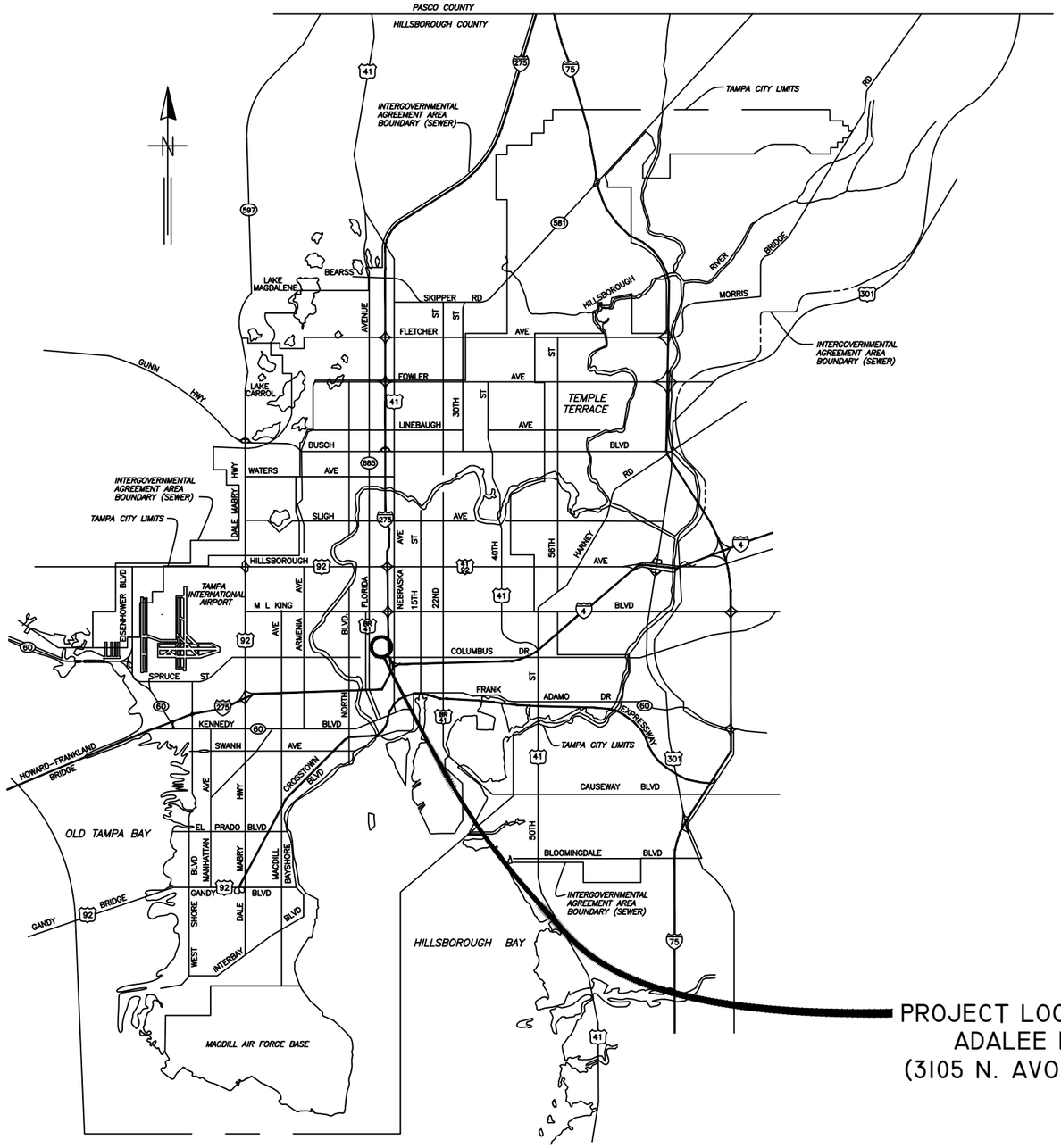
LOCATION MAP



CITY of TAMPA

CITY OF TAMPA FLORIDA
MASCOTTE
ORGANIZED JULY 15 1887

WASTEWATER DEPARTMENT

PLANS FOR

ADALEE PS REHABILITATION

CONTRACT NO. 20-C-00029

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: DR DRN: JHJ CKD: DATE: 1/11/23	CITY of TAMPA WASTEWATER DEPARTMENT	ADALEE PS REHABILITATION COVER SHEET	SHEET 1

LEGEND

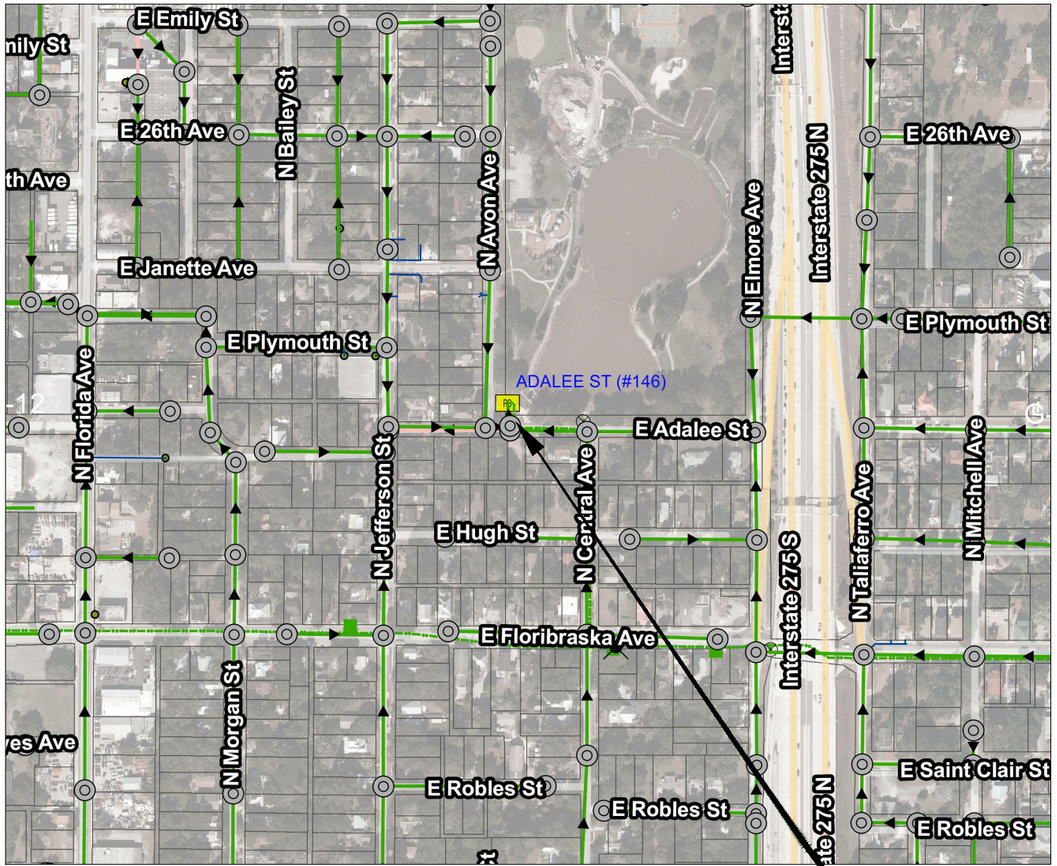
	UP to 36" & SMALLER	36" & LARGER
EX SEWERS		
EX FORCE MAIN		
EX SAN SEWER & MANHOLES		
EX STORM SEWER & MANHOLES		
PROP SEWERS		
PROP FORCE MAIN		
PROP SANITARY SEWER & MANHOLES		
PROP STORM SEWER & MANHOLES		

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 — 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.

ATLAS G-12

SEC. 12 T29S R18E

INDEX

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

No.	DATE	REVISIONS
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1		

DES: DR
DRN: JHJ
CKD:
DATE: 1/11/23

CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PS REHABILITATION
LEGEND, INDEX & LOCATION

SHEET 2

User: ss13 Drawing Name: K:\WasteWater Projects\Adalee PS Rehabilitation\Drafting\DWG\Adalee PS Rehabilitation.dwg
Layout- Apr 12, 2023 - 11:10am

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. VERTICAL ELEVATION DATUM FOR THIS PROJECT IS NGVD 29. ADD 0.84FT TO VERTICAL NGVD ELEVATION FOR NAVD 88.
2. DESIGN FLOOD ELEVATION (DEF) FOR THIS SITE IS ELEVATION 34.6FT NAVD. 88 OR 35.44 FT NGVD 29.
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHT-OF-WAY PERMITS FOR THE PUMPING STATION WORK.
4. CONTRACTOR SHALL CALL SUNSHINE (1-800-432-4770) AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY.
5. NORMAL WORKING HOURS SHALL BE WEEKDAYS FROM 7:30 AM TO 4:00 PM UNLESS OTHERWISE APPROVED BY THE ENGINEER.
6. 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.
7. TESTING OF THE NEW DISCHARGE PIPES WILL BE ACCOMPLISHED BY OBSERVING FOR ANY LEAKS DURING THE 24 HOUR TROUBLE FREE TEST PHASE.
8. IT IS THE ENGINEER'S INTENT THAT CONTINUOUS SERVICE WILL BE MAINTAINED THROUGHOUT THE PROJECT.
9. CONTRACTOR SHALL VERIFY QUANTITIES OF ALL NECESSARY PIPES, REDUCERS, FITTINGS, SUPPORTS, AND ANY MISCELLANEOUS BRACKETS.
10. 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.
11. 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.
12. PUMP DISCHARGE PIPING IN WET WELL SHALL BE 12-INCH DIAMETER HDPE, SDR-11, GREEN STRIPE, DIPS-OD. HDPE JOINTS SHALL BE FLANGED WITH 316 SS BACK UP RINGS.
13. PLUG VALVES SHALL BE DEZURIK, PEF 100% PORT, ECCENTRIC PLUG VALVES. ALL PLUG VALVES SHALL BE PROVIDED WITH HANDWHEEL. THESE VALVES ARE STANDARDIZED ITEMS AT THIS FACILITY AND NO "OR EQUALS" WILL BE CONSIDERED
14. CHECK VALVES SHALL BE APCO RUBBER FLAPPER 12-INCH SWING CHECK VALVES, SERIES 100. THIS EQUIPMENT IS A STANDARDIZED ITEM AT THIS FACILITY AND NO "OR EQUAL" SUBMITTALS WILL BE CONSIDERED.
15. ALL HARDWARE, UNLESS OTHERWISE NOTED, SHALL BE TYPE 316 STAINLESS STEEL. ALL BOLTED HARDWARE ON HDPE PIPE FLANGES OR HDPE PIPE SUPPORT BRACKETS SHALL BE SECURED WITH 316SS NYLOCK NUTS.
16. PIPE SUPPORTS SHALL BE CONSTRUCTED AS SHOWN IN THE PIPE SUPPORT DETAIL.
17. 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. THE 28-DAY COMPRESSIVE STRENGTH FOR FLOWABLE FILL SHALL BE BETWEEN 50-100 PSI.
18. 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.
19. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FLORIDA BUILDING CODE 7th EDITION 2020, & CHAPTER 5 OF THE CITY OF TAMPA CODE.
20. ALL METAL PIPE, FITTINGS, VALVES, ETC. SHALL RECIEVE:
20.1. SHOP COAT – ONE COAT, 4-6 MILS (DRY) TNEMEC N140-1211 EPOXY PRIMER.
20.2. FIELD COAT – ONE COAT, 5-7 MILS (DRY) TNEMEC SERIES 446 PERMA-SHIELD MCU
20.3. FIELD COAT
20.3.1. ABOVE GRADE : ONE COAT, 4-6 MILS (DRY) TNEMEC 1074U ENDURASHIELD (WITH FACTORY ADDED UV BLOCKER)
20.3.2. BELOW GRADE : ONE COAT, 5-7 MILS (DRY) TNEMEC SERIES 446 PERMA-SHIELD MCU
21. 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.
22. CONTRACTOR TO SUBMIT METHOD FOR 100% WATERTIGHT SEALING AT PIPE PENETRATIONS THROUGH STRUCTURES. PROPOSED LINK SEAL OR APPROVED EQUAL. REPAIR DAMAGED T-LOCK LINER AS SHOWN ON DETAILS.
23. 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.
24. ALL DIP PIPE AND FITTINGS SHALL BE CLASS 53 WITH PROTECTO 401 INTERIOR COATING.
25. TWO NEW PUMPS SHALL BE SUPPLIED AND INSTALLED FOR THIS PROJECT. PROPOSED PUMPS ARE FLYGT, MODEL NP-3202.185, 8-INCH, 60 HP, WITH 376mm IMPELLERS. PUMPS SHALL BE SUPPLIED WITH FLYGT MIX-FLUSH VALVES. ALL PROPOSED PUMP BASES SHALL BE 8-INCH DIAMETER DISCHARGE ELBOWS. PUMPS SHALL BE RATED FOR 2430 GPM AT 63 FT TDH. THIS EQUIPMENT IS STANDARDIZED ITEM AT THIS FACILITY AND NO "OR EQUAL" SUBMITTALS WILL BE CONSIDERED.

BYPASSING NOTE

1. CONTRACTOR SHALL SUPPLY SOUND ATTENUATED DIESEL BYPASS PUMPS PRIMARY & BACKUP, CAPABLE OF DELIVERING 2,500 GPM AT 64 TDH PLUS ANY LOSSES PRODUCED IN THE TEMPORARY BY-PASS PIPING. THE PUMP SUCTION SHOULD BE FROM MH IN STREET. CONTRACTOR SHALL SUBMIT BYPASS PUMPING PLAN TO THE ENGINEER FOR APPROVAL. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

SCOPE

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

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

No.	DATE	REVISIONS
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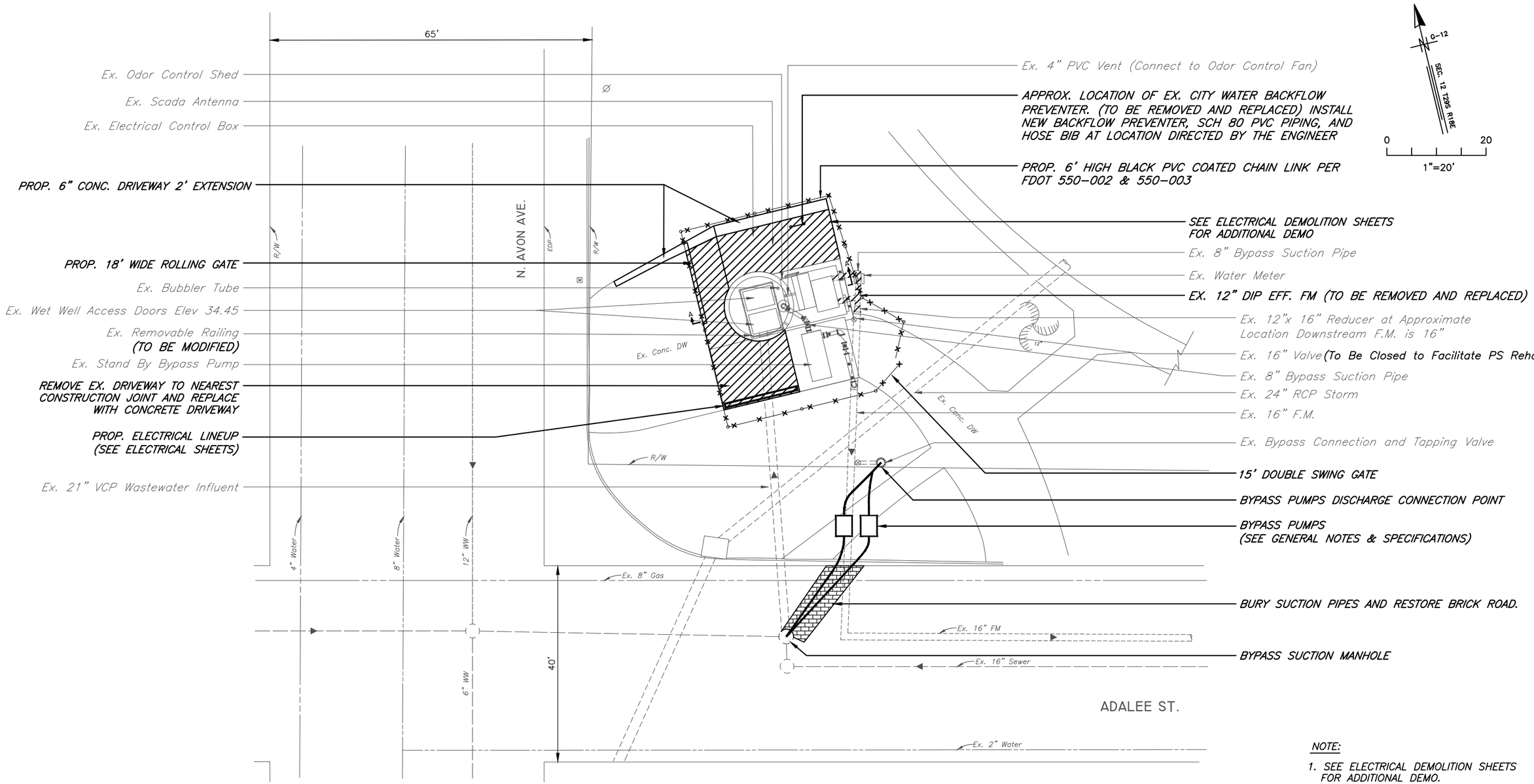
1		

DES: DR
DRN: JHJ
CKD:
DATE: 1/11/23

CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PS REHABILITATION
GENERAL NOTES

SHEET 3



NOTE:

1. SEE ELECTRICAL DEMOLITION SHEETS FOR ADDITIONAL DEMO.

SITE PLAN

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

No.	DATE	REVISIONS
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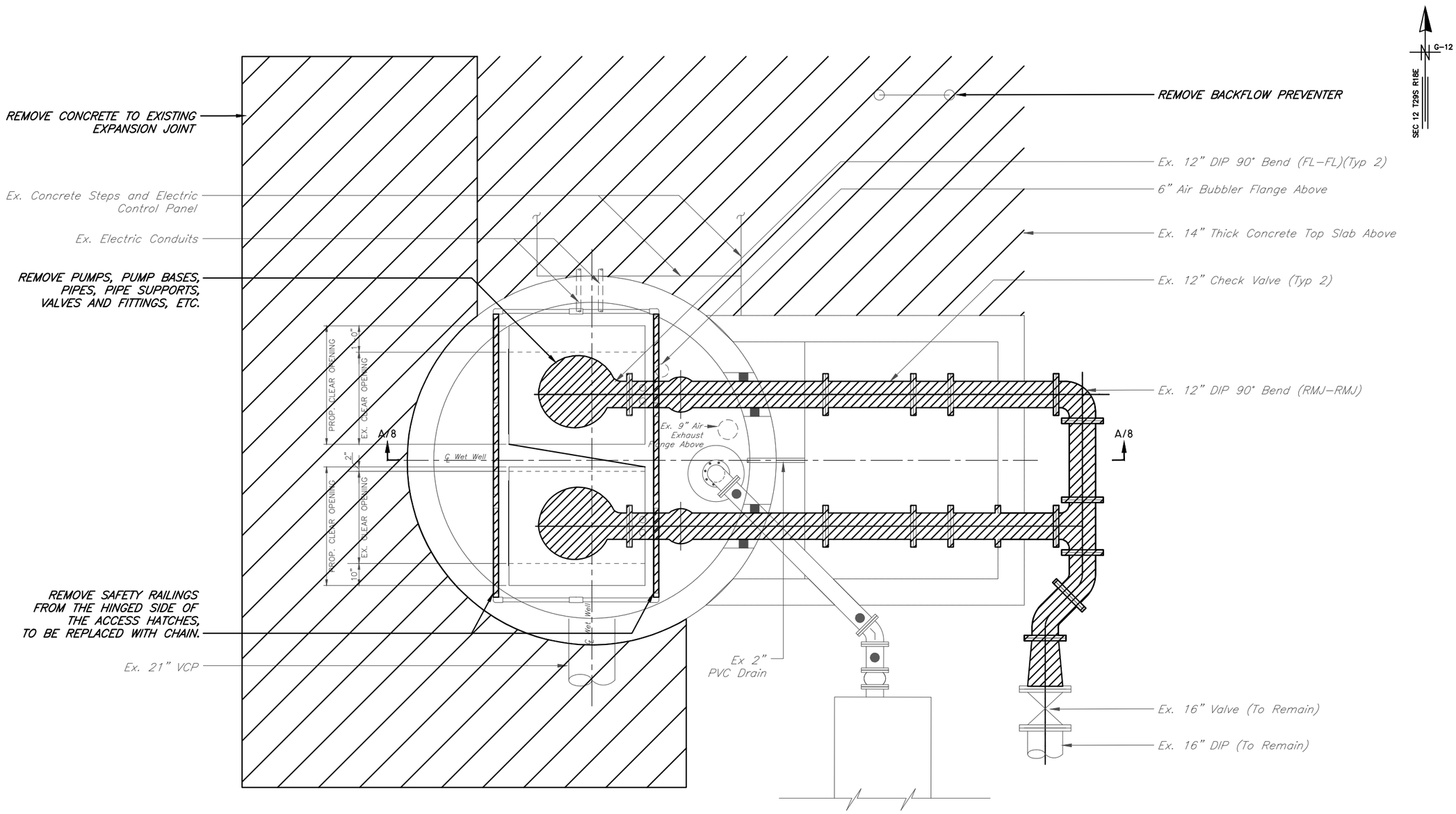
4		

DES: DR
DRN: JHJ
CKD:
DATE: 11/4/22

CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PUMPING STATION
BYPASS PUMP INSTALLATION
SITE PLAN

SHEET 4



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

DEMOLITION PLAN VIEW
SCALE: 1/4" = 1'

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

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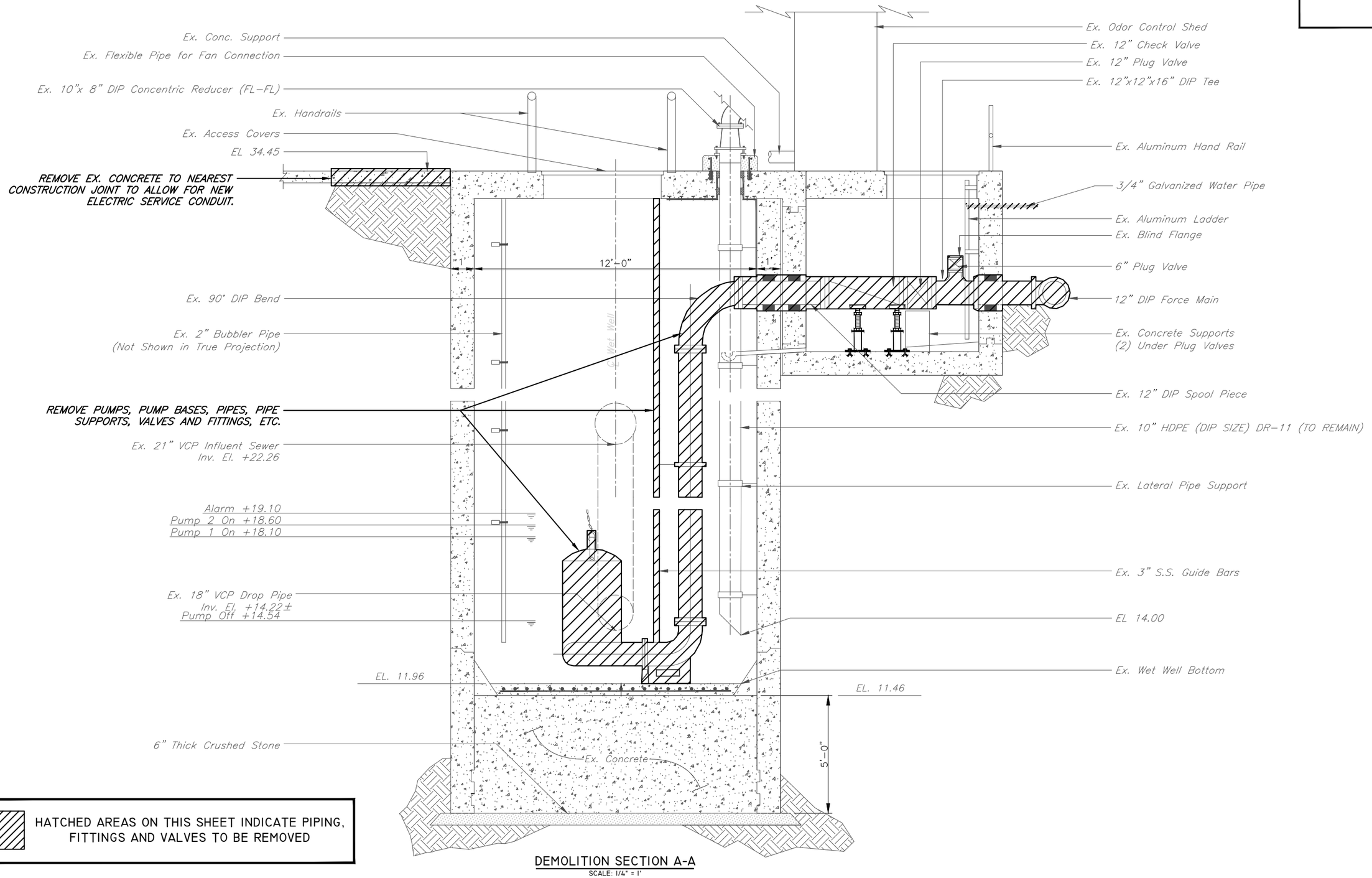
CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PUMPING STATION
DEMOLITION PLAN VIEW

