The Enclosed Document Is Provided For Your Convenience.

Please Email ALL Questions:

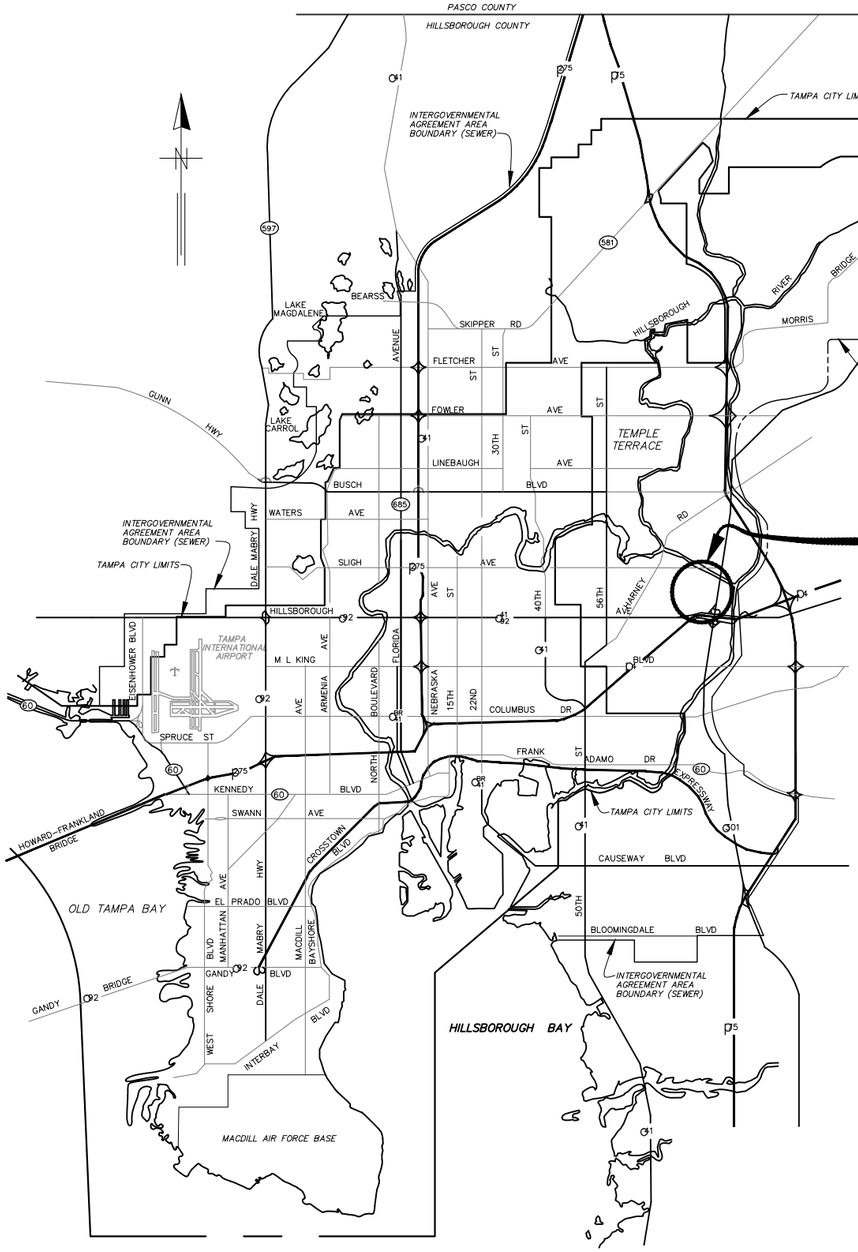
MailTo:ContractAdministration@TampaGov.net

Please Let Us Know If You Plan To Bid

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

B100-029

LOCATION MAP



PROJECT LOCATION
5906 BRECKENRIDGE PKWY.
TAMPA, FL 33610

CITY of TAMPA

WASTEWATER DEPARTMENT

PLANS FOR

BRECKENRIDGE PUMPING STATION REHABILITATION

CONTRACT: 17-C-00039

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	DES: VT DRN: MRL CKD: DATE:	CITY of TAMPA WASTEWATER DEPARTMENT	BRECKENRIDGE PUMPING STATION REHABILITATION COVER SHEET	SHEET 1
		3						
		2						
		1						

Layout- Aug 31, 2017 - 2:25pm C:\B - WW-10SHIBA.C\B

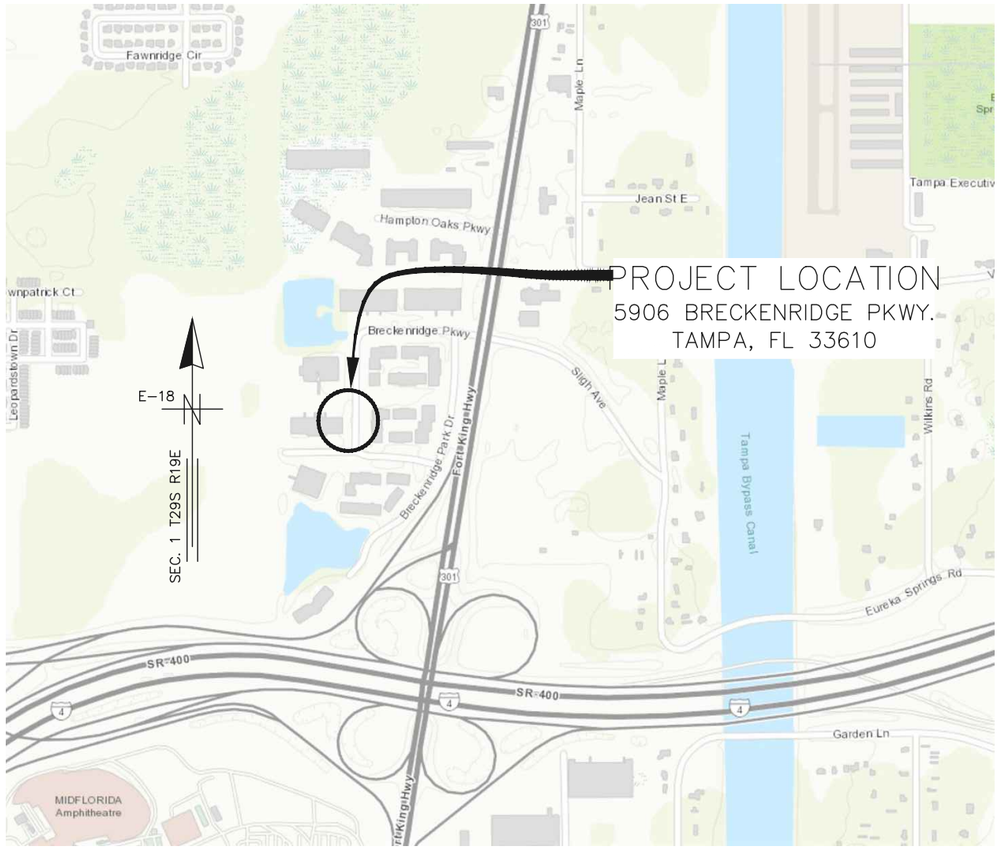
B100-030

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

OTHER FEATURES

RIGHT of WAY LINE (R/W)
EDGE of PAVEMENT
WATER LINE
GAS LINE
ELECTRICAL CABLE or DUCT
TELEPHONE CABLE or DUCT
TV CABLE
VALVE, AIR RELEASE VALVE
HYDRANT
CATCH BASIN, GRATE
POWER POLE
TELEPHONE POLE
GUY POLE
GUY WIRE
VALVE VAULT
WATER METER
ELECTRICAL MANHOLE or VAULT
TELEPHONE MANHOLE or VAULT
TRAFFIC BOX or VAULT
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

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



LOCATION MAP

INDEX

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
DEPARTMENT OF SANITARY SEWERS

No.	DATE	REVISIONS
3		
2		
1		

DES: VT
DRN: MRL
CKD:
DATE:

CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

LEGEND, INDEX & LOCATION MAP

SHEET 2

GENERAL NOTES

1. 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.
2. SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED BY THE CITY FOR PROPOSED ITEMS. ALL SUBMITTALS AND SHOP DRAWINGS SHALL BE ORIGINALS OR HIGH QUALITY COPIES (EASILY READABLE). NO FAXED SHEETS OR POOR QUALITY COPIES WILL BE ACCEPTED FOR SUBMITTAL REVIEW.
3. SALVAGEABLE MATERIAL AS DETERMINED BY TREATMENT PLANT PERSONNEL SHALL BE DELIVERED TO THE CITY OF TAMPA'S HOWARD F. CURREN AWTP AT 2700 MARITIME BOULEVARD. NON–SALVAGEABLE MATERIALS ARE TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF AT THE CONTRACTORS EXPENSE. IN GENERAL, ALL ITEMS CONSTRUCTED OF METAL SHALL REMAIN THE PROPERTY OF THE CITY AND SHALL BE DELIVERED TO THE TREATMENT PLANT.
4. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE PUMP STATION OPERATOR, VIA THE CONTRACT ADMINISTRATION DEPARTMENT PERSONNEL.
5. AFTER WET WELLS ARE DEWATERED, THE CONTRACTOR SHALL CLEAN WET WELLS OF ALL DEBRIS. DEBRIS MAY BE DELIVERED AND DISPOSED OF AT THE CITY OF TAMPA HOWARD F. CURREN AWTP, 2700 MARITIME BOULEVARD.
6. 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.
7. NORMAL WORKING HOURS SHALL BE WEEKDAYS FROM 7:30 AM TO 4 PM UNLESS OTHERWISE APPROVED BY THE ENGINEER/INSPECTOR.
8. 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 THE SAFETY OF CITY EMPLOYEES AND THE PUBLIC.
9. DISTURBANCE TO ANY PROPERTY, PUBLIC OR PRIVATE SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
10. CONTRACTOR SHALL VERIFY QUANTITIES OF ALL NECESSARY PIPES, REDUCERS, FITTINGS, SUPPORTS, AND MISCELLANEOUS BRACKETS
11. ALL METAL PIPE, FITTINGS, VALVES, ETC. SHALL RECEIVE:
    - A. SHOP COAT – ONE COAT, 4–6 MILS (DRY) TNEMEC N140–1211 EPOXY PRIMER.
    - B. FIELD COAT – ONE COAT, 5–7 MILS (DRY) TNEMEC SERIES 446 PERMA–SHIELD MCU
    - C. FIELD COAT
      - C.A. ABOVE GRADE: ONE COAT, 4–6 MILS (DRY) TNEMEC 1074U ENDURASHIELD (WITH FACTORY ADDED UV BLOCKER)
      - C.B. BELOW GRADE: ONE COAT, 5–7 MILS (DRY) TNEMEC SERIES 446 PERMA–SHIELD MCU
12. TAPPING SADDLES SHALL BE EPOXY LINED STEEL AND GATE (TAPPING) VALVES SHALL BE SERIES 2500 RESILIENT WEDGE GATE VALVES AS MANUFACTURED BY AMERICAN OR APPROVED EQUAL.
13. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE LINED USING PROTECTO 401 EPOXY.
14. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.
15. PIPE SUPPORTS SHALL BE STAINLESS STEEL AND CONSTRUCTED AS SHOWN ON THE PIPE SUPPORT DETAIL.
16. AT PIPE PENETRATIONS THROUGH WET WELL, CONTRACTOR SHALL FASTEN LINER TO PROPOSED HDPE PIPE USING 316 STAINLESS STEEL STRAPS OR OTHER METHOD AS APPROVED BY THE ENGINEER.
17. PLUG VALVES SHALL BE DEZURIK, 100% FULL PORT ECCENTRIC PLUG VALVES (PEF) OR APPROVED EQUAL.
18. CHECK VALVES SHALL BE REPLACED USING APCO SERIES 100 RUBBER FLAP CHECK VALVES. THIS ITEM IS STANDARDIZED AT THIS FACILITY AND NO "OR EQUAL" ITEMS WILL BE CONSIDERED.
19. CONTRACTOR SHALL SUPPLY AND INSTALL (2) FLYGT PUMPS, MODEL NP3153 274 IMPELLER, 240V 3ϕ, 23HP, 200 GPM @ 167' TDH, WITH 4" DISCHARGE, FLYGT MIX–FLUSH VALVES AND ALL ASSOCIATED APPURTENANCES/HARDWARE, NO "OR EQUAL" WILL BE APPROVED, SINCE IT'S STANDARDIZED EQUIPMENT.
20. CONTRACTOR IS RESPONSIBLE FOR SECURING ALL EQUIPMENT AND MATERIALS THAT ARE TO BE REUSED. THE CONTRACTOR SHALL REPLACE ANY LOSS OR DAMAGED EQUIPMENT THAT IS TO BE REUSED AT HIS EXPENSE AND NO PAYMENT SHALL BE MADE FOR SUCH.
21. PUMP DISCHARGE PIPING IN WET WELL SHALL BE 6" DIAMETER HDPE (PE4710), SDR–11, GREEN STRIPE, DIPS–OD. HDPE JOINTS SHALL BE FLANGED WITH 316 SS BACK UP RINGS. HDPE ELECTROFUSION JOINTS WILL BE ALLOWED, BUT ONLY IN THE WET WELL WITHIN 5' FROM THE BOTTOM OF THE TOP SLAB.
22. ALL CONCRETE PAVEMENT, UNLESS OTHERWISE NOTED, SHALL BE MINIMUM 6" THICK CONCRETE WITH 4X4 W6XW6 WWF. CONCRETE SHALL BE CONSTRUCTED ON COMPACTED SUB–BASE (MINIMUM 98% MODIFIED PROCTOR) WITH 1.5" DEEP CONTROL JOINTS SAW–CUT @ 15' MAX, CUT WITHIN 12HRS OF CONCRETE PLACEMENT.
23. 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.
24. 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.
25. TESTING OF THE NEW DISCHARGE PIPES WILL BE ACCOMPLISHED BY OPERATING EACH PUMP FOR A MINIMUM 2 HOUR DURATION AND OBSERVING FOR ANY LEAKS. ANY MANUAL PUMP OPERATION OR SWITCHING PUMPS MUST BE PERFORMED BY CITY PERSONNEL.
26. ALL BACKFILL SHALL BE COMPACTED TO 98% MODIFIED PROCTOR.
27. CONTRACTOR SHALL RESTORE ALL LANDSCAPING, SODDING, SPRINKLER SYSTEM PIPING AND PAVEMENT THAT MAY BE DAMAGED DURING CONSTRUCTION TO ITS ORIGINAL CONDITION OR BETTER. CONTRACTOR SHALL SOD ALL DISTURBED UNPAVED AREAS.
28. REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT AND BASE MATERIAL SIDEWALK, CURB, POLES, UNDERGROUND PIPES, STRUCTURES, FOUNDATION, AND OTHER MISCELLANEOUS ITEMS SHALL BE INCLUDED IN THE LUMP SUM PRICE AND NO SEPARATE PAYMENT WILL BE MADE.
29. AT LOCATIONS WHERE EXISTING CONCRETE IS TO BE CUT AND REMAIN, CONTRACTOR SHALL GRIND BACK REBAR ¼" AND FILL VOID WITH NON–SHRINK EPOXY.
30. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 5TH EDITION 2014, CHAPTER 5 OF THE CITY OF TAMPA CODE, AND THE NATIONAL ELECTRICAL CODE 2011 EDITION.

BYPASSING NOTES:

1. CONTRACTOR SHALL HAVE ALL PROPOSED EQUIPMENT AND MATERIALS BEFORE BEGINNING BYPASS OPERATIONS AT THE PUMPING STATION. A 72 HOURS NOTICE IS REQUIRED, PRIOR TO START BYPASS OPERATION.
2. CONTRACTOR SHALL SUPPLY SOUND ATTENUATED BY–PASS PUMP SYSTEM (PRIMARY AND BACKUP), CAPABLE OF DELIVERING A PEAK FLOW OF 200 GPM AT 167 FT. TDH PLUS ANY LOSSES PRODUCED IN THE TEMPORARY BY–PASS PIPING. THE PUMPS SHALL SUCTION FROM THE INLET PIPE USING FLOW–THROUGH PLUG AND DISCHARGE INTO THE PROPOSED 6" BY–PASS CONNECTION. CONTRACTOR SHALL SUBMIT BYPASS PUMPING PLAN TO THE ENGINEER FOR APPROVAL. REFER TO SPECIFIC PROVISIONS FOR BY–PASS PUMPING REQUIREMENTS.
3. THE CONTRACTOR MUST INSTALL ALL COMPONENTS NECESSARY FOR BYPASS WITHIN A SHUTDOWN WINDOW OF 2 HOURS DURING LOW FLOW PERIOD (IE. NIGHT). FLOW THROUGH PLUG INSTALLATION MAY REQUIRE INSTALLATION OF A TEMPORARY UPSTREAM PLUG.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL FACILITIES REQUIRED TO PROVIDE THE SOURCE OF ENERGY (ELECTRIC AND/OR DIESEL) FOR BYPASS PUMPING. ALL ELECTRICAL/FUEL ENERGY CHARGES SHALL BE PAID BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE AND INSTALL AN AUTO DIALER SYSTEM TO PROVIDE REMOTE ANNUNCIATION OF HIGH WATER TO THE CONTRACTOR OR HIS REPRESENTATIVE. THE CONTRACTOR SHALL RESPOND IMMEDIATELY TO THE ALARM AND QUICKLY RESTORE PROPER PUMPING. A SEPARATE FLOAT SWITCH SET BETWEEN THE LAG PUMP "ON" AND THE "HIGH–HIGH" FLOAT SWITCHES SHALL BE PROVIDED FOR THE AUTO DIALER ALARM TO ENSURE SUFFICIENT TIME FOR RESPONSE. THE "HIGH–HIGH" FLOAT SWITCH WILL BE MONITORED BY THE CITY. THE CONTRACTOR SHALL ENSURE THAT A RELIABLE POWER SOURCE IS CONNECTED TO THE AUTODIALER (I.E. BATTERIES ARE ALWAYS CHARGED. SEE SPECIFICATIONS SECTION SP–21 FOR ADDITIONAL REQUIREMENTS.)

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

No.	DATE	REVISIONS
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DES: VT
DRN: MRL
CKD:
DATE:

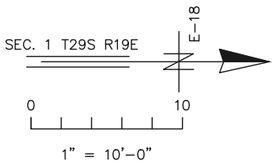
CITY of TAMPA
WASTEWATER DEPARTMENT

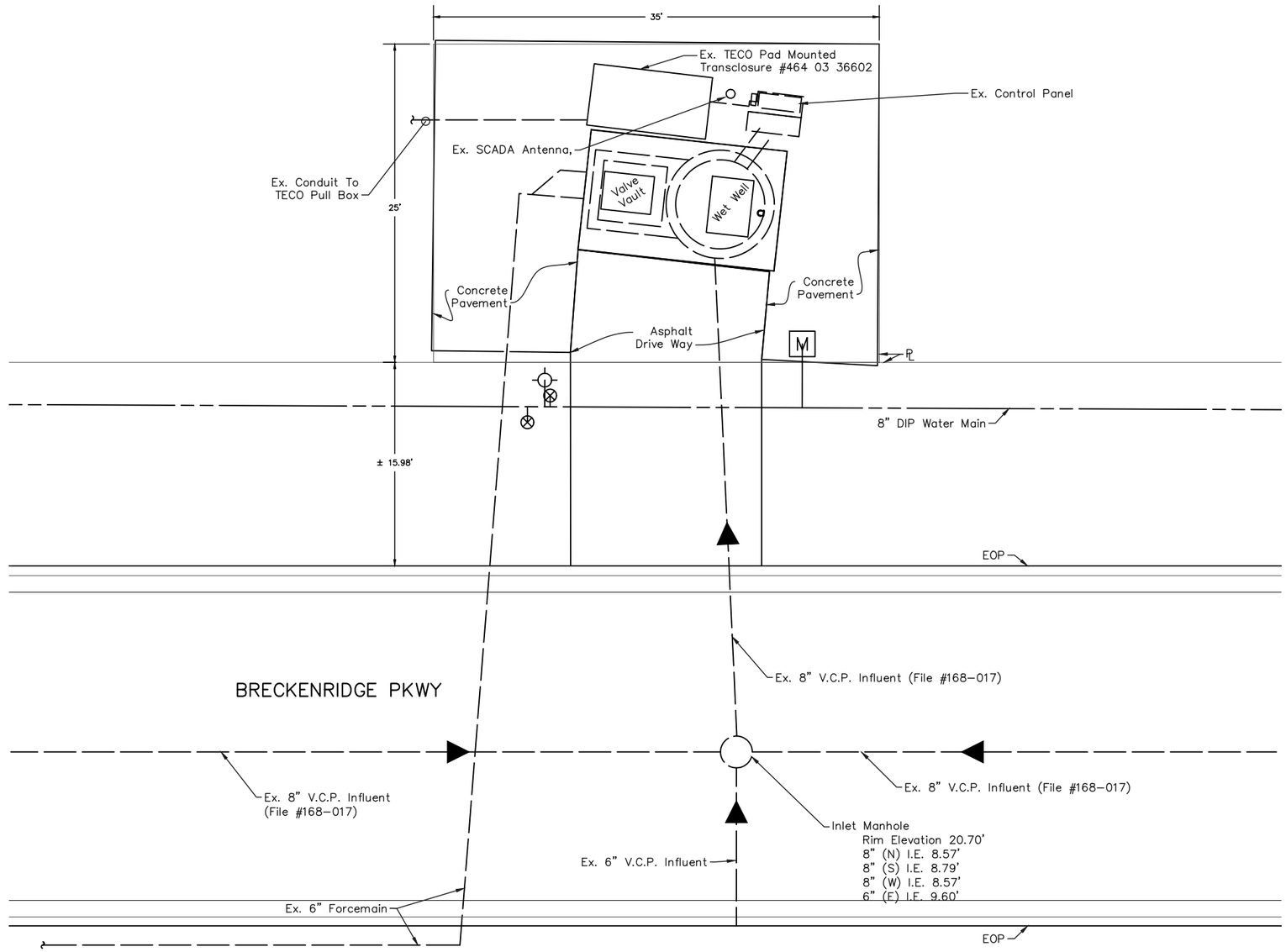
BRECKENRIDGE PUMPING STATION REHABILITATION

GENERAL NOTES

SHEET 3

B100-032





EXISTING SITE PLAN
SCALE 1"=10'

	No.	DATE	REVISIONS	DES: VT DRN: MRL CKD: DATE:	CITY of TAMPA WASTEWATER DEPARTMENT	BRECKENRIDGE PUMPING STATION REHABILITATION EXISTING SITE PLAN	SHEET 4
JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	3						
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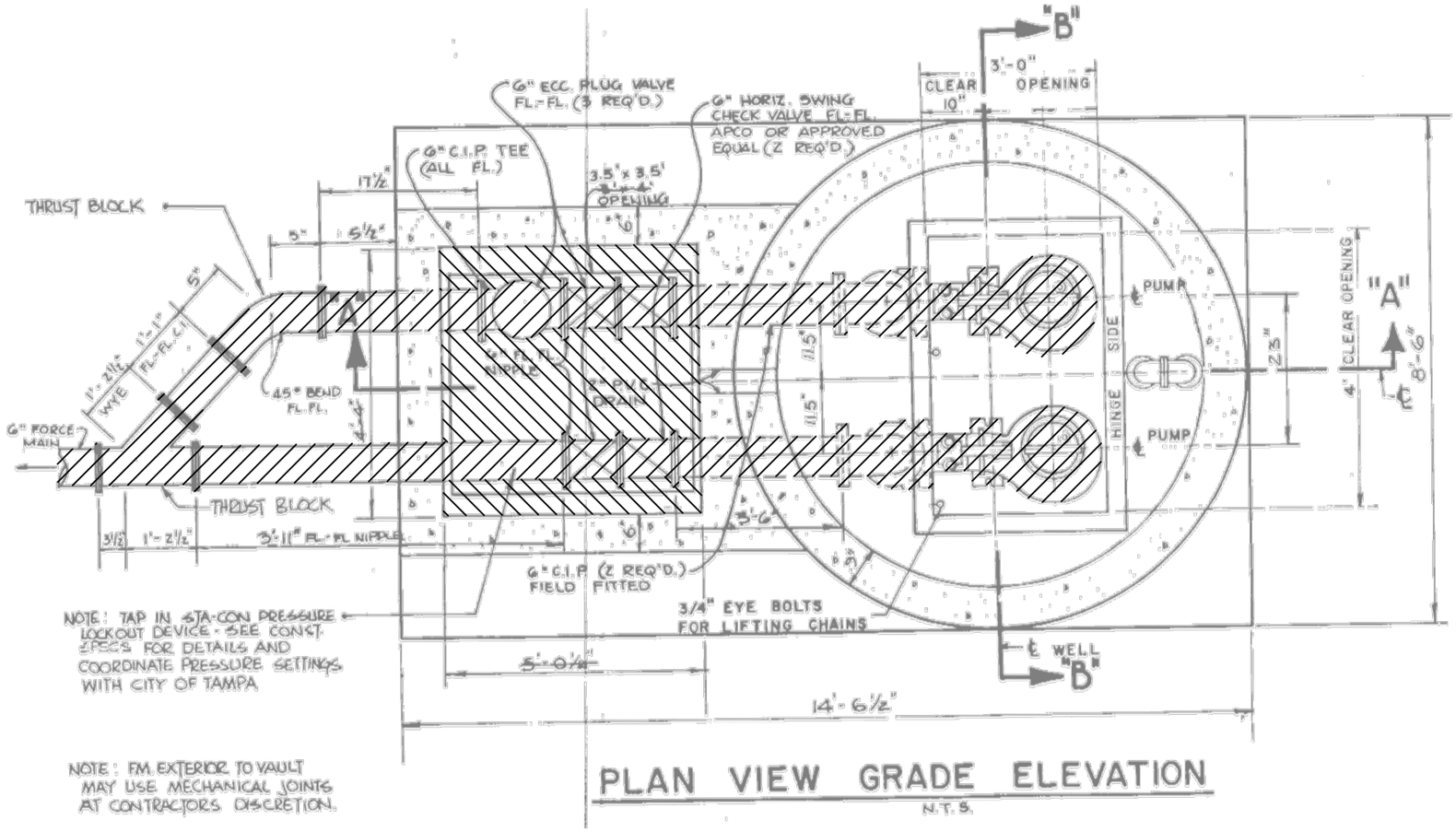
Layout- Sep 19, 2017 - 12:13pm CIB - WW-TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

B100–033

SEC. 1 T29S R19E

E-18



PLAN VIEW GRADE ELEVATION

N.T.S.

