

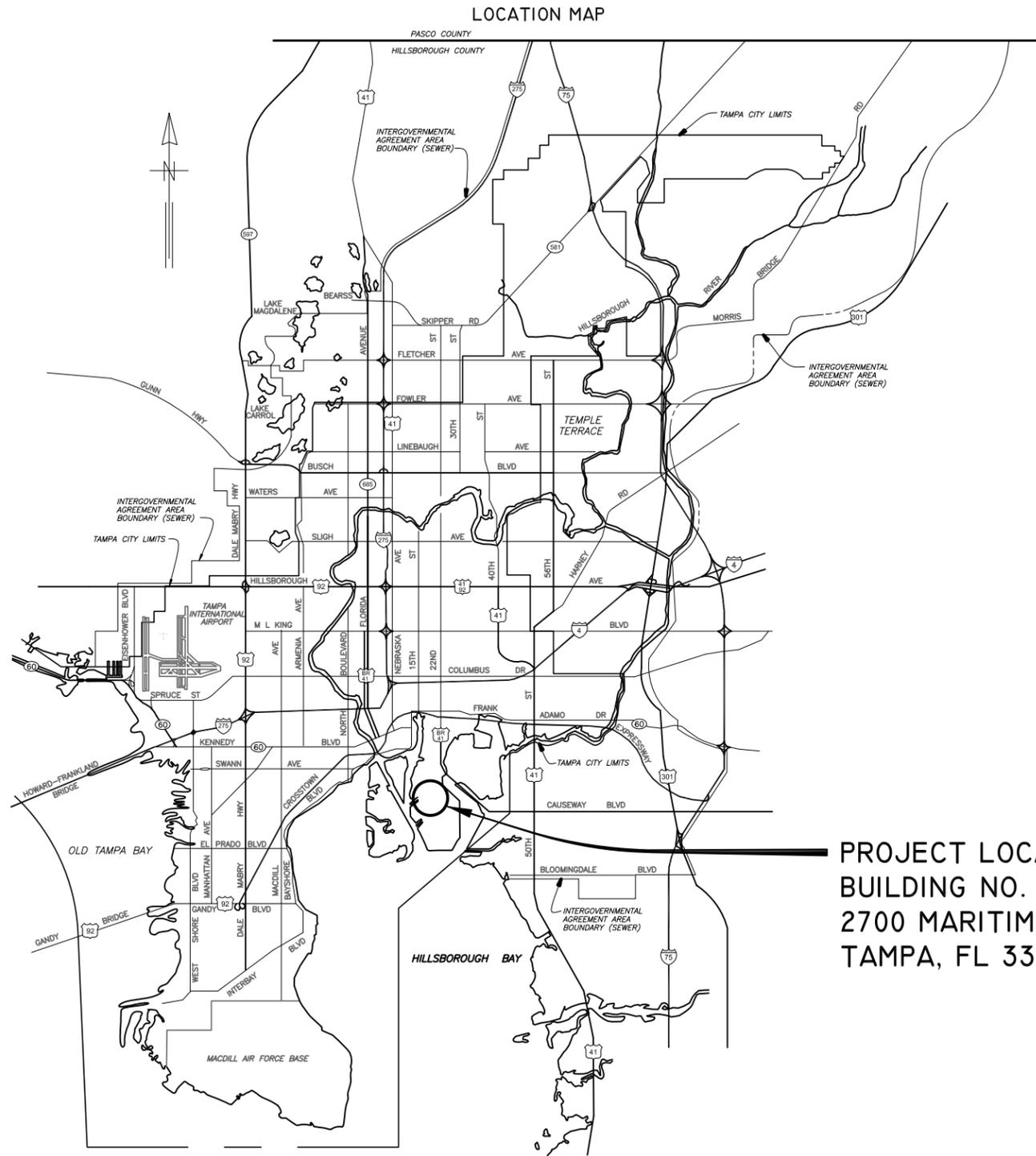
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**Please Email ALL Questions:**

**[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  
 BUILDING NO. 030  
 2700 MARITIME BLVD.  
 TAMPA, FL 33605

# PLANS

FOR

## CITY OF TAMPA FLORIDA WASTEWATER DEPARTMENT

FOR

THE CONSTRUCTION OF THE

## HOWARD F. CURREN AWTP SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC REPLACEMENT

CONTRACT: 18-C-00033

DECEMBER 2018



**TRICON**  
 CONSULTING ENGINEERS

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

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**GENERAL NOTES**

THE WORK CONSIST OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, AND TECHNICAL SUPERVISION TO INSTALL NEW SWITCHGEAR 50, MOTOR CONTROL CENTER 54 (MCC-54), MOTOR CONTROL CENTER 53 (MCC-53), MOTOR CONTROL CENTER 52 (MCC-52) AND MOTOR CONTROL CENTER 51 (MCC-51), AS WELL AS, MODIFY THE EXISTING CONTROL ENCLOSURE (DESIGNATED AS 'MCC-55') AS INDICATED AND SHOWN. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
- ALL WIRING SHALL BE IDENTIFIED WITH NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
- FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
- ALL NEW EQUIPMENT SHALL BE PERMANENTLY IDENTIFIED WITH A BLACK ON WHITE LAMACOID TAG ENGRAVED WITH MINIMUM 3/16 INCH LETTERING.
- ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS. NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
- 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.
- REPLACE THE EXISTING SWITCHGEAR 50, MCC-51, MCC-52, MCC-53 AND MCC-54 AS SHOWN AND SPECIFIED.
- PLANS ARE DESIGNED IN ACCORDANCE WITH THE 2017 FLORIDA BUILDING CODE, 6TH EDITION, AND THE 2014 EDITION OF THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL ENSURE THAT ALL ELECTRICAL WORK PERFORMED SHALL ADHERE TO THE SAME ACCORDANCE AND ALL APPLICABLE LOCAL ORDINANCES.
- 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**

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 SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC REPLACEMENT. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

- SUBMIT WORKING DRAWINGS, PARTS SCHEDULES AND CUT-SHEETS TO THE ENGINEER.
- FURNISH AND INSTALL ALL EQUIPMENT AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

SPECIFICALLY:

A. DEMOLITION

- PRIOR TO DEMOLITION, THE PROPOSED SWITCHGEAR AND MOTOR CONTROL CENTERS SHALL BE ON SITE AND READY FOR INSTALLATION. TEMPORARY POWER SHALL BE AS DESCRIBED IN THE TEMPORARY POWER SEQUENCE OF WORK (SHOWN ON SHEET 3). 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.
- VERIFY EXISTING POWER CONNECTIONS IN THE FIELD PRIOR TO COMMENCING DEMOLITION WORK.
- INSTALL SWITCHGEAR AND MOTOR CONTROL CENTERS AND MAKE CABLE CONNECTIONS AS SHOWN.
- 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 50, MCC-54, MCC-53, MCC-52 AND MCC-51 CIRCUIT BREAKERS, ETC. THE SHORT CIRCUIT STUDY SHALL BE SIGNED, SEALED AND APPROVED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.



JOB No.	231802042						
DESIGNED	TDT						
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SCALE

NOT TO SCALE

**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

**INDEX, SCHEDULES AND  
GENERAL NOTES**

SHEET NUMBER	2
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01

**TEMPORARY POWER SEQUENCE OF WORK**

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.

THE SEQUENCE OF WORK FOR PROVIDING TEMPORARY POWER DURING THE INSTALLATION OF SWITCHGEAR 50, MCC-54, MCC-53, MCC-52 AND MCC-51 SHALL BE AS FOLLOWS:

1. FOR EACH OF THE STEPS IDENTIFIED BELOW, THE CONTRACTOR SHALL SUBMIT TO THE CITY OF TAMPA, IN WRITING, A REQUEST TO COMMENCE WITH THE PROCEDURE. THE CONTRACTOR SHALL NOT BEGIN ANY OF THE PROCEDURES LISTED BELOW WITHOUT WRITTEN AUTHORIZATION FROM THE CITY OF TAMPA.
2. PROVIDE AND INSTALL BOTH TEMPORARY PANELBOARD 'A' TEMPORARY PANELBOARD 'B' AND NEW MCC-55 PLC CABINET. PROVIDE AND INSTALL ALL TEMPORARY CONDUIT/CONDUCTORS FROM TEMPORARY PANELBOARD 'A' AND PANELBOARD 'B' UP TO ALL EQUIPMENT TO BE PROVIDED WITH TEMPORARY POWER FROM THE TEMPORARY PANELBOARDS (WITHOUT MAKING FINAL CONNECTION TO SUCH EQUIPMENT). THIS SHALL INCLUDE THE CONNECTIONS UP TO EXISTING TRANSFORMERS 'T-5A-1' AND 'T-5B-1'.
3. COORDINATE WITH THE CITY OF TAMPA TO SCHEDULE OPENING THE SG-50 BUS 'A' MAIN CIRCUIT BREAKER AND CLOSE THE SG-50 MAIN TIE-BREAKER. LOCK-OUT/TAG-OUT THE SG-50 BUS 'A' MAIN CIRCUIT BREAKER. OPEN TRANSFORMER 'T-5A-1' CIRCUIT BREAKER AND DISCONNECT THE EXISTING FEEDERS TO SG-50 BUS 'A' MAIN CIRCUIT BREAKER. MAKE FINAL CONNECTIONS FROM TEMPORARY PANELBOARD 'A' TO THE EQUIPMENT TO BE FED (INCLUDING TRANSFORMER 'T-5A-1').
4. MAKE FINAL CONNECTIONS TO EQUIPMENT AND MEGGER TEST ALL TEMPORARY CONDUCTORS. AFTER SUCCESSFUL MEGGER TESTING, CLOSE TRANSFORMER 'T-5A-1' CIRCUIT BREAKER AND TEST FOR PROPER OPERATION OF ALL EQUIPMENT.
5. COORDINATE WITH THE CITY OF TAMPA TO SCHEDULE OPENING THE SG-50 BUS 'B' MAIN CIRCUIT BREAKER AND THE SG-50 MAIN TIE-BREAKER. LOCK-OUT/TAG-OUT THE SG-50 BUS 'B' MAIN CIRCUIT BREAKER. OPEN TRANSFORMER 'T-5B-1' CIRCUIT BREAKER AND DISCONNECT THE EXISTING FEEDERS TO SG-50 BUS 'B' MAIN CIRCUIT BREAKER. MAKE FINAL CONNECTIONS FROM TEMPORARY PANELBOARD 'B' TO THE EQUIPMENT TO BE FED (INCLUDING TRANSFORMER 'T-5B-1').
6. MAKE FINAL CONNECTIONS TO EQUIPMENT AND MEGGER TEST ALL TEMPORARY CONDUCTORS. AFTER SUCCESSFUL MEGGER TESTING, CLOSE TRANSFORMER 'T-5B-1' CIRCUIT BREAKER AND TEST FOR PROPER OPERATION OF ALL EQUIPMENT.
7. AFTER ALL MOTORS AND DEVICES ARE ON TEMPORARY POWER:
  - DISCONNECT CONDUCTORS FROM ASSOCIATED CIRCUIT BREAKERS WITHIN SG-50. REMOVE EXISTING SG-50 AND CONDUCTORS.
  - DISCONNECT CONDUCTORS FROM ASSOCIATED CIRCUIT BREAKERS/STARTERS WITHIN MCC-54. REMOVE EXISTING MCC-54 AND CONDUCTORS.
  - DISCONNECT CONDUCTORS FROM ASSOCIATED CIRCUIT BREAKERS/STARTERS WITHIN MCC-53. REMOVE EXISTING MCC-53 AND CONDUCTORS.
  - DISCONNECT CONDUCTORS FROM ASSOCIATED CIRCUIT BREAKERS/STARTERS WITHIN MCC-52. REMOVE EXISTING MCC-52 AND CONDUCTORS.
  - DISCONNECT CONDUCTORS FROM ASSOCIATED CIRCUIT BREAKERS/STARTERS WITHIN MCC-51. REMOVE EXISTING MCC-51 AND CONDUCTORS.
8. INSTALL NEW SG-50, MCC-54, MCC-53, MCC-52 AND MCC-51 AS REQUIRED.
9. NEW CONDUCTORS SHALL BE INSTALLED AND MEGGER TESTED. THE ORDER OF THE TEMPORARY CONNECTION PROCESSES SHALL BE REVERSED WITH EACH TEMPORARY CONNECTION BEING REPLACED IN KIND WITH THE PROPOSED PERMANENT CONNECTION.
10. ONCE TESTING IS COMPLETE AND SG-50, MCC-54, MCC-53, MCC-52 AND MCC-51 HAVE BEEN ACCEPTED BY THE CITY, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EQUIPMENT, CABLE TRAY, CONDUIT AND CONDUCTORS.

**TEMPORARY SYSTEM NOTES:**

1. TEMPORARY CONDUIT SYSTEMS NEED NOT BE SPECIFICATION GRADE. SCHEDULE 80 PVC CONDUIT MAY BE USED UNLESS EXPOSED TO POSSIBLE MECHANICAL DAMAGE – USE GALVANIZED STEEL RIGID CONDUIT IN THOSE LOCATIONS. THE CONTRACTOR HAS THE OPTION OF USING ALTERNATE CORROSION RESISTANT MOUNTING HARDWARE (SCREWS, BOLTS, NUTS, WASHERS, ETC.) IN LIEU OF 316 STAINLESS STEEL. CONSTRUCTION CHANNEL, TUBING, ETC. MAY BE GALVANIZED STEEL. THE TEMPORARY CONDUIT SYSTEM MUST BE TOTALLY REMOVED PRIOR TO CONTRACT CLOSE-OUT. ALL DAMAGED SURFACES MUST BE RESTORED AS NEAR TO ORIGINAL CONDITION AS POSSIBLE.
2. TEMPORARY PANELBOARD 'A' AND TEMPORARY PANELBOARD 'B' NEED NOT BE NEW IF IN GOOD CONDITION.



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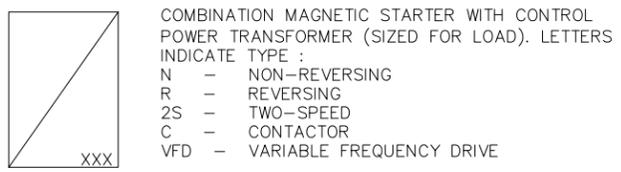
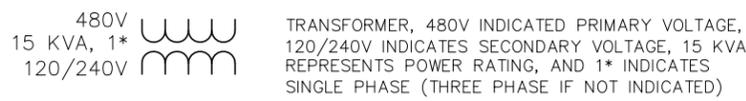
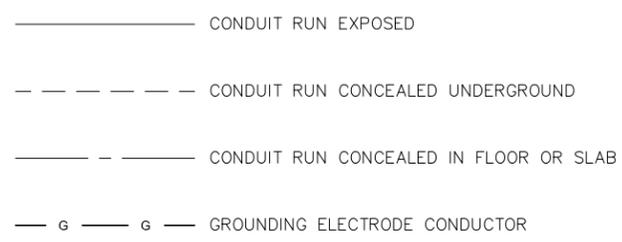
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HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
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**TEMPORARY POWER  
SEQUENCE OF WORK**

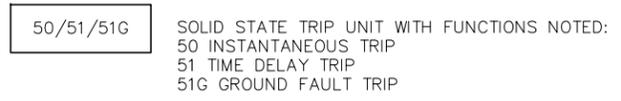
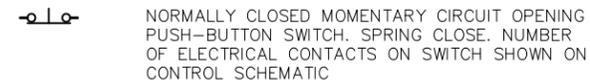
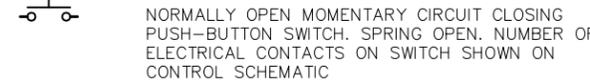
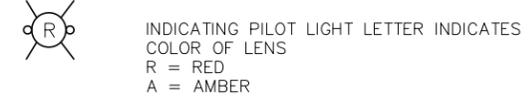
TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER  
**3**  
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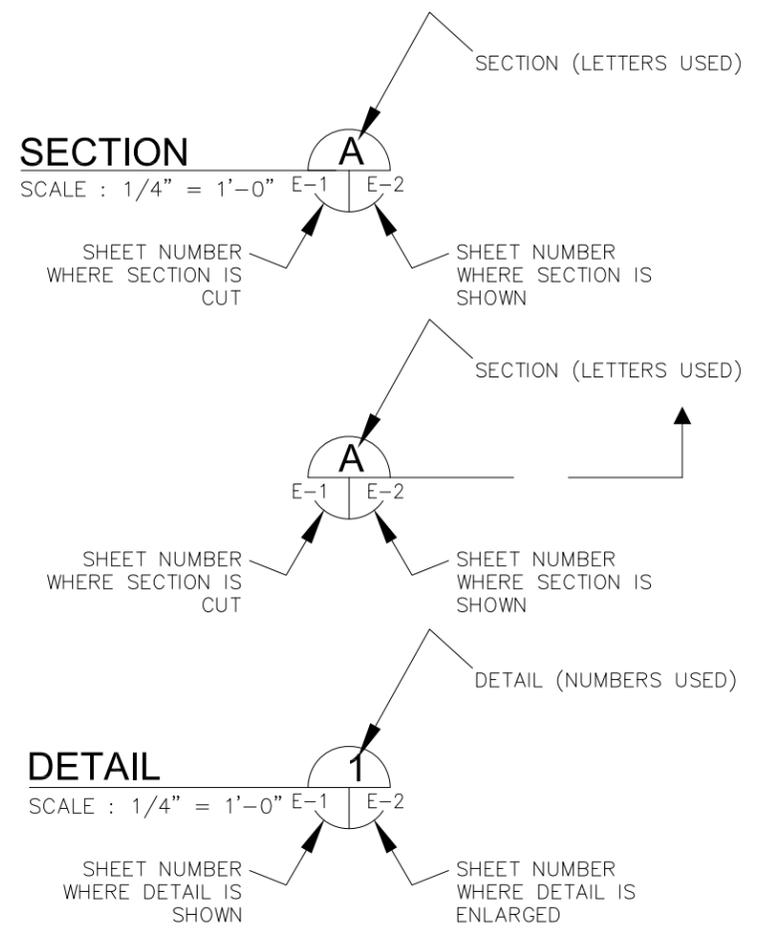
XXX	XXX_DEVICE	DESCRIPTION
	HLS	HIGH LEVEL SWITCH
	HOA	HAND-OFF-AUTO
	LD	LEAK DETECTION
	LLS	LOW LEVEL SWITCH
	LOR	LOCAL-OFF-REMOTE
	PB	PUSH BUTTON
	RTU	REMOTE TERMINAL UNIT
	SS	SOFT STARTER
	SS/B	SOFT START OR BYPASS
	TS	TEMPERATURE SWITCH
	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
	ZS	POSITION SENSOR (LIMIT SWITCH)



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
CONT STA	CONTROL STATION
CT	CURRENT TRANSFORMER
CU	COPPER
EO	ELECTRICALLY OPERATED
ELEC	ELECTRICAL
ETM	ELAPSED TIME METER
EX	EXISTING
EXP	EXPLOSION PROOF
FU	FUSE
GFI	GROUND FAULT INTERRUPTER
GND	GROUNDING CONDUCTOR
HP	HORSEPOWER
HZ	HERTZ
IG	ISOLATED GROUND
KI	KIRK-KEY INTERLOCK
KVA	KILOVOLT AMPERES
KW	KILOWATTS
MAX	MAXIMUM
MIN	MINIMUM
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
PB	PUSHBUTTON
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



	EXISTING THEROMSTAT		HAND-OFF-AUTO (HOA) SWITCH		MOTOR ACTUATED VALVE
	SINGLE POLE SWITCH		PRESSURE SWITCH		PRESSURE SWITCH
	LB CONDUIT FITTING		SEAL WATER SOLENOID		SEAL WATER SOLENOID
	JUNCTION BOX		ON/OFF SWITCH IN SINGLE DEVICE JUNCTION BOX 'L' INDICATES ON/OFF SWITCH INCLUDES MECHANICAL LOCKOUT DEVICE		
	TERMINAL BOX		ON/OFF SWITCH WITH TEST PUSHBUTTON IN TWO DEVICE JUNCTION BOX 'L' INDICATES ON/OFF SWITCH INCLUDES MECHANICAL LOCKOUT DEVICE		
	TEST/ON/OFF PUSHBUTTON STATION IN THREE DEVICE JUNCTION BOX 'L' INDICATES STATION INCLUDES MECHANICAL LOCKOUT DEVICE				



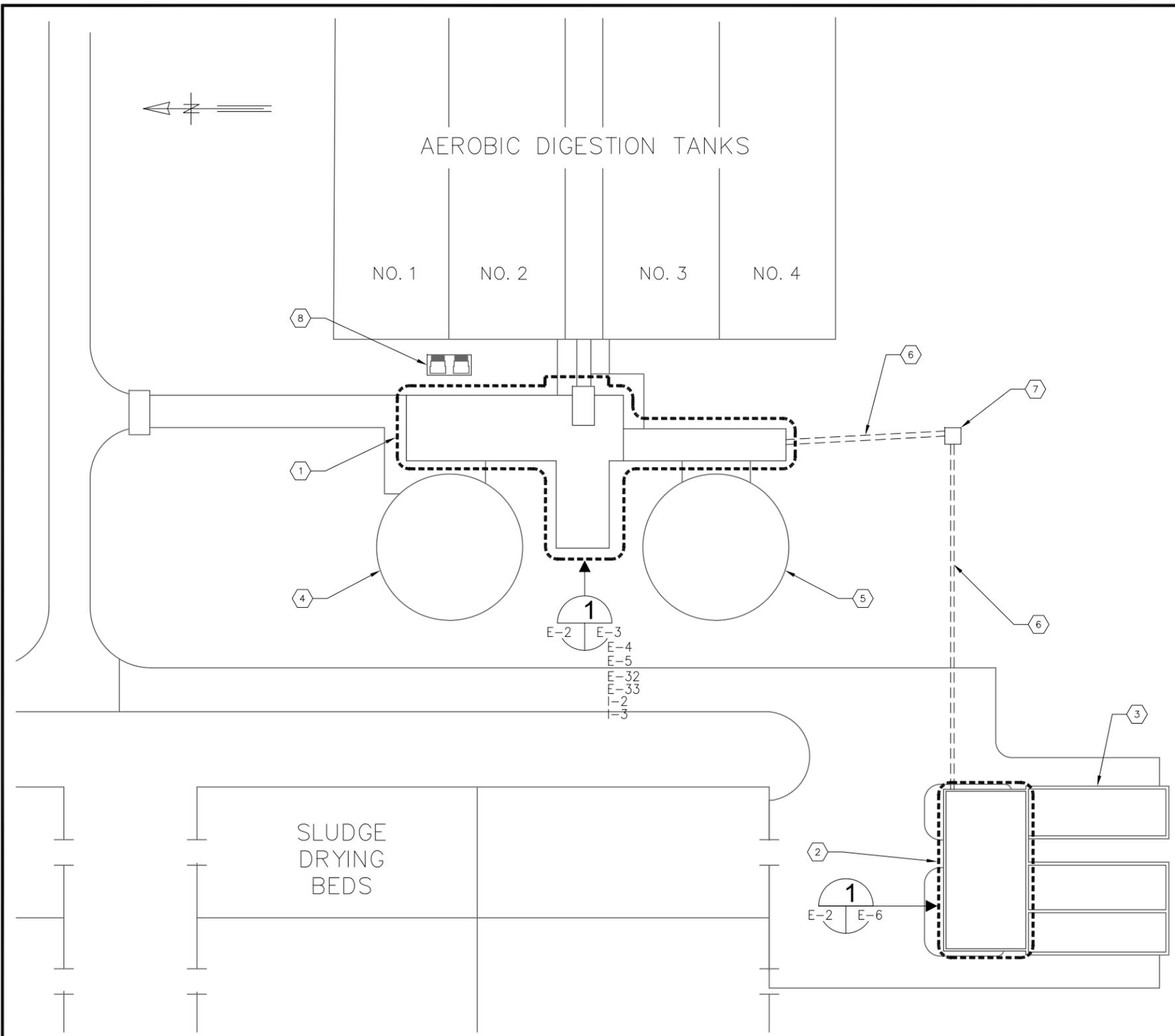
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SCALE
AS SHOWN

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HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC REPLACEMENT

ELECTRICAL LEGEND AND ABBREVIATIONS

SHEET NUMBER
E-1



- KEYED NOTES:**
- ① EXISTING SLUDGE TREATMENT BUILDING (030). REFER TO SHEETS E-3, E-4 AND E-5.
  - ② EXISTING FBS THICKENERS CONTROL BUILDING (070). REFER TO SHEET E-6.
  - ③ EXISTING FBS (SCUM) TANKS. NO WORK REQUIRED.
  - ④ EXISTING SLUDGE THICKENER TANK NO. 1. NO WORK REQUIRED.
  - ⑤ EXISTING SLUDGE THICKENER TANK NO. 2. NO WORK REQUIRED.
  - ⑥ EXISTING DUCTBANK. REFER TO SHEETS E-5 AND E-6 FOR WORK REQUIRED.
  - ⑦ EXISTING ELECTRIC MANHOLE #9.
  - ⑧ EXISTING TRANSFORMER PAD FOR TRANSFORMERS T-5A-1 AND T-5B-1.

- GENERAL NOTES:**
1. THE PLAN AND SCALE DEPICTED ARE BASED ON THE BEST RECORD DRAWING INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING MATERIALS OR COMMENCING WORK. DO NOT SCALE DRAWINGS.

**PARTIAL SITE PLAN** ①  
 SCALE : 1" = 60'-0" ④ | E-2



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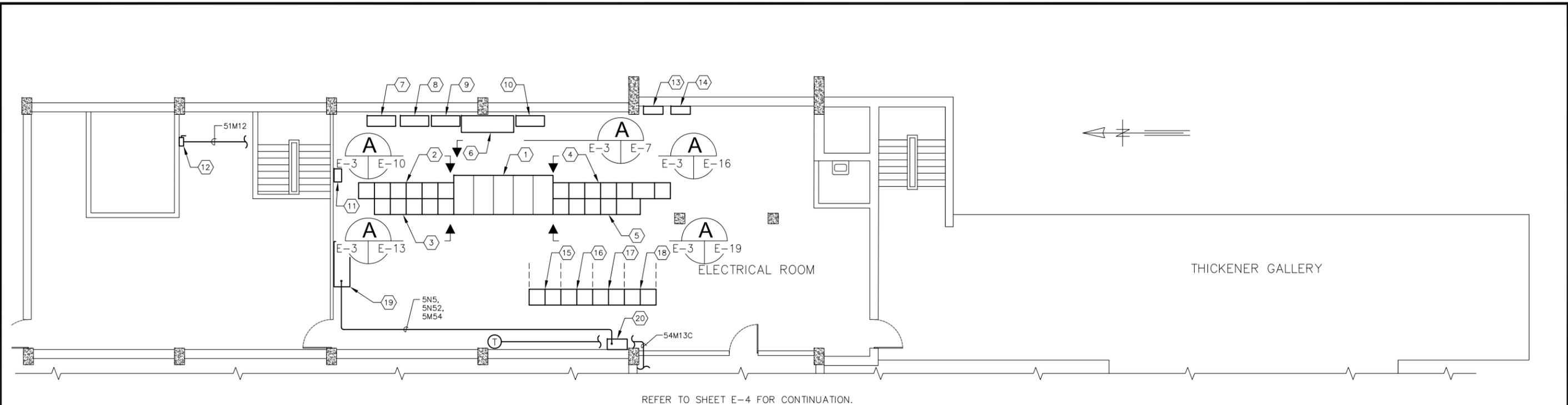
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 HOWARD F. CURREN AWTP  
 SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
 REPLACEMENT

**PARTIAL SITE PLAN FOR  
 SWITCHGEAR &  
 MCC REPLACEMENT**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER  
**E-2**  
 FILE: 231802042E01



REFER TO SHEET E-4 FOR CONTINUATION.

### SLUDGE TREATMENT BUILDING (030): PARTIAL FLOOR PLAN - ELEVATION 11'-0"

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



#### KEYED NOTES:

- |   |  |  |   |
|---|--|--|---|
| <p>1 FRONT OF EXISTING 277/480V, 2,000A, 3<math>\phi</math>, 4-WIRE SWITCHGEAR 50. EXISTING SWITCHGEAR TO BE REPLACED. REFER TO SHEETS E-7, E-8 AND E-9 FOR EXISTING ELEVATION, PROPOSED ELEVATION AND PROPOSED ONE-LINE DIAGRAM.</p> <p>2 FRONT OF EXISTING 277/480V, 800A, 3<math>\phi</math>, 4-WIRE MOTOR CONTROL CENTER 51 (MCC-51). EXISTING MCC-51 TO BE REPLACED. REFER TO SHEETS E-10, E-11 AND E-12 FOR EXISTING ELEVATION, PROPOSED ELEVATION AND PROPOSED ONE-LINE DIAGRAM.</p> <p>3 FRONT OF EXISTING 277/480V, 800A, 3<math>\phi</math>, 4-WIRE MOTOR CONTROL CENTER 52 (MCC-52). EXISTING MCC-52 TO BE REPLACED. REFER TO SHEETS E-13, E-14 AND E-15 FOR EXISTING ELEVATION, PROPOSED ELEVATION AND PROPOSED ONE-LINE DIAGRAM.</p> <p>4 FRONT OF EXISTING 277/480V, 800A, 3<math>\phi</math>, 4-WIRE MOTOR CONTROL CENTER 53 (MCC-53). EXISTING MCC-53 TO BE REPLACED. REFER TO SHEETS E-16, E-17 AND E-18 FOR EXISTING ELEVATION, PROPOSED ELEVATION AND PROPOSED ONE-LINE DIAGRAM.</p> <p>5 FRONT OF EXISTING 277/480V, 800A, 3<math>\phi</math>, 4-WIRE MOTOR CONTROL CENTER 54 (MCC-54). EXISTING MCC-54 TO BE REPLACED. REFER TO SHEETS E-19, E-20 AND E-21 FOR EXISTING ELEVATION, PROPOSED ELEVATION AND PROPOSED ONE-LINE DIAGRAM.</p> | <p>6 EXISTING MCC-55 CONTROL ENCLOSURE. EXISTING CONTROL ENCLOSURE TO BE MODIFIED AND REMAIN AS A TERMINAL CONNECTION POINT. REFER TO SHEETS I-4 AND I-5 FOR DETAILS.</p> <p>7 EXISTING VARIABLE FREQUENCY DRIVE 'VFD-1A' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-1A'. CONTRACTOR TO REMOVE EXISTING VFD.</p> <p>8 EXISTING VARIABLE FREQUENCY DRIVE 'VFD-1C' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-1C'. CONTRACTOR TO REMOVE EXISTING VFD.</p> <p>9 EXISTING VARIABLE FREQUENCY DRIVE 'VFD-2A' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-2A'. CONTRACTOR TO REMOVE EXISTING VFD.</p> <p>10 EXISTING VARIABLE FREQUENCY DRIVE 'VFD-2C' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-2C'. CONTRACTOR TO REMOVE EXISTING VFD.</p> <p>11 EXISTING 30KVA, 3<math>\phi</math>, 480-120/208V TRANSFORMER 'T-LP-50'. TRANSFORMER TO REMAIN. TRANSFORMER SHALL BE REFEED FROM NEW MCC-52 VIA 52M2.</p> <p>12 EXISTING 480V, 3-POLE, CIRCUIT BREAKER SEVERING AS A DISCONNECTING MEANS FOR OVERHEAD CRANE 'ST-MH-1'. DISCONNECT TO REMAIN. DISCONNECT SHALL BE REFEED FROM NEW MCC-51 VIA 51M12.</p> | <p>13 EXISTING 277/480V, 3<math>\phi</math> LIGHTING PANELBOARD 'LP-51'. LIGHTING PANELBOARD TO REMAIN. PANELBOARD SHALL BE REFEED FROM NEW MCC-54 VIA 54M2.</p> <p>14 EXISTING 120/208, 3<math>\phi</math> PANELBOARD 'LP-50' (FED FROM TRANSFORMER 'T-LP-50'). NO WORK REQUIRED.</p> <p>15 FRONT OF EXISTING 277/480V, 100A, 3<math>\phi</math>, 4-WIRE MOTOR CONTROL CENTER 51A (MCC-51A). EXISTING MCC-51A TO REMAIN. MCC-51A SHALL BE REFEED FROM NEW MCC-51 VIA 51M3.</p> <p>16 FRONT OF EXISTING 277/480V, 100A, 3<math>\phi</math>, 4-WIRE MOTOR CONTROL CENTER 52A (MCC-52A). EXISTING MCC-52A TO REMAIN. MCC-52A SHALL BE REFEED FROM NEW MCC-52 VIA 52M3.</p> <p>17 FRONT OF EXISTING 277/480V, 100A, 3<math>\phi</math>, 4-WIRE MOTOR CONTROL CENTER 53A (MCC-53A). EXISTING MCC-53A TO REMAIN. MCC-53A SHALL BE REFEED FROM NEW MCC-53 VIA 53M3.</p> <p>18 FRONT OF EXISTING 277/480V, 100A, 3<math>\phi</math>, 4-WIRE MOTOR CONTROL CENTER 54A (MCC-54A). EXISTING MCC-54A TO REMAIN. MCC-54A SHALL BE REFEED FROM NEW MCC-54 VIA 54M3.</p> | <p>19 EXISTING 480V, 3<math>\phi</math> VARIABLE FREQUENCY DRIVES (VFD'S) FOR 40 HP WASTE SLUDGE PUMPS 'ST-WSP-1' AND 'ST-WSP-2'. ENCLOSURE FOR VFD'S ALSO CONTAINS WASTE SLUDGE PUMP CONTROL PANEL. VFD'S SHALL BE REMOVED AND ST-WSP-1 AND ST-WSP-2 SHALL BE REFEED FROM NEW VFD'S TO BE LOCATED IN MCC-52 AND MCC-54.</p> <p>20 EXISTING TERMINAL CABINET. REFER TO SHEETS E-23 AND E-24 FOR REFERENCES.</p> |
|---|--|--|---|



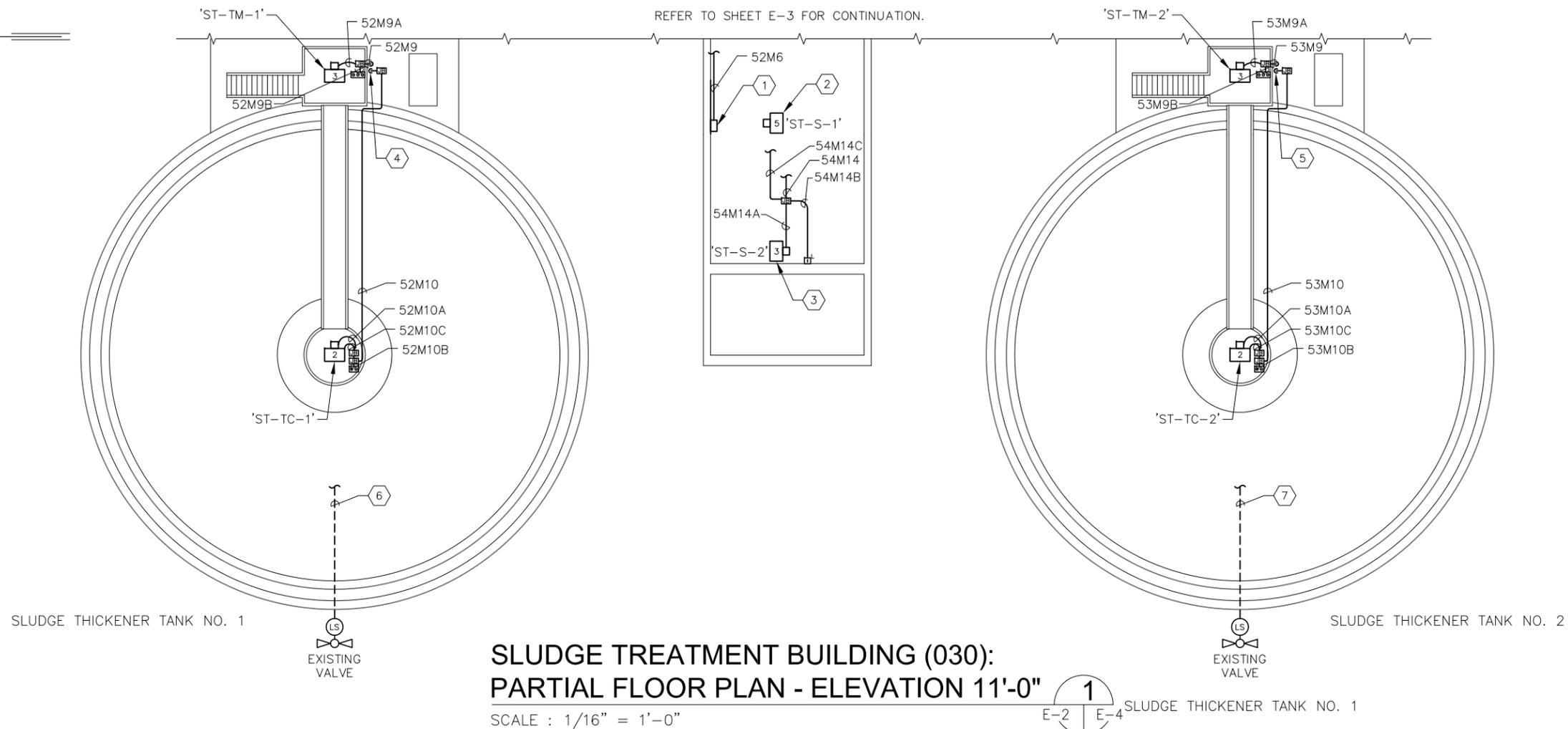
JOB No.	231802042						
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SCALE	AS SHOWN
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City of Tampa Wastewater Department  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

SLUDGE TREATMENT BUILDING  
EXISTING CONDITIONS PLAN  
(SHEET 1 OF 3)

SHEET NUMBER	E-3
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



KEYED NOTES:	
①	EXISTING 480V, 3 $\phi$ VARIABLE FREQUENCY DRIVE (VFD) FOR 5 HP SUPPLY FAN 1 'ST-S-1'. VFD TO REMAIN. VFD SHALL BE REFEED FROM NEW MCC-54 VIA 54M5.
②	EXISTING 480V, 3 $\phi$ 5 HP SUPPLY FAN 1 'ST-S-1'. SUPPLY FAN 1 TO REMAIN. VFD SHALL BE REFEED FROM NEW MCC-54 VIA 54M5.
③	EXISTING 480V, 3 $\phi$ , 3 HP SUPPLY FAN 2 'ST-S-2'. SUPPLY FAN 2 TO REMAIN. ST-S-2 SHALL BE REFEED FROM NEW MCC-54 VIA 54M14.
④	EXISTING CONDUITS FOR 52M9 AND 52M10 CONTINUE DOWN TO ELEVATION 3'-6".
⑤	EXISTING CONDUITS FOR 53M9 AND 53M10 CONTINUE DOWN TO ELEVATION 3'-6".
⑥	CONDUIT RUN BELOW TANK BOTTOM, 52M21F. CONTINUED ON SHEET I-3.
⑦	CONDUIT RUN BELOW TANK BOTTOM, 52M22F. CONTINUED ON SHEET I-3.



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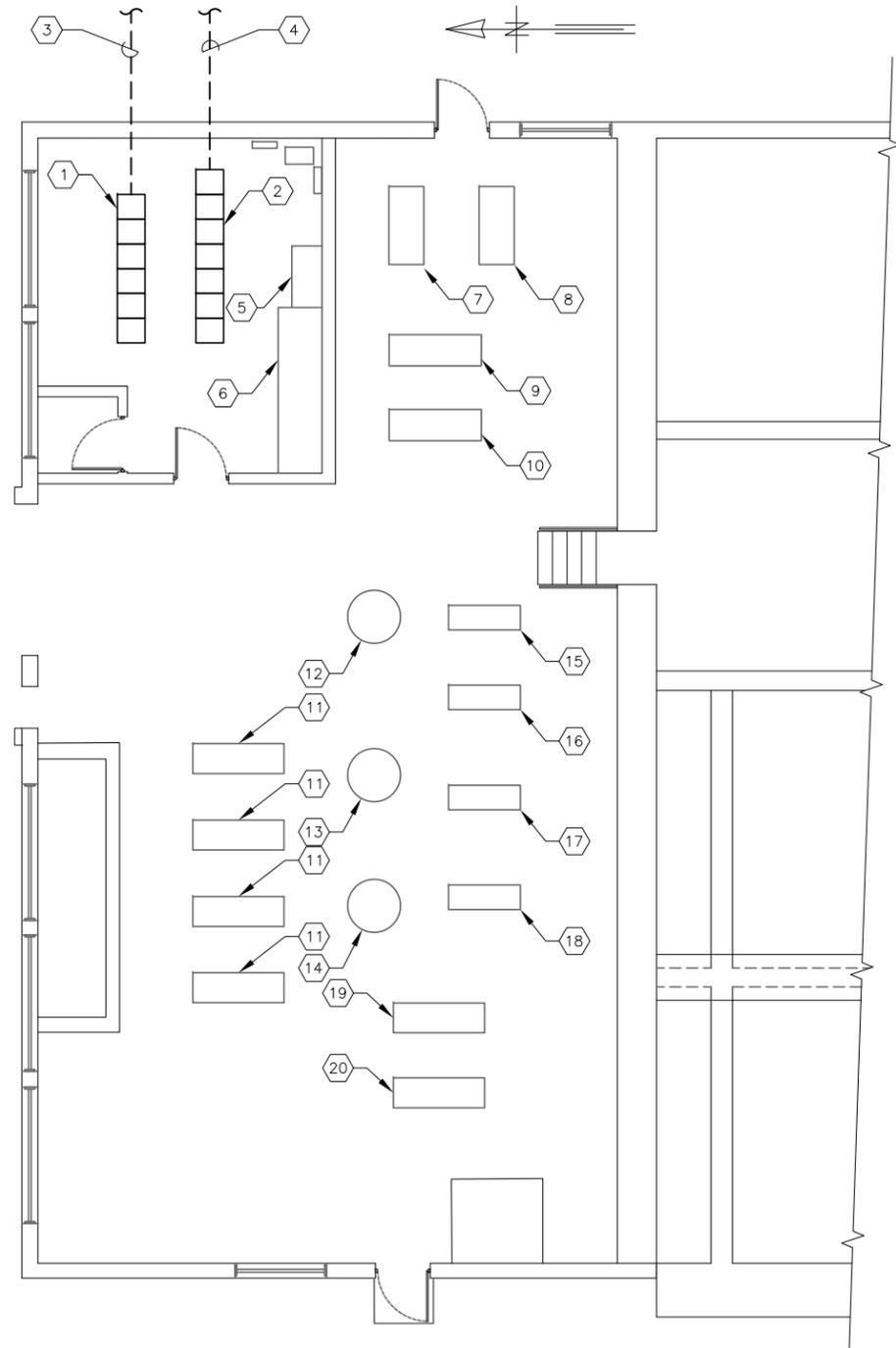
**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

**SLUDGE TREATMENT BUILDING  
EXISTING CONDITIONS PLAN  
(SHEET 2 OF 3)**

TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01
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SHEET NUMBER  
**E-4**





**KEYED NOTES:**

- ① EXISTING 277/480V, 600A MOTOR CONTROL CENTER 42 (MCC-42) TO REMAIN. CONTRACTOR SHALL PROVIDE AND INSTALL NEW CONDUCTORS IN EXISTING DUCTBANK. REFER ALSO TO SHEETS E-2 AND E-5.
- ② EXISTING 277/480V, 600A MOTOR CONTROL CENTER 43 (MCC-43) TO REMAIN. CONTRACTOR SHALL PROVIDE AND INSTALL NEW CONDUCTORS IN EXISTING DUCTBANK. REFER ALSO TO SHEETS E-2 AND E-5.
- ③ EXISTING DUCTBANK BETWEEN MCC-51 AND MCC-42 CONTAINING 51M2. CONTRACTOR SHALL PROVIDE AND INSTALL NEW CONDUCTORS IN EXISTING DUCTBANK. REFER ALSO TO SHEET E-2.
- ④ EXISTING DUCTBANK BETWEEN MCC-53 AND MCC-43 CONTAINING 53M2. CONTRACTOR SHALL PROVIDE AND INSTALL NEW CONDUCTORS IN EXISTING DUCTBANK. REFER ALSO TO SHEET E-2.
- ⑤ EXISTING CONTROL PANEL TO REMAIN. NO WORK REQUIRED.
- ⑥ EXISTING CONTROL CONSOLE TO REMAIN. NO WORK REQUIRED.
- ⑦ EXISTING AIR COMPRESSOR NO. 1 TO REMAIN. NO WORK REQUIRED.
- ⑧ EXISTING AIR COMPRESSOR NO. 2 TO REMAIN. NO WORK REQUIRED.
- ⑨ EXISTING THICKENER SLUDGE PUMP NO. 1 TO REMAIN. NO WORK REQUIRED.
- ⑩ EXISTING THICKENER SLUDGE PUMP NO. 2 TO REMAIN. NO WORK REQUIRED.
- ⑪ EXISTING SLUDGE FEED PUMP TO REMAIN. NO WORK REQUIRED.
- ⑫ EXISTING RETENTION TANK NO. 1 TO REMAIN. NO WORK REQUIRED.
- ⑬ EXISTING RETENTION TANK NO. 2 TO REMAIN. NO WORK REQUIRED.
- ⑭ EXISTING RETENTION TANK NO. 3 TO REMAIN. NO WORK REQUIRED.
- ⑮ EXISTING PRESS. PUMP NO. 1 TO REMAIN. NO WORK REQUIRED.
- ⑯ EXISTING PRESS. PUMP NO. 2 TO REMAIN. NO WORK REQUIRED.
- ⑰ EXISTING PRESS. PUMP NO. 3 TO REMAIN. NO WORK REQUIRED.
- ⑱ EXISTING THICKENER SLUDGE PUMP NO. 3 TO REMAIN. NO WORK REQUIRED.
- ⑳ EXISTING THICKENER SLUDGE PUMP NO. 4 TO REMAIN. NO WORK REQUIRED.

