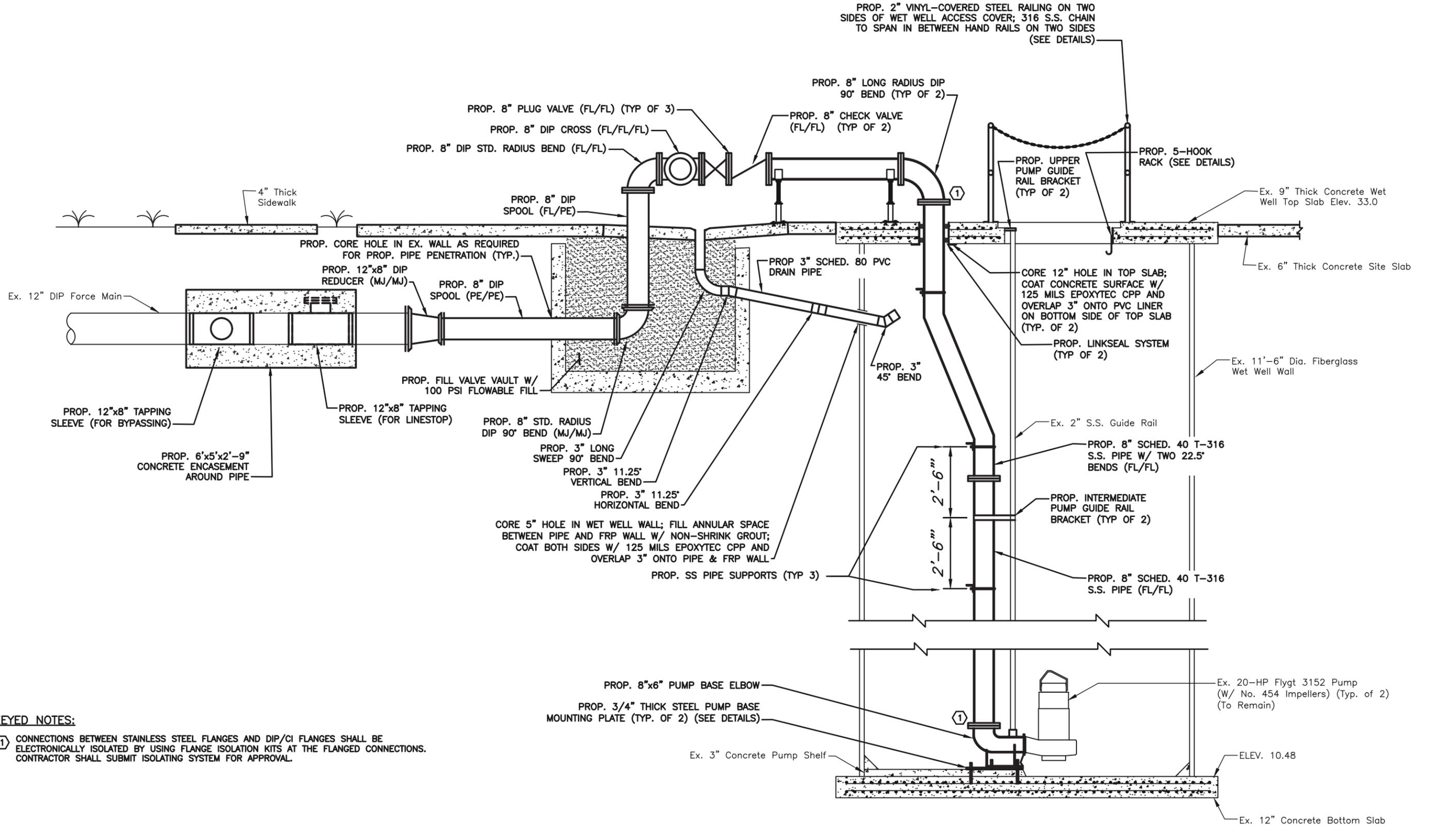
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SAINT ISABEL PUMPING STATION REHABILITATION
PROPOSED PLAN

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B105-090

JACINTO CARLOS FERRAS, P.E. #49454
 DESIGN DIVISION HEAD
 WASTEWATER DEPARTMENT



KEYED NOTES:

① CONNECTIONS BETWEEN STAINLESS STEEL FLANGES AND DIP/CI FLANGES SHALL BE ELECTRONICALLY ISOLATED BY USING FLANGE ISOLATION KITS AT THE FLANGED CONNECTIONS. CONTRACTOR SHALL SUBMIT ISOLATING SYSTEM FOR APPROVAL.

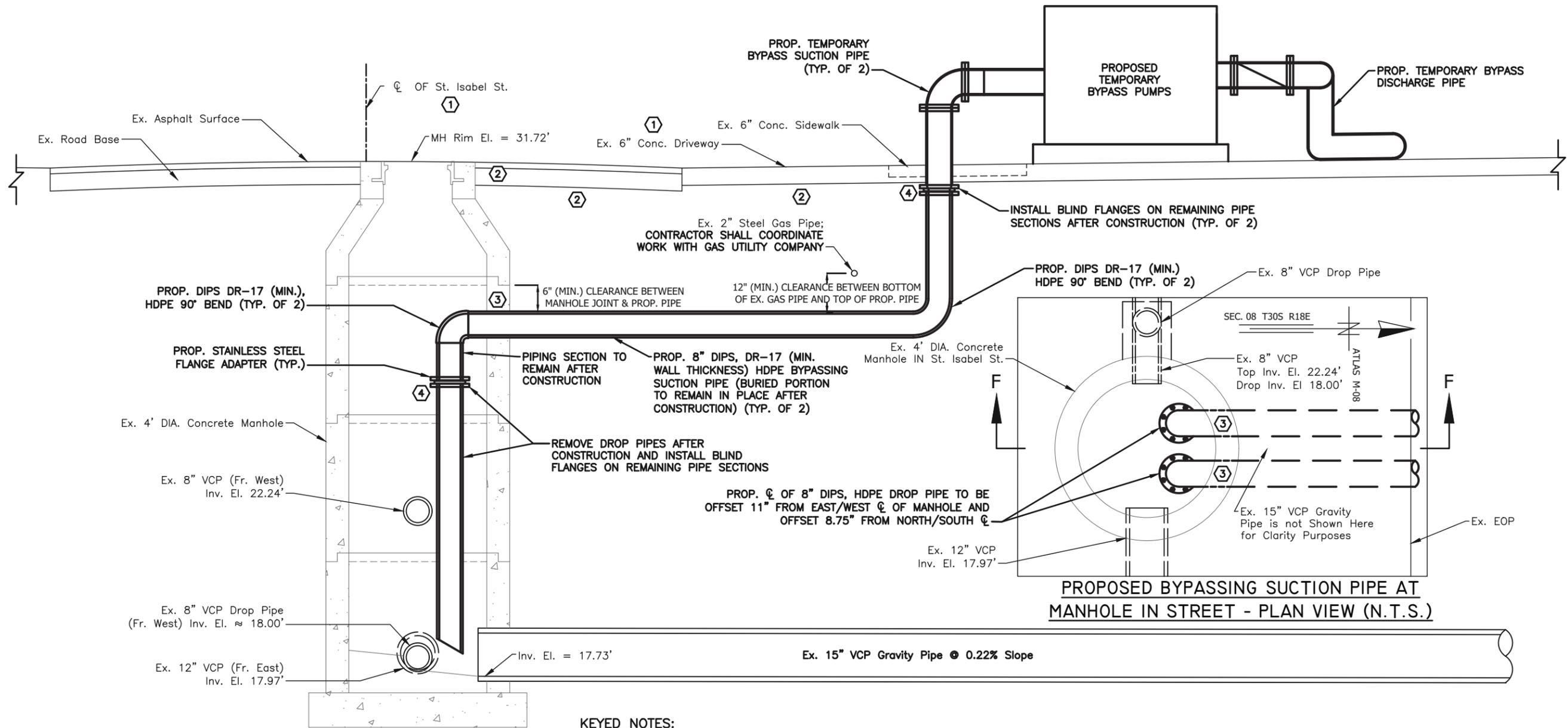
SECTION A - A
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JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: JH	CITY of TAMPA WASTEWATER DEPARTMENT	SAINT ISABEL PUMPING STATION REHABILITATION PROPOSED PROFILE	SHEET 7
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**SECTION F - F
(N.T.S.)**

**PROPOSED BYPASSING SUCTION PIPE AT
MANHOLE IN STREET - PLAN VIEW (N.T.S.)**

KEYED NOTES:

- ① CONTRACTOR IS RESPONSIBLE FOR OBTAINING NECESSARY RIGHT OF WAY AND ROAD CLOSURE PERMITS FROM THE CITY OF TAMPA.
- ② RIGHT OF WAY SHALL BE RESTORED TO PRE-EXISTING CONDITIONS OR BETTER. REPLACE GRASS BY SODDING. REPLACE CONCRETE DRIVEWAY WITH 6" (MIN.) 4,000 PSI (● 28 DAYS) CONCRETE WITH 4"x4" W6xW6 WELDED WIRE FABRIC. REPLACE ASPHALT PAVEMENT WITH 10" (MIN.) CRUSHED-CONCRETE BASE AND 2" SUPERPAVE SP12.5 ASPHALTIC-CONCRETE SURFACE COURSE. BACKFILL SHALL BE COMPACTED TO 98% OF MAXIMUM DRY DENSITY AS DETERMINED BY A.A.S.H.T.O. T-180-57.
- ③ CONTRACTOR SHALL CORE TWO 12" DIAMETER HOLES IN MANHOLE WALL TO INSTALL SUCTION PIPING. CONTRACTOR SHALL REPAIR MANHOLE BY FILLING ANULAR SPACES BETWEEN PIPES AND CONCRETE WALL WITH NON SHRINK GROUT. CONTRACTOR SHALL COAT EXTERIOR OF PIPE PENETRATIONS WITH 125 MILS (DFT) OF CPP EPOXY, EXTENDING OUT FROM PIPE SURFACES AND WALL SURFACES, 8" (MIN.) IN ALL DIRECTIONS.
- ④ 8" BLIND FLANGES SHALL BE 1" THICK HDPE OR 1.12" THICK (150#), TYPE 316 STAINLESS STEEL FLANGES.

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CITY of TAMPA
WASTEWATER DEPARTMENT

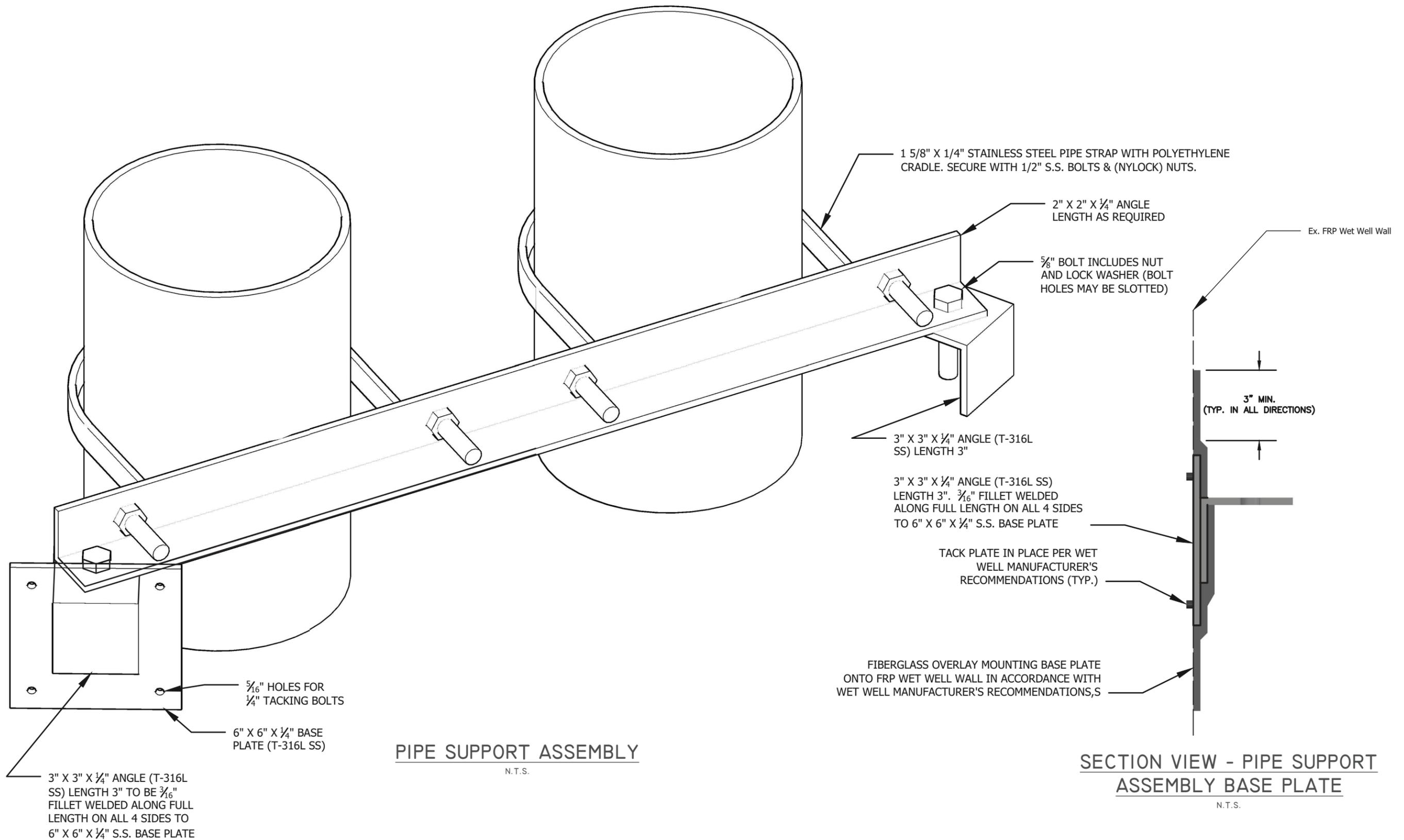
SAINT ISABEL PUMPING STATION REHABILITATION
PROPOSED BYPASS SUCTION PIPING PROFILE

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DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

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PIPE SUPPORT ASSEMBLY

N.T.S.

SECTION VIEW - PIPE SUPPORT ASSEMBLY BASE PLATE

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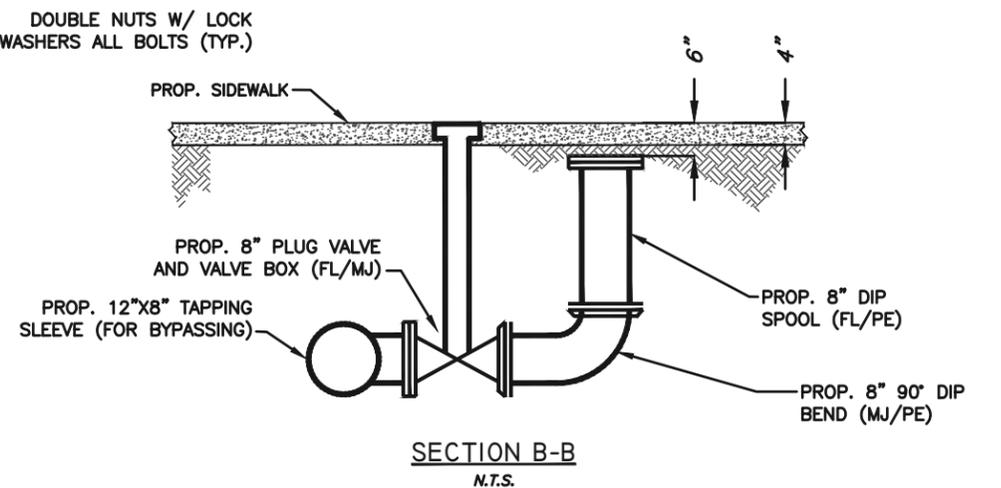
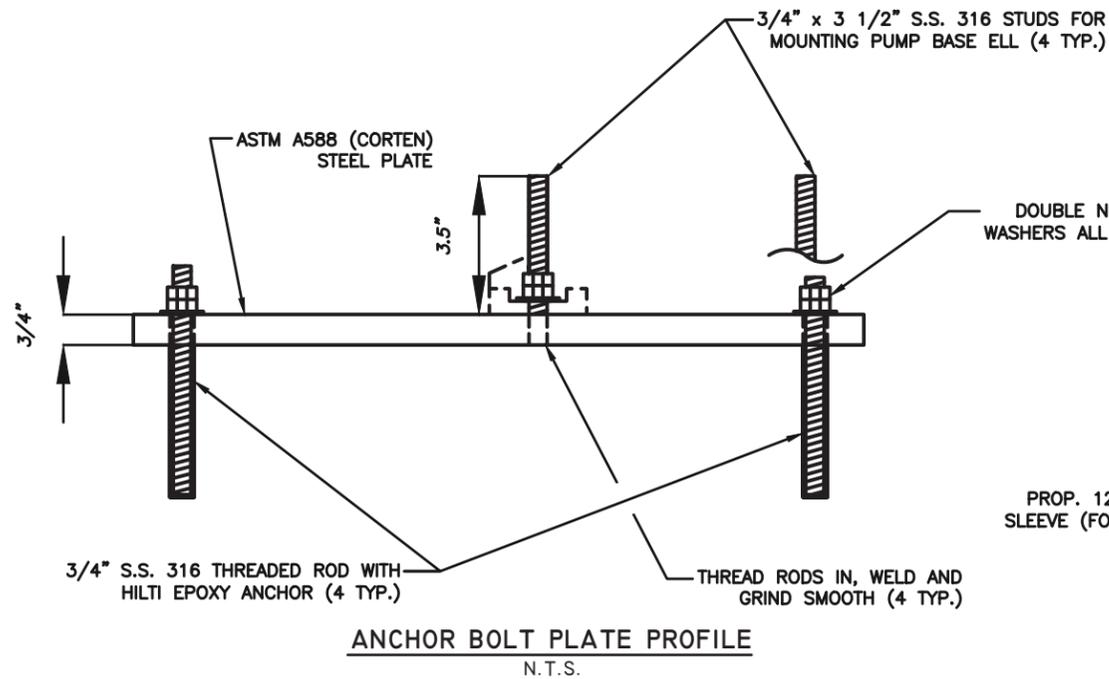
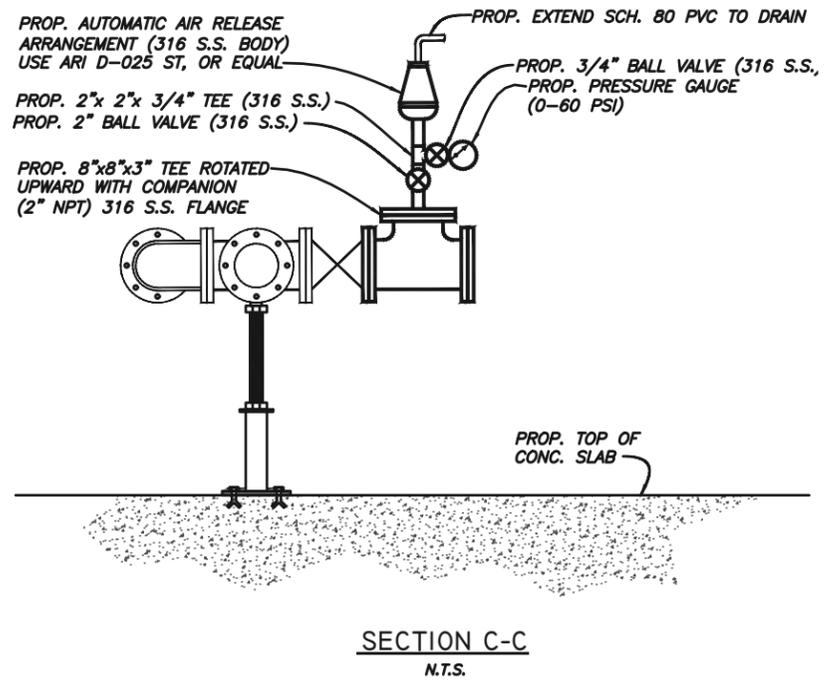
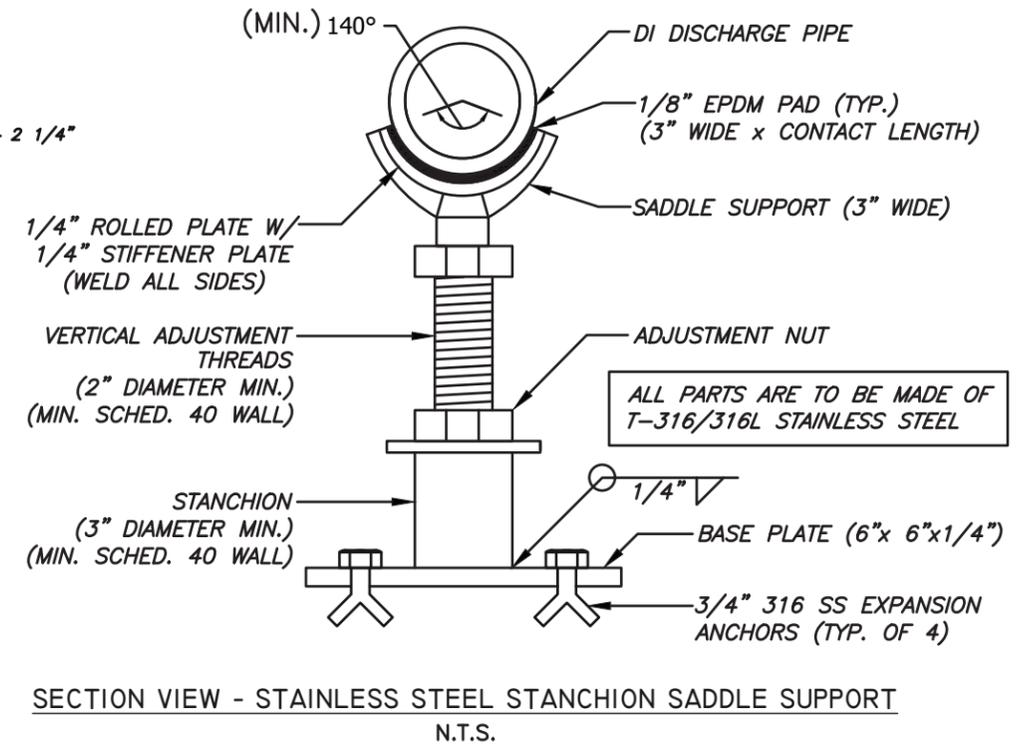
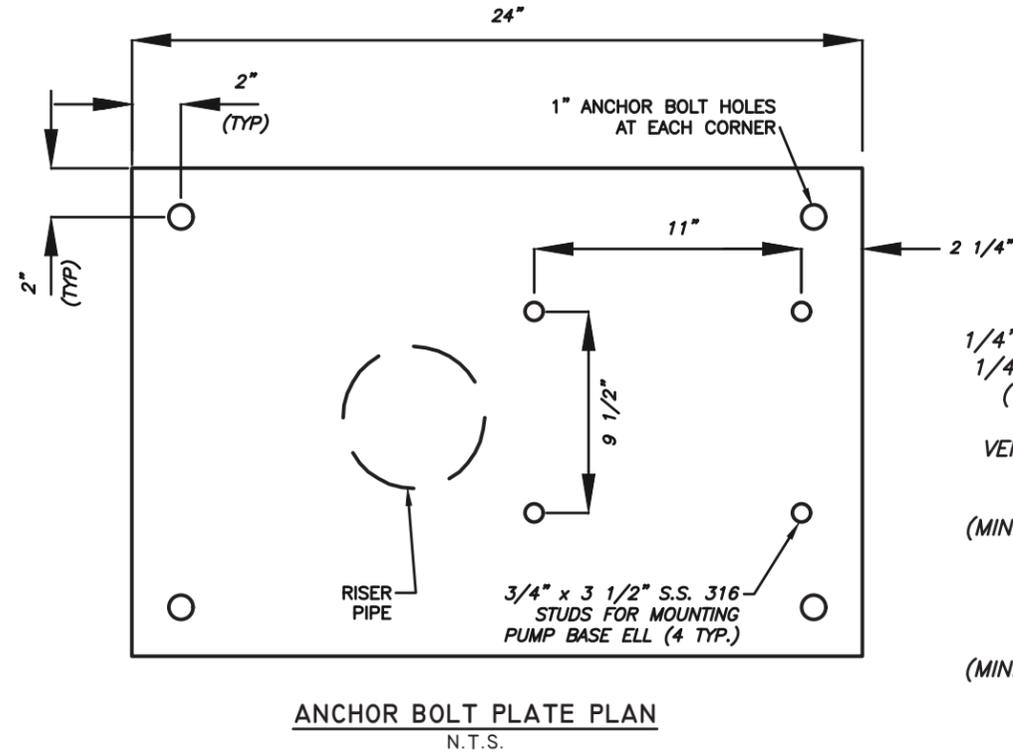
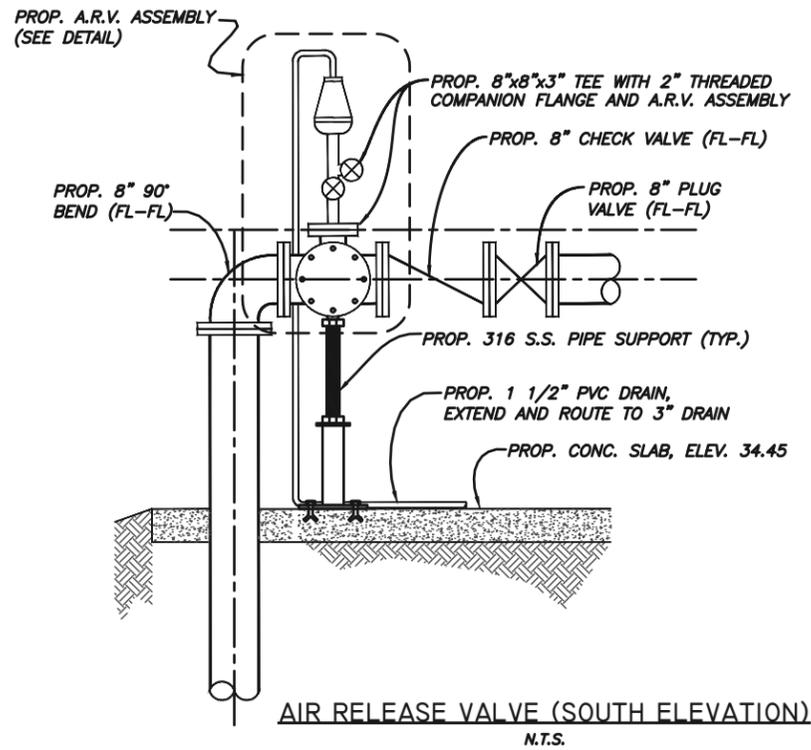
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SAINT ISABEL PUMPING STATION REHABILITATION
 RISER SUPPORT

