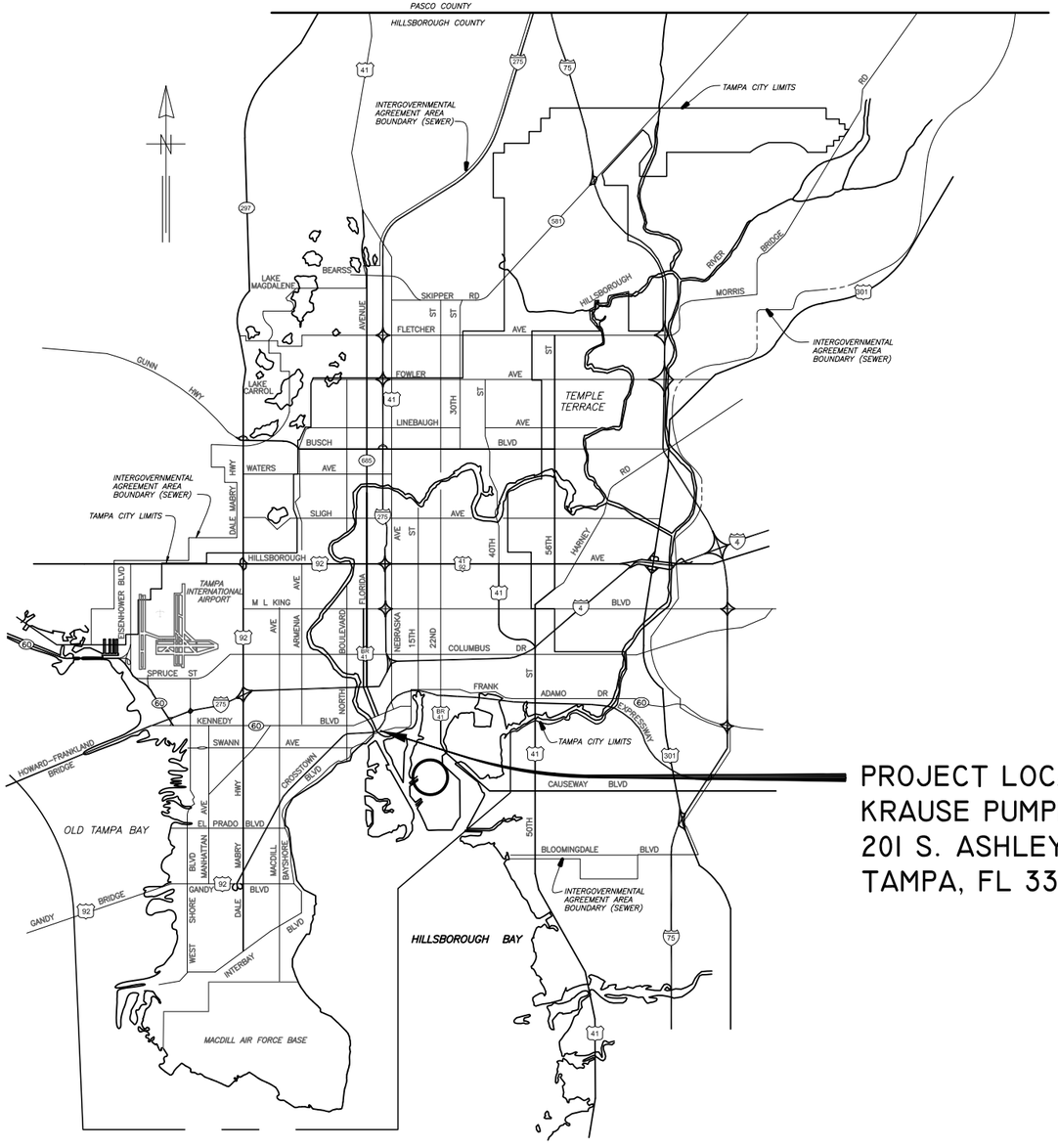
LOCATION MAP



PROJECT LOCATION
KRAUSE PUMPING STATION
201 S. ASHLEY DRIVE
TAMPA, FL 33602

PLANS

FOR

CITY OF TAMPA FLORIDA
WASTEWATER DEPARTMENT

FOR
THE CONSTRUCTION OF THE

KRAUSE PUMPING STATION
STANDBY GENERATORS

CONTRACT: 21-C-00009

MARCH 2021

CITY OF TAMPA FLORIDA • ORGANIZED JULY 15 1887 • MASCOTTE

MICHAEL A. SEMAGO, P.E. No. 87501

SETH E. SCHMID, P.E. No. 54640

JENNIFER L. DAOULAS, P.L.A. No. 6667369

Kimley»Horn
KIMLEY-HORN AND ASSOCIATES, INC.
100 2nd Avenue South
Suite 105-N
St. Petersburg, FL 33701
727-547-3999
Certificate of Authorization No. 0696

TRICON CONSULTING ENGINEERS
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Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

TIMOTHY THOMAS, P.E. No. 47079

DRAWING INDEX

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2	SHEET INDEX AND LOCATION MAP
C-0.1	KRAUSE GENERATOR DESIGN EXISTING SITE LAYOUT
C-0.2	KRAUSE GENERATOR DESIGN DEMO PLAN
C-0.3	KRAUSE GENERATOR DESIGN SITE PLAN
C-0.4	KRAUSE GENERATOR DESIGN STORMWATER PLAN
C-0.5	KRAUSE GENERATOR DESIGN SITE CIVIL DETAILS
C-0.6	KRAUSE GENERATOR DESIGN SITE CIVIL DETAILS
S-0.1	KRAUSE GENERATOR DESIGN STRUCTURAL NOTES
S-0.2	KRAUSE GENERATOR DESIGN FOUNDATION DETAIL
S-0.3	KRAUSE GENERATOR DESIGN PLAN VIEW AND TYPICAL STAIR DETAIL
S-0.4	KRAUSE GENERATOR DESIGN FRAME DETAILS
S-0.5	KRAUSE GENERATOR DESIGN FRAME DETAILS
S-0.6	KRAUSE GENERATOR DESIGN CROSS SECTIONS
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S-0.8	KRAUSE GENERATOR DESIGN TYPICAL WALKWAY DETAILS
S-0.9	KRAUSE GENERATOR DESIGN STAIR AND RAILING DETAILS
L-0.1	KRAUSE GENERATOR DESIGN LANDSCAPE PLAN
L-0.2	KRAUSE GENERATOR DESIGN LANDSCAPE SCHEDULE
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L-0.6	KRAUSE GENERATOR DESIGN LANDSCAPE NOTES
I-0.1	KRAUSE GENERATOR DESIGN IRRIGATION PLAN
I-0.2	KRAUSE GENERATOR DESIGN IRRIGATION SCHEDULE
I-0.3	KRAUSE GENERATOR DESIGN IRRIGATION NOTES
I-0.4	KRAUSE GENERATOR DESIGN IRRIGATION NOTES
I-0.5	KRAUSE GENERATOR DESIGN IRRIGATION NOTES & DETAILS
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E-0.1	ELECTRICAL SITE PLAN
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E-1.1	EXISTING SWITCHBOARD 'KPS' FRONT ELEVATIONS
E-1.2	CIRCUIT BREAKER 52-G1 CONTROL MODIFICATIONS
E-1.3	CIRCUIT BREAKER 52-G2 CONTROL MODIFICATIONS
E-1.4	SWITCHBOARD 'KPS' PLC CONTROL MODIFICATIONS
E-1.5	SWITCHBOARD 'KPS' PLC CONTROL MODIFICATIONS
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E-3.1	REQUIRED FIELD TERMINATIONS FOR GENERATOR 'A' I/O
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E-5.0	EXISTING PANELBOARD 'LPA' CIRCUIT ADDITIONS
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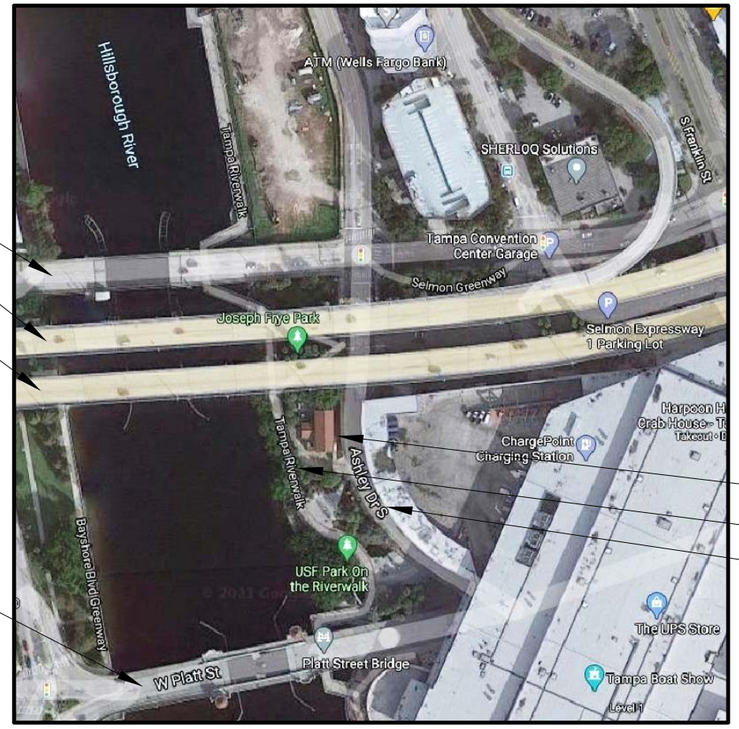
E-6.0	CONDUIT INSTALLATION DETAILS (SHEET 1 OF 2)
E-6.1	CONDUIT INSTALLATION DETAILS (SHEET 2 OF 2)



LOCATION MAP

SCALE: NOT TO SCALE

TRICON CONSULTING ENGINEERS	777 S. Harbour Island Blvd, Suite 350, Tampa, FL 33602, 813.227.9190, Certificate of Authorization No. 8363	JOB No.	231901542					
		DESIGNED	TDT					
		DRAWN	JLH					
		CHECKED	TDT					
		DATE	3/2021	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

City of Tampa Wastewater Department

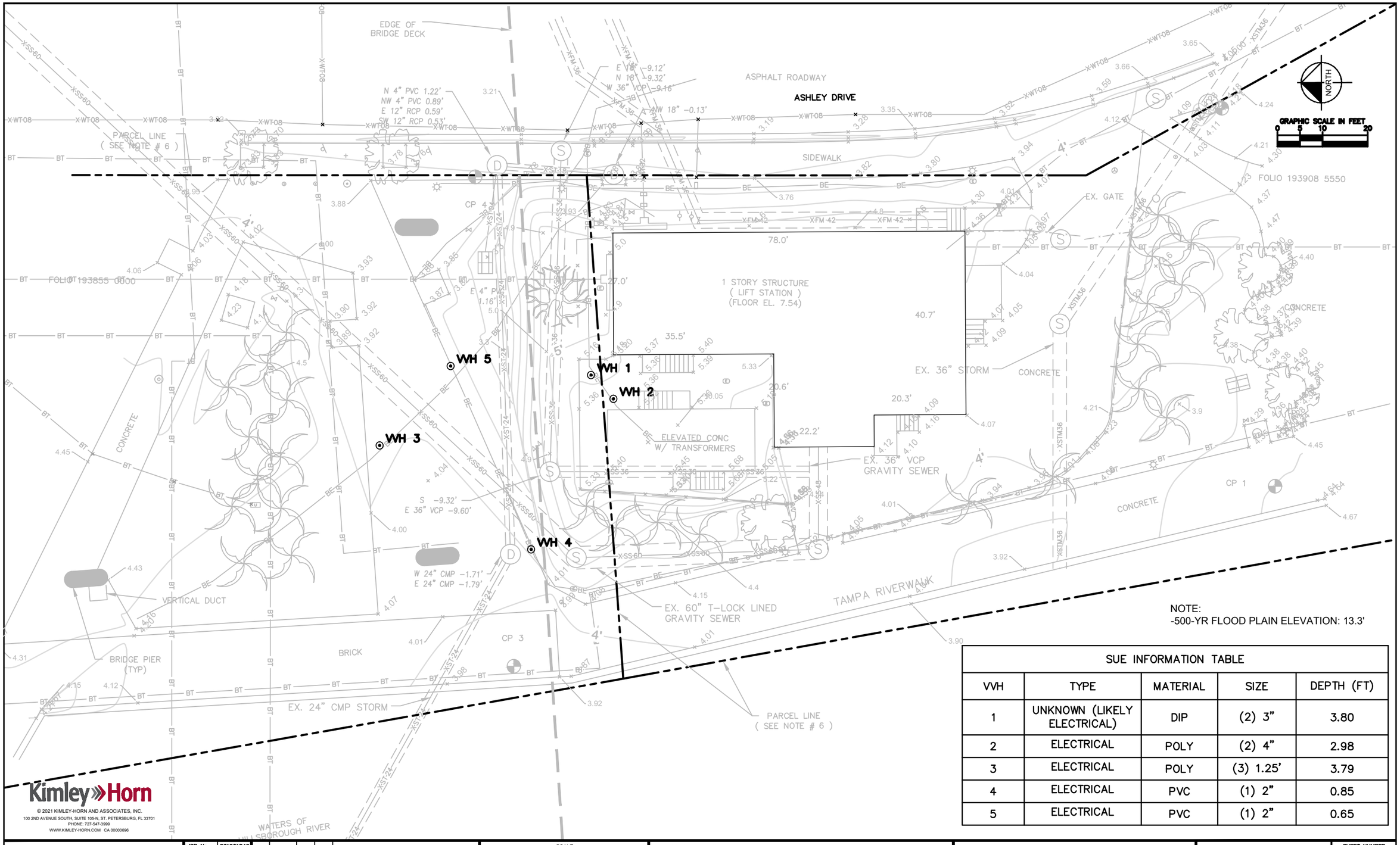
KRAUSE PUMPING STATION
STANDBY GENERATORS

SHEET INDEX AND LOCATION MAP

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER 2

FILE: 231901542



NOTE:
-500-YR FLOOD PLAIN ELEVATION: 13.3'

SUE INFORMATION TABLE

VVH	TYPE	MATERIAL	SIZE	DEPTH (FT)
1	UNKNOWN (LIKELY ELECTRICAL)	DIP	(2) 3"	3.80
2	ELECTRICAL	POLY	(2) 4"	2.98
3	ELECTRICAL	POLY	(3) 1.25'	3.79
4	ELECTRICAL	PVC	(1) 2"	0.85
5	ELECTRICAL	PVC	(1) 2"	0.65

100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

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DATE	1/2021

No.	DATE	BY	APP	REVISION DESCRIPTION

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN EXISTING SITE LAYOUT

MICHAEL A. SEMAGO, P.E. NO. 87501

SHEET NUMBER C-0.1

FILE: 231902342E2

TEMPORARY CONSTRUCTION FENCE

TEMPORARY SILT FENCE

SAW CUT EX. CONCRETE FOR REMOVAL

CONTRACTOR TO PROTECT EXISTING COLUMNS AND FERNS PRIOR TO CONSTRUCTION

SALVAGE EX. BIKE RACKS

15' PROTECTIVE RADIUS TEMPORARY TREE PROTECTION FENCE AROUND EXISTING 27" DBH OAK TREE SEE DETAIL SHEET L-0.3.

REMOVE 37 LF OF EX. FENCE

RELOCATE EX. PALM TREE (TYP. OF 3). SEE SHEET L-0.1.

PROPOSED TREE PROTECTION FENCE SEE DETAIL SHEET L-0.3

CONTRACTOR TO PROVIDE TEMPORARY HARD BARRIER TO PROTECT PIER

PEDESTRIAN CIRCULATION (TYP)

TEMPORARY CONSTRUCTION ENTRANCE

R/W LINE

EDGE OF BRIDGE DECK

ASPHALT ROADWAY

ASHLEY DRIVE

SIDEWALK

PARCEL LINE (SEE NOTE # 6)

FOLIO 193908 5550

EX. GATE

1 STORY STRUCTURE (LIFT STATION) (FLOOR EL. 7.54)

ELEVATED CONC W/ TRANSFORMERS

EX. 36" VCP GRAVITY SEWER

EX. 60" T-LOCK LINED GRAVITY SEWER

EX. 24" CMP STORM

EX. 36" STORM

CONCRETE

BRICK

VERTICAL DUCT

BRIDGE PIER (TYP)

WATERS OF HILLSBOROUGH RIVER

FOLIO 193855 0000

NORTH

GRAPHIC SCALE IN FEET
0 5 10 20

MATERIAL AND EQUIPMENT TO BE DEMOLISHED

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION AND ORDERING EQUIPMENT. CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCIES.
2. CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING EQUIPMENT, UTILITIES, STRUCTURES, AND PERSONNEL FROM DAMAGE OR INJURY DURING CONSTRUCTION.
3. THE CITY HAS FIRST RIGHT OF REFUSAL FOR ANY EQUIPMENT BEING DEMOLISHED.
4. PRIOR TO DEMOLITION CONTRACTOR SHALL COORDINATE WALKTHROUGH WITH OWNER AND ENGINEER TO DETERMINE SALVAGEABLE MATERIAL.
5. ALL SALVAGEABLE MATERIAL SHALL BE HANDED OVER TO THE CITY PRIOR TO COMMENCING DEMOLITION ACTIVITIES.
6. CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF DEMOLISHED MATERIAL. DISPOSAL SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

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City of Tampa Wastewater Department

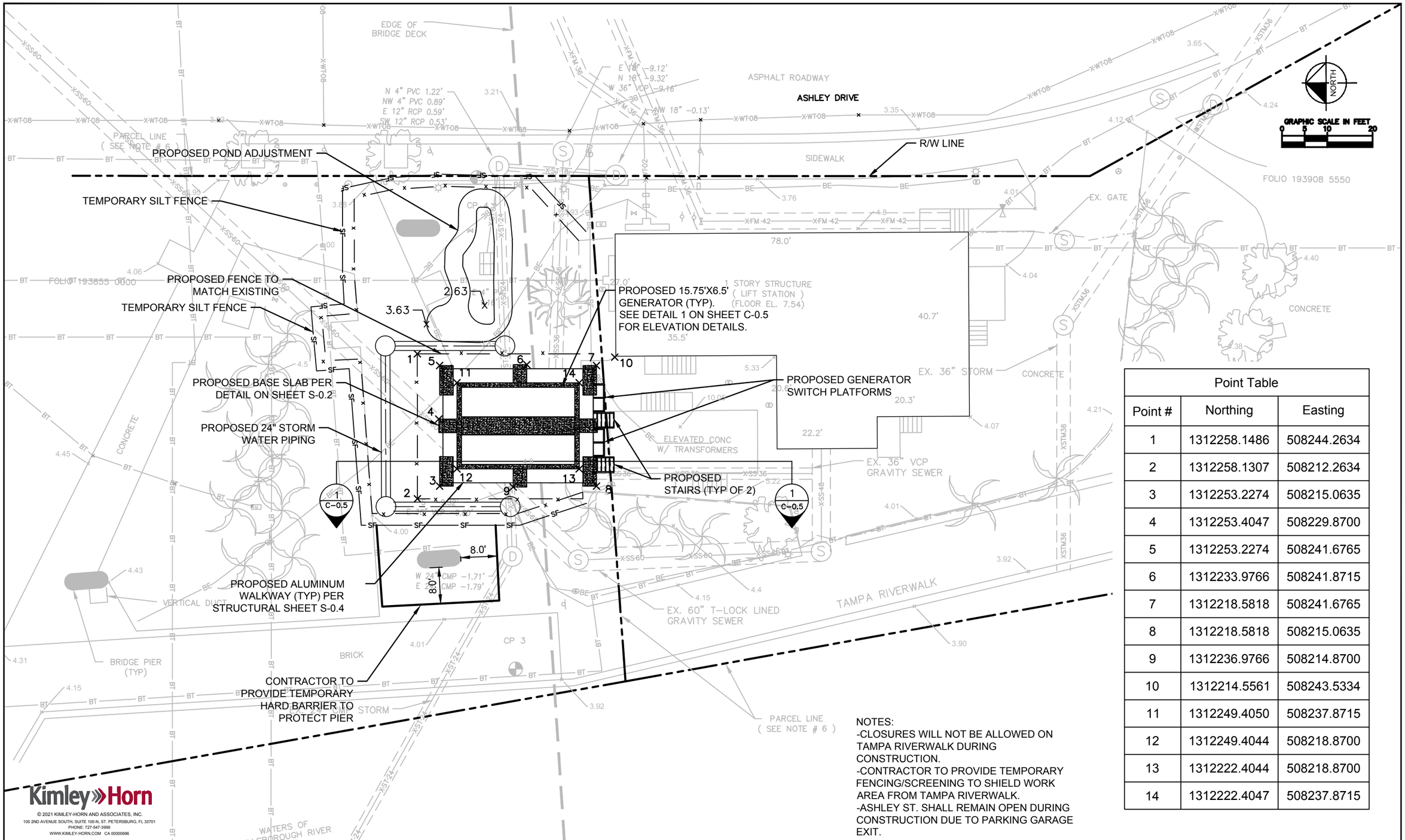
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN DEMO PLAN

MICHAEL A. SEMAGO, P.E. NO. 87501

SHEET NUMBER C-0.2

FILE: 231902342E2



Point Table		
Point #	Northing	Easting
1	1312258.1486	508244.2634
2	1312258.1307	508212.2634
3	1312253.2274	508215.0635
4	1312253.4047	508229.8700
5	1312253.2274	508241.6765
6	1312233.9766	508241.8715
7	1312218.5818	508241.6765
8	1312218.5818	508215.0635
9	1312236.9766	508214.8700
10	1312214.5561	508243.5334
11	1312249.4050	508237.8715
12	1312249.4044	508218.8700
13	1312222.4044	508218.8700
14	1312222.4047	508237.8715

NOTES:
-CLOSURES WILL NOT BE ALLOWED ON TAMPA RIVERWALK DURING CONSTRUCTION.
-CONTRACTOR TO PROVIDE TEMPORARY FENCING/SCREENING TO SHIELD WORK AREA FROM TAMPA RIVERWALK.
-ASHLEY ST. SHALL REMAIN OPEN DURING CONSTRUCTION DUE TO PARKING GARAGE EXIT.

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City of Tampa Wastewater Department

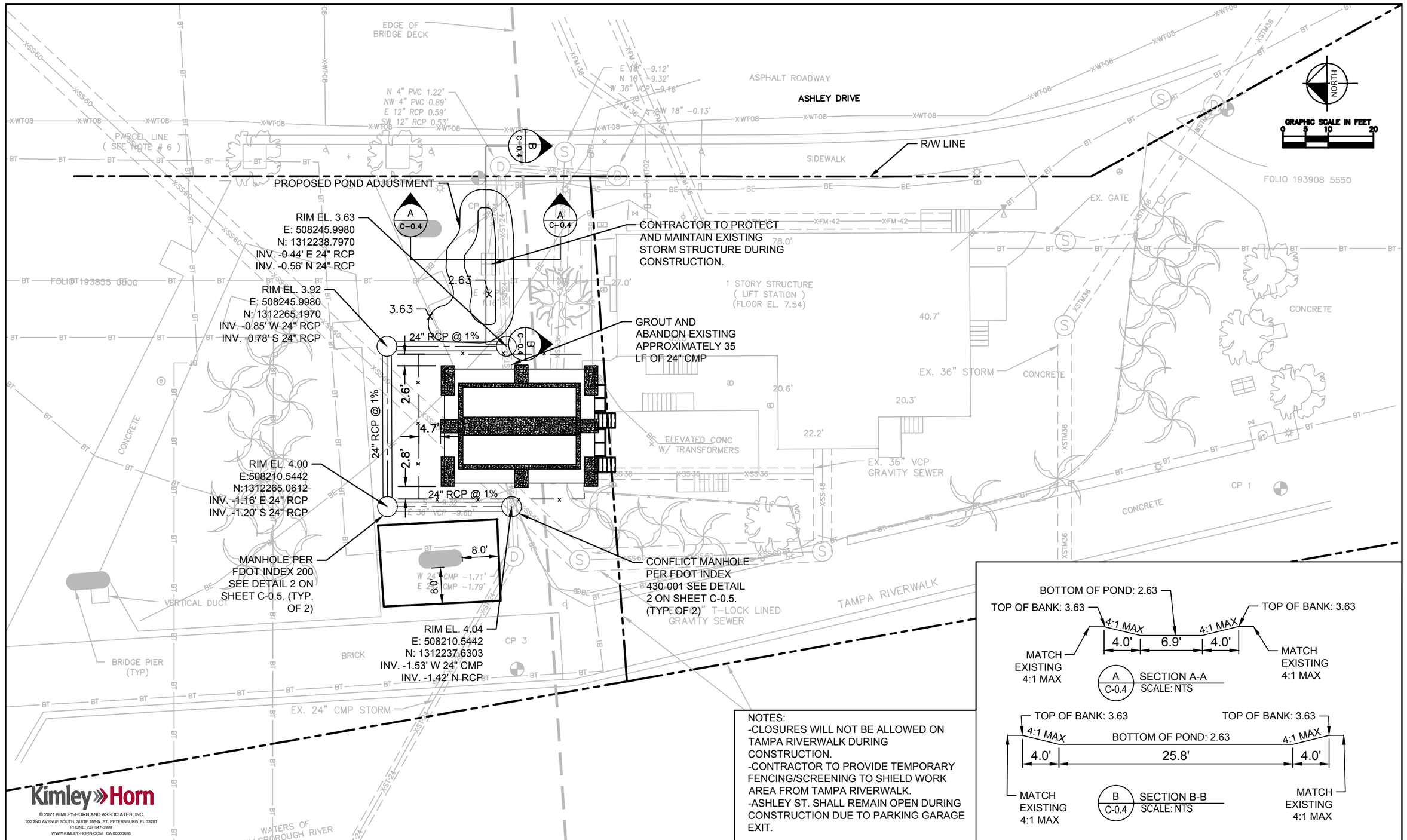
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR CONSRUCTION LAYOUT

MICHAEL A. SEMAGO, P.E. NO. 87501

SHEET NUMBER: C-0.3

FILE: 231902342E2



NOTES:
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City of Tampa Wastewater Department

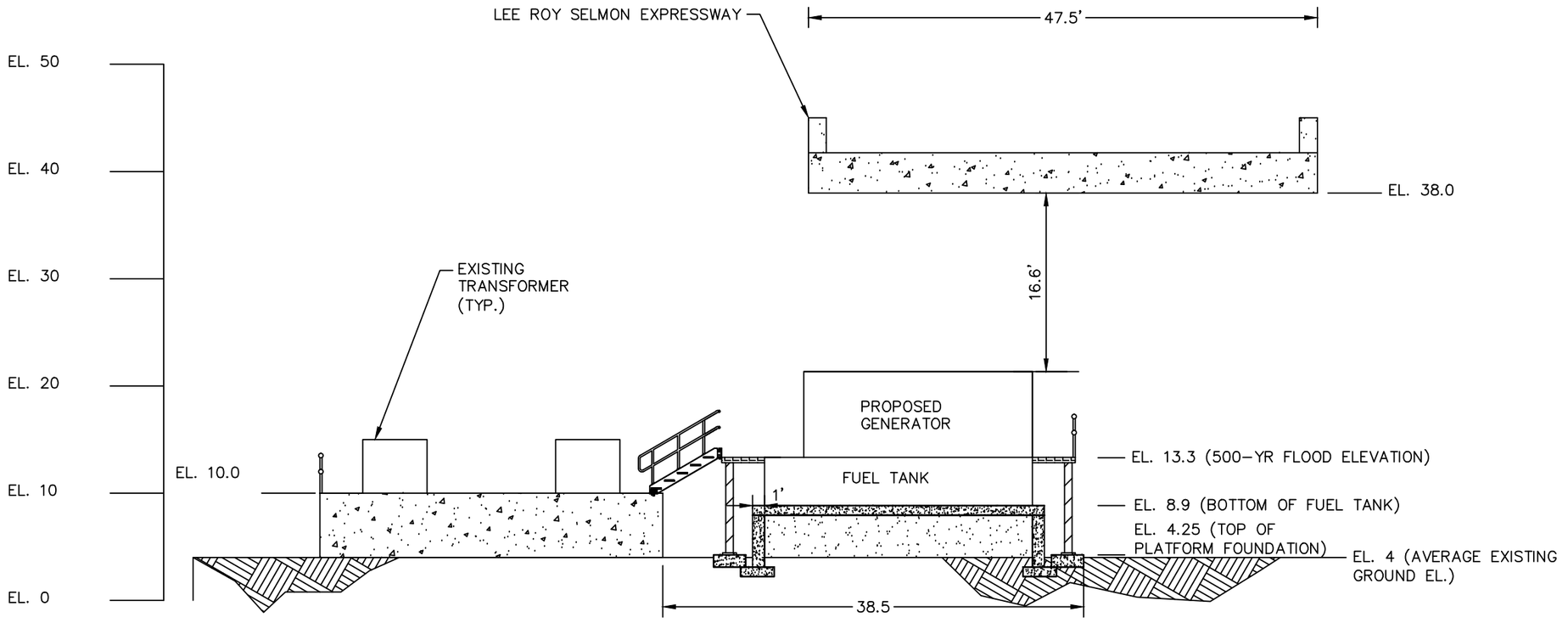
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN STORMWATER PLAN

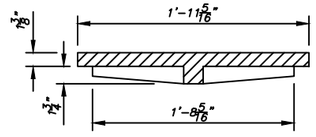
MICHAEL A. SEMAGO, P.E. NO. 87501

SHEET NUMBER C-0.4

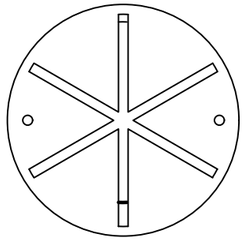
FILE: 231902342E2



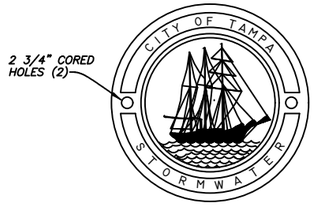
1 C-0.3 PROPOSED GENERATOR ELEVATION DETAILS
SCALE: NTS



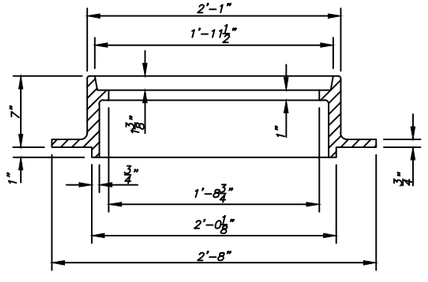
COVER SECTION



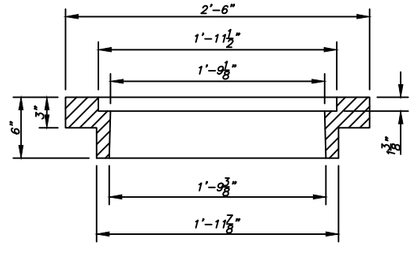
COVER BACK



COVER FACE



STANDARD FRAME SECTION



INVERTED FRAME SECTION

2 C-0.4 TYPICAL MANHOLE FRAME COVER
SCALE: NTS

NOTE:
MANHOLE STRUCTURES SHALL BE PER FDOT STANDARD INDEX #200 FOR STANDARD MANHOLES AND #430-001 FOR CONFLICT MANHOLES.

100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
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City of Tampa Wastewater Department

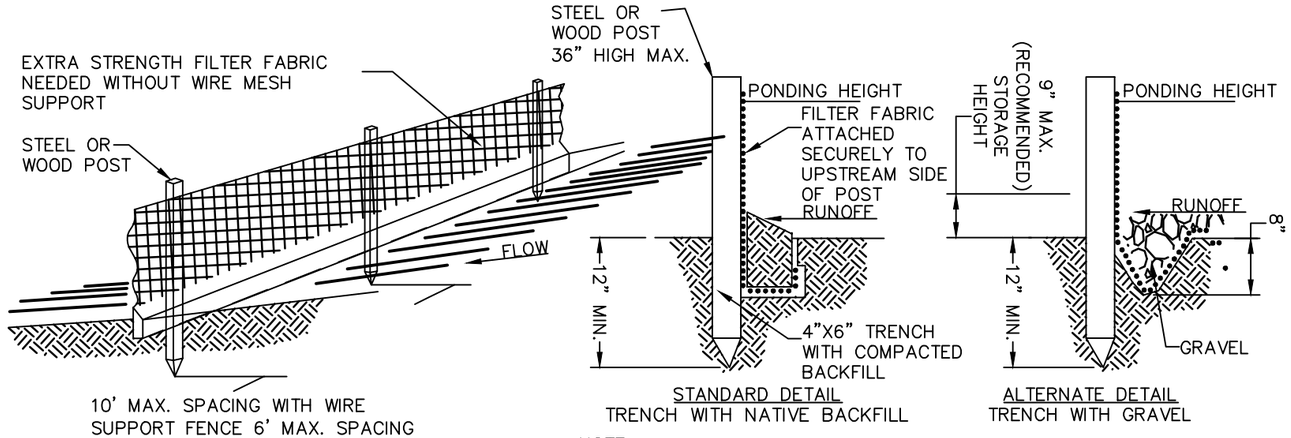
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN SITE CIVIL DETAILS

MICHAEL A. SEMAGO, P.E. NO. 87501

SHEET NUMBER C-0.5

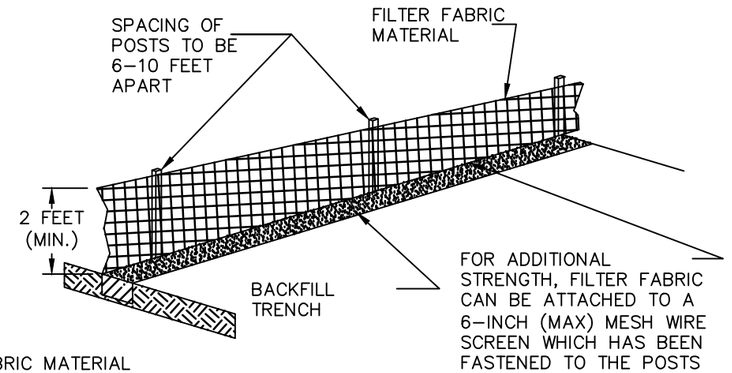
FILE: 231902342E2

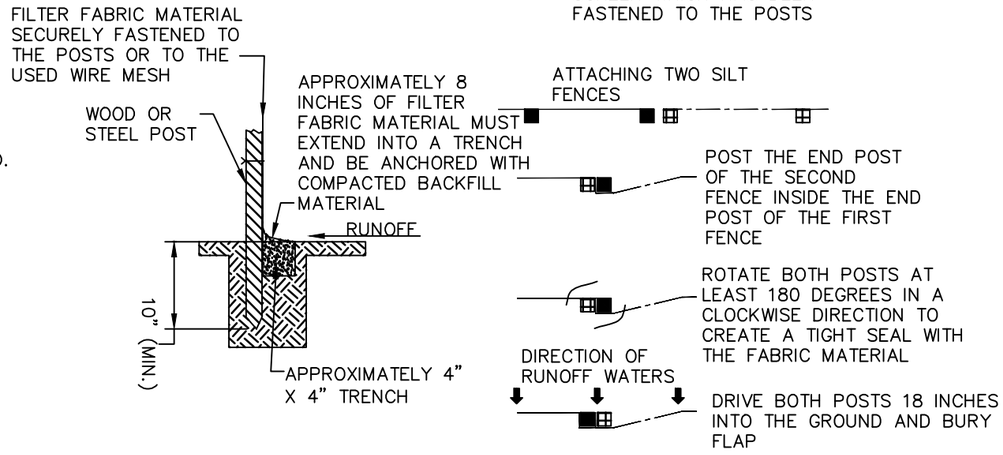


NOTE:

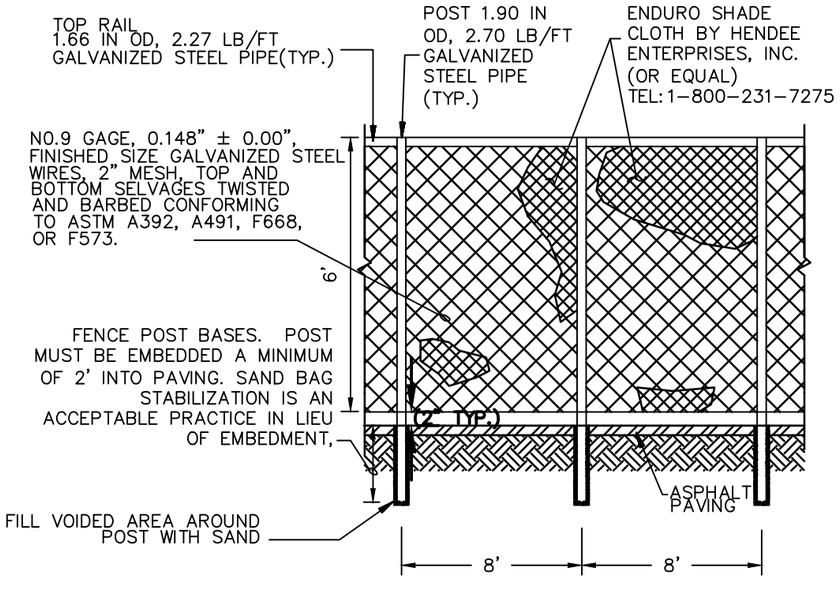
1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

1 / C-0.6 SILT FENCE DETAIL
SCALE: NTS





2 / C-0.6 SILT FENCE INSTALLATION DETAIL
SCALE: NTS



3 / C-0.5 TEMPORARY CONSTRUCTION FENCE
SCALE: NTS

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN SITE CIVIL DETAILS

MICHAEL A. SEMAGO, P.E. NO. 87501

SHEET NUMBER C-0.6

FILE: 231902342E2

STRUCTURAL NOTES

1. GENERAL:

(A) PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE. CONTRACTOR SHALL PROTECT THE WORK, ADJACENT PROPERTY, AND THE PUBLIC. CONTRACTOR IS SOLELY RESPONSIBLE FOR DAMAGE OR INJURY DUE TO HIS ACT OR NEGLECT.

(B) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY AND CONSTRUCTION PROCEDURES.

(C) PRIOR TO CONSTRUCTION, FIELD VERIFY ALL DIMENSIONS IN THE DRAWINGS AND DETAILS AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.

(D) REFER TO THE ENGINEER FOR INSTRUCTION FOR ANY DIMENSION NOT GIVEN ON DRAWINGS. SCALING OF DRAWINGS SHALL NOT BE USED TO OBTAIN OR VERIFY ANY DIMENSION SHOWN ON THE DRAWINGS.

2. CONCRETE:

(A) ALL CONCRETE MATERIALS, PLACING AND HANDLING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318 AND ACI 301.

(B) ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI (UNLESS OTHERWISE NOTED).

(C) PROVIDE 3" CONCRETE COVER OVER REINFORCING BARS EXCEPT AS OTHERWISE NOTED.

(D) FORM TIES AND REINFORCING BAR SUPPORTS SHALL BE OF NON-CORROSIVE MATERIAL INCLUDING, BUT NOT LIMITED TO, FIBERGLASS, PLASTIC, AND/OR CONCRETE BLOCK.

(E) CONCRETE FINISHES: FORMED SURFACE-SMOOTH FORM FINISH PER ACI 301.

(F) ALL GROUT SHALL BE NON-SHRINK, NON-METALLIC.

(G) CONCRETE SHALL BE CURED IMMEDIATELY AFTER FINISHING OPERATIONS IN ACCORDANCE WITH ONE OF THE FOLLOWING METHODS:
1. APPLY A LIQUID MEMBRANE CHEMICAL CURING COMPOUND IN ACCORDANCE WITH ASTM C-309.
2. WET CURE IN ACCORDANCE WITH ACI 301.

(A) ALL CONCRETE CONSTRUCTION SHALL BE DONE IN THE DRY.

(I) PROVIDE 3/4" CHAMFER ON ALL EXPOSED EDGES UNLESS OTHERWISE NOTED.

