City of Tampa
Jane Castor, Mayor

Contract Administration
Richard Mutterback, Director
306 East Jackson Street, 4N
Tampa, FL 33602

Office (813) 274-8116
Fax: (813) 274-7368

ADDENDUM
Via E-Mail
DATE: April 11, 2025

Contract: 25-D-00028 **Howard F. Curren AWTP Electrical System Improvements Design Services**

Submitters on the above referenced project are hereby notified that the following addendum is made to the RFQ. Any submissions shall conform to this notice.

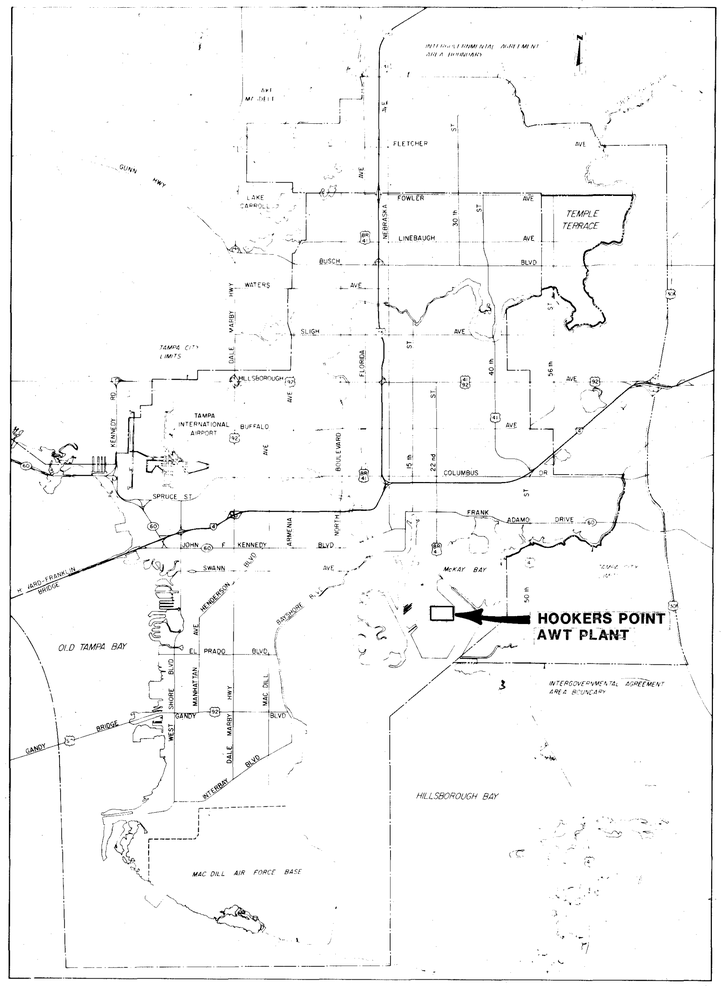
Item 1: Attached is a collection of reference documents.

All other provisions of this RFQ not in conflict with this Addendum shall remain in full force and effect. Questions are to be e-mailed to ContractAdministration@tampagov.net.

Jim Greiner

Jim Greiner, P.E., Contract Management Supervisor

MSPS Original As-Built_Year 1983



LOCATION MAP

CITY OF TAMPA

CITY OF TAMPA FLORIDA · ORGANIZED JULY 15, 1887 · MASCOTTE

FOURTH WASTEWATER IMPROVEMENT PROGRAM

PLANS FOR

ADDITIONS TO THE HOOKERS POINT ADVANCED WASTEWATER TREATMENT PLANT

DIVISION 4H-12

DISSOLVED AIR FLOTATION THICKENERS
ANAEROBIC DIGESTERS
ENGINE GENERATOR

U.S. ENVIRONMENTAL PROTECTION AGENCY
PROJECT NO. C120473420

AS BUILT
JA 6/9/97

Post, Buckley, Schuh & Jernigan, Inc. TAMPA, FLORIDA	Ralph L. Metcalf, II, P.E. # 23041 CHIEF ENGINEER DEPARTMENT of SANITARY SEWERS	578-153.00	Elton G. Smith, P.E. DIRECTOR DEPARTMENT of SANITARY SEWERS	NO DATE REVISIONS: 1 2 3 4 5	SCALE 1" = approximately 1½ miles (0 1 2 3 4 5 6)	DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA — ADDITIONS TO HOOKERS POINT AWT PLANT DIVISION 4H-12	TITLE SHEET AND LOCATION MAP	DATE: SEPT. 1982 SHEET G 1 OF G 15 DWG. 1 OF 157

OPERATIONS AND MAINTENANCE BUILDINGS

TRANSFORMER PAD NO. 5

MH-E11

MH-E12

HV AND LV E/D ℄ 0+23 X

HV E/D ℄ 2+93 X

HV AND LV E/D ℄ 4+44 Y

NOTES:

1. EXISTING PAVING, WALKWAYS, GRASS AREAS, CURBS, GUTTERS, ETC. CUT FOR THIS CONSTRUCTION SHALL BE RESTORED PER APPLICABLE SPECS.
2. PROVIDE IN A 3"C. 18 #14 TWISTED & SHIELDED PAIR FROM EGIP TO EXIST. PNL IM PUMPING STATION.

EXIST'G 6" CU. COND TO REMAIN.

MATCH LINE E + 91 Y

NOTES

1. ALL CONDUITS IN DUCT BANK ARE 4" PVC UNLESS OTHERWISE NOTED.
2. PULL BOX TYPE 'C' IS A BROOKS PRODUCTS (OR EQUAL) SERIES 300, 4'-0" X 4'-0" X 6'-0" DEEP. BOX WITH #300-20 COVER (TRAFFIC)
3. FOR IDENTIFICATION OF CIRCUITS IN DUCT BANKS (○) SEE "PARTIAL SITE PLAN C", DWG NO. 5 DIVISION 4H-12.
4. FOR MANHOLES 1 thru 8 DETAILS SEE "PARTIAL SITE PLAN C," DWG, NO. 5, "ELECTRICAL MANHOLE DETAIL".
5. CONTRACTOR MUST REFER TO "OUTSIDE PIPING" PART SITE PLAN 'B'.
6. T.O.D.B. STANDS FOR "TOP OF DUCT BANK".
7. ALL CONTROL CONDUITS (IN DUCT BANKS ARE TO BE STUBBED UNDER CONTROL CABINETS.

WASTE GAS BURNER

FOR TRANSFORMER PAD ② GROUNDING SEE SHEET E-29 FOR STRUCTURAL SEE S-27

TRANSF. PAD NO. 5-2

℄ G + 11.2 X

MIXED SLUDGE PUMPING STATION

STUB-OUT 2 FEET FROM M.H. & CAP. PROVIDE DUCT MARKER

PRIMARY SEDIMENTATION TANKS

T.O.D.B. @ +6.5

8'-0"

ANAEROBIC DIGESTERS

T.O.D.B. @ +5.0

M.H. #7

CONTROL PANEL

SLUDGE PUMPING STATION

PROVIDE PULL BOX BROOKS PRODUCTS 2424 SERIES W/PKWY. COVER.

T.O.D.B. @ +3.5

STUB THE 4 E.C. INTO BLDG. AND CAP. TERMINATE ALL CONT'L CONDUCTORS TO CONTROL PANEL VIA PULL BOX AND CONNECT TO DESIGNATED CONTACTS.

M.H. #8

M.H. #2

T.O.D.B. @ +4.5

SLOPE

4'-0"

DIVISION 4H-10. 4"C. (LOCATION SHOWN IS APPROX.) PROVIDE 6 #14 TWISTED PAIRS FROM CONTROL PANEL IN SLUDGE DIGESTION CONTROL BLDG. #1 TO VALVE PANEL IN EXISTING SLUDGE PUMPING STATION

SLUDGE DIGESTION CONTROL BUILDING NO. 1

DIGESTER CONTROL BLDG. "C"

STA. 3+14 Y

STA. 7+25 X

EXISTING 3"1/0, 3"1/0 & 2 #12 & 3 #600 MCM TO REMAIN

WASTE GAS BURNER PAD (DIVISION 4H-10)

CONTROL PANEL

4"C. GENERATOR BUILDING

4 EG3H, 3/4"C. TO "EGMP" IN PUMP ST.

4 EM2, 1 1/2 C. TO "EGMP" IN PUMP ST.

4 EM3, 3/4"C. TO "EGMP" IN PUMP ST.

GENERATOR BUILDING

NEW 4" PVC JACKETED H.W. STEEL CONDUIT TO FEED MCC-47

NEW 4" PVC JACKETED H.W. STEEL CONDUIT STUB-UP & CAPPED UNDER MCC-46.

FUT. EXTENSION OF SWGR NO. 60

SWGR NO. 60 SEE E-22 FOR DETAIL 'X' (DIV 4H-10)

PROVIDE NEW PULL BOX TYPE 'C' INTERCEPTING EXISTING CKTS. SPLICE & REROUTE AS SHOWN

INTERCEPT EXIST'G CKTS. SPLICE AND REROUTE BY MEANS OF DIRECT BURRY CABLE AS SHOWN

4 EG3H, 3/4 C. TO "EGCP" IN GEN. BLDG.

4 EM2, 1 1/2 C. TO "EGMP" IN GEN. BLDG.

4 EM3, 3/4 C. TO "EGMP" IN GEN. BLDG.

PUMPING STATION

EGMP

EXIST. TO REMAIN

CABLE BY ROME CABLE CO. TYPE "USE" W/XLP INSULATION.

1" E.C. FOR TELEPHONE

20'-0"

M.H. #1

T.O.D.B. @ +5.0

EGMP

EGCP

EXIST. STUB-OUTS 5' FROM SWGR.

SEE DWG. E-22 FOR CKT. NUMBER & DESTINATION

SEE NOTE 2

EXIST. TO BE ABANDONED

T.O.D.B. @ +3.5

EXISTING 4 #6

EFFLUENT BUILDING

EXIST'G. TO REMAIN MAINTENANCE BUILDING

STA. 0+79.07 Y

T.O.D.B. @ +4.0

INTERCEPT EXIST'G CKTS SPLICE TO NEW CABLE AND REROUTE AS SHOWN

NEW DUCT BANKS. SEE SECTIONS 'P' AND 'O' THIS DWG.

PROVIDE NEW PULL BOX TYPE 'C' INTERCEPTING EXISTING CIRCUITS SPLICE AND RE ROUTE AS SHOWN

2 #12 & 1 #12 B.C.IN 3/4" P.V.C. TO MCC 44-F18

SEE POLE DETAIL 'A' SH. E-5

4"C IN A 2"C.

2" SPARE

3-600 MCM IN A 4"C.

3 #1/0 IN A 2"C.

3 #10 & 6 #12 IN A 2"C.

#5 @ 12

2"C. SPARE

SECTION A N.T.S.

SECTION B N.T.S.

SECTION C N.T.S.

SECTION D N.T.S.

SECTION E N.T.S.

SECTION F N.T.S.

DIMENSIONS SHOWN ARE TYPICAL FOR ALL DUCT BANKS.

SECTION O N.T.S.

SECTION G N.T.S.

SECTION H N.T.S.

(SECTION I SAME AS H BUT FOR XMR #9A)

SECTION P N.T.S.

(TYPICAL REINFORCING FOR CONCRETE ENCASED ELECTRICAL CONDUITS)

SECTION J N.T.S.

SECTION L N.T.S.

(SECTION 'K' SAME AS 'L' BUT ALL 4" E.C. FOR FUT. DIGESTER)

SECTION M N.T.S.

NOTE: ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.19 FEET (0'-1 13/16").

Post, Buckley, Schuh & Jernigan, Inc.
TAMPA, FLORIDA

DES: Iglesias
DRN: Gordon
CKD:
578-153.00

BRADLEY, WHITWORTH ASSOCIATES, INC.
CONSULTING ENGINEERS
3400 S.W. 3RD. AVE
MIAMI, FLA. 33145

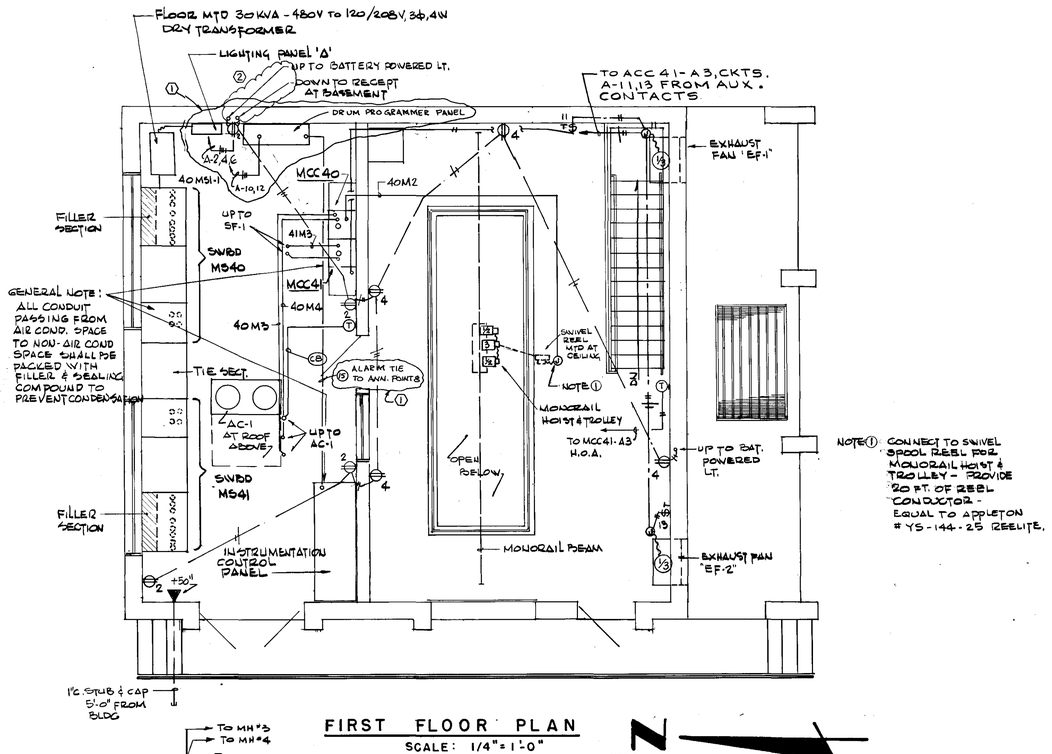
NO	DATE	REVISIONS
1	3-23-83	ADDED DIVISION 4H-10 WASTE GAS BURNER PAD, ADDENDUM 2
2	4-13-83	TRANS. PAD DESIGNATIONS, ADDENDUM 3
3		
4		
5		

SCALE
30 20 10 0 30 60
1 IN. = 30 FT.

DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA
ADDITIONS TO HOOKERS POINT AWT PLANT
DIVISION 4H - 12

ELECTRICAL
PARTIAL SITE PLAN "B"

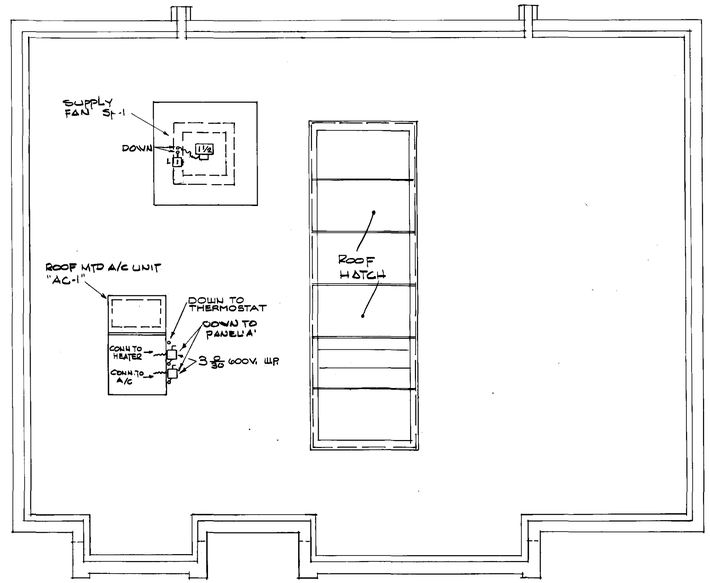
DATE SEPT. 1982
SHEET E-4 OF E-29
DWG. 113 OF 157



FIRST FLOOR PLAN

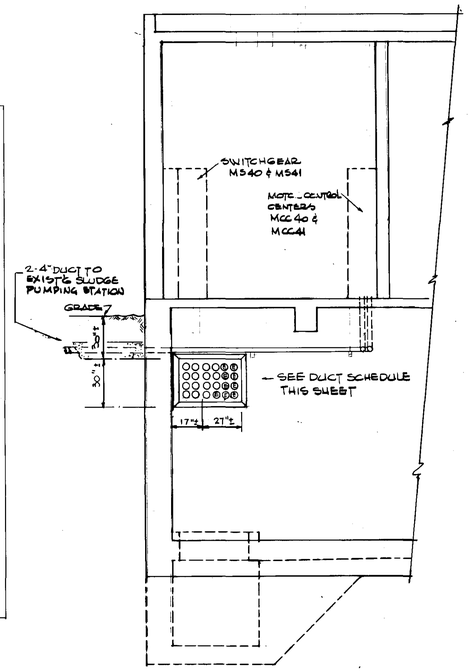
SCALE: 1/4" = 1'-0"

NOTE ①: CONNECT TO SWIVEL SPOOL REEL FOR MONORAIL HOIST & TROLLEY - PROVIDE 20 FT. OF REEL CONDUCTOR - EQUAL TO APPLETON # YS-144-25 REELITE.



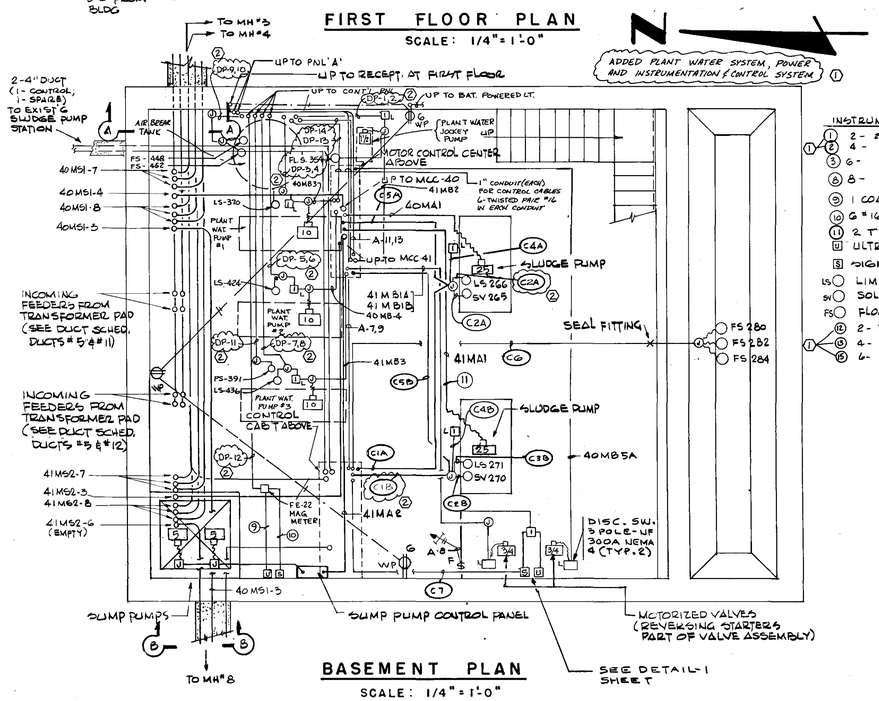
ROOF PLAN

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



SECTION - ELEVATION 'A-A'

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



BASEMENT PLAN

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

ADDED PLANT WATER SYSTEM, POWER AND INSTRUMENTATION & CONTROL SYSTEM ①

INSTRUMENTATION CONDUCTORS & CONDUIT

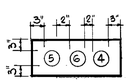
- ① 2 - #16 SHIELDED & TWISTED - 3/4" C
- ② 4 -
- ③ 6 - - 3/4" C
- ④ 8 - 1" C
- ⑨ 1 COAX CABLE + 3#16 TW - 3/4" C
- ⑩ G #16 TW - 3/4" C
- ⑪ 2 TWISTED PR. #16 - 3/4"
- ⑫ ULTRASONIC GENERATOR
- ⑬ SIGNAL CONVERTER
- LS LIMIT SWITCH
- SN SOLENOID VALVE
- FS FLOAT SWITCH
- ⑫ 2 - TWISTED PAIR #16
- ⑬ 4 -
- ⑮ 6 -

DRUM PROGRAM PANEL CABLE AND CONDUIT SCHEDULE

	DESTINATION	CABLE	TOTAL
DP-1, 2	JOCKEY PUMP	⑫ LOCK SW. ⑬ FLS.-354	⑮ - 1"C
DP-3, 4	PUMP #1	⑫ LOCK SW. ⑬ LS-370	⑮ - 1"C
DP-5, 6	PUMP #2	⑫ LOCK SW. ⑬ LS.-424	⑮ - 1"C
DP-7, 8	PUMP #3	⑫ LOCK SW. ⑬ LS.-436	⑮ - 1"C
DP-9, 10	AIR TANK	⑫ PS-448 ⑬ PS-452	⑮ - 1"C
DP-11	DISCH. PIPE	⑫ PS-391	⑫ - 3/4"
DP-12	MAG. METER	⑬ FE-22	⑮ - 3/4"
DP-13	MCC-40	⑭ CONTROLS	⑯ - 1"C
DP-14	MCC-41	⑭ CONTROLS	⑯ - 1"C

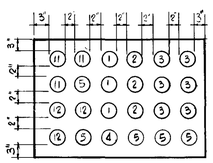
CONTROL PANEL CABLE AND CONDUIT SCHEDULE

	DESTINATION	CABLE	TOTAL
C1A	SLUDGE PUMP A	⑫ LOCK SW (C4A) ⑫ LS 266 (C2A) ⑫ SV 265 (C2A)	⑮ - 1"C
C1B	SLUDGE PUMP B	⑫ LOCK SW (C4B) ⑫ LS 271 (C3B) ⑫ SV 270 (C2B)	⑮ - 1"C
C5A	MCC-40-A1	⑫ M51	⑫ - 3/4" C
C5B	MCC-41-A1	⑫ M52	⑫ - 3/4" C
C6	SLUDGE SUCTION WELL	⑫ FS-280 ⑫ FS-282 ⑫ FS-284	⑮ - 1"C
C7	SIGNAL CONVERTER	⑫	⑫ - 3/4" C



DUCT 'B-B'

NO SCALE



DUCT -'A-A'

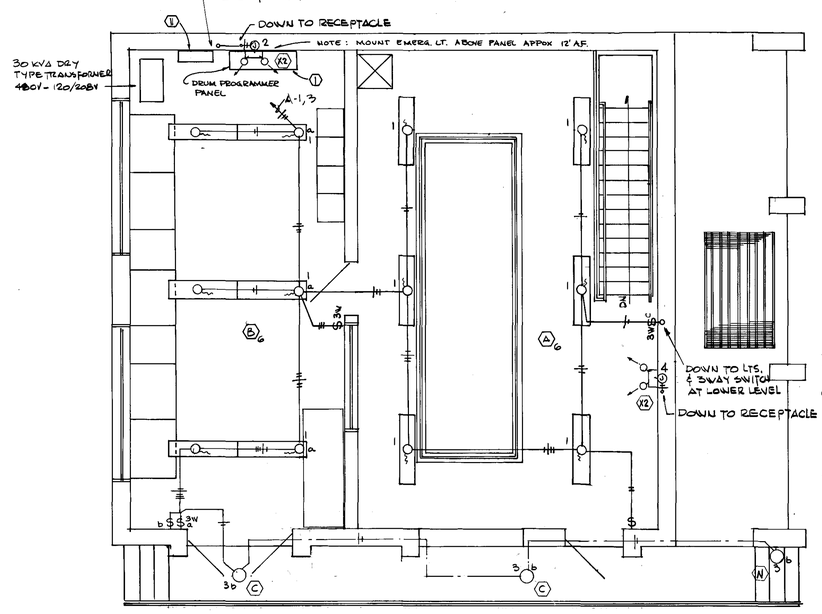
NO SCALE

DUCT SCHEDULE

#ø	CONDUCTORS	RACEWAY	FROM	TO
1	3-500 MCM + 1-3/0 BOND	4" DUCT	PANEL MS	MCC-44 - DIG. BLD. "C" - VIA MH "5" & 7
2	3-500 MCM + 1-3/0 BOND		PANEL MS	MCC-45 - DIG. BLD "C" - VIA MH'S "5 & 7
3	SPARE EMPTY		PANEL MS1	FUTURE DIGESTOR - VIA MH "5" & 7
4	CONTROL CONDUCTORS			
5	SPARE EMPTY		PANEL MS2	MH "24
6	3" 1/0 + 1" #3 BOND		PANEL MS1	ATS-1 AT GEN. BLDG - VIA MH "5" 8, 2, & 1
11	3-500 MCM + 1" 3/0 BOND		XFMR PAD	MS-40 VIA MH "4
12	3-500 MCM + 1" 3/0 BOND		XFMR PAD	MS-41 VIA MH "4

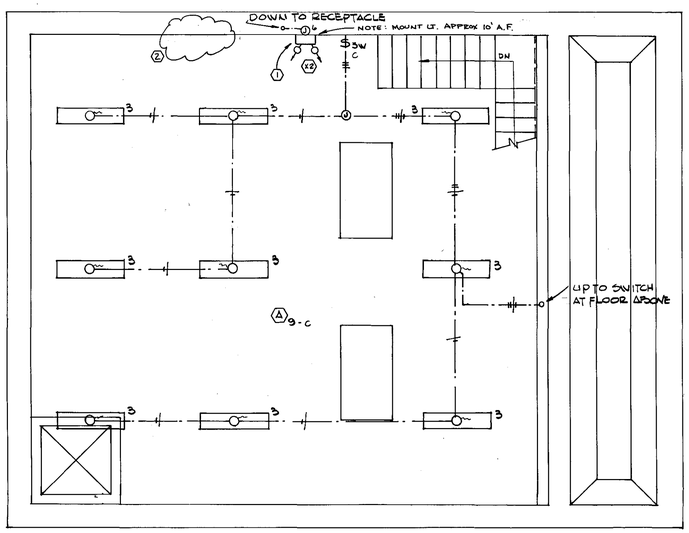
NOTE:
ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.18 FEET (0'-1 13/16").

Post, Buckley, Schuh & Jernigan, Inc. TAMPA, FLORIDA	DES: Magelaw DRN: Magelaw CKD: W. Whitworth 578-153.00	BRADLEY, WHITWORTH ASSOCIATES, INC. CONSULTING ENGINEERS 3400 S.W. 3RD. AVE MIAMI, FLA. 33145	No. / DATE / REVISIONS ① 3-23-83 ADDED PLANT WATER PUMPS & CONTROLS ② 4-13-83 ADDED CABLE SCHEDULES (FLOW SW., DE-LETED PRESS. SW.) REV. CONDUIT LAYOUT - ADDEN. 3 3 4 5	SCALE 2 0 2 4 6 8 10 1/4" = 1'-0"	DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA ADDITIONS TO HOOKERS POINT AWT PLANT DIVISION 4H - 12	ELECTRICAL MIXED SLUDGE PUMPING STATION PLAN, POWER	DATE: SEPT. 1982 SHEET E-7 OF E-29 DWG. 116 OF 157



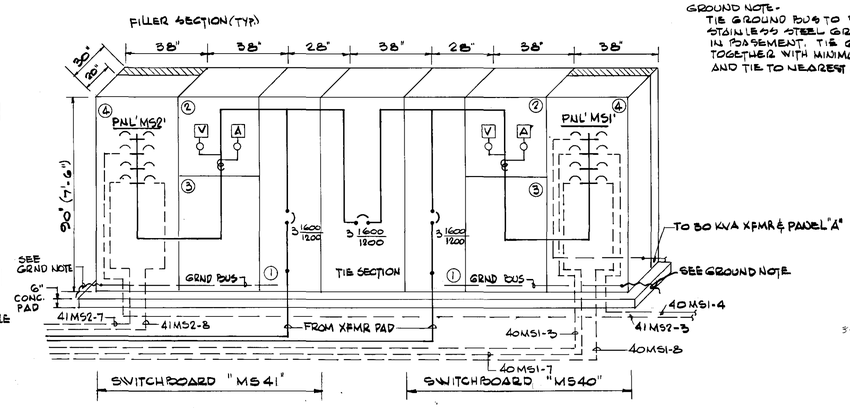
FIRST FLOOR PLAN

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

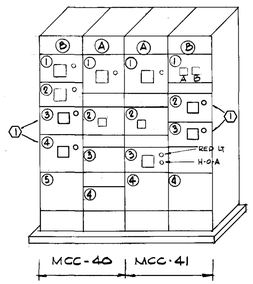


BASEMENT PLAN

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



GROUND NOTE:
TIE GROUND BUS TO 3/4" ϕ x 10' STAINLESS STEEL GROUND ROD IN BASEMENT. TIE GROUND RODS TOGETHER WITH MINIMUM 3/0 BARE C.U. AND TIE TO NEAREST C.W. PIPE



NOTE:
ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

* PROVIDE MAIN BKR WITH GROUND FAULT PROTECTION

TYPE: SQ.D - I LINE OR EQUAL
VOLT: 480V, 3ϕ, 4W
MOUNTING: FREE STANDING - FRONT ACCESSIBLE

SWITCHBOARD "MS-40" *

MAIN BUS: 1600 A (CU.) FULL NEUT ①
DEMAND KVA = 922 KVA ①

	DESCRIPTION	HP	DEM KVA	VOLTS	ϕ	POLES	FR.	TRIP	WIRE	COND	REMARKS
1	PULLING SECTION	—	—	—	—	—	—	—	—	—	
2	INSTRUMENTATION	-	-	-	-	-	-	-	-	-	
① 3	MAIN BREAKER		922	480	3	3	1600	1200	BUS	CONN	(SEE SHED. "MS1" BELOW)

TIE SECTION

	TIE BREAKER			480	3	3	1600	1200	BUS	CONN

TYPE: SQ.D - I LINE OR EQUAL
VOLT: 480V - 3ϕ, 4W
MOUNTING: FREE STANDING - FRONT ACCESSIBLE

SWITCHBOARD "MS-41" *

MAIN BUS: 1600A (CU.) FULL NEUT ①
DEMAND KVA = 789 KVA ①

	DESCRIPTION	HP	DEM KVA	VOLTS	ϕ	POLES	FR.	TRIP	WIRE	COND	REMARKS
1	PULLING SECTION	-	-	-	-	-	-	-	-	-	
2	INSTRUMENTATION	-	-	-	-	-	-	-	-	-	
① 3	MAIN BREAKER		789	480	3	3	1600	1200	BUS	CONN	(SEE SCHED "MS2" BELOW)
		-		-							

VOLTS: 480V - 3ϕ
TYPE: SQ D - NEHB, OR EQ.
MOUNTING: IN SWBD

DISTR. PANEL 'MS-1'

MAIN BUS - 1200 A.
DEMAND KVA = 922 KVA ①

CKT NO	DESCRIPTION	HP	CONN KVA	VOLTS	ϕ	BRANCH CIRCUITS POLES	FR.	TRIP	WIRE	COND	REMARKS
1	TRANSFORMER (PNL 'A')	-	30	480	3	3	100	40	4#8	3/4	
2	SPARE	-	20		3	3	100	-	-	-	
3	GENERATOR BLD.		65		3	3	225	150	4#4/0	4"	w/ #2 B.C.
① 4	MCC 40	-	96		3	3	225	150	4#4/0	2½"	w/ #2 B.C.
5	SPARE		10		3	3	225	-	-	-	
6	SPARE		10		3	3	225	-	-	-	
① 7	DIGEST. BLD 'C' - MCC 44		622		3	3	1000	800	500MCM	4"	2 PARALLEL RUNS w/ 3/0 BC
① 8	FUT. DIGEST. BLD.		622		3	3	1000	800	-	4"	
	CONNECTED KVA =		1485	EST							
①	SPARES/STANDBY/FUT =		931	EST							
	PRESENT DEMAND =		554	EST							
	FUTURE DEMAND =		922	EST							

VOLTS: 480V, 3ϕ
TYPE: SQ D - NEHB, OR EQ.
MOUNTING: IN SWITCHBOARD

DISTR. PANEL 'MS2'

MAIN BUS - 1200 A ①
DEMAND KVA = 789 KVA ①

CKT NO	DESCRIPTION	HP	CONN KVA	VOLTS	ϕ	BRANCH CIRCUITS POLES	FR.	TRIP	WIRE	COND	REMARKS
1	SPARE		20	480	3	3	100	-	-	-	
2	SPARE		20		3	3	100	-	-	-	
① 3	MCC 41		73		3	3	225	150	4#4/0	2½	
4	SPARE		10		3	3	225	-	-	-	
5	SPARE		10		3	3	225	-	-	-	
6	SPARE		10		3	3	225	-	-	-	
① 7	DIGEST BLD C' - MCC 45		622		3	3	1000	800	500MCM	4"	2 PARALLEL RUNS w/ 3/0 B.C.
① 8	FUT. DIGEST. BLD		622		3	3	1000	800		4"	
	CONNECTED KVA =		1381	EST							
①	SPARES/STANDBY/FUT =		966	EST							
	PRESENT DEM =		421	EST							
	FUTURE DEM =		789	EST							

TYPE: SQ. D - MODEL 4 OR EQUAL "MCC-40" ①
VOLT: 480 V, 3ϕ, 4W
MTG: FREE STANDING - FRONT ACCESSIBLE
MAINS - 225 A - FULL NEUT
CONN. LOAD = 91.3 KVA ①

CKT NO	DESIGNATION	HP	KVA	VOLT	ϕ	FRAME SIZE	TRIP * OR RANGE	STARTER	WIRE	COND	REMARKS
A-1	SLUDGE PUMP	30	33	480	3	100	330/1200	3 FVNR	3#4-1#12	1½	
▲ A-2	MONORAIL	4	5.3				18/58	—	4#10	3/4	
A-3	SPACE	-	5				—	—	—	—	
A-4	SPACE	-	5				—	—	—	—	
B-1	AC-1	-	12				30	1 FVNR	4#10	3/4	
B-2	AC-1 HEATER	-	10				40	1 FVNR	4#12	½	W CONTACTOR
① B-3	PLANT WATER PUMP #1	10	10.5				100/300	1 FVNR	4#10	3/4	
B-4	PLANT WATER PUMP #2	10	10.5				100/300	1 FVNR	4#10	3/4	
B-5	SPACE	-	-	-	-	-	-	-	-	-	

▲ STARTER PART OF HOIST ASSEMBLY

TYPE: SQ. D - MODEL 4 OR EQUAL "MCC-41" ①
VOLT: 480V, 3ϕ, 4W
MTG: FREE STANDING - FRONT ACCESSIBLE
MAINS: 225A - FULL NEUT
CONN LOAD = 72.8 KVA ①

CKT NO	DESIGNATION	HP	KVA	VOLT	ϕ	FRAME SIZE	TRIP * OR RANGE	STARTER	WIRE	COND	REMARKS
A-1	SLUDGE PUMP	30	33	480	3	100	330/1200	3 FVNR	3#4-1#12	1½	
● A-2	SUMP PUMP 3	10	12.2				50/150	—	4#10	3/4	
A-3	FAN SF-1	1½	2.5				8/22	1 FVNR	4#12	3/4	PROVIDE H-O-A SW
A-4	SPACE	-	5				—	—	—	—	
▲ B-1a	MOTORIZED VALVE	3/4	1.05				20	—	4#12	3/4	
▲ B-1b	MOTORIZED VALVE	3/4	1.05				20	—	4#12	3/4	
B-2	JOCKEY PUMP	1½	2.5	-	-	-	18/58	1 FVNR	4#12	3/4	
① B-3	PLANT WATER PUMP #3	10	10.5	-	-	-	100/300	1 FVNR	4#10	3/4	
B-4	SPACE	-	5	-	-	-	-	-	-	-	

▲ STARTER PART OF VALVE ASSEMBLY
● STARTER IN PUMP CONTROL PANEL
PROVIDE RED RUNNING LTS ON ALL STARTERS
① * ALL MOTORS SHALL BE PROTECTED WITH MOTOR CIRCUIT PROTECTORS

VOLTS: 120/208V, 3ϕ, 4W
TYPE: SQ D - NEHB, OR EQ. LIGHTING PANEL "A"
MOUNTING: SURFACE
MAIN BKR: 100/100
CONN. LOAD =

CIR NO	DESCRIPTION	CONNECTED LOAD A ϕ	B ϕ	C ϕ	DESCRIPTION	CIR NO
1	LIGHTING	1300 770			RECEPTACLES	2
3	LIGHTING		1300 770		RECEPTACLES	4
5	SPARE			720 720	RECEPTACLES	6
7	INSTRUM. CONTROL PANEL	720 720			FE-15	8
9	INSTRUM CONTROL PANEL		720 720		DRUM PROGRAMMER PANEL	10 ①
11	FAN SF-1			600 720	DRUM PROGRAMMER PANEL	12
13	FAN SF-2	600 720			SPARE	14
15	SPARE		720 720			16
17				720 720		18

CONDUIT & CABLE SCHEDULES

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
4 0MS1-1	3/4	3#8 + 1#12 B.C.	DISTR. PANEL MS1	TRANSFORMER
4 0 MS1-2	—	—		—
4 0 MS1-3	1-4" DUCT	4#4/0 + 1#2 B.C.		GENERATOR BLD ATS-1
4 0 MS1-4	2½"	4#4/0 + 1#2 B.C.		MCC 40
4 0 MS1-5	—	—		—
4 0 MS1-6	—	—		—
4 0MS1-7	2-4" DUCT	8-500MCM + 2-3/8 B.C.		DIGESTOR BLD. 'C' - MCC 44
4 0MS1-8	2-4" DUCT	—		FUTURE DIGESTOR BLD.

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
4 1MS2-1	-	-	DISTR. PANEL MS2	-
4 1MS2-2	-	-		-
4 1MS2-3	2½"	4#4/0 + 1#2 B.C.		MCC 41
4 1MS2-4	-	-		-
4 1MS2-5	-	-		-
4 1MS2-6	-	-		-
4 1MS2-7	2-4" DUCT	8-500MCM + 2-3/0 B.C.		DIGESTOR BLDG 'C' - MCC 45
4 1MS2-8	2-4" DUCT	-		FUTURE DIGESTOR BLD

NO	DATE	REVISIONS
①	3-23-83	ADDED CONTROL PANEL - REVISED CIRCUITS ADDED MCP'S - REVISED SCHEDULES
②	4-13-83	MCC SCHEDULES, ADDENDUM 3
3		
4		
5		

SCALE: 2 0 2 4 6 8 10 — 1/4" = 1'-0"

Post, Buckley, Schuh & Jernigan, Inc.
TAMPA, FLORIDA

DES: Mgalon
DRN: Mgalon
CKD: W. L. Smith
578-153.00

BRADLEY, WHITWORTH ASSOCIATES, INC.
CONSULTING ENGINEERS
3400 S.W. 3RD. AVE.
MIAMI, FLA. 33145

DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA

ADDITIONS TO HOOKERS POINT AWT PLANT
DIVISION 4H - 12

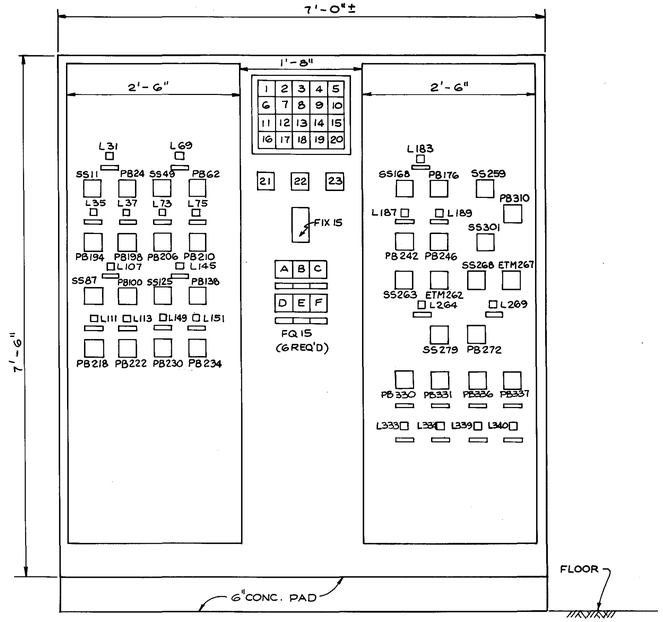
ELECTRICAL
MIXED SLUDGE PUMPING STATION
PLAN, LIGHTING

DATE: SEPT. 1982
SHEET E-8 OF E-29
DWG. 117 OF 157

DRUM PROGRAMMERS

PROGRAMMER NO.	CONTACT NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	LINE NO.	2	3	4	5	8	22	6	21	20	23	16	18	29	32
2	LINE NO.	40	41	42	43	46	60	44	59	58	61	54	56	67	70
3	LINE NO.	78	79	80	81	84	98	82	97	96	99	92	94	105	108
4	LINE NO.	116	117	118	119	122	136	120	135	134	137	130	132	143	146
5	LINE NO.	154	155	156	157	160	174	158	173	172	175	168	170	181	184

STEPS	FUNCTION	PUMP RUN	VALVE OPEN	VALVE CLOSE	RESET COUNTER	VALVE OPEN WINDOW AND INTERIGATION	VALVE CLOSE WINDOW AND INTERIGATION	MASTER STEPPING SWITCH STEP	CONTINUOUS STEP	VALVE FAILED TO OPEN CONTINUOUS STEP	VALVE FAILED TO CLOSE CONTINUOUS STEP	MASTER STEPPING SWITCH WINDOW	COUNTER CONTACT WINDOW	FILLED TANK ALARM	END CYCLE
	1	O	X	O	X	O	O	O	X	X	X	O	O	X	X
	2	O	O	O	O	X	O	O	O	X	X	O	O	X	O
	3	X	O	O	O	O	O	O	O	X	X	O	X	X	X
	4	O	O	X	O	O	O	O	X	X	X	O	O	X	X
	5	O	O	O	O	O	X	O	O	X	X	O	O	O	O
	6	O	O	O	O	O	O	X	X	X	X	O	O	O	X
	7	O	O	O	O	O	O	O	X	X	X	O	O	O	X
	8	O	O	O	O	O	O	O	O	O	O	X	O	X	O
	9	O	X	O	X	O	O	O	X	X	X	O	O	X	X
	10	O	O	O	O	X	O	O	O	X	X	O	O	X	O
	11	X	O	O	O	O	O	O	X	X	X	O	X	X	X
	12	O	O	X	O	O	O	O	X	X	X	O	O	X	X
	13	O	O	O	O	O	X	O	O	X	X	O	O	O	O
	14	O	O	O	O	O	O	X	X	X	X	O	O	O	X
	15	O	O	O	O	O	O	O	X	X	X	O	O	O	X
	16	O	O	O	O	O	O	O	O	O	O	X	O	O	O
	17	O	X	O	X	O	O	O	X	X	X	O	O	X	X
	18	O	O	O	O	X	O	O	O	X	X	O	O	X	O
	19	X	O	O	O	O	O	O	O	X	X	O	X	X	X
	20	O	O	X	O	O	O	O	X	X	X	O	O	X	X
	21	O	O	O	O	O	X	O	O	X	X	O	O	O	O
	22	O	O	O	O	O	O	X	X	X	X	O	O	O	X
	23	O	O	O	O	O	O	O	X	X	X	O	O	O	X
	24	O	O	O	O	O	O	O	O	O	O	X	O	O	O



LEGEND

[1]	CONSOLE MTD.
[2]	LOCATED IN MOTOR CONTROL CENTER
[3]	ITEM FIELD INSTALLED
[4]	ENGINE GENERATOR MONITORING PART (EGMP)
[5]	RAW SLUDGE PUMPING STATION ENGINE GENERATOR INSTRUMENT PANEL (EGIP)
[/]L	ON-OFF SWITCH WITH LOCK ATTACHMENT ON OFF POSITION WEATHER PROOF EQUAL SQ. D # 9001SKY103/K-5
S.S.	SELECTOR SWITCH
TR	TIMING RELAY
CR	CONTROL RELAY
L	LIGHT
P.B.	PUSH BUTTON SWITCH
L.S.	LIMIT SWITCH
F.S.	FLOAT SWITCH
P.S.	PRESSURE SWITCH
M.S.	MOTOR STARTER
MS. AUX.	MOTOR STARTER AUXILLERY CONTACT
⬡	TERMINAL
(A)	ANNUNCIATOR TERMINAL
MDPS	MASTER DRUM PROGRAMMER SWITCH (SPST OR DPDT)
DPS	DRUM PROGRAMMER SWITCH (SPST)
ETM	ELAPSED TIME METER
FL.S.	FLOW SWITCH ②

MASTER DRUM PROGRAMMER

STEP	CONTACT NO.	1	2	3	4	5	6	7	8	9	10	11
	LINE NO.	296	297	298	299	300	301	315	317	319	321	323
	1	X	O	O	O	O	O	X	O	O	O	O
	2	O	O	O	O	O	X	O	O	O	O	O
	3	O	X	O	O	O	O	O	X	O	O	O
	4	O	O	O	O	O	X	O	O	O	O	O
	5	O	O	X	O	O	O	O	O	X	O	O
	6	O	O	O	O	O	X	O	O	O	O	O
	7	O	O	O	X	O	O	O	O	O	X	O
	8	O	O	O	O	O	X	O	O	O	O	O
	9	O	O	O	O	X	O	O	O	O	O	X
	10	O	O	O	O	O	X	O	O	O	O	O
	11	X	O	O	O	O	O	X	O	O	O	O
	12	O	O	O	O	O	X	O	O	O	O	O
	13	O	X	O	O	O	O	O	X	O	O	O
	14	O	O	O	O	O	X	O	O	O	O	O
	15	O	O	X	O	O	O	O	O	X	O	O
	16	O	O	O	O	O	X	O	O	O	O	O
	17	O	O	O	X	O	O	O	O	O	X	O
	18	O	O	O	O	O	X	O	O	O	O	O
	19	O	O	O	O	O	O	O	O	O	O	X
	20	O	O	O	O	O	X	O	O	O	O	O
	21	O	O	O	O	O	X	O	O	O	O	O
	22	O	O	O	O	O	X	O	O	O	O	O
	23	O	O	O	O	O	X	O	O	O	O	O
	24	O	O	O	O	O	X	O	O	O	O	O

ANNUNCIATOR POINT NO.	CONTACT NO.		TITLE
1	CR	30-2	DIGESTER NO. 1 FULL
2	CR	68-2	DIGESTER NO. 2 FULL
3	CR	106-2	DIGESTER NO. 3 FULL
4	CR	144-2	DIGESTER NO. 4 FULL
5	CR	182-2	DIGESTER NO. 5 FULL
6	LINE	326	DIGESTER NO. 6 FULL
7	LINE	327	DIGESTER NO. 7 FULL
① 8	LINE	444*	PLANT WATER SYSTEM FAILURE
9	CR	272-3	MIXED SLUDGE PUMP NO. 1 FAILED
10	CR	274-3	MIXED SLUDGE PUMP NO. 2 FAILED
11	CR	28-3	DIGESTER NO. 1 VALVE FAILED TO OPEN
12	CR	66-3	DIGESTER NO. 2 VALVE FAILED TO OPEN
13	CR	104-3	DIGESTER NO. 3 VALVE FAILED TO OPEN
14	CR	148-3	DIGESTER NO. 4 VALVE FAILED TO OPEN
15	CR	180-3	DIGESTER NO. 5 VALVE FAILED TO OPEN
16	CR	24-2	DIGESTER NO. 1 VALVE FAILED TO CLOSE
17	CR	62-1	DIGESTER NO. 2 VALVE FAILED TO CLOSE
18	CR	100-2	DIGESTER NO. 3 VALVE FAILED TO CLOSE
19	CR	138-2	DIGESTER NO. 4 VALVE FAILED TO CLOSE
20	CR	176-2	DIGESTER NO. 5 VALVE FAILED TO CLOSE
21			TEST PUSH BUTTON SWITCH
22			ACKNOWLEDGE PUSH BUTTON SWITCH
23			RESET PUSH BUTTON SWITCH

① * NOTE : CONTACTS FROM PLANT WATER PUMP CONTROL PANEL

Post, Buckley, Schuh & Jernigan, Inc.
TAMPA, FLORIDA

DES: R.B.J.
DRN: M. Dubric
CKD: R.B.J.
578-153.00

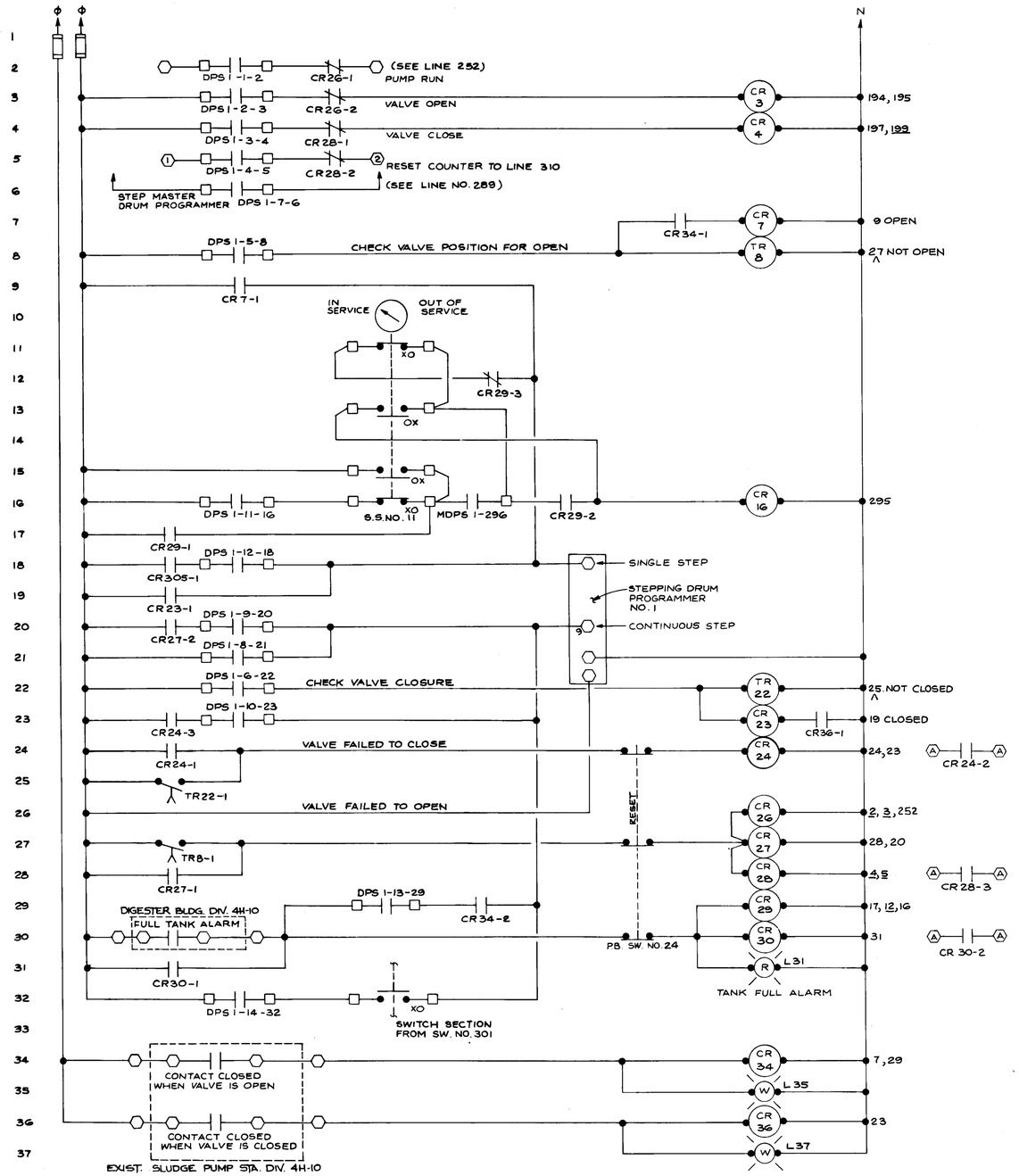
No.	DATE	REVISIONS
①	3/25/83	ADDED LINE 444 - ADDENDUM NO.2
②	4-13-83	ADD FL.S. TO LEGEND , ADDENDUM 3
3		
4		
5		

SCALE
NOT TO SCALE

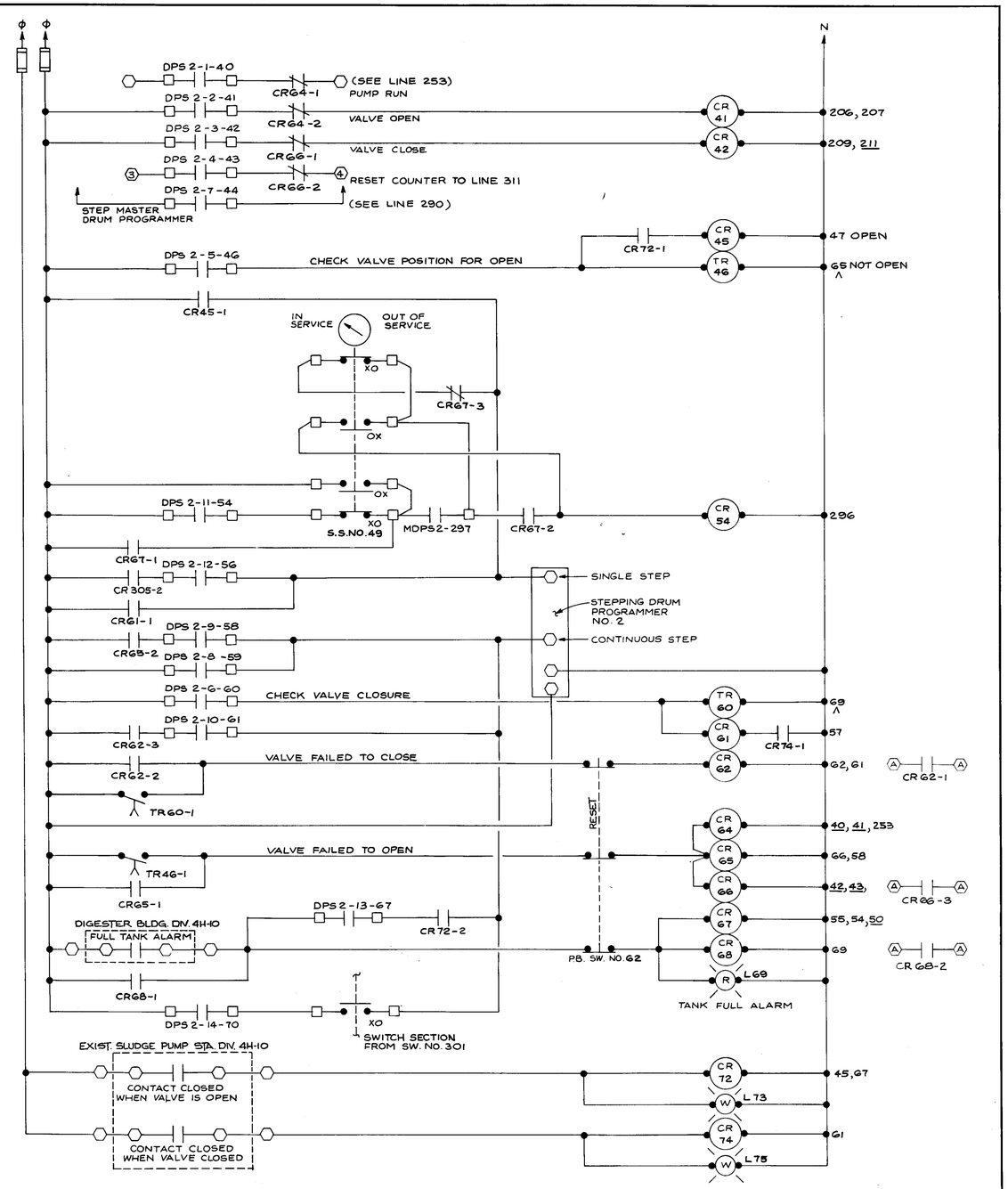
DEPARTMENT of SANITARY SEWERS
CITY of TAMPA , FLORIDA
ADDITIONS TO HOOKERS POINT AWT PLANT
DIVISION 4H - 12

INSTRUMENTATION AND CONTROL
MIXED SLUDGE PUMPING STATION
DRUM PROGRAMMER MATRIX
CONTROL PANEL AND LEGEND

DATE: SEPT. 1982
SHEET IC 1 OF IC19
DWG. 139 OF 157

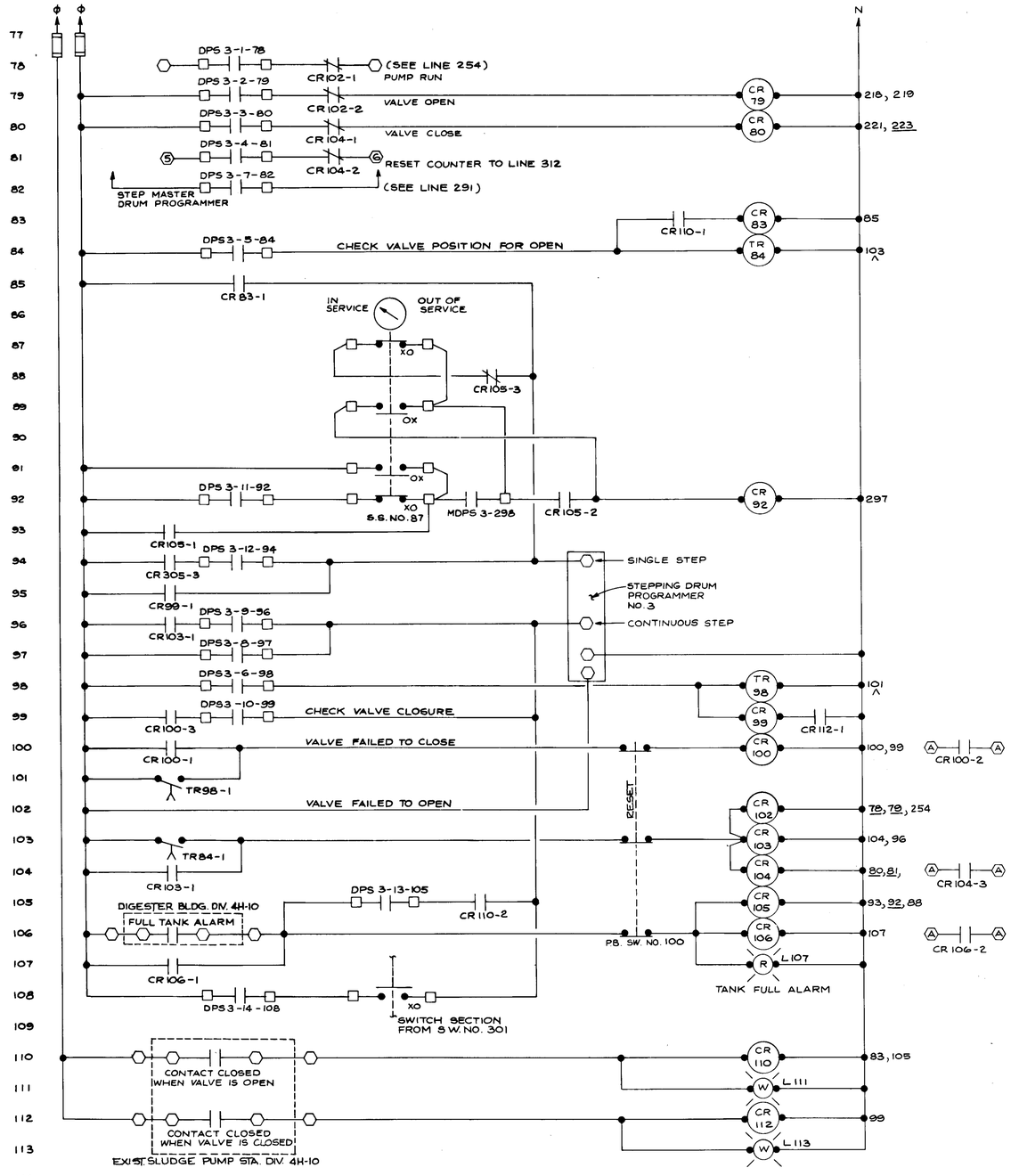


DIGESTER FILL CONTROL CIRCUIT

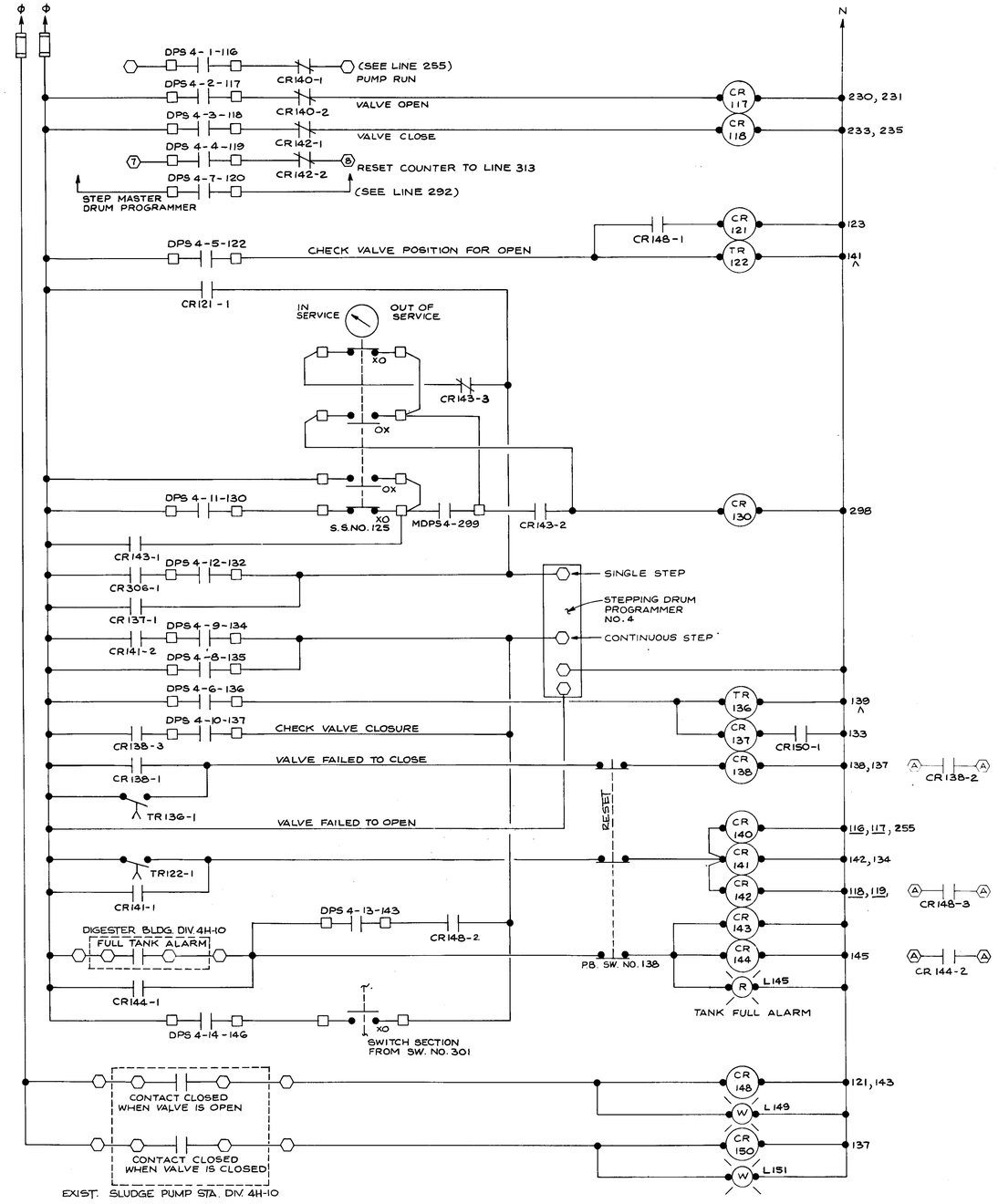


DIGESTER FILL CONTROL CIRCUIT

Post, Buckley, Schuh & Jernigan, Inc. TAMPA, FLORIDA	DES: R. D'Arcy DRN: M. Molonic CKD: R. D'Arcy 578 – 153.00	No. / DATE / REVISIONS 1 2 3 4 5	SCALE NOT TO SCALE	DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA **ADDITIONS TO HOOKERS POINT AWT PLANT** **DIVISION 4H - 12**	INSTRUMENTATION AND CONTROL MIXED SLUDGE PUMPING STATION CONTROL DIAGRAMS	DATE: SEPT 1982 SHEET 102 OF 1019 DWG. 140 OF 157

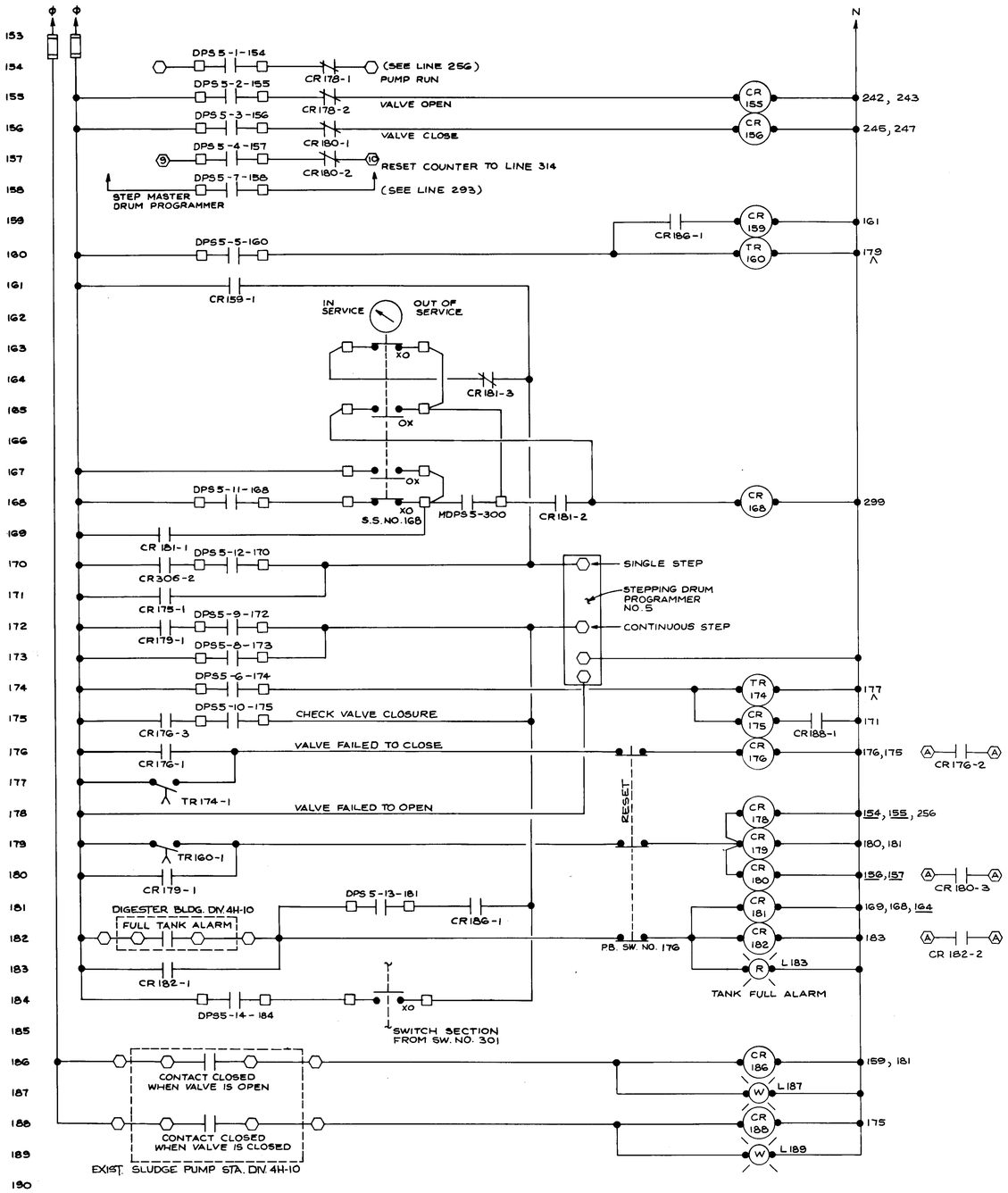


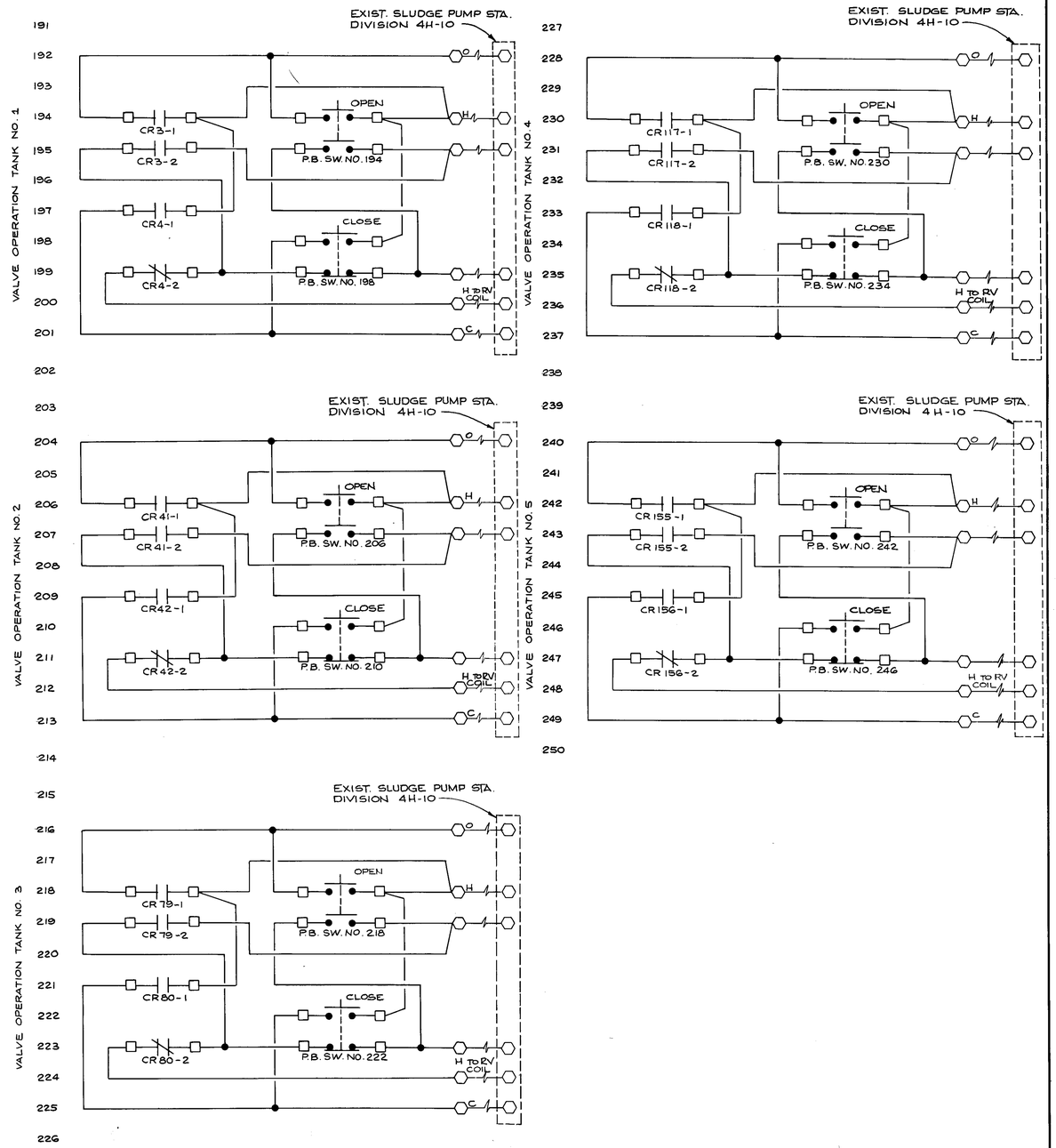
DIGESTER FILL CONTROL CIRCUIT



DIGESTER FILL CONTROL CIRCUIT

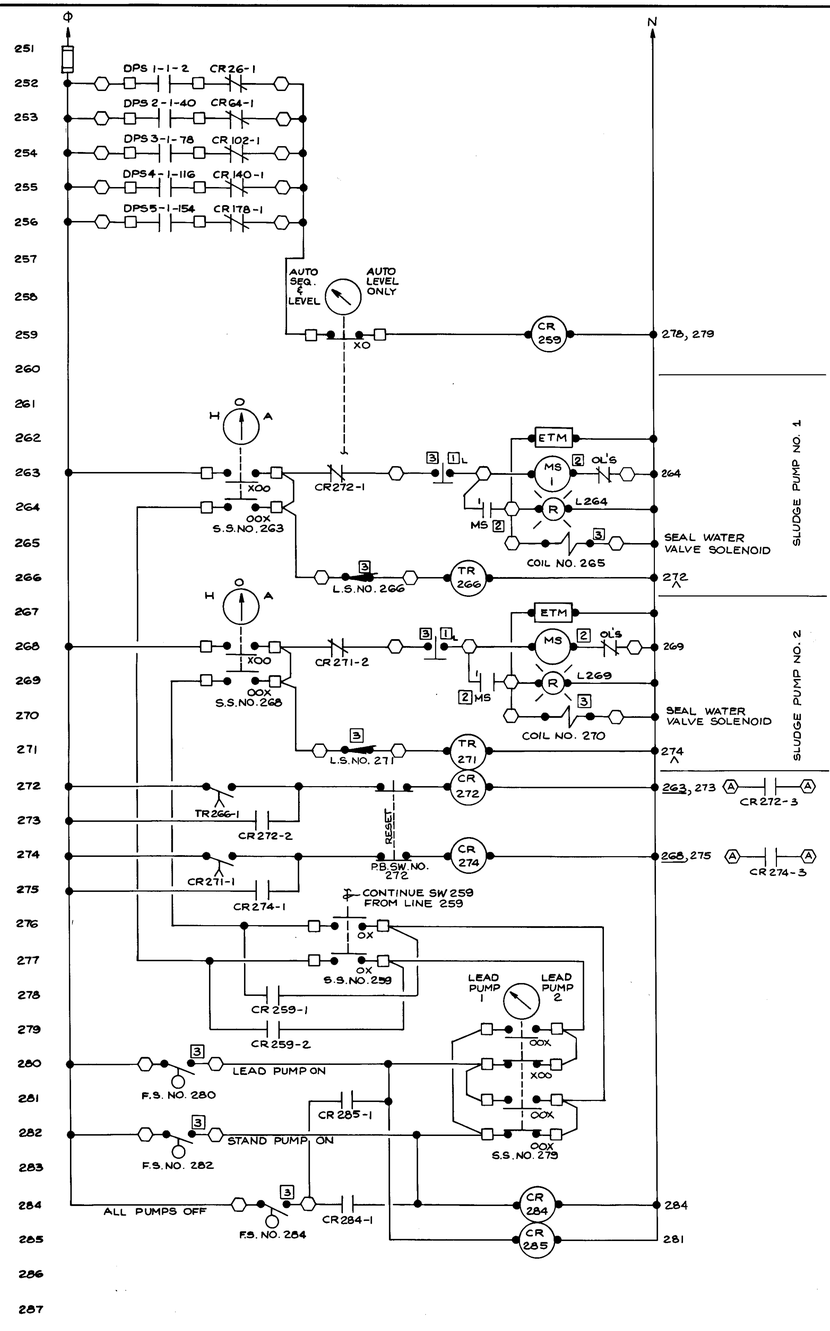
Post, Buckley, Schuh & Jernigan, Inc. TAMPA, FLORIDA	DES: R. Duffy DRN: M. Milani CKD: R. Duffy 578 - 153.00		No. / DATE / REVISIONS 1 2 3 4 5	SCALE NOT TO SCALE	DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA **ADDITIONS TO HOOKERS POINT AWT PLANT** **DIVISION 4H - 12**	INSTRUMENTATION AND CONTROL MIXED SLUDGE PUMPING STATION CONTROL DIAGRAMS	DATE: SEPT 1982 SHEET IC 3 OF IC19 DWG. 141 OF 157

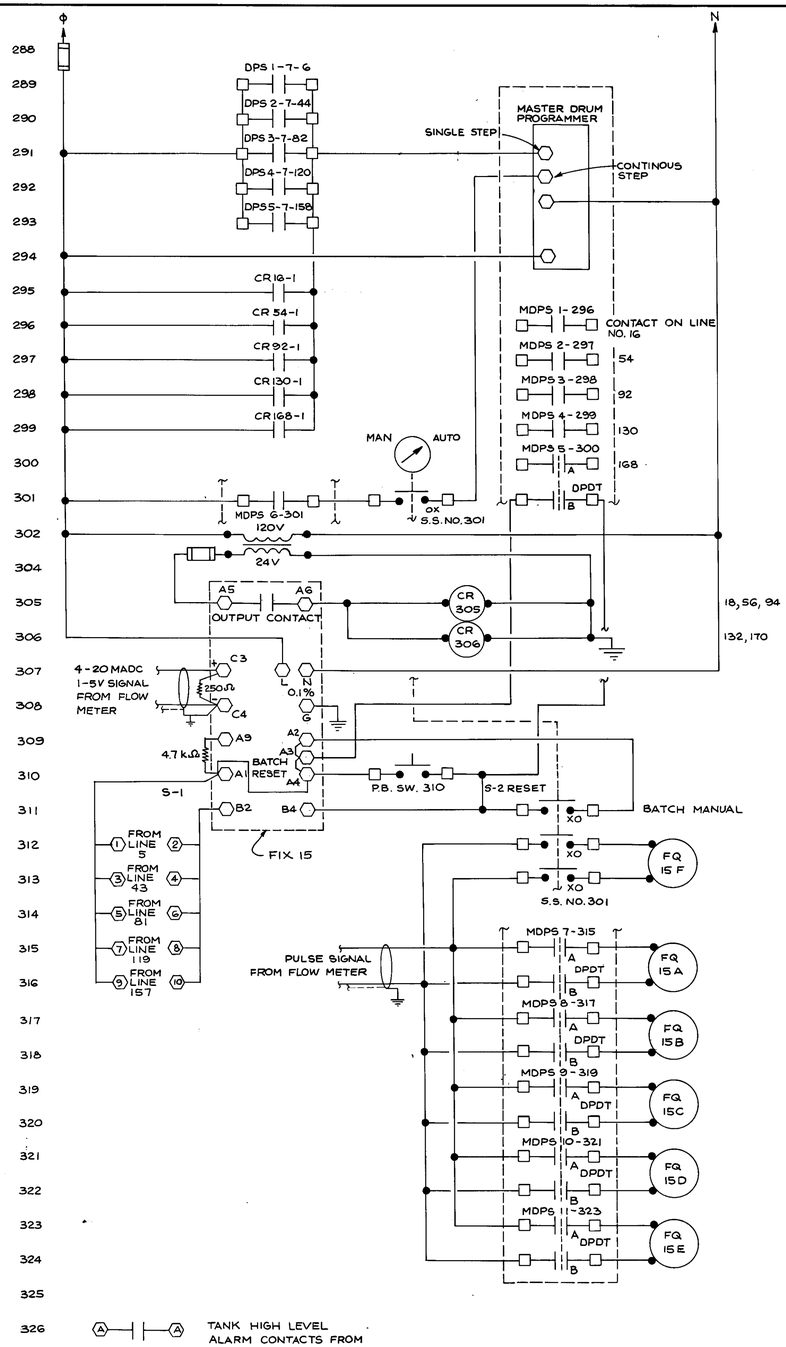


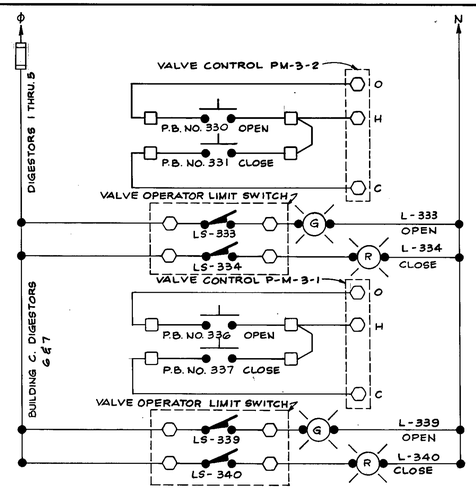


DIGESTER FILL CONTROL CIRCUIT

Post, Buckley, Schuh & Jernigan, Inc. TAMPA, FLORIDA	DES: R. D. Fry DRN: M. McInnis CKD: R. D. Fry 578 - 153.00		No. / DATE / REVISIONS 1 2 3 4 5	SCALE NOT TO SCALE	DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA **ADDITIONS TO HOOKERS POINT AWT PLANT** **DIVISION 4H - 12**	INSTRUMENTATION AND CONTROL MIXED SLUDGE PUMPING STATION CONTROL DIAGRAMS	DATE: SEPT 1982 SHEET IC4 OF IC19 DWG. 142 OF 157







A ⊣⊢ A TANK HIGH LEVEL ALARM CONTACTS FROM DIGESTER CONTROL BLDG. "C" CONTROL PANEL

Post, Buckley, Schuh & Jernigan, Inc. TAMPA, FLORIDA	DES: K. DeJong DRN: M. Mahair CKD: K. DeJong 578-153.00	SCALE: NOT TO SCALE

No.	DATE	REVISIONS
1	3/23/83	ADDED NOTE - ADDENDUM NO. 2
2		
3		
4		
5		

DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA
ADDITIONS TO HOOKERS POINT AWT PLANT
DIVISION 4H - 12

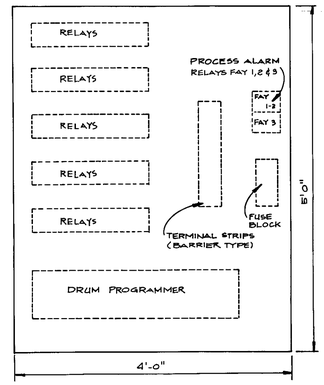
INSTRUMENTATION AND CONTROL
MIXED SLUDGE PUMPING STATION
CONTROL DIAGRAMS

1 — SHEETS IC 5A AND IC 5B FOLLOW

DATE: SEPT 1982
SHEET IC 5 OF IC 19
DWG. 143 OF 157

DRUM PROGRAMMER SEQUENCING SCHEDULE

LINE NO. A		357	358	359	360	361	362	363	364	365	403	404	405	406	407	408	409	410	411	412
LINE NO. B		393	394	395	396	397	398	399	400	401	—	—	—	—	—	—	—	—	—	—
CONTACT NO. A		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
CONTACT NO. B		1	2	3	4	5	6	7	8	9	—	—	—	—	—	—	—	—	—	—
1		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
2	1,2,3	X	O	O	O	X	O	O	O	X	X	O	O	O	X	O	O	O	X	O
3		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
4	3,1,2 ①	O	X	O	O	O	X	X	O	O	O	X	O	O	O	X	X	O	O	O
5		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
6	2,3,1 ①	O	O	X	X	O	O	O	X	O	O	O	X	X	O	O	O	X	O	O
7		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
8	1,3,2	X	O	O	O	O	X	O	X	O	X	O	O	O	O	X	O	X	O	O
9		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
10	2,1,3	O	X	O	X	O	O	O	O	X	O	X	O	X	O	O	O	O	X	O
11		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
12	3,2,1	O	O	X	O	X	O	X	O	O	O	O	/	O	/	O	/	O	O	O
13		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
14	1,2,3	X	O	O	O	X	O	O	O	X	X	O	O	O	X	O	O	O	X	O
15		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
16	3,1,2 ①	O	X	O	O	O	X	X	O	O	O	X	O	O	O	X	X	O	O	O
17		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
18	2,3,1 ①	O	O	X	X	O	O	O	X	O	O	O	X	X	O	O	O	X	O	O
19		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
20	1,3,2	X	O	O	O	O	X	O	X	O	X	O	O	O	O	X	O	X	O	O
21		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
22	2,1,3	O	X	O	X	O	O	O	O	X	O	X	O	X	O	O	O	O	X	O
23		O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X
24	3,2,1	O	O	X	O	X	O	X	O	O	O	O	X	O	X	O	X	O	O	O

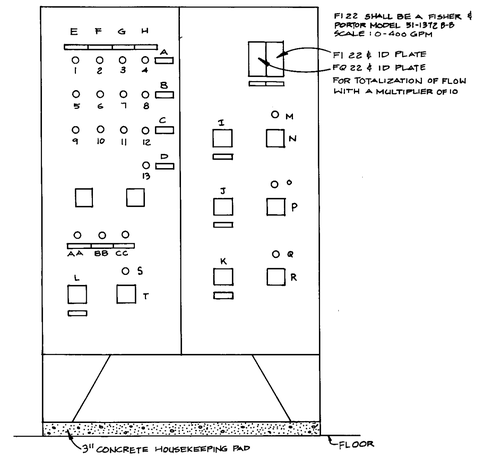


INTERIOR SCHEMATIC

LEGEND - ID PLATES

A	PUMP NO. 1
B	PUMP NO. 2
C	PUMP NO. 3
D	JOCKY PUMP
E	LEAD PUMP
F	LAG PUMP
G	STAND BY PUMP
H	PUMP FAILED
I	ETM 371 & ID PLATE
J	ETM 425 & ID PLATE
K	ETM 437 & ID PLATE
L	ETM 352 & ID PLATE
M	L 374
N	SS. 369
O	L 426
P	SS. 425
Q	L 436
R	SS. 435
S	L 353
T	SS. 351
U	PB 414
V	PB 373
1	L 405A
2	L 405B
3	L 405C
4	L 374
5	L 407A
6	L 407B
7	L 407C
8	L 436
9	L 411 A
10	L 411 B
11	L 411 C
12	L 438
13	L 445
AA	L 450 & ID PLATE
BB	L 453 & ID PLATE
CC	L 457 & ID PLATE

NOTE:
ETM ID PLATES SHALL READ ELAPSED TIME PUMP NO. 1, ETC., EXCEPT THE LAST WHICH SHALL READ JOCKY PUMP ELAPSED TIME.



FACE

PLANT WATER PUMP CONTROL PANEL

THIS SHEET ADDED AS PART OF ADDENDUM NO. 2

Post, Buckley, Schuh & Jernigan, Inc.
TAMPA, FLORIDA

DES: E. DETROY
DRN: M.G.
CKD: L. GREENBERG
578-153.00

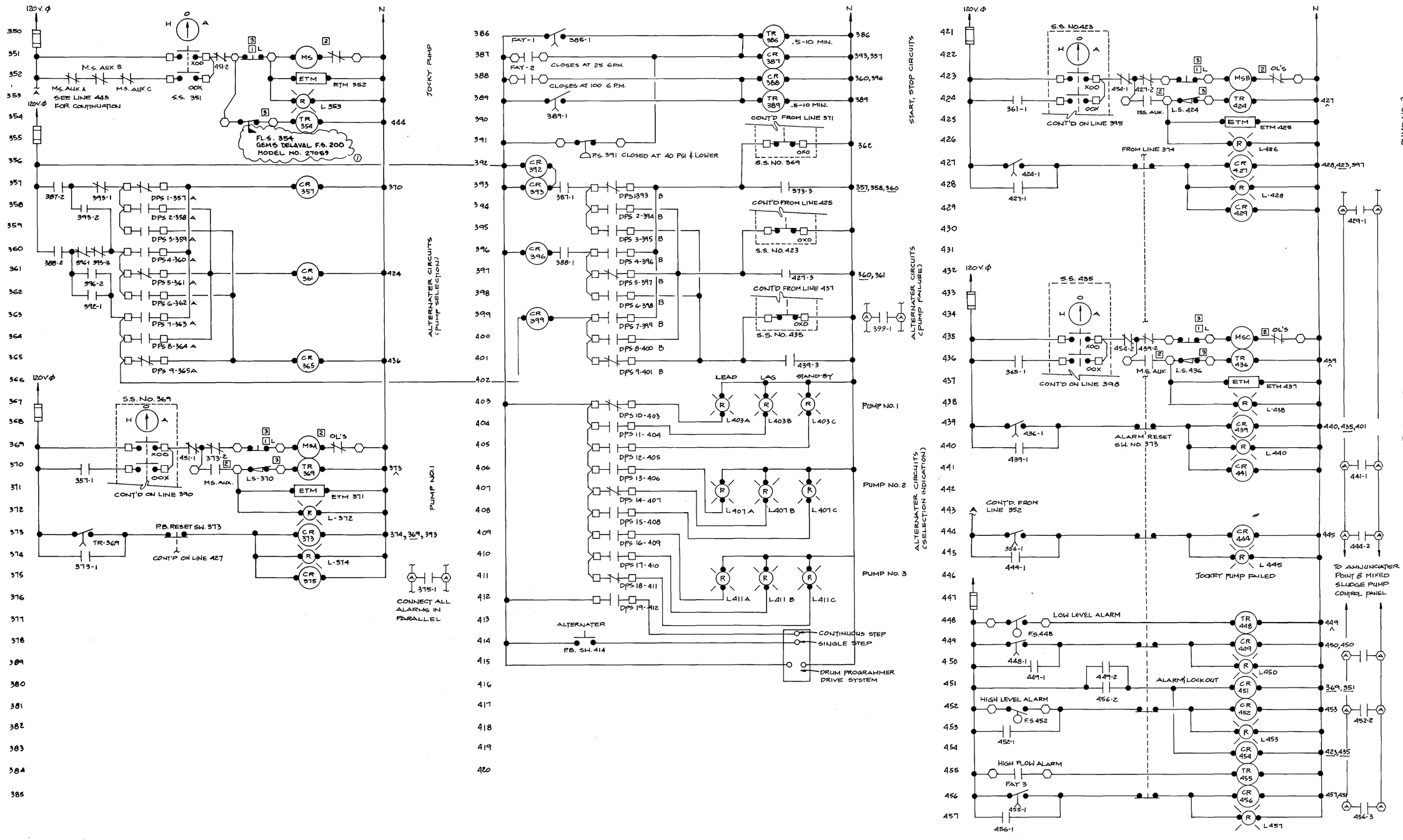
NO	DATE	REVISIONS
①	4-13-83	INTERCHANGE NUMBERS, ADDENDUM 3
2		
3		
4		
5		

SCALE
NOT TO SCALE

DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA
ADDITIONS TO HOOKERS POINT AWT PLANT
DIVISION 4H -12

INSTRUMENTATION AND CONTROL
MIXED SLUDGE PUMPING STATION, PLANT WATER SYSTEM, DRUM PROGRAMMER MATRIX, CONTROL PANEL AND LEGEND

DATE: MARCH, 1983
SHEET IC5A OF IC19
DWG. 143A OF 157



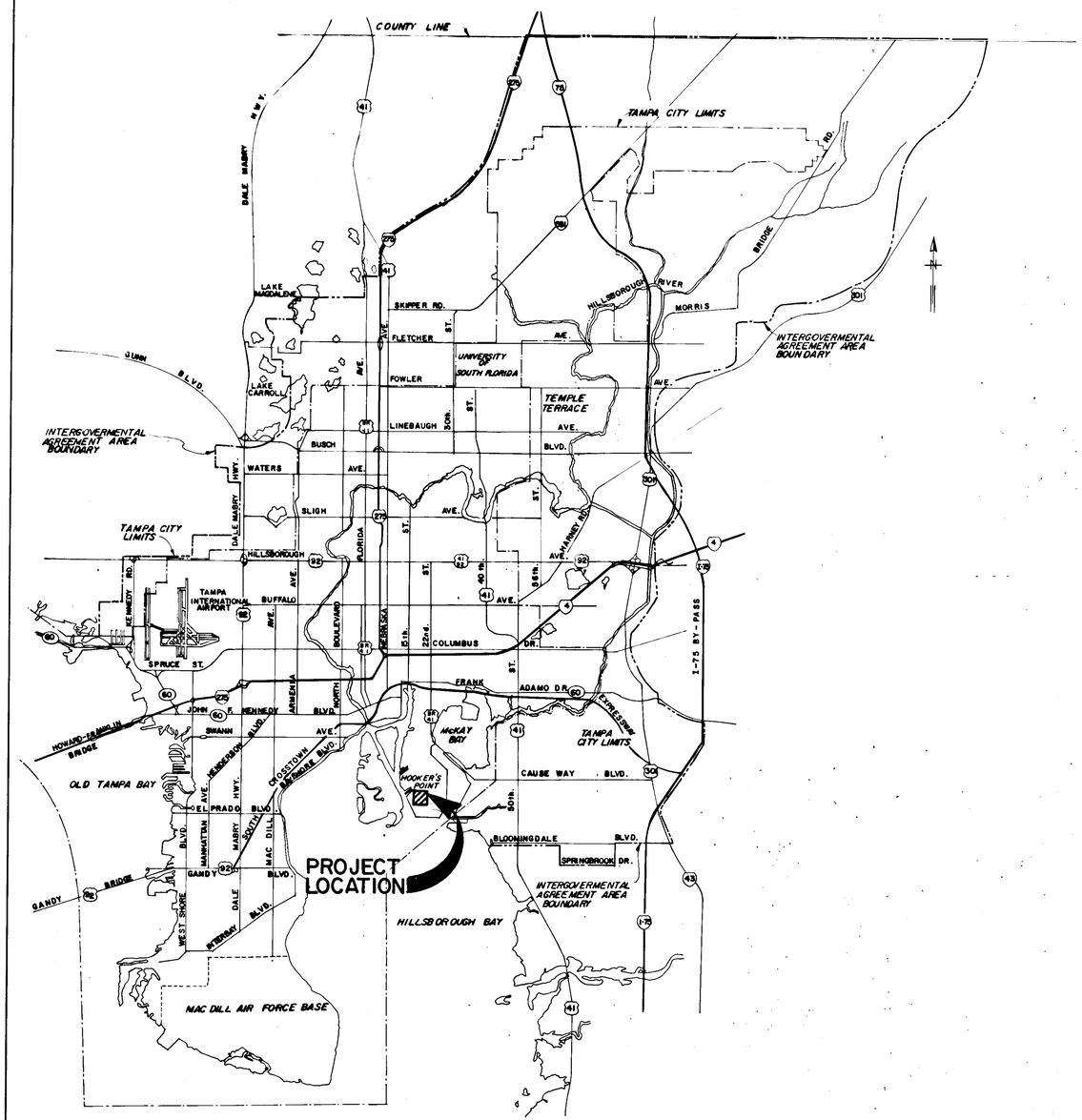
THIS SHEET ADDED AS PART OF ADDENDUM NO. 2.

Post, Buckley, Schuh & Jernigan, Inc. TAMPA, FLORIDA	DES: R. DETROY DRN: GUZZETTI CKD: L. ARENABERG 578-153.00	No. 1 — DATE 4-13-83 — REVISIONS: CHANGED PRESSURE SW., ADDENDUM 3	SCALE NOT TO SCALE
DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA **ADDITIONS TO HOOKERS POINT AWT PLANT** **DIVISION 4H -12**	INSTRUMENTATION AND CONTROL MIXED SLUDGE PUMPING STATION CONTROL DIAGRAMS	DATE: MARCH, 1983 SHEET IC5B OF IC19 DWG. 143B OF 157	

MSPS Sludge Grinders Addition_Year 1987

AF 10178

LOCATION MAP



CITY OF TAMPA

CITY OF TAMPA FLORIDA • ORGANIZED JULY 15 1887 • MASCOTTE

DEPARTMENT of SANITARY SEWERS

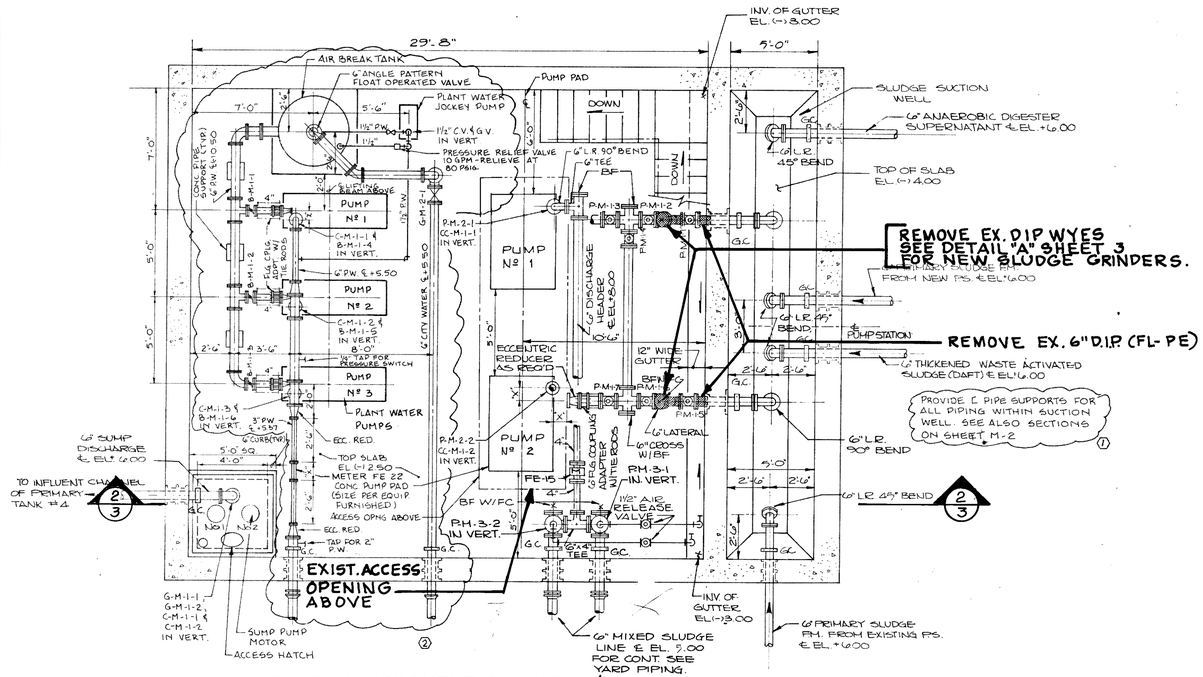
SEWER MODIFICATION PLANS

SLUDGE GRINDERS FOR MIXED SLUDGE PUMPING STATION

ANDREW T. CRONBERG, P.E. # 32560 CHIEF ENGINEER DEPARTMENT of SANITARY SEWERS	DES: A.H. DRN: E. R. CKD: DW DATE: 4-24-87	APPROVED BY JACK P. MORRISS, P.E. DIRECTOR DEPARTMENT of SANITARY SEWERS	No. / DATE / REVISIONS 1 2 3 4 5	SCALE 1" = approximately 1½ miles	DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA RENEWAL & REPLACEMENT SEWAGE DISPOSAL SYSTEM	TITLE SHEET & LOCATION MAP	SHEET 1 OF 5

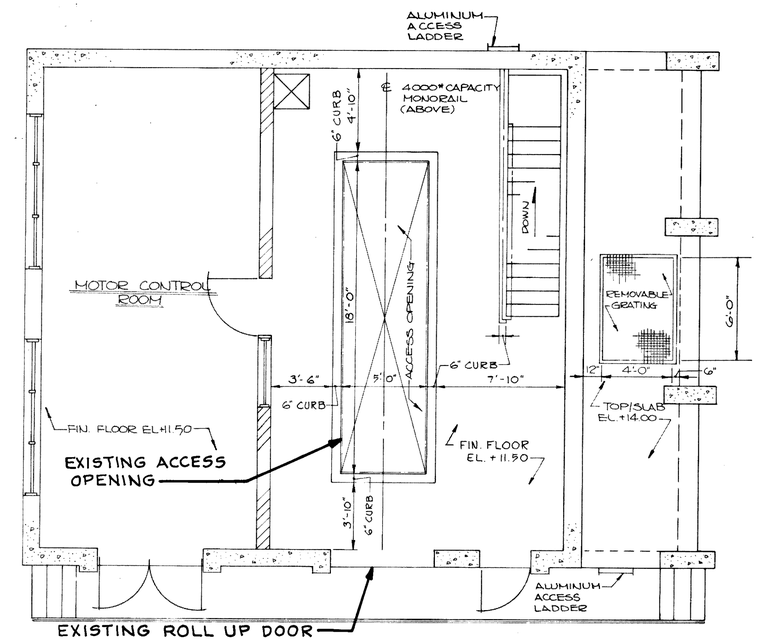
K & E 19-1253

TP-1-2



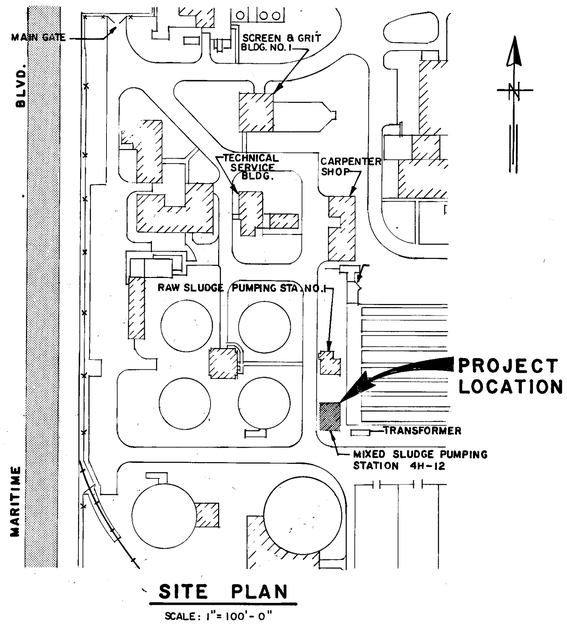
EXISTING BASEMENT PLAN (TOP/SLAB EL.-2.50)

N. T. S.



EXISTING FIRST FLOOR PLAN SHOWN FOR ACCESS ONLY.

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

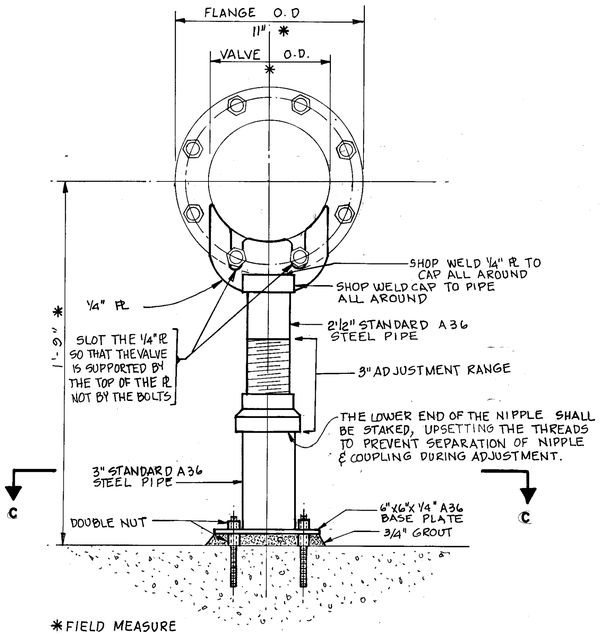


SITE PLAN

SCALE: 1"= 100'-0"

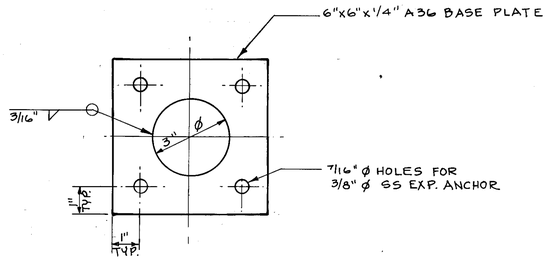
	ANDREW T. CRONBERG, P.E. # 32560 CHIEF ENGINEER DEPARTMENT of SANITARY SEWERS	DES. A.H. DRN. ETo. CKD. DW DATE. 4-24-87	APPROVED BY JACK P. MORRISS, P.E. DIRECTOR DEPARTMENT of SANITARY SEWERS	NO. / DATE / REVISIONS: 1, 2, 3, 4, 5	SCALE AS SHOWN	DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA RENEWAL & REPLACEMENT SEWAGE DISPOSAL SYSTEM	SLUDGE GRINDERS FOR MIXED SLUDGE PUMPING STATION	SHEET 2 OF 5

TP 1-3



SECTION B-B

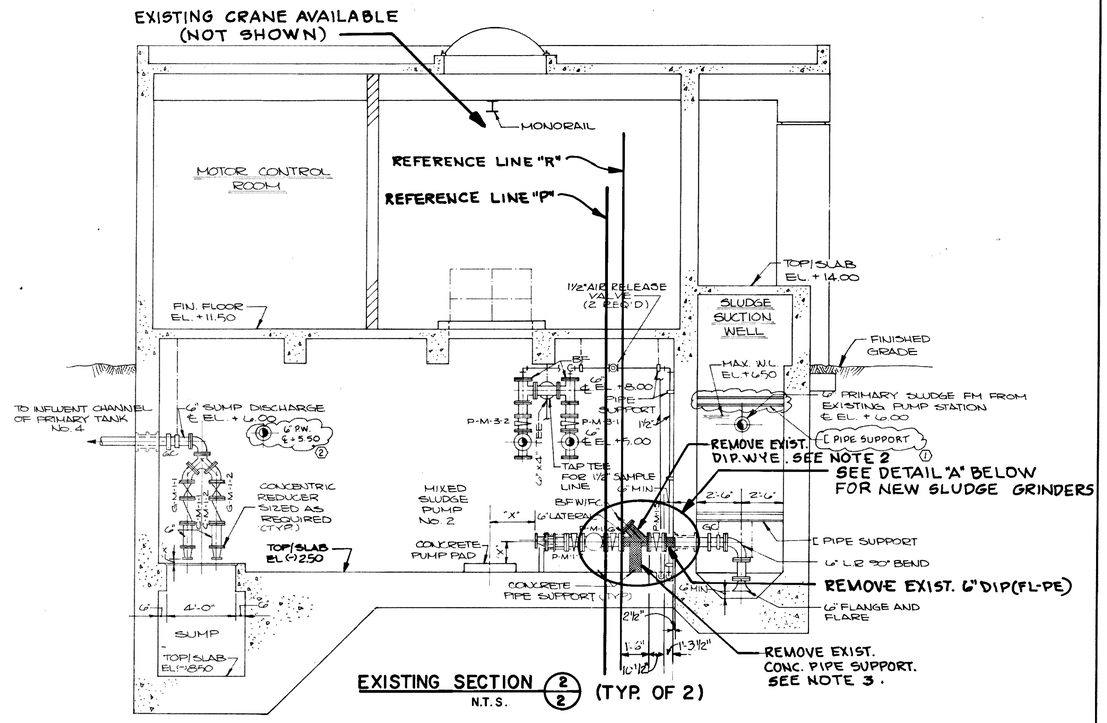
SCALE: 3"=1'-0"



SECTION "C-C"

SCALE: 3/8"=1"

NEW FLANGE SUPPORT (TYP. OF TWO)



EXISTING SECTION (2/2) (TYP. OF 2)

N.T.S.

NOTES

1.- THE CONTRACTOR SHALL COORDINATE WITH TREATMENT PLANT OPERATIONS PERSONNEL A MINIMUM OF OF 48 HOURS PRIOR TO TIE IN. OPERATIONS PERSONNEL WILL PROVIDE BLOCKAGE OF FLOW INTO THE SLUDGE SUCTION WELL FOR A MAXIMUM PERIOD OF 2 HOURS PER SHUTDOWN. THE EXISTING VALVES (REFER TO "EXISTING BASEMENT PLAN", SHEET NO. 2) ARE ARRANGED SO THAT ALL FLOW MAY BE DIVERTED TO EITHER PUMP NO. 1 OR PUMP NO. 2. DIVERSIONS SHALL ALSO BE COORDINATED WITH OPERATIONS PERSONNEL.

2.- THE EXISTING DIP WYES SHALL BE REMOVED INTACT AND TRANSPORTED TO AN ON SITE LOCATION AS DIRECTED BY THE ENGINEER.

3.- REMOVAL OF EXISTING CONCRETE PIPE SUPPORTS SHALL INCLUDE:
- -EXISTING DOWELS SHALL BE GROUND BACK A MINIMUM OF ONE INCH AND FILLED WITH SIKA, HI-MOD L.V.
- -THE EXPOSED CONCRETE AREAS SHALL BE PREPARED FOR SEALING AND PAINTING AS NEEDED.
- -THE CONTRACTOR SHALL REMOVE A SAMPLE OF THE EXISTING FLOOR COATING AND MATCH IT IN COLOR AND TEXTURE AND PAINT THE EXPOSED AREAS AS NEEDED.

4.- PRIOR TO POURING NEW CONCRETE PIPE SUPPORTS, SHOP DRAWINGS MUST BE APPROVED WHICH SHALL INCLUDE:
- -DEPARTMENT OF SANITARY SEWERS CLASS "C" CONCRETE CERTIFICATION.
- -REBAR DETAIL ILLUSTRATING A MINIMUM 1% STEEL AND DOWEL PENETRATIONS.
- -DESCRIPTION OF SLAB SURFACE PREPARATION.

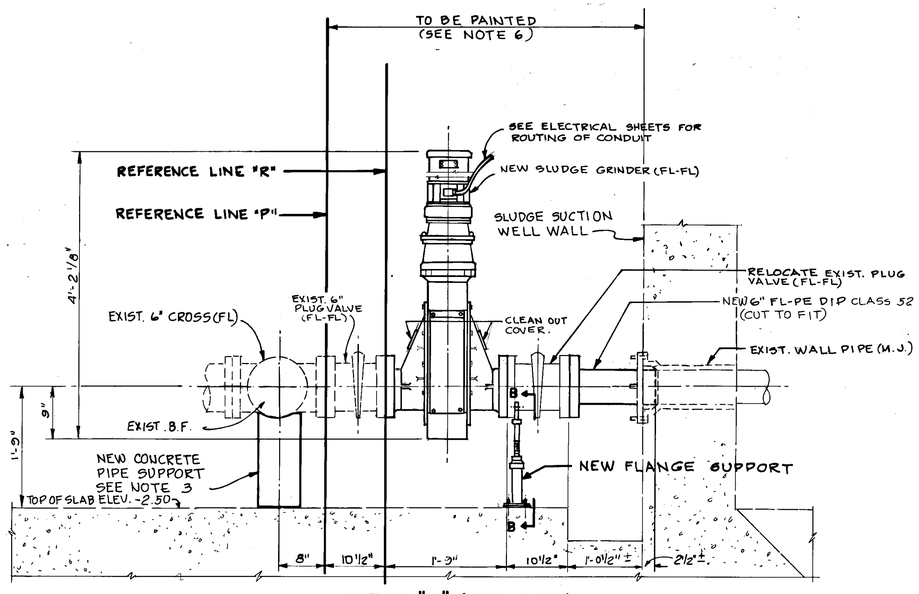
5.- SHOP DRAWINGS WHICH ARE IN FULL COMPLIANCE WITH THE SPECIFICATIONS FOR THE SLUDGE GRINDERS MUST BE APPROVED PRIOR TO SHIPMENT.

6.- THE SLUDGE GRINDERS SHALL BE FACTORY PRIMED ONLY. AFTER INSTALLATION THEY SHALL BE PAINTED TO MATCH EXISTING PIPING IN COLOR (BEIGE) AND TEXTURE (SPOT PRIME AFTER INSTALLATION IF NEEDED). THE CONTRACTOR SHALL PROVIDE A PAINT SUBMITTAL WHICH INCLUDES A CERTIFICATION OF COMPATIBILITY FOR THE FACTORY PRIME COAT AND FIELD APPLIED FINISH COAT. ALL VALVES AND FITTINGS BETWEEN REFERENCE LINE "P" AND THE WETWELL WALL SHALL BE REPAINTED.

7.- THE CONTRACTOR SHALL FURNISH AND INSTALL NEW GASKETS FOR THE RELOCATED PLUG VALVES.

8.- SHOP DRAWINGS SHALL BE APPROVED PRIOR TO FABRICATION OF THE ADJUSTABLE FLANGE SUPPORTS. WELDS SHALL BE GROUND SMOOTH AND SUPPORTS SHALL BE CLEANED AND FREE FROM GREASE PRIOR TO APPLICATION OF PRIME COAT. THE SUPPORTS SHALL BE PAINTED TO MATCH EXISTING AFTER ERECTION.

9.- SS. ANCHORS SHALL BE HILTI, REDHEAD OR EQUAL.

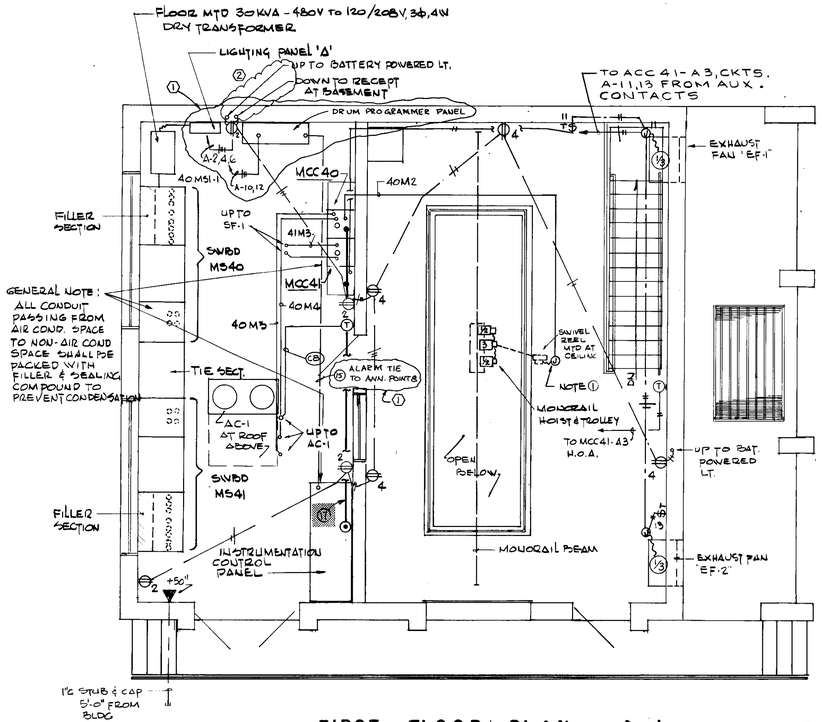


DETAIL "A" (TYP. OF 2)

SCALE: 1"=1'-0"

ANDREW T. CRONBERG, P.E. # 32560 CHIEF ENGINEER DEPARTMENT of SANITARY SEWERS	DES. A.H. DRN. Elo. CKD. DW DATE. 4-24-87	APPROVED BY JACK P. MORRISS, P.E. DIRECTOR DEPARTMENT of SANITARY SEWERS	No. / DATE / REVISIONS: 1 2 3 4 5	SCALE AS SHOWN	DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA RENEWAL & REPLACEMENT SEWAGE DISPOSAL SYSTEM	SLUDGE GRINDERS FOR MIXED SLUDGE PUMPING STATION	SHEET 3 OF 5

TP1-4



FIRST FLOOR PLAN

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

NOTE ① CONNECT TO SWIVEL SPOOL REEL FOR MONORAIL HOIST & TROLLEY - PROVIDE 20 FT. OF REEL CONDUCTOR - EQUAL TO APPLETON # YS-144-25 REELITE.

TYPE: GE, MODEL 8000 LINE — "MCC-40" — MAINS - 225A - FULL NEUT
VOLT: 480 V, 3Ø, 4W — CONN LOAD = 91.3KVA ①
MTG: FREE STANDING - FRONT ACCESSIBLE

CKT NO	DESIGNATION	HP	KVA	VOLT	Ø	FRAME SIZE	TRIP OR RANGE	STARTER	WIRE	COND	REMARKS
A-1	SLUDGE PUMP	30	33	480	3	100	350/1200	3 FVNR	3#4-1#12	1 1/2	
▲ A-2	MONORAIL	4	5.3				18/58	–	4#10	3/4	
A-3	SPACE	–	5				–	–	–		
■ A-4	SLUDGE GRINDER	3	3				15	–	4#12	3/4	
B-1	AC-1 HEATER	–	10				30	1 FVNR	4#10	3/4	
B-2	AC-1 HEATER	–	10				20	1 FVNR	4#12	1/2	
B-3	PLANT WATER PUMP #1	10	10.5				100/300	1 FVNR	4#10	3/4	
B-4	PLANT WATER PUMP #2	10	10.5				100/300	1 FVNR	4#10	3/4	
B-5	SPACE	–	–	–	–	–	–	–	–	–	

▲ STARTER PART OF HOIST ASSEMBLY

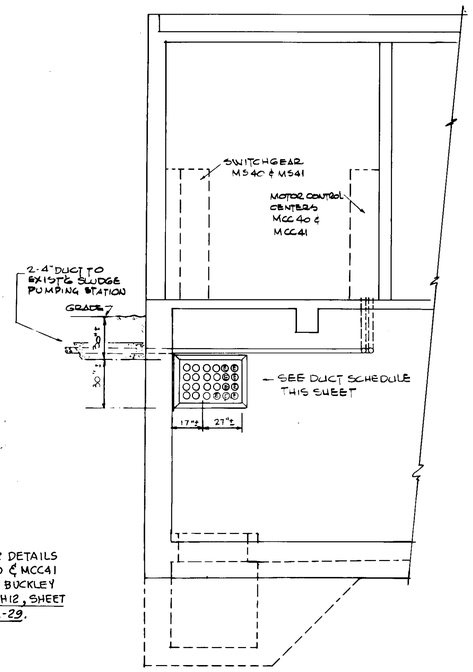
TYPE: GE, MODEL 8000 LINE — "MCC-41" — MAINS: 225A - FULL NEUT
VOLT: 480V, 3Ø, 4W — CONN LOAD = 72.8KVA ①
MTG: FREE STANDING - FRONT ACCESSIBLE

CKT NO	DESIGNATION	HP	KVA	VOLT	Ø	FRAME SIZE	TRIP OR RANGE	STARTER	WIRE	COND	REMARKS
A-1	SLUDGE PUMP	30	33	480	3	100	350/1200	3 FVNR	3#4-1#12	1 1/2	
A-2	SUMP PUMP 5	10	12.2				50/150	–	4#10	3/4	
A-3	FAN SF-1	1 1/2	2.5				8/22	1 FVNR	4#12	3/4	PROVIDE H-O-A SW
■ A-4	SLUDGE GRINDER	3	3				15	–	4#12	3/4	
B1A	MOTORIZED VALVE	3/4	1.05				20	–	4#12	3/4	
B1B	MOTORIZED VALVE	3/4	1.05				20	–	4#12	3/4	
B2	JOCKEY PUMP	1 1/2	2.5	–	–	–	18/58	1 FVNR	4#12	3/4	
B3	PLANT WATER PUMP #3	10	10.5	–	–	–	100/300	1 FVNR	4#10	3/4	
B4	SPACE	–	5	–	–	–	–	–	–	–	

■ SLUDGE GRINDER INSTALLATION

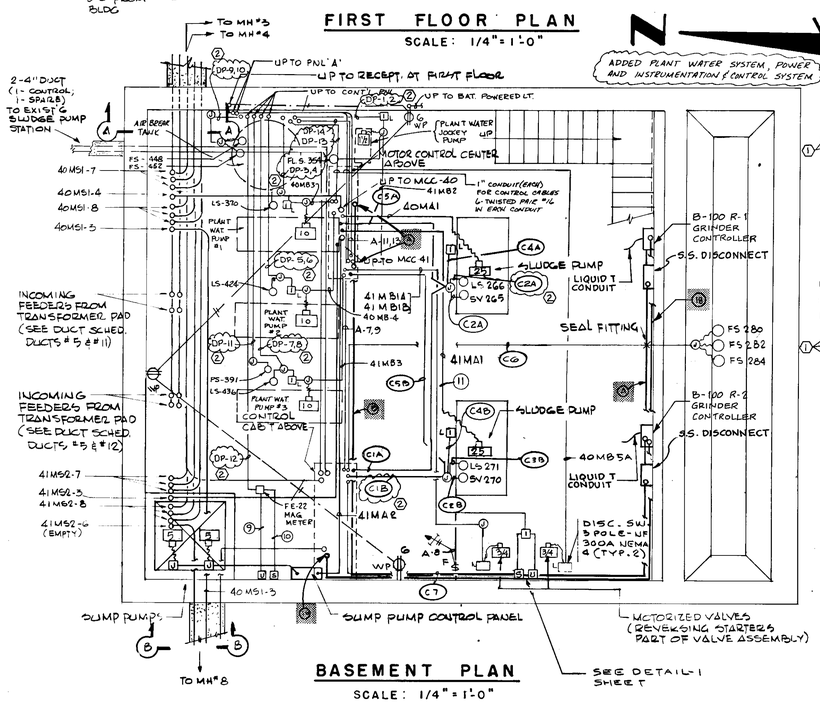
NOTE: FOR OTHER DETAILS ON MCC-40 & MCC41 SEE POST BUCKLEY MYLARS 4H12, SHEET E8 OF E-29.

CONDUIT & CABLE SCHEDULE



SECTION - ELEVATION 'A-A'

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



BASEMENT PLAN

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

ADDED PLANT WATER SYSTEM, POWER AND INSTRUMENTATION & CONTROL SYSTEM ①

INSTRUMENTATION CONDUCTORS & CONDUIT

- ① 2 - #16 SHIELDED & TWISTED — 3/4" C
- ② 4 - — 3/4" C
- ③ G - — 1" C
- ④ 8 - — 1 1/4" C
- ⑨ 1 COAX CABLE + 3#16 TW - 3/4" C
- ⑩ 6 #16 TW - 3/4" C
- ⑪ 2 TWISTED PR. #16 - 3/4"
- M ULTRASONIC GENERATOR
- S SIGNAL CONVERTER
- LS LIMIT SWITCH
- SV SOLENOID VALVE
- FS FLOAT SWITCH
- ⑫ 2 - TWISTED PAIR #16
- ⑬ 4 -
- ⑮ 6 -
- ⑭ 10 - AWG # 14 THHN, CU. - 3/4" C
- ⑰ 8 - AWG # 14 THHN, CU. - 3/4" C
- ⑱ 5 - AWG # 14 THHN, CU. - 3/4" C

POWER CONDUCTORS & CONDUITS

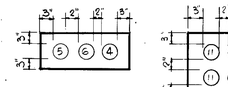
- ⑤ 4 - AWG # 12 THHN, CO. - 3/4" C
- ⑥ 8 - " " " " - 3/4" C

DRUM PROGRAM PANEL
CABLE AND CONDUIT SCHEDULE

	DESTINATION	CABLE	TOTAL
DP-1, 2	JOCKEY PUMP	⑫ LOCK SW. ⑫ FL.S.-354	⑱ - 1"C
DP-3, 4	PUMP #1	⑫ LOCK SW. ⑫ LS-370	⑱ - 1"C
DP-5, 6	PUMP #2	⑫ LOCK SW. ⑫ LS.-424	⑱ - 1"C
DP-7, 8	PUMP #3	⑫ LOCK SW. ⑫ LS.-436	⑱ - 1"C
DP-9, 10	AIR TANK	⑫ PS.-448 ⑫ PS.-452	⑱ - 1"C
DP-11	DISCH. PIPE	⑫ PS-391	⑫ - 3/4"
DP-12	MAG. METER	⑮ FE-22	⑮ - 3/4"
DP-13	MCC-40	⑮ CONTROLS	⑯ - 1"C
DP-14	MCC-41	⑮ CONTROLS	⑯ - 1"C

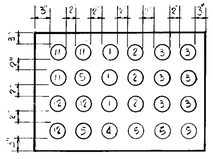
CONTROL PANEL
CABLE AND CONDUIT SCHEDULE

	DESTINATION	CABLE	TOTAL
C1A	SLUDGE PUMP A	⑫ LOCK SW (C4A) ⑫ LS 266 (C2A) ⑫ SV-265 (C2A)	⑱ - 1"C
C1B	SLUDGE PUMP B	⑫ LOCK SW (C4B) ⑫ LS 271 (C2B) ⑫ SV 270 (C2B)	⑱ - 1"C
C5A	MCC-40-A1	⑫ MS1	⑰ - 3/4" C
C5B	MCC-41-A1	⑫ MS2	⑰ - 3/4" C
C6	SLUDGE SUCTION WELL	⑫ FS-280 ⑫ FS-282 ⑫ FS-284	⑱ - 1"C
C7	SIGNAL CONVERTER	⑱	⑱ - 3/4" C



DUCT 'B-B'

NO SCALE



DUCT -'A-A'

NO SCALE

DUCT SCHEDULE

NO	CONDUCTORS	BACK/BACK	FROM	TO
1	3-500 MCM + 1-3/0 BOND	4" DUCT	PANEL MS	MCC-44 - DIG. BLD. "C" - VIA MH'S # 3 & 7
2	3-500 MCM + 1-3/0 BOND		PANEL MS	MCC-45 - DIG. BLD "C" - VIA MH'S # 3 & 7
3	SPARE EMPTY		PANEL MS1	FUTURE DIGESTOR VIA MH'S # 3 & 7
4	CONTROL CONDUCTORS			
5	SPARE EMPTY		PANEL MS2	MH # 2A
6	3# 1/0 + 1# 3 BOND		PANEL MS1	ATS-1 AT GEN. BLDG - VIA MH'S # 8, 2 & 1
11	3-500 MCM + 1# 3/0 BOND		XFMR PAD	MS-40 VIA MH # 4
12	3-500 MCM + 1# 3/0 BOND		XFMR PAD	MS-41 VIA MH # 4

NOTE: ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 6 IN FEET (0'-1 13/16")

DENNIS F. TROYAN, P.E. # 18650
ELECTRICAL SECTION HEAD
DEPARTMEN of SANITARY SEWERS

ANDREW T. CRONBERG, P.E.
CHIEF ENGINEER
DEPARTMENT of SANITARY SEWERS

DES. D.F.T.
DRN. E.I.o. / CP
CKD.
DATE.

APPROVED BY
JACK P. MORRISS, P.E.
DIRECTOR
DEPARTMENT of SANITARY SEWERS

No.	DATE	REVISIONS
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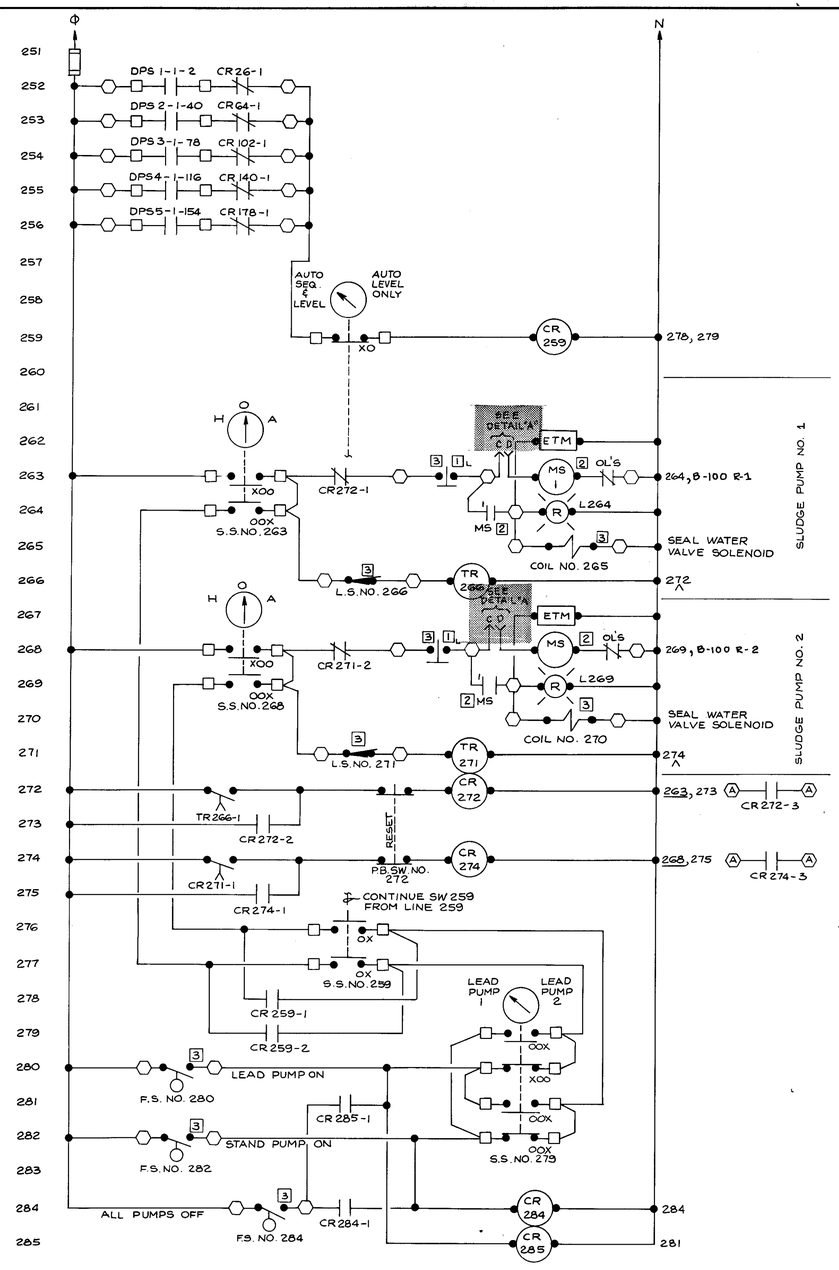
SCALE 2 0 2 4 6 8 10 — 1/4" = 1'-0"

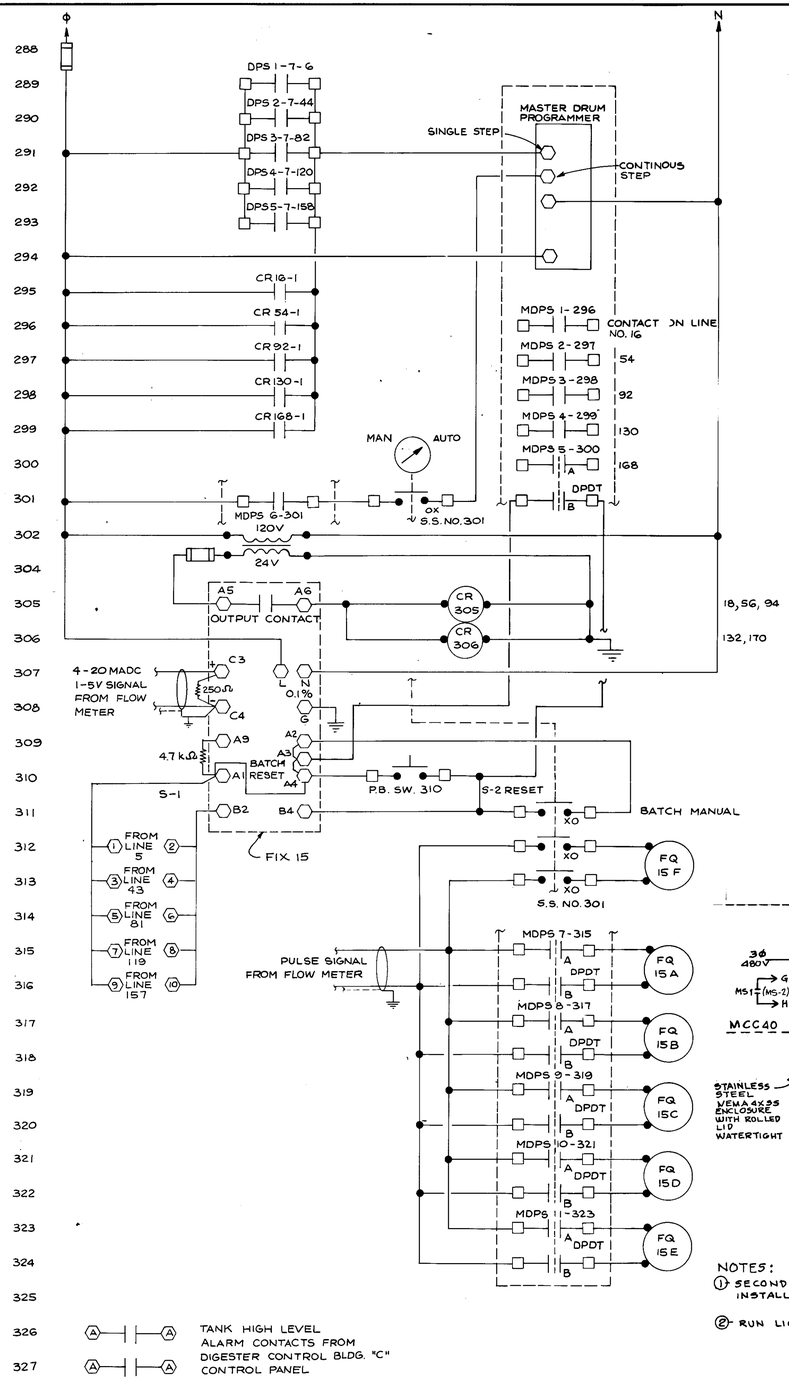
DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA
RENEWAL & REPLACEMENT
SEWAGE DISPOSAL SYSTEM

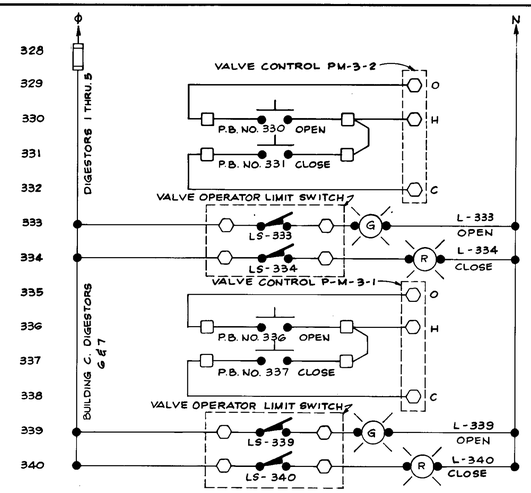
ELECTRICAL
SLUDGE GRINDERS FOR MIXED SLUDGE PUMPING STATION

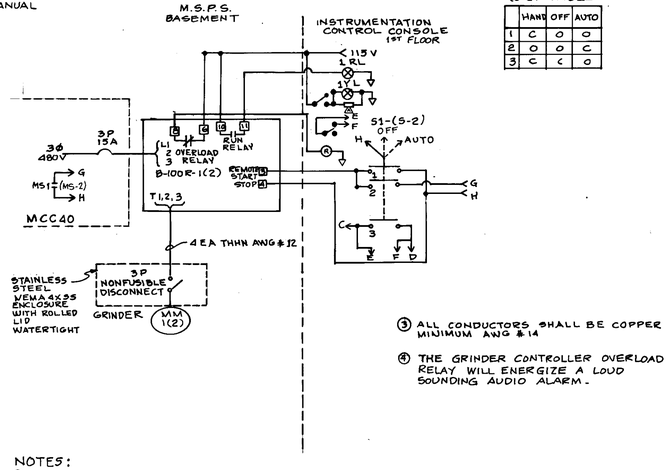
SHEET 4 OF 5

TP1-5









NOTES:
① SECOND SLUDGE GRINDER CONTROLS SHALL BE SAME INSTALLATION BUT THE 3P, 15A CB SHALL BE IN MCC 41.
② RUN LIGHT RED, OVERLOAD YELLOW.