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

No.	DATE	REVISIONS
3		
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1		

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

DES: VT
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CITY of TAMPA
WASTEWATER DEPARTMENT

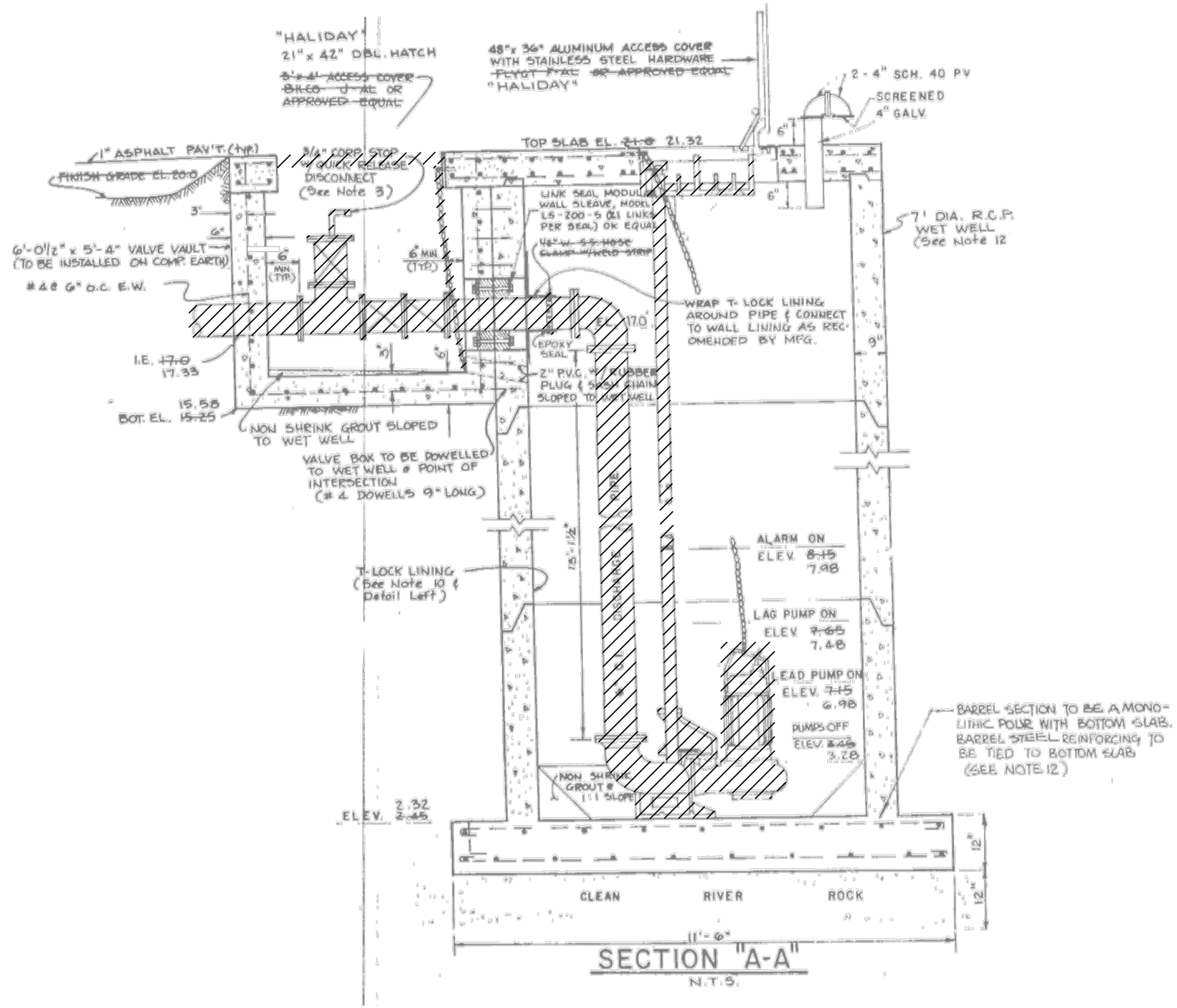
BRECKENRIDGE PUMPING STATION REHABILITATION

DEMOLITION PLAN

SHEET 5

Layout– Sep 19, 2017 – 12:09pm CIB – WW-TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

B100–034



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

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

DES: VT
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DATE:

CITY of TAMPA
WASTEWATER DEPARTMENT

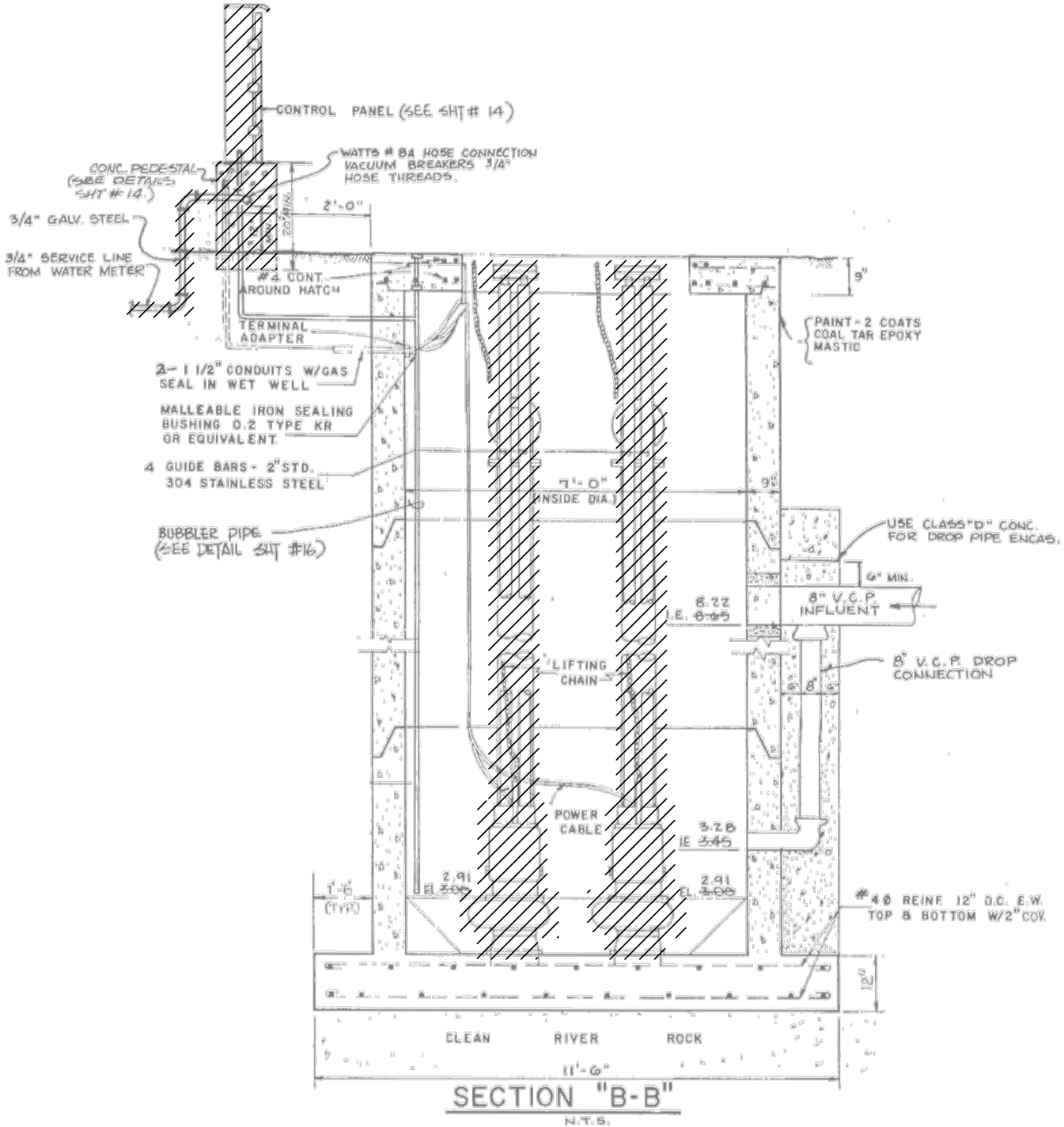
BRECKENRIDGE PUMPING STATION REHABILITATION

DEMOLITION SECTION A–A

SHEET 6

Layout– Sep 19, 2017 – 12:09pm CIB – WW-TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

B100–035



SECTION "B-B"

N.T.S.

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

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

DES: VT
DRN: MRL
CKD:
DATE:

CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

DEMOLITION SECTION B–B

SHEET 7

Layout– Sep 19, 2011 – 12:09pm CIB – WW–TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

B100-036

SEC. 1 T29S R19E

E-18

35'

PROP. 6" THICK CONCRETE SLAB (SEE SHT.11 FOR EXTENT OF SLAB REPLACEMENT)

BYPASS PUMP

BYPASS PUMP BACKUP

Ex. TECO Pad Mounted Transclosure #464 03 36602

PROP. 6" PLUG VALVE (FL/FL) (TYP OF 3)

PROP. 6" CHECK VALVE (FL/FL) (TYP OF 2)

PROP. 6" DIP BLIND FLANGE

PROP. 6" DIP SPOOL (FL/FL) W/ ARV ASSEMBLY (SEE DETAIL)

PROP. 6" DIP SPOOL (FL/PE)

PROP. 6" 45° DIP BEND (RMJ/RMJ)

PROP. 6" DIP SPOOL

PROP. 6" 90° DIP BEND (RMJ/RMJ)

PROP. 6" DIP SPOOL

PROP. 6" PLUG VALVE (RMJ/RMJ) W/ VALVE BOX

PROP. 6" DIP SPOOL

PROP. 6" DIP TEE (RMJ/RMJ/RMJ)

Ex. 6" CIP FM

PROP. LINE STOP (CONTRACTOR SHALL CAST 3'X3'X2' CONCRETE ENCASEMENT AT LINE STOP TO RESTRAIN EXISTING F.M.)

25'

22"

PROP. ELECTRICAL EQUIPMENT

PROP. 8" FLOW THROUGH PLUG

PROP. 6" D.I.P. SPOOL 18" LONG (TYP OF 2)

PROP. 6" D.I.P. TEE (FL/FL/FL) (TYP. OF 2)

PROP. 6" 90° D.I.P. BEND (FL/FL) (TYP OF 2)

PROP. 6" DIP 45° BEND (FL/FL)

RPZ

M

PROP. HOSE BIB (LOCATION TO BE DETERMINED IN THE FIELD)

PROP. RPZ

Asphalt Drive Way

Ex. 6" CIP FM

Ex. Fire Hydrant

Ex. 8" DIP Water Main

PROP. 6" THICK CONCRETE SLAB

PROP. 6" DIP BLIND FLANGE

PROP. 6" DIP SPOOL (FL/RMJ)

PROP. 90° BEND (RMJ)

PROP. 6" SPOOL

PROP. 6" PLUG VALVE W/ VALVE BOX (RMJ)

PROP. 6" SPOOL

El. 21.32'±

℄ ELEV. 18.22±

SECTION X-X

N.T.S.

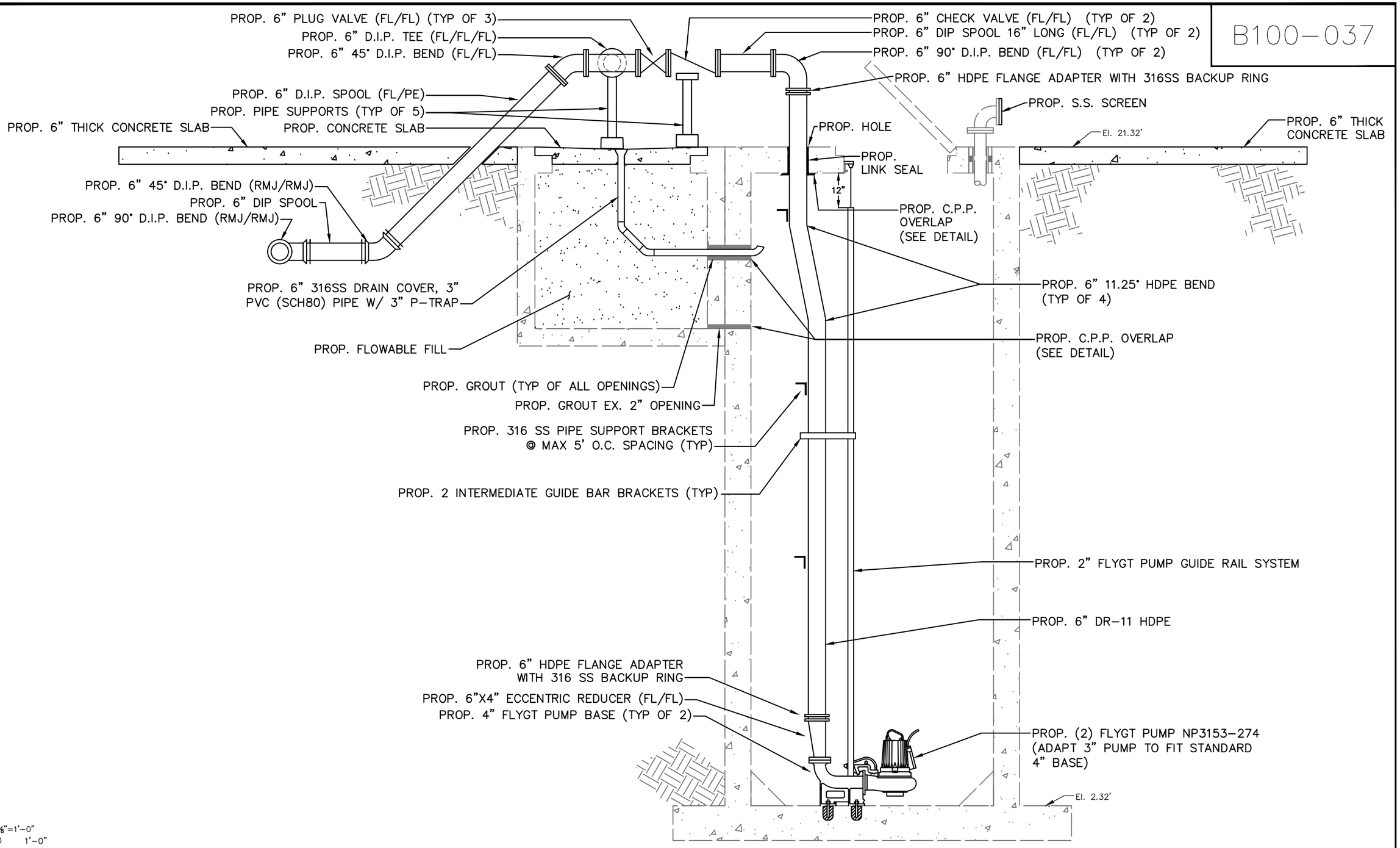
PLAN VIEW

¼" = 1'-0"

	No.	DATE	REVISIONS			
JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	3			DES: VT DRN: MRL CKD: DATE:	CITY of TAMPA WASTEWATER DEPARTMENT	BRECKENRIDGE PUMPING STATION REHABILITATION
	2					PROPOSED PLAN
	1					SHEET 8

Layout- Sep 19, 2017 - 12:09pm CIB - WW-TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

B100–037



SECTION "C–C"

3/8" = 1'–0"

SCALE: 3/8"=1'–0"
1'–0" 0 1'–0"
MEASURES 3/8" ON ORIG. DWG

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

DES: VT
DRN: MRL
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CITY of TAMPA
WASTEWATER DEPARTMENT

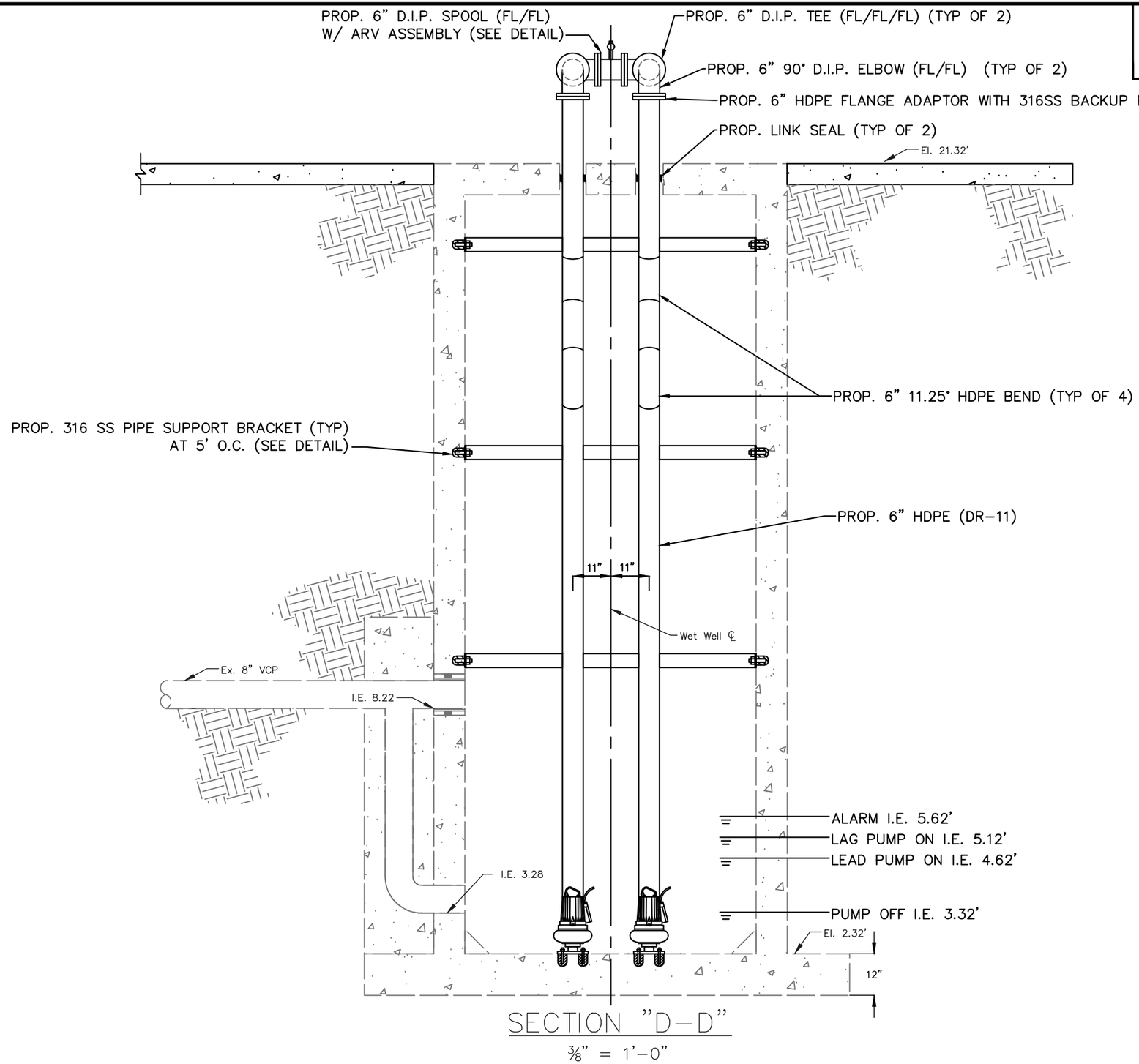
BRECKENRIDGE PUMPING STATION REHABILITATION

PROPOSED SECTION C–C

SHEET 9

Layout– Sep 19, 2017 – 12:09pm CIB – WW–TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

B100–038



SECTION "D–D"

3/8" = 1'–0"

SCALE: 3/8"=1'–0"

1'–0" 0 1'–0"

MEASURES 3/8" ON ORIG. DWG

SET EMERGENCY CONTROLLER TO 5 MINUTES.