SHEET 5



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

DEMOLITION SECTION A-A

SCALE: 1/4" = 1'

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Layout- SHT 6; Last Saved: Apr 10, 2023 - 11:13am

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

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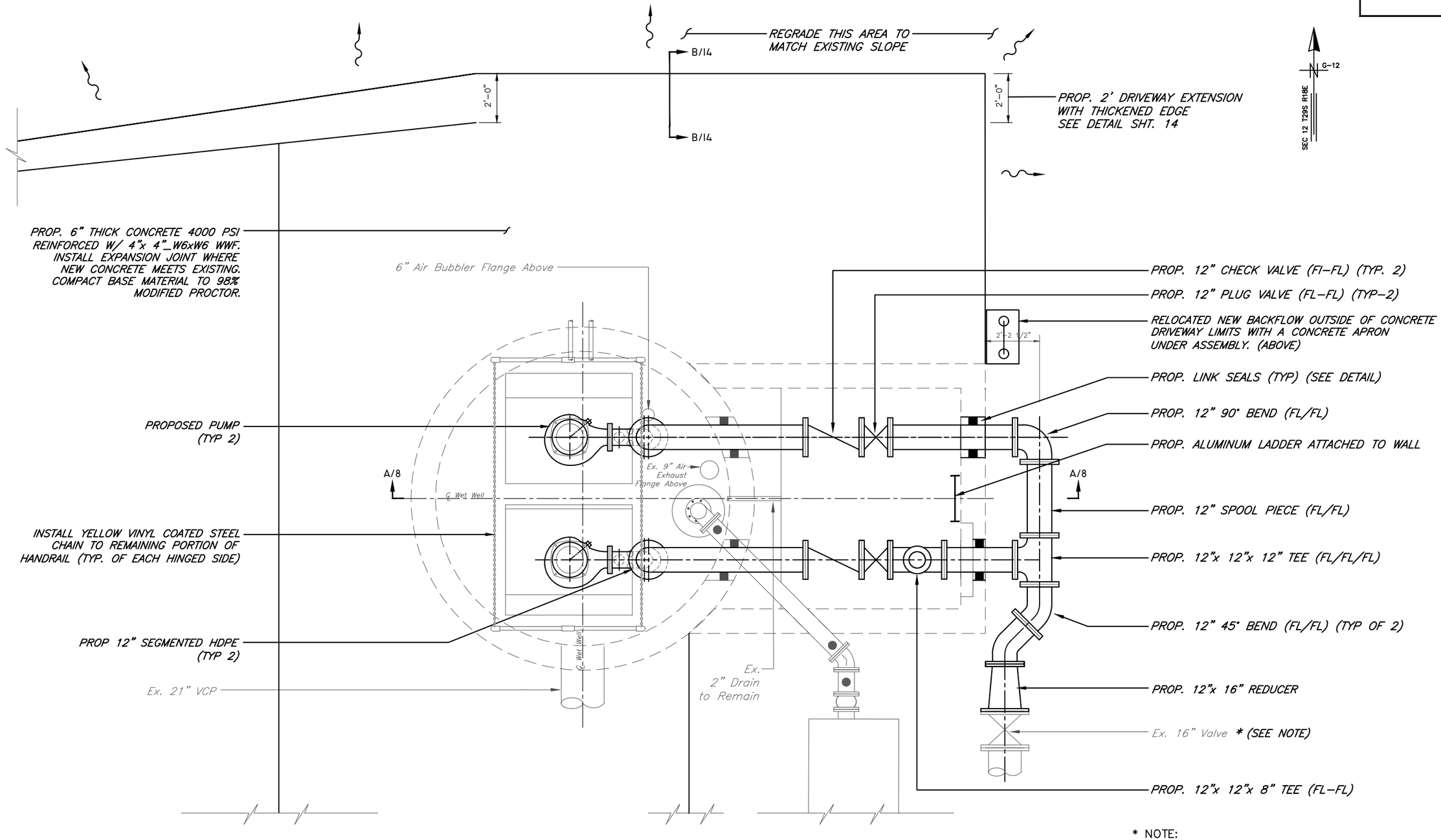
CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PUMPING STATION
DEMOLITION SECTION A-A

SHEET 6



PROPOSED PLAN VIEW AT ELEVATION 29.3
SCALE: 1/4" = 1'

* NOTE:
CONTRACTOR SHALL FIELD VERIFY LOCATION OF EX. 16" PLUG VALVE PRIOR TO ORDERING DIP FITTINGS.THE CITY WOULD PREFER BURIED RMJ JOINTS IF POSSIBLE.

	No.	DATE	REVISIONS
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	1		

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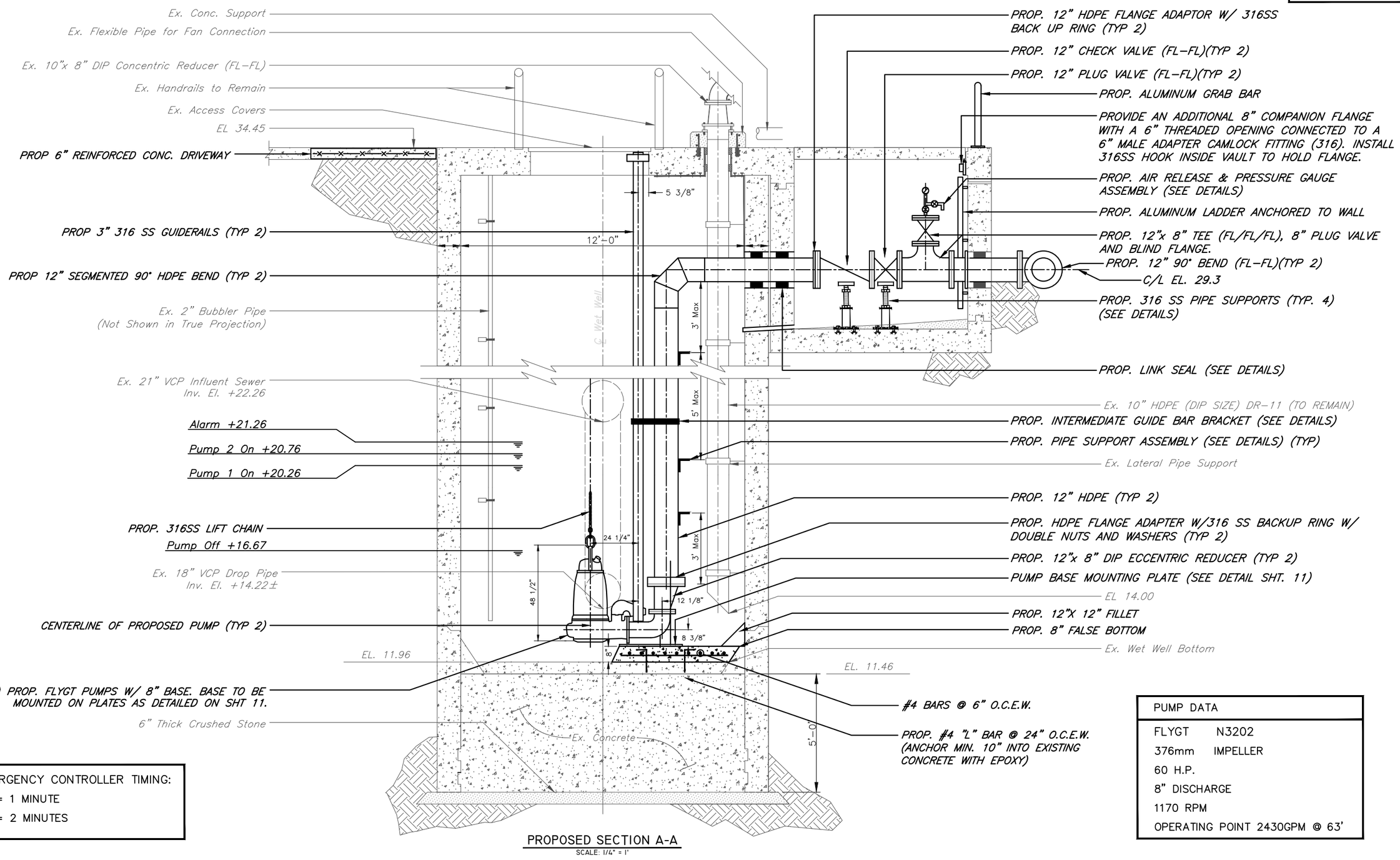
DATE: 1/11/23

CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PUMPING STATION
PROPOSED PLAN VIEW AT ELEVATION

SHEET 7



PROPOSED SECTION A-A
SCALE: 1/4" = 1'

EMERGENCY CONTROLLER TIMING:
T_1 = 1 MINUTE
T_2 = 2 MINUTES

PUMP DATA
FLYGT N3202
376mm IMPELLER
60 H.P.
8" DISCHARGE
1170 RPM
OPERATING POINT 2430GPM @ 63'

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

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CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PUMPING STATION
PROPOSED SECTION A-A

SHEET 8

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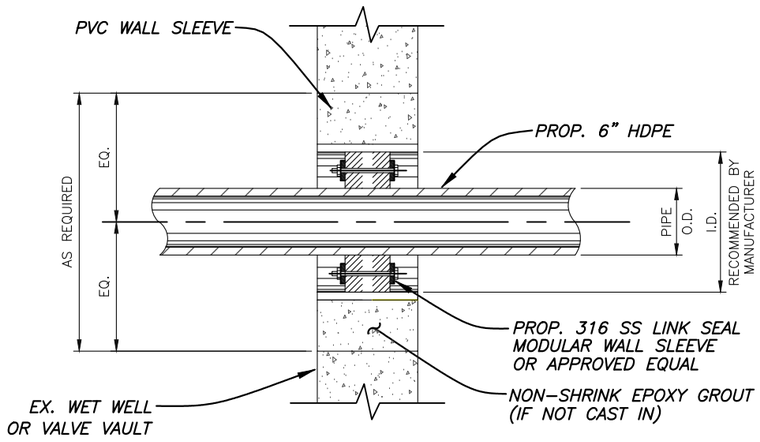

LINK SEAL DETAIL
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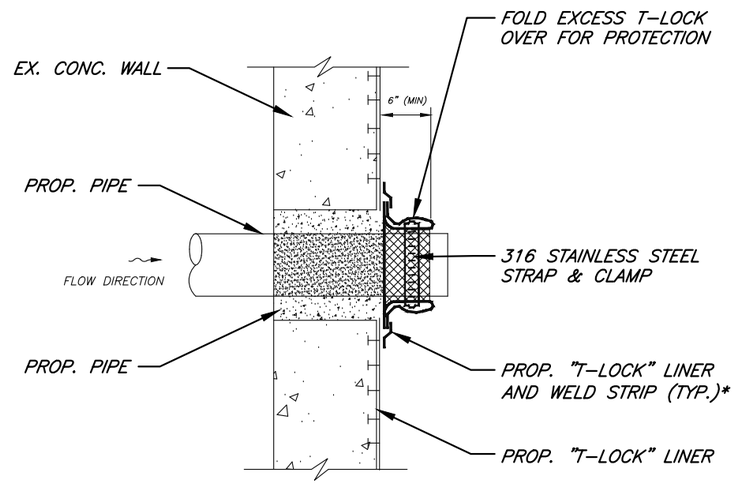
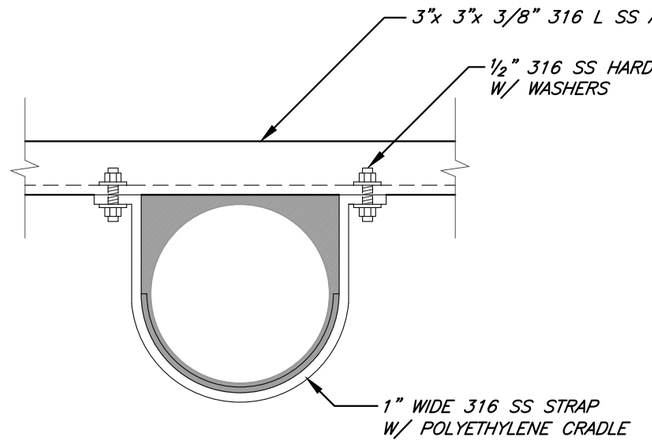


PIPE STRAP SUPPORT
N.T.S.



PIPE STRAP SUPPORT
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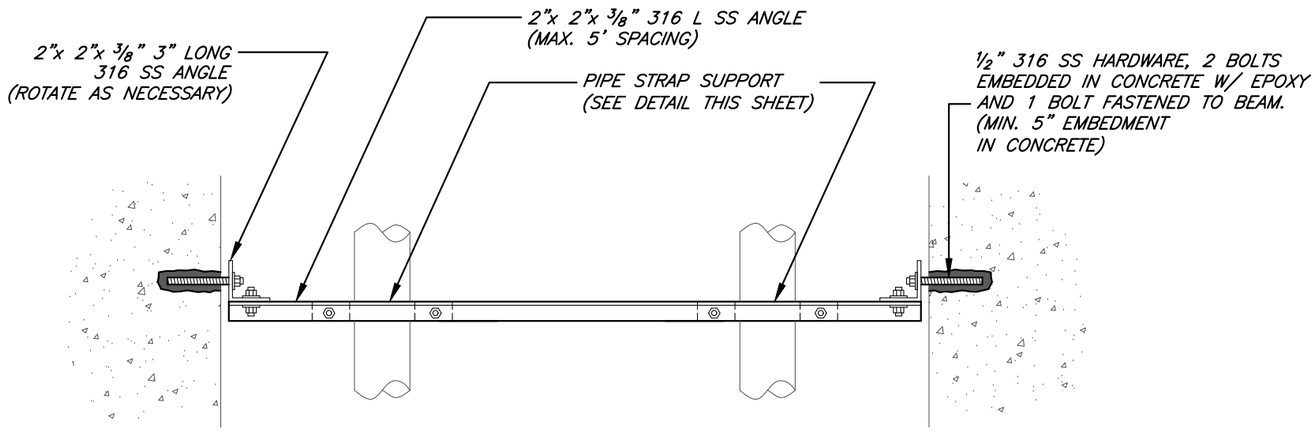

PIPE SUPPORT ASSEMBLY
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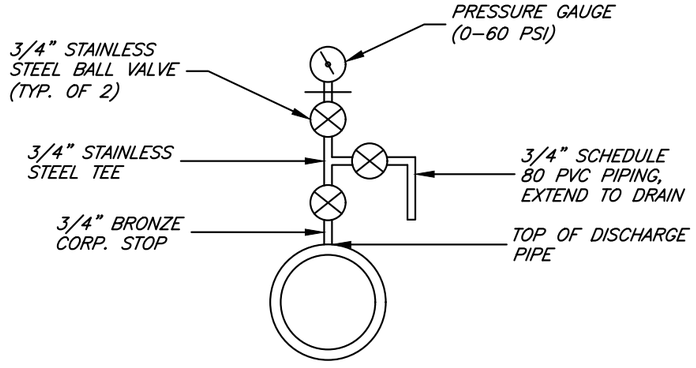

AIR RELEASE AND PRESSURE GAUGE
N.T.S.

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

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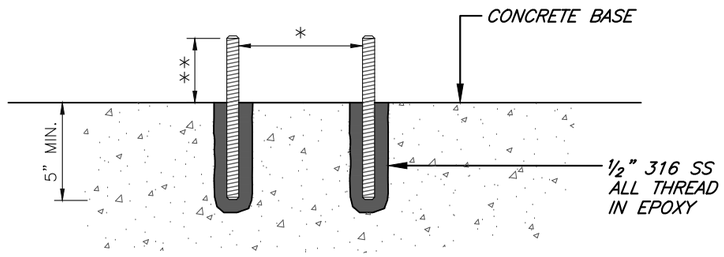
CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PS REHABILITATION
DETAILS

SHEET 9



* 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
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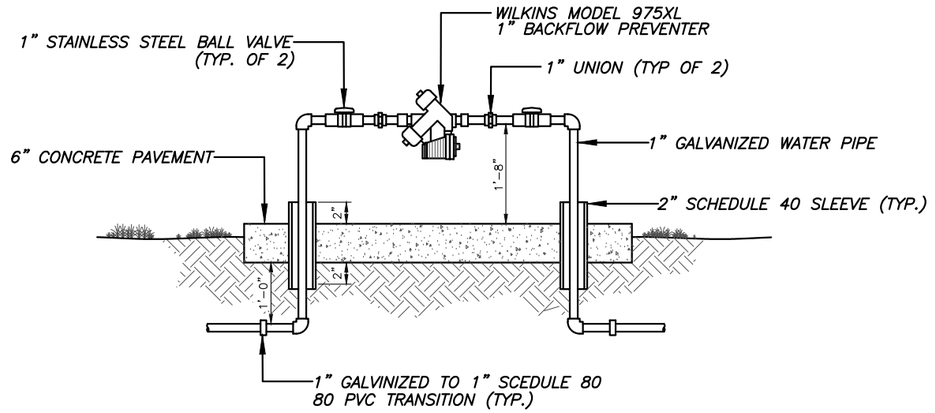

BACKFLOW PREVENTER DETAIL
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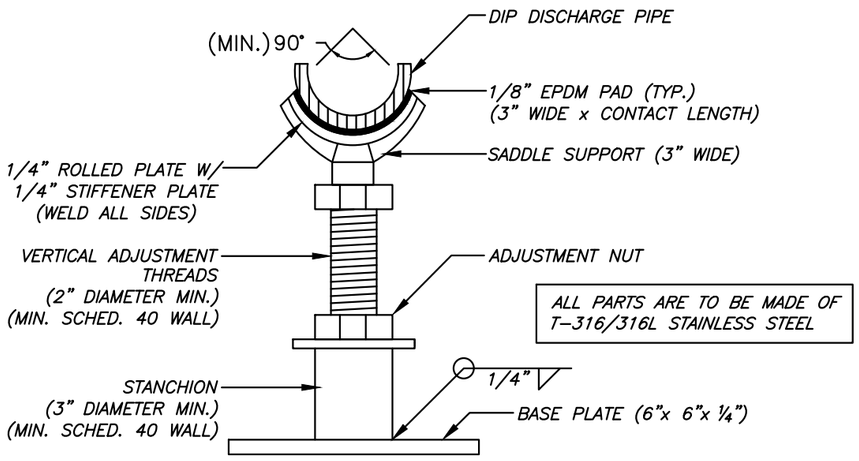
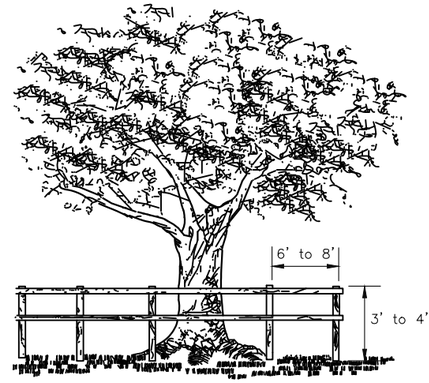


SECTION VIEW - STAINLESS STEEL STANCHION SADDLE SUPPORT
N.T.S.



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

VERTICAL WOOD MEMBER OR APPROVED MATERIAL.

BARRICADES PLACED AT DESIGNATED PROTECTIVE ROOT ZONE.

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

JACINTO CARLOS FERRAS, P.E., #49454
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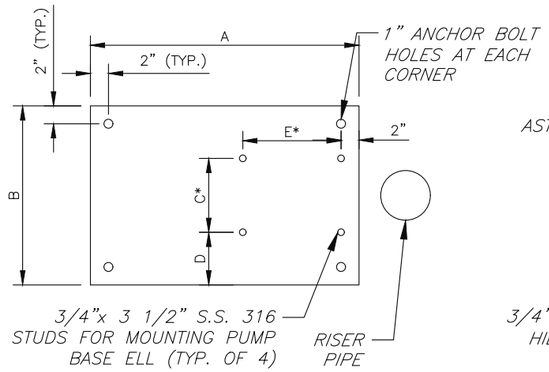
ADALEE PS REHABILITATION
DETAILS

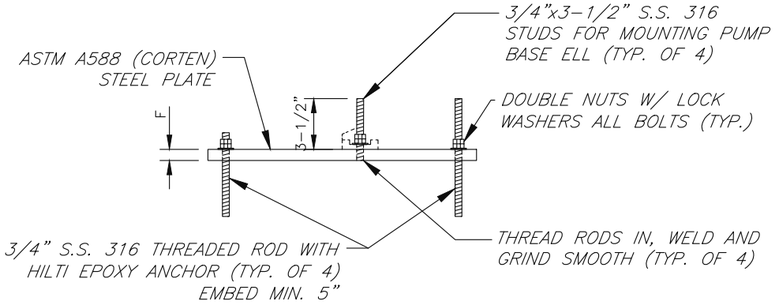
SHEET
10

PUMP BASE ELL MOUNTING PLATE DIMENSIONS					
A	B	C	D	E	F
24"	20"	8"	4"	11"	3/4"

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

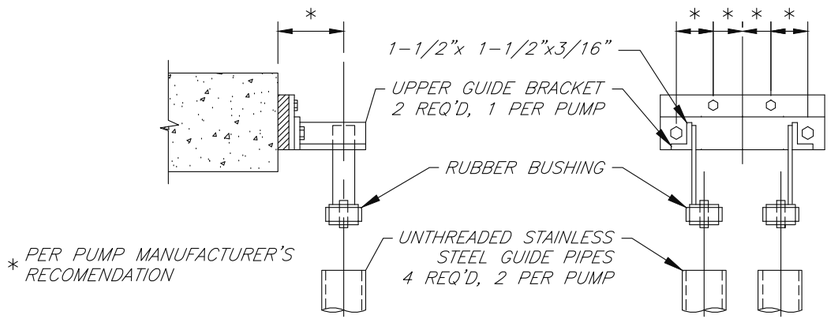


PLAN

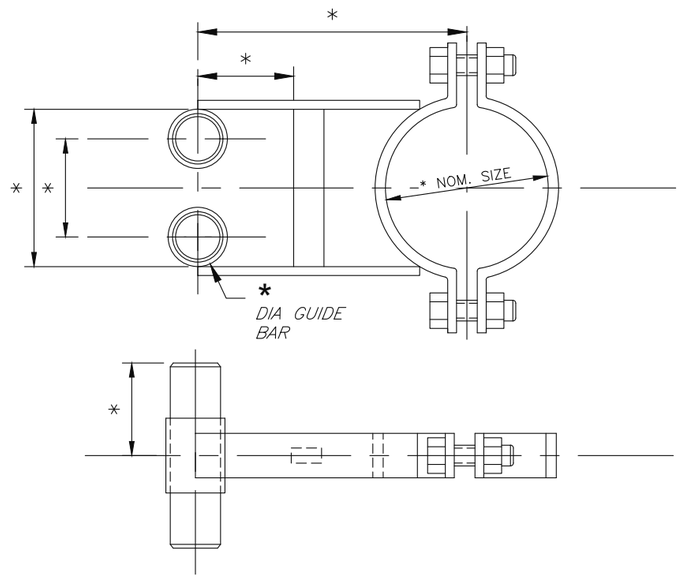


PROFILE

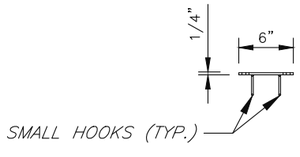
PUMP BASE ELL MOUNTING PLATE
N.T.S.



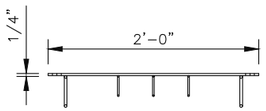
GUIDE BRACKET (SUPPLIED WITH PUMPS)
N.T.S.



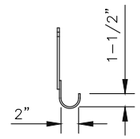
INTERMEDIATE GUIDE BAR BRACKETS
N.T.S.



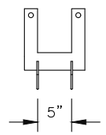
TOP VIEW SMALL HOOK



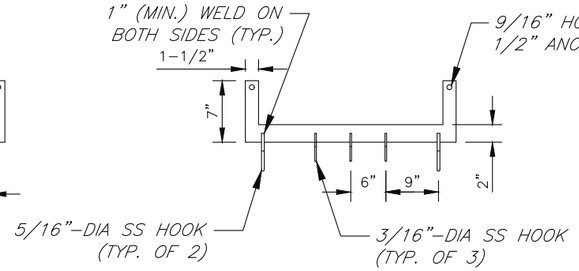
TOP VIEW LARGE RACK



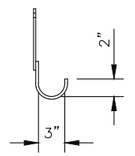
SMALL HOOK SIDE VIEW



FRONT VIEW SMALL RACK (TYP. OF 2)



FRONT VIEW LARGE RACK (TYP. OF 2)



LARGE HOOK SIDE VIEW

STAINLESS STEEL HOOK RACKS
N.T.S.

