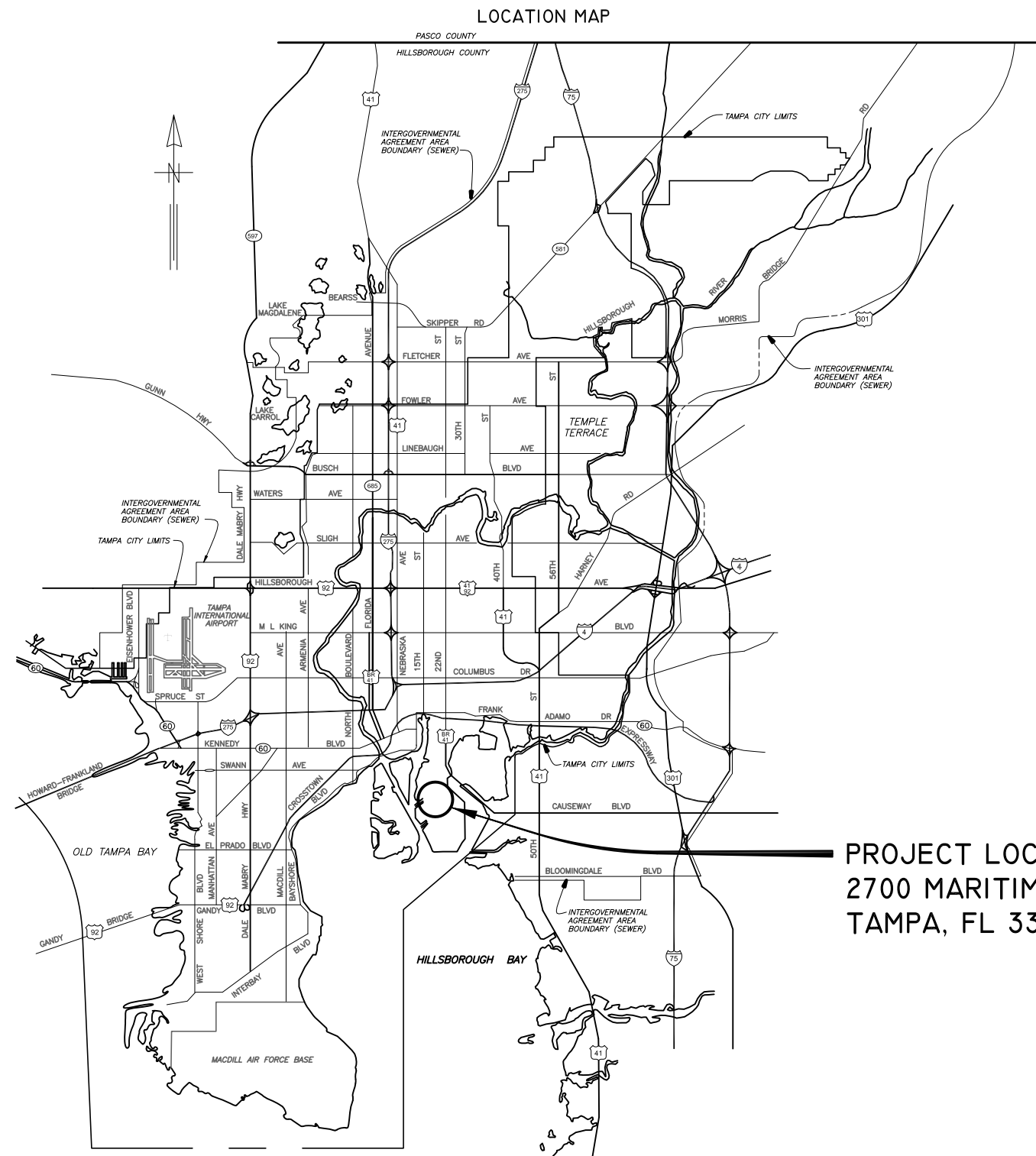


The Enclosed Document Is Provided For Your Convenience.

Please Email ALL Questions:
[MailTo:ContractAdministration@TampaGov.net](mailto:ContractAdministration@TampaGov.net)

Please Let Us Know If You Plan To Bid

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



PROJECT LOCATION
2700 MARITIME BLVD.
TAMPA, FL 33605

PLANS

FOR

CITY OF TAMPA FLORIDA WASTEWATER DEPARTMENT

FOR

THE CONSTRUCTION OF THE

HOWARD F. CURREN AWTP DENITRIFICATION FILTER BUILDING 1 SWITCHGEAR 56 REPLACEMENT

CONTRACT: 15-C-00041

JANUARY 2016



TRICON
CONSULTING ENGINEERS

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

DRAWING INDEX	
SHEET No.	SHEET TITLE
1	COVER SHEET
2	INDEX, SCHEDULES AND GENERAL NOTES
3	SITE PLAN FOR SWITCHGEAR 56 REPLACEMENT
E-1	ELECTRICAL LEGEND AND ABBREVIATIONS
E-2	FILTER BUILDING NO. 1 EXISTING CONDITIONS PLAN
E-3	EXISTING SWITCHGEAR 56 FRONT ELEVATION
E-4	EXISTING SWITCHGEAR 56 CONDUIT ENTRANCE DETAIL
E-5	EXISTING SWITCHGEAR 56 CONDUIT LAYOUT
E-6	SWITCHGEAR 56 REPLACEMENT TEMPORARY POWER PLAN
E-7	MCC-58 AND MCC-59 TEMPORARY POWER DETAILS (SHEET 1 OF 2)
E-8	MCC-58 AND MCC-59 TEMPORARY POWER DETAILS (SHEET 2 OF 2)
E-9	MCC-57 TEMPORARY POWER DETAILS
E-10	SWITCHGEAR 56 REPLACEMENT NEW WORK PLAN
E-11	PROPOSED SWITCHGEAR 56 FRONT ELEVATION
E-12	FILTER BUILDING NO. 1 EXISTING ONE-LINE DIAGRAM
E-13	FILTER BUILDING NO. 1 TEMPORARY ONE-LINE DIAGRAM
E-14	FILTER BUILDING NO. 1 PROPOSED ONE-LINE DIAGRAM
E-15	SWITCHGEAR 56 PROPOSED ONE-LINE DIAGRAM
E-16	LOAD AND CONDUIT SIZING CALCULATIONS

GENERAL NOTES	
<p>THE WORK CONSIST OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, AND TECHNICAL SUPERVISION TO INSTALL NEW SWITCHGEAR 56 AS INDICATED AND SHOWN. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:</p>	
1.	CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2.	ALL WIRING SHALL BE IDENTIFIED WITH NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
3.	FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
4.	ALL NEW EQUIPMENT SHALL BE PERMANENTLY IDENTIFIED WITH A BLACK ON WHITE LAMACOID TAG ENGRAVED WITH MINIMUM 3/16 INCH LETTERING.
5.	ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS. NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
6.	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.
7.	REPLACE THE EXISTING SWITCHGEAR 56 AS SHOWN AND SPECIFIED.
8.	ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2014 NATIONAL ELECTRICAL CODE (NEC) AND CHAPTER 5 OF THE CITY OF TAMPA CODE.
9.	TEST AND START-UP REPORTS FOR THE PROPOSED SWITCHGEAR SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE (O&M) MANUALS PROVIDED UNDER THIS CONTRACT. ALL CIRCUIT BREAKER SETTINGS SHALL BE TABULATED AND INCLUDED IN THE O&M MANUAL.

SCOPE OF WORK	
<p>THE WORK CONSISTS OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TRANSPORTATION, AND PERFORMING ALL OPERATIONS REQUIRED TO SUPPORT THE INSTALLATION AND COMMISSIONING OF THE ELECTRICAL PORTION OF THE HFC AWTP SWITCHGEAR 56 REPLACEMENT. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:</p>	
<ol style="list-style-type: none"> 1. SUBMIT WORKING DRAWINGS, PARTS SCHEDULES AND CUT-SHEETS TO THE ENGINEER. 2. FURNISH AND INSTALL ALL EQUIPMENT AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS. 	
SPECIFICALLY:	
A. DEMOLITION	
<ol style="list-style-type: none"> 1) PRIOR TO DEMOLITION, THE PROPOSED SWITCHGEAR SHALL BE ON SITE AND READY FOR INSTALLATION. TEMPORARY POWER SHALL BE AS DESCRIBED IN THE TEMPORARY POWER SEQUENCE OF WORK (SHOWN BELOW). THE CONTRACTOR SHALL SUPPLY AND INSTALL ANY AND ALL CONDUIT, CABLING, ETC. THAT MAY BE REQUIRED TO FACILITATE THE TEMPORARY POWER CONNECTIONS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CUT SHEETS DETAILING HIS TEMPORARY POWER SYSTEM PROPOSAL FOR ENGINEER'S APPROVAL. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING POWER AT ALL TIMES TO THE SAID FACILITIES AND PERFORMING ALL ASSOCIATED MAINTENANCE FUNCTIONS. IF DURING HIS PRECONSTRUCTION INVESTIGATION, THE CONTRACTOR UNCOVERS AN ALTERNATE METHOD FOR SUPPLYING TEMPORARY POWER TO ALL, OR PART OF, THE REQUIRED LOADS; HE WILL NOTIFY THE ENGINEER, IN WRITING, THROUGH THE RFI PROCESS. AFTER ENGINEER'S PRELIMINARY APPROVAL, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CUT SHEETS FOR THE PROPOSED TEMPORARY POWER SYSTEM AS WELL AS THE AMOUNT OF CREDIT OFFERED TO THE CITY FOR FINAL APPROVAL. 2) VERIFY EXISTING POWER CONNECTIONS IN THE FIELD PRIOR TO COMMENCING DEMOLITION WORK. 3) LABEL ALL MAIN AND FEEDER CONDUCTORS ATTACHED TO THE EXISTING SWITCHGEAR 56 (SG-56). ALL CONDUCTORS ARE TO BE RECONNECTED TO THE NEW SWITCHGEAR. REMOVE EXISTING SG-56 AND PREPARE EXISTING CONCRETE PAD AS REQUIRED TO INSTALL THE NEW SWITCHGEAR. 4) INSTALL SWITCHGEAR AND MAKE CABLE CONNECTIONS AS SHOWN. 5) PERFORM A SHORT CIRCUIT AND COORDINATION STUDY AS DETAILED IN SECTION 16085 OF THESE SPECIFICATIONS. THE STUDY SHALL BE USED TO DETERMINE THE PROPER SETTINGS FOR THE SWITCHGEAR 56 CIRCUIT BREAKERS, ETC. THE SHORT CIRCUIT STUDY SHALL BE SIGNED, SEALED AND APPROVED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. 	

TEMPORARY POWER SEQUENCE OF WORK	
<p>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.</p> <p>POWER OUTAGES WILL BE PERMITTED ONLY ON DAYS THAT BACKWASHING IS NOT SCHEDULED - THE CONTRACTOR SHALL COORDINATE THESE TIMES WITH THE CITY OF TAMPA.</p> <p>THE SEQUENCE OF WORK FOR PROVIDING TEMPORARY POWER DURING THE INSTALLATION OF SWITCHGEAR 56 SHALL BE AS FOLLOWS:</p>	
<ol style="list-style-type: none"> 1. DISCONNECT EXISTING FEEDERS FROM EXISTING SWITCHGEAR 56 TO EXISTING MCC-58. COIL AND TAPE CONDUCTORS AS NOTED ON THE DRAWINGS. 2. PROVIDE AND INSTALL TEMPORARY CONDUIT/CONDUCTORS BETWEEN EXISTING MCC-58 AND MCC-59 AS INDICATED ON THE DRAWINGS. 3. DISCONNECT EXISTING CONDUCTORS AND REMOVE PORTIONS OF CONDUIT BETWEEN EXISTING SWITCHGEAR 56 BUS A AND EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER IN MCC-57 FOR BACKWASH BLOWER No. 1. COIL AND TAPE CONDUCTORS AS NOTED ON THE DRAWINGS. 4. PROVIDE AND INSTALL TEMPORARY CONDUIT/CONDUCTORS BETWEEN EXISTING TRANSFORMER 'T-5B-3' AND EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER IN MCC-57 FOR BACKWASH BLOWER No. 1. 5. DISCONNECT EXISTING CONDUCTORS AND REMOVE PORTIONS OF CONDUIT BETWEEN EXISTING SWITCHGEAR 56 BUS B AND EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER IN MCC-57 FOR BACKWASH BLOWER No. 2. COIL AND TAPE CONDUCTORS AS NOTED ON THE DRAWINGS. 6. PROVIDE AND INSTALL TEMPORARY CONDUCTORS TO ACT AS JUMPERS BETWEEN EXISTING EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER IN MCC-57 FOR BACKWASH BLOWER No. 1. AND EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER IN MCC-57 FOR BACKWASH BLOWER No. 2. 7. ONCE TEMPORARY POWER HAS BEEN ESTABLISHED TO BOTH MCC-59 AND MCC-57, REMOVE EXISTING CONDUCTORS FROM TRANSFORMER 'T-5A-3' AND TRANSFORMER 'T-5B-3' TO SWITCHGEAR BUS A AND BUS B RESPECTIVELY. 8. ONCE THE PHYSICAL INSTALLATION OF SWITCHGEAR 56 IS COMPLETE (PRIOR TO BEING ENERGIZED), THE CONTRACTOR SHALL PROVIDE AND INSTALL SIX (6) PARALLEL SETS OF 3-#444.4 DLO CU + 1-#4/0 DLO CU NEUTRAL + 1-#262.6 DLO CU GND IN EXISTING CONDUIT FROM SWITCHGEAR BUS A TO TRANSFORMER 'T-5A-3'. THE CONTRACTOR SHALL THEN PROVIDE AND INSTALL SIX (6) PARALLEL SETS OF 3-#444.4 DLO CU + 1-#4/0 DLO CU NEUTRAL + 1-#262.6 DLO CU GND IN EXISTING CONDUIT FROM SWITCHGEAR BUS B TO TRANSFORMER 'T-5B-3'. 9. ONCE THE INSTALLATION OF SWITCHGEAR 56 IS COMPLETE (PRIOR TO BEING ENERGIZED), THE CONTRACTOR SHALL DISCONNECT ONE TEMPORARY POWER CONNECTION AT A TIME (COORDINATE ORDER WITH THE CITY OF TAMPA). CONDUCTORS DISCONNECTED PREVIOUSLY SHALL BE RECONNECTED AND THE FEEDER SHALL BE TESTED. REPEAT THIS PROCEDURE AS REQUIRED UNTIL ALL PREVIOUSLY DISCONNECTED FEEDERS ARE RECONNECTED. 10. ONCE TESTING IS COMPLETE AND SWITCHGEAR 56 HAS BEEN ACCEPTED BY THE CITY, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY CONDUIT AND CONDUCTORS. CONTRACTOR SHALL PLUG ANY OPENING CREATED FOR TEMPORARY CONDUIT. 	