(J) CONCRETE SHALL BE IN ACCORDANCE WITH ASTM C94:
1. TYPE II PORTLAND CEMENT – ASTM C150
2. AGGREGATES (3/4" MAX.) – ASTM C33
3. USE OF CALCIUM CHLORIDE IS NOT PERMITTED
4. AIR ENTRAINING (4% MAX.) – ASTM C260
5. WATER REDUCING – ASTM C494
6. FLY ASH (MAX 20% BY WEIGHT), TYPE F – ASTM C618
7. WATER – CLEAN AND POTABLE
8. MAXIMUM WATER CEMENT RATIO FOR 4,000 PSI, 28-DAY COMPRESSIVE STRENGTH = 0.45

(K) REQUIRED SLUMP: 2" TO 4"

(L) CONTRACTOR IS RESPONSIBLE FOR THE PROPER DESIGN AND CONSTRUCTION OF ALL FORMWORK AND SHORING.

(M) A QUALIFIED TESTING LABORATORY SHALL BE RETAINED TO PERFORM THE FOLLOWING CONCRETE TESTS:
1. CYLINDER STRENGTH TESTS – ASTM C39. ONE SET OF FIVE CYLINDERS FOR EACH 50 CUBIC YARDS OR FRACTION THEREOF PLACED. TEST ONE AT 3 DAYS, ONE AT 7 DAYS, TWO AT 28 DAYS, AND HOLD ONE.
2. SLUMP TESTS – ASTM C143

(A) ONE COPY OF ALL TEST REPORTS SHALL BE SENT DIRECTLY TO OWNER, ENGINEER, AND CONTRACTOR.

(O) CONCRETE SHALL BE PLACED WITHIN 90 MINUTES OF BATCH TIME

(P) ALL CONCRETE SHALL BE CONSOLIDATED IN PLACE USING INTERNAL VIBRATORS

(Q) SUBMITTALS:
1. SUBMIT PROPOSED CONCRETE MIX DESIGN PRIOR TO CONSTRUCTION
2. SUBMIT DETAILED SHOP DRAWINGS OF REINFORCING BARS SHOWING NUMBER, SIZE, AND LOCATION. INCLUDE BAR LISTS AND BEND DIAGRAMS.

3. REINFORCEMENT:

(A) REINFORCING STEEL SHALL BE A.S.T.M. A-615 WITH SUPPLEMENT, GRADE 60: MINIMUM WORKING STRESS – 24,000 PSI.

(B) ALL REINFORCEMENT SHALL BE UNCOATED (BLACK).

(C) ALL DIMENSIONS PERTAINING TO LOCATION OF REINFORCING BARS ARE TO CENTERLINE OF BARS EXCEPT WHERE THE CLEAR DIMENSION IS SHOWN TO FACE OF CONCRETE.

(D) REINFORCEMENT DETAIL DIMENSION ARE OUT-TO-OUT OF BARS.

(E) ACI STANDARD HOOKS SHALL BE USED UNLESS OTHERWISE NOTED.

(F) ALL LAP AND SPLICE LENGTHS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318 AND CRSI STANDARD PRACTICES, EXCEPT AS OTHERWISE NOTED.

4. FOUNDATIONS:

(A) A REPORT OF GEOTECHNICAL EXPLORATION HAS BEEN PREPARED BY AREHNA ENGINEERING, INC. (DATED FEBRUARY 3, 2020, PROJECT NO. B-19-127). ANY ADDITIONAL GEOTECHNICAL WORK WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

(B) NOTIFY THE ENGINEER IMMEDIATELY OF ANY EXISTING FOUNDATION CONDITIONS OR DETAILS THAT ARE IN CONFLICT WITH THOSE INDICATED AND SHOWN IN THE DRAWINGS.

(C) ADHERE TO THE RECOMMENDATIONS MADE IN THE GENERAL SITE PREPARATION SECTION OF THE GEOTECHNICAL REPORT.

(D) ALL FILL AND COMPACTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT.

(E) MAXIMUM ALLOWABLE SOIL BEARING PRESSURE = 2,000 PSF WHEN SITE IS PREPARED IN ACCORDANCE WITH THE GENERAL SITE PREPARATIONS SECTION OF THE GEOTECHNICAL REPORT.

5. STRUCTURAL ALUMINUM:

(A) STRUCTURAL ALUMINUM SHALL BE DOMESTIC ALLOY 6061-T6.

(B) ALUMINUM WORK SHALL BE IN ACCORDANCE WITH THE ALUMINUM ASSOCIATION'S SPECIFICATIONS FOR ALUMINUM STRUCTURES, LATEST EDITION.

(C) FASTENERS: UNLESS NOTED OTHERWISE, ALL FASTENERS SHALL BE 316 STAINLESS STEEL MEETING THE REQUIREMENTS OF ASTM F593 OR ASTM A193 FOR BOLTS AND ASTM F594 OR ASTM A194 FOR NUTS. ALL CONNECTIONS WITH DISSIMILAR MATERIALS (E.G. 316 STAINLESS STEEL TO ALUMINUM) SHALL RECEIVE NEOPRENE OR VINYL WASHER. WASHER SHALL BE LARGER THAN BOLT HEAD.

(D) ALL WELDING SHALL CONFORMS WITH AWS D1.2, LATEST STRUCTURAL WELDING CODE – ALUMINUM.

(E) ALL FILLET WELDS SHALL HAVE A MINIMUM SIZE OF 1/4" WITH 5356 FILLER ALLOY UNLESS OTHERWISE NOTED.

(F) PROVIDE NON-SLIP ALUMINUM STAIR TREADS WITH A MINIMUM LIVE LOAD CAPACITY OF 100 PSF.

(G) PROVIDE SHOP DRAWINGS FOR ALUMINUM FRAMING PRIOR TO FABRICATION AND INSTALLATION.

(H) WHERE THE CONTACT OF DISSIMILAR MATERIALS MAY CAUSE ELECTROLYSIS OR WHERE ALUMINUM WILL COME IN CONTACT WITH CONCRETE, MORTAR, OR PLASTER, THE CONTACT SURFACE OF THE ALUMINUM SHALL BE COATED WITH ONE HEAVY COAT OF BITUMINOUS PAINT.

DESIGN CRITERIA:

CODE:
2020 FLORIDA BUILDING CODE, 7th EDITION
ACI 318-14

DESIGN LOADS:

DEAD LOAD (GRATING):	5 PSF
LIVE LOADS:	
A. PLATFORM	125 PSF
B. STAIRS	100 PSF
WIND LOAD:	(ASCE 7-16)
BASIC WIND SPEED	150 MPH
EXPOSURE	C
RISK CATEGORY	III

100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
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777 S. Harbour Island Blvd, Suite 350
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Certificate of Authorization No. 8363

JOB No.	231901842					
DESIGNED						
DRAWN						
CHECKED						
DATE	1/2021	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

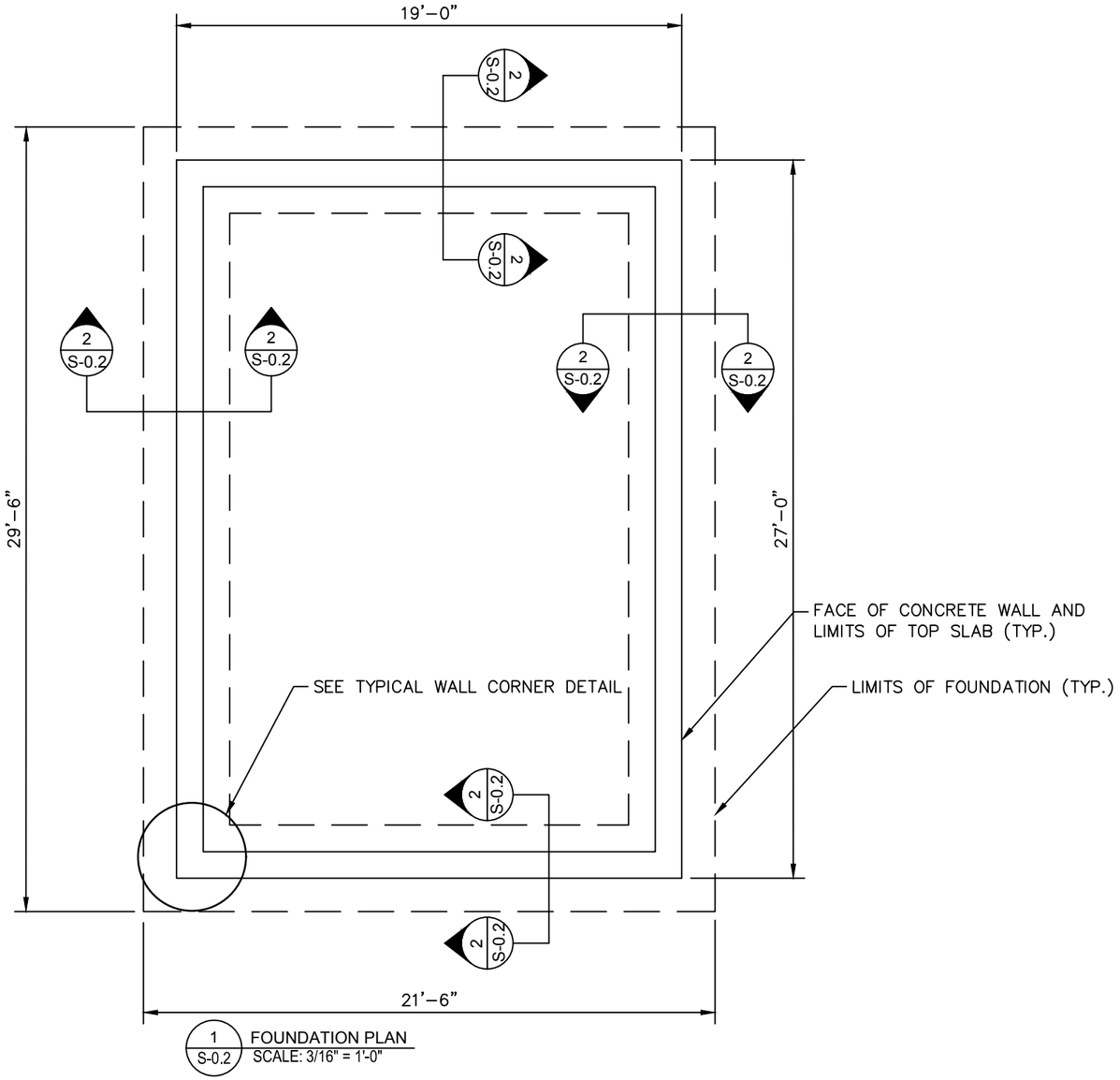
City of Tampa Wastewater Department
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN STRUCTURAL NOTES

SETH E. SCHMID, P.E. NO. 54640

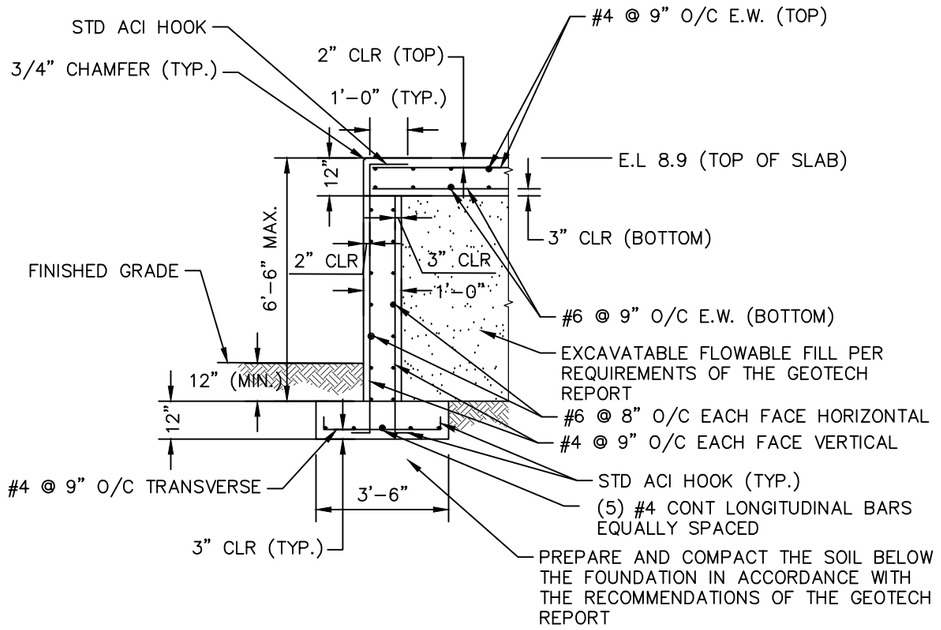
SHEET NUMBER: S-0.1

FILE: 231902342E2



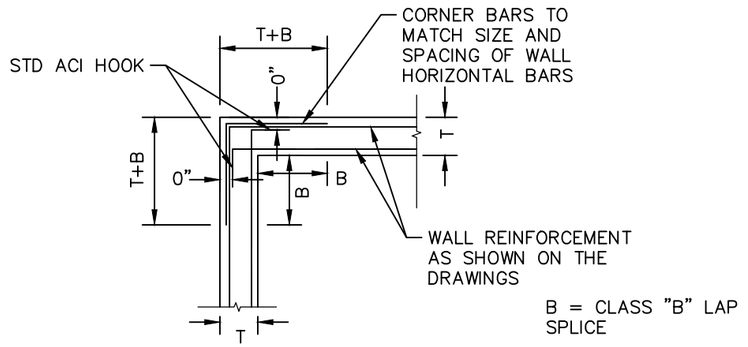
1 S-0.2 FOUNDATION PLAN
SCALE: 3/16" = 1'-0"

NOTES:
1. WALKWAY & GENERATORS NOT SHOWN FOR CLARITY
2. CONTRACTOR TO VERIFY SLAB/FOUNDATION DIMENSIONS WITH THE APPROVED GENERATORS AND SUB–BASE FUEL TANKS PRIOR TO CONSTRUCTION TO CONFIRM THERE ARE NO CONFLICTS AND THERE IS ADEQUATE SPACE FOR EQUIPMENT AND PLATFORMS.



2 S-0.2 TYPICAL WALL SECTION
SCALE: 1/4" = 1'-0"

NOTES:
1. WALKWAY AND GENERATORS NOT SHOWN FOR CLARITY



3 S-0.2 TYPICAL WALL CORNER DETAIL
SCALE: 1/4" = 1'-0"

SEE SECTION DETAIL ON THIS SHEET FOR REINFORCEMENT SIZE AND SPACING

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City of Tampa Wastewater Department

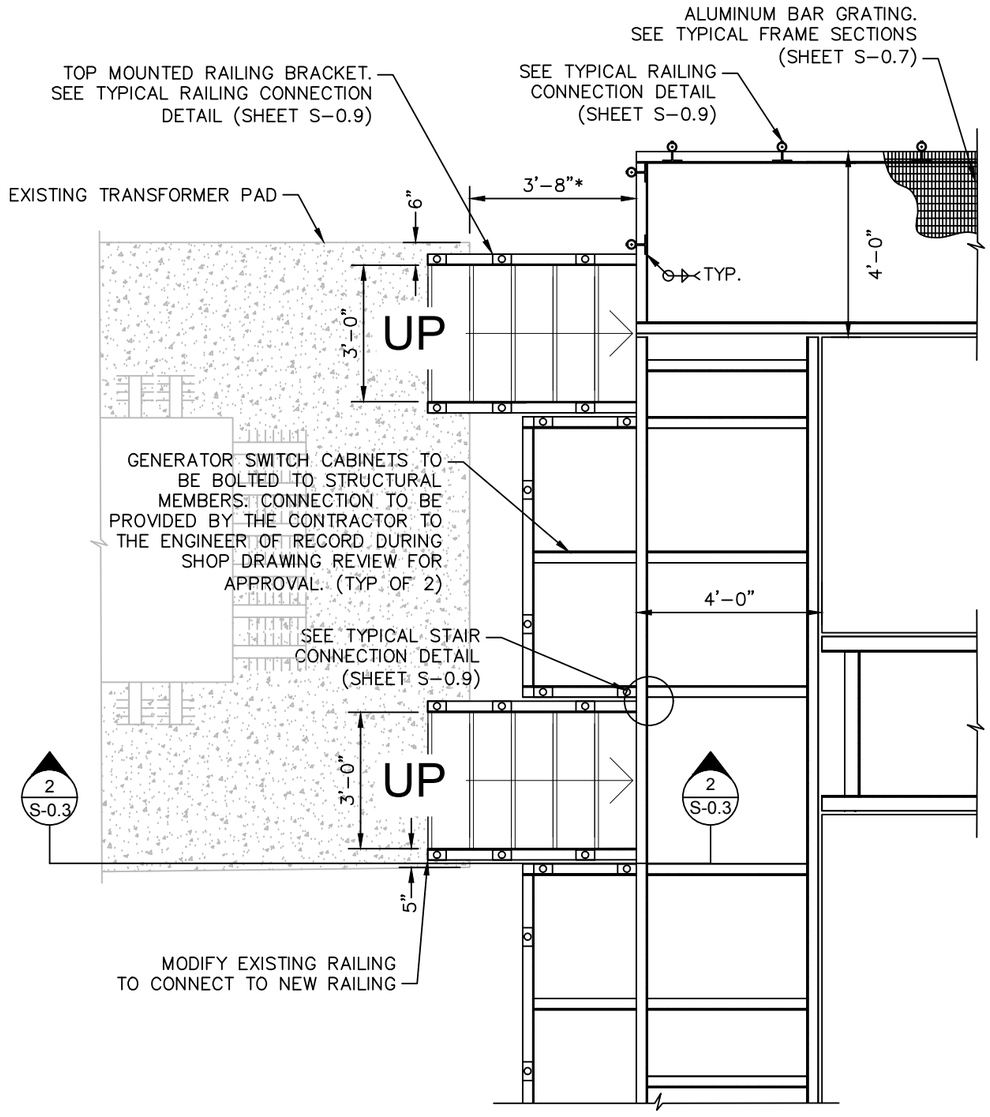
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN FOUNDATION DETAIL

SETH E. SCHMID, P.E. NO. 54640

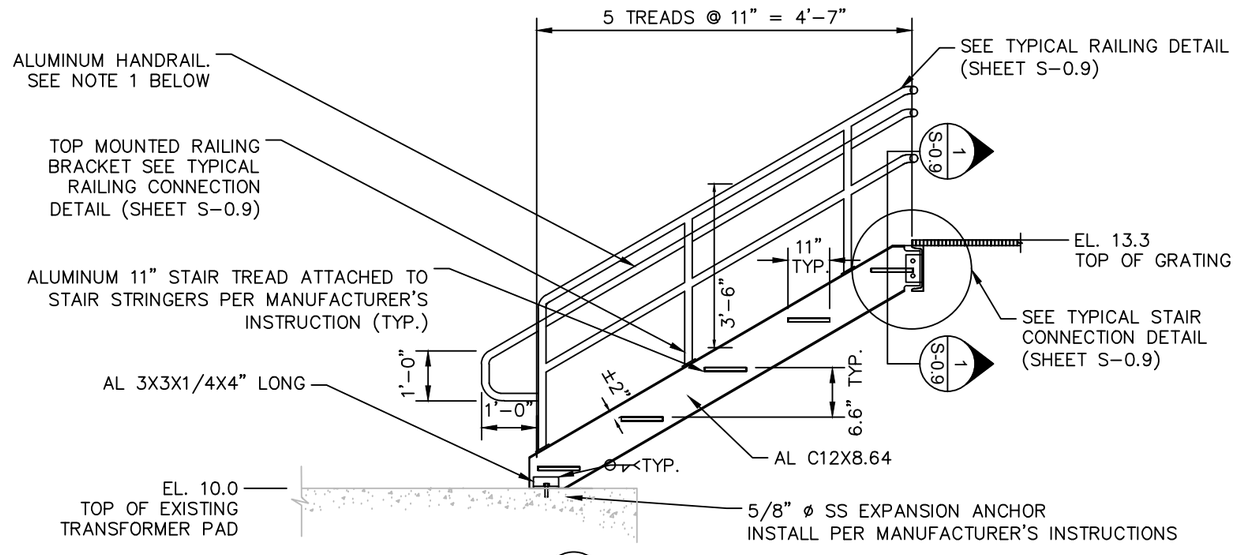
SHEET NUMBER S-0.2

FILE: 231902342E2



1 / S-0.3 FRAMING PLAN VIEW
SCALE: NTS

*CONTRACTOR TO VERIFY PRIOR TO FABRICATION AND CONSTRUCTION



2 / S-0.3 TYPICAL STAIR DETAIL
SCALE: NTS

NOTES:

1. HANDRAILS SHALL BE CONSTRUCTED OF 1-1/4" IPS ALUMINUM SCHEDULE 40 ALLOY 6063-T6 PIPE. ALL FITTINGS SHALL BE OF ONE-PIECE EXTRUSION OR CAST AND MACHINED TO FINAL SHAPE. PROVISIONS SHALL BE MADE TO DRAIN WATER FROM THE HANDRAIL SYSTEM, ATTACH HANDRAILS TO ALUMINUM RAILING PER MANUFACTURER'S INSTRUCTIONS AND IN ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE.

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

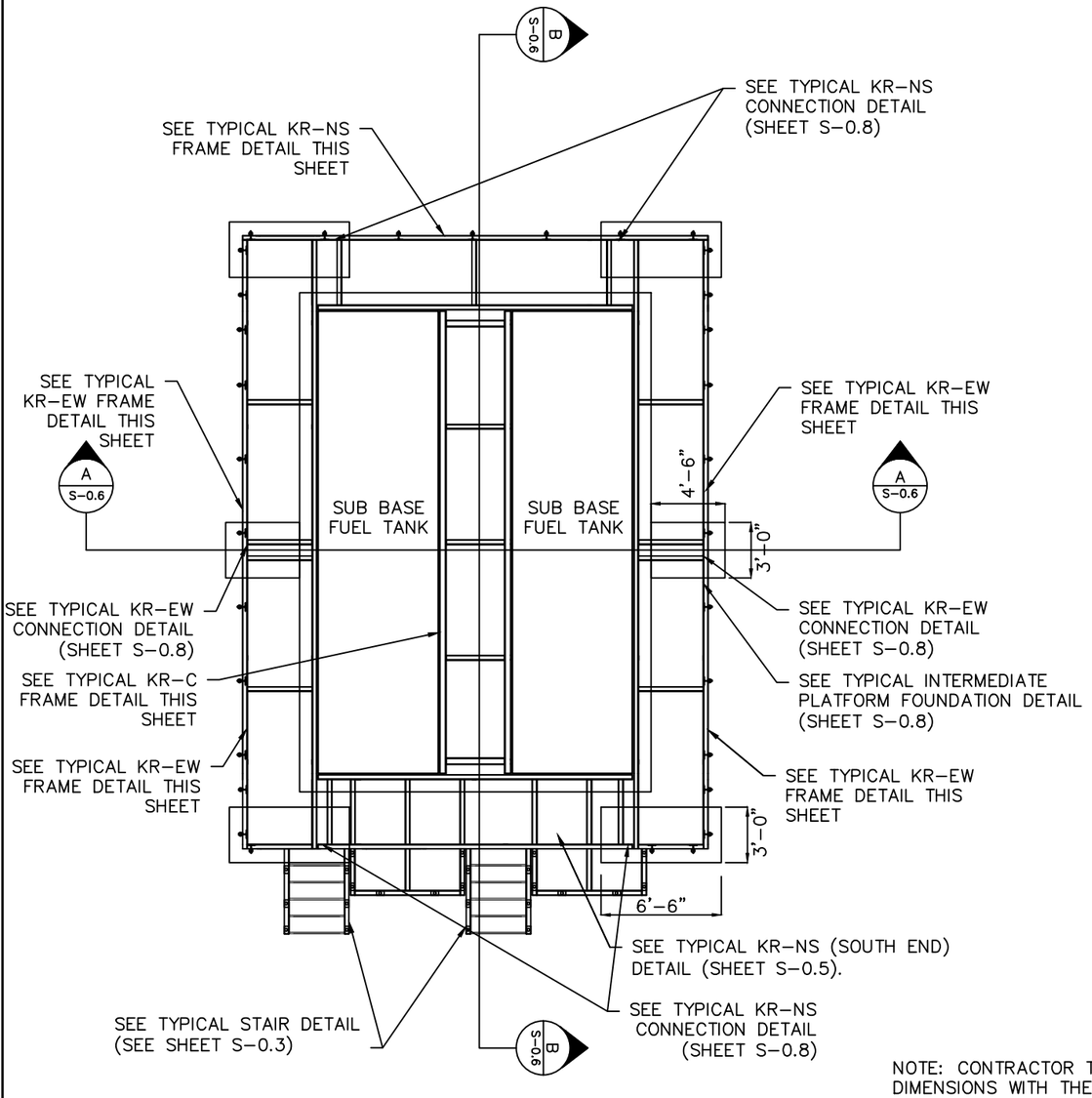
KRAUSE GENERATOR DESIGN PLAN VIEW AND TYPICAL STAIR DETAIL

SETH E. SCHMID, P.E. NO. 54640

SHEET NUMBER S-0.3

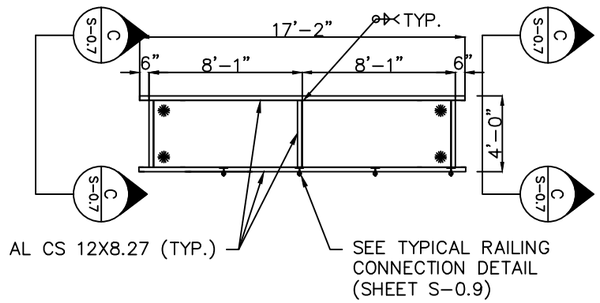
FILE: 231902342E2

● INDICATES LOCATION OF PLATFORM LEGS BELOW OUTER BEAM



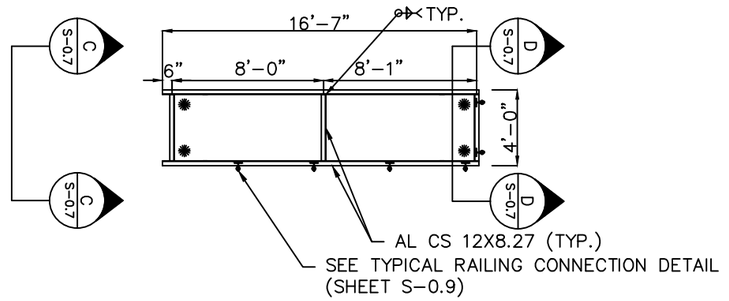
1 / S-0.4 FRAMING PLAN
SCALE: 1/8" = 1'-0"

NOTE: GRATING NOT SHOWN FOR CLARITY



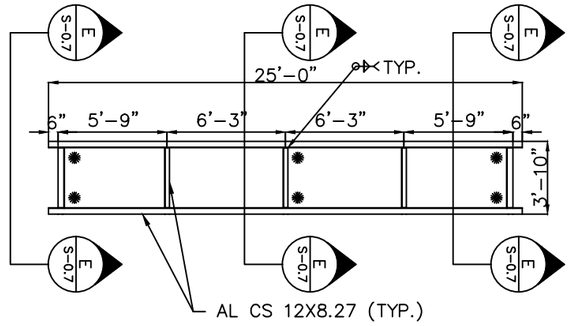
2 / S-0.4 TYPICAL KR-NS FRAME DETAIL
SCALE: 1/8" = 1'-0"

NOTE: NORTHERN FRAME SHOWN. SEE SHEET S–0.5 FOR SOUTHERN FRAME.



3 / S-0.4 TYPICAL KR-EW FRAME DETAIL
SCALE: 1/8" = 1'-0"

NOTE: ADJACENT KR–EW FRAME WILL BE A MIRRORED ORIENTATION OF THE FRAME SHOWN ABOVE



4 / S-0.4 TYPICAL KR-C FRAME DETAIL
SCALE: 1/8" = 1'-0"

NOTE: CONTRACTOR TO VERIFY PLATFORM FRAME DIMENSIONS WITH THE APPROVED GENERATORS AND SUB BASE FUEL TANKS PRIOR TO FABRICATION TO CONFIRM THERE ARE NO CONFLICTS. CONTRACTOR IS RESPONSIBLE TO MAKE ALL NECESSARY PLATFORM REVISIONS IN ORDER TO ALLOW ACCESS TO ALL CRITICAL ITEMS DURING THE SHOP DRAWING PROCESS. CONTRACTOR TO SUBMIT REVISIONS TO EOR FOR APPROVAL PRIOR TO FABRICATION.

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SCALE: NOT TO SCALE

City of Tampa Wastewater Department

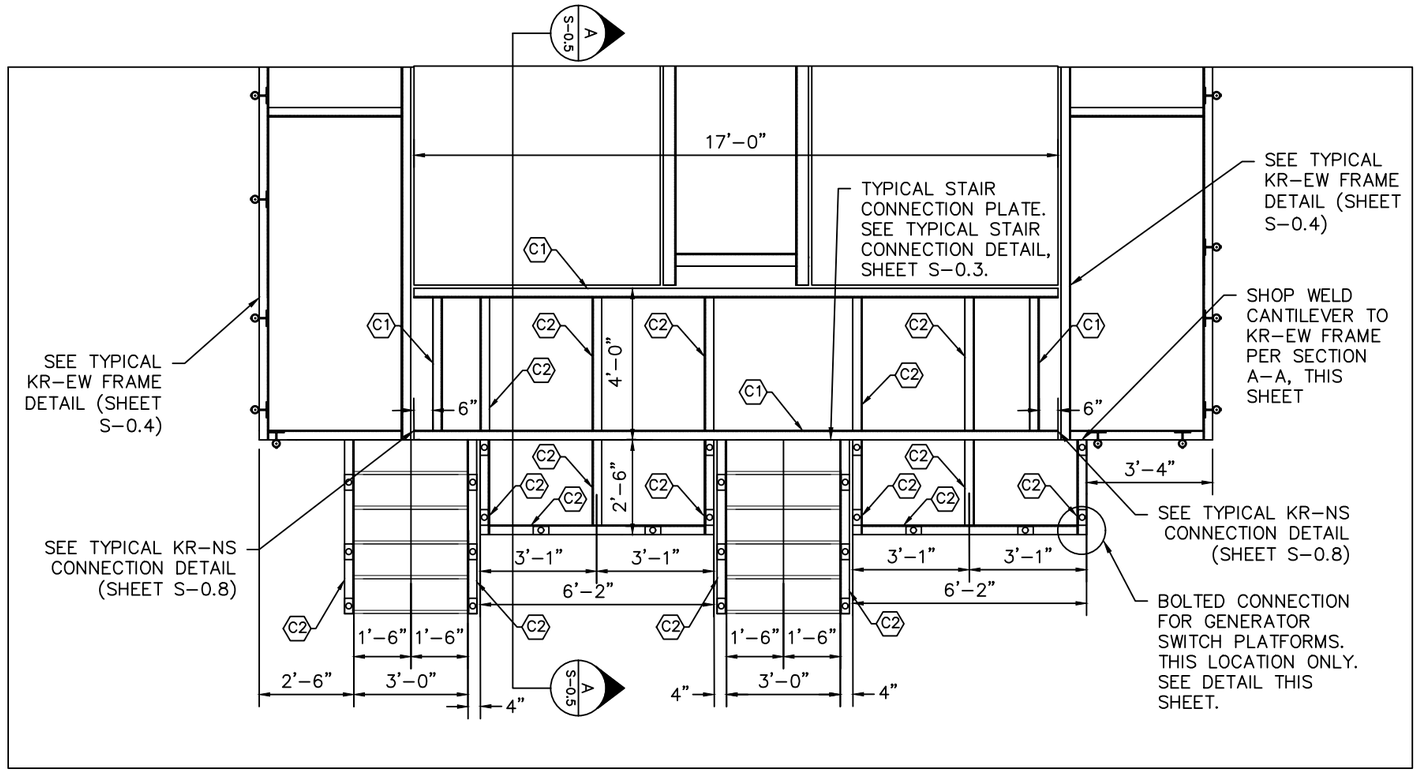
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN FRAME DETAILS

SETH E. SCHMID, P.E. NO. 54640

SHEET NUMBER S-0.4

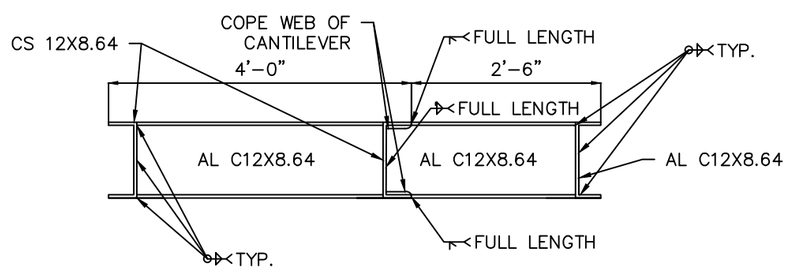
FILE: 231902342E2



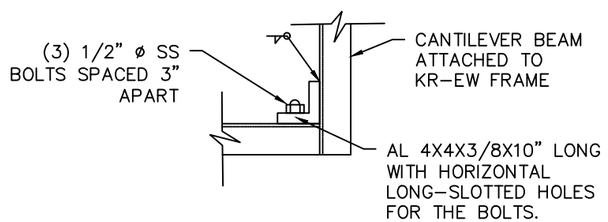
1 / S-0.5 KR-NS FRAME DETAIL (SOUTH END)
SCALE: 1/4" = 1'-0"

NOTE: GRATING, RAILING, AND FOUNDATIONS NOT SHOWN FOR CLARITY

BEAM TYPES: (C1) AL CS 12X8.27
(C2) AL C 12X8.64



2 / S-0.5 SECTION A-A
SCALE: 1/2" = 1'-0"



3 / S-0.5 BOLTED CONNECTION NEAR KR-EW FRAME
SCALE: NTS

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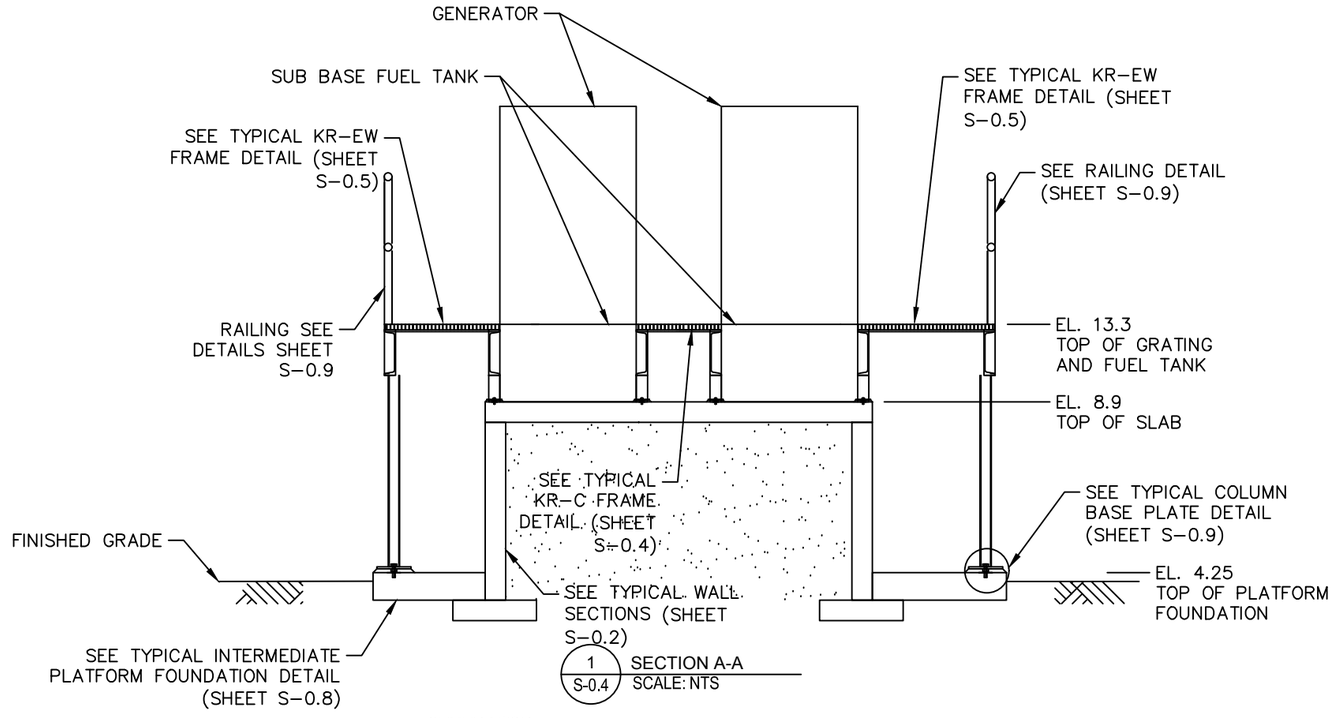
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN FRAME DETAILS

SETH E. SCHMID, P.E. NO. 54640

SHEET NUMBER S-0.5

FILE: 231902342E2



NOTE: ATTACH SUB BASE FUEL TANKS TO SLAB PER MANUFACTURERS INSTRUCTIONS

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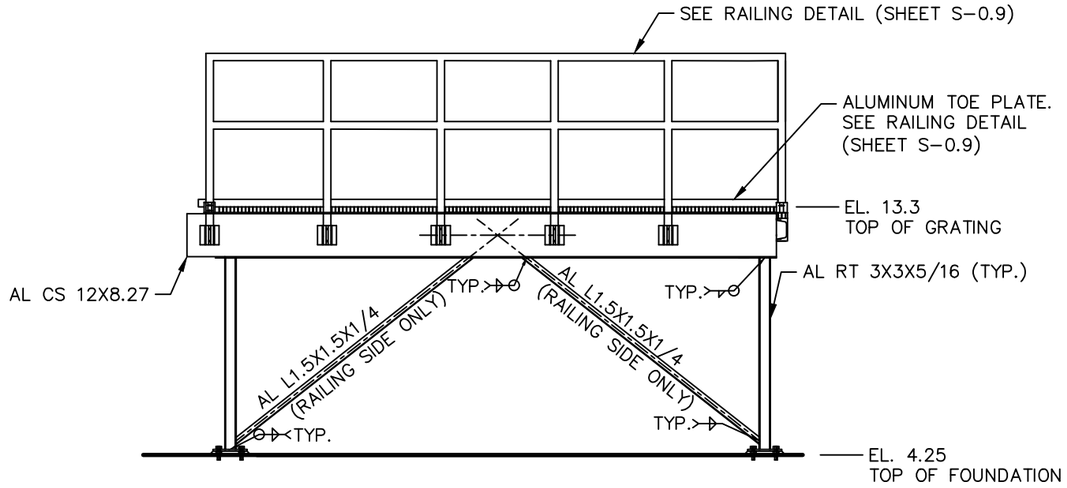
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN CROSS SECTIONS