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

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

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

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DRN: JHJ
CKD:
DATE: 1/11/23

CITY of TAMPA
WASTEWATER DEPARTMENT

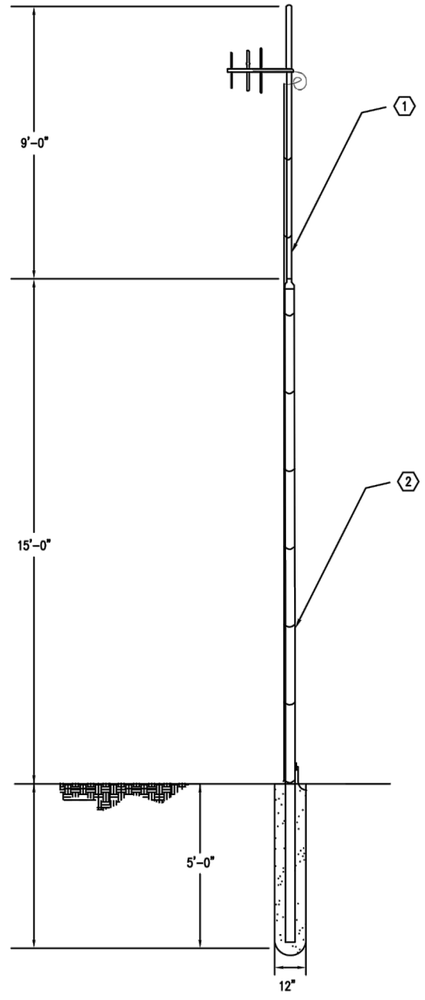
ADALEE PS REHABILITATION
DETAILS

SHEET
11

WIND DESIGN DATA:
CODE: FLORIDA BUILDING CODE 2020, 7TH EDITION
ASCE/SEI 7-10

BASIC WIND SPEED(VULT) ..... 152 MPH
NOMINAL WIND SPEED (VASD) ..... 118 MPH
CATEGORY (RISK) III
WIND EXPOSURE ..... B

DESIGN WIND PRESSURE (PSF) 45.9



NOTES

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

STRUCTURAL ANTENNA DETAIL
SCALE: N.T.S.

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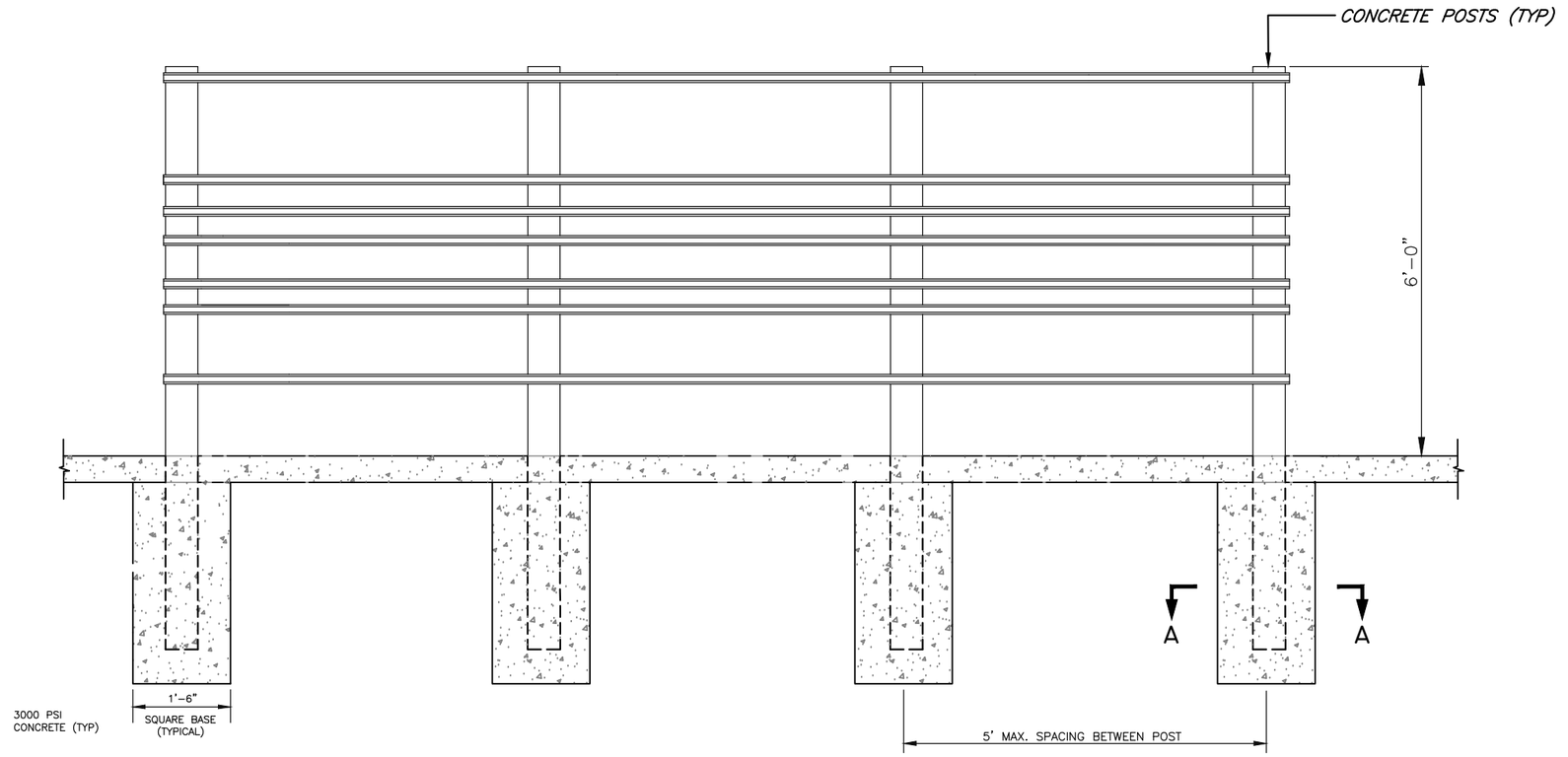
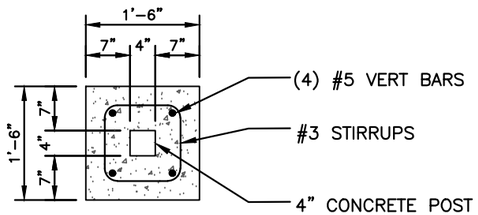
ADALEE PS REHABILITATION
STRUCTURAL ANTENNA DETAIL

SHEET 12



FRONT VIEW

N.T.S.



PROPOSED SECTION A-A

SCALE: ½" = 1'-0"

WIND DESIGN DATA:

CODE: FLORIDA BUILDING CODE 2020, 7TH EDITION AND ASCE/SEI 7-22

BASIC WIND SPEED (VULT):	*152 MPH*
NOMINAL WIND SPEED (VASD):	*118 MPH*
CATEGORY (RISK):	*III*
WIND EXPOSURE:	*B*
DESIGN AND WIND PRESSURE (PSF):	*45.9*

STRUCTURAL GENERAL NOTES:

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

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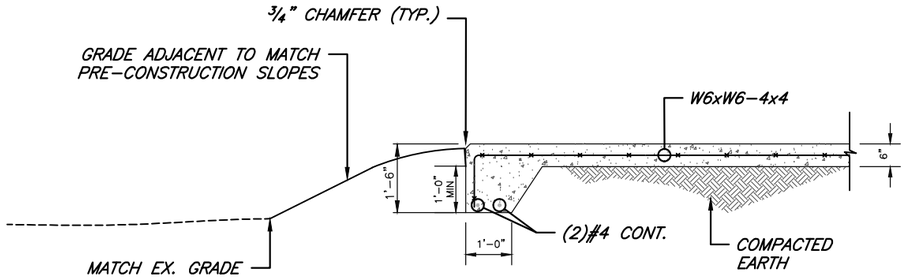
ADALEE PS REHABILITATION
ELECTRICAL CONTROL PANEL SUPPORT POST

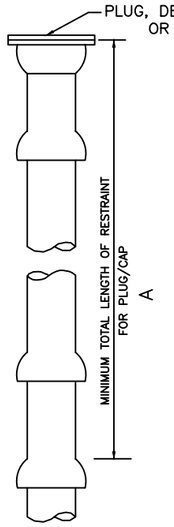
SHEET 13

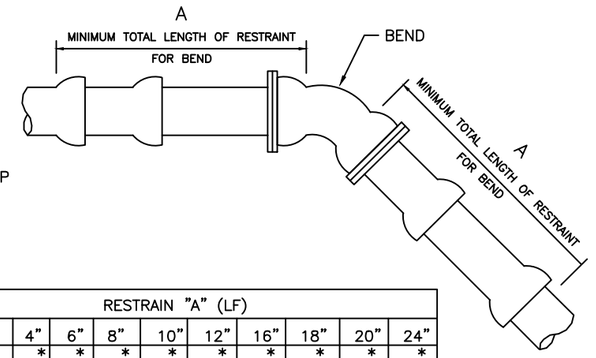


SECTION B-B
N.T.S.

CONCRETE SLAB NOTES:

1. *CONTRACTOR TO INSTALL ½" THICK PREFORMED EXPANSION MATERIAL WHERE THE NEW SLAB MEETS THE EXISTING P.S. SLAB.*
2. *SOIL COMPACTION UNDER NEW SLAB SHALL BE 98% MODIFIED PROCTOR (T-180).*





RESTRAIN "A" (LF)									
FITTING	4"	6"	8"	10"	12"	16"	18"	20"	24"
11-1/4°	2*	2*	3*	4*	4*	5*	6*	6*	7*
22-1/2°	3*	5*	6*	7*	9*	11*	12*	13*	15*
45°	7*	10*	13*	15*	18*	23	25	27	31
90°	17*	24	31	37	43	55	60	65	75
PLUG/CAP	38	53	69	83	96	126	139	153	178

A=MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED

* MINIMUM ONE PIPE JOINT UPSTREAM AND DOWNSTREAM OF EACH FITTING SHALL BE RESTRAINED

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

FITTING RESTRAINT DETAIL
(AWWA C900/C905 PVC PIPE)

JACINTO CARLOS FERRAS, P.E., #49454
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ADALEE PS REHABILITATION
SECTION B-B & PIPE RESTRAINT DETAILS

SHEET 14

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

(M) — FULL VOLTAGE NON REVERSING

(F) (R) — FULL VOLTAGE REVERSING

(F) (S) — 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 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.

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Certificate of Authorization No. 31028

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CKD:
DATE: 4/4/23

CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PS REHABILITATION
ELECTRICAL SYMBOL LEGEND (SHT. 1 OF 2)

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)
- 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

CONTROL SCHEMATIC SYMBOLS

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

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

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ADALEE PS REHABILITATION
ELECTRICAL SYMBOL LEGEND (SHT. 2 OF 2)

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 7TH EDITION 2020 OF THE FLORIDA BUILDING CODE AND THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE.
7. ALL THREADED CONNECTIONS SHALL BE COATED W/ ALUMA-SHIELD ANTI-SIEZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & B) OR EQUAL.
8. ALL PANELS, DISCONNECTS, SWITCHES, AND EQUIPMENT COVERPLATES SHALL BE LABELED W/ NAMEPLATES. NAMEPLATES SHALL BE THREE-PLY PHENOLIC BLACK-WHITE-BLACK ENGRAVED THROUGH THE FIRST BLACK LAYER. LETTERING SHALL BE 0.5 CM (3/16") MIN. EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.
9. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'-0" INTERVALS.
10. ALL CIRCUITS SHALL HAVE A PROPERLY SIZED GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT W/ POWER CONDUCTORS.
11. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS, NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNED IN THE DRAWINGS.
12. NEATLY COIL ALL SPARE CONDUCTORS & TAPE W/ VINYL ELECTRICAL TAPE (SCOTCH 33+).
13. PROVIDE A MINIMUM OF 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE W/ ARTICLE 110 OF THE NEC.
14. ALL FASTENING HARDWARE (SCREW, BOLTS NUTS ETC.) SHALL BE 316-STAINLESS STEEL, FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.
15. EXPOSED CONDUITS SHALL BE NON-COATED RIGID ALUMINUM CONDUIT, UNLESS OTHERWISE NOTED (UON). INSTALL PVC COATED RIGID ALUMINUM CONDUIT TO THE WET WELL, UNLESS OTHERWISE NOTED (UON).
16. DIRECT BURIED AND CONCRETE ENCASED CONDUIT SHALL BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED. TRANSITIONS FROM ABOVE-GRADE RIGID ALUMINUM CONDUIT TO NONMETALLIC CONDUIT SHALL BE ACCOMPLISHED WITH A THREADED ADAPTER. RIGID ALUMINUM CONDUIT INSTALLED ABOVE GRADE AND EXTENDING BELOW GRADE SHALL INCLUDE THE FIRST 90° ELBOW. ALL RIGID ALUMINUM CONDUITS EXTENDING BELOW GRADE SHALL BE COATED WITH TWO COATS OF ASPHALTUM-TYPE PAINT ALONG ITS ENTIRE LENGTH BELOW GRADE AND EXTENDING 6" ABOVE GRADE OR ABOVE THE TOP OF THE FINISHED SLAB.
17. ABOVE GRADE INDOOR, AND NON-WASHDOWN AREAS, RIGID ALUMINUM CONDUIT CONNECTIONS TO CONTROL BOXES, ETC. SHALL BE MADE WITH ALUMINUM DOUBLE LOCKNUTS AND BUSHINGS. TURN DOWN ON THREADS TO SOLIDLY CONNECT RACEWAY TO BOX OR ENCLOSURE.
18. ALUMINUM WATERTIGHT HUBS (MYERS HUBS) SHALL BE USED FOR CONNECTIONS TO CONTROL BOXES, ETC. MOUNTED OUTDOORS, BELOW GRADE, OR WASHDOWN AREAS.
19. A 316-STAINLESS STEEL CHANNEL ERECTOR SYSTEM SHALL BE USED TO SUPPORT ALL CONDUITS, BOXES ETC. USE 316 STAINLESS STEEL MOUNTING HARDWARE.
20. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND MAKE ADJUSTMENTS AS NECESSARY TO EXECUTE THE PROPOSED INSTALLATIONS.
21. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
22. PULL BOXES SHALL BE INSTALLED AS NECESSARY TO FACILITATE WIRE PULLS AND AVOID EXCESSIVE PULLING TENSION ON WIRING. IN NO CASE SHALL CONDUIT LENGTHS EXCEED 150' OR THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) WITHOUT A PULL BOX. PULL BOXES SHALL BE SIZED IN ACCORDANCE WITH ARTICLE 314 OF THE NEC.
23. THE WET WELL CLASSIFICATION IS CLASS 1, DIVISION 2, GROUP D, (HAZARDOUS AREA) NEC CHAPTER 5 IS APPLICABLE FOR INTERFACING WET WELL AND THE CONTROL ENCLOSURE.
24. CONTRACTOR SHALL ENSURE THAT ALL ELECTRICAL WORK SHALL BE PERFORMED WITHIN 2017 NEC, ALL APPLICABLE LOCAL ORDINANCES, AND SHALL BE INSPECTED BY CITY OF TAMPA/ HILLSBOROUGH COUNTY ELECTRICAL INSPECTORS, AS APPLICABLE.
25. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED AND AS SPECIFIED, OR AS APPROVED BY THE ENGINEER. THE PANEL BUILDER SHALL BE UL-508A CERTIFIED AND A UL LABEL SHALL BE ATTACHED TO THE INSIDE OF THE ENCLOSURE. THE DOUBLE THROW DISCONNECT MUST BE LABELED "SUITABLE FOR USE AS SERVICE EQUIPMENT."
26. THE ENCLOSURES SHALL BE NEMA 4X, THEY SHALL BE CONSTRUCTED OF MINIMUM 14 GAUGE 304SS, THEY SHALL HAVE RAL 9003 WHITE POWDER COAT AND THE CLOSING SURFACES SHALL HAVE ROLLED LIPS, PROVIDE HINGED DOORS WITH 3-POINT LATCHED AND LOCKABLE HANDLES.
27. ALL COMPONENTS TO BE MOUNTED ON PANEL USING TAPPED HOLES.
28. ALL CONTROL WIRING SHALL BE STRANDED XHHW-2 COPPER, MINIMUM AWG #14. INSTALL FERRULES FOR ALL WIRE TERMINATIONS SMALLER THAN #8 AWG.
29. ALARM FLOAT SWITCH WILL BE SUPPLIED BY THE CITY, BUT INSTALLED BY CONTRACTOR.
30. DIMENSIONS, ITEMS, OR ELEVATIONS MARKED "*" TO BE DETERMINED AFTER EQUIPMENT SELECTION.
31. ALL MECHANICAL CONNECTORS SHALL BE TORQUED PER NEC, UL OR MANUFACTURES SPECIFICATIONS.
32. INSTALL LAMINATED SCHEMATIC, LAMINATED DATA SHEET AND LAMINATED SOFT STARTER SETUP PARAMETERS ON BACK FACE OF THE DOOR INSIDE THE ENCLOSURE.
33. ENSURE THAT LINE CONNECTIONS TO METER SOCKET PROVIDE CORRECT MOTOR ROTATION.
34. CONDUCTORS WITHIN THE ENCLOSURE AND NOT ROUTED IN WIREWAYS, SHALL BE SECURED TO THE BACK PANEL WITH MECHANICAL FASTENERS, FASTENERS SECURED WITH ADHESIVE ARE NOT ACCEPTABLE.
35. ALL HINGED SURFACES SHALL BE GROUNDED WITH A BONDING JUMPER SECURED TO THE ENCLOSURE OR BACKPANEL.
36. THE PCSR SHALL BE MOTOROLA ACE 3600 PACKAGE AS DISTRIBUTED BY STAR CONTROLS, REVERE CONTROL SYSTEMS, AUTOMATED CONTROLS, CURRY CONTROLS, ROCHA CONTROLS, OR CAYZO CONSULTING INC. THE PUMPING STATION CONTRACTOR SHALL COORDINATE HIS EFFORTS WITH STAR CONTROLS, REVERE CONTROL SYSTEMS, AUTOMATED CONTROLS, CURRY CONTROLS, ROCHA CONTROLS, OR CAYZO CONSULTING INC. TO ENSURE SYSTEM COMPATIBILITY. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE DUPLEX CONTROL SYSTEM/SCADA PACKAGE, AS PROGRAMMED BY STAR CONTROLS, REVERE CONTROL SYSTEMS, AUTOMATED CONTROLS, CURRY CONTROLS, ROCHA CONTROLS, OR CAYZO CONSULTING INC. – THE EXISTING PUMPING STATION DCR CONTROLS SHALL REVERT TO THE CITY AS A SPARE. THE SCADA INTEGRATORS LISTED ABOVE ARE COMPANIES IN WHICH WASTEWATER IS FAMILIAR WITH THEIR WORK HISTORIES AND DOES NOT EXCLUDE ANY COMPANY FROM BIDDING. ANY NEW INTEGRATOR THAT HAS NOT COMPLETED WORK FOR WASTERWATER, SHALL DEMONSTRATE THEIR ABILITY TO PERFORM THE SPECIFIED WORK.
37. THE CONTRACTOR SHALL SCHEDULE A PUMP STATION SCADA TESTING DATE, PUMP STATION PRE-STARTUP DATE, AND PUMP STATION STARTUP DATE. THE CITY SHALL BE GIVEN 14 DAYS' NOTICE OF THE SCHEDULED SCADA TESTING DATE. ON THE SCADA TESTING DATE, THE SCADA PROGRAMMER SHALL PROVIDE TEMPORARY POWER TO THE CONTROL PANEL PLC, PLACE THE NEW PLC ON LINE WITH THE CITY'S VT SCADA SYSTEM, AND PERFORM ANY NEEDED TROUBLESHOOTING OR DEBUGGING. THE CITY SHALL PROVIDE REQUIRED ADDRESSING FOR TESTING. AFTER THE SCADA PROGRAMMER DETERMINES THAT THE NEW PLC AND THE VT SCADA ARE PROPERLY COMMUNICATING WITHOUT ISSUE, THE CONTRACTOR SHALL SCHEDULE AN ONSITE PLC WITNESS TEST BETWEEN THE CITY OR CITY REPRESENTATIVE, SCADA PROGRAMMER, AND ANY OTHER REQUIRED PARTIES. DURING THE PLC WITNESS TEST, THE SCADA PROGRAMMER MUST DEMONSTRATE THAT THE NEW PLC IS ONLINE, COMMUNICATING WITH VT SCADA, AND ALL LEVEL AND STATUS INDICATIONS ARE FREE FROM ERROR. ONCE THE CITY HAS WITNESSED AND APPROVED SCADA TESTING, THE CONTRACTOR SHALL SCHEDULE A PRE-STARTUP AND START UP DATE. THE CITY RESERVES THE RIGHT TO CANCEL THE PRE-STARTUP DATE, IF IT DEEMS THE PRE-STARTUP DATE IS NOT NECESSARY.
38. THE CONTROL PANELS SHALL BE FACTORY TESTED. THE CONTRACTOR SHALL PROVIDE A CERTIFIED TESTING REPORT DETAILING ALL I/O POINTS, CONNECTION AND EQUIPMENT ARE IN WORKING ORDER. A COPY OF THE REPORT SHALL BE PROVIDED TO THE CITY PRIOR TO DELIVERY AND A COPY SHALL BE INCLUDED WITH THE CONTROL PANELS AT 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/ ULTRA-4 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 E17.
40. PROVIDE FINGER SAFE POWER DISTRIBUTION BLOCKS.
41. XHHW-2 CONDUCTORS (3-#3 AWG + #6 GND. CU FOR EACH MOTOR) SHALL EXTEND FROM THE JUNCTION BOX. PROVIDE SEAL-OFF BETWEEN MOTOR CONTROL PANEL TO PUMP MOTOR CONNECTION AND JUNCTION BOX AS INDICATED. THE SHOWN SEAL-OFFS SHALL BE ALUMINUM BODY, CROUSE-HINDS, OR EQUIVALENT.
42. ALUMINUM CONDUIT SURFACES THAT ARE IN CONTACT WITH SOIL OR CONCRETE SHALL BE COATED WITH TWO COATS ASPHALT VARNISH (FED. SPEC. TT-V-51) EXTENDING 4" BEYOND FINAL CONTACT POINT.
43. STAINLESS STEEL HANGERS TO SUPPORT THE EXCESS LENGTH OF MOTOR CABLES SHALL BE INSTALLED IN THE WET WELL. THESE HANGERS SHALL BE LOCATED IN A SEPARATE AREA FROM THE HANGERS SUPPORTING THE PUMP CHAINS.