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DATE	1/2016	No.	DATE	BY	APP
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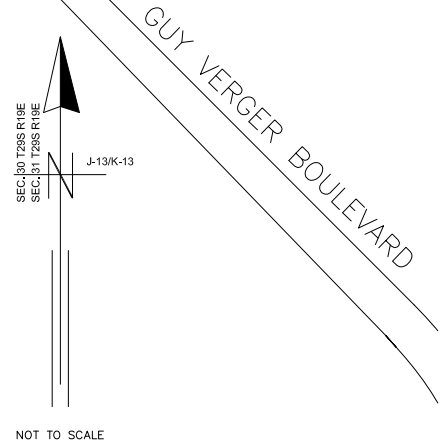
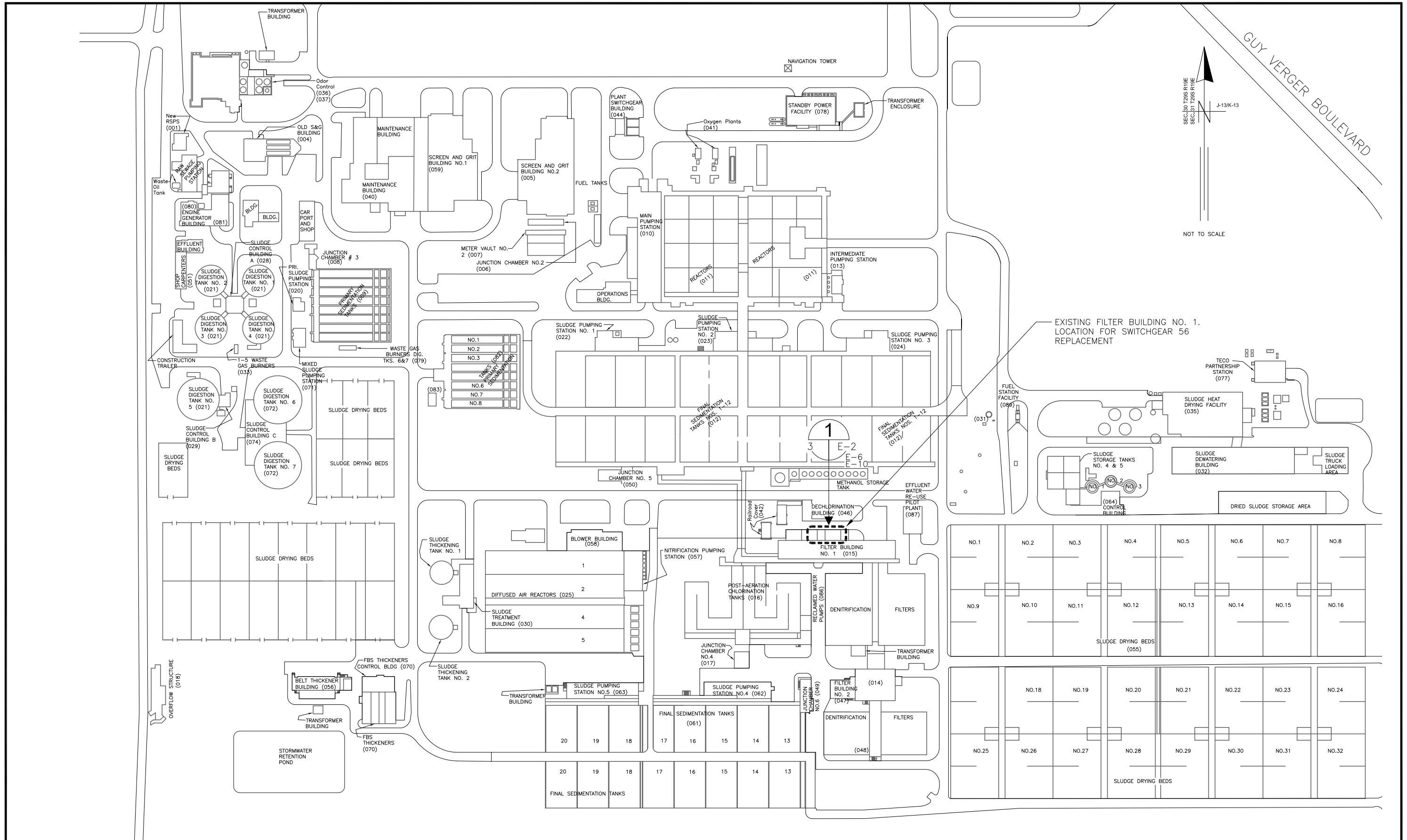
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City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
SWITCHGEAR 56 REPLACEMENT

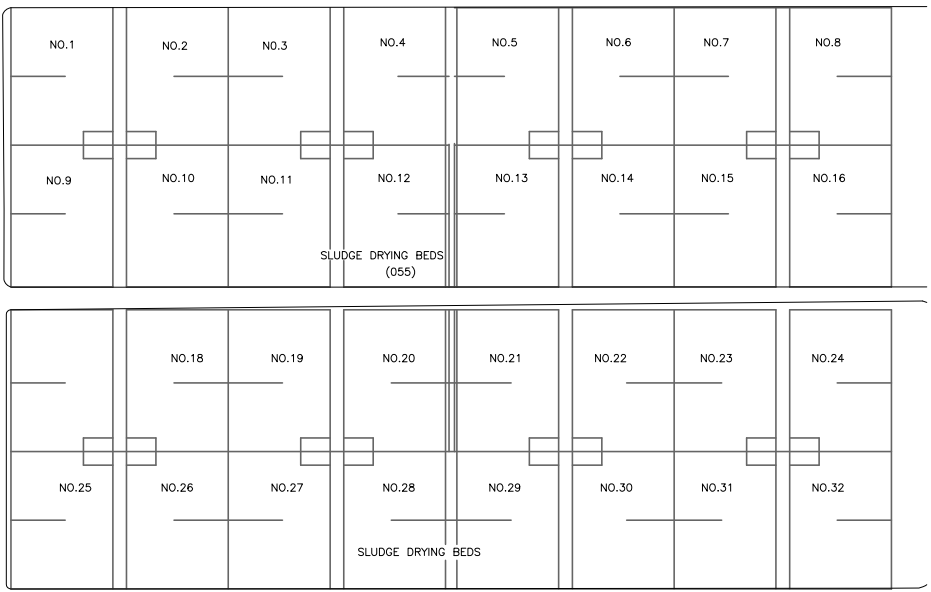
INDEX, SCHEDULES AND
GENERAL NOTES

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER
2
FILE: 171501742E01



EXISTING FILTER BUILDING NO. 1.
LOCATION FOR SWITCHGEAR 56
REPLACEMENT



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City of Tampa Wastewater Department
**HOWARD F. CURREN AWWP
SWITCHGEAR 56 REPLACEMENT**

**SITE PLAN FOR
SWITCHGEAR 56 REPLACEMENT**

SHEET NUMBER	3
TIMOTHY THOMAS, P.E. No. 47079	FILE: 171501742E01

- CONDUIT RUN EXPOSED
- - - - - CONDUIT RUN CONCEALED UNDERGROUND
- CONDUIT RUN CONCEALED IN FLOOR OR SLAB
- G — G — GROUNDING ELECTRODE CONDUCTOR


┌———— CONDUIT STUB OUT AND CAP

⊙ GROUND ROD

○ JUNCTION BOX


⤵ JUNCTION BOX WITH FLEXIBLE CONNECTION

480V
15 KVA, 1*
120/240V



TRANSFORMER, 480V INDICATED PRIMARY VOLTAGE, 120/240V INDICATES SECONDARY VOLTAGE, 15 KVA REPRESENTS POWER RATING, AND 1* INDICATES SINGLE PHASE (THREE PHASE IF NOT INDICATED)

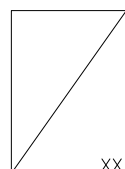
3P
30A



THERMAL MAGNETIC CIRCUIT BREAKER WITH NUMBER OF POLES AND AMPERE RATING

COMBINATION MAGNETIC STARTER WITH CONTROL POWER TRANSFORMER (SIZED FOR LOAD). LETTERS INDICATE TYPE :

N — NON-REVERSING
R — REVERSING
2S — TWO-SPEED
C — CONTACTOR
SS — SOLID STATE SOFT START



XXX

XXX_DEVICE	DESCRIPTION
HLS	HIGH LEVEL SWITCH
HOA	HAND-OFF-AUTO
LD	LEAK DETECTION
LLS	LOW LEVEL SWITCH
LOR	LOCAL-OFF-REMOTE
PB	PUSH BUTTON
RTU	REMOTE TERMINAL UNIT
SS	SOFT STARTER
SS/B	SOFT START OR BYPASS
TS	TEMPERATURE SWITCH
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
ZS	POSITION SENSOR (LIMIT SWITCH)

▭ FUSE

⊙ XX MOTOR

⌘ THERMAL OVERLOAD

○ UTILITY METER

⊗ TRANSFER SWITCH

▭ ELECTRIC PANELBOARD

⊗ DISCONNECT OR SAFETY SWITCH

⊗ FLOAT SWITCH. OPENS ON LOW LEVEL.

⊗ FLOAT SWITCH. CLOSING ON LOW LEVEL.

|| NORMALLY OPEN (N.O.) CONTACT

||/|| NORMALLY CLOSED (N.C.) CONTACT

⏏ GROUND CONNECTION

⊙ R INDICATING PILOT LIGHT LETTER INDICATES COLOR OF LENS

⊗ DISCONNECT OR TOGGLE SWITCH

⊗ NORMALLY OPEN MOMENTARY CIRCUIT CLOSING PUSH-BUTTON SWITCH. SPRING OPEN. NUMBER OF ELECTRICAL CONTACTS ON SWITCH SHOWN ON CONTROL SCHEMATIC

⊗ NORMALLY CLOSED MOMENTARY CIRCUIT OPENING PUSH-BUTTON SWITCH. SPRING CLOSE. NUMBER OF ELECTRICAL CONTACTS ON SWITCH SHOWN ON CONTROL SCHEMATIC

⊗ LIMIT SWITCH NORMALLY CLOSED CONTACT. CONTACT OPENS WHEN ACTUATED

⊗ TORQUE SWITCH NORMALLY CLOSED CONTACT. CONTACT OPENS WHEN ACTUATED

⊗ PUMP THERMAL SENSOR

50/51/51G SOLID STATE TRIP UNIT WITH FUNCTIONS NOTED:
50 INSTANTANEOUS TRIP
51 TIME DELAY TRIP
51G GROUND FAULT TRIP

ABBREVIATIONS:

4C	4 CONDUCTOR
A	AMPS
AF	AMPERE FRAME
AM	AMMETER
AT	AMPERE TRIP
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ATL	ACROSS-THE-LINE
C	CONDUIT
CLF	CURRENT LIMITING FUSE
CT	CURRENT TRANSFORMER
CU	COPPER
EX	EXISTING
ELEC	ELECTRICAL
EXP	EXPLOSION PROOF
FU	FUSE
GFI	GROUND FAULT INTERRUPTER
GND	GROUNDING CONDUCTOR
HP	HORSEPOWER
HZ	HERTZ
IG	ISOLATED GROUND
KVA	KILOVOLT AMPERES
KW	KILOWATTS
MAX	MAXIMUM
MIN	MINIMUM
N/A	NOT APPLICABLE
PH	PHASE
PM	POWER MONITOR
RECP	RECEPTACLE
RPM	REVOLUTIONS PER MINUTE
RTU	REMOTE TERMINAL UNIT
RVSS	REDUCED VOLTAGE SOFT STARTER
SPD	SURGE PROTECTION DEVICE
TYP	TYPICAL
V	VOLTS
W	WIRE
WP	WEATHERPROOF

EXAMPLE OF SECTION CUT AND DETAIL

SECTION

SCALE : 1/4" = 1'-0"

SHEET NUMBER WHERE SECTION IS CUT

SECTION (LETTERS USED)

SHEET NUMBER WHERE SECTION IS SHOWN

SECTION (LETTERS USED)

SHEET NUMBER WHERE SECTION IS CUT

SHEET NUMBER WHERE SECTION IS SHOWN

DETAIL

SCALE : 1/4" = 1'-0"

SHEET NUMBER WHERE DETAIL IS SHOWN

DETAIL (NUMBERS USED)

SHEET NUMBER WHERE DETAIL IS ENLARGED



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SCALE

AS SHOWN

City of Tampa Wastewater Department
HOWARD F. CURREN AWP
SWITCHGEAR 56 REPLACEMENT

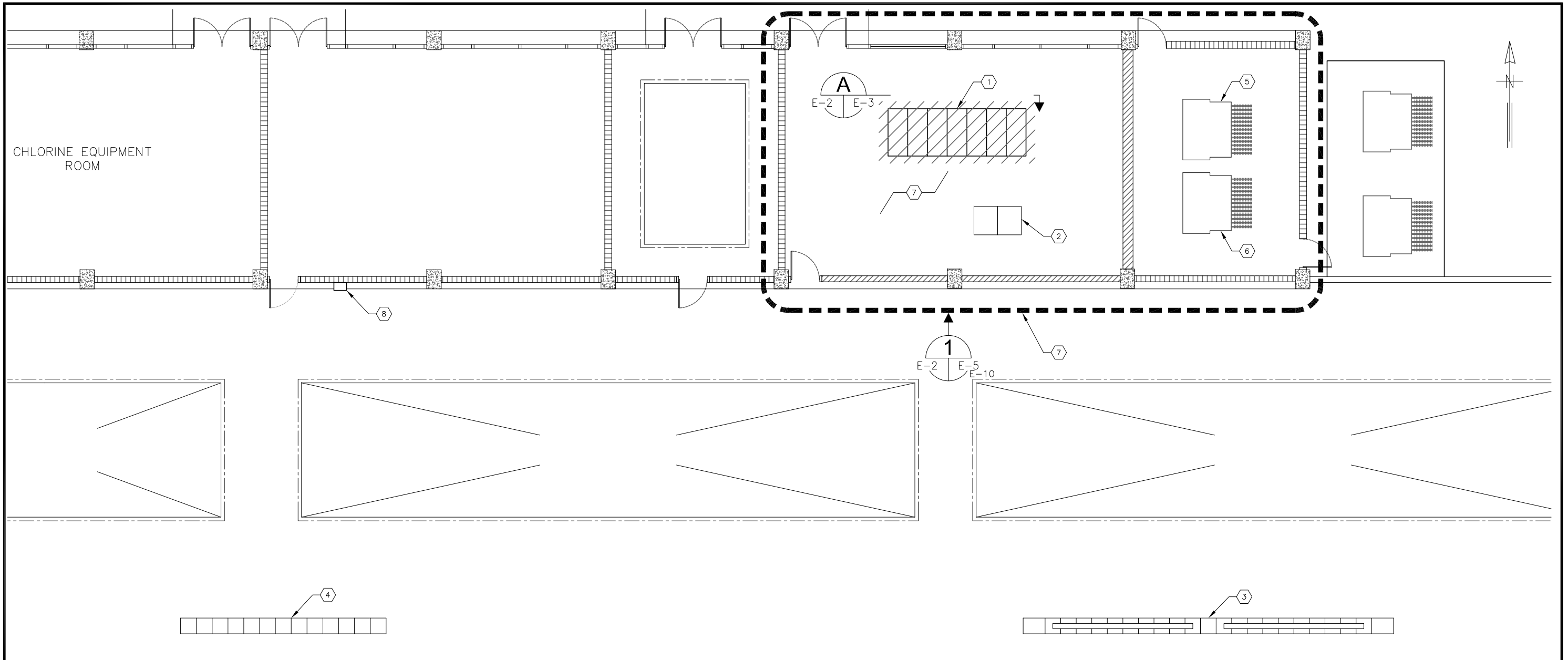
ELECTRICAL LEGEND
AND ABBREVIATIONS

SHEET NUMBER

E-1

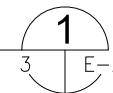
TIMOTHY THOMAS, P.E. No. 47079

FILE: 171501742E01

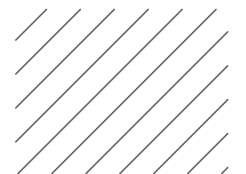


**FILTER BUILDING NO.1 (015) :
PLAN ELEVATION 13'-6"**

SCALE : 3/32" = 1'-0"



LEGEND :



THE EXISTING PLAN VIEW IS SHOWN. HATCHED AREA REPRESENTS SWITCHGEAR TO BE REMOVED. ALL ITEMS SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR UNLESS OTHERWISE NOTED.

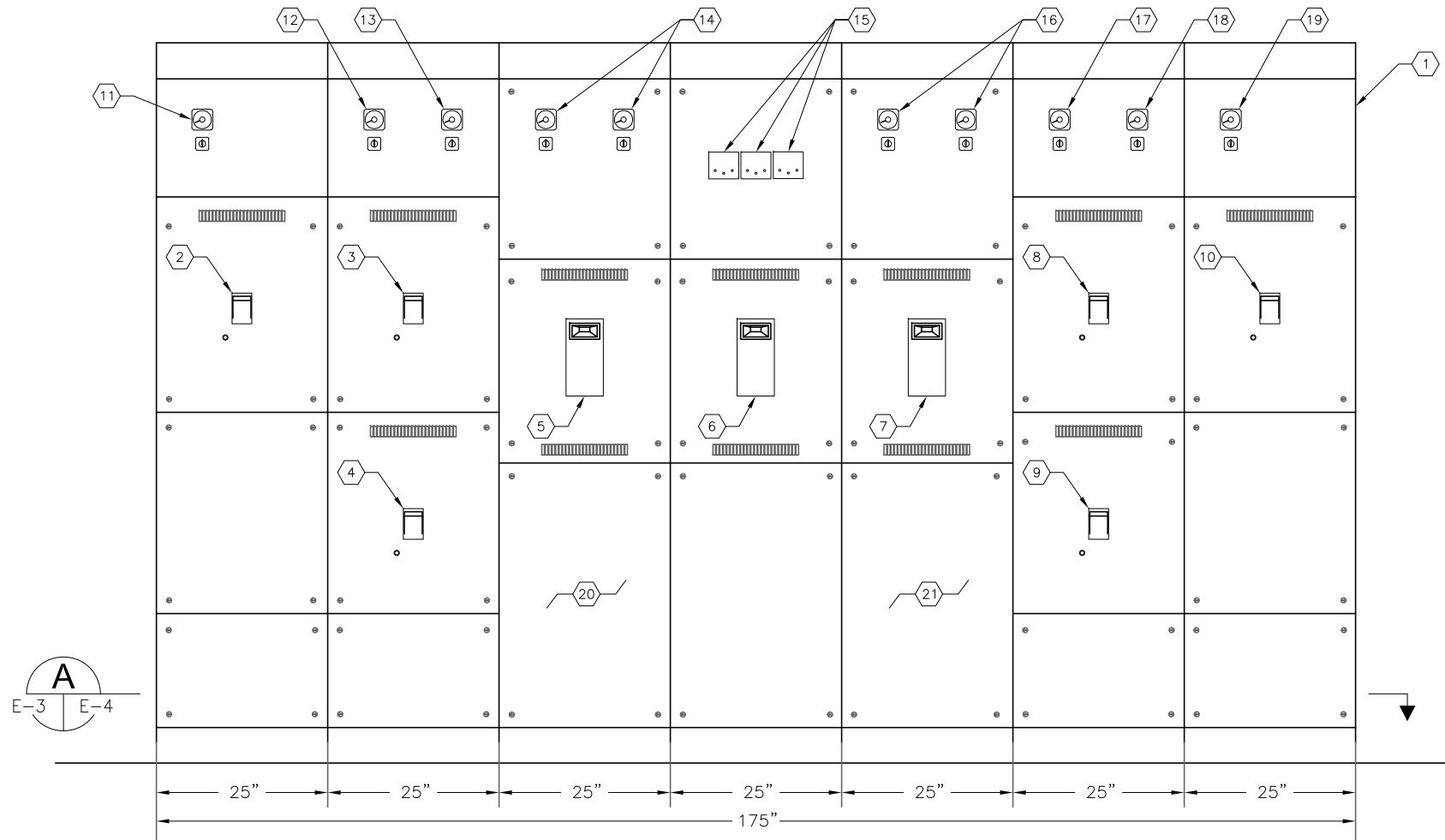
KEYED NOTES:

- ① EXISTING 277/480V, 2,000A SWITCHGEAR 56 TO BE REPLACED. REFER ALSO TO SHEET E-3 FOR EXISTING FRONT ELEVATION.
- ② EXISTING 480V, MCC-57. REFER TO SHEETS E-6 AND E-9 FOR PROVIDING TEMPORARY POWER TO MCC-57 DURING CONSTRUCTION.
- ③ EXISTING 480V, 1,200A MCC-58. REFER TO SHEETS E-6, E-7 AND E-8 FOR PROVIDING TEMPORARY POWER TO MCC-58 DURING CONSTRUCTION.