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DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

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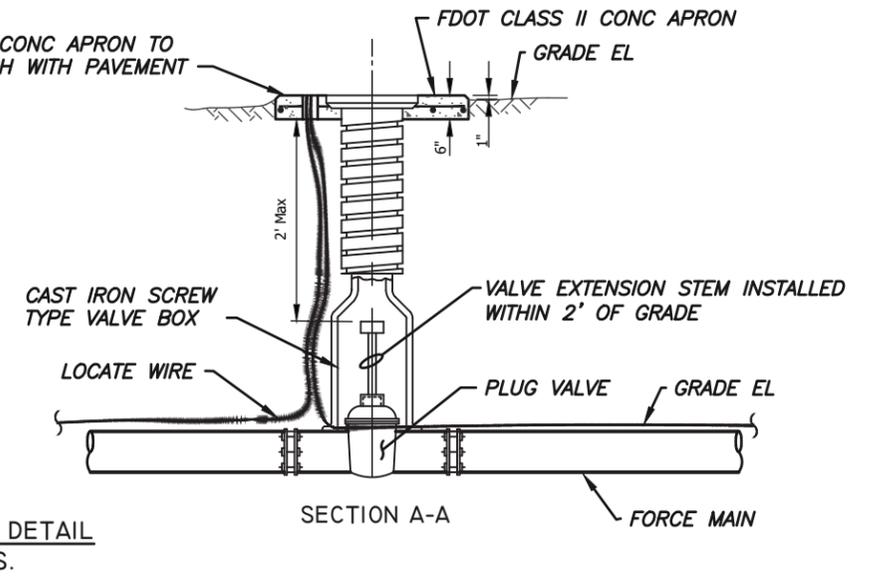
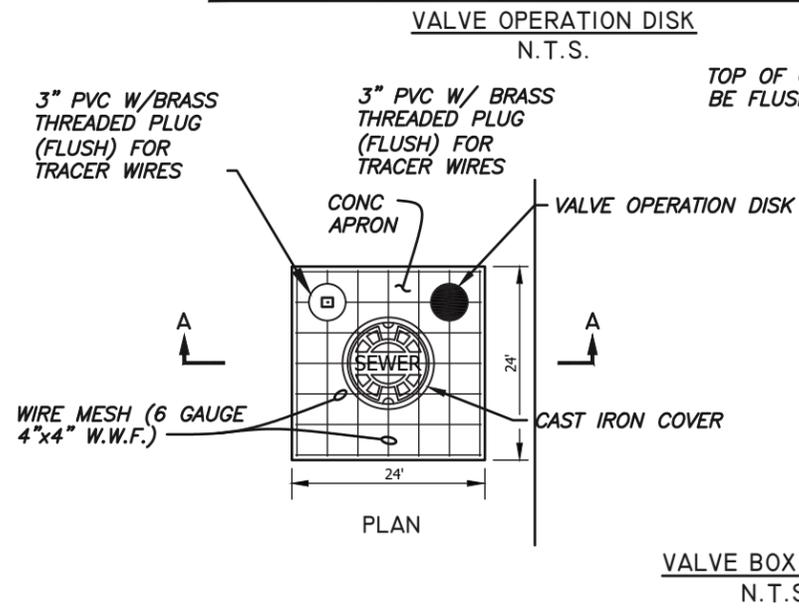
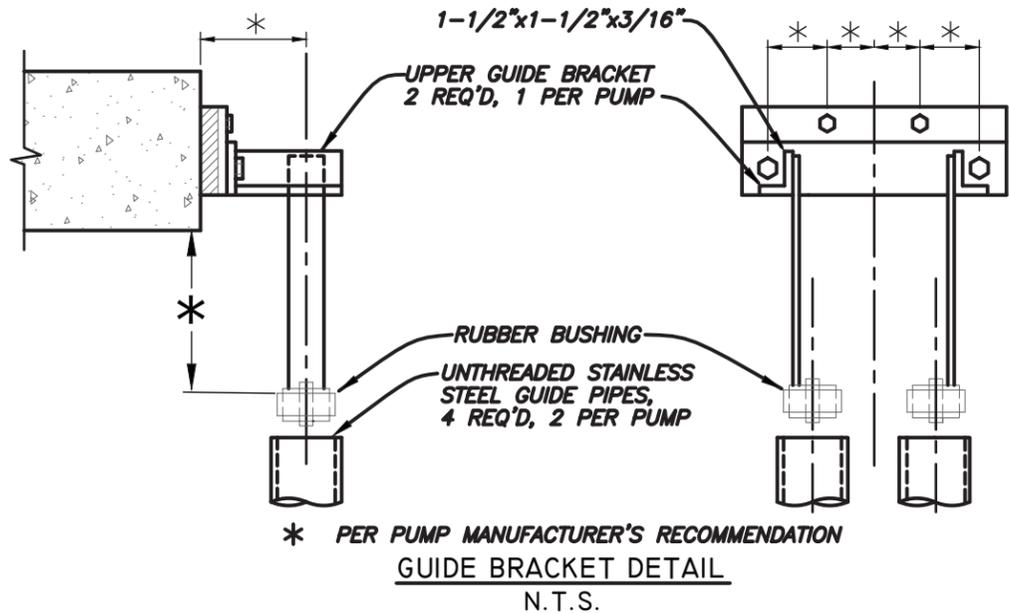
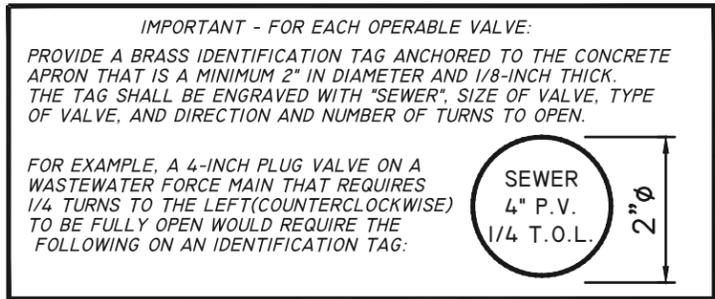
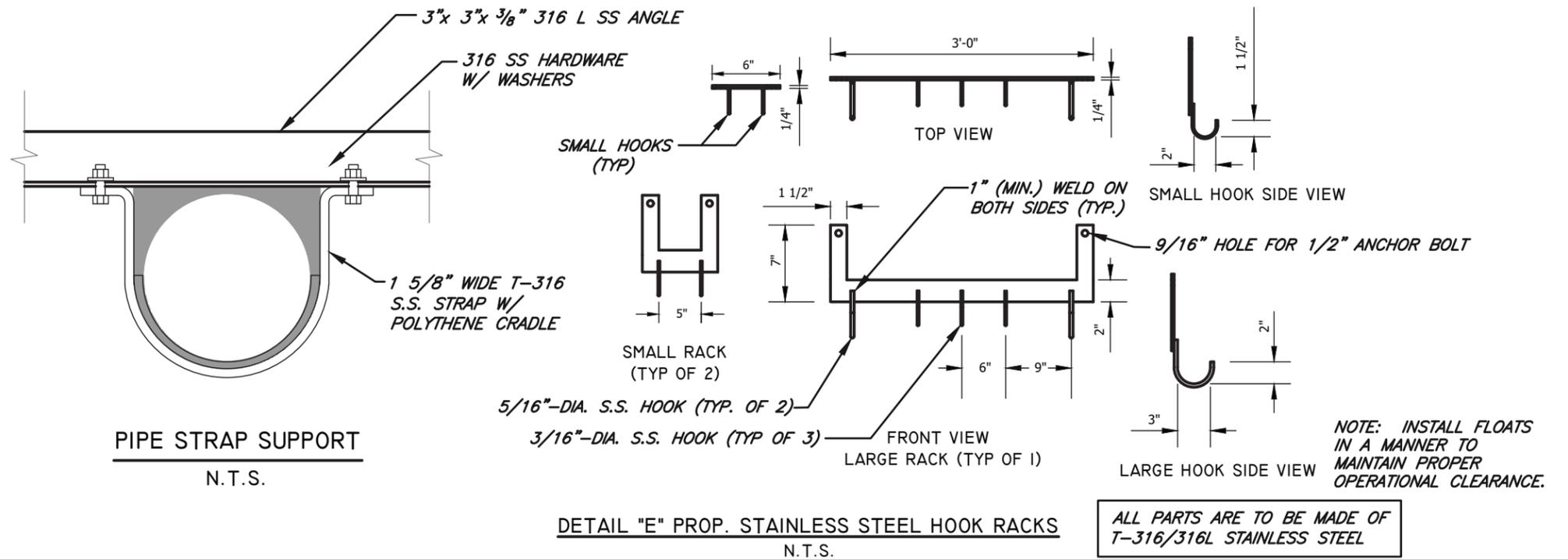
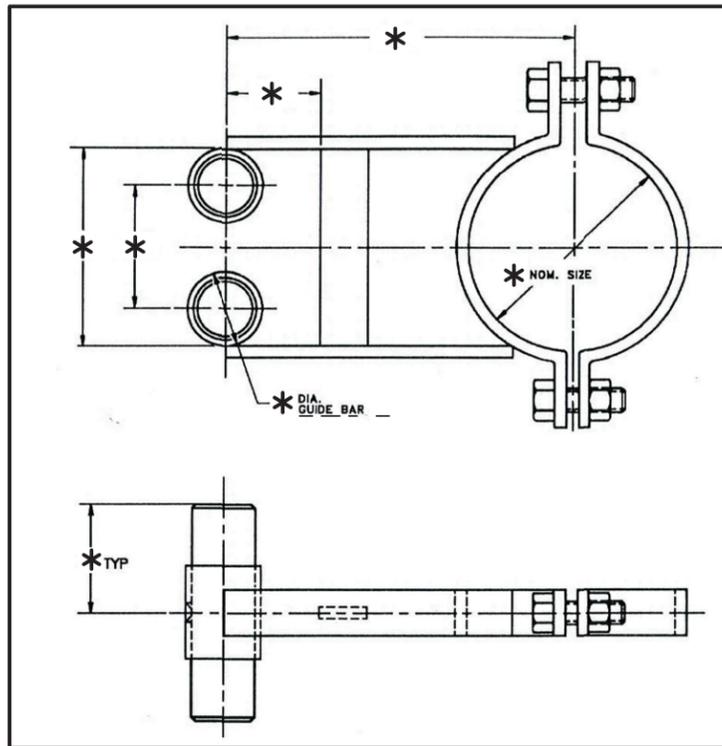
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CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION REHABILITATION
MISCELLANEOUS DETAILS AND SECTIONS

SHEET
10

B105-094



User: ssdk Drawing Name: K:\WasteWater\Projects\St Isabel PS Rehabilitation\Drafting\DWG\ST ISABEL PS.dwg Layout: Apr 29, 2019 3:18pm

JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS
	3		
	2		
	1		

DES: JH
DRN: MRL
CKD:
DATE:

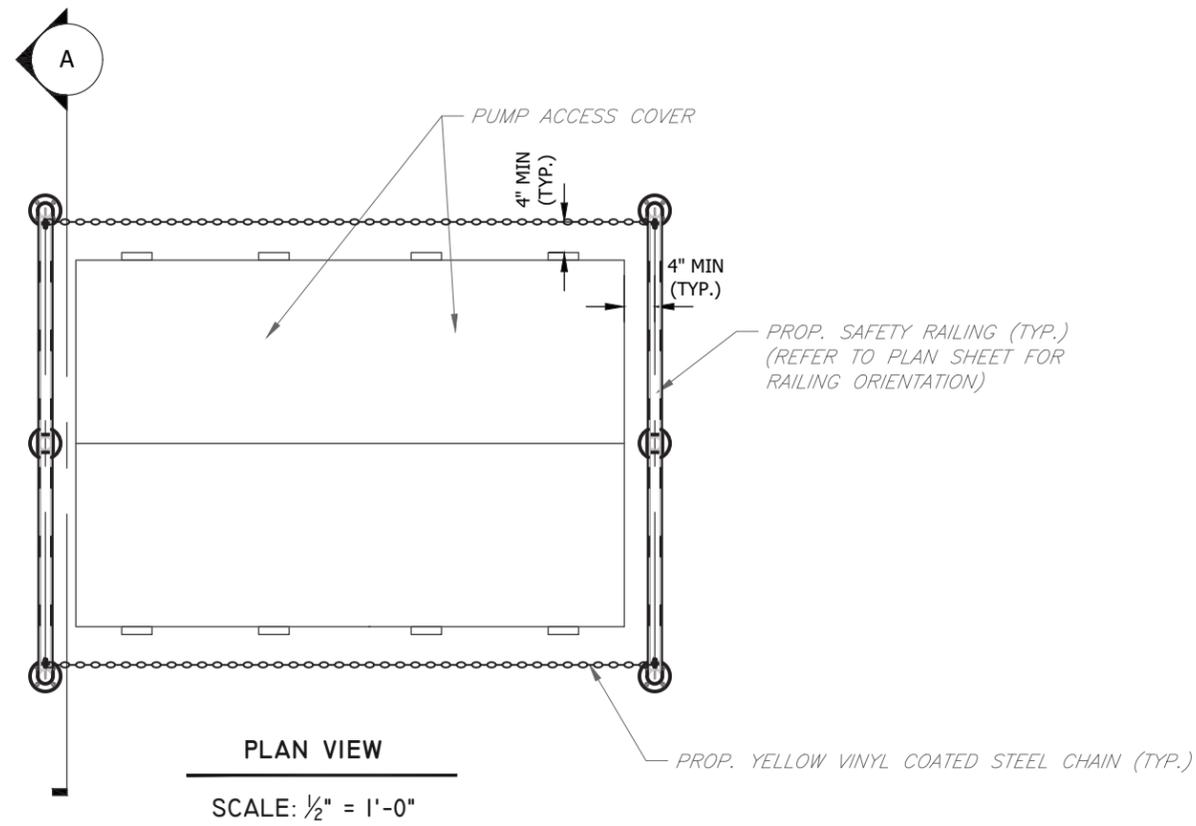
CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION REHABILITATION
MISCELLANEOUS DETAILS

SHEET
11

B105-095

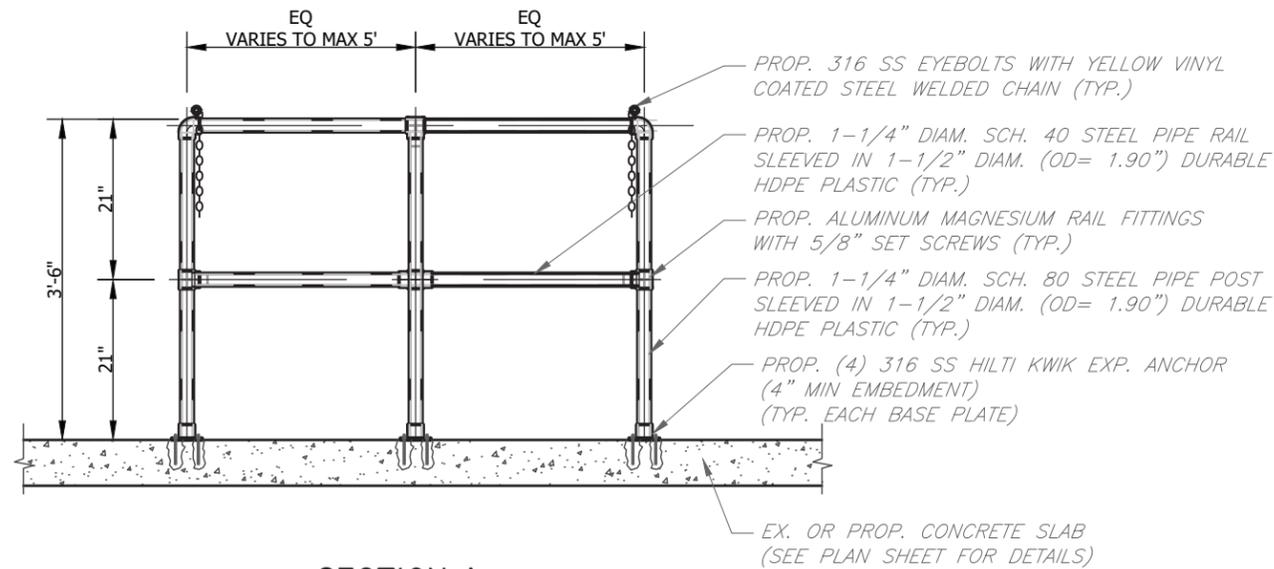
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 Layout: Apr 09, 2019 3:06:08 PM -- TOSHIBA_UNI_COLOR (NORTH WING)



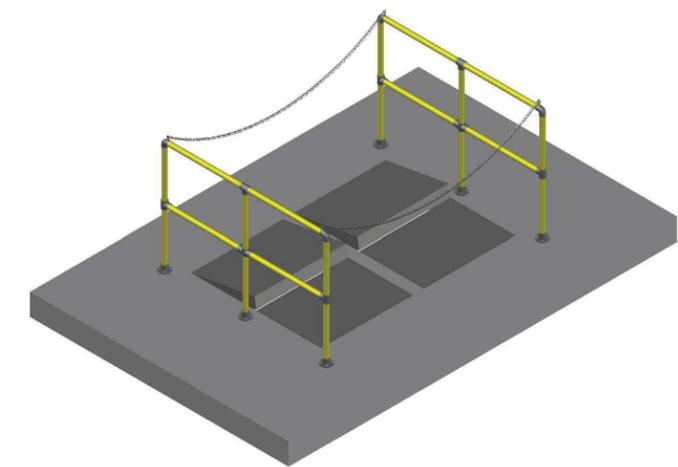
PLAN VIEW
 SCALE: 1/2" = 1'-0"

NOTES:

1. SAFETY RAILS AND PARTS SHALL BE STANDARD YELLOW, ULTRAVIOLET RESISTANT AND MANUFACTURED BY IDEAL SHIELD OR APPROVED EQUAL.
2. SAFETY CHAINS SHALL BE 1/4" DIAMETER WELDED YELLOW, ULTRAVIOLET RESISTANT, VINYL COATED STEEL WITH WORKING LOAD LIMIT OF 1,300 LBS WITH TWO 316 SS SPRING LOADED END SNAPHOOKS.



