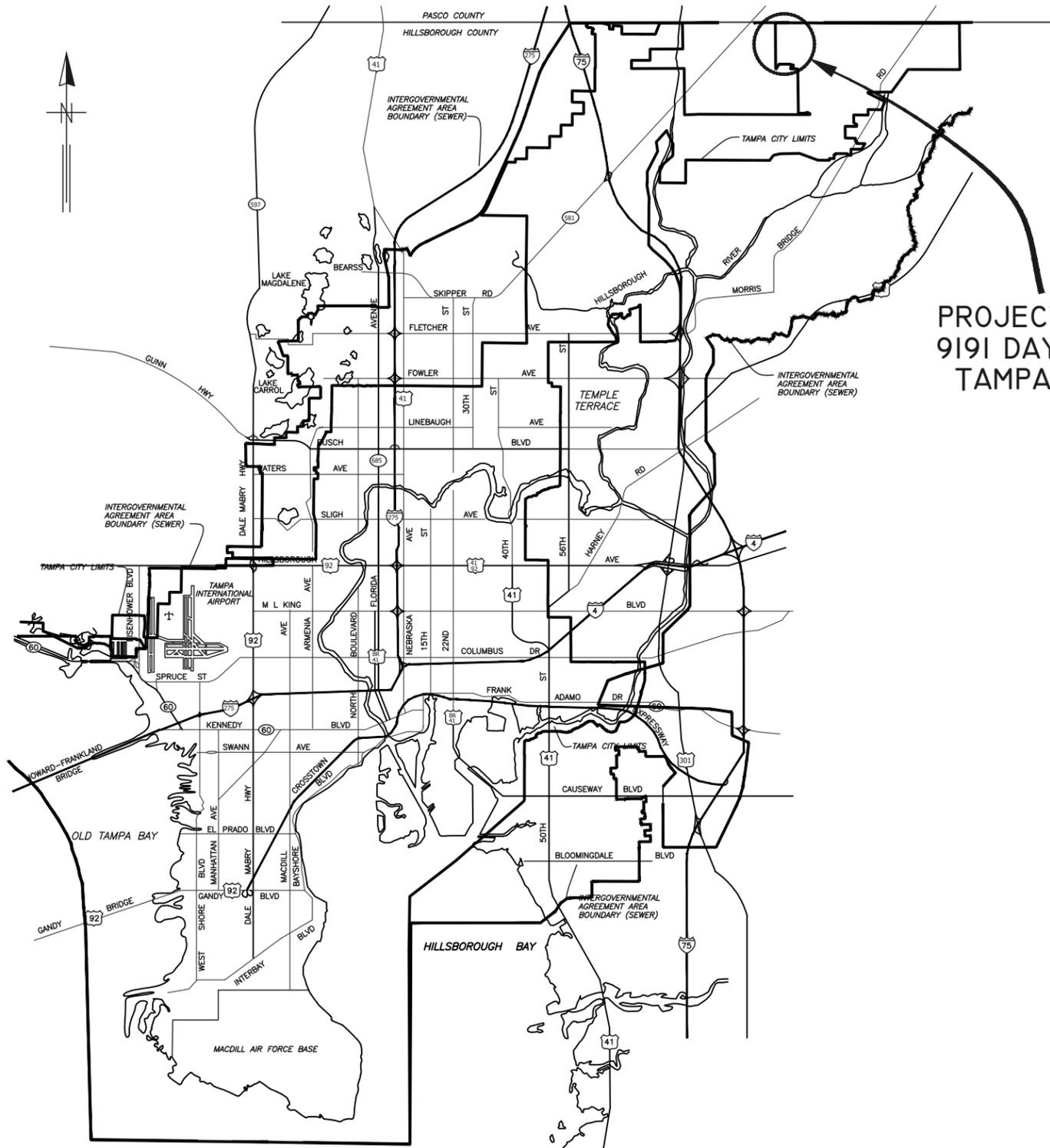


LOCATION MAP



CITY of TAMPA

PROJECT LOCATION
9191 DAYFLOWER DR
TAMPA, FL 33647



WASTEWATER DEPARTMENT

PLANS FOR DAYFLOWER PUMP STATION REHABILITATION

CONTRACT No.
20-C-00028

NOTE:
ATTENTION IS DIRECTED TO THE FACT THAT
THESE PLANS MAY HAVE BEEN REDUCED IN
SIZE BY REPRODUCTION. THIS MUST BE
CONSIDERED WHEN OBTAINING SCALED DATA.

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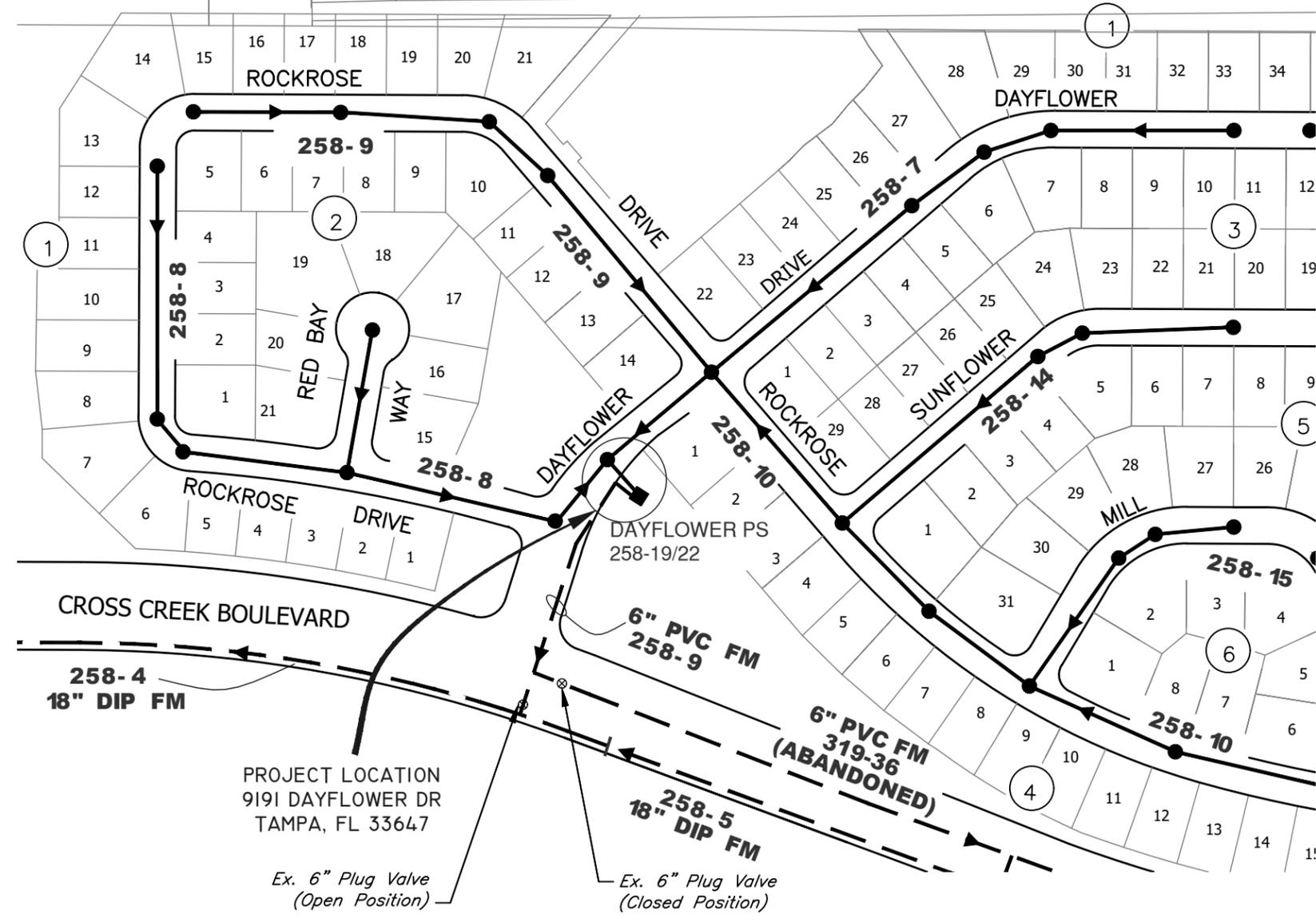
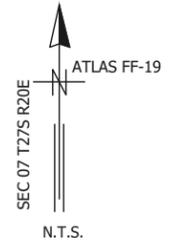
ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: CB	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION	SHEET
	3			DRN: KLT		COVER SHEET	1
	2			CKD:			
JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	1			DATE: Jul-2020			

LEGEND

ABBREVIATIONS

EX SEWERS	UP to 36" & SMALLER	36" & LARGER
EX FORCE MAIN		
EX SAN SEWER & MANHOLES		
EX STORM SEWER & MANHOLES		
PROP SEWERS		
PROP FORCE MAIN		
PROP SANITARY SEWER & MANHOLES		
PROP STORM SEWER & MANHOLES		
OTHER FEATURES		
RIGHT of WAY LINE		
EDGE of PAVEMENT		
WATER LINE		
GAS LINE		
ELECTRICAL CABLE or DUCT		
TELEPHONE CABLE or DUCT		
TV CABLE		
VALVE, AIR RELEASE VALVE		
HYDRANT		
CATCH BASIN, GRATE		
POWER POLE		
TELEPHONE POLE		
GUY POLE		
GUY WIRE		
VALVE VAULT		
WATER METER		
ELECTRICAL MANHOLE or VAULT		
TELEPHONE MANHOLE or VAULT		
TRAFFIC BOX or VAULT		
BUILDING LIMIT		
PROPERTY OWNERSHIP		
FENCE		
CONIFER		
PALM		
OAK		
OTHER		
SHRUB		
HEDGE		
RAILROAD TRACKS		
IRON PIPE		
CONTROL POINT		
CONCRETE MONUMENT		
OPEN DITCHES		
EXISTING WYE		
PROPOSED WYE		
CLEAN OUT		

AIR RELEASE VALVE	ARV	INVERT ELEVATION	IE or INV EL
APPROXIMATE LOCATION	AL	MAINTENANCE OF TRAFFIC	MOT
BENCH MARK	BM	MANHOLE	MH or MH
BURIED TELEPHONE	BT	PLUG VALVE	PV
CONCRETE PIPE	CP	POINT OF INTERSECTION	PI
DIAMETER RATIO	DR	POLYVINYL CHLORIDE PIPE	PVCP
DUCTILE IRON PIPE	DIP	REINFORCED CONCRETE PIPE	RCP
DRIVEWAY	D/W	RESTRAINED MECHANICAL JOINT	RMJ
EDGE OF PAVEMENT	EOP	RIGHT of WAY	R/W
FIBER OPTIC CABLE	FOC	TOP of PIPE	TOP
FLORIDA DEPT. OF TRANSPORTATION	FDOT	VERIFIED VERT. AND HORZ. LOCATION	Vvh
FORCE MAIN	FM	VITRIFIED CLAY PIPE	VCP
HIGH DENSITY POLYETHYLENE PIPE	HDPE	WASTEWATER	WW



INDEX	
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3	GENERAL NOTES
4	AERIAL AND SITE PLAN
5	DEMOLITION PLAN
6	DEMOLITION SECTION A
7	PROPOSED PLAN
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9	DETAILS (1 OF 3)
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11	DETAILS (3 OF 3)
12	ANTENNA DETAILS
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14	PIPE RESTRAINT DETAILS
15	GUARD RAIL DETAIL
16	PROPOSED ACCESS COVER DETAILS
EG1	ELECTRICAL SYMBOL LEGEND (SHT. 1 OF 2)
EG2	ELECTRICAL SYMBOL LEGEND (SHT. 2 OF 2)
EG3	GENERAL NOTES
EG4	SCOPE OF WORK
ED1	EXISTING ELECTRICAL DEMOLITION
ED2	EXISTING ELECTRICAL SECTION VIEWS
E1	PROPOSED ELECTRICAL PLAN
E2	ELECTRICAL EQUIPMENT LINE UP FRONT VIEW
E3	KEYED NOTES
E4	PUMP CONTROL PANEL DETAILS
E5	MOTOR CONTROL PANEL DETAILS & PMI DISCONNECTION ENCLOSURE
E6	ELECTRICAL ONE-LINE DIAGRAM
E7	ELECTRICAL SCHEMATIC (1 OF 3) MOTOR CONTROL PANEL
E8	ELECTRICAL SCHEMATIC (2 OF 3) PUMP CONTROL PANEL
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E14	ELECTRICAL DETAILS (SHT. 1 OF 4)
E15	ELECTRICAL DETAILS (SHT. 2 OF 4)
E16	ELECTRICAL DETAILS (SHT. 3 OF 4)
E17	ELECTRICAL DETAILS (SHT. 4 OF 4)

EXISTING PROJECT LOCATION

N.T.S.

No.	DATE	REVISIONS
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JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	DES: CB DRN: KLT CKD: DATE: Jul-2020
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CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
LOCATION MAP AND INDEX

SHEET
2

NOTES

DEMOLITION NOTES

1. SALVAGEABLE MATERIAL AS DETERMINED BY TREATMENT PLANT PERSONNEL SHALL BE DELIVERED TO THE CITY OF TAMPA'S HOWARD F. CURREN AWTP AT 2700 MARITIME BOULEVARD. NON-SALVAGEABLE MATERIALS ARE TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF AT THE CONTRACTORS EXPENSE. IN GENERAL, ALL ITEMS CONSTRUCTED OF METAL SHALL REMAIN THE PROPERTY OF THE CITY AND SHALL BE DELIVERED TO THE TREATMENT PLANT.
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.
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.

GENERAL NOTES

- 1 ALL ELEVATIONS ARE NGVD 29 VERTICAL DATUM, UNLESS OTHERWISE NOTED.
2. EXISTING DIMENSIONS ARE BASED ON THE BEST INFORMATION AVAILABLE. TRUE DIMENSIONS SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR.
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHT-OF-WAY PERMITS FOR THE PUMPING STATION WORK.
4. THE CITY WILL OBTAIN ALL NECESSARY BUILDING PERMITS AND FDEP WASTEWATER PERMITS.
5. CONTRACTOR SHALL CALL SUNSHINE (1-800-432-4770) AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY.
6. NORMAL WORKING HOURS SHALL BE WEEKDAYS FROM 7:30 AM TO 4:00 PM UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. TWO NEW PUMPS SHALL BE SUPPLIED FOR THIS PROJECT. PROPOSED PUMPS ARE FLYGT, MODEL NP-3202.185, 4-INCH, 45 HP, WITH 316 mm IMPELLERS. PUMPS SHALL BE SUPPLIED WITH FLYGT MIX-FLUSH VALVES. ALL PROPOSED PUMP BASES SHALL BE 4-INCH DIAMETER DISCHARGE ELBOWS. PUMPS SHALL BE RATED FOR 360 GPM AT 150 FT TDH. THIS EQUIPMENT IS A STANDARDIZED ITEM AT THIS FACILITY AND NO "OR EQUAL" SUBMITTALS WILL BE CONSIDERED.
8. CONTRACTOR SHALL VERIFY QUANTITIES OF ALL NECESSARY PIPES, REDUCERS, FITTINGS, SUPPORTS, AND ANY MISCELLANEOUS BRACKETS.
9. 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.
10. 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 (CLEARLY LEGIBLE). NO FAXED SHEETS OR POOR QUALITY COPIES WILL BE ACCEPTED FOR SUBMITTAL REVIEW.
11. PUMP DISCHARGE PIPING IN WET WELL SHALL BE 6-INCH DIAMETER HDPE, SDR-11, GREEN STRIPE, DIPS-OD. HDPE JOINTS SHALL BE BUTT FUSED OR FLANGED WITH 316 SS BACK UP RINGS.
12. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.
13. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH CONTRACT ADMINISTRATION DEPARTMENT, WASTEWATER PERSONNEL AND PUMPING STATION OPERATIONS.
14. PLUG VALVES SHALL BE DEZURIK, 100% FULL PORT ECCENTRIC PLUG VALVES (PEF) AND CHECK VALVES SHALL BE APCO MODEL RUBBER FLAPPER SWING CHECK VALVES, SERIES 100 MODEL 106P3. THESE ITEMS ARE STANDARDIZED ITEMS AT THIS FACILITY AND NO "OR EQUAL" WILL BE CONSIDERED.
15. ALL METAL PIPE, FITTINGS, VALVES, ETC. SHALL RECEIVE:
 - A) SHOP COAT - ONE COAT, 3-5 MILS (DRY) TNEMEC N140-1211 EPOXY PRIMER.
 - B) FIELD COAT - ONE COAT, 3-5 MILS (DRY) TNEMEC N69
 - C) FIELD COAT - ONE COAT, 2.5-4 MILS (DRY) TNEMEC 1074U ENDURASHIELD (WITH FACTORY ADDED UV BLOCKER)
16. PIPE SUPPORTS SHALL BE CONSTRUCTED AS SHOWN ON THE PIPE SUPPORT DETAIL. (SEE DETAIL ON SHT. 10.).

17. AFTER WET WELLS ARE DEWATERED, THE CONTRACTOR SHALL CLEAN WET WELLS OF ALL DEBRIS. DEBRIS MAY BE DELIVERED AND DISPOSED OF AT THE CITY OF TAMPA HOWARD F. CURREN AWTP, 2700 MARITIME BOULEVARD.
18. OSHA STANDARD SAFETY EQUIPMENT SUCH AS SAFETY HARNESES, GAS MONITORS, LOWER EXPLOSIVE LIMIT (LEL) DETECTORS, BREATHING APPARATUS, ETC. SHALL BE UTILIZED WHERE THE WORK DICTATES THEIR USE.
19. DURING THE REHABILITATION PROCESS, THE STRUCTURE SHALL BE ADEQUATELY VENTILATED AND HYDROGEN SULFIDE LEVELS SHALL BE CONTINUOUSLY MONITORED. THE CONTRACTOR MAY ALSO UTILIZE FORCED AIR.
20. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE CLASS 53 AND LINED USING PROTECTO 401 EPOXY.
21. DISTURBANCE TO ANY PROPERTY, PUBLIC OR PRIVATE, WITHIN THE RIGHT-OF-WAY SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
22. ALL CEMENTITIOUS CONCRETE AND GROUT, UNLESS OTHERWISE NOTED, SHALL BE CLASS "B", 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. ALL REINFORCING STEEL SHALL BE GRADE 60.
23. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FLORIDA BUILDING CODE 6TH EDITION 2017, CHAPTER 5 OF THE CITY OF TAMPA CODE AND NATIONAL ELECTRICAL CODE 2014 EDITION.
24. ALUMINUM ACCESS COVERS SHALL BE DESIGNED FOR A PEDESTRIAN LIVE LOADING OF 300 PSF WITH 316 STAINLESS STEEL HARDWARE, HINGES AND AUTOMATIC HOLD-OPEN ARM AS MANUFACTURED BY US FOUNDRY AND MANUFACTURING CORPORATION OR APPROVED EQUAL. THE PUMP ACCESS COVER SHALL BE A DOUBLE DOOR ARRANGEMENT RETROFIT INSTALLATION TO MATCH EXISTING OPENING, US FOUNDRY MODEL APD 48"x72" OR APPROVED EQUAL. THE ACCESS DOOR SHALL ALSO BE EQUIPPED WITH A FLUSH LIFTING HANDLE, TAMPERPROOF FASTENERS AND EXPOSED PADLOCK STAPLES. REFER TO PROPOSED ACCESS COVER DETAILS ON SHEET 16.
25. THE ACCESS COVER SHALL CLOSE FLUSH WITH THE FRAME. ALL ALUMINUM SURFACES THAT CONTAIN CONCRETE SHALL BE COATED WITH TWO COATS OF COAL TAR EPOXY OR BITUMINOUS COATING OR EQUAL. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING THE INSTALLATION AND CONFIGURATION OF THE ACCESS COVERS.
26. THE CONTRACTOR SHALL REPAIR ALL T-LOCK DAMAGED DURING THE ACCESS COVER REPLACEMENT OR PIPE INSTALLATION IN ACCORDANCE WITH DETAIL SHOWN ON SHEET 9.
27. ALL CONCRETE PAVEMENT, UNLESS NOTED OTHERWISE, SHALL BE MINIMUM 6" THICK CONCRETE WITH 4x4 W6xW6 WWF STEEL REINFORCEMENT. CONCRETE SHALL BE CONSTRUCTED ON COMPACTED SUBBASE (MINIMUM 98% MODIFIED PROCTOR) WITH 1.5" DEEP CONTROL JOINTS SAWCUT @ 15' MAX, CUT WITHIN 12 HRS OF CONCRETE PLACEMENT.

BYPASS PUMPING NOTES

1. SEWER SERVICE TO CUSTOMERS SHALL NOT BE DISRUPTED DURING CONSTRUCTION. CONTRACTOR SHALL SUBMIT DETAILED PROPOSAL FOR PUMPING STRATEGY.
2. THE BYPASS PUMPS SHALL BE THE SELF PRIMING QUIET FLOW TYPE PUMP. THE PUMPS SHALL SUCTION FROM MANHOLE AND DISCHARGE INTO THE PROPOSED 6" BYPASS ASSEMBLY IN THE VALVE VAULT. BYPASS PUMPS NOISE SHALL STRICTLY COMPLY TO ALL LOCAL REGULATIONS AND ORDINANCES COVERING NOISE CONTROL. THIS MAY REQUIRE CONSTRUCTING SOUND ATTENUATING ENCLOSURE AROUND PUMPS. SEE SPECIFICATIONS FOR ADDITIONAL BYPASS PUMPING REQUIREMENTS.
3. CONTRACTOR SHALL SUPPLY (2) SOUND ATTENUATED DIESEL BY-PASS PUMPS (1 PRIMARY AND 1 BACK-UP EACH CAPABLE OF DELIVERING 360 GPM AT 150' TDH PLUS ANY LOSSES PRODUCED IN THE TEMPORARY BY-PASS PIPING. THE PUMPS SHALL SUCTION FROM THE MANHOLE IN THE STREET AND DISCHARGE INTO THE PROPOSED BYPASS ASSEMBLY VALVES AND FITTINGS IN THE VALVE VAULT AS SHOWN ON SHEET 8 WITHIN A PUMP STATION SHUTDOWN WINDOW OF 2 HOURS. CONTRACTOR SHALL SUBMIT BYPASS PUMPING PLAN TO THE ENGINEER FOR APPROVAL.
4. THE CONTRACTOR MUST INSTALL THE PROPOSED BYPASS ASSEMBLY VALVES AND FITTINGS IN THE VALVE VAULT AS SHOWN ON SHEET 8 WITHIN A PUMP STATION SHUTDOWN WINDOW OF 2 HOURS. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH CITY PUMP STATION OPERATIONS PERSONNEL. THE SHUT DOWN WILL NEED TO OCCUR DURING LOW FLOW PERIODS.
5. THE 6" PLUG VALVE LOCATED AT DAYFLOWER AND CROSS CREEK BLVD. SHALL BE CLOSED DURING THE SHUTDOWN TO INSTALL THE BYPASS ASSEMBLY. ONLY CITY PERSONNEL SHALL OPERATE THIS VALVE. PLEASE PROVIDE THE CITY WITH TWO WEEK MINIMUM NOTICE OF THIS WORK.
6. CONTRACTOR SHALL HAVE ALL NEW EQUIPMENT ON-SITE BEFORE PLACING THE PUMPING STATION ON BYPASS.