- ④ EXISTING 480V, 1,200A MCC-59. REFER TO SHEETS E-6, E-7 AND E-8 FOR PROVIDING TEMPORARY POWER TO MCC-59 DURING CONSTRUCTION.
- ⑤ EXISTING TRANSFORMER 'T-5A-3'. 1,500 KVA, 13.2KV-277/480V. NO WORK REQUIRED FOR TEMPORARY POWER.
- ⑥ EXISTING TRANSFORMER 'T-5B-3'. 1,500 KVA, 13.2KV-277/480V. REFER TO SHEETS E-6 AND E-9 FOR PROVIDING TEMPORARY POWER TO MCC-57.

- ⑦ ALL CONDUITS ASSOCIATED WITH EXISTING SWITCHGEAR 56, EXISTING MCC-57, EXISTING MCC-58, EXISTING MCC-59, EXISTING TRANSFORMER 'T-5A-3' AND EXISTING TRANSFORMER 'T-5B-3' ARE TRAPEZE HUNG FROM BOTTOM ELEVATION 13'-6" FLOOR SLAB. (CEILING OF ELEVATION 1'-0"). REFER TO SHEET E-5 EXISTING CONDUIT LAYOUT. REFER TO SHEET E-10 FOR NEW WORK PLAN
- ⑧ EXISTING SCADA NETWORK CABINET. REFER TO SHEET E-10 FOR NEW WORK REQUIRED.

	JOB No.	171501727					SCALE	AS SHOWN	City of Tampa Wastewater Department HOWARD F. CURREN AWTP SWITCHGEAR 56 REPLACEMENT	FILTER BUILDING NO. 1 EXISTING CONDITIONS PLAN	TIMOTHY THOMAS, P.E. No. 47079	SHEET NUMBER
	DESIGNED	TDT					E-2					
	DRAWN	EAK										
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EXISTING SWITCHGEAR 56 FRONT ELEVATION A
 SCALE : N.T.S. E-2 | E-3

KEYED NOTES:

- ① EXISTING 277/480V, 2,000A SWITCHGEAR 56 TO BE REPLACED. CONTRACTOR SHALL REMOVE EXISTING SWITCHGEAR AND PROVIDE NEW SWITCHGEAR PER SPECIFICATIONS. APPROXIMATE DIMENSIONS OF EXISTING SWITCHGEAR: 175 INCHES WIDE BY 60 INCHES DEEP. CONTRACTOR TO FIELD VERIFY DIMENSIONS.
- ② EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER FOR BACKWASH BLOWER No. 1 IN MCC-57.
- ③ EXISTING 480V, 1200AF/1000AT 3-POLE CIRCUIT BREAKER FOR MCC-59 BUS A.
- ④ EXISTING 480V, 1200AF/1200AT 3-POLE CIRCUIT BREAKER FOR MCC-58 BUS A.
- ⑤ EXISTING 480V, 2000AF/2000AT 3-POLE MAIN CIRCUIT BREAKER FOR SG-56 BUS A.
- ⑥ EXISTING 480V, 2000AF/2000AT 3-POLE BUS TIE CIRCUIT BREAKER FOR SG-56.
- ⑦ EXISTING 480V, 2000AF/2000AT 3-POLE MAIN CIRCUIT BREAKER FOR SG-56 BUS B.
- ⑧ EXISTING 480V, 1200AF/1000AT 3-POLE CIRCUIT BREAKER FOR MCC-59 BUS B.
- ⑨ EXISTING 480V, 1200AF/1200AT 3-POLE CIRCUIT BREAKER FOR MCC-58 BUS B.
- ⑩ EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER FOR BACKWASH BLOWER No. 2 IN MCC-57.
- ⑪ METERING FOR BACKWASH BLOWER No. 1.
- ⑫ METERING FOR MCC-59 BUS A.
- ⑬ METERING FOR MCC-58 BUS A.
- ⑭ METERING FOR INCOMING LINE FEEDING BUS A.
- ⑮ GROUND FAULT TEST PANELS FOR INCOMING LINE 1 (BUS A), TIE CIRCUIT BREAKER AND INCOMING LINE 2 (BUS B).
- ⑯ METERING FOR INCOMING LINE FEEDING BUS B.
- ⑰ METERING FOR MCC-59 BUS B.
- ⑱ METERING FOR MCC-58 BUS B.
- ⑲ METERING FOR BACKWASH BLOWER No. 2.
- ⑳ INCOMING LINE 1 CUBICLE
- ㉑ INCOMING LINE 2 CUBICLE

GENERAL NOTES:

- 1. REFER TO SHEET E-4 FOR EXISTING SWITCHGEAR 56 CONDUIT ENTRANCE DETAIL. DETAIL SHOWS EXISTING SWITCHGEAR FOOTPRINT IN RELATIONSHIP TO EXISTING FLOOR PENETRATIONS AND CONDUIT ENTRIES.



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City of Tampa Wastewater Department
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SWITCHGEAR 56 REPLACEMENT

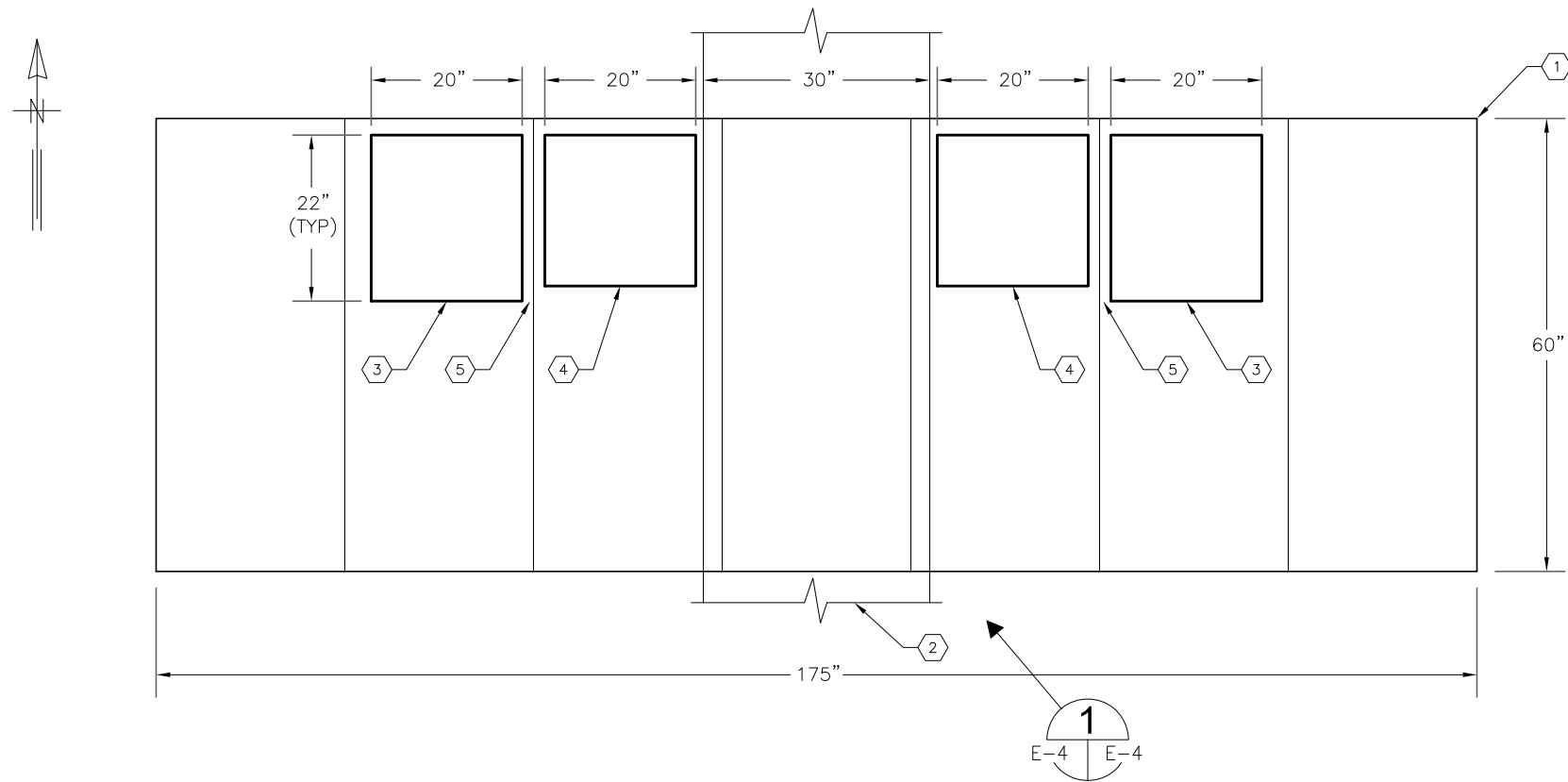
EXISTING SWITCHGEAR 56
FRONT ELEVATION

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER

E-3

FILE: 171501742E01



EXISTING SWITCHGEAR 56 CONDUIT ENTRANCE DETAIL

SCALE : N.T.S.



CONDUIT WINDOW DETAIL

SCALE : N.T.S.

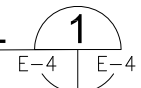


PHOTO TAKEN BELOW 13'-6" ELEVATION SLAB
AT ELEVATION 1'-0"

KEYED NOTES:

- ① FOOTPRINT OF EXISTING SWITCHGEAR 56 (TO BE REPLACED). CONTRACTOR SHALL FIELD VERIFY DIMENSIONS.
- ② EXISTING FLOOR BEAM SUPPORTING SLAB OF ELEVATION 13'-6". CONTRACTOR SHALL FIELD VERIFY DIMENSIONS.
- ③ EXISTING 20" WIDE BY 22" LONG FLOOR PENETRATION IN ELEVATION 13'-6" SLAB. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS.
- ④ EXISTING 20" WIDE BY 20" LONG FLOOR PENETRATION IN ELEVATION 13'-6" SLAB. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS.
- ⑤ EXISTING SPACING BETWEEN PENETRATIONS IS 3". CONTRACTOR SHALL FIELD VERIFY DIMENSIONS.

GENERAL NOTES:

1. SWITCHGEAR 56, CONDUIT AND WIRING INCLUDED ON THIS DRAWING ARE EXISTING. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS BEFORE SUBMITTING A BID OR COMMENCING CONSTRUCTION.
2. THE CONTRACTOR SHALL TAKE INTO ACCOUNT THE EXISTING CONDUIT WINDOW LOCATIONS AND DIMENSIONS WHEN SUBMITTING THEIR BID.
3. THE CONTRACTOR SHALL TAKE INTO ACCOUNT THE EXISTING FEEDER CONDUCTOR LENGTHS WHEN SUBMITTING THEIR BID. ALL CONDUIT AND CONDUCTORS ARE TO BE REUSED.



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SCALE

NOT TO SCALE

City of Tampa Wastewater Department
**HOWARD F. CURREN AWTP
SWITCHGEAR 56 REPLACEMENT**

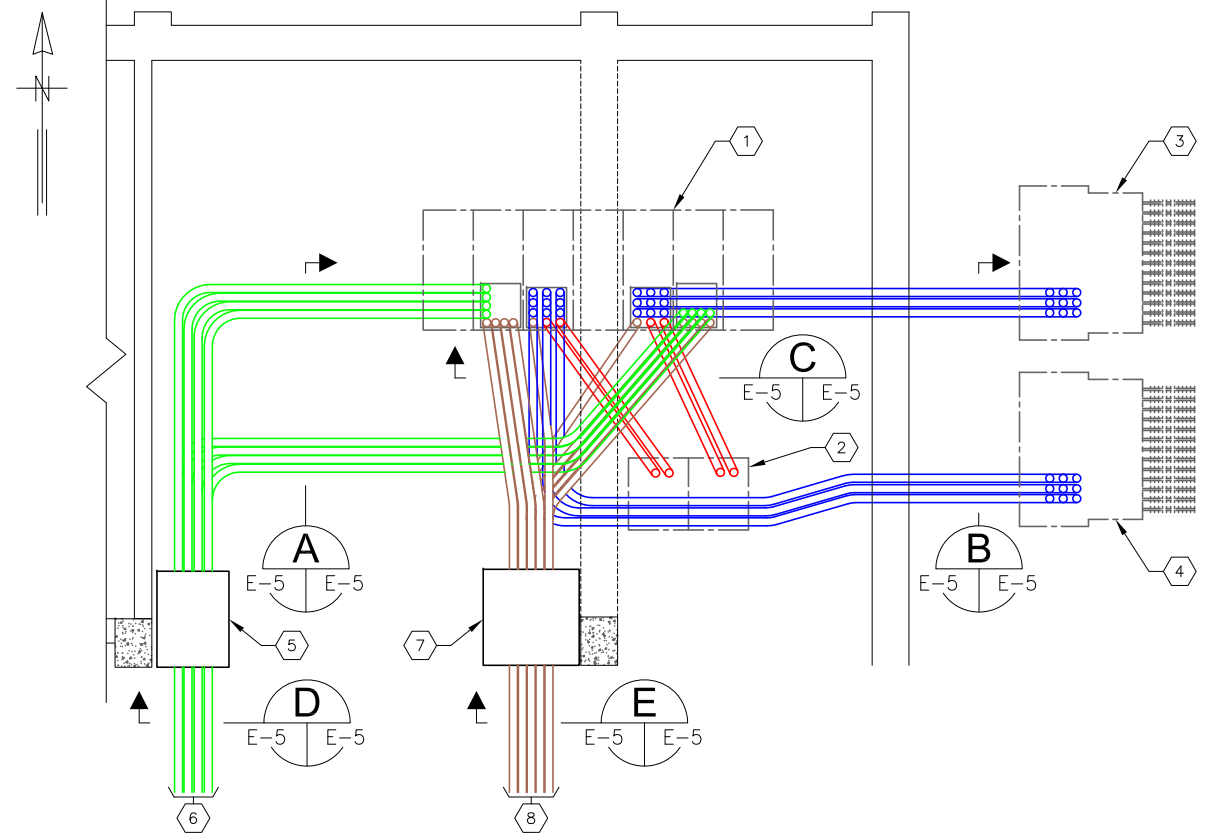
**EXISTING SWITCHGEAR 56
CONDUIT ENTRANCE DETAIL**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER