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

DES: VT
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CKD:
DATE:

CITY of TAMPA
WASTEWATER DEPARTMENT

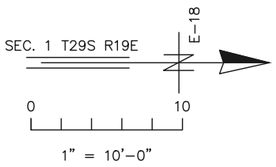
BRECKENRIDGE PUMPING STATION REHABILITATION

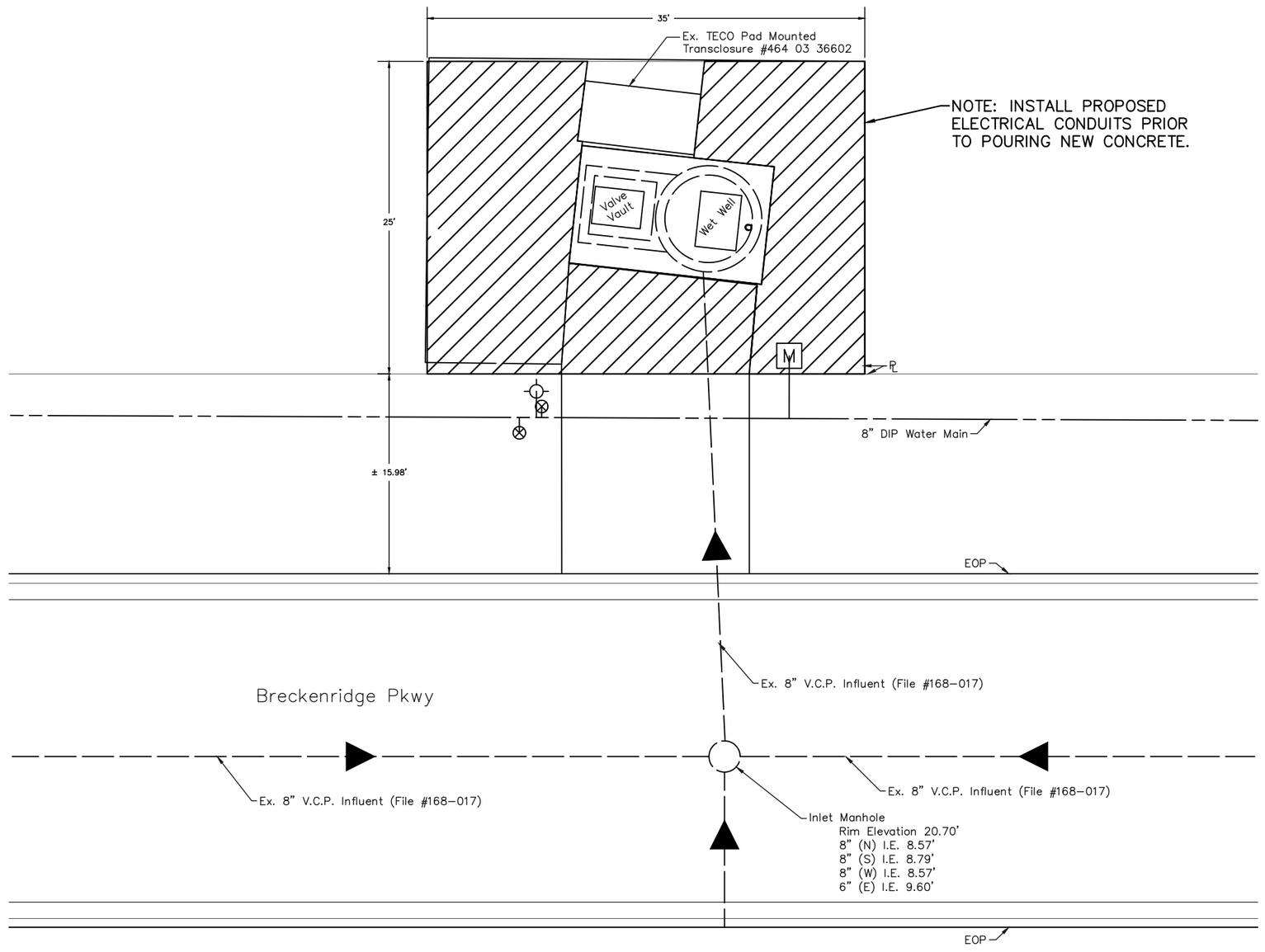
PROPOSED SECTION D–D

SHEET 10

User: ss8k Drawing Name: K:\WasteWater Projects\Breckenridge PS Rehabilitation\Drafting\DWG\Breckenridge PS ARCH.dwg Layout– Sep 19, 2017 – 12:09pm CTB – WW–TOSHIBA.CTB

B100-039





PLAN VIEW
SCALE 1"=10'

HATCHED AREAS ON THIS SHEET INDICATE CONCRETE OR ASPHALT TO BE REMOVED AND REPLACED WITH A 6" CONCRETE SLAB

Layout- Sep 19, 2011 - 12:13pm CIB - WW-TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

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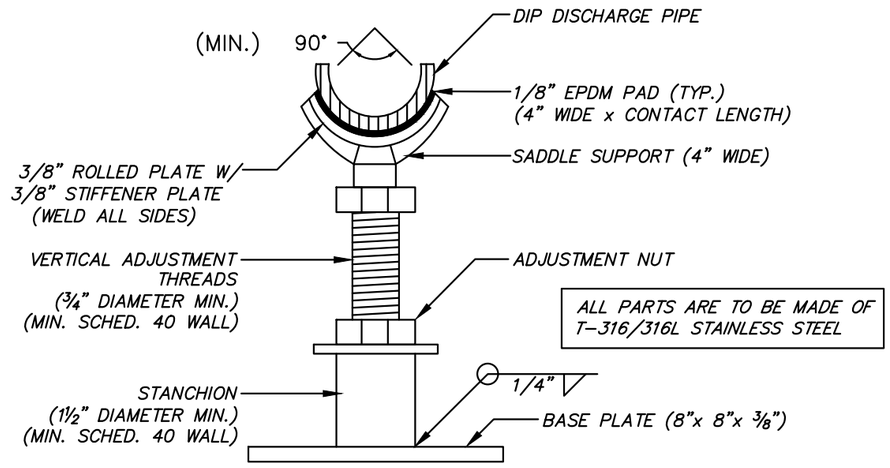
CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

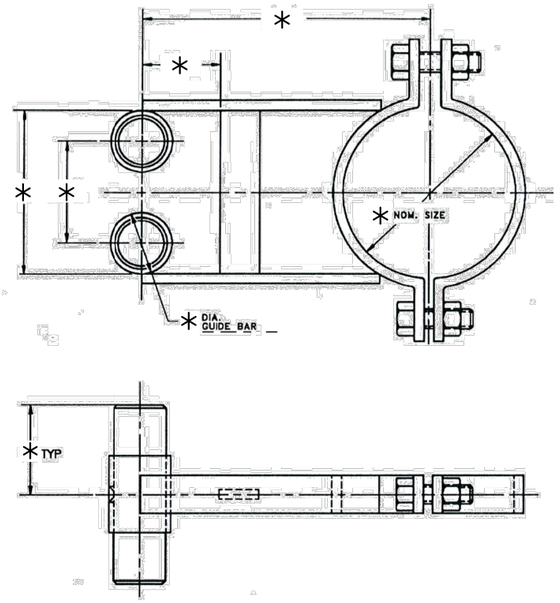
CONCRETE SITE PLAN

SHEET 11

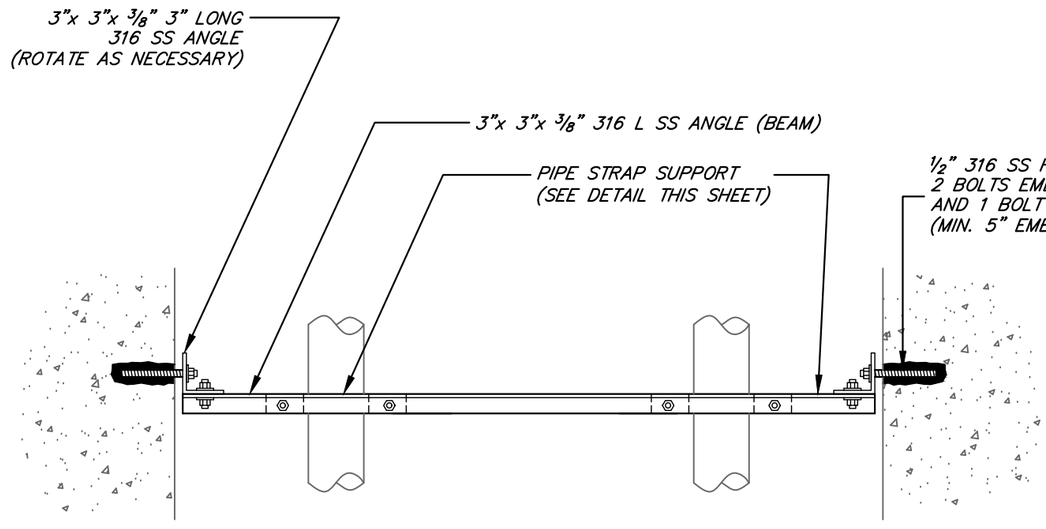
B100-040



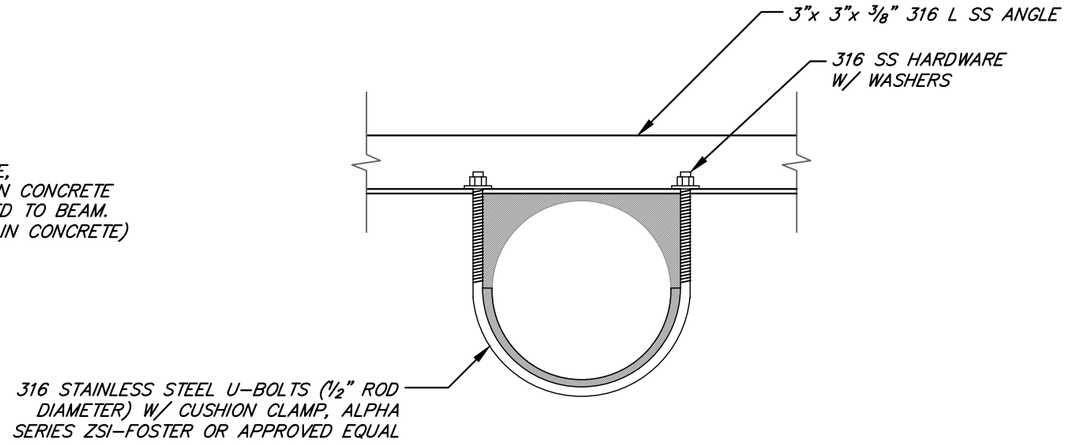
SECTION VIEW – STAINLESS STEEL STANCHION SADDLE SUPPORT
N.T.S.



INTERMEDIATE GUIDE BAR BRACKETS * *PER PUMP MANUFACTURER'S RECOMMENDATION*
N.T.S.



PIPE SUPPORT ASSEMBLY
N.T.S.



PIPE STRAP SUPPORT
N.T.S.

Layout- Sep 19, 2011 - 12:09pm CIB - WW-TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

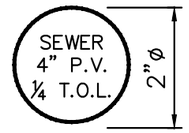
	No.	DATE	REVISIONS			
JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	3			DES: VT DRN: MRL CKD: DATE:	CITY of TAMPA WASTEWATER DEPARTMENT	BRECKENRIDGE PUMPING STATION REHABILITATION DETAILS (1)
	2					SHEET 12
	1					

B100–041

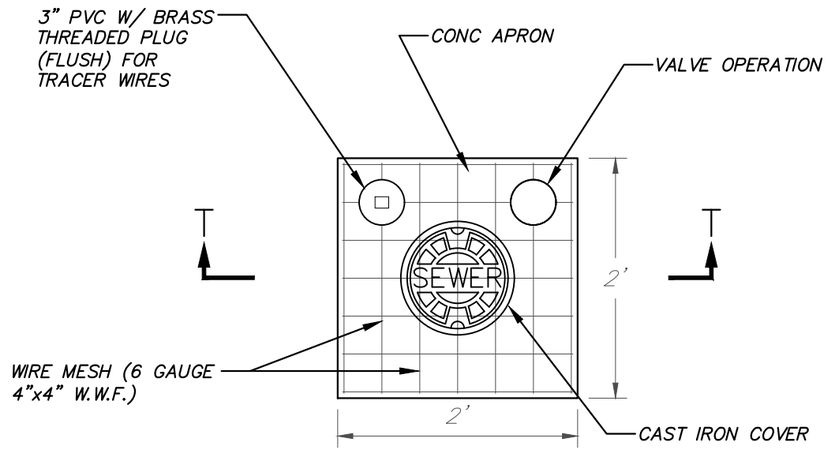
IMPORTANT – FOR EACH OPERABLE VALVE:

PROVIDE A BRASS IDENTIFICATION TAG ANCHORED TO THE CONCRETE APRON THAT IS A MINIMUM 2" IN DIAMETER AND 1/8–INCH THICK. THE TAG SHALL BE ENGRAVED WITH "SEWER", SIZE OF VALVE, TYPE OF VALVE, AND DIRECTION AND NUMBER OF TURNS TO OPEN.

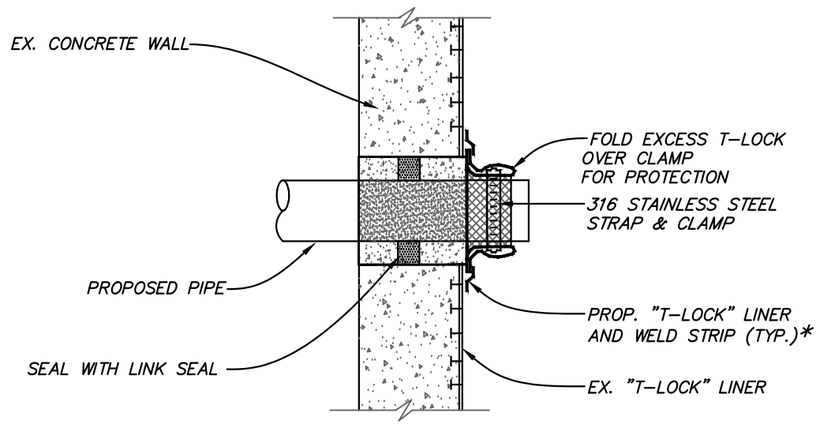
FOR EXAMPLE, A 4–INCH PLUG VALVE ON A WASTEWATER FORCE MAIN THAT REQUIRES 1/4 TURNS TO THE LEFT(COUNTERCLOCKWISE) TO BE FULLY OPEN WOULD REQUIRE THE FOLLOWING ON AN IDENTIFICATION TAG:



VALVE OPERATION DISK
NOT TO SCALE

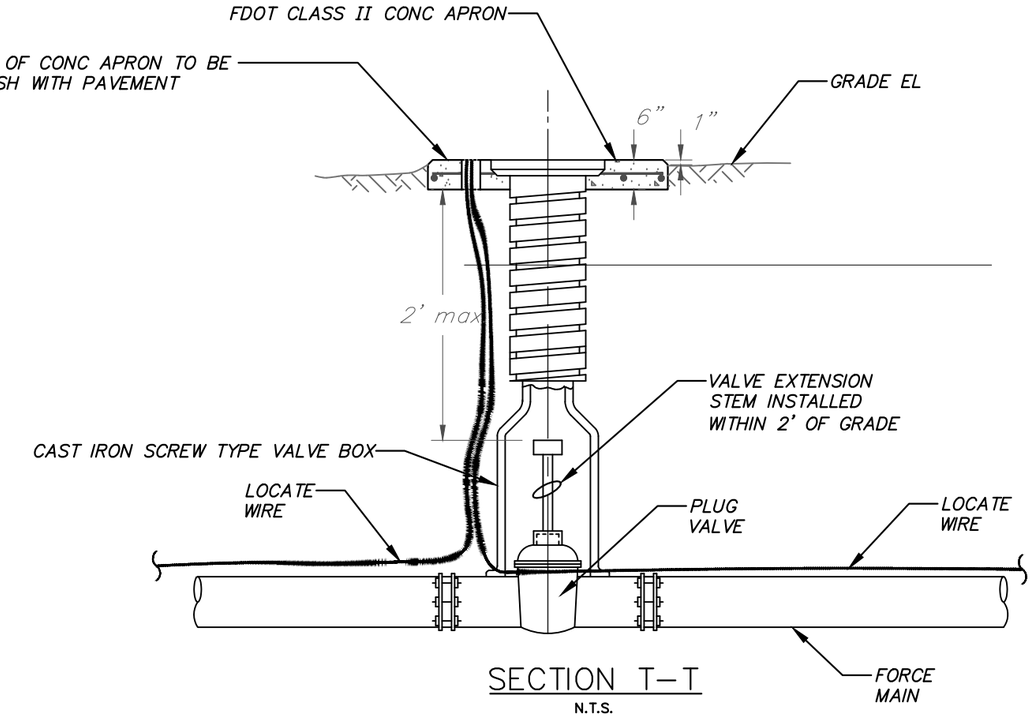


VALVE BOX DETAIL
Not To Scale



PIPE TO LINED STRUCTURE
N.T.S.

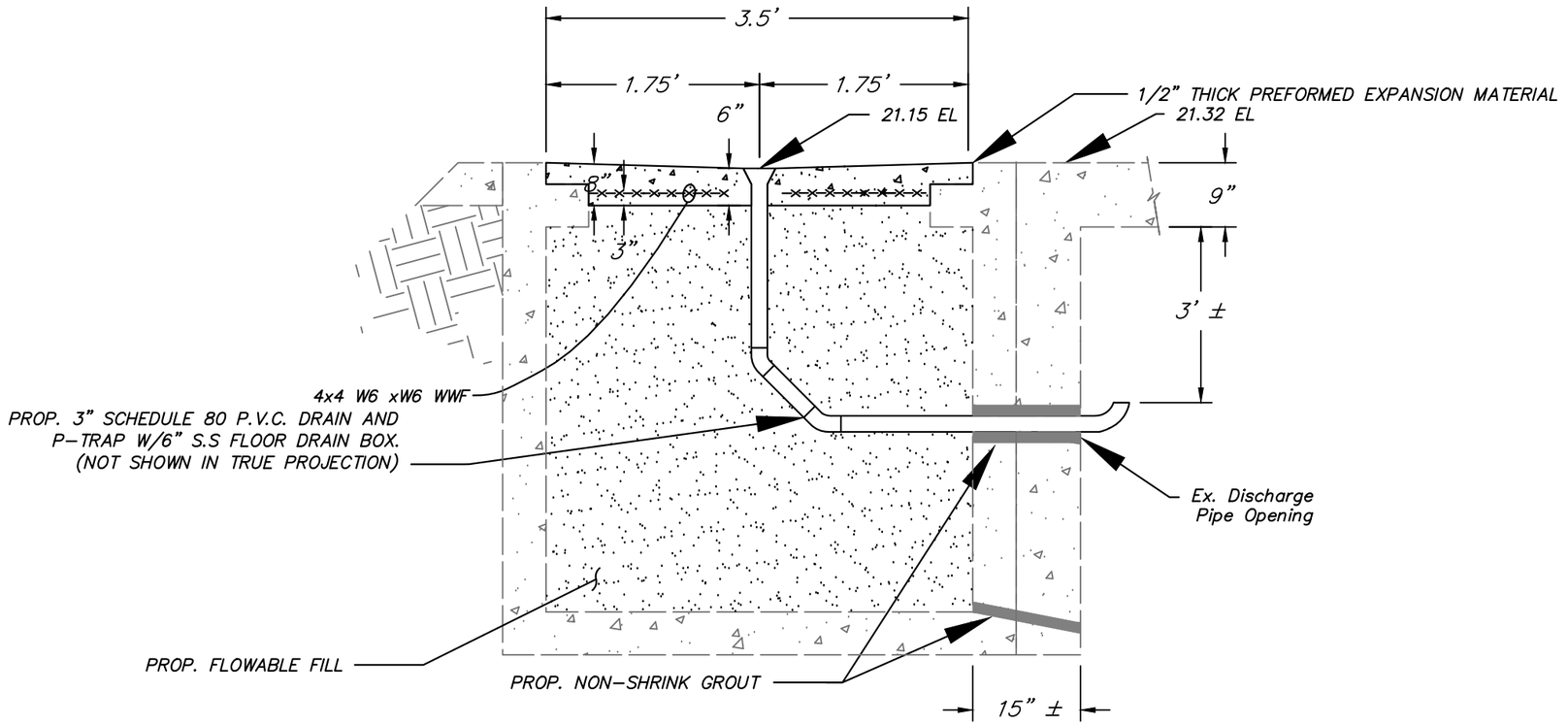
* ALTERNATIVE: CONTRACTOR MAY COAT WITH 125 MILS C.P.P. AND OVERLAP EXISTING T–LOCK BY 3".



SECTION T–T
N.T.S.

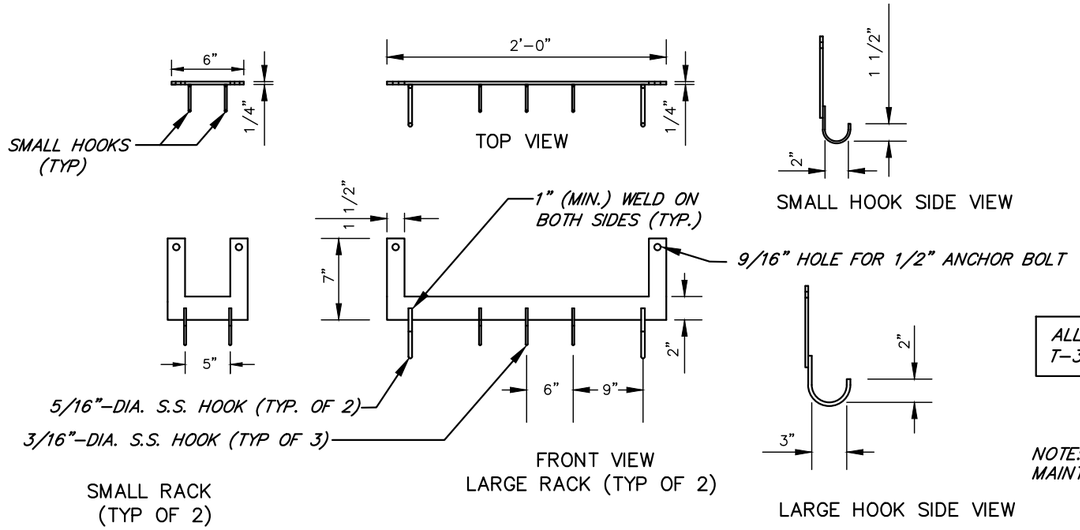
	No.	DATE	REVISIONS				
JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	3			DES: VT DRN: MRL CKD: DATE:	CITY of TAMPA WASTEWATER DEPARTMENT	BRECKENRIDGE PUMPING STATION REHABILITATION DETAILS (2)	SHEET 13
	2						
	1						

Layout– Sep 19, 2017 – 12:09pm CIB – WW–TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)



VALVE MANIFOLD SLAB SECTION
N.T.S.

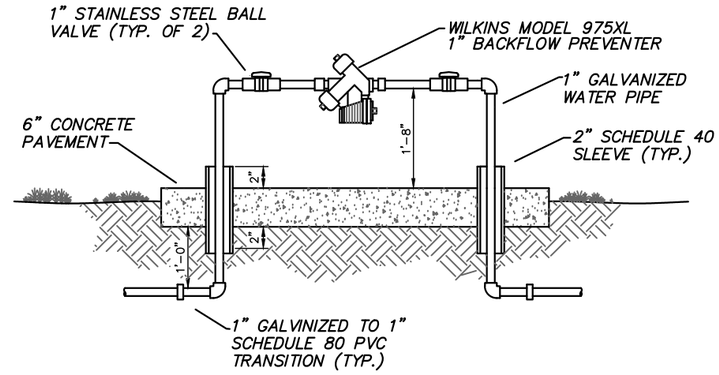
	No.	DATE	REVISIONS	DES: VT DRN: MRL CKD: DATE:	CITY of TAMPA WASTEWATER DEPARTMENT	BRECKENRIDGE PUMPING STATION REHABILITATION	SHEET 14
JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	3					DETAILS (3)	
	2						
	1						



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

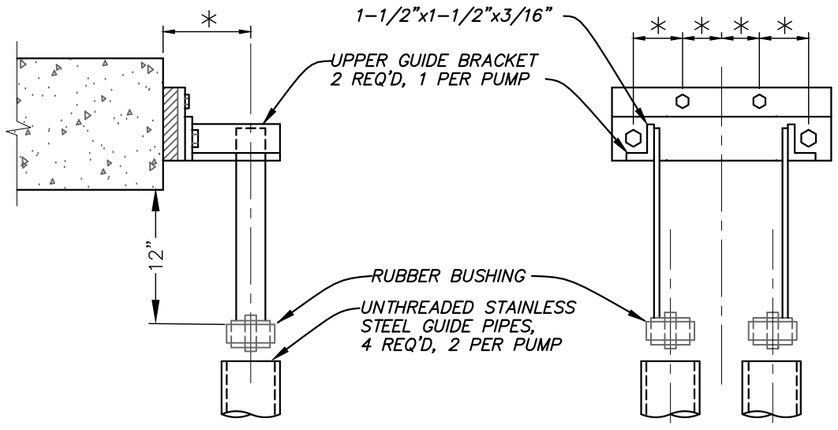
NOTE: INSTALL FLOATS IN A MANNER TO MAINTAIN PROPER OPERATIONAL CLEARANCE.

STAINLESS STEEL HOOK RACKS
N.T.S.

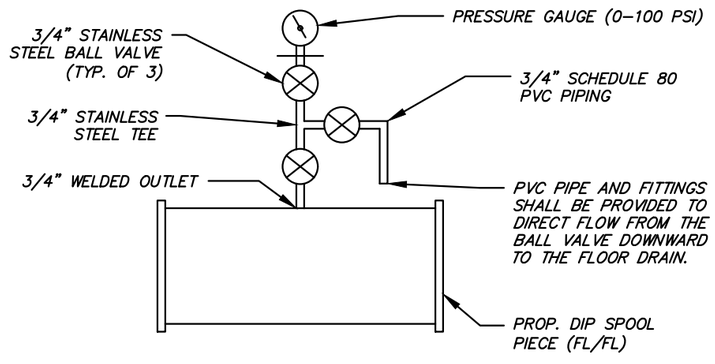


BACKFLOW PREVENTER DETAIL
N.T.S.

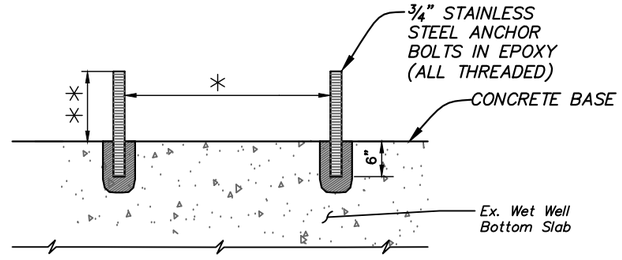
* PER PUMP MANUFACTURER'S RECOMMENDATION



GUIDE BRACKET DETAIL
N.T.S.



AIR RELEASE AND PRESSURE GAUGE
N.T.S.



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

** CONTRACTOR SHALL PROVIDE A MINIMUM 1/2 INCH BOLT PROTRUSION ABOVE THE FINAL NUT LOCATION AFTER THE NUT IS TIGHTENED TO MANUFACTURER'S RECOMMENDATION.