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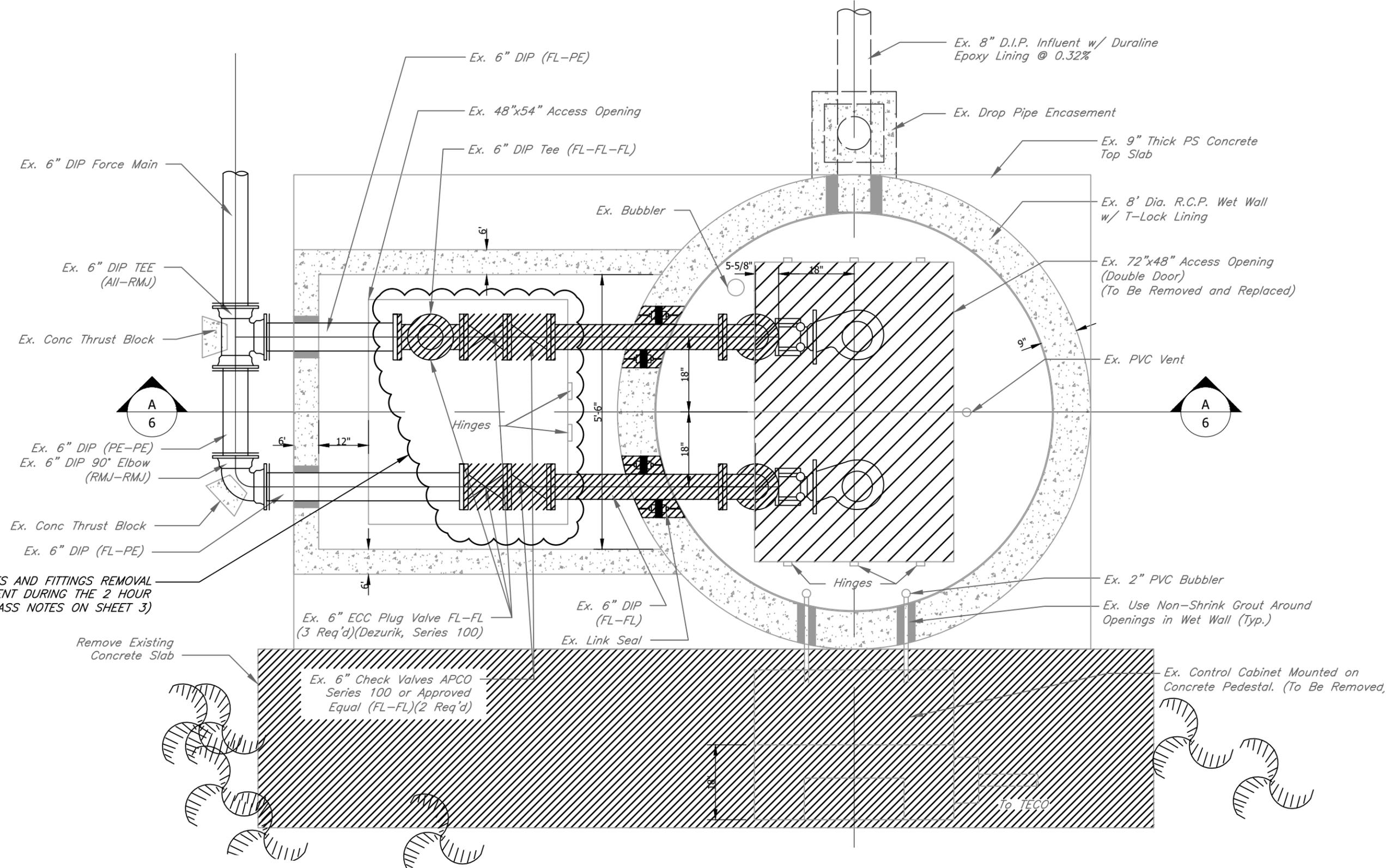
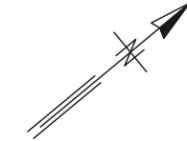
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DES: CB
 DRN: KLT
 CKD:
 DATE: Jul-2020

CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
 GENERAL NOTES

SHEET
3



**** PROPOSED VALVES AND FITTINGS REMOVAL AND REPLACEMENT DURING THE 2 HOUR SHUTDOWN. (SEE BYPASS NOTES ON SHEET 3)**

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

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

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

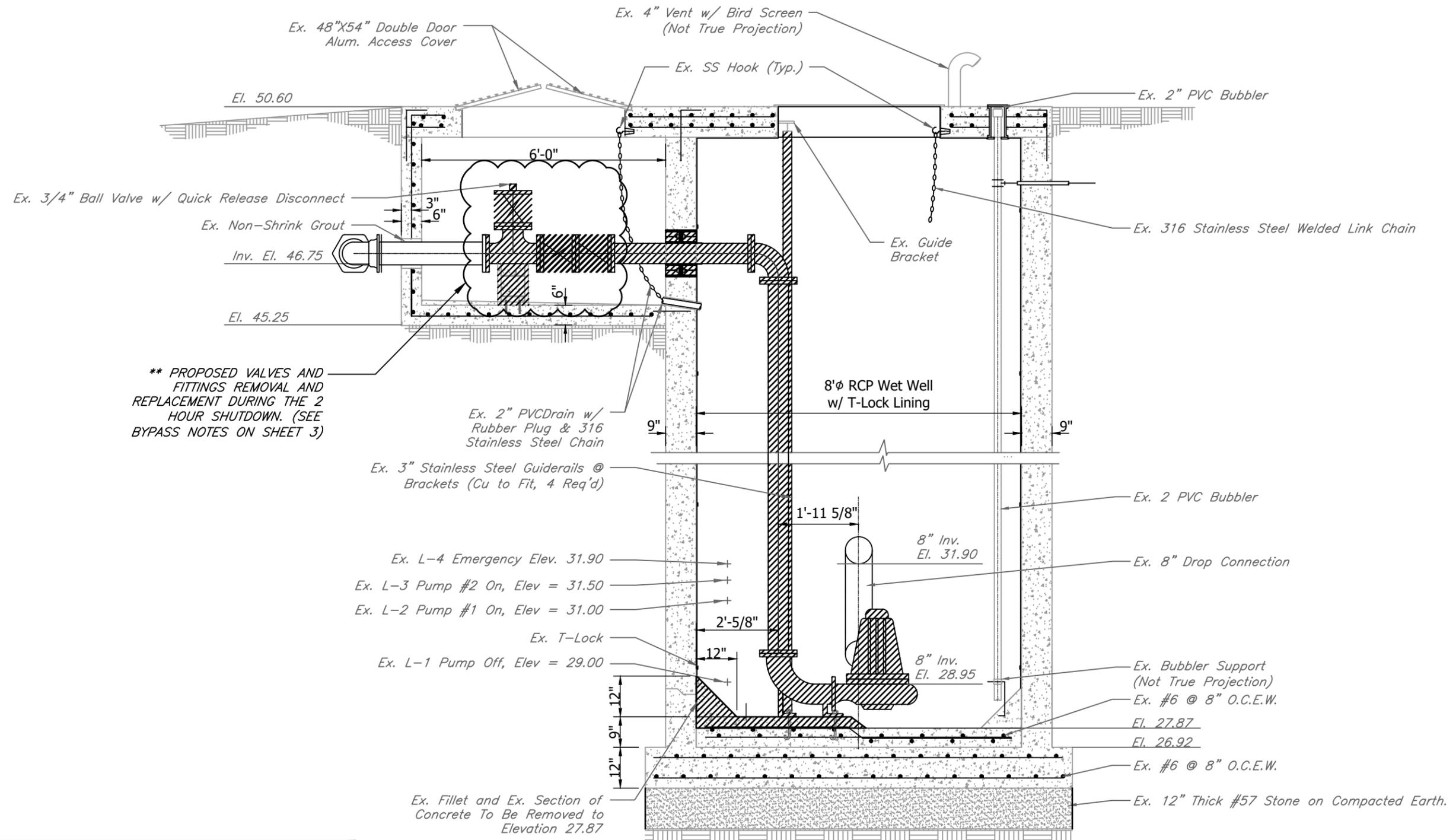
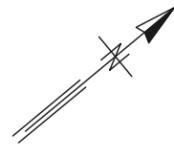
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CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
DEMOLITION PLAN

SHEET
5



**** PROPOSED VALVES AND FITTINGS REMOVAL AND REPLACEMENT DURING THE 2 HOUR SHUTDOWN. (SEE BYPASS NOTES ON SHEET 3)**

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

DEMOLITION SECTION A/5

SCALE: $\frac{3}{8}'' = 1'-0''$

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DIVISION HEAD
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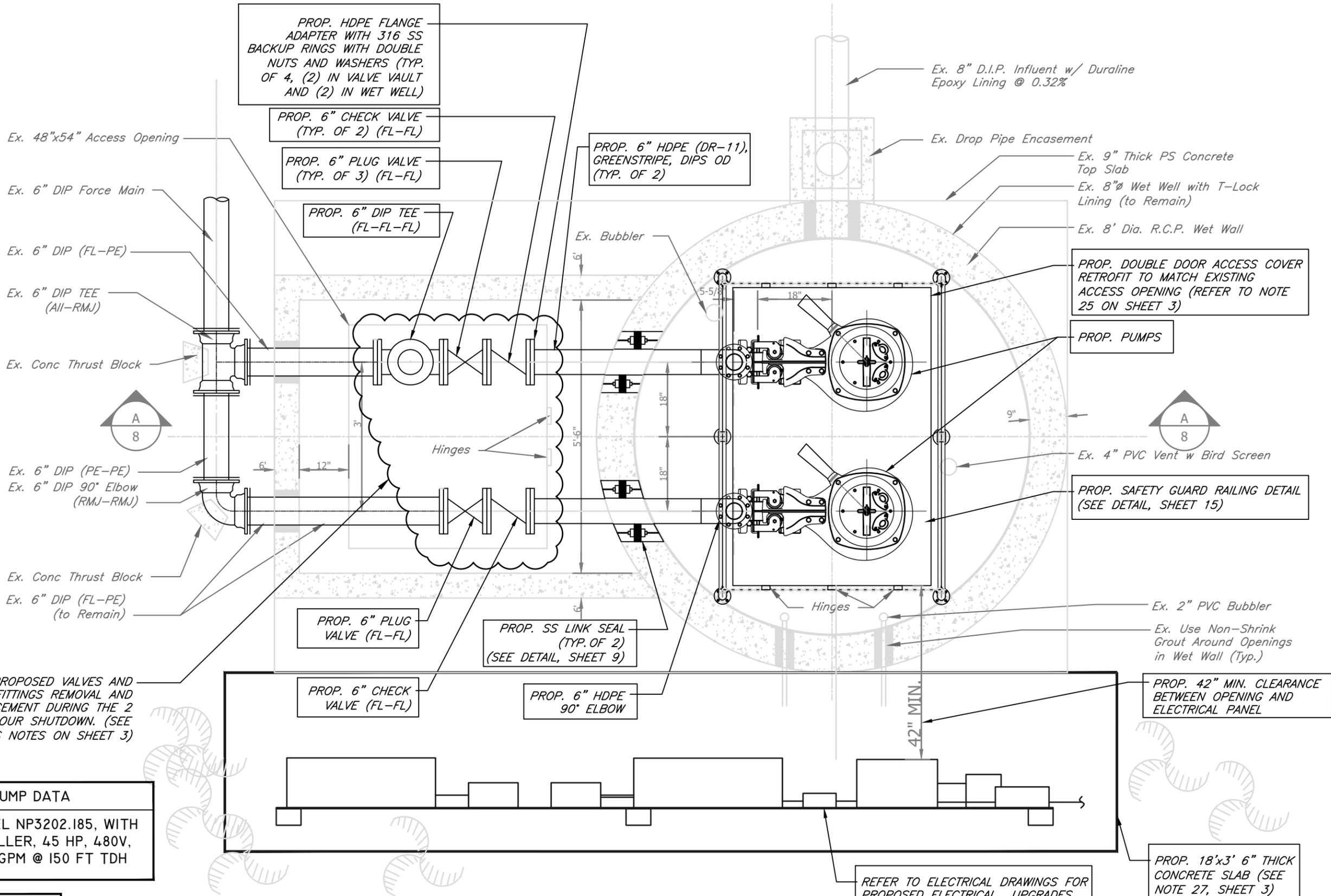
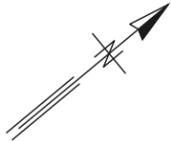
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CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
DEMOLITION SECTION A

SHEET
6



**** PROPOSED VALVES AND FITTINGS REMOVAL AND REPLACEMENT DURING THE 2 HOUR SHUTDOWN. (SEE BYPASS NOTES ON SHEET 3)**

PUMP DATA	
FLYGT MODEL NP3202.185, WITH 316MM IMPELLER, 45 HP, 480V, 3 PH, 360 GPM @ 150 FT TDH	

ALL PROPOSED WORK IS SHOWN IN BLOCKED TEXT

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

REFER TO ELECTRICAL DRAWINGS FOR PROPOSED ELECTRICAL UPGRADES.

PROP. 18'x3' 6" THICK CONCRETE SLAB (SEE NOTE 27, SHEET 3)

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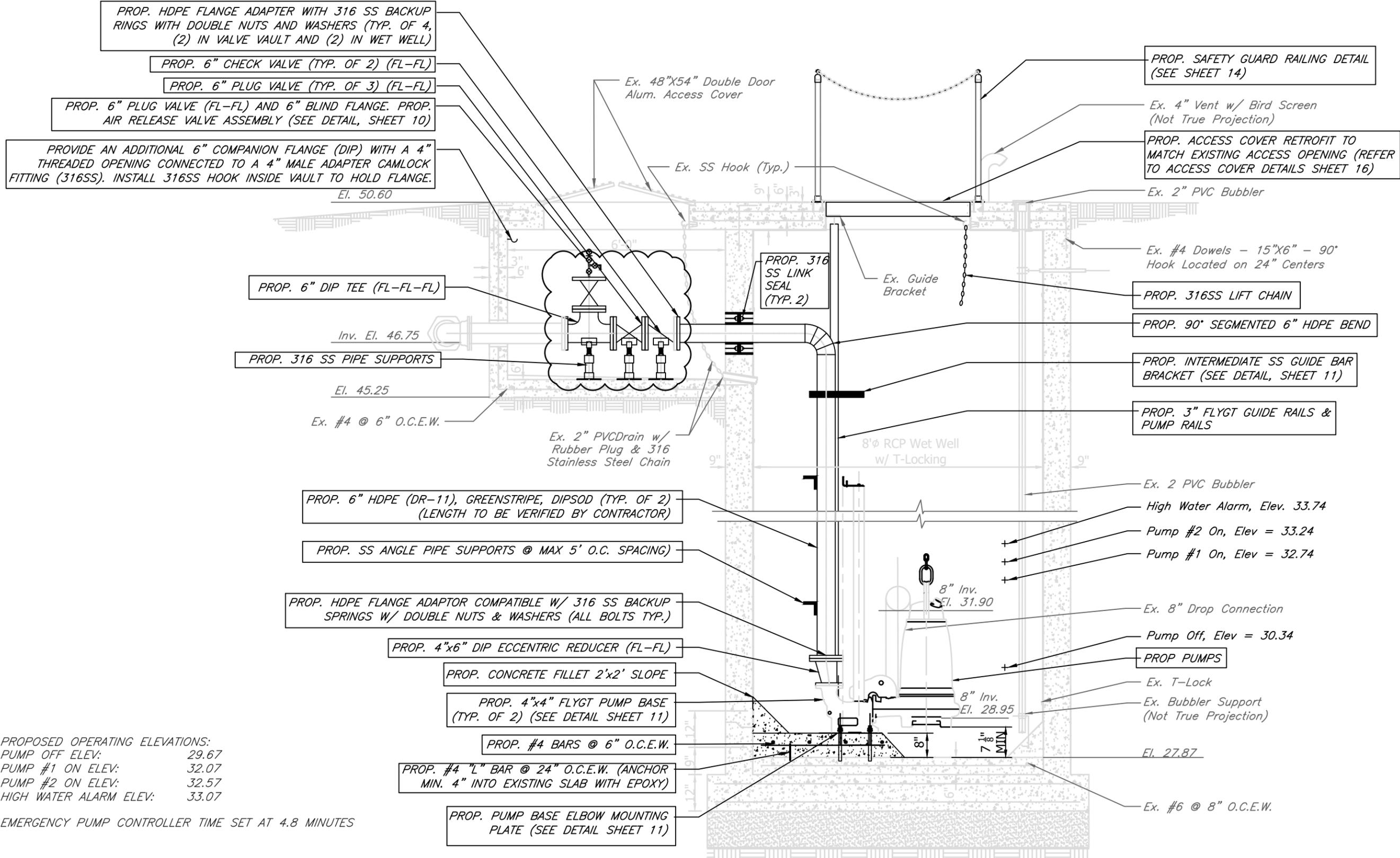
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CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
PROPOSED PLAN

SHEET
7



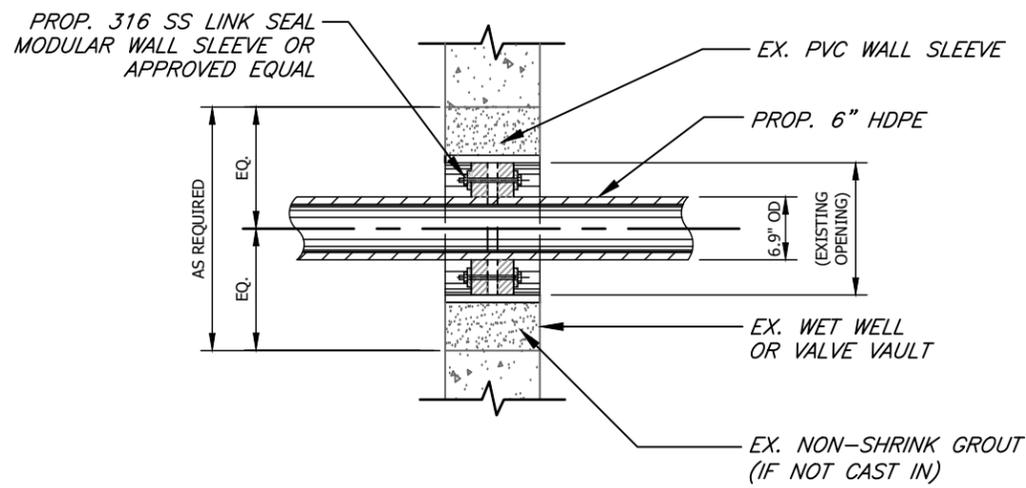
PROPOSED OPERATING ELEVATIONS:
 PUMP OFF ELEV: 29.67
 PUMP #1 ON ELEV: 32.07
 PUMP #2 ON ELEV: 32.57
 HIGH WATER ALARM ELEV: 33.07

EMERGENCY PUMP CONTROLLER TIME SET AT 4.8 MINUTES

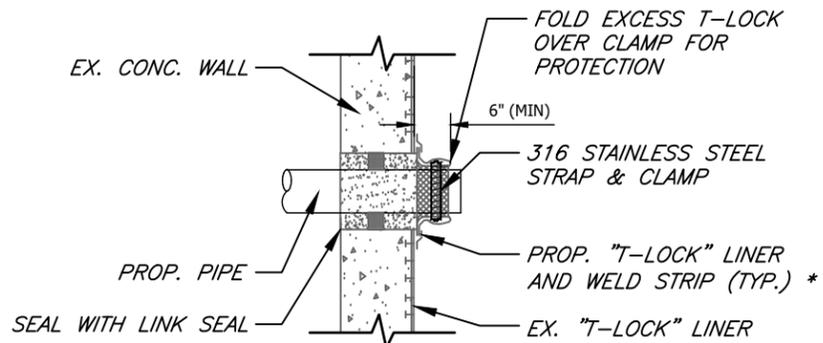
ALL PROPOSED WORK IS SHOWN IN BLOCKED TEXT

PROPOSED SECTION A/7
 SCALE: 3/8" = 1'-0"

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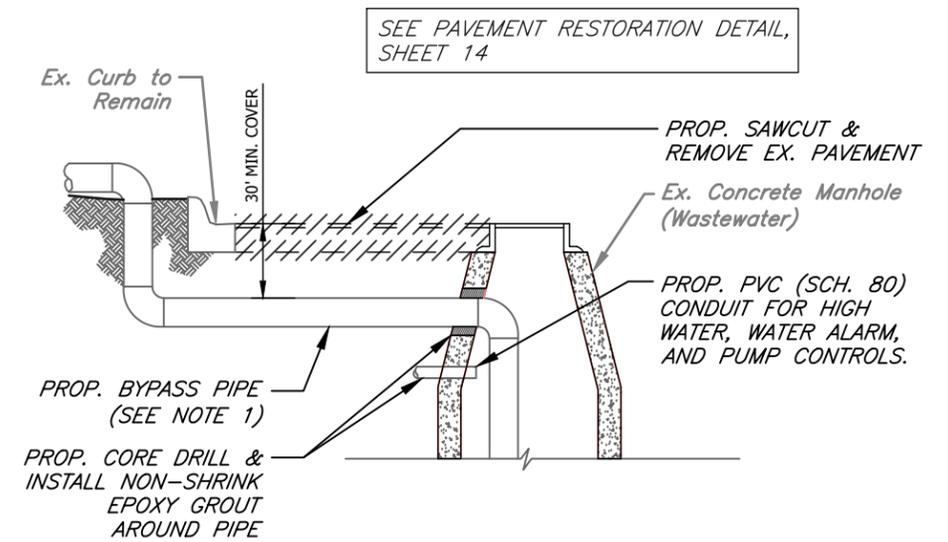


LINK SEAL DETAIL
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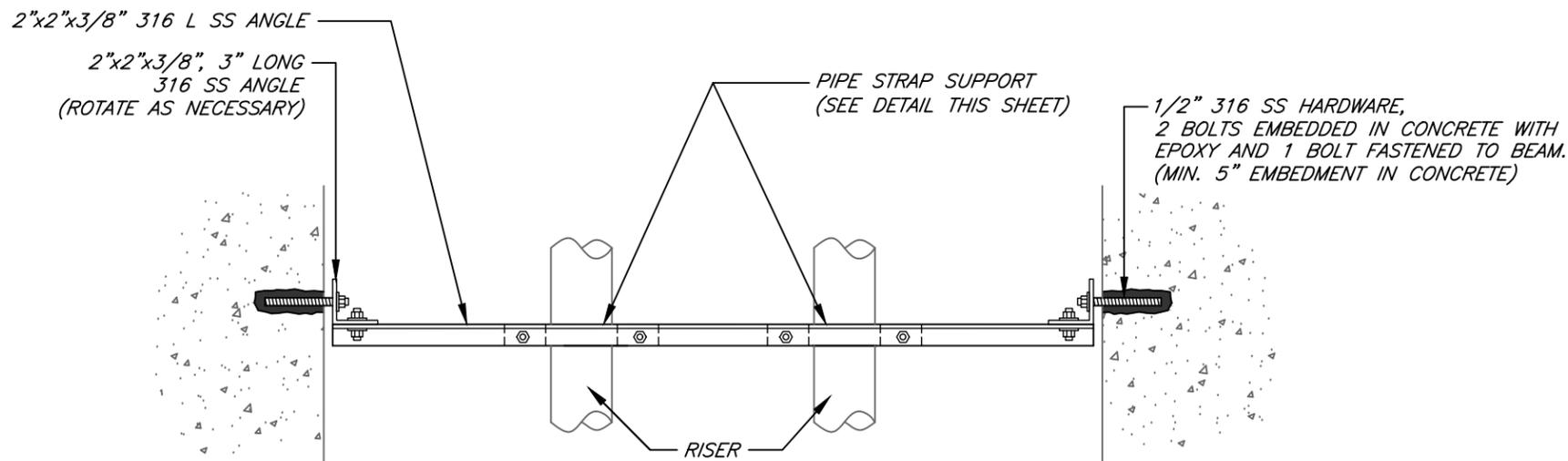


* ALTERNATIVE: CONTRACTOR MAY COAT WITH 125 MILS C.P.P. AND OVERLAP EXISTING T-LOCK BY 3"

PIPE LINED TO STRUCTURE
N.T.S.



BURIED BYPASS PIPE DETAIL
N.T.S.



PIPE SUPPORT ASSEMBLY
N.T.S.

NOTES:

1. BYPASS PIPE AND FITTINGS UNDER THE ROADWAY AND INSIDE THE MANHOLE SHALL BE HDPE C-906, MIN. DR-17 PIPE. ALL JOINTS SHALL BE BUTT-FUSED. ALTERNATE PIPE MATERIALS CAPABLE OF WITHSTANDING A H-20 LIVE LOAD MAY BE SUBMITTED FOR CONSIDERATION.
2. BYPASS PIPE SHALL BE EXTENDED TO THE MANHOLE BOTTOM AND SECURED TO THE MANHOLE. CONTRACTOR SHALL SUBMIT SHOP DRAWING ON PROPOSED INSTALLATION METHOD FOR APPROVAL.
3. UPON COMPLETION OF THE BYPASS OPERATION, CONTRACTOR SHALL COMPLETELY REMOVE BYPASS PIPE AND CONDUIT FROM INSIDE MANHOLE, AND CUT PIPE AT FACE OF WALL. PIPE UNDER ROADWAY SHALL REMAIN AND BE PLUGGED AT ENDS.
4. CONTRACTOR SHALL CALL SUNSHINE TO LOCATE UTILITIES IN EXCAVATION AREA.
5. EXISTING MANHOLE IS A CONCRETE MANHOLE.

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

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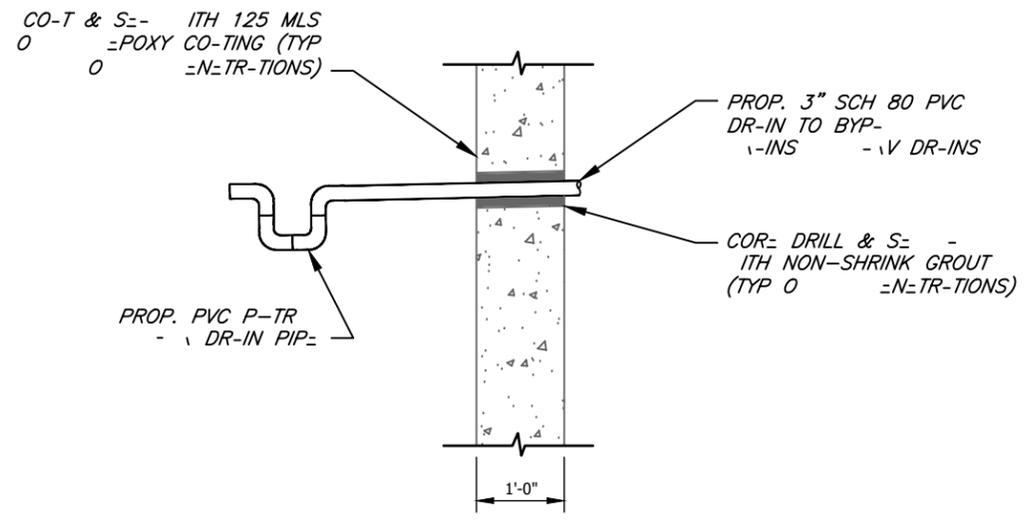
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CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION

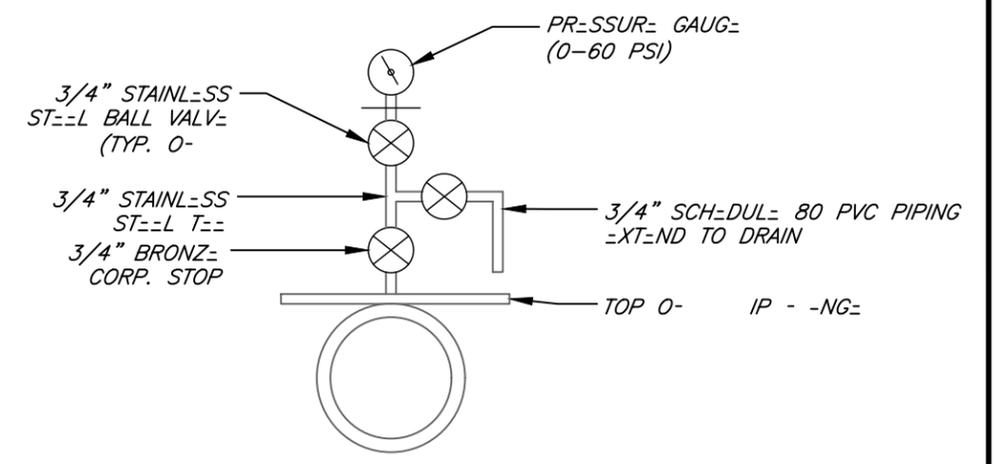
DETAILS (1 OF 3)

SHEET
9

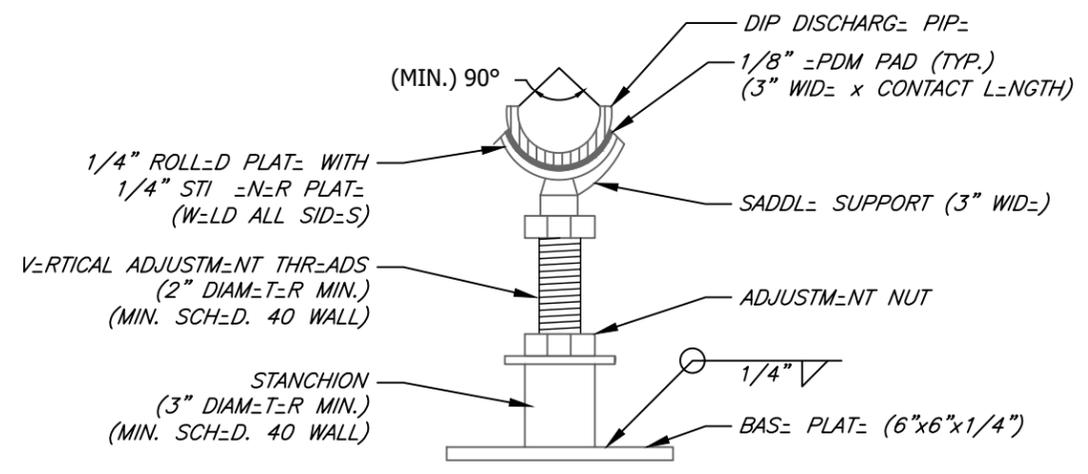


PIPE PENETRATION INTO WETWELL DETAIL (TYP)
N.T.S.