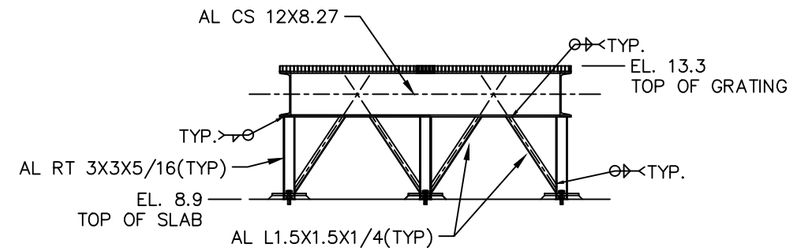
SETH E. SCHMID, P.E. NO. 54640

SHEET NUMBER S-0.6

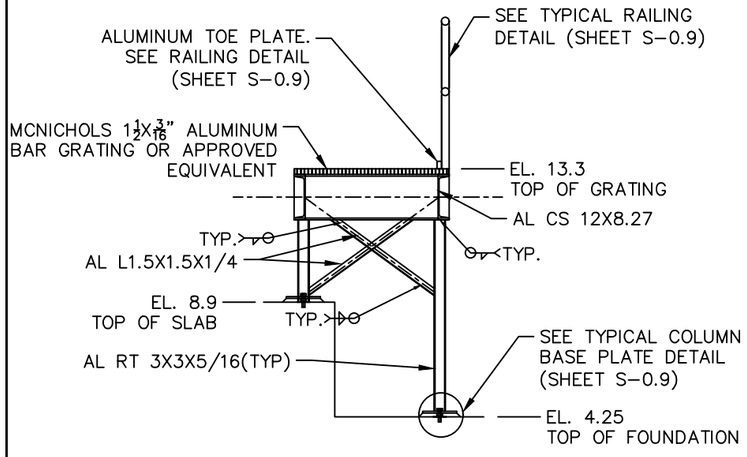
FILE: 231902342E2



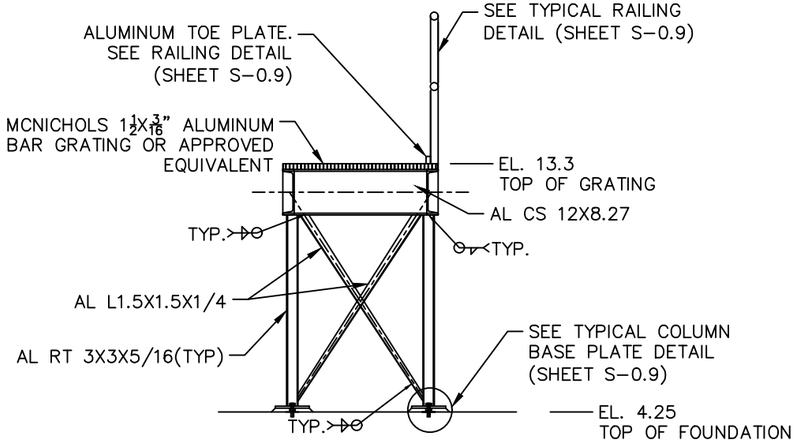
1 S-0.7 KR-EW ELEVATION (KR-NS ELEVATION SIMILAR)
SCALE: NTS



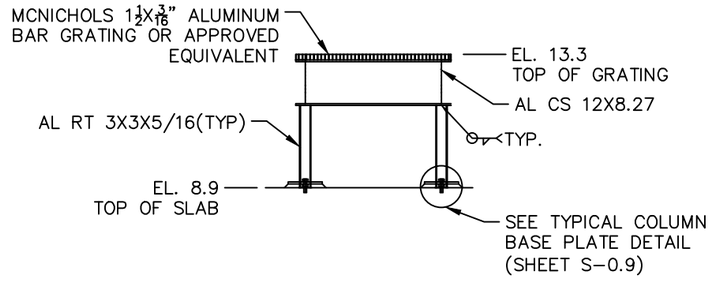
2 S-0.7 KR-C ELEVATION
SCALE: NTS



3 S-0.4 SECTION C-C
SCALE: NTS



4 S-0.4 SECTION D-D - KR-EW SECTION
SCALE: NTS



5 S-0.4 SECTION E-E - KR-C SECTION
SCALE: NTS

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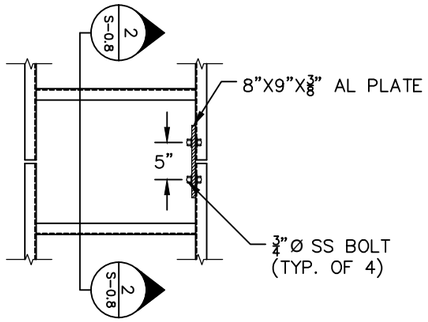
City of Tampa Wastewater Department
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN CROSS SECTIONS

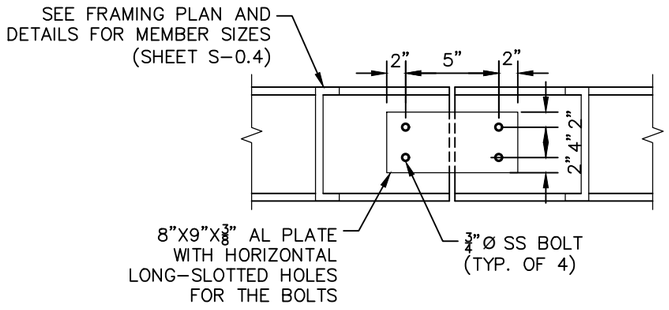
SETH E. SCHMID, P.E. NO. 54640

SHEET NUMBER
S-0.7
FILE: 231902342E2

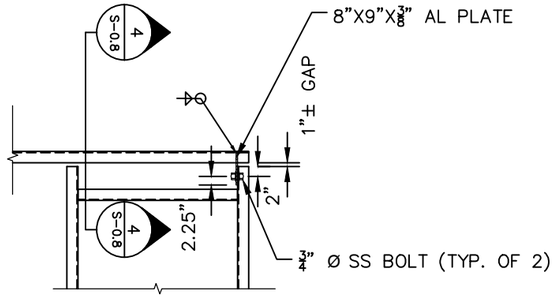


1 S-0.8 TYPICAL KR-EW CONNECTION DETAIL
SCALE: NTS

NOTES: GRATING AND RAILING NOT SHOWN FOR CLARITY

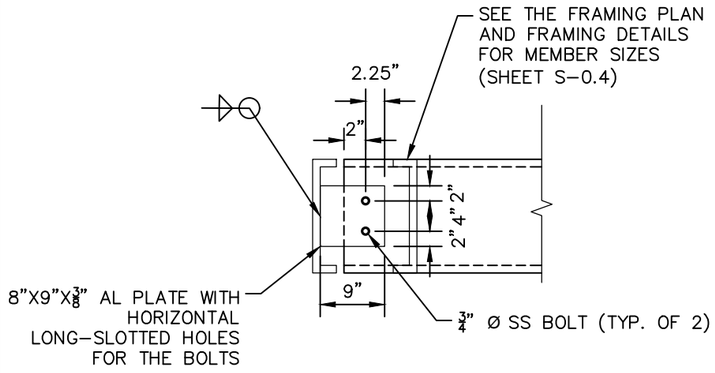


2 S-0.8 TYPICAL KR-EW SECTION
SCALE: NTS

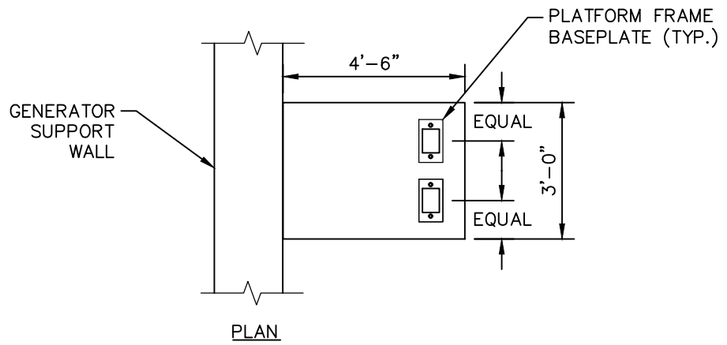


3 S-0.8 TYPICAL KR-NS CONNECTION DETAIL
SCALE: NTS

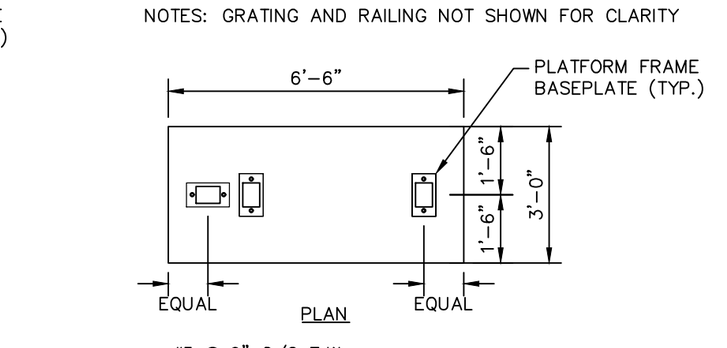
NOTES: GRATING AND RAILING NOT SHOWN FOR CLARITY



4 S-0.8 TYPICAL KR-NS SECTION
SCALE: NTS



5 S-0.8 TYPICAL INTERMEDIATE PLATFORM FOUNDATION DETAIL
SCALE: NTS



6 S-0.8 TYPICAL CORNER PLATFORM FOUNDATION DETAIL
SCALE: NTS

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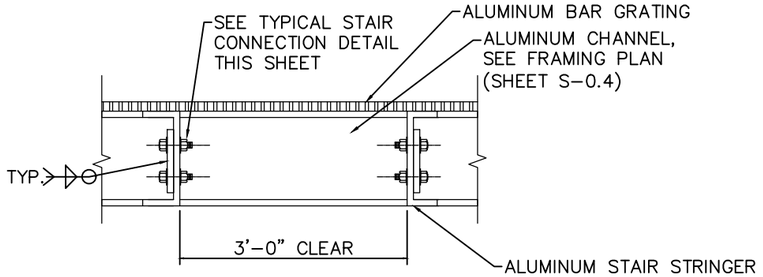
City of Tampa Wastewater Department
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN TYPICAL WALKWAY DETAILS

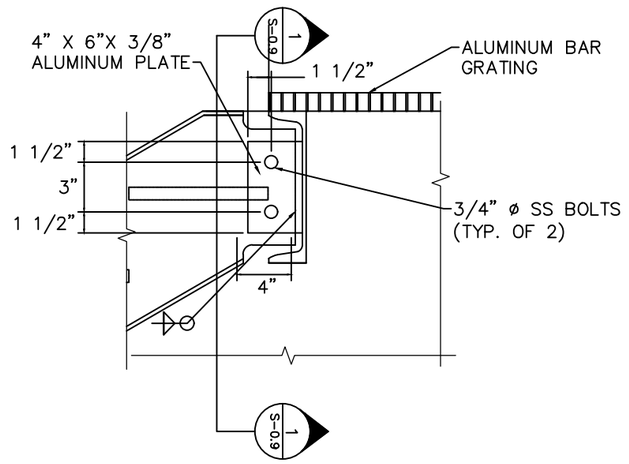
SETH E. SCHMID, P.E. NO. 54640

SHEET NUMBER
S-0.8
FILE: 231902342E2



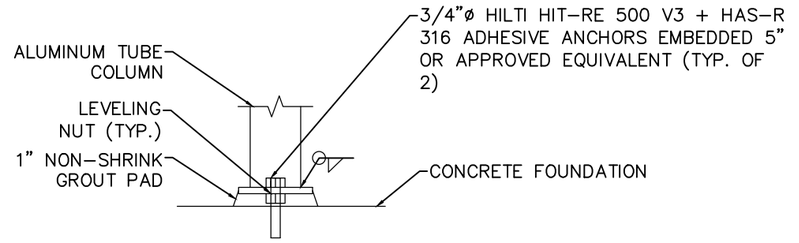
NOTE: STAIR TREAD AND RAILING NOT SHOWN FOR CLARITY

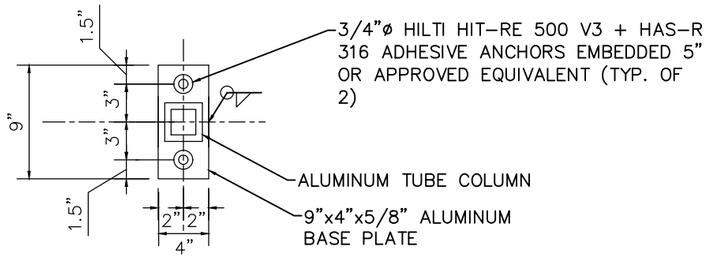
1 / S-0.9 TYPICAL STAIR CROSS SECTION
SCALE: NTS



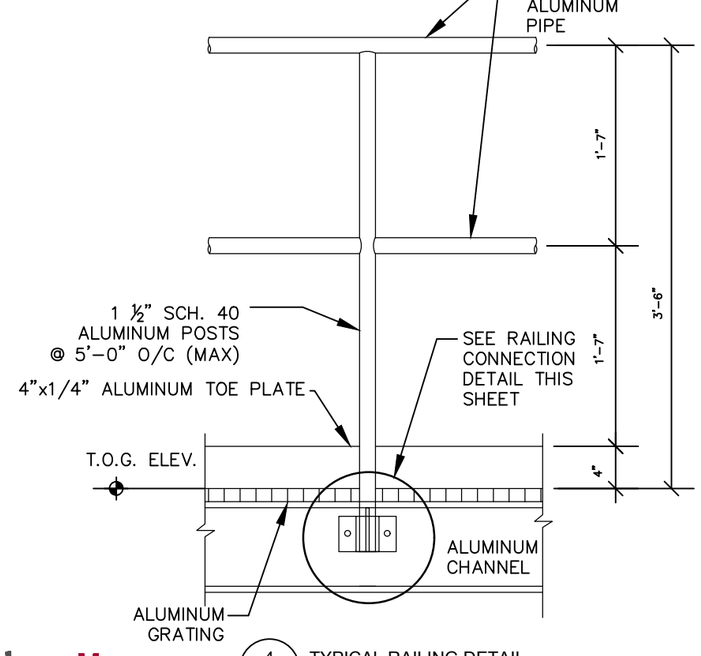
NOTES:
RAILING NOT SHOWN FOR CLARITY

2 / S-0.9 TYPICAL STAIR CONNECTION DETAIL
SCALE: NTS

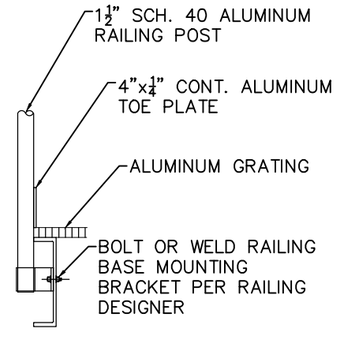




3 / S-0.9 TYPICAL COLUMN BASE DETAIL
SCALE: NTS



4 / S-0.9 TYPICAL RAILING DETAIL
SCALE: NTS



5 / S-0.9 RAILING CONNECTION DETAIL
SCALE: NTS

DESIGN SPECIFICATIONS FOR FACTORY-INDUSTRIAL RAILING APPLICATIONS

1. RAILING SHALL BE DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE FLORIDA BUILDING CODE.
2. THE MANUFACTURER SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY A FLORIDA REGISTERED PROFESSIONAL ENGINEER FOR REVIEW.
3. POST SPACING SHALL BE A MAXIMUM OF 5'-0". POSTS AND RAILINGS SHALL BE A MINIMUM OF 1 ½" SCH. 40 ALUMINUM PIPE, ALLOY 6063-T6, ASTM-B-429 OR ASTM-B-221. THE RAILING MANUFACTURER SHALL SHOW THAT THEIR POSTS ARE OF ADEQUATE STRENGTH TO MEET THE LOADING REQUIREMENTS. IF THE MANUFACTURER'S POSTS ARE NOT OF ADEQUATE STRENGTH, THE MANUFACTURER MAY REDUCE POST SPACING, OR ADD REINFORCING DOWEL, OR DO BOTH TO MEET LOADING REQUIREMENTS.
4. THE RAILING SHALL BE MADE OF PIPES JOINED TOGETHER WITH COMPONENT FITTINGS. COMPONENTS THAT ARE GLUED AT THE JOINTS WILL NOT BE ACCEPTABLE. ALL COMPONENTS MUST BE MECHANICALLY FASTENED WITH STAINLESS STEEL HARDWARE.
5. POSTS SHALL NOT INTERRUPT CONTINUATION OF THE TOP RAIL AT ANY POINT ALONG THE RAILING, INCLUDING CORNERS AND END TERMINATIONS (OSHA 191023). THE TOP SURFACE OF THE TOP RAILING SHALL BE SMOOTH AND UNINTERRUPTED BY PROJECTING FITTINGS.
6. THE MIDRAIL AT A CORNER RETURN SHALL BE ABLE TO WITHSTAND A 200 LB. LOAD WITHOUT LOOSENING. THE MANUFACTURER IS TO DETERMINE THIS DIMENSION FOR THEIR SYSTEM. PROVIDE PHYSICAL TEST RESULTS FROM A LABORATORY TO CONFIRM COMPLIANCE.
7. TOE PLATE SHALL CONFORM TO OSHA STANDARDS. TOE PLATE SHALL BE A MINIMUM OF 4" HIGH AND SHALL BE AN EXTRUSION THAT ATTACHES TO THE POSTS TO ALLOW FOR EXPANSION AND CONTRACTION BETWEEN POSTS. TOE PLATES SHALL BE SET ¼" ABOVE THE WALKING SURFACE. TOE PLATES SHALL BE PROVIDED ON RAILING AS REQUIRED BY OSHA AND/OR AS SHOWN ON DRAWINGS.
8. FIELD WELDING OF THE ALUMINUM RAILING IS NOT ALLOWED.

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SCALE: NOT TO SCALE

City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

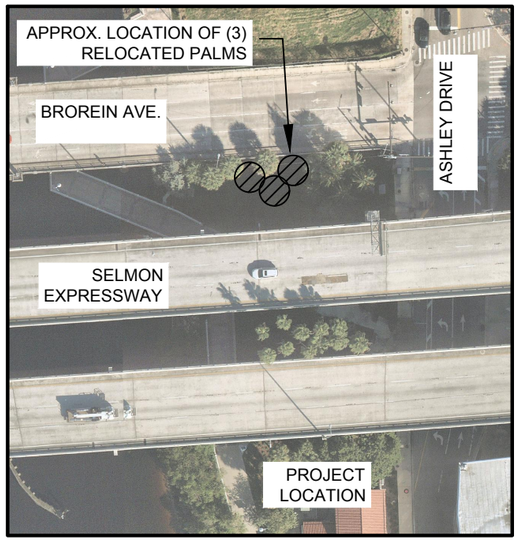
KRAUSE GENERATOR DESIGN STAIR AND RAILING DETAILS

SETH E. SCHMID, P.E. NO. 54640

SHEET NUMBER S-0.9

FILE: 231902342E2

EXHIBIT A



RELOCATION NOTES:

1. CONTRACTOR TO FLAG PROPOSED LOCATIONS OF RELOCATED SABAL PALMS. LOCATIONS SHALL BE APPROVED BY CITY OF TAMPA AND PROJECT LANDSCAPE ARCHITECT PRIOR TO PLANTING.
2. CONTRACTOR TO IDENTIFY UNDERGROUND UTILITIES PRIOR TO PLANTING. PLANTING SHALL BE ADJUSTED TO MAINTAIN 5' MINIMUM DISTANCE FROM EXISTING UTILITIES.
3. REFER TO DETAIL 1, SHEET L-0.4 FOR PALM PLANTING DETAIL AND TRANSPLANTING NOTES.

CONTRACTOR TO REPLACE ANY DISTURBED AREAS WITH JASMINE GROUNCOVER TO MATCH EXISTING CONDITIONS.

ASHLEY DRIVE

TM 128

CA 3

MC 51

TREE PROTECTION FENCING (TYP.)

EXISTING FERN COLUMN LOCATIONS TO REMAIN. CONTRACTOR TO PROTECT EXISTING COLUMNS AND FERNS PRIOR TO CONSTRUCTION

NE 36

PM 34

EX. 36" STORM

TREE PROTECTION FENCING (TYP.)

EXISTING PALM TO REMAIN (TYP.)

EX. 36" VCP GRAVITY SEWER

ZP 4

TAMPA RIVERWALK

EX. 60" T-LOCK LINED GRAVITY SEWER

TM 45

MIN 8 FT OFFSET FROM EXPRESSWAY COLUMN

EX. 24" CMP STORM

EXISTING BENCH TO REMAIN

EXISTING SIGN TO REMAIN

NORTH

GRAPHIC SCALE IN FEET
0 5 10 20

NOTES:

1. THE (3) SABAL PALMS PROPOSED TO BE RELOCATED, AS SHOWN ON THE DEMOLITION PLAN WILL BE PLANTED ON THE SOUTH SIDE OF THE WALL NEAR BROREIN AVENUE. REFER TO EXHIBIT A, ON THIS SHEET FOR APPROXIMATE LOCATION AS DIRECTED BY THE CITY OF TAMPA.
2. REFER TO L-0.2 FOR LANDSCAPE SCHEDULE.
3. REFER TO L-0.4 & L-0.5 FOR LANDSCAPE NOTES.

CALL 2 WORKING DAYS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
811 Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN LANDSCAPE PLAN

JENNIFER L. DAOULAS, PLA NO. 6667369

SHEET NUMBER: L-0.1

FILE: 231902342E2

PLANT SCHEDULE

SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONT	HEIGHT	SPREAD	SPACING	NATIVE
	CA	3	CRINUM ASIATICUM	SPIDER LILY	7 GAL	POT	30 IN MIN	30 IN MIN	60 IN OC	YES
	NE	41	NEPHROLEPIS EXALTATA	BOSTON FERN	3 GAL	POT	12 IN MIN	36 IN MIN	36 IN OC	NO
	PM	34	PODOCARPUS MACROPHYLLUS `MAKI`	MAKI SHRUBBY YEW PODOCARPUS	25 GAL	POT	8 FT MIN	36 IN MIN	36 IN OC	NO
	ZP	4	ZAMIA PUMILA	COONTIE CYCAD	15 GAL	POT	30 IN MIN	30 IN MIN	36 IN OC	YES

SHRUB AREAS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONT	HEIGHT	SPREAD	SPACING	NATIVE
	MC	52	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	3 GAL	POT	18 IN MIN	18 IN MIN	36 IN OC	YES

GROUND COVERS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONT	HEIGHT	SPREAD	SPACING	NATIVE
	TM	173	TRACHELOSPERMUM ASIATICUM `MINIMA`	MINIMA JASMINE	1 GAL MIN	POT	4 IN MIN	12 IN OC	18 IN OC	NO

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City of Tampa Wastewater Department

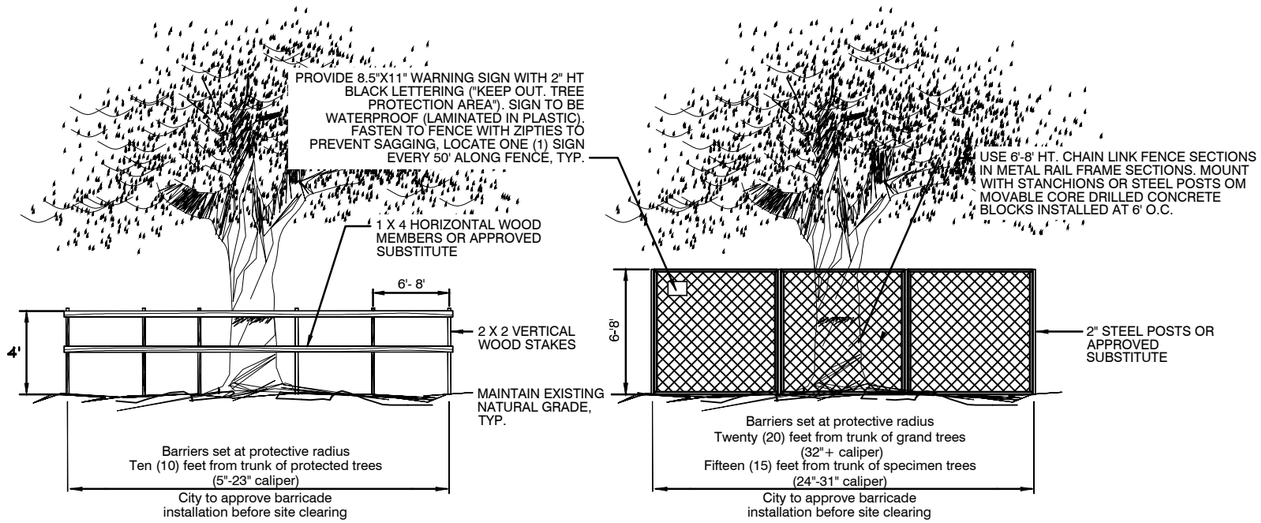
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN
LANDSCAPE SCHEDULE

JENNIFER L. DAOULAS, PLA NO. 6667369

SHEET NUMBER: L-0.2

FILE: 231902342E2



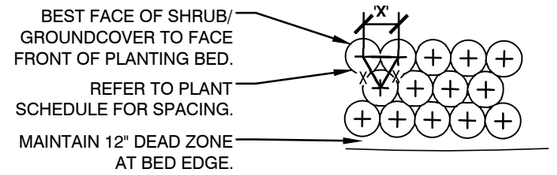
NOTE: ALL TREE PROTECTION SHALL BE IN ACCORDANCE WITH CITY OF TAMPA TREE AND LANDSCAPE TECHNICAL MANUAL (APRIL 18, 2019)

SPECIFIC CONDITIONS

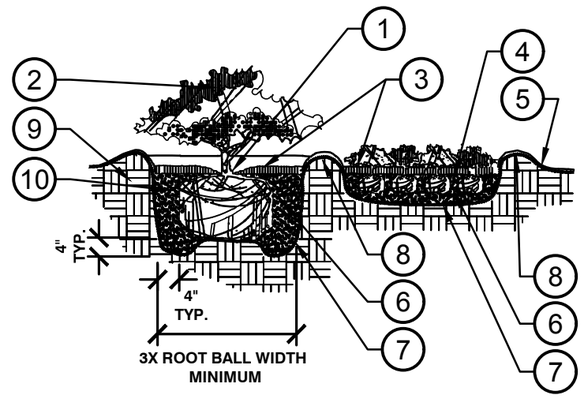
1. MINIMUM PROTECTION STANDARDS SHALL BE MET FOR ALL PROTECTED TREES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES ON-SITE, IN ACCORDANCE WITH THE ATTACHED TREE PROTECTION DETAILS AND NOTES.
2. NO CHANGES TO THE PREDEVELOPMENT CONDITIONS WITHIN THE APPROVED TREE PROTECTION ZONE DURING THE CONSTRUCTION PROCESS.
3. PROTECTION TREE BARRICADES MAY BE REMOVED ONLY TO PREPARE THE SITE FOR FINAL LANDSCAPE ACTIVITIES. DURING THIS ACTIVITY, ONLY NON-MECHANICAL TECHNIQUES MAY OCCUR WITHIN THE DESIGNATED TREE PROTECTIVE ROOT ZONE. NO ALTERNATION(S) OF ANY KIND SHALL BE MADE TO ANY PART OF THE TREE (ROOTS, TRUNK, CANOPY.CROWN) OTHER THAN THOSE APPROVED BY THE NATURAL RESOURCES COMMITTEE OR DESIGNEE AS PART OF THE RELATED PERMIT.
4. NO PARKING OR STORAGE OF VEHICLES, EQUIPMENT, OR MATERIALS IS PERMITTED WITHIN THE MINIMUM PROTECTIVE AREA AT ANY TIME.
5. NO SITE CLEARING OR GRADING IS PERMITTED WITHIN THE MINIMUM PROTECTION ZONE, OTHER THAN THOSE CHANGES THAT ARE APPROVED BY THE NATURAL RESOURCES COORDINATOR OR DESIGNEE AS PART OF THE RELATED PERMIT.

1 / L-0.3 — TREE PROTECTION DETAIL (COT)

NTS — P-TPA-KRA-05



PLAN



SECTION

1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT.
3. 3" MULCH LAYER AS SPECIFIED.
4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER BED.
5. FINISHED GRADE (SEE GRADING PLAN).
6. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES) NOTE: WHEN GROUND-COVERS AND SHRUBS USED IN MASSES, ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
7. SCARIFY OF PLANTING PIT SIDES AND BOTTOM.
8. 4" HIGH BERM FIRMLY COMPACTED.
9. UNDISTURBED NATIVE SOIL.
10. FERTILIZER TABLETS (MAX 3" DEEP)

NOTES:

A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. WHEN SHRUBS ARE PRUNED IN MASSES, PRUNE ALL SHRUBS TO ACHIEVE UNIFORM MASS / HEIGHT.

C. ALL SHRUBS AND GROUNDCOVERS SHALL BE PLUMB VERTICALLY, UNLESS OTHERWISE DIRECTED BY OWNERS REPRESENTATIVE.

2 / L-0.3 — SHRUB/GROUNDCOVER PLANTING — NTS

SECTION / PLAN — P-TPA-KRA-03

CITY OF TAMPA TREE PROTECTION NOTES:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL TREES WITHIN THE VICINITY OF THE PROPOSED CONSTRUCTION IN ACCORDANCE WITH CHAPTER 27 OF THE CITY OF TAMPA CODE.
2. PRUNING OF BRANCHES IS NOT AUTHORIZED WITHOUT PRIOR APPROVAL FROM THE CITY OF TAMPA PLANNING AND DEVELOPMENT DEPARTMENT, NATURAL RESOURCE SECTION, AND SHALL BE COMPLETED BY A CERTIFIED ARBORIST.
3. EXCAVATION WITHIN THE PROTECTIVE RADIUS OF TREES (20' FOR A GRAND TREE (32" OR GREATER DBH) , 15' FOR A SPECIMEN TREE (24 "-31" DBH) AND 10' FROM A PROTECTED TREE (5"- 23" DBH, OR ANY MITIGATION TREE) WILL REQUIRE ROOT PRUNING BY AN ARBORIST WITH THE APPROPRIATE EQUIPMENT TO ASSURE ROOTS ARE SEVERED CLEAN AT THE APPROVED RADIUS. NO ROOTS LARGER THAN 2" ARE TO BE SEVERED. IF ROOTS OVER 2" ARE ENCOUNTERED, NATURAL RESOURCES WILL BE CONSULTED. FOR QUESTIONS REGARDING THESE REQUIREMENTS, PLEASE CONTACT THE PLANNING AND DEVELOPMENT DEPARTMENT, NATURAL RESOURCE SECTION AT 274-3100 OR 1400 N. BOULEVARD, TAMPA, FLORIDA 33607.
4. BARRICADES SHALL BE PLACED AT DESIGNATED PROTECTIVE ROOT ZONE. BARRICADES SHALL BE CHAIN LINK (IN STANCHIONS).

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City of Tampa Wastewater Department

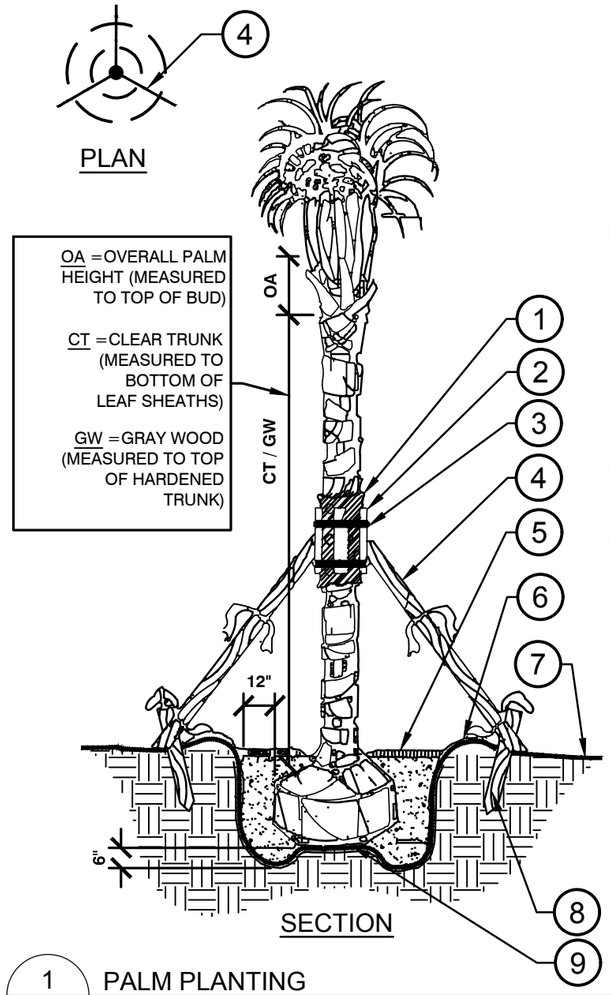
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN
LANDSCAPE DETAILS

JENNIFER L. DAOULAS, PLA NO. 6667369

SHEET NUMBER: L-0.3

FILE: 231902342E2



1. 5 LAYERS OF BURLAP TO PROTECT TRUNK.
2. FIVE 2" X 4" X 18" WOOD BATTENS.
3. SECURE BATTENS WITH 2- 3/4" CARBON STEEL BANDS TO HOLD BATTENS IN PLACE. NO NAILS SHALL BE DRIVEN INTO PALM. HEIGHT OF BATTENS SHALL BE LOCATED IN RELATION TO THE HEIGHT OF THE PALM FOR ADEQUATE BRACING.
4. (3) 2"X4"X8' SUPPORTS. NAIL (DRILL AN NAIL IF NECESSARY) TO BATTENS AND 2" 4" STAKES. STAIN DARK BROWN.
5. 3" SPECIFIED MULCH
6. BERM SOIL TO HOLD WATER.
7. FINISH GRADE
8. 2X4X24" (MIN) P.T. WOOD STAKES (TYP.) NAIL TO SUPPORT POLES.
9. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES).

NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. ALL TREE STAKING IS TO BE WITHIN MULCH BED AREA OUTSIDE TREE PIT.

C. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION - REFER TO POOR DRAINAGE CONDITION DETAIL.

1 SHEET — PALM PLANTING — SECTION / PLAN — NTS — KHA-LP-DET-11

PALM RELOCATION NOTE:

HURRICANE CUT EXISTING PALM AND REMOVE WITH A 60" MIN SPADE. RELOCATE PALM TO NEW PLANTING LOCATION. PALM LOCATION WILL BE MARKED IN THE FIELD BY LANDSCAPE ARCHITECT & CITY ARBORIST PRIOR TO REMOVAL. PALM SHALL RECEIVE AERIAL SPRAY IRRIGATION UNTIL ESTABLISHED AND PALM FROND ARE REGENERATED.

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN LANDSCAPE DETAILS

JENNIFER L. DAOULAS, PLA NO. 6667369

SHEET NUMBER: L-0.4

FILE: 231902342E2

LANDSCAPE SPECIFICATIONS

1. SCOPE OF WORK

1.1. THE WORK CONSISTS OF: FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT AS SHOWN ON THESE PLANS.

1.2. WORK SHALL INCLUDE MAINTENANCE AND WATERING AND WEED CONTROL OF ALL CONTRACT PLANTING AREAS UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER FOR 90 DAYS POST CONSTRUCTION.

1.3. WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS.

2. PROTECTION OF EXISTING AND PROPOSED SITE ELEMENTS

2.1. PROTECT ALL EXISTING SITE ITEMS, ALREADY COMPLETED OR ESTABLISHED AND DESIGNATED TO REMAIN FROM DAMAGE BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. ALL DAMAGE RESULTING FROM THE CONTRACTOR'S WORK SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER, AT NO COST TO THE OWNER.

2.2. MAINTAIN ALL NECESSARY BMP DEVICES THROUGHOUT THE DURATION OF ALL CONSTRUCTION ACTIVITIES.

2.3. WHERE APPLICABLE, SUBMIT A DETAILED PROJECT SPECIFIC WORK ZONE TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE APPROPRIATE REGULATORY AGENCY STANDARDS UNLESS THE WORK REQUIRES NOTHING MORE THAN A DIRECT APPLICATION OF FDOT STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION, INDEX 102-600.

2.4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE, PRIOR TO CONSTRUCTION ACTIVITIES. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UTILITIES IS APPROXIMATE. THE OWNER AND DESIGN PROFESSIONAL SHALL NOT BE RESPONSIBLE FOR THE ACCURACY AND COMPLETENESS OF ANY SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR; REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA; LOCATING ALL UTILITIES PRIOR TO CONSTRUCTION; THE SAFETY AND PROTECTION THEREOF; REPAIRING ANY DAMAGE RESULTING FROM THE WORK. THE COST OF ALL WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE. THE CONTRACTOR SHALL NOTIFY ANY AFFECTED UTILITY COMPANIES OR AGENCIES IN WRITING AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING WHEN ANY CONFLICT BETWEEN UTILITIES AND THESE PLANS EXIST PRIOR TO PLANTING.

2.5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGE TO PLANT MATERIAL EXISTING OR OTHERWISE. THIS SHALL INCLUDE COMPACTION AND SPILLING OF ANY DELETERIOUS MATERIALS WITHIN THE DRIP-LINE OF EXISTING TREES TO REMAIN. PLANT MATERIAL KILLED OR DAMAGED THAT IS MISSHAPEN AND/OR UNSIGHTLY SHALL BE REPLACED WITH LIKE SIZE AND KIND TO THE SATISFACTION OF THE OWNER OR REGULATORY AGENCY AT THE COST TO THE CONTRACTOR.

2.6. SEE TREE MITIGATION PLAN AND NOTES, IF APPLICABLE.

3. SUBMITTALS

3.1. SUBMIT MATERIAL SAMPLES LISTED BELOW FOR APPROVAL, ON SITE OR AS DETERMINED BY THE OWNER. UPON APPROVAL, DELIVERY OF MATERIALS MAY COMMENCE.

MATERIAL	SAMPLE SIZE
MULCH	ONE (1) GALLON PLASTIC BAG
SOIL MIXTURE	ONE (1) GALLON PLASTIC BAG
PLANTS	ONE (1) OF EACH VARIETY (OR TAGGED IN NURSERY)
STRUCTURAL SOIL	ONE (1) GALLON PLASTIC BAG
FERTILIZER	SAMPLE

3.2. SUBMIT TESTING RESULTS OF SOIL MIXTURE AS PER SECTION 6 BELOW.

4. PLANT MATERIALS

4.1. ALL PLANT MATERIAL SHALL CONFORM TO THE SPECIFICATIONS INDICATED ON THE DRAWINGS AND SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS, LATEST EDITION, PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. ALL PLANTS SHALL BE FLORIDA GRADE NO. 1 OR BETTER AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE OWNER OR OWNER'S REPRESENTATIVE. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN PERMISSION FROM THE LANDSCAPE ARCHITECT AND OWNER.

4.2. ALL TREE SPECIES INSTALLED SHALL BE MATCHED IN SIZE AND SHAPE UNLESS NOTED OTHERWISE.

4.3. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY TO THE SITE, DURING PROGRESS OF THE WORK AND/OR AFTER COMPLETION. REJECTED PLANTS SHALL BE REMOVED AND REPLACED IMMEDIATELY.

5. DIGGING AND HANDLING

5.1. PROTECT ROOTS OR ROOT BALLS OF PLANTS AT ALL TIMES FROM SUN, DRYING WINDS, WATER AND FREEZING, AS NECESSARY UNTIL PLANTING. NO PLANT MATERIAL SHALL BE HANDLED BY STEMS.

6. SOIL MIXTURE (PLANTING MEDIUM, PLANTING MIX, TOPSOIL MIX)

6.1. TEST EXISTING SOIL AND AMEND AS NECESSARY IN ACCORDANCE WITH THE GUIDELINES BELOW:

6.2. SOIL MIXTURE (PLANTING MEDIUM FOR PLANT PITS) SHALL CONSIST OF TWO PARTS OF TOPSOIL AND ONE PART SAND, AS DESCRIBED BELOW. SUBMIT SAMPLES AND PH TESTING RESULTS OF SOIL MIXTURE FOR OWNER'S REPRESENTATIVE APPROVAL PRIOR TO PLANT INSTALLATION OPERATIONS COMMENCE.

6.3. TOPSOIL FOR USE IN PREPARING SOIL MIXTURE FOR BACKFILLING PLANT PITS SHALL BE FERTILE, FRIABLE, AND OF A LOAMY CHARACTER; REASONABLY FREE OF SUBSOIL, CLAY LUMPS, BRUSH WEEDS AND OTHER LITTER; FREE OF ROOTS, STUMPS, STONES LARGER THAN 2" IN ANY DIRECTION, AND OTHER EXTRANEOUS OR TOXIC MATTER HARMFUL TO PLANT GROWTH. IT SHALL CONTAIN THREE (3) TO FIVE (5) PERCENT DECOMPOSED ORGANIC MATTER AND HAVE A PH BETWEEN 5.5 AND 7.0.

6.4. SAND SHALL BE COARSE, CLEAN, WELL-DRAINING, NATIVE SAND.

6.5. PLANT TREES IN THE EXISTING NATIVE SOIL ON SITE, UNLESS DETERMINED TO BE UNSUITABLE - AT WHICH POINT THE CONTRACTOR SHALL CONTACT OWNER'S REPRESENTATIVE TO DISCUSS ALTERNATE RECOMMENDATION PRIOR TO PLANTING.

6.6 COT STRUCTURAL SOIL: 35% $\frac{3}{4}$" AGGREGATE (NOT LIMESTONE), 35% COARSE BUILDER'S SAND, 20% ORGANIC TOPSOIL, 10% PINE FINES.

7. WATER

7.1. PROVIDE WATER NECESSARY FOR PLANTING ESTABLISHMENT AND MAINTENANCE. WATER SHALL BE OF SATISFACTORY QUALITY TO SUSTAIN ADEQUATE PLANT GROWTH AND SHALL NOT CONTAIN HARMFUL, NATURAL OR MAN-MADE ELEMENTS DETRIMENTAL TO PLANTS.