E-4

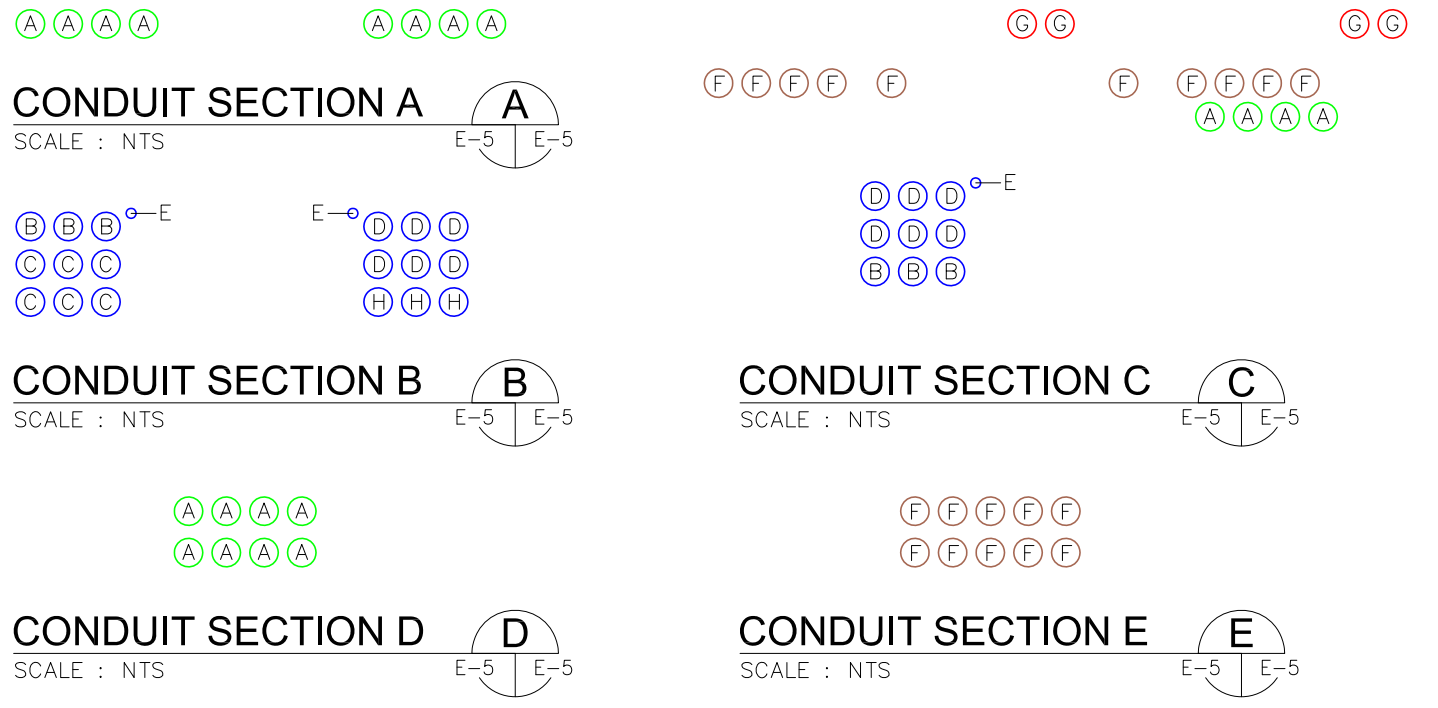
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FILTER BUILDING NO.1 (015) :
PLAN ELEVATION 1'-0"
 SCALE : 1/8" = 1'-0"
 1
 E-2 | E-5

KEYED NOTES:

- 1 FOOTPRINT OF EXISTING 277/480V, 2,000A SWITCHGEAR 56 AT ELEVATION 13'-6" (ABOVE). REFER ALSO TO SHEET E-3 FOR FRONT ELEVATION AND DIMENSIONS.
- 2 EXISTING 480V, MCC-57 AT ELEVATION 13'-6" (ABOVE). REFER TO SHEETS E-6 AND E-9 FOR PROVIDING TEMPORARY POWER TO MCC-57 DURING CONSTRUCTION.
- 3 EXISTING TRANSFORMER 'T-5A-3'. CONTRACTOR TO REMOVE EXISTING CONDUCTORS BETWEEN TRANSFORMER AND SWITCHGEAR BUS A. CONTRACTOR SHALL UTILIZE THE EXISTING 4" CONDUITS TO INSTALL 3-#444.4 DLO CU + 1-#4/0 DLO CU NEUTRAL + 1-#262.6 DLO CU GND. REFER ALSO TO TEMPORARY POWER SEQUENCE OF WORK NOTES ON SHEET 2.
- 4 EXISTING TRANSFORMER 'T-5B-3'. CONTRACTOR TO REMOVE EXISTING CONDUCTORS BETWEEN TRANSFORMER AND SWITCHGEAR BUS B. CONTRACTOR SHALL UTILIZE THE EXISTING 4" CONDUITS TO INSTALL 3-#444.4 DLO CU + 1-#4/0 DLO CU NEUTRAL + 1-#262.6 DLO CU GND. REFER ALSO TO TEMPORARY POWER SEQUENCE OF WORK NOTES ON SHEET 2.
- 5 EXISTING JUNCTION BOX FOR CONDUIT/CONDUCTORS TO MCC-59. REFER TO SHEET E-2 FOR MCC-59 LOCATION.
- 6 CONDUIT/CONDUCTORS CONTINUE TO MCC-59.
- 7 EXISTING JUNCTION BOX FOR CONDUIT/CONDUCTORS TO MCC-58. REFER TO SHEET E-2 FOR MCC-58 LOCATION.
- 8 CONDUIT/CONDUCTORS CONTINUE TO MCC-58.

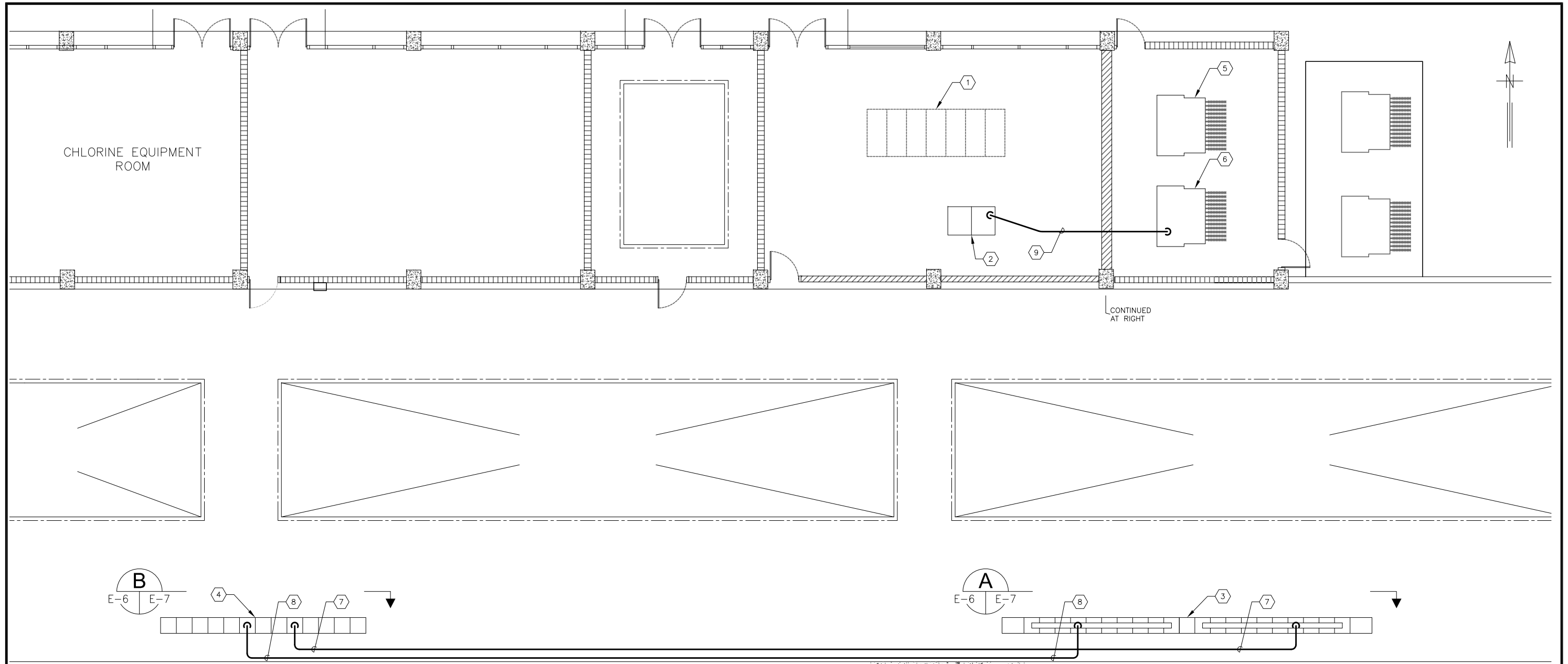


CONDUIT SECTIONS - LEGEND AND NOTES

CONDUIT	CONDUIT DESCRIPTION AND NOTES
A	EXISTING 3"C. WITH 3-#350MCM AL + 1-#4/0 AL GND. FROM SWITCHGEAR 56 TO MCC-59. CONDUCTORS TO BE TEMPORARILY DISCONNECTED DURING CONSTRUCTION. REFER TO SHEETS E-6, E-7 AND E-9 FOR PROVIDING TEMPORARY POWER TO MCC-59 DURING CONSTRUCTION. REFER ALSO TO TEMPORARY POWER SEQUENCE OF WORK NOTES ON SHEET 2.
B	EXISTING 4" SPARE CONDUIT. NO WORK REQUIRED.
C	EXISTING 4"C. WITH 3-#500MCM AL + 1-#3/0 AL N + 1-#1 AL GND. FROM TRANSFORMER 'T-5A-3' TO SWITCHGEAR 56 BUS A. EXISTING CONDUCTORS SHALL BE REMOVED. CONTRACTOR SHALL UTILIZE THE EXISTING 4" CONDUIT TO INSTALL 3-#444.4 DLO CU + 1-#4/0 DLO CU NEUTRAL + 1-#262.6 DLO CU GND. REFER ALSO TO TEMPORARY POWER SEQUENCE OF WORK NOTES ON SHEET 2.
D	EXISTING 4"C. WITH 3-#500MCM AL + 1-#3/0 AL N + 1-#1 AL GND. FROM TRANSFORMER 'T-5A-3' TO SWITCHGEAR 56 BUS A. EXISTING CONDUCTORS SHALL BE REMOVED. CONTRACTOR SHALL UTILIZE THE EXISTING 4" CONDUIT TO INSTALL 3-#444.4 DLO CU + 1-#4/0 DLO CU NEUTRAL + 1-#262.6 DLO CU GND. REFER ALSO TO TEMPORARY POWER SEQUENCE OF WORK NOTES ON SHEET 2.
E	EXISTING 1"C. AND CONDUCTORS FOR EXISTING REMOTE MONITORING. CONTRACTOR TO REMOVE EXISTING CONDUCTORS AND ABANDON CONDUIT.
F	EXISTING 3"C. WITH 3-#350MCM AL + 1-#250MCM AL GND. FROM SWITCHGEAR 56 TO MCC-58. CONDUCTORS TO BE TEMPORARILY DISCONNECTED DURING CONSTRUCTION. REFER TO SHEETS E-6, E-7 AND E-9 FOR PROVIDING TEMPORARY POWER TO MCC-58 DURING CONSTRUCTION. REFER ALSO TO TEMPORARY POWER SEQUENCE OF WORK NOTES ON SHEET 2.
G	EXISTING 3"C. WITH 3-#350MCM AL + 1-#2/0 AL GND. FROM SWITCHGEAR 56 TO MCC-57. CONDUCTORS TO BE TEMPORARILY DISCONNECTED DURING CONSTRUCTION. CONTRACTOR TO PROVIDE TEMPORARY POWER FROM TRANSFORMER 'T-5B-3'. REFER TO SHEETS E-6, E-7 AND E-9 FOR PROVIDING TEMPORARY POWER TO MCC-59 DURING CONSTRUCTION. REFER ALSO TO TEMPORARY POWER SEQUENCE OF WORK NOTES ON SHEET 2.
H	EXISTING 4" SPARE CONDUIT. CONTRACTOR SHALL DISASSEMBLE TWO (2) EXISTING 4" RIGID CONDUITS FROM TRANSFORMER 'T-5B-3' AT MOST APPROPRIATE LOCATION TO ACCOMMODATE A NEW TEMPORARY FEEDER TO THE EXISTING BACKWASH BLOWER No. 1 (BUS A) CIRCUIT BREAKER. TEMPORARY FEEDER SHALL CONSIST OF TWO (2) PARALLEL RUNS OF 3-#350MCM XHHW CU + 1-#1 XHHW CU GND IN NEW TEMPORARY RACEWAYS. REFER ALSO TO NOTE #9 ON SHEET E-9.

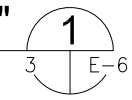
JOB No.	171501727						
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DATE	1/2016	No.	DATE	BY	APP	REVISION	DESCRIPTION

SCALE	AS SHOWN
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FILTER BUILDING NO.1 (015) : PLAN ELEVATION 13'-6"

SCALE : 3/32" = 1'-0"



KEYED NOTES:

- ① EXISTING 277/480V, 2,000A SWITCHGEAR 56. SWITCHGEAR SHALL BE REPLACED. DURING THE REPLACEMENT PROCESS, TEMPORARY POWER SHALL BE PROVIDED TO MCC-57 AND MCC-59. (REFER TO SHEETS E-7, E-8 AND E-9 FOR TEMPORARY POWER. REFER TO SHEET E-10 FOR NEW WORK REQUIRED).
- ② EXISTING MCC-57. REFER TO SHEET E-9 FOR TEMPORARY POWER REQUIREMENTS. REFER TO SHEET E-5 FOR EXISTING CONDUIT LAYOUT.
- ③ EXISTING 480V, 1,200A MCC-58. REFER TO SHEETS E-7 AND E-8 FOR TEMPORARY POWER REQUIREMENTS. REFER TO SHEET E-5 FOR EXISTING CONDUIT LAYOUT.
- ④ EXISTING 480V, 1,200A MCC-59. REFER TO SHEETS E-7 AND E-8 FOR TEMPORARY POWER REQUIREMENTS. REFER TO SHEET E-5 FOR EXISTING CONDUIT LAYOUT.
- ⑤ EXISTING TRANSFORMER 'T-5A-3'. 1,500 KVA, 13.2KV-277/480V. NO WORK REQUIRED FOR TEMPORARY POWER.
- ⑥ EXISTING TRANSFORMER 'T-5B-3'. 1,500 KVA, 13.2KV-277/480V. REFER TO SHEET E-9 FOR TEMPORARY POWER REQUIREMENTS. REFER TO SHEET E-5 FOR EXISTING CONDUIT LAYOUT.
- ⑦ CONTRACTOR TO PROVIDE AND INSTALL TWO (2) PARALLEL RUNS OF 4C-4/0 CU TYPE W PORTABLE POWER CABLE FROM MCC-58 (BUS A TEMPORARY POWER) TO BUS A MAIN CIRCUIT BREAKER OF MCC-59. REFER TO SHEET E-16 FOR LOAD CALCULATION.
- ⑧ CONTRACTOR TO PROVIDE AND INSTALL TWO (2) PARALLEL RUNS OF 4C-4/0 CU TYPE W PORTABLE POWER CABLE FROM MCC-58 (BUS B TEMPORARY POWER) TO BUS B MAIN CIRCUIT BREAKER OF MCC-59. REFER TO SHEET E-16 FOR LOAD CALCULATION.
- ⑨ CONTRACTOR TO PROVIDE AND INSTALL TWO (2) PARALLEL RUNS OF 3-#350MCM XHHW CU + 1-#1 XHHW CU GND IN NEW TEMPORARY RACEWAY FROM TRANSFORMER 'T-5B-3' TO EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER FOR BACKWASH BLOWER No. 1 IN MCC-57.