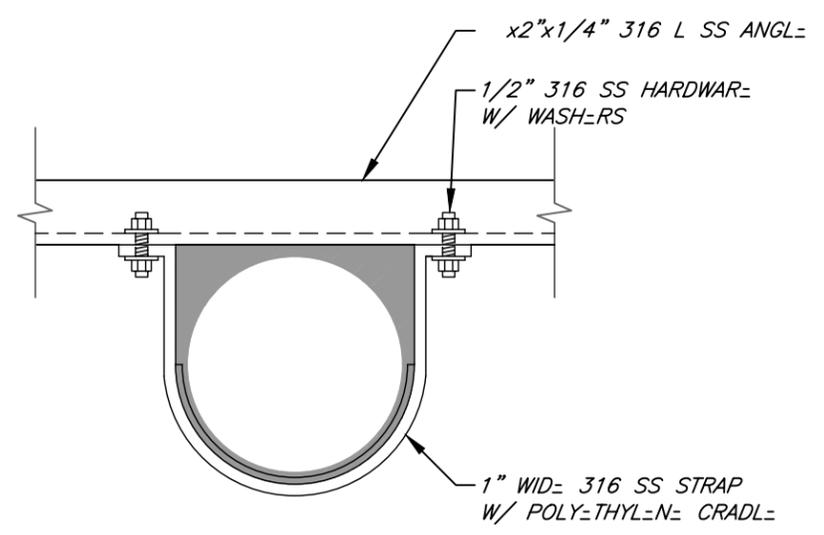
TRACTOR SHALL TAP AND DRILL ONE 3/4" CORPORATION STOP WITH AIR RELEASE VALVE AND PRESSURE GAUGE ASSEMBLY. PVC PIPE AND FITTINGS (SCH 80) SHALL BE PROVIDED TO DIRECT FLOW FROM THE BALL VALVE DOWNWARD TO THE FLOOR.



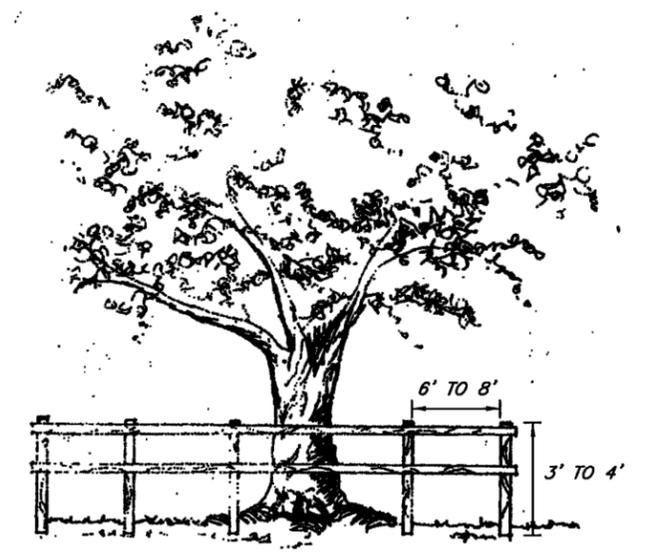
AIR RELEASE AND PRESSURE GAUGE
N.T.S.



SECTION VIEW - STAINLESS STEEL STANCHION SADDLE SUPPORT
N.T.S.



PIPE STRAP SUPPORT
N.T.S.



HORIZONTAL: WOOD MEMBER, ORANGE FENCING, CHAIN LINK FENCE OR OTHER APPROVED MATERIAL.
VERTICAL: WOOD MEMBER OR APPROVED MATERIAL.
BARRICADES PLACED AT DESIGNATED PROTECTIVE ROOT ZONE.

BARRICADE DETAIL FOR PROTECTED AND GRAND TREES DETAIL "J"
N.T.S.

ALL PARTS ARE TO BE MADE OF T-316/316L STAINLESS STEEL

No.	DATE	REVISIONS
3		
2		
1		

DES: CB
DRN: KLT
CKD:
DATE: Jul-2020

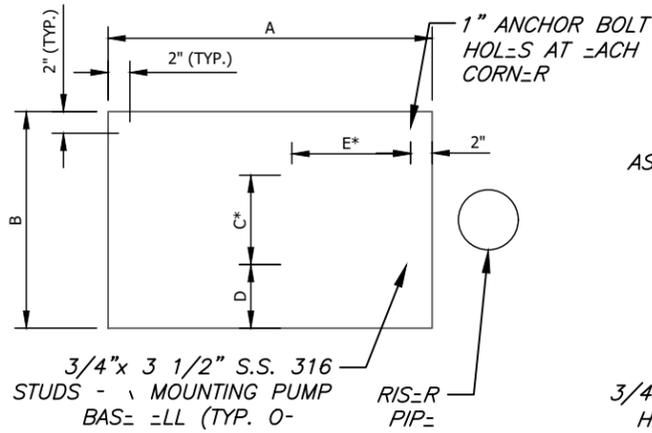
CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
DETAILS (2 OF 3)

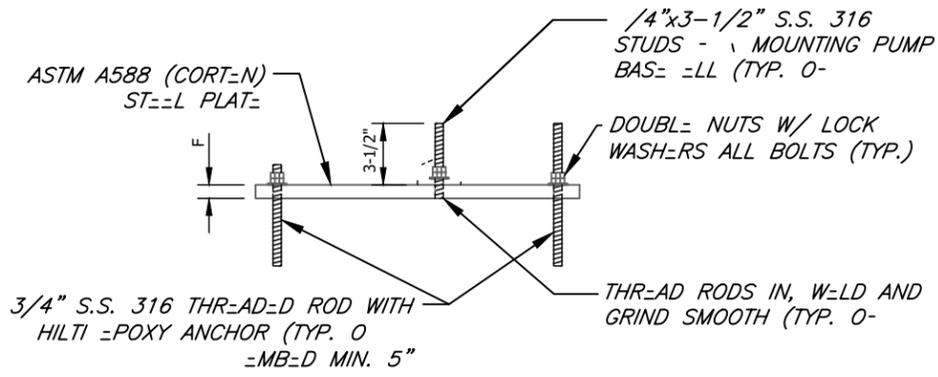
SHEET
10

PUMP BASE ELL MOUNTING PLATE DIMENSIONS					
A	B	C	D	E	F
24"	20"	6"	4"	9-7/8"	3/4"

- NOTES:
- INSTALL DOUBLE NUTS ON ALL EIGHT (8) THREADED RODS.
 - THE PLATE EDGES AND ALL HOLES SHALL BE GROUND SMOOTH TO REMOVE ALL BURRS.
 - DIMENSIONS FOR "C" & "E" ARE FOR FLYGT PUMPS, INC. BASE ELLS.
 - CONTRACTOR SHALL PROVIDE A MINIMUM 1/2 INCH BOLT PROTRUSION ABOVE THE FINAL NUT LOCATION AFTER THE NUT IS TIGHTENED TO MANUFACTURER'S RECOMMENDATION.



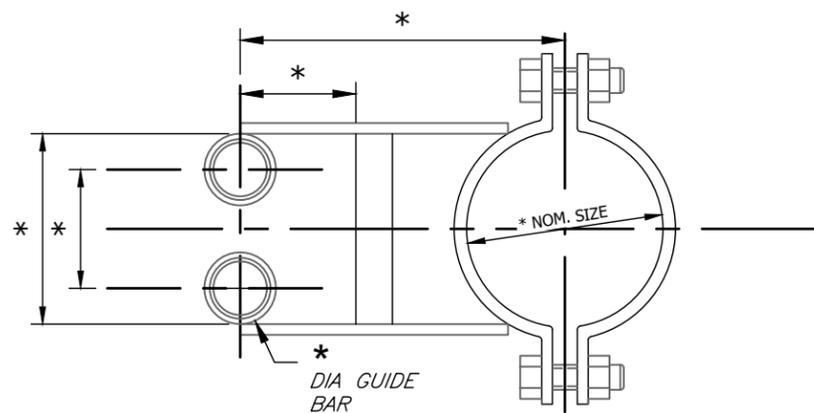
PLAN



PROFILE

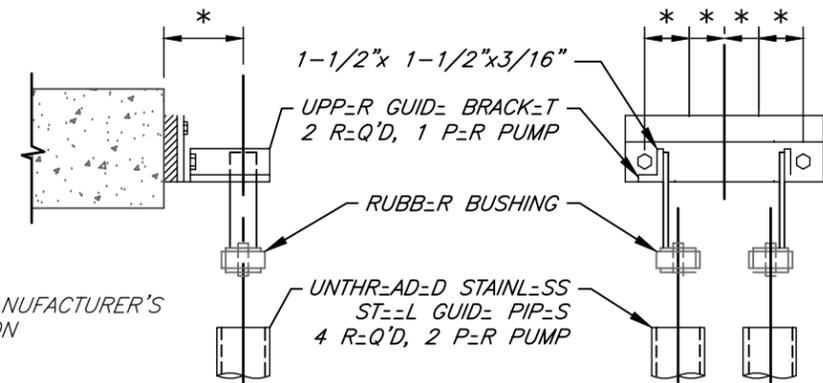
PUMP BASE ELL MOUNTING PLATE

N.T.S.



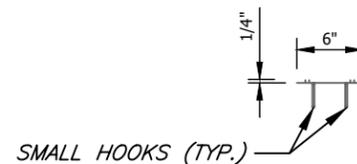
INTERMEDIATE GUIDE BAR BRACKETS

N.T.S.

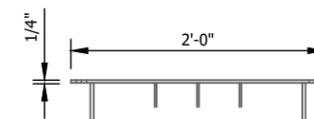


GUIDE BRACKET (SUPPLIED WITH PUMPS)

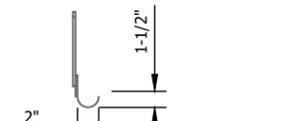
N.T.S.



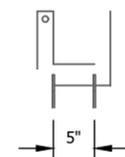
TOP VIEW SMALL HOOK



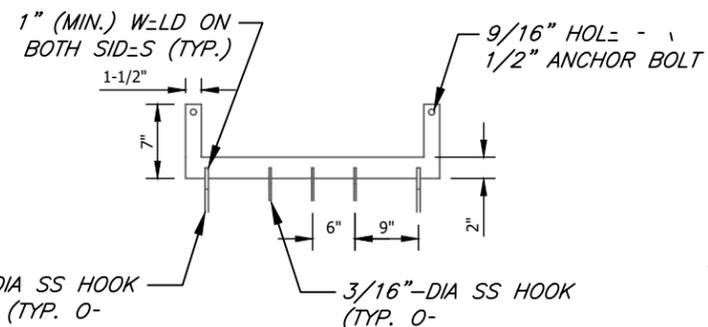
TOP VIEW LARGE RACK



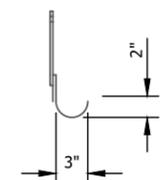
SMALL HOOK SIDE VIEW



FRONT VIEW SMALL RACK
(TYP. OF 2)



FRONT VIEW LARGE RACK
(TYP. OF 2)



LARGE HOOK SIDE VIEW

STAINLESS STEEL HOOK RACKS

N.T.S.

ALL PARTS ARE TO BE MADE OF T-316/316L STAINLESS STEEL

NOTE: INSTALL FLOATS IN A MANNER TO MAINTAIN PROPER OPERATIONAL CLEARANCE.

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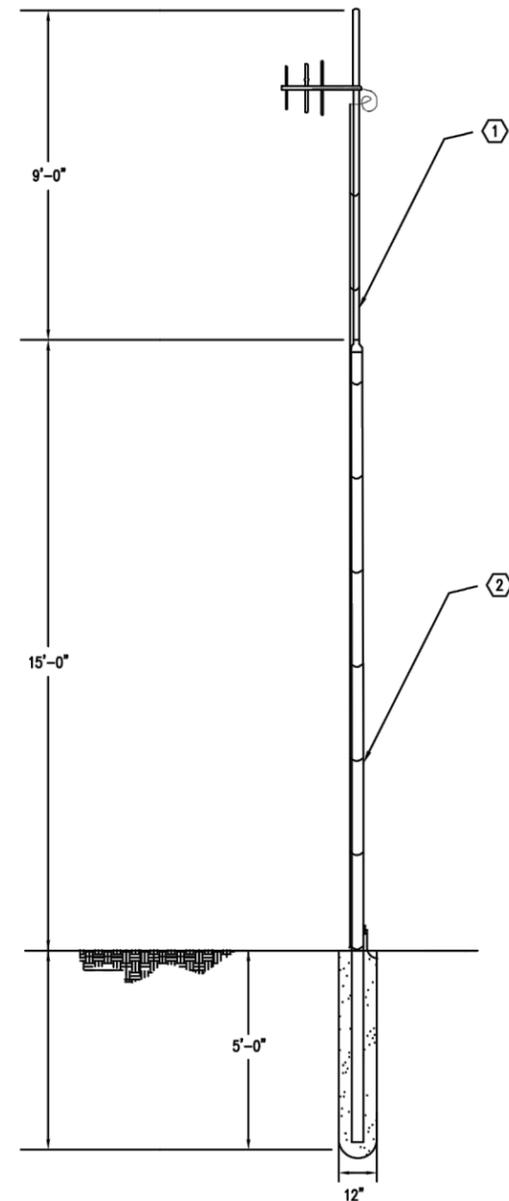
No.	DATE	REVISIONS
3		
2		
1		

WIND DESIGN DATA:

CODE: FLORIDA BUILDING CODE 2017, 6TH EDITION AND
ASCE/SEI 7-10

BASIC WIND SPEED(VULT) 152 MPH
 NOMINAL WIND SPEED (V_{ASD}) 118 MPH
 CATEGORY (RISK) III
 WIND EXPOSURE B

DESIGN WIND PRESSURE (PSF) 55.7 PSF



NOTES

- ① 1-1/4" GALVANIZED PIPE (SCH 40)
- ② 3" GALVANIZED PIPE (SCH 40)

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No.	DATE	REVISIONS
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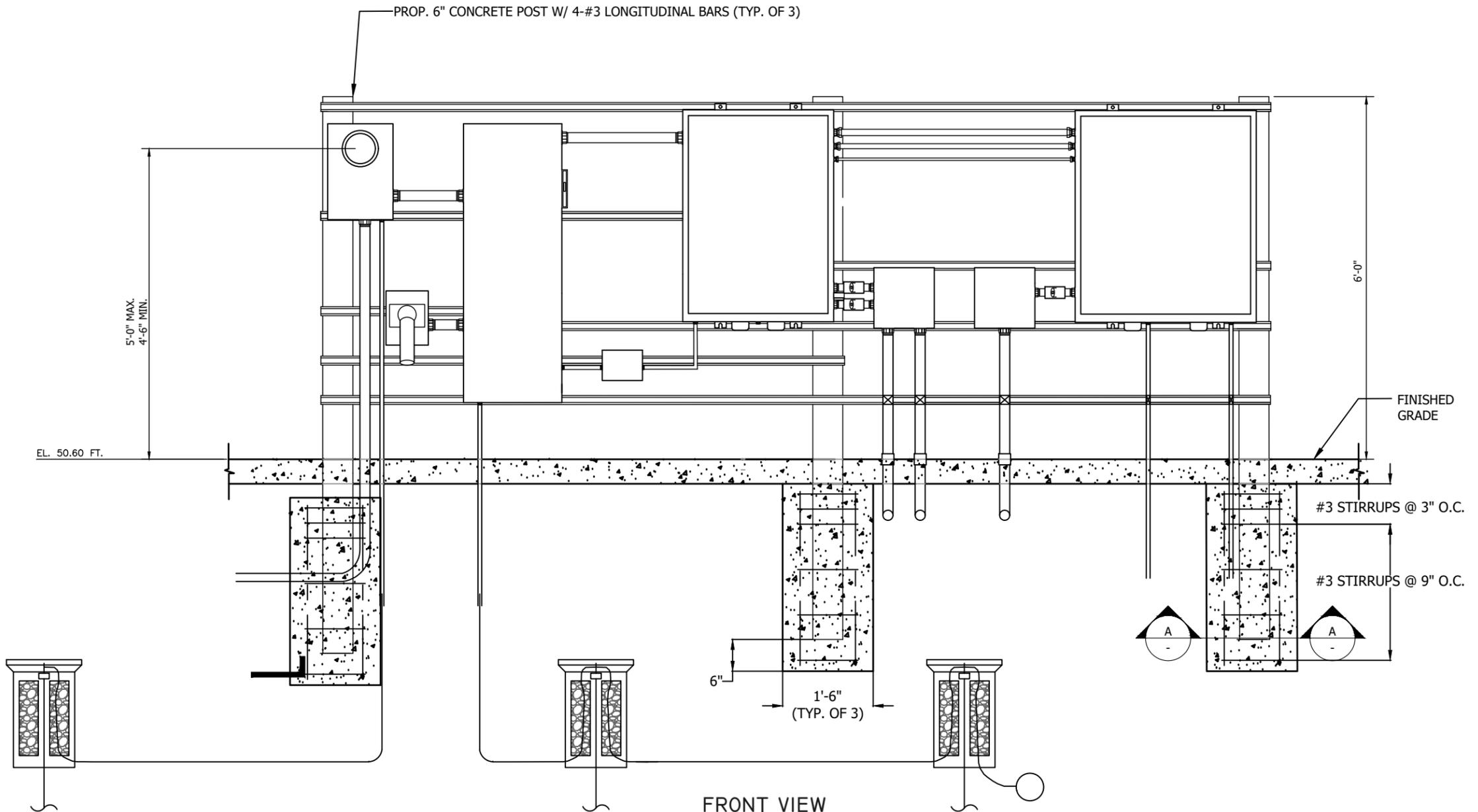
DES: CB
 DRN: KLT
 CKD:
 DATE: Jul-2020

CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION

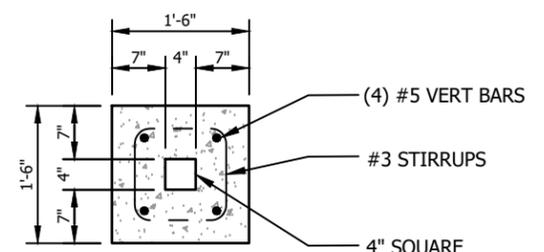
ANTENNA DETAILS

SHEET
12



FRONT VIEW

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



PROPOSED SECTION A-A

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

WIND DESIGN DATA:

CODE: FLORIDA BUILDING CODE 2017,
6TH EDITION AND ASCE/SEI 7-10

BASIC WIND SPEED (VULT): 152 MPH
 NOMINAL WIND SPEED (VASD): 118 MPH
 CATEGORY (RISK): III
 WIND EXPOSURE: B
 DESIGN AND WIND PRESSURE (PSF): 55.7

STRUCTURAL GENERAL NOTES:

1. THE DETAILING, BENDING, AND PLACING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ACI STANDARD 318-14 CODE AND ACI DETAILING MANUAL, SP-66 (94). FIELD BENDING WILL NOT BE PERMITTED UNLESS APPROVED BY ENGINEER.
2. ALL REINFORCING STEEL SHALL BE NEW BILLET STEEL DEFORMED BARS CONFORMING TO ASTM A614, GRADE 60.
3. ALL CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 PSI @ 28 DAY UNLESS OTHERWISE NOTED.
4. ALL STIRRUPS AND TIES SHALL BE CLOSED TYPE WITH 135 DEGREE HOOKS, U.N.O.
5. CONCRETE COVER OVER REINFORCEMENT SHALL BE 2 INCHES MINIMUM, UNLESS NOTED OTHERWISE, AND 3-INCHES MINIMUM WHERE CAST AGAINST EARTH.
6. POST FOUNDATIONS WERE DESIGNED USING CONSTRAINED CRITERIA.

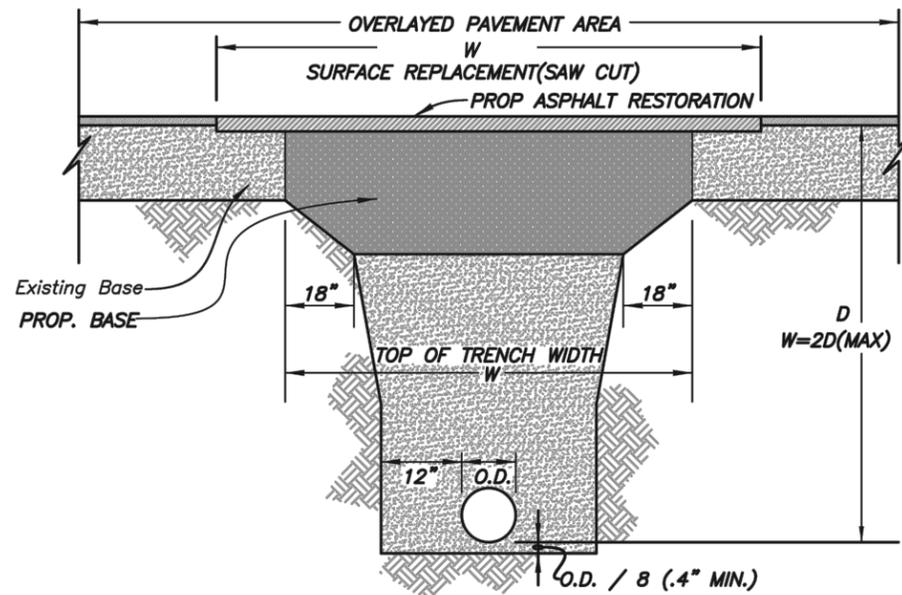
No.	DATE	REVISIONS
3		
2		
1		

DES: CB
 DRN: KLT
 CKD:
 DATE: Jul-2020

CITY of TAMPA
 WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
 ELECTRICAL CONTROL PANEL SUPPORT POST

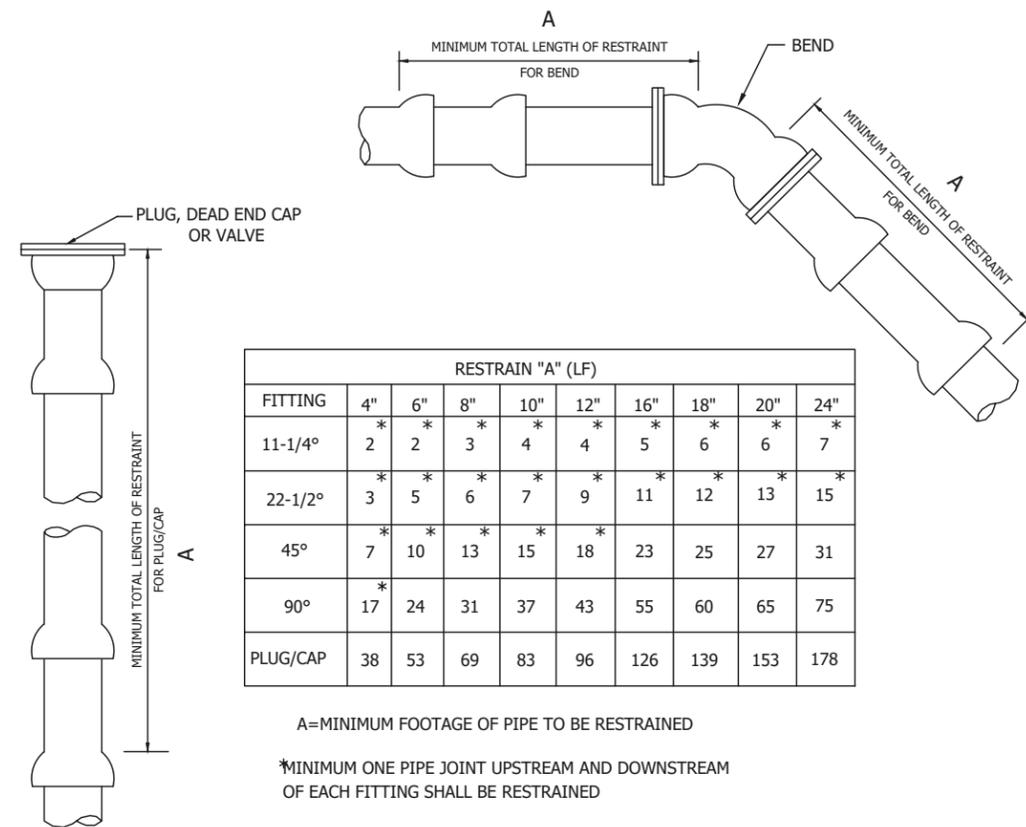
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**STANDARD DETAILS FOR ROADWAY RESTORATION
FOR A PERPENDICULAR UTILITY CROSSING**
NOT TO SCALE

PAVEMENT RESTORATION NOTES

1. B- K-ILL - \ P =D - -P =D - \ =- H = COMP- T=D TO 98% O -XIMUM DRY D=NSITY =T=RMIN=D BY --.S.H.T.O. T-180-57.
2. PROPOS=D CRUSH=D CONCR=T= B = SHOULD B= TWIC= TH= THICKN=SS O =XISTING B = OR 8" (WHICH=V=R IS GR=-T=R).
3. SUR = COURSE= SH = -.D.O.T. SUP=RP = - H- T SP 9.5 WITH - THICKN=SS =QU- TO TH= =XISTING COURSE= OR 2" (WHICH=V=R IS GR=-T=R WITHIN TR=NCH LIMITS).
4. MILL =RL- / WITH 1.5" O =RP = - H- T SP 9.5. MILL =RL- / LIMITS SH- INCLUD= TH= - ING:
· LOC- \O- ILL =RL- / - \B TO CURB WIDTH 100' WITH 1.5" O =RP = - H- T SP 9.5 WITHIN DIR=CT BURY PORTIONS O- TH= PROJ=CT.
5. R=PL = DISTURB=D CURB - ID=W- K IN KIND -T=R CONSTRUCTION.

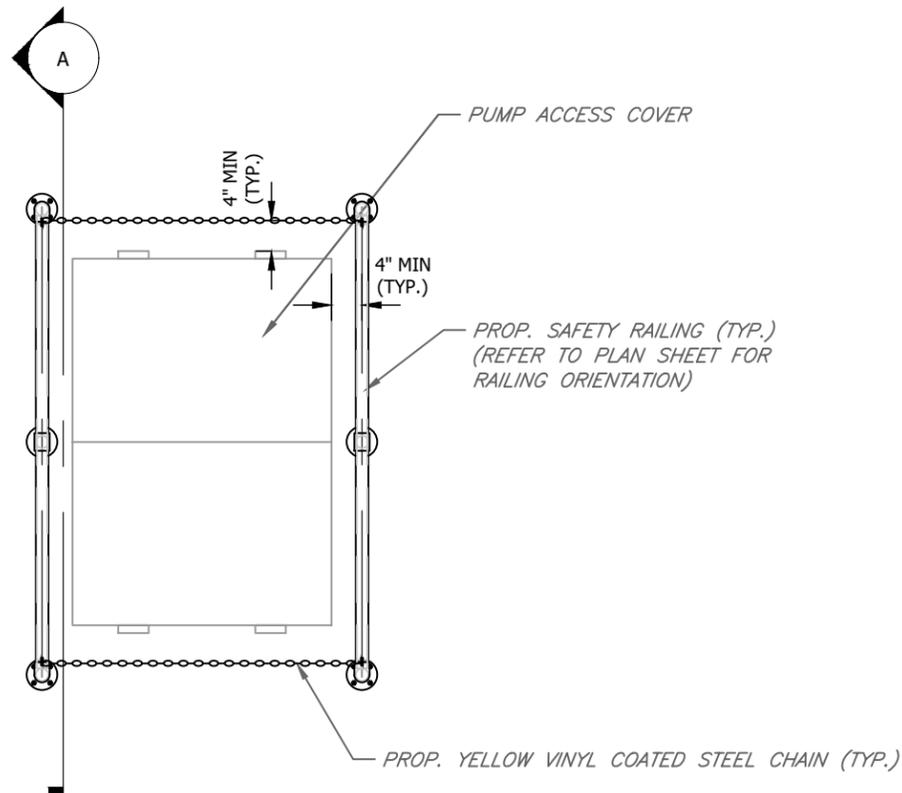


- NOTES:
1. THIS TABLE IS BASED ON:
A) MAXIMUM TEST PRESSURE OF 100 psi
B) LAYING CONDITION CLASS 'C'
C) POOR SOIL CONDITIONS
D) HORIZONTAL BENDS ONLY (SEE NOTE 2)
E) USING PVC
 2. RESTRAINED LENGTHS FOR VERTICAL BENDS AND TEES ARE TO BE DETERMINED ON A CASE BY CASE BASIS, AND SPECIFIED ON THE DESIGN PLANS.
 3. RESTRAINING DEVICES FOR PVC PIPE SHALL BE BY MEGALUG OR EQUAL, MEETING UNI-B-13.
 4. ANY ADDITIONAL FITTINGS WITHIN THE RESTRAINED SECTION SHALL BE RESTRAINED ACCORDINGLY.

