The Enclosed Document Is Provided For Your Convenience.

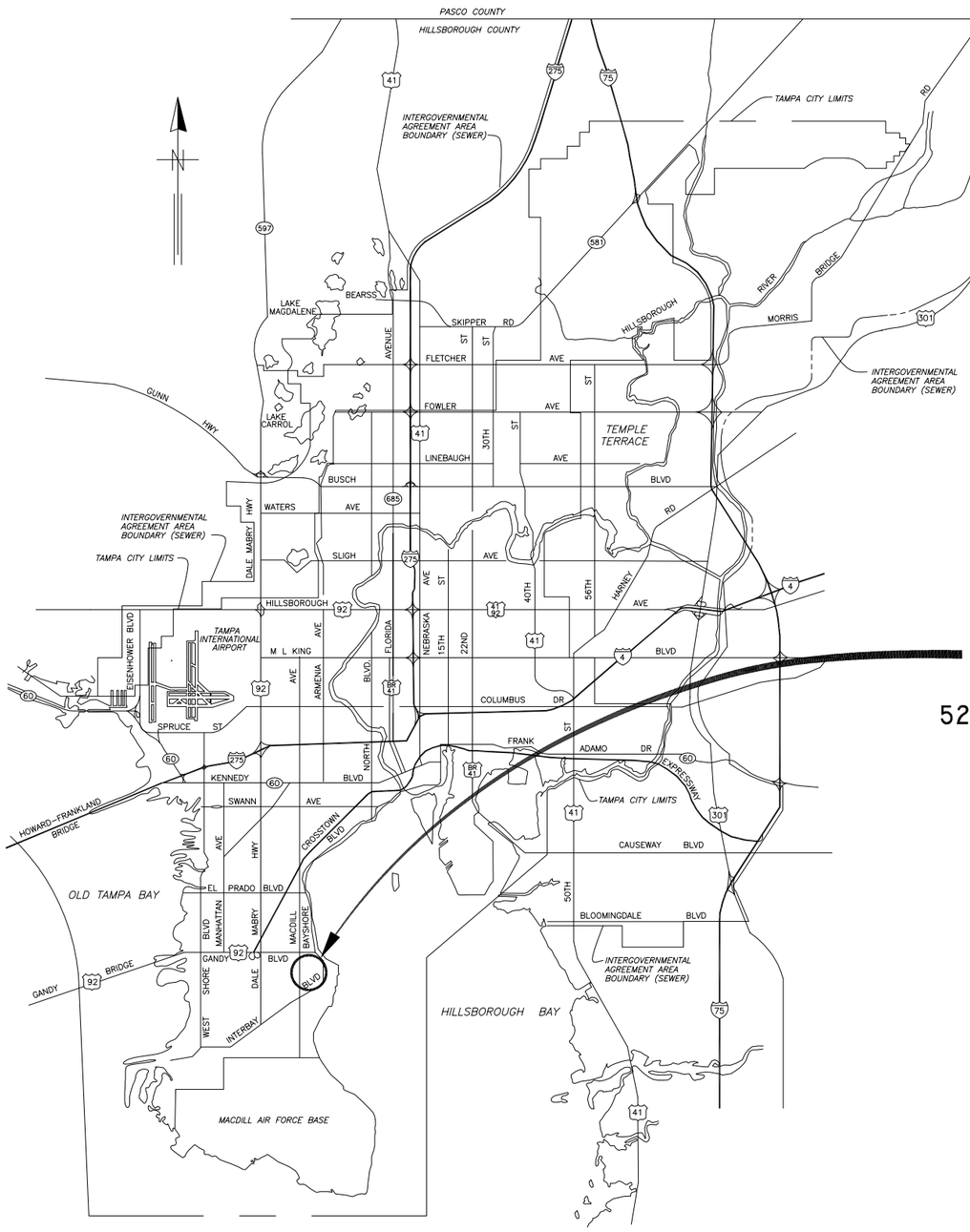
Please Email ALL Questions:

MailTo:ContractAdministration@TampaGov.net

Please Let Us Know If You Plan To Bid

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

LOCATION MAP



PROJECT LOCATION
5229 QUINCY ST.

CITY of TAMPA

CITY OF TAMPA FLORIDA
MASCOTTE
ORGANIZED JULY 15 1887

WASTEWATER DEPARTMENT

PLANS FOR

PUMPING STATION REPAIRS - QUINCY STREET

CONTRACT NO. 16-C-00003

JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD WASTEWATER DEPARTMENT	No. / DATE / REVISIONS 3 2 1	DES: MS / LG DRN: JHJ CKD: JF DATE: 3/21/17	CITY of TAMPA WASTEWATER DEPARTMENT	PUMPING STATION REPAIRS - QUINCY STREET COVER SHEET	W.O. 100051I SHEET I

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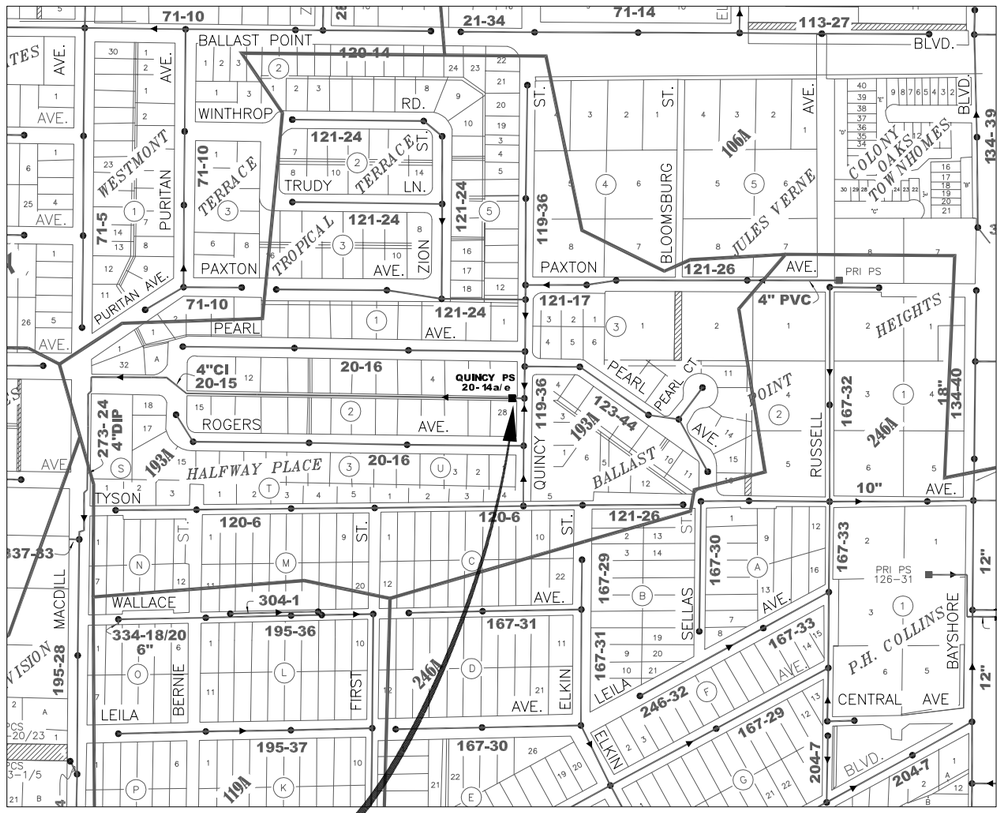
LEGEND

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	R/W
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	V
WATER METER	M
ELECTRICAL MANHOLE or VAULT	E
TELEPHONE MANHOLE or VAULT	T
TRAFFIC BOX or VAULT	TR
BUILDING LIMIT	1236
PROPERTY OWNERSHIP	Z
FENCE	
CONIFER	6"
PALM	8"
OAK	10"
OTHER	12"
SHRUB	
HEDGE	
RAILROAD TRACKS	
IRON PIPE	
CONTROL POINT	
CONCRETE MONUMENT	
OPEN DITCHES	
EXISTING WYE	
PROPOSED WYE	
CLEAN OUT	

ABBREVIATIONS

AIR RELEASE VALVE	ARV	MAINTENANCE OF TRAFFIC	MOT
APPROXIMATE LOCATION	AL	MANHOLE	MH or M
BENCH MARK	BM	PLUG VALVE	PV
BURIED TELEPHONE	BT	POINT of INTERSECTION	PI
CONCRETE PIPE	CP	POLYVINYL CHLORIDE PIPE	PVC
DIAMETER RATIO	DR	REINFORCED CONCRETE PIPE	RCP
DUCTILE IRON PIPE	DIP	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
EL INVERT ELEVATION	IE or INV		



LOCATION MAP
N.T.S.

INDEX

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

No.	DATE	REVISIONS
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1		

DES: MS
DRN: JHJ
CKD: JF
DATE: 3/21/17

CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
LEGEND, INDEX & LOCATION

W.O. I0005II
SHEET 2

DEMOLITION NOTES

1. SALVAGEABLE MATERIAL, AS DETERMINED BY DEPARTMENT PERSONNEL, SHALL BE DELIVERED TO THE PARTS WAREHOUSE LOCATED ON THE TREATMENT PLANT SITE. NON-SALVAGEABLE MATERIALS ARE TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

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. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHT-OF-WAY PERMITS FOR THE PUMPING STATION WORK.

2. CONTRACTOR SHALL CALL SUNSHINE (1-800-432-4770) AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY.

3. NORMAL WORKING HOURS SHALL BE WEEKDAYS FROM 7:30 AM TO 4:00 PM UNLESS OTHERWISE APPROVED BY THE ENGINEER.

4. AFTER WET WELL IS DEWATERED, THE CONTRACTOR SHALL CLEAN WET WELL OF ALL DEBRIS. DEBRIS MAY BE DELIVERED AND DISPOSED OF AT THE CITY OF TAMPA HOWARD F. CURREN AWTP, 2700 MARITIME BOULEVARD.

5. TESTING OF THE NEW DISCHARGE PIPES WILL BE ACCOMPLISHED BY OPERATING EACH PUMP FOR A MINIMUM 2 HOUR DURATION AND OBSERVING FOR ANY LEAKS. ANY MANUAL PUMP OPERATION OR SWITCHING PUMPS MUST BE PERFORMED BY CITY PERSONNEL.

6. IT IS THE ENGINEER'S INTENT THAT CONTINUOUS SERVICE WILL BE MAINTAINED THROUGHOUT THE PROJECT.

7. CONTRACTOR SHALL VERIFY QUANTITIES OF ALL NECESSARY PIPES, REDUCERS, FITTINGS, SUPPORTS, AND ANY MISCELLANEOUS BRACKETS.

8. 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.

9. 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.

10. PUMP DISCHARGE PIPING IN WET WELL SHALL BE 4-INCH DIAMETER HDPE, SDR-11, GREEN STRIPE, DIPS-OD. HDPE JOINTS SHALL BE FLANGED WITH 316 SS BACK UP RINGS.

11. PLUG VALVES SHALL BE DEZURIK, PEF 100% PORT, ECCENTRIC PLUG VALVES OR APPROVED EQUAL. PLUG VALVES SHALL BE PROVIDED WITH 2" NUTS AND NO HANDWHEELS.

12. CHECK VALVES SHALL BE APCO RUBBER FLAPPER 4-INCH SWING CHECK VALVES, SERIES 100, MODEL 104P3. THIS EQUIPMENT IS A STANDARDIZED ITEM AT THIS FACILITY AND NO "OR EQUAL" SUBMITTALS WILL BE CONSIDERED.

13. ALL HARDWARE, UNLESS OTHERWISE NOTED, SHALL BE TYPE 316 STAINLESS STEEL.

14. PIPE SUPPORTS SHALL BE CONSTRUCTED AS SHOWN IN THE PIPE SUPPORT DETAIL.

15. ALL CEMENTITIOUS CONCRETE AND GROUT, UNLESS OTHERWISE NOTED, SHALL BE CLASS "B", 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. ALL REINFORCING STEEL SHALL BE GRADE 60.

16. OSHA STANDARD SAFETY EQUIPMENT SUCH AS SAFETY HARNESSES, GAS MONITORS, LOWER EXPLOSIVE LIMIT (LEL) DETECTORS, BREATHING APPARATUS, ETC. SHALL BE UTILIZED WHERE THE WORK DICTATES THEIR USE.

17. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FLORIDA BUILDING CODE 5th EDITION 2014, & CHAPTER 5 OF THE CITY OF TAMPA CODE.

18. ALL METAL PIPE, FITTINGS, VALVES, ETC. SHALL RECIEVE:
18.1. SHOP COAT – ONE COAT, 4-6 MILS (DRY) TNEMEC N140-1211 EPOXY PRIMER.
18.2. FIELD COAT – ONE COAT, 5-7 MILS (DRY) TNEMEC SERIES 446 PERMA-SHIELD MCU
18.3. FIELD COAT
18.3.1. ABOVE GRADE : ONE COAT, 4-6 MILS (DRY) TNEMEC 1074U ENDURASHIELD (WITH FACTORY ADDED UV BLOCKER)
18.3.2. BELOW GRADE : ONE COAT, 5-7 MILS (DRY) TNEMEC SERIES 446 PERMA-SHIELD MCU

19. ALL STAINLESS STEEL PARTS TO BE WELDED SHALL BE THE LOW-CARBON VERSION OF THE GRADE OF STAINLESS STEEL THAT IS CALLED FOR, SUCH AS: T-316L OR T-304L.

20. CONTRACTOR SHALL POUR A NEW CONCRETE FILLET, AT THE BOTTOM OF THE WET-WELL, AS SHOWN IN THE PLANS WITH CLASS "D" (2,000 PSI @ 28-DAYS) CONCRETE.

21. CONTRACTOR TO SUBMIT METHOD FOR 100% WATERTIGHT SEALING AT PIPE PENETRATIONS THROUGH STRUCTURES. PROPOSED LINK SEAL OR APPROVED EQUAL.

22. CONTRACTOR SHALL PROVIDE A REDUCED PRESSURE BACKFLOW-PREVENTION DEVICE IN WATER SERVICE LINE, AS SHOWN IN DETAILS, AT A PLACE TO BE SPECIFIED DURING CONSTRUCTION. BACKFLOW PREVENTION DEVICE SHALL BE 1" WILKINS, MODEL #975 XL, OR EQUAL.

23. ALL DIP PIPE AND FITTINGS SHALL BE CLASS 53 WITH PROTECTO 401 INTERIOR COATING.

BYPASSING NOTES

1. THE CONTRACTOR WILL HAVE A MAXIMUM OF 4 HOURS SHUT DOWN TO REMOVE AND INSTALL THE PLUG VALVES (3) & BYPASS ASSEMBLY INSIDE THE VALVE VAULT DURING LOW FLOW EVENT (I.E. NIGHT). FITTINGS & VALVES INSIDE VALVE BOX TO BE INSTALLED DURING 4 HOUR SHUT DOWN TO ACCOMMODATE BYPASS INSTALLATION SHALL BE PRE-ASSEMBLED PRIOR TO SHUT DOWN.

2. CONTRACTOR SHALL SUPPLY (2) SOUND ATTENUATED DIESEL BYPASS PUMPS (1) PRIMARY & (1) BACKUP, EACH CAPABLE OF DELIVERING 180 GPM AT 40 TDH PLUS ANY LOSSES PRODUCED IN THE TEMPORARY BY-PASS PIPING. THE PUMP SUCTION SHOULD BE FROM MH IN STREET & DISCHARGE INTO THE PROPOSED 4" BYPASS VALVE. CONTRACTOR SHALL SUBMIT BYPASS PUMPING PLAN TO THE ENGINEER FOR APPROVAL.

SCOPE

THE PROJECT WILL SERVE TO REPLACE SEVERELY DETERIORATED RISER PIPES, PUMP BASES, ASSOCIATED APPURTENANCES, COAT THE WETWELL & UPGRADE THE ELECTRICAL COMPONENTS.

JACINTO CARLOS FERRAS, P.E., #49454
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WASTEWATER DEPARTMENT

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CKD: JF
DATE: 3/21/17

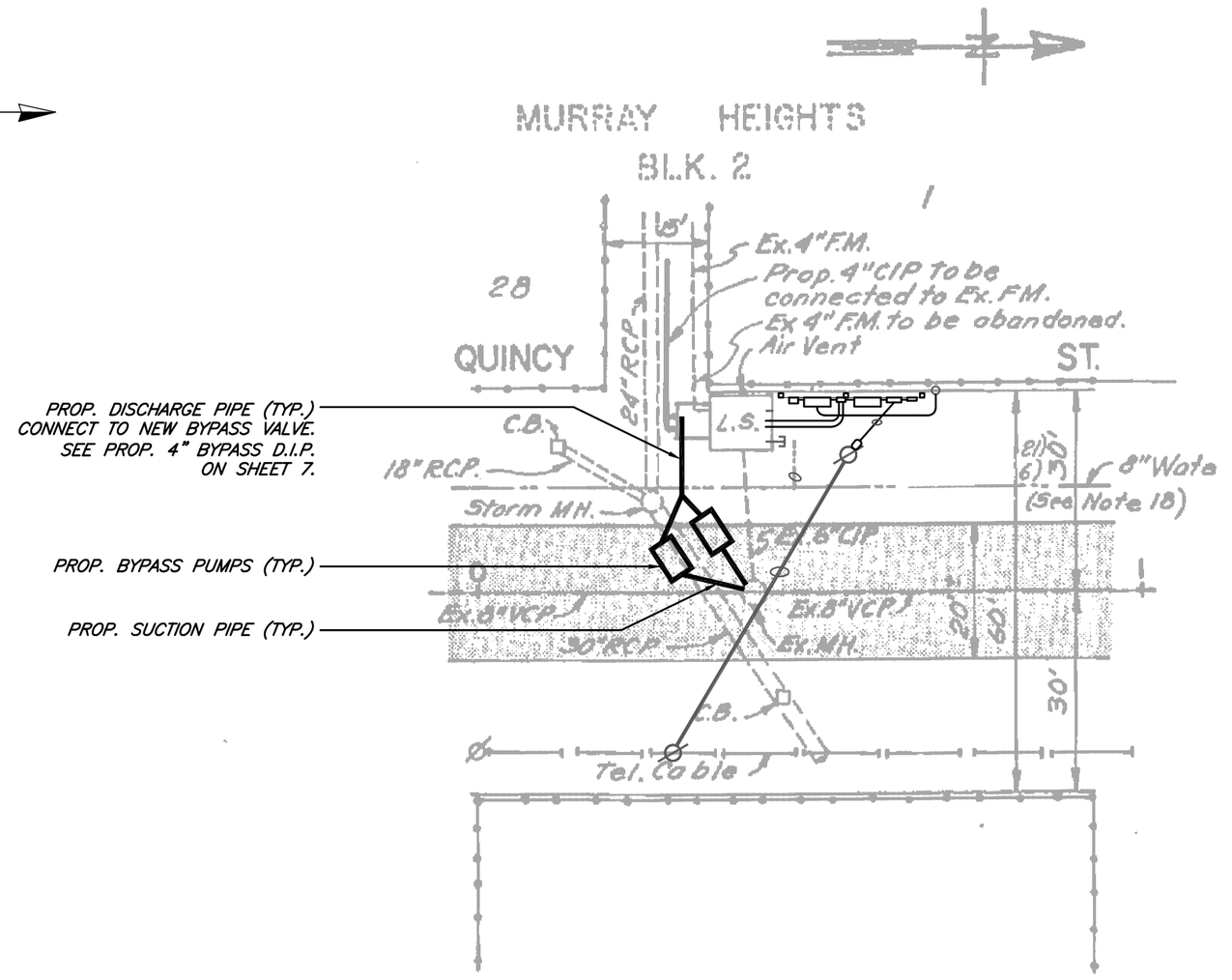
CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
GENERAL NOTES

W.O. 100051I
SHEET
3

AERIAL

5229 QUINCY ST.
PUMP STATION



EXISTING SITE PLAN
N.T.S.

NOTE:
PROVIDE MOT AND DETOUR SIGNAGE FOR FULL ROAD CLOSURE OF QUINCY ST.