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



ISO VIEW
 SCALE: N.T.S.

No.	DATE	REVISIONS
3		
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DES: CB
 DRN: KLT
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CITY of TAMPA
 WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION REHABILITATION
 SAFETY GUARDRAIL DETAILS

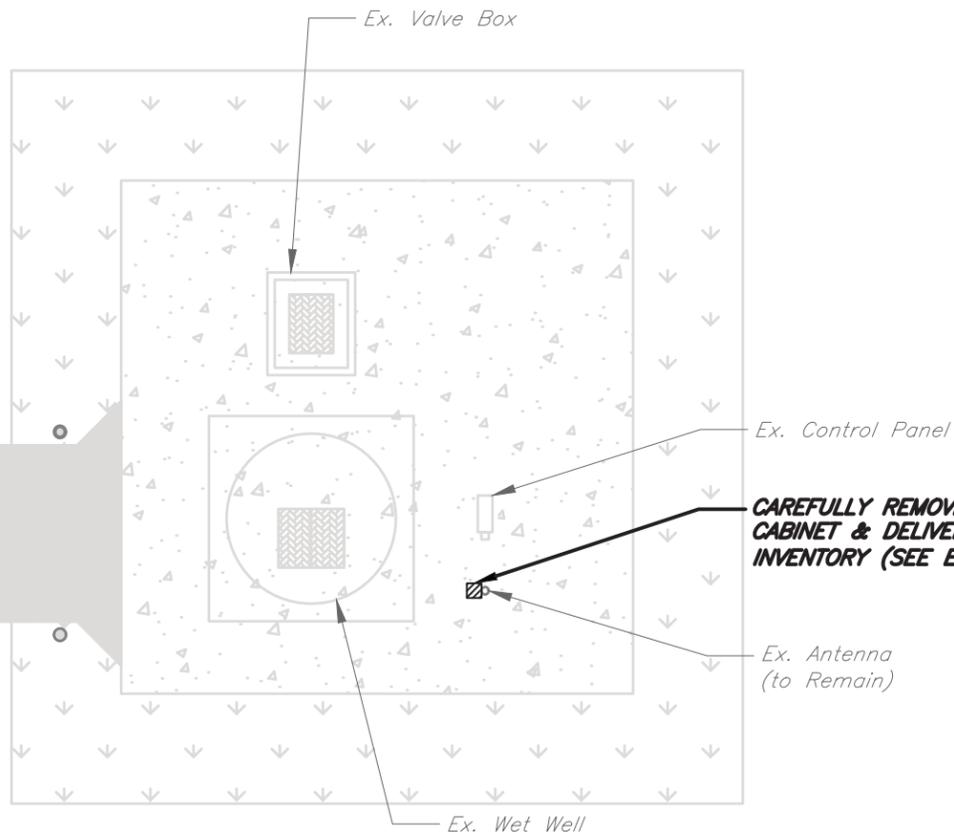
SHEET
 12

B105-096

SEC. 10 T29S R18E
ATLAS G-10

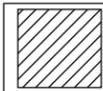
N. MACDILL AVE.

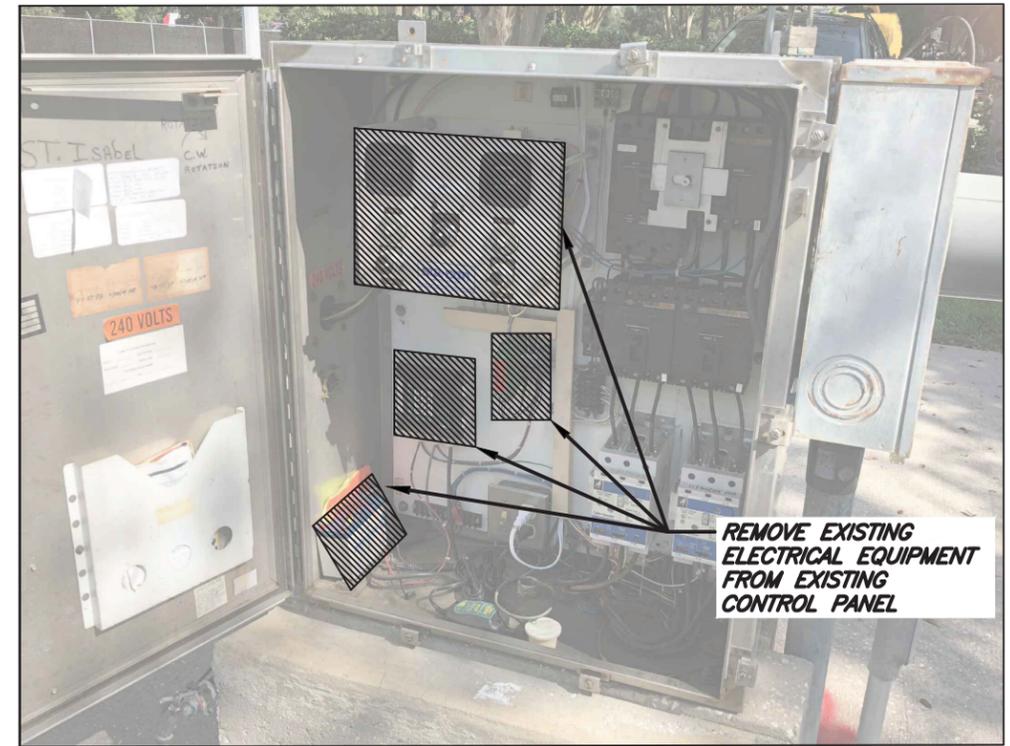
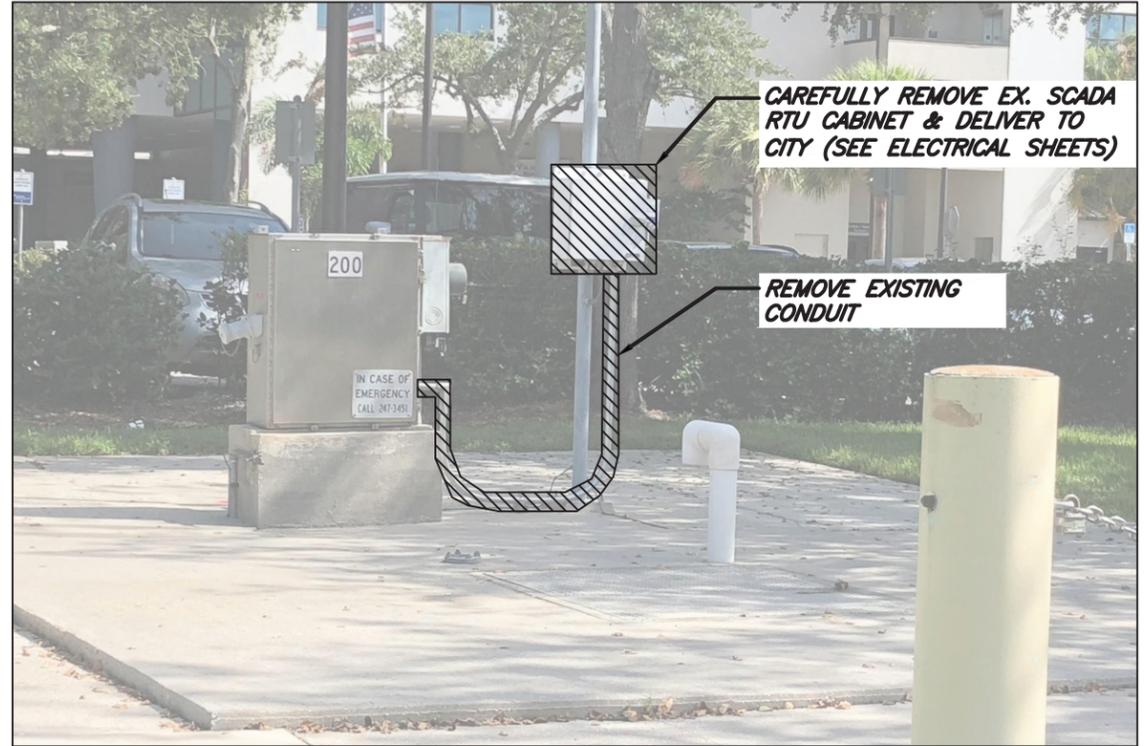
ST. ISABEL ST.



DEMOLITION PLAN VIEW

SCALE: 1" = 150'

 HATCHED AREAS ON THIS SHEET INDICATE PIPING AND EQUIPMENT TO BE REMOVED



DEMOLITION DETAILS

N.T.S.

No.	DATE	REVISIONS
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DES: KJG
DRN: KLT
CKD: ---
DATE: Apr-2019

CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION REHABILITATION
ELECTRICAL DEMOLITION PLAN & DETAILS

SHEET
EM1

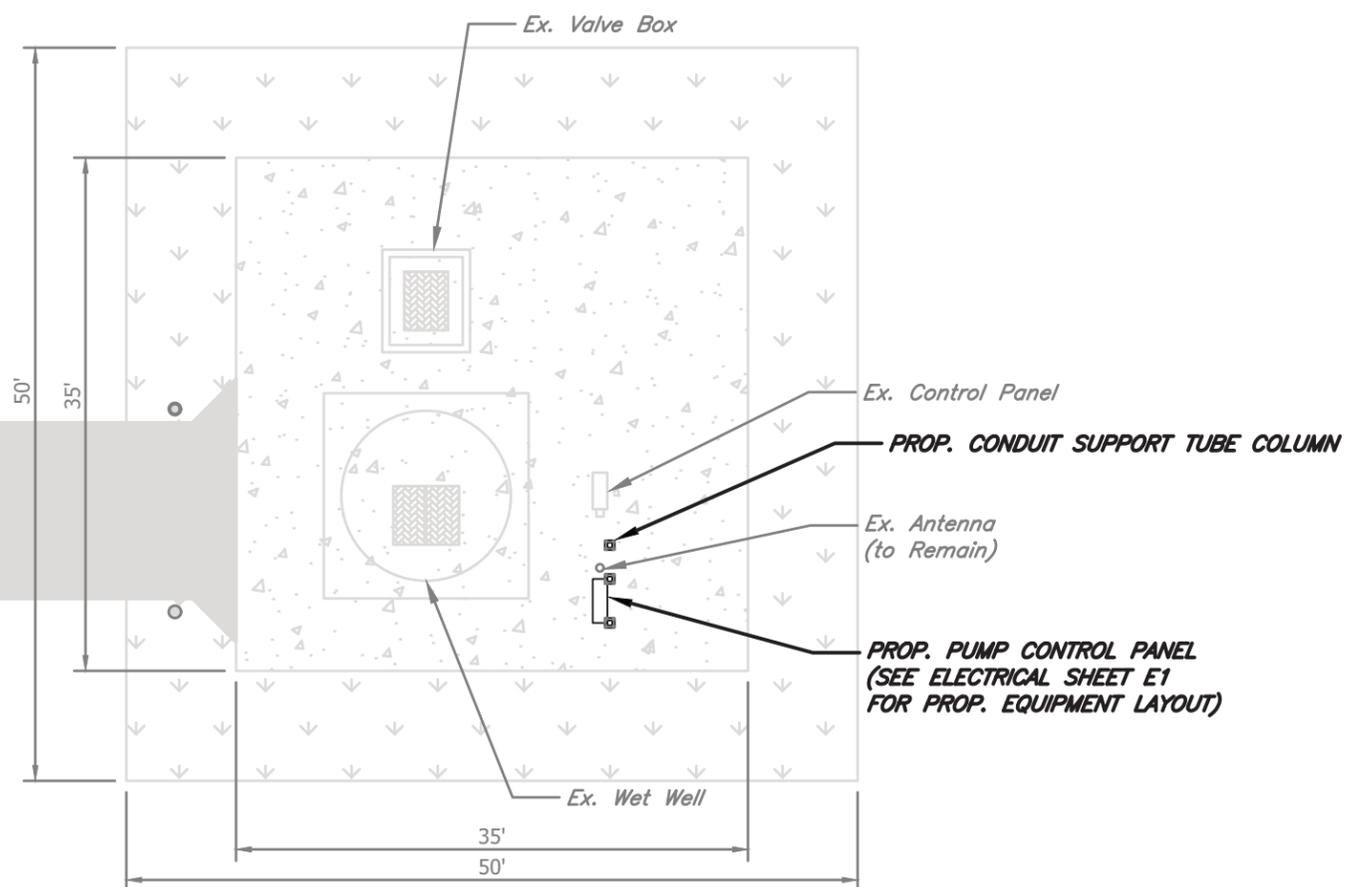
JACINTO CARLOS FERRAS, P.E. #49454
DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

B105-097

SEC. 10 T29S R18E
ATLAS G-10

N. MACDILL AVE.

ST. ISABEL ST.



PROPOSED PLAN VIEW
SCALE: 1" = 150'



PROP. CONDUIT SUPPORT TUBE COLUMN (SEE ELECTRICAL SHEETS)
PROP. PUMP CONTROL PANEL (SEE ELECTRICAL SHEET E1 FOR PROP. EQUIPMENT LAYOUT)

PROPOSED DETAILS
N.T.S.

JACINTO CARLOS FERRAS, P.E. #49454
DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
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DES: KJG
DRN: KLT
CKD: ---
DATE: Apr-2019

CITY of TAMPA
WASTEWATER DEPARTMENT

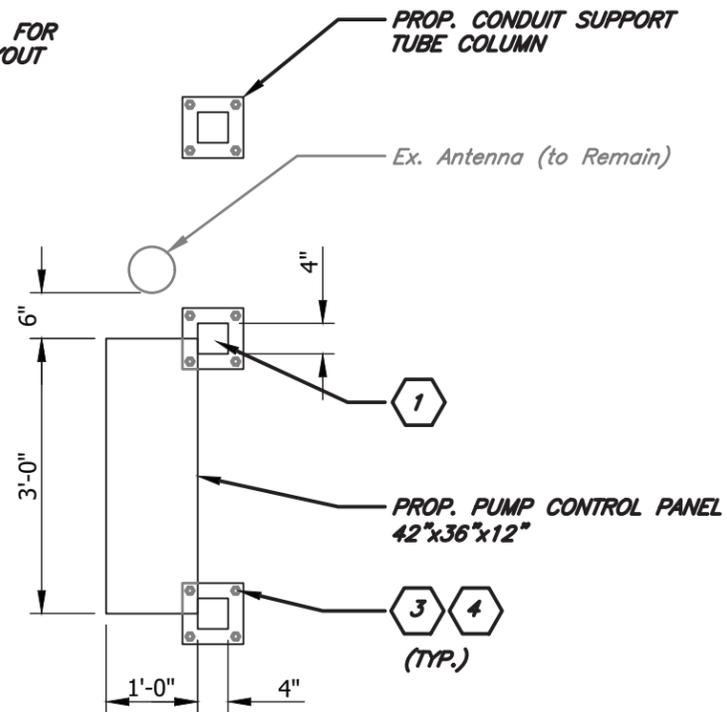
SAINT ISABEL PUMPING STATION REHABILITATION
ELECTRICAL PROPOSED SITE PLAN & DETAILS

SHEET
EM2

B105-098

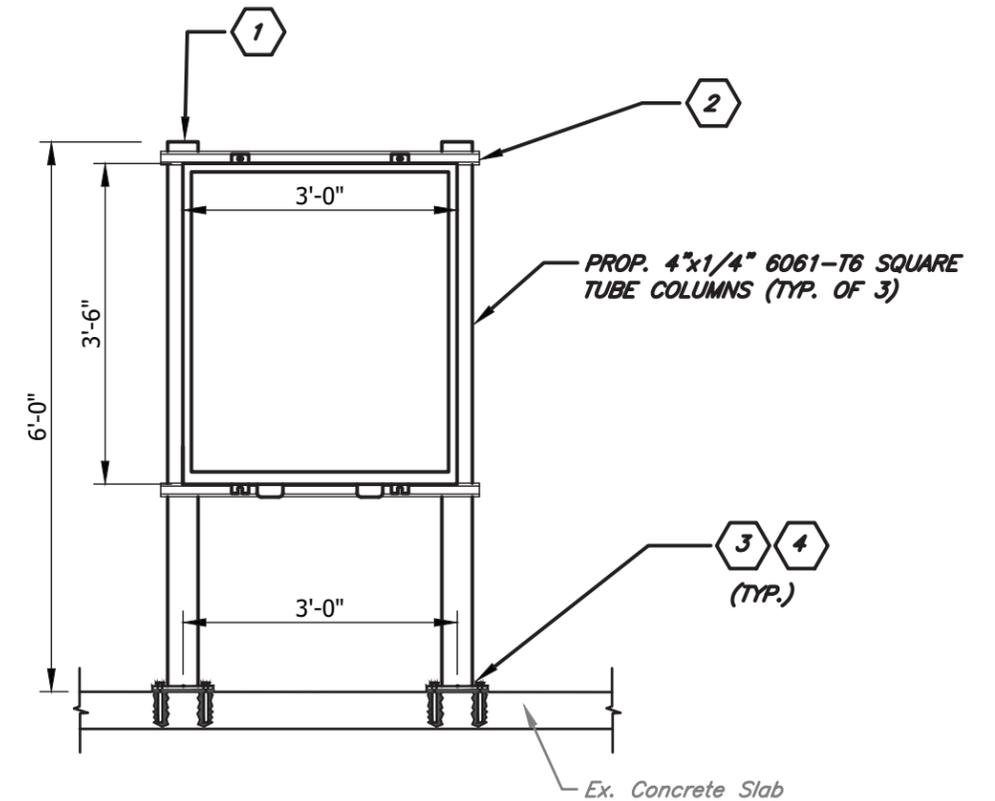
- KEYED NOTES:**
- ① PROVIDE AND INSTALL 4" SQUARE ALUMINUM POST WITH 1/2" WALL THICKNESS. WELD 1/4" CAP TO TOP OF EACH POST.
 - ② PROVIDE AND INSTALL 1-5/8" X 1-5/8" 316 STAINLESS STEEL UNISTRUT. ALL MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL. UNISTRUT BOLTS SHALL BE INSTALLED THROUGH POST.
 - ③ PROVIDE AND INSTALL 10" X 10" X 3/4" ALUMINUM BASE PLATE. SECURE EACH BASE PLATE TO CONCRETE W/ (4) STAINLESS STEEL 1/2" DIA. X 4" BOLTS & STAINLESS STEEL HEX NUTS WITH LOCKWASHER. DRILL CONCRETE & EMBED BOLTS AND ANCHORS IN EPOXY. COAT BOTTOM OF BASE PLATE WITH ASPHALT PAINT.
 - ④ PROVIDE FULL FILLET WELD TO BASE PLATE (TYP OF 3).