HATCHED AREAS ON ELECTRICAL SHEETS INDICATE ELECTRICAL ITEMS TO BE REMOVED

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CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PS REHABILITATION
GENERAL NOTES

SHEET
EG3

ELECTRICAL SERVICE LOAD SUMMARY

480 VAC, 3ø, 4W

LOAD	CONNECTED	DEMAND	APPROX. PHASE CURRENTS L1	L2	L3
PROP. PUMP #1	59.0 KVA	59.0 KVA	71.0 A	71.0 A	71.0 A
PROP. PUMP #2	59.0 KVA	59.0 KVA	71.0 A	71.0 A	71.0 A
CARBON BLOWER	2.1 KVA	2.1 KVA	2.5 A	2.5 A	2.5 A
SINGLE PHASE LOADS	5.0 KVA	5.0 KVA	10.4 A	0 A	10.4 A
TOTAL	125.1 KVA	125.1 KVA	154.9 A	144.5 A	154.9 A

PUMP MOTOR DATA

MAKE: FLYGT

MODEL: NP 3202 MT
3~460

H.P.: 60

480V, 3–PHASE, 71 FLA

TOTAL PUMP LOAD: 142 AMPS, 118.1 KVA

SHORT CIRCUIT CALCULATIONS

AVAILABLE SHORT–CIRCUIT CURRENT AT 480V UTILITY SERVICE IS 15,120 AMPERES.
AS PER (TECO REPRESENTATIVE);

TECO CONTACT: BROCK BLACKMORE (813) 228–1008

UTILITY SERVICE: 480/277, 3 PH, TRANSFORMER AVAILABLE
FAULT CURRENT AT SECONDARY SIDE OF
TECO'S TRANSFORMER: 15,120 AMP RMS SYM.
SERVICE CONDUCTOR LENGTH: 50 FEET
SERVICE CONDUCTOR SIZE: #250 THWN CU.
FUSE RATING: 250 AMPS
ISCA AT LINE SIDE OF FTDS:

$$ISCA = \left[\frac{1}{1 + \left[\frac{(1.73)(50)(15{,}120)}{(18{,}594)(480)} \right]} \right] * 15{,}120 = 13{,}186$$

SHORT CIRCUIT CURRENT AVAILABLE AT MAIN LUGS OF MCP=4,500 AMPS RMS, SYMMETRICAL

SCOPE OF WORK:

1. *THE SERVICE VOLTAGE TO THIS FACILITY SHALL REMAIN 277/480 VAC., 3–PHASE, 4–WIRE, WYE.*
2. *REMOVE THE EXISTING METER SOCKET, LIGHTNING ARRESTOR, CONTROL PANEL, CONCRETE PEDESTAL, AND ALL ASSOCIATED CONDUIT AND CONDUCTORS, AS SHOWN ON PLANS.*
3. *CAREFULLY REMOVE THE EXISTING CONTROL PANEL AND DELIVER 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 NEMA 4X 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 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 POWER CONNECTOR, AS SHOWN ON PLANS.*
13. *PROVIDE AND INSTALL SCADA ANTENNA/MAST AS INDICATED.*
14. *PROVIDE AND INSTALL AREA LIGHT, AS SHOWN ON PLANS.*
15. *CALIBRATE AND ADJUST SETPOINTS FOR ALL SENSING DEVICES, ALARM DEVICES, AND TIMERS. CALIBRATION AND SETPOINTS SHALL BE PROVIDED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.*
16. *PROVIDE FOR PROPER GROUNDING AS SHOWN, SPECIFIED, AND REQUIRED.*
17. *PROVIDE AND INSTALL ALL NECESSARY CONDUITS AND CONDUCTORS, AS SHOWN, SPECIFIED AND REQUIRED.*
18. *ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2017 EDITION OF THE NATIONAL ELECTRIC CODE AND CHAPTER 5 OF THE CITY OF TAMPA CODE.*
19. *REFER TO CIVIL/MECHANICAL SHEETS FOR BYPASS PUMPING REQUIREMENTS. IF ELECTRICALLY DRIVEN BYPASS PUMPS ARE UTILIZED, THE CONTRACTOR SHALL COORDINATE ALL TEMPORARY ELECTRICAL SERVICE REQUIREMENTS WITH TAMPA ELECTRIC COMPANY (TECO). ANY COSTS ASSOCIATED WITH TEMPORARY ELECTRIC POWER ARE TO BE INCLUDED IN THE LUMP SUM PRICE AND NO SEPERATE PAYMENT WILL BE MADE.*

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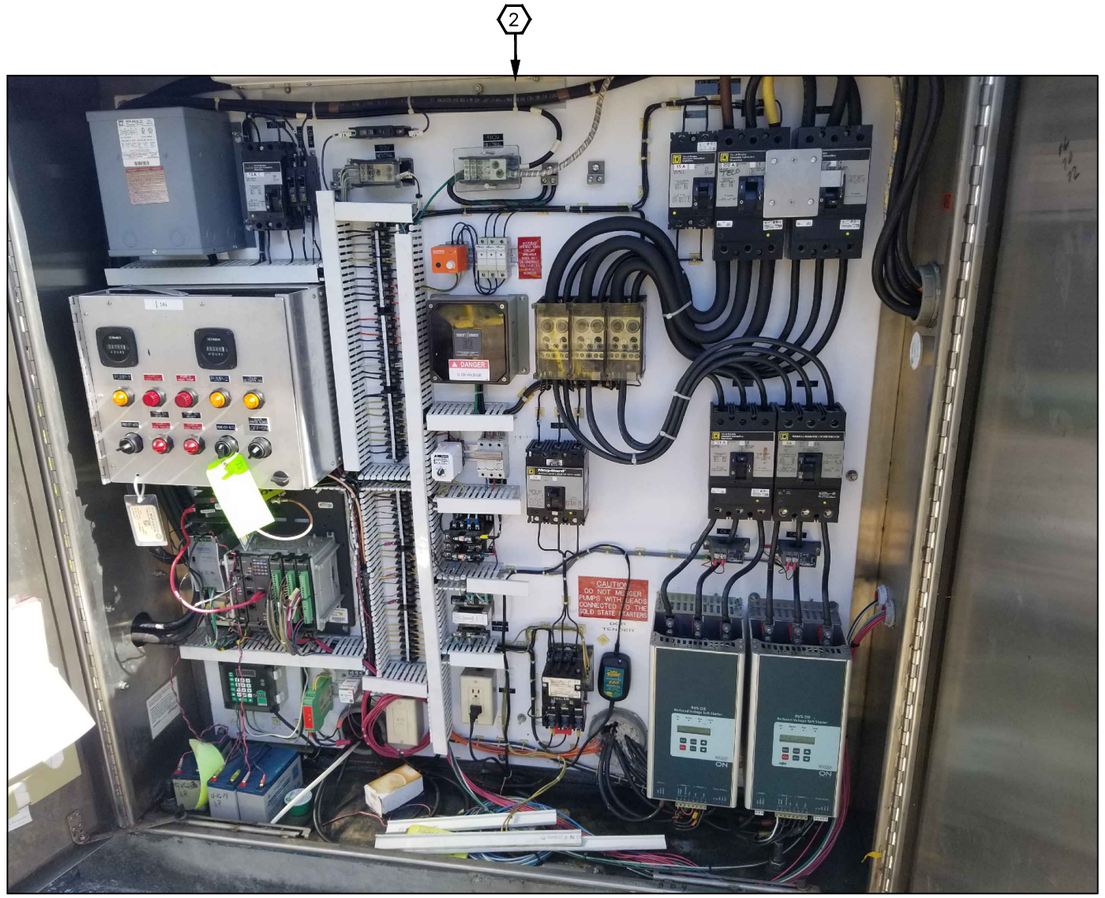
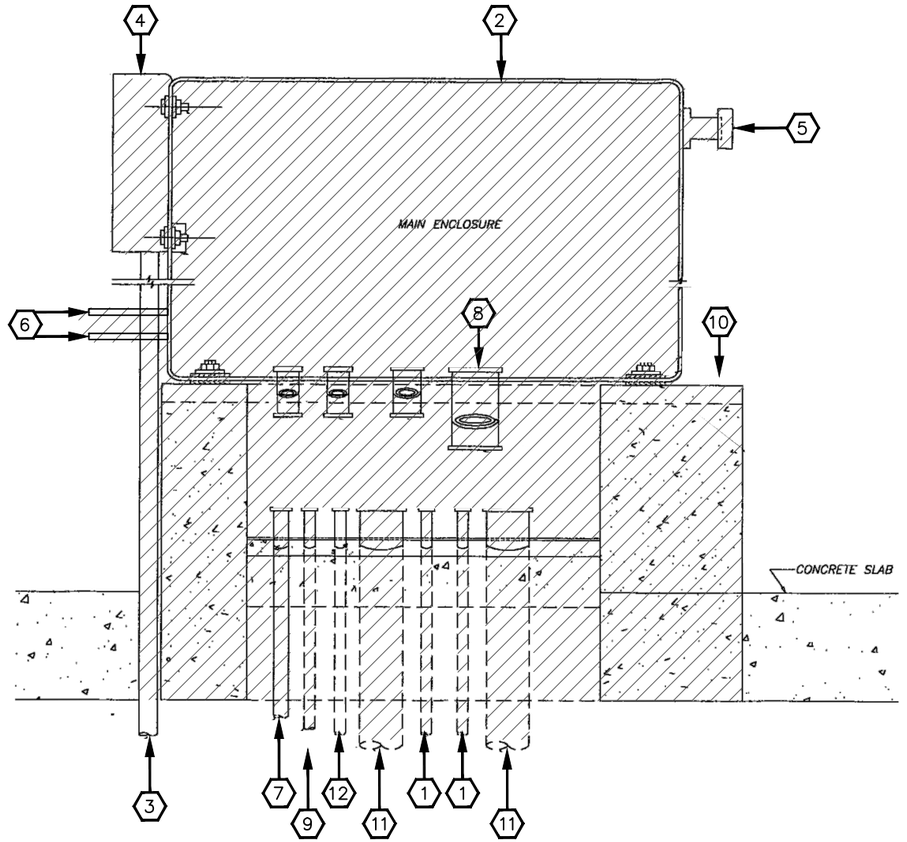
CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PS REHABILITATION
SCOPE OF WORK

SHEET
EG4





KEYED NOTES:

1. 1" CONDUIT TO WET WELL.
2. CONTROL CABINET MOUNTED ON CONCRETE PEDESTAL. (SEE NOTE 1)
3. SERVICE LATERAL TO TECO STUB POLE. (SEE NOTES 2 AND 3)
4. TECO METER
5. EMERGENCY CONNECTOR
6. CONDUITS TO DIESEL PUMP
7. 1" CONDUIT TO ANTENNA
8. CONDUIT SEALS
9. 1" CONDUIT TO ODOR CONTROL BUILDING
10. CONCRETE PEDESTAL
11. 3" PVC CONDUIT TO WET WELL
12. 1" CONDUIT FOR BUBBLER (SEE NOTES 2 AND 3)

GENERAL NOTES:

1. REMOVE EXISTING CABINET AND DELIVER TO THE CITY FOR MAINTENANCE INVENTORY.
2. INTERCEPT EXISTING BELOW GRADE CONDUIT AND EXTEND TO PROPOSED EQUIPMENT.
3. SEE PROPOSED ELECTRICAL SITE PLAN FOR CONDUIT EXTENSIONS.

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CITY of TAMPA
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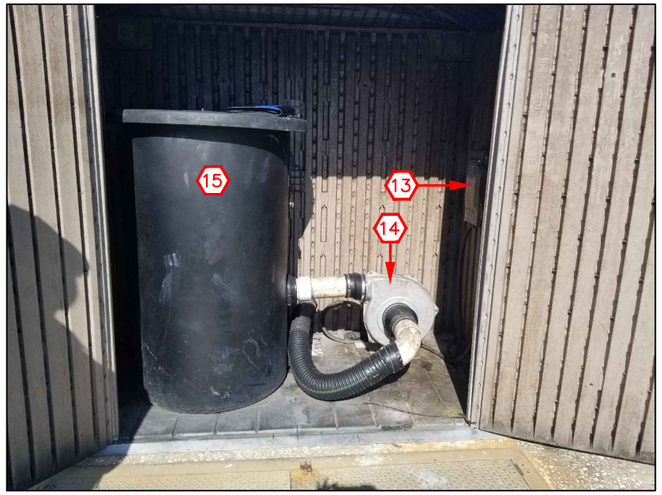
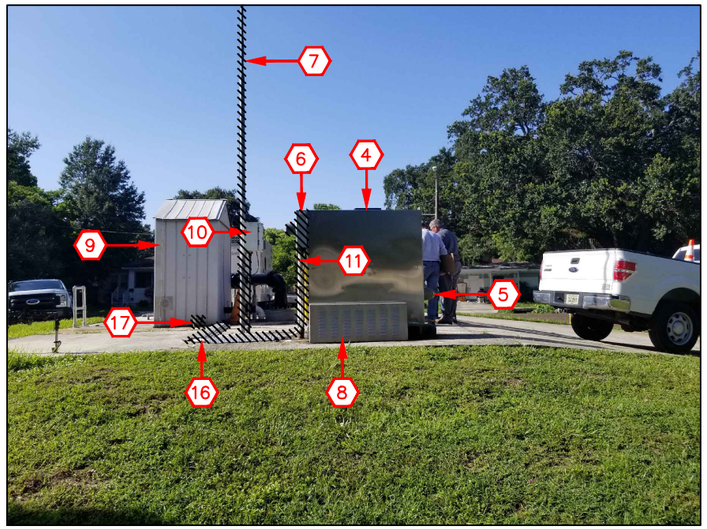
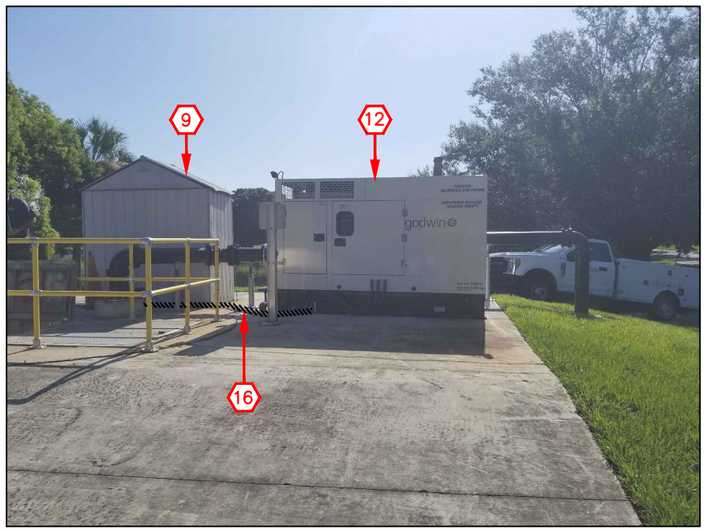
ADALEE PS REHABILITATION
ELECTRICAL DEMOLITION DETAILS

SHEET
EDI







KEYED NOTES:

1. TECO POLE #022595.
2. TECO STUB POLE #022594
3. TECO HANDHOLE
4. CONTROL PANEL (SEE NOTE 2)
5. EMERGENCY CONNECTOR (SEE NOTE 3)
6. TECO METER (SEE NOTE 3)
7. SCADA ANTENNA (SEE NOTE 3)
8. JUNCTION BOX (SEE NOTE 4)
9. ODOR CONTROL BUILDING (SEE NOTE 1)
10. DCR SCADA RTU CABINET (SEE NOTE 2)
11. METER CONDUIT (SEE NOTE 3)
12. DIESEL BACK UP PUMP (SEE NOTE 1)
13. 30 AMP DISCONNECT (SEE NOTE 1)
14. 2 HP, 2.5 FLA, 480V ODOR CONTROL PUMP (SEE NOTE 1)
15. ODOR CONTROL CARBON UNIT (SEE NOTE 1)
16. DIESEL BACK UP CONDUITS (SEE NOTE 3)
17. ODOR CONTROL CONDUIT (SEE NOTE 5)

GENERAL NOTES:

1. EQUIPMENT SHALL BE REUSED. AND/OR RELOCATED IF NECESSARY.
2. CAREFULLY REMOVE AND DELIVER TO TREATMENT PLANT FOR INVENTORY.
3. TO BE REMOVED.
4. TO BE REMOVED, INTERCEPT EXISTING CONDUITS AND EXTEND TO PROPOSED EQUIPMENT.
5. ODOR CONTROL CONDUIT BODY TO BE REMOVED AND FLEXIBLE CONDUIT TO BE REUSED.

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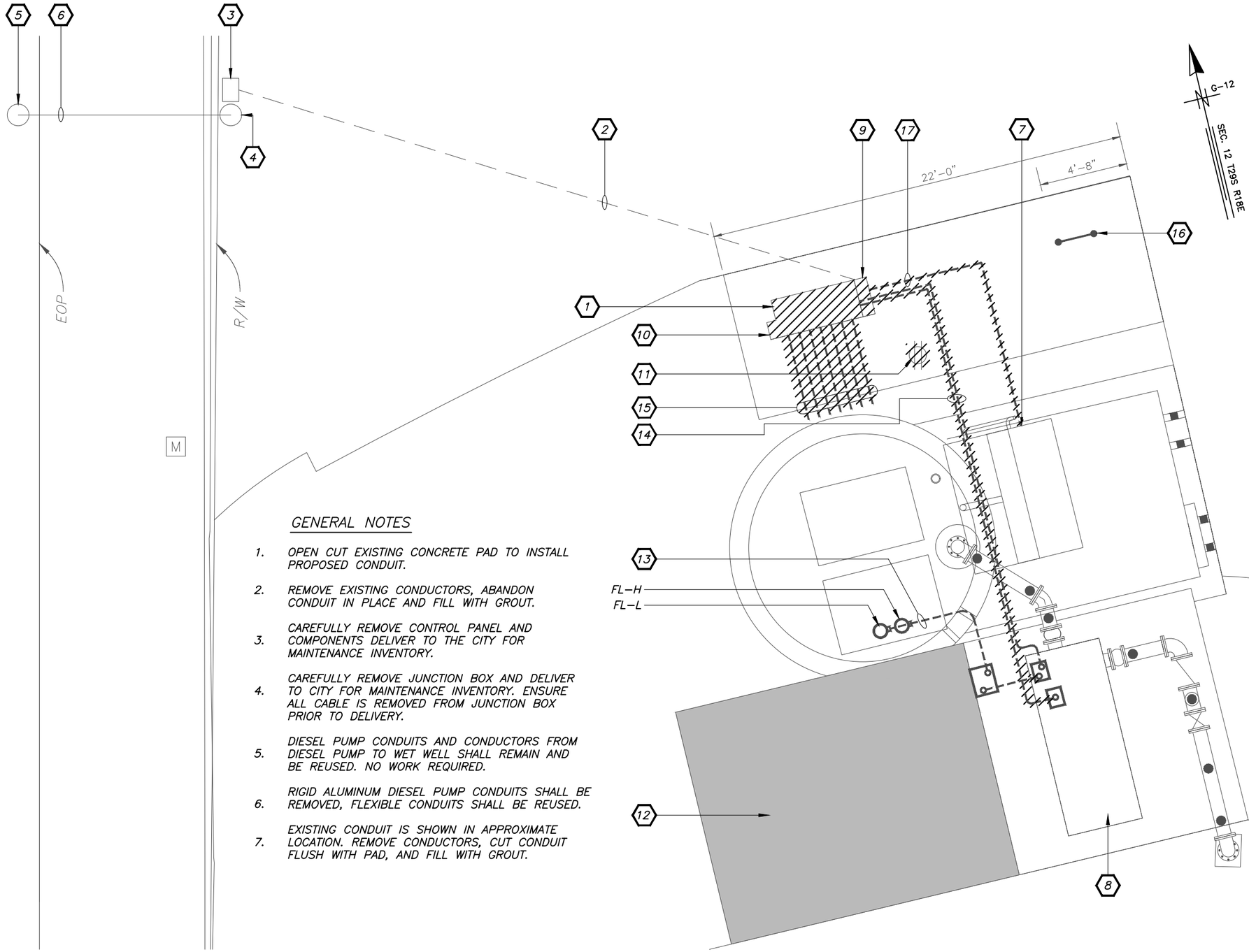
ADALEE PS REHABILITATION
EXISTING ELECTRICAL DEMOLITION

SHEET
ED2



GENERAL NOTES

1. OPEN CUT EXISTING CONCRETE PAD TO INSTALL PROPOSED CONDUIT.
2. REMOVE EXISTING CONDUCTORS, ABANDON CONDUIT IN PLACE AND FILL WITH GROUT.
3. CAREFULLY REMOVE CONTROL PANEL AND COMPONENTS DELIVER TO THE CITY FOR MAINTENANCE INVENTORY.
4. CAREFULLY REMOVE JUNCTION BOX AND DELIVER TO CITY FOR MAINTENANCE INVENTORY. ENSURE ALL CABLE IS REMOVED FROM JUNCTION BOX PRIOR TO DELIVERY.
5. DIESEL PUMP CONDUITS AND CONDUCTORS FROM DIESEL PUMP TO WET WELL SHALL REMAIN AND BE REUSED. NO WORK REQUIRED.
6. RIGID ALUMINUM DIESEL PUMP CONDUITS SHALL BE REMOVED, FLEXIBLE CONDUITS SHALL BE REUSED.
7. EXISTING CONDUIT IS SHOWN IN APPROXIMATE LOCATION. REMOVE CONDUCTORS, CUT CONDUIT FLUSH WITH PAD, AND FILL WITH GROUT.

KEYED NOTES:

1. CONTROL PANEL (SEE NOTE 3)
2. CONDUIT TO TECO METER (SEE NOTE 2)
3. TECO HAND HOLE
4. TECO STUB POLE (POLE #022394)
5. TECO POWER POLE (POLE #026593)
6. O/H CONDUCTORS
7. ODOR CONTROL SHED
8. DIESEL PUMP
9. TECO METER
10. EMERGENCY CONNECTOR (SEE NOTE 3)
11. SCADA ANTENNA (SEE NOTE 4)
12. OPEN CUT EXISTING CONCRETE PAD (SEE NOTE 1)
13. DIESEL PUMP CONDUIT (SEE NOTE 5)
14. DIESEL PUMP CONDUIT (SEE NOTE 6)
15. CONDUIT TO CONTROL PANEL FROM WET WELL (SEE NOTE 7)
16. BACKFLOW PREVENTER AND HOSE BIB.
17. ODOR CONTROL CONDUIT (SEE NOTE 7)

EXISTING ELECTRICAL SITE PLAN DEMOLITION
NTS

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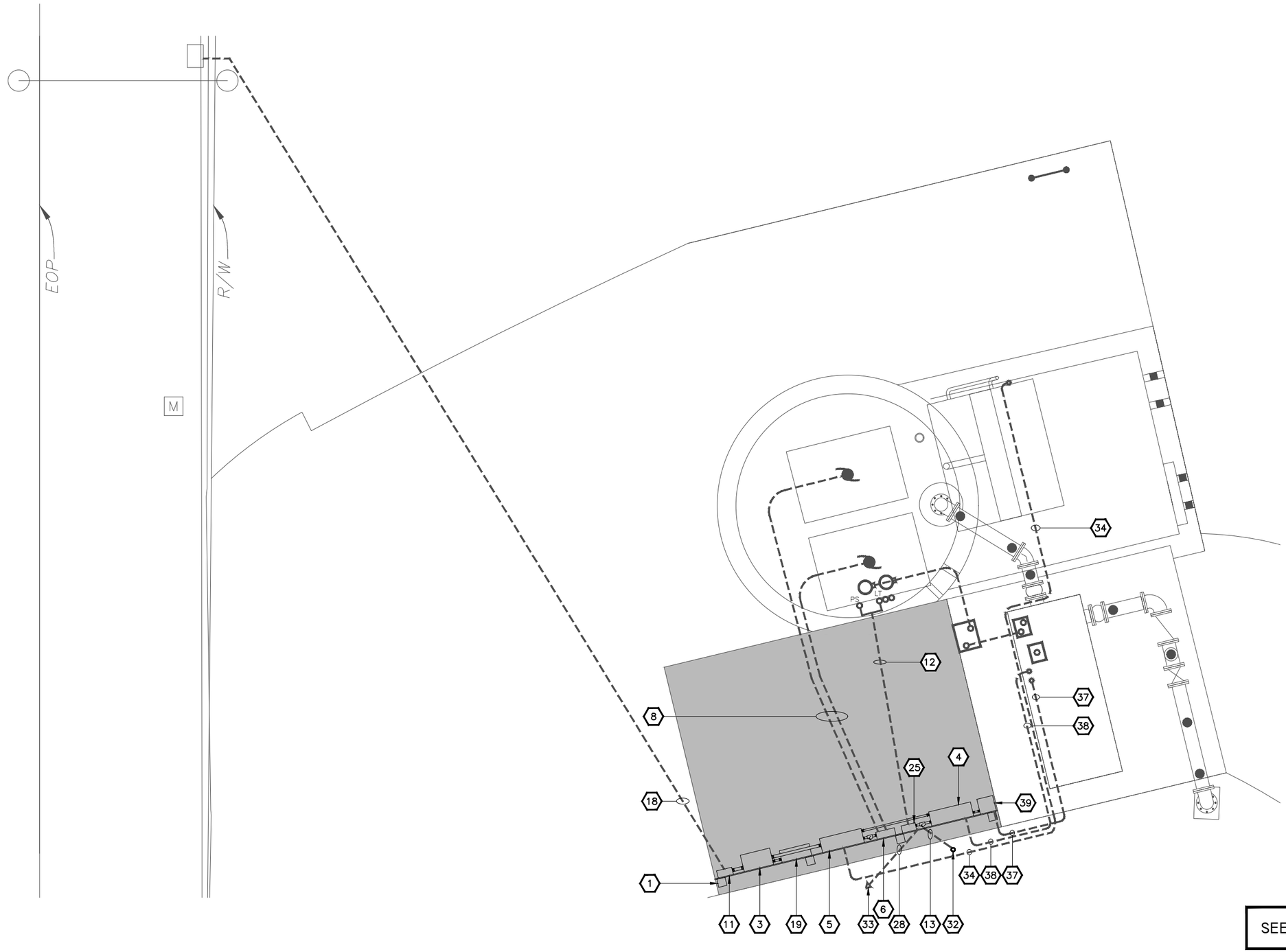
ADALEE PS REHABILITATION
EXISTING ELECTRICAL SITE PLAN DEMOLITION