7.2. WATERING/IRRIGATION RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

8. FERTILIZER

8.1. PROVIDE FERTILIZER APPLICATION SCHEDULE TO OWNER, AS APPLICABLE TO SOIL TYPE, PLANT INSTALLATION TYPE, AND SITE'S PROPOSED USE. SUGGESTED FERTILIZER TYPES SHALL BE ORGANIC OR OTHERWISE NATURALLY-DERIVED IN THE FORM OF AGRIFORM TABLETS FOR SHRUBS AND TREES.

8.2. FERTILIZER RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

9. MULCH

9.1. MOISTEN MULCH MATERIAL AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT, AND APPLIED AT A MINIMUM DEPTH OF THREE (3) INCHES. CONTRACTOR SHALL CLEAR MULCH FROM WITHIN A SIX (6) INCH RADIUS AROUND TRUNK / STEM FLARE. MULCH SHALL BE MINI PINE BARK MULCH TO MATCH EXISTING ON SITE.

9.2. PROVIDE A THREE (3) INCH MINIMUM LAYER OF SPECIFIED MULCH OVER THE ENTIRE AREA OF EACH PLANTING BED AND TREE RING (SIX (6) FOOT DIAMETER MINIMUM).

10. CONTAINER GROWN STOCK

10.1. CONTAINER GROWN PLANTS SHALL HAVE BEEN GROWN IN IT'S CONTAINER SUFFICIENTLY LONG ENOUGH FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER.

10.2. INSUFFICIENT OR POORLY STRUCTURED ROOT SYSTEMS ARE NOT ACCEPTABLE AND WILL BE REJECTED.

10.3. ROOTS PLUS GROWER (RPG) PRODUCTS SHALL BE USED WHERE SPECIFIED.

11. MATERIALS LIST

11.1. ALL QUANTITIES ARE PROVIDED FOR CONVENIENCE ONLY. CONTRACTOR SHALL CONFIRM ALL QUANTITIES PER PLAN PRIOR TO BIDDING AND CONSTRUCTION.

12. FINE GRADING

12.1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINE GRADING WHICH CONSISTS OF FINAL FINISHED GRADING (INCLUDING ADDITIONAL SOIL MIXTURE AS NEEDED) FOR LAWN AND PLANTING AREAS THAT HAVE BEEN ROUGH GRADED BY OTHERS. FINISH GRADE SHALL ACCOUNT FOR THICKNESS OF SOD AND/OR MULCH DEPTH.

12.2. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED FOR POSITIVE DRAINAGE TO SURFACE/SUBSURFACE STORM DRAIN SYSTEMS. AREAS ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS. REFER TO CIVIL ENGINEER'S PLANS FOR FINAL GRADES, IF APPLICABLE.

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN
LANDSCAPE NOTES

JENNIFER L. DAOULAS, PLA NO. 6667369

SHEET NUMBER: L-0.5

FILE: 231902342E2

LANDSCAPE SPECIFICATIONS (CONT.)

13. PLANTING PROCEDURES

13.1. CLEAN WORK AND SURROUNDING AREAS OF ALL RUBBISH OR OBJECTIONABLE MATTER DAILY. REMOVE ALL MORTAR, CEMENT, AND TOXIC MATERIAL FROM THE SURFACE OF ALL PLANT BEDS. DO NOT MIX THESE MATERIALS WITH THE SOIL. SHOULD THE CONTRACTOR FIND SUCH SOIL CONDITIONS BENEATH THE SOIL WHICH WILL IN ANY WAY ADVERSELY AFFECT THE PLANT GROWTH, IMMEDIATELY CALL IT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.

13.2. LOCATE, MAINTAIN AND PROTECT ALL UTILITIES ABOVE AND BELOW GROUND. CALL SUNSHINE STATE ONE CALL OF FLORIDA, INC. (811) TO LOCATE UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

13.3. NOTIFY LANDSCAPE ARCHITECT IN WRITING IMMEDIATELY IF CONFLICT(S) EXIST WITH PROPOSED TREE LOCATIONS AND EXISTING OVERHEAD POWER LINES IN ACCORDANCE WITH SETBACK REQUIREMENTS OF FPL'S "RIGHT TREE, RIGHT PLACE" PROGRAM. CONSULT THE UNIVERSITY OF FLORIDA'S "TREES AND POWER LINE" WEBSITE FOR TREE SIZE CATEGORIES.

13.4. NOTIFY LANDSCAPE ARCHITECT IN WRITING IMMEDIATELY IF CONFLICT(S) EXIST WITH PROPOSED TREE LOCATIONS AND EXISTING / PROPOSED LIGHT POLES. TREES INSTALLED IN CONFLICT WITH LIGHT POLES ARE SUBJECT TO RELOCATION AT THE EXPENSE OF THE CONTRACTOR.

13.5. REMOVE ALL EXISTING AND IMPORTED DELETERIOUS MATERIAL AND SUB-BASE FROM ALL LANDSCAPE PLANTING AREAS TO A MINIMUM DEPTH OF 36" OR TO NATIVE SOIL. CONTRACTOR IS RESPONSIBLE TO BACKFILL THESE PLANTING AREAS TO ROUGH FINISHED GRADE AS NEEDED WITH CLEAN SOIL MIXTURE.

13.6. FURNISH NURSERY'S CERTIFICATE OF COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS. COMPLY WITH APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK.

13.7. EXCAVATE ALL PLANTING PITS IN ACCORDANCE WITH LANDSCAPE DETAILS PROVIDED. TEST ALL TREE PITS WITH WATER BEFORE PLANTING TO ASSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE. IF POOR DRAINAGE EXISTS, NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY IN WRITING. NO ALLOWANCE WILL BE MADE FOR LOST PLANTS DUE TO IMPROPER DRAINAGE. CONTRACTOR SHALL ENSURE ELIMINATION OF ALL AIR POCKETS AROUND ROOTS.

13.8. SET TREES AND SHRUBS STRAIGHT AT AN ELEVATION THAT, AFTER SETTLEMENT, THE PLANT CROWN WILL STAND ONE (1) TO TWO (2) INCHES ABOVE GRADE. EACH PLANT SHALL BE SET IN THE CENTER OF THE PIT. PLANTING SOIL MIXTURE SHALL BE BACK FILLED, THOROUGHLY TAMPED AROUND THE BALL, AND SETTLED BY WATER (AFTER TAMPING).

13.9. DO NOT COVER TOP OF BALL WITH SOIL MIXTURE. ALL BURLAP, ROPE, WIRES, BASKETS, ETC., SHALL BE REMOVED FROM UPPER ONE THIRD (1/3) OF ROOT BALLS.

13.10. ALL SUCKER GROWTH AND BROKEN OR BADLY DAMAGED BRANCHES SHALL BE REMOVED WITH A CLEAN CUT IN ACCORDANCE WITH ANSI A-300.

13.11. SHRUBS AND GROUND COVER PLANTS SHALL BE SPACED IN ACCORDANCE WITH THE DRAWINGS, LANDSCAPE DETAILS AND AS INDICATED ON THE PLANT LIST.

13.12. TREE GUYING AND BRACING SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE PLANS TO INSURE STABILITY AND MAINTAIN TREES IN A PLUMB AND UPRIGHT POSITION.

13.13. FAILURE TO FOLLOW THE ABOVE PLANTING PROCEDURE SHALL MAKE THE CORRECTIVE MEASURES THE RESPONSIBILITY OF THE CONTRACTOR.

14. LAWN SODDING

14.1. THE WORK CONSISTS OF LAWN BED PREPARATION, SOIL PREPARATION, AND SODDING NECESSARY TO PRODUCE A TURF GRASS LAWN ACCEPTABLE TO THE OWNER.

14.2. ALL AREAS THAT ARE TO BE SODDED SHALL BE CLEARED OF ANY ROUGH GRASS, WEEDS, AND DEBRIS TO A MINIMUM DEPTH OF THREE (3) INCHES. PROVIDE ONE (1) INCH OF TOPSOIL ACROSS ENTIRE LAWN BED AND MIX THROUGHLY INTO TOP FOUR (4) INCHES OF SOIL TO BRING THE GROUND TO AN EVEN GRADE. THE ENTIRE SURFACE SHALL BE ROLLED WITH A ROLLER WEIGHING NOT MORE THAN ONE-HUNDRED (100) POUNDS PER FOOT OF WIDTH. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT SHALL BE FILLED WITH ADDITIONAL TOPSOIL AND THE SURFACE SHALL BE REGRADED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH TO THE REQUIRED GRADE.

14.3. HAND RAKE LAWN BED UNTIL ALL BUMPS AND DEPRESSIONS ARE REMOVED. WET PREPARED AREA THOROUGHLY.

14.4. SOD ALL AREAS THAT ARE NOT PAVED OR PLANTED AS DESIGNATED ON THE DRAWINGS WITHIN THE CONTRACT LIMITS, UNLESS SPECIFICALLY NOTED OTHERWISE.

14.5. THE SOD SHALL BE CERTIFIED TO MEET FLORIDA STATE PLANT BOARD SPECIFICATIONS, ABSOLUTELY TRUE TO VARIETAL TYPE, AND FREE FROM WEEDS, FUNGUS, INSECTS AND DISEASE OF ANY KIND.

14.6. SOD PANELS SHALL BE LAID TIGHTLY TOGETHER SO AS TO MAKE A SOLID SODDED LAWN AREA. SOD SHALL BE LAID UNIFORMLY AGAINST THE EDGES OF ALL CURBS AND OTHER HARDSCAPE ELEMENTS, PAVED AND PLANTED AREAS.

14.7. IMMEDIATELY FOLLOWING SOD LAYING, ROLL LAWN AREAS WITH A LAWN ROLLER AND THEN THOROUGHLY IRRIGATED.

14.8. IF, IN THE OPINION OF THE OWNER, TOP-DRESSING IS NECESSARY AFTER ROLLING TO FILL THE VOIDS BETWEEN THE SOD PANELS AND TO EVEN OUT INCONSISTENCIES IN THE SOD, CLEAN SAND, AS APPROVED BY THE OWNER'S REPRESENTATIVE, SHALL BE UNIFORMLY SPREAD OVER THE ENTIRE SURFACE OF THE SOD AND THOROUGHLY WATERED IN. FERTILIZE INSTALLED SOD AS ALLOWED BY PROPERTY'S JURISDICTIONAL AUTHORITY.

14.9. DURING DELIVERY, PRIOR TO, AND DURING THE PLANTING OF THE LAWN AREAS, THE SOD PANELS SHALL AT ALL TIMES BE PROTECTED FROM EXCESSIVE DRYING AND UNNECESSARY EXPOSURE OF THE ROOTS TO THE SUN. ALL SOD SHALL BE STACKED SO AS NOT TO BE DAMAGED BY EXCESSIVE HEAT AND MOISTURE.

14.10. WITHIN THE CONTRACT LIMITS, PRODUCE AND MAINTAIN A DENSE, WELL ESTABLISHED LAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND RE-SODDING OF ALL ERODED, SUNKEN OR BARE SPOTS UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. REPAIRED SODDING SHALL BE ACCOMPLISHED AS IN THE ORIGINAL WORK (INCLUDING REGRADING IF NECESSARY).

15. CLEANUP

15.1. UPON COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, REMOVE ALL MATERIAL, EQUIPMENT, AND DEBRIS RESULTING FROM HIS WORK. ALL PAVED AREAS SHALL BE CLEANED AND THE SITE LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER'S REPRESENTATIVE.

16. PLANT MATERIAL MAINTENANCE

16.1. ALL PLANT MATERIAL SHALL BE MAINTAINED BY WATERING, CULTIVATING, WEEDING, SPRAYING, AND ALL OTHER OPERATIONS (SUCH AS RE-STAKING OR REPAIRING GUY SUPPORTS) AS NECESSARY TO INSURE HEALTHY AND VIGOROUS GROWING CONDITIONS BY THE CONTRACTOR UPON DELIVERING TO THE SITE AND UNTIL AND FOR 90 DAYS AFTER FINAL ACCEPTANCE OF WORK.

17. FINAL INSPECTION AND ACCEPTANCE OF WORK

17.1. ALL PLANT BEDS SHALL BE KEPT FREE OF NOXIOUS WEEDS UNTIL FINAL ACCEPTANCE OF WORK. PRIOR TO FINAL INSPECTION, TREAT ALL PLANTING BEDS WITH AN APPROVED PRE-EMERGENT HERBICIDE PER MANUFACTURER RECOMMENDATIONS. (AS ALLOWED BY JURISDICTIONAL AUTHORITY)

17.2. PROVIDE WATERING/IRRIGATION SCHEDULE FOR ALL PLANT MATERIAL TO OWNER. OBSERVE ALL APPLICABLE WATERING RESTRICTIONS AS SET FORTH BY THE PROPERTY'S JURISDICTIONAL AUTHORITY.

17.3. UPON COMPLETION OF ALL WORK, A FINAL INSPECTION SHALL BE PERFORMED BY THE OWNER AND/OR OWNER'S REPRESENTATIVE. ALL PLANTING, CONSTRUCTION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS CONTRACT SHALL BE INSPECTED FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. ANY ITEMS FOUND TO NOT BE IN COMPLIANCE SHALL BE CORRECTED AT THE COST OF THE CONTRACTOR.

17.4. CONTRACTOR IS REQUIRED TO SUBMIT TO THE CITY AS-BUILT PLANS SHOWING THE FINAL RESULT OF PLANTING AND IRRIGATION INSTALLATION.

18. WARRANTY

18.1. THE LIFE AND SATISFACTORY CONDITION OF ALL PLANT MATERIAL INSTALLED BY THE LANDSCAPE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A MINIMUM OF ONE (1) CALENDAR YEAR COMMENCING AT THE TIME OF CERTIFICATION AND ACCEPTANCE OF THE WORK BY THE OWNER AND/OR OWNER'S REPRESENTATIVE.

18.2. ANY PLANT NOT FOUND IN A HEALTHY GROWING CONDITION THROUGHOUT THE WARRANTY PERIOD SHALL BE REMOVED FROM THE SITE AND REPLACED AS SOON AS WEATHER CONDITIONS PERMIT. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE AS SPECIFIED IN THE PLANT LIST. THEY SHALL BE FURNISHED, PLANTED AND MULCHED AS SPECIFIED AT NO ADDITIONAL COST TO THE OWNER. ANY REPLACED PLANT MATERIAL SHALL BE SUBJECT TO A NEW ONE (1) YEAR WARRANTY.

18.3. IN THE EVENT THE OWNER DOES NOT CONTRACT WITH THE CONTRACTOR FOR LANDSCAPE AND IRRIGATION MAINTENANCE, THE CONTRACTOR SHOULD VISIT THE PROJECT SITE PERIODICALLY DURING THE ONE (1) YEAR WARRANTY PERIOD TO EVALUATE MAINTENANCE PROCEDURES BEING PERFORMED BY THE OWNER. CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF MAINTENANCE PROCEDURES OR CONDITIONS WHICH THREATEN VIGOROUS AND HEALTHY PLANT GROWTH.

19. ABBREVIATIONS

B&B -	BALLED AND BURLAPPED
BR -	BARE ROOT
CAL -	CALIPER
CT -	CLEAR TRUNK
DBH -	DIAMETER AT BREAST HEIGHT
FG -	FIELD GROWN
FTG -	FULL TO GROUND
GW -	GREY WOOD
HO -	HARDENED OFF
OA -	OVERALL HEIGHT
RPG -	ROOTS PLUS GROWER

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KRAUSE PUMPING STATION
STANDBY GENERATORS

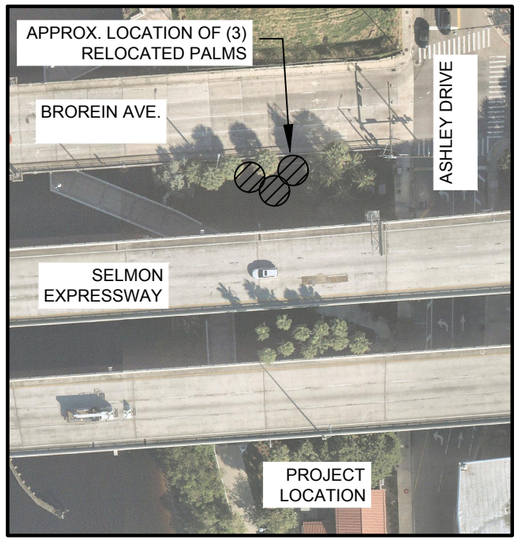
KRAUSE GENERATOR DESIGN
LANDSCAPE NOTES

JENNIFER L. DAOULAS, PLA NO. 6667369

SHEET NUMBER: L-0.6

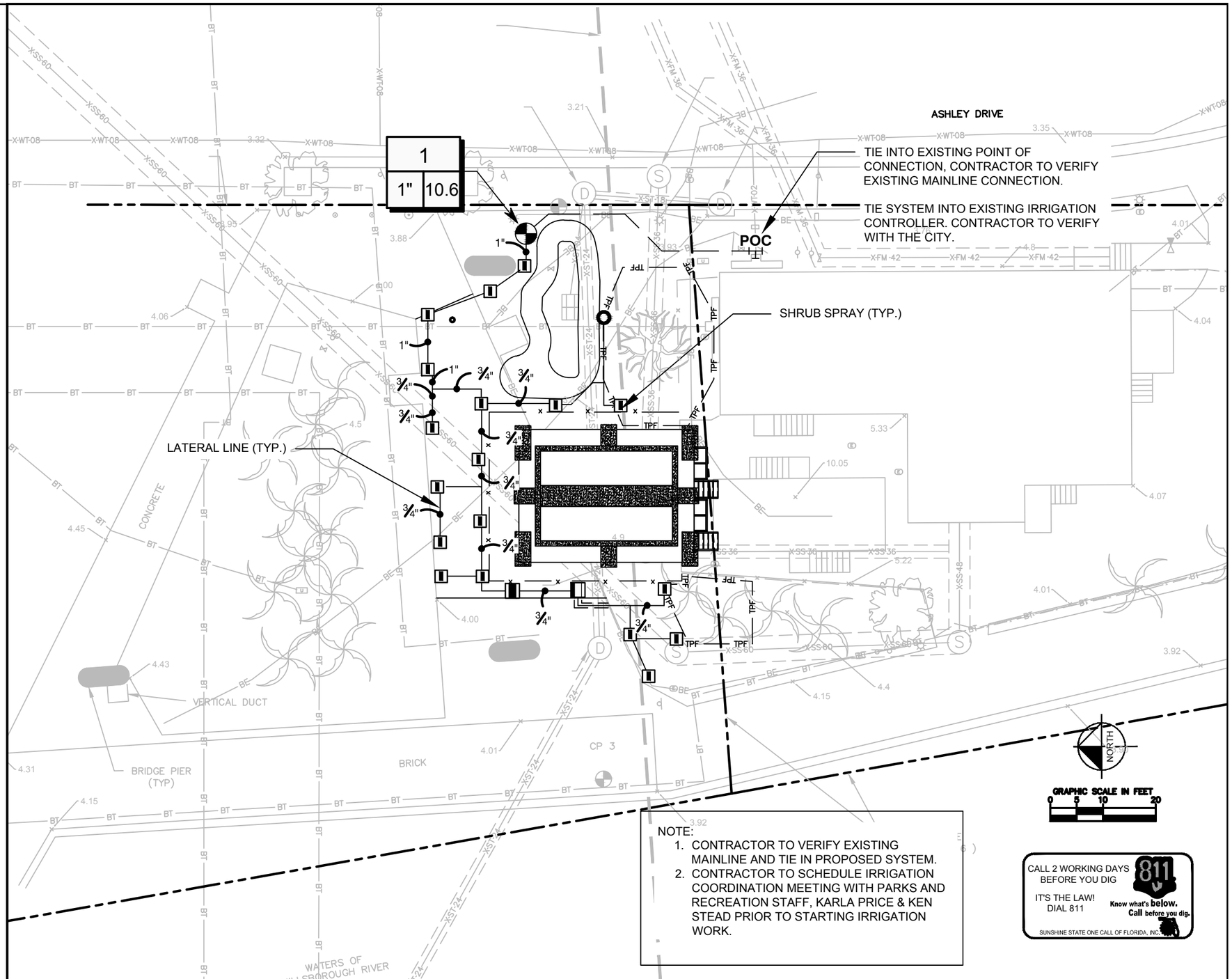
FILE: 231902342E2

EXHIBIT A



IRRIGATION NOTES:

1. IRRIGATION SHALL BE PROVIDED TO THE RELOCATED PALMS. PALMS WILL RECEIVE TWO BUBBLERS EACH AND TIE INTO THE EXISTING BUBBLER ZONE 12 SOUTH OF BROREIN. SYSTEM FLOW WILL BE ADJUSTED TO MEET ACCEPTABLE REQUIREMENTS.



NOTE:
1. CONTRACTOR TO VERIFY EXISTING MAINLINE AND TIE IN PROPOSED SYSTEM.
2. CONTRACTOR TO SCHEDULE IRRIGATION COORDINATION MEETING WITH PARKS AND RECREATION STAFF, KARLA PRICE & KEN STEAD PRIOR TO STARTING IRRIGATION WORK.

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN IRRIGATION PLAN

JENNIFER L. DAOULAS, PLA NO. 6667369

SHEET NUMBER: I-0.1

FILE: 231902342E2

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
R-VAN-LCS R-VAN-RCS R-VAN-SST	RAIN BIRD R-VAN-STRIP 1806-SAM-P45 TURF ROTARY, 5`X15` (LCS AND RCS), 5`X30` (SST) HAND ADJUSTABLE MULTI-STREAM ROTARY W/ 1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.	2	45
R-VAN14 R-VAN14-360	RAIN BIRD R-VAN14 1806-SAM-P45 TURF ROTARY, 8`-14` 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.	18	30
R-VAN18 R-VAN18-360	RAIN BIRD R-VAN18 1806-SAM-P45 TURF ROTARY, 13`-18` 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/1800 TURF SPRAY BODY ON 6.0" POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. 1/2" NPT FEMALE THREADED INLET.	1	45

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	IRRITROL 214B AND OMR-30 1" ELECTRIC REMOTE CONTROL VALVE, GLOBE/ANGLE CONFIGURATION, WITH OMNI-REG 5-30PSI REGULATOR	1
POC		1
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 3/4"	203.3 L.F.
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 1"	41.7 L.F.
	IRRIGATION MAINLINE: PVC SCHEDULE 40 1"	47.8 L.F.
	PIPE SLEEVE: PVC CLASS 200 SDR 21	6.6 L.F.

Valve Callout

CRITICAL ANALYSIS

Generated:	2021-01-22 12:32
P.O.C. NUMBER: 01	
Water Source Information:	
FLOW AVAILABLE	
Custom Max Flow:	0.00 gpm
Flow Available:	0.00 gpm
PRESSURE AVAILABLE	
Static Pressure at POC:	60.00 psi
Pressure Available:	60.00 psi
DESIGN ANALYSIS	
Maximum Station Flow:	10.57 gpm
Flow Available at POC:	0.00 gpm
Residual Flow Available:	-10.57 gpm
Critical Station:	1
Design Pressure:	30.00 psi
Friction Loss:	2.34 psi
Fittings Loss:	0.24 psi
Elevation Loss:	0.00 psi
Loss through Valve:	2.51 psi
Pressure Req. at Critical Station:	35.08 psi
Loss for Fittings:	0.14 psi
Loss for Main Line:	1.37 psi
Loss for POC to Valve Elevation:	0.00 psi
Loss for Backflow:	0.00 psi
Critical Station Pressure at POC:	36.59 psi
Pressure Available:	60.00 psi
Residual Pressure Available:	23.41 psi

VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC	PRECIP
1	IRRITROL 214B AND OMR-30	1"	TURF ROTARY	10.57	35.09	36.59	0.51 in/h

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN
IRRIGATION SCHEDULE

JENNIFER L. DACULAS, PLA NO. 6667369

SHEET NUMBER: I-0.2

FILE: 231902342E2

SECTION 32 84 23 : UNDERGROUND SPRINKLERS

PART 1: GENERAL

1.1 DESCRIPTION OF WORK

1.1.1 FURNISH ALL MATERIALS, EQUIPMENT AND LABOR AS NECESSARY FOR THE INSTALLATION OF AN IRRIGATION SYSTEM PER THE DRAWINGS AND SPECIFICATIONS. ALL WORK SHOULD MEET CITY OF TAMPA STANDARDS FOR MATERIALS AND WORKMANSHIP.

1.1.2 RELATED WORK:
SEE SECTION 32 93 00: PLANTS

1.2 RELATED DOCUMENTS:

1.2.1 DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL PROVISIONS, SUPPLEMENTARY GENERAL PROVISIONS, SPECIAL CONDITIONS, AND DIVISION – 1 SPECIFICATION SECTIONS APPLY TO WORK SPECIFIED IN THIS SECTION.

1.3 DESCRIPTION OF WORK:

1.3.1 LOCATION OF UNDERGROUND SPRINKLER SYSTEM IS SHOWN ON DRAWINGS IF PROVIDED.

1.3.2 DESIGN AND INSTALLATION OF SYSTEM INCLUDED IN THIS SECTION

1.4 QUALITY ASSURANCE:

1.4.1 WORKMANSHIP: ALL WORK SHALL BE INSTALLED BY LICENSED IRRIGATION CONTRACTOR USING SKILLED PERSONNEL, PROFICIENT IN THE TRADES REQUIRED, IN A NEAT, ORDERLY AND RESPONSIBLE MANNER WITH RECOGNIZED STANDARDS OF WORKMANSHIP. MATERIAL INSTALLATIONS ARE TO CONFORM TO MANUFACTURE SPECS. THE CONTRACTOR SHALL HAVE HAD CONSIDERABLE EXPERIENCE AND DEMONSTRATED ABILITY IN THE INSTALLATION OF SPRINKLER IRRIGATION SYSTEMS OF THIS TYPE.

1.5 SUBMITTALS:

1.5.1 PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL DATA FOR ALL MATERIALS AND INSTALLATION INSTRUCTIONS FOR UNDERGROUND SPRINKLER SYSTEM PRIOR TO STARTING WORK ON THE PROJECT SITE.

1.5.2 DRAWINGS: PROVIDE DESIGN DRAWINGS THAT WILL INCLUDE PLAN LAYOUT AND DETAILS ILLUSTRATING LOCATION AND TYPE OF HEADS, VALVES, PIPING CIRCUITS, CONTROLS AND ACCESSORIES. IF REQUESTED BY THE CITY, PROVIDE DESIGN CALCULATIONS DEMONSTRATING HOW SYSTEM COMPONENT SIZES WERE DERIVED.

1.5.2.1 FORMAT: THE IRRIGATION SYSTEM DESIGN PLANS SHALL BE DONE IN AUTOCAD TO SCALE. THESE PLANS SHALL BE PROVIDED TO THE CITY OF TAMPA PRIOR TO FINAL ACCEPTANCE OF THE PROJECT. PROVIDE CD CONTAINING AUTOCAD (DWG FILES) 2013 VERSION MINIMUM ALONG WITH THE REQUIREMENTS OF THE GENERAL PROVISIONS OF THE CONTRACT.

PART 2: PRODUCTS

2.1 MATERIALS:

2.1.1 BACKFLOW PREVENTER: PVB (PRESSURE VACUUM BREAKER) WITH BALL VALVES SIZED TO MATCH THE SYSTEM AND INSTALLED ON GALVANIZED RISERS.

2.1.2 IRRIGATION PIPE: ALL MAIN AND LATERAL LINES SHALL BE PVC PIPE ASTMD1785 1120 SCHEDULE 40. EXCEPTION WOULD BE GALVANIZED STEEL PIPE, WHEN SPECIFIED, AND IF EXPOSED PAINT WITH 2 COATS OF FOREST GREEN ENAMEL.

1. PIPE SIZE: INCREASED TO ALLOW EXPANSION OR NOZZLE SIZE CHANGE.

a. NO FLOW SHALL EXCEED 4' PER SECOND.

b. ALL LATERALS TO HEADS WILL BE 1" OR LARGER ON ROTORS AND ¾" OR LARGER ON POP-UPS, BUBBLERS AND QUICK COUPLERS

c. NOZZLE AND ZONE SIZE WILL BE CALCULATED TO PROVIDE MAXIMUM PRECIPITATION RATE TO REDUCE WATERING TIME BASED ON METER SIZE.

d. NO PIPE SMALLER THAN ¾".

2.1.3 SLEEVING: SLEEVING SHALL BE INSTALLED FOR ALL HARDSCAPE SURFACES INCLUDING, BUT NOT LIMITED TO, SIDEWALKS, COURTS, ETC. CONTRACTOR TO VERIFY SCHEDULE 40 OR HDPE. SLEEVE SIZE SHALL BE 2 TIMES IRRIGATION PIPE SIZE MINIMUM. FOR ALL SLEEVES CONTAINING LATERAL PIPE AND WIRING, ALL WIRE TO BE IN ITS OWN CONDUIT.

2.1.4 ADHESIVES:

2.1.4.1 ALL CONNECTIONS, 4" AND LESS, SHALL BE WELD-ON PC-68 OR PC-70 PURPLE PRIMER AND WELD-ON PVC 717 OR 727 CLEAR CEMENT.

2.1.5 PIPE FITTINGS:

2.1.5.1 ASTM D 2466 SOCKET FITTINGS SCHEDULE 40 SHALL BE USED FOR PVC PIPE. PUT PURPLE PRIMER FIRST, CEMENT AFTER.

2.1.5.2 ANSI B 16.3 GALVANIZED MALLEABLE IRON SCREWED FITTINGS SHALL BE USED FOR ALL GALVANIZED PIPE.

2.1.6 MANUAL VALVES: MANUFACTURED AS FOLLOWS: PVC SCHEDULE 40 BALL VALVES UNLESS OTHERWISE INDICATED.

2.1.7 QUICK COUPLING VALVE: STANDARD IS RAIN BIRD #3RC WITH MINIMUM LATERAL SIZE ¾". ATHLETIC FIELDS WITH WELLS ARE RAIN BIRD 44RC WITH MINIMUM LATERAL SIZE ½". ENSURE 2" OF CLEARANCE OF ALL VALVE HANDLES. (SEE "QUICK COUPLING VALVE DETAIL" FOR INSTALLATION.)

2.1.8 ELECTRIC VALVES: IRRITROL 200B SERIES ELECTRIC VALVE WITH FLOW CONTROL. AC OR DC DEPENDING UPON POWER SOURCE. IF DC IS SPECIFIED, A SEPARATE COMMON WIRE FOR EACH 6 ZONES MUST BE INSTALLED. MASTER VALVE TO BE USED WITH MORE THAN 2 ZONES OR IF MAIN LINE CROSSES A ROADWAY. NO PRESSURE REGULATOR ON VALVES. FOR RECLAIMED APPLICATIONS USE IRRITROL 100P WITH SCRUBBER KIT VALVE.

2.1.9 AUTOMATIC VALVE WIRING: 14 GAUGE DIRECT BURIAL WIRE, COLOR CODED AS FOLLOWS: RED FOR ZONES; BLUE FOR MASTER VALVE AND BLACK FOR EXTRAS. TWO BLACK EXTRA WIRES TO BE RUN TO THE FURTHEST VALVE FROM CONTROLLER IN EACH DIRECTION. WIRE SPLICES SHALL BE MADE AT A COMMON LOCATION, CONTAINED IN A VALVE BOX AND SPLICED USING GREASED FILLING KING WIRE NUTS. ALL WIRE TO BE BROUGHT WITHIN 6' OF TIMER LOCATION, INTO A JUNCTION BOX, AND PAIRED 18 GAUGE WIRE RUN INTO THE TIMER BOX WITH A 3' PIGTAIL. PROVIDE 12 GAUGE WHITE COMMON WIRE FOR ANY RUNS OVER 100'.

2.1.10 SPRINKLER HEADS: MANUFACTURER'S STANDARD UNIT DESIGNED TO PROVIDE UNIFORM COVERAGE OVER ENTIRE AREA OF SPRAY SHOWN ON DRAWINGS AT AVAILABLE WATER PRESSURE AND INSTALLED USING K-FLEX PIPE AND SCHEDULE 40 PVC CONNECTORS AS FOLLOWS:

2.1.10.1 RAIN BIRD BUBBLER: #1402 – 0.5 GPM ON K-FLEX PIPE (2 PER TREE).

2.1.10.2 RAIN BIRD POP-UP: 1800 SERIES SAM WITH NOZZLE TO MATCH APPLICATION (NO PRS).

2.1.10.3 HUNTER ROTOR: HUNTER I-20 OR I-25 (ATHLETIC FIELDS) WITH NOZZLE TO MATCH APPLICATION.

2.1.10.4 MICRO (MAXI-JET): TO BE MATCHED TO JOB AND USED ONLY WITH PARKS AND RECREATION DEPARTMENT APPROVAL.

2.1.11 VALVE BOX: PROVIDE PLASTIC VALVE BOX WITH COVER, SIZE AS NEEDED, OR AS SPECIFIED ON DRAWINGS. PLACE LEVEL ON BRICK OR STONE BLACKS. OPEN SIDE OF THE VALVE BOX TO BE WRAPPED IN GROUND CLOTH. TOP OF VALVE BOX INSTALLED FLUSHED WITH FINISHED GRADE. ANY VALVE PLACED IN CONCRETE MUST BE CONCRETE OR DOUBLE WALL CONCRETE RATED PLASTIC BOX.

2.1.12 COMPUTERIZED IRRIGATION CONTROLLER: COMPUTERIZED IRRIGATION CONTROLLER AND CABINET SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR. COORDINATION OF INSTALLATION OF THE CONTROLLER WITH THE CITY OF TAMPA IS REQUIRED BY THE CONTRACTOR.

2.1.13 COMPUTERIZED IRRIGATION EQUIPMENT: THE FOLLOWING IS PART OF THE COMPUTERIZED SYSTEM AND IS THE RESPONSIBILITY OF THE AWARDED CONTRACTOR.

2.1.13.1 COMPUTERIZED SYSTEMS SHALL UTILIZE A FLOW METER BY MASTER METER INC. MATCHED TO THE WATER METER SIZE, WITH A 1 OR 10 GALLON PULSE DEPENDING ON ZONE GPM.

2.1.13.2 WIRING FROM FLOW METER TO CONTROLLER MUST BE 14-2 MAXI-COM CABLE. NO SPLICES SHOULD BE MADE IN THE MAXI-COM CABLE. MAXI-COM TO BE RUN UNDER MAIN LINE OR IN CONDUIT.

2.1.13.3 POWER SOURCE AT TIMER SHOULD BE A/C. D/C (REQUIRES SPECIAL WIRING) USED ONLY IF ALL SOURCES OF A/C HAVE BEEN EXHAUSTED.

2.1.14 WATER SOURCE: TO BE COORDINATED WITH CITY OF TAMPA PRIOR TO DESIGN OF IRRIGATION SYSTEM. NEW WATER METERS SHALL BE REQUESTED AND PAID FOR BY THE CONTRACTOR. IF AVAILABLE, RECLAIMED WATER MUST BE USED FOR IRRIGATION. ANY SYSTEM THAT IS TO BE CONNECTED TO RECLAIMED WATER OR IS INDICATED TO HAVE RECLAIMED IN THE NEAR FUTURE SHALL HAVE ALL MATERIALS OF THE APPROPRIATE COLOR TO INDICATE THE USE OF RECLAIMED WATER. IF A WELL IS REQUIRED SEE CITY OF TAMPA WELL SPECS.

PART 3: EXECUTION

3.1 SYSTEM DESIGN:

3.1.1 SYSTEM DESIGN SHALL TAKE INTO ACCOUNT EXISTING PHYSICAL AND CULTURAL FEATURES AND ALL PROPOSED SITE IMPROVEMENTS TO AVOID CONFLICTS AND ENSURE AN EFFICIENT OPTIMAL SYSTEM.

3.1.2 DESIGN PRESSURES: VERIFY AVAILABLE WATER SOURCE AND PRESSURE PRIOR TO SYSTEM DESIGN. DESIGN SYSTEM THROUGHOUT TO BE COMPATIBLE WITH AVAILABLE WATER SOURCE. USE RECLAIMED WATER WHENEVER AVAILABLE. ATHLETIC FIELDS TO BE ON A WELL SYSTEM WHENEVER POSSIBLE.

3.1.3 LOCATION OF HEADS: DESIGN LOCATIONS IN ACCORDANCE WITH ACCEPTED SPRINKLER PRACTICE TO PROVIDE 100% HEAD TO HEAD COVERAGE. MAKE MINOR ADJUSTMENTS AS NECESSARY TO AVOID STRUCTURES AND OTHER OBSTRUCTIONS.

3.1.4 MINIMUM WATER COVERAGE:

3.1.4.1 100% OF ALL LANDSCAPE BEDS AND TURF AREAS.

3.1.4.2 LAYOUT MAY BE MODIFIED, IF NECESSARY TO OBTAIN COVERAGE, AND TO SUIT MANUFACTURER'S STANDARD HEADS. DO NOT DECREASE NUMBER OF HEADS INDICATED UNLESS OTHERWISE ACCEPTABLE TO CITY REPRESENTATIVE. ANY PROPOSED DECREASE MUST BE APPROVED BY THE CITY REPRESENTATIVE.

3.1.5 GROUP VALVES CLOSE TO WATER SOURCE IN 1 OR 2 LOCATIONS. PLANTING BEDS, TREES AND TURF AREAS SHALL BE ON SEPARATE ZONES.

3.1.6 MINIMIZE WIRING RUNS. MAXIMIZE USE OF LATERAL LINES. KEEP VALVES 5' FROM CLOSEST HARDSCAPE.

3.1.7 NO FLOW SHALL EXCEED 4 FEET PER SECOND.

3.1.8 TOP OF PIPE TO GRADE SHALL BE:
1. MANIFOLDS: 6"
2. LATERALS: 12"
3. MAINLINES: 18"

3.1.9 DESIGN ZONES TO HAVE MATCHED PRECIPITATION RATES.

3.1.10 DO NOT USE PRESSURE-REGULATING SPRINKLERS.

3.1.11 INSERT SPRINKLERS 3 INCHES FROM CURBS, HARDSCAPES AND STRUCTURES TO ALLOW FOR EDGING.

3.1.12 COMPUTERIZED IRRIGATION SYSTEM CONTROLLER WILL BE INSTALLED BY THE CITY OF TAMPA. VERIFY CONTROLLER LOCATION PRIOR TO INSTALLATION OF IRRIGATION SYSTEM AND RELATED ELECTRICAL WIRING.

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN IRRIGATION NOTES

JENNIFER L. DACULAS, PLA NO. 6667369

SHEET NUMBER: I-0.3

FILE: 231902342E2

3.1.11 INSERT SPRINKLERS 3 INCHES FROM CURBS, HARDSCAPES AND STRUCTURES TO ALLOW FOR EDGING.

3.1.12 COMPUTERIZED IRRIGATION SYSTEM CONTROLLER WILL BE INSTALLED BY THE CITY OF TAMPA. VERIFY CONTROLLER LOCATION PRIOR TO INSTALLATION OF IRRIGATION SYSTEM AND RELATED ELECTRICAL WIRING.

3.1.13 NO PIPE SMALLER THAN ¾"

3.1.14 QUICK COUPLER VALVE (RAIN BIRD #3RC OR 44RC FOR ATHLETIC FIELD APPLICATIONS) SHALL BE LOCATED IN A VALVE BOX WITH THE QUICK COUPLER CAP WITHIN 2" OF THE BOTTOM OF THE VALVE BOX LID. PROVIDE 3" OF GALVANIZED MAIN LINE UP TO AND AFTER A GALVANIZED T. PROVIDE 2' OF VERTICAL GALVANIZED PIPE, CAPPED AT BOTTOM. MOUNT QC VALVE ON GALVANIZED NIPPLE, LENGTH AS REQUIRED. QUICK COUPLER TO BE ON A SEPARATE MAIN LINE (SEE QUICK COUPLER VALVE DETAIL).