**SLUDGE TREATMENT BUILDING (070):  
PARTIAL FLOOR PLAN - ELEVATION 3'-6"**

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

1  
E-2 | E-6



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SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

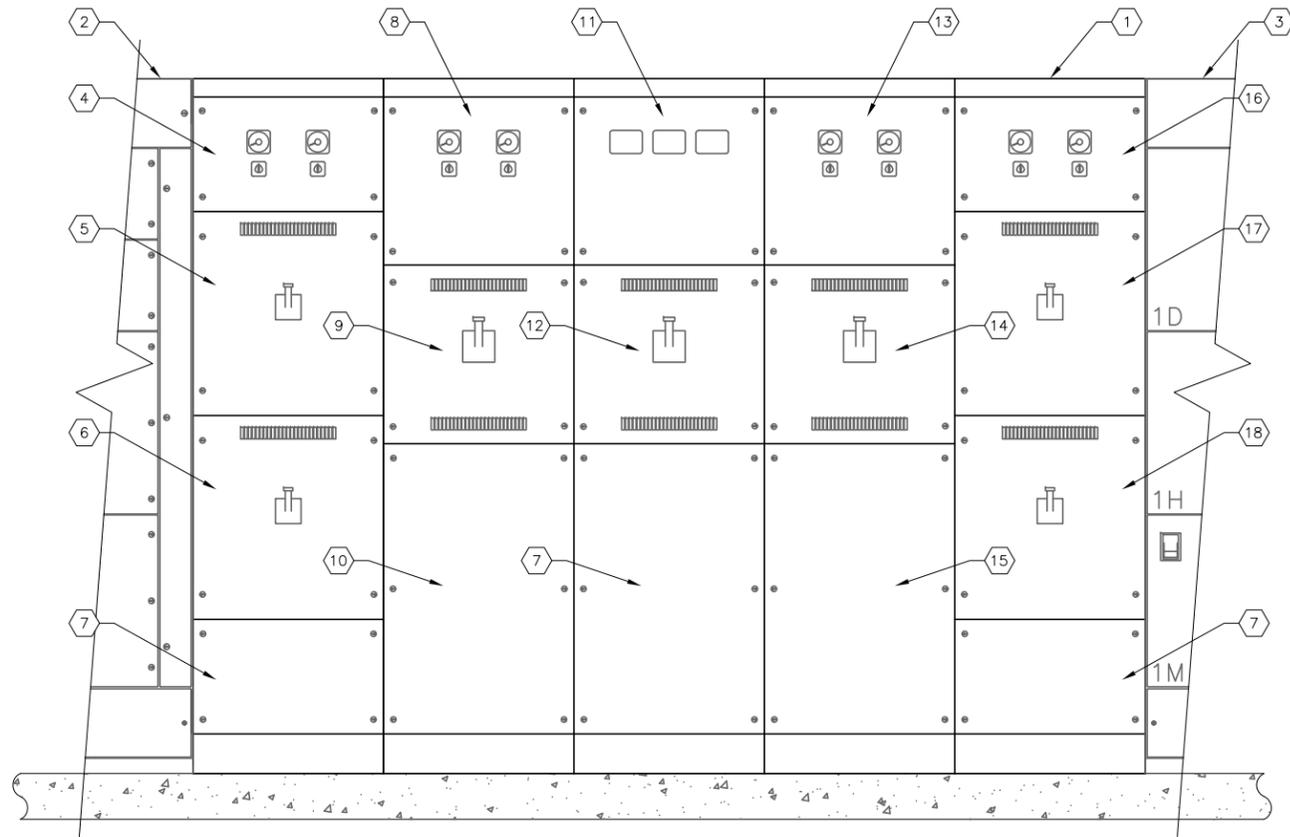
**FBS THICKENERS CONTROL  
BUILDING  
EXISTING CONDITIONS PLAN**

SHEET NUMBER

**E-6**

TIMOTHY THOMAS, P.E. No. 47079

FILE: 231802042E01

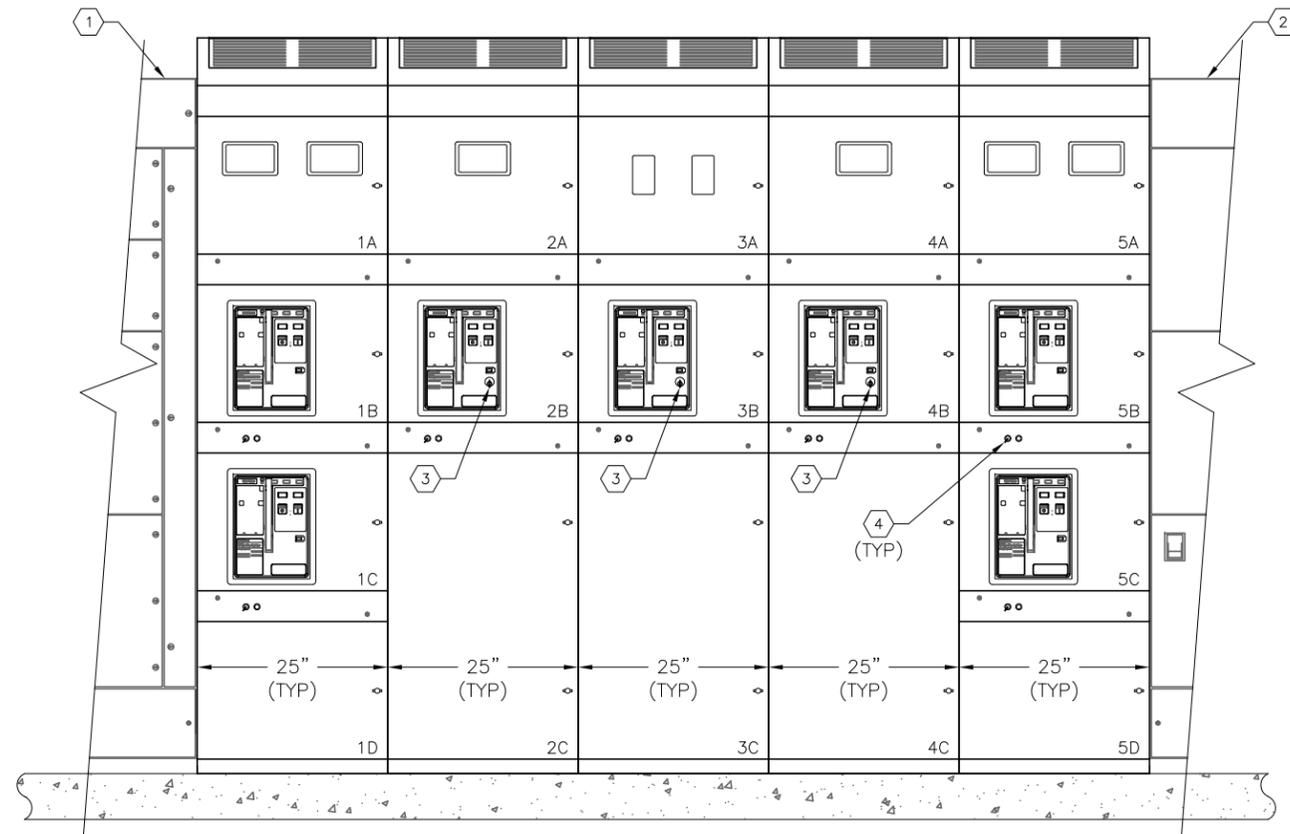


- KEYED NOTES:**
- 1 EXISTING 277/480V, 2,000A, 3 $\phi$ , 4W SWITCHGEAR 50 TO BE REPLACED. CONTRACTOR SHALL REMOVE EXISTING SWITCHGEAR AND PROVIDE NEW SWITCHGEAR PER SPECIFICATIONS. APPROXIMATE DIMENSIONS OF EXISTING SWITCHGEAR: 120 INCHES WIDE BY 60 INCHES DEEP. CONTRACTOR TO FIELD VERIFY DIMENSIONS.
  - 2 EXISTING 277/480V, 800A, 3 $\phi$ , 4W MOTOR CONTROL CENTER 53 (MCC-53) TO BE REPLACED. CONTRACTOR REFER TO SHEETS E-16 FOR MCC-53 REPLACEMENT DETAILS.
  - 3 EXISTING 277/480V, 800A, 3 $\phi$ , 4W MOTOR CONTROL CENTER 51 (MCC-51) TO BE REPLACED. CONTRACTOR REFER TO SHEETS E-10 FOR MCC-51 REPLACEMENT DETAILS.
  - 4 EXISTING COMPARTMENT FOR MCC-53 AND MCC-54 AMMETERS.
  - 5 EXISTING 1200AF/800AT 3-POLE CIRCUIT BREAKER FOR MCC-53.
  - 6 EXISTING 1200AF/800AT 3-POLE CIRCUIT BREAKER FOR MCC-54.
  - 7 EXISTING AUXILIARY COMPARTMENT.
  - 8 EXISTING COMPARTMENT FOR METERING FOR INCOMING LINE FEEDING BUS B.
  - 9 EXISTING 480V, 2000AF/2000AT 3-POLE MAIN CIRCUIT BREAKER FOR SG-50 BUS B.
  - 10 COMPARTMENT FOR BUS B INCOMING FEEDERS.
  - 11 COMPARTMENT FOR GROUND FAULT TEST PANELS FOR BUS A INCOMING LINE, TIE CIRCUIT BREAKER AND BUS B INCOMING LINE.
  - 12 EXISTING 480V, 2000AF/2000AT 3-POLE BUS TIE CIRCUIT BREAKER FOR SG-50.
  - 13 EXISTING COMPARTMENT FOR METERING FOR INCOMING LINE FEEDING BUS A.
  - 14 EXISTING 480V, 2000AF/2000AT 3-POLE MAIN CIRCUIT BREAKER FOR SG-50 BUS A.
  - 15 COMPARTMENT FOR BUS A INCOMING FEEDERS.
  - 16 EXISTING COMPARTMENT FOR MCC-51 AND MCC-52 AMMETERS.
  - 17 EXISTING 1200AF/800AT 3-POLE CIRCUIT BREAKER FOR MCC-51.
  - 18 EXISTING 1200AF/800AT 3-POLE CIRCUIT BREAKER FOR MCC-52.

**EXISTING SWITCHGEAR 50 (SG-50) FRONT ELEVATION** 1  
 SCALE: NOT TO SCALE E-3 | E-7

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**PROPOSED SWITCHGEAR 50 SCHEDULE**

- 1A - MCC-53 AND MCC-54 METERING EQUIPMENT DISPLAYS
- 1B - CIRCUIT BREAKER FOR MCC-53
- 1C - CIRCUIT BREAKER FOR MCC-54
- 1D - PREPARED SPACE
- 2A - INCOMING BUS B METERING EQUIPMENT DISPLAY
- 2B - SG-50 BUS B MAIN CIRCUIT BREAKER
- 2C - BUS B INCOMING LINE COMPARTMENT
- 3A - SG-50 BUS A AND BUS B SURGE PROTECTION DEVICES
- 3B - SG-50 BUS TIE CIRCUIT BREAKER
- 3C - AUXILIARY COMPARTMENT
- 4A - INCOMING BUS A METERING EQUIPMENT DISPLAY
- 4B - SG-50 BUS A MAIN CIRCUIT BREAKER
- 4C - BUS A INCOMING LINE COMPARTMENT
- 5A - MCC-51 AND MCC-52 METERING EQUIPMENT DISPLAYS
- 5B - CIRCUIT BREAKER FOR MCC-52
- 5C - CIRCUIT BREAKER FOR MCC-51
- 5D - PREPARED SPACE

**GENERAL NOTES:**

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND COORDINATE CONDUIT OPENINGS IN FLOOR SLAB WITH DIMENSIONS OF 60" DEEP SWITCHGEAR TO BE PROVIDED.
2. CIRCUIT BREAKER HOIST NOT SHOWN FOR CLARITY.

**PROPOSED SWITCHGEAR 50 (SG-50)  
FRONT ELEVATION**

SCALE : N.T.S.

**KEYED NOTES:**

- 1 PROPOSED 277/480V, 800A, 3 $\phi$ , 4W MOTOR CONTROL CENTER 53 (MCC-53) TO BE REPLACED. CONTRACTOR REFER TO SHEETS E-16 FOR MCC-53 REPLACEMENT DETAILS.
- 2 PROPOSED 277/480V, 800A, 3 $\phi$ , 4W MOTOR CONTROL CENTER 51 (MCC-51) TO BE REPLACED. CONTRACTOR REFER TO SHEETS E-10 FOR MCC-51 REPLACEMENT DETAILS.
- 3 KIRK-KEY INTERLOCK FOR ASSOCIATED CIRCUIT BREAKER.
- 4 MAINTENANCE MODE SELECTOR SWITCH AND ASSOCIATED PILOT LIGHT. TYPICAL FOR ALL CIRCUIT BREAKERS.



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SCALE

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**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

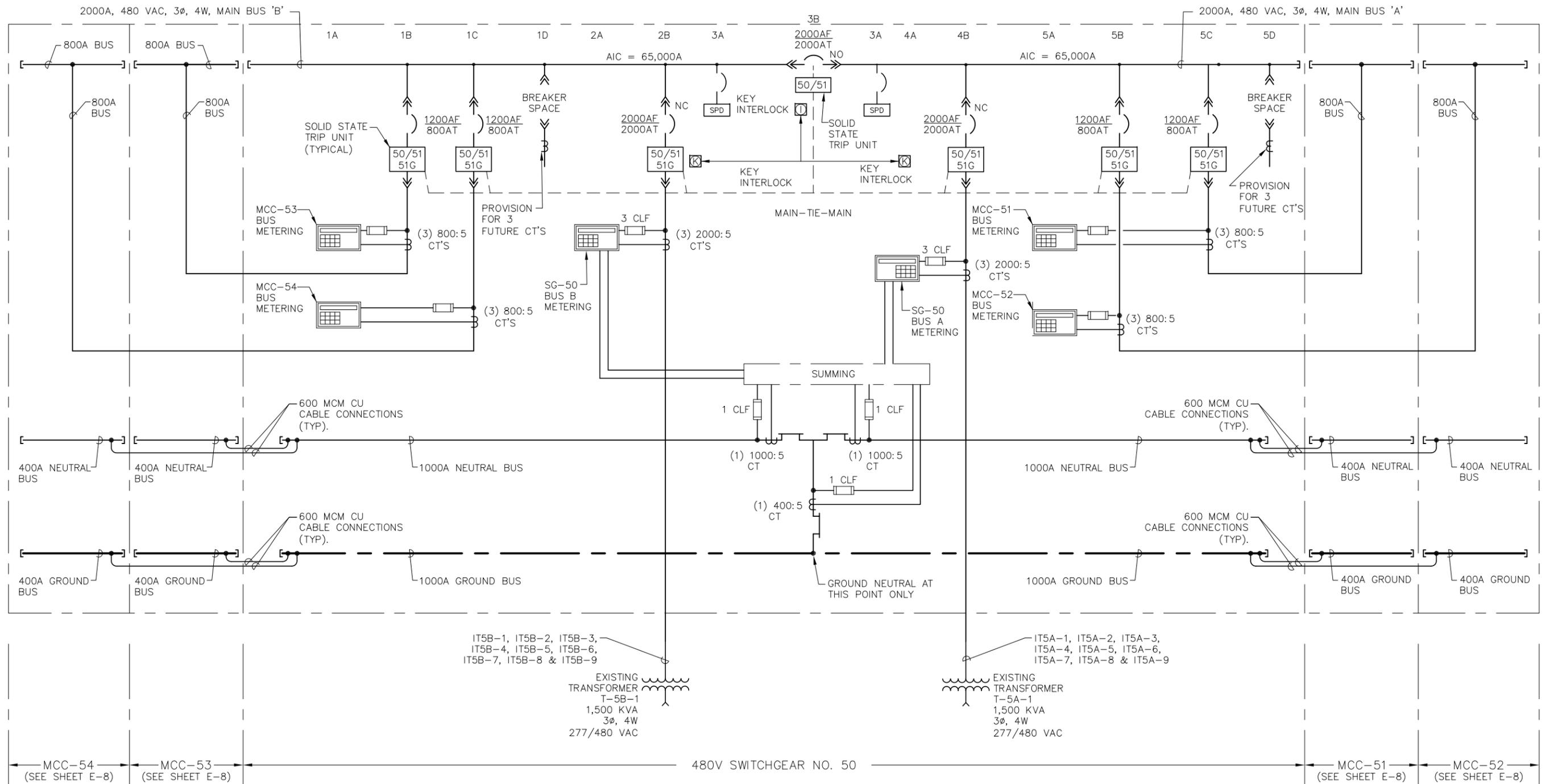
**PROPOSED SWITCHGEAR 50  
FRONT ELEVATION**

SHEET NUMBER

**E-8**

TIMOTHY THOMAS, P.E. No. 47079

FILE: 231802042E01



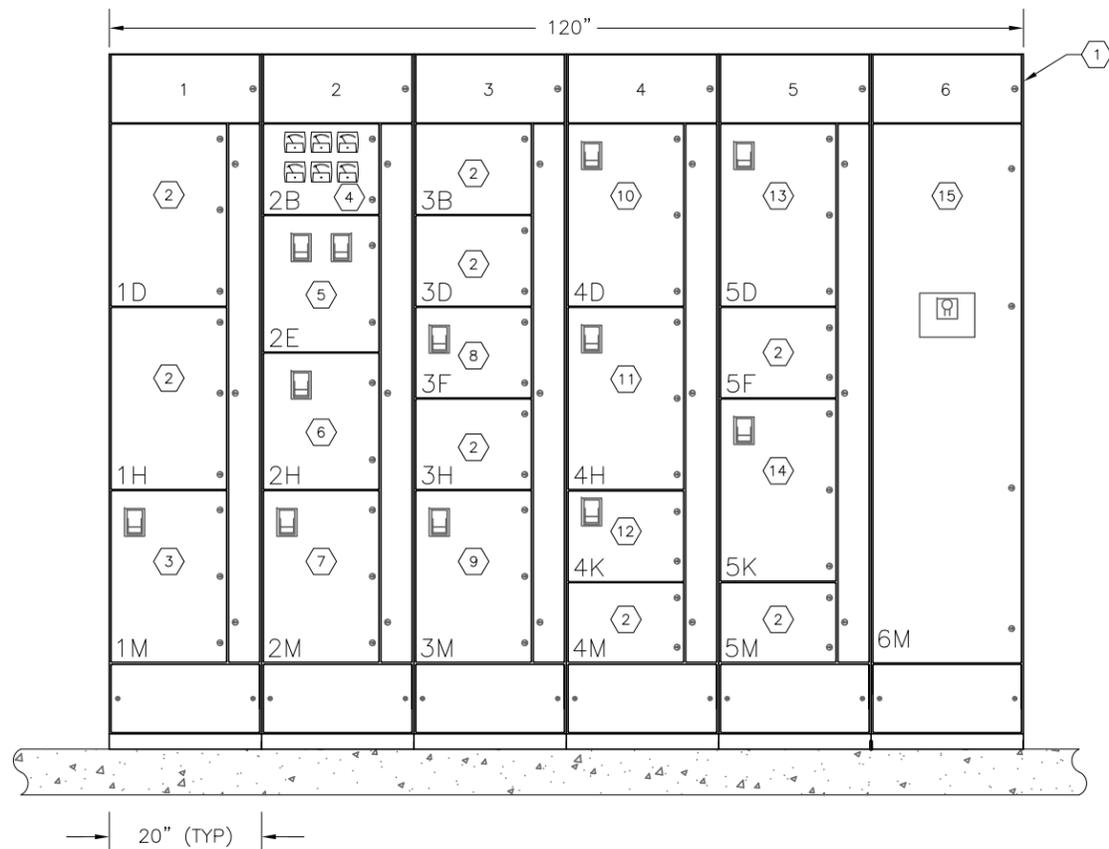
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HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
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**SWITCHGEAR NO. 50  
PROPOSED ELECTRICAL  
ONE-LINE DIAGRAM**

SHEET NUMBER	E-9
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



**GENERAL NOTES:**

1. THIS EXISTING DEVICE WILL BECOME OBSOLETE UNDER THIS CONTRACT. DUPLICATION IN THE NEW MCC-51 PROPOSED IS NOT REQUIRED.
2. THIS EXISTING DEVICE SHALL BE DUPLICATED IN THE NEW MCC-51 PROPOSED. REFER ALSO TO SHEETS E-11 AND E-12 FOR PROPOSED MCC-51 ONE-LINE DIAGRAM.

**EXISTING MCC-51 FRONT ELEVATION**

SCALE : N.T.S.



**KEYED NOTES:**

<p>① 277/480V, 800A, 3<math>\phi</math>, 4-WIRE MCC-51, CONTRACTOR SHALL REMOVE EXISTING MCC AND PROVIDE NEW MCC-51 PER SPECIFICATIONS.</p> <p>② SPACE. REFER TO PROPOSED MCC-51 ELEVATION AND MCC-51 ONE-LINE DIAGRAM FOR SPACES REQUIRED IN THE NEW MCC-51.</p> <p>③ 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-1A'. GENERAL NOTE 1.</p> <p>④ 12" BUCKET CONTAINING AMMETERS FOR ST-MA-1A, ST-MA-1B, ST-MA-1C, ST-MA-1D, ST-MA-1E AND ST-MA-1F. GENERAL NOTE 1.</p> <p>⑤ 18" BUCKET CONTAINING ONE 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR MOTOR OPERATED VALVE. THE BUCKET ALSO CONTAINS ONE OTHER 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR A SECOND MOTOR OPERATED VALVE. GENERAL NOTE 2.</p> <p>⑥ 18" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR REUSE PUMP. GENERAL NOTE 2.</p> <p>⑦ 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-1B'. GENERAL NOTE 1.</p> <p>⑧ 12" BUCKET CONTAINING ONE 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR MCC-51A FEEDER. GENERAL NOTE 2.</p>	<p>⑨ 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-1C'. GENERAL NOTE 1.</p> <p>⑩ 24" BUCKET CONTAINING ONE 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR OVERHEAD CRANE 'ST-MH-1'. GENERAL NOTE 2.</p> <p>⑪ 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-1D'. GENERAL NOTE 1.</p> <p>⑫ 12" BUCKET CONTAINING ONE 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR WASTE SLUDGE VALVE 'ST-WSV-1'. GENERAL NOTE 2.</p> <p>⑬ 24" BUCKET CONTAINING ONE 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR DUPLEX PUMP CONTROLLER 'ST-SSP-1'. GENERAL NOTE 2.</p> <p>⑭ 24" BUCKET CONTAINING ONE 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR SUMP PUMP CONTROLLER 'ST-SP-1'. GENERAL NOTE 2.</p> <p>⑮ FULL SIZE BUCKET CONTAINING ONE 480V, 800AF/800AT 3-POLE CIRCUIT BREAKER FOR MCC-42 LOCATED IN THE FBS (SCUM) BUILDING. GENERAL NOTE 2.</p>
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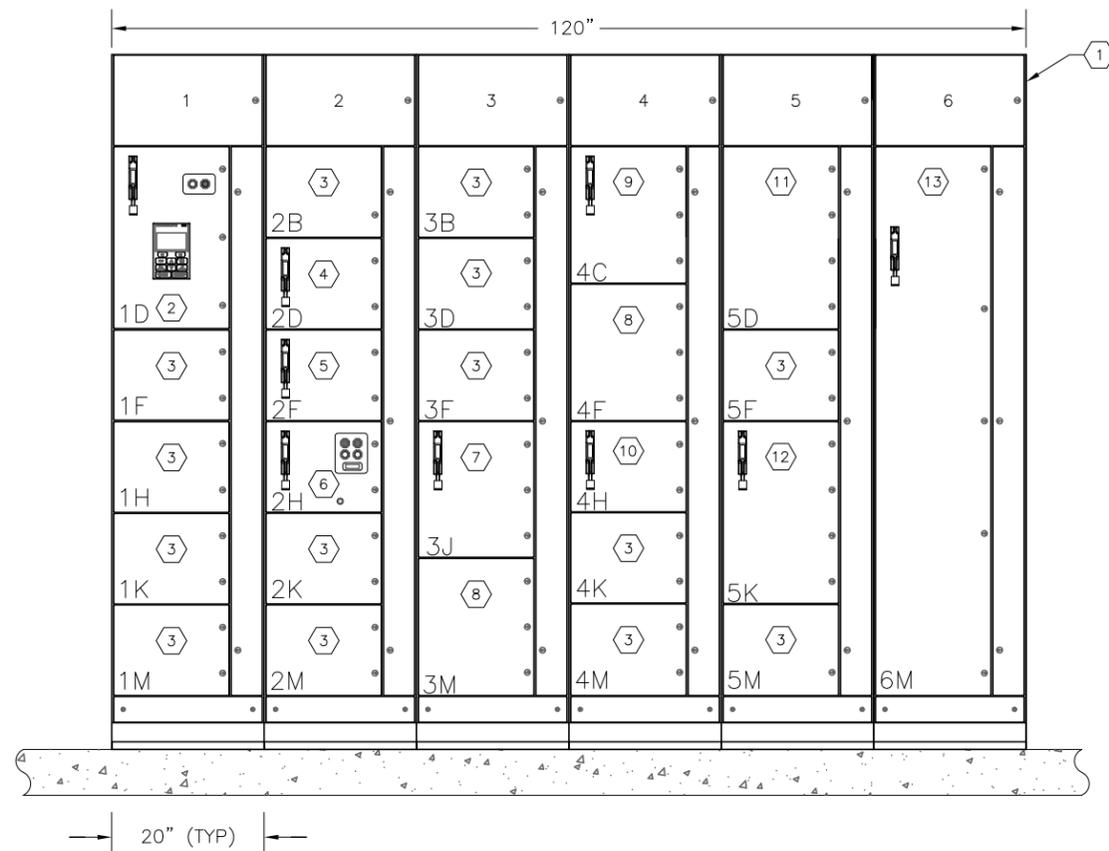
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HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

**EXISTING MCC-51  
FRONT ELEVATION**

SHEET NUMBER	E-10
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01

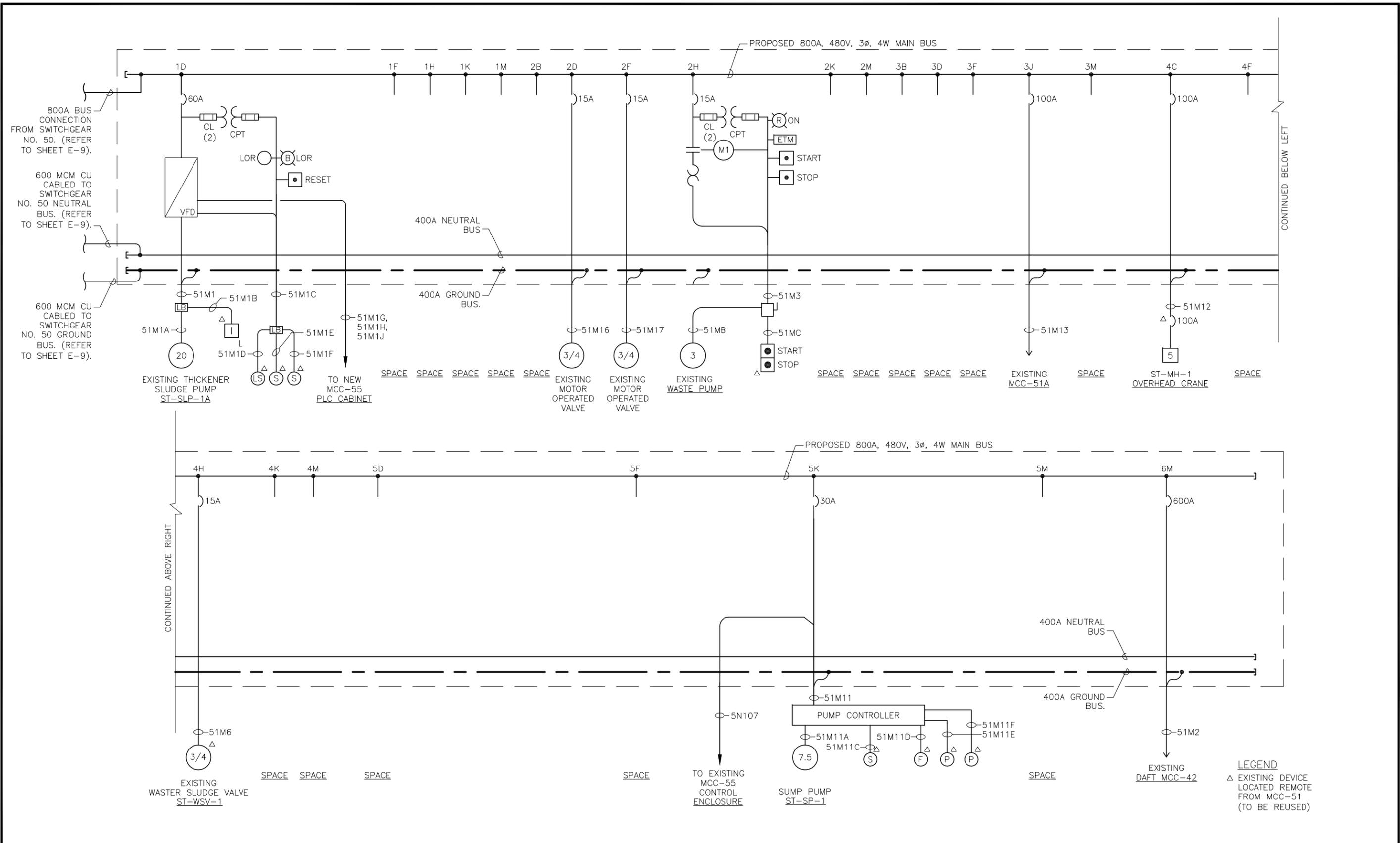


### PROPOSED MCC-51 FRONT ELEVATION

SCALE : N.T.S.

#### KEYED NOTES:

- |   |  |
|---|--|
| ① 277/480V, 800A, 3 $\phi$ , 4-WIRE MCC-51.   | ⑧ 18" SPACE.   |
| ② 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER AND 20 HP VFD FOR EXISTING THICKENER SLUDGE PUMP 'SL-SLP-1A'. | ⑨ 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR EXISTING OVERHEAD CRANE 'ST-MH-1'.       |
| ③ 12" SPACE.  | ⑩ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR EXISTING WASTER SLUDGE VALVE 'ST-WSV-1'. |
| ④ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR MOTOR OPERATED VALVE.                                     | ⑪ 24" SPACE.   |
| ⑤ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR MOTOR OPERATED VALVE.                                     | ⑫ 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR SUMP PUMP CONTROLLER 'ST-SP-1'.          |
| ⑥ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR EXISTING WASTE PUMP.                                      | ⑬ 480V, 600AF/600AT 3-POLE CIRCUIT BREAKER FOR DAFT MCC-42.                            |
| ⑦ 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR EXISTING MCC-51A FEEDER.                                 |  |



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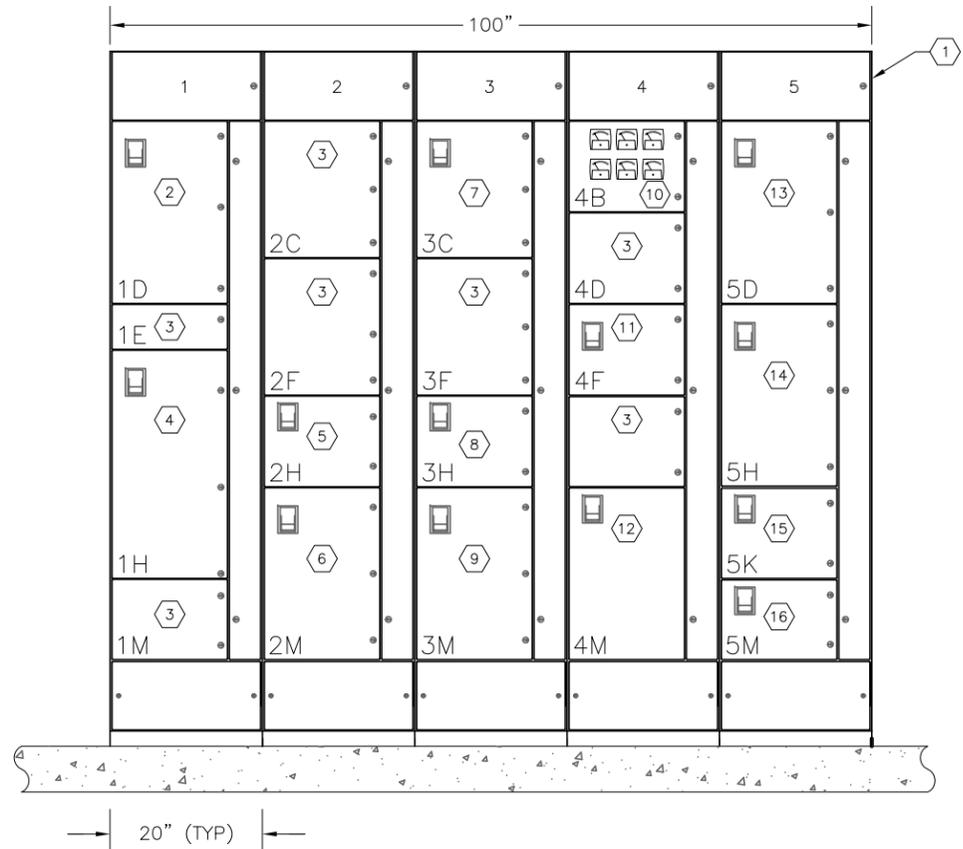
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City of Tampa Wastewater Department  
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REPLACEMENT

**MCC-51  
PROPOSED ELECTRICAL  
ONE-LINE DIAGRAM**

TIMOTHY THOMAS, P.E. No. 47079

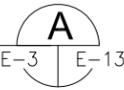
SHEET NUMBER	E-12
FILE:	231802042E01



**GENERAL NOTES:**

1. THIS EXISTING DEVICE WILL BECOME OBSOLETE UNDER THIS CONTRACT. DUPLICATION IN THE NEW MCC-52 PROPOSED IS NOT REQUIRED.
2. THIS EXISTING DEVICE SHALL BE DUPLICATED IN THE NEW MCC-52 PROPOSED. REFER ALSO TO SHEETS E-14 AND E-15 FOR PROPOSED MCC-52 ONE-LINE DIAGRAM.