FITTING RESTRAINT DETAIL
(AWWA C900/C905 PVC PIPE)

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JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: CB	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION	SHEET 14
	3			DRN: KLT			
	2			CKD:		PIPE RESTRAINT DETAILS	
	1			DATE: Jul-2020			

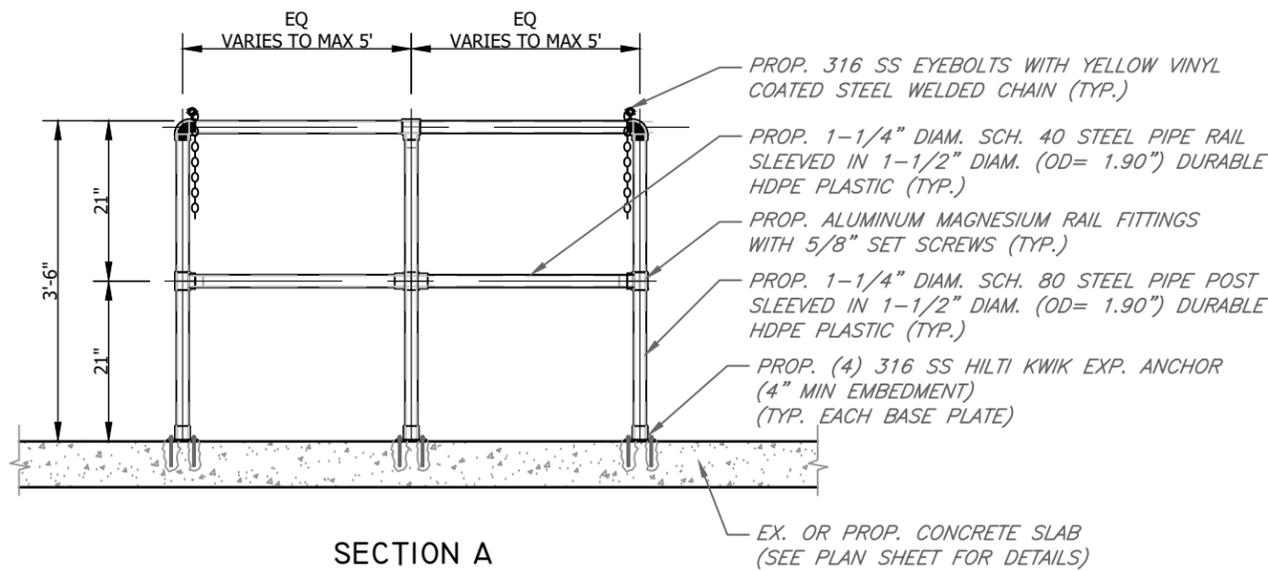


SAFETY GUARD RAIL DETAIL PLAN VIEW

N.T.S.

NOTES:

1. SAFETY RAILS AND PARTS SHALL BE STANDARD YELLOW, ULTRAVIOLET RESISTANT - 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 TWO 316 SS SPRING LOADS AND SNAPHOOKS.
3. ANCHORS SHALL BE DETACHED IN THE FIELD AND - COVERED BY ANGR.

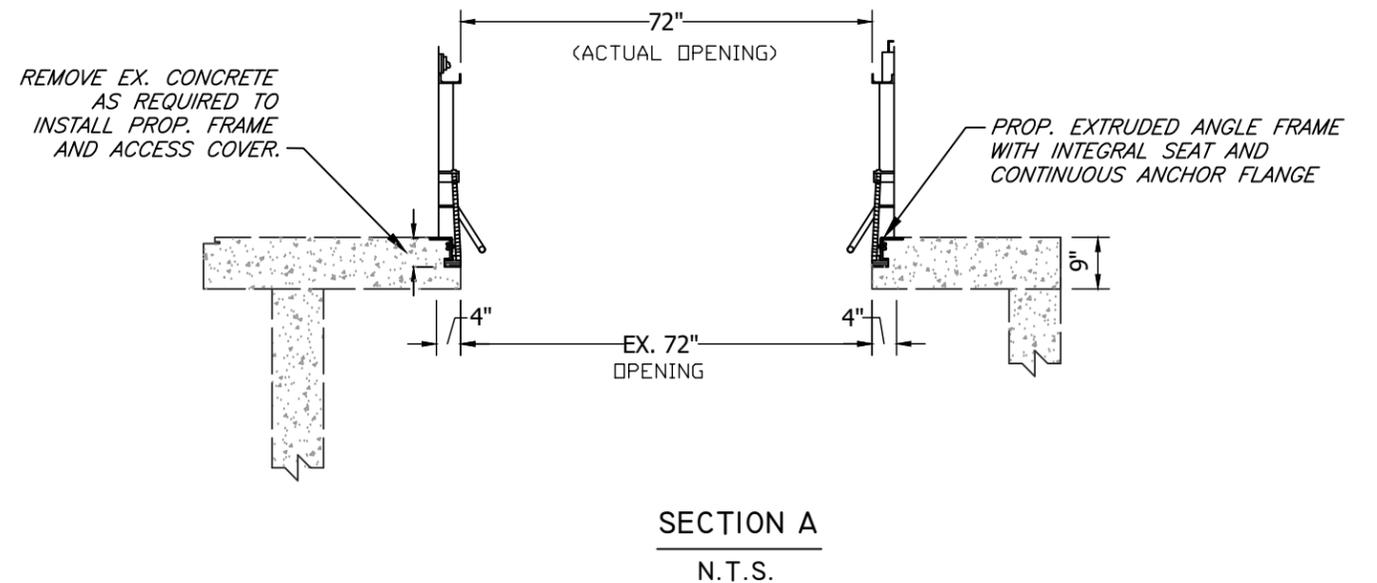
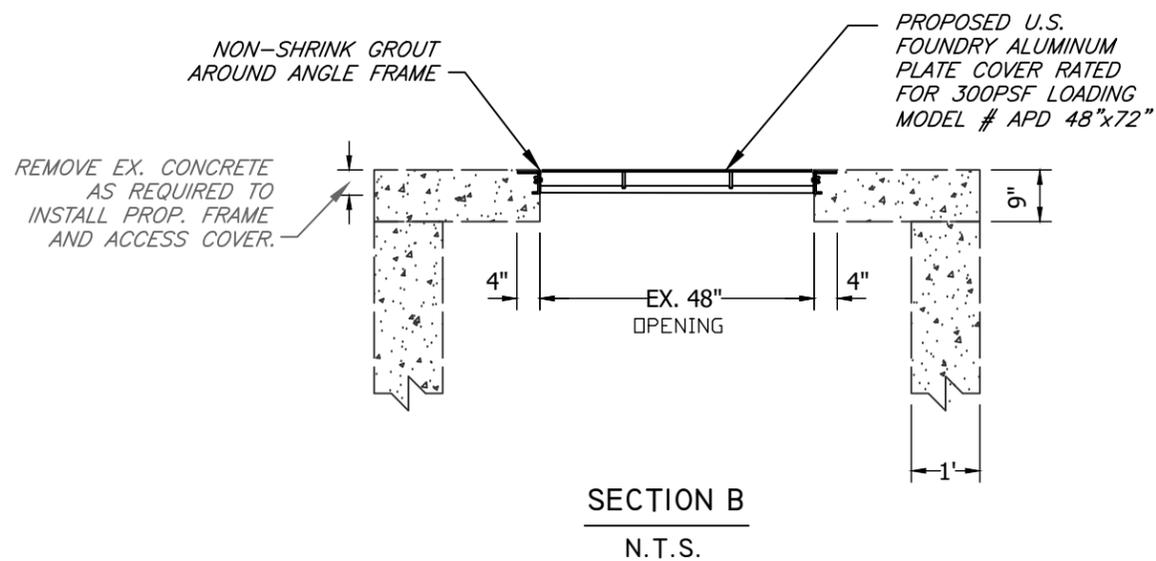


SECTION A

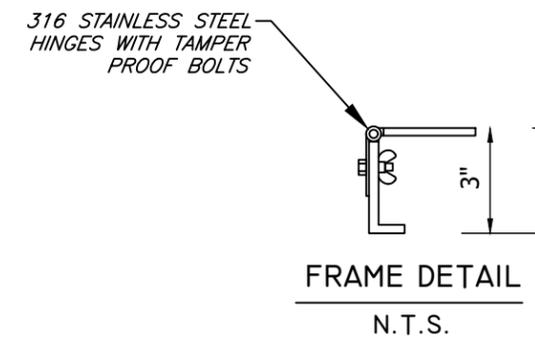
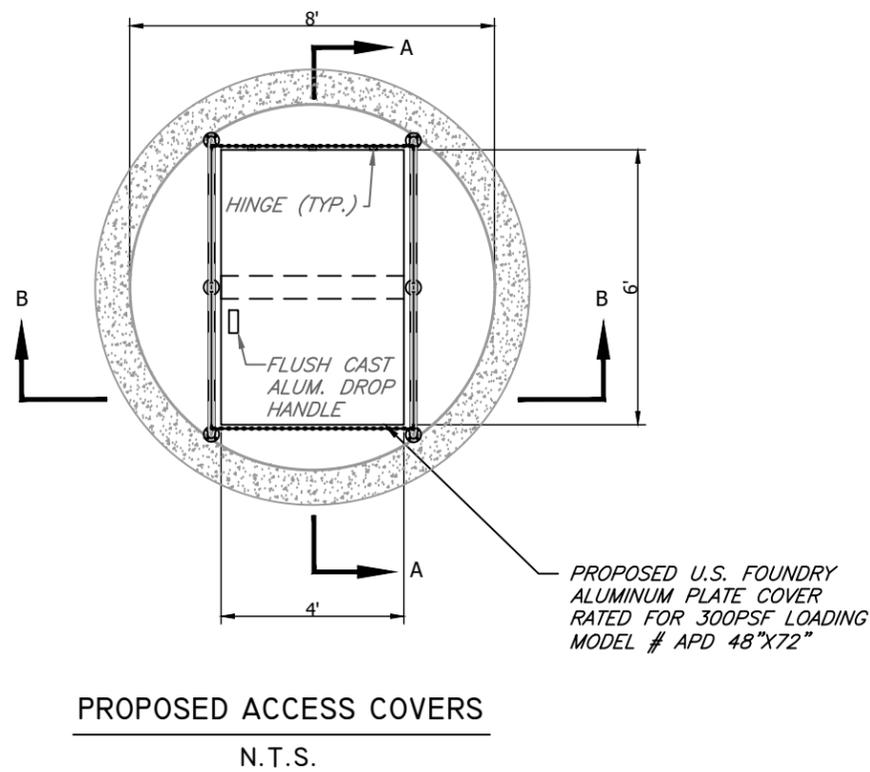
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JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: CB	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION	SHEET 15
	3			DRN: KLT			
	2			CKD:			
	1			DATE: Jul-2020			
						SAFETY GUARD RAIL DETAIL	



SEC 07 T275 R20E
ATLAS FF-19
N.T.S.



No.	DATE	REVISIONS
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DES: CB
DRN: KLT
CKD:
DATE: Jul-2020

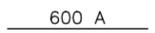
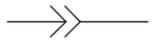
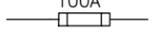
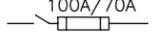
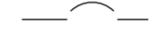
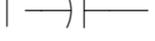
CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION

PROPOSED ACCESS COVER DETAILS

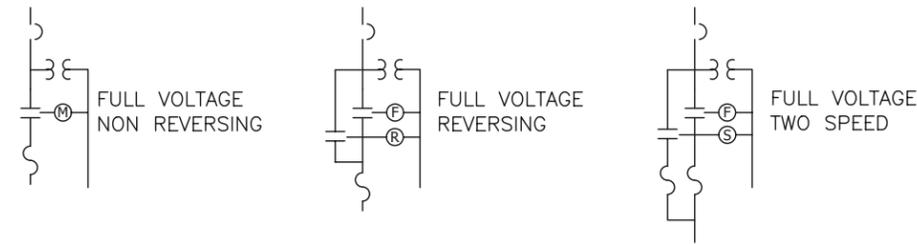
SHEET
16

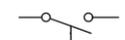
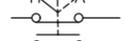
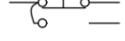
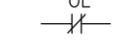
ONE LINE DIAGRAM SYMBOLS

-  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 - 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

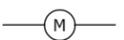
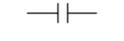
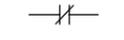
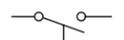
-  OL1 THERMAL OVERLOAD ELEMENT (OL)
-  (5) SQUIRREL CAGE MOTOR (INDICATE HORSEPOWER)
-  (G) GENERATOR
-  (R) INDICATING LIGHT (R-RED, G-GREEN, A-AMBER, B-BLUE, W-WHITE)

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



-  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

SCHEMATIC AND WIRING DIAGRAM SYMBOLS

-  (M) 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

- | | | |
|---|---|--|
| <p>NORMALLY OPEN N.O.</p>    | <p>NORMALLY CLOSED N.C.</p>    | <p>LIMIT SWITCH</p> <p>FLOAT SWITCH</p> <p>PRESSURE SWITCH</p> <p>FLOW SWITCH</p> <p>TEMPERATURE</p> |
|---|---|--|

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

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ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: LG	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION	SHEET
	1			DRN: KLT		ELECTRICAL SYMBOL LEGEND (SHT. 1 OF 2)	EG1
	2			CKD: ----			
	3			DATE: Jul-2020			

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; "M" INDICATES MANUAL, OFF, AND REMOTE; ETC)
- OFF SWITCH WITH LOCK ATTACHMENT ON OFF POSITION
- LOW 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
- DESIGNATES MOUNTING HEIGHT
- DESIGNATES WATERPROOF EQUIPMENT
- DESIGNATES EXPLOSIONPROOF EQUIPMENT
- DESIGNATES MOTOR OPERATED VALVE
- DESIGNATES EXISTING EQUIPMENT
- DESIGNATES PROPOSED EQUIPMENT

CONTROL SCHEMATIC SYMBOLS

- TRANSFORMER
- PUSH BOTTOM
- 115 V, 60 Hz. DUPLEX RECEPTACLE
- SWITCH
- CONNECTED
- OVERLOAD HEATER COIL
- COIL
TD - TIME DELAY RELAY
CR - CONTROL RELAY
ETI - TIMEMETER
M - MOTOR STARTER
- PILOT LIGHT - READ (PRESS-TO-TEST)
- PRESSURE LEVEL SWITCH CONTACT
- AIR LINE
- CIRCUIT BREAKER (SINGLE-POLE)
- CIRCUIT BREAKER (THREE-POLE)
- CONTACT NORMALLY OPEN (CLOSED)
- SPLIT BOLT SPLICE
- NOT CONNECTED
- GROUND BUS
- NEUTRAL BUS (INSULATED)
- FUSE
- "ON DELAY" CONTACT
- INSTANT CLOSE CONTACT
- FIELD WIRING

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

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ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: LG	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION ELECTRICAL SYMBOL LEGEND (SHT. 2 OF 2)	SHEET
	1			DRN: KLT			EG2
	2			CKD: ----			
	3			DATE: Jul-2020			

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.
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. CONTRACTOR SHALL ENSURE THAT ALL ELECTRICAL WORK SHALL BE PERFORMED WITHIN 2014 NEC, ALL APPLICABLE LOCAL ORDINANCES, 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 LATCHED 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 PCSR SHALL BE MOTOROLA ACE 3600 PACKAGE AS DISTRIBUTED BY STAR CONTROLS, REVERE CONTROL SYSTEMS, AUTOMATED CONTROLS, CURRY CONTROLS, ROCHA CONTROLS, OR CAYZO CONSULTING INC. THE PUMPING STATION CONTRACTOR SHALL COORDINATE HIS EFFORTS WITH STAR CONTROLS, REVERE CONTROL SYSTEMS, AUTOMATED CONTROLS, CURRY CONTROLS, ROCHA CONTROLS, OR CAYZO CONSULTING INC. TO ENSURE SYSTEM COMPATIBILITY. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE DUPLEX CONTROL SYSTEM/SCADA PACKAGE, AS PROGRAMMED BY STAR CONTROLS, REVERE CONTROL SYSTEMS, AUTOMATED CONTROLS, CURRY CONTROLS, ROCHA CONTROLS, OR CAYZO CONSULTING INC. - THE EXISTING PUMPING STATION DCR CONTROLS SHALL REVERT TO THE CITY AS A SPARE. THE SCADA INTEGRATORS LISTED ABOVE ARE COMPANIES IN WHICH WASTEWATER IS FAMILIAR WITH THEIR WORK HISTORIES AND DOES NOT EXCLUDE ANY COMPANY FROM BIDDING. ANY NEW INTEGRATOR THAT HAS NOT COMPLETED WORK FOR WASTERWATER, SHALL DEMONSTRATE THEIR ABILITY TO PERFORM THE SPECIFIED WORK.
37. THE CONTRACTOR SHALL SCHEDULE A PUMP STATION SCADA TESTING DATE, PUMP STATION PRE-STARTUP DATE, AND PUMP STATION STARTUP DATE. THE CITY SHALL BE GIVEN 14 DAYS' NOTICE OF THE SCHEDULED SCADA TESTING DATE. ON THE SCADA TESTING DATE, THE SCADA PROGRAMMER SHALL PROVIDE TEMPORARY POWER TO THE CONTROL PANEL PLC, PLACE THE NEW PLC ON LINE WITH THE CITY'S VT SCADA SYSTEM, AND PERFORM ANY NEEDED TROUBLESHOOTING OR DEBUGGING. THE CITY SHALL PROVIDE REQUIRED ADDRESSING FOR TESTING. AFTER THE SCADA PROGRAMMER DETERMINES THAT THE NEW PLC AND THE VT SCADA ARE PROPERLY COMMUNICATING WITHOUT ISSUE, THE CONTRACTOR SHALL SCHEDULE AN ONSITE PLC WITNESS TEST BETWEEN THE CITY OR CITY REPRESENTATIVE, SCADA PROGRAMMER, AND ANY OTHER REQUIRED PARTIES. DURING THE PLC WITNESS TEST, THE SCADA PROGRAMMER MUST DEMONSTRATE THAT THE NEW PLC IS ONLINE, COMMUNICATING WITH VT SCADA, AND ALL LEVEL AND STATUS INDICATIONS ARE FREE FROM ERROR. ONCE THE CITY HAS WITNESSED AND APPROVED SCADA TESTING, THE CONTRACTOR SHALL SCHEDULE A PRE-STARTUP AND START UP DATE. THE CITY RESERVES THE RIGHT TO CANCEL THE PRE-STARTUP DATE, IF IT DEEMS THE PRE-STARTUP DATE IS NOT NECESSARY.
38. THE CONTROL PANELS SHALL BE FACTORY TESTED. THE CONTRACTOR SHALL PROVIDE A CERTIFIED TESTING REPORT DETAILING ALL I/O POINTS, CONNECTION AND EQUIPMENT ARE 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 THE TIME OF THE DELIVERY.
39. 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 E18.
40. PROVIDE LEXAN SHIELDS OVER POWER DISTRIBUTION BLOCK EXPOSED CABLE TERMINATIONS.
41. XHHW-2 CONDUCTORS (3-#8 AWG + #10 GND. CU FOR EACH MOTOR) SHALL EXTEND FROM THE JUNCTION BOX. PROVIDE SEAL-OFF BETWEEN MOTOR CONTROL PANEL TO PUMP MOTOR CONNECTION AND JUNCTION BOX AS INDICATED. THE SHOWN SEAL-OFFS SHALL BE ALUMINUM BODY, CROUSE-HINDS, OR EQUIVALENT.
42. 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.
43. 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.

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ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: LG	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION	SHEET
	1			DRN: KLT			GENERAL NOTES
	2			CKD: ----			
	3			DATE: Jul-2020			

ELECTRICAL SERVICE LOAD SUMMARY

480 VAC, 3ø, 4W

LOAD	CONNECTED	DEMAND	APPROX. PHASE CURRENTS		
			L1	L2	L3
PROP. PUMP #1	43.2 KVA	43.2 KVA	52.0 A	52.0 A	52.0 A
PROP. PUMP #2	43.2 KVA	43.2 KVA	52.0 A	52.0 A	52.0 A
SINGLE PHASE LOADS	2.0 KVA	2.0 KVA	4.2 A	0 A	4.2 A
TOTAL	88.4 KVA	88.4 KVA	108.2 A	104.0 A	108.2 A

PUMP MOTOR DATA

MAKE: FLYGT

MODEL: NP 3202 HT
3~468

H.P.: 45

480V, 3-PHASE, 52 FLA

TOTAL PUMP LOAD: 104 AMPS, 86.5 KVA

SHORT CIRCUIT CALCULATIONS

AVAILABLE SHORT-CIRCUIT CURRENT AT 480V UTILITY SERVICE IS 6,939 AMPERES.
AS PER (TECO REPRESENTATIVE);

TECO CONTACT: BROCK BLACKMORE (813) 228-1008

UTILITY SERVICE: 480/277, 3 PH, TRANSFORMER AVAILABLE FAULT CURRENT AT SECONDARY SIDE OF
TECO'S TRANSFORMER: 6,939 AMP RMS SYM.
SERVICE CONDUCTOR LENGTH: 40 FEET
SERVICE CONDUCTOR SIZE: #3/0 THWN CU.
FUSE RATING: 200 AMPS
ISCA AT LINE SIDE OF FDTs:

$$ISCA = \left[1 + \frac{1}{\frac{(1.73)(40)(6,939)}{(13,923)(480)}} \right] * 6,939 = 6,473$$

SHORT CIRCUIT CURRENT AVAILABLE AT MAIN LUGS OF MCP=4,289 AMPS RMS, SYMMETRICAL

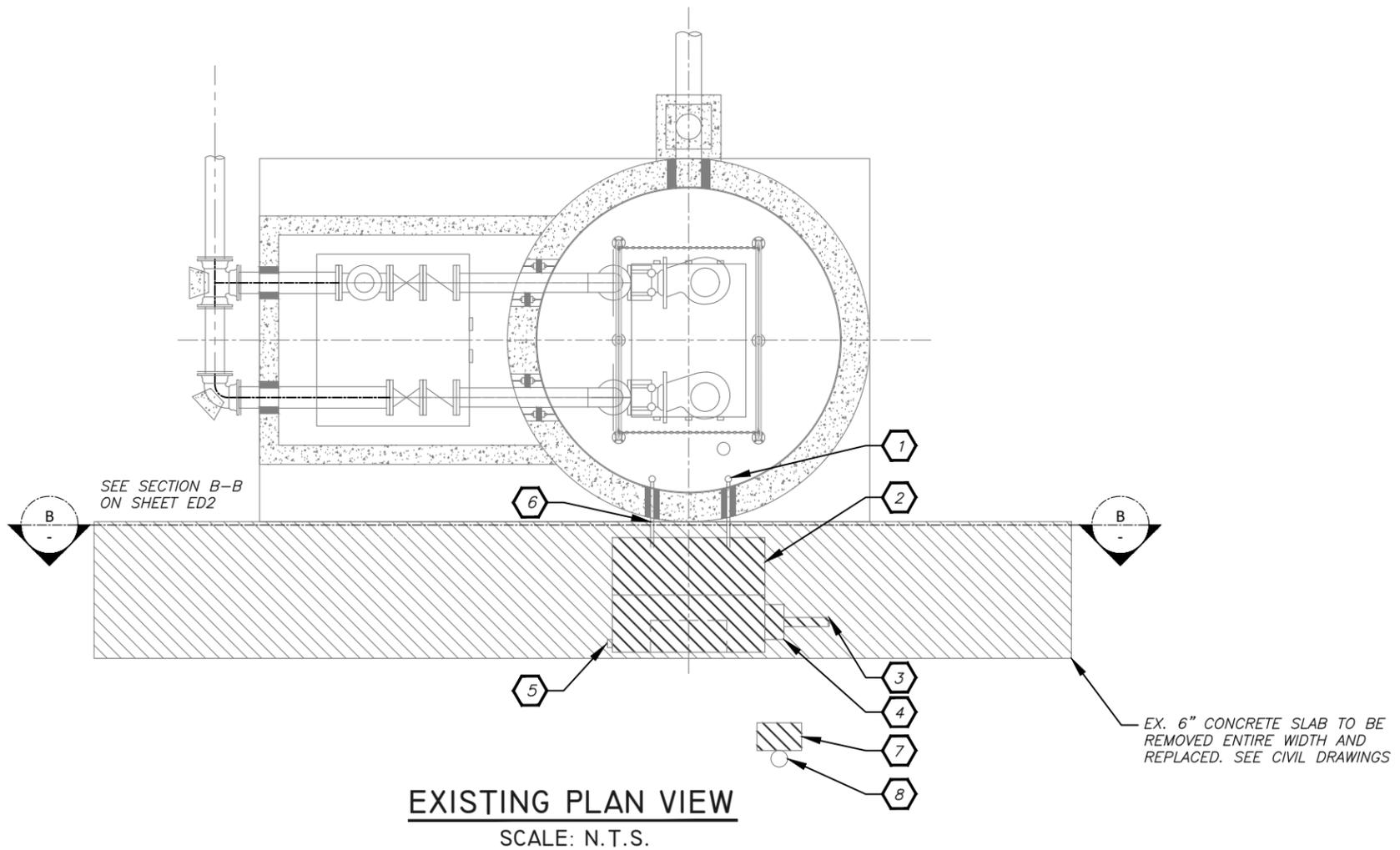
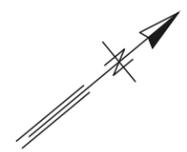
SCOPE OF WORK:

1. THE SERVICE VOLTAGE TO THIS FACILITY SHALL REMAIN 277/480 VAC., 3-PHASE, 4-WIRE, WYE.
2. REMOVE THE EXISTING METER SOCKET, LIGHTNING ARRESTOR, CONTROL PANEL, CONCRETE PEDESTAL, AND ALL ASSOCIATED CONDUIT AND CONDUCTORS, AS SHOWN ON PLANS.
3. CAREFULLY REMOVE THE EXISTING DCR SCADA RTU CABINET MOUNTED ON THE EXISTING SCADA ANTENNA. DELIVER THIS RTU PACKAGE TO THE CITY FOR MAINTENANCE INVENTORY.
4. CAREFULLY REMOVE THE EXISTING JUNCTION BOX MOUNTED ON THE CONTROL PANEL. DELIVER THIS PACKAGE TO THE CITY FOR MAINTENANCE INVENTORY.
5. ANY SALVAGEABLE MATERIALS, AS DETERMINED BY THE ENGINEER, SHALL BE DELIVERED, BY THE CONTRACTOR, TO THE HOWARD F. CURREN AWTP. THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL OTHER REMOVED EQUIPMENT.
6. PROVIDE AND INSTALL A NEW ELECTRICAL METER SOCKET, LIGHTNING ARRESTOR AND GROUNDING, AS SHOWN ON PLANS.
7. PREPARE THE SITE FOR THE INSTALLATION OF THE PROPOSED CONTROL EQUIPMENT.
8. PROVIDE AND INSTALL A NEW DUPLEX PUMP CONTROL PANEL. THE PUMP CONTROL PANEL SHALL CONTAIN CONTROL COMPONENTS, INDICATOR LIGHTS, AND SCADA RTU, AS SHOWN ON PLANS AND DETAILED IN SPECIFICATIONS.
9. PROVIDE AND INSTALL NEMA 4X WET WELL ISOLATION JUNCTION BOX FOR PUMP MOTOR CONNECTIONS.
10. PROVIDE AND INSTALL A NEW DUPLEX MOTOR CONTROL PANEL. THE MOTOR CONTROL PANEL SHALL CONTAIN CIRCUIT BREAKERS AND MOTOR STARTERS, AS SHOWN ON PLANS AND DETAILED IN SPECIFICATIONS.
11. PROVIDE AND INSTALL NEMA 4X WET WELL ISOLATION BOX FOR INSTRUMENTATION AND CONTROL CONNECTIONS.
12. PROVIDE AND INSTALL A NEMA 4X, SERVICE ENTRANCE RATED, FUSED DOUBLE THROW SWITCH, AS SHOWN ON PLANS.
13. PROVIDE AND INSTALL A NEMA 4X, EMERGENCY POWER CONNECTOR, AS SHOWN ON PLANS. REUSE EXISTING SCADA ANTENNA/MAST AS INDICATED.
14. PROVIDE AND INSTALL AREA LIGHT, AS SHOWN ON PLANS.
15. CALIBRATE AND ADJUST SETPOINTS FOR ALL SENSING DEVICES, ALARM DEVICES, AND TIMERS. CALIBRATION AND SETPOINTS SHALL BE PROVIDED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
16. PROVIDE FOR PROPER GROUNDING AS SHOWN, SPECIFIED, AND REQUIRED.
17. PROVIDE AND INSTALL ALL NECESSARY CONDUITS AND CONDUCTORS, AS SHOWN, SPECIFIED AND REQUIRED.
18. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2014 EDITION OF THE NATIONAL ELECTRIC CODE AND CHAPTER 5 OF THE CITY OF TAMPA CODE.
19. 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 TEMPORARY ELECTRIC POWER ARE TO BE INCLUDED IN THE LUMP SUM PRICE AND NO SEPERATE PAYMENT WILL BE MADE.