SEE ELECTRICAL SHEET E1 FOR PROPOSED EQUIPMENT LAYOUT



PROPOSED PLAN VIEW

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



PROPOSED ELEVATION VIEW

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

No.	DATE	REVISIONS
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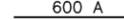
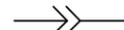
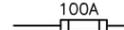
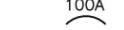
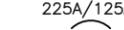
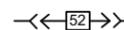
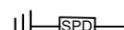
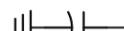
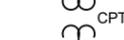
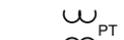
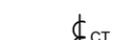
GENERAL NOTES

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2. ALL POWER CONDUCTORS SHALL BE STRANDED COPPER, #12 AWG MIN. W/ XHHW-2 INSULATION, UNLESS OTHERWISE NOTED.
3. ALL WIRING SHALL BE IDENTIFIED W/NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
4. VERIFY ALL MECHANICAL EQUIPMENT SIZES AND RATING PRIOR TO CONNECTING.
5. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
6. PLANS ARE DESIGNED IN ACCORDANCE WITH THE 6TH EDITION 2017 OF THE FLORIDA BUILDING CODE AND THE 2014 EDITION OF THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL ENSURE THAT ALL ELECTRICAL WORK PERFORMED SHALL ADHERE TO THE SAME ACCORDANCE AND ALL APPLICABLE LOCAL ORDINANCES.
7. ALL THREADED CONNECTIONS SHALL BE COATED W/ ALUMA-SHIELD ANTI-SIEZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & B) OR EQUAL.
8. ALL PANELS, DISCONNECTS, SWITCHES, AND EQUIPMENT COVERPLATES SHALL BE LABELED W/ NAMEPLATES. NAMEPLATES SHALL BE THREE-PLY PHENOLIC BLACK-WHITE-BLACK ENGRAVED THROUGH THE FIRST BLACK LAYER. LETTERING SHALL BE 0.5 CM (3/16") MIN. EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.
9. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'-0" INTERVALS.
10. ALL CIRCUITS SHALL HAVE A PROPERLY SIZED GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT W/ POWER CONDUCTORS.
11. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS, NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNED IN THE DRAWINGS.
12. NEATLY COIL ALL SPARE CONDUCTORS & TAPE W/ VINYL ELECTRICAL TAPE (SCOTCH 33+).
13. PROVIDE A MINIMUM OF 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE W/ ARTICLE 110 OF THE NEC.
14. ALL FASTENING HARDWARE (SCREW, BOLTS NUTS ETC.) SHALL BE 316-STAINLESS STEEL, FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.
15. EXPOSED CONDUITS SHALL BE NON-COATED RIGID ALUMINUM CONDUIT, UNLESS OTHERWISE NOTED (UON). INSTALL PVC COATED RIGID ALUMINUM CONDUIT TO THE WET WELL, UNLESS OTHERWISE NOTED (UON).
16. DIRECT BURIED AND CONCRETE ENCASED CONDUIT SHALL BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED. TRANSITIONS FROM ABOVE-GRADE RIGID ALUMINUM CONDUIT TO NONMETALLIC CONDUIT SHALL BE ACCOMPLISHED WITH A THREADED ADAPTER. RIGID ALUMINUM CONDUIT INSTALLED ABOVE GRADE AND EXTENDING BELOW GRADE SHALL INCLUDE THE FIRST 90° ELBOW. ALL RIGID ALUMINUM CONDUITS EXTENDING BELOW GRADE SHALL BE COATED WITH TWO COATS OF ASPHALTUM-TYPE PAINT ALONG ITS ENTIRE LENGTH BELOW GRADE AND EXTENDING 6" ABOVE GRADE OR ABOVE THE TOP OF THE FINISHED SLAB.
17. ABOVE GRADE INDOOR, AND NON-WASHDOWN AREAS, RIGID ALUMINUM CONDUIT CONNECTIONS TO CONTROL BOXES, ETC. SHALL BE MADE WITH ALUMINUM DOUBLE LOCKNUTS AND BUSHINGS. TURN DOWN ON THREADS TO SOLIDLY CONNECT RACEWAY TO BOX OR ENCLOSURE.
18. ALUMINUM WATERTIGHT HUBS (MYERS HUBS) SHALL BE USED FOR CONNECTIONS TO CONTROL BOXES, ETC. MOUNTED OUTDOORS, BELOW GRADE, OR WASHDOWN AREAS.
19. A 316-STAINLESS STEEL CHANNEL ERECTOR SYSTEM SHALL BE USED TO SUPPORT ALL CONDUITS, BOXES ETC. USE 316 STAINLESS STEEL MOUNTING HARDWARE.
20. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND MAKE ADJUSTMENTS AS NECESSARY TO EXECUTE THE PROPOSED INSTALLATIONS.
21. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
22. PULL BOXES SHALL BE INSTALLED AS NECESSARY TO FACILITATE WIRE PULLS AND AVOID EXCESSIVE PULLING TENSION ON WIRING. IN NO CASE SHALL CONDUIT LENGTHS EXCEED 150' OR THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) WITHOUT A PULL BOX. PULL BOXES SHALL BE SIZED IN ACCORDANCE WITH ARTICLE 314 OF THE NEC.

23. THE WET WELL CLASSIFICATION IS CLASS 1, DIVISION 1, GROUP D, (HAZARDOUS AREA) NEC CHAPTER 5 IS APPLICABLE FOR INTERFACING WET WELL AND THE CONTROL ENCLOSURE.
24. ALL ELECTRICAL WORK SHALL BE PERFORMED WITHIN 2014 NEC AND CITY OF TAMPA/ HILLSBOROUGH COUNTY CODES AND SHALL BE INSPECTED BY CITY OF TAMPA/ HILLSBOROUGH COUNTY ELECTRICAL INSPECTORS AS APPLICABLE.
25. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED AND AS SPECIFIED, OR AS APPROVED BY THE ENGINEER. THE PANEL BUILDER SHALL BE UL-508A CERTIFIED AND A UL LABEL SHALL BE ATTACHED TO THE INSIDE OF THE ENCLOSURE. THE DOUBLE THROW DISCONNECT MUST BE LABELED "SUITABLE FOR USE AS SERVICE EQUIPMENT."
26. THE ENCLOSURES SHALL BE NEMA 4X, THEY SHALL BE CONSTRUCTED OF MINIMUM 14 GAUGE 304SS, THEY SHALL HAVE RAL 9003 WHITE POWDER COAT AND THE CLOSING SURFACES SHALL HAVE ROLLED LIPS, PROVIDE HINGED DOORS WITH 3-POINT LATCH AND LOCKABLE HANDLES.
27. ALL COMPONENTS TO BE MOUNTED ON PANEL USING TAPPED HOLES.
28. ALL CONTROL WIRING SHALL BE STRANDED XHHW-2 COPPER, MINIMUM AWG #14 AND SHALL HAVE SPADE LUG TERMINATIONS.
29. ALARM FLOAT SWITCH WILL BE SUPPLIED BY THE CITY, BUT INSTALLED BY CONTRACTOR.
30. DIMENSIONS, ITEMS, OR ELEVATIONS MARKED "*" TO BE DETERMINED AFTER EQUIPMENT SELECTION.
31. ALL MECHANICAL CONNECTORS SHALL BE TORQUED PER NEC, UL OR MANUFACTURES SPECIFICATIONS.
32. INSTALL LAMINATED SCHEMATIC, LAMINATED DATA SHEET AND LAMINATED SOFT STARTER SETUP PARAMETERS ON BACK FACE OF THE DOOR INSIDE THE ENCLOSURE.
33. ENSURE THAT LINE CONNECTIONS TO METER SOCKET PROVIDE CORRECT MOTOR ROTATION.
34. CONDUCTORS WITHIN THE ENCLOSURE AND NOT ROUTED IN WIREWAYS, SHALL BE SECURED TO THE BACK PANEL WITH MECHANICAL FASTENERS, FASTENERS SECURED WITH ADHESIVE ARE NOT ACCEPTABLE.
35. ALL HINGED SURFACES SHALL BE GROUNDED WITH A BONDING JUMPER SECURED TO THE ENCLOSURE OR BACKPANEL.
36. THE PUMP CONTROL PANEL SHALL BE FACTORY TESTED. THE CONTRACTOR SHALL PROVIDE A CERTIFIED TESTING REPORT DETAILING THE TESTS MADE AND THAT THE EQUIPMENT IS IN WORKING ORDER. A COPY OF THE REPORT SHALL BE PROVIDED TO THE CITY PRIOR TO DELIVERY AND A COPY SHALL BE INCLUDED WITH THE CONTROL PANELS AT AT THE TIME OF DELIVERY.
37. A WET WELL LEVEL DETECTION SYSTEM SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. THE OUTPUT SHALL BE A LINEAR 4-20mA SIGNAL WITH RANGE AND CALIBRATION SUITABLE FOR THIS APPLICATION. THE SYSTEM SHALL BE OF THE ULTRASONIC TYPE-PULSAR, INC. MODEL dB10 W/ BLACKBOX 130 TRANSMITTER. CITY INSTRUMENTATION PERSONNEL WILL ASSIST THE CONTRACTOR WITH SPECIFYING THE TRANSDUCER MOUNTING LOCATION AND CALIBRATION. THE dB10 TRANSDUCER SHALL BE MOUNTED USING A 2 1/2" x 1/4" S.S. BRACKET, SEE dB10 MOUNTING BRACKET DETAIL, SHEET E7.
40. PROVIDE LEXAN SHIELDS OVER POWER DISTRIBUTION BLOCK EXPOSED CABLE TERMINATIONS.
41. ALUMINUM CONDUIT SURFACES THAT ARE IN CONTACT WITH SOIL OR CONCRETE SHALL BE COATED WITH TWO COATS ASPHALT VARNISH (FED. SPEC. TT-V-51) EXTENDING 4" BEYOND FINAL CONTACT POINT.
42. STAINLESS STEEL HANGERS TO SUPPORT THE EXCESS LENGTH OF MOTOR CABLES SHALL BE INSTALLED IN THE WET WELL. THESE HANGERS SHALL BE LOCATED IN A SEPARATE AREA FROM THE HANGERS SUPPORTING THE PUMP CHAINS.

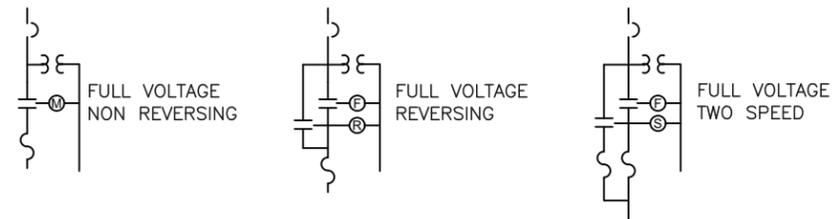
ELECTRICAL DRAWING INDEX	
SHEET No.	SHEET TITLE
EG1	DRAWING INDEX & GENERAL NOTES
EG2	SYMBOLS LEGEND (SHT. 1 OF 2)
EG3	SYMBOLS LEGEND (SHT. 2 OF 2)
EG4	ELECTRICAL SCOPE OF WORK
E1	ELECTRICAL PLAN AND SECTION
E2	ONE-LINE DIAGRAM
E3	EXISTING CONTROL PANEL MODIFICATIONS
E4	MODIFICATIONS TO EXITING MOTOR CONTROL (MCP) SCHEMATIC
E5	MOTOR CONTROL PANEL (MCP) TB3 & TB4 DETAILS
E6	PUMP CONTROL PANEL (PCP) LAYOUT
E7	PUMP CONTROL PANEL (PCP) SCHEMATIC (1 OF 2)
E8	PUMP CONTROL PANEL (PCP) SCHEMATIC (2 OF 2)
E9	PUMP CONTROL PANEL (PCP) PARTS SCHEDULE
E10	PUMP CONTROL PANEL (PCP) TBI & TB2 DETAILS
E11	MCP TO PCP INTERCONNECTION DIAGRAM
E12	ELECTRICAL DETAILS
E13	KEYED NOTES FOR SHTS. E1-E12

ONE LINE DIAGRAM SYMBOLS

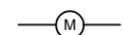
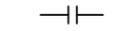
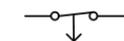
-  600 A BUS-RATING AS SHOWN
-  INCOMING LINE
-  OUTCOMING LINE
-  DISCONNECTING DEVICE
-  CONDUCTORS CONNECTED
-  CONDUCTORS NOT CONNECTED
-  100A FUSE-RATING AS SHOWN
-  100A SINGLE THROW DISCONNECT SWITCH-RATING AS SHOWN
-  100A/70A FUSED DISCONNECT SWITCH-100A SWITCH, 70A FUSE
-  100A LOW VOLTAGE AIR CIRCUIT BREAKER WITHOUT TRIP DEVICE 100A FRAME
-  225A/125A LOW VOLTAGE AIR CIRCUIT BREAKER WITH 225A FRAME AND 125A TRIP
-  ←←[52]→→ MEDIUM VOLTAGE DRAWOUT TYPE AIR CIRCUIT BREAKER
-  GROUND CONNECTION
-  SPD LIGHTNING OR SURGE ARRESTOR
-  SURGE CAPACITOR
-  POWER TRANSFORMER WITH WINDING CONNECTIONS INDICATED
-  CPT CONTROL POWER TRANSFORMER
-  PT POTENTIAL TRANSFORMER
-  CT CURRENT TRANSFORMER

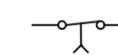
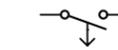
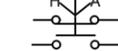
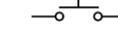
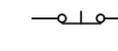
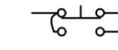
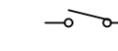
-  THERMAL OVERLOAD ELEMENT (OL)
-  (S) SQUIRREL CAGE MOTOR (INDICATE HORSEPOWER)
-  (G) GENERATOR
-  (R) INDICATING LIGHT (R-RED, G-GREEN, A-AMBER, B-BLUE, W-WHITE)

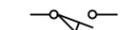
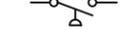
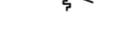
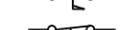
COMBINATION STARTER WITH CONTROL TRANSFORMERS AND OVERLOAD RELAYS AND MOTOR CIRCUIT PROTECTOR



SCHEMATIC AND WIRING DIAGRAM SYMBOLS

-  OPERATING COIL
-  NORMALLY OPEN CONTACT (N.O.)
-  NORMALLY CLOSED CONTACT (N.C.)
-  NORMALLY OPEN CONTACT WITH TIME DELAY CLOSING (ON-DELAY)
-  INSTANT OPEN- TIME DELAY CLOSED CONTACT (OFF DELAY)
- M-MOTOR STARTER
- C- CONTACTOR
- F- FORWARD
- R- REVERSE
- AR- AUXILIARY RELAY
- CR- CONTROL RELAY
- TR- TIME DELAY RELAY

-  NORMALLY CLOSED CONTACT WITH TIME DELAY OPENING (ON-DELAY)
-  INSTANT CLOSE- TIME DELAY OPEN CONTACT (OFF DELAY)
-  INDICATING LIGHT- PUSH TO TEST (R-RED, G-GREEN, A-AMBER, B-BLUE, W-WHITE)
-  3-POSITION SELECTOR SWITCH (SHOWN IN "H" POS.)
-  NORMALLY OPEN PUSHBUTTON-MOMENTARY CONTACT
-  NORMALLY CLOSED PUSHBUTTON-MOMENTARY CONTACT
-  DOUBLE CIRCUIT PUSHBUTTON WITH SPRING RETURN TO NORMAL
-  TRANSFORMER
-  OL OVERLOAD RELAY CONTACT
-  THERMAL OVERLOAD ELEMENT (OL)
-  ON-OFF SWITCH
-  (G) GROUND BUS
-  (N) NEUTRAL BUS (INSULATED)
-  SINGLE-POLE CIRCUIT BREAKER

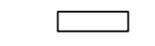
- | | |
|---|---|
| NORMALLY OPEN N.O.
 LIMIT SWITCH
 FLOAT SWITCH
 PRESSURE SWITCH
 FLOW SWITCH
 TEMPERATURE | NORMALLY CLOSED N.C.
 LIMIT SWITCH
 FLOAT SWITCH
 PRESSURE SWITCH
 FLOW SWITCH
 TEMPERATURE |
|---|---|

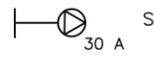
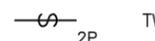
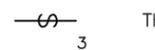
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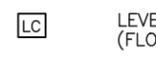
THE SYMBOLS SHOWN COMPRISE A GENERAL LEGEND TO FACILITATE THE USE OF PLANS. REFER TO THE PLANS AND SPECIFICATIONS FOR ITEMS REQUIRED.

No.	DATE	REVISIONS
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POWER AND LIGHTING SYMBOLS

-  EXPOSED CONDUIT RUN
-  CONDUIT RUN CONCEALED IN FLOOR OR UNDERGROUND
-  CONDUIT RUN CONCEALED IN WALLS, ABOVE SUSPENDED CEILING, OR IN ROOF SLAB
-  CONDUIT WITH HOT, NEUTRAL AND GROUND WIRES (LONG LINE IS NEUTRAL; LONG LINE WITH DOTS DENOTE GROUND)
-  HOMERUN TO LIGHTING PANELBOARD (PNL-1 INDICATES PANELBOARD AND 1, 3, 5 INDICATES 20A-1P CKTS. 1, 3 AND 5)
-  FLEXIBLE LIQUIDTIGHT CONDUIT
-  CONDUIT-UP (OR TOWARDS VIEWER)
-  CONDUIT-DOWN (OR AWAY FROM VIEWER)
-  GROUNDING CONDUCTOR
-  GROUND ROD
-  LIGHTNING ROD
-  CEILING MOUNTED INCANDESCENT OR MERCURY VAPOR FIXTURE. "A" INDICATES FIXTURE TYPE LISTED IN SCHEDULE
-  WALL MOUNTED LIGHTING FIXTURE
-  EXIT SIGN
-  EMERGENCY INCANDESCENT OR MERCURY VAPOR LIGHTING FIXTURE
-  FLUORESCENT FIXTURE
-  EMERGENCY FLUORESCENT FIXTURE

-  POLE MOUNTED LIGHTING FIXTURE
 -  DUPLEX RECEPTACLE- 20 A, 120 V, 3 WIRE (TO PNL- CIRCUIT No.4)
 -  SINGLE RECEPTACLE - 2 POLE, 3 WIRE, 240V, RATING NOTED
 -  3 POLE, 4 WIRE, 240V WELDING OUTLET (60 A)
 -  SINGLE POLE SWITCH
 -  TWO POLE SWITCH
 -  THREE WAY SWITCH
 -  OUTLET BOX WITH BLANK COVER
 -  JUNCTION BOX
 -  PULL BOX
 -  TERMINAL BOX
- ### GENERAL SYMBOLS
-  START-STOP PUSHBUTTON
 -  ON-OFF MAINTAINED CONTACT PUSHBUTTON WITH LOCK ATTACHMENT
 -  INDICATING LIGHT AND START-STOP PUSHBUTTON WITH LOCK ATTACHMENT ON STOP
 -  PUSH/PULL BUTTON WITH STOP LOCK. (PULL TO RESUME- PUSH TO STOP)
 -  SELECTOR SWITCH ("HOA" INDICATES HAND, OFF, AND AUTO; "MOR" INDICATES MANUAL, OFF, AND REMOTE; ETC)
 -  ON-OFF SWITCH WITH LOCK ATTACHMENT ON OFF POSITION

-  FLOW SWITCH
-  LIMIT SWITCH
-  PRESSURE SWITCH
-  SOLENOID OPERATED VALVE
-  TEMPERATURE SWITCH
-  FLOAT SWITCH
-  LEVEL TRANSMITTER (PRESSURE ANALOG TYPE)
-  LEVEL TRANSMITTER (FLOAT TYPE)
-  TEMPERATURE TRANSMITTER
-  FLOW TRANSMITTER
- MH DESIGNATES MOUNTING HEIGHT
- WP DESIGNATES WATERPROOF EQUIPMENT
- XP DESIGNATES EXPLOSIONPROOF EQUIPMENT
- MOV DESIGNATES MOTOR OPERATED VALVE
- EX. DESIGNATES EXISTING EQUIPMENT
- PROP. DESIGNATES PROPOSED EQUIPMENT

NOTE:
THE SYMBOLS SHOWN COMPRISE A GENERAL LEGEND TO FACILITATE THE USE OF PLANS. REFER TO THE PLANS AND SPECIFICATIONS FOR ITEMS REQUIRED.

SCOPE OF WORK:

1. SUBMIT WORKING DRAWINGS, PARTS SCHEDULES, AND CUT-SHEETS TO THE ENGINEER.
2. FURNISH AND INSTALL ALL ELECTRICAL EQUIPMENT, CONTROLS, AND INSTRUMENTATION AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

3. GENERAL DESCRIPTION

EXISTING CONDITIONS:

- a. THE EXISTING PUMPING STATION CONTROLS CONSIST OF A PEDESTAL-MOUNTED STAINLESS STEEL ENCLOSURE THAT HOUSES FACILITIES FOR ELECTRICAL SERVICE ENTRANCE; SEWAGE PUMP MOTOR STARTING; WET WELL LEVEL CONTROL; AND OTHER CONTROLS.
- b. ALSO EXISTING IS A SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) REMOTE TELEMETRY UNIT (RTU) MOUNTED ON THE ANTENNA MAST LOCATED ADJACENT TO THE EXISTING CONTROLS ENCLOSURE.