ANCHOR BOLT DETAIL
N.T.S.

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

No.	DATE	REVISIONS
3		
2		
1		

DES: VT
DRN: MRL
CKD:
DATE:

CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

DETAILS (4)

SHEET 15

B100-046

ONE LINE DIAGRAM SYMBOLS

600 A — BUS–RATING AS SHOWN

INCOMING LINE

OUTCOMING LINE

DISCONNECTING DEVICE

CONDUCTORS CONNECTED

CONDUCTORS NOT CONNECTED

100A — FUSE–RATING AS SHOWN

100A — SINGLE THROW DISCONNECT SWITCH–RATING AS SHOWN

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

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

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

5 — MEDIUM VOLTAGE DRAWOUT TYPE AIR CIRCUIT BREAKER

GROUND CONNECTION

SPD — LIGHTNING OR SURGE ARRESTOR

SURGE CAPACITOR

POWER TRANSFORMER WITH WINDING CONNECTIONS INDICATED

CPT — CONTROL POWER TRANSFORMER

PT — POTENTIAL TRANFORMER

CT — CURRENT TRANSFORMER

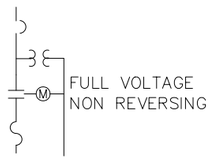
THERMAL OVERLOAD ELEMENT (OL)

5 — SQUIRREL CAGE MOTOR (INDICATE HORSEPOWER)

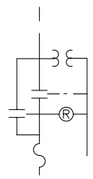
G — GENERATOR

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

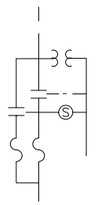
COMBINATION STARTER WITH CONTROL TRANSFORMERS AND OVERLOAD RELAYS AND MOTOR CIRCUIT PROTECTOR



FULL VOLTAGE NON REVERSING



FULL VOLTAGE REVERSING



FULL VOLTAGE TWO SPEED

SCHEMATIC AND WIRING DIAGRAM SYMBOLS

M — OPERATING COIL

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

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

NORMALLY OPEN CONTACT (N.O.)

NORMALLY CLOSED CONTACT (N.C.)

NORMALLY OPEN CONTACT WITH TIME DELAY CLOSING (ON–DELAY)

INSTANT OPEN– TIME DELAY CLOSED CONTACT (OFF DELAY)

NORMALLY CLOSED CONTACT WITH TIME DELAY OPENING (ON–DELAY

INSTANT CLOSE– TIME DELAY OPEN CONTACT (OFF DELAY)

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

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

NORMALLY OPEN PUSHBUTTON– MOMENTARY CONTACT

NORMALLY CLOSED PUSHBUTTON– MOMENTARY CONTACT

DOUBLE CIRCUIT PUSHBUTTON WITH SPRING RETURN TO NORMAL

TRANSFORMER

OL — OVERLOAD RELAY CONTACT

THERMAL OVERLOAD ELEMENT (OL)

ON–OFF SWITCH

G — GROUND BUS

N — NEUTRAL BUS (INSULATED)

SINGLE–POLE CIRCUIT BREAKER

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

NOTE:

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

TOSHIBA_UNI_COLOR (NORTH WING)

Layout – Sep 19, 2017 – 12:13pm C1B – WW-TOSHIBA.C1B

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
DEPARTMENT OF SANITARY SEWERS

No.	DATE	REVISIONS
3		
2		
1		

DES: LRG
DRN: MRL
CKD:
DATE:

CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

ELECTRICAL SYMBOL LEGEND (SHT. 1 OF 2)

SHEET EG1

B100-047

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)

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

(FL) — FLOW SWITCH

(LS) — LIMIT SWITCH

(P) — PRESSURE SWITCH

(S) — SOLENOID OPERATED VALVE

(T) — TEMPERATURE SWITCH

(F) — FLOAT SWITCH

L — LEVEL TRANSMITTER (PRESSURE ANALOG TYPE)

LC — LEVEL TRANSMITTER (FLOAT TYPE)

T — TEMPERATURE TRANSMITTER

FT — FLOW TRANSMITTER

MH — DESIGNATES MOUNTING HEIGHT

WP — DESIGNATES WATERPROOF EQUIPMENT

XP — DESIGNATES EXPLOSIONPROOF EQUIPMENT

MOV — DESIGNATES MOTOR OPERATED VALVE

EX. — DESIGNATES EXISTING EQUIPMENT

PROP. — DESIGNATES PROPOSED EQUIPMENT

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
DEPARTMENT OF SANITARY SEWERS

No.	DATE	REVISIONS
3		
2		
1		

DES: LRG
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CKD:
DATE:

CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

ELECTRICAL SYMBOL LEGEND (SHT. 2 OF 2)

SHEET EG2

B100-048

GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2. ALL POWER CONDUCTORS SHALL BE STRANDED COPPER, #12 AWG MIN. W/XHHW-2 INSULATION, UNLESS OTHERWISE NOTED.
3. ALL WIRING SHALL BE IDENTIFIED W/NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
4. VERIFY ALL MECHANICAL EQUIPMENT SIZES AND RATING PRIOR TO CONNECTING.
5. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
6. PLANS ARE DESIGNED IN ACCORDANCE WITH THE 5TH EDITION 2014 OF THE FLORIDA BUILDING CODE AND THE 2011 EDITION OF THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL ENSURE THAT ALL ELECTRICAL WORK PERFORMED SHALL ADHERE TO THE SAME ACCORDANCE AND ALL APPLICABLE LOCAL ORDINANCES.
7. ALL THREADED CONNECTIONS SHALL BE COATED W/ ALUMA-SHIELD ANTI-SIEZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & B) OR EQUAL.
8. ALL PANELS, DISCONNECTS, SWITCHES, AND EQUIPMENT COVERPLATES SHALL BE LABELED W/ NAMEPLATES. NAMEPLATES SHALL BE THREE-PLY PHENOLIC BLACK-WHITE-BLACK ENGRAVED THROUGH THE FIRST BLACK LAYER. LETTERING SHALL BE 0.5 CM (3/16") MIN. EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.
9. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'-0" INTERVALS.
10. ALL CIRCUITS SHALL HAVE A PROPERLY SIZED GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT W/ POWER CONDUCTORS.
11. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS, NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNED IN THE DRAWINGS.
12. NEATLY COIL ALL SPARE CONDUCTORS & TAPE W/ VINYL ELECTRICAL TAPE (SCOTCH 33+).
13. PROVIDE A MINIMUM OF 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE W/ ARTICLE 110 OF THE NEC.
14. ALL FASTENING HARDWARE (SCREW, BOLTS, NUTS, ETC.) SHALL BE 316-STAINLESS STEEL. FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.
15. EXPOSED CONDUITS SHALL BE NON-COATED RIGID ALUMINUM CONDUIT, UNLESS OTHERWISE NOTED (UON). INSTALL PVC COATED RIGID ALUMINUM CONDUIT TO THE WET WELL, UNLESS OTHERWISE NOTED (UON).
16. DIRECT BURIED AND CONCRETE ENCASED CONDUIT SHALL BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED. TRANSITIONS FROM ABOVE-GRADE RIGID ALUMINUM CONDUIT TO NONMETALLIC CONDUIT SHALL BE ACCOMPLISHED WITH A THREADED ADAPTER. RIGID ALUMINUM CONDUIT INSTALLED ABOVE GRADE AND EXTENDING BELOW GRADE SHALL INCLUDE THE FIRST 90° ELBOW. ALL RIGID ALUMINUM CONDUITS EXTENDING BELOW GRADE SHALL BE COATED WITH TWO COATS OF ASPHALTUM-TYPE PAINT ALONG ITS ENTIRE LENGTH BELOW GRADE AND EXTENDING 6" ABOVE GRADE OR ABOVE THE TOP OF THE FINISHED SLAB.
17. ABOVE GRADE INDOOR, AND NON-WASHDOWN AREAS, RIGID ALUMINUM CONDUIT CONNECTIONS TO CONTROL BOXES, ETC. SHALL BE MADE WITH ALUMINUM DOUBLE LOCKNUTS AND BUSHINGS. TURN DOWN ON THREADS TO SOLIDLY CONNECT RACEWAY TO BOX OR ENCLOSURE.
18. ALUMINUM WATERTIGHT HUBS (MYERS HUBS) SHALL BE USED FOR CONNECTIONS TO CONTROL BOXES, ETC. MOUNTED OUTDOORS, BELOW GRADE, OR WASHDOWN AREAS.
19. A 316-STAINLESS STEEL CHANNEL ERECTOR SYSTEM SHALL BE USED TO SUPPORT ALL CONDUITS, BOXES ETC. USE 316 STAINLESS STEEL MOUNTING HARDWARE.
20. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND MAKE ADJUSTMENTS AS NECESSARY TO EXECUTE THE PROPOSED INSTALLATIONS.
21. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
22. PULL BOXES SHALL BE INSTALLED AS NECESSARY TO FACILITATE WIRE PULLS AND AVOID EXCESSIVE PULLING TENSION ON WIRING. IN NO CASE SHALL CONDUIT LENGTHS EXCEED 150' OR THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) WITHOUT A PULL BOX. PULL BOXES SHALL BE SIZED IN ACCORDANCE WITH ARTICLE 314 OF THE NEC.
23. THE WET WELL CLASSIFICATION IS CLASS 1, DIVISION 1, GROUP D, (HAZARDOUS AREA) NEC CHAPTER 5 IS APPLICABLE FOR INTERFACING WET WELL AND THE ENCLOSURES.
24. ALL ELECTRICAL WORK SHALL BE PERFORMED WITHIN 2011 NEC AND CITY OF TAMPA/HILLSBOROUGH COUNTY CODES AND SHALL BE INSPECTED BY CITY OF TAMPA/HILLSBOROUGH COUNTY ELECTRICAL INSPECTORS AS APPLICABLE.
25. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED AND AS SPECIFIED, OR AS APPROVED BY THE ENGINEER. THE PANEL BUILDER SHALL BE UL-508A CERTIFIED AND A UL LABEL SHALL BE ATTACHED TO THE INSIDE OF THE ENCLOSURE. THE DOUBLE THROW DISCONNECT MUST BE LABELED "SUITABLE FOR USE AS SERVICE EQUIPMENT."
26. THE ENCLOSURES SHALL BE NEMA 4X, THEY SHALL BE CONSTRUCTED OF MINIMUM 14 GAUGE 304SS, THEY SHALL HAVE RAL 9003 WHITE POWDER COAT AND THE CLOSING SURFACES SHALL HAVE ROLLED LIPS, PROVIDE HINGED DOORS WITH 3-POINT LATCHED AND LOCKABLE HANDLES.
27. ALL COMPONENTS TO BE MOUNTED ON PANEL USING TAPPED HOLES.
28. ALL CONTROL WIRING SHALL BE COPPER, ALL CONTROL WIRING SHALL BE STRANDED XHHW-2 COPPER, MINIMUM AWG #14 AND SHALL HAVE SPADE LUG TERMINATIONS.
29. ALARM FLOAT SWITCH WILL BE SUPPLIED BY THE CITY, BUT INSTALLED BY CONTRACTOR.
30. DIMENSIONS, ITEMS, OR ELEVATIONS MARKED "*" TO BE DETERMINED AFTER EQUIPMENT SELECTION.
31. ALL MECHANICAL CONNECTORS SHALL BE TORQUED PER NEC, UL OR MANUFACTURES SPECIFICATIONS.
32. INSTALL LAMINATED SCHEMATIC, LAMINATED DATA SHEET AND LAMINATED SOFT STARTER SETUP PARAMETERS ON BACK FACE OF THE DOOR INSIDE THE ENCLOSURE.
33. ENSURE THAT LINE CONNECTIONS TO METER SOCKET PROVIDE CORRECT MOTOR ROTATION.
34. CONDUCTORS WITHIN THE ENCLOSURE AND NOT ROUTED IN WIREWAYS, SHALL BE SECURED TO THE BACK PANEL WITH MECHANICAL FASTENERS, FASTENERS SECURED WITH ADHESIVE ARE NOT ACCEPTABLE.
35. ALL HINGED SURFACES SHALL BE GROUNDED WITH A BONDING JUMPER SECURED TO THE ENCLOSURE OR BACKPANEL.
36. THE PCSR SHALL BE MOTOROLA ACE 3600 PACKAGE AS DISTRIBUTED BY DCR ENGINEERING SERVICES INC. SCADAONE, LLC., STAR CONTROLS OR REVERE CONTROL SYSTEMS. THE PUMPING STATION CONTRACTOR SHALL COORDINATE HIS EFFORTS WITH DCR, SCADAONE, STAR CONTROLS OR REVERE CONTROL SYSTEMS TO ENSURE SYSTEM COMPATIBILITY. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE DUPLEX CONTROL SYSTEM/SCADA PACKAGE, AS PROGRAMMED BY DCR, SCADAONE, 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. PRIOR TO THE SCHEDULED SCADA TESTING DATE, THE CITY SHALL REMOVE THE EXISTING PLC AND INSTALL A TEMPORARY AUTO DIALER FOR ALARMING NEEDS. ON THE SCADA TESTING DATE, THE SCADA PROGRAMMER SHALL PROVIDE TEMPORARY POWER TO THE CONTROL PANEL PLC, PLACE THE NEW PLC ONLINE WITH THE CITY'S VT SCADA SYSTEM, AND PREFORM ANY NEEDED TROUBLESHOOTING OR DEBUGGING. 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 THE SCADA TESTING, THE CONTRACTOR SHALL SCHEDULE A PRE-STARTUP DATE AND STARTUP DATE. THE CITY RESERVES THE RIGHT TO CANCEL THE PRE-STARTUP DATE, IF IT DEEMS THE PRE-STARTUP IS NOT NECESSARY
38. 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 E17.
39. PROVIDE 1/4" MINIMUM THICKNESS LEXAN SHIELDS OVER POWER DISTRIBUTION BLOCK AND OTHER EXPOSED CABLE TERMINATIONS.
40. XHHW-2 CONDUCTORS (3-#6 AWG + 1-#8 AWG GND. CU FOR EACH MOTOR) SHALL EXTEND FROM THE CONTROL PANEL TO ASSOCIATED HIGH VOLTAGE JUNCTION BOX. PROVIDE SEAL-OFF BETWEEN CONTROL PANEL AND JUNCTION BOX AS INDICATED. THE SHOWN SEAL-OFFS SHALL BE ALUMINUM BODY, CROUSE-HINDS, OR EQUIVALENT.
41. ALUMINUM CONDUIT SURFACE THAT IS A CONTACT WITH SOIL OR CONCRETE SHALL BE COATED WITH TWO COATS ASPALT VARNISH (FED. SPEC. TT-V-51) EXTENDING 4" BEYOND FINAL CONTACT POINT.
42. STAINLESS STEEL HANGERS TO SUPPORT THE EXCESS LENGTH OF MOTOR CABLES SHALL BE INSTALLED IN THE WET WELL. THESE HANGERS SHALL BE LOCATED IN A SEPARATE AREA FROM THE HANGERS SUPPORTING THE PUMP CHAINS.
43. HIGH LEG OF DELTA SERVICE MUST BE COLOR CODED ORANGE AS PER NEC 230-56. ENSURE THAT THE LINE CONNECTIONS TO METER SOCKET PROVIDE CORRECT METER ROTATION.

SCOPE OF WORK:

1. THE SERVICE VOLTAGE TO THIS FACILITY SHALL REMAIN 120/240 VAC. 3-PHASE, 4-WIRE, DELTA.
2. REMOVE THE EXISTING METER SOCKET, LIGHTNING ARRESTER, 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 ARRESTER 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 THE PLANS AND DETAILED IN THE 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 REDUCED VOLTAGE SOFT STARTERS AS SHOWN ON THE PLANS AND DETAILED IN THE 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 EMERGENCY POWER CONNECTOR, AS SHOWN ON THE PLANS.
13. RELOCATE AND REUSE EXISTING SCADA ANTENNA MAST AS INDICATED ON CONTRACT PLANS.
14. PROVIDE AND INSTALL AREA LIGHT AS SHOWN ON THE 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. THE EXISTING PUMP MOTOR AND BUBBLER CONDUITS SHALL BE ABANDONED IN PLACE, CAPPED OFF AT BOTH ENDS, AND FILLED WITH GROUT. PATCH/SEAL ANY OPENINGS AND DAMAGED CONCRETE WITH APPROVED PRODUCTS AND FINISH TO MATCH SURROUNDING SURFACE.
19. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2011 EDITION OF THE NATIONAL ELECTRIC CODE AND CHAPTER 5 OF THE CITY OF TAMPA CODE.
20. REFER TO CIVIL/MECHANICAL SHEETS FOR BYPASS PUMPING REQUIREMENTS. IF ELECTRICALLY DRIVEN BYPASS PUMPS ARE UTILIZED, THE CONTRACTOR SHALL COORDINATE ALL TEMPORARY ELECTRICAL SERVICE REQUIREMENTS WITH TAMPA ELECTRIC COMPANY (TECO). ANY COSTS ASSOCIATED WITH TEMPORARY ELECTRIC POWER ARE TO BE INCLUDED IN THE LUMP SUM PRICE AND NO SEPARATE PAYMENT WILL BE MADE.

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
DEPARTMENT OF SANITARY SEWERS

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DES: LRG
DRN: MRL
CKD:
DATE:

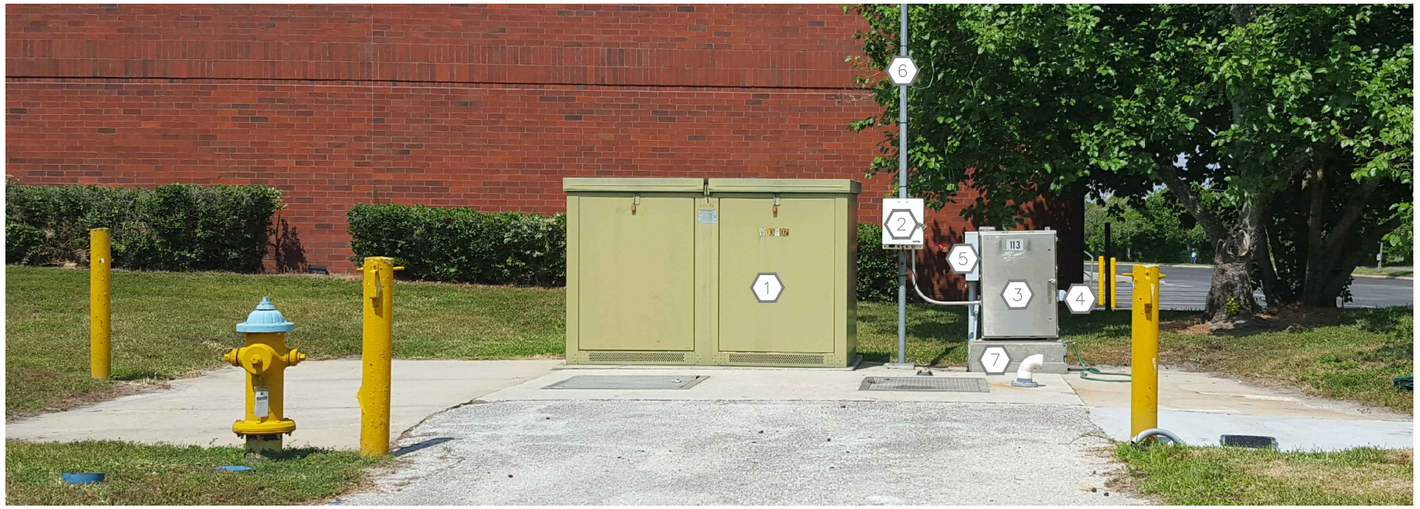
CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

GENERAL NOTES & SCOPE OF WORK

SHEET
EG3

B100–044



EXISTING CONTROL PANEL
STREET VIEW

EXISTING CONTROL PANEL
BACK VIEW

KEYED NOTES:

1. *EXISTING TECO PAD MOUNTED TRANSCLOSURE 464 03 36602 (NO WORK REQUIRED).*
2. *EXISTING DCR SCADA RTU CABINET. (SEE SCOPE OF WORK, NOTE 3, SH. EG3).*
3. *EXISTING CONTROL PANEL (TO BE REMOVED).*
4. *EXISTING EMERGENCY CONNECTOR (TO BE REMOVED).*
5. *EXISTING TECO METER (TO BE REMOVED).*
6. *EXISTING SCADA ANTENNA (TO BE REUSED AND RELOCATED).*
7. *EXISTING CONCRETE PEDESTAL AND STEP (TO BE REMOVED).*

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DATE:

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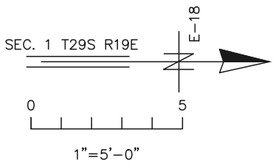
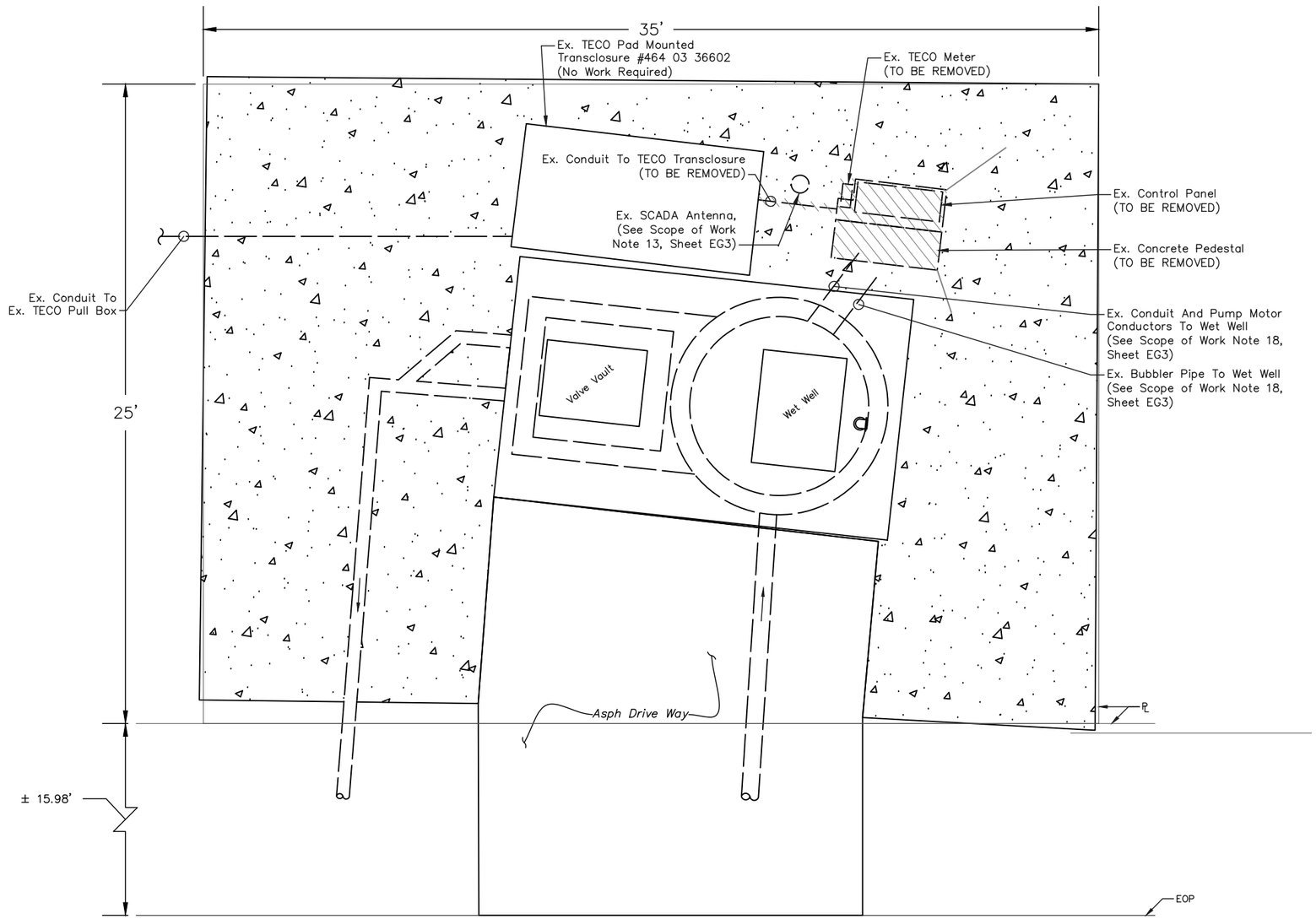
BRECKENRIDGE PUMPING STATION REHABILITATION

ELECTRICAL DEMOLOITION EQUIPMENT IDENTIFICATION

SHEET
ED

B100-045





PLAN VIEW
1"=5'-0"