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ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: LG	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION	SHEET
	1			DRN: KLT			SCOPE OF WORK
	2			CKD: ----			
3				DATE: Jul-2020			

SEE SECTION A-A
ON SHEET ED2



KEYED NOTES:

- ① 2" PVC BUBBLER (NO LONGER REQUIRED)
- ② WORKING SPACE IN FRONT OF CONTROL CABINET
- ③ 2" CONDUIT TO TECO PAD MOUNTED TRANSFORMER
- ④ TECO METER
- ⑤ PUMP CONTROL CABINET
- ⑥ CONDUITS WET WELL
- ⑦ SCATA RTU, SEE NOTE
- ⑧ ANTENNA MAST (TO REMAIN)
- ⑨ TECO PAD MOUNTED TRANSFORMER

GENERAL NOTE:
CAREFULLY REMOVE AND DELIVER TO THE CITY.

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

No.	DATE	REVISIONS
1		
2		
3		

DES: LG
DRN: KLT
CKD: ----
DATE: Jul-2020

CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
EXISTING ELECTRICAL DEMOLITION

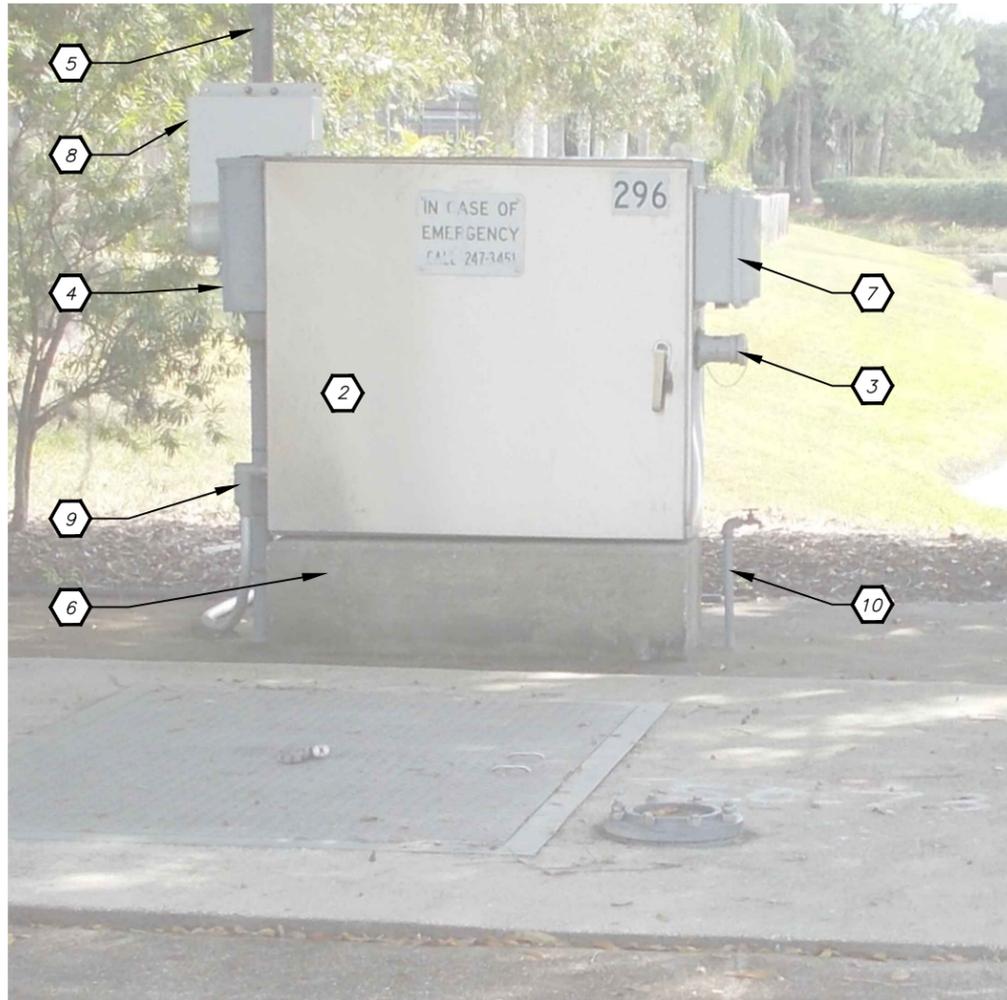
SHEET
ED1

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SECTION A-A

SCALE: N.T.S.



SECTION B-B

SCALE: N.T.S.

KEYED NOTES:

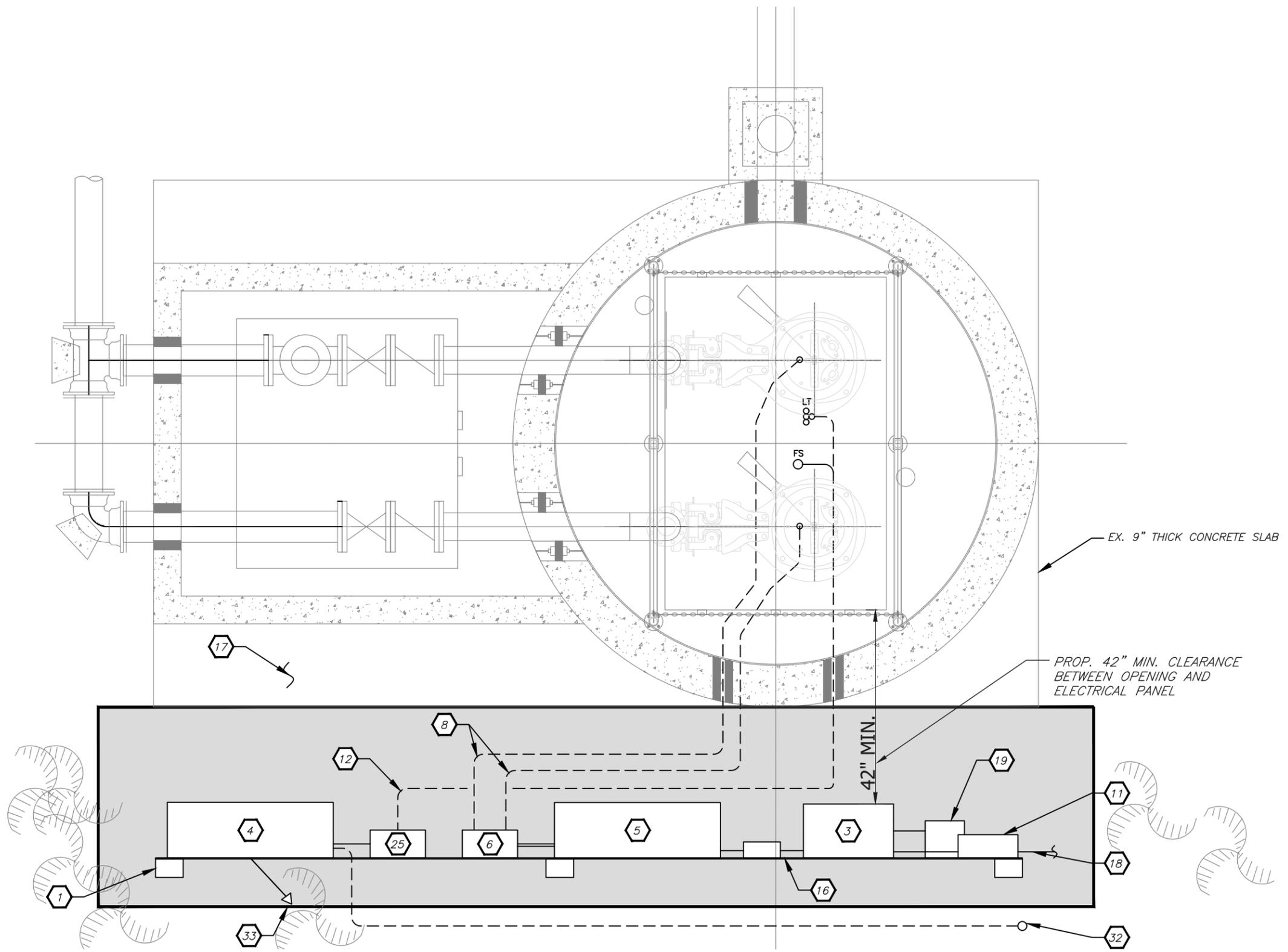
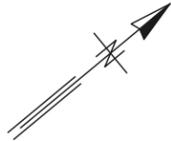
- 1 EXISTING TECO PAD MOUNTED TRANSFORMER 2875048500 (TO REMAIN)
- 2 EXISTING CONTROL PANEL (TO BE REMOVED)
- 3 EXISTING EMERGENCY CONNECTOR (TO BE REMOVED)
- 4 EXISTING TECO METER (TO BE REMOVED)
- 5 EXISTING SCADA ANTENNA MAST (TO REMAIN W/ MODIFICATIONS)
- 6 EXISTING CONCRETE PEDESTAL, SEE NOTE 1 (TO BE REMOVED)
- 7 EXISTING JUNCTION BOX (SEE NOTE 2)
- 8 EXISTING DCR SCADA RTU CABINET (SEE NOTE 2)
- 9 EXISTING CONDUIT FOR ANTENNA CABLE (TO BE REMOVED)
- 10 EXISTING WATER CONNECTION (TO BE RELOCATED)

NOTES:

1. SPLICE BOX INSIDE PEDESTAL CONTAINS EXISTING CONDUITS - FROM THE WET WELL. THESE CONDUITS SHALL BE REMOVED AND THE WET WELL PENETRATION HOLES EITHER PROPERLY SEALED, OR REUSED - \ THESE PROPOSED CONDUITS. THERE ARE (2)-3" CONDUITS AND (2)-1" CONDUITS TO BE REMOVED.
2. CAREFULLY REMOVE AND DELIVER TO TRAFFIC PLANT - \ INVENTORY

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ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: LG DRN: KLT CKD: ---- DATE: Jul-2020	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION	SHEET
	1					EXISTING ELECTRICAL SECTION VIEWS	ED2
	2						
	3						



PROPOSED ELECTRICAL PLAN VIEW

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

SHADED AREAS ON THIS SHEET INDICATE PROPOSED CONCRETE

SEE KEYED NOTES ON SHEET E3

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

No.	DATE	REVISIONS
1		
2		
3		

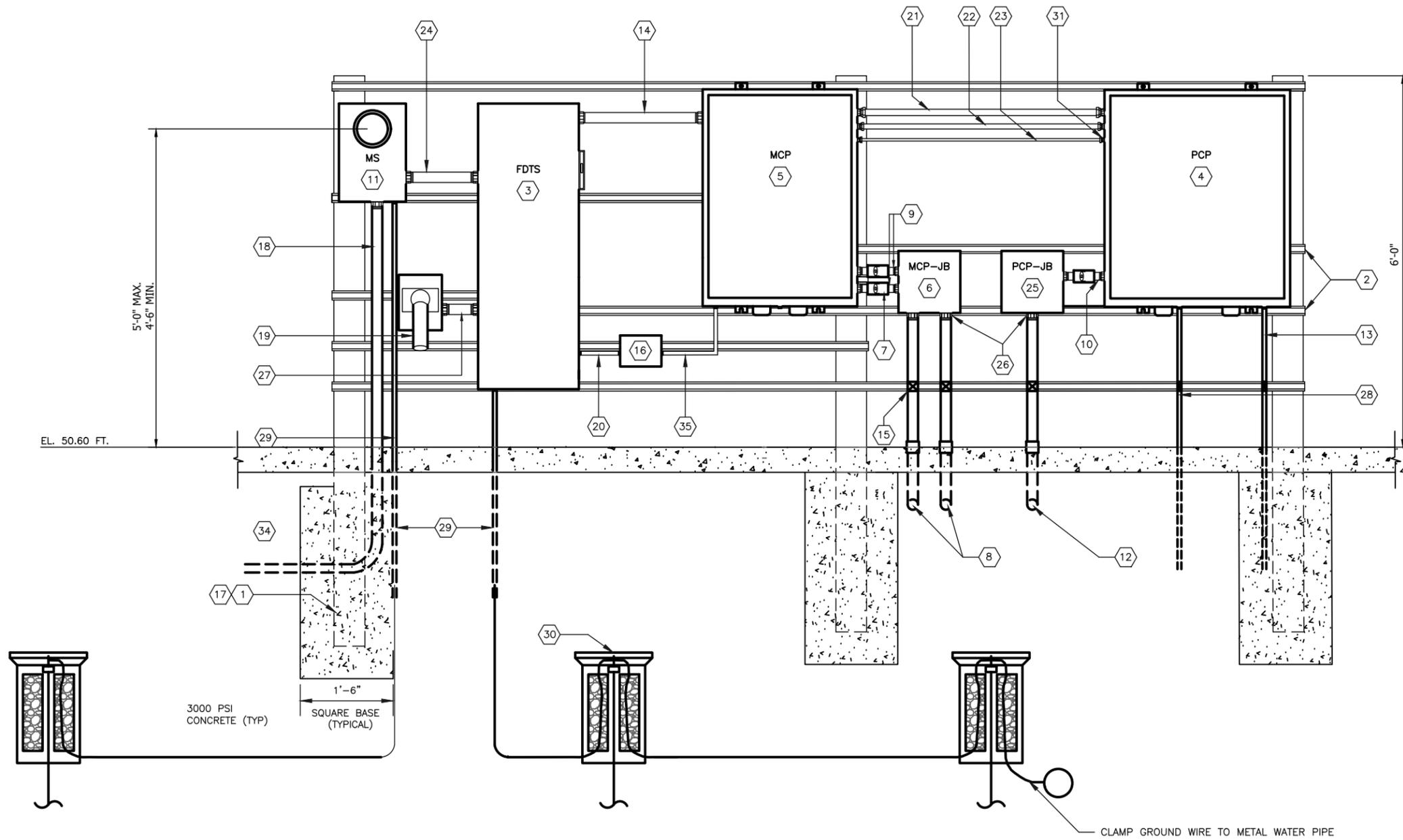
DES: LG
DRN: KLT
CKD: ----
DATE: Jul-2020

CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
PROPOSED ELECTRICAL PLAN

SHEET
E1

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SEE KEYED NOTES
ON SHEET E3

ELECTRICAL EQUIPMENT LINE UP

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

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ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: LG	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION	SHEET
	1			DRN: KLT		ELECTRICAL EQUIPMENT LINE UP FRONT VIEW	E2
	2			CKD: ----			
	3			DATE: Jul-2020			

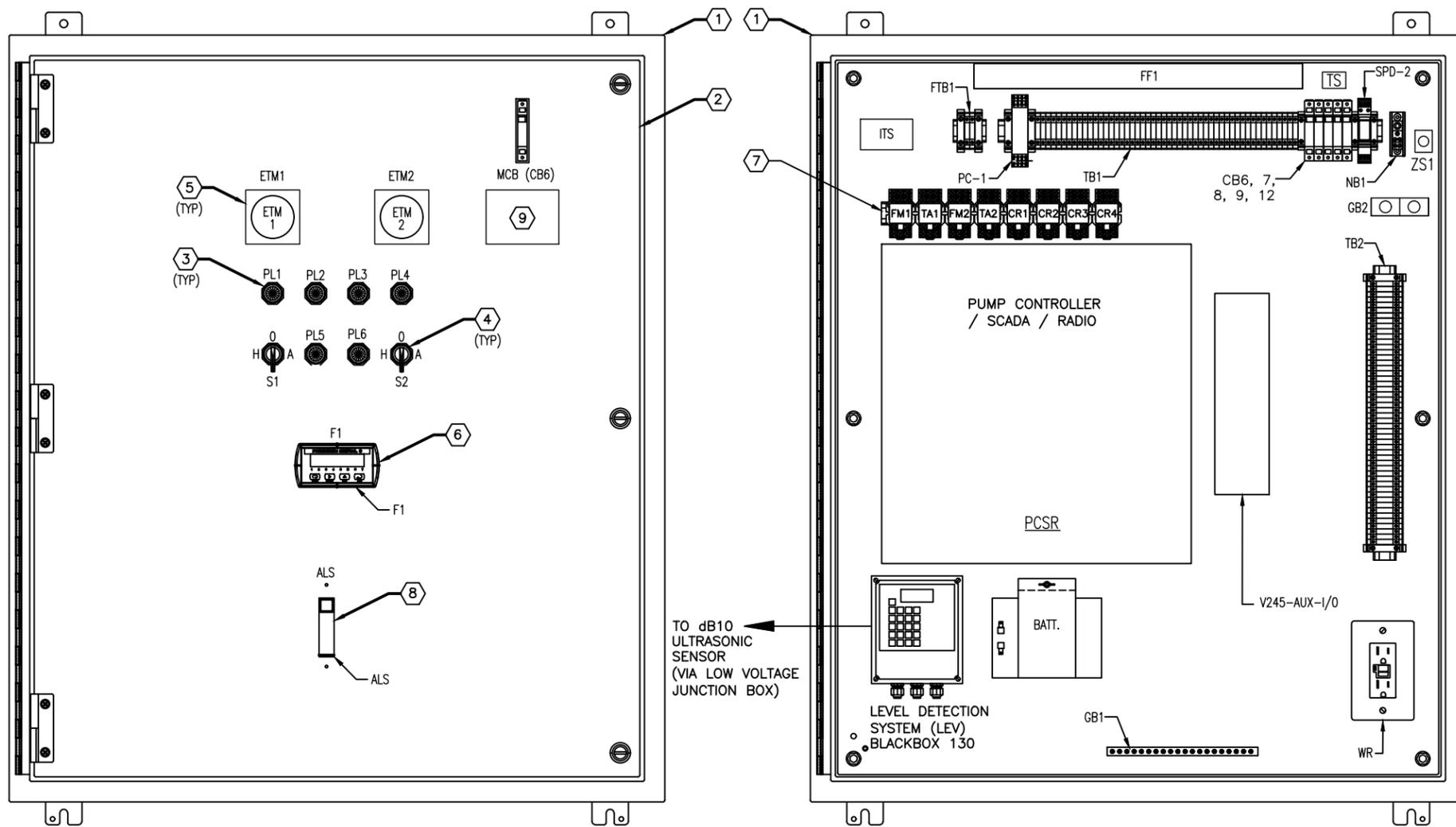
KEYED NOTES:

- ① PROVIDE AND INSTALL THREE (3) 6" X 6" X 9' REINFORCED SQUARE CONCRETE POSTS.
- ② PROVIDE AND INSTALL 1-5/8" X 1-5/8" 316 STAINLESS STEEL UNISTRUT WITH 316 STAINLESS STEEL HARDWARE. NOTE: INSTALL ALL BOLTS FOR UNISTRUT COMPLETELY THROUGH CONCRETE POSTS.
- ③ PROVIDE AND INSTALL HEAVY DUTY, DOUBLE THROW, FUSIBLE SWITCH, 3-POLE, 600 VAC, 400 AMP IN NEMA 4X TYPE ENCLOSURE, 600 VOLT, DUAL-ELEMENT, TIME-DELAY CLASS RK5 FUSES; SWITCH--EATON DT365FWK, DT000NK-NEUTRAL KIT, DS468GK-GROUND LUG KIT, DS66FK-"R" FUSE ADAPTER KIT.
- ④ PROVIDE AND INSTALL PUMP CONTROL CABINET. REFER TO DETAIL ON SHEET E4.
- ⑤ PROVIDE AND INSTALL MOTOR CONTROL CABINET. REFER TO DETAIL ON SHEET E5.
- ⑥ PUMP MOTOR CONNECTIONS J.B.-USED AS A DEMARCATION BOX TO PROVIDE ISOLATION BETWEEN THE WET WELL AND PUMP CONTROLS. PROVIDE AND INSTALL A 12"x12"x6" NEMA 4X, STAINLESS STEEL JUNCTION BOX WITH HINGED DOOR, WIEGMANN #BN4121206CHSS. INSTALL A STAINLESS STEEL LOUVER PLATE KIT (4.75"x 4.5") ON SIDE OF BOX TO PROVIDE NATURAL ASPIRATION, WIEGMANN #WAVK0304SSA. TERMINATIONS SHALL BE MADE USING SPLIT BOLTS. CAREFULLY TAPE CONNECTIONS TO PROVIDE A 600V INSULATION LEVEL (TYPICAL FOR EACH CONDUCTOR) SEE SHEET E14 FOR JB DETAILS.
- ⑦ PROVIDE AND INSTALL CROUSE-HINDS EYS TYPE SEALS W/CHICO COMPOUNDS.
- ⑧ PROPOSED 2" PVC COATED ALUMINUM CONDUITS FOR MOTOR CONDUCTORS. CORE DRILL WET WELL WALLS AS REQUIRED TO INSTALL CONDUIT, SEE CIVIL SHEETS FOR PIPE PENETRATION INTO WET WELL DETAIL.
- ⑨ PROVIDE AND INSTALL (3)-#4 XHHW-2 CU + (1)-#6 XHHW-2 CU GND + (2)-#12 XHHW-2 CU (LEAK/TEMP) IN 1-1/2" CONDUIT FOR SUBMERSIBLE PUMP POWER.
- ⑩ PROVIDE AND INSTALL (3)-#14 XHHW-2 CU + (1)-#14 XHHW-2 CU GND + (1)-3/C-#18 TWISTED SHIELDED CABLE IN 1" CONDUIT FOR FLOAT AND WET WELL LEVEL TRANSMITTER.
- ⑪ PROVIDE AND INSTALL METER SOCKET IN ALUMINUM ENCLOSURE.
- ⑫ MANUFACTURER SUPPLIED CABLES FOR FLOAT SWITCH AND WET WELL LEVEL TRANSMITTER INSTALL IN 2" PVC COATED CONDUIT TO WET WELL FROM JUNCTION BOX. CORE DRILL WET WELL AS NEEDED TO INSTALL, PATCH SEAL WITH APPROVED PRODUCT. SEE CIVIL SHEETS FOR PIPE PENETRATION INTO WET WELL DETAIL.
- ⑬ PROVIDE AND INSTALL 1" CONDUIT FOR ANTENNA COAXIAL CABLE.
- ⑭ PROVIDE AND INSTALL (3)-#3/0 CONDUIT XHHW-2 CU, (1)-#3 XHHW-2 NEU, AND (1)-#4 XHHW-2 CU GND. IN 2" CONDUIT.
- ⑮ PROVIDE AND INSTALL ALUMINUM CONDUIT STRAPS (TYPICAL).
- ⑯ PROVIDE AND INSTALL A 3-PHASE POWER MONITOR RELAY W/480 VAC LINE INPUT-ALARM ON PHASE LOSS, UNDERVOLTAGE, OR WRONG ROTATION. PANEL MOUNT,ATC DIVERSIFIED. MODEL SUA-440-ASA. FUSE BOX DISCONNECT(FGBD1)-ALLEN BRADLEY 1492-FB3C30-L W/ BUSSMAN KTK-R-2 FUSES IN A NEMA 4X CONTINUOUS HINGE ENCLOSURE-HAMMOND MANUFACTURING MODEL EJ863S16, 8"x6"x3.5", NEMA 4X SS. SEE DETAILS ON SHEET E17.
- ⑰ OPEN CUT EXISTING CONCRETE PAD AS NECESSARY TO INSTALL NEW CONDUIT. REPLACE CONCRETE SLAB PER CIVIL DRAWINGS.
- ⑱ PROVIDE AND INSTALL 2" CONDUIT TO BE EXTENDED TO EXISTING TECO TRANSFORMER. IF PRACTICABLE, INTERCEPT EXISTING SERVICE CONDUIT AND PROVIDE COUPLING FOR REUSE. EXISTING CONDUIT MUST BE 2" MINIMUM TO QUALIFY FOR REUSE. REMOVE EXISTING CONDUCTORS AND PROVIDE AND INSTALL (3) #3/0 XHHW-2 & (1) #2/0 GND XHHW-2.
- ⑲ PROVIDE AND INSTALL AN EMERGENCY CONNECTOR.
- ⑳ PROVIDE AND INSTALL (3)-#12 XHHW-2 CU + (1)# 12 XHHW-2 CU GND. IN 3/4" C.
- ㉑ PROVIDE AND INSTALL (26)-#12 XHHW-2 CU + (1)# 12 XHHW-2 CU GND. IN 1-1/4" C. FOR 120VAC CONTROL SIGNALS. REFER TO MCP TO PCP INTERCONNECTIONS WIRING DIAGRAM ON SHEET E10.
- ㉒ PROVIDE AND INSTALL (17)-#14 XHHW-2 CU + (1)-#14 XHHW-2 CU GND. IN 1" C. FOR 24V DC CONTROL SIGNALS, REFER TO MCP TO PCP INTERCONNECTION WIRING DIAGRAM ON SHEET E10.
- ㉓ PROVIDE AND INSTALL (3)-#12 XHHW-2 CU H. + (1)-#12 XHHW-2 CU NEU. + (1)#12 XHHW-2 CU GND. IN 3/4" CONDUIT FROM MOTOR CONTROLS PANEL TO PUMP CONTROL PANEL FOR 120V POWER CIRCUIT.
- ㉔ PROVIDE AND INSTALL (3)-#3/0 XHHW-2 CU + (1)-#2/0 XHHW-2 NEU. IN 2" CONDUIT.
- ㉕ INSTRUMENTATION AND CONTROLS J.B.-USED AS DEMARCATION BOX TO PROVIDE ISOLATION BETWEEN THE WET WELL AND PUMP CONTROLS. PROVIDE AND INSTALL A 12"x12"x6" NEMA 4X, STAINLESS STEEL JUNCTION BOX WITH HINGED DOOR, WIEGMANN #BN4121206CHSS. INSTALL A STAINLESS STEEL LOUVER PLATE KIT (4.75"x4.5") ON SIDE OF BOX TO PROVIDE NATURAL ASPIRATION, WIEGMANN #WAVK0304SSA. TERMINATIONS SHALL BE MADE WITH UNDERGROUND WIRE CONNECTORS - IDEAL MODEL #60 - (TYPICAL FOR EACH CONDUCTOR). SEE SHEET E14 FOR JB DETAILS.
- ㉖ PROVIDE DUCT SEALING COMPOUND IN ALL CONDUITS EXTENDING TO THE WET WELL.
- ㉗ PROVIDE AND INSTALL (3)-#3/0 XHHW-2 CU + (1)-#3 XHHW-2 CU NEU + (1)-#4 XHHW-2 CU GND IN 2" CONDUIT FOR EMERGENCY CONNECTOR.
- ㉘ PROVIDE AND INSTALL A 3/4" CONDUIT TO PROPOSED AREA LIGHT, (AL), SEE SHT. E16 FOR DETAILS.
- ㉙ PROVIDE AND INSTALL A 3/4" SCHEDULE 80 PVC CONDUIT FOR #4 AWG GROUNDING CONDUCTOR.
- ㉚ PROPOSED GROUNDING CONDUCTOR. APPROVED GROUND CLAMPS SHALL BE ATTACHED TO TWO APPROVED GROUNDING RODS (MINIMUM SPACING 6'-0") GROUNDING CONDUCTOR SHALL BE AWG #4 MIN. BARE STRANDED COPPER, SEE SHEET E15 FOR DETAILS.
- ㉛ PROVIDE AND INSTALL WATER-TIGHT / DUST-TIGHT (TYP.) MYERS HUB AND UNION (TYP.).
- ㉜ EXISTING ANTENNA MAST TO BE REUSED. PROVIDE AND INSTALL NEW CONDUIT, YAGA ANTENNA, AND COAXIAL CABLE AS SHOWN ON SHEET E16.
- ㉝ PROPOSED NEW LED LIGHT FIXTURE WITH CONCRETE POLE. SEE SHT. E16 FOR DETAILS.
- ㉞ EQUIPMENT-LINE UP IS FOR INFORMATIONAL PURPOSES; CONTRACTOR SHALL VERIFY IF CONDUIT CAN BE INSTALLED AS SHOWN. MAKE MODIFICATIONS TO INSTALLATION AS NEEDED.
- ㉟ PROVIDE AND INSTALL (2) #14 XHHW-2 CU + (1) #14 XHHW-2 CU GND. IN 3/4" C.