THE PROPOSED ELECTRICAL CONFIGURATION CONSISTS OF THE FOLLOWING EQUIPMENT:

- a. A MOTOR CONTROL PANEL (MCP) WHICH INCLUDES FACILITIES FOR ELECTRICAL SERVICE ENTRANCE; SEWAGE PUMP MOTOR STARTING AND PROTECTION; ELECTRICAL POWER MONITORING; AND CONTROL POWER DISTRIBUTION. THE EXISTING PEDESTAL-MOUNTED PUMPING STATION CONTROL ENCLOSURE / PANEL SHALL BE MODIFIED AS SHOWN, SPECIFIED, AND REQUIRED TO SERVE AS THE PROPOSED MCP.
- b. A SEPARATE PUMP CONTROL PANEL (PCP) WHICH INCLUDES FACILITIES TO MONITOR WET WELL LEVEL; CONTROL SEWAGE PUMPS OPERATION; AND PROVIDE FULL-FEATURED WIRELESS SCADA. THE PCP IS OF OUR CURRENT STANDARD DESIGN AND IS AVAILABLE THROUGH THE SEWAGE PUMP MANUFACTURER--FLYGT / XYLEM. THE PCP SHALL BE PROVIDED AND INSTALLED AS SHOWN, SPECIFIED AND REQUIRED BY THE CONTRACTOR. THE CONTRACTOR SHALL ENLIST THE SERVICES OF THE PUMP MANUFACTURER'S REPRESENTATIVE DURING PUMPING STATION START-UP.

4. THE FOLLOWING TASKS SHALL BE PERFORMED BY THE CONTRACTOR:

- a. CAREFULLY REMOVE THE EXISTING SCADA RTU CABINET MOUNTED ON THE EXISTING SCADA ANTENNA MAST. DELIVER THIS RTU PACKAGE TO THE CITY FOR MAINTENANCE INVENTORY.
- b. PROVIDE AND INSTALL THE PROPOSED PUMP CONTROL PANEL (PCP) ADJACENT TO THE EXISTING ANTENNA MAST USING ALUMINUM STANCHIONS AND STRUT CHANNEL AS SHOWN, SPECIFIED AND REQUIRED.
- c. MAKE MODIFICATIONS TO THE EXISTING PEDESTAL-MOUNTED CONTROL ENCLOSURE / PANEL AS SHOWN, SPECIFIED, AND REQUIRED.
- d. RUN CONDUITS BETWEEN THE NEW PCP AND MODIFIED MCP AS SHOWN, SPECIFIED, AND REQUIRED.
- e. THE EXISTING ANTENNA MAST AND ANTENNA SHALL BE REUSED. THE CONTRACTOR SHALL PROVIDE AND INSTALL NEW ANTENNA CABLE EQUAL IN QUALITY AND CHARACTERISTICS TO THE EXISTING ANTENNA CABLE. PROVIDE AND INSTALL A NEW CONDUIT BETWEEN THE PCP AND ANTENNA MAST.
- f. CALIBRATE AND ADJUST SETPOINTS AND ALL SENSING DEVICES, ALARM DEVICES, AND TIMERS. CALIBRATIONS AND SETPOINTS SHALL BE PROVIDED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- g. PROVIDE FOR PROPER GROUNDING AS SHOWN, SPECIFIED, AND REQUIRED.
- h. PROVIDE AND INSTALL ALL NECESSARY CONDUITS AND CONDUCTORS AS SHOWN, SPECIFIED AND REQUIRED.
- i. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH 2014 EDITION OF THE NATIONAL ELECTRIC CODE AND CHAPTER 5 OF THE CITY OF TAMPA CODE.
- j. REFER TO CIVIL/MECHANICAL SHEETS FOR BYPASS PUMPING REQUIREMENTS. IF ELECTRICALLY DRIVEN BYPASS PUMPS ARE UTILIZED. THE CONTRACTOR SHALL COORDINATE ALL TEMPORARY ELECTRICAL SERVICE REQUIREMENTS WITH TAMPA ELECTRIC COMPANY (TECO). ANY COSTS ASSOCIATED WITH THE TEMPORARY ELECTRIC POWER ARE TO BE INCLUDED IN THE LUMP SUM PRICE AND NO SEPARATE PAYMENT WILL BE MADE.

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

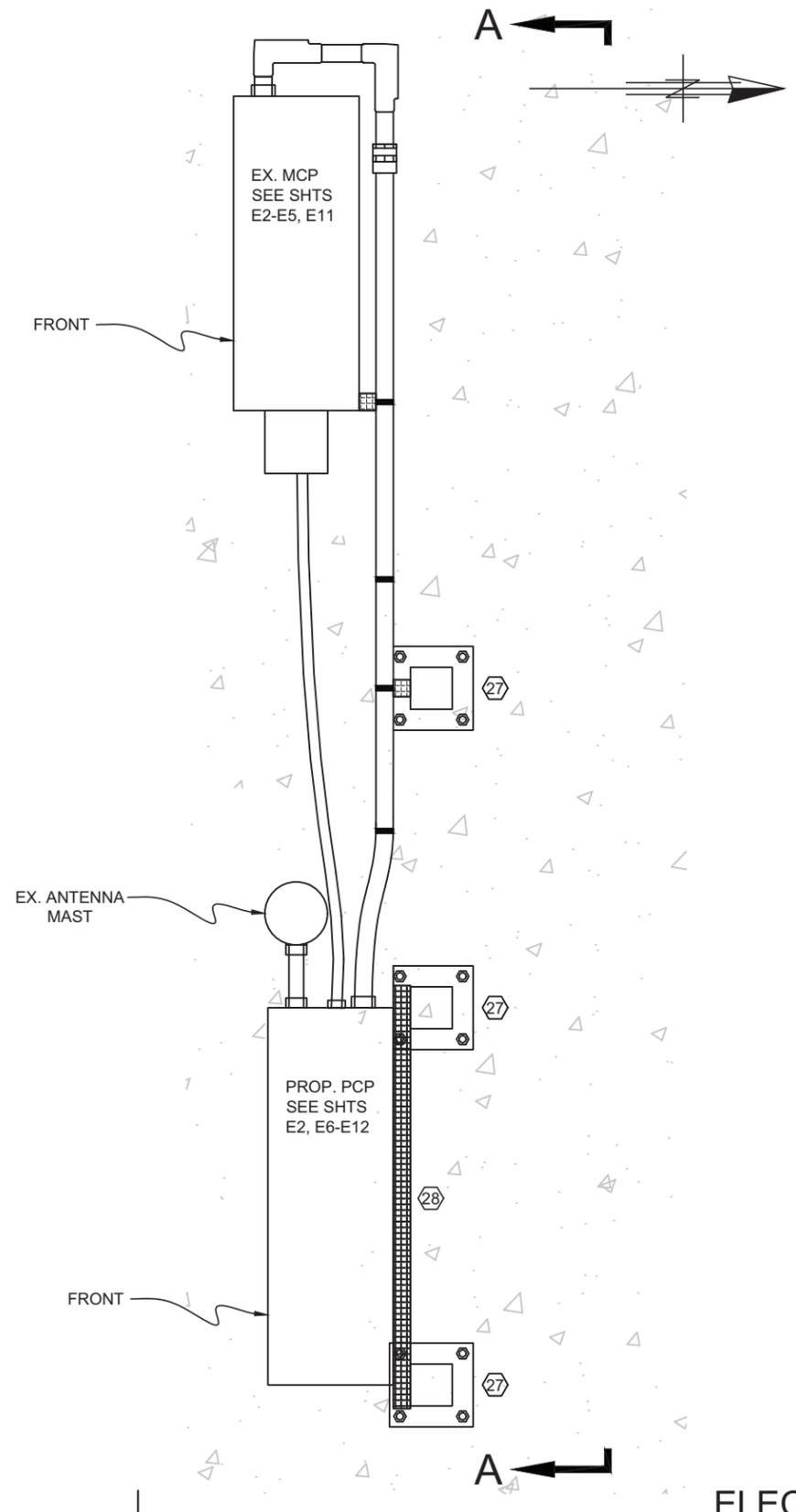
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CITY of TAMPA
WASTEWATER DEPARTMENT

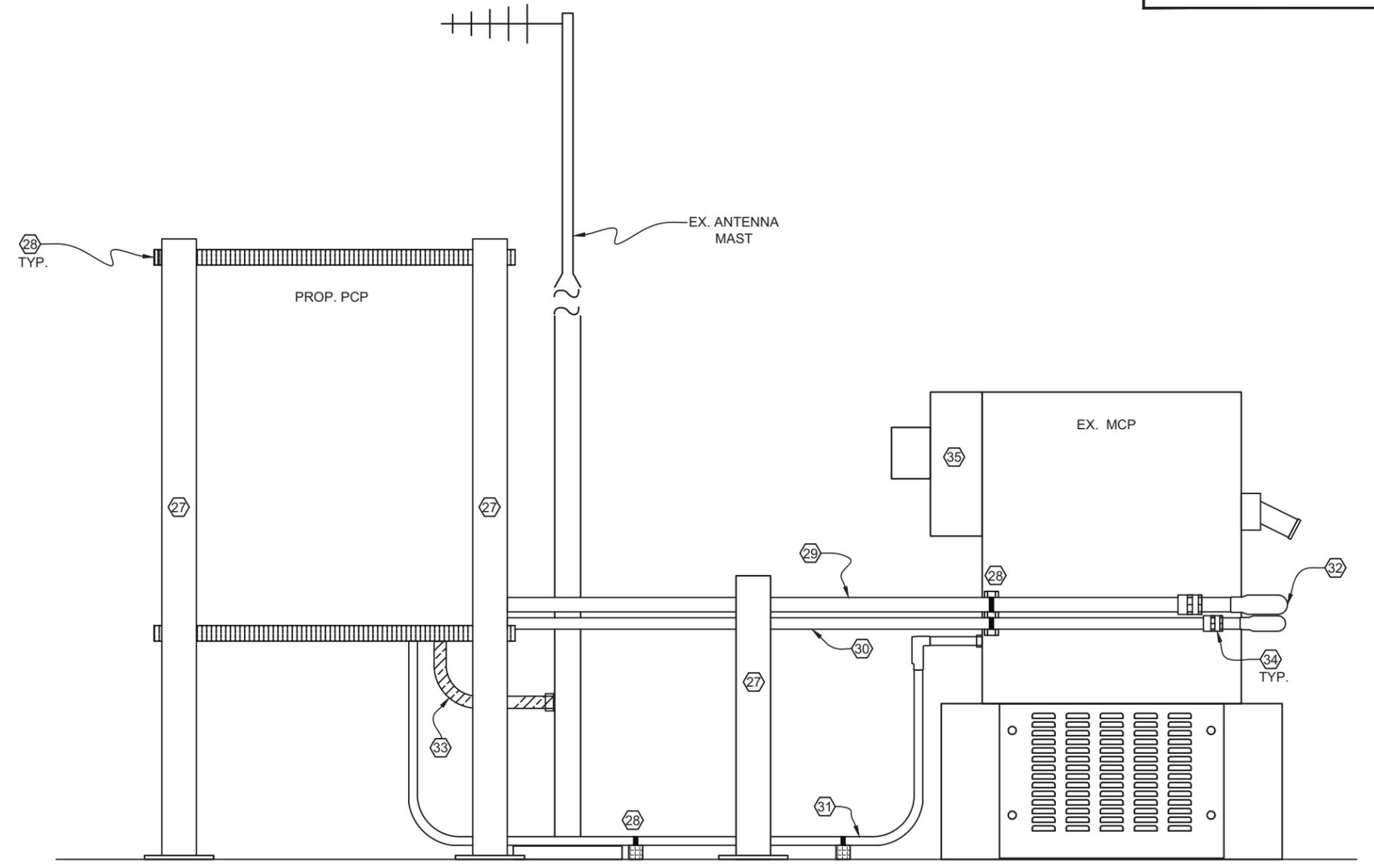
SAINT ISABEL PUMPING STATION
ELECTRICAL SCOPE OF WORK

W.O. 0000
SHEET
EG4



ELECTRICAL PLAN

3/4" = 1' - 0"



SECTION A-A

3/4" = 1' - 0"

⬡ KEYED NOTES ARE LISTED ON SHEET E13

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

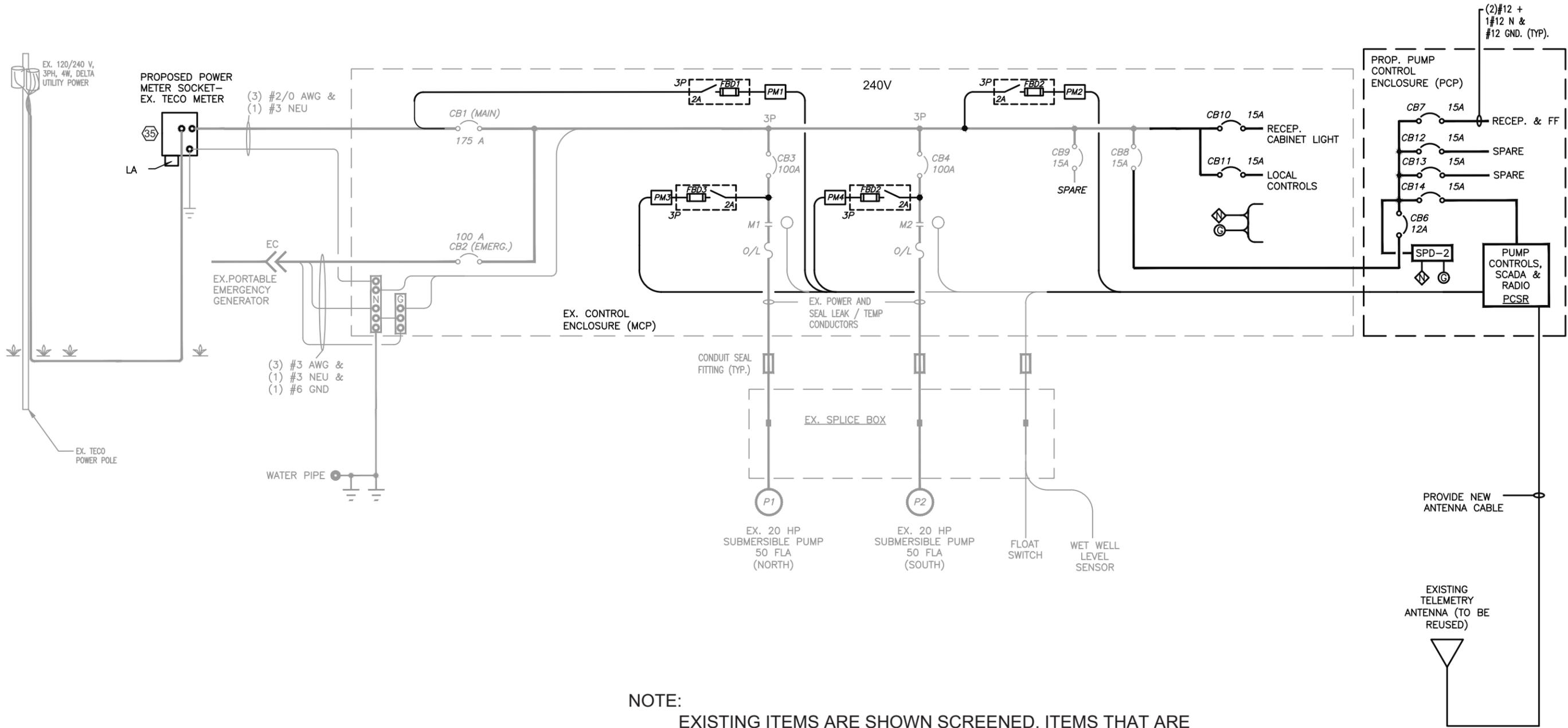
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CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION
ELECTRICAL PLAN AND SECTION

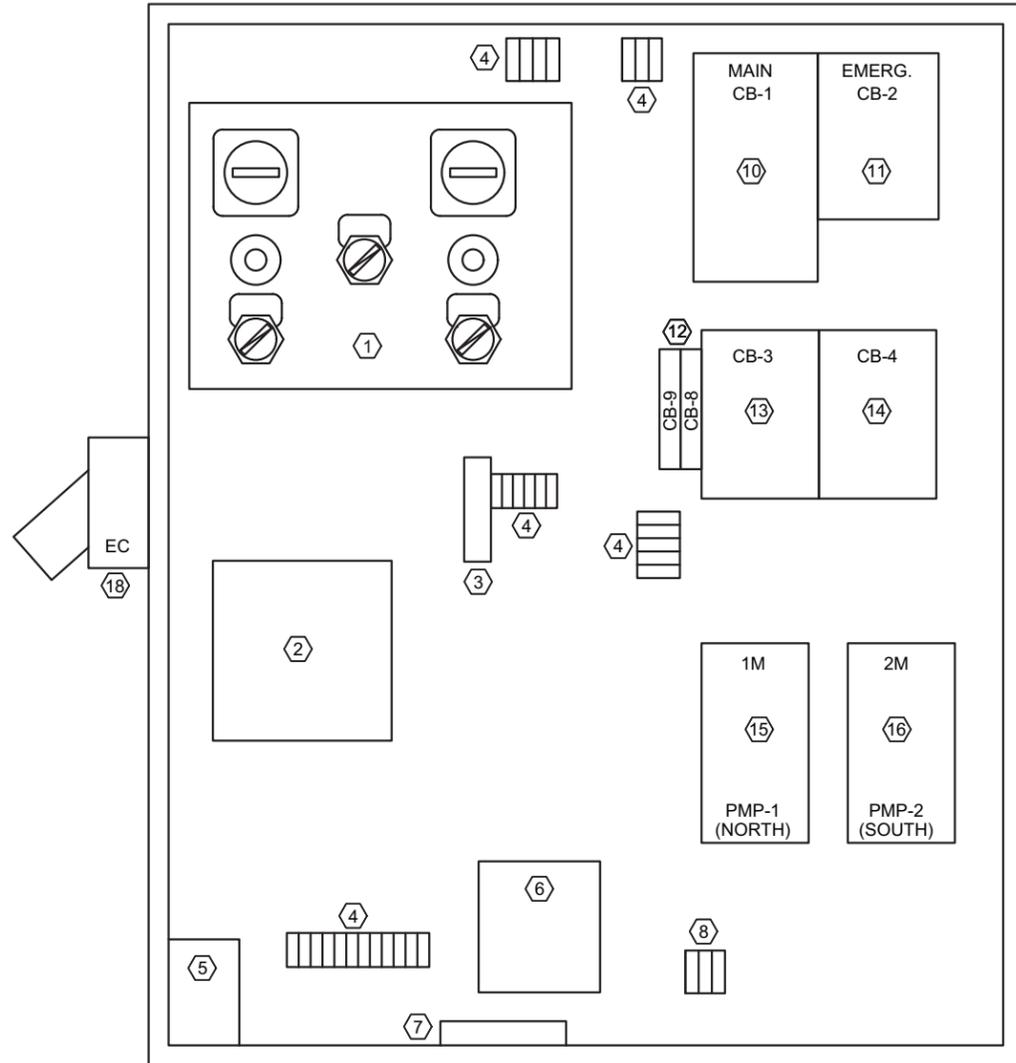
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EI



NOTE:
 EXISTING ITEMS ARE SHOWN SCREENED. ITEMS THAT ARE SHOWN BOLD ARE THE ADDITIONS / MODIFICATIONS TO BE MADE UNDER THIS CONTRACT.