JACINTO CARLOS FERRAS, P.E., #49454
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CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
EXISTING SITE PLAN

W.O. 100051I
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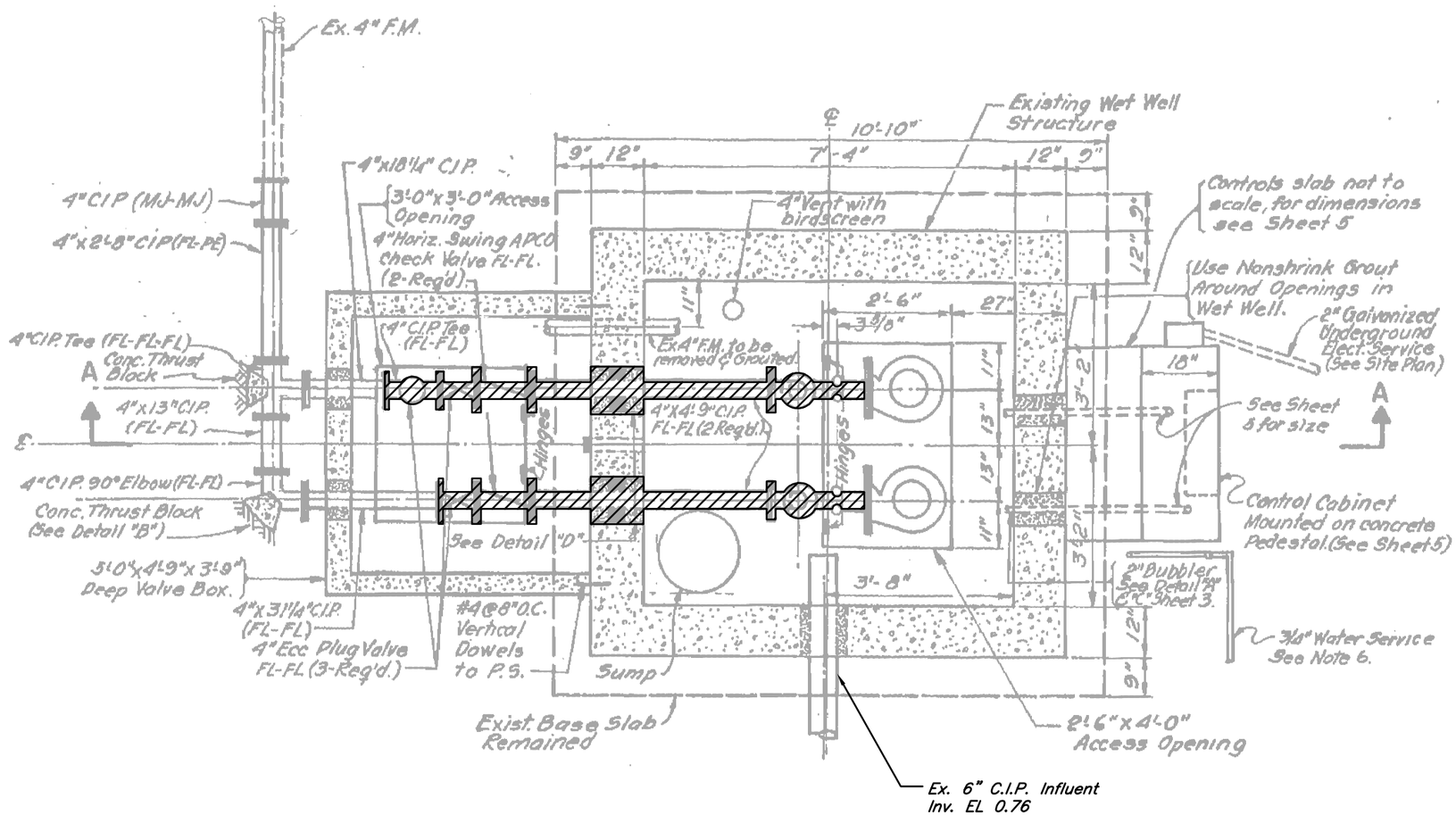

DEMOLITION PLAN VIEW

SCALE: 3/8" = 1'-0"

HATCHED AREAS ON THIS SHEET INDICATE PIPING, FITTINGS AND VALVES TO BE REMOVED

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WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
DEMOLITION PLAN VIEW

W.O. 100051I
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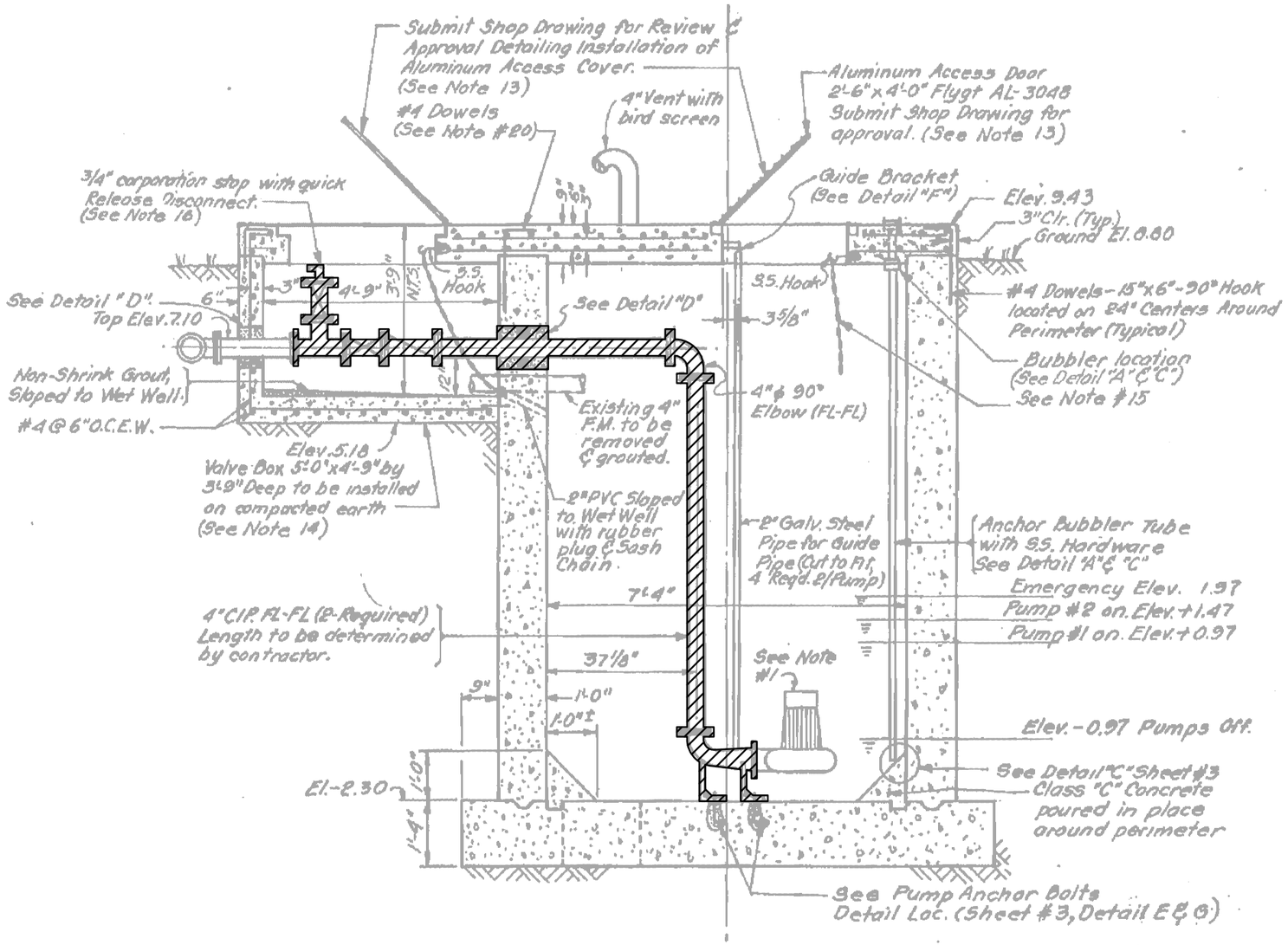

HATCHED AREAS ON THIS SHEET INDICATE PIPING, FITTINGS AND VALVES TO BE REMOVED

DEMOLITION SECTION VIEW

SCALE: 3/8" = 1'-0"

JACINTO CARLOS FERRAS, P.E., #49454
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WASTEWATER DEPARTMENT

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CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
DEMOLITION SECTION VIEW

W.O. 100051I
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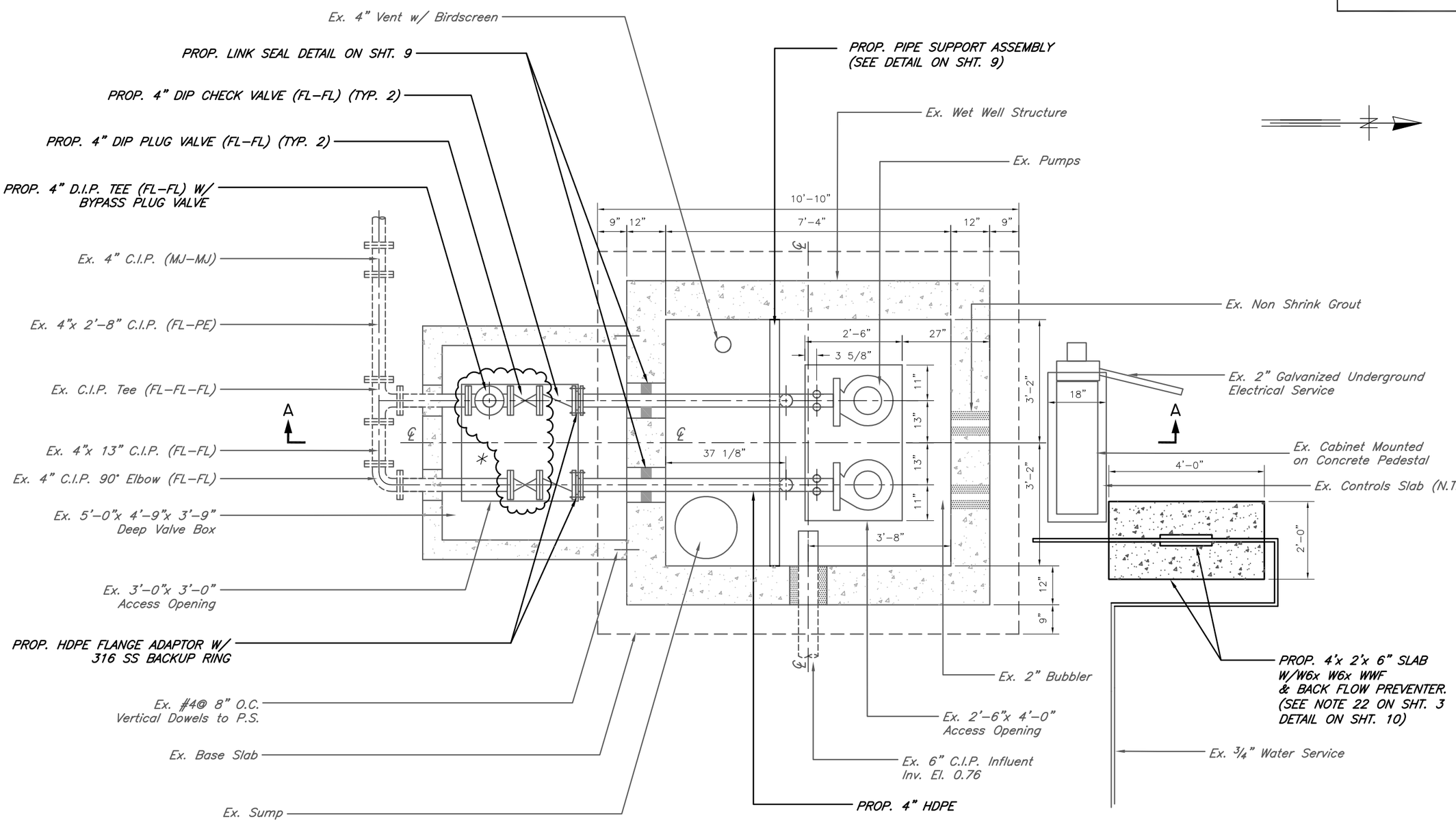

* PROPOSED VALVE & FITTING REMOVAL. VALVES AND FITTINGS SHOWN WITHIN CLOUDED AREA ARE TO BE REMOVED DURING PUMP STATION SHUTDOWN. (SEE BYPASS NOTES SHT. 3)

PROPOSED PLAN VIEW

SCALE: 3/8" = 1'-0"

NOTE: ALL PROPOSED WORK DONE IN BOLD.

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PUMPING STATION REPAIRS - QUINCY STREET
PROPOSED PLAN VIEW

W.O. I0005II
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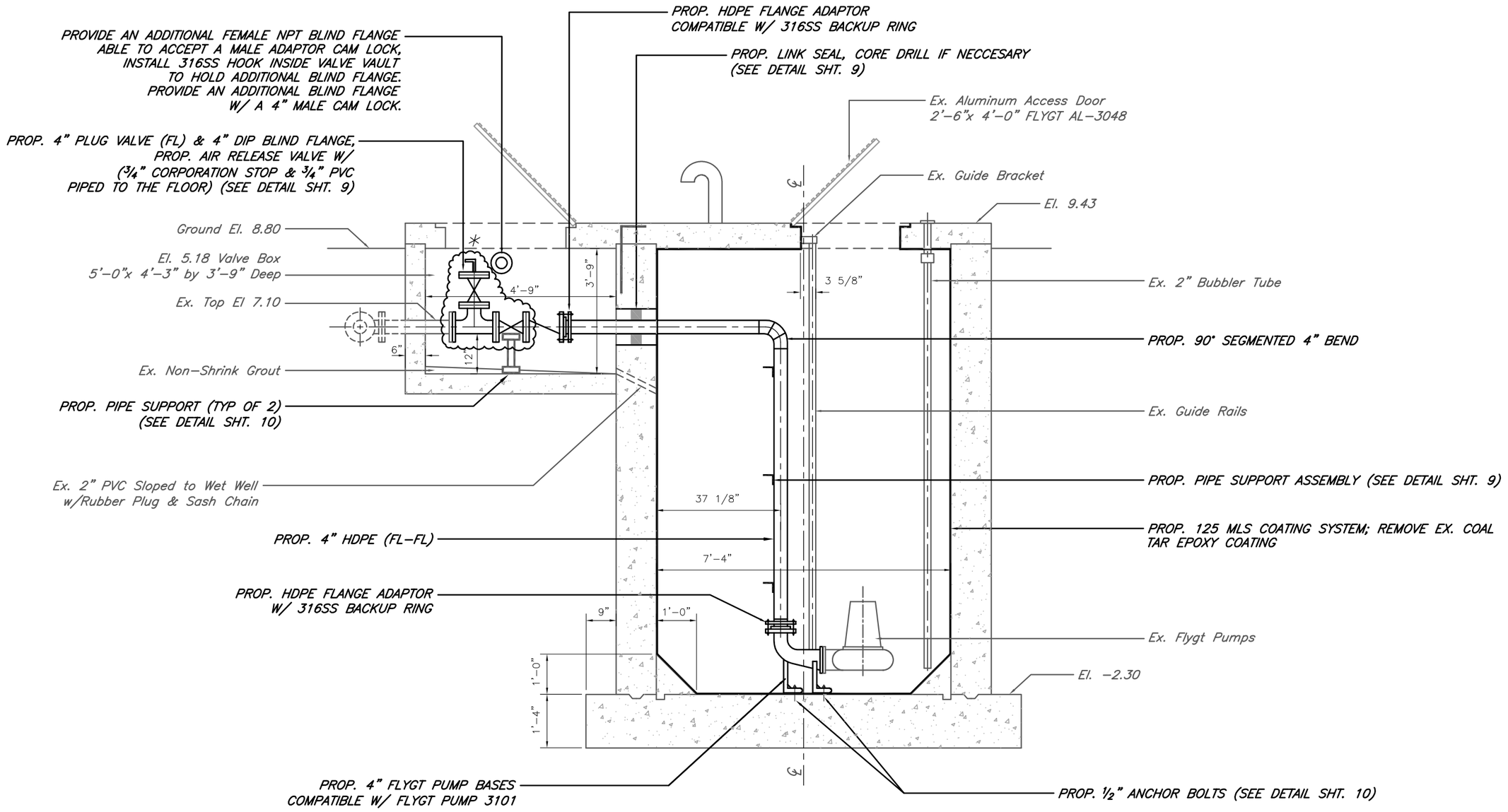

* PROPOSED VALVE & FITTING REMOVAL. VALVES AND FITTINGS SHOWN WITHIN CLOUDED AREA ARE TO BE REMOVED DURING PUMP STATION SHUTDOWN. (SEE BYPASS NOTES SHT. 3)

PROPOSED SECTION VIEW

SCALE: 3/8" = 1'-0"

NOTE: ALL PROPOSED WORK DONE IN BOLD.

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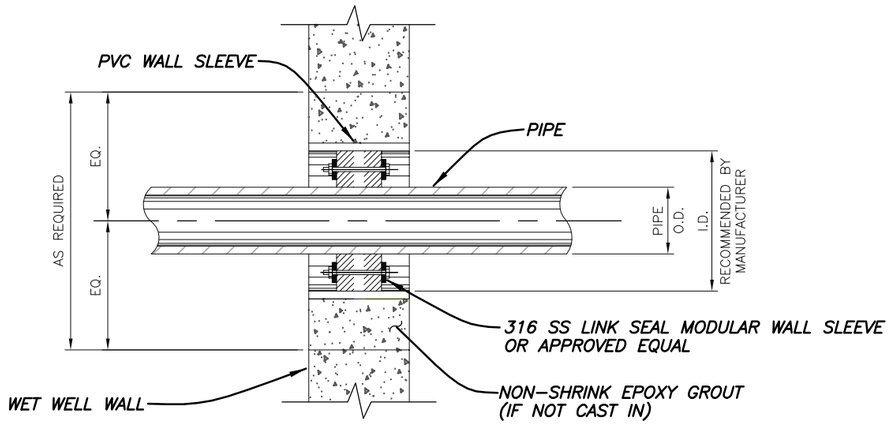
PUMPING STATION REPAIRS - QUINCY STREET
PROPOSED SECTION VIEW

W.O. 100051I
SHEET 8



LINK SEAL DETAIL
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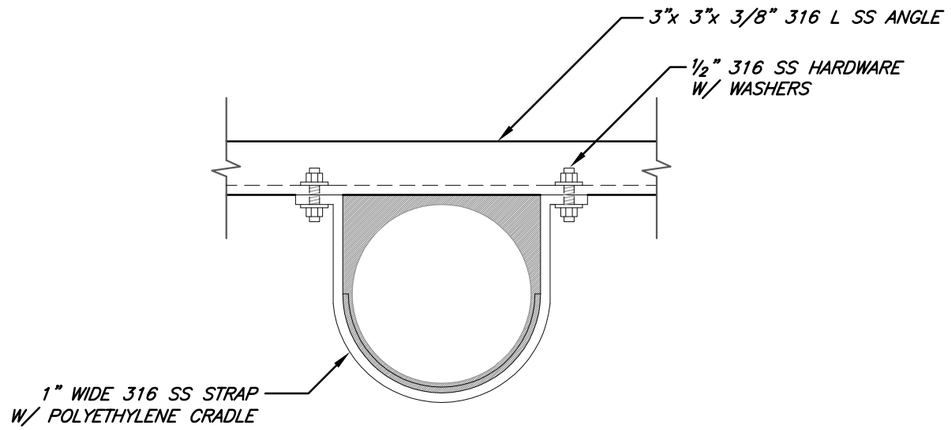
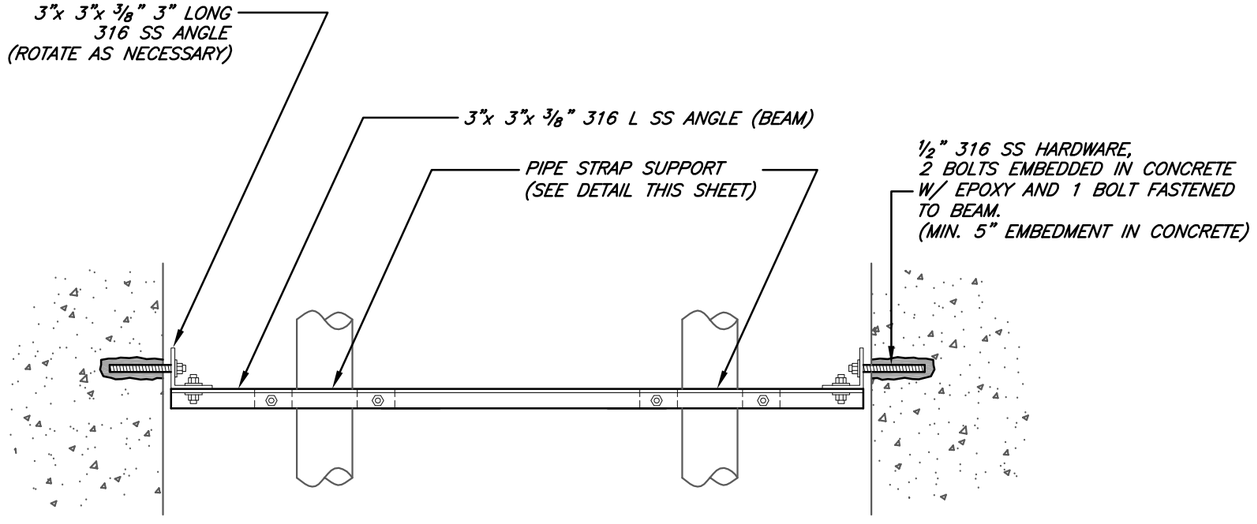
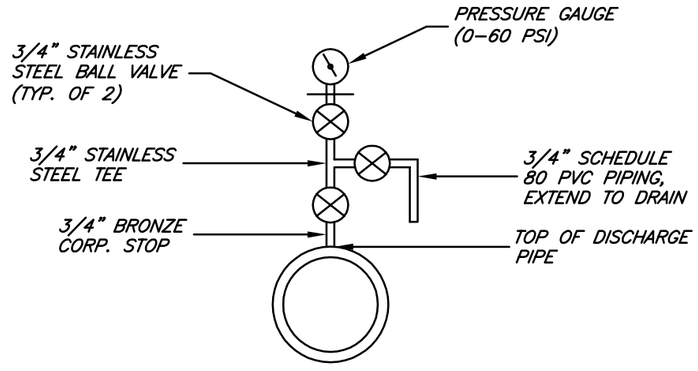


PIPE STRAP SUPPORT
N.T.S.