3.1.15 COORDINATE AND CONFIRM EXACT WATER SOURCE AND ELECTRIC SOURCE.

3.2 ELECTRIC AND WATER SERVICE:

3.2.1 WATER SERVICE: THE CONTRACTOR SHALL INCLUDE IN THE BID PRICE ALL COSTS ASSOCIATED WITH PROVIDING WATER SERVICE TO SYSTEM AS REQUIRED. THIS INCLUDES ALL APPLICATIONS AND FEES REQUIRED BY CITY OF TAMPA WATER DEPARTMENT TO PROVIDE SERVICE, CONNECTION FEES AND ALL MATERIALS AND LABOR FOR A COMPLETE FUNCTIONING SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING AND PAYING FOR ANY NEW WATER METERS AS REQUIRED. COORDINATE THIS REQUIREMENT WITH THE CONTRACT DOCUMENTS.

3.2.2 ELECTRIC SERVICE: CONTRACTOR SHALL INCLUDE IN BID PRICE ALL COSTS ASSOCIATED WITH PROVIDING POWER SERVICE TO SYSTEM AS INDICATED IN THE GENERAL PROVISIONS OF THE CONTRACT. THIS INCLUDES ALL APPLICATIONS, DRAWINGS AND FEES REQUIRED BY TAMPA ELECTRIC COMPANY (TECO) AND THE CITY OF TAMPA. ALL WORK TO COMPLY WITH CITY OF TAMPA CODES AND TECO STANDARDS FOR POWER CONNECTION. ALL COSTS ASSOCIATED WITH POWER INSTALLATION AND CONNECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3.2.3 UPON FINAL ACCEPTANCE OF IRRIGATION SYSTEM, OWNERSHIP OF WATER AND ELECTRIC METERS WILL BE TRANSFERRED TO THE CITY OF TAMPA.

3.3 TRENCHING AND BACKFILLING:

3.3.1 GENERAL: PROTECT EXISTING UTILITIES, PAVING, PLANTS, TREES AND OTHER FACILITIES CAUSED BY IRRIGATION OPERATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE TO EXISTING UTILITIES AND PAVING. EXCAVATE STRAIGHT AND TRUE WITH BOTTOM UNIFORMLY SLOPED TO LOW POINT.

3.3.2 SUNSHINE: CONTACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UNDERGROUND UTILITIES 48 HOURS PRIOR TO BEGINNING WORK (800) 432-4770. NO SITE WORK SHALL COMMENCE UNTIL ALL UNDERGROUND UTILITIES HAVE BEEN PROPERLY LOCATED AND IDENTIFIED.

3.3.3 BACKFILL: BACKFILL WITH CLEAN MATERIAL FROM EXCAVATION. REMOVE ORGANIC MATERIAL AS WELL AS ROCKS AND DEBRIS LARGER THAN 1" DIAMETER. PLACE ACCEPTABLE BACKFILL MATERIAL IN 6" LIFTS, COMPACTING EACH LIFT.

3.3.4 EXISTING LAWNS: WHERE TRENCHING IS REQUIRED ACROSS EXISTING LAWNS, TRENCH NO WIDER THAN NECESSARY TO ACCOMMODATE PIPES.

3.3.4.1 BACKFILL TRENCH TO WITHIN 6" OF FINISHED GRADE. CONTINUE FILL WITH ACCEPTABLE TOPSOIL AND COMPACT TO BRING AREA TO THE ELEVATION OF EXISTING LAWN.

3.3.4.2 IF TRENCH IS MORE THAN 6" IN WIDTH, RELAY OR PLANT NEW SOD WITHIN 7 DAYS AFTER REMOVAL, ROLL AND WATER GENEROUSLY.

3.3.4.3 RESTORE TO ORIGINAL CONDITION ANY SOD AREAS NOT IN HEALTHY CONDITION EQUAL TO ADJOINING LAWNS 30 DAYS AFTER PLANTING.

3.3.5 EXISTING TREES: ALL EFFORTS SHALL BE MADE TO AVOID TRENCHING UNDER THE DRIPLINES OF EXISTING TREES AND CANOPY SPREAD OF PROPOSED TREES. ALL PROPOSED TRENCHING OR OTHER WORK UNDER THE LIMB SPREAD OF ANY AND ALL TREES SHALL BE DONE BY HAND SO THAT NO LIMBS OR BRANCHES OR ROOTS ARE DAMAGED IN ANY WAY.

3.3.5.1 TRENCHING SHALL COMPLY WITH CHAPTER 13-146, TECHNICAL MANUAL AND SHALL BE DONE TO MINIMIZE ROOT DISTURBANCE. CITY OF TAMPA REPRESENTATIVE SHALL BE PRESENT PRIOR TO BEGINNING WORK, TO DETERMINE LIMITS OF ROOT PRUNING AND SHALL APPROVE ANY WORK TAKING PLACE WITHIN PROTECTIVE RADIUS OF TREES. ALL TREE ROOTS SHALL BE SEVERED CLEANLY PER THE CHAPTER 13 OF THE CITY CODE.

3.3.5.2 PROTECTIVE RADIUS SCHEDULE PER CHAPTER 13 OF THE CITY CODE READS AS FOLLOWS:
1" CALIPER – NO TRENCHING WITHIN 4' OF TREE TRUNK
6" – 14"CALIPER – NO TRENCHING WITHIN 6' OF TREE TRUNK
15" – 34" CALIPER – NO TRENCHING WITHIN 15' OF TREE TRUNK
34" AND GREATER – NO TRENCHING WITHIN 20' UNLESS APPROVED BY CITY REPRESENTATIVE

3.3.6 PAVEMENTS:

3.3.6.1 BORING IS THE PREFERRED METHOD. OPEN CUTS MUST BE APPROVED BY CITY REPRESENTATIVE. WHERE EXISTING PAVEMENTS MUST BE CROSSED TO INSTALL LANDSCAPE IRRIGATION SYSTEM, SAW CUT STRAIGHT CLEAN LINES 6" WIDER THAN TRENCH.

3.3.6.2 EXCAVATE TRENCH TO REQUIRED DEPTH AND WIDTH.

3.3.6.3 REMOVE CUT OUT PAVEMENT AND EXCAVATED MATERIAL FROM THE SITE.

3.3.6.4 BACKFILL WITH DRY SAND FILL MATERIAL, PLACING IN 6" LIFTS TO MEET CITY OF TAMPA COMPACTION REQUIREMENTS.

3.3.6.5 REPAIR OR REPLACE PAVEMENT CUTS WITH EQUIVALENT MATERIALS AND FINISHES.

3.3.6.6 IF A CONCRETE SIDEWALK IS CUT OR DAMAGED, THE FULL SECTION MUST BE REPLACED.

3.3.6.7 PIPING UNDER HARDSCAPE THAT IS 5' WIDER OR GREATER SHALL BE SLEEVED.

3.3.6.8 CONTRACTOR IS RESPONSIBLE FOR DAILY CLEAN UP OF OPERATIONS TO INCLUDE DEBRIS, DIRECTIONAL BORE SLURRY AND ANY HYDRAULIC FLUIDS.

3.4 INSTALLATION: (SEE DETAILS ON CONSTRUCTION DRAWINGS)

3.4.1 A PRE-CONSTRUCTION MEETING WILL OCCUR ON SITE PRIOR TO COMMENCEMENT OF WORK.

3.4.2 GENERAL: CONTRACTOR SHALL BE RESPONSIBLE FOR FILING AND OBTAINING ANY AND ALL AGENCY PERMITS AS DESCRIBED. ALL WORK MUST CONFORM TO CITY OF TAMPA AND THE LATEST ADOPTED PLUMBING CODE. ANY WORK TAKING PLACE ALONG A CITY, COUNTY OR STATE ROAD OR MEDIAN MUST COMPLY WITH APPROPRIATE REGULATING AUTHORITY GUIDELINES FOR TRAFFIC CONTROL FOR CONSTRUCTION AND MAINTENANCE OPERATIONS.

3.4.3 REQUIRED INSPECTIONS:

3.4.3.1 PIPING: PRIOR TO COVERING.

3.4.3.2 ALL MATERIALS PRIOR TO PLANTING AND/OR MULCHING.

3.4.3.3 24 HOUR NOTICE OF INSPECTION REQUIRED.

3.4.3.4 MAIN LINES REQUIRE PRESSURE TESTS OF 50 PSI TO BE MAINTAINED FOR MINIMUM OF 1 HOUR.

3.4.4 BACKFLOW PREVENTER: PVB (PRESSURE VACUUM BREAKER) WITH BALL VALVES SIZED TO MATCH THE SYSTEM AND INSTALLED ON GALVANIZED RISERS.

3.4.5 CONTROL VALVES: INSTALL IN VALVE BOX. ARRANGE IN BOX FOR EASY ADJUSTMENT AND REMOVAL.

3.4.5.1 ADJUST SIZE OF AUTOMATIC CONTROL VALVES TO PROVIDE FLOW RATE OF RATED OPERATING PRESSURE REQUIRED FOR EACH SPRINKLER ZONE.

3.4.5.2 ALL ZONE WIRING AND MAXI-COM CABLE TO BE INSTALLED UNDER THE MAIN LINE OR IN CONDUIT. WIRING THAT SHARES A SLEEVE WITH IRRIGATION WATER LINES SHALL BE CONTAINED IN ITS OWN CONDUIT.

3.4.6 PROVIDE 18" OF STRAIGHT UNINTERRUPTED PVC PIPE IN FRONT OF THE MASTER METER AND 12" OF STRAIGHT BEHIND.

3.4.7 PIPING: LAY PIPE ON SOLID SUB-BASE UNIFORMLY SLOPED.

3.4.7.1 INSTALL PVC PIPE IN DRY WEATHER WHEN TEMPERATURE IS ABOVE 40 DEGREES F IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. ALLOW JOINTS TO CURE AT LEAST 24 HOURS AT TEMPERATURES ABOVE 40 DEGREES F (4 DEGREES C) BEFORE TESTING, UNLESS OTHERWISE RECOMMENDED BY MANUFACTURER. ALL PVC CONNECTIONS WILL BE CLEANED WITH PURPLE PRIMER PRIOR TO CEMENTING.

3.4.7.2 MAINLINE DEPTH SHALL BE 18".

3.4.7.3 LATERAL LINE DEPTH SHALL BE 12".

3.4.8 SPRINKLER HEADS: FLUSH CIRCUIT LINES WITH FULL PRESSURE AND INSTALL NOZZLES AFTER HYDROSTATIC TEST IS COMPLETED.

3.4.8.1 INSTALL ALL HEADS AT MANUFACTURER'S RECOMMENDED HEIGHTS.

3.4.8.2 LOCATE PART-CIRCLE HEADS TO MAINTAIN A MINIMUM DISTANCE OF 3" FROM CURBS, HARDSCAPE AND STRUCTURES.

3.4.8.3 AFTER COMPLETION OF GRADING, SEEDING OR SODDING, AND ROLLING OF THE GRASS AREAS, CAREFULLY ADJUST LAWN SPRINKLER HEADS SO THEY WILL BE FLUSH WITH GRADE.

3.4.8.4 POP-UPS INSTALLED ON ½" FLEX HOSE USING SCHEDULE 40 PVC CONNECTORS.

3.4.8.5 ROTORS TO BE INSTALLED ON APPROPRIATE SIZE FLEX HOSE USING SCHEDULE 40 PVC CONNECTORS. ENSURE SPRAYER ROTOR WATER DOES NOT DIRECTLY CONTACT EXISTING STRUCTURES OR HARDSCAPE AREAS.

3.4.9 DIELECTRIC PROTECTION: USE DIELECTRIC FITTINGS AT CONNECTION WHERE PIPES OF DISSIMILAR METAL ARE JOINED.

3.4.10 WIRING: ALL WIRING SHALL BE PERFORMED BY THE CONTRACTOR AS SHOWN ON DRAWINGS. ALL WIRING SHALL BE RUN FROM POINT OF CONNECTION BACK TO THE CONTROLLER.

3.4.11 QUICK COUPLER VALVES: BUILD AND INSTALL PER DETAILS ON CONSTRUCTION DRAWINGS. VALVE BOX SHALL BE ADEQUATELY SIZED AND INSTALLED SO AS NOT TO INTERFERE WITH THE OPERATION OF THE QUICK COUPLER KEY.

3.5 ACCEPTANCE:

3.5.1 MAINTENANCE: CONTRACTOR IS RESPONSIBLE FOR ALL MAINTENANCE OF THE SYSTEM UNTIL FINAL ACCEPTANCE BY CITY REPRESENTATIVE AND FOR THE MAINTENANCE PERIOD SPECIFIED IN SECTION TREES, PLANTS AND GROUND COVERS.

3.5.2 FINAL INSPECTION: THE INSPECTION OF IRRIGATED AREAS WILL BE MADE BY THE CITY REPRESENTATIVE UPON CONTRACTOR'S REQUEST. PROVIDE NOTIFICATION AT LEAST 2 WORKING DAYS PRIOR. THE CITY REPRESENTATIVE WILL PROVIDE A PUNCH LIST OF THOSE ITEMS WHICH MUST BE CORRECTED BEFORE RE-INSPECTION FOR FINAL ACCEPTANCE. THE CITY REPRESENTATIVE WILL SET AN APPROPRIATE TIME PERIOD IN WHICH THE PUNCH LIST ITEMS MUST BE CORRECTED.

3.5.2.1 CONTRACTOR TO PROVIDE NOTIFICATION OF AT LEAST 2 WORKING DAYS PRIOR TO INSPECTION.

3.5.2.2 SYSTEM TO BE RUN THROUGH ELECTRONICALLY OF ALL ZONES TO ENSURE ALL COMPONENTS ARE WORKING PROPERLY.

3.5.2.3 SYSTEM TO BE RUN THROUGH CITY PROGRAMMING FOR ONE WEEK PRIOR TO FINAL ACCEPTANCE.

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN IRRIGATION NOTES

JENNIFER L. DAOULAS, PLA NO. 6667369

SHEET NUMBER: I-0.4

FILE: 231902342E2

3.5.2.4 AS BUILT DRAWINGS: AT PROJECT CLOSEOUT, THE CONTRACTOR SHALL SUBMIT COMPLETE ELECTRONIC DRAWINGS SHOWING ANY CHANGES FROM APPROVED SHOP DRAWING. THESE SHALL BE INCLUDED AS PART OF REQUIRED AS-BUILT/RECORD DRAWING REQUIREMENT OF THE GENERAL PROVISION.

AS-BUILT DRAWINGS SHALL INCLUDE THE FOLLOWING:
- O IRRIGATION SYSTEM AS INSTALLED.
- O WATER SOURCE LOCATION AND SIZE.
- O POWER SOURCE LOCATION.
- O CHANGES TO CONTROLLER TYPE OR LOCATION.
- O CHANGES IN TYPE OR LOCATION OF FLOW METER OR MASTER VALVE.
- O ANY WIRING CHANGES IN LOCATION, NUMBER, TYPE, COLOR.
- O VALVE LOCATIONS SHOULD BE DIMENSIONED AND AREAS CONTROLLED IDENTIFIED.
- O LOCATION, DEPTH AND SIZE OF MAINLINE AND FEEDER LINES. OFF-SET TO MAIN LINE REQUESTED.
- O LOCATION OF MAXI-COM CABLE.
- O LOCATION AND DEPTH OF ALL DIRECTIONAL BORES.

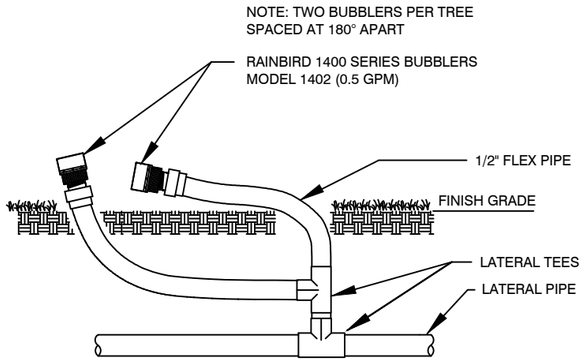
3.6 GUARANTEE:

3.6.1 GUARANTEE: ALL WORK SHALL BE GUARANTEED BY CONTRACTOR FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE AGAINST ALL DEFECTS AND MALFUNCTIONS IN MATERIALS, EQUIPMENT AND WORKMANSHIP AND SHALL BE INCLUDED AS A PART OF THE PROJECT CLOSEOUT DOCUMENT REQUIREMENTS.

3.6.1.1 THE GUARANTEE SHALL ALSO COVER REPAIR OF DAMAGE TO ANY PART OF THE PREMISES RESULTING FROM LEAKS OR OTHER DEFECTS IN MATERIALS, EQUIPMENT AND WORKMANSHIP, TO THE SATISFACTION OF THE CITY OF TAMPA. REPAIRS, IF REQUIRED, SHALL BE DONE PROMPTLY AT NO COST TO THE CITY OF TAMPA. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR DAMAGE TO THE IRRIGATION SYSTEM BY OTHERS. THE GUARANTEE SHALL STATE THE NAME OF THE OWNER, PROVIDE FULL GUARANTEE TERMS, EFFECTIVE AND TERMINATION DATE, NAME AND LICENSE NUMBER. IT SHALL BE SIGNED BY THE CHIEF EXECUTIVE OF THE CONTRACTING FIRM AND NOTARIZED. MANUFACTURER'S WARRANTIES SHALL NOT RELIEVE THE CONTRACTOR OF HIS LIABILITY UNDER THE GUARANTEE. SUCH WARRANTIES SHALL ONLY SUPPLEMENT THE GUARANTEE.

3.6.1.2 THE CONTRACTOR SHALL MAKE NECESSARY REPAIRS WITHIN 72 HOURS NOTICE. IF THE CONTRACTOR NEGLECTS TO MAKE OR UNDERTAKE THE REPAIRS WITH THE DUE DILIGENCE, THE CITY OF TAMPA MAY MAKE SUCH REPAIRS AT THE CONTRACTOR'S EXPENSE. IN THE CASE OF AN EMERGENCY WHERE IN THE JUDGMENT OF THE CITY OF TAMPA, DELAY WOULD CAUSE LOSS OR DAMAGE, REPAIRS OR REPLACEMENT MAY BE MAD WITHOUT NOTICE BEING SENT TO THE CONTRACTOR AND THE CONTRACTOR SHALL PAY THE COST THEREOF.

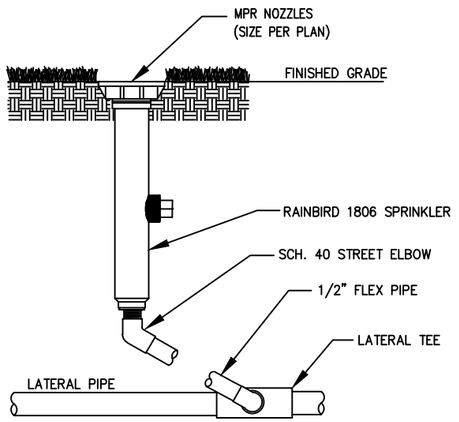
END OF SECTION 32 84 23



RAINBIRD 1400 SERIES BUBBLER

1 / I-0.1 BUBBLER

City of Tampa KHA-TPA-ICOT-04



2 / I-0.1 POP UP SPRAY

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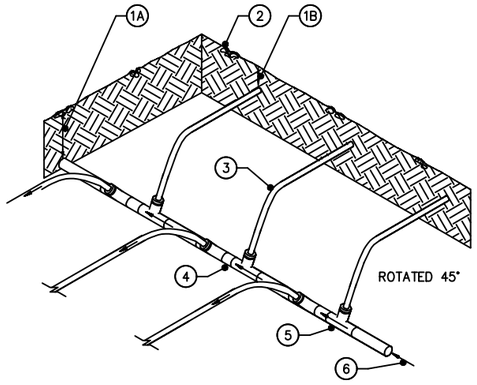
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN IRRIGATION NOTES & DETAILS

JENNIFER L. DAOULAS, PLA NO. 6667369

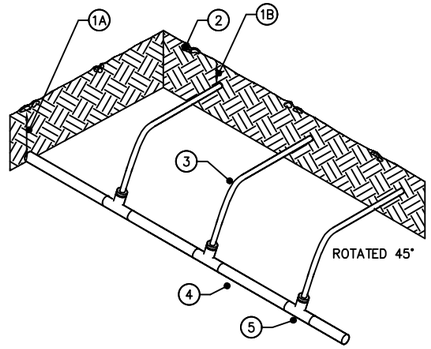
SHEET NUMBER: I-0.5

FILE: 231902342E2



1A 5"–6"
1B LAID ON FINISH GRADE STAKED EVERY 3'
2 FINISHED GRADE
3 RAINBIRD DRIPLINE (TYP.)
4 PVC SUPPLY MANIFOLD
NOTE: REGARDING SIZE OF EXHAUST MANIFOLD (SEE TABLE)
5 PVC TEE TO RAINBIRD COMPRESSION ADAPTERS
6 FLOW FROM VALVE

CENTER FEED SUPPLY MANIFOLD



1A 5"–6"
1B LAID ON FINISH GRADE STAKED EVERY 3'
2 FINISHED GRADE
3 RAINBIRD DRIPLINE (TYP.)
4 PVC SUPPLY/ EXHAUST MANIFOLD
NOTE: REGARDING SIZE OF EXHAUST MANIFOLD (SEE TABLE)
5 PVC TEE TO 1/2" SLIP X .620" O.D. TUBING COMPRESSION ADAPTERS

SUPPLY/EXHAUST MANIFOLD

IRRIGATION ZONE DEMAND GALLONS PER MINUTE (GPM)	SUPPLY MANIFOLD PIPE SIZE END AND CENTER FEED	EXHAUST MANIFOLD PIPE SIZE W/END FEED SUPPLY LINE	EXHAUST MANIFOLD PIPE SIZE W/END FEED SUPPLY LINE (TWO EXHAUST MANIFOLDS REQ'D)
0 – 6	3/4"	3/4"	3/4"
7 – 11	1"	1"	3/4"
12 – 19	1 1/4"	1 1/4"	1"
20 – 26	1 1/2"	1 1/2"	1 1/4"
27– 42	2"	2"	1 1/4"
43 – 60	2 1/2"	2 1/2"	2"
61 – 90	3"	3"	2"

REFER TO EACH DRIPLINE IRRIGATION ZONE ON PLAN DRAWINGS FOR ZONE GPM

DRIPLINE SUPPLY AND EXHAUST MANIFOLD PIPE SIZE TABLE

1 / I-0.1

MANIFOLD DETAILS

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE GENERATOR DESIGN
IRRIGATION DETAILS

JENNIFER L. DAOULAS, PLA NO. 6667369

SHEET NUMBER: I-0.6

FILE: 231902342E2

GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2. ALL MAIN 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, THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE AND CHAPTER 5 OF THE CITY OF TAMPA CODE AND SHALL BE INSPECTED BY CITY OF TAMPA/HILLSBOROUGH COUNTY ELECTRICAL INSPECTORS AS APPLICABLE. 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).
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. 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.
24. ALL COMPONENTS TO BE MOUNTED ON PANEL USING TAPPED HOLES.
25. ALL CONTROL WIRING SHALL BE STRANDED XHHW-2 COPPER, MINIMUM AWG #14 AND SHALL HAVE SPADE LUG TERMINATIONS.
26. DIMENSIONS, ITEMS, OR ELEVATIONS MARKED "*" TO BE DETERMINED AFTER EQUIPMENT SELECTION.
27. ALL MECHANICAL CONNECTORS SHALL BE TORQUED PER NEC, UL OR MANUFACTURER'S SPECIFICATIONS.
28. 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.
29. ALL HINGED SURFACES SHALL BE GROUNDED WITH A BONDING JUMPER SECURED TO THE ENCLOSURE OR BACKPANEL.
30. THE CONTRACTOR SHALL COORDINATE ALL REQUIRED OUTAGES/WORK WITH THE CITY OF TAMPA. PRIOR TO ANY OUTAGE, THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE CITY OF TAMPA. THE REQUEST SHALL DETAIL THE NATURE OF THE OUTAGE, ALL EQUIPMENT AFFECTED BY THE OUTAGE, THE AMOUNT OF TIME REQUIRED FOR THE OUTAGE AND A CONTINGENCY PLAN FOR THE OUTAGE. THE OUTAGE REQUEST SHALL BE SUBMITTED TO THE CITY A MINIMUM OF 2 WEEKS PRIOR TO THE DATE OF THE REQUESTED OUTAGE. THE CONTRACTOR SHALL NOT BE ALLOWED TO INITIATE THE OUTAGE PRIOR TO RECEIVING WRITTEN APPROVAL FROM THE CITY OF TAMPA.

SCOPE OF WORK:

1. CONTRACTOR SHALL PROVIDE AND INSTALL TWO (2) NEW 500 KW GENERATORS AND ASSOCIATED 3,000 GALLON SUBBASE DIESEL FUEL STORAGE TANKS.
2. CONTRACTOR SHALL INSTALL TWO (2) NEW 600V, 1,200A GENERATOR DOCKING STATIONS (ONE FOR GENERATOR 'A' AND ONE FOR GENERATOR 'B').
3. THE CONTRACTOR SHALL REWORK THE EXISTING CONDUITS AT THE EXISTING GENERATOR TERMINAL BOXES AND REPLACE THE EXISTING CONDUCTORS IN ORDER TO CONNECT THE TWO (2) NEW 600V, 1,200A GENERATOR DOCKING STATIONS.
4. THE CONTRACTOR SHALL INSTALL NEW CONDUIT AND CONDUCTORS FOR THE FOLLOWING:
   i. AS REQUIRED AND INDICATED ON THE DRAWINGS FOR PROPER OPERATION OF THE CIRCUIT BREAKERS 52-1, 52-2, 52-T, 52-G1 AND 52-G2.
   ii. AS REQUIRED AND INDICATED ON THE DRAWINGS FOR THE CONTROL AND MONITORING OF EACH NEW 500 KW GENERATOR UNITS.
   iii. AS REQUIRED AND INDICATED ON THE DRAWINGS FOR THE NEW 500 KW GENERATORS 120V AC POWER.
5. PROVIDE TESTING OF THE GENERATORS, CIRCUIT BREAKERS, GENERATOR OPERATION AND ALL CONTROL AND MONITORING FUNCTIONS PRIOR TO EQUIPMENT STARTUP.
6. PROVIDE STARTUP AND COMMISSIONING OF THE GENERATORS, CIRCUIT BREAKERS, GENERATOR OPERATION AND ALL CONTROL AND MONITORING FUNCTIONS.
7. PROVIDE TRAINING FOR GENERATOR OPERATION AND MAINTENANCE; AUTOMATIC TRANSFER SCHEME OPERATION; SYSTEM CONTROLS AND SCADA MONITORING FOR CITY PERSONNEL.

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SCALE: NOT TO SCALE

City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

ELECTRICAL GENERAL NOTES AND SCOPE OF WORK

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: EG1

FILE: 231901542

ONE LINE DIAGRAM SYMBOLS

- 600 A — BUS–RATING AS SHOWN
- INCOMING LINE
- OUTCOMING LINE
- DISCONNECTING DEVICE
- CONDUCTORS CONNECTED
- CONDUCTORS NOT CONNECTED
- 100A — FUSE–RATING AS SHOWN
- 100A — SINGLE THROW DISCONNECT SWITCH–RATING AS SHOWN
- 100A/70A — FUSED DISCONNECT SWITCH–100A SWITCH, 70A FUSE
- 100A — LOW VOLTAGE AIR CIRCUIT BREAKER WITHOUT TRIP DEVICE 100A FRAME
- 225A/125A — LOW VOLTAGE AIR CIRCUIT BREAKER WITH 225A FRAME AND 125A TRIP
- 52 — MEDIUM VOLTAGE DRAWOUT TYPE AIR CIRCUIT BREAKER
- GROUND CONNECTION
- LIGHTNING OR SURGE ARRESTOR
- SURGE CAPACITOR
- POWER TRANSFORMER WITH WINDING CONNECTIONS INDICATED
- CPT — CONTROL POWER TRANSFORMER
- PT — POTENTIAL TRANFORMER
- CT — CURRENT TRANSFORMER

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

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

- (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)

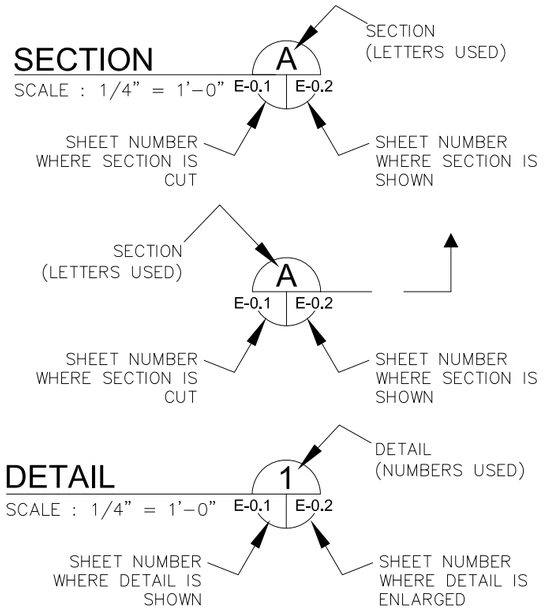
- NORMALLY CLOSED CONTACT WITH TIME DELAY OPENING (ON–DELAY)
- INSTANT CLOSE– TIME DELAY OPEN CONTACT (OFF DELAY)
- (R) — INDICATING LIGHT– PUSH TO TEST (R–RED, G–GREEN, A–AMBER, B–BLUE, W–WHITE)
- H O A — 3–POSITION SELECTOR SWITCH (SHOWN IN "H" POS.)
- NORMALLY OPEN PUSHBUTTON– MOMENTARY CONTACT
- NORMALLY CLOSED PUSHBUTTON– MOMENTARY CONTACT
- DOUBLE CIRCUIT PUSHBUTTON WITH SPRING RETURN TO NORMAL
- TRANSFORMER
- OL — OVERLOAD RELAY CONTACT
- THERMAL OVERLOAD ELEMENT (OL)
- ON–OFF SWITCH
- (G) — GROUND BUS
- (N) — NEUTRAL BUS (INSULATED)
- SINGLE–POLE CIRCUIT BREAKER

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

NOTE:

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

EXAMPLE OF SECTION CUT AND DETAIL



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SCALE: AS SHOWN

City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

ELECTRICAL SYMBOLS AND LEGEND (SHEET 1 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: EG2

FILE: 231901542

POWER AND LIGHTING SYMBOLS

EXPOSED CONDUIT RUN

CONDUIT RUN CONCEALED IN FLOOR OR UNDERGROUND

CONDUIT RUN CONCEALED IN WALLS, ABOVE SUSPENDED CEILING, OR IN ROOF SLAB

CONDUIT WITH HOT, NEUTRAL AND GROUND WIRES (LONG LINE IS NEUTRAL; LONG LINE WITH DOTS DENOTE GROUND)

PNL–1 1,3,5 — HOMERUN TO LIGHTING PANELBOARD (PNL–1 INDICATES PANELBOARD AND 1, 3, 5 INDICATES 20A–1P CKTS. 1, 3 AND 5)

FLEXIBLE LIQUIDTIGHT CONDUIT

CONDUIT–UP (OR TOWARDS VIEWER)

CONDUIT–DOWN (OR AWAY FROM VIEWER)

GROUNDING CONDUCTOR

GROUND ROD

LIGHTNING ROD

CEILING MOUNTED INCANDESCENT OR MERCURY VAPOR FIXTURE. "A" INDICATES FIXTURE TYPE LISTED IN SCHEDULE

WALL MOUNTED LIGHTING FIXTURE

EXIT SIGN

EMERGENCY INCANDESCENT OR MERCURY VAPOR LIGHTING FIXTURE

FLUORESCENT FIXTURE

EMERGENCY FLUORESCENT FIXTURE

POLE MOUNTED LIGHTING FIXTURE

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

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

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

SINGLE POLE SWITCH

2P — TWO POLE SWITCH

3 — THREE WAY SWITCH

J — OUTLET BOX WITH BLANK COVER

JB — JUNCTION BOX

PB — PULL BOX

TB — TERMINAL BOX

GENERAL SYMBOLS

START–STOP PUSHBUTTON

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

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

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

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

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

FL — FLOW SWITCH

LS — LIMIT SWITCH

P — PRESSURE SWITCH

S — SOLENOID OPERATED VALVE

T — TEMPERATURE SWITCH

F — FLOAT SWITCH

L — LEVEL TRANSMITTER (PRESSURE ANALOG TYPE)

LC — LEVEL TRANSMITTER (FLOAT TYPE)

T — TEMPERATURE TRANSMITTER

FT — FLOW TRANSMITTER

MH — DESIGNATES MOUNTING HEIGHT

WP — DESIGNATES WATERPROOF EQUIPMENT

XP — DESIGNATES EXPLOSIONPROOF EQUIPMENT

MOV — DESIGNATES MOTOR OPERATED VALVE

EX. — DESIGNATES EXISTING EQUIPMENT

PROP. — DESIGNATES PROPOSED EQUIPMENT

NOTE:

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

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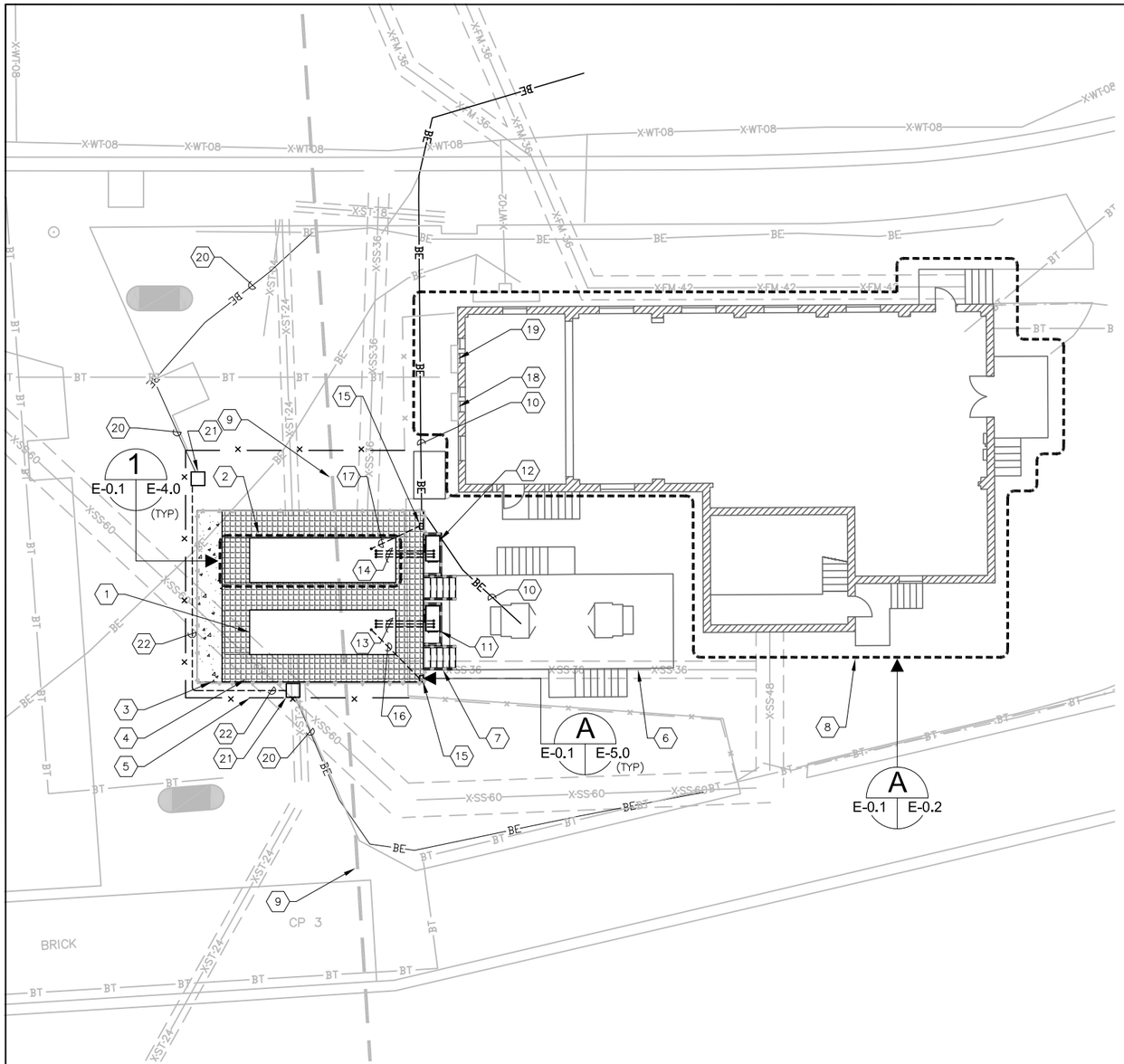
KRAUSE PUMPING STATION
STANDBY GENERATORS

ELECTRICAL SYMBOLS AND LEGEND (SHEET 2 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: EG3

FILE: 231901542

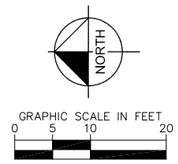


ELECTRICAL SITE PLAN

SCALE: AS SHOWN

KEYED NOTES:

1. PROPOSED 500 KW, 277/480V, 4-WIRE GENERATOR WITH SOUND ATTENUATED ENCLOSURE AND 3,000 GALLON SUBBASE DIESEL STORAGE TANK. DESIGNATED 'A' (GENERATOR TO FEED BUS 'A') REFER TO SHEET E-4.0 FOR TYPICAL DETAILS AND ELEVATIONS.
2. PROPOSED 500 KW, 277/480V, 4-WIRE GENERATOR WITH SOUND ATTENUATED ENCLOSURE AND 3,000 GALLON SUBBASE DIESEL STORAGE TANK. DESIGNATED 'B' (GENERATOR TO FEED BUS 'B') REFER TO SHEET E-4.0 FOR TYPICAL DETAILS.
3. PROPOSED GENERATOR BASE SLAB (TYPICAL). REFER TO CIVIL AND STRUCTURAL PLANS FOR DETAILS.
4. PROPOSED ALUMINUM WALKWAY (TYPICAL). REFER TO CIVIL AND STRUCTURAL PLANS FOR DETAILS.
5. PROPOSED FENCING (TYPICAL). REFER TO CIVIL AND STRUCTURAL PLANS FOR DETAILS.
6. EXISTING ELEVATED PLATFORM FOR TAMPA ELECTRIC COMPANY (TECO) PAD-MOUNTED TRANSFORMERS. NO WORK REQUIRED.
7. PROPOSED ALUMINUM STAIRS (TYPICAL) FROM GENERATOR ALUMINUM WALKWAY TO ELEVATED TECO TRANSFORMER PLATFORM. REFER TO CIVIL AND STRUCTURAL PLANS FOR DETAILS.
8. EXISTING KRAUSE PUMPING STATION. REFER TO SHEET E-0.2 FOR EXISTING EQUIPMENT LAYOUT AND WORK REQUIRED IN THE INTERIOR OF THE PUMPING STATION.
9. EDGE OF EXISTING BRIDGE DECK FOR LEROY SELMON EXPRESSWAY (BOTTOM OF DECK AT ELEVATION 38.0').
10. APPROXIMATE LOCATION OF EXISTING TECO PRIMARY DISTRIBUTION LINES.
11. PROVIDE AND INSTALL NEW 600V, 1,200A GENERATOR DOCKING STATION 'A' FOR GENERATOR 'A'. REFER TO STRUCTURAL PLANS FOR MOUNTING DETAILS.
12. PROVIDE AND INSTALL NEW 600V, 1,200A GENERATOR DOCKING STATION 'B' FOR GENERATOR 'B'. REFER TO STRUCTURAL PLANS FOR MOUNTING DETAILS.
13. PROVIDE AND INSTALL M200, M200A AND M200B.
14. PROVIDE AND INSTALL M201, M201A AND M201B.
15. PROVIDE AND INSTALL GENERATOR EMERGENCY STOP PUSHBUTTON STATION. STATIONS ARE TYPICAL. REFER TO TYPICAL DETAIL ON SHEET E-5.0
16. PROVIDE AND INSTALL M202A.
17. PROVIDE AND INSTALL M202B.
18. EXISTING GENERATOR TERMINAL BOX FOR BUS 'A'. REFER ALSO TO SHEET E-0.2.
19. EXISTING GENERATOR TERMINAL BOX FOR BUS 'B'. REFER ALSO TO SHEET E-0.2.
20. EXISTING PARK LIGHTING CIRCUIT CONSISTING OF 2" PVC CONDUIT. CONTRACTOR TO FIELD VERIFY QUANTITY AND SIZE OF EXISTING CONDUCTORS.
21. CONTRACTOR TO INTERCEPT EXISTING PARK LIGHTING CIRCUIT AT THIS POINT. CONTRACTOR TO INSTALL NEW 24" X 24" X 24" POLYMER CONCRETE HANDHOLE WITH FLUSH, SOLID POLYMER LID, HEX HEAD BOLTS AND BOLT RETAINERS. HANDHOLE TO BE OLDCASTLE 2424. CONTRACTOR TO UTILIZE HANDHOLE TO SPLICE NEW CONDUCTORS TO EXISTING CONDUCTORS. CONTRACTOR SHALL UTILIZE SUBMERSIBLE STREET LIGHTING CONNECTORS, POLARIS SLWB OR SLOWB AS REQUIRED.
22. PROVIDE AND INSTALL 2" SCHEDULE 80 PVC BETWEEN HANDHOLES INSTALLED IN KEYED NOTE 21 ABOVE. INSTALL NEW CONDUCTORS.CONDUCTORS TO BE COPPER, XHHW-2, SIZE AND QUANTITY TO MATCH EXISTING. NOTE: WORK SHALL BE SCHEDULED SO THAT LIGHTS ARE OPERATIONAL DURING NON-DAYLIGHT HOURS.