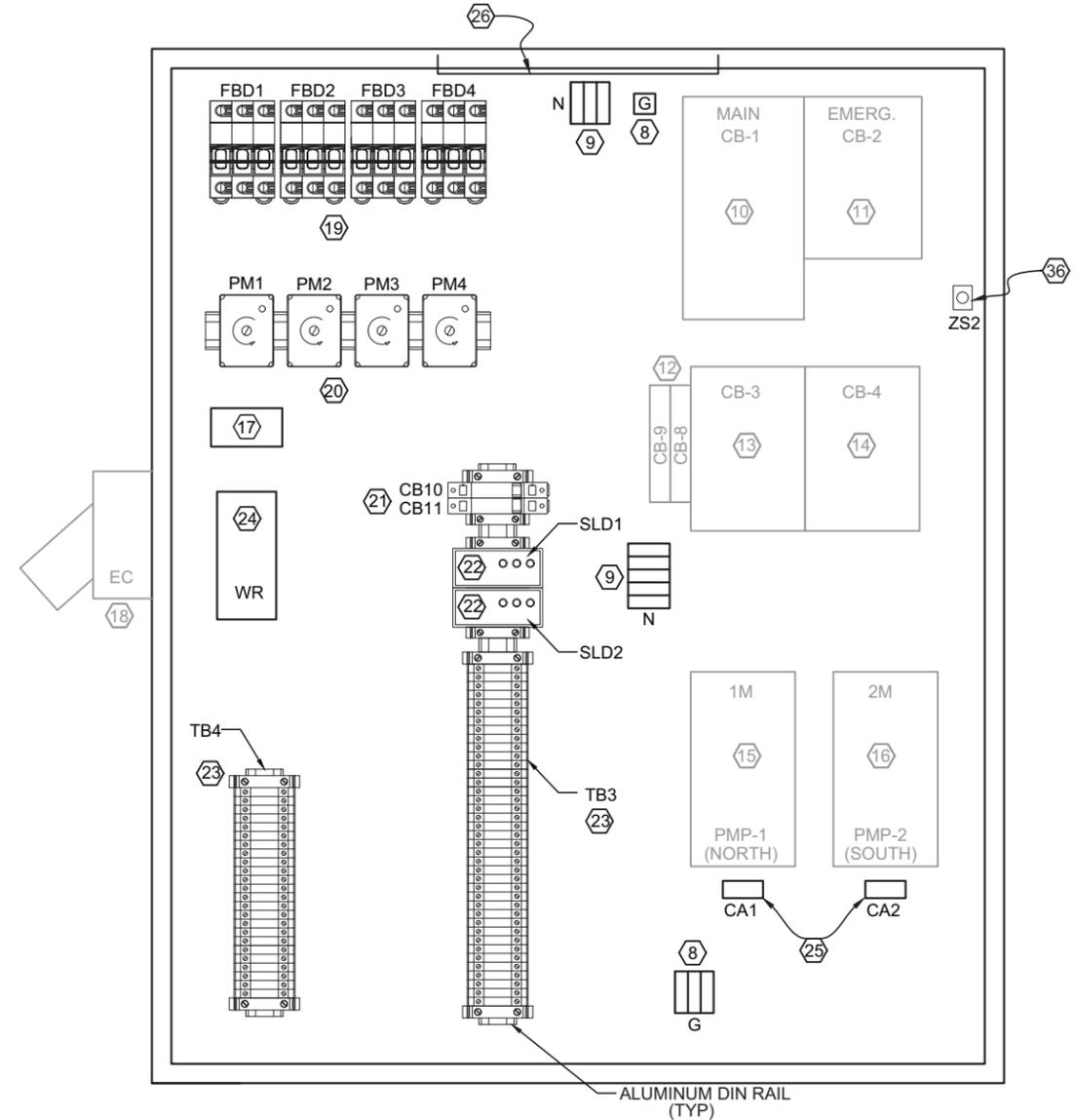
⬡ KEYED NOTES ARE LISTED ON SHEET E13

ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: RK	CITY of TAMPA WASTEWATER DEPARTMENT	SAINT ISABEL PUMPING STATION ONE-LINE DIAGRAM	W.O. 0000
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	2			CKD:			E2
	1			DATE: 1/18/19			



EXISTING CONTROL PANEL (MCP)
PRIOR TO MODIFICATIONS

NOT TO SCALE



EXISTING CONTROL PANEL (MCP) WITH
PROPOSED MODIFICATIONS

NOT TO SCALE

⬡ KEYED NOTES ARE
LISTED ON SHEET E13

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

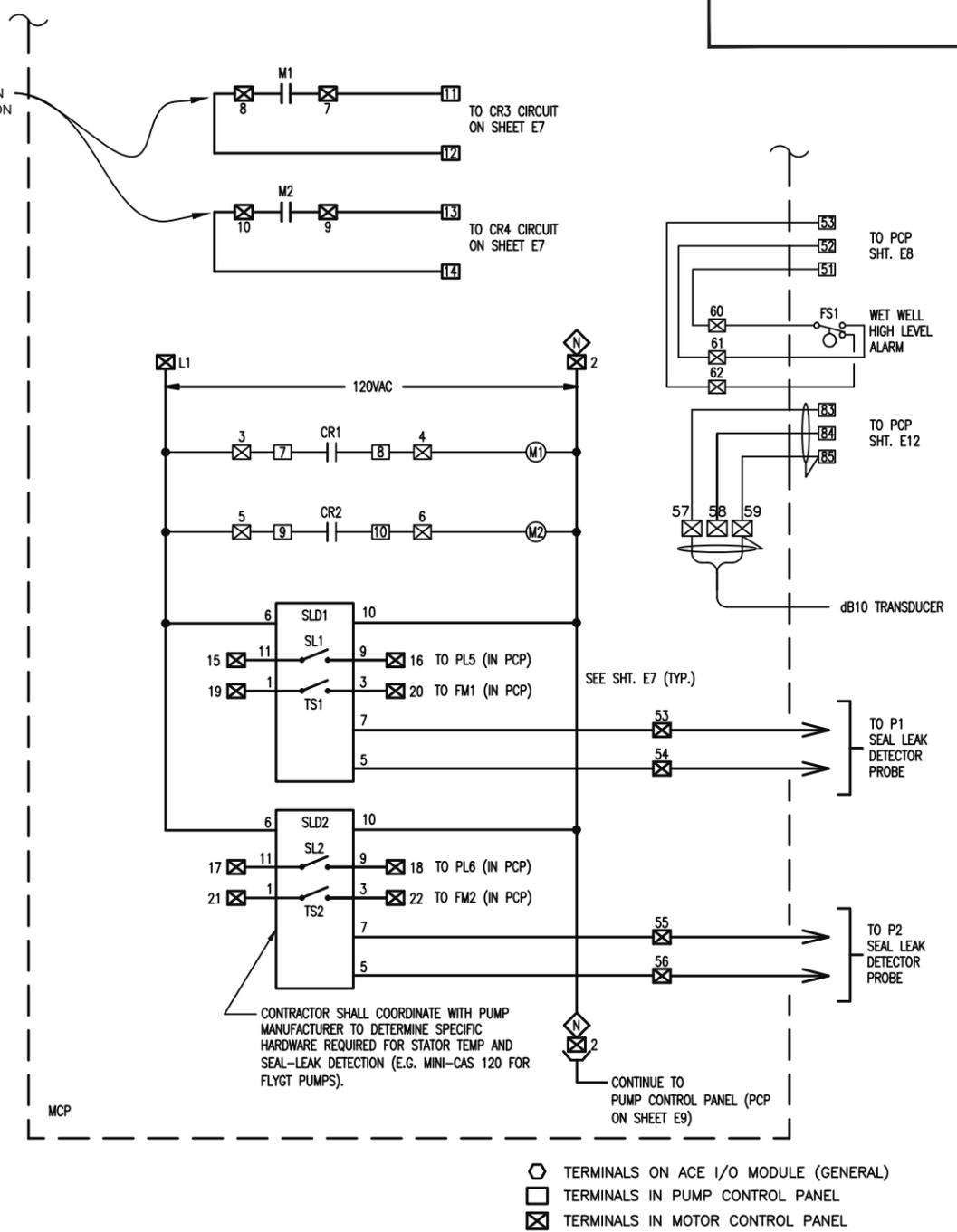
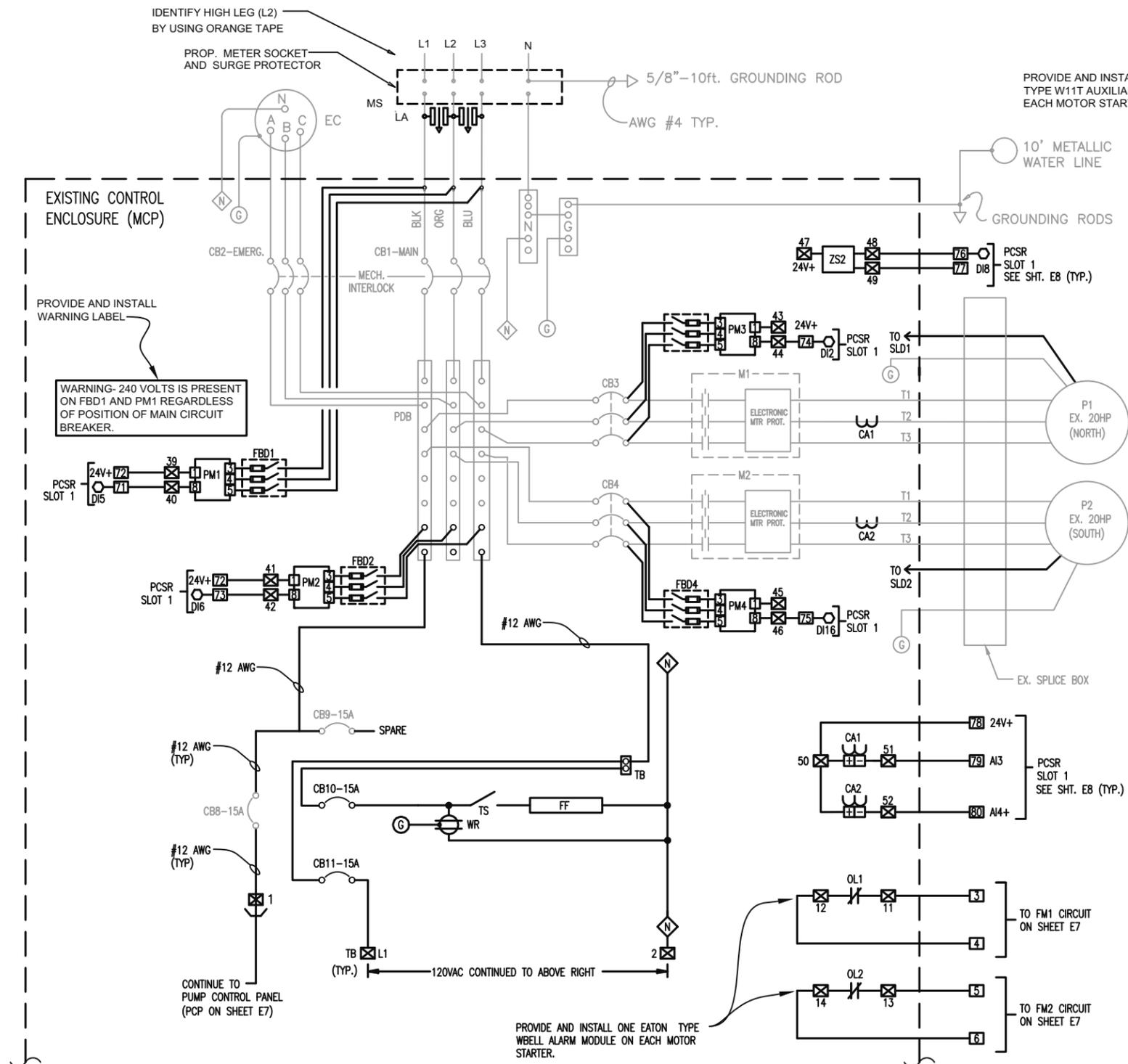
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CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION
EXISTING CONTROL PANEL MODIFICATIONS

W.O. 0000
SHEET
E3



NOTE:
EXISTING ITEMS ARE SHOWN SCREENED. ITEMS THAT ARE SHOWN BOLD ARE THE ADDITIONS / MODIFICATIONS TO BE MADE UNDER THIS CONTRACT.

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

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CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION
MODIFICATIONS TO EXISTING MOTOR
CONTROL (MCP) SCHEMATIC

W.O. 0000
SHEET
E4

TB3 (☒) (120V AC) MOUNTED ON MOTOR CONTROL PANEL (MCP)	
TERM.	DESCRIPTION
1	120V TO PUMP CONTROL PANEL
2	NEUTRAL (CONTINUED TO PUMP CONTROL PANEL)
3	PUMP 1 START COMMAND FROM CR1-1 (IN PCP)
4	PUMP 1 START COMMAND FROM CR1-1 (IN PCP)
5	PUMP 2 START COMMAND FROM CR2-1 (IN PCP)
6	PUMP 2 START COMMAND FROM CR2-1 (IN PCP)
7	PUMP 1 'ON' SIGNAL TO CR3 (IN PCP)
8	PUMP 1 'ON' SIGNAL TO CR3 (IN PCP)
9	PUMP 2 'ON' SIGNAL TO CR4 (IN PCP)
10	PUMP 2 'ON' SIGNAL TO CR4 (IN PCP)
11	M1 FAULT SIGNAL TO PCP
12	M1 FAULT SIGNAL TO PCP
13	M2 FAULT SIGNAL TO PCP
14	M2 FAULT SIGNAL TO PCP
15	PUMP 1 LEAK DETECTED TO PILOT LIGHT 5 (IN PCP)
16	PUMP 1 LEAK DETECTED TO PILOT LIGHT 5 (IN PCP)
17	PUMP 2 LEAK DETECTED TO PILOT LIGHT 6 (IN PCP)
18	PUMP 2 LEAK DETECTED TO PILOT LIGHT 6 (IN PCP)
19	PUMP 1 TEMPERATURE ALARM TO FM1 (IN PCP)
20	PUMP 1 TEMPERATURE ALARM TO FM1 (IN PCP)
21	PUMP 2 TEMPERATURE ALARM TO FM2 (IN PCP)
22	PUMP 2 TEMPERATURE ALARM TO FM2 (IN PCP)
23-37	SPARE
L1	CB11 OUT MOTOR CONTROL PANEL POWER

TB4 (☒) (24V DC) MOUNTED ON MOTOR CONTROL PANEL (MCP)	
TERM.	DESCRIPTION
39	SLOT 1 PCSR 24V+
40	UTILITY POWER AVAILABLE
41	SLOT 1 PCSR 24V+
42	MOTOR CONTROL PANEL PHASE LOSS (PM2) TO PCSR
43	SLOT 1 PCSR 24V+
44	PUMP #1 MCP STATUS PHASE LOSS (PM3) TO PCSR
45	SLOT 1 PCSR 24V+
46	PUMP #2 MCP STATUS PHASE LOSS (PM4) TO PCSR
47	SLOT 1 PCSR 24V+
48	} MOTOR CONTROL PANEL INTRUSION
49	
50	SLOT 1 PCSR 24V+
51	PUMP 1 AMPS
52	PUMP 2 AMPS
53	PUMP 1 SEAL LEAK DETECTOR PROBE
54	PUMP 1 SEAL LEAK DETECTOR PROBE
55	PUMP 1 SEAL LEAK DETECTOR PROBE
56	PUMP 1 SEAL LEAK DETECTOR PROBE
57	dB-10, POWER
58	dB-10, SIGNAL
59	dB-10, Ø VOLT + SHIELD
60	SLOT 1 PCSR 24V+
61	FLOAT SW. FS1-WET WELL HIGH
62	FLOAT SW. FS1-WET WELL NOT HIGH
63	SPARE
64	SPARE
65	SPARE
66	SPARE

X-Y
 TERMINAL POINT MOUNTED ON PCP (INTERFACE TO PCSR)
 TERMINAL POINT ON PCSR
 TERMINAL POINT IN PUMP CONTROL PANEL (PCP)
 TERMINAL POINT IN MOTOR CONTROL PANEL (MCP)

ROMAN D. KORCHAK, P.E. #42626
 ELECTRICAL SECTION HEAD
 WASTEWATER DEPARTMENT

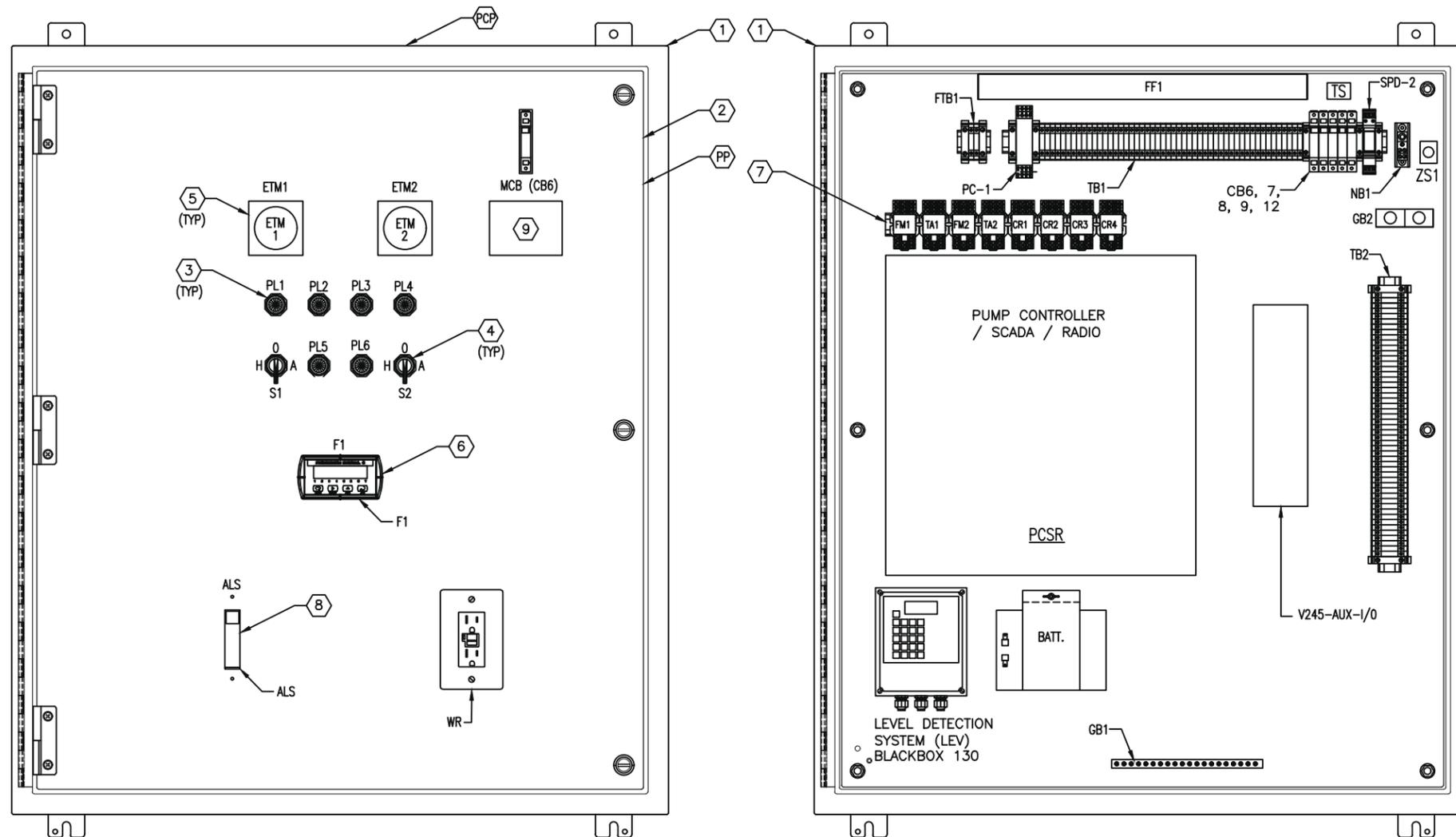
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CITY of TAMPA
 WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION
 MOTOR CONTROL PANEL (MCP)
 TB3 & TB4 DETAILS

W.O. 0000
 SHEET
 E5



PUMP CONTROL PANEL DETAILS

1/8 SCALE

NOTE: FRONT ENCLOSURE DOOR NOT SHOWN FOR CLARITY

PANEL INTERIOR

LEGEND PLATE SCHEDULE

SYMBOL	DEVICE	LEGEND
ETM1	ELAPSED TIME METER	PUMP NO. 1 HOURS
ETM2	ELAPSED TIME METER	PUMP NO. 2 HOURS
PL1	YELLOW PILOT LIGHT	PUMP NO. 1 ON
PL2	RED ILLUMINATED PUSH BUTTON	PUMP NO. 1 TEMP. ALARM
PL3	RED ILLUMINATED PUSH BUTTON	PUMP NO. 2 TEMP. ALARM
PL4	YELLOW PILOT LIGHT	PUMP NO. 2 ON
PL5	RED PILOT LIGHT	PUMP NO. 1 SEAL LEAK ALARM
PL6	RED PILOT LIGHT	PUMP NO. 2 SEAL LEAK ALARM
S1	3 POSITION SWITCH	PUMP NO. 1 HAND-OFF-AUTO
S2	3 POSITION SWITCH	PUMP NO. 2 HAND-OFF-AUTO
MCB	PUMP CONTROL PANEL MAIN CIRCUIT BREAKER	MAIN CIRCUIT BREAKER
F1	DIGITAL PROCESS METER	WET WELL LEVEL
ALS	TOGGLE SWITCH	AREA LIGHT SWITCH

KEYED NOTES (FOR THIS SHEET ONLY):

- ① PUMP CONTROL CABINET. 42" X 36" X 12" NEMA 4X SS, PAINTED WHITE.
- ② PROVIDE AND INSTALL ALUMINUM DEADFRONT DOOR WITH STOP KIT.
- ③ PROVIDE AND INSTALL NEW PILOT LIGHT. REFER ALSO TO PARTS SCHEDULE ON SHEET E9.
- ④ PROVIDE AND INSTALL NEW SELECTOR SWITCH. REFER ALSO TO PARTS SCHEDULE ON SHEET E9.
- ⑤ PROVIDE AND INSTALL NEW ELAPSED TIME METER. REFER ALSO TO PARTS SCHEDULE ON SHEET E9.
- ⑥ PROVIDE AND INSTALL PRECISION DIGITAL PROCESS METER, MODEL PD765-6R0-10 WITH 4-20mA OUTPUT. REFER ALSO TO PARTS SCHEDULE ON SHEET E9.
- ⑦ PROVIDE AND INSTALL ALUMINUM DIN RAIL WHERE REQUIRED.
- ⑧ PROVIDE AND INSTALL NEW SINGLE-POLE 120/277V, 20A LIGHT SWITCH TO CONTROL AREA LIGHT. REFER ALSO TO PARTS SCHEDULE ON SHEET E9.
- ⑨ PROVIDE WARNING LABEL ABOVE OR BELOW CB6.
LABEL TO READ:
"WARNING: THE 120VAC SUPPLY FOR THIS PUMP CONTROL PANEL (PCP) IS FED FROM MOTOR CONTROL PANEL MCP AND WILL BE PRESENT AT THE LINE SIDE OF MCB (CB-6) LOCATED IN THIS PANEL. LOCK AND TAG OUT THE MOTOR CONTROL PANEL DISCONNECT PRIOR TO OPENING DEAD FRONT DOOR."