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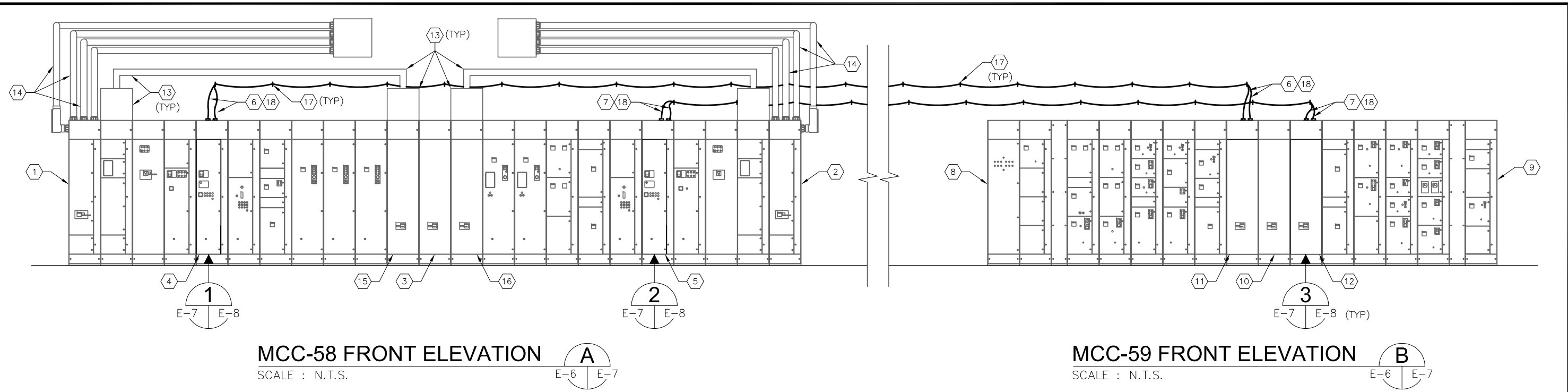
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City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
SWITCHGEAR 56 REPLACEMENT

SWITCHGEAR 56 REPLACEMENT
TEMPORARY POWER PLAN

TIMOTHY THOMAS, P.E. No. 47079

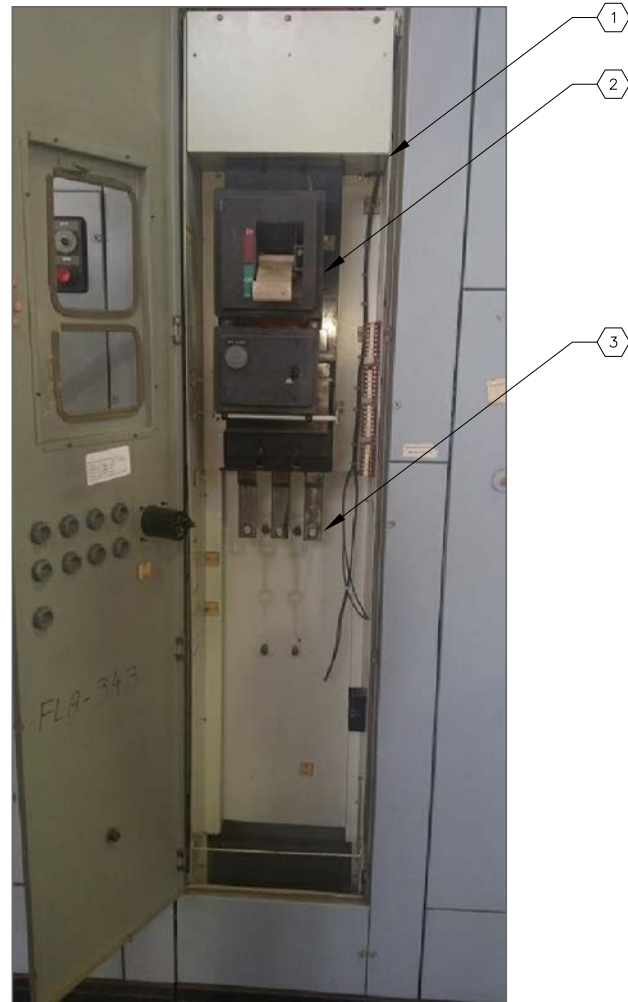
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KEYED NOTES:

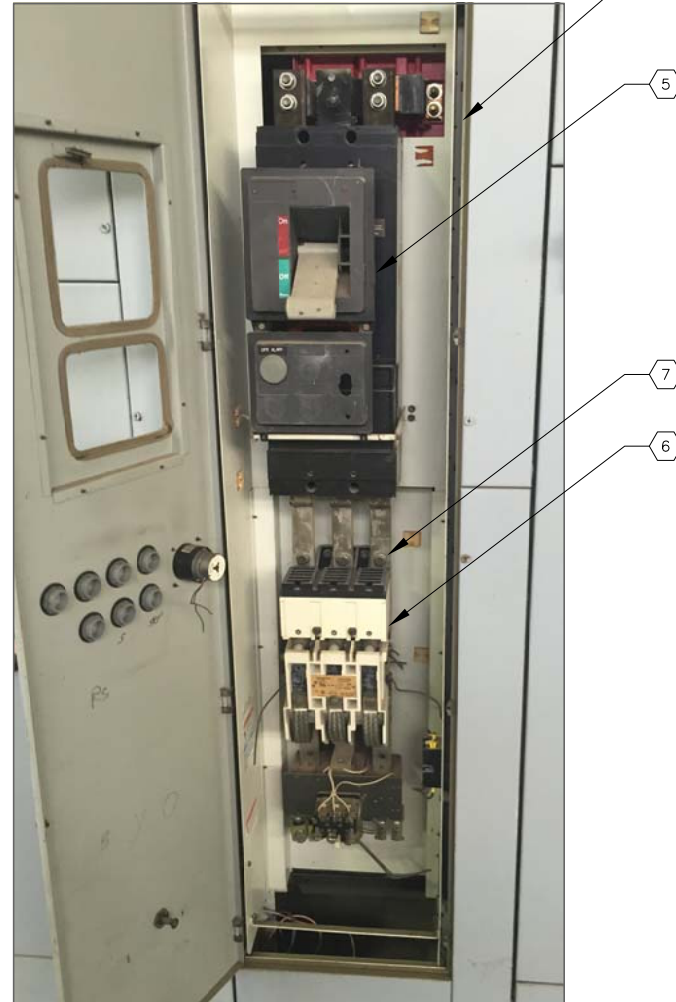
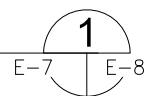
- ① EXISTING MCC-58. (BUS A SIDE).
- ② EXISTING MCC-58. (BUS B SIDE).
- ③ EXISTING MCC-58 BUS TIE CIRCUIT BREAKER. NO WORK REQUIRED.
- ④ EXISTING CUBICLE 3 ON BUS A SIDE OF MCC-58. CUBICLE CONTAINS SPARE 600V, 3-POLE, 500 AMPERE CIRCUIT BREAKER. CONTRACTOR SHALL PROVIDE AND INSTALL NEW LUGS ON LOAD SIDE OF EXISTING CIRCUIT BREAKER TO ACCOMMODATE NEW TEMPORARY CONDUCTORS TO PROVIDE TEMPORARY POWER TO THE BUS A SIDE OF MCC-59. CONDUCTORS TO BE PROVIDED SHALL CONSIST OF TWO (2) PARALLEL RUNS OF 4/C-4/O CU TYPE W PORTABLE POWER CABLE. REFER ALSO TO SHEET E-8 FOR EXISTING CUBICLE 3 DETAIL.
- ⑤ EXISTING CUBICLE 17 ON BUS B SIDE OF MCC-58. CUBICLE CONTAINS SPARE 600V, 3-POLE, 500 AMPERE CIRCUIT BREAKER. CUBICLE ALSO CONTAINS EXISTING STARTER. STARTER SHALL BE REMOVED AND DELIVERED TO THE CITY OF TAMPA FOR MAINTENANCE INVENTORY. CONTRACTOR SHALL THEN PROVIDE AND INSTALL NEW LUGS ON LOAD SIDE OF EXISTING CIRCUIT BREAKER TO ACCOMMODATE NEW TEMPORARY CONDUCTORS TO PROVIDE TEMPORARY POWER TO THE BUS B SIDE OF MCC-59. CONDUCTORS TO BE PROVIDED SHALL CONSIST OF TWO (2) PARALLEL RUNS OF 4/C-4/O CU TYPE W PORTABLE POWER CABLE. REFER ALSO TO SHEET E-8 FOR EXISTING CUBICLE 17 DETAIL.
- ⑥ CONTRACTOR TO PROVIDE AND INSTALL TWO (2) PARALLEL RUNS OF 4/C-4/O CU TYPE W PORTABLE POWER CABLE FROM EXISTING CUBICLE 3 CIRCUIT BREAKER (BUS A TEMPORARY POWER) TO BUS A MAIN CIRCUIT BREAKER OF MCC-59.
- ⑦ CONTRACTOR TO PROVIDE AND INSTALL TWO (2) PARALLEL RUNS OF 4C-4/O CU TYPE W PORTABLE POWER CABLE FROM EXISTING CUBICLE 17 CIRCUIT BREAKER (BUS B TEMPORARY POWER) TO BUS B MAIN CIRCUIT BREAKER OF MCC-59.
- ⑧ EXISTING MCC-59. (BUS A SIDE).
- ⑨ EXISTING MCC-59. (BUS B SIDE).
- ⑩ EXISTING MCC-59 BUS TIE CIRCUIT BREAKER. NO WORK REQUIRED.
- ⑪ EXISTING MCC-59 BUS A MAIN CIRCUIT BREAKER. IN ORDER TO PROVIDE TEMPORARY POWER TO MCC-59, THE CONTRACTOR SHALL DISCONNECT THE EXISTING CONDUCTORS LEADING FROM SWITCHGEAR 56 TO THE MCC-59 BUS A MAIN CIRCUIT BREAKER. THE FEEDER SHALL BE DISCONNECTED AT BOTH THE SWITCHGEAR 56 AND MCC-59 ENDS. THE CONTRACTOR SHALL NEATLY COIL THE CONDUCTORS AND TAPE THE ENDS OF THE CONDUCTORS WITH VINYL ELECTRICAL TAPE (SCOTCH 33+). THE CONTRACTOR MAY THEN CONNECT THE TEMPORARY FEEDER CONDUCTORS (TWO (2) PARALLEL RUNS 4/C-4/O CU TYPE W PORTABLE POWER CABLE FROM EXISTING MCC-58 CUBICLE 3 CIRCUIT BREAKER). REFER ALSO TO SHEET E-8 FOR TYPICAL MCC-59 MAIN CIRCUIT BREAKER DETAILS.
- ⑫ EXISTING MCC-59 BUS B MAIN CIRCUIT BREAKER. IN ORDER TO PROVIDE TEMPORARY POWER TO MCC-59, THE CONTRACTOR SHALL DISCONNECT THE EXISTING CONDUCTORS LEADING FROM SWITCHGEAR 56 TO THE MCC-59 BUS B MAIN CIRCUIT BREAKER. THE FEEDER SHALL BE DISCONNECTED AT BOTH THE SWITCHGEAR 56 AND MCC-59 ENDS. THE CONTRACTOR SHALL NEATLY COIL THE CONDUCTORS AND TAPE THE ENDS OF THE CONDUCTORS WITH VINYL ELECTRICAL TAPE (SCOTCH 33+). THE CONTRACTOR MAY THEN CONNECT THE TEMPORARY FEEDER CONDUCTORS (TWO (2) PARALLEL RUNS OF 4/C-4/O CU TYPE W PORTABLE POWER CABLE FROM EXISTING MCC-58 CUBICLE 17 CIRCUIT BREAKER). REFER ALSO TO SHEET E-8 FOR TYPICAL MCC-59 MAIN CIRCUIT BREAKER DETAILS.
- ⑬ EXISTING TOP HAT AND ENCLOSED BUSWAY. NO WORK REQUIRED. EXISTING ENCLOSED BUSWAY SHOWN TO INDICATE EXISTING CONDITIONS. CONTRACTOR SHALL FIELD ROUTE TEMPORARY POWER CONDUIT/CONDUCTORS AS REQUIRED TO AVOID EXISTING ENCLOSED BUSWAY.
- ⑭ EXISTING CONDUIT. NO WORK REQUIRED. EXISTING CONDUITS SHOWN TO INDICATE EXISTING CONDITIONS. CONTRACTOR SHALL FIELD ROUTE TEMPORARY POWER CONDUCTORS AS REQUIRED TO AVOID EXISTING CONDUITS.
- ⑮ EXISTING MCC-58 BUS A MAIN CIRCUIT BREAKER. CONTRACTOR SHALL DISCONNECT THE EXISTING CONDUCTORS LEADING FROM SWITCHGEAR 56 TO THE MCC-58 BUS A MAIN CIRCUIT BREAKER. THE FEEDER SHALL BE DISCONNECTED AT BOTH THE SWITCHGEAR 56 AND MCC-58 ENDS. THE CONTRACTOR SHALL NEATLY COIL THE CONDUCTORS AND TAPE THE ENDS OF THE CONDUCTORS WITH VINYL ELECTRICAL TAPE (SCOTCH 33+). THE CONTRACTOR SHALL ALSO INCLUDE A PLACARD ON THE CUBICLE THAT STATES "EMERGENCY USE ONLY. FOR MCC-58 BACKUP CONNECTION, CONDUCTORS NOT CONNECTED".
- ⑯ EXISTING MCC-58 BUS B MAIN CIRCUIT BREAKER. CONTRACTOR SHALL DISCONNECT THE EXISTING CONDUCTORS LEADING FROM SWITCHGEAR 56 TO THE MCC-58 BUS B MAIN CIRCUIT BREAKER. THE FEEDER SHALL BE DISCONNECTED AT BOTH THE SWITCHGEAR 56 AND MCC-58 ENDS. THE CONTRACTOR SHALL NEATLY COIL THE CONDUCTORS AND TAPE THE ENDS OF THE CONDUCTORS WITH VINYL ELECTRICAL TAPE (SCOTCH 33+). THE CONTRACTOR SHALL ALSO INCLUDE A PLACARD ON THE CUBICLE THAT STATES "EMERGENCY USE ONLY. FOR MCC-58 BACKUP CONNECTION, CONDUCTORS NOT CONNECTED".
- ⑰ CONTRACTOR TO PROVIDE AND INSTALL 2-HOLE CONDUIT STRAPS A MINIMUM OF EVERY 3 FEET TO SUPPORT TEMPORARY PORTABLE POWER CABLE.
- ⑱ CONTRACTOR TO PROVIDE AND INSTALL 4 INCH INSULATING BUSHING AT TEMPORARY PORTABLE POWER CABLE ENTRANCES.

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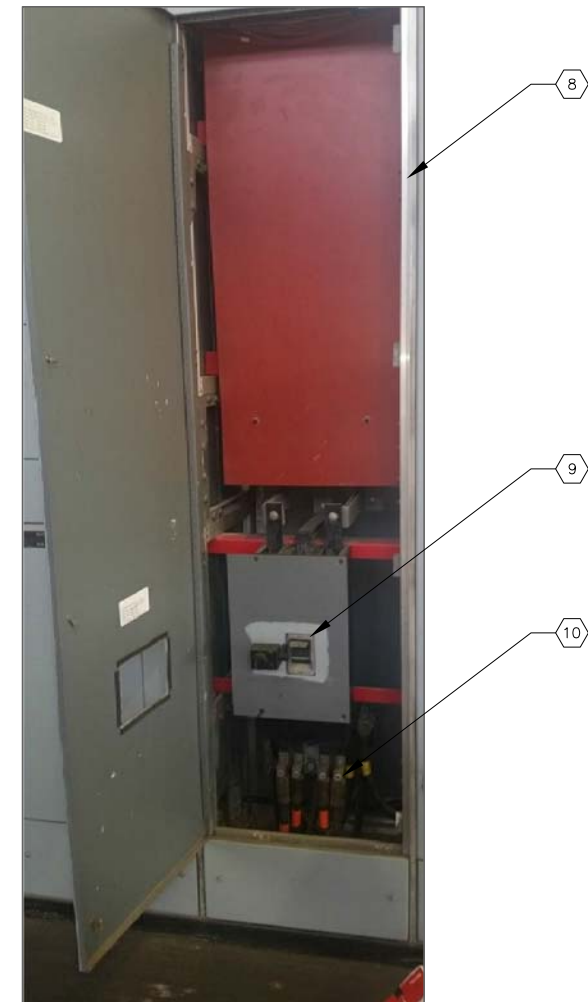
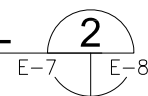
MCC-58 CUBICLE 3 DETAIL

SCALE : N.T.S.



MCC-58 CUBICLE 17 DETAIL

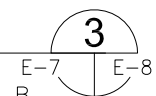
SCALE : N.T.S.



MCC-59 MAIN CIRCUIT BREAKER CUBICLE DETAIL

SCALE : N.T.S.

NOTE : DETAIL TYPICAL FOR BOTH BUS A & B



KEYED NOTES:

- ① EXISTING MCC-58 CUBICLE 3 (MCC-58 BUS A).
- ② SPARE 600V, 3-POLE, 500 AMPERE CIRCUIT BREAKER.
- ③ CONTRACTOR SHALL PROVIDE AND INSTALL NEW LUGS ON LOAD SIDE OF EXISTING CIRCUIT BREAKER TO ACCOMMODATE NEW TEMPORARY CONDUCTORS.
- ④ EXISTING MCC-58 CUBICLE 17 (MCC-58 BUS B).
- ⑤ SPARE 600V, 3-POLE, 500 AMPERE CIRCUIT BREAKER.

- ⑥ EXISTING MOTOR STARTER. STARTER SHALL BE REMOVED AND DELIVERED TO THE CITY OF TAMPA FOR MAINTENANCE INVENTORY.
- ⑦ AFTER REMOVING STARTER, CONTRACTOR SHALL PROVIDE AND INSTALL NEW LUGS ON LOAD SIDE OF EXISTING CIRCUIT BREAKER TO ACCOMMODATE NEW TEMPORARY CONDUCTORS.
- ⑧ EXISTING CUBICLE FOR MCC-59 BUS A MAIN CIRCUIT BREAKER (TYPICAL FOR MCC-59 BUS B MAIN CIRCUIT BREAKER CUBICLE).
- ⑨ EXISTING MCC-59 BUS A MAIN CIRCUIT BREAKER (TYPICAL FOR MCC-59 BUS B MAIN CIRCUIT BREAKER).

