

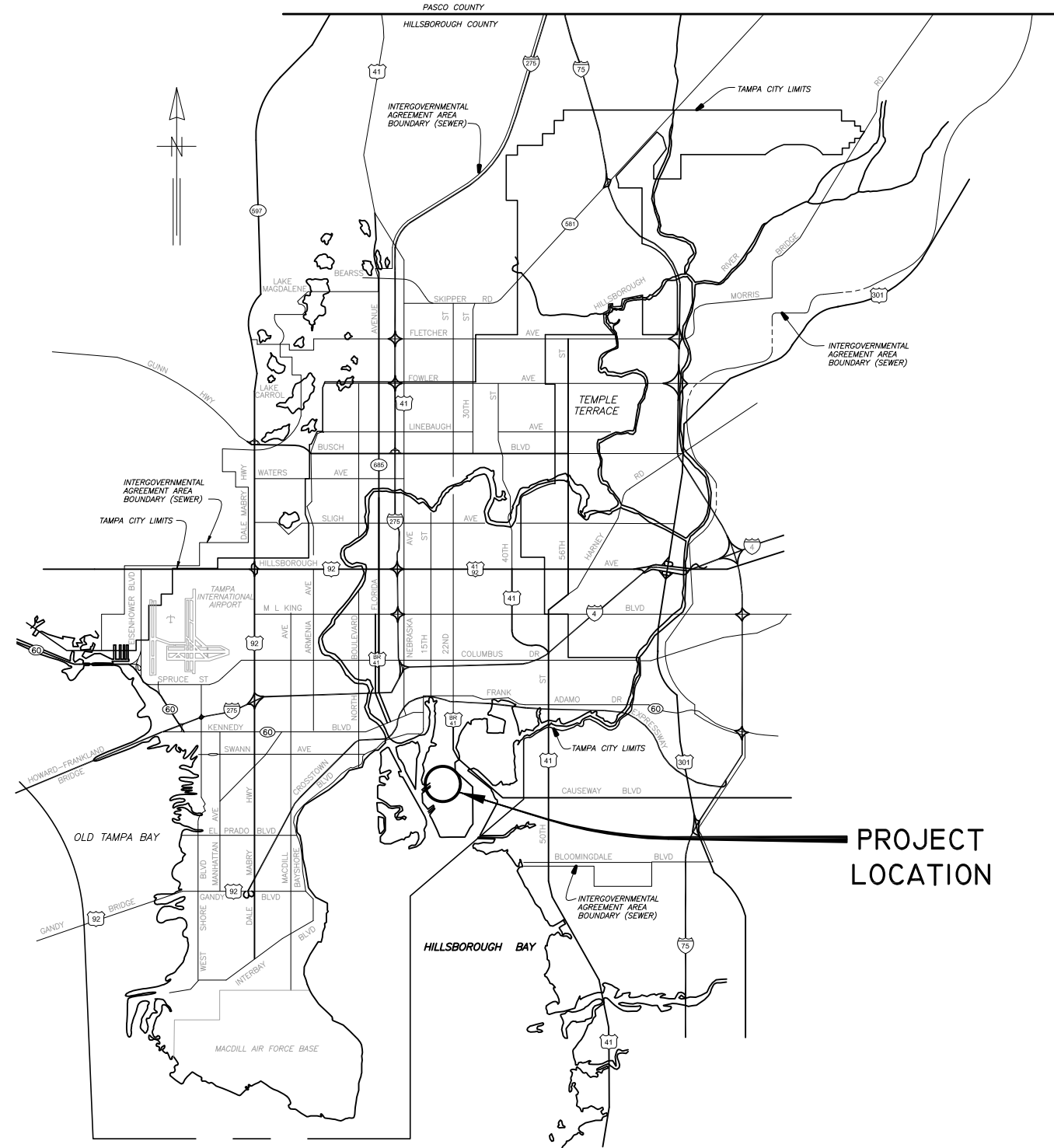
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**Please Email ALL Questions:**  
**[MailTo:ContractAdministration@TampaGov.net](mailto:ContractAdministration@TampaGov.net)**

**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

LOCATION MAP



PLANS

FOR

CITY OF TAMPA FLORIDA  
WASTEWATER DEPARTMENT  
PHASE I

FOR

THE CONSTRUCTION OF THE

HOWARD F. CURREN AWTP  
LARGE MOTOR SOFTSTART ADDITIONS

CONTRACT : 13-C-00035

AUGUST 2013



**TRICON**  
CONSULTING ENGINEERS

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

DRAWING INDEX	
SHEET No.	SHEET TITLE
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2	INDEX, SCHEDULES AND GENERAL NOTES
3	SITE PLAN FOR SOFTSTARTER ADDITIONS
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E-2	JUNCTION CHAMBER NO. 1 : PARTIAL FLOOR PLAN
E-3	MAIN PUMPING STATION : PARTIAL FLOOR PLAN
E-4	FILTER BUILDING NO. 1 : PARTIAL FLOOR PLANS
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E-23	MP-AB-2 AND MP-AB-3 SOFTSTARTER DETAILS
E-24	MOTOR FEEDER INFORMATION
E-25	PROCESS AIR BLOWER CONTROL PANEL DETAILS

480V SOFTSTARTER ADDITION SCHEDULE							
MOTOR SIZE	VOLTAGE	FULL LOAD AMPS	TYPE OF LOAD	SERVICE	LOCATION	MCC	DESIGNATION
250	480	324	POSITIVE DISPLACEMENT	AIR BLOWER	JUNCTION CHAMBER NO. 1 - 002	MCC-27	JC-1-AB-1
250	480	324	POSITIVE DISPLACEMENT	AIR BLOWER	JUNCTION CHAMBER NO. 1 - 002	MCC-27	JC-1-AB-2
250	480	324	POSITIVE DISPLACEMENT	AIR BLOWER	JUNCTION CHAMBER NO. 1 - 002	MCC-27A	JC-1-AB-3
250	480	324	POSITIVE DISPLACEMENT	AIR BLOWER	JUNCTION CHAMBER NO. 1 - 002	MCC-27A	JC-1-AB-4
400	480	434	CENTRIFUGAL	MAIN PUMP AIR BLOWER	MAIN PUMPING STATION - 010	MCC-31	MP-AB-2
400	480	434	CENTRIFUGAL	MAIN PUMP AIR BLOWER	MAIN PUMPING STATION - 010	MCC-31	MP-AB-3
350	480	395	POSITIVE DISPLACEMENT	BACKWASH AIR BLOWER	FILTER BUILDING NO. 1 - 015	MCC-57	FB-BWB-1
350	480	395	POSITIVE DISPLACEMENT	BACKWASH AIR BLOWER	FILTER BUILDING NO. 1 - 015	MCC-57	FB-BWB-2
350	480	395	POSITIVE DISPLACEMENT	BACKWASH AIR BLOWER	FILTER BUILDING NO. 2 - 047	MCC-85	FB-BWB-3
350	480	395	POSITIVE DISPLACEMENT	BACKWASH AIR BLOWER	FILTER BUILDING NO. 2 - 047	MCC-85	FB-BWB-4
350	480	395	POSITIVE DISPLACEMENT	BACKWASH AIR BLOWER	FILTER BUILDING NO. 2 - 047	MCC-85	FB-BWB-5

**GENERAL NOTES**

- THE WORK CONSIST OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, AND TECHNICAL SUPERVISION TO INSTALL NEW SOFTSTARTERS AND CAPACITORS 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.
  - CONTROL CONDUCTORS SHALL BE STRANDED COPPER, 14AWG MINIMUM, WITH XHHW INSULATION, UNLESS OTHERWISE NOTED.
  - ALL WIRING SHALL BE IDENTIFIED w/ 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 CIRCUITS SHALL HAVE A GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT w/ POWER CONDUCTORS.
  - 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.
  - CONDUITS SHALL BE RIGID HEAVY WALL ALUMINUM. FLEXIBLE CONDUITS SHALL BE NONMETALLIC LIQUID TIGHT.
  - ALL MOTOR CONDUCTORS SHALL BE REPLACED (WITH THE EXCEPTION OF PROCESS BLOWER #1). THE EXISTING CONDUCTORS SHALL BE REMOVED, AND REPLACED WITH NEW COPPER DLO CONDUCTORS AS INDICATED. PRIOR TO PULLING THE NEW CONDUCTORS, CLEAN THE EXISTING CONDUITS USING A SWAB, AND RUN A PROPERLY SIZED RUBBER SLUG MANDREL THROUGH THEM TO PROVE INTEGRITY AND SPREAD WIRE LUBRICANT. PRIOR TO MAKING FINAL CONNECTIONS, THE CONTRACTOR SHALL USE A MEGGER TO TEST THE INSULATION RESISTANCE OF THE INSTALLED CONDUCTORS (PHASE TO PHASE & PHASE TO GROUND-1000V FOR ONE MINUTE) AND RECORD VALUES.
  - MAKE MODIFICATIONS TO THE EXISTING MOTOR CONTROL CENTERS AS SHOWN AND SPECIFIED.
  - MAKE MODIFICATIONS TO THE EXISTING PROCESS AIR BLOWERS CONTROL PANEL AS SHOWN AND SPECIFIED.
  - PROVIDE AND INSTALL SOFTSTARTER, CABINET, CAPACITORS AND ASSOCIATED HARDWARE AS SHOWN AND SPECIFIED.
  - MAKE REQUIRED INTERCONNECTIONS BETWEEN MOTOR CONTROL CENTER COMPONENTS AND NEW SOFTSTARTER AS SHOWN AND SPECIFIED.
  - MAKE FINAL CONNECTIONS TO MOTORS USING NEW POWER COMPRESSION FITTINGS AND NON-METALLIC LIQUID-TIGHT FLEXIBLE CONDUIT AS NECESSARY.
  - PROVIDE AND INSTALL STAINLESS STEEL CHANNEL ERECTOR SYSTEMS TO MOUNT AND SUPPORT ENCLOSURES, BOXES, CONDUITS AND OTHER EQUIPMENT. ALL MOUNTING HARDWARE SHALL BE 316 SS.
  - ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2008 NATIONAL ELECTRICAL CODE (NEC) AND CHAPTER 5 OF THE CITY OF TAMPA CODE.
  - CONTRACTOR SHALL USE THE MOTOR DATA PROVIDED IN THE SPECIFICATIONS TO ESTABLISH THE PROGRAMMABLE PARAMETERS FOR THE NEW SOFTSTARTER. CONTRACTOR SHALL FULLY PROGRAM THE SOFTSTARTER PRIOR TO INITIAL START-UP OF THE SYSTEM TO AVOID UNEXPECTED OR HARMFUL OPERATION OF THE SYSTEM.
  - AFTER COMPLETING THE EQUIPMENT INSTALLATION AND PROGRAMMING TASKS, THE SYSTEM SHALL BE TESTED TO SHOW FUNCTIONALITY. IF NECESSARY, SOFTSTARTER PROGRAM PARAMETERS SHALL BE ADJUSTED TO ACHIEVE THE PROPER MOTOR STARTING AND STOPPING CHARACTERISTICS.
  - TEST AND START-UP REPORTS FOR THE MOTOR STARTER SYSTEM AND WIRE SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE (O&M) MANUALS PROVIDED UNDER THIS CONTRACT. ALL RELAY AND SOFTSTARTER SETTINGS SHALL BE TABULATED AND INCLUDED IN THE O&M MANUAL.



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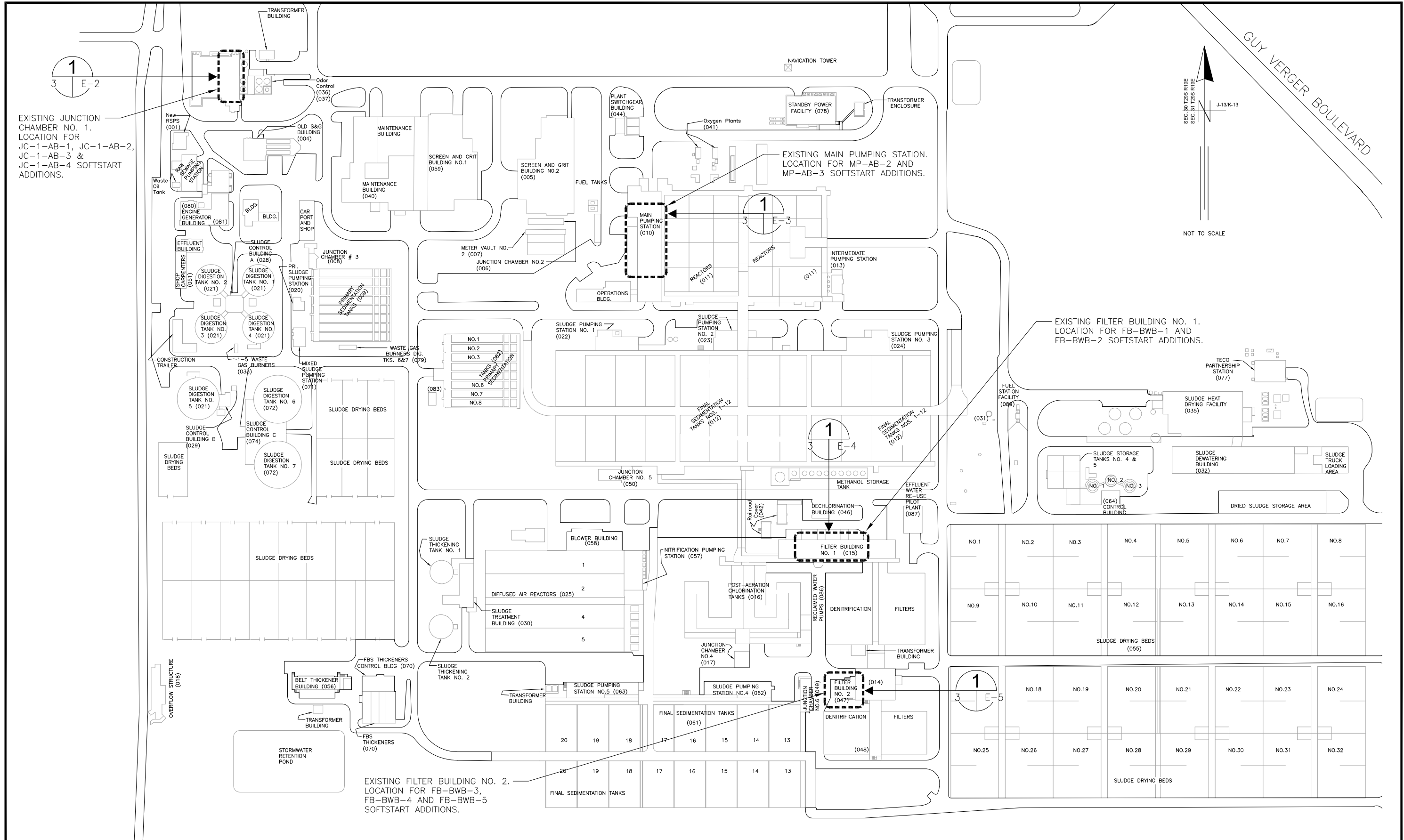
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**City of Tampa Wastewater Department**  
**HOWARD F. CURREN AWP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

**INDEX, SCHEDULES AND  
GENERAL NOTES**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER	<b>2</b>
FILE:	17130134E01

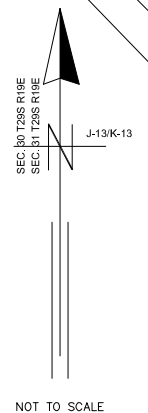


EXISTING JUNCTION CHAMBER NO. 1. LOCATION FOR JC-1-AB-1, JC-1-AB-2, JC-1-AB-3 & JC-1-AB-4 SOFTSTART ADDITIONS.

EXISTING MAIN PUMPING STATION. LOCATION FOR MP-AB-2 AND MP-AB-3 SOFTSTART ADDITIONS.

EXISTING FILTER BUILDING NO. 1. LOCATION FOR FB-BWB-1 AND FB-BWB-2 SOFTSTART ADDITIONS.

EXISTING FILTER BUILDING NO. 2. LOCATION FOR FB-BWB-3, FB-BWB-4 AND FB-BWB-5 SOFTSTART ADDITIONS.



GUY VERGER BOULEVARD

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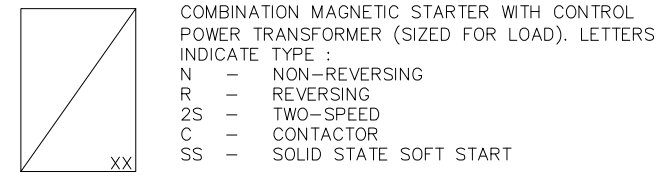
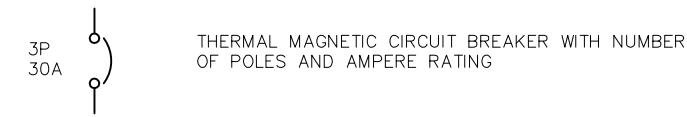
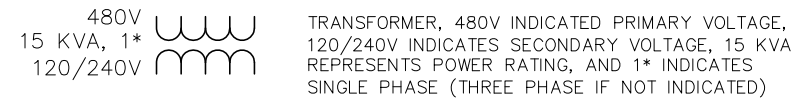
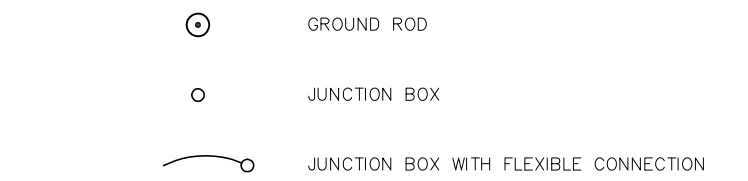
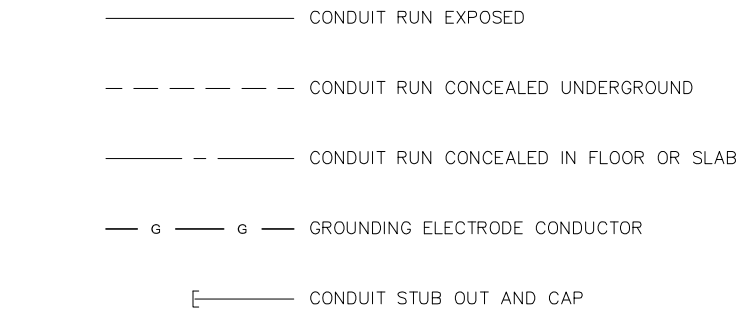
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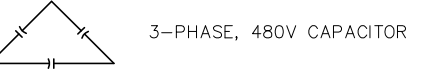
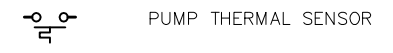
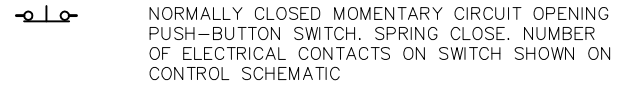
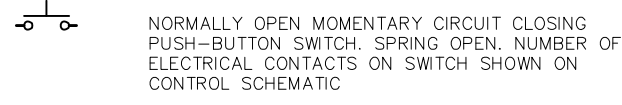
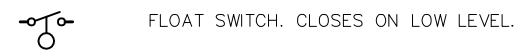
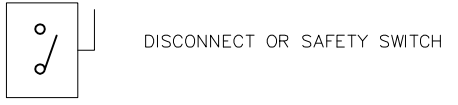
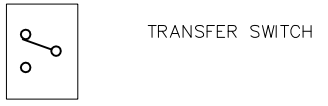
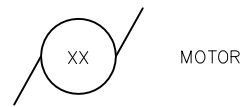
City of Tampa Wastewater Department  
**HOWARD F. CURREN AWWP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

**SITE PLAN FOR**  
**SOFTSTARTER ADDITIONS**

SHEET NUMBER	3
TIMOTHY THOMAS, P.E. No. 47079	FILE: 171301342E01



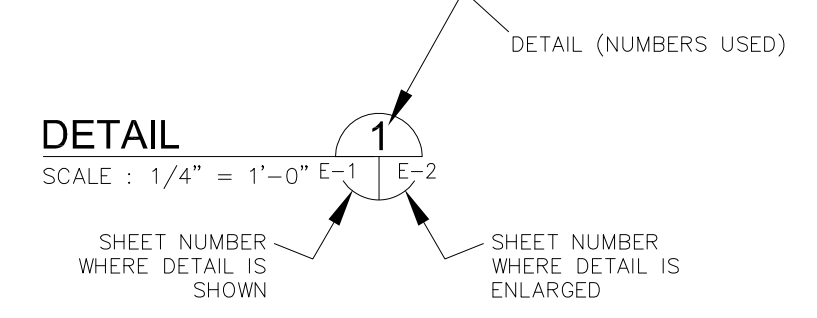
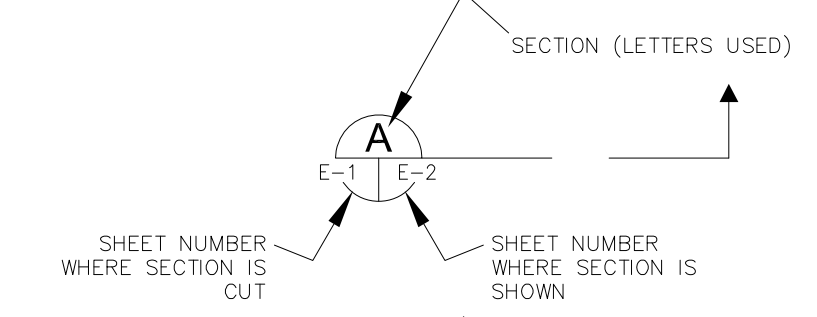
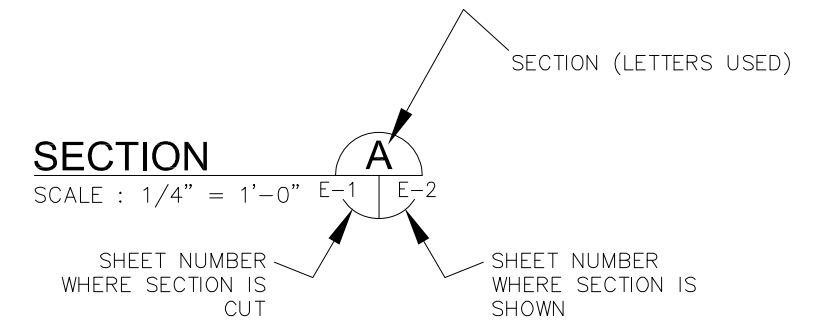
XXX	XXX DEVICE	DESCRIPTION
HLS	HLS	HIGH LEVEL SWITCH
HOA	HOA	HAND-OFF-AUTO
LD	LD	LEAK DETECTION
LLS	LLS	LOW LEVEL SWITCH
LOR	LOR	LOCAL-OFF-REMOTE
PB	PB	PUSH BUTTON
RTU	RTU	REMOTE TERMINAL UNIT
SS	SS	SOFT STARTER
SS/B	SS/B	SOFT START OR BYPASS
TS	TS	TEMPERATURE SWITCH
TVSS	TVSS	TRANSIENT VOLTAGE SURGE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



ABBREVIATIONS:

A	AMPS
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ATL	ACROSS-THE-LINE
C	CONDUIT
CU	COPPER
EX	EXISTING
ELEC	ELECTRICAL
EXP	EXPLOSION PROOF
FU	FUSE
GFI	GROUND FAULT INTERRUPTER
GND	GROUNDING CONDUCTOR
HP	HORSEPOWER
HZ	HERTZ
IG	ISOLATED GROUND
KVA	KILOVOLT AMPERES
KW	KILOWATTS
MAX	MAXIMUM
MIN	MINIMUM
N/A	NOT APPLICABLE
PH	PHASE
RECP	RECEPTACLE
RPM	REVOLUTIONS PER MINUTE
RTU	REMOTE TERMINAL UNIT
SPD	SURGE PROTECTION DEVICE
TYP	TYPICAL
V	VOLTS
WP	WEATHERPROOF