FOR USE WITH SHEETS E1 AND E2

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ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: LG DRN: KLT CKD: ---- DATE: Jul-2020	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION KEYED NOTES	SHEET E3
	1						
	2						
	3						



PUMP CONTROL PANEL DETAILS

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

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:

- ① PUMP CONTROL CABINET. 42" X 36" X 12" NEMA 4X SS, POWDER COAT 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 E13.
- ④ PROVIDE AND INSTALL NEW SELECTOR SWITCH. REFER ALSO TO PARTS SCHEDULE ON SHEET E13.
- ⑤ PROVIDE AND INSTALL NEW ELAPSED TIME METER. REFER ALSO TO PARTS SCHEDULE ON SHEET E14.
- ⑥ PROVIDE AND INSTALL PRECISION DIGITAL PROCESS METER, MODEL PD765-6R3-10 WITH 4-20mA OUTPUT. REFER ALSO TO PARTS SCHEDULE ON SHEET E13.
- 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 E13.
- 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."

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No.	DATE	REVISIONS
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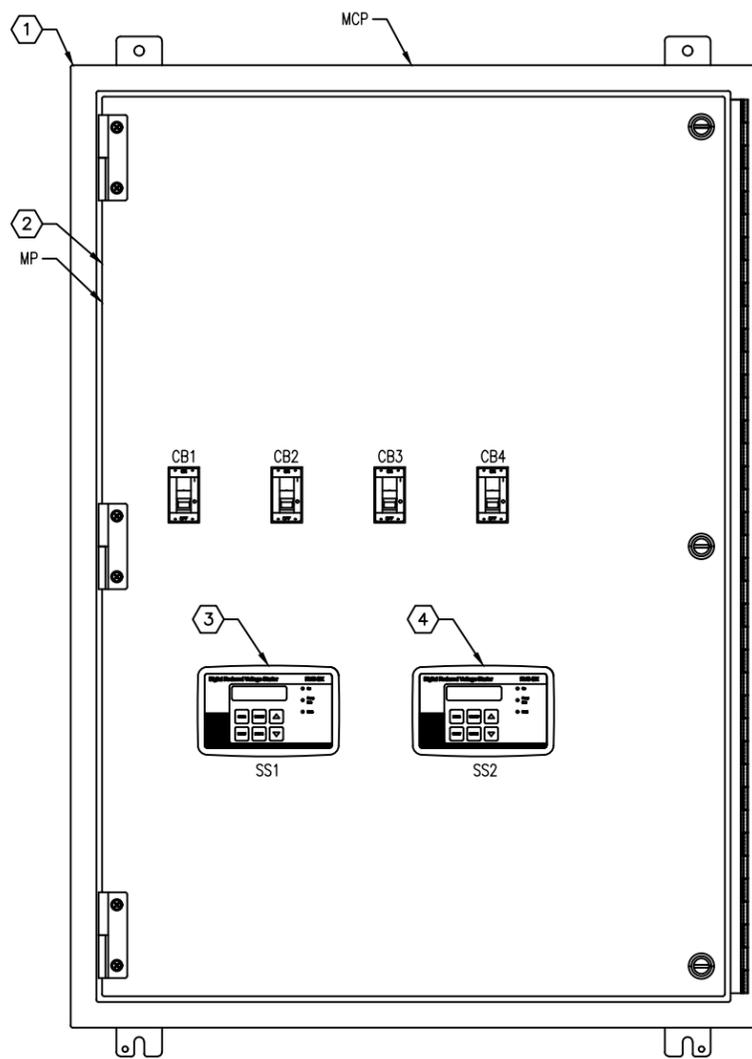
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DAYFLOWER PUMP STATION REHABILITATION

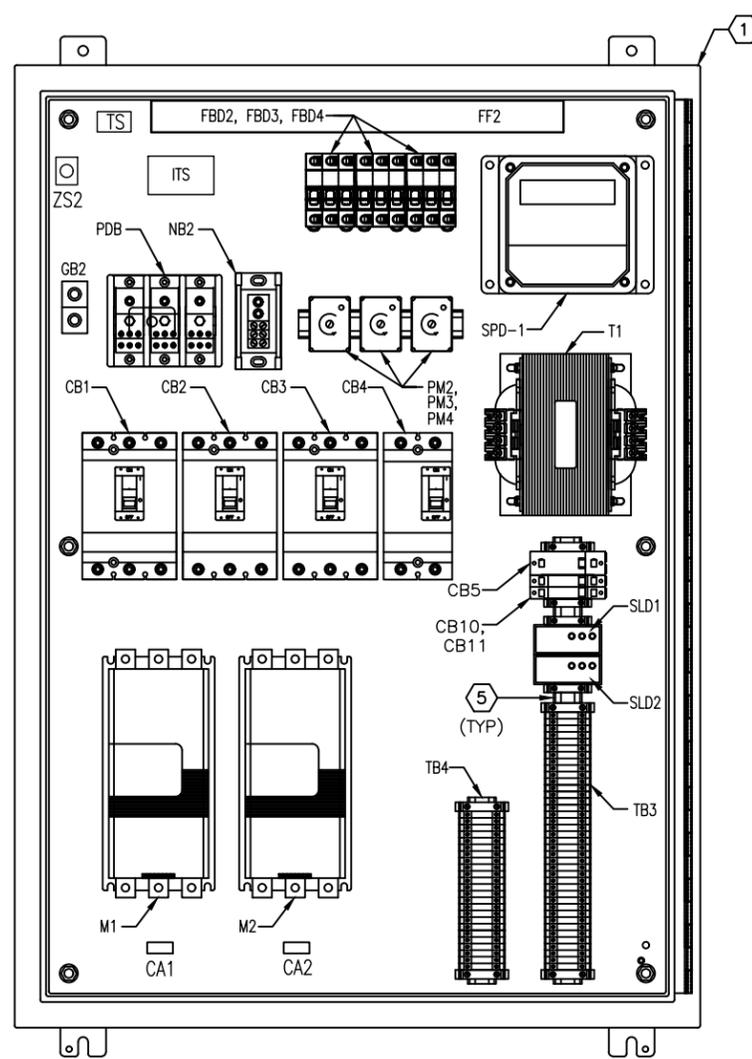
PUMP CONTROL PANEL DETAILS

SHEET

E4



MOTOR CONTROL PANEL
DETAILS



PANEL INTERIOR
DETAILS

LEGEND PLATE SCHEDULE

SYMBOL	DEVICE	LEGEND
CB1	CIRCUIT BREAKER	PUMP NO. 1 CIRCUIT BREAKER
CB2	CIRCUIT BREAKER	PUMP NO. 2 CIRCUIT BREAKER
CB3	CIRCUIT BREAKER	SPARE
CB4	CIRCUIT BREAKER	TRANSFORMER 'T1' 480V FEEDER
SS1	SOFTSTARTER KEYPAD	SOFTSTARTER NO. 1 KEYPAD
SS2	SOFTSTARTER KEYPAD	SOFTSTARTER NO. 2 KEYPAD

KEYED NOTES:

- ① MOTOR CONTROL CABINET. 42" X 30 X 12" NEMA 4X SS, POWDER COAT WHITE.
- ② PROVIDE AND INSTALL ALUMINUM DEADFRONT DOOR WITH STOP KIT.
- ③ PROVIDE AND INSTALL NEW KEYPAD FOR SOFTSTARTER #1. REFER ALSO TO PARTS SCHEDULE ON SHEET E12.
- ④ PROVIDE AND INSTALL NEW KEYPAD FOR SOFTSTARTER #2. REFER ALSO TO PARTS SCHEDULE ON SHEET E12.
- ⑤ PROVIDE AND INSTALL ALUMINUM DIN RAIL WHERE REQUIRED.

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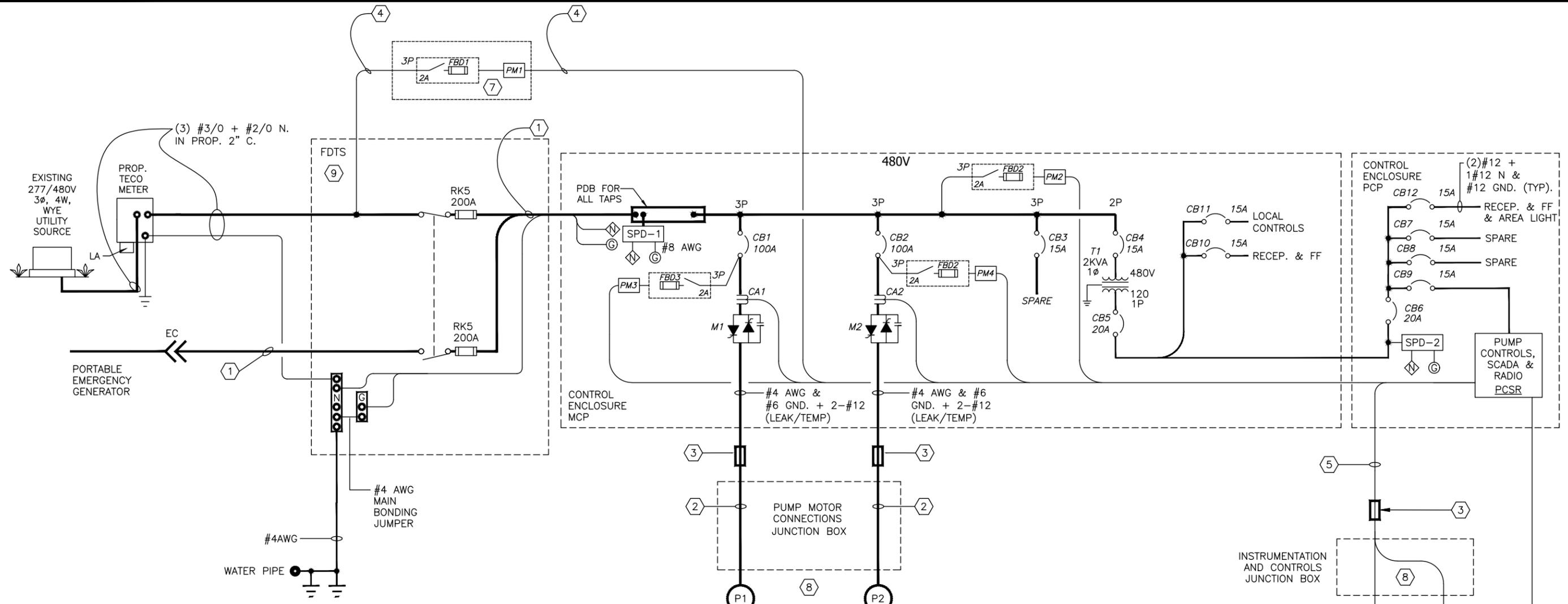
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CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
MOTOR CONTROL PANEL DETAILS &
PMI DISCONNECTION ENCLOSURE

SHEET
E5



AVAILABLE FAULT CURRENT AT THE SECONDARY LUGS FOR THE POLE-MOUNTED TRANSFORMER BANK IS 6,939A. THE INTERRUPTING RATING, IR, OF THE FDTS CURRENT LIMITING FUSE IS 200KA RMS, SYMETRICAL. THE LET-THROUGH CURRENT OF THE FUSE AT 10KA SHORT CIRCUIT CURRENT IS 5,100 RMS, SYMETRICAL.

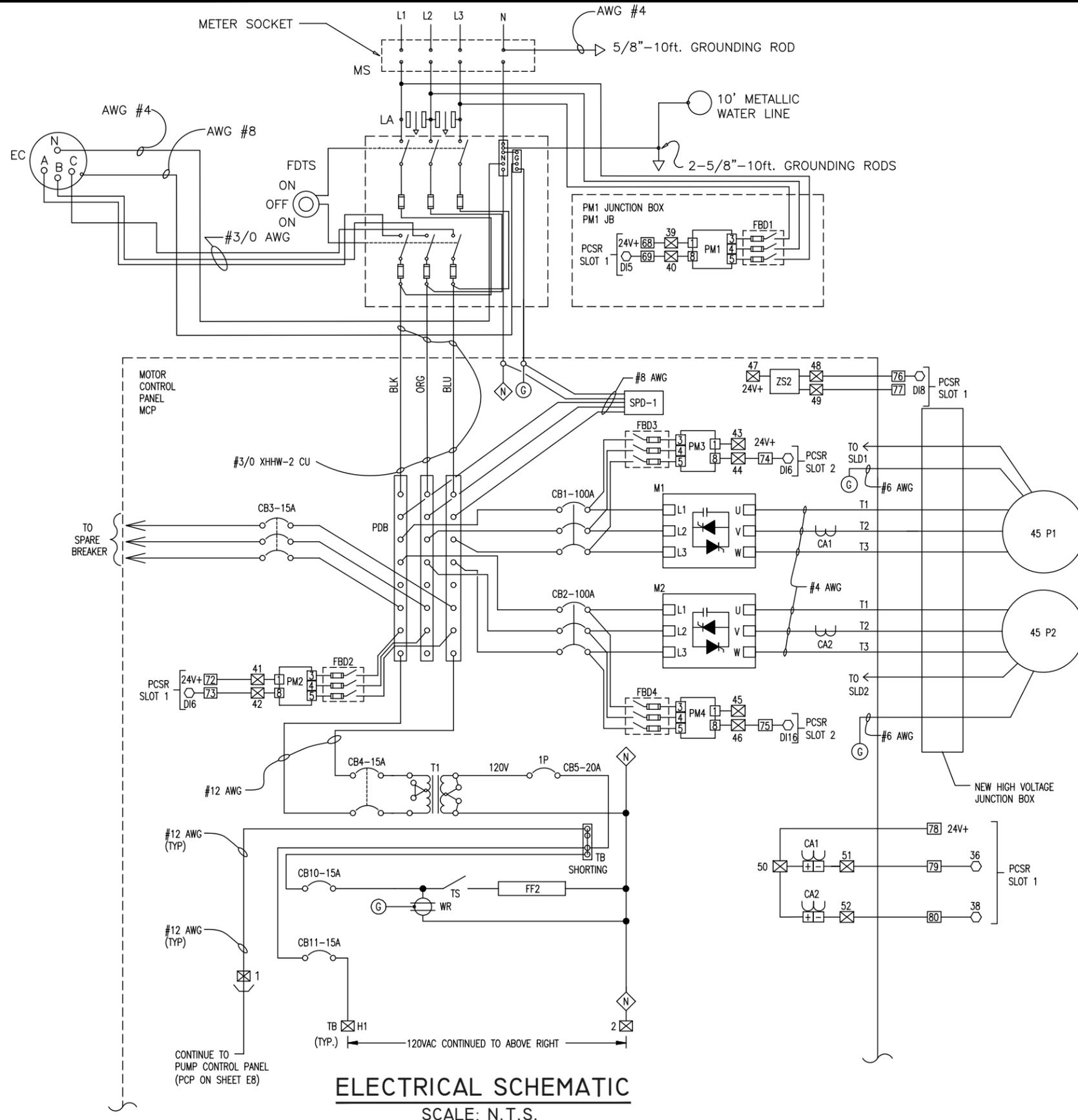
- MCP TO PCP DIAGRAM NOTES:**
- ① PROVIDE AND INSTALL 3-#3/0 + 1-#3 NEUTRAL + 1-#4 GND IN 2" CONDUIT, REFER TO DETAILS ON SHEET E2.
 - ② PROPOSED SUBMERSIBLE PUMP POWER CABLE IN PROPOSED 2" CONDUIT.
 - ③ PROVIDE SEAL FITTING, REFER TO DETAIL ON SHEET E2.
 - ④ PROVIDE AND INSTALL 3-#12 + 1-#12 GND. IN 3/4" CONDUIT, REFER TO DETAILS ON SHEET E2.
 - ⑤ PROVIDE 2" CONDUITS FROM NEW PUMP CONTROL CABINET TO WET WELL FOR FLOAT SWITCH AND LEVEL SENSOR CABLES. REFER TO DETAILS ON SHEET E2.
 - ⑥ PROVIDE 1" CONDUIT FROM NEW PUMP CONTROL CABINET TO EXISTING ANTENNA MAST FOR NEW COAX CABLE, REFER TO DETAILS ON SHEET E16.
 - ⑦ PM1 JUNCTION BOX, SEE SHEET E17 FOR DETAILS.
 - ⑧ SEE CONNECTION DETAILS ON SHEET E14.
 - ⑨ SERVICE ENTRANCE RATED, FUSED DOUBLE THROW SWITCH.

ELECTRICAL ONE-LINE DIAGRAM

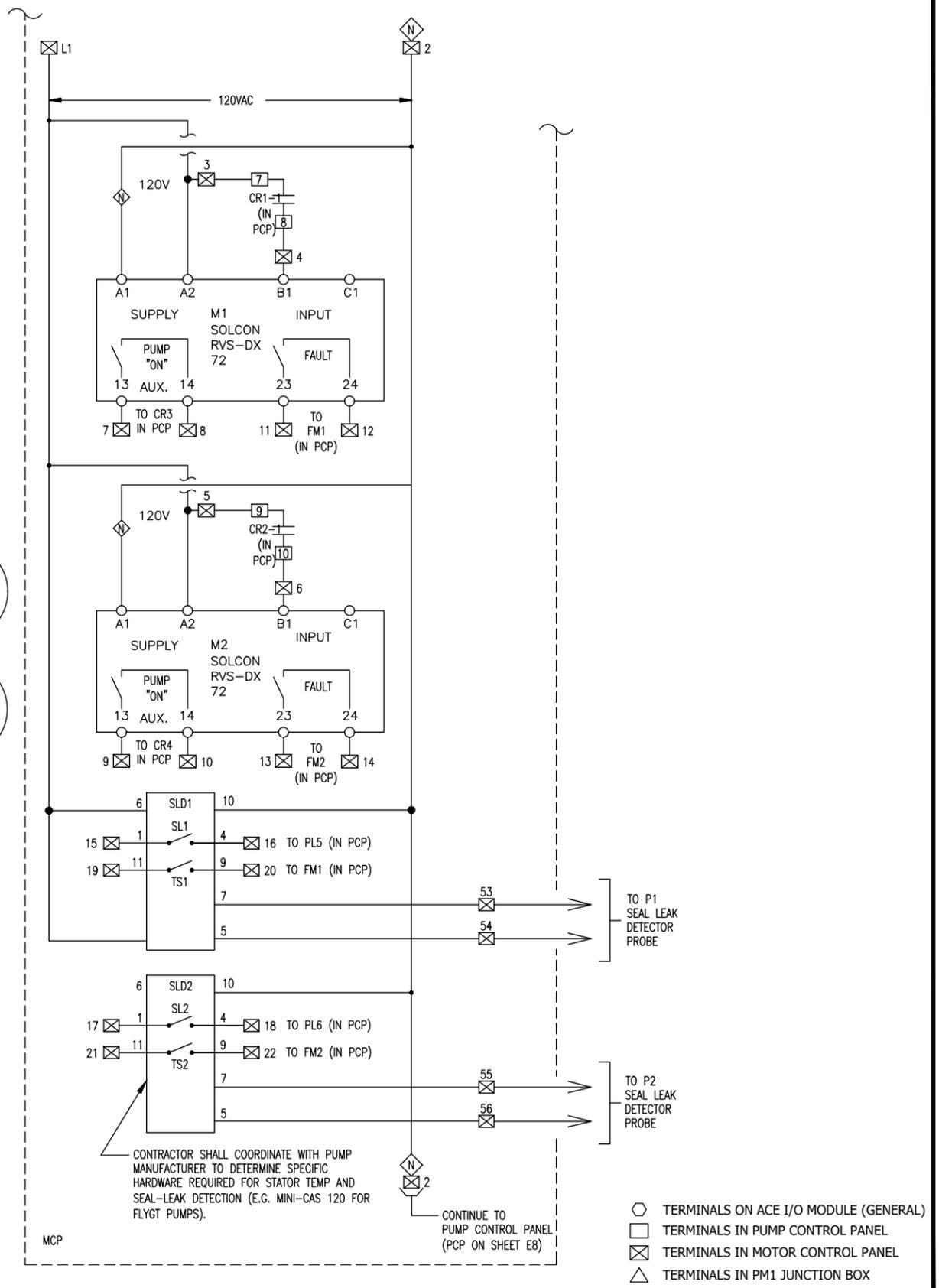
SCALE: N.T.S.

ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: LG	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION ELECTRICAL ONE-LINE DIAGRAM	SHEET
	1			DRN: KLT			E6
	2			CKD: ----			
	3			DATE: Jul-2020			

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ELECTRICAL SCHEMATIC
SCALE: N.T.S.



- TERMINALS ON ACE I/O MODULE (GENERAL)
- TERMINALS IN PUMP CONTROL PANEL
- ⊗ TERMINALS IN MOTOR CONTROL PANEL
- △ TERMINALS IN PM1 JUNCTION BOX

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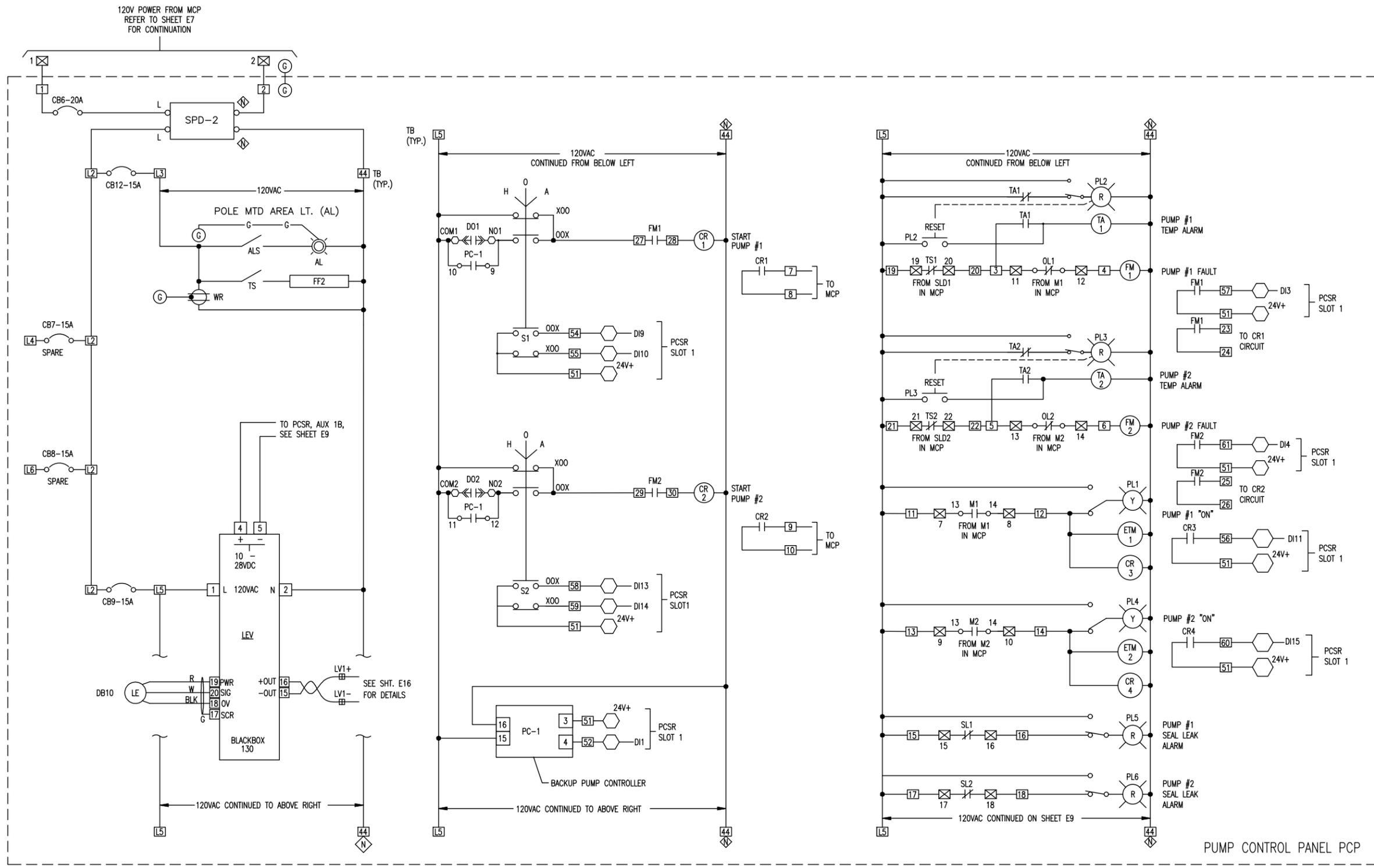
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DATE: Jul-2020

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DAYFLOWER PUMP STATION REHABILITATION
ELECTRICAL SCHEMATIC (1 OF 3)
MOTOR CONTROL PANEL

SHEET
E7



ELECTRICAL SCHEMATIC

SCALE: N.T.S.

