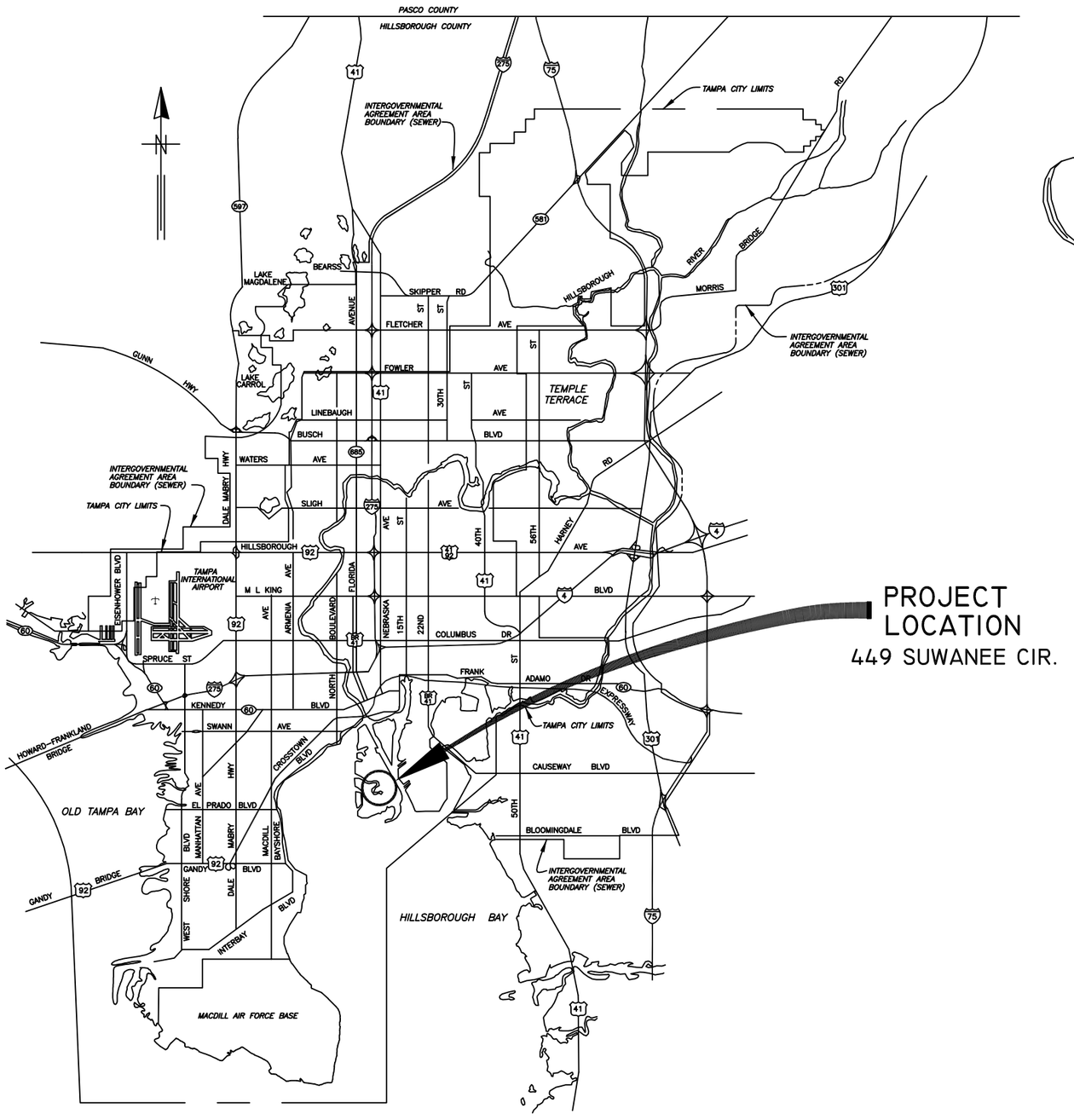
The Enclosed Document Is Provided For Your Convenience.

Please Email ALL Questions:

MailTo:ContractAdministration@TampaGov.net

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

LOCATION MAP



PROJECT LOCATION
449 SUWANEE CIR.

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.

CITY of TAMPA

CITY OF TAMPA FLORIDA
MASCOTTE
ORGANIZED JULY 15 1887

WASTEWATER DEPARTMENT

PLANS FOR

DAVIS ISLAND PUMP STATION REHABILITATION

CONTRACT #19-C-00005

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

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd.
Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

No.	DATE	REVISIONS
3		
2		
1		

DES: KJG
DRN: RFK/JHJ
CKD:
DATE: 2/4/19

CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PS REHABILITATION
COVER SHEET

SHEET 1

LEGEND

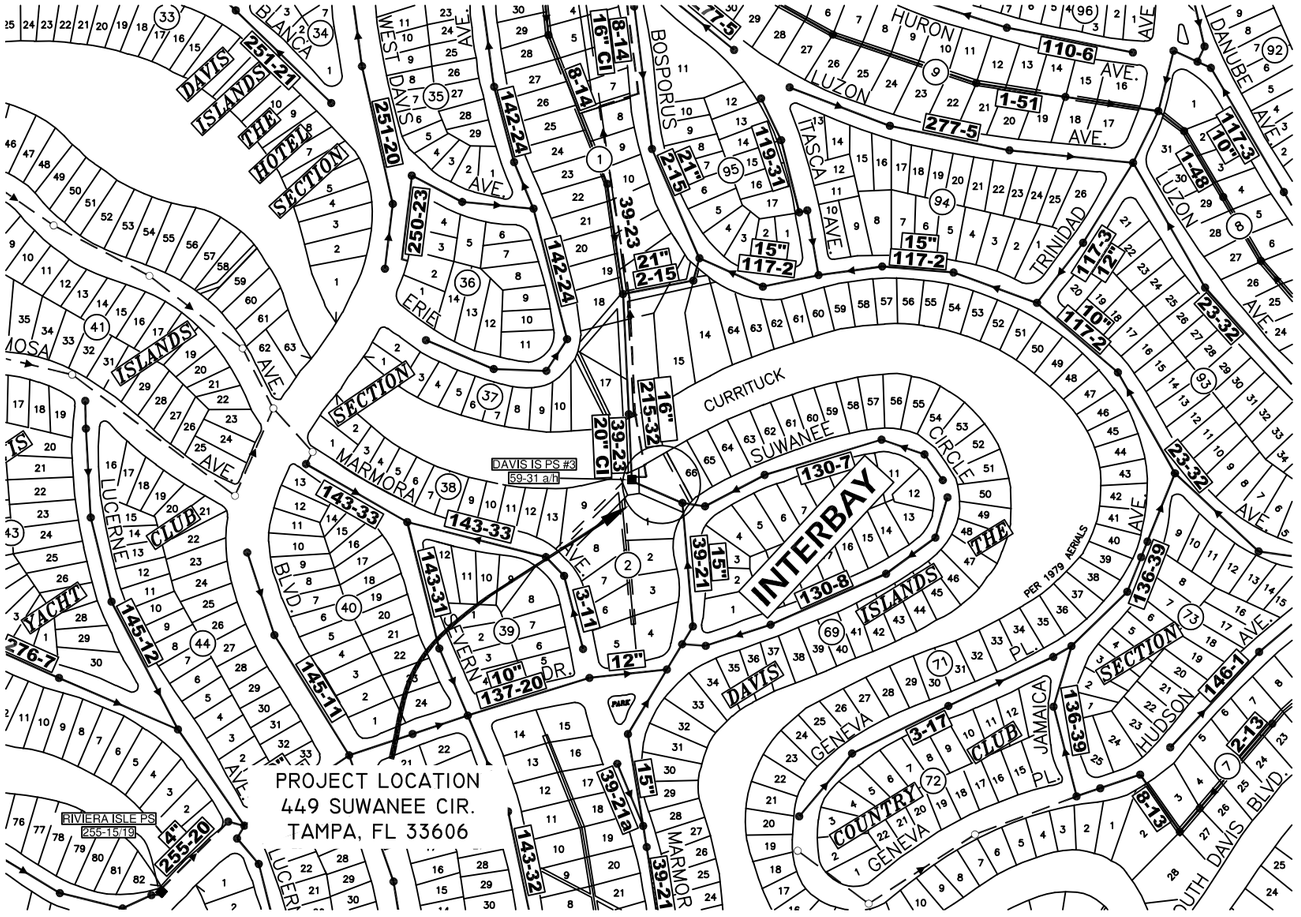
	UP to 36" & SMALLER	36" & LARGER
EX SEWERS		
EX FORCE MAIN		
EX SAN SEWER & MANHOLES		
EX STORM SEWER & MANHOLES		
PROP SEWERS		
PROP FORCE MAIN		
PROP SANITARY SEWER & MANHOLES		
PROP STORM SEWER & MANHOLES		

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
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	INVERT ELEVATION	IE or INV EL
APPROXIMATE LOCATION	AL	MAINTENANCE OF TRAFFIC	MOT
BENCH MARK	BM	MANHOLE	MH or M-H
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

EXISTING PROJECT LOCATION

N.T.S.

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

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CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PS REHABILITATION
INDEX

SHEET 2

DEMOLITION NOTES

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

D.2. THE CONSTRUCTION SITE SHALL BE MAINTAINED IN AS NEAT AND ORDERLY CONDITION AS POSSIBLE DURING CONSTRUCTION OPERATIONS. SITE SHALL BE SECURED WITH TEMPORARY FENCING AND STRUCTURES DURING HOURS WHEN CONTRACTOR IS NOT PRESENT TO ENSURE SAFETY OF CITY EMPLOYEES AND THE PUBLIC.

D.3. CONTRACTOR SHALL RESTORE ALL LANDSCAPING, SODDING, SPRINKLER SYSTEM PIPING AND PAVEMENT THAT MAY HAVE BEEN DAMAGED DURING CONSTRUCTION TO ITS ORIGINAL CONDITION OR BETTER.

GENERAL NOTES

G.1. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH WASTEWATER INSPECTOR, WASTEWATER PERSONNEL AND PUMPING STATION OPERATIONS AFTER ISSUANCE OF THE NOTICE TO PROCEED (NTP).

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

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

G.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.

G.5. CONTRACTOR SHALL VERIFY QUANTITIES OF ALL NECESSARY PIPES, REDUCERS, FITTINGS, SUPPORTS, AND ANY MISCELLANEOUS BRACKETS.

G.6. DIMENSIONS SHOWN ARE NOT NECESSARILY ACCURATE TO THE DEGREE REQUIRED FOR FABRICATION. EXISTING DIMENSIONS AND VIEWS ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE. CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT DIMENSIONS AND REFLECT THEM ON DETAILED SHOP DRAWINGS FOR APPROVAL BEFORE ANY FABRICATION.

G.7. TWO NEW PUMPS SHALL BE SUPPLIED FOR THIS PROJECT. PROPOSED PUMPS ARE FLYGT, MODEL NP-3202-462, 6-INCH, 45HP WITH 278mm IMPELLERS. PUMPS SHALL BE SUPPLIED WITH FLYGT MIX-FLUSH VALVES. EXISTING PUMP BASES SHALL REMAIN. PUMPS SHALL BE RATED FOR 1718 GPM AT 62 FT TDH. THIS EQUIPMENT IS A STANDARDIZED ITEM AT THIS FACILITY AND NO "OR EQUAL" SUBMITTALS WILL BE CONSIDERED.

G.8. 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.

G.9. ALL HARDWARE, UNLESS OTHERWISE NOTED, SHALL BE TYPE 316 STAINLESS STEEL.

G.10. 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.

G.11. 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.

G.12. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FLORIDA BUILDING CODE 6TH EDITION 2017, CHAPTER 5 OF THE CITY OF TAMPA CODE AND NATIONAL ELECTRIC CODE 2014 EDITION..

G.13. ALL ELEVATIONS ARE BASED ON NGVD 29 DATUM.

BYPASS PUMPING NOTES

B.1. SEWER SERVICE TO CUSTOMERS SHALL NOT BE DISRUPTED DURING CONSTRUCTION. CONTRACTOR SHALL SUBMIT DETAILED PROPOSAL FOR BYPASS PUMPING STRATEGY.

B.2. CONTRACTOR SHALL SUPPLY (3) SOUND ATTENUATED BYPASS PUMPS, (2) PRIMARY AND (1) BACKUP. EACH BYPASS PUMP SHALL BE CAPABLE OF DELIVERING 1718 GPM AT 62 FT TDH PLUS ANY LOSSES IN THE TEMPORARY BYPASS PIPING. THE BYPASS PUMPS SHALL BE OF THE SELF PRIMING QUIET FLOW TYPE PUMPS.

B.3. BYPASS PUMPS NOISE SHALL STRICTLY COMPLY TO ALL LOCAL REGULATIONS AND ORDINANCES COVERING NOISE CONTROL.

B.4. IN ORDER TO MINIMIZE BYPASS PUMPING DURATION, CONTRACTOR SHALL HAVE ALL PROPOSED MATERIALS AND EQUIPMENT ON-SITE BEFORE PLACING PUMPING STATION ON BYPASS.

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

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DRN: RFK/JHJ
CKD:
DATE: 2/4/19

CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PS REHABILITATION
DEMOLITION, GENERAL AND BYPASS NOTES

SHEET 3

CURRITUCK CHANNEL

ABANDONED 16" CIP FM under channel

12" HDPE FM Connected to Ex. 16" CIP FM n/o Channel

CONTRACTOR MAY UTILIZE THIS MH FOR STAGGERING OF THE BYPASS PUMPS

Sea Wall

MH EL. 7.46
N 5131.104
E 4835.528
INV −9.089 20"N
INV −6.999 18"E
INV −0.098 18"W

PROP. BYPASS SUCTION PIPING

Valve Vault
Antenna
Control Panel
Backflow Preventer
Diesel Pump
18" WW CIP
20" WW CIP
24" WW CP W/Internal Red Valve Check Valve

Sea Wall

OVERFLOW MH EL. 6.787
N 5134.360
E 4810.363
INV −0.266 24"N

MH EL. 6.728
N 5125.659
E 4811.102
OPENING EL −.042
INV 0.434 18"E

PROP. BYPASS PUMPS

Fence

Abdn. Meter Vault

18" RCP
21" RCP
24" WW

15" Tree

Fence

TP

499

Ø PP

Meter Vault
Flow Meter
10" Plug Valves (Typ of 4)
12" HDPE (By HDD)

Ø PP

2" ARV

Driveway

16" Tree

501

Wall

Fence

MH EL. 8.09
N 5102.578
E 4887.128
INV −9.66 24"N
INV −8.29 24"W
INV −7.43 18"E

18" WW CIP

18" Tree

12" Plug Valves (Typ of 4)

PROP. BYPASS SUCTION PIPING

PROP. BYPASS DISCHARGE PIPING

CONNECT TO EX. 90° BEND

8" WW VCP

Hedge

ØPP

Verizon

15" Tree

MM

Water Meters

497

15" WW VCP

741 MARMORA

MH EL. 6.80
N 5059.011
E 4958.803
INV −7.10 18"W
INV −6.90 15"S
INV −6.31 8" DROP SE
INV −0.48 8"

503

MH EL. 6.03
N 5046.408
E 4981.474
(POSSIBLY OUT OF SERVICE)

MH EL. 5.93
N 5096.214
E 5129.561
INV 0.04 8"SW

R/W

EOP

Curb

8" WW VCP

EOP

R/W

SUWANEE CIR

506

504

502

MH EL. 6.014
N 5029.346
E 4983.661
INV −0.149 8"NE
INV −0.148 8"NW
INV −0.147 8"SW

8" WW VCP

Curb

R/W

498

15" WW VCP

EOP

EOP

R/W

495

MH EL. 5.834
N 4986.478
E 4956.994
INV −0.021 8"N

ATLAS K12

SEC. 36 T29S R18E

0 30

1"=30'

	No.	DATE	REVISIONS			
JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	3			DES: KJG DRN: RFK/JHJ CKD: DATE: 2/4/19	CITY of TAMPA WASTEWATER DEPARTMENT	DAVIS ISLAND PS REHABILITATION EXISTING SITE AND BYPASS PLAN	SHEET 4
	2						
	1						

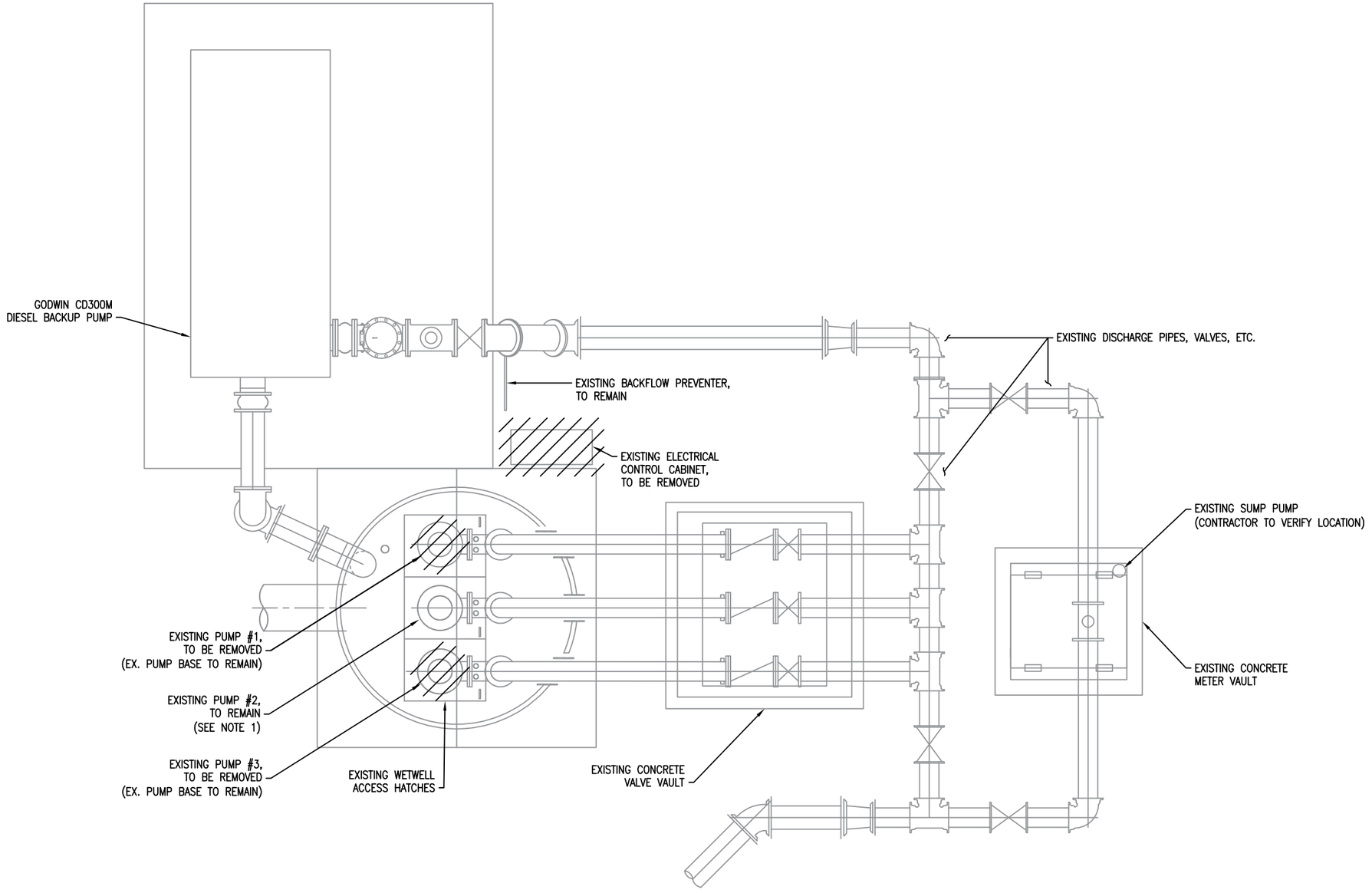
User: ss13 Drawing Name: K:\WasteWater Projects\Davis Island Pump Station Rehab\Drafting\DWG\Davis Island PS Rehab.dwg
Layout— Jul 17, 2019 - 11:42am

SEC. 36 T29S R18E

ATLAS K12

0 5

1"=5'



NOTES:

1. EXISTING PUMP #2 SHALL BE MOVED TO POSITION #3.

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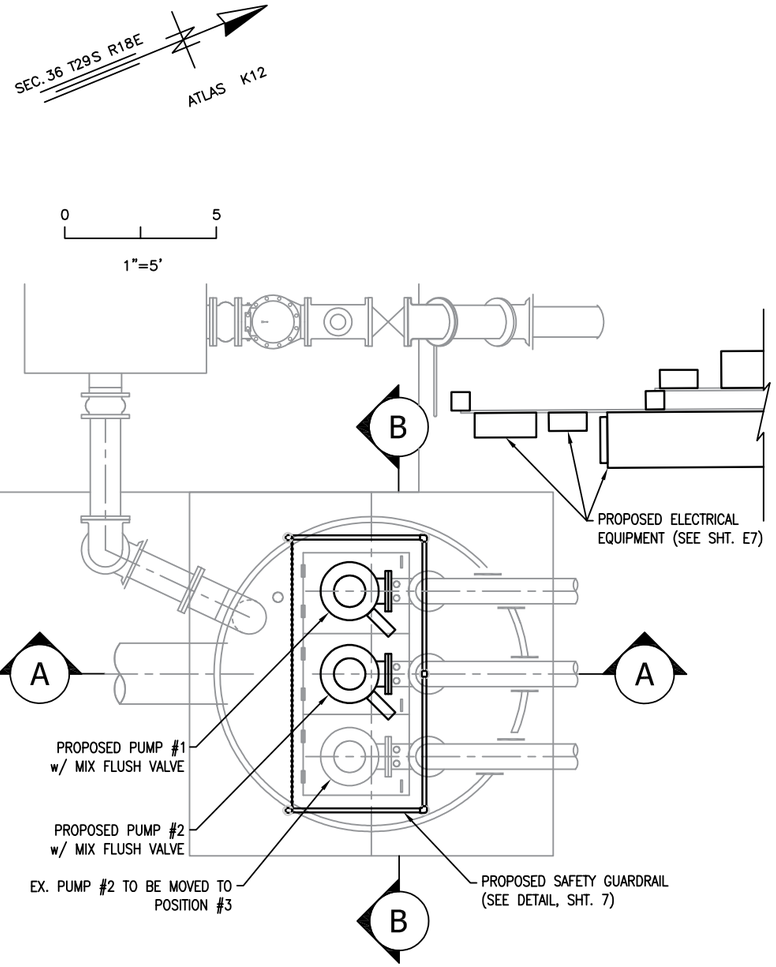
CITY of TAMPA
WASTEWATER DEPARTMENT