A ⊣⊢ A — TANK HIGH LEVEL ALARM CONTACTS FROM DIGESTER CONTROL BLDG. "C" CONTROL PANEL

DETAIL 'A'
SLUDGE GRINDER CONTROLS

DENNIS F. TROYAN, P.E. # 18650
ELECTRICAL SECTION HEAD
DEPARTMEN of SANITARY SEWERS

ANDREW T. CRONBERG, P.E.
CHIEF ENGINEER
DEPARTMENT of SANITARY SEWERS

DES. D.F.T.
DRN. Elo. /68

APPROVED BY
JACK P. MORRISS, P.E.
DIRECTOR
DEPARTMENT of SANITARY SEWERS

NO	DATE	REVISIONS
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SCALE
NOT TO SCALE

DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA
RENEWAL & REPLACEMENT
SEWAGE DISPOSAL SYSTEM

ELECTRICAL
SLUDGE GRINDERS FOR MIXED SLUDGE PUMPING STATION

SHEET 5 OF 5

T-P1-6

MSPS Pump Addition_Year 1992

CITY of TAMPA

DEPARTMENT OF SANITARY SEWERS

SEWAGE DISPOSAL SYSTEM

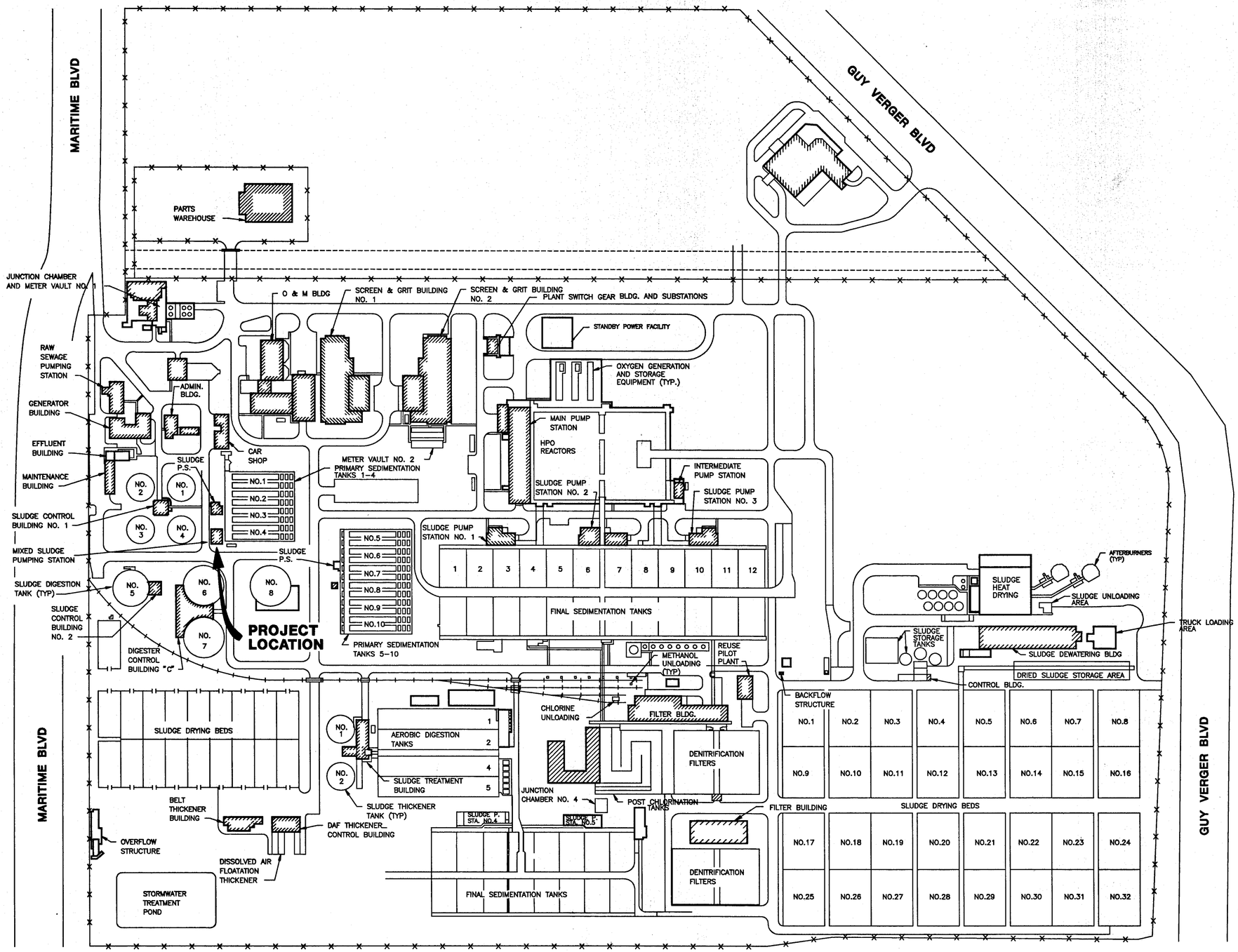
PLANS FOR THE

HOOKERS POINT MIXED SLUDGE PUMPING STATION PUMP ADDITION

CONTRACT M-92

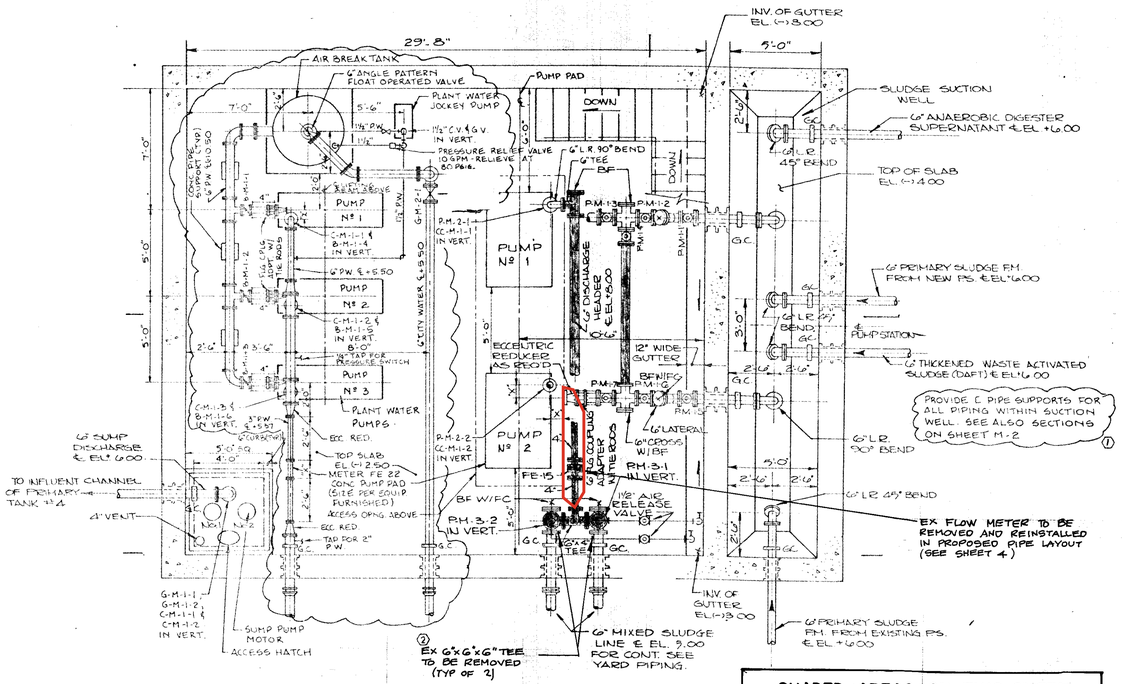
TP6-9

Roman D. Korchak ROMAN D. KORCHAK, P.E. #42628 ELECTRICAL SECTION HEAD DEPARTMENT OF SANITARY SEWERS	Henry L. Dorzback HENRY DORZBACK, P.E. #39449 CHIEF ENGINEER DEPARTMENT OF SANITARY SEWERS	Ralph L. Metcalf II RALPH L. METCALF II, P.E. DIRECTOR DEPARTMENT OF SANITARY SEWERS	DES: CL DRN: CS CKD: A.H. DATE: 7-1-92	No. / DATE / REVISIONS 1 2 3 4 5	CITY of TAMPA, FLORIDA DEPARTMENT OF SANITARY SEWERS HOOKERS POINT TREATMENT PLANT IMPROVEMENTS	TITLE SHEET DESIGN W.O. 4423 CONSTRUCTION W.O. SHEET 1 OF 7



TP6-10

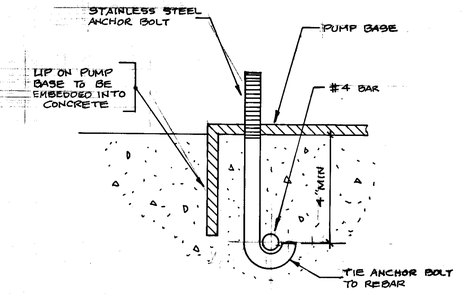
ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD DEPARTMENT OF SANITARY SEWERS	HENRY DORZBACK, P.E. #39449 CHIEF ENGINEER DEPARTMENT OF SANITARY SEWERS	RALPH L. METCALF II, P.E. DIRECTOR DEPARTMENT OF SANITARY SEWERS	DES: CL DRN: CS CKD: A.H. DATE: 7-1-92	No. / DATE / REVISIONS: 1 2 3 4 5	SCALE NO SCALE	CITY OF TAMPA FLORIDA DEPARTMENT OF SANITARY SEWERS HOOKERS POINT TREATMENT PLANT IMPROVEMENTS	**PROJECT MAP**	DESIGN W.O. 4423 CONSTRUCTION W.O.	SHEET 2 OF 7



DEMOLITION DETAIL

1/4" = 1'-0"

SHADED AREAS ON THIS SHEET INDICATE PIPING and EQUIPMENT TO BE REMOVED IN THIS CONTRACT



ANCHOR BOLT DETAIL

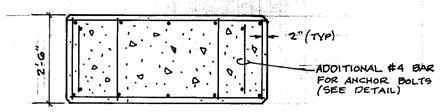
NOT TO SCALE

NOTES

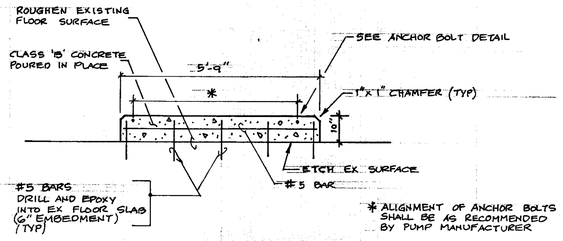
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL FIELD MEASUREMENTS AND VERIFYING THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING PIPING, STRUCTURES, AND OTHER FEATURES AFFECTING HIS WORK PRIOR TO SUBMITTAL OF SHOP DRAWINGS OR STARTING CONSTRUCTION.
2. EXISTING PIPE AND FITTINGS FOR REMOVAL SHALL BE REMOVED AND STORED AS DIRECTED BY TREATMENT PLANT PERSONNEL.
3. ALL PIPE AND FITTINGS SHALL BE CLASS 53 DIP LINED WITH POLYETHYLENE.
4. PRESSURE GAUGES SHALL BE EQUIPPED WITH STAINLESS STEEL DIAPHRAGM SEALS AND ISOLATION VALVES.
5. MECHANICAL SEAL DRAIN PIPING SHALL BE INSTALLED TO DISCHARGE INTO THE EXISTING FLOOR DRAINS.
6. ALL PIPE, FITTINGS, HANGERS, SUPPORTS, AND EQUIPMENT SHALL BE PAINTED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.
7. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR PIPE HANGERS AND SUPPORTS. PIPE HANGERS AND SUPPORTS SHALL BE SCREW ADJUSTABLE AND SHALL BE ADEQUATE TO MAINTAIN THE PIPE LINES AND EQUIPMENT IN PROPER ALIGNMENT UNDER ALL SERVICE CONDITIONS. ALL METAL SURFACES THAT COME IN CONTACT WITH CONCRETE SURFACES SHALL RECEIVE 2 COATS OF COAL TAR EPOXY WHICH SHALL BE APPLIED TO THE METAL SURFACE PER THE MANUFACTURER'S RECOMMENDATIONS.
8. ALL STEEL REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST 'ACI MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES'.
9. CONTRACTOR SHALL SUBMIT DETAILS OF THE PIPE LAYOUT FOR APPROVAL BY THE ENGINEER PRIOR TO FABRICATION AND ERECTION. DETAILS SHALL INCLUDE ALL DIMENSIONS OF PIPING TO EXISTING STRUCTURES AND EQUIPMENT.

⚠ 10. OPENING IN WET WALL SHALL BE LARGE ENOUGH TO ACCOMODATE LINK SEAL AND PIPE O.D. DRY PIT SIDE OF SPOOL PIECE SHALL BE EQUIPPED WITH A SCREW ON FLANGE OR ROCKWELL 912 FLANGE ADAPTOR OR EQUAL.

⚠ 11. PUMP STATION SHUT DOWNS REQUIRED FOR INSTALLATION OF SUCTION PIPE THRU WET WELL WALL, INSTALLATION OR DISASSEMBLY OF DISCHARGE PIPING, OR ANY OTHER REQUIRED SHUTDOWN SHALL BE LIMITED TO A MAXIMUM OF TWO HOURS PER SHUTDOWN.

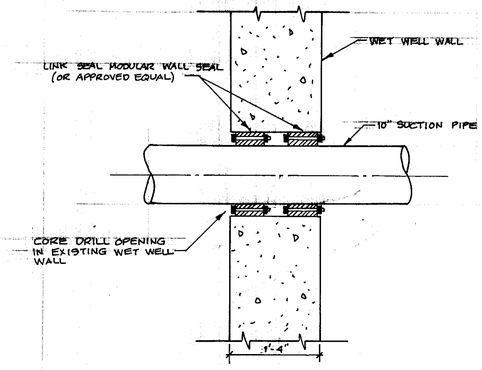


SECTION PLAN



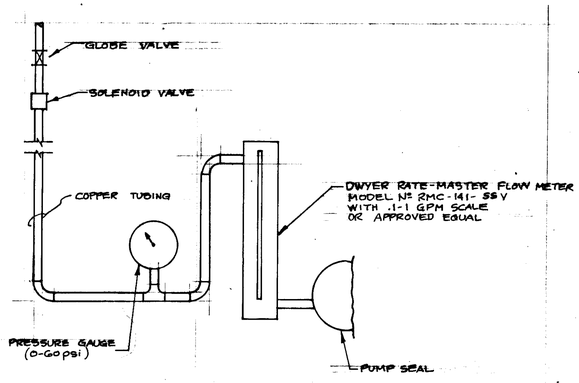
PUMP PEDESTAL REINFORCEMENT DETAIL

1/2" = 1'-0"



LINK SEAL DETAIL

NOT TO SCALE



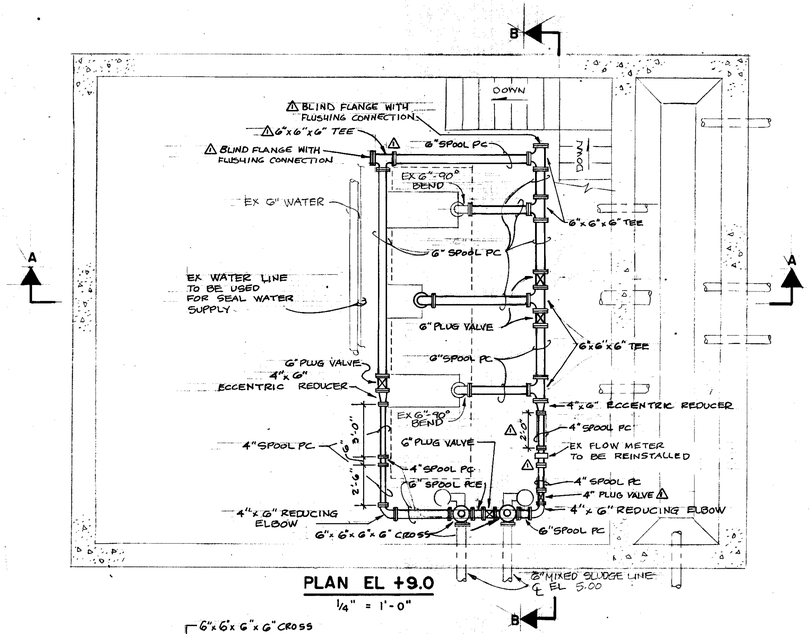
SEAL WATER DETAIL

NOT TO SCALE

NOTE: ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM CONVERTED TO NATIONAL OCEAN SURVEY (NOS) DATUM. 1 FOOT (0.3048m)

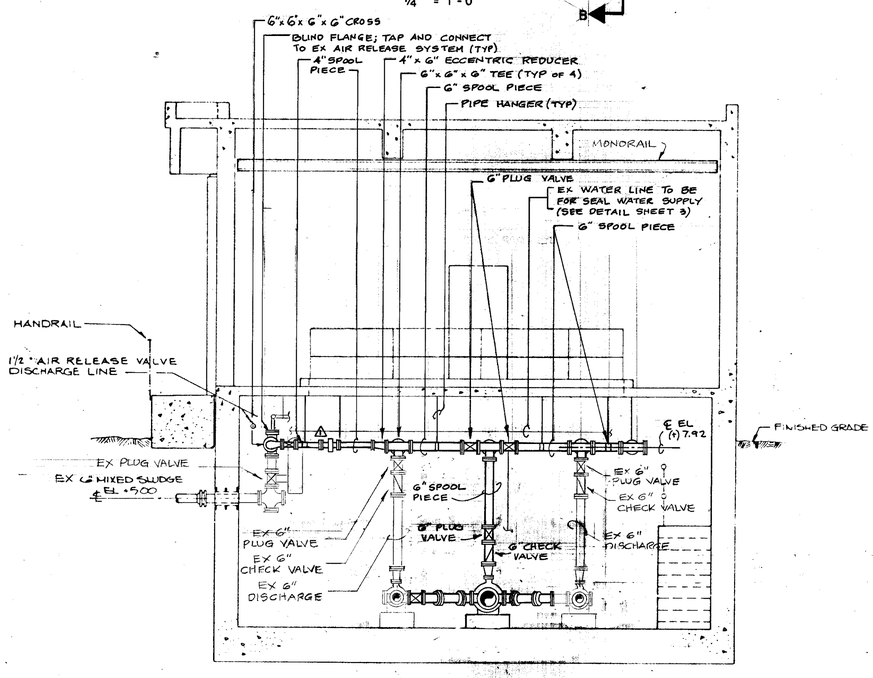
TP611

	HENRY DORZBACK, PE #39449 CHIEF ENGINEER DEPARTMENT of SANITARY SEWERS	DES: CL DRN: CG CKD: A.H. DATE: 6/25/92	APPROVED BY RALPH L METCALF II, PE DIRECTOR DEPARTMENT of SANITARY SEWERS	No. 1	DATE 7-20-92	REVISIONS ADDED NOTES 10 & 11 E.A.R. HD	SCALE AS SHOWN	DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA HOOKERS POINT TREATMENT PLANT IMPROVEMENTS	• MIXED SLUDGE PS PUMP ADDITION • DEMOLITION and DETAILS	SHEET 3 OF 7



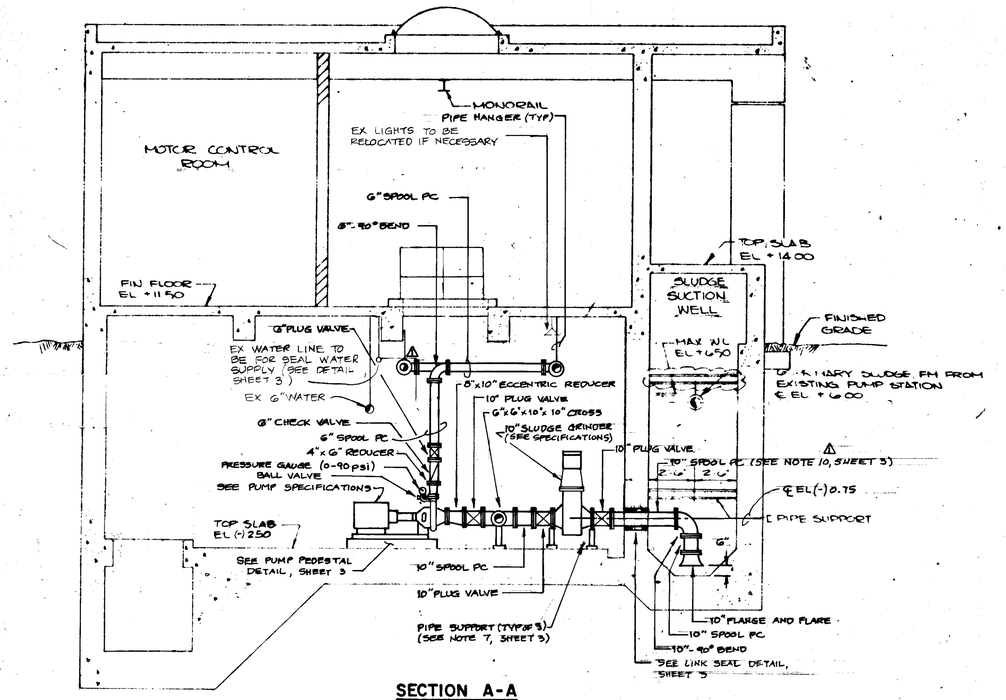
PLAN EL +9.0

1/4" = 1'-0"



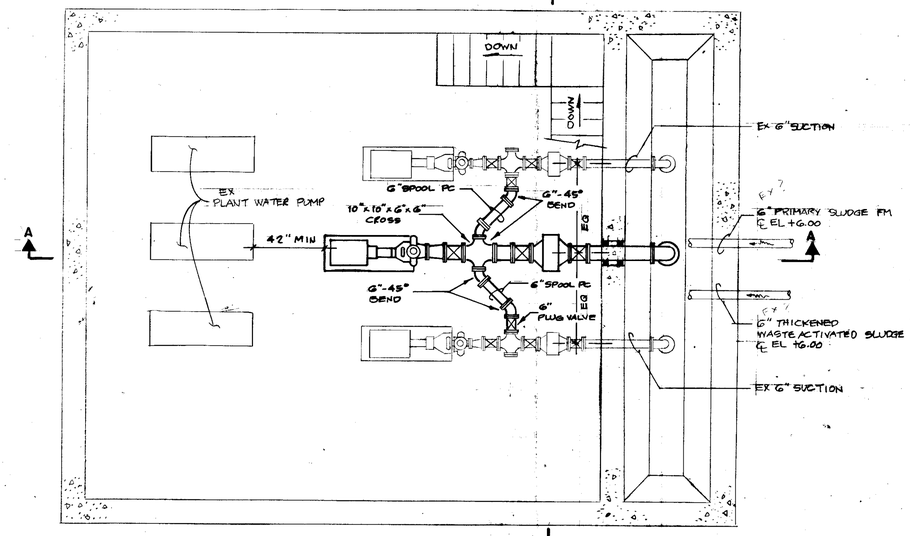
SECTION B-B

1/4" = 1'-0"



SECTION A-A

1/4" = 1'-0"



PLAN EL +3.0

1/4" = 1'-0"

TP6-12

*ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEANIC SURVEY (NGS) DATUM, SUBTRACT 8.15 FEET (8'-1 13/16")

Henry L. Dorzback

HENRY DORZBACK, PE #39449
CHIEF ENGINEER
DEPARTMENT of SANITARY SEWERS

DES: CL
DRN: CG
CKD: A.H.
DATE: 6/23/93

APPROVED BY

RALPH L METCALF II, PE
DIRECTOR
DEPARTMENT of SANITARY SEWERS

№	DATE	REVISIONS
1	7-20-93	CHANGED PIPING & ADDED NOTES ERR. HLD
2		
3		
4		
5		

SCALE

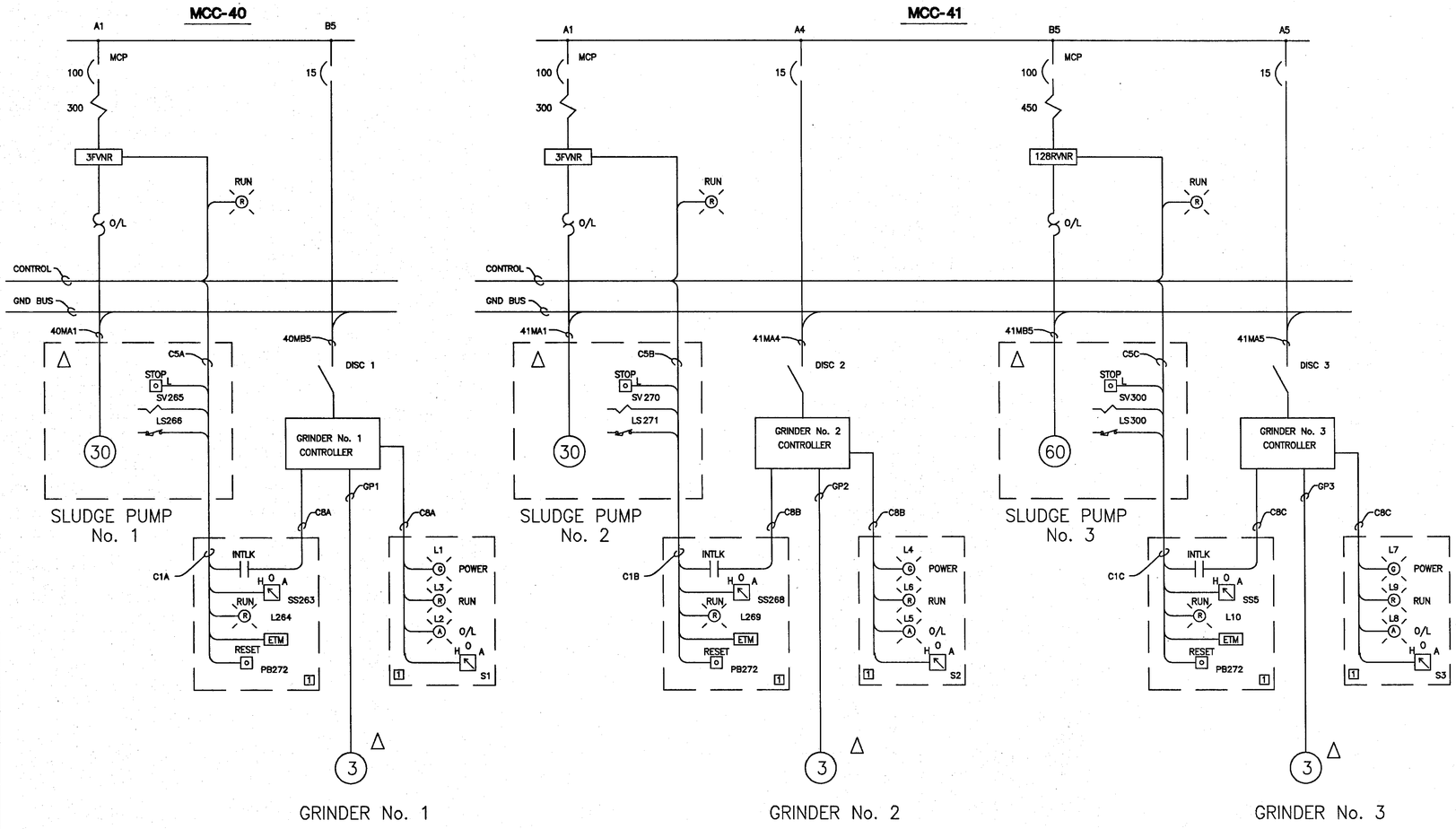
AS SHOWN

DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA
HOOKERS POINT TREATMENT PLANT
IMPROVEMENTS

MIXED SLUDGE PS PUMP ADDITION

SECTIONS and DETAILS

SHEET 4 OF 7



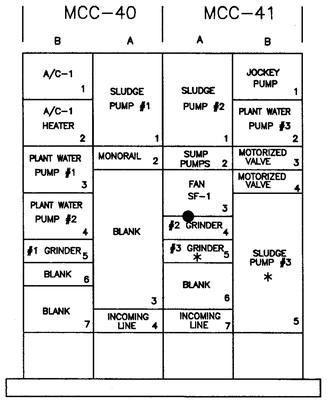
SLUDGE PUMPING SYSTEM
ONE LINE DIAGRAM

LEGEND

- DISCONNECTING DEVICE
- MCP 100 300 — MOTOR CIRCUIT PROTECTOR, 100 AMPERE CONTINUOUS RATING, 300 AMPERE MAGNETIC TRIP SETTING
- CVT — CONTROL POWER TRANSFORMER
- FUSE
- NORMALLY OPEN CONTACT / NORMALLY CLOSED CONTACT — OR TIME DELAY RELAY, INSTANT TRANSFER SWITCH
- IM — MOTOR STARTER COIL
- MOL — MOTOR THERMAL OVERLOAD
- R — PILOT LIGHT (RED LENS)
- TERMINAL STRIP
- ETM — HOUR METER
- STOP L — STOP PUSHBUTTON WITH PROVISIONS FOR PADLOCK
- OFF 1 3 — 3 POSITION SELECTION SWITCH
- LS1 — LIMIT SWITCH, NORMALLY OPEN
- LS3 — LIMIT SWITCH, NORMALLY CLOSED
- PSI — PRESSURE SWITCH, NORMALLY OPEN
- 30 — 3 PHASE MOTOR, 30 H.P.
- △ — MOUNTED NEAR EQUIPMENT OR MOTOR (LOCAL)
- ▽ — NEUTRAL
- STOP / L — PUSHBUTTON WITH PROVISIONS FOR LOCK. (N.O.)
- N.C. PUSHBUTTON
- TR — NORMALLY CLOSED "ON DELAY" TIMING RELAY
- TR — NORMALLY OPEN "ON DELAY" TIMING RELAY
- TR — INSTANT CLOSE – DELAY OPEN TIMING RELAY (OFF DELAY)
- TR — INSTANT OPEN – DELAY CLOSE TIMING RELAY (OFF DELAY)
- CR — CONTROL RELAY COIL
- TR — TIME DELAY RELAY COIL
- SV — SOLENOID VALVE
- 3FVNR — NEMA SIZE 3 FULL VOLTAGE, NON-REVERSING MOTOR STARTER
- 15 — CIRCUIT BREAKER 15 AMP
- H O A — HAND-OFF-AUTO SWITCH
- L — LOCKABLE STOP PUSH BUTTON
- SOLENOID VALVE
- J — JUNCTION BOX
- 3 — 3 H.P. MOTOR, LIQUID TIGHT FLEX CONDUIT
- SAFETY SWITCH
- 1 — MOUNTED ON INSTRUMENTATION – CONTROL PANEL
- 128RVNR — 128 AMP SOLID STATE REDUCED VOLTAGE, NON-REVERSING MOTOR STARTER

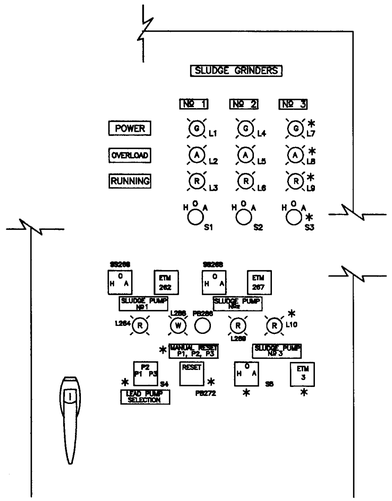
TP6.13

ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD DEPARTMENT OF SANITARY SEWERS	HENRY DORZBACK, P.E. CHIEF ENGINEER DEPARTMENT OF SANITARY SEWERS	RALPH L. METCALF II, P.E. DIRECTOR DEPARTMENT OF SANITARY SEWERS	DES: RK DRN: RK/CS CKD: DATE:	No. / DATE / REVISIONS: 1 2 3 4 5	SHEET NO SCALE	CITY OF TAMPA FLORIDA DEPARTMENT OF SANITARY SEWERS HOOKERS POINT TREATMENT PLANT IMPROVEMENTS	• MIXED SLUDGE PS PUMP ADDITION • ELECTRICAL ONE LINE DIAGRAM	DESIGN W.O. 4423 CONSTRUCTION W.O.	SHEET 5 OF 7



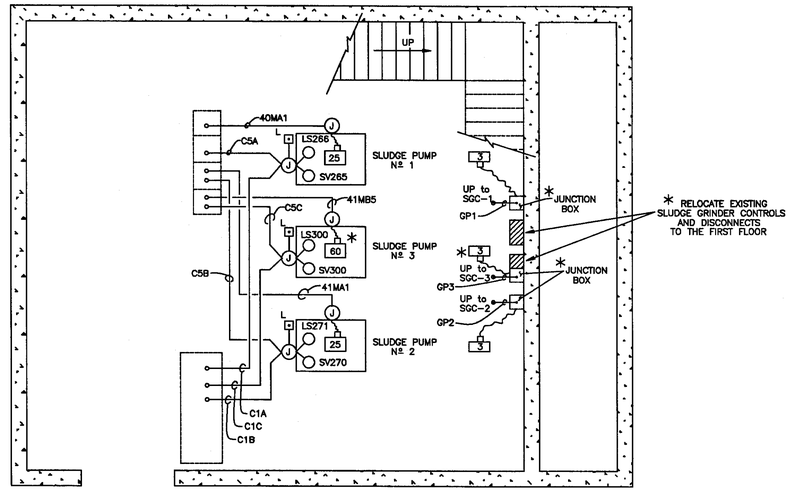
EXISTING MCC-40 AND MCC-41

FRONT ELEVATION



EXISTING INSTRUMENTATION CONTROL PANEL

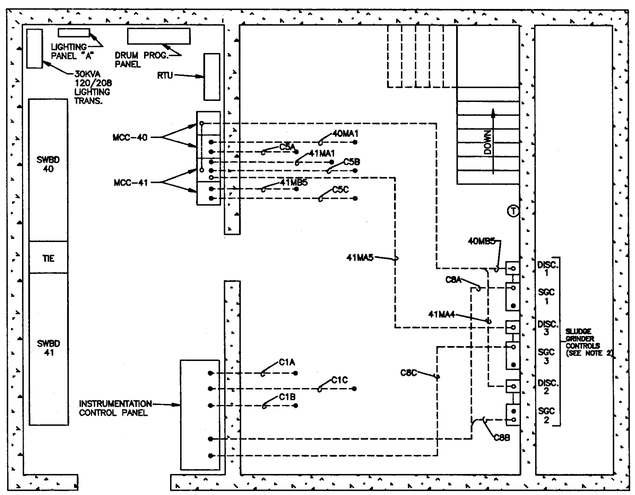
(ITEMS MARKED ✱ PROPOSED MODIFICATIONS)



BASEMENT PLAN

CONDUIT AND CONDUCTOR SCHEDULE

LABEL	CONDUIT SIZE	FROM	TO	REMARKS
C1A (EXISTING)	1"	CONTROL PANEL	SLUDGE PUMP #1	STOP/L, LS266, SV265, (2) SPARE } 5–TWISTED PR. #16AWG.
C1B (EXISTING)	1"	CONTROL PANEL	SLUDGE PUMP #2	STOP/L, LS271, SV270, (2) SPARE } 5–TWISTED PR. #16AWG.
C1C	1"	CONTROL PANEL	SLUDGE PUMP #3	STOP/L, LS300, SV300, (2) SPARE } 5–TWISTED PR. #16AWG.
C5A (EXISTING)	3/4"	CONTROL PANEL	MCC–40–A1	CR283MS, MS1–AUX, SPARE } 3–TWISTED PR. #16AWG
C5B (EXISTING)	3/4"	CONTROL PANEL	MCC–41–A1	CR268MS, MS2–AUX, SPARE } 3–TWISTED PR. #16AWG
C5C	3/4"	CONTROL PANEL	MCC–41–B5	CR350MS, MS3–AUX, SPARE } 3–TWISTED PR. #16AWG
C8A	3/4"	CONTROL PANEL	SLUDGE GRINDER #1 CONTROLLER	O/L RELAY, RUN RELAY, START, SPARE } 4–TWISTED PR. #16AWG
C8B	3/4"	CONTROL PANEL	SLUDGE GRINDER #2 CONTROLLER	O/L RELAY, RUN RELAY, START, SPARE } 4–TWISTED PR. #16AWG
C8C	3/4"	CONTROL PANEL	SLUDGE GRINDER #3 CONTROLLER	O/L RELAY, RUN RELAY, START, SPARE } 4–TWISTED PR. #16AWG
40MA1 (EXISTING)	1 1/2"	MCC–40–A1	SLUDGE PUMP #1	3–#4, 1–#8 B.C. TO MOTOR
41MA1 (EXISTING)	1 1/2"	MCC–41–A1	SLUDGE PUMP #2	3–#4, 1–#8 B.C. TO MOTOR
41MB5	1 1/2"	MCC–41–B5	SLUDGE PUMP #3	3–#3, 1–#8 B.C. TO MOTOR
40MB5	3/4"	MCC–40–B5	DISC. 1 TO #1 GRINDER CONTROLLER	4–#12
41MA4	3/4"	MCC–41–A4	DISC. 2 TO #2 GRINDER CONTROLLER	4–#12
41MA5	3/4"	MCC–41–A5	DISC. 3 TO #3 GRINDER CONTROLLER	4–#12
GP1	3/4"	#1 GRINDER CONTROLLER	MOTOR 1	4–#12
GP2	3/4"	#2 GRINDER CONTROLLER	MOTOR 2	4–#12
GP3	3/4"	#3 GRINDER CONTROLLER	MOTOR 3	4–#12



FIRST FLOOR PLAN

TYPE: GE, MODEL 8000 LINE
VOLT: 480V, 3PH, 4W
MTG: FREE STANDING – FRONT ACC.

MCC–40

MAINS – 225A – FULL NEU
CONN. LOAD = 82KVA

CKT No.	DESIGNATION	HP	KVA	V	PH	FRAME SIZE	TRIP RANGE	STARTER	WIRE	COND	REMARKS
A–1	SLUDGE PMP #1	25	27	480	3	100	330/1200	3FVNR	3–#4, 1#8	1 1/2	
A–2	MONORAIL	4	5.3				18/58	–	4–#10	3/4	
A–3	BLANK	–	–				–	–	–	–	
A–4	INCOMING LINE	–	–				–	–	–	–	
B–1	AC–1	–	12				30	1FVNR	4–#10	3/4	
B–2	AC–1 HEATER	–	10				20	1FVNR	4–#12	3/4	
B–3	PLANT WATER P#1	10	10.5				100/300	1FVNR	4–#10	3/4	
B–4	PLANT WATER P#2	10	10.5				100/300	1FVNR	4–#10	3/4	
B–5	#1 GRINDER	3	3.8				15	–	4–#12	3/4	
B–6	BLANK	–	–				–	–	–	–	
B–7	BLANK	–	–				–	–	–	–	

TYPE: GE, MODEL 8000 LINE
VOLT: 480V, 3PH, 4W
MTG: FREE STANDING – FRONT ACC.

MCC–41

MAINS – 225A – FULL NEU
CONN. LOAD = 128KVA

CKT No.	DESIGNATION	HP	KVA	V	PH	FRAME SIZE	TRIP RANGE	STARTER	WIRE	COND	REMARKS
A–1	SLUDGE PMP #2	25	27	480	3	100	330/1200	3FVNR	3–#4, 1#8	1 1/2	
A–2	SUMP PUMPS	10	12.2				50/150	–	4–#10	3/4	
A–3	FAN SF–1	1 1/2	2.5				8/22	1FVNR	4–#12	3/4	WITH H–O–A SW.
A–4	#2 GRINDER	3	3.8				15	–	4–#12	3/4	
A–5	#3 GRINDER	3	3.8				15	–	4–#12	3/4	✱
A–6	BLANK	–	–				–	–	–	–	
A–7	INCOMING LINE	–	–				–	–	–	–	
B–1	JOCKEY PUMP	1 1/2	2.5				18/58	1FVNR	4–#12	3/4	
B–2	PLANT WATER P#3	10	10.5				100/300	1FVNR	4–#10	3/4	
B–3	MOTORIZED VALVE	3/4	1.05				20	–	4–#12	3/4	
B–4	MOTORIZED VALVE	3/4	1.05				20	–	4–#12	3/4	
B–5	SLUDGE PMP #3	60	61.3			150	450/2000	128RVNR	4–#3, 1–#8	1 1/2	128 AMP SOLID STATE REDUCED VOLTAGE, NON–REVERSING MOTOR STARTER ✱

NOTES

1. ITEMS MARKED "✱" SHALL BE ADDED OR MODIFIED AS SHOWN TO FACILITATE GRINDER AND PUMP No. 3 ADDITION.
2. THE EXISTING SLUDGE GRINDER CONTROLS AND DISCONNECTS FOR UNITS No. 1 AND No. 2 SHALL BE RELOCATED FROM THE BASEMENT TO THE FIRST FLOOR, AS SHOWN, USING THE SAME MOUNTING TECHNIQUES AND FLOOR SPACING AS EXISTING. THE CONTROLS AND DISCONNECT FOR GRINDER No. 3 SHALL BE PROVIDED AND INSTALLED AS SHOWN.
3. MCC AND CONTROL COMPONENTS PROVIDED SHALL BE OF THE SAME MANUFACTURER, QUALITY, AND PHYSICAL APPEARANCE AS THOSE EXISTING.
4. EXISTING CONDUITS MAY BE USED OR REUSED, AS REQUIRED, PROVIDING THEY ARE OF SUFFICIENT SIZE TO COMPLY WITH THE NEC. ANY NEW CONDUITS AND FITTINGS SHALL BE RIGID ALUMINUM, AND SHALL BE SUPPLIED AS REQUIRED.
5. IN GENERAL THE WORD "SHALL" IS USED TO REFER TO ACTIONS TAKEN BY THE CONTRACTOR.

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

HENRY DORZBACK, P.E.
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

RALPH L. METCALF II, P.E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

DES: RK
DRN: RK/CS
CKD:
DATE:

No.	DATE	REVISIONS
1		
2		
3		
4		
5		

SCALE
NO SCALE

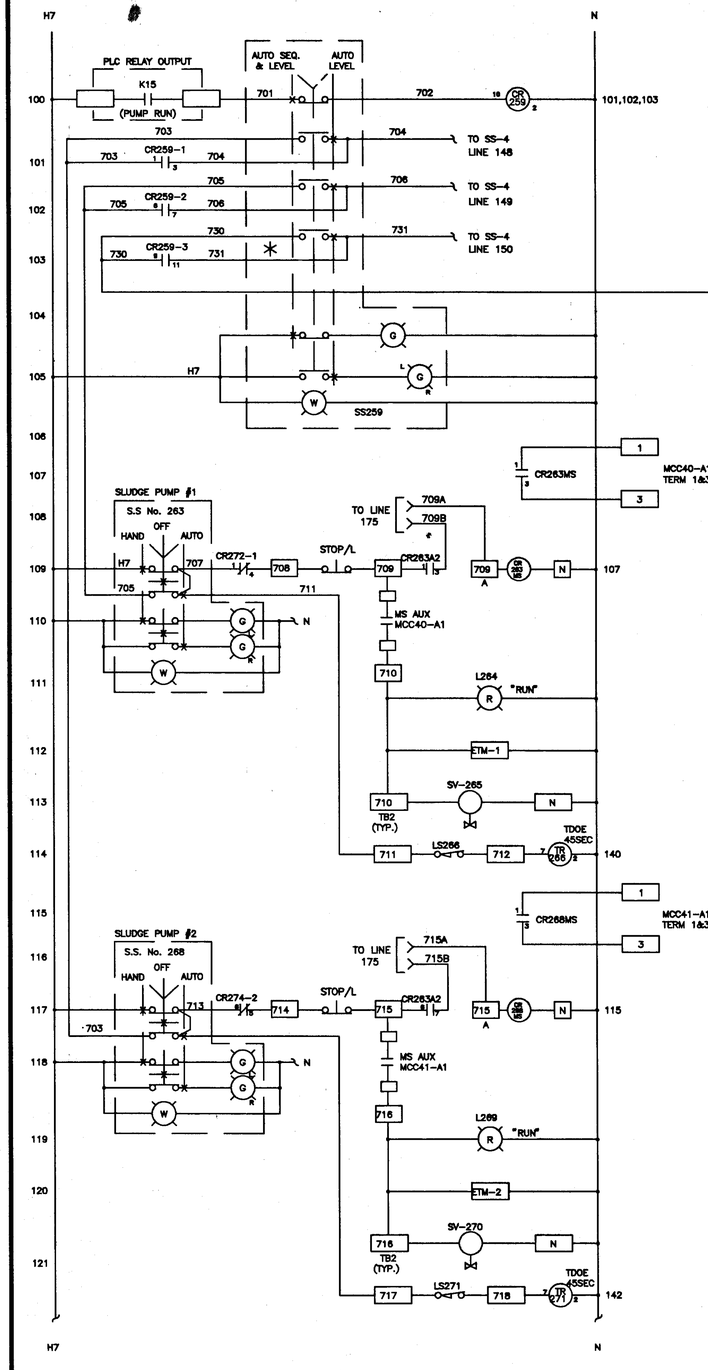
CITY OF TAMPA FLORIDA
DEPARTMENT OF SANITARY SEWERS
HOOKERS POINT TREATMENT PLANT IMPROVEMENTS

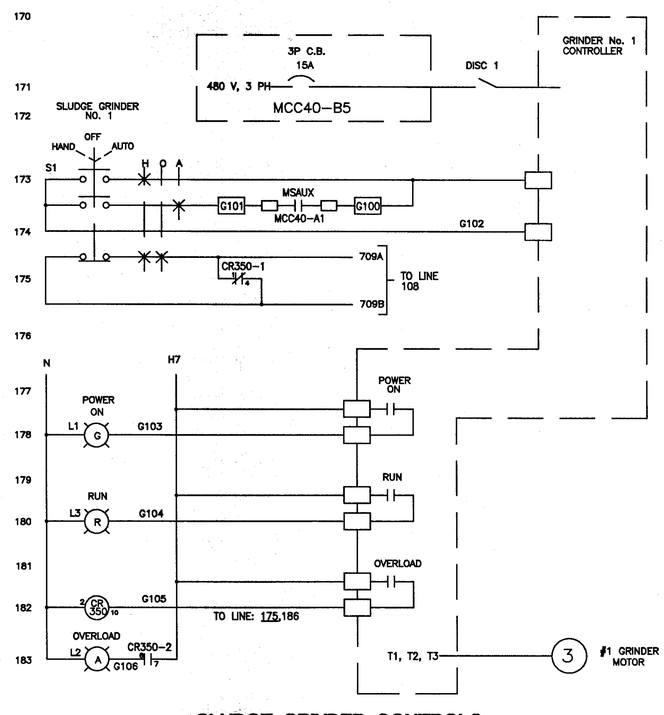
• MIXED SLUDGE PS PUMP ADDITION •
ELECTRICAL LAYOUT AND SCHEDULES

DESIGN W.O. 4423
CONSTRUCTION W.O.

SHEET 6 OF 7

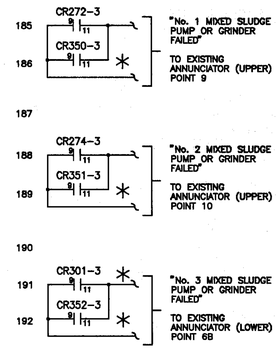
TP6-14





SLUDGE GRINDER CONTROLS

No. 1 SHOWN, No. 2 AND No. 3 CONTROLS ARE IDENTICAL.
(SEE CROSS-REFERENCE TABLE)



CROSS-REFERENCE TABLE		
SLUDGE GRINDER NO. 1	SLUDGE GRINDER NO. 2	SLUDGE GRINDER NO. 3 *
S1	S2	S3
L1	L4	L7
L2	L5	L8
L3	L6	L9
MS AUX, MCC40-A1	MS AUX, MCC41-A1	MS AUX, MCC41-B5
G100	G100A	G100B
G101	G101A	G101B
G102	G102A	G102B
G103	G103A	G103B
G104	G104A	G104B
G105	G105A	G105B
G106	G106A	G106B
CR350	CR351	CR352
DISC. 1	DISC. 2	DISC. 3
108	116	132
186	189	192
709A/709B	715A/715B	737A/737B
MCC40-B5	MCC41-A4	MCC41-A5

NOTES

1. THE SCHEMATICS ON THIS SHEET DELINEATE THE CONTROLS FOR THE COMPLETE SLUDGE GRINDING AND PUMPING SYSTEM. THE CONTROLS FOR GRINDERS AND PUMPS No. 1 AND No. 2 ARE EXISTING. ITEMS MARKED "*" SHALL BE ADDED OR MODIFIED AS SHOWN TO FACILITATE GRINDER AND PUMP No. 3 ADDITION.
2. THE EXISTING ANNUNCIATORS (UPPER AND LOWER) ARE LOCATED ON THE INSTRUMENTATION AND CONTROL PANEL DOOR. ANNUNCIATOR WINDOWS SHALL BE RELABELED AS SHOWN. ANY COMPONENTS NECESSARY TO ACTIVATE THE SPARE ANNUNCIATOR POINT, FOR GRINDER/PUMP No. 3, SHALL BE SUPPLIED BY THE CONTRACTOR.
3. ENSURE THAT THERE ARE SUFFICIENT CONDUCTORS FROM THE ANNUNCIATOR TO THE EXISTING SCADA RTU TO PROVIDE PUMP/GRINDER No. 3 ALARM. CITY FORCES ARE TO MAKE FINAL RTU CONNECTIONS.

TP6-15

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

HENRY DORZBACK, P.E.
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

RALPH L. METCALF II, P.E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

DES: R.K.
DRN: R.K.
CKD:
DATE:

No.	DATE	REVISIONS
1		
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SCALE
NO SCALE

CITY OF TAMPA FLORIDA
DEPARTMENT OF SANITARY SEWERS
RENEWAL & REPLACEMENT
SEWAGE DISPOSAL SYSTEM

• MIXED SLUDGE P.S. PUMP ADDITION •

ELECTRICAL SCHEMATIC DIAGRAM

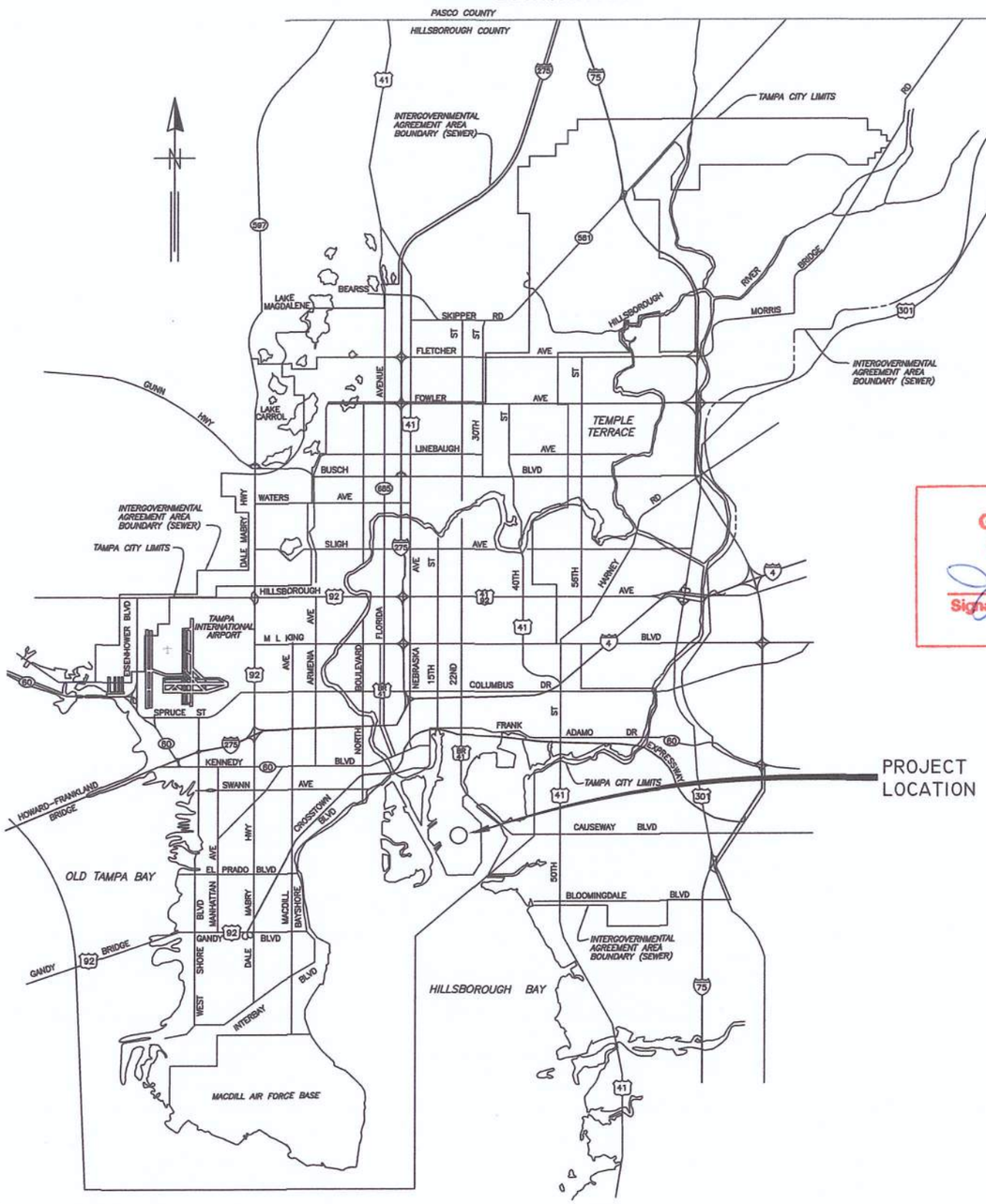
DESIGN W.O. 4423
CONSTRUCTION W.O.

SHEET 7 OF 7

MSPS Pump Replacement_Year 2016

TPB014-001

LOCATION MAP



NOTE:

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
☑ No Changes

CITY of TAMPA

CITY OF TAMPA FLORIDA
MASCOTTE
ORGANIZED JULY 15 1887

WASTEWATER DEPARTMENT

PLANS FOR

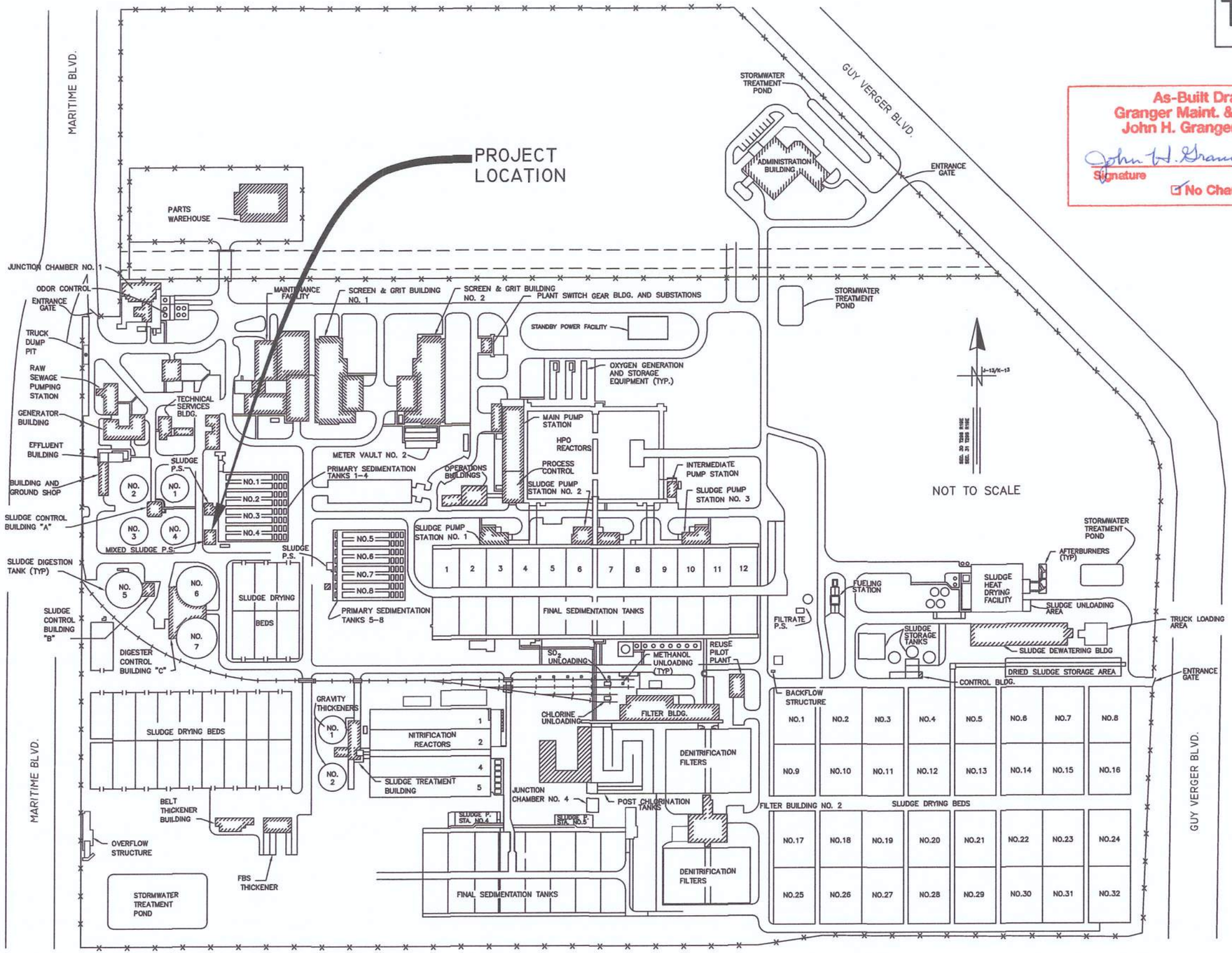
HOWARD F. CURREN AWTP
MIXED SLUDGE PUMPING STATION
PUMP REPLACEMENT

CONTRACT No. 14-C-00022
ORACLE No. 1000102

JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	TIMOTHY THOMAS, P.E. #47079 ELECTRICAL ENGINEER TRICON CONSULTING ENGINEERS	DES: D.R. DRN: BB CKD: DATE:	No.	DATE	REVISIONS	CITY of TAMPA HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	◦ COVER SHEET ◦	W.O. 5983 SHEET 1 OF 28
			3					
			2					
			1					

TPB014-002

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

DES: D.R.
DRN:
CKD:
DATE:

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION PUMP REPLACEMENT
PROJECT MAP

W.O. 5983
SHEET 2 OF 28

User: ss1f Drawing Name: K:\WW_Projects\2013\2013_5983_Mixed Sludge PS Rehab\Dwg\5983-Sheet-02&03.dwg
Layout- Sep 02, 2014 - 3:30pm CTB - MONOCHROME.CTB

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TPB014-003

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1	COVER SHEET
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7	PROPOSED PLANS – PLAN VIEW
8	PROPOSED PLANS – SECTION A–A
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10	MISCELLANEOUS DETAILS
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E2/12	PROPOSED OVERALL ONE–LINE DIAGRAM
E3/13	EXISTING PUMPING SYSTEM ONE–LINE DIAGRAM AND DEMOLITION
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E18/28	DOCUMENTATION OF SOFT STARTER PARAMETERS

GENERAL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL FIELD MEASUREMENTS AND VERIFYING THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING PIPING, STRUCTURES, AND OTHER FEATURES AFFECTING HIS WORK PRIOR TO SUBMITTAL OF SHOP DRAWINGS OR STARTING CONSTRUCTION.
2. PROPOSED PUMP SHALL BE A 60 HP MODEL F4K–S SCREW CENTRIFUGAL PUMP AS MANUFACTURED BY WEMCO–HIDROSTAL. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
3. PROPOSED GRINDER SHALL BE A 5 HP MODEL 30001–18–10 MUFFIN MONSTER GRINDER AS MANUFACTURED BY JWC ENVIRONMENTAL. SEE SPECIFICATION FOR FURTHER INFORMATION.
4. ALL PIPE AND FITTINGS SHALL BE CLASS 53 DUCTILE IRON PIPE (DIP) LINED WITH PROTECTO 401 OR APPROVED EQUAL. FITTINGS SHALL BE LONG–RADIUS (C110) TO MATCH EXISTING.
5. PRESSURE GAGES SHALL BE EQUIPPED WITH STAINLESS STEEL DIAPHRAGM SEALS AND ISOLATION VALVES.
6. MECHANICAL SEAL DRAIN PIPING SHALL BE INSTALLED TO DISCHARGE INTO THE EXISTING FLOOR DRAINS
7. ALL PIPE, FITTINGS, HANGERS, SUPPORTS, AND EQUIPMENT SHALL BE PAINTED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS. HANGERS, SUPPORTS AND ALL HARDWARE SHALL BE 316 STAINLESS STEEL.
8. OPENING IN WET WELL SHALL BE LARGE ENOUGH TO ACCOMMODATE LINK SEAL AND PIPE'S OUTSIDE DIAMETER. DRY PIT SIDE OF SPOOL PIECE SHALL BE EQUIPPED WITH A SERIES 2100 MEGA–FLANGE RESTRAINED FLANGE ADAPTOR WITH STAINLESS STEEL HARDWARE AS MANUFACTURED BY EBAA IRON OR APPROVED EQUAL.
9. PUMP STATION SHUTDOWNS ARE REQUIRED FOR THE INSTALLATION AND DISASSEMBLY OF THE SUCTION PIPE THROUGH THE WET WELL WALL. SHUTDOWNS SHALL BE LIMITED TO A MAXIMUM 4 HOURS PER SHUT DOWN. ALL SHUTDOWNS SHALL BE DONE AS PLANT OPERATIONS PERMIT AND WITH A MINIMUM 72 HOURS ADVANCE NOTICE. IT IS ESSENTIAL THAT THE CONTRACTOR HAVE ALL NECESSARY MATERIALS AND EQUIPMENT ON–SITE AND "READY TO GO" AND ALL PIPING PRE–ASSEMBLED (IF POSSIBLE) BEFORE THE START OF THE SHUTDOWN. THE MINIMUM DURATION BETWEEN SHUTDOWNS SHALL BE 24 HOURS.
10. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR PIPE HANGERS AND SUPPORTS. PIPE HANGERS AND SUPPORTS SHALL BE SCREW ADJUSTABLE AND SHALL BE ADEQUATE TO MAINTAIN THE PIPELINES AND EQUIPMENT IN PROPER ALIGNMENT UNDER ALL SERVICE CONDITIONS. FLOOR PIPE SUPPORTS SHALL BE BOLTED TO THE FLOOR WITH 316 S.S. EPOXY ANCHORS.
11. ALL METAL SURFACES THAT COME IN CONTACT WITH CONCRETE SURFACES OR DISSIMILAR METALS SHALL RECEIVE 2–COATS OF CARBOLINE BITUMINOUS 50 COATING OR APPROVED EQUAL.
12. CONTRACTOR SHALL SUBMIT DETAILS OF THE PIPE LAYOUT FOR APPROVAL BY THE ENGINEER PRIOR TO FABRICATION AND ERECTION. DETAILS SHALL INCLUDE ALL DIMENSIONS OF PIPING TO EXISTING STRUCTURES AND EQUIPMENT.
13. CONCRETE SHALL HAVE A 28–DAY COMPRESSIVE STRENGTH OF 4,000 PSI AND STEEL REINFORCEMENT SHALL BE GRADE 60. ALL STEEL REINFORCEMENT SHALL BE DETAILED ACCORDING TO ACI 315–99 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT". STEEL PLACEMENT SHALL BE REFLECTED ON SHOP DRAWINGS AND SUBMITTED FOR THE ENGINEER'S APPROVAL.
14. OSHA STANDARD SAFETY EQUIPMENT SUCH AS SAFETY HARNESSES, GAS MONITORS, LOWER EXPLOSIVE LIMIT (LEL) DETECTORS, BREATHING APPARATUS, ETC. SHALL BE UTILIZED WHERE THE WORK DICTATES THEIR USE.
15. ALL HARDWARE INCLUDING BOLTS, EXPANSION ANCHORS, WASHERS, NUTS, ETC. SHALL BE 316 STAINLESS STEEL UNLESS OTHERWISE SPECIFIED.

DEMOLITION NOTES

1. UNLESS OTHERWISE NOTED, ALL ITEMS SHOWN IN HATCHED AREAS ARE TO BE DEMOLISHED AND REMOVED.
2. ALL PIPE SUPPORTS AND CONCRETE ANCHORS SHALL BE GROUND BACK AND SEALED.
3. WHERE NEW CONCRETE IS TO BE INSTALLED OVER OR NEXT TO EXISTING CONCRETE SURFACES, CONTRACTOR SHALL ROUGHEN EXISTING SURFACES AND APPLY AN APPROVED EPOXY BONDING AGENT. WHERE SECTIONS OF CONCRETE ARE TO BE CUT AND A SIDE IS TO REMAIN EXPOSED, EXISTING REINFORCEMENT STEEL SHALL BE GROUND BACK 1" AND THE SURFACE RESTORED WITH GROUT.
4. ALL ITEMS DESIGNATED FOR REMOVAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR AS DIRECTED BY TREATMENT PLANT PERSONNEL.

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

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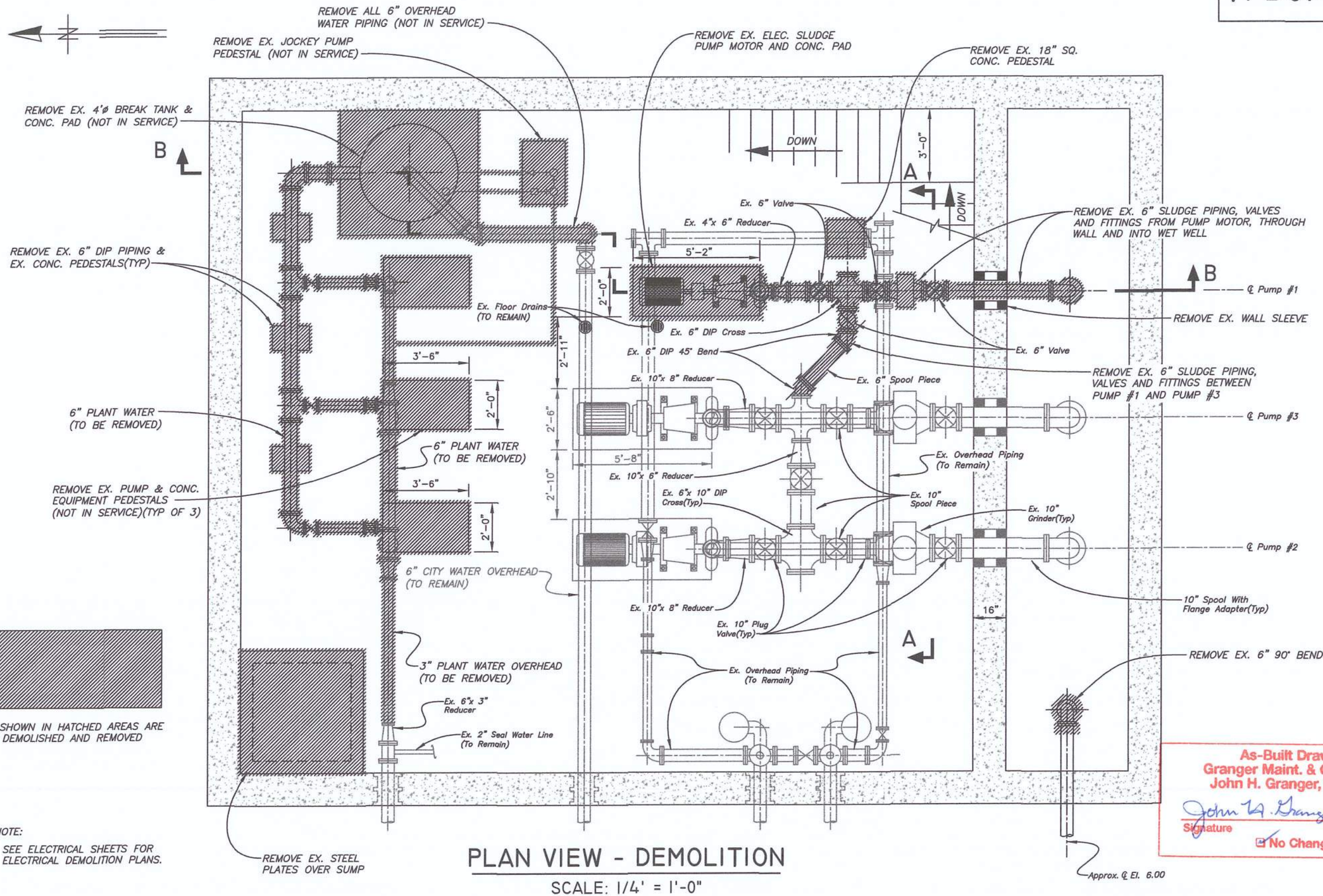
CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION PUMP REPLACEMENT
NOTES AND INDEX

W.O. 5983
SHEET 3 OF 28

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TPB014-004



PLAN VIEW - DEMOLITION

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

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John H. Granger, President
John H. Granger 12/15/16
Signature Date
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WASTEWATER DEPARTMENT

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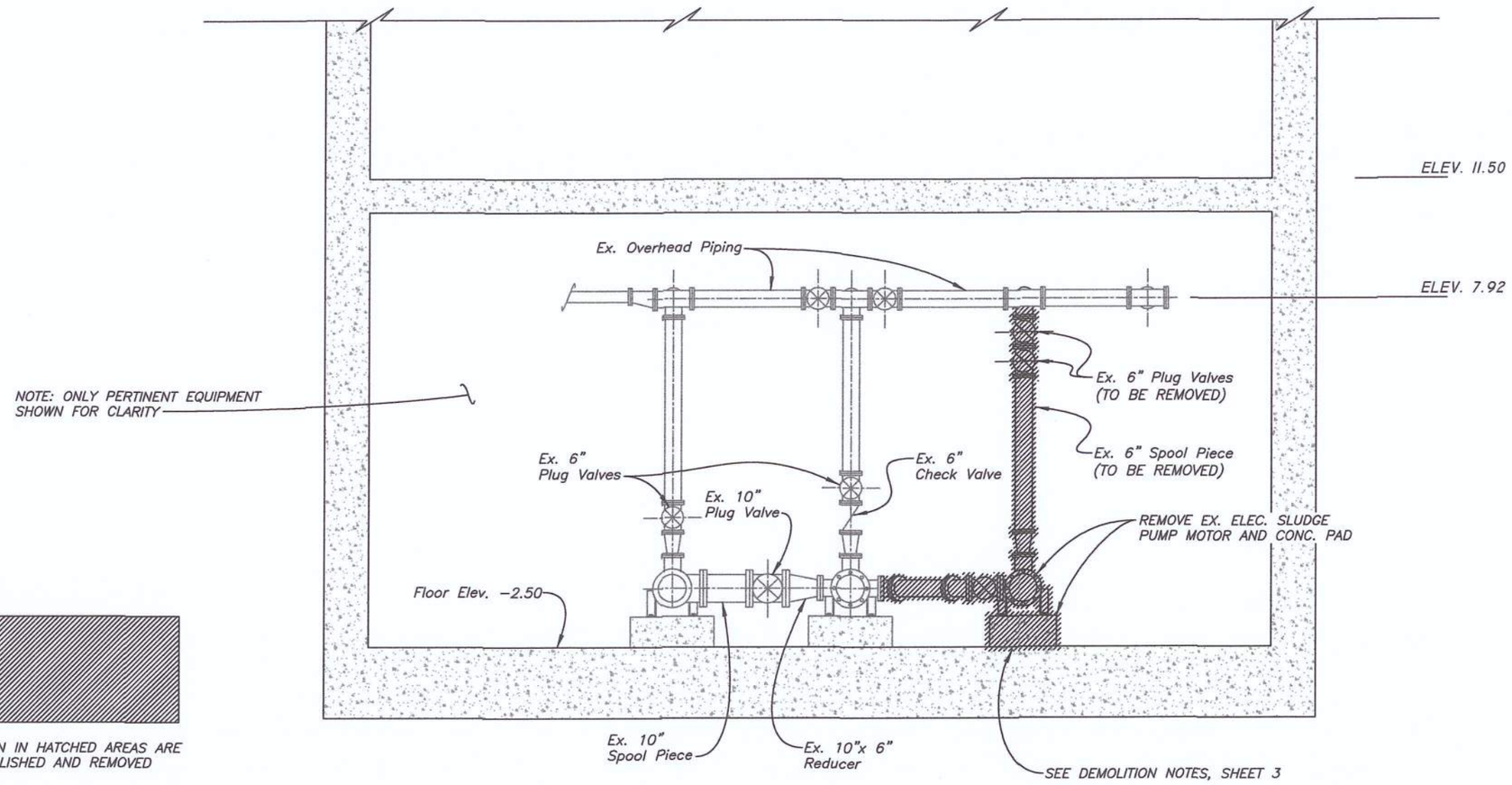
CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION PUMP REPLACEMENT
DEMOLITION PLAN - PLAN VIEW

W.O. 5983
SHEET 4 OF 28

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TPB014-005



ITEMS SHOWN IN HATCHED AREAS ARE TO BE DEMOLISHED AND REMOVED

NOTE:

SEE ELECTRICAL SHEETS FOR ELECTRICAL DEMOLITION PLANS.

MIXED SLUDGE PUMPING STATION
DEMOLITION PLAN - SECTION A-A

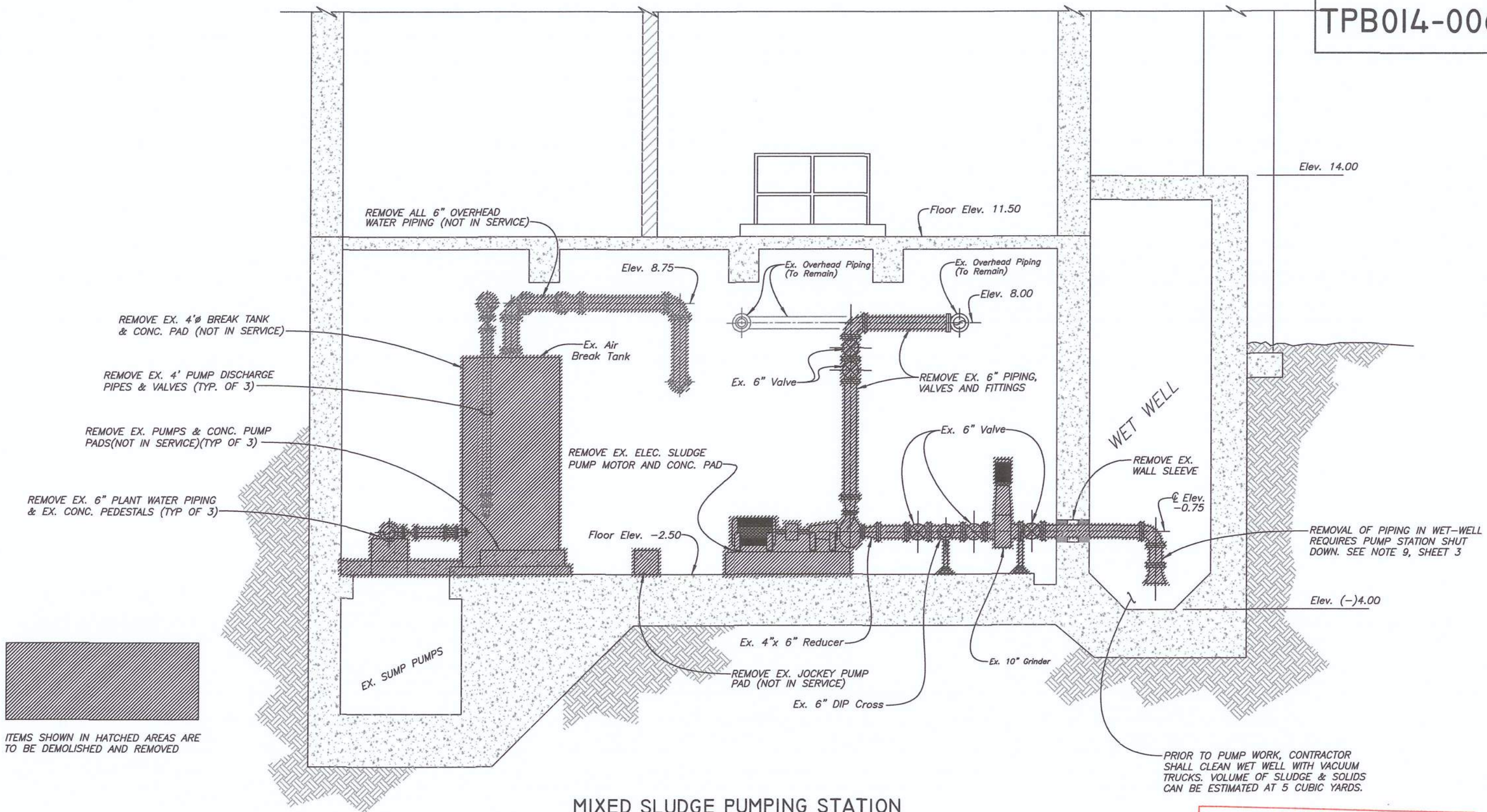
SCALE: 1/4" = 1'-0"

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John H. Granger, President
John H Granger 12/15/16
Signature Date
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	No.	DATE	REVISIONS				
JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	3			DES: D.R. DRN: CKD: DATE:	CITY of TAMPA WASTEWATER DEPARTMENT	HOWARD F. CURREN A.W.T.P. MIXED SLUDGE PUMPING STATION PUMP REPLACEMENT DEMOLITION PLAN - SECTION A-A	W.O. 5983 SHEET 5 OF 28
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TPB014-006



ITEMS SHOWN IN HATCHED AREAS ARE TO BE DEMOLISHED AND REMOVED

NOTE:

SEE ELECTRICAL SHEETS FOR ELECTRICAL DEMOLITION PLANS.

MIXED SLUDGE PUMPING STATION
DEMOLITION PLAN - SECTION B-B

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

As-Built Drawings
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John H. Granger, President
John H. Granger 12/15/16
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DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

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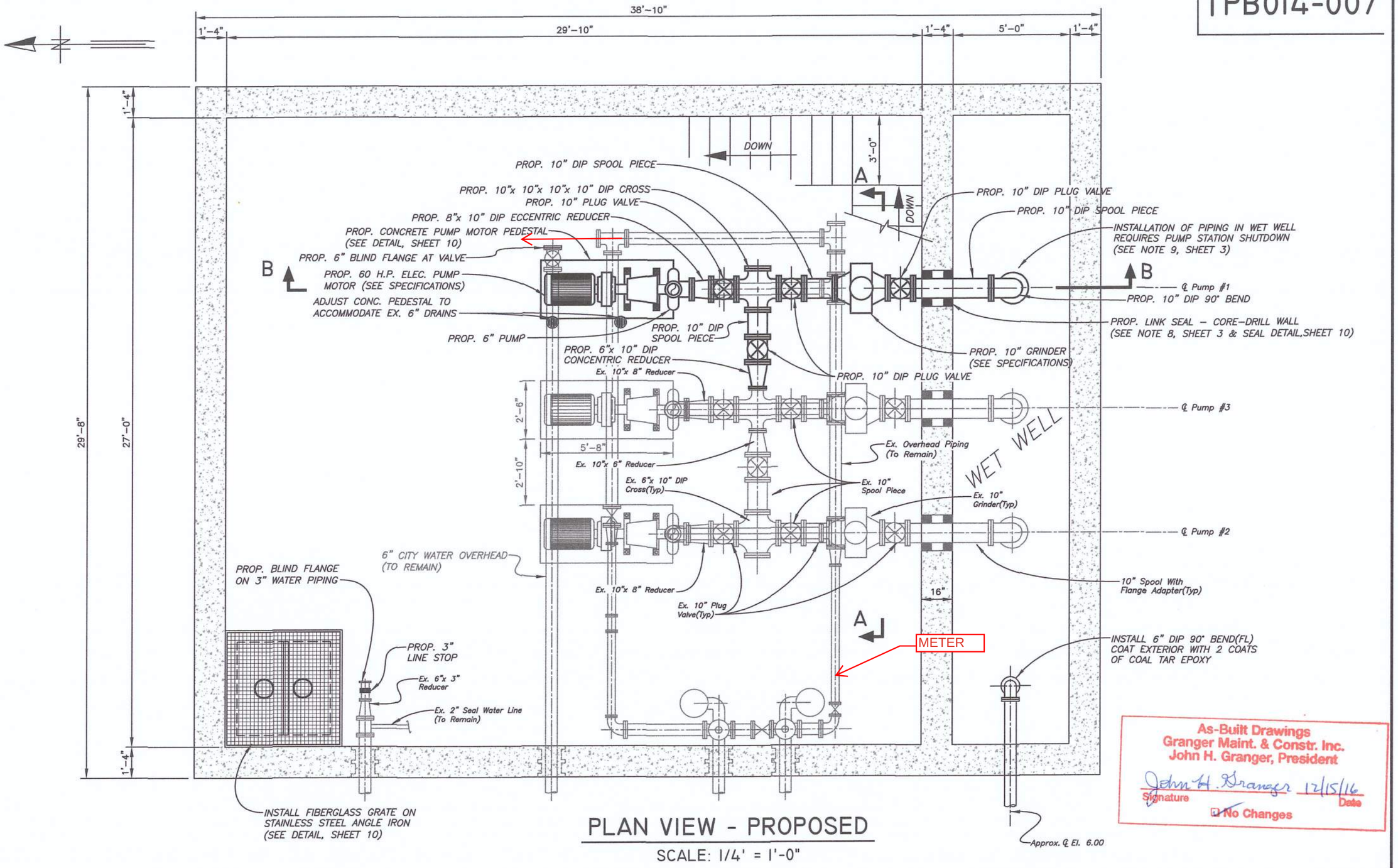
CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION PUMP REPLACEMENT
DEMOLITION PLAN - SECTION B-B

W.O. 5983
SHEET 6 OF 28

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John H. Granger 12/15/16
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☑ No Changes

PLAN VIEW - PROPOSED

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

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DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

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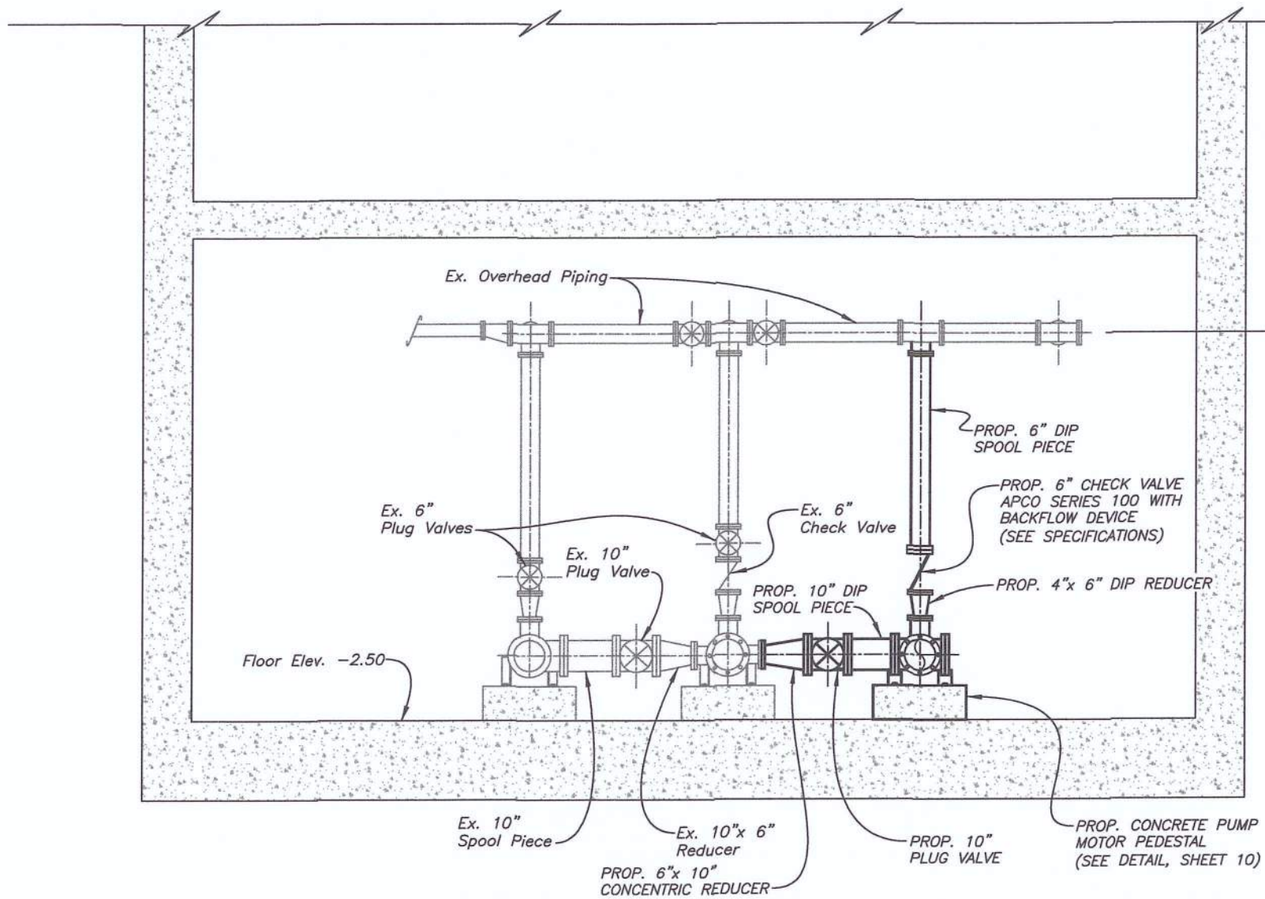
CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION PUMP REPLACEMENT
PROPOSED PLAN - PLAN VIEW

W.O. 5983
SHEET 7 OF 28

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TPB014-008



MIXED SLUDGE PUMPING STATION
PROPOSED PLAN - SECTION A-A

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

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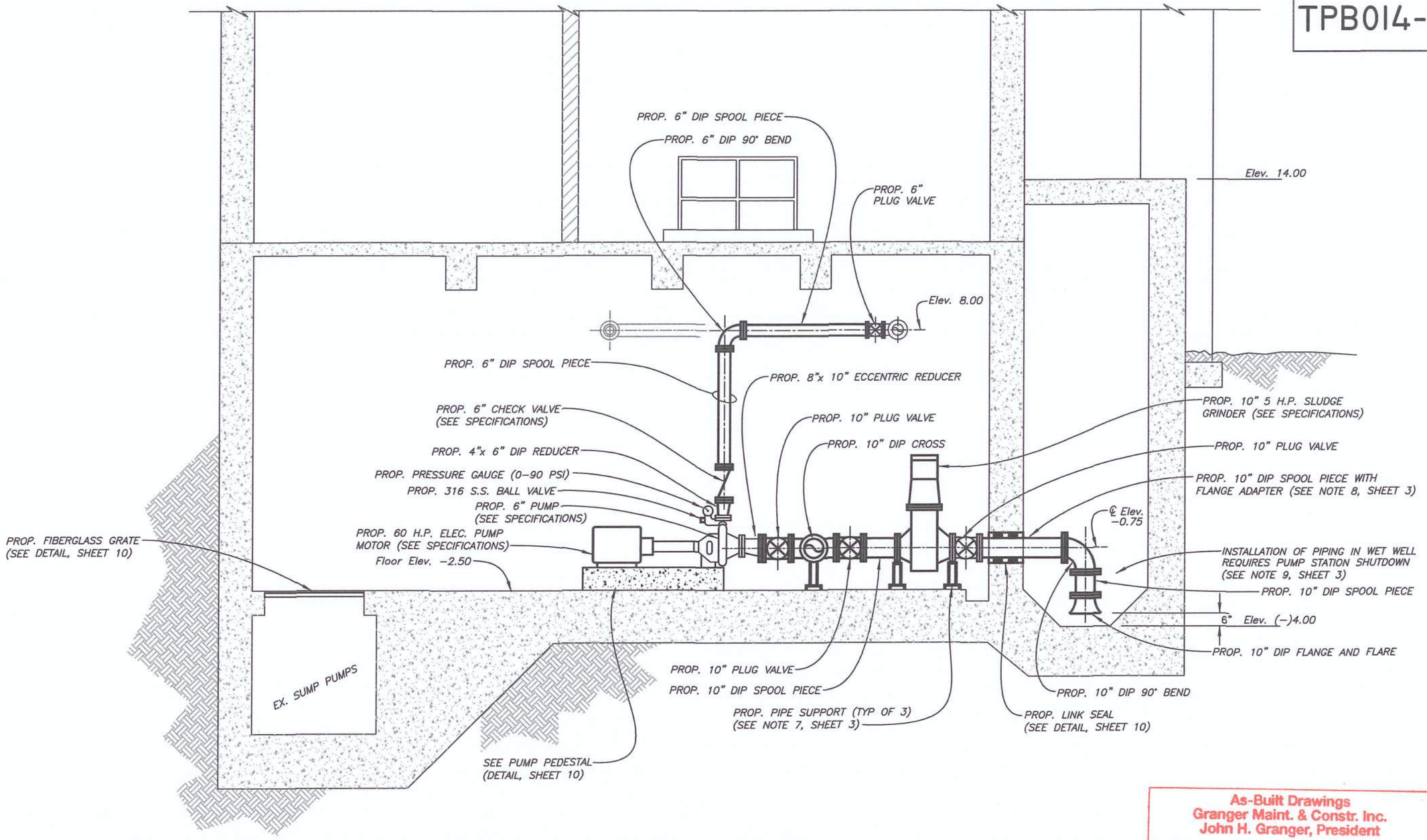
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CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION PUMP REPLACEMENT
PROPOSED PLAN - SECTION A-A

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SHEET 8 OF 28

TPB014-009



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MIXED SLUDGE PUMPING STATION
PROPOSED PLAN - SECTION B-B

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

No.	DATE	REVISIONS
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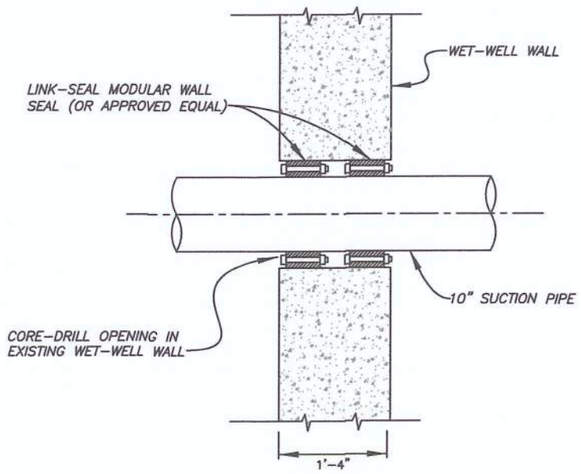
CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION PUMP REPLACEMENT
PROPOSED PLAN - SECTION B-B

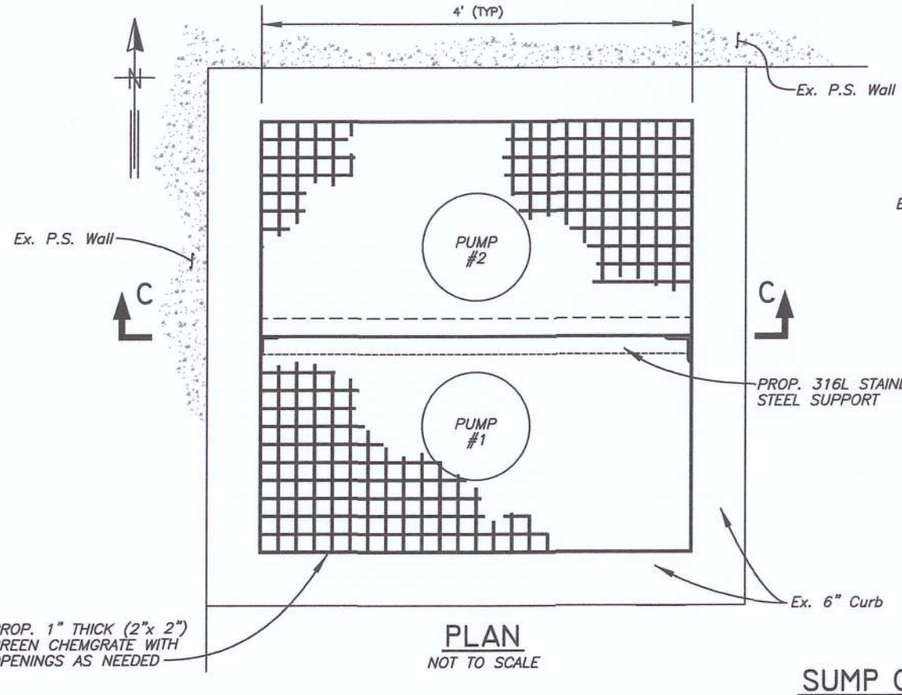
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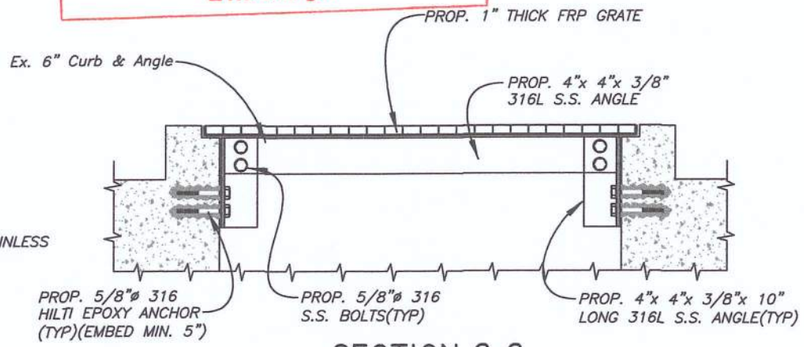
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John H. Granger 12/15/16
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LINK SEAL DETAIL
NOT TO SCALE



PLAN
NOT TO SCALE



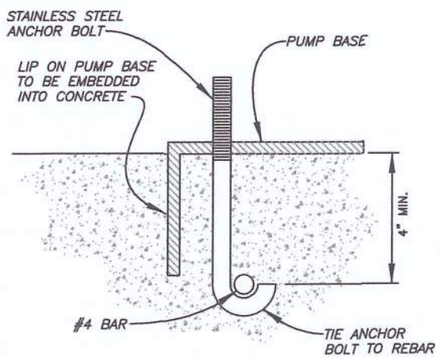
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NOTE:
CONTRACTOR TO PROVIDE ADDITIONAL SUPPORTS AS NEEDED AROUND GRATE OPENINGS

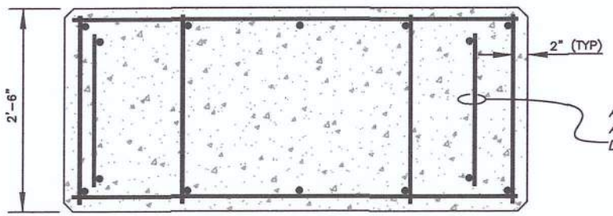
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NOTES

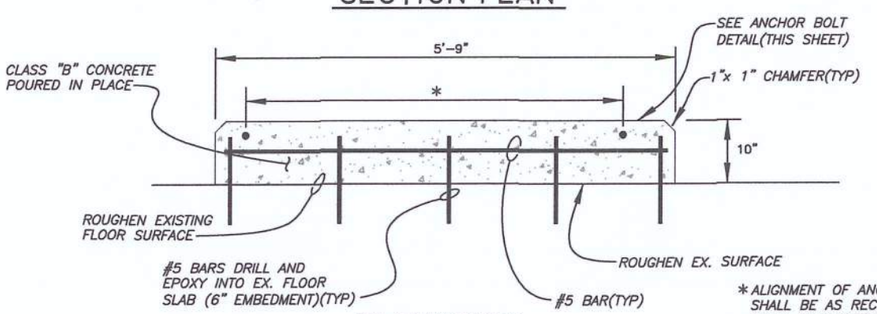
1. ALL PIPE, VALVES AND FITTINGS SHALL BE ½" DIAMETER.
2. SEAL WATER PIPING SHALL BE 316 STAINLESS STEEL TUBING OR 316 STAINLESS STEEL BRAIDED HOSE, AS NECESSARY.
3. ALL BALL VALVES ARE TO BE 316 STAINLESS STEEL, FULL PORT BALL VALVES.



ANCHOR BOLT DETAIL
NOT TO SCALE



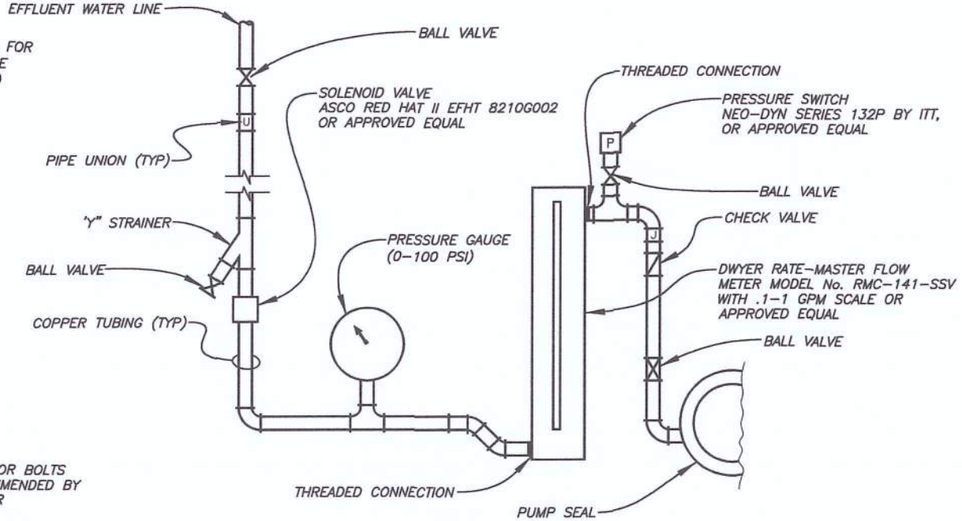
SECTION PLAN



ELEVATION

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

PUMP PEDESTAL REINFORCEMENT DETAIL
NOT TO SCALE



SEAL WATER DETAIL
NOT TO SCALE

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

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CITY of TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION PUMP REPLACEMENT DETAILS

W.O. 5983
SHEET 10 OF 28

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TPB014-011

SCOPE OF WORK:

THE SCOPE OF WORK UNDER THIS DIVISION CONSISTS OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT AND TRANSPORTATION, AND PERFORMING ALL OPERATIONS REQUIRED TO SUPPORT THE INSTALLATION AND COMMISSIONING OF THE ELECTRICAL PORTION OF THE PROPOSED MIXED SLUDGE PUMPING STATION REHABILITATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

A. SUBMIT WORKING DRAWINGS, PARTS SCHEDULES, AND CUT-SHEETS TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING WORK.

B. FURNISH AND INSTALL ALL ELECTRICAL EQUIPMENT, CONTROLS, AND INSTRUMENTATION AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS. THIS INSTALLATION INCLUDES:

1. DISCONNECT AND REMOVE / MODIFY THE ELECTRICAL EQUIPMENT ASSOCIATED WITH THE EXISTING SLUDGE PUMP NO.1 AND GRINDER NO.1. PORTIONS OF THE EXISTING CONDUIT, CONDUCTOR, AND ANCILLARY SYSTEMS MAY BE REUSED IF THEY ARE FOUND IN GOOD CONDITION, AND THEY DO NOT INTERFERE WITH OTHER ASPECTS OF THE PROPOSED MECHANIZATION. REMOVE ALL LOCALLY MOUNTED CONTROL EQUIPMENT INCLUDING CONTROLLERS, PUSHBUTTONS, SOLENOIDS, LIMIT SWITCHES, ETCETERA, ASSOCIATED WITH THE EXISTING SLUDGE PUMP NO.1 AND GRINDER NO.1.

2. FURNISH AND INSTALL IN THE BASEMENT: SLUDGE PUMP NO.1 MOTOR, PUSHBUTTON STATION, SEAL WATER SOLENOID, AND SEAL WATER PRESSURE SWITCH, AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

3. FURNISH AND INSTALL IN THE BASEMENT: GRINDER NO.1 MOTOR, DISCONNECT SWITCH, AND NEMA 4X S/S CONTROLLER, AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

4. FURNISH AND INSTALL ALL NECESSARY RIGID ALUMINUM CONDUITS, CONDUCTORS AND GROUNDING AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

5. MODIFY THE EXISTING MOTOR CONTROL CENTERS, MCC-40 AND MCC-41, AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

6. MODIFY THE EXISTING INSTRUMENTATION AND CONTROL PANEL, AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

7. SUPPLY, AND PULL THROUGH THE EXISTING CONDUITS, ANY NECESSARY CONDUCTORS TO PROVIDE SLUDGE PUMP/GRINDER NO.1 FAULT INFORMATION TO THE EXISTING SCADA RTU. FINAL RTU CONNECTIONS WILL BE MADE BY CITY FORCES.

GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.

2. ALL CONDUCTORS SHALL BE STRANDED COPPER, AWG 12 MIN. w/ THWN INSULATION, UNLESS OTHERWISE NOTED.

3. ALL WIRING SHALL BE IDENTIFIED w/ NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.

4. VERIFY ALL MECHANICAL EQUIPMENT SIZES AND RATINGS PRIOR TO CONNECTING.

5. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.

6. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE w/ CHAPTER 27 OF THE FLORIDA BUILDING CODE, THE NEC AND ALL APPLICABLE LOCAL ORDINANCES.

7. ALL THREADED CONNECTIONS SHALL BE COATED w/ COPPER SHIELD ANTI-SEIZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & B).

8. ALL PANELS, DISCONNECTS, SWITCHES AND EQUIPMENT COVERPLATES SHALL BE LABELED w/ NAMEPLATES. NAMEPLATES SHALL BE THREE-PLY PHENOLIC BLACK-WHITE-BLACK ENGRAVED THROUGH THE FIRST BLACK LAYER. LETTERING SHALL BE 0.5 CM (3/16") MIN. EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.

9. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'-0" INTERVALS.

10. ALL CIRCUITS SHALL HAVE A GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT w/ POWER CONDUCTORS.

11. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS. NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.

12. NEATLY COIL ALL SPARE CONDUCTORS & TAPE w/ VINYL ELECTRICAL TAPE (SCOTCH 33+). U.O.N.

13. PROVIDE A MINIMUM OF 3'-0" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE w/ ARTICLE 110 OF THE NEC.

14. ALL INSTALLATIONS SHALL BE IN ACCORDANCE w/ CITY OF TAMPA CODE, CHAPTER 5.

15. ALL FASTENING HARDWARE (SCREWS, BOLTS, NUTS, ETC.) SHALL BE 316 STAINLESS STEEL. FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.

16. ALL CONDUITS SHALL BE RIGID HEAVY WALL ALUMINUM CONDUIT.

17. A 316 STAINLESS STEEL CHANNEL ERECTOR SYSTEM SHALL BE USED TO SUPPORT ALL CONDUITS, BOXES, ETC. USE 316 STAINLESS STEEL MOUNTING HARDWARE. EXISTING UNISTRUT SUPPORTS MAY BE USED WHERE PRACTICABLE.

18. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND MAKE ADJUSTMENTS AS NECESSARY TO EXECUTE THE PROPOSED INSTALLATIONS.

19. 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.

LEGEND

- DISCONNECTING DEVICE
- MCP 100 300 — MOTOR CIRCUIT PROTECTOR; 100 AMPERE CONTINUOUS RATING; 300 AMPERE MAGNETC TRIP SETTING
- CVT — CONTROL POWER TRANSFORMER
- FUSE
- NORMALLY OPEN CONTACT — OR TIME DELAY RELAY INSTANT TRANSFER SWITCH
- NORMALLY CLOSED CONTACT — OR TIME DELAY RELAY INSTANT TRANSFER SWITCH
- IM — MOTOR STARTER COIL
- MOL — MOTOR THERMAL OVERLOAD
- R — PILOT LIGHT (RED LENS)
- TERMINAL STRIP
- ETM — HOUR METER
- STOP/L — STOP PUSHBUTTON WITH PROVISIONS FOR PADLOCK
- OFF, 1, 3 — 3 POSITION SELECTION SWITCH
- LS1 — LIMIT SMITCH, NORMALLY OPEN
- LS3 — LIMIT SWITCH, NORMALLY CLOSED
- PSI — PRESSURE SWITCH, NORMALLY CLOSED
- 30 — 3 PHASE MOTOR, 30 H.P.
- MOUNTED NEAR EQUIPMENT OR MOTOR (LOCAL)
- NEUTRAL
- N.O. PUSHBUTTON
- N.C. PUSHBUTTON
- TR — NORMALLY OPEN "ON DELAY" TIMING RELAY
- TR — NORMALLY OPEN "ON DELAY" TIMING RELAY
- TR — INSTANT CLOSE – DELAY OPEN TIMING RELAY (OFF DELAY)
- TR — INSTANT OPEN – DELAY CLOSE TIMING RELAY (OFF DELAY)
- CR — CONTROL RELAY COIL
- TR — TIME DELAY RELAY COIL
- SV — SOLENOID VALVE
- 3FVNR — NEMA SIZE 3 FULL VOLTAGE, NON-REVERSING MOTOR STARTER
- CB 15 — THERMAL MAGNETIC CIRCUIT BREAKER 15 AMP
- H 0 A — HAND-OFF-AUTO SWITCH
- L — LOCKABLE STOP PUSH BUTTON
- SOLENOID VALVE
- J — JUNCTION BOX
- 3 — 3 H.P. MOTOR; LIQUID TIGHT FLEX CONDUIT
- SAFETY SWITCH
- 1 — MOUNTED ON INSTRUMENTATION – CONTROL PANEL
- SSRV — SOLID STATE REDUCED VOLTAGE MOTOR STARTER

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H Granger 12/15/16
Signature Date
No Changes

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

No.	DATE	REVISIONS
3		
2		
1		

TIMOTHY THOMAS, P.E. #47079

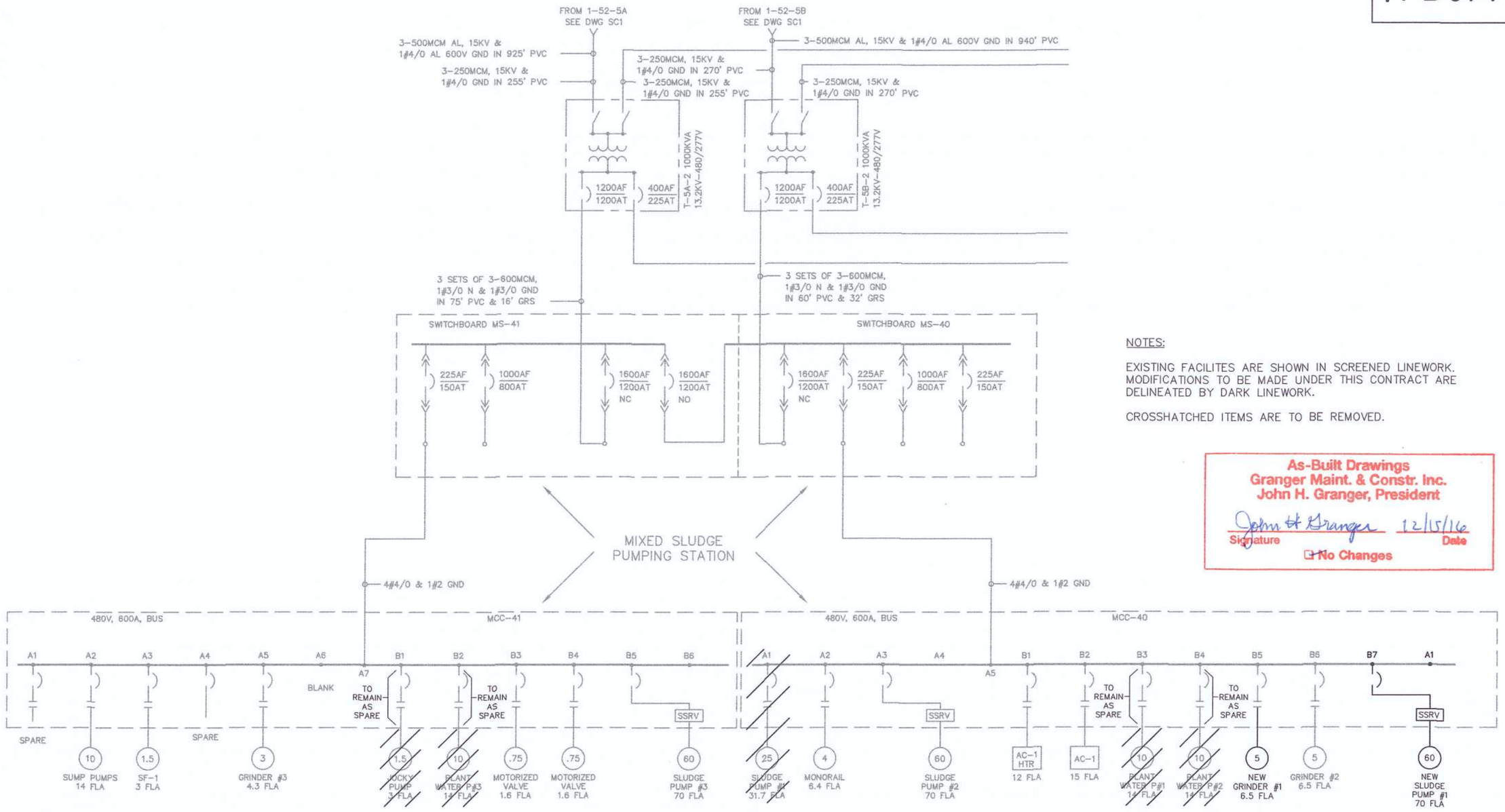
DES: T.DT.
DRN: E.A.K.
CKD: T.DT.
DATE: 9-9-14

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
SCOPE, NOTES AND LEGEND

W.O. 5983
SHEET
E1

TPB014-012



NOTES:

EXISTING FACILITES ARE SHOWN IN SCREENED LINEWORK. MODIFICATIONS TO BE MADE UNDER THIS CONTRACT ARE DELINEATED BY DARK LINEWORK.

CROSSHATCHED ITEMS ARE TO BE REMOVED.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H Granger 12/15/16
Signature Date
No Changes

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

TIMOTHY THOMAS, P.E. #47079

No.	DATE	REVISIONS
3		
2		
1		

DES: T.DT.
DRN: E.A.K.
CKD: T.DT.
DATE: 9-9-14

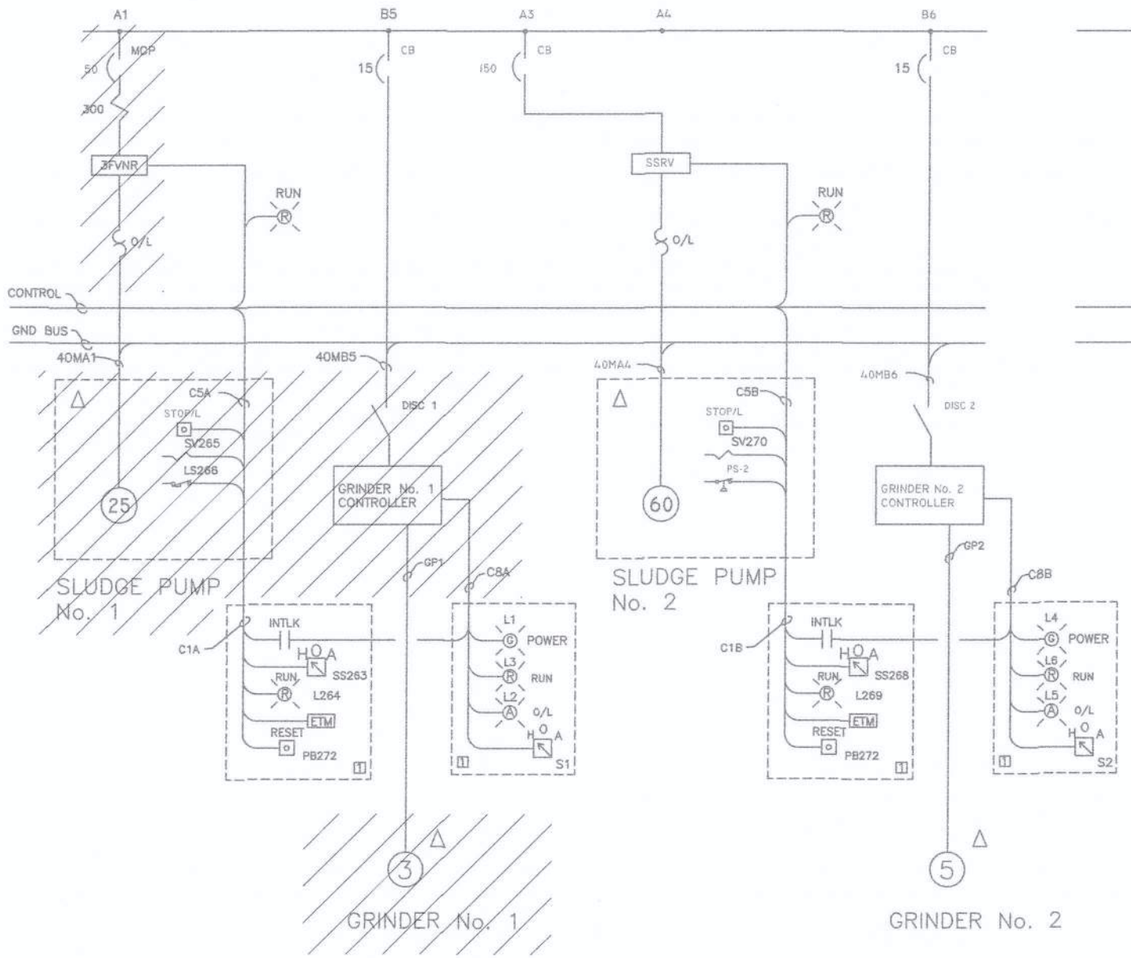
CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
PROPOSED OVERALL ONE-LINE DIAGRAM

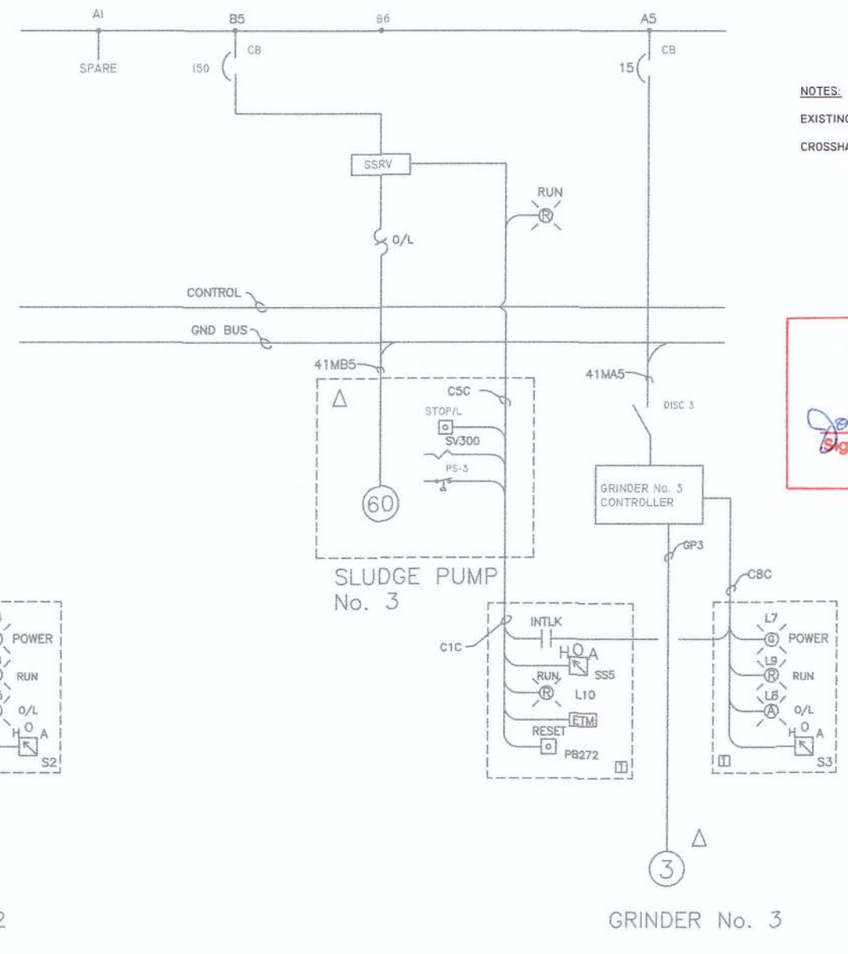
W.O. 5983
SHEET E2

TPB014-013

MCC-40



MCC-41



NOTES:

EXISTING ITEMS SHOWN IN SCREENED LINEWORK.

CROSSHATCHED ITEMS ARE TO BE REMOVED.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President

John H Granger 12/15/16
Signature Date

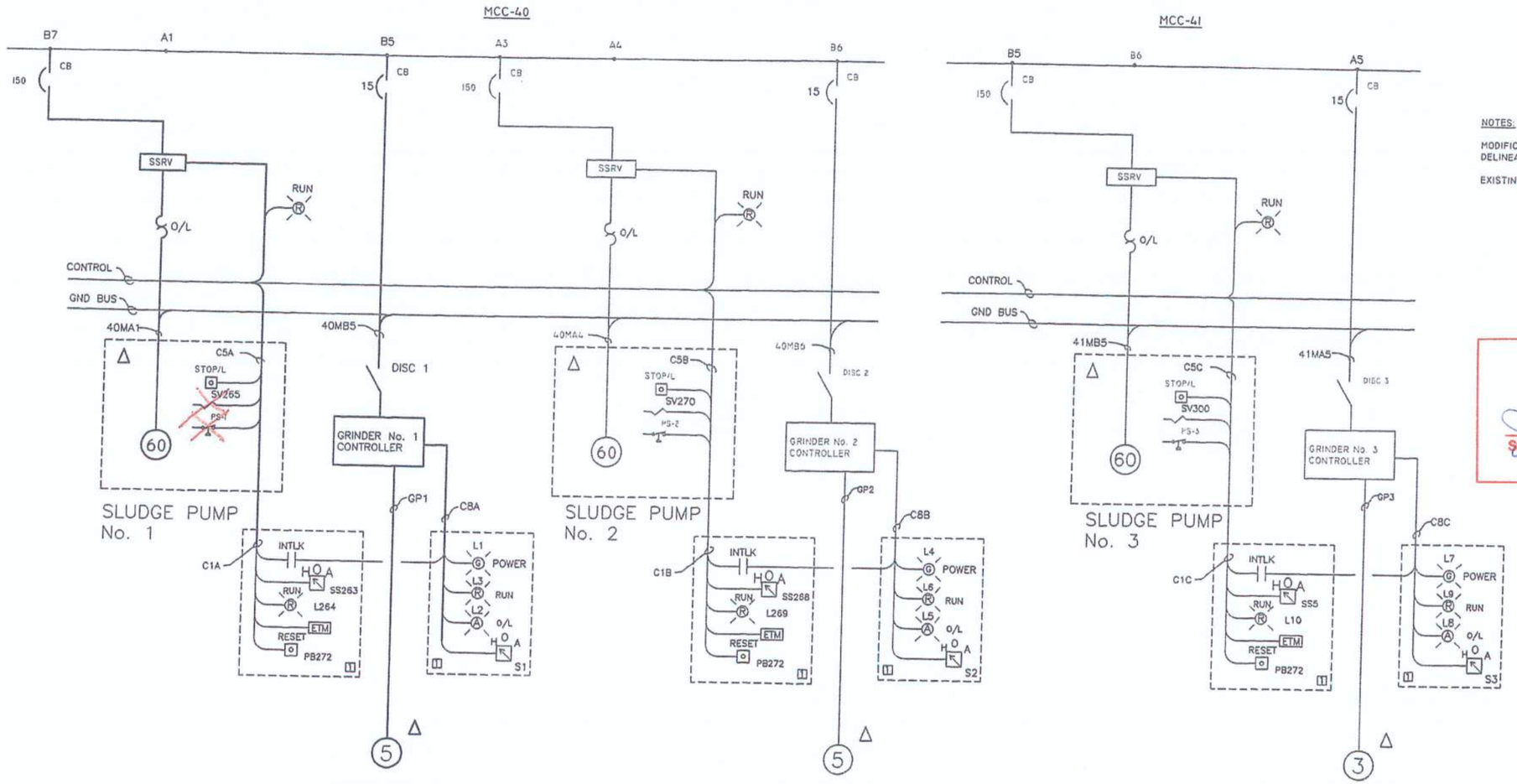
☑ No Changes

SLUDGE PUMPING SYSTEM
EXISTING ONE LINE DIAGRAM

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

	No.	DATE	REVISIONS				
TIMOTHY THOMAS, P.E. #47079	3			DES: T.DT.	CITY of TAMPA	HOWARD F. CURREN A.W.T.P.	W.O. 5983
	2			DRN: E.A.K.	HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	MIXED SLUDGE PUMPING STATION REHABILITATION	SHEET E3
	1			CKD: T.DT.		EX. PUMPING SYSTEM ONE-LINE DIAGRAM AND DEMO	
				DATE: 9-9-14			

TPB014-014



NOTES:

MODIFICATIONS TO BE MADE UNDER THIS CONTRACT ARE DELINEATED BY DARK LINEWORK.

EXISTING ITEMS TO REMAIN SHOWN IN SCREENED LINEWORK.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President

John H. Granger 12/15/16
Signature Date

☐ No Changes

SLUDGE PUMPING SYSTEM
PROPOSED ONE LINE DIAGRAM

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

RECORD DRAWINGS BS 4/11/16

No.	DATE	REVISIONS
3		
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TIMOTHY THOMAS, P.E. #47079

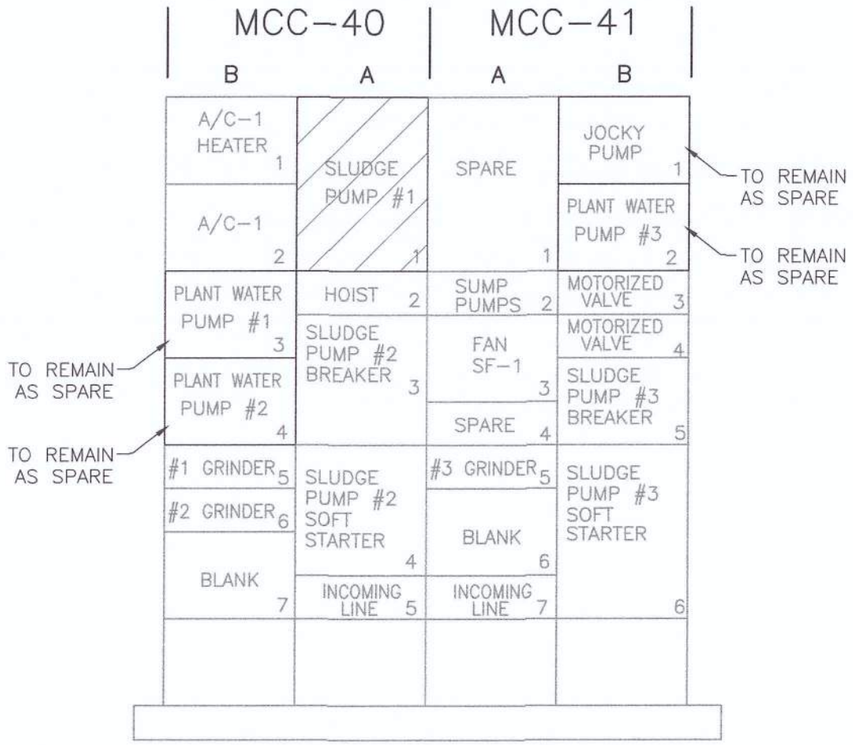
DES: T.DT.
DRN: E.A.K.
CKD: T.DT.
DATE: 9-9-14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
PROPOSED PUMPING SYSTEM ONE-LINE DIAGRAM

W.O. 5983
SHEET E4

TPB014-015

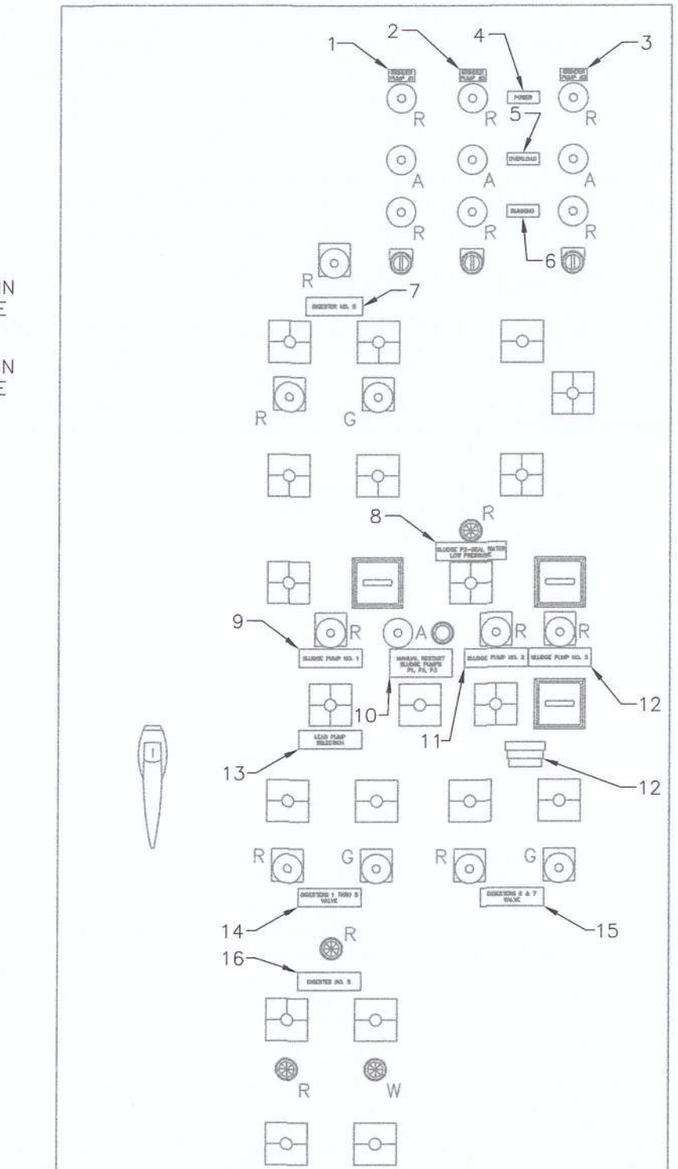


EXISTING MCC–40 AND MCC–41
FRONT ELEVATION

NOTES:

EXISTING ITEMS SHOWN IN SCREENED LINEWORK.

CROSSHATCHED ITEMS ARE TO BE REMOVED/MODIFIED.



EXISTING INSTRUMENTATION
CONTROL PANEL FRONT ELEVATION

EXISTING NAME PLATE LEGEND	
ITEM	DEVICE
1	GRINDER PUMP #1
2	GRINDER PUMP #2
3	GRINDER PUMP #3
4	POWER
5	OVERLOAD
6	RUNNING
7	DIGESTER No. 5
8	SLUDGE P2–SEAL WATER LOW PRESSURE
9	SLUDGE PUMP No. 1
10	MANUAL RESTART SLUDGE PUMPS P1, P2, P3
11	SLUDGE PUMP No. 2
12	SLUDGE PUMP No. 3
13	LEAD PUMP SELECTION
14	DIGESTERS 1 THRU 5 VALVE
15	DIGESTERS 6 & 7 VALVE
16	DIGESTER No. 8

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
☑ No Changes

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

	No.	DATE	REVISIONS				
TIMOTHY THOMAS, P.E. #47079	3			DES: T.DT. DRN: E.A.K. CKD: T.DT. DATE: 9–9–14	CITY of TAMPA HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	HOWARD F. CURREN A.W.T.P. MIXED SLUDGE PUMPING STATION REHABILITATION EX. MCC & INSTRUMENTATION PANEL ELEVATION	W.O. 5983 SHEET E5
	2						
	1						

TPB014-016

TYPE: GE, MODEL 8000 LINE
VOLT: 480V, 3PH, 4W
MTG: FREE STANDING – FRONT ACC.

MCC – 40

MAINS – 225A – FULL NEU
CONN. LOAD = 146KVA

CKT No.	DESIGNATION	HP	KVA	V	PH	FRAME SIZE	TRIP RANGE	STARTER	WIRE	COND	REMARKS
A–1	SLUDGE PUMP #1	25	27	480	3	100	330/1200	3FVNR	3–#4, 1#8	1–1/2	
A–2	HOIST	4	5.3			100	18/58	–	4–#10	3/4	
A–3	SLUDGE PUMP #2	60	61.3			150	450/2000				72 AMP SOLID STATE REDUCED VOLTAGE MOTOR STARTER
A–4								72 RVNR	4–#3, 1–#8	1–1/2	
A–5	INCOMING LINE	–	–				–	–	–	–	
B–1	AC–1 HEATER	–	10			100	30	1FVNR	4–#10	3/4	
B–2	AC–1	–	12				20	1FVNR	4–#12	3/4	
B–3	PLANT WATER P#1	10	10.5				100/300	1FVNR	4–#10	3/4	
B–4	PLANT WATER P#2	10	10.5				100/300	1FVNR	4–#10	3/4	
B–5	#1 GRINDER	3	3.8				15	–	4–#12	3/4	
B–6	#2 GRINDER	5	6.0				15	–	4–#12	3/4	
B–7	BLANK	–	–				–	–	–	–	

TYPE: GE, MODEL 8000 LINE
VOLT: 480V, 3PH, 4W
MTG: FREE STANDING – FRONT ACC.

MCC – 41

MAINS – 225A – FULL NEU
CONN. LOAD = 95KVA

CKT No.	DESIGNATION	HP	KVA	V	PH	FRAME SIZE	TRIP RANGE	STARTER	WIRE	COND	REMARKS
A–1	SPARE	–	–	480	3	100	330/1200	3FVNR	–	–	
A–2	SUMP PUMPS	10	12.2				50/150	–	4–#10	3/4	
A–3	FAN SF–1	1–1/2	2.5				8/22	1FVNR	4–#12	3/4	WITH H–O–A SW.
A–4	SPARE	–	–				15	–	–	–	
A–5	#3 GRINDER	3	3.8				15	–	4–#12	3/4	
A–6	BLANK	–	–				–	–	–	–	
A–7	INCOMING LINE	–	–				–	–	–	–	
B–1	JOCKEY PUMP	1–1/2	2.5				18/58	1FVNR	4–#12	3/4	
B–2	PLANT WATER P#3	10	10.5				100/300	1FVNR	4–#10	3/4	
B–3	MOTORIZED VALVE	3/4	1.05				20	–	4–#12	3/4	
B–4	MOTORIZED VALVE	3/4	1.05				20	–	4–#12	3/4	
B–5	SLUDGE PUMP #3	60	61.3			150	450/2000				72 AMP SOLID STATE REDUCED VOLTAGE MOTOR STARTER
B–6								72 RVNR	4–#3, 1–#8	1–1/2	

NOTES:

CROSSHATCHED ITEMS ARE TO BE REMOVED.