EXAMPLE OF SECTION CUT AND DETAIL



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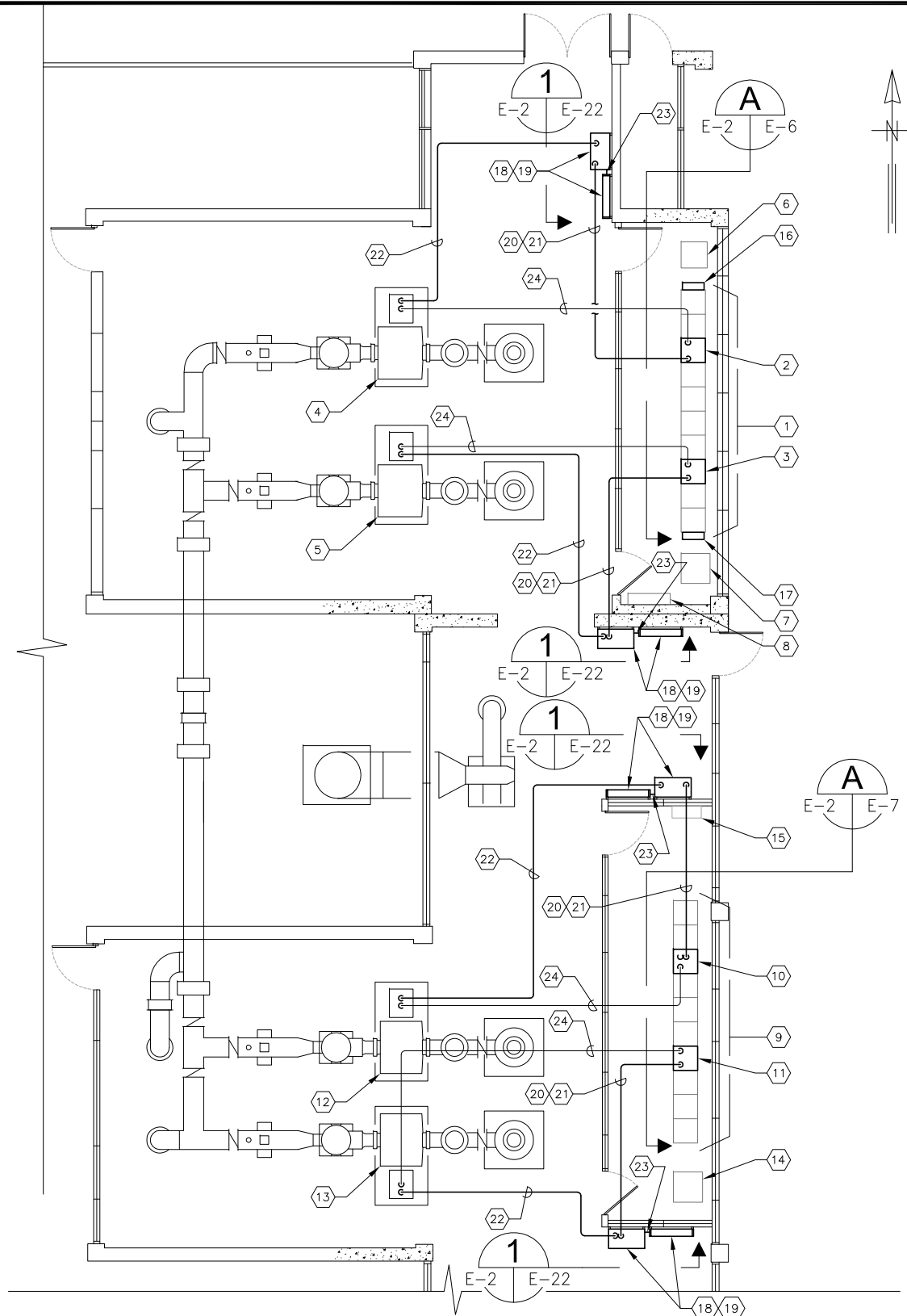
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**HOWARD F. CURREN AWTP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

**ELECTRICAL LEGEND AND ABBREVIATIONS**

SHEET NUMBER
E-1

TIMOTHY THOMAS, P.E. No. 47079  
 FILE: 171301342E01



**JUNCTION CHAMBER NO. 1 (002)**

**PLAN EL 34'-0"**

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

1  
3 E-2

**KEYED NOTES:**

- 1 EXISTING MOTOR CONTROL CENTER : MCC-27A.
- 2 EXISTING SOFTSTARTER INSTALLED IN STARTER FOR AIR BLOWER JC-1-AB-4. EXISTING SOFTSTARTER TO BE REMOVED. REFER TO TYPICAL DETAILS ON SHEET E-6.
- 3 EXISTING ACROSS-THE-LINE STARTER FOR AIR BLOWER JC-1-AB-3. EXISTING ACROSS-THE-LINE STARTER TO BE REMOVED. REFER TO TYPICAL DETAILS ON SHEET E-6.
- 4 EXISTING 480V, 250 H.P. MOTOR FOR AIR BLOWER JC-1-AB-4.
- 5 EXISTING 480V, 250 H.P. MOTOR FOR AIR BLOWER JC-1-AB-3.
- 6 EXISTING H.V.A.C. EQUIPMENT. NO WORK REQUIRED.
- 7 EXISTING COMBUSTIBLE GAS DETECTOR CABINET. NO WORK REQUIRED.
- 8 EXISTING CONTROL CABINET, JC-1-TCP-1. NO WORK REQUIRED.
- 9 EXISTING MOTOR CONTROL CENTER : MCC-27.
- 10 EXISTING ACROSS-THE-LINE STARTER FOR AIR BLOWER JC-1-AB-2. EXISTING ACROSS-THE-LINE STARTER TO BE REMOVED. REFER TO TYPICAL DETAILS ON SHEET E-6.
- 11 EXISTING ACROSS-THE-LINE STARTER FOR AIR BLOWER JC-1-AB-1. EXISTING ACROSS-THE-LINE STARTER TO BE REMOVED. REFER TO TYPICAL DETAILS ON SHEET E-6.
- 12 EXISTING 480V, 250 H.P. MOTOR FOR AIR BLOWER JC-1-AB-2.
- 13 EXISTING 480V, 250 H.P. MOTOR FOR AIR BLOWER JC-1-AB-1.
- 14 EXISTING H.V.A.C. EQUIPMENT. NO WORK REQUIRED.
- 15 EXISTING CONTROL CABINET, JC-1-TCP-2. NO WORK REQUIRED.
- 16 EXISTING 480V, 3 $\phi$ , 52.5 CAPACITOR FOR AIR BLOWER JC-1-AB-4. CAPACITOR TO BE REMOVED.
- 17 EXISTING 480V, 3 $\phi$ , 52.5 KVAR CAPACITOR FOR AIR BLOWER JC-1-AB-3. CAPACITOR TO BE REMOVED.
- 18 CONTRACTOR TO PROVIDE AND INSTALL NEW 480V, 590 AMPERE, 3-POLE SOFTSTARTER. REFER TO DETAIL ON SHEET E-22.
- 19 CONTRACTOR TO PROVIDE AND INSTALL 480V, 3 $\phi$ , 65 KVAR CAPACITOR WITH INTEGRAL FUSING AND CONTACTOR. REFER TO DETAIL ON SHEET E-22.
- 20 CONTRACTOR TO PROVIDE AND INSTALL PARALLEL RUNS OF 3-#4/0 DLO CU + 1-#1/0 DLO CU IN 3" C. (WITH GROUND BUSHING) TO LINE SIDE OF SOFTSTARTER (FROM EXISTING CIRCUIT BREAKER).
- 21 CONTRACTOR TO PROVIDE AND INSTALL 4-#12 XHHW CU + 1-#12 XHHW CU GND (2-#12 XHHW FROM STARTER CONTROL TRANSFORMER TO SOFTSTARTER FOR 120V POWER, 2-#12 XHHW FROM RESET PUSHBUTTON FOR SOFTSTARTER RESET) IN 3/4" C. (WITH GROUND BUSHING).
- 22 CONTRACTOR TO PROVIDE AND INSTALL PARALLEL RUNS OF 3-#4/0 DLO CU + 1-#1/0 DLO CU IN 3" C. (WITH GROUND BUSHING) FROM LOAD SIDE OF SOFTSTARTER TO EXISTING MOTOR.
- 23 CONTRACTOR TO PROVIDE AND INSTALL 3-#1/0 THWN CU + 1-#6 THWN CU GND IN 2" C. FOR POWER FACTOR CORRECTING CAPACITORS AND 2-#12 XHHW CU + 1-#12 XHHW CU GND IN 3/4" C. FOR CAPACITOR CONTACTOR CONTROL WIRING.
- 24 EXISTING MOTOR FEEDER (CONDUCTORS AND CONDUIT) TO BE REMOVED AND REPLACED. REFER TO SHEET E-24 FOR NEW CONDUCTOR/CONDUIT SIZES AND APPROXIMATE LENGTHS.

**GENERAL NOTES:**

- 1. THE NEW 480V, 590 AMPERE, SOFTSTARTERS AND NEW 480V, 3 $\phi$ , 65 KVAR CAPACITORS SHALL BE PROVIDED IN NEMA 4X STAINLESS STEEL ENCLOSURES. (APPLIES ONLY TO SOFTSTARTERS AND CAPACITORS IN JUNCTION CHAMBER NO. 1).



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**LARGE MOTOR SOFTSTART ADDITIONS**

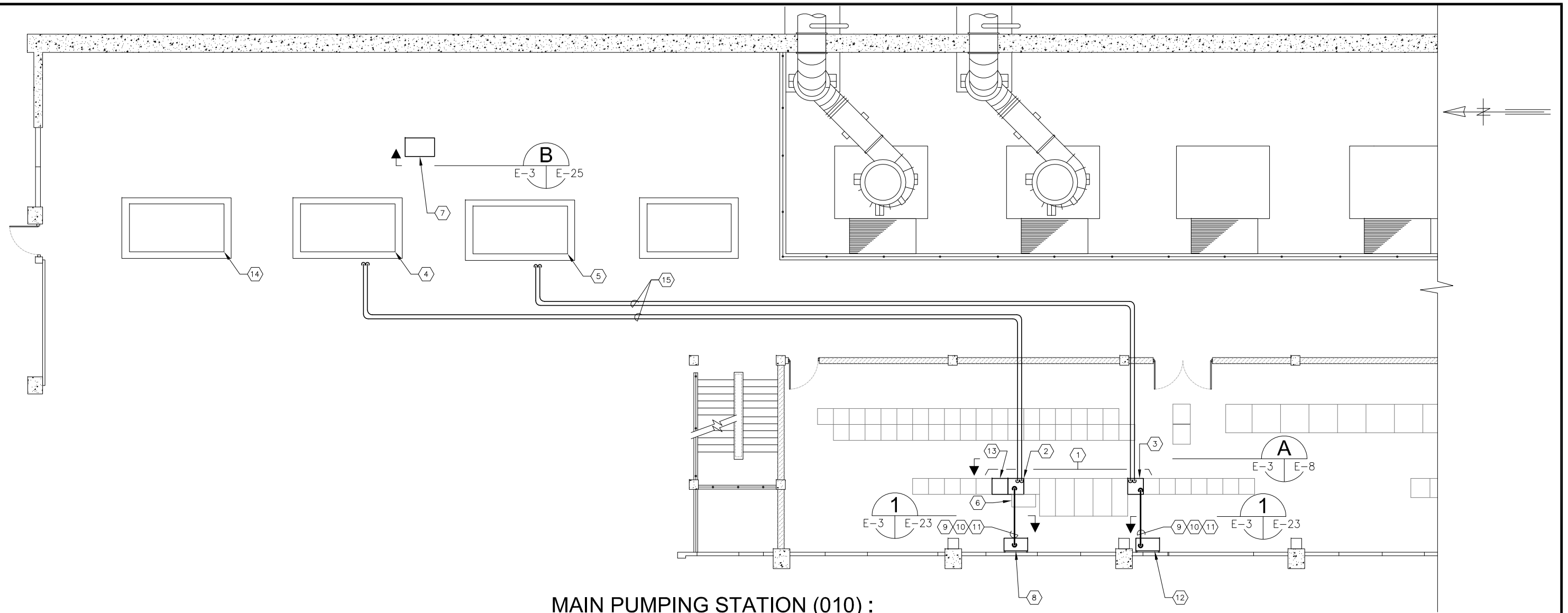
**JUNCTION CHAMBER NO. 1**  
**PARTIAL FLOOR PLAN**

SHEET NUMBER

**E-2**

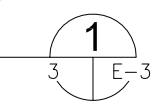
TIMOTHY THOMAS, P.E. No. 47079

FILE: 17130134E01



**MAIN PUMPING STATION (010) :**  
**PLAN EL 11'-0"**

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



**KEYED NOTES:**

- |   |   |   |
|---|---|---|
| <p>1 EXISTING MOTOR CONTROL CENTER : MCC-31.</p> <p>2 EXISTING ACROSS-THE-LINE STARTER FOR MAIN PUMP AIR BLOWER MP-AB-2. EXISTING ACROSS-THE-LINE STARTER TO BE REMOVED. REFER TO TYPICAL DETAILS ON SHEET E-8.</p> <p>3 EXISTING ACROSS-THE-LINE STARTER FOR MAIN PUMP AIR BLOWER MP-AB-3. EXISTING ACROSS-THE-LINE STARTER TO BE REMOVED. REFER TO TYPICAL DETAILS ON SHEET E-8.</p> <p>4 EXISTING 480V, 400 H.P. MOTOR FOR AIR BLOWER MP-AB-2.</p> <p>5 EXISTING 480V, 400 H.P. MOTOR FOR AIR BLOWER MP-AB-3.</p> <p>6 EXISTING SOFTSTARTER FOR MAIN PUMP AIR BLOWER MP-AB-1. NEW CONDUCTORS TO BE INSTALLED FROM EXISTING CIRCUIT BREAKER. REFER ALSO TO SHEET E-8.</p> | <p>7 EXISTING PROCESS AIR BLOWER CONTROL PANEL. REFER TO SHEET E-25 FOR REQUIRED MODIFICATIONS.</p> <p>8 PROVIDE AND INSTALL NEW SOFTSTARTER FOR MP-AB-2. REFER TO DETAILS ON SHEET E-23.</p> <p>9 PROVIDE AND INSTALL PARALLEL RUNS OF : 3-373.7 KCMIL DLO CU + 1-#1/0 DLO CU GND IN 3-1/2" C. FROM CIRCUIT BREAKER TO LINE SIDE OF SOFTSTARTER.</p> <p>10 PROVIDE AND INSTALL PARALLEL RUNS OF : 3-373.7 KCMIL DLO CU + 1-#1/0 DLO CU GND IN 3-1/2" C. (SOFTSTARTER LOAD SIDE TO BLOWER MOTOR VIA MCC CUBICLE).</p> <p>11 CONTRACTOR TO PROVIDE AND INSTALL 4-#12 XHHW CU + 1-#12 XHHW CU GND (2-#12 XHHW FROM STARTER CONTROL TRANSFORMER TO SOFTSTARTER FOR 120V POWER, 2-#12 XHHW FROM RESET PUSHBUTTON FOR SOFTSTARTER RESET) IN 3/4" C. (WITH GROUND BUSHING).</p> | <p>12 PROVIDE AND INSTALL NEW SOFTSTARTER FOR MP-AB-3. REFER TO DETAILS ON SHEET E-23.</p> <p>13 EXISTING ACROSS-THE-LINE STARTER FOR MAIN PUMP AIR BLOWER MP-AB-1. EXISTING ACROSS-THE-LINE STARTER TO BE REMOVED. REFER TO TYPICAL DETAILS ON SHEET E-8.</p> <p>14 EXISTING 480V, 400 H.P. MOTOR FOR AIR BLOWER MP-AB-1.</p> <p>15 EXISTING MOTOR FEEDERS TO BE REPLACED. PROVIDE AND INSTALL PARALLEL RUNS OF 3-373.7 KCMIL DLO CU + 1-#1/0 DLO CU IN EXISTING 3-1/2" CONDUIT. EXISTING CONDUITS BELOW EL 11'-0" (HUNG ON CEILING OF EL 2'-0"). REFER TO SHEET E-24 FOR CONDUCTOR/CONDUIT LENGTHS. (BLOWERS #2 AND #3 ONLY).</p> |
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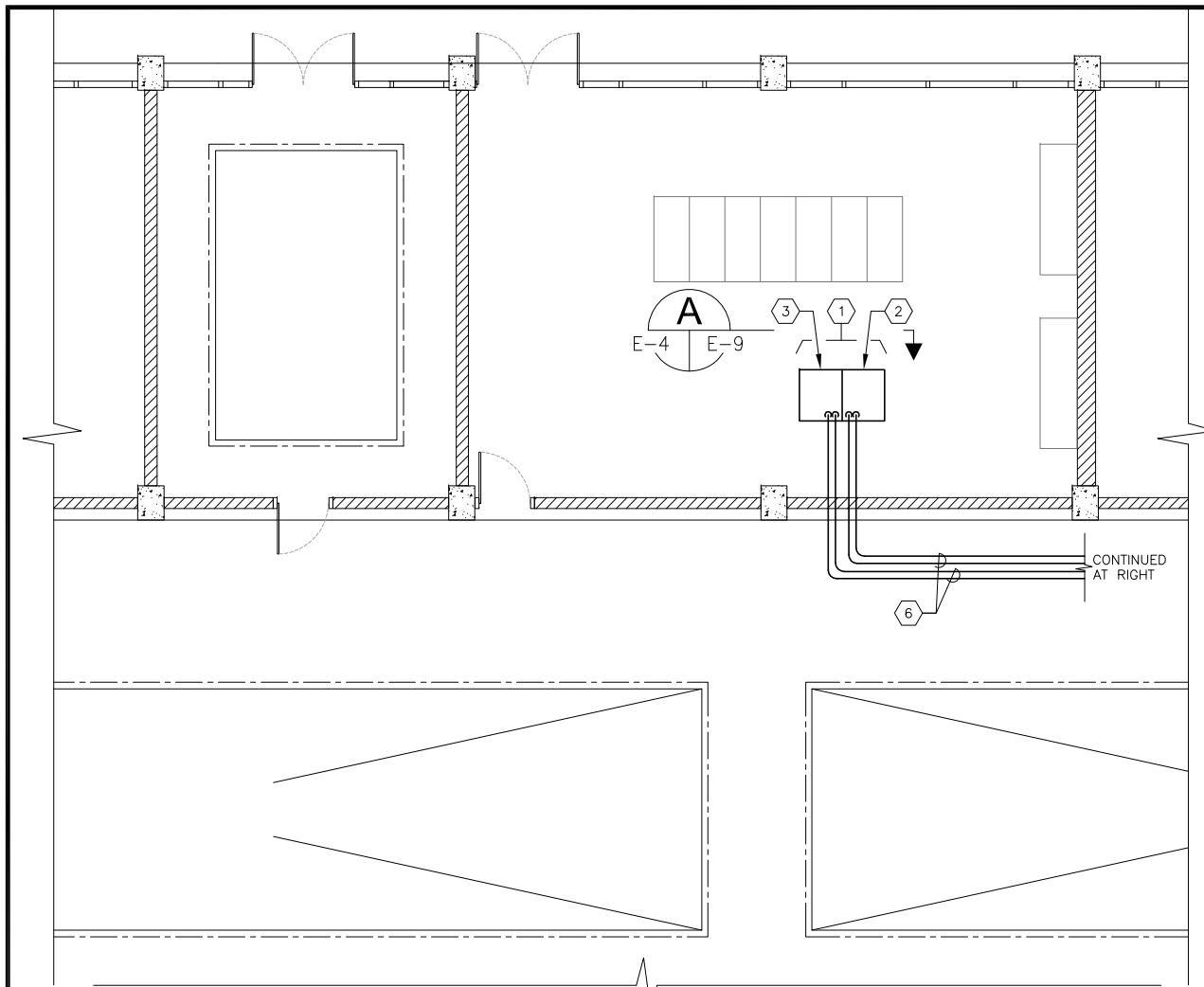
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DESIGNED	TDT						
DRAWN	EAK						
CHECKED	DEV						
DATE	08/2013	No.	DATE	BY	APP	REVISION	DESCRIPTION

SCALE  
 AS SHOWN

City of Tampa Wastewater Department  
**HOWARD F. CURREN AWTP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

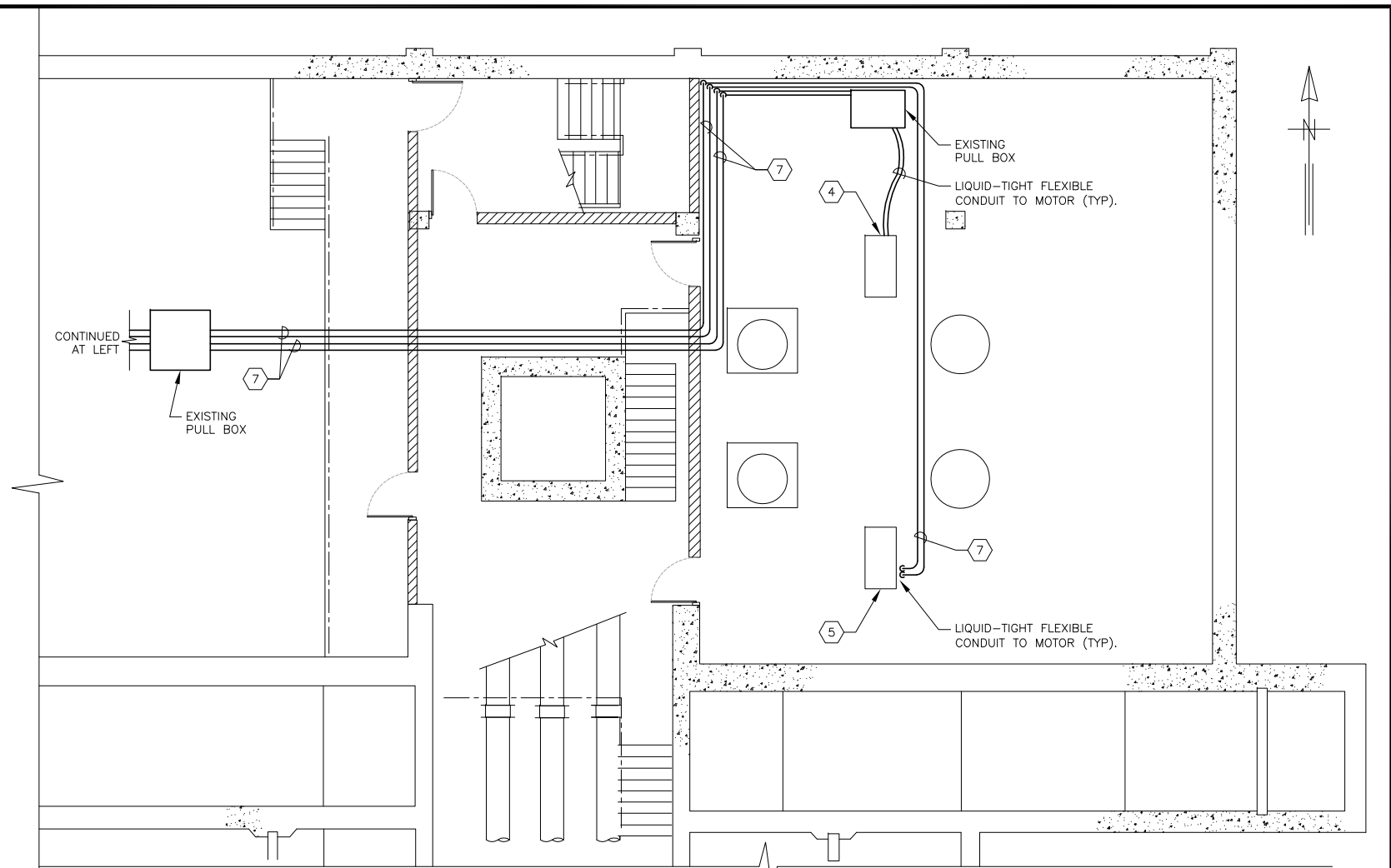
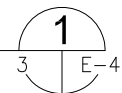
**MAIN PUMPING STATION**  
**PARTIAL FLOOR PLAN**

SHEET NUMBER	E-3
TIMOTHY THOMAS, P.E. No. 47079	FILE: 171301342E01



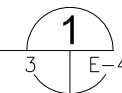
**FILTER BUILDING NO.1 (015) :**  
**PLAN EL 11'-0"**

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



**FILTER BUILDING NO.1 (015) :**  
**PLAN EL 3'-6" & 1'-6"**

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



**KEYED NOTES:**

- ① BACKWASH AIR BLOWER CONTROL CENTER : MCC-57. REFER ALSO TO SHEET E-9 FOR REQUIRED MODIFICATIONS.
- ② EXISTING ACROSS-THE-LINE STARTER FOR FB-BWB-1 IN CUBICLE NO. 1. EXISTING ACROSS-THE-LINE STARTER TO BE REMOVED. PROVIDE AND INSTALL NEW SOFTSTARTER FOR FB-BWB-1. REFER TO TYPICAL DETAILS ON SHEET E-9.
- ③ EXISTING ACROSS-THE-LINE STARTER FOR FB-BWB-2 IN CUBICLE NO. 2. EXISTING ACROSS-THE-LINE STARTER TO BE REMOVED. PROVIDE AND INSTALL NEW SOFTSTARTER FOR FB-BWB-2. REFER TO TYPICAL DETAILS ON SHEET E-9.
- ④ EXISTING 480V, 350 H.P. MOTOR FOR BACKWASH AIR BLOWER FB-BWB-1.
- ⑤ EXISTING 480V, 350 H.P. MOTOR FOR BACKWASH AIR BLOWER FB-BWB-2.
- ⑥ EXISTING MOTOR FEEDERS TO BE REPLACED. PROVIDE AND INSTALL TWO (2) PARALLEL RUNS OF 3-313.3 KCMIL DLO CU + 1-#1/0 DLO CU IN EXISTING 3-1/2" CONDUIT. EXISTING CONDUITS BELOW EL 11'-0" (HUNG ON CEILING OF EL 3'-6"). REFER TO SHEET E-24 FOR CONDUCTOR/CONDUIT LENGTHS.
- ⑦ EXISTING MOTOR FEEDERS TO BE REPLACED. PROVIDE AND INSTALL TWO (2) PARALLEL RUNS OF 3-313.3 KCMIL DLO CU + 1-#1/0 DLO CU IN EXISTING 3-1/2" CONDUIT. CONDUITS SHOWN ARE AT EL 3'-6". REFER TO SHEET E-24 FOR CONDUCTOR/CONDUIT LENGTHS.