**EXISTING MCC-52 FRONT ELEVATION**  
SCALE : N.T.S.



**KEYED NOTES:**

<p>1 277/480V, 800A, 3<math>\phi</math>, 4-WIRE MCC-52 CONTRACTOR SHALL REMOVE EXISTING MCC AND PROVIDE NEW MCC-52 PER SPECIFICATIONS.</p> <p>2 24" BUCKET CONTAINING ONE 480V, 100AF/50AT 3-POLE CIRCUIT BREAKER FOR PANELBOARD 'LP-50' TRANSFORMER ('T-LP-50'). GENERAL NOTE 2.</p> <p>3 SPACE. REFER TO PROPOSED MCC-52 ELEVATION AND MCC-52 ONE-LINE DIAGRAM FOR SPACES REQUIRED IN THE NEW MCC-52.</p> <p>4 30" BUCKET CONTAINING ONE 480V, 100AF/50AT 3-POLE CIRCUIT BREAKER FOR MCC-55 FEEDER. GENERAL NOTE 1.</p> <p>5 12" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR THICKENER MIXING CHAMBER MIXER 'ST-TM-1'. GENERAL NOTE 2.</p> <p>6 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-2A'. GENERAL NOTE 1.</p> <p>7 18" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR POLYMER TRANSFER PUMP. GENERAL NOTE 2.</p> <p>8 12" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR THICKENER TANK COLLECTOR DRIVE 'ST-TC-1'. GENERAL NOTE 2.</p>	<p>9 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-2B'. GENERAL NOTE 1.</p> <p>10 12" BUCKET CONTAINING AMMETERS FOR ST-MA-2A, ST-MA-2B, ST-MA-2C, ST-MA-2D, ST-MA-2E AND ST-MA-2F. GENERAL NOTE 1.</p> <p>11 12" BUCKET CONTAINING ONE 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR MCC-52A FEEDER. GENERAL NOTE 2.</p> <p>12 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-2C'. GENERAL NOTE 1.</p> <p>13 SPARE CIRCUIT BREAKER. REFER TO PROPOSED MCC-52 ELEVATION AND MCC-52 ONE-LINE DIAGRAM FOR SPARE CIRCUIT BREAKERS REQUIRED IN THE NEW MCC-52.</p> <p>14 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-2D'. GENERAL NOTE 1.</p> <p>15 12" BUCKET CONTAINING ONE 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR WASTE SLUDGE PUMP 2 'ST-WSP-2'. GENERAL NOTE 2.</p> <p>16 12" BUCKET CONTAINING ONE 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER FOR POLYMER CONTROL SYSTEM. GENERAL NOTE 2.</p>
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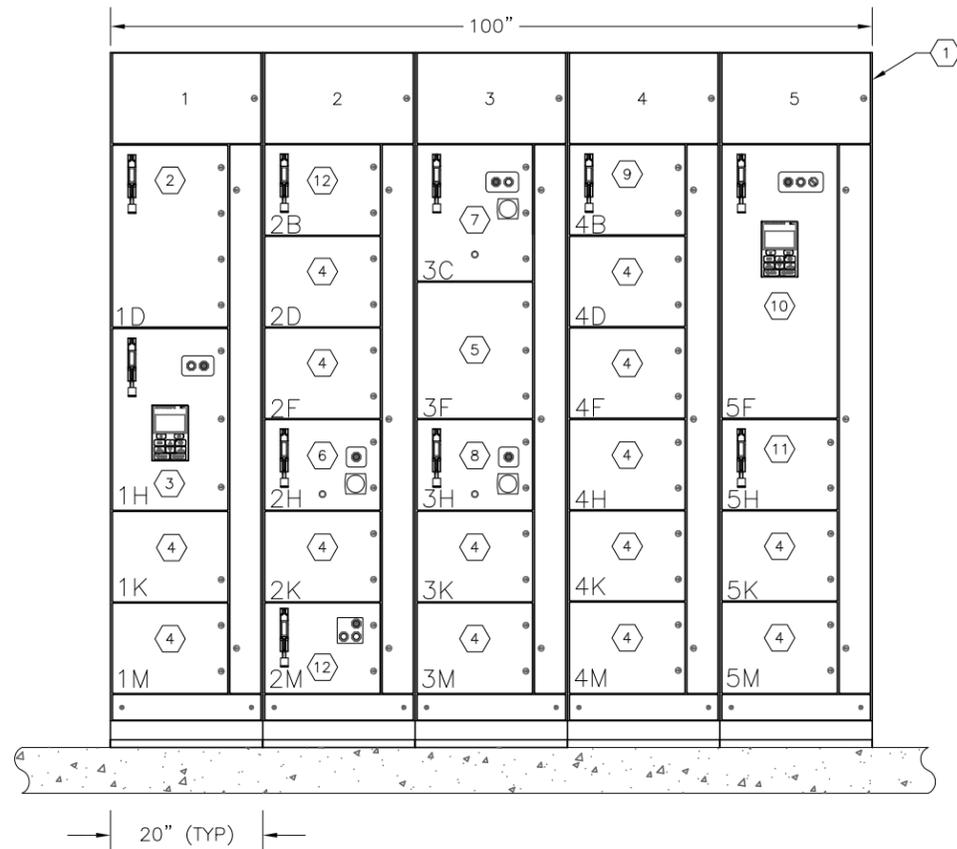
JOB No.	231802042						
DESIGNED	TDI						
DRAWN	JLH						
CHECKED	TDI						
DATE	12/2018	No.	DATE	BY	APP	REVISION	DESCRIPTION

SCALE  
  
AS SHOWN

**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

**EXISTING MCC-52  
FRONT ELEVATION**

SHEET NUMBER	E-13
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01

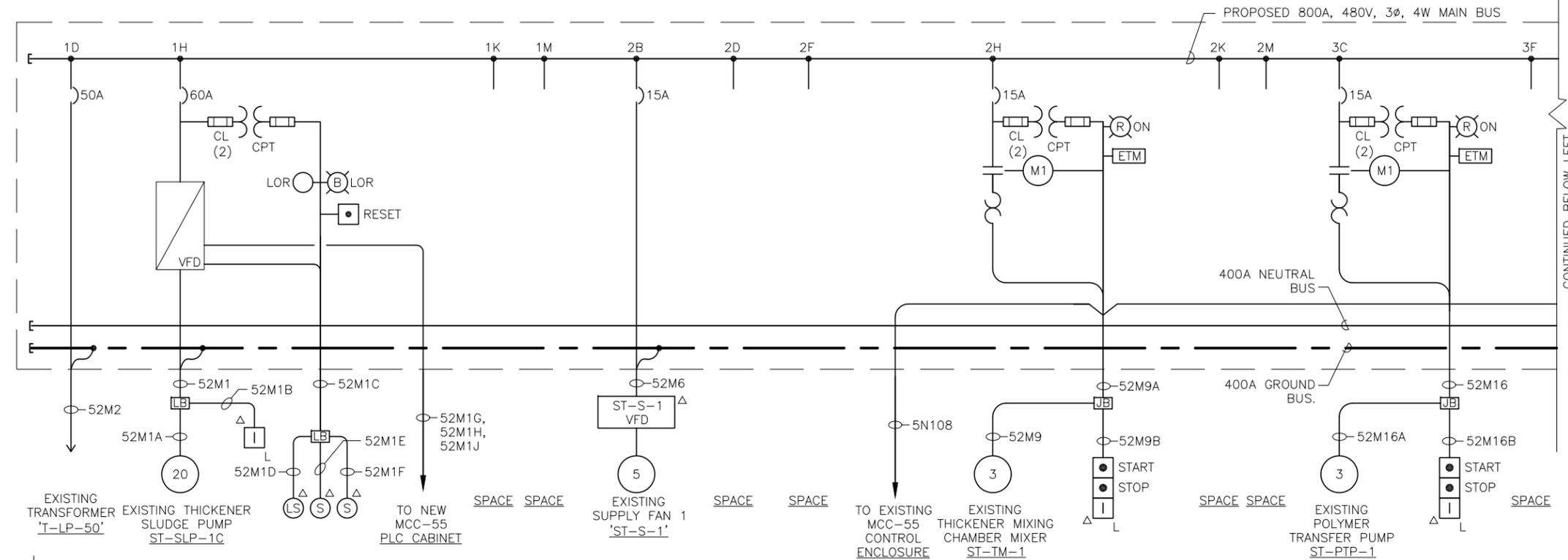


### PROPOSED MCC-52 FRONT ELEVATION

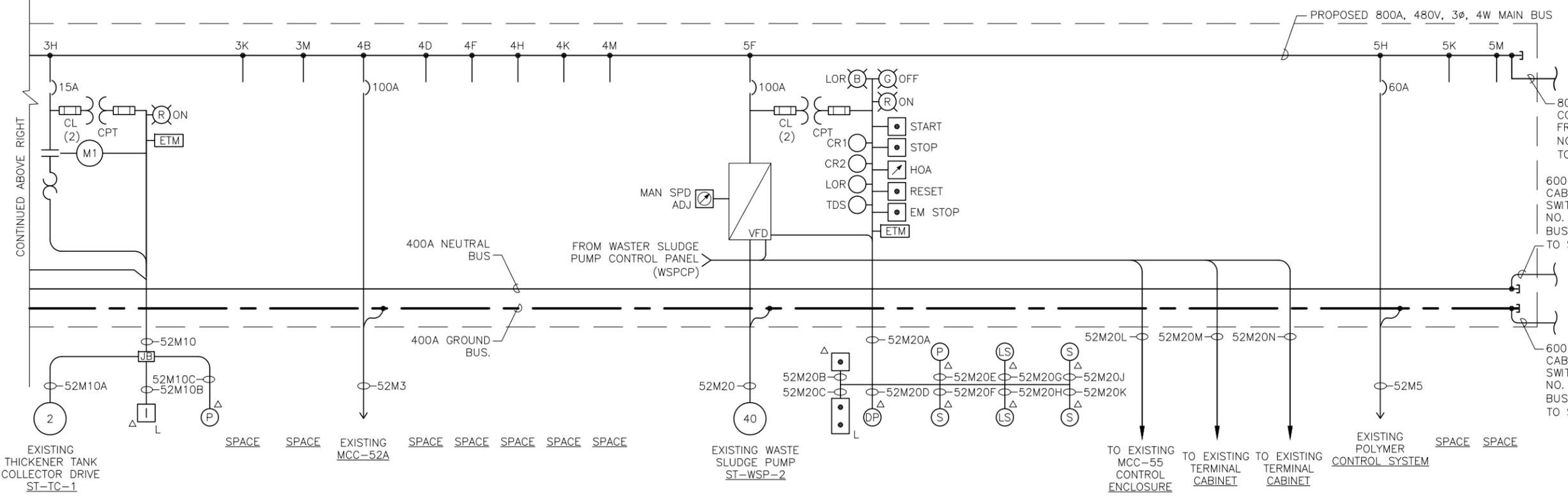
SCALE : N.T.S.

#### KEYED NOTES:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>① 277/480V, 800A, 3<math>\phi</math>, 4-WIRE MCC-52.</li> <li>② 480V, 100AF/50AT 3-POLE CIRCUIT BREAKER FOR PANELBOARD 'LP-50' TRANSFORMER ('T-LP-50').</li> <li>③ 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER AND 20 HP VFD FOR EXISTING THICKENER SLUDGE PUMP 'SL-SLP-1C'.</li> <li>④ 12" SPACE.</li> <li>⑤ 18" SPACE.</li> <li>⑥ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER AND 3-POLE MOTOR STARTER FOR THICKENER MIXING CHAMBER MIXER 'ST-TM-1'.</li> </ul> | <ul style="list-style-type: none"> <li>⑦ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER AND 3-POLE MOTOR STARTER FOR POLYMER TRANSFER PUMP 'ST-PTP-1'.</li> <li>⑧ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER AND 3-POLE MOTOR STARTER FOR THICKENER TANK COLLECTOR DRIVE 'ST-TC-1'.</li> <li>⑨ 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR EXISTING MCC-52A FEEDER.</li> <li>⑩ 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER AND 40 HP VFD FOR EXISTING WASTE SLUDGE PUMP 'ST-WSP-2'.</li> <li>⑪ 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER FOR POLYMER CONTROL SYSTEM.</li> <li>⑫ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR SUPPLY FAN 1 'ST-S-1'.</li> </ul> |
|--|---|



**LEGEND**  
 Δ EXISTING DEVICE  
 LOCATED REMOTE  
 FROM MCC-52  
 (TO BE REUSED)



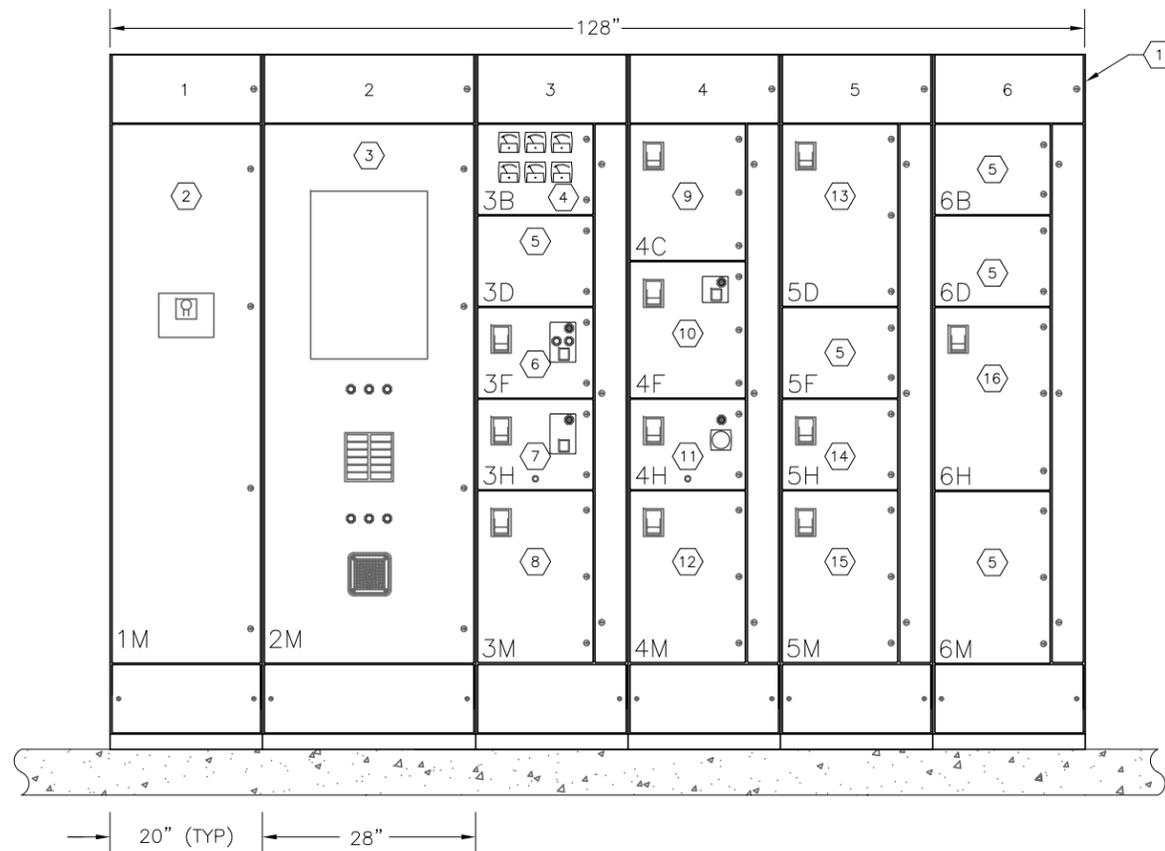
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DESIGNED	TDT						
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DATE	12/2018	No.	DATE	BY	APP	REVISION	DESCRIPTION

SCALE  
 AS SHOWN

**City of Tampa Wastewater Department**  
 HOWARD F. CURREN AWTP  
 SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
 REPLACEMENT

**MCC-52  
 PROPOSED ELECTRICAL  
 ONE-LINE DIAGRAM**

SHEET NUMBER	E-15
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



**GENERAL NOTES:**

1. THIS EXISTING DEVICE WILL BECOME OBSOLETE UNDER THIS CONTRACT. DUPLICATION IN THE NEW MCC-53 PROPOSED IS NOT REQUIRED.
2. THIS EXISTING DEVICE SHALL BE DUPLICATED IN THE NEW MCC-53 PROPOSED. REFER ALSO TO SHEETS E-17 AND E-18 FOR PROPOSED MCC-53 ONE-LINE DIAGRAM.

**EXISTING MCC-53 FRONT ELEVATION**

SCALE : N.T.S.



**KEYED NOTES:**

<p>1 277/480V, 800A, 3<math>\phi</math>, 4-WIRE MCC-53 CONTRACTOR SHALL REMOVE EXISTING MCC AND PROVIDE NEW MCC-53 PER SPECIFICATIONS.</p> <p>2 FULL SIZE BUCKET CONTAINING ONE 480V, 800AF/800AT 3-POLE CIRCUIT BREAKER FOR MCC-43 LOCATED IN THE DISSOLVED AIR FLOTATION TANK BUILDING. GENERAL NOTE 2.</p> <p>3 FULL SIZE BUCKET CONTAINING MCC-53 ANNUNCIATOR AND ALARM HORN. ANNUNCIATOR TO BE REPLACED WITH MAPLE SYSTEMS HMI5150P OPERATOR INTERFACE TERMINAL. GENERAL NOTE 2.</p> <p>4 12" BUCKET CONTAINING AMMETERS FOR ST-MA-3A, ST-MA-3B, ST-MA-3C, ST-MA-3D, ST-MA-3E AND ST-MA-3F. GENERAL NOTE 1.</p> <p>5 SPACE. REFER TO PROPOSED MCC-53 ELEVATION AND MCC-53 ONE-LINE DIAGRAM FOR SPACES REQUIRED IN THE NEW MCC-53.</p> <p>6 12" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR DISTRIBUTION CHAMBER SLUDGE MIXER 'ST-SM-1'. GENERAL NOTE 1.</p> <p>7 12" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR THICKENER MIXING CHAMBER MIXER 'ST-TM-2'. GENERAL NOTE 2.</p> <p>8 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-3C'. GENERAL NOTE 1.</p>	<p>9 18" BUCKET CONTAINING ONE 480V, 3-POLE CIRCUIT BREAKER FOR PLANT WATER PUMPS 1 &amp; 2. GENERAL NOTE 1.</p> <p>10 18" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR DEWATERING PUMP NO. 1 'ST-DP-1'. GENERAL NOTE 2.</p> <p>11 12" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR THICKENER TANK COLLECTOR DRIVE 'ST-TC-2'. GENERAL NOTE 2.</p> <p>12 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-3D'. GENERAL NOTE 1.</p> <p>13 SPARE CIRCUIT BREAKER. REFER TO PROPOSED MCC-53 ELEVATION AND MCC-53 ONE-LINE DIAGRAM FOR SPARE CIRCUIT BREAKERS REQUIRED IN THE NEW MCC-53.</p> <p>14 12" BUCKET CONTAINING ONE 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR MCC-53A FEEDER. GENERAL NOTE 2.</p> <p>15 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-3A'. GENERAL NOTE 1.</p> <p>16 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-3B'. GENERAL NOTE 1.</p>
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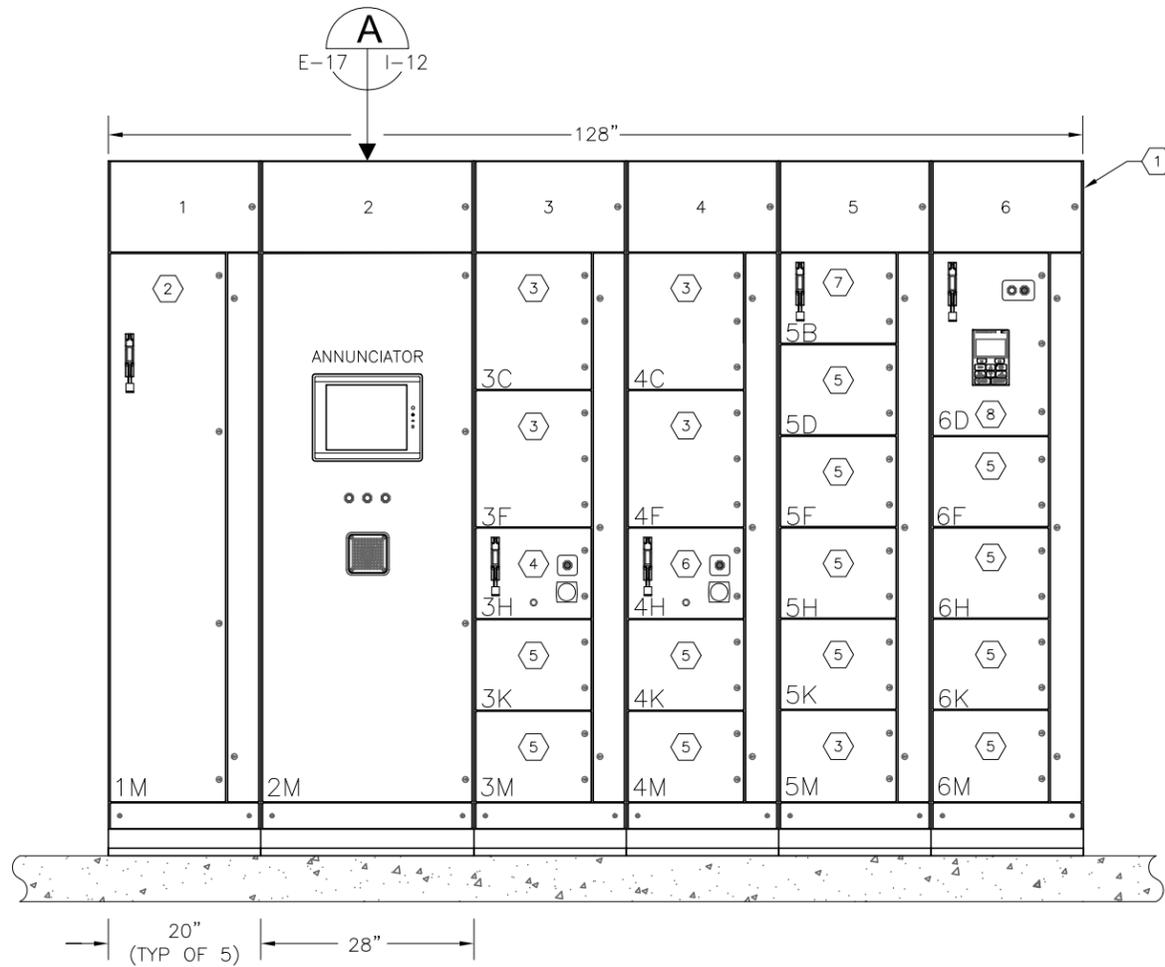
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DESIGNED	TDT						
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CHECKED	TDT						
DATE	12/2018	No.	DATE	BY	APP	REVISION	DESCRIPTION

SCALE  
  
AS SHOWN

**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

**EXISTING MCC-53  
FRONT ELEVATION**

SHEET NUMBER	E-16
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01

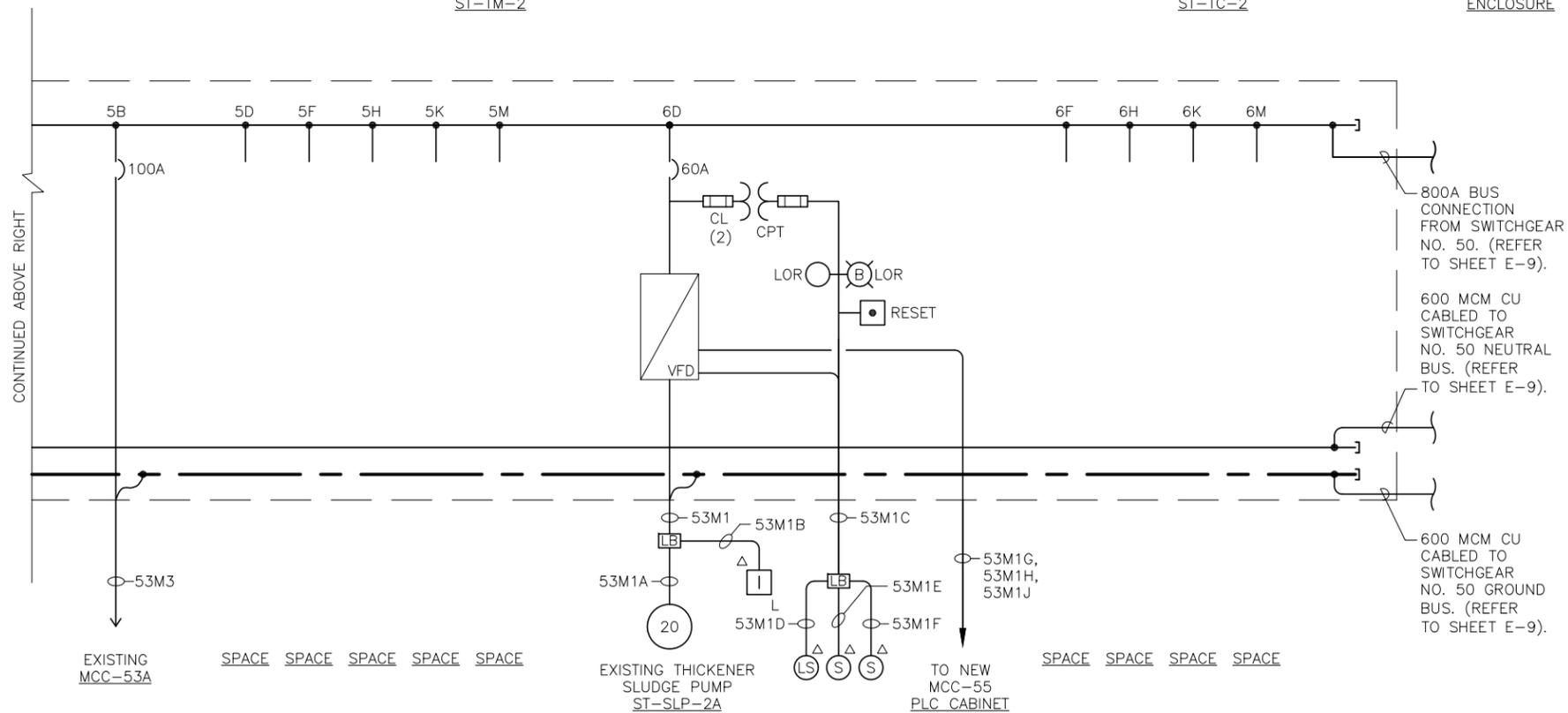
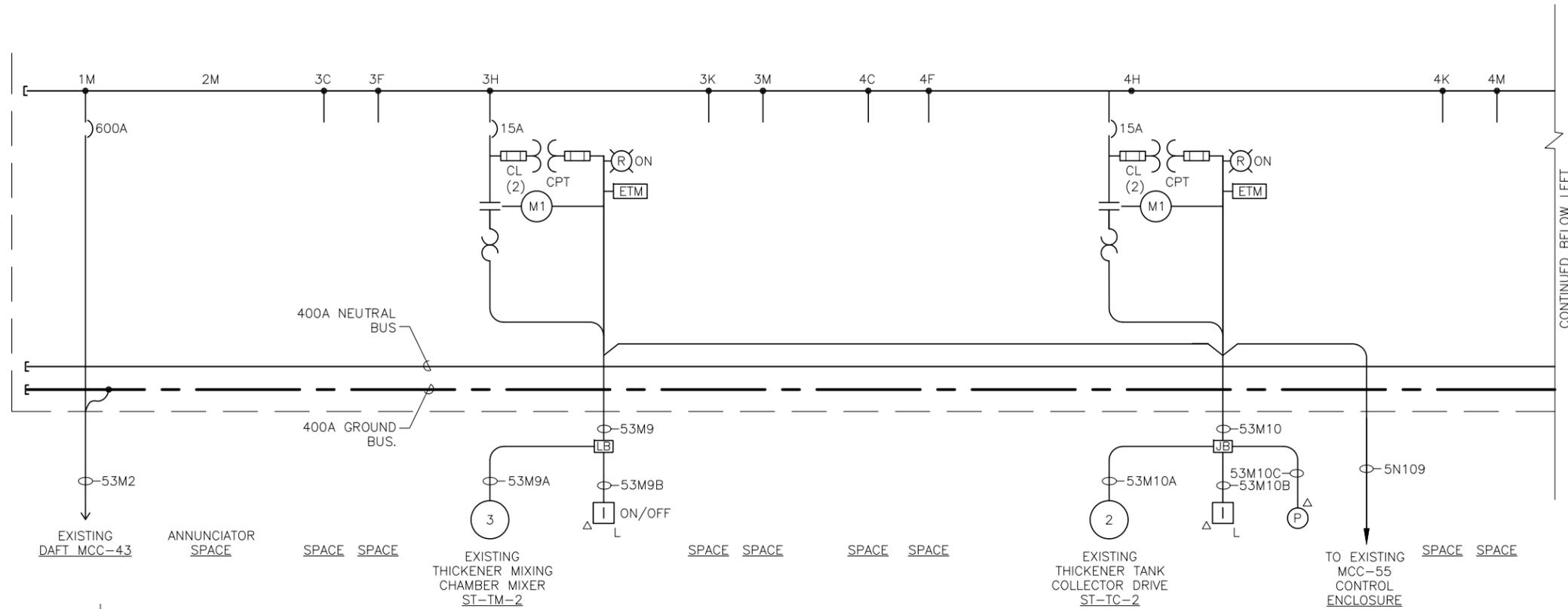


### PROPOSED MCC-53 FRONT ELEVATION

SCALE : N.T.S.

#### KEYED NOTES:

- |  |  |
|--|--|
| ① 277/480V, 800A, 3 $\phi$ , 4-WIRE MCC-53.  | ⑤ 12" SPACE.   |
| ② 480V, 600AF/600AT 3-POLE CIRCUIT BREAKER FOR DAFT MCC-43.  | ⑥ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER AND 3-POLE MOTOR STARTER FOR THICKENER TANK COLLECTOR DRIVE 'ST-TC-2'. |
| ③ 18" SPACE.   | ⑦ 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR EXISTING MCC-53A FEEDER.  |
| ④ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER AND 3-POLE MOTOR STARTER FOR THICKENER MIXING CHAMBER MIXER 'ST-TM-2'. | ⑧ 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER AND 20 HP VFD FOR EXISTING THICKENER SLUDGE PUMP 'SL-SLP-2A'.          |



**LEGEND**  
 △ EXISTING DEVICE LOCATED REMOTE FROM MCC-53 (TO BE REUSED)



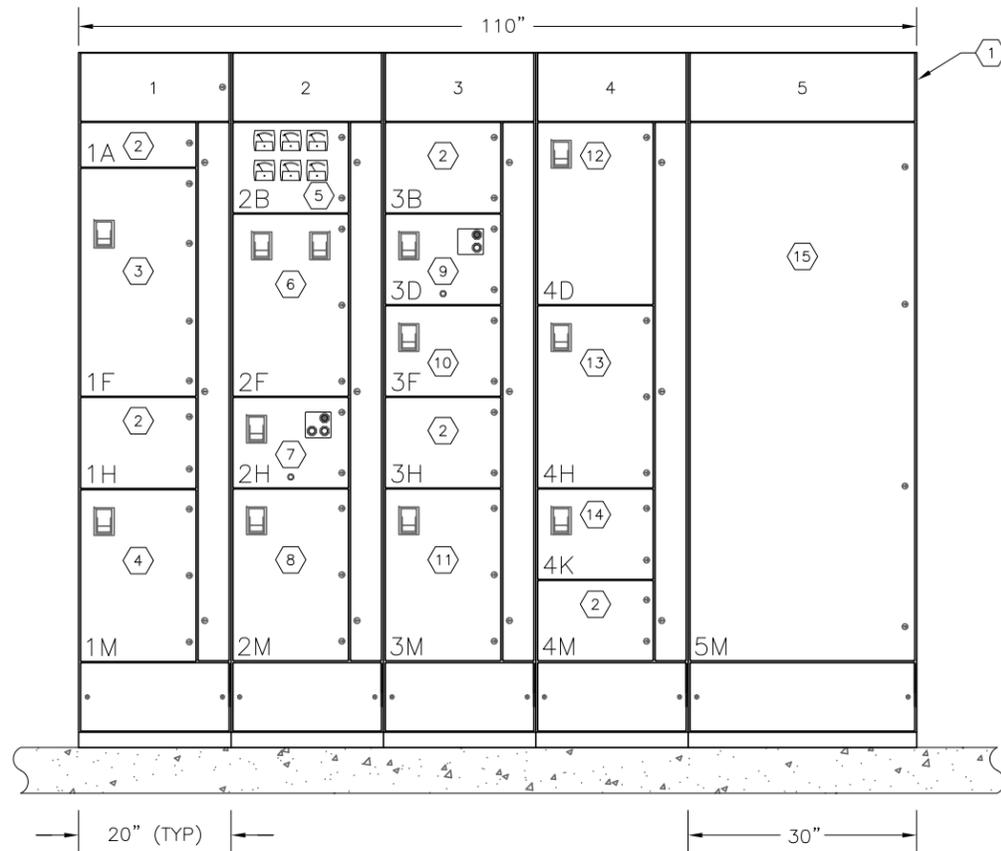
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DATE	12/2018	No.	DATE	BY	APP	REVISION	DESCRIPTION

SCALE  
 AS SHOWN

**City of Tampa Wastewater Department**  
 HOWARD F. CURREN AWTP  
 SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC REPLACEMENT

**MCC-53 ELECTRICAL ONE-LINE DIAGRAM**

SHEET NUMBER	E-18
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



**GENERAL NOTES:**

1. THIS EXISTING DEVICE WILL BECOME OBSOLETE UNDER THIS CONTRACT. DUPLICATION IN THE NEW MCC-54 PROPOSED IS NOT REQUIRED.
2. THIS EXISTING DEVICE SHALL BE DUPLICATED IN THE NEW MCC-53 PROPOSED. REFER ALSO TO SHEETS E-20 AND E-21 FOR PROPOSED MCC-54 ONE-LINE DIAGRAM.

**EXISTING MCC-54 FRONT ELEVATION** A  
 SCALE : N.T.S. E-3 | E-19

**KEYED NOTES:**

<p>① 277/480V, 800A, 3<math>\phi</math>, 4-WIRE MCC-54 CONTRACTOR SHALL REMOVE EXISTING MCC AND PROVIDE NEW MCC-54 PER SPECIFICATIONS.</p> <p>② SPACE. REFER TO PROPOSED MCC-54 ELEVATION AND MCC-54 ONE-LINE DIAGRAM FOR SPACES REQUIRED IN THE NEW MCC-54.</p> <p>③ 30" BUCKET CONTAINING ONE 480V, 3-POLE CIRCUIT BREAKER FOR MCC-55 SECTION NO. 3. GENERAL NOTE 1.</p> <p>④ 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-4C'. GENERAL NOTE 1.</p> <p>⑤ 12" BUCKET CONTAINING AMMETERS FOR ST-MA-4A, ST-MA-4B, ST-MA-4C, ST-MA-4D, ST-MA-4E AND ST-MA-4F. GENERAL NOTE 1.</p> <p>⑥ 24" BUCKET CONTAINING ONE 480V, 3-POLE CIRCUIT BREAKER FOR SUMP PUMP 3 'ST-SP-3' AND ONE 480V, 3-POLE CIRCUIT BREAKER FOR LIGHTING PANEL LP-51. GENERAL NOTE 2.</p> <p>⑦ 12" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR SUPPLY FAN 1 'ST-S-1'. GENERAL NOTE 2.</p> <p>⑧ 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-4D'. GENERAL NOTE 1.</p>	<p>⑨ 12" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR SUPPLY FAN 2 'ST-S-2'. GENERAL NOTE 2.</p> <p>⑩ 12" BUCKET CONTAINING ONE 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR MCC-54A FEEDER. GENERAL NOTE 2.</p> <p>⑪ 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-4A'. GENERAL NOTE 1.</p> <p>⑫ 24" BUCKET CONTAINING ONE 480V, 3-POLE CIRCUIT BREAKER FOR SUMP PUMP 2 'ST-SP-2'. GENERAL NOTE 2.</p> <p>⑬ 24" BUCKET CONTAINING ONE 480V, 3-POLE MOTOR STARTER FOR MECHANICAL AERATOR 'DAR-MM-4B'. GENERAL NOTE 1.</p> <p>⑭ 12" BUCKET CONTAINING ONE 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR WASTE SLUDGE PUMP 1 'ST-WSP-1'. GENERAL NOTE 2.</p> <p>⑮ FULL SIZE BUCKET FOR 'FIBER OPTIC CONNECTION CENTER'. CONTRACTOR SHALL REUSE ALL RELOCATE ALL EXISTING FIBER OPTIC EQUIPMENT AND CABLES TO NEW FULL SIZE BUCKET IN NEW MCC-54. GENERAL NOTE 2.</p>
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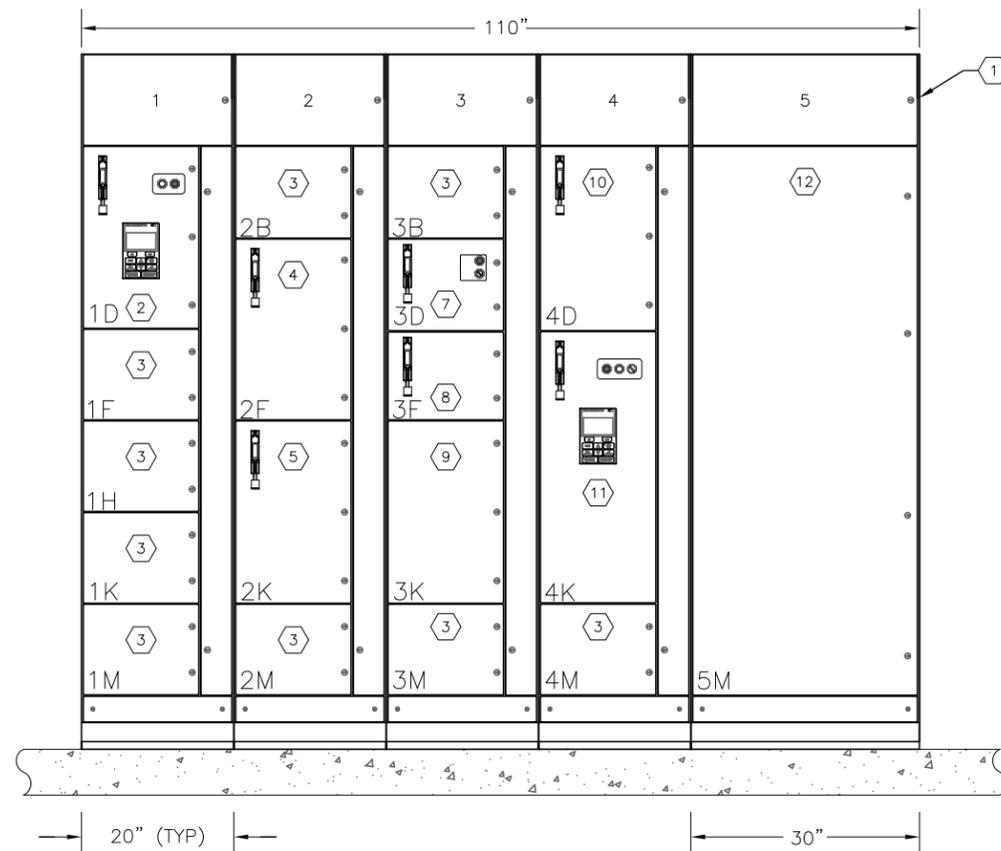
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DESIGNED	TD				
DRAWN	JLH				
CHECKED	TD				
DATE	12/2018	No.	DATE	BY	APP
REVISION DESCRIPTION					

SCALE  
  
AS SHOWN

**City of Tampa Wastewater Department**  
 HOWARD F. CURREN AWTP  
 SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
 REPLACEMENT

**EXISTING MCC-54  
 FRONT ELEVATION**

SHEET NUMBER	E-19
TIMOTHY THOMAS, P.E. No. 47079	
FILE: 231802042E01	

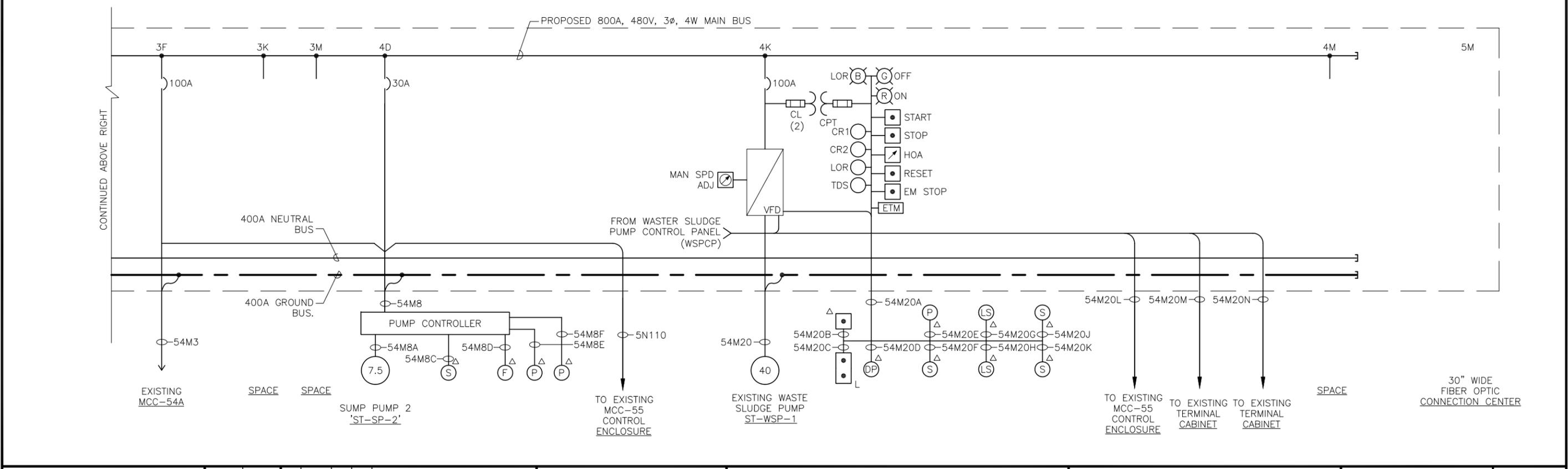
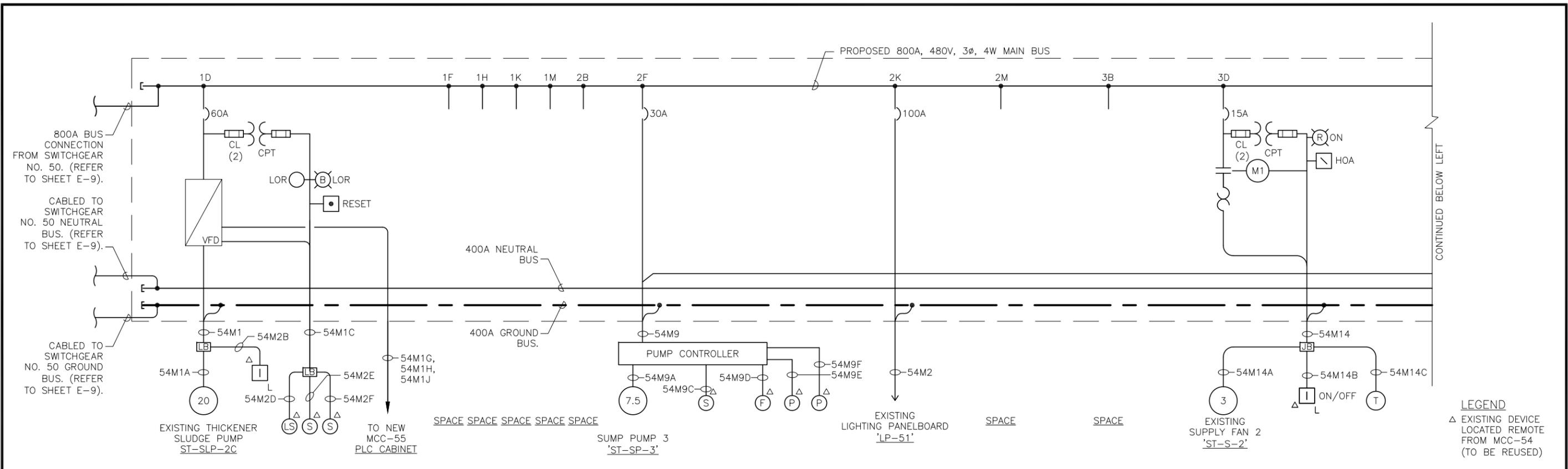


### PROPOSED MCC-54 FRONT ELEVATION

SCALE : N.T.S.