SHEET
ED3



SEE KEYED NOTES ON SHEET E3

PROPOSED ELECTRICAL SITE PLAN

NTS

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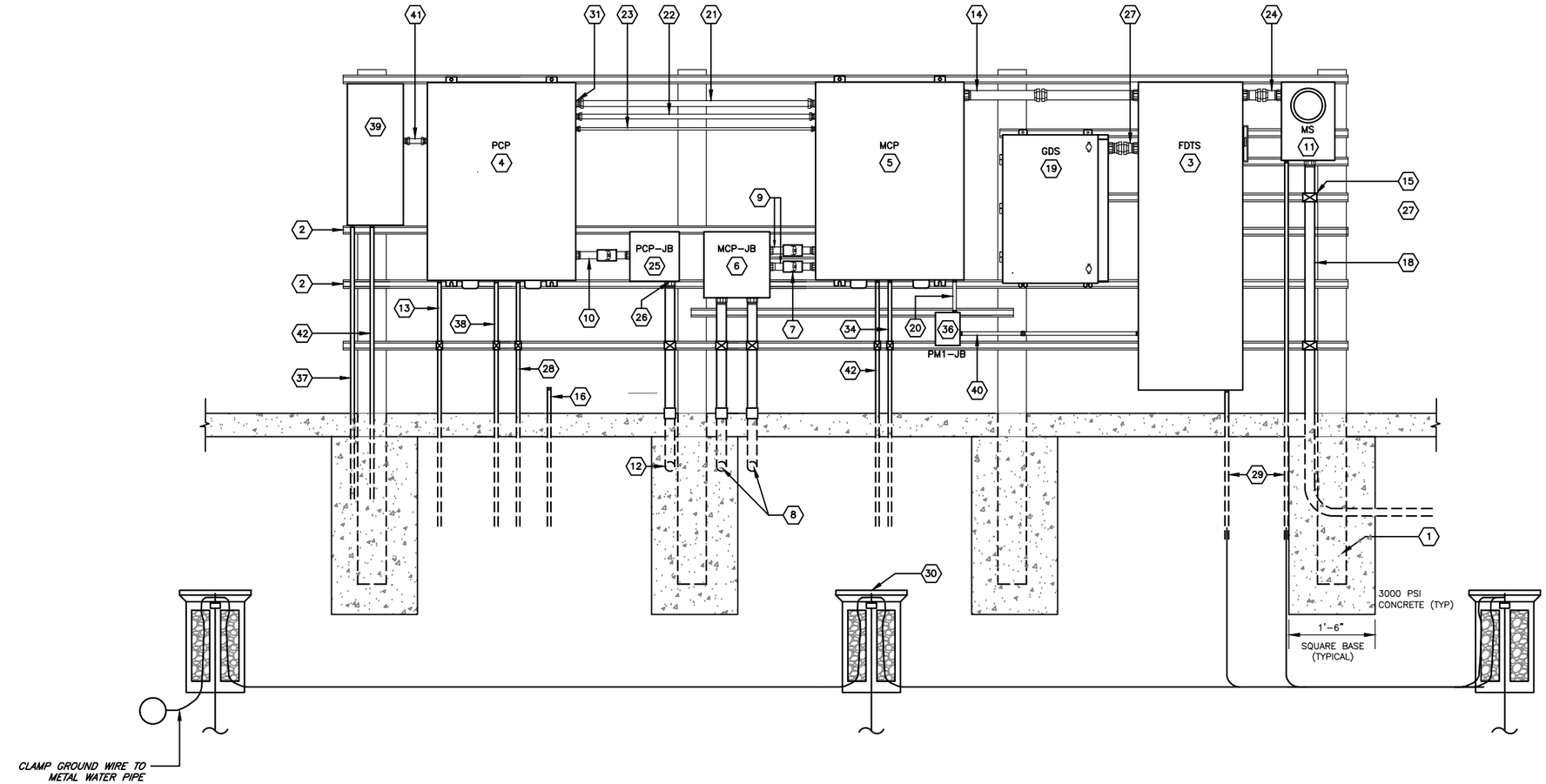
ADALEE PS REHABILITATION
PROPOSED ELECTRICAL SITE PLAN

SHEET
E1



ELECTRICAL EQUIPMENT LINE UP
SCALE: 3/8" =1'-0"

NOTES:

1. *SEE KEYED NOTES ON SHEET E3.*
2. *REFER TO SHEET 13 FOR INSTALLATION AND WIND LOADING REQUIREMENTS.*

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ADALEE PS REHABILITATION
ELECTRICAL EQUIPMENT LINE UP FRONT VIEW

SHEET
E2

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 HEAVY DUTY, DOUBLE THROW, FUSIBLE SWITCH, 3–POLE, 600 VAC, 400 AMP IN NEMA 4X TYPE ENCLOSURE, 600 VOLT, DUAL–ELEMENT, TIME–DELAY CLASS J FUSES; SWITCH––EATON DT365FWK, DTØ00NK–NEUTRAL KIT, DS468GK–GROUND LUG KIT, DT400JK– 400A TYPE "J" FUSE ADAPTER KIT.
4. PROVIDE AND INSTALL PUMP CONTROL CABINET. REFER TO DETAIL ON SHEET E4.
5. PROVIDE AND INSTALL MOTOR CONTROL CABINET. REFER TO DETAIL ON SHEET E5.
6. PUMP MOTOR CONNECTIONS J.B.–USED AS A DEMARCATION BOX TO PROVIDE ISOLATION BETWEEN THE WET WELL AND PUMP CONTROLS. PROVIDE AND INSTALL A 16"x16"x6" NEMA 4X, STAINLESS STEEL JUNCTION BOX WITH HINGED DOOR, HAMMOND #1418N4SSG6. 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. CAREFULLY TAPE CONNECTIONS TO PROVIDE A 600V INSULATION LEVEL (TYPICAL FOR EACH CONDUCTOR). SEE SHEET E15 FOR JB DETAILS.
7. PROVIDE AND INSTALL COPPER–FREE ALUMINUM CROUSE–HINDS EYS TYPE SEALS W/CHICO COMPOUNDS.
8. PROPOSED 2" PVC COATED ALUMINUM CONDUITS FOR MOTOR CONDUCTORS. CORE DRILL WET WELL WALLS AS REQUIRED TO INSTALL CONDUIT, SEE CIVIL SHEETS FOR PIPE PENETRATION INTO WET WELL DETAIL.
9. PROVIDE AND INSTALL (3)–#3 XHHW–2 CU + (1)–#6 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 1–1/4" CONDUIT FOR FLOAT AND WET WELL LEVEL TRANSMITTER.
11. PROVIDE AND INSTALL METER SOCKET IN ALUMINUM ENCLOSURE.
12. MANUFACTURER SUPPLIED CABLES FOR FLOAT SWITCH AND WET WELL LEVEL TRANSMITTER INSTALL IN 2" PVC COATED CONDUIT TO WET WELL FROM JUNCTION BOX. CORE DRILL WET WELL AS NEEDED TO INSTALL, PATCH SEAL WITH APPROVED PRODUCT. SEE CIVIL SHEETS FOR PIPE PENETRATION INTO WET WELL DETAIL.
13. PROVIDE AND INSTALL 1" CONDUIT FOR ANTENNA COAXIAL CABLE.
14. PROVIDE AND INSTALL (3)–#250 CONDUIT XHHW–2 CU, (1)–#1 XHHW–2 NEU, AND (1)–#4 XHHW–2 CU GND. IN 2" CONDUIT.
15. PROVIDE AND INSTALL ALUMINUM CONDUIT STRAPS (TYPICAL).
16. REUSE EXISTING 1" CONDUIT FOR BUBBLER. EXTEND EXISTING CONDUIT TO EDGE OF CONCRETE PAD AND CAP OFF.
17. EXTEND EXISTING CONCRETE PAD IN GRASSY AREA AS SHOWN. OPEN CUT EXISTING CONCRETE PAD AS NECESSARY TO INSTALL NEW CONDUIT. REPAIR CONCRETE WITH APPROVED PRODUCTS.
18. PROVIDE AND INSTALL (3)–#250 + (1)–#1. NEU. IN PROPOSED 3" CONDUIT TO EXISTING TECO HANDHOLE.
19. PROVIDE AND INSTALL GENERATOR DOCKING STATION 'GDS'. 200A, 277/480V, 3ø, WITH SOLID NEUTRAL, 100% GROUND BUS AND GENERATOR MALE CAMLOCK CONNECTION IN STAINLESS STEEL ENCLOSURE. TRYSTAR GDS025W–LM–GI. SUPPLIER SHALL PROVIDE DOCKING STATION WITH REVERSE SERVICE OF THE NEUTRAL AND GROUND.
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 H. + (1)–#12 XHHW–2 CU NEU. + (1)#12 XHHW–2 CU GND. IN 3/4" CONDUIT FROM MOTOR CONTROLS PANEL TO PUMP CONTROL PANEL FOR 120V POWER CIRCUIT.
24. PROVIDE AND INSTALL (3)–#250 XHHW–2 CU + (1)–#1 XHHW–2 NEU. IN 2" CONDUIT.
25. INSTRUMENTATION AND CONTROLS J.B.–USED AS DEMARCATION BOX TO PROVIDE ISOLATION BETWEEN THE WET WELL AND PUMP CONTROLS. PROVIDE AND INSTALL A 12"x12"x6" NEMA 4X, STAINLESS STEEL JUNCTION BOX WITH HINGED DOOR, WIEGMANN #BN4121206CHSS. INSTALL A STAINLESS STEEL LOUVER PLATE KIT (4.75"x4.5") ON SIDE OF BOX TO PROVIDE NATURAL ASPIRATION, WIEGMANN #WAVK0304SSA. SEE SHEET E15 FOR JB DETAILS.
26. PROVIDE DUCT SEALING COMPOUND IN ALL CONDUITS EXTENDING TO THE WET WELL.
27. PROVIDE AND INSTALL (3)–#3/0 XHHW–2 CU + (1)–#1 XHHW–2 CU NEU + (1)–#4 XHHW–2 CU GND IN 2" CONDUIT FOR GENERATOR DOCKING STATION.
28. PROVIDE AND INSTALL A 3/4" CONDUIT TO PROPOSED AREA LIGHT, (AL), SEE SHT. E17 FOR DETAILS.
29. PROVIDE AND INSTALL A 3/4" SCHEDULE 80 PVC CONDUIT FOR #2 AWG GROUNDING CONDUCTOR.
30. PROPOSED GROUNDING CONDUCTOR. EXOTHERMICALLY WELDED TO TWO APPROVED GROUNDING RODS (MINIMUM SPACING 6'–0") GROUNDING CONDUCTOR SHALL BE AWG #2AWG MIN. BARE STRANDED COPPER, SEE SHEET E16 FOR DETAILS.
31. PROVIDE AND INSTALL WATER–TIGHT / DUST–TIGHT (TYP.) MYERS HUB AND UNION (TYP.).
32. PROPOSED SCADA ANTENNA.
33. PROPOSED NEW LED LIGHT FIXTURE WITH CONCRETE POLE. SEE SHT. E16 FOR DETAILS.
34. PROVIDE AND INSTALL (3)–#12 XHHW–2 CU + (1)–#12 XHHW–2 CU GND IN PROPOSED 3/4" CONDUIT FOR EXISTING CARBON ODOR CONTROL. CONDUIT BODY SHALL BE REMOVED AND FLEXIBLE CONDUIT REUSED, SEE NOTE.
35. RELOCATED ODOR CONTROL BUILDING.
36. PROVIDE AND INSTALL A 3–PHASE POWER MONITOR RELAY W/480 VAC LINE INPUT–ALARM ON PHASE LOSS, UNDERVOLTAGE, OR WRONG ROTATION. PANEL MOUNT, ATC DIVERSIFIED. MODEL SUA–440–ASA. FUSE BOX DISCONNECT(FGBD1)–ALLEN BRADLEY 1492–FB3C30–L W/ BUSSMAN KTK–R–2 FUSES IN A NEMA 4X CONTINUOUS HINGE ENCLOSURE–HAMMOND MANUFACTURING MODEL EJ863S16, 8"x6"x3.5", NEMA 4X SS.
37. PROVIDE AND INSTALL A 3/4" CONDUIT BETWEEN MINI POWER ZONE "LP" AND DIESEL BACK–UP PUMP (120VAC), SEE NOTE
38. PROVIDE AND INSTALL A 1" CONDUIT FOR DIESEL BACK–UP PUMP CONTROLS/SCADA, SEE NOTE
39. PROVIDE AND INSTALL 480V–120/240V, 7.5KVA MINI POWER–ZONE "LP" IN NEMA 3R STAINLESS STEEL ENCLOSURE SQUARE–D MPZB7S40FSS. REFER TO SHEET E18 FOR PANEL SCHEDULE.
40. PROVIDE AND INSTALL (2)–#14 + (1)–#14 GND IN 3/4" C. (24V DC CONTROLS).
41. PROVIDE AND INSTALL 2–#2 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.
42. PROVIDE AND INSTALL 2–#12 AWG + 1–#12 CU. GND IN 3/4" CONDUIT FROM MINI POWER ZONE 'LP' TO MOTOR CONTROL PANEL FOR 120V POWER CIRCUIT.

NOTE: INSTALL PROPOSED CONDUIT AS NEAR AS POSSIBLE TO EQUIPMENT TO AVOID TRIPPING HAZARD.

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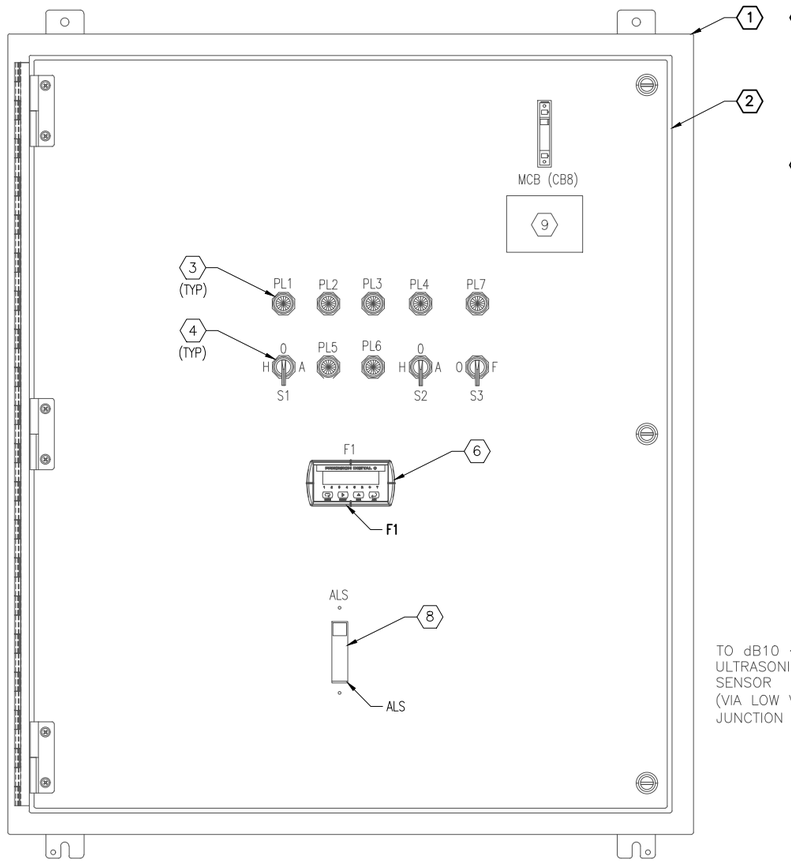
ADALEE PS REHABILITATION
KEYED NOTES

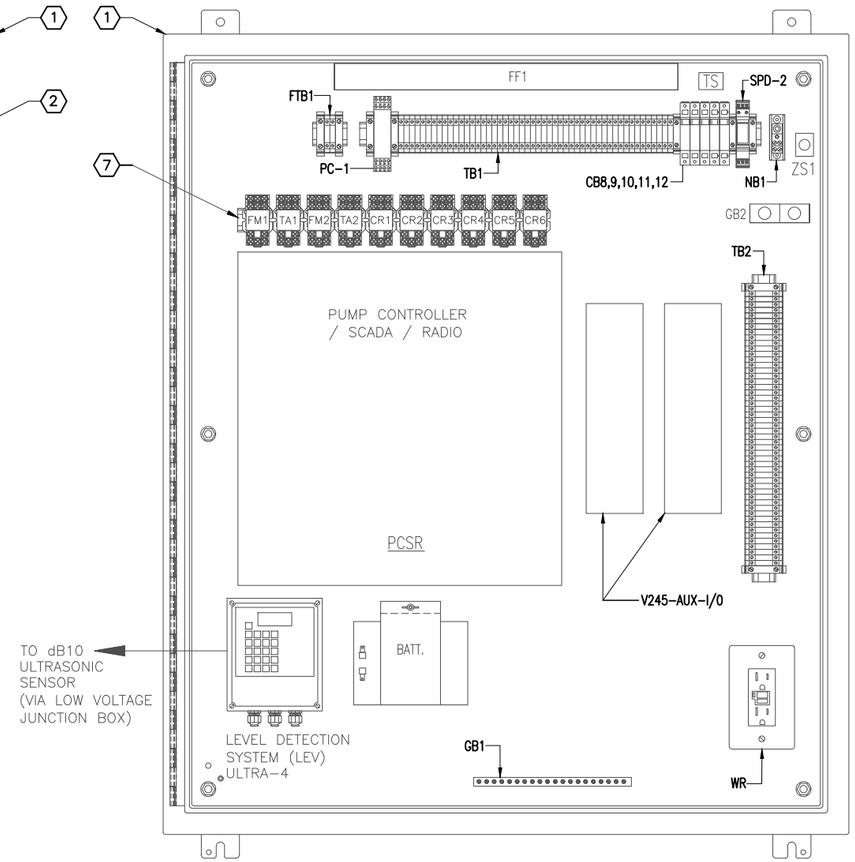
SHEET
E3



PUMP CONTROL PANEL DETAILS

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

NOTE: FRONT ENCLOSURE DOOR NOT SHOWN FOR CLARITY



PANEL INTERIOR

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

NOTE: FRONT ENCLOSURE DOOR NOT SHOWN FOR CLARITY

LEGEND PLATE SCHEDULE

SYMBOL	DEVICE	LEGEND
PL1	YELLOW PILOT LIGHT	PUMP NO. 1 ON
PL2	RED ILLUMINATED PUSH BUTTON	PUMP NO. 1 TEMP. ALARM
PL3	RED ILLUMINATED PUSH BUTTON	PUMP NO. 2 TEMP. ALARM
PL4	YELLOW PILOT LIGHT	PUMP NO. 2 ON
PL5	RED PILOT LIGHT	PUMP NO. 1 SEAL LEAK ALARM
PL6	RED PILOT LIGHT	PUMP NO. 2 SEAL LEAK ALARM
PL7	YELLOW PILOT LIGHT	ODOR CONTROL ON
S1	3 POSITION SWITCH	PUMP NO. 1 HAND-OFF-AUTO
S2	3 POSITION SWITCH	PUMP NO. 2 HAND-OFF-AUTO
S3	2 POSITION SWITCH	ODOR CONTROL ON-OFF
MCB (CB8)	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 E13.
4. PROVIDE AND INSTALL NEW SELECTOR SWITCH. REFER ALSO TO PARTS SCHEDULE ON SHEET E13.
5. RESERVED.
6. PROVIDE AND INSTALL PRECISION DIGITAL PROCESS METER, MODEL PD765-6R3-10 WITH 4-20mA OUTPUT. REFER ALSO TO PARTS SCHEDULE ON SHEET E13.
7. PROVIDE AND INSTALL ALUMINUM DIN RAIL WHERE REQUIRED.
8. PROVIDE AND INSTALL NEW SINGLE-POLE 120/277V, 20A LIGHT SWITCH TO CONTROL AREA LIGHT. REFER ALSO TO PARTS SCHEDULE ON SHEET E13.
9. PROVIDE WARNING LABEL ABOVE OR BELOW CB6. LABEL TO READ:
   "WARNING: THE 120VAC SUPPLY FOR THIS PUMP CONTROL PANEL (PCP) IS FED FROM MOTOR CONTROL PANEL MCP AND WILL BE PRESENT AT THE LINE SIDE OF MCB (CB-6) LOCATED IN THIS PANEL. LOCK AND TAG OUT THE MOTOR CONTROL PANEL DISCONNECT PRIOR TO OPENING DEAD FRONT DOOR."

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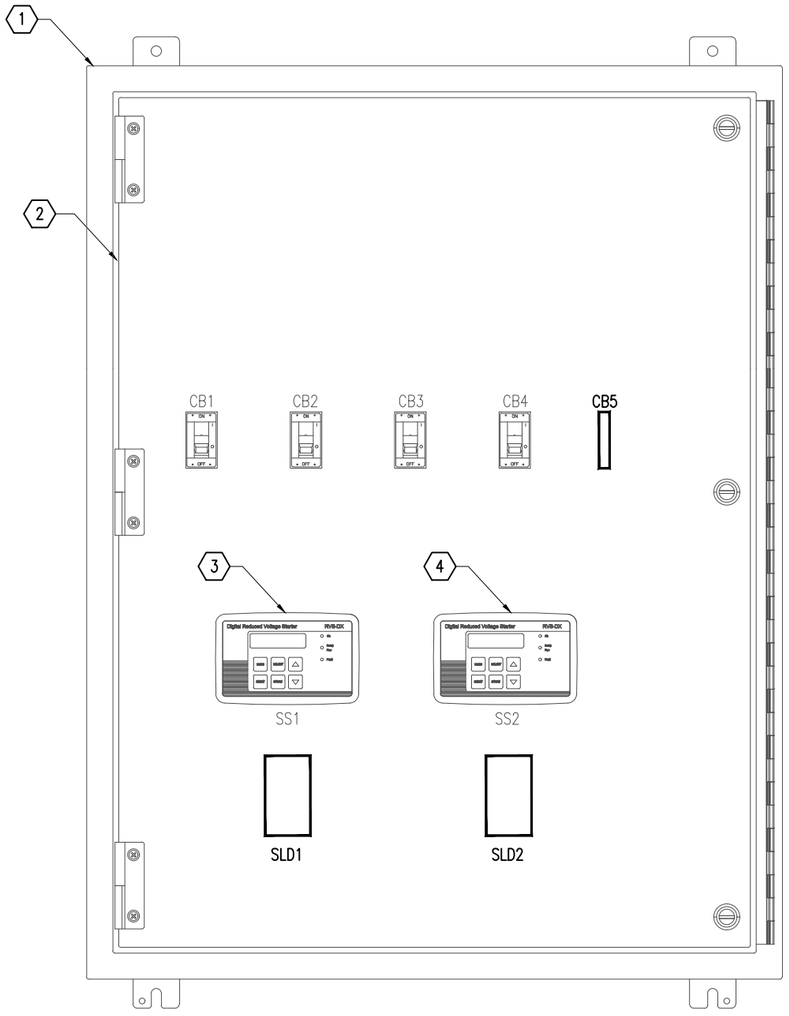
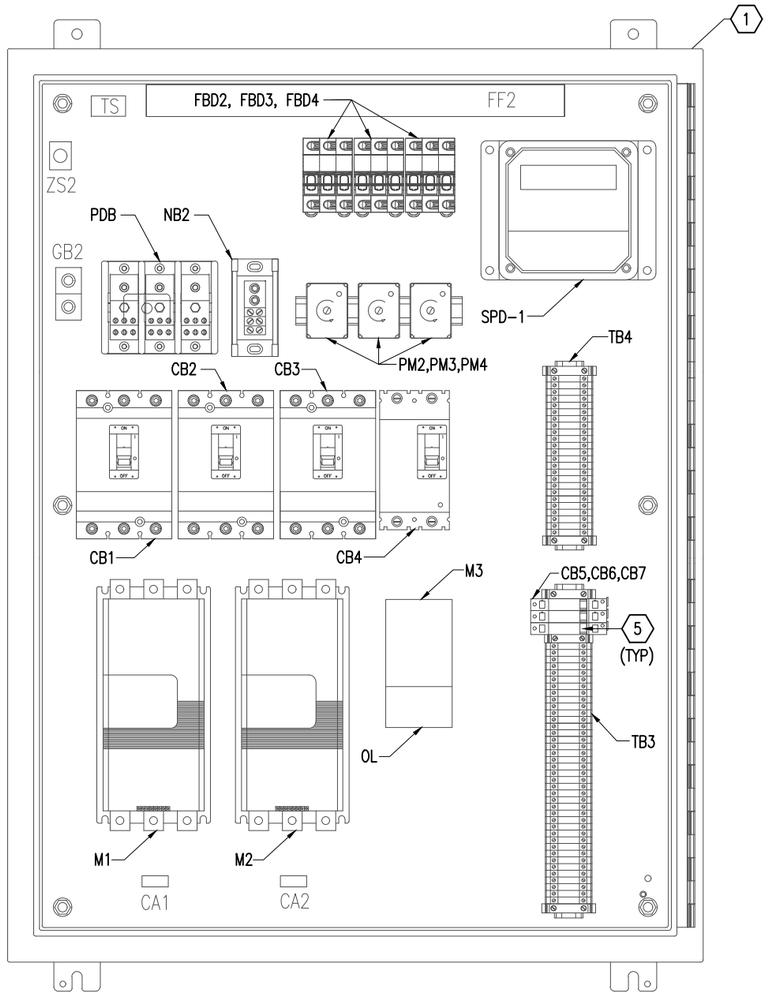
ADALEE PS REHABILITATION
PUMP CONTROL PANEL (PCP) DETAILS

SHEET
E4



MOTOR CONTROL PANEL DETAILS

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



PANEL INTERIOR

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

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	ODOR CONTROL CIRCUIT BREAKER
CB4	CIRCUIT BREAKER	MINI POWER-ZONE "LP" 480V FEEDER
CB5	CIRCUIT BREAKER	MCP CONTROL POWER MAIN CIRCUIT BREAKER
SS1	SOFTSTARTER KEYPAD	SOFTSTARTER NO. 1 KEYPAD
SS2	SOFTSTARTER KEYPAD	SOFTSTARTER NO. 2 KEYPAD
SLD1	PUMP MONITORING UNIT	PUMP NO. 1 SEAL LEAK DETECTOR
SLD2	PUMP MONITORING UNIT	PUMP NO. 2 SEAL LEAK DETCETOR

KEYED NOTES:

1. MOTOR CONTROL CABINET. 48" X 36" X 12" NEMA 4X SS, POWDER COAT WHITE.
2. PROVIDE AND INSTALL ALUMINUM DEADFRONT DOOR WITH STOP KIT.
3. PROVIDE AND INSTALL NEW KEYPAD FOR SOFTSTARTER #1. REFER ALSO TO PARTS SCHEDULE ON SHEET 13.
4. PROVIDE AND INSTALL NEW KEYPAD FOR SOFTSTARTER #2. REFER ALSO TO PARTS SCHEDULE ON SHEET 13.
5. PROVIDE AND INSTALL ALUMINUM RAIL WHERE REQUIRED.