EXISTING FACILITES ARE SHOWN IN SCREENED LINEWORK.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
☑ No Changes

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

TIMOTHY THOMAS, P.E. #47079

No.	DATE	REVISIONS
3		
2		
1		

DES: T.DT.
DRN: E.A.K.
CKD: T.DT.
DATE: 9–8–14

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
EXISTING MCC SCHEDULES

W.O. 5983
SHEET E6

TPB014-017

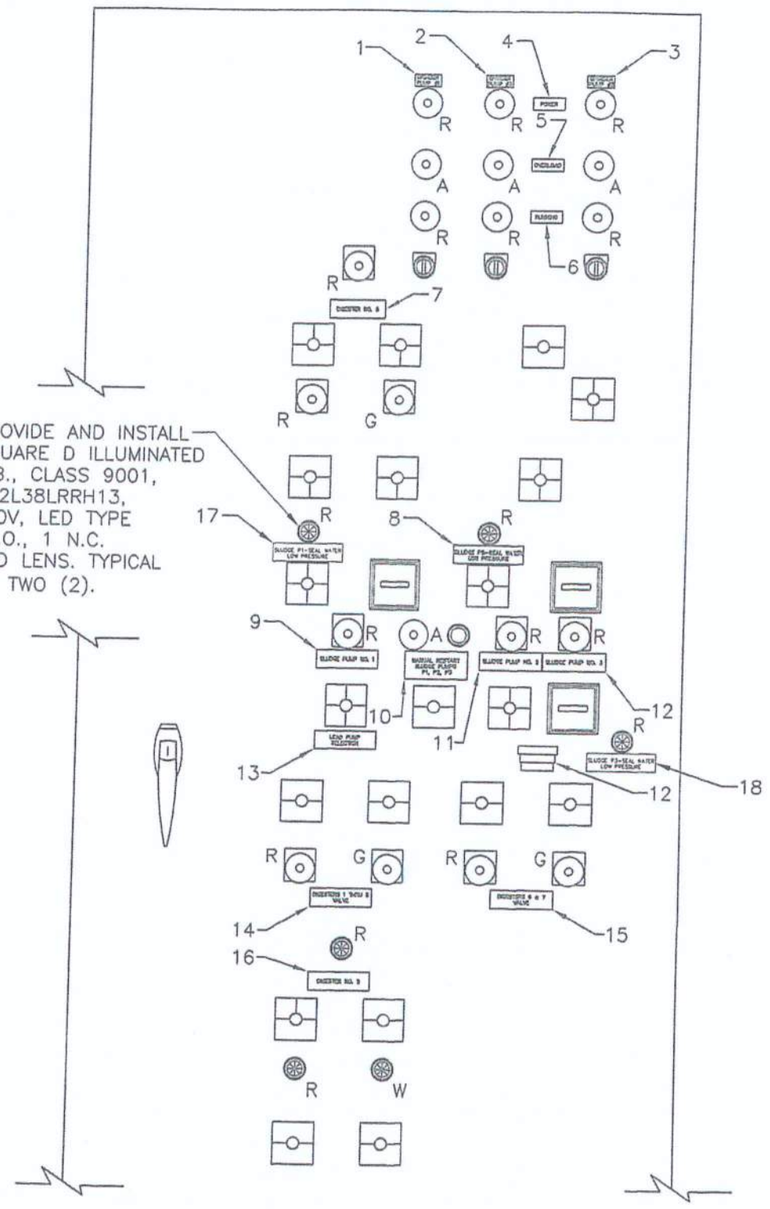
MCC-40 B	MCC-40 A	MCC-41 A	MCC-41 B
A/C-1 HEATER 1	SLUDGE PUMP #1 SOFT STARTER 1	SPARE 1	SPARE 1
A/C-1 2			SPARE 2
SPARE 3	HOIST 2	SUMP PUMPS 2	MOTORIZED VALVE 3
	SLUDGE PUMP #2 BREAKER 3	FAN SF-1 3	MOTORIZED VALVE 4
#1 GRINDER 3		SPARE 4	SLUDGE PUMP #3 BREAKER 5
SPARE 4			
BLANK SPACE #1 GRINDER 5	SLUDGE PUMP #2 SOFT STARTER 4	#3 GRINDER 5	SLUDGE PUMP #3 SOFT STARTER 6
#2 GRINDER 6		BLANK 6	
SLUDGE PUMP #1 CIRCUIT BREAKER 7	INCOMING LINE 5	INCOMING LINE 7	

PROPOSED MODIFICATIONS TO
EXISTING MCC-40
FRONT ELEVATION

NOTES:

MODIFICATIONS TO BE MADE UNDER THIS CONTRACT ARE DELINEATED BY DARK LINEWORK.

EXISTING ITEMS TO REMAIN SHOWN IN SCREENED LINEWORK.



PROPOSED MODIFICATIONS TO
CONTROL PANEL

REVISED NAME PLATE LEGEND	
ITEM	DEVICE
1	GRINDER PUMP #1
2	GRINDER PUMP #2
3	GRINDER PUMP #3
4	POWER
5	OVERLOAD
6	RUNNING
7	DIGESTER No. 5
8	SLUDGE P2-SEAL WATER LOW PRESSURE
9	SLUDGE PUMP No. 1
10	MANUAL RESTART SLUDGE PUMPS P1, P2, P3
11	SLUDGE PUMP No. 2
12	SLUDGE PUMP No. 3
13	LEAD PUMP SELECTION
14	DIGESTERS 1 THRU 5 VALVE
15	DIGESTERS 6 & 7 VALVE
16	DIGESTER No. 8
17	SLUDGE P1-SEAL WATER LOW PRESSURE
18	SLUDGE P3-SEAL WATER LOW PRESSURE

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
☐ No Changes

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 870, Tampa, FL 33602, 813.227.9190, Certificate of Authorization No. 8303

RECORD DRAWINGS B.S. 4/11/16

No.	DATE	REVISIONS
3		
2		
1		

TIMOTHY THOMAS, P.E. #47079

DES: T.DT.
DRN: E.A.K.
CKD: T.DT.
DATE: 9-8-14

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
PROP. MCC & INSTRUMENTATION PANEL ELEVATION

W.O. 5983
SHEET E7

TPB014-018

TYPE: GE, MODEL 8000 LINE
VOLT: 480V, 3PH, 4W
MTG: FREE STANDING – FRONT ACC.

MCC – 40

MAINS – 225A – FULL NEU
CONN. LOAD = 162KVA

CKT No.	DESIGNATION	HP	KVA	V	PH	FRAME SIZE	TRIP RANGE	STARTER	WIRE	COND	REMARKS
A–1	SLUDGE PUMP #1	60	61.3	480	3			85 RVNR	4–#3, 1–#8	1–1/2	85 AMP SOLID STATE REDUCED VOLTAGE MOTOR STARTER
A–2	HOIST	4	5.3			100	18/58	–	4–#10	3/4	
A–3	SLUDGE PUMP #2	60	61.3			150	450/2000				72 AMP SOLID STATE REDUCED VOLTAGE MOTOR STARTER
A–4								72 RVNR	4–#3, 1–#8	1–1/2	
A–5	INCOMING LINE	–	–				–	–	–	–	
B–1	AC–1 HEATER	–	10			100	30	1FVNR	4–#10	3/4	
B–2	AC–1	–	12				20	1FVNR	4–#12	3/4	
B–3	SPARE	–	–				100/300	1FVNR	–	–	
B–4	#1 ~~SPARE~~	–	–				~~100/300~~	~~1FVNR~~	–	–	#1 GRINDER RELOCATED FROM B-5
B–5	~~#1~~ #2 GRINDER	5	6.0			100	15	–	4–#12	3/4	#2 GRINDER RELOCATED FROM B-6
B–6	~~#2 GRINDER~~	~~5~~	~~6.0~~				~~15~~	–	~~4–#12~~	~~3/4~~	BLNK SPACE
B–7	SLUDGE PUMP #1	60	61.3			150	150	–	4–#3, 1–#8	–	CIRCUIT BREAKER FOR SSRV IN MCC–40 A1

#1 GRINDER →

BLNK SPACE →

19" BUCKET

TYPE: GE, MODEL 8000 LINE
VOLT: 480V, 3PH, 4W
MTG: FREE STANDING – FRONT ACC.

MCC – 41

MAINS – 225A – FULL NEU
CONN. LOAD = 82KVA

CKT No.	DESIGNATION	HP	KVA	V	PH	FRAME SIZE	TRIP RANGE	STARTER	WIRE	COND	REMARKS
A–1	SPARE	–	–	480	3	100	330/1200	3FVNR			
A–2	SUMP PUMPS	10	12.2				50/150	–	4–#10	3/4	
A–3	FAN SF–1	1–1/2	2.5				8/22	1FVNR	4–#12	3/4	WITH H–O–A SW.
A–4	SPARE	–	–				15	–	–	–	
A–5	#3 GRINDER	3	3.8				15	–	4–#12	3/4	
A–6	BLANK	–	–				–	–	–	–	
A–7	INCOMING LINE	–	–				–	–	–	–	
B–1	SPARE	–	–				18/58	1FVNR	–	–	
B–2	SPARE	–	–				100/300	1FVNR	–	–	
B–3	MOTORIZED VALVE	3/4	1.05			100	20	–	4–#12	3/4	
B–4	MOTORIZED VALVE	3/4	1.05				20	–	4–#12	3/4	
B–5	SLUDGE PUMP #3	60	61.3			150	450/2000				72 AMP SOLID STATE REDUCED VOLTAGE MOTOR STARTER
B–6								72 RVNR	4–#3, 1–#8	1–1/2	

NOTES:

MODIFICATIONS TO BE MADE UNDER THIS CONTRACT ARE DELINEATED BY DARK LINEWORK.

EXISTING ITEMS TO REMAIN SHOWN IN SCREENED LINEWORK.

THE CONTRACTOR SHALL PROVIDE AND INSTALL A NEW THERMAL-MAGNETIC CIRCUIT BREAKER TO FEED THE NEW SLUDGE PUMP (#1) SSRV. A MOTOR CIRCUIT PROTECTOR (MCP) SHALL NOT BE ALLOWED.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
☐ No Changes

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RECORD DRAWINGS B.S. 4/11/16

TIMOTHY THOMAS, P.E. #47079

No.	DATE	REVISIONS
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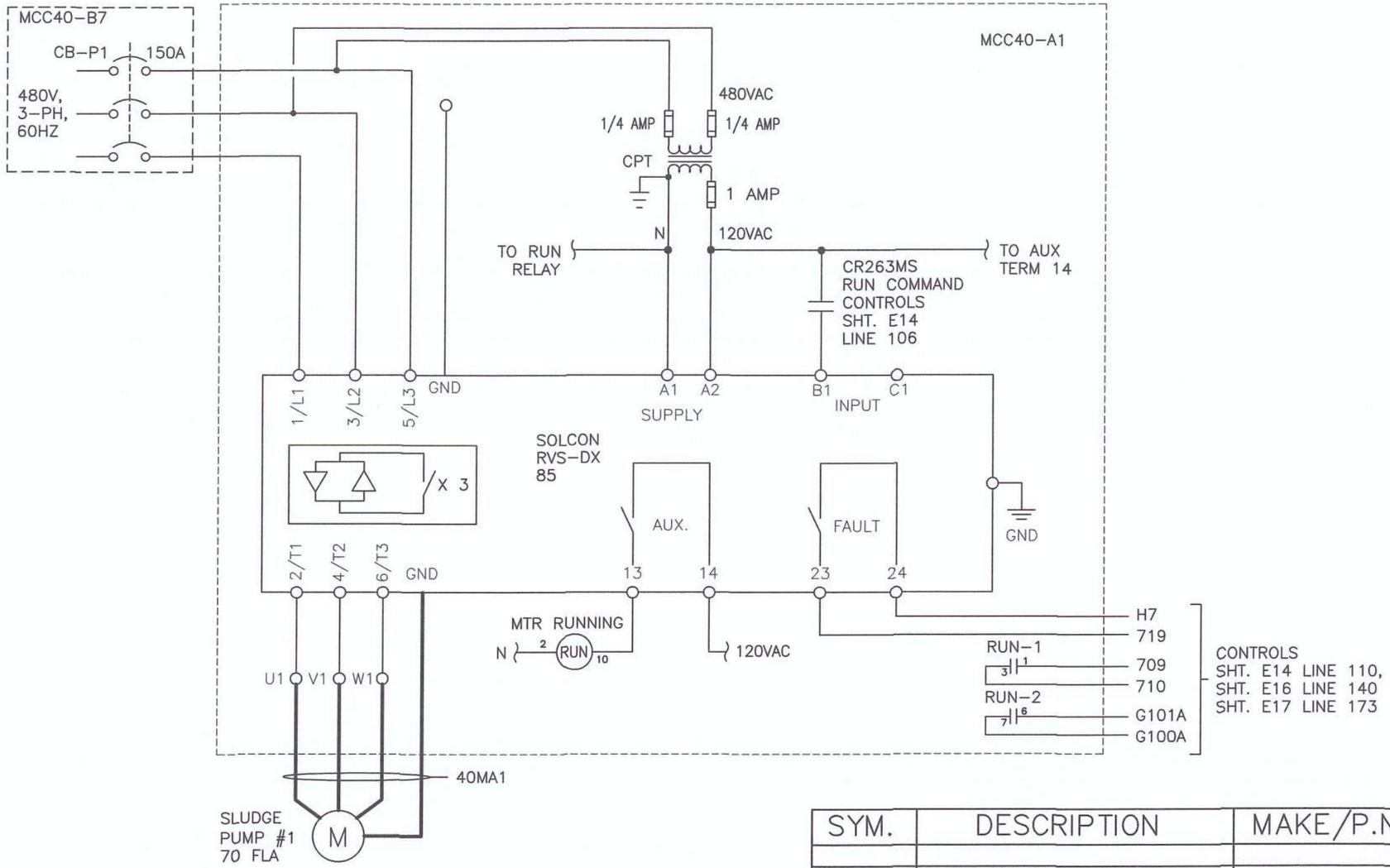
DES: T.DT.
DRN: E.A.K.
CKD: T.DT.
DATE: 9–8–14

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
PROPOSED MCC SCHEDULE

W.O. 5983
SHEET E8

TPB014-019



As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/14
Signature Date
☑ No Changes

SYM.	DESCRIPTION	MAKE/P.N.	DETAILS
SSRV	SOLID STATE SOFT STARTER	SOLCON RVS-DX 85 480-115-8-S	85A, 60HP @ 460V, 1.15SF
RUN	CONTROL RELAY	POTTER & BRUMFIELD KRPA14AN120	120VAC COIL, 3PDT, 10A CONTACTS W/ INDICATOR
CPT	CONTROL POWER TRANSFORMER	SQUARE-D 9070T100D1	100VA, 480V-120V
CB-P1	FEEDER CIRCUIT BREAKER	GENERAL ELECTRIC THED136150	150A, 25KAIC @ 480V

SLUDGE PUMP #1
SCHEMATIC DIAGRAM

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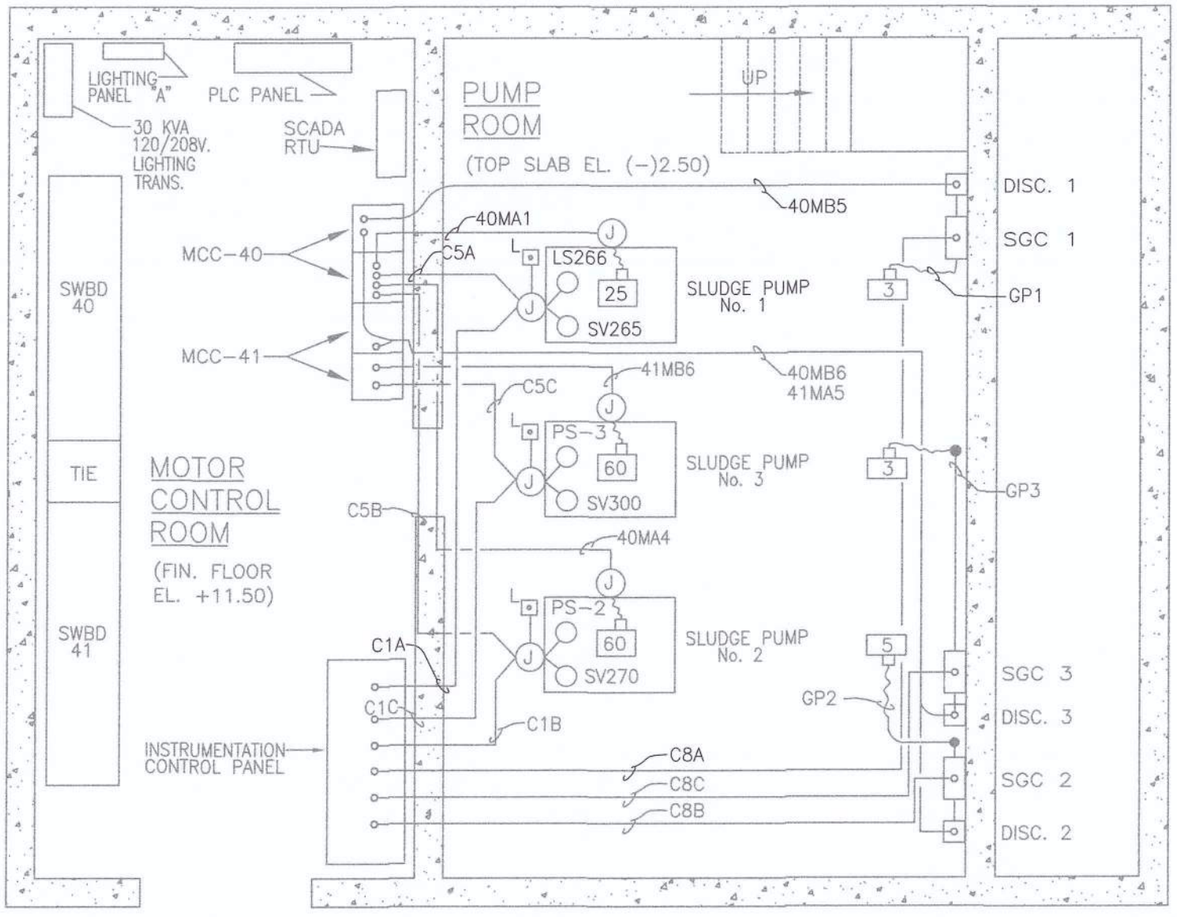
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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
SLUDGE PUMP No.1 CONTROLS

W.O. 5983
SHEET E9 OF 18

TPB014-020



EXISTING ELECTRICAL PLAN

NOTE:

THIS DRAWING SHOWS EXISTING CONDITIONS USING THE BEST AS−BUILT INFORMATION AVAILABLE AT THE TIME OF DESIGN. IT IS PROVIDED FOR REFERENCE ONLY. THE CONTRACTOR SHALL FIELD VERIFY EXISTING FACILITIES LYING WITHIN HIS SCOPE OF WORK.

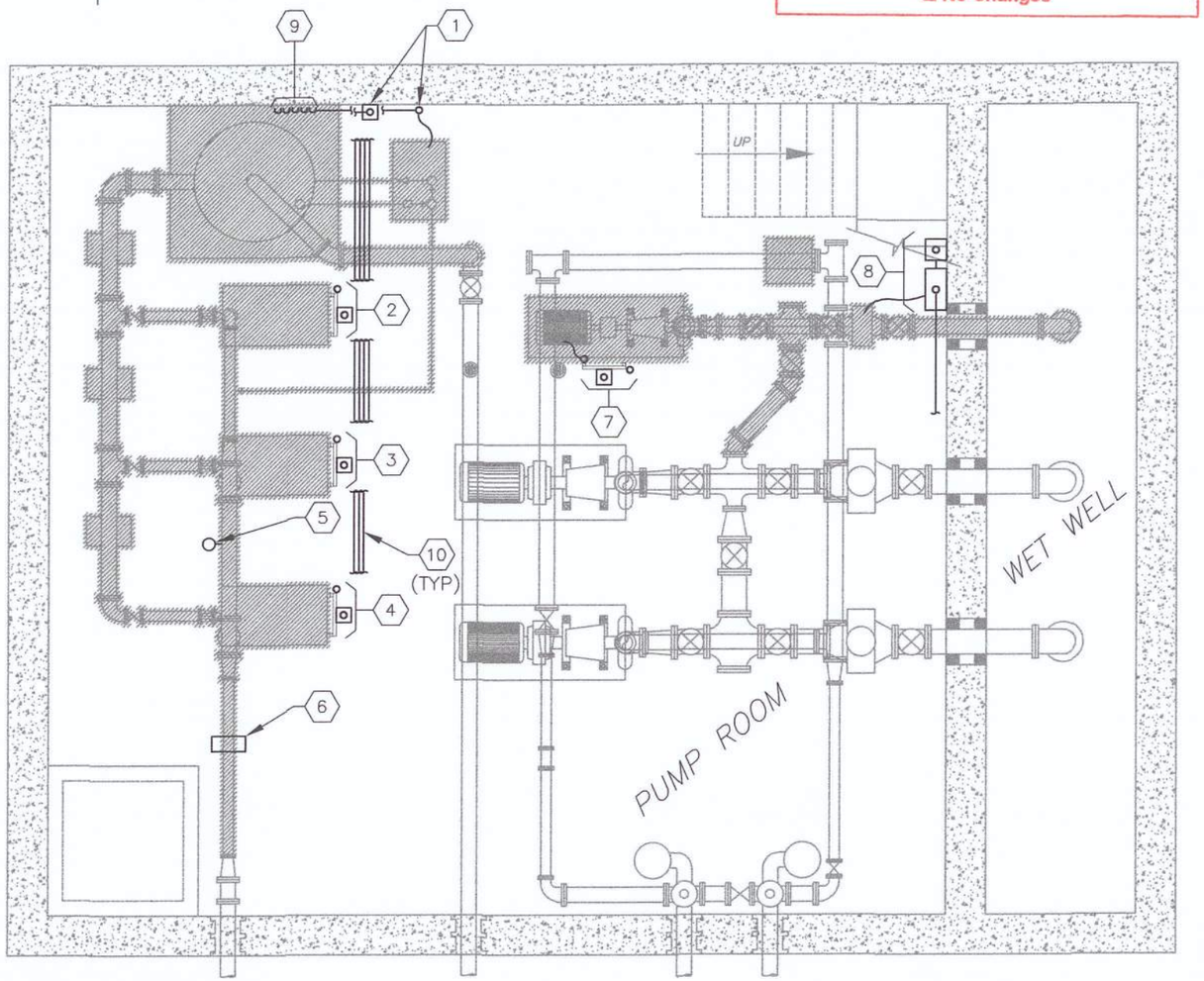
As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
☑ No Changes

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	No.	DATE	REVISIONS				
TIMOTHY THOMAS, P.E. #47079	3			DES: T.D.T.	CITY of TAMPA	HOWARD F. CURREN A.W.T.P.	W.O. 5983
	2			DRN: E.A.K.	HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	MIXED SLUDGE PUMPING STATION REHABILITATION	SHEET E10
	1			CKD: T.D.T.		EXISTING ELECTRICAL PLAN	OF 18
				DATE: 9−9−14			

TPB014-021

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
☑ No Changes



ELECTRICAL DEMOLITION PLAN

ITEMS SHOWN IN HATCHED AREAS ARE TO BE DEMOLISHED AND REMOVED BY MECHANICAL CONTRACTOR

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KEYED NOTES:

1. CONTRACTOR TO REMOVE ALL CONDUIT, CONDUCTORS, PUSHBUTTON, UNISTRUT AND JUNCTION BOXES ASSOCIATED WITH THE EXISTING JOCKEY PUMP TO BE REMOVED. REMOVE CONDUCTORS BACK TO THEIR ORIGIN. CONDUITS SHALL BE CAPPED AT FLOOR SLAB OF MOTOR CONTROL ROOM (FIRST FLOOR).
2. CONTRACTOR TO REMOVE ALL CONDUIT, CONDUCTORS, PUSHBUTTON, UNISTRUT AND JUNCTION BOXES ASSOCIATED WITH THE EXISTING PUMP (PWP–1) TO BE REMOVED. REMOVE CONDUCTORS BACK TO THEIR ORIGIN. CONDUITS SHALL BE CAPPED AT FLOOR SLAB OF MOTOR CONTROL ROOM (FIRST FLOOR).
3. CONTRACTOR TO REMOVE ALL CONDUIT, CONDUCTORS, PUSHBUTTON, UNISTRUT AND JUNCTION BOXES ASSOCIATED WITH THE EXISTING PUMP (PWP–2) TO BE REMOVED. REMOVE CONDUCTORS BACK TO THEIR ORIGIN. CONDUITS SHALL BE CAPPED AT FLOOR SLAB OF MOTOR CONTROL ROOM (FIRST FLOOR).
4. CONTRACTOR TO REMOVE ALL CONDUIT, CONDUCTORS, PUSHBUTTON, UNISTRUT AND JUNCTION BOXES ASSOCIATED WITH THE EXISTING PUMP (PWP–3) TO BE REMOVED. REMOVE CONDUCTORS BACK TO THEIR ORIGIN. CONDUITS SHALL BE CAPPED AT FLOOR SLAB OF MOTOR CONTROL ROOM (FIRST FLOOR).
5. CONTRACTOR TO REMOVE ALL CONDUIT, CONDUCTORS AND JUNCTION BOXES ASSOCIATED WITH THE EXISTING PRESSURE SWITCH TO BE REMOVED. REMOVE CONDUCTORS BACK TO THEIR ORIGIN. CONDUIT SHALL BE CAPPED AT FLOOR SLAB OF MOTOR CONTROL ROOM (FIRST FLOOR). REMOVAL OF PRESSURE SWITCH BY MECHANICAL CONTRACTOR.
6. CONTRACTOR TO REMOVE ALL CONDUIT, CONDUCTORS AND JUNCTION BOXES ASSOCIATED WITH THE EXISTING FLOW METER TO BE REMOVED. REMOVE CONDUCTORS BACK TO THEIR ORIGIN. CONDUIT SHALL BE CAPPED AT FLOOR SLAB OF MOTOR CONTROL ROOM (FIRST FLOOR). REMOVAL OF FLOW METER BY MECHANICAL CONTRACTOR.
7. CONTRACTOR TO REMOVE ALL CONDUCTORS, PUSHBUTTON, LIMIT SWITCH, PRESSURE SWITCH, UNISTRUT AND JUNCTION BOXES ASSOCIATED WITH THE EXISTING SLUDGE PUMP (SP–1) TO BE REMOVED. REMOVE CONDUCTORS BACK TO THEIR ORIGIN. CONDUITS MAY BE REUSED AFTER CLEANING. SOME CONDUIT WILL NEED TO BE REWORKED TO ACCOMMODATE NEW SLUDGE PUMP TO BE INSTALLED. PROVIDE ALL NEW CONDUCTORS.
8. CONTRACTOR TO REMOVE ALL CONDUCTORS, DISCONNECT, CONTROL PANEL, UNISTRUT AND JUNCTION BOXES ASSOCIATED WITH THE EXISTING GRINDER PUMP (G–1) TO BE REMOVED. REMOVE CONDUCTORS BACK TO THEIR ORIGIN. CONDUITS MAY BE REUSED AFTER CLEANING. SOME CONDUIT WILL NEED TO BE REWORKED TO ACCOMMODATE NEW DISCONNECT AND CONTROL PANEL TO BE INSTALLED. PROVIDE ALL NEW CONDUCTORS.
9. EXISTING CONDUITS UP TO PLC PANEL ON FIRST FLOOR.
10. APPROXIMATE LOCATION OF EXISTING CONDUIT/CONDUCTORS ASSOCIATED WITH NOTES 2 THRU 6. THESE CONDUITS ARE TO BE REMOVED.

No.	DATE	REVISIONS
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TIMOTHY THOMAS, P.E. #47079

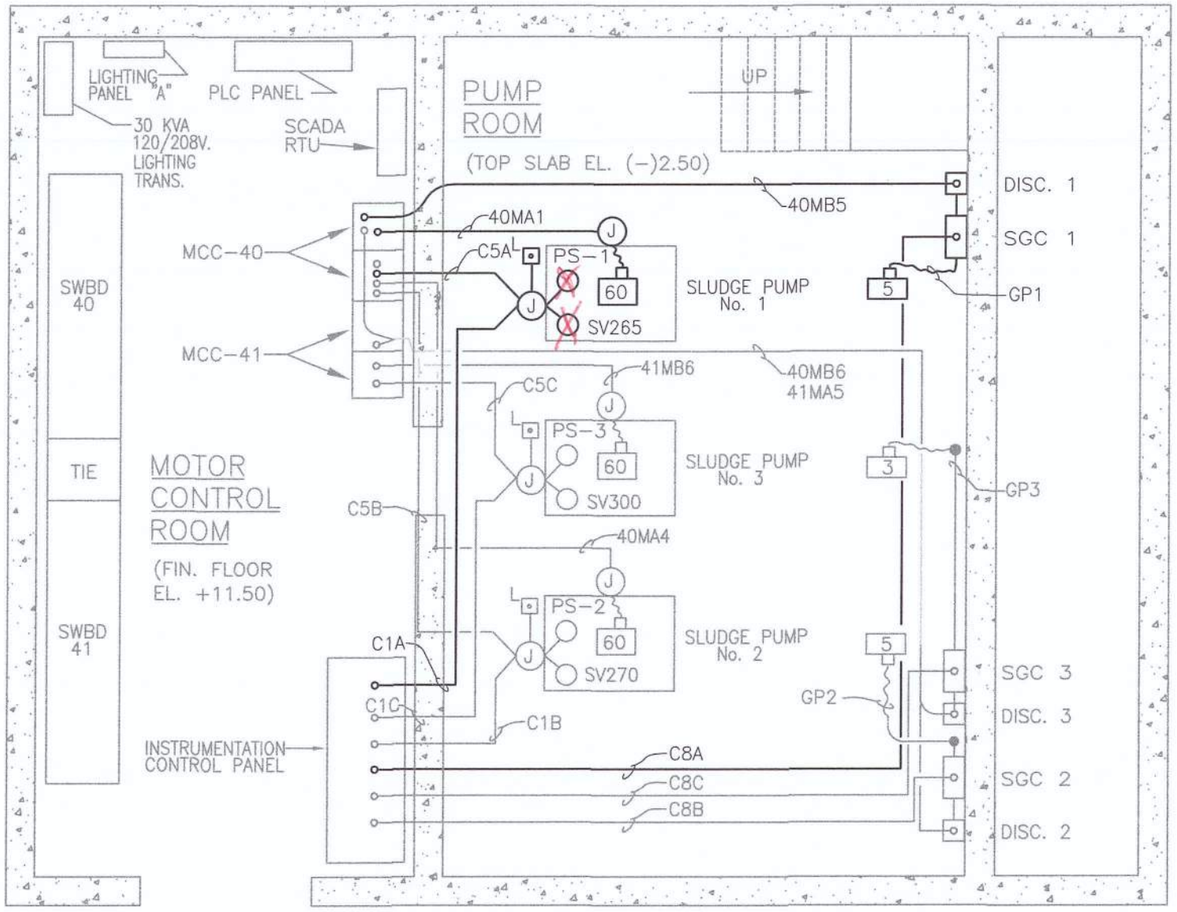
DES: T.DT.
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DATE: 9–9–14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
ELECTRICAL DEMOLITION PLAN

W.O. 5983
SHEET E11 OF 18

TPB014-022



PROPOSED MODIFICATIONS
TO ELECTRICAL PLAN

NOTES:

1. ITEMS SHOWN ON THIS SHEET THAT SHALL BE PROVIDED AND INSTALLED INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

   *** GRINDER #1 –– LOCAL NEMA 4X S/S DISCONNECT AND LOCAL NEMA 4X S/S CONTROLLER

   *** SLUDGE PUMP #1 –– CONTROLS AND INTERLOCKS AS SHOWN, STOP/L PUSHBUTTON, SEAL WATER SOLENOID VALVE, SEAL WATER PRESSURE SWITCH.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
❑ No Changes

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RECORD DRAWINGS BS 8/2/2016

	No.	DATE	REVISIONS			
TIMOTHY THOMAS, P.E. #47079	3			DES: T.D.T.	CITY of TAMPA	W.O. 5983
	2			DRN: E.A.K.	HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	HOWARD F. CURREN A.W.T.P. MIXED SLUDGE PUMPING STATION REHABILITATION PROPOSED ELECTRICAL PLAN
	1			CKD: T.D.T.		SHEET E12 OF 18
				DATE: 9–9–14		

TPB014-023

CONDUIT AND CONDUCTOR SCHEDULE

LABEL	CONDUIT SIZE	FROM	TO	REMARKS
C1A	1"	CONTROL PANEL	SLUDGE PUMP #1	STOP/L PS-1 SV265 (2) SPARE — 5-TWISTED PR. #16AWG
C1B	1"	CONTROL PANEL	SLUDGE PUMP #2	STOP/L PS-2 SV270 (2) SPARE — 5-TWISTED PR. #16AWG
C1C	1"	CONTROL PANEL	SLUDGE PUMP #3	STOP/L PS-3 SV300 (2) SPARE — 5-TWISTED PR. #16AWG
C5A	3/4"	CONTROL PANEL	MCC-40-A1	CR263MS MS1-AUX SPARE — 3-TWISTED PR. #16AWG
C5B	3/4"	CONTROL PANEL	MCC-40-A4	CR268MS MS2-AUX SPARE — 3-TWISTED PR. #16AWG
C5C	3/4"	CONTROL PANEL	MCC-41-B6	CR300MS MS3-AUX SPARE — 3-TWISTED PR. #16AWG
C8A	3/4"	CONTROL PANEL	SLUDGE GRINDER #1 CONTROLLER	O/L RELAY RUN LIGHT POWER LIGHT SPARE — 4-TWISTED PR. #16AWG
C8B	3/4"	CONTROL PANEL	SLUDGE GRINDER #2 CONTROLLER	O/L RELAY RUN LIGHT POWER LIGHT SPARE — 4-TWISTED PR. #16AWG
C8C	3/4"	CONTROL PANEL	SLUDGE GRINDER #3 CONTROLLER	O/L RELAY RUN LIGHT POWER LIGHT SPARE — 4-TWISTED PR. #16AWG
40MA1	1-1/2"	MCC-40-B7	SLUDGE PUMP #1	3-#3, 1-#8 B.C. TO MOTOR
40MA4	1-1/2"	MCC-40-A4	SLUDGE PUMP #2	3-#3, 1-#8 B.C. TO MOTOR
41MB6	1-1/2"	MCC-41-B6	SLUDGE PUMP #3	3-#3, 1-#8 B.C. TO MOTOR
40MB5	3/4"	MCC-40-B5	DISC. 1 TO #1 GRINDER CONTROLLER	4-#12
40MB6	3/4"	MCC-40-B6	DISC. 2 TO #2 GRINDER CONTROLLER	4-#12
41MA5	3/4"	MCC-41-A5	DISC. 3 TO #3 GRINDER CONTROLLER	4-#12
GP1	3/4"	#1 GRINDER CONTROLLER	MOTOR 1	4-#12
GP2	3/4"	#2 GRINDER CONTROLLER	MOTOR 2	4-#12
GP3	3/4"	#3 GRINDER CONTROLLER	MOTOR 3	4-#12

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
☑ No Changes

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TIMOTHY THOMAS, P.E. #47079

No.	DATE	REVISIONS
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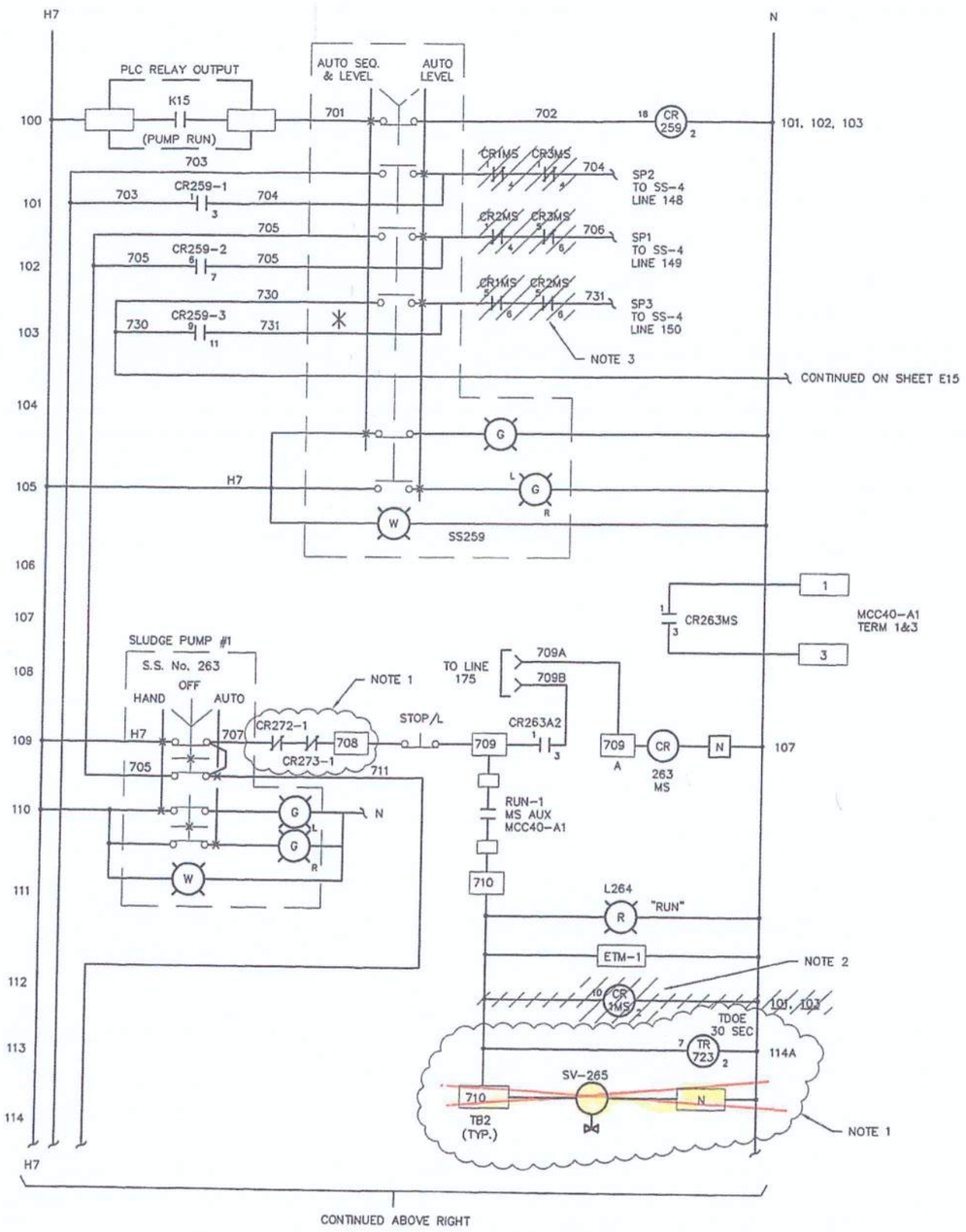
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DATE: 9-9-14

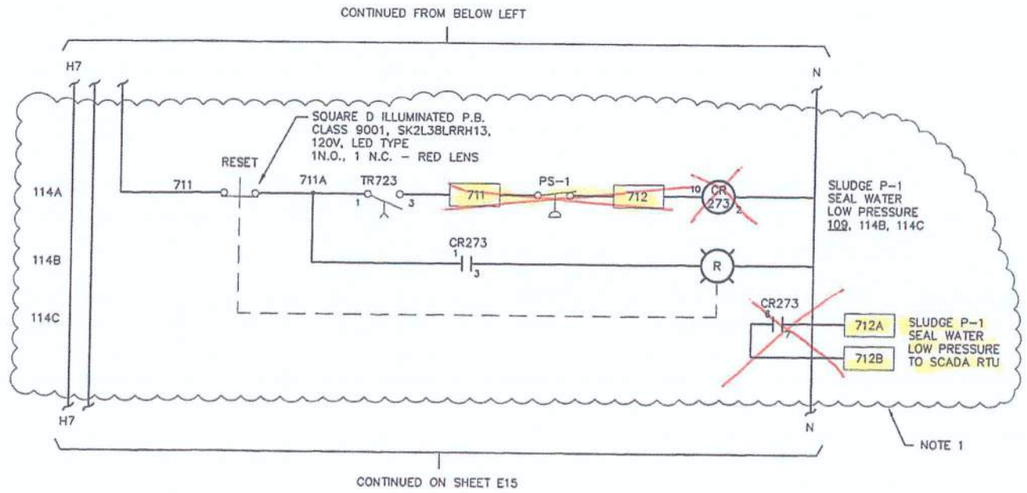
CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
CONDUIT AND CONDUCTOR SCHEDULE

W.O. 5983
SHEET E13 OF 18

TPB014-024





NOTES:

1. CLOUDED AREA SHOWS FACILITIES THAT REQUIRE MODIFICATIONS AND/OR ADDITIONS UNDER THIS CONTRACT.
2. HATCHED AREA INDICATES ITEMS TO BE FIELD VERIFIED FOR ACCURACY BY THE CONTRACTOR. THESE ITEMS ARE NOT REQUIRED AND SHALL BE REMOVED UNDER THIS CONTRACT.
3. HATCHED AREA INDICATES ITEMS TO BE FIELD VERIFIED FOR ACCURACY BY THE CONTRACTOR. THESE ITEMS ARE NOT REQUIRED AND SHALL BE REMOVED UNDER THIS CONTRACT. IF CONTACTS SHOWN ARE REQUIRED TO BE REMOVED, THE CONTRACTOR SHALL INSTALL CONDUCTORS TO CONTINUE THE RESPECTIVE CIRCUITS TO SS-4.

GENERAL NOTE:

THE CONTROL SCHEMATICS SHOWN ARE DEVELOPED FROM THE BEST AVAILABLE AS-BUILT DRAWINGS AND FIELD OBSERVATIONS. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DOCUMENT ANY DISCREPANCIES DISCOVERED.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
☐ No Changes

TRICON CONSULTING ENGINEERS
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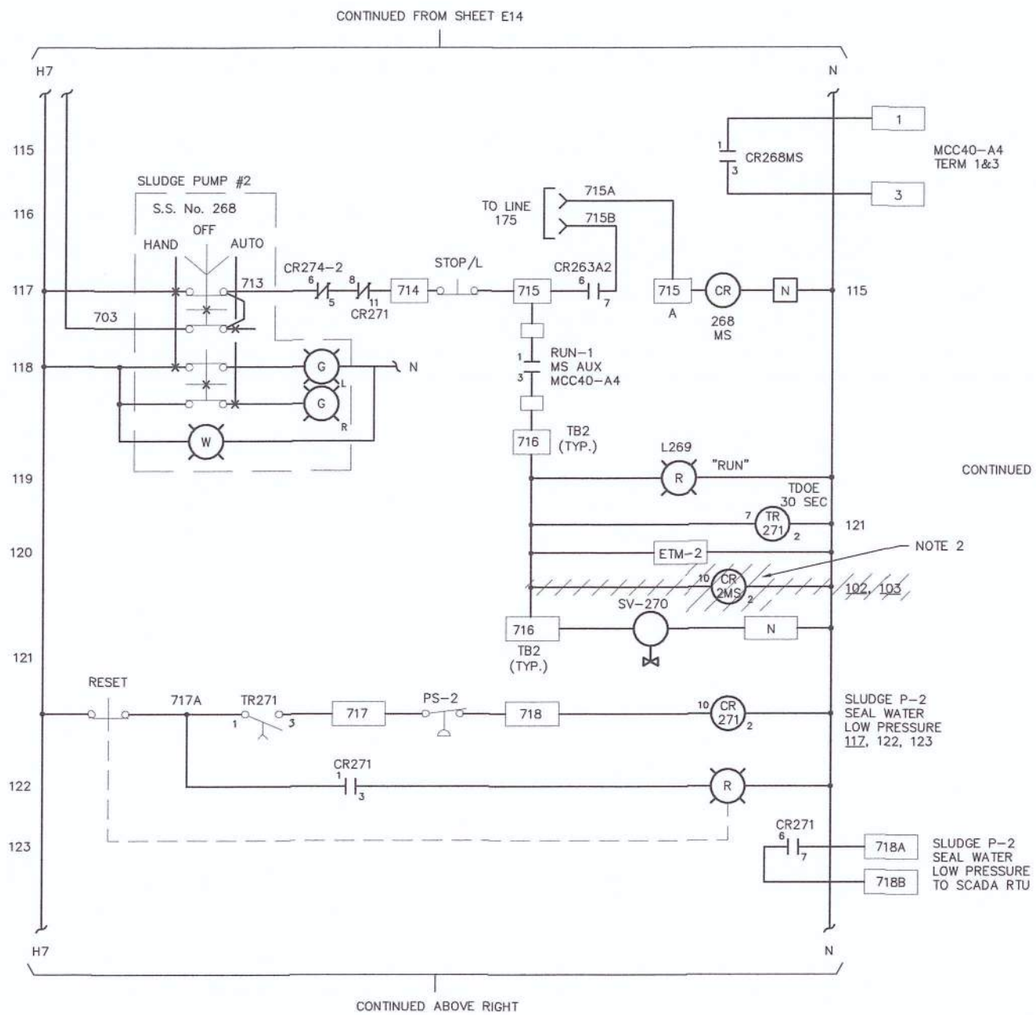
TIMOTHY THOMAS, P.E. #47079

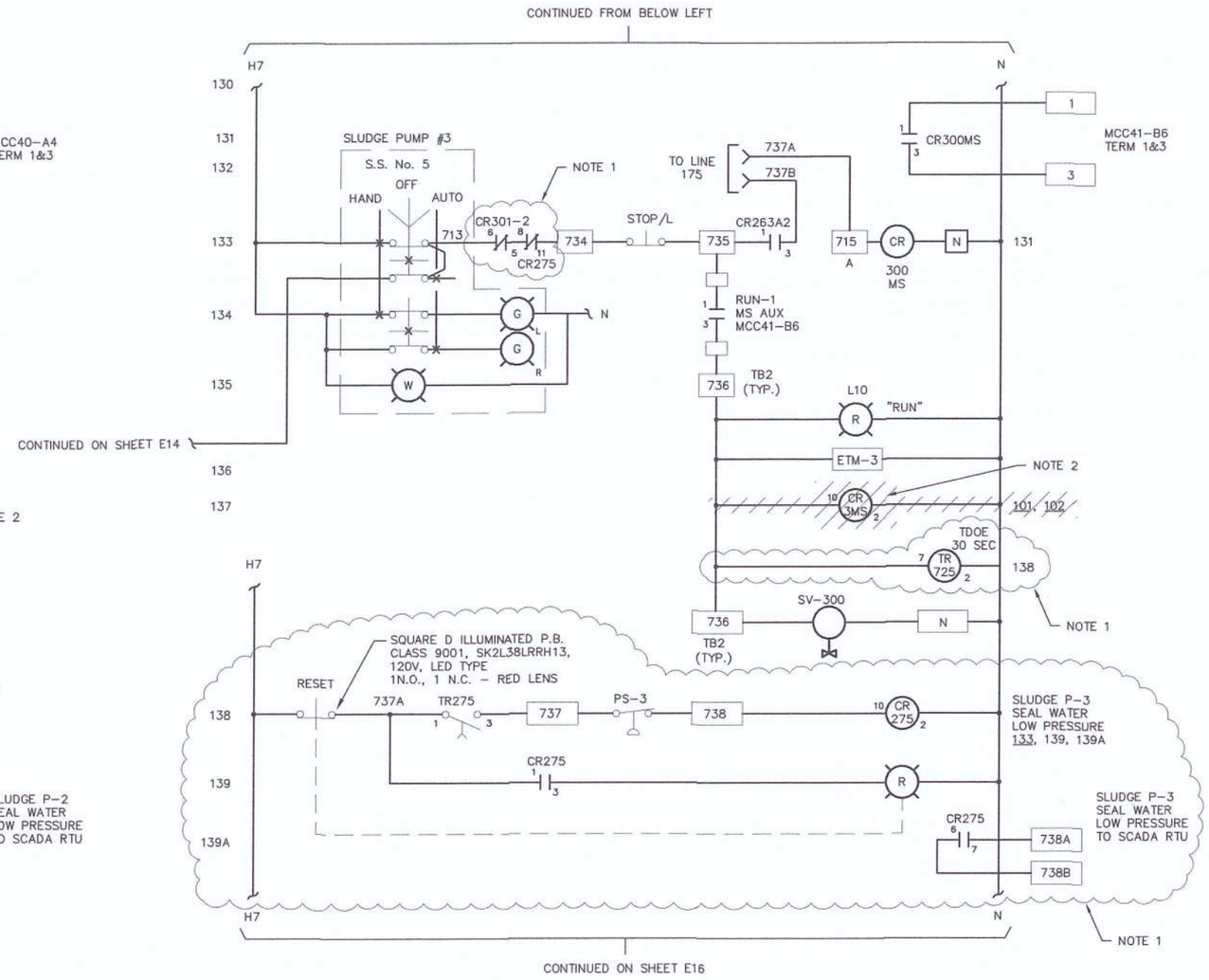
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
SCHEMATIC 1/4

W.O. 5983
SHEET E14 OF 18





NOTES:

1. CLOUDED AREA SHOWS FACILITIES THAT REQUIRE MODIFICATIONS AND/OR ADDITIONS UNDER THIS CONTRACT.
2. HATCHED AREA INDICATES ITEMS TO BE FIELD VERIFIED FOR ACCURACY BY THE CONTRACTOR. THESE ITEMS ARE NOT REQUIRED AND SHALL BE REMOVED UNDER THIS CONTRACT.

GENERAL NOTE:

THE CONTROL SCHEMATICS SHOWN ARE DEVELOPED FROM THE BEST AVAILABLE AS-BUILT DRAWINGS AND FIELD OBSERVATIONS. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DOCUMENT ANY DISCREPANCIES DISCOVERED.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
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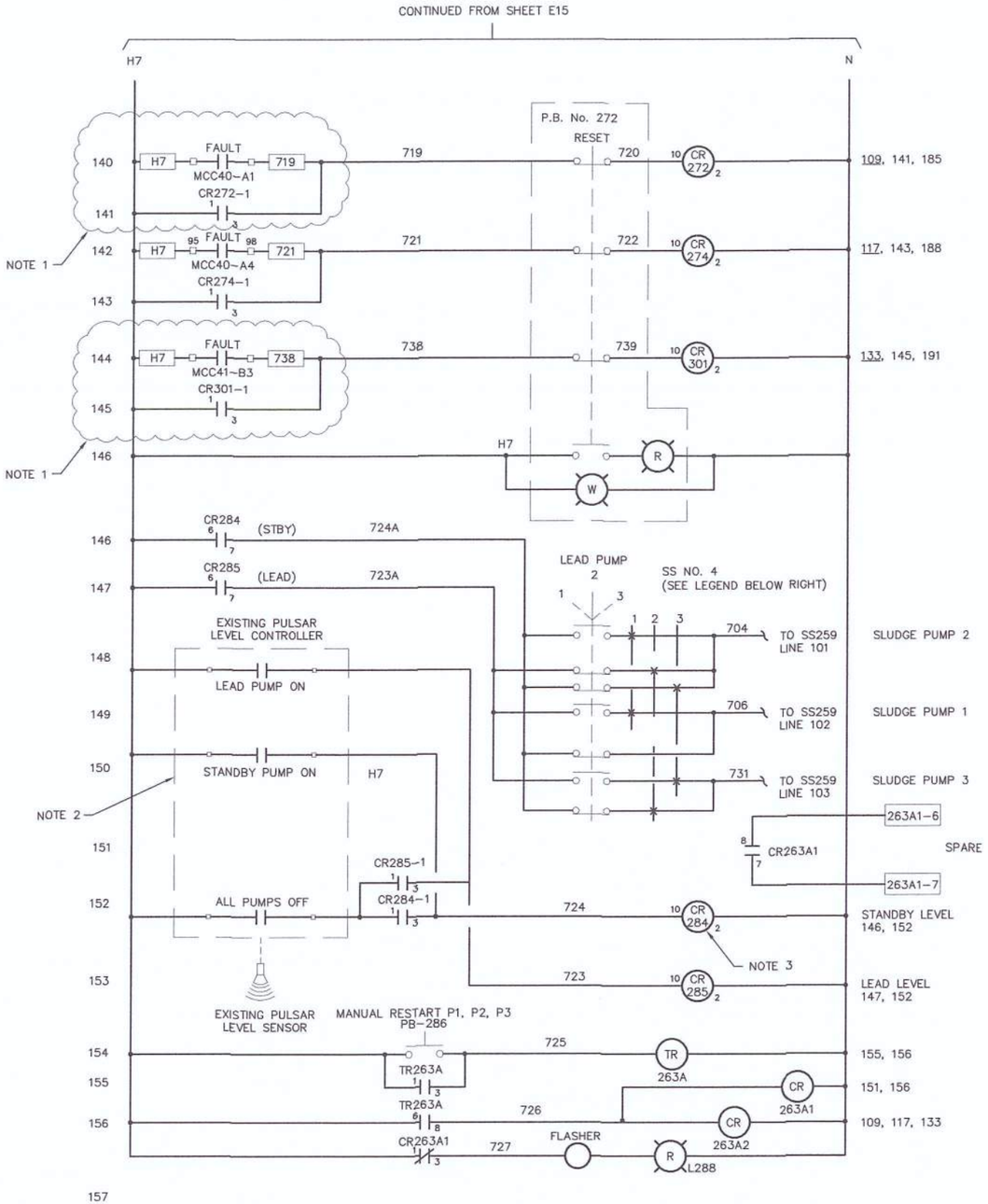
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
SCHEMATIC 2/4

W.O. 5983
SHEET E15 OF 18

TPB014-026



NOTES:

1. CLOUDED AREA SHOWS FACILITIES THAT REQUIRE MODIFICATIONS AND/OR ADDITIONS UNDER THIS CONTRACT.
2. WIRING/CONNECTIONS TO EXISTING PULSAR LEVEL CONTROLLER TO BE FIELD VERIFIED FOR ACCURACY BY THE CONTRACTOR. CONTRACTOR SHALL MODIFY IF REQUIRED.
3. CONTRACTOR TO PROVIDE MISSING RELAY AND CHECK FOR PROPER CONNECTIONS.

GENERAL NOTE:

THE CONTROL SCHEMATICS SHOWN ARE DEVELOPED FROM THE BEST AVAILABLE AS-BUILT DRAWINGS AND FIELD OBSERVATIONS. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DOCUMENT ANY DISCREPANCIES DISCOVERED.

LEGEND		
SS NO.4	SLUDGE PUMP LEAD SWITCH	
	LEAD	STANDBY
POS-1	PUMP NO. 1	PUMP NO. 2
POS-2	PUMP NO. 2	PUMP NO. 3
POS-3	PUMP NO. 3	PUMP NO. 2

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
No Changes

TRICON CONSULTING ENGINEERS
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TIMOTHY THOMAS, P.E. #47079

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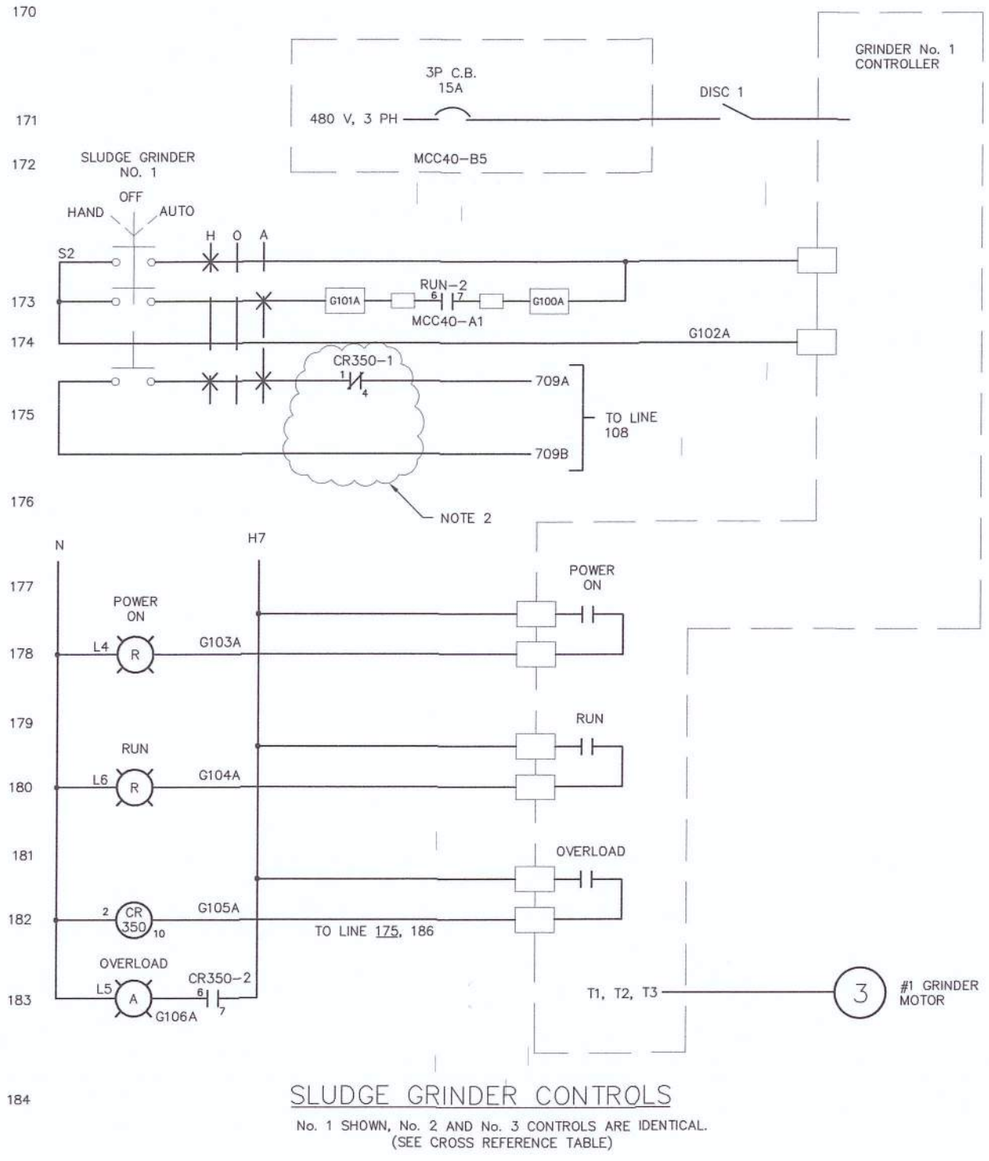
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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
SCHEMATIC 3/4

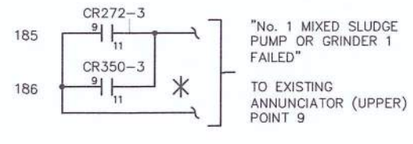
W.O. 5983
SHEET E16 OF 18

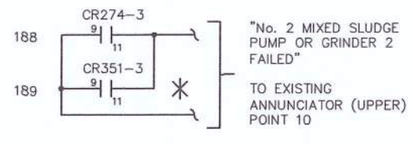
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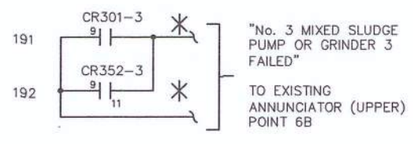


SLUDGE GRINDER CONTROLS

No. 1 SHOWN, No. 2 AND No. 3 CONTROLS ARE IDENTICAL. (SEE CROSS REFERENCE TABLE)







NOTES:

1. ITEMS SHOWN ON THIS SHEET THAT SHALL BE PROVIDED AND INSTALLED INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING :

   *** GRINDER #1 – LOCAL NEMA 4X S/S DISCONNECT, LOCAL NEMA 4X S/S CONTROLLER.

2. CLOUDED AREA SHOWS FACILITIES THAT REQUIRE MODIFICATIONS UNDER THIS CONTRACT.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
☐ No Changes

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 670
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

	No.	DATE	REVISIONS
TIMOTHY THOMAS, P.E. #47079	3		
	2		
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DES: T.DT.
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
SCHEMATIC 4/4

W.O. 5983
SHEET E17 OF 18

SOFTSTARTER SET UP PARAMETERS

UPON START–UP OF SOFT STARTER, THE CONTRACTOR SHALL DOCUMENT THE INITIAL CONTROL PARAMETERS AND SETTING UTILIZED.

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

THE MINIMUM PARAMETERS TO BE DOCUMENTED SHALL INCLUDE :

1. SOFT STARTER FULL LOAD CURRENT
2. MOTOR FULL LOAD CURRENT
3. SOFT STARTER 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. SOFT START 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

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 12/15/16
Signature Date
☐ No Changes

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

No.	DATE	REVISIONS
3		
2		
1		

TIMOTHY THOMAS, P.E. #47079

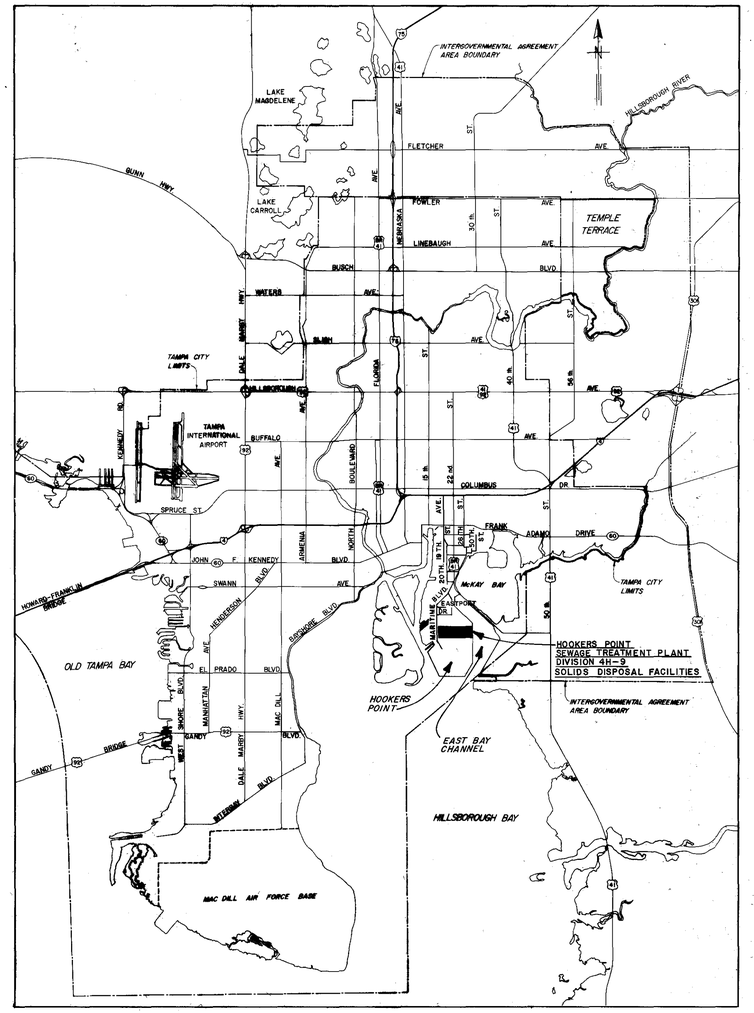
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DRN: E.A.K.
CKD: T.DT.
DATE: 9–9–14

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN A.W.T.P.
MIXED SLUDGE PUMPING STATION REHABILITATION
DOCUMENTATION OF SOFT STARTER PARAMETERS

W.O. 5983
SHEET E18 OF 18

Sludge Control Bldg. Original_Year 1980



LOCATION MAP

INDEX

DRAWING NO.	SHEET NO.	TITLE
1	I1	INDEX
		GENERAL
2	G1	SITE PLAN
3	G2	OUTSIDE PIPING - SOUTHWEST PLAN - DETAIL AND LEGEND
4	G3	OUTSIDE PIPING - SOUTHEAST PLAN
5	G4	ROADS AND STORM SEWERS - SOUTHEAST PLAN
6	G5	EXISTING AND NEW GRADES - SOUTHEAST PLAN
7	G6	DETAILED PLANS - SECTIONS AND DETAILS
8	G7	PAVEMENTS - SECTIONS AND DETAILS
9	G8	OUTSIDE PIPING - STORM INLETS - MANHOLES AND DETAILS
10	G9	PLAN, PROFILE - SECTIONS AND DETAILS
		SLUDGE DRYING BEDS
11	G10	TYPICAL SLUDGE BED - PLAN, SECTIONS AND DETAILS
12	G11	CONVEYOR AND PIPE GALLERY - PLAN AND SECTION
13	G12	DETAILED PLANS
14	G13	DRIED SLUDGE STORAGE AREA - PLAN AND SECTIONS
15	G14	SLUDGE GRINDER STATION AND CONVEYOR LOADING CHUTE DETAILS
16	G15	DRIED SLUDGE STORAGE AREA - SECTIONS
17	G16	SECTIONS AND DETAILS
18	G17	SECTIONS AND DETAILS
		STRUCTURAL
		SLUDGE DRYING BEDS
19	S1	PILE PLAN
20*	S2*	PLAN
21	S3	PARTIAL PLANS AND SECTIONS
22	S4	CONVEYOR AND PIPE GALLERY
23	S5	SECTIONS
24	S6	SECTIONS AND DETAILS
25	S7	CONVEYOR SUPPORT - ELEVATIONS AND SECTIONS
26	S8	SLUDGE GRINDER STATION - BACKFLOW STRUCTURE - WALL AT N.W. CORNER
27	S9	CONVEYOR DB-DSC-6 BRIDGE - SECTIONS AND DETAILS
28	S10	CONVEYOR DB-DBC-5 BRIDGE & TRUCK UNLOADING STATION RAMP
29	S11	BEAM SCHEDULE AND GRADE BEAM ELEVATION
30	S12	PLAN, SECTIONS AND DETAILS CONTROL BUILDING
31	S13	PLAN, SECTIONS AND DETAILS CONTROL BUILDING
32	S14	PLAN AND SECTION CONTROL BUILDING
33	S15	SECTIONS CONTROL BUILDING
34	S16	SECTIONS CONTROL BUILDING
35	S17	COLUMN AND BEAM - SCHEDULE AND DETAILS CONTROL BUILDING
36	S18	SECTION, ELEVATION AND DETAILS CONTROL BUILDING
		GENERAL DETAILS
37	S19	TYPICAL CONSTRUCTION AND REINFORCING DETAILS
38	S20	WATER STOP JOINT DETAILS AND GENERAL NOTES
39	S21	GENERAL DETAILS
40	S22	TYPICAL PILE DETAILS AND ELECTRICAL MANHOLE MH-E18 DETAIL
		ARCHITECTURAL
		CONTROL BUILDING
41	A1	PLANS AND DETAILS
42	A2	SECTIONS, DETAILS AND ELEVATIONS
43	A3	WALL SECTIONS AND DETAILS
44	A4	DETAILS AND DOOR SCHEDULE
* (Add)	20A	S2A PLAN, LIGHT WEIGHT AGGREGATE CONSTRUCTION

DRAWING NO.	SHEET NO.	TITLE
		MECHANICAL
		FLOW DIAGRAMS METERS AND GAUGES
45	M1	PLANT AIR DIAGRAM AND DETAILS
46	M2	PLANT, CITY AND EFFLUENT WATER - DIAGRAMS AND DETAILS
47	M3	CONTROL BUILDING OPERATING PANEL - GRAPHIC SECTION AND DETAILS
48	M4	CONTROL BUILDING OPERATING PANEL - MISC. SECTION AND POLYMER DIAGRAMS
49	M5	DIAGRAMS, DETAILS AND SYMBOL LEGEND
		CONTROL BUILDING
50	M6	PLANS
51	M7	PLANS
52	M8	SECTIONS
53	M9	SECTIONS AND DETAILS
54	M10	PLANS, SECTIONS AND DETAILS
55	M11	SYMBOL LEGEND AND GENERAL DETAILS
		HVAC
56	HV1	CONTROL BUILDING - PLANS AND SECTIONS
		ELECTRICAL
57	E1	SITE PLAN - POWER
58	E2	SITE PLAN - LIGHTING
59	E3	SITE PLAN - ENLARGED PLANS - SECTIONS AND DETAILS
60	E4	MANHOLES - PLANS, SECTIONS AND DETAILS
61	E5	SYMBOL LIST
62	E6	SYMBOL LIST
63	E7	13.2KV DISTRIBUTION - ONE LINE DIAGRAM
64	E8	MOTOR CONTROL CENTER MCC-501 - ONE LINE DIAGRAM
65	E9	DIGESTED SLUDGE PUMPS - ONE LINE DIAGRAM AND ELEVATIONS
66	E10	SERVICE GROUNDING AND GROUND FAULT RELAYING DIAGRAM
67	E11	CONTROL BUILDING OPERATING PANEL - SCHEMATIC DIAGRAMS
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70	E14	DIGESTED SLUDGE PUMPS - SCHEMATIC DIAGRAMS
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72	E16	SCHEMATIC DIAGRAMS
73	E17	SCHEMATIC DIAGRAMS
		CONTROL BUILDING
74	E18	POWER PLAN AT EL. 0'-0"
75	E19	POWER PLAN AT EL. 16'-0"
76	E20	POWER PLAN AT EL. 32'-6"
77	E21	LIGHTING PLANS AT EL. 0'-0" AND 16'-0"
78	E22	LIGHTING PLANS AT EL. 32'-6" AND 45'-0"
79	E23	SECTIONS AND DETAILS
80	E24	LIGHTING FIXTURE DETAILS - AND PANEL SCHEDULES
81	E25	LIGHTING FIXTURE SCHEDULE
82	E26	EXIT SIGN AND BATTERY PACK - SCHEDULES
83	E27	CONDUIT AND CABLE - SCHEDULE
84	E28	CONDUIT AND CABLE - SCHEDULE
85	E29	CONDUIT AND CABLE - SCHEDULE
86	E30	CONDUIT AND CABLE - SCHEDULE
87	E31	CONDUIT AND CABLE - SCHEDULE
		MISCELLANEOUS
88	MS1	INSTRUMENT PANELS HOUSING - PLAN, SECTIONS AND DETAILS (This sheet has been VOIDED by change order)
4H-9A		IN-HOUSE DESIGN/CONSTRUCTION

PAUL E. LANGDON, JR. CERTIFICATE No. 15473 STATE OF FLA. REGISTERED ENGINEER

RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

NOTE:

ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED	RN
DRAWN	BT
CHECKED	REB

APPROVED
SUPT., DEPT. OF SANITARY SEWERS — DATE 10-25-76
GREELEY AND HANSEN, ENGINEERS — DATE 10-25-76

NO.	DATE	APP.	REVISION
1	2/80	DSH	Rec. Dwg. Revisions

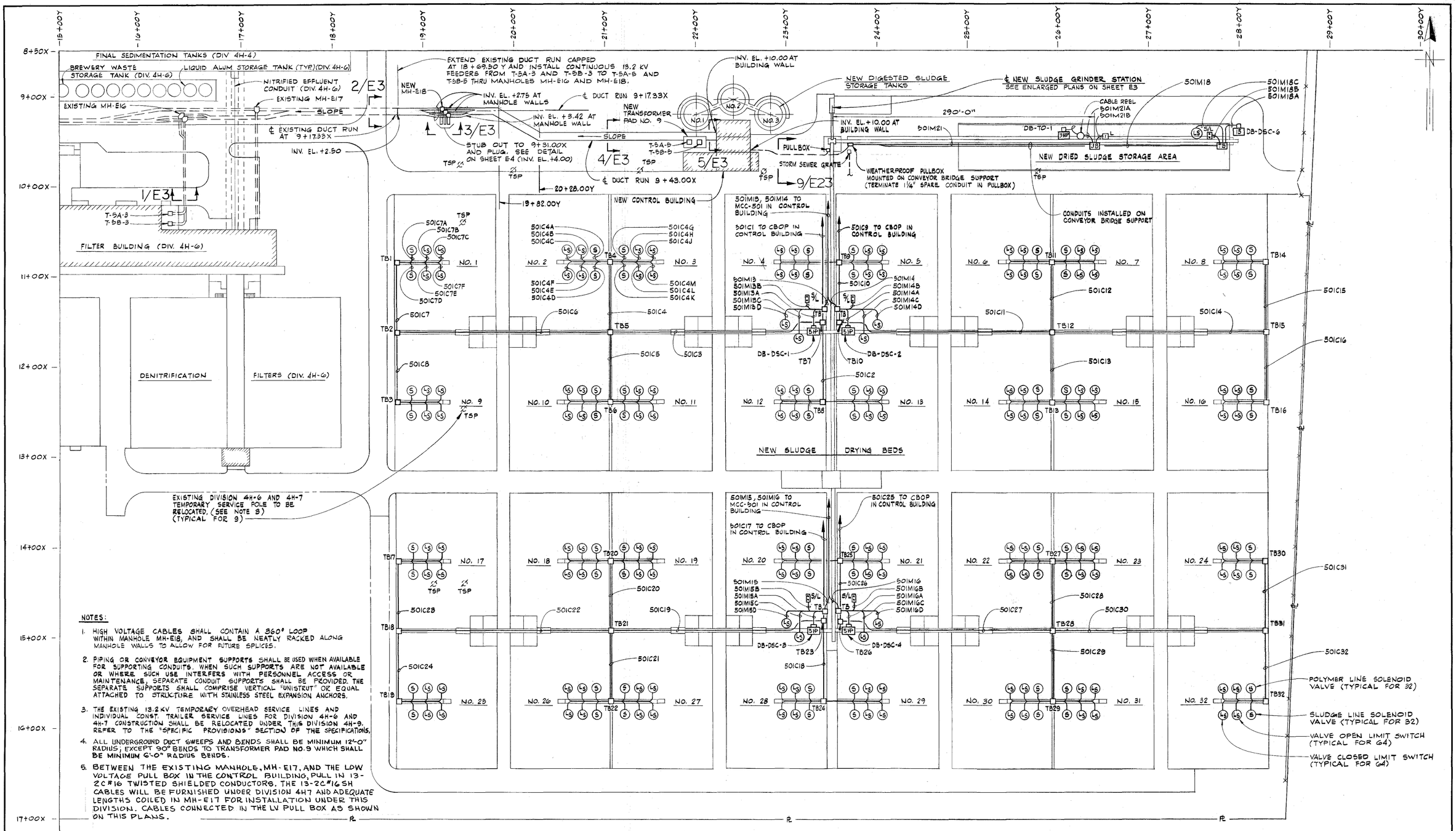
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CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

LOCATION MAP AND INDEX

PROJ. NO. S 202-70-30D-
SHEET I I OF I
DATE OCTOBER, 1976 | REV. 0

DWG 1 OF 88



NOTES:

1. HIGH VOLTAGE CABLES SHALL CONTAIN A 360° LOOP WITHIN MANHOLE MH-E18, AND SHALL BE NEATLY RACKED ALONG MANHOLE WALLS TO ALLOW FOR FUTURE SPLICES.
2. PIPING OR CONVEYOR EQUIPMENT SUPPORTS SHALL BE USED WHEN AVAILABLE FOR SUPPORTING CONDUITS. WHEN SUCH SUPPORTS ARE NOT AVAILABLE OR WHERE SUCH USE INTERFERS WITH PERSONNEL ACCESS OR MAINTENANCE, SEPARATE CONDUIT SUPPORTS SHALL BE PROVIDED. THE SEPARATE SUPPORTS SHALL COMPRISE VERTICAL "UNISTRUT" OR EQUAL ATTACHED TO STRUCTURE WITH STAINLESS STEEL EXPANSION ANCHORS.
3. THE EXISTING 13.2 KV TEMPORARY OVERHEAD SERVICE LINES AND INDIVIDUAL CONST. TRAILER SERVICE LINES FOR DIVISION 4H-6 AND 4H-7 CONSTRUCTION SHALL BE RELOCATED UNDER THIS DIVISION 4H-9. REFER TO THE "SPECIFIC PROVISIONS" SECTION OF THE SPECIFICATIONS.
4. ALL UNDERGROUND DUCT SWEEPS AND BENDS SHALL BE MINIMUM 12'-0" RADIUS; EXCEPT 90° BENDS TO TRANSFORMER PAD NO.9 WHICH SHALL BE MINIMUM 6'-0" RADIUS BENDS.
5. BETWEEN THE EXISTING MANHOLE, MH-E17, AND THE LOW VOLTAGE PULL BOX IN THE CONTROL BUILDING, PULL IN 13-2C #16 TWISTED SHIELDED CONDUCTORS. THE 13-2C #16 SH CABLES WILL BE FURNISHED UNDER DIVISION 4H7 AND ADEQUATE LENGTHS COILED IN MH-E17 FOR INSTALLATION UNDER THIS DIVISION. CABLES CONNECTED IN THE LV PULL BOX AS SHOWN ON THIS PLANS.

SITE PLAN - POWER

NOTE:
ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

RECORD DRAWING
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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN DAS
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION
1	2/80	DSH	REC. DWG. REVISIONS

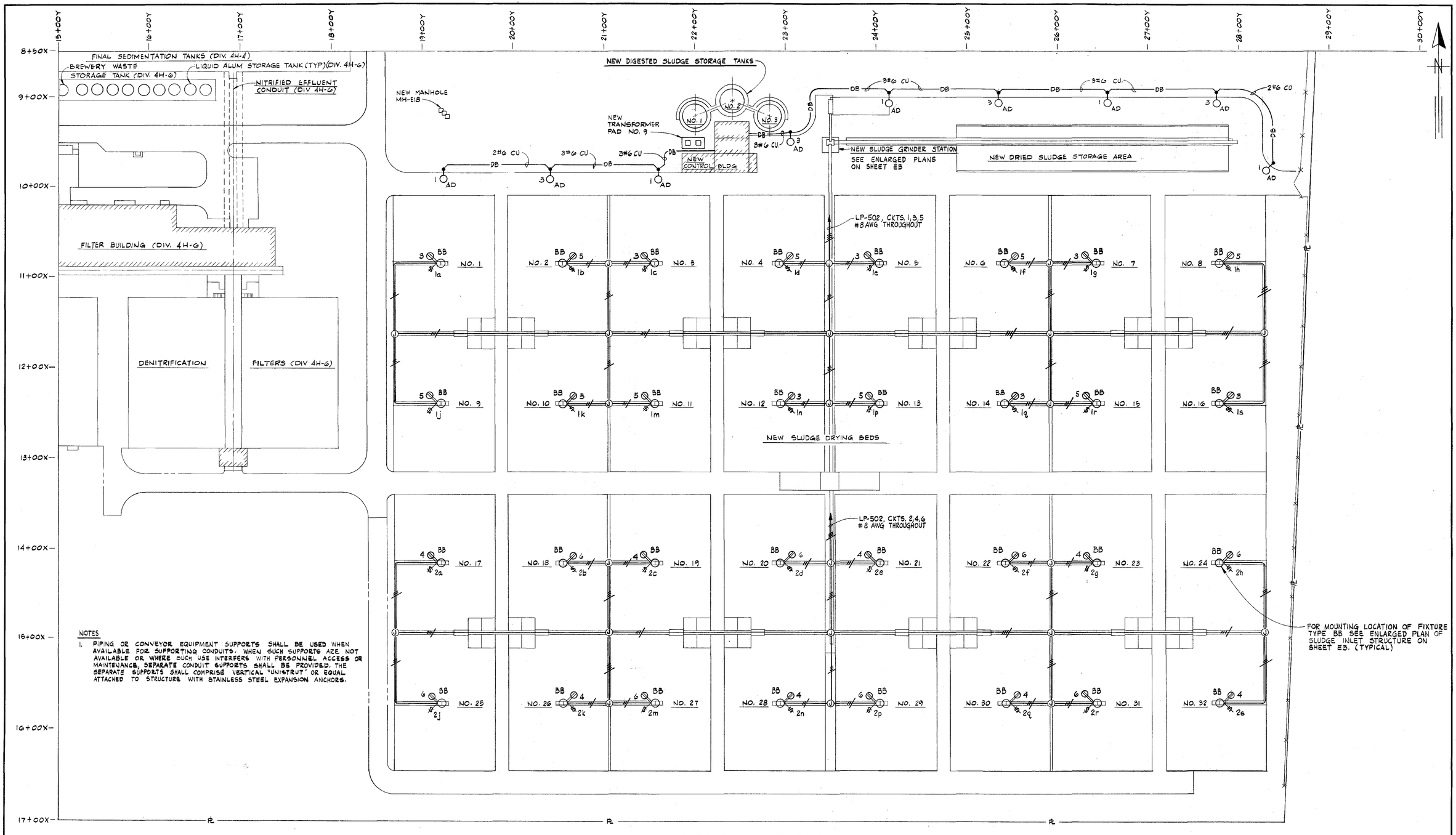
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1" = 50'

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
SITE PLAN
POWER

PROJ. NO. S 202-70-30D
SHEET E1 OF 31
DATE OCTOBER, 1976 REV. 0

DWG 57 OF 88



NOTES

1. PIPING OR CONVEYOR EQUIPMENT SUPPORTS SHALL BE USED WHEN AVAILABLE FOR SUPPORTING CONDUITS. WHEN SUCH SUPPORTS ARE NOT AVAILABLE OR WHERE SUCH USE INTERFERES WITH PERSONNEL ACCESS OR MAINTENANCE, SEPARATE CONDUIT SUPPORTS SHALL BE PROVIDED. THE SEPARATE SUPPORTS SHALL COMPRISE VERTICAL "UNISTRUT" OR EQUAL ATTACHED TO STRUCTURE WITH STAINLESS STEEL EXPANSION ANCHORS.

SITE PLAN - LIGHTING

NOTE:

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN DAS
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

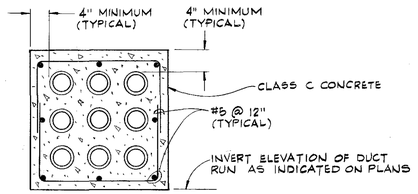
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1" = 50'

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

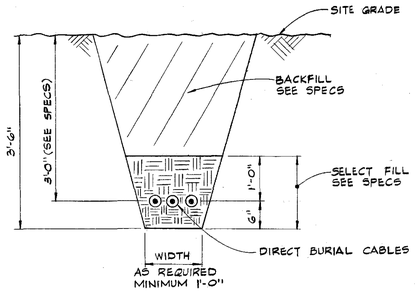
ELECTRICAL
SITE PLAN
LIGHTING

PROJ. NO. S 202-70-30D
SHEET E2 OF 31
DATE OCTOBER, 1976 | REV. 0

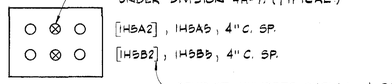
DWG 58 OF 88



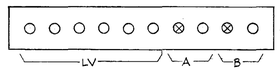
TYPICAL REINFORCING FOR CONCRETE ENCASED ELECTRICAL CONDUITS



TYPICAL SECTION SHOWING DIRECT BURIAL CABLE INSTALLATION

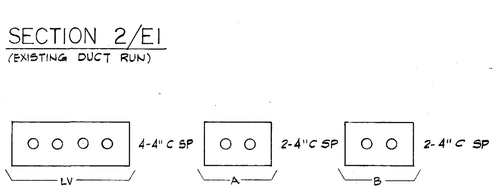


SECTION 1/E1
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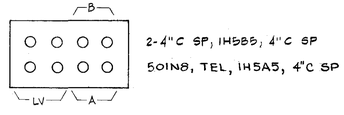


501N8, 4-4"C.SP, 1H5A5, 4"C.SP 1H5B5, 4" C. SP.

SECTION 2/E1
(EXISTING DUCT RUN)

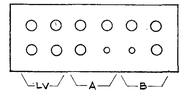


SECTION 3/E1



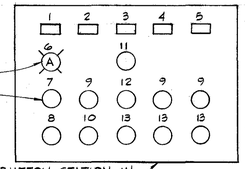
2-4"C SP, 1H5B5, 4" C SP
501N8, TEL, 1H5A5, 4"C SP

SECTION 4/E1, E15



2-4" C SP, 1T5A5-1, 1T5A5-2, 1T5B5-1, 1T5B5-2
501N8, TEL, 4"C SP, 501M1, 501M2, 4"C SP

SECTION 5/E1, E15

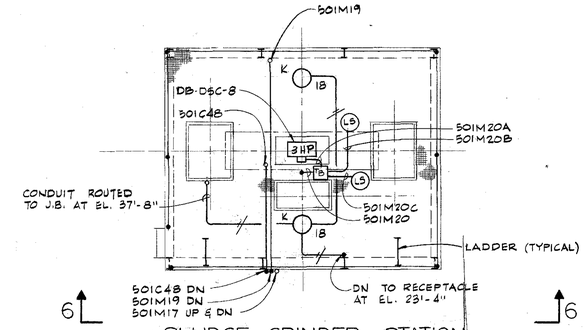


NAMEPLATE LEGEND:

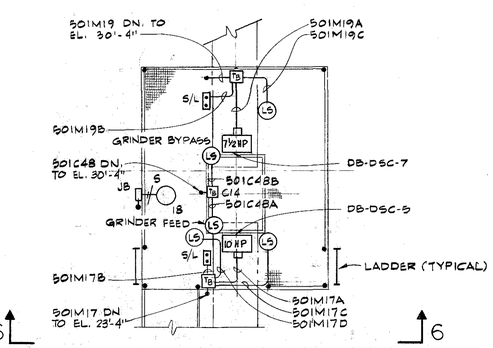
1. DRIED SLUDGE DISCHARGE CHUTE
2. DRIED SLUDGE CONVEYOR NO. 6
3. DRIED SLUDGE CONVEYOR NO. 8
4. DRIED SLUDGE GRINDER NO. 1
5. DRIED SLUDGE GRINDER NO. 2
6. OPERABLE
7. FORWARD
8. REVERSE
9. START
10. STOP
11. FEED GRINDER NO. 1
12. FEED GRINDER NO. 2
13. STOP/LOCKOUT

SEE SLUDGE GRINDER STATION PLAN AT EL. 23'-4" FOR LOCATION

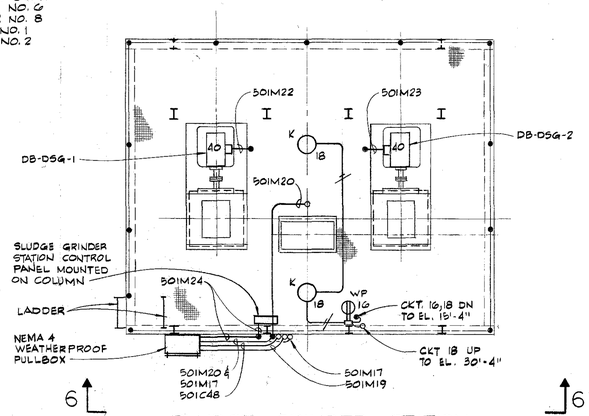
SLUDGE GRINDER STATION CONTROL PANEL



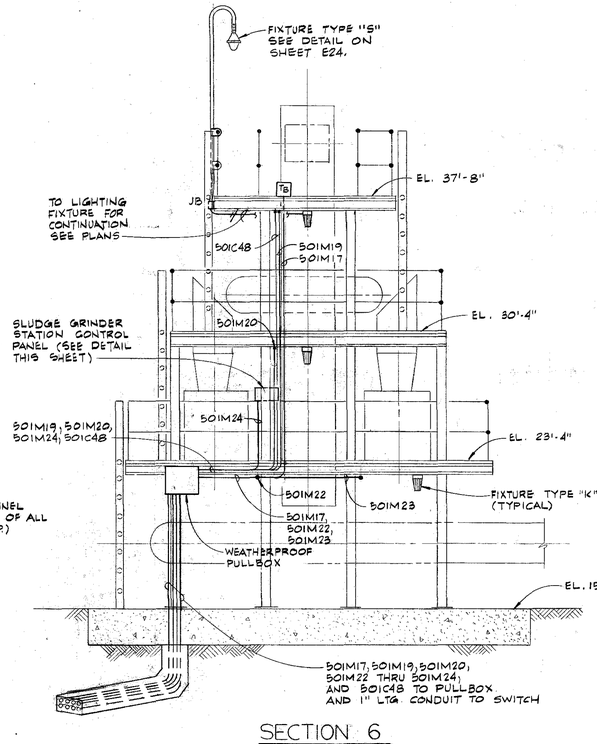
SLUDGE GRINDER STATION PLAN AT EL. 30'-4"
SCALE: 1/4"=1'-0"



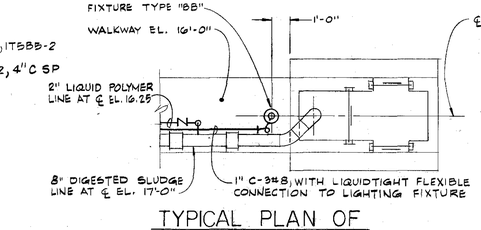
SLUDGE GRINDER STATION PLAN AT EL. 37'-8"
SCALE: 1/4"=1'-0"



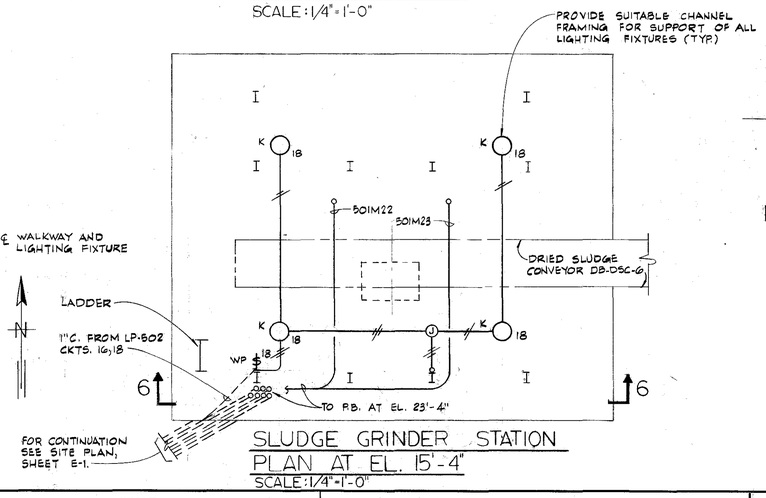
SLUDGE GRINDER STATION PLAN AT EL. 23'-4"
SCALE: 1/4"=1'-0"



SECTION 6
SCALE: 1/4"=1'-0"



TYPICAL PLAN OF SLUDGE INLET STRUCTURE
SCALE: 1/4" = 1'-0"



SLUDGE GRINDER STATION PLAN AT EL. 15'-4"
SCALE: 1/4"=1'-0"

NOTE:
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RECORD DRAWING
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GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED WJK DRAWN DAS CHECKED WJK, RAW	APPROVED DATE SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS	1	2/80	DSH	REC. DWG REVISIONS
			NO.	DATE.	APP.	REVISION

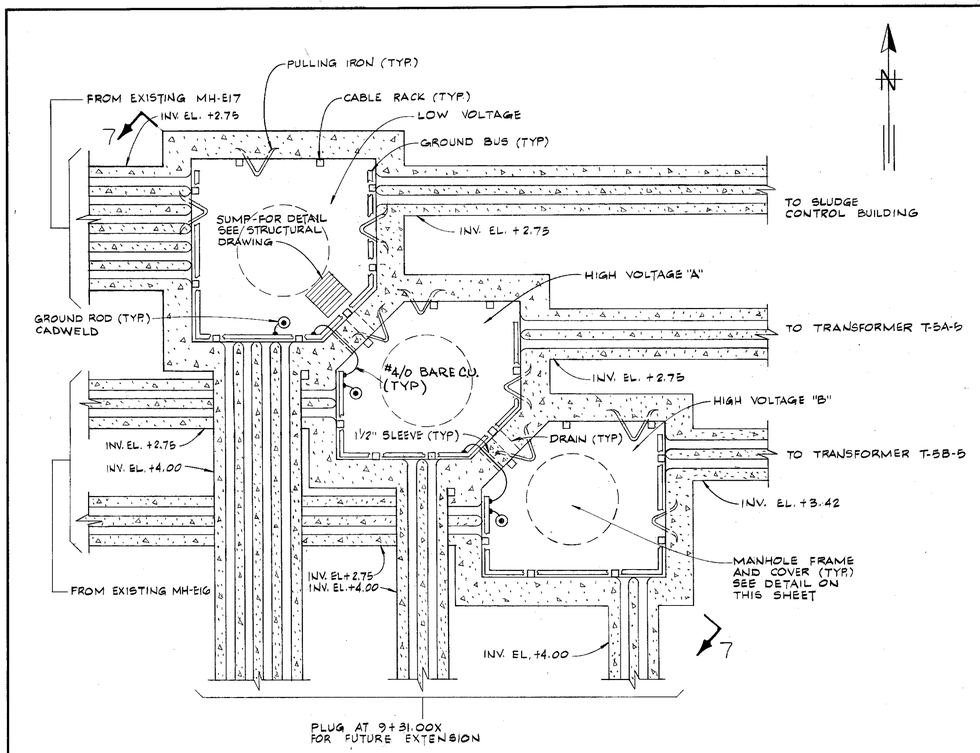
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CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

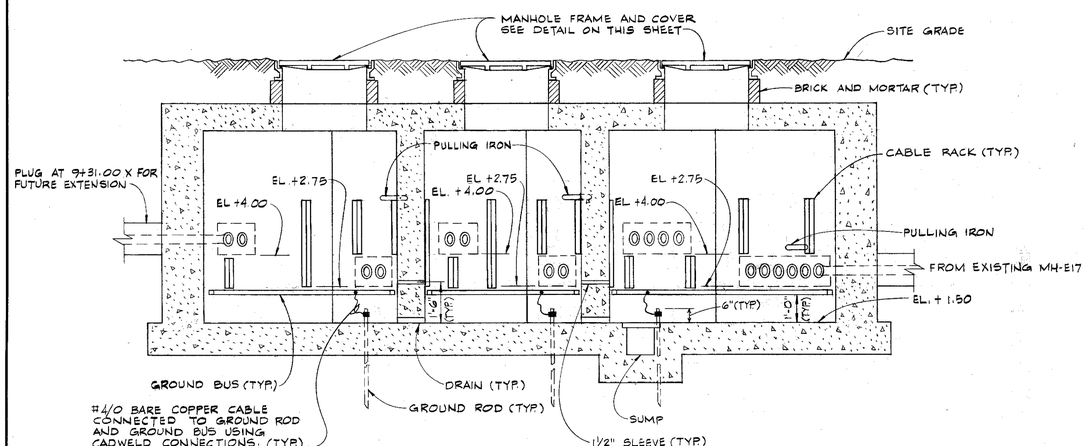
ELECTRICAL
SITE PLAN
ENLARGED PLANS
SECTIONS AND DETAILS

PROJ. NO. S 202-70-30D
SHEET E3 OF 31
DATE OCTOBER, 1976 REV. 0

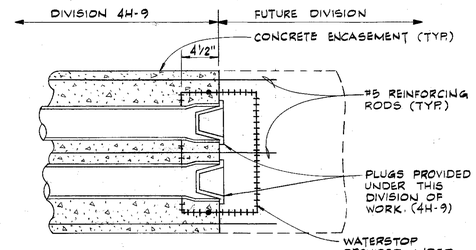
DWG 59 OF 88



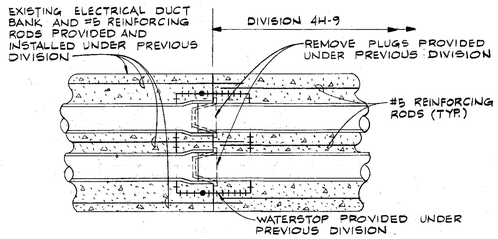
MANHOLE MH-E18
SCALE: 3/8"= 1'-0"



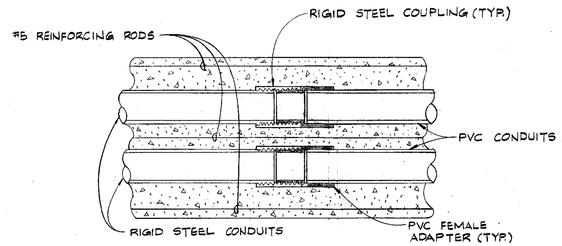
SECTION 7
SCALE: 3/8"= 1'-0"



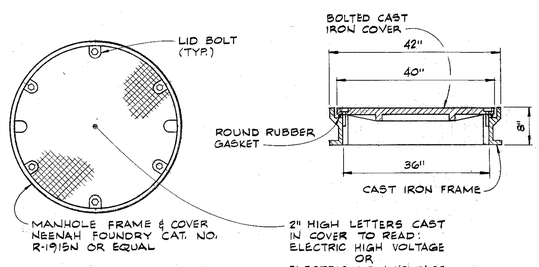
TYPICAL PVC PLUGGING DETAIL
SCALE: NONE



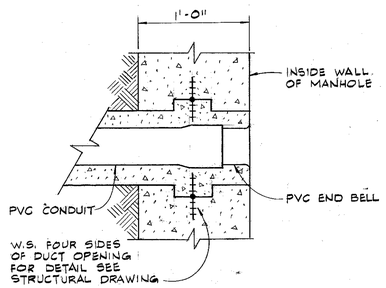
TYPICAL PVC DUCT EXTENSION DETAIL
SCALE: NONE



RIGID STEEL TO PVC DUCT CONNECTION
SCALE: NONE



ELECTRICAL MANHOLE FRAME & COVER
SCALE: NONE



TYPICAL CONDUIT ENTRANCE AT MANHOLE
SCALE: NONE

NOTES:

1. FOR LOCATION OF ELECTRICAL MANHOLE, SEE SHEET E1.
2. FOR CONSTRUCTION OF ELECTRICAL MANHOLE, DUCT ENCASEMENTS, AND TRANSFORMER PAD, SEE STRUCTURAL DRAWINGS.
3. PROVIDE IN EACH MANHOLE, McGRAW EDISON OR EQUAL TYPE DU10B, TYPE "A" SERIES CABLE RACKS, DU95 SERIES CABLE SUPPORTS, DE12U SERIES UNDERGROUND INSULATORS AND DUIT SERIES PULLING IRONS AS INDICATED ON ELECTRICAL MANHOLE PLANS AND SECTIONS.
4. PROVIDE IN EACH MANHOLE A ¼" X 1½" COPPER GROUND BUS SPACED ½" FROM THE MANHOLE WALL AND MOUNTED APPROXIMATELY 1'-0" ABOVE THE MANHOLE FLOOR.
5. PROVIDE IN EACH MANHOLE A ¾" X 10'-0" STAINLESS STEEL GROUND ROD WITH TOP OF ROD EXTENDING 6" ABOVE THE MANHOLE FLOOR. ALL GROUND RODS SHALL BE INSTALLED PRIOR TO THE POURING OF MANHOLE FLOOR. SLEEVES THRU THE FLOOR ARE NOT ACCEPTABLE.
6. PROVIDE A 1½" STEEL CONDUIT SLEEVE THRU THE COMMON WALL OF ADJACENT MANHOLES APPROXIMATELY 1'-6" ABOVE THE MANHOLE FLOOR. CONNECT A #4/0 BARE COPPER CABLE BETWEEN THE GROUND BUS IN ADJACENT MANHOLES USING CADWELD CONNECTIONS.
7. ALL ELECTRICAL UNDERGROUND DUCTS SHALL BE PVC CONDUIT, CARLON, TYPE "D3" OR APPROVED EQUAL, 4" NOMINAL I.D. FOR HIGH VOLTAGE AND 4" NOMINAL I.D. FOR LOW VOLTAGE AS INDICATED ON SECTIONS AND CABLE SCHEDULES.
8. 4" DUCTS SHALL BE SPACED 8" O.C. THROUGHOUT. FOR TYPICAL REINFORCING SEE DETAIL ON SHEET E3.
9. CONNECTIONS TO CONDUITS STUBBED OUT UNDER OTHER DIVISIONS SHALL MADE WITH COUPLINGS AND ADAPTERS AS MANUFACTURED BY CARLON OR APPROVED EQUAL. SEE DETAIL ON THIS SHEET.
10. ALL ELECTRICAL DUCTS TERMINATING IN MANHOLE, EXCEPT AS PROVIDED FOR PUBLIC TELEPHONE, SHALL BE FITTED WITH END BELLS INSTALLED FLUSH WITH THE INSIDE WALL OF THE MANHOLE, SEE DETAIL ON THIS SHEET.
11. ~~ALL ELECTRICAL DUCTS PROVIDED FOR PUBLIC TELEPHONE SHALL BE FITTED WITH FEMALE ADAPTERS PROJECTING 1½" INTO THE MANHOLE. PROVIDE A 90° STEEL CONDUIT FROM THE FEMALE ADAPTER TO A 24" X 20" X 10" CAST ALUMINUM JUNCTION BOX, KILLARK CAT. EDGE 202412 W/GASKETED FLANGE TYPE PLAIN COVER OR EQUAL, SET ON THE FLOOR OF THE MANHOLE.~~
12. ALL GROUND WIRES IN DUCTS TERMINATING IN MANHOLES SHALL BE CONNECTED TO THE GROUND BUS USING A CADWELD CONNECTION, TO THE BUS AND A CADWELD 'T' TOP TO THE GROUND CONDUCTOR.
13. BACKFILL FOR ALL ELECTRICAL DUCTS AND MANHOLES SHALL BE TYPE "A".
14. ALL UNDERGROUND ELECTRICAL DUCTS TERMINATING AT BUILDINGS SHALL MAKE TRANSITION TO RIGID STEEL CONDUIT A MINIMUM OF 3'-0" FROM THE BUILDING ENTRY POINT.
15. INVERT ELEVATIONS OF DUCT RUNS SHOWN ON MANHOLE PLAN INDICATE THE BOTTOM OF THE CONCRETE ENCASEMENT WHERE IT ENTERS THE MANHOLE.
16. ALL DUCT SWEEPS AND BENDS SHALL BE MINIMUM 12'-0" RADIUS; EXCEPT 90° BENDS UP TO TRANSFORMER PAD NO.9 WHICH SHALL BE MINIMUM 6'-0" RADIUS BENDS.

NOTE:

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RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN DAS
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION
1	2/80	DSH	REC DWG REVISIONS

SCALE
1 0 1 2 3 4 5 6 7 FT 3/8"= 1'-0"

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
MANHOLES
PLANS, SECTIONS AND DETAILS

PROJ. NO. S 202-70-30D
SHEET E4 OF 31
DATE OCTOBER, 1976 | REV. 0

DWG 60 OF 88

GENERAL SYMBOLS

MH	Designates Mounting Height
WP	Designates Weatherproof Equipment
XP	Designates Explosionproof Equipment
EWC	Designates Electric Water Cooler
MOV	Designates Motor Operated Valve

Note : All Relays, Contactors, Controllers, Breakers, Annunciators, Timers, Pushbuttons, Indicating Lights and Similar Devices are Within Designated Motor Control Centers, Control Panels or Switchgear Unless Noted Otherwise by Specific Plan Notes or the Symbols Below:

△ Indicates Device Located Near Motor or Remote From Controller.

* Indicates Device Located in a Specific Local Control Panel as Designated on the Plans.

CONDUIT AND CABLE SCHEDULE LEGEND

(19)(M)(123A) — Typical Conduit & Cable Run Number
- Indicates Specific Conduit & Cable Run From Source Distribution Center
- Code Letter Indicating Source Distribution Center Type and or Wiring System
- Indicates Source Distribution Center Number

Example : 19 M 123A - Indicates Conduit & Cable Run Number 123A of a Wiring System From Motor Control Center No. 19.

Code Letter	Wiring System and/or Source
M	- Control, Power, and Instrumentation Wiring From and to Motor Control Centers, Pump Control Panels & 480V Switchgear (See Note Below)
H	- 13.2 KV Feeders
C	- Control, Metering and Protective Relaying Wiring From and to 13.2 KV & 4.16 KV Switchgear & Standby Generation System
N	- Alarm, Data Logging, Scanner&Supervisory Control System Wiring & Instrumentation System Wiring
T	- 4160V and 480V Feeders From Power Transformers

Note : Numbering for Motor Control Centers, 480V Switchgear and Similar 480V Distribution Equipment is Consecutive Within Areas According to the Following Chart (See Equipment Location Schedules Also:)

Number Series	Area No.	Area Served
1 Thru 9		Not Used
10 Thru 19	1	Present & Future Oxygen Generation & Storage
20 Thru 29	2	Junction Chamber No. 1, Operations Building & Screen and Grit
30 Thru 39	3	Main Pumping Station & Reactors
40 Thru 49	4	Sludge Pumping & Final Sedimentation, Intermediate Pumping Station, Future Sludge Pumping & Final Sedimentation & Future Reactors
50 Thru 59	5	Present and Future Digestion Lagoons & Pumping Stations; Present and Future Denitrifying Filters
501 Thru 509	5	Solids Disposal Facilities

ONE LINE DIAGRAM SYMBOLS

600A — Bus - Rating as Shown
Incoming Line
Outgoing Line
13.8 KV Cable Termination
Disconnecting Device
Conductors Connected
100A — Fuse - Rating as Shown
100A — Single Throw Disconnect Switch - Rating as Shown
100A/70A — Fused Disconnect Switch - 100A Switch, 70A Fuse
Interrupter Switch
Fused Interrupter Switch
100A — Low Voltage Air Circuit Breaker with Magnetic Only Trip Device 100A Frame
225A/125A — Low Voltage Air Circuit Breaker with 225A Frame and 125A Trip
600A/400A — Low Voltage Drawout Type Air Circuit Breaker with 600A Frame and 400A Trip
52 — Medium Voltage Drawout Type Air Circuit Breaker
G — Circuit Breaker with Solid State Ground Fault Sensor.

(27) Protective Relay

27 - Undervoltage	86 - Lockout
50 - Instantaneous Overcurrent	87 - Differential Current
51 - A.C. Time Overcurrent	G - Device in Ground Circuit
52 - A.C. Circuit Breaker	N - Device in Neutral Circuit
60 - Voltage Balance	X - Auxiliary Relay
43 - Manual - Automatic Master Transfer Function Selector Switch	IR - Interposing Relay
32 Reverse Power	GSR - Ground Sensing Relay
	25/27 - Synchronizing Check Relay
	DBX - Dead Bus Auxiliary Relay

225A/150A — Low Voltage Air Circuit Breaker with Coordinated CL Fuses. 225A Frame and 150A Trip.

Key Interlock - Dotted Line with Arrows Indicates Movement of Key During Interlock Procedure

[A] Meter, Instrument or Instrument Switch
- A - Ammeter
- V - Voltmeter
- W - Wattmeter
- WHD - Watthour Demand Meter
- W/VAR - Combination Wattmeter/Varmeter
- AS - Ammeter Switch
- VS - Voltmeter Switch
- W/VSW - Wattmeter/Varmeter Switch
- SI - Speed Indicator
- TM - Elapsed Time Meter
- VAR - Varmeter
- CS - "52" Breaker Control Switch
- WT - Watts Transducer
- VART - Vars Transducer
- VT - Volts Transducer
- AT - Amperes Transducer

Ground Connection
Lightning or Surge Arrestor
Surge Capacitor

Power Transformer with Winding Connections Indicated
CPT — Control Power Transformer
PT — Potential Transformer
CT — Current Transformer
CT — Current Transformer - 3 Phase Window Type
Thermal Overload Element (OL)
(5) — Squirrel Cage Motor (Indicate Horsepower)
(G) — Generator
R — Indicating Light (R-Red, G-Green, A-Amber, B-Blue, W-White)

M81 / 23/3 / FVNR — Combination Starter with Control Transformer and Overload Relays - Magnetic Circuit Breaker with Current Limiter Fuses
- 23/3 - Trip Setting / Limiter Rating
- FVNR - Full Voltage Non Reversing
- FVR - Full Voltage Reversing
- 25-1W - Full Voltage Two Speed, Single Winding, Consequent Pole, Variable Torque
- 25-2W - Full Voltage Two Speed, Two Winding

Power Line
Control Line

SCHEMATIC AND WIRING DIAGRAM SYMBOLS

(M) — Operating Coil — M - Motor Starter — C - Contactor, F - Forward, R - Reverse — AR - Auxiliary Relay, CR - Control Relay, TR - Time Delay Relay
Normally Open Contact (N.O.)
Normally Closed Contact (N.C.)
TC — Normally Open Contact with Time Delay Closing
TO — Normally Closed Contact with Time Delay Opening
R — Indicating Light (R-Red, G-Green, A-Amber, B-Blue, W-White)
3-Position Selector Switch
Normally Open Pushbutton
Normally Closed Pushbutton
Double Circuit Pushbutton with Spring Return to Normal
Transformer
OL — Overload Relay Contact
Thermal Overload Element (OL)
On-Off Switch
R — Resistor
Solenoid Valve

Normally Open N.O.	Normally Closed N.C.	
		Limit Switch
		Float Switch
		Pressure Switch
		Flow Switch
		Temperature Switch

NOTE:

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RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN RWZ
CHECKED WJK, RAW

APPROVED
DATE
SUPT., DEPT. OF SANITARY SEWERS
DATE
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
SYMBOL LIST

PROJ. NO. S 202-70-30D-
SHEET E 5 OF 31
DATE OCTOBER, 1976 | REV. 0

POWER AND LIGHTING SYMBOLS

- Exposed Conduit Run
- Conduit Run Concealed in Floor
- Conduit Run Concealed in Walls, Above Suspended Ceiling, or in Roof Slab
- Conduit with #12 AWG Hot and Neutral Wires (Long Line is Neutral)
- Home Run to Lighting Panelboard (LP:G Indicates Panelboard & 1,3,5 Indicates 20A-1P Ckts. 1, 3 and 5) — LP:G 1,3,5
- Flexible Liquidtight Conduit
- —G— Grounding Conductor
- —E— Underground Duct Encased in Concrete
- —DB— Direct Burial Cable
- Conduit-Up
- Conduit-Down
- Lighting Panelboard 120/208V, 3Φ, 4W, SN
- Lighting Panelboard 277/480V, 3Φ, 4W, SN
- T Telephone Cabinet
- Equipment Enclosure as Indicated on Plan
- Manually Operated Starter or Circuit Breaker
- M Full Voltage Magnetic Starter
- M Combination Full Voltage Magnetic Starter with Circuit Breaker
- C Magnetic Contactor
- 5 Motor - Three Phase (5 HP)
- 1/3 Motor - Single Phase (1/3 HP)
- WH Electric Water Heater
- Ground Rod
- Lightning Rod
- 1/2 Prewired Three Phase Motor and Controller

- A Ceiling Mounted Incandescent or Mercury Vapor Lighting Fixture. "A" Indicates Fixture Type Listed in Schedule on Sheet E25.
- Wall Mounted Lighting Fixture
- Exit Sign
- Emergency Incandescent or Mercury Vapor Lighting Fixture
- Fluorescent Fixture
- Emergency Fluorescent Fixture
- Fluorescent Strip Light
- Pole Mounted Lighting Fixture
- BP Battery Pack for Emergency Fixture
- Single Receptacle - 20A, 2Pole, 3 Wire
- Duplex Receptacle - 20A, 2 Pole, 3 Wire
- Duplex Receptacle - 20A, 2 Pole, 3 Wire, 208V
- 30A Single Receptacle - 2 Pole, 3 Wire, 208V, Rating Noted
- 60A, 3Pole, 3 Wire, 480V, Welding Outlet
- C Clock Outlet
- Single Pole Switch
- 2P Two Pole Switch
- 3W Three Way Switch
- 4W Four Way Switch
- T Switch with Thermal Overload Protection
- M Momentary Contact Switch
- D Door Switch
- P Switch With Pilot Light
- G Combustible Gas Detection Sensor
- Photo Electric Cell
- J Outlet Box with Blank Cover
- JB Junction Box
- PB Pullbox
- TB Terminal Box
- J Watertight Floor Outlet Box
- Floor Outlet Box with Duplex Receptacle - 20A, 2 Pole, 3 Wire

- S Intercommunication Speaker Outlet (General Tel. Co.)
- V Intercommunication Speaker Volume Control Outlet (General Tel. Co.)
- Intercommunication Telephone Outlet (General Tel. Co.)
- Horn
- ▽ Intercommunication Telephone Floor Outlet (General Tel. Co.)

GENERAL SYMBOLS

- Start-Stop Pushbutton
- S/L Start-Stop Pushbutton with Lock Attachment on Stop
- S/L Indicating Light and Start-Stop Pushbutton with Lock Attachment on Stop
- Forward-Stop-Reverse or Slow-Fast-Stop Pushbutton
- Single Pushbutton
- Selector Switch ("HOA" Indicates Hand Off Auto; "MOR" Indicates Manual Off Remote; etc)
- L On-Off Switch with Lock Attachment on Off Position
- EP Electric-Pneumatic Switch
- F Float Switch
- FL Flow Switch
- FS Freezestat
- LS Limit Switch
- M Motor Operated Valve or Sluice Gate with Integral Controller and Circuit Breaker
- P Pressure Switch
- PE Pneumatic-Electric Switch
- S Solenoid Operated Valve
- T Temperature Switch
- TG Tachometer Generator
- TS Torque Switch
- DM Damper Motor

NOTE:

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN RWZ
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIADS DISPOSAL FACILITIES

ELECTRICAL
SYMBOL LIST

PROJ. NO. S 202-70-30D-
SHEET E6 OF 31
DATE OCTOBER, 1976 REV. 0

13.2KV OUTDOOR SWITCHGEAR NO. 1

EAST LINE UP-"B" SECTION

WEST LINE UP-"A" SECTION

2000A, 3φ, 3W, Bus No. 2

2000A, 3φ, 3W, Bus No. 1

Bus For Future Extension to South

Main Brkr No.2 1-52-2 | Dist Brkr 1-52-1B | Dist Brkr 1-52-2B | Dist Brkr 1-52-3B | Dist Brkr 1-52-4B | Dist Brkr 1-52-5B | Spare Dist Brkr 1-52-6B | NC Standby Tie Brkr 1-52-52 | Future Dist Brkr 1-52-7B | NO Tie Brkr 1-52-Tie | NC Standby Tie Brkr 1-52-51 | Dist Brkr 1-52-6A | Dist Brkr 1-52-5A | Dist Brkr 1-52-4A | Dist Brkr 1-52-3A | Dist Brkr 1-52-2A | Dist Brkr 1-52-1A | Main Brkr No.1 1-52-1

2000A, 3φ, 3W, Bus Tie

Future Splice

Manhole MH-E15 Section-B

4H-12

1H1B1 | 1H2B1 | 1H3B1 | 1H4B1 | 1H5B1 | 1H5B2 | 1H2B2 | 1H2B3 | 1T1B1 | 1T2B2-1 To 1T2B2-3

T-1B-1 1500KVA 13.2KV-4160V

T-2B-1 500KVA 13.2KV-480/277V

Screen & Grit Bldg

1T2B1-1, 1T2B1-2

T-2B-2 750KVA 13.2KV-480/277V

Oxygen Generator B-1

Operations & Maint. Bldg

T-4B-1 1000KVA 13.2KV-480/277V

1T4B1-1 To 1T4B1-4

Sludge Pump & Final Sed.

T-5B-1 1500KVA 13.2KV-480/277V

1T5B1-1 to 1T5B1-6

Sludge Treatment Bldg.

T-3B-1 1500KVA 13.2KV-480/277V

1T3B1-1 To 1T3B1-6

Reactors

1H4B2 | 1H3B2

T-4B-2 750KVA 13.2KV-480/277V

1T4B2-1 To 1T4B2-3

Intermediate Pump Station

T-5B-2 1500KVA 13.2KV-480/277V

MS PS-C-BLDG

T-3B-2 1500KVA 1500KVA 13.2KV-480/277V

1T3B2-1 To 1T3B2-6

Main Pumping Station

1H3B3

1H3B3-TS

Elect. Operated Manual Transfer Switch TS-3B-3

NC | EO | NO

Manhole MH-E18 Section-B

Future Splice

Connection typical for all transformers

Future T-1B-2 1500KVA 13.2KV-4160V

T-2B-3 500KVA 13.2KV-480/277V

Existing Teco Supply To Be Disconnected

Manhole MH-E13

Future Splice

1T2B3-1, 1T2B3-2

1H2B4

Junction Chamb. No.1

Future T-2B-4 500KVA 13.2KV 480/277V

Future Oxygen Generator B-2

Future Junction Chamber No.1 Addition

Existing T-2B-5 500KVA 13.2KV 480/277V

Existing Sewage Plant Pumping Station

Future T-4B-3 1000KVA 13.2KV-480/277V

Fut. Sludge Pmp. & Final Sed.

Future T-4B-4 1500KVA 13.2KV-480/277V

Future Reactors

Future T-5B-3 1500KVA 13.2KV-480/277V

Denitrifying Filters

Future T-5B-4 1000KVA 13.2KV-480/277V

Future Denitrifying Filters

T-3B-3 1500KVA 13.2KV 480/277V

1T3B3-1 To 1T3B3-6

Main Sewage Pumps

1H5B5

T-5B-5 500KVA 13.2KV-480/277V.

1T5B5-1, 1T5B5-2

Solids Disposal Facilities

13.2KV INDOOR SWITCHGEAR NO. 2

"A" SECTION 1200A, 3φ, 3W, Bus No.1

"B" SECTION 1200A, 3φ, 3W, Bus No.2

Fut 2.52-3 | NO 2.52-1 | NO Dist Brkr 2.52-51 | NO Dist Brkr 2.52-53 | NC Tie Brkr 2.52-Tie | NO Dist Brkr 2.52-52 | NO 2.52-2

1200A, 3φ, 3W, Bus Tie

2H3 | 2H1 | 2H2

G3 | G1 | G2

Future 2800KW 2800 KW

2800KW

Standby Gen. Dist. Line No. 1 (2H51)

Standby Gen. Dist. Line No. 2 (2H52)

Standby Gen. Dist. Line No. 3 (2H53)

6.9KV TECO Overhead Supply From Power Grid

New HOOKERS POINT SUBSTATION By TECO

13.2KV TECO U.G. Distribution

6.9KV-13.2KV

13.2KV TECO U.G. Distribution

NC | NC | NC | NC | NC

Future | Future | Future

Tie Breaker

Manhole MH-E16 Section-A

Future Splice

1H5A5

T-5A-5 500KVA 13.2KV-480/277V

1T5A5-1, 1T5A5-2

Solid Disposal Facilities

Future T-5A-4 1000KVA 13.2KV-480/277V

Future Denitrifying Filters

Future T-4A-4 1500KVA 13.2KV-480/277V

Future Reactors

Future T-2A-4 500KVA 13.2KV 480/277V

Future Junction Chamber No.1 Addition

Future Oxygen Generator A-2

LB SW.

SWGR #GD

1T5A1-1 To 1T5A1-G

1H5A2

Manhole MH-E15 Section-A

4H-12

1H5A1

T-5A-1 1500KVA 13.2KV-480/277V

Sludge Treatment Bldg.

LRS SW.

T-5A-2 1500KVA 13.2KV-480/277V

MS PS-C-BLDG

1H4A1 | 1H3A1 | 1H2A1 | 1H1A1

T-4A-1 1000KVA 13.2KV-480/277V

1T4A1-1 To 1T4A1-4

Sludge Pump & Final Sed.

1H4A2

T-4A-2 750KVA 13.2KV-480/277V

1T4A2-1 To 1T4A2-3

Intermediate Pump Station

1H2A2

T-3A-1 1500KVA 13.2KV-480/277V

1T3A1-1 To 1T3A1-6

Reactors

1H3A2

T-3A-2 1500KVA 13.2KV-480/277V

1T3A2-1 To 1T3A2-6

Main Pumping Station

1H3A3

T-3A-3 1500KVA 13.2KV-480/277V

1T3A3-1 To 1T3A3-6

Main Sewage Pumps

T-2A-1 500KVA 13.2KV-480/277V

1T2A1-1, 1T2A1-2

Screen & Grit Bldg

1H2A3

Future T-2A-2 300KVA 13.2KV-480/277V

1T2A2-1 To 1T2A2-3

Operations & Maint. Bldg

T-2A-3 750KVA 13.2KV-480/277V

1T2A3-1, 1T2A3-2

Junction Chamber No.1

T-1A-1 1500KVA 13.2KV-4160V

1T1A1

Oxygen Generator A-1

Future T-1A-2 1500KVA 13.2KV-4160V

Future T-5A-3 1500KVA 13.2KV-480/277V

Denitrifying Filters

Future T-4A-3 1000KVA 13.2KV-480/277V

Fut. Sludge Pmp. & Final Sed.

Future T-4A-4 1000KVA 13.2KV-480/277V

Future Reactors

GEN. NOTE: WORK SHOWN UNDER THIS CONTRACT (4H-9) INCLUDES MH-E18, T-5A-5 AND T-5B-5, INCLUDING FEEDERS 1H5B5 AND 1H5A5 (SEE SPECIFICATIONS).

NOTE: ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA "DATUM" TO "CONVERT" TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

RECORD DRAWING

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13.2KV Incoming Line No. 2 By TECO

13.2KV Incoming Line No. 1 By TECO

GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED WJK DRAWN HSP CHECKED WJK, RAW	APPROVED SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS DATE	2 2/80 CB INCL. REV to 4H4, 6, 9, 10, 12 (PER JLB) 1 2-1-80 DS.R. REC. DWG. REVISIONS NO. DATE APP. REVISION	SCALE: NO SCALE	CITY OF TAMPA, FLORIDA SEWAGE DISPOSAL SYSTEM HOOKERS POINT SEWAGE TREATMENT PLANT DIVISION 4H-9 SOLIADS DISPOSAL FACILITIES	ELECTRICAL 13.2 KV DISTRIBUTION ONE LINE DIAGRAM	PROJ. NO. S 202-70-30D- SHEET E7 OF 31 DATE OCTOBER, 1976 REV. 0

DWG 63 OF 84

13.2KV OUTDOOR SWITCHGEAR NO. 1

EAST LINE UP-"B" SECTION

2000A, 3φ, 3W, Bus No. 2

Main Brkr No. 2 1-52-2 | Dist Brkr 1-52-1B | Dist Brkr 1-52-2B | Dist Brkr 1-52-3B | Dist Brkr 1-52-4B | Dist Brkr 1-52-5B | Spare Dist Brkr 1-52-6B | NC Standby Tie Brkr 1-52-S2 | Future Dist Brkr 1-52-7B

Bus For Future Extension to South

2000A, 3φ, 3W, Bus Tie

NO Tie Brkr 1-52-Tie | NC Standby Tie Brkr 1-52-S1 | Future Dist Brkr 1-52-6A

WEST LINE UP-"A" SECTION

2000A, 3φ, 3W, Bus No. 1

Dist Brkr 1-52-5A | Dist Brkr 1-52-4A | Dist Brkr 1-52-3A | Dist Brkr 1-52-2A | Dist Brkr 1-52-1A | Main Brkr No. 1 1-52-1

1H1B1 | 1H2B1 | 1H3B1 | 1H4B1 | 1H5B1 | 1H5B2 | 1H2B2 | 1H2B3 | 1T1B1

T-1B-1 1500KVA 13.2KV-416OV

T-2B-1 500KVA 13.2KV-480/277V — 1T2B1-1, 1T2B1-2 — Screen & Grit Bldg

T-2B-2 750KVA 13.2KV-480/277V — 1T2B2-1 To 1T2B2-3 — Operations & Maint. Bldg

T-4B-1 1000KVA 13.2KV-480/277V — 1T4B1-1 To 1T4B1-4 — Sludge Pump & Final Sed.

T-5B-1 1500KVA 13.2KV-480/277V — 1T5B1-1 To 1T5B1-6 — Sludge Treatment Bldg.

T-3B-1 1500KVA 13.2KV-480/277V — 1T3B1-1 To 1T3B1-6 — Reactors

1H4B2

T-4B-2 750KVA 13.2KV-480/277V — 1T4B2-1 To 1T4B2-3 — Intermediate Pump Station

Future T-5B-2 1500KVA 13.2KV-480/277V — Fut. Digestion Logoon & P.S.

T-3B-2 1500KVA 13.2KV-480/277V — 1T3B2-1 To 1T3B2-6 — Main Pumping Station

1H3B3 — 1H3B3-TS — Elect. Operated Manual Transfer Switch T5-3B-3 (NC / EO / NO)

Future Splice — Manhole MH-E15 Section-B

Oxygen Generator B-1

Future T-1B-2 1500KVA 13.2KV-416OV

Manhole MH-E13

Future Splice

Future Oxygen Generator B-2

Future Junction Chamber No. 1 Addition

Future T-2B-4 500KVA 13.2KV 480/277V

Junction Chamb. No. 1

1H2B4

T-2B-3 500KVA 13.2KV-480/277V — 1T2B3-1, 1T2B3-2

Future Splice — Connection typical for all transformers

Existing Teco Supply To Be Disconnected

Existing Sewage Plant Pumping Station

Existing T-2B-5 500KVA 13.2KV 480/277V

Future T-4B-3 1000KVA 13.2KV-480/277V

Fut. Sludge Pmp. & Final Sed.

Future T-4B-4 1500KVA 13.2KV-480/277V

Future Reactors

Future T-5B-3 1500KVA 13.2KV-480/277V

Denitrifying Filters

Future T-5B-4 1000KVA 13.2KV-480/277V

Future Denitrifying Filters

T-3B-3 1500KVA 13.2KV 480/277V — 1T3B3-1 To 1T3B3-6

Main Sewage Pumps

1H5B5

T-5B-5 500KVA 13.2KV-480/277V. — 1T5B5-1, 1T5B5-2 — Solids Disposal Facilities

13.2KV Incoming Line No. 2 By TECO

13.2KV INDOOR SWITCHGEAR NO. 2

"A" SECTION 1200A, 3φ, 3W, Bus No. 1

Fut 2-52-3 | NO 2-52-1 | NO Dist Bkr 2-52-51 | NO Dist Bkr 2-52-53

"B" SECTION 1200A, 3φ, 3W, Bus No. 2

NC Tie Brkr 2-52-Tie | NO Dist Brkr 2-52-52 | NO 2-52-2

2H3 | 2H1 | 2H2

G3 — Future 2800KW 2800 KW

G1

1200A, 3φ, 3W, Bus Tie

G2 — 2800KW

Standby Gen. Dist. Line No. 1 (2H51)

Standby Gen. Dist. Line No. 2 (2H52)

Standby Gen. Dist. Line No. 3 (2H53)

6.9KV TECO Overhead Supply From Power Grid

New HOOKERS POINT SUBSTATION By TECO

13.2KV TECO U.G. Distribution — 6.9KV-13.2KV — NC — NC — Future

Tie Breaker NC

13.2KV TECO U.G. Distribution — NC — Future

1H5A1 | 1H4A1 | 1H3A1 | 1H2A1 | 1H1A1

Manhole MH-E15 Section-A

Future Splice

1T5A1-1 To 1T5A1-6

1H5A2

T-5A-1 1500KVA 13.2KV-480/277V — Sludge Treatment Bldg.

T-4A-1 1000KVA 13.2KV-480/277V — 1T4A1-1 To 1T4A1-4 — Sludge Pump & Final Sed.

T-3A-1 1500KVA 13.2KV-480/277V — 1T3A1-1 To 1T3A1-6 — Reactors

T-2A-1 500KVA 13.2KV-480/277V — 1T2A1-1, 1T2A1-2 — Screen & Grit Bldg

T-1A-1 1500KVA 13.2KV-416OV — 1T1A1

1H4A2

Future T-5A-2 1500KVA 13.2KV-480/277V — Future Digestion Logoon & P.S.

T-4A-2 750KVA 13.2KV-480/277V — 1T4A2-1 To 1T4A2-3 — Intermediate Pump Station

1H2A3

T-3A-2 1500KVA 13.2KV-480/277V — 1T3A2-1 To 1T3A2-6 — Main Pumping Station

Future T-2A-2 300KVA 13.2KV-480/277V — 1T2A2-1 To 1T2A2-3 — Operations & Maint. Bldg

Future T-1A-2 1500KVA 13.2KV-416OV — Oxygen Generator A-1

Manhole MH-E18 Section-A

Future Splice

1H5A5

T-5A-3 1500KVA 13.2KV-480/277V — 1T5A3-1 To 1T5A3-6 — Denitrifying Filters

Future T-4A-3 1000KVA 13.2KV-480/277V — Fut. Sludge Pmp. & Final Sed.

T-3A-3 1500KVA 13.2KV-480/277V — 1T3A3-1 To 1T3A3-6 — Main Sewage Pumps

1H3A3

T-2A-3 750KVA 13.2KV-480/277V — 1T2A3-1, 1T2A3-2 — Junction Chamber No. 1

Future T-1A-2 1500KVA 13.2KV-416OV — Future Oxygen Generator A-2

T-5A-5 500KVA 13.2KV-480/277V — 1T5A5-1, 1T5A5-2 — Solid Disposal Facilities

Future T-5A-4 1000KVA 13.2KV-480/277V — Future Denitrifying Filters

Future T-4A-4 1500KVA 13.2KV-480/277V — Future Reactors

Future T-2A-4 500KVA 13.2KV 480/277V — Future Junction Chamber No. 1 Addition

13.2KV Incoming Line No. 1 By TECO

GEN. NOTE: WORK SHOWN UNDER THIS CONTRACT (4H-9) INCLUDES MH-E18, T-5A-5 AND T-5B-5, INCLUDING FEEDERS 1H5B5 AND 1H5A5 (SEE SPECIFICATIONS).