**GENERAL NOTES :**

1. PROVIDE AND INSTALL THE FOLLOWING CONDUIT/CONDUCTORS FROM THE EXISTING CIRCUIT BREAKER TO THE NEW SOFTSTARTER :
  - a. PARALLEL RUNS OF : 3-313.3 KCMIL DLO CU (SOFTSTARTER LINE SIDE).
2. PROVIDE AND INSTALL THE FOLLOWING CONDUCTORS FROM THE NEW SOFTSTARTER TO THE EXISTING MOTOR (VIA EXISTING CUBICLE AND MOTOR FEEDER CONDUIT) :
  - a. PARALLEL RUNS OF : 3-313.3 KCMIL DLO CU + 1-#1/0 DLO CU GND IN EXISTING 3-1/2" C. (CONTRACTOR TO FIELD VERIFY EXISTING CONDUIT SIZE).



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SCALE	AS SHOWN
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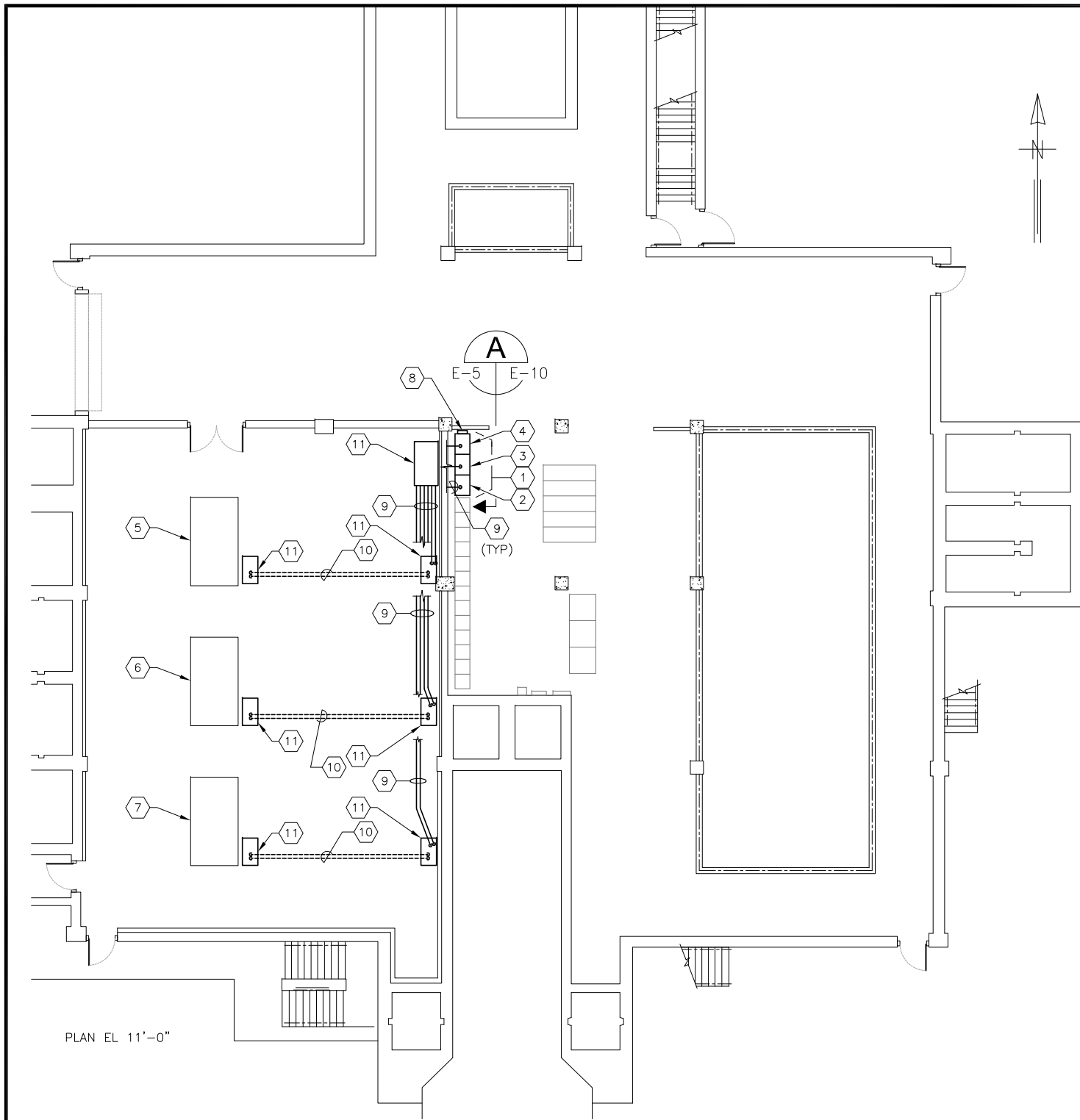
City of Tampa Wastewater Department  
**HOWARD F. CURREN AWP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

**FILTER BUILDING NO. 1**  
**PARTIAL FLOOR PLANS**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER	E-4
FILE:	171301342E01



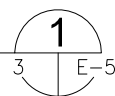


**KEYED NOTES:**

- ① EXISTING MOTOR CONTROL CENTER : MCC-85.
- ② EXISTING ACROSS-THE-LINE STARTER FOR AIR BLOWER FB-BWB-3. EXISTING ACROSS-THE-LINE STARTER TO BE REMOVED. PROVIDE AND INSTALL NEW SOFTSTARTER FOR FB-BWB-3. REFER TO TYPICAL DETAILS ON SHEET E-10.
- ③ EXISTING ACROSS-THE-LINE STARTER FOR AIR BLOWER FB-BWB-4. EXISTING ACROSS-THE-LINE STARTER TO BE REMOVED. PROVIDE AND INSTALL NEW SOFTSTARTER FOR FB-BWB-4. REFER TO TYPICAL DETAILS ON SHEET E-10.
- ④ EXISTING ACROSS-THE-LINE STARTER FOR AIR BLOWER FB-BWB-5. EXISTING ACROSS-THE-LINE STARTER TO BE REMOVED. PROVIDE AND INSTALL NEW SOFTSTARTER FOR FB-BWB-5. REFER TO TYPICAL DETAILS ON SHEET E-10.
- ⑤ EXISTING 480V, 350 H.P. MOTOR FOR AIR BLOWER FB-BWB-3.
- ⑥ EXISTING 480V, 350 H.P. MOTOR FOR AIR BLOWER FB-BWB-4.
- ⑦ EXISTING 480V, 350 H.P. MOTOR FOR AIR BLOWER FB-BWB-5.
- ⑧ EXISTING CAPACITORS TO BE REMOVED.
- ⑨ EXISTING MOTOR FEEDERS TO BE REPLACED. PROVIDE AND INSTALL TWO (2) PARALLEL RUNS OF 3-313.3 KCMIL DLO CU + 1-#1/0 DLO CU IN EXISTING 3" CONDUIT. REFER TO SHEET E-24 FOR CONDUCTOR/CONDUIT LENGTHS.
- ⑩ EXISTING MOTOR FEEDERS TO BE REPLACED. PROVIDE AND INSTALL TWO (2) PARALLEL RUNS OF 3-313.3 KCMIL DLO CU + 1-#1/0 DLO CU IN EXISTING 3" CONDUIT. EXISTING CONDUIT IS INSTALLED IN CONCRETE SLAB.
- ⑪ EXISTING PULL BOX.

**FILTER BUILDING NO. 2 (047)  
PLAN EL 11'-0"**

SCALE : 1/16" = 1'-0"



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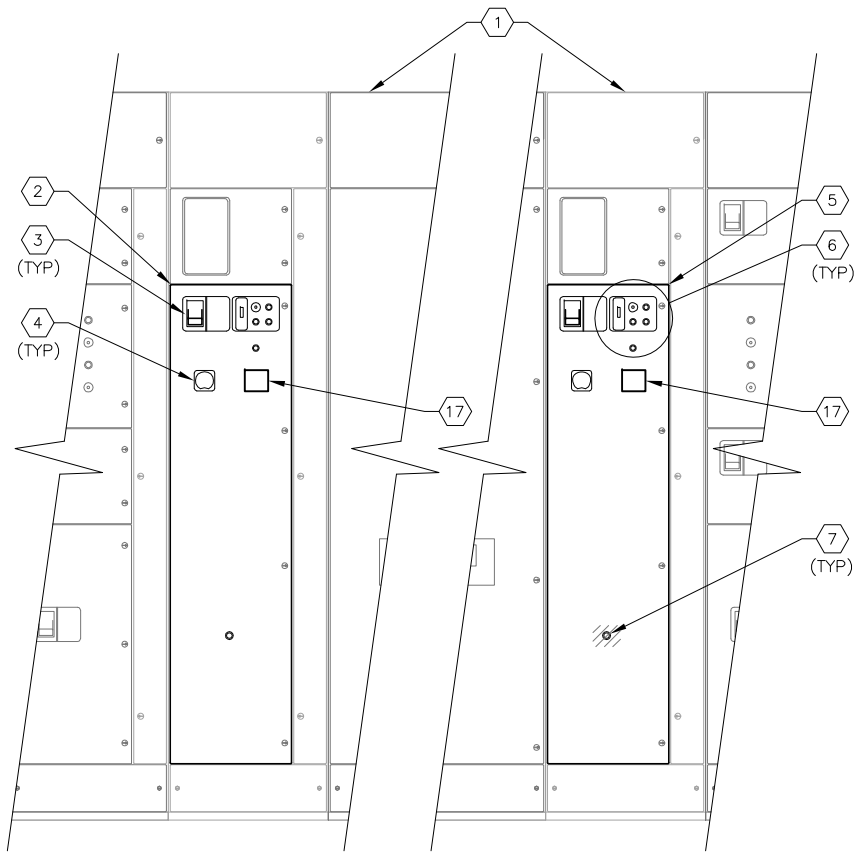
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City of Tampa Wastewater Department  
**HOWARD F. CURREN AWP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

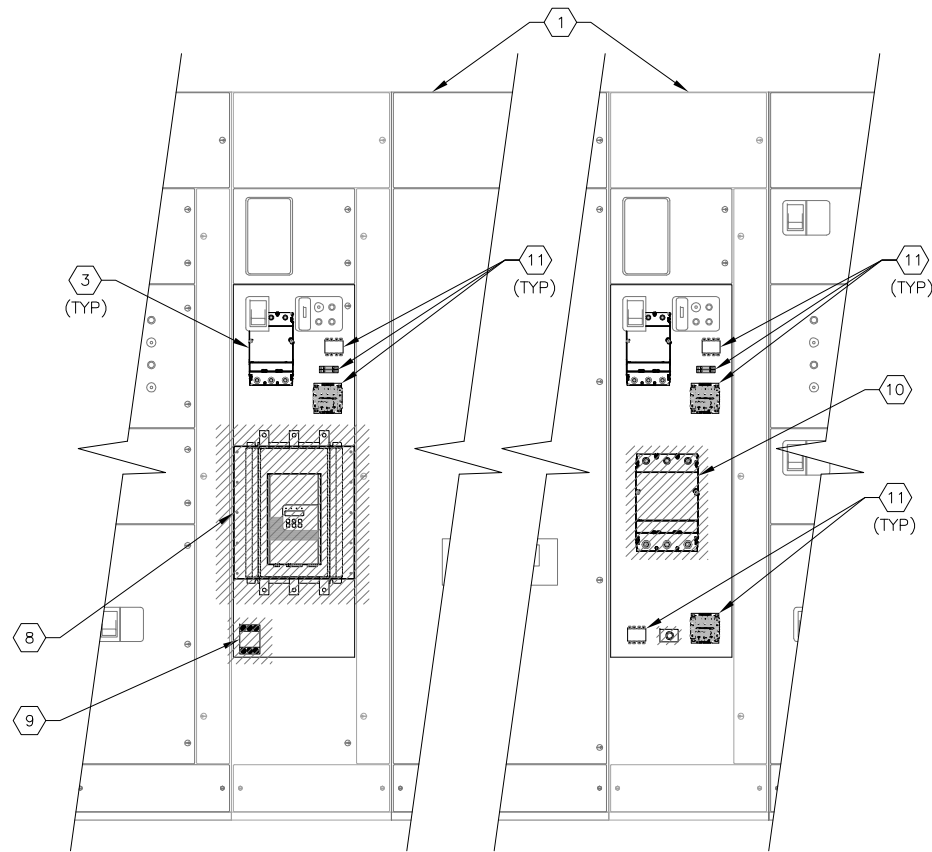
**FILTER BUILDING NO. 2  
PARTIAL FLOOR PLAN**

TIMOTHY THOMAS, P.E. No. 47079

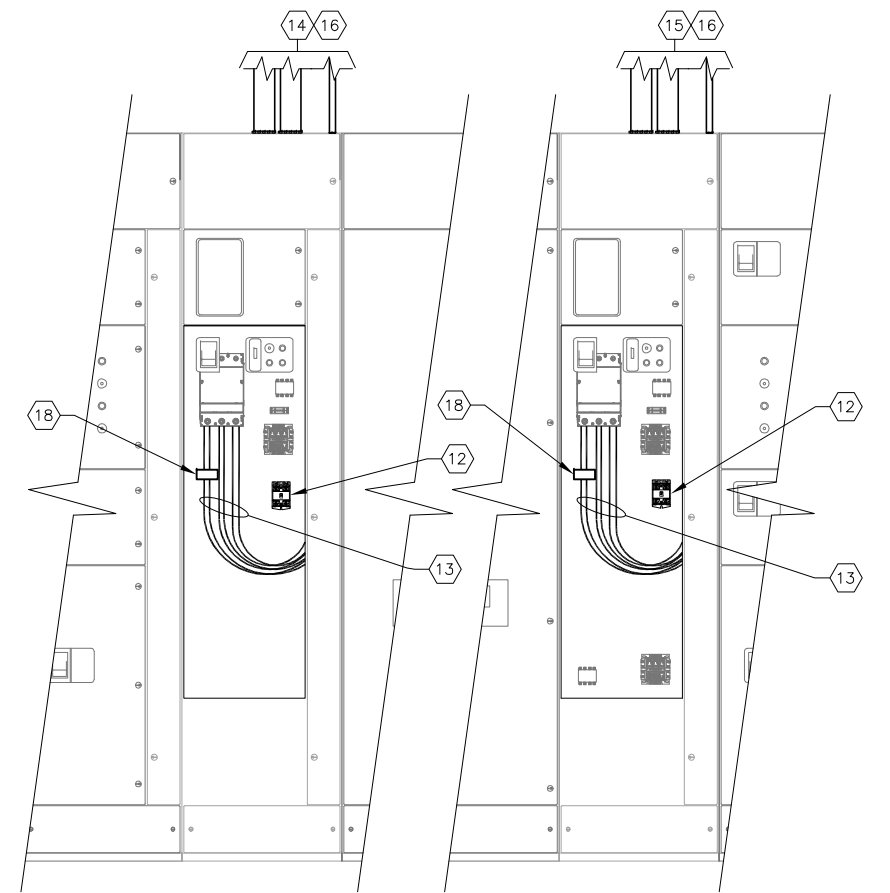
SHEET NUMBER	E-5
FILE:	171301342E01



**MCC-27A PARTIAL FRONT ELEVATION** **A**  
SCALE : N.T.S. E-2 E-6



**MCC-27A EXISTING INTERIOR ELEVATION**  
SCALE : N.T.S.



**MCC-27A NEW WORK INTERIOR ELEVATION**  
SCALE : N.T.S.

**KEYED NOTES:**

- ① EXISTING MOTOR CONTROL CENTER : MCC-27A.
- ② EXISTING STARTER CUBICLE FOR JC-1-AB-4. SOFTSTARTER SHALL BE REMOVED AND NEW SOFTSTARTER SHALL BE INSTALLED PER SHEET E-2.
- ③ EXISTING 500A, 3-POLE CIRCUIT BREAKER. NO WORK REQUIRED.
- ④ EXISTING ELAPSED TIME METER. NO WORK REQUIRED.
- ⑤ EXISTING STARTER CUBICLE FOR JC-1-AB-3.
- ⑥ EXISTING PILOT LIGHTS FOR MOTOR ON AND LOCKOUT TRIPPED; LOCKOUT RELAY RESET PUSHBUTTON; MOTOR START PUSHBUTTON; MOTOR STOP PUSHBUTTON; AND GROUND FAULT RESET SWITCH. GROUND FAULT RESET SWITCH TO BE REMOVED. REFER TO SHEET E-16 FOR RESET PUSHBUTTON MODIFICATIONS.
- ⑦ EXISTING RESET PUSHBUTTON FOR STARTER. PUSHBUTTON TO BE REMOVED. CONTRACTOR TO PROVIDE BLANK COVER.
- ⑧ EXISTING SOFTSTARTER FOR JC-1-AB-4 TO BE REMOVED.
- ⑨ EXISTING CONTACTOR FOR JC-1-AB-4 CAPACITOR TO BE REMOVED.
- ⑩ EXISTING ACROSS-THE-LINE STARTER FOR AIR BLOWER JC-1-AB-3 TO BE REMOVED.
- ⑪ EXISTING CONTROL POWER TRANSFORMER, FUSES, TERMINAL BLOCKS, RELAYS, ETC., TO REMAIN (WITH THE EXCEPTION OF OVERLOAD RESET).
- ⑫ CONTRACTOR TO PROVIDE AND INSTALL NEW INDUSTRIAL CONTROL RELAY (SQUARE-D CLASS 8501 TYPE X OR EQUAL). 120V COIL, NUMBER OF CONTACTS AS REQUIRED.
- ⑬ CONTRACTOR TO PROVIDE AND INSTALL PARALLEL RUNS OF 3-#4/0 DLO CU + 1-#1/0 DLO CU FROM EXISTING CIRCUIT BREAKER TO LINE SIDE OF NEW SOFTSTARTER.
- ⑭ CONTRACTOR TO PROVIDE AND INSTALL PARALLEL RUNS OF 3-#4/0 DLO CU + 1-#1/0 DLO CU IN 3" C. (WITH GROUND BUSHING) FROM EXISTING JC-1-AB-4 CIRCUIT BREAKER TO LINE SIDE OF NEW SOFTSTARTER.
- ⑮ CONTRACTOR TO PROVIDE AND INSTALL PARALLEL RUNS OF 3-#4/0 DLO CU + 1-#1/0 DLO CU IN 3" C. (WITH GROUND BUSHING) FROM EXISTING JC-1-AB-3 CIRCUIT BREAKER TO LINE SIDE OF NEW SOFTSTARTER.
- ⑯ CONTRACTOR TO PROVIDE AND INSTALL 8-#12 XHHW CU + 1-#12 XHHW CU GND (2-#12 STARTER CONTROL TRANSFORMER TO SOFTSTARTER FOR 120V POWER, 2-#12 FROM RESET PUSHBUTTON FOR SOFTSTARTER RESET, 2-#12 RUN COMMAND, 2-#12 SOFTSTARTER FAULT) IN 3/4" C. (WITH GROUND BUSHING).
- ⑰ CONTRACTOR TO PROVIDE AND INSTALL NEW AMMETER FOR MOTOR CIRCUIT. 0-5 AMP INPUT WITH 0-500 AMP SCALE. SIMPSON MODEL 01450-Z59MD. REFER ALSO TO SHEETS E-11 AND E-16.
- ⑱ CONTRACTOR TO PROVIDE AND INSTALL NEW CURRENT TRANSFORMER (CT) FOR NEW AMMETER IN NOTE 17. 500:5 CT RATIO TO ACCOMMODATE NEW AMMETER PROVIDED. REFER ALSO TO SHEETS E-11 AND E-16.