No.	DATE	REVISIONS
3		
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1		

ROMAN D. KORCHAK, P.E. #42626
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WASTEWATER DEPARTMENT

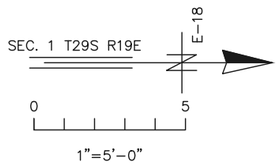
BRECKENRIDGE PUMPING STATION REHABILITATION

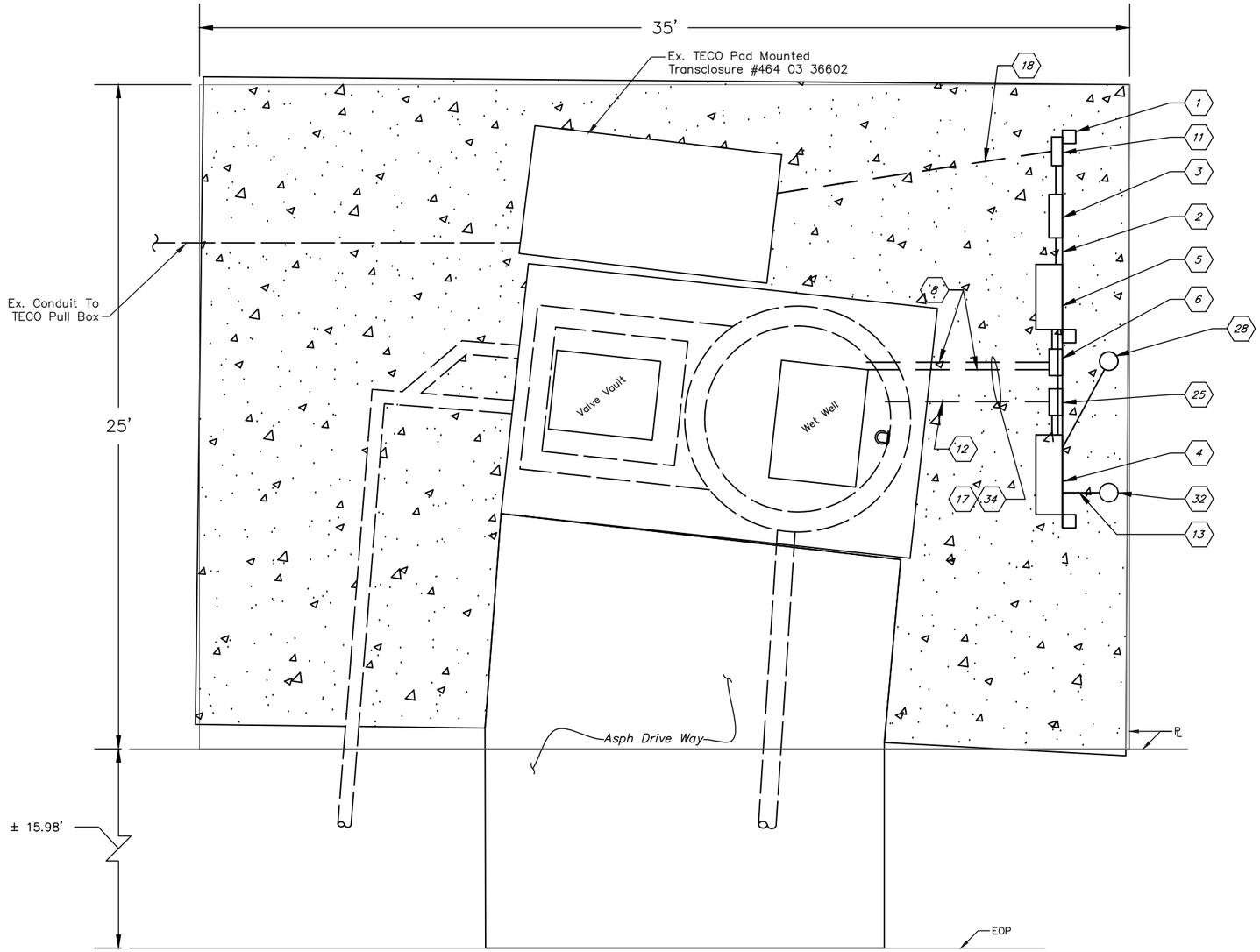
EXISTING ELECTRICAL DEMOLITION SITE PLAN

SHEET
ES

Layout- Sep 19, 2017 - 12:13pm CIB - WW-TOSHIBA.CIB
TOSHIBA_UNI_COLOR (NORTH WING)

B100-049





PROPOSED ELECTRICAL PLAN VIEW
1"=5'-0"

SEE KEYED NOTES ON SHEET E3.

	No.	DATE	REVISIONS			
ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD DEPARTMENT OF SANITARY SEWERS	3			DES: LRG DRN: MRL CKD: DATE:	CITY of TAMPA WASTEWATER DEPARTMENT	BRECKENRIDGE PUMPING STATION REHABILITATION PROPOSED ELECTRICAL PLAN VIEW	SHEET E1
	2						
	1						

Layout- Sep 19, 2017 - 12:13pm CIB - WW-TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

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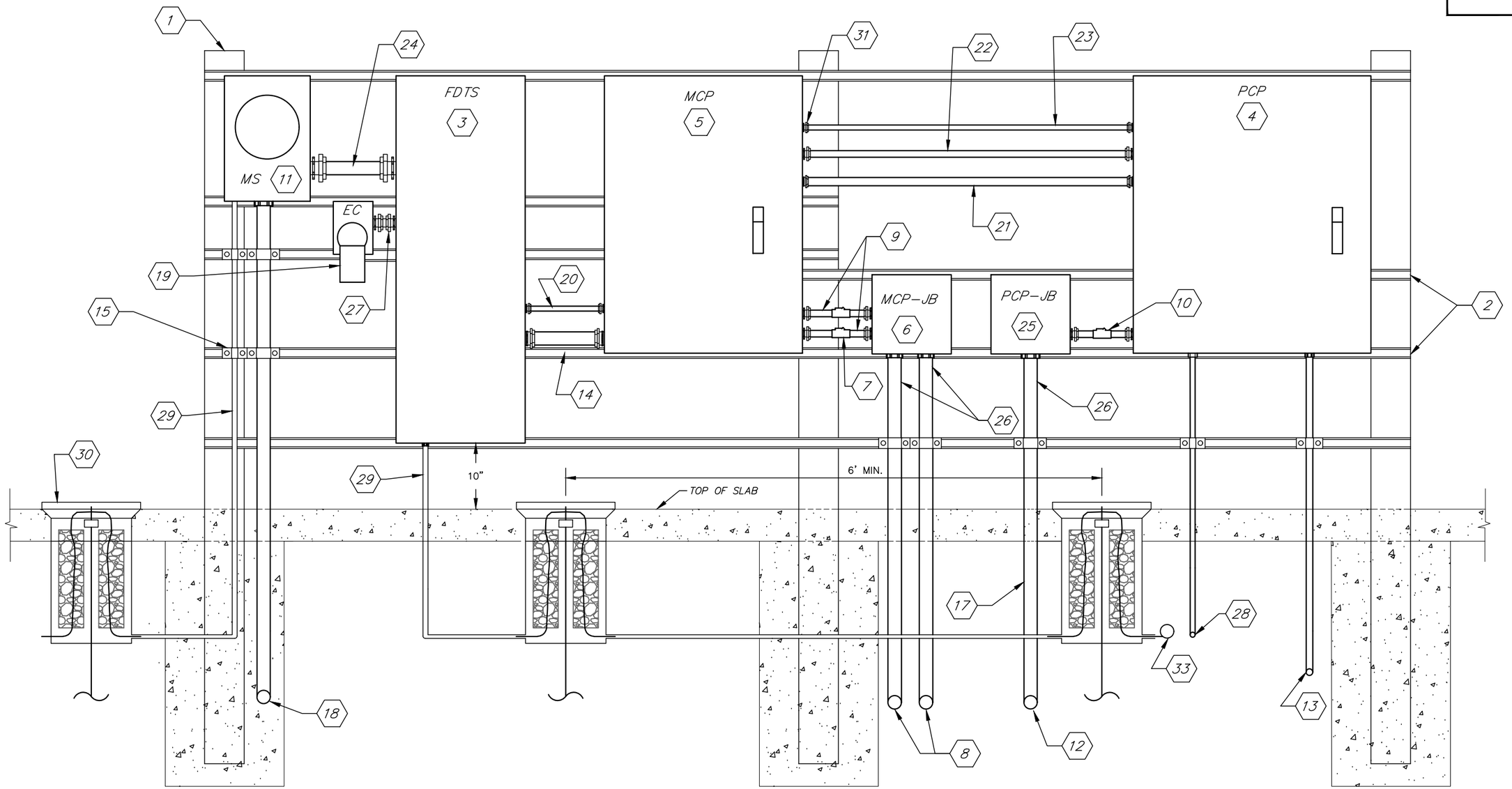

ELECTRICAL EQUIPMENT LINE UP FRONT-VIEW

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

NOTES:
1. SEE KEYED NOTES ON SHEET E3
2. SLAB OMITTED FOR CLARITY

	No.	DATE	REVISIONS			
ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD DEPARTMENT OF SANITARY SEWERS	3			DES: LRG DRN: MRL CKD: DATE:	CITY of TAMPA WASTEWATER DEPARTMENT	BRECKENRIDGE PUMPING STATION REHABILITATION ELECTRICAL EQUIPMENT LINE UP FRONT-VIEW	SHEET E2
	2						
	1						

Layout- Sep 14, 2017 - 4:02pm CIB - WW-TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

KEYED NOTES:

1. PROVIDE AND INSTALL THREE (3) 6" X 6" X 9' REINFORCED SQUARE CONCRETE POSTS.
2. PROVIDE AND INSTALL 1–5/8" x 1–5/8" 316 STAINLESS STEEL UNISTRUT WITH 316 STAINLESS STEEL HARDWARE. NOTE: INSTALL ALL BOLTS FOR UNISTRUT COMPLETELY THROUGH CONCRETE POSTS.
3. PROVIDE AND INSTALL SERVICE ENTRANCE RATED HEAVY DUTY, DOUBLE THROW, FUSIBLE SWITCH, 3–POLE, 240 VAC, 200 AMP IN NEMA 4X TYPE ENCLOSURE, 240 VAC, DUAL–ELEMENT, TIME–DELAY CLASS RK5 FUSES; SWITCH––EATON DT324FWK, DT200NK–NEUTRAL KIT, DS200GK–GROUND LUG KIT, DS46FK–"R" FUSE ADAPTER KIT.
4. PROVIDE AND INSTALL PUMP CONTROL CABINET. REFER TO DETAIL ON SHEET E4.
5. PROVIDE AND INSTALL MOTOR CONTROL CABINET. REFER TO DETAIL ON SHEET E5.
6. PUMP MOTOR CONNECTIONS J.B.–USED AS A DEMARCATION BOX TO PROVIDE ISOLATION BETWEEN THE WET WELL AND PUMP CONTROLS. PROVIDE AND INSTALL A 12"x12"x6" NEMA 4X, STAINLESS STEEL JUNCTION BOX WITH HINGED DOOR, WIEGMANN #BN4121206CHSS. INSTALL A STAINLESS STEEL LOUVER PLATE KIT (4.75"x 4.5") ON SIDE OF BOX TO PROVIDE NATURAL ASPIRATION, WIEGMANN #WAVK0304SSA. TERMINATIONS SHALL BE MADE USING SPLIT BOLTS. CAREFULLY TAPE CONNECTIONS TO PROVIDE A 600V INSULATION LEVEL (TYPICAL FOR EACH CONDUCTOR) SEE SHEET E15 FOR JB DETAILS.
7. PROVIDE AND INSTALL CROUSE–HINDS EYS TYPE SEALS W/CHICO COMPOUNDS.
8. PROPOSED 2" PVC COATED ALUMINUM CONDUITS FOR MOTOR CONDUCTORS. INSTALL CONDUIT AS DESCRIBED IN KEYED NOTE 34, THIS SHEET.
9. PROVIDE AND INSTALL (3)–#6 XHHW–2 CU + (1)–#8 XHHW–2 CU GND + (2)–#12 XHHW–2 CU (LEAK/TEMP) IN 1" CONDUIT FOR SUBMERSIBLE PUMP POWER.
10. PROVIDE AND INSTALL (3)–#14 XHHW–2 CU + (1)–#14 XHHW–2 CU GND + (1)–3/C–#18 TWISTED SHIELDED CABLE IN 1" CONDUIT FOR FLOAT AND WET WELL LEVEL TRANSMITTER.
11. PROVIDE AND INSTALL METER SOCKET IN ALUMINUM ENCLOSURE.
12. PROPOSED 2" PVC COATED ALUMINUM CONDUIT FOR I & C CONDUCTORS. INSTALL CONDUIT AS DESCRIBED IN KEYED NOTE 34, THIS SHEET.
13. PROVIDE AND INSTALL 1" CONDUIT FOR ANTENNA COAXIAL CABLE.
14. PROVIDE AND INSTALL (3)–#2/0 THWN CU, (1)–#4 THWN NEU, AND (1)–#4 THWN CU GND. IN 2" CONDUIT.
15. PROVIDE AND INSTALL ALUMINUM CONDUIT STRAPS (TYPICAL).
16. EXISTING CONCRETE PAD IS BEING REPLACED, SEE CIVIL PLAN SHEET 11. TRADES SHALL COORDINATE THEIR EFFORTS TO ENSURE THAT THE ELECTRICAL EQUIPMENT IS NOT INSTALLED UNTIL THE REMOVAL OF THE EXISTING PAD HAS BEEN COMPLETED. THE PROPOSED CONCRETE PAD SHALL NOT BE POURED UNTIL ELECTRICAL WORK HAS BEEN COMPLETED.
17. FOR UNDERGROUND RACEWAYS TO WETWELL THE CONTRACTOR SHALL UTILIZE PVC COATED ALUMINUM.
18. PROVIDE AND INSTALL (3)–#2/0 AWG + (1)–#4 NEU. IN 2" CONDUIT TO EXISTING TECO TRANSCLOSURE WITH THREE 1Ø TRANSFORMERS IN BANK.
19. PROVIDE AND INSTALL AN EMERGENCY CONNECTOR.
20. PROVIDE AND INSTALL (3)–#12 XHHW–2 CU + (1)# 12 XHHW–2 CU GND. IN 3/4" C.
21. PROVIDE AND INSTALL (26)–#14 XHHW–2 CU + (1)# 12 XHHW–2 CU GND. IN 1–1/4" C. FOR 120VAC CONTROL SIGNALS. REFER TO MCP TO PCP INTERCONNECTIONS WIRING DIAGRAM ON SHEET E10.
22. PROVIDE AND INSTALL (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 E10.
23. PROVIDE AND INSTALL (1)–#12 XHHW–2 CU NUE. + (1)#12 XHHW–2 CU GND. IN 3/4" CONDUIT FROM MOTOR CONTROLS PANEL TO PUMP CONTROL PANEL FOR 120V POWER CIRCUIT.
24. PROVIDE AND INSTALL (3)–#2/0 THWN CU + (1)–#4 THWN NEU. IN 2" CONDUIT.
25. INSTRUMENTATION AND CONTROLS J.B.–USED AS DEMARCATION BOX TO PROVIDE ISOLATION BETWEEN THE WET WELL AND PUMP CONTROLS. PROVIDE AND INSTALL A 12"x12"x6" NEMA 4X, STAINLESS STEEL JUNCTION BOX WITH HINGED DOOR, WIEGMANN #BN4121206CHSS. INSTALL A STAINLESS STEEL LOUVER PLATE KIT (4.75"x4.5") ON SIDE OF BOX TO PROVIDE NATURAL ASPIRATION, WIEGMANN #WAVK0304SSA. TERMINATIONS SHALL BE MADE WITH UNDERGROUND WIRE CONNECTORS – IDEAL MODEL #60 – (TYPICAL FOR EACH CONDUCTOR). SEE SHEET E15 FOR JB DETAILS.
26. PROVIDE DUCT SEALING COMPOUND IN ALL CONDUITS EXTENDING TO THE WET WELL.
27. PROVIDE AND INSTALL (3)–#3 XHHW–2 CU + (1)–#4 XHHW–2 CU NEU + (1)–#6 XHHW–2 CU GND IN 1–1/4" CONDUIT FOR EMERGENCY CONNECTOR.
28. PROVIDE AND INSTALL A 3/4" CONDUIT TO PROPOSED AREA LIGHT, (AL), SEE SHT. E17 FOR DETAILS.
29. PROVIDE AND INSTALL A 3/4" SCHEDULE 80 PVC CONDUIT FOR #4 AWG GROUNDING CONDUCTOR.
30. PROPOSED GROUND TEST WELL. MINIMUM SPACING BETWEEN WELLS 6'–0", SEE SHEET E16 FOR DETAILS.
31. PROVIDE AND INSTALL WATER–TIGHT / DUST–TIGHT MYERS HUB AND UNION (TYP.).
32. RELOCATED EXISTING SCADA ANTENNA.
33. CLAMP GROUND WIRE TO METAL WATER PIPE.
34. CORE DRILL WET WELL WALL AS REQUIRED TO INSTALL CONDUIT USING LINK–SEALS. LINK–SEALS SHALL BE PROVIDED WITH 316 STAINLESS STEEL BOLTS AND NUTS.

FOR USE WITH SHEETS E1 AND E2

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
DEPARTMENT OF SANITARY SEWERS

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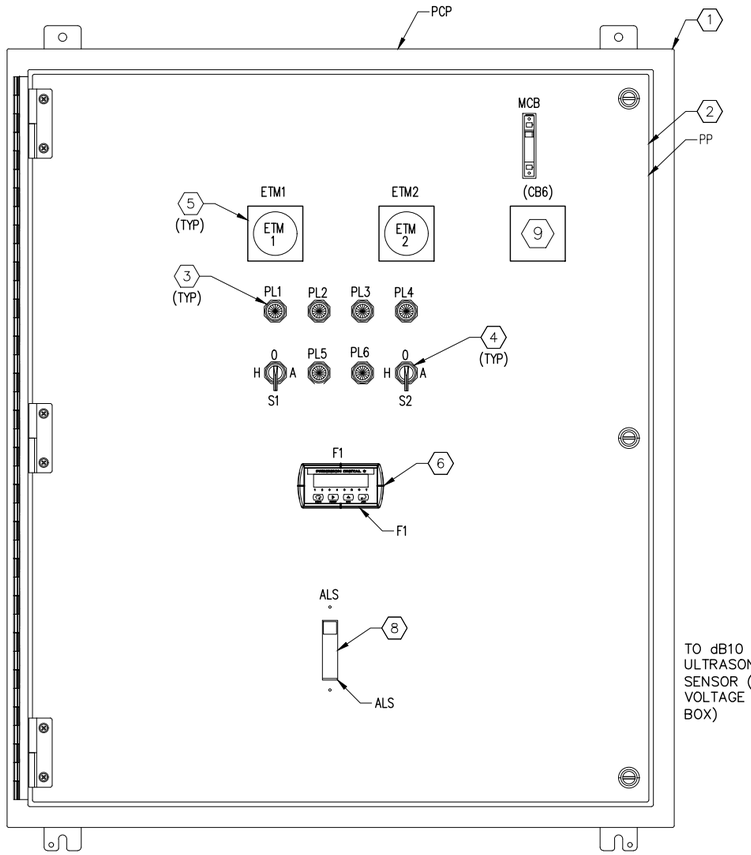
DATE:

CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

KEYED NOTES

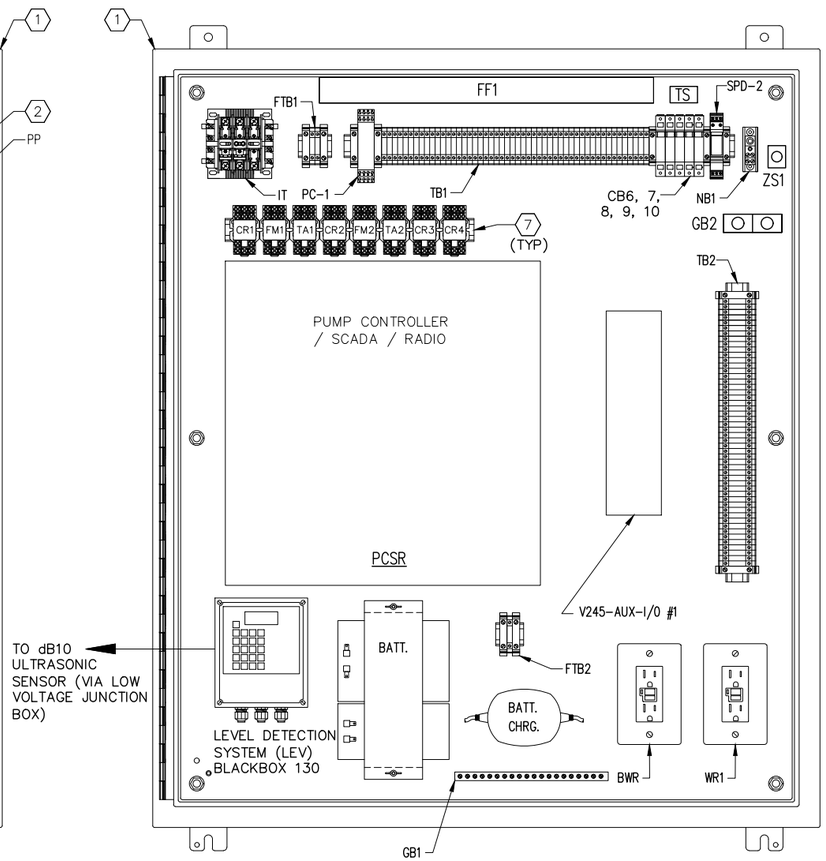
SHEET E3



PUMP CONTROL PANEL DETAILS

SCALE: 1/8" = 1'–0"

NOTE: FRONT ENCLOSURE DOOR NOT SHOWN FOR CLARITY



PANEL INTERIOR

LEGEND PLATE SCHEDULE

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

KEYED NOTES:

1. PUMP CONTROL CABINET. 42" X 36" X 12" NEMA 4X SS, PAINTED WHITE.
2. PROVIDE AND INSTALL ALUMINUM DEADFRONT DOOR WITH STOP KIT.
3. PROVIDE AND INSTALL NEW PILOT LIGHT. REFER ALSO TO PARTS SCHEDULE ON SHEET E13.
4. PROVIDE AND INSTALL NEW SELECTOR SWITCH. REFER ALSO TO PARTS SCHEDULE ON SHEET E13.
5. PROVIDE AND INSTALL NEW ELAPSED TIME METER. REFER ALSO TO PARTS SCHEDULE ON SHEET E13.
6. PROVIDE AND INSTALL PRECISION DIGITAL PROCESS METER, MODEL PD765–6X3–00 WITH 4–20mA OUTPUT. REFER ALSO TO PARTS SCHEDULE ON SHEET E14.
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 E14.
9. PROVIDE WARNING LABEL ABOVE CB6.
   LABEL TO READ:
   "WARNING: THE 120VAC SUPPLY FOR THIS PUMP CONTROL PANEL (PCP) IS FED FROM MOTOR CONTROL PANEL (MCP) WILL BE PRESENT AT THE LINE SIDE OF MCB (CB–6) LOCATED IN THIS PANEL. LOCK AND TAG OUT THE MOTOR CONTROL PANEL DISCONNECT PRIOR TO OPENING DEAD FRONT DOOR."