NOTE: ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

RECORD DRAWING

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GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED WJK DRAWN HSP CHECKED WJK, RAW	APPROVED DATE SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS	1	2-/-80	D.S.R.	REC. DWG. REVISIONS
			NO.	DATE	APP.	REVISION

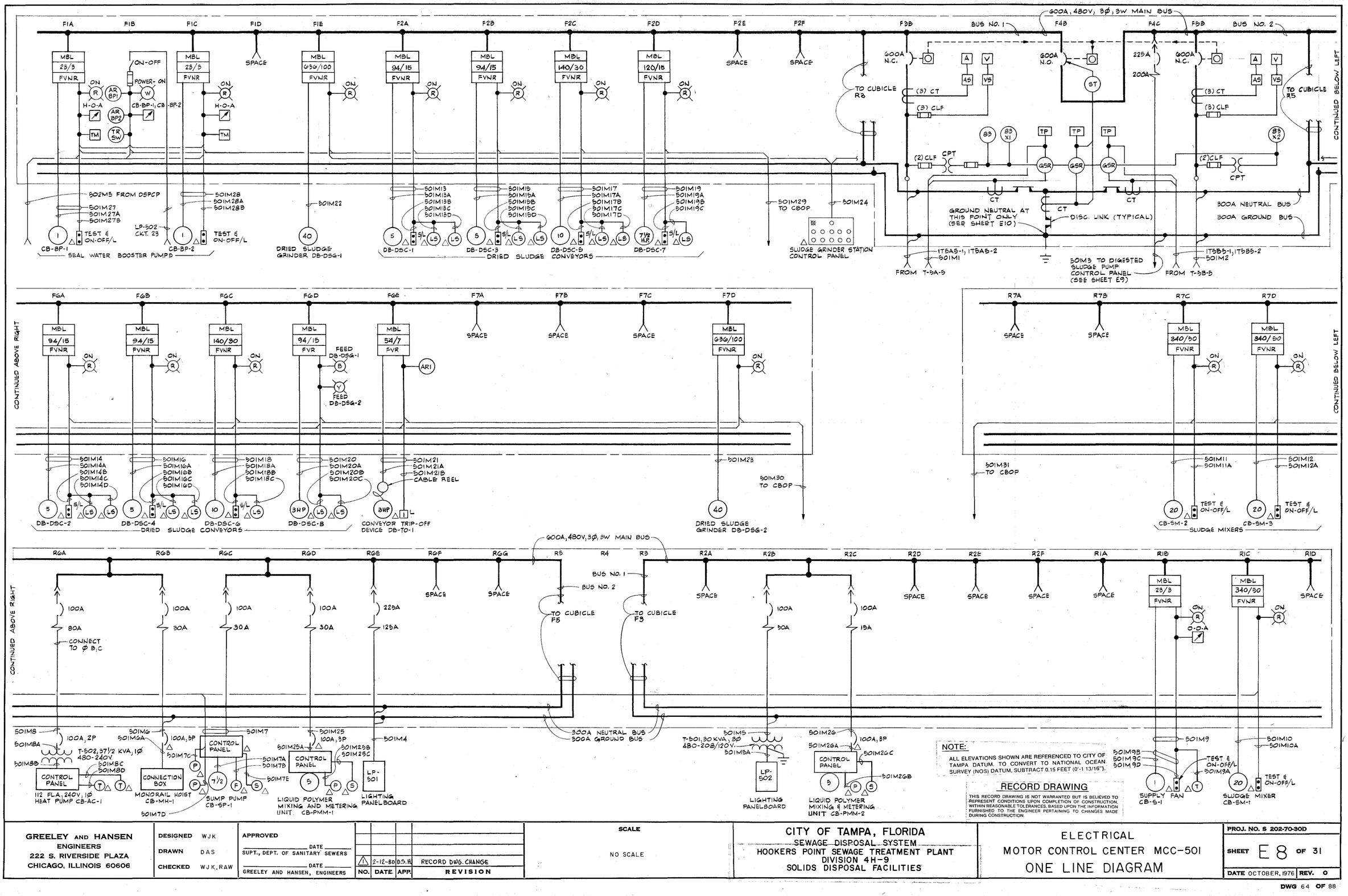
SCALE: NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIADS DISPOSAL FACILITIES

ELECTRICAL
13.2 KV DISTRIBUTION
ONE LINE DIAGRAM

PROJ. NO. S 202-70-30D-
SHEET E7 OF 31
DATE OCTOBER, 1976 | REV. 0

DWG 63 OF 88



GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN DAS
CHECKED WJK, RAW

APPROVED
DATE
SUPT., DEPT. OF SANITARY SEWERS
DATE
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION
1	2-12-80	D.S.H.	RECORD DWG. CHANGE

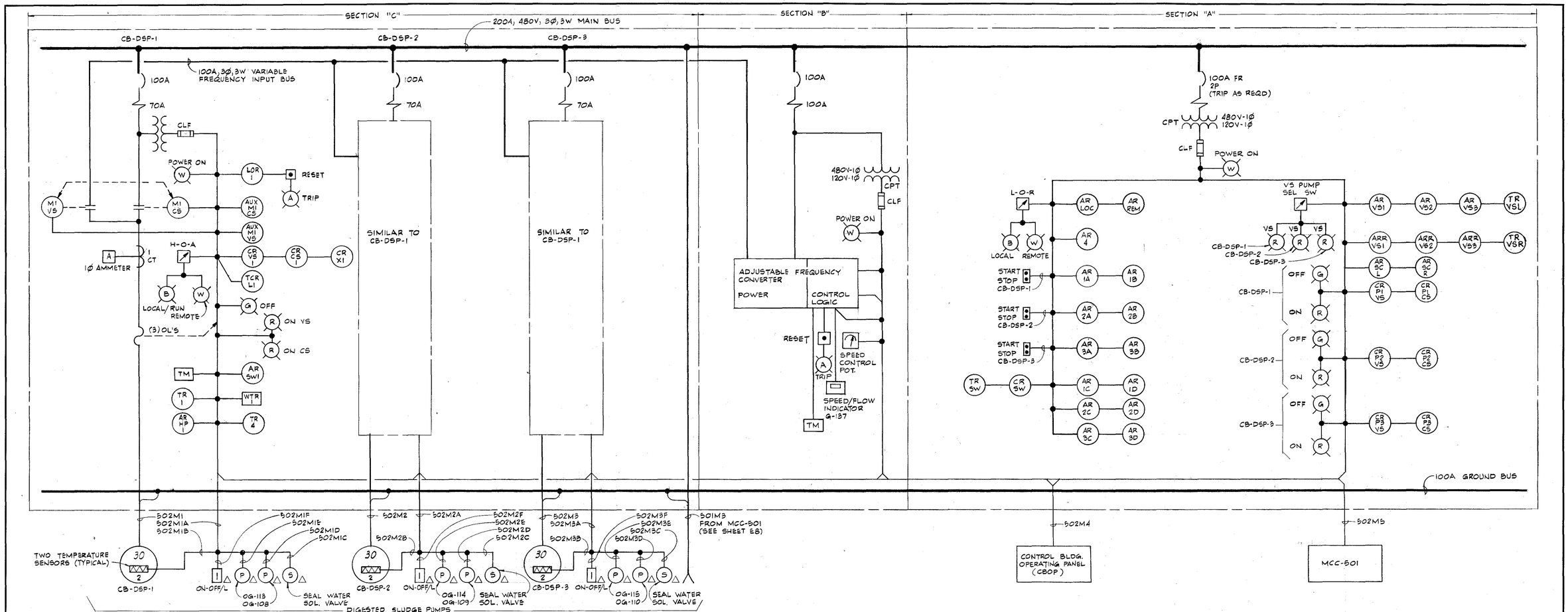
SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

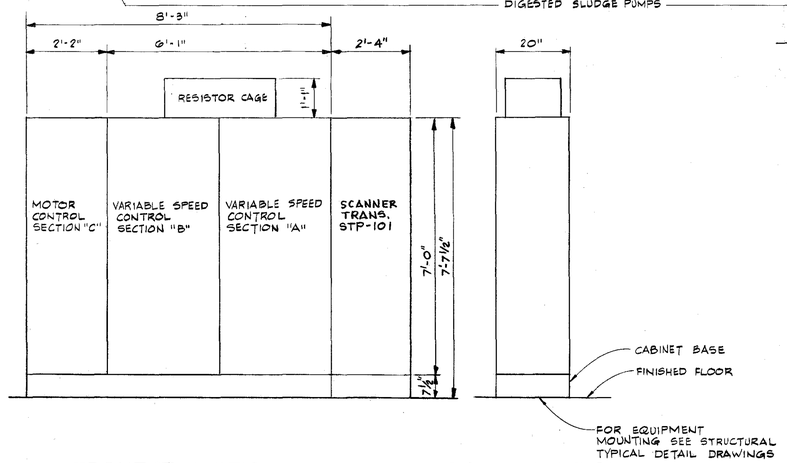
ELECTRICAL
MOTOR CONTROL CENTER MCC-501
ONE LINE DIAGRAM

PROJ. NO. S 202-70-30D
SHEET E 8 OF 31
DATE OCTOBER, 1976 REV. 0

DWG 64 OF 88



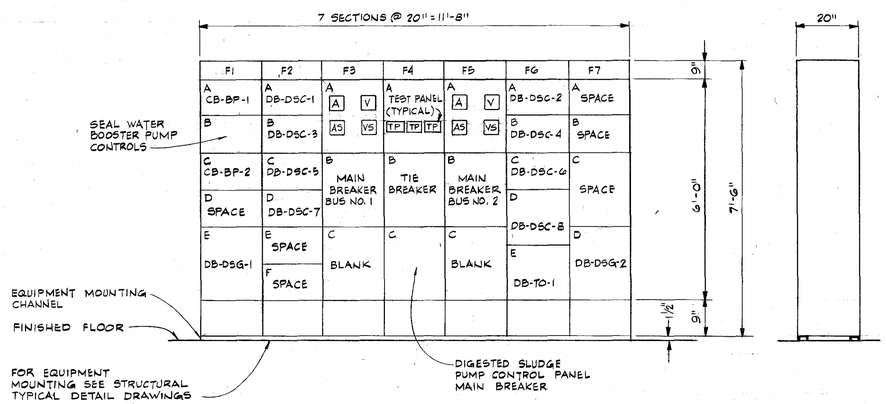
ONE LINE DIAGRAM – DIGESTED SLUDGE PUMP CONTROL PANEL (DSPCP)



FRONT ELEVATION

SIDE ELEVATION

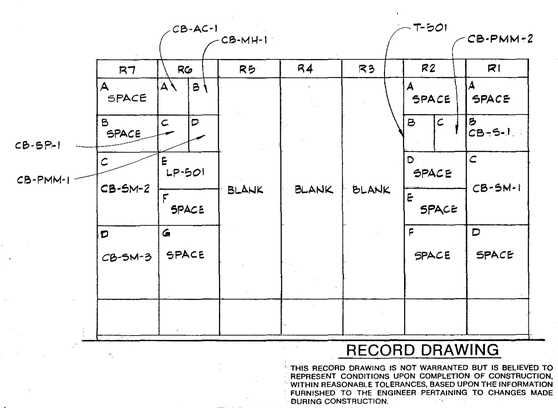
DIGESTED SLUDGE PUMP CONTROL PANEL (DSPCP)



FRONT ELEVATION

SIDE ELEVATION

MOTOR CONTROL CENTER MCC-501



RECORD DRAWING

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NOTE: REAR ELEVATION

ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK, RAW
DRAWN DAS
CHECKED WJK, RAW

APPROVED
SUPT., DEPT. OF SANITARY SEWERS — DATE
GREELEY AND HANSEN, ENGINEERS — DATE

NO.	DATE	APP.	REVISION
1	2/80	DSH.	REC. DWG. REVISIONS

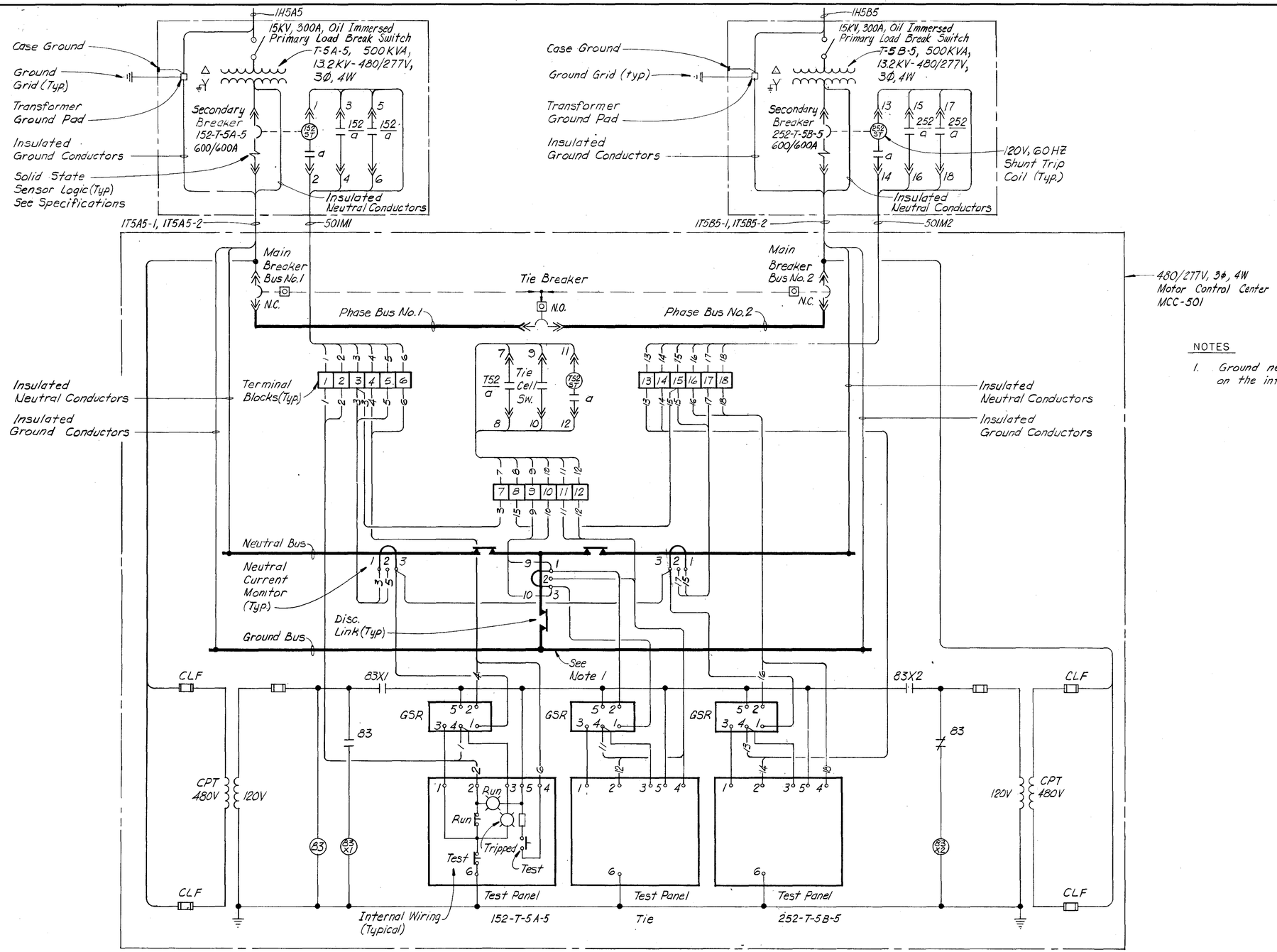
SCALE: NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
DIGESTED SLUDGE PUMPS
ONE LINE DIAGRAM AND ELEVATIONS

PROJ. NO. S 202-70-30D
SHEET E 9 OF 31
DATE OCTOBER, 1976 REV. 0

DWG 65 OF 88



NOTES

1. Ground neutral at one point only specifically as noted on the interconnection schematic.

GROUNDING AND GROUND FAULT RELAYING INTERCONNECTIONS BETWEEN MCC-501 AND T-5A-5 AND T-5B-5

(SEE NOTES)

NOTE:

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN HSP
CHECKED WJK, RAW

APPROVED
SUPT., DEPT. OF SANITARY SEWERS — DATE
GREELEY AND HANSEN, ENGINEERS — DATE

NO.	DATE	APP.	REVISION
1, 2	8/0	D.S.H	REC. DWG. REVISIONS

SCALE: NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9

ELECTRICAL
SERVICE GROUNDING AND GROUND FAULT RELAYING DIAGRAM

PROJ. NO. S 202-70-30D
SHEET E 10 OF 31
DATE OCTOBER, 1976 REV. 0

H
N
120V., 60 HZ POWER SUPPLY LP-502; CIRCUIT 25 (30A.)
INTERNAL DISCONNECT
INTERNAL DRAWOUT FUSE (TYPICAL)
10A
ANNUNCIATOR PANEL
ALARM INDICATIONS AS REQUIRED
AUDIBLE ALARM
SILENCE
TEST
RESET
N.O. AUXILIARY CONTACTS (ONE SET FOR EACH ALARM INDICATION IN ANNUNCIATOR PANEL)
N.C. AUXILIARY CONTACT (NORMALLY ENERGIZED) CLOSES ON LOSS OF POWER)
LP-502, CIRCUIT 21
SCANNER TRANSMITTER STP-501 LOCATED IN ELECTRICAL ROOM
STATUS INDICATIONS AS REQUIRED
3-2/C #16 SH (1-SPARE) TO NEW SCANNER RECEIVER NO. 501 IN NEW SCANNER ALARM PANEL ADDITION BY DIVISION 4H-9, LOCATED IN MAIN PUMPING STATION. (ALARM AND STATUS INDICATIONS)
15A.
CLOCK
ROADWAY LIGHTING SPDT MOMENTARY CONTACT SWITCH
ON
OFF
C
O
H H N
LP-501, CIRCUITS 1, 3
600V, 30A, 3-POLE MECHANICALLY HELD LIGHTING CONTACTOR WITH 120V. OPERATING COILS, LOCATED IN ELECTRICAL ROOM (1-POLE SPARE)
ROADWAY LIGHTING SEE SHEET E2

LEGEND:

△ INDICATES DEVICE LOCATED NEAR MOTOR OR REMOTE FROM CONTROLLER.

✳ INDICATES DEVICE LOCATED IN A SPECIFIC LOCAL CONTROL PANEL AS DESIGNATED.

⊕ INDICATES DEVICE LOCATED IN MOTOR CONTROL CENTER MCC-501

⊕ INDICATES DEVICE LOCATED IN DIGESTED SLUDGE PUMP CONTROL PANEL (DSPCP)

NOTE:

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20A.
TO EXISTING PROCESS MONITORING AND TERMINAL CABINET ADDITION BY DIVISION 4H-6, LOCATED IN MAIN PUMPING STATION (TYPICAL)
SEE SHEETS M4 AND M5 FOR RELAYS AND ANNUNCIATOR ALARMS ASSOCIATED WITH INDICATORS GS-12 TO GS-16.

LEVEL INDICATOR GS-12
EMPTY
R
W
FULL
TO PMTT
LIQUID LEVEL RETRANSMITTER AND INDICATOR CABINET
CABLE FURN. BY INSTRUMENT MFR
LIQUID LEVEL TRANSMITTER SENSOR HEAD PG-49
DIGESTED SLUDGE STORAGE TANK NO. 1

LEVEL INDICATOR GS-13
LIQUID LEVEL RETRANSMITTER AND INDICATOR CABINET
LIQUID LEVEL TRANSMITTER SENSOR HEAD PG-50
DIGESTED SLUDGE STORAGE TANK NO. 2

LEVEL INDICATOR GS-14
LIQUID LEVEL RETRANSMITTER AND INDICATOR CABINET
LIQUID LEVEL TRANSMITTER SENSOR HEAD PG-51
120V, 60HZ LP-502, CIRCUIT 11
DIGESTED SLUDGE STORAGE TANK NO. 3

LEVEL INDICATOR GS-15
PRESSURE (LEVEL) TRANSMITTER OG-106
LOCATED IN POLYMER UNLOADING PANEL
LIQUID POLYMER STORAGE TANK NO. 1

CONTINUED ABOVE RIGHT

CONTINUED FROM BELOW LEFT

LEVEL INDICATOR GS-16
PRESSURE (LEVEL) TRANSMITTER OG-107
LOCATED IN POLYMER UNLOADING PANEL
LIQUID POLYMER STORAGE TANK NO. 2
2-#14 VIA 501N2J, 501N2H, 501N2
2-#14 VIA 502M4
FLOW INDICATOR GS-17
RETURN TO ZERO UNIT
FLOW SIGNAL CONVERTER AND INDICATOR
MAGNETIC FLOW METER MS-7
AUX-M1-VS
AUX-M1-CS
AUX-M2-VS
AUX-M2-CS
AUX-M3-VS
AUX-M3-CS
CONTROL BUILDING OPERATING PANEL
DENSITY INDICATOR GS-18
DENSITY SIGNAL CONVERTER AND INDICATOR
SLUDGE DENSITY METER PG-52
DIGESTED SLUDGE PUMP CONTROL PANEL
FLOW
G
R
NO FLOW
SIGNAL TRANSMITTER AND INDICATOR
CABLE FURNISHED BY INSTRUMENT MANUFACTURER
ULTRASONIC FLOW SWITCH PG-53
AEROBIC DIGESTED SLUDGE
ULTRASONIC FLOW SWITCH PG-54
120V, 60HZ LP-502, CIRCUIT 14
ANAEROBIC DIGESTED SLUDGE

CONTINUED ON SHEET E13

CONTROL BUILDING OPERATING PANEL
120V A.C. CONTROL CIRCUIT

GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED WJK DRAWN DAS CHECKED WJK.RAW	APPROVED DATE SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS	1 2-/-80 DS.H. REC.DWG. REVISIONS NO. DATE. APP. REVISION

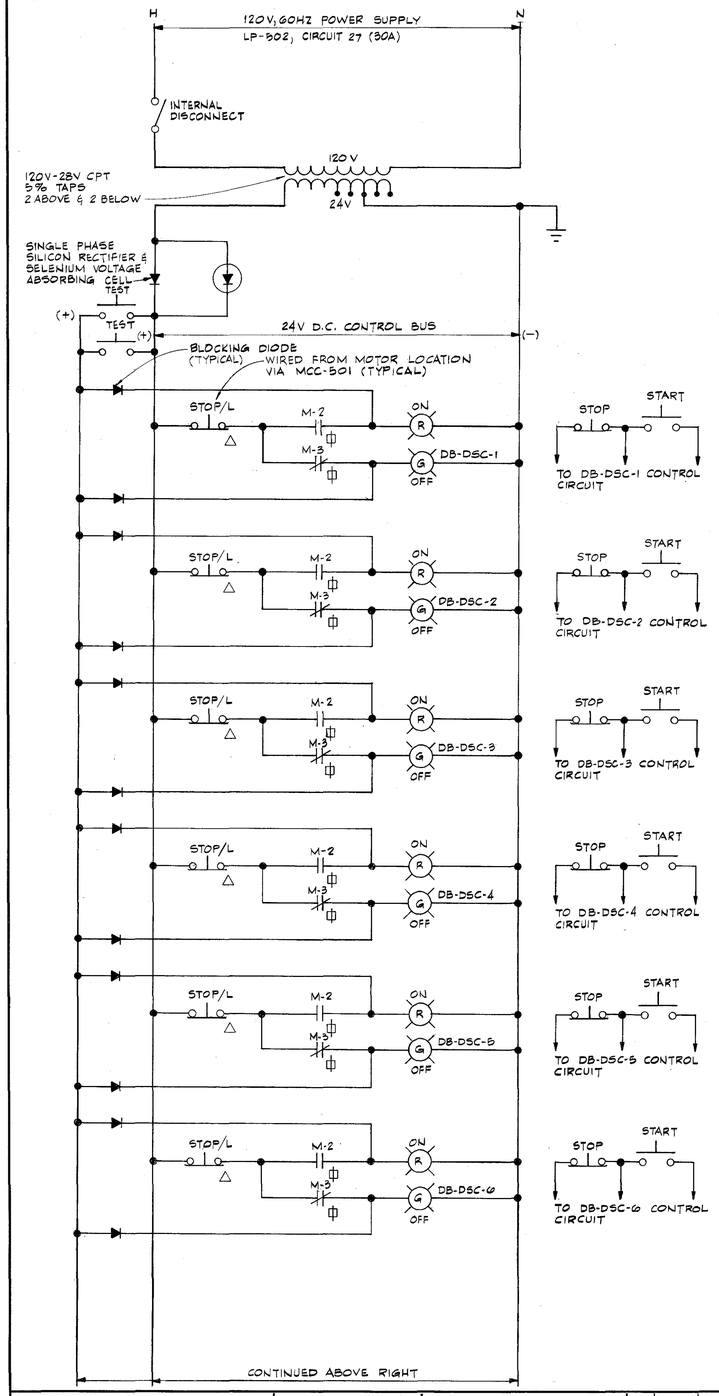
SCALE: NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
CONTROL BUILDING OPERATING PANEL
SCHEMATIC DIAGRAMS

PROJ. NO. S 202-70-30D
SHEET E11 OF 31
DATE OCTOBER, 1976 REV. 0

DWG 67 OF 88



CONTROL BUILDING OPERATING PANEL
24V D.C. CONTROL CIRCUIT

HAND OPERATED FEED CHUTE CONTACT DEVELOPMENT CHART

CONTACT	OPEN TO GRINDER	INTERMEDIATE	OPEN TO GRINDER BY PASS
1	———	- - -	
2		- - -	———

——— INDICATES CLOSED CONTACT
- - - - INDICATES OPEN CONTACT

LIMIT SWITCH CONTACT DEVELOPMENT CHART FOR GRINDER FEED CHUTE

VALVE LIMIT SWITCH CONTACT DEVELOPMENT CHART

CONTACT	FULL OPEN	INTERMEDIATE	FULL CLOSED
1	———		- - -
2	- - -		———

——— INDICATES CLOSED CONTACT
- - - - INDICATES OPEN CONTACT

TYPICAL FOR FEED VALVES FV-1 TO FV-4 AND DISCHARGE VALVES NO.1 & NO.2

LEGEND:

△ INDICATES DEVICE LOCATED NEAR MOTOR OR REMOTE FROM CONTROLLER.

* INDICATES DEVICE LOCATED IN A SPECIFIC LOCAL CONTROL PANEL AS DESIGNATED.

Φ INDICATES DEVICE LOCATED IN MOTOR CONTROL CENTER MCC-501.

Φ INDICATES DEVICE LOCATED IN DIGESTED SLUDGE PUMP CONTROL PANEL (DSPCP).

NOTE:

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN DAS
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

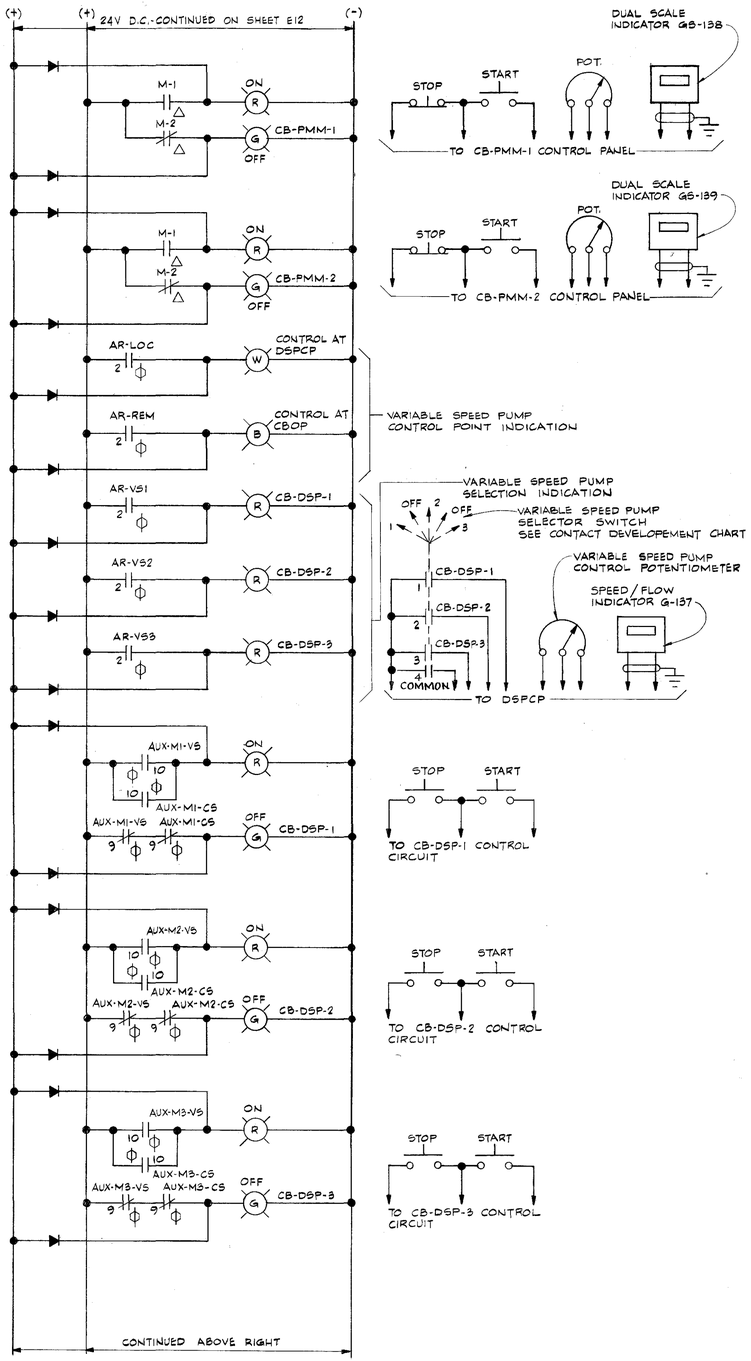
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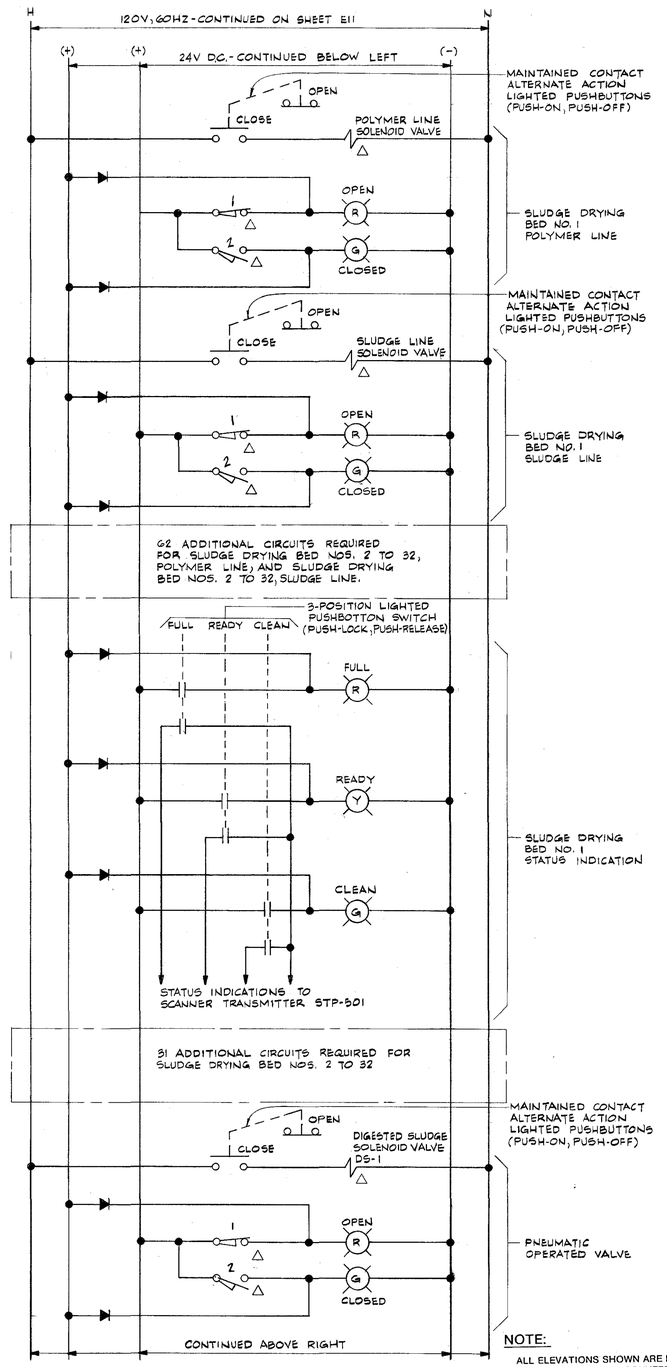
CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

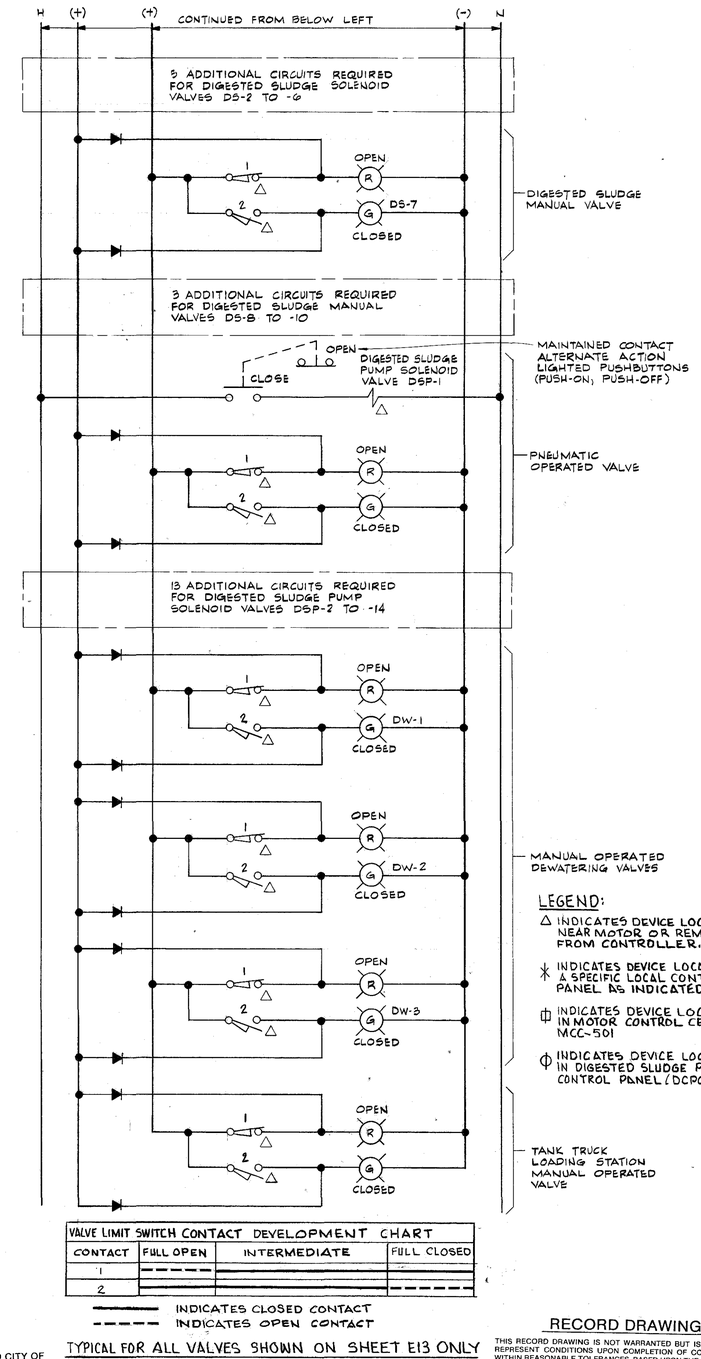
ELECTRICAL
CONTROL BUILDING OPERATING PANEL
SCHEMATIC DIAGRAMS

PROJ. NO. S 202-70-30D
SHEET E12 OF 31
DATE OCTOBER, 1976 | REV. 0

DWG 68 OF 88







LEGEND:

- △ INDICATES DEVICE LOCATED NEAR MOTOR OR REMOTE FROM CONTROLLER.
- ✳ INDICATES DEVICE LOCATED IN A SPECIFIC LOCAL CONTROL PANEL AS INDICATED.
- ⊞ INDICATES DEVICE LOCATED IN MOTOR CONTROL CENTER MCC-501
- Φ INDICATES DEVICE LOCATED IN DIGESTED SLUDGE PUMP CONTROL PANEL (DCPCP)

VALVE LIMIT SWITCH CONTACT DEVELOPMENT CHART

CONTACT	FULL OPEN	INTERMEDIATE	FULL CLOSED
1	———		- - -
2	- - -		———

——— INDICATES CLOSED CONTACT
- - - - INDICATES OPEN CONTACT

TYPICAL FOR ALL VALVES SHOWN ON SHEET E13 ONLY

NOTE:

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RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN DAS
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION
1	2/80	D.S.H.	REC. DWG. REVISIONS

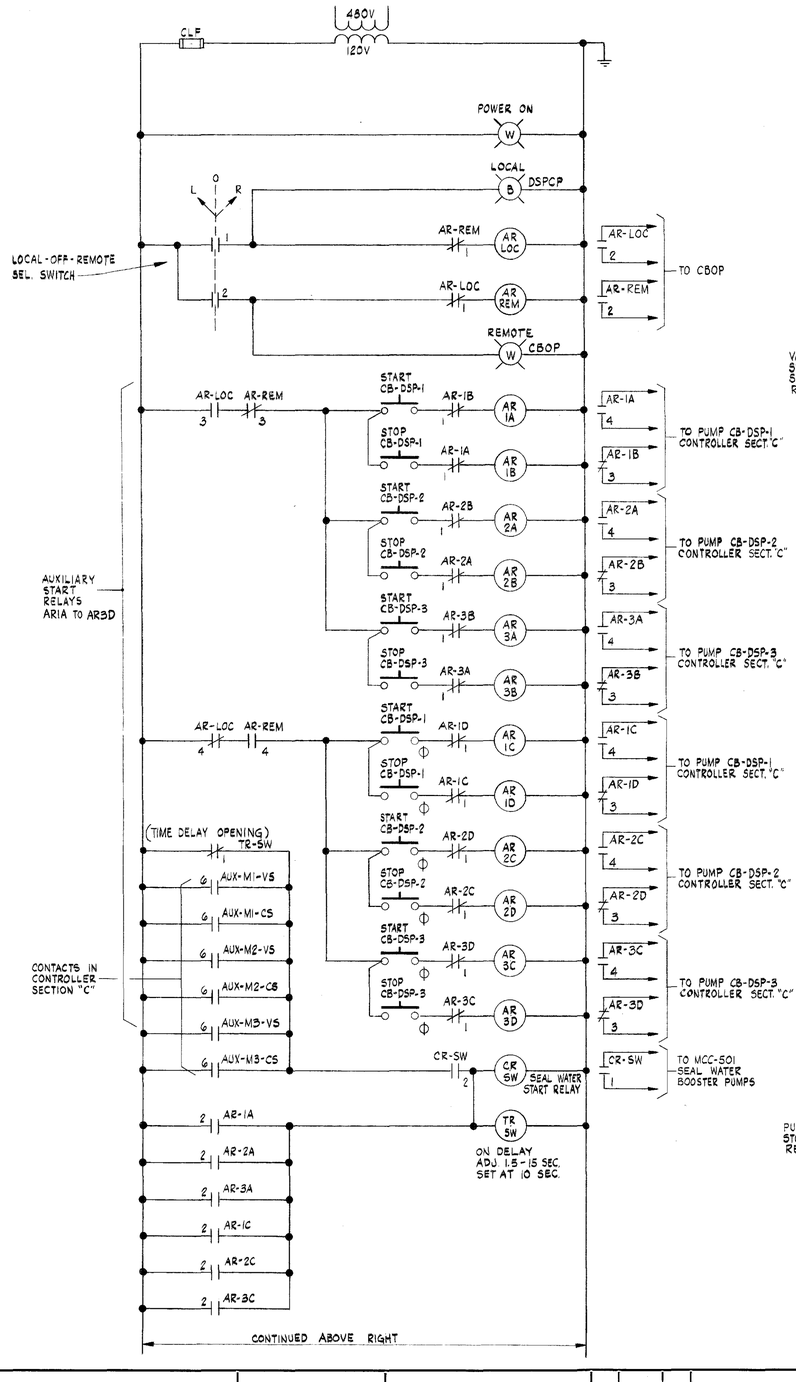
SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
CONTROL BUILDING OPERATING PANEL
SCHEMATIC DIAGRAMS

PROJ. NO. S 202-70-30D
SHEET E13 OF 31
DATE OCTOBER, 1976 | REV. 0

DWG 69 OF 88



DIGESTED SLUDGE PUMP CONTROL PANEL (DSPCP)
VARIABLE SPEED CONTROL SECTION "A"

LEGEND

△ - INDICATES DEVICE LOCATED NEAR MOTOR OR REMOTE FROM CONTROLLER.

✳ - INDICATES DEVICE LOCATED IN A SPECIFIC LOCAL CONTROL PANEL AS DESIGNATED.

Φ - INDICATES DEVICE LOCATED IN CONTROL BUILDING OPERATING PANEL (CBOP).

Φ - INDICATES DEVICE LOCATED IN MOTOR CONTROL CENTER MCC-501.

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED RAW
DRAWN HSP
CHECKED WJK, RAW

APPROVED
DATE
SUPT., DEPT. OF SANITARY SEWERS
DATE
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

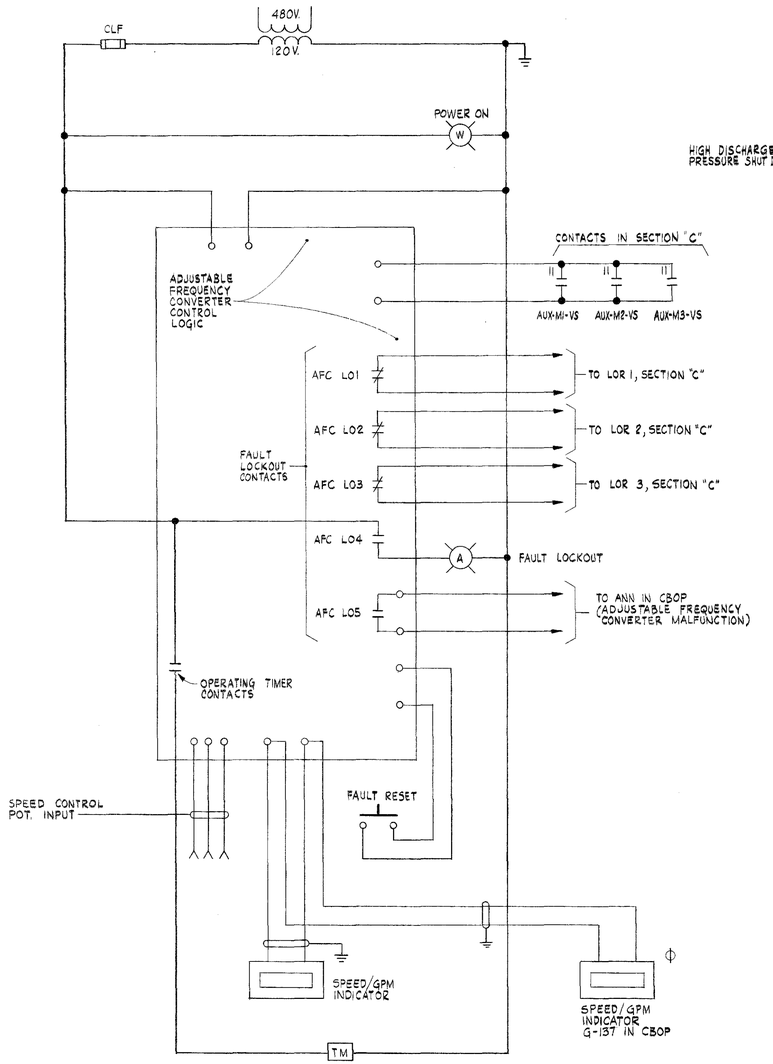
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CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
DIGESTED SLUDGE PUMPS
SCHEMATIC DIAGRAMS

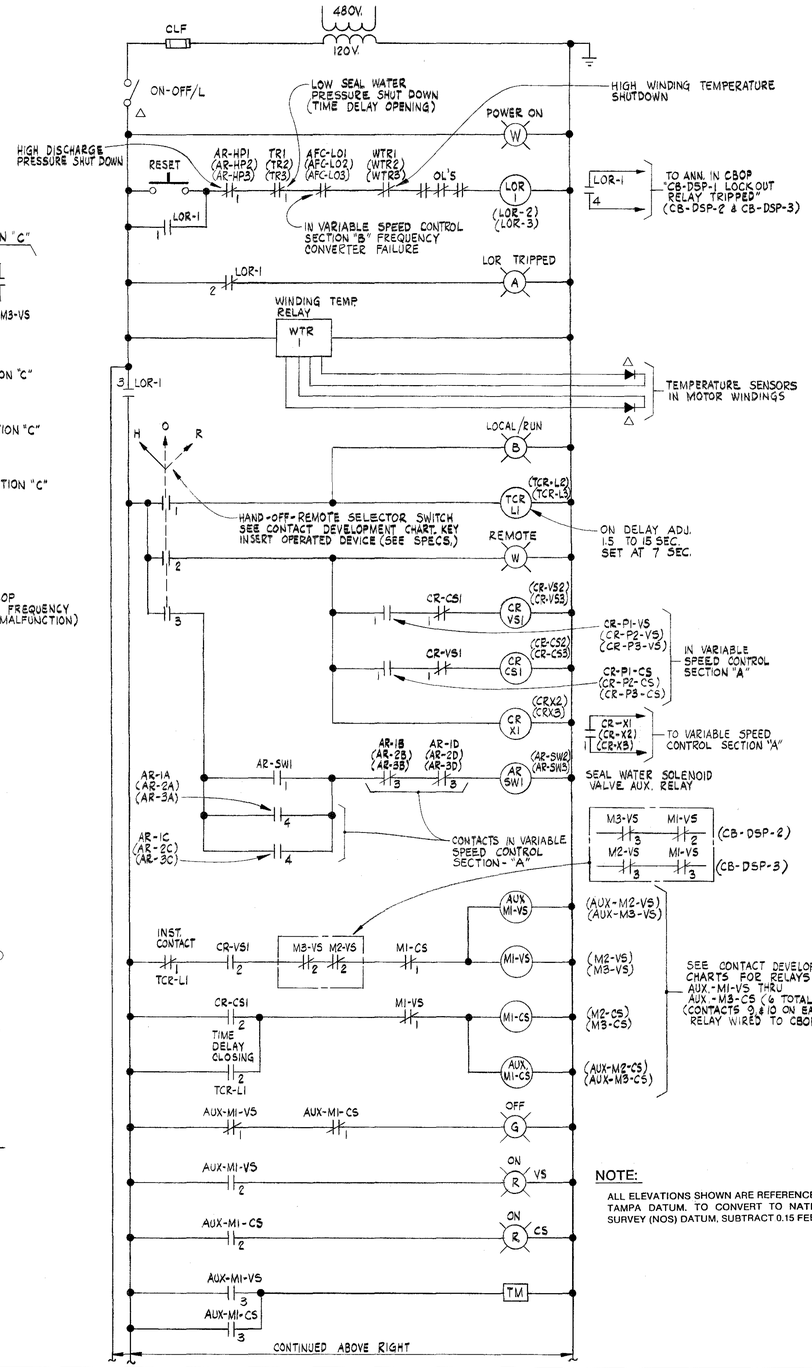
PROJ. NO. S 202-70-30D
SHEET E14 OF 31
DATE OCTOBER, 1976 REV. 0

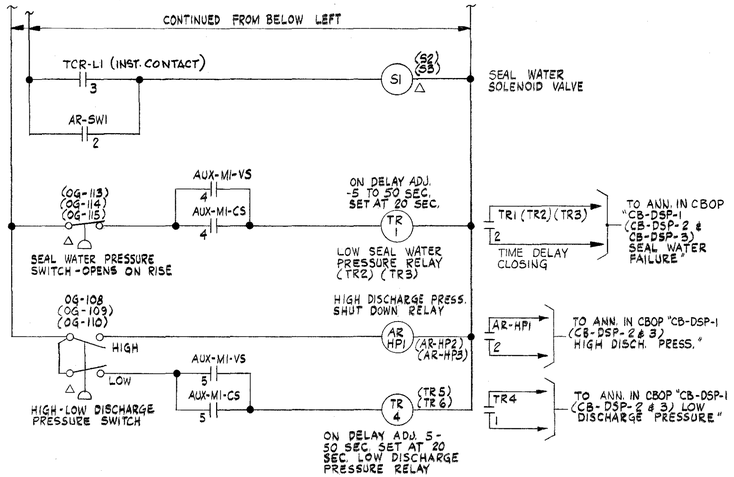
DWG 70 OF 88



DIGESTED SLUDGE PUMP CONTROL PANEL (DSPCP)

VARIABLE SPEED CONTROL SECTION "B"





DIGESTED SLUDGE PUMP CONTROL PANEL (DSPCP)
MOTOR CONTROL SECTION "C" PUMP NO. CB-DSP-1
(CB-DSP-2 AND CB-DSP-3 SIMILAR)

VARIABLE SPEED PUMP SELECTOR SWITCH CONTACT DEVELOPMENT CHART (2 REQ'D. - ONE EACH ON DSPCP & CBOP)

CONTACT NO.	SWITCH POSITION				
	CB-DSP-1	OFF	CB-DSP-2	OFF	CB-DSP-3
1	X	O	O	O	O
2	O	O	X	O	O
3	O	O	O	O	X
4	X	O	X	O	X

DIGESTED SLUDGE PUMP CONTROL PANEL SECTION "A"

LOCAL-OFF-REMOTE SELECTOR SWITCH CONTACT DEVELOPMENT CHART

CONTACT NO.	SWITCH POSITION		
	LOCAL	OFF	REMOTE
1	X	O	O
2	O	O	X

DIGESTED SLUDGE PUMP CONTROL PANEL SECTION "C"

HAND-OFF-REMOTE SELECTOR SWITCH CONTACT DEVELOPMENT CHART (3 REQ'D.)

CONTACT NO.	SWITCH POSITION		
	HAND	OFF	REMOTE
1	X	O	O
2	O	O	X
3	O	O	X

X - INDICATES CONTACT CLOSED
O - INDICATES CONTACT OPEN
SWITCH MUST TRANSFER THROUGH THE OFF POSITION.

DIGESTED SLUDGE PUMP CONTROL PANEL - SECTION "C"

CONTACT DEVELOPMENT CHART - AUXILIARY RELAYS AUX-MI-VS THRU AUX-M3-VS AND AUX-MI-CS THRU AUX-M3-CS (6 TOTAL)

CONTACT NO.	CONTACT POSITION		FUNCTION
	COIL DE-ENERG.	COIL ENERG.	
1	X	O	STOP IND. LT. SECT. "C".
2	O	X	ON IND LT. VS OR CS SECTION "C"
3	O	X	ELAPSED TIME METER SECTION "C"
4	O	X	LOW SEAL WATER PRESS. INTERLOCK SECTION "C"
5	O	X	LOW DISCH. PRESS. INTERLOCK SECT. "C"
6	O	X	SEAL WATER BOOSTER STOP CKT. SECTION "A"
7	X	O	OFF IND. LT. SECT. "A"
8	O	X	ON IND. LT. SECT. "A"
9	X	O	OFF IND LT. CBOP
10	O	X	ON IND LT. CBOP
11	O	X	ADJ. FREQ. CONVERTER INTERLOCK - VS RELAYS ONLY
12	X	O	SPARE
13	O	X	SPARE
14	X	O	SPARE

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⊞ - INDICATES DEVICE LOCATED IN MOTOR CONTROL CENTER MCC-501.

RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED RAW
DRAWN HSP
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION
1	2/80	DSH	REC. DWG. REVISIONS

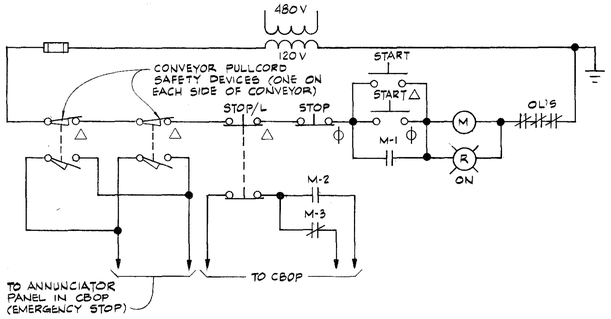
SCALE
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CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

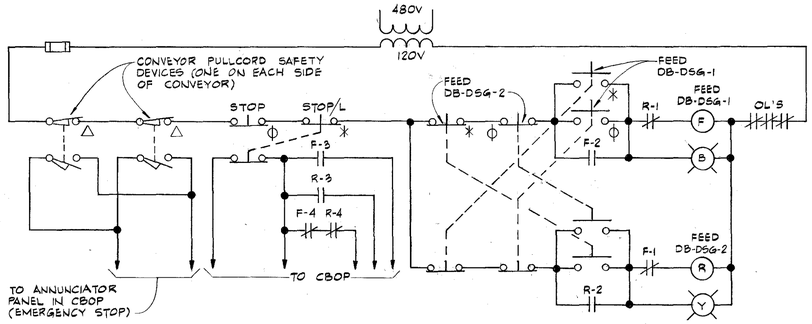
ELECTRICAL
DIGESTED SLUDGE PUMPS
SCHEMATIC DIAGRAMS

PROJ. NO. S 202-70-30D
SHEET E15 OF 31
DATE OCTOBER, 1976 | REV. 0

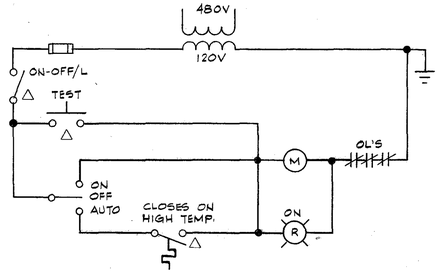
DWG 71 OF 88



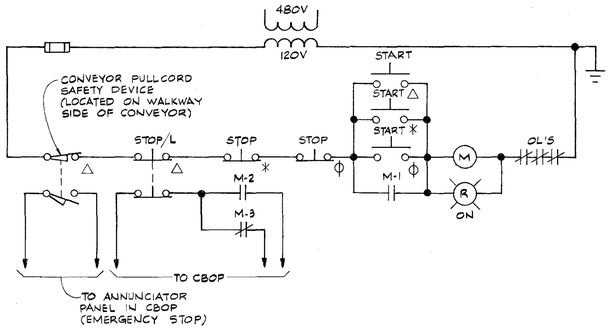
DRIED SLUDGE CONVEYORS DB-DSC-1 TO 5



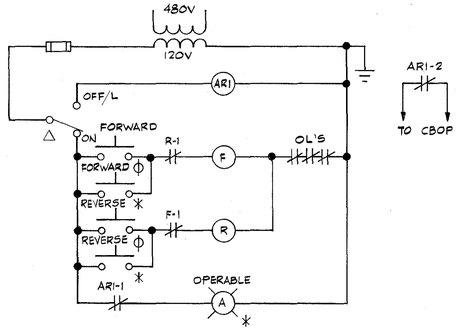
DRIED SLUDGE CONVEYOR DB-DSC-8



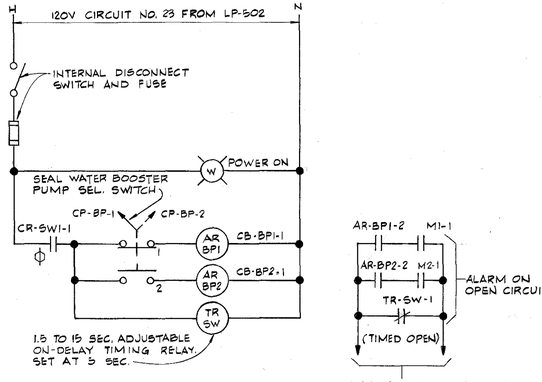
SUPPLY FAN CB-S-1

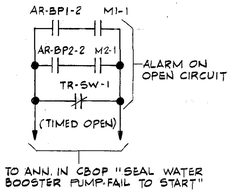


DRIED SLUDGE CONVEYOR DB-DSC-6

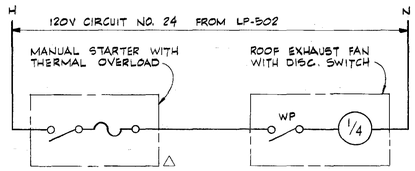


CONVEYOR TRIP-OFF DEVICE DB-TO-1

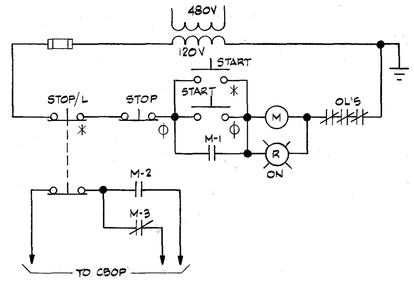




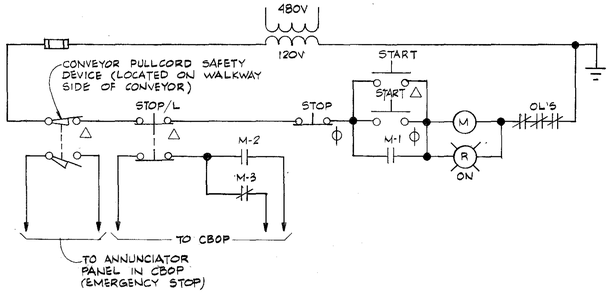
SEAL WATER BOOSTER PUMP START CONTROL CIRCUIT



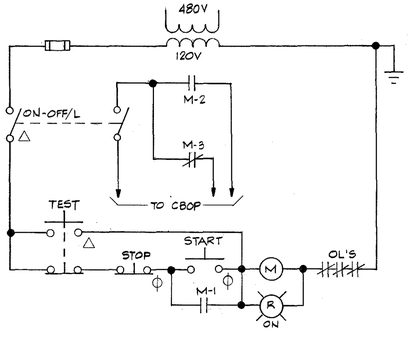
ROOF EXHAUST FAN CB-REF-1



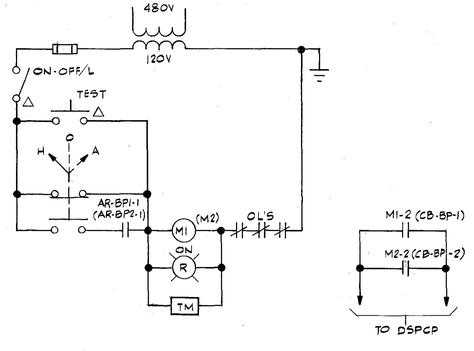
DRIED SLUDGE GRINDERS DB-DSG-1 & 2



DRIED SLUDGE CONVEYOR DB-DSC-7



SLUDGE MIXER CB-SM-1 TO 3



SEAL WATER BOOSTER PUMP CB-BP-1

(CB-BP-2 SIMILAR)

LEGEND:

△ INDICATES DEVICE LOCATED NEAR MOTOR OR REMOTE FROM CONTROLLER.

* INDICATES DEVICE LOCATED IN CONTROL PANEL AT SLUDGE GRINDER STATION.

Φ INDICATES DEVICE LOCATED IN CONTROL BUILDING OPERATING PANEL. (CBOP)

Φ INDICATES DEVICE LOCATED IN DIGESTED SLUDGE PUMP CONTROL PANEL (DSPCP)

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN DAS
CHECKED WJK, RAW

APPROVED
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GREELEY AND HANSEN, ENGINEERS

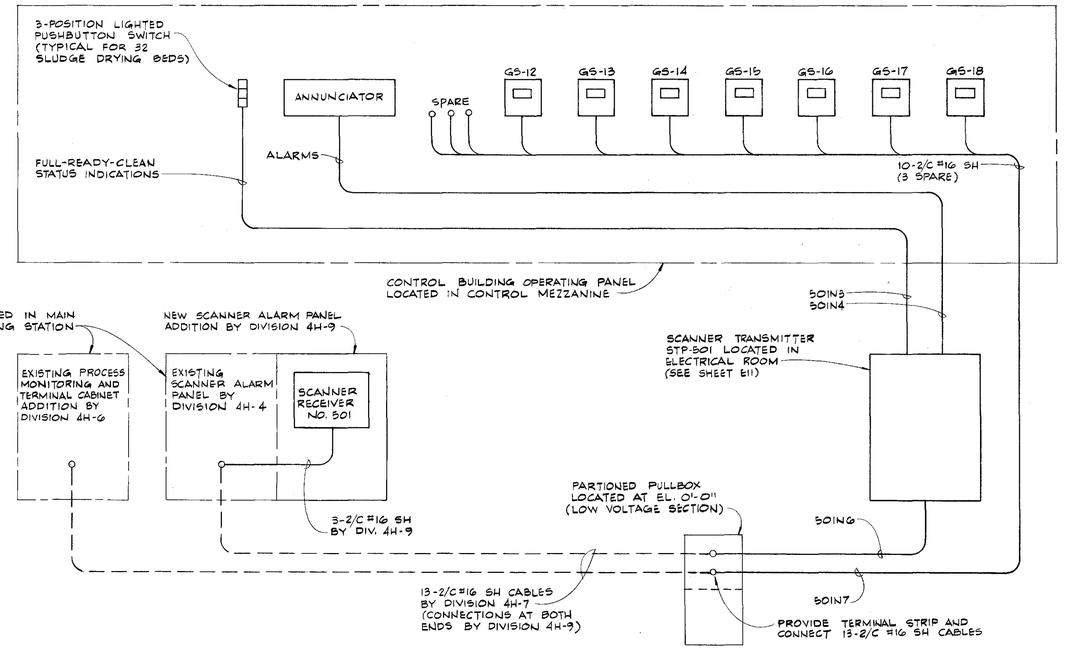
NO.	DATE	APP.	REVISION

SCALE
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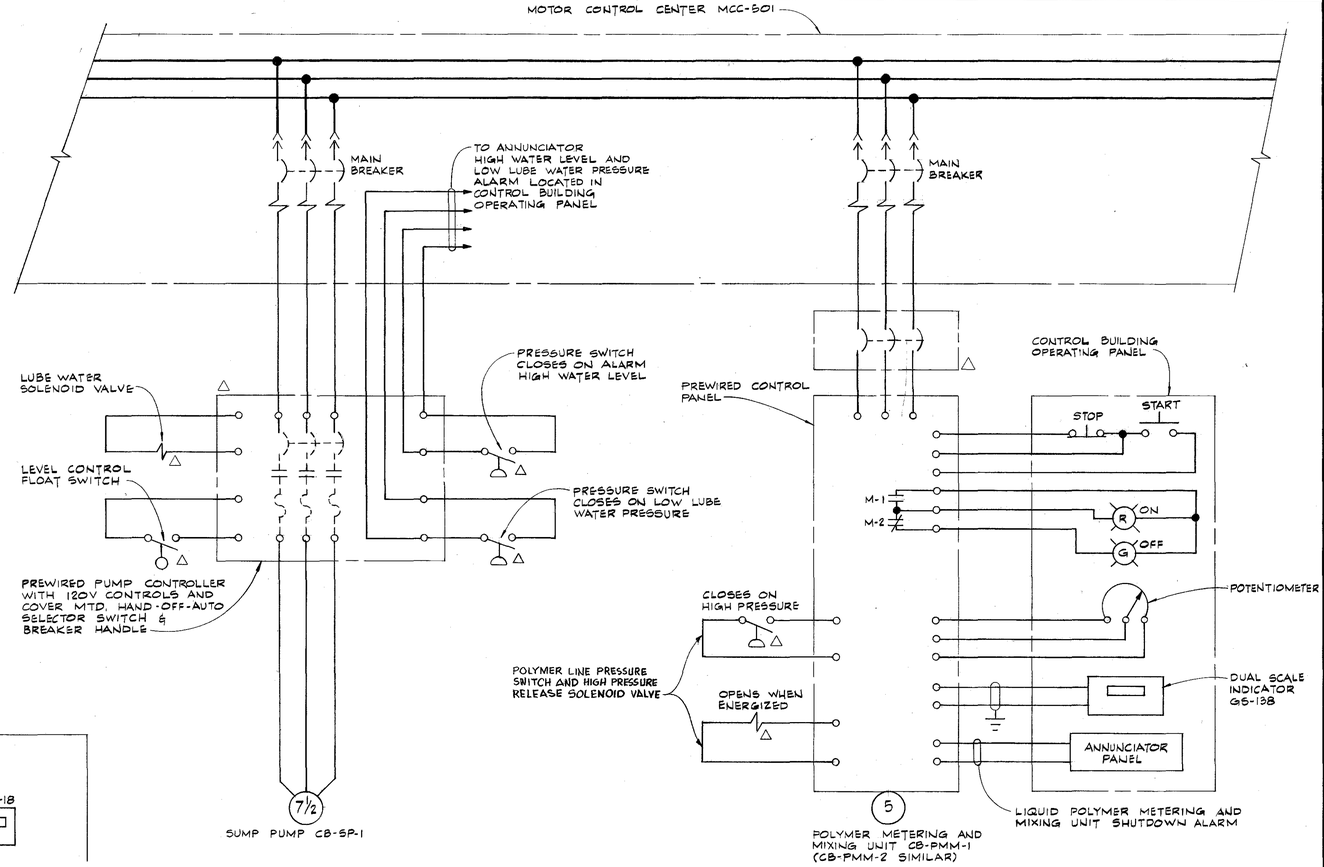
CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
SCHEMATIC DIAGRAMS

PROJ. NO. S 202-70-30D
SHEET E16 OF 31
DATE OCTOBER, 1976 REV. 0



INSTRUMENTATION BLOCK DIAGRAM



TYPICAL CONNECTION DETAILS

NOTE:

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GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED WJK DRAWN DAS CHECKED WJK, RAW	APPROVED _____ DATE _____ SUPT., DEPT. OF SANITARY SEWERS _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	1	2/80	D.S.H.	REC. DWG. REVISIONS	SCALE NO SCALE
			NO.	DATE	APP.	REVISION	

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
SCHEMATIC DIAGRAMS

PROJ. NO. S 202-70-30D
SHEET E17 OF 31
DATE OCTOBER, 1976 REV. 0

DWG 73 OF 88

Sludge Control Bldg. Original_Year 1980

DIGESTED SLUDGE STORAGE TANK NO. 1

DIGESTED SLUDGE STORAGE TANK NO. 2

DIGESTED SLUDGE STORAGE TANK NO. 3

CONDUITS TO TURN UP AT CENTER OF TANK SIMILAR TO TANK NOS. 1 & 3

SEE PARTIAL POWER PLAN AT EL. 0'-0" ON SHEET E23 FOR CONTINUATION OF CONDUITS 501C40 AND 501C49.

NEMA 12 PULLBOX WITH DRAIN FITTING

NEMA 12 PULLBOX WITH DRAIN FITTING

MCC-501 ABOVE

FOR CONTINUATION SEE SHEET E1

DUCT BANK H.P. INV. EL. 10.17

SLOPE

501N8 3-4"C SP

1H5A5

4"C SP

T-5A-5

1T5A5-1

1T5A5-2

1H5B5

T-5B-5

1T5B5-1

1T5B5-2

501M1 4"C SP

501M2 4"C SP

TRANSFORMER PAD NO. 3

500MCM BARE COPPER GROUND CABLE (TYPICAL)

3/4" X 10'-0" STAINLESS STEEL GROUND ROD IN ACCESS BOX (TYPICAL) SEE DETAIL ON SHEET E23.

TRANSFORMER PAD PILE (TYPICAL FOR 6)

INV. EL. +10.00

6'-0" W. x 3'-0" D. x 2'-0" H. NEMA 12 PULLBOX WITH PARTITIONS BETWEEN 480V. POWER AND LOW VOLTAGE SECTIONS, SEPARATE COVERS, AND DRAIN FITTINGS.

TO MCC-501

5'-0" MH

2"C TO 1TTC-501

3/4"C TO 1TTC-501

CB-BP-1

CB-BP-2

DIGESTED SLUDGE PUMPING STATION

501M17, 18, 19, 20, 21, 22, 23, 24 TO MCC-501

ACCESS OPENING IN CEILING

501M25

501M26

TO MCC-501

501C33

CKT. 12 TO OUTDOOR RECEPTACLE

100A MAGNETIC ONLY TRIP CIRCUIT BREAKERS IN NEMA 12 ENCLOSURES

501C33C TO POLYMER UNLOADING PANEL

CB-PMM-1

CB-PMM-2

FV-3

FV-4

DV-1

DV-2

501M25A

501M25B

501M25C

501M26A

501M26B

501M26C

501C38

501C38A

501C38B

501C39

501C38C

TO OG-106

TO OG-107

LIQUID POLYMER EQUIPMENT

501N2A

501N2H

DENSITY SIGNAL CONVERTER AND INDICATOR CABINET

501N2B

501N2J

501N2K

501N2L

FLOW SIGNAL CONVERTER AND INDICATOR CABINET

SLUDGE DENSITY METER PG-52

501N2M

501N2N

501C35

CKT. 14

501C37

501N2F

501C34

501N2E

501N2G

501N2D

AEROBIC SLUDGE SIGNAL TRANSMITTER AND INDICATOR

ANAEROBIC SLUDGE SIGNAL TRANSMITTER AND INDICATOR

STAIR NO. 2

UP

CKT. 10 TO OUTDOOR RECEPTACLE

MAGNETIC FLOW METER MS-7

ULTRASONIC FLOW SWITCH PG-54

ULTRASONIC FLOW SWITCH PG-53

501C35A

501C35C

501C35B

501C35D

DS-9

DS-10

501C36 TO TERMINAL BOX NO. C3 AT TANK TRUCK LOADING STATION

LP-502 CKTS. 8, 10, 12, 14

TERMINAL BOX NO. C12 CONTINUED ON SHEET E23

501C48

1"C TO LP-502, CKTS. 16, 18

501M7

501M7A

501M7B

501M7E

501M7C

501M7D

NEMA 12 PULLBOX WITH DRAIN FITTING (TERMINATE 1¼" SPARE CONDUIT IN PULLBOX)

CB-SP-1

TO SLUDGE GRINDER CONTROL STATION AND DRIED SLUDGE STORAGE AREA. SEE SHEETS E1 & E3.

¢ CONDUITS AT EL. 11'-6", DIRECT BURIED IN EARTH. CONDUITS SHALL BE GIVEN ONE FIELD COAT OF KOPPERS METAL PASSIVATOR NO. 40 AND ONE COAT OF KOPPERS BITUMASTIC SUPER SERVICE BLACK OR TWO COATS OF ASPHALT VARNISH CONFORMING TO FEDERAL SPECIFICATION TT-V-51. (TYPICAL FOR TANK NOS. 1 TO 3)

501M11 501M11A 501M10 501M10A 501N1A 501N1C 501N1E 501N7 502M5 502M3 502M2 502M1 502M4 502M2B 502M2C 502M2D 502M3 502M2E 502M2F 502M2A 502M3A 502M3F 502M3B 502M3C 502M3D 502M3E 501M27 501M27A 501M27B 501M28 501M28A 501M28B 501N5 501N6 501M12 501M12A

4/E3 5/E3 8/E23 9/E23

POWER PLAN AT EL. 0'-0"

SEE PARTIAL POWER PLAN AT EL. 0'-0" ON SHEET E23 FOR ADDITIONAL WIRING.

NOTE:

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RECORD DRAWING

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1	2/80	DSH	REC. DWG. REVISIONS		
NO.	DATE	APP.	REVISION		

GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN HSP
CHECKED WJK, RAW

APPROVED
DATE
SUPT., DEPT. OF SANITARY SEWERS
DATE
GREELEY AND HANSEN, ENGINEERS

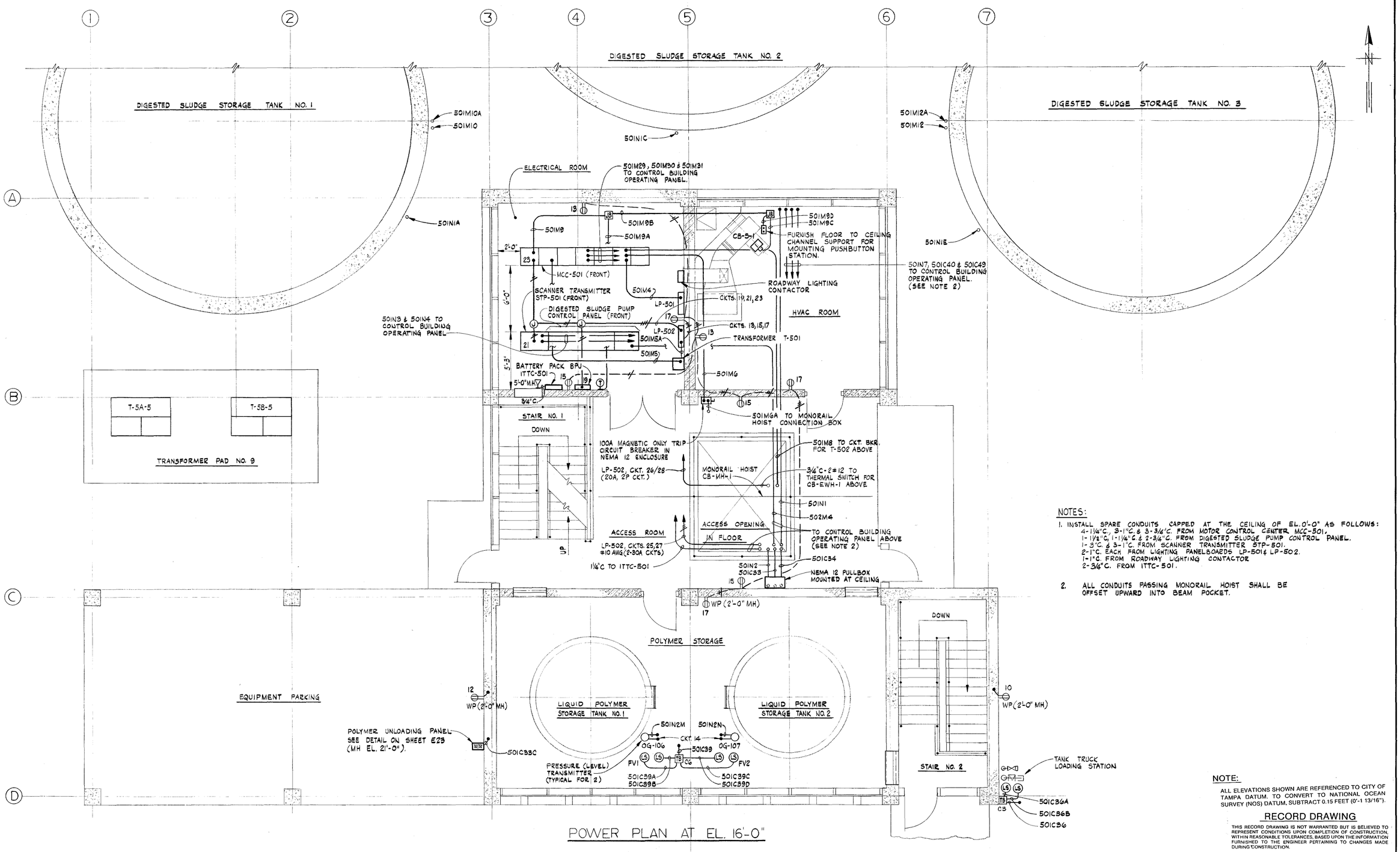
SCALE
4 0 4 8 FT
1/4"= 1'-0"

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
CONTROL BUILDING
POWER PLAN AT EL. 0'-0"

PROJ. NO. S 202-70-30D
SHEET E18 OF 31
DATE OCTOBER, 1976 REV. 0

DWG 74 OF 88



POWER PLAN AT EL. 16'-0"

NOTES:

1. INSTALL SPARE CONDUITS CAPPED AT THE CEILING OF EL. 0'-0" AS FOLLOWS:
   4-1½"C., 3-1"C. & 3-¾"C. FROM MOTOR CONTROL CENTER MCC-501.
   1-1½"C., 1-1¼"C. & 2-¾"C. FROM DIGESTED SLUDGE PUMP CONTROL PANEL.
   1-3"C. & 3-1"C. FROM SCANNER TRANSMITTER STP-501.
   2-1"C. EACH FROM LIGHTING PANELBOARDS LP-501 & LP-502.
   1-1"C. FROM ROADWAY LIGHTING CONTACTOR
   2-¾"C. FROM ITTC-501.
2. ALL CONDUITS PASSING MONORAIL HOIST SHALL BE OFFSET UPWARD INTO BEAM POCKET.

NOTE:

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GREELEY AND HANSEN
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222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN HSP
CHECKED WJK, RAW

APPROVED
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_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION
1	2/80	DSH	REC. DWG. REVISIONS

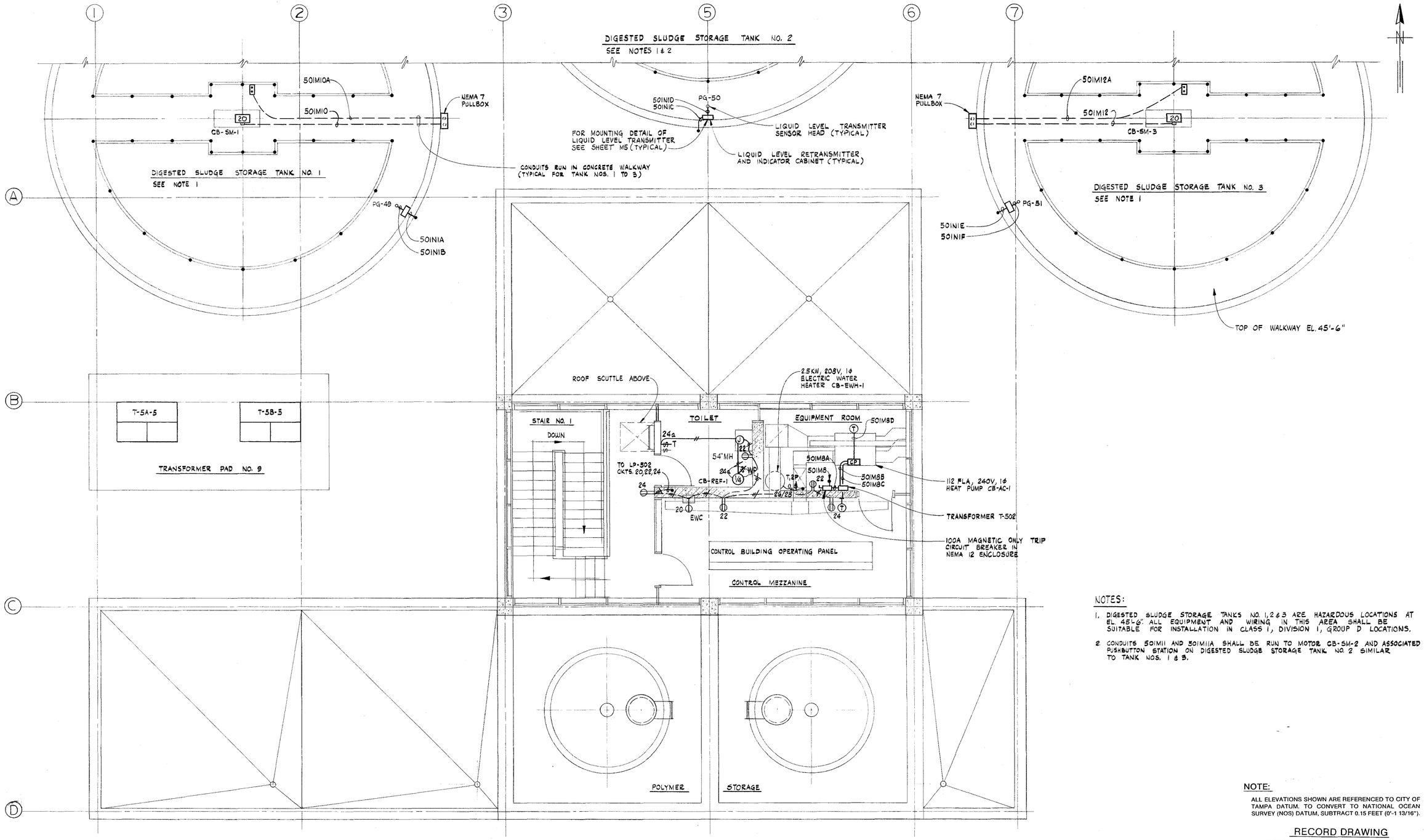
SCALE
4 0 4 8 FT
1/4"=1'-0"

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
CONTROL BUILDING
POWER PLAN AT EL. 16'-0"

PROJ. NO. S 202-70-30D
SHEET E19 OF 31
DATE OCTOBER, 1976 REV. 0

DWG 75 OF 88



POWER PLAN AT EL. 32'-6"

NOTES:

1. DIGESTED SLUDGE STORAGE TANKS NO. 1, 2 & 3 ARE HAZARDOUS LOCATIONS AT EL 45'-6". ALL EQUIPMENT AND WIRING IN THIS AREA SHALL BE SUITABLE FOR INSTALLATION IN CLASS I, DIVISION 1, GROUP D LOCATIONS.
2. CONDUITS 501M11 AND 501M11A SHALL BE RUN TO MOTOR CB-SM-2 AND ASSOCIATED PUSHBUTTON STATION ON DIGESTED SLUDGE STORAGE TANK NO. 2 SIMILAR TO TANK NOS. 1 & 3.

NOTE:

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RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN HSP
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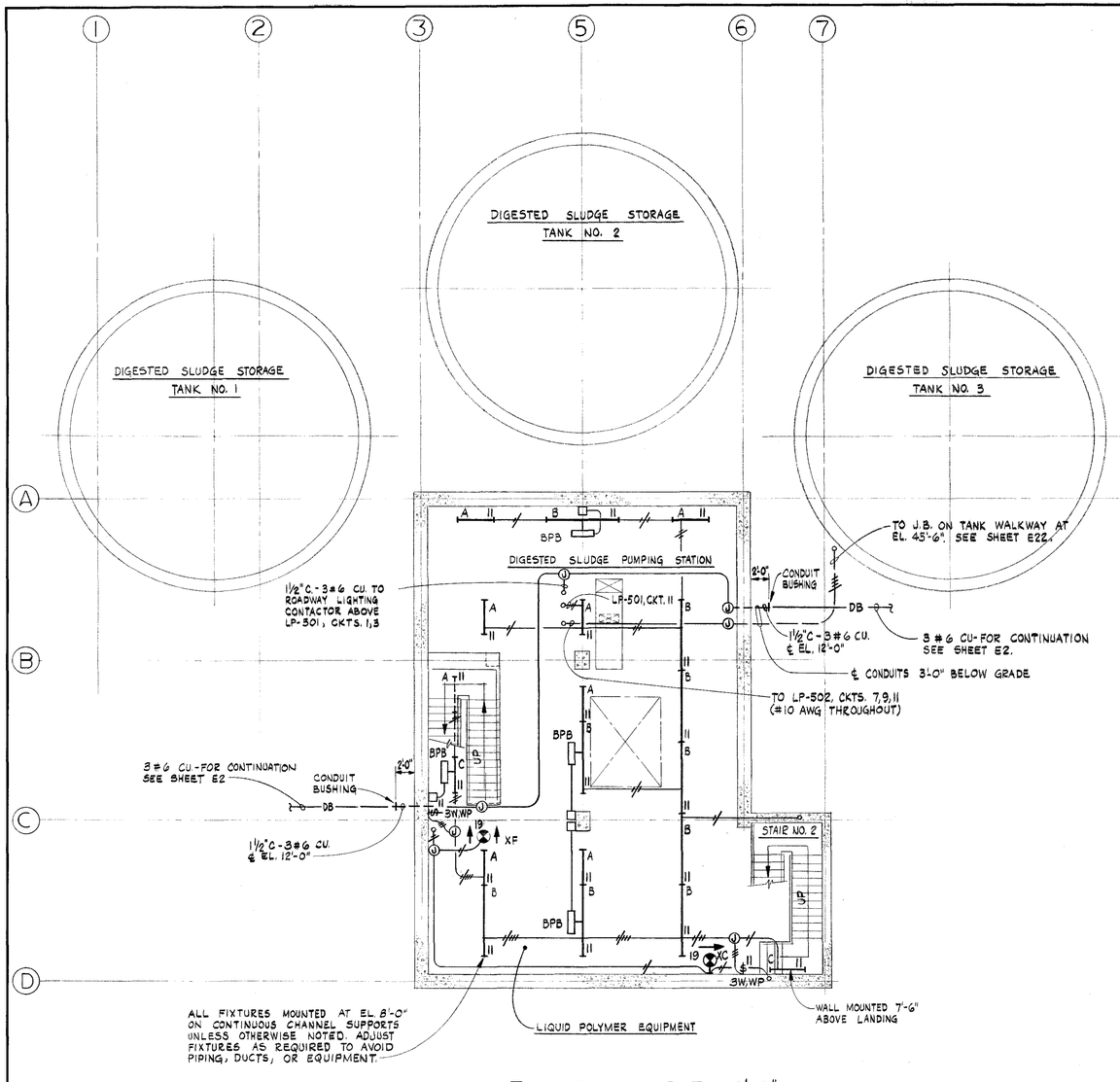
SCALE
4 0 4 8 FT
1/4" = 1'-0"

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

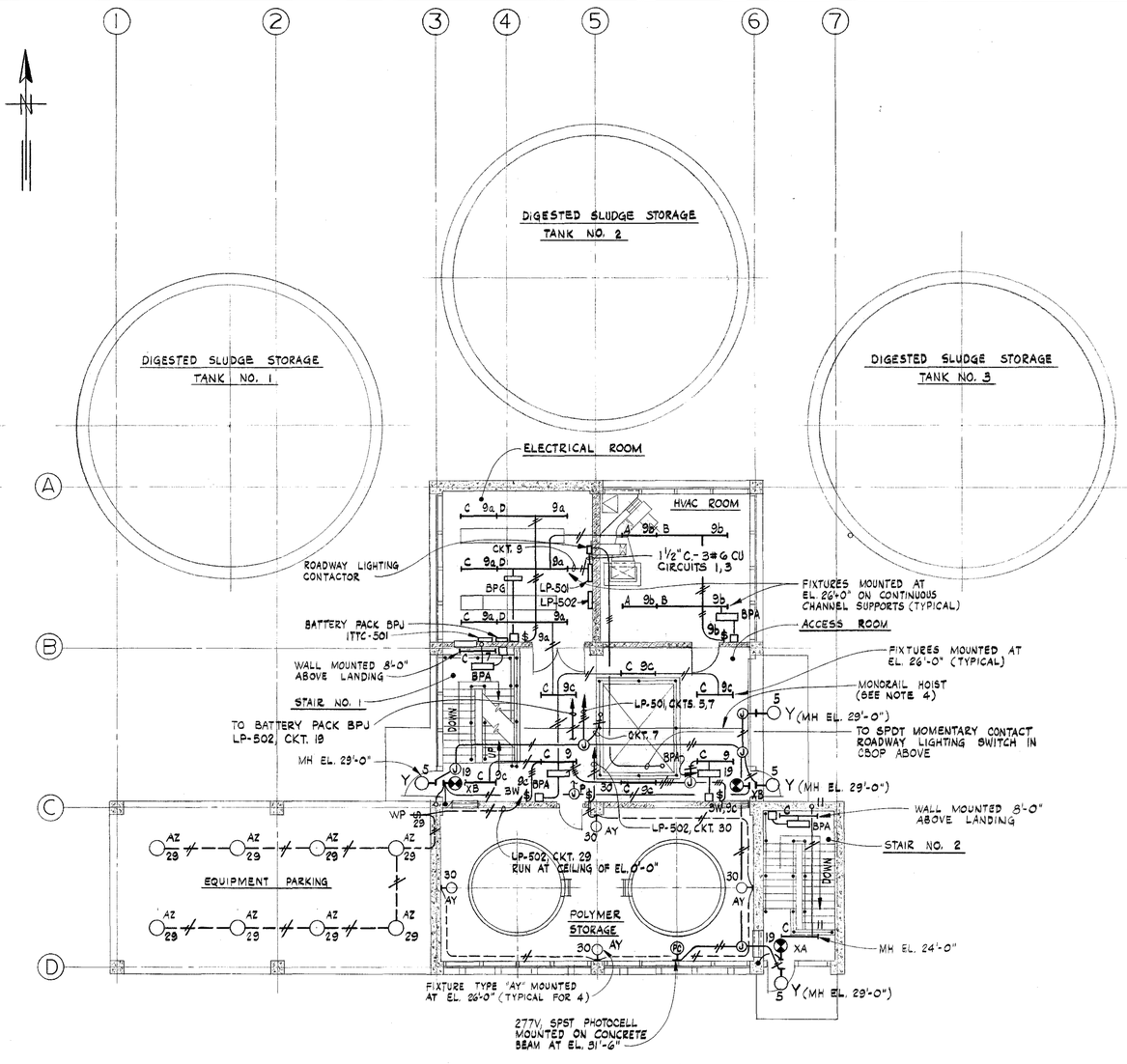
ELECTRICAL
CONTROL BUILDING
POWER PLAN AT EL. 32'-6"

PROJ. NO. S 202-70-30D
SHEET E 20 OF 31
DATE OCTOBER, 1976 | REV. 0

DWG 76 OF 88



LIGHTING PLAN AT EL. 0'-0"



LIGHTING PLAN AT EL. 16'-0"

NOTES:

1. ALL EXIT SIGNS SHALL BE MOUNTED 8'-0" ABOVE FINISHED FLOOR.
2. ALL SPEAKERS SHALL BE MOUNTED 9'-0" ABOVE FINISHED FLOOR.
3. CONDUITS BURIED DIRECTLY IN EARTH SHALL BE GIVEN ONE FIELD COAT OF KOPPERS METAL PASSIVATOR NO. 40 AND ONE COAT OF KOPPERS BITUMASTIC SUPER SERVICE BLACK OR TWO COATS OF ASPHALT VARNISH CONFORMING TO FEDERAL SPECIFICATION TT-V-51.
4. ALL CONDUITS PASSING MONORAIL HOIST SHALL BE OFFSET UPWARD INTO BEAM POCKET.

NOTE:

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NO.	DATE	APP.	REVISION
1	2/80	DSH	REC. DWG. REVISION

SCALE
8 0 8 16 FT
1/8"=1'-0"

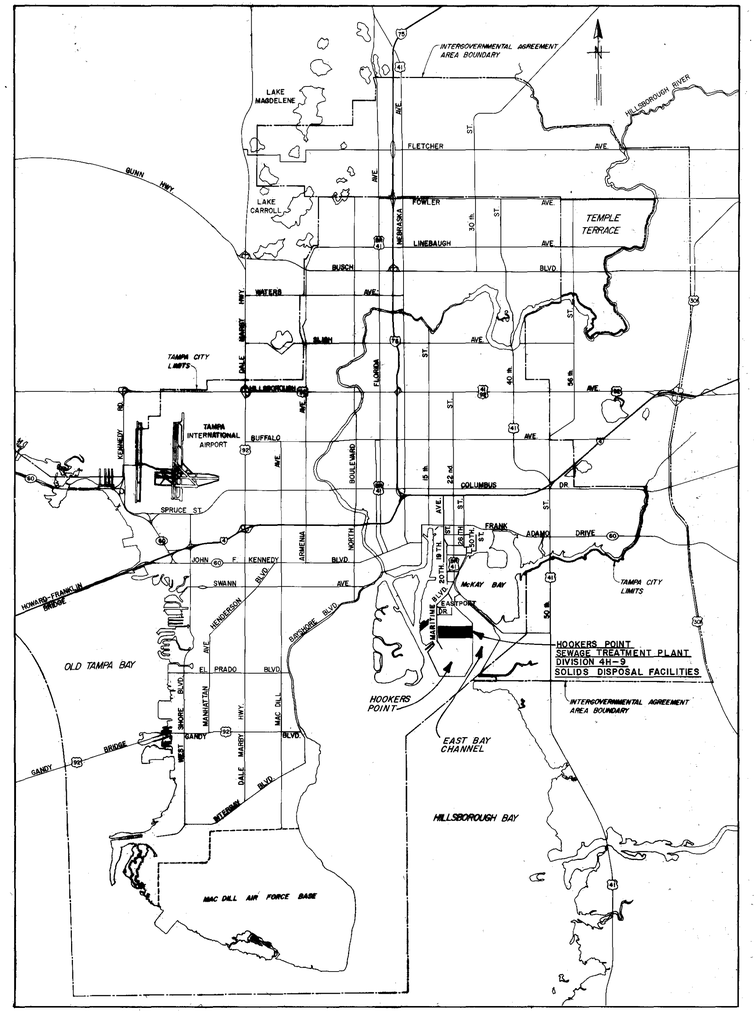
CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
CONTROL BUILDING
LIGHTING PLANS AT
EL. 0'-0" AND 16'-0"

PROJ. NO. S 202-70-30D
SHEET E21 OF 31
DATE OCTOBER, 1976 REV. 0

DWG 77 OF 88

INDEX



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4	G3	OUTSIDE PIPING - SOUTHEAST PLAN
5	G4	ROADS AND STORM SEWERS - SOUTHEAST PLAN
6	G5	EXISTING AND NEW GRADES - SOUTHEAST PLAN
7	G6	DETAILED PLANS - SECTIONS AND DETAILS
8	G7	PAVEMENTS - SECTIONS AND DETAILS
9	G8	OUTSIDE PIPING - STORM INLETS - MANHOLES AND DETAILS
10	G9	PLAN, PROFILE - SECTIONS AND DETAILS
		SLUDGE DRYING BEDS
11	G10	TYPICAL SLUDGE BED - PLAN, SECTIONS AND DETAILS
12	G11	CONVEYOR AND PIPE GALLERY - PLAN AND SECTION
13	G12	DETAILED PLANS
14	G13	DRIED SLUDGE STORAGE AREA - PLAN AND SECTIONS
15	G14	SLUDGE GRINDER STATION AND CONVEYOR LOADING CHUTE DETAILS
16	G15	DRIED SLUDGE STORAGE AREA - SECTIONS
17	G16	SECTIONS AND DETAILS
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		STRUCTURAL
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19	S1	PILE PLAN
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21	S3	PARTIAL PLANS AND SECTIONS
22	S4	CONVEYOR AND PIPE GALLERY
23	S5	SECTIONS
24	S6	SECTIONS AND DETAILS
25	S7	CONVEYOR SUPPORT - ELEVATIONS AND SECTIONS
26	S8	SLUDGE GRINDER STATION - BACKFLOW STRUCTURE - WALL AT N.W. CORNER
27	S9	CONVEYOR DB-DSC-6 BRIDGE - SECTIONS AND DETAILS
28	S10	CONVEYOR DB-DBC-5 BRIDGE & TRUCK UNLOADING STATION RAMP
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37	S19	TYPICAL CONSTRUCTION AND REINFORCING DETAILS
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		ARCHITECTURAL
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42	A2	SECTIONS, DETAILS AND ELEVATIONS
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44	A4	DETAILS AND DOOR SCHEDULE
* (Add)	20A	S2A PLAN, LIGHT WEIGHT AGGREGATE CONSTRUCTION

DRAWING NO.	SHEET NO.	TITLE
		MECHANICAL
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46	M2	PLANT, CITY AND EFFLUENT WATER - DIAGRAMS AND DETAILS
47	M3	CONTROL BUILDING OPERATING PANEL - GRAPHIC SECTION AND DETAILS
48	M4	CONTROL BUILDING OPERATING PANEL - MISC. SECTION AND POLYMER DIAGRAMS
49	M5	DIAGRAMS, DETAILS AND SYMBOL LEGEND
		CONTROL BUILDING
50	M6	PLANS
51	M7	PLANS
52	M8	SECTIONS
53	M9	SECTIONS AND DETAILS
54	M10	PLANS, SECTIONS AND DETAILS
55	M11	SYMBOL LEGEND AND GENERAL DETAILS
		HVAC
56	HV1	CONTROL BUILDING - PLANS AND SECTIONS
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58	E2	SITE PLAN - LIGHTING
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61	E5	SYMBOL LIST
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73	E17	SCHEMATIC DIAGRAMS
		CONTROL BUILDING
74	E18	POWER PLAN AT EL. 0'-0"
75	E19	POWER PLAN AT EL. 16'-0"
76	E20	POWER PLAN AT EL. 32'-6"
77	E21	LIGHTING PLANS AT EL. 0'-0" AND 16'-0"
78	E22	LIGHTING PLANS AT EL. 32'-6" AND 45'-0"
79	E23	SECTIONS AND DETAILS
80	E24	LIGHTING FIXTURE DETAILS - AND PANEL SCHEDULES
81	E25	LIGHTING FIXTURE SCHEDULE
82	E26	EXIT SIGN AND BATTERY PACK - SCHEDULES
83	E27	CONDUIT AND CABLE - SCHEDULE
84	E28	CONDUIT AND CABLE - SCHEDULE
85	E29	CONDUIT AND CABLE - SCHEDULE
86	E30	CONDUIT AND CABLE - SCHEDULE
87	E31	CONDUIT AND CABLE - SCHEDULE
		MISCELLANEOUS
88	MS1	INSTRUMENT PANELS HOUSING - PLAN, SECTIONS AND DETAILS (This sheet has been VOIDED by change order)
4H-9A		IN-HOUSE DESIGN/CONSTRUCTION

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PAUL E. LANGDON, JR. CERTIFICATE No. 15473 STATE OF FLA. REGISTERED ENGINEER

GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED RN
DRAWN BT
CHECKED REB

APPROVED
SUPT., DEPT. OF SANITARY SEWERS DATE 10-25-76
GREELEY AND HANSEN, ENGINEERS DATE 10-25-76

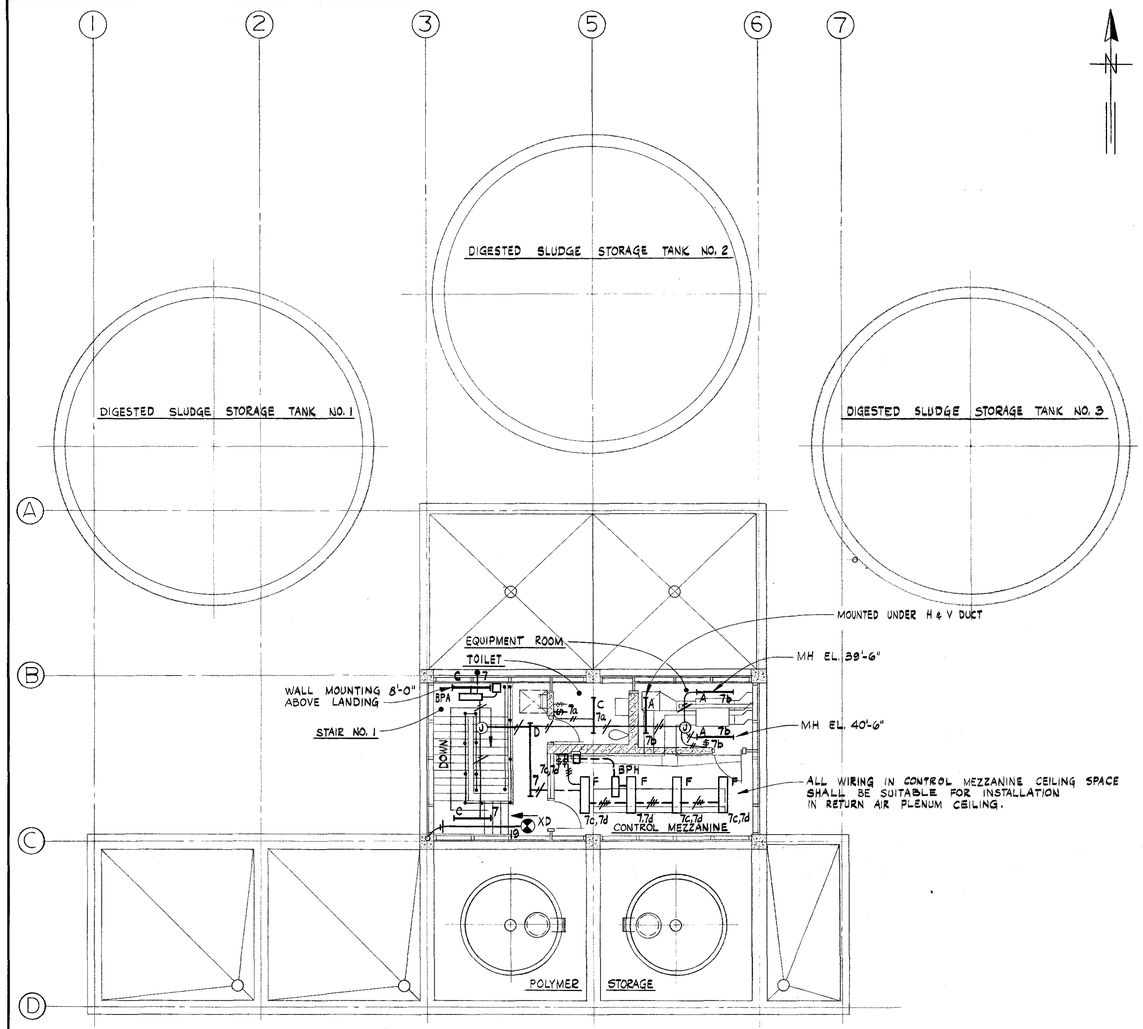
NO.	DATE	APP.	REVISION
1	2/80	DSH	Rec. Dwg. Revisions

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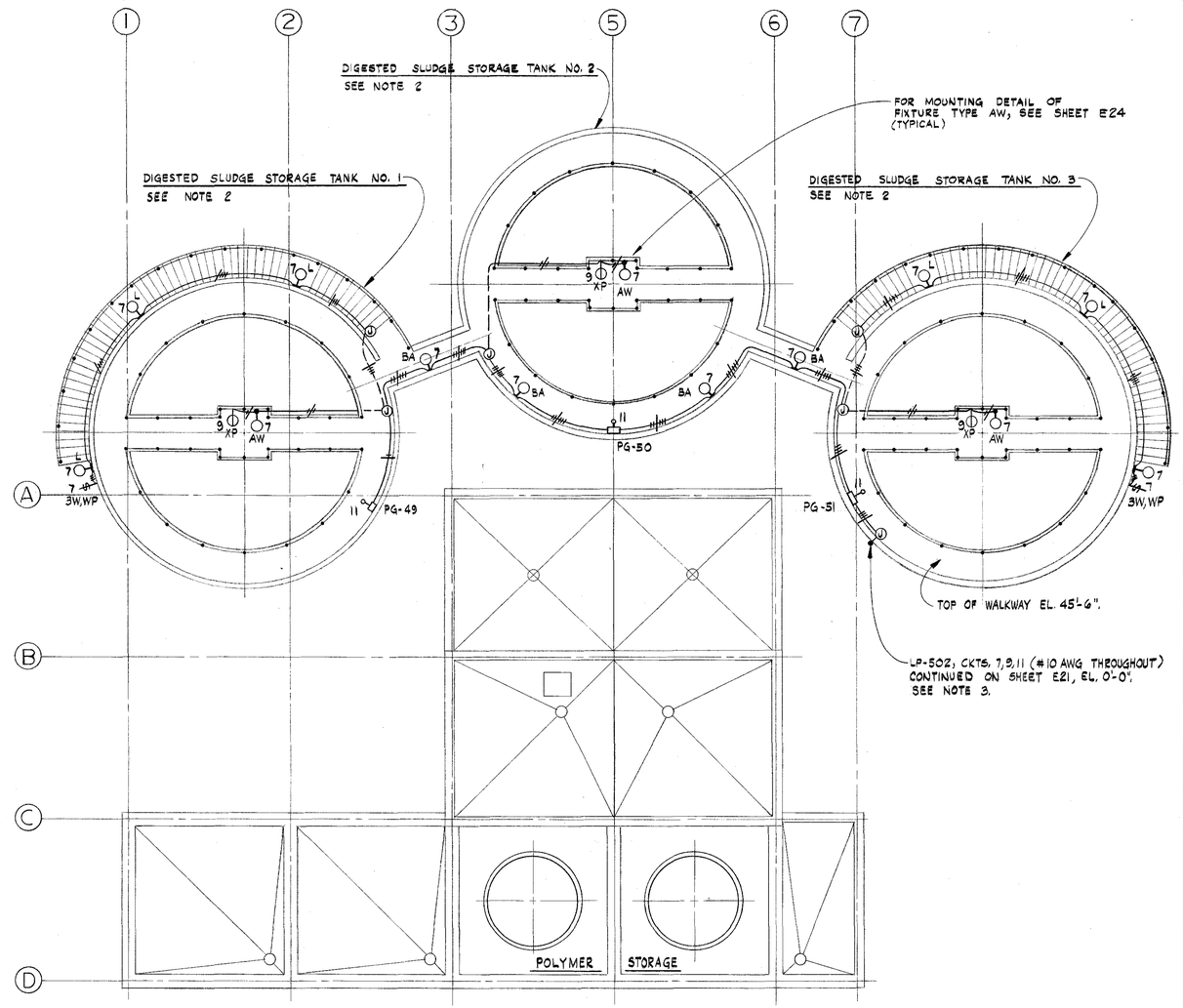
CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

LOCATION MAP AND INDEX

PROJ. NO. S 202-70-30D-
SHEET I I OF I
DATE OCTOBER, 1976 REV. 0



LIGHTING PLAN AT EL. 32'-6"



LIGHTING PLAN AT EL. 45'-0"

NOTES:

1. ALL EXIT SIGNS SHALL BE MOUNTED 8'-0" ABOVE FINISHED FLOOR.
2. DIGESTED SLUDGE STORAGE TANKS NO. 1,2 & 3 ARE HAZARDOUS LOCATIONS AT EL. 45'-6". ALL EQUIPMENT AND WIRING IN THIS AREA SHALL BE SUITABLE FOR INSTALLATION IN CLASS I, DIVISION 1, GROUP D LOCATIONS.
3. INSTALL A JUNCTION BOX ADJACENT TO ALL LIGHTING FIXTURES, RECEPTACLES AND INSTRUMENTS MOUNTED ON DIGESTED SLUDGE STORAGE TANK WALKWAYS AT EL. 45'-6". ALL WIRING SHOWN TO THESE DEVICES SHALL BE ROUTED THRU THE JUNCTION BOX AND THEN TO THE DEVICE AS INDICATED.

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CHICAGO, ILLINOIS 60606

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GREELEY AND HANSEN, ENGINEERS

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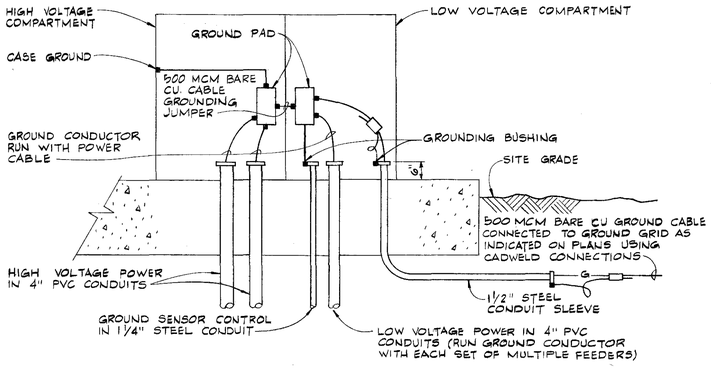
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CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

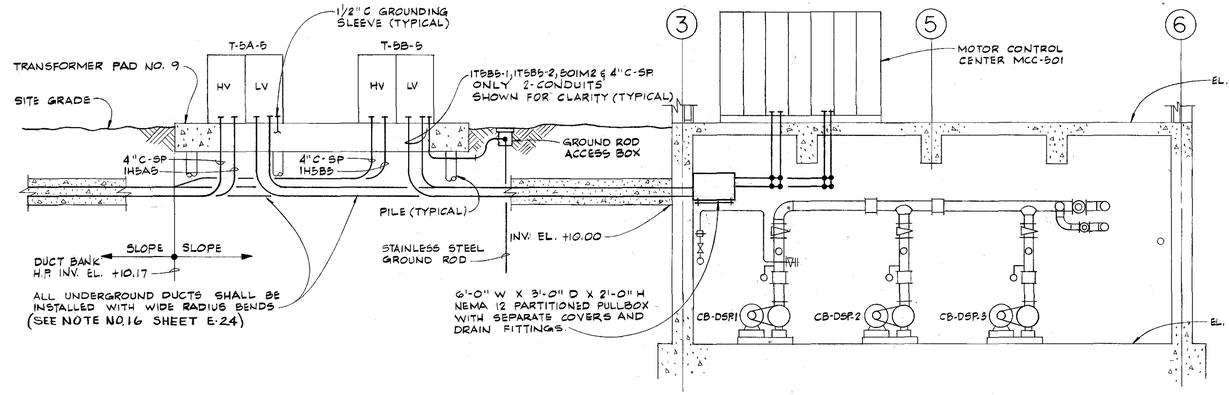
ELECTRICAL
CONTROL BUILDING
LIGHTING PLAN AT
EL. 32'-6" AND 45'-0"

PROJ. NO. S 202-70-30D
SHEET E22 OF 31
DATE OCTOBER, 1976 REV. 0

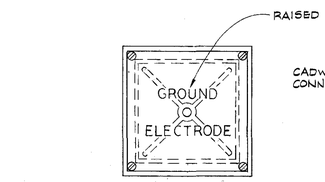
DWG 78 OF 88



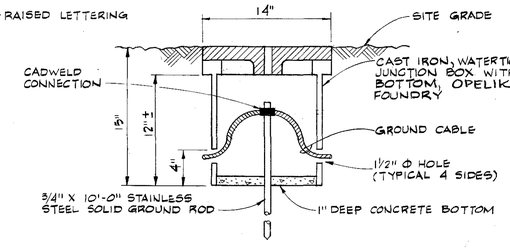
PAD MOUNTED TRANSFORMER GROUNDING DETAIL
SCALE: NONE



SECTION 8/E18
SCALE: 3/16"=1'-0"

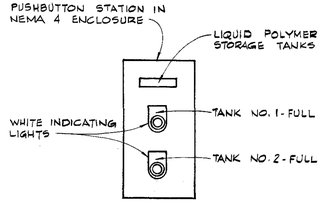


PLAN

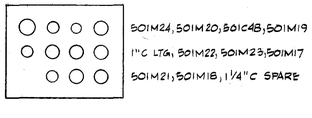


SECTION

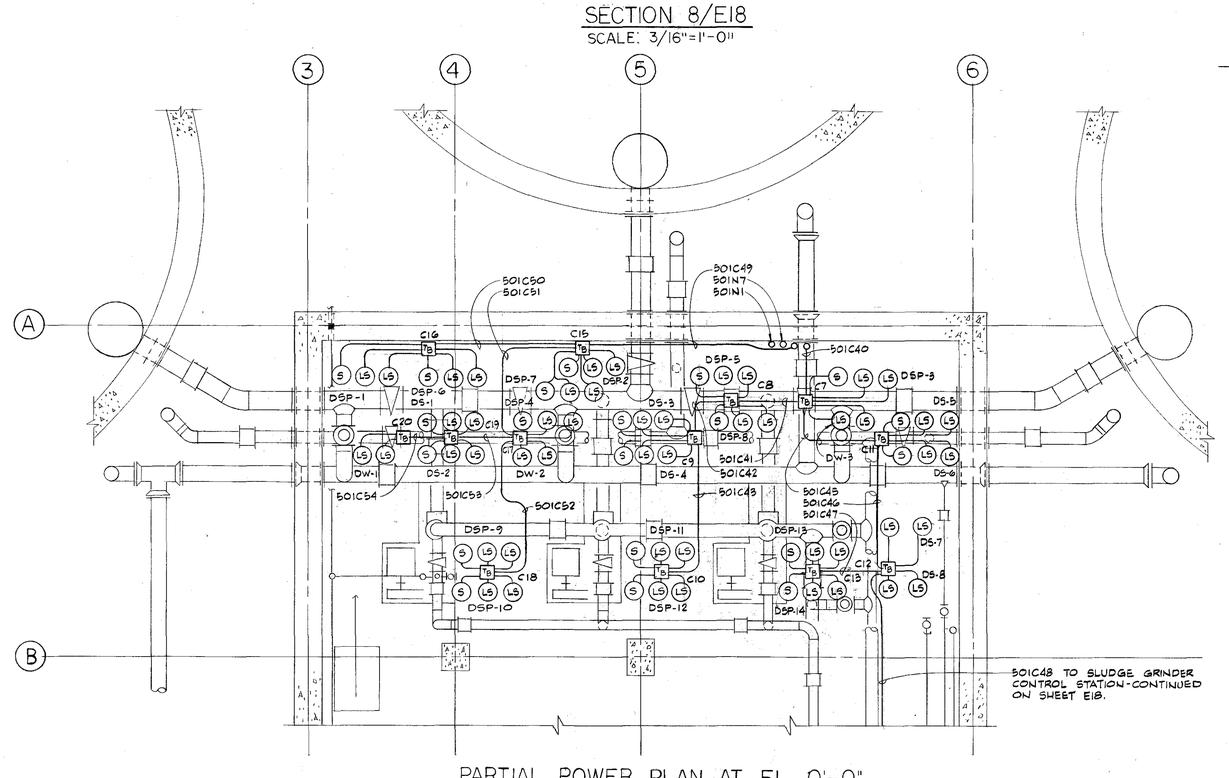
GROUND ROD ACCESS BOX INSTALLED AT TRANSFORMER PAD
SCALE: 1 1/2" = 1'-0"



POLYMER UNLOADING PANEL
SCALE: NONE



SECTION 9/E1, E18
SCALE: NONE



PARTIAL POWER PLAN AT EL. 0'-0"
SCALE: ¼=1'-0"

FOR ADDITION WIRING IN THIS AREA, SEE SHEET E18.

NOTE:

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CHICAGO, ILLINOIS 60606

DESIGNED W J K
DRAWN D A S
CHECKED W J K, R A W

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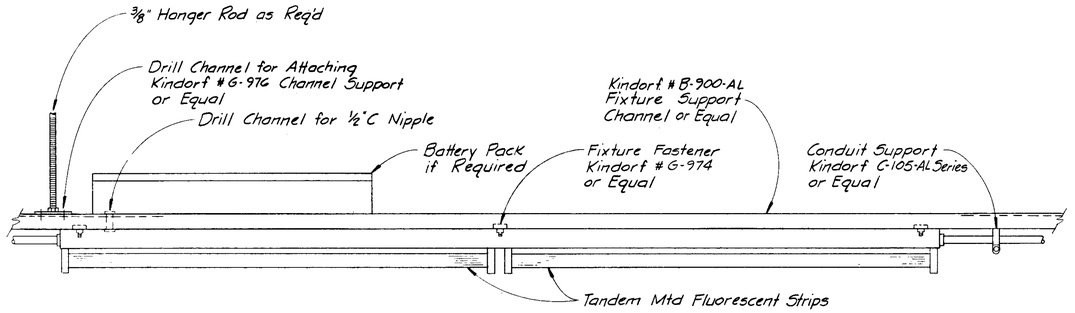
SCALE
4 0 4 8 12 FT 3/16"=1'-0"
4 0 4 8 FT 1/4"=1'-0"

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

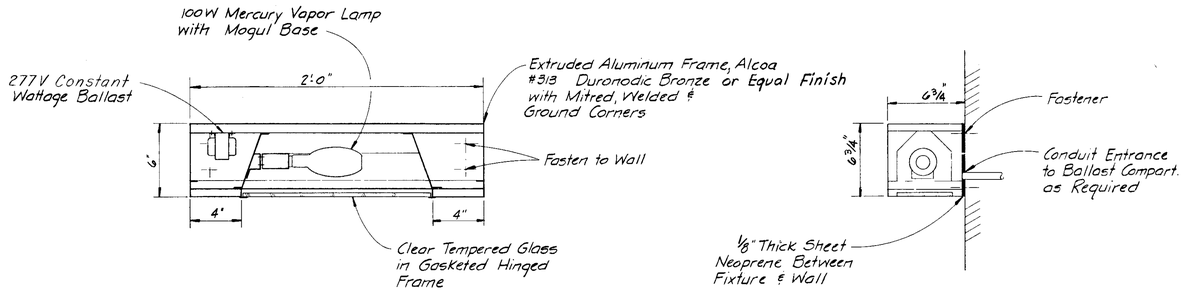
ELECTRICAL
CONTROL BUILDING
SECTIONS AND DETAILS

PROJ. NO. S 202-70-30D
SHEET E23 OF 31
DATE OCTOBER, 1976 REV. 0

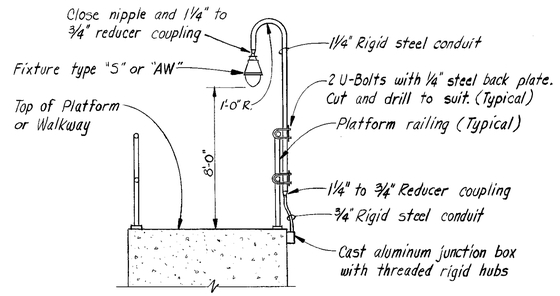
DWG 79 OF 88



TYPICAL FIXTURE MOUNTED ON CONTINUOUS CHANNEL SUPPORT



FIXTURE TYPE "Y"

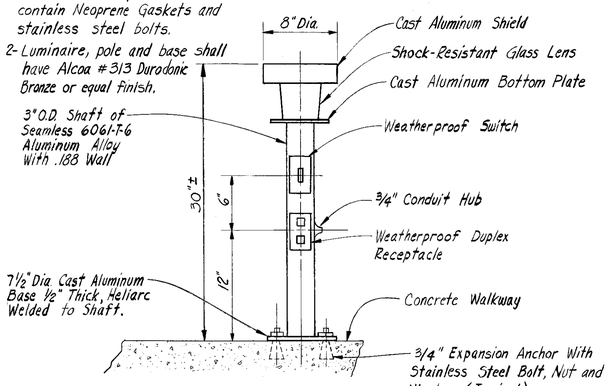


TYPICAL MOUNTING DETAIL
FIXTURE TYPES "S" & "AW"

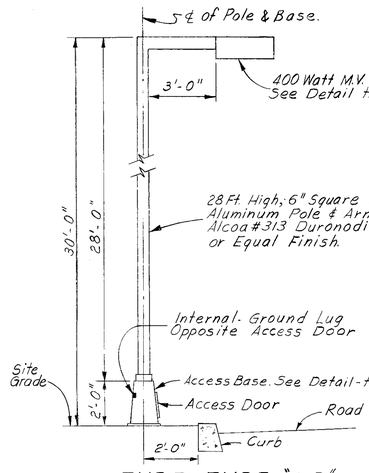
NOTES

1- All removable components shall contain Neoprene Gaskets and stainless steel bolts.

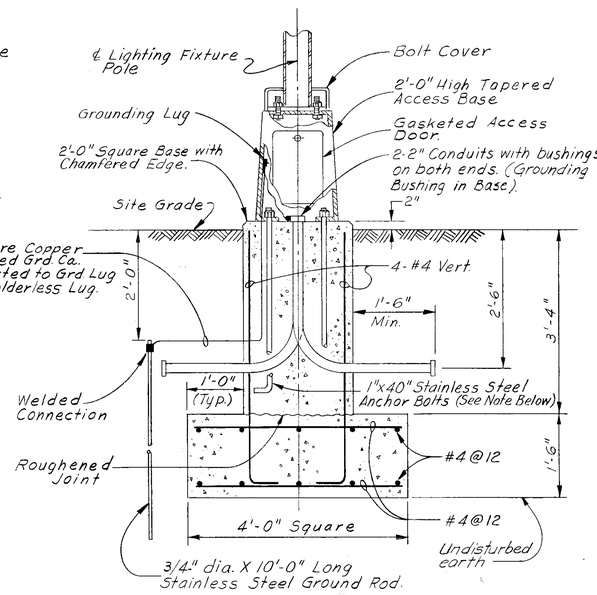
2- Luminaire, pole and base shall have Alcoa #313 Duronodic Bronze or equal finish.



FIXTURE TYPE "BB"



FIXTURE TYPE "AD"



BASE DETAIL
FIXTURE TYPE "AD"

Note: Anchor bolts shall be made from 1" diameter Stainless Steel to meet ASTM Des. A276, Type 304 (4 Required)

PANELBOARD SCHEDULE

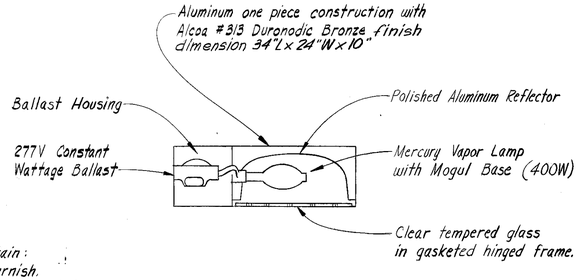
MARK	VOLTAGE	MAINS	MOUNTING	BRANCH CIRCUITS 20A, 1P	BRANCH CIRCUITS MISCELLANEOUS	BRANCH CIRCUITS SPACES	TOTAL POLES	REMARKS
LP-501	277/480V, 3φ, 4W	225A M.L.O.	Surface	12 (6-SP)		18	30	
LP-502	120/208V, 3φ, 4W	100A Breaker	Surface	32 (6-SP)	2-30A, 1P & 1-20A, 2P	6	42	

INTERCOM TELEPHONE TERMINAL CABINET SCHEDULE

MARK	LOCATION	CABINET SIZE	MOUNTING	ENCLOSURE TYPE	NUMBER OF TERMINALS
ITTC-501	Sludge Control Building Electrical Room	18"W x 18"H x 6"D	Surface	NEMA 1A Gasketed	24

NOTES:

Intercom Telephone Terminal Cabinet ITTC-501 shall contain:
1. 3/4" Plywood backing finished with black insulating varnish.
2. Terminal strips with minimum number of terminals as indicated.
3. Concealed hinges and trim clamps.
4. Flush Lock, keyed same as panelboards.



LUMINAIRE DETAIL
FIXTURE TYPE "AD"

NOTE:

ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED WJK DRAWN RWZ CHECKED WJK, RAW	APPROVED SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS DATE	1 | 2/80 | DSH | REC. DWG. REVISIONS NO. | DATE | APP. | REVISION	SCALE NO SCALE	CITY OF TAMPA, FLORIDA SEWAGE DISPOSAL SYSTEM HOOKERS POINT SEWAGE TREATMENT PLANT DIVISION 4H-9 SOLIDS DISPOSAL FACILITIES

ELECTRICAL
LIGHTING FIXTURE DETAILS AND PANEL SCHEDULES

PROJ. NO. S 202-70-30D-
SHEET E24 OF 31
DATE OCTOBER, 1976 | REV. 0

DWG 80 OF 88

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER (OR APP'D. EQUAL)	CATALOG NO.	VOLTS	LAMPS NO.	LAMPS WATTS	LAMPS TYPE	MOUNTING		DESCRIPTION
(A)	SPAULDING DEVOE	4-MI-1-430-RS TC-148-AL-S	277	1	40	FLUOR F40/CW	AS NOTED ON PLANS		48" LONG SINGLE LAMP STRIP LIGHT, ALL ALUMINUM CONSTRUCTION, BAKED WHITE ENAMEL FINISH, TELESCOPIC TOMBSTONE SOCKETS
(B)	SPAULDING DEVOE	8-MI-1-430-RS TC-196-AL-TS	277	2	40	FLUOR F40/CW	AS NOTED ON PLANS		96" LONG SINGLE ROW TANDEM STRIP LIGHT, ALL ALUMINUM CONSTRUCTION, BAKED WHITE ENAMEL FINISH TELESCOPIC TOMBSTONE SOCKETS
(C)	SPAULDING DEVOE	4-MI-2-430-RS TC-248-AL-S	277	2	40	FLUOR F40/CW	AS NOTED ON PLANS		48" LONG TWO LAMP STRIP LIGHT, ALL ALUMINUM CONSTRUCTION, BAKED WHITE ENAMEL FINISH, TELESCOPIC TOMBSTONE SOCKETS
(D)	SPAULDING DEVOE	8-MI-2-430-RS TC-296-AL-TS	277	4	40	FLUOR F40/CW	AS NOTED ON PLANS		96" LONG TWO ROW TANDEM STRIP LIGHT, ALL ALUMINUM CONSTRUCTION, BAKED WHITE ENAMEL FINISH, TELESCOPIC TOMBSTONE SOCKETS
E	SPAULDING DEVOE	8-VMI-2-1500 TC-296-AL-PG-S	277	2	215	FLUOR F96T12/CW/ 1500	AS NOTED ON PLANS		96" LONG TWO LAMP STRIP LIGHT, ALL ALUMINUM CONSTRUCTION, BAKED WHITE ENAMEL FINISH, TELESCOPIC TOMBSTONE SOCKETS, 1500MA
(F)	LIGHTING PRODUCTS INC.	JS14B87R340-RA	277	3	40	FLUOR F40/CW	REC	CLG	SAME AS TYPE G EXCEPT ONLY ONE KNOCKOUT IN FIXTURE, FOR INSTALLATION IN RETURN AIR PLENUM CEILING.
G	LIGHTING PRODUCTS INC.	JS14B87R340	277	3	40	FLUOR F40/CW	REC	CLG	1'x 4' RECESSED TROFFER, FLANGELESS, FRAMED ACRYLIC PRISMATIC LENS W/FLUSH DOOR, STL TRIM, BAKED WHITE ENAMEL FINISH INCLUDING DIFFUSER DOOR, FOR CONCEALED Z-SPLINE ACOUSTICAL CEILING
H	LIGHTING PRODUCTS INC.	JS18B87R640	277	6	40	FLUOR F40/CW	REC	CLG	SAME AS TYPE G EXCEPT 1'x 8' WITH 3-2 LAMP BALLASTS SWITCHED IN 3 TANDEM ROWS
J	LIGHTING PRODUCTS INC.	JS22B87U340	277	3	40	FLUOR F40/CW/U	REC	CLG	2'x 2' RECESSED TROFFER, FLANGELESS, FRAMED ACRYLIC PRISMATIC LENS W/FLUSH DOOR, STL TRIM, BAKED WHITE ENAMEL FINISH INCLUDING DIFFUSER DOOR, FOR CONCEALED Z-SPLINE ACOUSTICAL CEILING
(K)	APPLETON	VPX1075	120	1	100	INCAND A-21	SURF	CLG	VAPORTIGHT, PRISMATIC GLASS GLOBE, CEILING MOUNTING JUNCTION UNILET WITH MOUNTING LUGS AND 3/4" HUBS
(L)	APPLETON	VPWB1075	120	1	100	INCAND A-21	SURF	WALL	VAPORTIGHT, PRISMATIC GLASS GLOBE, WALL MOUNTING JUNCTION UNILET WITH MOUNTING LUGS AND 3/4" HUBS
M	APPLETON	GSK-LR5/GSX-75-5	120	1	150	INCAND R-40 REFL.FLOOD	SURF	CLG	VAPORTIGHT LAMPHOLDER, JUNCTION UNILET WITH MOUNTING LUGS AND 3/4" HUBS
N	APPLETON	AP1575	120	1	200	INCAND A-23	SUSP	CLG	EXPLOSION-PROOF, FACTORY SEALED, PRISMATIC HEAT AND IMPACT RESISTANT GLOBE, PENDANT MOUNTING, 3/4" HUB
P	APPLETON	AC1575	120	1	200	INCAND A-23	SURF	CLG	EXPLOSION-PROOF, FACTORY SEALED, PRISMATIC HEAT AND IMPACT RESISTANT GLOBE, CEILING MOUNTING JUNCTION UNILET WITH MOUNTING LUGS AND 3/4" HUBS
R	APPLETON	ALB1575	120	1	200	INCAND A-23	SURF	WALL	EXPLOSION-PROOF, FACTORY SEALED, PRISMATIC HEAT AND IMPACT RESISTANT GLOBE, LONG BRACKET MOUNTING JUNCTION UNILET WITH MOUNTING LUGS AND 3/4" HUBS
(S)	APPLETON	VPA1075	120	1	100	INCAND A-21	PENDANT		VAPORTIGHT, PRISMATIC GLASS GLOBE, 3/4" CONDUIT HUB
T	APPLETON	AMP2510ST-27	277	1	250	M.V. H37-5KC/DX	SUSP	CLG	EXPLOSION-PROOF, FACTORY SEALED, INTEGRAL CONSTANT WATTAGE BALLAST, PRISMATIC GLOBE, PENDANT MOUNTING, 1" HUB
U	APPLETON	AMC2510ST-27	277	1	250	M.V. H37-5KC/DX	SURF	CLG	EXPLOSION-PROOF, FACTORY SEALED, INTEGRAL CONSTANT WATTAGE BALLAST, PRISMATIC GLOBE, CEILING MOUNTING JUNCTION UNILET WITH MOUNTING LUGS AND 1" HUBS
V	APPLETON	AMP4010DB-27	277	1	400	M.V. H33-1GL/DX	SUSP	CLG	SAME AS TYPE T EXCEPT 400 WATT
W	APPLETON	AMC4010DB-27	277	1	400	M.V. H33-1GL/DX	SURF	CLG	SAME AS TYPE U EXCEPT 400 WATT
X	DEVOE QUALITY	MS-100-120-TAM 2010-12CW	120	1	100	M.V. H38-4JA/DX	SURF	WALL	SEE DETAIL ON SHEET
(Y)	DEVOE QUALITY	MS-100-277-TAM 2010-27CW	277	1	100	M.V. H38-4JA/DX	SURF	WALL	SEE DETAIL ON SHEET E24.
Z	DEVOE QUALITY	MS-100-277-C-TAM 8072-T-27CW	277	1	175	M.V. H39-22KC/DX	SURF	CLG	GASKETED ALUMINUM HOUSING, BRONZE COLOR, CLEAR TEMPERED GLASS IN HINGED FRAME, CONSTANT WATTAGE REGULATOR BALLAST, MOGUL BASE SOCKET (TO MATCH FIXTURE TYPE AA)
AA	DEVOE QUALITY	PS-513M-175-1-TAM 521-13SL-8072-27CW	277	1	175	M.V. H39-22KC/DX	13FT POLE	BASE	SEE DETAIL ON SHEET
AB	DEVOE QUALITY	PS-513M-175-2-TAM 522-13SL-8072-27CW	277	2	175	M.V. H39-22KC/DX	13FT POLE	BASE	SEE DETAIL ON SHEET
AC	DEVOE QUALITY	PS-513M-175-RE-TAM 530-15SL-8072-27CW	277	1	175	M.V. H39-22KC/DX	13FT POLE	RAMP EDGE	SEE DETAIL ON SHEET
(AD)	QUALITY (EQUAL BY DEVOE OR DEVINE)	521-28SL-8132-27CW -653A	277	1	400	M.V. H33-1GL/DX	28FT POLE	BASE	GASKETED ALUMINUM HOUSING, CLEAR TEMPERED GLASS, CONSTANT WATTAGE REGULATOR BALLAST WITH 24" HIGH BASE, 28FT. ALUMINUM POLE, 3 FT. ARM. FINISH: ALCOA #313 DURONODIC BRONZE. (SEE DETAIL ON SHEET E24).
AE									
AF									

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER (OR APP'D. EQUAL)	CATALOG NO.	VOLTS	LAMPS NO.	LAMPS WATTS	LAMPS TYPE	MOUNTING		DESCRIPTION
AG	HOLOPHANE	2913-ELB-277	277	2	400	M.V. H33-1GL/DX	SURF	CLG	TWIN LOW BRIGHTNESS PRISMATIC GLASS REFLECTORS, INTEGRAL TWIN-LAMP CONSTANT WATTAGE BALLAST, WITH TYPE UPH-35 POWER-HOOK AND TYPE PHCA CORD ASSEMBLY INCLUDING LOOP
AH	HOLOPHANE	1025-ELB-277	277	1	1000	M.V. H36-15GW/DX	SURF	CLG	LOW BRIGHTNESS PRISMATIC GLASS REFLECTOR, INTEGRAL CONSTANT WATTAGE BALLAST, WITH TYPE UPH-35 POWER-HOOK AND TYPE PHCA CORD ASSEMBLY INCLUDING LOOP
AJ	ART METAL	3357AA	120	1	75	INCAND A-19	REC	CLG	GASKETED, WEATHERPROOF, ANODIZED CAST ALUMINUM TRIM, WHITE CERAMIC GLASS, NO. 323PR PREWIRED PLASTER FRAME
AK	DEVINE	F60F-277	277	2	8	FLUOR. F8T5/CW	SURF	WALL	GASKETED, WEATHERPROOF STEP-LIGHT, ANODIZED CAST ALUMINUM TRIM WITH SATIN FINISH, TEMPERED DIFFUSING GLASS, ALUMINUM SPLICE BOX
AL	SPAULDING	8-WR-2-800	277	4	40	FLUOR. F40/CW	SURF	WALL	96" LONG TWO LAMP LIGHT, ALL ALUMINUM CONSTRUCTION, BAKED WHITE ENAMEL FINISH, CLEAR ACRYLIC LENS, SILVER PLATED CONTACT SOCKETS.
AM	ALKCO	3235	277	2	30	FLUOR. F30/T12	SURF	WALL	36" LONG TWO LAMP ABOVE MIRROR LIGHTS IN TANDEM, ALL STEEL CONSTRUCTION, BAKED WHITE ENAMEL FINISH, ACRYLIC DIFFUSER, HPF-RS BALLAST
AN	WAKEFIELD	PSD-214-OB	277	2	40	FLUOR F40/CW	SUSP	CLG	1'x 4' WITH SOLID METAL SIDES. BAKED WHITE ENAMEL FINISH, NO LENS
AP	WAKEFIELD	PSD-214-OB	277	2	40	FLUOR. F40/CW	SURF	WALL	1'x 4' WITH SOLID METAL SIDES. BAKED WHITE ENAMEL FINISH, NO LENS
AR	PASS & SEYMOUR	457	120	1	60	SILVER GLOBE INCAND	SEMI REC	CLG	SEE FIXTURE DETAILS & PARTS SCHEDULE ON SHEET
AS	LIGHTOLIER	7587 & 7622	120	1	150	INCAND R40/FL	SURF	CLG	SATIN ALUMINUM UNIVERSAL LYTESPOT WITH MATTE BLACK UNIVERSAL SHIELD, LIGHTOLIER SURFACE MOUNTED "LYTESPAN II" LIGHTING TRACK.
									SERIES 7500 TRK. UNITS, COVERS, & ACCESORIES TO SUPPORT & SUPPLY FIXTURES TYPE " AS". SEE SHEET E4 FOR LIGHTING TRACK LENGTHS.
AT	LIGHTOLIER	7763	120	1	150	INCAND R40/FL	SEMI REC	CLG	MULTI-GROOVE BAFFLE DOWNLIGHT, SEMI-RECESSED WITH SEAMLESS ALUMINUM HOUSING AND CONCRETE POUR BOX; CATALOG #7951
AU	CROUSE HINDS	EVMA 83100/120	120	1	100	M.V. H38-4JA/DX	SUSP	CLG	EXPLOSION-PROOF, FACTORY SEALED, INTEGRAL CONSTANT WATTAGE BALLAST, HEAT & IMPACT RESISTANT GLOBE, DOME REFLECTOR, PENDANT MOUNTING & 1" HUB.
AV	LIGHTING PRODUCTS, INC.	MR101400-SS-277.	277	2	40	FLUOR F40/CW	SUSP	CLG	GASKETED, CLEAR VIRGIN ACRYLIC SHIELD, ALL STAINLESS STEEL CONSTUCTION WITH STAINLESS STEEL FINISH AND THREADED CONDUIT HUBS
(AW)	APPLETON	AP1075	120	1	100	INCAND A-19	PENDANT		EXPLOSION-PROOF, FACTORY SEALED, HEAT & IMPACT RESISTANT GLOBE, PENDANT MOUNTING WITH 3/4" HUB.
AX	HOLOPHANE	913-ELB-277	277	1	400	M.V. H33-1GL/DX	PENDANT		LOW BRIGHTNESS PRISMATIC GLASS REFLECTOR, INTEGRAL CONSTANT, WATTAGE BALLAST WITH TYPE UPH-36 POWER-HOOK AND TYPE PHCA CORD ASSEMBLY, INCLUDING LOOP.
(AY)	APPLETON	VPOBW10	120	1	150	INCAND A-21	SURF	WALL	VAPORTIGHT, PRISMATIC GLASS GLOBE, FOR WALL MOUNTING ON RECESSED OUTLET BOX, WITH GASKET
(AZ)	APPLETON	VPOB10G	120	1	150	INCAND A-21	SURF	CLG	VAPORTIGHT, PRISMATIC GLASS GLOBE WITH GUARD, FOR CEILING MOUNTING ON RECESSED OUTLET BOX, WITH GASKET
(BA)	APPLETON	ASB1575G	120	1	100	INCAND A-19	SURF	WALL	EXPLOSION-PROOF, FACTORY SEALED, PRISMATIC HEAT AND IMPACT RESISTANT GLOBE WITH GUARD, SHORT BRACKET MOUNTING JUNCTION UNILET WITH MOUNTING LUGS AND 3/4" HUBS
(BB)	IMPERIAL-BRONZELITE	WA-1100-1-SP/RSHD	120	1	100	INCAND A-19	POLE	BASE	GASKETED ALUMINUM HOUSING, SHOCK-RESISTANT GLASS LENS, ALUMINUM POLE WITH WEATHERPROOF DUPLEX RECEPTACLE, SWITCH, AND 3/4" CONDUIT HUB, ALCOA #313 DURONODIC BRONZE FINISH (SEE DETAIL ON SHEET E24).