PIPE SUPPORT ASSEMBLY
N.T.S.



AIR RELEASE AND PRESSURE GAUGE
N.T.S.

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PUMPING STATION REPAIRS - QUINCY STREET
DETAILS

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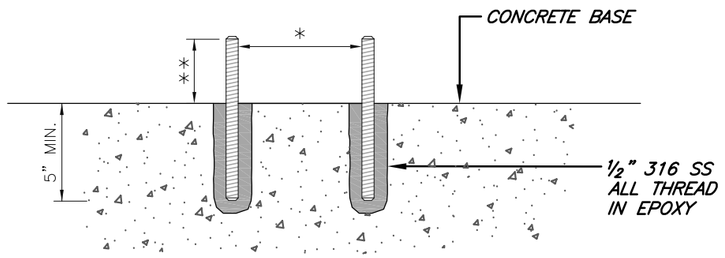
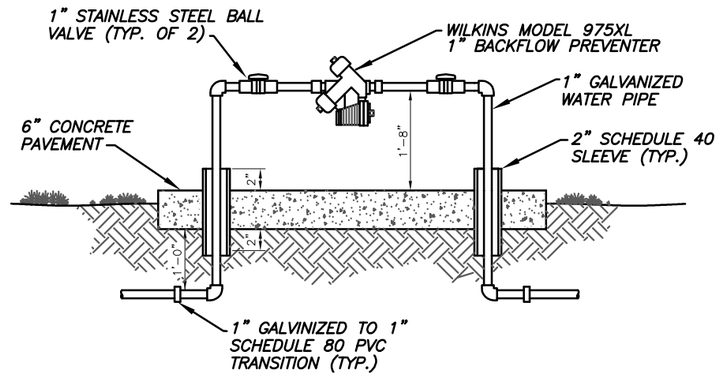


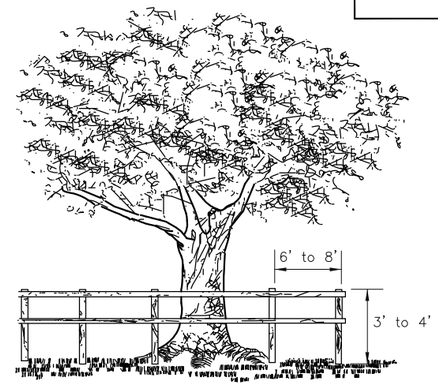
* ALIGNMENT OF ANCHOR BOLTS SHALL BE AS RECOMMENDED BY PUMP MANUFACTURER.

** CONTRACTOR SHALL PROVIDE A MINIMUM ½ INCH BOLT PROTRUSION ABOVE THE FINAL NUT LOCATION AFTER THE NUT IS TIGHTENED TO MANUFACTURE'S RECOMMENDATION.

ANCHOR BOLT DETAIL
N.T.S.



BACKFLOW PREVENTER DETAIL
N.T.S.



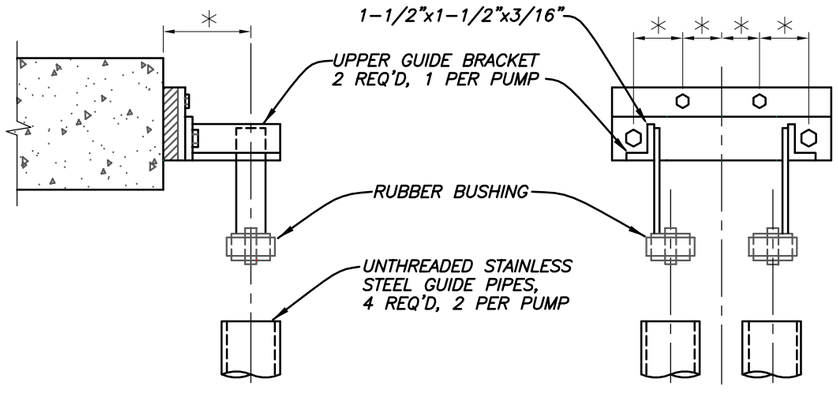
HORIZONTAL WOOD MEMBER, ORANGE FENCING, CHAIN LINK FENCE OR OTHER APPROVED MATERIAL.

VERTICAL WOOD MEMBER OR APPROVED MATERIAL.

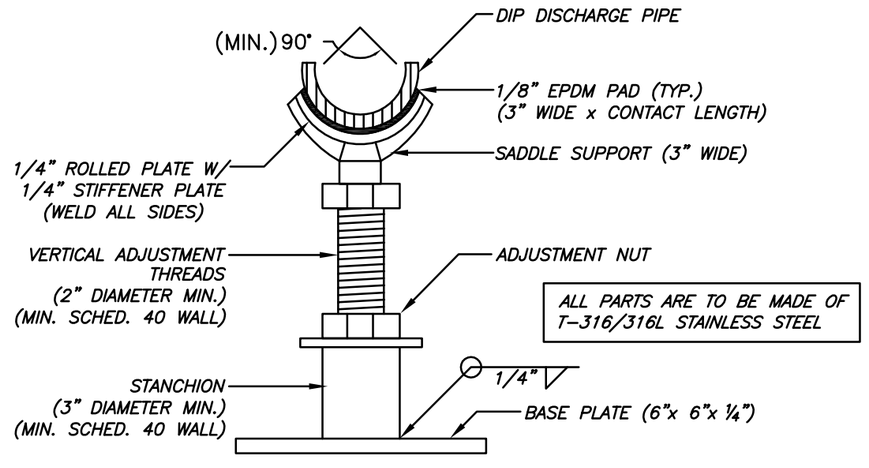
BARRICADES PLACED AT DESIGNATED PROTECTIVE ROOT ZONE.

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

* PER PUMP MANUFACTURER'S RECOMENDATION



GUIDE BRACKET DETAIL (SUPPLIED WITH PUMPS)
N.T.S.



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

JACINTO CARLOS FERRAS, P.E., #49454
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PUMPING STATION REPAIRS - QUINCY STREET
DETAILS

W.O. 100051I
SHEET
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ONE LINE DIAGRAM SYMBOLS

600 A — BUS–RATING AS SHOWN

INCOMING LINE

OUTCOMING LINE

DISCONNECTING DEVICE

CONDUCTORS CONNECTED

CONDUCTORS NOT CONNECTED

100A — FUSE–RATING AS SHOWN

100A — SINGLE THROW DISCONNECT SWITCH–RATING AS SHOWN

100A/70A — FUSED DISCONNECT SWITCH–100A SWITCH, 70A FUSE

100A — LOW VOLTAGE AIR CIRCUIT BREAKER WITHOUT TRIP DEVICE 100A FRAME

225A/125A — LOW VOLTAGE AIR CIRCUIT BREAKER WITH 225A FRAME AND 125A TRIP

52 — MEDIUM VOLTAGE DRAWOUT TYPE AIR CIRCUIT BREAKER

GROUND CONNECTION

SPD — LIGHTNING OR SURGE ARRESTOR

SURGE CAPACITOR

POWER TRANSFORMER WITH WINDING CONNECTIONS INDICATED

CPT — CONTROL POWER TRANSFORMER

PT — POTENTIAL TRANFORMER

CT — CURRENT TRANSFORMER

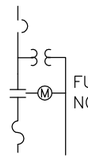
THERMAL OVERLOAD ELEMENT (OL)

(5) — SQUIRREL CAGE MOTOR (INDICATE HORSEPOWER)

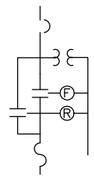
(G) — GENERATOR

(R) — INDICATING LIGHT (R–RED, G–GREEN, A–AMBER, B–BLUE, W–WHITE)

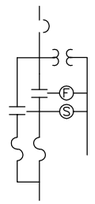
COMBINATION STARTER WITH CONTROL TRANSFORMERS AND OVERLOAD RELAYS AND MOTOR CIRCUIT PROTECTOR



FULL VOLTAGE NON REVERSING



FULL VOLTAGE REVERSING



FULL VOLTAGE TWO SPEED

SCHEMATIC AND WIRING DIAGRAM SYMBOLS

(M) — OPERATING COIL

M–MOTOR STARTER
C– CONTACTOR
F– FORWARD
R– REVERSE

AR– AUXILIARY RELAY
CR– CONTROL RELAY
TR– TIME DELAY RELAY

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)

NORMALLY CLOSED CONTACT WITH TIME DELAY OPENING (ON–DELAY)

INSTANT CLOSE– TIME DELAY OPEN CONTACT (OFF DELAY)

(R) — INDICATING LIGHT– PUSH TO TEST (R–RED, G–GREEN, A–AMBER, B–BLUE, W–WHITE)

H O A — 3–POSITION SELECTOR SWITCH (SHOWN IN "H" POS.)

NORMALLY OPEN PUSHBUTTON– MOMENTARY CONTACT

NORMALLY CLOSED PUSHBUTTON– MOMENTARY CONTACT

DOUBLE CIRCUIT PUSHBUTTON WITH SPRING RETURN TO NORMAL

TRANSFORMER

OL — OVERLOAD RELAY CONTACT

THERMAL OVERLOAD ELEMENT (OL)

ON–OFF SWITCH

(G) — GROUND BUS

(N) — NEUTRAL BUS (INSULATED)

SINGLE–POLE CIRCUIT BREAKER

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

NOTE:

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

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

No.	DATE	REVISIONS
3		
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DES: LRG
DRN: JHJ
CKD:
DATE: 3/21/17

CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL SYMBOL LEGEND (SHT. 1 OF 2)

W.O. 100051I
SHEET
EGI

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)

PNL–1 1,3,5 — 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)

G — 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

4 — DUPLEX RECEPTACLE– 20 A, 120 V, 3 WIRE (TO PNL– CIRCUIT No.4)

30 A — SINGLE RECEPTACLE – 2 POLE, 3 WIRE, 240V, RATING NOTED

60 A — 3 POLE, 4 WIRE, 240V WELDING OUTLET (60 A)

SINGLE POLE SWITCH

2P — TWO POLE SWITCH

3 — THREE WAY SWITCH

J — OUTLET BOX WITH BLANK COVER

JB — JUNCTION BOX

PB — PULL BOX

TB — TERMINAL BOX

GENERAL SYMBOLS

START–STOP PUSHBUTTON

ON/OFF/L — ON–OFF MAINTAINED CONTACT PUSHBUTTON WITH LOCK ATTACHMENT

S/L — INDICATING LIGHT AND START–STOP PUSHBUTTON WITH LOCK ATTACHMENT ON STOP

RESUME STOP/L — PUSH/PULL BUTTON WITH STOP LOCK. (PULL TO RESUME– PUSH TO STOP)

SELECTOR SWITCH ("HOA" INDICATES HAND, OFF, AND AUTO; "MOR" INDICATES MANUAL, OFF, AND REMOTE; ETC)

I L — ON–OFF SWITCH WITH LOCK ATTACHMENT ON OFF POSITION

FL — FLOW SWITCH

LS — LIMIT SWITCH

P — PRESSURE SWITCH

S — SOLENOID OPERATED VALVE

T — TEMPERATURE SWITCH

F — FLOAT SWITCH

L — LEVEL TRANSMITTER (PRESSURE ANALOG TYPE)

LC — LEVEL TRANSMITTER (FLOAT TYPE)

T — TEMPERATURE TRANSMITTER

FT — FLOW TRANSMITTER

MH — DESIGNATES MOUNTING HEIGHT

WP — DESIGNATES WATERPROOF EQUIPMENT

XP — DESIGNATES EXPLOSIONPROOF EQUIPMENT

MOV — DESIGNATES MOTOR OPERATED VALVE

EX. — DESIGNATES EXISTING EQUIPMENT

PROP. — DESIGNATES PROPOSED EQUIPMENT

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WASTEWATER DEPARTMENT

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CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL SYMBOL LEGEND (SHT. 2 OF 2)

W.O. 100051I
SHEET
EG2

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 5TH EDITION 2014 OF THE FLORIDA BUILDING CODE AND THE 2011 EDITION OF THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL ENSURE THAT ALL ELECTRICAL WORK PERFORMED SHALL ADHERE TO THE SAME ACCORDANCE AND ALL APPLICABLE LOCAL ORDINANCES.
7. ALL THREADED CONNECTIONS SHALL BE COATED W/ ALUMA-SHIELD ANTI-SIEZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & B) OR EQUAL.
8. ALL PANELS, DISCONNECTS, SWITCHES, AND EQUIPMENT COVERPLATES SHALL BE LABELED W/ NAMEPLATES. NAMEPLATES SHALL BE THREE-PLY PHENOLIC BLACK-WHITE-BLACK ENGRAVED THROUGH THE FIRST BLACK LAYER. LETTERING SHALL BE 0.5 CM (3/16") MIN. EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.
9. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'-0" INTERVALS.
10. ALL CIRCUITS SHALL HAVE A PROPERLY SIZED GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT W/ POWER CONDUCTORS.
11. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS, NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNED IN THE DRAWINGS.
12. NEATLY COIL ALL SPARE CONDUCTORS & TAPE W/ VINYL ELECTRICAL TAPE (SCOTCH 33+)
13. PROVIDE A MINIMUM OF 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE W/ ARTICLE 110 OF THE NEC.
14. ALL FASTENING HARDWARE (SCREW, BOLTS NUTS ETC.) SHALL BE 316-STAINLESS STEEL. FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.
15. EXPOSED CONDUITS SHALL BE NON-COATED RIGID ALUMINUM CONDUIT, UNLESS OTHERWISE NOTED (UON), INSTALL PVC COATED RIGID ALUMINUM CONDUIT TO THE WET WELL, UNLESS OTHERWISE NOTED (UON).
16. DIRECT BURIED AND CONCRETE ENCASED CONDUIT SHALL BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED. TRANSITIONS FROM ABOVE-GRADE RIGID ALUMINUM CONDUIT TO NONMETALLIC CONDUIT SHALL BE ACCOMPLISHED WITH A THREADED ADAPTER. RIGID ALUMINUM CONDUIT INSTALLED ABOVE GRADE AND EXTENDING BELOW GRADE SHALL INCLUDE THE FIRST 90° ELBOW. ALL RIGID ALUMINUM CONDUITS EXTENDING BELOW GRADE SHALL BE COATED WITH TWO COATS OF ASPHALTUM-TYPE PAINT ALONG ITS ENTIRE LENGTH BELOW GRADE AND EXTENDING 6" ABOVE GRADE OR ABOVE THE TOP OF THE FINISHED SLAB.
17. ABOVE GRADE INDOOR, AND NON-WASHDOWN AREAS, RIGID ALUMINUM CONDUIT CONNECTIONS TO CONTROL BOXES, ETC. SHALL BE MADE WITH ALUMINUM DOUBLE LOCKNUTS AND BUSHINGS. TURN DOWN ON THREADS TO SOLIDLY CONNECT RACEWAY TO BOX OR ENCLOSURE.
18. ALUMINUM WATERTIGHT HUBS (MYERS HUBS) SHALL BE USED FOR CONNECTIONS TO CONTROL BOXES, ETC. MOUNTED OUTDOORS, BELOW GRADE, OR WASHDOWN AREAS.
19. A 316-STAINLESS STEEL CHANNEL ERECTOR SYSTEM SHALL BE USED TO SUPPORT ALL CONDUITS, BOXES ETC. USE 316 STAINLESS STEEL MOUNTING HARDWARE.
20. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND MAKE ADJUSTMENTS AS NECESSARY TO EXECUTE THE PROPOSED INSTALLATIONS.
21. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
22. PULL BOXES SHALL BE INSTALLED AS NECESSARY TO FACILITATE WIRE PULLS AND AVOID EXCESSIVE PULLING TENSION ON WIRING. IN NO CASE SHALL CONDUIT LENGTHS EXCEED 150' OR THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) WITHOUT A PULL BOX. PULL BOXES SHALL BE SIZED IN ACCORDANCE WITH ARTICLE 314 OF THE NEC.
23. THE WET WELL CLASSIFICATION IS CLASS 1, DIVISION 1, GROUP D, (HAZARDOUS AREA) NEC CHAPTER 5 IS APPLICABLE FOR INTERFACING WET WELL AND THE CONTROL ENCLOSURE.
24. ALL ELECTRICAL WORK SHALL BE PERFORMED WITHIN 2011 NEC AND CITY OF TAMPA/ HILLSBOROUGH COUNTY CODES AND SHALL BE INSPECTED BY CITY OF TAMPA/ HILLSBOROUGH COUNTY ELECTRICAL INSPECTORS AS APPLICABLE.
25. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED AND AS SPECIFIED, OR AS APPROVED BY THE ENGINEER. THE PANEL BUILDER SHALL BE UL-508A CERTIFIED AND A UL LABEL SHALL BE ATTACHED TO THE INSIDE OF THE ENCLOSURE. THE DOUBLE THROW DISCONNECT MUST BE LABELED "SUITABLE FOR USE AS SERVICE EQUIPMENT."
26. THE ENCLOSURES SHALL BE NEMA 4X, THEY SHALL BE CONSTRUCTED OF MINIMUM 14 GAUGE 304SS, THEY SHALL HAVE RAL 9003 WHITE POWDER COAT AND THE CLOSING SURFACES SHALL HAVE ROLLED LIPS, PROVIDE HINGED DOORS WITH 3-POINT 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 DCR ENGINEERING SERVICES INC. SCADAONE, LLC., OR REVERE CONTROL SYSTEMS. THE PUMPING STATION CONTRACTOR SHALL COORDINATE HIS EFFORTS WITH DCR, SCADAONE, OR REVERE CONTROL SYSTEMS TO ENSURE SYSTEM COMPATIBILITY. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE DUPLEX CONTROL SYSTEM/SCADA PACKAGE, AS PROGRAMMED BY DCR, SCADAONE, OR REVERE CONTROLS – THE EXISTING PUMPING STATION DCR CONTROLS SHALL REVERT TO THE CITY AS A SPARE.
37. A WET WELL LEVEL DETECTION SYSTEM SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. THE OUTPUT SHALL BE A LINEAR 4-20mA SIGNAL WITH RANGE AND CALIBRATION SUITABLE FOR THIS APPLICATION. THE SYSTEM SHALL BE OF THE ULTRASONIC TYPE-PULSAR, INC. MODEL dB10 W/ BLACKBOX 130 TRANSMITTER. CITY INSTRUMENTATION PERSONNEL WILL ASSIST THE CONTRACTOR WITH SPECIFYING THE TRANSDUCER MOUNTING LOCATION AND CALIBRATION. THE dB10 TRANSDUCER SHALL BE MOUNTED USING A 2 1/2" x 1/4" S.S. BRACKET, SEE dB10 MOUNTING BRACKET DETAIL, SHEET E18.
38. PROVIDE 1/4" MINIMUM THICKNESS LEXAN SHIELDS OVER POWER DISTRIBUTION BLOCK AND OTHER EXPOSED CABLE TERMINATIONS.
39. XHHW-2 CONDUCTORS (3-#10 AWG + 1-#10 AWG GND. CU FOR EACH MOTOR) SHALL EXTEND FROM THE CONTROL PANEL TO ASSOCIATED HIGH VOLTAGE JUNCTION BOX. PROVIDE SEAL-OFF BETWEEN CONTROL PANEL AND JUNCTION BOX AS INDICATED. THE SHOWN SEAL-OFFS SHALL BE ALUMINUM BODY, CROUSE-HINDS, OR EQUIVALENT.
40. ALUMINUM CONDUIT SURFACE THAT IS A CONTACT WITH SOIL OR CONCRETE SHALL BE COATED WITH TWO COATS ASPALT VARNISH (FED. SPEC. TT-V-51) EXTENDING 4" BEYOND FINAL CONTACT POINT.
41. 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.