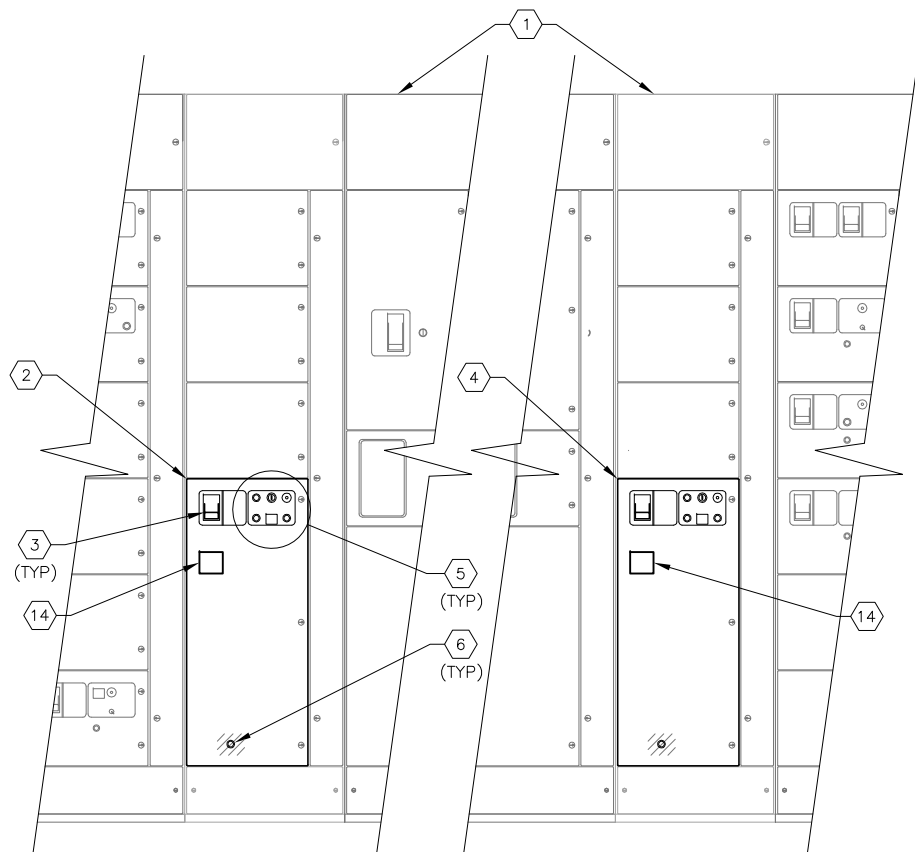
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DATE	08/2013	No.	DATE	BY	APP	REVISION	DESCRIPTION

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NOT TO SCALE

City of Tampa Wastewater Department  
**HOWARD F. CURREN AWP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

**JUNCTION CHAMBER NO. 1**  
**MCC-27A ELEVATION**

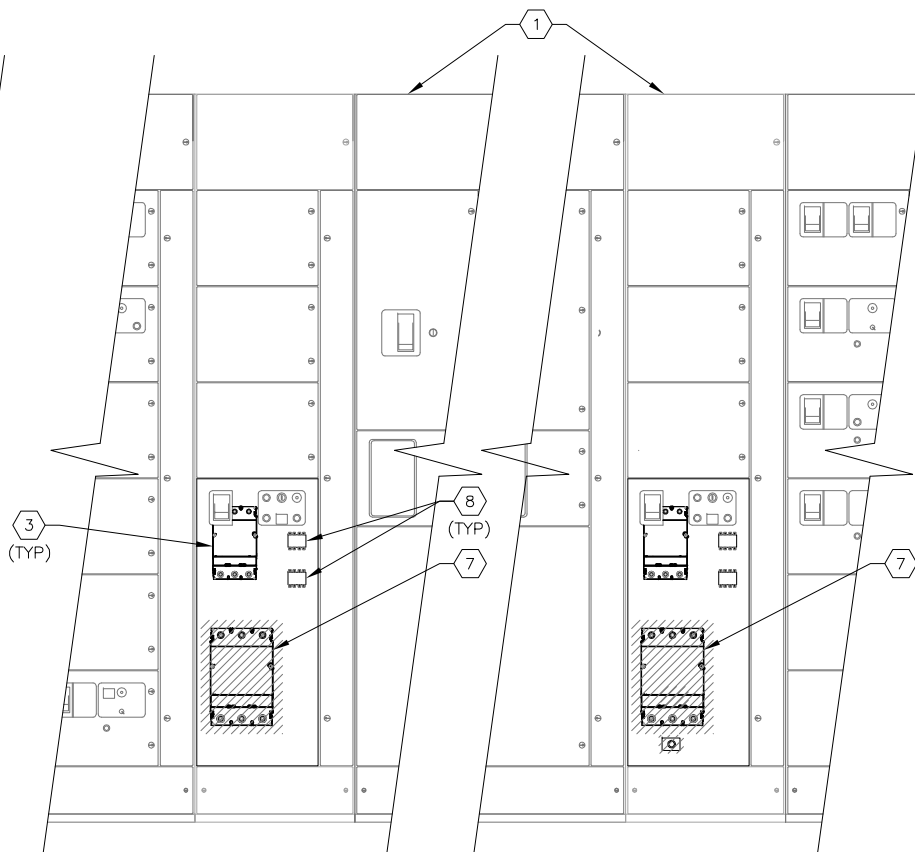
SHEET NUMBER	<b>E-6</b>
TIMOTHY THOMAS, P.E. No. 47079	FILE: 171301342E01



**MCC-27 PARTIAL FRONT ELEVATION**

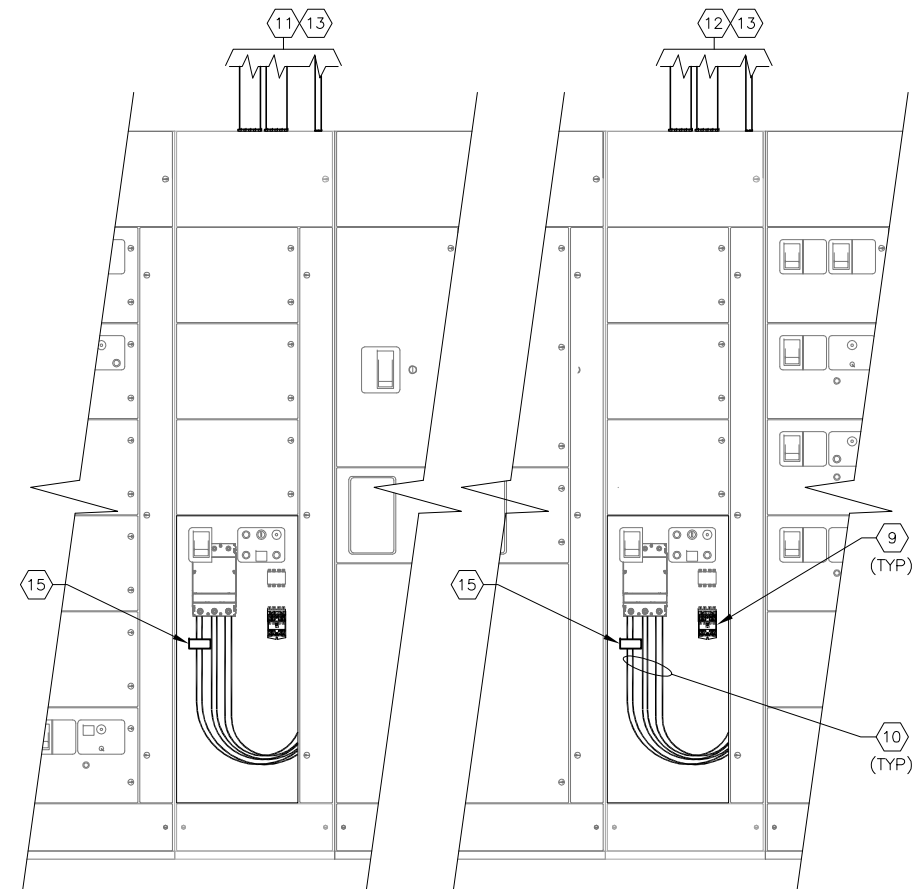
SCALE : N.T.S.

**A**  
E-2 | E-7



**MCC-27 EXISTING INTERIOR ELEVATION**

SCALE : N.T.S.



**MCC-27 NEW WORK INTERIOR ELEVATION**

SCALE : N.T.S.

**KEYED NOTES:**

- ① EXISTING MOTOR CONTROL CENTER : MCC-27.
- ② EXISTING STARTER CUBICLE FOR JC-1-AB-2.
- ③ EXISTING 500A, 3-POLE CIRCUIT BREAKER. NO WORK REQUIRED.
- ④ EXISTING STARTER CUBICLE FOR JC-1-AB-1.
- ⑤ EXISTING PILOT LIGHTS FOR MOTOR ON AND LOCKOUT TRIPPED; LOCKOUT RELAY RESET PUSHBUTTON; MOTOR START PUSHBUTTON; MOTOR STOP PUSHBUTTON; AND GROUND FAULT RESET SWITCH. GROUND FAULT RESET SWITCH TO BE REMOVED. REFER TO SHEET E-17 FOR RESET PUSHBUTTON MODIFICATIONS.
- ⑥ EXISTING RESET PUSHBUTTON FOR STARTER. PUSHBUTTON TO BE REMOVED. CONTRACTOR TO PROVIDE BLANK COVER.
- ⑦ EXISTING ACROSS-THE-LINE STARTER FOR AIR BLOWER TO BE REMOVED.
- ⑧ EXISTING CONTROL POWER TRANSFORMER, FUSES, TERMINAL BLOCKS, RELAYS, ETC., TO REMAIN (WITH THE EXCEPTION OF OVERLOAD RESET).
- ⑨ CONTRACTOR TO PROVIDE AND INSTALL NEW INDUSTRIAL CONTROL RELAY (SQUARE-D CLASS 8501 TYPE X OR EQUAL). 120V COIL, NUMBER OF CONTACTS AS REQUIRED.
- ⑩ CONTRACTOR TO PROVIDE AND INSTALL PARALLEL RUNS OF 3-#4/0 DLO CU + 1-#1/0 DLO CU FROM EXISTING CIRCUIT BREAKER TO LINE SIDE OF NEW SOFTSTARTER.
- ⑪ CONTRACTOR TO PROVIDE AND INSTALL PARALLEL RUNS OF 3-#4/0 DLO CU + 1-#1/0 DLO CU IN 3" C. (WITH GROUND BUSHING) FROM EXISTING JC-1-AB-2 CIRCUIT BREAKER TO LINE SIDE OF NEW SOFTSTARTER.
- ⑫ CONTRACTOR TO PROVIDE AND INSTALL PARALLEL RUNS OF 3-#4/0 DLO CU + 1-#1/0 DLO CU IN 3" C. (WITH GROUND BUSHING) FROM EXISTING JC-1-AB-1 CIRCUIT BREAKER TO LINE SIDE OF NEW SOFTSTARTER.
- ⑬ CONTRACTOR TO PROVIDE AND INSTALL 8-#12 XHHW CU + 1-#12 XHHW CU GND (2-#12 STARTER CONTROL TRANSFORMER TO SOFTSTARTER FOR 120V POWER, 2-#12 FROM RESET PUSHBUTTON FOR SOFTSTARTER RESET, 2-#12 RUN COMMAND, 2-#12 SOFTSTARTER FAULT) IN 3/4" C. (WITH GROUND BUSHING).
- ⑭ CONTRACTOR TO PROVIDE AND INSTALL NEW AMMETER FOR MOTOR CIRCUIT. 0-5 AMP INPUT WITH 0-500 AMP SCALE. SIMPSON MODEL 01450-Z59MD. REFER ALSO TO SHEETS E-12 AND E-17.
- ⑮ CONTRACTOR TO PROVIDE AND INSTALL NEW CURRENT TRANSFORMER (CT) FOR NEW AMMETER IN NOTE 14. 500:5 CT RATIO TO ACCOMMODATE NEW AMMETER PROVIDED. REFER ALSO TO SHEETS E-12 AND E-17.



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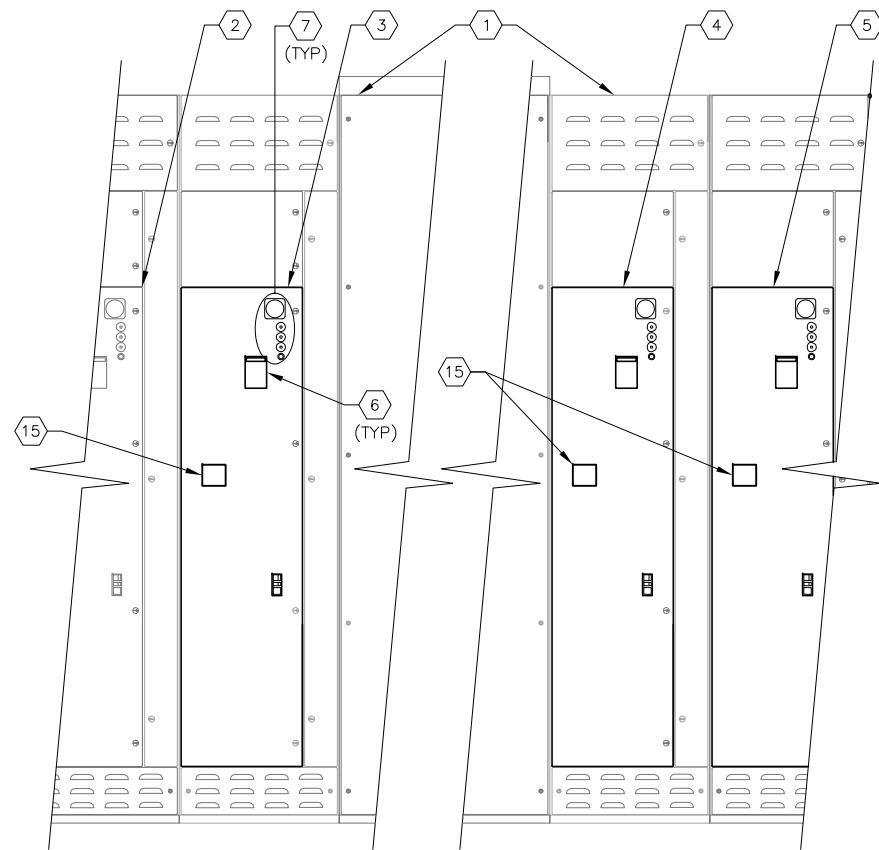
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City of Tampa Wastewater Department  
**HOWARD F. CURREN AWP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

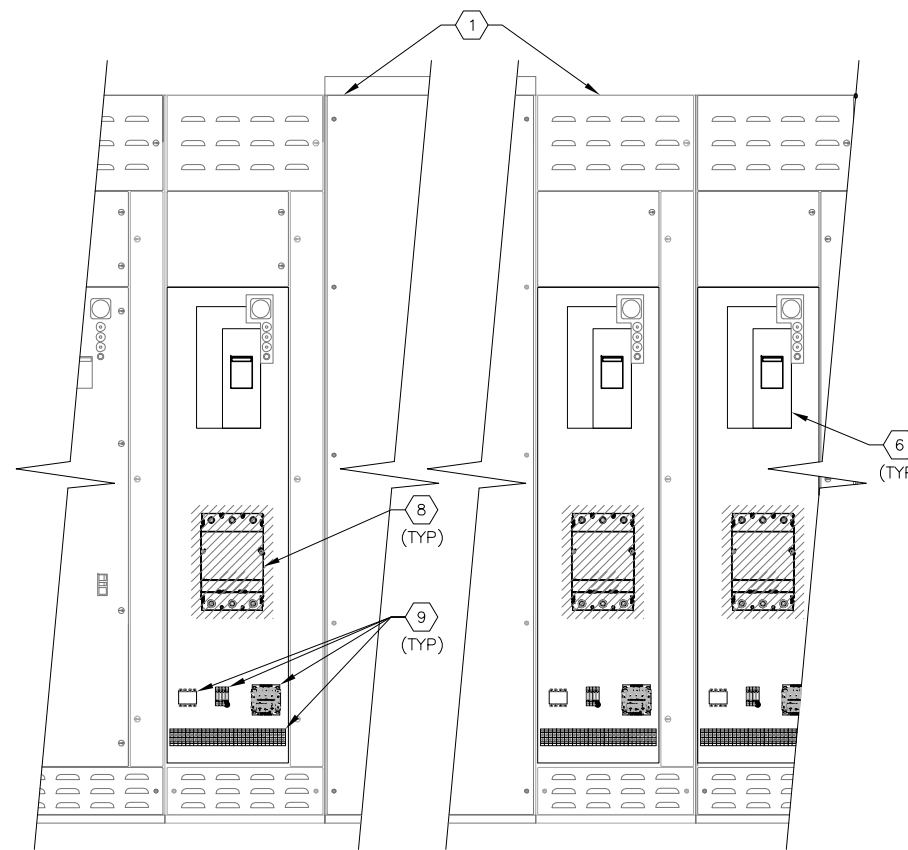
**JUNCTION CHAMBER NO. 1**  
**MCC-27 ELEVATION**

TIMOTHY THOMAS, P.E. No. 47079

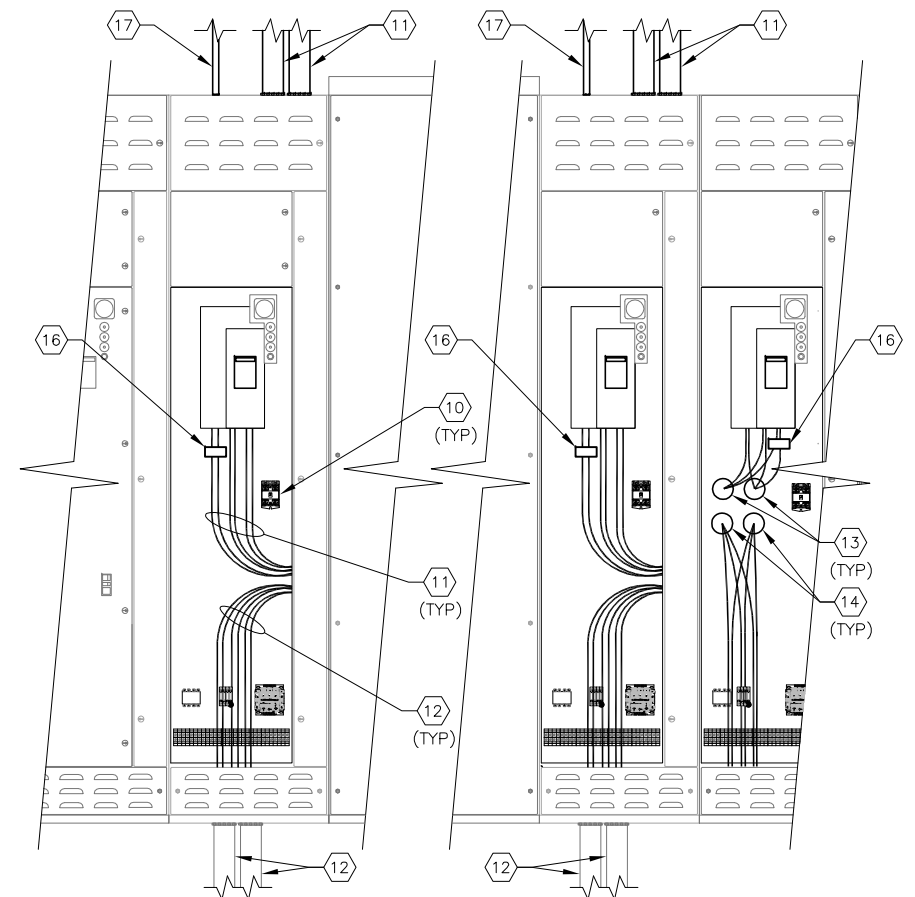
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**E-7**  
FILE: 171301342E01



**MCC-31 PARTIAL FRONT ELEVATION** **A**  
SCALE : N.T.S. E-3 | E-8



**MCC-31 EXISTING INTERIOR ELEVATION**  
SCALE : N.T.S.



**MCC-31 NEW WORK INTERIOR ELEVATION**  
SCALE : N.T.S.

**KEYED NOTES:**

- ① EXISTING MOTOR CONTROL CENTER : MCC-31.
- ② SPACE FOR FUTURE MP-AB-4 STARTER.
- ③ EXISTING ACROSS-THE-LINE STARTER FOR MP-AB-3 TO BE REMOVED.
- ④ EXISTING ACROSS-THE-LINE STARTER FOR MP-AB-2 TO BE REMOVED.
- ⑤ EXISTING ACROSS-THE-LINE STARTER FOR MP-AB-1. SOFTSTARTER FOR MP-AB-1 HAS PREVIOUSLY BEEN INSTALLED. CONTRACTOR SHALL REMOVE EXISTING ACROSS-THE-LINE STARTER FOR MP-AB-1.
- ⑥ EXISTING 600A, 3-POLE CIRCUIT BREAKER. NO WORK REQUIRED.
- ⑦ EXISTING PILOT LIGHTS FOR MOTOR OFF, MOTOR RUNNING AND LOR TRIPPED; LOCKOUT RELAY RESET PUSHBUTTON AND ELAPSED TIME METER. REFER TO SHEET E-18 FOR LOR RESET PUSHBUTTON MODIFICATIONS REQUIRED.
- ⑧ EXISTING ACROSS-THE-LINE STARTER FOR AIR BLOWER TO BE REMOVED.
- ⑨ EXISTING CONTROL POWER TRANSFORMER, FUSES, TERMINAL BLOCKS, RELAYS, ETC., TO REMAIN (WITH THE EXCEPTION OF OVERLOAD RESET AND GROUND SENSING RELAY).
- ⑩ CONTRACTOR TO PROVIDE AND INSTALL NEW INDUSTRIAL CONTROL RELAY (SQUARE-D CLASS 8501 TYPE X OR EQUAL). 120V COIL, NUMBER OF CONTACTS AS REQUIRED.
- ⑪ CONTRACTOR TO PROVIDE AND INSTALL TWO (2) NEW PARALLEL RUNS OF 3-373.7 KCMIL DLO CU + 1-#1/0 DLO CU GND IN 3-1/2" CONDUIT (WITH GROUND BUSHING) FROM EXISTING CIRCUIT BREAKER TO NEW SOFTSTARTER (STARTERS MP-AB-2 AND MP-AB-3).
- ⑫ CONTRACTOR TO PROVIDE AND INSTALL TWO (2) NEW PARALLEL RUNS OF 3-373.7 KCMIL DLO CU + 1-#1/0 DLO CU GND IN EXISTING CONDUIT FROM NEW SOFTSTARTER (STARTERS MP-AB-2 AND MP-AB-3) TO ASSOCIATED AIR BLOWER MOTOR VIA EXISTING CUBICLE.
- ⑬ CONTRACTOR TO PROVIDE AND INSTALL TWO (2) NEW PARALLEL RUNS OF 3-373.7 KCMIL DLO CU + 1-#1/0 DLO CU GND IN EXISTING CONDUIT FROM EXISTING CIRCUIT BREAKER TO EXISTING SOFTSTARTER (STARTER MP-AB-1).
- ⑭ EXISTING PARALLEL RUNS OF 3-373.7 KCMIL DLO CU + 1-#1/0 DLO CU GND IN EXISTING CONDUIT TO MP-AB-1 BLOWER MOTOR. NO WORK REQUIRED.
- ⑮ CONTRACTOR TO PROVIDE AND INSTALL NEW AMMETER FOR MOTOR CIRCUIT. 0-5 AMP INPUT WITH 0-500 AMP SCALE. SIMPSON MODEL 01450-Z59MD. REFER ALSO TO SHEETS E-13, E-18 AND E-25.
- ⑯ CONTRACTOR TO PROVIDE AND INSTALL NEW CURRENT TRANSFORMER (CT) FOR NEW AMMETER IN NOTE 15. 500:5 CT RATIO TO ACCOMMODATE NEW AMMETER PROVIDED. REFER ALSO TO SHEETS E-13, E-18 AND E-25.
- ⑰ CONTRACTOR TO PROVIDE AND INSTALL 8-#12 XHHW CU + 1-#12 XHHW CU GND (2-#12 STARTER CONTROL TRANSFORMER TO SOFTSTARTER FOR 120V POWER, 2-#12 FROM RESET PUSHBUTTON FOR SOFTSTARTER RESET, 2-#12 RUN COMMAND, 2-#12 SOFTSTARTER FAULT) IN 3/4" C. (WITH GROUND BUSHING). STARTERS MP-AB-2 AND MP-AB-3 ONLY.