NOTE: ONLY LIGHTING FIXTURES MARKED THUS (◯) ARE PART OF DIVISION 4H-9.

RECORD DRAWING

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NOTE:

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN BFT
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

ELECTRICAL
LIGHTING FIXTURE SCHEDULE

PROJ. NO. S 202-70-30D-
SHEET E 25 OF 31
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EXIT SIGN FIXTURE SCHEDULE

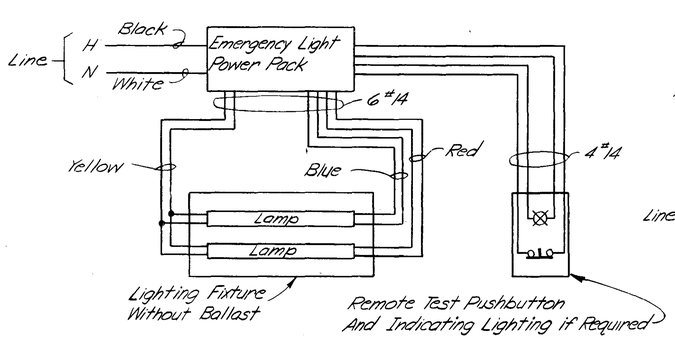
MARK	MANUFACTURER (OR APP'D. EQUAL)	CATALOG NO.	VOLTS	LAMPS NO.	LAMPS WATTS	LAMPS TYPE	MOUNTING		DESCRIPTION
(XA)	ALKCO	EGO-12-SR	120	4	7 1/2	INCAND C7 1/2	SURF	WALL	SINGLE FACE WITH DOWNLIGHT, LONG LIFE TRANSISTORIZED SILICONE RECTIFIER, GLASS PANEL, 6" RED LETTERS ON WHITE BACKGROUND, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
(XB)	ALKCO	ETGO-22-SR	120	4	7 1/2	INCAND C7 1/2	SURF	WALL	TRIANGULAR WITH DOWNLIGHT, LONG LIFE TRANSISTORIZED SILICONE RECTIFIER, GLASS PANEL, 6" RED LETTERS ON WHITE BACKGROUND, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
(XC)	ALKCO	EGO-12-SR-L	120	4	7 1/2	INCAND C7 1/2	SURF	WALL	SINGLE FACE WITH ARROW LEFT AND DOWNLIGHT, LONG LIFE TRANSISTORIZED SILICONE RECTIFIER, GLASS PANEL, 4½" RED LETTERS ON WHITE BACK-GROUND, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
(XD)	ALKCO	EGO-12-SR-R	120	4	7 1/2	INCAND C7 1/2	SURF	WALL	SINGLE FACE WITH ARROW RIGHT AND DOWNLIGHT, LONG LIFE TRANSISTORIZED SILICONE RECTIFIER, GLASS PANEL, 4½" RED LETTERS ON WHITE BACK-GROUND, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
XE	ALKCO	EGO-12-SR-DH	120	4	7 1/2	INCAND C7 1/2	SURF	WALL	SINGLE FACE WITH DOUBLE HEADED ARROW AND DOWNLIGHT, LONG LIFE TRANSISTORIZED SILICONE RECTIFIER, GLASS PANEL, 4½" RED LETTERS ON WHITE BACKGROUND, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
(XF)	ALKCO	EGO-22-SR W/ARROWS	120	4	7 1/2	INCAND C7 1/2	SURF OR SUSP	CLG	DOUBLE FACE WITH ARROWS AND DOWNLIGHT, LONG LIFE TRANSISTORIZED SILICONE RECTIFIER, GLASS PANEL, 4½" RED LETTERS ON WHITE BACK-GROUND, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
XG	ALKCO	EGO-22-SR W/ 2-DH ARROWS	120	4	7 1/2	INCAND C7 1/2	SURF OR SUSP	CLG	DOUBLE FACE WITH DOUBLE HEADED ARROWS AND DOWNLIGHT, LONG LIFE TRANSISTORIZED SILICONE RECTIFIER, GLASS PANEL, 4½" RED LETTERS ON WHITE BACKGROUND, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
XH									
XJ	ALKCO	EPO-12/MB-1	120	1	40	INCAND A19/IF LONG LIFE	SUSP	CLG	EXPLOSION-PROOF, SINGLE FACE WITH DOWNLIGHT, GLASS PANEL, 6" RED LETTERS ON WHITE BACKGROUND, PENDANT MOUNTING BRACKET, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
XK	ALKCO	EPO-12/MB-3	120	1	40	INCAND A19/IF LONG LIFE	SURF	WALL	EXPLOSION-PROOF, SINGLE FACE WITH DOWNLIGHT, GLASS PANEL, 6" RED LETTERS ON WHITE BACKGROUND, WALL MOUNTING BRACKET, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
XL	ALKCO	EPTO-22/MB-3	120	1	40	INCAND A19/IF LONG LIFE	SURF	WALL	EXPLOSION-PROOF, TRIANGULAR WITH DOWNLIGHT, GLASS PANEL, 6" RED LETTERS ON WHITE BACKGROUND, WALL MOUNTING BRACKET, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
XM	ALKCO	EPO-12-L/MB-3	120	1	40	INCAND A19/IF LONG LIFE	SURF	WALL	EXPLOSION-PROOF, SINGLE FACE WITH ARROW LEFT AND DOWNLIGHT, GLASS PANEL, 4 1/2" RED LETTERS ON WHITE BACKGROUND, WALL MOUNTING BRACKET, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
XN	ALKCO	EPO-12-R/MB-3	120	1	40	INCAND A19/IF LONG LIFE	SURF	WALL	EXPLOSION-PROOF, SINGLE FACE WITH ARROW RIGHT AND DOWNLIGHT, GLASS PANEL, 4 1/2" RED LETTERS ON WHITE BACKGROUND, WALL MOUNTING BRACKET, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
XP	ALKCO	EPO-12-DH/MB-3	120	1	40	INCAND A19/IF LONG LIFE	SURF	WALL	EXPLOSION-PROOF, SINGLE FACE WITH DOUBLE HEADED ARROW AND DOWNLIGHT GLASS PANEL, 4 1/2" RED LETTERS ON WHITE BACKGROUND, WALL MOUNTING BRACKET, FINISH EQUAL TO ALCOA DURONODIC 313 BRONZE.
XR									

BATTERY PACK SCHEDULE

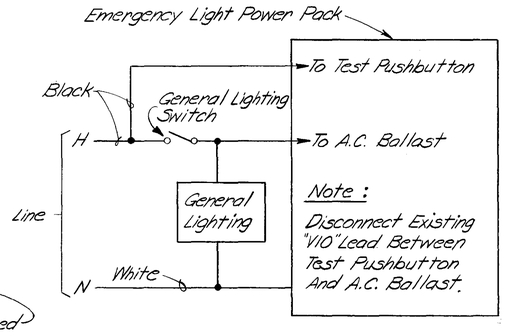
MARK	LIGHTING FIXTURE TYPE	BATTERY PACK CATALOG NO. (OR APP'D. EQUAL)	ENCLOSURE TYPE	MOUNTING	TEST P. B. & INDICAT. LIGHT LOCATION	REMARKS
(BPA)	B, C	SILTRON # ELP-1020-277	NEMA 1	ADJACENT TO FIXTURE	REMOTE	40 WATT RAPID START LAMPS-2 LAMPS ON NORMAL, 1 LAMP ON EMERGENCY, 277 VOLT A.C. INPUT AND OUTPUT (SEE NOTE 3).
(BPB)	B, C	SILTRON # ELP-1020-277	NEMA 4	ADJACENT TO FIXTURE	REMOTE	SAME AS TYPE BPA EXCEPT NEMA 4 ENCLOSURE
BPC	G	SILTRON # ELP-G-90-277	NEMA 1	ADJACENT TO FIXTURE	REMOTE	40 WATT RAPID START LAMPS-3 LAMPS ON NORMAL, 1 LAMP ON EMERGENCY, 277 VOLT A.C. INPUT AND OUTPUT (SEE NOTE 3).
BPD	D	SILTRON # ELP-D-90-277	NEMA 4	ADJACENT TO FIXTURE	REMOTE	40 WATT RAPID START LAMPS-4 LAMPS ON NORMAL, 1 LAMP ON EMERGENCY, 277 VOLT A.C. INPUT AND OUTPUT (SEE NOTE 3).
BPE	H	SILTRON # ELP-D-90-277	NEMA 1	ADJACENT TO FIXTURE	REMOTE	40 WATT RAPID START LAMPS-6 LAMPS ON NORMAL, 1 LAMP ON EMERGENCY, 277 VOLT A.C. INPUT AND OUTPUT (SEE NOTE 3).
BPF	E	SILTRON # ELP-P-60-277	NEMA 4	ADJACENT TO FIXTURE	REMOTE	F96 T12/1500 MA LAMPS - 2 LAMPS ON NORMAL, 1 LAMP ON EMERGENCY, 277 VOLT A.C. INPUT AND OUTPUT (SEE NOTE 3).
(BPG)	D	SILTRON # ELP-1020-277	NEMA 1	AJACENT TO FIXTURE	REMOTE	40 WATT RAPID START LAMPS-4 LAMPS ON NORMAL, 1 LAMP ON EMERGENCY, 277 VOLT A.C. INPUT AND OUTPUT (SEE NOTE 3)
(BPH)	F	SILTRON # ELP-1020-277	NEMA 1	ADJACENT TO FIXTURE	REMOTE	40 WATT RAPID START LAMPS-3 LAMPS ON NORMAL, 1 LAMP ON EMERGENCY, 277 VOLT A.C. INPUT AND OUTPUT (SEE NOTE 3) FOR INSTALLATION IN RETURN AIR PLENUM CEILING.
(BPJ)	EXIT SIGNS	SILTRON # EPP-500D-120	NEMA 1	SURFACE MOUNTED ON WALL	IN COVER	500 WATT OUTPUT AUXILIARY POWER SYSTEM-120 VOLT A.C. INPUT AND NORMAL OUTPUT, 120 VOLT D.C. EMERGENCY OUTPUT, COVER MOUNTED CHARGE RATE, READY CHARGE AND FULL CHARGE INDICATING LIGHTS, TEST PUSHBUTTON, DOOR SAFETY LOCK AND KEY.
BPK	M	SILTRON # EPP-1500D-277-TD	NEMA 1	SURFACE MOUNTED ON WALL	IN COVER	1500 WATT OUTPUT AUXILIARY POWER SYSTEM-277 VOLT A.C. INPUT, 120 VOLT D.C. EMERGENCY OUTPUT, COVER MOUNTED CHARGE RATE, READY CHARGE AND FULL CHARGE INDICATING LIGHTS, TEST PUSHBUTTON, DOOR SAFETY LOCK AND KEY. NORMALLY OFF 120 VOLT D.C. LIGHTING CIRCUIT TO BE ENERGIZED WHEN NORMAL 277 VOLT LIGHTING FAILS. 0 TO 15 MINUTE ADJUSTABLE TIME DELAY ON RETRANSFER TO NORMAL SERVICE.
BPL	N, P	SILTRON # EPP-3000D-277-TD	NEMA 1	SURFACE MOUNTED ON WALL	IN COVER	SAME AS TYPE BPK EXCEPT 3000 WATT OUTPUT

NOTES:

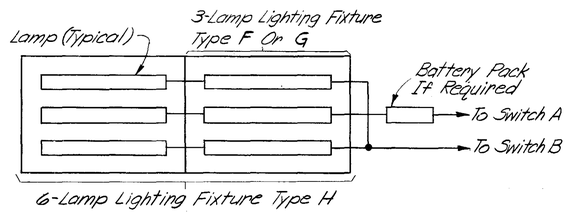
1. TWO-LAMP LIGHTING FIXTURES CONNECTED TO BATTERY PACKS SHALL BE ORDERED WITH LAMP LEADS AND WITHOUT BALLAST. THREE AND FOUR-LAMP LIGHTING FIXTURES SHALL BE ORDERED WITH ONE TWO-LAMP BALLAST, AND SIX-LAMP LIGHTING FIXTURE SHALL BE ORDERED WITH TWO TWO-LAMP BALLASTS. BATTERY PACK WIRED TO CENTER ROW OF THREE-LAMP AND SIX-LAMP FIXTURES.
2. UNDER EMERGENCY MODE OPERATION, ALL BATTERY PACK UNITS SHALL OPERATE FOR A MINIMUM OF 90 MINUTES WITHOUT DECREASING LIGHT OUTPUT AND AN ADDITIONAL 90 MINUTES WITH DECREASING LIGHT OUTPUT.
3. REMOTE TEST PUSHBUTTON AND INDICATING LIGHT SHALL BE SILTRON NO. RTB-H OR APPROVED EQUAL, MOUNTED 4'-6" ABOVE FINISHED FLOOR IN TYPE "FS" BOX OR OUTLET BOX SUITABLE FOR AREA OF INSTALLATION.
4. BATTERY PACKS WITH TEST PUSHBUTTON AND INDICATING LIGHT LOCATED IN COVER SHALL BE WALL MOUNTED WITH TOP OF BATTERY PACK 6'-0" ABOVE FINISHED FLOOR.
5. BATTERY PACKS FOR RECESSED LIGHTING FIXTURES SHALL BE INSTALLED IN ACCESSIBLE SPACE ABOVE FINISHED CEILING.
6. BATTERY PACKS FOR SUSPENDED LIGHTING FIXTURES SHALL BE MOUNTED ATOP THE SUPPORTING CHANNEL OF THE FIXTURE.
7. ONLY EXIT SIGNS AND BATTERY PACKS MARKED THUS ◯ ARE PART OF DIVISION 4H-9.



TYPICAL BATTERY POWERED FIXTURE



TYPICAL BATTERY POWERED FIXTURE SWITCH WITH GENERAL LIGHTING



TYPICAL TWO LEVEL SWITCHING DIAGRAM

NOTE:

ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

RECORD DRAWING

"THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED WJK	APPROVED					SCALE: NO SCALE
	DRAWN THS	DATE SUPT., DEPT. OF SANITARY SEWERS					CITY OF TAMPA, FLORIDA SEWAGE DISPOSAL SYSTEM HOOKERS POINT SEWAGE TREATMENT PLANT DIVISION 4H-9 SOLIDS DISPOSAL FACILITIES
	CHECKED WJK, RAW	DATE GREELEY AND HANSEN, ENGINEERS	NO.	DATE	APP.	REVISION	ELECTRICAL EXIT SIGN AND BATTERY PACK SCHEDULES

PROJ. NO. S 202-70-30D-

SHEET E 26 OF 31

DATE OCTOBER, 1976 | REV. 0

DWG 82 OF 88

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CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
			13.2KV FEEDERS.	
1H5A5	4	3#500MCM, 15KV &1#4/0, 600V GRD.	TRANSFORMER T-5A-3	TRANSFORMER T-5A-5
1H5B5	4	3#500MCM, 15KV &1#4/0, 600V GRD.	TRANSFORMER T-5B-3	TRANSFORMER T-5B-5
			480V FEEDERS FROM POWER TRANSFORMERS	
1T5A5-1	4	3#500MCM, 1#3/0 N, 1#4/0 G	TRANSFORMER T-5A-5	MOTOR CONTROL CENTER MCC-501
1T5A5-2	4	3#500MCM, 1#3/0 N, 1#4/0 G	TRANSFORMER T-5A-5	MOTOR CONTROL CENTER MCC-501
1T5B5-1	4	3#500MCM, 1#3/0 N, 1#4/0 G	TRANSFORMER T-5B-5	MOTOR CONTROL CENTER MCC-501
1T5B5-2	4	3#500MCM 1#3/0 N, 1#4/0 G	TRANSFORMER T-5B-5	MOTOR CONTROL CENTER MCC-501

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
			480V MOTOR CONTROL CENTER MCC-501	
501M1	1 1/4	6#14	MCC-501	TRANSFORMER T-5A-5
501M2	1 1/4	6#14	MCC-501	TRANSFORMER T-5B-5
501M3	2 1/2	3#4/0, 1#4 G	MCC-501	DIGESTED SLUDGE PUMP CONT.PNL.
501M4	2 1/2	4#2/0, 1#1G	MCC-501	LIGHTING PANELBOARD LP-501
501M5	1 1/4	3#6, 1#6G	MCC-501	TRANSFORMER T-501
501M5A	2	4#1	TRANSFORMER T-501	LIGHTING PANELBOARD LP-502
501M6	3/4	3#12, 1#12 G	MCC-501	CB-MH-1 CIRCUIT BREAKER
501M6A	3/4	3#12, 1#12 G	CB-MH-1 CIRCUIT BREAKER	MONORAIL HOIST CB-MH-1
501M7	1	3#12, 4#14	MCC-501	MOTOR CB-SP-1 CONTROL PANEL
501M7A	3/4	3#12	MOTOR CB-SP-1 CONTROL PANEL	MOTOR CB-SP-1
501M7B	3/4	2#14	MOTOR CB-SP-1 CONTROL PANEL	LEVEL CONTROL FLOAT SWITCH
501M7C	3/4	2#14	MOTOR CB-SP-1 CONTROL PANEL	HIGH WATER LEVEL PRESSURE SW.
501M7D	3/4	2#14	MOTOR CB-SP-1 CONTROL PANEL	LOW LUBE WATER PRESSURE SW.
501M7E	3/4	2#14	MOTOR CB-SP-1 CONTROL PANEL	LUBE WATER SOLENOID VALVE
501M8	1 1/4	2#2	MCC-501	TRANSFORMER T-502 CKT. BKR.
501M8A	1 1/4	2#2	TRANSFORMER T-502 CKT. BKR.	TRANSFORMER T-502
501M8B	2	2#3/0	TRANSFORMER T-502	HEAT PUMP CB-AC-1 CONT. PANEL
501M8C	3/4	7#14	HEAT PUMP CB-AC-1 CONT. PANEL	INDOOR AIR TEMPERATURE SWITCH
501M8D	3/4	2#14	HEAT PUMP CB-AC-1 CONT. PANEL	OUTDOOR AIR TEMPERATURE SWITCH
501M9	1	3#12, 5#14	MCC-501	J.B. IN ELECTRICAL ROOM
501M9A	3/4	2#14	J.B. IN ELECTRICAL ROOM	THERMOSTAT
501M9B	1	3#12, 3#14	J.B. IN ELECTRICAL ROOM	J.B. IN HVAC ROOM
501M9C	3/4	3#12	J.B. IN HVAC ROOM	MOTOR CB-S-1
501M9D	3/4	3#14	J.B. IN HVAC ROOM	PUSHBUTTON STATION
501M10	1 1/4	3#6	MCC-501	MOTOR CB-SM-1
501M10A	3/4	5#14	MCC-501	PUSHBUTTON STATION
501M11	1 1/4	3#6	MCC-501	MOTOR CB-SM-2
501M11A	3/4	5#14	MCC-501	PUSHBUTTON STATION
501M12	1 1/4	3#6	MCC-501	MOTOR CB-SM-3
501M12A	3/4	5#14	MCC-501	PUSHBUTTON STATION
501M13	1 1/4	3#8, 8#12	MCC-501	T.B. AT MOTOR DB-DSC-1
501M13A	1	3#8	T.B. AT MOTOR DB-DSC-1	MOTOR DB-DSC-1
501M13B	1	6#12	T.B. AT MOTOR DB-DSC-1	PUSHBUTTON STATION
501M13C	3/4	4#12	T.B. AT MOTOR DB-DSC-1	SAFETY LIMIT SWITCH NO.1
501M13D	3/4	4#12	T.B. AT MOTOR DB-DSC-1	SAFETY LIMIT SWITCH NO.2
501M14	1 1/4	3#8, 8#12	MCC-501	T.B. AT MOTOR DB-DSC-2
501M14A	1	3#8	T.B. AT MOTOR DB-DSC-2	MOTOR DB-DSC-2
501M14B	1	6#12	T.B. AT MOTOR DB-DSC-2	PUSHBUTTON STATION
501M14C	3/4	4#12	T.B. AT MOTOR DB-DSC-2	SAFETY LIMIT SWITCH NO.1
501M14D	3/4	4#12	T.B. AT MOTOR DB-DSC-2	SAFETY LIMIT SWITCH NO.2

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
501M15	1 1/4	3#8, 8#12	MCC-501	T.B. AT MOTOR DB-DSC-3
501M15A	1	3#8	T.B. AT MOTOR DB-DSC-3	MOTOR DB-DSC-3
501M15B	1	6#12	T.B. AT MOTOR DB-DSC-3	PUSHBUTTON STATION
501M15C	3/4	4#12	T.B. AT MOTOR DB-DSC-3	SAFETY LIMIT SWITCH NO.1
501M15D	3/4	4#12	T.B. AT MOTOR DB-DSC-3	SAFETY LIMIT SWITCH NO.2
501M16	1 1/4	3#8, 8#12	MCC-501	T.B. AT MOTOR DB-DSC-4
501M16A	1	3#8	T.B. AT MOTOR DB-DSC-4	MOTOR DB-DSC-4
501M16B	1	6#12	T.B. AT MOTOR DB-DSC-4	PUSHBUTTON STATION
501M16C	3/4	4#12	T.B. AT MOTOR DB-DSC-4	SAFETY LIMIT SWITCH NO.1
501M16D	3/4	4#12	T.B. AT MOTOR DB-DSC-4	SAFETY LIMIT SWITCH NO.2
501M17	1 1/4	3#10, 8#14	MCC-501	T.B. AT MOTOR DB-DSC-5
501M17A	3/4	3#10	T.B. AT MOTOR DB-DSC-5	MOTOR DB-DSC-5
501M17B	3/4	6#14	T.B. AT MOTOR DB-DSC-5	PUSHBUTTON STATION
501M17C	3/4	4#14	T.B. AT MOTOR DB-DSC-5	SAFETY LIMIT SWITCH NO.1
501M17D	3/4	4#14	T.B. AT MOTOR DB-DSC-5	SAFETY LIMIT SWITCH NO.2
501M18	1 1/4	3#8, 8#12	MCC-501	T.B. AT MOTOR DB-DSC-6
501M18A	1	3#8	T.B. AT MOTOR DB-DSC-6	MOTOR DB-DSC-6
501M18B	1	6#12	T.B. AT MOTOR DB-DSC-6	PUSHBUTTON STATION
501M18C	3/4	4#12	T.B. AT MOTOR DB-DSC-6	SAFETY LIMIT SWITCH
501M19	1 1/4	3#10, 8#14	MCC-501	T.B. AT MOTOR DB-DSC-7
501M19A	3/4	3#10	T.B. AT MOTOR DB-DSC-7	MOTOR DB-DSC-7
501M19B	3/4	6#14	T.B. AT MOTOR DB-DSC-7	PUSHBUTTON STATION
501M19C	3/4	4#14	T.B. AT MOTOR DB-DSC-7	SAFETY LIMIT SWITCH
501M20	1	3#12, 4#14	MCC-501	T.B. AT MOTOR DB-DSC-8
501M20A	3/4	3#12	T.B. AT MOTOR DB-DSC-8	MOTOR DB-DSC-8
501M20B	3/4	4#14	T.B. AT MOTOR DB-DSC-8	SAFETY LIMIT SWITCH NO.1
501M20C	3/4	4#14	T.B. AT MOTOR DB-DSC-8	SAFETY LIMIT SWITCH NO.2
501M21	1	3#12, 3#14	MCC-501	J.B. AT MOTOR DB-TO-1
501M21A	3/4	3#12	J.B. AT MOTOR DB-TO-1	MOTOR DB-TO-1 CABLE REEL
501M21B	3/4	3#14	J.B. AT MOTOR DB-TO-1	PUSHBUTTON STATION
501M22	1 1/4	3#3	MCC-501	MOTOR DB-DSG-1
501M23	1 1/4	3#3	MCC-501	MOTOR DB-DSG-2
501M24	1 1/2	40#14(9 SPARE)	MCC-501	SLUDGE GRINDER STATION CONTROL PANEL
501M25	3/4	3#12	MCC-501	CB-PMM-1 CIRCUIT BREAKER
501M25A	3/4	3#12	CB-PMM-1 CIRCUIT BREAKER	MOTOR CB-PMM-1 CONTROL PANEL
501M25B	3/4	2#14	MOTOR CB-PMM-1 CONTROL PANEL	POLYMER LINE PRESSURE SWITCH
501M25C	3/4	2#14	MOTOR CB-PMM-1 CONTROL PANEL	POLYMER LINE SOLENOID VALVE
501M26	3/4	3#12	MCC-501	CB-PMM-2 CIRCUIT BREAKER
501M26A	3/4	3#12	CB-PMM-2 CIRCUIT BREAKER	MOTOR CB-PMM-2 CONTROL PANEL
501M26B	3/4	2#14	MOTOR CB-PMM-2 CONTROL PANEL	POLYMER LINE PRESSURE SWITCH
501M26C	3/4	2#14	MOTOR CB-PMM-2 CONTROL PANEL	POLYMER LINE SOLENOID VALVE
501M27	1	3#12, 3#14	MCC-501	J.B. AT MOTOR CB-BP-1
501M27A	3/4	3#12	J.B. AT MOTOR CB-BP-1	MOTOR CB-BP-1
501M27B	3/4	3#14	J.B. AT MOTOR CB-BP-1	PUSHBUTTON STATION
501M28	1	3#12, 3#14	MCC-501	J.B. AT MOTOR CB-BP-2
501M28A	3/4	3#12	J.B. AT MOTOR CB-BP-2	MOTOR CB-BP-2
501M28B	3/4	3#14	J.B. AT MOTOR CB-BP-2	PUSHBUTTON STATION
501M29	2	50#14(10 SPARE)	MCC-501	CONTROL BLDG. OPER. PANEL
501M30	2	60#14(10 SPARE)	MCC-501	CONTROL BLDG. OPER. PANEL
501M31	2	50#14(28 SPARE)	MCC-501	CONTROL BLDG. OPER. PANEL

NOTE:

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN BFT
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION
1	2/80	D.S.H.	REC. DWG. REVISIONS

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

CONDUIT AND CABLE SCHEDULE

PROJ. NO. S 202-70-30D-
SHEET E27 OF 31
DATE OCTOBER, 1976 | REV. 0

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
			DIGESTED SLUDGE PUMP CONTROL PANEL	
502M1	1 1/2	3#4 & 1#6G	DIG. SL. PUMP CONTROL PANEL	MOTOR CB-DSP-1
502M1A	1 1/4	13#14	DIG. SL. PUMP CONTROL PANEL	J.B. AT CB-DSP-1
502M1B	3/4	4#14	J.B. AT CB-DSP-1	WINDING TEMP SENSORS CB-DSP-1
502M1C	3/4	2#14	J.B. AT CB-DSP-1	SEAL WATER SOLENOID VALVE
502M1D	3/4	3#14	J.B. AT CB-DSP-1	PRESSURE SWITCH OG-108
502M1E	3/4	2#14	J.B. AT CB-DSP-1	PRESSURE SWITCH OG-113
502M1F	3/4	2#14	J.B. AT CB-DSP-1	ON-OFF/L, MOTOR CB-DSP-1
502M2	1 1/2	3#4 & 1#6 G	DIG. SL. PUMP CONTROL PANEL	MOTOR CB-DSP-2
502M2A	1 1/4	13#14	DIG. SL. PUMP CONTROL PANEL	J.B. AT CB-DSP-2
502M2B	3/4	4#14	J.B. AT CB-DSP-2	WINDING TEMP SENSORS CB-DSP-2
502M2C	3/4	2#14	J.B. AT CB-DSP-2	SEAL WATER SOLENOID VALVE
502M2D	3/4	3#14	J.B. AT CB-DSP-2	PRESSURE SWITCH OG-109
502M2E	3/4	2#14	J.B. AT CB-DSP-2	PRESSURE SWITCH OG-114
502M2F	3/4	2#14	J.B. AT CB-DSP-2	ON-OFF/L, MOTOR CB-DSP-2
502M3	1 1/2	3#4 & 1#6G	DIG. SL. PUMP CONTROL PANEL	MOTOR CB-DSP-3
502M3A	1 1/4	13#14	DIG. SL. PUMP CONTROL PANEL	J.B. AT CB-DSP-3
502M3B	3/4	4#14	J.B. AT CB-DSP-3	WINDING TEMP SENSORS CB-DSP-3
502M3C	3/4	2#14	J.B. AT CB-DSP-3	SEAL WATER SOLENOID VALVE
502M3D	3/4	3#14	J.B. AT CB-DSP-3	PRESSURE SWITCH OG-110
502M3E	3/4	2#14	J.B. AT CB-DSP-3	PRESSURE SWITCH OG-115
502M3F	3/4	2#14	J.B. AT CB-DSP-3	ON-OFF/L, MOTOR CB-DSP-3
502M4	3	8I#14 (6 SPARE) & 1-2/C#16 SH & 1-3/C#16 SH	DIG. SL. PUMP CONTROL PANEL	CONTROL BLDG. OPER. PANEL
502M5	3/4	4#14	DIG. SL. PUMP CONTROL PANEL	MCC-501

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
			CONTROL CONDUITS	
501C1	2 1/2	50#10	CONTROL BLDG. OPER. PANEL	TERMINAL BOX NO.7
501C2	1 1/4	14#10	TERMINAL BOX NO.7	TERMINAL BOX NO.8
501C2A	3/4	2#10	TERMINAL BOX NO.8	POLYMER LINE SOLENOID VALVE
501C2B	3/4	2#10	TERMINAL BOX NO.8	VALVE OPEN LIMIT SWITCH
501C2C	3/4	2#10	TERMINAL BOX NO.8	VALVE CLOSED LIMIT SWITCH
501C2D	3/4	2#10	TERMINAL BOX NO.8	SLUDGE LINE SOLENOID VALVE
501C2E	3/4	2#10	TERMINAL BOX NO.8	VALVE OPEN LIMIT SWITCH
501C2F	3/4	2#10	TERMINAL BOX NO.8	VALVE CLOSED LIMIT SWITCH
501C2G	3/4	2#10	TERMINAL BOX NO.8	POLYMER LINE SOLENOID VALVE
501C2H	3/4	2#10	TERMINAL BOX NO.8	VALVE OPEN LIMIT SWITCH
501C2J	3/4	2#10	TERMINAL BOX NO.8	VALVE CLOSED LIMIT SWITCH
501C2K	3/4	2#10	TERMINAL BOX NO.8	SLUDGE LINE SOLENOID VALVE
501C2L	3/4	2#10	TERMINAL BOX NO.8	VALVE OPEN LIMIT SWITCH
501C2M	3/4	2#10	TERMINAL BOX NO.8	VALVE CLOSED LIMIT SWITCH
501C3	2	38#10	TERMINAL BOX NO.7	TERMINAL BOX NO.5
501C4	1 1/4	14#10	TERMINAL BOX NO.5	TERMINAL BOX NO.4
501C4A	3/4	2#10	TERMINAL BOX NO.4	POLYMER LINE SOLENOID VALVE
501C4B	3/4	2#10	TERMINAL BOX NO.4	VALVE OPEN LIMIT SWITCH
501C4C	3/4	2#10	TERMINAL BOX NO.4	VALVE CLOSED LIMIT SWITCH
501C4D	3/4	2#10	TERMINAL BOX NO.4	SLUDGE LINE SOLENOID VALVE
501C4E	3/4	2#10	TERMINAL BOX NO.4	VALVE OPEN LIMIT SWITCH
501C4F	3/4	2#10	TERMINAL BOX NO.4	VALVE CLOSED LIMIT SWITCH
501C4G	3/4	2#10	TERMINAL BOX NO.4	POLYMER LINE SOLENOID VALVE
501C4H	3/4	2#10	TERMINAL BOX NO.4	VALVE OPEN LIMIT SWITCH
501C4J	3/4	2#10	TERMINAL BOX NO.4	VALVE CLOSED LIMIT SWITCH
501C4K	3/4	2#10	TERMINAL BOX NO.4	SLUDGE LINE SOLENOID VALVE
501C4L	3/4	2#10	TERMINAL BOX NO.4	VALVE OPEN LIMIT SWITCH
501C4M	3/4	2#10	TERMINAL BOX NO.4	VALVE CLOSED LIMIT SWITCH
501C5	1 1/4	14#10	TERMINAL BOX NO.5	TERMINAL BOX NO.6
501C5A	3/4	2#10	TERMINAL BOX NO.6	POLYMER LINE SOLENOID VALVE
501C5B	3/4	2#10	TERMINAL BOX NO.6	VALVE OPEN LIMIT SWITCH
501C5C	3/4	2#10	TERMINAL BOX NO.6	VALVE CLOSED LIMIT VALVE
501C5D	3/4	2#10	TERMINAL BOX NO.6	SLUDGE LINE SOLENOID VALVE
501C5E	3/4	2#10	TERMINAL BOX NO.6	VALVE OPEN LIMIT SWITCH
501C5F	3/4	2#10	TERMINAL BOX NO.6	VALVE CLOSED LIMIT SWITCH
501C5G	3/4	2#10	TERMINAL BOX NO.6	POLYMER LINE SOLENOID VALVE
501C5H	3/4	2#10	TERMINAL BOX NO.6	VALVE OPEN LIMIT SWITCH
501C5J	3/4	2#10	TERMINAL BOX NO.6	VALVE CLOSED LIMIT SWITCH
501C5K	3/4	2#10	TERMINAL BOX NO.6	SLUDGE LINE SOLENOID VALVE
501C5L	3/4	2#10	TERMINAL BOX NO.6	VALVE OPEN LIMIT SWITCH
501C5M	3/4	2#10	TERMINAL BOX NO.6	VALVE CLOSED LIMIT SWITCH
501C6	1 1/4	14#10	TERMINAL BOX NO.5	TERMINAL BOX NO.2
501C7	1	8#10	TERMINAL BOX NO.2	TERMINAL BOX NO.1
501C7A	3/4	2#10	TERMINAL BOX NO.1	POLYMER LINE SOLENOID VALVE
501C7B	3/4	2#10	TERMINAL BOX NO.1	VALVE OPEN LIMIT SWITCH
501C7C	3/4	2#10	TERMINAL BOX NO.1	VALVE CLOSED LIMIT SWITCH
501C7D	3/4	2#10	TERMINAL BOX NO.1	SLUDGE LINE SOLENOID VALVE
501C7E	3/4	2#10	TERMINAL BOX NO.1	VALVE OPEN LIMIT SWITCH
501C7F	3/4	2#10	TERMINAL BOX NO.1	VALVE CLOSED LIMIT SWITCH
501C8	1	8#10	TERMINAL BOX NO.2	TERMINAL BOX NO.3
501C8A	3/4	2#10	TERMINAL BOX NO.3	POLYMER LINE SOLENOID VALVE
501C8B	3/4	2#10	TERMINAL BOX NO.3	VALVE OPEN LIMIT SWITCH
501C8C	3/4	2#10	TERMINAL BOX NO.3	VALVE CLOSED LIMIT SWITCH

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
501C8D	3/4	2#10	TERMINAL BOX NO.3	SLUDGE LINE SOLENOID VALVE
501C8F	3/4	2#10	TERMINAL BOX NO.3	VALVE OPEN LIMIT SWITCH
501C8F	3/4	2#10	TERMINAL BOX NO.3	VALVE CLOSED LIMIT SWITCH
501C9	2 1/2	50#10	CONTROL BLDG. OPER. PANEL	TERMINAL BOX NO.9
501C9A	3/4	2#10	TERMINAL BOX NO.9	POLYMER LINE SOLENOID VALVE
501C9B	3/4	2#10	TERMINAL BOX NO.9	VALVE OPEN LIMIT SWITCH
501C9C	3/4	2#10	TERMINAL BOX NO.9	VALVE CLOSED LIMIT SWITCH
501C9D	3/4	2#10	TERMINAL BOX NO.9	SLUDGE LINE SOLENOID VALVE
501C9E	3/4	2#10	TERMINAL BOX NO.9	VALVE OPEN LIMIT SWITCH
501C9F	3/4	2#10	TERMINAL BOX NO.9	VALVE CLOSED LIMIT SWITCH
501C9G	3/4	2#10	TERMINAL BOX NO.9	POLYMER LINE SOLENOID VALVE
501C9H	3/4	2#10	TERMINAL BOX NO.9	VALVE OPEN LIMIT SWITCH
501C9J	3/4	2#10	TERMINAL BOX NO.9	VALVE CLOSED LIMIT SWITCH
501C9K	3/4	2#10	TERMINAL BOX NO.9	SLUDGE LINE SOLENOID VALVE
501C9L	3/4	2#10	TERMINAL BOX NO.9	VALVE OPEN LIMIT SWITCH
501C9M	3/4	2#10	TERMINAL BOX NO.9	VALVE CLOSED LIMIT SWITCH
501C10	2	38#10	TERMINAL BOX NO.9	TERMINAL BOX NO.10
501C11	2	38#10	TERMINAL BOX NO.10	TERMINAL BOX NO.12
501C12	1 1/4	14#10	TERMINAL BOX NO.12	TERMINAL BOX NO.11
501C12A	3/4	2#10	TERMINAL BOX NO.11	POLYMER LINE SOLENOID VALVE
501C12B	3/4	2#10	TERMINAL BOX NO.11	VALVE OPEN LIMIT SWITCH
501C12C	3/4	2#10	TERMINAL BOX NO.11	VALVE CLOSED LIMIT SWITCH
501C12D	3/4	2#10	TERMINAL BOX NO.11	SLUDGE LINE SOLENOID VALVE
501C12E	3/4	2#10	TERMINAL BOX NO.11	VALVE OPEN LIMIT SWITCH
501C12F	3/4	2#10	TERMINAL BOX NO.11	VALVE CLOSED LIMIT SWITCH
501C12G	3/4	2#10	TERMINAL BOX NO.11	POLYMER LINE SOLENOID VALVE
501C12H	3/4	2#10	TERMINAL BOX NO.11	VALVE OPEN LIMIT SWITCH
501C12J	3/4	2#10	TERMINAL BOX NO.11	VALVE CLOSED LIMIT SWITCH
501C12K	3/4	2#10	TERMINAL BOX NO.11	SLUDGE LINE SOLENOID VALVE
501C12L	3/4	2#10	TERMINAL BOX NO.11	VALVE OPEN LIMIT SWITCH
501C12M	3/4	2#10	TERMINAL BOX NO.11	VALVE CLOSED LIMIT SWITCH
501C13	1 1/4	14#10	TERMINAL BOX NO.12	TERMINAL BOX NO.13
501C13A	3/4	2#10	TERMINAL BOX NO.13	POLYMER LINE SOLENOID VALVE
501C13B	3/4	2#10	TERMINAL BOX NO.13	VALVE OPEN LIMIT SWITCH
501C13C	3/4	2#10	TERMINAL BOX NO.13	VALVE CLOSED LIMIT SWITCH
501C13D	3/4	2#10	TERMINAL BOX NO.13	SLUDGE LINE SOLENOID VALVE
501C13E	3/4	2#10	TERMINAL BOX NO.13	VALVE OPEN LIMIT SWITCH
501C13F	3/4	2#10	TERMINAL BOX NO.13	VALVE CLOSED LIMIT SWITCH
501C13G	3/4	2#10	TERMINAL BOX NO.13	POLYMER LINE SOLENOID VALVE
501C13H	3/4	2#10	TERMINAL BOX NO.13	VALVE OPEN LIMIT SWITCH
501C13J	3/4	2#10	TERMINAL BOX NO.13	VALVE CLOSED LIMIT SWITCH
501C13K	3/4	2#10	TERMINAL BOX NO.13	SLUDGE LINE SOLENOID VALVE
501C13L	3/4	2#10	TERMINAL BOX NO.13	VALVE OPEN LIMIT SWITCH
501C13M	3/4	2#10	TERMINAL BOX NO.13	VALVE CLOSED LIMIT SWITCH
501C14	1 1/4	14#10	TERMINAL BOX NO.12	TERMINAL BOX NO.15
501C15	1	8#10	TERMINAL BOX NO.15	TERMINAL BOX NO.14
501C15A	3/4	2#10	TERMINAL BOX NO.14	POLYMER LINE SOLENOID VALVE
501C15B	3/4	2#10	TERMINAL BOX NO.14	VALVE OPEN LIMIT SWITCH
501C15C	3/4	2#10	TERMINAL BOX NO.14	VALVE CLOSED LIMIT SWITCH
501C15D	3/4	2#10	TERMINAL BOX NO.14	SLUDGE LINE SOLENOID VALVE
501C15E	3/4	2#10	TERMINAL BOX NO.14	VALVE OPEN LIMIT SWITCH
501C15F	3/4	2#10	TERMINAL BOX NO.14	VALVE CLOSED LIMIT SWITCH

NOTE:

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RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION. WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN BFT
CHECKED WJK, RAW

APPROVED
DATE
SUPT., DEPT. OF SANITARY SEWERS
DATE
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION
1	2/80	DS.H.	REC. DWG. REVISIONS

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

CONDUIT AND CABLE SCHEDULE

PROJ. NO. S 202-70-30D-
SHEET E 28 OF 31
DATE OCTOBER, 1976 | REV.

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
			CONTROL CONDUITS (CONTINUED)	
501C16	1	8#10	TERMINAL BOX NO.15	TERMINAL BOX NO.16
501C16A	3/4	2#10	TERMINAL BOX NO.16	POLYMER LINE SOLENOID VALVE
501C16B	3/4	2#10	TERMINAL BOX NO.16	VALVE OPEN LIMIT SWITCH
501C16C	3/4	2#10	TERMINAL BOX NO.16	VALVE CLOSED LIMIT SWITCH
501C16D	3/4	2#10	TERMINAL BOX NO.16	SLUDGE LINE SOLENOID VALVE
501C16E	3/4	2#10	TERMINAL BOX NO.16	VALVE OPEN LIMIT SWITCH
501C16F	3/4	2#10	TERMINAL BOX NO.16	VALVE CLOSED LIMIT SWITCH
501C17	2 1/2	50#10	CONTROL BLDG. OPER. PANEL	TERMINAL BOX NO.23
501C18	1 1/4	14#10	TERMINAL BOX NO.23	TERMINAL BOX NO.24
501C18A	3/4	2#10	TERMINAL BOX NO.24	POLYMER LINE SOLENOID VALVE
501C18B	3/4	2#10	TERMINAL BOX NO.24	VALVE OPEN LIMIT SWITCH
501C18C	3/4	2#10	TERMINAL BOX NO.24	VALVE CLOSED LIMIT SWITCH
501C18D	3/4	2#10	TERMINAL BOX NO.24	SLUDGE LINE SOLENOID VALVE
501C18E	3/4	2#10	TERMINAL BOX NO.24	VALVE OPEN LIMIT SWITCH
501C18F	3/4	2#10	TERMINAL BOX NO.24	VALVE CLOSED LIMIT SWITCH
501C18G	3/4	2#10	TERMINAL BOX NO.24	POLYMER LINE SOLENOID VALVE
501C18H	3/4	2#10	TERMINAL BOX NO.24	VALVE OPEN LIMIT SWITCH
501C18J	3/4	2#10	TERMINAL BOX NO.24	VALVE CLOSED LIMIT SWITCH
501C18K	3/4	2#10	TERMINAL BOX NO.24	SLUDGE LINE SOLENOID VALVE
501C18L	3/4	2#10	TERMINAL BOX NO.24	VALVE OPEN LIMIT SWITCH
501C18M	3/4	2#10	TERMINAL BOX NO.24	VALVE CLOSED LIMIT SWITCH
501C19	2	38#10	TERMINAL BOX NO.23	TERMINAL BOX NO.21
501C20	1 1/4	14#10	TERMINAL BOX NO.21	TERMINAL BOX NO.20
501C20A	3/4	2#10	TERMINAL BOX NO.20	POLYMER LINE SOLENOID VALVE
501C20B	3/4	2#10	TERMINAL BOX NO.20	VALVE OPEN LIMIT SWITCH
501C20C	3/4	2#10	TERMINAL BOX NO.20	VALVE CLOSED LIMIT SWITCH
501C20D	3/4	2#10	TERMINAL BOX NO.20	SLUDGE LINE SOLENOID VALVE
501C20E	3/4	2#10	TERMINAL BOX NO.20	VALVE OPEN LIMIT SWITCH
501C20F	3/4	2#10	TERMINAL BOX NO.20	VALVE CLOSED LIMIT SWITCH
501C20G	3/4	2#10	TERMINAL BOX NO.20	POLYMER LINE SOLENOID VALVE
501C20H	3/4	2#10	TERMINAL BOX NO.20	VALVE OPEN LIMIT SWITCH
501C20J	3/4	2#10	TERMINAL BOX NO.20	VALVE CLOSED LIMIT SWITCH
501C20K	3/4	2#10	TERMINAL BOX NO.20	SLUDGE LINE SOLENOID VALVE
501C20L	3/4	2#10	TERMINAL BOX NO.20	VALVE OPEN LIMIT SWITCH
501C20M	3/4		TERMINAL BOX NO.20	VALVE CLOSED LIMIT SWITCH
501C21	1 1/4	14#10	TERMINAL BOX NO.21	TERMINAL BOX NO.22
501C21A	3/4	2#10	TERMINAL BOX NO.22	POLYMER LINE SOLENOID VALVE
501C21B	3/4	2#10	TERMINAL BOX NO.22	VALVE OPEN LIMIT SWITCH
501C21C	3/4	2#10	TERMINAL BOX NO.22	VALVE CLOSED LIMIT SWITCH
501C21D	3/4	2#10	TERMINAL BOX NO.22	SLUDGE LINE SOLENOID VALVE
501C21E	3/4	2#10	TERMINAL BOX NO.22	VALVE OPEN LIMIT SWITCH
501C21F	3/4	2#10	TERMINAL BOX NO.22	VALVE CLOSED LIMIT SWITCH
501C21G	3/4	2#10	TERMINAL BOX NO.22	POLYMER LINE SOLENOID VALVE
501C21H	3/4	2#10	TERMINAL BOX NO.22	VALVE OPEN LIMIT SWITCH
501C21J	3/4	2#10	TERMINAL BOX NO.22	VALVE CLOSED LIMIT SWITCH
501C21K	3/4	2#10	TERMINAL BOX NO.22	SLUDGE LINE SOLENOID VALVE
501C21L	3/4	2#10	TERMINAL BOX NO.22	VALVE OPEN LIMIT SWITCH
501C21M	3/4	2#10	TERMINAL BOX NO.22	VALVE CLOSED LIMIT SWITCH
501C22	1 1/4	14#10	TERMINAL BOX NO.21	TERMINAL BOX NO.18
501C23	1	8#10	TERMINAL BOX NO.18	TERMINAL BOX NO.17
501C23A	3/4	2#10	TERMINAL BOX NO.17	POLYMER LINE SOLENOID VALVE
501C23B	3/4	2#10	TERMINAL BOX NO.17	VALVE OPEN LIMIT SWITCH
501C23C	3/4	2#10	TERMINAL BOX NO.17	VALVE CLOSED LIMIT SWITCH
501C23D	3/4	2#10	TERMINAL BOX NO.17	SLUDGE LINE SOLENOID VALVE
501C23E	3/4	2#10	TERMINAL BOX NO.17	VALVE OPEN LIMIT SWITCH
501C23F	3/4	2#10	TERMINAL BOX NO.17	VALVE CLOSED LIMIT SWITCH
501C24	1	8#10	TERMINAL BOX NO.18	TERMINAL BOX NO.19
501C24A	3/4	2#10	TERMINAL BOX NO.19	POLYMER LINE SOLENOID VALVE
501C24B	3/4	2#10	TERMINAL BOX NO.19	VALVE OPEN LIMIT SWITCH
501C24C	3/4	2#10	TERMINAL BOX NO.19	VALVE CLOSED LIMIT SWITCH
501C24D	3/4	2#10	TERMINAL BOX NO.19	SLUDGE LINE SOLENOID VALVE
501C24E	3/4	2#10	TERMINAL BOX NO.19	VALVE OPEN LIMIT SWITCH
501C24F	3/4	2#10	TERMINAL BOX NO.19	VALVE CLOSED LIMIT SWITCH
501C25	2 1/2	50#10	CONTROL BLDG. OPER. PANEL	TERMINAL BOX NO.25
501C25A	3/4	2#10	TERMINAL BOX NO.25	POLYMER LINE SOLENOID VALVE
501C25B	3/4	2#10	TERMINAL BOX NO.25	VALVE OPEN LIMIT SWITCH
501C25C	3/4	2#10	TERMINAL BOX NO.25	VALVE CLOSED LIMIT SWITCH
501C25D	3/4	2#10	TERMINAL BOX NO.25	SLUDGE LINE SOLENOID VALVE
501C25E	3/4	2#10	TERMINAL BOX NO.25	VALVE OPEN LIMIT SWITCH
501C25F	3/4	2#10	TERMINAL BOX NO.25	VALVE CLOSED LIMIT SWITCH
501C25G	3/4	2#10	TERMINAL BOX NO.25	POLYMER LINE SOLENOID VALVE
501C25H	3/4	2#10	TERMINAL BOX NO.25	VALVE OPEN LIMIT SWITCH
501C25J	3/4	2#10	TERMINAL BOX NO.25	VALVE CLOSED LIMIT SWITCH
501C25K	3/4	2#10	TERMINAL BOX NO.25	SLUDGE LINE SOLENOID VALVE
501C25L	3/4	2#10	TERMINAL BOX NO.25	VALVE OPEN LIMIT SWITCH
501C25M	3/4	2#10	TERMINAL BOX NO.25	VALVE CLOSED LIMIT SWITCH
501C26	2	38#10	TERMINAL BOX NO.25	TERMINAL BOX NO.26
501C27	2	38#10	TERMINAL BOX NO.26	TERMINAL BOX NO.28
501C28	1 1/4	14#10	TERMINAL BOX NO.28	TERMINAL BOX NO.27
501C28A	3/4	2#10	TERMINAL BOX NO.27	POLYMER LINE SOLENOID VALVE
501C28B	3/4	2#10	TERMINAL BOX NO.27	VALVE OPEN LIMIT SWITCH
501C28C	3/4	2#10	TERMINAL BOX NO.27	VALVE CLOSED LIMIT SWITCH
501C28D	3/4	2#10	TERMINAL BOX NO.27	SLUDGE LINE SOLENOID VALVE
501C28E	3/4	2#10	TERMINAL BOX NO.27	VALVE OPEN LIMIT SWITCH
501C28F	3/4	2#10	TERMINAL BOX NO.27	VALVE CLOSED LIMIT SWITCH
501C28G	3/4	2#10	TERMINAL BOX NO.27	POLYMER LINE SOLENOID VALVE
501C28H	3/4	2#10	TERMINAL BOX NO.27	VALVE OPEN LIMIT SWITCH
501C28J	3/4	2#10	TERMINAL BOX NO.27	VALVE CLOSED LIMIT SWITCH
501C28K	3/4	2#10	TERMINAL BOX NO.27	SLUDGE LINE SOLENOID VALVE
501C28L	3/4	2#10	TERMINAL BOX NO.27	VALVE OPEN LIMIT SWITCH
501C28M	3/4	2#10	TERMINAL BOX NO.27	VALVE CLOSED LIMIT SWITCH
501C29	1 1/4	14#10	TERMINAL BOX NO.28	TERMINAL BOX NO.29
501C29A	3/4	2#10	TERMINAL BOX NO.29	POLYMER LINE SOLENOID VALVE
501C29B	3/4	2#10	TERMINAL BOX NO.29	VALVE OPEN LIMIT SWITCH
501C29C	3/4	2#10	TERMINAL BOX NO.29	VALVE CLOSED LIMIT SWITCH
501C29D	3/4	2#10	TERMINAL BOX NO.29	SLUDGE LINE SOLENOID VALVE
501C29E	3/4	2#10	TERMINAL BOX NO.29	VALVE OPEN LIMIT SWITCH
501C29F	3/4	2#10	TERMINAL BOX NO.29	VALVE CLOSED LIMIT SWITCH
501C29G	3/4	2#10	TERMINAL BOX NO.29	POLYMER LINE SOLENOID VALVE
501C29H	3/4	2#10	TERMINAL BOX NO.29	VALVE OPEN LIMIT SWITCH
501C29J	3/4	2#10	TERMINAL BOX NO.29	VALVE CLOSED LIMIT SWITCH
501C29K	3/4	2#10	TERMINAL BOX NO.29	SLUDGE LINE SOLENOID VALVE
501C29L	3/4	2#10	TERMINAL BOX NO.29	VALVE OPEN LIMIT SWITCH
501C29M	3/4	2#10	TERMINAL BOX NO.29	VALVE CLOSED LIMIT SWITCH
501C30	1 1/4	14#10	TERMINAL BOX NO.28	TERMINAL BOX NO.31
501C31	1	8#10	TERMINAL BOX NO.31	TERMINAL BOX NO.30
501C31A	3/4	2#10	TERMINAL BOX NO.30	POLYMER LINE SOLENOID VALVE
501C31B	3/4	2#10	TERMINAL BOX NO.30	VALVE OPEN LIMIT SWITCH
501C31C	3/4	2#10	TERMINAL BOX NO.30	VALVE CLOSED LIMIT SWITCH
501C31D	3/4	2#10	TERMINAL BOX NO.30	SLUDGE LINE SOLENOID VALVE
501C31E	3/4	2#10	TERMINAL BOX NO.30	VALVE OPEN LIMIT SWITCH
501C31F	3/4	2#10	TERMINAL BOX NO.30	VALVE CLOSED LIMIT SWITCH
501C32	1	8#10	TERMINAL BOX NO.31	TERMINAL BOX NO.32
501C32A	3/4	2#10	TERMINAL BOX NO.32	POLYMER LINE SOLENOID VALVE
501C32B	3/4	2#10	TERMINAL BOX NO.32	VALVE OPEN LIMIT SWITCH
501C32C	3/4	2#10	TERMINAL BOX NO.32	VALVE CLOSED LIMIT SWITCH
501C32D	3/4	2#10	TERMINAL BOX NO.32	SLUDGE LINE SOLENOID VALVE
501C32E	3/4	2#10	TERMINAL BOX NO.32	VALVE OPEN LIMIT SWITCH
501C32F	3/4	2#10	TERMINAL BOX NO.32	VALVE CLOSED LIMIT SWITCH
501C33	2	2-2/C#16 SH & 25#14	CONTROL BLDG. OPER. PANEL	J.B. AT CB-PMM-1
501C33A	1 1/4	2/C#16 SH & 11#14	J.B. AT CB-PMM-1	CB-PMM-1 CONTROL PANEL
501C33B	1 1/4	2/C#16 SH & 11#14	J.B. AT CB-PMM-1	CB-PMM-2 CONTROL PANEL
501C33C	3/4	3#14	J.B. AT CB-PMM-1	POLYMER UNLOADING PANEL
501C34	1 1/2	19#14	CONTROL BLDG. OPER. PANEL	TERMINAL BOX NO. C1
501C35	1	7#14	TERMINAL BOX NO. C1	TERMINAL BOX NO. C2
501C35A	3/4	2#14	TERMINAL BOX NO. C2	VALVE DS-9 OPEN LIMIT SW.
501C35B	3/4	2#14	TERMINAL BOX NO. C2	VALVE DS-9 CLOSED LIMIT SW.
501C35C	3/4	2#14	TERMINAL BOX NO. C2	VALVE DS-10 OPEN LIMIT SW.
501C35D	3/4	2#14	TERMINAL BOX NO. C2	VALVE DS-10 CLOSED LIMIT SW.
501C36	3/4	3#14	TERMINAL BOX NO. C2	TERMINAL BOX NO. C3
501C36A	3/4	2#14	TERMINAL BOX NO. C3	T.T.L.S. VALVE OPEN LIMIT SW.
501C36B	3/4	2#14	TERMINAL BOX NO. C3	T.T.L.S. VALVE CLOSED LIMIT SW.
501C37	1 1/4	13#14	TERMINAL BOX NO. C1	TERMINAL BOX NO. C4
501C37A	3/4	2#14	TERMINAL BOX NO. C4	VALVE DV-2 OPEN LIMIT SW.
501C37B	3/4	2#14	TERMINAL BOX NO. C4	VALVE DV-2 CLOSED LIMIT SW.
501C37C	3/4	2#14	TERMINAL BOX NO. C4	VALVE FV-4 OPEN LIMIT SW.
501C37D	3/4	2#14	TERMINAL BOX NO. C4	VALVE FV-4 CLOSED LIMIT SW.
501C38	3/4	5#14	TERMINAL BOX NO. C4	TERMINAL BOX NO. C5
501C38A	3/4	2#14	TERMINAL BOX NO. C5	VALVE DV-1 OPEN LIMIT SW.
501C38B	3/4	2#14	TERMINAL BOX NO. C5	VALVE DV-1 CLOSED LIMIT SW.
501C38C	3/4	2#14	TERMINAL BOX NO. C5	VALVE FV-3 OPEN LIMIT SW.
501C38D	3/4	2#14	TERMINAL BOX NO. C5	VALVE FV-3 CLOSED LIMIT SW.
501C39	3/4	5#14	TERMINAL BOX NO. C4	TERMINAL BOX NO. C6
501C39A	3/4	2#14	TERMINAL BOX NO. C6	VALVE FV-1 OPEN LIMIT SW.
501C39B	3/4	2#14	TERMINAL BOX NO. C6	VALVE FV-1 CLOSED LIMIT SW.
501C39C	3/4	2#14	TERMINAL BOX NO. C6	VALVE FV-2 OPEN LIMIT SW.
501C39D	3/4	2#14	TERMINAL BOX NO. C6	VALVE FV-2 CLOSED LIMIT SW.
501C40	2	43#14	CONTROL BLDG. OPER. PANEL	TERMINAL BOX NO. C7
501C40A	3/4	2#14	TERMINAL BOX NO. C7	VALVE DW-3 OPEN LIMIT SW.
501C40B	3/4	2#14	TERMINAL BOX NO. C7	VALVE DW-3 CLOSED LIMIT SW.

NOTE:

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN BFT
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

CONDUIT AND CABLE SCHEDULE

PROJ. NO. S 202-70-30D-
SHEET E 29 OF 31
DATE OCTOBER, 1976 REV.

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
			CONTROL CONDUITS (CONTINUED)	
501C40C	3/4	2#14	TERMINAL BOX NO. C7	VALVE DSP-3 SOLENOID VALVE
501C40D	3/4	2#14	TERMINAL BOX NO. C7	VALVE DSP-3 OPEN LIMIT SW.
501C40E	3/4	2#14	TERMINAL BOX NO. C7	VALVE DSP-3 CLOSED LIMIT SW.
501C41	1 1/2	20#14	TERMINAL BOX NO. C7	TERMINAL BOX NO. C8
501C41A	3/4	2#14	TERMINAL BOX NO. C8	VALVE DSP-5 SOLENOID VALVE
501C41B	3/4	2#14	TERMINAL BOX NO. C8	VALVE DSP-5 OPEN LIMIT SW.
501C41C	3/4	2#14	TERMINAL BOX NO. C8	VALVE DSP-5 CLOSED LIMIT SW.
501C41D	3/4	2#14	TERMINAL BOX NO. C8	VALVE DSP-8 SOLENOID VALVE
501C41E	3/4	2#14	TERMINAL BOX NO. C8	VALVE DSP-8 OPEN LIMIT SW.
501C41F	3/4	2#14	TERMINAL BOX NO. C8	VALVE DSP-8 CLOSED LIMIT SW.
501C42	1 1/4	14#14	TERMINAL BOX NO. C8	TERMINAL BOX NO. C9
501C42A	3/4	2#14	TERMINAL BOX NO. C9	VALVE DS-3 SOLENOID VALVE
501C42B	3/4	2#14	TERMINAL BOX NO. C9	VALVE DS-3 OPEN LIMIT SW.
501C42C	3/4	2#14	TERMINAL BOX NO. C9	VALVE DS-3 CLOSED LIMIT SW.
501C42D	3/4	2#14	TERMINAL BOX NO. C9	VALVE DS-4 SOLENOID VALVE
501C42E	3/4	2#14	TERMINAL BOX NO. C9	VALVE DS-4 OPEN LIMIT SW.
501C42F	3/4	2#14	TERMINAL BOX NO. C9	VALVE DS-4 CLOSED LIMIT SW.
501C43	1	8#14	TERMINAL BOX NO. C9	TERMINAL BOX NO. C10
501C43A	3/4	2#14	TERMINAL BOX NO. C10	VALVE DSP-11 SOLENOID VALVE
501C43B	3/4	2#14	TERMINAL BOX NO. C10	VALVE DSP-11 OPEN LIMIT SW.
501C43C	3/4	2#14	TERMINAL BOX NO. C10	VALVE DSP-11 CLOSED LIMIT SW.
501C43D	3/4	2#14	TERMINAL BOX NO. C10	VALVE DSP-12 SOLENOID VALVE
501C43E	3/4	2#14	TERMINAL BOX NO. C10	VALVE DSP-12 OPEN LIMIT SW.
501C43F	3/4	2#14	TERMINAL BOX NO. C10	VALVE DSP-12 CLOSED LIMIT SW.
501C45	1 1/2	20#14	TERMINAL BOX NO. C7	TERMINAL BOX NO. C11
501C45A	3/4	2#14	TERMINAL BOX NO. C11	VALVE DS-5 SOLENOID VALVE
501C45B	3/4	2#14	TERMINAL BOX NO. C11	VALVE DS-5 OPEN LIMIT SW.
501C45C	3/4	2#14	TERMINAL BOX NO. C11	VALVE DS-5 CLOSED LIMIT SW.
501C45D	3/4	2#14	TERMINAL BOX NO. C11	VALVE DS-6 SOLENOID VALVE
501C45E	3/4	2#14	TERMINAL BOX NO. C11	VALVE DS-6 OPEN LIMIT SW.
501C45F	3/4	2#14	TERMINAL BOX NO. C11	VALVE DS-6 CLOSED LIMIT SW.
501C46	1 1/4	14#14	TERMINAL BOX NO. C11	TERMINAL BOX NO. C12
501C46A	3/4	2#14	TERMINAL BOX NO. C12	VALVE DS-7 OPEN LIMIT SW.
501C46B	3/4	2#14	TERMINAL BOX NO. C12	VALVE DS-7 CLOSED LIMIT SW.
501C46C	3/4	2#14	TERMINAL BOX NO. C12	VALVE DS-8 OPEN LIMIT SW.
501C46D	3/4	2#14	TERMINAL BOX NO. C12	VALVE DS-8 CLOSED LIMIT SW.
501C47	1	8#14	TERMINAL BOX NO. C12	TERMINAL BOX NO. C13
501C47A	3/4	2#14	TERMINAL BOX NO. C13	VALVE DSP-13 SOLENOID VALVE
501C47B	3/4	2#14	TERMINAL BOX NO. C13	VALVE DSP-13 OPEN LIMIT SW.
501C47C	3/4	2#14	TERMINAL BOX NO. C13	VALVE DSP-13 CLOSED LIMIT SW.
501C47D	3/4	2#14	TERMINAL BOX NO. C13	VALVE DSP-14 SOLENOID VALVE
501C47E	3/4	2#14	TERMINAL BOX NO. C13	VALVE DSP-14 OPEN LIMIT SW.
501C47F	3/4	2#14	TERMINAL BOX NO. C13	VALVE DSP-14 CLOSED LIMIT SW.

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
501C48	3/4	3#14	TERMINAL BOX NO. C12	TERMINAL BOX NO. C14
501C48A	3/4	2#14	TERMINAL BOX NO. C14	GRINDER FEED LIMIT SWITCH
501C48B	3/4	2#14	TERMINAL BOX NO. C14	GRINDER BYPASS LIMIT SWITCH
501C49	2	33#14	CONTROL BLDG. OPER. PANEL	TERMINAL BOX NO. C15
501C49A	3/4	2#14	TERMINAL BOX NO. C15	VALVE DSP-2 SOLENOID VALVE
501C49B	3/4	2#14	TERMINAL BOX NO. C15	VALVE DSP-2 OPEN LIMIT SW.
501C49C	3/4	2#14	TERMINAL BOX NO. C15	VALVE DSP-2 CLOSED LIMIT SW.
501C49D	3/4	2#14	TERMINAL BOX NO. C15	VALVE DSP-7 SOLENOID VALVE
501C49E	3/4	2#14	TERMINAL BOX NO. C15	VALVE DSP-7 OPEN LIMIT SW.
501C49F	3/4	2#14	TERMINAL BOX NO. C15	VALVE DSP-7 CLOSED LIMIT SW.
501C50	1	8#14	TERMINAL BOX NO. C15	TERMINAL BOX NO. C16
501C50A	3/4	2#14	TERMINAL BOX NO. C16	VALVE DSP-1 SOLENOID VALVE
501C50B	3/4	2#14	TERMINAL BOX NO. C16	VALVE DSP-1 OPEN LIMIT SW.
501C50C	3/4	2#14	TERMINAL BOX NO. C16	VALVE DSP-1 CLOSED LIMIT SW.
501C50D	3/4	2#14	TERMINAL BOX NO. C16	VALVE DSP-6 SOLENOID VALVE
501C50E	3/4	2#14	TERMINAL BOX NO. C16	VALVE DSP-6 OPEN LIMIT SW.
501C50F	3/4	2#14	TERMINAL BOX NO. C16	VALVE DSP-6 CLOSED LIMIT SW.
501C51	1 1/2	21#14	TERMINAL BOX NO. C15	TERMINAL BOX NO. C17
501C51A	3/4	2#14	TERMINAL BOX NO. C17	VALVE DW-2 OPEN LIMIT SW.
501C51B	3/4	2#14	TERMINAL BOX NO. C17	VALVE DW-2 CLOSED LIMIT SW.
501C51C	3/4	2#14	TERMINAL BOX NO. C17	VALVE DSP-4 SOLENOID VALVE
501C51D	3/4	2#14	TERMINAL BOX NO. C17	VALVE DSP-4 OPEN LIMIT SW.
501C51E	3/4	2#14	TERMINAL BOX NO. C17	VALVE DSP-4 CLOSED LIMIT SW.
501C52	1	8#14	TERMINAL BOX NO. C17	TERMINAL BOX NO. C18
501C52A	3/4	2#14	TERMINAL BOX NO. C18	VALVE DSP-9 SOLENOID VALVE
501C52B	3/4	2#14	TERMINAL BOX NO. C18	VALVE DSP-9 OPEN LIMIT SW.
501C52C	3/4	2#14	TERMINAL BOX NO. C18	VALVE DSP-9 CLOSED LIMIT SW.
501C52D	3/4	2#14	TERMINAL BOX NO. C18	VALVE DSP-10 SOLENOID VALVE
501C52E	3/4	2#14	TERMINAL BOX NO. C18	VALVE DSP-10 OPEN LIMIT SW.
501C52F	3/4	2#14	TERMINAL BOX NO. C18	VALVE DSP-10 CLOSED LIMIT SW.
501C53	1	10#14	TERMINAL BOX NO. C17	TERMINAL BOX NO. C19
501C53A	3/4	2#14	TERMINAL BOX NO. C19	VALVE DS-1 SOLENOID VALVE
501C53B	3/4	2#14	TERMINAL BOX NO. C19	VALVE DS-1 OPEN LIMIT SW.
501C53C	3/4	2#14	TERMINAL BOX NO. C19	VALVE DS-1 CLOSED LIMIT SW.
501C53D	3/4	2#14	TERMINAL BOX NO. C19	VALVE DS-2 SOLENOID VALVE
501C53E	3/4	2#14	TERMINAL BOX NO. C19	VALVE DS-2 OPEN LIMIT SW.
501C53F	3/4	2#14	TERMINAL BOX NO. C19	VALVE DS-2 CLOSED LIMIT SW.
501C54	3/4	3#14	TERMINAL BOX NO. C19	TERMINAL BOX NO. C20
501C54A	3/4	2#14	TERMINAL BOX NO. C20	VALVE DW-1 OPEN LIMIT SW.
501C54B	3/4	2#14	TERMINAL BOX NO. C20	VALVE DW-1 CLOSED LIMIT SW.

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO

NOTE:

ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO ~~CONVERT~~ TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN BFT
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

CONDUIT AND CABLE SCHEDULE

PROJ. NO. S 202-70-30D-
SHEET E 30 OF 31
DATE OCTOBER, 1976 | REV.

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO
			INSTRUMENTATION CONDUITS	
501N1	1	3-2/C#16 SH	CONTROL BLDG. OPER. PANEL	J.B. AT EL. 0'-0"
501N1A	3/4	2/C#16 SH	J.B. AT EL. 0'-0"	TRANS. CAB.-D.S.S. TANK NO.1
501N1B	3/4	SEE NOTE 1	TRANS. CAB.-D.S.S. TANK NO.1	SENSOR HEAD PG-49
501N1C	3/4	2/C#16 SH	J.B. AT EL.0'-0"	TRANS. CAB.-D.S.S. TANK NO.2
501N1D	3/4	SEE NOTE 1	TRANS. CAB.-D.S.S. TANK NO.2	SENSOR HEAD PG-50
501N1E	3/4	2/C#16 SH	J.B. AT EL. 0'-0"	TRANS. CAB.-D.S.S. TANK NO.3
501N1F	3/4	SEE NOTE 1	TRANS. CAB.-D.S.S. TANK NO.3	SENSOR HEAD PG-51
501N2	1 1/4	4-2/C#16 SH & 7#14	CONTROL BLDG. OPER. PANEL	J.B. AT DENSITY SIGNAL CONV.
501N2A	3/4	2/C#16 SH	J.B. AT DENSITY SIGNAL CONV.	DENSITY SIGNAL CONVERTER
501N2B	3/4	SEE NOTE 1	DENSITY SIGNAL CONVERTER	SLUDGE DENSITY METER PG-52
501N2C	3/4	5#14	J.B. AT DENSITY SIGNAL CONV.	J.B. AT SIGNAL TRANSMITTERS
501N2D	3/4	3#14	J.B. AT SIGNAL TRANSMITTERS	AEROBIC SLUDGE TRANSMITTER
501N2E	3/4	SEE NOTE 1	AEROBIC SLUDGE TRANSMITTER	FLOW SWITCH PG-53
501N2F	3/4	3#14	J.B. AT SIGNAL TRANSMITTERS	ANAEROBIC SLUDGE TRANSMITTER
501N2G	3/4	SEE NOTE 1	ANAEROBIC SLUDGE TRANSMITTER	FLOW SWITCH PG-54
501N2H	1	3-2/C#16 SH & 2#14	J.B. AT DENSITY SIGNAL CONV.	J.B. AT FLOW SIGNAL CONV.
501N2J	3/4	2/C#16 SH & 2#14	J.B. AT FLOW SIGNAL CONV.	FLOW SIGNAL CONVERTER
501N2K	3/4	SEE NOTE 1	FLOW SIGNAL CONVERTER	MAGNETIC FLOW METER MS-7
501N2L	3/4	2-2/C#16 SH	J.B. AT FLOW SIGNAL CONV.	J.B. BELOW PRESS.TRANS..OG-106
501N2M	3/4	2/C#16 SH	J.B. BELOW PRESS.TRANS..OG-106	PRESSURE TRANSMITTER OG-106
501N2N	3/4	2/C#16 SH	J.B. BELOW PRESS.TRANS. OG-106	PRESSURE TRANSMITTER OG-107
501N3	3 1/2	107#14(10 SPARE)	CONTROL BLDG. OPER. PANEL	SCANNER TRANSMITTER STP-501 (STATUS INDICATIONS)
501N4	3	66#14(23 SPARE)	CONTROL BLDG. OPER. PANEL	SCANNER TRANSMITTER STP-501 (ANNUNCIATOR ALARMS)
501N5	2	SPARE	SCANNER TRANSMITTER STP-501	PARTITIONED PULL BOX AT EL.0'-0"
501N6	2	3-2/C#16 SH (1 SPARE)	SCANNER TRANSMITTER STP-501	PARTITIONED PULLBOX AT EL.0'-0"
501N7	2	10-2/C#16 SH (3 SPARE)	CONTROL BLDG. OPER. PANEL	PARTITIONED PULLBOX AT EL.0'-0" (ANALOG INDICATIONS TO PMTT)
501N8	4	13-2/C#16 SH	EXISTING MH-E17 MH-E17	PAPTITIONED PULLBOX AT EL.0'-0" LOW VOLTAGE PULLBOX IN THE CONTROL BLDG.

CONDUIT NUMBER	CONDUIT SIZE	NUMBER OF CONDUCTORS	FROM	TO

NOTES
1. INSTALL SHIELDED CONTROL CABLE FURNISHED BY INSTRUMENTATION MANUFACTURER.

NOTE:
ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

RECORD DRAWING
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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WJK
DRAWN B F T
CHECKED WJK, RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION
1	2/80	DSH	REC. DWG. REVISIONS

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-9
SOLIDS DISPOSAL FACILITIES

CONDUIT AND CABLE SCHEDULE

PROJ. NO. S 202-70-30D-
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DATE OCTOBER, 1976 REV.

Sludge Control Bldg. Modification_Year 1996

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GREELEY AND HANSEN
ENGINEERS
1715 NORTH WESTSHORE BOULEVARD
TAMPA, FLORIDA 33607–4135

DESIGNED DCH
DRAWN ROO
CHECKED DCH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
3	30/7/96		RECORD DWG REVISIONS

SCALE
NO SCALE

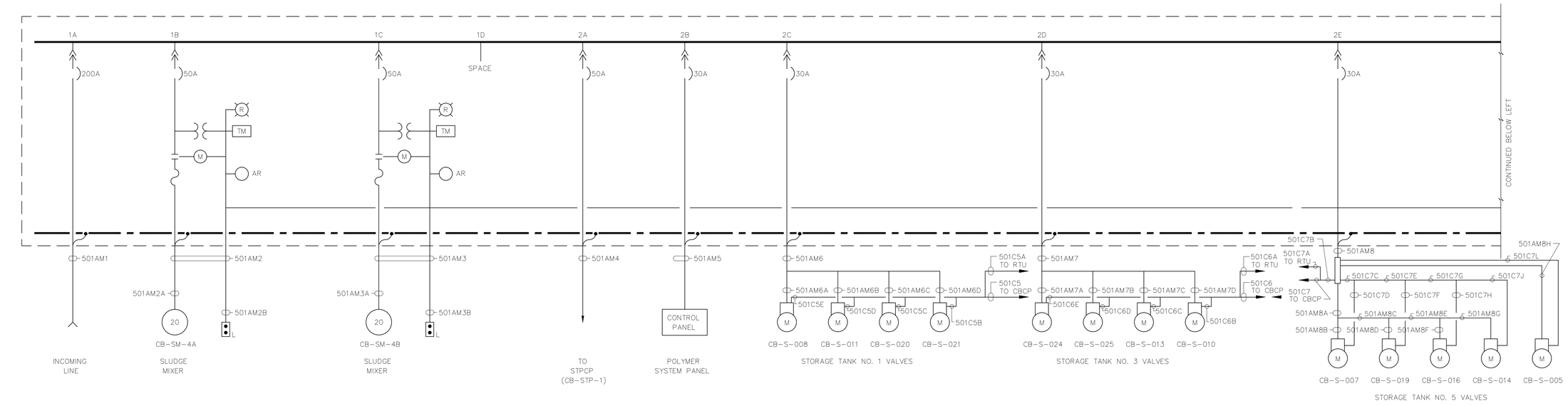
CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H3B
STANDBY POWER AND SLUDGE STORAGE FACILITIES

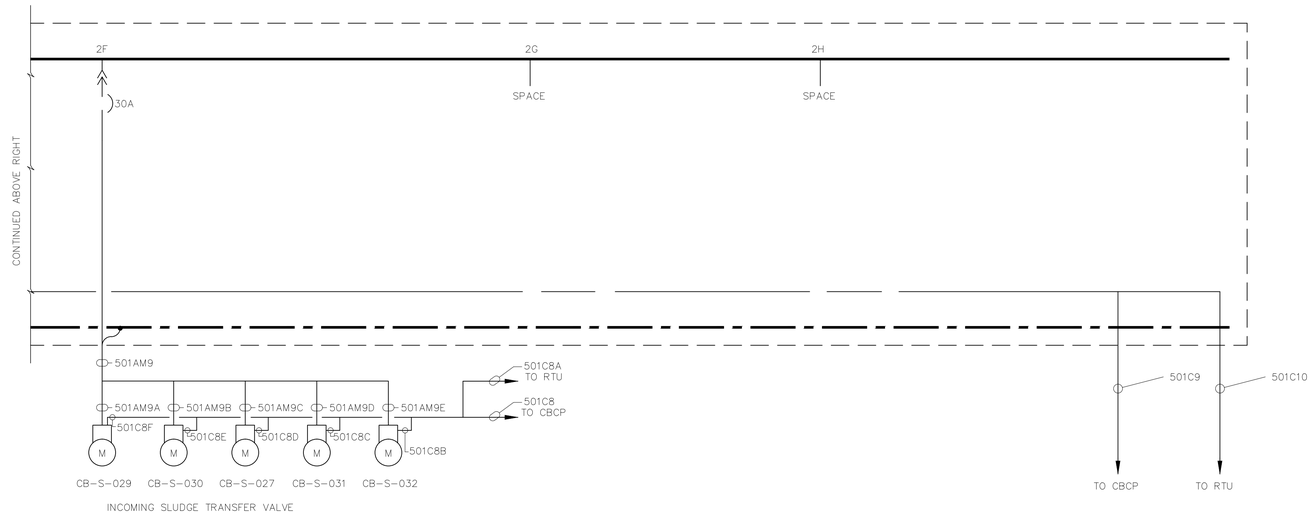
GENERAL
INDEX

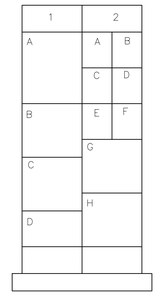
PROJ NO. 202G
DWG AG1
SHEET
DATE DECEMBER 1991 REV 3

5H3B_0AG-001

FILE: H3B-AG01 SCALE: 1:1 09/04, 1996 at 15:27 – *13_c4h (Hardware Lock)*







FRONT ELEVATION

RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

h3B-UE01.DWG 03-20-98 11:41

GREELEY AND HANSEN
ENGINEERS
1715 NORTH WESTSHORE BOULEVARD
TAMPA, FLORIDA 33607-4135

DESIGNED CSC
DRAWN LCC
CHECKED BBK

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
3	9/8/96		RECORD DWG REVISIONS

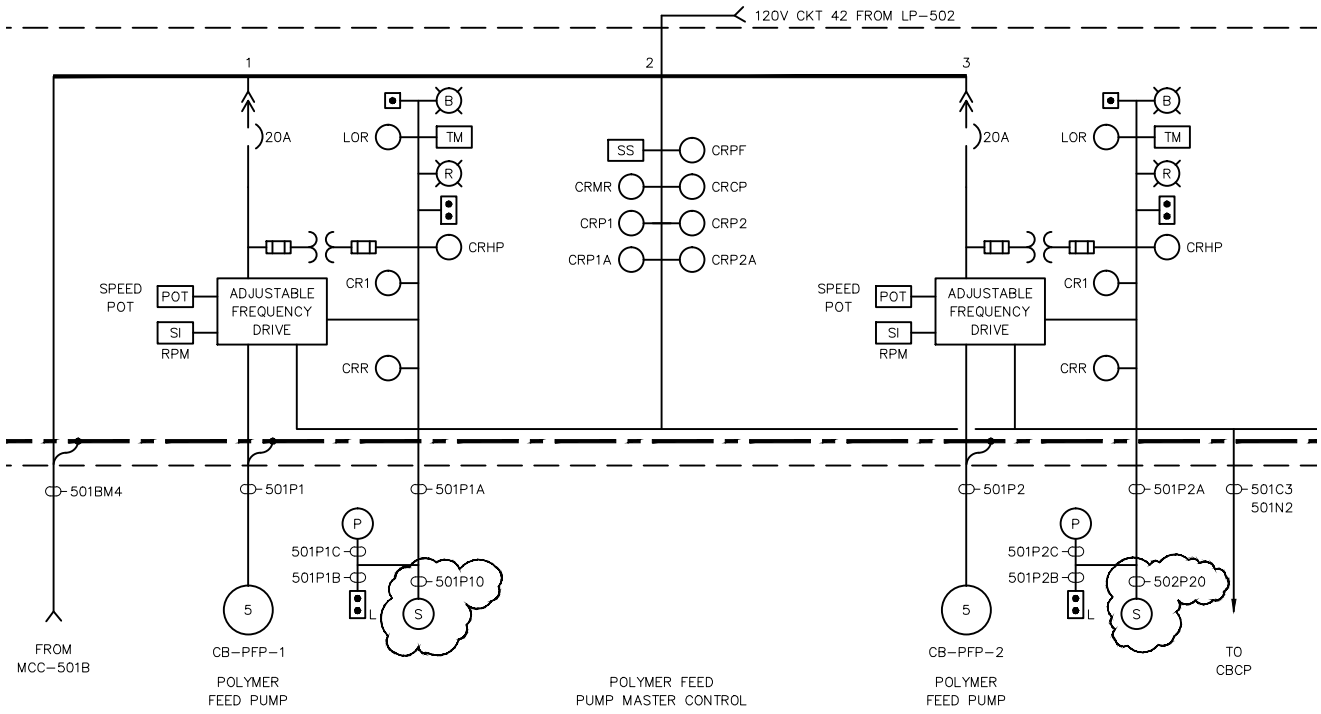
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CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H3B
STANDBY POWER AND SLUDGE STORAGE FACILITIES

SLUDGE STORAGE TANK
ELECTRICAL
480-VOLT MCC-501A
ONE LINE DIAGRAM AND ELEVATION

PROJ NO. 202G
DWG UE1
SHEET
DATE JANUARY 1992 REV 3

5H3B_0UE-001



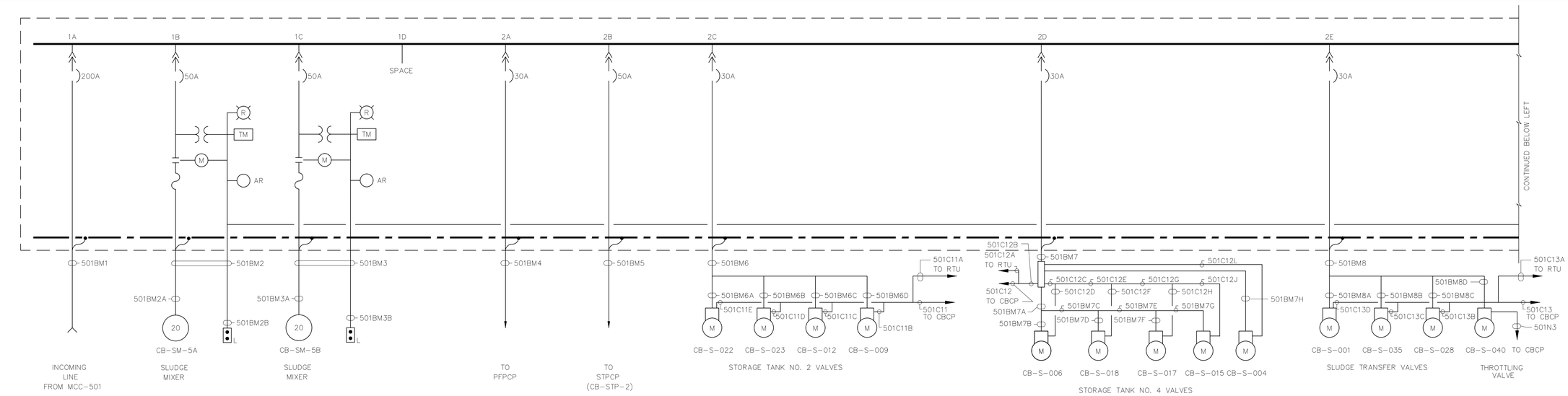
POLYMER FEED PUMP CONTROL PANEL (PFPCP) (PARTIAL)

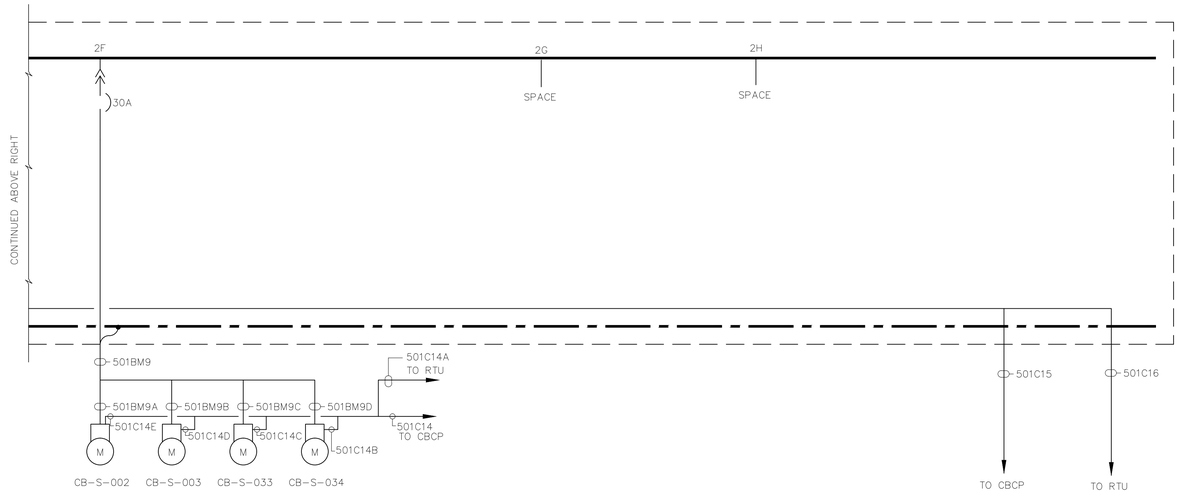
REVISES DWG UE3

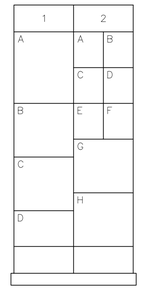
DES BBK	CKD BBK					H.P.W.W.T.P.
DR ROO	APPD					DIVISION 5H3B
GREELEY AND HANSEN ENGINEERS						SD-45
TAMPA, FLORIDA 34607		NO.	DATE	APPD	REVISION	DATE NOV 94 NO. 0

FILE: H:\AC\5H3B\ELEC\5H3AE02 SCALE: 1:1i 11/09, 1994 at 13:45 *R11 c2*

5H3B_0UE-003A







FRONT ELEVATION

RECORD DRAWING

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H3B-UE02.DWG 03-20-98 11:42

GREELEY AND HANSEN
ENGINEERS
1715 NORTH WESTSHORE BOULEVARD
TAMPA, FLORIDA 33607-4135

DESIGNED CSC
DRAWN LCC LAL
CHECKED BBK

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
3	8/9/96		RECORD DWG REVISIONS

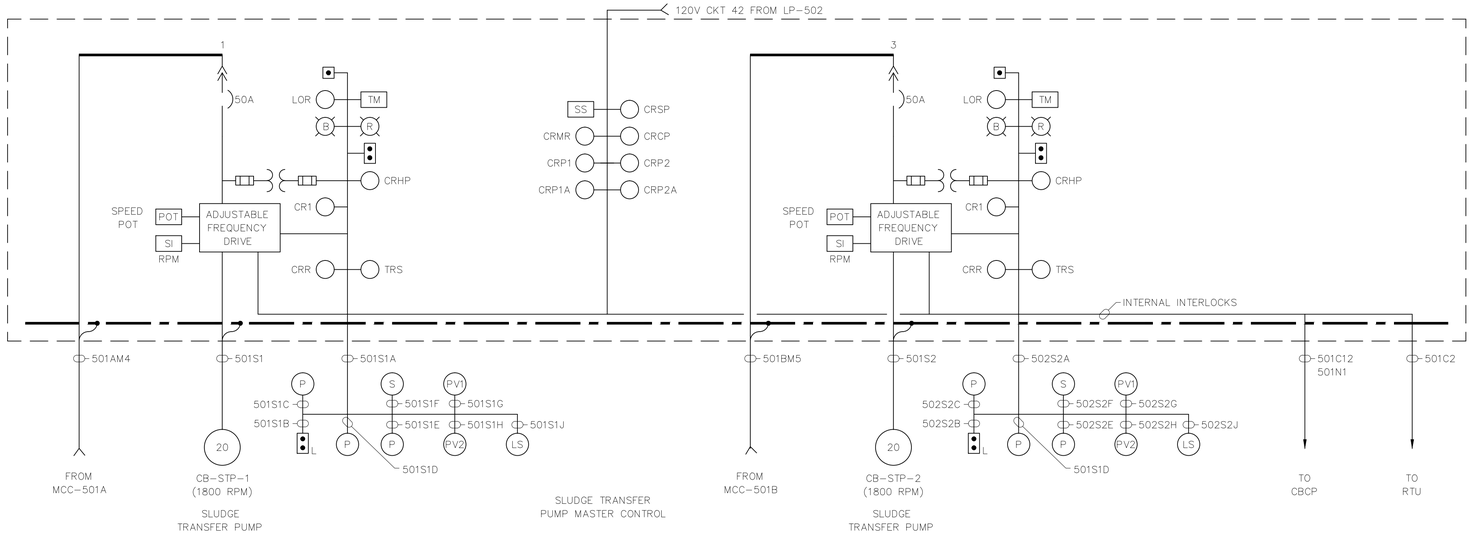
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CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H3B
STANDBY POWER AND SLUDGE STORAGE FACILITIES

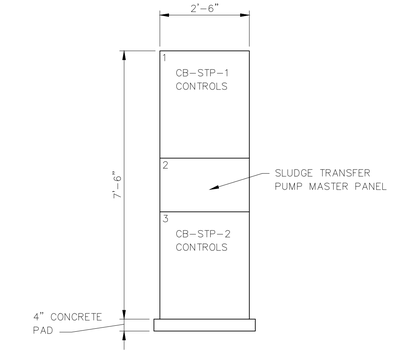
SLUDGE STORAGE TANK
ELECTRICAL
480 VOLT MCC-501B
ONE LINE DIAGRAM AND ELEVATION

PROJ NO. 202G
DWG UE2
SHEET
DATE DECEMBER 1991 REV 3

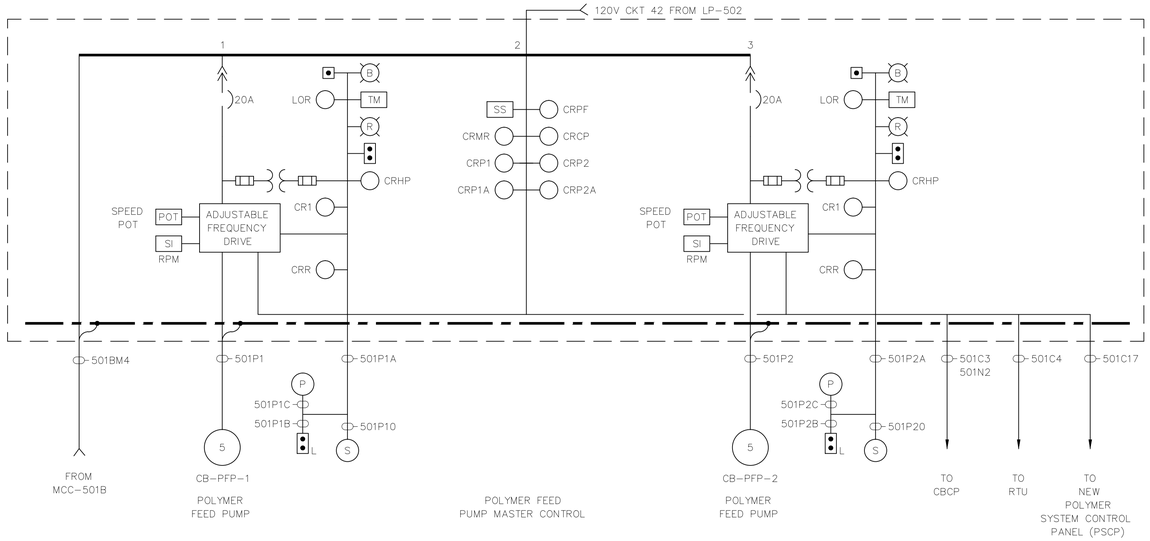
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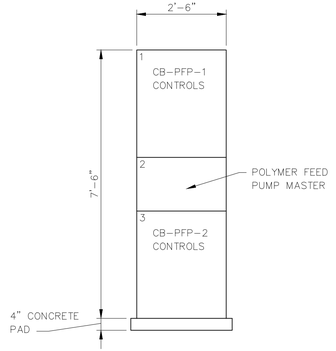
SLUDGE TRANSFER PUMP CONTROL PANEL (STPCP)



STPCP FRONT ELEVATION



POLYMER FEED PUMP CONTROL PANEL (PFPCP) (PARTIAL)



PFPSP FRONT ELEVATION

See Supplemental Drawing SD-45
FILE #5H3B_0UE-003A

RECORD DRAWING

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FILE: H3B-UE03 SCALE: 1:1 09/16, 1996 at 10:44 - *13_4h (Hardware Lock)*

GREELEY AND HANSEN
ENGINEERS
1715 NORTH WESTSHORE BOULEVARD
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN SK
CHECKED BBK

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
3	8/12/96		RECORD DWG REVISIONS

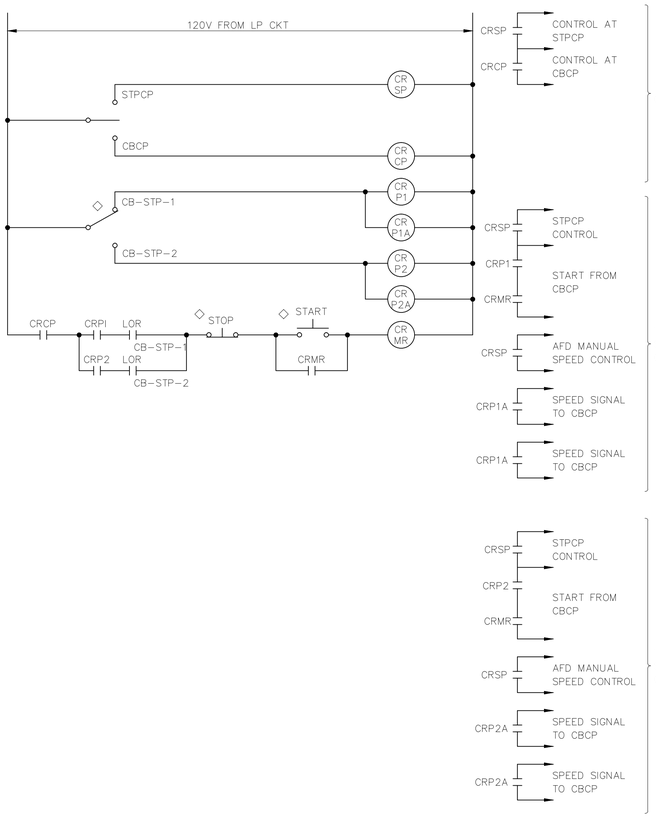
SCALE: NO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H3B
STANDBY POWER AND SLUDGE STORAGE FACILITIES

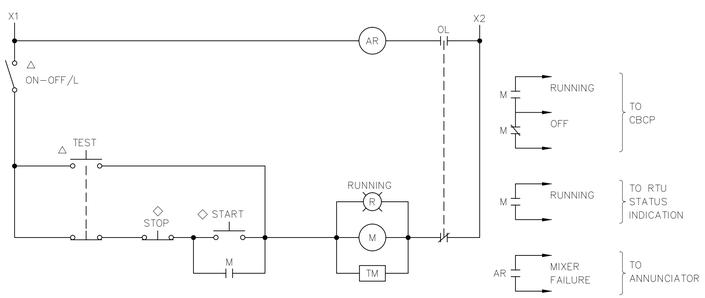
SLUDGE STORAGE TANKS
ELECTRICAL
STCP AND PFPCP
ONE LINE DIAGRAM AND ELEVATION

PROJ NO. 202G
DWG UE3
SHEET
DATE DECEMBER 1991 REV 3

5H3B_0UE-003

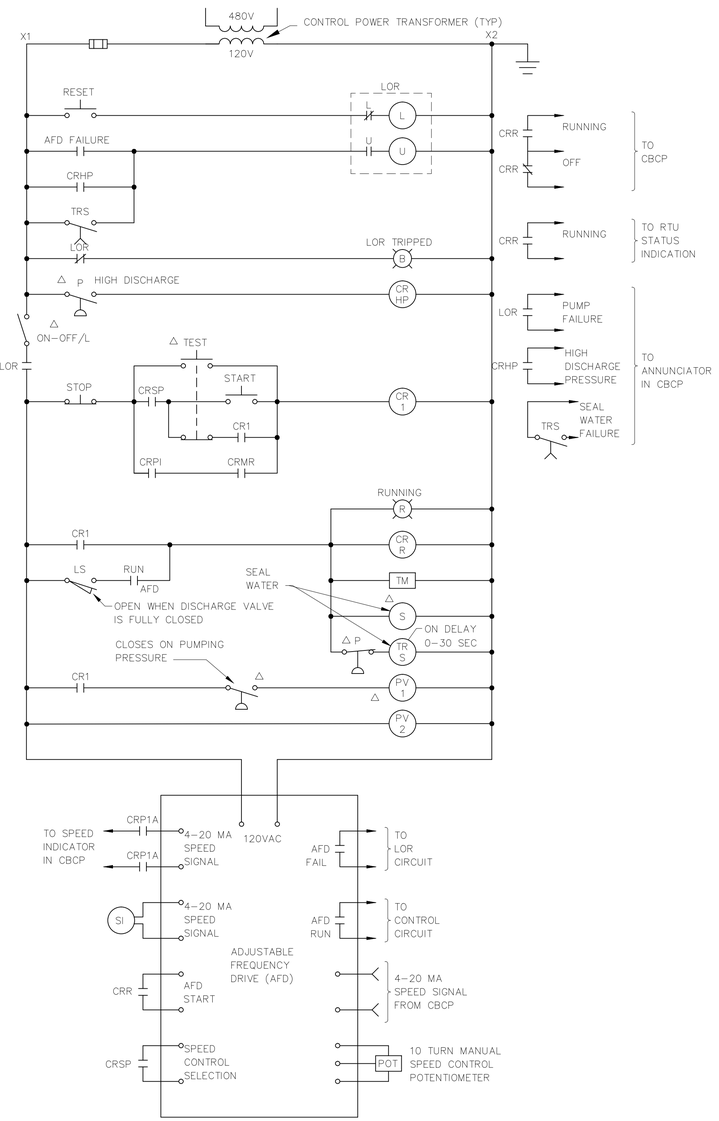


SLUDGE TRANSFER PUMP MASTER CONTROL



SLUDGE MIXER CB-SM-4A

SIMILAR FOR CB-SM-4B, CB-SM-5A AND CB-SM-5B

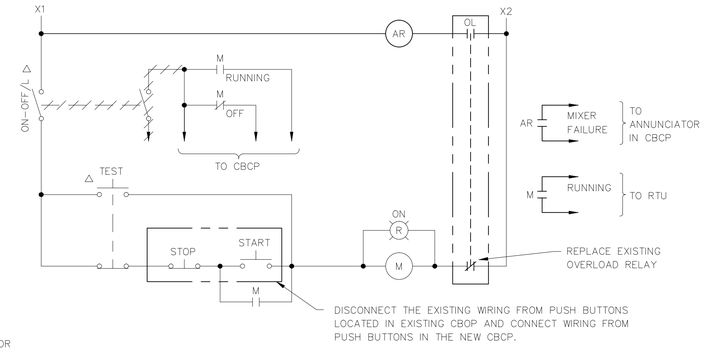


?

PV1 – SOLENOID PILOT VALVE FOR PNEUMATIC OPERATION OF PUMP DISCHARGE VALVE. DISCHARGE VALVE OPENS WHEN PV1 IS ENERGISED.
PV2 – SOLENOID PILOT VALVE FOR RAPID CLOSING OF DISCHARGE VALVE. DISCHARGE VALVE CLOSES WHEN PV2 IS DE-ENERGISED.

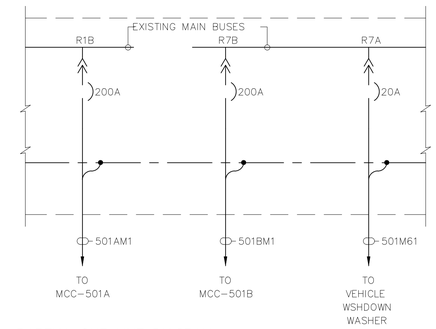
SLUDGE TRANSFER PUMP CB-STP-1

TYPICAL FOR CB-STP-2

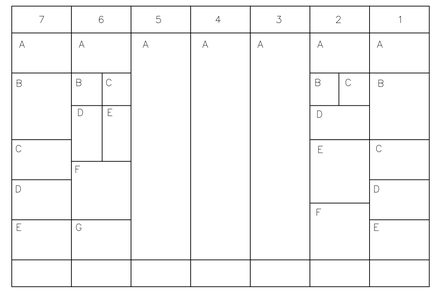


EXISTING SLUDGE MIXER CB-SM-1 CONTROL MODIFICATIONS

SIMILAR FOR CB-MS-2 AND CB-MS-3



PARTIAL ONE LINE DIAGRAM



REAR ELEVATION

EXISTING MCC-501

RECORD DRAWING

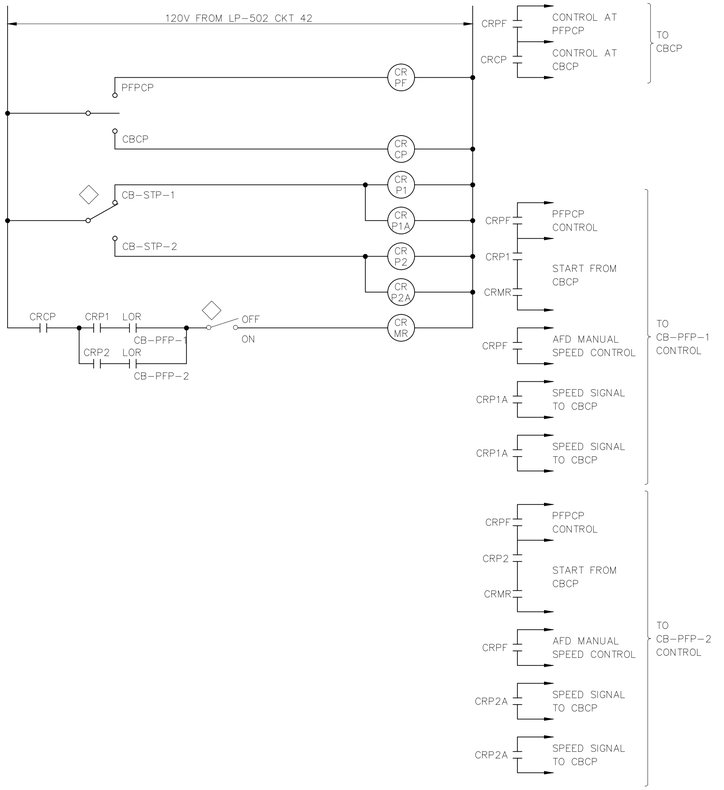
THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

NOTES:
◇ DENOTES DEVICE LOCATED IN CBCP

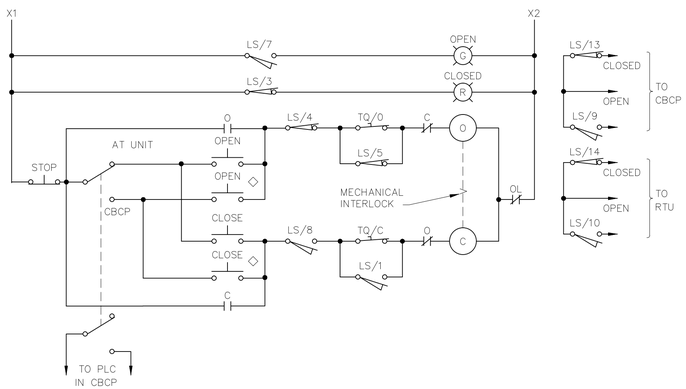
GREELEY AND HANSEN ENGINEERS 1715 NORTH WESTSHORE BOULEVARD TAMPA, FLORIDA 33607-4135	DESIGNED BBK DRAWN AF CHECKED BBK	APPROVED DATE DATE GREELEY AND HANSEN, ENGINEERS	3 8/13/96 RECORD DWG REVISIONS NO. DATE APPD REVISION
SCALE NOT TO SCALE	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT PLANT EXPANSION PHASE I DIVISION 5H3B STANDBY POWER AND SLUDGE STORAGE FACILITIES	SLUDGE STORAGE TANKS ELELCTRICAL SCHEMATIC DIAGRAMS	PROJ NO. 202G DWG UE4 SHEET DATE DECEMBER 1991 REV 3

5H3B_0UE-004

FILE: \H3B\-UE04 SCALE: 1:1 09/16, 1996 at 10:58 - "13_c4h (Hardware Lock)"

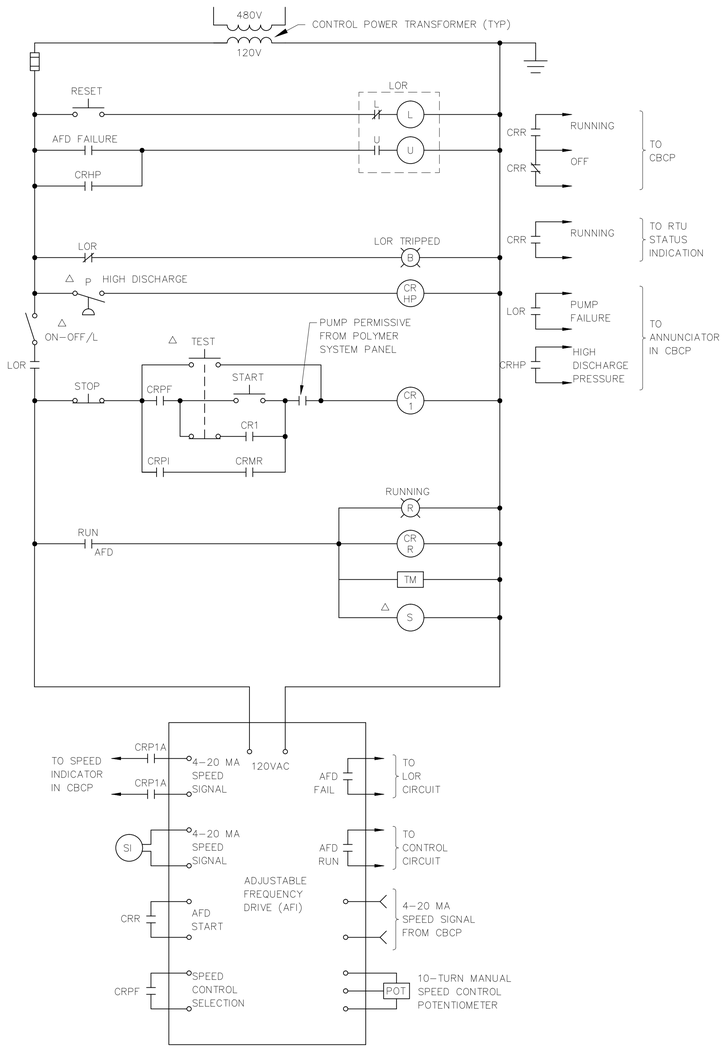


POLYMER FEED PUMP MASTER CONTROL



SLUDGE VALVES

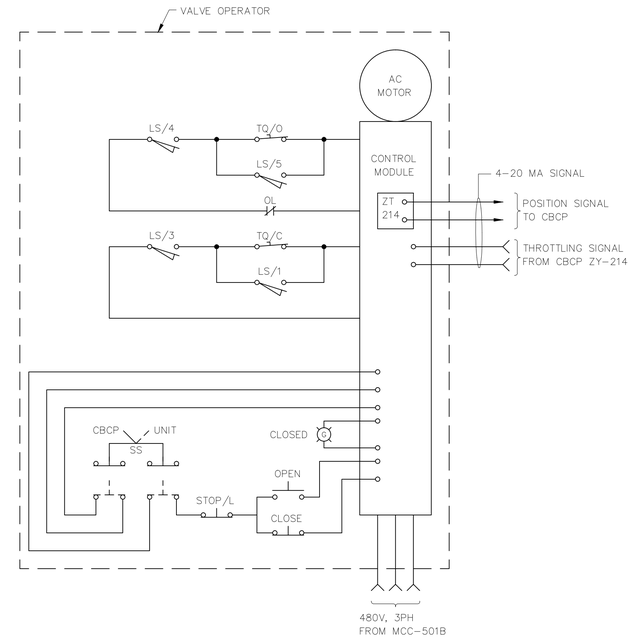
INCOMING SLUDGE VALVES CB-S-001 TO CB-S-003
SLUDGE STORAGE TANK INLET VALVES CB-S-004 TO CB-S-013
SLUDGE STORAGE TANK OUTLET VALVES CB-S-014 TO CB-S-025
SLUDGE TRANSFER VALVES CB-S-027 TO CB-S-035



POLYMER FEED PUMP CB-PFP-1

TYPICAL FOR CB-PFP-2

?



THROTTLING VALVE - CB-S-040

TYPICAL LIMIT SWITCH CONTACT DEVELOPMENT FOR MOTORIZED GATE AND VALVE OPERATORS

ROTOR NO.	CONTACT NO.	OPERATOR POSITION: FULL OPEN	OPERATOR POSITION: INTER-MEDIATE	OPERATOR POSITION: FULL CLOSED	CONTACT FUNCTION
1	1	▬	– –	– –	BYPASS CKT
	2	▬	– –	– –	AUXILIARY
	3	– –	– –	▬	INDICATOR LIGHT
	4	– –	▬	▬	FORWARD (OPEN) LIMIT
2	5	– –	– –	▬	BYPASS CKT
	6	– –	– –	▬	AUXILIARY
	7	▬	▬	– –	INDICATOR LIGHT
	8	▬	▬	– –	REVERSE (CLOSED) LIMIT
3	9	▬	▬	– –	AUXILIARY
	10	▬	▬	– –	AUXILIARY
	11	– –	– –	▬	AUXILIARY
	12	– –	– –	▬	AUXILIARY
4	13	– –	▬	▬	AUXILIARY
	14	– –	▬	▬	AUXILIARY
	15	▬	– –	– –	AUXILIARY
	16	▬	– –	– –	AUXILIARY

TQ/C – CLOSING TORQUE SWITCH
TQ/O – OPENING TORQUE SWITCH
▬ INDICATES CONTACT CLOSED
– – INDICATES CONTACT OPEN

SEE SCHEMATIC DIAGRAMS FOR FUNCTION OF THE "AUXILIARY" LIMIT SWITCH CONTACTS

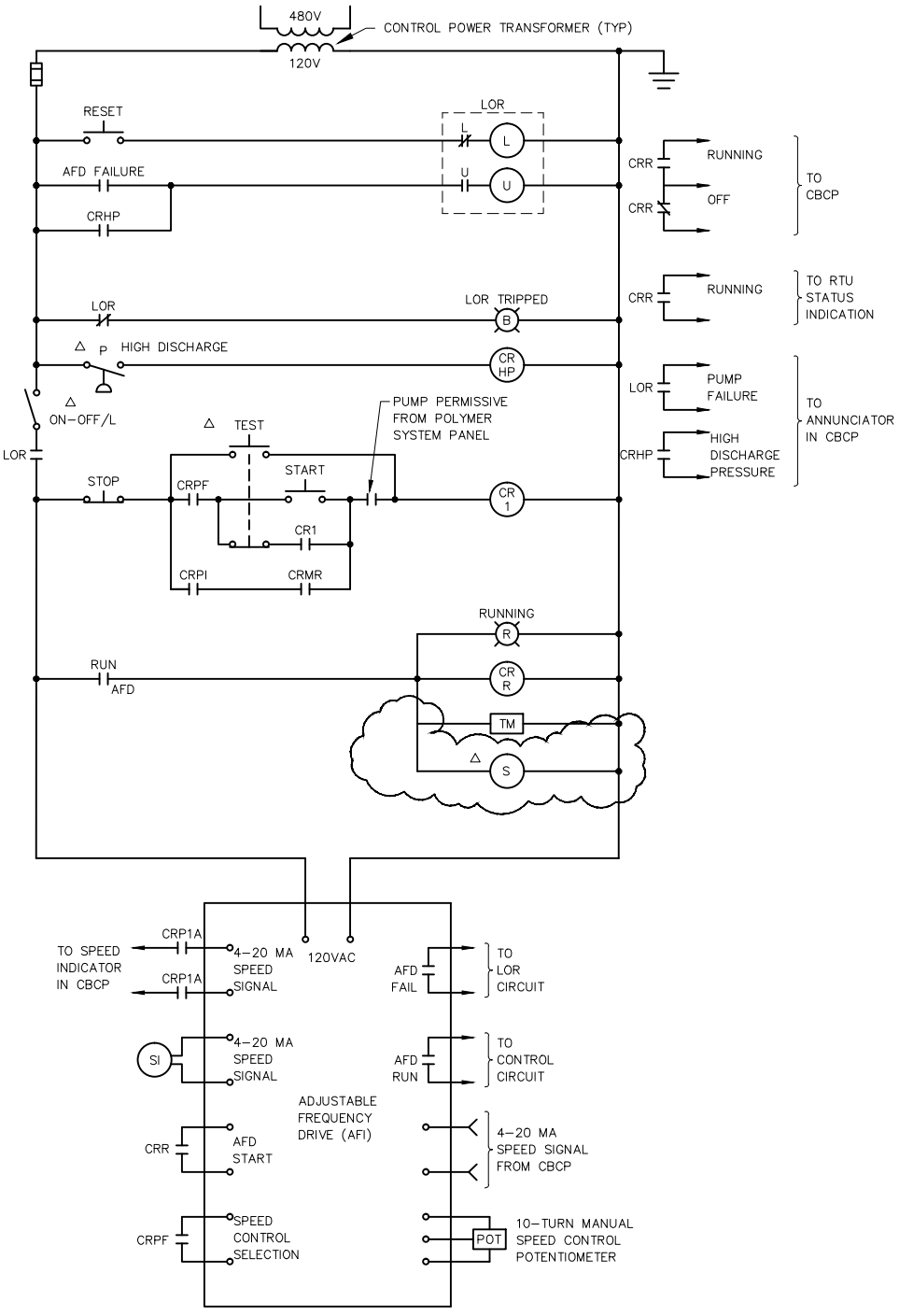
NOTE
◇ DENOTES DEVICE LOCATED IN CBCP

RECORD DRAWING
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FILE: H5B-UE05 SCALE: 1:1 09/16, 1996 at 11:10 - *13_c4h (Hardware Lock)*

GREELEY AND HANSEN ENGINEERS 1715 NORTH WESTSHORE BOULEVARD TAMPA, FLORIDA 33607-4135	DESIGNED BBK DRAWN AF CHECKED BBK	APPROVED _____ DATE _____ _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	4 8/9/96 RECORD DWG REVISIONS NO. DATE APPD REVISION
SCALE NOT TO SCALE	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT PLANT EXPANSION PHASE I DIVISION 5H3B STANDBY POWER AND SLUDGE STORAGE FACILITIES	SLUDGE STORAGE TANKS ELECTRICAL SCHEMATIC DIAGRAMS	See Supplemental Drawing SD-46 FILE #5H3B_0UE-005A
			PROJ NO. 202G DWG UE5 SHEET DATE DECEMBER 1991 REV 4

5H3B_0UE-005



POLYMER FEED PUMP CB-PFP-1

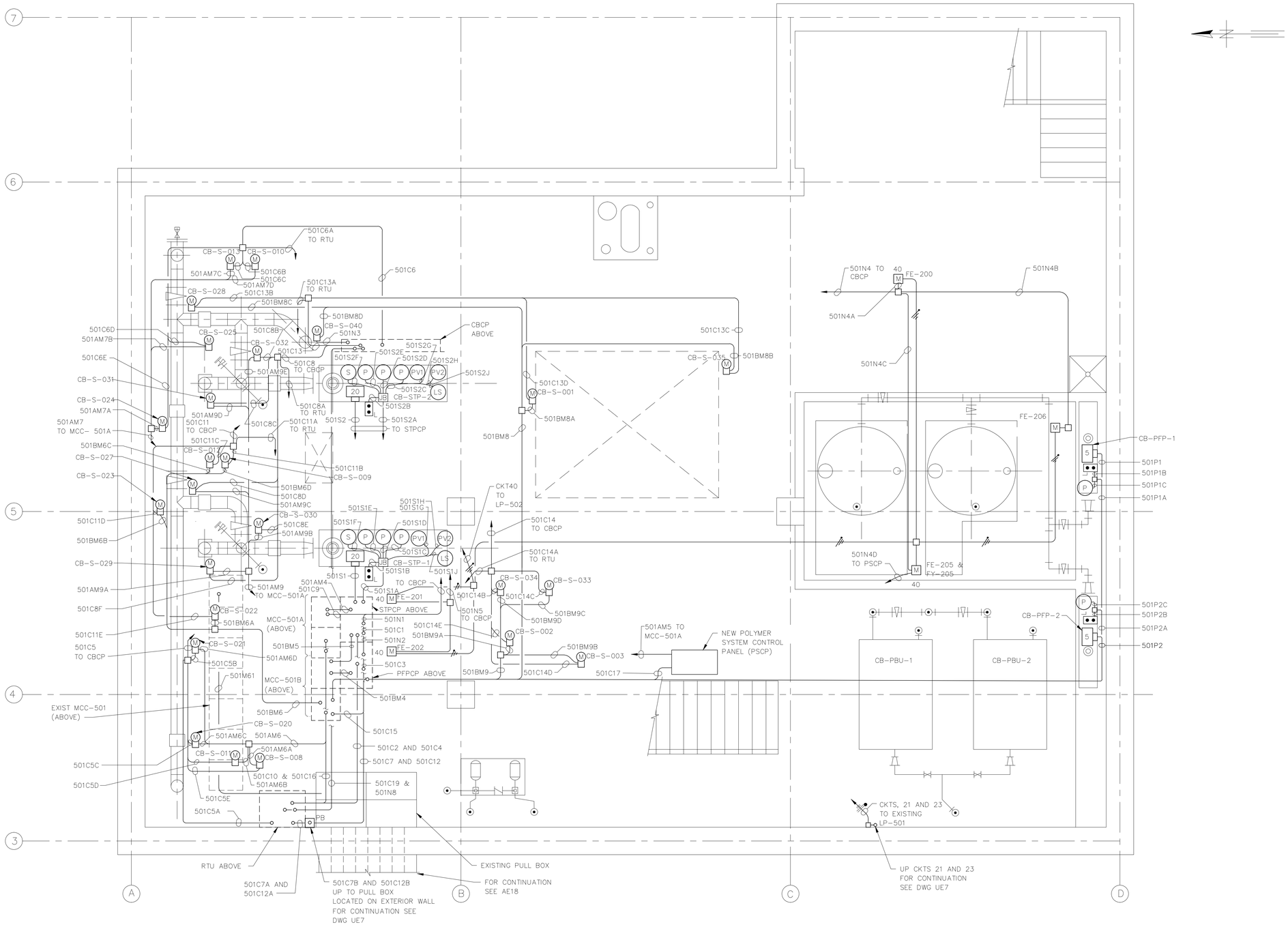
TYPICAL FOR CB-PFP-2

REVISES DWG UE5

DES BBK	CKD BBK					H.P.W.W.T.P.
DR ROO	APPD					DIVISION 5H3B
GREELEY AND HANSEN ENGINEERS						SD-46
TAMPA, FLORIDA 34607		NO.	DATE	APPD	REVISION	DATE NOV 94 NO. 0

FILE: H:\AC\5H3B\ELEC\TAMAE22 SCALE: 1:1i 11/09, 1994 at 13:53 *R11 c2*

5H3B_0UE-005A



RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

FILE: H3B-UE06 SCALE: 1:32 09/16, 1996 at 12:53 -- *13_c4h (Hardware Lock)*

GREELEY AND HANSEN
ENGINEERS
1715 NORTH WESTSHORE BOULEVARD
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN PAE
CHECKED BBK

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
4	8/9/96		RECORD DWG REVISIONS

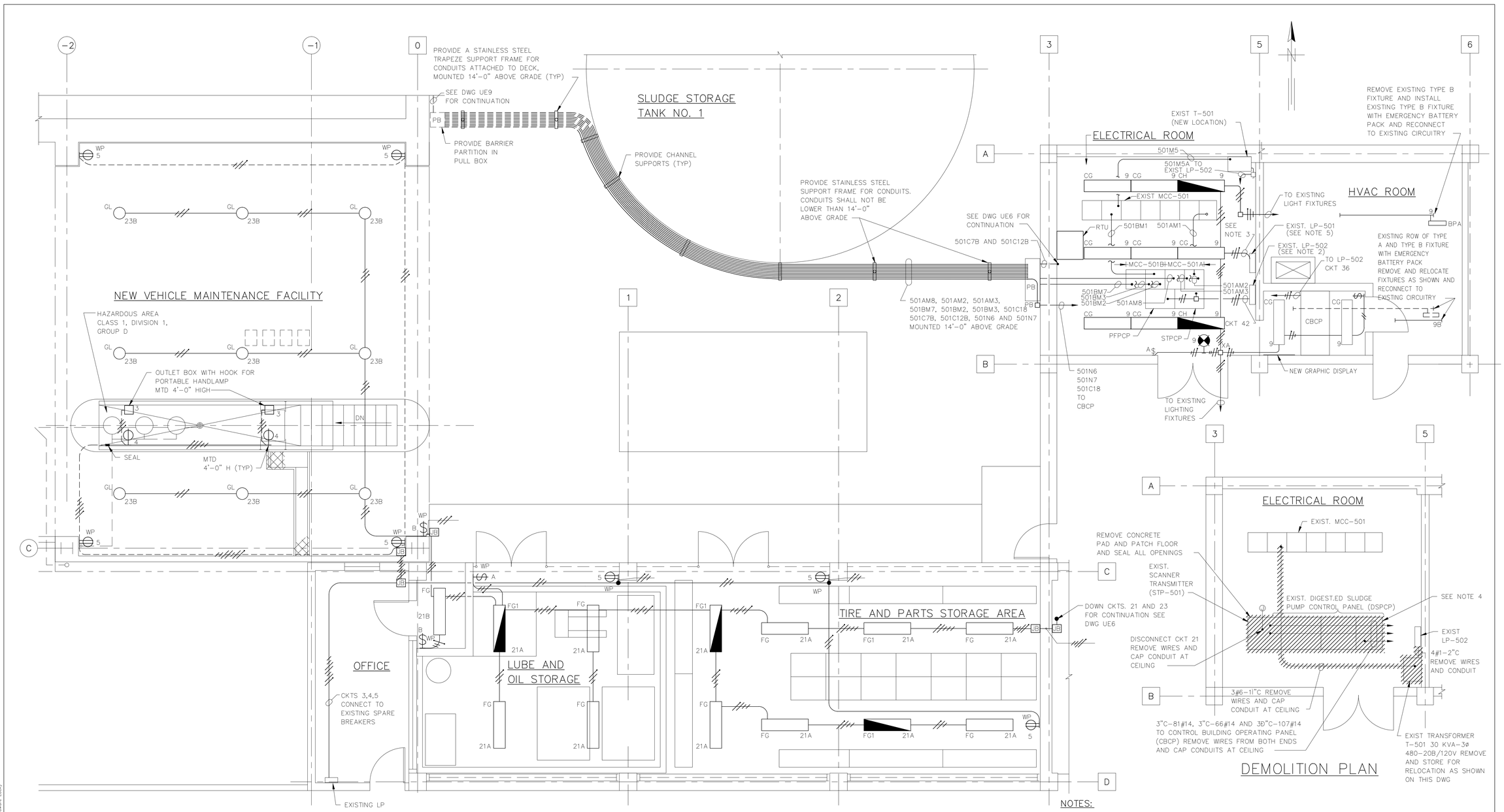
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3/8"=1'-0"

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H3B
STANDBY POWER AND SLUDGE STORAGE FACILITIES

SLUDGE STORAGE TANKS
ELECTRICAL
CONTROL BUILDING
POWER PLAN

PROJ NO. 202G
DWG UE6
SHEET
DATE DECEMBER 1991
REV 4

5H3B_0UE-006



NOTES:

1. ALL CONDUITS CONNECTED TO CONTROL BUILDING CONTROL PANEL (CBCP) SHALL BE INSTALLED AFTER CBCP HAS BEEN INSTALLED IN PLACE.
2. INSTALL FIVE 20 A1P CIRCUIT BREAKERS IN THE SPACE FOR CIRCUITS 36, 38, 40, 41, AND 42 IN EXISTING LP-502.
3. CONNECT TO EXISTING CIRCUIT NO. 9 AS SHOWN AND EXTEND TO NEW LIGHTING FIXTURES IN ELECTRICAL ROOM AND RECONNECT EXISTING LIGHTING.
4. REMOVE WIRES AND CUT AT FLOOR AND CAP THE FOLLOWING CONDUITS RUN BELOW DSPCP: 3 AT 1D"C-3#4 & 1#6G, 3 AT 1"C-13#14, 1 AT 2D"C-3#4/0 & 1#4G AND 1 AT 0"C-4#14.
5. INSTALL THREE NEW 20 A1P CIRCUIT BREAKERS IN THE SPACE FOR CIRCUITS 19, 21, 23 IN EXISTING LP-501.
6. ALL EQUIPMENT, WIRING, PULL BOXES AND FIXTURES ARE NEW UNLESS NOTED OTHERWISE.

RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
1715 NORTH WESTSHORE BOULEVARD
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN ROO
CHECKED BBK

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
3	8/13/96		RECORD DWG REVISIONS

SCALE
4 0 4 8 FT
1/4"=1'-0"

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H3B
STANDBY POWER AND SLUDGE STORAGE FACILITIES

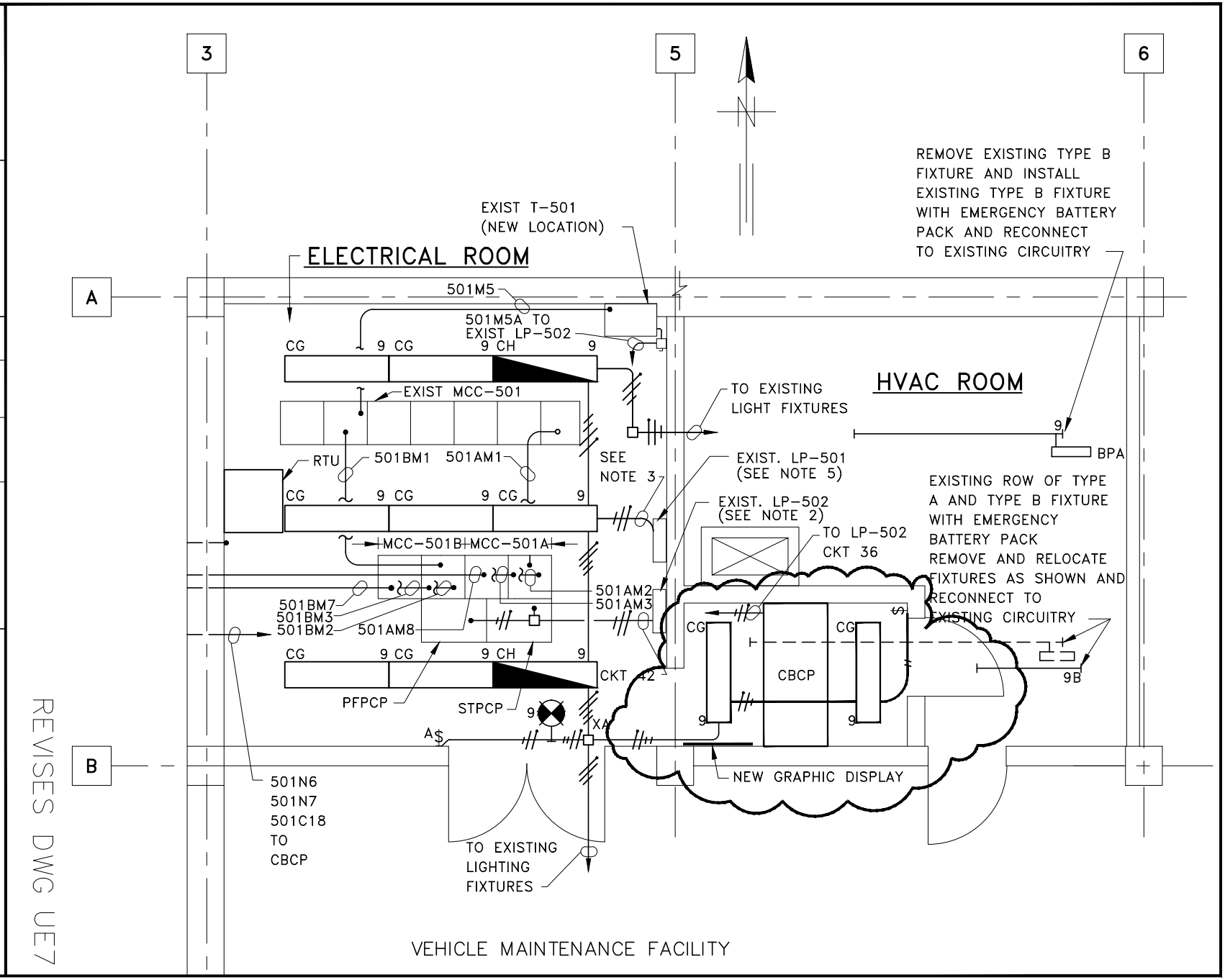
SLUDGE STORAGE TANKS
ELECTRICAL
CONTROL BLD AND VEHICLE MAINTENANCE FACILITY
POWER AND LIGHTING PLAN

See Supplemental Drawing SD-42
FILE #5H3B_0UE-007A

PROJ NO. 202G
DWG UE7
SHEET
DATE DECEMBER 1991 REV 3

5H3B_0UE-007

FILE: H3B-UE07 SCALE: 1:48 09/16, 1996 at 13:13 — "13_c4h (Hardware Lock)"



DES BBK | CKD BBK
DR BBK | APPD

GREELEY AND HANSEN
ENGINEERS
TAMPA, FLORIDA 34607

NO.	DATE	APPD	REVISION

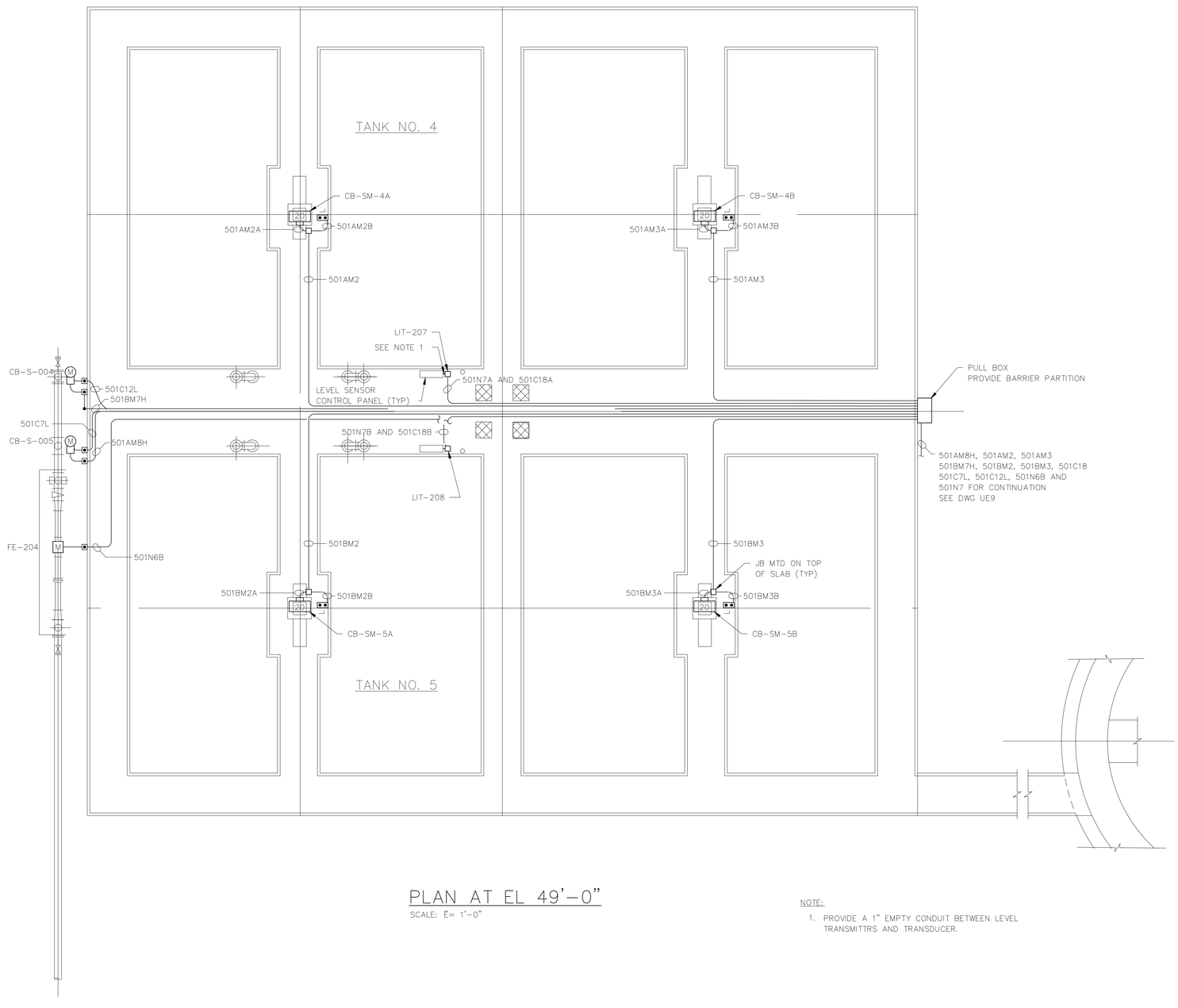
H.P.W.T.P.
DIVISION 5H3B

SD-42

DATE MAY 94 NO. 0

REVISES DWG UE7

5H3B_0UE-007



PLAN AT EL 49'-0"

SCALE: E= 1'-0"

NOTE:

1. PROVIDE A 1" EMPTY CONDUIT BETWEEN LEVEL TRANSMITTRS AND TRANSDUCER.

RECORD DRAWING

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H3B-UE08.DWG 03-20-98 11:44

GREELEY AND HANSEN
ENGINEERS
1715 NORTH WESTSHORE BOULEVARD
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN PAE
CHECKED BBK

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
3	8/9/96		RECORD DWG REVISIONS

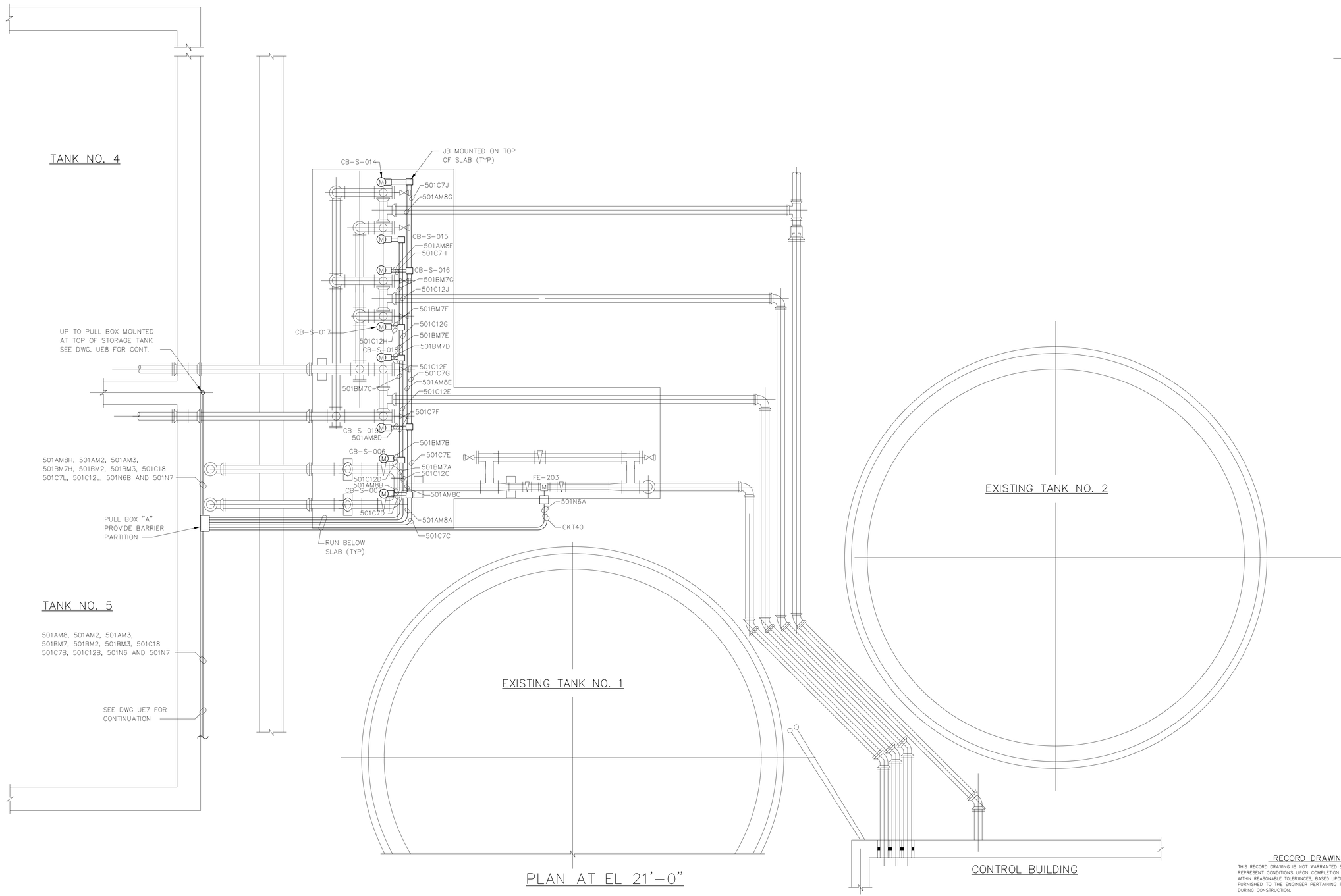
SCALE
4 0 4 8 12 FT
3/16"=1'-0"

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H3B
STANDBY POWER AND SLUDGE STORAGE FACILITIES

SLUDGE STORAGE TANKS
ELECTRICAL
SLUDGE STORAGE TANKS NO. 4 AND NO. 5
POWER PLAN

PROJ NO. 202G
DWG UE8
SHEET
DATE DECEMBER 1991 REV 3

5H3B_0UE-008



PLAN AT EL 21'-0"

RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

FILE: i:\5B-UE09 SCALE: 1:48 09/17, 1996 at 07:01 - *13_c4h (Hardware Lock)*

GREELEY AND HANSEN
ENGINEERS
1715 NORTH WESTSHORE BOULEVARD
TAMPA, FLORIDA 33607-4135

DESIGNED	BBK
DRAWN	MSB
CHECKED	BBK

APPROVED _____ DATE _____

_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
3	8/13/96		RECORD DWG REVISIONS

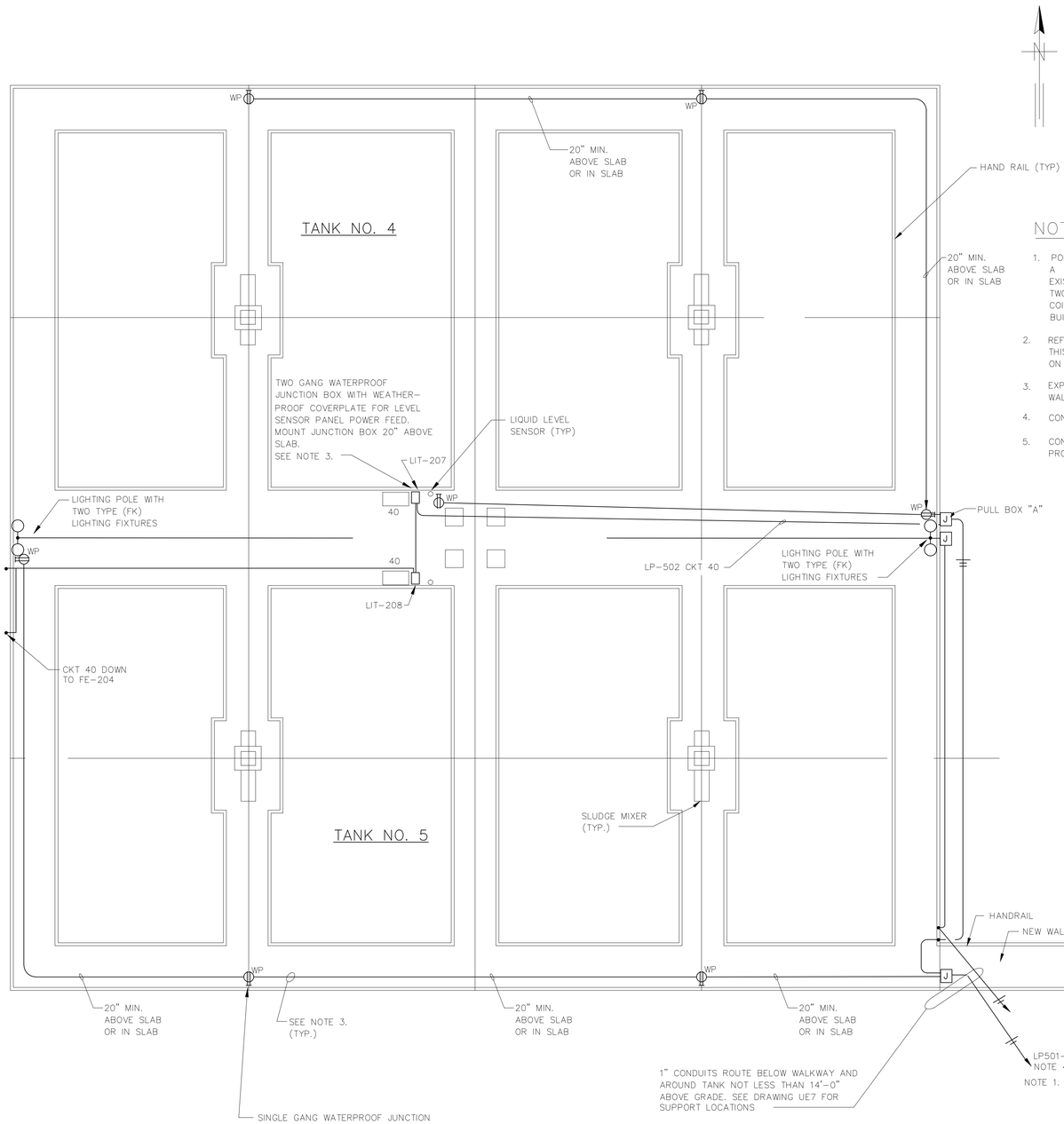
SCALE
4 0 4 8 FT
1/4"=1'-0"

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H3B
STANDBY POWER AND SLUDGE STORAGE FACILITIES

SLUDGE STORAGE TANKS
ELECTRICAL
VALVE AND METER PAD
POWER PLAN

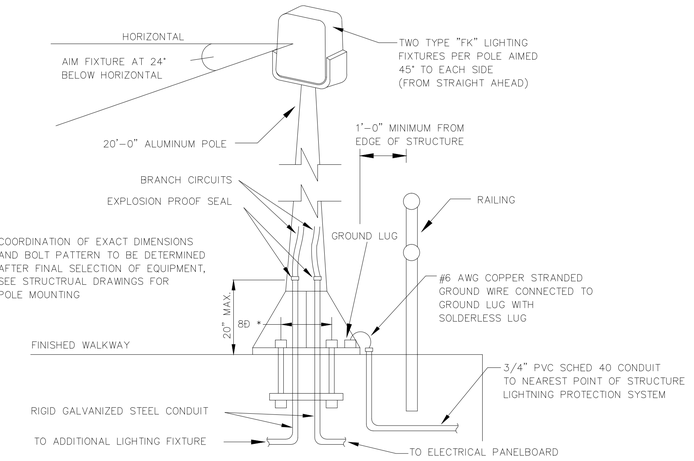
PROJ NO. 202G
DWG UE9
SHEET
DATE DECEMBER 1991 REV 3

5H3B_0UE-009



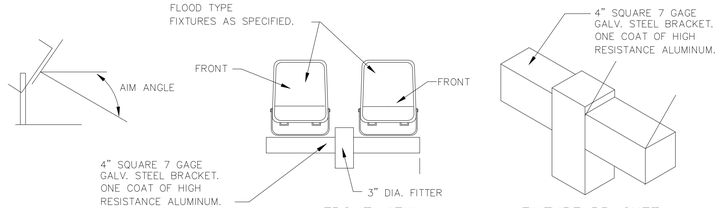
NOTES:

1. POLE MOUNTED FIXTURES SHALL BE CONTROLLED BY A LIGHTING CONTACTOR LOCATED IN THE EXISTING CONTROL BUILDING. PROVIDE A 120 TWO POLE, 20 AMP LIGHTING CONTACTOR WITH 120 VAC COIL AND A PHOTOCELL FOR INSTALLATION IN THE CONTROL BUILDING
2. REFER TO EXTERIOR LIGHTING CONTROL DIAGRAM ON THIS SHEET. MOUNT PHOTOCELL ON 4'-0" POLE ON ROOF OF SLUDGE CONTROL BUILDING FACING NORTH.
3. EXPOSED CONDUIT ABOVE THE SLAB SHALL BE RIGID HEAVY WALL ALUMINUM.
4. CONNECT TO LIGHTING CONTACTOR IN CONTROL BUILDING.
5. CONTRACTOR TO PROVIDE AUX. RELAYS AS REQUIRED FOR PROPER FUNCTION OF MECHANICALLY HELD CONTACTORS.



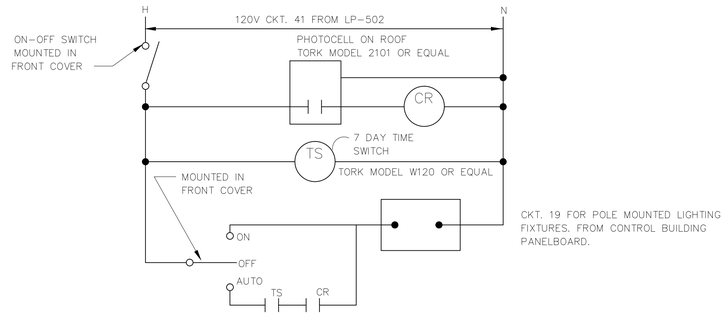
POLE MOUNTED LIGHTING FIXTURE DETAIL

SCALE: NONE



BRACKET/FIXTURE MOUNTING DETAILS

SCALE: NONE



LIGHTING CONTACTOR PANEL DETAIL

SCALE: NONE

RECORD DRAWING

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EMTEC Corporation
CONSULTING ENGINEERS
1723 W. KENNEDY BOULEVARD
SUITE 210
TAMPA, FLORIDA 33606

GREELEY AND HANSEN
ENGINEERS
1715 NORTH WESTSHORE BOULEVARD
TAMPA, FLORIDA 33607-4135

DESIGNED RG
DRAWN RG
CHECKED RJJ

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
4	8/9/96		RECORD DWG REVISIONS

SCALE
4 0 4 8 12 FT
3/16"=1'-0"

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H3B
STANDBY POWER AND SLUDGE STORAGE FACILITIES

SLUDGE STORAGE TANKS
ELECTRICAL
LIGHTING
PLAN AT EL 49'-0"

PROJ NO. 202G
DWG UE10
SHEET
DATE DECEMBER 1991 REV 4

5H3B_0UE-010

PLE: H3B-UE10 SCALE: 1:64 09/16, 1996 at 14:35 - *13_4th (Hardware Lock)*

CONDUIT NUMBER & SIZE	CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS
MOTOR CONTROL CENTER MCC-501A				
501AM1	2-1/2 3#4/0 & 1#6 GND	EXISTING MCC-501	MCC-501A	
501AM2	1-1/4 3#8, 4#14 & 1#10 GND	MCC-501A	JB NEAR CB-SM-4A	
501AM2A	1 3#8 & 1#10 GND	JB NEAR CB-SM-4A	MOTOR CB-SM-4A	
501AM2B	3/4 4#14 & 1#10 GND	JB NEAR CB-SM-4A	PUSHBUTTON STATION	
501AM3	1-1/4 3#8, 4#14 & 1#10 GND	MCC-501A	JB NEAR CB-SM-4B	
501AM3A	1 3#8 & 1#10 GND	JB NEAR CB-SM-4B	MOTOR CB-SM-4B	
501AM3B	3/4 4#14 & 1#10 GND	JB NEAR CB-SM-4B	PUSHBUTTON STATION	
501AM4	1 3#8 & 1#10 GND	MCC-501A	STPCP	
501AM5	3/4 3#10 & 1#10 GND	MCC-501A	POLYMER SYSTEM PANEL	
501AM6	3/4 3#10 & 1#10 GND	MCC-501A	JB NEAR CB-S-008	
501AM6A	3/4 3#10 & 1#10 GND	JB NEAR CB-S-008	CB-S-008	
501AM6B	3/4 3#10 & 1#10 GND	JB NEAR CB-S-008	CB-S-011	
501AM6C	3/4 3#10 & 1#10 GND	JB NEAR CB-S-008	CB-S-020	
501AM6D	3/4 3#10 & 1#10 GND	JB NEAR CB-S-008	CB-S-021	
501AM7	3/4 3#10 & 1#10 GND	MCC-501A	JB NEAR CB-S-024	
501AM7A	3/4 3#10 & 1#10 GND	JB NEAR CB-S-024	CB-S-024	
501AM7B	3/4 3#10 & 1#10 GND	JB NEAR CB-S-024	CB-S-025	
501AM7C	3/4 3#10 & 1#10 GND	JB NEAR CB-S-024	CB-S-013	
501AM7D	3/4 3#10 & 1#10 GND	JB NEAR CB-S-024	CB-S-010	
501AM8	3/4 3#10 & 1#10 GND	MCC-501A	PULLBOX "A"	
501AM8A	3/4 3#10 & 1#10 GND	PULLBOX "A"	JB NEAR CB-S-007	
501AM8B	3/4 3#10 & 1#10 GND	JB NEAR CB-S-007	CB-S-007	
501AM8C	3/4 3#10 & 1#10 GND	JB NEAR CB-S-007	JB NEAR CB-S-019	
501AM8D	3/4 3#10 & 1#10 GND	JB NEAR CB-S-019	CB-S-019	
501AM8E	3/4 3#10 & 1#10 GND	JB NEAR CB-S-019	JB NEAR CB-S-016	
501AM8F	3/4 3#10 & 1#10 GND	JB NEAR CB-S-016	CB-S-016	
501AM8G	3/4 3#10 & 1#10 GND	JB NEAR CB-S-016	CB-S-014	
501AM8H	3/4 3#10 & 1#10 GND	PULLBOX "A"	CB-S-005	
501AM9	3/4 3#10 & 1#10 GND	MCC-501A	JB NEAR CB-S-029	
501AM9A	3/4 3#10 & 1#10 GND	JB NEAR CB-S-029	CB-S-029	
501AM9B	3/4 3#10 & 1#10 GND	JB NEAR CB-S-029	CB-S-030	
501AM9C	3/4 3#10 & 1#10 GND	JB NEAR CB-S-029	CB-S-027	
501AM9D	3/4 3#10 & 1#10 GND	JB NEAR CB-S-029	CB-S-031	
501AM9E	3/4 3#10 & 1#10 GND	JB NEAR CB-S-029	CB-S-032	

CONDUIT NUMBER & SIZE	CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS
MOTOR CONTROL CENTER MCC-501B				
501BM1	2-1/2 3#4/0 & 1#6 GND	EXISTING MCC-501	MCC-501B	
501BM2	1-1/4 3#8, 4#14 & 1#10 GND	MCC-501B	JB NEAR CB-SM-5A	
501BM2A	1 3#8 & 1#10 GND	JB NEAR CB-SM-5A	MOTOR CB-SM-5A	
501BM2B	3/4 4#14 & 1#10 GND	JB NEAR CB-SM-5A	PUSHBUTTON STATION	
501BM3	1-1/4 3#8, 4#14 & 1#10 GND	MCC-501B	JB NEAR CB-SM-5B	
501BM3A	1 3#8 & 1#10 GND	JB NEAR CB-SM-5B	MOTOR CB-SM-5B	
501BM3B	3/4 4#14 & 1#10 GND	JB NEAR CB-SM-5B	PUSHBUTTON STATION	
501BM4	3/4 3#10 & 1#10 GND	MCC-501B	PFPCP	
501BM5	1 3#8 & 1#10 GND	MCC-501B	STPCP	
501BM6	3/4 3#10 & 1#10 GND	MCC-501B	JB NEAR CB-S-022	
501BM6A	3/4 3#10 & 1#10 GND	JB NEAR CB-S-022	CB-S-022	
501BM6B	3/4 3#10 & 1#10 GND	JB NEAR CB-S-022	CB-S-023	
501BM6C	3/4 3#10 & 1#10 GND	JB NEAR CB-S-022	CB-S-012	
501BM6D	3/4 3#10 & 1#10 GND	JB NEAR CB-S-022	CB-S-009	
501BM7	3/4 3#10 & 1#10 GND	MCC-501B	PULLBOX "A"	
501BM7A	3/4 3#10 & 1#10 GND	PULLBOX "A"	JB NEAR CB-S-006	
501BM7B	3/4 3#10 & 1#10 GND	JB NEAR CB-S-006	CB-S-006	
501BM7C	3/4 3#10 & 1#10 GND	JB NEAC CB-S-006	JB NEAR CB-S-018	
501BM7D	3/4 3#10 & 1#10 GND	JB NEAR CB-S-018	CB-S-018	
501BM7E	3/4 3#10 & 1#10 GND	JB NEAR CB-S-018	JB NEAR CB-S-017	
501MB7F	3/4 3#10 & 1#10 GND	JB NEAR CB-S-017	CB-S-017	
501BM7G	3/4 3#10 & 1#10 GND	JB NEAR CB-S-017	CB-S-015	
501BM7H	3/4 3#10 & 1#10 GND	PULLBOX "A"	CB-S-004	
501BM8	3/4 3#10 & 1#10 GND	MCC-501B	JB NEAR CB-S-001	
501BM8A	3/4 3#10 & 1#10 GND	JB NEAR CB-S-001	CB-S-001	
501BM8B	3/4 3#10 & 1#10 GND	JB NEAR CB-S-001	CB-S-035	
501BM8C	3/4 3#10 & 1#10 GND	JB NEAR CB-S-001	CB-S-028	
501BM8D	3/4 3#10 & 1#10 GND	JB NEAR CB-S-001	CB-S-040	
501BM8E	3/4 3#10 & 1#10 GND	JB NEAR CB-S-001	CB-S-026	
501BM8F	3/4 3#10 & 1#10 GND	JB NEAR CB-S-001	CB-S-036	
501BM9	3/4 3#10 & 1#10 GND	MCC-501B	JB NEAR CB-S-002	
501BM9A	3/4 3#10 & 1#10 GND	JB NEAR CB-S-002	CB-S-002	
501BM9B	3/4 3#10 & 1#10 GND	JB NEAR CB-S-002	CB-S-003	
501BM9C	3/4 3#10 & 1#10 GND	JB NEAR CB-S-002	CB-S-033	
501BM9D	3/4 3#10 & 1#10 GND	JB NEAR CB-S-002	CB-S-034	

CONDUIT NUMBER & SIZE	CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS
SLUDGE TRANSFER PUMP CONTROL PANEL				
501S1	1 3#8 & 1#10 GND	STPCP	CB-STP-1	
501S1A	1-1/2 18#14 & 1#12 GND	STPCP	JB NEAR CB-STP-1	
501S1B	3/4 4#14 & 1#12 GND	JB NEAR CB-STP-1	PUSHBUTTON STATION	
501S1C	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-1	PRESSURE SWITCH	
501S1D	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-1	PRESSURE SWITCH	
501S1E	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-1	PRESSURE SWITCH	
501S1F	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-1	SOLENOID OPERATOR VALVE	
501S1G	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-1	SOLENOID PILOT VALVE	
501S1H	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-1	SOLENOID PILOT VALVE	
501S1J	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-1	LIMIT SWITCH	
501S2	1 3#8 & 1#10 GND	STPCP	CB-STP-2	
501S2A	1-1/2 18#14 & 1#12 GND	STPCP	JB NEAR CB-STP-2	
501S2B	3/4 4#14 & 1#12 GND	JB NEAR CB-STP-2	PUSHBUTTON STATION	
501S2C	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-2	PRESSURE SWITCH	
501S2D	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-2	PRESSURE SWITCH	
501S2E	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-2	PRESSURE SWITCH	
501S2f	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-2	SOLENOID OPERATED VALVE	
501S2G	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-2	SOLENOID PILOT VALVE	
501S2H	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-2	SOLENOID PILOT VALVE	
501S2J	3/4 2#14 & 1#12 GND	JB NEAR CB-STP-2	LIMIT SWITCH	
POLYMER FEED PUMP CONTROL PANEL				
501P1	3/4 3#12 & 1#12 GND	PFPCP	CB-PFP-1	
501P1A	1 9#14 & 1#12 GND	PFPCP	JB NEAR CB-PFP-1	
501P1B	3/4 5#14 & 1#12 GND	JB NEAR CB-PFP-1	PUSHBUTTON STATION	
501P1C	3/4 2#14 & 1#12 GND	JB NEAR CB-PFP-1	PRESSURE SWITCH	
501P1D	3/4 2#14 & 1#12 GND	JB NEAR CB-PFP-1	SOLENOID VALVE	SEAL WATER
501P2	3/4 3#12 & 1#12 GND	PFPCP	CB-PFP-2	
501P2A	1 9#14 & 1#12 GND	PFPCP	JB NEAR CB-PFP-2	
501P2B	3/4 5#14 & 1#12 GND	JB NEAR CB-PFP-2	PUSHBUTTON STATION	
501P2C	3/4 2#14 & 1#12 GND	JB NEAR CB-PFP-2	PRESSURE SWITCH	
501P2D	3/4 2#14 & 1#12 GND	JB NEAR CB-PFP-2	SOLENOID VALVE	SEAL WATER
MOTOR CONTROL CENTER MCC-501				
501M61	1 3#10 & 1#10 GND	EXISTING MCC-501	VEHICLE WASHDOWN WASHER	
501M5	1-1/4 3#6 & 1#10 GND	EXISTING MCC-501	RELOCATED T-501	
501M5A	2 4#1 & 1#6 GND	RELOCATED T-501	EXISTING LP-502	

RECORD DRAWING

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FILE: H3B-UE11 SCALE: 1:1 09/17, 1996 at 07:04 - *13_Lab (Hardware Lock)*

GREELEY AND HANSEN
ENGINEERS
1715 NORTH WESTSHORE BOULEVARD
TAMPA, FLORIDA 33607-4135

DESIGNED CSC
DRAWN BBK
CHECKED BBK

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
4	8/8/96		RECORD DWG REVISIONS

SCALE
NOT TO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE II DIVISION 5H4
BIOLOGICAL TREATMENT FACILITIES

SLUDGE STORAGE FACILITY
ELECTRICAL
CONDUIT AND CABLE SCHEDULE

PROJ NO. 202G
DWG UE11
SHEET
DATE JANUARY 1992 REV 4

5H3B_0UE-011

CONDUIT NUMBER & SIZE	CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS
SLUDGE STORAGE TANK CONTROL CONDUITS				
501C1	2	3-12/C#14 & 1#14 GND	STPCP	CBCP	9 SPARE
501C2	1	8#14 & 1#14 GND	STPCP	RTU	4 SPARE
501C3	2	3-12/C#14 & 1#14 GND	PFPCP	CBCP	14 SPARE
501C4	1	8#14 & 1#14 GND	PFPCP	RTU	4 SPARE
501C5	2	32#14 & 1#14 GND	CBCP	JB NEAR CB-S-021	
501C5A	1-1/4	12#14 & 1#14 GND	RTU	JB NEAR CB-S-021	
501C5B	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-021	CB-S-021	
501C5C	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-021	CB-S-020	
501C5D	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-021	CB-S-011	
501C5E	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-021	CB-S-008	
501C6	2	32#14 & 1#14 GND	CBCP	JB NEAR CB-S-010	
501C6A	1-1/4	12#14 & 1#14 GND	RTU	JB NEAR CB-S-010	
501C6B	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-010	CB-S-010	
501C6C	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-010	CB-S-013	
501C6D	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-010	CB-S-025	
501C6E	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-010	CB-S-024	
501C7	2	40#14 & 1#14 GND	CBCP	PULL BOX	
501C7A	1-1/4	15#14 & 1#14 GND	RTU	PULL BOX	
501C7B	2-1/2	55#14 & 1#14 GND	PULL BOX	PULLBOX "A"	
501C7C	2-1/2	44#14 & 1#14 GND	PULLBOX "A"	JB NEAR CB-S-007	
501C7D	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-007	CB-S-007	
501C7E	2	33#14 & 1#14 GND	JB NEAR CB-S-007	JB NEAR CB-S-019	
501C7F	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-019	CB-S-019	
501C7G	1-1/2	22#14 & 1#14 GND	JB NEAR CB-S-019	JB NEAR CB-S-016	
501C7H	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-016	CB-S-016	
501C7J	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-016	CB-S-014	
501C7L	1-1/4	11#14 & 1#14 GND	PULLBOX "A"	CB-S-005	
501C8	2	40#14 & 1#14 GND	CBCP	JB NEAR CB-S-32	
501C8A	1-1/4	15#14 & 1#14 GND	RTU	JB NEAR CB-S-32	
501C8B	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-032	CB-S-032	
501C8C	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-032	CB-S-031	
501C8D	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-032	CB-S-027	
501C8E	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-032	CB-S-030	
501C8F	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-032	CB-S-029	
501C9	2	2-12/C#14 & 1#14 GND	MCC-501A	CBCP	8 SPARE
501C10	1	8#14 & 1#14 GND	MCC-501A	RTU	4 SPARE
501C11	2	32#14 & 1#14 GND	CBCP	JB NEAR CB-S-009	
501C11A	1-1/4	12#14 & 1#14 GND	RTU	JB NEAR CB-S-009	
501C11B	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-009	CB-S-009	
501C11C	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-009	CB-S-012	
501C11D	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-009	CB-S-023	
501C11E	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-009	CB-S-022	
501C12	2	40#14 & 1#14 GND	CBCP	PULL BOX	
501C12A	1-1/4	15#14 & 1#14 GND	RTU	PULL BOX	
501C12B	2-1/2	55#14 & 1#14 GND	PULL BOX	PULLBOX "A"	
501C12C	2-1/2	44#14 & 1#14 GND	PULLBOX "A"	JB NEAR CB-S-006	
501C12D	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-006	CB-S-006	
501C12E	2	33#14 & 1#14 GND	JB NEAR CB-S-006	JB NEAR CB-S-018	
501C12F	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-018	CB-S-018	
501C12G	1-1/2	22#14 & 1#14 GND	JB NEAR CB-S-018	JB NEAR CB-S-017	
501C12H	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-017	CB-S-017	
501C12J	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-017	CB-S-015	
501C12L	1-1/4	11#14 & 1#14 GND	PULLBOX "A"	CB-S-004	
501C13	2	40#14 & 1#14 GND	CBCP	PULL BOX	
501C13A	1-1/4	15#14 & 1#14 GND	RTU	PULL BOX	
501C13B	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-028	CB-S-028	
501C13C	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-028	CB-S-035	
501C13D	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-028	CB-S-001	
501C13E	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-028	CB-S-026	
501C13F	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-028	CB-S-036	
501C14	2	32#14 & 1#14 GND	CBCP	JB NEAR CB-S-034	
501C14A	1-1/4	12#14 & 1#14 GND	RTU	JB NEAR CB-S-034	
501C14B	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-034	CB-S-034	
501C14C	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-034	CB-S-033	
501C14D	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-034	CB-S-003	
501C14E	1-1/4	11#14 & 1#14 GND	JB NEAR CB-S-034	CB-S-002	
501C15	2	2-12/C#14 & 1#14 GND	MCC-501B	CBCP	8 SPARE
501C16	1	8#14 & 1#14 GND	MCC-501B	RTU	4 SPARE
501C17	1	4#14 & 1#14 GND	STPCP	PSCP	
501C18	3/4	6#14 & 1#14 GND	CBCP	PULLBOX	
501C18A	3/4	3#14 & 1#14 GND	PULLBOX	LIT-207	
501C18B	3/4	3#14 & 1#14 GND	PULLBOX	LIT-208	
501C19	3	7-12/C#14 & 1#14 GND	CBCP	RTU	18 SPARE
501C20	1	6#14 & 1#14 GND	CBCP	JB NEAR LIT-209	
501C20A	3/4	3#14 & 1#14 GND	JB NEAR LIT-209	LIT-209	
501C20B	3/4	3#14 & 1#14 GND	JB NEAR LIT-209	LIT-210	

CONDUIT NUMBER & SIZE	CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS
SLUDGE STORAGE TANK INSTRUMENTATION CONDUITS				
501N1	1	4-2/C#16 SHLD	STPCP	CBCP	
501N2	1	4-2/C#16 SHLD	PFPCP	CBCP	
501N3	1	4-2/C#16 SHLD	CB-S-040	CBCP	
501N4	1-1/4	5-2/C#16 SHLD	CBCP	JB NEAR FE-200	
501N4A	3/4	2-2/C#16 SHLD	JB NEAR FE-200	FE-200	
501N4B	3/4	2 2/C#16 SHLD	JB NEAR FE-200	FE-206	
501N4C	3/4	1-2/C#16 SHLD	JB NEAR FE-200	FE-205 & FY-205	
501N4D	3/4	2-2/C#16 SHLD	PSCP	FE-205 & FY-205	
501N5	1	4-2/C#16 SHLD	CBCP	JB NEAR FE-201	
501N5A	3/4	2-2/C#16 SHLD	JB NEAR FE-201	FE-201	
501N5B	3/4	2 2/C#16 SHLD	JB NEAR FE-201	FE-202	
501N6	1	4-2/C#16 SHLD	CBCP	PULLBOX "A"	
501N6A	3/4	2-2/C#16 SHLD	PULLBOX "A"	FIT-203	
501N6B	3/4	2-2/C#16 SHLD	PULLBOX "A"	FIT-204	
501N7	3/4	2 2/C#16 SHLD	CBCP	PULLBOX	
501N7A	3/4	1-2/C#16 SHLD	PULLBOX	LIT-207	
501N7B	3/4	1-2/C#16 SHLD	PULLBOX	LIT-208	
501N8	3	30-2/C#16 SHLD	RTU	CBCP	4 SPARE
501N9	3/4	2 2/C#16 SHLD	CBCP	JB NEAR LIT-209	
501N9A	3/4	1-2/C#16 SHLD	JB NEAR LIT-209	LIT-209	
501N9B	3/4	1-2/C#16 SHLD	JB NEAR LIT-209	LIT-210	

RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

GREELEY AND HANSEN
ENGINEERS
1715 NORTH WESTSHORE BOULEVARD
TAMPA, FLORIDA 33607-4135

DESIGNED CSC
DRAWN BBK
CHECKED BBK

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
4	8/8/96		RECORD DWG REVISIONS

SCALE
NOT TO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H3B
STANDBY POWER AND SLUDGE STORAGE FACILITIES

SLUDGE STORAGE FACILITY
ELECTRICAL
CONDUIT AND CABLE SCHEDULE

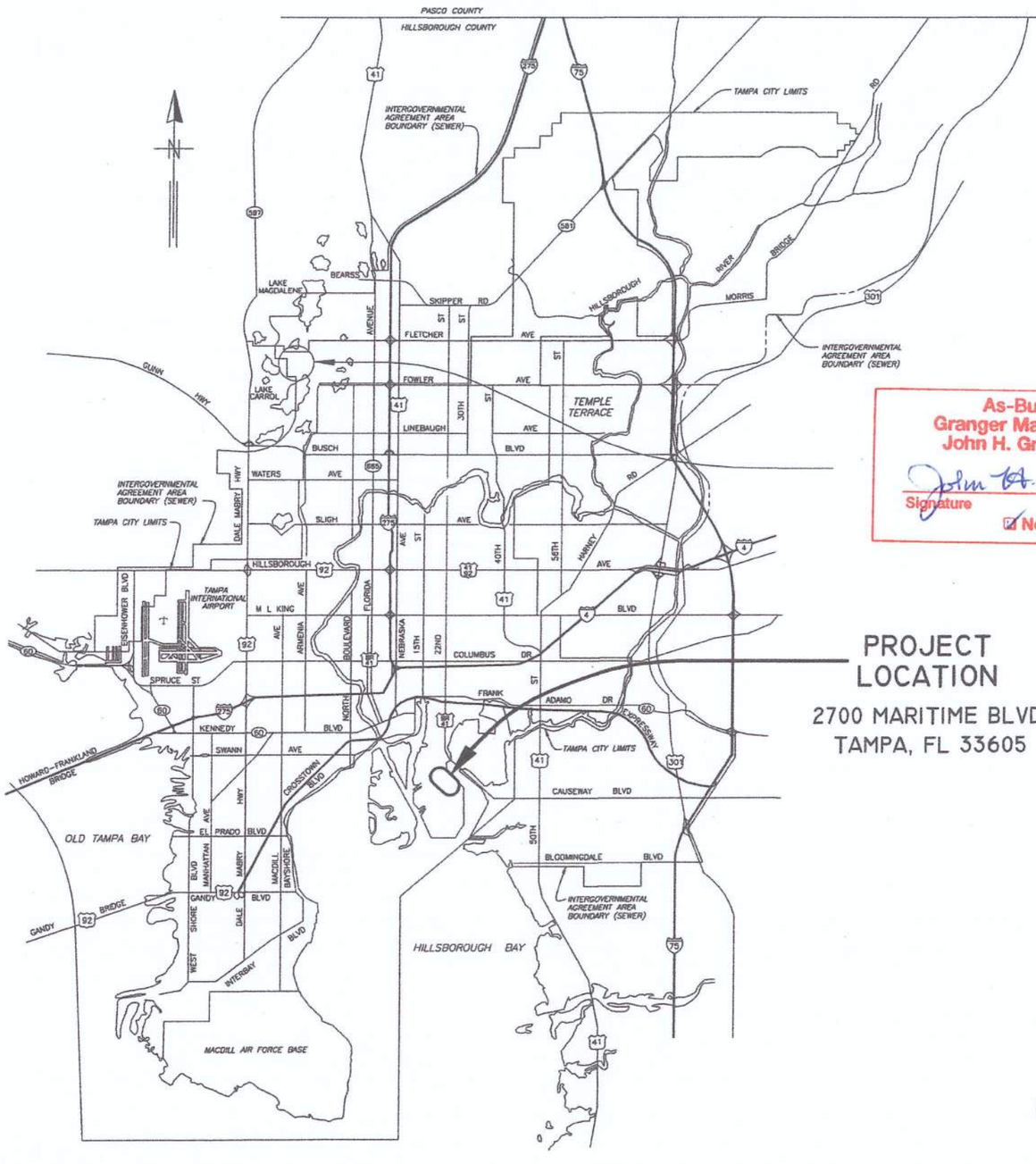
PROJ NO. 202G
DWG UE12
SHEET
DATE DECEMBER 1991 REV 4

5H3B_0UE-012

FILE: H3B-UE12 SCALE: 1:1 09/16, 1996 at 14:44 - *13_d4 (Hardware Lock)*

Sludge Control Bldg. Modification_Year 2016

LOCATION MAP



PROJECT LOCATION

2700 MARITIME BLVD.
TAMPA, FL 33605

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President

John H. Granger 9/2/2016
Signature Date

☑ No Changes

CITY of TAMPA

CITY OF TAMPA FLORIDA
MASCOTTE
ORGANIZED JULY 15 1887

WASTEWATER DEPARTMENT

PLANS FOR

HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

SLUDGE CONTROL BUILDING
CONTROL VALVES AND PIPING REPLACEMENT

CONTRACT NO. 14-C-00029

Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
PLANNING ENGINEERING PROGRAM MANAGEMENT
107 Hampton Road, Suite 190,
Clearwater, FL 33759
Tel 727-726-0005 Fax 727-726-0009
CA Lic. No: 9086

5/13/2014
PAUL WOOD, P.E. #74193
CIVIL WASTEWATER
LOCKWOOD ANDREWS & NEWNAM, INC.

5/13/2014
GASPAR D. GARCIA, P.E. #76573
ELECTRICAL AND CONTROLS
LOCKWOOD ANDREWS & NEWNAM, INC.

No.	DATE	REVISIONS
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1		

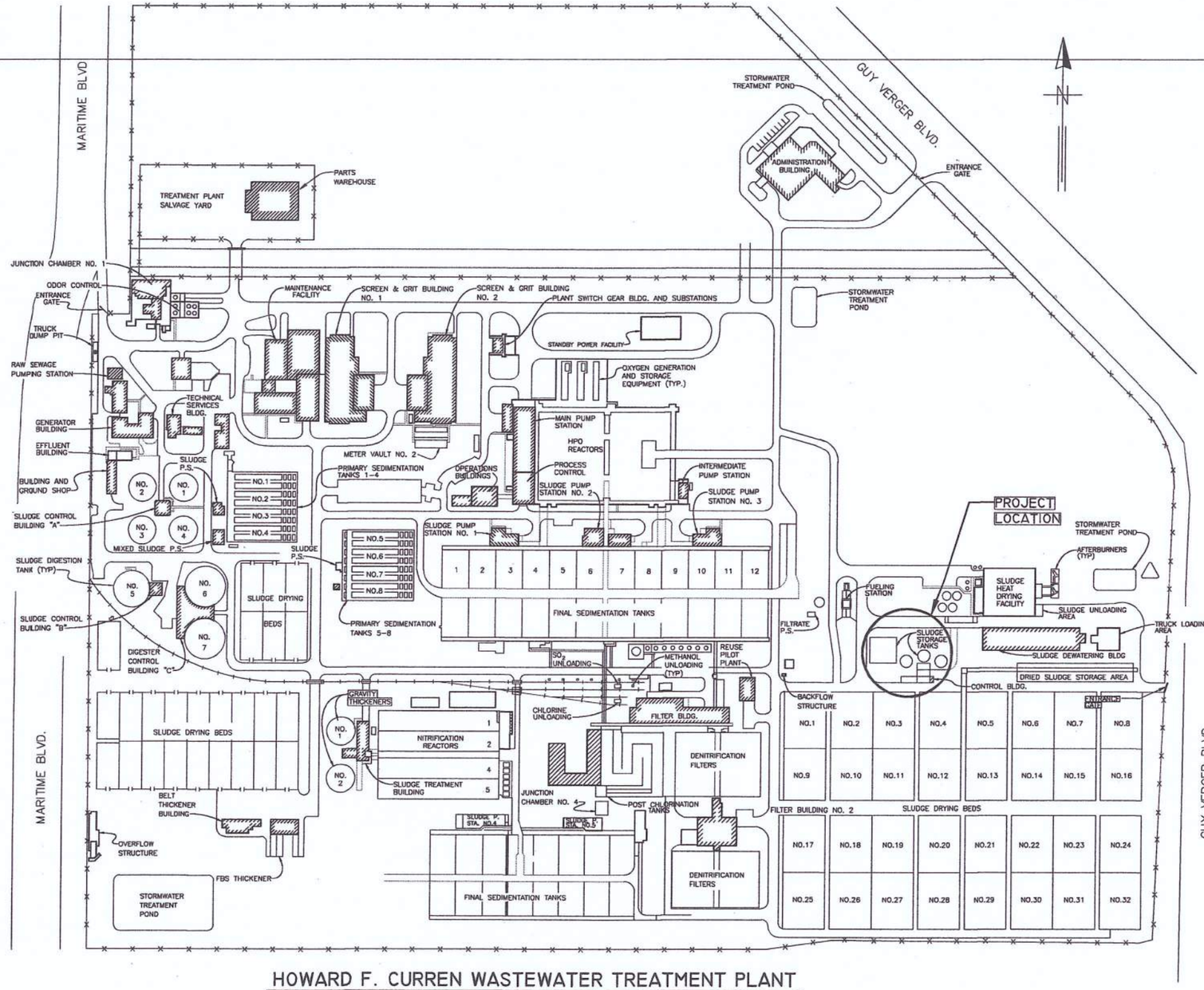
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CKD: PW
DATE: 5/13/14

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

COVER SHEET

W.O. 4506
SHEET 1

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HOWARD F. CURREN WASTEWATER TREATMENT PLANT

SITE PLAN / PROJECT MAP

NOT TO SCALE

INDEX

SH. No.	DESCRIPTION
1	COVER SHEET
2	PROJECT LOCATION AND INDEX
3	GENERAL NOTES
4	VALVE SCHEDULE
5	DEMOLITION PLAN VIEW SCHEMATIC
6	PROPOSED PLAN VIEW SCHEMATIC
7	PROPOSED SITE PLAN AT EL. 49'-0"
8	PROPOSED SITE PLAN AT EL. 21'-0"
9	PROPOSED SITE PLAN AT EL. 11'-8"
10	PROPOSED SITE PLAN AT EL. 10'-0"
11	PROPOSED SITE PLAN AT EL. 8'-5"
12	PROPOSED SITE PLAN AT EL. 0'-3"
13	PROPOSED SECTION VIEWS A-D
14	PROPOSED SECTION VIEWS E-I
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16	PROPOSED POLYMER TANK PIPING
17	ELECTRICAL GENERAL NOTES
18	ELECTRICAL DEMO PLAN AT EL. 0'-3"
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20	ELECTRICAL DEMO PLAN AT EL. 49'-0"
21	ELECTRICAL PROP PLAN AT EL. 0'-3"
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23	ELECTRICAL PROP PLAN AT EL. 49'-0"
24	ELECTRICAL PROP PLAN
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27	ELECTRICAL SCHEDULES
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As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☑ No Changes

PAUL WOOD LICENSE No 74193 STATE OF FLORIDA PROFESSIONAL ENGINEER
5/13/2014

Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
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CA Lic. No: 9086

No.	DATE	REVISIONS
3		
2		
1		

DES: PW
DRN: OL
CKD: PW
DATE: 5/13/14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
PROJECT LOCATION AND INDEX

W.O.
SHEET 2

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ABBREVIATIONS

A	AMMETER, AMPERE, AMBER
AF	AMPERE FRAME
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AS	AMMETER SWITCH, AMPERE SENSOR
ASU	AIR SUPPLY UNIT
AT	AMPERE TRIP
ATC	AUTOMATIC THROWOVER CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
BC	BARE COPPER
BRKR	BREAKER
BUP	BACK UP PANEL
C	CONDUIT, CONTACTOR
CB	CIRCUIT BREAKER
CC	CONTROL CABLE
CKT	CIRCUIT
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CRE	CORROSION-RESISTANT
CRS	COATED RIGID STEEL CONDUIT
CT	CURRENT TRANSFORMER
DC	DIRECT CURRENT
DIV	DIVISION
E	EMPTY
EHH	ELECTRIC HAND HOLD
ED	ELECTRIC OPERATOR
EQPT	EQUIPMENT
ESS	EMERGENCY SHUTDOWN SWITCH
ETM	ELAPSED TIME METER
EXST	EXISTING
FDR	FEEDER
F	FUSE
FLR	FLOOR
FLUOR	FLUORESCENT
FO	FIBER OPTIC
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
G	GREEN, GROUND
GALV	GALVANIZED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER SMA
GFI	GROUND FAULT INTERRUPTER-EQUIPMENT-30MA
GFR	GROUND FAULT RELAY
GND	GROUND
H	HIGH SPEED
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HPS	HIGH PRESSURE SODIUM
HS	HAND SWITCH
IC	INTERRUPTING CAPACITY
I & C	INSTRUMENTATION AND CONTROL
INCAND	INCANDESCENT
L	LIGHTING CONTACTOR, LOW SPEED
LOS	LOCKOUT STOP PUSH BUTTON
LR	LATCHING RELAY
LT FLEX	LIQUID TIGHT FLEX CONDUIT
LTS	LIGHTS
M	MAGNETIC CONTACTOR
MCC	MOTOR CONTROL CENTER
MH	MANHOLE, METAL HALIDE
MO	MOTOR OPERATOR
MS	MOTOR STARTER
MT	MOUNT
MTD	MOUNTED
N	NEUTRAL
NA	NON-AUTOMATIC
NC	NORMALLY CLOSED
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NP	NAMEPLATE
OC	ON CENTER
OL	OVERLOAD RELAY
PB	PULL BOX, PUSH BUTTON SWITCH
PC	PHOTOCELL
PH	PHASE
PMR	PHASE MONITOR RELAY
PNL	PANEL
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE CONDUIT
R	RED
RCPT	RECEPTACLE
REQD	REQUIRED
RM	REMOTE MULTIPLEXER
RS	RIGID STEEL CONDUIT
RT	REMOTE TELEMETRY
RVNR	REDUCED VOLTAGE NON-REVERSING
RVR	REDUCED VOLTAGE REVERSING
SA	SURGE ARRESTOR
SCCR	SHORT CIRCUIT CURRENT RATING
S/N	SOLID NEUTRAL
SPD	SPEED
SST	STAINLESS STEEL
SV	SOLENOID VALVE
SW	SWITCH
T	THERMOSTAT
TB	TERMINAL BOARD
TC	TIME CLOSE
TD	TEMPERATURE DETECTOR RELAY
TDR	TIME DELAY RELAY
TJB	TERMINAL JUNCTION BOX
T.O.	TIME OPEN
TS	AUTO TRANSFORMER, TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR
TST	TWISTED SHIELDED TRIAD
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED

GENERAL NOTES

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2. ALL CONDUCTORS SHALL BE STRANDED COPPER, #12 AWG MIN. WITH THWN INSULATION, UNLESS OTHERWISE NOTED.
3. ALL WIRING SHALL BE IDENTIFIED WITH NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
4. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
5. ALL ELECTRICAL WORK SHALL BE PREFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL APPLICABLE LOCAL ORDINANCES.
6. ALL THREADED CONNECTIONS SHALL BE COATED WITH COPPER SHIELD ANTI-SEIZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & B) OR EQUAL.
7. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'-0" INTERVALS.
8. ALL CIRCUITS SHALL HAVE A PROPERLY SIZED GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT WITH POWER CONDUCTORS.
9. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS, NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
10. NEATLY COIL ALL SPARE CONDUCTORS AND TAPE WITH VINYL ELECTRICAL TAPE (SCOTCH 33+).
11. PROVIDE A MINIMUM OF 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110 OF THE NEC.
12. ALL FASTENING HARDWARE (SCREW, BOLTS, NUTS, ETC.) SHALL BE 316-STAINLESS STEEL. FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.
13. EXPOSED CONDUITS SHALL BE NON-COATED RIGID ALUMINUM CONDUIT, UNLESS OTHERWISE NOTED (UON). INSTALL PVC COATED RIGID ALUMINUM CONDUIT IN THE WETWELL.
14. DIRECT BURIED AND CONCRETE ENCASED CONDUIT SHALL BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED, WITH A TRANSITION TO RIGID ALUMINUM IN THE VERTICAL RUN AT LEAST ONE FOOT PRIOR TO EMERGENCE. ALL ALUMINUM SURFACES IN CONTACT WITH SOIL, CONCRETE4, AND OTHER INCOMPATIBLE MATERIALS SHALL BE COATED WITH TWO COATS OF BITUMASTIC OR OTHER APPROVED INSULATING MATERIAL.
15. ABOVE GRADE INDOOR, AND NON-WASHDOWN AREAS, RIGID ALUMINUM CONDUIT CONNECTIONS TO CONTROL BOXES, ETC. SHALL BE MADE WITH ALUMINUM DOUBLE LOCKNUTS AND BUSHINGS. TURN DOWN ON THREADS TO SOLIDLY CONNECT RACEWAY TO BOX OR ENCLOSURE.
16. ALUMINUM WATERTIGHT HUBS (MYERS HUBS) SHALL BE USED FOR CONNECTIONS TO CONTROL BOXES, ETC. MOUNTED OUTDOORS, BELOW GRADE, OR IN WASHDOWN AREAS.
17. A 316-STAINLESS STEEL CHANNEL ERECTOR SYSTEM SHALL BE USED TO SUPPORT ALL CONDUITS, BOXES, ETC. USE 316-STAINLESS STEEL MOUNTING HARDWARE.
18. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND MAKE ADJUSTMENTS AS NECESSARY TO EXECUTE THE PROPOSED INSTALLATIONS.
19. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
20. PULL BOXES SHALL BE INSTALLED AS NECESSARY TO FACILITATE WIRE PULLS AND TO AVOID EXCESSIVE PULLING TENSION ON WIRING. IN NO CASE SHALL CONDUIT LENGTHS EXCEED 150' OR THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) WITHOUT A PULL BOX. PULL BOXES SHALL BE SIZED IN ACCORDANCE WITH ARTICLE 314 OF THE NEC.
21. VERIFY ALL EQUIPMENT SIZES AND RATING PRIOR TO CONNECTING.
22. ALL PANELS, DISCONNECTS, SWITCHES, AND EQUIPMENT COVER PLATES SHALL BE LABELED WITH NAMEPLATES. NAMEPLATES SHALL BE THREE-PLY PHENOLIC BLACK-WHITE-BLACK ENGRAVED THROUGH THE FIRST BLACK LAYER. LETTERING SHALL BE 0.5 CM (3/16") MINIMUM EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.

POWER PLAN SYMBOLS

- DUPLEX
- FLOOR MOUNTED
- QUAD
- SINGLE
- THREE PRONG
- SPLIT
- ISOLATED GROUND
- GFCI BREAKER
- GROUND FAULT
- HALF SWITCHED
- COMBO 15/20A
- PATIENT REF GROUND BUS
- SPECIAL
- CEILING MOUNTED
- WALL MOUNTED
- PULL BOX
- TV TELEVISION
- POWER
- COMMUNICATIONS
- EXISTING
- LOW VOLTAGE
- EXISTING LOW VOLTAGE
- LA-2 HOME RUN – DESTINATION SHOWN
- SINGLE PHASE
- THREE PHASE
- MANUAL
- MAGNETIC
- 30A/3P DISCONNECT UON
- 30A/3P FUSED DISC UON
- COMBO
- XFMR
- ATS
- VALVE ACTUATOR

LIGHTING PLAN SYMBOLS

- STRIP FLUORESCENT LIGHT FIXTURE 1x4, LETTER DENOTES TYPE
- STRIP FLUORESCENT LIGHT FIXTURE ON EMERGENCY 1x4 LETTER DENOTES TYPE
- FLUORESCENT LIGHT FIXTURE 2x4, LETTER DENOTES TYPE
- FLUORESCENT LIGHT ON EMERGENCY 2x4 LETTER DENOTES TYPE
- FLUORESCENT LIGHT FIXTURE 2x2, LETTER DENOTES TYPE
- FLUORESCENT LIGHT ON EMERGENCY 2x2 LETTER DENOTES TYPE
- STRIP FLUORESCENT LIGHT FIXTURE, LETTER DENOTES TYPE
- EXTERIOR POLE MOUNTED FIXTURE, LETTER DENOTES TYPE
- SURFACE OR RECESSED LIGHTING FIXTURE, LETTER DENOTES TYPE
- WALL MOUNT EXIT LIGHT
- CEILING MOUNT EXIT LIGHT, ARROW DENOTES DIRECTION
- SELF CONTAINED
- WALL-PACK FIXTURE
- EMERGENCY WALL-PACK FIXTURE

LTG-SWITCH

- $ SWITCH:
  - WALL SWITCH
    - 2- DOUBLE POLE
    - 3- THREE WAY
    - 4- FOUR WAY
    - CRE- CORROSION RESISTANT
    - D- DIMMER
    - K- KEY OPERATED
    - P- PILOT LIGHT
    - WP- WEATHERPROOF
    - OS- OCCUPANCY SENSOR
  - MOTOR SWITCH
    - M- MOTOR RATED TOGGLE SWITCH WITHOUT OVERLOADS
    - MS- MANUAL MOTOR STARTER WITH OVERLOADS
- OS CEILING MOUNTED OCCUPANCY SENSOR
- PE PHOTOELECTRIC SWITCH

SINGLE LINE DIAGRAM SYMBOLS

- POT HEAD
- POT HEAD
- UTILITY CONNECTION
- BREAKER
- DRAW OUT TYPE
- FUSE
- ATS
- MTS
- FORMC
- FUSED SWITCH
- METER REVENUE
- MOTOR
- DC MOTOR
- GENERATOR
- PANEL
- VALVE ACTUATOR
- T-03 5kVA 600-120/208V Z=0.8% TRANSFORMER
- AUTO TRANSFORMER
- GROUND
- GROUND/RESISTOR
- GROUND/LARR
- AS AMMETER SWITCH
- VS VOLTMETER SWITCH
- X METER INDICATING
- X METER RECORDING
- K KEY INTERLOCK
- XXXX METEROP
- XXX CONDUIT TAG

DRAWING SYMBOLS

- POINT OF CONNECTION
- KEYED NOTES
- A/X SECTION NO./SHEET NO.

NOTES:

1. THIS IS A STANDARD LEGEND. SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS DRAWING AND NOT ON PLANS.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☑ No Changes

GASPARD D. GARCIA
LICENSE
No 76573
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-13-2014
ELECTRICAL ENGINEER

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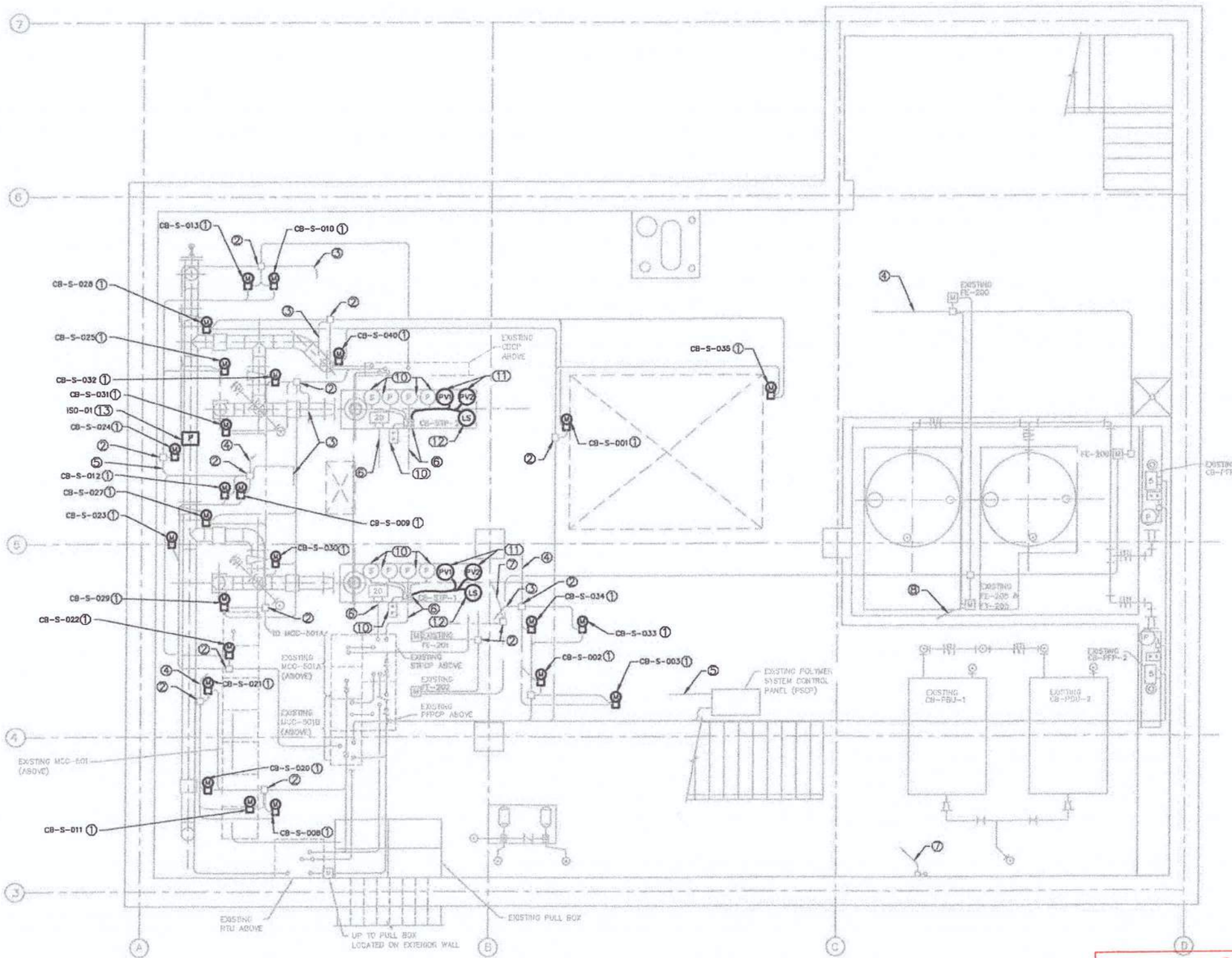
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CKD: DH
DATE: 5/13/14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
ELECTRICAL GENERAL NOTES

W.O.
SHEET 17

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EXISTING PLAN AT EL 0'-3"

NTS

NTS

GENERAL NOTES:

1. EXISTING EQUIPMENT TO REMAIN (SHOWN AS LIGHT SHADED LINES). DEMOLITION WORK IS SHOWN IN BOLD LINES.
2. REFER TO SHEET 17 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.
3. EXISTING POWER AND CONTROL CONDUIT HOMERUNS AND EXISTING PULL BOXES AS SHOWN ARE DERIVED FROM RECORD DRAWINGS. VERIFY EXISTING CONDUIT ROUTING AND PULL BOX LOCATIONS PRIOR TO DEMOLITION. TAG AND TRACE ALL EXISTING VALVE ACTUATOR POWER AND CONTROL CONDUCTORS PRIOR TO REMOVAL. CREATE A POINT-TO-POINT WIRING LIST AND MARK CONDUCTORS TO FACILITATE RECONNECTION.
4. EXISTING VALVE ACTUATORS AS SHOWN ARE DERIVED FROM RECORD DRAWINGS. FIELD VERIFY EXISTING LOCATIONS PRIOR TO REMOVAL.

KEYED NOTES:

1. COORDINATE REMOVAL OF VALVE ACTUATOR WITH MECHANICAL CONTRACTOR. DISCONNECT AND SALVAGE EXISTING VALVE ACTUATOR POWER/INSTRUMENTATION/CONTROL CONDUIT(S) AND CONDUCTORS TO THE NEAREST PULL BOX AS SHOWN. PROTECT AND NEATLY COIL CONDUCTORS FOR CONNECTION TO PROPOSED VALVE ACTUATOR AS SHOWN ON SHEET 21. COORDINATE DISCONNECTION WITH THE CITY.
2. EXISTING PULL BOX TO REMAIN.
3. EXISTING CONDUIT TO EXISTING RTU CABINET TO REMAIN.
4. EXISTING CONDUIT TO "CBCP" TO REMAIN.
5. EXISTING CONDUIT TO "MCC-501A" TO REMAIN.
6. EXISTING JUNCTION BOX AND CONTROL CONDUITS BACK TO "STPCP" TO REMAIN.
7. EXISTING CONDUIT TO "LP-502" TO REMAIN.
8. EXISTING CONDUIT TO "PSCP" TO REMAIN.
9. RESERVED.
10. EXISTING PRESSURE SWITCHES, PUSH BUTTON CONTROL, CONTROL WIRING, AND CONTROL CONDUITS TO "STPCP" TO REMAIN.
11. REMOVE EXISTING PNEUMATIC SOLENOID PILOT VALVES "PV1" AND "PV2". REMOVE EXISTING CONTROL CONDUIT(S) BACK TO JUNCTION BOX. REMOVE EXISTING CONTROL CONDUCTORS BACK TO "STPCP".
12. REMOVE EXISTING PNEUMATIC VALVE LIMIT SWITCH. REMOVE EXISTING CONTROL CONDUIT(S) BACK TO JUNCTION BOX. REMOVE EXISTING CONTROL CONDUCTORS BACK TO "STPCP".
13. COORDINATE REMOVAL OF PNEUMATIC ACTUATOR AND PNEUMATIC CONTROLS WITH MECHANICAL CONTRACTOR. REMOVE CONTROL CONDUCTORS BACK TO PANELS "RTU" AND "CBCP". FIELD VERIFY EXISTING CONTROL CONDUIT SIZE IS ADEQUATE FOR PROPOSED CONTROL CONDUCTORS AS SHOWN ON SHEET 21. IF CONDUIT SIZE NOT LARGE ENOUGH PROVIDE CONDUIT AS SHOWN ON SHEET 27. FIELD VERIFY EXISTING VALVE CONTROL IN "CBCP" AND "RTU" AND MODIFY AS NECESSARY TO ENSURE OPERATION OF PROPOSED VALVE AS SHOWN ON SHEET 21.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☑ No Changes

GASPARD D. GARCIA
LICENSE
No 76573
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-13-2014

ELECTRICAL ENGINEER

Lockwood, Andrews & Newnam, Inc.
A LBG A DALY COMPANY
PLANNING ENGINEERING PROGRAM MANAGEMENT
107 Hampton Road, Suite 190, Clearwater, FL 33759
Tel 727-726-0005 Fax 727-726-0009
CA Lic. No: 9086

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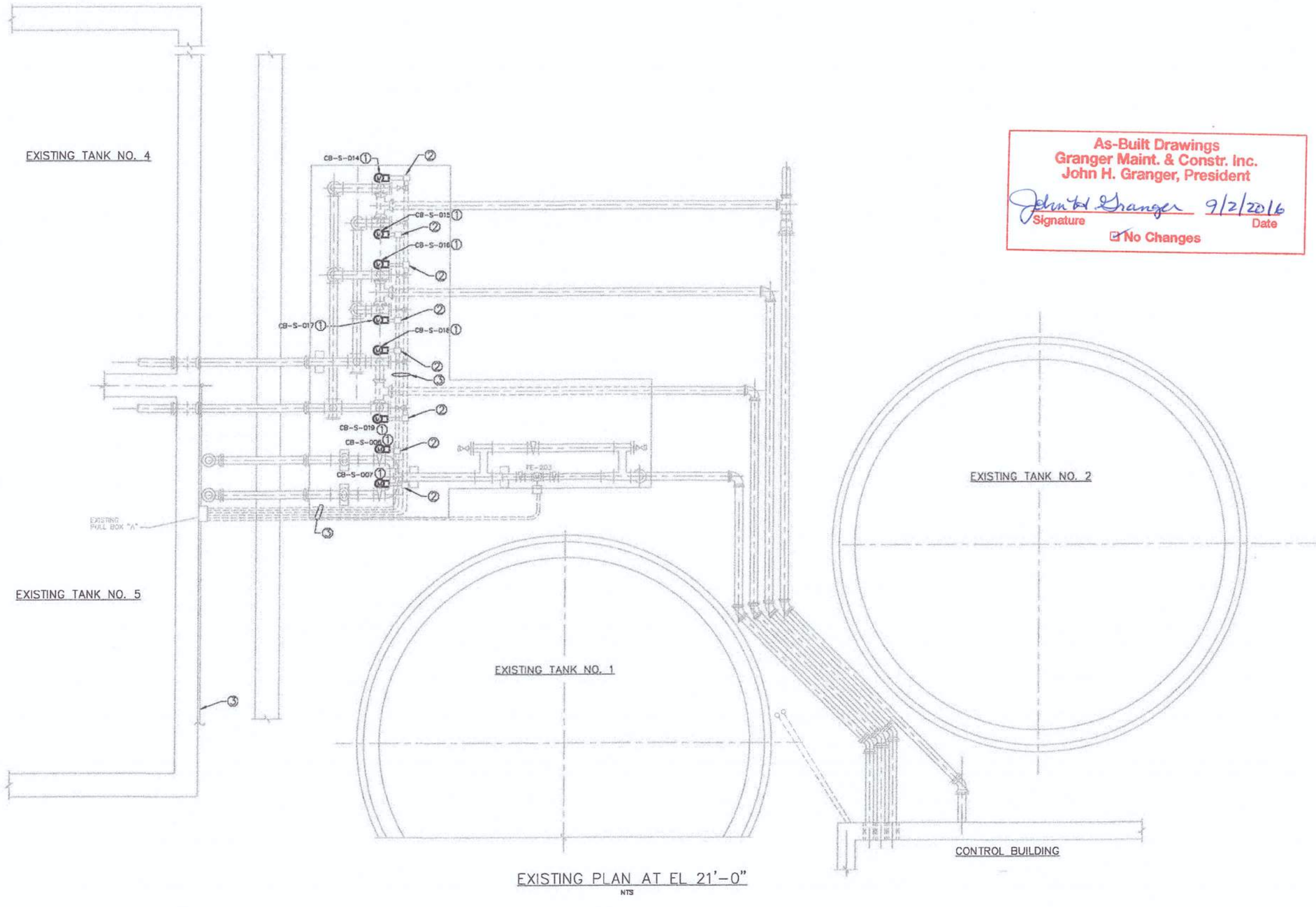
DES: GG
DRN: OL
CKD: DH
DATE: 5/13/14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
ELECTRICAL DEMOLITION PLAN AT EL. 0'-3"

W.O.
SHEET 18

ProjectWise: pw:\\lodge.lodos.int:projectwise\Documents\Projects\130-10429-0031\4-0-Production\4-01-Drawings\
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EXISTING PLAN AT EL 21'-0"
NTS

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☑ No Changes

N
NTS

GENERAL NOTES:

1. EXISTING EQUIPMENT TO REMAIN (SHOWN AS LIGHT SHADED LINES). DEMOLITION WORK IS SHOWN IN BOLD LINES.
2. REFER TO SHEET 17 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.
3. EXISTING POWER AND CONTROL CONDUIT HOMERUNS AND EXISTING PULL BOXES AS SHOWN ARE DERIVED FROM RECORD DRAWINGS. VERIFY EXISTING CONDUIT ROUTING AND PULL BOX LOCATIONS PRIOR TO CONSTRUCTION. TAG AND TRACE ALL EXISTING VALVE ACTUATOR POWER AND CONTROL CONDUCTORS PRIOR TO REMOVAL.
4. EXISTING VALVE ACTUATORS AS SHOWN ARE DERIVED FROM RECORD DRAWINGS. FIELD VERIFY EXISTING LOCATIONS PRIOR TO REMOVAL.

KEYED NOTES:

1. COORDINATE REMOVAL OF VALVE ACTUATOR WITH MECHANICAL CONTRACTOR. DISCONNECT AND SALVAGE EXISTING VALVE ACTUATOR POWER/INSTRUMENTATION/CONTROL CONDUIT(S) AND CONDUCTORS TO THE NEAREST PULL BOX AS SHOWN. PROTECT AND NEATLY COIL CONDUCTORS FOR CONNECTION TO PROPOSED VALVE ACTUATOR AS SHOWN ON SHEET 22. COORDINATE DISCONNECTION WITH CITY.
2. EXISTING PULL BOX TO REMAIN.
3. EXISTING CONDUITS TO "MCC-501A", "MCC-501B", AND "CBCP" TO REMAIN.

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107 Hampton Road, Suite 190, Clearwater, Fl. 33759
Tel 727-726-0005 Fax 727-726-0009
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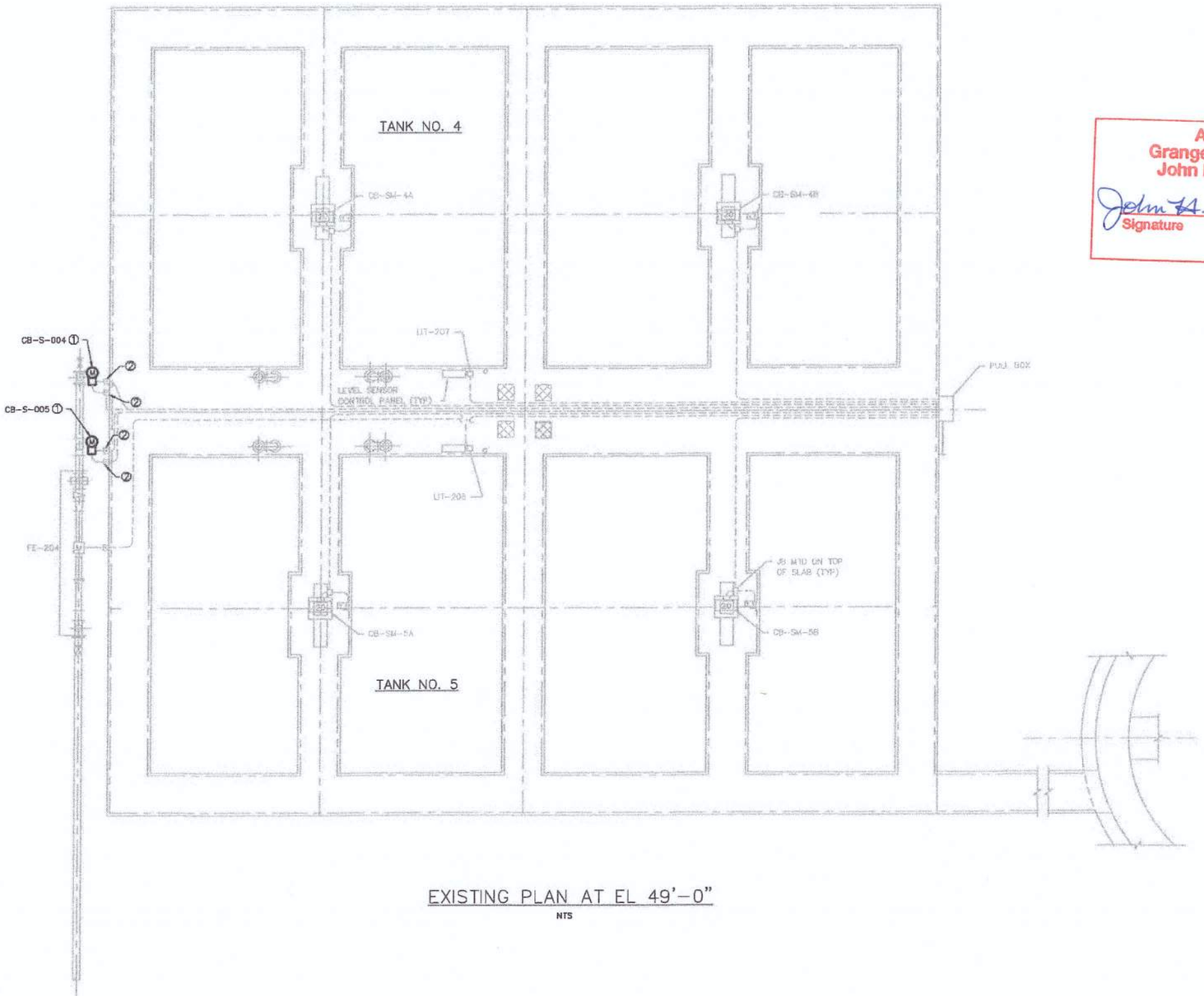
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DRN: OL
CKD: DH
DATE: 5/13/14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
ELECTRICAL DEMOLITION PLAN AT EL. 21'-0"

W.O.
SHEET 19

Project Files: pw:\\Vadpw.lacon.int:projectwise\Documents\Projects\130-10429-003\4-0-Production\4-01-Drawings\
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EXISTING PLAN AT EL 49'-0"
NTS

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☑ No Changes

N
NTS

GENERAL NOTES:

1. EXISTING EQUIPMENT TO REMAIN (SHOWN AS LIGHT SHADED LINES). DEMOLITION WORK IS SHOWN IN BOLD LINES.
2. REFER TO SHEET 17 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.
3. EXISTING POWER AND CONTROL CONDUIT HOMERUNS AND EXISTING PULL BOXES AS SHOWN ARE DERIVED FROM RECORD DRAWINGS. VERIFY EXISTING CONDUIT ROUTING AND PULL BOX LOCATIONS PRIOR TO CONSTRUCTION. TAG AND TRACE ALL EXISTING VALVE ACTUATORS POWER AND CONTROL CONDUCTORS PRIOR TO REMOVAL.
4. EXISTING VALVE ACTUATORS AS SHOWN ARE DERIVED FROM RECORD DRAWINGS. FIELD VERIFY EXISTING LOCATIONS PRIOR TO REMOVAL.

⬡ KEYED NOTES:

1. COORDINATE REMOVAL OF VALVE ACTUATOR WITH MECHANICAL CONTRACTOR. DISCONNECT AND SALVAGE EXISTING VALVE ACTUATOR POWER/INSTRUMENTATION/CONTROL CONDUIT(S) AND CONDUCTORS TO THE NEAREST PULL BOX AS SHOWN. PROTECT AND NEATLY COIL CONDUCTORS FOR CONNECTION TO PROPOSED VALVE ACTUATOR AS SHOWN ON SHEET 23. COORDINATE DISCONNECTION WITH THE CITY.
2. EXISTING PULL BOX TO REMAIN.

GASPARD D. GARCIA
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107 Hampton Road, Suite 190, Clearwater, FL 33759
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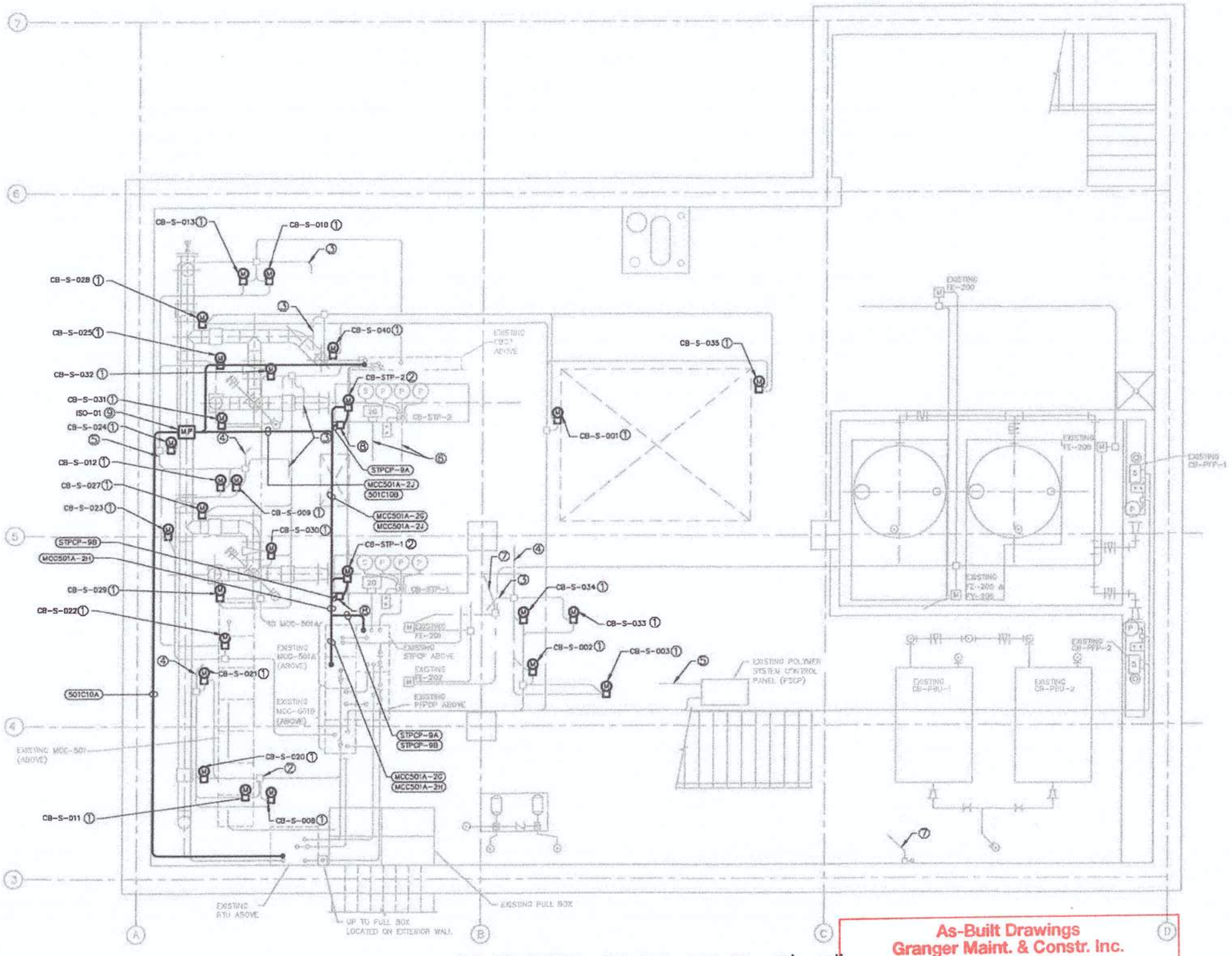
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DRN: OL
CKD: DH
DATE: 5/13/14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
ELECTRICAL DEMOLITION PLAN AT EL. 49'-0"

W.O.
SHEET 20

ProjectWise: prc:\\lodpw.lodocs.int:projectwise\Documents\Projects\130-10429-003\4-0-Production\4-01-Drawings\
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PROPOSED PLAN AT EL 0'-3"

NTS

NTS

GENERAL NOTES:

1. EXISTING EQUIPMENT TO REMAIN (SHOWN AS LIGHT SHADED LINES). PROPOSED WORK IS SHOWN IN BOLD LINES.
2. REFER TO SHEET 17 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.
3. REFER TO SHEET 24 FOR "MCC-501A", "STPCP", "RTU" AND "CBCP" LOCATIONS.
4. REFER TO SHEET 25 FOR ONE-LINE DIAGRAM.
5. REFER TO SHEET 27 FOR ELECTRICAL CONDUIT SCHEDULE.
6. PROPOSED VALVE ACTUATORS AS SHOWN ARE DERIVED FROM RECORD DRAWINGS. REFER TO PLANS AND SECTIONS SHEETS 9 THROUGH 16 FOR LOCATIONS.
7. REFER TO SHEET 28 FOR PROPOSED VALVE ACTUATOR SCHEMATICS.

⬡ KEYED NOTES:

1. COORDINATE INSTALLATION OF PROPOSED VALVE ACTUATOR WITH MECHANICAL CONTRACTOR. EXTEND EXISTING POWER AND CONTROL CONDUCTORS AND CONDUIT TO PROPOSED VALVE ACTUATOR FROM NEAREST PULL BOX. IF EXISTING CONDUCTORS ARE FOUND TO BE DETERIORATED PROVIDE NEW CONDUCTORS. WHERE EXISTING CONDUCTORS ARE NOT LONG ENOUGH FIELD VERIFY TO MATCH EXISTING, SPLICE FROM NEAREST PULL BOX AND EXTEND TO PROPOSED VALVE ACTUATOR.
2. COORDINATE INSTALLATION OF PROPOSED VALVE ACTUATOR WITH MECHANICAL CONTRACTOR. PROVIDE POWER AND CONTROL CONDUIT/CONDUCTORS AS INDICATED BY CONDUIT TAG. CONDUIT ROUTING SHOWN IS DIAGRAMMATIC. FIELD VERIFY ROUTING WITH EXISTING CONDUITS AND PIPING.
3. EXISTING CONDUIT TO EXISTING RTU CABINET TO REMAIN.
4. EXISTING CONDUIT TO "CBCP" TO REMAIN.
5. EXISTING CONDUIT TO "MCC-501A" TO REMAIN.
6. EXISTING CONDUIT TO "STPCP" TO REMAIN.
7. EXISTING CONDUIT TO "LP-502" TO REMAIN.
8. REFER TO GENERAL NOTE 20 ON SHEET 17.
9. COORDINATE INSTALLATION OF PROPOSED VALVE ACTUATOR WITH MECHANICAL CONTRACTOR. PROVIDE POWER CONDUIT/CONDUTORS AS INDICATED BY CONDUIT TAG. PROVIDE CONTROL CONDUCTORS IN EXISTING CONTROL CONDUITS AS INDICATED BY CONDUIT TAG. CONDUIT ROUTING SHOWN IS DIAGRAMMATIC. FIELD VERIFY ROUTING WITH EXISTING CONDUITS AND PIPING.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☑ No Changes

GASPARD D. GARCIA
LICENSE
No 76573
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-13-2014
ELECTRICAL ENGINEER

Lockwood, Andrews & Newnam, Inc.
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107 Hampton Road, Suite 190, Clearwater, FL 33759
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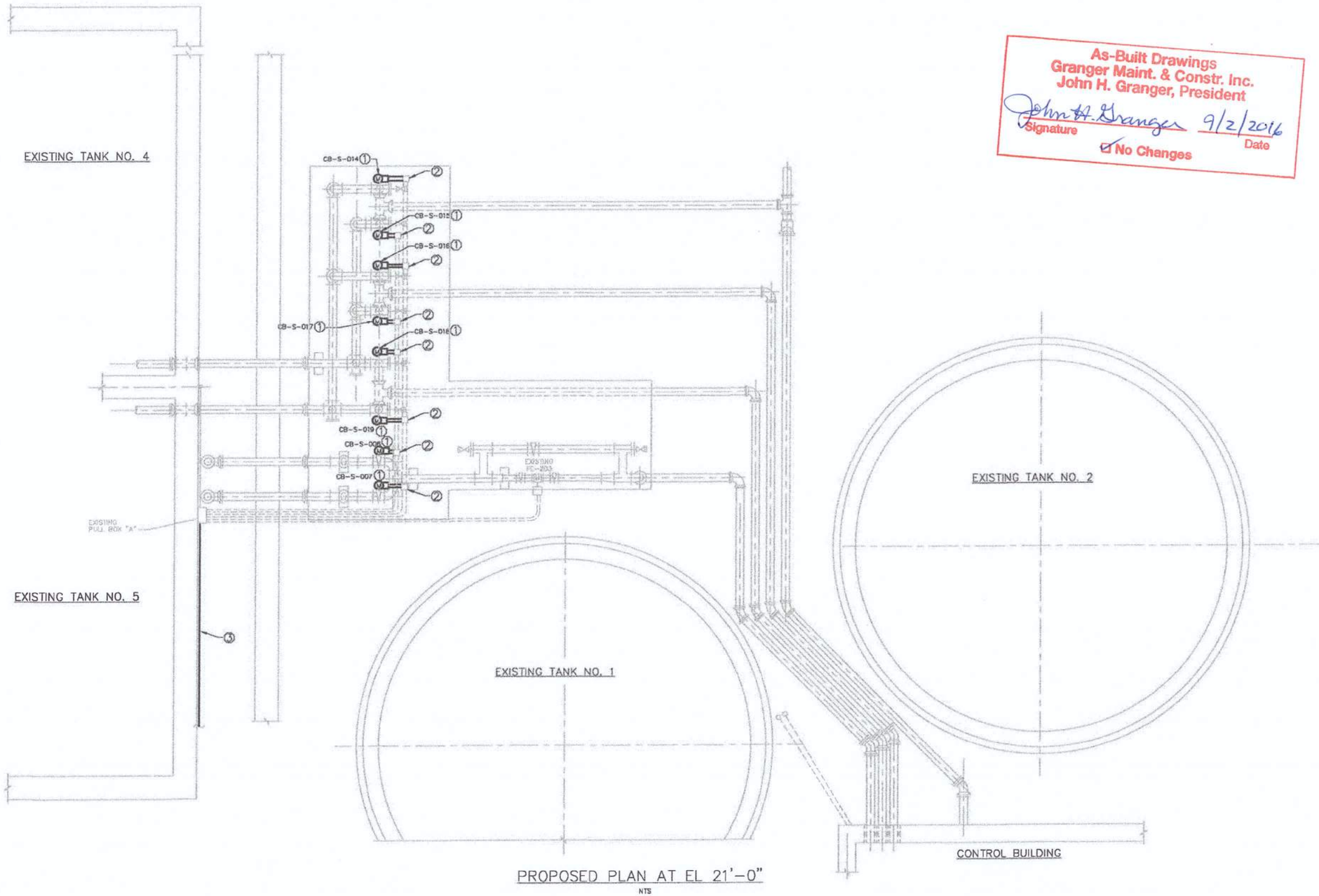
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CKD: DH
DATE: 5/13/14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
ELECTRICAL PROPOSED PLAN AT EL. 0'-3"

W.O.
SHEET 21

ProjectWise: pw:\\Workdocs.lnl.projectwise\Documents\Projects\130-10429-003\4-0-Production\4-01-Drawings\
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PROPOSED PLAN AT EL 21'-0"
NTS

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☑ No Changes

N
NTS

GENERAL NOTES:

1. EXISTING EQUIPMENT TO REMAIN (SHOWN AS LIGHT SHADED LINES). PROPOSED WORK IS SHOWN IN BOLD LINES.
2. REFER TO SHEET 17 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.
3. REFER TO SHEET 27 FOR ELECTRICAL CONDUIT SCHEDULE AND FOR PANEL "LP" SCHEDULE.
4. REFER TO SHEET 24 FOR "MCC-501A", "STPCP", "RTU" AND "CBCP" LOCATIONS.
5. PROPOSED VALVE ACTUATORS AS SHOWN ARE DERIVED FROM RECORD DRAWINGS. REFER TO PLANS AND SECTIONS SHEETS 9 THROUGH 16 FOR LOCATIONS.
6. REFER TO SHEET 28 FOR PROPOSED VALVE ACTUATOR SCHEMATICS.

⬡ KEYED NOTES:

1. COORDINATE INSTALLATION OF PROPOSED VALVE ACTUATOR WITH MECHANICAL CONTRACTOR. EXTEND EXISTING POWER AND CONTROL CONDUCTORS AND CONDUIT TO PROPOSED VALVE ACTUATOR FROM NEAREST PULL BOX. IF EXISTING CONDUCTORS ARE FOUND TO BE DETERIORATED PROVIDE NEW CONDUCTORS. WHERE EXISTING CONDUCTORS ARE NOT LONG ENOUGH FIELD VERIFY TO MATCH EXISTING, SPLICE FROM NEAREST PULL BOX AND EXTEND TO PROPOSED VALVE ACTUATOR.
2. EXISTING PULLBOX.
3. EXISTING CONDUITS TO MCC-501A, MCC-501B, CBCP, AND RTU TO REMAIN.

GASPARD D. GARCIA
LICENSE
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5-13-2014
ELECTRICAL ENGINEER

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107 Hampton Road, Suite 190, Clearwater, FL 33759
Tel 727-726-0005 Fax 727-726-0009
CA Lic. No: 9086

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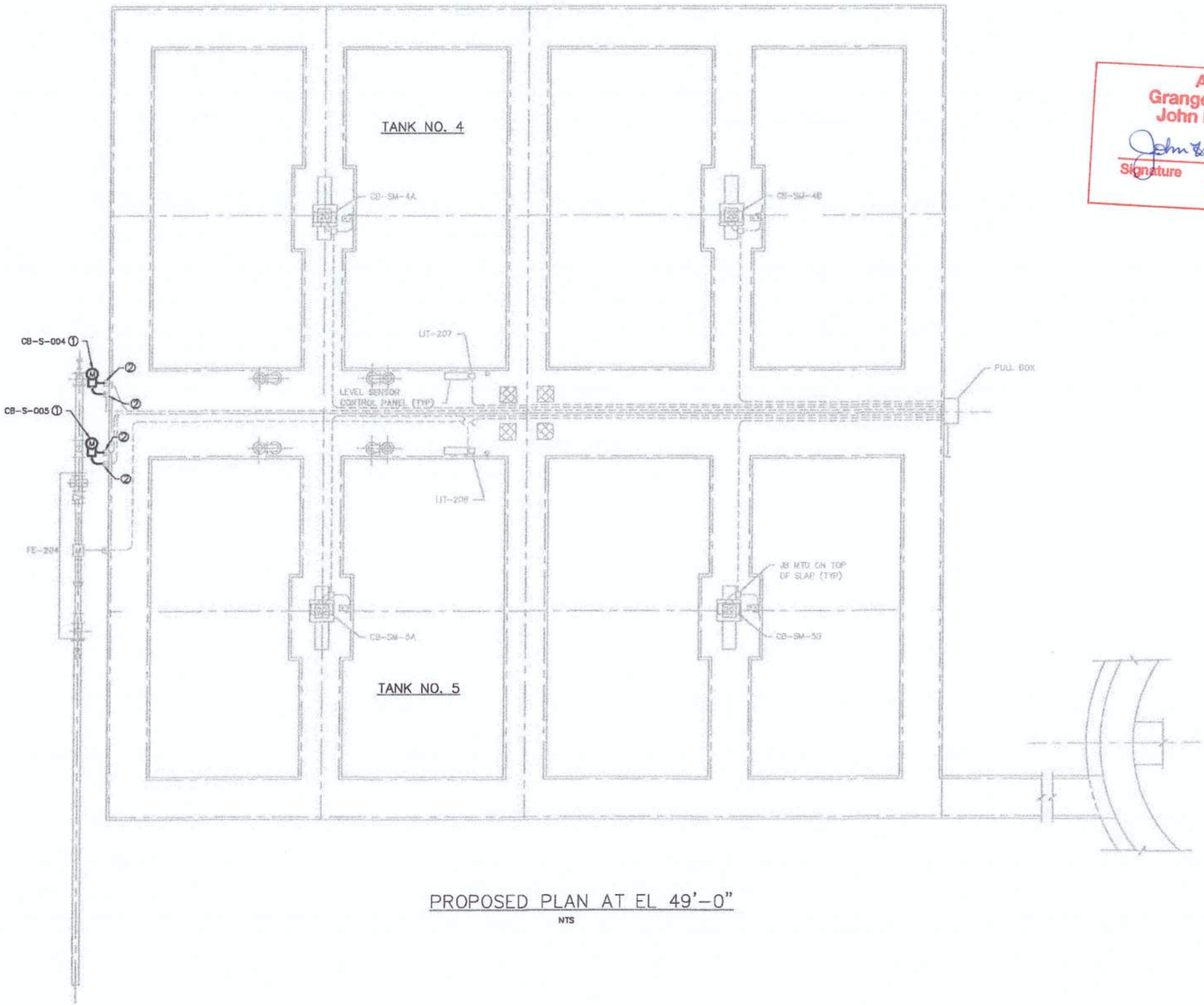
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CKD: DH
DATE: 5/13/14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
ELECTRICAL PROPOSED PLAN AT EL. 21'-0"

W.O.
SHEET 22

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PROPOSED PLAN AT EL 49'-0"
NTS

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☑ No Changes

N
NTS

GENERAL NOTES:

1. EXISTING EQUIPMENT TO REMAIN (SHOWN AS LIGHT SHADED LINES). PROPOSED WORK IS SHOWN IN BOLD LINES.
2. REFER TO SHEET 17 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.
3. REFER TO SHEET 27 FOR ELECTRICAL CONDUIT SCHEDULE AND FOR PANEL "LP" SCHEDULE.
4. REFER TO SHEET 24 FOR "MCC-501A", "STPCP", "RTU" AND "CBCP" LOCATIONS.
5. PROPOSED VALVE ACTUATORS AS SHOWN ARE DERIVED FROM RECORD DRAWINGS. REFER TO PLANS AND SECTIONS SHEETS 9 THROUGH 16 FOR LOCATIONS.
6. REFER TO SHEET 28 FOR PROPOSED VALVE ACTUATOR SCHEMATICS.

○ KEYED NOTES:

1. COORDINATE INSTALLATION OF PROPOSED VALVE ACTUATOR WITH MECHANICAL CONTRACTOR. EXTEND EXISTING POWER AND CONTROL CONDUCTORS AND CONDUIT TO PROPOSED VALVE ACTUATOR FROM NEAREST PULL BOX. IF EXISTING CONDUCTORS ARE FOUND TO BE DETERIORATED PROVIDE NEW CONDUCTORS. WHERE EXISTING CONDUCTORS ARE NOT LONG ENOUGH FIELD VERIFY TO MATCH EXISTING, SPLICE FROM NEAREST PULL BOX AND EXTEND TO PROPOSED VALVE ACTUATOR.
2. EXISTING PULLBOX.

GASPARD D. GARCIA
LICENSE
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5-13-2014
ELECTRICAL ENGINEER

Lockwood, Andrews & Newnam, Inc.
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PLANNING ENGINEERING PROGRAM MANAGEMENT
107 Hampton Road, Suite 190, Clearwater, FL 33759
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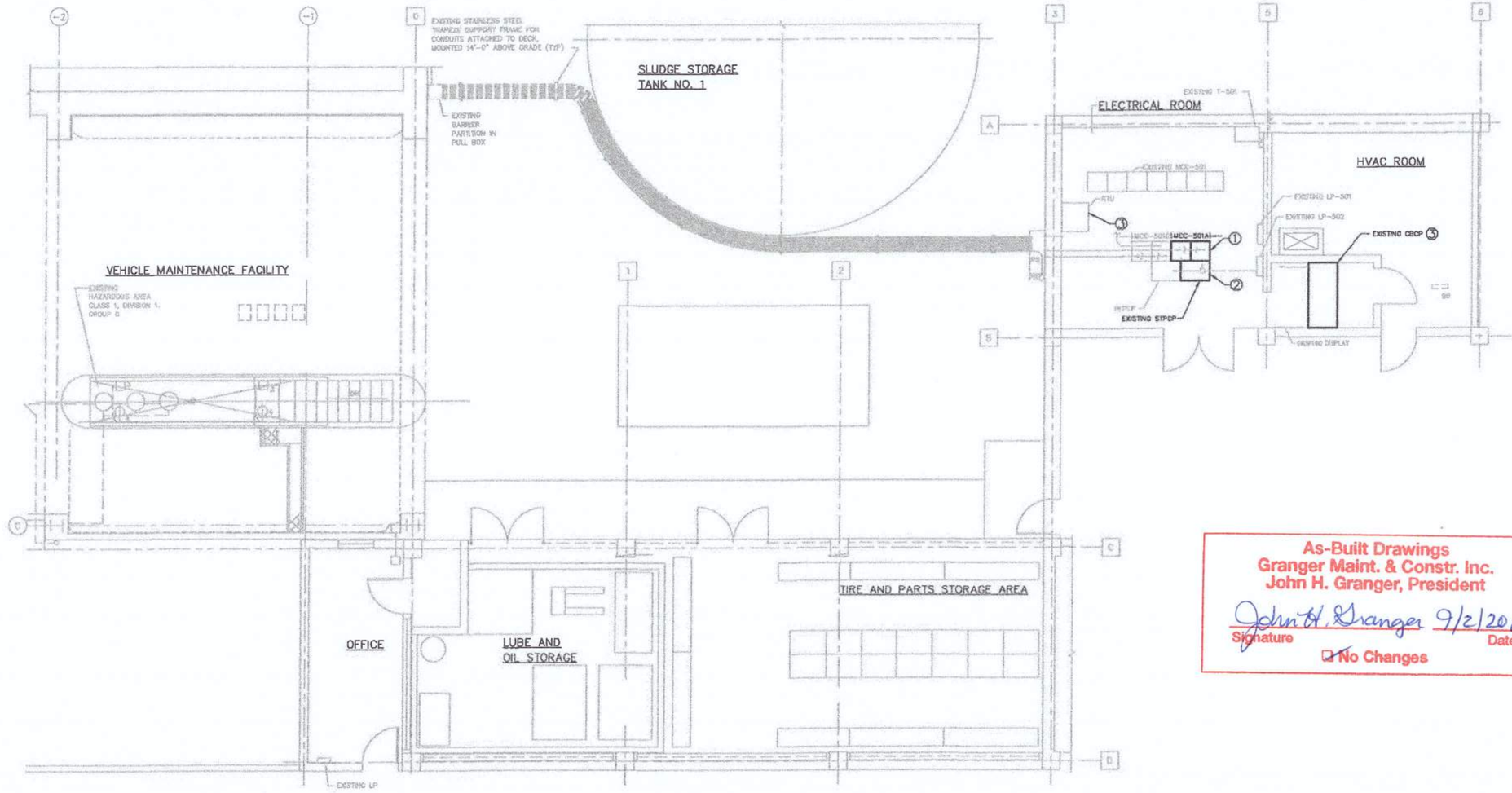
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CKD: DH
DATE: 5/13/14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
ELECTRICAL PROPOSED PLAN AT EL. 49'-0"

W.O.
SHEET 23

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ELECTRICAL FLOOR PLAN
NTS

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NTS

GENERAL NOTES:

1. PROPOSED VALVE ACTUATORS AS SHOWN ARE DERIVED FROM RECORD DRAWINGS. REFER TO PLANS AND SECTIONS SHEETS 9 THROUGH 16 FOR LOCATIONS.
2. EXISTING EQUIPMENT TO REMAIN (SHOWN AS LIGHT SHADED LINES) PROPOSED WORK IS SHOWN IN BOLD LINES.
3. REFER TO SHEET 17 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.

KEYED NOTES:

1. PROVIDE CONDUIT AND CONDUCTORS FROM EXISTING MCC-501A TO PROPOSED VALVE ACTUATORS. REFER TO SHEET 25 FOR PROPOSED ONE-LINE DIAGRAM. REFER TO SHEET 21 FOR PROPOSED VALVE ACTUATOR LOCATIONS AND CONDUIT ROUTING.
2. PROVIDE CONDUIT AND CONDUCTORS FROM EXISTING "STPCP" TO PROPOSED VALVE ACTUATOR. REFER TO SHEET 21 FOR PROPOSED VALVE ACTUATOR LOCATIONS AND CONDUIT ROUTING. REFER TO SHEET 28 EXISTING "STPCP" SLUDGE TRANSFER PUMP CONTROL SCHEMATIC FOR PROPOSED WORK.
3. PROVIDE CONTROL CONDUCTORS IN EXISTING CONDUIT FROM EXISTING "RTU" AND "CBCP" TO PROPOSED VALVE ACTUATOR. REFER TO SHEET 21 FOR PROPOSED VALVE ACTUATOR LOCATIONS.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☐ No Changes

GASPARD D. GARCIA
LICENSE
No 76573
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-13-2014
ELECTRICAL ENGINEER

Lockwood, Andrews & Newnam, Inc.
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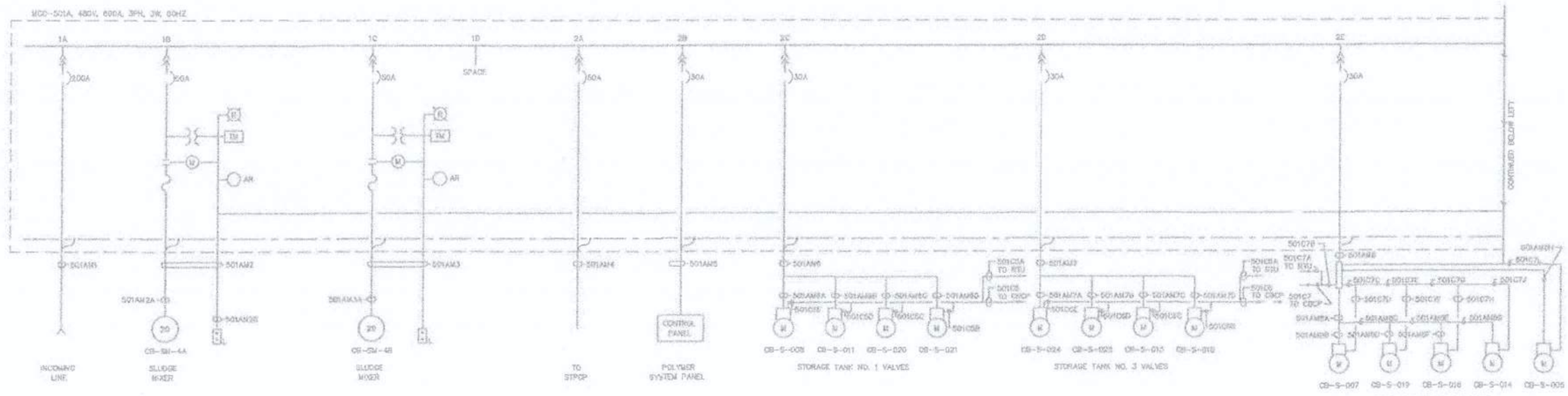
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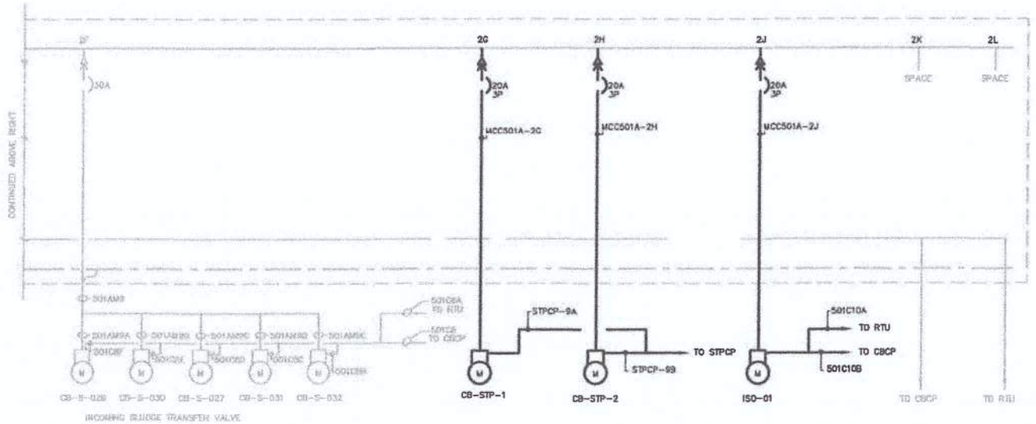
CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

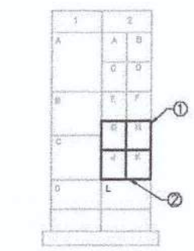
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
ELECTRICAL PROPOSED PLAN

W.O.
SHEET 24

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MCC-501A
FRONT ELEVATION

GENERAL NOTES:

1. EXISTING EQUIPMENT TO REMAIN (SHOWN AS LIGHT SHADED LINES). PROPOSED WORK IS SHOWN IN BOLD LINES.
2. REFER TO SHEET 17 FOR ELECTRICAL LEGEND AND ABBREVIATIONS.
3. THE EXISTING MCC ONE-LINE DIAGRAM AND MCC ELEVATION ARE DERIVED FROM RECORD DRAWINGS AND FROM VISUAL OBSERVATION. VERIFY THE EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER AND OWNER OF ANY DISCREPANCIES FOUND.
4. EXISTING CONDUIT TAGS DERIVED FROM RECORD DRAWINGS SHOWN FOR INFORMATION PURPOSES ONLY
5. REFER TO SHEET 27 FOR ELECTRICAL CONDUIT SCHEDULE.
6. REFER TO SHEET 24 FOR "MCC-501A", "STPCP", "RTU", AND "CBCP" LOCATIONS.

○ KEYED NOTES:

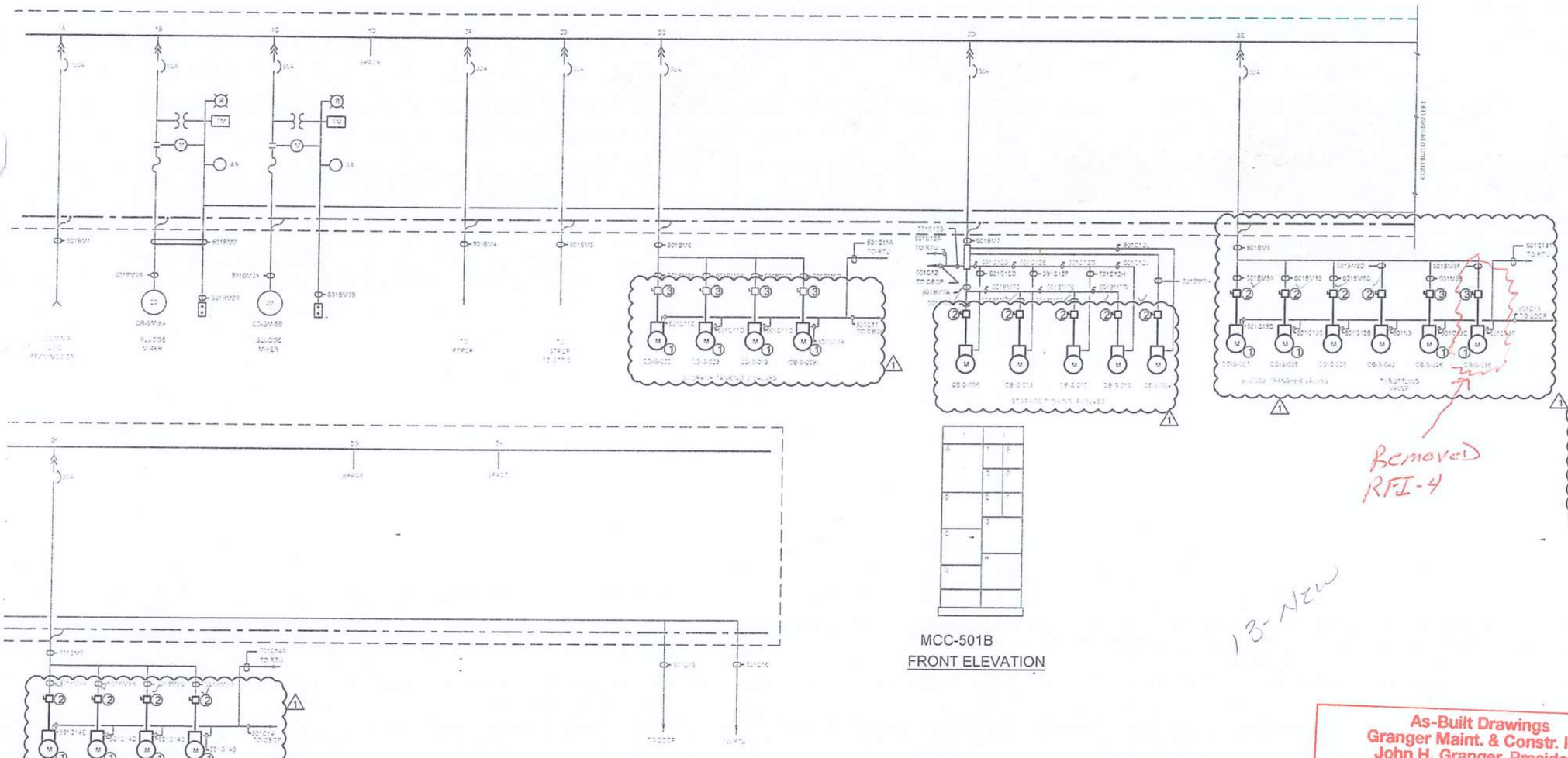
1. PROVIDE DUAL MOUNTED CIRCUIT BREAKERS IN EXISTING MCC CUBICLE. FIELD VERIFY TO MATCH AIC RATING OF EXISTING CIRCUIT BREAKER. PROVIDE NAMEPLATES FOR THE PROPOSED VALVES ON MCC CUBICLE.
2. PROVIDE CIRCUIT BREAKER IN EXISTING MCC CUBICLE. FIELD VERIFY TO MATCH AIC RATING OF EXISTING CIRCUIT BREAKER. PROVIDE NAMEPLATES FOR THE PROPOSED VALVES ON MCC CUBICLE.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☑ No Changes

GASPARD D. GARCIA
LICENSE
No 76573
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-13-2014
ELECTRICAL ENGINEER

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Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY	No.	DATE	REVISIONS	DES: GG	CITY of TAMPA	HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	W.O.
PLANNING ENGINEERING PROGRAM MANAGEMENT	3			DRN: OL		HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	
107 Hampton Road, Suite 190, Clearwater, FL 33759	2			CKD: DH		SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT	SHEET 25
Tel 727-726-0005 Fax 727-726-0009	1			DATE: 5/13/14		ELECTRICAL ONE-LINE DIAGRAM FOR MCC-501A	
CA Lic. No: 9086							



MCC-501B
FRONT ELEVATION

GENERAL NOTES:

1. EXISTING MCC-501B ONE-LINE DIAGRAM IS SHOWN FOR INFORMATION PURPOSES. THERE IS NO PROPOSED MCC WORK FOR THIS SHEET.
2. EXISTING CONDUIT TAGS DERIVED FROM RECORD DRAWINGS SHOWN FOR INFORMATION PURPOSES ONLY.

○ KEYED NOTES:

1. UTILIZE EXISTING REMOTE CONTROL STATION, CONTROL CONDUCTORS, CONDUIT, AND CONNECT TO PROPOSED VALVE ACTUATOR.
2. PROVIDE SQUARE D 2510-KR2H, 600V, 3P, NEMA 3R 7/9 DISCONNECT.
3. UTILIZE EXISTING DISCONNECT AND CONNECT TO PROPOSED VALVE ACTUATOR.

Removed
RFI-4

13-New

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☐ No Changes

Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
PLANNING ENGINEERING PROGRAM MANAGEMENT
107 Hampton Road, Suite 190, Clearwater, FL 33759
Tel 727-726-0005 Fax 727-726-0009
CA Lic. No: 9086

No.	DATE	REVISIONS
3		
2		
1	4/10/15	REVISION 1

DES: GG
DRN: OL
CKD: DH
DATE: 4/10/15

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
ELECTRICAL ONE-LINE DIAGRAM FOR MCC-501B

W.O.
SHEET 26

TK Remod Drawings 2C 71.111

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File:C:\projectwise\vsingh\d0295406\ONE-LINE DIAGRAM MCC501B_SUBMITTAL.dwg Plotted 6/5/2015 1:15 PM By Singh, Nona

CONDUIT SCHEDULE					
CONDUIT TAG	TO	FROM	NOTES	CONDUCTORS	CONDUIT
MCC501A-2G	CB-STP-1 MOV	MCC-501A	PROPOSED	3#10 AWG, 1#10AWG GND	3/4"
STPCP-9A	CB-STP-1 MOV	STPCP	1	1-8PR#16 TP, 1-4"PR#16 STP	1-1/2"
MCC 501A-2H	CB-STP-2 MOV	MCC-501A	PROPOSED	3#10 AWG, 1#10AWG GND	3/4"
STPCP-9B	CB-STP-2 MOV	STPCP	1	1-8PR#16 TP, 1-4"PR#16 STP	1-1/2"
MCC501A-2J	ISO-01 MOV	MCC-501A	1	3#10 AWG, 1#10AWG GND	3/4"
501C10A	ISO-01 MOV	CBCP	2	1-8PR#16 TP, 1-4"PR#16 STP	1-1/2"
501C10B	ISO-01 MOV	RTU	2	1-8PR#16 TP, 1-4"PR#16 STP	1-1/2"

NOTE 1: PROVIDE CONTROL CONDUCTORS AS INDICATED TO "STPCP" AS FOLLOWS:
- LIMIT SWITCH STATUS
- VALVE OPEN
- VALVE CLOSE

REFER TO STPCP CONTROL SCHEMATIC SHEET 28 FOR MORE DETAIL.
NOTE 2: UTILIZE EXISTING CONDUIT WHERE POSSIBLE AND PROVIDE CONTROL CONDUCTORS AS INDICATED.

EXISTING CONDUIT TAGS SHOWN FOR INFORMATION ONLY					
501AM5	PULLBOX NEAR CB-S-006	MCC-501A	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM5A	CB-S-006	PULLBOX NEAR CB-S-006	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM5B	CB-S-241	PULLBOX NEAR CB-S-009	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM5C	CB-S-320	PULLBOX NEAR CB-S-010	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM5D	CB-S-321	PULLBOX NEAR CB-S-011	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM7	PULLBOX NEAR CB-S-0024	MCC-501A	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM7A	CB-S-024	PULLBOX NEAR CB-S-024	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM7B	CB-S-024	PULLBOX NEAR CB-S-024	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM7C	CB-S-043	PULLBOX NEAR CB-S-024	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM7D	CB-S-070	PULLBOX NEAR CB-S-024	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM9	PULLBOX "A"	MCC-501A	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM9A	PULLBOX NEAR CB-S-007	PULLBOX "A"	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM9B	CB-S-007	PULLBOX NEAR CB-S-007	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM9C	PULLBOX NEAR CB-S-019	PULLBOX NEAR CB-S-007	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM9D	CB-S-019	PULLBOX NEAR CB-S-019	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM9E	PULLBOX NEAR CB-S-016	PULLBOX NEAR CB-S-019	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM9F	CBS-016	PULLBOX NEAR CB-S-016	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM9G	CB-S-014	PULLBOX NEAR CB-S-016	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM9H	CB-S-005	PULLBOX "A"	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM11	PULLBOX NEAR CB-S-029	MCC-501A	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM11A	CB-S-029	PULLBOX NEAR CB-S-029	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM11B	CB-S-030	PULLBOX NEAR CB-S-029	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM11C	CB-S-031	PULLBOX NEAR CB-S-029	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM11D	CB-S-031	PULLBOX NEAR CB-S-029	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501AM11E	CB-S-032	PULLBOX NEAR CB-S-029	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM1	PULLBOX NEAR CB-S-022	MCC-501B	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM1A	CB-S-022	PULLBOX NEAR CB-S-022	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM1B	CB-S-021	PULLBOX NEAR CB-S-022	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM1C	CB-S-021	PULLBOX NEAR CB-S-022	EXISTING	3#10 AWG, 1#10AWG GND.	3/4"
501BM1D	CB-S-009	PULLBOX NEAR CB-S-022	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM7	PULLBOX "A"	MCC-501B	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM7A	PULLBOX NEAR CB-S-006	PULLBOX "A"	EXISTING	3#10 AWG, 1#10AWG GND.	3/4"
501BM7B	CB-S-006	PULLBOX NEAR CB-S-006	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM7C	PULLBOX NEAR CB-S-018	PULLBOX NEAR CB-S-006	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM7D	CB-S-018	PULLBOX NEAR CB-S-018	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM7E	PULLBOX NEAR CB-S-017	PULLBOX NEAR CB-S-018	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM7F	CB-S-017	PULLBOX NEAR CB-S-017	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM7G	CB-S-015	PULLBOX NEAR CB-S-017	EXISTING	3#10 AWG, 1#10AWG GND.	3/4"
501BM7H	CB-S-004	PULLBOX "A"	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM9	PULLBOX NEAR CB-S-001	MCC-501B	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM9A	CB-S-001	PULLBOX NEAR CB-S-001	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM9B	CB-S-035	PULLBOX NEAR CB-S-001	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM9C	CB-S-036	PULLBOX NEAR CB-S-001	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM9D	CB-S-040	PULLBOX NEAR CB-S-001	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM11	PULLBOX NEAR CB-S-002	MCC-501B	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM11A	CB-S-002	PULLBOX NEAR CB-S-002	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM11B	CB-S-003	PULLBOX NEAR CB-S-002	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM11C	CB-S-033	PULLBOX NEAR CB-S-002	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501BM11D	CB-S-034	PULLBOX NEAR CB-S-002	EXISTING	3#10 AWG, 1#10AWG GND	3/4"
501C6	PULLBOX NEAR CB-S-021	CBCP		12#14, 1#14 GND.	2"
501C6A	PULLBOX NEAR CB-S-021	RTU		12#14, 1#14 GND.	1-1/4"
501C6B	CB-S-021	PULLBOX NEAR CB-S-021		11#14, 1#14 GND.	1-1/4"
501C6C	CB-S-020	PULLBOX NEAR CB-S-021		11#14, 1#14 GND.	1-1/4"
501C6D	CB-S-241	PULLBOX NEAR CB-S-021	CONDUCTOR CONT. THRU (3-10)	11#14, 1#14 GND.	1-1/4"
501C6E	CB-S-008	PULLBOX NEAR CB-S-021	CONDUCTOR CONT. THRU (3-10)	11#14, 1#14 GND.	1-1/4"
501C8	PULLBOX NEAR CB-S-010	CBCP	EXISTING	12#14, 1#14 GND.	2"
501C8A	PULLBOX NEAR CB-S-010	RTU	EXISTING	12#14, 1#14 GND.	1-1/4"
501C8B	CB-S-010	PULLBOX NEAR CB-S-010	EXISTING	11#14, 1#14 GND.	1-1/4"
501C8C	CB-S-015	PULLBOX NEAR CB-S-010	EXISTING	11#14, 1#14 GND.	1-1/4"
501C8D	CB-S-025	PULLBOX NEAR CB-S-010	EXISTING	11#14, 1#14 GND.	1-1/4"
501C8E	CB-S-024	PULLBOX NEAR CB-S-010	EXISTING	11#14, 1#14 GND.	1-1/4"
501C7	PULLBOX	CBCP	EXISTING	42#14, 1#14 GND.	2"
501C7A	PULLBOX	RTU	EXISTING	41#14, 1#14 GND.	1-1/4"
501C7B	PULLBOX "A"	PULLBOX	EXISTING	55#14, 1#14 GND.	2-1/2"
501C7C	PULLBOX NEAR CB-S-007	PULLBOX "A"	EXISTING	44#14, 1#14 GND.	2-1/2"
501C7D	CB-S-007	PULLBOX NEAR CB-S-007	EXISTING	31#14, 1#14 GND.	1-1/4"
501C7E	PULLBOX NEAR CB-S-019	PULLBOX NEAR CB-S-007	EXISTING	33#14, 1#14 GND.	2"
501C7F	CB-S-019	PULLBOX NEAR CB-S-019	EXISTING	31#14, 1#14 GND.	1-1/4"
501C7G	PULLBOX NEAR CB-S-016	PULLBOX NEAR CB-S-019	EXISTING	22#14, 1#14 GND.	1-1/2"
501C7H	CB-S-016	PULLBOX NEAR CB-S-016	EXISTING	31#14, 1#14 GND.	1-1/4"
501C7J	CB-S-014	PULLBOX NEAR CB-S-016	EXISTING	31#14, 1#14 GND.	1-1/4"
501C7L	CB-S-005	PULLBOX "A"	EXISTING	31#14, 1#14 GND.	1-1/4"
501C9	PULLBOX NEAR CB-S-032	CBCP	EXISTING	43#14, 1#14 GND.	2"
501C9A	PULLBOX NEAR CB-S-032	RTU	EXISTING	15#14, 1#14 GND.	1-1/4"
501C9B	CB-S-032	PULLBOX NEAR CB-S-032	EXISTING	31#14, 1#14 GND.	1-1/4"
501C9C	CB-S-031	PULLBOX NEAR CB-S-032	EXISTING	31#14, 1#14 GND.	1-1/4"
501C9D	CB-S-027	PULLBOX NEAR CB-S-032	EXISTING	31#14, 1#14 GND.	1-1/4"
501C9E	CB-S-030	PULLBOX NEAR CB-S-032	EXISTING	31#14, 1#14 GND.	1-1/4"
501C9F	CB-S-029	PULLBOX NEAR CB-S-032	EXISTING	31#14, 1#14 GND.	1-1/4"
501C11	PULLBOX NEAR CB-S-009	CBCP	EXISTING	32#14, 1#14 GND.	2"
501C11A	PULLBOX NEAR CB-S-009	RTU	EXISTING	12#14, 1#14 GND.	1-1/4"
501C11B	CB-S-009	PULLBOX NEAR CB-S-009	EXISTING	11#14, 1#14 GND.	1-1/4"
501C11C	CB-S-012	PULLBOX NEAR CB-S-009	EXISTING	11#14, 1#14 GND.	1-1/4"
501C11D	CB-S-013	PULLBOX NEAR CB-S-009	EXISTING	11#14, 1#14 GND.	1-1/4"
501C11E	CB-S-022	PULLBOX NEAR CB-S-009	EXISTING	11#14, 1#14 GND.	1-1/4"
501C12	PULLBOX	CBCP	EXISTING	43#14, 1#14 GND.	2"
501C12A	PULLBOX	RTU	EXISTING	15#14, 1#14 GND.	1-1/4"
501C12B	PULLBOX "A"	PULLBOX	EXISTING	55#14, 1#14 GND.	2-1/2"
501C12C	PULLBOX NEAR CB-S-006	PULLBOX "A"	EXISTING	44#14, 1#14 GND.	2-1/2"
501C12D	CB-S-006	PULLBOX NEAR CB-S-006	EXISTING	31#14, 1#14 GND.	1-1/4"
501C12E	PULLBOX NEAR CB-S-018	PULLBOX NEAR CB-S-006	EXISTING	33#14, 1#14 GND.	2"
501C12F	CB-S-018	PULLBOX NEAR CB-S-018	EXISTING	31#14, 1#14 GND.	1-1/4"
501C12G	PULLBOX NEAR CB-S-017	PULLBOX NEAR CB-S-018	EXISTING	22#14, 1#14 GND.	1-1/2"
501C12H	CB-S-017	PULLBOX NEAR CB-S-017	EXISTING	31#14, 1#14 GND.	1-1/4"
501C12J	CB-S-016	PULLBOX NEAR CB-S-017	EXISTING	31#14, 1#14 GND.	1-1/4"
501C12L	CB-S-004	PULLBOX "A"	EXISTING	31#14, 1#14 GND.	1-1/4"
501C13	PULLBOX NEAR CB-S-028	CBCP	EXISTING	24#14, 1#14 GND.	1-1/2"
501C13A	PULLBOX NEAR CB-S-028	RTU	EXISTING	9#14, 1#14 GND.	1"
501C13B	CB-S-028	PULLBOX NEAR CB-S-028	EXISTING	31#14, 1#14 GND.	1-1/4"
501C13C	CB-S-055	PULLBOX NEAR CB-S-028	EXISTING	31#14, 1#14 GND.	1-1/4"
501C13D	CB-S-001	PULLBOX NEAR CB-S-028	EXISTING	31#14, 1#14 GND.	1-1/4"
501C14	PULLBOX NEAR CB-S-034	CBCP	EXISTING	32#14, 1#14 GND.	2"
501C14A	PULLBOX NEAR CB-S-034	RTU	EXISTING	12#14, 1#14 GND.	1-1/4"
501C14B	CB-S-034	PULLBOX NEAR CB-S-034	EXISTING	11#14, 1#14 GND.	1-1/4"
501C14C	CB-S-033	PULLBOX NEAR CB-S-034	EXISTING	11#14, 1#14 GND.	1-1/4"
501C14D	CB-S-003	PULLBOX NEAR CB-S-034	EXISTING	11#14, 1#14 GND.	1-1/4"
501C14E	CB-S-002	PULLBOX NEAR CB-S-034	EXISTING	11#14, 1#14 GND.	1-1/4"

GENERAL NOTES:

1. EXISTING CONDUIT TAGS SHOWN IN CONDUIT SCHEDULE IS FOR INFORMATION PURPOSES ONLY.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☑ No Changes

GASPARD D. GARCIA
LICENSE
No 76573
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-13-2014
ELECTRICAL ENGINEER

Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
PLANNING ENGINEERING PROGRAM MANAGEMENT
107 Hampton Road, Suite 190, Clearwater, FL 33759
Tel 727-726-0005 Fax 727-726-0009
CA Lic No: 9086

No.	DATE	REVISIONS
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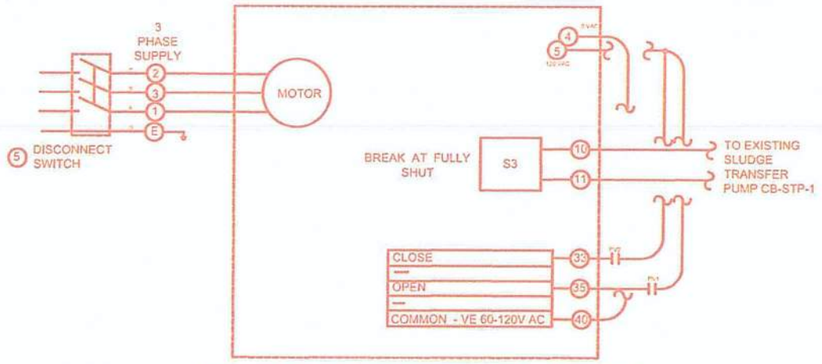
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DRN: OL
CKD: DH
DATE: 5/13/14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

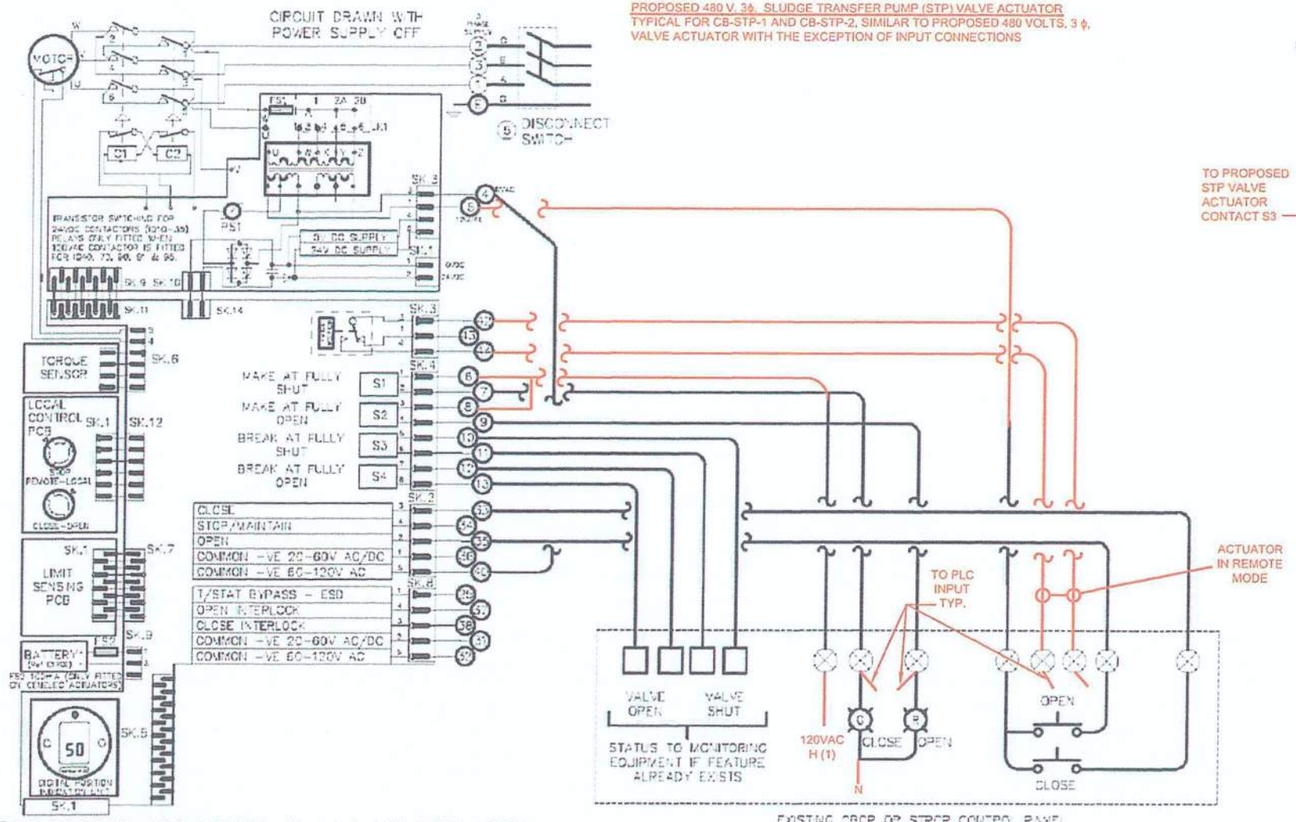
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
ELECTRICAL SCHEDULES

W.O.
SHEET 27

Project files: pw:\\Vadpw.lotus.int:projectwise\Documents\Projects\30-10429-003\4-0-Production\4-01-Drawings\
File: C:\projectwise\adryan\d0153953\ELECTRICAL SCHEDULES 901.dwg Plotted: 5/13/2014 4:05 PM By: Lykyn, Diana

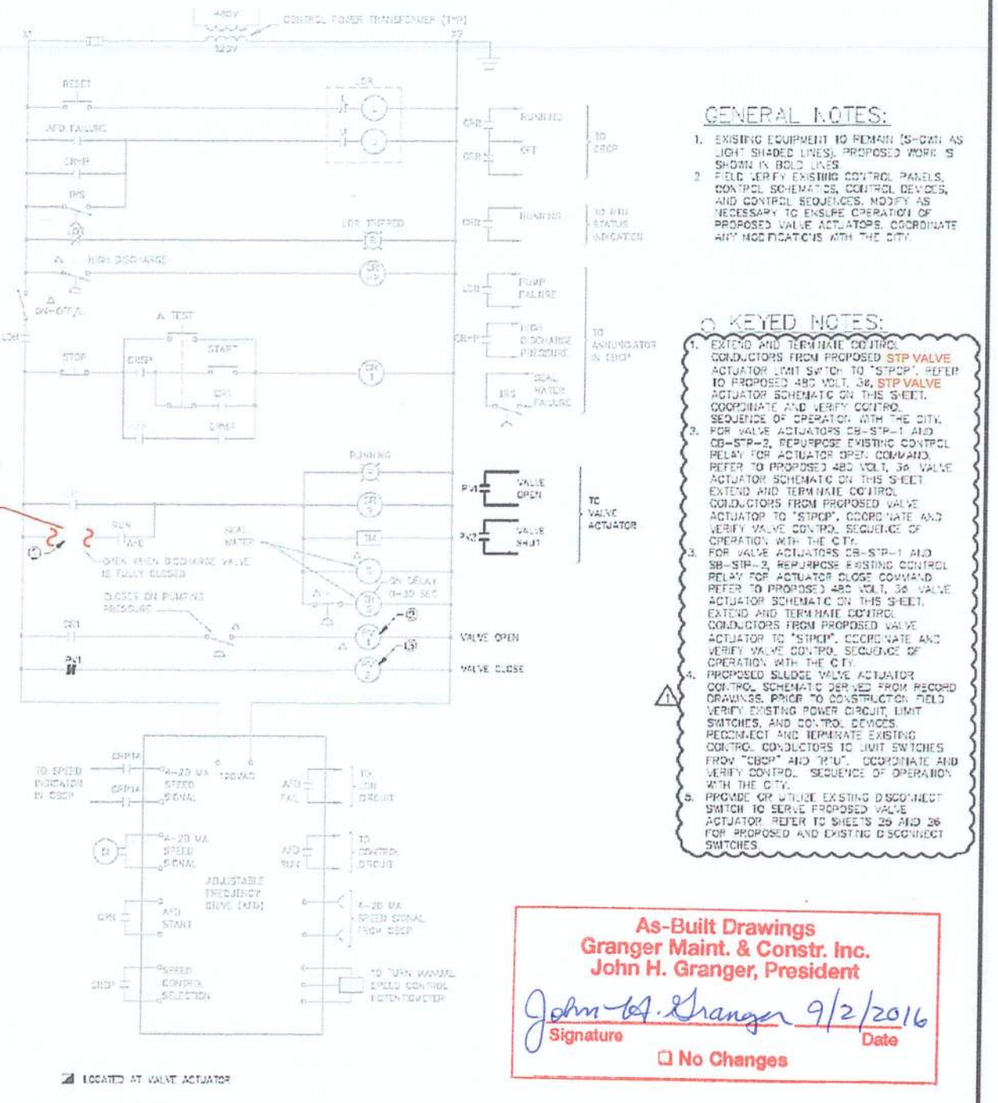


PROPOSED 480 V. 3ϕ SLUDGE TRANSFER PUMP (STP) VALVE ACTUATOR
TYPICAL FOR CB-STP-1 AND CB-STP-2, SIMILAR TO PROPOSED 480 VOLTS, 3 ϕ, VALVE ACTUATOR WITH THE EXCEPTION OF INPUT CONNECTIONS



④ PROPOSED 480 VOLTS, 3ø, VALVE ACTUATOR

TYPICAL FOR CB-S-004, CB-S-005, CB-S-006, CB-S-007, CB-S-014, CB-S-015, CB-S-016, CB-S-017, CB-S-018, CB-S-019, CB-S-028, CB-S-032



EXISTING SLUDGE TRANSFER PUMP CB-STP-1

TYPICAL FOR CB-STP-2

GENERAL NOTES:

1. EXISTING EQUIPMENT TO REMAIN (S-CAN AS LIGHT SHADED LINES). PROPOSED WORK IS SHOWN IN BOLD LINES.
2. FIELD VERIFY EXISTING CONTROL PANELS, CONTROL SCHEMATICS, CONTROL DEVICES, AND CONTROL SEQUENCES. MODIFY AS NECESSARY TO ENSURE OPERATION OF PROPOSED VALVE ACTUATORS. COORDINATE ANY MODIFICATIONS WITH THE CITY.