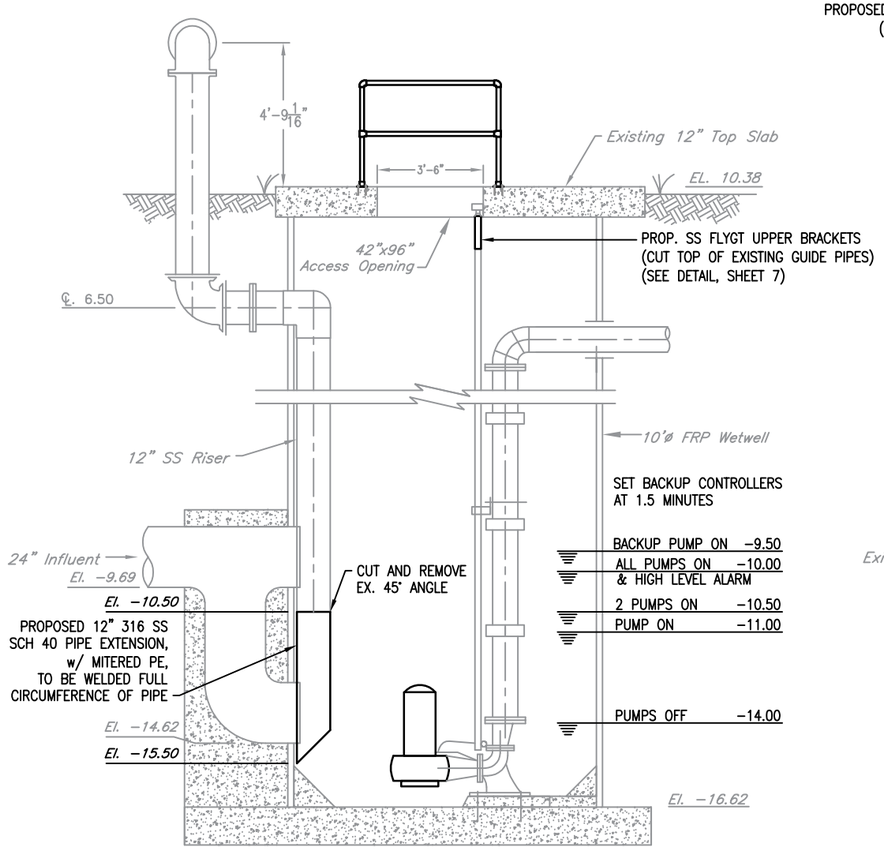
DAVIS ISLAND PS REHABILITATION
DEMOLITION PLAN

SHEET 5



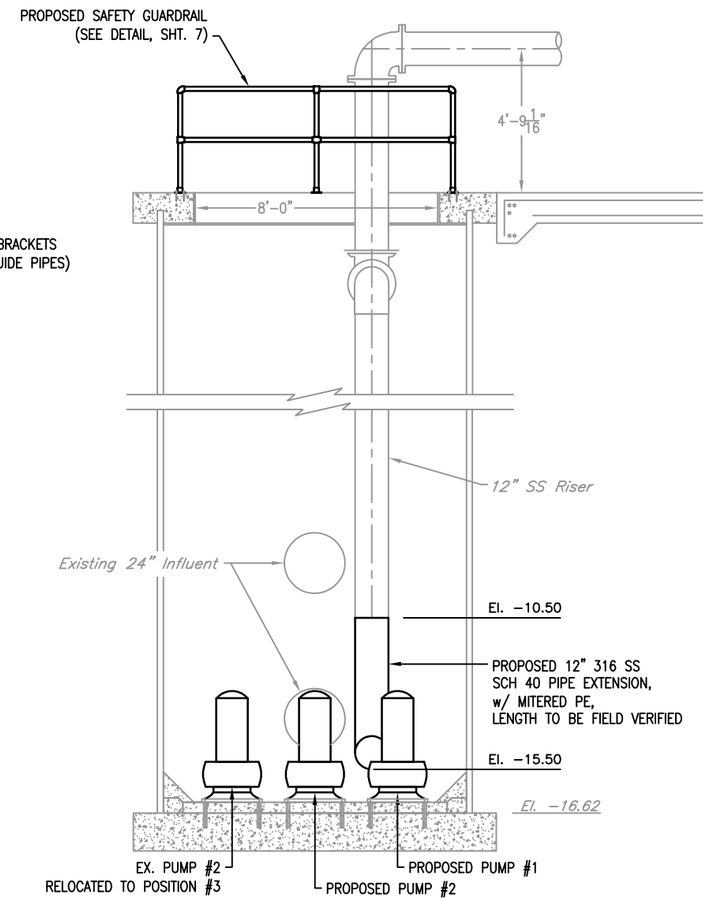
PROPOSED LAYOUT

SCALE: 1" = 5'-0"



SECTION A-A

SCALE: 1" = 5'-0"



SECTION B-B

SCALE: 1" = 5'-0"

PUMP DATA	
PUMP #1: (PROPOSED)	FLYGT NP3202-462 (3 PH, 480V, 278mm IMP, 6-INCH DISCHARGE, 45HP, 1718 GPM @ 62 FT TDH)
PUMP #2: (PROPOSED)	FLYGT NP3202-462 (3 PH, 480V, 278mm IMP, 6-INCH DISCHARGE, 45HP, 1718 GPM @ 62 FT TDH)
PUMP #3: (EXISTING) (MOVED FROM POSITION #2)	FLYGT CP 3201.180 (3 PH, 480V, #457 IMP, 6-INCH DISCHARGE, 47HP, 1464 GPM @ 56 FT TDH)

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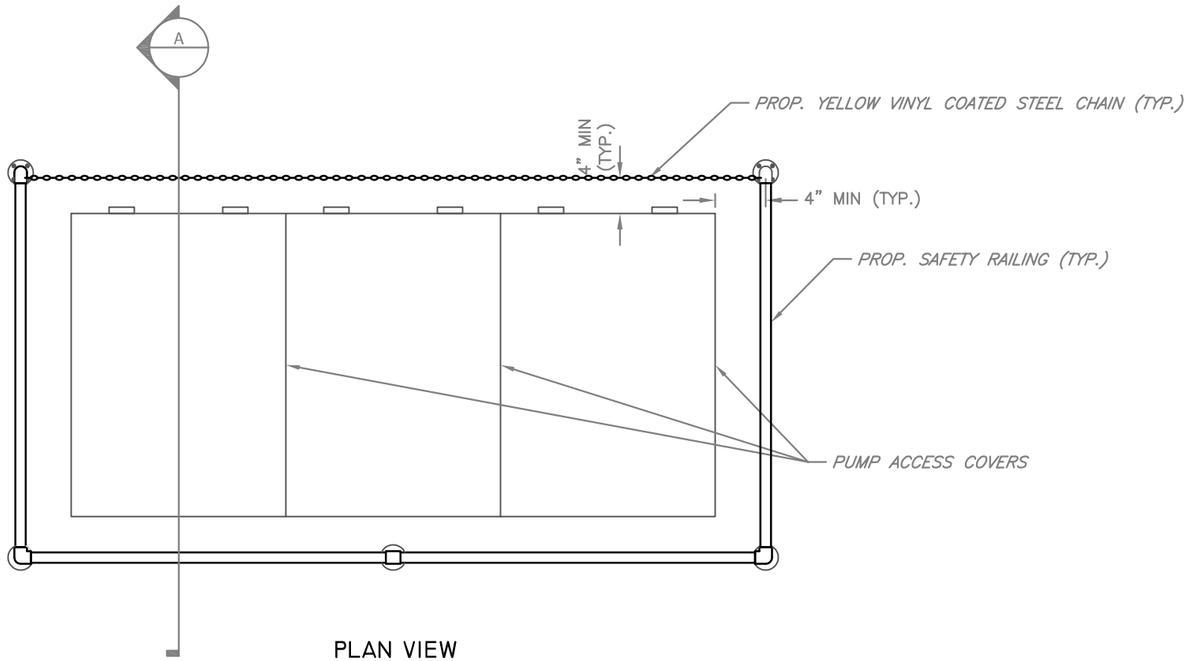
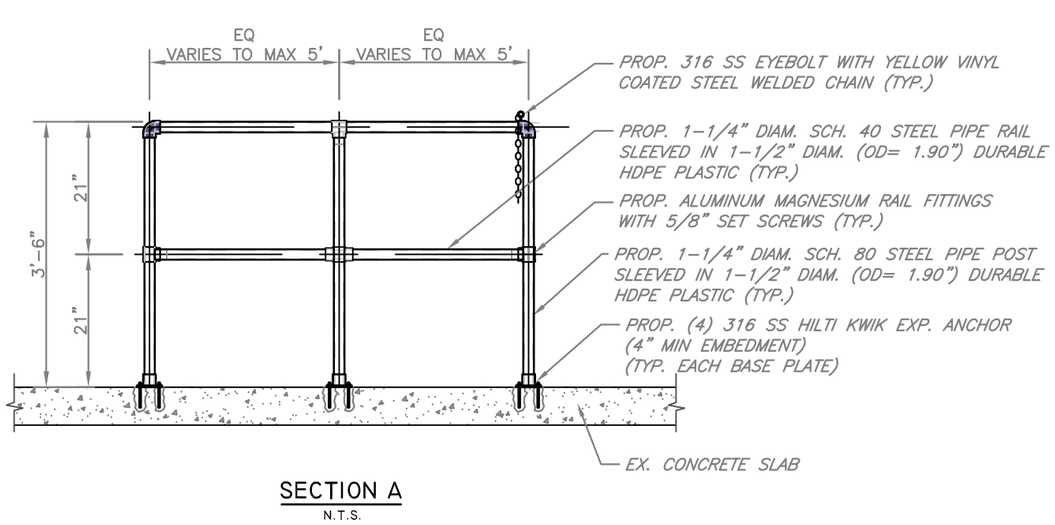
CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PS REHABILITATION
PROPOSED LAYOUT AND SECTIONS

SHEET 6



PLAN VIEW
N.T.S.

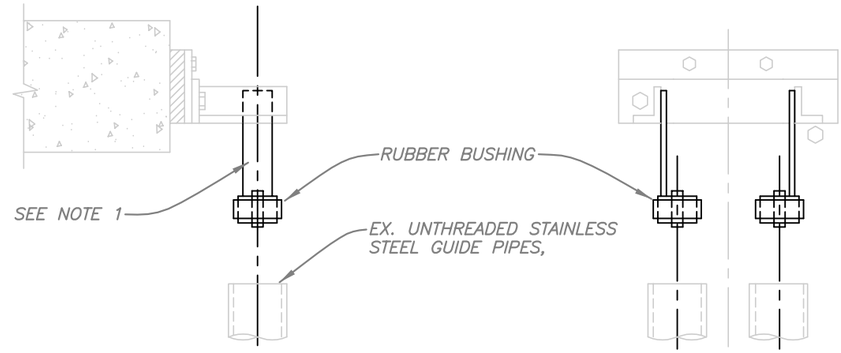


SECTION A
N.T.S.

SAFETY GUARD RAIL DETAIL

NOTES:

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



NOTES:

1. LENGTH SHALL BE AS NECESSARY SO THAT PUMP DISENGAGES FROM RAILS BEFORE MIX FLUSH VALVE IS IN CONFLICT WITH EXISTING ACCESS COVER DOOR SUPPORT.

GUIDE BRACKET MODIFICATIONS DETAIL
N.T.S.

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WASTEWATER DEPARTMENT

DAVIS ISLAND PS REHABILITATION
MISCELLANEOUS DETAILS

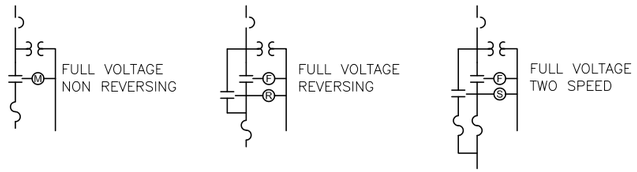
SHEET 7

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
- 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

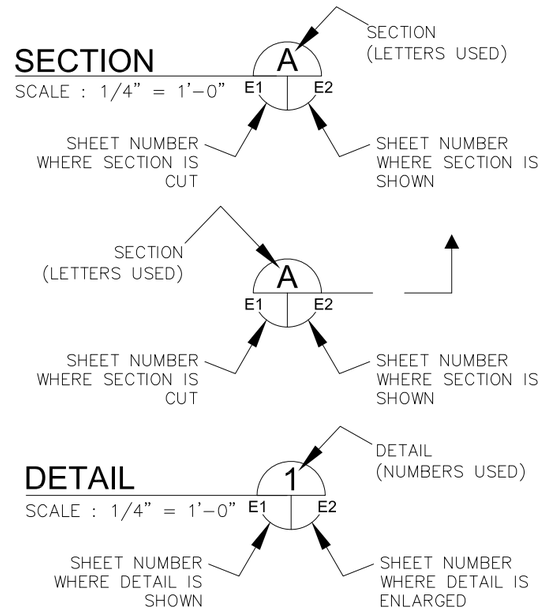
- (M) — OPERATING COIL
  - M–MOTOR STARTER
  - C– CONTACTOR
  - F– FORWARD
  - R– REVERSE
  - AR– AUXILIARY RELAY
  - CR– CONTROL RELAY
  - TR– TIME DELAY RELAY
- NORMALLY OPEN CONTACT (N.O.)
- NORMALLY CLOSED CONTACT (N.C.)
- NORMALLY OPEN CONTACT WITH TIME DELAY CLOSING (ON–DELAY)
- INSTANT OPEN– TIME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

EXAMPLE OF SECTION CUT AND DETAIL



TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 350
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

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1		

TIMOTHY THOMAS, P.E. #47079

DES: T.DT.
DRN: J.L.H.
CKD: T.DT.
DATE: 3-27-19

CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL SYMBOLS LEGEND (SHEET 1 OF 2)

W.O. 0000

SHEET
E1

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)

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.)

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

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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TIMOTHY THOMAS, P.E. #47079

No.	DATE	REVISIONS
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DES: T.DT.
DRN: J.L.H.
CKD: T.DT.
DATE: 3-27-19

CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL SYMBOLS LEGEND (SHEET 2 OF 2)

W.O. 0000
SHEET
E2

GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2. ALL POWER CONDUCTORS SHALL BE STRANDED COPPER, #12 AWG MIN. W/XHHW-2 INSULATION, UNLESS OTHERWISE NOTED.
3. ALL WIRING SHALL BE IDENTIFIED W/NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
4. VERIFY ALL MECHANICAL EQUIPMENT SIZES AND RATING PRIOR TO CONNECTING.
5. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
6. PLANS ARE DESIGNED IN ACCORDANCE WITH THE 6TH EDITION 2017 OF THE FLORIDA BUILDING CODE AND THE 2014 EDITION OF THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL ENSURE THAT ALL ELECTRICAL WORK PERFORMED SHALL ADHERE TO THE SAME ACCORDANCE AND ALL APPLICABLE LOCAL ORDINANCES.
7. ALL THREADED CONNECTIONS SHALL BE COATED W/ ALUMA-SHIELD ANTI-SIEZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & B) OR EQUAL.
8. ALL PANELS, DISCONNECTS, SWITCHES, AND EQUIPMENT COVERPLATES SHALL BE LABELED W/ NAMEPLATES. NAMEPLATES SHALL BE THREE-PLY PHENOLIC BLACK-WHITE-BLACK ENGRAVED THROUGH THE FIRST BLACK LAYER. LETTERING SHALL BE 0.5 CM (3/16") MIN. EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.
9. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'-0" INTERVALS.
10. ALL CIRCUITS SHALL HAVE A PROPERLY SIZED GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT W/ POWER CONDUCTORS.
11. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS, NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNED IN THE DRAWINGS.
12. NEATLY COIL ALL SPARE CONDUCTORS & TAPE W/ VINYL ELECTRICAL TAPE (SCOTCH 33+).
13. PROVIDE A MINIMUM OF 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE W/ ARTICLE 110 OF THE NEC.
14. ALL FASTENING HARDWARE (SCREW, BOLTS, NUTS ETC.) SHALL BE 316-STAINLESS STEEL, FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.
15. EXPOSED CONDUITS SHALL BE NON-COATED RIGID ALUMINUM CONDUIT, UNLESS OTHERWISE NOTED (UON). INSTALL PVC COATED RIGID ALUMINUM CONDUIT TO THE WET WELL, UNLESS OTHERWISE NOTED (UON).
16. DIRECT BURIED AND CONCRETE ENCASED CONDUIT SHALL BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED. TRANSITIONS FROM ABOVE-GRADE RIGID ALUMINUM CONDUIT TO NONMETALLIC CONDUIT SHALL BE ACCOMPLISHED WITH A THREADED ADAPTER. RIGID ALUMINUM CONDUIT INSTALLED ABOVE GRADE AND EXTENDING BELOW GRADE SHALL INCLUDE THE FIRST 90° ELBOW. ALL RIGID ALUMINUM CONDUITS EXTENDING BELOW GRADE SHALL BE COATED WITH TWO COATS OF ASPHALTUM-TYPE PAINT ALONG ITS ENTIRE LENGTH BELOW GRADE AND EXTENDING 6" ABOVE GRADE OR ABOVE THE TOP OF THE FINISHED SLAB.
17. ABOVE GRADE INDOOR, AND NON-WASHDOWN AREAS, RIGID ALUMINUM CONDUIT CONNECTIONS TO CONTROL BOXES, ETC. SHALL BE MADE WITH ALUMINUM DOUBLE LOCKNUTS AND BUSHINGS. TURN DOWN ON THREADS TO SOLIDLY CONNECT RACEWAY TO BOX OR ENCLOSURE.
18. ALUMINUM WATERTIGHT HUBS (MYERS HUBS) SHALL BE USED FOR CONNECTIONS TO CONTROL BOXES, ETC. MOUNTED OUTDOORS, BELOW GRADE, OR WASHDOWN AREAS.
19. A 316-STAINLESS STEEL CHANNEL ERECTOR SYSTEM SHALL BE USED TO SUPPORT ALL CONDUITS, BOXES ETC. USE 316 STAINLESS STEEL MOUNTING HARDWARE.
20. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND MAKE ADJUSTMENTS AS NECESSARY TO EXECUTE THE PROPOSED INSTALLATIONS.
21. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
22. PULL BOXES SHALL BE INSTALLED AS NECESSARY TO FACILITATE WIRE PULLS AND AVOID EXCESSIVE PULLING TENSION ON WIRING. IN NO CASE SHALL CONDUIT LENGTHS EXCEED 150' OR THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) WITHOUT A PULL BOX. PULL BOXES SHALL BE SIZED IN ACCORDANCE WITH ARTICLE 314 OF THE NEC.
23. THE WET WELL CLASSIFICATION IS CLASS 1, DIVISION 1, GROUP D, (HAZARDOUS AREA) NEC CHAPTER 5 IS APPLICABLE FOR INTERFACING WET WELL AND THE CONTROL ENCLOSURE.
24. ALL ELECTRICAL WORK SHALL BE PERFORMED WITHIN 2014 NEC AND CITY OF TAMPA/ HILLSBOROUGH COUNTY CODES AND SHALL BE INSPECTED BY CITY OF TAMPA/ HILLSBOROUGH COUNTY ELECTRICAL INSPECTORS AS APPLICABLE.
25. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED AND AS SPECIFIED, OR AS APPROVED BY THE ENGINEER. THE PANEL BUILDER SHALL BE UL-508A CERTIFIED AND A UL LABEL SHALL BE ATTACHED TO THE INSIDE OF THE ENCLOSURE. THE DOUBLE THROW DISCONNECT MUST BE LABELED "SUITABLE FOR USE AS SERVICE EQUIPMENT."
26. THE ENCLOSURES SHALL BE NEMA 4X, THEY SHALL BE CONSTRUCTED OF MINIMUM 14 GAUGE 304SS, THEY SHALL HAVE RAL 9003 WHITE POWDER COAT AND THE CLOSING SURFACES SHALL HAVE ROLLED LIPS. PROVIDE HINGED DOORS WITH 3-POINT 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 MANUFACTURER'S 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., STAR CONTROLS OR REVERE CONTROL SYSTEMS. THE PUMPING STATION CONTRACTOR SHALL COORDINATE HIS EFFORTS WITH DCR, STAR CONTROLS, OR REVERE CONTROL SYSTEMS TO ENSURE SYSTEM COMPATIBILITY. THE PCSR SHALL STORE AND FORWARD SITE ID'S 302 AND 303. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE DUPLEX CONTROL SYSTEM/SCADA PACKAGE, AS PROGRAMMED BY DCR, STAR CONTROLS OR REVERE CONTROLS – THE EXISTING PUMPING STATION DCR CONTROLS SHALL REVERT TO THE CITY AS A SPARE.
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 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-#4 AWG + #6 AWG GND. CU FOR EACH MOTOR) SHALL EXTEND FROM THE JUNCTION BOX. PROVIDE SEAL-OFF BETWEEN MOTOR CONTROL CABINET 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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CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
GENERAL NOTES

W.O. 0000
SHEET
E3

ELECTRICAL SERVICE LOAD SUMMARY

480 VAC, 3Ø, 4W

LOAD	CONNECTED	DEMAND	APPROX. PHASE CURRENTS L1	L2	L3
PUMP #1	43.1 KVA	43.1 KVA	52.0 A	52.0 A	52.0 A
PUMP #2	43.1 KVA	43.1 KVA	52.0 A	52.0 A	52.0 A
PUMP #3	43.1 KVA	43.1 KVA	52.0 A	52.0 A	52.0 A
MINI POWER-ZONE	5.0 KVA	5.0 KVA	0.0 A	10.4 A	10.4 A
TOTAL	134.3 KVA	134.3 KVA	156.0 A	166.4 A	166.4 A

PUMP MOTOR DATA

MAKE: FLYGT

MODEL: NP3202-462

H.P.: 45

480V, 3-PHASE, 52 FLA

TOTAL PUMP LOAD: 52 AMPS, 43.1 KVA

SHORT CIRCUIT CALCULATIONS

AVAILABLE SHORT-CIRCUIT CURRENT AT 480V UTILITY SERVICE IS 13,532 AMPERES.
CONTRACTOR TO CONFIRM WITH TECO

TECO CONTACT: BROCK BLACKMORE (813) 228-1008

UTILITY SERVICE: 480/277, 3 PH, TRANSFORMER AVAILABLE
FAULT CURRENT AT SECONDARY SIDE OF
TECO'S TRANSFORMER: 13,532 AMP RMS SYM.
SERVICE CONDUCTOR LENGTH: 70 FEET
SERVICE CONDUCTOR SIZE: #4/0 THWN CU.
FUSE RATING: 225 AMPS
ISCA AT LINE SIDE OF FTDS:

$$ISCA = \left[\frac{1}{1 + \left[\frac{(1.73)(70)(13,532)}{(13,400)(480)} \right]} \right] * 13,532 = 10,784$$

SHORT CIRCUIT CURRENT AVAILABLE AT LINE SIDE LUGS OF THE FUSED DOUBLE THROW SWITCH = 10,784 AMPS RMS. THE LET-THROUGH CURRENT OF THE FUSES = 7,960 AMPS WHICH IS THE SYMMETRICAL CURRENT AVAILABLE AT THE MOTOR CONTROL PANEL (MCP).

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. 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 TRIPLEX 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 NEMA 4X WET WELL ISOLATION JUNCTION BOX FOR PUMP MOTOR CONNECTIONS.
9. PROVIDE AND INSTALL A NEW TRIPLEX 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 NEMA 4X 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 A NEMA 4X, EMERGENCY GENERATOR DOCKING STATION AS SHOWN ON THE PLANS.
13. THE EXISTING SCADA ANTENNA AND ASSOCIATED MAST SHALL BE CAREFULLY REMOVED, RELOCATED AND REUSED AS INDICATED.
14. PROVIDE AND INSTALL AREA LIGHTS, 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 SEPARATE PAYMENT WILL BE MADE.
20. AS PART OF THE SHOP DRAWING PROCESS, THE CONTRACTOR SHALL SUBMIT A PLAN TO INSURE SCADA COMMUNICATIONS ARE MAINTAINED DURING CONSTRUCTION. COORDINATE ALL REQUIREMENTS WITH THE CITY OF TAMPA.