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

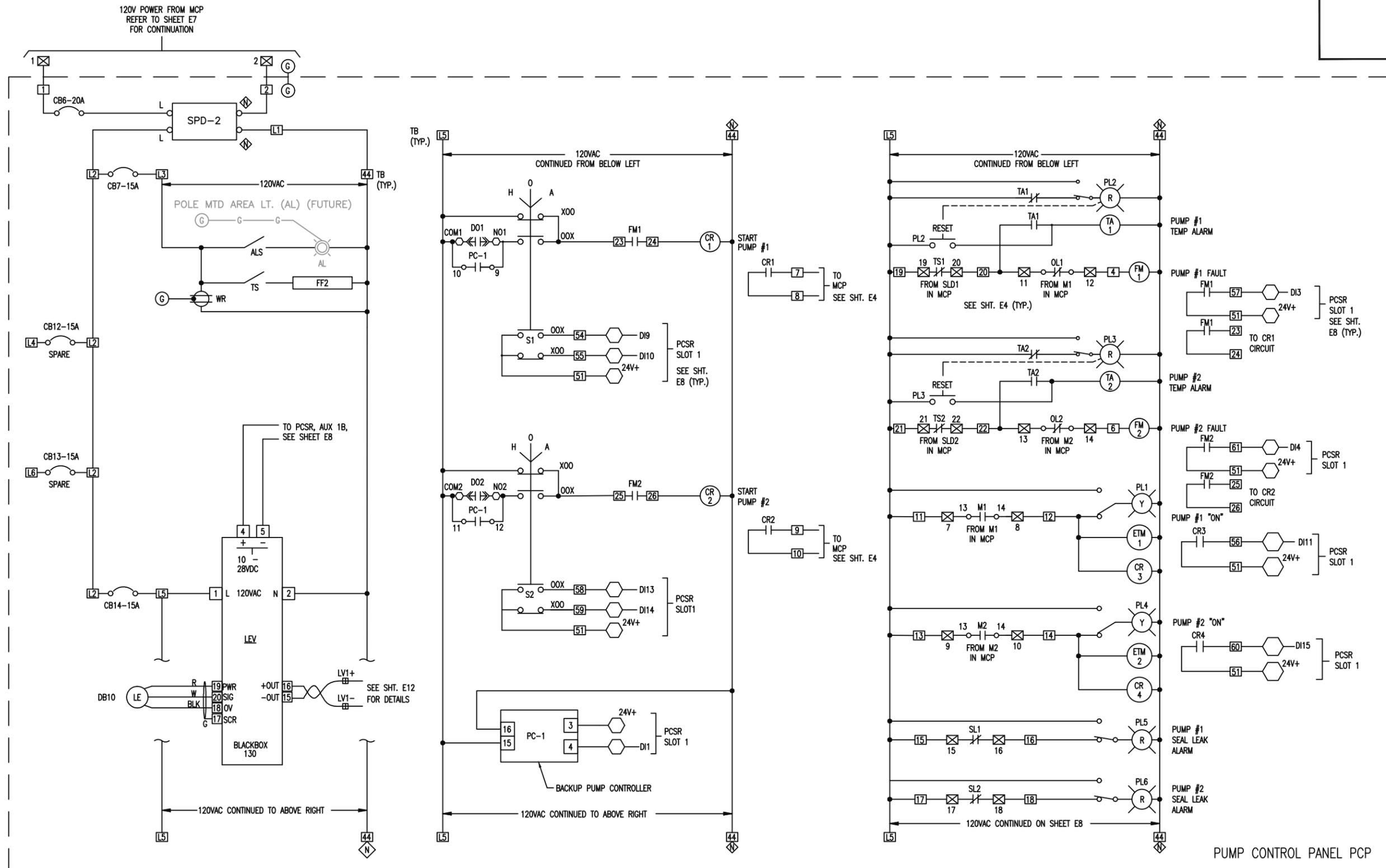
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CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION
PUMP CONTROL PANEL (PCP)
LAYOUT

W.O. 0000
SHEET
E6



- TERMINALS ON ACE I/O MODULE (GENERAL)
- TERMINALS IN PUMP CONTROL PANEL (PCP)
- ⊗ TERMINALS IN MOTOR CONTROL PANEL (MCP)

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

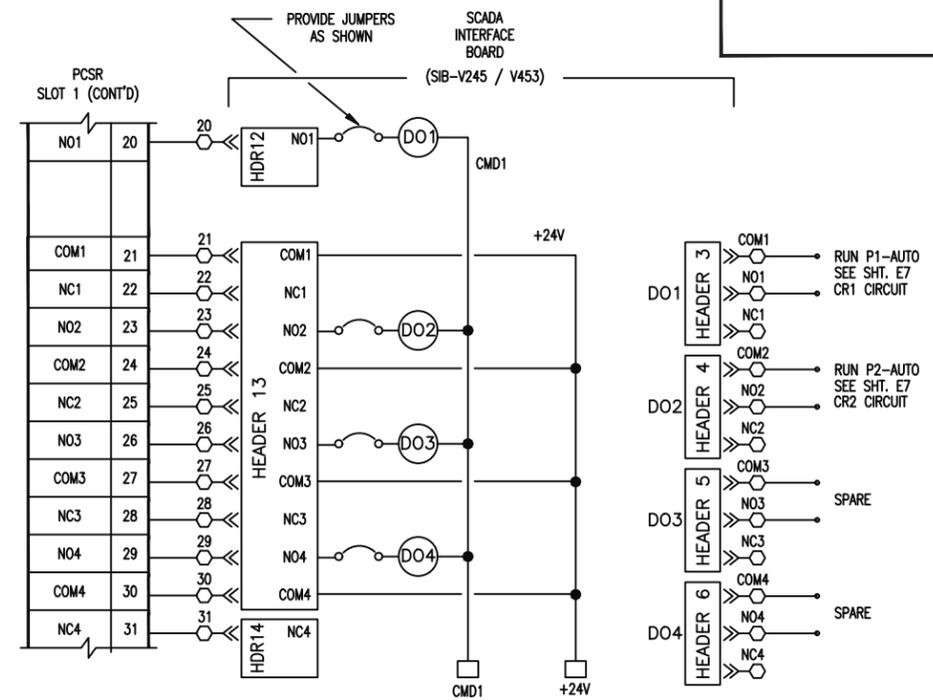
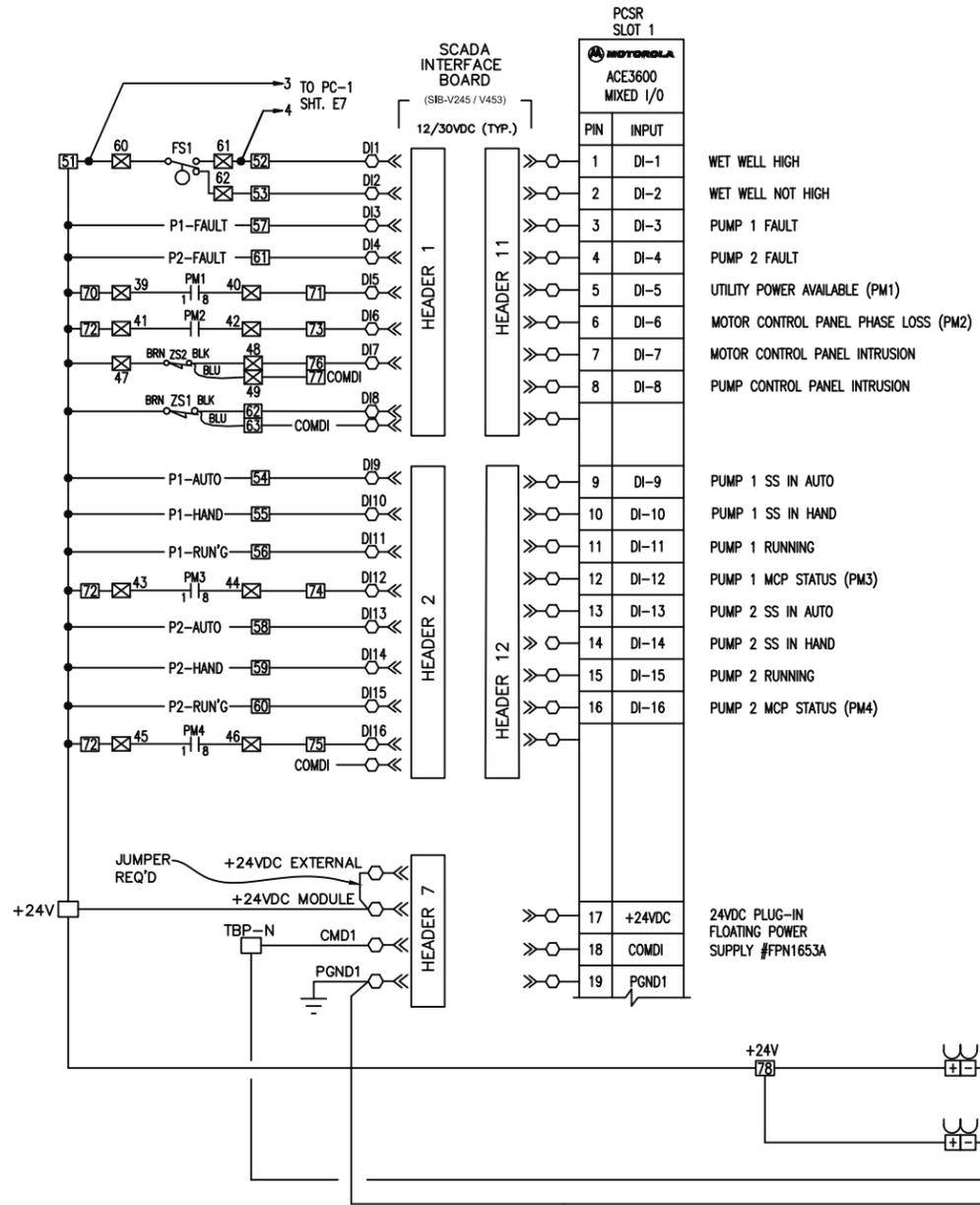
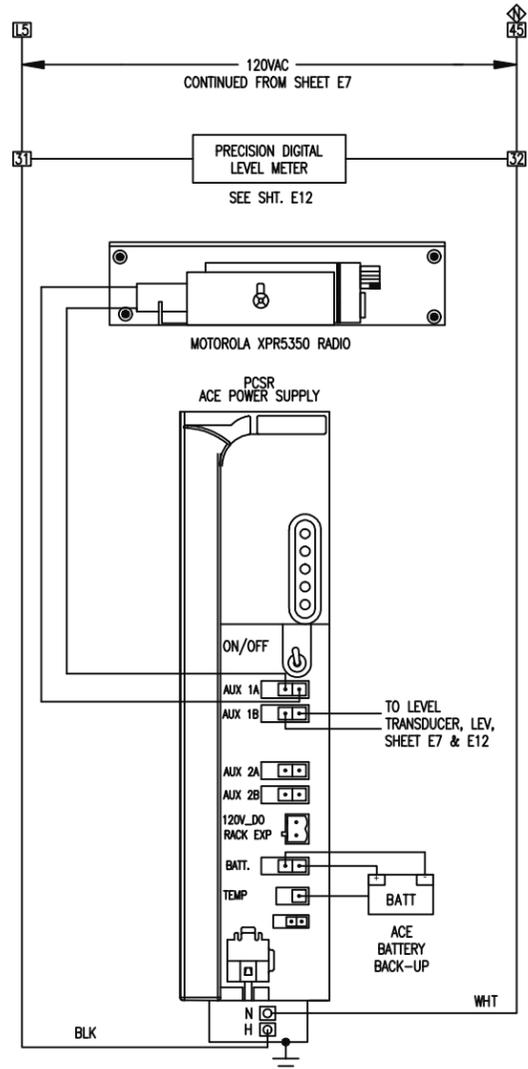
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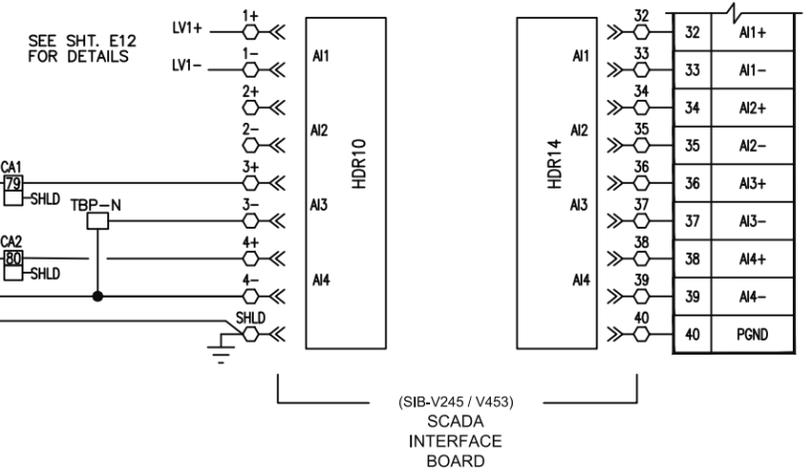
CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION
PUMP CONTROL PANEL (PCP)
SCHEMATIC (1 OF 2)

W.O. 0000
SHEET
E7



- TERMINALS ON ACE I/O MODULE (GENERAL)
- TERMINALS IN PUMP CONTROL PANEL
- ⊗ TERMINALS IN MOTOR CONTROL PANEL



ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

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CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION
PUMP CONTROL PANEL (PCP)
SCHEMATIC (2 OF 2)

W.O. 0000
SHEET
E8

PARTS SCHEDULE (PUMP CONTROL PANEL)

SYMBOL	NAME	PART			RATING	REMARKS
		MAKE	TYPE	MODEL OR CAT. #		
PCSR	PLC BASED PUMP CONTROLLER, SCADA, AND RADIO SYSTEM	MOTOROLA CORP.	DUPLEX PUMP CONTROLLER BASED ON ACE 3600 PROGRAM CONTROLLER	ACE 3600 BASIC MODEL NO. RADIO PART #XPR5350	1-AC POWER SUPPLY 85-264V W/ BAT CHARGER PAR #: V261	COORDINATE EFFORT W/ SCADA INTEGRATOR
	SLOTS 1 & 2	MOTOROLA CORP.	1-MIXED I/O AUXILIARY INTERFACE WILKERSON BOARD PART #: SIB V245/ V453	MOTORBO XPR5350 RADIO UNF RI: 403-470MHZ, PART #UE1078A MOTORBO ANALOG RADIO INSTALLATION KIT PART #FLN1059	1- ACE CPU3640 PART #: V446	1- 10.0 Ah BATTERY PART #: V328
	1-3 I/O SLOT FRAM PART #: V103	1-20 PIN TB HOLDER KIT PART #: V158	1- 14x 14 METAL CHASSIS PART #: V214	1-ACE MIXED I/O MODULE-16DI, 4DO(E), (4)±20mA ANALOG IN PART #: V245 W/ 24VDC PLUG-IN, FLOATING POWER SUPPLY # FPN1653A	1-40 PIN TB HOLDER KIT PART #: V153	
	10.0 Ah BATT.					
PC-1	BACKUP PUMP CONTROLLER	WILKERSON	DUPLEX LIFT STATION	DR1920	10 AMP CONTACTS	DIN RAIL MOUNTING
FTB1	FUSED TERMINAL BLOCKS	PHOENIX CONTACT		UK 5-HESI	PROVIDE 1, 2, & 5A FUSES	PROVIDE COOPER BUSSMAN GDB SERIES FUSES
F1	PROCESS METER	PRECISION DIGITAL	4 DIGIT, 1.2" DISPLAY	PD765-6RO-10		PROVIDE 4-20mA OUTPUT
CB 7, 9, 12	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU-115	120 V, 15A	
CB 6, 8	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU-120	120 V, 20A	
PL1, PL4	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT - 38LYA9	120 V, LED TYPE	YELLOW LENS & PRESS TEST
PL2, PL3	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT - 38LRR9	120 V, LED TYPE	RED LENS & PRESS TEST
PL5, PL6	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT - 38LRR9	120 V, LED TYPE	RED LENS & PRESS TEST
S1, S2	HOA SWITCH ASSEMBLY	SQUARE D	OIL-TIGHT CLASS 9001	SKS - 43B H2	10A @ 120V	
ETM1, ETM2	ELAPSED TIME METER	CRAMER	ROUND BEZEL, NON RESET	635-E	120 V	W.W. GRANGER CAT. NO. 6X144
Ⓢ ZS1, (ZS2 ON MCP)	CONTROL PNL INTRUSION SENSOR	OMRON	CYLINDRICAL, SHORT BARREL	E2F-X5F1 (GRAINGER-1EA77)	12-24VDC, 3-WIRE PNP	W/ TELEMECANIQUE MTG. BRACKET (GRAINGER - 5B233)
FF1 & TS	LED LIGHTING FIXTURE	HOFFMAN	LED	LEDA1S35	120 V, 5W	W/TOGGLE SWITCH-TS
WR	WALL RECEPTACLE	HUBBELL	DUPLEX W/GFI	GF5262	120V AC, 15A GFI	W/ALUMINUM OUTLET BOX AND COVER
TB1, TB2,	TERMINALS	PHOENIX CONTACT		UK5N TERMINALS	30 A W/ ALUM. DIN RAIL	50 CONTACTS (MIN)
ITS	INSULATED TERMINAL STRIP	ALLEN-BRADLEY	STYLE AA	1492-15-T	600 V AC NEUTRAL BLOCK	4 CONTACTS (MIN) W/ SHORTING BARS
GB1	GROUND BAR SYSTEM	PANDUIT	12 PORT WITH MAIN LUG	UGB2/0-414-12		COPPER CONSTRUCTION
GB2	GROUNDING BLOCK	ILSCO	AS REQUIRED	AS REQUIRED		
TA1, TA2	CONTROL RELAY	POTTER & BRUMFIELD	8 PIN PLUG-IN	KRPA-11AG-120	120V AC COIL, 10A CONTACTS	DPDT W/ SOCKET AND HOLD DOWN SPRING
FM1, FM2	CONTROL RELAY	POTTER & BRUMFIELD	11 PIN PLUG-IN	KRPA-14AG-120	120V AC COIL, 10A CONTACTS	3PDT W/ SOCKET AND HOLD DOWN SPRING
LEV	WET WELL LEVEL SENSOR	PULSAR, INC.	ULTRASONIC	dB10 TRANSDUCER W/ BLACKBOX 130 TRANSMITTER PART #: 130-110-300-00P-KP-TROP	1 TD 32.8 FT RANGE 115VAC/24VDC POWERED W/ 4-20MA AND (2) RELAY OUT W/ KEY PAD, DISPLAY, AND TROPICALIZATION	CITY FORCES WILL PROVIDE ASSISTANCE WITH MOUNTING AND CALIBRATION
CR1, CR2	CONTROL RELAY	POTTER & BRUMFIELD	14-BLADE SQUARE PLUG-IN	KUP-L7A19-120	120V AC COIL, 10A CONTACTS	4PDT W/ SOCKET AND HOLD DOWN SPRING
PCP	PUMP CONTROL PANEL ENCLOSURE	HOFFMAN	NEMA 4X, 3P LATCH, 42"x36"x12"	42"x36"x12" SS	304 SS, POWDER COATED WHITE	3P LATCH W/STOP KIT. EXTERNAL FINISH DURABLE RAL 9003 WHITE POWER COAT.
PP	ENCLOSURE PANEL	HOFFMAN	39" X 33", STEEL	A42P36	STEEL, 12 GAUGE	
NB1, 2	NEUTRAL DISTRIBUTION BLOCK	BUSSMAN	SINGLE POLE	16220-1	600V, 175A	
ALS	AREA LIGHT SWITCH	HUBBELL	SINGLE-POLE	HBL1221	277V, 20A	
SPD-2	SURGE PROTECTION DEVICE TYPE 3	PHOENIX CONTACT	3 CONDUCTOR SYSTEM (L, N, G)	2856812	120V, 25A	

NOTES:

- ALARM FLOAT SWITCH WILL BE SUPPLIED BY WWD AND INSTALLED BY CONTRACTOR.