◇ KEYED NOTES:

1. EXTEND AND TERMINATE CONTROL CONDUCTORS FROM PROPOSED STP VALVE ACTUATOR (XM SWITCH TO "STPCP". REFER TO PROPOSED 480 VOLT, 3ϕ, STP VALVE ACTUATOR SCHEMATIC ON THIS SHEET. COORDINATE AND VERIFY CONTROL SEQUENCE OF OPERATION WITH THE CITY.
2. FOR VALVE ACTUATORS CB-STP-1 AND CB-STP-2, REPURPOSE EXISTING CONTROL RELAY FOR ACTUATOR OPEN COMMAND. REFER TO PROPOSED 480 VOLT, 3ϕ VALVE ACTUATOR SCHEMATIC ON THIS SHEET. EXTEND AND TERMINATE CONTROL CONDUCTORS FROM PROPOSED VALVE ACTUATOR TO "STPCP". COORDINATE AND VERIFY VALVE CONTROL SEQUENCE OF OPERATION WITH THE CITY.
3. FOR VALVE ACTUATORS CB-STP-1 AND CB-STP-2, REPURPOSE EXISTING CONTROL RELAY FOR ACTUATOR CLOSE COMMAND. REFER TO PROPOSED 480 VOLT, 3ϕ VALVE ACTUATOR SCHEMATIC ON THIS SHEET. EXTEND AND TERMINATE CONTROL CONDUCTORS FROM PROPOSED VALVE ACTUATOR TO "STPCP". COORDINATE AND VERIFY VALVE CONTROL SEQUENCE OF OPERATION WITH THE CITY.
4. PROPOSED SLUDGE VALVE ACTUATOR CONTROL SCHEMATIC DERIVED FROM RECORD DRAWINGS. PRIOR TO CONSTRUCTION, FIELD VERIFY EXISTING POWER CIRCUIT, LIMIT SWITCHES, AND CONTROL DEVICES. RECONNECT AND TERMINATE EXISTING CONTROL CONDUCTORS TO LIMIT SWITCHES FROM "CBCP" AND "RTU". COORDINATE AND VERIFY CONTROL SEQUENCE OF OPERATION WITH THE CITY.
5. PROVIDE OR UTILIZE EXISTING DISCONNECT SWITCH TO SERVE PROPOSED VALVE ACTUATOR. REFER TO SHEETS 29 AND 26 FOR PROPOSED AND EXISTING DISCONNECT SWITCHES.

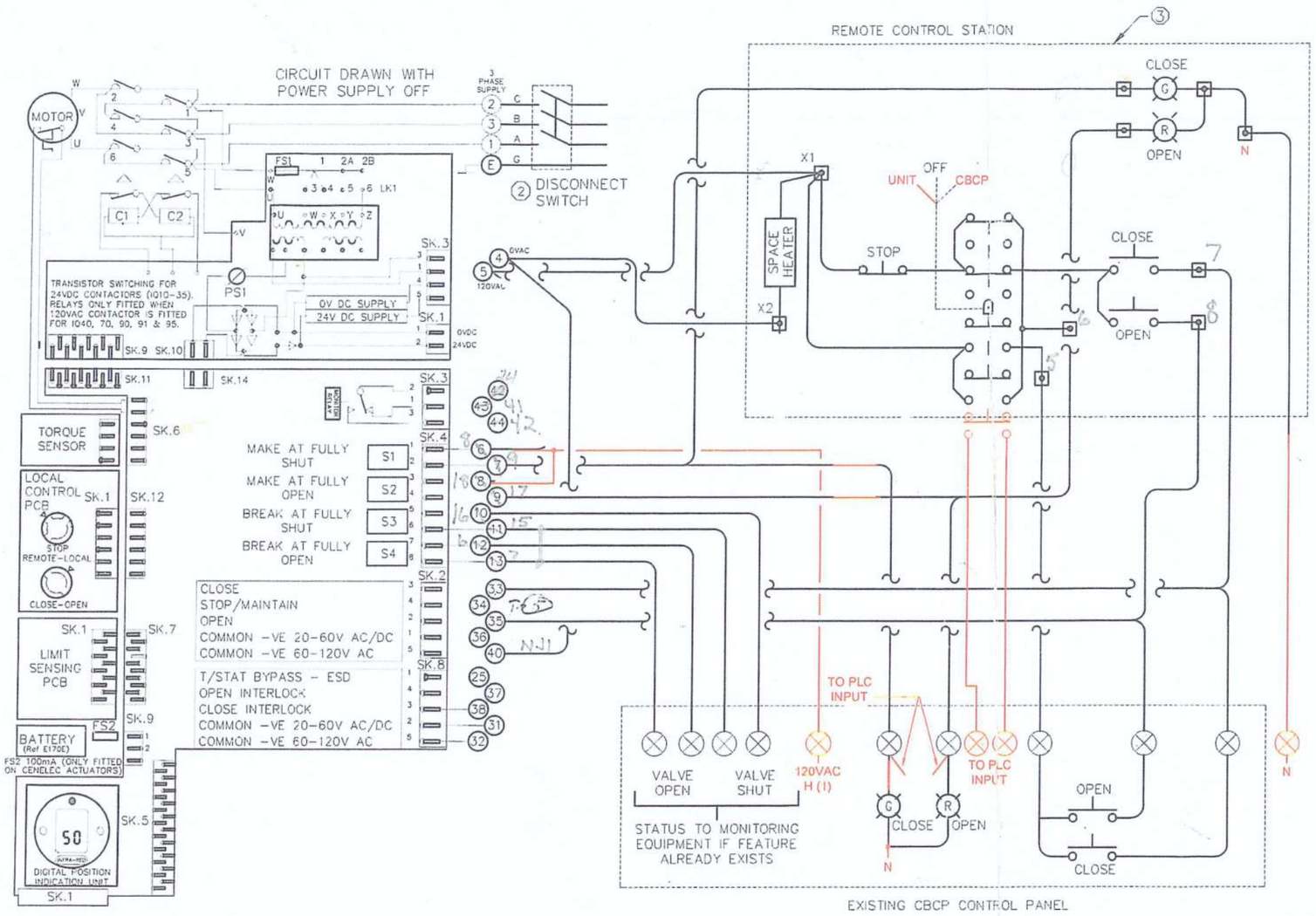
As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☐ No Changes

Lockwood, Andrews & Newnam, Inc. — A JFQ A DALT COMPANY PLANNING ENGINEERING PROGRAM MANAGEMENT 107 Harrington Road, Suite 150, Clearwater, FL 33755 Tel 727.726.9069 Fax 727.726.6008 CA # LC 26000069	No.	DATE	REVISIONS	DES: GG DRN: OL CKD: DH DATE: 4/10/15	CITY of TAMPA HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT ELECTRICAL SCHEMATIC DIAGRAMS	W.O. SHEET 28
	3						
	2						
	1	4/10/15	REVISION 1				

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TPS Bruce Stewart RECORD DRAWINGS 8/24/16

Sludge Control Bldg. Modification_Year 2016



EXISTING CBCP CONTROL PANEL

GENERAL NOTES:

1. EXISTING EQUIPMENT TO REMAIN (SHOWN AS LIGHT SHADED LINES). PROPOSED WORK IS SHOWN IN BOLD LINES.
2. FIELD VERIFY EXISTING CONTROL PANELS, CONTROL SCHEMATICS, CONTROL DEVICES, AND CONTROL SEQUENCES. MODIFY AS NECESSARY TO ENSURE OPERATION OF PROPOSED VALVE ACTUATORS. COORDINATE ANY MODIFICATIONS WITH THE CITY.

○ KEYED NOTES:

1. PROPOSED SLUDGE VALVE ACTUATOR CONTROL SCHEMATIC DERIVED FROM RECORD DRAWINGS. PRIOR TO CONSTRUCTION FIELD VERIFY EXISTING POWER CIRCUIT, LIMIT SWITCHES, AND CONTROL DEVICES. RECONNECT AND TERMINATE EXISTING CONTROL CONDUCTORS TO LIMIT SWITCHES FROM "CBCP" AND "RTU". COORDINATE AND VERIFY CONTROL SEQUENCE OF OPERATION WITH THE CITY. RECONNECT AND TERMINATE EXISTING REMOTE START/STOP CONTROL CONDUCTORS FROM EXISTING "CBCP". COORDINATE AND VERIFY CONTROL SEQUENCE OF OPERATION WITH THE CITY.
2. PROVIDE OR UTILIZE EXISTING DISCONNECT SWITCH TO SERVE PROPOSED VALVE ACTUATOR. REFER TO SHEETS 25 AND 26 FOR PROPOSED AND EXISTING DISCONNECT SWITCHES.
3. PROVIDE REMOTE CONTROL STATION FOR PROPOSED VALVE ACTUATOR ISO-01. UTILIZE EXISTING EIM OR GENERIC REMOTE CONTROL STATION FOR ALL OTHER VALVES. REMOTE CONTROL STATION AS SHOWN IS TYPICAL FOR EXISTING EIM STATIONS. GENERIC CONTROL STATIONS ARE SIMILAR.

As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☐ No Changes

BILL OF MATERIALS, ISO-01 REMOTE CONTROL STATION	
PART	SQUARE D PART NUMBER
LOR SWITCH	SKS43/BH1
ILLUMINATED RED PUSH BUTTON (CLOSE)	9001SK1L1RH13
ILLUMINATED GREEN PUSH BUTTON (OPEN)	9001SK1L1GH13
RED MUSHROOM STOP BUTTON	SKR4RH13
STAINLESS STEEL (304) ENCLOSURE	9001KYSS4

① PROPOSED 480 VOLTS, 3ø, VALVE ACTUATOR WITH REMOTE CONTROL STATION

TYPICAL FOR CB-S-001, CB-S-002, CB-S-003, CB-S-008, CB-S-009, CB-S-010, CB-S-011, CB-S-012, CB-S-013, CB-S-020, CB-S-021, CB-S-022, CB-S-023, CB-S-024, CB-S-025, CB-S-026, CB-S-027, CB-S-029, CB-S-030, CB-S-031, CB-S-033, CB-S-034, CB-S-035, CB-S-036, ISO-01

Removed See sheet 4

Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
PLANNING ENGINEERING PROGRAM MANAGEMENT
107 Hampton Road, Suite 100, Clearwater, FL 33759
Tel 727-726-0005 Fax 727-726-0009
CA Lic. No. 9086

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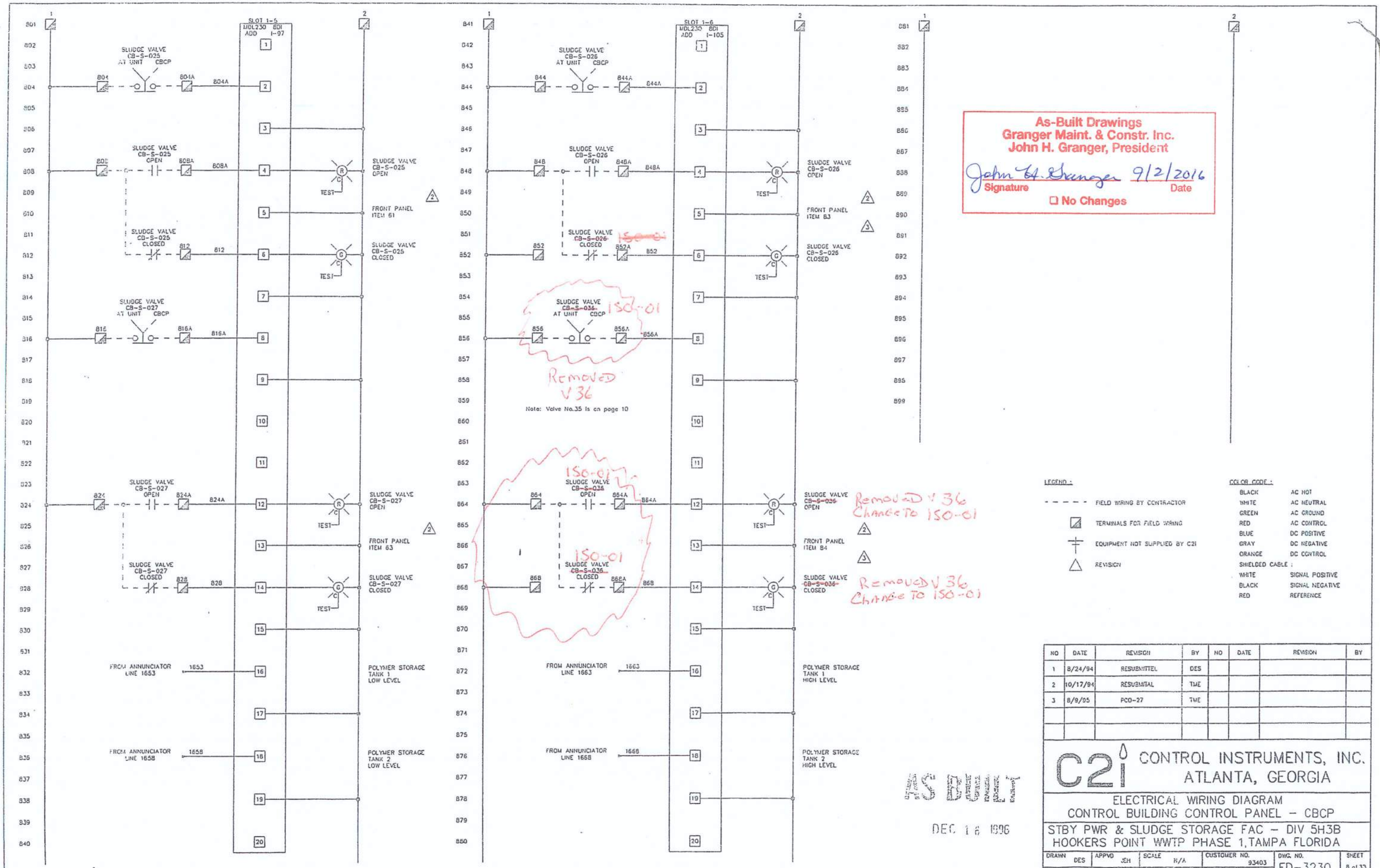
CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT
SLUDGE CONTROL BUILDING CONTROL VALVES AND PIPING REPLACEMENT
ELECTRICAL SCHEMATIC DIAGRAMS

W.O. 1
SHEET 29

TPS BS Record Drawings 7/1/16

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As-Built Drawings
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Signature Date
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LEGEND :

- FIELD WIRING BY CONTRACTOR
- TERMINALS FOR FIELD WIRING
- EQUIPMENT NOT SUPPLIED BY C2I
- REVISION

COLOR CODE :

BLACK	AC HOT
WHITE	AC NEUTRAL
GREEN	AC GROUND
RED	AC CONTROL
BLUE	DC POSITIVE
GRAY	DC NEGATIVE
ORANGE	DC CONTROL
SHIELDED CABLE :	
WHITE	SIGNAL POSITIVE
BLACK	SIGNAL NEGATIVE
RED	REFERENCE

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1	8/24/94	RESUBMITTEL	DES				
2	10/17/94	RESUBMITAL	TWE				
3	8/9/95	PCO-27	TWE				

C2i CONTROL INSTRUMENTS, INC.
ATLANTA, GEORGIA

ELECTRICAL WIRING DIAGRAM
CONTROL BUILDING CONTROL PANEL – CBCP

STBY PWR & SLUDGE STORAGE FAC – DIV 5H3B
HOOKERS POINT WWTP PHASE 1, TAMPA FLORIDA

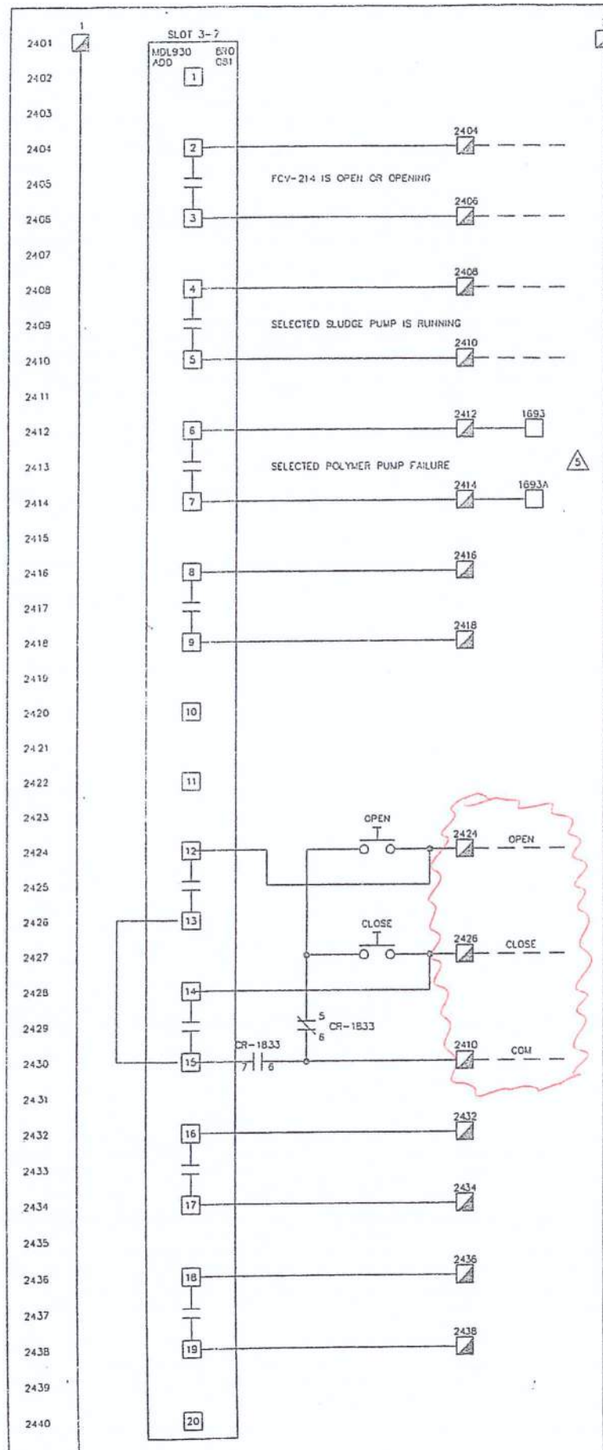
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AS SHOWN

DEC 16 1996

RECORD DRAWINGS 5/11/15 TPS

* V36 ELIMINATED



2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440

2

FCV-214 IS OPEN OR OPENING TO POLYMER SYSTEM

SELECTED SLUDGE PUMP IS RUNNING TO POLYMER SYSTEM

SELECTED POLYMER PUMP FAILURE TO ANNUNCIATOR SEE ED-3230 PG 15 LINE 1693

SPARE

SLUDGE TRANSFER VALVE -036- FRONT PANEL ITEM 84

Removed V36 ISO-01 Change to ISO-01

SPARE

SPARE

2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480

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As-Built Drawings
Granger Maint. & Constr. Inc.
John H. Granger, President
John H. Granger 9/2/2016
Signature Date
☐ No Changes

LEGEND :

- — — — FIELD WIRING BY CONTRACTOR
- TERMINALS FOR FIELD WIRING
- EQUIPMENT NOT SUPPLIED BY C2i
- REVISION

COLOR CODE :

BLACK	AC HOT
WHITE	AC NEUTRAL
GREEN	AC GROUND
RED	AC CONTROL
BLUE	DC POSITIVE
GRAY	DC NEGATIVE
ORANGE	DC CONTROL
SHIELDED CABLE :	
WHITE	SIGNAL POSITIVE
BLACK	SIGNAL NEGATIVE
RED	REFERENCE

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY
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2	10/17/94	RESUBMITAL	TME				
3	0/0/95	PCO-27	TME				
4	8/3/95	PCO-19	TME				
5	5/14/96	AS-BUILT	TME				

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ATLANTA, GEORGIA

ELECTRICAL WIRING DIAGRAM
CONTROL BUILDING CONTROL PANEL – CBCP

STBY PWR & SLUDGE STORAGE FAC – DIV 5H3B
HOOKERS POINT WWTP PHASE 1, TAMPA FLORIDA

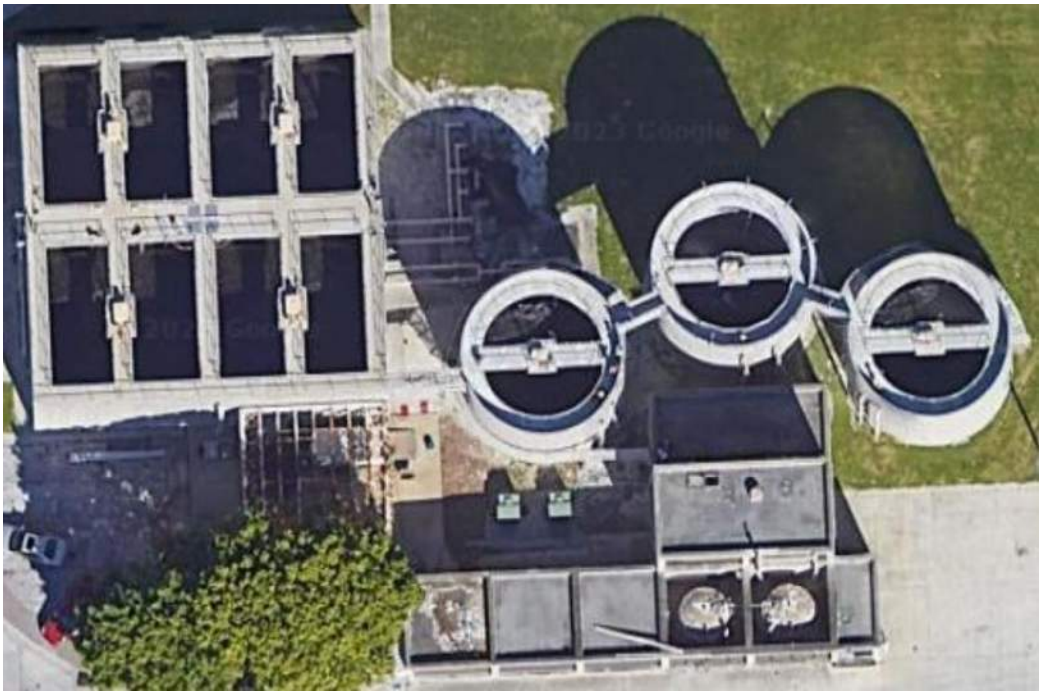
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RECORD DRAWINGS 5/11/15 BPS

* V36 ELIMINATED

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Howard F. Curren AWTP – Master Plan Improvements, Amendment No. 3: Sludge Control Building Electrical Improvements (Building 054)

Technical Memorandum (TM)

City Project No. 20-C-00001
Reliable Tampa Partners Project No. 23-500
Hazen and Sawyer Project No. 41077-13C Task 256
January 2025

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1. Introduction

1.1 Background

The City of Tampa Howard F. Curren Advanced Water Treatment Plant (HFC AWTP) Sludge Control Building was constructed in 1980. Except for select equipment that was upgraded in 1996, much of the equipment associated with this building is original, including the electrical distribution system. Some components of that system have operated beyond their useful life and require replacement, including the motor control centers (MCCs), sludge transfer pump variable frequency drive (VFD) control panels, and polymer feed pump VFD control panels. The following technical memorandum details the sludge control building electrical distribution system evaluation and recommendations.

1.2 Electrical Systems Regulatory, Maintainability and Reliability Criteria

Regulations, by their nature, intend to accomplish objectives such as fire prevention, life safety, and continuity of critical environmental processes, all to benefit the public health. These are mandatory and of highest priority in the evaluation criteria. Regulations that apply for this evaluation include the following:

- National Electrical Code (NEC)
- National Fire Protection Association (NFPA) 70E, Standard for Electrical Safety in the Workplace
- NFPA 820, Standard for Fire Protection in Wastewater Treatment and Collection Facilities.
- Environmental Protection Agency (EPA) Design Criteria for Mechanical, Electric, and Fluid System and Component Reliability.
- Florida Administrative Code Chapter 62-600, Domestic Wastewater Facilities.

Electrical systems require periodic maintenance. Adequate maintenance is a key component of a reliable system. Electrical maintenance activities typically include infrared testing for hot spots, torquing of electrical connections, cleaning and lubrication of equipment, and testing of protective devices to ensure they will function correctly when called upon to do so. The electrical maintenance activities described previously must be done with the equipment de-energized with the exception of infrared testing. In a continuous process facility such as a wastewater treatment plant or pump station, an electrical system design that allows for shutdown of electrical equipment for maintenance yet still maintaining the process is paramount. Additionally, one of the criteria for this facility plan is to reduce single points of failure.

Another factor in maintainability is equipment obsolescence. Electrical equipment typically has a useful life of 20 to 30 years depending upon the type of equipment. Electrical equipment with electronics (VFDs, PLCs, etc.) may have a useful life of less than 15 years as Manufacturers' designs are upgraded on a shorter design cycle where spare parts and product support are no longer available.

Finally, heavily loaded electrical equipment in hot, humid, dusty and corrosive environments will require more maintenance and earlier replacement than lightly loaded electrical equipment located in clean climate-controlled areas.

Electrical equipment should be marked with arc flash hazard labels. This NEC provision was added to complement NFPA 70E for working safely around electrical equipment. While generic labels are available, equipment specific labels can give workers more accurate guidance on personnel protective equipment that is required. To provide specific labels, a short circuit, coordination study, and arc flash hazard analysis is required. A City of Tampa standard arc flash label will be affixed to all new equipment after the conclusion of the study. Figure 1-1 shows an example of a standardized arc flash label.



Figure 1-1: City of Tampa Standard Arc Flash Label

2. Existing Item Inventory and Condition Assessment

On May 17, 2023, team members from Electrical Design Associates visited the HFC AWTP Sludge Control Building and took an inventory of the existing electrical equipment. It should be noted the original scope included evaluating the relocation of the air compressors currently located near the Sludge Heat Drying Building. Per City of Tampa direction, this evaluation is no longer required since the compressors will be relocated within Filter Building No. 2. Additionally, it was determined the existing TECO building will be powered from the new Sludge Dewatering Facility transformers due to proximity. Refer to Tables 2-1 thru 2-2 for a list of equipment and condition assessments related to the Sludge Control Building. Figures 2-1 through 2-5 depict some of the individual electrical system components.

2.1 Electrical Equipment

Table 2-1: Electrical Distribution Equipment

Equipment	Rating	Description	Condition
T-5A-5	13.2kV-480/277V, 500kVA	The Sludge Control Building is served by two transformers: T-5A-5 and T-5B-5. The transformers are part of the 13.2kV loop distribution through the facility. The transformer also serves the Sludge Control Pump Station installed under the Dewatering Facility project.	On site transformers are not included within this condition assessment evaluation. These transformers were replaced in 2014 and have a NAVD 1988 elevation of 14.88 ft.
T-5B-5			

Table 2-2: Electrical Motor Control Equipment

Equipment	Rating	Description	Condition	Recommendation
MCC-501	600 amp, 277/480 volt, 4-wire	Motor control center MCC-501 is fed by transformers T-5A-5 and T-5B-5. This MCC is a Federal Pacific main-tie-main motor control center and provides power to MCC-501A and MCC-501B, in addition to other various control panels in the same room. The equipment was installed in 1980.	The equipment shows signs of rust, corrosion, and is past its reliable design life.	Replace MCC.
MCC-501A	600 amp, 480 volt, 3 phase, 3 wire	Motor control centers MCC-501A and MCC-501B are each Westinghouse single ended motor control centers installed in 1996. These MCCs provide power to various control panels in the same room, including the sludge control panel VFDs, polymer feed pump VFDs, and filtrate pumping station.	Both motor control centers are in poor condition with obsolete parts.	Replace MCCs.
MCC-501B				
VFDs for Sludge Pumps and Transfer Pumps	480 volt, 3 phase, 3 wire	Yaskawa VFDs service sludge pumps and polymer feed pumps.	The equipment shows signs of rust, corrosion, and is past its reliable design life.	Replace VFDs.

Table 2-3: Miscellaneous Electrical Equipment

Equipment	Rating	Description	Condition	Recommendation
LP-501	250 amp, 277/480 Volt, 3-phase, 4-wire	Square D Panelboard provides power to roadway lighting, belt press lighting, sludge tank lighting, parts storage area lighting, and vehicle maintenance area lighting.	The panelboard appears to have been replaced and does not have signs of rust.	Keep panelboard and update panelboard schedule.
LP-502	225 amp, 120/208 Volt, 3-phase, 4-wire	Square D Panelboard provides power to miscellaneous lights and receptacles for drying beds, sludge storage tanks, and sludge grinder station.	The panelboard appears to have been replaced and does not have signs of rust.	Keep panelboard and update panelboard schedule.
30kVA Transformer and Disconnect	30kVA, 480-120/208 Volt, 3-phase, 4-wire	Transformer providing power to 120/208 volt panelboard.	The equipment shows signs of rust, corrosion, and is past its reliable design life.	Replace transformer.
Roadway Lighting Controls	277/480 Volt, 3-phase, 4-wire	Westinghouse and Federal Pacific roadway lighting controls.	The equipment appears original, shows signs of corrosion, and is past its reliable design life.	Replace lighting controls.
Unlabeled Junction Box	120/208 Volt, 3-phase, 4-wire	Junction box adjacent to C54-FPP-02 providing power to miscellaneous equipment.	The equipment appears original, shows signs of corrosion, and is past its reliable design life.	Remove junction box and install new wire and conduit directly to equipment.
A/C Unit Panelboard	120/208 Volt, 3-phase, 4-wire	Panelboard adjacent to and providing power to air conditioning unit.	Equipment is in working order.	Remove panelboard and power A/C unit directly from new panelboard with new wire and conduit.



Figure 2-1: Sludge Control Building MCC-501



Figure 2-2: Sludge Control Building MCC-501A & MCC-501B



Figure 2-3: Sludge Control Building Transfer Pump and Polymer Feed VFDs



Figure 2-4: Panelboard LP-501, LP-502, Road Light Controls, Disconnect, and Transformer



Figure 2-5: Unlabeled Junction Box and C54-FPP-02 and C54-FPP-01



Figure 2-6: Air Conditioning Panelboard



Figure 2-7: 30kVA Transformer and Disconnect

2.2 Instrumentation & Controls

Monitoring and Control of the Sludge Control Building, from the SCADA system is via the PLC-08 control panel located within the Sludge Control Building (see Figure 2-5). Field instruments used for this area include pressure gauges, transmitters, switches, and level transmitters. The sludge control valves are operated by motorized actuators. Air blower equipment is monitored and controlled by the PLC.

In general, all instruments per available record drawings and as listed in Table 2-4, field control elements, the PLC-08 control panel, RTU panel, and all components inside the panels, have exceeded their life expectancy and require replacement.

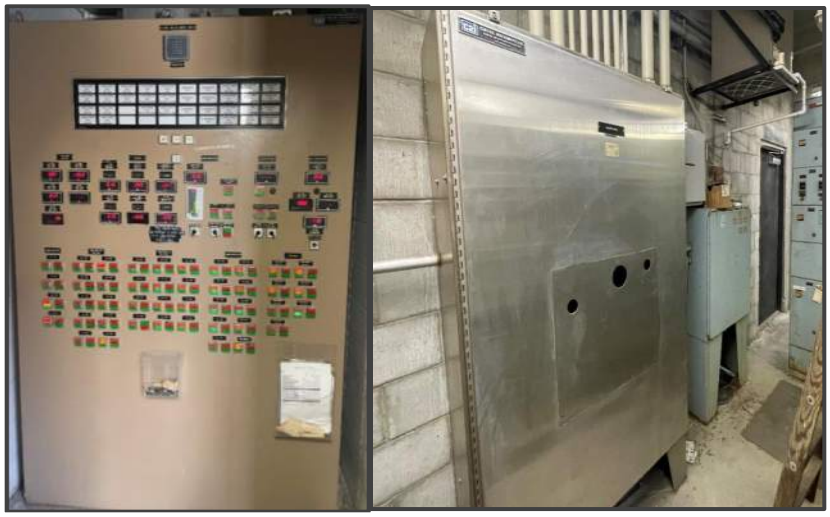


Figure 2-8: Left - Sludge Control Building Control Center Panel (PLC-08), Right - RTU Panel

Table 2-4: Instrument Equipment

Equipment	Description	Assessment
FE/FIT -200	Flow Meter and Transmitter	Installed in 1994, end of life.
FE/FIT -206	Flow Meter and Transmitter	Installed in 1994, end of life.
FE/FIT -205	Flow Meter and Transmitter	Installed in 1994, end of life.
FE/FIT -201	Flow Meter and Transmitter	Installed in 1994, end of life.
FE/FIT -202	Flow Meter and Transmitter	Installed in 1994, end of life.
FE/FIT – 203	Flow Meter and Transmitter	Installed in 1994, end of life.
FE/FIT-204	Flow Meter and Transmitter	Installed in 1994, end of life.
LE/LIT-207	Storage Tank No.1 Level Transmitter	Installed in 1994, end of life.
LE/LIT-208	Storage Tank No.2 Level Transmitter	Installed in 1994, end of life.
LE/LIT-209	Storage Tank No.3 Level Transmitter	Installed in 1994, end of life.
LE/LIT-210	Polymer Tank Level Transmitter	Installed in 1994, end of life.

2.3 Additional Observations

The following additional observations were noted during the site visit.

- As depicted in the most current FEMA Flood Insurance Rate Map (FIRM), much of the HFC AWTP is located in Zone AE with a 100-year base flood elevation (BFE) of 12.0 feet in NAVD 1988 vertical datum. Per ASCE 24-14 Class 3, the design flood elevation (DFE) of utilities and equipment is to be 1-foot above the BFE. The existing transformers T-5A-5 and T-5B-5 appear to be above the DFE (NAVD 1988 elevation - 14.88 feet) and will not require replacement or relocation.
- The existing building has fluorescent lighting throughout. It is recommended high efficiency LED lighting be installed.
- An air conditioning system is installed over an existing control panel. Air conditioning equipment should not be installed over electrical equipment as equipment failure could lead to water damage to the electrical equipment.
- Roof drain piping was noted within the electrical room. Due to the potential for pipe leakage and electrical equipment damage, it's recommended no roof drains be routed through an electrical room.
- The grounding systems, including lightning protection systems require routine testing to verify the systems are properly grounded with an impedance of less than 5 ohms.

2.4 Recommendations

The following are recommendations for new electrical equipment installations:

- Recommend avoiding common mode failures within the electrical distribution system. Also, consider splitting I/O for like loads on separate I/O cards in case of a single I/O card failure.
- All outdoor NEMA 4X enclosures to have 3-point latch and no other latches.
- Sun shields to be provided for all outdoor control panels and instruments.
- Wiring diagrams to be available, matching the wiring termination tags for troubleshooting.
- Shielded I&C cables to be grounded on one end only.
- Provide environmental conditioning for all electrical equipment.
- Analyzers and instruments to be on individual 120V power circuits.
- New Power System Analysis, including arc flash hazard analysis, with City of Tampa standard labels.

3. Electrical and Control Equipment Replacement Recommendations

3.1 NFPA 820 Considerations

NFPA 820 "Standard for Fire Protection in Wastewater Treatment and Collection Facilities" was originally published in 1990 as a recommended practice and subsequently became a standard in 1995. This standard identifies fire hazards associated with wastewater systems. Sewer and sludge gases are flammable and explosive conditions can result around influent collection, influent screening and degritting, odor control, primary clarification, anaerobic digestion, and sludge handling areas of the plant. NEC Article 500 describes the class of hazardous areas: Class I being flammable and combustible gases. Article 500 includes wiring requirements for these hazardous areas, including conduit seal-offs or explosion proof devices. As the original and subsequent construction of parts of the plant pre-date NFPA 820 and the standard is not retroactive, these requirements do not apply to existing equipment within the Sludge Control Building.

The biggest concern is the existing Sludge Control Building's proximity to the existing sludge tanks. Per NFPA 820-2020, Table 6.2.2(a), an envelope 10-ft horizontal from the wetted walls of the sludge storage tank is considered a Class 1, Division 2 location (see Figure 3-1). The north side of the Sludge Control Building's HVAC Room contains louvers that are approximately 6-ft away from sludge holding tank No. 2 (see Figure 3-2). These louvers supply fresh air via a supply fan to the HVAC Room basement. The proximity of the louvers to the sludge holding tank creates a Class 1, Division 2 location within the room. Based on observations, the HVAC Room is used for storage of miscellaneous materials and the supply fan appears to be beyond its design life. The building contains lights and receptacles as well, which are not rated for a Class I, Division 2 environment. It is recommended the louvers on the north side of the room be sealed off and new louvers constructed on an adjacent wall that is not within the 10-ft envelope.

10	a	SLUDGE STORAGE WET WELLS, PITS, AND HOLDING TANKS Retaining of sludge	Possible generation of methane gas in explosive concentrations; carryover of floating flammable liquids	A	Enclosed — entire space	Division 1
	b			B	Enclosed — entire space	Division 2
	c			Not enclosed, open to atmosphere	Envelope 0.46 m (18 in.) above water surface and 3 m (10 ft) horizontally from wetted walls[c]	Division 2

Figure 3-1: NFPA 820 Reference



Figure 3-2: Linear Distance (Sludge Holding Tank No. 2 and Sludge Control Building)

3.2 Recommendations

3.2.1 Introduction

The consultant's approach is to install and commission new electrical distribution equipment in new locations to the extent possible so loads can be transitioned primarily one at a time to the new system. Reliability and maintainability is key to any electrical distribution. EPA provides reliability criteria for wastewater treatment plants and two key issues of EPA's criteria involve providing two sources (utility and standby generator) and splitting the loads among at least two MCCs to avoid common mode failures. With the considerations for Arc Flash and personnel safety, there are a number of mitigation techniques that can be utilized with the replacement of this equipment to reduce the categories and PPE required for staff while not significantly increasing the costs of the equipment. The preferred course of action is to avoid spending capital dollars for temporary assets that are not part of the final electrical distribution system and this approach will reduce risk to personnel and potential impact to operations.

The replacement and relocation of I&C components within the existing Sludge Control Building is driven by the age of the existing components, the current control and monitoring needs of the City, and the proposed electrical upgrades listed in this technical memorandum.

3.2.2 Prefabbed Electrical Building

The consultant proposes installing a new prefabricated electrical building over the existing recessed vehicle maintenance bay. During a previous site visit, it was determined a prefabricated building would prove more cost effective than bringing the existing building to code. Since the existing maintenance bay was never utilized for its intended purpose (oil changes, etc.), no environmental permitting requirements are anticipated. However, a structural evaluation will still need to be performed. The electrical building will contain two motor control center line ups, an A-Side and a B-Side. A-Side will be fed from Transformer T-5A-5 and B-Side will be fed from Transformer T-5B-5. The new motor control centers will have an interconnecting tie circuit breaker. Refer to Appendix C for the proposed equipment layout.

All equipment starters, VFDs, and control panels will be located in the new building. The aging panelboards in the existing building will be removed and replaced in-kind with new lighting panels, in order to power existing low voltage circuits in the area.

It is recommended to install new conduit and wire from the new building directly to each piece of equipment with no splices.

3.2.2.1 HVAC

It is recommended the new prefabricated electrical building contain redundant air conditioning. Climate controlled rooms will increase the equipment longevity. At a minimum, any rooms with variable frequency drives or PLC control systems should be climate controlled to increase equipment life cycles.

3.2.2.2 Grounding

Grounding will consist of a building steel column that is bonded to the underground rebar, or a made electrode system (triad or connection to ground loop around the building). In addition, ground rods will be driven outside the building to supplement the grounding electrode. Grounding electrodes of ground mats or embedded rods and cables shall have a maximum resistance to ground of 5 ohms. The parts of all electrical equipment, devices, panelboards, and metallic raceways that do not carry current will be connected to the ground conductors. The transformer neutrals of wye-connected transformers will be solidly grounded through a grounding conductor connected to the grounding system. A ground wire will be installed in all raceways that contain power conductors of any voltage.

3.2.2.3 Lightning Protection

A lightning protection system will be provided and installed for the structures greater than 15 feet above grade. The lightning protection system will be in compliance with City of Tampa Wastewater standards, and provisions of Code for Lightning Protection Systems as adopted by the National Fire Protection Association and Lightning Protection Institute. Lightning protection cable shall be Class I conductors. Air terminals will be as required to match roof conductors, will have proper base support for surface on which they are attached, and will be securely anchored to this surface. Terminals shall project a minimum of 10 inches above the top of the object to which it is attached. Roof conductors will be routed to interconnect with air terminals and provide a two-way minimum path to ground. Down conductors will be concealed within the structure to the extent possible.

3.2.2.4 Surge Protection

High Performance Surge Protection Devices (SPDs) will provide effective high energy transient voltage surge suppression, surge current diversion, and high frequency noise attenuation in all electrical modes for equipment connected downstream of the load side of the main circuit breakers. The unit shall be connected in parallel with the facility wiring system. Systems shall be designed, manufactured, tested, and installed in accordance with UL 1449 – Latest Edition.

3.2.2.5 Lighting

All lighting will be high efficiency LED type. Exterior egress lighting for door entrances and exits shall be provided for new facilities. Additional exterior building lighting and site lighting will be determined as design processes and final locations and arrangements of equipment and structures are identified. Lighting plans developed for the new and modified buildings will locate lighting fixtures, receptacles, and any other 120V circuits. Interior emergency and egress lighting, exit signs, etc. will be provided with 90-minute battery backup packs/units. All exterior and interior lighting will be rated 120V.

3.2.2.6 Raceways

Raceways applications shall be as follows:

- Except where otherwise shown on the drawings or specified, all wiring shall be in rigid aluminum conduit.
- Rigid aluminum conduit shall be used at all locations (underground and within structures) as raceways for shielded process instrumentation wiring, shielded control wiring, data highway wiring and I/O wiring.
- PVC Coated Aluminum shall be used in classified areas, chemical areas, and other areas corrosive to aluminum.
- Rigid aluminum conduit or Schedule 80 PVC conduit shall be used underground where concrete encasement is not called for or as noted above. Where Schedule 80 PVC is used, all elbows shall be rigid aluminum. Where aluminum conduit is used underground, it shall be coated with two coats of Bitumastic paint.
- Schedule 40 PVC conduit shall be used for concrete-encased underground duct banks except as noted above.
- New conduits will be concealed in the slab, in walls, or the ceiling to the greatest extent possible.

3.2.2.7 Wiring

All wires and cables for services 600V or less shall be annealed copper and adhere to the following criteria:

- Wire for all non VFD power motor circuits and below grade lighting and receptacle circuits shall be type XHHW-2, stranded.
- Wire for control circuits shall be #14 AWG minimum NEC Type XHHW-2 stranded.
- Equipment grounding conductors shall be NEC Type XHHW-2

- Multi-conductor control cable shall be 600V, #14 AWG stranded, Type XLP insulated with PVC jacket.
- Multi conductor power cable shall be stranded, 600V, Type XLP insulated with PVC jacket, Type "TC" (XLP) with ground.
- Process instrumentation wire shall be twisted pair, #16 AWG stranded, 600V, Type XLP insulated, aluminum tape shield, with PVC jacket.

3.2.2.8 Enclosures

All equipment enclosures will adhere to the following NEMA classifications and requirements:

- Use NEMA 1 for dry, air conditioned, non-process indoor areas such as electrical rooms. Use rigid aluminum conduit for these indoor locations.
- Use NEMA 12 (or NEMA 1 Gasketed) for indoor, non-process locations without air conditioning. Use rigid aluminum conduit for these indoor locations.
- Use NEMA 4X for outdoor locations, rooms below grade (including basements and buried vaults), damp, wet locations, and corrosive environments. Use rigid aluminum conduit for these areas. Enclosures shall be Type 316 stainless steel.

3.2.3 Instrumentation and Controls (I&C)

3.2.3.1 Monitoring and Control Goals – Process Functional Descriptions

The goals and objectives of the proposed I&C system design are as follows:

- Utilize a proven control and monitoring system.
- The existing control panel (annunciator panel) is used as a termination cabinet/ pass through cabinet sending signals to RTU No. 8. Both panels currently send signals to SCADA and have lights, displays, and switches for monitoring and control. To maintain consistency in operations, the I&C design will include changing these panels to termination cabinets and provide a new control panel to meet the hardware and software standards being used by the facility at the other areas recently upgraded.
- Provide OIT screens to control and monitor the sludge control building.

The following process systems of the Sludge Control Building will require functional descriptions:

- Sludge Transfer Pumps
- Bulk Polymer Storage Tank level monitoring and transfer pump operation

- Level & Valve Control in sludge storage tanks
- Electrical Systems, including monitoring of the new smart MCC and ATS
- Miscellaneous Monitoring – samplers, temperature, panel intrusion

3.2.3.2 New Control System Features and Components

The existing Sludge Control Building is considered a wet environment with high H_2S gas and corrosive conditions due to the facility's proximity to Tampa Bay and the salt air associated with this location. Any field devices and instruments that must be located on the process floor will be rated NEMA4X. As part of upgrades, the controls will provide continuous automated sequential operation and require little interaction from operations personnel after initial configuration.

A new PLC control panel with fiber optic patch panel will be located within the proposed electrical building, while local control stations will be mounted near the equipment. A human machine interface (HMI) screen installed on the PLC control panel shall allow operators to interface with the control system locally. The HMI control format should be consistent with City standards which are to be developed as part of the I&C/SCADA Master Plan.

Currently, SCADA communications travel via fiber network using OM1 fiber optic cable from the Sludge Control Building (PLC-8) to the Filter Building 1 basement (015-FPP-03). This system also extends to the Guy N. Verger Blvd. security gate using 2-strand fiber cable as shown in Figure 3-3. Another 12-strand of fiber cable extends from the Sludge Control Building (PLC-8) to the Sludge Pump Station Electrical Building, which connects to the new dewatering facility. For reliable communications, a new 12-strand OM3 fiber cable is recommended to replace the existing fiber cable between the Sludge Control Building, filter building, security gate and the sludge pump station electrical building.

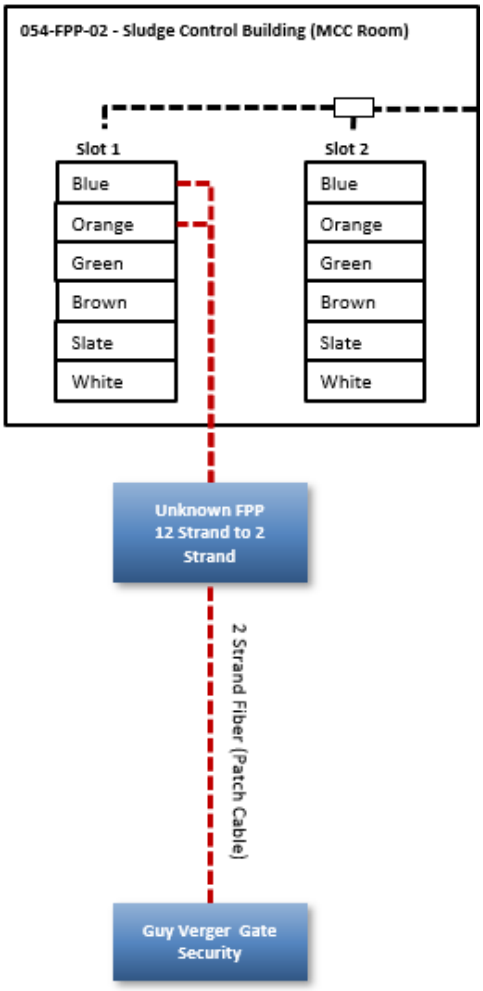


Figure 3-3 Building No. 054 Fiber Network Diagram

New instruments and control components will be based on the below list. In addition to the listed manufacturer, two other manufacturers will be provided for the City's review and selection.

- Level Transmitters: E&H 4-wire FMU ultrasonic level sensors and transmitters
- Pressure Gauges: Ashcroft 1279
- Pressure Switches: Ashcroft B Series
- PLC Control Panel: OIT Maple Systems
- PLC Controller: Allen Bradley Control Logix PLC
- Control Panel Components: City standard for common components utilized at this facility and/or elsewhere as directed by the City.

The existing fuel storage island power and controls will be served from the new electrical building as well and include a new HMI screen for monitoring purposes. However, the fuel storage system including control panel and instruments will be reused, no upgrades are necessary for this system.

3.2.3.3 SCADA System

Operators currently interface with the existing PLC-8 located within the Sludge Control Building to monitor and control the system through an HSQ operator interface software system (HSQ Technology SCADA Systems Management, by Railworks Company) from operator workstations at a base station within the facility.

The City is moving the in-plant processes over to a VTSCADA system to replace the HSQ system within the plant. New screens shall be developed in VTSCADA to monitor and control the sludge control system from SCADA.

The SCADA HMI computers are located inside various buildings throughout the plant. No workstations currently exist within the Sludge Control Building currently, and unless otherwise indicated, none shall be installed.

3.2.3.4 Security System

Provisions for security cameras would allow for monitoring of the SCB area for operations and security purposes. For security cameras and Wi-Fi, the entire network will be reviewed and designed to include current network modifications, communication protocol, camera type, data storage, and retrieval. Locations of cameras shall be reviewed to allow for monitoring and operator safety at the SCB area. Note, these items were not identified in the original scope of work.

3.2.3.5 Process and Instrumentation Diagram (P&ID)

Existing P&IDs for the Sludge Control Building are not available. A block diagram showing instrument wiring is available as shown in Figure 3-4. P&IDs should be developed for the Sludge Control Building processes to supplement control functional descriptions and provide a basis for new instruments required and I/O list. The following represents the tag numbers for equipment and instruments that are to be followed for tagging all equipment and creating a database of tag names. The format for descriptive tag names used in the PLC and HMI will be as depicted in Table 3-1.

Table 3-1: P&ID Instrument Numbering Convention

Site Location Identifier	Building Number	Instrument Code	Loop Number	Instrument Number	Redundancy Identifier
A	XXX	BBBXXX	XXX	XX	CX

Instrument Tag Example:

H-054-LIT000-124-02 identifies a level transmitter on the Polymer Bulk Storage Tank No.2

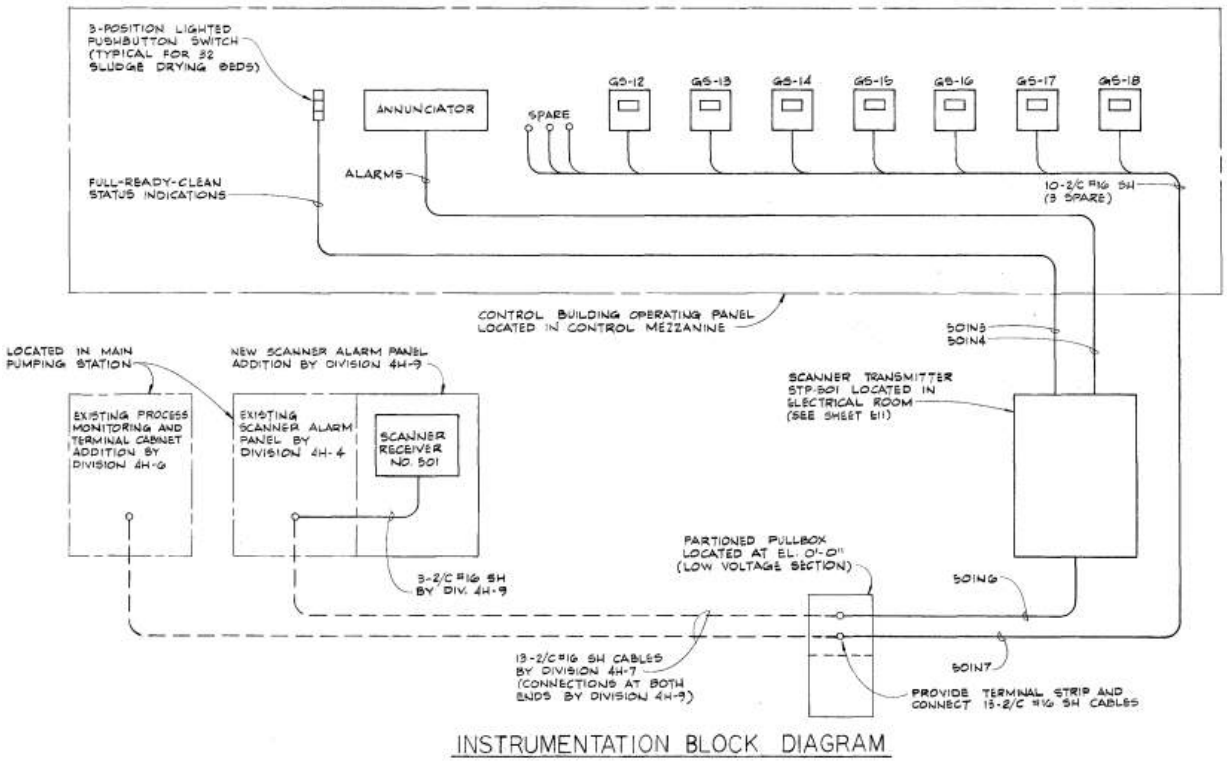


Figure 3-4 Building No. 054 Instrumentation Block Diagram

3.2.4 Maintenance of Plant Operations (MOPO)

Installing the equipment in a new building and location allows a phased approach for sequencing. The following is a general sequence. This sequence will require refinement as part of a detailed design.

Phase 1 – Place New Electrical Building in Service

1. Install the new electrical building and new MCCs, PLC, VFDs, and other equipment.

2. De-energize transformer T-5A-5 from existing MCC-501. Close the tie breaker in MCC-501 to temporarily power all of MCC-501 through transformer T-5B-5.

3. Energize new MCC-501 (A) through existing transformer T-5A-5. Perform startup and testing for new MCC-501 (A), PLC, VFDs, HVAC equipment, etc.

Phase 2 – Transition Loads to New Electrical Building

1. Install the new ATS-502 and Transformer TR-2 in the Existing Sludge Control Building Electrical Room and feed from the new electrical building.

2. De-energize the existing LP panels, re-feed from the new Transformer TR-2, and re-energize. To be performed one panel at a time with a short shutdown for each.

3. Demolish and replace existing road light controls.

4. Relocate the existing sludge tank power and controls to the new electrical building. This will generally be accomplished by installing a new terminal junction box at the southeast corner of the newer sludge storage tanks near the existing pull box, as follows:

    a. At the existing pull box, trace each conduit and wire to verify existing conditions.

    b. One conduit at a time, de-energize and cut the wire, pull the cut wire and conduit from the existing pull box back to the nearest coupling. Then temporarily splice the wires outside of the box until all the conduit and wire and is removed from the existing pull box.

    c. Remove the existing pull box and install the new terminal junction box.

    d. Install new conduit and wiring from the new electrical building to the new terminal junction box.

    e. One conduit at a time, install new conduit from the nearest existing coupling to the new terminal junction box with the existing wire and terminate to the new terminal blocks. Alternatively, new wire could be pulled from the terminal block to the field device.

5. Install new conduits and pull wire from the new VFDs up to the existing equipment.

6. One at a time, shutdown each piece of equipment, connect conduit and wire, then place back in service.

Phase 3 – Decommission Electrical Equipment at Sludge Control Building

1. De-energize transformer T-5B-5 from existing MCC-501. Energize new MCC-501 (B) through existing transformer T-5B-5. Perform startup and testing for new MCC-501 (B)

2. Remove all remaining electrical equipment within the existing Sludge Control Building.

4. Future Efforts

Future efforts include the following:

- Detailed NFPA 820 areas and classification will be determined for all spaces.
- New gear will be evaluated for incident energy and mitigation efforts defined to limit incident energy (addition of Arc Flash Reduction Maintenance Switches, etc.).
- Determine all miscellaneous low voltage circuits (120V, 208V, 240V) that require power from the existing electrical room.

Appendix A: Site Visit Summary

Howard F. Curren AWTP Master Plan Improvements Phase 1 / Task 256

May 17, 2023

Site Visit Summary Overview

Dried Sludge Control Building (Building 054) and Sludge Heat Drying Building (035)

Attendees:

Charlie Lynch, City of Tampa
Karloren Guzman, City of Tampa
Ryan Robinson, City of Tampa
Jim Johnson, City of Tampa
Robert Decker, City of Tampa
Dan Gildea, City of Tampa
Lashonda Green-Buron, City of Tampa
Andres Aviles, City of Tampa
Charles Clark, City of Tampa
Joseph Striker, City of Tampa
Javier Moreno, City of Tampa
Erik Garwell, City of Tampa
Ted Dundas, RTP
Savannah Mika, Hazen and Sawyer
Caryssa Joustra, Hazen and Sawyer
Amal Yelkur, Hazen and Sawyer
Dakota Caldwell, Hazen and Sawyer
Michael Cahill, EDA
Joe Ferguson, EDA

During the site visit for Task 256, discussions were held on to identify approach for electrical and I&C upgrades to the sludge control electrical building. The site visit will inform recommendations presented in the TM as the deliverable for this task. The main items for replacement are identified in the table below. There was also discussion on a change order for the dewatering building construction. Summary tables are provided below for details on the elements included for each category.

Demolitions and Replacements

Items	Disciplines
~~Replace air compressors and heat dryers and move to either new electrical building or reuse vehicle maintenance structure. City prefers new air compressors and heat dryers instead of moving existing.~~ Per City of Tampa direction, this evaluation is no longer required as the compressors will be relocated within Filter Building No. 2.	Process Mech / Electrical / I&C / HVAC / Structural
Rehabilitate vehicle maintenance structure if moving to this location.	Process Mech / Electrical / I&C / HVAC / Structural
Replace electrical building with new prefabricated building. Structural to evaluate feasibility of existing recessed oil changing bay.	Process Mech / Electrical / I&C / HVAC / Structural
PLC 08 and new fiber hub to be located in the new electrical building. • Fuel station electrical feed and fiber to be rerouted to new building • New PLC to consolidate controls	I&C / Electrical
New Instrumentation & Control Items • MCCs (501, 501A, 501B) • PLC 08 • RTU Panel • Sludge Transfer Pump VFD control panel • Polymer Feed Pump VFD control panel	I&C / Electrical

Additional Items not Identified in Original Scope of Work

Items	Discipline
Feed TECO building with the new dewatering building under change order for dewatering project	Electrical

Additional Notes

1. City indicated they would rather replace air compressors and heat dryers rather than relocate near the new electrical building,
    a. Further evaluation of re-using the old vehicle maintenance structure to house new compressors
    b. Option to include with the new electrical building, using a partition wall to separate from electrical equipment
    c. Compressors will need accommodations to drain to sanitary sewer.
2. New building for electrical is recommended
    a. City proposed either removing wall between existing electrical and HVAC room or using 2nd floor of building – however, both of these options would likely require updating building to latest code requirements
    b. Still recommended to install new electrical building rather than reuse existing structures for the electrical improvements

3. City wants to clean up old vehicle maintenance facility regardless if used for new air compressors
4. Location of new electrical building was proposed to be between old vehicle maintenance facility (See photo below). City indicated there is an existing recessed oil changing bay in this location that may need structural evaluation. The bay was never used for its intended purpose, so there is no concern of any environmental permitting requirements.
5. New PLC for the sludge control building and can consolidate into one with the proposed new PLC rather than relocation of the old
6. Main fiber hub to be located in new electrical building.
7. Fuel station to be refed by the new electrical building and fiber to be rerouted to new fiber hub in new building.
8. Sludge heat drying building to be demolished in future. Not part of this scope.

RELEVANT PHOTOS

Description	Photo
Proposed Location for New Electrical Building	
Fuel Station	

Description	Photo
Vehicle Maintenance Building	
Inside Vehicle Maintenance Building	

Description	Photo
Existing Air Compressor 1	
Existing Air Compressor 2	

Description	Photo
Transfer Switch in TECO Building	
Inside Existing Electrical Room	

Appendix B: Cost Estimate

Howard F. Curren AWTP Master Plan Improvements

Task 256

Sludge Control Building

Electrical Improvements

Contract No. 20-C-00001

Cost Estimate

Prepared by Reliable Tampa Partners

Issued March 1st, 2024

RELIABLE
TAMPA PARTNERS
THE HOMETOWN TEAM

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COST ESTIMATE

TAB 1. SUMMARY

TAB 2. ESTIMATE SUMMARY

TAB 3. CLARIFICATIONS

TAB 1. SUMMARY

The City of Tampa entered into an agreement with Reliable Tampa Partners, A Wharton-Smith/Garney JV, to provide professional services in connection with Contract 20-C-00001; Howard F. Curren Advanced Wastewater Treatment Plant Master Plan Improvements, Phase I Design-Build.

Under the Design-Build Amendment 3 to Agreement, Reliable Tampa Partners has prepared a cost estimate of the improvements discussed in the Task 256 Sludge Control Building Electrical Improvements. This is a Class 4 Estimate (-30% / +50%) developed in accordance with the Office Renovation Technical Memorandum.

The estimated cost for this project is $7,146,780, based on the market conditions of this first quarter of 2024. This estimate includes a Firm's Contingency of twenty-precent (20%) based on the limited information included in this preliminary design effort.

TAB 2. ESTIMATE SUMMARY

Guarantee Maximum Price (GMP)		
General Conditions	**$**	**535,429**
Project Management Team	**$**	**474,264**
Project Controls and Documentation	**$**	**39,000**
Safety and Quality	**$**	**22,165**
Cost of Construction	**$**	**4,061,200**
Field Management	**$**	**577,267**
Consultants	**$**	**240,000**
Scope of Work	**$**	**3,243,933**
Existing Conditions	*$*	*198,725*
Concrete	*$*	*166,855*
Metals	*$*	*75,775*
Finishes	*$*	*30,750*
Specialties	*$*	*12,825*
Special Construction	*$*	*157,028*
Heating Ventilating and Air Condition	*$*	*97,375*
Electrical	*$*	*2,120,225*
Process Interconnections	*$*	*384,375*
FIRM Contingency	**$**	**919,326**
Bonds & Insurance	**$**	**500,000**
Subtotal	**$**	**6,015,955**
Fee (7%)	**$**	**421,117**
Allowances	**$**	**60,000**
Owner Contingency	**$**	**649,708**
TOTAL	**$**	**7,146,780**

TAB 3. CLARIFICATIONS

The following are qualifications, assumptions, and clarifications, generally referred to as clarifications.

1. Costs are based on first quarter of 2024 market conditions and is not adjusted for escalations or other changes in market conditions.

2. No Davis-Bacon, other prevailing wages requirements, or American Iron and Steel (AIS) provisions are required or incorporated into the estimates.

3. The project duration is estimated to be 12 months, assuming the electrical gear procurement is started 18 months prior to the construction NTP.

Appendix C: Dried Sludge Control Building Drawing

PLAN SYMBOLS

- HOME RUN TO DESIGNATED EQUIPMENT. NO. OF ARROWS INDICATE NO. OF CIRCUITS, HASH MARKS INDICATE NO. OF #12 AWG. CONDUCTORS. NO HASH MARKS INDICATE 2#12 CONDUCTORS & 1#12 GND IN 3/4" CONDUIT.
- CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING
- CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.
- CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.
- FLEXIBLE CONDUIT WITH EQUIPMENT CONNECTION.
- CONCRETE ENCASED DUCTBANK.
- WALL MOUNTED LIGHTING FIXTURE.
- LED LIGHTING FIXTURE, CEILING MOUNTED.
- EXTERIOR LUMINAIRE AND MOUNTING STANDARD.
- EMERGENCY BATTERY PACK LIGHTING FIXTURE.
- (J) JUNCTION BOX N.E.C. SURFACE MOUNTED UNLESS INDICATED OTHERWISE.
- [J] NEMA 4X 316 STAINLESS STEEL JUNCTION BOX PER N.E.C., RACK MOUNTED UNLESS INDICATED OTHERWISE.
- FLUSH OR SURFACE MOUNTED LIGHTING PANELBOARD.
- FLUSH OR SURFACE MOUNTED POWER PANELBOARD.
- 30 DRY TYPE TRANSFORMER. NO. INDICATES KVA RATING.
- 30 LIQUID FILLED TRANSFORMER, KVA RATING AS SHOWN
- SINGLE RECEPTACLE, RATING AS SHOWN
- 20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 18" ABOVE FINISHED FLOOR.
- 20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR OR 6" ABOVE FINISHED COUNTER AS REQUIRED (AFC)
- 20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH, FLOOR MOUNTED OUTLET BOX.
- 20A, 125V, 3W DUPLEX RECEPTACLE, SURFACE MOUNTED.
- SURFACE MOUNTED GROUND FAULT DUPLEX WEATHERPROOF RECEPTACLE 20A, 125V, 3W – MOUNTED 18" ABOVE FINISHED GRADE, UNLESS OTHERWISE NOTED.
- 20A, 125, 3W DOUBLE DUPLEX RECEPTACLE IN FLUSH OUTLET BOX.
- FLUSH MOUNTED GROUND FAULT DUPLEX RECEPTACLE 20A, 125V, 3W –MOUNTED 18" ABOVE FINISHED FLOOR.
- DISCONNECT RACK MOUNTED.
- HANDS/OFF/AUTOMATIC & DISCONNECT RACK MOUNTED WITH JUNCTION BOX MOUNTED BELOW OFF/REMOTE, SEE DETAIL
- S SINGLE POLE SWITCH IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED (TYPICAL).
- S_S SINGLE POLE SWITCH, SURFACE MOUNTED.
- S_3 THREE–WAY SWITCH IN FLUSH OUTLET BOX.
- S_4 FOUR–WAY SWITCH IN FLUSH OUTLET BOX.
- 30/20 NON–FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.
- NON–FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED, WITH REMOTE CONTROL STATION AS REQUIRED BY ELEMENTARY DIAGRAMS OR SPECS.
- (100) ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.
- [F] FUSED DISCONNECT SWITCH(30/20: 30=SWITCH RATING, 20=FUSE RATING) 3 POLE–UNLESS NOTED OTHERWISE.
- (M) MOTORIZED VALVE AND GATE
- COMBINATION MOTOR STARTER, DISCONNECT SWITCH
- [VFD] VARIABLE FREQUENCY DRIVE
- (T) THERMOSTAT
- ELECTRIC HEATER
- FLUSH OUTLET BOX AND TELEPHONE COVER PLATE AND SUITABLE FOR DATA DEVICE CONNECTION 48" ABOVE FINISHED FLOOR.
- FLUSH FLOOR MOUNTED OUTLET BOX AND TELEPHONE COVER PLATE.

PLAN SYMBOLS (CONTINUED)

- C CONTROL MANHOLE
- P POWER MANHOLE
- H HANDHOLE
- (MS) MOISTURE SENSOR
- (TE) STATOR RTD'S
- (M) ACTUATOR
- (DS) DOOR SWITCH
- (FE) FLOW ELEMENT
- (LE) LEVEL ELEMENT
- (ZS) LIMIT SWITCH
- (PS) PRESSURE SWITCH
- (SV) SOLENOID VALVE
- (LLS) LIQUID LEVEL SWITCH
- [FIT] FLOW INDICATING TRANSMITTER
- (LD) LEAK DETECTION SWITCH
- [LIT] LEVEL INDICATING TRANSMITTER
- [AIT] ANALYZING INDICATING TRANSMITTER
- (TS) TEMPERATURE SWITCH
- (SH) SPACE HEATER
- (SD) SMOKE DETECTOR W/FORM A (SPST) N.O. CONTACTS FOR CONNECTION TO ALARM OUTPUT CIRCUITRY

SINGLE LINE DIAGRAM SYMBOLS

- $\square^2$ COMBINATION MOTOR STARTER, NO. INDICATES STARTER SIZE
- (V) VOLTMETER
- (A) AMMETER
- [ST] SHUNT TRIP
- [PM] PHASE MONITOR
- (GFI) GROUND FAULT INTERRUPTER
- FUSE
- CAPACITOR
- DRAW–OUT CIRCUIT BREAKER
- MOLDED CASE CIRCUIT BREAKER
- TYPICAL SELECTOR SWITCH AND CONTROL. SEE ELEMENTARY DIAGRAMS FOR EXACT TYPE.
- (10) ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.
- SERVICE OR EQUIPMENT GROUND.
- NON–FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.
- CROUSE HINDS EYS FITTING
- CROUSE HINDS EYSR FITTING
- LIGHTING PANELBOARD
- POWER PANELBOARD
- CURRENT TRANSFORMERS
- POTENTIAL TRANSFORMERS.
- (LOS) LOCKOUT SWITCH
- (HOR) HAND–OFF–REMOTE
- (LCS) LOCAL CONTROL STATION
- [O/R] OFF–REMOTE

RISER & CONTROL DIAGRAM SYMBOLS

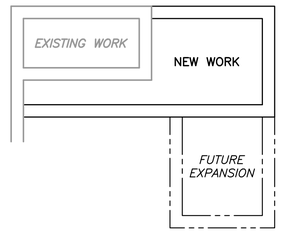
- TEMPERATURE SWITCH, NORMALLY OPEN
- TEMPERATURE SWITCH, NORMALLY CLOSED
- NORMALLY OPEN, TIMED TO CLOSE CONTACT
- NORMALLY CLOSED, TIMED TO OPEN CONTACT
- NORMALLY CLOSED, TIMED TO CLOSE CONTACT
- NORMALLY OPEN, TIMED TO OPEN CONTACT
- (XS) TORQUE SWITCH
- (PS) PRESSURE SWITCH
- (ZS) LIMIT SWITCH
- (SV) SOLENOID VALVE
- (LLS) LIQUID LEVEL SWITCH
- (VS) VIBRATION SWITCH
- (CR) CONTROL RELAY
- (M) MOTOR STARTER
- (TR) TIMING RELAY
- (ES) EMERGENCY STOP
- (PSL) LOW PRESSURE SWITCH
- (PSH) HIGH PRESSURE SWITCH
- (A) ALARM INDICATING LIGHT
- (R) RUN INDICATING LIGHT
- MOMENTARY CONTACT PUSHBUTTON
- MOMENTARY BREAK PUSHBUTTON OR RESET
- K KEYED SWITCH
- MAINTAINED CONTACT ON–OFF SWITCH
- START/STOP(S/S) CONTROL SWITCH MAINTAINED CONTACT
- THREE POSITION MAINTAINED CONTACT SELECTOR SWITCH
- CONTROL POWER TRANSFORMER
- REMOTE TERMINAL BLOCK POINT
- [VS] THREE PHASE VOLT SWITCH
- [AS] THREE PHASE AMP SWITCH
- FUSE
- MOLDED CASE CIRCUIT BREAKER
- SERVICE OR EQUIPMENT GROUND
- NON–FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED
- CURRENT TRANSFORMERS
- POTENTIAL TRANSFORMERS
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- FLOAT SWITCH, NORMALLY OPEN
- FLOAT SWITCH, NORMALLY CLOSED
- FLOW SWITCH, NORMALLY OPEN
- FLOW SWITCH, NORMALLY CLOSED

ABBREVIATIONS

A	AMPERES	GFR	GROUND FAULT RECEPTACLE	OL	OVERLOAD HEATER
AIC	AMPS INTERRUPTING CURRENT	GFI	GROUND FAULT INTERRUPTER	OOR	ON/OFF/REMOTE
AL	ALARM LIGHT	GND	GROUND	P	POLE
ATS	AUTOMATIC TRANSFER SWITCH	GRS	GALVANIZED RIGID STEEL	PCP	PUMP CONTROL PANEL
ASB	ALTERNATOR TEST SWITCH	GWCP	GRIT WASHER CONTROL PANEL	PM	PHASE MONITOR
BKR	BREAKER	HOA	HAND–OFF–AUTOMATIC	PNL	PANEL
BSCP	BARSCREEN CONTROL PANEL	HOLR	HAND–OFF–LOCAL–REMOTE	PP	POWER PANEL
CB	CIRCUIT BREAKER	HOR	HAND–OFF–REMOTE	PRI	PRIMARY
CCB	CONTROL CIRCUIT BREAKER	HP	HORSEPOWER	PVC	POLYVINYL CHLORIDE
CCT	CONTROL CIRCUIT TRANSFORMER	HPS	HIGH PRESSURE SODIUM	R	RELAY
CP	CONTROL PANEL	HSS	HORN SILENCE SWITCH	RCP	REMOTE CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER	HWY	HIGHWAY	RL	RUNNING LIGHT
CU	COPPER	IPS	INFLUNET PUMPING STATION	PRI	PRIMARY
DH	DATA HIGHWAY	KVA	KILO VOLT–AMPERES	SC	SURGE CAPACITOR
DISC	DISCONNECT	KW	KILOWATT	SEC	SECONDARY
DPP	DISTRIBUTION POWER PANEL	LA	LIGHTNING ARRESTOR	SH	SHIELDED
DPST	DOUBLE POLE SINGLE THROW	LCS	LOCAL CONTROL STATION	SPD	SURGE PROTECTION DEVICE
DR	DUPLEX RECEPTACLE	LF	LINEAR FEET	SS	STAINLESS STEEL
EFF	EFFLUENT	LOS	LOCKOUT SWITCH	SUPP	SUPPRESSOR
ELEC	ELECTRICAL	LTG	LIGHTING	SW	SWITCH
ELR	EMERGENCY LOCK–OUT RELAY	MAX	MAXIMUM	TBR	TO BE REMOVED
EM	EMERGENCY	MB	MOTOR BREAKER	TC	TIME CLOCK
ENCL	ENCLOSURE	MCB	MAIN CIRCUIT BREAKER	TECO	TAMPA ELECTRIC COMPANY
EP	EXPLOSION PROOF	MCC	MOTOR CONTROL CENTER	TLS	TROUBLE LIGHT SWITCH
ESB	ENERGY SAVING BALLAST	MH	MANHOLE	TS	TERMINAL STRIP
ETM	ELAPSED TIME METER	MPZ	MINI POWER ZONE	TYP	TYPICAL
EUH	ELECTRIC UNIT HEATER	MIN	MINIMUM	UG	UNDERGROUND
EXH	EXHAUST	MLO	MAIN LUGS ONLY	V	VOLT
EXIST	EXISTING	MSC	MANUFACTURER'S SUPPLIED CABLE	VCP	VALVE CONTROL PANEL
F	FUSE	MTD	MOUNTED	VFD	VARIABLE FREQUENCY DRIVE
FL	FLASHER	NEC	NATIONAL ELECTRICAL CODE	W	WATT
FR	FLOAT REGULATOR	N	NEUTRAL	w/	WITH
FVNR	FULL VOLTAGE NON–REVERSING	NTS	NOT TO SCALE	WP	WEATHERPROOF
GCP	GENERATOR CONTROL PANEL	OCP	ODOR CONTROL PANEL	ϕ	PHASE
GEN	GENERATOR	OH	OVERHEAD		

NOTES

1. ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE TO THE FLORIDA BUILDING CODE (FBC) 8TH EDITION (2020), THE NATIONAL ELECTRICAL CODE (NEC) 2020 EDITION AND CHAPTER 5 OF THE CITY OF TAMPA CODE.
3. MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRING, UNLESS OTHERWISE NOTED. ALL CONDUCTORS SHALL BE STRANDED COPPER.
4. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
5. ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE 2020 EDITION OF THE N.E.C. OR LOCAL CODES. ALL CONDUITS SHALL HAVE A BOND WIRE SIZED PER TABLE 250 OF THE NATIONAL ELECTRICAL CODE.
6. ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.
7. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/OWNER.
8. THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF THE 2020 EDITION OF THE NATIONAL ELECTRICAL CODE.
9. PROVIDE EQUIPMENT GROUNDING CONDUCTOR PER ARTICLE 250.112 OF THE 2020 EDITION OF THE NATIONAL ELECTRICAL CODE.
10. ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS W/DIRECTORIES.
11. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
12. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO THE MECHANICAL DRAWINGS & THE APPROVED MANUFACTURER'S SHOP DRAWINGS FOR THE EXACT LOCATION OF ALL EQUIPMENT.
13. EXISTING EQUIPMENT OR STRUCTURES DESIGNATED BY *SHADED TEXT*. NON–SHADED TEXT DENOTES NEW EQUIPMENT, STRUCTURES AND WORK. *SLANTED TEXT* (NOT SHADED) DENOTES FUTURE EQUIPMENT, STRUCTURES AND WORK.



EXISTING OR FUTURE CONDITION DESIGNATION

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C.O.A. No. 8079

REV	ISSUED FOR	DATE	BY
1	TECHNICAL MEMORANDUM	06/2024	

PROJECT ENGINEER:	M. CAHILL
DESIGNED BY:	M. CAHILL
DRAWN BY:	S. VICKERS
CHECKED BY:	W. NELSON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

RELIABLE TAMPA PARTNERS THE HOMETOWN TEAM

Hazen
HAZEN AND SAWYER
1000 NORTH ASHLEY DRIVE AVE, SUITE 1000
TAMPA, FLORIDA 33602
PHONE: (813) 630-4498 FAX: (813) 630-1967

City of Tampa Florida

CITY OF TAMPA
WASTEWATER DEPARTMENT

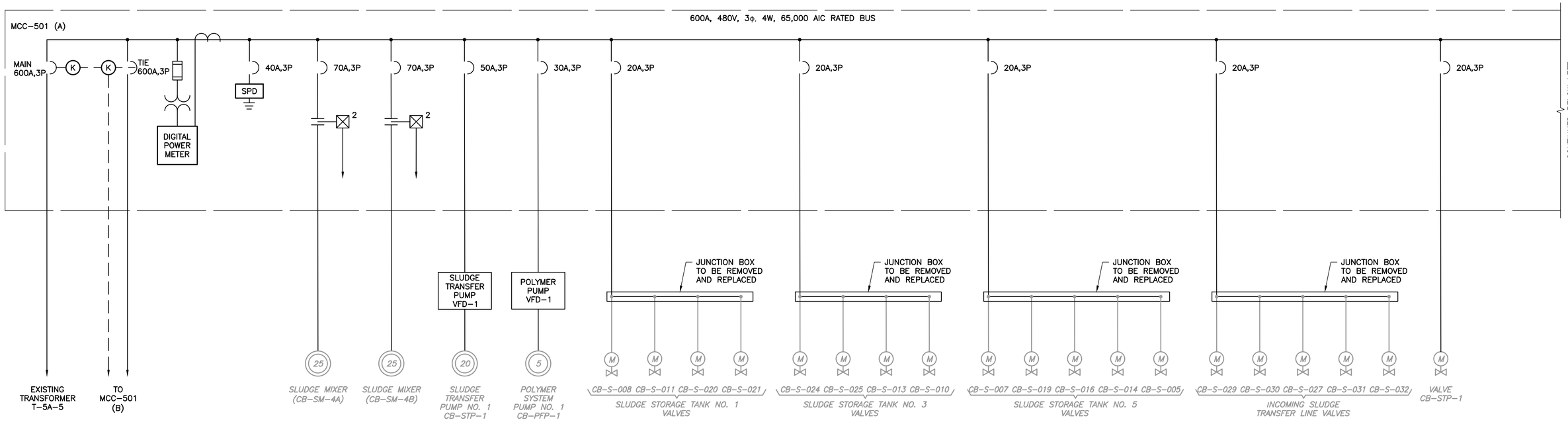
HOWARD F. CURREN AWTP
SLUDGE CONTROL BUILDING

ELECTRICAL

SYMBOLS, NOTES, AND ABBREVIATIONS

DATE:	JUNE 2024
HAZEN NO.:	XXXXX-XXXX
CONTRACT NO.:	20-C-00001
DRAWING NUMBER:	E-000-001

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NEW MCC–501 (A) SINGLE LINE DIAGRAM

MCC–501 (A) LOAD TABULATION
(480V, 3 PHASE)

DESCRIPTION	LOAD		AMPACITY
① SLUDGE MIXERS	2	@ 25 HP	= 68.00 AMPS
① SLUDGE TRANSFER PUMP	1	@ 20 HP	= 27.00 AMPS
① POLYMER SYSTEM PUMP	1	@ 5 HP	= 7.60 AMPS
① MOTORIZED VALVES	21	@ 1 HP	= 44.10 AMPS
① FILTRATION PUMPING STATION	2	@ 30 HP	= 80.00 AMPS
① LIQUID POLYMER MIXER	1	@ 10 HP	= 14.00 AMPS
PANELBOARD LP–501			= 200.00 AMPS
LP–1	1	@ 15 KVA	= 18.00 AMPS
AC–1			= 40.00 AMPS
CONNECTED LOAD			= 498.70 AMPS

NOTES:

① AMPACITIES PER TABLE 430.250 OF THE NATIONAL ELECTRICAL CODE.

NOTES:

① PROVIDE NEW 480V,3 PHASE, 3W AUTOMATIC TRANSFER SWITCH. ATS SHALL BE MOLDED CASE BREAKER DESIGN WITH NON–PREFERRED SOURCE OPERATION. ATS SHALL BE EATON MODEL ATC–900 OR EQUAL.

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REV	ISSUED FOR	DATE	BY
1	TECHNICAL MEMORANDUM	06/2024	

PROJECT ENGINEER:	M. CAHILL
DESIGNED BY:	M. CAHILL
DRAWN BY:	S. VICKERS
CHECKED BY:	W. NELSON

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE (0, 1/2", 1")

RELIABLE TAMPA PARTNERS – THE HOMETOWN TEAM

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City of Tampa Florida

CITY OF TAMPA
WASTEWATER DEPARTMENT

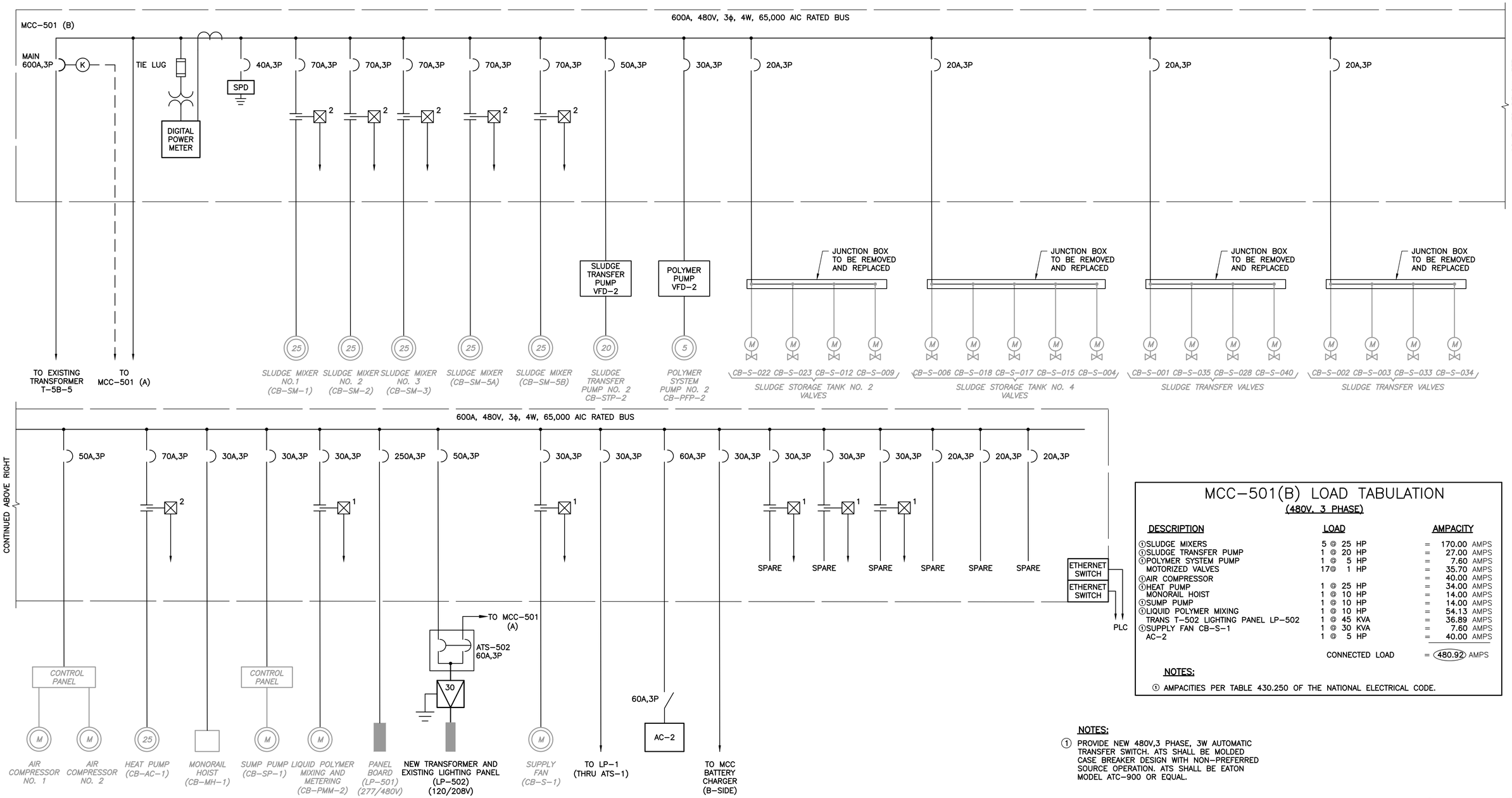
HOWARD F. CURREN AWTP
SLUDGE CONTROL BUILDING

ELECTRICAL

NEW MCC-501 (A)
SINGLE LINE DIAGRAM

DATE:	JUNE 2024
HAZEN NO.:	XXXXX-XXXX
CONTRACT NO.:	20-C-00001
DRAWING NUMBER:	E-000-002

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MCC–501(B) LOAD TABULATION
(480V, 3 PHASE)

DESCRIPTION	LOAD	AMPACITY
①SLUDGE MIXERS	5 @ 25 HP	= 170.00 AMPS
①SLUDGE TRANSFER PUMP	1 @ 20 HP	= 27.00 AMPS
①POLYMER SYSTEM PUMP	1 @ 5 HP	= 7.60 AMPS
MOTORIZED VALVES	17@ 1 HP	= 35.70 AMPS
①AIR COMPRESSOR		= 40.00 AMPS
①HEAT PUMP	1 @ 25 HP	= 34.00 AMPS
MONORAIL HOIST	1 @ 10 HP	= 14.00 AMPS
①SUMP PUMP	1 @ 10 HP	= 14.00 AMPS
①LIQUID POLYMER MIXING	1 @ 10 HP	= 54.13 AMPS
TRANS T–502 LIGHTING PANEL LP–502	1 @ 45 KVA	= 36.89 AMPS
①SUPPLY FAN CB–S–1	1 @ 30 KVA	= 7.60 AMPS
AC–2	1 @ 5 HP	= 40.00 AMPS
	CONNECTED LOAD	= (480.92) AMPS

NOTES:

① AMPACITIES PER TABLE 430.250 OF THE NATIONAL ELECTRICAL CODE.

NOTES:

① PROVIDE NEW 480V,3 PHASE, 3W AUTOMATIC TRANSFER SWITCH. ATS SHALL BE MOLDED CASE BREAKER DESIGN WITH NON–PREFERRED SOURCE OPERATION. ATS SHALL BE EATON MODEL ATC–900 OR EQUAL.

NEW MCC–501 (B) SINGLE LINE DIAGRAM

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C.O.A. No. 8079

REV	ISSUED FOR	DATE	BY
1	TECHNICAL MEMORANDUM	06/2024	

PROJECT ENGINEER:	M. CAHILL
DESIGNED BY:	M. CAHILL
DRAWN BY:	S. VICKERS
CHECKED BY:	W. NELSON
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RELIABLE TAMPA PARTNERS THE HOMETOWN TEAM

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City of Tampa Florida

CITY OF TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN AWTP
SLUDGE CONTROL BUILDING

ELECTRICAL

NEW MCC-501 (B)
SINGLE LINE DIAGRAM

DATE:	JUNE 2024
HAZEN NO.:	XXXXX-XXXX
CONTRACT NO.:	20-C-00001
DRAWING NUMBER:	E-000-003

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NETWORK SWITCHES	LIGHTING PANEL LP-1	SLUDGE TRANSFER PUMP VFD-1	3P, SIZE 1 SPARE	SLUDGE MIXER (CB-SM-4A)	TIE BREAKER	SPD
	LIGHTING PANEL LP-502	POLYMER PUMP VFD-1				
	AC-1	①				POWER MONITOR
	MCC BATTERY SYSTEM CHARGER (A-SIDE)	②	SPACE	SLUDGE MIXER (CB-SM-4B)		
20A,3P SPARE	SPACE	③				MAIN BREAKER
20A,3P SPARE		④				
20A,3P SPARE		VALVE CB-STP-1	LIQUID POLYMER MIXING & METERING (CB-PMM-1)	3P, SIZE 1 SPARE		
SPACE		VALVE CB-STP-2				
	FILTRATION PUMP STATION	VALVE ISO-01 (VALVE 60)				
		SPACE	SPARE	3P, SIZE 1 SPARE		
	LIGHTING PANEL LP-501					

NEW MCC-501 (A) FRONT VIEW

N.T.S.

NOTES:

① SLUDGE STORAGE TANK NO. 1 VALVES: CB-S-008, CB-S-011, CB-S-020, CB-S-021.

② SLUDGE STORAGE TANK NO. 3 VALVES: CB-S-024, CB-S-025, CB-S-013, CB-S-010.

③ SLUDGE STORAGE TANK NO. 5 VALVES: CB-S-007, CB-S-019, CB-S-016, CB-S-014, CB-S-005.

④ INCOMING SLUDGE TRANSFER LINE VALVES: CB-S-029, CB-S-030, CB-S-027, CB-S-031 CB-S-032.

SPD	TIE LUGS	SLUDGE MIXER (CB-SM-5A)	HEAT PUMP (CB-AC-1)	3P, SIZE 1 SPARE	SLUDGE TRANSFER PUMP VFD-2	LIGHTING PANEL LP-1
					POLYMER PUMP VFD-2	LIGHTING PANEL LP-502
POWER MONITOR					①	AC-2
		SLUDGE MIXER (CB-SM-5B)	LIQUID POLYMER MIXING & METERING (CB-PMM-2)	3P, SIZE 1 SPARE	②	MCC BATTERY SYSTEM CHARGER (B-SIDE)
MAIN BREAKER					③	NETWORK SWITCHES
					④	
		SLUDGE MIXER NO. 2 (CB-SM-2)	SUPPLY FAN (CB-S-1)	3P, SIZE 1 SPARE	AIR COMPRESSOR NO. 1 & NO. 2	
					MONORAIL HOIST (CB-MH-1)	
					SUMP PUMP (CB-SP-1)	20A,3P SPACE
		SLUDGE MIXER NO. 3 (CB-SM-3)	SLUDGE MIXER NO. 1 (CB-SM-1)	SPACE	SPACE	20A,3P SPACE
						20A,3P SPACE
						SPACE

NEW MCC-501 (B) FRONT VIEW

N.T.S.

NOTES:

① SLUDGE STORAGE TANK NO. 2 VALVES: CB-S-022, CB-S-023, CB-S-012, CB-S-009.

② SLUDGE STORAGE TANK NO. 4 VALVES: CB-S-006, CB-S-018, CB-S-017, CB-S-015, CB-S-004.

③ SLUDGE TRANSFER VALVES: CB-S-001, CB-S-035, CB-S-028, CB-S-040.

④ SLUDGE TRANSFER VALVES: CB-S-002, CB-S-003, CB-S-033, CB-S-034.

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C.O.A. No. 8079

REV	ISSUED FOR	DATE	BY
1	TECHNICAL MEMORANDUM	06/2024	

PROJECT ENGINEER:	M. CAHILL
DESIGNED BY:	M. CAHILL
DRAWN BY:	S. VICKERS
CHECKED BY:	W. NELSON

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 0 1/2" 1"

RELIABLE TAMPA PARTNERS THE HOMETOWN TEAM

Hazen
HAZEN AND SAWYER
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PHONE: (813) 630-4498 FAX: (813) 630-1967

City of Tampa Florida

CITY OF TAMPA
WASTEWATER DEPARTMENT

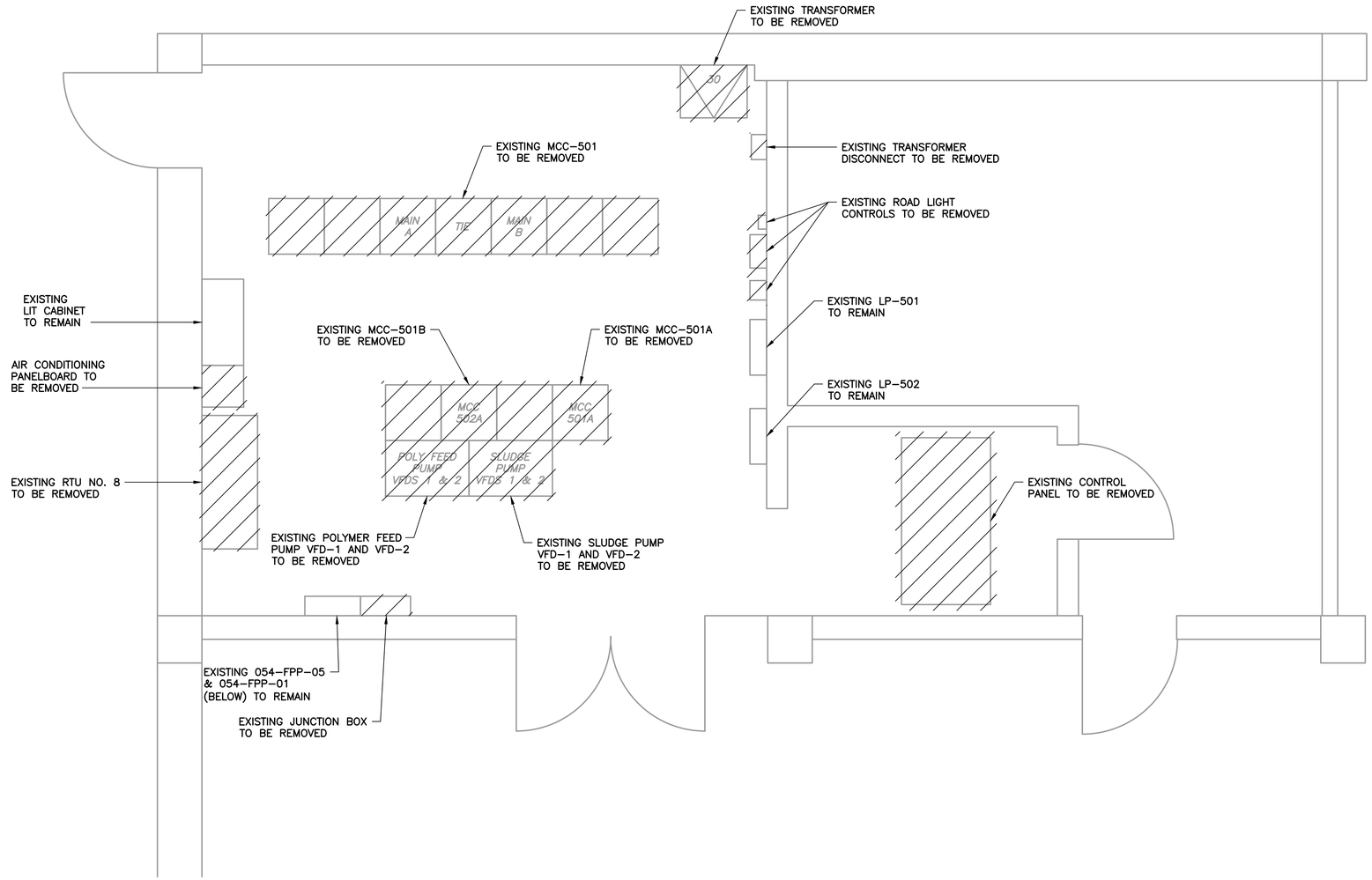
HOWARD F. CURREN AWTP
SLUDGE CONTROL BUILDING

ELECTRICAL

MCC-501 (A) & MCC-501 (B)
FRONT VIEWS

DATE:	JUNE 2024
HAZEN NO.:	XXXXX-XXXX
CONTRACT NO.:	20-C-00001
DRAWING NUMBER:	E-000-004

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EXISTING SLUDGE CONTROL BUILDING 064 ELECTRICAL ROOM (DEMOLITION)

SCALE: 1/2"=1'-0"

2' 1' 0 2'

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C.O.A. No. 8079

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1	TECHNICAL MEMORANDUM	06/2024	

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CITY OF TAMPA
WASTEWATER DEPARTMENT

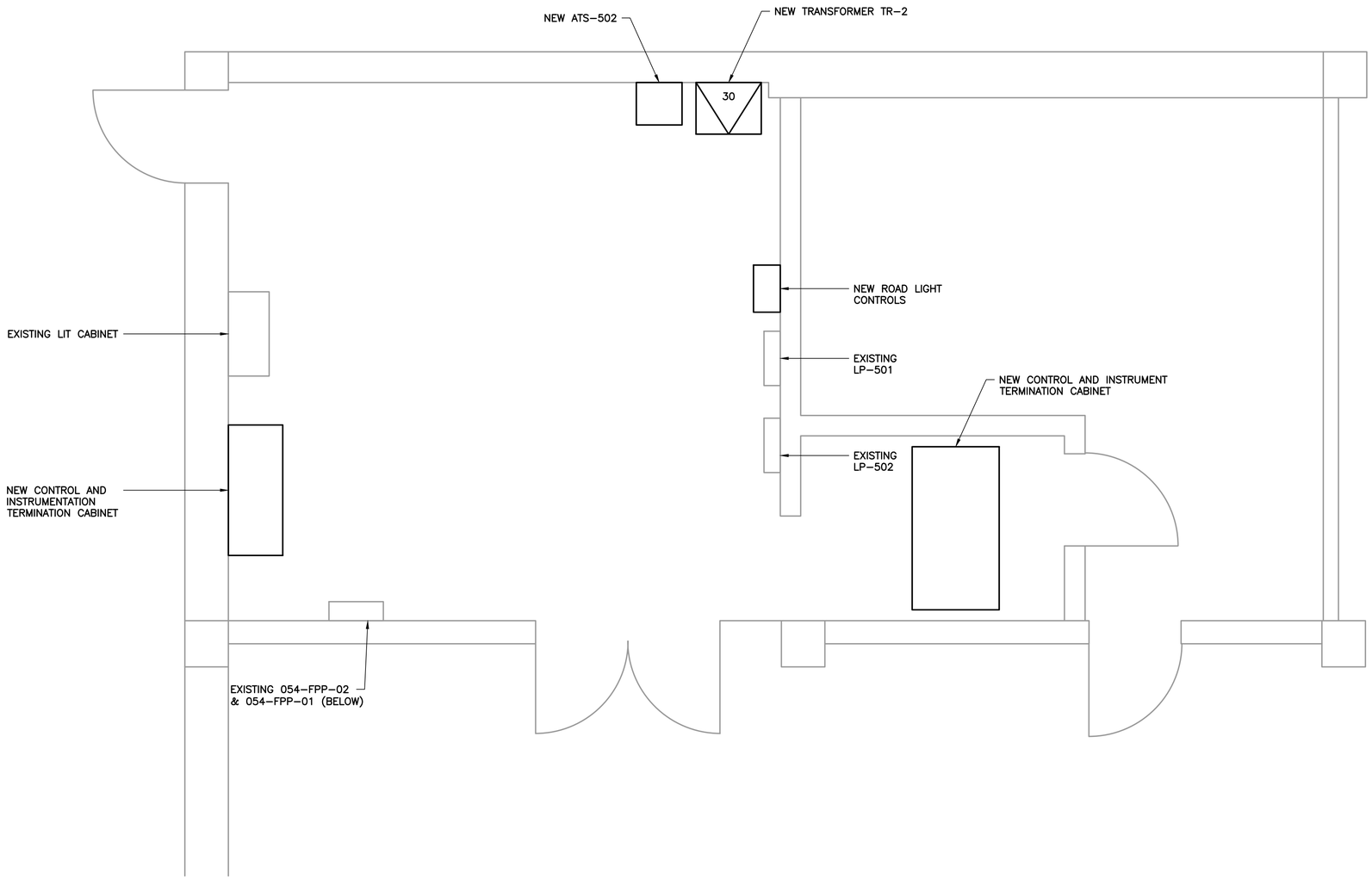
HOWARD F. CURREN AWTP
SLUDGE CONTROL BUILDING

ELECTRICAL

EXISTING SLUDGE CONTROL BUILDING ELECTRICAL ROOM (DEMOLITION)

DATE:	JUNE 2024
HAZEN NO.:	XXXXX-XXXX
CONTRACT NO.:	20-C-00001
DRAWING NUMBER:	E-000-005

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EXISTING SLUDGE CONTROL BUILDING 064
ELECTRICAL ROOM (MODIFICATIONS)

SCALE: 1/2"=1'–0"

2' 1' 0 2'

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Electrical Design Associates
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TAMPA, FLORIDA 33607
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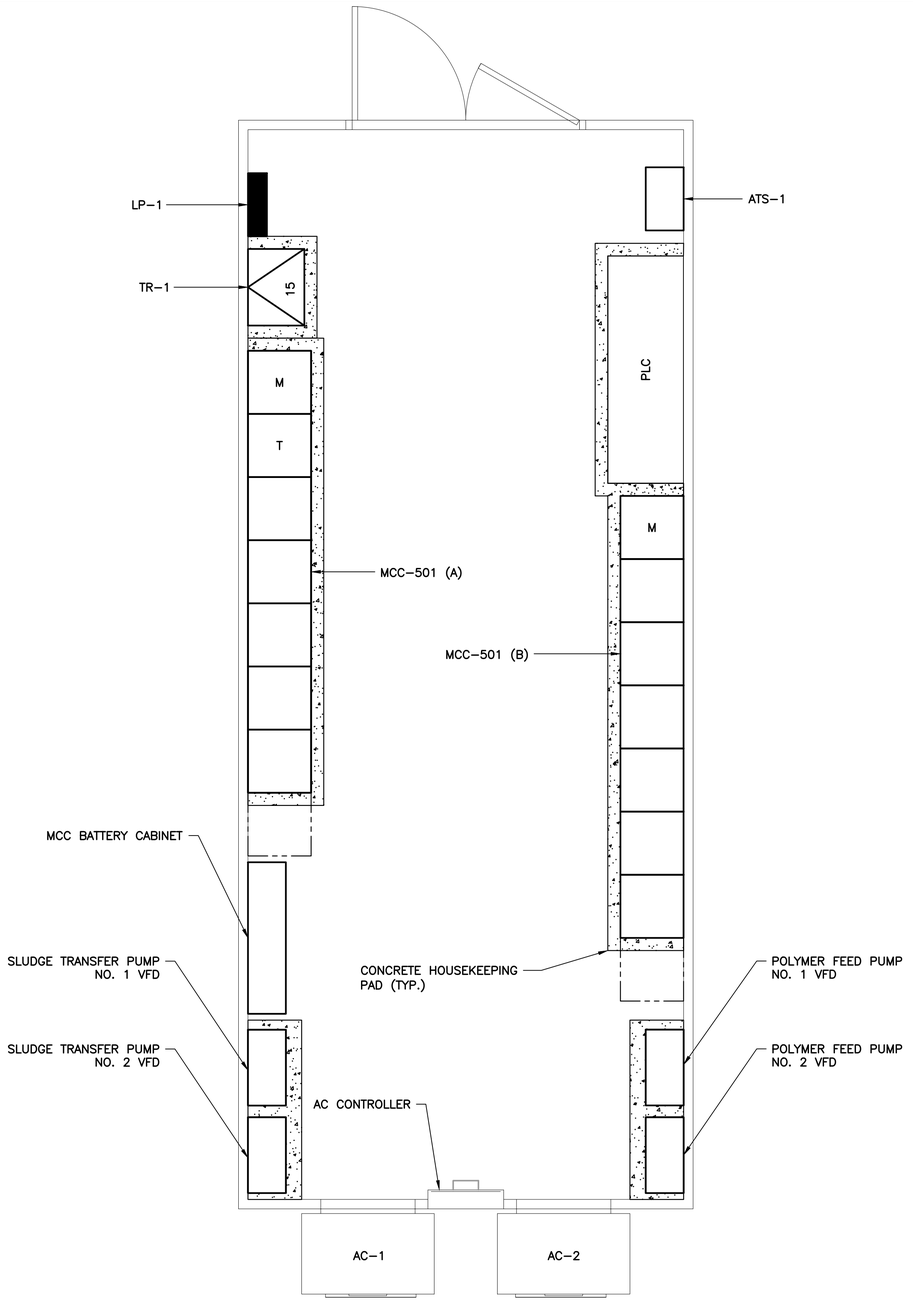
HOWARD F. CURREN AWTP
SLUDGE CONTROL BUILDING

ELECTRICAL

EXISTING SLUDGE CONTROL BUILDING ELECTRICAL ROOM (MODIFICATIONS)

DATE:	JUNE 2024
HAZEN NO.:	XXXXX-XXXX
CONTRACT NO.:	20-C-00001
DRAWING NUMBER:	E-000-006

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SLUDGE CONTROL ELECTRICAL BUILDING POWER PLAN

SCALE: 1/2"=1'–0"

2' 1' 0 2'

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City of Tampa Florida

CITY OF TAMPA
WASTEWATER DEPARTMENT

HOWARD F. CURREN AWTP
SLUDGE CONTROL BUILDING

ELECTRICAL

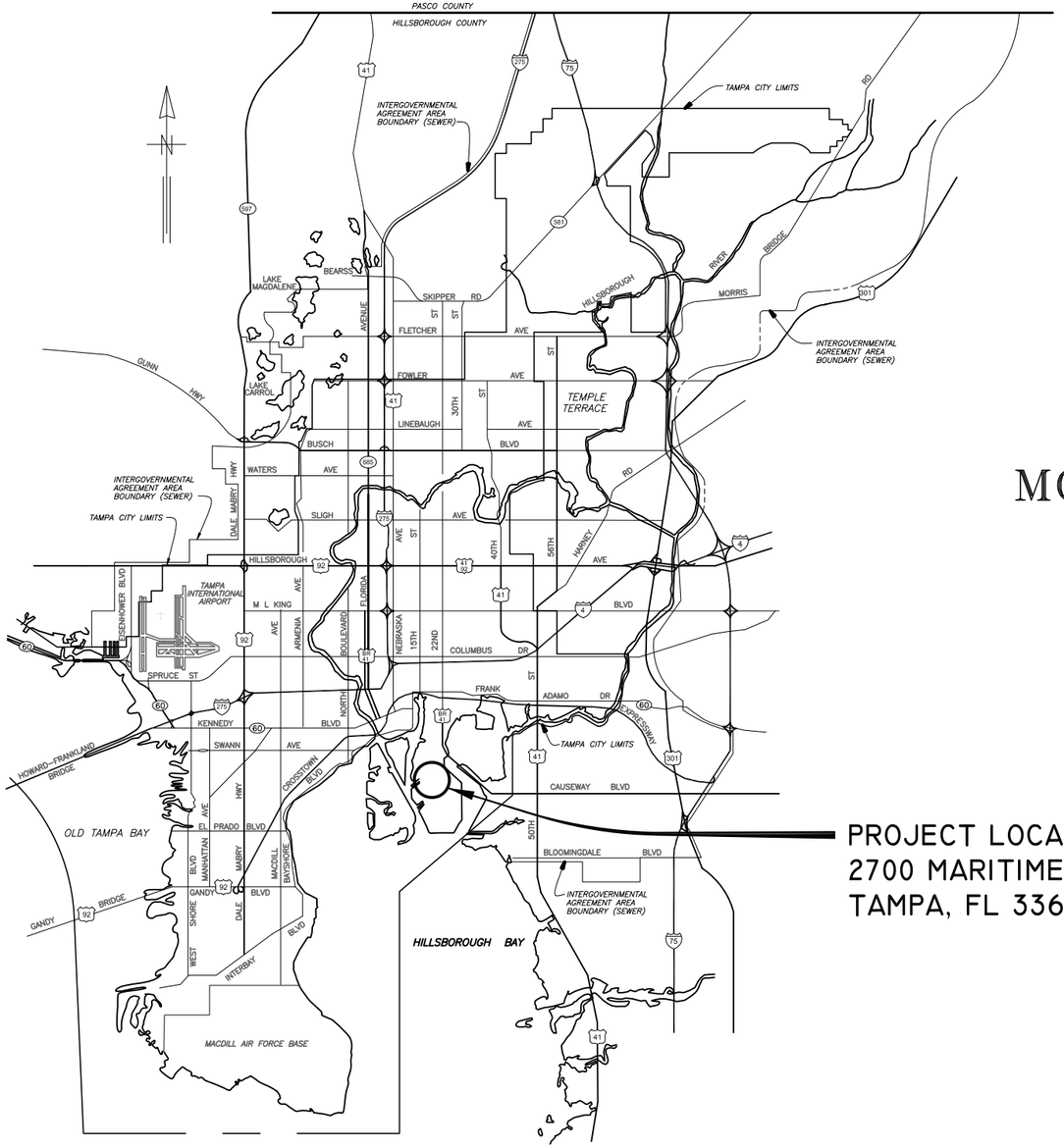
NEW SLUDGE CONTROL BUILDING POWER PLAN

DATE:	JUNE 2024
HAZEN NO.:	XXXXX-XXXX
CONTRACT NO.:	20-C-00001
DRAWING NUMBER:	E-000-007

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Filter Building No. 1 MCC Replacement_Year 2019

LOCATION MAP



PROJECT LOCATION
2700 MARITIME BLVD.
TAMPA, FL 33605

PLANS

FOR

CITY OF TAMPA FLORIDA
WASTEWATER DEPARTMENT

FOR
THE CONSTRUCTION OF THE

HOWARD F. CURREN
FILTER BUILDING
MOTOR CONTROL CENTER REPLACEMENT
– BUILDING NO. 1 MCC 58

CONTRACT: 17-C-00020

APRIL 2017

CITY OF TAMPA FLORIDA • ORGANIZED JULY 15 1887 • MASCOTTE

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 250
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

TIMOTHY THOMAS, P.E. No. 47079

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TEMPORARY EQUIPMENT NOTES

TEMPORARY EQUIPMENT SHALL BE PROVIDED DURING THE REMOVAL THE OLD MCC–58 AND THE INSTALLATION OF THE NEW MCC–58. REFER ALSO TO SHEET 3 FOR THE TEMPORARY POWER SEQUENCE OF INSTALLATION ON MCC–58THE WORK CONSIST OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, AND TECHNICAL SUPERVISION TO INSTALL NEW MCC–58 AS INDICATED AND SHOWN. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

1. THE TEMPORARY EQUIPMENT SHALL BE NEW, OR IF USED, BE IN EXCELLENT WORKING CONDITION.
2. THE TEMPORARY EQUIPMENT PROVIDED MAY BE RENTAL EQUIPMENT. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE CITY OF TAMPA FOR APPROVAL ALL RENTAL EQUIPMENT TO BE PROVIDED. SHOP DRAWINGS SHALL INDICATE THE SPECIFICATIONS FOR THE PROPOSED EQUIPMENT AND THE RENTAL FACILITY SUPPLYING THE EQUIPMENT.
3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE CITY OF TAMPA FOR APPROVAL OF ALL TEMPORARY EQUIPMENT TO BE UTILIZED.
4. THE CONTRACTOR SHALL MAINTAIN ALL TEMPORARY EQUIPMENT TO BE PROVIDED FOR THE DURATION OF THE TIME THE TEMPORARY EQUIPMENT IS IN SERVICE.
5. THE CONTRACTOR SHALL PROVIDE 24 HOUR ON SITE EMERGENCY SERVICE FOR ANY MALFUNCTION OF THE TEMPORARY EQUIPMENT PROVIDED.

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 MCC–58 REPLACEMENT. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

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

SPECIFICALLY:

A. DEMOLITION

1) PRIOR TO DEMOLITION, THE PROPOSED MCC 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.

2) VERIFY EXISTING POWER CONNECTIONS IN THE FIELD PRIOR TO COMMENCING DEMOLITION WORK.

3) LABEL ALL MAIN AND FEEDER CONDUCTORS ATTACHED TO THE EXISTING MOTOR CONTROL CENTER 58 (MCC–58). ALL CONDUCTORS ARE TO BE RECONNECTED TO THE NEW MCC. REMOVE EXISTING MCC–58 AND PREPARE EXISTING CONCRETE PAD AS REQUIRED TO INSTALL THE NEW MCC.

4) INSTALL MCC AND MAKE CABLE CONNECTIONS AS SHOWN.

5) PERFORM A SHORT CIRCUIT AND COORDINATION STUDY AS DETAILED IN SECTION 16085 OF THE SPECIFICATIONS. THE STUDY SHALL BE USED TO DETERMINE THE PROPER SETTINGS FOR THE MCC–58 CIRCUIT BREAKERS, ETC. THE SHORT CIRCUIT STUDY SHALL BE SIGNED, SEALED AND APPROVED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.

GENERAL NOTES

THE WORK CONSIST OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, AND TECHNICAL SUPERVISION TO INSTALL NEW MCC–58 AS INDICATED AND SHOWN. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2. ALL WIRING SHALL BE IDENTIFIED WITH NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
3. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
4. ALL NEW EQUIPMENT SHALL BE PERMANENTLY IDENTIFIED WITH A BLACK ON WHITE LAMACOID TAG ENGRAVED WITH MINIMUM 3/16 INCH LETTERING.
5. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS. NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
6. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
7. REPLACE THE EXISTING MOTOR CONTROL CENTER 58 (MCC–58) AS SHOWN AND SPECIFIED.
8. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2011 NATIONAL ELECTRICAL CODE (NEC) AND CHAPTER 5 OF THE CITY OF TAMPA CODE.
9. TEST AND START–UP REPORTS FOR THE PROPOSED MCC 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.

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SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

INDEX, SCHEDULES AND GENERAL NOTES

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER 2

FILE: 171604942E01

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 MCC–58 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 FORM THE CITY OF TAMPA.
2. PROVIDE AND INSTALL ALL TEMPORARY POWER AND TEMPORARY CONTROL EQUIPMENT. THIS SHALL INCLUDE ALL CABLE TRAY AND ASSOCIATED CABLES TO BE UTILIZED SOLELY BETWEEN THE TEMPORARY POWER EQUIPMENT (TEMPORARY PANELBOARD 'A', TEMPORARY PANELBOARD 'B', TEMPORARY MOTOR STARTERS AND TEMPORARY VARIABLE FREQUENCY DRIVES (VFD'S)), AND TEMPORARY CONTROL EQUIPMENT (TEMPORARY MOTOR CONTROL PANEL 'A' AND TEMPORARY MOTOR CONTROL PANEL 'B'). THE CONTRACTOR SHALL MEGGER ALL TEMPORARY CABLES AFTER INSTALLATION.
3. OPEN THE CIRCUIT BREAKERS IN SWITCHGEAR 56 WHICH FEED MCC–58 BUS A AND MCC–58 BUS B. LOCKOUT CIRCUIT BREAKERS. DISCONNECT THE ASSOCIATED FEEDER CONDUCTORS FROM THE LOAD SIDE OF THE ASSOCIATED CIRCUIT BREAKERS.
4. DISCONNECT FEEDER CONDUCTORS FROM ASSOCIATED CIRCUIT BREAKERS WITHIN MCC–58. COIL AND TAPE CONDUCTORS INSIDE MCC–58 (IN PREPARATION FOR THE REMOVAL OF MCC–58) AND PROTECT FROM DAMAGE.
5. UTILIZE EXISTING PULL BOX 'A' (REFER SHEETS E–19, E–31 AND E–32) TO REMOVE MCC–58 BUS A AND MCC–58 BUS B FEEDER CONDUCTORS FROM SWITCHGEAR 56 BACK TO AND OUT OF EXISTING PULL BOX. COIL AND TAPE CONDUCTORS AND PROTECT FROM DAMAGE.
6. UTILIZING TEMPORARY CABLE TRAY AND CONDUIT/PULL BOXES VACATED BY THE REMOVAL OF THE MCC–58 BUS A AND MCC–58 BUS B FEEDERS, INSTALL NEW TEMPORARY TYPE W CABLE FROM SWITCHGEAR 56 MCC–58 BUS A AND MCC–58 BUS B CIRCUIT BREAKERS TO THE TEMPORARY PANELBOARDS A AND B RESPECTIVELY. THE CONTRACTOR SHALL MEGGER THE TEMPORARY POWER CABLES AFTER INSTALLATION. AFTER A SUCCESSFUL MEGGER TEST, CLOSE SWITCHGEAR 56 MCC–58 BUS A AND MCC–58 BUS B CIRCUIT BREAKERS, THEREBY ENERGIZING TEMPORARY PANELBOARD A AND TEMPORARY PANELBOARD B.
7. OPEN THE CIRCUIT BREAKER IN MCC–58 WHICH FEEDS MCC–58A BUS A. LOCKOUT THE CIRCUIT BREAKER. DISCONNECT THE ASSOCIATED FEEDER CONDUCTORS FROM THE LOAD SIDE OF THE ASSOCIATED CIRCUIT BREAKER. COIL AND TAPE CONDUCTORS INSIDE MCC–58 (IN PREPARATION FOR THE REMOVAL OF MCC–58) AND PROTECT FROM DAMAGE.
8. DISCONNECT FEEDER CONDUCTORS FROM ASSOCIATED CIRCUIT BREAKER WITHIN MCC–58A. UTILIZE EXISTING PULL BOX 'B' (REFER TO SHEETS E–19, E–31 AND E–32) TO REMOVE MCC–58A BUS A CONDUCTORS FROM MCC–58A BUS A BACK TO AND OUT OF EXISTING PULL BOX. COIL AND TAPE CONDUCTORS AND PROTECT FROM DAMAGE.
9. UTILIZING TEMPORARY CABLE TRAY AND CONDUIT/PULL BOXES VACATED BY THE REMOVAL OF THE MCC–58A BUS A FEEDER, INSTALL NEW TEMPORARY TYPE W CABLE FROM MCC–58A BUS A CIRCUIT BREAKER TO TEMPORARY PANELBOARD A. THE CONTRACTOR SHALL MEGGER THE TEMPORARY POWER CABLES AFTER INSTALLATION . AFTER A SUCCESSFUL MEGGER TEST, CLOSE MCC–58A BUS A FEEDER CIRCUIT BREAKER, THEREBY ENERGIZING MCC–58A BUS A.
10. REPEAT THE PREVIOUSLY OUTLINED PROCESS TO PROVIDE TEMPORARY POWER TO MCC–58A BUS B.
11. OPEN THE CIRCUIT BREAKER IN MCC–58 WHICH FEEDS NORMAL POWER TO THE AUTOMATIC TRANSFER SWITCH (ATS) SERVING PANELBOARD LP–53'S STEP–DOWN TRANSFORMER. LOCKOUT THE CIRCUIT BREAKER. DISCONNECT THE ASSOCIATED FEEDER CONDUCTORS FROM THE LOAD SIDE OF THE ASSOCIATED CIRCUIT BREAKER. COIL AND TAPE CONDUCTORS INSIDE MCC–58 (IN PREPARATION FOR THE REMOVAL OF MCC–58) AND PROTECT FROM DAMAGE.
12. DISCONNECT THE ASSOCIATED FEEDER CONDUCTORS FROM THE LINE SIDE OF THE ATS. COIL AND TAPE CONDUCTORS AND PROTECT FROM DAMAGE.
13. INSTALL NEW TEMPORARY TYPE W CABLE FROM TEMPORARY PANELBOARD A TO PANELBOARD LP–53 ATS. DUE TO THE LOCATION AND ROUTING OF THIS CABLE, THE CONTRACTOR SHALL PROVIDE AN APPROPRIATELY SIZED CHANNELED CABLE PROTECTOR TO BE INSTALLED ON THE FINISHED FLOOR. THE CONTRACTOR SHALL MEGGER THE TEMPORARY CABLE AFTER INSTALLATION. AFTER A SUCCESSFUL MEGGER TEST, CLOSE THE ASSOCIATED TEMPORARY PANELBOARD A CIRCUIT BREAKER, THEREBY ENERGIZING THE NORMAL POWER SIDE OF PANELBOARD LP–53'S ATS.
14. REPEAT THE PREVIOUSLY OUTLINED PROCESS TO PROVIDE TEMPORARY POWER TO THE EMERGENCY POWER SIDE OF PANELBOARD LP–53'S ATS.
15. OPEN THE CIRCUIT BREAKER IN MCC–58 WHICH FEEDS PUMP MOTOR FB–GPP–4. LOCKOUT THE CIRCUIT BREAKER. DISCONNECT THE ASSOCIATED FEEDER CONDUCTORS FROM THE LOAD SIDE OF THE ASSOCIATED CIRCUIT BREAKER. COIL AND TAPE CONDUCTORS INSIDE MCC–58 (IN PREPARATION FOR THE REMOVAL OF MCC–58) AND PROTECT FROM DAMAGE.
16. DISCONNECT THE ASSOCIATED FEEDER CONDUCTORS FROM THE PUMP MOTOR.
17. UTILIZE EXISTING PULL BOX 'A' (REFER TO SHEETS E–19, E–31 AND E–32) TO REMOVE FB–GPP–4 FEEDER CONDUCTORS FROM FB–GPP–4 BACK TO AND OUT OF EXISTING PULL BOX. COIL AND TAPE CONDUCTORS AND PROTECT FROM DAMAGE.
18. UTILIZING TEMPORARY CABLE TRAY AND CONDUIT/PULL BOXES VACATED BY THE REMOVAL OF THE FB–GPP–4 FEEDER, INSTALL NEW TEMPORARY TYPE W CABLE FROM TEMPORARY PANELBOARD A TO PUMP MOTOR FOR FB–GPP–4. THE CONTRACTOR SHALL MEGGER THE TEMPORARY POWER CABLE AFTER INSTALLATION.
19. DISCONNECT THE ASSOCIATED CONTROL CONDUCTORS FROM THE FB–GPP–4 JUNCTION BOX. COIL AND TAPE CONDUCTORS AND PROTECT FROM DAMAGE.
20. DISCONNECT THE ASSOCIATED CONTROL CONDUCTORS FROM MCC–58. COIL AND TAPE CONDUCTORS INSIDE MCC–58 (IN PREPARATION FOR THE REMOVAL OF MCC–58) AND PROTECT FROM DAMAGE.
21. UTILIZING TEMPORARY CABLE TRAY AND EXISTING CONDUIT TRAPEZE SUPPORTS, FIELD ROUTE TEMPORARY TYPE SO CONTROL CABLES FROM TEMPORARY FB–GPP–4 STARTER TO THE EXISTING FB–GPP–4 JUNCTION BOX. THE CONTRACTOR SHALL MEGGER THE TEMPORARY CONTROL CABLE AFTER INSTALLATION.
22. AFTER SUCCESSFUL MEGGER TESTS ON BOTH TEMPORARY POWER AND CONTROL CABLES, CLOSE THE ASSOCIATED TEMPORARY PANELBOARD A CIRCUIT BREAKER AND TEST MOTOR FOR PROPER OPERATION.
23. REPEAT THE PREVIOUSLY OUTLINED PROCEDURE FOR FB–GPP–3.
24. REPEAT THE PREVIOUSLY OUTLINED PROCEDURE FOR CF GPEW–1, CF GPEW–2, BWP–1, BWP–2, BWP–3, PP201A AND PP201S. THE EXCEPTIONS TO THESE INDIVIDUAL PUMP MOTORS WILL BE THE INSTALLATION (ROUTING) OF THE TEMPORARY POWER AND CONTROL CABLES.
25. WHILE THE PREVIOUSLY OUTLINED METHODS SHALL APPLY, INSTALLATION OF THE TEMPORARY POWER AND TEMPORARY CONTROL CABLES FOR BWP–1, BWP–2, BWP–3, PP201A AND PP201S SHALL UTILIZE THE EXISTING SUPPORT STRUCTURES FOR THE CURRENTLY INSTALLED POWER AND CONTROL CONDUITS.
26. WHILE THE PREVIOUSLY OUTLINED METHODS SHALL APPLY, INSTALLATION OF THE TEMPORARY POWER AND TEMPORARY CONTROL CABLES FOR CF GPEW–1 AND CF GPEW–2 SHALL UTILIZE THE EXISTING CONDUIT TRAPEZE SUPPORT STRUCTURES.
27. FOR ALL TEMPORARY CABLE INSTALLATIONS, THE TRANSITION FROM THE PUMPS (LOCATED ON ELEVATION 3'–6") TO THE ASSOCIATED TEMPORARY PANELBOARDS AND TEMPORARY MOTOR CONTROL PANELS (LOCATED ON ELEVATION 11'–0") SHALL BE VIA THE OPENING IN THE ELEVATION 11'–0" FLOOR SLAB (REFER TO DRAWINGS). ALL TEMPORARY CABLES SHALL BE SECURED TO CONDUIT TRAPEZE SUPPORT SYSTEM, HANDRAILS, OR OTHER MEANS AS APPROVED BY THE CITY OF TAMPA.
28. AT NO TIME SHALL MORE THAN ONE (1) PUMP BE REMOVED FROM SERVICE IN ORDER TO INSTALL TEMPORARY CONNECTIONS. TEMPORARY CONNECTIONS TO PUMP MOTORS SHALL NOT BE MADE CONCURRENTLY.
29. THE PREVIOUSLY OUTLINED MEANS AND METHODS SHALL APPLY TO THE INSTALLATION OF THE TEMPORARY POWER CABLES REQUIRED FOR THE MONORAIL HOIST, PILOT PLANT, TRANSFORMER T–LCP–54 AND TRANSFORMER T–LCP–55.
30. ONCE ALL TEMPORARY POWER AND TEMPORARY CONTROL CABLES HAVE BEEN INSTALLED AND ALL PUMPS AND EQUIPMENT ARE OPERATIONALLY SOUND, THE CONTRACTOR SHALL OPEN AND LOCK OUT THE CIRCUIT BREAKERS IN THE SECONDARY COMPARTMENTS OF TRANSFORMERS T–5A–7 AND T–5B–7 (RESPECTIVELY). THE CONTRACTOR SHALL THEN OPEN MCC–58'S MAIN CIRCUIT BREAKER BUS A AND MAIN CIRCUIT BREAKER BUS B. THE EXISTING MCC–58 WILL NOW BE READY TO BE REMOVED.
31. ONCE THE PHYSICAL INSTALLATION OF THE NEW MCC–58 IS COMPLETE, AND ALL TESTS HAVE BEEN ACCEPTED/APPROVED, THE CONTRACTOR SHALL REMOVE THE ASSOCIATED LOCKS ON THE CIRCUIT BREAKERS IN THE SECONDARY COMPARTMENTS OF TRANSFORMERS T–5A–7 AND T–5B–7 AND THEN CLOSE THE CIRCUIT BREAKERS IN THE TRANSFORMERS. THE CONTRACTOR SHALL THEN CLOSE MCC–58'S MAIN CIRCUIT BREAKER BUS A AND MAIN CIRCUIT BREAKER BUS B.
32. CONDUCTORS DISCONNECTED PREVIOUSLY SHALL BE RECONNECTED AND THE FEEDER SHALL BE MEGGER TESTED. WHERE REQUIRED, 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. THEREFORE, THE LAST PERMANENT CONNECTIONS TO BE MADE SHALL BE THE MCC–58 BUS A AND MCC–58 BUS B FEEDERS FROM SWITCHBOARD 56. THIS SHALL ALLOW FOR POWER TO TEMPORARY PANELBOARD A AND TEMPORARY PANELBOARD B TO BE THE LAST TEMPORARY CONNECTION.
33. ONCE TESTING IS COMPLETE AND MCC–58 HAS BEEN ACCEPTED BY THE CITY, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EQUIPMENT, CABLE TRAY, CONDUIT AND CONDUCTORS.

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City of Tampa Wastewater Department

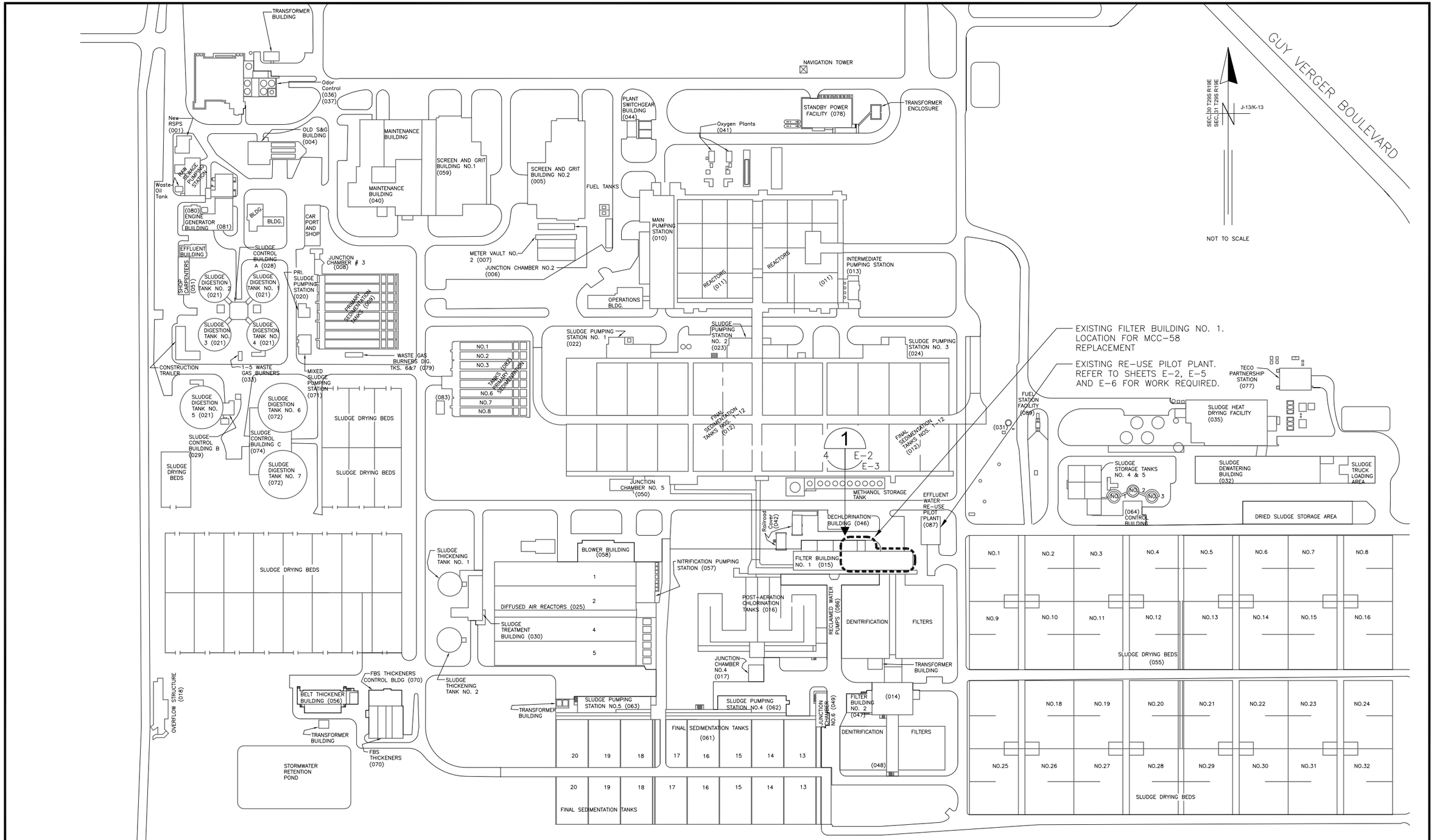
HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

TEMPORARY POWER SEQUENCE OF WORK

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER 3

FILE: 171604942E01



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SITE PLAN FOR MCC-58 REPLACEMENT

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER 4

FILE: 171604942E01

CONDUIT RUN EXPOSED

CONDUIT RUN CONCEALED UNDERGROUND

CONDUIT RUN CONCEALED IN FLOOR OR SLAB

G — G — GROUNDING ELECTRODE CONDUCTOR

CONDUIT STUB OUT AND CAP

GROUND ROD

JUNCTION BOX

JUNCTION BOX WITH FLEXIBLE CONNECTION

480V
15 KVA, 1*
120/240V

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

3P
30A

THERMAL MAGNETIC CIRCUIT BREAKER WITH NUMBER OF POLES AND AMPERE RATING

XX

COMBINATION MAGNETIC STARTER WITH CONTROL POWER TRANSFORMER (SIZED FOR LOAD). LETTERS INDICATE TYPE :
N – NON–REVERSING
R – REVERSING
2S – TWO–SPEED
C – CONTACTOR
SS – SOLID STATE SOFT START

XXX

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

FUSE

XX

MOTOR

THERMAL OVERLOAD

UTILITY METER

TRANSFER SWITCH

ELECTRIC PANELBOARD

DISCONNECT OR SAFETY SWITCH

FLOAT SWITCH. OPENS ON LOW LEVEL.