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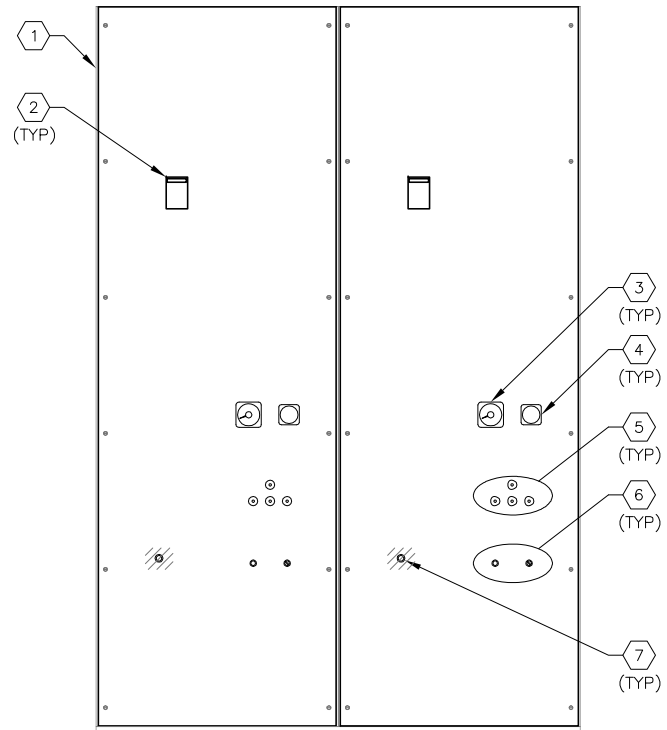
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City of Tampa Wastewater Department  
**HOWARD F. CURREN AWP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

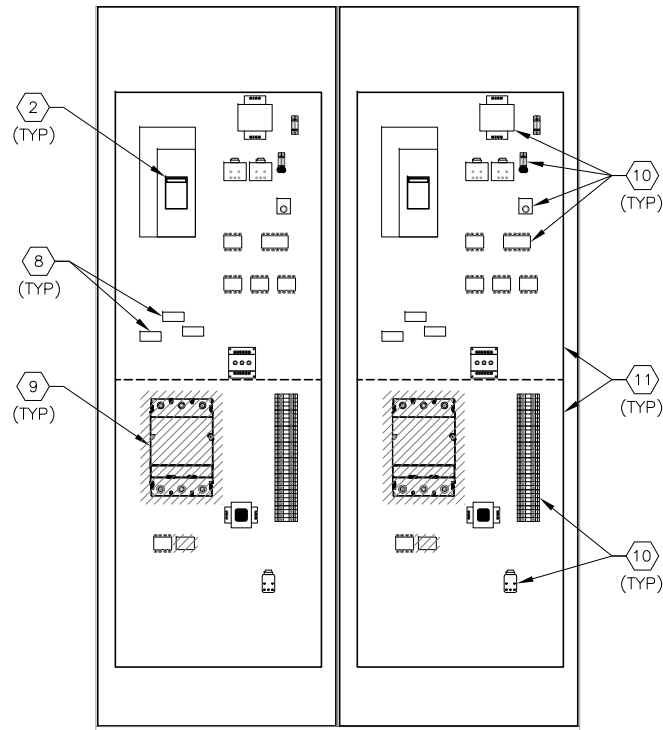
**MAIN PUMPING STATION**  
**MCC-31 PARTIAL ELEVATION**

TIMOTHY THOMAS, P.E. No. 47079	FILE: 171301342E01
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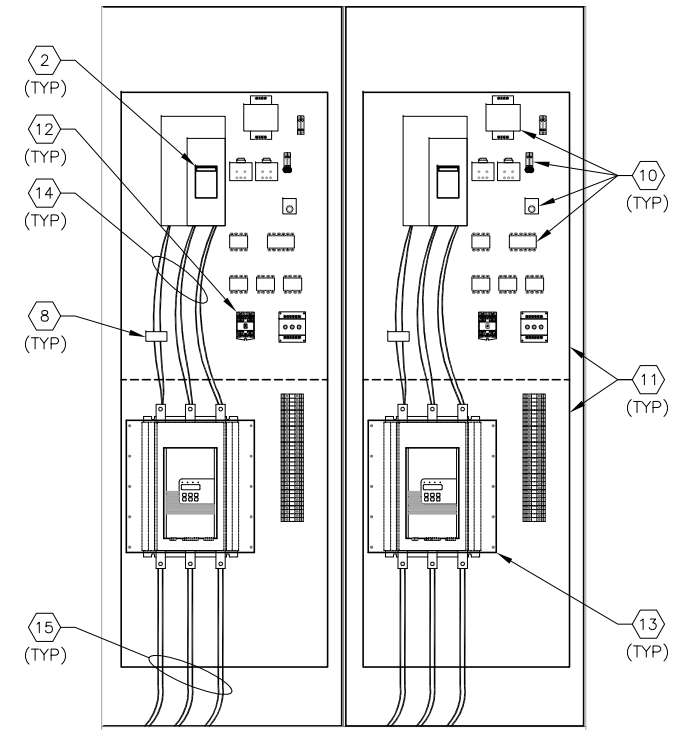
SHEET NUMBER  
**E-8**



**MCC-57 FRONT ELEVATION** A  
SCALE : N.T.S. E-4 E-9



**MCC-57 EXISTING INTERIOR ELEVATION**  
SCALE : N.T.S.



**MCC-57 NEW WORK INTERIOR ELEVATION**  
SCALE : N.T.S.

**KEYED NOTES:**

- |   |  |
|---|--|
| <p>1 EXISTING MOTOR CONTROL CENTER : MCC-57.</p> <p>2 EXISTING 1200A, 3-POLE CIRCUIT BREAKER. NO WORK REQUIRED.</p> <p>3 EXISTING AMPERE METER. NO WORK REQUIRED.</p> <p>4 EXISTING ELAPSED TIME METER. NO WORK REQUIRED.</p> <p>5 EXISTING PILOT LIGHTS FOR MOTOR ON, MOTOR OFF, LOR TRIPPED AND MOTOR IN SERVICE. NO WORK REQUIRED.</p> <p>6 EXISTING PUSHBUTTON FOR LOCKOUT RELAY RESET AND SELECTOR SWITCH FOR OFF-TEST-AUTO. REFER TO SHEET E-19 FOR LOR RESET PUSHBUTTON MODIFICATIONS REQUIRED.</p> <p>7 EXISTING RESET PUSHBUTTON FOR STARTER. PUSHBUTTON TO BE REMOVED. CONTRACTOR TO PROVIDE BLANK COVER.</p> <p>8 CONTRACTOR TO REUSE ONE (1) OF THE EXISTING CT'S IN NOTE #8 FOR THE EXISTING AMMETER IN NOTE #3. REMAINING CT'S SHALL BE SHORTED OUT.</p> <p>9 EXISTING ACROSS-THE-LINE STARTER FOR BACKWASH AIR BLOWER TO BE REMOVED.</p> | <p>10 EXISTING CONTROL POWER TRANSFORMER, FUSES, TERMINAL BLOCKS, RELAYS, ETC., TO BE RELOCATED AS REQUIRED TO ACCOMMODATE NEW SOFTSTARTER.</p> <p>11 EXISTING BACKPLATE FOR MOTOR STARTER. BACKPLATE SHALL BE MODIFIED TO ALLOW NEW SOFTSTARTER TO BE INSTALLED AT APPROPRIATE DEPTH.</p> <p>12 CONTRACTOR TO PROVIDE AND INSTALL NEW INDUSTRIAL CONTROL RELAY (SQUARE-D CLASS 8501 TYPE X OR EQUAL). 120V COIL, NUMBER OF CONTACTS AS REQUIRED.</p> <p>13 CONTRACTOR TO PROVIDE AND INSTALL NEW 480V, 590 AMPERE, 3-POLE SOFTSTARTER.</p> <p>14 CONTRACTOR TO PROVIDE AND INSTALL TWO PARALLEL RUNS OF 3-313.3 KCMIL DLO CU FROM EXISTING CIRCUIT BREAKER TO NEW SOFTSTARTER.</p> <p>15 CONTRACTOR TO PROVIDE AND INSTALL TWO PARALLEL RUNS OF 3-313.3 KCMIL DLO CU + 1-#1/0 DLO CU GND IN EXISTING CONDUIT TO EXISTING BACKWASH AIR BLOWER.</p> |
|---|--|

**GENERAL NOTES:**

- SOFTSTARTER DIMENSIONS ARE BASED ON A SPECIFIC MANUFACTURER USED FOR THE BASIS OF DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ADEQUATE SPACE IS AVAILABLE WITHIN MCC-57 TO ACCOMMODATE THE SOFTSTARTER SELECTED/PROVIDED PRIOR TO COMMENCING CONSTRUCTION. IF THE CONTRACTOR DETERMINES THAT THE SOFTSTARTER TO BE PROVIDED CANNOT BE INSTALLED WITHIN MCC-57, THE CONTRACTOR SHALL PROVIDE THE SOFTSTARTER WITHIN AN EXTERIOR ENCLOSURE AS DETAILED ON SHEET E-23. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF THE EXTERIOR ENCLOSURE WITH THE CITY AND PROVIDE ALL NECESSARY CONDUIT AND CONDUCTORS REQUIRED FOR THE EXTERIOR ENCLOSURE AT NO COST TO THE CITY.

JOB No.	171301327					
DESIGNED	TDT					
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DATE	08/2013	No.	DATE	BY	APP	REVISION DESCRIPTION

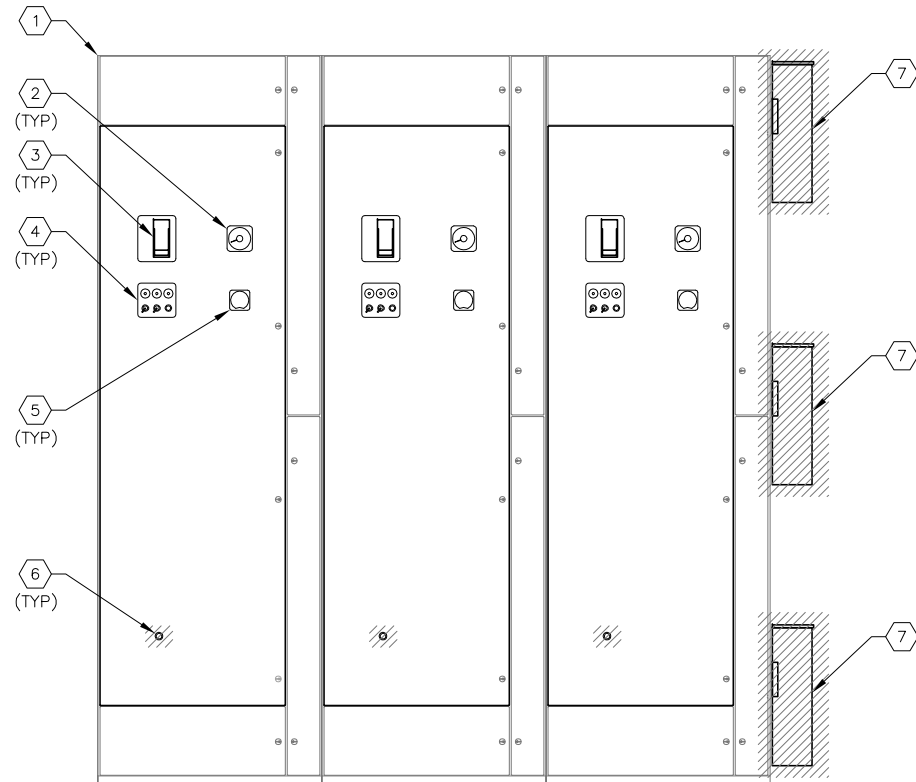
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City of Tampa Wastewater Department  
**HOWARD F. CURREN AWTP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

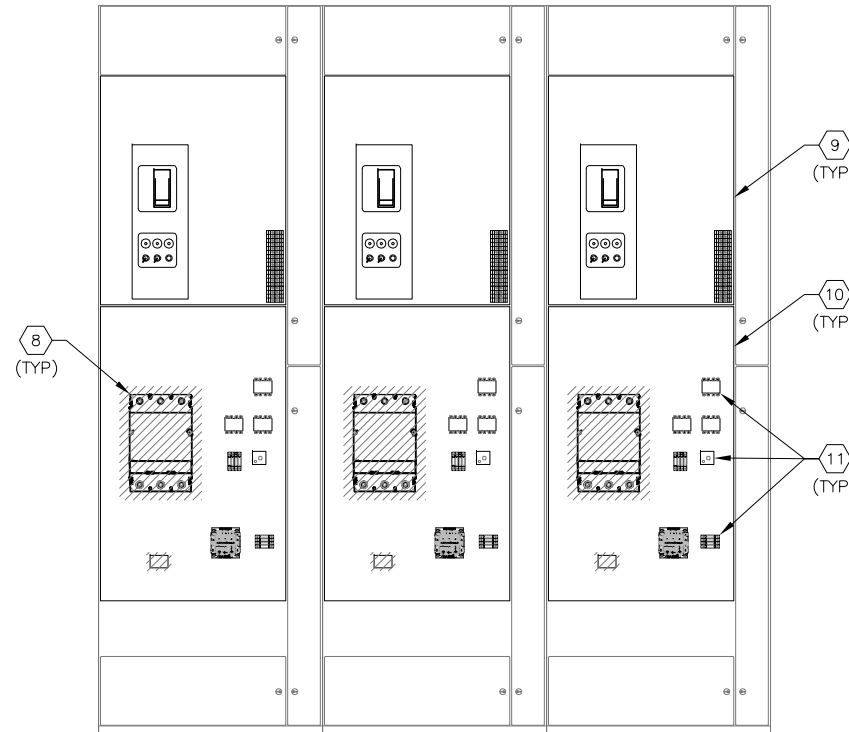
**FILTER BUILDING NO. 1**  
**MCC-57 ELEVATION**

TIMOTHY THOMAS, P.E. No. 47079

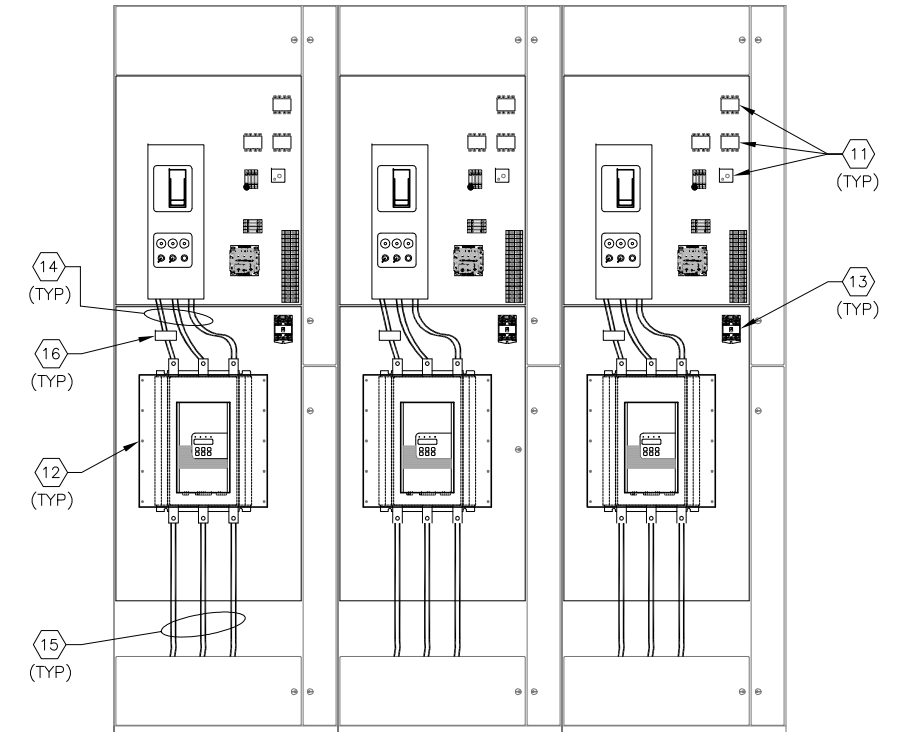
SHEET NUMBER  
**E-9**  
FILE: 171301342E01



**MCC-85 FRONT ELEVATION** A  
SCALE : N.T.S. E-5 | E-10



**MCC-85 EXISTING INTERIOR ELEVATION**  
SCALE : N.T.S.



**MCC-85 NEW WORK INTERIOR ELEVATION**  
SCALE : N.T.S.

**KEYED NOTES:**

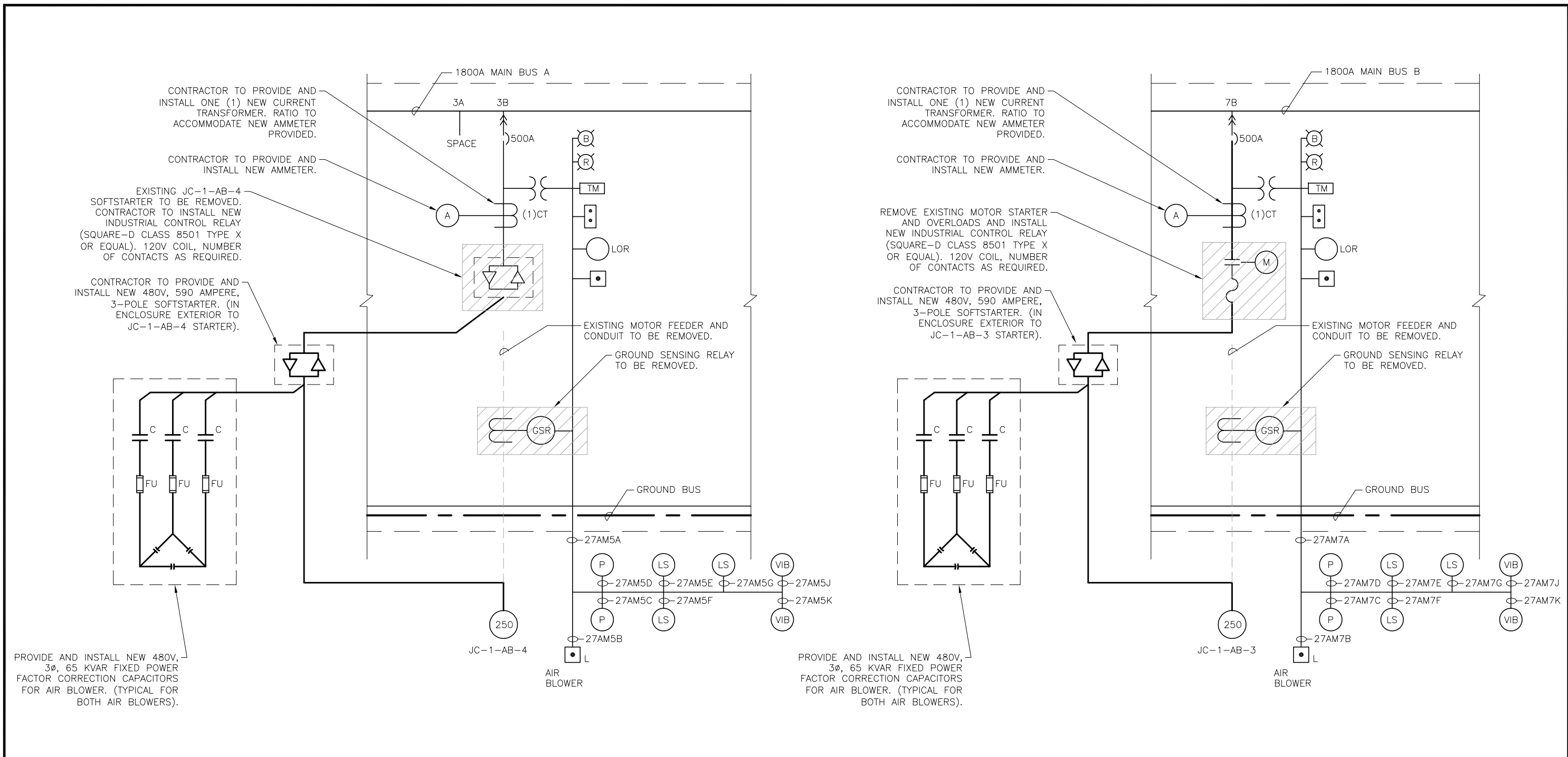
- |  |  |
|--|--|
| <p>1 EXISTING MOTOR CONTROL CENTER : MCC-85.</p> <p>2 EXISTING AMMETER. CONNECT TO NEW CT (NOTE #16).</p> <p>3 EXISTING 600A, 3-POLE CIRCUIT BREAKER. NO WORK REQUIRED.</p> <p>4 EXISTING PILOT LIGHTS FOR MOTOR ON, MOTOR OFF, LOR TRIPPED; LOCKOUT RELAY RESET PUSHBUTTON; AND SELECTOR SWITCHES FOR OFF-TEST-AUTO AND MOTOR START/STOP. REFER TO SHEET E-21 FOR LOR RESET PUSHBUTTON MODIFICATIONS REQUIRED.</p> <p>5 EXISTING ELAPSED TIME METER. NO WORK REQUIRED.</p> <p>6 EXISTING RESET PUSHBUTTON FOR STARTER. PUSHBUTTON TO BE REMOVED. CONTRACTOR TO PROVIDE BLANK COVER.</p> <p>7 EXISTING CAPACITOR FOR BACKWASH AIR BLOWER TO BE REMOVED.</p> <p>8 EXISTING ACROSS-THE-LINE STARTER FOR BACKWASH AIR BLOWER TO BE REMOVED.</p> <p>9 EXISTING BACKPLATE FOR BACKWASH AIR BLOWER CIRCUIT BREAKER. NO WORK REQUIRED.</p> <p>10 EXISTING BACKPLATE FOR MOTOR STARTER. BACKPLATE SHALL BE MODIFIED TO ALLOW NEW SOFTSTARTER TO BE INSTALLED AT APPROPRIATE DEPTH.</p> | <p>11 EXISTING CONTROL POWER TRANSFORMER, FUSES, TERMINAL BLOCKS, RELAYS, ETC., TO BE RELOCATED AS REQUIRED TO ACCOMMODATE NEW SOFTSTARTER.</p> <p>12 CONTRACTOR TO PROVIDE AND INSTALL NEW 480V, 590 AMPERE, 3-POLE SOFTSTARTER.</p> <p>13 CONTRACTOR TO PROVIDE AND INSTALL NEW INDUSTRIAL CONTROL RELAY (SQUARE-D CLASS 8501 TYPE X OR EQUAL). 120V COIL, NUMBER OF CONTACTS AS REQUIRED.</p> <p>14 CONTRACTOR TO PROVIDE AND INSTALL TWO PARALLEL RUNS OF 3-313.3 KCMIL DLO CU FROM EXISTING CIRCUIT BREAKER TO NEW SOFTSTARTER.</p> <p>15 CONTRACTOR TO PROVIDE AND INSTALL TWO PARALLEL RUNS OF 3-313.3 KCMIL DLO CU + 1-#1/0 THWN CU GND. IN EXISTING CONDUIT TO EXISTING BACKWASH AIR BLOWER.</p> <p>16 CONTRACTOR TO PROVIDE AND INSTALL NEW CURRENT TRANSFORMER (CT) FOR EXISTING AMMETER SHOWN IN NOTE #2. CT RATIO SHALL ACCOMMODATE EXISTING AMMETER.</p> |
|--|--|

**GENERAL NOTES:**

- SOFTSTARTER DIMENSIONS ARE BASED ON A SPECIFIC MANUFACTURER USED FOR THE BASIS OF DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ADEQUATE SPACE IS AVAILABLE WITHIN MCC-85 TO ACCOMMODATE THE SOFTSTARTER SELECTED/PROVIDED PRIOR TO COMMENCING CONSTRUCTION. IF THE CONTRACTOR DETERMINES THAT THE SOFTSTARTER TO BE PROVIDED CANNOT BE INSTALLED WITHIN MCC-85, THE CONTRACTOR SHALL PROVIDE THE SOFTSTARTER WITHIN AN EXTERIOR ENCLOSURE AS DETAILED ON SHEET E-23. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF THE EXTERIOR ENCLOSURE WITH THE CITY AND PROVIDE ALL NECESSARY CONDUIT AND CONDUCTORS REQUIRED FOR THE EXTERIOR ENCLOSURE AT NO COST TO THE CITY.