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City of Tampa Wastewater Department

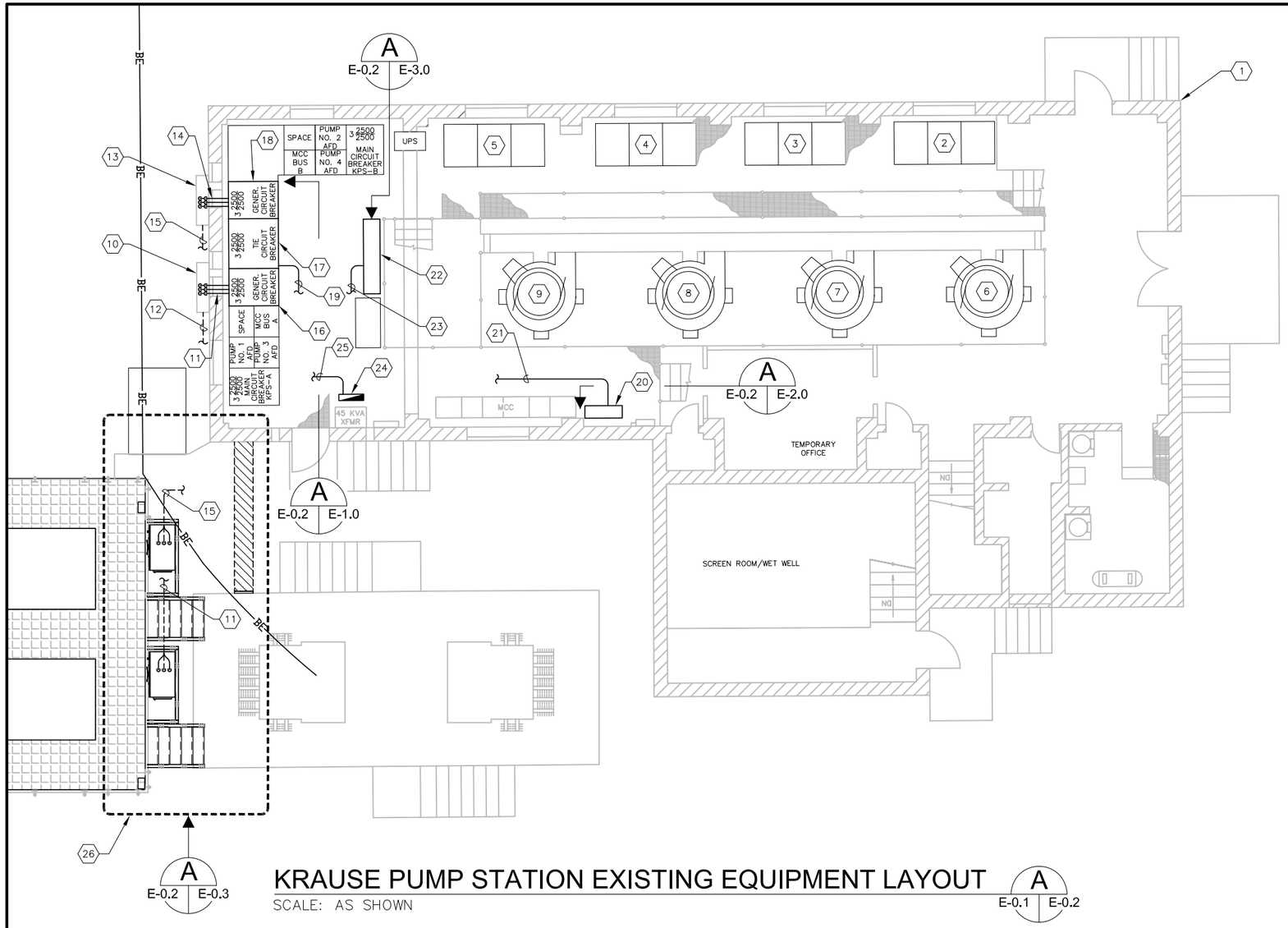
KRAUSE PUMPING STATION
STANDBY GENERATORS

ELECTRICAL SITE PLAN

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-0.1

FILE: 231901542



KRAUSE PUMP STATION EXISTING EQUIPMENT LAYOUT

SCALE: AS SHOWN

NORTH

GRAPHIC SCALE IN FEET
0 2.5 5 10

KEYED NOTES:

1. EXISTING KRAUSE PUMPING STATION.
2. EXISTING 500 HP AFD #1. NO WORK REQUIRED.
3. EXISTING 500 HP AFD #2. NO WORK REQUIRED.
4. EXISTING 500 HP AFD #3. NO WORK REQUIRED.
5. EXISTING 500 HP AFD #4. NO WORK REQUIRED.
6. EXISTING 400 HP, 480V PUMP #1. NO WORK REQUIRED.
7. EXISTING 400 HP, 480V PUMP #2. NO WORK REQUIRED.
8. EXISTING 400 HP, 480V PUMP #3. NO WORK REQUIRED.
9. EXISTING 400 HP, 480V PUMP #4. NO WORK REQUIRED.
10. EXISTING GENERATOR 'A' TERMINAL BOX. TERMINAL BOX IS EQUIPPED WITH POWER DISTRIBUTION BLOCKS (POWER DISTRIBUTION BLOCKS TO BE REUSED).
11. CONTRACTOR TO REMOVE EXISTING CONDUCTORS FROM POWER DISTRIBUTION BLOCKS TO GENERATOR CIRCUIT BREAKER 52-G1 AND UTILIZE THREE (3) OF THE EXISTING 4" CONDUITS TO INSTALL CONDUCTORS FOR M100A, M100B AND M100C.
12. CONTRACTOR TO PROVIDE AND INSTALL M100D, M100E AND M100F. REFER TO SHEET E-0.3 FOR CONTINUATION.
13. EXISTING GENERATOR 'B' TERMINAL BOX. TERMINAL BOX IS EQUIPPED WITH POWER DISTRIBUTION BLOCKS (POWER DISTRIBUTION BLOCKS TO BE REUSED).
14. CONTRACTOR TO REMOVE EXISTING CONDUCTORS FROM POWER DISTRIBUTION BLOCKS TO GENERATOR CIRCUIT BREAKER 52-G2 AND UTILIZE THREE (3) OF THE EXISTING 4" CONDUITS TO INSTALL CONDUCTORS FOR M101A, M101B AND M101C.
15. CONTRACTOR TO PROVIDE AND INSTALL M101D, M101E AND M101F. REFER TO SHEET E-0.3 FOR CONTINUATION.
16. EXISTING SWITCHBOARD 'KPS' SECTION 4 CONTAINING GENERATOR BUS 'A' CIRCUIT BREAKER. REFER ALSO TO ELEVATION ON SHEET E-1.0.
17. EXISTING SWITCHBOARD 'KPS' SECTION 5 CONTAINING TIE BREAKER AND SWITCHBOARD PLC. REFER ALSO TO ELEVATION ON SHEET E-1.0.
18. EXISTING SWITCHBOARD 'KPS' SECTION 6 CONTAINING GENERATOR BUS 'B' CIRCUIT BREAKER. REFER ALSO TO ELEVATION ON SHEET E-1.0.
19. CONTRACTOR TO PROVIDE AND INSTALL M200E AND M201E.
20. EXISTING REMOTE CIRCUIT BREAKER CONTROL PANEL (RCBP). REFER TO SHEET E-2.0 FOR ELEVATION AND DETAILS.
21. CONTRACTOR TO PROVIDE AND INSTALL M203 AND M204.
22. EXISTING PUMP CONTROL PANEL/PLC. REFER TO SHEETS E-3.0 THROUGH E-3.5 FOR ELEVATION AND REQUIRED MODIFICATIONS.
23. CONTRACTOR TO PROVIDE AND INSTALL M200C, M200D, M200G, M200J, M201C, M201D, M201G AND M200J.
24. EXISTING 120/208V PANELBOARD 'LPA' WITH 175A MAIN CIRCUIT BREAKER. REFER TO SHEET E-5.0 FOR NEW CIRCUIT BREAKERS TO BE PROVIDED AND INSTALLED FOR GENERATOR'S ANCILLARY POWER REQUIREMENTS.
25. CONTRACTOR TO PROVIDE AND INSTALL M200F, M200H, M200K, M201F, M201H AND M201K.
26. REFER TO SHEET E-0.3 FOR CONDUIT ROUTING AND INSTALLATION DETAILS.

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City of Tampa Wastewater Department

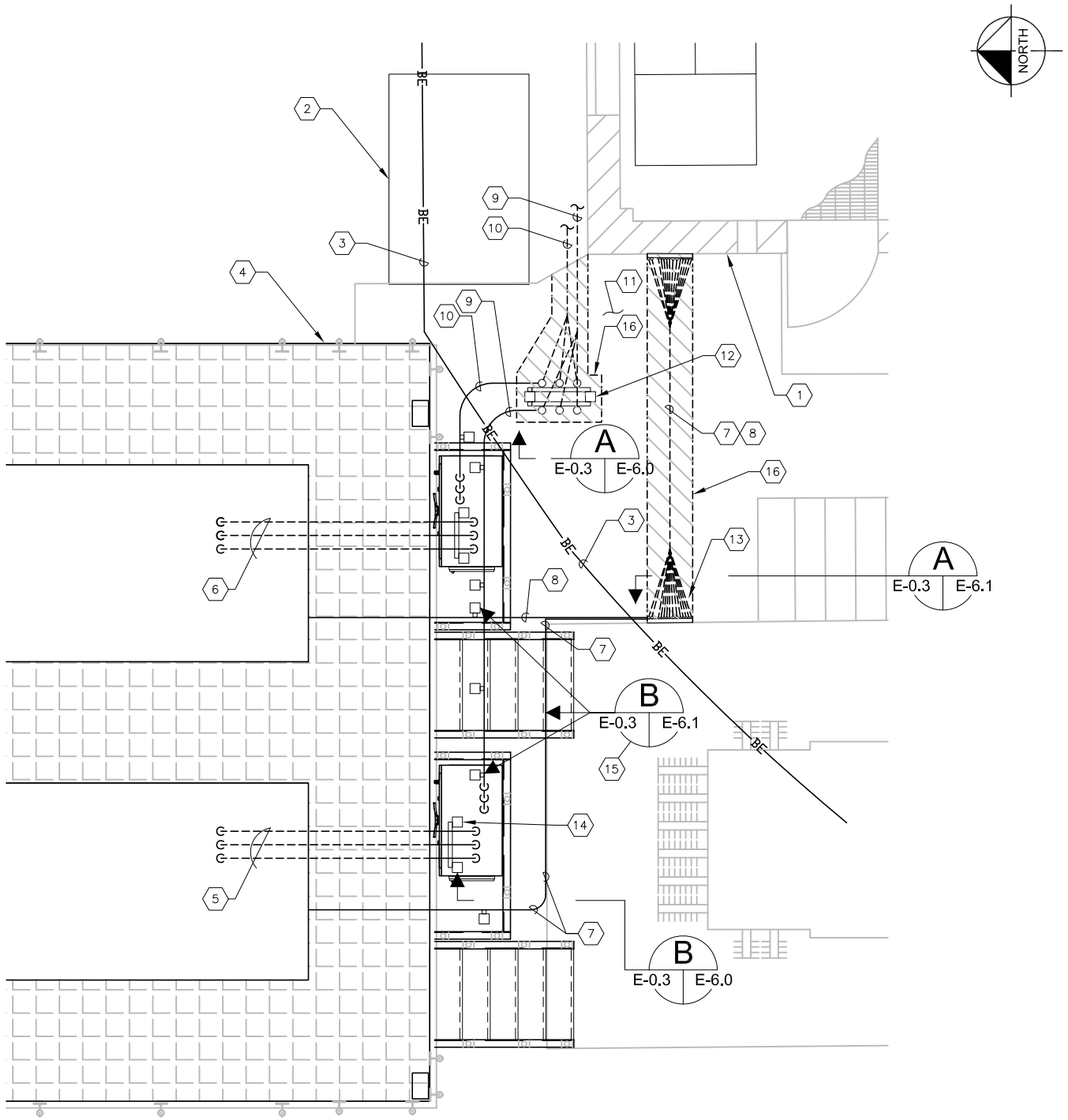
KRAUSE PUMPING STATION
STANDBY GENERATORS

KRAUSE PUMP STATION
EXISTING EQUIPMENT LAYOUT

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-0.2

FILE: 231801142



CONDUIT ROUTING AND INSTALLATION DETAILS

SCALE: NOT TO SCALE

A
E-0.2 | E-0.3

KEYED NOTES:

1. EXISTING KRAUSE PUMPING STATION.
2. EXISTING HANDHOLE. ASSUMED TO BE ABANDONED. FIELD VERIFY.
3. EXISTING TECO 15KV PRIMARY. REFER TO SHEET C–0.1 FOR SUE INFORMATION.
4. PROPOSED ALUMINUM WALKWAY (TYPICAL). REFER TO CIVIL AND STRUCTURAL PLANS FOR DETAILS.
5. M200, M200A AND M200B.
6. M201, M201A AND M201B.
7. M200C, M200D, M200E, M200F, M200G, M200H M200J AND M200K.
8. M201C, M201D, M201E, M201F, M201G, M201H M201J AND M201K.
9. M100D, M100E AND M100F.
10. M101D, M101E AND M101F.
11. EXISTING CONCRETE SLAB.
12. PROPOSED CONDUIT RACK FOR M100D, M100E, M100F, M101D, M101E AND M101F. REFER TO DETAIL ON SHEET E–6.0.
13. PROPOSED CONDUIT BODY INSTALLATION FOR M200C, M200D, M200E, M200F, M200G, M200H, M200J, M200K, M201C, M201D, M201E, M201F, M201G, M201H M201J AND M201K. REFER TO DETAIL ON SHEET E–6.1.
14. PROPOSED CONDUIT SUPPORT FOR M200, M200A, AND M200B. IDENTICAL FOR M201, M201A AND M201B. REFER TO DETAIL ON SHEET E–6.0.
15. PROPOSED CONDUIT SUPPORTS FOR HORIZONTAL RUNS. REFER TO DETAIL ON SHEET E–6.1, DETAIL SHOWS SUPPORT INTENDED FOR SUPPORT VIA TRANSFORMER PAD WALL OR ALUMINUM POST. TYPICAL OF NUMEROUS LOCATIONS.
16. CONTRACTOR TO SAW CUT EXISTING CONCRETE SLAB, EXCAVATE FOR PROPOSED CONDUITS, FILL, COMPACT AND RESTORE CONCRETE TO MATCH EXISTING.

INSTALLATION NOTES:

1. THE INTENT OF THE ROUTING AND INSTALLATION SHOWN IS IN AN EFFORT TO AVOID THE TECO 15KV PRIMARY LINE WHICH PASSES BETWEEN THE KRAUSE PUMPING STATION BUILDING AND THE PROPOSED GENERATORS TO BE INSTALLED.
2. THE PROPOSED ROUTING SEGREGATES CONDUCTORS FOR CLARITY. THE CONTRACTOR SHALL BE ALLOWED TO COMBINE CONDUCTORS SERVING SIMILAR FUNCTIONS (120V AC CONDUCTORS, 24V DC I/O SIGNAL CONDUCTORS AND 4–20mA CABLES) IF POSSIBLE USING CONDUITS AND JUNCTION BOXES SIZED PER THE NATIONAL ELECTRICAL CODE. HOWEVER, 120V AC CIRCUITS SHALL BE SEPARATED FROM 24V DC AND 4–20mA CONDUCTORS BY A MINIMUM OF 6 INCHES IN ALL CASES.
3. ACCESS FOR OPERATOR MAINTENANCE SHALL BE CONSIDERED FOR ALL JUNCTION BOX LOCATIONS.
4. ELEVATIONS OF CONDUITS ARE TO BE DETERMINED BASED ON GENERATOR PLATFORM ELEVATIONS AND ACCESSIBILITY.
5. SUPPORTING CONDUITS FROM THE GENERATOR PLATFORM, STAIRS ETC. VIA APPROPRIATE CLAMPS, ALL–THREAD, UNISTRUT ETC. SHALL ONLY BE ALLOWED AFTER APPROVAL OF THE STRUCTURAL ENGINEER.
6. AS PART OF THE SHOP DRAWING REVIEW PROCESS, THE CONTRACTOR SHALL SUBMIT A CONDUIT ROUTING AND INSTALLATION PLAN FOR ENGINEER'S APPROVAL. THE CONTRACTOR SHALL NOT ORDER MATERIALS OR COMMENCE CONDUIT INSTALLATION UNTIL THE CONTRACTOR'S CONDUIT ROUTING AND INSTALLATION PLAN HAS BEEN APPROVED BY THE CITY OF TAMPA.

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Certificate of Authorization No. 8363

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DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2021	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

City of Tampa Wastewater Department

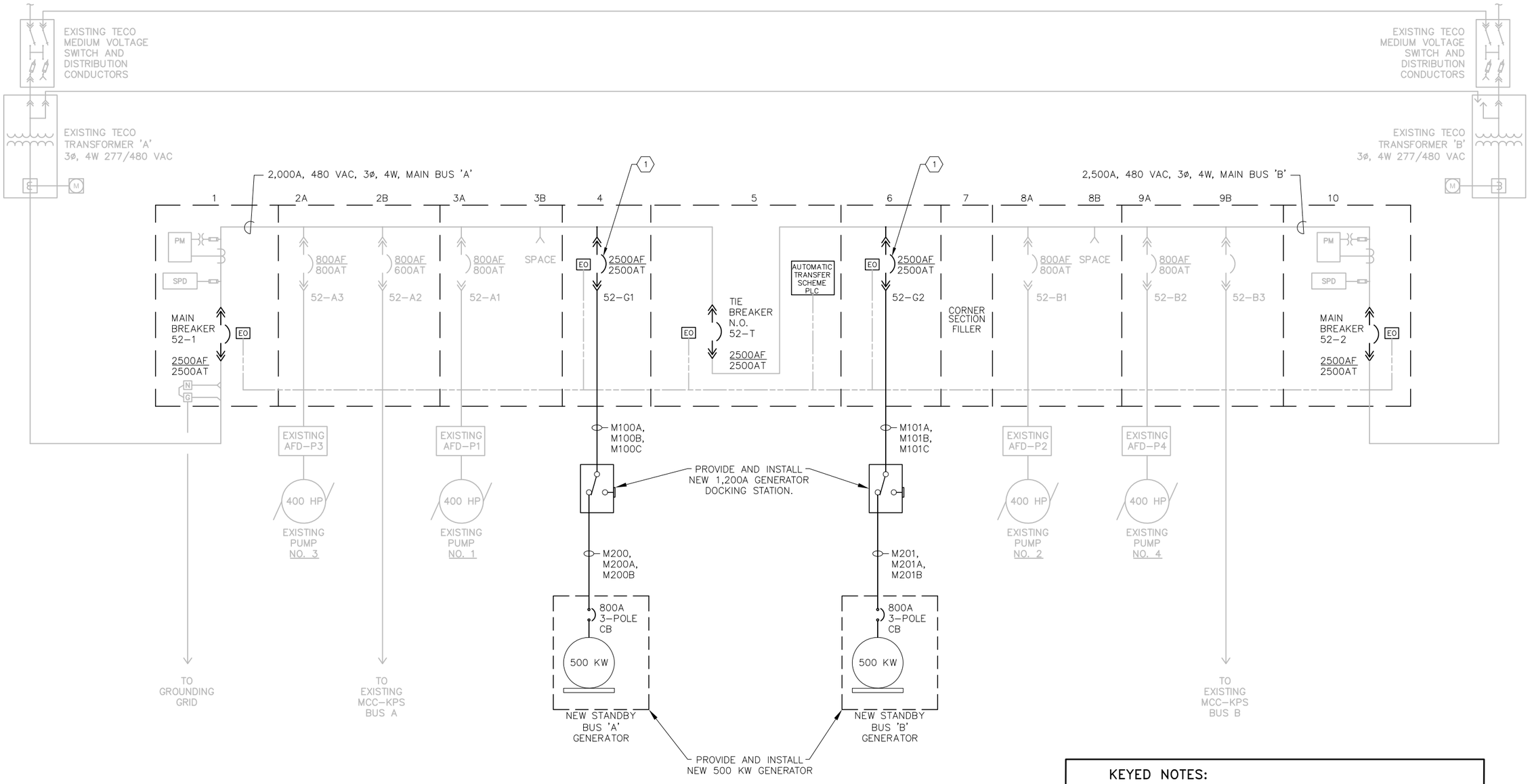
KRAUSE PUMPING STATION
STANDBY GENERATORS

CONDUIT ROUTING AND INSTALLATION DETAILS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER
E–0.3

FILE: 231801142



SWITCHBOARD 'KPS' ONE LINE DIAGRAM

KEYED NOTES:

1. CONTRACTOR SHALL ADJUST CIRCUIT BREAKER PROTECTIVE SETTINGS AS REQUIRED TO ALLOW COMPLETE COORDINATION WITH MAIN CIRCUIT BREAKER PROVIDED WITH THE MANUFACTURER.

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SCALE: AS SHOWN

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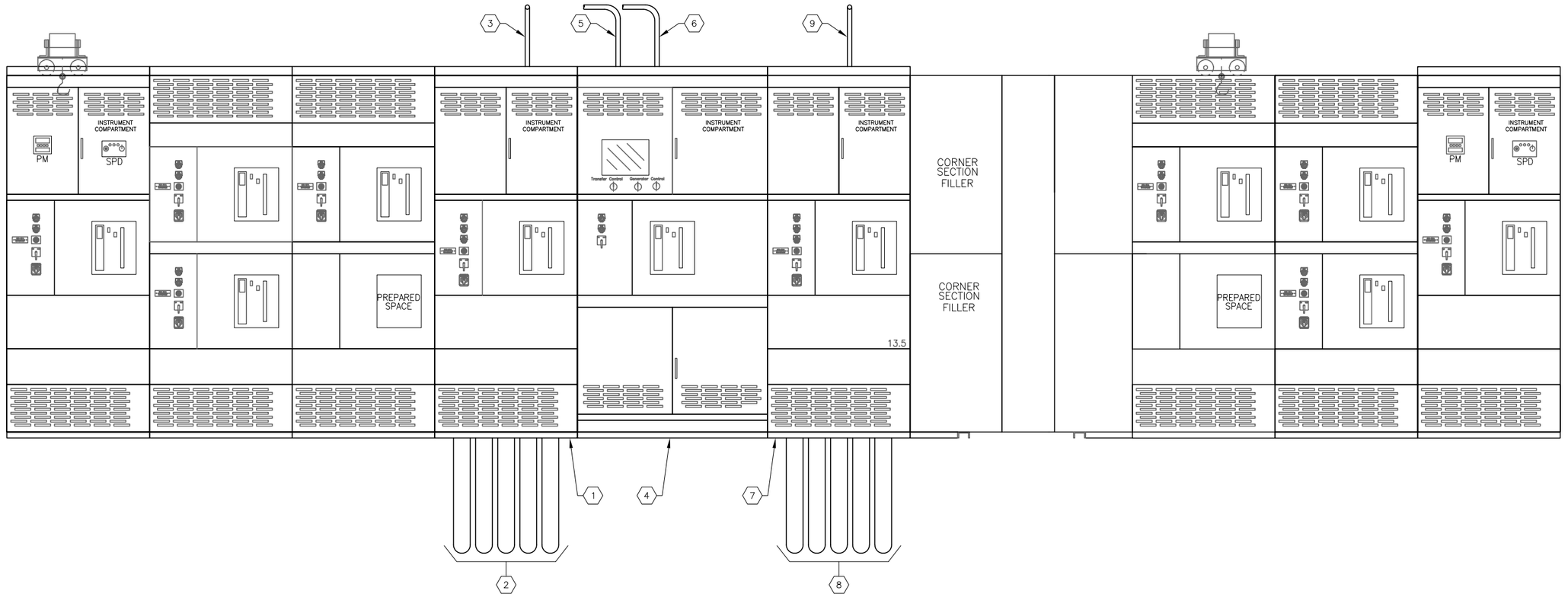
KRAUSE PUMPING STATION
STANDBY GENERATORS

EXISTING SWITCHBOARD 'KPS' ONE LINE DIAGRAM

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER E–1.0

FILE: 231901542



SWITCHBOARD 'KPS': NORTH SECTION FRONT ELEVATION

SCALE: N.T.S.

A
E-0.2 | E-1.0

SWITCHBOARD 'KPS': EAST SECTION FRONT ELEVATION

SCALE: N.T.S.

KEYED NOTES:

1. EXISTING SWITCHBOARD 'KPS' SECTION 4 CONTAINING GENERATOR CIRCUIT BREAKER 52–G1 (BUS 'A'). REFER SHEET E1.2 FOR 52–G1 CIRCUIT BREAKER CONTROL CIRCUIT MODIFICATIONS.
2. CONTRACTOR TO MODIFY EXISTING CONDUIT AND CONDUCTORS. REFER TO KEYED NOTE #11 ON SHEET E–0.2.
3. CONTRACTOR TO INSTALL M203 TO REMOTE CIRCUIT BREAKER PANEL (RCBP) FOR CIRCUIT BREAKER 52–G1 CONTROL MODIFICATIONS. REFER TO SHEET E–0.2 FOR RCBP LOCATION.
4. EXISTING SWITCHBOARD 'KPS' SECTION 5 CONTAINING TIE CIRCUIT BREAKER 52–T AND SWITCHBOARD PLC CONTROLLER. REFER SHEET E1.3 FOR PLC MODIFICATIONS.
5. CONTRACTOR TO INSTALL M200E TO NEW BUS 'A' GENERATOR FOR GENERATOR START COMMAND. REFER TO SHEET E–0.1 FOR NEW BUS 'A' GENERATOR LOCATION.
6. CONTRACTOR TO INSTALL M201E TO NEW BUS 'B' GENERATOR FOR GENERATOR START COMMAND. REFER TO SHEET E–0.1 FOR NEW BUS 'B' GENERATOR LOCATION.
7. EXISTING SWITCHBOARD 'KPS' SECTION 6 CONTAINING GENERATOR CIRCUIT BREAKER 52–G2 (BUS 'B'). REFER SHEET E1.4 FOR 52–G2 CIRCUIT BREAKER CONTROL CIRCUIT MODIFICATIONS.
8. CONTRACTOR TO MODIFY EXISTING CONDUIT AND CONDUCTORS. REFER TO KEYED NOTE #14 ON SHEET E–0.2.
9. CONTRACTOR TO INSTALL M204 TO REMOTE CIRCUIT BREAKER PANEL (RCBP) FOR CIRCUIT BREAKER 52–G2 CONTROL MODIFICATIONS. REFER TO SHEET E–0.2 FOR RCBP LOCATION.

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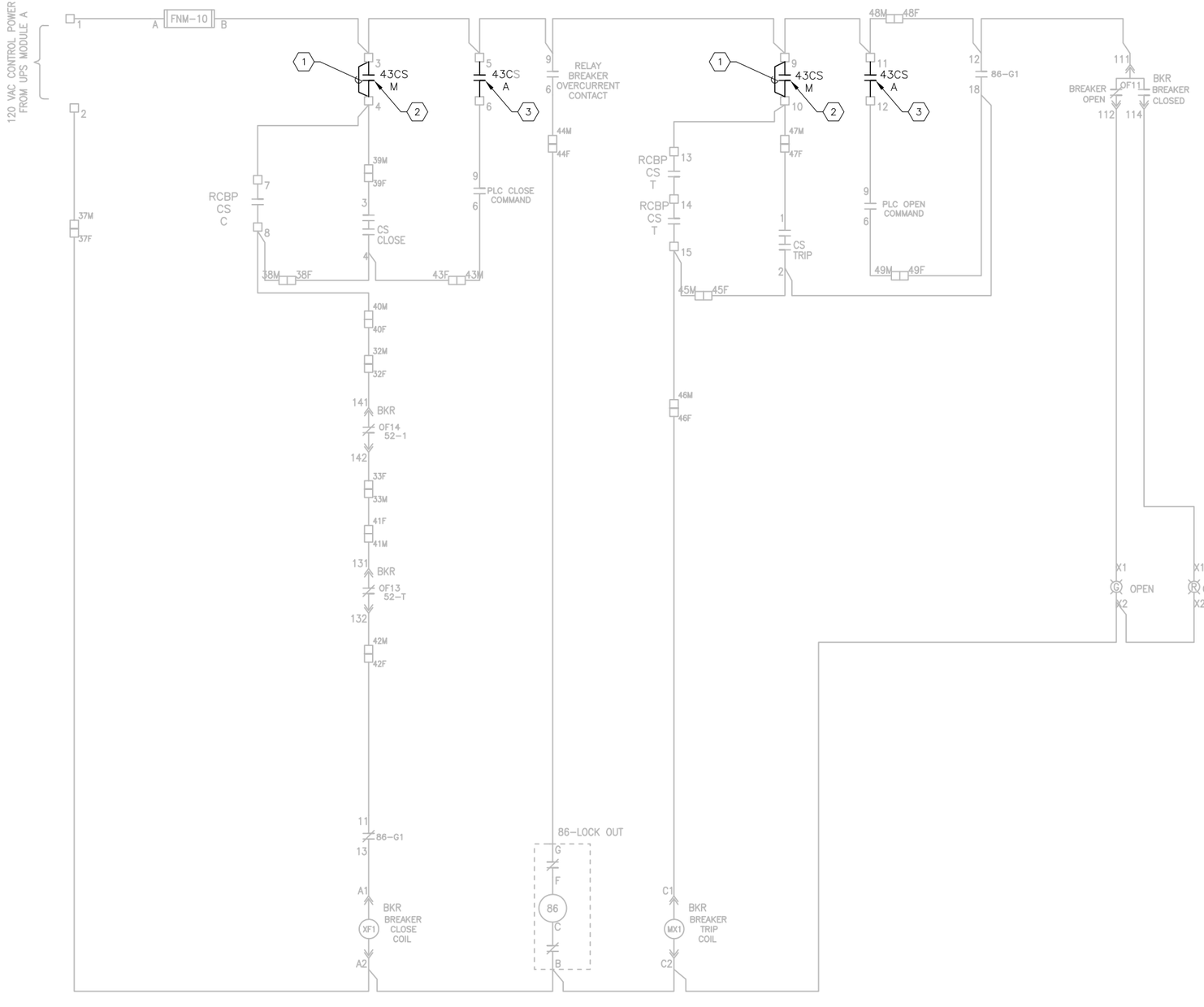
KRAUSE PUMPING STATION
STANDBY GENERATORS

EXISTING SWITCHBOARD 'KPS' FRONT ELEVATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–1.1

FILE: 231901542



KEYED NOTES:

1. EXISTING JUMPER TO BE REMOVED.
2. EXISTING CONTACT IN REMOTE CIRCUIT BREAKER PANEL. MANUAL TRANSFER CONTROL SWITCH MANUAL SELECT CONTACT. CONTRACTOR TO INTEGRATE CONTACT INTO CIRCUIT BREAKER CONTROL CIRCUIT VIA M203.
3. EXISTING CONTACT IN REMOTE CIRCUIT BREAKER PANEL. MANUAL TRANSFER CONTROL SWITCH AUTO SELECT CONTACT. CONTRACTOR TO INTEGRATE CONTACT INTO CIRCUIT BREAKER CONTROL CIRCUIT VIA M203.

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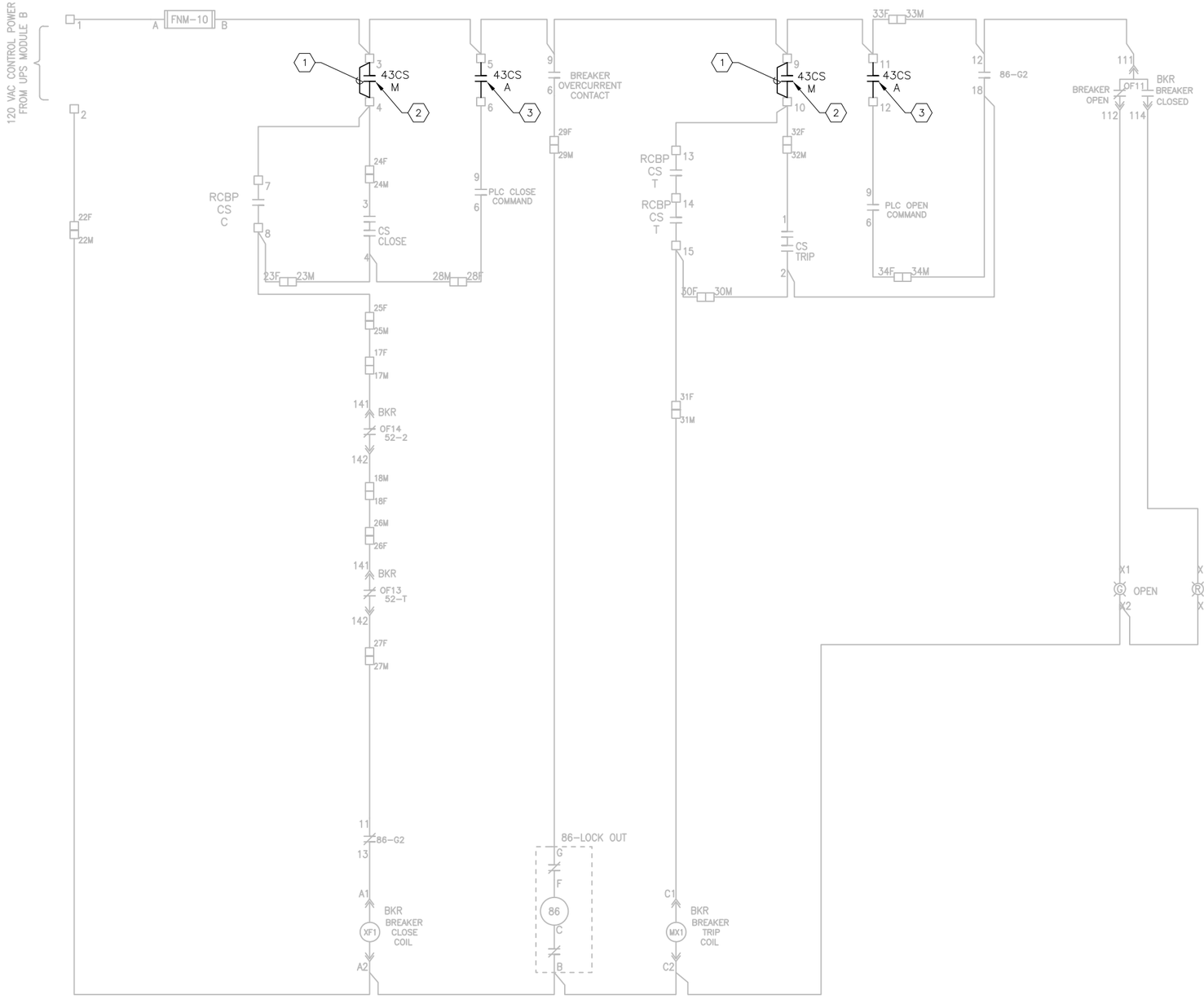
KRAUSE PUMPING STATION
STANDBY GENERATORS

CIRCUIT BREAKER 52-G1 CONTROL MODIFICATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-1.2

FILE: 231901542



KEYED NOTES:

1. EXISTING JUMPER TO BE REMOVED.
2. EXISTING CONTACT IN REMOTE CIRCUIT BREAKER PANEL. MANUAL TRANSFER CONTROL SWITCH MANUAL SELECT CONTACT. CONTRACTOR TO INTEGRATE CONTACT INTO CIRCUIT BREAKER CONTROL CIRCUIT VIA M204.
3. EXISTING CONTACT IN REMOTE CIRCUIT BREAKER PANEL. MANUAL TRANSFER CONTROL SWITCH AUTO SELECT CONTACT. CONTRACTOR TO INTEGRATE CONTACT INTO CIRCUIT BREAKER CONTROL CIRCUIT VIA M204.

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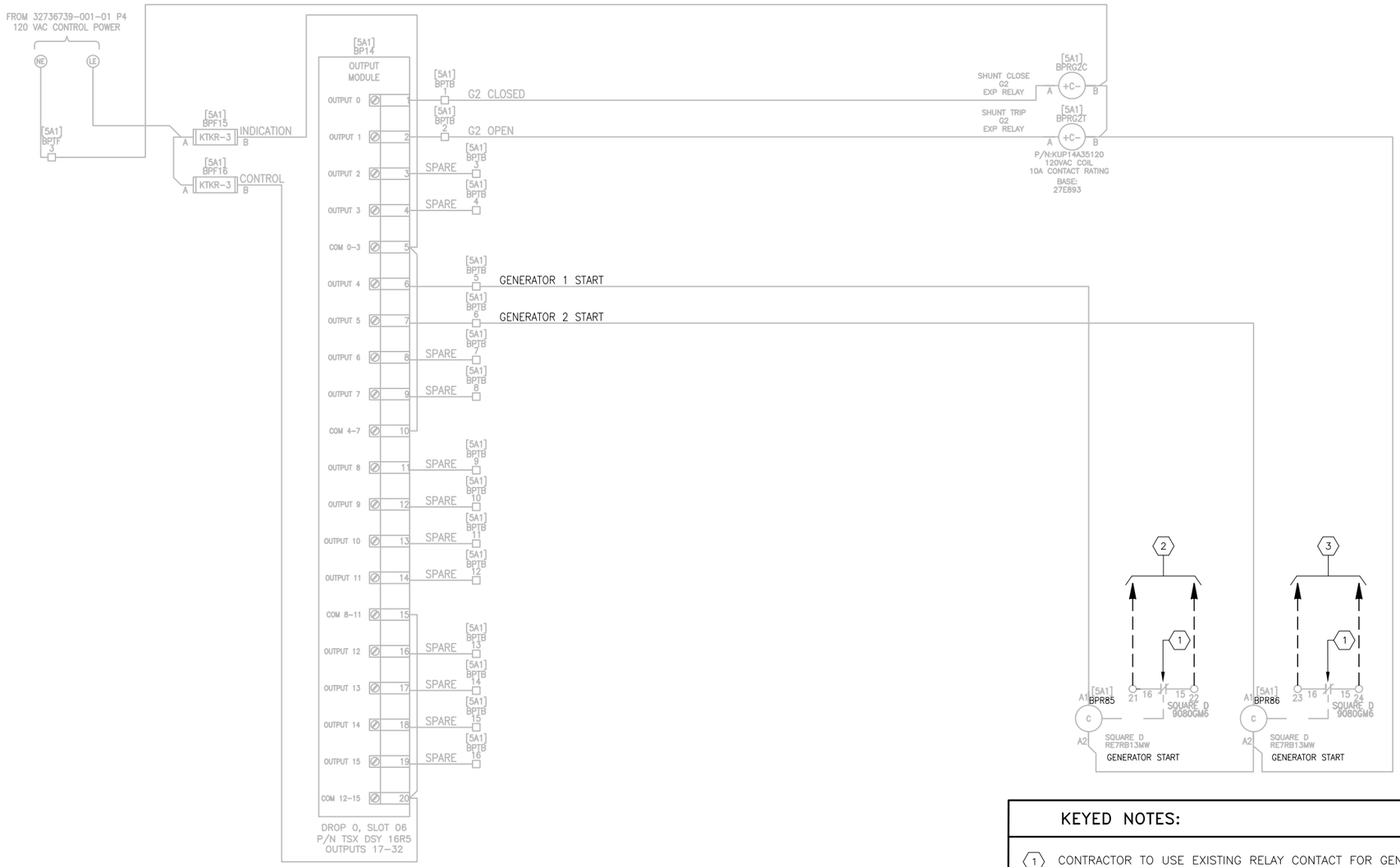
KRAUSE PUMPING STATION
STANDBY GENERATORS

CIRCUIT BREAKER 52-G2 CONTROL MODIFICATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-1.3

FILE: 231901542



KEYED NOTES:

1. CONTRACTOR TO USE EXISTING RELAY CONTACT FOR GENERATOR START COMMAND.
2. PROVIDE M200E FOR GENERATOR BUS 'A' START COMMAND.
3. PROVIDE M201E FOR GENERATOR BUS 'B' START COMMAND.