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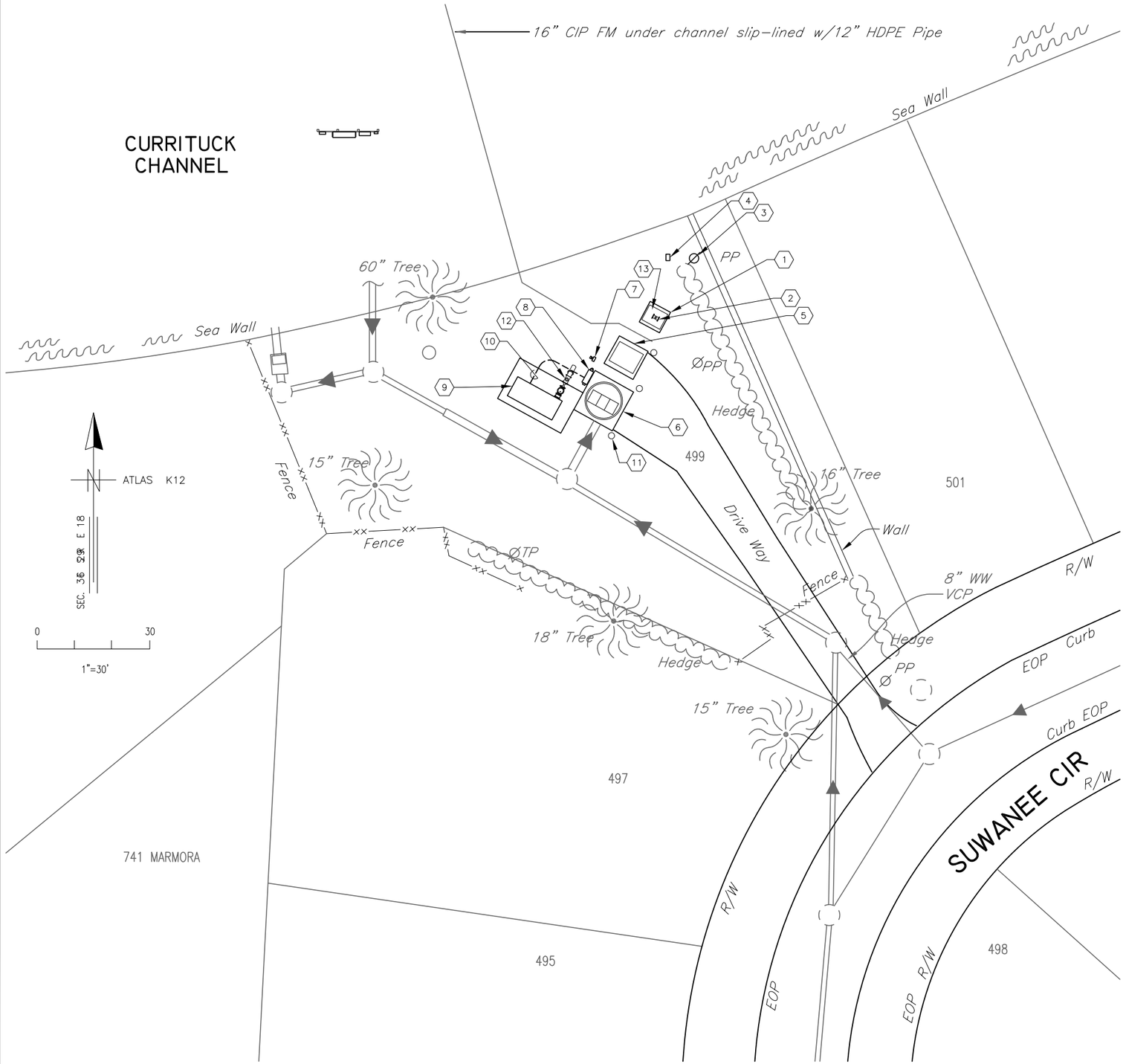
CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
SCOPE OF WORK

W.O. 0000
SHEET
E4



KEYED NOTES:

1. EXISTING METER VAULT TO REMAIN. NO WORK REQUIRED.
2. EXISTING FLOW METER LOCATED IN EXISTING METER VAULT (FLOW METER TO REMAIN. REFER TO SHEET E-29 FOR REQUIRED MODIFICATIONS).
3. EXISTING TECO POWER DISTRIBUTION POLE. NO WORK REQUIRED.
4. APPROXIMATE LOCATION (CONTRACTOR TO FIELD LOCATE) FOR EXISTING TECO HANDHOLE. REFER TO SHEET E6 FOR MODIFICATIONS REQUIRED.
5. EXISTING VALVE VAULT. NO WORK REQUIRED.
6. EXISTING WET WELL. REFER TO SHEET E7 FOR MODIFICATIONS REQUIRED.
7. EXISTING SCADA RTU, EXISTING SCADA ANTENNA/MAST AND EXISTING FLOW METER TRANSMITTER. EXISTING FLOW METER TRANSMITTER SHALL BE REUSED. REFER TO SHEET E5 FOR MODIFICATIONS REQUIRED. EXISTING SCADA ANTENNA/MAST SHALL BE REMOVED AND RELOCATED. REFER TO SHEETS E7 AND E25 FOR MODIFICATIONS REQUIRED. SCADA RTU SHALL BE REMOVED AND TURNED OVER TO THE CITY OF TAMPA FOR INVENTORY PURPOSES.
8. EXISTING MOTOR CONTROL PANEL, CONTROL POWER TRANSFORMER AND ELECTRIC SERVICE METER TO BE REMOVED AND TURNED OVER TO THE CITY OF TAMPA FOR INVENTORY PURPOSES.
9. EXISTING DIESEL BACKUP PUMP TO REMAIN.
10. CONTRACTOR TO MODIFY EXISTING CONDUIT AND CONDUCTORS REQUIRED FOR DIESEL BACKUP POWER AND CONTROL. REFER TO SHEET E7 FOR MODIFICATIONS REQUIRED.
11. EXISTING BOLLARD (TYPICAL OF THREE). NO WORK REQUIRED.
12. EXISTING DIESEL BACKUP PUMP DISCHARGE PIPING TO REMAIN. NO WORK REQUIRED.
13. EXISTING SUMP PUMP LOCATED WITHIN METER VAULT TO REMAIN. REFER TO SHEET E7 FOR POWER MODIFICATIONS REQUIRED.

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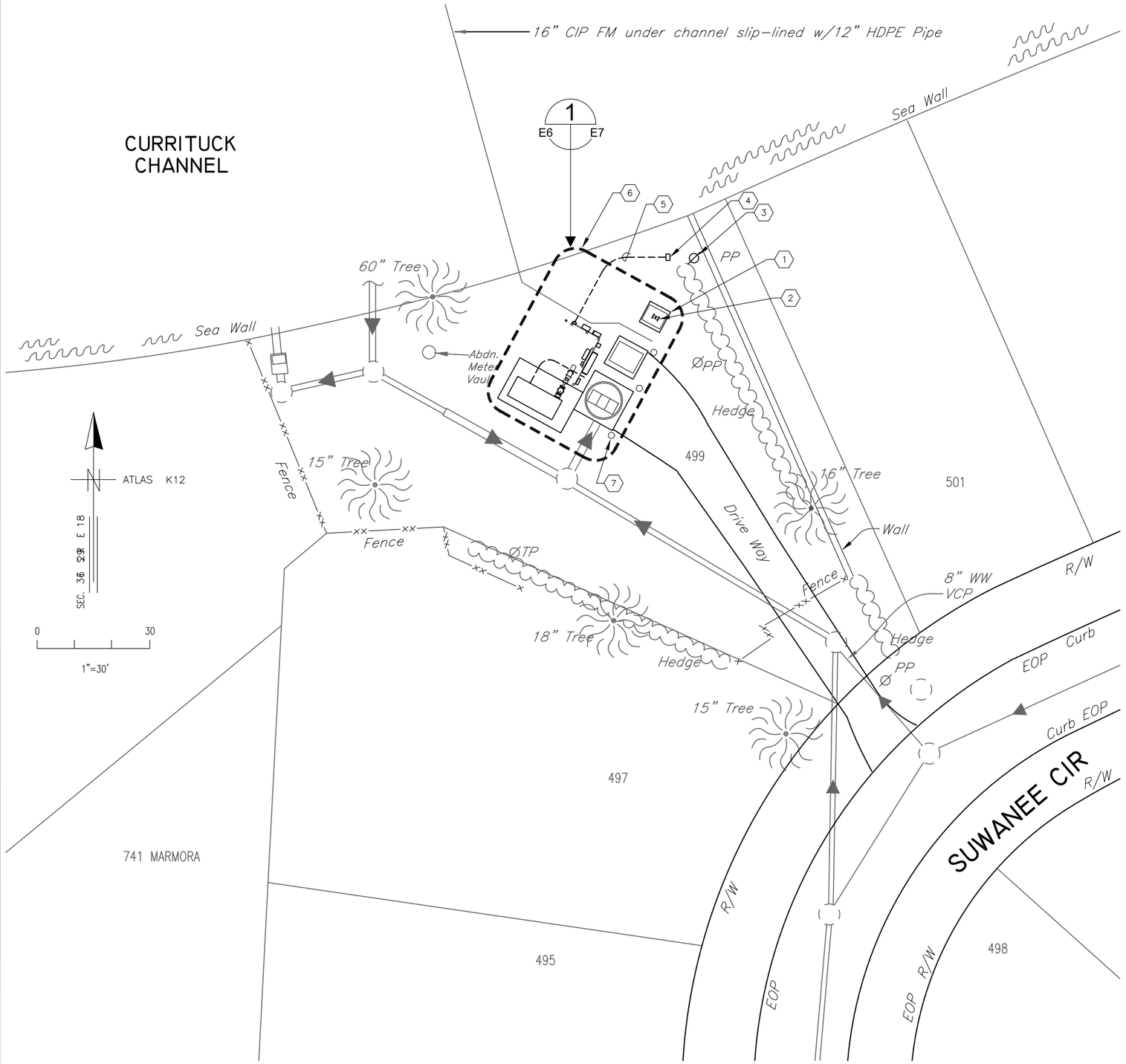
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
EXISTING ELECTRICAL PLAN (DEMOLITION SHEET)

W.O. 0000
SHEET
E5



KEYED NOTES:

1. EXISTING METER VAULT TO REMAIN. NO WORK REQUIRED.
2. EXISTING FLOW METER LOCATED IN EXISTING METER VAULT (FLOW METER TO REMAIN. REFER TO SHEET E7 FOR REQUIRED MODIFICATIONS).
3. EXISTING TECO POWER DISTRIBUTION POLE. NO WORK REQUIRED.
4. APPROXIMATE LOCATION (CONTRACTOR TO FIELD LOCATE) FOR EXISTING TECO HANDHOLE. REFER TO SHEET E7 FOR NEW ELECTRICAL SERVICE REQUIREMENTS.
5. PROVIDE AND INSTALL 3-#4/0 XHHW-2 CU + 1-#1/0 XHHW-2 CU NEUTRAL IN 2"C. FROM TECO HANDHOLE TO METER.
6. REFER TO SHEET E7 FOR PARTIAL ELECTRICAL PLAN.
7. EXISTING BOLLARD (TYPICAL OF THREE). NO WORK REQUIRED.

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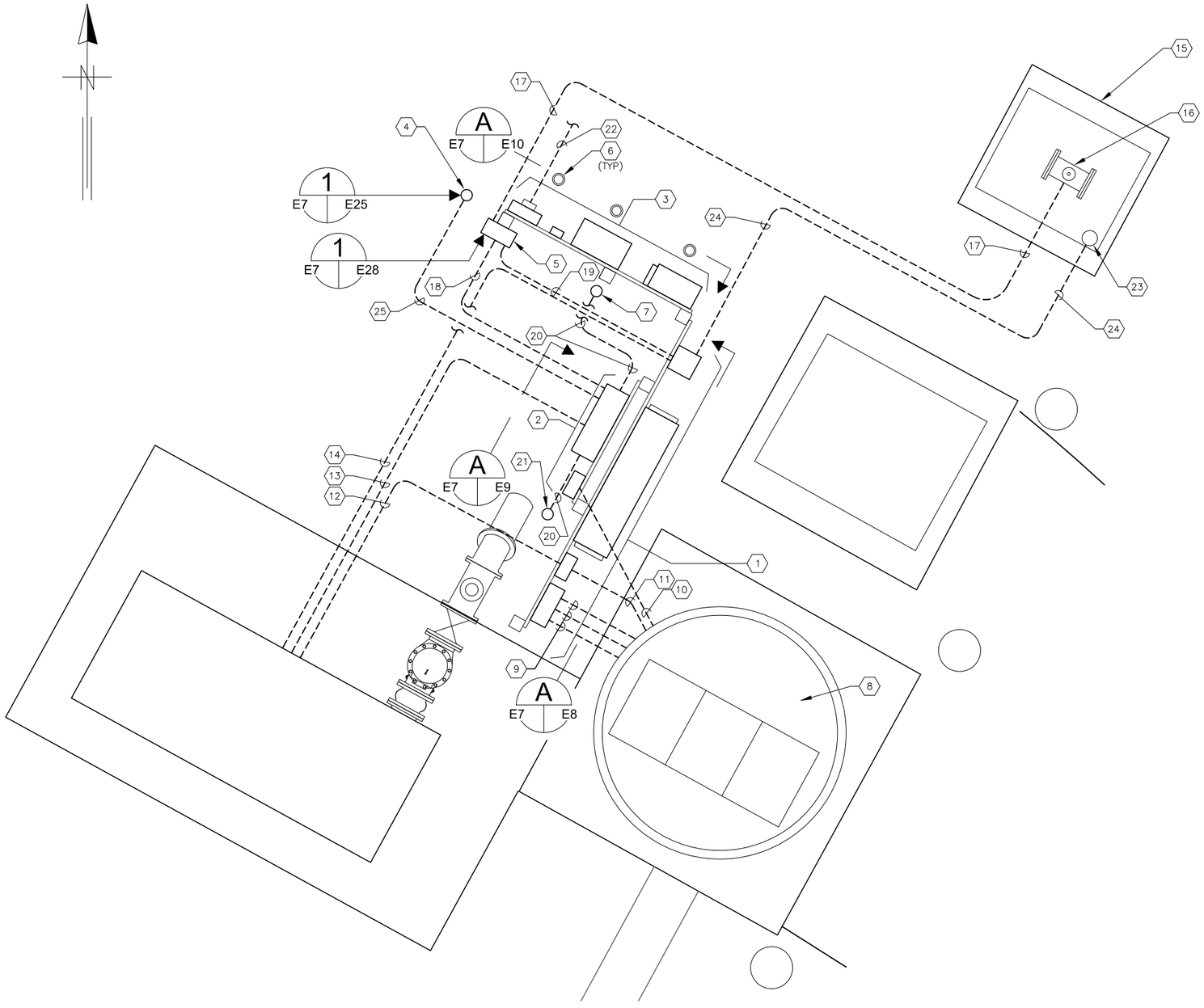
DAVIS ISLAND PUMP STATION REHABILITATION
PROPOSED ELECTRICAL PLAN

W.O. 0000
SHEET
E6



PARTIAL ELECTRICAL PLAN

SCALE: NOT TO SCALE

KEYED NOTES:

1. PROPOSED MINI POWER–ZONE, MOTOR CONTROL PANEL AND ASSOCIATED DEMARCATION BOX. REFER TO ELEVATION ON SHEET E8.
2. PROPOSED PUMP CONTROL PANEL AND ASSOCIATED DEMARCATION BOX. REFER TO ELEVATION ON SHEET E9.
3. PROPOSED ELECTRIC METER, DOUBLE–THROW, FUSED DISCONNECT SWITCH AND GENERATOR DOCKING STATION. REFER TO ELEVATION ON SHEET E10.
4. RELOCATED SCADA ANTENNA/MAST. REFER TO DETAIL ON SHEET E25.
5. PROPOSED REMOTE FLOW TRANSMITTER CABINET. REFER TO ELEVATION OF SHEET E28.
6. PROVIDE AND INSTALL NEW GROUND ROD TEST WELL (TYPICAL OF 3). REFER TO SHEET E27 FOR GROUND TEST WELL DETAIL.
7. PROVIDE AND INSTALL NEW AREA LIGHT (AL), TYPE 'A'. REFER TO SHEET E26 FOR DETAIL.
8. EXISTING WET WELL.
9. PROVIDE AND INSTALL THREE (3) 2" CONDUITS WITH MANUFACTURER SUPPLIED PUMP POWER CABLES TO WET WELL.
10. PROVIDE AND INSTALL 2" CONDUIT WITH MANUFACTURER SUPPLIED FLOAT AND LEVEL SENSOR CABLES TO WET WELL.
11. PROVIDE AND INSTALL 2" CONDUIT WITH MANUFACTURER SUPPLIED HIGH AND LOW FLOAT CABLES (FOR DIESEL BACKUP CONTROL) TO WET WELL.
12. PROVIDE AND INSTALL 3/4"C. WITH 7–#14 + 1– #14 GND BETWEEN DIESEL BACKUP PUMP AND DIESEL BACKUP PUMP DEMARCATION BOX.
13. PROVIDE AND INSTALL 3/4"C. WITH 10–#14 + 2–#12 + 1–#12 GND BETWEEN DIESEL BACKUP PUMP AND PUMP CONTROL PANEL.
14. PROVIDE AND INSTALL 2–#12 + 1–#12 GND BETWEEN DIESEL BACKUP PUMP AND MINI POWER–ZONE 'LP' FOR DIESEL PUMP 120V AC POWER.
15. EXISTING METER VAULT (TO REMAIN NO WORK REQUIRED).
16. EXISTING FLOW METER ELEMENT LOCATED IN EXISTING METER VAULT.
17. PROVIDE NEW FLOW METER ELEMENT SIGNAL CABLES IN 1"C. TO NEW FLOW METER TRANSMITTER CABINET.
18. PROVIDE AND INSTALL NEW FLOW METER TRANSMITTER 4–20mA SIGNAL CABLE (BELDEN 8719) IN 1"C. TO NEW PUMP CONTROL PANEL.
19. PROVIDE AND INSTALL 2–#12 + 1–#12 GND BETWEEN NEW FLOW METER TRANSMITTER CABINET AND MINI POWER–ZONE 'LP'.
20. PROVIDE AND INSTALL 2–#12 + 1–#12 GND BETWEEN NEW AREA LIGHTS AND PUMP CONTROL PANEL (PCP).
21. PROVIDE AND INSTALL NEW AREA LIGHT (AL), TYPE 'B'. REFER TO SHEET E26 FOR DETAIL.
22. PROVIDE AND INSTALL 3–#4/0 XHHW–2 CU + 1–#1/0 XHHW–2 CU NEUTRAL IN 2"C. FROM TECO HANDHOLE TO METER. REFER TO SHEET E6 FOR CONTINUATION.
23. EXISTING SUMP PUMP TO REMAIN (CONTRACTOR TO FIELD VERIFY LOCATION WITHIN METER VAULT).
24. PROVIDE AND INSTALL 2–#12 + 1–#12 GND BETWEEN NEW MINI POWER–ZONE 'LP' AND EXISTING SUMP PUMP.
25. PROVIDE AND INSTALL NEW COAXIAL CABLE IN 1" CONDUIT FROM PUMP CONTROL PANEL TO RELOCATED SCADA ANTENNA/MAST.

GENERAL NOTES:

1. NOT ALL CONDUCTORS AND CONDUIT SHOWN FOR CLARITY. REFER TO SHEETS E8, E9, E10 AND DETAIL SHEETS FOR OTHER REQUIREMENTS.

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CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
PARTIAL ELECTRICAL PLAN

W.O. 0000
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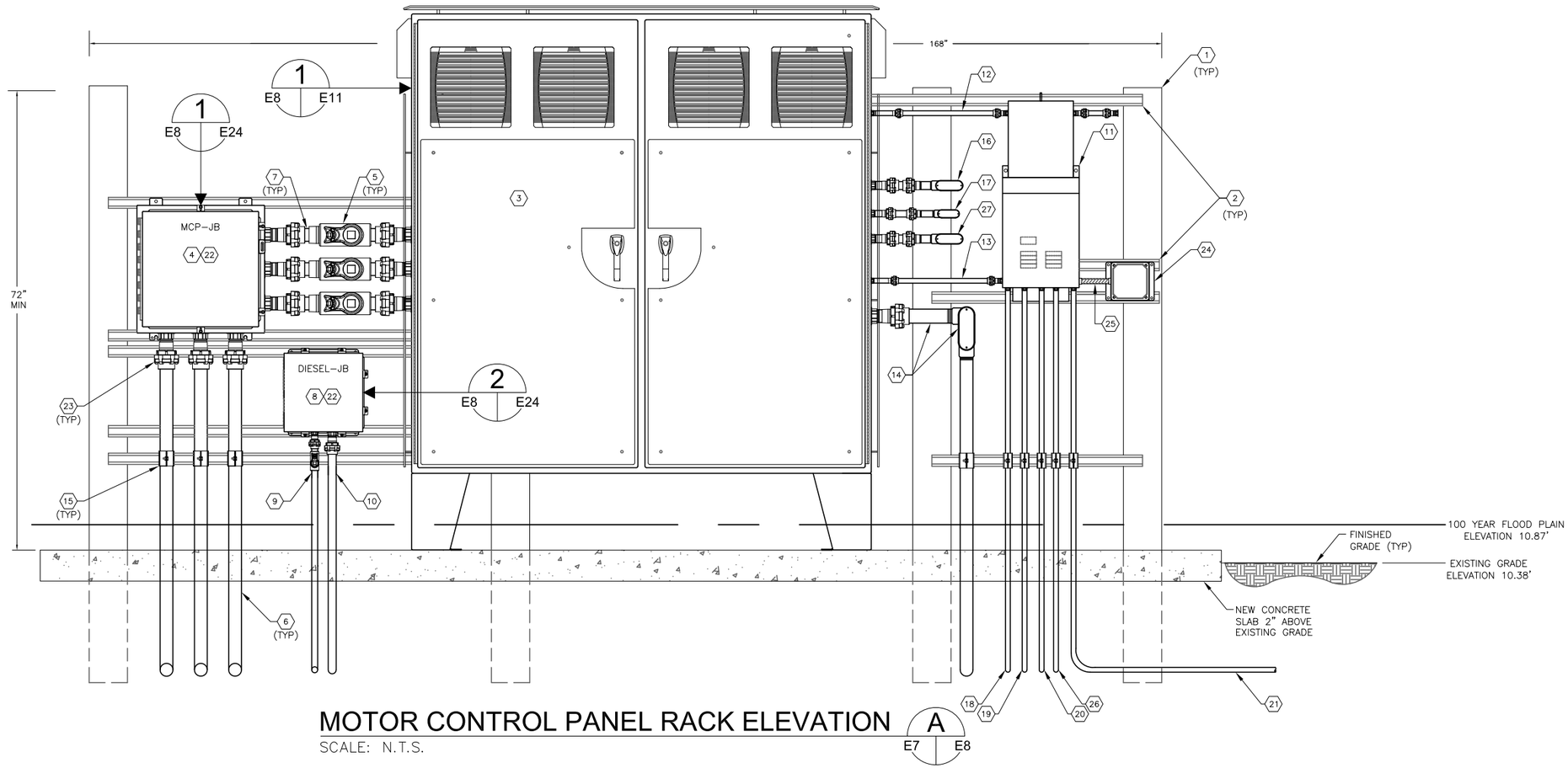
E7



MOTOR CONTROL PANEL RACK ELEVATION A

SCALE: N.T.S.

E7 | E8

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
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813.227.9190
Certificate of Authorization No. 8363

KEYED NOTES:

1. PROVIDE AND INSTALL FOUR (4) 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 MOTOR CONTROL PANEL. REFER TO DETAIL ON SHEET E11.
4. PUMP MOTOR CONNECTIONS J.B.–USED AS A DEMARCATION BOX TO PROVIDE ISOLATION BETWEEN THE WET WELL AND PUMP CONTROLS. PROVIDE AND INSTALL A 20"x20"x6" NEMA 4X, STAINLESS STEEL JUNCTION BOX WITH HINGED DOOR, HAMMOND #1418N4SSD6. 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 POWER DISTRIBUTION BLOCKS. SEE SHEET E24 FOR J.B. DETAILS.
5. PROVIDE AND INSTALL CROUSE-HINDS EYS TYPE SEALS W/CHICO COMPOUNDS.
6. PROVIDE AND INSTALL NEW 2" CONDUITS WITH NEW MANUFACTURER SUPPLIED SUBMERSIBLE PUMP POWER CABLES TO WET WELL. INSTALL PVC COATED RIGID ALUMINUM CONDUIT TO THE WET WELL. CORE DRILL WET WELL AS NEEDED TO INSTALL, PATCH SEAL WITH APPROVED PRODUCT. SEE CIVIL SHEETS FOR PIPE PENETRATION INTO WET WELL DETAIL.
7. PROVIDE AND INSTALL 3-#4 XHHW-2 CU + 1-#6 XHHW-2 CU GND + 2-#12 XHHW-2 CU (LEAK/TEMP) IN 2" CONDUIT FOR SUBMERSIBLE PUMP POWER.
8. DIESEL BACKUP PUMP J.B.–USED AS DEMARCATION BOX TO PROVIDE ISOLATION BETWEEN THE WET WELL AND DIESEL BACKUP 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 E24 FOR JB DETAILS.
9. PROVIDE AND INSTALL 3/4"C. WITH 7-#14 + 1- #14 GND BETWEEN DIESEL BACKUP PUMP AND DIESEL BACKUP PUMP DEMARCATION BOX.
10. PROVIDE AND INSTALL 2" CONDUIT WITH MANUFACTURER SUPPLIED HIGH AND LOW FLOAT CABLES (FOR DIESEL BACKUP CONTROL) TO WET WELL.
11. PROVIDE AND INSTALL 480V-120/240V, 7.5KVA MINI POWER-ZONE 'LP' IN NEMA 3R STAINLESS STEEL ENCLOSURE. SQUARE-D MPZ7S40FSS. REFER TO SHEET E27 FOR PANEL SCHEDULE.
12. PROVIDE AND INSTALL 2-#12 XHHW-2 CU + 1-#12 XHHW-2 CU GND IN 3/4"C. FOR MINI POWER-ZONE 480V FEEDER.
13. PROVIDE AND INSTALL 3-#12 XHHW-2 CU + 1-#12 XHHW-2 CU GND IN 3/4"C. FOR MOTOR CONTROL PANEL 120V POWER CIRCUITS.
14. PROVIDE AND INSTALL 3-#4/0 XHHW-2 CU + 1-#1/0 XHHW-2 CU GND + 1-#4 XHHW-2 CU GND IN 2"C. FROM MOTOR CONTROL PANEL TO DOUBLE-THROW, FUSIBLE DISCONNECT SWITCH FOR MOTOR CONTROL PANEL 480V FEEDER. PROVIDE CONDUIT L.B. AS REQUIRED.
15. PROVIDE AND INSTALL ALUMINUM CONDUIT STRAPS (TYPICAL).
16. PROVIDE AND INSTALL 34-#12 XHHW-2 CU + 1-#12 XHHW-2 CU GND. IN 1-1/4" C. FOR 120VAC CONTROL SIGNALS (COUNT INCLUDED SPARES). REFER TO MCP TO PCP INTERCONNECTIONS WIRING DIAGRAM ON SHEET E20. PROVIDE CONDUIT L.B. AS REQUIRED.
17. PROVIDE AND INSTALL 18-#14 XHHW-2 CU + 1-#14 XHHW-2 CU GND. IN 1" C. FOR 24V DC CONTROL SIGNALS (COUNT INCLUDES SPARES). REFER TO MCP TO PCP INTERCONNECTION WIRING DIAGRAM ON SHEET E20. PROVIDE CONDUIT L.B. AS REQUIRED.
18. PROVIDE AND INSTALL 2-#12 XHHW-2 CU + 1-#12 XHHW-2 CU GND. IN 3/4" CONDUIT FROM MINI POWER-ZONE 'LP' TO PUMP CONTROL PANEL FOR 120V POWER CIRCUIT.
19. PROVIDE AND INSTALL 2-#12 XHHW-2 CU + 1-#12 XHHW-2 CU GND. IN 3/4" CONDUIT FROM MINI POWER-ZONE 'LP' TO DIESEL BACKUP PUMP CONTROLLER FOR SPACE HEATER, BATTERY CHARGER, CONTROL AND LIGHTING 120V POWER CIRCUIT.
20. PROVIDE AND INSTALL 2-#12 XHHW-2 CU + 1-#12 XHHW-2 CU GND. IN 3/4" CONDUIT FROM MINI POWER-ZONE 'LP' TO FLOW METER REMOTE TRANSMITTER CABINET FOR 120V POWER CIRCUIT.
21. PROVIDE AND INSTALL BARE #8 COPPER GROUNDING ELECTRODE CONDUCTOR IN 3/4" CONDUIT FROM MINI POWER-ZONE 'LP' TO GROUND ROD IN GROUND ROD WELL. FOR CONTINUATION, REFER ALSO TO ELECTRICAL SERVICE ENTRANCE RACK ELEVATION ON SHEET E10.
22. PROVIDE DUCT SEALING COMPOUND IN ALL CONDUITS EXTENDING TO THE WET WELL.
23. PROVIDE AND INSTALL WATER-TIGHT / DUST-TIGHT MYERS HUB AND UNION (TYP.).
24. PROVIDE AND INSTALL SURGE PROTECTION DEVICE (SPD) UNIT, 120/240V, 1ø, TYPE 1, ASCO SERIES 400, IN NEMA 4X ENCLOSURE.
25. PROVIDE AND INSTALL 3-#10 THWN + 1-#10 THWN CU NEUTRAL + 1-#10 THWN CU GND IN 3/4" SEAL-TITE CONDUIT TO SPD CIRCUIT BREAKER.
26. PROVIDE AND INSTALL 2-#12 XHHW-2 CU + 1-#12 XHHW-2 CU GND. IN 3/4" CONDUIT FROM MINI POWER-ZONE 'LP' TO EXISTING SUMP PUMP LOCATED IN METER VAULT (SUMP PUMP 120V POWER CIRCUIT).
27. PROVIDE AND INSTALL SIX (6) 2/C-#16 TWISTED-SHIELDED CABLES (BELDEN 8790) IN 1-1/4" C. FOR 4-20Ma SIGNALS. REFER TO MCP TO PCP INTERCONNECTIONS WIRING DIAGRAM ON SHEET E20. PROVIDE CONDUIT L.B. AS REQUIRED.