SCOPE OF WORK:

1. THE CONTRACTOR SHALL COORDINATE ELECTRICAL SERVICE REQUIREMENTS WITH TAMPA ELECTRIC COMPANY (TECO). THE CITY WILL MAKE PRELIMINARY ARRANGEMENTS WITH TECO AND COMPENSATE THE UTILITY DIRECTLY FOR ANY CONTRIBUTION IN AID OF CONSTRUCTION (CIAC) REQUIRED FOR TECO TO INSTALL A HANDHOLE AT THE BASE OF THE EXISTING TECO STUB POLE. THE PROPOSED SERVICE VOLTAGE SHALL REMAIN 120/240 VAC, 3PH, 4W, DELTA.
2. REMOVE THE EXISTING METER SOCKET, LIGHTNING ARRESTOR, EMERGENCY CONNECTOR, 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. 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.
5. PROVIDE AND INSTALL A NEW ELECTRICAL METER SOCKET, LIGHTNING ARRESTOR AND GROUNDING, AS SHOWN ON PLANS.
6. PREPARE THE SITE FOR THE INSTALLATION OF THE PROPOSED CONTROL EQUIPMENT.
7. 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.
8. PROVIDE AND INSTALL A WET WELL ISOLATION JUNCTION BOX FOR PUMP MOTOR CONNECTIONS.
9. 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.
10. PROVIDE AND INSTALL WET WELL ISOLATION BOX FOR INSTRUMENTATION AND CONTROL CONNECTIONS.
11. PROVIDE AND INSTALL A NEMA 4X, SERVICE ENTRANCE RATED, FUSED DOUBLE THROW SWITCH, AS SHOWN ON PLANS.
12. PROVIDE AND INSTALL EMERGENCY POWER CONNECTOR, AS SHOWN ON PLANS.
13. 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. FURNISH AND INSTALL NEMA 4X JUNCTION BOXES, AS SHOWN ON PLANS.
17. PROVIDE FOR PROPER GROUNDING AS SHOWN, SPECIFIED, AND REQUIRED.
18. PROVIDE AND INSTALL ALL NECESSARY CONDUITS AND CONDUCTORS, AS SHOWN, SPECIFIED AND REQUIRED.
19. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2011 EDITION OF THE NATIONAL ELECTRIC CODE AND CHAPTER 5 OF THE CITY OF TAMPA CODE.
20. 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.

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

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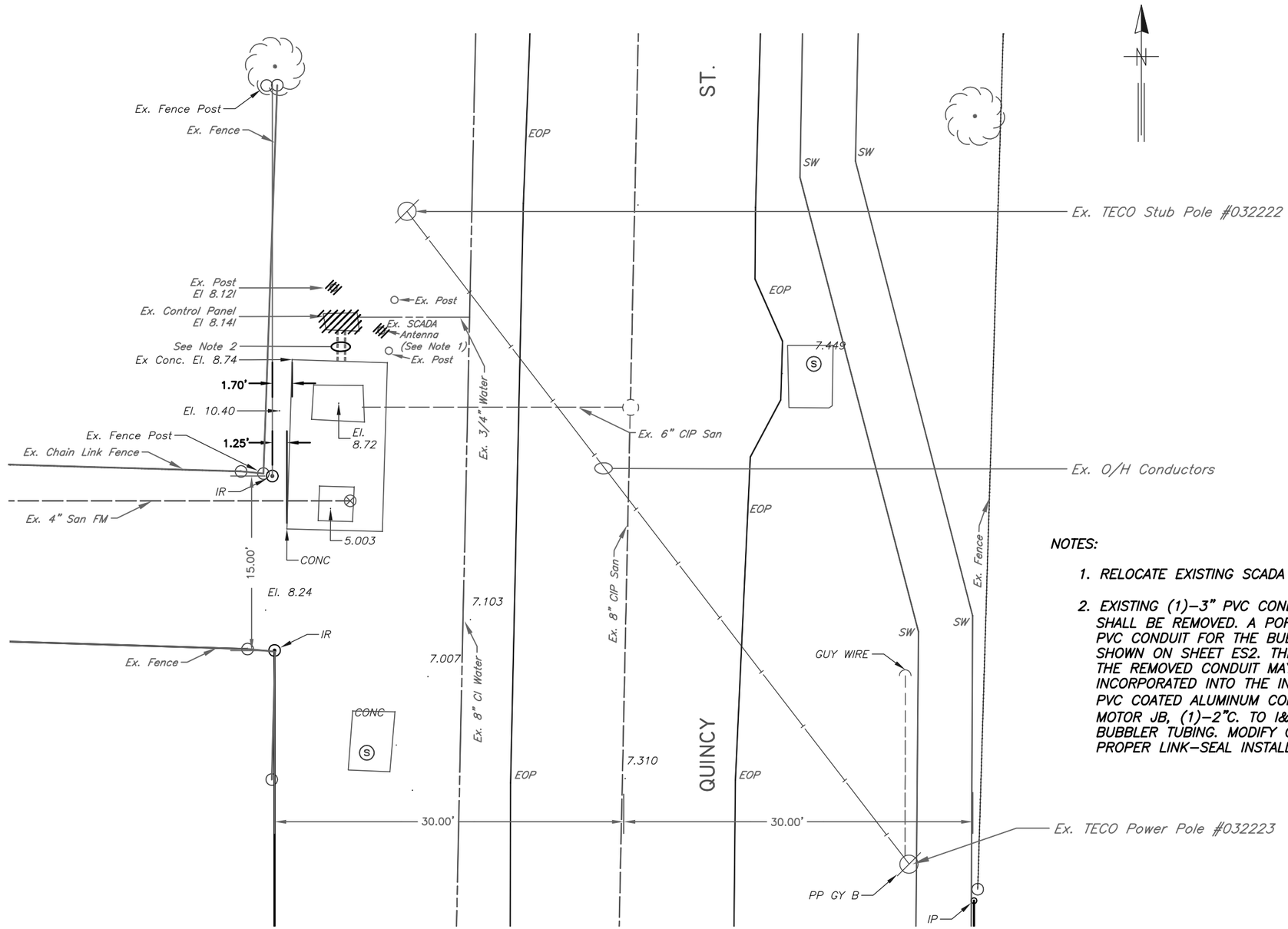
CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
GENERAL NOTES AND SCOPE OF WORK

W.O. 100051I
SHEET
EG3



NOTES:

1. *RELOCATE EXISTING SCADA ANTENNA, SEE SHEET ES2.*
2. *EXISTING (1)–3" PVC CONDUIT FOR MOTOR CONDUCTORS SHALL BE REMOVED. A PORTION OF THE EXISTING (1)–1" PVC CONDUIT FOR THE BUBBLER MAY BE REUSED AS SHOWN ON SHEET ES2. THE WET WELL PENETRATION FOR THE REMOVED CONDUIT MAY BE MODIFIED AND INCORPORATED INTO THE INSTALLATION OF THE PROPOSED PVC COATED ALUMINUM CONDUITS I.E.: (2)–2"C. TO PUMP MOTOR JB, (1)–2"C. TO I&C JB, AND (1)–1"C. FOR BUBBLER TUBING. MODIFY OPENINGS AS REQUIRED FOR PROPER LINK–SEAL INSTALLATION.*

HATCHED AREAS ON THIS SHEET INDICATE ELECTRICAL EQUIPMENT TO BE REMOVED

EXISTING ELECTRICAL DEMOLITION SITE PLAN

SCALE: 1" = 10'-0"

ROMAN D. KORCHAK, P.E., #42626
ELECTRICAL DIVISION HEAD
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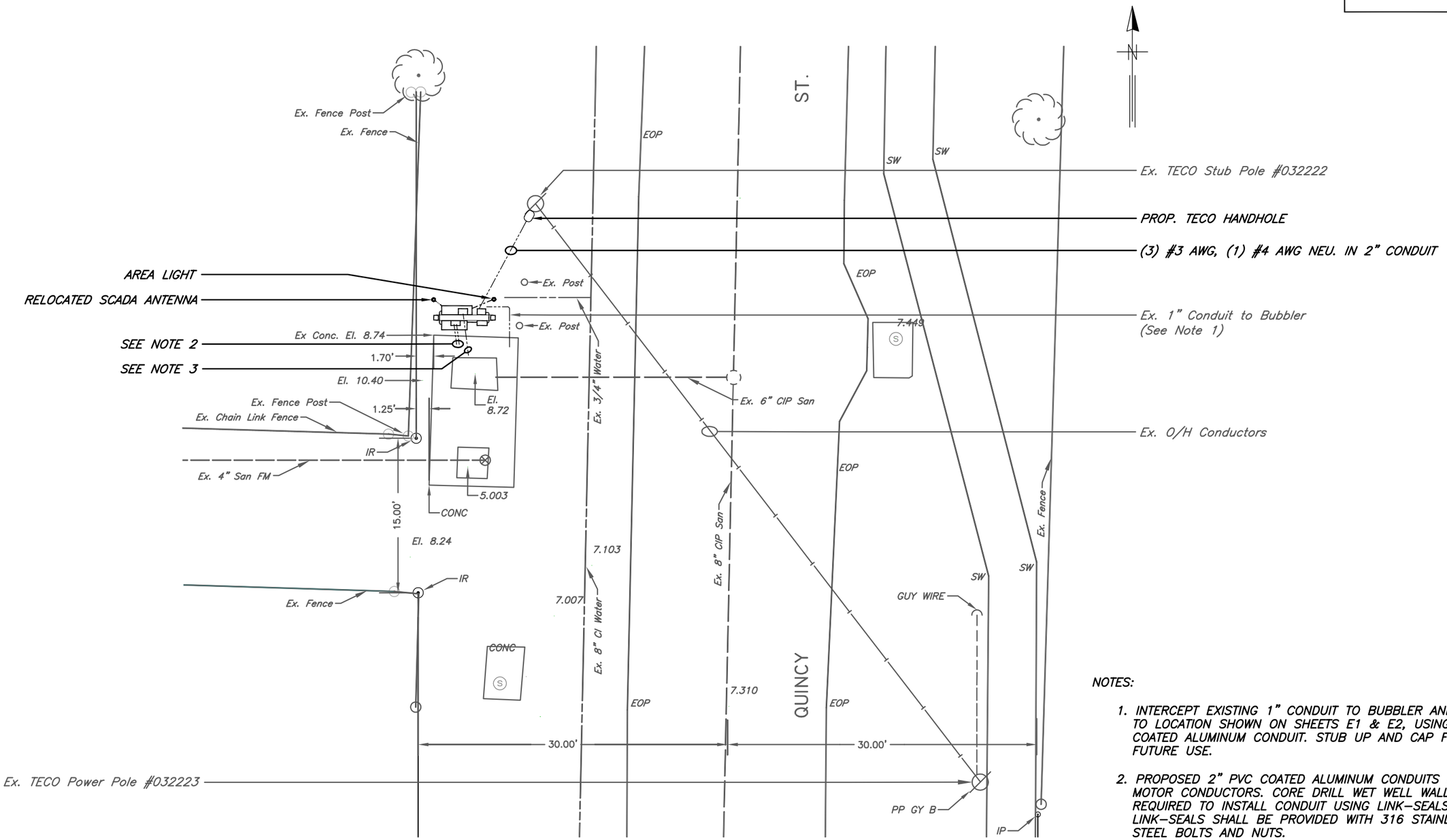
CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
EXISTING ELECTRICAL SITE DEMOLITION

W.O. 100051I
SHEET
ES1



PROPOSED ELECTRICAL SITE PLAN

SCALE: 1" = 10'-0"

NOTES:

1. INTERCEPT EXISTING 1" CONDUIT TO BUBBLER AND EXTEND, TO LOCATION SHOWN ON SHEETS E1 & E2, USING PVC COATED ALUMINUM CONDUIT. STUB UP AND CAP FOR FUTURE USE.
2. PROPOSED 2" PVC COATED ALUMINUM CONDUITS FOR MOTOR CONDUCTORS. CORE DRILL WET WELL WALL AS REQUIRED TO INSTALL CONDUIT USING LINK-SEALS. LINK-SEALS SHALL BE PROVIDED WITH 316 STAINLESS STEEL BOLTS AND NUTS.
3. PROPOSED 2" PVC COATED ALUMINUM CONDUIT FOR I&C CONDUCTORS. INSTALL CONDUIT AS DESCRIBED IN NOTE 2.

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CITY of TAMPA
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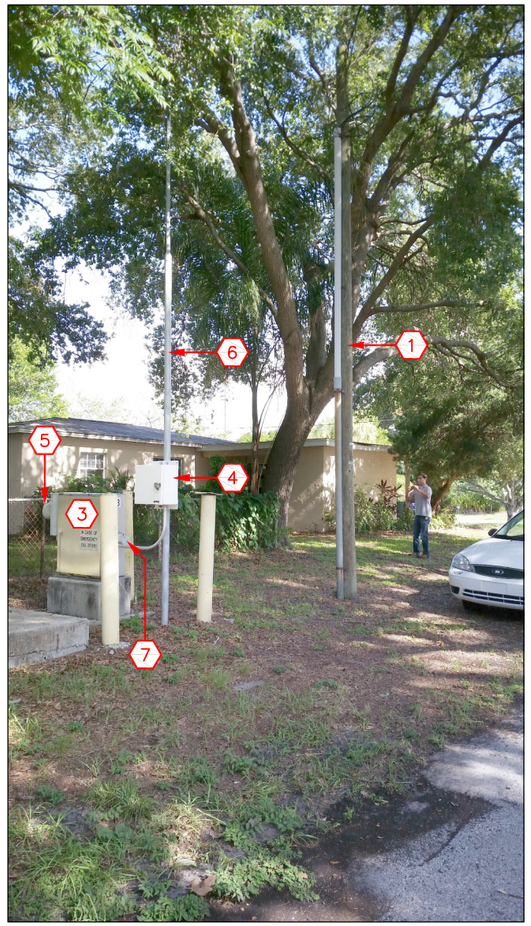
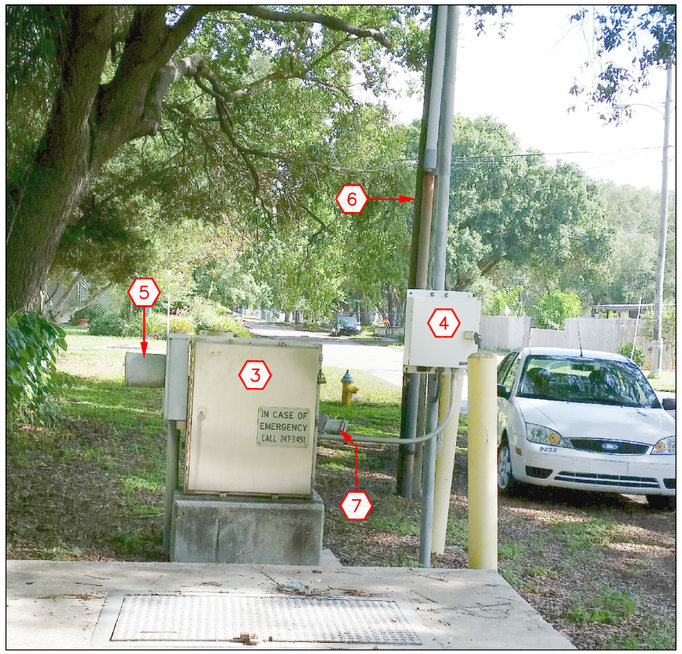
PUMPING STATION REPAIRS - QUINCY STREET
PROPOSED ELECTRICAL SITE PLAN

W.O. 100051I
SHEET
ES2



EXISTING TECO STUB POLE
NORTH WEST VIEW

EXISTING TECO POWER POLE
NORTH VIEW



EXISTING CONTROL PANEL
NORTH VIEW

KEYED NOTES:

1. *EXISTING TECO STUB POLE #032222 (NO WORK REQUIRED).*
2. *EXISTING TECO POWER POLE #032223 (NO WORK REQUIRED).*
3. *EXISTING CONTROL PANEL (TO BE REMOVED).*
4. *EXISTING DCR SCADA RTU CABINET (SEE SCOPE OF WORK NOTE 3, SHEET EG3).*
5. *EXISTING TECO METER (TO BE REMOVED).*
6. *EXISTING SCADA ANTENNA (TO BE REUSED AND RELOCATED).*
7. *EXISTING EMERGENCY CONNECTOR (TO BE REMOVED).*

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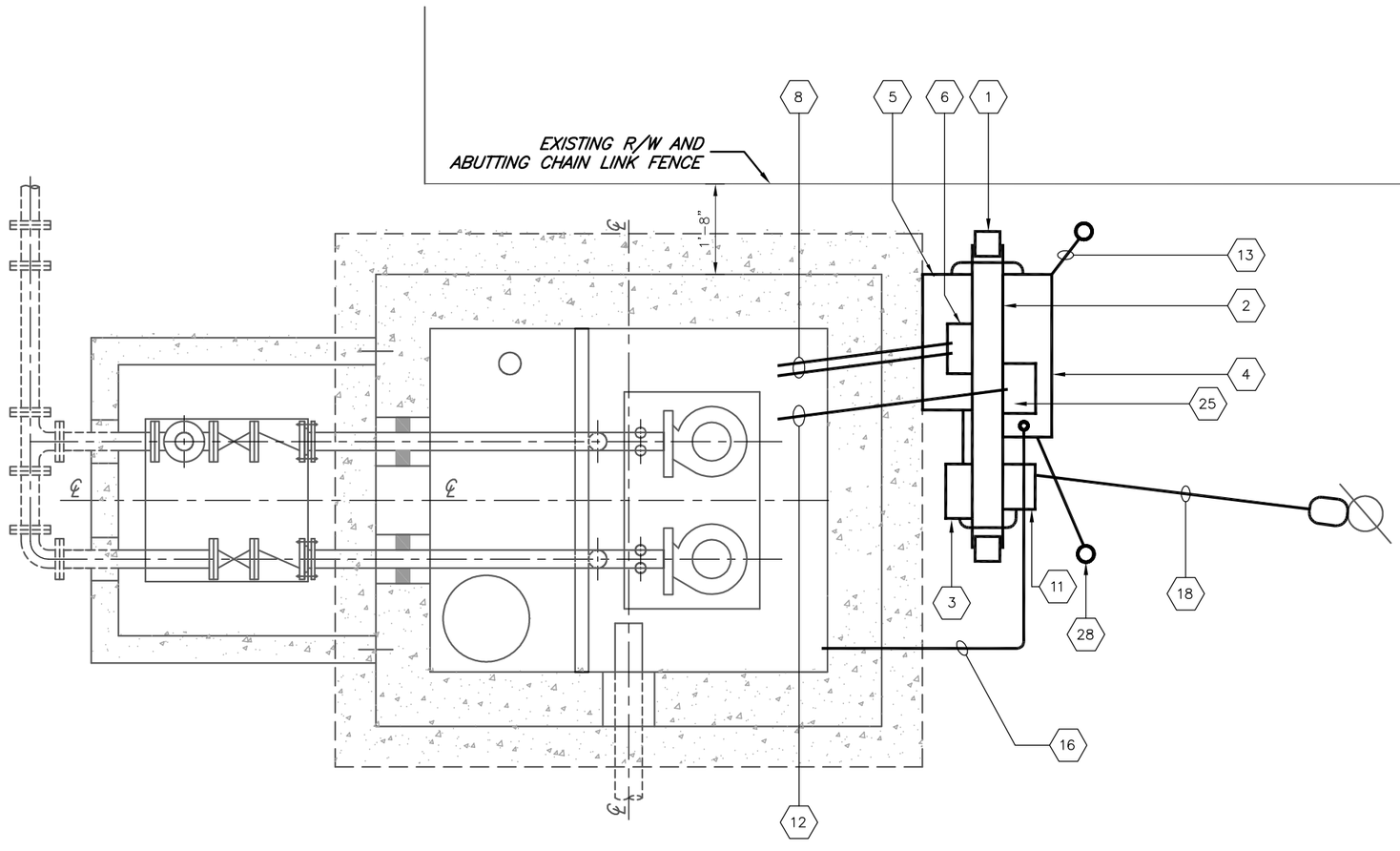
CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL DEMOLITION EQUIPMENT IDENTIFICATION

W.O. 100051I
SHEET
EDI



PROPOSED ELECTRICAL PLAN VIEW

SCALE: 3/8" = 1'-0"

NOTE: SEE KEYED NOTES ON SHEET E4.