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

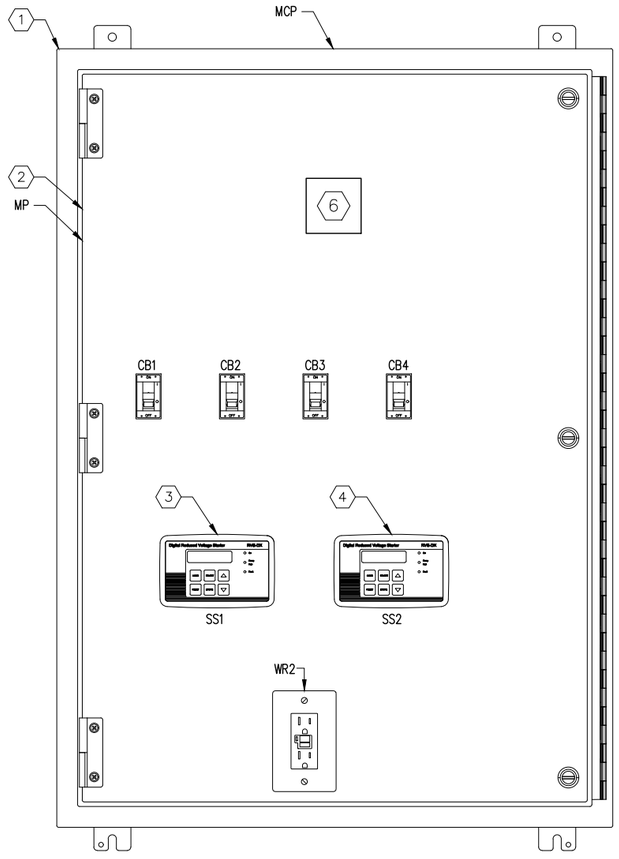
BRECKENRIDGE PUMPING STATION REHABILITATION

PUMP CONTROL PANEL DETAILS

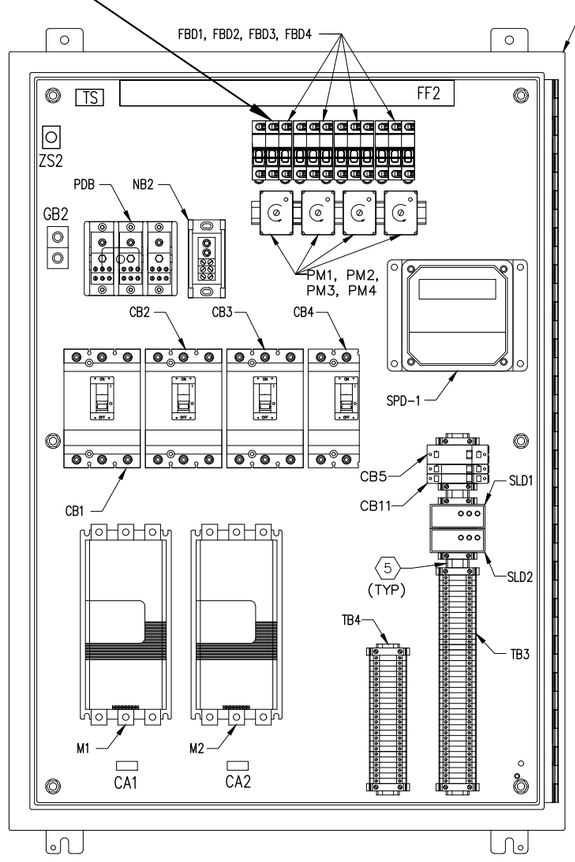
SHEET E4

User: ss8k Drawing Name: K:\WasteWater Projects\Breckenridge PS Rehabilitation\Drafting\DWG\Breckenridge PS DEC.dwg
Layout– Sep 19, 2017 – 12:13pm CTB – WW–TOSHIBA.CTB
TOSHIBA_UNI_COLOR (NORTH WING)

PROVIDE WARNING LABEL ABOVE FBD1.
LABEL TO READ:
"WARNING – OPENING FUSED DOUBLE THROW SWITCH DOES NOT DE–ENERGIZE VOLTAGE TO FBD1 DISCONNECT"



MOTOR CONTROL PANEL
DETAILS



PANEL INTERIOR

LEGEND PLATE SCHEDULE		
SYMBOL	DEVICE	LEGEND
CB1	CIRCUIT BREAKER	PUMP NO. 1 CIRCUIT BREAKER
CB2	CIRCUIT BREAKER	PUMP NO. 2 CIRCUIT BREAKER
CB3	CIRCUIT BREAKER	SPARE CIRCUIT BREAKER
CB4	CIRCUIT BREAKER	PUMP CONTROL PANEL DISCONNECT
SS1	SOFTSTARTER KEYPAD	SOFTSATARTER NO. 1 KEYPAD
SS2	SOFTSTARTER KEYPAD	SOFTSTARTER NO. 2 KEYPAD

KEYED NOTES:

1. MOTOR CONTROL CABINET. 42" X 30" X 12" NEMA 4X SS, POWDER COAT WHITE.
2. PROVIDE AND INSTALL ALUMINUM DEADFRONT DOOR WITH STOP KIT.
3. PROVIDE AND INSTALL NEW KEYPAD FOR SOFTSTARTER #1. REFER ALSO TO PARTS SCHEDULE ON SHEET E13.
4. PROVIDE AND INSTALL NEW KEYPAD FOR SOFTSTARTER #2. REFER ALSO TO PARTS SCHEDULE ON SHEET E13.
5. PROVIDE AND INSTALL ALUMINUM DIN RAIL WHERE REQUIRED.
6. PROVIDE WARNING LABEL ABOVE FBD1.
   LABEL TO READ: "WARNING – OPENING FUSED DOUBLE THROW SWITCH DOES NOT DE–ENERGIZE VOLTAGE TO FBD1 DISCONNECT"

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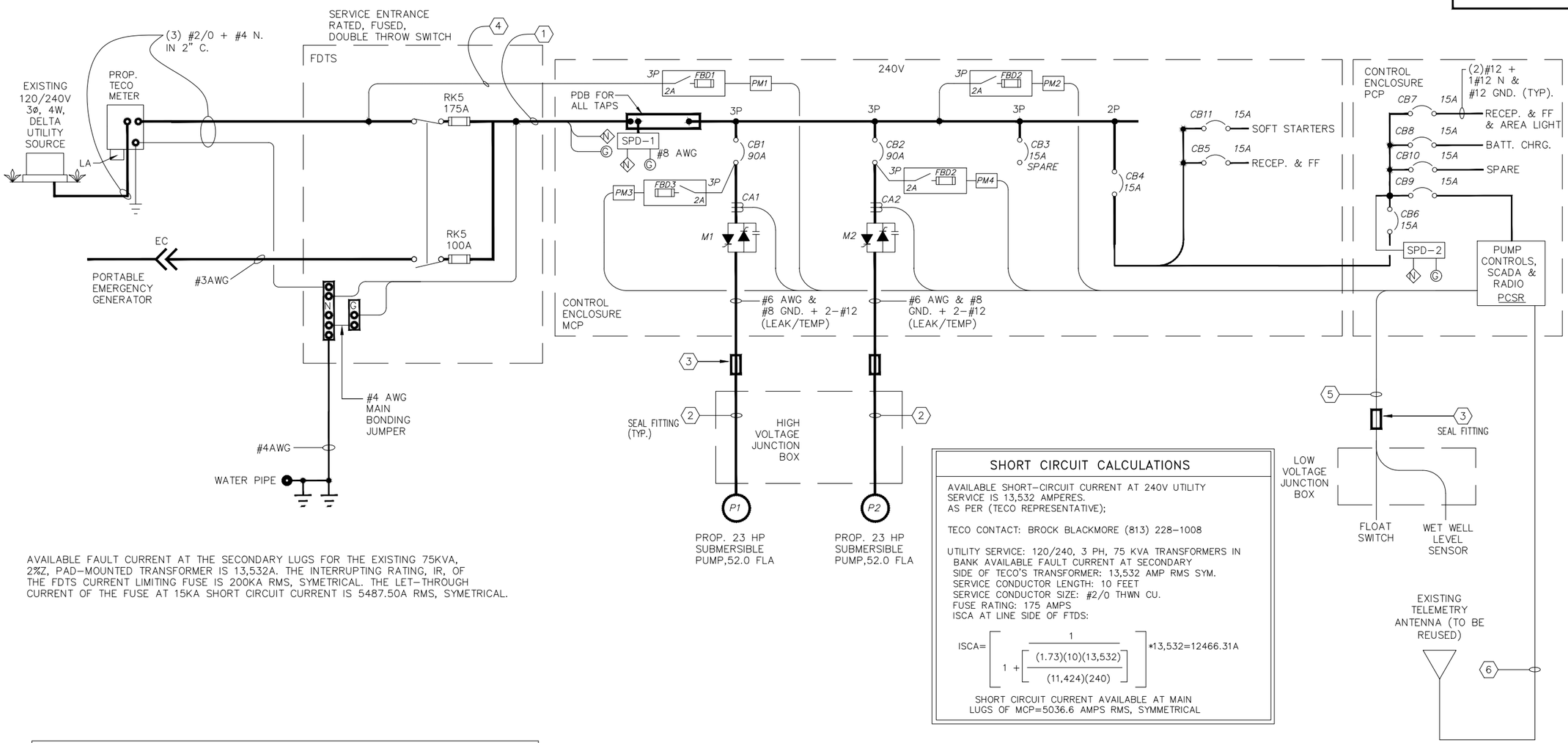
CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

MOTOR CONTROL PANEL DETAILS

SHEET
E5



AVAILABLE FAULT CURRENT AT THE SECONDARY LUGS FOR THE EXISTING 75KVA, 2%Z, PAD-MOUNTED TRANSFORMER IS 13,532A. 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 5487.50A RMS, SYMETRICAL.

SHORT CIRCUIT CALCULATIONS

AVAILABLE SHORT-CIRCUIT CURRENT AT 240V UTILITY SERVICE IS 13,532 AMPERES.
AS PER (TECO REPRESENTATIVE);

TECO CONTACT: BROCK BLACKMORE (813) 228-1008

UTILITY SERVICE: 120/240, 3 PH, 75 KVA TRANSFORMERS IN BANK AVAILABLE FAULT CURRENT AT SECONDARY
SIDE OF TECO'S TRANSFORMER: 13,532 AMP RMS SYM.
SERVICE CONDUCTOR LENGTH: 10 FEET
SERVICE CONDUCTOR SIZE: #2/0 THWN CU.
FUSE RATING: 175 AMPS
ISCA AT LINE SIDE OF FTDS:

$$ISCA=\left[\frac{1}{1+\left[\frac{(1.73)(10)(13{,}532)}{(11{,}424)(240)}\right]}\right]*13{,}532=12466.31A$$

SHORT CIRCUIT CURRENT AVAILABLE AT MAIN LUGS OF MCP=5036.6 AMPS RMS, SYMMETRICAL

ELECTRICAL SERVICE LOAD SUMMARY

240 VAC, 3ø, 4W

LOAD	CONNECTED	DEMAND	APPROX. PHASE CURRENTS L1	L2	L3
PUMP #1	21.6 KVA	21.6 KVA	52.0 A	52.0 A	52.0 A
PUMP #2	21.6 KVA	21.6 KVA	52.0 A	52.0 A	52.0 A
SINGLE PHASE LOADS	2.0 KVA	2.0 KVA	8.3 A	0.0 A	8.3A
TOTAL	45.2 KVA	45.2 KVA	112.3 A	104.0 A	112.3 A

ONE LINE DIAGRAM NOTES:

1. PROVIDE AND INSTALL 3-#2/0 + 1-#4 NEUTRAL + 1-#4 GND IN 2"C. CONDUIT, REFER TO DETAILS ON SHEETS E1 & E2.
2. PROVIDE AND INSTALL 2" CONDUIT FOR PROPOSED SUBMERSIBLE PUMP POWER CABLE.
3. PROVIDE SEAL FITTING, REFER TO DETAIL ON SHEET E2.
4. PROVIDE AND INSTALL 3-#12 + 1-#12 GND. IN ¾" CONDUIT, REFER TO DETAILS ON SHEET E2
5. PROVIDE 2" CONDUIT 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 DETAIL ON SHEET E17.

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
DEPARTMENT OF SANITARY SEWERS

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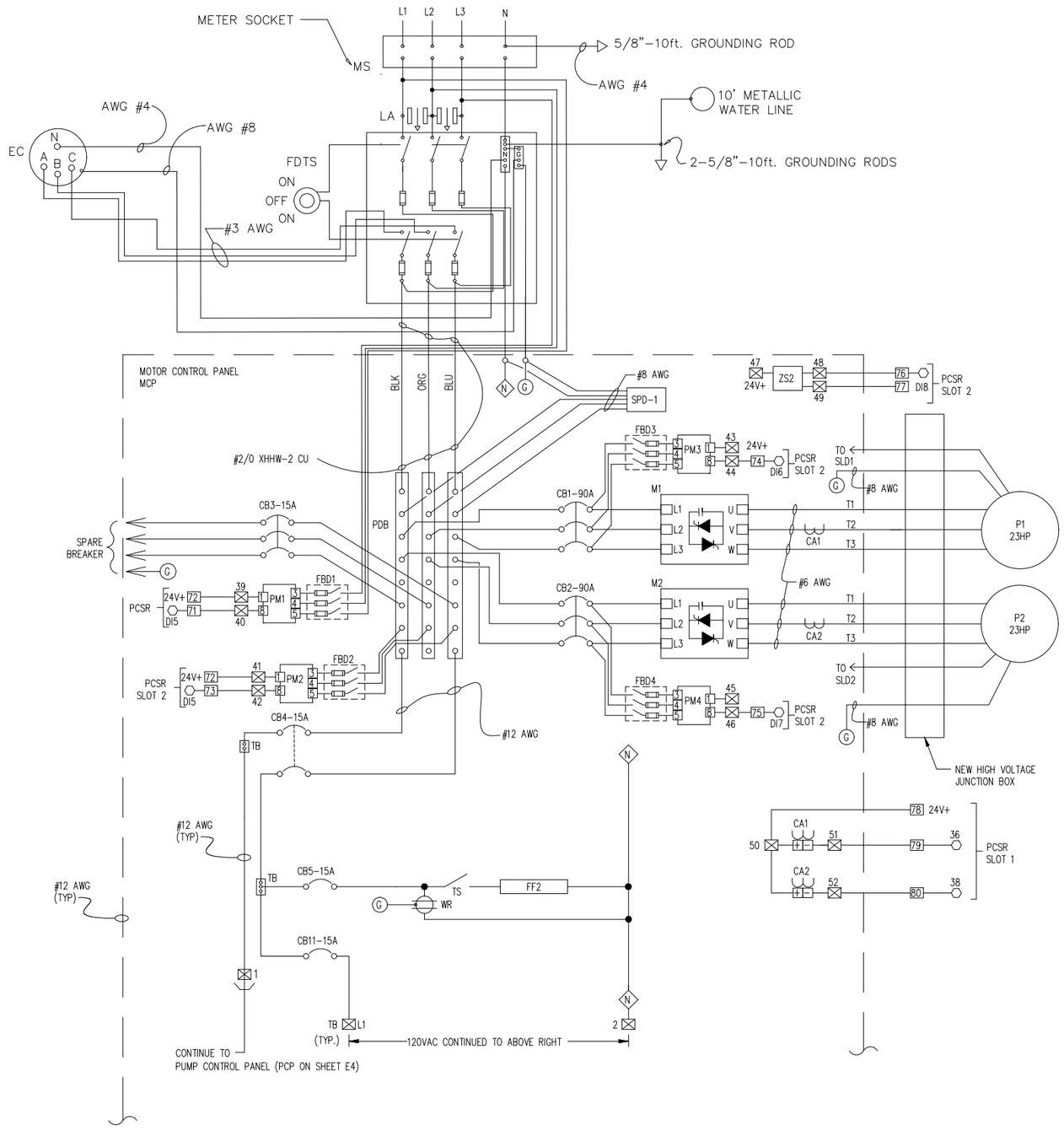
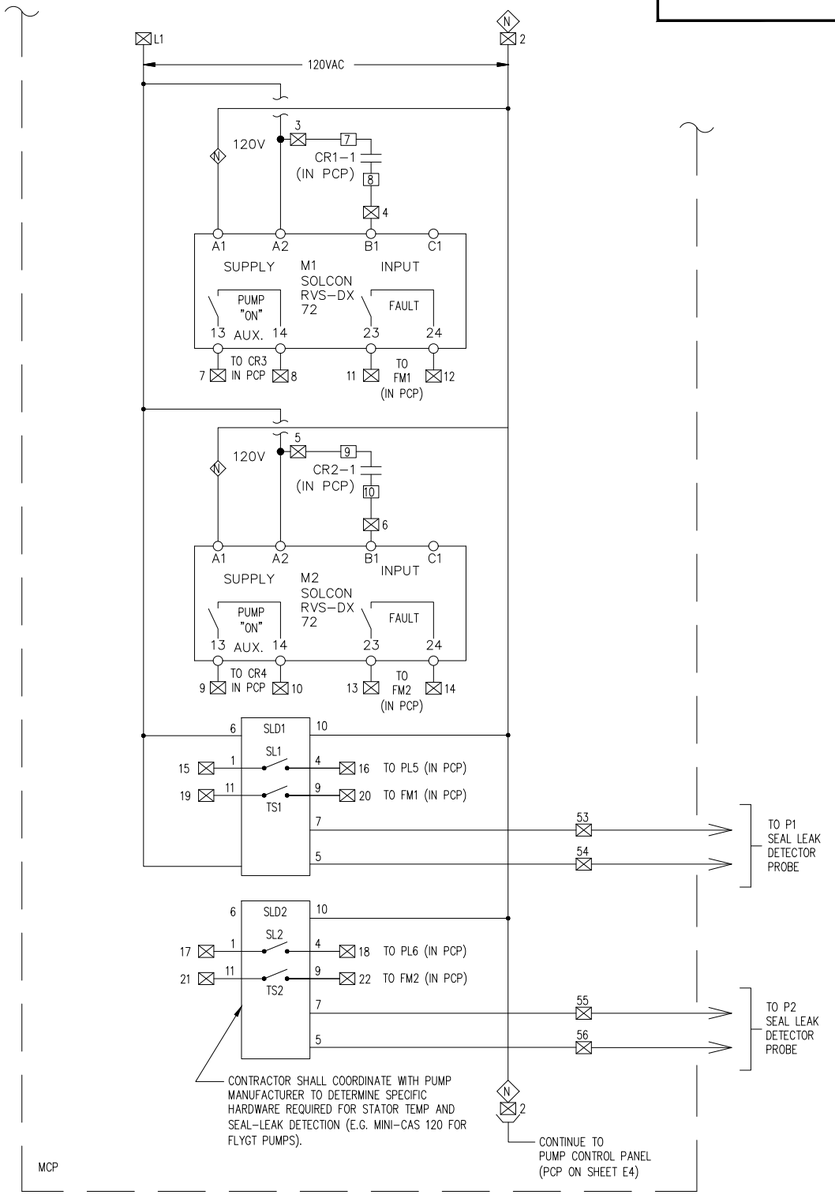
BRECKENRIDGE PUMPING STATION REHABILITATION

ONE LINE DIAGRAM

SHEET E6

B100-055





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

No.	DATE	REVISIONS
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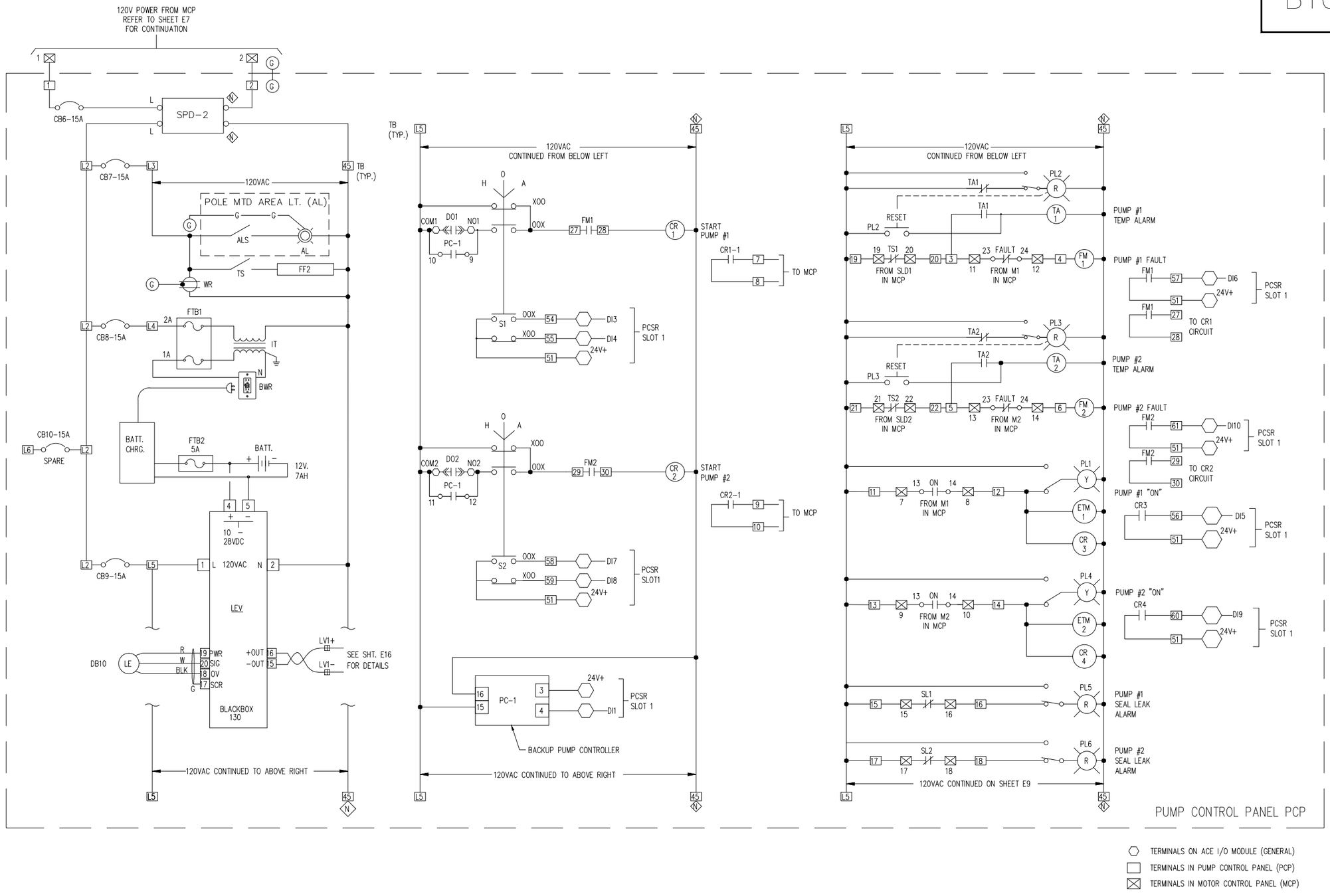
BRECKENRIDGE PUMPING STATION REHABILITATION

ELECTRICAL SCHEMATIC (1 OF 3)
MOTOR CONTROL PANEL

SHEET E7

Layout- Sep 19, 2017 - 12:13pm CIB - WW-TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

B100-056



TOSHIBA_UNI_COLOR (NORTH WING)

Layout- Sep 19, 2011 - 12:15pm CIB - WW-TOSHIBA.CIB

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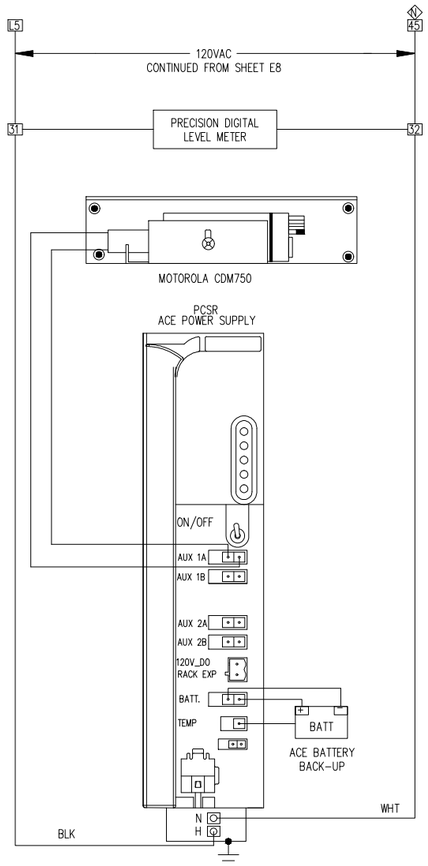
WASTEWATER DEPARTMENT