TIMOTHY THOMAS, P.E. #47079

No.	DATE	REVISIONS
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DES: T.DT.
DRN: J.L.H.
CKD: T.DT.
DATE: 3-27-19

CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
MOTOR CONTROL PANEL RACK ELEVATION

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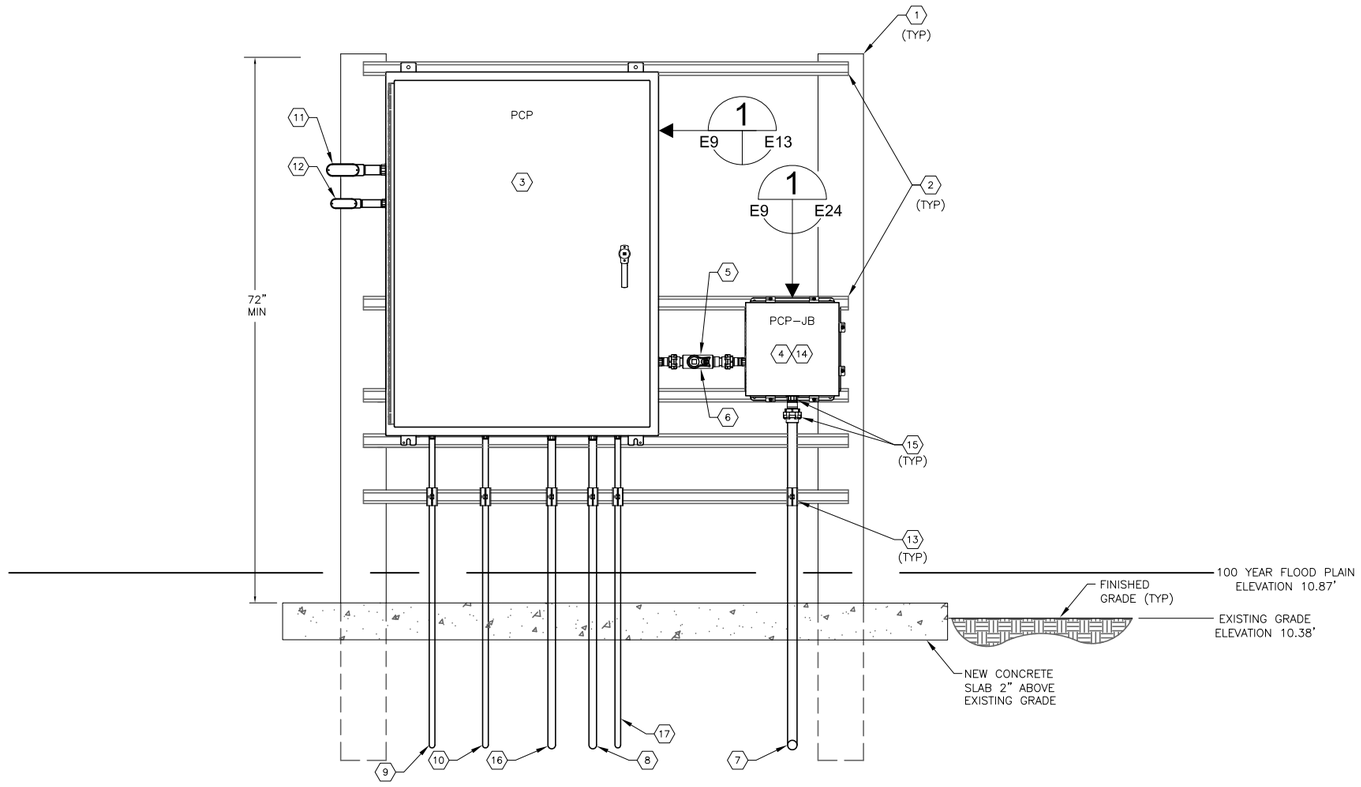

PUMP CONTROL PANEL RACK ELEVATION

SCALE: N.T.S.

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E7 | E9

KEYED NOTES:

1. PROVIDE AND INSTALL TWO (2) 6" X 6" x 9' REINFORCED SQUARE CONCRETE POSTS INSTALLED FOR MOTOR CONTROL PANEL RACK.
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 PUMP CONTROL PANEL. REFER TO DETAIL ON SHEET E13.
4. 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 E24 FOR JB DETAILS.
5. PROVIDE AND INSTALL CROUSE–HINDS EYS TYPE SEALS W/CHICO COMPOUNDS.
6. 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.
7. MANUFACTURER SUPPLIED CABLES FOR FLOAT SWITCH AND WET WELL LEVEL TRANSMITTER INSTALL IN 2" CONDUIT TO WET WELL FROM JUNCTION BOX. INSTALL PVC COATED RIGID ALUMINUM CONDUIT TO THE WET WELL. CORE DRILL WET WELL AS NEEDED TO INSTALL, PATCH SEAL WITH APPROVED PRODUCT. SEE CIVIL SHEETS FOR PIPE PENETRATION INTO WET WELL DETAIL.
8. PROVIDE AND INSTALL 1" CONDUIT FOR ANTENNA COAXIAL CABLE REFER TO SHEET E7 FOR CONTINUATION.
9. PROVIDE AND INSTALL 2–#12 XHHW–2 CU + 1–#12 XHHW–2 CU GND. IN 3/4" CONDUIT FROM PUMP CONTROL PANEL TO AREA LIGHTS FOR 120V POWER CIRCUITS.
10. PROVIDE AND INSTALL 2–#12 XHHW–2 CU + 1–#12 XHHW–2 CU GND. IN 3/4" CONDUIT FROM MINI POWER–ZONE 'LP' TO PUMP CONTROL PANEL FOR 120V POWER CIRCUITS.
11. PROVIDE AND INSTALL 34–#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 E20. PROVIDE CONDUIT L.B. AS REQUIRED.
12. PROVIDE AND INSTALL 18–#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 E20. PROVIDE CONDUIT L.B. AS REQUIRED.
13. PROVIDE AND INSTALL ALUMINUM CONDUIT STRAPS (TYPICAL).
14. PROVIDE DUCT SEALING COMPOUND IN ALL CONDUITS EXTENDING TO THE WET WELL.
15. PROVIDE AND INSTALL WATER–TIGHT / DUST–TIGHT MYERS HUB AND UNION (TYPICAL).
16. PROVIDE AND INSTALL NEW FLOW METER TRANSMITTER 4–20MA SIGNAL CABLE (BELDEN 8719) IN 1"C. TO NEW REMOTE FLOW TRANSMITTER CABINET. REFER TO SHEET E5 FOR CONTINUATION.
17. PROVIDE AND INSTALL 3–#12 XHHW–2 CU + 1–#12 XHHW–2 CU GND. IN 3/4"C. TO PHASE MONITOR JUNCTION BOX ON ELECTRICAL SERVICE ENTRANCE RACK. REFER TO SHEETS E7 AND E10 FOR JUNCTION BOX LOCATION. PROVIDE CONDUIT L.B. AS REQUIRED.

TRICON CONSULTING ENGINEERS
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TIMOTHY THOMAS, P.E. #47079

DES: T.DT.
DRN: J.L.H.
CKD: T.DT.
DATE: 3-27-19

CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
PUMP CONTROL PANEL RACK ELEVATION

W.O. 0000
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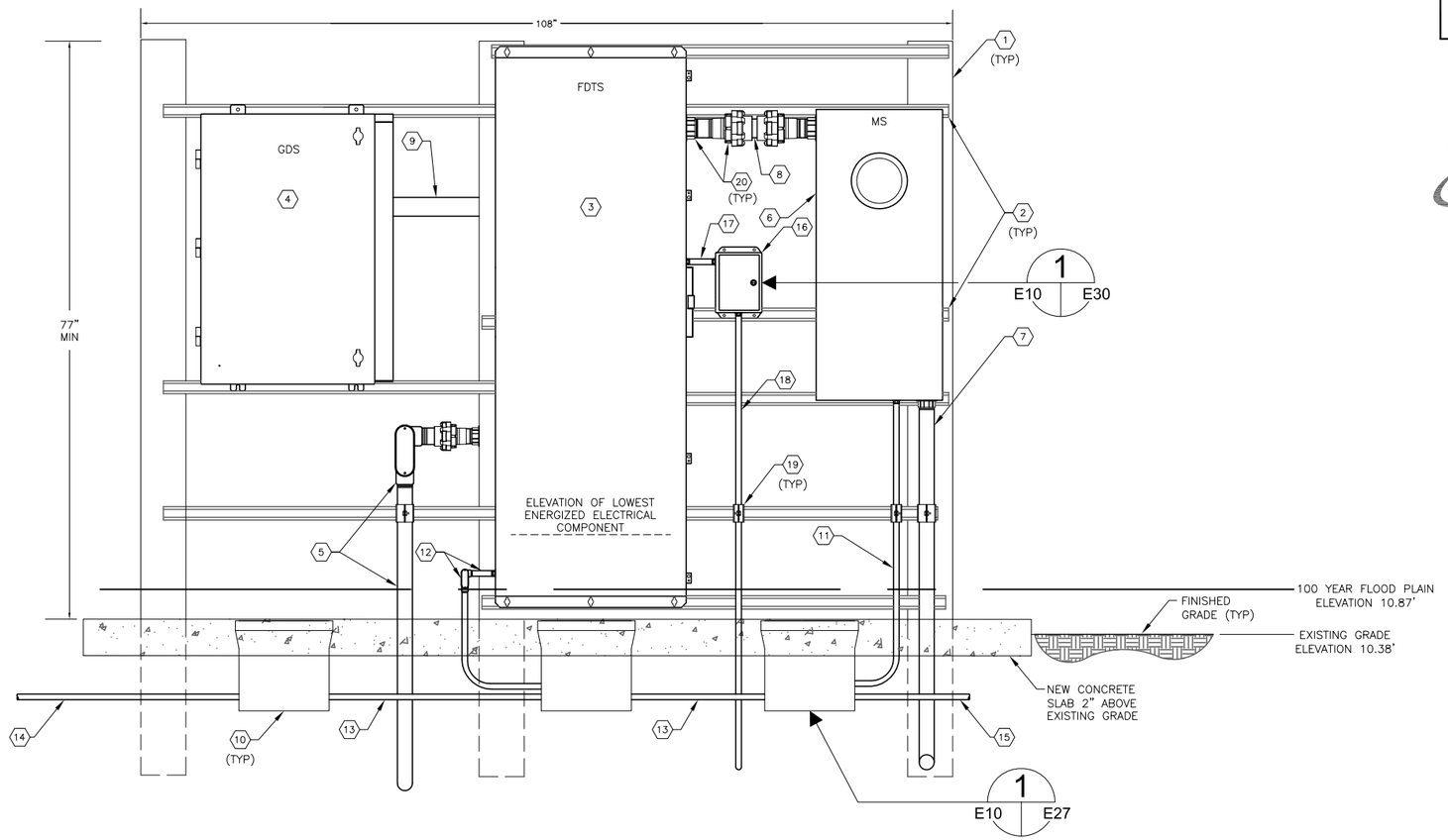

ELECTRICAL SERVICE ENTRANCE RACK ELEVATION

SCALE: N.T.S.

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E7 | E8

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, SERVICE ENTRANCE RATED FUSIBLE SWITCH 'FDTS'. 3–POLE, 600 VAC, 400 AMP IN NEMA 4X TYPE ENCLOSURE PROVIDE 225A, 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 GENERATOR DOCKING STATION 'GDS'. 400A, 277/480V, 3ø, WITH SOLID NEUTRAL, 100% GROUND BUS AND GENERATOR MALE CAMLOCK CONNECTION IN STAINLESS STEEL ENCLOSURE. TRYSTAR GDS045W–LM–GI. SUPPLIER SHALL PROVIDE DOCKING STATION WITH REVERSE SERVICE OF THE NEUTRAL AND GROUND.
5. PROVIDE AND INSTALL 3–#4/0 XHHW–2 CU + 1–#1/0 XHHW–2 CU GND + 1–#4 XHHW–2 CU GND IN 2"C. FROM DOUBLE–THROW, FUSIBLE DISCONNECT SWITCH TO MOTOR CONTROL PANEL FOR MOTOR CONTROL PANEL 480V FEEDER. PROVIDE CONDUIT L.B. AS REQUIRED.
6. PROVIDE AND INSTALL 320 AMPERE (OR AS APPROVED BY TECO) METER SOCKET IN ALUMINUM ENCLOSURE. ELEVATION TO THE CENTER OF THE METER SHALL NOT EXCEED 5'–0" PER TECO STANDARDS. PROVIDE SURGE PROTECTION DEVICE PER TECO STANDARDS.
7. PROVIDE AND INSTALL 3–#4/0 XHHW–2 CU + 1–#1/0 XHHW–2 CU NEUTRAL IN 2"C. FROM TECO HANDHOLE TO METER. REFER TO SHEET E6 FOR CONTINUATION.
8. PROVIDE AND INSTALL 3–#4/0 XHHW–2 CU + 1–#1/0 XHHW–2 CU NEUTRAL IN 2"C. FROM METER TO DOUBLE THROW, SERVICE ENTRANCE RATED FUSIBLE SWITCH 'FDTS'.
9. PROVIDE AND INSTALL 3–#4/0 XHHW–2 CU + 1–#1/0 XHHW–2 CU NEUTRAL + 1–#4 XHHW–2 CU GND IN 2"C. FROM DOUBLE THROW, SERVICE ENTRANCE RATED FUSIBLE SWITCH 'FDTS' TO GENERATOR DOCKING STATION. GENERATOR DOCKING STATION IS REAR ACCESS ONLY. PROVIDE CONDUIT L.B.'S ON BACKSIDE OF BOTH ENCLOSURES TO ROUTE CONDUIT AS REQUIRED.
10. PROVIDE AND INSTALL GROUND ROD TEST WELL, OLDCASTLE PRECAST ENCLOSURE SOLUTIONS #F08 BOX WITH #F08C CAST IRON LID MARKED "GROUND". MINIMUM SPACING BETWEEN GROUND ROD TEST WELLS/GROUND RODS SHALL BE 6'–0". PROVIDE AND INSTALL APPROVED GROUNDING ROD AND ATTACH BARE COPPER GROUND CONDUCTOR (AWG #4 MINIMUM) UTILIZING APPROVED GROUND CLAMPS. REFER TO SHEET E27 FOR GROUND TEST WELL DETAIL.
11. PROVIDE AND INSTALL #4 BARE COPPER GROUNDING ELECTRODE CONDUCTOR IN 3/4" SCHEDULE 80 PVC CONDUIT FROM METER TO GROUND ROD TEST WELL. CONFIRM CONDUCTOR SIZE WITH TECO.
12. PROVIDE AND INSTALL #2 BARE COPPER GROUNDING ELECTRODE CONDUCTOR IN 1" SCHEDULE 80 PVC CONDUIT FROM SERVICE DISCONNECT 'FDTS' TO GROUND ROD TEST WELL. PROVIDE CONDUIT L.B. AS REQUIRED.
13. PROVIDE AND INSTALL #2 BARE COPPER GROUNDING ELECTRODE CONDUCTOR IN 1" SCHEDULE 80 PVC CONDUIT BETWEEN GROUND ROD TEST WELLS.
14. PROVIDE AND INSTALL #8 BARE COPPER GROUNDING ELECTRODE CONDUCTOR IN 3/4" SCHEDULE 80 PVC CONDUIT FROM MINI POWER–ZONE 'LP' TO GROUND ROD TEST WELL. FOR CONTINUATION REFER TO SHEET E6.
15. PROVIDE AND INSTALL #4 BARE COPPER GROUNDING ELECTRODE CONDUCTOR IN 3/4" SCHEDULE 80 PVC CONDUIT FROM ANTENNA POLE TO GROUND ROD TEST WELL. REFER ALSO TO ANTENNA POLE DETAIL ON SHEET E25.
16. PROVIDE AND INSTALL A 3ø, POWER MONITOR RELAY 'PM1' JUNCTION BOX WITH 480 VAC LINE INPUT – ALARM ON PAHSE LOSS, UNDERVOLTAGE, OR WRONG ROTATION. PANEL MOUNT, ATC DIVERSIFIED MODEL SUA–440–ASA, FUSE BOX DISCONNECT (FGBD1) – ALLEN BRADLEY 1492–FB3630–L WITH BUSSMAN KTK–R–2 FUSES IN NEMA 4X STAINLESS STEEL 8" X 6" X 3.5" ENCLOSURE WITH CONTINUOUS HINGE – HAMMOND MANUFACTURING EJ863S16. REFER TO DETAIL ON SHEET E30. PROVIDE AND INSTALL WARNING LABEL. LABEL TO READ: 'WARNING – PHASE MONITOR TO DETERMINE ELECTRIC UTILITY SERVICE AVAILABILITY – 480VAC MAY BE PRESENT REGARDLESS OF POSITION OF MAIN DISCONNECT OPERATOR.'
17. PROVIDE AND INSTALL 3–#12 XHHW–2 CU + 1–#12 XHHW–2 CU GND. IN 3/4"C.
18. PROVIDE AND INSTALL 3–#12 XHHW–2 CU + 1–#12 XHHW–2 CU GND. IN 3/4"C. TO PUMP CONTROL PANEL.
19. PROVIDE AND INSTALL ALUMINUM CONDUIT STRAPS (TYPICAL).
20. PROVIDE AND INSTALL WATER–TIGHT / DUST–TIGHT MYERS HUB AND UNION (TYP.).

No.	DATE	REVISIONS
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TIMOTHY THOMAS, P.E. #47079

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CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL SERVICE ENTRANCE RACK ELEVATION

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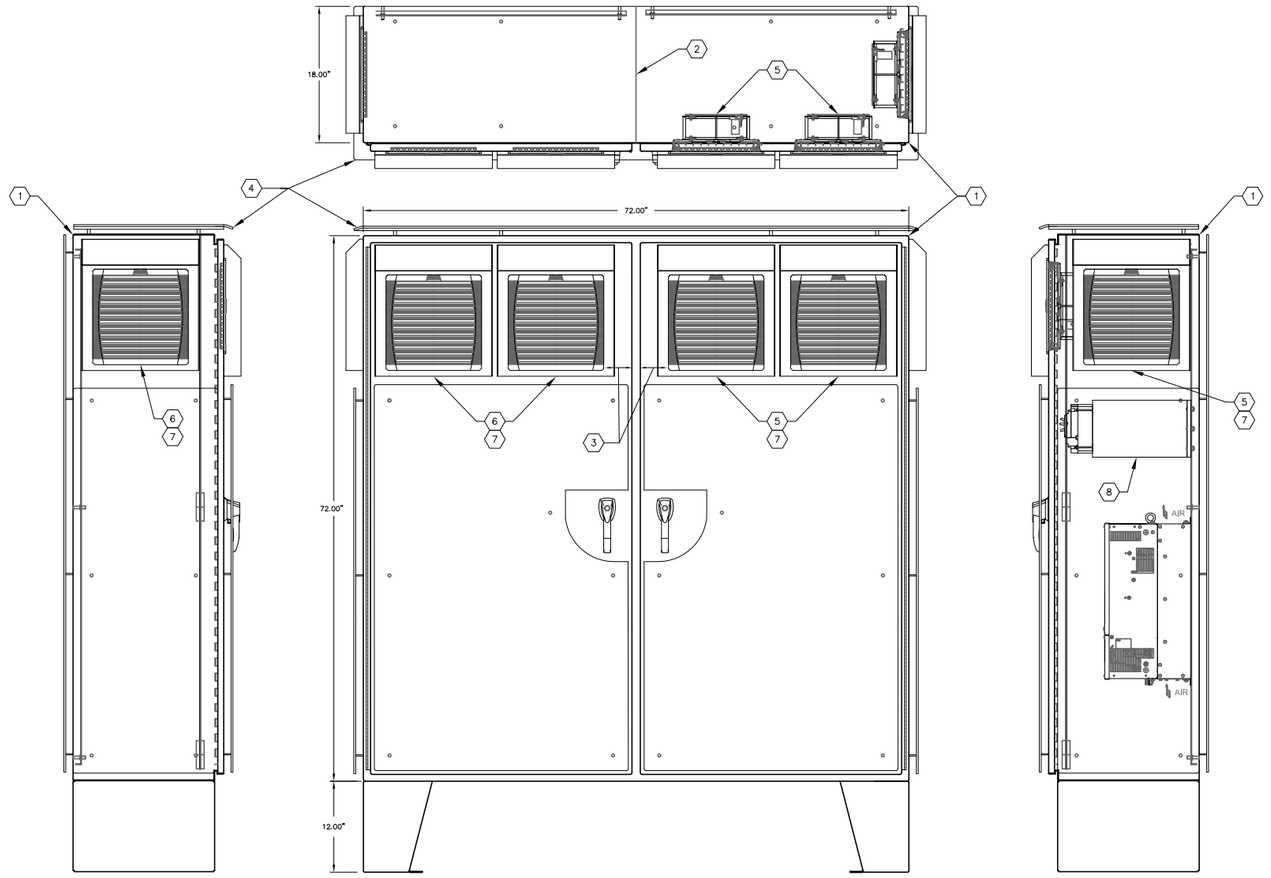

MOTOR CONTROL PANEL EXTERIOR ELEVATIONS

SCALE: N.T.S.