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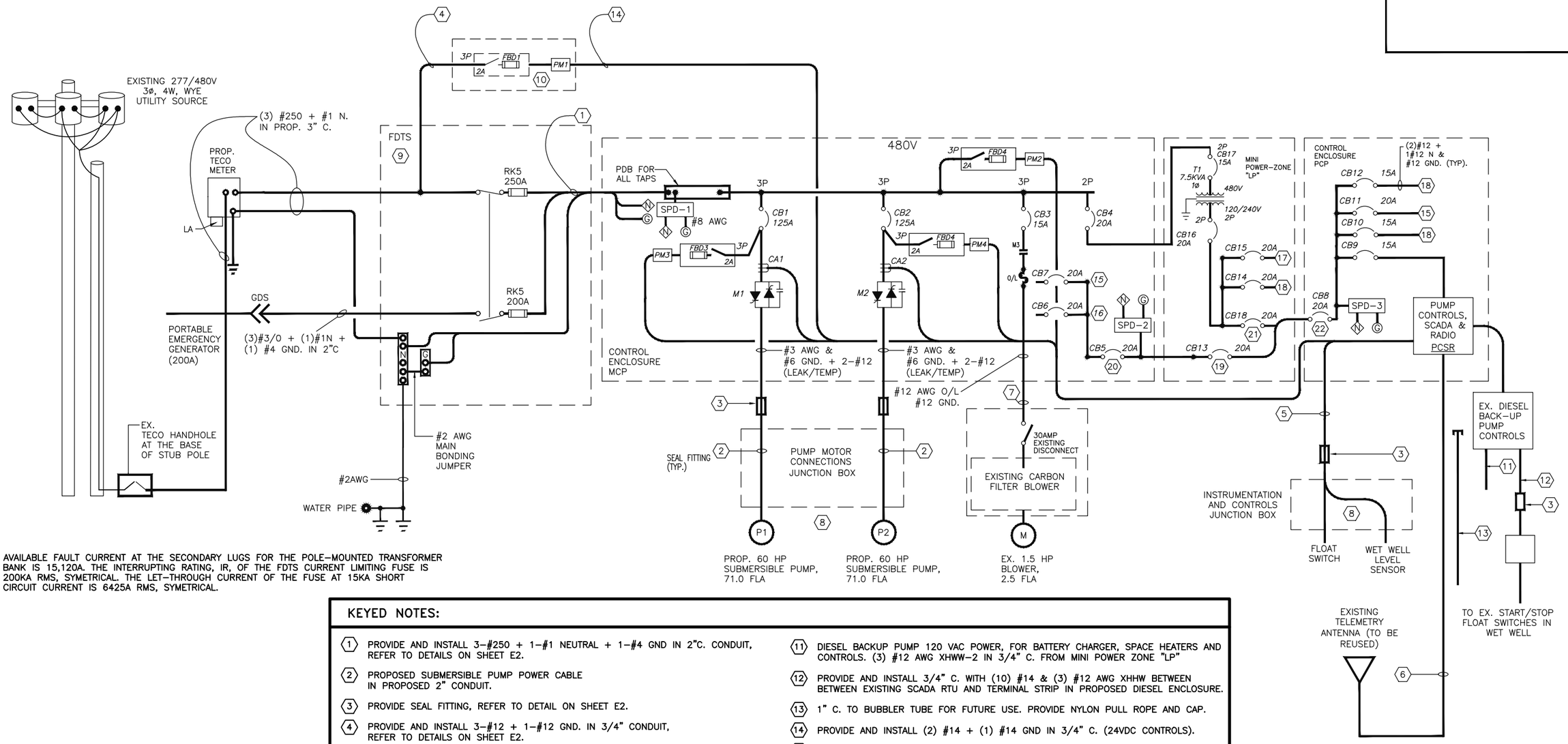
ADALEE PS REHABILITATION
MOTOR CONTROL PANEL (MCP) DETAILS

SHEET
E5



AVAILABLE FAULT CURRENT AT THE SECONDARY LUGS FOR THE POLE-MOUNTED TRANSFORMER BANK IS 15,120A. 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 6425A RMS, SYMETRICAL.

KEYED NOTES:

1. PROVIDE AND INSTALL 3-#250 + 1-#1 NEUTRAL + 1-#4 GND IN 2"C. CONDUIT, REFER TO DETAILS ON SHEET E2.
2. PROPOSED SUBMERSIBLE PUMP POWER CABLE IN PROPOSED 2" CONDUIT.
3. PROVIDE SEAL FITTING, REFER TO DETAIL ON SHEET E2.
4. PROVIDE AND INSTALL 3-#12 + 1-#12 GND. IN 3/4" CONDUIT, REFER TO DETAILS ON SHEET E2.
5. PROVIDE 2" CONDUITS FROM NEW PUMP CONTROL CABINET TO WET WELL FOR FLOAT SWITCH AND LEVEL SENSOR CABLES. REFER TO DETAILS ON SHEET E2.
6. PROVIDE 1" CONDUIT FROM NEW PUMP CONTROL CABINET TO EXISTING ANTENNA MAST FOR NEW COAX CABLE, REFER TO DETAILS ON SHEET E2.
7. PROVIDE 3/4" CONDUIT FROM NEW MOTOR CONTROL PANEL TO EXISTING ODOR CONTROL DISCONNECT.
8. SEE CONNECTION DETAILS ON SHEET E15.
9. SERVICE ENTRANCE RATED, FUSED DOUBLE THROW SWITCH.
10. PM1 JUNCTION BOX, SEE SHEETS E2 AND E18 FOR DETAILS.
11. DIESEL BACKUP PUMP 120 VAC POWER, FOR BATTERY CHARGER, SPACE HEATERS AND CONTROLS. (3) #12 AWG XHWW-2 IN 3/4" C. FROM MINI POWER ZONE "LP"
12. PROVIDE AND INSTALL 3/4" C. WITH (10) #14 & (3) #12 AWG XHHW BETWEEN BETWEEN EXISTING SCADA RTU AND TERMINAL STRIP IN PROPOSED DIESEL ENCLOSURE.
13. 1" C. TO BUBBLER TUBE FOR FUTURE USE. PROVIDE NYLON PULL ROPE AND CAP.
14. PROVIDE AND INSTALL (2) #14 + (1) #14 GND IN 3/4" C. (24VDC CONTROLS).
15. RECEPTACLE & PANEL LIGHTS
16. SOFT STARTER CONTROL POWER
17. DIESEL BACK UP PUMP
18. SPARE
19. MCP POWER
20. MCP CONTROL POWER MAIN CIRCUIT BREAKER
21. PCP POWER
22. PCP CONTROL POWER MAIN CIRCUIT BREAKER

ONE LINE DIAGRAM

SCALE: N.T.S.

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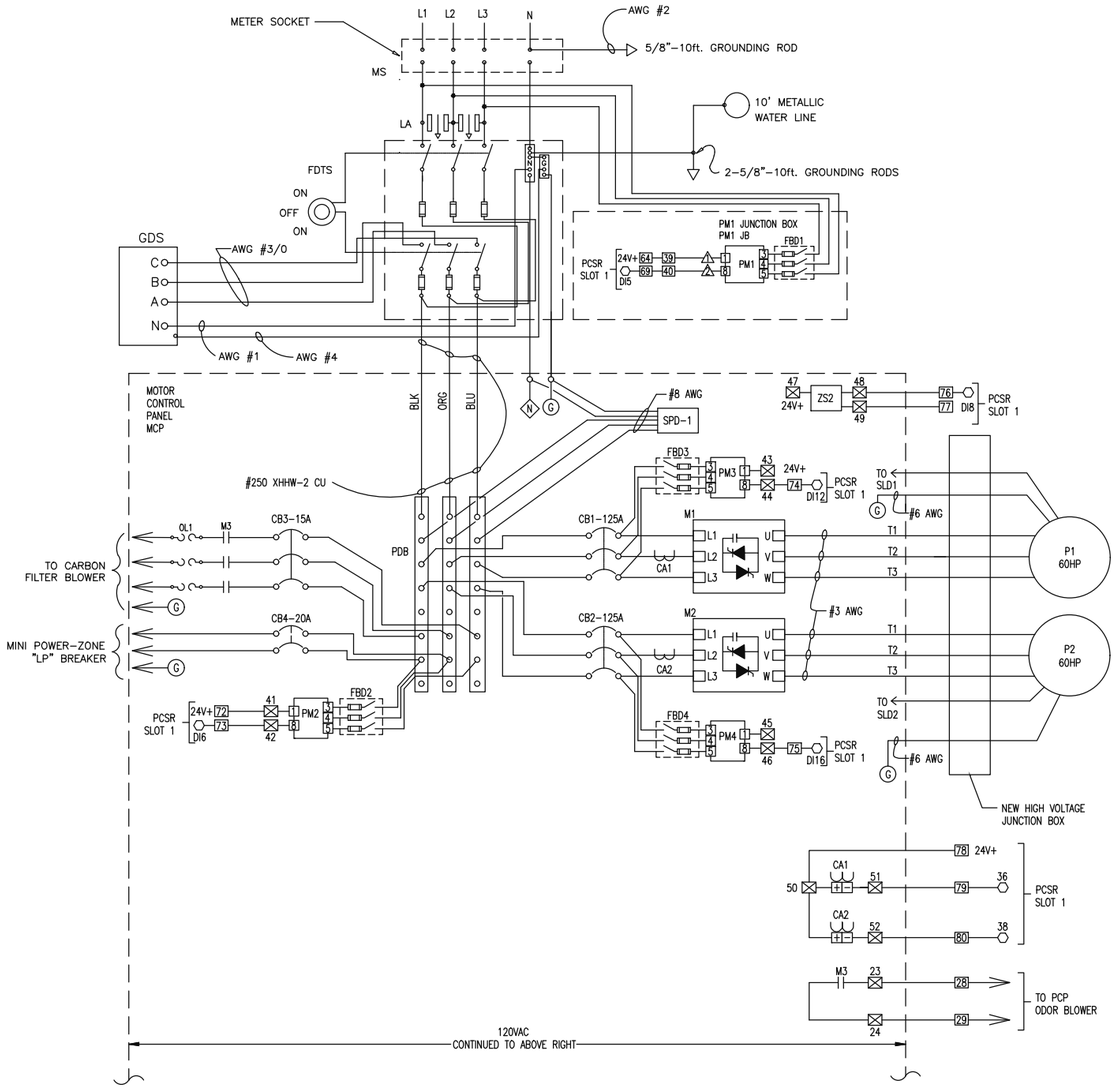
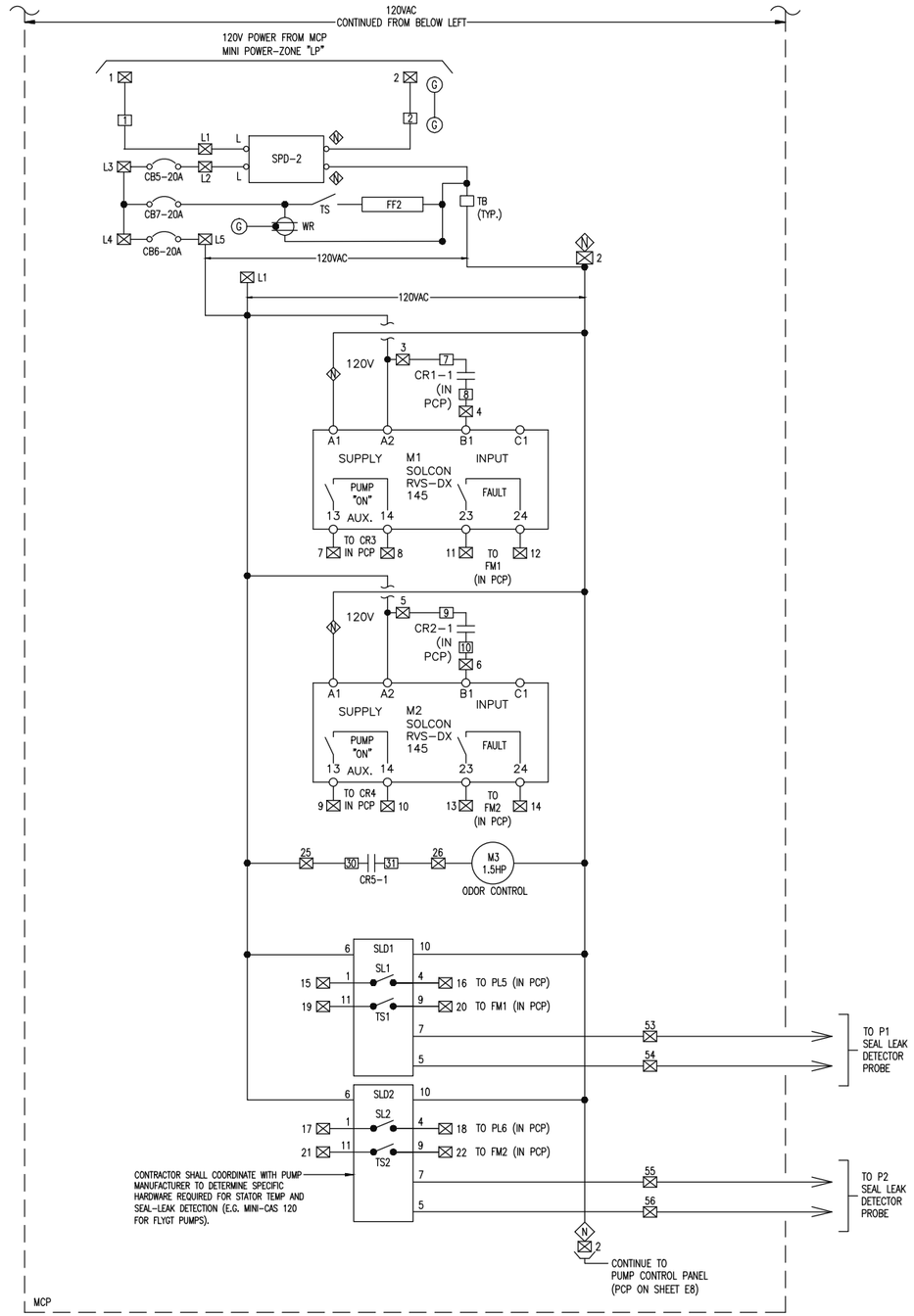
ADALEE PS REHABILITATION
SYSTEM ONE-LINE DIAGRAM

SHEET
E6





⬡ 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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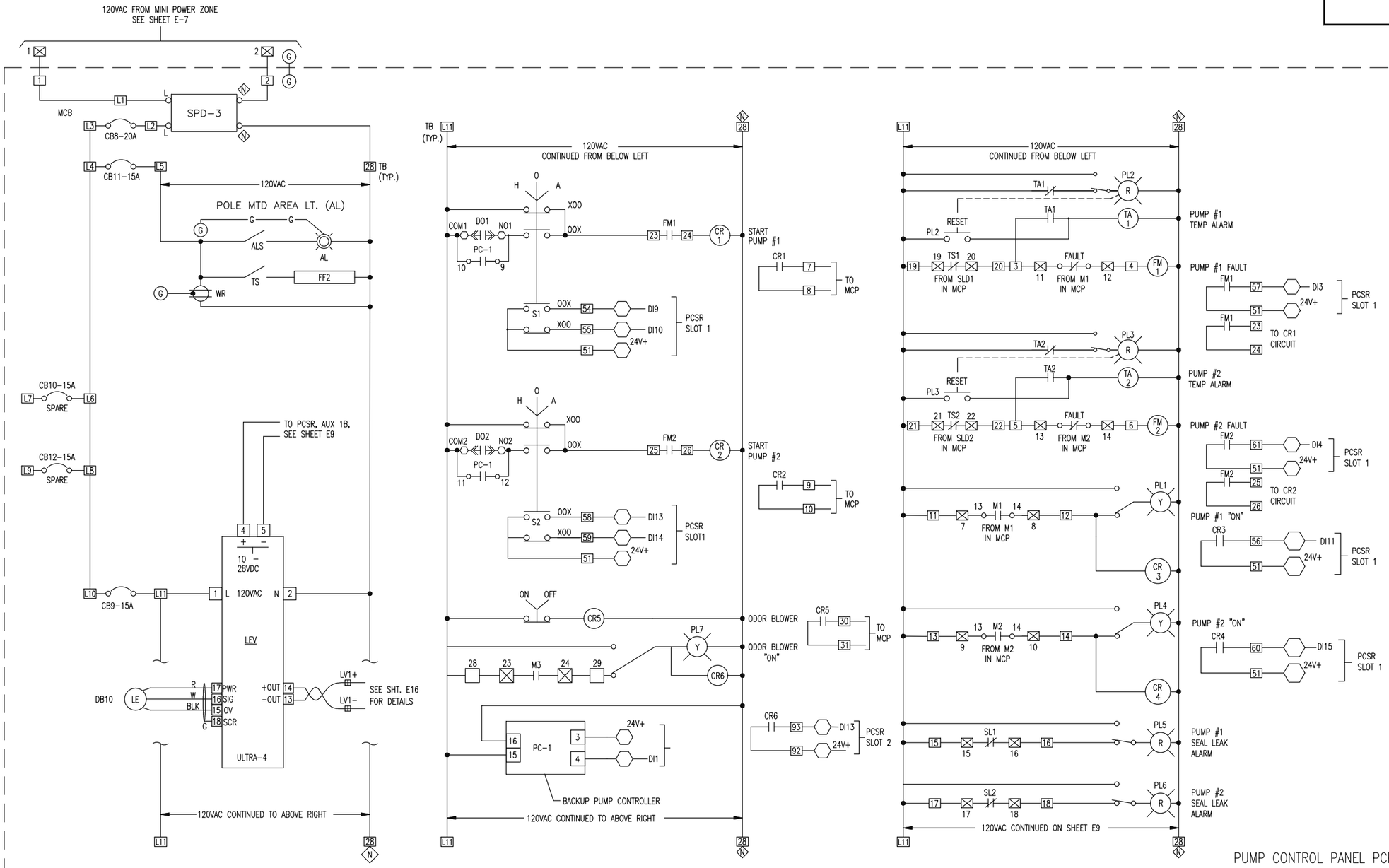
ADALEE PS REHABILITATION
ELECTRICAL SCHEMATIC (1 OF 4)

SHEET
E7



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

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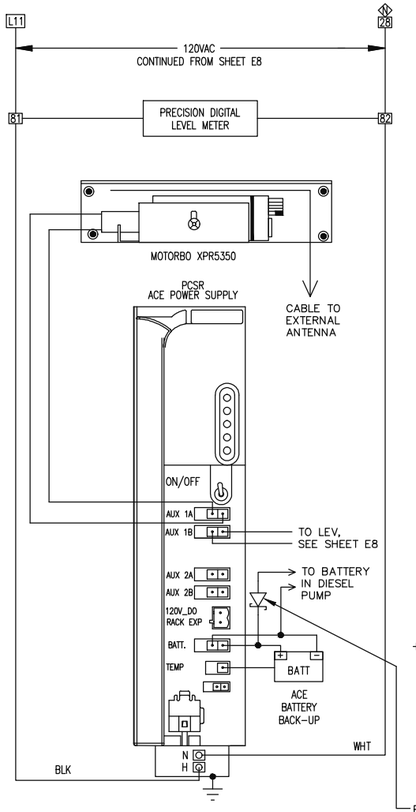
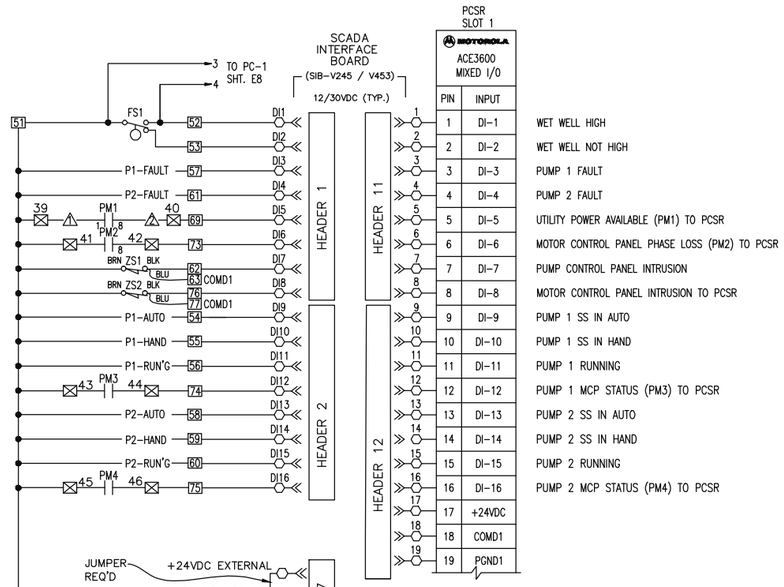
ADALEE PS REHABILITATION
ELECTRICAL SCHEMATIC (2 OF 4)

SHEET
E8

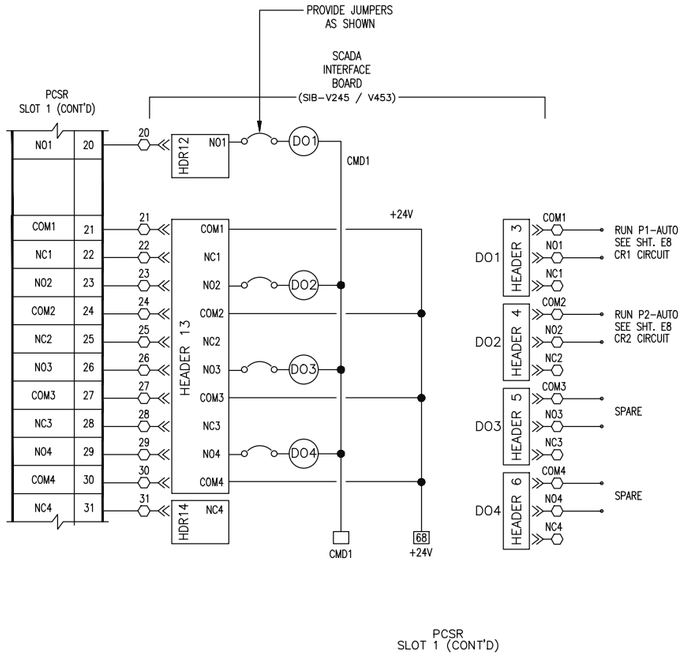


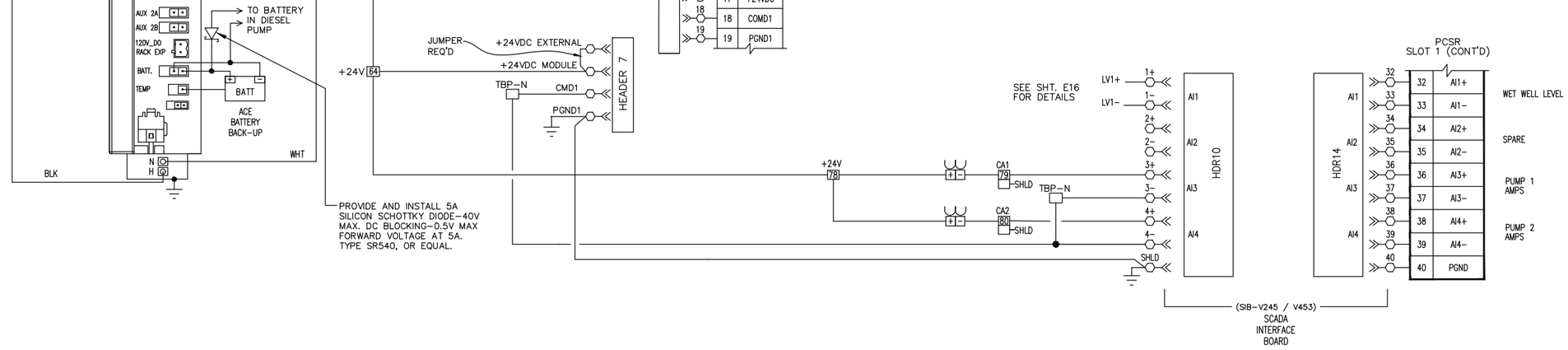


PCSR SLOT 1

MOTOROLA ACE3600 MIXED I/O

PIN	INPUT	
1	DI-1	WET WELL HIGH
2	DI-2	WET WELL NOT HIGH
3	DI-3	PUMP 1 FAULT
4	DI-4	PUMP 2 FAULT
5	DI-5	UTILITY POWER AVAILABLE (PM1) TO PCSR
6	DI-6	MOTOR CONTROL PANEL PHASE LOSS (PM2) TO PCSR
7	DI-7	PUMP CONTROL PANEL INTRUSION
8	DI-8	MOTOR CONTROL PANEL INTRUSION TO PCSR
9	DI-9	PUMP 1 SS IN AUTO
10	DI-10	PUMP 1 SS IN HAND
11	DI-11	PUMP 1 RUNNING
12	DI-12	PUMP 1 MCP STATUS (PM3) TO PCSR
13	DI-13	PUMP 2 SS IN AUTO
14	DI-14	PUMP 2 SS IN HAND
15	DI-15	PUMP 2 RUNNING
16	DI-16	PUMP 2 MCP STATUS (PM4) TO PCSR
17	+24VDC	
18	COMD1	
19	PGND1	