#### KEYED NOTES:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>① 277/480V, 800A, 3<math>\phi</math>, 4-WIRE MCC-54.</li> <li>② 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER AND 20 HP VFD FOR EXISTING THICKENER SLUDGE PUMP 'SL-SLP-2C'.</li> <li>③ 12" SPACE.</li> <li>④ 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR SUMP PUMP 3 'ST-SP-3'.</li> <li>⑤ 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR LIGHTING PANELBOARD 'LP-51'.</li> <li>⑥ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR SUPPLY FAN 1 'ST-S-1'.</li> </ul> | <ul style="list-style-type: none"> <li>⑦ 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER AND 3-POLE MOTOR STARTER FOR SUPPLY FAN 2 'ST-S-2'.</li> <li>⑧ 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR EXISTING MCC-54A FEEDER.</li> <li>⑨ 24" SPACE.</li> <li>⑩ 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR SUMP PUMP 2 'ST-SP-2'.</li> <li>⑪ 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER AND 40 HP VFD FOR EXISTING WASTE SLUDGE PUMP 'ST-WSP-1'.</li> <li>⑫ CONTRACTOR TO PROVIDE EMPTY 30" WIDE, FULL LENGTH CUBICLE (NO BUS REQUIRED) TO SERVE AS NEW FIBER OPTIC CONNECTION CENTER. REFER ALSO TO KEYED NOTE #15 ON SHEET E-19.</li> </ul> |
|--|---|



**LEGEND**  
 Δ EXISTING DEVICE LOCATED REMOTE FROM MCC-54 (TO BE REUSED)

**TRICON CONSULTING ENGINEERS**  
 777 S. Harbour Island Blvd.  
 Suite 350  
 Tampa, FL 33602  
 813.227.9190  
 Certificate of Authorization No. B363

JOB No.	231802042					
DESIGNED	TDT					
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SCALE  
 AS SHOWN

**City of Tampa Wastewater Department**  
 HOWARD F. CURREN AWTP  
 SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC REPLACEMENT

**MCC-54 ELECTRICAL ONE-LINE DIAGRAM**

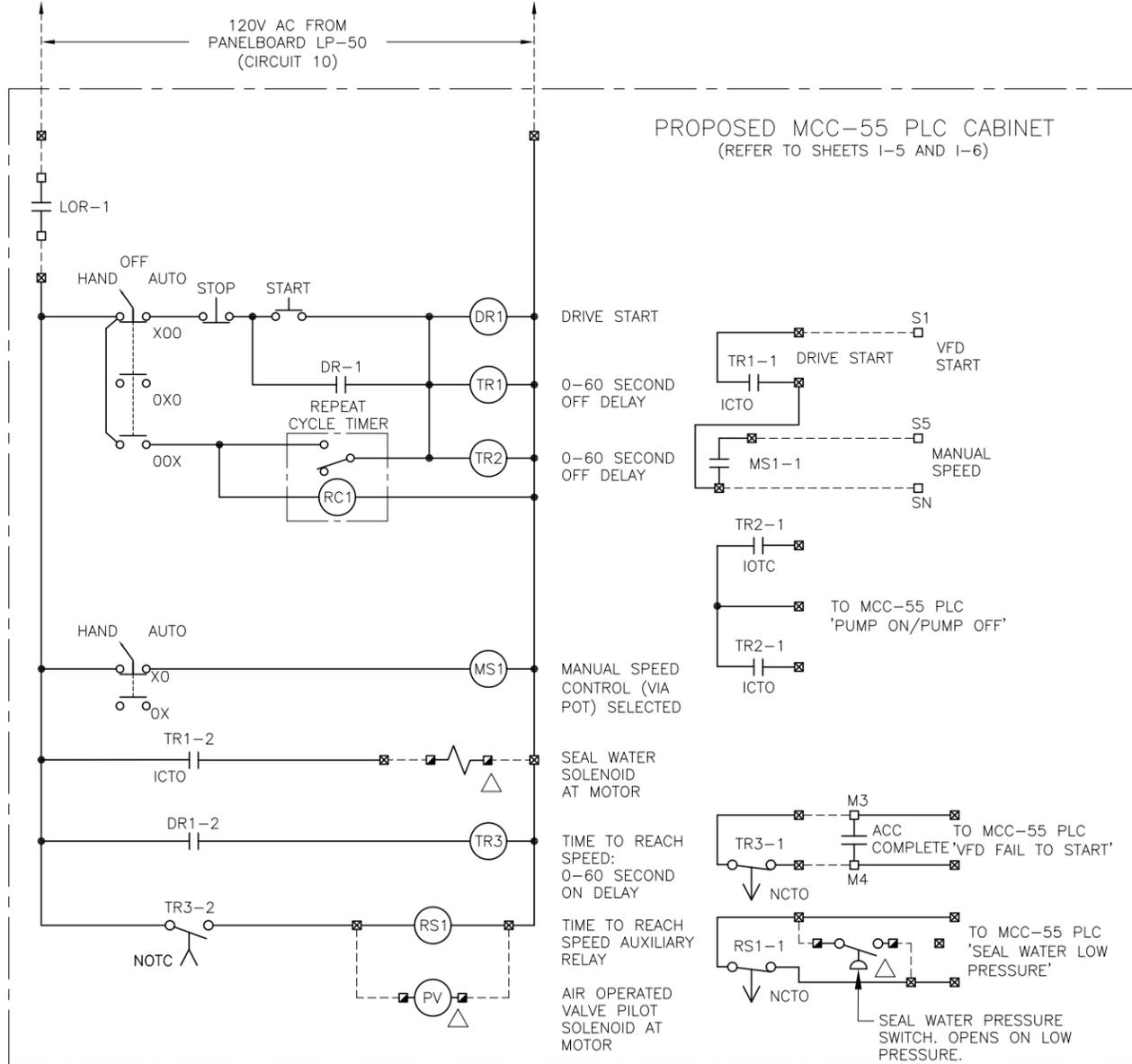
SHEET NUMBER	E-21
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01

# LEGEND

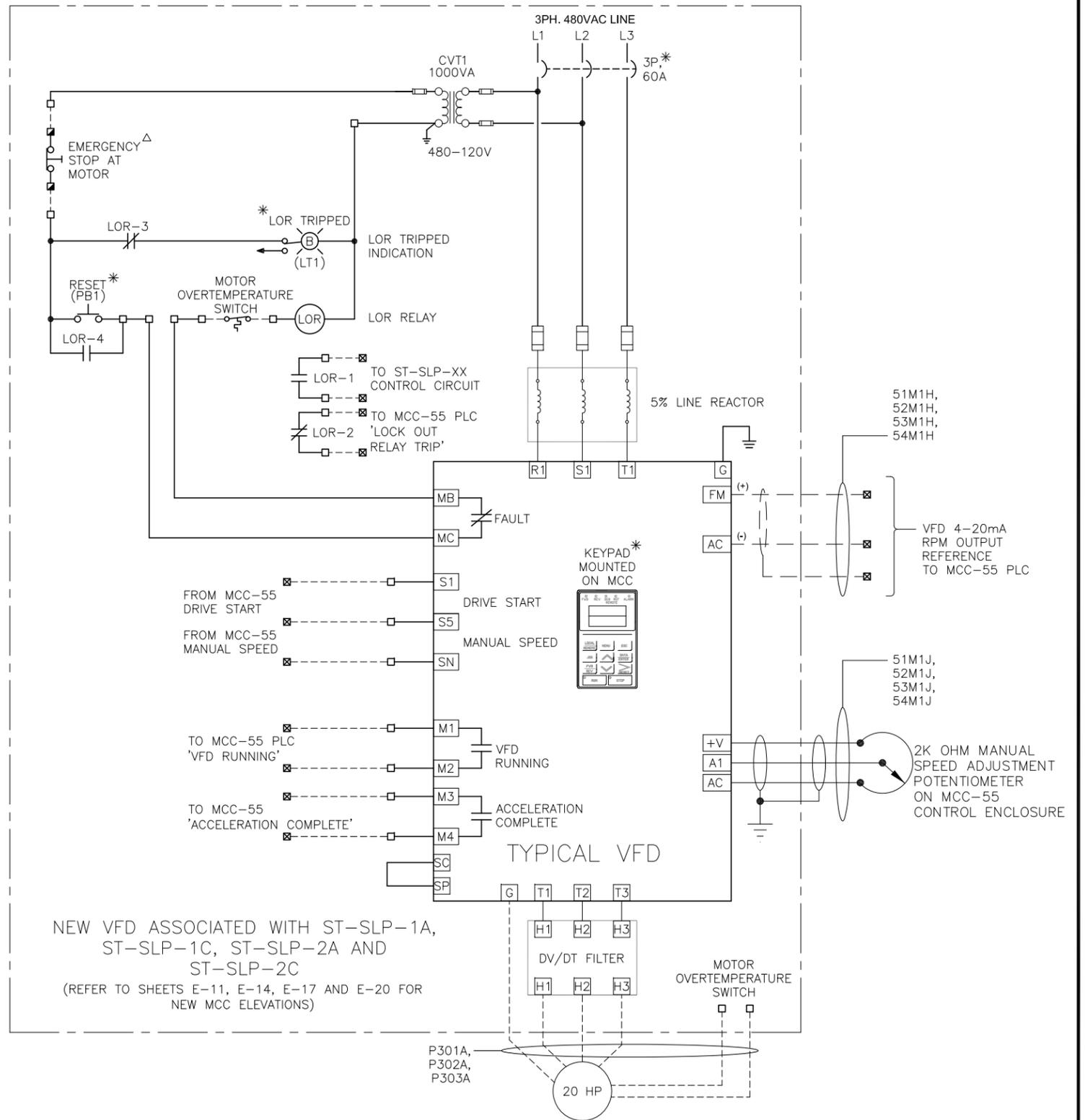
- △ EXISTING DEVICE LOCATED REMOTE FROM MCC (TO BE REUSED)
- \* DEVICE TO BE LOCATED ON MCC BUCKET DOOR
- ⊗ DENOTES TERMINAL IN MCC-55 CONTROL ENCLOSURE
- DENOTES TERMINAL ON NEW VFD OR IN ASSOCIATED MCC BUCKET
- ▣ DENOTES TERMINAL ON FIELD DEVICE
- DENOTES FIELD WIRING

# GENERAL NOTES:

1. ITEMS NOTED WITH AS △ SHALL BE LOCATED OUTSIDE OF THE ASSOCIATED MCC BUCKET.
2. CONTRACTOR SHALL VERIFY VFD WIRING SHOWN, I/O AND ALL OTHER PARAMETERS WITH VFD MANUFACTURER PRIOR TO COMMENCING CONSTRUCTION.
3. MOTOR CONTROL WIRING SCHEMATICS SHOWN REPRESENT THE CURRENT RECORD DRAWING INFORMATION AVAILABLE. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING FIELD WIRING PRIOR TO COMMENCING CONSTRUCTION OR INSTALLATION.



△ HOA, PUSHBUTTONS, REPEAT CYCLE TIMER, RELAYS, ETC. LOCATED IN/ON MCC-55 CONTROL ENCLOSURE.



**THICKENED SLUDGE PUMP ST-SLP-1A: MCC 51**  
(ST-SLP-1C:MCC 52, ST-SLP-2A:MCC 53 AND ST-SLP-2C:MCC 54 ARE SIMILAR)



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SCALE: NOT TO SCALE

**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC REPLACEMENT

**TYPICAL MOTOR CONTROL SCHEMATICS**  
(SHEET 1 OF 4)

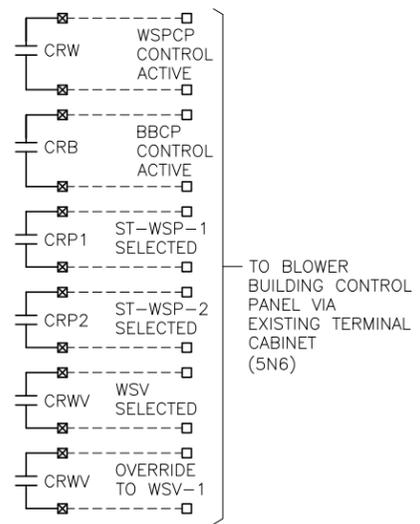
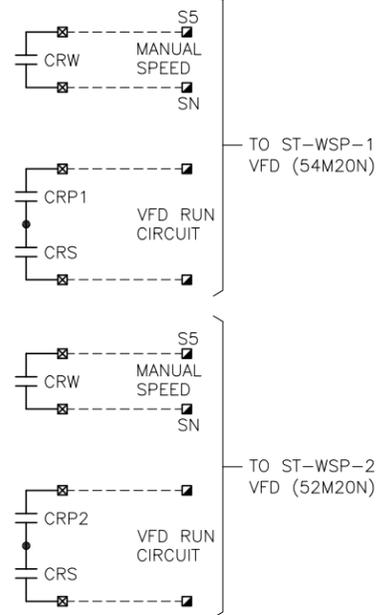
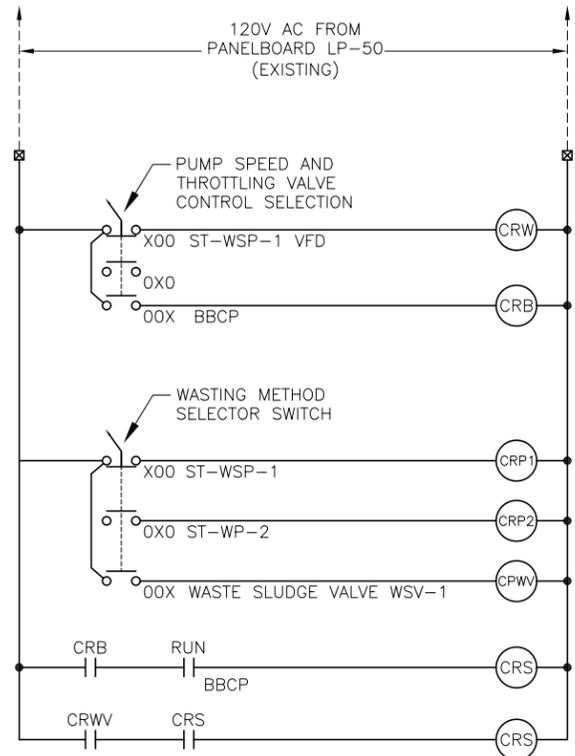
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**E-22**

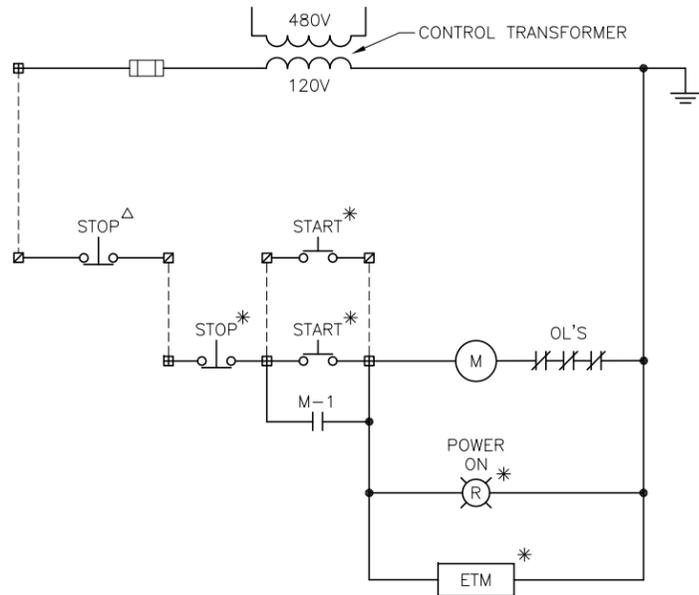
TIMOTHY THOMAS, P.E. No. 47079

FILE: 231802042E01





WASTE SLUDGE PUMP CONTROL PANEL (WSPCP)



WASTE PUMP: MCC 51

**LEGEND**

- △ EXISTING DEVICE LOCATED REMOTE FROM MCC (TO BE REUSED)
- \* DEVICE TO BE LOCATED ON MCC BUCKET DOOR
- ▲ DENOTES EXISTING DEVICE LOCATED IN WASTE SLUDGE PUMP MASTER CONTROLLER. REFER TO SHEET E-24.
- ⊠ DENOTES TERMINAL IN WASTE SLUDGE PUMP MASTER CONTROLLER
- DENOTES TERMINAL ON VFD
- DENOTES TERMINAL IN BBCP
- ⊞ DENOTES TERMINAL IN MCC
- ⊡ DENOTES TERMINAL ON FIELD DEVICE
- DENOTES FIELD WIRING

**GENERAL NOTES:**

1. ITEMS NOTED WITH AS △ SHALL BE LOCATED OUTSIDE OF THE ASSOCIATED MCC BUCKET.
2. CONTRACTOR SHALL VERIFY VFD WIRING SHOWN, I/O AND ALL OTHER PARAMETERS WITH VFD MANUFACTURER PRIOR TO COMMENCING CONSTRUCTION.
3. MOTOR CONTROL WIRING SCHEMATICS SHOWN REPRESENT THE CURRENT RECORD DRAWING INFORMATION AVAILABLE. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING FIELD WIRING PRIOR TO COMMENCING CONSTRUCTION OR INSTALLATION.



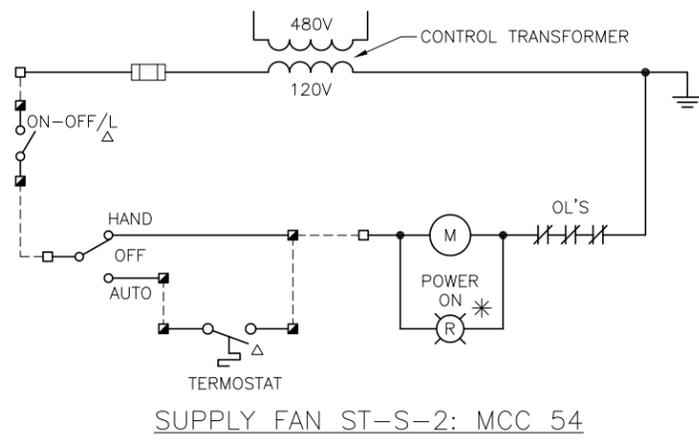
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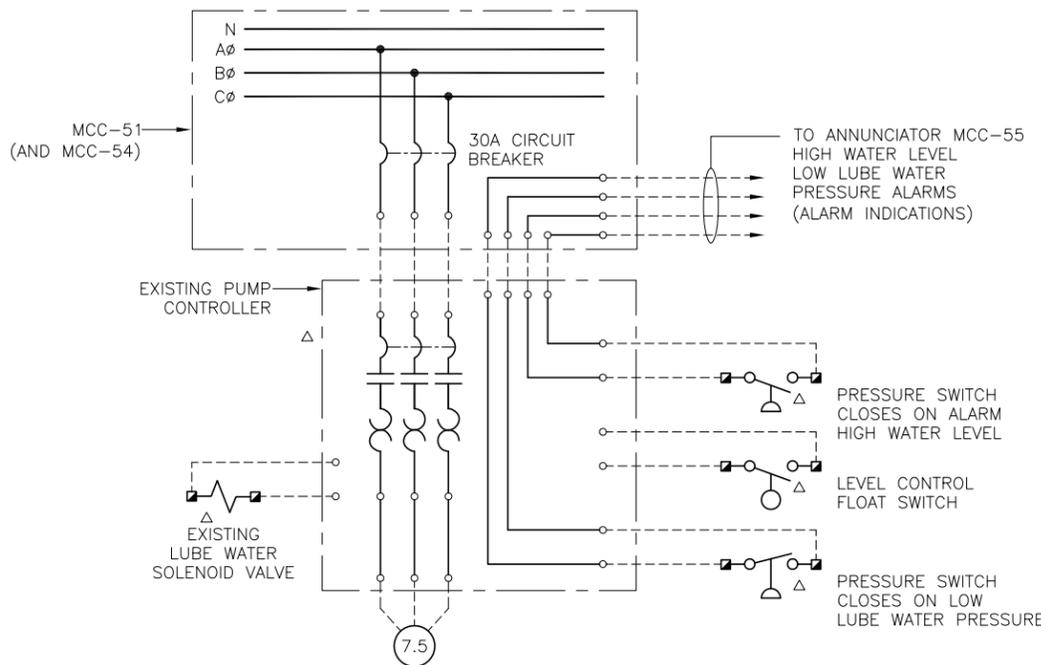
City of Tampa Wastewater Department  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

TYPICAL MOTOR  
CONTROL SCHEMATICS  
(SHEET 3 OF 4)

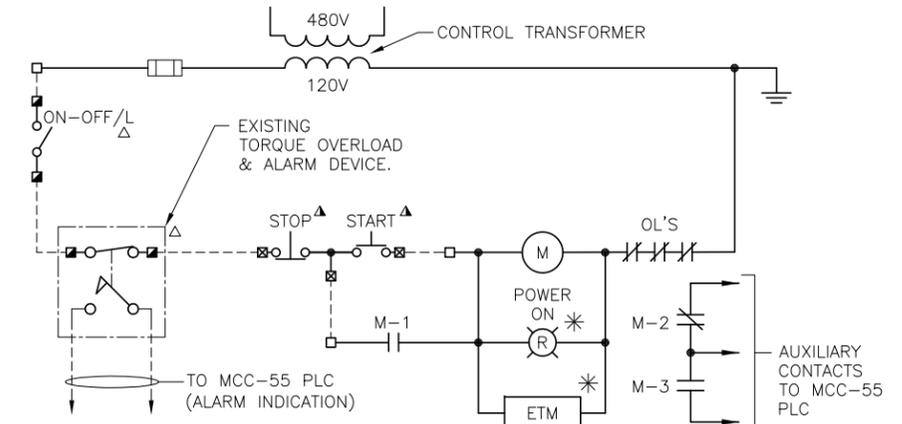
SHEET NUMBER	E-24
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E04



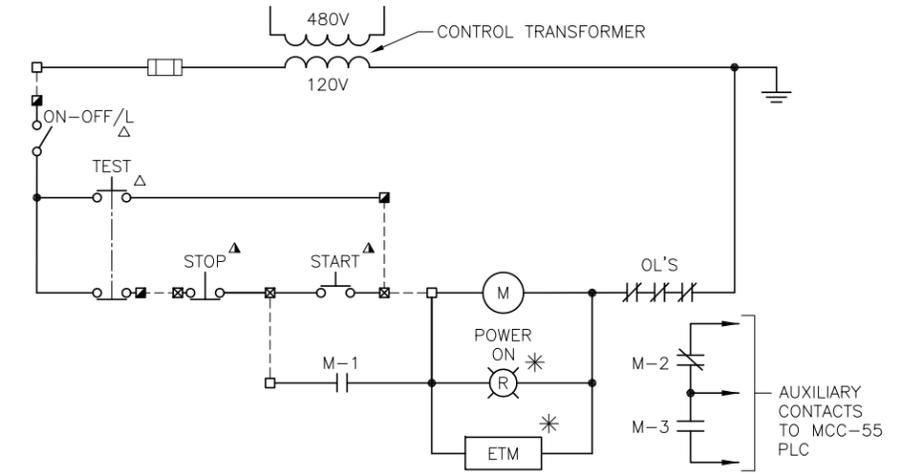
SUPPLY FAN ST-S-2: MCC 54



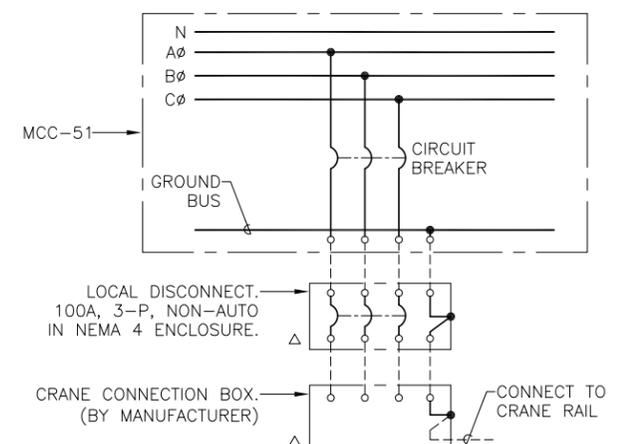
SUMP PUMP ST-SP-1: MCC 51  
(ST-SP-2: MCC 54 AND ST-SP-3: MCC 54 ARE SIMILAR)



THICKENER TANK COLLECTOR DRIVE ST-TC-1: MCC 52  
(ST-TC-2: MCC 53 IS SIMILAR)



THICKENER MIXING CHAMBER MIXER ST-TM-1: MCC 52  
(ST-TM-2: MCC 53 IS SIMILAR)



OVERHEAD CRANE ST-MH-1: MCC 51

**LEGEND**

- △ EXISTING DEVICE LOCATED REMOTE FROM MCC (TO BE REUSED)
- ▲ EXISTING DEVICE LOCATED REMOTE FROM MCC (ON MCC-55 PLC CONTROL ENCLOSURE)
- \* DEVICE TO BE LOCATED ON MCC BUCKET DOOR
- ⊠ DENOTES TERMINAL IN MCC-55 CONTROL ENCLOSURE
- DENOTES TERMINAL ON ASSOCIATED MCC BUCKET
- DENOTES TERMINAL ON FIELD DEVICE
- DENOTES FIELD WIRING



JOB No.	231802042						
DESIGNED	TDT						
DRAWN	JLH						
CHECKED	TDT						
DATE	12/2018	No.	DATE	BY	APP	REVISION	DESCRIPTION

SCALE  
  
NOT TO SCALE

City of Tampa Wastewater Department  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC REPLACEMENT

TYPICAL MOTOR CONTROL SCHEMATICS  
(SHEET 4 OF 4)

SHEET NUMBER	E-25
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E04

CONDUIT AND CABLE SCHEDULE

CONDUIT No.	SIZE	NUMBER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
IT5A1-1	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5A-1	EX SWITCHGEAR BUS 'A'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5A1-2	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5A-1	EX SWITCHGEAR BUS 'A'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5A1-3	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5A-1	EX SWITCHGEAR BUS 'A'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5A1-4	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5A-1	EX SWITCHGEAR BUS 'A'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5A1-5	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5A-1	EX SWITCHGEAR BUS 'A'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5A1-6	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5A-1	EX SWITCHGEAR BUS 'A'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5A1-7	4"	SPARE	EX TRANSFORMER T-5A-1	EX SWITCHGEAR 50 BUS 'A'	EX CONDUIT TO BE CLEANED AND AND MAY BE USED FOR TEMPORARY POWER.
IT5A1-8	4"	SPARE	EX TRANSFORMER T-5A-1	EX SWITCHGEAR 50 BUS 'A'	EX CONDUIT TO BE CLEANED AND AND MAY BE USED FOR TEMPORARY POWER.
IT5A1-9	4"	SPARE	EX TRANSFORMER T-5A-1	EX SWITCHGEAR 50 BUS 'A'	EX CONDUIT TO BE CLEANED AND AND MAY BE USED FOR TEMPORARY POWER.
IT5B-1	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5B-1	EX SWITCHGEAR BUS 'B'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5B1-2	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5B-1	EX SWITCHGEAR BUS 'B'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5B1-3	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5B-1	EX SWITCHGEAR BUS 'B'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5B1-4	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5B-1	EX SWITCHGEAR BUS 'B'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5B1-5	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5B-1	EX SWITCHGEAR BUS 'B'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5B1-6	4"	3-350 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5B-1	EX SWITCHGEAR BUS 'B'	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
IT5B1-7	4"	SPARE	EX TRANSFORMER T-5B-1	EX SWITCHGEAR 50 BUS 'B'	EX CONDUIT TO BE CLEANED AND AND MAY BE USED FOR TEMPORARY POWER.
IT5B1-8	4"	SPARE	EX TRANSFORMER T-5B-1	EX SWITCHGEAR 50 BUS 'B'	EX CONDUIT TO BE CLEANED AND AND MAY BE USED FOR TEMPORARY POWER.
IT5B1-9	4"	SPARE	EX TRANSFORMER T-5B-1	EX SWITCHGEAR 50 BUS 'B'	EX CONDUIT TO BE CLEANED AND AND MAY BE USED FOR TEMPORARY POWER.
51M1	1"	3-#10 + 4-#12 + 1-#10 GND	MCC-51	EX MOTOR ST-STP-1A LB	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M1A	1"	3-#10 + 2-#12 + 1-#10 GND	ST-STP-1A LB	EX MOTOR ON/OFF/L	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M1B	3/4"	2-#12 + 1-#12 GND	MCC-51	EX CONDUIT LB	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M1C	3/4"	6-#12 + 1-#12 GND	MCC-51	EX CONDUIT LB	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M1D	3/4"	2-#12 + 1-#12 GND	EX CONDUIT LB	EX SOLENOID	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M1E	3/4"	2-#12 + 1-#12 GND	EX CONDUIT LB	EX SOLENOID	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M1F	3/4"	2-#12 + 1-#12 GND	EX CONDUIT LB	EX LIMIT SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M1G	1"	22-#12 + 1-#12 GND	MCC-51	NEW MCC-55 PLC CABINET	CONDUCTORS AND CONDUIT TO BE NEW. CONDUCTOR COUNT INCLUDES SPARES.
51M1H	1"	2/C #18 SHIELDED (BELLDEN 8719)	MCC-51	NEW MCC-55 PLC CABINET	CONDUIT AND CONDUCTORS TO BE NEW.
51M1J	1"	3/C #18 SHIELDED (BELLDEN 8770)	MCC-51	NEW MCC-55 PLC CABINET	CONDUIT AND CONDUCTORS TO BE NEW.
51M2	4"	3-600kcmil + 1-3/O NEU + 1-3/O GND	MCC-51	EX MCC-42	CONDUCTORS TO BE NEW. EXISTING CONDUIT AND DUCTBANK TO BE REUSED AFTER CLEANING.
51M3	1"	3-#12 + 4-#14 + 1-#12 GND	MCC-51	EX REUSE PUMP DISC	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M3A	3/4"	3-#12 + 1-#12 GND	EX REUSE PUMP DISC	EX REUSE PUMP	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M3B	3/4"	4-#14 + 1-#14 GND	EX REUSE PUMP DISC	EX REUSE PUMP PB STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M6	3/4"	3-#12 + 1-#12 GND	MCC-51	EX ST-WSV-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M11	1"	3-#12 + 4-#14 + 1-#12 GND	MCC-51	EX ST-SP-1 PUMP CONTROL	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
51M11A	3/4"	3-#12 + 1-#12 GND	EX ST-SP-1 PUMP CONTR	EX MOTOR ST-SP-1	EX CONDUIT AND CONDUCTORS TO BE REUSED.
51M11C	3/4"	2-#14 + 1-#14 GND	EX ST-SP-1 PUMP CONTR	EX LUBE WATER SOL VALVE	EX CONDUIT AND CONDUCTORS TO BE REUSED.
51M11D	3/4"	2-#14 1-#14 GND	EX ST-SP-1 PUMP CONTR	EX LVL CONTR FLT SWITCH	EX CONDUIT AND CONDUCTORS TO BE REUSED.
51M11E	3/4"	2-#14 + 1-#14 GND	EX ST-SP-1 PUMP CONTR	EX HIGH LVL PRESS SWITCH	EX CONDUIT AND CONDUCTORS TO BE REUSED.

CONTINUED ON SHEET E-27

 <p>777 S. Harbour Island Blvd. Suite 350 Tampa, FL 33602 813.227.9190 Certificate of Authorization No. 8363</p>	JOB No.	231802042				<p>SCALE</p> <p>NOT TO SCALE</p>	<p>City of Tampa Wastewater Department</p> <p>HOWARD F. CURREN AWTP SLUDGE TREATMENT BUILDING SWITCHGEAR &amp; MCC REPLACEMENT</p>	<p>CONDUIT AND CABLE SCHEDULE (SHEET 1 OF 6)</p>	<p>TIMOTHY THOMAS, P.E. No. 47079</p>	SHEET NUMBER	E-26
	DESIGNED	TDT									
	DRAWN	JLH									
	CHECKED	TDT									
	DATE	12/2018	No.	DATE	BY					APP	REVISION DESCRIPTION



CONDUIT AND CABLE SCHEDULE

CONDUIT No.	SIZE	NUMBER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
52M20	1-1/2"	3-#6 + 1-#6 GND	MCC-52	EX MOTOR ST-WSP-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
52M20A	1-1/4"	13-#14 + 1-#14 GND	MCC-52	EX JB NEAR ST-WSP-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
52M20B	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-2	EX PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
52M20C	3/4"	5-#14 + 1-#14 GND	EX JB NEAR ST-WSP-2	EX PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
52M20D	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-2	EX PRESSURE SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
52M20E	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-2	EX PRESSURE SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
52M20F	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-2	EX SOLENOID VALVE	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
52M20G	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-2	EX LIMIT SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
52M20H	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-2	EX LIMIT SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
52M20J	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-2	EX SOLENOID VALVE	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
52M20K	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-2	EX SOLENOID VALVE	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
52M20L	3/4"	2/C #18 SHIELDED (BELDEN 8719)	MCC-52	NEW MCC-55 PLC CABINET	CONDUIT AND CONDUCTORS TO BE NEW.
52M20M	1"	12-#14 + 1-#14 GND	MCC 52	NEW MCC-55 PLC CABINET	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. COUNT INCLUDES SPARES.
52M20N	1"	12-#14 + 1-#14 GND	MCC 52	EX WASTE SLUDGE CP	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. COUNT INCLUDES SPARES.
53M1	1"	3-#10 + 4-#12 + 1-#10 GND	MCC-53	EX MOTOR ST-STP-2A LB	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
53M1A	1"	3-#10 + 2-#12 + 1-#10 GND	EX ST-STP-2A LB	EX MOTOR ST-STP-2A	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
53M1B	3/4"	6-#12 + 1-#12 GND	EX CONDUIT LB	EX MOTOR ON/OFF/L	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
53M1C	3/4"	6-#12 + 1-#12 GND	MCC-53	EX CONDUIT LB	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
53M1D	3/4"	2-#12 + 1-#12 GND	EX CONDUIT LB	EX SOLENOID	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
53M1E	3/4"	2-#12 + 1-#12 GND	EX CONDUIT LB	EX SOLENOID	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
53M1F	3/4"	2-#12 + 1-#12 GND	EX CONDUIT LB	EX EX LIMIT SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
53M1G	1"	22-#12 + 1-#12 GND	MCC-53	NEW MCC-55 PLC CABINET	CONDUCTORS AND CONDUIT TO BE NEW. CONDUCTOR COUNT INCLUDES SPARES.
53M1H	1"	2/C #18 SHIELDED (BELDEN 8719)	MCC-53	NEW MCC-55 PLC CABINET	CONDUIT AND CONDUCTORS TO BE NEW.
53M1J	1"	3/C #18 SHIELDED (BELDEN 8770)	MCC-53	NEW MCC-55 PLC CABINET	CONDUIT AND CONDUCTORS TO BE NEW.
53M2	4"	3-600kcmil + 1-3/O NEU + 1-3/O GND	MCC-53	EX MCC-43	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
53M3	1-1/2"	3-#3 + 1-#3 NEU + 1-#8 GND	MCC-53	EX MCC-53A	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
53M9	1"	3-#12 + 6-#14 + 1-#12 GND	MCC-53	EX LB AT ST-TM-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
53M9A	3/4"	3-#12 + 1-#12	EX LB AT ST-TM-2	EX ST-TM-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
53M9B	3/4"	6-#14 + 1-#14 GND	EX LB AT ST-TM-2	EX ST-TM-2 PB STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
53M10	1"	3-#12 + 6-#14 + 1-#12 GND	MCC-53	LB AT ST-TC-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
53M10A	3/4"	2-#14 + 1-#14 GND	EX LB AT ST-TC-2	EX ST-TC-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
53M10B	3/4"	2-#14 + 1-#14 GND	EX LB AT ST-TC-2	EX ST-TC-1 PB STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
53M10C	3/4"	6-#14 + 1-#14 GND	EX LB AT ST-TC-2	EX TORQUE SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
54M1	1"	3-#10 + 4-#12 + 1-#10 GND	MCC-54	EX MOTOR ST-STP-2C LB	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M1A	1"	3-#10 + 2-#12 + 1-#10 GND	EX ST-STP-2C LB	EX MOTOR ST-STP-2C	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M1B	3/4"	2-#12 + 1-#12 GND	EX CONDUIT LB	EX MOTOR ON/OFF/L	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M1C	3/4"	6-#12 + 1-#12 GND	MCC-54	EX CONDUIT LB	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M1D	3/4"	2-#12 + 1-#12 GND	EX CONDUIT LB	EX SOLENOID	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.

CONTINUED ON SHEET E-29



JOB No.	231802042						
DESIGNED	TDT						
DRAWN	JLH						
CHECKED	TDT						
DATE	12/2018	No.	DATE	BY	APP	REVISION	DESCRIPTION

SCALE  
  
NOT TO SCALE

City of Tampa Wastewater Department  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

CONDUIT AND CABLE  
SCHEDULE  
(SHEET 3 OF 6)

SHEET NUMBER	E-28
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01

**CONDUIT AND CABLE SCHEDULE**

CONDUIT No.	SIZE	NUMBER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
54M1E	3/4"	2-#12 + 1-#12 GND	EX CONDUIT LB	EX SOLENOID	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M1F	3/4"	2-#12 + 1-#12 GND	EX CONDUIT LB	EX LIMIT SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M1G	1"	22-#12 + 1-#12 GND	MCC-54	NEW MCC-55 PLC CABINET	CONDUCTORS AND CONDUIT TO BE NEW. CONDUCTOR COUNT INCLUDES SPARES.
54M1H	1"	2/C #18 SHIELDED (BELLDEN 8719)	MCC-54	NEW MCC-55 PLC CABINET	CONDUIT AND CONDUCTORS TO BE NEW.
54M1J	1"	3/C #18 SHIELDED (BELLDEN 8770)	MCC-54	NEW MCC-55 PLC CABINET	CONDUIT AND CONDUCTORS TO BE NEW.
54M2	2"	4-#1 + 1-#6 GND	MCC-54	EX LIGHTING PANEL LP-51	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M3	1-1/2"	3-#3 + 1-#3 NEU + 1-#8 GND	MCC-54	EX MCC-54A	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M5	3/4"	3-#12 + 1-#12 GND	MCC-54	EX ST-S-1 VFD	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M8	1"	3-#12 + 4-#14 + 1-#12 GND	MCC-54	EX ST-SP-2 PUMP CONTR	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M8A	3/4"	3-#12 + 1-#12 GND	EX ST-SP-2 PUMP CONTR	EX ST-SP-2	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M8C	3/4"	2-#14 + 1-#14 GND	EX ST-SP-2 PUMP CONTR	EX LUBE WATER SOL VALVE	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M8D	3/4"	2-#14 + 1-#14 GND	EX ST-SP-2 PUMP CONTR	EX LEVEL CONTR FLOAT SW	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M8E	3/4"	2-#14 + 1-#14 GND	EX ST-SP-2 PUMP CONTR	EX HIGH WATER PRESS SW	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M8F	3/4"	2-#14 + 1-#14 GND	EX ST-SP-2 PUMP CONTR	EX LUBE WATER PRESS SW	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M9	1"	3-#12 + 4-#14 + 1-#12 GND	MCC-54	EX ST-SP-3 PUMP CONTR	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M9A	3/4"	3-#12 + 1-#12 GND	EX ST-SP-3 PUMP CONTR	EX ST-SP-3	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M9C	3/4"	2-#14 + 1-#14 GND	EX ST-SP-3 PUMP CONTR	EX LUBE WATER SOL VALVE	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M9D	3/4"	2-#14 + 1-#14 GND	EX ST-SP-3 PUMP CONTR	EX LEVEL CONTR FLOAT SW	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M9E	3/4"	2-#14 + 1-#14 GND	EX ST-SP-3 PUMP CONTR	EX HIGH WATER PRESS SW	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M9F	3/4"	2-#14 + 1-#14 GND	EX ST-SP-3 PUMP CONTR	EX LUBE WATER PRESS SW	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M14	1"	3-#12 + 6-#14 + 1-#12 GND	MCC-54	EX JB AT ST-S-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M14A	3/4"	3-#12 + 1-#12 GND	EX JB AT ST-S-2	EX ST-S-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M14B	3/4"	2-#14 + 1-#14 GND	EX JB AT ST-S-2	EX ST-S-2 PB STATION	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M14C	3/4"	2-#14 + 1-#14 GND	EX JB AT ST-S-2	EX THERMOSTAT	EX CONDUIT AND CONDUCTORS TO BE REUSED.
54M20	1-1/2"	3-#6 + 1-#6 GND	MCC-54	EX MOTOR ST-WSP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M20A	1-1/4"	13-#14 + 1-#14 GND	MCC-54	EX JB NEAR ST-WSP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M20B	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-1	EX PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M20C	3/4"	5-#14 + 1-#14 GND	EX JB NEAR ST-WSP-1	EX PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M20D	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-1	EX PRESSURE SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M20E	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-1	EX PRESSURE SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M20F	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-1	EX SOLENOID VALVE	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M20G	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-1	EX LIMIT SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M20H	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-1	EX LIMIT SWITCH	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M20J	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-1	EX SOLENOID VALVE	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M20K	3/4"	2-#14 + 1-#14 GND	EX JB NEAR ST-WSP-1	EX SOLENOID VALVE	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
54M20L	3/4"	2/C #18 SHIELDED (BELDEN 8719)	MCC-54	NEW MCC-55 PLC CABINET	CONDUIT AND CONDUCTORS TO BE NEW.
54M20M	1"	12-#14 + 1-#14 GND	MCC 54	NEW MCC-55 PLC CABINET	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. COUNT INCLUDES SPARES.

CONTINUED ON SHEET E-30



JOB No.	231802042						
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NOT TO SCALE

**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

**CONDUIT AND CABLE SCHEDULE**  
**(SHEET 4 OF 6)**

SHEET NUMBER	E-29
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



**CONDUIT AND CABLE SCHEDULE**

CONDUIT No.	SIZE	NUMBER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
55M21	2"	31-#14	EX MCC-55	EX TB NO. 1A	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21A	2"	28-#14	EX TB NO. 1A	EX JB NEAR COL F-7	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21B	1-1/2"	25-#14	EX JB NEAR COL F-7	EX TB NO. 1B	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21C	3/4"	5-#14	EX TB NO. 1A	EX TB AT VALVE TI-1	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21D	3/4"	3-#14	EX TB AT VALVE TI-1	EX VALVE TI-1 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21E	3/4"	3-#14	EX TB AT VALVE TI-1	EX VALVE EW-1 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21F	3/4"	3-#14	EX JB NEAR COL F-7	EX VALVE T10-1 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21G	1-1/4"	11-#14	EX TB NO. 1B	EX TB AT VALVE SLP-1C-1	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21H	1"	7-#14	EX TB NO. 1B	EX TB AT VALVE SLP-1A-2	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21J	3/4"	5-#14	EX TB AT VALVE SLP-1A-2	EX VALVE SLP-1A-1 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21K	3/4"	5-#14	EX TB AT VALVE SLP-1A-2	EX VALVE SLP-1A-2 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21L	3/4"	5-#14	EX TB AT VALVE SLP-1C-1	EX VALVE SLP-1B-1 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21M	3/4"	5-#14	EX TB NO. 1B	EX VALVE SLP-1B-2 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21N	3/4"	6-#14	EX TB NO. 1B	EX VALVE SLP-1B-3 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21P	3/4"	6-#14	EX TB NO. 1B	EX VALVE SLP-1B-4 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21Q	3/4"	5-#14	EX TB AT VALVE SLP-1C-1	EX VALVE SLP-1C-1 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M21R	3/4"	5-#14	EX TB AT VALVE SLP-1C-1	EX VALVE SLP-1C-2 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22	2"	37-#14	EX MCC-55	EX TB NO. 2A	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22A	2"	28-#14	EX TB NO. 2A	EX JB NEAR COL F-13	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22B	1-1/2"	25-#14	EX JB NEAR COL F-13	EX TB NO. 2B	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22C	3/4"	5-#14	EX TB NO. 2A	EX TB AT VALVE TI-2	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22D	3/4"	3-#14	EX TB AT VALVE TI-2	EX VALVE TI-2 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22E	3/4"	3-#14	EX TB AT VALVE TI-2	EX VALVE EW-2 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22F	3/4"	3-#14	EX JB NEAR COL F-13	EX VALVE T10-2 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22G	1-1/4"	11-#14	EX TB NO. 2B	EX TB AT VALVE SLP-2C-1	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22H	1"	7-#14	EX TB NO. 2B	EX TB AT VALVE SLP-2A-2	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22J	3/4"	5-#14	EX TB AT VALVE SLP-2A-2	EX VALVE SLP-2A-1 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22K	3/4"	5-#14	EX TB AT VALVE SLP-2A-2	EX VALVE SLP-2A-2 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22L	3/4"	5-#14	EX TB AT VALVE SLP-2C-1	EX VALVE SLP-2B-1 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22M	3/4"	5-#14	EX TB NO. 2B	EX VALVE SLP-2B-2 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22N	3/4"	6-#14	EX TB NO. 2B	EX VALVE SLP-2B-3 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22P	3/4"	6-#14	EX TB NO. 2B	EX VALVE SLP-2B-4 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22Q	3/4"	5-#14	EX TB AT VALVE SLP-2C-1	EX VALVE SLP-2C-1 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22R	3/4"	5-#14	EX TB AT VALVE SLP-2C-1	EX VALVE SLP-2C-2 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22S	3/4"	5-#14	EX TB NO. 2A	EX VALVE WS-2 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
55M22T	3/4"	5-#14	EX TB NO. 2A	EX VALVE WS-1 LS	EX CONDUIT AND CONDUCTORS TO BE REUSED.
ET100	1"	CAT 5e ETHERNET CABLE	MCC-55 CONTROL ENCL.	MCC-53: 2M	CAT 5e SHIELD ETHERNET CABLE WITH SHIELDED RJ45 CONNECTORS. (REFER TO SHEET I-14).