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

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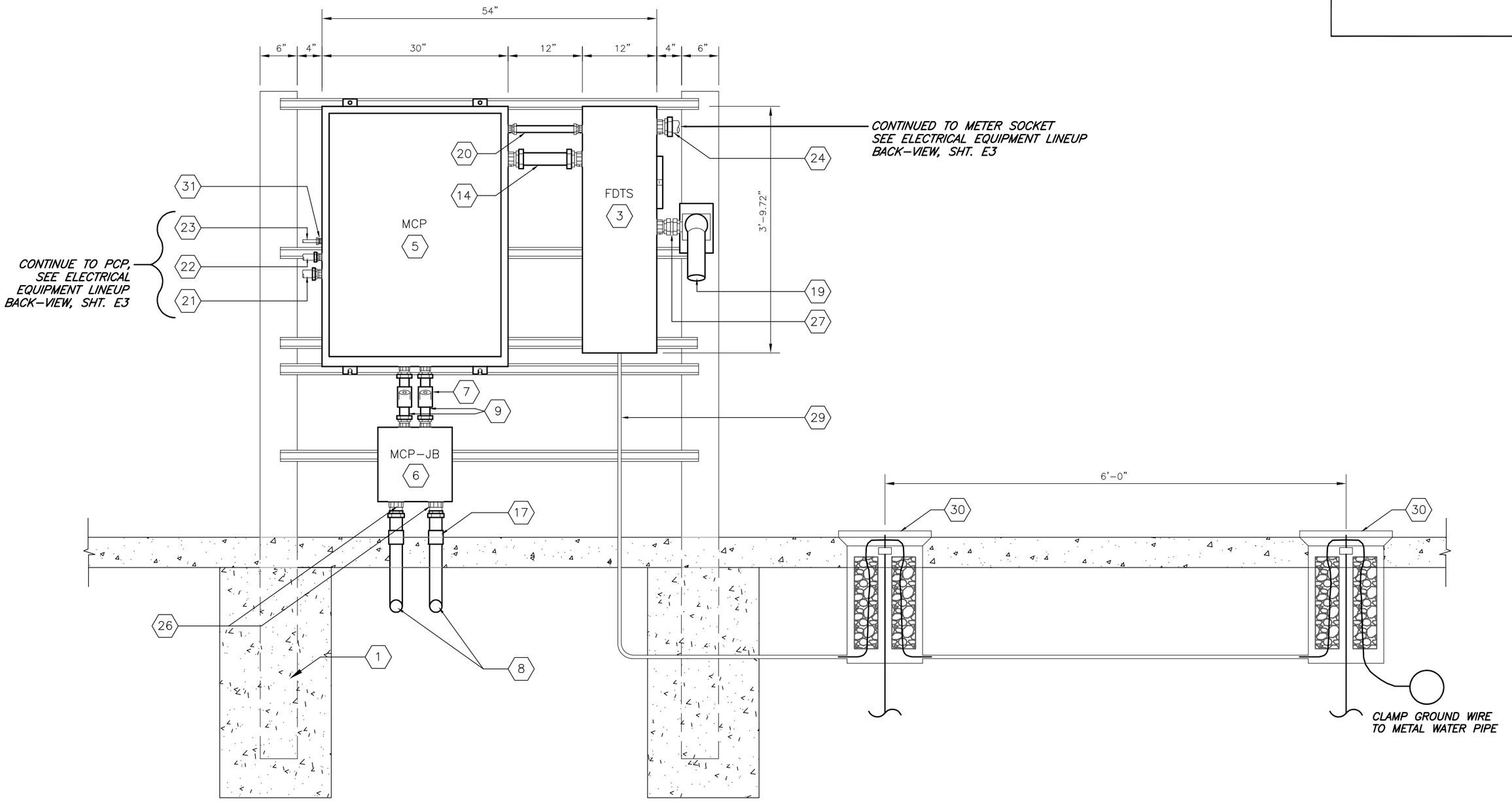
CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
PROPOSED ELECTRICAL PLAN VIEW

W.O. 100051I
SHEET
E1



ELECTRICAL EQUIPMENT LINE UP
FRONT-VIEW

SCALE
6" 0 6" 1'-0"
3/4"=1'-0"
MEASURES 3/4" ON ORIG. DWG

NOTE: *SEE KEYED NOTES ON SHEET E4.*

ROMAN KORCHAK, P.E., #42626
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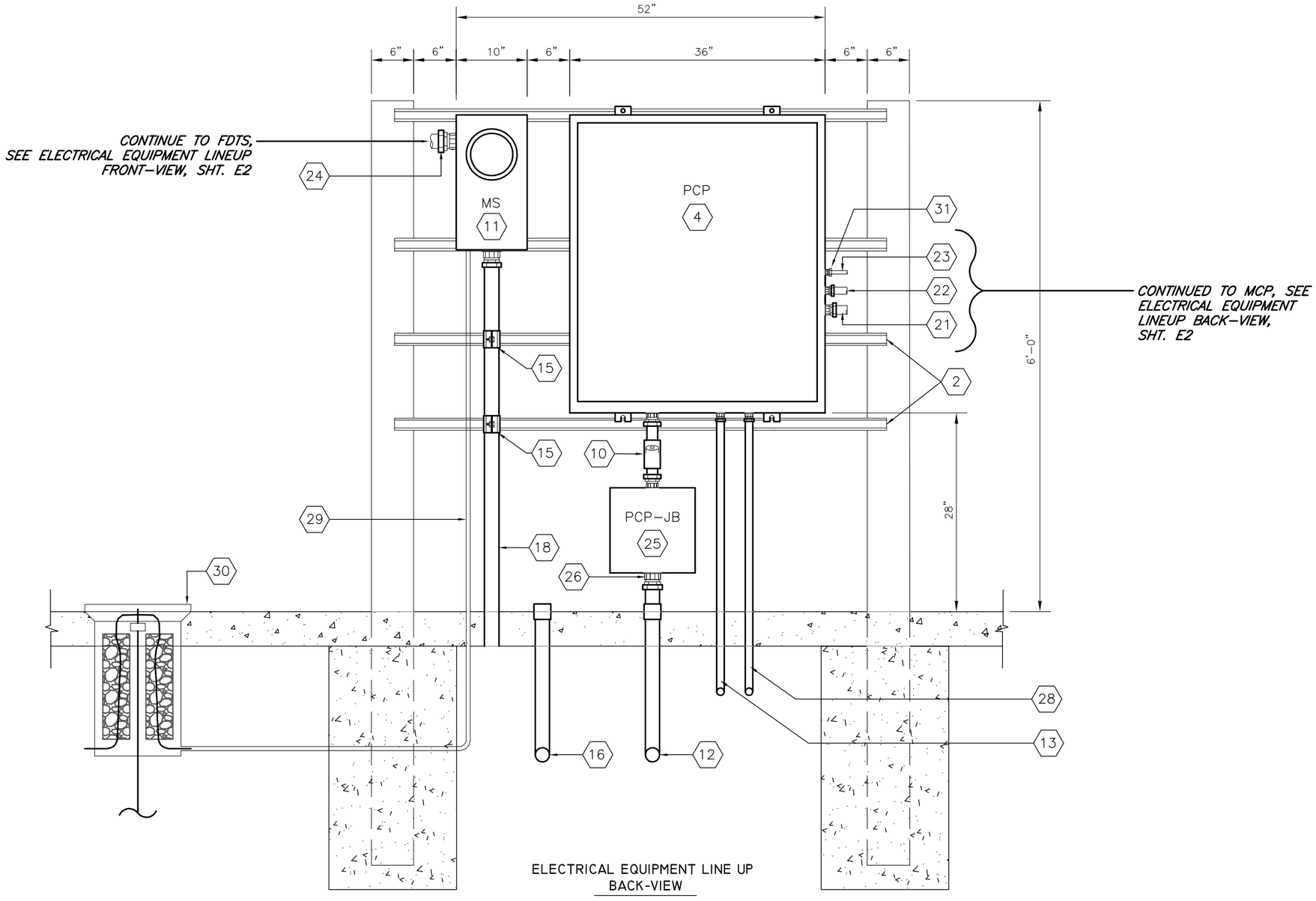
PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL EQUIPMENT LINE UP FRONT-VIEW

W.O. 100051I
SHEET
E2



ELECTRICAL EQUIPMENT LINE UP
BACK-VIEW

SCALE
6" 0 6" 1'–0"
3/4"=1'–0"
MEASURES 3/4" ON ORIG. DWG

NOTE: *SEE KEYED NOTES ON SHEET E4.*

ROMAN KORCHAK, P.E., #42626 ELECTRICAL DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: LRG DRN: JHJ CKD: DATE: 3/21/17	CITY of TAMPA WASTEWATER DEPARTMENT	PUMPING STATION REPAIRS - QUINCY STREET ELECTRICAL EQUIPMENT LINE UP BACK-VIEW	W.O. 100051I SHEET E3
	3						
	2						
	1						

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 SERVICE ENTRANCE RATED HEAVY DUTY, DOUBLE THROW, FUSIBLE SWITCH, 3–POLE, 240 VAC, 100 AMP IN NEMA 4X TYPE ENCLOSURE, 240 VOLT, DUAL–ELEMENT, TIME–DELAY CLASS RK5 FUSES; SWITCH––EATON DT323FWK, DT100NK NEUTRAL KIT, DS100GK GROUND LUG KIT, DS36FK– "R" FUSE ADAPTER KIT.
4. PROVIDE AND INSTALL PUMP CONTROL CABINET. REFER TO DETAIL ON SHEET E5.
5. PROVIDE AND INSTALL MOTOR CONTROL CABINET. REFER TO DETAIL ON SHEET E6.
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 E16 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. INSTALL CONDUIT AS DESCRIBED IN NOTE 2 OF SHEET ES2.
9. PROVIDE AND INSTALL (3)–#10 XHHW–2 CU + (1)–#10 XHHW–2 CU GND + (2)–#12 XHHW–2 CU (LEAK/TEMP) IN 1" 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. PROPOSED 2" PVC COATED ALUMINUM CONDUIT FOR I&C CONDUCTORS. INSTALL CONDUIT AS DESCRIBED IN NOTE 3 OF SHEET ES2.
13. PROVIDE AND INSTALL 1" CONDUIT FOR ANTENNA COAXIAL CABLE REFER TO SHEET E1 FOR CONTINUATION.
14. PROVIDE AND INSTALL (3)–#3 THWN CU, (1)–#4 THWN NEU, AND (1)–#6 THWN CU GND. IN 2" CONDUIT.
15. PROVIDE AND INSTALL ALUMINUM CONDUIT STRAPS (TYPICAL).
16. PROP. BUBBLER CONDUIT–SEE NOTE 1 ON SHEET ES2.
17. FOR UNDERGROUND RACEWAYS TO WETWELL THE CONTRACTOR SHALL UTILIZE PVC COATED ALUMINUM.
18. PROVIDE AND INSTALL (3)–#3 AWG + (1)–#4 NEU. IN 2" CONDUIT TO PROPOSED TECO HANDHOLE. SEE SHEET ES2 FOR CONTINUATION.
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 E11.
22. PROVIDE AND INSTALL (15)–#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 E11.
23. PROVIDE AND INSTALL (1)–#12 XHHW–2 CU NUE. + (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 THWN CU + (1)–#4 THWN 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 E16 FOR JB DETAILS.
26. PROVIDE DUCT SEALING COMPOUND IN ALL CONDUITS EXTENDING TO THE WET WELL.
27. PROVIDE AND INSTALL (3)–#3 XHHW–2 CU + (1)–#4 XHHW–2 CU NEU + (1)–#6 XHHW–2 CU GND IN 1–1/4" CONDUIT FOR EMERGENCY CONNECTOR.
28. PROVIDE AND INSTALL A 3/4" CONDUIT TO PROPOSED AREA LIGHT, (AL), SEE SHT. E18 FOR DETAILS.
29. PROVIDE AND INSTALL A 3/4" SCHEDULE 80 PVC CONDUIT FOR #4 AWG GROUNDING CONDUCTOR.
30. PROPOSED GROUND TEST WELL. MINIMUM SPACING BETWEEN WELLS 6'–0". SEE SHEET E17 FOR DETAILS.
31. PROVIDE AND INSTALL WATER–TIGHT / DUST–TIGHT MYERS HUB AND UNION (TYP.).

FOR USE WITH SHEETS EI THRU E3

ROMAN D. KORCHAK, P.E., #42626
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DRN: JHJ
CKD:
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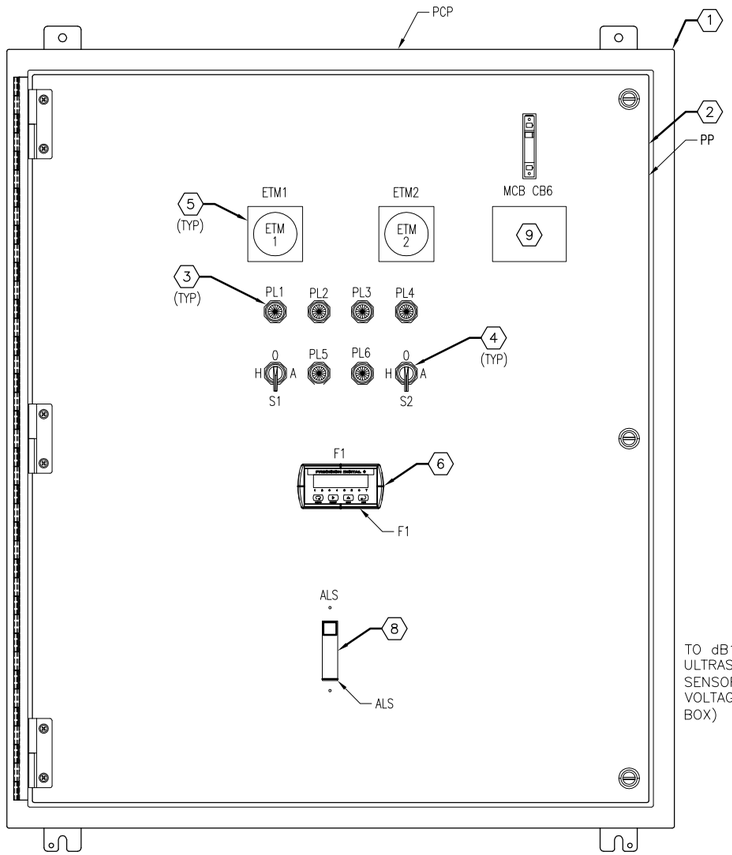
PUMPING STATION REPAIRS - QUINCY STREET
KEYED NOTES

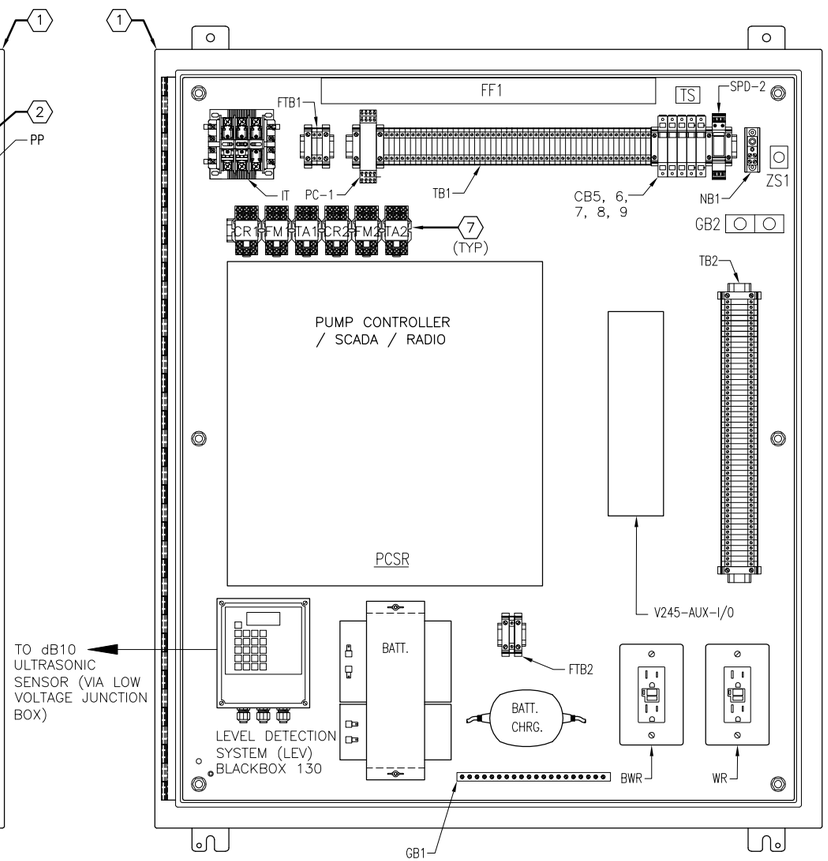
W.O. 100051I
SHEET
E4



PUMP CONTROL PANEL DETAILS

SCALE: 1/8" = 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	YELOW 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, PAINTED WHITE.
2. PROVIDE AND INSTALL ALUMINUM DEADFRONT DOOR WITH STOP KIT.
3. PROVIDE AND INSTALL NEW PILOT LIGHT. REFER ALSO TO PARTS SCHEDULE ON SHEET E14.
4. PROVIDE AND INSTALL NEW SELECTOR SWITCH. REFER ALSO TO PARTS SCHEDULE ON SHEET E14.
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 PD765-6X3-00 WITH 4-20mA OUTPUT. REFER ALSO TO PARTS SCHEDULE ON SHEET E15.
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 E15.
9. PROVIDE WARNING LABEL 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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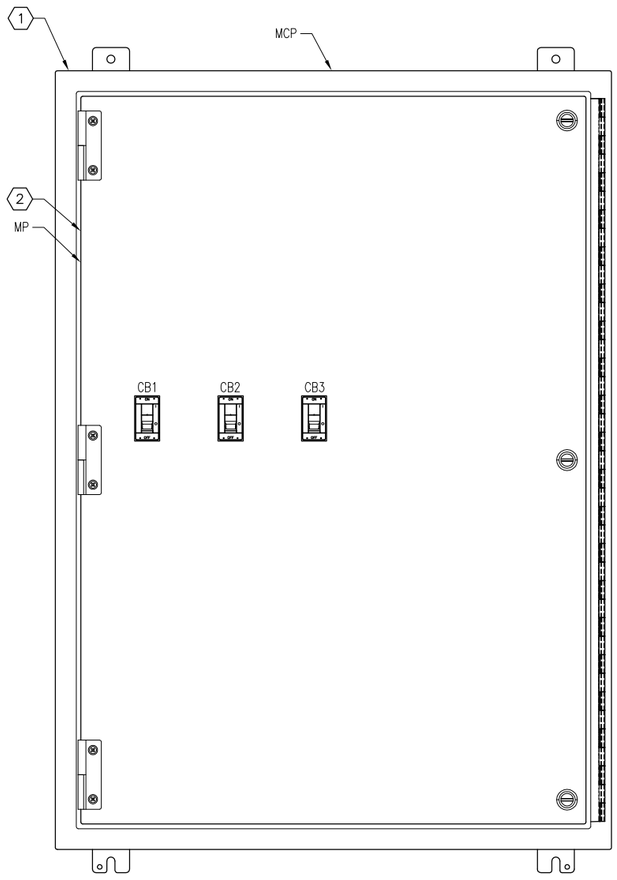
PUMPING STATION REPAIRS - QUINCY STREET
PUMP CONTROL PANEL DETAILS