- ⬡ 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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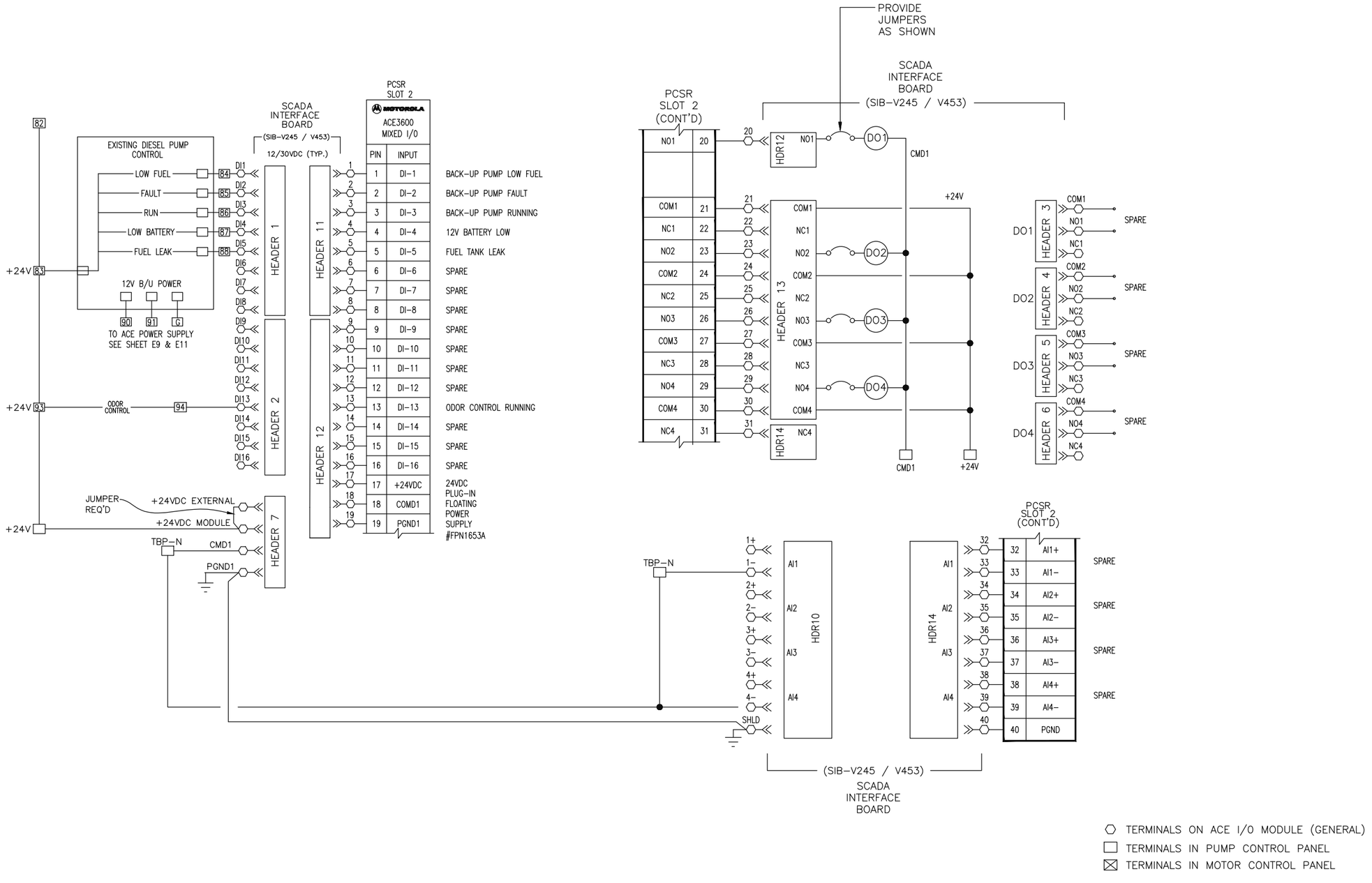
ADALEE PS REHABILITATION
ELECTRICAL SCHEMATIC (3 OF 4)

SHEET
E9



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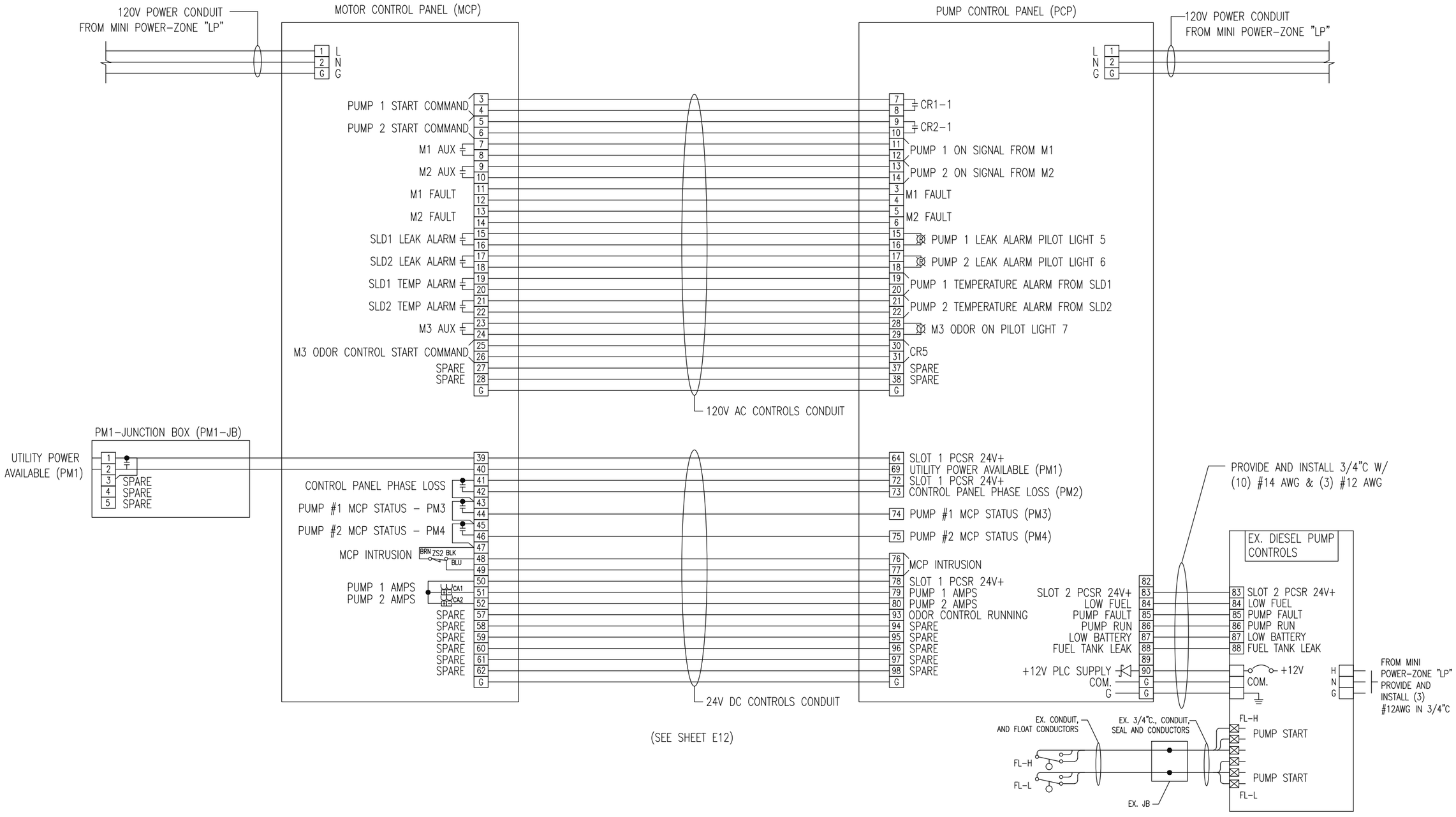
ADALEE PS REHABILITATION
ELECTRICAL SCHEMATIC (4 OF 4)

SHEET
E10



(SEE SHEET E12)

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ADALEE PS REHABILITATION
INTERCONNECTION WIRING DIAGRAM

SHEET
E11

TB1 (▭) (120V AC) MOUNTED ON PUMP CONTROL PANEL (PCP)	
TERM.	DESCRIPTION
1	120V FROM MINI POWER ZONE
2	NEUTRAL FROM MINI POWER ZONE
3	SOFT STARTER NO. 1 FAULT FROM M1
4	SOFT STARTER NO. 1 FAULT FROM M1
5	SOFT STARTER NO. 2 FAULT FROM M2
6	SOFT STARTER NO. 2 FAULT FROM M2
7	PUMP 1 START COMMAND TO M1 (IN MCP)
8	PUMP 1 START COMMAND TO M1 (IN MCP)
9	PUMP 2 START COMMAND TO M2 (IN MCP)
10	PUMP 2 START COMMAND TO M2 (IN MCP)
11	P1 "ON" SIGNAL FROM M1 (IN MCP)
12	P1 "ON" SIGNAL FROM M1 (IN MCP)
13	P2 "ON" SIGNAL FROM M2 (IN MCP)
14	P2 "ON" SIGNAL FROM M2 (IN MCP)
15	PUMP 1 LEAK ALARM FROM MCP
16	PUMP 1 LEAK ALARM FROM MCP
17	PUMP 2 LEAK ALARM FROM MCP
18	PUMP 2 LEAK ALARM FROM MCP
19	PUMP 1 TEMPERATURE ALARM FROM MCP
20	PUMP 1 TEMPERATURE ALARM FROM MCP
21	PUMP 2 TEMPERATURE ALARM FROM MCP
22	PUMP 2 TEMPERATURE ALARM FROM MCP
23	PUMP 1 FAULT RELAY CONTACT
24	PUMP 1 FAULT RELAY CONTACT
25	PUMP 2 FAULT RELAY CONTACT
26	PUMP 2 FAULT RELAY CONTACT
27	SPD-3-NUETRAL OUT
32-43	SPARE
L1	SPD-3 LINE
L2	CB8 LINE
L3	CB8 LOAD
L4	CB11 LINE
L5	CB11 LOAD
L6	CB10 LINE
L7	CB10 LOAD
L8	CB12 LINE
L9	CB12 LOAD
L10	CB9 LINE
L11	CB9 LOAD
28	ODOR "ON" SIGNAL FROM M3 IN MCP
29	ODOR "ON" SIGNAL FROM M3 IN MCP
30	ODOR "START" COMMAND TO M3 IN MCP
31	ODOR "START" COMMAND TO M3 IN MCP

TB2 (▭) (24V DC) MOUNTED ON PUMP CONTROL PANEL (PCP)	
TERM.	DESCRIPTION
51	SLOT 1 PCSR 24V+
52	WET WELL HIGH
53	WET WELL NOT HIGH
54	PUMP 1 "AUTO" TO PCSR
55	PUMP 1 "HAND" TO PCSR
56	PUMP 1 "ON" TO PCSR
57	PUMP 1 "FAULT" TO PCSR
58	PUMP 2 "AUTO" TO PCSR
59	PUMP 2 "HAND" TO PCSR
60	PUMP 2 "ON" TO PCSR
61	PUMP 2 "FAULT" TO PCSR
62	PUMP CONTROL PANEL INTRUSION
63	
64	SLOT 1 PCSR 24V+
65	SPARE
66	SLOT 1 PCSR 24V+
67	SLOT 1 PCSR 24V+
68	SLOT 1 PCSR 24V+
69	UTIL POWER AVAILABLE (PM1) TO PCSR
70	SPARE
71	SPARE
72	SLOT 1 PCSR 24V+
73	MOTOR CONTROL PANEL PHASE LOSS (PM2)
74	PUMP #1 MCP STATUS (PM3) TO PCSR
75	PUMP #2 MCP STATUS (PM4) TO PCSR
76	MOTOR CONTROL PANEL INTRUSION
77	
78	SLOT 1 PCSR 24V+
79	PUMP 1 AMPS
80	PUMP 2 AMPS
81	SPARE
82	SLOT 2 PCSR 24V+
83	SLOT 2 PCSR 24V+ BACK TO DIESEL PUMP
84	DIESEL BACKUP PUMP LOW FUEL
85	DIESEL BACKUP PUMP PUMP FAULT
86	DIESEL BACKUP PUMP RUNNING
87	DIESEL BACKUP PUMP 12V BATTERY LOW
88	DIESEL BACKUP PUMP FUEL TANK LEAK
90-91	+12V PLC SUPPLY
92	SLOT 2 PCSR 24V+
93	ODOR CONTROL "ON" TO PCSR
94-98	SPARE

TB3 (⊠) (120V AC) MOUNTED ON MOTOR CONTROL PANEL (MCP)	
TERM.	DESCRIPTION
1	120VAC FROM MINI POWER ZONE
2	NEUTRAL FROM MINI POWER ZONE
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	SOFT START 1 FAULT SIGNAL TO PCP
12	SOFT START 1 FAULT SIGNAL TO PCP
13	SOFT START 2 FAULT SIGNAL TO PCP
14	SOFT START 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	ODOR "ON" SIGNAL TO CR6 IN PCP
24	ODOR "ON" SIGNAL TO CR6 IN PCP
25	ODOR RUN COMMAND SIGNAL TO MCP
26	ODOR RUN COMMAND SIGNAL TO MCP
27-38	SPARE
L1	SPD-2 LINE
L2	CB5 (MCB) LINE
L3	CB5 (MCB) LOAD
L4	CB6 LINE
L5	CB6 LOAD

TB4 (⊠) (24V DC) MOUNTED ON MOTOR CONTROL PANEL (MCP)	
TERM.	DESCRIPTION
39	SLOT 1 PCSR 24+
40	UTILITY POWER AVAILABLE (PM1)
41	SLOT 1 PCSR 24V+
42	MOTOR CONTROL PANEL PHASE LOSS (PM2) TO PCSR
43	SLOT 1 PCSR 24V+
44	PUMP #1 MCP STATUS PHASE LOSS (PM3) TO PCSR
45	SLOT 1 PCSR 24V+
46	PUMP #2 MCP STATUS PHASE LOSS (PM4) TO PCSR
47	SLOT 1 PCSR 24V+
48	MOTOR CONTROL PANEL INTRUSION
49	
50	SLOT 1 PCSR 24V+
51	PUMP 1 AMPS
52	PUMP 2 AMPS
53	PUMP 1 SEAL LEAK DETECTOR PROBE
54	PUMP 1 SEAL LEAK DETECTOR PROBE
55	PUMP 1 SEAL LEAK DETECTOR PROBE
56	PUMP 1 SEAL LEAK DETECTOR PROBE
57-66	SPARE

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

X-Y TERMINAL POINT MOUNTED ON PCP (INTERFACE TO PCSR)
○ TERMINAL POINT ON PCSR
▭ TERMINAL POINT IN PUMP CONTROL PANEL (PCP)
⊠ TERMINAL POINT IN MOTOR CONTROL PANEL (MCP)
△ TERMINAL POINT IN PM1 JUNCTION BOX (PM1-JB)

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ADALEE PS REHABILITATION
PUMP CONTROL PANEL DETAILS

SHEET
E12

PARTS SCHEDULE (MOTOR CONTROL PANEL)

SYMBOL	NAME	PART			RATING	REMARKS
		MAKE	TYPE	MODEL OR CAT. #		
CB 1	CIRCUIT BREAKER	SQUARE D	THREE POLE	HDL36125	600 V, 125A	18 KAIC @ 480VAC
CB 2	CIRCUIT BREAKER	SQUARE D	THREE POLE	HDL36125	600 V, 125A	
CB 3	CIRCUIT BREAKER	SQUARE D	THREE POLE	HDL36015	600 V, 15A	
CB 4	CIRCUIT BREAKER	SQUARE D	TWO POLE	HDL26020	600 V, 20A	
CB 5, 6, 7	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU-120	120 V, 20A	
M1, 2	MOTOR STARTER	SOLCON	RVSS	RVS-DX 145-480-115-8-U-S	145 A	PROVIDE REMOTE KEYPAD
M3	MOTOR STARTER	SQUARE D	NEMA SIZE 1, w/S.S. O/L RELAY	CLASS 8536 MODEL SCO3VØ2H3Ø	12Ø V, (COIL)	10 HP (MAX), w/AUX CONTACT
CA1, CA2	CIRCUIT SENSOR	ENERCORP INSTRUMENTS	4-20mA OUTPUT	SC200-2	0-100A, 0-150, 0-200A	ADJUSTABLE RANGE
ZS2	CONTROL PNL INTRUSION SENSOR	OMRON	CYLINDRICAL, SHORT BARREL	E2F-X5F1 (GRAINGER-1EA77)	12-24VDC, 3-WIRE PNP	W/ TELEMECANIQUE MTG. BRACKET (GRAINGER - 5B233)
FF2 & TS	LED LIGHTING FIXTURE	HOFFMAN	LED	LEDA1S35	120 V, 5W	W/TOGGLE SWITCH-TS
SPD-1	SURGE PROTECTIVE DEVICE TYPE 1	ASCO POWER TECHNOLOGIES	MOTOR CONTROL PANEL SPD	430277YP20ACAJ10	277/480 V, 3ø, 4W	200 kA SURGE CAPACITY
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	SCHAEFER'S	NEMA 4X, 3P LATCH, 48"x36"x12"	SPN4SS-483612	304 SS, POWDER COATED WHITE	3P LATCH W/STOP KIT. EXTERNAL FINISH DURABLE RAL 9003 WHITE POWER COAT.
MP	ENCLOSURE PANEL	SCHAEFER'S	45" X 33", STEEL	SPP-4236	STEEL, 12 GAUGE	
PM2, PM3, PM4	3-PHASE POWER MONITOR	ATC DIVERSIFIED ELECTRONICS	8 PIN PLUG-IN	SUA-440-ASA	440 VAC	W/ OPTIONAL 5-SEC RELEASE AND DIN RAIL SOCKET-RB08PC
PDB	PWR DIST. BLOCK	BUSSMANN/EATON	THREE POLE	PDBFS330	600 V, 380 AMP	FINGER-SAFE, ENCLOSED
FBD 2, 3, 4	FUSE BLOCK / DISCONNECT	ALLEN BRADLEY	THREE PHASE- HIGH INTER. CAP.	1492-FB3C30-L	600 VAC, 200KAIC	W/ BUSSMANN KTK-R-2 FAST ACTING, REJECTION FUSES
FTB2	FUSED TERMINAL BLOCKS	PHOENIX CONTACT		UK 5-HESI	PROVIDE 1, 2, & 5A FUSES	PROVIDE COOPER BUSSMAN GDB SERIES FUSES
SLD1, SLD2	PUMP MONITORING UNIT	XYLEM		MINI-CAS 120	10A AT 240V AC	
GB2	GROUNDING BLOCK	ILSCO	AS REQUIRED	AS REQUIRED		

PARTS SCHEDULE (MISCELLANEOUS)

PM1- JUNCTION BOX

SYMBOL	NAME	PART			RATING	REMARKS
		MAKE	TYPE	MODEL OR CAT. #		
PM1	3-PHASE POWER MONITOR	ATC DIVERSIFIED ELECTRONICS	8 PIN PLUG-IN	SUA-440-ASA	440 VAC	W/ OPTIONAL 5-SEC RELEASE AND DIN RAIL SOCKET-RB08PC
FBD1	FUSE BLOCK / DISCONNECT	ALLEN BRADLEY	THREE PHASE- HIGH INTER. CAP.	1492-FB3C30-L	600 VAC, 200KAIC	W/ BUSSMANN KTK-R-2 FAST ACTING, REJECTION FUSES
PM1-JB	PHASE MONITOR JUNCTION BOX	HAMMOND MANUFACTURING	NEMA 4X, 8"Hx6"Wx6"D	EJ866S16	316 S.S.	INSTALL DIN RAILS TO MOUNT PM1 AND FBD1
TB5	TERMINALS	PHOENIX CONTACT		UK5N TERMINALS	30 A W/ ALUM. DIN RAIL	5 CONTACTS (MIN)

EXTERNAL ELECTRICAL

SYMBOL	NAME	PART			RATING	REMARKS
		MAKE	TYPE	MODEL OR CAT. #		
FDTS	FUSED DOUBLE THROW DISCONNECT SWITCH	EATON	SERVICE ENTRANCE RATED, HEAVY DUTY	DT365FWK	400A, 600V, NEMA 4X, S/S	TIME DELAY CLASS J FUSES (3) BUSSMAN LPJ-250SP (3) BUSSMAN LPJ-200SP PROVIDE (3) SPARES FOR EACH
				DT000 NK NEUTRAL KIT DS468 GK GROUND KIT DT400JK FUSE ADAPTOR KIT		
MS	METER SOCKET	MILBANK	7 TERMINAL, RINGLESS	UAP3566-X-HSP	600 VAC, 320 AMP	ALUMINUM CONSTRUCTION
GDS	GENERATOR DOCKING STATION	TRYSTAR	WALL MOUNT	GDS025W-LM-GI. REVERSE SERVICE OF THE NEUTRAL AND GROUND.	600 VAC, 200 AMP	STAINLESS STEEL ENCLOSURE
LA SPD 1	LIGHTNING ARRESTER	SQUARE D	THREE POLE, 4 WIRE	SDS A3650	40 KA, 600 V MAX	
MCP-JB	MOTOR CONTROL PANEL JUNCTION BOX	HAMMOND	NEMA 4X, 16"X16"X6"	#1418N4SSG6	304 S.S.	INSTALL S.S. LOUVER PLATE KIT WIEGMANN #WAVK0304SSA
PCP-JB	PUMP CONTROL PANEL JUNCTION BOX	WIEGMANN	NEMA 4X, 12"X12"X6"	BN4121206CHSS	304 S.S.	INSTALL S.S. LOUVER PLATE KIT WIEGMANN #WAVK0304SSA
PDB	PWR DIST. BLOCK	BUSSMANN/EATON	THREE POLE	PDBFS220	600 V, 175 AMP	BARRIER TERMINAL BLOCKS
	SEAL FITTING	CROUSE-HINDS	COPPER-FREE ALUMINUM	AS REQUIRED		
	CONDUIT BODIES	CROUSE-HINDS	COPPER-FREE ALUMINUM, FORM 7 OR 9	AS REQUIRED		
LP	MINI POWER-ZONE	SQUARE D	NEMA 3R	MPZB7S4DFSS	480V-120/240V, 7.5 KVA	18 KA INTERRUPT RATING
	SCADA ANTENNA	LAIRD TECHNOLOGY	GOLD ANODIZED	Y4503	450-470 MHz	
FL	FLOAT SWITCH	ANCHOR SCIENTIFIC	SPDT	S3ONONC	10 A @ 120 V	

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PARTS SCHEDULE (1 OF 2)

SHEET
E13

PARTS SCHEDULE (PUMP CONTROL PANEL)

SYMBOL	NAME	PART — PCSR PARTS LIST				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	PART F7509	BASIC MODEL	PROVIDE (1) SPARE
		MOTOROLA CORP.	MOTORBO ANALOG RADIO INSTALLATION KIT	VA00194 (PART #FLN1059)		
		MOTOROLA CORP.	MOTORBO XPR5350 RADIO	VA00161 (PART #UE1078A)	UHF RI: 403–470MHZ	
		MOTOROLA CORP.	METAL CHASIS	PART #V214	MEDIUM 14" x 14"	
		MOTOROLA CORP.	AC POWER SUPPLY 85–264V	PART #V261	100–240 VAC W/ 12V SMART CHARGER	PROVIDE (1) SPARE
		MOTOROLA CORP.	BACKUP BATTERY	PART #V328	10.0 Ah SEALED LEAD–ACID	FITS IN SEPARATE LOCATION FROM METAL CHASSIS; INCLUDE: FKN8376 BATTERY POWER CABLE, FHN601 MOUNTING BRACKET, AND FNN7898 10 AH BACKUP BATTERY
		MOTOROLA CORP.	3–I/O SLOT FRAME	PART #V103		
		MOTOROLA CORP.	20 PIN TB HOLDER KIT	PART #V158		
		MOTOROLA CORP.	I/O SLOT COVER	PART #V20	BLANK MODULE	UTILIZE WHERE NEEDED
		MOTOROLA CORP.	16 DI + 4 DO (EE) + (4)± 20 mA AI	PART #V245	PART #V245	MIXED I/O, PROVIDE (2) SPARES
		MOTOROLA CORP.	24 VDC PLUG–IN POWER SUPPLY	PART #V260 (FPN1653A)	24V FLOATING MAX, 150 mA OUTPUT	FLOATING POWER SUPPLY
		WILKERSON	SCADA INTERFACE BOARD	PART #SIB–V 245/V453		PROVIDE (2) SPARES