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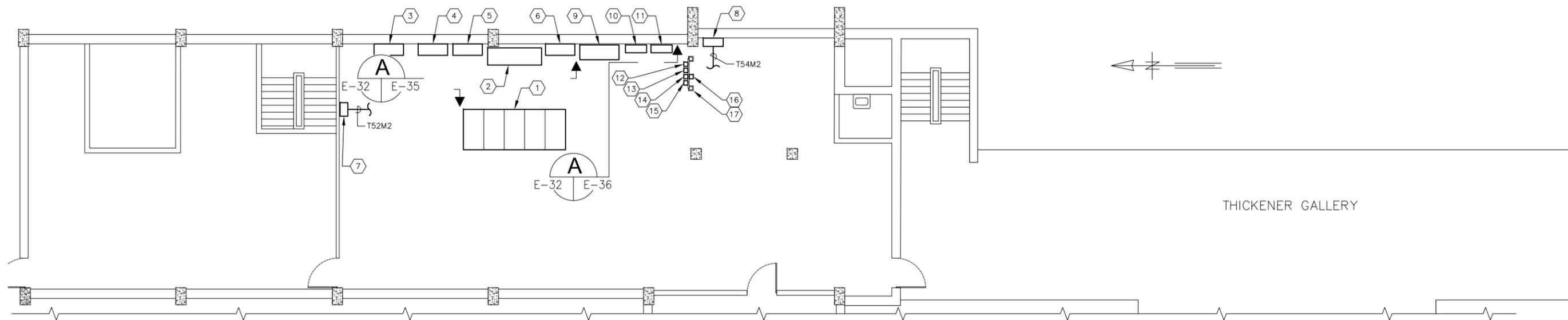
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**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

**CONDUIT AND CABLE SCHEDULE**  
**(SHEET 6 OF 6)**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER  
**E-31**  
FILE: 231802042E01



REFER TO SHEET E-33 FOR CONTINUATION

### SLUDGE TREATMENT BUILDING (030): PARTIAL FLOOR PLAN - ELEVATION 11'-0"

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

1  
E-2 | E-32

#### KEYED NOTES:

- |   |  |   |
|---|--|---|
| <p>1 FRONT OF EXISTING 277/480V, 2,000A, 3<math>\phi</math>, 4-WIRE SWITCHGEAR 50. EXISTING SWITCHGEAR TO BE REPLACED. REFER TO SHEETS E-7, E-8 AND E-9 FOR EXISTING ELEVATION, PROPOSED ELEVATION AND PROPOSED ONE-LINE DIAGRAM.</p> <p>2 EXISTING MCC-55 CONTROL ENCLOSURE. EXISTING CONTROL ENCLOSURE TO BE MODIFIED. REFER TO SHEET E-34 FOR DETAILS.</p> <p>3 EXISTING VARIABLE FREQUENCY DRIVE 'VFD-1A' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-1A'. CONTRACTOR TO FEED EXISTING VFD WITH TEMPORARY POWER DURING CONSTRUCTION. REFER ALSO TO SHEET E-34 FOR DETAILS.</p> <p>4 EXISTING VARIABLE FREQUENCY DRIVE 'VFD-1C' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-1C'. CONTRACTOR TO FEED EXISTING VFD WITH TEMPORARY POWER DURING CONSTRUCTION. REFER ALSO TO SHEET E-34 FOR DETAILS.</p> <p>5 EXISTING VARIABLE FREQUENCY DRIVE 'VFD-2A' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-2A'. CONTRACTOR TO FEED EXISTING VFD WITH TEMPORARY POWER DURING CONSTRUCTION. REFER ALSO TO SHEET E-34 FOR DETAILS.</p> <p>6 EXISTING VARIABLE FREQUENCY DRIVE 'VFD-2C' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-2C'. CONTRACTOR TO FEED EXISTING VFD WITH TEMPORARY POWER DURING CONSTRUCTION. REFER ALSO TO SHEET E-34 FOR DETAILS.</p> | <p>7 EXISTING 30KVA, 3<math>\phi</math>, 480-120/208V TRANSFORMER 'T-LP-50'. TRANSFORMER TO REMAIN. TRANSFORMER TO BE FED TEMPORARY POWER DURING CONSTRUCTION.</p> <p>8 EXISTING 277/480V, 3<math>\phi</math> LIGHTING PANELBOARD 'LP-51'. LIGHTING PANELBOARD TO REMAIN. PANELBOARD TO BE FED WITH TEMPORARY POWER DURING CONSTRUCTION.</p> <p>9 CONTRACTOR TO PROVIDE AND INSTALL NEW MCC-55 PLC CABINET. REFER TO SHEET E-34 FOR DETAILS.</p> <p>10 CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 480V, 400A, 3<math>\phi</math>, 4-WIRE PANELBOARD 'A' FOR POWER DISTRIBUTION DURING SG-50, MCC-54, MCC-53, MCC-52 AND MCC-51 REMOVAL AND INSTALLATION. REFER TO SHEET E-35 FOR DETAILS.</p> <p>11 CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 480V, 400A, 3<math>\phi</math>, 4-WIRE PANELBOARD 'B' FOR POWER DISTRIBUTION DURING SG-50, MCC-54, MCC-53, MCC-52 AND MCC-51 REMOVAL AND INSTALLATION. REFER TO SHEET E-35 FOR DETAILS.</p> <p>12 PROVIDE AND INSTALL 3-POLE, 600V STARTER FOR ST-TM-1. MINIMUM NEMA 1.</p> | <p>13 PROVIDE AND INSTALL 3-POLE, 600V STARTER FOR ST-TC-1. MINIMUM NEMA 1.</p> <p>14 PROVIDE AND INSTALL 3-POLE, 600V STARTER FOR ST-TM-2. MINIMUM NEMA 1.</p> <p>15 PROVIDE AND INSTALL 3-POLE, 600V STARTER FOR ST-TC-2. MINIMUM NEMA 1.</p> <p>16 PROVIDE AND INSTALL 3-POLE, 600V STARTER FOR ST-S-1. MINIMUM NEMA 1.</p> <p>17 TEMPORARY STARTER RACK SHALL CONSIST OF: 6" X 6" X 3/4" ALUMINUM BASE PLATE. SECURE EACH BASE PLATE TO CONCRETE W/(4) STAINLESS STEEL 1/2" DIA. X 6" BOLTS &amp; STAINLESS STEEL HEX NUTS WITH LOCKWASHER. DRILL CONCRETE &amp; EMBED BOLTS AND ANCHORS IN EPOXY. COAT BOTTOM OF BASE PLATE WITH ASPHALT PAINT. PROVIDE 4" SQUARE ALUMINUM POSTS WITH 1/2" WALL THICKNESS AND PROVIDE FULL FILLET WELD TO BASE PLATE (TYPICAL OF 2). PROVIDE AND INSTALL 1-5/8" X 1-5/8" 316 STAINLESS STEEL UNISTRUT. ALL MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL. UNISTRUT BOLTS SHALL BE INSTALLED THROUGH POSTS. REFER TO SHEETS E-42 AND E-43 FOR TEMPORARY CONDUCTORS AND CONDUITS.</p> |
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SCALE

AS SHOWN

City of Tampa Wastewater Department  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

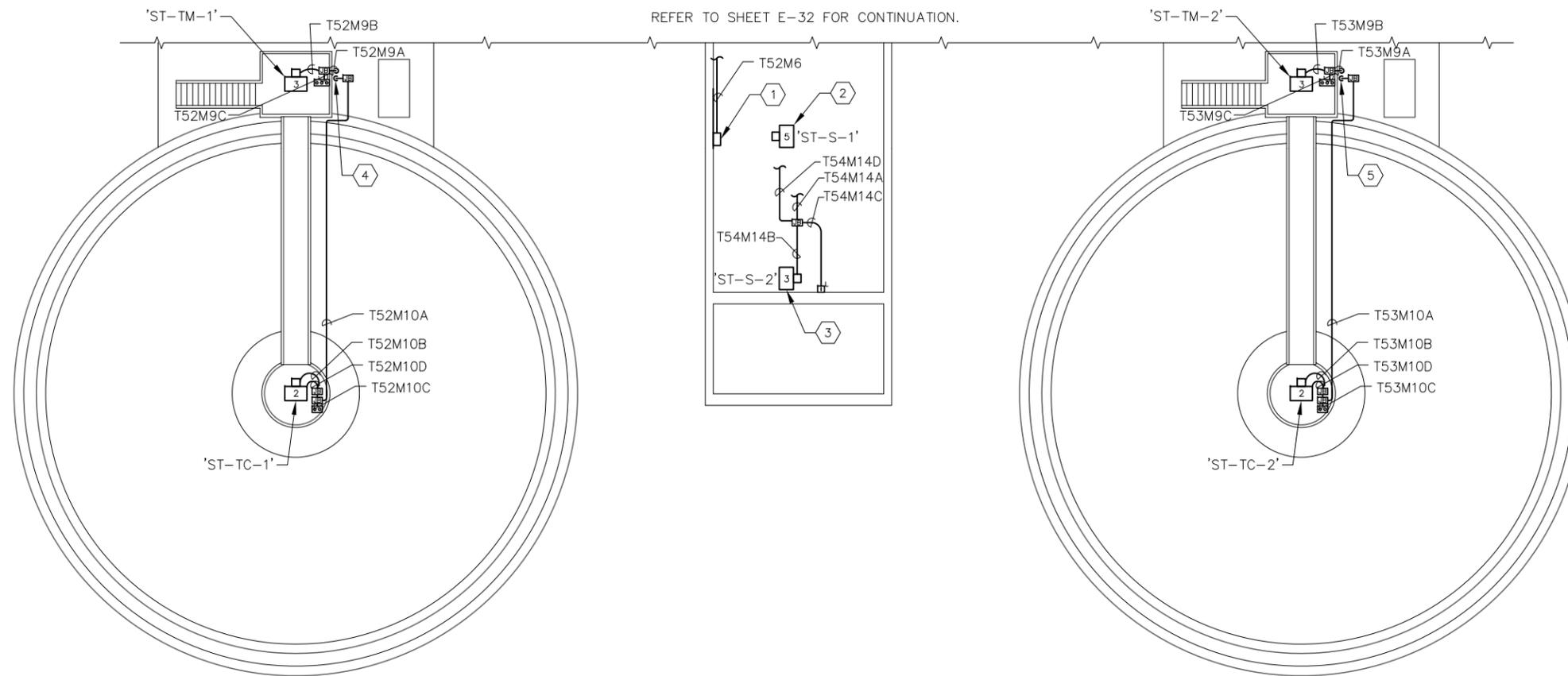
SLUDGE TREATMENT BUILDING  
TEMPORARY POWER PLANS  
(SHEET 1 OF 3)

SHEET NUMBER

E-32

TIMOTHY THOMAS, P.E. No. 47079

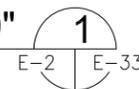
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REFER TO SHEET E-32 FOR CONTINUATION.

**SLUDGE TREATMENT BUILDING (030):  
PARTIAL FLOOR PLAN - ELEVATION 11'-0"**

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



**KEYED NOTES:**

- |  |   |  |  |
|--|---|--|--|
| <p>① EXISTING 277/480V, 2,000A, 3<math>\phi</math>, 4-WIRE SWITCHGEAR 50 ABOVE AT ELEVATION 11'-0".</p> <p>② EXISTING DUPLEX PUMP CONTROLLER FOR SAMPLE SUMP PUMP NO. 1 AND SAMPLE PUMP NO. 2. DUPLEX PUMP CONTROLLER TO REMAIN AND BE FED WITH TEMPORARY POWER.</p> <p>③ EXISTING 480V, 3<math>\phi</math>, 1 HP SAMPLE SUMP PUMP NO. 1 'ST-SSP-1' TO REMAIN AND BE FED WITH TEMPORARY POWER.</p> | <p>④ EXISTING 480V, 3<math>\phi</math>, 1 HP SAMPLE SUMP PUMP NO. 2 'ST-SSP-2' TO REMAIN AND BE FED WITH TEMPORARY POWER.</p> <p>⑤ EXISTING 480V, 3<math>\phi</math>, 20 HP SLUDGE THICKENING PUMP NO. 1A, 'ST-SLP-1A' TO REMAIN AND BE FED WITH TEMPORARY POWER.</p> <p>⑥ EXISTING 480V, 3<math>\phi</math>, 20 HP SLUDGE THICKENING PUMP NO. 1C, 'ST-SLP-1C' TO REMAIN AND BE FED WITH TEMPORARY POWER.</p> <p>⑦ EXISTING 480V, 3<math>\phi</math>, 20 HP SLUDGE THICKENING PUMP NO. 2A, 'ST-SLP-2A' TO REMAIN AND BE FED WITH TEMPORARY POWER.</p> | <p>⑧ EXISTING 480V, 3<math>\phi</math>, 20 HP SLUDGE THICKENING PUMP NO. 2C, 'ST-SLP-2C' TO REMAIN AND BE FED WITH TEMPORARY POWER.</p> <p>⑨ EXISTING POLYMER CONTROL PANEL AND DISCONNECT TO REMAIN AND BE FED WITH TEMPORARY POWER.</p> <p>⑩ EXISTING DUCTBANK TO EXISTING TRANSFORMERS 'T-5A-1 AND 'T-5B-1'. CONTRACTOR SHALL UTILIZE EXISTING 4" SPARE CONDUITS IN DUCTBANK TO PROVIDE TEMPORARY 480V, 3<math>\phi</math> POWER DURING CONSTRUCTION.</p> | <p>⑪ CONTRACTOR TO INTERCEPT EXISTING 4" SPARE CONDUITS AT THE MOST CONVENIENT LOCATION, PROVIDE AN APPROPRIATELY SIZED JUNCTION BOX AND INSTALL TEMPORARY CONDUIT AND CONDUCTORS UP TO TEMPORARY POWER EQUIPMENT ON ELEVATION 11'-0".</p> <p>⑫ CONTRACTOR SHALL CORE-DRILL CONCRETE SLAB TO ACCOMMODATE TEMPORARY CONDUIT AND CONDUCTORS.</p> |
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SCALE

AS SHOWN

**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

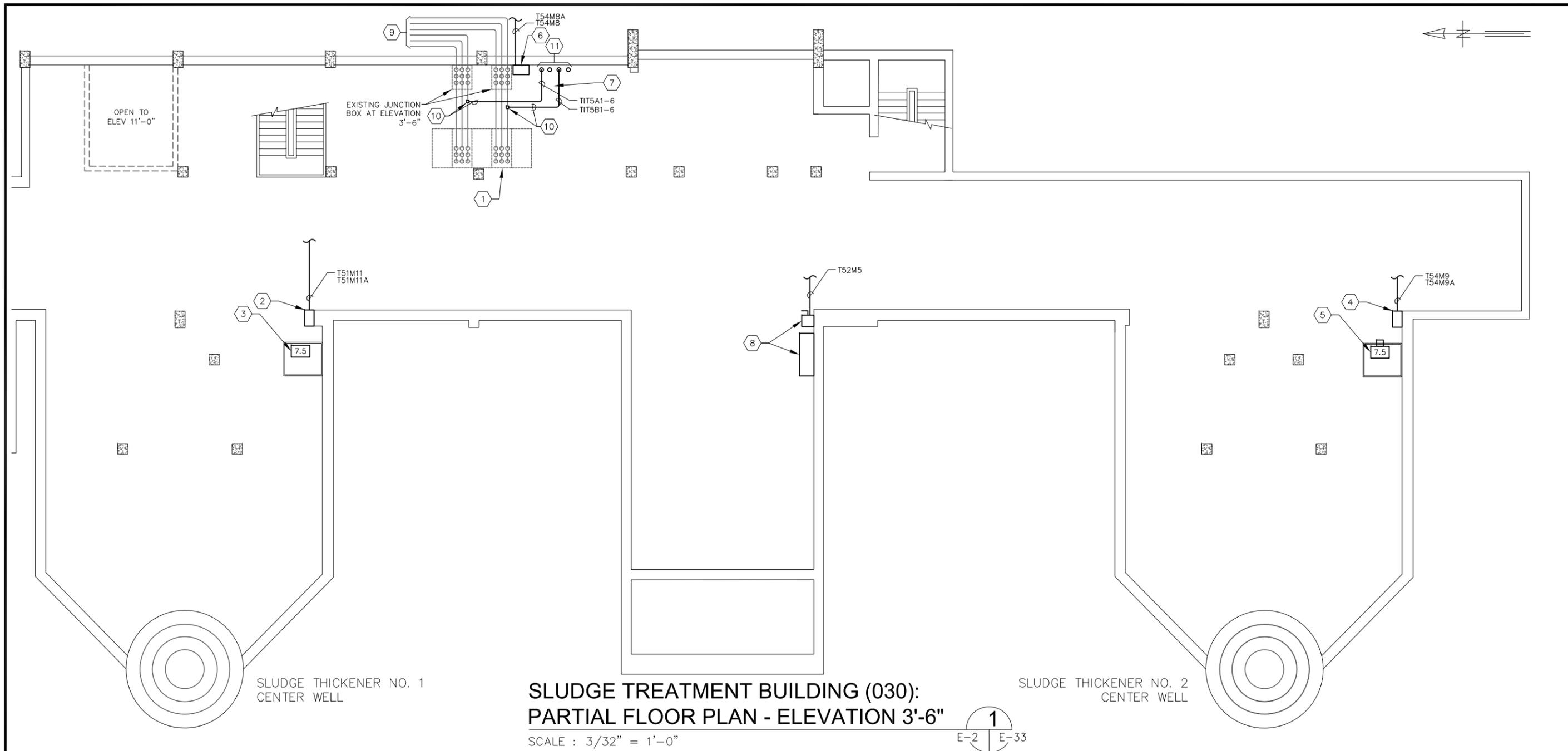
**SLUDGE TREATMENT BUILDING  
TEMPORARY POWER PLANS  
(SHEET 2 OF 3)**

SHEET NUMBER

**E-33**

TIMOTHY THOMAS, P.E. No. 47079

FILE: 231802042E01



**SLUDGE TREATMENT BUILDING (030):  
PARTIAL FLOOR PLAN - ELEVATION 3'-6"**

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

1  
E-2 | E-33

**KEYED NOTES:**

<p>① EXISTING 277/480V, 2,000A, 3<math>\phi</math>, 4-WIRE SWITCHGEAR 50 ABOVE AT ELEVATION 11'-0".</p> <p>② EXISTING SUMP PUMP NO. 1 'ST-SP-1' CONTROLLER.</p> <p>③ EXISTING 480V, 3<math>\phi</math>, 7.5 HP SUMP PUMP NO. 1 'ST-SP-1'.</p> <p>④ EXISTING SUMP PUMP NO. 3 'ST-SP-3' CONTROLLER.</p> <p>⑤ EXISTING 480V, 3<math>\phi</math>, 7.5 HP SUMP PUMP NO. 3 'ST-SP-3'.</p>	<p>⑥ EXISTING SUMP PUMP NO. 2 'ST-SP-2' CONTROLLER.</p> <p>⑦ EXISTING 480V, 3<math>\phi</math>, 7.5 HP SUMP PUMP NO. 2 'ST-SP-2'.</p> <p>⑧ EXISTING POLYMER CONTROL PANEL AND DISCONNECT TO REMAIN AND BE FED WITH TEMPORARY POWER.</p> <p>⑨ EXISTING DUCTBANK TO EXISTING TRANSFORMERS 'T-5A-1 AND 'T-5B-1'. CONTRACTOR SHALL UTILIZE EXISTING 4" SPARE CONDUITS IN DUCTBANK TO PROVIDE TEMPORARY 480V, 3<math>\phi</math> POWER DURING CONSTRUCTION.</p>	<p>⑩ CONTRACTOR TO INTERCEPT EXISTING 4" SPARE CONDUITS AT THE MOST CONVENIENT LOCATION, PROVIDE AN APPROPRIATELY SIZED JUNCTION BOX AND INSTALL TEMPORARY CONDUIT AND CONDUCTORS UP TO TEMPORARY POWER EQUIPMENT ON ELEVATION 11'-0".</p> <p>⑪ CONTRACTOR SHALL CORE-DRILL CONCRETE SLAB TO ACCOMMODATE TEMPORARY CONDUIT AND CONDUCTORS.</p>
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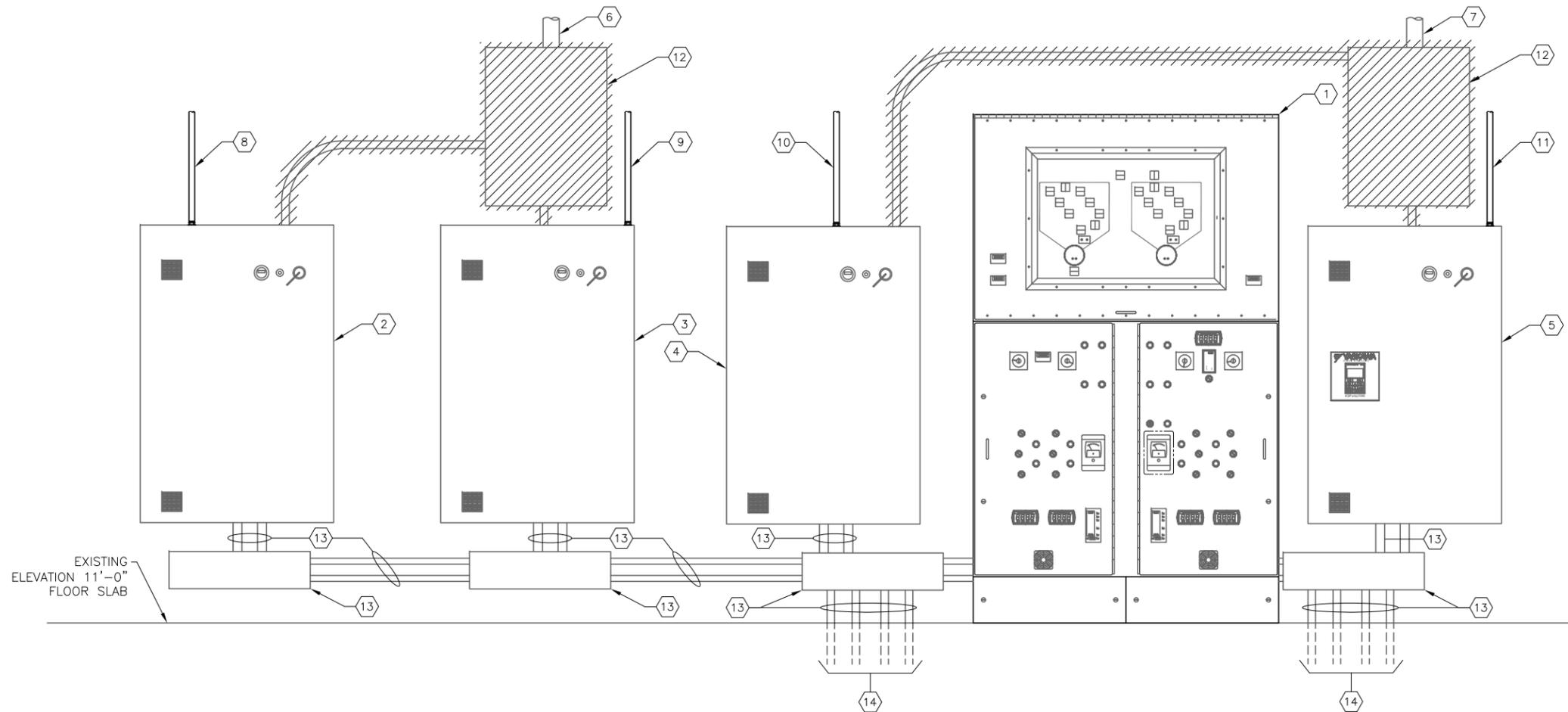
JOB No.	231802042						
DESIGNED	TDT						
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CHECKED	TDT						
DATE	12/2018	No.	DATE	BY	APP	REVISION	DESCRIPTION

SCALE  
AS SHOWN

**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

**SLUDGE TREATMENT BUILDING  
TEMPORARY POWER PLANS  
(SHEET 3 OF 3)**

SHEET NUMBER	E-34
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



**EXISTING MCC-55 FRONT ELEVATION**

SCALE : N.T.S.

**A**  
E-32 | E-35

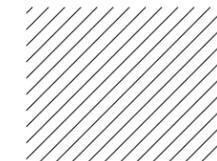
**GENERAL NOTES:**

1. THE EXISTING VFD'S SHOWN WILL BE REMOVED IN THEIR ENTIRETY AFTER SG-50, MCC-51, MCC-52, MCC-53 AND MCC-54 ARE INSTALLED, TESTED AND ACCEPTED BY THE CITY OF TAMPA. UNTIL SUCH TIME, THE EXISTING VFD'S SHALL BE SUPPLIED POWER FROM THE TEMPORARY EQUIPMENT TO BE PROVIDED.

**KEYED NOTES:**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>① EXISTING MCC-55 CONTROL ENCLOSURE. EXISTING CONTROL ENCLOSURE TO BE MODIFIED. REFER TO SHEETS I-4 AND I-5 FOR DETAILS.</li> <li>② EXISTING VARIABLE FREQUENCY DRIVE 'VFD-1A' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-1A'. VFD TO BE USED TEMPORARILY DURING CONSTRUCTION.</li> <li>③ EXISTING VARIABLE FREQUENCY DRIVE 'VFD-1C' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-1C'. VFD TO BE USED TEMPORARILY DURING CONSTRUCTION.</li> <li>④ EXISTING VARIABLE FREQUENCY DRIVE 'VFD-2A' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-2A'. VFD TO BE USED TEMPORARILY DURING CONSTRUCTION.</li> <li>⑤ EXISTING VARIABLE FREQUENCY DRIVE 'VFD-2C' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-2C'. VFD TO BE USED TEMPORARILY DURING CONSTRUCTION.</li> <li>⑥ EXISTING CONDUIT AND CONDUCTORS TO MCC-52 FOR 'ST-SLP-1A' AND 'ST-SLP-1C'. CONDUIT AND CONDUCTORS TO BE REMOVED.</li> <li>⑦ EXISTING CONDUIT AND CONDUCTORS TO MCC-54 FOR 'ST-SLP-2A' AND 'ST-SLP-2C'. CONDUIT AND CONDUCTORS TO BE REMOVED.</li> </ul> | <ul style="list-style-type: none"> <li>⑧ PROVIDE AND INSTALL 3-#10 +1-#10 GND IN 1" C. FROM 'VFD-1A' TO TEMPORARY PANELBOARD 'A'. REFER TO SHEET E-32 FOR TEMPORARY PANELBOARD LOCATION.</li> <li>⑨ PROVIDE AND INSTALL 3-#10 +1-#10 GND IN 1" C. FROM 'VFD-1C' TO TEMPORARY PANELBOARD 'A'. REFER TO SHEET E-32 FOR TEMPORARY PANELBOARD LOCATION.</li> <li>⑩ PROVIDE AND INSTALL 3-#10 +1-#10 GND IN 1" C. FROM 'VFD-2A' TO TEMPORARY PANELBOARD 'B'. REFER TO SHEET E-32 FOR TEMPORARY PANELBOARD LOCATION.</li> <li>⑪ PROVIDE AND INSTALL 3-#10 +1-#10 GND IN 1" C. FROM 'VFD-2C' TO TEMPORARY PANELBOARD 'B'. REFER TO SHEET E-32 FOR TEMPORARY PANELBOARD LOCATION.</li> <li>⑫ EXISTING JUNCTION BOXES AND CONDUIT/CONDUCTORS CURRENTLY UTILIZED FOR VFD POWER TO BE REMOVED.</li> <li>⑬ EXISTING JUNCTION BOXES AND CONDUIT/CONDUCTORS CURRENTLY UTILIZED FOR VFD CONTROLS TO REMAIN DURING CONSTRUCTION FOR TEMPORARY CONTROL PURPOSES.</li> <li>⑭ EXISTING CONDUIT/CONDUCTORS DOWN TO ELEVATION 3'-6".</li> </ul> |
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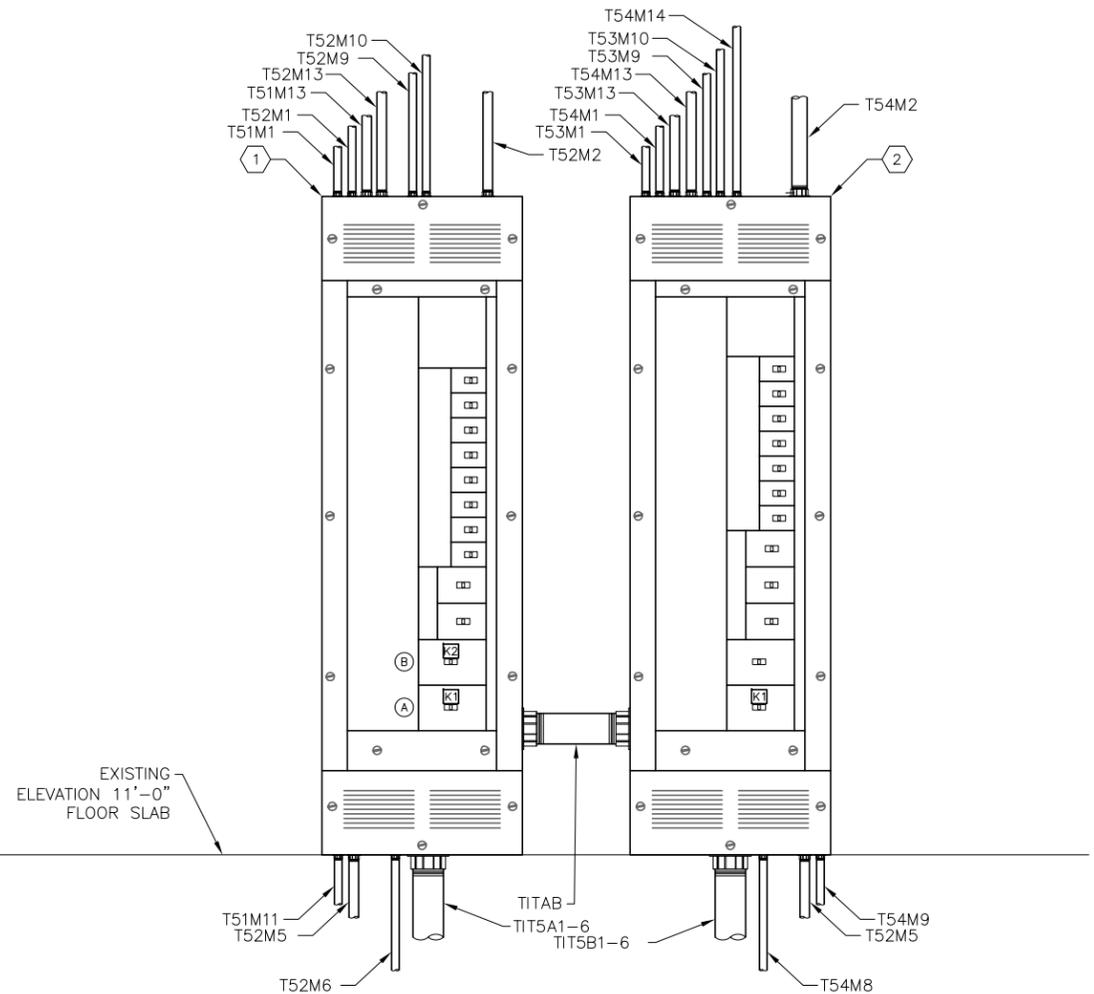
**LEGEND :**



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

JOB No.	231802042						
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SCALE	AS SHOWN
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**TEMPORARY PANELBOARD 'A' AND  
TEMPORARY PANELBOARD 'B'  
FRONT ELEVATION**

SCALE : N.T.S.

A  
E-32 | E-36

**KEYED NOTES:**

- ① CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 480V, 400A, 3 $\phi$ , 4-WIRE PANELBOARD 'A' (SQUARE-D TYPE HCU-SU OR EQUAL DUE TO SPACE LIMITATIONS) FOR POWER DISTRIBUTION DURING SG-50, MCC-54, MCC-53, MCC-52 AND MCC-51 REMOVAL AND INSTALLATION.
- ② CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 480V, 400A, 3 $\phi$ , 4-WIRE PANELBOARD 'B' (SQUARE-D TYPE HCU-SU OR EQUAL DUE TO SPACE LIMITATIONS) FOR POWER DISTRIBUTION DURING SG-50, MCC-54, MCC-53, MCC-52 AND MCC-51 REMOVAL AND INSTALLATION.



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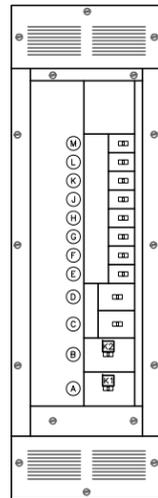
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**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

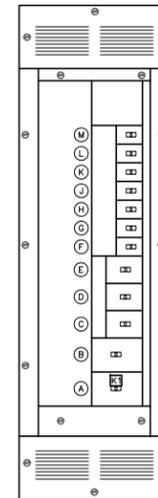
**TEMPORARY PANELBOARD 'A'  
AND TEMPORARY  
PANELBOARD 'B' DETAILS**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER  
**E-36**  
FILE: 231802042E01



TEMPORARY PANELBOARD 'A'



TEMPORARY PANELBOARD 'B'

TEMPORARY PANELBOARD 'A' CIRCUIT BREAKER SCHEDULE						
BREAKER	POLES	AMPERAGE	VOLTAGE	AIC RATING	SERVICE	NOTES
A	3P	400A	600V	65K	TEMPORARY PANELBOARD 'A' MAIN CIRCUIT BREAKER	PROVIDE KIRK-KEY INTERLOCK WITH TEMPORARY PANELBOARD 'A' TIE CIRCUIT BREAKER. MAIN CIRCUIT BREAKER TO BE FED FROM TRANSFORMER 'T-5A-1'.
B	3P	400A	600V	65K	TEMPORARY PANELBOARD 'A' TIE CIRCUIT BREAKER	PROVIDE KIRK-KEY INTERLOCK WITH TEMPORARY PANELBOARD 'B' MAIN CIRCUIT BREAKER.
C	3P	100A	600V	65K	MCC-51A	
D	3P	100A	600V	65K	MCC-52A	
E	3P	50A	600V	65K	TRANSFORMER 'T-LP-50'	
F	3P	60A	600V	65K	POLYMER CONTROL SYSTEM	
G	3P	60A	600V	65K	THICKENER SLUDGE PUMP 'ST-SLP-1A'	FEEDER TO EXISTING VFD
H	3P	60A	600V	65K	THICKENER SLUDGE PUMP 'ST-SLP-1C'	FEEDER TO EXISTING VFD
J	3P	20A	600V	65K	SUMP PUMP 1 'ST-SP-1'	FOR ST-SP-1 TEMPORARY MOTOR STARTER
K	3P	20A	600V	65K	SUPPLY FAN 1 'ST-S-1'	FEEDER TO EXISTING SUPPLY FAN ST-S-1 VFD
L	3P	15A	600V	65K	MIXER 1 'ST-TM-1'	FOR ST-TM-1 TEMPORARY MOTOR STARTER
M	3P	15A	600V	65K	COLLECTOR DRIVE 1 'ST-TC-1'	FOR ST-TC-1 TEMPORARY MOTOR STARTER

TEMPORARY PANELBOARD 'B' CIRCUIT BREAKER SCHEDULE						
BREAKER	POLES	AMPERAGE	VOLTAGE	AIC RATING	SERVICE	NOTES
A	3P	400A	600V	65K	TEMPORARY PANELBOARD 'B' MAIN CIRCUIT BREAKER	PROVIDE KIRK-KEY INTERLOCK WITH TEMPORARY PANELBOARD 'A' TIE CIRCUIT BREAKER. MAIN CIRCUIT BREAKER TO BE FED FROM TRANSFORMER 'T-5B-1'
B	3P	400A	600V	65K	TEMPORARY PANELBOARD 'B' TIE CIRCUIT BREAKER	NOT A DISTRIBUTION BREAKER, FEEDER BREAKER.
C	3P	100A	600V	65K	MCC-53A	
D	3P	100A	600V	65K	MCC-54A	
E	3P	100A	600V	65K	PANELBOARD 'LP-51'	
F	3P	60A	600V	65K	THICKENER SLUDGE PUMP 'ST-SLP-2A'	FEEDER TO EXISTING VFD
G	3P	60A	600V	65K	THICKENER SLUDGE PUMP 'ST-SLP-2C'	FEEDER TO EXISTING VFD
H	3P	15A	600V	65K	SUPPLY FAN 2 'ST-S-2'	FOR ST-S-2 TEMPORARY MOTOR STARTER
J	3P	20A	600V	65K	SUMP PUMP 2 'ST-SP-2'	FOR ST-SP-2 TEMPORARY MOTOR STARTER
K	3P	20A	600V	65K	SUMP PUMP 3 'ST-SP-3'	FOR ST-SP-3 TEMPORARY MOTOR STARTER
L	3P	15A	600V	65K	MIXER 2 'ST-TM-2'	FOR ST-TM-2 TEMPORARY MOTOR STARTER
M	3P	15A	600V	65K	COLLECTOR DRIVE 2 'ST-TC-2'	FOR ST-TC-2 TEMPORARY MOTOR STARTER



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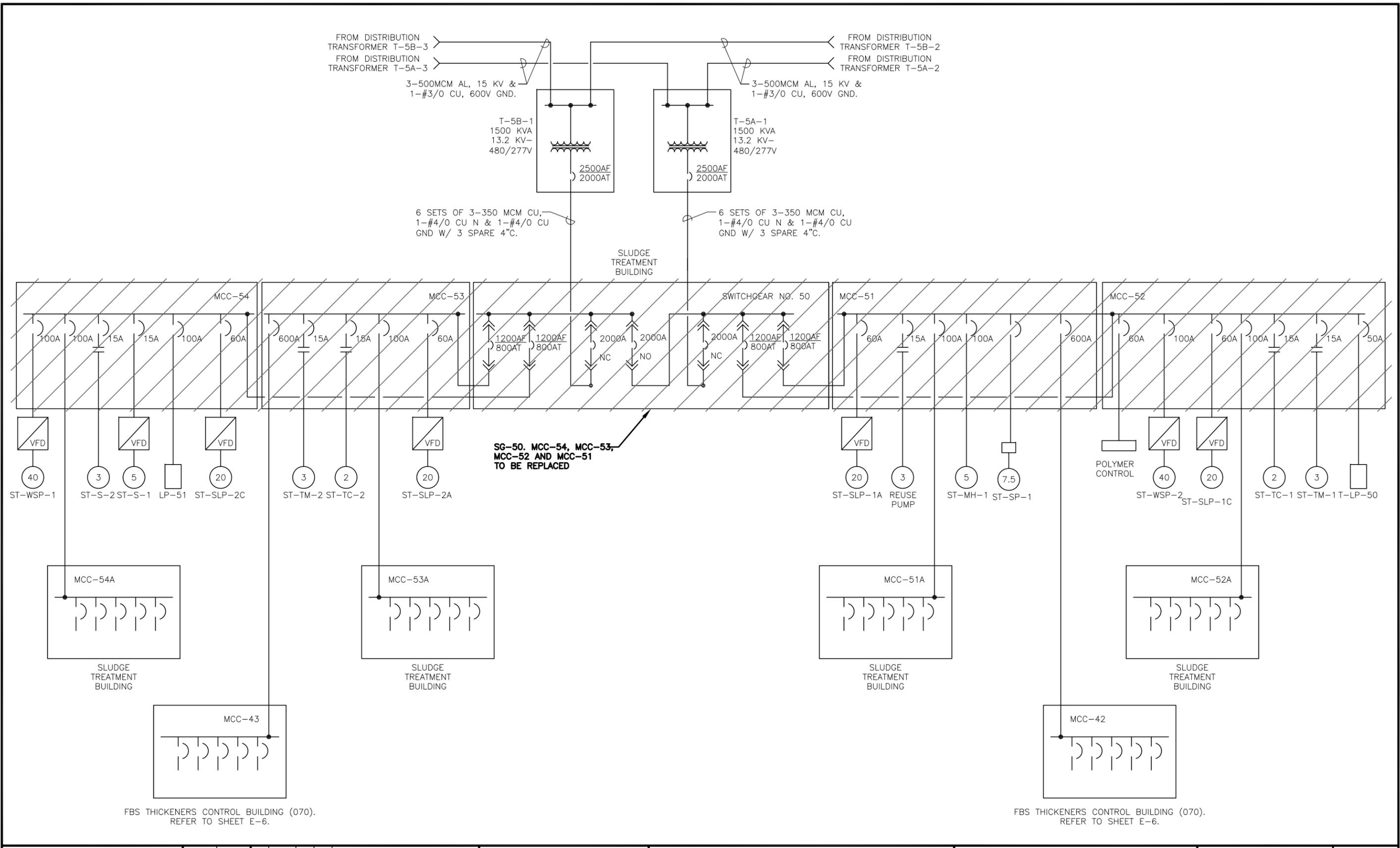
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SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
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TEMPORARY PANELBOARD 'A'  
AND TEMPORARY  
PANELBOARD 'B' SCHEDULES

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER  
**E-37**  
FILE: 231802042E01



**TRICON**  
CONSULTING ENGINEERS

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Suite 350  
Tampa, FL 33602  
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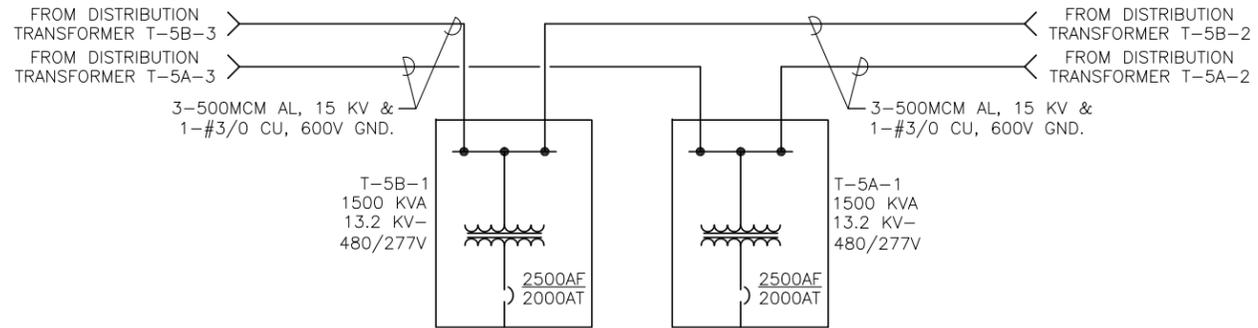
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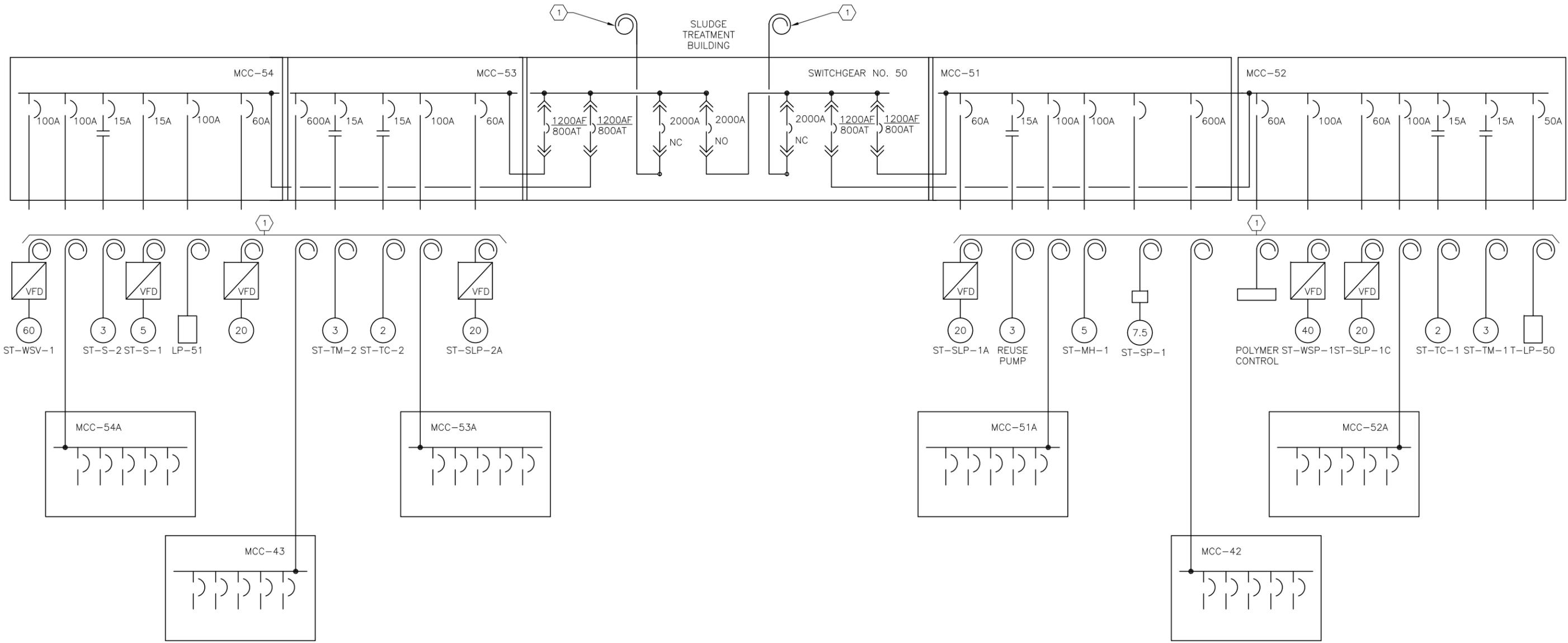
EXISTING SLUDGE TREATMENT  
BUILDING ONE-LINE DIAGRAM

SHEET NUMBER	E-38
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



**KEYED NOTES:**

① EXISTING CONDUCTORS TO BE TEMPORARILY DISCONNECTED.