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E8 | E11

KEYED NOTES:

1. MOTOR CONTROL PANEL ENCLOSURE 'MCP', 72"H X 72"W X 18"D, TWO-DOOR, NEMA 4X, 304 STAINLESS STEEL, 3-PT LATCHES, SUN-SHIELDS ON TOP, SIDES, FRONT AND BACK. POWDER COAT WHITE.
2. PROVIDE AND INSTALL WELDED CABINET DIVIDER TO CIRCUMVENT AIR FLOW SHORT CIRCUITING. REFER ALSO TO SHEET E12.
3. INSURE A MINIMUM CLEARANCE OF 4.00" FROM EDGE OF DOOR TO EXHAUST CUT-OUT TO AVOID CONFLICT WITH DOOR LATCH MECHANISM
4. INSURE SUN-SHIELD INSTALLED ON TOP OF ENCLOSURE HAS FULL DRIP SHIELD FOR FRONT OF ENCLOSURE.
5. PROVIDE AND INSTALL VFD FAN, UL TYPE 12, 368 CFM, 115V, 50/60 HZ. PFANNENBERG PART NUMBER PF-11667154055.
6. PROVIDE AND INSTALL EXHAUST FILTER AND FILTER MEDIA. PFANNENBERG PART NUMBER PFA-11760004055.
7. PROVIDE AND INSTALL 304 STAINLESS STEEL WASHDOWN RAINHOOD. PFANNENBERG MODEL PF-RH-60000-WD-SS.
8. PROVIDE AND INSTALL STAND-OFF BRACKETS AS REQUIRED TO EXTEND CIRCUIT BREAKERS TO INNER DOOR.

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MOTOR CONTROL PANEL EXTERIOR ELEVATIONS

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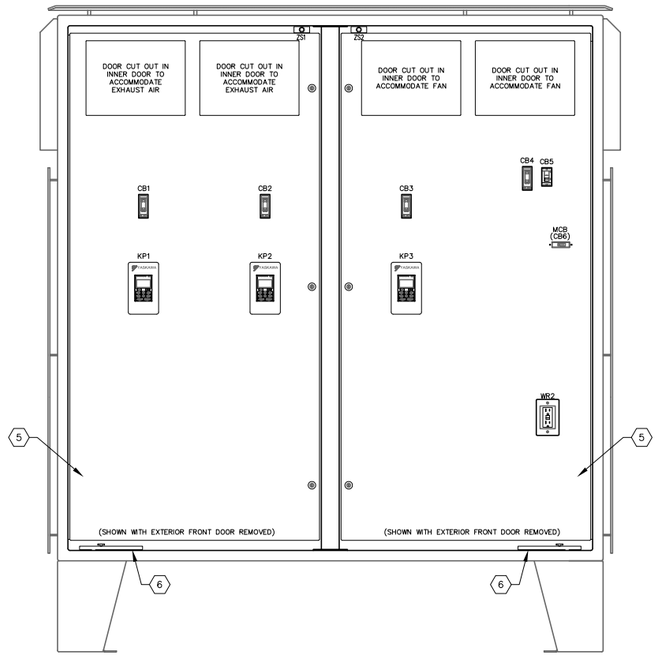
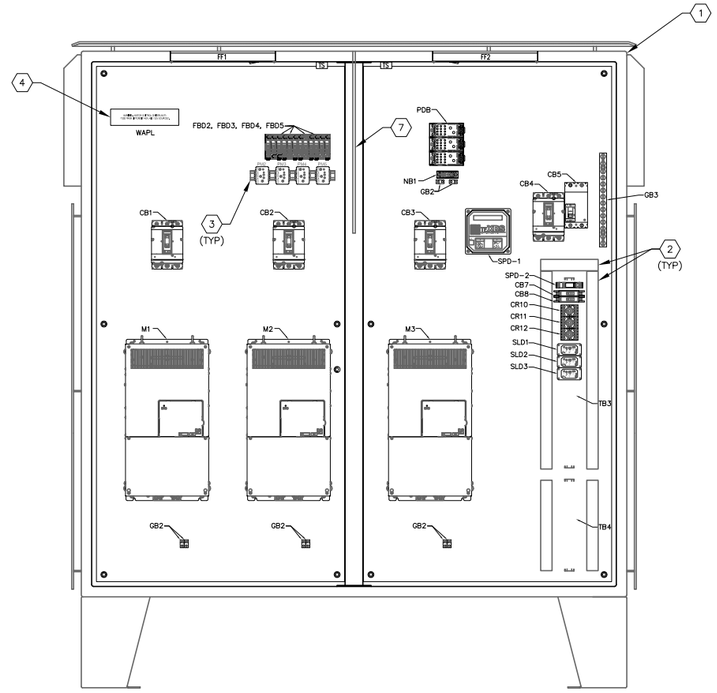


MOTOR CONTROL PANEL INTERIOR DOOR ELEVATION

SCALE: N.T.S.



MOTOR CONTROL PANEL INTERIOR ELEVATION

SCALE: N.T.S.

KEYED NOTES:

1. MOTOR CONTROL PANEL 'MCP'. 72" X 72 X 18" NEMA 4X SS, POWDER COAT WHITE.
2. PROVIDE AND INSTALL PANDUIT WIRING DUCT. SIZE AS REQUIRED.
3. PROVIDE AND INSTALL ALUMINUM DIN RAIL WHERE REQUIRED.
4. PROVIDE AND INSTALL WARNING LABEL. LABEL TO READ: 'WARNING – MOTOR CONTROL CENTER FEED FROM DIFFERENT 480V AND 120V SOURCES'.
5. PROVIDE AND INSTALL ALUMINUM DEADFRONT DOOR.
6. PROVIDE AND INSTALL DOOR STOP KIT.
7. PROVIDE AND INSTALL 24" LONG WELDED CABINET DIVIDER TO CIRCUMVENT FAN AIR FLOW SHORT CIRCUITING.

GENERAL NOTES:

1. ALL HINGED SURFACES SHALL BE GROUNDED WITH A #12 COPPER BOND CONDUCTOR (WITH GREEN INSULATION) SECURED TO THE ENCLOSURE OR BACKPANEL. THIS SHALL INCLUDE THE OUTER DOOR AND INNER DOOR.

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	PUMP NO. 3 CIRCUIT BREAKER
CB4	CIRCUIT BREAKER	FUTURE ODOR CONTROL
CB5	CIRCUIT BREAKER	MINI POWER-ZONE 'LP' 480V FEEDER
KP1	VFD NO. 1 REMOTE KEYPAD	VFD NO. 1
KP2	VFD NO. 2 REMOTE KEYPAD	VFD NO. 2
KP3	VFD NO. 3 REMOTE KEYPAD	VFD NO. 3
MCB	MOTOR CONTROL PANEL CONTROL POWER MAIN CIRCUIT BREAKER	120V AC CONTROL POWER MAIN CIRCUIT BREAKER (CB6)
WAPL	WARNIING PLACARD	REFER TO NOTE 4 FOR VERBIAGE

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MOTOR CONTROL PANEL INTERIOR ELEVATIONS

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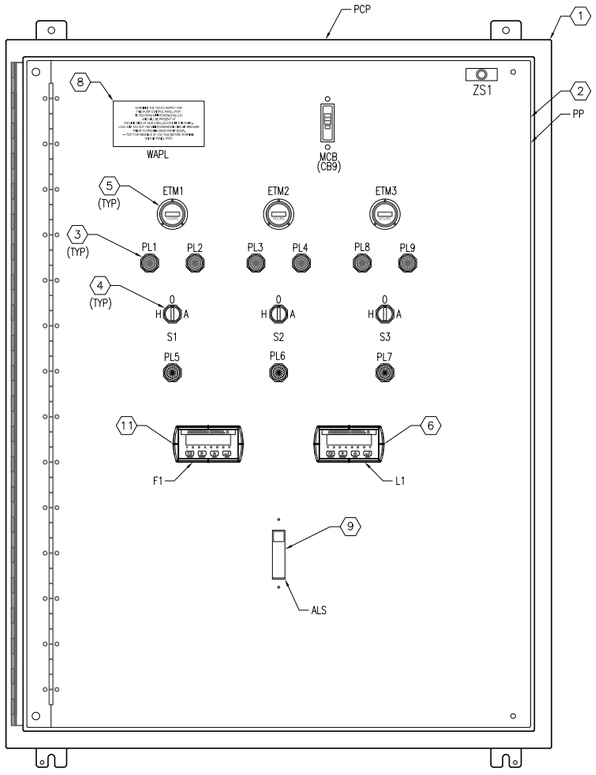

PUMP CONTROL PANEL INTERIOR DOOR ELEVATION

SCALE: N.T.S.

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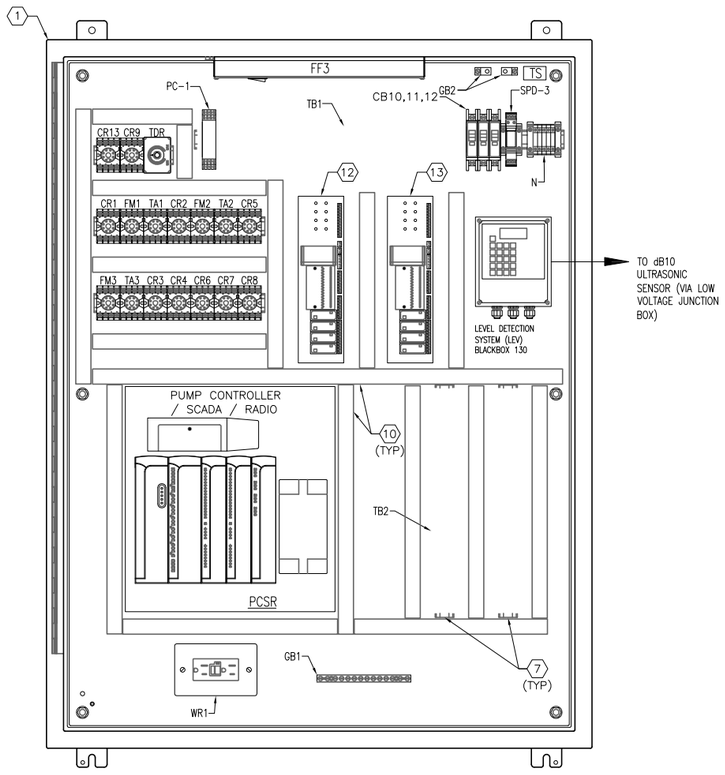
E9 E13

NOTE: FRONT ENCLOSURE DOOR NOT SHOWN FOR CLARITY



PUMP CONTROL PANEL INTERIOR ELEVATION

SCALE: N.T.S.

LEGEND PLATE SCHEDULE

SYMBOL	DEVICE	LEGEND
ETM1	ELAPSED TIME METER	PUMP NO. 1 HOURS
ETM2	ELAPSED TIME METER	PUMP NO. 2 HOURS
ETM3	ELAPSED TIME METER	PUMP NO. 3 HOURS
PL1	YELLOW PILOT LIGHT	PUMP NO. 1 ON
PL2	RED ILLUMINATED PUSH BUTTON	PUMP NO. 1 TEMP. ALARM
PL3	YELOW PILOT LIGHT	PUMP NO. 2 ON
PL4	RED ILLUMINATED PUSH BUTTON	PUMP NO. 2 TEMP. ALARM
PL5	RED PILOT LIGHT	PUMP NO. 1 SEAL LEAK ALARM
PL6	RED PILOT LIGHT	PUMP NO. 2 SEAL LEAK ALARM
PL7	RED PILOT LIGHT	PUMP NO. 3 SEAL LEAK ALARM
PL8	YELLOW PILOT LIGHT	PUMP NO. 3 ON
PL9	RED ILLUMINATED PUSH BUTTON	PUMP NO. 3 TEMP. ALARM
S1	3 POSITION SWITCH	PUMP NO. 1 HAND–OFF–AUTO
S2	3 POSITION SWITCH	PUMP NO. 2 HAND–OFF–AUTO
S3	3 POSITION SWITCH	PUMP NO. 3 HAND–OFF–AUTO
MCB	PUMP CONTROL PANEL MAIN CIRCUIT BREAKER	MAIN CIRCUIT BREAKER (CB9)
L1	DIGITAL PROCESS METER	WET WELL LEVEL
F1	DIGITAL PROCESS METER	FLOW METER
WAPL	WARNIING PLACARD	REFER TO NOTE 8 FOR VERBIAGE

KEYED NOTES:

1. PUMP CONTROL PANEL. 48" 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 E22.
4. PROVIDE AND INSTALL NEW SELECTOR SWITCH. REFER ALSO TO PARTS SCHEDULE ON SHEET E22.
5. PROVIDE AND INSTALL NEW ELAPSED TIME METER. REFER ALSO TO PARTS SCHEDULE ON SHEET E22.
6. PROVIDE AND INSTALL PRECISION DIGITAL PROCESS METER, MODEL PD765–6X3–00 WITH 4–20mA OUTPUT (WET WELL LEVEL). REFER ALSO TO PARTS SCHEDULE ON SHEET E23.
7. PROVIDE AND INSTALL ALUMINUM DIN RAIL WHERE REQUIRED.
8. PROVIDE IN INSTALL WARNING PLACARD WHICH STATES: "WARNING: THE 120VAC SUPPLY FOR THIS PUMP CONTROL PANEL (PCP) IS FED FROM MINI POWER–ZONE 'LP' AND WILL BE PRESENT AT THE LINE SIDE OF MCB (CB9) LOCATED IN THIS PANEL. LOCK AND TAG OUT THE MINI POWER–ZONE CIRCUIT BREAKER PRIOR TO OPENING DEAD FRONT DOOR–– TEST FOR ABSENCE OF VOLTAGE, BEFORE WORKING ON THIS PANEL (PCP)."
9. PROVIDE AND INSTALL NEW SINGLE–POLE 120/277V, 20A LIGHT SWITCH TO CONTROL AREA LIGHTS. REFER ALSO TO PARTS SCHEDULE ON SHEET E23.
10. PROVIDE AND INSTALL PANDUIT WIRING DUCT. SIZE AS REQUIRED.
11. PROVIDE AND INSTALL PRECISION DIGITAL PROCESS METER, MODEL PD765–6X3–00 WITH 4–20mA OUTPUT (FLOW METER). REFER ALSO TO PARTS SCHEDULE ON SHEET E23.
12. PROVIDE AND INSTALL MIXED I/O AUXILLARY INTERFACE #1. WILKERSON BOARD PART #SIB V245/V453. REFER ALSO TO PARTS SCHEDULE ON SHEET E23.
13. PROVIDE AND INSTALL MIXED I/O AUXILLARY INTERFACE #2. WILKERSON BOARD PART #SIB V245/V453. REFER ALSO TO PARTS SCHEDULE ON SHEET E23.

GENERAL NOTES:

1. ALL HINGED SURFACES SHALL BE GROUNDED WITH A #12 COPPER BOND CONDUCTOR (WITH GREEN INSULATION) SECURED TO THE ENCLOSURE OR BACKPANEL. THIS SHALL INCLUDE THE OUTER DOOR AND INNER DOOR.

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TIMOTHY THOMAS, P.E. #47079

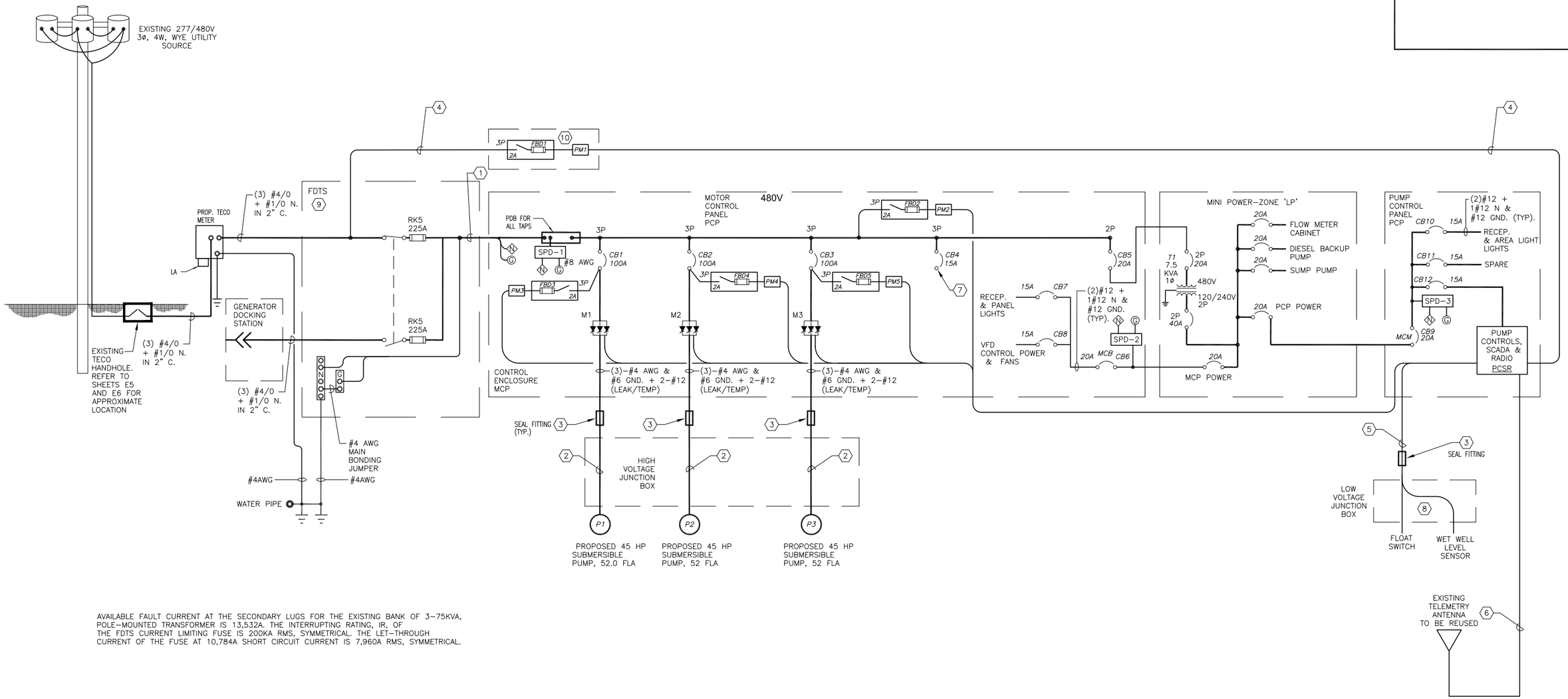
DES: T.DT.
DRN: J.L.H.
CKD: T.DT.
DATE: 3-27-19

CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
PUMP CONTROL PANEL 'PCP' DETAILS

W.O. 0000

SHEET
E13



AVAILABLE FAULT CURRENT AT THE SECONDARY LUGS FOR THE EXISTING BANK OF 3-75KVA, POLE-MOUNTED TRANSFORMER IS 13,532A. THE INTERRUPTING RATING, IR, OF THE FDTS CURRENT LIMITING FUSE IS 200KA RMS, SYMMETRICAL. THE LET-THROUGH CURRENT OF THE FUSE AT 10,784A SHORT CIRCUIT CURRENT IS 7,960A RMS, SYMMETRICAL.

ONE LINE DIAGRAM NOTES:

1. PROVIDE AND INSTALL 3-#4/0 + 1-#1/0 NEUTRAL + 1-#4 GND IN 2"C. CONDUIT, REFER TO DETAILS ON SHEET E8.
2. NEW SUBMERSIBLE PUMP POWER CABLE IN NEW 2" CONDUIT.
3. PROVIDE SEAL FITTING, REFER TO DETAIL ON SHEET E8.
4. PROVIDE AND INSTALL 3-#12 + 1-#12 IN 3/4"C. REFER TO DETAILS ON SHEETS E10 AND E30.
5. PROVIDE NEW 2" CONDUIT FROM NEW PUMP CONTROL PANEL TO WET WELL FOR FLOAT SWITCH AND LEVEL SENSOR CABLES. REFER TO DETAILS ON SHEET E9.
6. PROVIDE NEW 1" CONDUIT FROM NEW PUMP CONTROL PANEL TO NEW ANTENNA MAST FOR NEW COAX CABLE, REFER TO DETAIL ON SHEET E25.
7. SPARE CIRCUIT BREAKER FOR FUTURE ODOR CONTROL UNIT.
8. SEE CONNECTION DETAILS ON SHEET E24.
9. SERVICE ENTRANCE RATED, FUSED DOUBLE THROW SWITCH.
10. PM1 JUNCTION BOX, SEE SHEETS E10 AND E30 FOR DETAILS.

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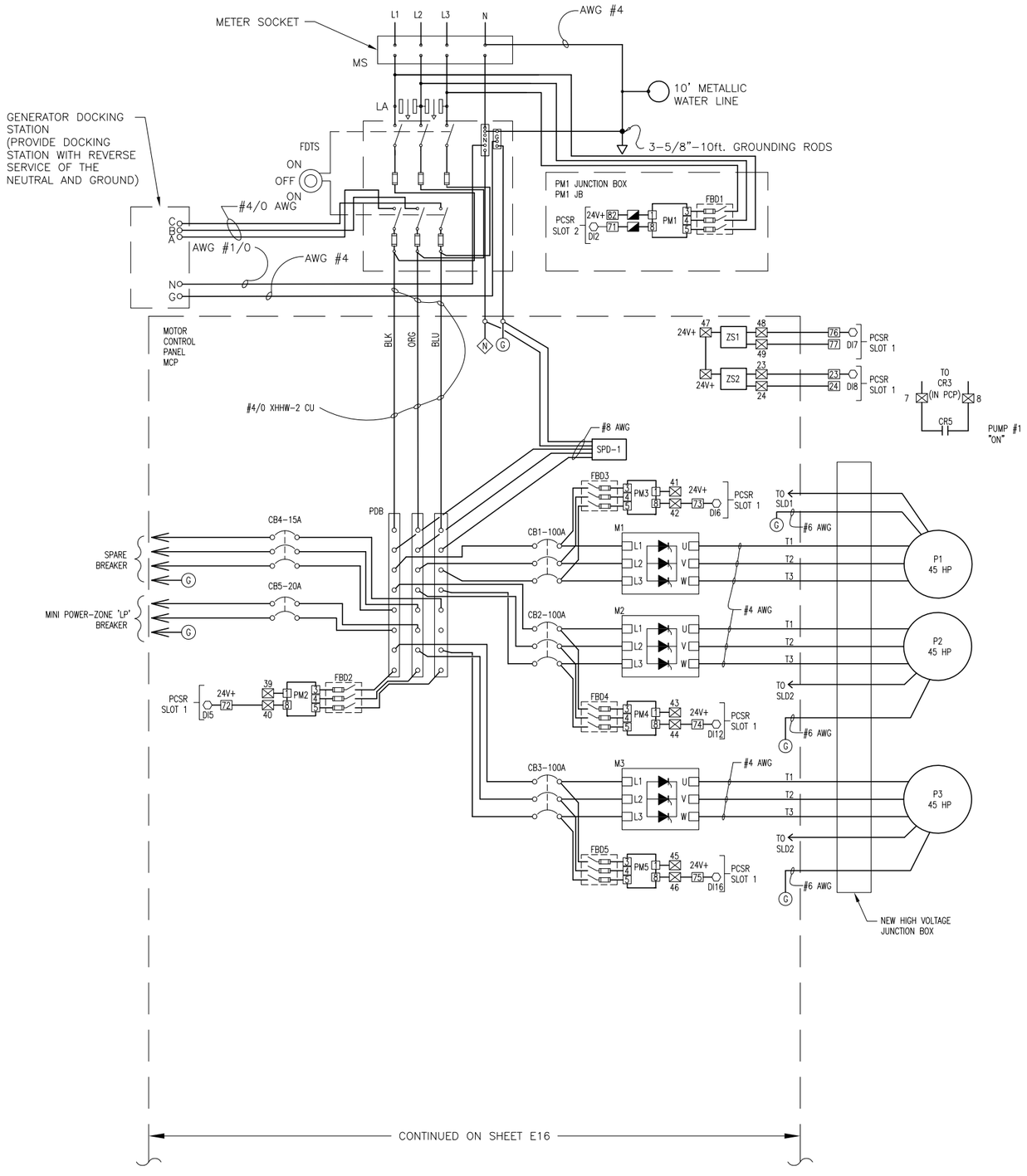
DAVIS ISLAND PUMP STATION REHABILITATION
ONE LINE DIAGRAM