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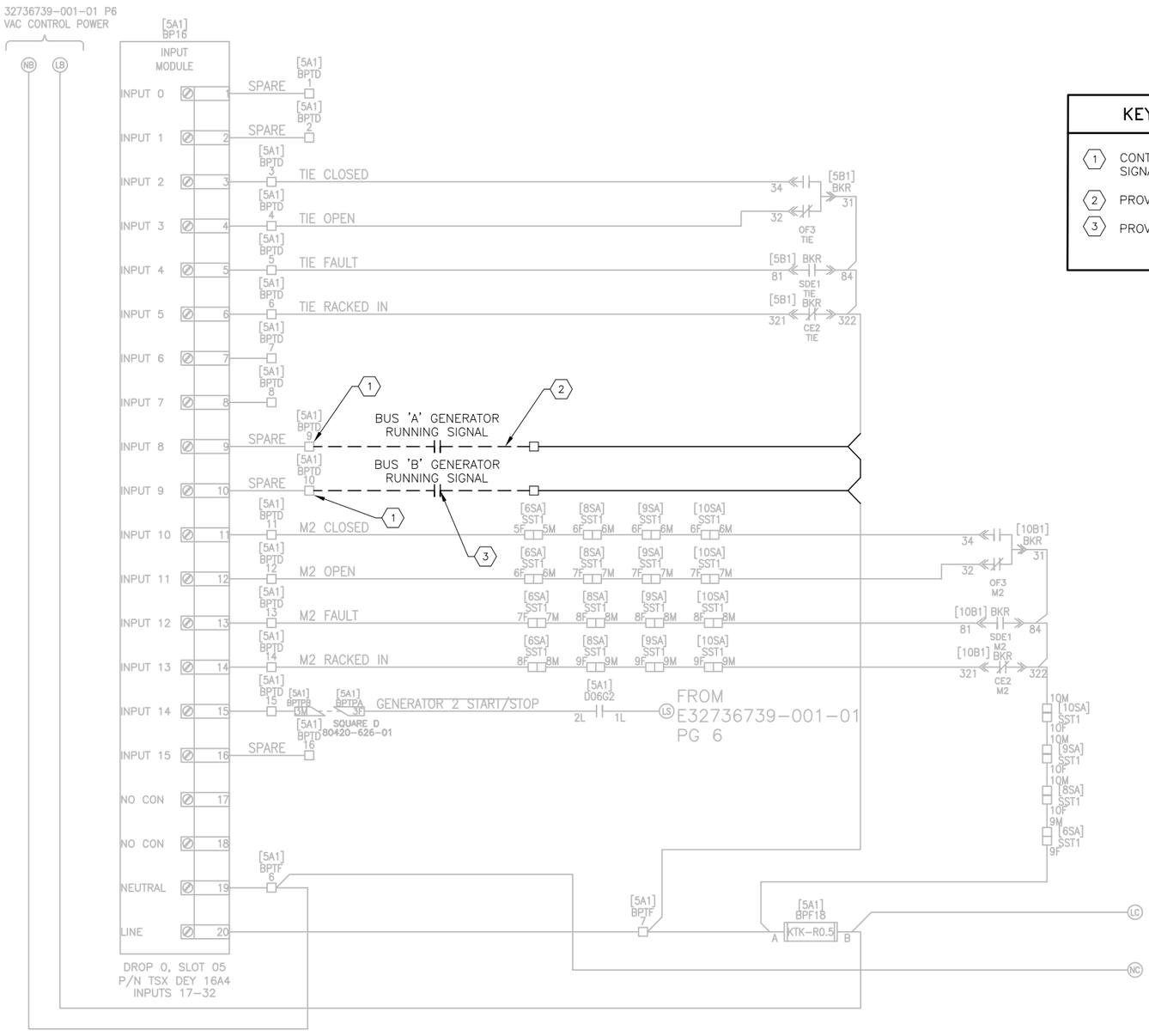
KRAUSE PUMPING STATION
STANDBY GENERATORS

SWITCHBOARD 'KPS' PLC CONTROL MODIFICATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-1.4

FILE: 231901542



KEYED NOTES:

1. CONTRACTOR TO USE EXISTING SPARE INPUT FOR GENERATOR RUNNING SIGNAL.
2. PROVIDE M200E FOR GENERATOR BUS 'A' GENERATOR RUNNING SIGNAL.
3. PROVIDE M201E FOR GENERATOR BUS 'B' GENERATOR RUNNING SIGNAL.

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SCALE: AS SHOWN

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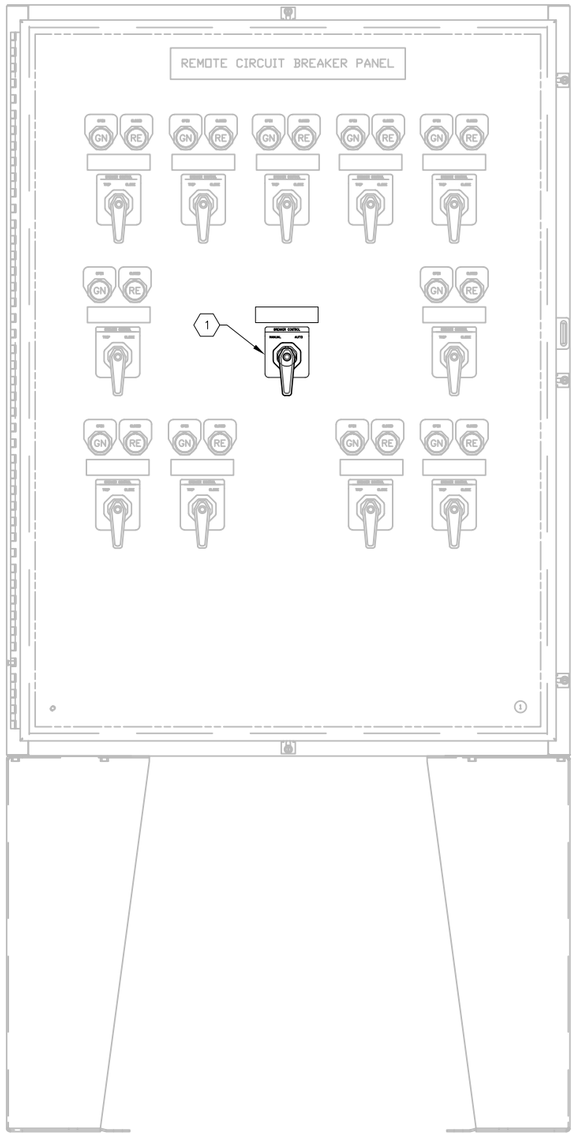
STANDBY GENERATORS

SWITCHBOARD 'KPS' PLC CONTROL MODIFICATIONS

TIMOTHY THOMAS, P.E. No. 47079

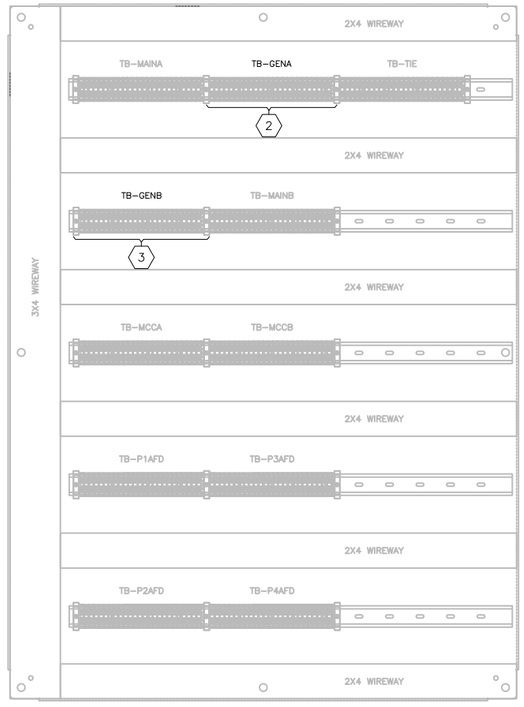
SHEET NUMBER: E-1.5

FILE: 231901542



EXISTING RCBP FRONT EXTERIOR ELEVATION

SCALE: NOT TO SCALE



EXISTING RCBP INTERIOR ELEVATION

SCALE: NOT TO SCALE

KEYED NOTES:

1. EXISTING MANUAL TRANSFER CONTROL SWITCH 43CS. CONTRACTOR TO UTILIZE EXISTING AUTO SELECT AND MANUAL SELECT CONTACTS FOR CIRCUIT BREAKER 52-G1 AND 52-G2 CONTROL CIRCUIT MODIFICATIONS. REFER ALSO TO SHEETS E-1.1 AND E-1.3.
2. EXISTING TERMINAL BLOCKS FOR CIRCUIT BREAKER 52-G1 (BUS 'A' GENERATOR).
3. EXISTING TERMINAL BLOCKS FOR CIRCUIT BREAKER 52-G2 (BUS 'B' GENERATOR).

A
E-0.2 | E-2.0

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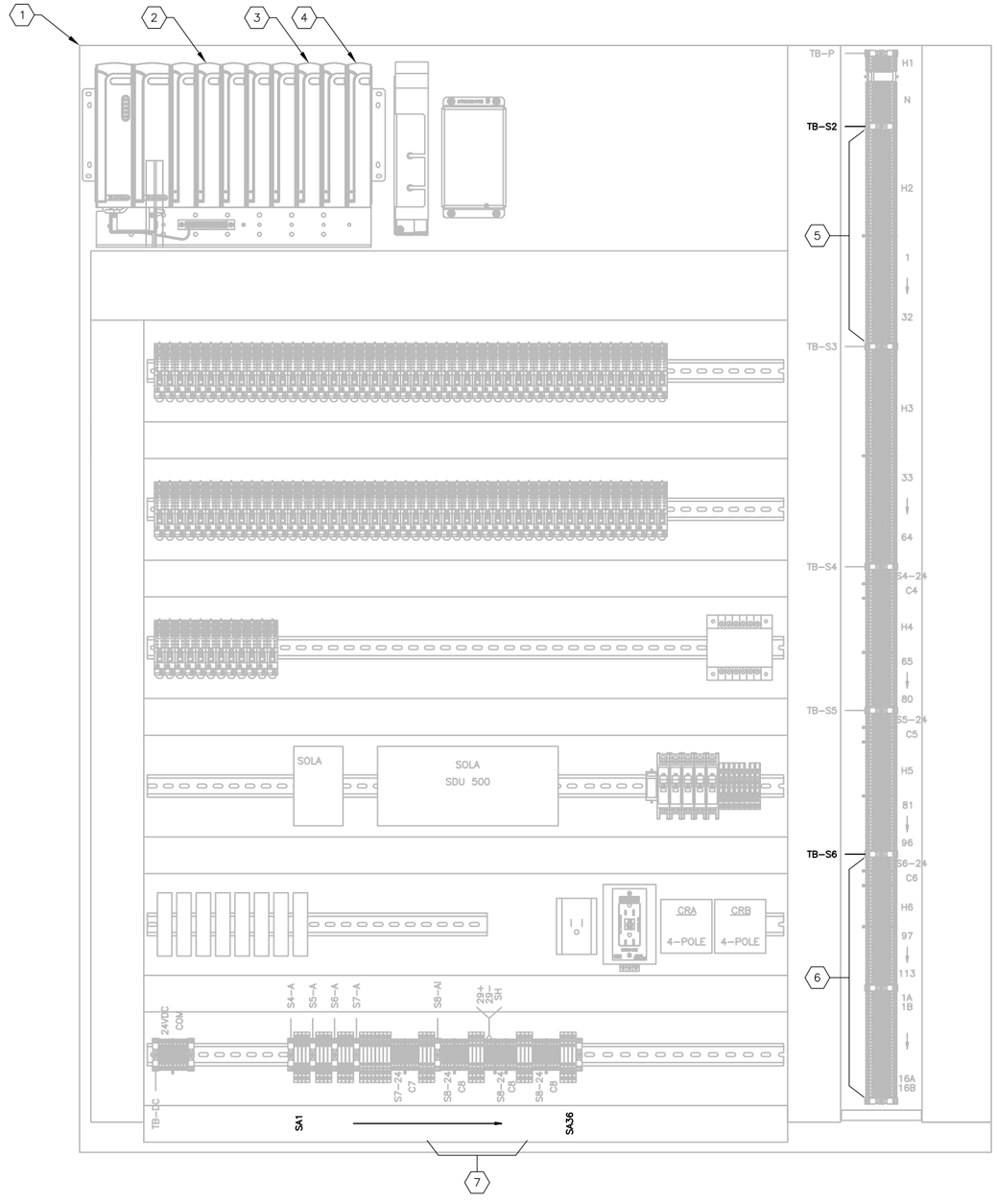
KRAUSE PUMPING STATION
STANDBY GENERATORS

EXISTING REMOTE CIRCUIT BREAKER PANEL (RCBP) ELEVATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-2.0

FILE: 231801142



KEYED NOTES:

1. INTERIOR OF EXISTING PUMP CONTROL PANEL/PLC.
2. EXISTING MOSCAD ACE3600 MODULE IN SLOT 2. 32 DIGITAL INPUTS/DIGITAL OUTPUTS, REFER TO SHEET E-3.3 FOR NEW INPUTS TO MODULE.
3. EXISTING MOSCAD ACE3600 MODULE IN SLOT 6. MIXED I/O, REFER TO SHEET E-3.4 FOR NEW INPUTS TO MODULE.
4. EXISTING MOSCAD ACE3600 MODULE IN SLOT 8. 4 ANALOG OUTPUTS, 8 ANALOG INPUTS, REFER TO SHEET E-3.5 FOR NEW ANALOG SIGNALS TO MODULE.
5. EXISTING TERMINAL BLOCKS 'TB-S2' FOR SLOT 2 MODULE. REFER TO SHEET E-3.1 FOR FIELD WIRING TO TERMINATE ON ASSOCIATED TERMINAL BLOCKS.
6. EXISTING TERMINAL BLOCKS 'TB-S6' FOR SLOT 6 MODULE. REFER TO SHEET E-3.2 FOR FIELD WIRING TO TERMINATE ON ASSOCIATED TERMINAL BLOCKS.
7. EXISTING ANALOG SURGE PROTECTION DEVICES (SPD'S) 'SA-30' AND 'SA-31'. CONTRACTOR TO UTILIZE EXISTING SPD'S TO TERMINATE FIELD CONDUCTORS FOR GENERATOR DIESEL TANK LEVEL SIGNALS. REFER ALSO TO SHEET E-3.5.

EXISTING PUMP CONTROL PANEL/PLC INTERIOR ELEVATION

SCALE: NOT TO SCALE

A
E-0.2 | E-3.0

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KRAUSE PUMPING STATION
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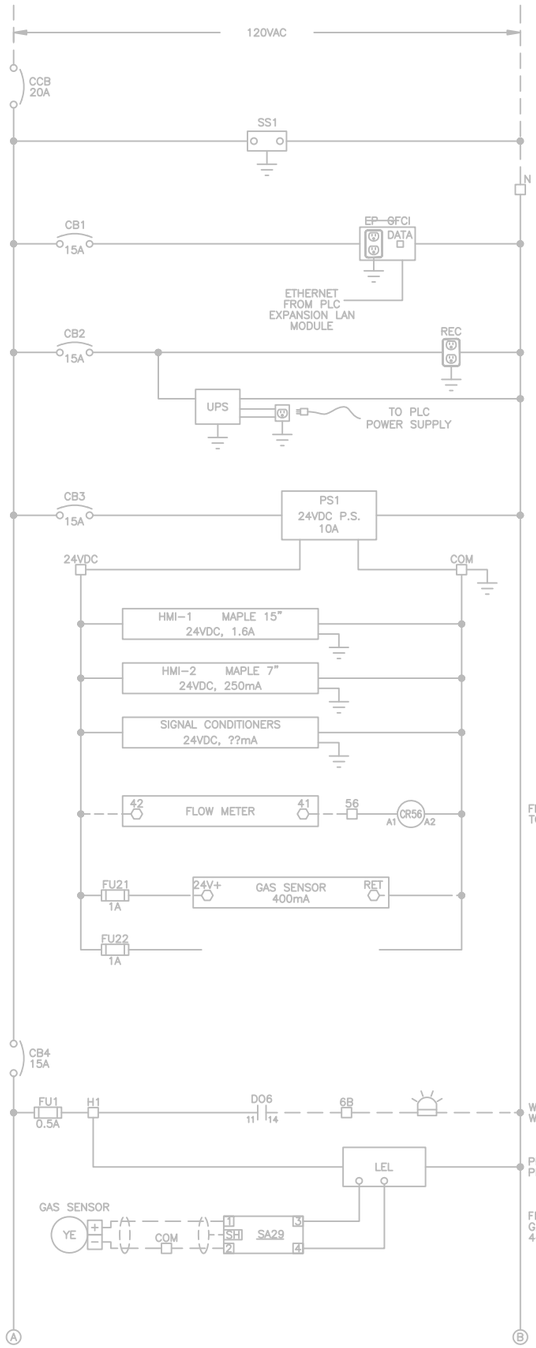
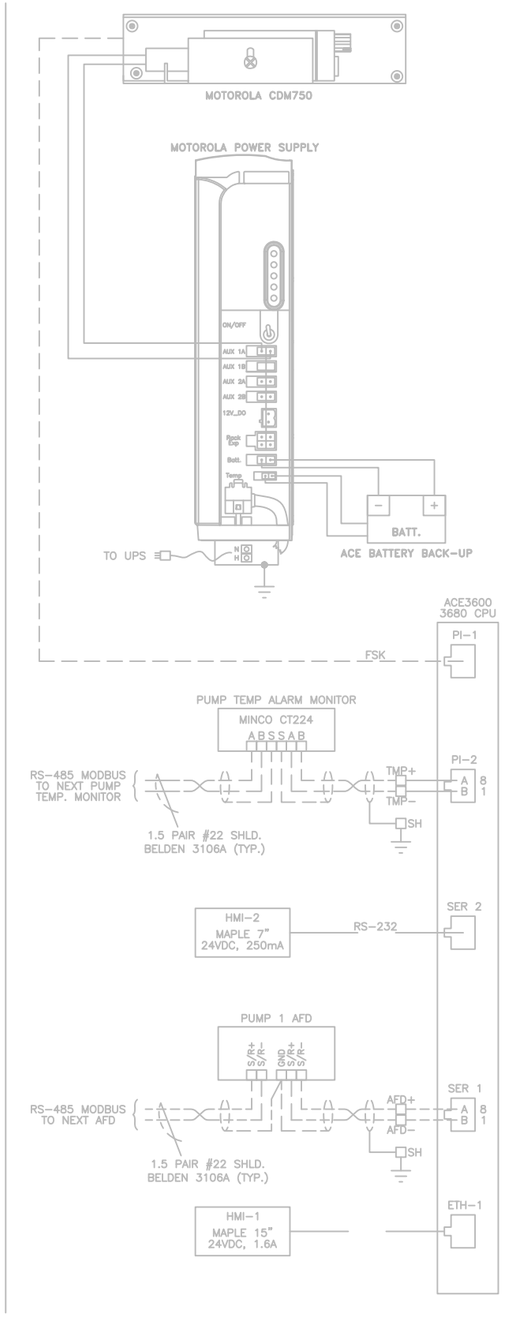
EXISTING PUMP CONTROL PANEL/PLC INTERIOR ELEVATION

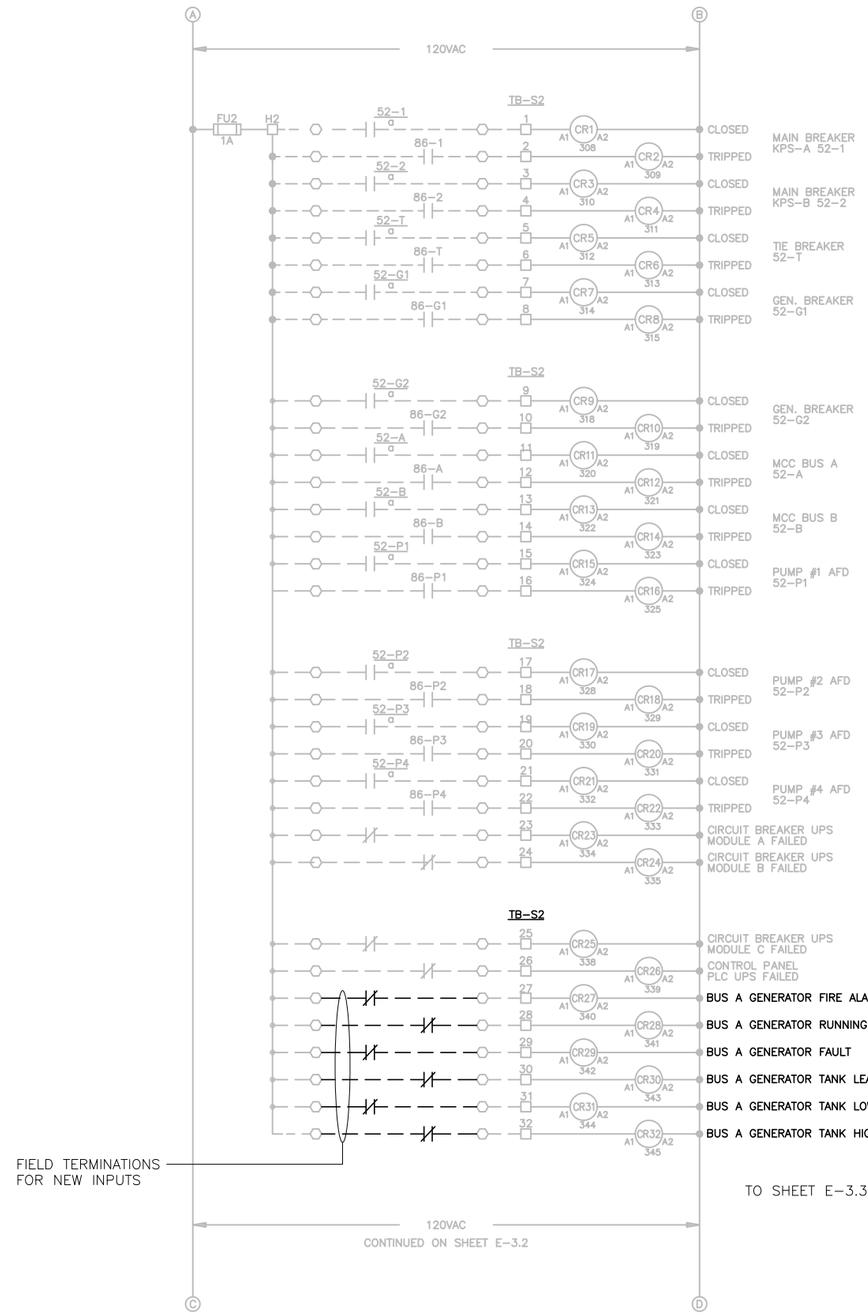
TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER
E-3.0

FILE: 231901542







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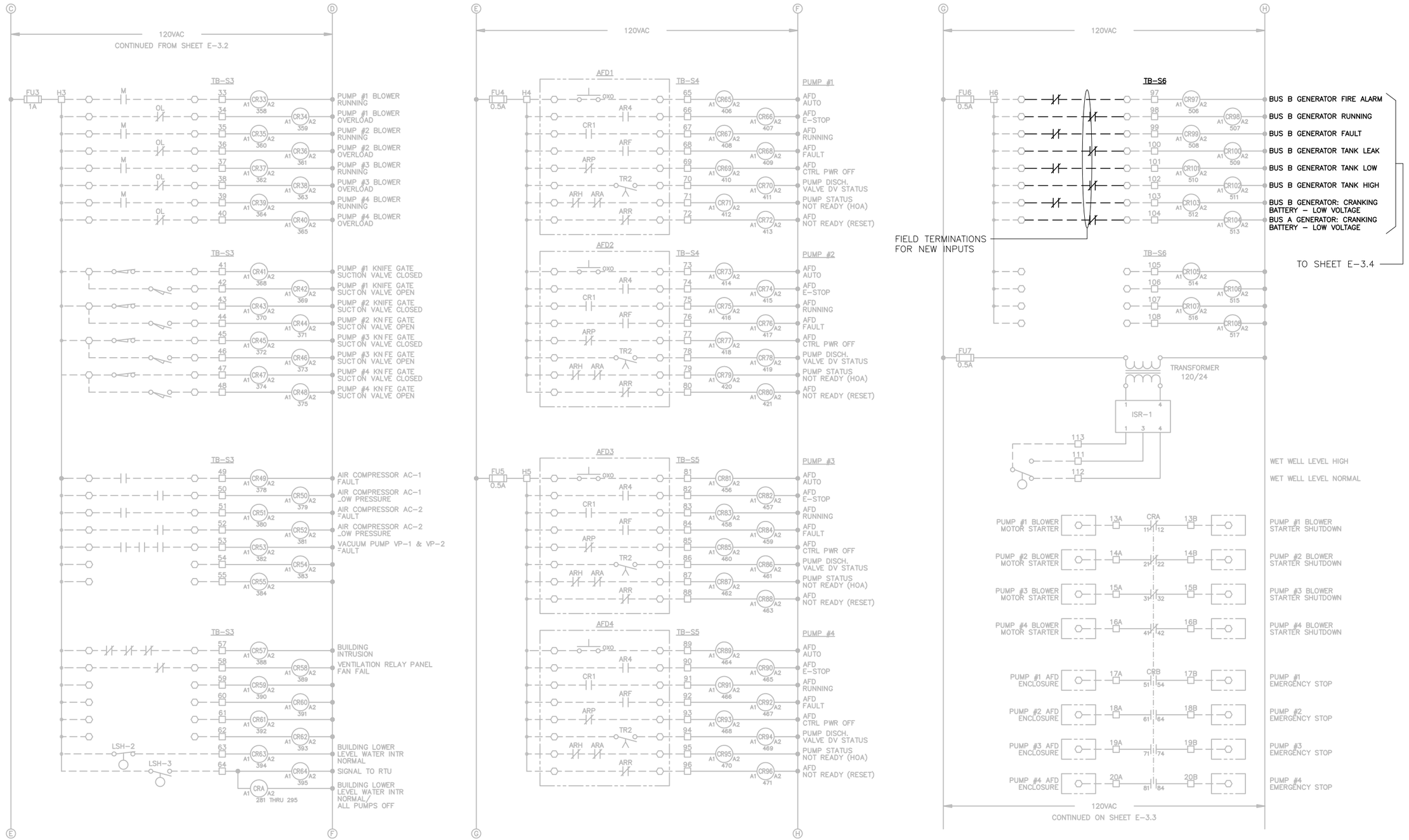
KRAUSE PUMPING STATION
STANDBY GENERATORS

REQUIRED FIELD TERMINATIONS FOR GENERATOR 'A' I/O

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–3.1

FILE: 231901542



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KRAUSE PUMPING STATION
STANDBY GENERATORS

REQUIRED FIELD TERMINATIONS FOR GENERATOR 'B' I/O

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-3.2

FILE: 231901542

120VAC
CONTINUED FROM SHEET E-3.2

SLOT 2
MOTOROLA
ACE3600
32 DI/DO FET

PIN	INPUT		
1	DI-1	CR1	CLOSED — MAIN BREAKER KPS-A 52-1
2	DI-2	CR2	TRIPPED
3	DI-3	CR3	CLOSED — MAIN BREAKER KPS-B 52-2
4	DI-4	CR4	TRIPPED
5	DI-5	CR5	CLOSED — TIE BREAKER 52-T
6	DI-6	CR6	TRIPPED
7	DI-7	CR7	CLOSED — GEN. BREAKER 52-G1
8	DI-8	CR8	TRIPPED
9	COM1		
10	PGND1		
11	DI-9	CR9	CLOSED — GEN. BREAKER 52-G2
12	DI-10	CR10	TRIPPED
13	DI-11	CR11	CLOSED — MCC BUS A 52-A1
14	DI-12	CR12	TRIPPED
15	DI-13	CR13	CLOSED — MCC BUS B 52-A1
16	DI-14	CR14	TRIPPED
17	DI-15	CR15	CLOSED — PUMP #1 AFD 52-A1
18	DI-16	CR16	TRIPPED
19	COM2		
20	PGND2		
21	DI-17	CR17	CLOSED — PUMP #2 AFD 52-A1
22	DI-18	CR18	TRIPPED
23	DI-19	CR19	CLOSED — PUMP #3 AFD 52-A1
24	DI-20	CR20	TRIPPED
25	DI-21	CR21	CLOSED — PUMP #4 AFD 52-A1
26	DI-22	CR22	TRIPPED
27	DI-23	CR23	CIRCUIT BREAKER UPS MODULE A FAILED
28	DI-24	CR24	CIRCUIT BREAKER UPS MODULE B FAILED
29	COM3		
30	PGND3		
31	DI-25	CR25	CIRCUIT BREAKER UPS MODULE C FAILED
32	DI-26	CR26	CONTROL PANEL PLC UPS FAILED
33	DI-27	CR27	BUS A GENERATOR FIRE ALARM
34	DI-28	CR28	BUS A GENERATOR RUNNING
35	DI-29	CR29	BUS A GENERATOR FAULT
36	DI-30	CR30	BUS A GENERATOR TANK LEAK
37	DI-31	CR31	BUS A GENERATOR TANK LOW
38	DI-32	CR32	BUS A GENERATOR TANK HIGH
39	COM4		
40	PGND4		

NEW INPUTS FOR SLOT 2 (VIA ASSOCIATED INTERPOSING RELAYS) REFER ALSO TO SHEET E-3.1

SLOT 3
MOTOROLA
ACE3600
32 DI/DO FET

PIN	INPUT		
1	DI-1	CR33	PUMP #1 BLOWER RUNNING
2	DI-2	CR34	PUMP #1 BLOWER OVERLOAD
3	DI-3	CR35	PUMP #2 BLOWER RUNNING
4	DI-4	CR36	PUMP #2 BLOWER OVERLOAD
5	DI-5	CR37	PUMP #3 BLOWER RUNNING
6	DI-6	CR38	PUMP #3 BLOWER OVERLOAD
7	DI-7	CR39	PUMP #4 BLOWER RUNNING
8	DI-8	CR40	PUMP #4 BLOWER OVERLOAD
9	COM1		
10	PGND1		
11	DI-9	CR41	PUMP #1 KNIFE GATE SUCTION VALVE CLOSED
12	DI-10	CR42	PUMP #1 KNIFE GATE SUCTION VALVE OPEN
13	DI-11	CR43	PUMP #2 KNIFE GATE SUCTION VALVE CLOSED
14	DI-12	CR44	PUMP #2 KNIFE GATE SUCTION VALVE OPEN
15	DI-13	CR45	PUMP #3 KNIFE GATE SUCTION VALVE CLOSED
16	DI-14	CR46	PUMP #3 KNIFE GATE SUCTION VALVE OPEN
17	DI-15	CR47	PUMP #4 KNIFE GATE SUCTION VALVE CLOSED
18	DI-16	CR48	PUMP #4 KNIFE GATE SUCTION VALVE OPEN
19	COM2		
20	PGND2		
21	DI-17	CR49	AIR COMPRESSOR AC-1 FAULT
22	DI-18	CR50	AIR COMPRESSOR AC-1 LOW PRESSURE
23	DI-19	CR51	AIR COMPRESSOR AC-2 FAULT
24	DI-20	CR52	AIR COMPRESSOR AC-2 LOW PRESSURE
25	DI-21	CR53	VACUUM PUMP VP-1 & VP-2 FAULT
26	DI-22	CR54	
27	DI-23	CR55	FLOW METER TOTALIZED FLOW
28	DI-24	CR56	
29	COM3		
30	PGND3		
31	DI-25	CR57	BUILDING INTRUSION
32	DI-26	CR58	VENTILATION RELAY PANEL FAN FAIL
33	DI-27	CR59	
34	DI-28	CR60	
35	DI-29	CR61	
36	DI-30	CR62	
37	DI-31	CR63 LSH-2	BUILDING LOWER LEVEL WATER INTRUSION NORMAL
38	DI-32	CR64 LSH-3	BUILDING LOWER LEVEL WATER INTRUSION NORMAL/ ALL PUMPS OFF
39	COM4		
40	PGND4		

24VDC FROM
PLUG-IN POWER SUPPLY SLOT 4

SLOT 4
W/24V P.S.
MOTOROLA
ACE3600
Mixed I/O

PIN	INPUT			
1	DI-1	CR65	BK	AFD AUTO
2	DI-2	CR66	RD	AFD E-STOP
3	DI-3	CR67	GR	AFD RUNNING
4	DI-4	CR68	WH	AFD FAULT — PUMP #1
5	DI-5	CR69	BR	AFD CTRL PWR ON
6	DI-6	CR70	BU	PUMP DISCH. VALVE DV STATUS
7	DI-7	CR71	OR	PUMP STATUS NOT READY (HOA)
8	DI-8	CR72	YE	AFD NOT READY (RESET)
9	DI-9	CR73	PU	AFD AUTO
10	DI-10	CR74	GY	AFD E-STOP
11	DI-11	CR75	WH/BK	AFD RUNNING
12	DI-12	CR76	WH/RD	AFD FAULT — PUMP #2
13	DI-13	CR77	WH/GR	AFD CTRL PWR ON
14	DI-14	CR78	WH/YE	PUMP DISCH. VALVE DV STATUS
15	DI-15	CR79	WH/BU	PUMP STATUS NOT READY (HOA)
16	DI-16	CR80	WH/BR	AFD NOT READY (RESET)
17	24V+	S4-24	WH/OR	
18	COMDI		WH/GY	
19	PGNDI		WH/PU	

C4

NO1	20	WH/BK/RD	PUMP #1 VFD START SIGNAL
COM1	21	WH/BK/GR	
NC1	22	WH/BK/YE	
NO2	23	WH/BK/BU	PUMP #2 VFD START SIGNAL
COM2	24	WH/BK/BR	
NC2	25	WH/BK/OR	
NO3	26	WH/BK/GY	PUMP #3 VFD START SIGNAL
COM3	27	WH/BK/PU	
NC3	28	WH/RD/OR	
NO4	29	WH/RD/YE	PUMP #4 VFD START SIGNAL
COM4	30	WH/RD/BU	
NC4	31	WH/RD/BR	

DO1 A1 A2 — 1A 1B
DO2 A1 A2 — 2A 2B
DO3 A1 A2 — 3A 3B
DO4 A1 A2 — 4A 4B

VT	SA1	WH/RD/OR	PUMP #1 MOTOR VIBRATION
		WH/RD/GY	
TT	SA2	WH/RD/PU	PUMP #1 MOTOR TEMP
		WH/GR/YE	
VT	SA3	WH/GR/BU	PUMP #1 PUMP VIBRATION
		WH/GR/BR	
TT	SA4	WH/GR/OR	PUMP #1 PUMP TEMP
		WH/GR/GY	
		WH/GR/PU	

PIN	INPUT
32	AI1+
33	AI1-
34	AI2+
35	AI2-
36	AI3+
37	AI3-
38	AI4+
39	AI4-
40	PGND

120VAC

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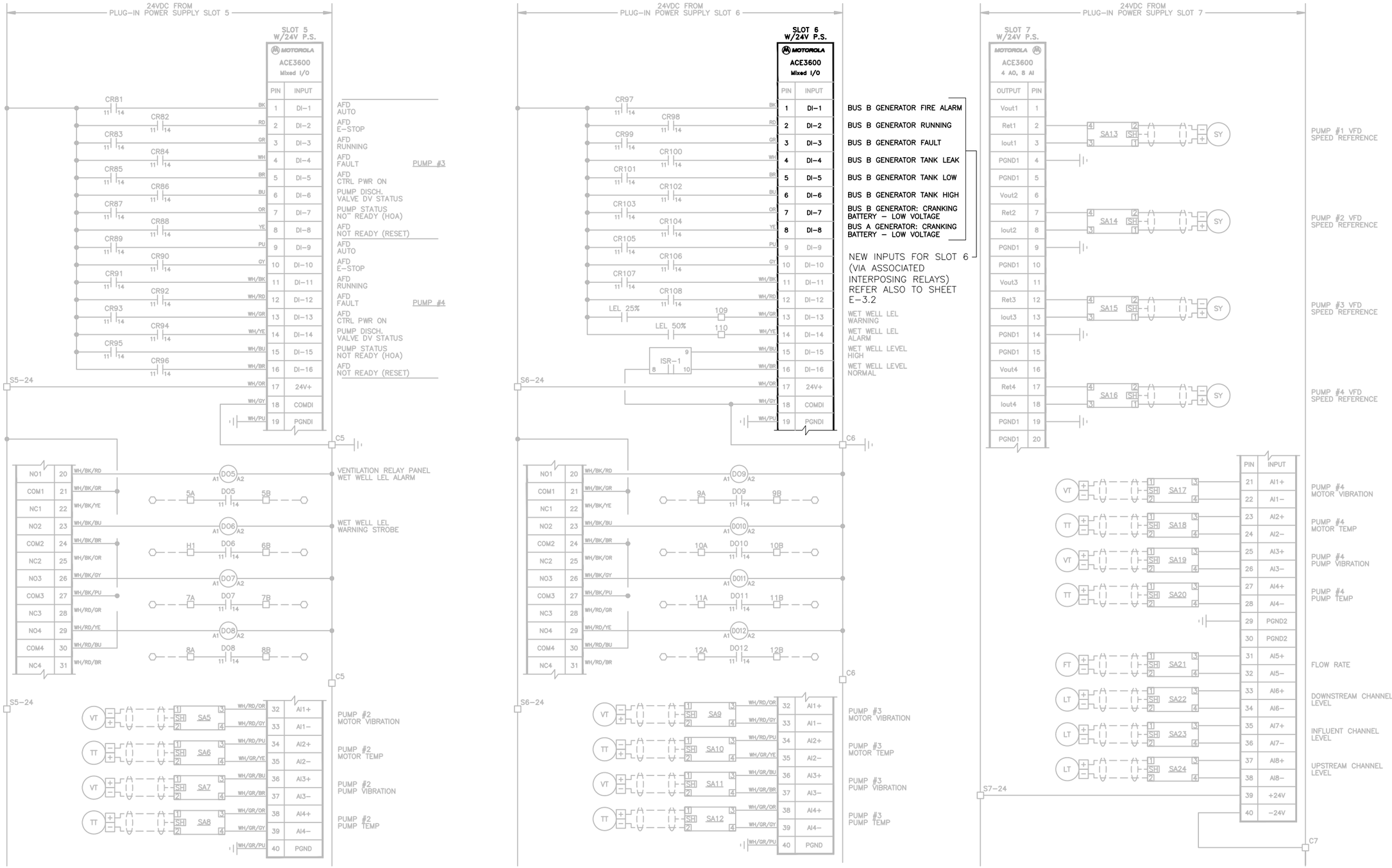
SCALE
AS SHOWN

City of Tampa Wastewater Department
KRAUSE PUMPING STATION
STANDBY GENERATORS

EXISTING ACE3600 DI/DO SLOT 2 MODIFICATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER
E-3.3
FILE: 231901542



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City of Tampa Wastewater Department