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HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

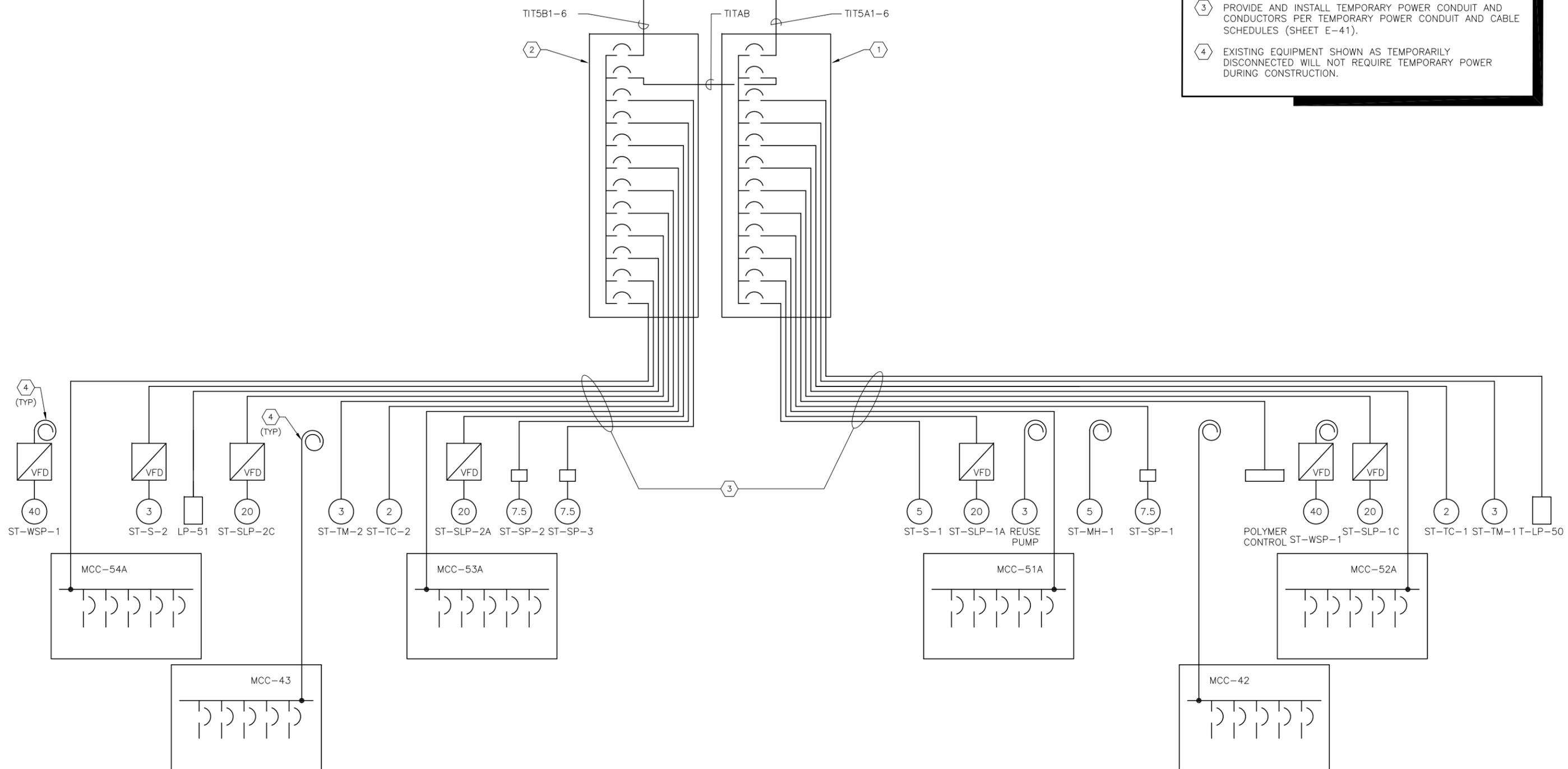
SLUDGE TREATMENT BUILDING  
TEMPORARY ONE-LINE DIAGRAM  
(SHEET 1 OF 2)

SHEET NUMBER	E-39
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01

FROM DISTRIBUTION TRANSFORMER T-5B-3  
 FROM DISTRIBUTION TRANSFORMER T-5A-3  
 3-500MCM AL, 15 KV &  
 1-#3/0 CU, 600V GND.  
 T-5B-1  
 1500 KVA  
 13.2 KV-  
 480/277V  
 2500AF  
 2000AT

FROM DISTRIBUTION TRANSFORMER T-5B-2  
 FROM DISTRIBUTION TRANSFORMER T-5A-2  
 3-500MCM AL, 15 KV &  
 1-#3/0 CU, 600V GND.  
 T-5A-1  
 1500 KVA  
 13.2 KV-  
 480/277V  
 2500AF  
 2000AT

- KEYED NOTES:**
- 1 PROVIDE AND INSTALL TEMPORARY PANELBOARD 'A'.
  - 2 PROVIDE AND INSTALL TEMPORARY PANELBOARD 'B'.
  - 3 PROVIDE AND INSTALL TEMPORARY POWER CONDUIT AND CONDUCTORS PER TEMPORARY POWER CONDUIT AND CABLE SCHEDULES (SHEET E-41).
  - 4 EXISTING EQUIPMENT SHOWN AS TEMPORARILY DISCONNECTED WILL NOT REQUIRE TEMPORARY POWER DURING CONSTRUCTION.



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 SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
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SLUDGE TREATMENT BUILDING  
 TEMPORARY ONE-LINE DIAGRAM  
 (SHEET 2 OF 2)

SHEET NUMBER	E-40
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01

TEMPORARY PANELBOARD 'A' LOAD CALCULATION			
EQUIPMENT	H.P.	DEMAND KVA	DEMAND AMPERES
MCC-51A		66.5	80.0
MCC-52A		66.5	80.0
THICKENED SLUDGE PUMP (ST-SLP-1A)	20	22.4	27.0
THICKENED SLUDGE PUMP (ST-SLP-1C)	20	22.4	27.0
TRANSFORMER 'T-LP-50'		29.9	36.0
POLYMER CONTROL SYSTEM		31.6	38.0
COLLECTOR DRIVE 'ST-TC-1'	2	2.8	3.4
MIXER 'ST-TM-1'	3	4.0	4.8
SUMP PUMP 'ST-SP-1'	7.5	9.2	11.0
SUPPLY FAN 'ST-S-1'	5	6.3	7.6
TOTAL TEMPORARY PANELBOARD 'A'	57.5	261.6	314.8

**TEMPORARY CONDUCTOR CALCULATIONS**

TEMPORARY PANELBOARD 'A'  
LOAD OF PANELBOARD 'A' = 314.8 AMPERES  
TEMPORARY FEEDER FOR TEMPORARY PANELBOARD 'A' SHALL CONSIST OF -  
3-600 kcmil + 1-#4/0 N + 1-#4/0 GND = 420 AMPERES.

TEMPORARY PANELBOARD 'B'  
LOAD OF PANELBOARD 'B' = 324.0 AMPERES  
TEMPORARY FEEDER FOR TEMPORARY PANELBOARD 'B' SHALL CONSIST OF -  
3-600 kcmil + 1-#4/0 N + 1-#4/0 GND = 420 AMPERES.

TEMPORARY PANELBOARD 'B' LOAD CALCULATION			
EQUIPMENT	H.P.	DEMAND KVA	DEMAND AMPERES
MCC-531A		66.5	80.0
MCC-54A		66.5	80.0
THICKENED SLUDGE PUMP (ST-SLP-2A)	20	22.4	27.0
THICKENED SLUDGE PUMP (ST-SLP-2C)	20	22.4	27.0
PANELBOARD 'LP-51'		62.3	75.0
COLLECTOR DRIVE 'ST-TC-2'	2	2.8	3.4
MIXER 'ST-TM-2'	3	4.0	4.8
SUMP PUMP 'ST-SP-2'	7.5	9.2	11.0
SUMP PUMP 'ST-SP-3'	7.5	9.2	11.0
SUPPLY FAN 'ST-S-2'	3	4.0	4.8
TOTAL TEMPORARY PANELBOARD 'B'	63	269.3	324.0



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SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
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TEMPORARY  
POWER CALCULATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER  
E-41  
FILE: 231802042E01

CONDUIT AND CABLE SCHEDULE

CONDUIT No.	SIZE	NUMBER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
TIT5A1-6	4"	3-600 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5A-1	TEMP PANELBOARD 'A'	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
TIT5B1-6	4"	3-600 kcmil + 1-#4/O N + 1-#4/O GND	EX TRANSFORMER T-5B-1	TEMP PANELBOARD 'B'	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
TITAB	4"	3-600 kcmil + 1-#4/O N + 1-#4/O GND	TEMP PANELBOARD 'A'	TEMP PANELBOARD 'B'	TIE CIRCUIT BREAKERS FOR PANELBOARD 'A' AND PANELBOARD 'B'. TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T51M1	1"	3-#10 + 2-#12 + 1-#10 GND	TEMP PANELBOARD 'A'	EX MOTOR ST-STP-1A VFD	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T52M1	1"	3-#10 + 2-#12 + 1-#10 GND	TEMP PANELBOARD 'A'	EX MOTOR ST-STP-1C VFD	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T53M1	1"	3-#10 + 2-#12 + 1-#10 GND	TEMP PANELBOARD 'B'	EX MOTOR ST-STP-2A VFD	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T54M1	1"	3-#10 + 2-#12 + 1-#10 GND	TEMP PANELBOARD 'B'	EX MOTOR ST-STP-2C VFD	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T51M13	1-1/4"	3-#3 + 1-#3 NEU + 1-#6 GND	TEMP PANELBOARD 'A'	EX MCC-51A	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T52M13	1-1/4"	3-#3 + 1-#3 NEU + 1-#6 GND	TEMP PANELBOARD 'A'	EX MCC-52A	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T53M13	1-1/4"	3-#3 + 1-#3 NEU + 1-#6 GND	TEMP PANELBOARD 'B'	EX MCC-53A	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T54M13	1-1/4"	3-#3 + 1-#3 NEU + 1-#6 GND	TEMP PANELBOARD 'B'	EX MCC-54A	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T52M2	1-1/4"	3-#6 + 1-#8 GND	TEMP PANELBOARD 'A'	EX TRANSFORMER 'T-LP-50'	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T52M5	1"	3-#6 + 1-#8 GND	TEMP PANELBOARD 'A'	EX POLYMER CP DISCONNECT	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T54M2	2"	4-#1 + 1-#6 GND	TEMP PANELBOARD 'B'	EX LIGHTING PANEL LP-51	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T52M6	3/4"	3-#12 + 1-#12 GND	TEMP PANELBOARD 'A'	EX ST-S-1 VFD	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. EXISTING CONDUIT MAY BE REUSED WHERE POSSIBLE.
T54M14	1"	3-#12 + 1-#12 GND	TEMP PANELBOARD 'B'	TEMP ST-S-2 STARTER	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. TEMPORARY 480V FEEDER.
T54M14A	1"	3-#12 + 6-#14 + 1-#12 GND	TEMP ST-S-2 STARTER	EX JB AT ST-S-2	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T54M14B	3/4"	3-#12 + 1-#12 GND	EX JB AT ST-S-2	EX ST-S-2	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T54M14C	3/4"	2-#14 + 1-#14 GND	EX JB AT ST-S-2	EX ST-S-2 PB STATION	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T54M14D	3/4"	2-#14 + 1-#14 GND	EX JB AT ST-S-2	EX THERMOSTAT	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T52M9	3/4"	3-#12 + 1-#12 GND	TEMP PANELBOARD 'A'	TEMP ST-TM-1 STARTER	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. TEMPORARY 480V FEEDER.
T52M9A	1"	3-#12 + 6-#14 + 1-#12 GND	TEMP ST-TM-1 STARTER	EX LB AT ST-TM-1	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T52M9B	3/4"	3-#12 + 1-#12	EX LB AT ST-TM-1	EX ST-TM-1	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T52M9C	3/4"	6-#14 + 1-#14 GND	EX LB AT ST-TM-1	EX ST-TM-1 PB STATION	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.

CONTINUED ON SHEET E-43



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TEMPORARY CONDUIT  
AND CABLE SCHEDULE  
(SHEET 1 OF 2)

SHEET NUMBER	E-42
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01

**CONDUIT AND CABLE SCHEDULE**

CONDUIT No.	SIZE	NUMBER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
T52M10	3/4"	3-#12 + 6-#14 + 1-#12 GND	TEMP PANELBOARD 'A'	TEMP ST-TC-1 STARTER	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. TEMPORARY 480V FEEDER.
T52M10A	1"	3-#12 + 6-#14 + 1-#12 GND	TEMP ST-TM-1 STARTER	LB AT ST-TC-1	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T52M10B	3/4"	2-#14 + 1-#14 GND	EX LB AT ST-TC-1	EX ST-TC-1	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T52M10C	3/4"	2-#14 + 1-#14 GND	EX LB AT ST-TC-1	EX ST-TC-1 PB STATION	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T52M10D	3/4"	6-#14 + 1-#14 GND	EX LB AT ST-TC-1	EX TORQUE SWITCH	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T53M9	3/4"	3-#12 + 1-#12 GND	TEMP PANELBOARD 'B'	TEMP ST-TM-2 STARTER	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. TEMPORARY 480V FEEDER.
T53M9A	1"	3-#12 + 6-#14 + 1-#12 GND	TEMP ST-TM-2 STARTER	EX LB AT ST-TM-2	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T53M9B	3/4"	3-#12 + 1-#12	EX LB AT ST-TM-2	EX ST-TM-2	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T53M9C	3/4"	6-#14 + 1-#14 GND	EX LB AT ST-TM-2	EX ST-TM-2 PB STATION	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T53M10	3/4"	3-#12 + 6-#14 + 1-#12 GND	TEMP PANELBOARD 'B'	TEMP ST-TC-2 STARTER	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. TEMPORARY 480V FEEDER.
T53M10A	1"	3-#12 + 6-#14 + 1-#12 GND	TEMP ST-TM-2 STARTER	LB AT ST-TC-2	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T53M10B	3/4"	2-#14 + 1-#14 GND	EX LB AT ST-TC-2	EX ST-TC-2	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T53M10C	3/4"	2-#14 + 1-#14 GND	EX LB AT ST-TC-2	EX ST-TC-2 PB STATION	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T53M10D	3/4"	6-#14 + 1-#14 GND	EX LB AT ST-TC-2	EX TORQUE SWITCH	TEMPORARY CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
T51M11	3/4"	3-#12 + 1-#12 GND	TEMP PANELBOARD 'A'	EX ST-SP-1 PUMP CONTROL	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. TEMPORARY 480V FEEDER.
T51M11A	3/4"	4-#14 + 1-#14 GND	EX ST-SP-1 PUMP CONTR	EX MCC-55 CONTR ENCL	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T54M8	3/4"	3-#12 + 4-#14 + 1-#12 GND	TEMP PANELBOARD 'B'	EX ST-SP-2 PUMP CONTR	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. TEMPORARY 480V FEEDER.
T54M8A	3/4"	4-#14 + 1-#14 GND	EX ST-SP-2 PUMP CONTR	EX MCC-55 CONTR ENCL	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T54M9	3/4"	3-#12 + 4-#14 + 1-#12 GND	TEMP PANELBOARD 'B'	EX ST-SP-3 PUMP CONTR	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. TEMPORARY 480V FEEDER.
T54M9A	3/4"	4-#14 + 1-#14 GND	EX ST-SP-3 PUMP CONTR	EX MCC-55 CONTR ENCL	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW.
T5N107	1"	12-#14 + 1-#14 GND	TEMPORARY STARTERS	EX MCC-55 CONTROL ENCL	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. COUNT INCLUDES SPARES.
T5N108	1"	12-#14 + 1-#14 GND	TEMPORARY STARTERS	EX MCC-55 CONTROL ENCL	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. COUNT INCLUDES SPARES.
T5N109	1"	12-#14 + 1-#14 GND	TEMPORARY STARTERS	EX MCC-55 CONTROL ENCL	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. COUNT INCLUDES SPARES.
T5N110	1"	12-#14 + 1-#14 GND	TEMPORARY STARTERS	EX MCC-55 CONTROL ENCL	TEMPORARY CONDUCTORS AND CONDUIT TO BE NEW. COUNT INCLUDES SPARES.



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**TEMPORARY CONDUIT  
AND CABLE SCHEDULE  
(SHEET 2 OF 2)**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER  
**E-43**  
FILE: 231802042E01

FUNCTION SYMBOL SCHEDULE

IDENTIFICATION LETTERS					
	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		PROGRAMMER		
C	CONDUCTIVITY			CONTROL	CLOSED
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	GAGING		GLASS VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTOR	MOMENTARY			MIDDLE, INTERMEDIATE
N	VIBRATION		IGNITOR	ISOLATOR	
O	OPERATION	OFFSET	ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY, EVENT	INTEGRATE, TOTALIZE	INTEGRATE		
R	RADIATION		RECORD, PRINT		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE	TREND	MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VISCOSITY	VACUUM		VALVE, DAMPER, LOUVER, GATE	
W	WEIGHT, FORCE, TORQUE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y				RELAY, COMPUTE, CONVERT	
Z	POSITION			FINAL CONTROL ELEMENT	UNCLASSIFIED

LINE DESIGNATIONS

INSTRUMENTATION SIGNAL ---  
 ELECTRICAL POWER - - - - -  
 DATA LINK --- d --- d ---  
 RADIO LINK --- R --- R ---  
 PNEUMATIC SIGNAL --- P --- P ---

MISCELLANEOUS NOTATIONS

S/D = SHUTDOWN  
 O/R = OVERRIDE  
 MCS = MASTER CONTROL STATION  
 AFD = ADJUSTABLE FREQUENCY DRIVE  
 PCC = PROCESS CONTROL CABINET  
 LCP = LOCAL CONTROL PANEL  
 ES = ELECTRICAL SUPPLY (120VAC)  
 AS = AIR SUPPLY

VALVE DESIGNATIONS

MOV = MOTOR OPERATED VALVE

GENERAL ABBREVIATIONS

SCADA - SUPERVISORY CONTROL AND DATA ACQUISITION.  
 PLC - PROGRAMMABLE LOGIC CONTROL  
 SA - SURGE SUPPRESSOR DEVICE

CONTROLLER NOTATION

PV = PROCESS VARIABLE INPUT  
 SP = SET POINT INPUT  
 C = CONTROL OUTPUT

EQUIPMENT NOTATION

B = BLOWER OR FAN  
 E = ENGINE  
 G = GENERATOR  
 F = FILTER  
 GS = GRINDER/SCREEN  
 K = COMPRESSOR  
 H = HOIST  
 ME = MECHANICAL EQUIPMENT  
 MX = MIXER  
 P = PUMP  
 T = TANK OR SUMP

INPUT/OUTPUT NOTATIONS

AI = ANALOG INPUT  
 AO = ANALOG OUTPUT  
 DI = DISCRETE INPUT  
 DO = DISCRETE OUTPUT

HAND SWITCH NOTATION

HOA = HAND-OFF-AUTO  
 S/S = START/STOP  
 SEL = SELECTOR  
 O/C = OPEN/CLOSE  
 O/O = ON/OFF  
 LOS = LOCKOUT-START  
 LOR = LOCAL-OFF-REMOTE  
 OAC = OPEN-AUTO CLOSE  
 CAO = CLOSED-AUTO OPEN  
 OSC = OPEN-STOP-CLOSE

MISCELLANEOUS SYMBOLS

CONTINUATION OF SIGNAL OR DATA TO/FROM SHEET NUMBER INDICATED  
 INTERLOCK  
 AIR PURGE SET  
 SOLENOID VALVE  
 CYLINDER ACTUATION  
 MAG METER  
 ULTRASONIC LEVEL TRANSDUCER  
 BUBBLER TUBE  
 MOTOR

BASIC SYMBOLS

SINGLE FUNCTION		MUTIPLE FUNCTION	
	OR		FIELD MOUNTED INSTRUMENT OR DEVICE
	OR		FRONT OF PANEL MOUNTED INSTRUMENT ON LCP, PCC, MCS, OR VFD
	OR		REAR OF PANEL MOUNTED INSTRUMENT ON LCP, PCC, MCS, OR VFD
	OR		FRONT OF PANEL MOUNTED INSTRUMENT ON MAIN PANEL
	OR		REAR OF PANEL MOUNTED INSTRUMENT ON MAIN PANEL
	OR		PLC AND/OR COMPUTER SOFTWARE COMPONENT (OPERATOR ACCESSIBLE UNDER NORMAL CONDITIONS) OR
	OR		PLC AND/OR COMPUTER GENERATED COMPONENT (NOT OPERATOR ACCESSIBLE UNDER NORMAL CONDITIONS)
	OR		SCADA PLC INPUT/OUTPUT



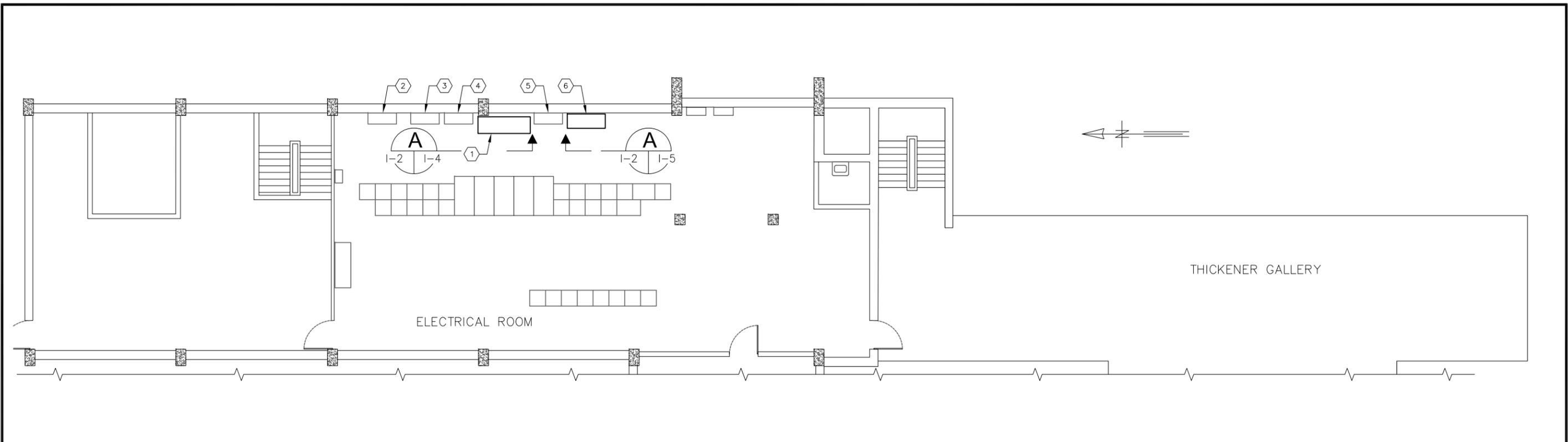
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DESIGNED	TDT						
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CHECKED	TDT						
DATE	12/2018	No.	DATE	BY	APP	REVISION	DESCRIPTION

SCALE  
  
AS SHOWN

City of Tampa Wastewater Department  
 HOWARD F. CURREN AWTP  
 SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC REPLACEMENT

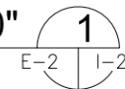
INSTRUMENTATION AND CONTROL  
 LEGEND AND SYMBOLS

SHEET NUMBER	1-1
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



**SLUDGE TREATMENT BUILDING (030):  
PARTIAL FLOOR PLAN - ELEVATION 11'-0"**

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



**KEYED NOTES:**

- ① EXISTING MCC-55 CONTROL ENCLOSURE. EXISTING CONTROL ENCLOSURE TO BE MODIFIED AND REUSED AS A TERMINAL CONNECTION POINT. REFER TO SHEET I-4 FOR DETAILS.
- ② EXISTING VARIABLE FREQUENCY DRIVE 'VFD-1A' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-1A'. CONTRACTOR TO REMOVE EXISTING VFD AFTER ALL PERMANENT COMPONENTS ARE INSTALLED TESTED AND ACCEPTED.
- ③ EXISTING VARIABLE FREQUENCY DRIVE 'VFD-1C' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-1C'. CONTRACTOR TO REMOVE EXISTING VFD AFTER ALL PERMANENT COMPONENTS ARE INSTALLED TESTED AND ACCEPTED.
- ④ EXISTING VARIABLE FREQUENCY DRIVE 'VFD-2A' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-2A'. CONTRACTOR TO REMOVE EXISTING VFD AFTER ALL PERMANENT COMPONENTS ARE INSTALLED TESTED AND ACCEPTED.
- ⑤ EXISTING VARIABLE FREQUENCY DRIVE 'VFD-2C' FOR EXISTING THICKENED SLUDGE PUMP 'ST-SLP-2C'. CONTRACTOR TO REMOVE EXISTING VFD AFTER ALL PERMANENT COMPONENTS ARE INSTALLED TESTED AND ACCEPTED.



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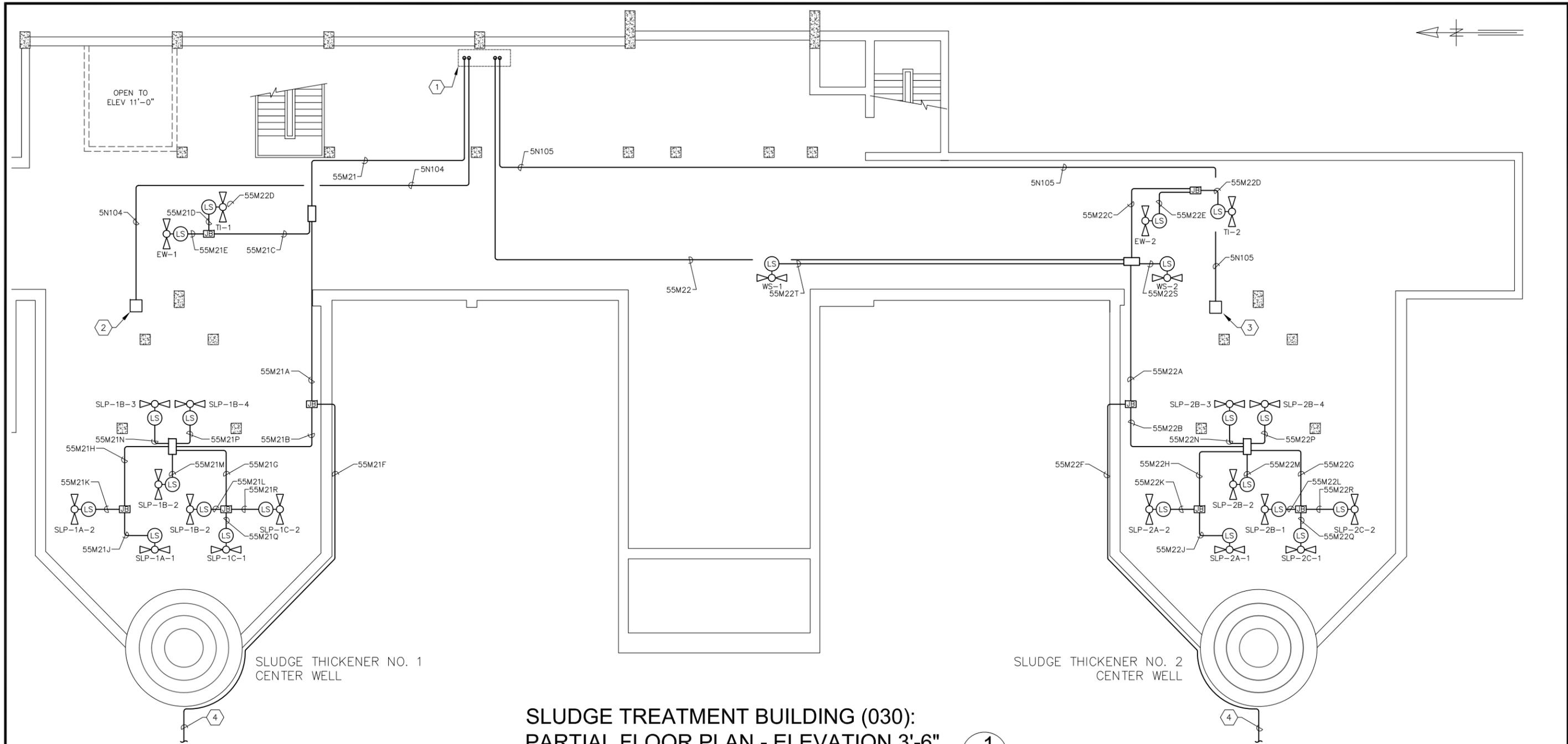
SCALE  
  
AS SHOWN

**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

**SLUDGE TREATMENT BUILDING  
EXISTING CONDITIONS PLAN  
(SHEET 1 OF 2)**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER  
**I-2**  
FILE: 231802042E01



**SLUDGE TREATMENT BUILDING (030):  
PARTIAL FLOOR PLAN - ELEVATION 3'-6"**

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

1  
E-2 | E-4

**KEYED NOTES:**

- ① EXISTING MCC-55 CONTROL ENCLOSURE ABOVE AT ELEVATION 11'-0". REFER TO SHEET I-4 FOR MODIFICATION DETAILS.
- ② EXISTING MRC-16 FLOW INDICATOR WITH CONTROL MODULE AND VALVE OPERATOR. MRC-16 TO REMAIN.
- ③ EXISTING MRC-17 FLOW INDICATOR WITH CONTROL MODULE AND VALVE OPERATOR. MRC-17 TO REMAIN.
- ④ CONTINUED ON SHEET E-4.



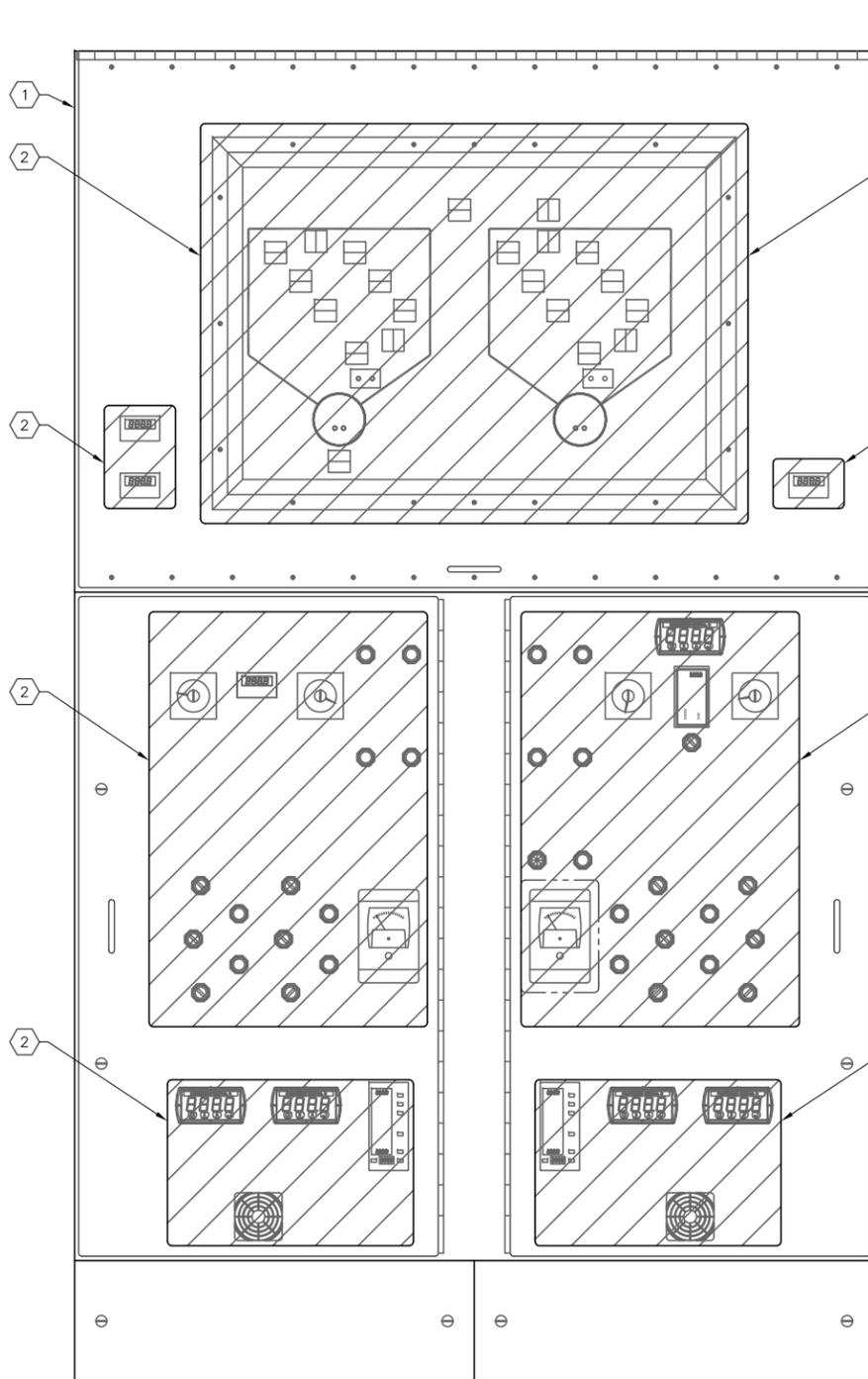
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SCALE	AS SHOWN
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**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

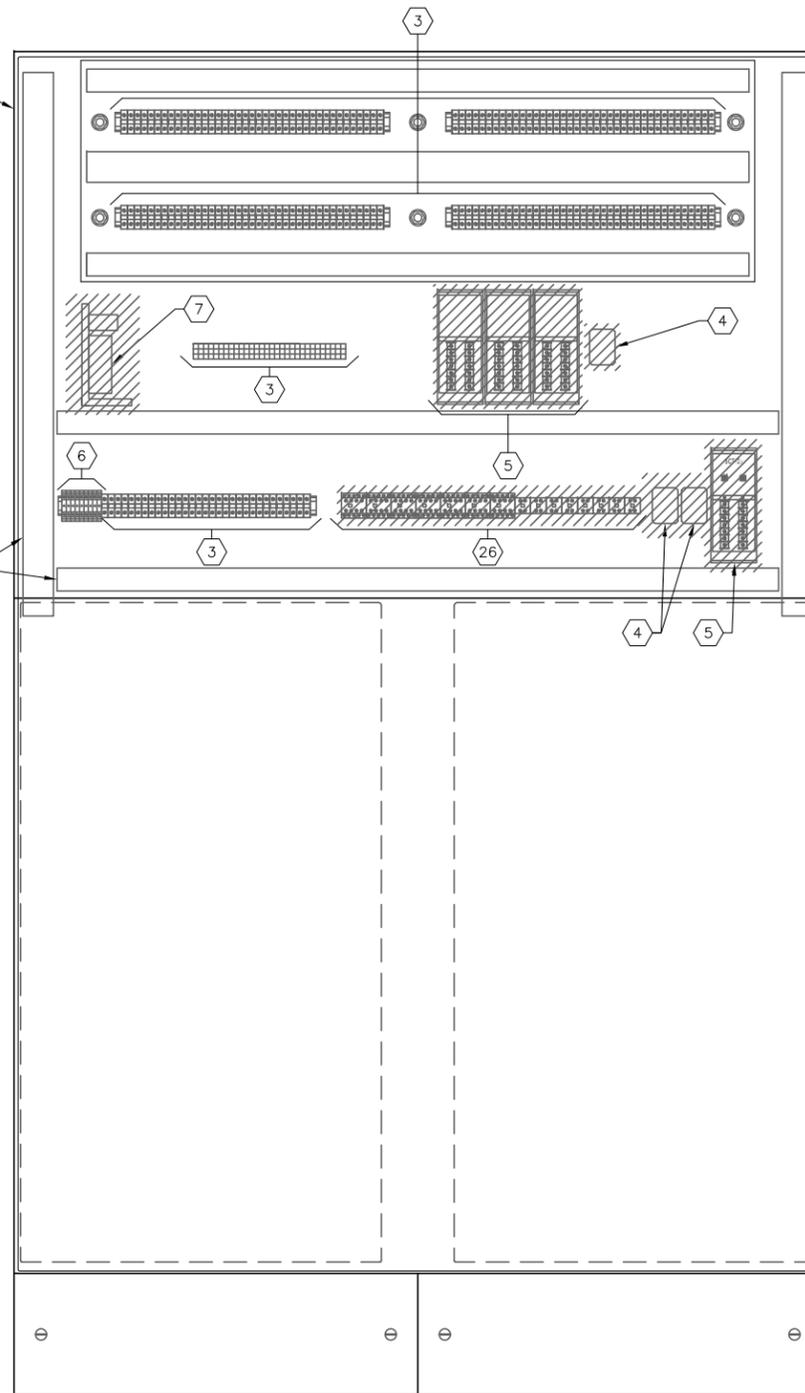
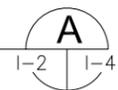
**SLUDGE TREATMENT BUILDING  
EXISTING CONDITIONS PLAN  
(SHEET 2 OF 2)**

SHEET NUMBER	I-3
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



**EXISTING MCC-55 CONTROL ENCLOSURE  
FRONT ELEVATION**

SCALE : N.T.S.  
(REFER ALSO TO INTERIOR ELEVATION AT RIGHT)



**EXISTING MCC-55 CONTROL ENCLOSURE  
INTERIOR ELEVATION**

SCALE : N.T.S.

**KEYED NOTES:**

- ① EXISTING MCC-55 CONTROL ENCLOSURE.
- ② CONTRACTOR SHALL REMOVE EXISTING GRAPHICS PANEL, EXISTING PILOT DEVICES, EXISTING PROCESS DISPLAYS, EXISTING ON AND OFF PUSHBUTTONS, EXISTING HOA SELECTOR SWITCHES, EXISTING SPEED CONTROL DEVICES, EXISTING CYCLE TIMERS, EXISTING SET POINT CONTROLLERS AND EXISTING FANS. AFTER REMOVAL OF ALL EXISTING SURFACE MOUNTED COMPONENTS, CONTRACTOR SHALL PROVIDE AND INSTALL 1/4" ALUMINUM PLATE OVER EXISTING CUT-OUT. PAINT ALUMINUM PLATE TO MATCH EXISTING SURFACE.
- ③ EXISTING TERMINAL BLOCKS TO REMAIN. CONTRACTOR SHALL REUSE EXISTING TERMINAL BLOCK AS REQUIRED FOR NEW FIELD DEVICE WIRING CONNECTIONS.
- ④ EXISTING SIGNAL CONDITIONER TO BE REMOVED.
- ⑤ EXISTING SETPOINT CONTROLLER(S) TO BE REMOVED.
- ⑥ EXISTING OBSOLETE DEVICES TO BE REMOVED. CONTRACTOR SHALL FIELD VERIFY IF DEVICES ARE CURRENTLY IN USE.
- ⑦ EXISTING POWER SUPPLY TO BE REMOVED.
- ⑧ EXISTING PANDUIT TO REMAIN AND BE REUSED.