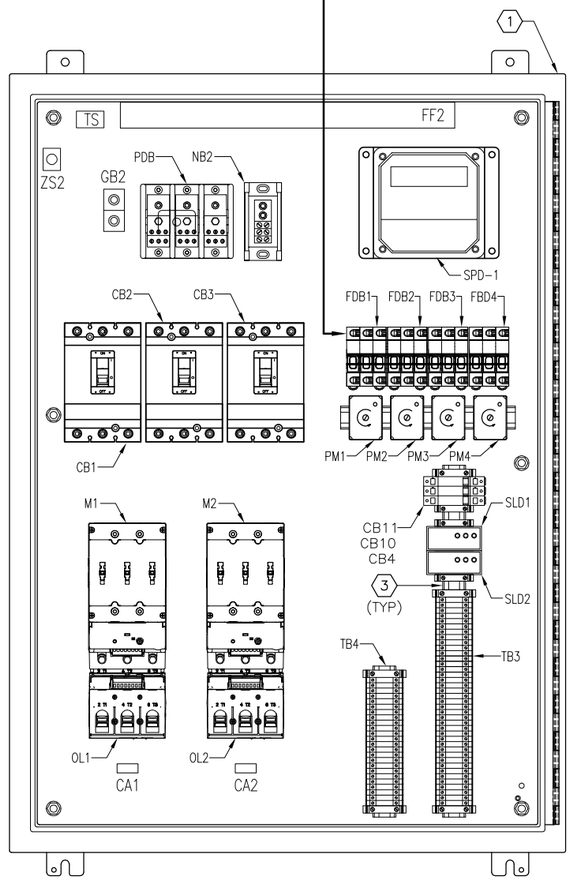
W.O. 100051I
SHEET
E5

PROVIDE WARNING LABEL ABOVE FBD1.
LABEL TO READ:

"WARNING – OPENING FUSED DOUBLE THROW SWITCH DOES NOT DE-ENERGIZE VOLTAGE TO THIS DISCONNECT."



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 CIRCUIT BREAKER

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 ALUMINUM DIN RAIL WHERE REQUIRED.

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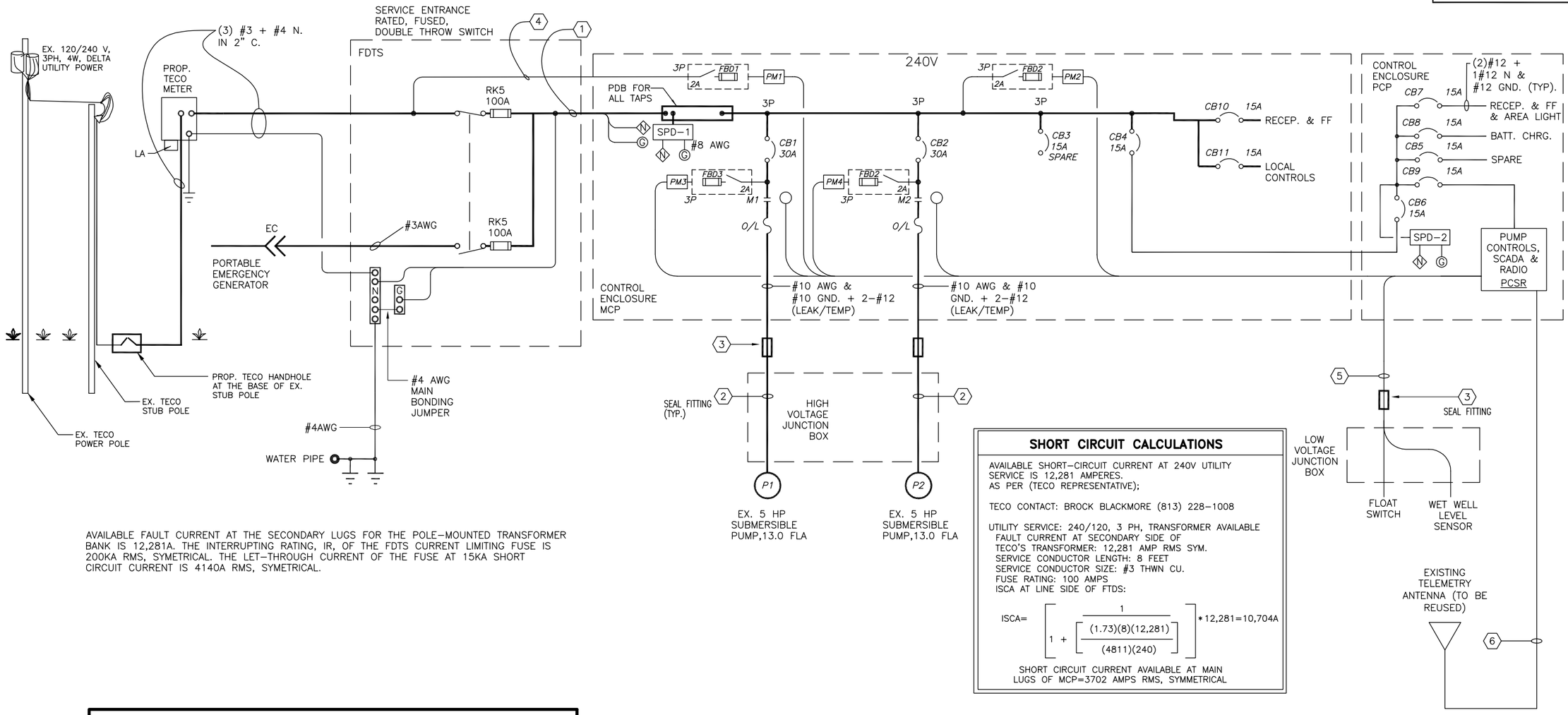
PUMPING STATION REPAIRS - QUINCY STREET
MOTOR CONTROL PANEL DETAILS

W.O. I00051I
SHEET
E6



AVAILABLE FAULT CURRENT AT THE SECONDARY LUGS FOR THE POLE-MOUNTED TRANSFORMER BANK IS 12,281A. THE INTERRUPTING RATING, IR, OF THE FDTS CURRENT LIMITING FUSE IS 200KA RMS, SYMETRICAL. THE LET-THROUGH CURRENT OF THE FUSE AT 15KA SHORT CIRCUIT CURRENT IS 4140A RMS, SYMETRICAL.

SHORT CIRCUIT CALCULATIONS

AVAILABLE SHORT-CIRCUIT CURRENT AT 240V UTILITY SERVICE IS 12,281 AMPERES.
AS PER (TECO REPRESENTATIVE);

TECO CONTACT: BROCK BLACKMORE (813) 228-1008

UTILITY SERVICE: 240/120, 3 PH, TRANSFORMER AVAILABLE
FAULT CURRENT AT SECONDARY SIDE OF
TECO'S TRANSFORMER: 12,281 AMP RMS SYM.
SERVICE CONDUCTOR LENGTH: 8 FEET
SERVICE CONDUCTOR SIZE: #3 THWN CU.
FUSE RATING: 100 AMPS
ISCA AT LINE SIDE OF FTDS:

$$ISCA = \left[\frac{1}{1 + \left[\frac{(1.73)(8)(12{,}281)}{(4811)(240)} \right]} \right] * 12{,}281 = 10{,}704A$$

SHORT CIRCUIT CURRENT AVAILABLE AT MAIN LUGS OF MCP=3702 AMPS RMS, SYMMETRICAL

ELECTRICAL SERVICE LOAD SUMMARY

480 VAC, 3ø, 4W

LOAD	CONNECTED	DEMAND	APPROX. PHASE CURRENTS L1	L2	L3
EX. PUMP #1	5.4 KVA	5.4 KVA	13.0 A	13.0 A	13.0 A
EX. PUMP #2	5.4 KVA	5.4 KVA	13.0 A	13.0 A	13.0 A
PUMP CONTROL PANEL	2.0 KVA	2.0 KVA	8.3 A	0	8.3 A
ODOR CONTROL (FUT.)	0.7 KVA	0.7 KVA	1.7 A	1.7 A	1.7 A
TOTAL	13.5 KVA	13.5 KVA	36.0 A	27.7 A	36.0 A

ONE LINE DIAGRAM NOTES:

1. PROVIDE AND INSTALL 3-#3 + 1-#4 NEUTRAL + 1-#4 GND IN 2"C. CONDUIT, REFER TO DETAILS ON SHEET E1 & E2.
2. PROVIDE AND INSTALL 2"C FOR EXISTING SUBMERSIBLE PUMP CABLE (PROVIDE W/ PUMP)-SEE SHEET E1 & E2
3. PROVIDE SEAL FITTING, REFER TO DETAIL ON SHEET E2.
4. REFER TO NOTES ON SHEET E6 FOR PHASE MONITORING SIGNALS REQUIRED FROM NEW FUSED DOUBLE THROW DISCONNECT SWITCH TO PUMP CONTROL PANEL.
5. PROVIDE 2" CONDUIT FROM NEW PUMP CONTROL JB CABINET TO WET WELL FOR FLOAT SWITCH AND LEVEL SENSOR CABLES. REFER TO DETAILS ON SHEET E1 & E2.
6. PROVIDE 1" CONDUIT FROM NEW PUMP CONTROL CABINET TO EXISTING ANTENNA MAST FOR NEW COAX CABLE, REFER TO DETAIL ON SHEET E18.

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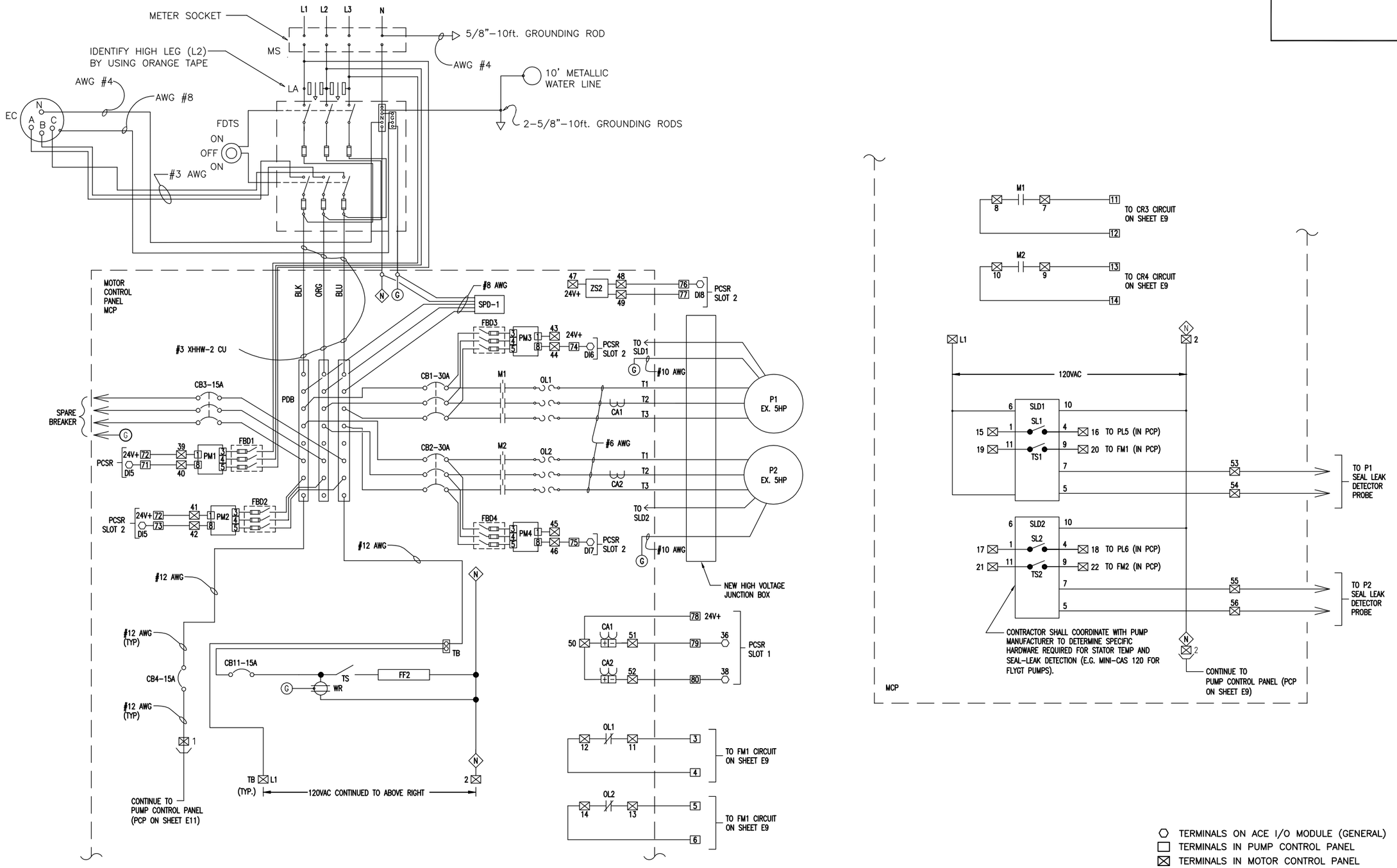
PUMPING STATION REPAIRS - QUINCY STREET
ONE LINE DIAGRAM

W.O. 100051I
SHEET
E7



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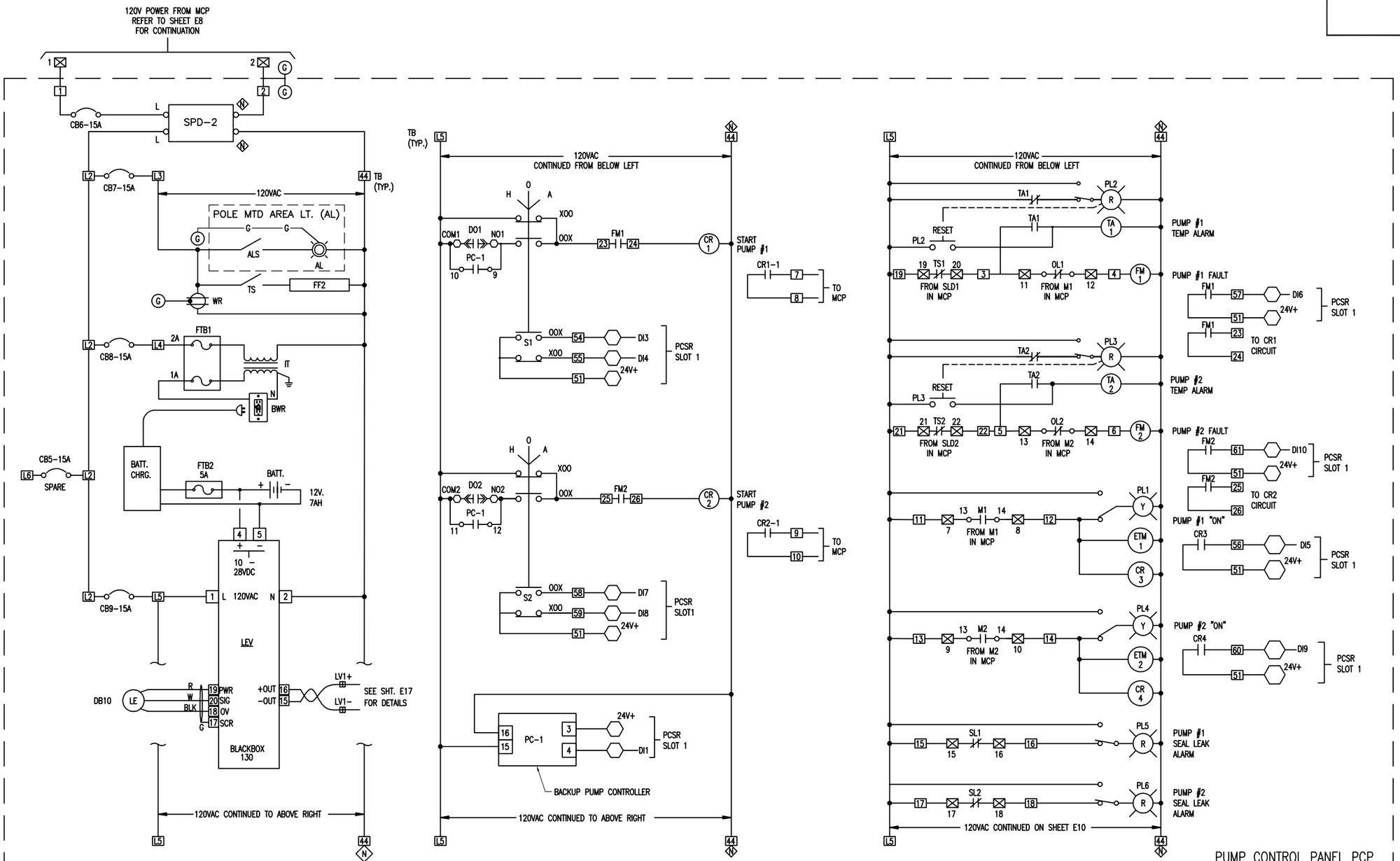
PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL SCHEMATIC (1 OF 3)
MOTOR CONTROL PANEL