W.O. 0000
SHEET
E14



⬡ 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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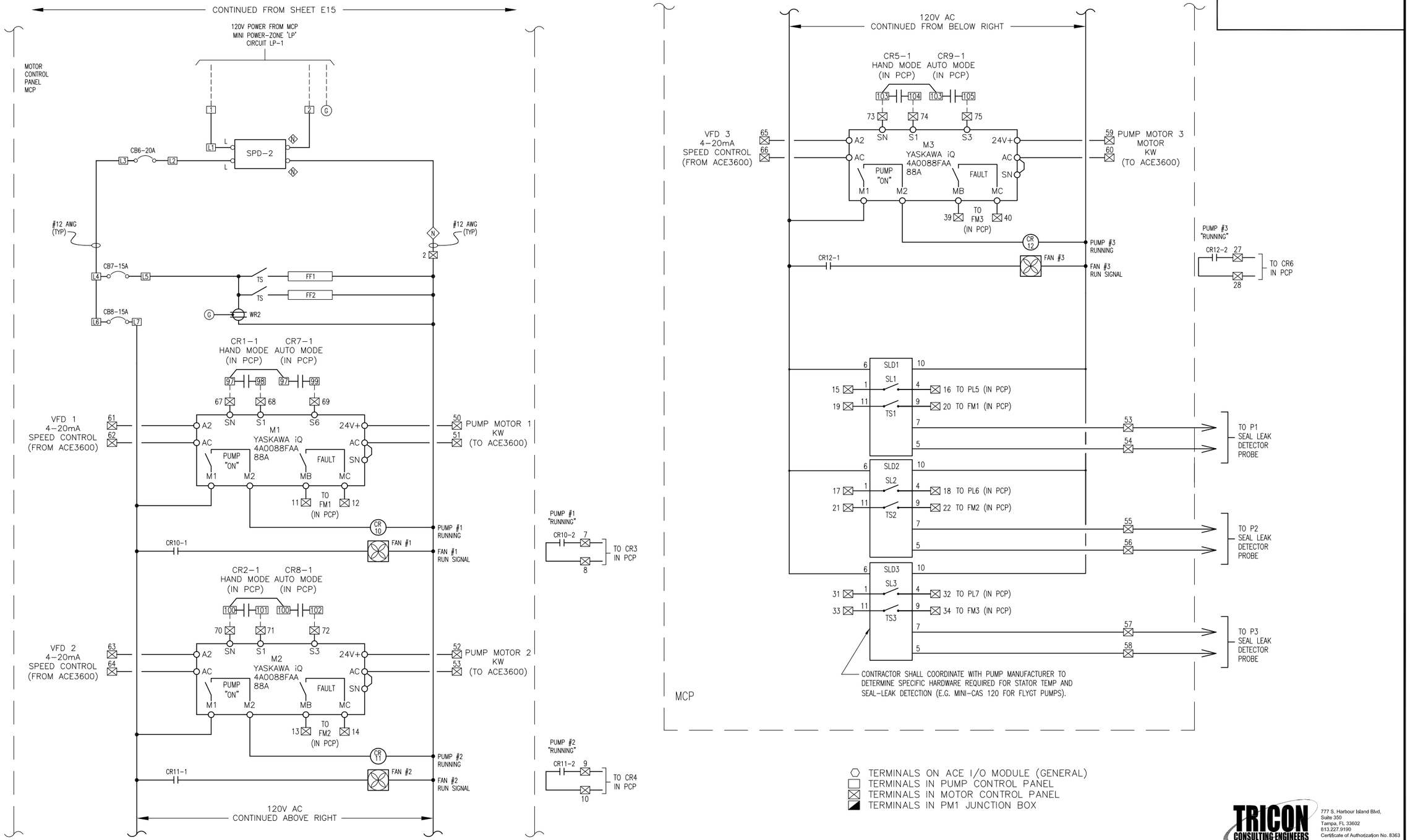
DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL SCHEMATIC (1 OF 5)
MOTOR CONTROL PANEL

W.O. 0000
SHEET E15



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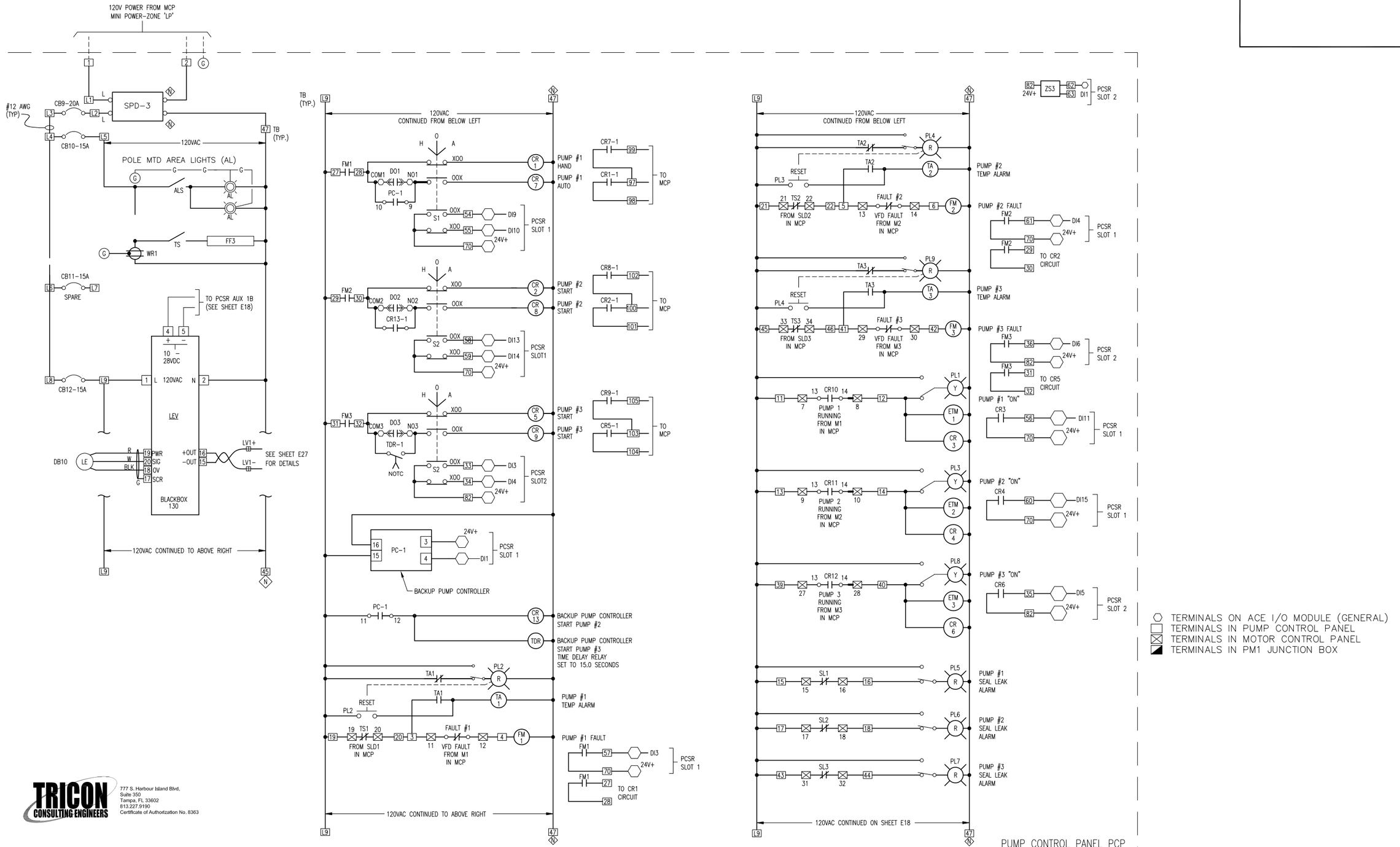
DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL SCHEMATIC (2 OF 5)
MOTOR CONTROL PANEL

W.O. 0000
SHEET E16



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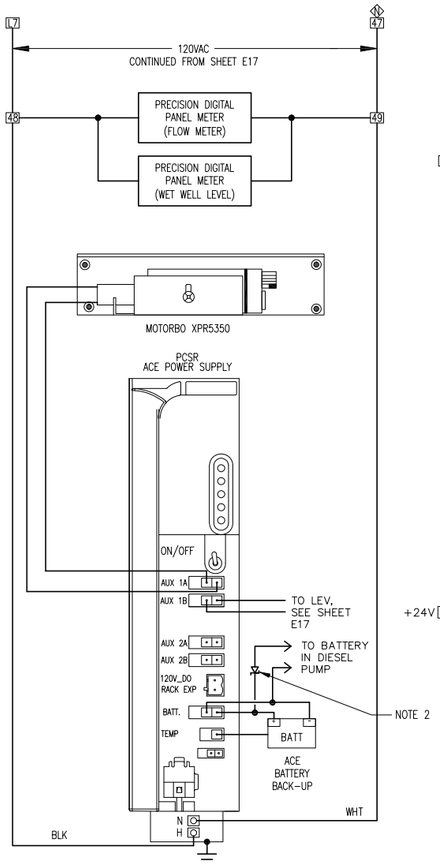
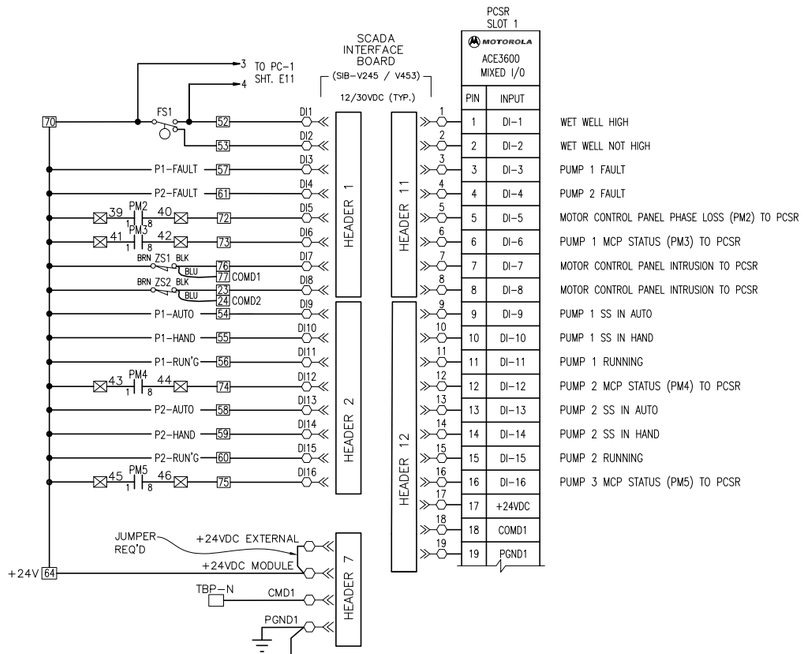
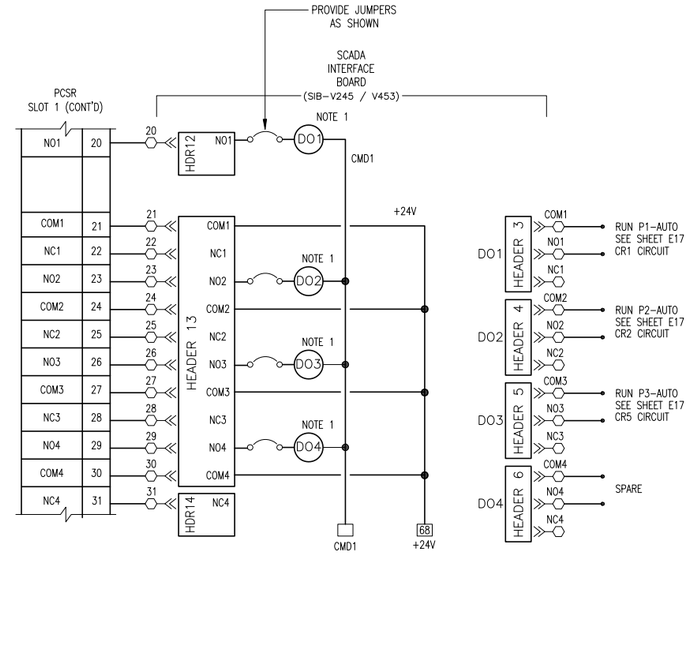
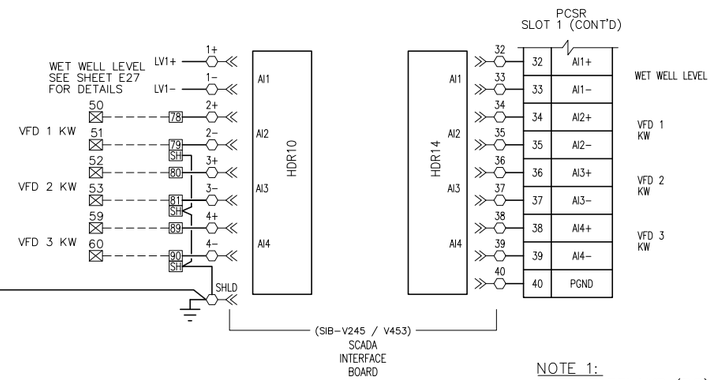
DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL SCHEMATIC (3 OF 5)
PUMP CONTROL PANEL

W.O. 0000
SHEET
E17









NOTE 1:
OUTPUT RELAYS (DO) ARE INTEGRAL TO THE WILKERSON MIXED I/O AUXILIARY INTERFACE BOARD

NOTE 2:
PROVIDE AND INSTALL 5 AMP SCHOTTKY DIODE

⬡ 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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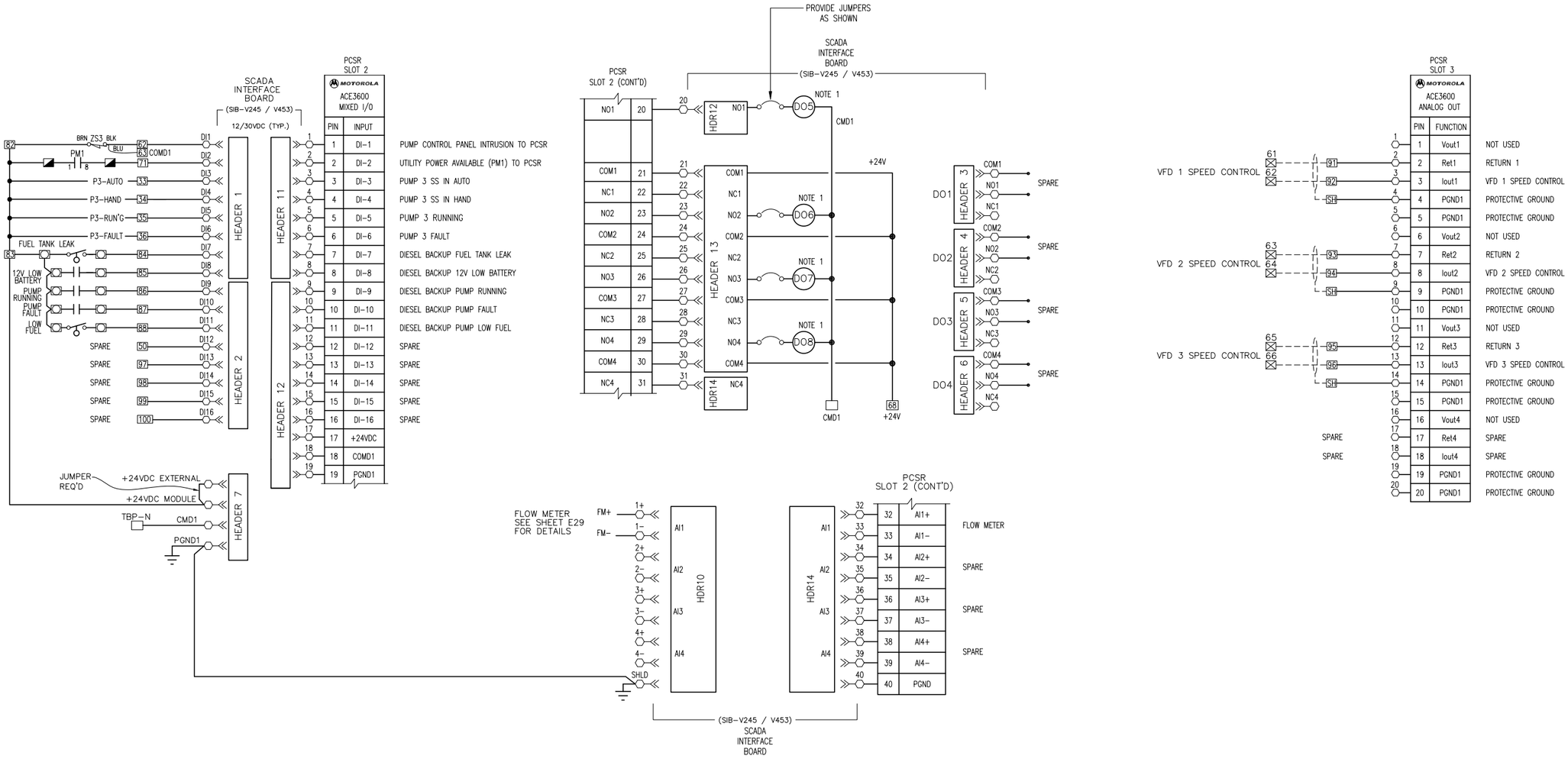
DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL SCHEMATIC (4 OF 5)
PUMP CONTROL PANEL

W.O. 0000
SHEET
E18



NOTE 1:

OUTPUT RELAYS (DO) ARE INTEGRAL TO THE WILKERSON MIXED I/O AUXILIARY INTERFACE BOARD

- ⬡ TERMINALS ON ACE I/O MODULE (GENERAL)
- ☐ TERMINALS IN PUMP CONTROL PANEL
- ☒ TERMINALS IN MOTOR CONTROL PANEL
- ◪ TERMINALS IN PM1 JUNCTION BOX
- ◯ TERMINALS IN DIESEL BACKUP PUMP CONTROLLER

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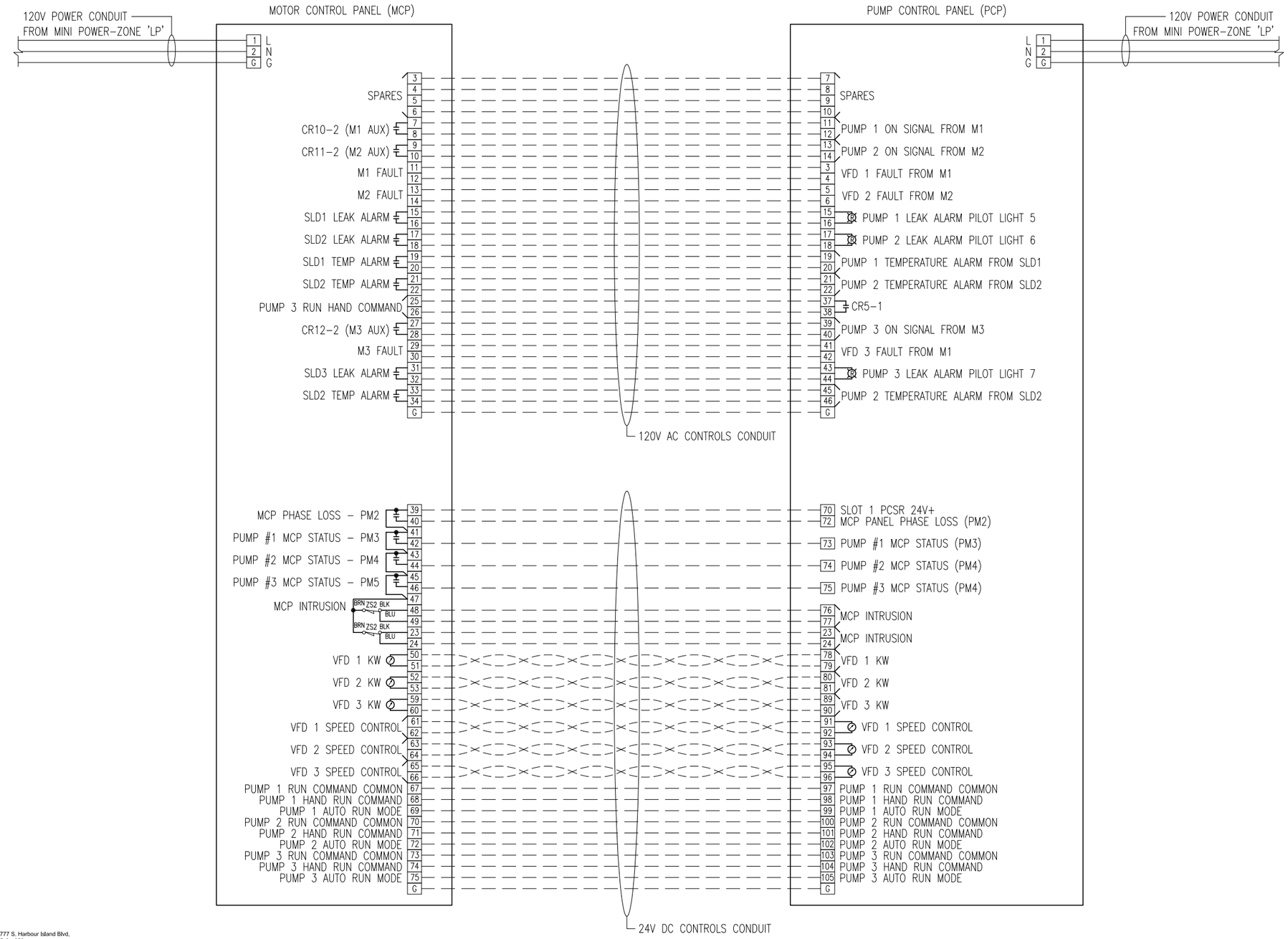
DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL SCHEMATIC (5 OF 5)
PUMP CONTROL PANEL

W.O. 0000
SHEET
E19



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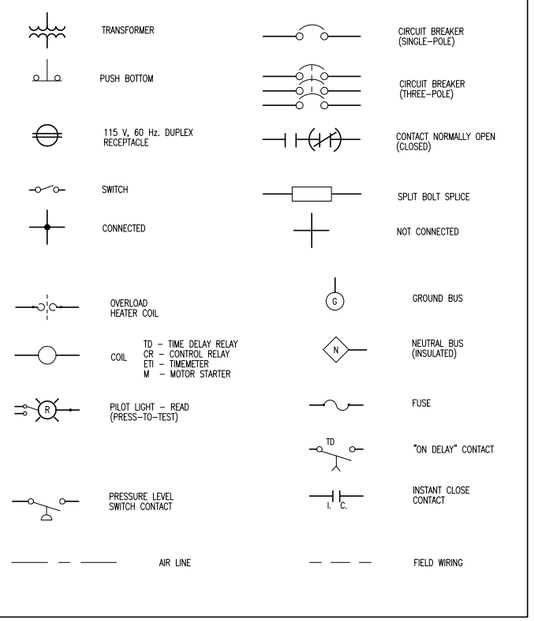
DAVIS ISLAND PUMP STATION REHABILITATION
MCP TO PCP INTERCONNECTION WIRING DIAGRAM

W.O. 0000
SHEET
E20

CONTROL SCHEMATIC SYMBOLS



TB1 (▭) (120V AC) MOUNTED ON PUMP CONTROL PANEL (PCP)

TERM.	DESCRIPTION
1	120V FROM MOTOR CONTROL PANEL
2	NEUTRAL FROM MOTOR CONTROL PANEL
3	VFD NO. 1 FAULT
4	VFD NO. 1 FAULT
5	VFD NO. 2 FAULT
6	VFD NO. 2 FAULT
7–10	SPARES
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	MOTOR CONTROL PANEL INTRUSION – ZS2
24	
25–26	SPARE
51	SPARE
27	PUMP 1 FAULT RELAY CONTACT
28	PUMP 1 FAULT RELAY CONTACT
29	PUMP 2 FAULT RELAY CONTACT
30	PUMP 2 FAULT RELAY CONTACT
31	PUMP 3 FAULT RELAY CONTACT
32	PUMP 3 FAULT RELAY CONTACT
33	PUMP 3 "AUTO" TO PCSR
34	PUMP 3 "HAND" TO PCSR
35	PUMP 3 "ON" TO PCSR
36	PUMP 3 "FAULT" TO PCSR
37	PUMP 3 START COMMAND TO M1 (IN MCP)
38	PUMP 3 START COMMAND TO M1 (IN MCP)
39	P3 "ON" SIGNAL FROM M2 (IN MCP)
40	P3 "ON" SIGNAL FROM M2 (IN MCP)
41	VFD NO. 3 FAULT
42	VFD NO. 3 FAULT
43	PUMP 3 LEAK ALARM FROM MCP
44	PUMP 3 LEAK ALARM FROM MCP
45	PUMP 3 TEMPERATURE ALARM FROM MCP
46	PUMP 3 TEMPERATURE ALARM FROM MCP
47	SPD-3 NEUTRAL OUT
48	FLOW AND LEVEL PRECISION DIGITAL LINE
49	FLOW AND LEVEL PRECISION DIGITAL NEUTRAL
50–51	SPARES
L1	SPD-3 LINE
L2	CB9 (MCB) LINE
L3	CB9 (MCB) LOAD
L4	CB10 LINE
L5	CB10 LOAD
L6	CB11 LINE
L7	CB11 LOAD
L8	CB12 LINE
L9	CB12 LOAD