**GENERAL NOTES:**

1. DRAWINGS PRESENTED ARE BASED ON THE BEST RECORD INFORMATION AVAILABLE. ALL EXISTING INSTALLATIONS DENOTED ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO ORDERING MATERIALS OR COMMENCING CONSTRUCTION.
2. THE CONTRACTOR PROVIDE FIELD INVESTIGATION OF THE EXISTING CONDITIONS, CIRCUITRY AND DEVICES. THE CONTRACTOR SHALL DETERMINE IF ALL REQUIRED CONTROL CIRCUITS AND REQUIRED DEVICES AS PROPOSED ALLOW THE CONTROL SYSTEM TO FUNCTION AS INTENDED. THE CONTRACTOR SHALL COORDINATE THIS EFFORT WITH THE CITY OF TAMPA AND NOTIFY THE CITY OF ANY DISCREPANCIES. ALL FIELD INVESTIGATION AND COORDINATION SHALL OCCUR PRIOR TO ORDERING MATERIALS OR COMMENCING WORK.
3. AS PART OF THE SHOP DRAWING SUBMITTAL, THE CONTRACTOR SHALL PROVIDE A WRITTEN REPORT STATING THAT THE MEANS, METHODS AND MATERIALS PROPOSED SATISFY THE REQUIREMENTS OF THE CONTROL SYSTEM AND THE CITY OF TAMPA'S OPERATIONAL REQUIREMENTS.
4. THE CONTRACTOR MAY INSTALL ADDITIONAL TERMINAL BLOCKS IF REQUIRED TO ACCOMMODATE CONDUCTOR INSTALLATION FROM EXISTING MCC CONTROL ENCLOSURE TO NEW MCC 55 PLC CABINET.
5. COORDINATE THE REMOVAL OF ALL EXISTING EQUIPMENT AND THE INSTALLATION OF ALL NEW EQUIPMENT WITH THE CITY OF TAMPA.



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SCALE

AS SHOWN

**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

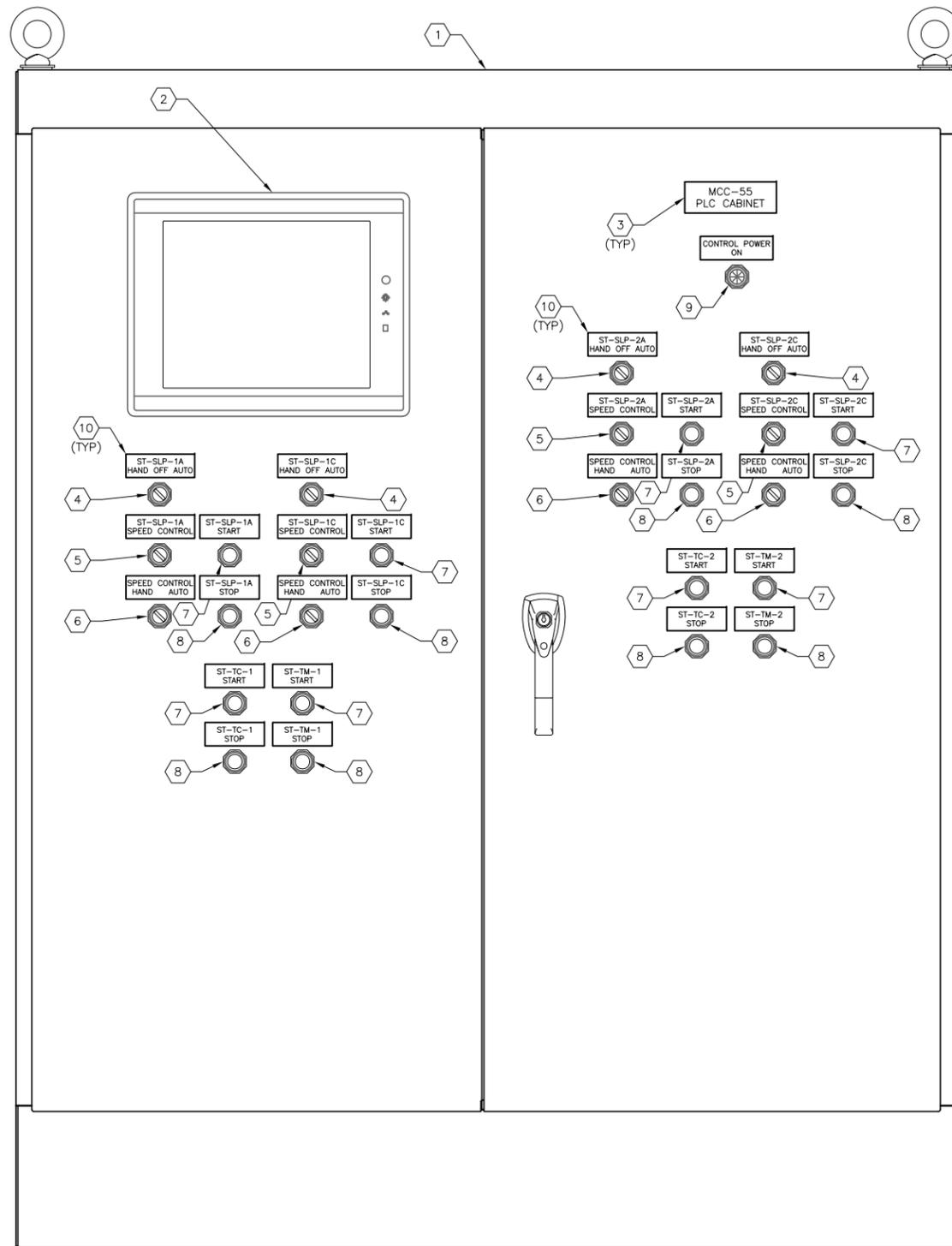
**EXISTING MCC-55 CONTROL  
ENCLOSURE MODIFICATIONS**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER

1-4

FILE: 231802042E01



- KEYED NOTES:**
- ① PROPOSED MCC-55 PLC CONTROL CABINET. 60" X 48" X 12", NEMA 12 MILD STEEL WITH HINGED DOORS AND HANDLE. HAMMOND 1418AW18.
  - ② PROVIDE AND INSTALL NEW 15" OPERATOR INTERFACE TERMINAL (OIT), MAPLE SYSTEMS #HMI5150P. OIT SHALL BE USED TO DISPLAY ALL STATUS AND ALARM INFORMATION - TOUCH SCREEN PROMPTS TO DISPLAY ADDITIONAL INFORMATION.
  - ③ PROVIDE AND INSTALL LAMACOID NAMEPLATE (TYPICAL). LETTERING SHALL BE 1/2" MINIMUM. SECURE NAMEPLATE WITH STAINLESS STEEL SCREWS.
  - ④ PROVIDE AND INSTALL 3-POSITION, MAINTAINED, PUMP HAND/OFF/AUTO SWITCH. SQUARE-D CLASS 9001, SKS43FB13 WITH CONTACTS AS REQUIRED.
  - ⑤ PROVIDE AND INSTALL 2K OHM MANUAL SPEED ADJUSTMENT POTENTIOMETER. COORDINATE REQUIREMENTS WITH VFD SUPPLIER.
  - ⑥ PROVIDE AND INSTALL 2-POSITION, MAINTAINED, PUMP SPEED HAND/AUTO SWITCH. SQUARE-D CLASS 9001, SKS11B WITH CONTACTS AS REQUIRED.
  - ⑦ PROVIDE AND INSTALL MOMENTARY START PUSHBUTTON WITH RED CAP. SQUARE-D CLASS 9001, SKR1RHB13.
  - ⑧ PROVIDE AND INSTALL MOMENTARY STOP PUSHBUTTON WITH GREEN CAP. SQUARE-D CLASS 9001, SKR1GHB13.
  - ⑨ PROVIDE AND INSTALL LED, PUSH-TO-TEST PILOT LIGHT WITH GREEN COLOR LENS. SQUARE-D 9001 SKT38LGG31.
  - ⑩ PROVIDE AND INSTALL LAMACOID NAMEPLATE (TYPICAL). LETTERING SHALL BE 1/4" MINIMUM. SECURE NAMEPLATE WITH STAINLESS STEEL SCREWS.

**PROPOSED MCC-55 PLC CABINET EXTERIOR ELEVATION** A

SCALE : N.T.S.

(FOR INTERIOR ELEVATION REFER TO SHEET I-6)



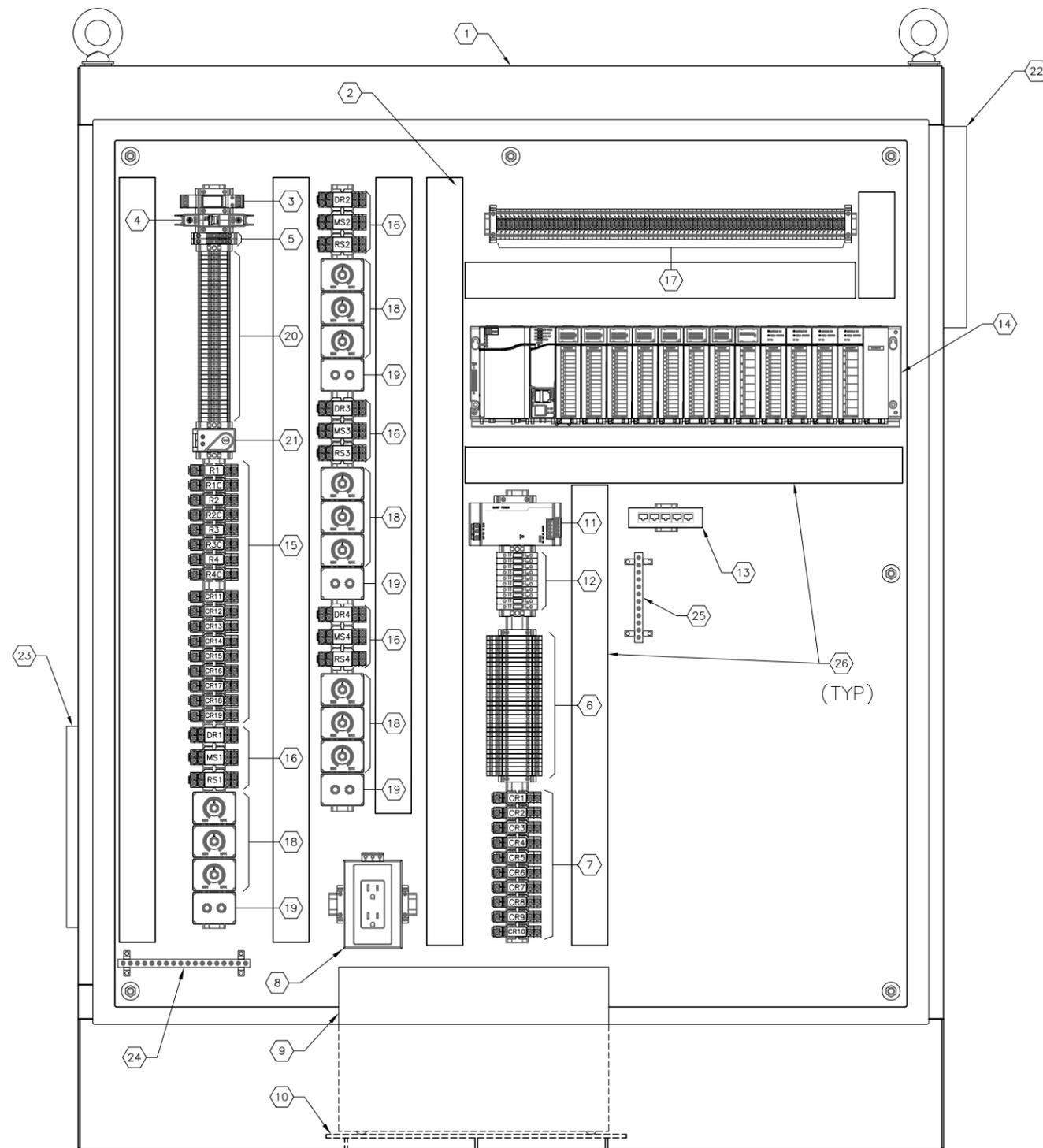
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**City of Tampa Wastewater Department**  
 HOWARD F. CURREN AWTP  
 SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
 REPLACEMENT

**PROPOSED MCC-55  
 PLC CABINET  
 EXTERIOR ELEVATION**

SHEET NUMBER	I-5
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



**PROPOSED MCC-55 PLC CABINET INTERIOR ELEVATION**

SCALE : N.T.S.

**KEYED NOTES:**

- ① PROPOSED MCC-55 PLC CONTROL CABINET.
- ② HAMMOND 60AWFW 44" X 48" FULL BACK PANEL.
- ③ PROVIDE AND INSTALL INCOMING 120V POWER SURGE PROTECTION DEVICE. PHOENIX CONTACT #2905228.
- ④ PROVIDE AND INSTALL 120V CIRCUIT BREAKER. SQUARE-D QOU115.
- ⑤ PROVIDE AND INSTALL 120V, THERMAL CIRCUIT BREAKERS. REFER TO SHEET I-8 FOR QUANTITIES AND SIZES. ALL THERMAL CIRCUIT BREAKERS SHALL BE PHOENIX CONTACT TCP TYPE.
- ⑥ PROVIDE AND INSTALL SURGE PROTECTION DEVICES FOR 4-20mA ANALOG INPUT AND OUTPUT CIRCUITS. PHOENIX CONTACT #2838186.
- ⑦ PROVIDE AND INSTALL SQUARE-D 8501 R SERIES (OR EQUAL) SPDT RELAYS WITH 24V DC COILS. PROVIDE RELAY BASE AND HOLD DOWN SPRING FOR EACH RELAY.
- ⑧ PROVIDE AND INSTALL NEW 120V, 20A DUPLEX RECEPTACLE. PHOENIX CONTACT #5600525 FOR UPS AND ETHERNET SWITCH 120V AC POWER.
- ⑨ PROVIDE AND INSTALL 1000VA UPS. POWERWARE PW9130L 1000T-XL, OR EQUAL.
- ⑩ PROVIDE AND INSTALL ALUMINUM STAND FOR UPS. DIMENSIONS AS REQUIRED.
- ⑪ PROVIDE AND INSTALL 120VAC-24VDC POWER SUPPLY 'PS1' WITH 10 AMPERE OUTPUT. PHOENIX CONTACT #2866763.
- ⑫ PROVIDE AND INSTALL FUSE TERMINAL BLOCKS FOR DC POWER. PHOENIX CONTACT UK 5-HESI. REFER TO WIRING DIAGRAM ON SHEET I-7 FOR QUANTITIES AND SIZES.
- ⑬ PROVIDE AND INSTALL 5-PORT ETHERNET SWITCH. HIRSCHMANN 5TX.
- ⑭ CONTRACTOR TO PROVIDE AND INSTALL PROPOSED PLC RACK. PLC RACK TO CONSIST OF: ONE (1) - GE RX3i CPU, IC695CPE305-ABAG; SIX (6) 24V DC INPUT MODULES, GE IC694MDL241; ONE (1) RELAY OUTPUT MODULE, GE IC694MDL930; THREE (3) ANALOG INPUT MODULES, GE IC694ALG616; ONE (1) ANALOG OUTPUT MODULE, GE IC693ALG392; ONE (1) 120V POWER SUPPLY, GE IC695PSA140; ONE (1) RX3I SLOT FILLER, GE IC694ACC310. ONE (1) 16-SLOT BACK PLANE: GE IC695CHS016.
- ⑮ PROVIDE AND INSTALL SQUARE-D 8501 R SERIES (OR EQUAL) SPDT RELAYS WITH 120V AC COILS. PROVIDE RELAY BASE AND HOLD DOWN SPRING FOR RELAYS.
- ⑯ PROVIDE AND INSTALL SQUARE-D 8501 R SERIES (OR EQUAL) DPDT RELAYS WITH 120V AC COILS. PROVIDE RELAY BASE AND HOLD DOWN SPRING FOR RELAYS.
- ⑰ PROVIDE AND INSTALL SURGE PROTECTION DEVICES FOR 24V DC DISCRETE INPUT CIRCUITS. PHOENIX CONTACT #2794699.
- ⑱ PROVIDE AND INSTALL SQUARE-D 9050 JCK12V20 TIMING RELAYS WITH 120V AC COILS. PROVIDE RELAY BASE AND HOLD DOWN SPRING FOR RELAYS.
- ⑲ PROVIDE AND INSTALL ALLEN BRADLEY 700HV32EEU120 REPEAT CYCLE RELAY WITH 120V AC COIL. PROVIDE RELAY BASE AND HOLD DOWN SPRING FOR RELAY.
- ⑳ PROVIDE AND INSTALL DIN-RAIL MOUNTED TERMINAL BLOCKS, ALLEN-BRADLEY 1492-W10. ALL DIN-RAIL SHALL BE ALUMINUM.
- ㉑ PROVIDE AND INSTALL 120V FAN THERMOSTAT. AUSTIN AB-TSTATF.
- ㉒ PROVIDE AND INSTALL 6" UL TYPE 12 COOLING FAN. AUSTIN AB-FN9-94.
- ㉓ PROVIDE AND INSTALL 6" EXHAUST LOUVER. AUSTIN AB-FNEX9.
- ㉔ PROVIDE AND INSTALL EQUIPMENT GROUND BAR SYSTEM. PANDUIT # UGB2/0-414-18. PROVIDE BONDING STANDOFFS (PANDUIT UGB-B-S0).
- ㉕ PROVIDE AND INSTALL ISOLATED SIGNAL GROUND BUS BAR. PANDUIT # UGB2/0-414-12. PROVIDE ISOLATION STANDOFFS (PANDUIT UGB-IN-S0).
- ㉖ PROVIDE AND INSTALL 2" X 3" PANDUIT.



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SCALE

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**City of Tampa Wastewater Department**  
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SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

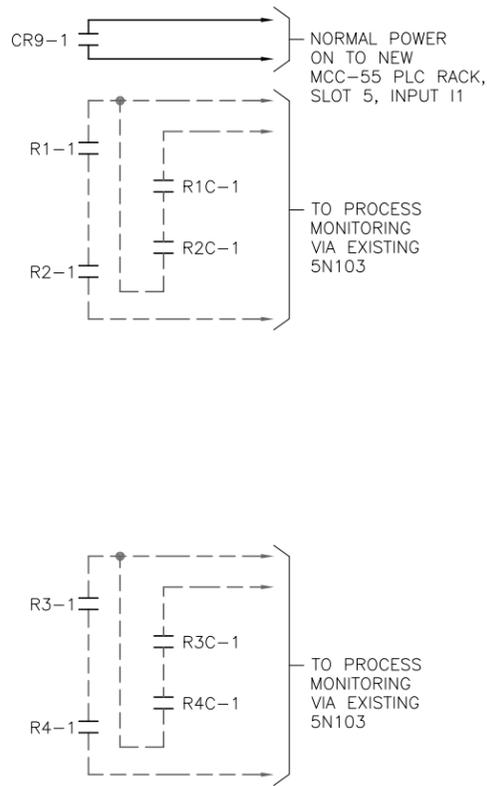
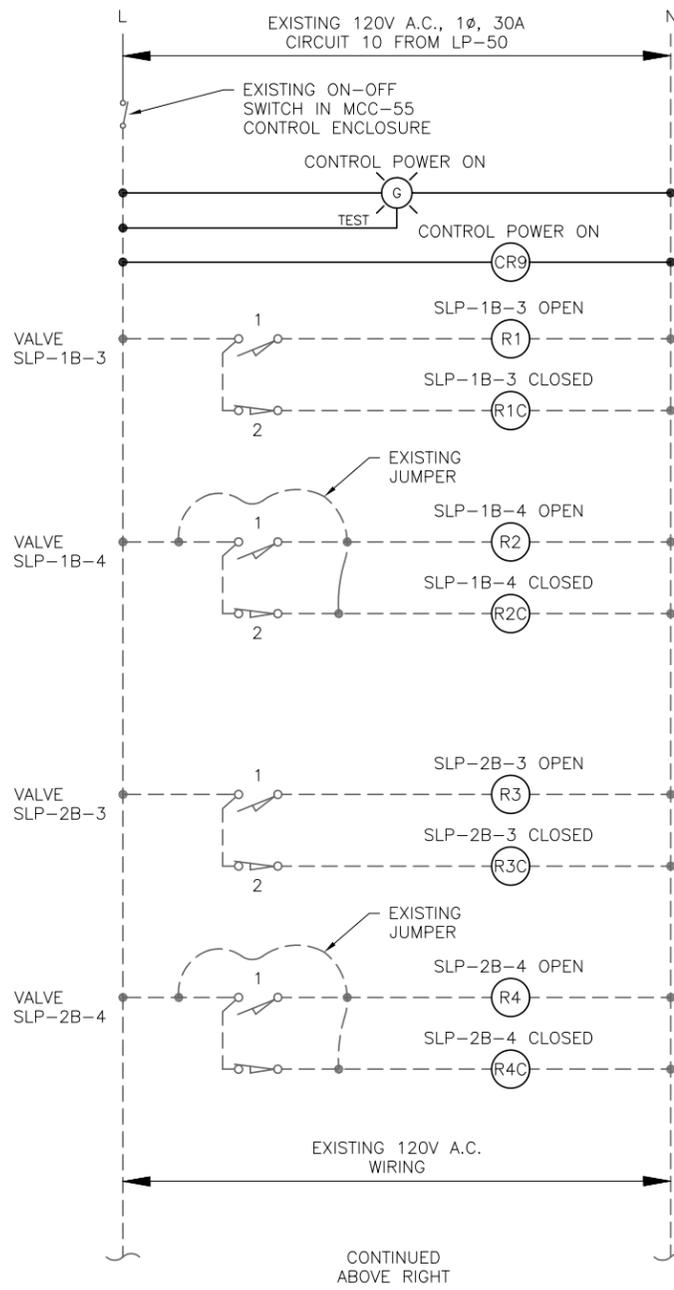
**PROPOSED MCC-55  
PLC CABINET  
INTERIOR ELEVATION**

SHEET NUMBER

I-6

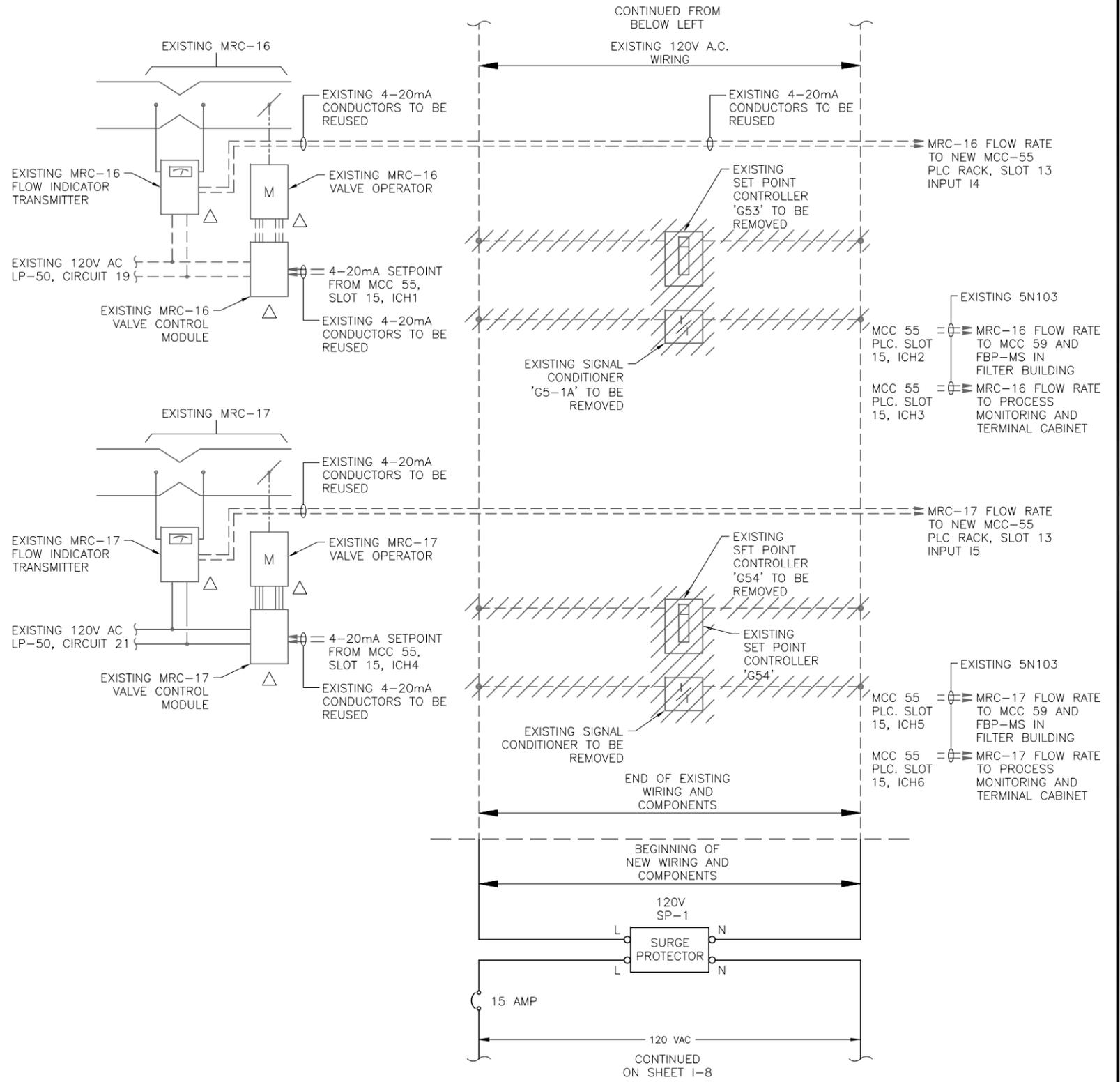
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**LEGEND**

- DENOTES EXISTING WIRING
- DENOTES PROPOSED WIRING
- ☒ DENOTES TERMINAL ON FIELD DEVICE
- DENOTES TERMINAL IN MCC-55 PLC CABINET



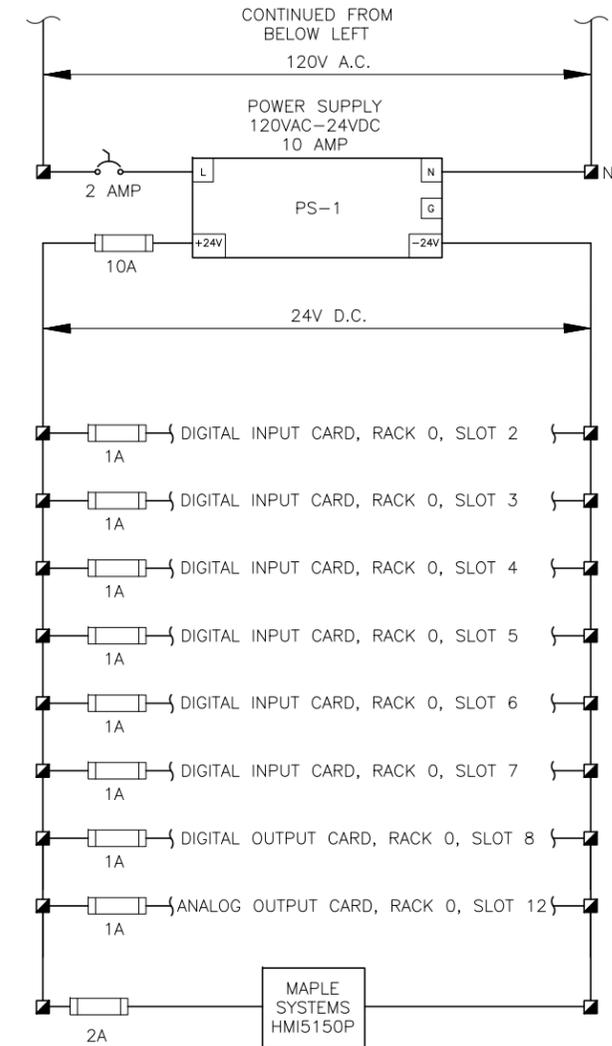
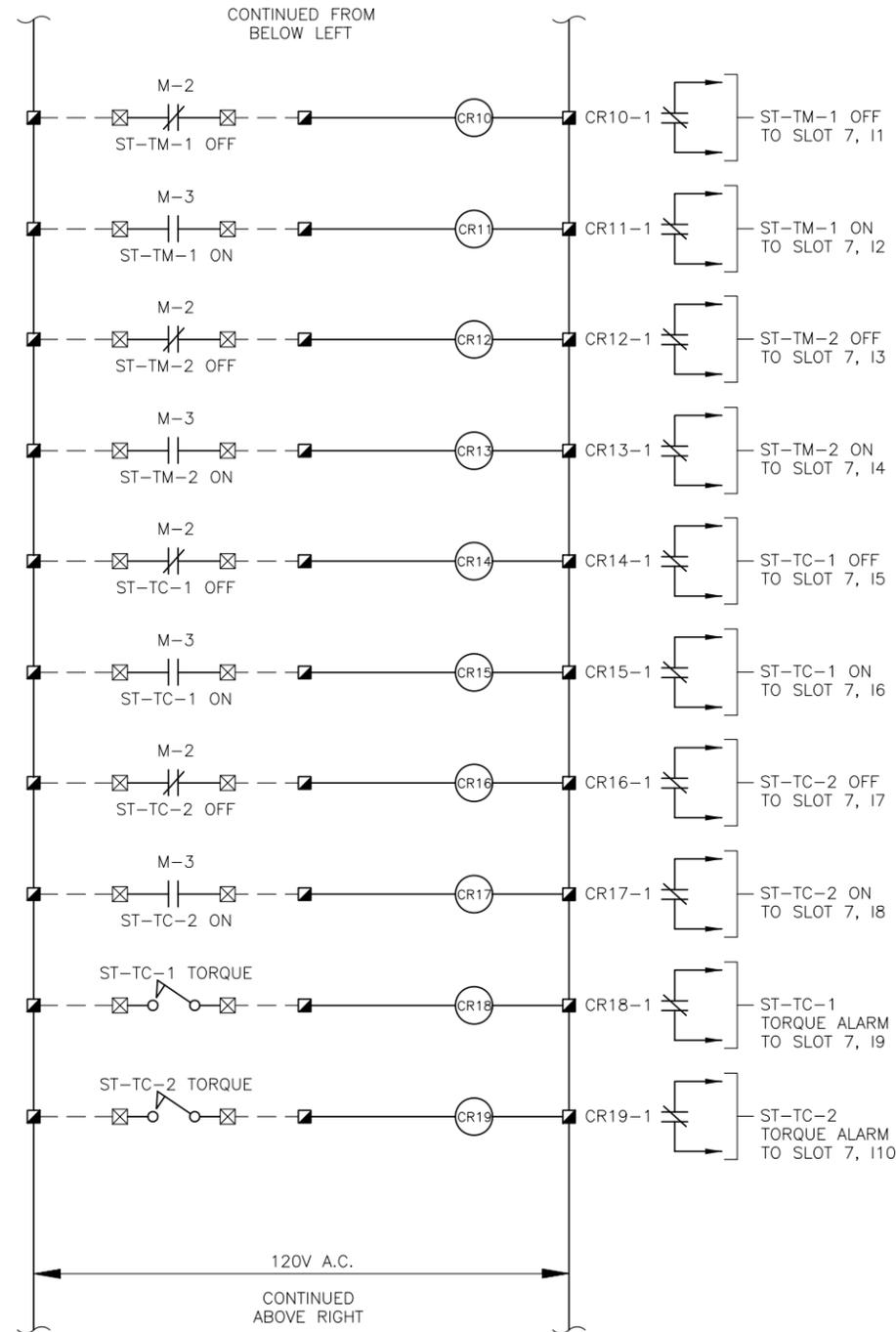
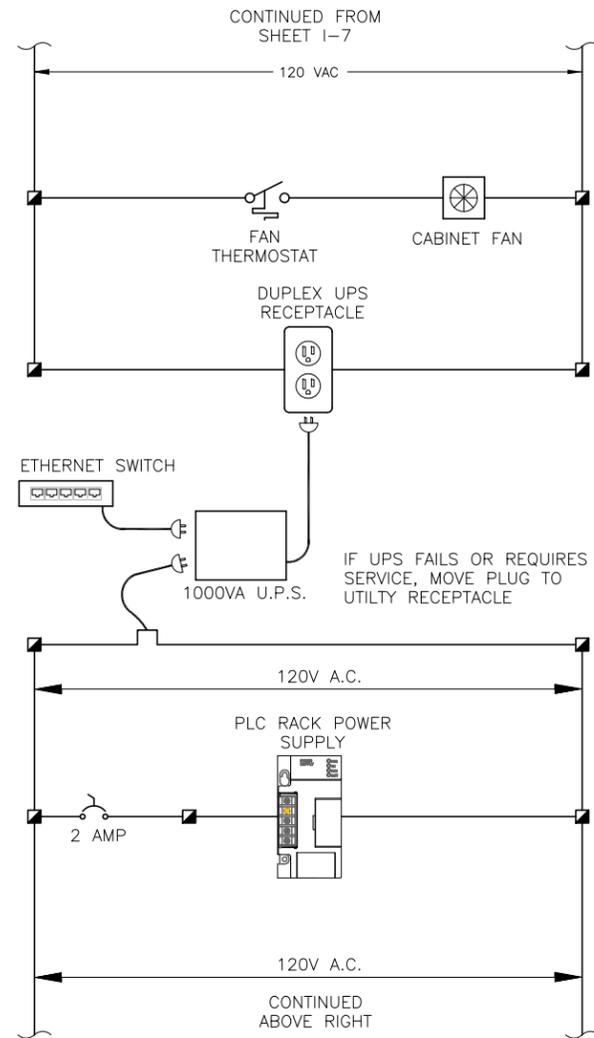
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SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC REPLACEMENT

**MCC-55 CONTROL ENCLOSURE WIRING SCHEMATIC (SHEET 1 OF 2)**

SHEET NUMBER	1-7
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01

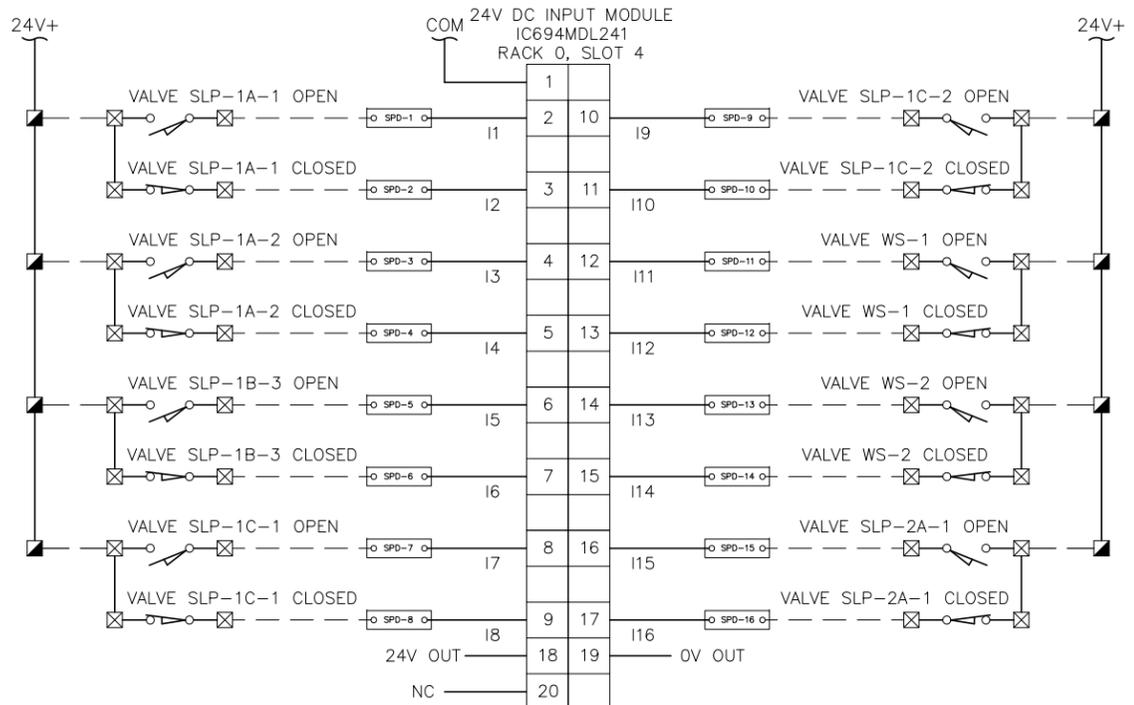


**LEGEND**

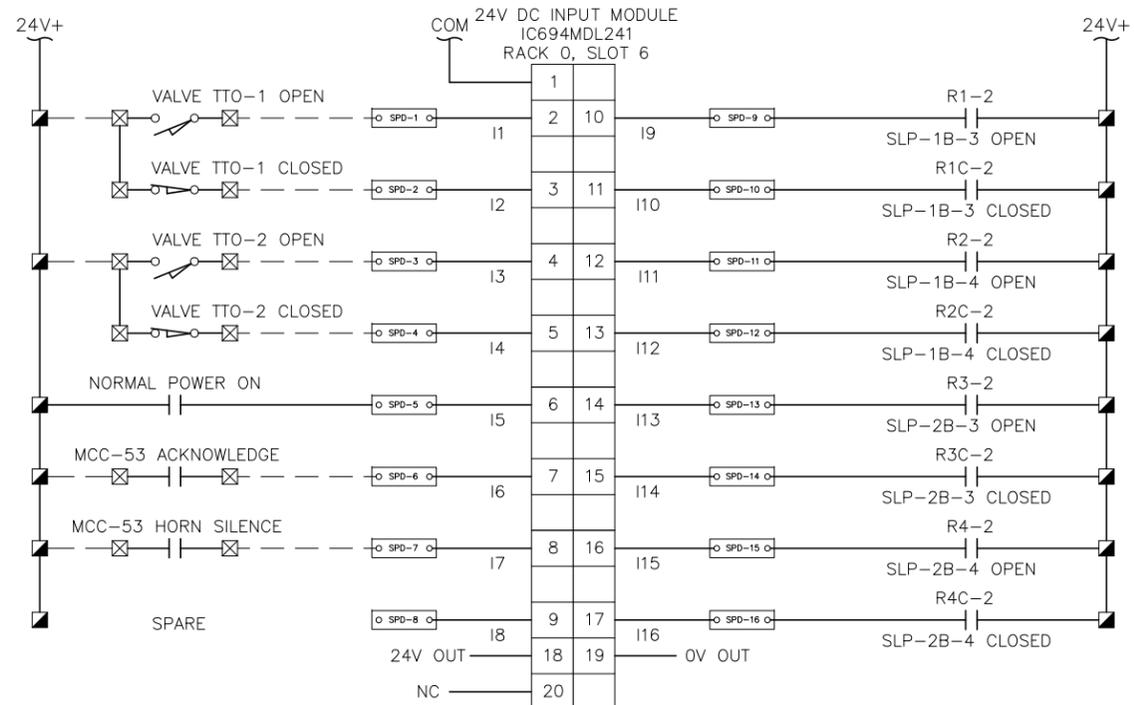
- DENOTES PROPOSED WIRING
- ☒ DENOTES TERMINAL ON FIELD DEVICE
- DENOTES TERMINAL IN MCC-55 PLC CABINET

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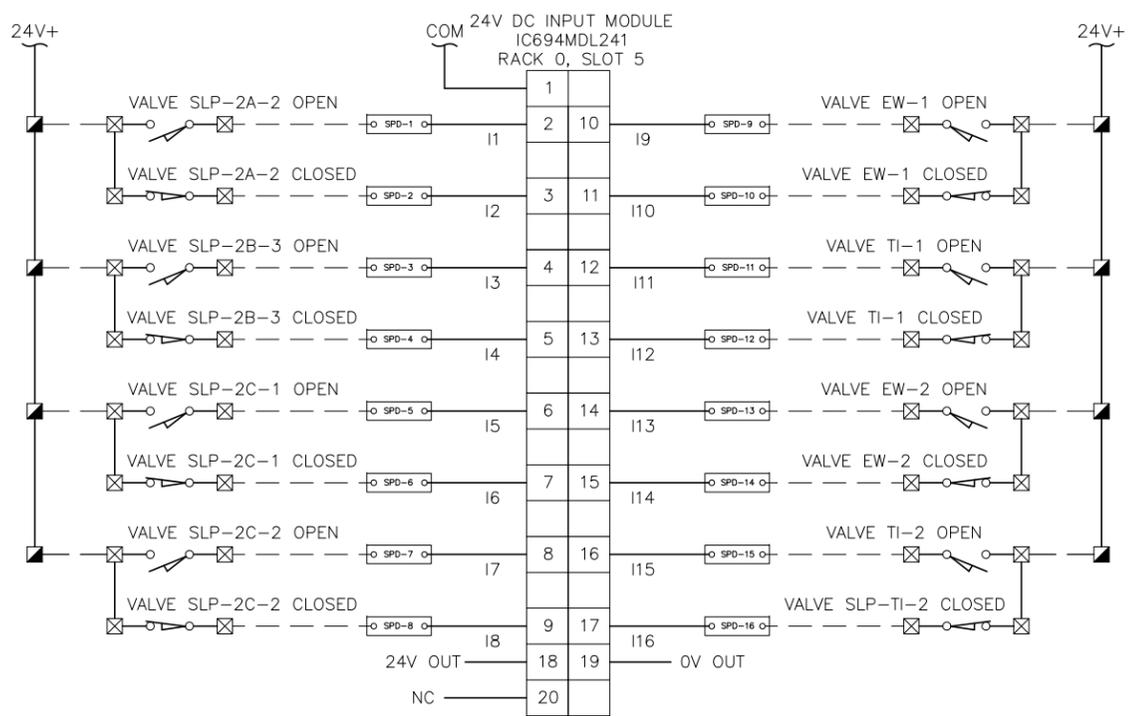
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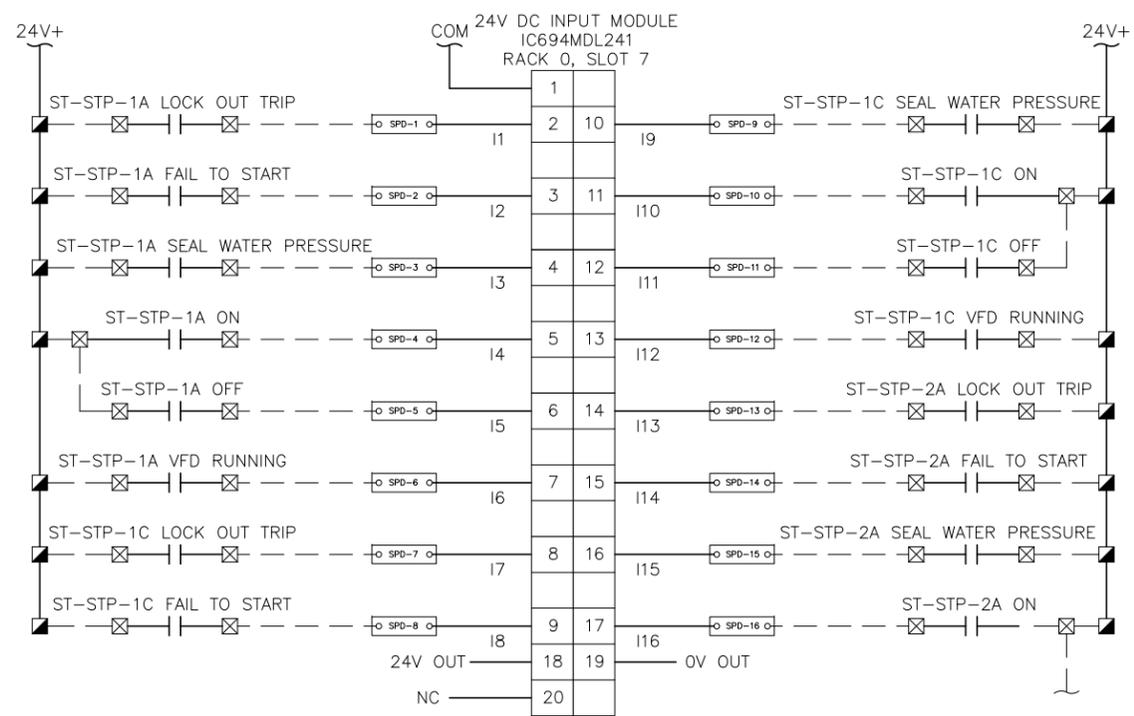
PLC DISCRETE INPUT CARD WIRING DIAGRAM - SLOT 4