W.O. 100051I
SHEET
E8



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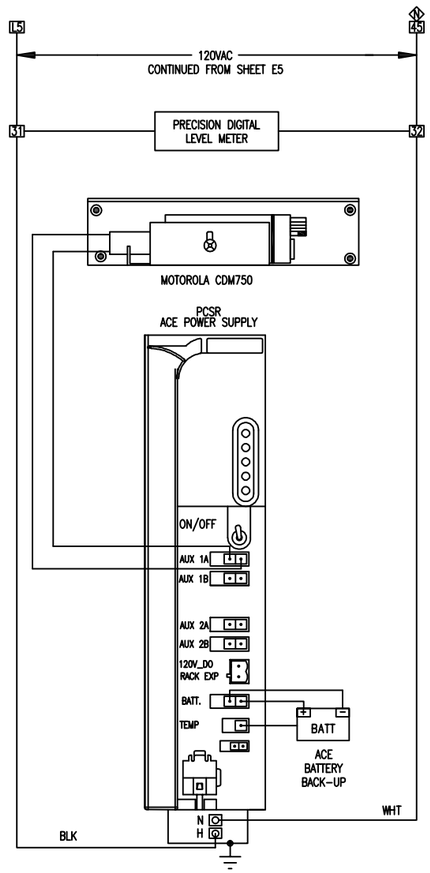
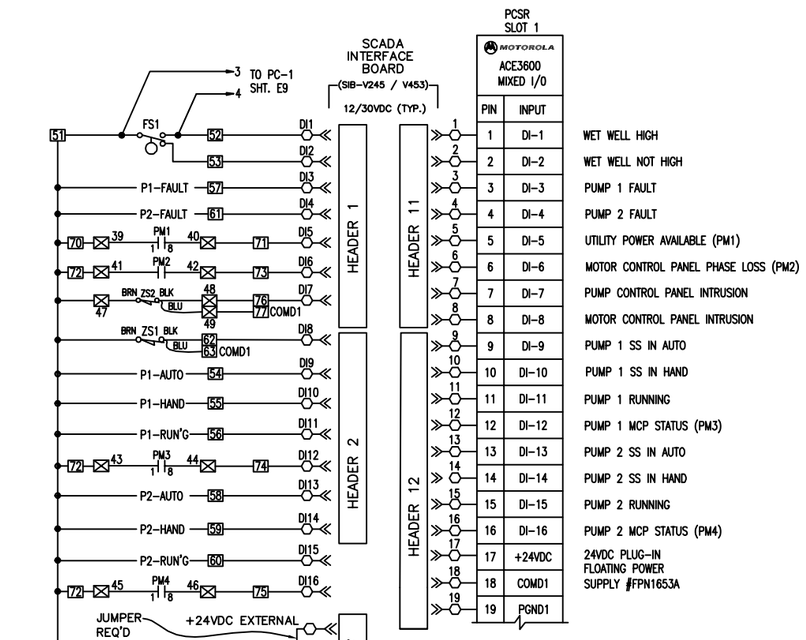
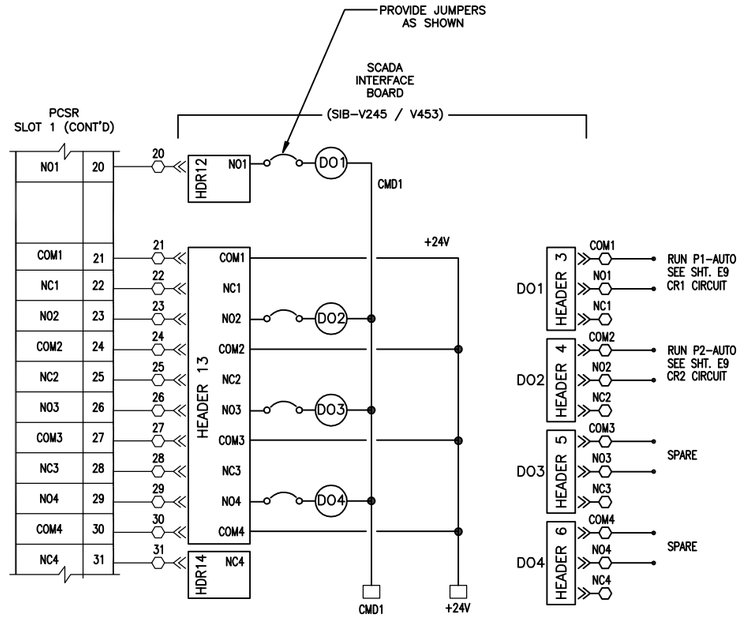
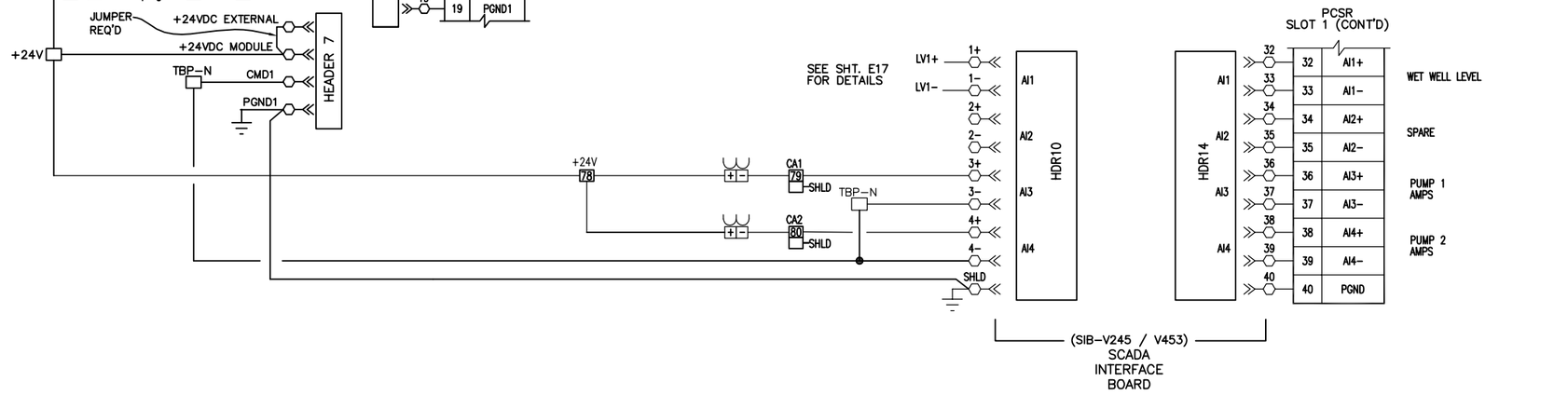
PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL SCHEMATIC (2 OF 3)
PUMP CONTROL PANEL

W.O. 100051I
SHEET
E9









⬡ TERMINALS ON ACE I/O MODULE (GENERAL)
□ TERMINALS IN PUMP CONTROL PANEL
⊠ TERMINALS IN MOTOR CONTROL PANEL

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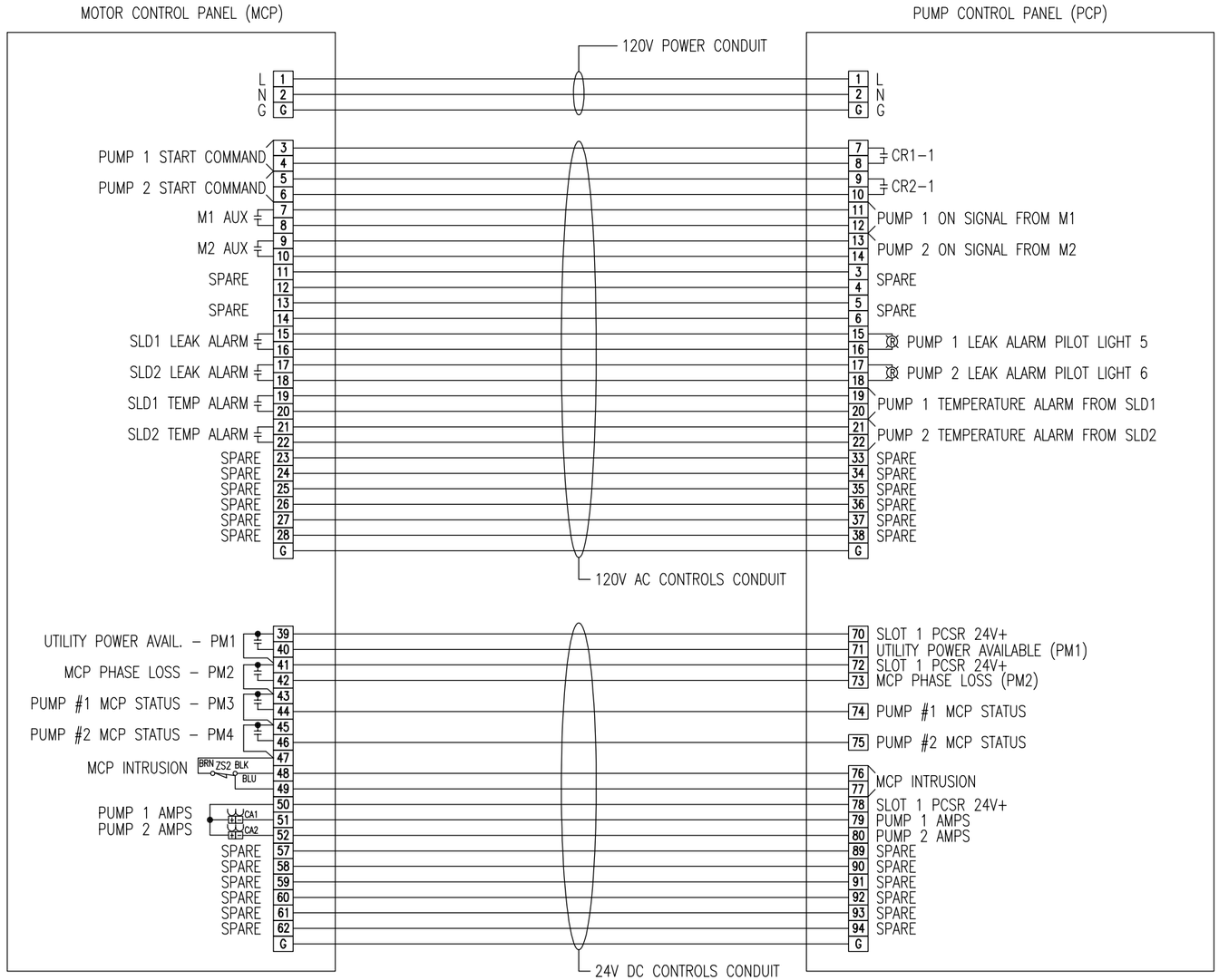
PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL SCHEMATIC (3 OF 3)
MOTOR CONTROL PANEL

W.O. 100051I
SHEET
E10



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PUMPING STATION REPAIRS - QUINCY STREET
MCP TO PCP INTERCONNECTION WIRING DIAGRAM

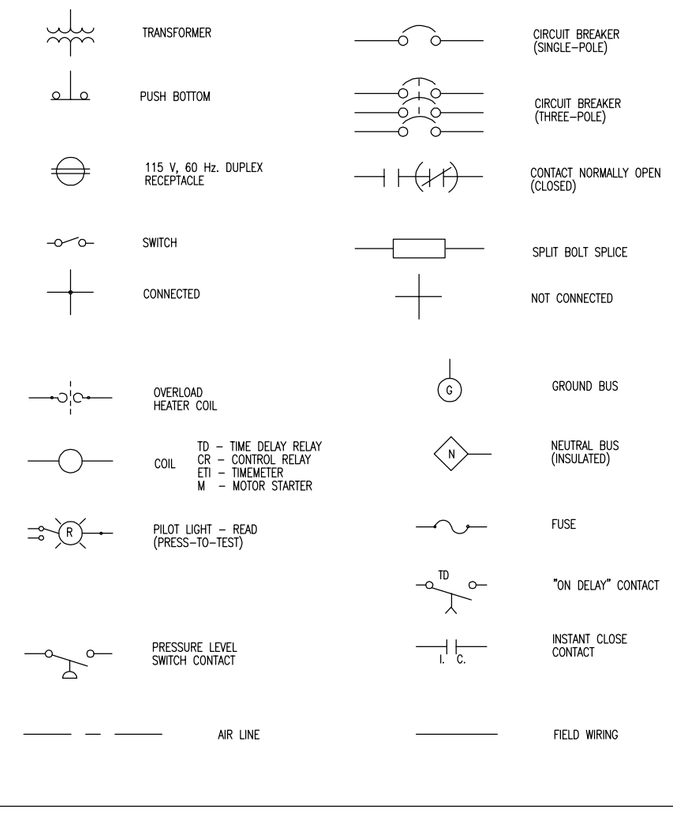
W.O. 100051I
SHEET
E11

TB1 (▭) (120V AC) MOUNTED ON PUMP CONTROL PANEL (PCP)	
TERM.	DESCRIPTION
1	120V FROM MOTOR CONTROL PANEL
2	NEUTRAL FROM MOTOR CONTROL PANEL
3–6	SPARE
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 NEUTRAL OUT
L1	SPD–2 120V LINE OUT
L2	MAIN BREAKER CB6 OUT
L3	CB7 OUT
L4	CB8 OUT
L5	CB9 OUT
L6	SPARE CB12 BREAKER

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 63	PUMP CONTROL PANEL INTRUSION
64	SLOT 1 PCSR 24V+
65	SPARE
66	SLOT 1 PCSR 24V+
67	SPARE
68	SLOT 1 PCSR 24V+
69	SPARE
70	SLOT 1 PCSR 24V+
71	UTIL. POWER AVAILABLE (PM1)
72	SLOT 1 PCSR 24V+
73	MOTOR CONTROL PANEL PHASE LOSS (PM2)
74	PUMP #1 MCP STATUS (PM3)
75	PUMP #2 MCP STATUS (PM4)
76 77	MOTOR CONTROL PANEL INTRUSION
78	SLOT 1 PCSR 24V+
79	PUMP 1 AMPS
80	PUMP 2 AMPS
81–91	SPARES

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)

CONTROL SCHEMATIC SYMBOLS



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PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL SCHEMATIC LEGEND (SHT. 1 OF 2)

W.O. 100051I
SHEET
E12

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)
11-14	SPARE
15	PUMP 1 LEAK DETECTED TO PILOT LIGHT 5 (IN PCP)
16	PUMP 1 LEAK DETECTED TO PILOT LIGHT 5 (IN PCP)
17	PUMP 2 LEAK DETECTED TO PILOT LIGHT 6 (IN PCP)
18	PUMP 2 LEAK DETECTED TO PILOT LIGHT 6 (IN PCP)
19	PUMP 1 TEMPERATURE ALARM TO FM1 (IN PCP)
20	PUMP 1 TEMPERATURE ALARM TO FM1 (IN PCP)
21	PUMP 2 TEMPERATURE ALARM TO FM2 (IN PCP)
22	PUMP 2 TEMPERATURE ALARM TO FM2 (IN PCP)
23-37	SPARE
L1	CB11 OUT MOTOR CONTROL PANEL POWER

TB4 (⊠) (24V DC) MOUNTED ON MOTOR CONTROL PANEL (MCP)	
TERM.	DESCRIPTION
39	SLOT 1 PCSR 24V+
40	UTILITY POWER AVAILABLE (PM1)
41	SLOT 1 PCSR 24V+
42	MOTOR CONTROL PANEL PHASE LOSS (PM2)
43	SLOT 1 PCSR 24V+
44	PUMP 1 MCP STATUS PHASE LOSS (PM3)
45	SLOT 1 PCSR 24V+
46	PUMP 2 MCP STATUS PHASE LOSS (PM4)
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

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

ROMAN D. KORCHAK, P.E., #42626
ELECTRICAL DIVISION HEAD
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DRN: JHJ
CKD:
DATE: 3/21/17

CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL SCHEMATIC LEGEND (SHT. 2 OF 2)

W.O. 100051I
SHEET
E13

PARTS SCHEDULE

SYMBOL	NAME	PART				REMARKS
		MAKE	TYPE	MODEL OR CAT. #	RATING	
CB 1	CIRCUIT BREAKER	SQUARE D	THREE POLE	HDL 36030	480 V, 30A	25 KAIC @ 240VAC
CB 2	CIRCUIT BREAKER	SQUARE D	THREE POLE	HDL 36030	480 V, 30A	
CB 3	CIRCUIT BREAKER	SQUARE D	THREE POLE	HDL 36015	480 V, 15A	
CB 4,5,6,7,8,9,10,11	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU-115	120 V, 15A	
M1, 2	MOTOR STARTER	CUTLER HAMMER	NEMA SIZE 2	AN16GN0AB	120V (COIL)	15HP (MAX)
OL1,2	OVERLOAD RELAY	CUTLER HAMMER	BIMETALLIC, AMBIENT COMPENSATED	H2011B-3	9.14-14A	
CA1, CA2	CIRCUIT SENSOR	ENERCORP INSTRUMENTS	4-20 mA OUTPUT	SC200-1	0 - 50A	ADJUSTABLE RANGE
PL1, PL4	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT - 38LYA9	120 V, LED TYPE	YELLOW LENS & PRESS TEST
PL2, PL3	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT - 38LRR9	120 V, LED TYPE	RED LENS & PRESS TEST
PL5, PL6	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT - 38LRR9	120 V, LED TYPE	RED LENS & PRESS TEST
S1, S2	HOA SWITCH ASSEMBLY	SQUARE D	OIL-TIGHT CLASS 9001	SKS - 43B H2	10A @ 120V	
ETM1, ETM2	ELAPSED TIME METER	CRAMER	ROUND BEZEL, NON RESET	635E&S	120 V	W.W. GRANGER CAT. NO. 6X144
ZS1, ZS2	CONTROL PNL INTRUSION SENSOR	OMRON	CYLINDRICAL, SHORT BARREL	E2F-X5F1 (GRAINGER-1EA77)	12-24VDC, 3-WIRE PNP	W/ TELEMECANIQUE MTG. BRACKET (GRAINGER - 5B233)
FF1, FF2 & 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
SPD-1	SURGE PROTECTIVE DEVICE TYPE 1	ADVANCED PROTECTION TECHNOLOGIES	MOTOR CONTROL PANEL SPD	TEO3XDS104X	240/120 V, 3ø, 4W	
TB1, TB2, 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	
GB1	GROUND BAR SYSTEM	PANDUIT	12 PORT WITH MAIN LUG	UGB2/0-414-12		COPPER CONSTRUCTION
GB2	GROUNDING BLOCK	ILSCO	AS REQUIRED	AS REQUIRED		
IT	ISOLATION TRANSFORMER	SQUARE D	120V/120V ISOLATION	9070 T100D24		
TA1, TA2, CR1, CR2	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	8 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

PARTS SCHEDULE IS CONTINUED ON SHEET E15

NOTES:

1. ALARM FLOAT SWITCH WILL BE SUPPLIED BY WWD AND INSTALLED BY CONTRACTOR.
2. DIMENSIONS, ITEMS, OR ELEVATIONS MARKED "*" SHALL BE DETERMINED AFTER EQUIPMENT SELECTION.