Ⓢ KEYED NOTES ARE LISTED ON SHEET E13

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
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DES: RK
DRN: RK
CKD:
DATE:1/10/19

CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION
PUMP CONTROL PANEL (PCP)
PARTS SCHEDULE

W.O. 0000
SHEET
E9

TB1 (□) (120V AC) MOUNTED ON PUMP CONTROL PANEL (PCP)	
TERM.	DESCRIPTION
1	120V FROM MOTOR CONTROL PANEL
2	NEUTRAL FROM MOTOR CONTROL PANEL
3	M1 OVERLOAD
4	M1 OVERLOAD
5	M2 OVERLOAD
6	M2 OVERLOAD
7	PUMP 1 START COMMAND TO M1 (IN MCP)
8	PUMP 1 START COMMAND TO M1 (IN MCP)
9	PUMP 2 START COMMAND TO M2 (IN MCP)
10	PUMP 2 START COMMAND TO M2 (IN MCP)
11	P1 "ON" SIGNAL FROM M1 (IN MCP)
12	P1 "ON" SIGNAL FROM M1 (IN MCP)
13	P2 "ON" SIGNAL FROM M2 (IN MCP)
14	P2 "ON" SIGNAL FROM M2 (IN MCP)
15	PUMP 1 LEAK ALARM FROM MCP
16	PUMP 1 LEAK ALARM FROM MCP
17	PUMP 2 LEAK ALARM FROM MCP
18	PUMP 2 LEAK ALARM FROM MCP
19	PUMP 1 TEMPERATURE ALARM FROM MCP
20	PUMP 1 TEMPERATURE ALARM FROM MCP
21	PUMP 2 TEMPERATURE ALARM FROM MCP
22	PUMP 2 TEMPERATURE ALARM FROM MCP
23	FM1 TO CR1 CIRCUIT
24	FM1 TO CR1 CIRCUIT
25	FM2 TO CR2 CIRCUIT
26	FM2 TO CR2 CIRCUIT
27	PUMP 1 FAULT RELAY CONTACT
28	PUMP 1 FAULT RELAY CONTACT
29	PUMP 2 FAULT RELAY CONTACT
30	PUMP 2 FAULT RELAY CONTACT
31	SPARE
32-43	SPARE

TB1 CONTINUED

44	SPD-2 NUETRAL OUT
L1	SPD-2 NUETRAL OUT
L2	SPD-2 H OUT
L3	CB7 OUT
L4	SPARE CB12 OUT
L5	CB14 OUT
L6	SPARE CB13 OUT

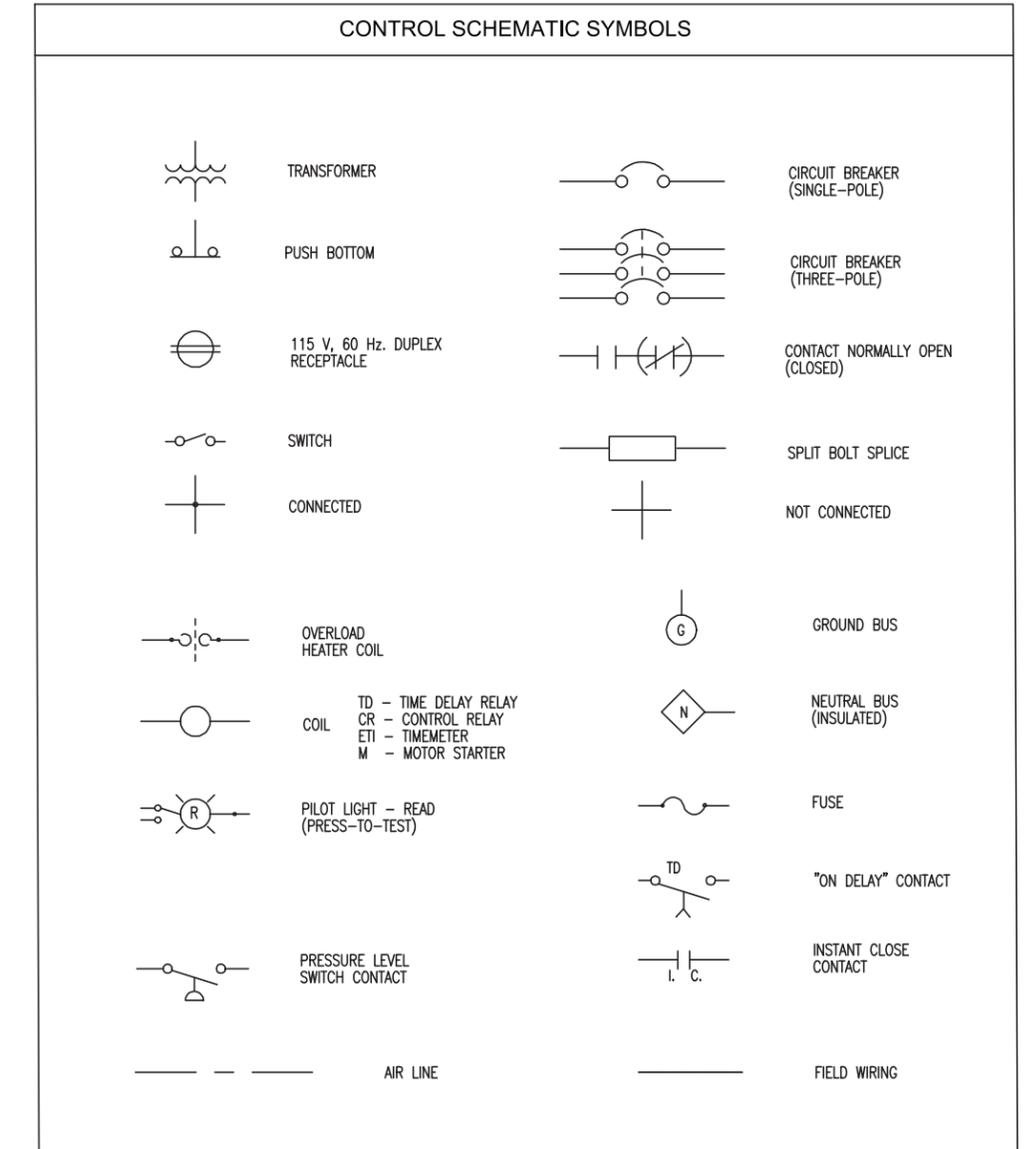
TB2 (□) (24V DC) MOUNTED ON PUMP CONTROL PANEL (PCP)	
TERM.	DESCRIPTION
51	SLOT 1 PCSR 24V+
52	WET WELL HIGH
53	WET WELL NOT HIGH
54	PUMP 1 "AUTO" TO PCSR
55	PUMP 1 "HAND" TO PCSR
56	PUMP 1 "ON" TO PCSR
57	PUMP 1 "FAULT" TO PCSR
58	PUMP 2 "AUTO" TO PCSR
59	PUMP 2 "HAND" TO PCSR
60	PUMP 2 "ON" TO PCSR
61	PUMP 2 "FAULT" TO PCSR
62	} PUMP CONTROL PANEL INTRUSION
63	
64	SLOT 1 PCSR 24V+
65	SPARE
66	SLOT 1 PCSR 24V+
67	SPARE
68	SLOT 1 PCSR 24V+
69	SPARE
70	SLOT 1 PCSR 24V+
71	UTIL POWER AVAILABLE (PM1) TO PCSR
72	SLOT 1 PCSR 24V+
73	MOTOR CONTROL PANEL PHASE LOSS (PM2)
74	PUMP #1 MCP STATUS (PM3) TO PCSR
75	PUMP #2 MCP STATUS (PM4) TO PCSR
76	} MOTOR CONTROL PANEL INTRUSION
77	
78	SLOT 1 PCSR 24V+
79	PUMP 1 AMPS
80	PUMP 2 AMPS
81	PROCESS METER FOR LEVEL 120V-POWER
82	PROCESS METER FOR LEVEL 120V-NEUTRAL
83	dB-10, POWER
84	dB-10, SIGNAL
85	dB-10, 0-VOLTS + SHIELD

TB2 CONTINUED

86	SLOT 2 PCSR 24V+
87	SLOT 2 PCSR 24V+
88-100	SPARE SLOT 2 TERMINALS

X-Y

 TERMINAL POINT MOUNTED ON PCP (INTERFACE TO PCSR)
 ○ TERMINAL POINT ON PCSR
 □ TERMINAL POINT IN PUMP CONTROL PANEL (PCP)
 ⊠ TERMINAL POINT IN MOTOR CONTROL PANEL (MCP)



ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

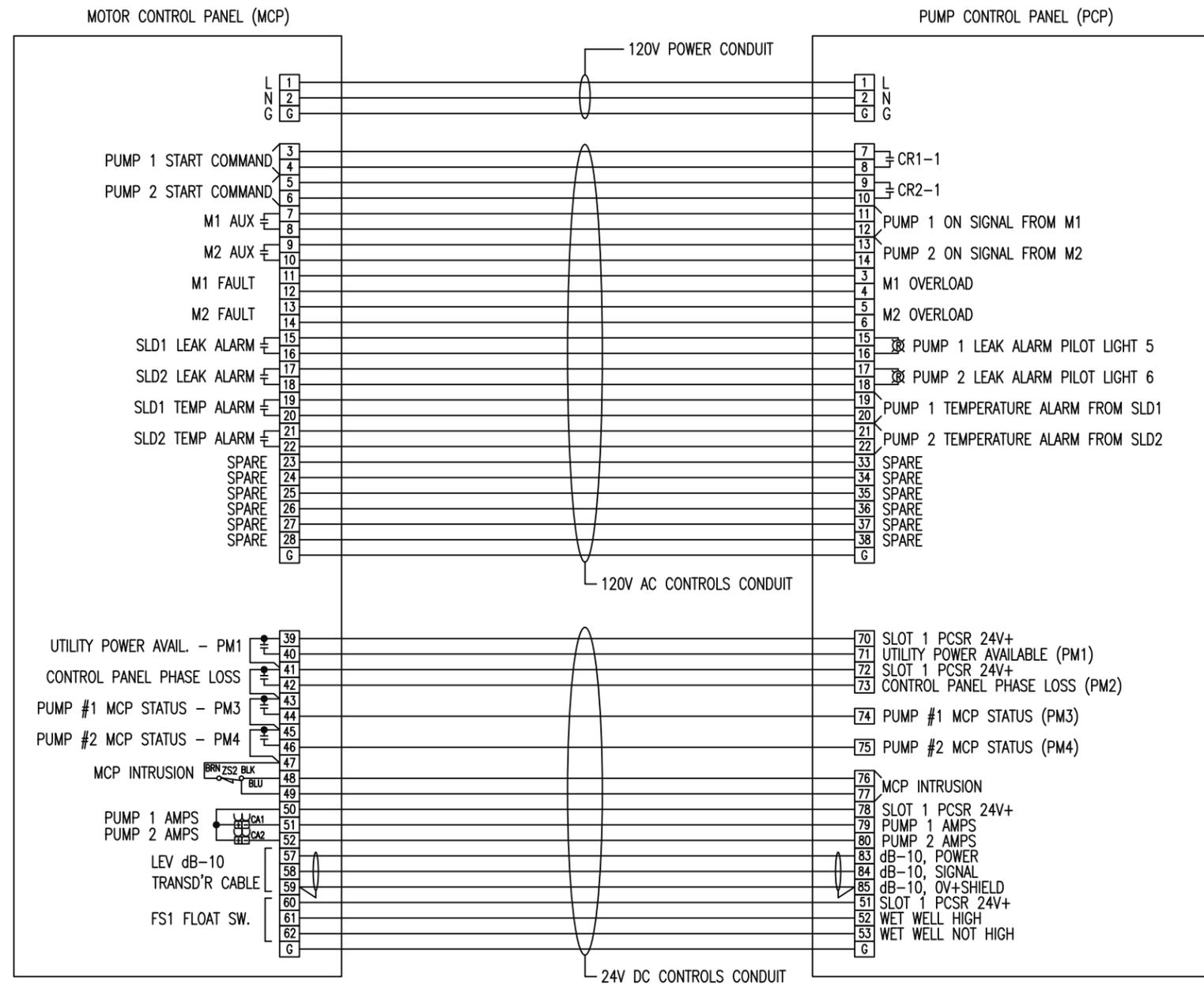
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CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION
PUMP CONTROL PANEL (PCP)
TBI & TB2 DETAILS

W.O. 0000
SHEET
E10



ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
WASTEWATER DEPARTMENT

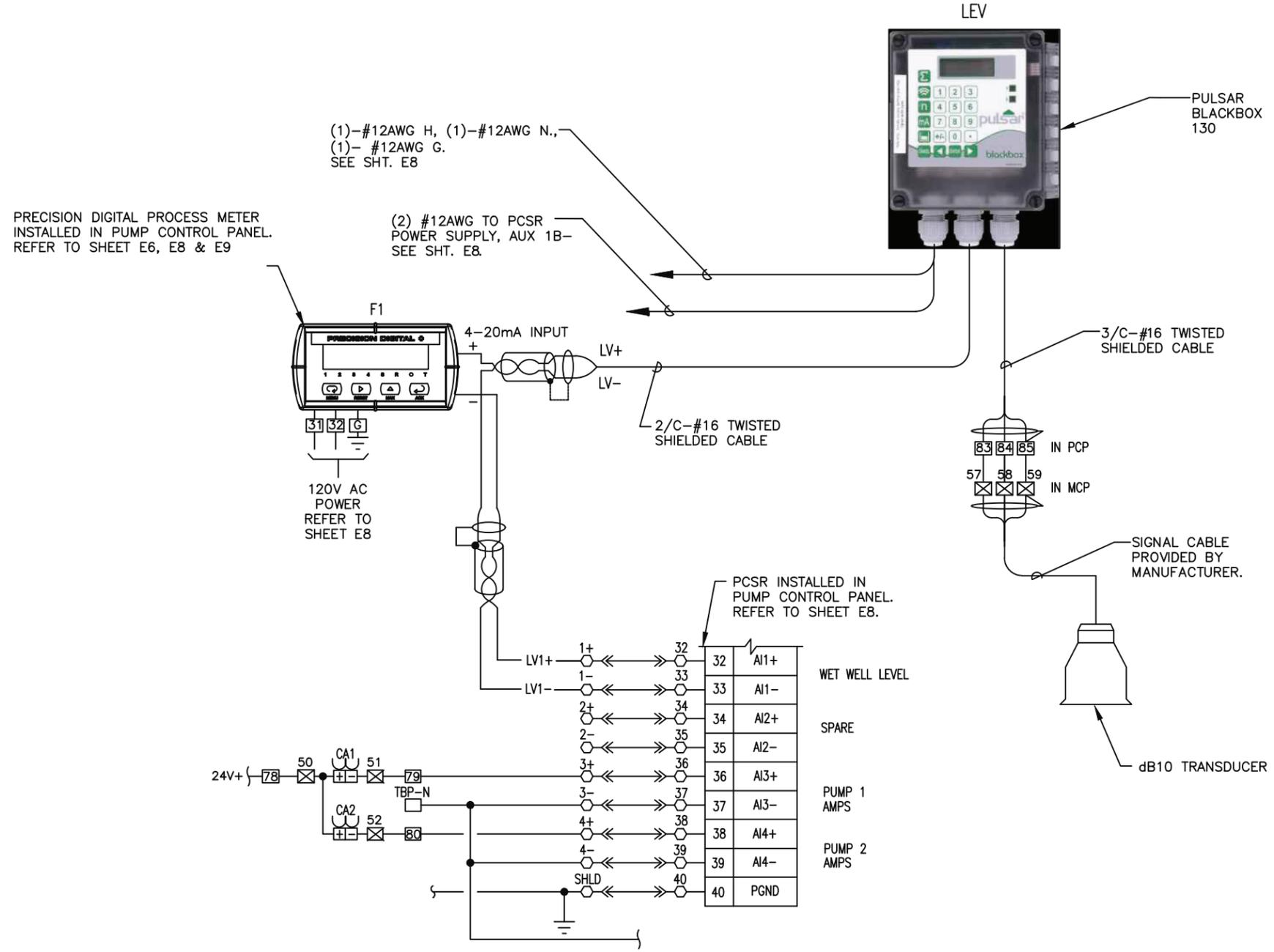
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CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION
MCP TO PCP INTERCONNECTION
DIAGRAM

W.O. 0000
SHEET
EII



- TERMINALS ON ACE I/O MODULE (GENERAL)
- TERMINALS IN PUMP CONTROL PANEL
- ⊗ TERMINALS IN MOTOR CONTROL PANEL

LEVEL TRANSDUCER WIRING SCHEMATIC

ALL WIRING TO BE VERIFIED/CONFIRMED WITH
MANUFACTURER PRIOR TO INSTALLATION

ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: RK	CITY of TAMPA WASTEWATER DEPARTMENT	SAINT ISABEL PUMPING STATION ELECTRICAL DETAILS	W.O. 0000
	3			DRN: RK			SHEET
	2			CKD:			E12
	1			DATE: 1/11/19			

KEYED NOTES

1. EXISTING CONTROL CHASSIS TO BE REMOVED.
2. EXISTING ULTRASONIC TRANSMITTER / CONTROLLER TO BE REMOVED.
3. EXISTING BACK-UP PUMP CONTROLLER TO BE REMOVED.
4. EXISTING TERMINAL STRIPS. REMOVE AND REPLACE AS SHOWN, SPECIFIED, OR REQUIRED.
5. EXISTING BATTERY TO BE REMOVED.
6. EXISTING CONVENIENCE RECEPTACLE, SWITCH & BOX TO BE REMOVED.
7. EXISTING BATTERY CHARGER TO BE REMOVED.
8. PROVIDE AND INSTALL GROUND LUG AS SHOWN, SPECIFIED, OR REQUIRED.
9. PROVIDE AND INSTALL ISOLATED NEUTRAL BLOCKS AS SHOWN, SPECIFIED, OR REQUIRED.
10. EXISTING 3-POLE MAIN CIRCUIT BREAKER, CB-1, WITH MECHANICAL INTERLOCK TO REMAIN.
11. EXISTING 3-POLE EMERGENCY CIRCUIT BREAKER, CB-2, INTERLOCKED WITH MAIN C.B. TO REMAIN.
12. EXISTING 120V, 15A, SINGLE-POLE CIRCUIT BREAKERS CB-8 AND CB-9 TO REMAIN-- DISCONNECT FROM EXISTING CIRCUITS. USE CB-8 AS THE FEEDER FOR THE PROPOSED PUMP CONTROL PANEL (PCP) AND MARK CB-9 AS SPARE.
13. EXISTING 3-POLE PUMP #1 MOTOR SHORT CIRCUIT PROTECTION, CB-3, TO REMAIN.
14. EXISTING 3-POLE PUMP #2 MOTOR SHORT CIRCUIT PROTECTION, CB-4, TO REMAIN.
15. EXISTING PUMP #1 MOTOR STARTER, 1M, TO REMAIN.
16. EXISTING PUMP #2 MOTOR STARTER, 2M, TO REMAIN.
17. PROVIDE AND INSTALL LAMICOID WARNING LABEL, RED BACKGROUND WITH WHITE 3/16" ENGRAVED LETTERING STATING: "WARNING 240 VOLTS REMAINS PRESENT ON FBD1 AND PM1 REGARDLESS OF POSITION OF MAIN CIRCUIT BREAKER."
18. EXISTING EMERGENCY CONNECTOR, EC, TO REMAIN.
19. PROVIDE AND INSTALL 3-POLE, 600V, FINGER SAFE, FUSE BLOCK / DISCONNECTS FBD1, FBD2, FBD3 AND FBD4-- ALLEN-BRADLEY #1492-FB3C30-L. PROVIDE AND INSTALL BUSSMANN KTK-R-2 FAST ACTING, REJECTION FUSES.
20. PROVIDE AND INSTALL PHASE MONITORS PM1, PM2, PM3 AND PM4-- ATC-DIVERSIFIED #SLA-230-ASA WITH MATCHING DIN RAIL SOCKETS.
21. PROVIDE AND INSTALL 120V, 15A SINGLE POLE CIRCUIT BREAKERS CB10 AND CB11-- SQUARE D #QOU-115. CB-10 FEEDS THE CONVENIENCE RECEPTACLE AND CB-11 THE MOTOR CONTROL CIRCUITS.
22. PROVIDE AND INSTALL XYLEM MINICAS-120 MOTOR PROTECTION RELAYS SD1 AND SD2.
23. PROVIDE AND INSTALL DIN RAIL MOUNTED TERMINALS AS SHOWN, SPECIFIED OR REQUIRED-- PHOENIX CONTACT #UK5N. NOTE ALL DIN RAIL SHALL BE ALUMINUM.
24. PROVIDE AND INSTALL 120V, 15A GFI DUPLEX WALL RECEPTACLE-- HUBBELL #GF5262 WITH ALUMINUM OUTLET BOX AND COVER.
25. PROVIDE AND INSTALL MOTOR CURRENT SENSOR WITH SPLIT CT CORE, 0-100A RATING AND 4-20MA OUTPUT (CA1 & CA2)-- ENERCORP INSTRUMENTS #SC200-2.
26. PROVIDE AND INSTALL LED LIGHTING FIXTURE HOFFMAN # LEDA1S35, OR EQUAL.
27. SEE EQUIPMENT MOUNTING STANCHION DETAIL ON MECHANICAL SHEET EM3.
28. 1-5/8" X 1-5/8" STRUT CHANNEL-- 316 STAINLESS STEEL.
29. PROVIDE AND INSTALL 120VAC CONTROL SIGNAL CONDUCTORS-- (26) #14 AWG XHHW AND (1) #14 GND IN 1-1/4" C.
30. PROVIDE AND INSTALL 24VDC CONTROL SIGNAL CONDUCTORS-- (18) #14 AWG XHHW, (1) #14 GND, AND (1) 3C-#16 AWG SHIELDED- BELDEN #8618 IN 1-1/4" C.
31. PROVIDE AND INSTALL PCP 120VAC POWER CONDUCTORS-- (1) #12 AWG XHHW-2, H; (1) #12 AWG, N; AND (1) #12 AWG GND IN 3/4" C.
32. PROVIDE AND INSTALL CONDUIT BODIES AS SHOWN, SPECIFIED, AND REQUIRED.
33. PROVIDE AND INSTALL RADIO ANTENNA CABLE IN 1" FLEXIBLE CONDUIT AS SHOWN, SPECIFIED AND REQUIRED.
34. PROVIDE AND INSTALL ALUMINUM CONDUIT UNIONS, CROUSE-HINDS TYPE UNF.
35. REMOVE EXISTING UTILITY POWER METER SOCKET AND PROVIDE AND INSTALL NEW SOCKET- MILBANK MANUFACTURING- ALUMINUM HOUSING; 600VAC, 200A; 7 TERMINAL, WITH LEVER BYPASS- MODEL UAP9701-X-QG-HSP. ALSO PROVIDE AND INSTALL A G.E. 9L15ECC001 SECONDARY SURGE ARRESTER (LA).
36. PROVIDE AND INSTALL AN INDUCTIVE INTRUSION SENSOR ZS2- SEE PART DESCRIPTION ON SHEET E9.

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CITY of TAMPA
WASTEWATER DEPARTMENT

SAINT ISABEL PUMPING STATION
KEYED NOTES FOR SHTS. EI-EI2

W.O. 0000

SHEET

EI3