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

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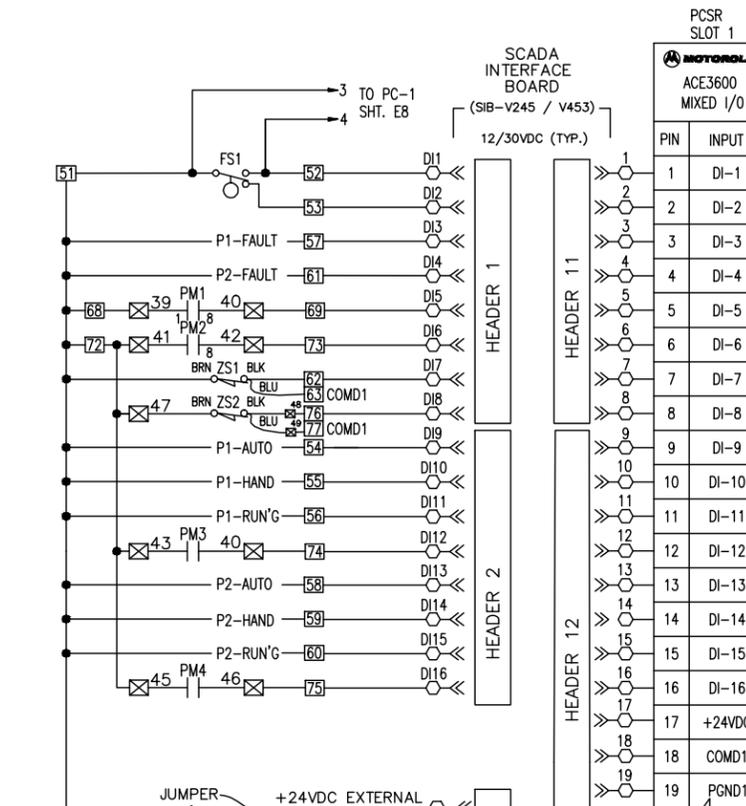
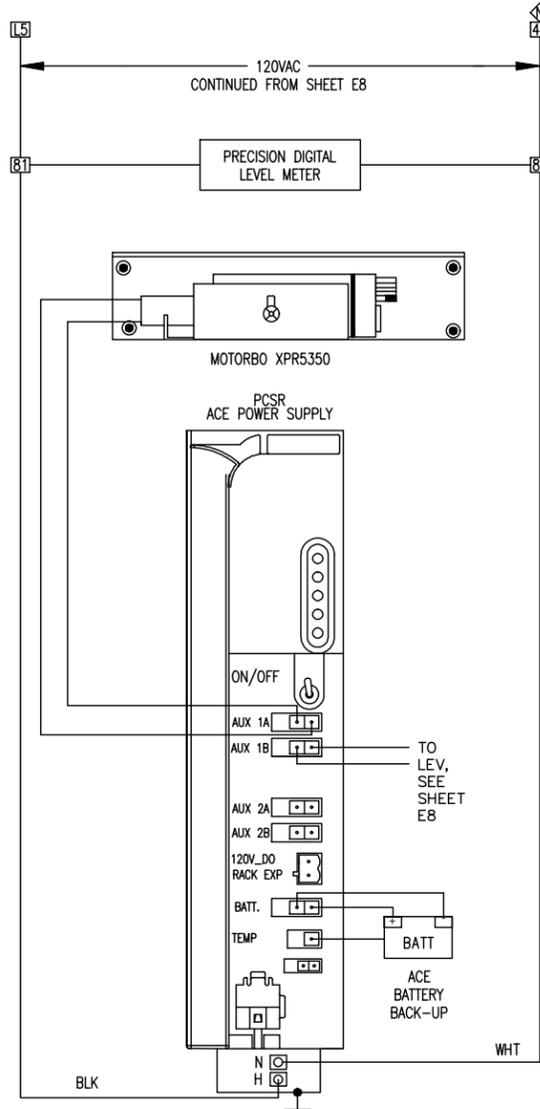
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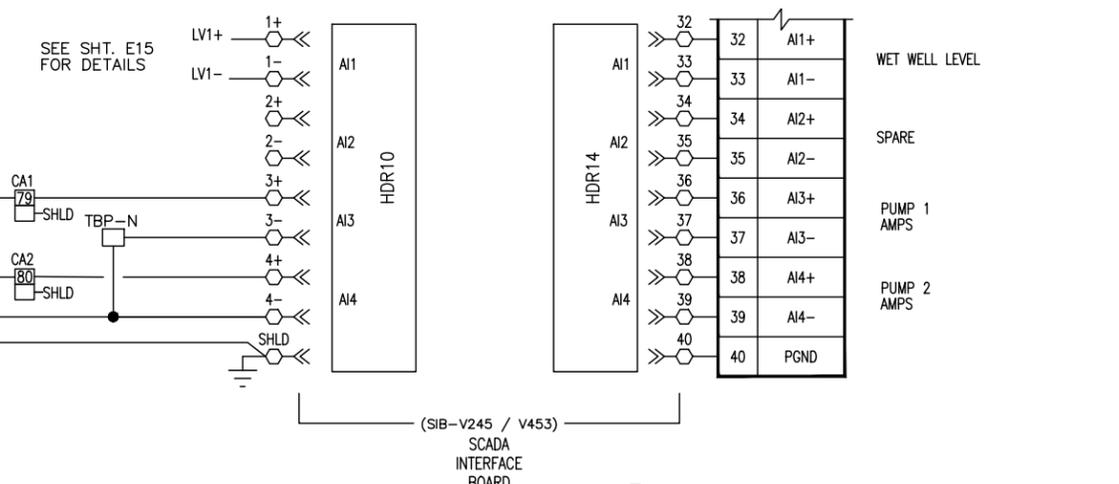
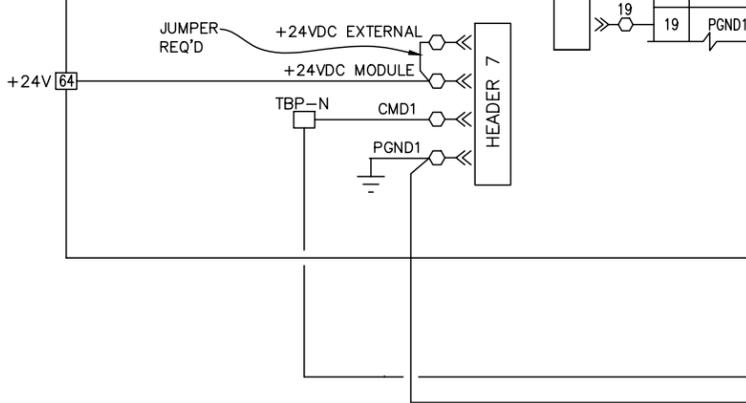
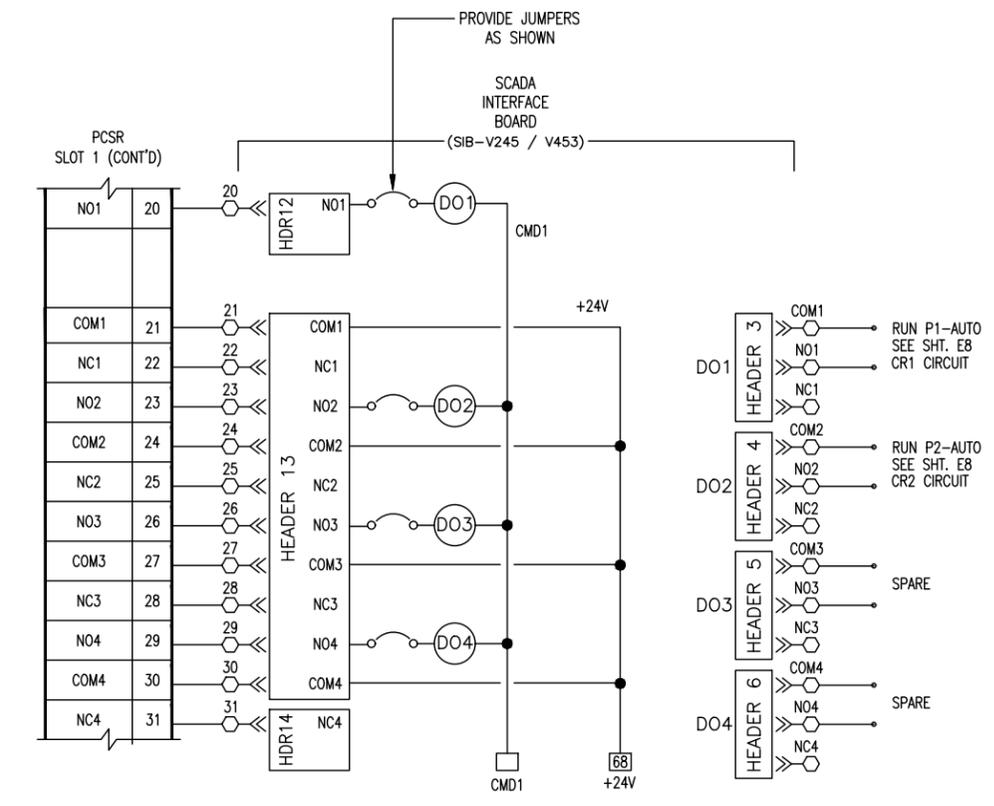
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DAYFLOWER PUMP STATION REHABILITATION
ELECTRICAL SCHEMATIC (2 OF 3)
PUMP CONTROL PANEL

SHEET
E8



- WET WELL HIGH
- WET WELL NOT HIGH
- PUMP 1 FAULT
- PUMP 2 FAULT
- UTILITY POWER AVAILABLE (PM1) TO PCSR
- MOTOR CONTROL PANEL PHASE LOSS (PM2) TO PCSR
- PUMP CONTROL PANEL INTRUSION
- MOTOR CONTROL PANEL INTRUSION TO PCSR
- PUMP 1 SS IN AUTO
- PUMP 1 SS IN HAND
- PUMP 1 RUNNING
- PUMP 1 MCP STATUS (PM3) TO PCSR
- PUMP 2 SS IN AUTO
- PUMP 2 SS IN HAND
- PUMP 2 RUNNING
- PUMP 2 MCP STATUS (PM4) TO PCSR



ELECTRICAL SCHEMATIC
SCALE: N.T.S.

- TERMINALS ON ACE I/O MODULE (GENERAL)
- TERMINALS IN PUMP CONTROL PANEL
- ⊗ TERMINALS IN MOTOR CONTROL PANEL
- △ TERMINALS IN PM1 JUNCTION BOX

No.	DATE	REVISIONS
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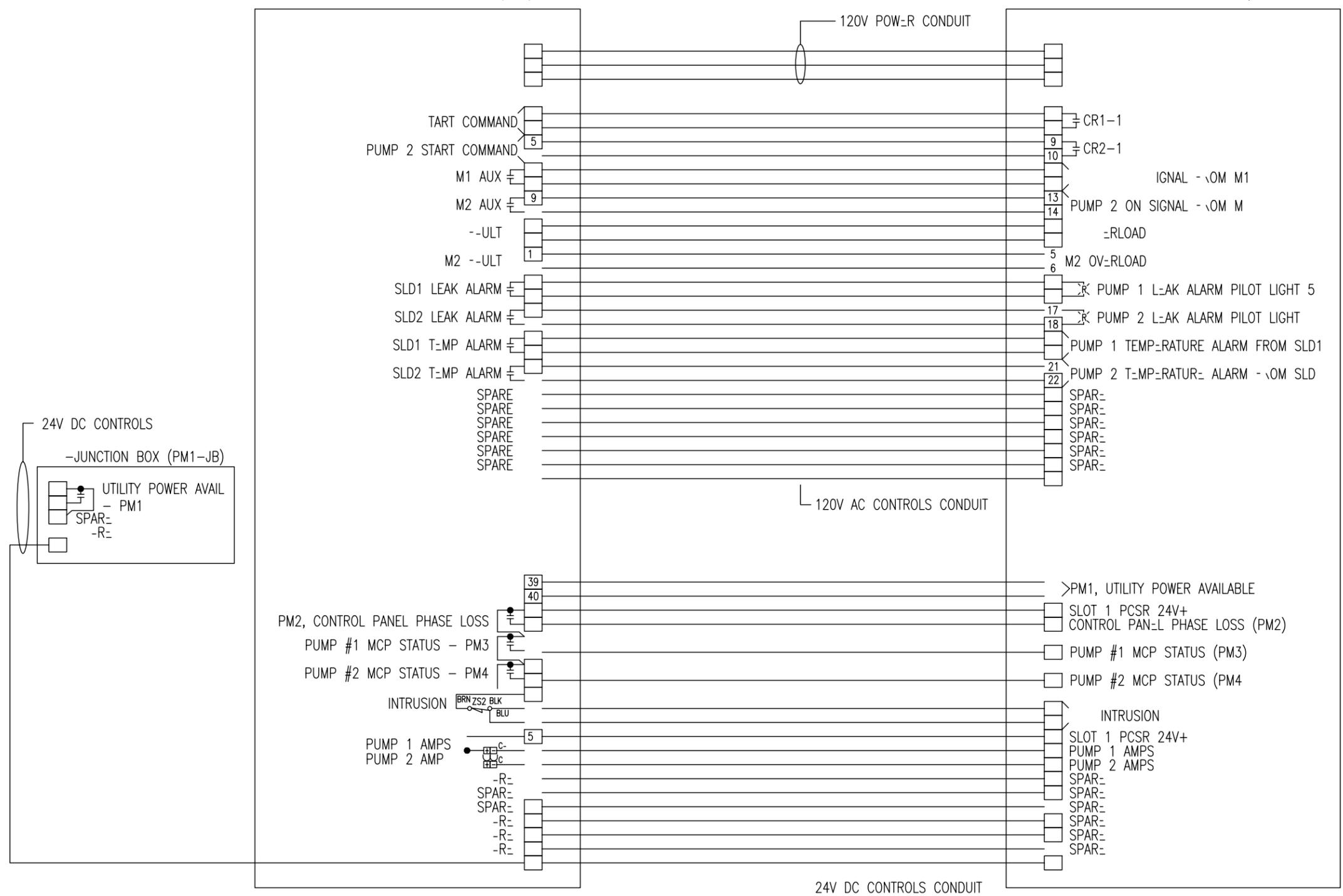
DAYFLOWER PUMP STATION REHABILITATION
ELECTRICAL SCHEMATIC (3 OF 3)
PUMP CONTROL PANEL

SHEET
E9

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MOTOR CONTROL PAN=L (MCP)

PUMP CONTROL PAN=L (PCP)



(S=E SH=ET =11

INTERCONNECTION WIRING DIAGRAM

SCALE: N.T.S.

ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: LG	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION	SHEET
	1			DRN: KLT		INTERCONNECTION WIRING DIAGRAM	E10
	2			CKD: ---- DATE: Jul-2020			
3							

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TB1 (□) (120V AC) MOUNTED ON PUMP CONTROL PANEL (PCP)	
TERM.	DESCRIPTION
1	120V FROM MOTOR CONTROL PANEL
2	NEUTRAL FROM MOTOR CONTROL PANEL
3	SOFTSTARTER NO. 1 FAULT FROM M1
4	SOFTSTARTER NO. 1 FAULT FROM M1
5	SOFTSTARTER NO. 2 FAULT FROM M2
6	SOFTSTARTER NO. 2 FAULT FROM M2
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	PUMP 1 FAULT RELAY CONTACT
24	PUMP 1 FAULT RELAY CONTACT
25	PUMP 2 FAULT RELAY CONTACT
26	PUMP 2 FAULT RELAY CONTACT
27-43	SPARE
44	SPD-2 NUETRAL OUT
L1	SPD-2 NUETRAL OUT
L2	MAIN BREAKER CB6
L3	CB12 RECEP. & AREA LIGHT
L4	CB7 OUT (SPARE)
L5	CB9 PUMP CONTROLS
L6	CB8 OUT (SPARE)

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	SLOT 1 PCSR 24V+
68	SLOT 1 PCSR 24V+
69	UTIL POWER AVAILABLE (PM1) TO PCSR
70	SPARE
71	SPARE
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	SPARE SLOT 1 TERMINALS
84	SPARE SLOT 1 TERMINALS
85	SLOT 2 PCSR 24V+
86	SLOT 2 PCSR 24V+
87	SLOT 2 PCSR 24V+
88-100	SPARE SLOT 2 TERMINALS

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
H1	CB11 OUT MOTOR CONTROL PANEL POWER

TB4 (⊗) (24V DC) MOUNTED ON MOTOR CONTROL PANEL (MCP)	
TERM.	DESCRIPTION
39	PM1, UTILITY POWER AVAILABLE
40	PM1, 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
57-66	SPARE

TB5 (△) (24V YOC) MOUNTED ON PM1-JUNCTION BOX (PM1-JB)	
TERM.	DESCRIPTION
1	SLOT 1 PCSR 24V+
2	UTIL POWER AVAILABLE (PM1) TO PCSR
3	SPARE
4	SPARE
5	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)
△	TERMINAL POINT IN PM1 JUNCTION BOX (PM1-JB)

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ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS
	1		
	2		

3			
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DES: LG
 DRN: KLT
 CKD: ----
 DATE: Jul-2020

CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
 PUMP CONTROL PANEL DETAILS

SHEET
E11

PARTS SCHEDULE (MOTOR CONTROL PANEL)

SYMBOL	NAME	PART			RATING	REMARKS
		MAKE	TYPE	MODEL OR CAT. #		
CB 1	CIRCUIT BREAKER	SQUARE D	THREE POLE	HDL 36100	600 V, 100A	18 KAIC @ 480VAC
CB 2	CIRCUIT BREAKER	SQUARE D	THREE POLE	HDL 36100	600 V, 100A	
CB 3	CIRCUIT BREAKER	SQUARE D	THREE POLE	HDL36015	600 V, 15A	
CB 4	CIRCUIT BREAKER	SQUARE D	TWO POLE	HDL26015	480 V, 15A	
CB 5	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU-120	120 V, 20A	
CB 10, 11	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU-115	120 V, 15A	
M1, 2	MOTOR SOFT STARTER	SOLCON	SOFT STARTER	RVS-DX-72-480-115-8D-U-S	480V, 72A, 120V CONTROLS	PROVIDE REMOTE KEYPAD
T1	TRANSFORMER	SQUARE D	OPEN TYPE	9070T2000D31	480V PRI, 120/240 V SEC.	2KVA
CA1, CA2	CIRCUIT SENSOR	ENERCORP INSTRUMENTS	4-20mA OUTPUT	SC200-2	0 - 100A	ADJUSTABLE RANGE
ETM1, ETM2			ROUND BEZEL, NON RESET			
ZS2	CONTROL PNL INTRUSION SENSOR	OMRON	CYLINDRICAL, SHORT BARREL	E2F-X5F1 (GRAINGER-1EA77)	12-24VDC, 3-WIRE PNP	W/ TELEMECANIQUE MTG. BRACKET (GRAINGER - 5B233)
FF2 & TS	LED LIGHTING FIXTURE	HOFFMAN	LED	LEDA1S35	120 V, 5W	W/TOGGLE SWITCH-TS
SPD-1	SURGE PROTECTIVE DEVICE TYPE 1	ADVANCED PROTECTION TECHNOLOGIES	MOTOR CONTROL PANEL SPD	TE04XDS104X	277/480 V, 3ø, 4W	
TB3, TB4	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
MCP	MOTOR CONTROL PANEL ENCLOSURE	HOFFMAN	NEMA 4X, 3P LATCH, 42"x30"x12"	42"x30"x12" SS	304 SS, POWDER COATED WHITE	3P LATCH W/STOP KIT. EXTERNAL FINISH DURABLE RAL 9003 WHITE POWER COAT.
MP	ENCLOSURE PANEL	HOFFMAN	39" X 27", STEEL	A42P30	STEEL, 12 GAUGE	
PM2, PM3, PM4	3-PHASE POWER MONITOR	ATC DIVERSIFIED ELECTRONICS	8 PIN PLUG-IN	SUA-440-ASA	440 VAC	W/ OPTIONAL 5-SEC RELEASE AND DIN RAIL SOCKET-RB08PC
PDB	PWR DIST. BLOCK	BUSSMANN/EATON	THREE POLE	PDBFS220	600 V, 175 AMP	FINGER-SAFE TERMINAL BLOCKS
FBD 2, 3, 4	FUSE BLOCK / DISCONNECT	ALLEN BRADLEY	THREE PHASE- HIGH INTER. CAP.	1492-FB3C30-L	600 VAC, 200KAIC	W/ BUSSMANN KTK-R-2 FAST ACTING, REJECTION FUSES
FL	FLOAT SWITCH	ANCHOR SCIENTIFIC	SPDT	S20NONC	10 A @ 120 V	PROVIDED BY THE CITY INSTALLED BY CONTRACTOR
FTB2	FUSED TERMINAL BLOCKS	PHOENIX CONTACT		UK 5-HESI	PROVIDE 1, 2, & 5A FUSES	PROVIDE COOPER BUSSMAN GDB SERIES FUSES
SLD1, SLD2	PUMP MONITORING UNIT	XYLEM		MINI-CAS 120	10A AT 240V AC	
GB2	GROUNDING BLOCK	ILSCO	AS REQUIRED	AS REQUIRED		
NB2	NEUTRAL DISTRIBUTION BLOCK	BUSSMAN	SINGLE POLE	16220-1	600V, 175A	

PARTS SCHEDULE (MISCELLANEOUS)

PM1- JUNCTION BOX

SYMBOL	NAME	PART			RATING	REMARKS
		MAKE	TYPE	MODEL OR CAT. #		
PM1	3-PHASE POWER MONITOR	ATC DIVERSIFIED ELECTRONICS	8 PIN PLUG-IN	SUA-440-ASA	440 VAC	W/ OPTIONAL 5-SEC RELEASE AND DIN RAIL SOCKET-RB08PC
FBD1	FUSE BLOCK / DISCONNECT	ALLEN BRADLEY	THREE PHASE- HIGH INTER. CAP.	1492-FB3C30-L	600 VAC, 200KAIC	W/ BUSSMANN KTK-R-2 FAST ACTING, REJECTION FUSES
PM1-JB	PHASE MONITOR JUNCTION BOX	HAMMOND MANUFACTURING	NEMA 4X, 8"x6"x3.5"	EJ863S16	316 S.S.	INSTALL DIN RAILS TO MOUNT PM1 AND FBD1
TB5	TERMINALS	PHOENIX CONTACT		UK5N TERMINALS	30 A W/ ALUM. DIN RAIL	5 CONTACTS (MIN)

EXTERNAL ELECTRICAL

SYMBOL	NAME	PART			RATING	REMARKS
		MAKE	TYPE	MODEL OR CAT. #		
FDTS	FUSED DOUBLE THROW DISCONNECT SWITCH	EATON	SERVICE ENTRANCE RATED, HEAVY DUTY	DT364FWK SWITCH DT200 NK NEUTRAL KIT DS468 GK GROUND KIT DS66FK R FUSE ADAPTOR KIT	600 VAC, 200 AMP	TIME DELAY CLASS RK5 FUSES (6) EDISON ECSR200 (PROVIDE (6) SPARES)
MS	METER SOCKET	MILBANK	7 TERMINAL	UAP9701-X-QG-HSP	600 VAC, 200 AMP	ALUMINUM CONSTRUCTION
EC	EMERGENCY CONNECTOR	CROUSE & HINDS	ARKTITE	AREA20416-S22 W/ BACK BOX, ANGLE ADAPTER, 2" HUB AND SPRING COVER	600V 200 AMP	
LA SPD 1	LIGHTNING ARRESTER	SQUARE D	THREE POLE, 4 WIRE	SDS A3650	40 KA, 600 V MAX	
MCP-JB	MOTOR CONTROL PANEL JUNCTION BOX	WIEGMANN	NEMA 4X, 12"x12"x6"	BN4121206CHSS	304 S.S.	INSTALL S.S. LOUVER PLATE KIT WIEGMANN #WAVK0304SSA
PCP-JB	PUMP CONTROL PANEL JUNCTION BOX	WIEGMANN	NEMA 4X, 12"x12"x6"	BN4121206CHSS	304 S.S.	INSTALL S.S. LOUVER PLATE KIT WIEGMANN #WAVK0304SSA
PDB	PWR DIST. BLOCK	BUSSMANN/EATON	THREE POLE	PDBFS220	600 V, 175 AMP	FINGER-SAFE TERMINAL BLOCKS
	SEAL FITTING	CROUSE-HINDS	COPPER-FREE ALUMINUM	AS REQUIRED		

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CITY of TAMPA
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DAYFLOWER PUMP STATION REHABILITATION

PARTS SCHEDULE (SHT. 1 OF 2)

SHEET
E12

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

PARTS SCHEDULE (PUMP CONTROL PANEL)

SYMBOL	NAME	PART				REMARKS
		PCSR PARTS LIST				
		MAKE	TYPE	MODEL OR CAT. #	RATING	
PCSR	PLC BASED PUMP CONTROLLER, SCADA, AND RADIO SYSTEM	MOTOROLA CORP.	DUPLEX PUMP CONTROLLER BASED ON ACE 3600 PROGRAM CONTROLLER	PART #7509	BASIC MODEL	PROVIDE (1) SPARE
		MOTOROLA CORP.	MOTORBO ANALOG RADIO INSTALLATION KIT	VA00194 (PART #FLN1059)		
		MOTOROLA CORP.	MOTORBO XPR5350 RADIO	VA00161 (PART #UE1078A)	UHF RI: 403-470MHZ	
		MOTOROLA CORP.	METAL CHASIS	PART #V214	MEDIUM 14" x 14"	
		MOTOROLA CORP.	AC POWER SUPPLY 85-264V	PART #V261	100-240 VAC W/ 12V SMART CHARGER	PROVIDE (1) SPARE
		MOTOROLA CORP.	BACKUP BATTERY	PART #V328	10.0 Ah SEALED LEAD-ACID	FITS IN SEPARATE LOCATION FROM METAL CHASSIS; INCLUDE: FKN8376 BATTERY POWER CABLE, FHN601 MOUNTING BRACKET, AND FNN7898 10 AH BACKUP BATTERY
		MOTOROLA CORP.	3-1/0 SLOT FRAME	PART #V103		
		MOTOROLA CORP.	20 PIN TB HOLDER KIT	PART #V158		
		MOTOROLA CORP.	1/0 SLOT COVER	PART #V20	BLANK MODULE	UTILIZE WHERE NEEDED
		MOTOROLA CORP.	16 DI + 4 DO (EE) + (4)± 20 mA AI	PART #V245	PART #V245	MIXED I/O, PROVIDE (2) SPARES
		MOTOROLA CORP.	24 VDC PLUG-IN POWER SUPPLY	PART #V260 (FPN1653A)	24V FLOATING MAX, 150 mA OUTPUT	FLOATING POWER SUPPLY
WILKERSON	SCADA INTERFACE BOARD	PART #SIB-V 245/V453		PROVIDE (2) SPARES		
SYMBOL	NAME	PART				REMARKS
		REMAINING PARTS LIST				
		MAKE	TYPE	MODEL OR CAT. #	RATING	
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	PD765-6R3-10		PROVIDE 4-20 mA OUTPUT
CB 6	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU-120	120 V, 20A	
CB 7, 8, 9, 12	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU-115	120 V, 15A	
PL1, PL4	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT - 38LYA9	120 V, LED TYPE	YELLOW LENS & PRESS TEST
PL2, PL3	ILLUM. PUSH BUTTON	SQUARE D	CLASS 9001	SK2L38LRRH13	120 V, LED TYPE	RED LENS & 1 N.O., 1 N.C.
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	635E&S	120 V	W.W. GRANGER CAT. NO. 6X144
ZS1	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, CR3, CR4	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	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)	2905228	120V, 25A	