- ⑩ CONTRACTOR SHALL DISCONNECT THE EXISTING CONDUCTORS LEADING FROM SWITCHGEAR 56 TO THE MCC-59 BUS A MAIN CIRCUIT BREAKER (TYPICAL FOR MCC-59 BUS B MAIN CIRCUIT BREAKER). THE FEEDER SHALL BE DISCONNECTED AT BOTH THE SWITCHGEAR 56 AND MCC-59 ENDS. THE CONTRACTOR SHALL NEATLY COIL THE CONDUCTORS AND TAPE THE ENDS OF THE CONDUCTORS WITH VINYL ELECTRICAL TAPE (SCOTCH 33+). THE CONTRACTOR MAY THEN CONNECT THE TEMPORARY FEEDER CONDUCTORS (TWO (2) PARALLEL RUNS OF 4/C-4/O CU TYPE W PORTABLE POWER CABLE FROM EXISTING MCC-58 CUBICLE 3 (FOR MCC-59 BUS A) OR CUBICLE 17 (FOR MCC-59 BUS B). THE CONTRACTOR SHALL ALSO INCLUDE A PLACARD ON THE CUBICLE THAT STATES "EMERGENCY USE ONLY. FOR MCC-58 BACKUP CONNECTION, CONDUCTORS NOT CONNECTED".



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SCALE

NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
SWITCHGEAR 56 REPLACEMENT

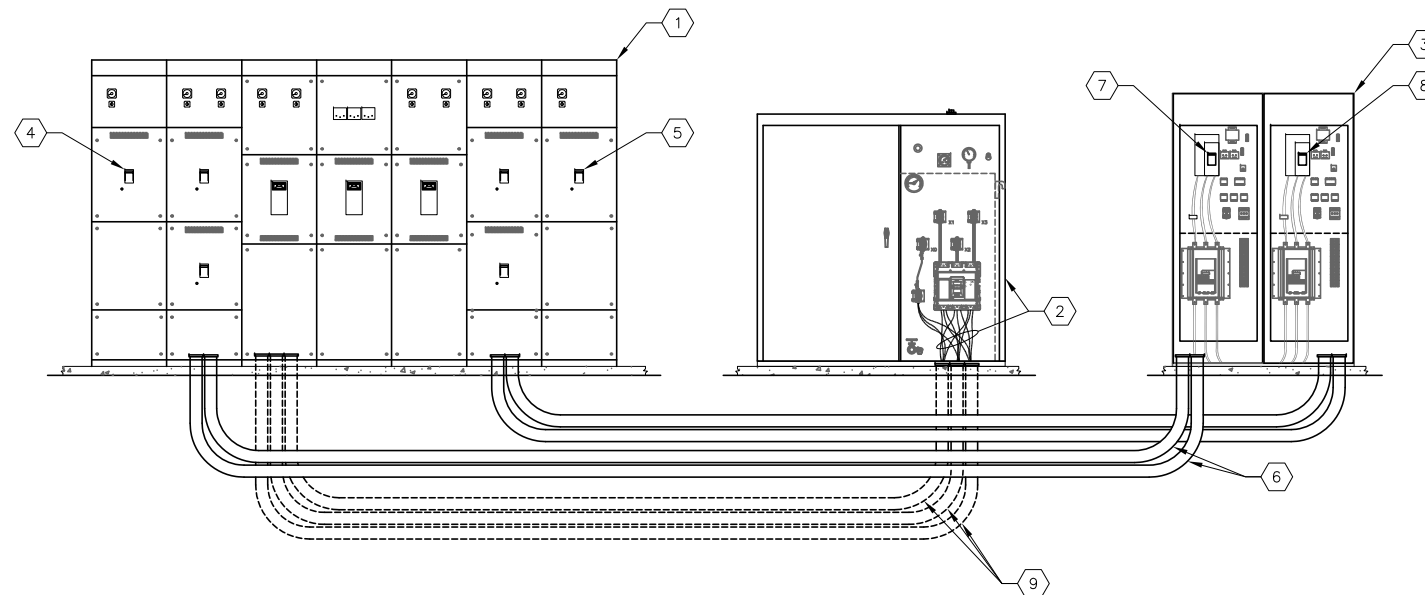
MCC-58 AND MCC-59
TEMPORARY POWER DETAILS
(SHEET 2 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER

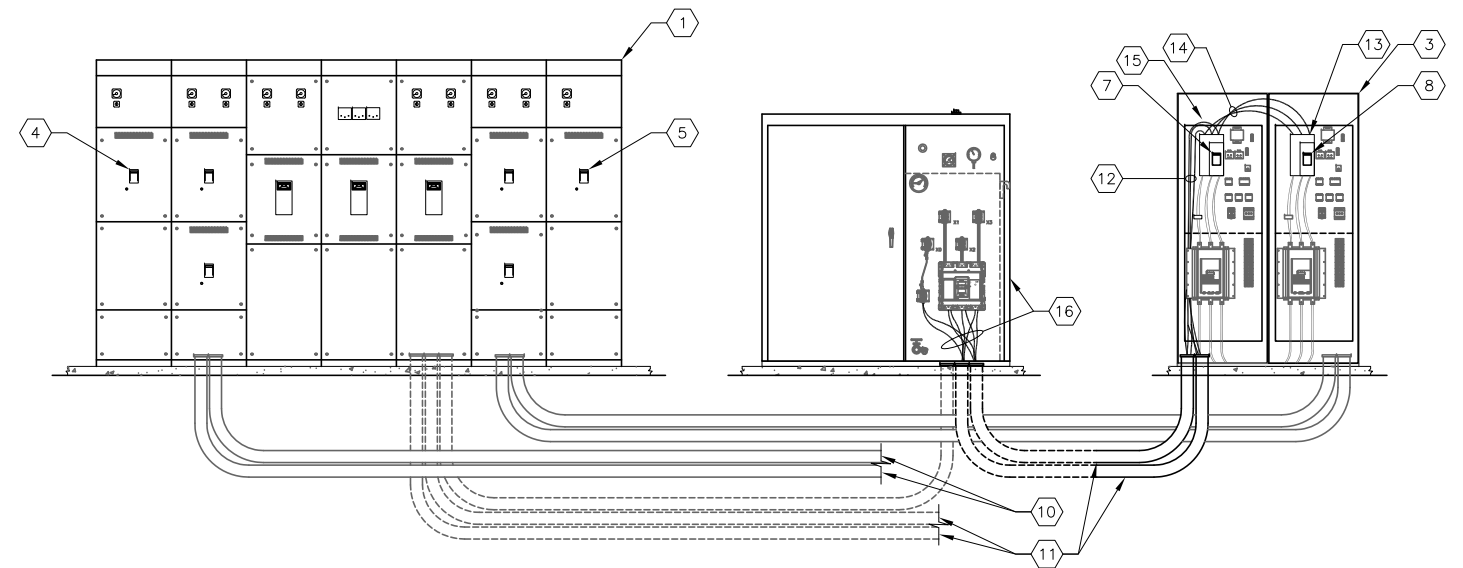
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FILE: 171501742E01



EXISTING CONDITIONS SCHEMATIC

SCALE : N.T.S.



TEMPORARY POWER SCHEMATIC

SCALE : N.T.S.

KEYED NOTES:

- ① EXISTING SWITCHGEAR 56 (TO BE REPLACED). REFER TO SHEET E-6 FOR EXISTING LOCATION.
- ② EXISTING TRANSFORMER 'T-5B-3'. 1,500 KVA, 13.2KV-277/480V DELTA-WYE. REFER TO SHEET E-6 FOR LOCATION. ALL EXISTING SERVICE ENTRANCE FEEDER CONDUCTORS SHALL BE REMOVED. TRANSFORMER SHALL BE USED TO FEED MCC-57 ON A TEMPORARY BASIS. AFTER NEW SWITCHGEAR 56 IS INSTALLED, THE CONTRACTOR SHALL UTILIZE THE EXISTING CONDUITS TO INSTALL SIX (6) PARALLEL RUNS OF 3-#444.4 DLO CU + 1-#4/O DLO CU NEUTRAL + 1-#262.6 DLO CU GND. FROM TRANSFORMER 'T-5B-3' TO SWITCHGEAR 56 BUS B MAIN CIRCUIT BREAKER.
- ③ EXISTING BACKWASH AIR BLOWER CONTROL CENTER : MCC-57. REFER TO SHEET E-6 FOR LOCATION.
- ④ EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER IN SWITCHGEAR 56 FOR BACKWASH BLOWER No. 1 IN MCC-57. CONTRACTOR SHALL DISCONNECT THE EXISTING CONDUCTORS LEADING FROM THIS CIRCUIT BREAKER TO MCC-57 BACKWASH BLOWER No. 1 (BUS A). THE FEEDER SHALL BE DISCONNECTED AT BOTH THE SWITCHGEAR 56 AND MCC-57 ENDS. THE CONTRACTOR SHALL NEATLY COIL THE CONDUCTORS AND TAPE THE ENDS OF THE CONDUCTORS WITH VINYL ELECTRICAL TAPE (SCOTCH 33+).
- ⑤ EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER IN SWITCHGEAR 56 FOR BACKWASH BLOWER No. 2 IN MCC-57. CONTRACTOR SHALL DISCONNECT THE EXISTING CONDUCTORS LEADING FROM THIS CIRCUIT BREAKER TO MCC-57 BACKWASH BLOWER No. 2 (BUS B). THE FEEDER SHALL BE DISCONNECTED AT BOTH THE SWITCHGEAR 56 AND MCC-57 ENDS. THE CONTRACTOR SHALL NEATLY COIL THE CONDUCTORS AND TAPE THE ENDS OF THE CONDUCTORS WITH VINYL ELECTRICAL TAPE (SCOTCH 33+).
- ⑥ CONTRACTOR SHALL DISASSEMBLE EXISTING 4" RIGID CONDUITS (TWO TOTAL) FROM SWITCHGEAR 56 AT MOST APPROPRIATE LOCATION TO ACCOMMODATE NEW TEMPORARY FEEDER. COIL AND TAPE SLACK CONDUCTORS AS INDICATED IN NOTE #4. REFER ALSO TO NOTE #10.
- ⑦ EXISTING BACKWASH BLOWER No. 1 (BUS A) CIRCUIT BREAKER. CONTRACTOR SHALL DISCONNECT SWITCHGEAR 56 BUS A FEEDER. COIL AND TAPE CONDUCTOR ENDS PER NOTE #4.
- ⑧ EXISTING BACKWASH BLOWER No. 2 (BUS B) CIRCUIT BREAKER. CONTRACTOR SHALL DISCONNECT SWITCHGEAR 56 BUS B FEEDER. COIL AND TAPE CONDUCTOR ENDS PER NOTE #4.
- ⑨ EXISTING 4" RIGID CONDUITS FOR SERVICE ENTRANCE CONDUCTORS FROM TRANSFORMER 'T-5B-3' TO SWITCHGEAR 56 BUS B MAIN CIRCUIT BREAKER. NOT ALL CONDUITS SHOWN FOR CLARITY. REFER TO SHEET E-5 FOR EXISTING CONDUIT LAYOUT. CONTRACTOR SHALL DISASSEMBLE TWO (2) EXISTING 4" RIGID CONDUITS FROM TRANSFORMER 'T-5B-3' AT MOST APPROPRIATE LOCATION TO ACCOMMODATE A NEW TEMPORARY FEEDER TO THE EXISTING BACKWASH BLOWER No. 1 (BUS A) CIRCUIT BREAKER. TEMPORARY FEEDER SHALL CONSIST OF TWO (2) PARALLEL RUNS OF 3-#350MCM XHHW CU + 1-#1 XHHW CU GND IN NEW TEMPORARY RACEWAYS.
- ⑩ CONTRACTOR TO INTERCEPT EXISTING CONDUITS AS IDENTIFIED IN NOTE #6 AND COIL AND TAPE SLACK CONDUCTORS AS INDICATED IN NOTE #4 IN ORDER TO ACCOMMODATE THE NEW TEMPORARY FEEDER FROM EXISTING TRANSFORMER 'T-5B-3' TO EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER FOR BACKWASH BLOWER No. 1 IN MCC-57. REFER ALSO TO NOTE #6.
- ⑪ CONTRACTOR TO INTERCEPT EXISTING CONDUITS AS IDENTIFIED IN NOTE #9 AND EXTEND TWO (2) 4" RIGID CONDUITS (CONDUIT TYPE BASED ON EXISTING CONDITIONS) TO MCC-57. CONTRACTOR SHALL THEN INSTALL TWO (2) PARALLEL RUNS OF 3-#350MCM XHHW CU + 1-#1 XHHW CU GND IN NEW TEMPORARY RACEWAY TO EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER FOR BACKWASH BLOWER No. 1 IN MCC-57.
- ⑫ TWO (2) PARALLEL RUNS OF 3-#350MCM XHHW CU + 1-#1 XHHW CU GND FROM TRANSFORMER 'T-5B-3'.
- ⑬ CONTRACTOR SHALL DISCONNECT THE EXISTING CONDUCTORS LEADING FROM SWITCHGEAR 56 TO MCC-57 BACKWASH BLOWER No. 2 (BUS B). THE FEEDER SHALL BE DISCONNECTED AT BOTH THE SWITCHGEAR 56 AND MCC-57 ENDS. THE CONTRACTOR SHALL NEATLY COIL THE CONDUCTORS AND TAPE THE ENDS OF THE CONDUCTORS WITH VINYL ELECTRICAL TAPE (SCOTCH 33+).
- ⑭ TWO (2) PARALLEL RUNS OF 3-#350MCM XHHW CU + 1-#1 XHHW CU GND TO ACT AS A TEMPORARY JUMPER BETWEEN EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER FOR BACKWASH BLOWER No. 1 AND EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER FOR BACKWASH BLOWER No. 2.
- ⑮ CONTRACTOR SHALL PROVIDE NEW LUGS (IF REQUIRED) ON LINE SIDE OF EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER FOR BACKWASH BLOWER No. 1 TO ACCOMMODATE BOTH INCOMING FEEDER CONDUCTORS AND TEMPORARY JUMPERS TO EXISTING 1200AF/600AT 3-POLE CIRCUIT BREAKER FOR BACKWASH BLOWER No. 2 IN MCC-57.
- ⑯ REMOVE ALL EXISTING SERVICE ENTRANCE FEEDER CONDUCTORS FROM EXISTING TRANSFORMER 'T-5B-3' TO SWITCHGEAR 56. PROVIDE AND INSTALL TWO (2) PARALLEL RUNS OF 3-#350MCM XHHW CU + 1-#1 XHHW CU GND TO MCC-57.

GENERAL NOTES:

1. NOT ALL CONDUITS SHOWN FOR CLARITY. REFER ALSO TO SHEET E-5 FOR EXISTING CONDUIT LAYOUT.
2. REFER ALSO TO TEMPORARY POWER SEQUENCE OF WORK NOTES ON SHEET 2.



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Suite 870
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

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NOT TO SCALE

City of Tampa Wastewater Department
**HOWARD F. CURREN AWTP
SWITCHGEAR 56 REPLACEMENT**

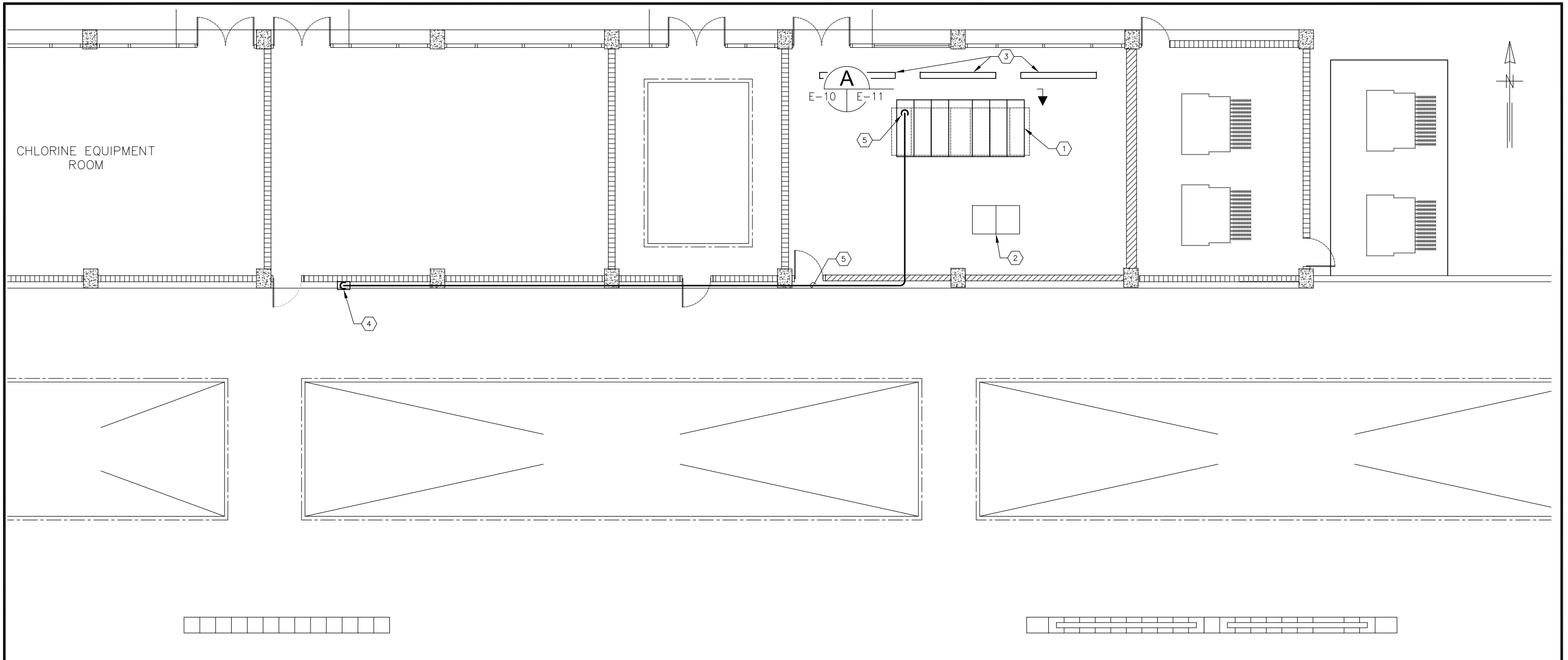
**MCC-57
TEMPORARY POWER DETAILS**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER