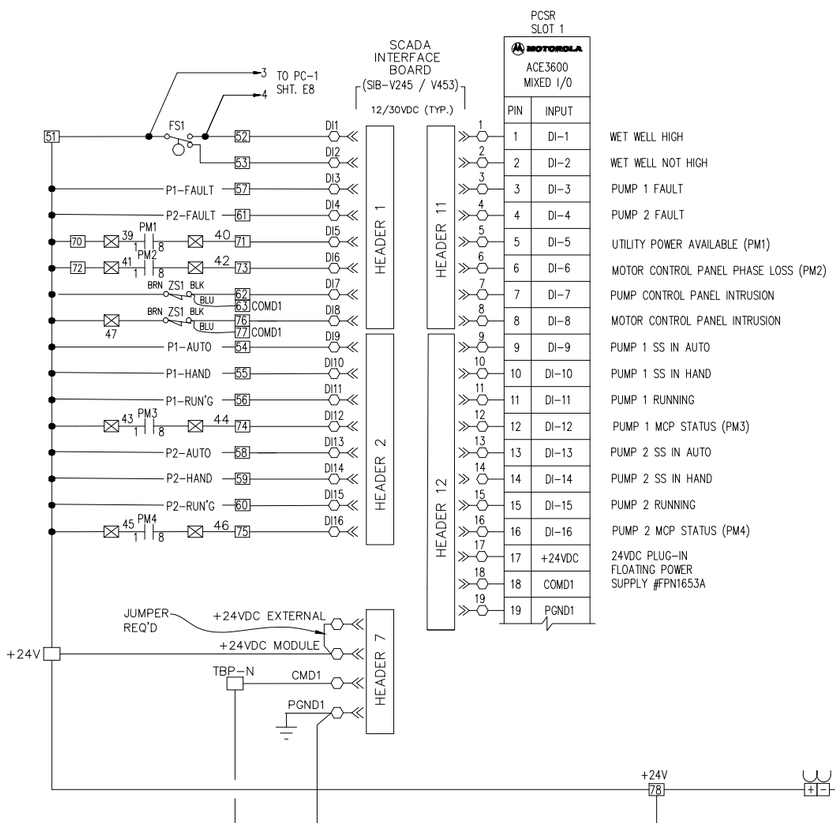
BRECKENRIDGE PUMPING STATION REHABILITATION

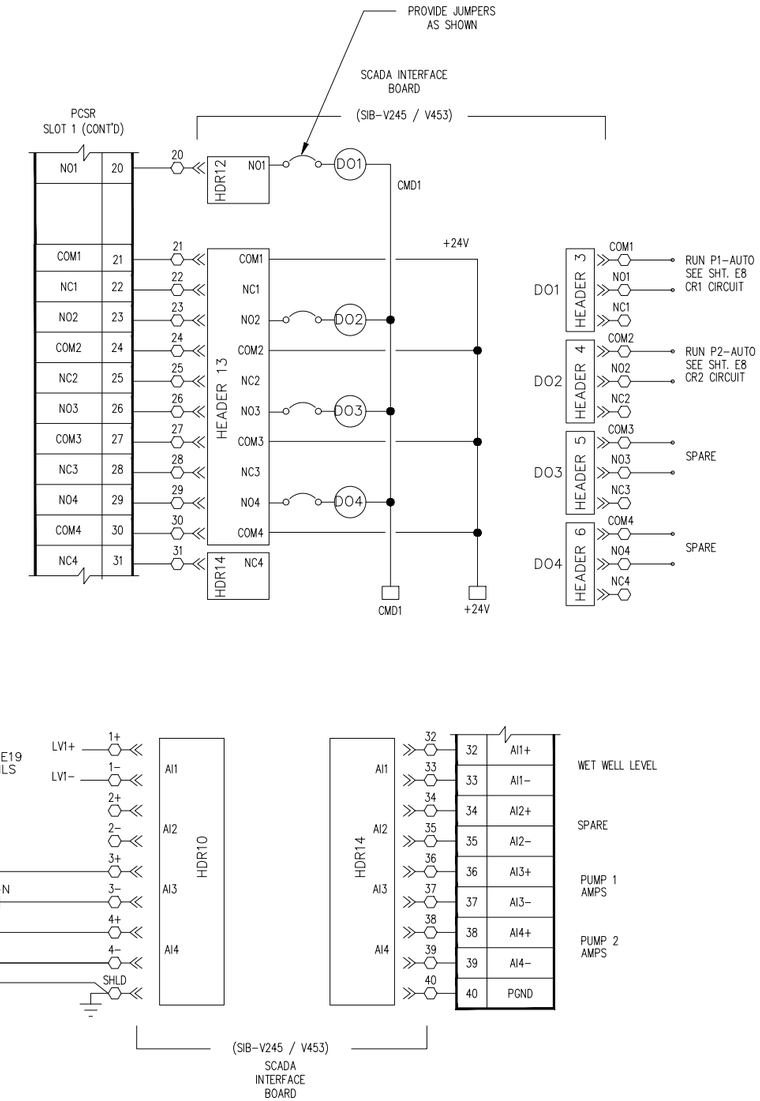
ELECTRICAL SCHEMATIC (2 OF 3)
PUMP CONTROL PANEL

SHEET E8

B100-057





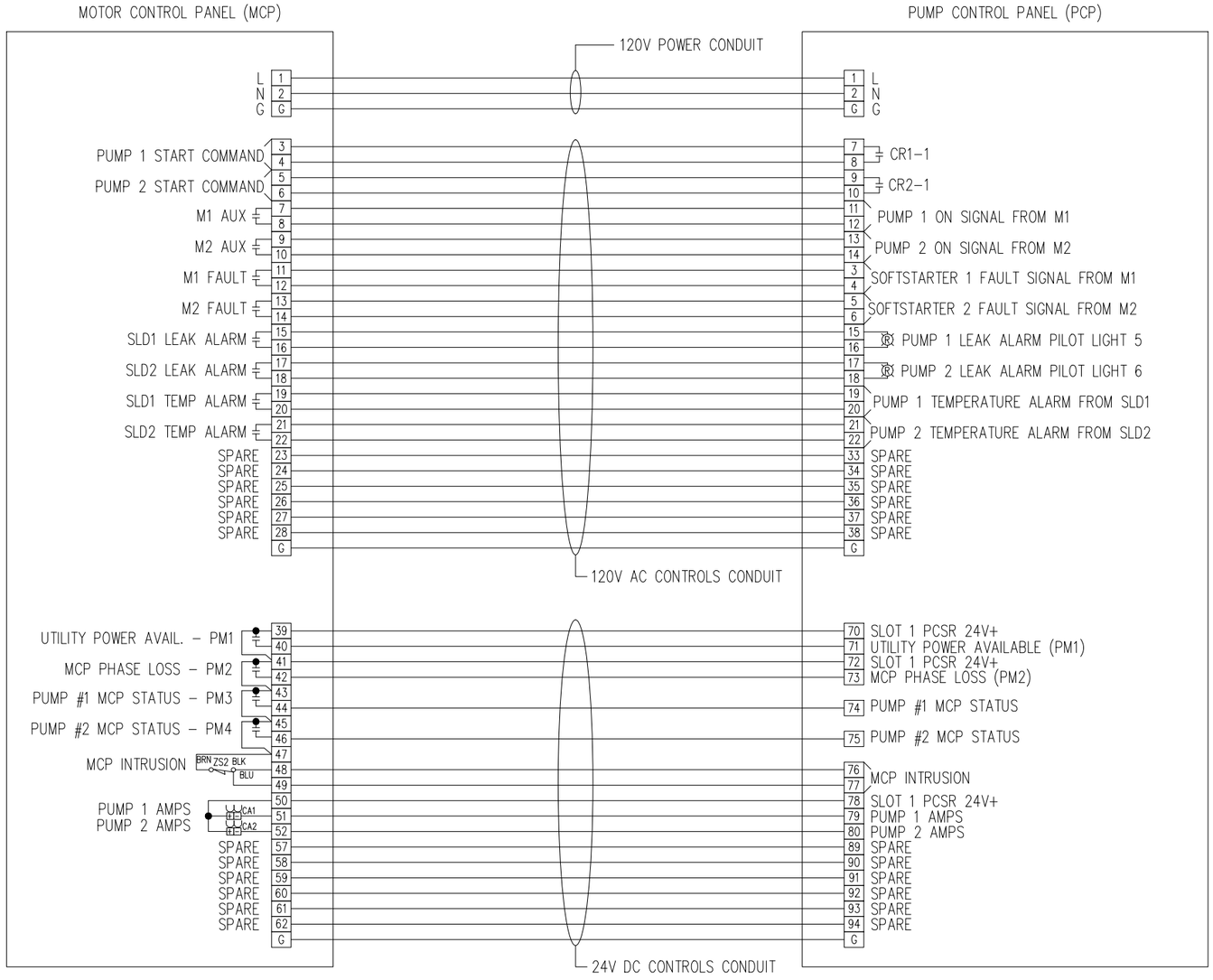


○ TERMINALS ON ACE I/O MODULE (GENERAL)
□ TERMINALS IN PUMP CONTROL PANEL
⊠ TERMINALS IN MOTOR CONTROL PANEL

	No.	DATE	REVISIONS			
ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD DEPARTMENT OF SANITARY SEWERS	3			DES: LRG DRN: LRG CKD: DATE:	CITY of TAMPA WASTEWATER DEPARTMENT	BRECKENRIDGE PUMPING STATION REHABILITATION ELECTRICAL SCHEMATIC (3 OF 3) PUMP CONTROL PANEL	SHEET E9
	2						
	1						

Layout- Sep 19, 2017 - 12:13pm CIB - WW-TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

B100–058



	No.	DATE	REVISIONS			
ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD DEPARTMENT OF SANITARY SEWERS	3			DES: LRG DRN: LRG CKD: DATE:	CITY of TAMPA WASTEWATER DEPARTMENT	BRECKENRIDGE PUMPING STATION REHABILITATION MCP TO PCP INTERCONNECTION WIRING DIAGRAM	SHEET E10
	2						
	1						

Layout– Sep 19, 2017 – 12:13pm CIB – WW–TOSHIBA.CIB TOSHIBA_UNI_COLOR (NORTH WING)

TB1 ( ) (120V - T=D ON PUMP CONTROL P =L (PCP)	
T=RM.	D=SCRIPTION
1	120V - \OM MOTOR CONTROL PAN=L
2	N=UTRAL - \OM MOTOR CONTROL PAN=L
3	-TSTART=R NO. 1 - -ULT - \OM M1
4	SO-TSTART=R NO. 1 - -ULT - \OM M1
5	SO-TSTART=R NO. 2 - -ULT - \OM M2
6	SO-TSTART=R NO. 2 - -ULT - \OM 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 - \OM M1 (IN MCP)
12	P1 "ON" SIGNAL - \OM M1 (IN MCP)
13	P2 "ON" SIGNAL - \OM M2 (IN MCP)
14	P2 "ON" SIGNAL - \OM M2 (IN MCP)
15	PUMP 1 L=AK ALARM - \OM MCP
16	PUMP 1 L=AK ALARM - \OM MCP
17	PUMP 2 L=AK ALARM - \OM MCP
18	PUMP 2 L=AK ALARM - \OM MCP
19	PUMP 1 T=MP=RATUR= ALARM - \OM MCP
20	PUMP 1 T=MP=RATUR= ALARM - \OM MCP
21	PUMP 2 T=MP=RATUR= ALARM - \OM MCP
22	PUMP 2 T=MP=RATUR= ALARM - \OM MCP
23	SPAR=
24	SPAR=
25	SPAR=
26	SPAR=
27	PUMP 1 - -ULT R=LAY CONTACT
28	PUMP 1 - -ULT R=LAY CONTACT
29	PUMP 2 - -ULT R=LAY CONTACT
30	PUMP 2 - -ULT R=LAY CONTACT
31-44	SPAR=

TB1 CONTINU=D

	-2 N=UTRAL OUT
L1	SPD-2 120V LIN= OUT
L2	MAIN BR=AK=R CB6 OUT
L3	CB7 OUT
L4	CB8 OUT
L5	CB9 OUT
L6	SPAR= CB12 BR=AK=R

TB2 ( ) (24V DC) MOUNT=D ON PUMP CONTROL P =L (PCP	
T=RM.	D=SCRIPTION
51	SLOT 1 PCSR 24V+
52	W=T W=LL HIGH
53	W=T W=LL NOT HIGH
54	PUMP 1 "AUTO" TO PCSR
55	PUMP 1 "HAND" TO PCSR
56	PUMP 1 "ON" TO PCSR
57	PUMP 1 "- -ULT" TO PCSR
58	PUMP 2 "AUTO" TO PCSR
59	PUMP 2 "HAND" TO PCSR
60	PUMP 2 "ON" TO PCSR
61	PUMP 2 "- -ULT" TO PCSR
62	PUMP CONTROL PAN=L INTRUSION
63	
64	SLOT 2 PCSR 24V+
65	SPAR=
66	SLOT 1 PCSR 24V+
67	SPAR=
68	SLOT 2 PCSR 24V+
69	SPAR=
70	SLOT 1 PCSR 24V+
71	UTIL. POW=R AVAILABL= (PM1) TO PCSR
72	SLOT 1 PCSR 24V+
73	MOTOR CONTROL P =L PH = LOSS (PM2) TO PCSR
74	PUMP #1 MCP ST-TUS (PM3) TO PCSR
75	PUMP #2 MCP ST-TUS (PM4) TO PCSR
76	MOTOR CONTROL PAN=L INTRUSION
77	
78	SLOT 1 PCSR 24V+
79	PUMP 1 AMPS
80	PUMP 2 AMPS

TB2 CONTINU=D

89-100	SP- \=S

X=Y	T=RMIN-	INT MOUNT=D ON PCP (INT=R = TO PCSR)
⬡	T=RMIN-	INT ON PCSR
▭	T=RMIN-	INT IN PUMP CONTROL P =L (PCP)
⊠	T=RMIN-	INT IN MOTOR CONTROL PAN=L (MCP

CONTROL SCHEMATIC SYMBOLS

- TR - \M=R
- PUSH BOTTOM
- 115 V, 60 Hz. DUPL=X R=C=PTACL=
- SWITCH
- CONN=CT=D
- OV=RLO- H=-T=R COIL
- COIL — TD - TIM= D=L- , R=L- , CR - CONTROL R=L- , =TI - TIM=M=T=R, M - MOTOR ST- \T=R
- PILOT LIGHT - R=- \=SS-TO-T=ST)
- PR=SSUR= L=V=L SWITCH CONTACT
- -IR LIN=
- CIRCUIT BR=-K=R (SINGL=-POL=)
- CIRCUIT BR=-K=R (THR=-POL=)
- CONT- T NORM- , OP=N (CLOS=D)
- SPLIT BOLT SPLIC=
- NOT CONN=CT=D
- GROUND BUS
- N — N=UTR- INSUL-T=D)
- =
- TD — "ON D=L- ," CONT- T
- I. C. — INST- T CLOS= CONT- T
- -I=LD WIRING

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ELECTRICAL SCHEMATIC LEGEND (SHT. 1 OF 2)

SHEET E11

TB3 (⊠) (120V - T=D ON MOTOR CONTROL P =L (MCP	
T=RM.	D=SCRIPTION
1	120V TO PUMP CONTROL PAN=L
2	N=UTRAL (CONTINU=D TO PUMP CONTROL PAN=L)
3	PUMP 1 START COMMAND - \OM CR1–1 (IN PCP
4	PUMP 1 START COMMAND - \OM CR1–1 (IN PCP)
5	PUMP 2 START COMMAND - \OM CR2–1 (IN PCP)
6	PUMP 2 START COMMAND - \OM 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	SO-TSTART 1 --ULT SIGNAL TO PCP
12	SO-TSTART 1 --ULT SIGNAL TO PCP
13	SO-TSTART 2 --ULT SIGNAL TO PCP
14	SO-TSTART 2 --ULT SIGNAL TO PCP
15	PUMP 1 L=AK D=T=CT=D TO PILOT LIGHT 5 (IN PCP)
16	PUMP 1 L=AK D=T=CT=D TO PILOT LIGHT 5 (IN PCP)
17	PUMP 2 L=AK D=T=CT=D TO PILOT LIGHT 6 (IN PCP)
18	PUMP 2 L=AK D=T=CT=D TO PILOT LIGHT 6 (IN PCP)
19	PUMP 1 T=MP=RATUR= ALARM TO - IN PCP)
20	PUMP 1 T=MP=RATUR= ALARM TO - IN PCP)
21	PUMP 2 T=MP=RATUR= ALARM TO - IN PCP)
22	PUMP 2 T=MP=RATUR= ALARM TO - IN PCP)
23–37	SPAR=
L1	CB11 OUT MOTOR CONTROL PAN=L POW=R

TB4 (⊠) (24V DC) MOUNT=D ON MOTOR CONTROL P =L (MCP	
T=RM.	D=SCRIPTION
39	SLOT 1 PCSR 24V+
40	UTILITY POW=R AVAILABL= (PM1) TO PCSR
41	SLOT 1 PCSR 24V+
42	MOTOR CONTROL P =L PH = LOSS (PM2) TO PCSR
43	SLOT 1 PCSR 24V+
44	PUMP #1 MCP STATUS PH = LOSS (PM3) TO PCSR
45	SLOT 1 PCSR 24V+
46	PUMP #2 MCP STATUS PH = LOSS (PM4) TO PCSR
47	SLOT 1 PCSR 24V+
4	MOTOR CONTROL PAN=L INTRUSION
49	
50	SLOT 1 PCSR 24V+
51	PUMP 1 AMPS
52	PUMP 2 AMPS
53	PUMP 1 S=AL L=AK D=T=CTOR PROB=
54	PUMP 1 S=AL L=AK D=T=CTOR PROB=
55	PUMP 1 S=AL L=AK D=T=CTOR PROB=
56	PUMP 1 S=AL L=AK D=T=CTOR PROB=
57–66	SPAR=

X–Y

⊞ T=RMIN- INT MOUNT=D ON PCP (INT=R = TO PCSR)

⬡ T=RMIN- INT ON PCSR

▭ T=RMIN- INT IN PUMP CONTROL P =L (PCP)

⊠ T=RMIN- INT IN MOTOR CONTROL PAN=L (MCP

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BRECKENRIDGE PUMPING STATION REHABILITATION

ELECTRICAL SCHEMATIC LEGEND (SHT. 2 OF 2)

SHEET E12

PARTS SCHEDULE

SYMBOL	NAME	PART				REMARKS
		MAKE	TYPE	MODEL OR CAT. #	RATING	
CB 1	CIRCUIT BREAKER	SQUAR= D	THREE POL=	HDL 36090	480 V, 90A	25 KAIC @ 240VAC
CB 2	CIRCUIT BR=AKER	SQUAR= D	THREE POL=	HDL 36090	480 V, 90A	
CB 3	CIRCUIT BR=AKER	SQUARE D	THREE POL=	HDL 36015	480 V, 15A	
CB 5, 6, 7, 8, 9, 10, 11	CIRCUIT BR=AK=R	SQUARE D	SINGLE POLE	QOU-115	120 V, 15A	
CB 4	CIRCUIT BR=AK=R	SQUARE D	TWO POLE	HDL 26015	480 V, 15A	25 KAIC @ 240VAC
M1, 2	MOTOR STARTER	SOLCON	RVSS	RVS-DX 72-400-115-8-U-S	72 A	PROVIDE R=MOTE KEYPAD
CA1, CA2	CIRCUIT S=NSOR	ENERCORP INSTRUM=NTS	4-20 mA OUTPUT	SC200-2	0 - 100A	ADJUSTABL= RANGE
PL1, PL4	INDICATOR LIGHT	SQUAR= D	CLASS 9001	SKT - 38LYA9	120 V, LED TYPE	YELLOW L=NS & PRESS TEST
PL2, PL3	INDICATOR LIGHT	SQUARE D	CLASS 9001	SKT - 38LRR9	120 V, LED TYPE	R=D LENS & PR=SS T=ST
PL5, PL6	INDICATOR LIGHT	SQUAR= D	CLASS 9001	SKT - 38LRR9	120 V, LED TYP=	R=D LENS & PRESS TEST
S1, S2	HOA SWITCH ASSEMBLY	SQUARE D	OIL-TIGHT CLASS 9001	SKS - 43B H2	10A @ 120V	
ETM1, ETM2	ELAPSED TIM= METER	CRAMER	ROUND BEZEL, NON RES=T	635E&S	120 V	W.W. GRANG=R CAT. NO. 6X144
ZS1, ZS2	CONTROL PNL INTRUSION S=NSOR	OMRON	CYLINDRICAL, SHORT BARREL	E2F-X5F1 (GRAINGER-1EA77)	12-24VDC, 3-WIRE PNP	W/ TELEMECANIQU= MTG. BRACKET (GRAINGER - 5B233)
F- -- TS	LED LIGHTING FIXTUR=	HO--MAN	LED	LEDA1S35	120 V, 5W	W/TOGGLE SWITCH-TS
WR 1	WALL REC=PTACL=	HUBBELL	DUPL=X W/G-I	GF5262	120V AC, 15A GFI	W/ALUMINUM OUTLET BOX AND COVER
WR 2	WALL REC=PTACL=	HUBBELL	DUPL=X W/G-I	GF5262	120V AC, 15A GFI	W/COV=R
SPD-1	SURG= PROT=CTIV= DEVICE TYPE 1	ASCO	MOTOR CONTROL PANEL SPD	430240HP10ACSJ1	120/240 V, 3Ø, DELTA	
TB1, TB2, TB3, TB4	T=RMINALS	PHOENIX CONTACT		UK5N TERMINALS	30 A W/ ALUM. DIN RAIL	50 CONTACTS (MIN)
ITS	INSULATED TERMINAL STRIP	ALL=N-BRADLEY	STYL= AA	1492-15-T	600 V AC NEUTRAL BLOCK	4 CONTACTS (MIN) W/ SHORTING BARS
MCP	MOTOR CONTROL PANEL ENCLOSUR=	HO--MAN	NEMA 4X, 3P LATCH, 42"x30"x12"	42"x30"x12" SS	304 SS, POWD=R COAT=D WHITE	3P LATCH W/STOP KIT. =XTERNAL -INISH DURABLE RAL 9003 WHITE POW=R COAT.
MP	ENCLOSURE PANEL	HO--MAN	39" X 27", STE=L	A42P30	ST=EL, 12 GAUGE	
GB1	GROUND BAR SYST=M	PANDUIT	12 PORT WITH MAIN LUG	UGB2/0-414-12		COPP=R CONSTRUCTION
GB2	GROUNDING BLOCK	ILSCO	AS REQUIR=D	AS R=QUIRED		
IT	ISOLATION TRANSFORM=R	SQUARE D	120V/120V ISOLATION	9070 T100D23		
TA1, TA2, CR1, CR2	CONTROL RELAY	POTTER & BRUMFIELD	8 PIN PLUG-IN	KRPA-11AG-120	120V AC COIL, 10A CONTACTS	DPDT W/ SOCKET AND HOLD DOWN SPRING
FM1. - \3, CR4	CONTROL RELAY	POTTER & BRUMFIELD	8 PIN PLUG-IN	KRPA-14AG-120	120V AC COIL, 10A CONTACTS	3PDT W/ SOCKET AND HOLD DOWN SPRING
L=V	WET W=LL L=VEL SENSOR	PULSAR, INC.	ULTRASONIC	dB10 TRANSDUC=R W/ BLACKBOX 130 TRANSMITTER PART #: 130D110000X4-X0P	1 TD 32.8 FT RANGE 115VAC/24VDC POW=RED W/ 4-20MA AND (2) RELAY OUT W/ K=Y PAD, DISPLAY, AND TROPICALIZATION	CITY - \C=S WILL PROVIDE ASSISTANC= WITH MOUNTING AND CALIBRATION

PARTS SCHEDULE IS CONTINUED ON SHEET E14

NOTES:

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

ROMAN D. KORCHAK, P.E. #42626
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PARTS SCHEDULE (SHT. 1 OF 2)

SHEET E13

PARTS SCHEDULE (CONTINUED)