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

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CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
PARTS SCHEDULE (SHT. 1 OF 2)

W.O. 100051I
SHEET
E14

PARTS SCHEDULE (CONTINUED)

SYMBOL	NAME	PART				REMARKS
		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	ACE 3600 BASIC MODEL NO. RADIO PART #: F7509	1–AC POWER SUPPLY 85–264V W/ BAT CHARGER PAR #: V261	COORDINATE EFFORT W/ SCADA INTEGRATOR
SLOT 1		MOTOROLA CORP.	1–MIXED I/O AUXILLARY INTERFACE WILKERSON BOARD PART #: SIB V245/ V453	MOTOTRBO XPR5350 RADIO UHF R1; 403–470MHz PART # FUE1078A	1– ACE CPU3640 PART #: V446	1– 10.0 Ah BATTERY PART #: V328
				MOTOTRBO ANALOG RADIO INSTALLATION KIT PART # FLN1059	1–40 WIRE CABLE W/TB HOLDER 3M PART #: V358	
	1–3 I/O SLOT FRAM PART #: V103	1–20 PIN TB HOLDER KIT PART #: V158	1– 14x 14 METAL CHASSIS PART #: V214	1–ACE MIXED I/O MODULE–16DI, 4DO(EE), (4)±20mA ANALOG IN PART #: V245 W/ 24VDC PLUG–IN, FLOATING POWER SUPPLY # FPN1653A	1–40 PIN TB HOLDER KIT PART #: V153	
10.0 Ah BATT.						
PM1, PM2, PM3, PM4	3–PHASE POWER MONITOR	ATC DIVERSIFIED ELECTRONICS	8 PIN PLUG–IN	SLA–230–ALA	230 VAC	W/ OPTIONAL 5–SEC RELEASE AND DIN RAIL SOCKET
PDB	PWR DIST. BLOCK	ILSCO	THREE POLE	PDB–16–2/0–3	600 V, 175 AMP	W/ LEXAN COVER
FBD1, 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
BATT.	BATTERY	POWERSONIC	ABSORBENT GLASS MAT (AGM)	PS–1270 F2	12 VOLT, 7.0 AH	W/ 0.25" x 0.032" TABS
BATT. CHRG.	BATTERY CHARGER	DELTRAN CORP.	BATTERY TENDER	WATERPROOF 800	120VOLT, 800 mADC	QUALIFICATION, BULK, & FLOAT CHARGING
PC–1	BACKUP PUMP CONTROLLER	WILKERSON	DUPLEX LIFT STATION	DR1920	10 AMP CONTACTS	DIN RAIL MOUNTING
FL	FLOAT SWITCH	ANCHOR SCIENTIFIC	SPDT	S2ONONC	10 A @ 120 V	PROVIDED BY THE CITY INSTALLED BY CONTRACTOR
FTB1, 2	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	
BWR	BATTERY WALL RECEPTACLE	HUBBELL	DUPLEX W/GFI	GF5262	120V AC, 15A GFI	W/ALUMINUM OUTLET BOX AND COVER
PCP	PUMP CONTROL PANEL ENCLOSURE	HOFFMAN	NEMA 4X, 3P LATCH, 42"x36"x12"	42"x36"x12" SS	304 SS, POWDER COATED WHITE	3P LATCH W/STOP KIT. EXTERNAL FINISH DURABLE RAL 9003 WHITE POWER COAT.
PP	ENCLOSURE PANEL	HOFFMAN	39" X 33", STEEL	A42P36	STEEL, 12 GAUGE	
NB1, 2	NEUTRAL DISTRIBUTION BLOCK	BUSSMAN	SINGLE POLE	16220–1	600V, 175A	
F1	PROCESS METER	PRECISION DIGITAL	4 DIGIT, 1.2" DISPLAY	PD765–6X3–00		PROVIDE 4–20mA OUTPUT
ALS	AREA LIGHT SWITCH	HUBBELL	SINGLE–POLE	HBL1221	277V, 20A	
SPD–2	SURGE PROTECTION DEVICE TYPE 3	PHOENIX CONTACT	3 CONDUCTOR SYSTEM (L, N, G)	2856812	120V, 25A	
FDTS	FUSED DOUBLE THROW DISCONNECT SWITCH	EATON	SERVICE ENTRANCE RATED, HEAVY DUTY	DT323FWK SWITCH–NEMA 4X, S/S	100A, 3–POLE, 240VAC	TIME DELAY CLASS RK5 FUSES (3) EDISON ECNR100 (3) EDISON ECNR100 (PROVIDE (3) SPARES FOR EA.)
				DT100 NK NEUTRAL KIT DS100 GK GROUND KIT		
MS	METER SOCKET	MILBANK	7 TERMINAL	UAP9701–X–QG–HSP	600 VAC, 200 AMP	ALUMINUM CONSTRUCTION
EC	EMERGENCY CONNECTOR	CROUSE & HINDS	ARKTITE	AREA10415–S22 W/ BACK BOX, ANGLE ADAPTER, 1–1/2 HUB AND SPRING COVER	600V 100 AMP	
LA	LIGHTNING ARRESTER	GENERAL ELECTRIC	TRANQUELL	9L15ECC001	650V	

NOTES:

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ROMAN D. KORCHAK, P.E., #42626
ELECTRICAL DIVISION HEAD
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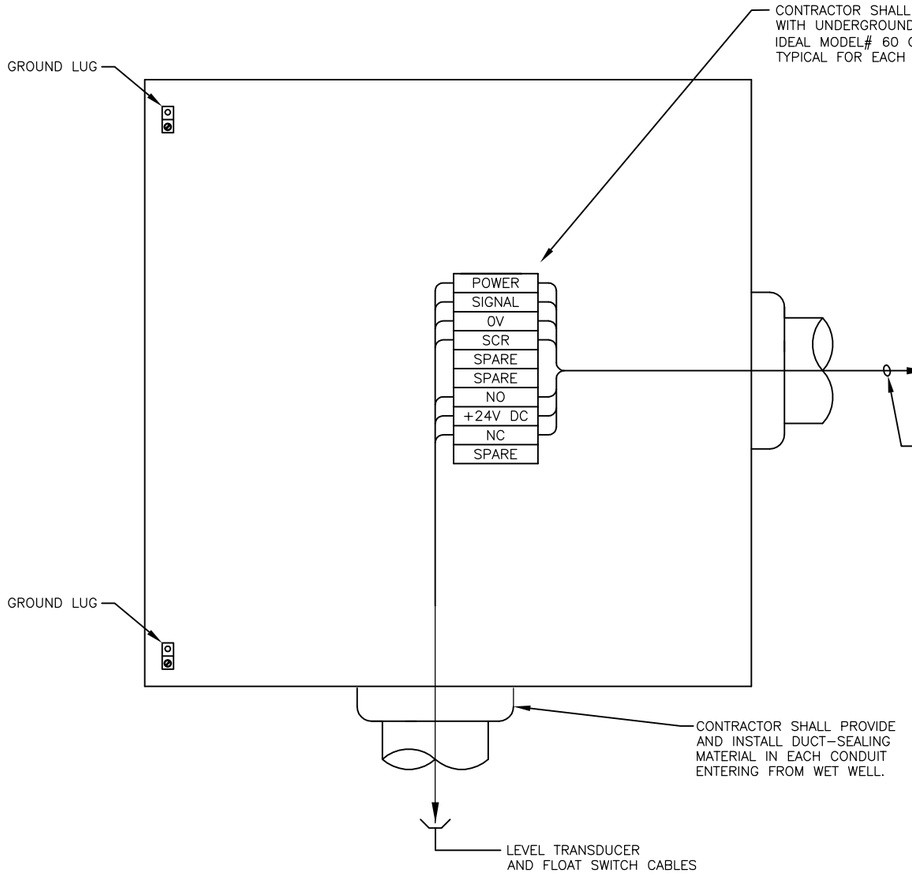
CITY of TAMPA
WASTEWATER DEPARTMENT

PUMPING STATION REPAIRS - QUINCY STREET
PARTS SCHEDULE (SHT. 2 OF 2)

W.O. 100051I
SHEET
E15

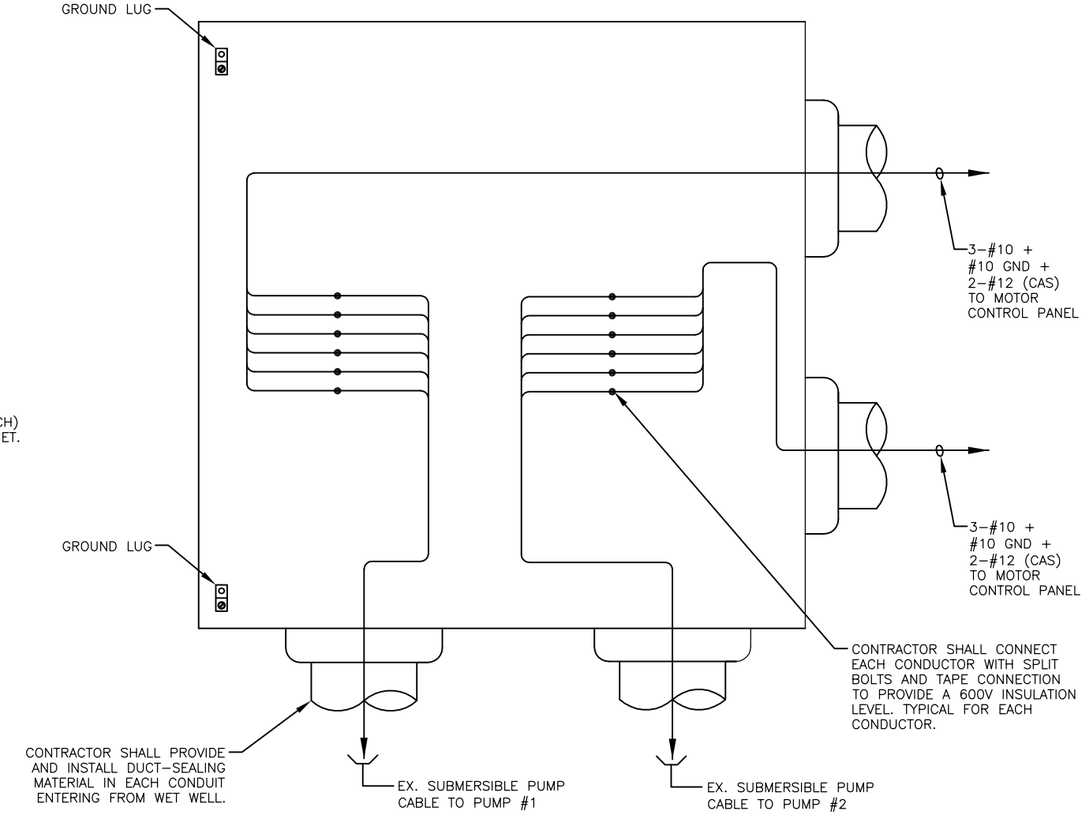


NOTES:

1. COVER NOT SHOWN FOR CLARITY
2. BOND GROUNDING CONDUCTORS TO ENCLOSURE BACK PANEL.

INSTRUMENTATION AND CONTROLS JUNCTION BOX DETAIL

N.T.S.



NOTES:

1. COVER NOT SHOWN FOR CLARITY
2. BOND GROUNDING CONDUCTORS TO ENCLOSURE BACK PANEL.

PUMP MOTOR CONNECTIONS JUCTION BOX DETAIL

N.T.S.

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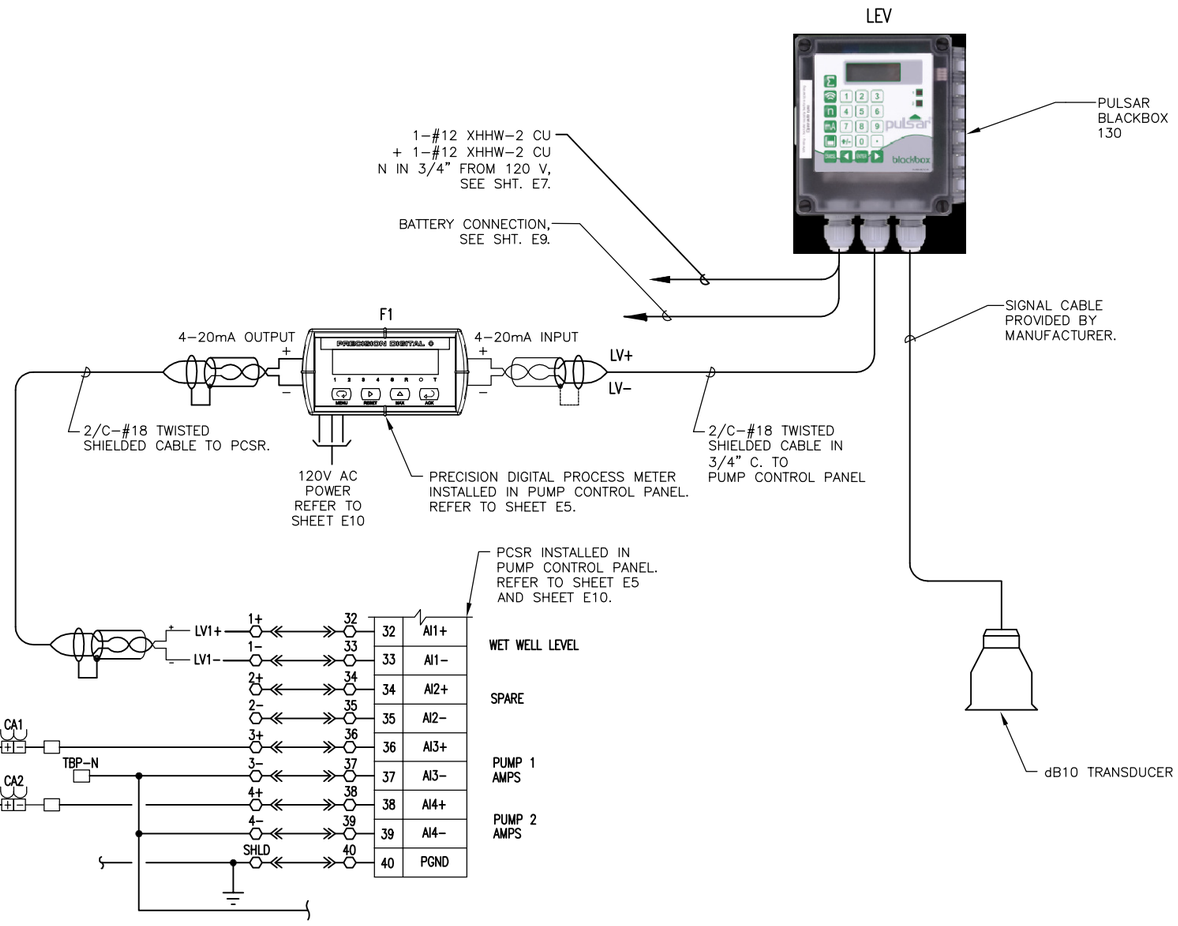
WASTEWATER DEPARTMENT

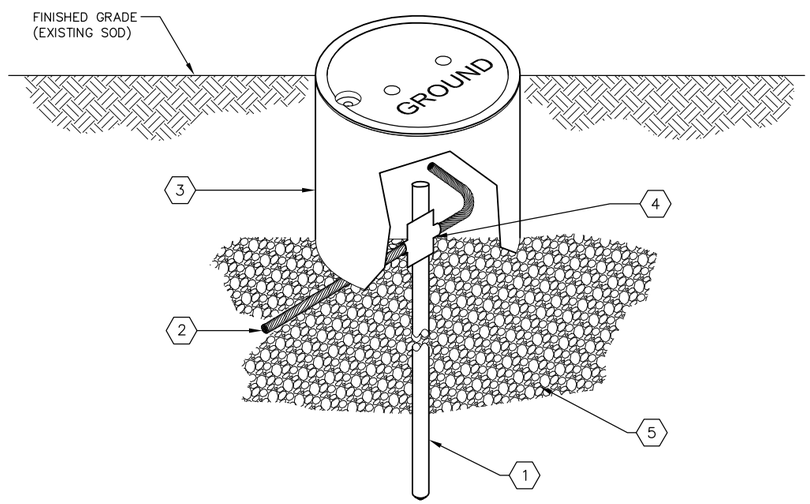
PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL DETAILS (SHT. 1 OF 3)

W.O. 100051I
SHEET
E16



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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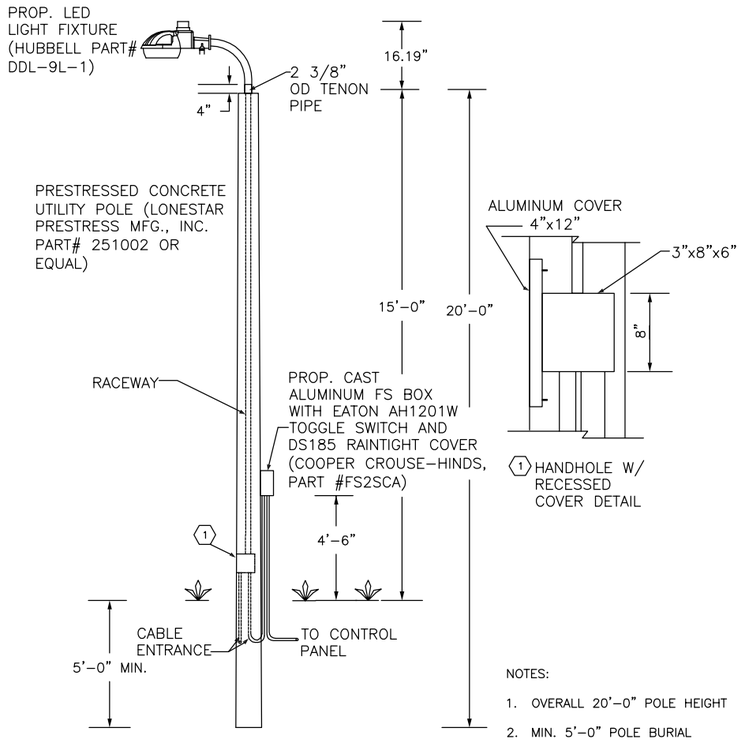
PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL DETAILS (SHT. 2 OF 3)

W.O. I0005II
SHEET
E17

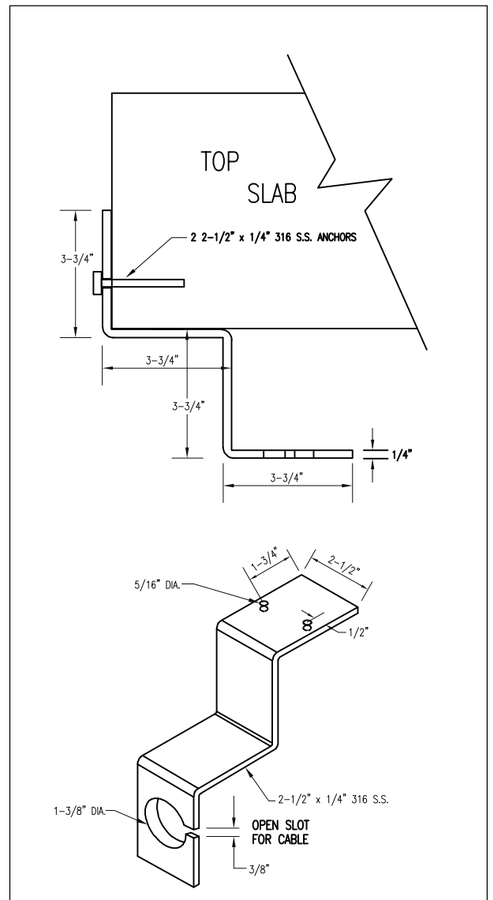


NOTES:

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

AREA LIGHT (AL) DETAIL

SCALE: N.T.S.

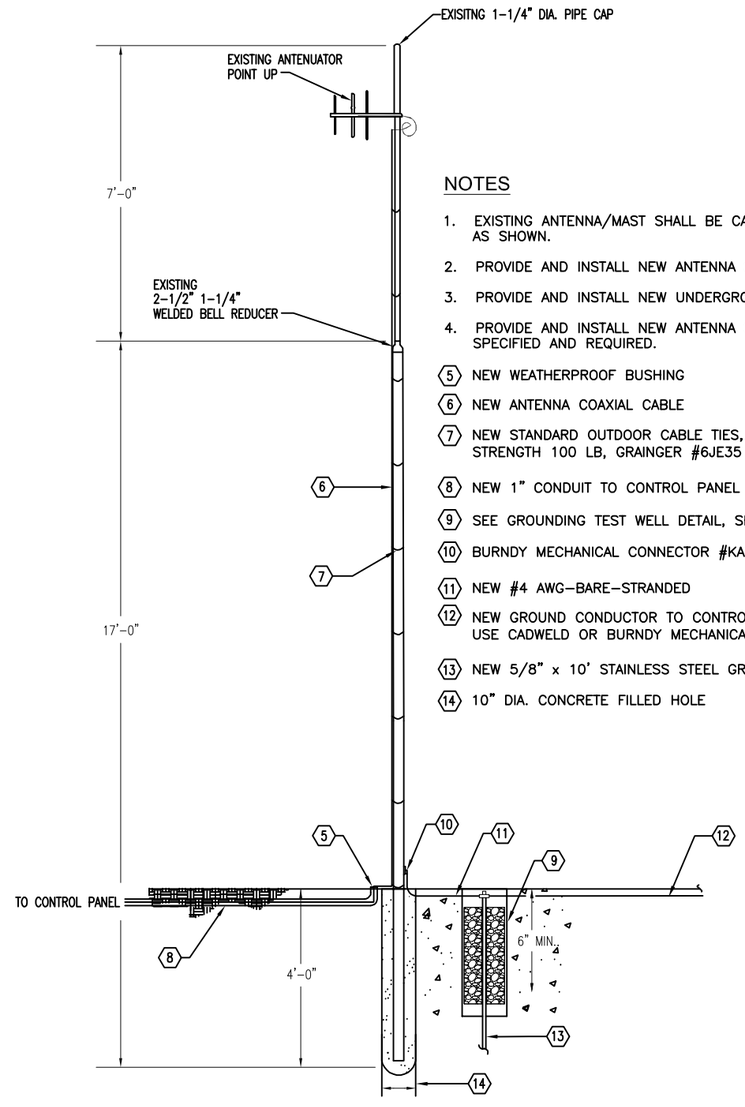


NOTE:

ROUND OVER ALL EDGES, RADIUS ALL CORNERS

DB10 OR PULSAR MOUNTING BRACKET DETAIL

SCALE: N.T.S.



NOTES

1. EXISTING ANTENNA/MAST SHALL BE CAREFULLY REMOVED AND RELOCATED, AS SHOWN.
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

(14) 10" DIA. CONCRETE FILLED HOLE

ANTENNA DETAIL

SCALE: N.T.S.

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PUMPING STATION REPAIRS - QUINCY STREET
ELECTRICAL DETAILS (SHT. 3 OF 3)

W.O. 100051I
SHEET
E18