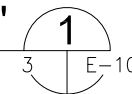
E-9

FILE: 171501742E01



FILTER BUILDING NO.1 (015) : PLAN ELEVATION 13'-6"

SCALE : 3/32" = 1'-0"



KEYED NOTES:

- ① CONTRACTOR TO PROVIDE AND INSTALL NEW 277/480V, 2,000A SWITCHGEAR 56. REFER TO SHEET E-11 FOR NEW ELEVATION AND INSTALLATION DETAILS.
- ② EXISTING MCC-57. REFER TO SHEET E-9 FOR TEMPORARY POWER REQUIREMENTS. REFER TO SHEET E-5 FOR EXISTING CONDUIT LAYOUT.
- ③ EXISTING LIGHT FIXTURES (FRONT SIDE OF SWITCHGEAR). NEW SWITCHGEAR INSTALLATION SHALL RAISE THE HEIGHT OF THE CIRCUIT BREAKER HOIST. CONTRACTOR SHALL RAISE LIGHT FIXTURES TO AN ELEVATION THAT WILL ALLOW FULL TRAVEL OF HOIST WITHOUT INTERFERENCE FROM LIGHT FIXTURES.
- ④ EXISTING SCADA NETWORK CABINET. CONTRACTOR TO PROVIDE AND INSTALL NEW 1" C. WITH ONE (1) NEW CAT 5e ETHERNET CABLE TO NEW SWITCHGEAR 56 FOR SCADA MONITORING. CONNECT CAT 5e ETHERNET CABLE TO EXISTING ETHERNET SWITCH WITHIN SCADA NETWORK CABINET.
- ⑤ CONTRACTOR SHALL FIELD ROUTE NEW 1" C. WITH ONE (1) NEW CAT 5e ETHERNET CABLE FROM SCADA NETWORK CABINET TO NEW SWITCHGEAR 56. COORDINATE CONNECTION LOCATION WITH SWITCHGEAR MANUFACTURER.



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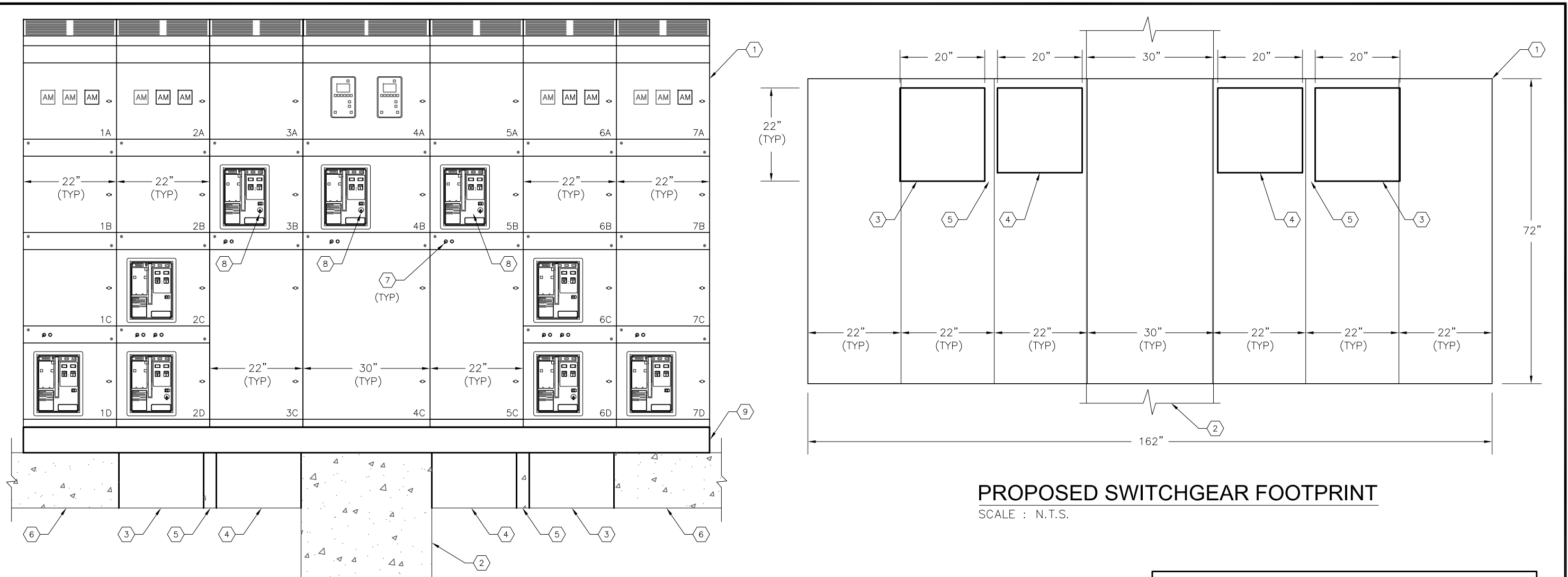
SCALE

AS SHOWN

City of Tampa Wastewater Department
HOWARD F. CURREN AWP
SWITCHGEAR 56 REPLACEMENT

SWITCHGEAR 56 REPLACEMENT
NEW WORK PLAN

TIMOTHY THOMAS, P.E. No. 47079	FILE: 171501742E01
SHEET NUMBER E-10	



PROPOSED SWITCHGEAR 56 FRONT ELEVATION

SCALE : N.T.S.



PROPOSED SWITCHGEAR FOOTPRINT

SCALE : N.T.S.

KEYED NOTES:

- ① FOOTPRINT OF PROPOSED SWITCHGEAR 56 (DIMENSIONS DEPENDENT ON ACTUAL SWITCHGEAR SUPPLIED BY CONTRACTOR). CONTRACTOR COORDINATE SLAB OPENING WITH SWITCHGEAR PROVIDED.
- ② EXISTING FLOOR BEAM SUPPORTING SLAB OF ELEVATION 13'-6". CONTRACTOR SHALL FIELD VERIFY DIMENSIONS.
- ③ EXISTING 20" WIDE BY 22" LONG FLOOR PENETRATION IN ELEVATION 13'-6" SLAB. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS.
- ④ EXISTING 20" WIDE BY 20" LONG FLOOR PENETRATION IN ELEVATION 13'-6" SLAB. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS.
- ⑤ EXISTING SPACING BETWEEN PENETRATIONS IS 3". CONTRACTOR SHALL FIELD VERIFY DIMENSIONS.
- ⑥ EXISTING FLOOR SLAB OF ELEVATION 13'-6".
- ⑦ MAINTENANCE MODE SELECTOR SWITCH AND ASSOCIATED PILOT LIGHT. TYPICAL FOR ALL CIRCUIT BREAKERS.
- ⑧ KIRK-KEY INTERLOCK FOR ASSOCIATED CIRCUIT BREAKER.
- ⑨ NEW SWITCHGEAR 56 TO BE PROVIDED WITH BOX CHANNEL, I-BEAM, OR WIREWAY TO ELEVATE SWITCHGEAR 6 INCHES. REFER ALSO TO SPECIFICATIONS.

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND COORDINATE CONDUIT OPENINGS IN FLOOR SLAB WITH DIMENSIONS OF SWITCHGEAR TO BE PROVIDED.
2. CIRCUIT BREAKER HOIST NOT SHOWN FOR CLARITY.
3. 1" C. FOR ETHERNET CONNECTION TO EXISTING SCADA NETWORK CABINET NOT SHOWN FOR CLARITY. REFER TO SHEET E-10.

PROPOSED SWITCHGEAR 56 SCHEDULE

1A	-	BACKWASH BLOWER No. 1 METERING EQUIPMENT
1B	-	PREPARED SPACE
1C	-	PREPARED SPACE
1D	-	CIRCUIT BREAKER FOR BACKWASH BLOWER No. 1 (MCC-57)
2A	-	MCC-58 & MCC-59 BUS A METERING EQUIPMENT
2B	-	PREPARED SPACE
2C	-	CIRCUIT BREAKER FOR MCC-59 BUS A.
2D	-	CIRCUIT BREAKER FOR MCC-58 BUS A.
3A	-	SG 56 BUS A SURGE PROTECTION DEVICE
3B	-	SG 56 BUS A MAIN CIRCUIT BREAKER
3C	-	INCOMING LINE COMPARTMENT FOR BUS A
4A	-	SG 56 BUS A & BUS B METERING EQUIPMENT
4B	-	SG 56 BUS TIE CIRCUIT BREAKER
4C	-	INCOMING LINE COMPARTMENT
5A	-	SG 56 BUS B SURGE PROTECTION DEVICE
5B	-	SG 56 BUS B MAIN CIRCUIT BREAKER
5C	-	INCOMING LINE COMPARTMENT FOR BUS B
6A	-	MCC-58 & MCC-59 BUS B METERING EQUIPMENT
6B	-	PREPARED SPACE
6C	-	CIRCUIT BREAKER FOR MCC-59 BUS B.
6D	-	CIRCUIT BREAKER FOR MCC-58 BUS B.
7A	-	BACKWASH BLOWER No. 2 METERING EQUIPMENT
7B	-	PREPARED SPACE
7C	-	PREPARED SPACE
7D	-	CIRCUIT BREAKER FOR BACKWASH BLOWER No. 2 (MCC-57)



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 SWITCHGEAR 56 REPLACEMENT**

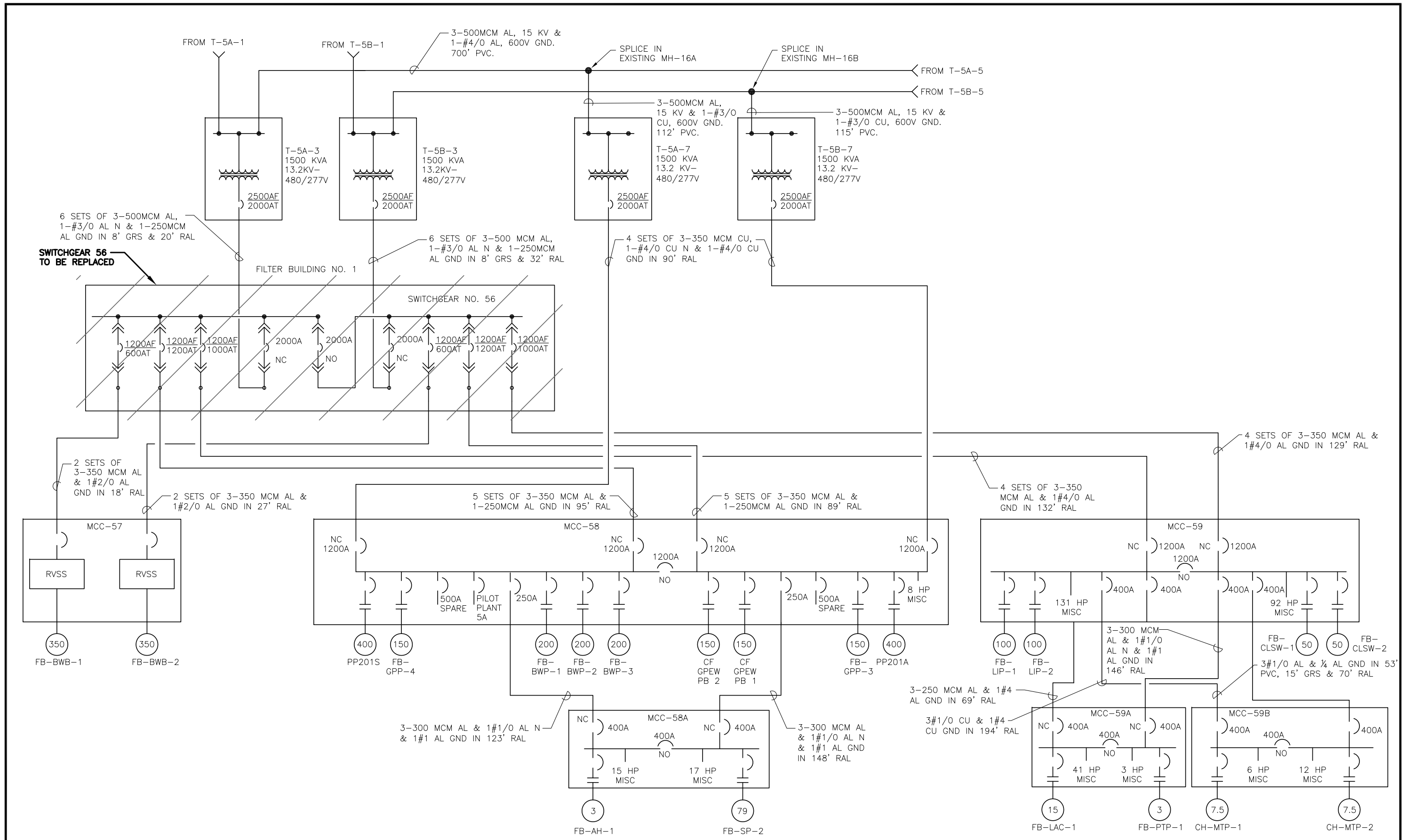
**PROPOSED SWITCHGEAR 56
 FRONT ELEVATION**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER

E-11

FILE: 171501742E01



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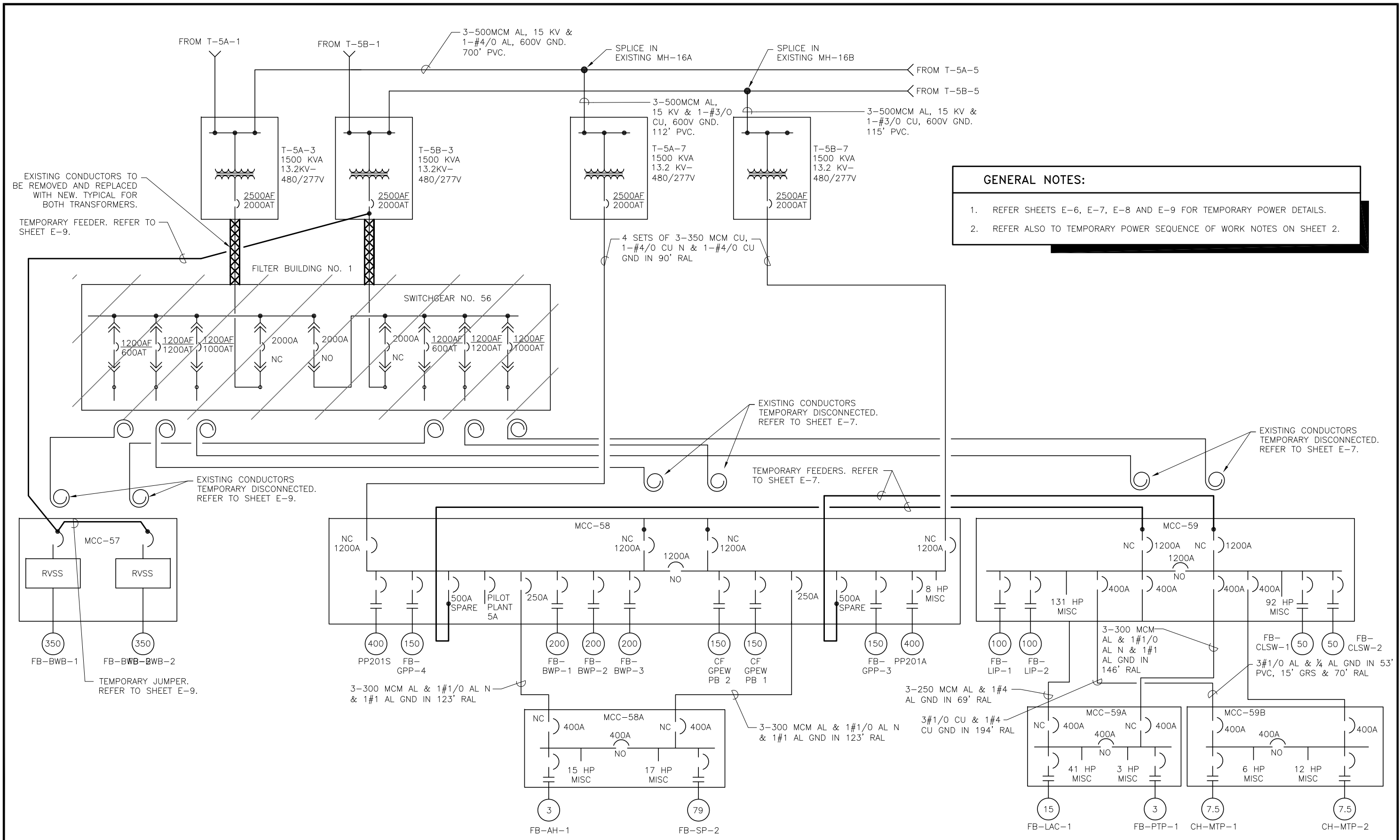
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City of Tampa Wastewater Department
**HOWARD F. CURREN AWTP
 SWITCHGEAR 56 REPLACEMENT**

**FILTER BUILDING NO. 1
 EXISTING ONE-LINE DIAGRAM**

TIMOTHY THOMAS, P.E. No. 47079	FILE: 171501742E01
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SHEET NUMBER
E-12



GENERAL NOTES:

- REFER SHEETS E-6, E-7, E-8 AND E-9 FOR TEMPORARY POWER DETAILS.
- REFER ALSO TO TEMPORARY POWER SEQUENCE OF WORK NOTES ON SHEET 2.