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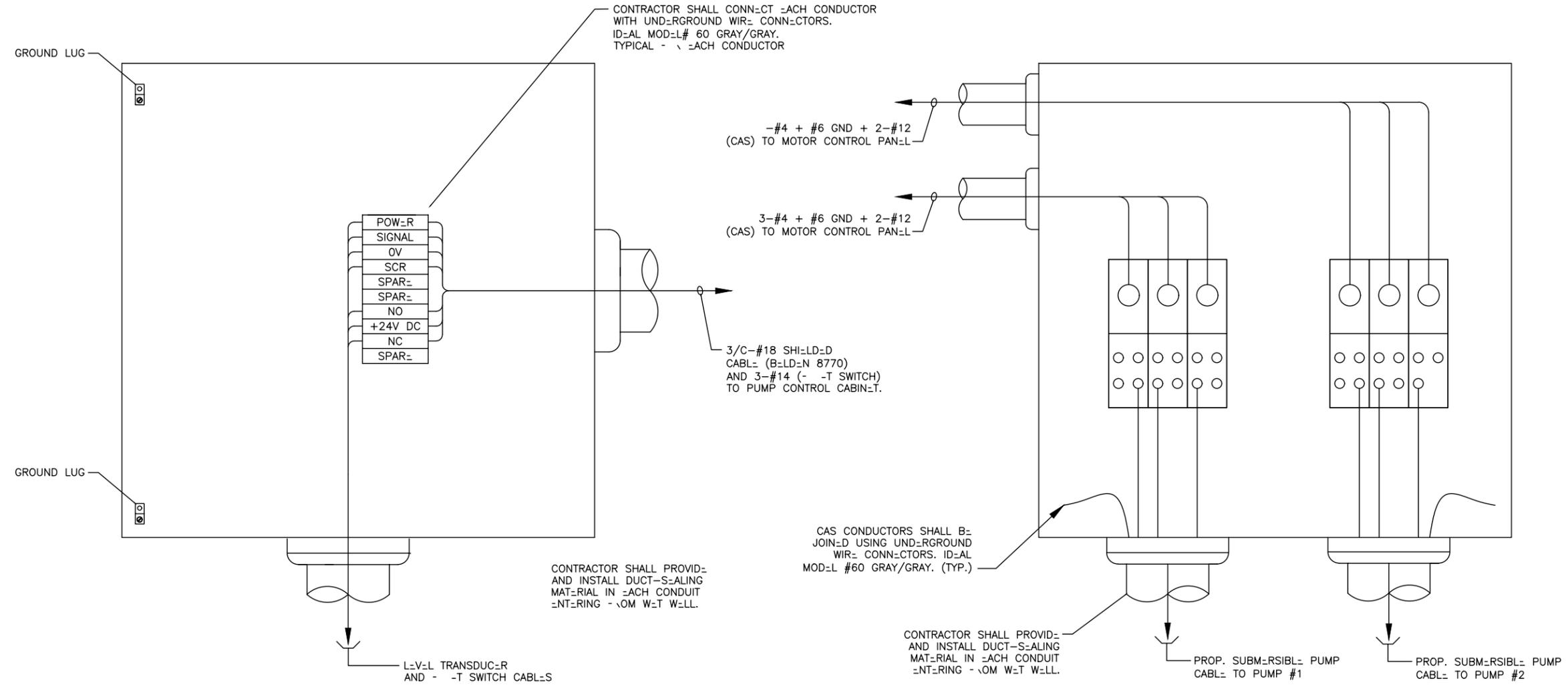
ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS
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CITY of TAMPA
WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION
 PARTS SCHEDULE (SHT. 2 OF 2)

SHEET
E13



NOTES:

- COVER NOT SHOWN - \ CLARITY
- BOND GROUNDING CONDUCTORS TO ENCLOSURE BACK PANEL.

INSTRUMENTATION AND CONTROLS JUNCTION BOX DETAIL
N.T.S.

NOTES:

- COVER NOT SHOWN - \ CLARITY
- BOND GROUNDING CONDUCTORS TO ENCLOSURE BACK PANEL.

PUMP MOTOR CONNECTIONS JUNCTION BOX DETAIL
N.T.S.

NOTES:

ALL HINGED SURFACES SHALL BE GROUNDED WITH A BONDING JUMPER SECURED TO THE ENCLOSURE OR BACKPANEL.

No.	DATE	REVISIONS
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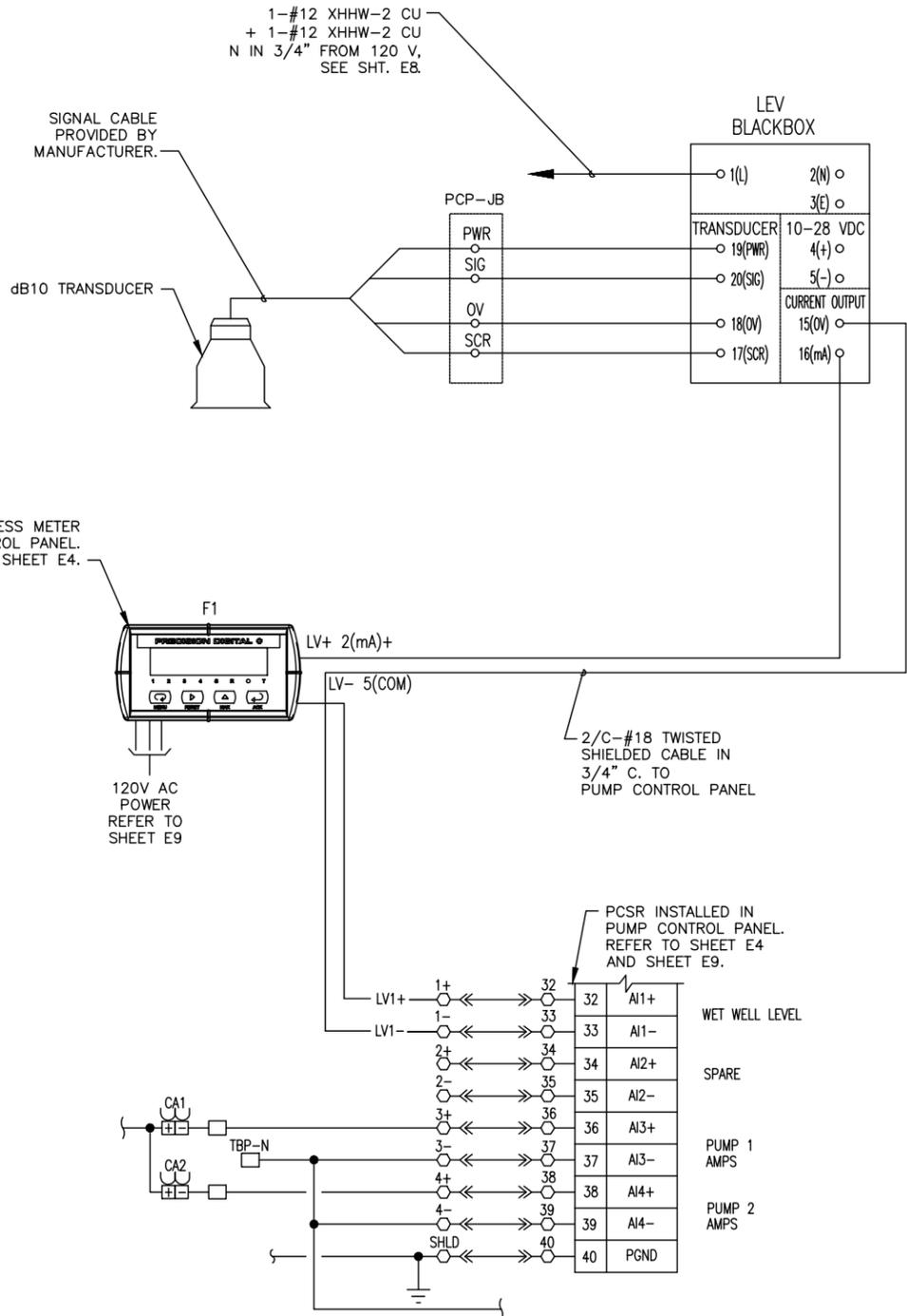
CITY of TAMPA
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DAYFLOWER PUMP STATION REHABILITATION

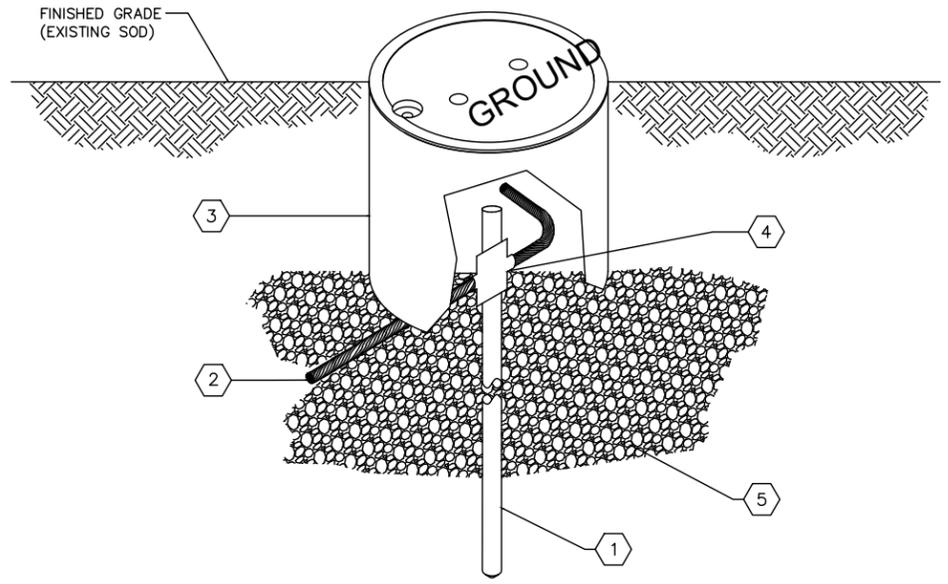
ELECTRICAL DETAILS (SHT. 1 OF 4)

SHEET

E14



LEVEL TRANSDUCER WIRING SCHEMATIC
 ALL WIRING TO BE VERIFIED/CONFIRMED WITH
 MANUFACTURER PRIOR TO INSTALLATION

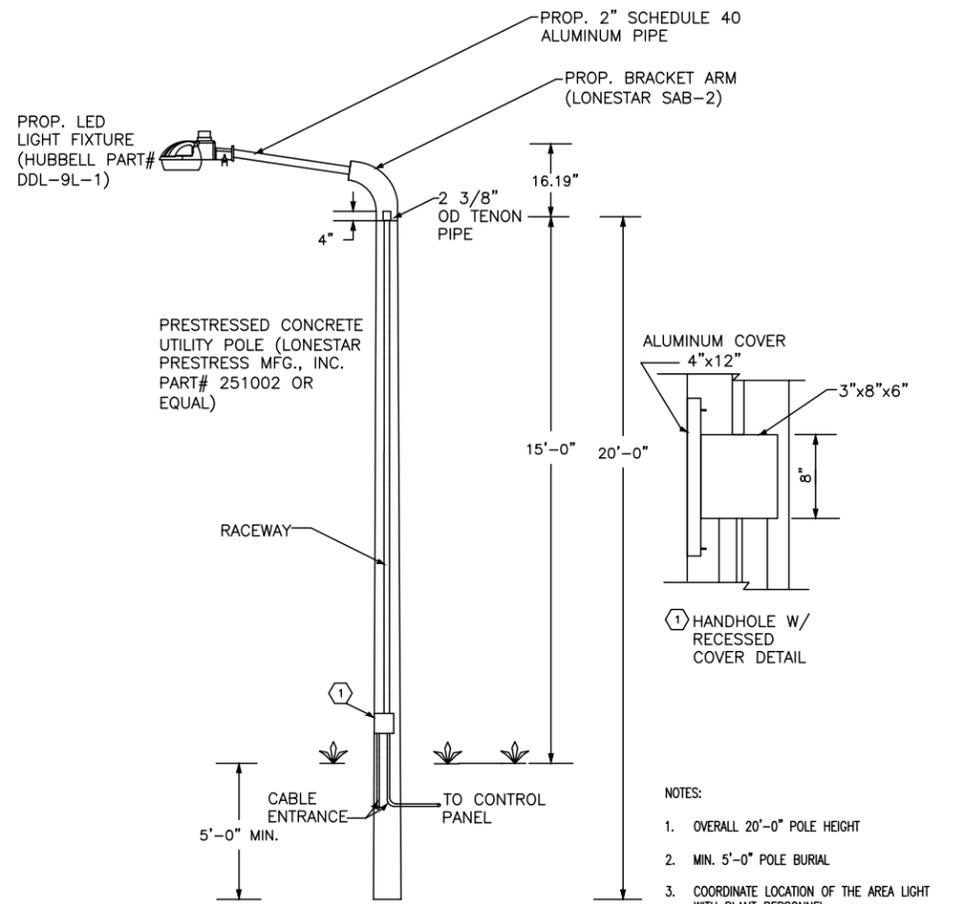


- GROUND TEST WELL DETAIL KEYED NOTES:**
- ① NEW GROUND ROD, STAINLESS STEEL, 5/8" X 10'-0" (TYP).
 - ② #4 BARE STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR (TYP).
 - ③ PROVIDE AND INSTALL OLDCASTLE PRECAST ENCLOSURE SOLUTIONS #F08 BOX WITH #F08C CAST IRON LID MARKED "GROUND".
 - ④ EXOTHERMIC WELD.
 - ⑤ PROVIDE 6" MINIMUM OF CRUSHED STONE.

GROUNDING TEST WELL DETAIL
 SCALE: N.T.S.

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ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: LG DRN: KLT CKD: ---- DATE: Jul-2020	CITY of TAMPA WASTEWATER DEPARTMENT	DAYFLOWER PUMP STATION REHABILITATION	SHEET
	1					ELECTRICAL DETAILS (SHT. 2 OF 4)	E15
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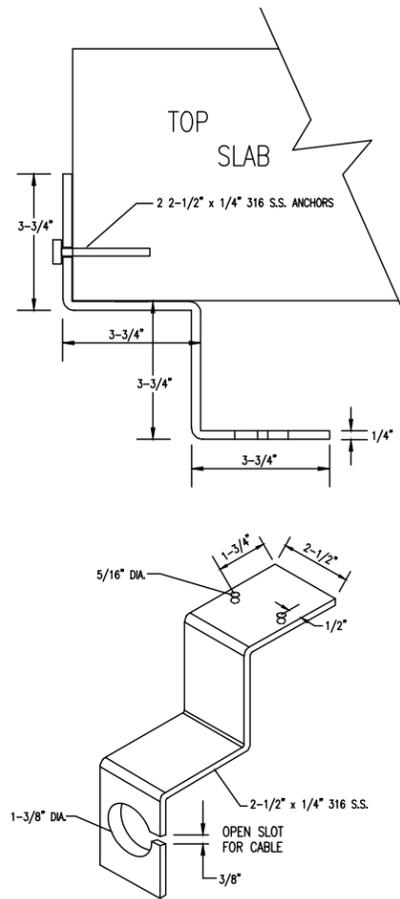


AREA LIGHT (AL) DETAIL

SCALE: N.T.S.

NOTES:

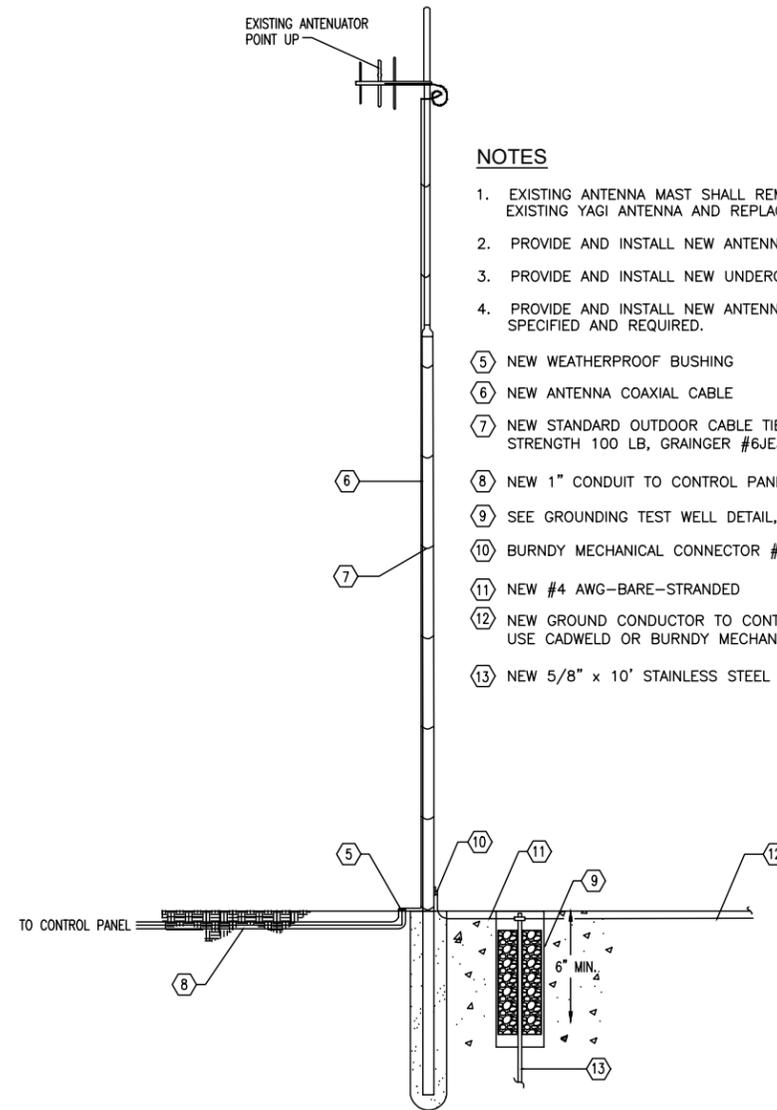
1. OVERALL 20'-0" POLE HEIGHT
2. MIN. 5'-0" POLE BURIAL
3. COORDINATE LOCATION OF THE AREA LIGHT WITH PLANT PERSONNEL
4. USE STAINLESS STEEL PIPE STRAPS SPACED 2'-0" APART TO MOUNT CONDUIT
5. THE LIGHT POLE SHALL BE DESIGNED TO MEET THE SPECIFIED WIND LOAD CRITERIA AND THE LIGHT POLE SUBMITTAL SHALL INCLUDE THE LIGHT POLE CALCULATIONS MEETING THE WIND LOAD CRITERIA AND SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER.



DB10 OR PULSAR MOUNTING BRACKET DETAIL

SCALE: N.T.S.

NOTE:
ROUND OVER ALL EDGES,
RADIUS ALL CORNERS



ANTENNA DETAIL

SCALE: N.T.S.

NOTES

1. EXISTING ANTENNA MAST SHALL REMAIN IN PLACE AND BE REUSED. REMOVE EXISTING YAGI ANTENNA AND REPLACE IN KIND.
2. PROVIDE AND INSTALL NEW ANTENNA COAX CABLE, AS REQUIRED.
3. PROVIDE AND INSTALL NEW UNDERGROUND CONDUIT, AS REQUIRED.
4. PROVIDE AND INSTALL NEW ANTENNA GROUNDING SYSTEM, AS SHOWN, SPECIFIED AND REQUIRED.
5. NEW WEATHERPROOF BUSHING
6. NEW ANTENNA COAXIAL CABLE
7. NEW STANDARD OUTDOOR CABLE TIES, 304 STAINLESS STEEL, TENSILE STRENGTH 100 LB, GRAINGER #6JE35
8. NEW 1" CONDUIT TO CONTROL PANEL
9. SEE GROUNDING TEST WELL DETAIL, SHEET E17
10. BURNDY MECHANICAL CONNECTOR #KA25-4-1/0
11. NEW #4 AWG-BARE-STRANDED
12. NEW GROUND CONDUCTOR TO CONTROL PANEL GROUNDING SYSTEM, USE CADWELD OR BURNDY MECHANICAL CONNECTOR #VT2525
13. NEW 5/8" x 10" STAINLESS STEEL GROUND ROD

WIND DESIGN DATA:

CODE: FLORIDA BUILDING CODE 2017, 6TH EDITION, AND ASCE/SEI 7/10

BASIC WIND SPEED (VULT): 152 MPH
 NOMINAL WIND SPEED (ASD): 118 MPH
 CATEGORY (RISK): III
 WIND EXPOSURE: B
 DESIGN AND WIND PRESSURE (PSF): 55.7 PSF

No.	DATE	REVISIONS
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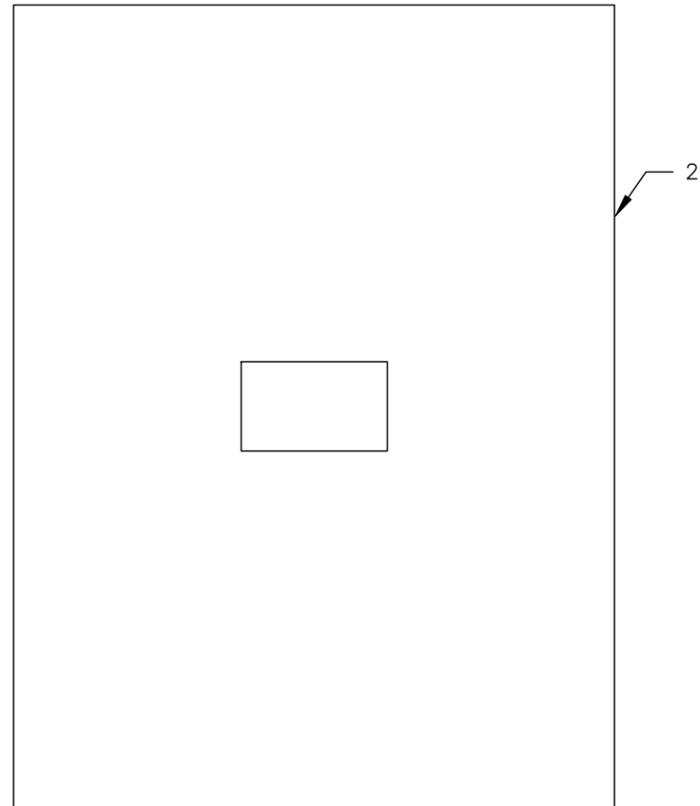
CITY of TAMPA
 WASTEWATER DEPARTMENT

DAYFLOWER PUMP STATION REHABILITATION

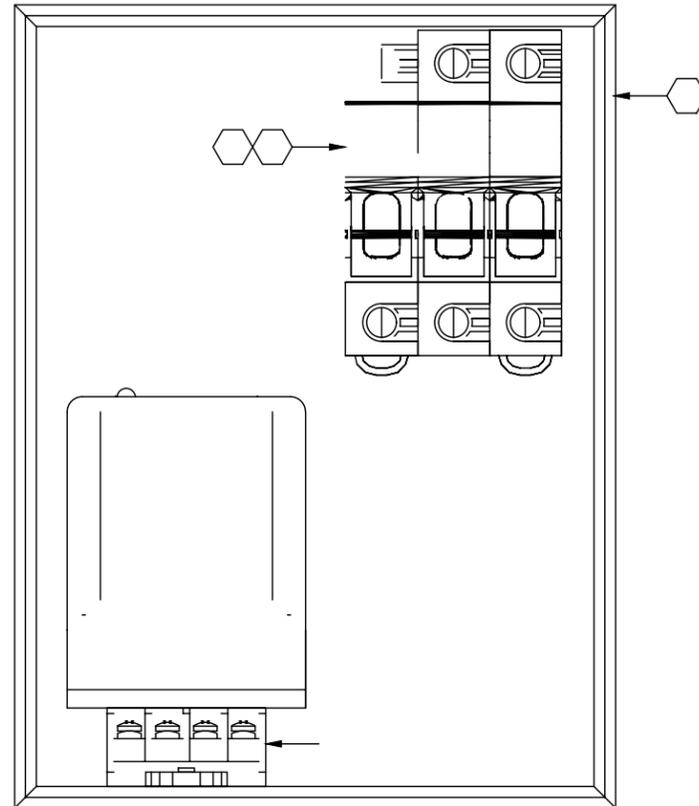
ELECTRICAL DETAILS (SHT. 3 OF 4)

SHEET

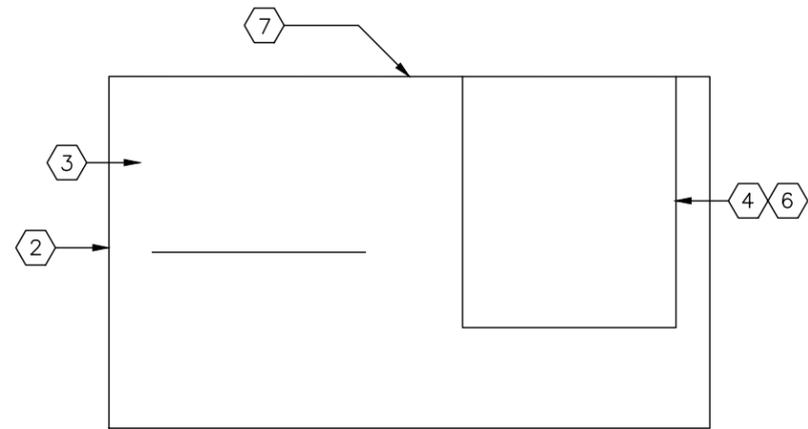
E16



FRONT VIEW



FRONT INTERIOR VIEW



TOP VIEW

PHASE MONITOR (PMI) JUNCTION BOX

SCALE: N.T.S.

KEYED NOTES:

- ① 8 PIN OCTAL SOCKET, DIN RAIL MOUNTED OT08
- ② NEMA 4X STAINLESS STEEL, 8"x 6"x 3.5" ENCLOSURE PART NUMBER EJ863516
- ③ 3-PHASE POWER MONITOR, PM1
- ④ FUSE DISTRIBUTION BLOCK, FDB1
- ⑤ MOUNTED TO BOTTOM OF ENCLOSURE
- ⑥ DIRECTLY MOUNTED TO BACK OF ENCLOSURE
- ⑦ BACK OF ENCLOSURE
- ⑧ PROVIDE WARNING LABEL ON ENCLOSURE DOOR. LABEL TO READ:
"WARNING – OPENING FUSED DOUBLE THROW SWITCH DOES NOT DE-ENERGIZE VOLTAGE TO THIS ENCLOSURE."

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DAYFLOWER PUMP STATION REHABILITATION
ELECTRICAL DETAILS (SHT. 4 OF 4)

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