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 – ZS3
63	
64	PUMP 3 "FAULT" TO PCSR
65	PUMP 3 "AUTO" TO PCSR
66	PUMP 3 "HAND" TO PCSR
67	PUMP 3 "ON" TO PCSR
68	SPARE
69	SPARE
70	SLOT 1 PCSR 24V+
71	UTIL. POWER AVAILABLE (PM1) TO PCSR
72	MOTOR CONTROL PANEL PHASE LOSS (PM2) TO PCSR
73	PUMP #1 MCP STATUS (PM3) TO PCSR
74	PUMP #2 MCP STATUS (PM3) TO PCSR
75	PUMP #3 MCP STATUS (PM4) TO PCSR
76	MOTOR CONTROL PANEL INTRUSION – ZS1
77	
78	VFD 1 KW +
79	VFD 1 KW –
80	VFD 2 KW +
81	VFD 2 KW –
82	SLOT 2 PCSR 24V+
83	SLOT 2 PCSR 24V+ TO DIESEL BACKUP PUMP
84	DIESEL BACKUP PUMP FUEL LEAK
85	DIESEL BACKUP PUMP 12V LOW BATTERY
86	DIESEL BACKUP PUMP RUNNING
87	DIESEL BACKUP PUMP FAULT
88	DIESEL BACKUP PUMP LOW FUEL
89	VFD 3 KW +
90	VFD 3 KW –
91	VFD 1 SPEED CONTROL +
92	VFD 1 SPEED CONTROL –
93	VFD 2 SPEED CONTROL +
94	VFD 2 SPEED CONTROL –
95	VFD 3 SPEED CONTROL +
96	VFD 3 SPEED CONTROL –
97	PUMP 1 RUN COMMAND COMMON (TO MCP)
98	PUMP 1 HAND RUN COMMAND TO M1 (IN MCP)
99	PUMP 1 AUTO RUN COMMAND TO M2 (IN MCP)
100	PUMP 2 RUN COMMAND COMMON (TO MCP)
101	PUMP 2 HAND RUN COMMAND TO M1 (IN MCP
102	PUMP 2 AUTO RUN COMMAND TO M2 (IN MCP)
103	PUMP 3 RUN COMMAND COMMON (TO MCP)
104	PUMP 3 HAND RUN COMMAND TO M1 (IN MCP
105	PUMP 3 AUTO RUN COMMAND TO M2 (IN MCP)
106–120	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)

TB3 (⊠) (120V AC) MOUNTED ON MOTOR CONTROL PANEL (MCP)

TERM.	DESCRIPTION
1	120V TO PUMP CONTROL PANEL
2	NEUTRAL (CONTINUED TO MINI POWER-ZONE "LP")
3–6	SPARES
7	PUMP 1 "ON" SIGNAL TO CR10 (IN PCP)
8	PUMP 1 "ON" SIGNAL TO CR10 (IN PCP)
9	PUMP 2 "ON" SIGNAL TO CR11 (IN PCP)
10	PUMP 2 "ON" SIGNAL TO CR11 (IN PCP)
11	VFD #1 FAULT SIGNAL TO PCP
12	VFD #1 FAULT SIGNAL TO PCP
13	VFD #2 FAULT SIGNAL TO PCP
14	VFD #2 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	MOTOR CONTROL PANEL INTRUSION – ZS2
24	
25	PUMP 3 HAND COMMAND FROM CR5-1 (IN PCP)
26	PUMP 3 HAND COMMAND FROM CR5-1 (IN PCP)
27	PUMP 3 "ON" SIGNAL TO CR12 (IN PCP)
28	PUMP 3 "ON" SIGNAL TO CR12 (IN PCP)
29	VFD #3 FAULT SIGNAL TO PCP
30	VFD #3 FAULT SIGNAL TO PCP
31	PUMP 3 LEAK DETECTED TO PILOT LIGHT 7 (IN PCP)
32	PUMP 3 LEAK DETECTED TO PILOT LIGHT 7 (IN PCP)
33	PUMP 3 TEMPERATURE ALARM TO FM3 (IN PCP)
34	PUMP 3 TEMPERATURE ALARM TO FM3 (IN PCP)
35	SPARE
36	SPARE
37	SPARE
38	SPARE
L1	SPD-2 LINE
L2	CB6 (MCB) LINE
L3	CB6 (MCB) LOAD
L4	CB7 LINE
L5	CB7 LOAD
L6	CB8 LINE
L7	CB8 LOAD

TB4 (⊠) (24V DC) MOUNTED ON MOTOR CONTROL PANEL (MCP)

TERM.	DESCRIPTION
39	SLOT 1 PCSR 24V+
40	MOTOR CONTROL PANEL PHASE LOSS (PM2) TO PCSR
41	SLOT 1 PCSR 24V+
42	PUMP #1 MCP STATUS PHASE LOSS (PM3) TO PCSR
43	SLOT 1 PCSR 24V+
44	PUMP #2 MCP STATUS PHASE LOSS (PM4) TO PCSR
45	SLOT 1 PCSR 24V+
46	PUMP #3 MCP STATUS PHASE LOSS (PM5) TO PCSR
47	SLOT 1 PCSR 24V+
48	MOTOR CONTROL PANEL INTRUSION – ZS1
49	
50	VFD 1 KW +
51	VFD 1 KW –
52	VFD 2 KW +
53	VFD 2 KW –
53	PUMP 1 SEAL LEAK DETECTOR PROBE
54	PUMP 1 SEAL LEAK DETECTOR PROBE
55	PUMP 2 SEAL LEAK DETECTOR PROBE
56	PUMP 2 SEAL LEAK DETECTOR PROBE
57	PUMP 3 SEAL LEAK DETECTOR PROBE
58	PUMP 3 SEAL LEAK DETECTOR PROBE
59	VFD 3 KW +
60	VFD 3 KW –
61	VFD 1 SPEED CONTROL +
62	VFD 1 SPEED CONTROL –
63	VFD 2 SPEED CONTROL +
64	VFD 2 SPEED CONTROL –
65	VFD 3 SPEED CONTROL +
66	VFD 3 SPEED CONTROL –
67	PUMP 1 RUN COMMAND COMMON (TO PCP)
68	PUMP 1 HAND RUN COMMAND FROM CR1-1 (IN PCP)
69	PUMP 1 AUTO RUN COMMAND FROM CR7-1 (IN PCP)
70	PUMP 2 RUN COMMAND COMMON (TO PCP)
71	PUMP 2 HAND RUN COMMAND FROM CR2-1 (IN PCP)
72	PUMP 2 AUTO RUN COMMAND FROM CR8-1 (IN PCP)
73	PUMP 3 RUN COMMAND COMMON (TO PCP)
74	PUMP 3 HAND RUN COMMAND FROM CR5-1 (IN PCP)
75	PUMP 3 AUTO RUN COMMAND FROM CR9-1 (IN PCP)
76–85	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)

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WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL SCHEMATIC LEGEND

W.O. 0000

SHEET
E21

PARTS SCHEDULE

SYMBOL	NAME	PART				REMARKS
		MAKE	TYPE	MODEL OR CAT. #	RATING	
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	HDL 36100	600 V, 100A	
CB 4	CIRCUIT BREAKER	SQUARE D	THREE POLE	HDL 36015	600 V, 15A	
CB 5	CIRCUIT BREAKER	SQUARE D	TWO POLE	HDL26020	600 V, 20A	
CB 6, 9	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU-120	120 V, 20A	
CB 7, 8, 10, 11, 12	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU-115	120 V, 15A	
M1, M2, M3	MOTOR STARTER	YASKAWA	VARIABLE FREQUENCY DRIVE (VFD)	PW4A0088FAA	480V, 88A, 120V CONTROLS	PROVIDE REMOTE KEYPAD
PL1, PL3, PL8	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT - 38LYA9	120 V, LED TYPE	YELLOW LENS & PRESS TEST
PL2, PL4, PL9	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT - 38LRR9	120 V, LED TYPE	RED LENS & PRESS TEST
PL5, PL6, PL7	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT - 38LRR9	120 V, LED TYPE	RED LENS & PRESS TEST
S1, S2, S3	HOA SWITCH ASSEMBLY	SQUARE D	OIL-TIGHT CLASS 9001	SKS - 43B H2	10A @ 120V	
ETM1, ETM2, ETM3	ELAPSED TIME METER	CRAMER	ROUND BEZEL, NON RESET	635-E	120 V	W.W. GRANGER CAT. NO. 6X144
ZS1, ZS2, ZS3	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, FF3 & TS	LED LIGHTING FIXTURE	HOFFMAN	LED	LEDA1S35	120 V, 5W	W/TOGGLE SWITCH-TS
WR1, WR2	WALL RECEPTACLE	HUBBELL	DUPLEX W/GFI	GF5262	120V AC, 15A GFI	W/ALUMINUM OUTLET BOX AND COVER
SPD-1	SURGE PROTECTIVE DEVICE TYPE 1	ASCO	MOTOR CONTROL PANEL SPD	430277YP10ACSJ1	277/480 V, 3ø, 4W	
SPD-2, SPD-3	SURGE PROTECTIVE DEVICE TYPE 3	PHOENIX CONTACT	3 CONDUCTOR SYSTEM (L, N, G)	2856812	120 V, 25A	
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, 72"x72"x18"	72"x72"x18" SS	304 SS, POWDER COATED WHITE	3P LATCH W/STOP KIT. EXTERNAL FINISH DURABLE RAL 9003 WHITE POWER COAT.
MP	ENCLOSURE PANELS	HOFFMAN	68" X 68", STEEL	A68P68	STEEL, 12 GAUGE	
PCP	PUMP CONTROL PANEL ENCLOSURE	HOFFMAN	NEMA 4X, 3P LATCH, 48"x36"x12"	48"x36"x12" SS	304 SS, POWDER COATED WHITE	
PP	ENCLOSURE PANEL	HOFFMAN	45" X 33", STEEL	A48P36	STEEL, 12 GAUGE	3P LATCH W/STOP KIT. EXTERNAL FINISH DURABLE RAL 9003 WHITE POWER COAT.
GB1, GB3	GROUND BAR SYSTEM	PANDUIT	12 PORT WITH MAIN LUG	UGB2/0-414-12		
GB2	GROUNDING BLOCK	ILSCO	AS REQUIRED	AS REQUIRED		COPPER CONSTRUCTION
TA1, TA2, TA3, CR1, CR2, CR5, CR13	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, FM3, CR3, CR4, CR6, CR7, CR8, CR9, CR10, CR11, CR12	CONTROL RELAY	POTTER & BRUMFIELD	8 PIN PLUG-IN	KRPA-14AG-120	120V AC COIL, 10A CONTACTS	3PDT W/ SOCKET AND HOLD DOWN SPRING
TDR	TIME DELAY RELAY	SQUARE D	8 PIN PLUG-IN	9050JCK12V20	120V AC COIL, 10A CONTACTS	0.3-30 SECOND ADJUSTABLE DELAY, DPDT 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 E23

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.

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DRN: J.L.H.
CKD: T.DT.
DATE: 3-27-19

TIMOTHY THOMAS, P.E. #47079

CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL SCHEMATIC LEGEND (SHEET 1 OF 2)

W.O. 0000
SHEET
E22

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 #XPR5350	1-AC POWER SUPPLY 85-264V W/ BAT CHARGER PAR #: V261	COORDINATE EFFORT W/ SCADA INTEGRATOR
					MOTORBO XPR5350 RADIO UNF RI: 403-470MHZ, PART #UE1078A	1- ACE CPU3640 PART #: V446	1- 10.0 Ah BATTERY PART #: V328
					MOTORBO ANALOG RADIO INSTALLATION KIT PART #FLN1059		
		1-3 I/O SLOT FRAM PART #: V103	MOTOROLA CORP.				
		1- 14x 14 METAL CHASSIS PART #: V214	MOTOROLA CORP.				
			MOTOROLA CORP.		2-ACE MIXED I/O MODULE-16DI, 4DO(EE), (4)±20mA ANALOG IN PART #: V245 W/ 24VDC PLUG-IN, FLOATING POWER SUPPLY # FPN1653A	2-40 PIN TB HOLDER KIT PART #: V153	
			WILKERSON INSTRUMENT CO.	2-MIXED I/O AUXILLARY INTERFACE WILKERSON BOARD PART #: SIB V245/ V453			
			MOTOROLA CORP.		1-ACE (4)±20mA ANALOG OUTPUT PART #: V118	1-20 PIN TB HOLDER KIT PART #: V158	
	10.0 Ah BATT.						
PM1, PM2, PM3, PM4, PM5		3-PHASE POWER MONITOR	ATC DIVERSIFIED ELECTRONICS	8 PIN PLUG-IN	SUA-440-ASA	440 VAC	WITH OPTIONAL 5-SEC RELEASE AND DIN RAIL SOCKET
PDB		PWR DIST. BLOCK	BUSSMAN/EATON	THREE POLE	PDBFS377	600 V, 570 AMP	FINGER SAFE POWER DIST. BLOCKS
FBD1, 2, 3, 4, 5		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
PC-1		BACKUP PUMP CONTROLLER	WILKERSON	DUPLEX LIFT STATION	DR1920	10 AMP CONTACTS	DIN RAIL MOUNTING
FL, FL1, FL2		FLOAT SWITCHES	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, SLD3		PUMP MONITORING UNIT	XYLEM		MINI-CAS 120	10A AT 240V AC	
NB1		NEUTRAL DISTRIBUTION BLOCK	BUSSMAN	SINGLE POLE	16220-1	600V, 175A	
L1, F1		PROCESS METER	PRECISION DIGITAL	4 DIGIT, 1.2" DISPLAY	PD765-6RO-10		PROVIDE 4-20mA OUTPUT
ALS		AREA LIGHT SWITCH	HUBBELL	SINGLE-POLE	HBL1221	277V, 20A	
FDTS		FUSED DOUBLE THROW DISCONNECT SWITCH	EATON	SERVICE ENTRANCE RATED, HEAVY DUTY	DT365FWK	DT000 NK NEUTRAL KIT DS468 GK GROUND KIT DS66FK R FUSE ADAPTOR KIT	TIME DELAY CLASS RK5 FUSES (6) EDISON ECSR225 (PROVIDE (6) SPARES)
MS		METER SOCKET	MILBANK	7 TERMINAL	UAP3566-X-HSP	600 VAC, 320 AMP	ALUMINUM CONSTRUCTION
GDS		GENERATOR DOCKING STATION	TRYSTAR	WALL MOUNT	GDS045W-LM-GI. REVERSE SERVICE OF THE NEUTRAL AND GROUND.	600V 400 AMP	STAINLESS STEEL ENCLOSURE
LA		LIGHTNING ARRESTER	GENERAL ELECTRIC	TRANQUELL	9L15ECC001	650V	

NOTES:

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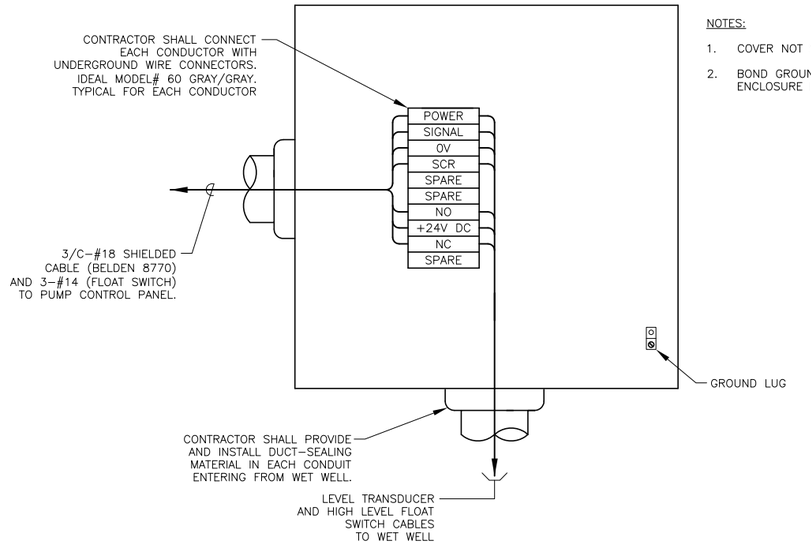
CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
PARTS SCHEDULE (SHEET 2 OF 2)

W.O. 0000
SHEET
E23



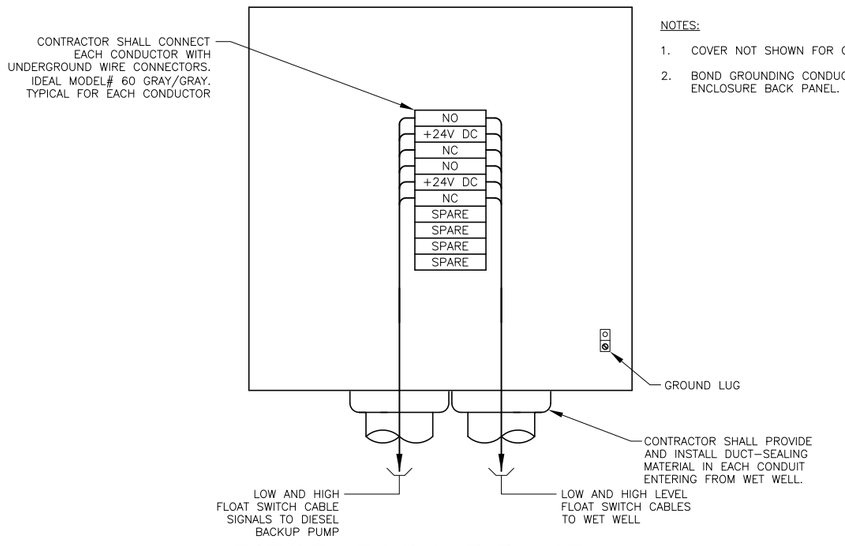
NOTES:

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

INSTRUMENTATION AND CONTROLS JUNCTION BOX DETAIL

1 | E9 | E24

SCALE: N.T.S.



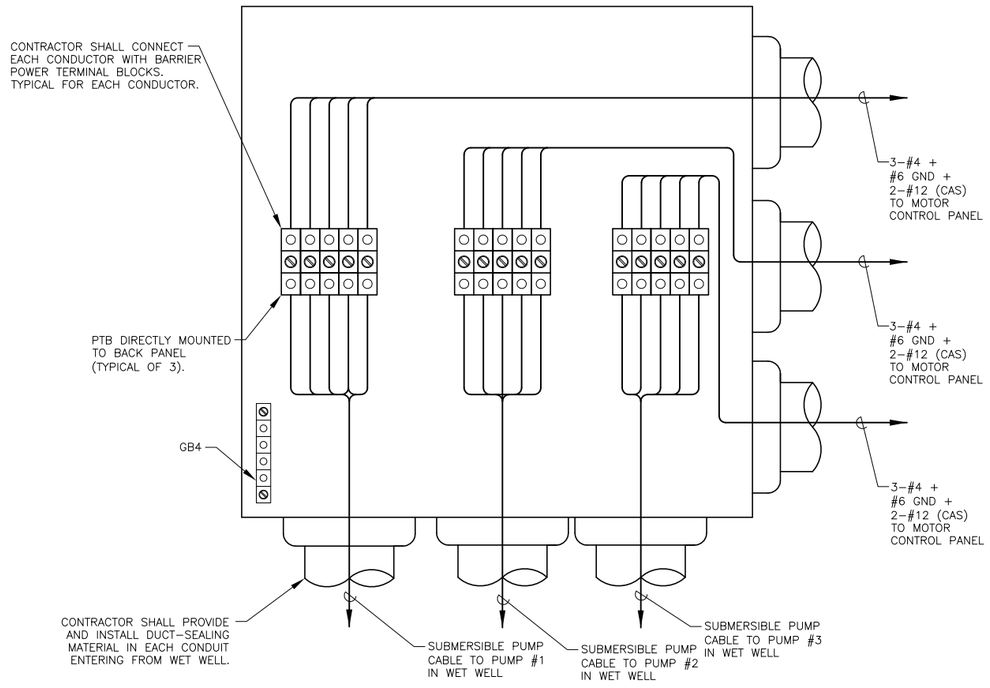
NOTES:

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

DIESEL BACKUP PUMP JUNCTION BOX DETAIL

2 | E8 | E24

SCALE: N.T.S.



PUMP MOTOR CONNECTIONS JUNCTION BOX DETAIL

1 | E9 | E24

SCALE: N.T.S.

NOTES:

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

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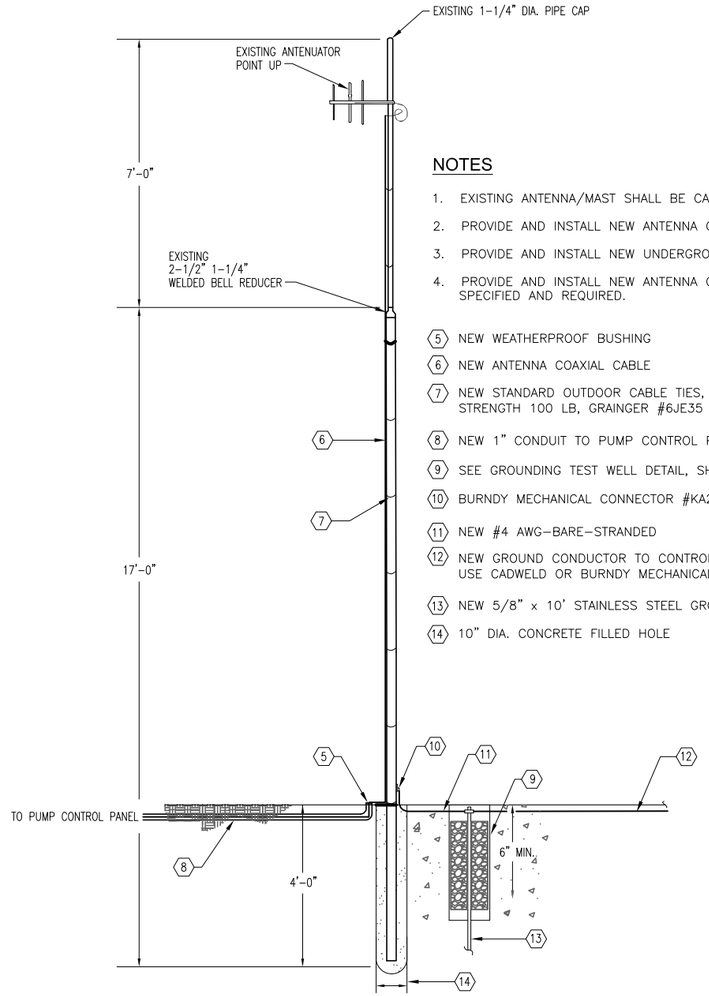
DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL DETAILS (SHEET 1 OF 7)

W.O. 0000
SHEET
E24



NOTES

1. EXISTING ANTENNA/MAST SHALL BE CAREFULLY REMOVED AND RELOCATED.
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 PUMP CONTROL PANEL
9. SEE GROUNDING TEST WELL DETAIL, SHEET E27
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.