SYMBOL	NAME	PART — REMAINING PARTS LIST				REMARKS
		MAKE	TYPE	MODEL OR CAT. #	RATING	
PC–1	BACKUP PUMP CONTROLLER	WILKERSON	DUPLEX LIFT STATION	DR1920	10 AMP CONTACTS	DIN RAIL MOUNTING
FTB1	FUSED TERMINAL BLOCKS	PHOENIX CONTACT		UK 5–HESI	PROVIDE 1, 2, & 5A FUSES	PROVIDE COOPER BUSSMAN GDB SERIES FUSES
F1	PROCESS METER	PRECISION DIGITAL	4 DIGIT, 1.2" DISPLAY	PD765–6R3–10		PROVIDE 4–20 mA OUTPUT
CB 9, 10, 12	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU–115	120 V, 15A	
CB 8, 11	CIRCUIT BREAKER	SQUARE D	SINGLE POLE	QOU–120	120 V, 20A	
PL1, PL4	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT – 38LYA9	120 V, LED TYPE	YELLOW LENS & PRESS TEST
PL2, PL3	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT – 38LRR9	120 V, LED TYPE	RED LENS & PRESS TEST
PL5, PL6	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT – 38LRR9	120 V, LED TYPE	RED LENS & PRESS TEST
S1, S2	HOA SWITCH ASSEMBLY	SQUARE D	OIL–TIGHT CLASS 9001	SKS – 43B H2	10A @ 120V	
ZS1	CONTROL PNL INTRUSION SENSOR	OMRON	CYLINDRICAL, SHORT BARREL	E2F–X5F1 (GRAINGER–1EA77)	12–24VDC, 3–WIRE PNP	W/ TELEMECANIQUE MTG. BRACKET (GRAINGER – 5B233)
FF1 & TS	LED LIGHTING FIXTURE	HOFFMAN	LED	LEDA1S35	120 V, 5W	W/TOGGLE SWITCH–TS
WR	WALL RECEPTACLE	HUBBELL	DUPLEX W/GFI	GF5262	120V AC, 15A GFI	W/ALUMINUM OUTLET BOX AND COVER
TB1, TB2	TERMINALS	PHOENIX CONTACT		UK5N TERMINALS	30 A W/ ALUM. DIN RAIL	50 CONTACTS (MIN)
ITS	INSULATED TERMINAL STRIP	ALLEN–BRADLEY	STYLE AA	1492–15–T	600 V AC NEUTRAL BLOCK	4 CONTACTS (MIN) W/ SHORTING BARS
GB1	GROUND BAR SYSTEM	PANDUIT	12 PORT WITH MAIN LUG	UGB2/0–414–12		COPPER CONSTRUCTION
GB2	GROUNDING BLOCK	ILSCO	AS REQUIRED	AS REQUIRED		
TA1, TA2	CONTROL RELAY	POTTER & BRUMFIELD	8 PIN PLUG–IN	KRPA–11AG–120	120V AC COIL, 10A CONTACTS	DPDT W/ SOCKET AND HOLD DOWN SPRING
FM1, FM2	CONTROL RELAY	POTTER & BRUMFIELD	11 PIN PLUG–IN	KRPA–14AG–120	120V AC COIL, 10A CONTACTS	3PDT W/ SOCKET AND HOLD DOWN SPRING
LEV	WET WELL LEVEL SENSOR	PULSAR, INC.	ULTRASONIC	dB10 TRANSDUCER W/ ULTRA–4	1 TD 32.8 FT RANGE 115VAC/24VDC POWERED W/ 4–20MA AND (4) RELAY OUT W/ KEY PAD, DISPLAY, AND TROPICALIZATION	CITY FORCES WILL PROVIDE ASSISTANCE WITH MOUNTING AND CALIBRATION
CR1, CR2, CR3, CR4, CR5, CR6	CONTROL RELAY	POTTER & BRUMFIELD	14–BLADE SQUARE PLUG–IN	KUP–17A19–120	120V AC COIL, 10A CONTACTS	4PDT W/ SOCKET AND HOLD DOWN SPRING
PCP	PUMP CONTROL PANEL ENCLOSURE	HOFFMAN	NEMA 4X, 3P LATCH, 42"x36"x12"	42"x36"x12" SS	304 SS, POWDER COATED WHITE	3P LATCH W/STOP KIT. EXTERNAL FINISH DURABLE RAL 9003 WHITE POWER COAT.
PP	ENCLOSURE PANEL	HOFFMAN	39" X 33", STEEL	A42P36	STEEL, 12 GAUGE	
NB1, 2	NEUTRAL DISTRIBUTION BLOCK	BUSSMAN	SINGLE POLE	16220–1	600V, 175A	
ALS	AREA LIGHT SWITCH	HUBBELL	SINGLE POLE	HBL1221	277V, 20A	
SPD–2	SURGE PROTECTION DEVICE TYPE 3	PHOENIX CONTACT	3 CONDUCTOR SYSTEM (L, N, G)	2905228	120V, 25A	

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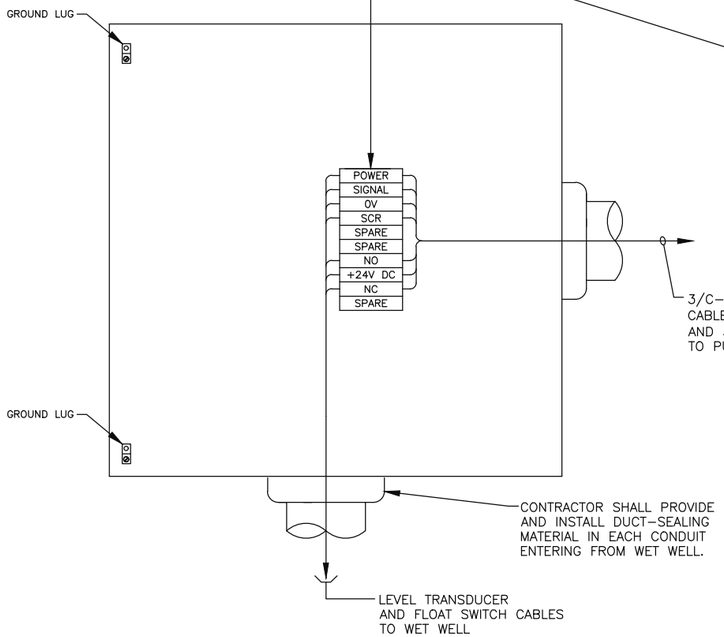
ADALEE PS REHABILITATION
PARTS SCHEDULE (SHT. 2 OF 2)

SHEET
E14

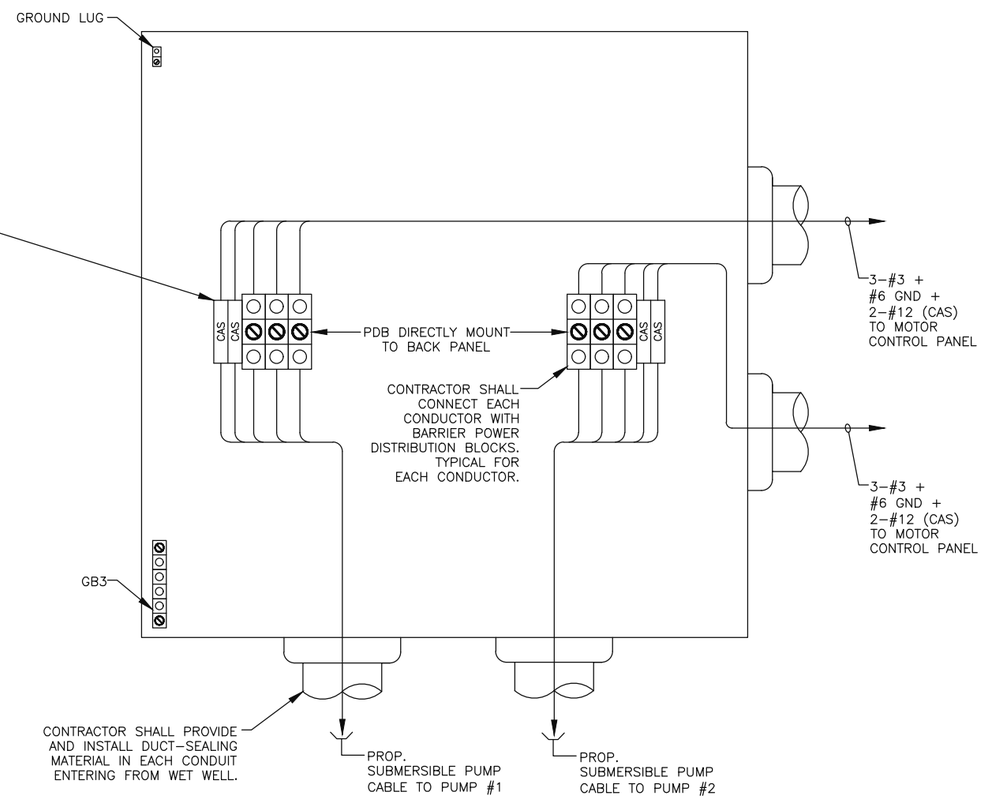
CONTRACTOR SHALL PROVIDE AND INSTALL FEED–THROUGH TERMINAL BLOCKS (PHOENIX CONTACT UK5N) ON ALUMINUM DIN RAIL. STRANDED COPPER WIRE FOR TERMINAL BLOCK CONNECTIONS SHALL BE MADE WITH A FERRULE TO WIRE TERMINATION. THE FERRULE SHALL BE INSULATED AND EXTEND FROM THE STRIPPED INSULATION, THEN COMPRESSED WITH PHOENIX CONTACT CRIMPING PLIERS (CRIMPFOX CENTRUS OR APPROVED EQUAL). THE FERRULE SHALL BE MANUFACTURED BY PHOENIX CONTACT, OR EQUAL. TYPICAL FOR CAS TERMINAL BLOCKS.



NOTES:

1. COVER NOT SHOWN FOR CLARITY
2. BOND GROUNDING CONDUCTORS TO ENCLOSURE BACK PANEL.
3. 12"x12"x6" NEMA 4X, STAINLESS STEEL JUNCTION BOX WITH HINGED DOOR, WIEGMANN #BN4121206CHSS.

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



NOTES:

1. COVER NOT SHOWN FOR CLARITY
2. BOND GROUNDING CONDUCTORS TO ENCLOSURE BACK PANEL.
3. 16"x16"x6" NEMA 4X, STAINLESS STEEL JUNCTION BOX WITH HINGED DOOR, HAMMOND #1418N4SSG6

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

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

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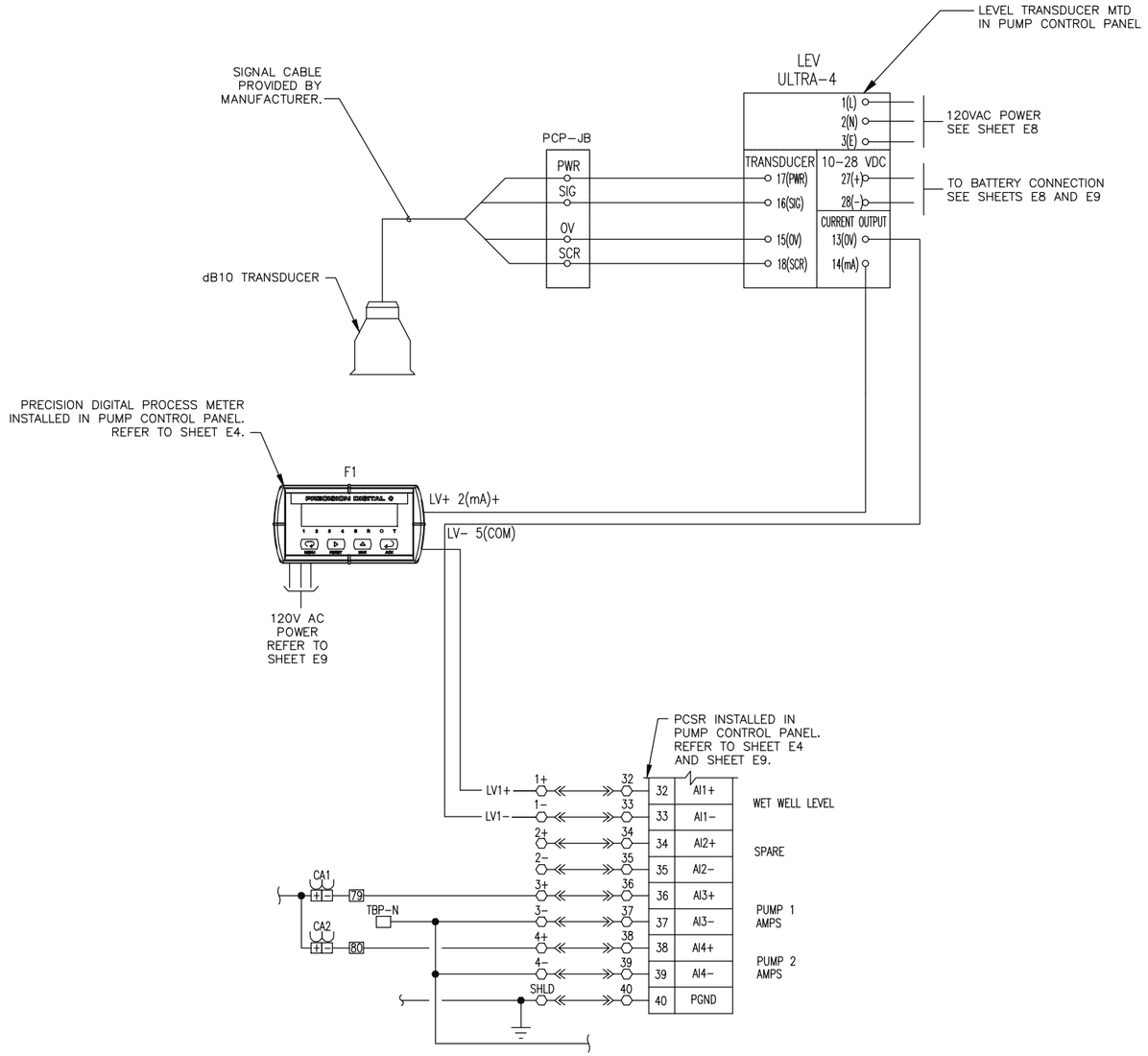
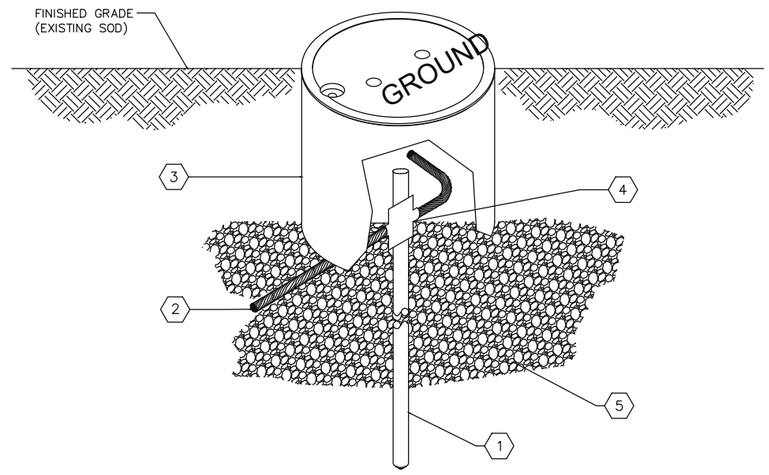
ADALEE PS REHABILITATION
ELECTRICAL DETAILS (SHT. 1 OF 4)

SHEET
E15



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. #2 AWG 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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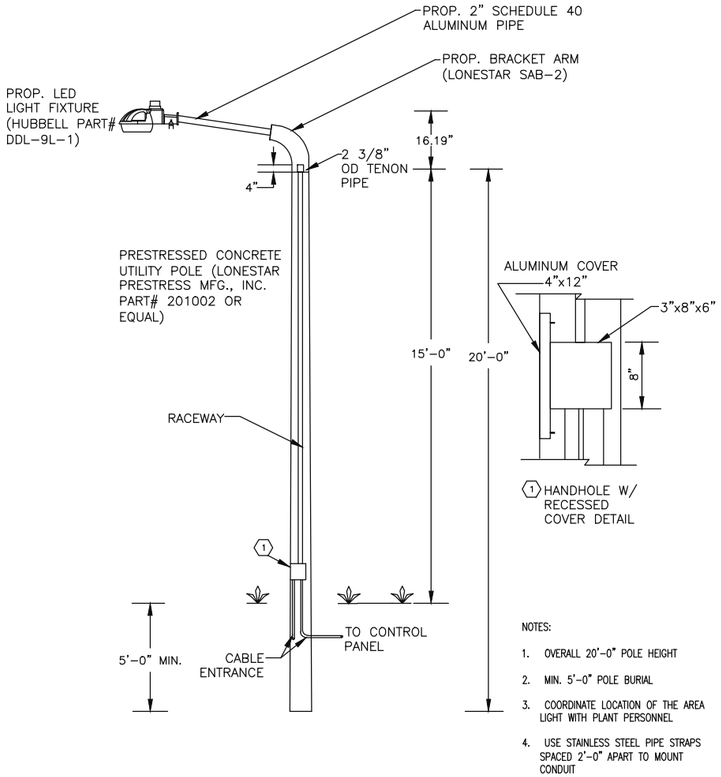
ADALEE PS REHABILITATION
ELECTRICAL DETAILS (SHT. 2 OF 4)

SHEET
E16

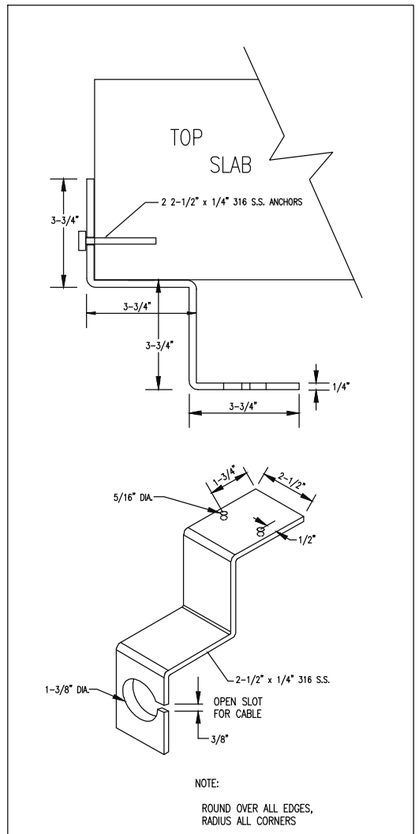


NOTES:

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.

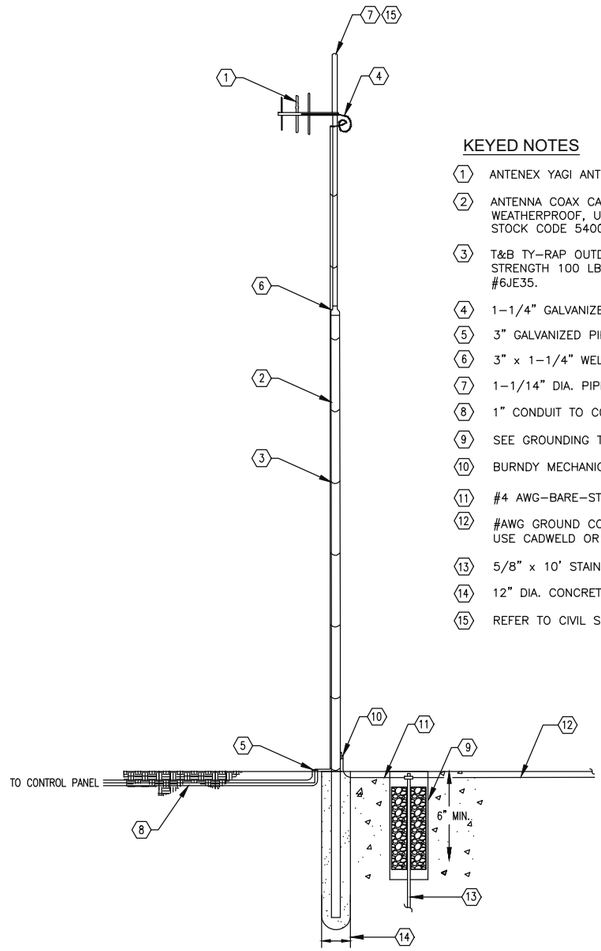


NOTE:

ROUND OVER ALL EDGES, RADIUS ALL CORNERS

DB10 OR PULSAR MOUNTING BRACKET DETAIL

SCALE: N.T.S.



ANTENNA DETAIL

SCALE: N.T.S.

KEYED NOTES

1. ANTENEX YAGI ANTENNA MODEL Y4503 (DIRECTIONS POINT UP, AS SHOWN)
2. ANTENNA COAX CABLE– RG-8/9913: AIR-DIELECTRIC TYPE, LOW LOSS, WEATHERPROOF, UV PROTECTED. TIMES MICROWAVE SYSTEMS LMR-400 STOCK CODE 54001 WITH REQUIRED CONNECTORS.
3. T&B TY-RAP OUTDOOR CABLE TIES, 304 STAINLESS STEEL, TENSILE STRENGTH 100 LB, 6.5" LONG, UL LISTED– MODEL SS7-180-10 GRAINGER #6JE35.
4. 1-1/4" GALVANIZED PIPE (SCH. 40)
5. 3" GALVANIZED PIPE (SCH 40)
6. 3" x 1-1/4" WELDED BELL REDUCER
7. 1-1/14" DIA. PIPE CAP.
8. 1" CONDUIT TO CONTROL PANEL
9. SEE GROUNDING TEST WELL DETAIL, SHEET E17
10. BURNDY MECHANICAL CONNECTOR #KA25-4-1/0
11. #4 AWG-BARE-STRANDED GROUNDED CONDUCTOR
12. #AWG GROUND CONDUCTOR TO CONTROL PANEL GROUNDING SYSTEM, USE CADWELD OR BURNDY MECHANICAL CONNECTOR #VT2525
13. 5/8" x 10' STAINLESS STEEL GROUND ROD
14. 12" DIA. CONCRETE FILLED HOLE
15. REFER TO CIVIL SHEET 12 FOR WIND LOADING AND INSTALLATION.

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ELECTRICAL DETAILS (SHT. 3 OF 4)

SHEET
E17

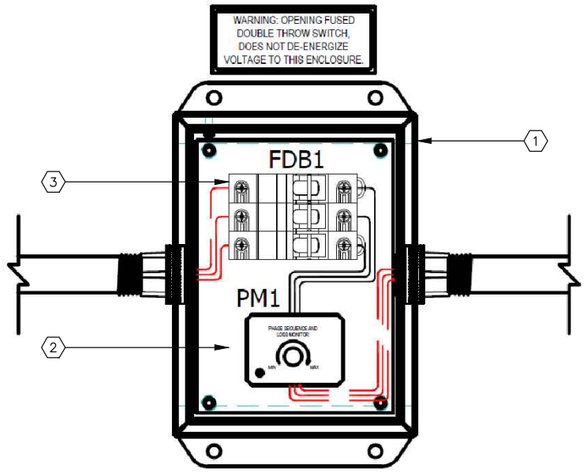
PROPOSED PANEL SCHEDULE (LP)

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

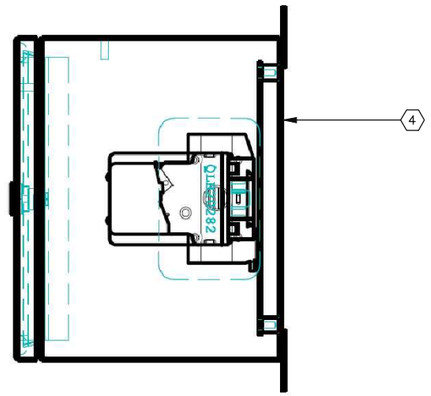
EQUIPMENT SERVED	CIRCUIT BREAKER			KVA/PHASE		CIRC. NO.	CIRC. NO.	KVA/PHASE		CIRCUIT BREAKER			EQUIPMENT SERVED
	POLE	AMPS	FRAME	A	B			A	B	POLE	AMPS	FRAME	
MOTOR CONTROL PANEL (CB13)	1	20	QOB	0.6		1	2			--	--	--	SPACE
PUMP CONTROL PANEL (CB18)	1	20	QOB		0.9	3	4		1.2	1	20	QOB	DIESEL BACKUP PUMP (CB15)
SPACE	--	--	--			5	6			--	--	--	SPACE
SPACE	--	--	--			7	8			--	--	--	SPACE
SPACE	--	--	--			9	10			--	--	--	SPACE
SUB-TOTAL KVA				0.6	0.9			0.0	1.2				

TOTAL CONNECTED LOAD = 2.7 KVA

TOTAL DEMAND LOAD = 2.7 KVA



FRONT VIEW



SIDE VIEW

KEYED NOTES:

1. NEMA 4X STAINLESS STEEL, 12"x 10"x 8" ENCLOSURE PART NUMBER EJ12108S16
2. 3-PHASE POWER MONITOR, PM1
3. FUSE DISTRIBUTION BLOCK, FDB1
4. DIRECTLY MOUNTED TO BACK OF ENCLOSURE

PHASE MONITOR (PMI) JUNCTION BOX

SCALE: N.T.S.

THOMAS ENGINEERING
777 S. Harbour Island Blvd,
Suite 350
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 31028

No.	DATE	REVISIONS
3		
2		
1		

DES: TDT
DRN: JLT
CKD:
DATE: 4/4/23

CITY of TAMPA
WASTEWATER DEPARTMENT

ADALEE PS REHABILITATION
ELECTRICAL DETAILS (SHT. 4 OF 4)

SHEET
E18