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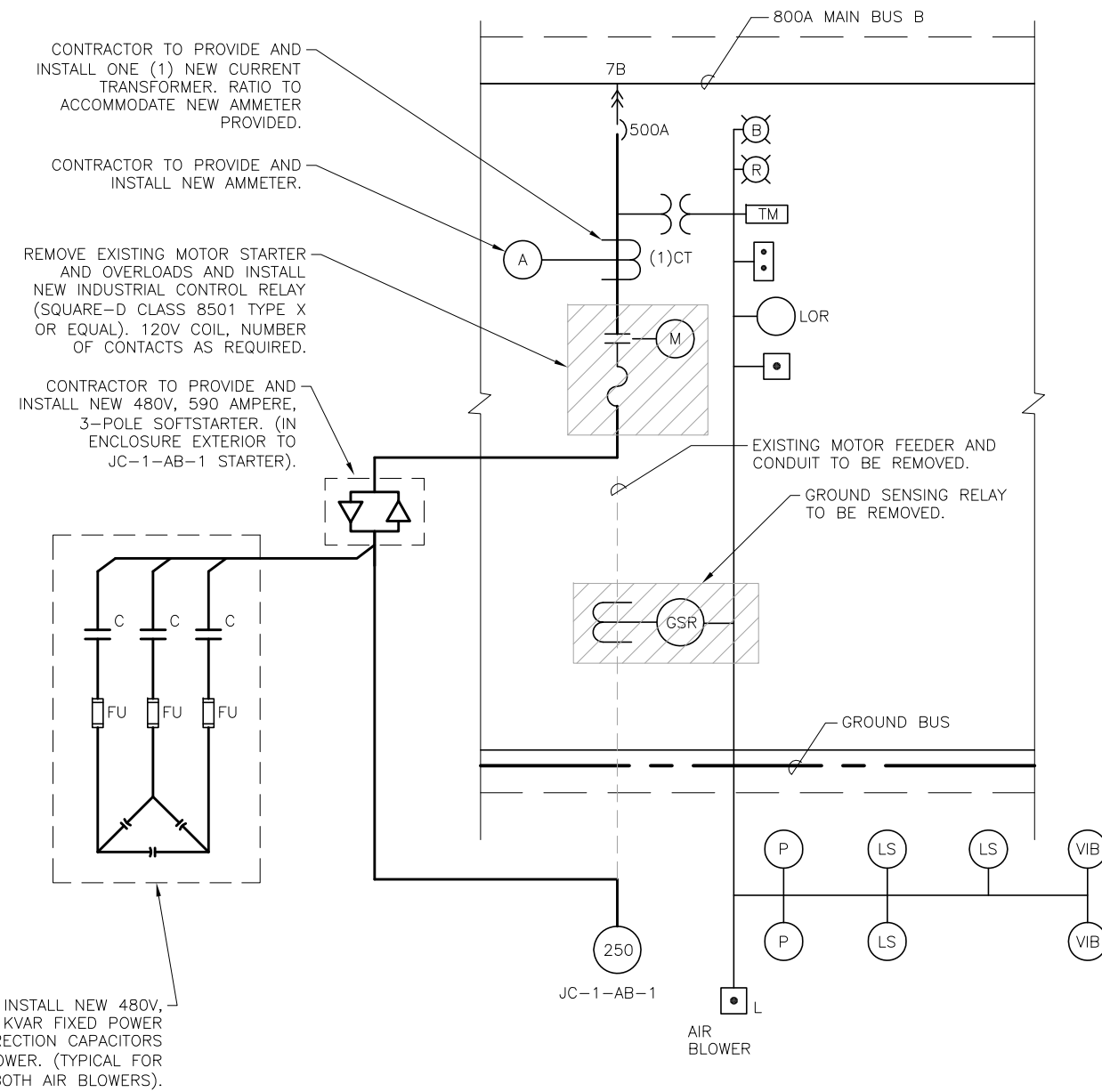
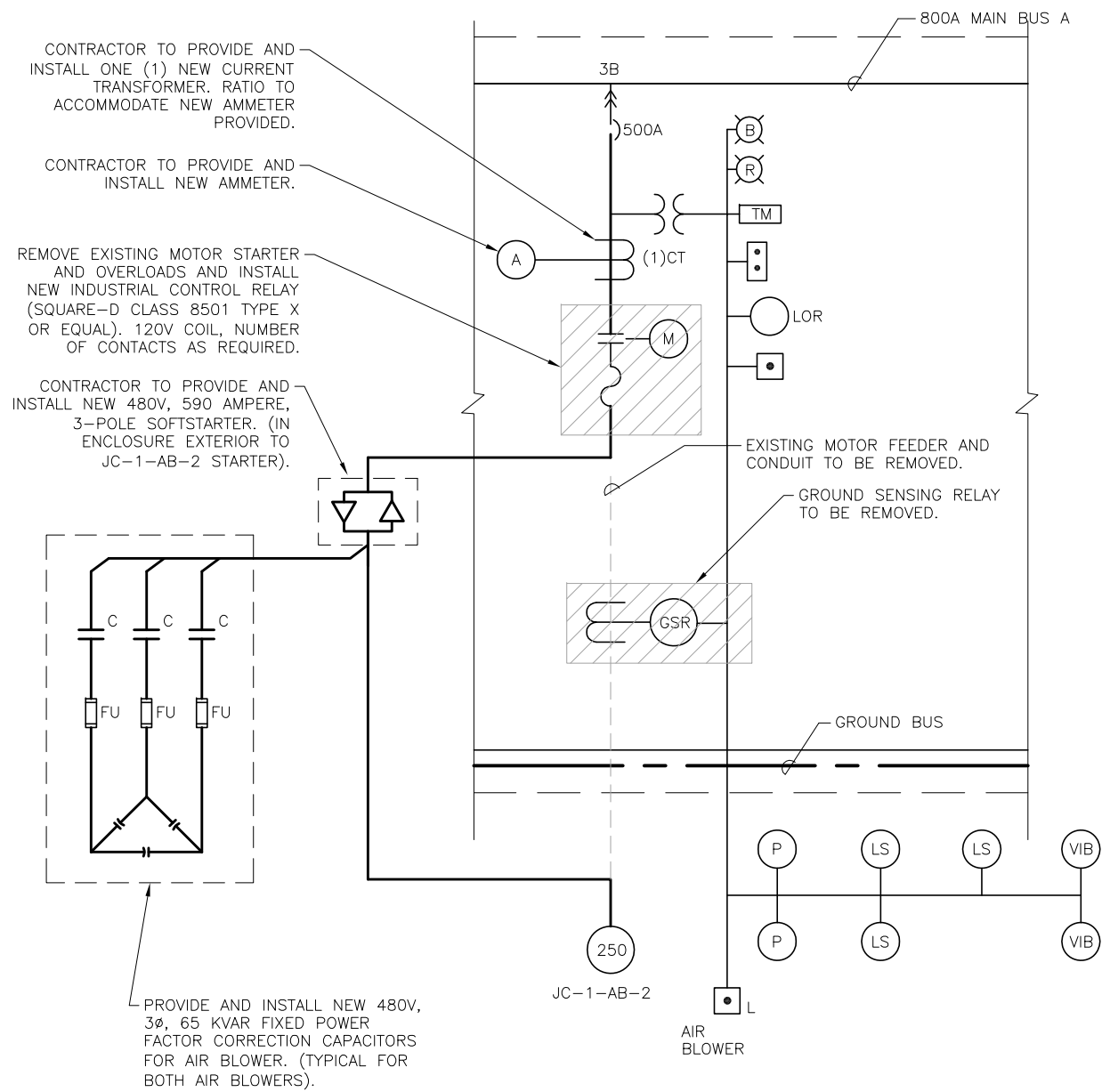
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**MCC-27A : PARTIAL ONE-LINE DIAGRAM**  
SCALE : N.T.S.

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**MCC-27 : ONE-LINE DIAGRAM**  
SCALE : N.T.S.

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DATE	08/2013	No.	DATE	BY	APP	REVISION	DESCRIPTION		

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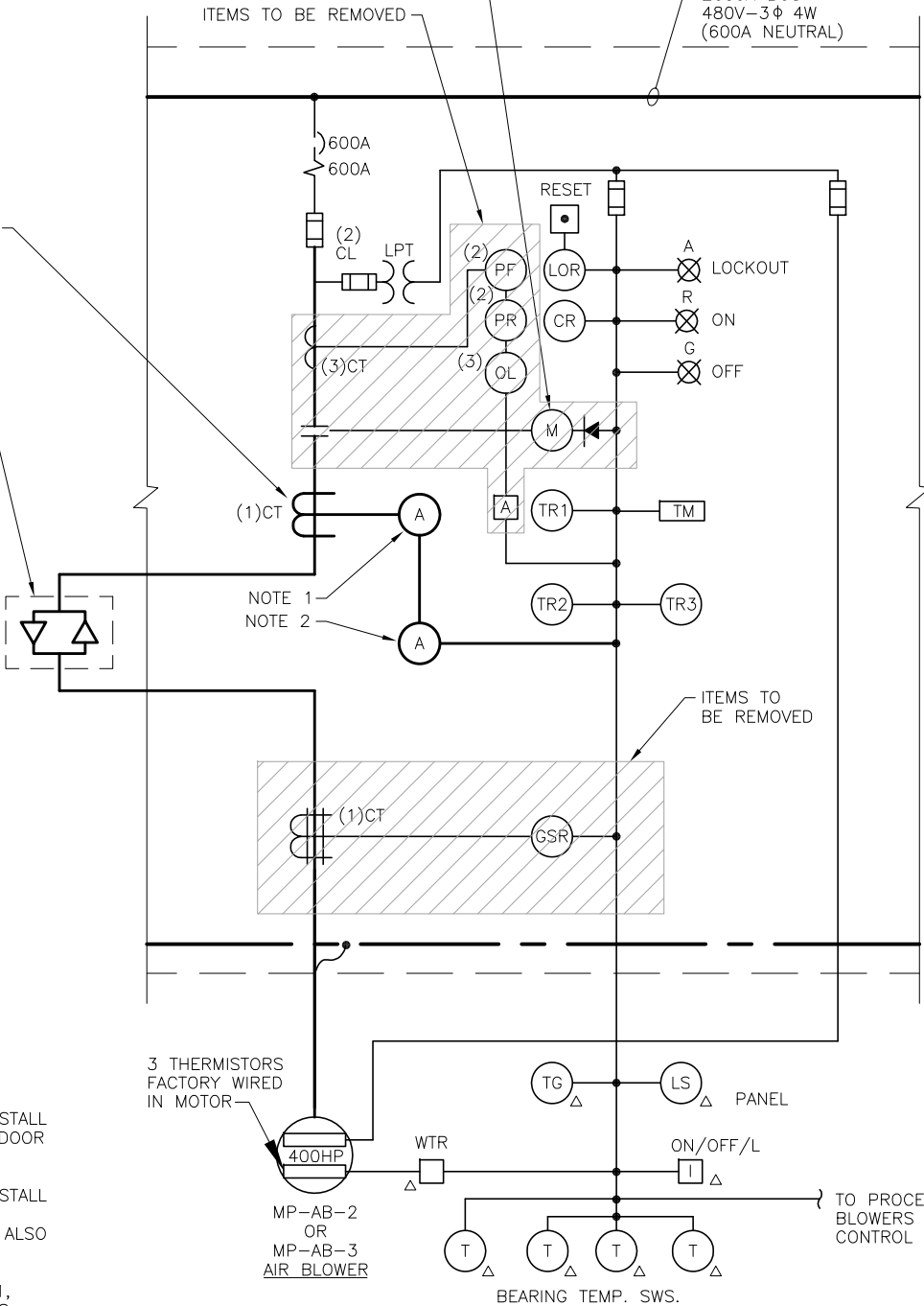
REMOVE EXISTING FULL WAVE RECTIFIED COIL CIRCUIT AND REPLACE WITH INDUSTRIAL CONTROL RELAY. (TYPICAL FOR ALL 3 AIR BLOWERS).

ITEMS TO BE REMOVED

2000A BUS  
480V-3 $\phi$  4W  
(600A NEUTRAL)

CONTRACTOR TO PROVIDE AND INSTALL ONE (1) NEW CURRENT TRANSFORMER. RATIO TO ACCOMMODATE NEW AMMETER PROVIDED.

CONTRACTOR TO PROVIDE AND INSTALL NEW 480V, 590 AMPERE, 3-POLE SOFTSTARTER. (STARTERS MP-AB-3 AND MP-AB-2). PROVIDE SOFTSTARTER IN ENCLOSURE EXTERIOR TO THE EXISTING STARTERS.



- NOTES :
1. CONTRACTOR TO PROVIDE AND INSTALL NEW AMMETER ON THE CUBICLE DOOR OF STARTER.
  2. CONTRACTOR TO PROVIDE AND INSTALL NEW AMMETER ON PROCESS AIR BLOWER CONTROL PANEL. REFER ALSO TO SHEET E-25.
  3. EXISTING AMMETER FOR MP-AB-1, CURRENTLY LOCATED ON PROCESS AIR BLOWER CONTROL PANEL. REFER ALSO TO SHEET E-25.

**MCC-31 PARTIAL ONE-LINE DIAGRAM**  
TYPICAL FOR STARTERS MP-AB-2 AND MP-AB-3

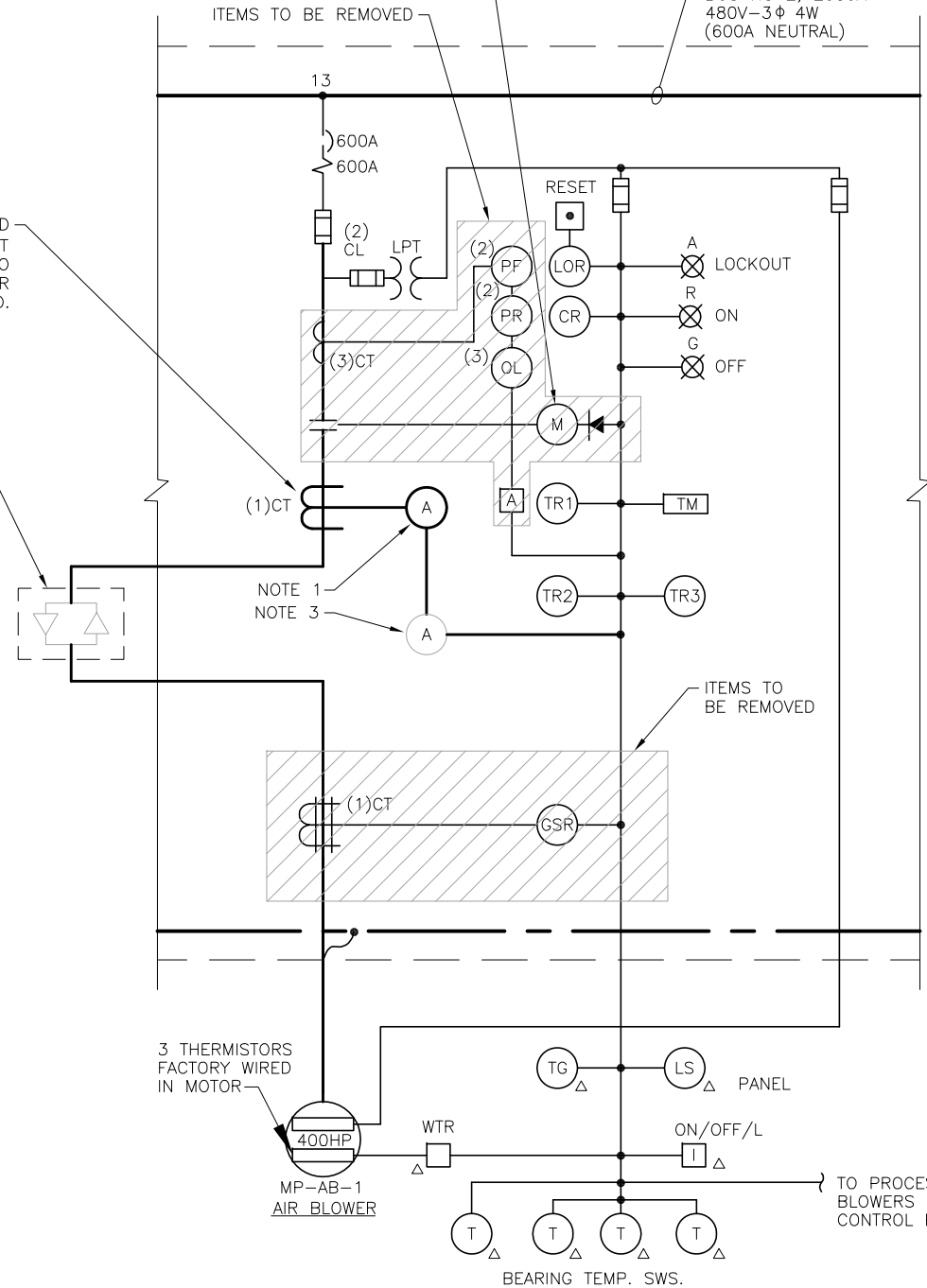
REMOVE EXISTING FULL WAVE RECTIFIED COIL CIRCUIT AND REPLACE WITH INDUSTRIAL CONTROL RELAY. (TYPICAL FOR ALL 3 AIR BLOWERS).

ITEMS TO BE REMOVED

BUS NO 2, 2000A  
480V-3 $\phi$  4W  
(600A NEUTRAL)

CONTRACTOR TO PROVIDE AND INSTALL ONE (1) NEW CURRENT TRANSFORMER. RATIO TO ACCOMMODATE NEW AMMETER PROVIDED.

SOFTSTARTER IS EXISTING FOR MP-AB-1.



**MCC-31 PARTIAL ONE-LINE DIAGRAM**  
FOR STARTER MP-AB-1



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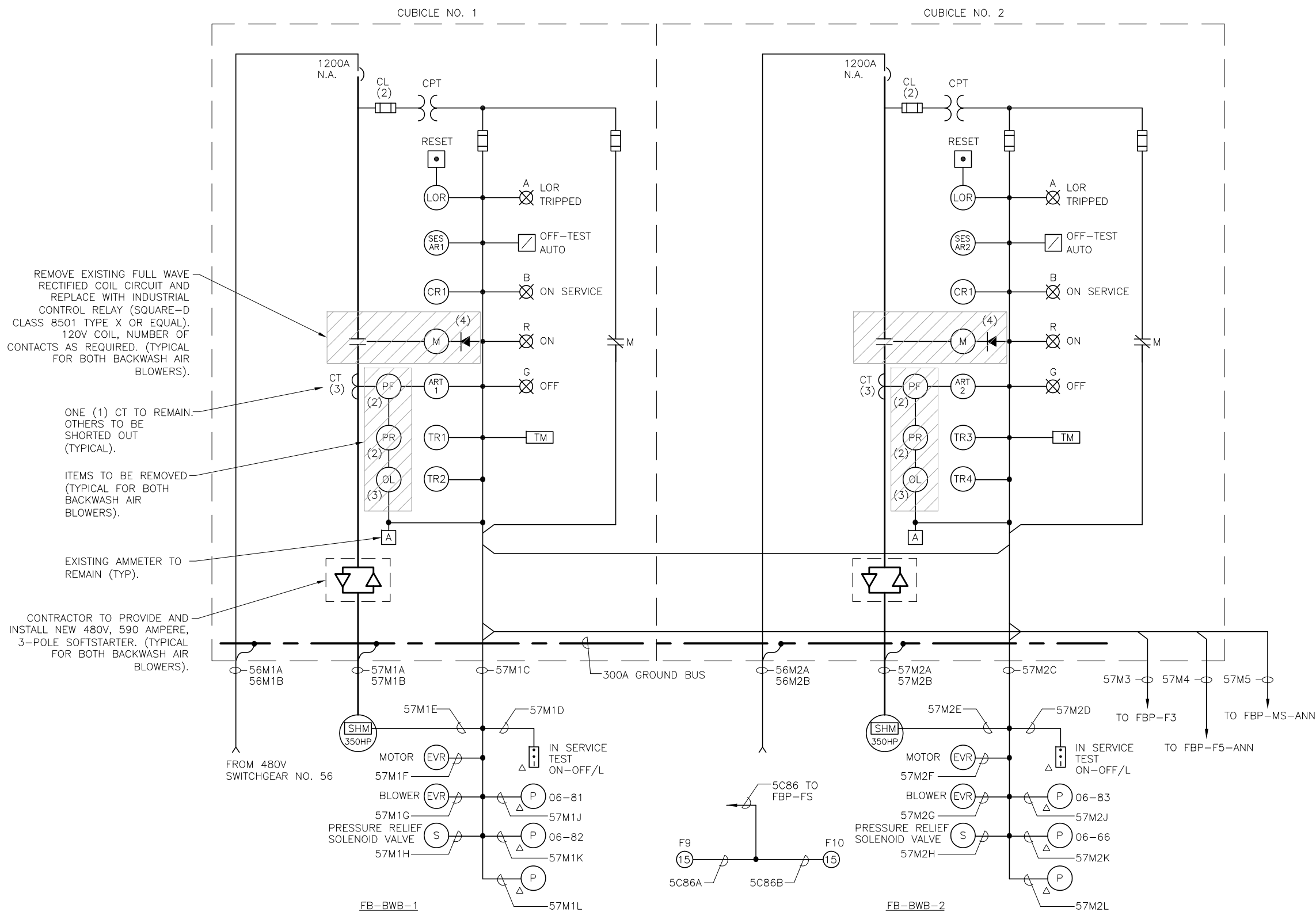
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City of Tampa Wastewater Department  
**HOWARD F. CURREN AWTP**  
LARGE MOTOR SOFTSTART ADDITIONS

MAIN PUMPING STATION  
**MCC-31**  
PARTIAL ONE-LINE DIAGRAM

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER  
**E-13**  
FILE: 171301342E01



**BACKWASH AIR BLOWER CONTROL CENTER : MCC-57 ONE-LINE DIAGRAM**



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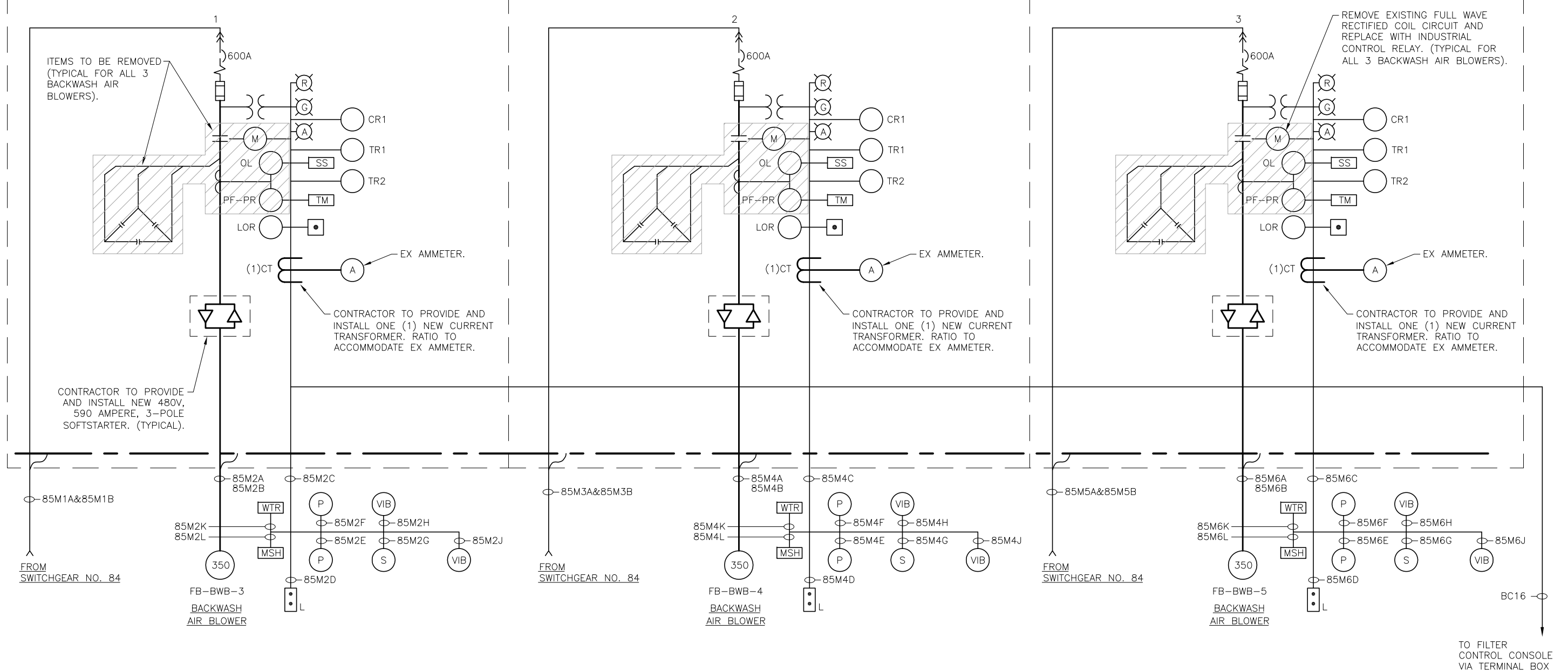
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City of Tampa Wastewater Department  
**HOWARD F. CURREN AWP**  
 LARGE MOTOR SOFTSTART ADDITIONS

**FILTER BUILDING NO. 1**  
**MCC-57**  
**ONE-LINE DIAGRAM**

SHEET NUMBER	E-14
FILE:	171301342E01

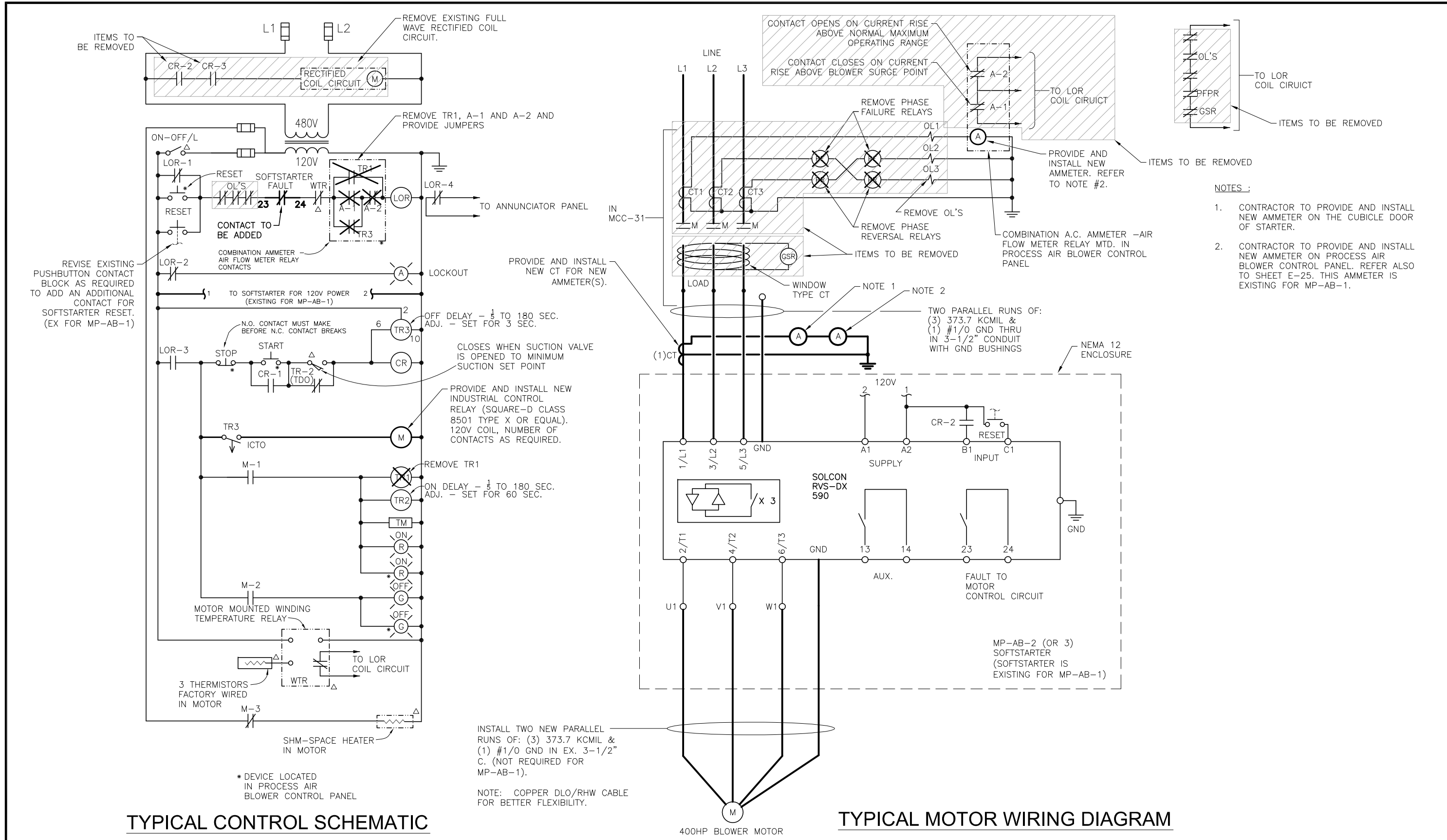
TIMOTHY THOMAS, P.E. No. 47079



MCC-85 ONE-LINE DIAGRAM







**TYPICAL CONTROL SCHEMATIC**

**TYPICAL MOTOR WIRING DIAGRAM**

**NOTES:**

1. CONTRACTOR TO PROVIDE AND INSTALL NEW AMMETER ON THE CUBICLE DOOR OF STARTER.
2. CONTRACTOR TO PROVIDE AND INSTALL NEW AMMETER ON PROCESS AIR BLOWER CONTROL PANEL. REFER ALSO TO SHEET E-25. THIS AMMETER IS EXISTING FOR MP-AB-1.