1 — E7 | E25

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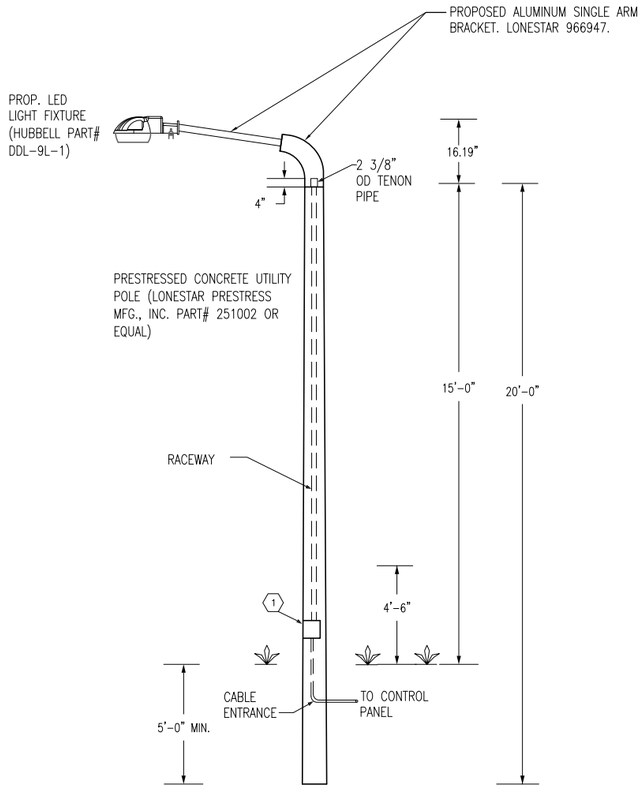
DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL DETAILS (SHEET 2 OF 7)

W.O. 0000
SHEET
E25

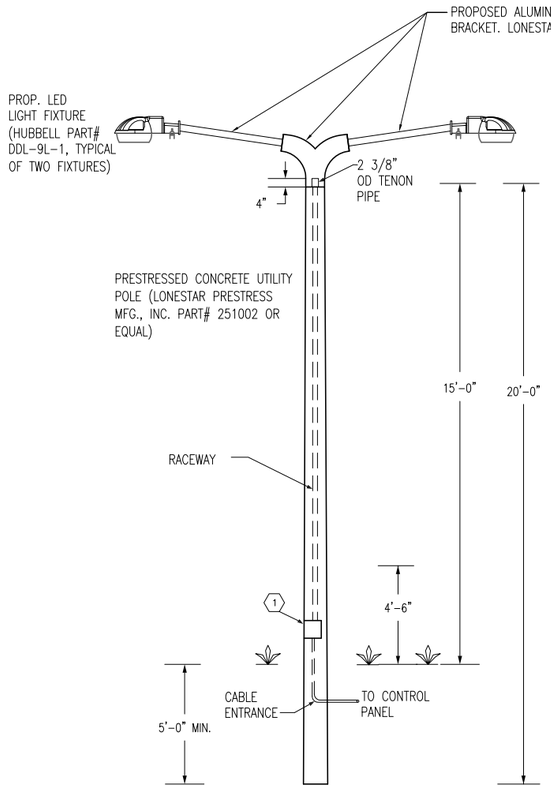


AREA LIGHT (AL) TYPE 'A' DETAIL

SCALE: NONE

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

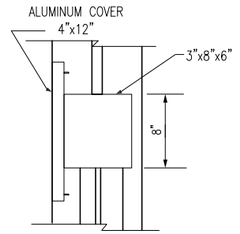


AREA LIGHT (AL) TYPE 'B' DETAIL

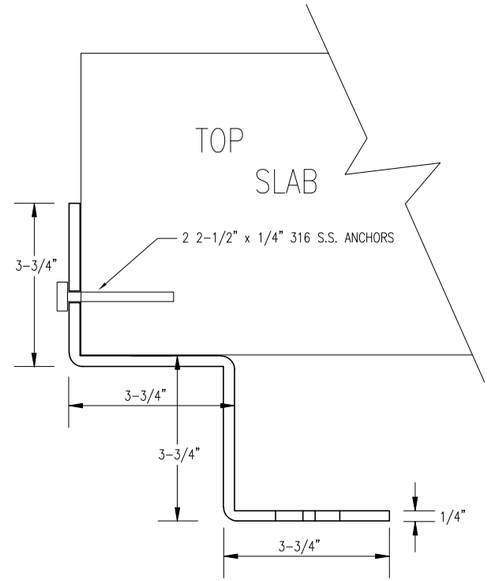
SCALE: NONE

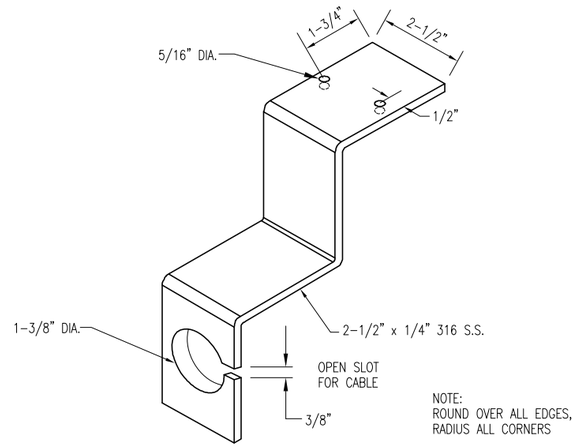
NOTES:

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



1 HANDHOLE W/ RECESSED COVER DETAIL





DB10 OR PULSAR MOUNTING BRACKET DETAIL

SCALE: NONE

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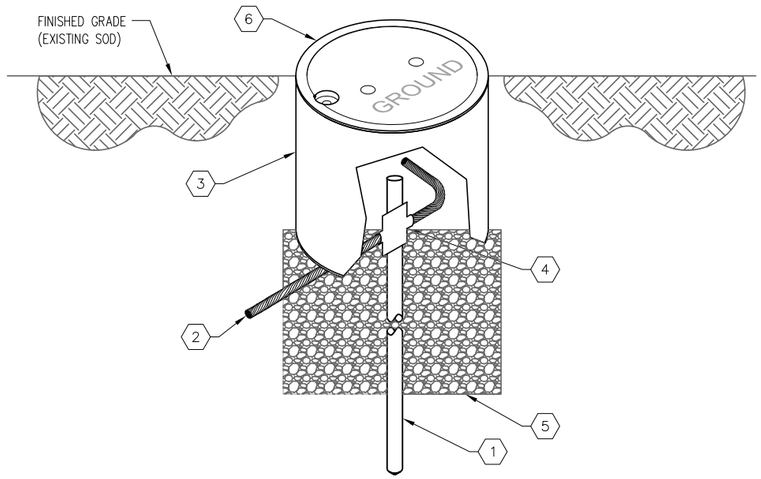
DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL DETAILS (SHEET 3 OF 7)

W.O. 0000
SHEET
E26



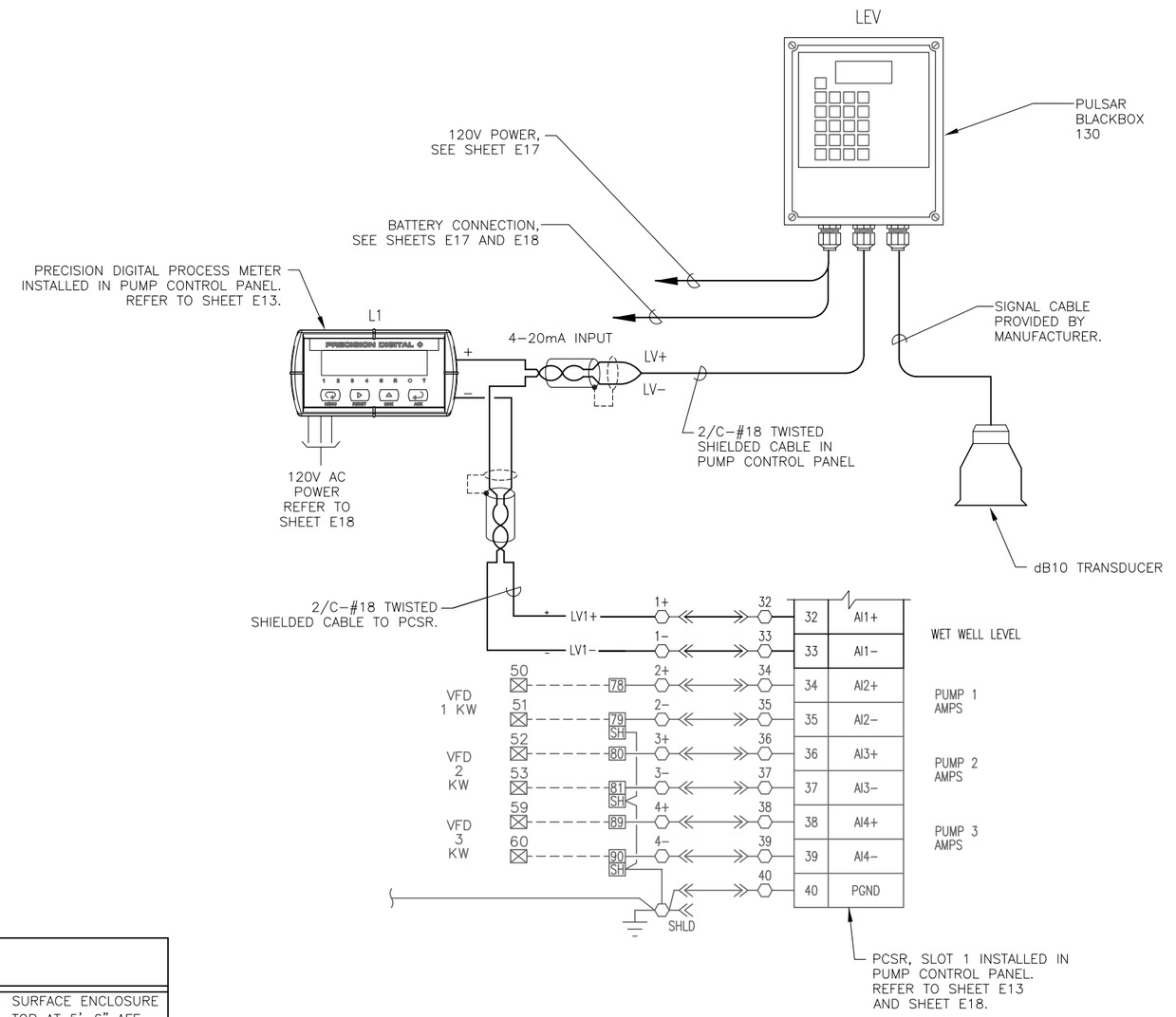
GROUND TEST WELL DETAIL

SCALE: N.T.S.

1 | E10 | E27

GROUND TEST WELL DETAIL KEYED NOTES:

1. NEW GROUND ROD, STAINLESS STEEL, 5/8" X 10'-0" (TYP).
2. #2, #4 OR #8 BARE STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR AS REQUIRED.
3. PROVIDE AND INSTALL HARGER 362PS12CILS80, SCHEDULE 80 PVC GROUND TEST WELL (TYP).
4. EXOTHERMIC WELD.
5. PROVIDE 6" MINIMUM OF CRUSHED STONE.
6. GROUND TEST WELL CAST IRON COVER.



LEVEL TRANSDUCER WIRING SCHEMATIC

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

PROPOSED PANEL SCHEDULE

PANEL 'LP' ; SQUARE D CO. MINI POWER-ZONE 120/240 VOLTS, 1ø, 3W 40 AMP MAIN CIRCUIT BREAKER PROVIDE EQUIPMENT GROUND BAR ; SURFACE ENCLOSURE TOP AT 5'-6" AFF

EQUIPMENT SERVED	CIRCUIT BREAKER POLE	AMPS	FRAME	KVA/PHASE A	B	CIRC. NO.	CIRC. NO.	KVA/PHASE A	B	CIRCUIT BREAKER POLE	AMPS	FRAME	EQUIPMENT SERVED
MOTOR CONTROL PANEL	1	20	QOB	0.6		1	2	0.1		1	20	QOB	FLOW METER
PUMP CONTROL PANEL	1	20	QOB		0.9	3	4		1.2	1	20	QOB	DIESEL BACKUP PUMP
SUMP PUMP	1	20	QOB	0.7		5	6			--	--	--	SPACE
SPACE	--	--	--			7	8			--	--	--	SPACE
SPACE	--	--	--			9	10			--	--	--	SPACE
SUB-TOTAL KVA				1.3	0.9			0.1	1.2				

TOTAL CONNECTED LOAD = 3.5 KVA TOTAL DEMAND LOAD = 3.5 KVA

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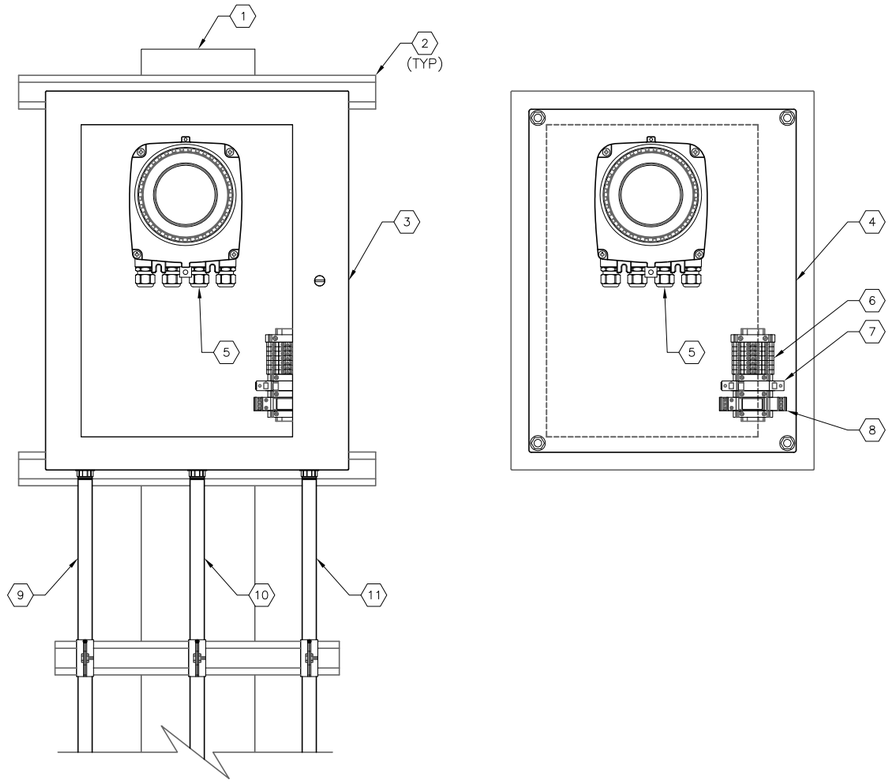
DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL DETAILS (SHEET 4 OF 7)

W.O. 0000
SHEET
E27



REMOTE TRANSMITTER CABINET DETAILS

1 / E7 | E28

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

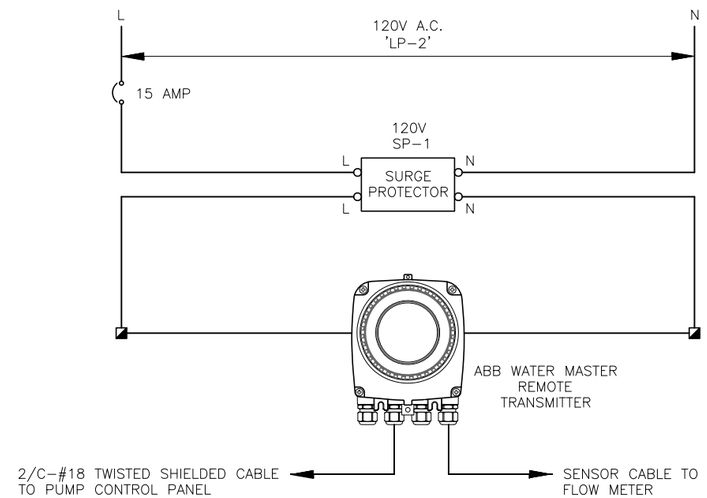
NOTE: FRONT ENCLOSURE DOOR NOT SHOWN FOR CLARITY.

KEYED NOTES:

1. 6" X 6" X 9' REINFORCED SQUARE CONCRETE POST INSTALLED FOR ELECTRICAL SERVICE ENTRANCE RACK.
2. PROVIDE AND INSTALL 1-5/8" X 1-5/8" STAINLESS STEEL UNISTRUT WITH STAINLESS STEEL HARDWARE. NOTE: INSTALL ALL BOLTS FOR UNISTRUT COMPLETELY THROUGH CONCRETE POSTS.
3. PROVIDE AND INSTALL NEW REMOTE TRANSMITTER CABINET. 20" X 16" X 8" NEMA 4X STAINLESS STEEL WITH STAINLESS STEEL STOP KIT AND WINDOW. HOFFMAN CSD201608SS6.
4. PROVIDE AND INSTALL HOFFMAN CP2016G BACKPLATE.
5. EXISTING ABB WATER MASTER REMOTE TRANSMITTER TO BE RELOCATED NEW REMOTE TRANSMITTER CABINET.
6. PROVIDE AND INSTALL TERMINAL BLOCKS WITH ALUMINUM DIN RAIL. PHOENIX CONTACT UK5N.
7. PROVIDE AND INSTALL SINGLE-POLE CIRCUIT BREAKER. 120V, 15A. SQUARE D QOU-115.
8. PROVIDE AND INSTALL INCOMING 120V POWER SURGE PROTECTION DEVICES. PHOENIX CONTACT #2905228.
9. PROVIDE AND INSTALL 2-#12 XHHW-2 CU + 1-#12 XHHW-2 CU GND IN 3/4" CONDUIT FROM MINI POWER-ZONE 'LP' TO REMOTE TRANSMITTER FOR 120V POWER. CIRCUIT LP-2. REFER TO SHEET E7 FOR MINI POWER-ZONE LOCATION.
10. PROVIDE AND INSTALL 2/C-#18 TWISTED SHIELDED CABLE IN 3/4"C. TO PUMP CONTROL PANEL FOR FLOW METER REMOTE TRANSMITTER 4-20mA SIGNAL. REFER TO SHEET E9 FOR PUMP CONTROL PANEL LOCATION.
11. CONTRACTOR SHALL PROVIDE AND INSTALL 3/4" CONDUIT FOR MANUFACTURER SUPPLIED SENSOR CABLE (CONTRACTOR TO VERIFY CONDUIT SIZE REQUIREMENTS WITH MANUFACTURER). PROVIDE NON-METALLIC, WEATHERPROOF, FLEXIBLE CONNECTION TO THE FLOW METER SENSOR. INSTALL CONDUIT/CABLE FROM FLOW METER SENSOR TO REMOTE TRANSMITTER. REFER TO SHEET E7 FOR TRANSMITTER LOCATION.

GENERAL NOTES:

1. REFER TO SHEET E26 FOR REMOTER TRANSMITTER WIRING SCHEMATIC WHICH INCLUDES CONNECTIONS TO FLOW METER ELEMENT, PROCESS METER AND PCSR (IN PUMP CONTROL PANEL).



REMOTE TRANSMITTER CABINET WIRING SCHEMATIC

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

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2		
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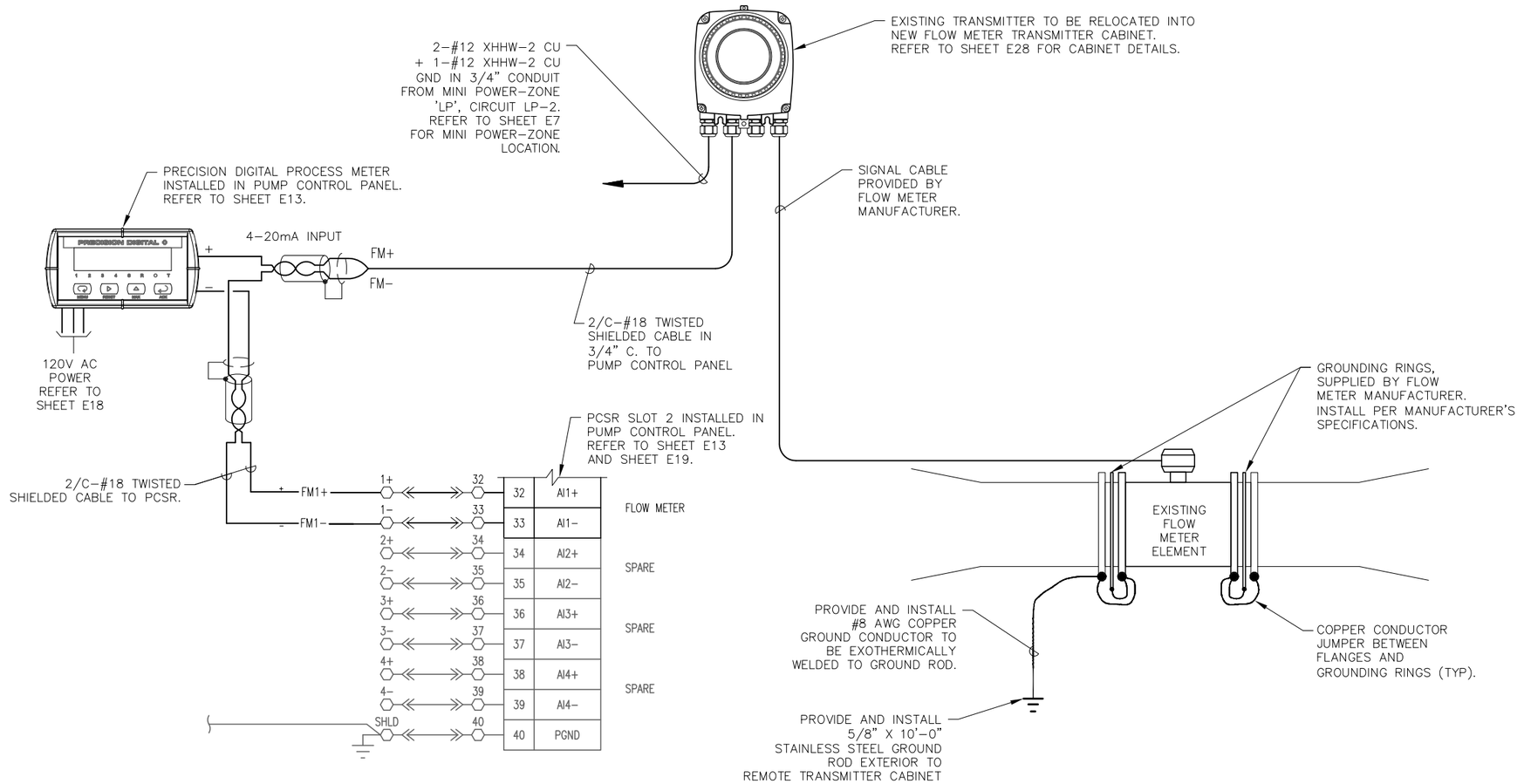
DES: T.DT.
DRN: J.L.H.
CKD: T.DT.
DATE: 3-27-19

CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL DETAILS (SHEET 5 OF 7)

W.O. 0000
SHEET
E28



REMOTE TRANSMITTER WIRING SCHEMATIC

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

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 350
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

TIMOTHY THOMAS, P.E. #47079

No.	DATE	REVISIONS
3		
2		
1		

DES: T.DT.
DRN: J.L.H.
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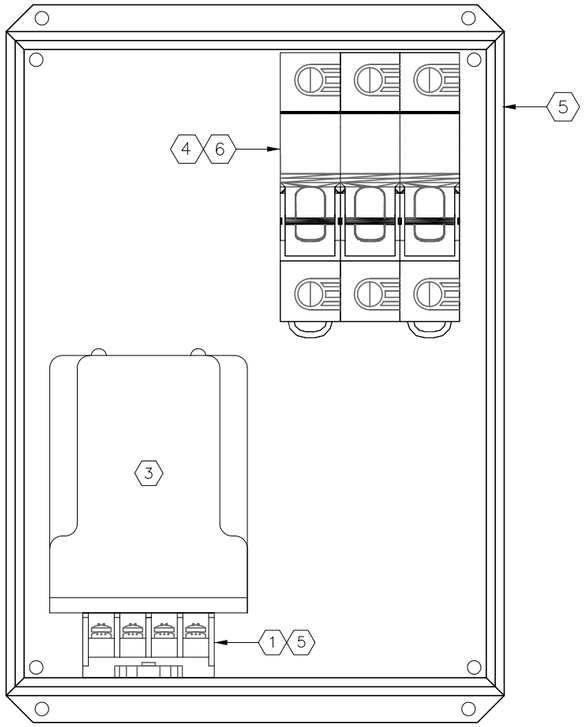
DATE: 3-27-19

CITY of TAMPA
WASTEWATER DEPARTMENT

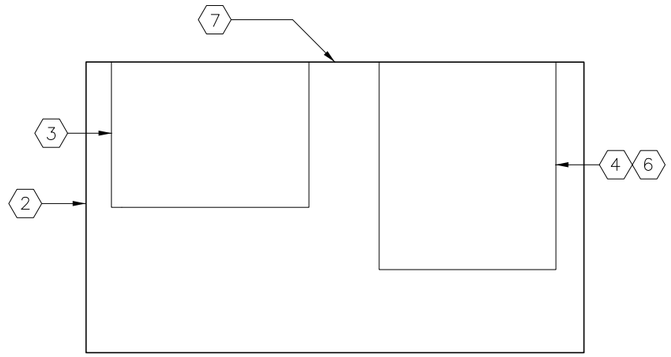
DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL DETAILS (SHEET 6 OF 7)

W.O. 0000
SHEET
E29



PM1 JUNCTION BOX FRONT ELEVATION

SCALE: N.T.S.



PM1 JUNCTION BOX TOP ELEVATION

SCALE: N.T.S.

1
E10 E30

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

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CITY of TAMPA
WASTEWATER DEPARTMENT

DAVIS ISLAND PUMP STATION REHABILITATION
ELECTRICAL DETAILS (SHEET 7 OF 7)

W.O. 0000
SHEET
E30