SYMBOL		NAME	PART				REMARKS
			MAKE	TYPE	MODEL OR CAT. #	RATING	
PCSR		PLC BASED PUMP CONTROLLER, SCADA, AND RADIO SYSTEM	MOTOROLA CORP.	DUPLEX PUMP CONTROLLER BASED ON ACE 3600 PROGRAM CONTROLLER	ACE 3600 BASIC MODEL NO. RADIO PART #F7509	1-AC POWER SUPPLY 85-264V W/ BAT CHARGER PAR #: V261	COORDINATE EFFORT W/ SCADA INTEGRATOR
	SLOT		MOTOROLA CORP.	1-MIXED I/O AUXILLARY INTERFACE WILKERSON BOARD PART #: SIB V245/ V453	MOTOTRBO XPR5350 RADIO UNF RI: 403-470MHZ, PART #FUE1078A	1- ACE CPU3640 PART #: V446	1- 10.0 Ah BATTERY PART #: V328
					MOTOTRBO ANALOG RADIO INSTALLATION KIT PART #FLN1059	1-40 WIRE CABLE W/TB HOLDER 3M PART #: V358	
		1-3 I/O SLOT FRAM PART #: V103	1-20 PIN TB HOLDER KIT PART #: V158	1- 14x 14 METAL CHASSIS PART #: V214	1-ACE MIXED I/O MODULE-16DI, 4DO(EE), (4)±20mA ANALOG IN PART #: V245 W/ 24VDC PLUG-IN, FLOATING POWER SUPPLY # FPN1653A	1-40 PIN TB HOLDER KIT PART #: V153	
	10.0 Ah BATT.						
PM1, PM2, PM3, PM4		3-PHASE POWER MONITOR	ATC DIVERSIFIED ELECTRONICS	8 PIN PLUG-IN	SLA-230-ASA	230 VAC	W/ OPTIONAL 5-SEC RELEASE AND DIN RAIL SOCKET
PDB		PWR DIST. BLOCK	ILSCO	THREE POLE	PDB-16-2/0-3	600 V, 175 AMP	W/ LEXAN COVER
FBD1, 2, 3, 4		FUSE BLOCK / DISCONNECT	ALLEN BRADLEY	THREE PHASE- HIGH INTER. CAP.	1492-FB3C30-L	600 VAC, 200KAIC	W/ BUSSMANN KTK-R-2 FAST ACTING, REJECTION FUSES
BATT.		BATTERY	POWERSONIC	ABSORBENT GLASS MAT (AGM)	PS-1270 F2	12 VOLT, 7.0 AH	W/ 0.25" x 0.032" TABS
BATT. CHRG.		BATTERY CHARGER	DELTRAN CORP.	BATTERY TENDER	WATERPROOF 800	120VOLT, 800 mADC	QUALIFICATION, BULK, & FLOAT CHARGING
PC-1		BACKUP PUMP CONTROLLER	WILKERSON	DUPLEX LIFT STATION	DR1920	10 AMP CONTACTS	DIN RAIL MOUNTING
FL		FLOAT SWITCH	ANCHOR SCIENTIFIC	SPDT	S20NONC	10 A @ 120 V	PROVIDED BY THE CITY INSTALLED BY CONTRACTOR
FTB1, 2		FUSED TERMINAL BLOCKS	PHOENIX CONTACT		UK 5-HESI	PROVIDE 1, 2, & 5A FUSES	PROVIDE COOPER BUSSMAN GDB SERIES FUSES
SLD1, SLD2		PUMP MONITORING UNIT	XYLEM		MINI-CAS 120	10A AT 240V AC	
BWR		BATTERY WALL RECEPTACLE	HUBBELL	DUPLEX W/GFI	GF5262	120V AC, 15A GFI	W/ALUMINUM OUTLET BOX AND COVER
PCP		PUMP CONTROL PANEL ENCLOSURE	HOFFMAN	NEMA 4X, 3P LATCH, 42"x36"x12"	42"x36"x12" SS	304 SS, POWDER COATED WHITE	3P LATCH W/STOP KIT. EXTERNAL FINISH DURABLE RAL 9003 WHITE POWER COAT.
PP		ENCLOSURE PANEL	HOFFMAN	39" X 33", STEEL	A42P36	STEEL, 12 GAUGE	
NB1, 2		NEUTRAL DISTRIBUTION BLOCK	BUSSMAN	SINGLE POLE	16220-1	600V, 175A	
F1		PROCESS METER	PRECISION DIGITAL	4 DIGIT, 1.2" DISPLAY	PD765-6X3-00		PROVIDE 4-20mA OUTPUT
ALS		AREA LIGHT SWITCH	HUBBELL	SINGLE-POLE	HBL1221	277V, 20A	
SPD-2		SURGE PROTECTION DEVICE TYPE 3	PHOENIX CONTACT	3 CONDUCTOR SYSTEM (L, N, G)	2856812	120V, 25A	
FDTS		FUSED DOUBLE THROW DISCONNECT SWITCH	EATON	SERVICE ENTRANCE RATED, HEAVY DUTY	DT364FWK	600V, 200A	TIME DELAY CLASS RK5 FUSES (3) EDISON ECSR175 (3) EDISON ECSR100 (PROVIDE (3) SPARES FOR EA.)
					DT200 NK NEUTRAL KIT DS200 GK GROUND KIT DS46 FK ADAPTOR KIT		
MS		METER SOCKET	MILBANK	7 TERMINAL	UAP9701-X-QG-HSP	600 VAC, 200 AMP	ALUMINUM CONSTRUCTION
EC		EMERGENCY CONNECTOR	CROUSE & HINDS	ARKTITE	AREA10415-S22 W/ BACK BOX, ANGLE ADAPTER, 1-1/2 HUB AND SPRING COVER	600V 100 AMP	
LA		LIGHTNING ARRESTER	GENERAL ELECTRIC	TRANQUELL	9L15ECC001	650V	
PTB		POWER TERMINAL BLOCK	MARATHON	THREE POLE	1423121	600V	
GB3		GROUND BAR	BRUMALL	5 PORT	4-7,1,7		

NOTES:

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

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
DEPARTMENT OF SANITARY SEWERS

No.	DATE	REVISIONS
3		
2		
1		

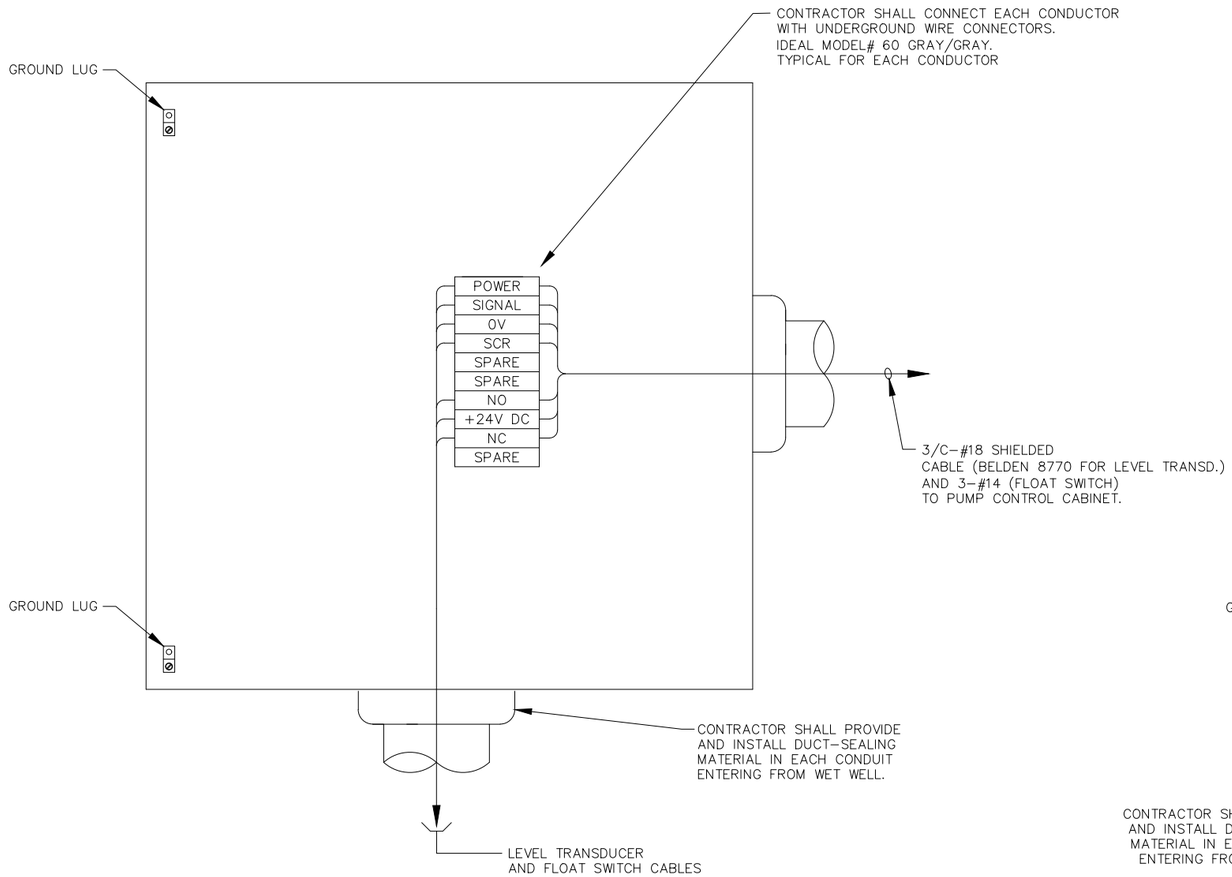
DES: LRG
DRN: LRG
CKD:
DATE:

CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

PARTS SCHEDULE (SHT. 2 OF 2)

SHEET E14

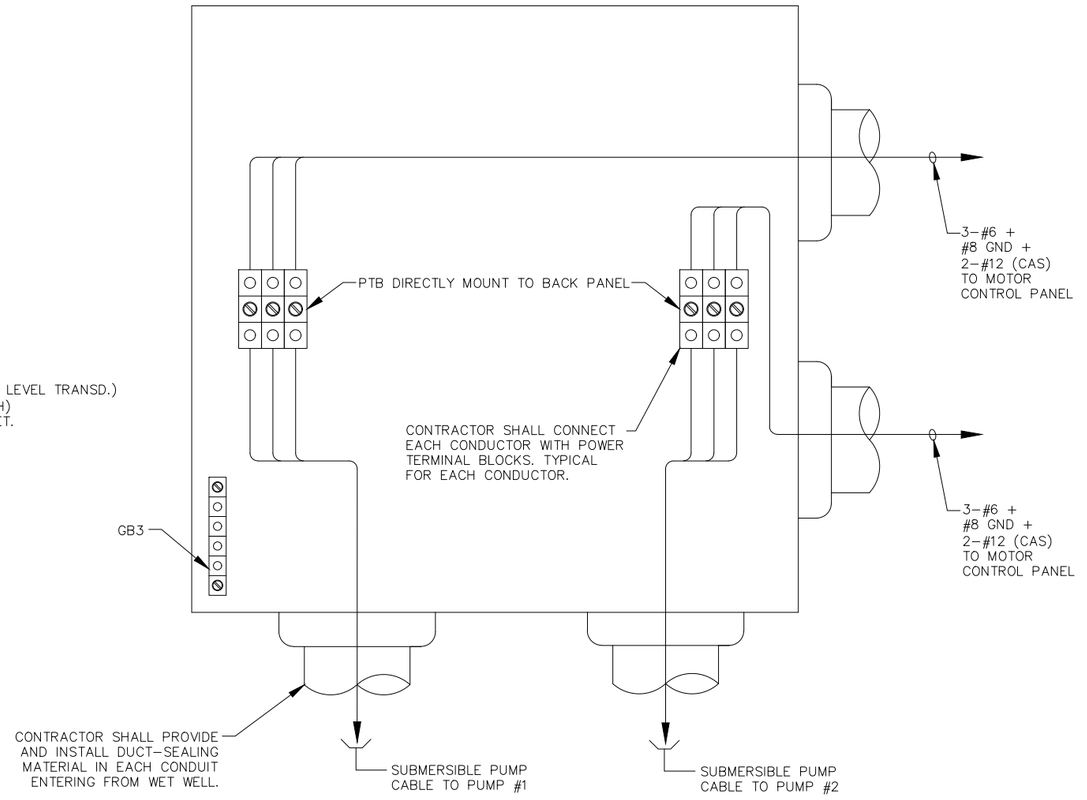


NOTES:

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

INSTRUMENTATION AND CONTROLS JUNCTION BOX DETAIL

N.T.S.



NOTES:

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

PUMP MOTOR CONNECTIONS JUCTION BOX DETAIL

N.T.S.

ROMAN D. KORCHAK, P.E. #42626
ELECTRICAL SECTION HEAD
DEPARTMENT OF SANITARY SEWERS

No.	DATE	REVISIONS
3		
2		
1		

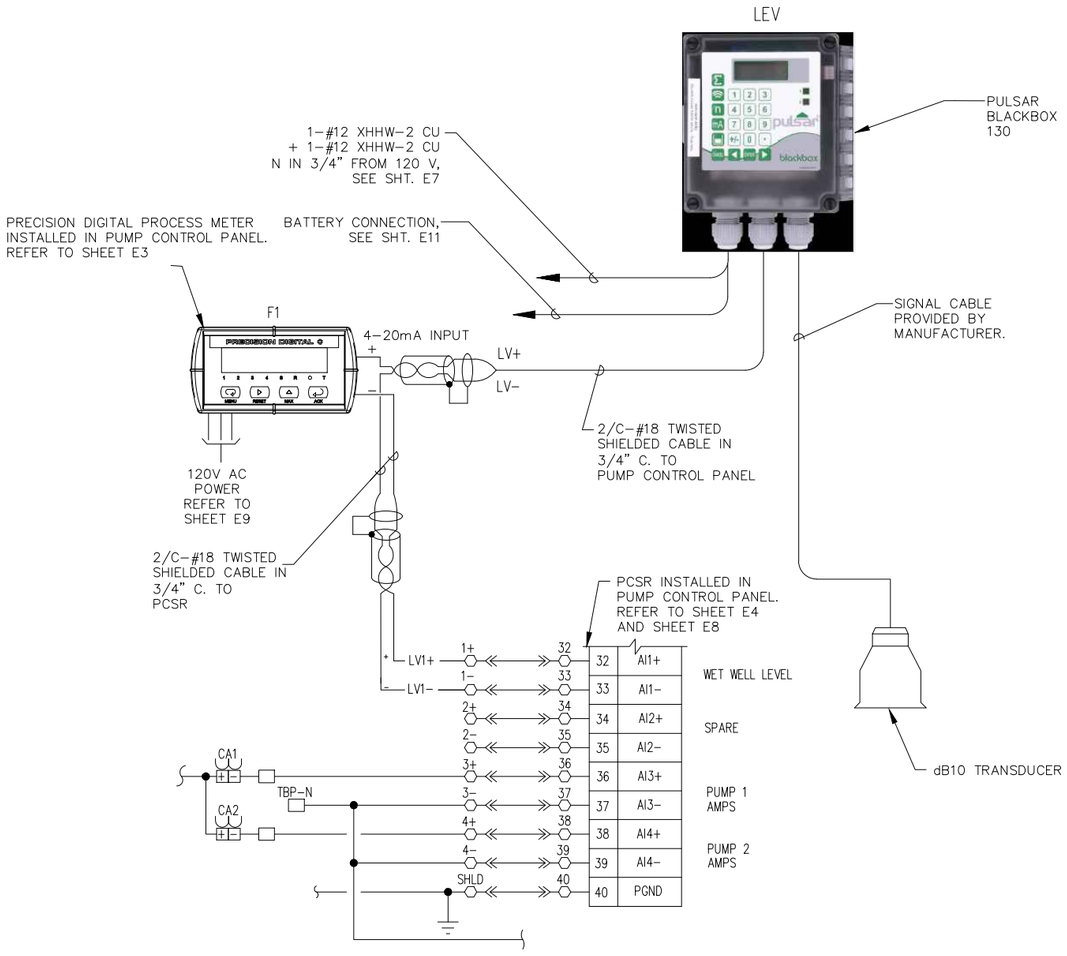
DES: LRG
DRN: LRG
CKD:
DATE:

CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

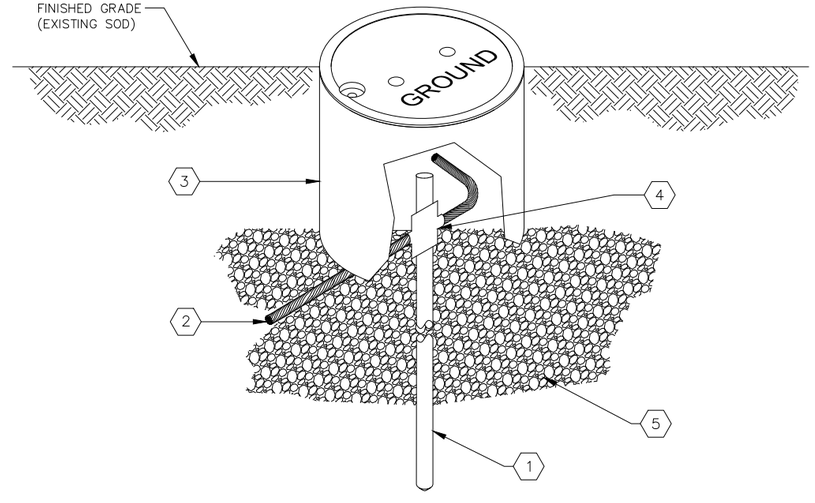
ELECTRICAL DETAILS (SHT. 1 OF 3)

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. #4 BARE STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR (TYP).
3. PROVIDE AND INSTALL OLDCASTLE PRECAST ENCLOSURE SOLUTIONS #F08 BOX WITH #F08C CAST IRON LID MARKED "GROUND".
4. EXOTHERMIC WELD.
5. PROVIDE 6" MINIMUM OF CRUSHED STONE.

GROUNDING TEST WELL DETAIL

SCALE: N.T.S.

ROMAN D. KORCHAK, P.E. #42626
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3		
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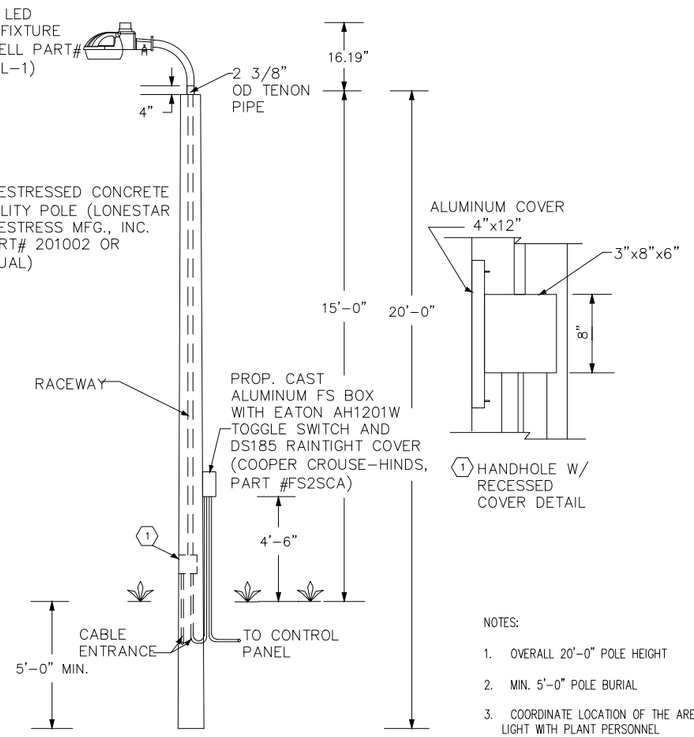
CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

ELECTRICAL DETAILS (SHT. 2 OF 3)

SHEET E16

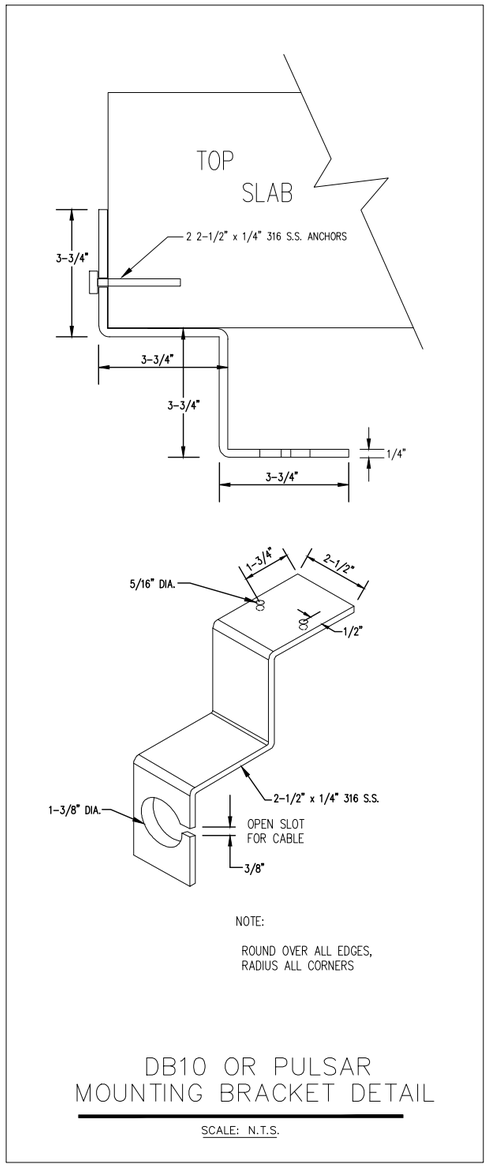


NOTES:

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.

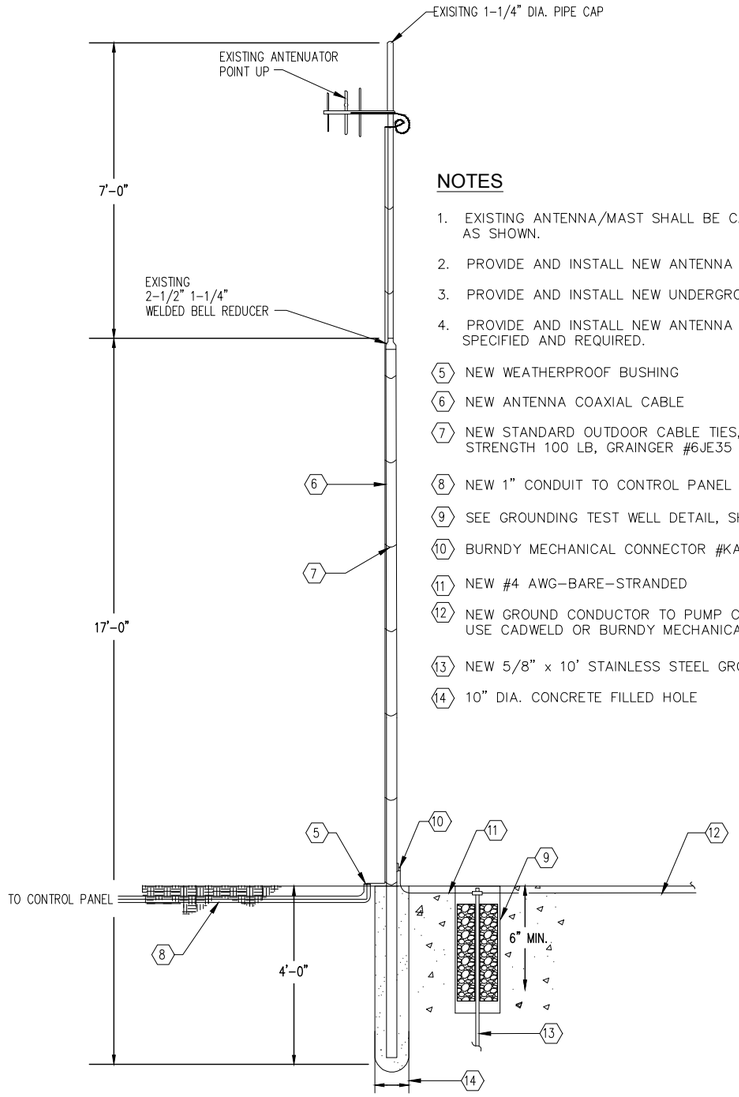


NOTE:

ROUND OVER ALL EDGES, RADIUS ALL CORNERS

DB10 OR PULSAR MOUNTING BRACKET DETAIL

SCALE: N.T.S.



NOTES

1. EXISTING ANTENNA/MAST SHALL BE CAREFULLY REMOVED AND RELOCATED, AS SHOWN.
2. PROVIDE AND INSTALL NEW ANTENNA COAX CABLE, AS REQUIRED.
3. PROVIDE AND INSTALL NEW UNDERGROUND CONDUIT, AS REQUIRED.
4. PROVIDE AND INSTALL NEW ANTENNA GROUNDING SYSTEM, AS SHOWN, SPECIFIED AND REQUIRED.

(5) NEW WEATHERPROOF BUSHING

(6) NEW ANTENNA COAXIAL CABLE

(7) NEW STANDARD OUTDOOR CABLE TIES, 304 STAINLESS STEEL, TENSILE STRENGTH 100 LB, GRAINGER #6JE35

(8) NEW 1" CONDUIT TO CONTROL PANEL

(9) SEE GROUNDING TEST WELL DETAIL, SHEET E16

(10) BURNDY MECHANICAL CONNECTOR #KA25-4-1/0

(11) NEW #4 AWG-BARE-STRANDED

(12) NEW GROUND CONDUCTOR TO PUMP 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.

	No.	DATE	REVISIONS
ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD DEPARTMENT OF SANITARY SEWERS	3		
	2		
	1		

DES: LRG
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CITY of TAMPA
WASTEWATER DEPARTMENT

BRECKENRIDGE PUMPING STATION REHABILITATION

ELECTRICAL DETAILS (SHT. 3 OF 3)

SHEET
E17