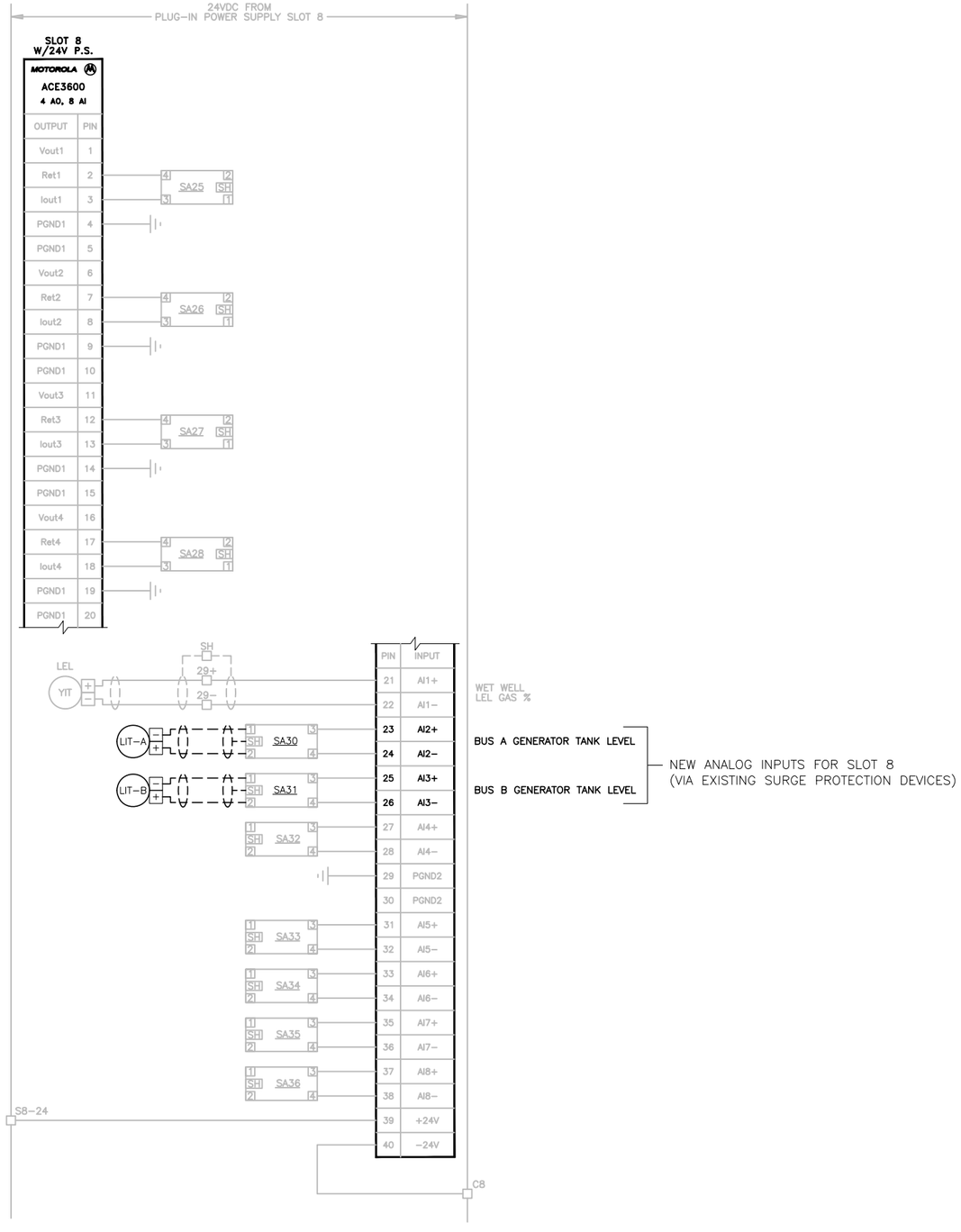
KRAUSE PUMPING STATION
STANDBY GENERATORS

EXISTING ACE3600 DI/DO SLOT 6 MODIFICATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-3.4

FILE: 231901542



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City of Tampa Wastewater Department

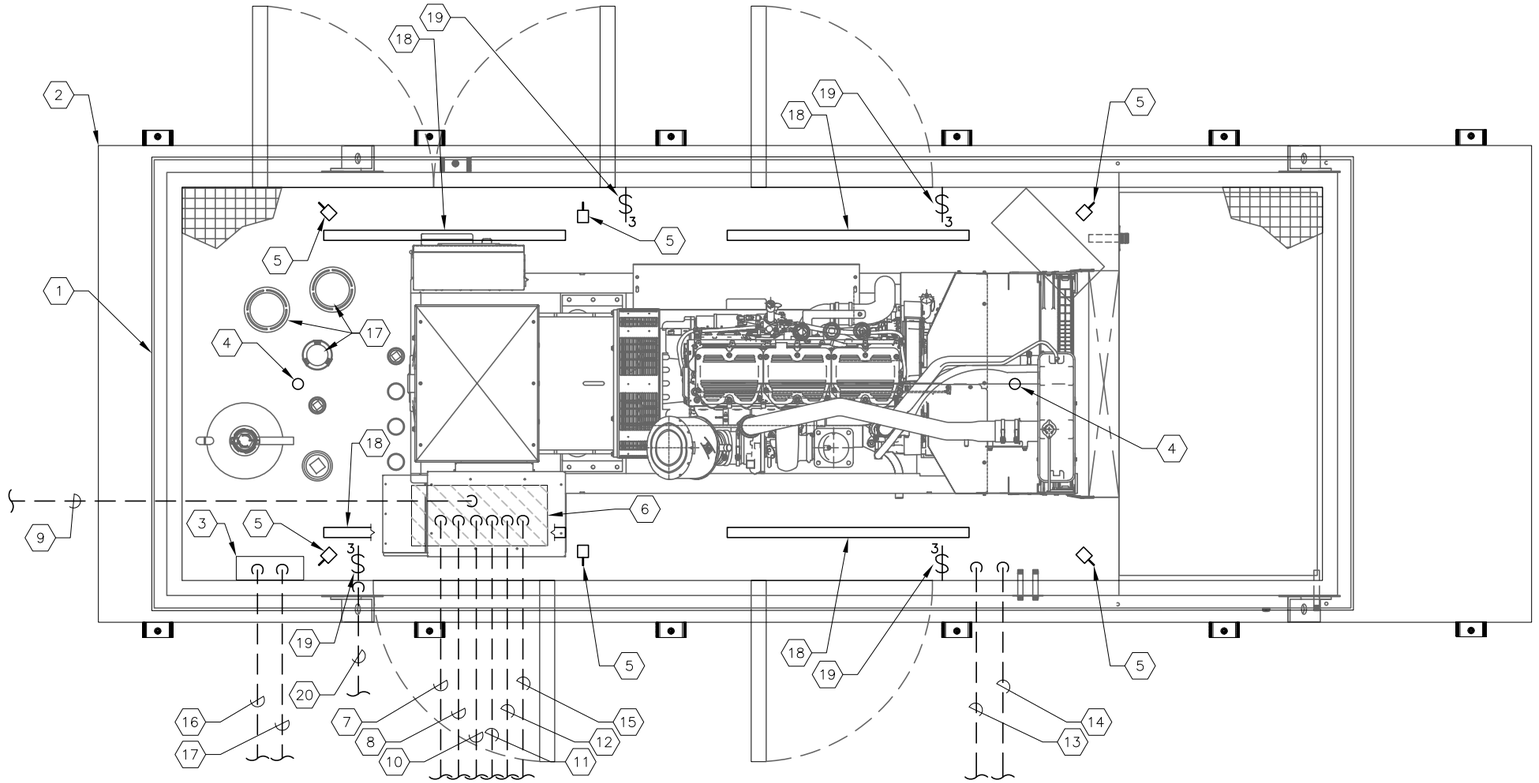
KRAUSE PUMPING STATION
STANDBY GENERATORS

EXISTING ACE3600 ANALOG INPUT SLOT 8 MODIFICATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER
E-3.5

FILE: 231901542



TYPICAL 500 KW GENERATOR LAYOUT DETAIL (1)

SCALE: NOT TO SCALE

E-0.1 | E-4.0

FIRE PROTECTION NOTES:

1. THE SYSTEM SHALL BE DESIGNED TO PROVIDE AN INERT ENVIRONMENT FOR AT LEAST 10 MINUTES AFTER DISCHARGE.
2. THE SHOP DRAWING SUBMITTALS SHALL BE SIGNED AND SEALED BY A FIRE PROTECTION ENGINEER REGISTERED IN THE STATE OF FLORIDA.

KEYED NOTES:

1. NEW 480V, 500 KW GENERATOR IN WEATHER–PROOF, SOUND ATTENUATED ENCLOSURE. REFER ALSO TO SPECIFICATIONS.
2. NEW 3,000 GALLON SUB–BASE DIESEL STORAGE TANK TO BE PROVIDED WITH 500 KW GENERATOR. REFER ALSO TO SPECIFICATIONS.
3. STAT–X FIRE SUPPRESSION RELEASE CONTROL PANEL TO BE PROVIDED WITH GENERATOR ENCLOSURE.
4. STAT–X FIRE SUPPRESSION SYSTEM ACTIVATION DEVICE (HEAT DETECTION) TO BE PROVIDED WITH GENERATOR ENCLOSURE.
5. STAT–X CHEMICAL RELEASE DEVICE TO BE PROVIDED WITH GENERATOR ENCLOSURE.
6. STUBUP LOCATION FOR 480V FEEDER CIRCUIT, GENERATOR STARTER CIRCUIT, GENERATOR SHUT DOWN AND PUMP CONTROL PANEL/PLC I/O. COORDINATE/VERIFY EXACT LOCATION WITH ENCLOSURE MANUFACTURER.
7. PROVIDE AND INSTALL M200A OR M201A AS REQUIRED.
8. PROVIDE AND INSTALL M200B OR M201B AS REQUIRED.
9. PROVIDE AND INSTALL M202B (BUS 'A' GENERATOR ONLY).
10. PROVIDE AND INSTALL M202C. CONDUIT TRAVELS OPPOSITE DIRECTION IN BUS 'B' GENERATOR.
11. PROVIDE AND INSTALL M200C OR M201C AS REQUIRED.
12. PROVIDE AND INSTALL M200E OR M201E AS REQUIRED.
13. PROVIDE AND INSTALL M200D OR M201D AS REQUIRED. COORDINATE EXACT LOCATION WITH 3,000 GALLON DIESEL SUB–BASE TANK MANUFACTURER.
14. PROVIDE AND INSTALL M200G OR M201G AS REQUIRED. COORDINATE EXACT LOCATION WITH 3,000 GALLON DIESEL SUB–BASE TANK MANUFACTURER.
15. PROVIDE AND INSTALL M200F OR M201F AS REQUIRED.
16. PROVIDE AND INSTALL M200H OR M201H AS REQUIRED.
17. DIESEL TANK FUELING COMPONENTS.
18. 4' LED LIGHT FIXTURE PROVIDED AND INSTALLED AS PART OF THE ENCLOSURE PACKAGE.
19. 3–WAY SWITCHES PROVIDED AND INSTALLED AS PART OF THE ENCLOSURE PACKAGE.
20. M200K OR M201K AS REQUIRED. FIELD ROUTE AS REQUIRED.

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City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

TYPICAL GENERATOR ELEVATION AND DETAILS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER
E–4.0

FILE: 231801142

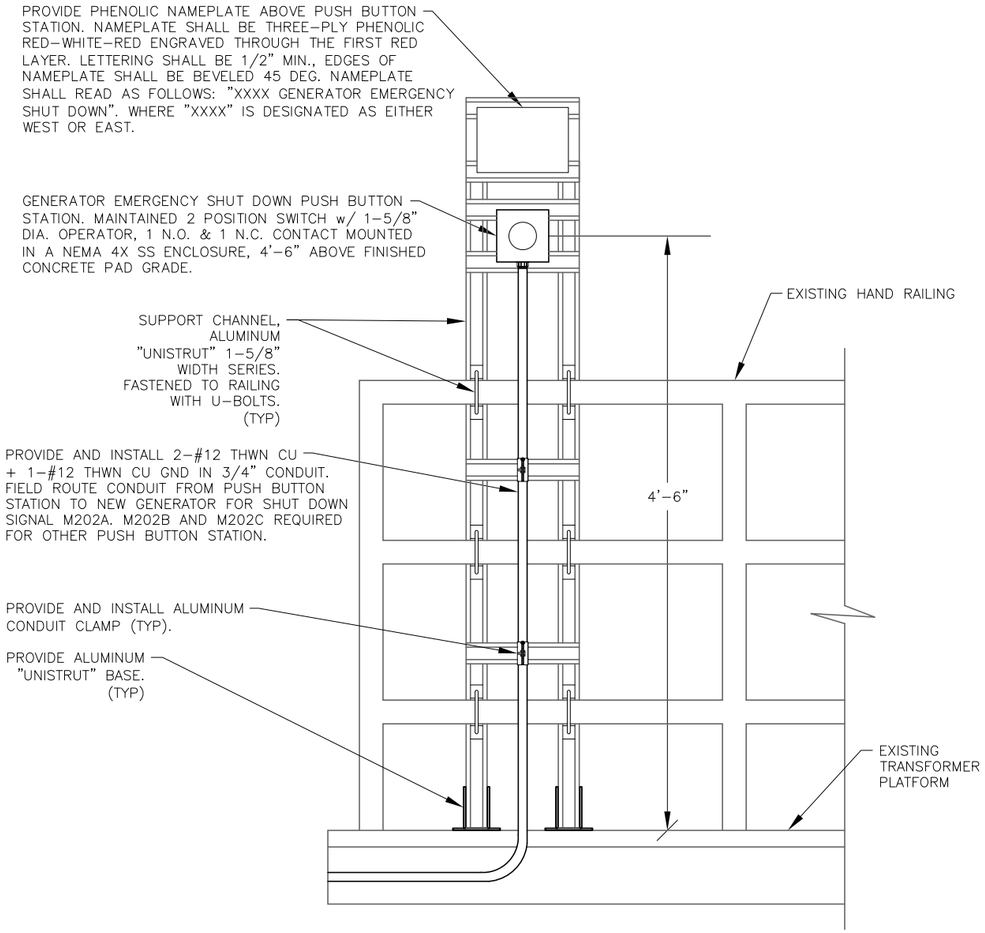
EX PANEL SCHEDULE

PANEL 'LPA' ; SQUARE D CO. TYPE NF ; 120/208 VOLTS, 3ø, 4W ; 175 AMP MAIN CIRCUIT BREAKER ; 35K AIC RATING ; SURFACE ENCLOSURE TOP AT 5'–6" AFF

EQUIPMENT SERVED	CIRCUIT BREAKER			AMPS/PHASE			CIRC. NO.	CIRC. NO.	AMPS/PHASE			CIRCUIT BREAKER			EQUIPMENT SERVED
	POLE	AMPS	FRAME	A	B	C			A	B	C	POLE	AMPS	FRAME	
EX CONTROL PANEL/PLC	1	20	QOB	7.0			1	2	5.0			1	15	QOB	EX FLOW METER TOTALIZER
EX BUBBLER PANEL	1	15	QOB		4.0		3	4		12.0		3	20	QOB	EX TRAVELING BRIDGE CRANE
EX LOWER LEVEL RECEPTACLES	1	20	QOB			5.0	5	6			12.0	--	--	--	" "
EX LOWER LEVEL RECEPTACLES	1	20	QOB	3.0			7	8	12.0			--	--	--	" "
EX LOWER LEVEL LIGHTING	1	20	QOB		2.0		9	10		1.0		1	20	QOB	EX WET WELL UPPER LIGHTING
EX LOWER LEVEL LIGHTING	1	20	QOB			2.0	11	12			1.0	1	20	QOB	EX WET WELL LOWER LIGHTING
EX LOWER LEVEL LIGHTING	1	20	QOB	9.0			13	14	4.0			1	20	QOB	EX EXTERIOR LIGHTING
EX UPPER LEVEL LIGHTING	1	20	QOB		5.0		15	16		10.0		1	20	QOB	EX OFFICE A/C RECEPTACLE
EX UPPER LEVEL RECEPTACLES	1	20	QOB			9.0	17	18			2.0	1	15	QOB	EX VENTILATION RELAY PANEL
EX UPPER LEVEL RECEPTACLES	1	20	QOB	9.0			19	20	12.0			1	20	QOB	EX SUMP PUMP
EX AIR DRYER	1	20	QOB		2.0		21	22		8.0		1	20	QOB	EX HIGH BAY LIGHTING
GENERATOR 'A' BATT CHARGER	1	20	QOB			10.0	23	24			21.0	2	30	QOB	EX UPS MODULE 'A'
GENERATOR 'A' ALT HEATER	1	20	QOB	6.0			25	26	21.0			--	--	--	" "
GENERATOR 'A' BLOCK HEATER	2	30	QOB		12.0		27	28		21.0		2	30	QOB	EX UPS MODULE 'B'
" "						12.0	29	30			21.0	--	--	--	" "
GEN 'A' FIRE RELEASE PANEL	1	20	QOB	1.0			31	32	10.0			1	20	QOB	GENERATOR 'B' BATT CHARGER
GENERATOR 'A' LIGHTS	1	20	QOB		0.4		33	34		6.0		1	20	QOB	GENERATOR 'B' ALT HEATER
GENERATOR 'B' LIGHTS	1	20	QOB			0.4	35	36			12.0	2	30	QOB	GENERATOR 'B' BLOCK HEATER
SPACE	--	--	--				37	38	12.0			--	--	--	" "
SPACE	--	--	--				39	40		1.0		1	20	QOB	GEN 'B' FIRE RELEASE PANEL
SPACE	--	--	--				41	42				--	--	--	SPACE
SUB–TOTAL KVA				35.0	25.4	38.4			65.0	60.0	69.0				

TOTAL CONNECTED LOAD = 37.9 KVA

TOTAL DEMAND LOAD = 31.3 KVA



TYPICAL EMERGENCY SHUTOFF PUSH BUTTON ELEVATION

SCALE: NOT TO SCALE

A
E-0.1 | E-5.0

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SCALE: AS SHOWN

City of Tampa Wastewater Department

KRAUSE PUMPING STATION
STANDBY GENERATORS

EXISTING PANELBOARD 'LPA' CIRCUIT ADDITIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER
E–5.0

FILE: 231901542

CONDUIT AND CABLE SCHEDULE

CONDUIT No.	SIZE	NUMBER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
M100A	4"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	GEN CIR BREAKER 52–G1	BUS A TERMINAL BOX	THREE EXISTING CONDUITS TO BE REUSED AFTER CONDUITS ARE CLEANED WITH MANDREL, PROVIDE NEW CONDUCTORS.
M100B	4"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	GEN CIR BREAKER 52–G1	BUS A TERMINAL BOX	THREE EXISTING CONDUITS TO BE REUSED AFTER CONDUITS ARE CLEANED WITH MANDREL, PROVIDE NEW CONDUCTORS.
M100C	4"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	GEN CIR BREAKER 52–G1	BUS A TERMINAL BOX	THREE EXISTING CONDUITS TO BE REUSED AFTER CONDUITS ARE CLEANED WITH MANDREL, PROVIDE NEW CONDUCTORS.
M100D	3"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	BUS A TERMINAL BOX	GENERATOR BUS A DOCKING STATION	CONDUCTORS AND CONDUITS TO BE NEW.
M100E	3"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	BUS A TERMINAL BOX	GENERATOR BUS A DOCKING STATION	CONDUCTORS AND CONDUITS TO BE NEW.
M100F	3"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	BUS A TERMINAL BOX	GENERATOR BUS A DOCKING STATION	CONDUCTORS AND CONDUITS TO BE NEW.
M101A	4"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	GEN CIR BREAKER 52–G2	BUS B TERMINAL BOX	THREE EXISTING CONDUITS TO BE REUSED AFTER CONDUITS ARE CLEANED WITH MANDREL, PROVIDE NEW CONDUCTORS.
M101B	4"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	GEN CIR BREAKER 52–G2	BUS B TERMINAL BOX	THREE EXISTING CONDUITS TO BE REUSED AFTER CONDUITS ARE CLEANED WITH MANDREL, PROVIDE NEW CONDUCTORS.
M101C	4"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	GEN CIR BREAKER 52–G2	BUS A TERMINAL BOX	THREE EXISTING CONDUITS TO BE REUSED AFTER CONDUITS ARE CLEANED WITH MANDREL, PROVIDE NEW CONDUCTORS.
M101D	3"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	BUS B TERMINAL BOX	GENERATOR BUS B DOCKING STATION	CONDUCTORS AND CONDUITS TO BE NEW.
M101E	3"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	BUS B TERMINAL BOX	GENERATOR BUS B DOCKING STATION	CONDUCTORS AND CONDUITS TO BE NEW.
M101F	3"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	BUS B TERMINAL BOX	GENERATOR BUS B DOCKING STATION	CONDUCTORS AND CONDUITS TO BE NEW.
M200	3"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	NEW BUS A GENERATOR	GENERATOR BUS A DOCKING STATION	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS.
M200A	3"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	NEW BUS A GENERATOR	GENERATOR BUS A DOCKING STATION	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS.
M200B	3"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	NEW BUS A GENERATOR	GENERATOR BUS A DOCKING STATION	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS.
M200C	3/4"	6–#12 + 1–#12 GND	NEW BUS A GENERATOR	PUMP CONTROL PANEL/PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 2–#12 FOR GEN RUNNING, 2–#12 FOR GEN FAIL AND 2–#12 FOR BATTERY LOW VOLTAGE INDICATION.
M200D	3/4"	8–#12 + 1–#12 GND	NEW BUS A GENERATOR	PUMP CONTROL PANEL/PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 2–#12 TANK LEAK, 2–#12 TANK LOW LEVEL, 2–#12 TANK HIGH AND 2–#12 SPARE.
M200E	3/4"	4–#12 + 1–#12 GND	NEW BUS A GENERATOR	SWITCHBOARD 'KPS' PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS FOR GENERATOR BUS A START COMMAND AND GENERATOR RUNNING INDICATION SIGNAL.
M200F	1"	6–#12 + 1–#12 GND	NEW BUS A GENERATOR	PANELBOARD 'LPA'	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS, 2–#12 BATTERY CHARGER, 2–#10 FOR BLOCK HEATER, 2–#12 FOR ALTERNATOR HEATER.
M200G	1"	2/C–#16 TW SHD (BELDEN 8719)	NEW BUS A GENERATOR	PUMP CONTROL PANEL/PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS, 2/C–#16 FOR GENERATOR A FUEL TANK LEVEL.
M200H	3/4"	2–#12 + 1–#12 GND	NEW BUS A GENERATOR	PANELBOARD 'LPA'	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS FOR FIRE SUPPRESSION RELEASE CONTROL PANEL 120V POWER.
M200J	3/4"	2–#12 + 1–#12 GND	NEW BUS A GENERATOR	PUMP CONTROL PANEL/PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 2–#12 FOR FIRE SUPPRESSION ACTIVATION ALARM.
M200K	3/4"	2–#12 + 1–#12 GND	NEW BUS A GENERATOR	PUMP CONTROL PANEL/PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 2–#12 FOR 120V INTERIOR GENERATOR LIGHTS.
M201	4"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	NEW BUS B GENERATOR	GENERATOR BUS B DOCKING STATION	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS.
M201A	4"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	NEW BUS B GENERATOR	GENERATOR BUS B DOCKING STATION	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS.
M201B	4"	3–#350 + 1–#250 NEUT + 1–#2/0 GND	NEW BUS B GENERATOR	GENERATOR BUS B DOCKING STATION	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS.
M201C	3/4"	6–#12 + 1–#12 GND	NEW BUS B GENERATOR	PUMP CONTROL PANEL/PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 2–#12 FOR GEN RUNNING, 2–#12 FOR GEN FAIL AND 2–#12 FOR BATTERY LOW VOLTAGE INDICATION.
M201D	3/4"	8–#12 + 1–#12 GND	NEW BUS B GENERATOR	PUMP CONTROL PANEL/PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 2–#12 TANK LEAK, 2–#12 TANK LOW LEVEL, 2–#12 TANK HIGH AND 2–#12 SPARE.
M201E	3/4"	4–#12 + 1–#12 GND	NEW BUS B GENERATOR	SWITCHBOARD 'KPS' PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS FOR GENERATOR BUS B START COMMAND AND GENERATOR RUNNING INDICATION SIGNAL.
M201F	1"	6–#12 + 1–#12 GND	NEW BUS B GENERATOR	PANELBOARD 'LPA'	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS, 2–#12 BATTERY CHARGER, 2–#10 FOR BLOCK HEATER, 2–#12 FOR ALTERNATOR HEATER.
M201G	1"	2/C–#16 TW SHD (BELDEN 8719)	NEW BUS B GENERATOR	PUMP CONTROL PANEL/PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS, 2/C–#16 FOR GENERATOR B FUEL TANK LEVEL.
M201H	3/4"	2–#12 + 1–#12 GND	NEW BUS B GENERATOR	PANELBOARD 'LPA'	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS FOR FIRE SUPPRESSION RELEASE CONTROL PANEL 120V POWER.
M201J	3/4"	2–#12 + 1–#12 GND	NEW BUS B GENERATOR	PUMP CONTROL PANEL/PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 2–#12 FOR FIRE SUPPRESSION ACTIVATION ALARM.
M201K	3/4"	2–#12 + 1–#12 GND	NEW BUS B GENERATOR	PUMP CONTROL PANEL/PLC	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 2–#12 FOR 120V INTERIOR GENERATOR LIGHTS.
M202A	3/4"	2–#12 + 1–#12 GND	GENERATOR A E–STOP PB	GENERATOR A	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 2–#12 FOR GENERATOR EMERGENCY STOP COMMAND.
M202B	3/4"	2–#12 + 1–#12 GND	GENERATOR B E–STOP PB	GENERATOR B	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 2–#12 FOR GENERATOR EMERGENCY STOP COMMAND.
M203	1"	8–#12 + 1–#12 GND	GEN CIR BREAKER 52–G1	RCBP	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 4–#12 FOR 43CS(M) & 43CS(A) CLOSE AND 4–#12 FOR 43CS(M) & 43CS(A) TRIP.
M204	1"	8–#12 + 1–#12 GND	GEN CIR BREAKER 52–G2	RCBP	PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. 4–#12 FOR 43CS(M) & 43CS(A) CLOSE AND 4–#12 FOR 43CS(M) & 43CS(A) TRIP.

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City of Tampa Wastewater Department

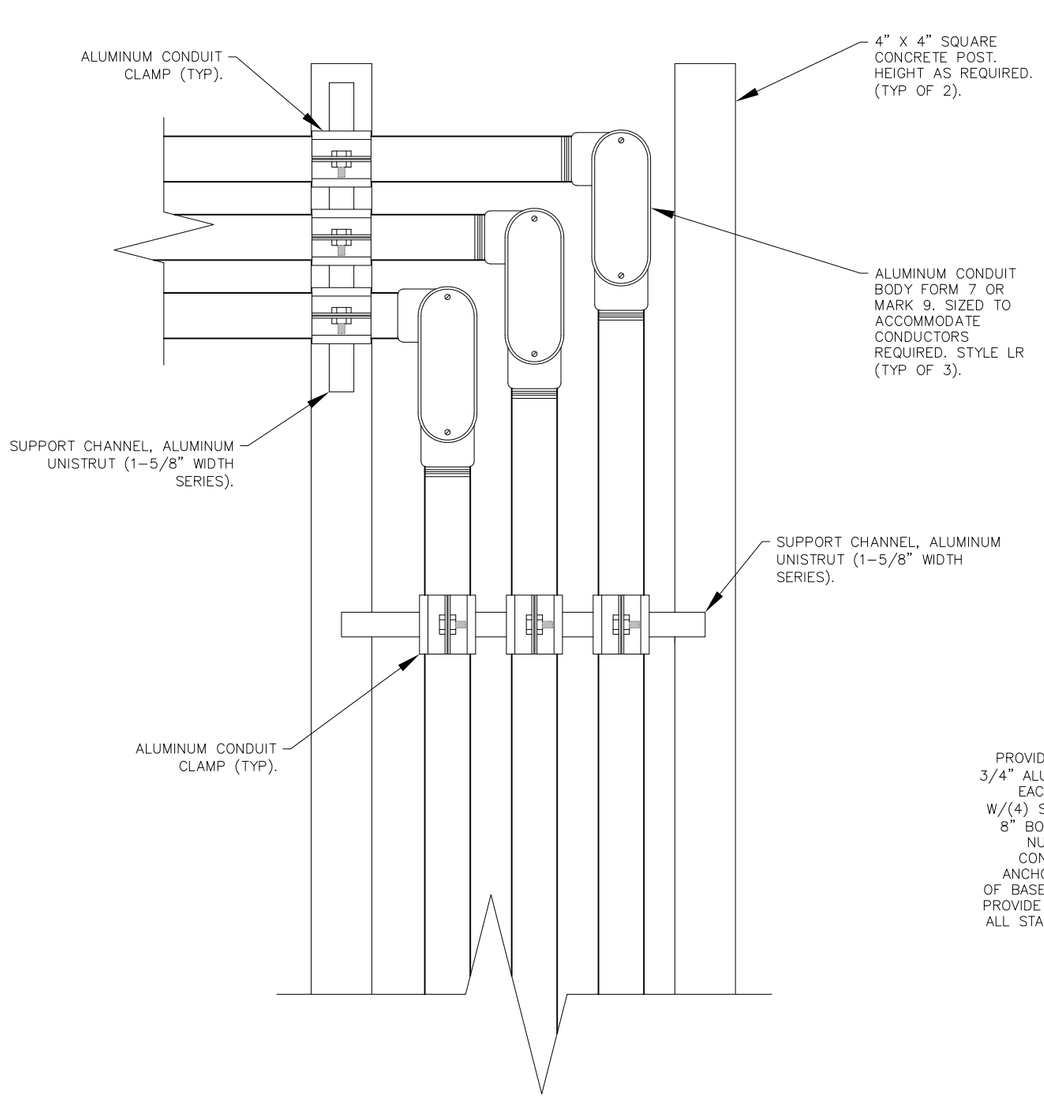
KRAUSE PUMPING STATION
STANDBY GENERATORS

CONDUIT AND CABLE SCHEDULE

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–5.1

FILE: 231901542

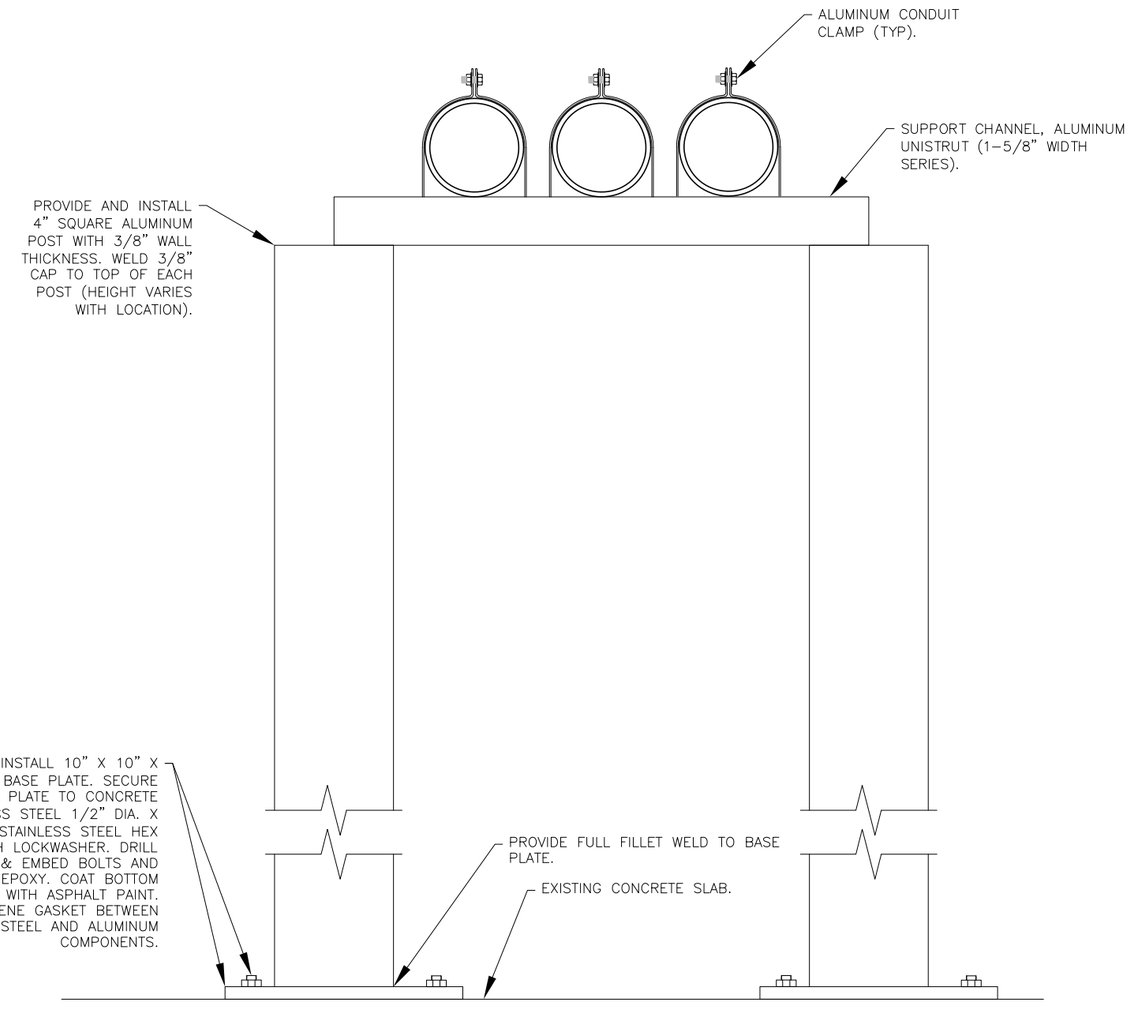


PARTIAL CONDUIT RACK DETAIL

SCALE: NOT TO SCALE

A — E-0.3 | E-6.0

NOTE: EAST SIDE OF RACK IS MIRRORED IMAGE



TYPICAL GENERATOR TO DOCKING STATION CONDUIT SUPPORT DETAIL

SCALE: NOT TO SCALE

B — E-0.3 | E-6.0

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City of Tampa Wastewater Department

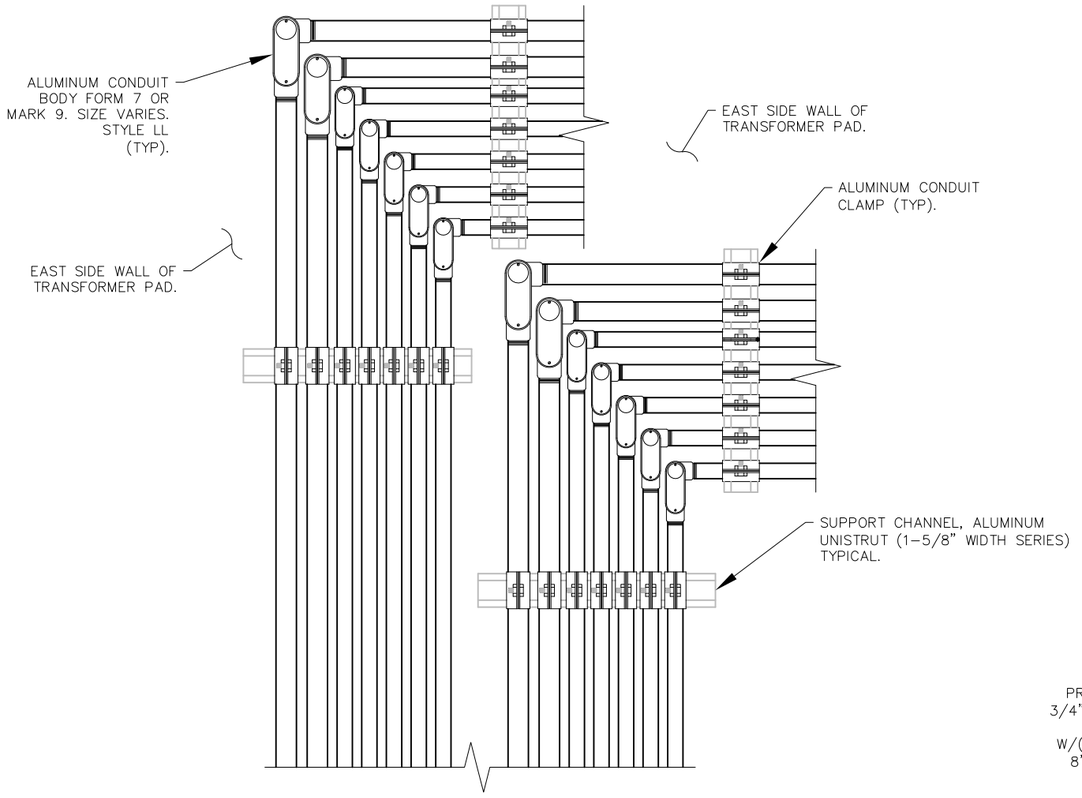
KRAUSE PUMPING STATION
STANDBY GENERATORS

CONDUIT INSTALLATION DETAILS (SHEET 1 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-6.0

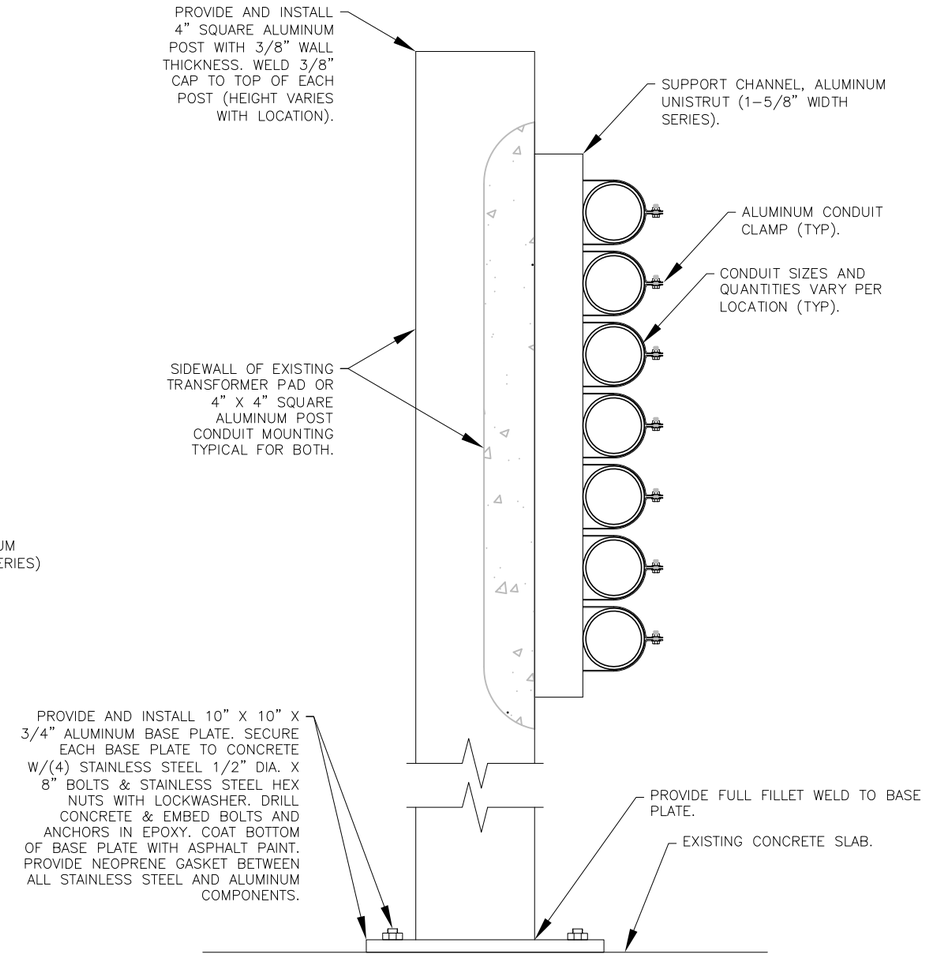
FILE: 231901542



PROPOSED CONDUIT BODY DETAIL A

SCALE: AS SHOWN

E-0.3 | E-6.1



PROPOSED CONDUIT BODY DETAIL B

SCALE: AS SHOWN

E-0.3 | E-6.1

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KRAUSE PUMPING STATION
STANDBY GENERATORS

CONDUIT INSTALLATION DETAILS (SHEET 2 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER E-6.1

FILE: 231901542