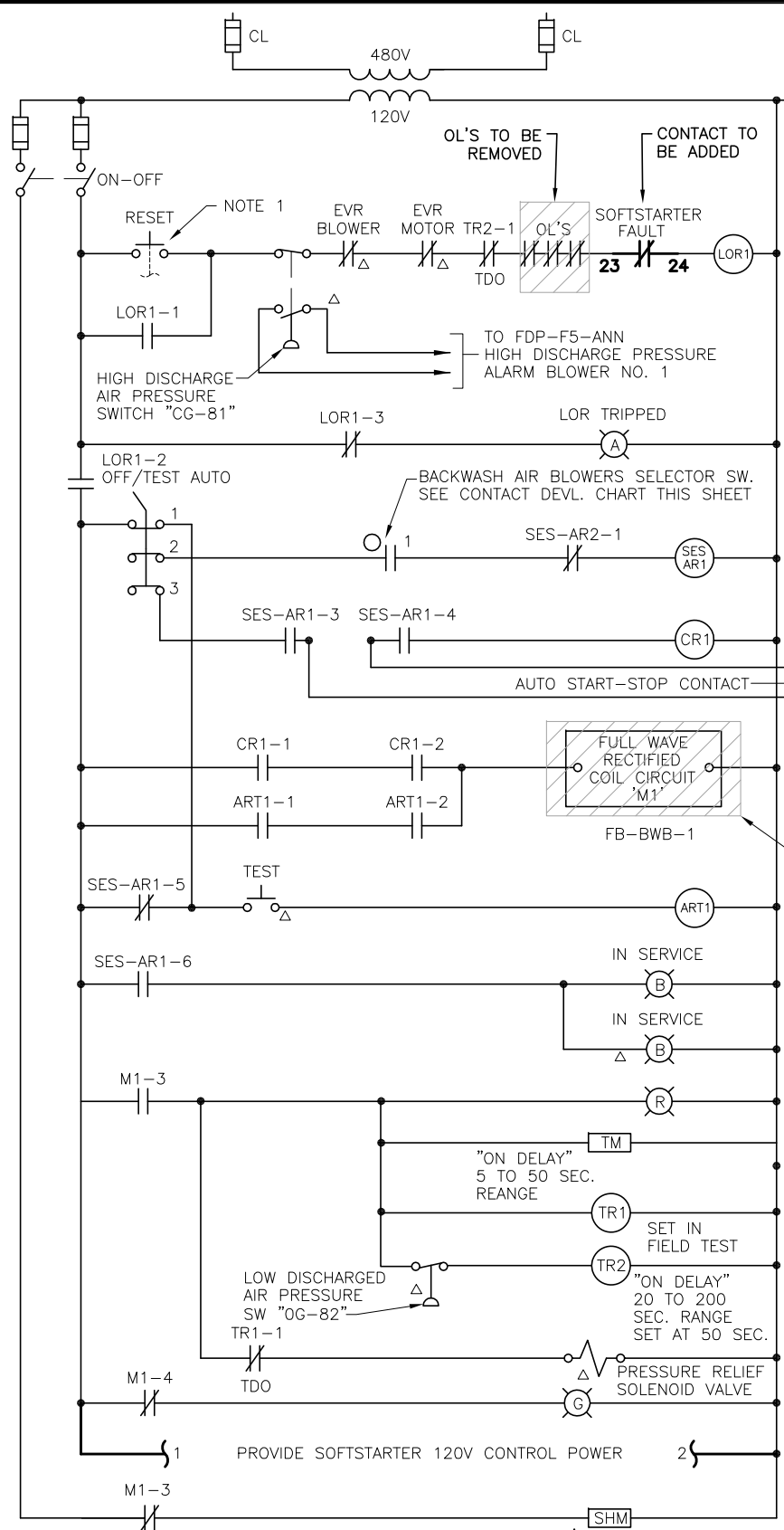
INSTALL TWO NEW PARALLEL RUNS OF: (3) 373.7 KCMIL & (1) #1/0 GND IN EX. 3-1/2" C. (NOT REQUIRED FOR MP-AB-1).

NOTE: COPPER DLO/RHW CABLE FOR BETTER FLEXIBILITY.

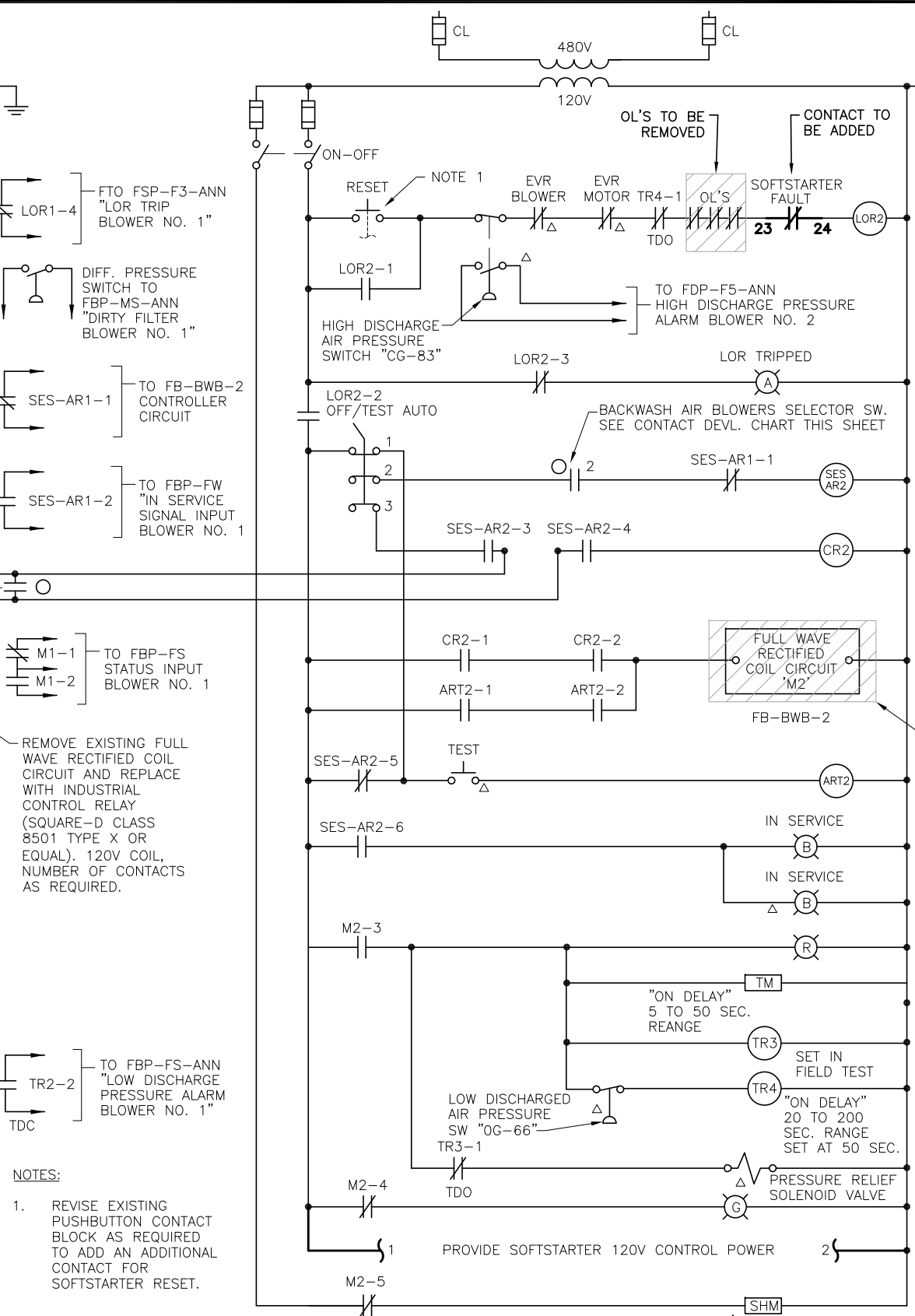
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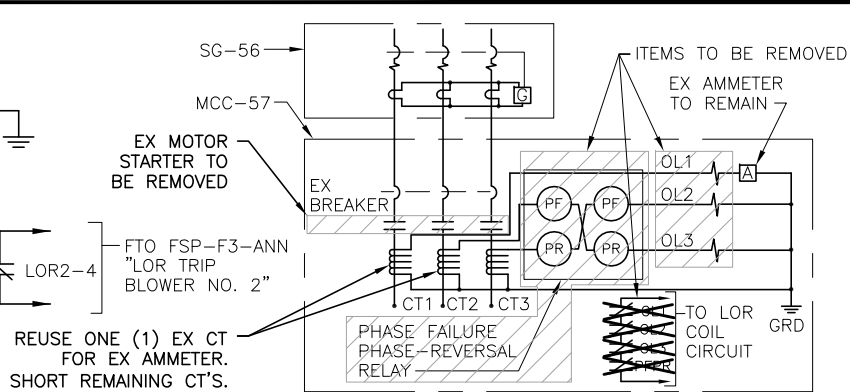
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**BACKWASH AIR BLOWER FB-BWB-1**



**BACKWASH AIR BLOWER FB-BWB-2**



**PHASE FAILURE-PHASE REVERSAL, OVERLOAD RELAYS, & AMMETER CONTROL CIRCUIT**

(TYPICAL FOR BACKWASH AIR BLOWERS FB-BWB-1 AND FB-BWB-2)

FILTER BUILDING PANEL FILTER SECTION - CONTACT DEVELOPMENT CHART BACKWASH AIR BLOWER SELECTOR SWITCH			
SWITCH POSITION	CONTACT POSITION	FUNCTION AND REMARKS	
	1	2	
BLOWER NO. 1	X	0	BLOWER NO. 1 IN SERVICE SELECTION
BLOWER NO. 2	0	X	BLOWER NO. 2 IN SERVICE SELECTION

X - INDICATES CONTACT CLOSED  
0 - INDICATES CONTACT OPEN

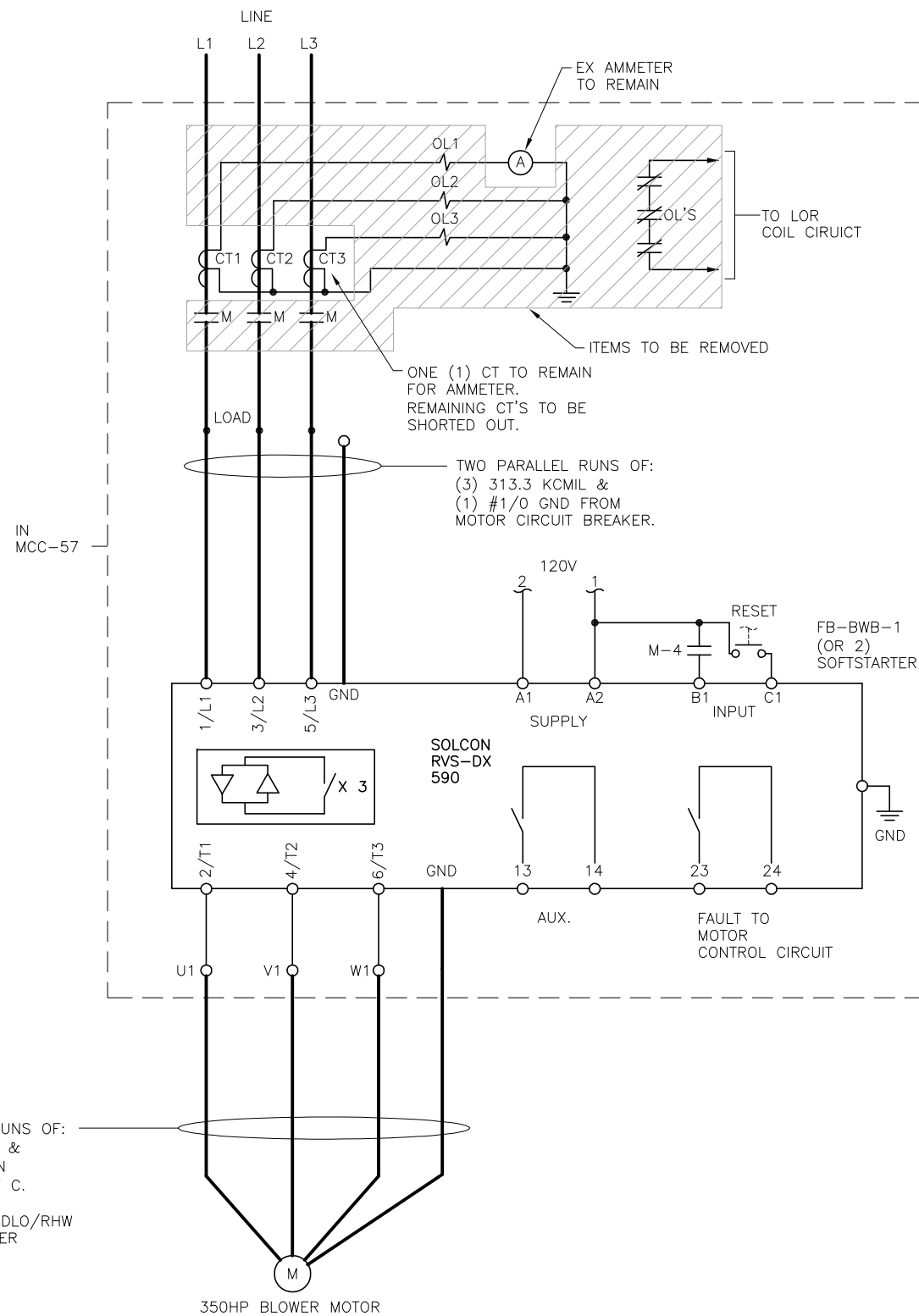
BACKWASH AIR BLOWERS FB-BWB-1 AND FB-BWB-2 CONTACT DEVELOPMENT CHART OFF/TEST-AUTO SELECTOR SWITCHES			
SWITCH POSITION	CONTACT POSITION		
	1	2	3
OFF/TEST	X	0	0
AUTO	0	X	X

X - INDICATES CONTACT CLOSED  
0 - INDICATES CONTACT OPEN

BACKWASH AIR BLOWERS FB-BWB-1 AND FB-BWB-2 CONTACT DEVELOPMENT CHART SELECTOR SWITCH AUXILIARY RELAY SES-AR1 (SES-AR2 SIMILAR)			
CONTACT NO.	CONTACT POSITION		CONTACT FUNCTION & REMARKS
	COIL ENER.	COIL DE-ENER.	
SES-AR1-1 (SES-AR2-1)	0	X	COIL LOCKOUT SES-AR2 (COIL LOCKOUT, SES-AR1)
SES-AR1-2 (SES-AR2-2)	X	0	"IN SERVICE" SIGNAL TO FBP-FS
SES-AR1-3 (SES-AR2-3)	X	0	CRI (CRS) COIL CIRCUIT SELECTION
SES-AR1-4 (SES-AR2-4)	X	0	CRI (CR2) COIL CIRCUIT SELECTION
SES-AR1-5 (SES-AR2-5)	0	X	TEST CIRCUIT PERMISSIVE CONTACT
SES-AR1-6 (SES-AR2-6)	X	0	"IN SERVICE" INDICATING LIGHT
SES-AR1-7 (SES-AR2-7)	0	X	SPARE
SES-AR1-8 (SES-AR2-8)	X	0	SPARE

- NOTES:**
- REVISE EXISTING PUSHBUTTON CONTACT BLOCK AS REQUIRED TO ADD AN ADDITIONAL CONTACT FOR SOFTSTARTER RESET.

**GENERAL NOTE:**  
THE CONTRACTOR SHALL FIELD VERIFY THE CONTROL VOLTAGES SHOWN AND PROVIDE THE CITY WITH REVISED SCHEMATICS FOR ANY DEVIATIONS DISCOVERED.



TYPICAL MOTOR WIRING



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

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NOT TO SCALE

City of Tampa Wastewater Department  
HOWARD F. CURREN AWP  
LARGE MOTOR SOFTSTART ADDITIONS

FILTER BUILDING NO. 1  
FB-BWB-1 & FB-BWB-2  
MOTOR WIRING SCHEMATICS

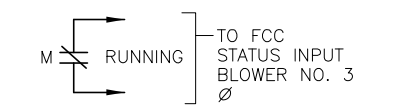
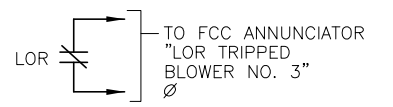
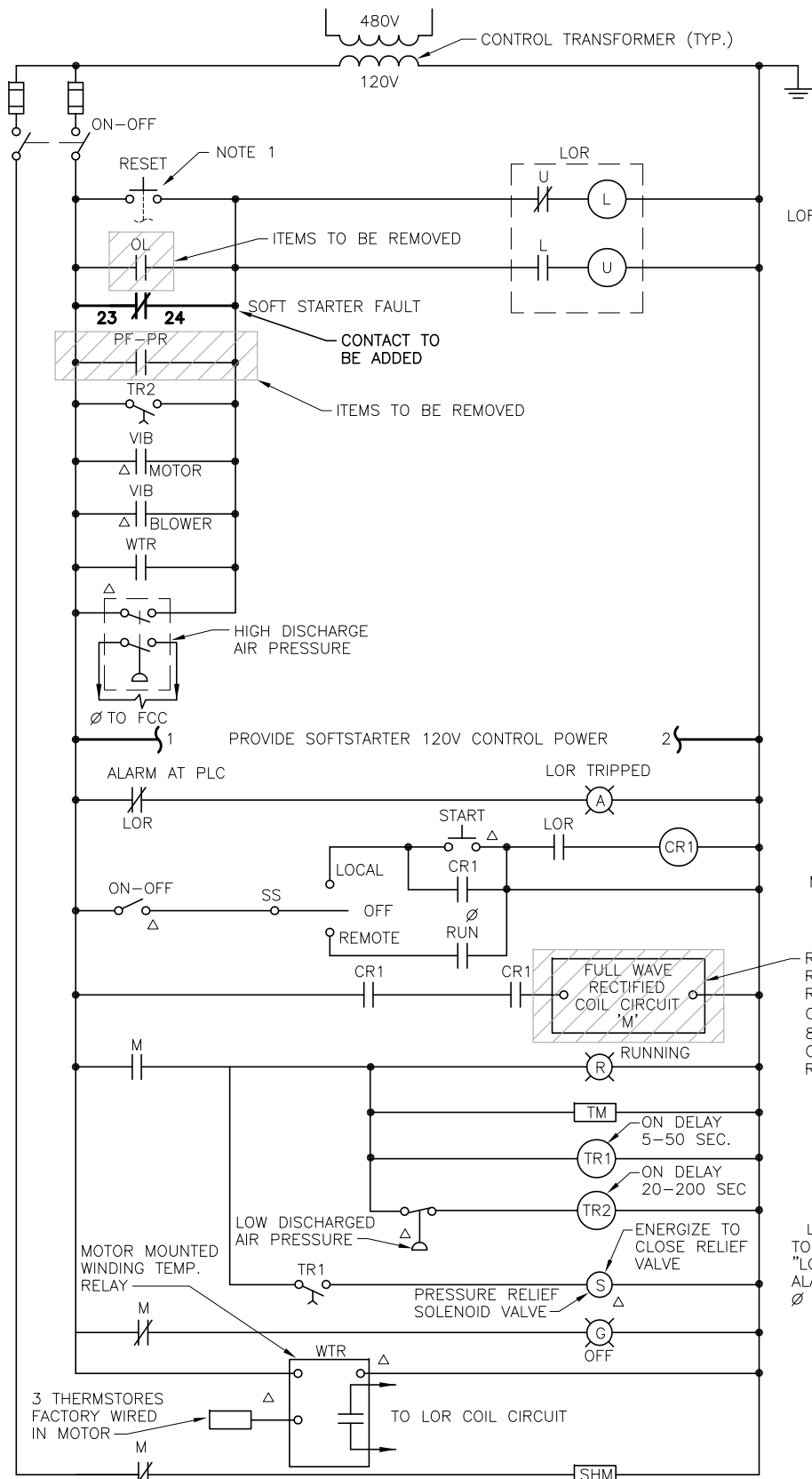
TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER

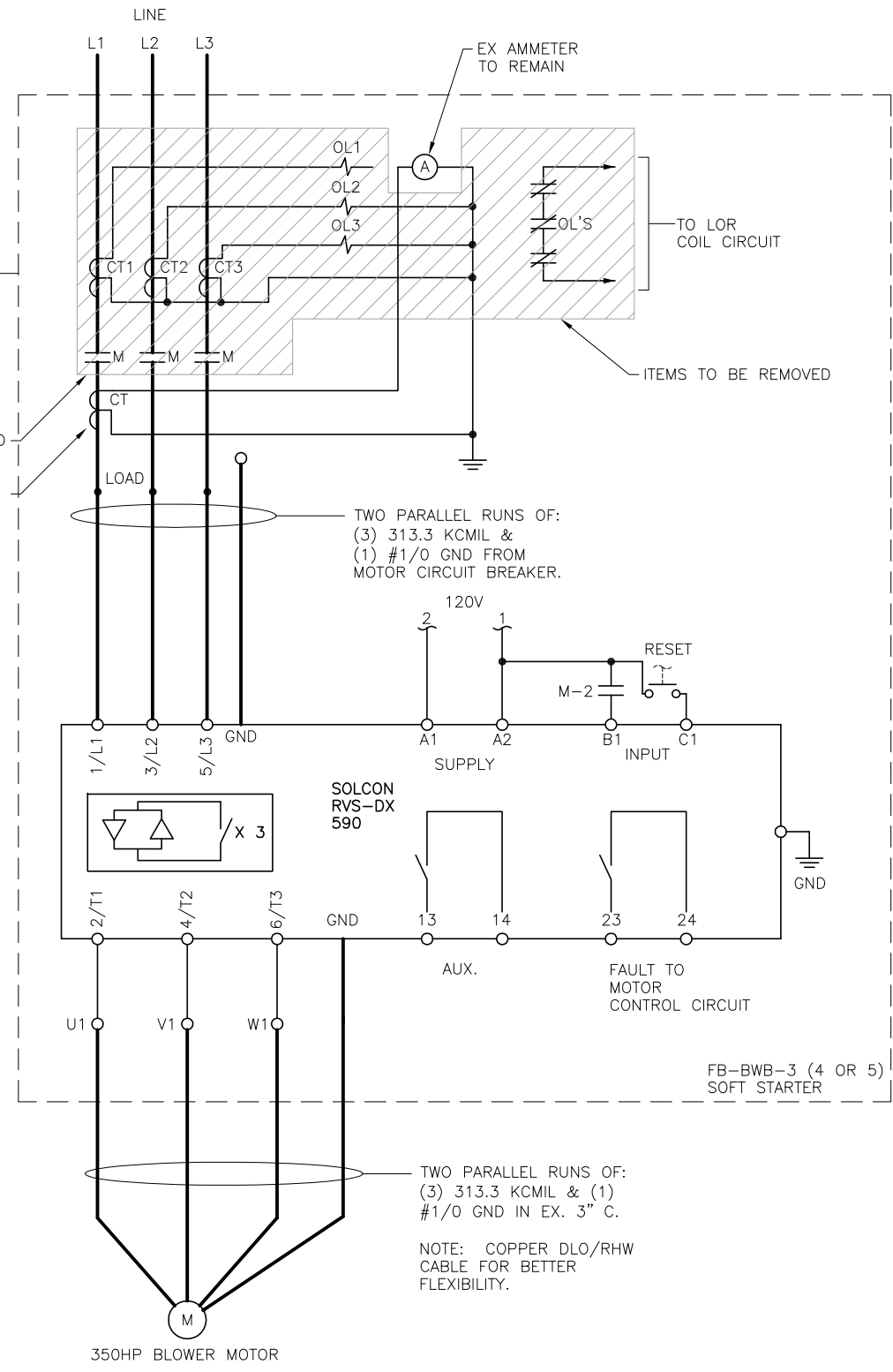
E-20

FILE: 171301342E01





∅ LOCATED IN FILTER CONTROL CONSOLE (FCC) IN CONTROL ROOM OF FILTER BUILDING NO. 1.