EXISTING CONDUCTORS TO BE REMOVED AND REPLACED WITH NEW, TYPICAL FOR BOTH TRANSFORMERS.

TEMPORARY FEEDER. REFER TO SHEET E-9.

EXISTING CONDUCTORS TEMPORARILY DISCONNECTED. REFER TO SHEET E-7.

TEMPORARY FEEDERS. REFER TO SHEET E-7.

EXISTING CONDUCTORS TEMPORARILY DISCONNECTED. REFER TO SHEET E-9.

EXISTING CONDUCTORS TEMPORARILY DISCONNECTED. REFER TO SHEET E-7.

TEMPORARY JUMPER. REFER TO SHEET E-9.



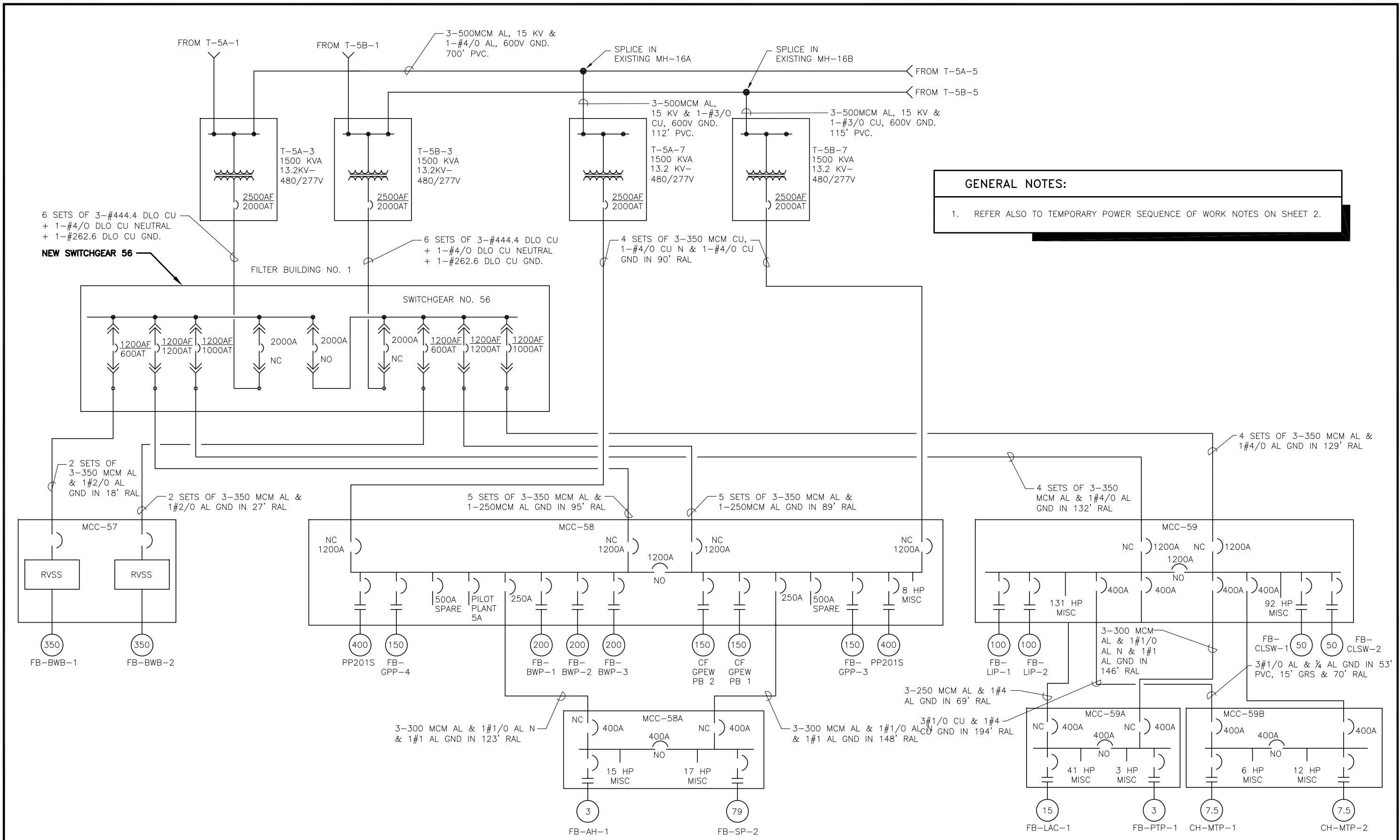
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City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
SWITCHGEAR 56 REPLACEMENT

**FILTER BUILDING NO. 1
TEMPORARY ONE-LINE DIAGRAM**

SHEET NUMBER	E-13
TIMOTHY THOMAS, P.E. No. 47079	FILE: 171501742E01



GENERAL NOTES:

1. REFER ALSO TO TEMPORARY POWER SEQUENCE OF WORK NOTES ON SHEET 2.



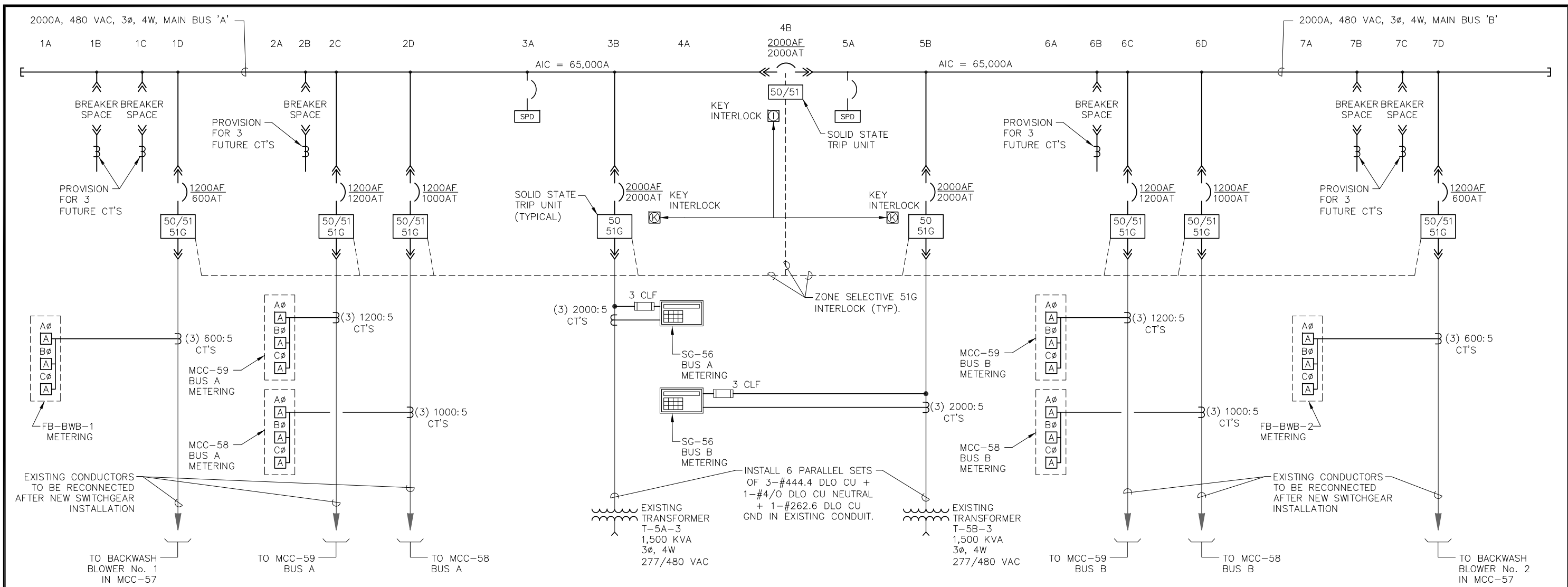
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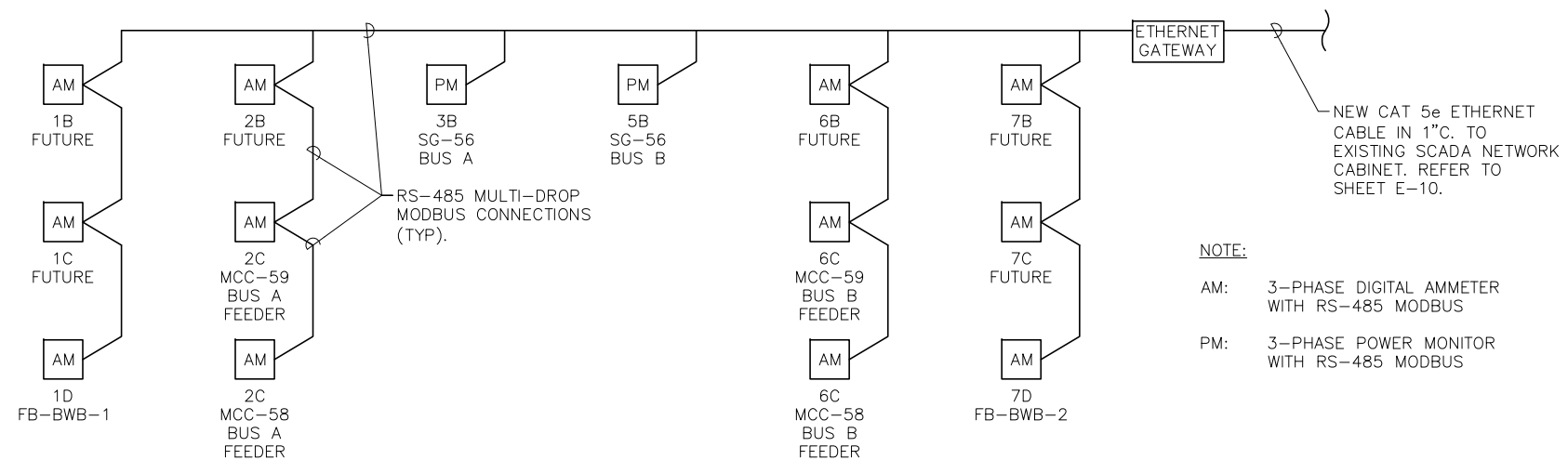
City of Tampa Wastewater Department
**HOWARD F. CURREN AWTP
SWITCHGEAR 56 REPLACEMENT**

**FILTER BUILDING NO. 1
PROPOSED ONE-LINE DIAGRAM**

TIMOTHY THOMAS, P.E. No. 47079	FILE: 171501742E01
SHEET NUMBER E-14	



PROPOSED SWITCHGEAR 56 ONE-LINE DIAGRAM



PROPOSED SWITCHGEAR 56 METERING SCHEMATIC



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City of Tampa Wastewater Department
HOWARD F. CURREN AWP
SWITCHGEAR 56 REPLACEMENT

SWITCHGEAR 56
PROPOSED ONE-LINE DIAGRAM

SHEET NUMBER	E-15
TIMOTHY THOMAS, P.E. No. 47079	FILE: 171501742E01

MCC-59 LOAD CALCULATION					
EQUIPMENT	BUS No.	H.P.	DEMAND KVA	DEMAND AMPERES	
MCC-59B, BUS #1	1		32.1	38.6	
OVERHEAD CRANE (FB-OC-1)	1	10.0	11.6	14.0	
DEWATERING PUMP (SA-DP-1)	1	15.0	17.6	21.0	
CHLORINE SOL WATER PMP #2 (CHSW-2)	1	50.0	54.0	65.0	
SUMP PUMP 1 (SP-1)	1	7.5	9.1	11.0	
SUMP PUMP 2 (SP-2)	1	7.5	9.1	11.0	
SLUICE GATES SG1-SG4	1	4.0	6.0	7.2	
WELDING OUTLET (WO-01)	1		40.0	48.0	
DECHLORINATION PUMP #2	1	40.0	43.2	52.0	
SAMPLE PUMP 1 (SSP-3)	1	0.5	0.8	1.0	
SAMPLE PUMP 2 (SSP-1)	1	0.5	0.8	1.0	
CHLORINE SAMPLE PUMP	1	0.5	0.8	1.0	
SAMPLE PUMP 4 (SSP-4)	1	0.5	0.8	1.0	
MECHANICAL MIXER (JC-4-MM-1)	1	10.0	11.6	14.0	
SLUICE GATES SG5-SG6	1	2.0	3.0	3.6	
MCC-59A, BUS #1	1		77.2	92.8	
TOTAL MCC-59 BUS 1	1		317.6	382.2	
MCC-59B, BUS #2	2		39.9	48.0	
MCC-59A, BUS #2	2		74.5	89.6	
EFF. WATER STRAINER DRIVE (EWS-2)	2	0.3	0.6	0.7	
CHLORINE SOL WATER PMP #1 (CHSW-1)	2	50.0	54.0	65.0	
EFF. WATER STRAINER DRIVE (EWS-1)	2	0.3	0.6	0.7	
SEWAGE SAMPLE PUMP #5	2	0.5	0.8	1.0	
SAMPLE PUMP (JC-4-SSP-1)	2	0.5	0.8	1.0	
DECHLORINATION PUMP #1	2	40.0	43.2	52.0	
THICK TANKS DIL. WATER (TDP-1)	2	20.0	22.0	27.0	
THICK TANKS DIL. WATER (TDP-2)	2	20.0	22.0	27.0	
EFF. WATER STRAINER B/W PUMP (SBW-1)	2	15.0	17.5	21.0	
EFF. WATER STRAINER B/W PUMP (SBW-2)	2	15.0	17.5	21.0	
SLUICE GATES SG13-SG16	2	4.0	6.0	7.2	
MECHANICAL MIXER (JC-4-MM-2)	1	10.0	11.6	14.0	
TOTAL MCC-59 BUS 2	1		311.0	375.1	

MCC-59 BUS 1 LOAD IS CALCULATED AS 382.2 AMPERES:
 TEMPORARY FEEDER FOR MCC-59 BUS 1 SHALL CONSIST OF -
 TWO (2) PARALLEL RUNS OF 4 CONDUCTOR 4/0 CU TYPE W
 PORTABLE POWER CABLE. 75° RATING FOR A SINGLE 4 CONDUCTOR
 4/0 TYPE W CABLE IS 277 AMPERES. WITH CONDUCTORS IN
 PARALLEL 2 X 277A = 554 AMPERES.

CIRCUIT BREAKER TO BE UTILIZED FOR TEMPORARY POWER FEEDER
 IS 500 AMPERES.

MCC-59 BUS 2 LOAD IS CALCULATED AS 375.1 AMPERES:
 TEMPORARY FEEDER FOR MCC-59 BUS 2 SHALL CONSIST OF -
 TWO (2) PARALLEL RUNS OF 4 CONDUCTOR 4/0 CU TYPE W
 PORTABLE POWER CABLE. 75° RATING FOR A SINGLE 4 CONDUCTOR
 4/0 TYPE W CABLE IS 277 AMPERES. WITH CONDUCTORS IN
 PARALLEL 2 X 277A = 554 AMPERES.

CIRCUIT BREAKER TO BE UTILIZED FOR TEMPORARY POWER FEEDER
 IS 500 AMPERES.

CONDUIT FILL CALCULATION 4" - DLO CABLE 4" CONDUIT WITH DLO CABLE			
CONDUCTOR	SQUARE INCHES	QUANTITY	TOTAL SQ. IN.
#444.4 DLO PHASE CONDUCTOR	1.0568	3	3.1704
#4/0 NEUTRAL CONDUCTOR	0.5945	1	0.5945
#262.6 GROUND CONDUCTOR	0.7854	1	0.7854
TOTAL AREA IN SQUARE INCHES			4.5503
40% FILL FOR 4" RMC PER NEC			5.153
4" CONDUIT WILL ACCOMMODATE CONDUCTORS SPECIFIED			

AMPACITY CALCULATION - TRANSFORMER FEEDERS #444.4 DLO CABLE			
CONDUCTOR	75° C AMPACITY	QUANTITY	TOTAL AMPACITY
#444.4 DLO PHASE CONDUCTOR	355A	6 SETS	2,130A
SWITCHGEAR 56 SPECIFIED WITH AN AMPACITY OF			2,000A
CONDUCTORS WILL ACCOMMODATE LOAD CURRENT			