PLC DISCRETE INPUT CARD WIRING DIAGRAM - SLOT 6



PLC DISCRETE INPUT CARD WIRING DIAGRAM - SLOT 5



PLC DISCRETE INPUT CARD WIRING DIAGRAM - SLOT 7

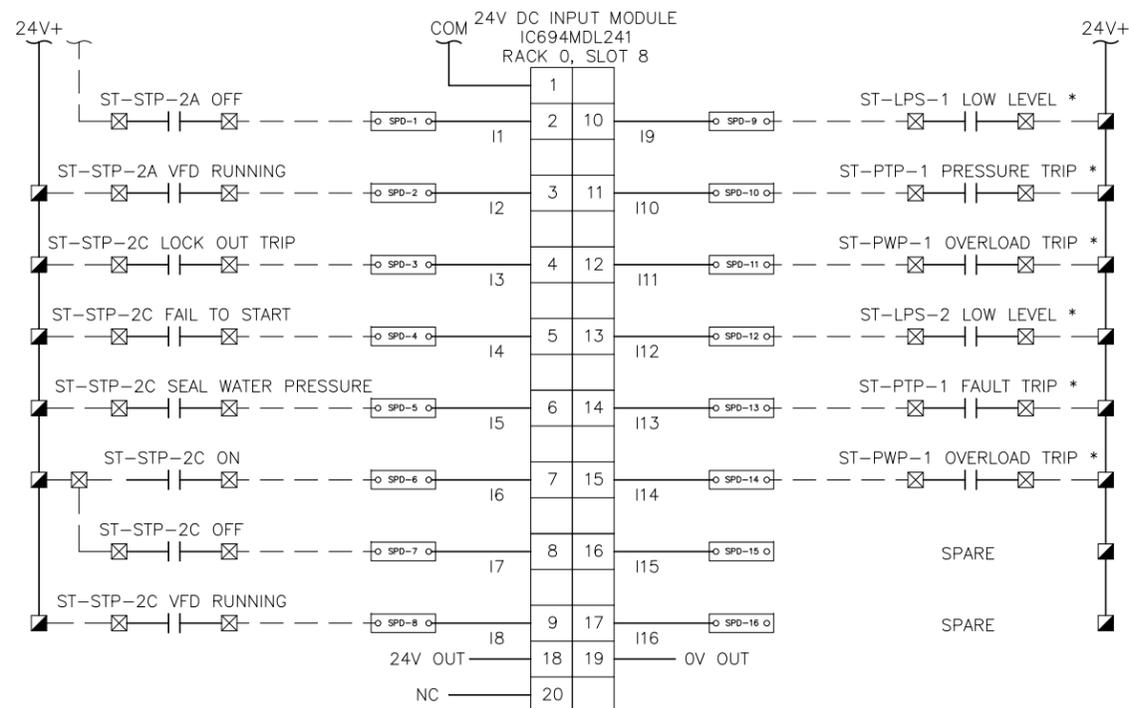
- LEGEND**
- DENOTES FIELD WIRING
  - ⊠ DENOTES TERMINAL ON FIELD DEVICE
  - DENOTES TERMINAL IN MCC-55 PLC CABINET

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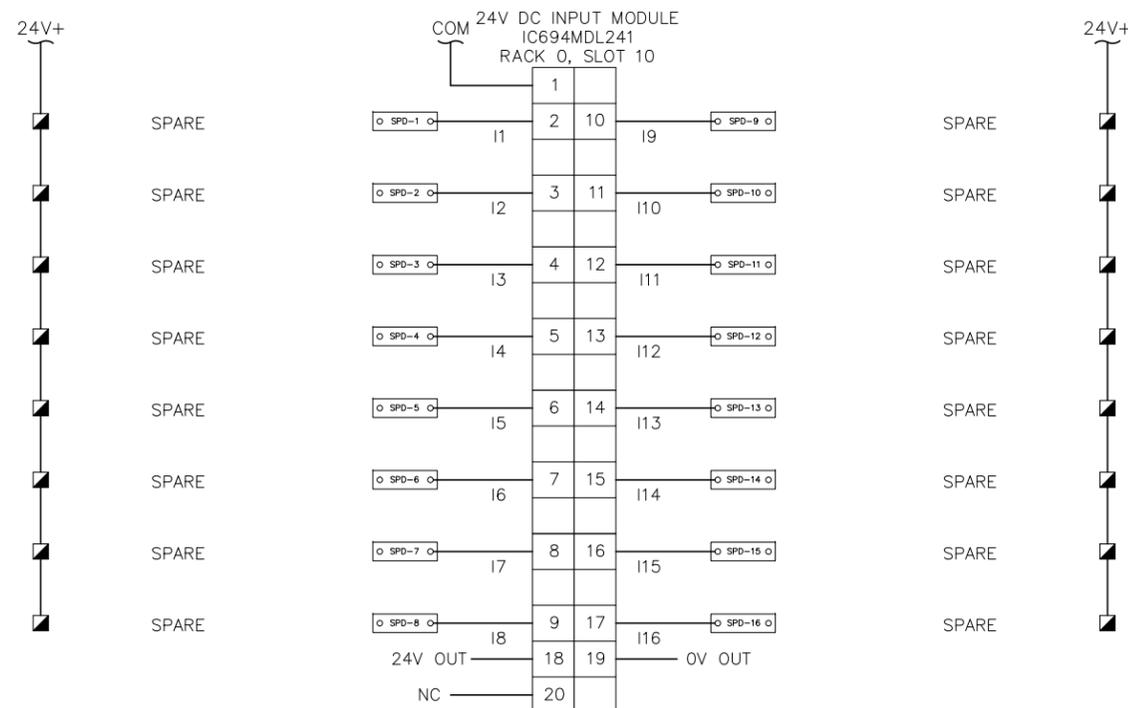
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SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

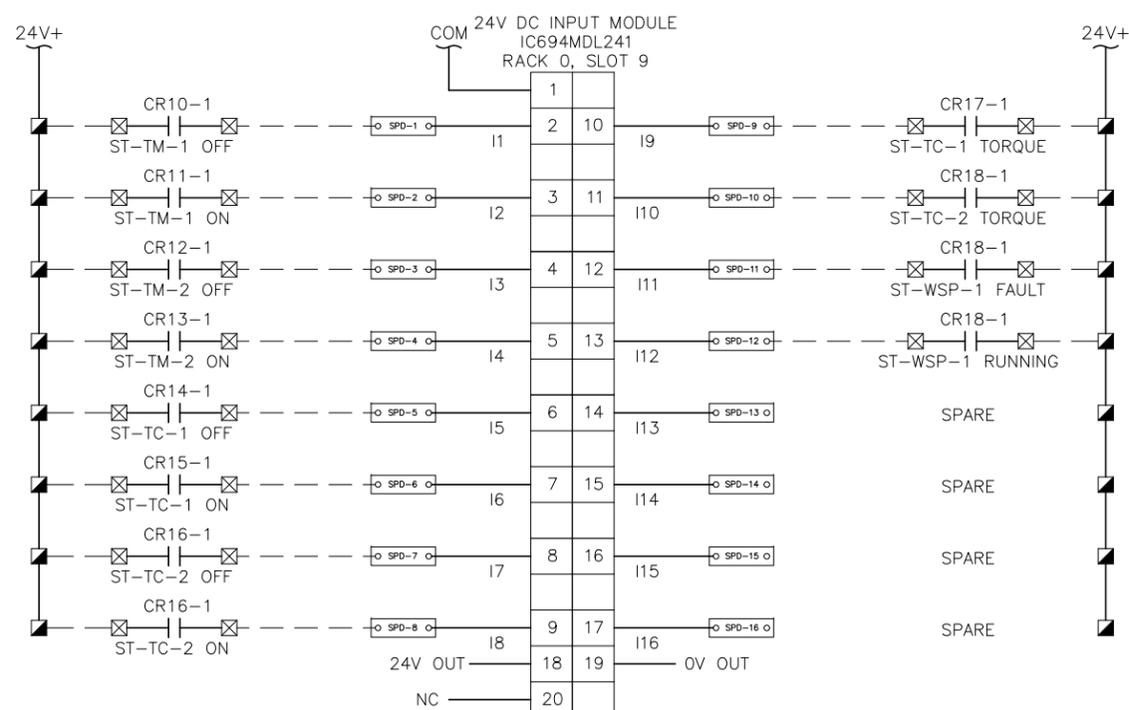
MCC-55 PLC  
DISCRETE INPUT I/O  
WIRING DIAGRAM



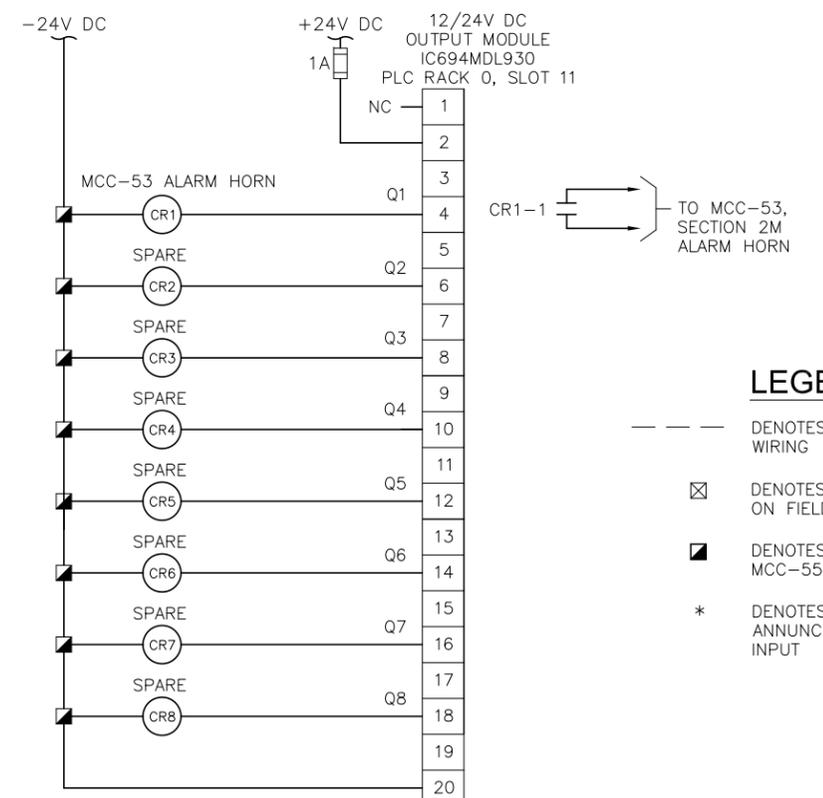
PLC DISCRETE INPUT CARD WIRING DIAGRAM - SLOT 8



PLC DISCRETE INPUT CARD WIRING DIAGRAM - SLOT 10



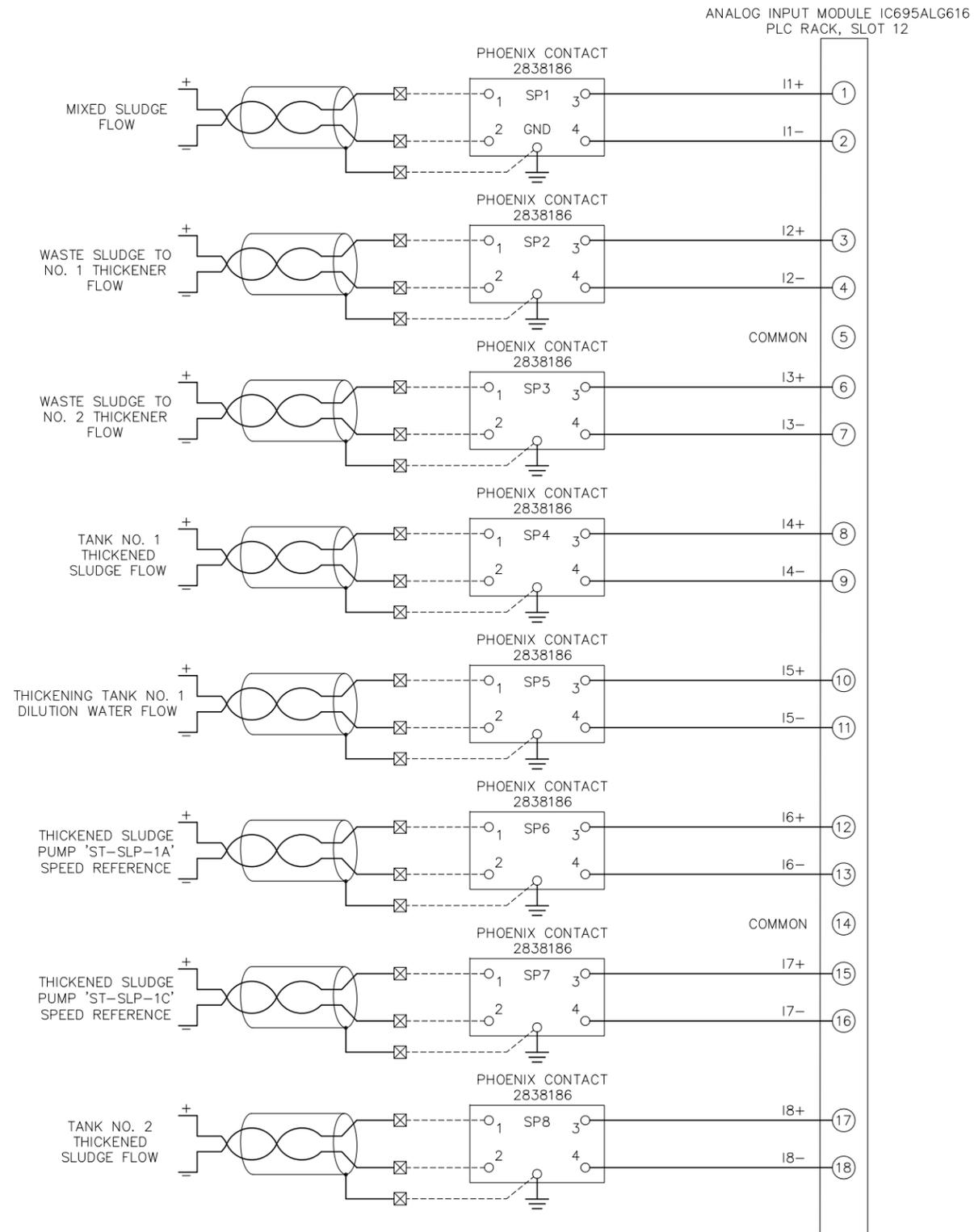
PLC DISCRETE INPUT CARD WIRING DIAGRAM - SLOT 9



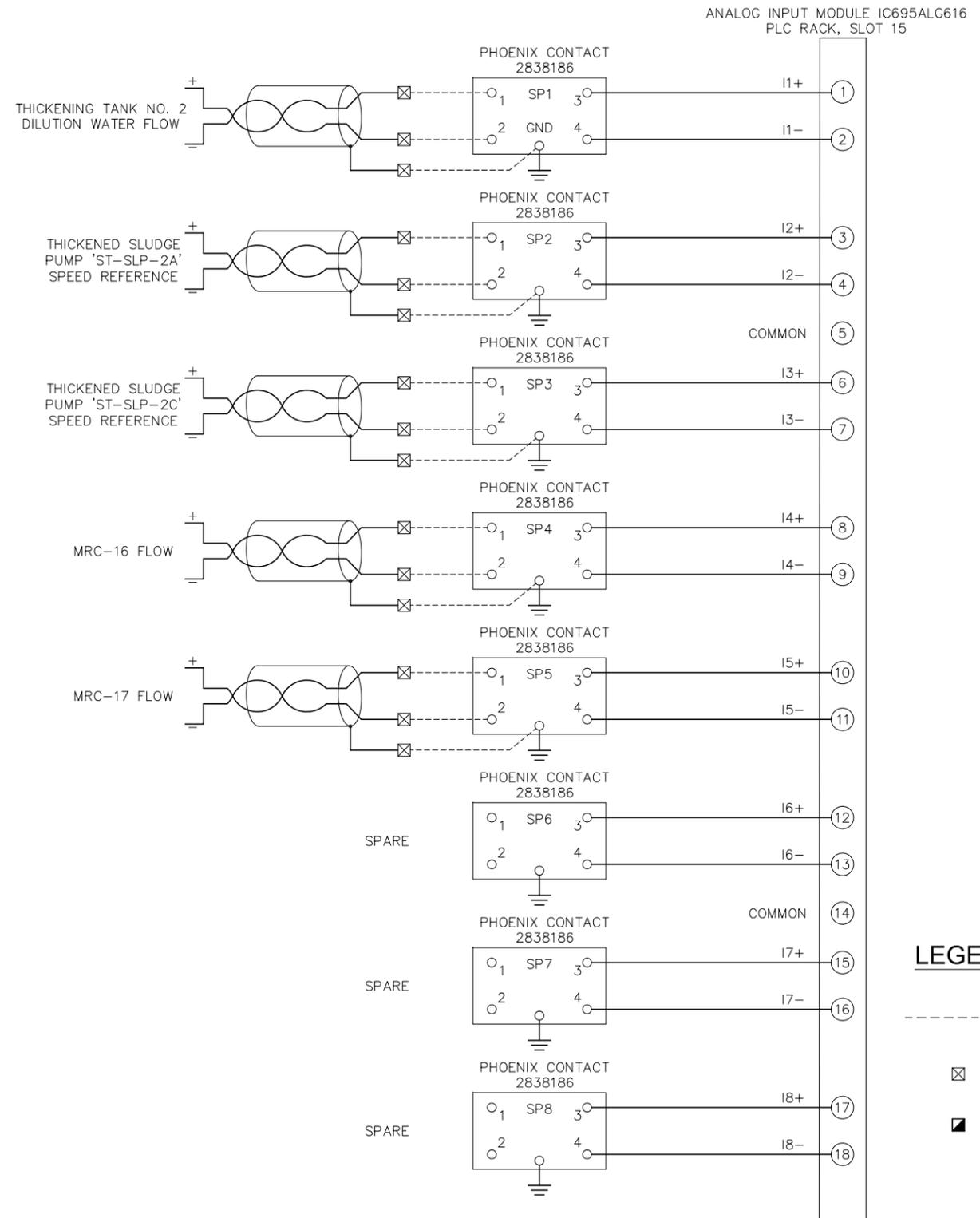
PLC RELAY OUTPUT CARD WIRING DIAGRAM - SLOT 11

**LEGEND**

- DENOTES FIELD WIRING
- ☒ DENOTES TERMINAL ON FIELD DEVICE
- DENOTES TERMINAL IN MCC-55 PLC CABINET
- \* DENOTES MCC-53 ANNUNCIATOR ALARM INPUT



PLC - ANALOG INPUT CARD WIRING DIAGRAM - SLOT 12



PLC - ANALOG INPUT CARD WIRING DIAGRAM - SLOT 15

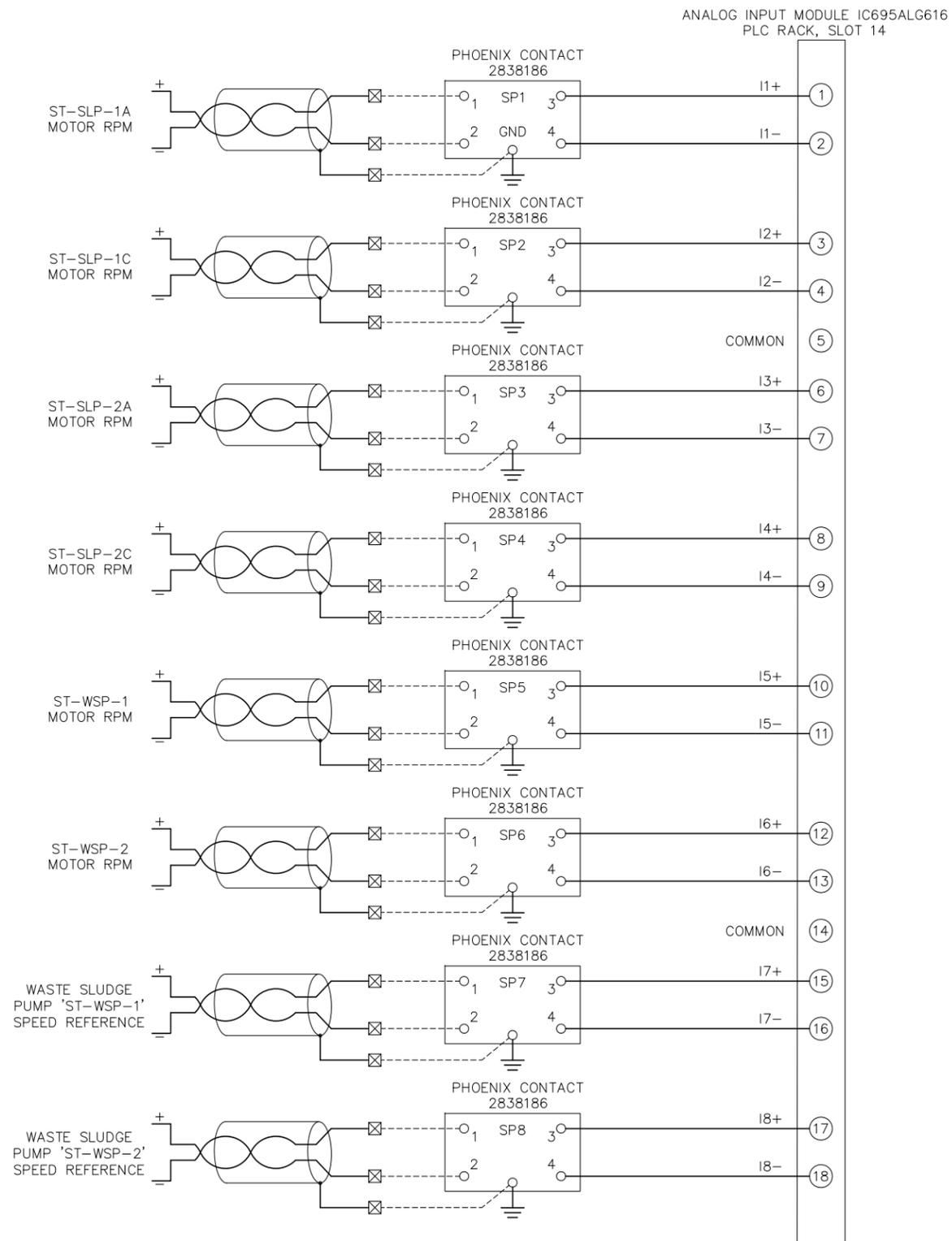
**LEGEND**

- DENOTES FIELD WIRING
- ⊗ DENOTES TERMINAL ON FIELD DEVICE
- DENOTES TERMINAL IN MCC-55 PLC CABINET

JOB No.	231802042						
DESIGNED	TDT						
DRAWN	JLH						
CHECKED	TDT						
DATE	12/2018	No.	DATE	BY	APP	REVISION	DESCRIPTION

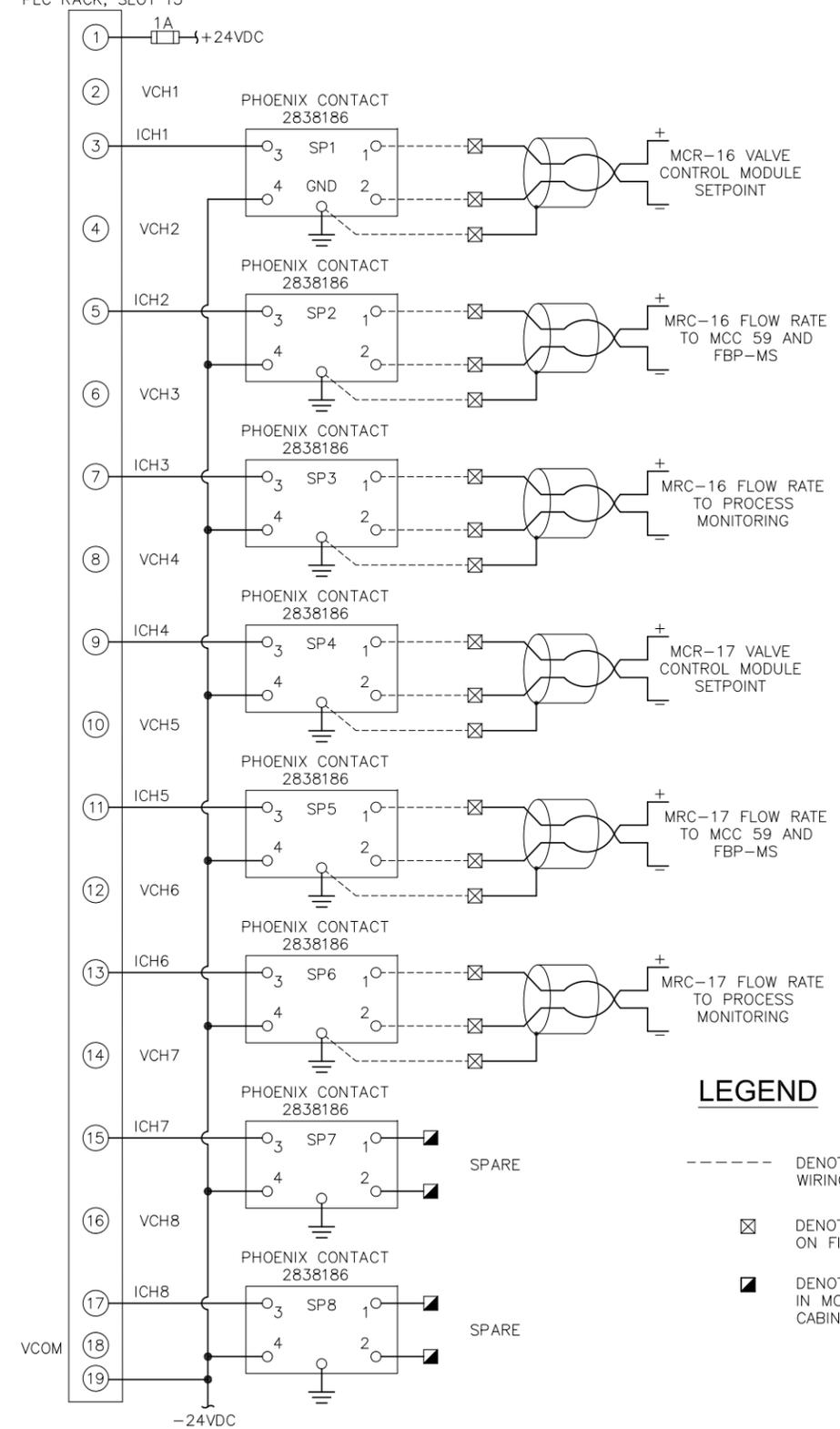
SCALE

AS SHOWN



PLC - ANALOG INPUT CARD WIRING DIAGRAM - SLOT 14

ANALOG OUTPUT MODULE IC693ALG392  
PLC RACK, SLOT 15



**LEGEND**

- DENOTES FIELD WIRING
- ☒ DENOTES TERMINAL ON FIELD DEVICE
- DENOTES TERMINAL IN MCC-55 PLC CABINET

PLC - ANALOG OUTPUT CARD WIRING DIAGRAM - SLOT 15



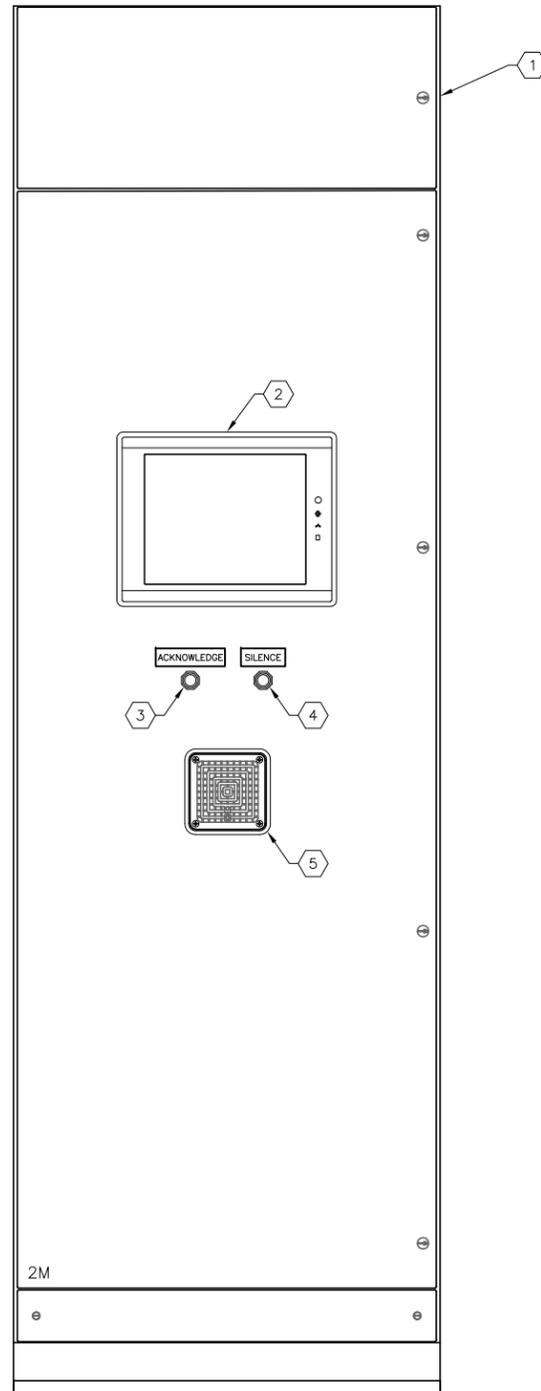
JOB No.	231802042								
DESIGNED	TDT								
DRAWN	JLH								
CHECKED	TDT								
DATE	12/2018	No.		DATE	BY	APP	REVISION	DESCRIPTION	

SCALE	
AS SHOWN	

**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

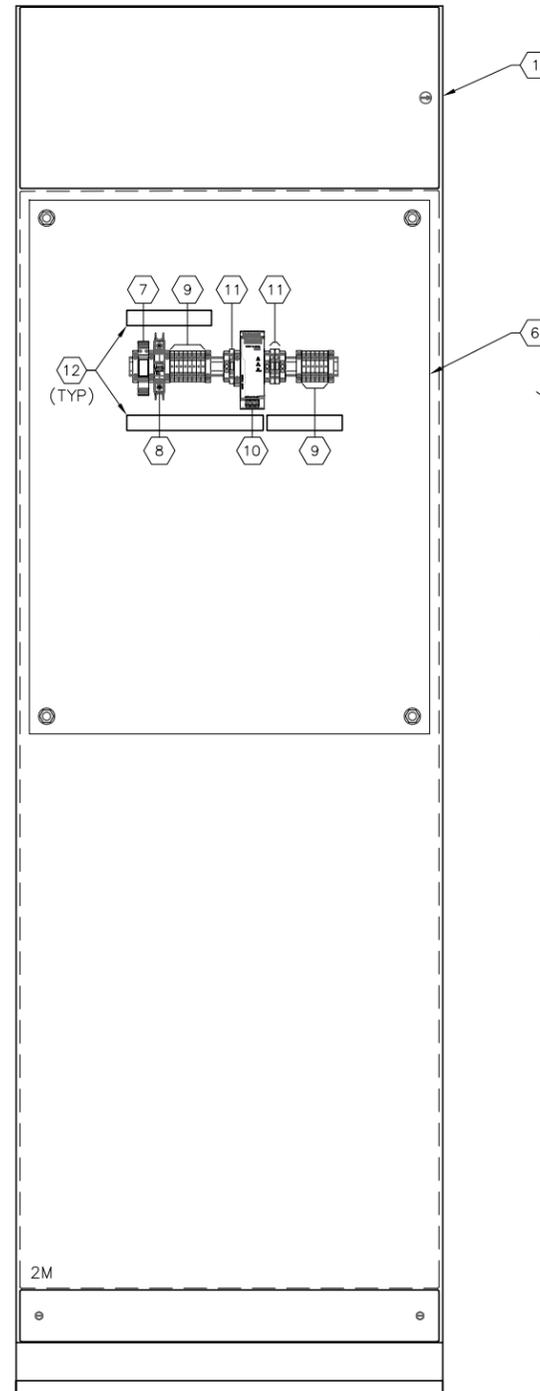
**MCC-55 PLC  
ANALOG INPUT I/O  
WIRING DIAGRAM**

SHEET NUMBER	I-12
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



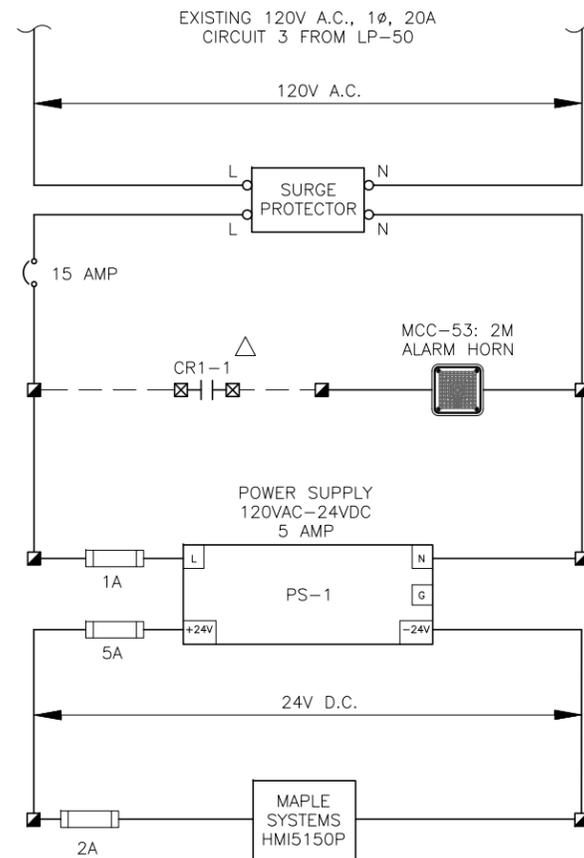
**PROPOSED MCC-53  
FRONT ELEVATION**

SCALE : N.T.S.



**PROPOSED MCC-53  
INTERIOR ELEVATION**

SCALE : N.T.S.



**MCC-53: SECTION 2M  
WIRING SCHEMATIC**

**KEYED NOTES:**

- ① 277/480V, 800A, 3φ, 4-WIRE MCC-53, SECTION 2M.
- ② CONTRACTOR TO PROVIDE AND INSTALL NEW 15" OPERATOR INTERFACE TERMINAL (OIT), MAPLE SYSTEMS #HMI5150P. OIT SHALL BE USED TO DISPLAY ALL STATUS AND ALARM INFORMATION - TOUCH SCREEN PROMPTS TO DISPLAY ADDITIONAL INFORMATION.
- ③ PROVIDE AND INSTALL MOMENTARY PUSHBUTTON, NON- ILLUMINATED WITH RED COLOR CAP FOR 'ACKNOWLEDGE'. ALLEN BRADLEY 800H-BR6A. PROVIDE AND INSTALL LAMACOID NAMEPLATE (TYPICAL). LETTERING SHALL BE 1/2" MINIMUM. SECURE NAMEPLATE WITH STAINLESS STEEL SCREWS. CONTRACTOR SHALL USE PUSHBUTTON FOR 'ACKNOWLEDGE' INPUT TO MCC-55 PLC.
- ④ PROVIDE AND INSTALL MOMENTARY PUSHBUTTON, NON- ILLUMINATED WITH RED COLOR CAP FOR 'SILENCE'. ALLEN BRADLEY 800H-BR6A. PROVIDE AND INSTALL LAMACOID NAMEPLATE (TYPICAL). LETTERING SHALL BE 1/2" MINIMUM. SECURE NAMEPLATE WITH STAINLESS STEEL SCREWS. CONTRACTOR SHALL USE PUSHBUTTON FOR 'SILENCE' INPUT TO MCC-55 PLC.
- ⑤ PROVIDE AND INSTALL 120V AC ALARM HORN #350WB.
- ⑥ PROVIDE AND INSTALL PARTIAL 1/2 LENGTH BACKPLANE FOR THE INSTALLATION OF COMPONENTS.
- ⑦ PROVIDE AND INSTALL INCOMING 120V POWER SURGE PROTECTION DEVICE. PHOENIX CONTACT #2905228.
- ⑧ PROVIDE AND INSTALL 120V CIRCUIT BREAKER. SQUARE-D QOU115.
- ⑨ PROVIDE AND INSTALL MULTI-LEVEL TERMINAL BLOCKS. PHOENIX CONTACT #3044636.
- ⑩ PROVIDE AND INSTALL 120VAC-24VDC POWER SUPPLY WITH 5 AMPERE OUTPUT PHOENIX CONTACT #2866750.
- ⑪ PROVIDE AND INSTALL FUSE TERMINAL BLOCKS FOR DC POWER. PHOENIX CONTACT UK 5-HESI. REFER TO WIRING DIAGRAM ON SHEET I-7 FOR QUANTITIES AND SIZES.
- ⑫ PROVIDE AND INSTALL 1" X 3" PANDUIT.

**LEGEND**

- DENOTES FIELD WIRING
- DENOTES TERMINAL IN MCC-53, 2M
- ⊠ DENOTES TERMINAL IN MCC-55 PLC CABINET
- △ DENOTES DEVICE IN MCC-55 PLC CABINET



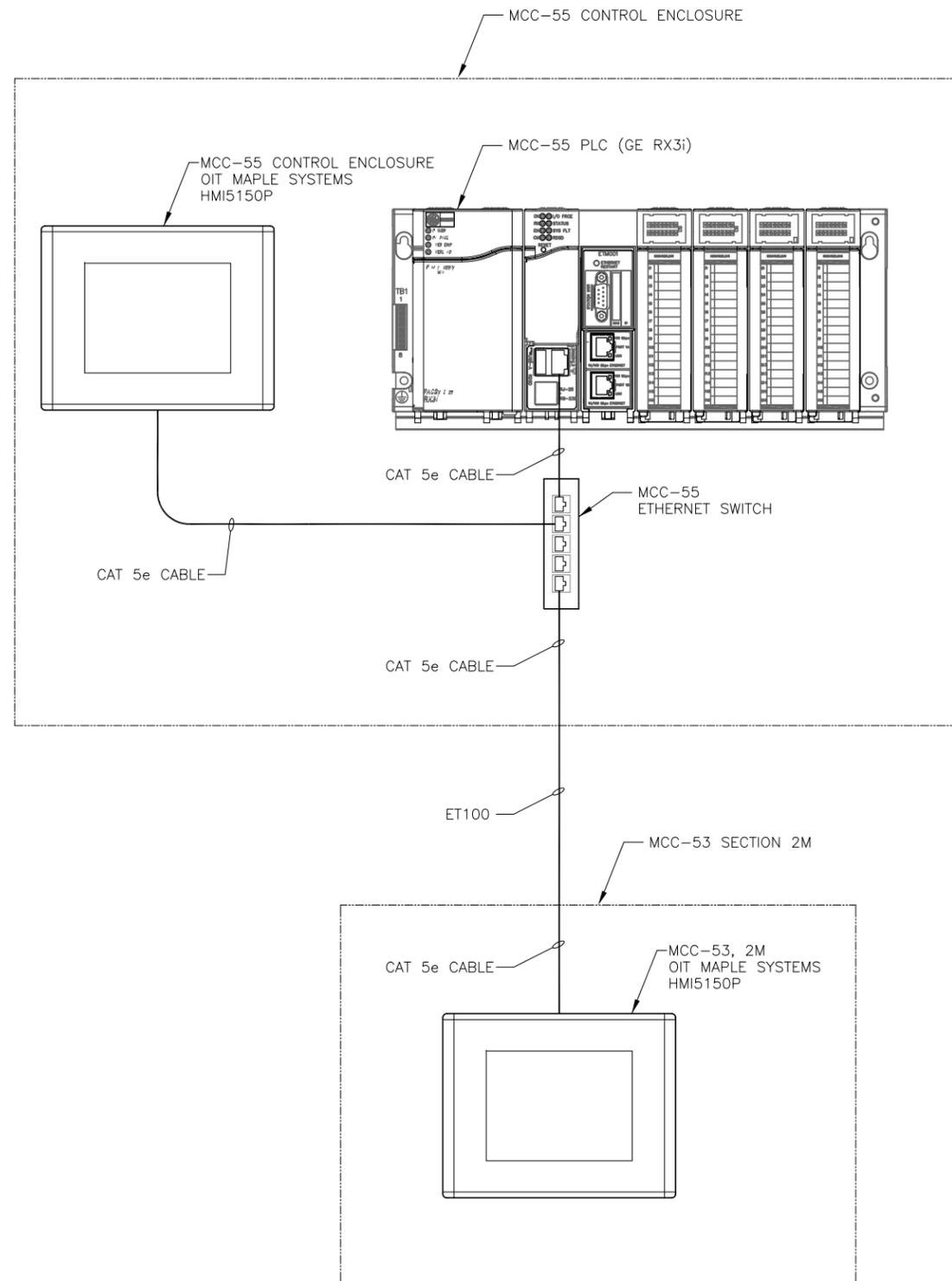
JOB No.	231802042						
DESIGNED	TDT						
DRAWN	JLH						
CHECKED	TDT						
DATE	12/2018	No.	DATE	BY	APP	REVISION	DESCRIPTION

SCALE  
AS SHOWN

**City of Tampa Wastewater Department**  
HOWARD F. CURREN AWTP  
SLUDGE TREATMENT BUILDING SWITCHGEAR & MCC  
REPLACEMENT

**MCC-53: SECTION 2M  
DETAILS**

SHEET NUMBER	I-13
TIMOTHY THOMAS, P.E. No. 47079	FILE: 231802042E01



**COMMUNICATIONS RISER DIAGRAM**

JOB No.	231802042							
DESIGNED	TDT							
DRAWN	JLH							
CHECKED	TDT							
DATE	12/2018	No.	DATE	BY	APP	REVISION	DESCRIPTION	

SCALE	
AS SHOWN	