**GENERAL NOTE:**  
THE CONTRACTOR SHALL FIELD VERIFY THE CONTROL VOLTAGES SHOWN AND PROVIDE THE CITY WITH REVISED SCHEMATICS FOR ANY DEVIATIONS DISCOVERED.

- NOTES:**
1. REVISE EXISTING PUSHBUTTON CONTACT BLOCK AS REQUIRED TO ADD AN ADDITIONAL CONTACT FOR SOFTSTARTER RESET.

**TYPICAL MOTOR WIRING**

**BACKWASH AIR BLOWER FB-BWB-3**  
SIMILAR FOR FB-BWB-4 AND FB-BWB-5



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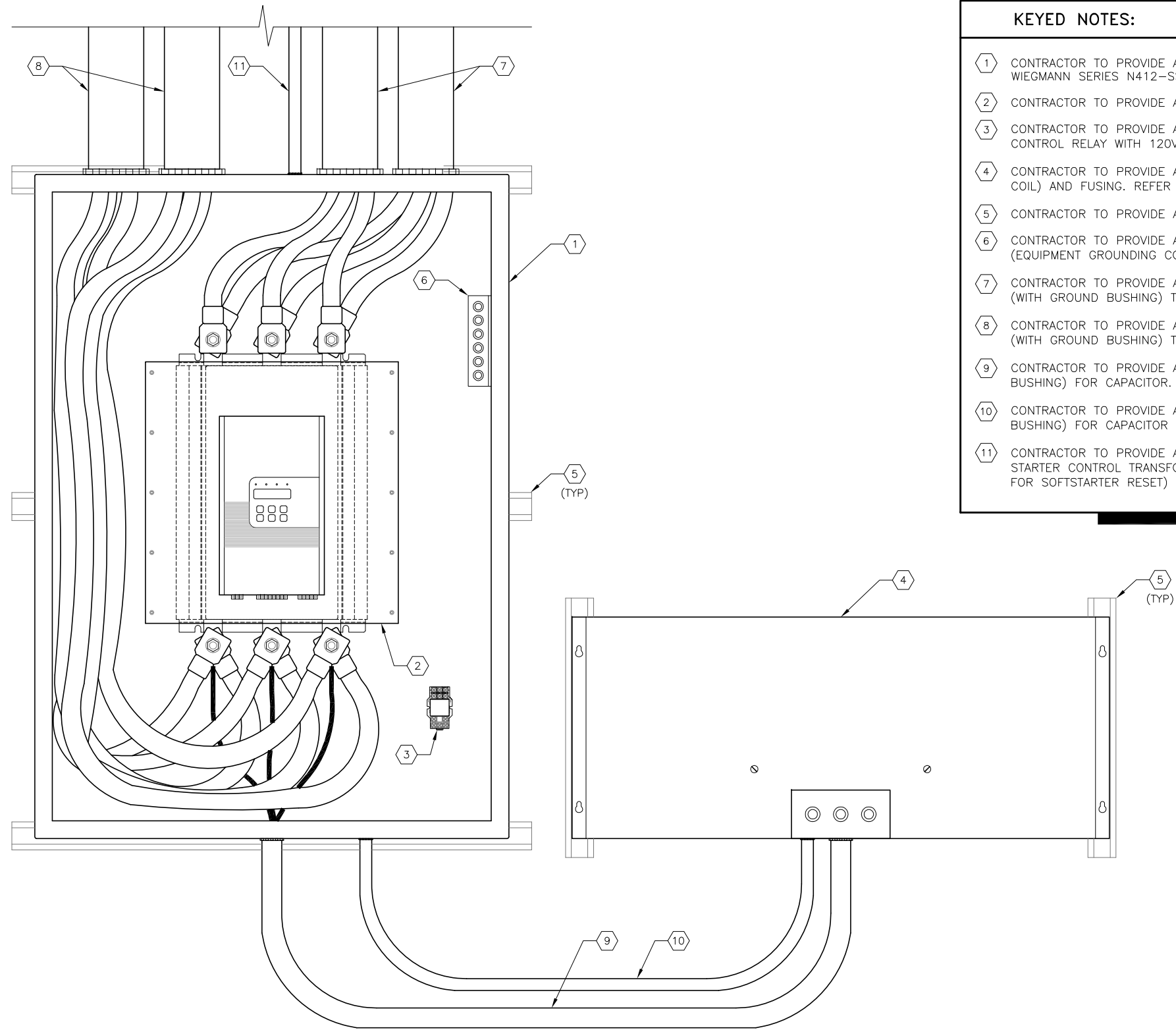
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City of Tampa Wastewater Department  
**HOWARD F. CURREN AWTP**  
LARGE MOTOR SOFTSTART ADDITIONS

**FILTER BUILDING NO. 2**  
**FB-BWB-3, 4 & 5**  
**CONTROL SCHEMATICS**

SHEET NUMBER	E-21
FILE:	171301342E01

TIMOTHY THOMAS, P.E. No. 47079



- KEYED NOTES:**
- ① CONTRACTOR TO PROVIDE AND INSTALL NEW 42"H x 30"W x 16"D NEMA 4X STAINLESS STEEL ENCLOSURE. WIEGMANN SERIES N412-SSC.
  - ② CONTRACTOR TO PROVIDE AND INSTALL NEW SOLCON SOFTSTARTER. SOLCON MODEL NUMBER RVS-DXM 590-8.
  - ③ CONTRACTOR TO PROVIDE AND INSTALL NEW INTERPOSING RELAY FOR CAPACITOR CONTACTOR COIL. 2-PDT, 10A, CONTROL RELAY WITH 120V COIL. SQUARE-D CAT# 8501 KU12 V20 OR EQUAL.
  - ④ CONTRACTOR TO PROVIDE AND INSTALL NEW CAPACITOR. 480V, 3 $\phi$ , 65 KVAR WITH INTEGRAL CONTACTOR (120V COIL) AND FUSING. REFER TO SPECIFICATIONS.
  - ⑤ CONTRACTOR TO PROVIDE AND INSTALL NEW 1-5/8" X 1-5/8" ALUMINUM UNISTRUT WITH ALUMINUM HARDWARE.
  - ⑥ CONTRACTOR TO PROVIDE AND INSTALL GROUND LUGS TO ACCOMMODATE EQUIPMENT GROUNDING CONDUCTORS (EQUIPMENT GROUNDING CONDUCTORS NOT SHOWN FOR CLARITY).
  - ⑦ CONTRACTOR TO PROVIDE AND INSTALL TWO PARALLEL RUNS OF 3-#4/0 DLO CU + 1-#1/0 DLO CU IN 3" C. (WITH GROUND BUSHING) TO EXISTING MOTOR CIRCUIT BREAKER.
  - ⑧ CONTRACTOR TO PROVIDE AND INSTALL TWO PARALLEL RUNS OF 3-#4/0 DLO CU + 1-#1/0 DLO CU IN 3" C. (WITH GROUND BUSHING) TO EXISTING MOTOR.
  - ⑨ CONTRACTOR TO PROVIDE AND INSTALL 3-#1/0 THWN CU + 1-#6 THWN CU GND IN 2" C. (WITH GROUND BUSHING) FOR CAPACITOR.
  - ⑩ CONTRACTOR TO PROVIDE AND INSTALL 2-#12 XHHW CU + 1-#12 XHHW CU GND IN 3/4" C. (WITH GROUND BUSHING) FOR CAPACITOR CONTACTOR CONTROL.
  - ⑪ CONTRACTOR TO PROVIDE AND INSTALL 4-#12 XHHW CU + 1-#12 XHHW CU GND (2-#12 XHHW FROM STARTER CONTROL TRANSFORMER TO SOFTSTARTER FOR 120V POWER, 2-#12 XHHW FROM RESET PUSHBUTTON FOR SOFTSTARTER RESET) IN 3/4" C. (WITH GROUND BUSHING).

- GENERAL NOTES:**
1. THE NEW 480V, 590 AMPERE, SOFTSTARTERS AND NEW 480V, 3 $\phi$ , 65 KVAR CAPACITORS SHALL BE PROVIDED IN NEMA 4X STAINLESS STEEL ENCLOSURES. (APPLIES ONLY TO SOFTSTARTERS AND CAPACITORS IN JUNCTION CHAMBER NO. 1).
  2. SOFTSTARTER DIMENSIONS, SOFTSTARTER ENCLOSURE DIMENSIONS AND CAPACITOR DIMENSIONS SHOWN ARE BASED ON SPECIFIC MANUFACTURERS USED FOR THE BASIS OF DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING OF ENCLOSURES BASED ON THE FINAL EQUIPMENT SELECTED/PROVIDED.
  3. THE DETAIL DEPICTS INSTALLATION OF THE SOFTSTARTER/CAPACITOR ON MASONRY WALLS ONLY. FOR INSTALLATION OF THE SOFTSTARTER/CAPACITOR ON OTHER THAN MASONRY WALL THE CONTRACTOR SHALL : PROVIDE AND INSTALL 4" SQUARE ALUMINUM POST WITH 1/2" WALL THICKNESS. WELD 1/4" TOP TO EACH POST. PROVIDE FULL FILLET WELD TO BASE PLATE. PROVIDE AND INSTALL 1-5/8" X 1-5/8" ALUMINUM UNISTRUT. ALL MOUNTING HARDWARE SHALL BE ALUMINUM. UNISTRUT BOLTS SHALL BE INSTALLED THROUGH POST. PROVIDE AND INSTALL 10" X 10" X 3/4" ALUMINUM BASE PLATE. SECURE EACH BASE PLATE TO CONCRETE W/(4) STAINLESS STEEL 1/2" DIA. X 4" BOLTS & STAINLESS STEEL HEX NUTS WITH LOCKWASHER. DRILL CONCRETE & EMBED BOLTS AND ANCHORS IN EPOXY. COAT BOTTOM OF BASE PLATE WITH ASPHALT PAINT.

**SOFTSTARTER DETAILS** 1  
SCALE : N.T.S. E-2 | E-22



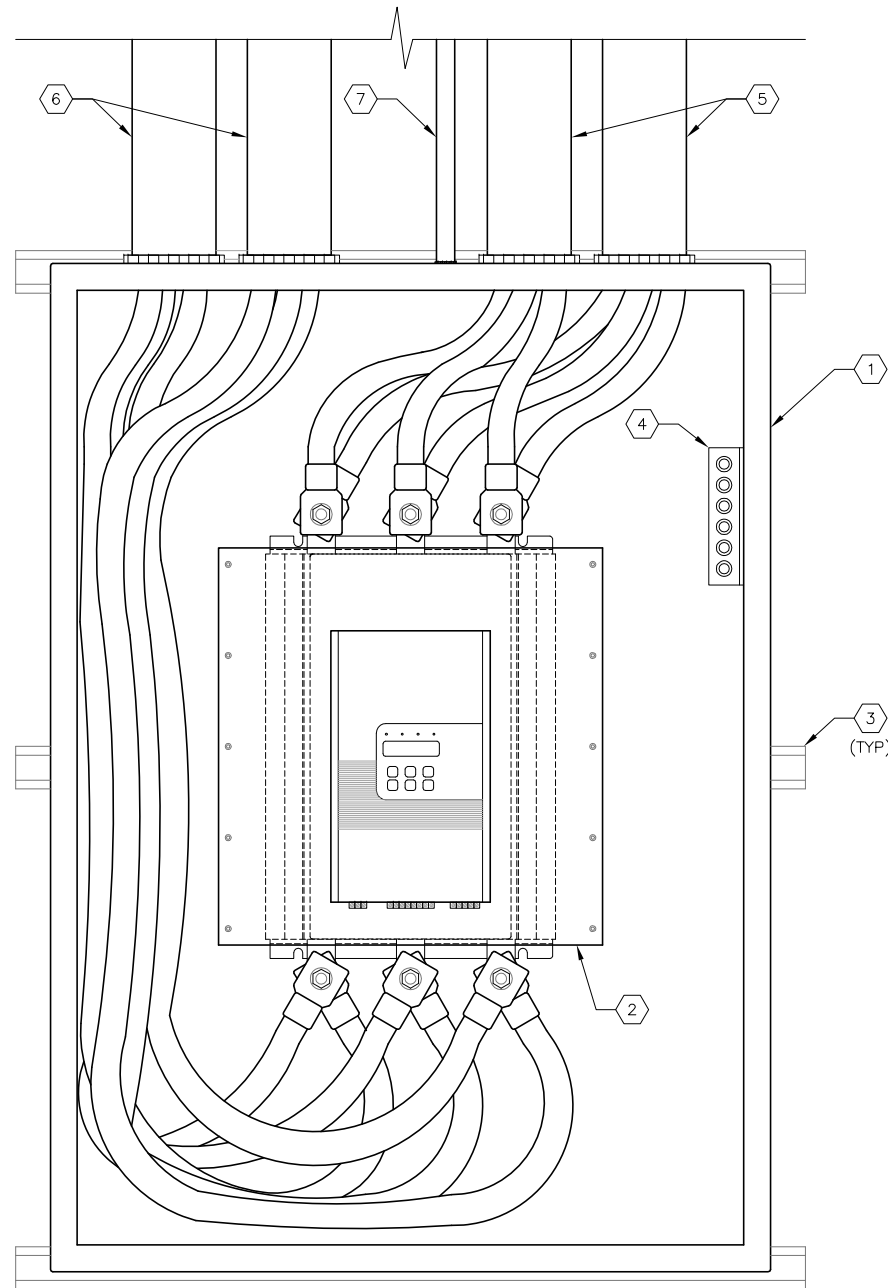
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City of Tampa Wastewater Department  
**HOWARD F. CURREN AWP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

**JC-1-AB-1, JC-1-AB-2,  
JC-1-AB-3 & JC-1-AB-4**  
**SOFTSTARTER DETAILS**

TIMOTHY THOMAS, P.E. No. 47079	FILE: 171301342E01
SHEET NUMBER	<b>E-22</b>



**KEYED NOTES:**

- ① CONTRACTOR TO PROVIDE AND INSTALL NEW 42"H x 30"W x 16"D NEMA 12 ENCLOSURE. WIEGMANN MODEL NUMBER N12423016.
- ② CONTRACTOR TO PROVIDE AND INSTALL NEW SOLCON SOFTSTARTER. SOLCON MODEL NUMBER RVS-DXM 590-8.
- ③ CONTRACTOR TO PROVIDE AND INSTALL NEW 1-5/8" X 1-5/8" ALUMINUM STEEL UNISTRUT WITH ALUMINUM HARDWARE.
- ④ CONTRACTOR TO PROVIDE AND INSTALL GROUND LUGS TO ACCOMMODATE EQUIPMENT GROUNDING CONDUCTORS (EQUIPMENT GROUNDING CONDUCTORS NOT SHOWN FOR CLARITY).
- ⑤ CONTRACTOR TO PROVIDE AND INSTALL TWO PARALLEL RUNS OF 3-373.7 KCMIL DLO CU + 1-#1/0 DLO CU IN 3-1/2" C. (WITH GROUND BUSHING) TO EXISTING CIRCUIT BREAKER.
- ⑥ CONTRACTOR TO PROVIDE AND INSTALL TWO PARALLEL RUNS OF 3-373.7 KCMIL DLO CU + 1-#1/0 DLO CU IN 3-1/2" C. (WITH GROUND BUSHING) TO EXISTING MOTOR (VIA MCC CUBICLE).
- ⑦ CONTRACTOR TO PROVIDE AND INSTALL 4-#12 XHHW CU + 1-#12 XHHW CU GND (2-#12 XHHW FROM STARTER CONTROL TRANSFORMER TO SOFTSTARTER FOR 120V POWER, 2-#12 XHHW FROM RESET PUSHBUTTON FOR SOFTSTARTER RESET) IN 3/4" C. (WITH GROUND BUSHING).

**GENERAL NOTES:**

- 1. SOFTSTARTER DIMENSIONS AND SOFTSTARTER ENCLOSURE DIMENSIONS SHOWN ARE BASED ON SPECIFIC MANUFACTURERS USED FOR THE BASIS OF DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING OF ENCLOSURES BASED ON THE FINAL EQUIPMENT SELECTED/PROVIDED.

**SOFTSTARTER DETAILS**

SCALE : N.T.S.

1  
E-3 | E-23

JOB No.	171301327								
DESIGNED	TDT								
DRAWN	EAK								
CHECKED	DEV								
DATE	08/2013	No.	DATE	BY	APP	REVISION	DESCRIPTION		

NOT TO SCALE

**MOTOR FEEDER INFORMATION (LENGTHS ARE APPROXIMATIONS)**

1. AIR BLOWERS JC-1-AB-1, JC-1-AB-2, JC-1-AB-3 AND JC-1-AB-4.

EXISTING MOTOR FEEDERS AND CONDUIT TO BE REPLACED WITH PARALLEL RUNS OF 3-#4/0 DLO CU + 1-#1/0 DLO CU IN 3" C. (WITH GROUND BUSHING). PROVIDE LIQUID-TIGHT FLEXIBLE CONDUIT CONNECTION TO MOTOR.

APPROXIMATE CONDUIT LENGTHS :  
 JC-1-AB-1 :: 75 FEET  
 JC-1-AB-2 :: 85 FEET  
 JC-1-AB-3 :: 90 FEET  
 JC-1-AB-4 :: 90 FEET

APPROXIMATE CONDUCTOR LENGTHS :  
 JC-1-AB-1 :: 105 FEET  
 JC-1-AB-2 :: 115 FEET  
 JC-1-AB-3 :: 120 FEET  
 JC-1-AB-4 :: 120 FEET

NOTE THAT CONDUIT/CONDUCTOR LENGTHS ARE FROM MCC CUBICLE TO NEW SOFTSTARTER ENCLOSURE AND FROM NEW SOFTSTARTER ENCLOSURE TO ASSOCIATED MOTOR.

2. MAIN PUMP AIR BLOWERS MP-AB-2 AND MP-AB-3.

EXISTING MOTOR FEEDERS TO BE REPLACED WITH TWO (2) PARALLEL RUNS OF 3-373.7 KCMIL DLO CU + 1-#1/0 DLO CU IN EXISTING 3-1/2" CONDUIT. PROVIDE NEW LIQUID-TIGHT FLEXIBLE CONDUIT CONNECTION TO MOTOR.

NOTE THAT CONDUIT LENGTHS ARE FROM MOTOR STARTER CUBICLE TO MOTOR, HOWEVER CONDUCTOR LENGTHS ARE FROM SOFTSTARTER (THROUGH EXISTING STARTER CUBICLE) TO MOTOR.

APPROXIMATE CONDUCTOR LENGTHS :  
 MP-AB-2 :: 170 FEET  
 MP-AB-3 :: 155 FEET

3. BACKWASH AIR BLOWERS FB-BWB-1 AND FB-BWB-2.

EXISTING MOTOR FEEDERS TO BE REPLACED WITH 3-313.3 KCMIL DLO CU + 1-#1/0 DLO CU IN EXISTING 3" CONDUIT. PROVIDE NEW LIQUID-TIGHT FLEXIBLE CONDUIT CONNECTION TO MOTOR.

APPROXIMATE CONDUCTOR LENGTHS :  
 FB-BWB-1 :: 275 FEET  
 FB-BWB-2 :: 305 FEET

4. BACKWASH AIR BLOWERS FB-BWB-3, FB-BWB-4 AND FB-BWB-5.

EXISTING MOTOR FEEDERS TO BE REPLACED WITH TWO (2) PARALLEL RUNS OF 3-313.3 KCMIL DLO CU + 1-#1/0 DLO CU IN EXISTING 3-1/2" CONDUIT. PROVIDE NEW LIQUID-TIGHT FLEXIBLE CONDUIT CONNECTION TO MOTOR.

APPROXIMATE CONDUCTOR LENGTHS :  
 FB-BWB-3 :: 115 FEET  
 FB-BWB-4 :: 140 FEET  
 FB-BWB-5 :: 165 FEET

**NOTE :**

CONTRACTOR TO FIELD VERIFY CONDUIT LENGTHS AND SIZES PRIOR TO COMMENCING CONSTRUCTION.

**SOFTSTARTER SET UP PARAMETERS**

UPON START-UP OF EACH SOFTSTARTER, THE CONTRACTOR SHALL DOCUMENT THE INITIAL CONTROL PARAMETERS AND SETTING UTILIZED.

THE SETTINGS FOR EACH SOFTSTARTER SHALL BE PROVIDED ON AN 8" X 11" LAMINATED DOCUMENT AND SHALL BE PLACED ON THE INNER DOOR OF THE ASSOCIATED SOFTSTARTER (OR MOTOR STARTER CUBICLE).

THE MINIMUM PARAMETERS TO BE DOCUMENTED SHALL INCLUDE :

1. SOFTSTARTER FULL LOAD CURRENT
2. MOTOR FULL LOAD CURRENT
3. SOFTSTARTER RATED POWER
4. CONNECTION TYPE (LINE OR INSIDE DELTA)
5. RATED LINE VOLTAGE
6. OVERCURRENT TRIP AS A FUNCTION OF FULL LOAD AMPERES
7. UNDERCURRENT DELAY (IN SECONDS)
8. OVERCURRENT SHEAR PIN (% OF FULL LOAD CURRENT)
9. OVERCURRENT TIME DELAY
10. OVERLOAD CLASS
11. OVERLOAD PROTECT ENABLE WHILE RUN
12. UNDERVOLT TRIP (% OF LINE VOLTAGE)
13. UNDERVOLTAGE TRIP DELAY (IN SECONDS)
14. OVERVOLTAGE TRIP (% OF LINE VOLTAGE)
15. OVERVOLTAGE TRIP DELAY (IN SECONDS)
16. SOFTSTART CURVE
17. PULSE TIME (IN SECONDS)
18. INITIAL VOLTAGE (% OF LINE VOLTAGE)
19. INITIAL CURRENT (% OF FULL LOAD CURRENT)
20. CURRENT LIMIT OF FULL LOAD (% OF FULL LOAD CURRENT)
21. ACCELERATION TIME (IN SECONDS)
22. MAX START TIME (IN SECONDS)
23. NUMBER OF STARTS (NUMBER OF STARTS PERMITTED IN START PERIOD)
24. STARTS PERIOD (1-60 MINUTE PERIOD)
25. START INHIBIT (1-60 MINUTES)
26. SOFT STOP CURVE
27. DECELERATION TIME (IN SECONDS)
28. FINAL TORQUE



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NOT TO SCALE

City of Tampa Wastewater Department  
**HOWARD F. CURREN AWP**  
**LARGE MOTOR SOFTSTART ADDITIONS**

**MOTOR FEEDER INFORMATION**

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER  
**E-24**  
FILE: 171301342E01