FLOAT SWITCH. CLOSES ON LOW LEVEL.

NORMALLY OPEN (N.O.) CONTACT

NORMALLY CLOSED (N.C.) CONTACT

GROUND CONNECTION

R

INDICATING PILOT LIGHT LETTER INDICATES COLOR OF LENS

DISCONNECT OR TOGGLE SWITCH

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

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

LIMIT SWITCH NORMALLY CLOSED CONTACT. CONTACT OPENS WHEN ACTUATED

TORQUE SWITCH NORMALLY CLOSED CONTACT. CONTACT OPENS WHEN ACTUATED

PUMP THERMAL SENSOR

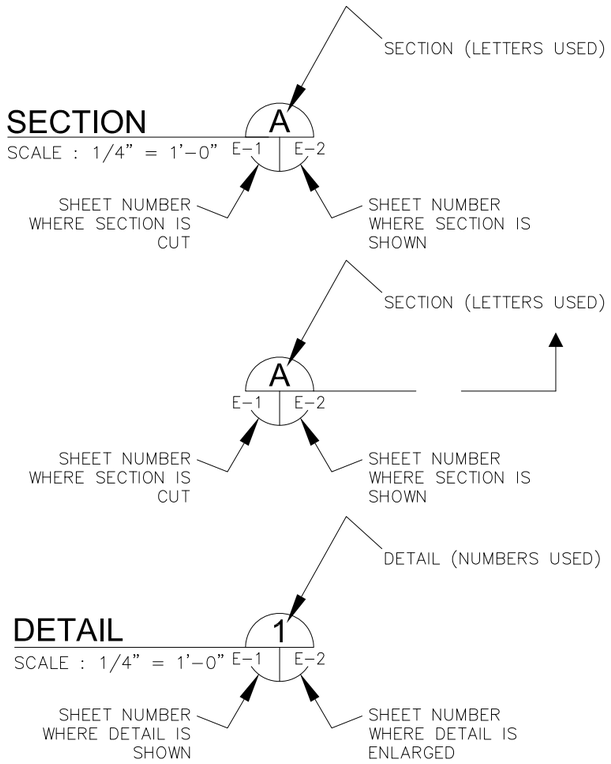
ST
a

CIRCUIT BREAKER SHUNT TRIP COIL AND CLEARING CONTACT

ABBREVIATIONS:

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

EXAMPLE OF SECTION CUT AND DETAIL



EXISTING 3–PHASE, 480V CAPACITOR TO BE REUSED

L — EXISTING ON–OFF/L TO BE REUSED

/ ON/OFF — EXISTING ON–OFF SELECTOR SWITCH TO BE REUSED

PUSHBUTTON

SS CONT — SOFTSTARTER CONTROLS

MV — EXISTING BENTLEY NEVADA MOTOR VIBRATION CONTROLLER TO BE REUSED

MVB — EXISTING MOTOR VIBRATION SENSOR TO BE REUSED

PV — EXISTING BENTLEY NEVADA PUMP VIBRATION CONTROLLER TO BE REUSED

PVB — EXISTING PUMP VIBRATION SENSOR TO BE REUSED

P — EXISTING PRESSURE SWITCH TO BE REUSED

SH — EXISTING MOTOR SPACE HEATER TO BE REUSED

SEL–849 — SCHWEITZER ENGINEERING LABORATORIES MOTOR MANAGEMENT RELAY. TYPE SEL–849. 120V AC POWER SUPPLY AND ARC FLASH SENSOR

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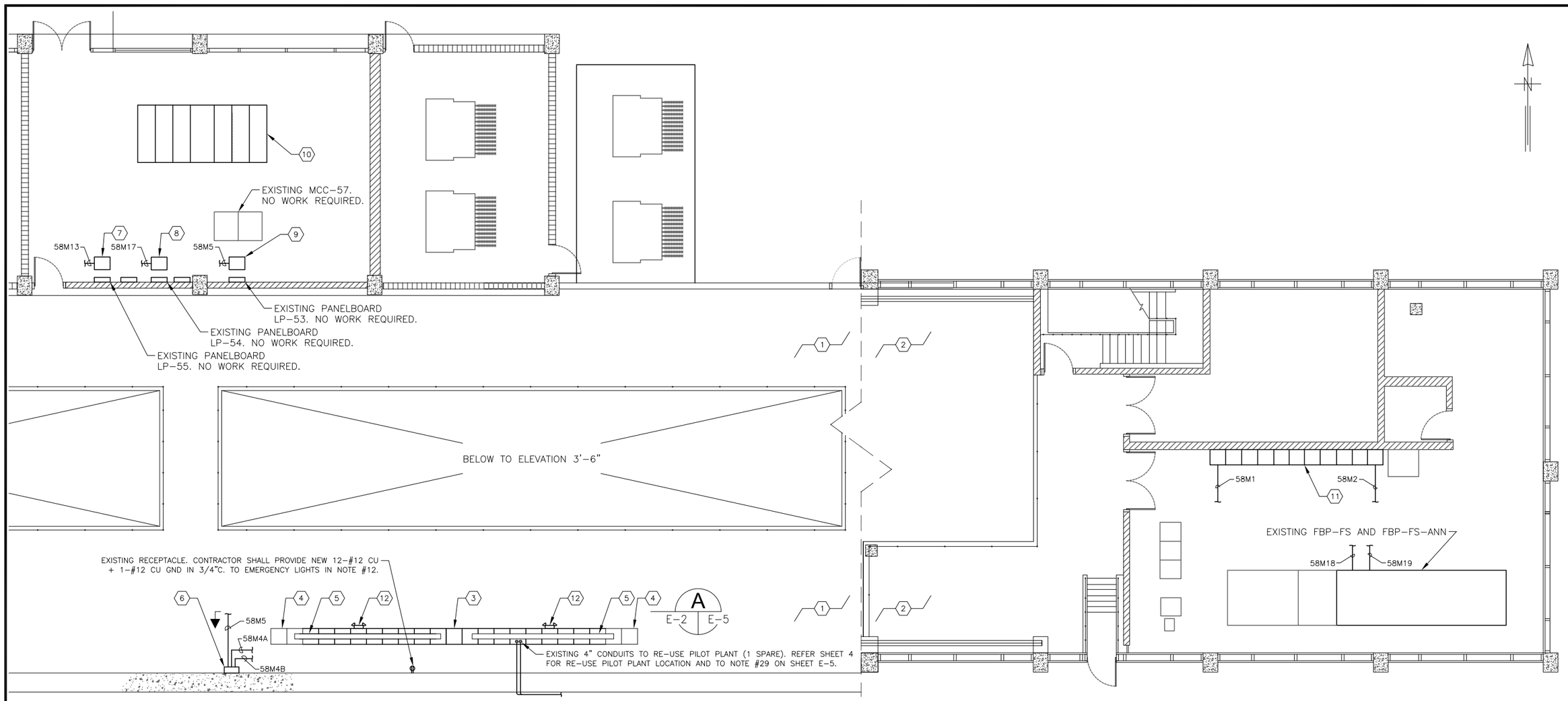
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FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

ELECTRICAL LEGEND AND ABBREVIATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–1

FILE: 171604942E01



FILTER BUILDING NO.1 (015) : FLOOR PLANS

SCALE : 3/32" = 1'–0"

1 / 4 / E–2

KEYED NOTES:

1. EXISTING PLAN AT ELEVATION 11'–0".
2. EXISTING PLAN AT ELEVATION 23'–6".
3. EXISTING 480V, 1,200A MCC–58. THE MAJORITY OF MCC–58 SHALL BE REPLACED. REFER TO SHEET E–5 FOR EXISTING ELEVATION AND WORK REQUIRED. REFER TO SHEETS E–18, E–19, E–20 AND E–21 FOR PROVIDING TEMPORARY POWER TO MCC–58 DURING CONSTRUCTION.
4. EXISTING 1,200A MAIN CIRCUIT BREAKER TO REMAIN AND BE REUSED. REFER TO ELEVATIONS ON SHEETS E–5 AND E–6 FOR DETAILS.
5. EXISTING 1,200A BUS DUCT TO REMAIN AND BE REUSED. REFER TO ELEVATIONS ON SHEETS E–5 AND E–6 FOR DETAILS.
6. EXISTING AUTOMATIC TRANSFER SWITCH (ATS) FOR PANELBOARD LP–53 TO REMAIN AND BE REUSED.
7. EXISTING TRANSFORMER T–LP–55 TO REMAIN. TRANSFORMER TO BE REFED VIA NEW CONDUCTORS IN EXISTING CONDUIT.
8. EXISTING TRANSFORMER T–LP–54 TO REMAIN. TRANSFORMER TO BE REFED VIA NEW CONDUCTORS IN EXISTING CONDUIT.
9. EXISTING TRANSFORMER T–LP–53 TO REMAIN. NO WORK REQUIRED.
10. EXISTING SWITCHGEAR NO. 56 TO REMAIN. REFER TO SHEETS E–18, E–19, E–20 AND E–21 FOR FOR PROVIDING TEMPORARY POWER DURING CONSTRUCTION.
11. EXISTING MCC–58A LOCATED ON ELEVATION 23'–6". MCC–58A TO BE REFED VIA NEW CONDUCTORS IN EXISTING CONDUIT.
12. EXISTING EMERGENCY LIGHTS TO BE REPLACED. CONTRACTOR SHALL PROVIDE NEW LED EMERGENCY LIGHTS (LITHONIA EU2 LED HO M6). SECURE EMERGENCY LIGHTS TO WALL AND MCC VIA SS UNISTRUT.

NOTE:

CONTRACTOR SHALL FIELD VERIFY EXISTING MCC DIMENSIONS, AS WELL AS, ALL EXISTING CONDUIT LOCATIONS, ROUTING AND DISTANCES PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS.

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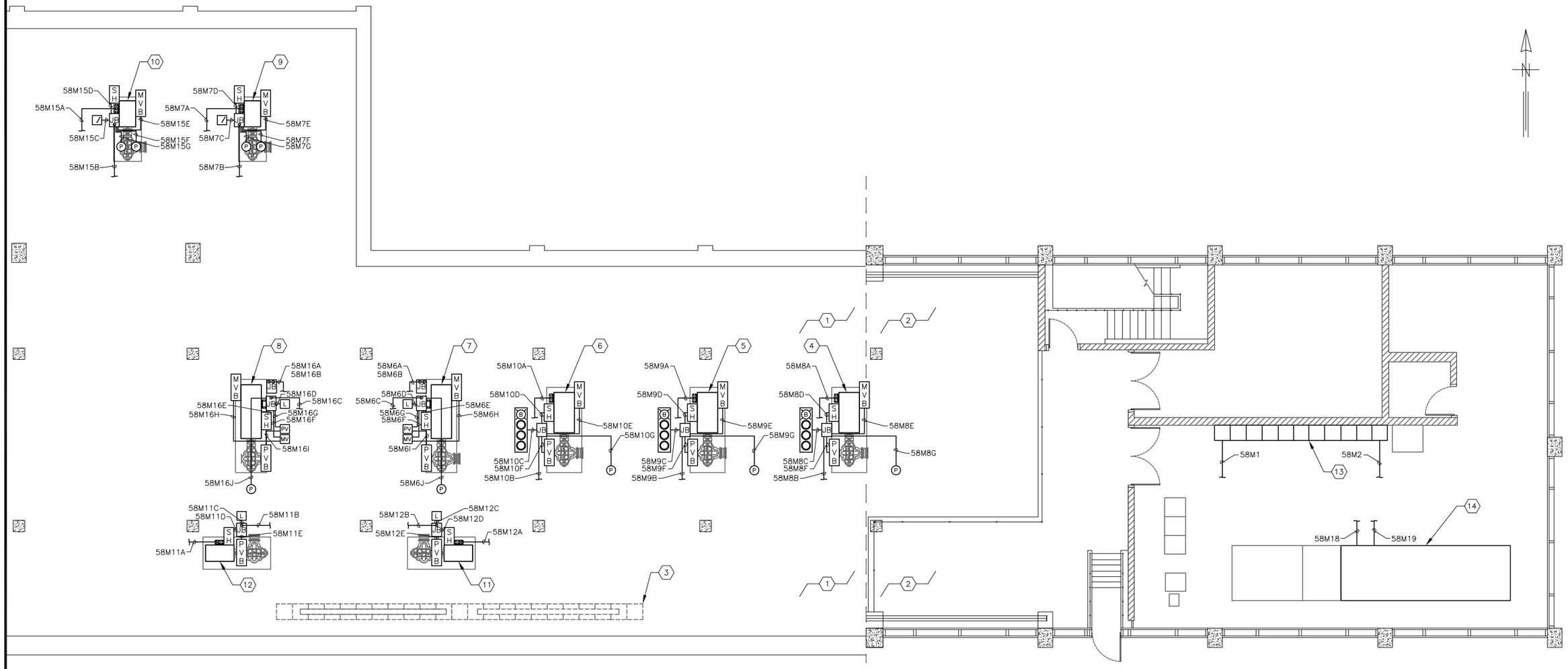
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FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

EXISTING CONDITIONS PLAN ELEVATIONS 11'–0" & 23'–6"

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–2

FILE: 171604942E01



FILTER BUILDING NO.1 (015) : PLAN ELEVATIONS

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

1 / 4 | E-3

KEYED NOTES:

1. EXISTING PLAN AT ELEVATION 3'-6".
2. EXISTING PLAN AT ELEVATION 23'-6".
3. EXISTING 480V, 1,200A MCC-58 LOCATED AT ELEVATION 11'-0" ABOVE. REFER TO SHEET E-2 FOR WORK REQUIRED. REFER TO SHEETS E-18, E-19,E-20 AND E-21 FOR PROVIDING TEMPORARY POWER TO MCC-58 DURING CONSTRUCTION.
4. EXISTING BACKWASH WATER PUMP 1 (FB-BWP-1)
5. EXISTING BACKWASH WATER PUMP 2 (FB-BWP-2)
6. EXISTING BACKWASH WATER PUMP 3 (FB-BWP-3)
7. EXISTING GENERAL PURPOSE PUMP 2 (PP201S)
8. EXISTING GENERAL PURPOSE PUMP 1 (PP201A)
9. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP 4 (FB-GPP-4)
10. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP 3 (FB-GPP-3)
11. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP CF-GPEW 1
12. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP CF-GPEW 2
13. EXISTING MCC-58A LOCATED ON ELEVATION 23'-6". MCC-58A TO BE REFED VIA NEW CONDUCTORS IN EXISTING CONDUIT.
14. EXISTING FBP-FS AND FBP-FS-ANN

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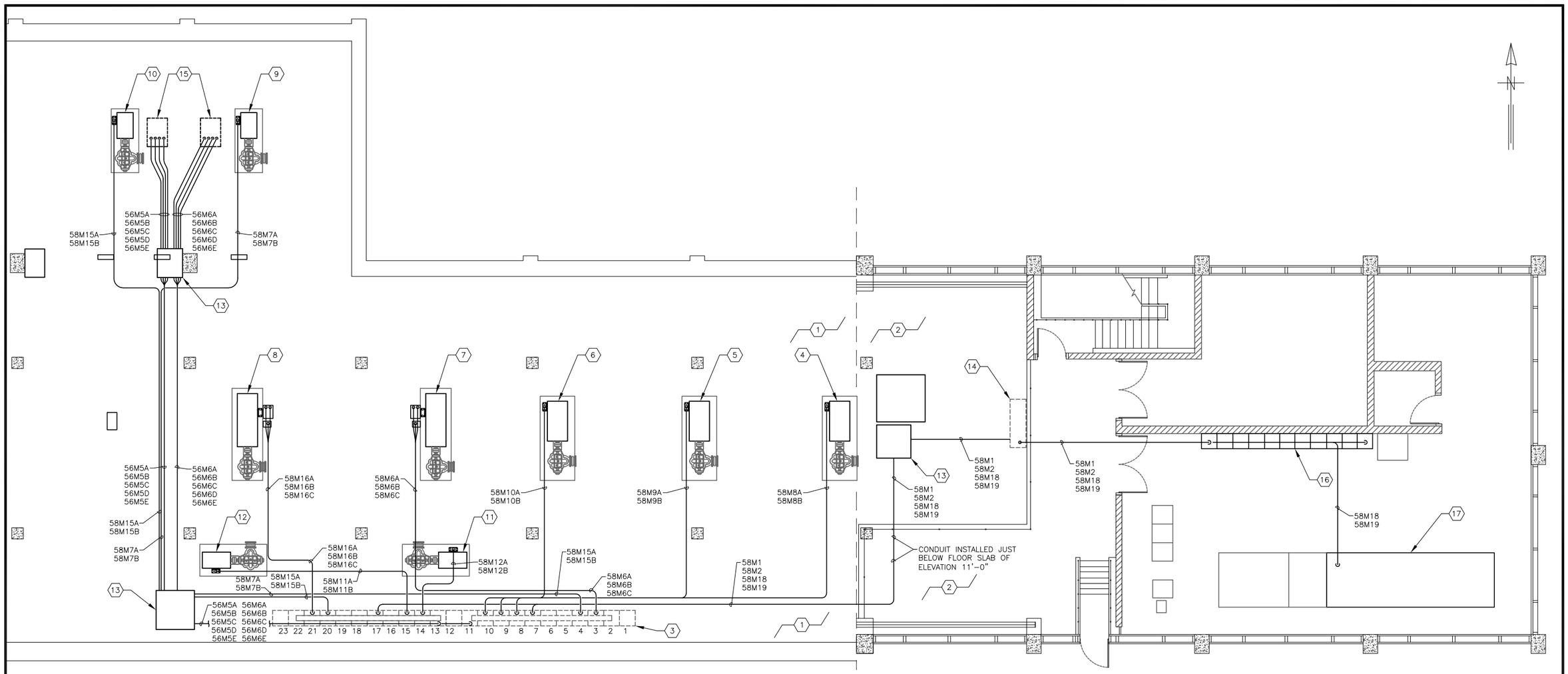
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EXISTING CONDITIONS PLAN ELEVATION 3'-6" & 23'-6"

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-3

FILE: 171604942E01



FILTER BUILDING NO.1 (015) : PLAN ELEVATIONS

SCALE : 3/32" = 1'–0"

1 / 3 / E-3

KEYED NOTES:

1. EXISTING PLAN AT ELEVATION 3'–6".
2. EXISTING PLAN AT ELEVATION 23'–6".
3. EXISTING 480V, 1,200A MCC–58 LOCATED AT ELEVATION 11'–0" ABOVE. REFER TO SHEET E–2 FOR WORK REQUIRED. REFER TO SHEETS E–18 AND E–30 FOR PROVIDING TEMPORARY POWER TO MCC–58 DURING CONSTRUCTION.
4. EXISTING BACKWASH WATER PUMP 1 (FB–BWP–1).
5. EXISTING BACKWASH WATER PUMP 2 (FB–BWP–2).
6. EXISTING BACKWASH WATER PUMP 3 (FB–BWP–3).
7. EXISTING GENERAL PURPOSE PUMP 2 (PP201S).
8. EXISTING GENERAL PURPOSE PUMP 1 (PP201A).
9. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP 4 (FB–GPP–4).
10. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP 3 (FB–GPP–3).
11. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP CF–GPEW 1.
12. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP CF–GPEW 2.
13. EXISTING PULL BOX INSTALLED ON CEILING OF ELEVATION 3'–6".
14. EXISTING PULL BOX INSTALLED ON ELEVATION 11'–0".
15. EXISTING OPENINGS IN ELEVATION 11'–0" SLAB TO PASS SWITCHGEAR 56 CONDUITS.
16. EXISTING MCC–58A LOCATED ON ELEVATION 23'–6". MCC–58A TO BE REFED VIA NEW CONDUCTORS IN EXISTING CONDUIT.
17. EXISTING FBP–FS AND FBP–FS–ANN ON ELEVATION 23'–6".

NOTE:

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDUIT LOCATIONS, ROUTING AND DISTANCES PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS.

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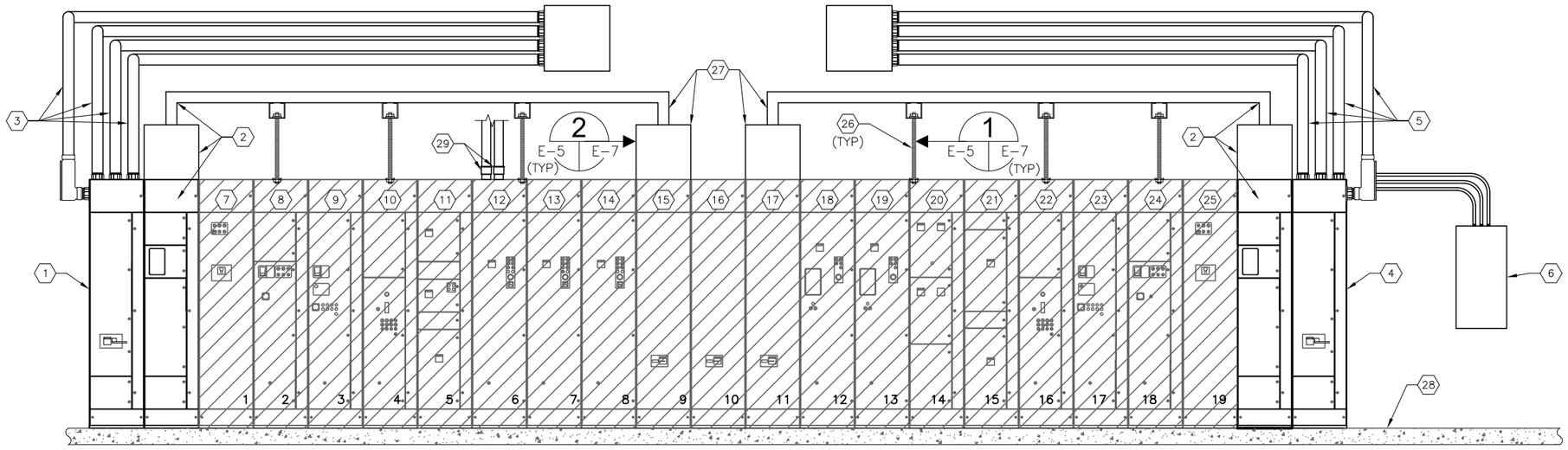
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EXISTING CONDUIT ROUTING PLAN

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–4

FILE: 171604942E01



EXISTING MCC-58 FRONT ELEVATION

SCALE : N.T.S.

A
E-2 | E-5

KEYED NOTES:

1. EXISTING MCC-58 MAIN CIRCUIT BREAKER (BUS A SIDE) FED FROM TRANSFORMER T-5A-7. MAIN CIRCUIT BREAKER TO REMAIN AND BE REUSED.
2. EXISTING MCC-58 METERING SECTION AND TOP HAT TO ACCOMMODATE EXISTING 1,200A BUS DUCT. METERING SECTION, TOP HAT AND BUS DUCT TO REMAIN AND BE REUSED.
3. EXISTING FEEDERS FROM TRANSFORMER T-5A-7 (IT5A7-1, IT5A7-2, IT5A7-3 AND IT5A7-4) TO BE REUSED. NO WORK REQUIRED.
4. EXISTING MCC-58 MAIN CIRCUIT BREAKER (BUS B SIDE) FED FROM TRANSFORMER T-5B-7. MAIN CIRCUIT BREAKER TO REMAIN AND BE REUSED.
5. EXISTING FEEDERS FROM TRANSFORMER T-5B-7 (IT5B7-1, IT5B7-2, IT5B7-3 AND IT5B7-4) TO BE REUSED. NO WORK REQUIRED.
6. EXISTING AUTOMATIC TRANSFER SWITCH (ATS) FOR PANELBOARD LP-53. ATS TO REMAIN AND BE REUSED.
7. EXISTING CUBICLE FOR PP201S (ALSO KNOW AS GPP-2) STARTER TO BE REMOVED.
8. EXISTING CUBICLE FOR GPP-4 STARTER TO BE REMOVED.
9. EXISTING SPARE CUBICLE TO BE REMOVED.
10. EXISTING CUBICLE FOR PP201S CONTROLS TO BE REMOVED.
11. EXISTING CUBICLE FOR PILOT PLANT CIRCUIT BREAKER, LP-53 ATS FEEDER AND MCC-58A BUS 'A' FEEDER TO BE REMOVED.
12. EXISTING CUBICLE FOR FB-BWP-1 STARTER TO BE REMOVED.
13. EXISTING CUBICLE FOR FB-BWP-2 STARTER TO BE REMOVED. NOTE: BACKWASH WATER PUMP 2 (FB-BWP-2) STARTER TO BE RELOCATED TO BUS 'B' OF PROPOSED MCC-58. THIS RELOCATION SHALL REQUIRE THAT THE NEW FEEDER CONDUCTORS FOR FB-BWP-2 BE ROUTED UNDER PROPOSED MCC-58 VIA PROPOSED BOX CHANNEL, I-BEAM, OR WIREWAY TO ELEVATE MCC-58 6 INCHES. REFER ALSO TO SHEET E-6.
14. EXISTING CUBICLE FOR FB-BWP-3 STARTER TO BE REMOVED.
15. EXISTING CUBICLE FOR SWITCHGEAR 56 BUS 'A' FEEDER CIRCUIT BREAKER TO BE REMOVED.
16. EXISTING CUBICLE FOR TIE CIRCUIT BREAKER TO BE REMOVED.
17. EXISTING CUBICLE FOR SWITCHGEAR 56 BUS 'B' FEEDER CIRCUIT BREAKER TO BE REMOVED.
18. EXISTING CUBICLE FOR CF-GPEW 2 STARTER TO BE REMOVED.
19. EXISTING CUBICLE FOR CF-GPEW 1 STARTER TO BE REMOVED.
20. EXISTING CUBICLE FOR LP-53 ATS FEEDER, LP-55 FEEDER AND MONORAIL HOIST (FB-MH-3) FEEDER TO BE REMOVED.
21. EXISTING CUBICLE FOR LP-54 FEEDER AND MCC-58A BUS 'B' FEEDER TO BE REMOVED.
22. EXISTING CUBICLE FOR PP201A CONTROLS TO BE REMOVED.
23. EXISTING SPARE CUBICLE TO BE REMOVED.
24. EXISTING CUBICLE FOR GPP-3 STARTER TO BE REMOVED.
25. EXISTING CUBICLE FOR PP201A (ALSO KNOWN AS GPP-1) STARTER TO BE REMOVED.
26. TYPICAL BUS DUCT SUPPORT. BUS DUCT SUPPORT MAY BE REUSED IF PHYSICALLY POSSIBLE. REFER TO DETAIL AND NOTES ON SHEET E-7.
27. EXISTING TOP HAT FOR ENCLOSED BUS DUCT TRANSITION. TYPICAL OF TWO (2). REFER TO DETAIL ON SHEET E-7. BUS DUCT TRANSITION MAY BE REUSED IF PHYSICALLY POSSIBLE. REFER TO DETAIL AND NOTES ON SHEET E-7.
28. EXISTING FLOOR SLAB AT ELEVATION 11'-0".
29. EXISTING 4" CONDUIT LB'S AND ASSOCIATED CONDUIT (1 SPARE) WITH 3-4/0 CU + 1-#4 CU TO RE-USE PILOT PLANT FIELD VERIFY. CONTRACTOR SHALL MODIFY CONDUIT TO INSTALL TEMPORARY POWER FEEDER TO RE-USE PILOT PLANT DURING THE INSTALLATION OF THE NEW MCC-58. AFTER MCC-58 IS INSTALLED, THE CONTRACTOR SHALL RECOONECT THE EXISTING CONDUCTORS TO THE NEW RE-USE PILOT PALNT CIRCUIT BREAKER IN MCC-58.

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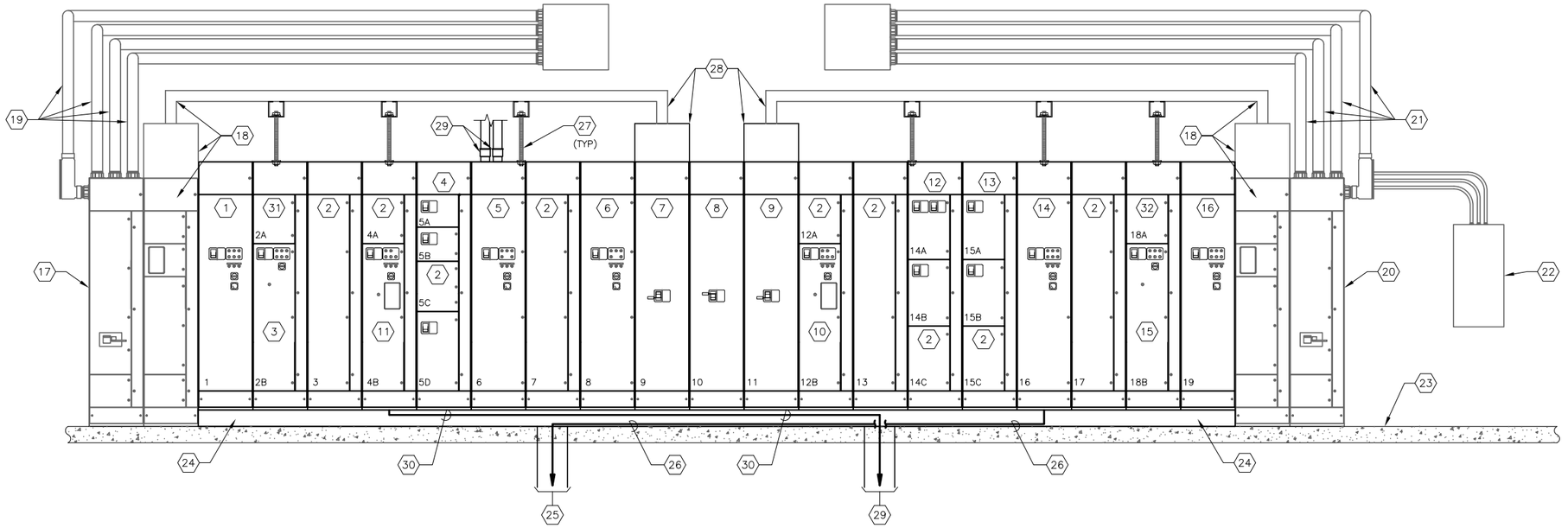
EXISTING MCC-58 ELEVATION

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER

E-5

FILE: 171604942E01



PROPOSED MCC-58 FRONT ELEVATION

SCALE : N.T.S.

KEYED NOTES:

1. PROPOSED CUBICLE SPACE FOR PP201S (ALSO KNOWN AS GPP-2) 400 HP SOFTSTARTER.
2. PROPOSED PREPARED SPACE.
3. PROPOSED CUBICLE SPACE FOR GPP-4 150 HP ACROSS-THE-LINE STARTER.
4. PROPOSED BUCKET SPACES FOR PILOT PLANT 5A CIRCUIT BREAKER, LP-53 ATS 70A CIRCUIT BREAKER (ATS FEEDER) AND MCC-58A BUS 'A' 250A CIRCUIT BREAKER.
5. PROPOSED CUBICLE SPACE FOR FB-BWP-1 200 HP SOFTSTARTER.
6. PROPOSED CUBICLE SPACE FOR FB-BWP-3 200 HP SOFTSTARTER.
7. PROPOSED CUBICLE SPACE FOR SWITCHGEAR 56 BUS 'A' 1200A FEEDER CIRCUIT BREAKER.
8. PROPOSED CUBICLE SPACE FOR 1200A TIE CIRCUIT BREAKER.
9. PROPOSED CUBICLE SPACE FOR SWITCHGEAR 56 BUS 'B' 1200A FEEDER CIRCUIT BREAKER.
10. PROPOSED CUBICLE SPACE FOR CF GPEW 2 100 HP ACROSS-THE-LINE STARTER.
11. PROPOSED CUBICLE SPACE FOR CF GPEW 1 100 HP ACROSS-THE-LINE STARTER.
12. PROPOSED CUBICLE SPACES FOR LP-53 70A CIRCUIT BREAKER (ATS FEEDER), MONORAIL HOIST (FB-MH-3) 30A CIRCUIT BREAKER AND LCP-55 100A CIRCUIT BREAKER.
13. PROPOSED BUCKET SPACES FOR LP-54 200A CIRCUIT BREAKER AND MCC-58A BUS 'B' 250A CIRCUIT BREAKER.
14. PROPOSED CUBICLE SPACE FOR FB-BWP-2 200 HP SOFTSTARTER. REFER ALSO TO NOTE #26 FOR CONDUCTOR ROUTING.
15. PROPOSED CUBICLE SPACE FOR GPP-3 150 HP ACROSS-THE-LINE STARTER.
16. PROPOSED CUBICLE SPACE FOR PP201A (ALSO KNOWN AS GPP-1) 400 HP SOFTSTARTER.
17. EXISTING MCC-58 MAIN CIRCUIT BREAKER (BUS A SIDE) FED FROM TRANSFORMER T-5A-7. MAIN CIRCUIT BREAKER TO REMAIN AND BE REUSED.
18. EXISTING MCC-58 METERING SECTION AND TOP HAT TO ACCOMMODATE EXISTING 1,200A BUS DUCT. METERING SECTION, TOP HAT AND BUS DUCT TO REMAIN AND BE REUSED.
19. EXISTING FEEDERS FROM TRANSFORMER T-5A-7 (IT5A7-1, IT5A7-2, IT5A7-3 AND IT5A7-4) TO BE REUSED. NO WORK REQUIRED.
20. EXISTING MCC-58 MAIN CIRCUIT BREAKER (BUS B SIDE) FED FROM TRANSFORMER T-5B-7. MAIN CIRCUIT BREAKER TO REMAIN AND BE REUSED.
21. EXISTING FEEDERS FROM TRANSFORMER T-5B-7 (IT5B7-1, IT5B7-2, IT5B7-3 AND IT5B7-4) TO BE REUSED. NO WORK REQUIRED.
22. EXISTING AUTOMATIC TRANSFER SWITCH (ATS) FOR PANELBOARD LP-53. ATS TO REMAIN AND BE REUSED.
23. EXISTING FLOOR SLAB AT ELEVATION 11'-0".
24. PROPOSED MCC-58 TO BE PROVIDED WITH BOX CHANNEL, I-BEAM, OR WIREWAY TO ELEVATE MCC 6 INCHES IN ORDER TO ALLOW FOR PROPOSED CONDUCTOR ROUTING. REFER ALSO TO SPECIFICATIONS.
25. EXISTING LOCATION OF CONDUIT STUBUP FOR FB-BWP-2. REFER ALSO TO SHEET E-5 FOR EXISTING FB-BWP-2 STARTER LOCATION.
26. CONTRACTOR TO UTILIZE PROPOSED WIREWAY (NOTE 24) TO INSTALL CONDUCTORS FOR FB-BWP-2. CONDUCTORS 58M9A AND 58M9B.
27. TYPICAL BUS DUCT SUPPORT. BUS DUCT SUPPORT MAY BE REUSED IF PHYSICALLY POSSIBLE. REFER TO DETAIL AND NOTES ON SHEET E-7.
28. EXISTING TOP HAT FOR ENCLOSED BUS DUCT TRANSITION. TYPICAL OF TWO (2). REFER TO DETAIL ON SHEET E-7. BUS DUCT TRANSITION MAY BE REUSED IF PHYSICALLY POSSIBLE. REFER TO DETAIL AND NOTES ON SHEET E-7.
29. EXISTING LOCATION OF CONDUIT STUBUP FOR CF-GPEW-1. REFER ALSO TO SHEET E-5 FOR EXISTING CF GPEW-1 STARTER LOCATION.
30. CONTRACTOR TO UTILIZE PROPOSED WIREWAY (NOTE 24) TO INSTALL CONDUCTORS FOR CF-GPEW-1. CONDUCTORS 58M12A AND 58M12B.
31. SPACE FOR BUS A CONTROL POWER TRANSFORMER.
32. SPACE FOR BUS B CONTROL POWER TRANSFORMER.
33. REWORKED 4" CONDUIT LB'S AND ASSOCIATED CONDUIT WITH 3-4/0 CU + 1-#4 CU TO RE-USE PILOT PLANT. REFER ALSO TO SHEET E-5 KEYED NOTE #29. APPROXIMATE CONDUCTOR LENGTH TO RE-USE PILOT PLANT IS 400'. CONTRACTOR TO FIELD VERIFY PRIOR TO ORDERING MATERIALS.

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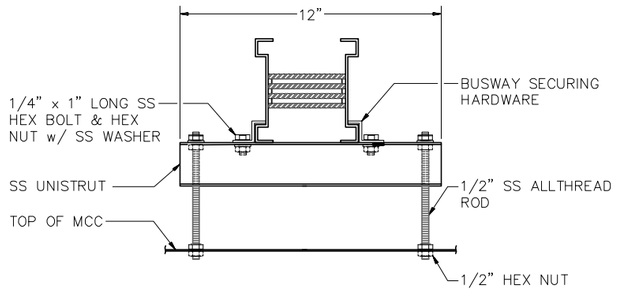
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FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

PROPSED MCC-58 ELEVATION

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-6

FILE: 171604942E01



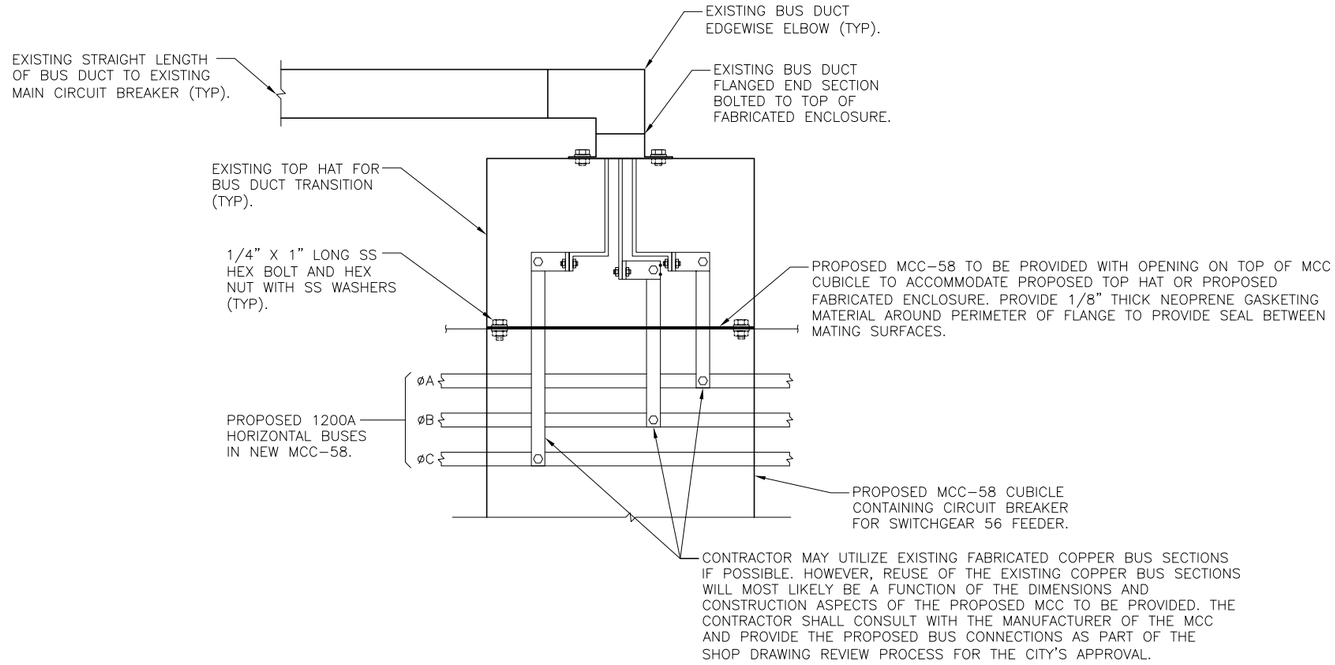
TYPICAL DETAIL OF EXISTING BUS DUCT SUPPORT

SCALE : N.T.S.

1 (E-5 | E-7)

BUS DUCT SUPPORT GENERAL NOTES:

1. CONTRACTOR MAY REUSE THE EXISTING BUS DUCT SUPPORTS IF THEY CAN BE MADE FULLY FUNCTIONAL AND THE HIGHEST LEVEL OF WORKMANSHIP CAN BE MAINTAINED. THE DIMENSIONS, TYPE OF CONSTRUCTION AND OTHER FACTORS WILL BE A FUNCTION OF THE MCC PROVIDED. THE CONTRACTOR SHALL CONSULT WITH THE MANUFACTURER OF THE MCC AND SUBMIT SHOP DRAWINGS OF THE PROPOSED DUCT SUPPORTS TO THE CITY FOR APPROVAL FOLLOWING THE PROCEDURE OUTLINED IN THE SPECIFICATIONS.
2. PROVIDE SUPPORTS AT A MINIMUM OF 5'-0" OR AS DIRECTED BY THE MANUFACTURER.
3. THE CONTRACTOR SHALL MINIMIZE THE NUMBER OF MCC PENETRATIONS TO BE CREATED BY THE BUS DUCT SUPPORTS.
4. ENSURE BUS DUCT SUPPORT HARDWARE DOES NOT VIOLATE MCC BUS CLEARANCE. MAINTAIN A MINIMUM CLEARANCE AS DIRECTED BY THE MCC MANUFACTURER.



TYPICAL DETAIL OF EXISTING BUS DUCT TRANSITION

SCALE : N.T.S.

2 (E-5 | E-7)

BUS DUCT TRANSITION GENERAL NOTES:

1. EXISTING GROUNDING CONNECTION NOT SHOWN FOR CLARITY. CONTRACTOR SHALL BOND PROPOSED BUS DUCT GROUND BUS TO MCC-58 HORIZONTAL GROUND BUS.
2. IF NEW FABRICATED BUS DUCT SECTION(S) ARE REQUIRED, PROPOSED BUS DUCT SECTIONS SHALL BE TIN PLATED COPPER.

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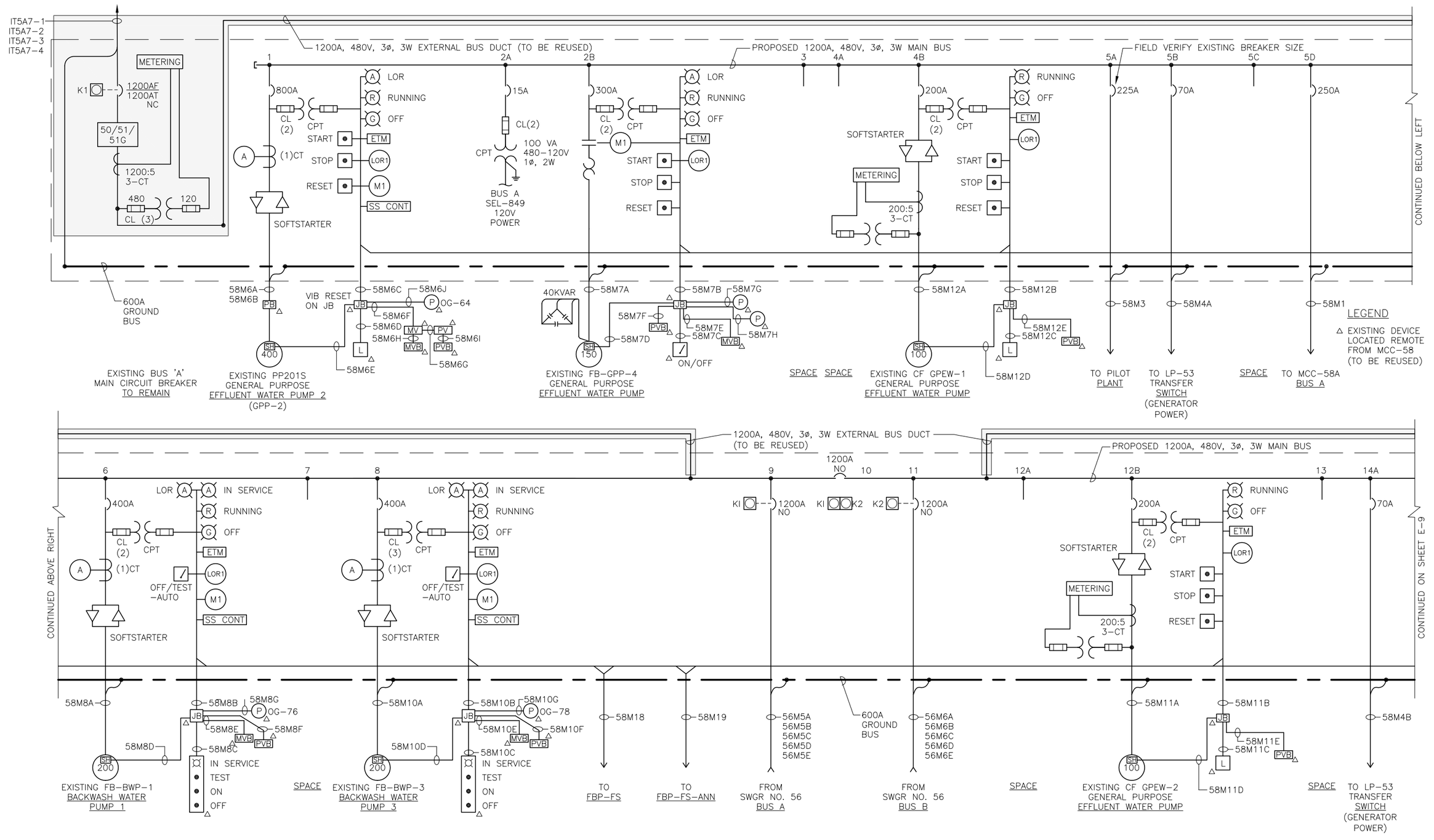
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EXISTING MCC-58 BUS DUCT DETAILS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-7

FILE: 171604942E01



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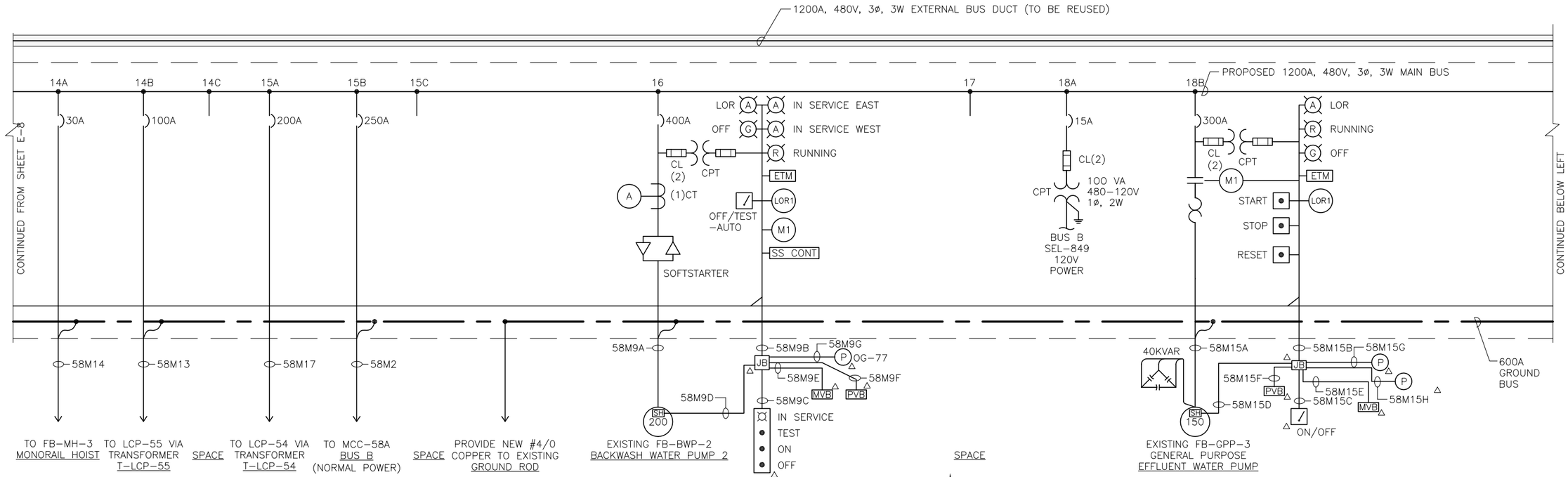
HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

MCC-58 ELECTRICAL ONE-LINE DIAGRAM (SHEET 1 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER
E-8

FILE: 171604942E01



LEGEND

△ EXISTING DEVICE LOCATED REMOTE FROM MCC-58 (TO BE REUSED)

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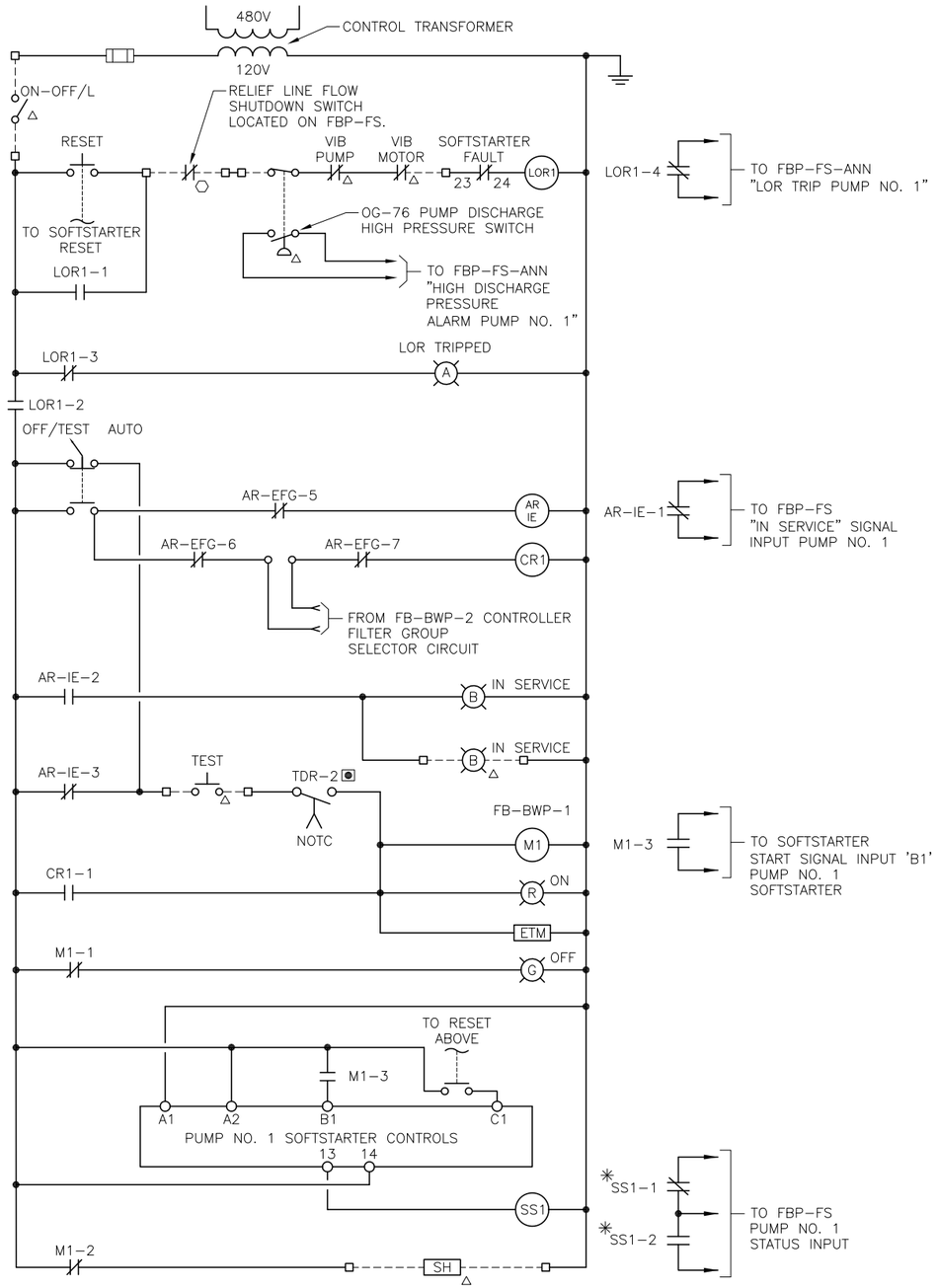
HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

MCC-58 ELECTRICAL ONE-LINE DIAGRAM (SHEET 2 OF 2)

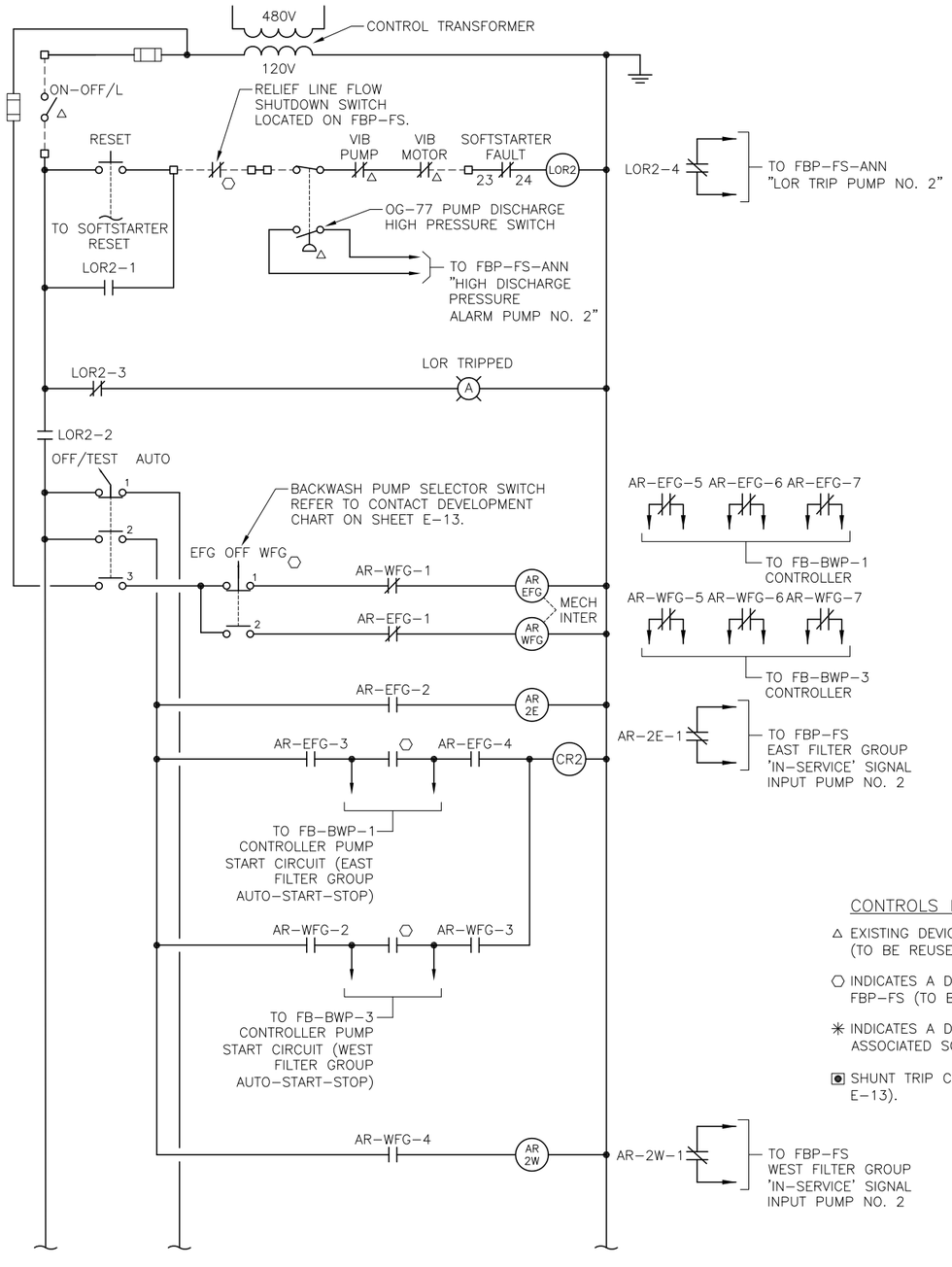
TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-9

FILE: 171604942E01



BACKWASH WATER PUMP FB-BWP-1
(MCC-58)



CONTROLS DESIGNATIONS

△ EXISTING DEVICE LOCATED REMOTE FROM MCC-58 (TO BE REUSED)

⬡ INDICATES A DEVICE LOCATED ON OR WITHIN FBP-FS (TO BE RECONNECTED)

✳ INDICATES A DEVICE LOCATED ON OR WITH ASSOCIATED SOFT STARTER (REFER TO SHEET E-13)

▣ SHUNT TRIP CONTROL CIRCUIT TIME DELAY (REFER TO SHEET E-13).

CONTINUED ON SHEET E-11

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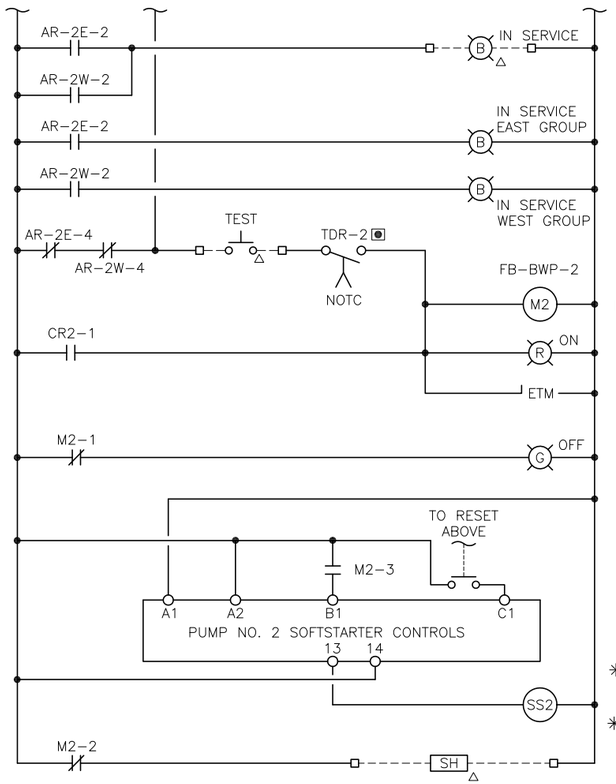
BACKWASH WATER PUMP CONTROL SCHEMATICS (SHEET 1 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-10

FILE: 171604942E01

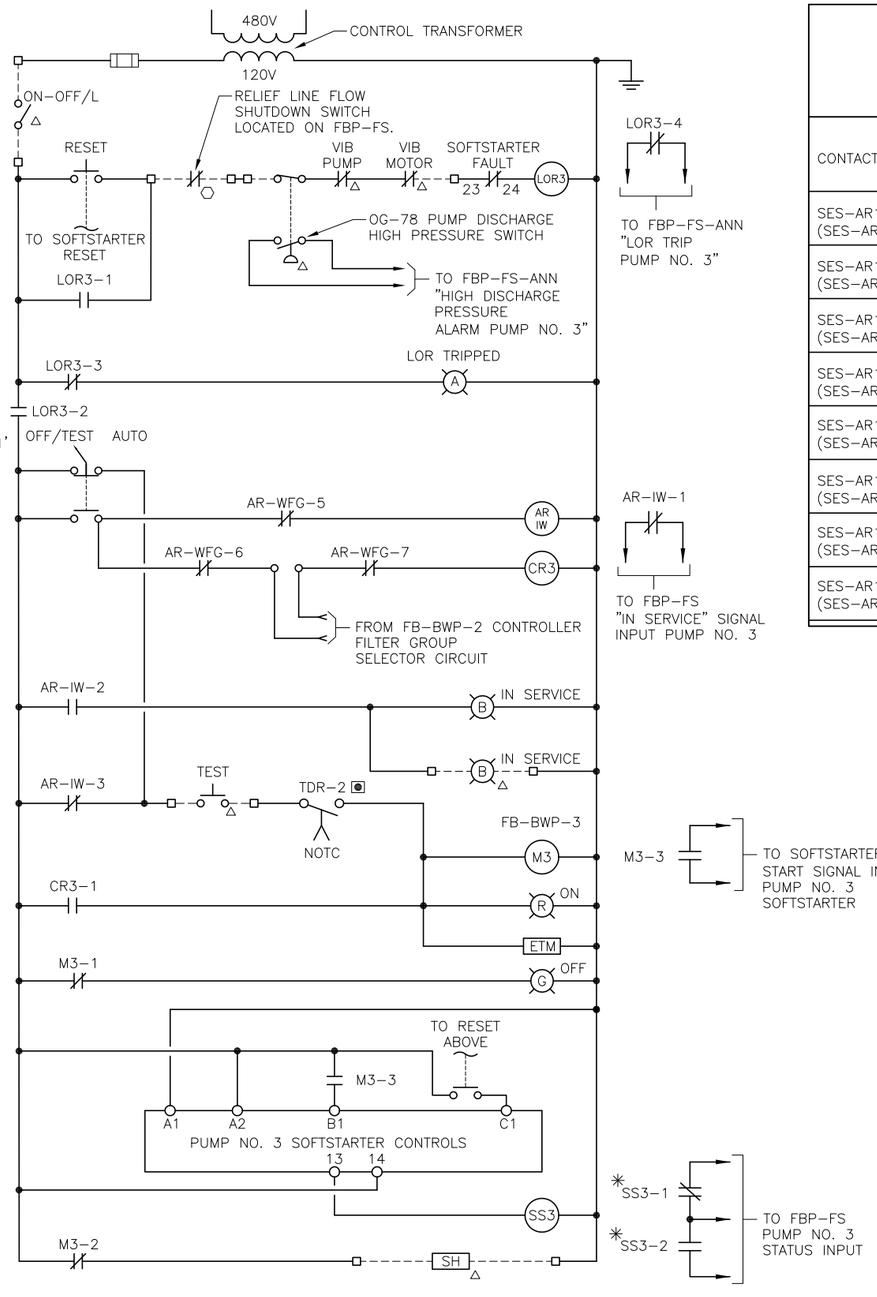
CONTINUED FROM SHEET E-10



M2-3 — TO SOFTSTARTER START SIGNAL INPUT 'B1' PUMP NO. 2 SOFTSTARTER

✳SS2-1, ✳SS2-2 — TO FBP-FS PUMP NO. 2 STATUS INPUT

BACKWASH WATER PUMP FB-BWP-2
(MCC-58)



✳SS3-1, ✳SS3-2 — TO FBP-FS PUMP NO. 3 STATUS INPUT

BACKWASH WATER PUMP FB-BWP-3
(MCC-58)

BACKWASH AIR BLOWERS
FB-BWB-1 & FB-BWB-2
CONTACT DEVELOPMENT CHART
SLECTRO SWITCH AUXILIARY RELAY
SES-AR1 (SES-AR2 SIMILAR)

CONTACT NO.	CONTACT POSITION		CONTACT FUNCTION & REMARKS
	COIL ENERGIZED	COIL DE-ENERGIZED	
SES-AR1-1 (SES-AR2-1)	O	X	COIL LOCKOUT SES-AR2 (COIL LOCKOUT SES-AR1)
SES-AR1-2 (SES-AR2-2)	X	O	"IN SERVICE" SIGNAL TO FBP-FS
SES-AR1-3 (SES-AR2-3)	X	O	"CR1 (CR2) COIL CIRCUIT SELECTION
SES-AR1-4 (SES-AR2-4)	X	O	"CR1 (CR2) COIL CIRCUIT SELECTION
SES-AR1-5 (SES-AR2-5)	O	X	TEST CIRCUIT PERMISSIVE CONTACT
SES-AR1-6 (SES-AR2-6)	X	O	"IN SERVICE" INDICATING LIGHT
SES-AR1-7 (SES-AR2-7)	O	X	SPARE
SES-AR1-8 (SES-AR2-8)	X	O	SPARE

CONTROLS DESIGNATIONS

△ EXISTING DEVICE LOCATED REMOTE FROM MCC-58 (TO BE REUSED)

⬡ INDICATES A DEVICE LOCATED ON OR WITHIN FBP-FS (TO BE RECONNECTED)

✳ INDICATES A DEVICE LOCATED ON OR WITH ASSOCIATED SOFT STARTER (REFER TO SHEET E-13)

⦿ SHUNT TRIP CONTROL CIRCUIT TIME DELAY (REFER TO SHEET E-13).

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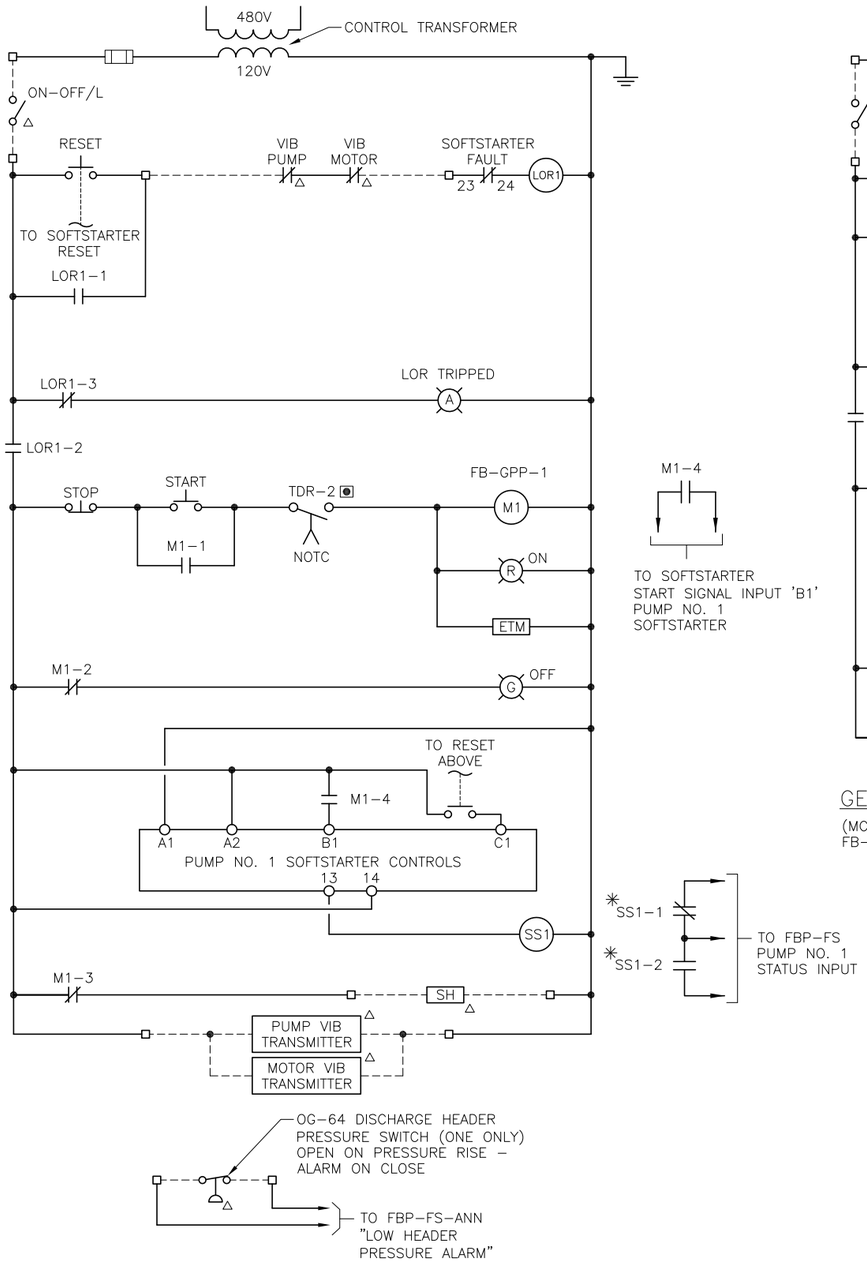
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FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

BACKWASH WATER PUMP CONTROL SCHEMATICS (SHEET 2 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

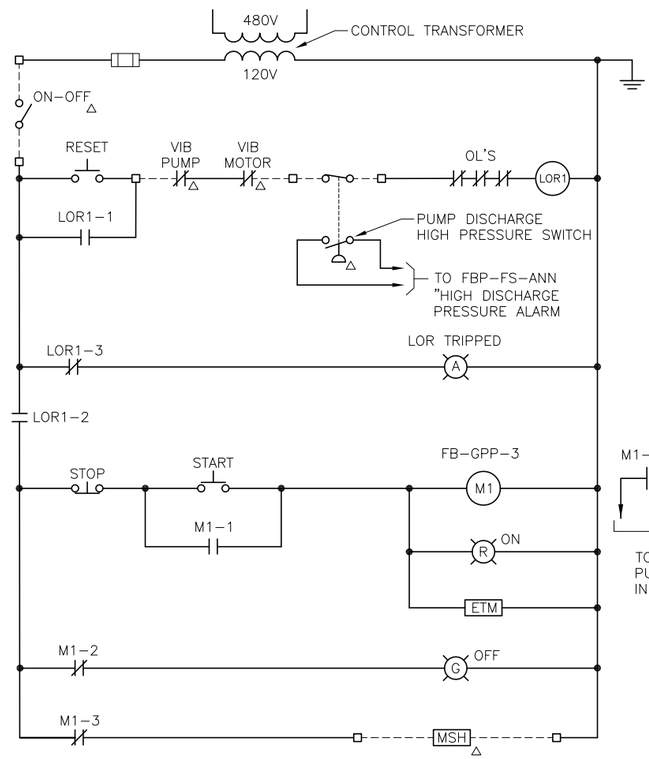
SHEET NUMBER: E-11

FILE: 171604942E01



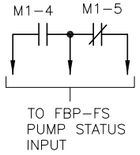
GENERAL PURPOSE EFFLUENT WATER PUMP FB–GPP–1
AKA PP201A

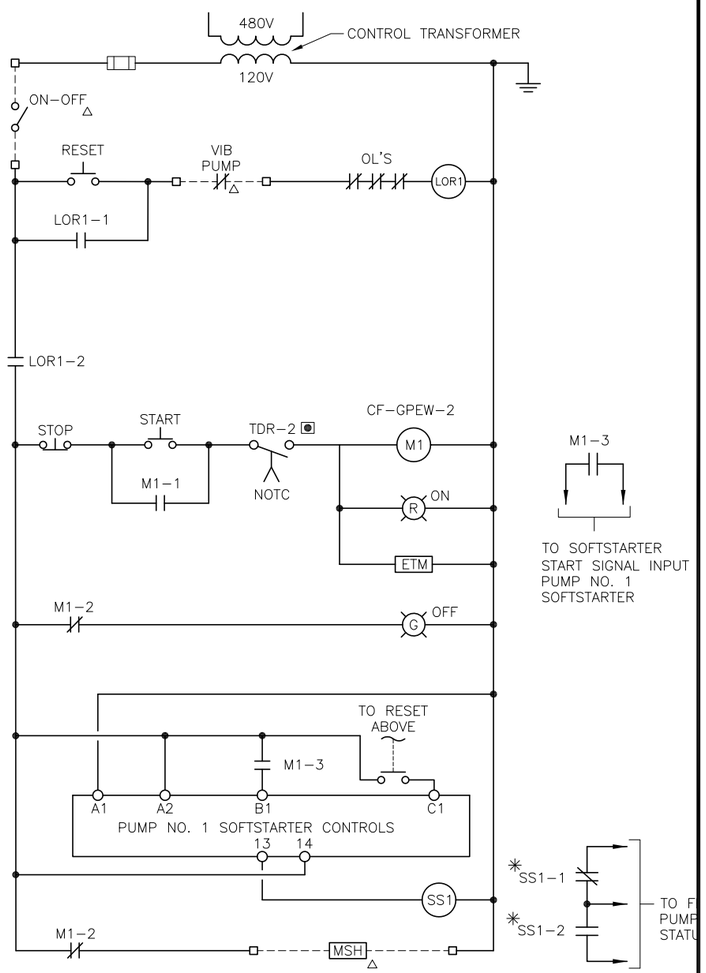
(MCC–58)
FB–GPP–2 : AKA PP201S IS SIMILAR



GENERAL PURPOSE EFFLUENT WATER PUMP FB–GPP–3

(MCC–58)
FB–GPP–4 IS SIMILAR





CF GPEW–2 (PB–2)

(MCC–58)
CF–GPEW–1 IS SIMILAR

CONTROLS DESIGNATIONS

△ EXISTING DEVICE LOCATED REMOTE FROM MCC–58 (TO BE REUSED)

⬡ INDICATES A DEVICE LOCATED ON OR WITHIN FBP–FS (TO BE RECONNECTED)

✳ INDICATES A DEVICE LOCATED ON OR WITH ASSOCIATED SOFT STARTER (REFER TO SHEET E–13)

◙ SHUNT TRIP CONTROL CIRCUIT TIME DELAY (REFER TO SHEET E–13).

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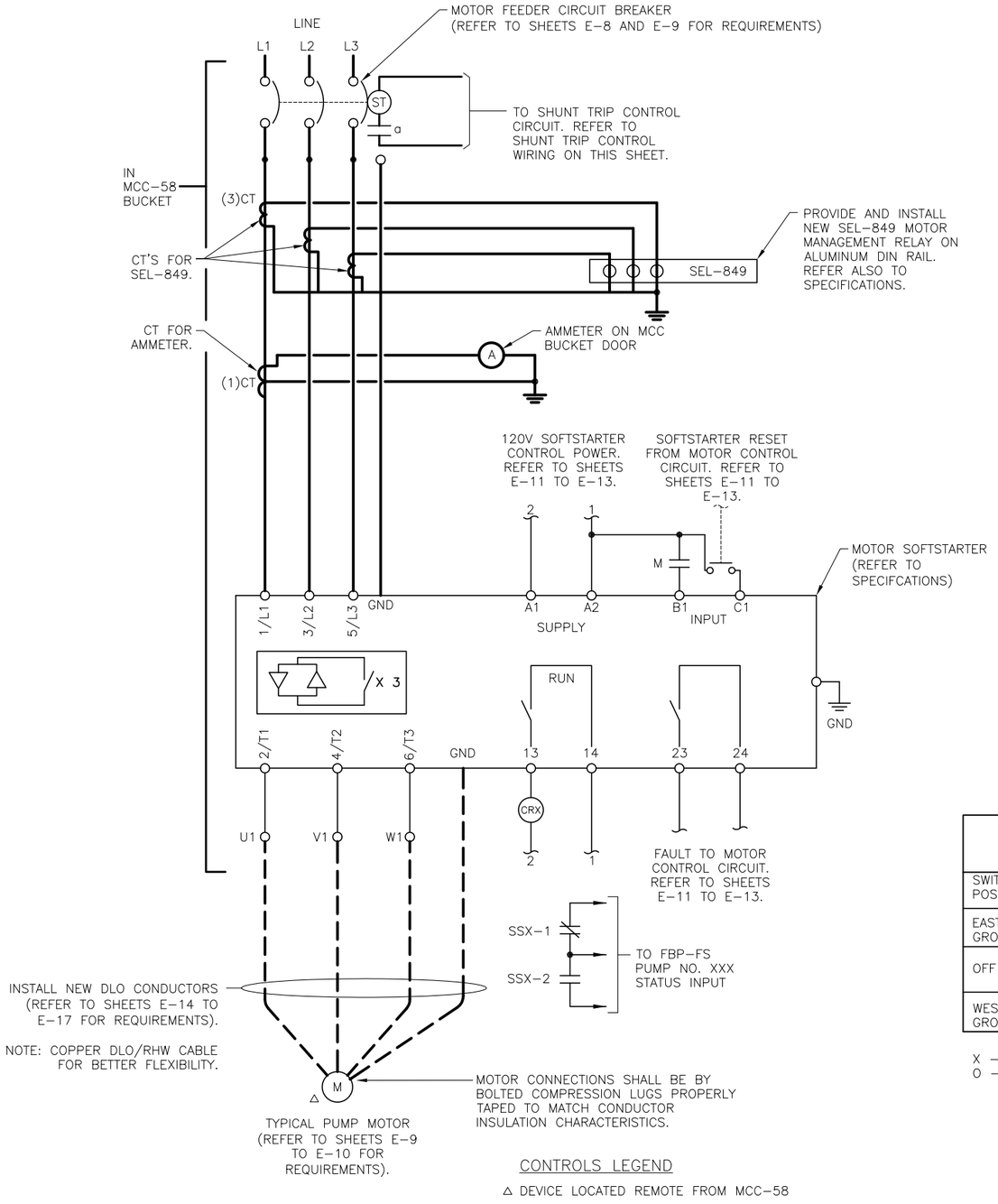
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FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

WATER PUMP CONTROL SCHEMATICS

TIMOTHY THOMAS, P.E. No. 47079

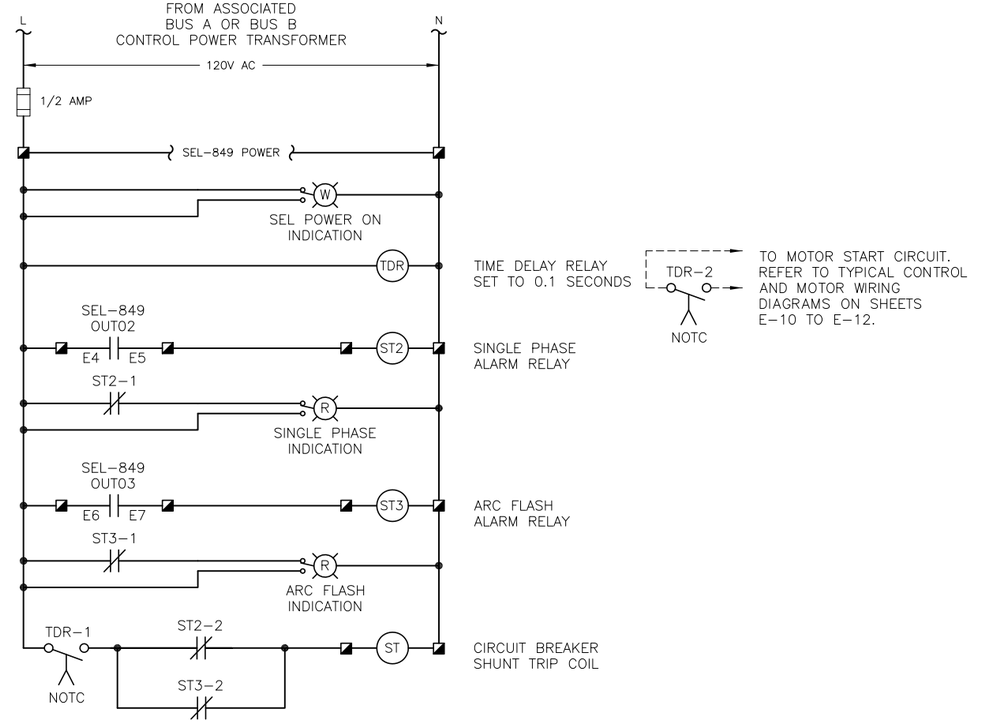
SHEET NUMBER: E–12

FILE: 171604942E01



CONTROLS LEGEND

△ DEVICE LOCATED REMOTE FROM MCC-58



BACKWASH WATER PUMP SELECTOR SWITCH CONTACT DEVELOPMENT CHART			
SWITCH POSITION	CONTACT POSITION 1	CONTACT POSITION 2	FUNCTION AND REMARKS
EAST GROUP	X	O	PUMP No. 2 SERVES THE EAST FILTER GROUP
OFF	O	O	PUMP No. 1 SERVES THE EAST FILTER GROUP PUMP No. 3 SERVES THE WEST FILTER GROUP
WEST GROUP	O	X	PUMP No. 2 SERVES THE WEST FILTER GROUP

X – INDICATES CLOSED
O – INDICATED OPEN

BACKWASH WATER PUMP FB-BWP-1 THRU FB-BWP-3 'OFF-TEST-AUTOMATIC' SELECTOR SWITCH CONTACT DEVELOPMENT CHART			
SWITCH POSITION	CONTACT POSITION 1	CONTACT POSITION 2	CONTACT POSITION 3
OFF/TEST	X	O	O
AUTOMATIC	O	X	X

X – INDICATES CLOSED
O – INDICATED OPEN

CONTACT No. 3 REQUIRED ON FB-BWP-2 ONLY

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HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

TYPICAL SOFTSTARTER WIRING SCHEMATICS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-13

FILE: 171604942E01

CONDUIT AND CABLE SCHEDULE

CONDUIT No.	SIZE	NUMER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
IT5A7–1	4"	3–350 kcmil + 1–#4/0 N + 1–#4/0 GND	EX TRANSFORMER T–5A–7	EX MCC–58 BUS 'A' MCB	EX CONDUIT AND CONDUCTORS TO BE REUSED.
IT5A7–2	4"	3–350 kcmil + 1–#4/0 N + 1–#4/0 GND	EX TRANSFORMER T–5A–7	EX MCC–58 BUS 'A' MCB	EX CONDUIT AND CONDUCTORS TO BE REUSED.
IT5A7–3	4"	3–350 kcmil + 1–#4/0 N + 1–#4/0 GND	EX TRANSFORMER T–5A–7	EX MCC–58 BUS 'A' MCB	EX CONDUIT AND CONDUCTORS TO BE REUSED.
IT5A7–4	4"	3–350 kcmil + 1–#4/0 N + 1–#4/0 GND	EX TRANSFORMER T–5A–7	EX MCC–58 BUS 'A' MCB	EX CONDUIT AND CONDUCTORS TO BE REUSED.
IT5B7–1	4"	3–350 kcmil + 1–#4/0 N + 1–#4/0 GND	EX TRANSFORMER T–5B–7	EX MCC–58 BUS 'B' MCB	EX CONDUIT AND CONDUCTORS TO BE REUSED.
IT5B7–2	4"	3–350 kcmil + 1–#4/0 N + 1–#4/0 GND	EX TRANSFORMER T–5B–7	EX MCC–58 BUS 'B' MCB	EX CONDUIT AND CONDUCTORS TO BE REUSED.
IT5B7–3	4"	3–350 kcmil + 1–#4/0 N + 1–#4/0 GND	EX TRANSFORMER T–5B–7	EX MCC–58 BUS 'B' MCB	EX CONDUIT AND CONDUCTORS TO BE REUSED.
IT5B7–4	4"	3–350 kcmil + 1–#4/0 N + 1–#4/0 GND	EX TRANSFORMER T–5B–7	EX MCC–58 BUS 'B' MCB	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M1	3"	3–300 kcmil + 1–#1 GND	MCC–58	EX MCC–58A : BUS A	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
58M2	3"	3–300 kcmil + 1–#1 GND	MCC–58	EX MCC–58A : BUS B	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
58M3	4"	3–4/0 + 1–#4 GND	MCC–58	EX PILOT PLANT	EX CONDUIT AND CONDUCTORS TO BE REUSED. CONTRACTOR TO FIELD VERIFY CONDUIT/CONDUCTOR SIZING AND ROUTING.
58M4A	1–1/4"	3–#4 + 1–#8 GND	MCC–58	EX LP 53 TRANSFER SW.	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT/CONDUCTOR SIZING AND ROUTING.
58M4B	1–1/4"	3–#4 + 1–#8 GND	MCC–58	EX LP 53 TRANSFER SW.	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT/CONDUCTOR SIZING AND ROUTING.
58M5	1–1/4"	3–#4 + 1–#8 GND	EX LP 53 TRANSFER SW.	EX TRANSFORMER T–LP–53	NO WORK REQUIRED. EXISTING CONDUCTORS AND CONDUIT TO REMAIN.
58M6A	3–1/2"	3–373.7 DLO + 1–#1/0 DLO GND	MCC–58	EX MOTOR PP201S	DLO CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. EX FLEXIBLE CONNECTIONS TO BE REPLACED W/ ALUMINUM CORE FLEXIBLE CONDUIT.
58M6B	3–1/2"	3–373.7 DLO + 1–#1/0 DLO GND	MCC–58	EX MOTOR PP201S	DLO CONDUCTORS TO BE NEW, EXISTING CONDUIT TO BE REUSED AFTER CLEANING. EX FLEXIBLE CONNECTIONS TO BE REPLACED W/ ALUMINUM CORE FLEXIBLE CONDUIT.
58M6C	1"	12–#14 + 1–#14 GND (4 SPARE)	MCC–58	EX JB AT MOTOR PP201S	NEW CONDUCTORS TO BE PROVIDED. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
58M6D	3/4"	2–#14 + 1–#14 GND	EX JB AT PP201S	STOP/LOCKOUT PUSHBUTTON	EXISTING CONDUIT, CONDUCTORS AND PUSHBUTTON STATION TO BE REUSED
58M6E	3/4"	2–#14 + 1–#14 GND	EX JB AT PP201S	PP201S SPACE HEATER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M6F	3/4"	2–#14 + 1–#14 GND	EX JB AT PP201S	MOTOR VIB CONTROLLER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M6G	3/4"	4–#14 + 1–#14 GND	MOTOR VIB CONTROLLER	PUMP VIB CONTROLLER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M6H	3/4"	2/C–#18 TW–SH	MOTOR VIB CONTROLLER	MOTOR VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M6I	3/4"	2/C–#18 TW–SH	PUMP VIB CONTROLLER	PUMP VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M6J	3/4"	2–#14 + 1–#14 GND	EX JB AT PP201S	PRESSURE SWITCH OG–64	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M7A	2–1/2"	3–4/0 DLO + 1–#4 XHHW–2 GND	MCC–58	EX MOTOR FB–GPP–4	DLO CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. EX FLEXIBLE CONNECTIONS TO BE REPLACED W/ ALUMINUM CORE FLEXIBLE CONDUIT.
58M7B	1"	16–#14 + 1–#14 GND (2 SPARE)	MCC–58	EX JB AT MOTOR FB–GPP–4	NEW CONDUCTORS TO BE PROVIDED. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
58M7C	3/4"	2–#14 + 1–#14 GND	EX JB AT MOTOR GPP–4	START/STOP SELECTOR	EXISTING CONDUIT, CONDUCTORS AND PUSHBUTTON STATION TO BE REUSED
58M7D	3/4"	2–#14 + 1–#14 GND	EX JB AT MOTOR GPP–4	GPP–4 SPACE HEATER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M7E	3/4"	2–#14 + 1–#14 GND	EX JB AT MOTOR GPP–4	MOTOR VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M7F	3/4"	2–#14 + 1–#14 GND	EX JB AT MOTOR GPP–4	PUMP VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M7G	3/4"	2–#14 + 1–#14 GND	EX JB AT MOTOR GPP–4	PRESSURE SWITCH	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M7H	3/4"	2–#14 + 1–#14 GND	EX JB AT MOTOR GPP–4	PRESSURE SWITCH	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M8A	3"	3–373.7 DLO + 1–#3 XHHW–2 GND	MCC–58	EX MOTOR FB–BWP–1	DLO CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. EX FLEXIBLE CONNECTIONS TO BE REPLACED W/ ALUMINUM CORE FLEXIBLE CONDUIT.
58M8B	1"	16–#14 + 1–#14 GND (2 SPARE)	MCC–58	EX JB AT MOTOR BWP–1	NEW CONDUCTORS TO BE PROVIDED. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. COUNT INCLUDES SPARES.
58M8C	3/4"	8–#14 + 1–#14 GND	EX JB AT MOTOR BWP–1	TEST–ON–OFF	EXISTING CONDUIT, CONDUCTORS AND PUSHBUTTON STATION TO BE REUSED
58M8D	3/4"	2–#14 + 1–#14 GND	EX JB AT MOTOR BWP–1	BWP–1 SPACE HEATER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M8E	3/4"	2–#14 + 1–#14 GND	EX JB AT MOTOR BWP–1	MOTOR VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M8F	3/4"	2–#14 + 1–#14 GND	EX JB AT MOTOR BWP–1	PUMP VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M8G	3/4"	2–#14 + 1–#14 GND	EX JB AT MOTOR BWP–1	PRESSURE SWITCH	EX CONDUIT AND CONDUCTORS TO BE REUSED.

CONTINUED ON SHEET E–15

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FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

CONDUIT AND CABLE SCHEDULE (SHEET 1 OF 3)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–14

FILE: 171604942E01

CONDUIT AND CABLE SCHEDULE (CONTINUED)

CONDUIT No.	SIZE	NUMER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
58M9A	3"	3-373.7 DLO + 1-#3 XHHW-2 GND	MCC-58	EX MOTOR FB-BWP-2	DLO CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. EX FLEXIBLE CONNECTIONS TO BE REPLACED W/ ALUMINUM CORE FLEXIBLE CONDUIT.
58M9B	1"	16-#14 + 1-#14 GND (2 SPARE)	MCC-58	EX JB AT MOTOR BWP-2	NEW CONDUCTORS TO BE PROVIDED. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. COUNT INCLUDES SPARES.
58M9C	3/4"	8-#14 + 1-#14 GND	EX JB AT MOTOR BWP-2	TEST-ON-OFF	EXISTING CONDUIT, CONDUCTORS AND PUSHBUTTON STATION TO BE REUSED
58M9D	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR BWP-2	BWP-2 SPACE HEATER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M9E	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR BWP-2	MOTOR VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M9F	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR BWP-2	PUMP VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M9G	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR BWP-2	PRESSURE SWITCH	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M10A	3"	3-373.7 DLO + 1-#3 XHHW-2 GND	MCC-58	EX MOTOR FB-BWP-3	DLO CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. EX FLEXIBLE CONNECTIONS TO BE REPLACED W/ ALUMINUM CORE FLEXIBLE CONDUIT.
58M10B	1"	16-#14 + 1-#14 GND (2 SPARE)	MCC-58	EX JB AT MOTOR BWP-3	NEW CONDUCTORS TO BE PROVIDED. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. COUNT INCLUDES SPARES.
58M10C	3/4"	8-#14 + 1-#14 GND	EX JB AT MOTOR BWP-3	TEST-ON-OFF	EXISTING CONDUIT, CONDUCTORS AND PUSHBUTTON STATION TO BE REUSED
58M10D	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR BWP-3	BWP-3 SPACE HEATER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M10E	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR BWP-3	MOTOR VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M10F	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR BWP-3	PUMP VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M10G	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR BWP-3	PRESSURE SWITCH	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M11A	2"	3-2/0 DLO + 1-#6 XHHW-2 GND	MCC-58	EX MOTOR CF GPEW-2	DLO CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. EX FLEXIBLE CONNECTIONS TO BE REPLACED W/ ALUMINUM CORE FLEXIBLE CONDUIT.
58M11B	1"	8-#14 + 1-#14 GND (2 SPARE)	MCC-58	EX JB AT MOTOR GPEW-2	NEW CONDUCTORS TO BE PROVIDED. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
58M11C	3/4"	2-#14 + 1-#14 GND	EX JB AT GPEW-2	STOP/LOCKOUT	EXISTING CONDUIT, CONDUCTORS AND PUSHBUTTON STATION TO BE REUSED
58M11D	3/4"	2-#14 + 1-#14 GND	EX JB AT GPEW-2	GPEW-2 SPACE HEATER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M11E	3/4"	2-#14 + 1-#14 GND	EX JB AT GPEW-2	PUMP VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M12A	2"	3-2/0 DLO + 1-#6 XHHW-2 GND	MCC-58	EX MOTOR CF GPEW-1	DLO CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. EX FLEXIBLE CONNECTIONS TO BE REPLACED W/ ALUMINUM CORE FLEXIBLE CONDUIT.
58M12B	1"	8-#14 + 1-#14 GND (2 SPARE)	MCC-58	EX JB AT MOTOR GPEW-1	NEW CONDUCTORS TO BE PROVIDED. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
58M12C	3/4"	2-#14 + 1-#14 GND	EX JB AT GPEW-1	STOP/LOCKOUT	EXISTING CONDUIT, CONDUCTORS AND PUSHBUTTON STATION TO BE REUSED
58M12D	3/4"	2-#14 + 1-#14 GND	EX JB AT GPEW-1	GPEW-1 SPACE HEATER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M12E	3/4"	2-#14 + 1-#14 GND	EX JB AT GPEW-1	PUMP VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M13	1-1/4"	3-#3 + 1-#6 GND	MCC-58	EX LCP 55 TRANSFORMER	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT/CONDUCTOR SIZING AND ROUTING.
58M14	1"	3-#8 + 1-#8 GND	MCC-58	EX MONORAIL HOIST	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT/CONDUCTOR SIZING AND ROUTING.
58M15A	2-1/2"	3-4/0 DLO + 1-#4 XHHW-2 GND	MCC-58	EX MOTOR FB-GPP-3	DLO CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. EX FLEXIBLE CONNECTIONS TO BE REPLACED W/ ALUMINUM CORE FLEXIBLE CONDUIT.
58M15B	1"	16-#14 + 1-#14 GND (2 SPARE)	MCC-58	EX JB AT MOTOR FB-GPP-3	NEW CONDUCTORS TO BE PROVIDED. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
58M15C	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR GPP-3	START/STOP SELECTOR	EXISTING CONDUIT, CONDUCTORS AND PUSHBUTTON STATION TO BE REUSED
58M15D	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR GPP-3	GPP-3 SPACE HEATER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M15E	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR GPP-3	MOTOR VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M15F	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR GPP-3	PUMP VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M15G	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR GPP-3	PRESSURE SWITCH	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M15H	3/4"	2-#14 + 1-#14 GND	EX JB AT MOTOR GPP-3	PRESSURE SWITCH	EX CONDUIT AND CONDUCTORS TO BE REUSED.

CONTINUED ON SHEET E-16

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City of Tampa Wastewater Department
HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

CONDUIT AND CABLE SCHEDULE (SHEET 2 OF 3)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-15

FILE: 171604942E01

CONDUIT AND CABLE SCHEDULE (CONTINUED)

CONDUIT No.	SIZE	NUMER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
58M16A	3–1/2"	3–373.7 DLO + 1–#1/0 DLO GND	MCC–58	EX MOTOR PP201A	DLO CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. EX FLEXIBLE CONNECTIONS TO BE REPLACED W/ ALUMINUM CORE FLEXIBLE CONDUIT.
58M16B	3–1/2"	3–373.7 DLO + 1–#1/0 DLO GND	MCC–58	EX MOTOR PP201A	DLO CONDUCTORS TO BE NEW, EXISTING CONDUIT TO BE REUSED AFTER CLEANING. EX FLEXIBLE CONNECTIONS TO BE REPLACED W/ ALUMINUM CORE FLEXIBLE CONDUIT.
58M16C	1"	12–#14 + 1–#14 GND (4 SPARE)	MCC–58	EX JB AT MOTOR PP201A	NEW CONDUCTORS TO BE PROVIDED. EXISTING CONDUIT TO BE REUSED AFTER CLEANING
58M16D	3/4"	2–#14 + 1–#14 GND	EX JB AT PP201A	STOP/LOCKOUT PUSHBUTTON	EXISTING CONDUIT, CONDUCTORS AND PUSHBUTTON STATION TO BE REUSED
58M16E	3/4"	2–#14 + 1–#14 GND	EX JB AT PP201A	PP201A SPACE HEATER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M16F	3/4"	2–#14 + 1–#14 GND	EX JB AT PP201A	MOTOR VIB CONTROLLER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M16G	3/4"	4–#14 + 1–#14 GND	MOTOR VIB CONTROLLER	PUMP VIB CONTROLLER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M16H	3/4"	2/C–#18 TW–SH	MOTOR VIB CONTROLLER	MOTOR VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M16I	3/4"	2/C–#18 TW–SH	PUMP VIB CONTROLLER	PUMP VIB SENSOR	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M16J	3/4"	2–#14 + 1–#14 GND	EX JB AT PP201A	PRESSURE SWITCH OG–65	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M17	2"	3–#3/0 + 1–#6 GND	MCC–58	EX LCP 54 TRANSFORMER	EX CONDUIT AND CONDUCTORS TO BE REUSED.
58M18	1–1/2"	40–#14 + 1–#14 GND	MCC–58	FBP–FS	EX CONDUIT AND CONDUCTORS TO BE REUSED. CONTRACTOR TO FIELD VERIFY CONDUCTOR COUNT AND CONDUIT SIZE.
58M19	1–1/2"	30–#14 + 1–#14 GND	MCC–58	FBP–FS–ANN	EX CONDUIT AND CONDUCTORS TO BE REUSED. CONTRACTOR TO FIELD VERIFY CONDUCTOR COUNT AND CONDUIT SIZE.
56M5A	4"	3–#350 kcmil + 1–#250 kcmil GND	SWITCHGEAR NO. 56 'A'	MCC–58 BUS 'A'	EX CONDUIT AND CONDUCTORS TO BE REUSED.
56M5B	4"	3–#350 kcmil + 1–#250 kcmil GND	SWITCHGEAR NO. 56 'A'	MCC–58 BUS 'A'	EX CONDUIT AND CONDUCTORS TO BE REUSED.
56M5C	4"	3–#350 kcmil + 1–#250 kcmil GND	SWITCHGEAR NO. 56 'A'	MCC–58 BUS 'A'	EX CONDUIT AND CONDUCTORS TO BE REUSED.
56M5D	4"	3–#350 kcmil + 1–#250 kcmil GND	SWITCHGEAR NO. 56 'A'	MCC–58 BUS 'A'	EX CONDUIT AND CONDUCTORS TO BE REUSED.
56M5E	4"	3–#350 kcmil + 1–#250 kcmil GND	SWITCHGEAR NO. 56 'A'	MCC–58 BUS 'A'	EX CONDUIT AND CONDUCTORS TO BE REUSED.
56M6A	4"	3–#350 kcmil + 1–#250 kcmil GND	SWITCHGEAR NO. 56 'B'	MCC–58 BUS 'B'	EX CONDUIT AND CONDUCTORS TO BE REUSED.
56M6B	4"	3–#350 kcmil + 1–#250 kcmil GND	SWITCHGEAR NO. 56 'B'	MCC–58 BUS 'B'	EX CONDUIT AND CONDUCTORS TO BE REUSED.
56M6C	4"	3–#350 kcmil + 1–#250 kcmil GND	SWITCHGEAR NO. 56 'B'	MCC–58 BUS 'B'	EX CONDUIT AND CONDUCTORS TO BE REUSED.
56M6D	4"	3–#350 kcmil + 1–#250 kcmil GND	SWITCHGEAR NO. 56 'B'	MCC–58 BUS 'B'	EX CONDUIT AND CONDUCTORS TO BE REUSED.
56M6E	4"	3–#350 kcmil + 1–#250 kcmil GND	SWITCHGEAR NO. 56 'B'	MCC–58 BUS 'B'	EX CONDUIT AND CONDUCTORS TO BE REUSED.

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HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

CONDUIT AND CABLE SCHEDULE (SHEET 3 OF 3)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–16

FILE: 171604942E01

PUMP MOTOR FEEDER AMPACITY CALCULATIONS						
LOAD DESCRIPTION	MOTOR H.P.	NEC 430.250 FLA	125% OF FLA	DLO CABLE SIZE	DLO COND QUANTITY	DLO AMPACITY AT 75° F
BACKWASH WATER PUMP 1	200	240	300	373.7 kcmil	1 PER PHASE	321 AMPERES
BACKWASH WATER PUMP 2	200	240	300	373.7 kcmil	1 PER PHASE	321 AMPERES
BACKWASH WATER PUMP 3	200	240	300	373.7 kcmil	1 PER PHASE	321 AMPERES
GENERAL PURPOSE PUMP 3 (GPP–3)	150	180	225	4/0 AWG	1 PER PHASE	230 AMPERES
GENERAL PURPOSE PUMP 4 (GPP–4)	150	180	225	4/0 AWG	1 PER PHASE	230 AMPERES
CF GPEW–1 (PB–1)	100	124	155	2/0 AWG	1 PER PHASE	175 AMPERES
CF GPEW–2 (PB–2)	100	124	155	2/0 AWG	1 PER PHASE	175 AMPERES
GENERAL PURPOSE PUMP GPP–1 (PP201A)	400	477	596	373.7 kcmil	2 PER PHASE	642 AMPERES
GENERAL PURPOSE PUMP GPP–2 (PP201S)	400	477	596	373.7 kcmil	2 PER PHASE	642 AMPERES

CONDUIT FILL CALCULATION FOR BACKWASH WATER PUMPS 373.7 kcmil DLO CABLE IN 3" CONDUIT			
CONDUCTOR	SQUARE INCHES	QUANTITY	TOTAL SQ. IN.
#373.7 DLO CU PHASE CONDUCTOR	0.916	3	2.748
#3 AWG CU GROUND CONDUCTOR	0.096	1	0.096
TOTAL AREA IN SQUARE INCHES			2.844
40% FILL FOR 3" RMC PER NEC			3.000
3" CONDUIT WILL ACCOMMODATE CONDUCTORS SPECIFIED			

CONDUIT FILL CALCULATION FOR CF GPEW-1 & CF GPEW-2 PUMPS 2/0 AWG DLO CABLE IN 2" CONDUIT			
CONDUCTOR	SQUARE INCHES	QUANTITY	TOTAL SQ. IN.
#2/0 DLO CU PHASE CONDUCTOR	0.396	3	1.188
#6 AWG CU GROUND CONDUCTOR	0.062	1	0.062
TOTAL AREA IN SQUARE INCHES			1.250
40% FILL FOR 2" RMC PER NEC			1.363
2" CONDUIT WILL ACCOMMODATE CONDUCTORS SPECIFIED			

CONDUIT FILL CALCULATION FOR GPP-3 AND GPP-4 4/0 AWG DLO CABLE IN 2-1/2" CONDUIT			
CONDUCTOR	SQUARE INCHES	QUANTITY	TOTAL SQ. IN.
#4/0 DLO CU PHASE CONDUCTOR	0.515	3	1.545
#4 AWG CU GROUND CONDUCTOR	0.080	1	0.080
TOTAL AREA IN SQUARE INCHES			1.625
40% FILL FOR 2–1/2" RMC PER NEC			1.946
2–1/2" CONDUIT WILL ACCOMMODATE CONDUCTORS SPECIFIED			

CONDUIT FILL CALCULATION FOR PP201A AND PP201S PUMPS 373.7 kcmil DLO CABLE IN 3-1/2" CONDUIT			
CONDUCTOR	SQUARE INCHES	QUANTITY	TOTAL SQ. IN.
#373.7 DLO CU PHASE CONDUCTOR	0.916	3	2.748
#1/0 DLO CU GROUND CONDUCTOR	0.322	1	0.322
TOTAL AREA IN SQUARE INCHES			3.070
40% FILL FOR 3–1/2" RMC PER NEC			4.004
3–1/2" CONDUIT WILL ACCOMMODATE CONDUCTORS SPECIFIED (PARALLEL RUNS TO BE PROVIDED FOR THESE MOTORS).			

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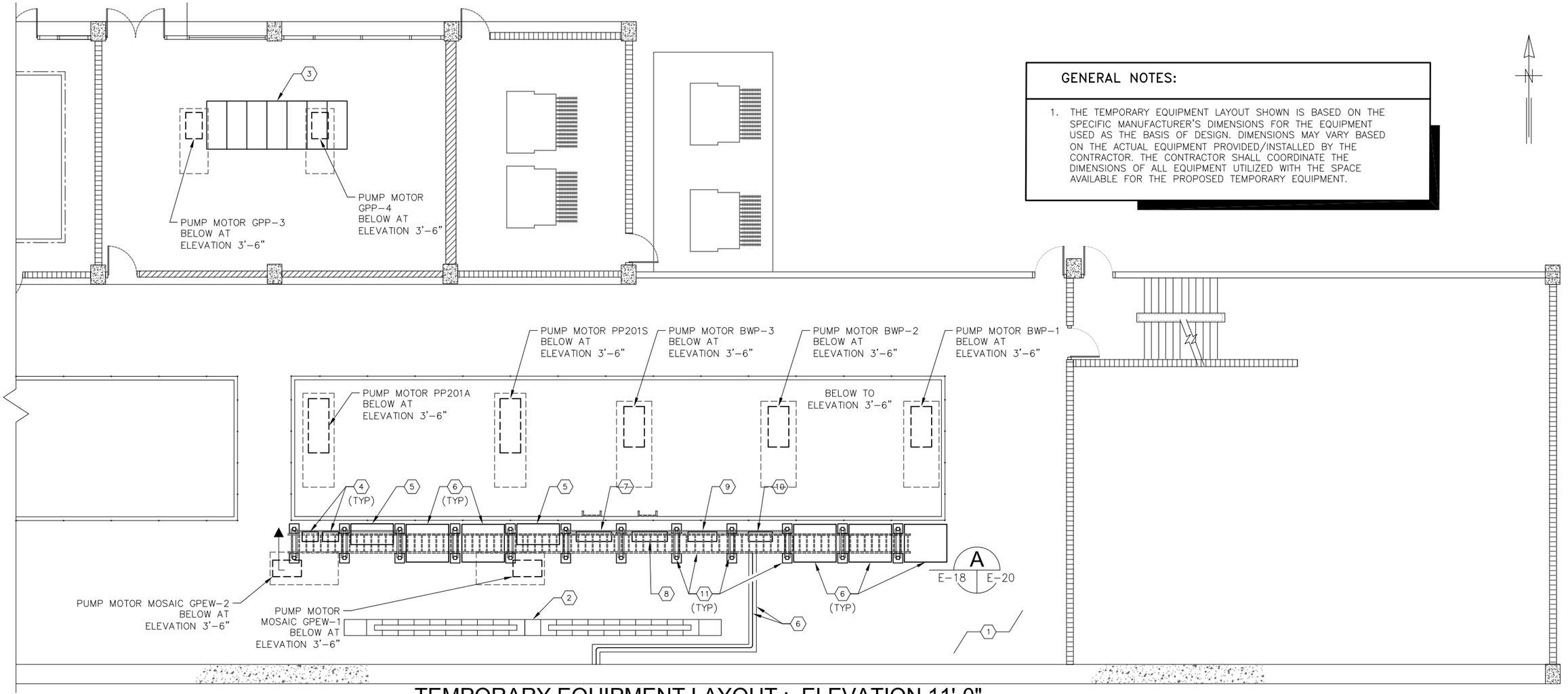
HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

LOAD AND CONDUIT SIZING CALCULATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–17

FILE: 171604942E01



GENERAL NOTES:

1. THE TEMPORARY EQUIPMENT LAYOUT SHOWN IS BASED ON THE SPECIFIC MANUFACTURER'S DIMENSIONS FOR THE EQUIPMENT USED AS THE BASIS OF DESIGN. DIMENSIONS MAY VARY BASED ON THE ACTUAL EQUIPMENT PROVIDED/INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE THE DIMENSIONS OF ALL EQUIPMENT UTILIZED WITH THE SPACE AVAILABLE FOR THE PROPOSED TEMPORARY EQUIPMENT.

TEMPORARY EQUIPMENT LAYOUT : ELEVATION 11'-0"

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

KEYED NOTES:

1. PLAN AT ELEVATION 11'-0".
2. EXISTING 480V, 1,200A MCC-58. REFER TO SHEET E-5 FOR EXISTING ELEVATION AND WORK REQUIRED.
3. EXISTING 480V, 2,000A SWITCHGEAR 56 AT ELEV 11'-0". FEEDERS CURRENTLY UTILIZED FOR MCC-58 SHALL BE MODIFIED TO PROVIDE TEMPORARY POWER DURING THE REMOVAL/INSTALLATION OF MCC-58.
4. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY NEMA SIZE 5 MOTOR STARTER TO SERVE AS A TEMPORARY MOTOR STARTER DURING MCC-58 REMOVAL/INSTALLATION.
5. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 100HP SOFTSTARTER (FOR GPEW-1 AND GPEW-2) TO SERVE AS A TEMPORARY MOTOR STARTER DURING MCC-58 REMOVAL/INSTALLATION.
6. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY VFD TO SERVE AS A TEMPORARY MOTOR STARTER DURING MCC-58 REMOVAL/INSTALLATION. REFER TO SHEET E-20 FOR DETAILS.
7. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 480V, 1,200A, 3ø, 3-WIRE PANELBOARD 'A' FOR POWER DISTRIBUTION DURING MCC-58 REMOVAL/INSTALLATION. REFER TO SHEET E-21 FOR DETAILS.
8. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 480V, 1,200A, 3ø, 3-WIRE PANELBOARD 'B' FOR POWER DISTRIBUTION DURING MCC-58 REMOVAL/INSTALLATION. REFER TO SHEET E-21 FOR DETAILS.
9. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY MOTOR CONTROL PANEL 'A' FOR MOTOR CONTROL DURING MCC-58 REMOVAL/INSTALLATION. REFER TO SHEET E-22 FOR DETAILS.
10. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY MOTOR CONTROL PANEL 'B' FOR MOTOR CONTROL DURING MCC-58 REMOVAL/INSTALLATION. REFER TO SHEET E-25 FOR DETAILS.
11. CONTRACTOR TO PROVIDE AND INSTALL SUPPORTS, UNISTRUT AND CABLE TRAY TO SERVE AS TEMPORARY RACEWAY FOR TEMPORARY POWER CABLES DURING MCC-58 REMOVAL/INSTALLATION. REFER TO ELEVATION ON SHEET E-20 FOR DETAILS.
12. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY FEEDER CABLE (58T3) TO EXISTING RE-USE FACILITY. CONTRACTOR TO PROVIDE AND INSTALL DROP OVER CABLE PROTECTOR BY ELECTRIDUCT OR PROVIDE OTHER CITY OF TAMPA APPROVED MEANS OF PROTECTION.

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TEMPORARY EQUIPMENT LAYOUT: ELEVATION 11'-0"

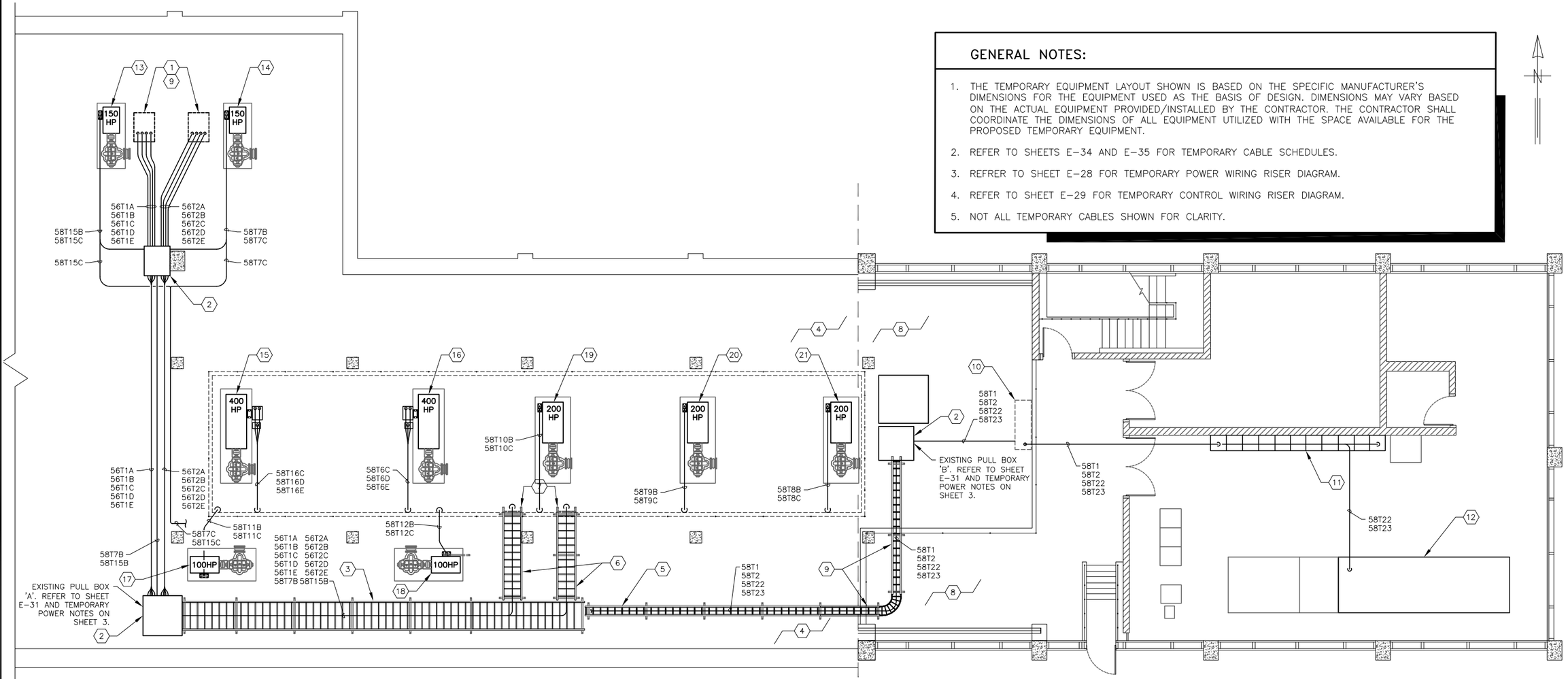
TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-18

FILE: 171604942E01

GENERAL NOTES:

1. THE TEMPORARY EQUIPMENT LAYOUT SHOWN IS BASED ON THE SPECIFIC MANUFACTURER'S DIMENSIONS FOR THE EQUIPMENT USED AS THE BASIS OF DESIGN. DIMENSIONS MAY VARY BASED ON THE ACTUAL EQUIPMENT PROVIDED/INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE THE DIMENSIONS OF ALL EQUIPMENT UTILIZED WITH THE SPACE AVAILABLE FOR THE PROPOSED TEMPORARY EQUIPMENT.
2. REFER TO SHEETS E-34 AND E-35 FOR TEMPORARY CABLE SCHEDULES.
3. REFRER TO SHEET E-28 FOR TEMPORARY POWER WIRING RISER DIAGRAM.
4. REFER TO SHEET E-29 FOR TEMPORARY CONTROL WIRING RISER DIAGRAM.
5. NOT ALL TEMPORARY CABLES SHOWN FOR CLARITY.



TEMPORARY CABLE ROUTING: ELEVATION 3'-6"

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

KEYED NOTES:

1. OPENING IN FLOOR SLAB (ELEV 11'-0") FOR CONDUIT ENTRANCE INTO EXISTING SWITCHGEAR 56.
2. EXISTING PULL BOX ATTACHED TO THE UNDERSIDE OF ELEV 11'-0" FLOOR SLAB.
3. CONTRACTOR TO PROVIDE AND INSTALL 36" WIDE ALUMINUM CABLE TRAY. CABLE TRAY TO BE INSTALLED APPROXIMATELY 8'-6" ABOVE FINISHED FLOOR AT ELEV 3'-6". CONTRACTOR TO FIELD ADJUST CABLE TRAY HEIGHT BASED ON EXISTING CONDITIONS IF REQUIRED.
4. EXISTING PLAN AT ELEVATION 3'-6".
5. CONTRACTOR TO PROVIDE AND INSTALL 12" WIDE ALUMINUM CABLE TRAY. CABLE TRAY TO BE INSTALLED APPROXIMATELY 8'-6" ABOVE FINISHED FLOOR AT ELEV 3'-6". CONTRACTOR TO FIELD ADJUST CABLE TRAY HEIGHT BASED ON EXISTING CONDITIONS IF REQUIRED.
6. CONTRACTOR TO PROVIDE AND INSTALL 24" WIDE ALUMINUM CABLE TRAY. CABLE TRAY HEIGHT BASED ON FIELD CONDITIONS.
7. CONTRACTOR TO PROVIDE AND INSTALL 24" WIDE ALUMINUM CABLE TRAY. CABLE TRAY TO BE SECURED TO SIDE OF ELEV 11'-0" FLOOR SLAB.
8. EXISTING PLAN AT ELEVATION 23'-6".
9. PORTION OF 12" WIDE CABLE TRAY SUSPENDED FROM UNDERSIDE OF ELEV 11'-0" FLOOR SLAB.
10. PULL BOX INSTALLED AT FLOOR SLAB OF ELEVATION 11'-0".
11. EXISTING MOTOR CONTROL CENTER (MCC-58A) LOCATED ON ELEVATION 23'-6".
12. EXISTING FBP-FS AND FBP-FS-ANN LOCATED ON ELEVATION 23'-6".
13. EXISTING PUMP MOTOR GPP-3.
14. EXISTING PUMP MOTOR GPP-4.
15. EXISTING PUMP MOTOR PP201A.
16. EXISTING PUMP MOTOR PP201S.
17. EXISTING PUMP MOTOR MOSAIC GPEW-2
18. EXISTING PUMP MOTOR MOSAIC GPEW-1.
19. EXISTING PUMP MOTOR BWP-3.
20. EXISTING PUMP MOTOR BWP-2.
21. EXISTING PUMP MOTOR BWP-1.

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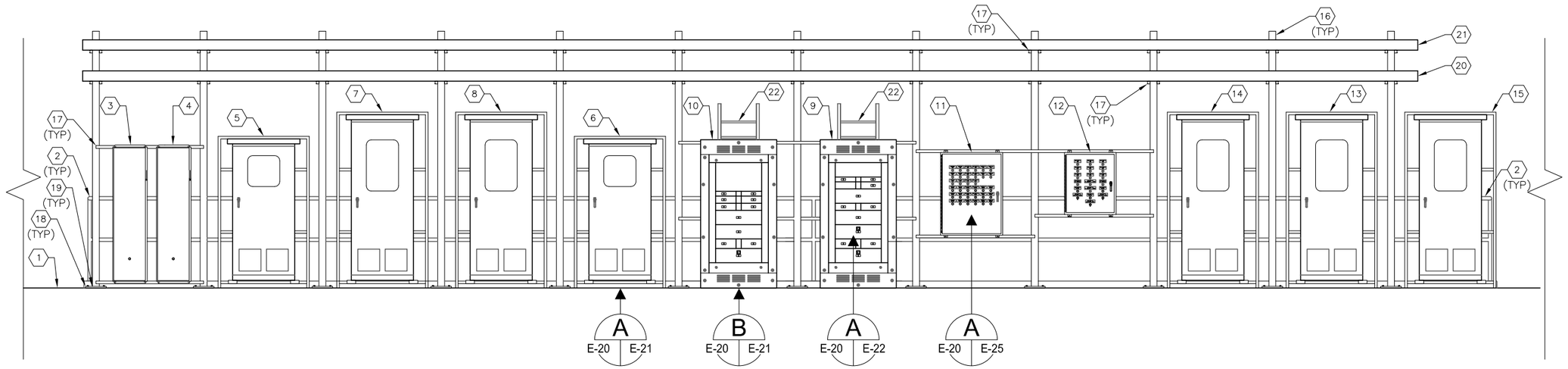
HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

TEMPORARY CABLE ROUTING ELEVATION 3'-6"

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-19

FILE: 171604942E01



TEMPORARY EQUIPMENT FRONT ELEVATION

SCALE : N.T.S.

A
E-18 E-20

KEYED NOTES:

1. EXISTING FLOOR SLAB OF FILTER BUILDING No. 1 (015) AT ELEVATION 11'–0".
2. EXISTING HANDRAIL AND CURB (TYPICAL). NO WORK REQUIRED.
3. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY NEMA SIZE 5 STARTER FOR EXISTING EXISTING 150 HP, 480V GENERAL PURPOSE EFFLUENT WATER PUMP GPP–3.
4. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY NEMA SIZE 5 STARTER FOR EXISTING EXISTING 150 HP, 480V GENERAL PURPOSE EFFLUENT WATER PUMP GPP–4.
5. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 100 HP SOFTSTARTER FOR EXISTING EXISTING 100 HP, 480V PUMP MOSAIC GPEW–2.
6. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 100 HP SOFTSTARTER FOR EXISTING EXISTING 100 HP, 480V PUMP MOSAIC GPEW–1.
7. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY VFD FOR EXISTING 400 HP, 480V GENERAL PURPOSE PUMP 1 (PP201A).
8. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY VFD FOR EXISTING 400 HP, 480V GENERAL PURPOSE PUMP 2 (PP201S).
9. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 1200A, 600V, 3ø, 3–WIRE PANELBOARD 'A'. REFER TO SHEET E–21 FOR PANELBOARD ELEVATION AND CIRCUIT BREAKER SCHEDULE.
10. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 1200A, 600V, 3ø, 3–WIRE PANELBOARD 'B'. REFER TO SHEET E–21 FOR PANELBOARD ELEVATION AND CIRCUIT BREAKER SCHEDULE.
11. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY MOTOR CONTROL PANEL 'A'. REFER TO SHEET E–22 FOR DETAILS.
12. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY MOTOR CONTROL PANEL 'B'. REFER TO SHEET E–25 FOR DETAILS.
13. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY VFD FOR EXISTING 200 HP, 480V BACKWASH PUMP BWP–3.
14. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY VFD FOR EXISTING 200 HP, 480V BACKWASH PUMP BWP–2.
15. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY VFD FOR EXISTING 200 HP, 480V BACKWASH PUMP BWP–1.
16. PROVIDE AND INSTALL 6" SQUARE ALUMINUM POST WITH 1/2" WALL THICKNESS. (TYPICAL).
17. 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 POST.
18. PROVIDE AND INSTALL 12" X 12" X 3/4" ALUMINUM BASE PLATE. SECURE EACH BASE PLATE TO CONCRETE W/(4) STAINLESS STEEL 1/2" DIA. X 6" BOLTS & STAINLESS STEEL HEX NUTS WITH LOCKWASKER. DRILL CONCRETE & EMBED BOLTS AND ANCHORS IN EPOXY. COAT BOTTOM OF BASE PLATE WITH ASPHALT PAINT.
19. PROVIDE FULL FILLET WELD TO BASE PLATE (TYPICAL OF 3).
20. CONTRACTOR TO PROVIDE AND INSTALL 24" WIDE ALUMINUM CABLE TRAY FOR TEMPORARY POWER CABLE. INSTALL CABLE TRAY APPROXIMATELY 10'–0" ABOVE ELEV 11'–0" FLOOR SLAB.
21. CONTRACTOR TO PROVIDE AND INSTALL 24" WIDE ALUMINUM CABLE TRAY FOR TEMPORARY CONTROL CABLE. INSTALL CABLE TRAY APPROXIMATELY 11'–6" ABOVE ELEV 11'–0" FLOOR SLAB.
22. CONTRACTOR TO PROVIDE AND INSTALL 24" WIDE ALUMINUM CABLE TRAY FOR TRANSITION FROM ELEVATION 3'–6" TO ELEVATION 11'–0". REFER ALSO TO SHEET E–19.

GENERAL NOTES:

1. THE TEMPORARY EQUIPMENT LAYOUT SHOWN IS BASED ON THE SPECIFIC MANUFACTURER'S DIMENSIONS FOR THE EQUIPMENT USED AS THE BASIS OF DESIGN. DIMENSIONS MAY VARY BASED ON THE ACTUAL EQUIPMENT PROVIDED/INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE THE DIMENSIONS OF ALL EQUIPMENT UTILIZED WITH THE SPACE AVAILABLE FOR THE PROPOSED TEMPORARY EQUIPMENT.

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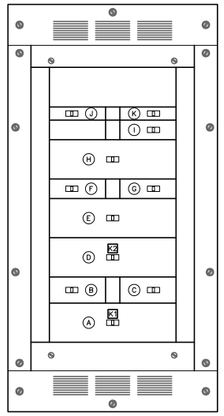
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TEMPORARY EQUIPMENT RACK FRONT ELEVATION

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–20

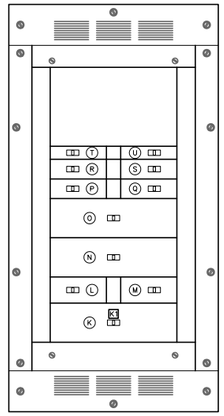
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TEMPORARY PANELBOARD A FRONT ELEVATION

SCALE : N.T.S.

A — E-20 | E-21



TEMPORARY PANELBOARD B FRONT ELEVATION

SCALE : N.T.S.

B — E-20 | E-21

TEMPORARY PANELBOARD 'A' CIRCUIT BREAKER SCHEDULE

BREAKER	POLES	AMPERAGE	VOLTAGE	AIC RATING	SERVICE	NOTES
A	3P	1200A	600V	65K	TEMPORARY PANELBOARD 'A' MAIN CIRCUIT BREAKER	PROVIDE KIRK–KEY INTERLOCK WITH TEMPORARY PANELBOARD 'A' TIE CIRCUIT BREAKER. MAIN CIRCUIT BREAKER TO BE FEED FROM SWITCHGEAR 56 BUS 'A'.
B	3P	400A	600V	65K	BACKWASH WATER PUMP 1 (FB–BWP–1)	
C	3P	400A	600V	65K	BACKWASH WATER PUMP 3 (FB–BWP–3)	
D	3P	1200A	600V	65K	TEMPORARY PANELBOARD 'A' TIE CIRCUIT BREAKER	PROVIDE KIRK–KEY INTERLOCK WITH TEMPORARY PANELBOARD 'A' AND TEMPORARY PANELBOARD 'B' MAIN CIRCUIT BREAKERS.
E	3P	800A	600V	65K	GENERAL PURPOSE WATER PUMP 2 (PP201S)	
F	3P	70A	600V	65K	PANELBOARD LP–53 TRANSFER SWITCH	(NORMAL POWER SOURCE)
G	3P	250A	600V	65K	MCC–58A BUS 'A'	
H	3P	300A	600V	65K	GENERAL PURPOSE EFFLUENT PUMP 4 (FB–GPP–4)	
I	2P	225A	600V	65K	PILOT PLANT	
J	3P	200A	600V	65K	MOSAIC GPEW–1	
K	2P	20A	600V	65K	TEMPORARY MOTOR CONTROL PANEL 'A'	

TEMPORARY PANELBOARD 'B' CIRCUIT BREAKER SCHEDULE

BREAKER	POLES	AMPERAGE	VOLTAGE	AIC RATING	SERVICE	NOTES
K	3P	1200A	600V	65K	TEMPORARY PANELBOARD 'B' MAIN CIRCUIT BREAKER	PROVIDE KIRK–KEY INTERLOCK WITH TEMPORARY PANELBOARD 'A' TIE CIRCUIT BREAKER. MAIN CIRCUIT BREAKER TO BE FEED FROM SWITCHGEAR 56 BUS 'B'.
L	3P	400A	600V	65K	BACKWASH WATER PUMP 2 (FB–BWP–2)	
M	3P	300A	600V	65K	GENERAL PURPOSE EFFLUENT PUMP 3 (FB–GPP–3)	
N	3P	800A	600V	65K	GENERAL PURPOSE WATER PUMP 1 (PP201A)	
O	3P	250A	600V	65K	MCC–58A BUS 'B'	
P	3P	200A	600V	65K	MOSAIC GPEW–2	
Q	3P	100A	600V	65K	TRANSFORMER T–LCP–55	
R	3P	70A	600V	65K	PANELBOARD LP–53 TRANSFER SWITCH	(EMERGENCY POWER SOURCE)
S	3P	30A	600V	65K	MONORAIL HOIST FB–MH–3	
T	2P	20A	600V	65K	TEMPORARY MOTOR CONTROL PANEL 'B'	
U	3P	200A	600V	65K	TRANSFORMER T–LCP–54	

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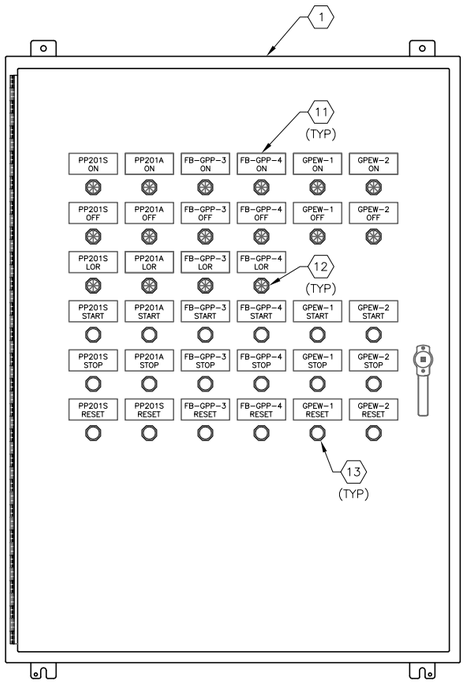
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TEMPORARY PANELBOARD ELEVATIONS AND SCHEDULES

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER E–21

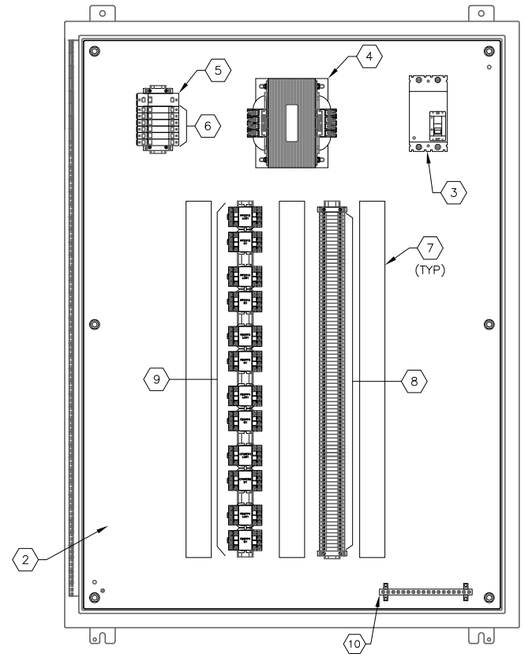
FILE: 171501742E01



TEMPORARY MOTOR CONTROL PANEL 'A' FRONT ELEVATION

SCALE : N.T.S.

A
E-20 | E-22



TEMPORARY MOTOR CONTROL PANEL 'A' INTERIOR ELEVATION

SCALE : N.T.S.

KEYED NOTES:

1. PROVIDE AND INSTALL 48" X 36" X 12", NEMA 1 ENCLOSURE WITH STEEL BACK PANEL AND 3-POINT LATCHING DOOR. PROVIDE WITH DOOR STOP KIT. HOFFMAN CATALOG #A48H36DLP3PT.
2. STEEL BACK PANEL. HOFFMAN CATALOG #A48P36 BACK PANEL.
3. PROVIDE AND INSTALL 600V, 2-POLE, 15A CIRCUIT BREAKER. SQUARE-D HDL 26015.
4. PROVIDE AND INSTALL 480V-120/240V, 1ø, 2KVA CONTROL POWER TRANSFORMER. SQUARE D CATALOG #9070T2000D31.
5. PROVIDE AND INSTALL 240V CIRCUIT BREAKER. 15 AMPERE SQUARE-D QOU215.
6. PROVIDE AND INSTALL 120V CIRCUIT BREAKERS. 15 AMPERE SQUARE-D QOU115 AS REQUIRED.
7. PROVIDE AND INSTALL 2"X2" PANDUIT (OR EQUAL) WIRING SYSTEM WITH COVERS (TYPICAL).
8. PROVIDE AND INSTALL DIN-RAIL MOUNTED TERMINAL BLOCKS, ALLEN-BRADLEY 1492-W10. ALL DIN-RAIL SHALL BE ALUMINUM. VERIFY QUANTITY PRIOR TO FABRICATION.
9. PROVIDE AND INSTALL 4PDT RELAYS WITH 10 AMP CONTACTS AND 120V AC COILS. ALLEN BRADLEY CATALOG #700HF34A1-3-4 WITH PUSH-TO-TEST MANUAL OVERRIDE AND LED INDICATOR. PROVIDE RELAY BASE AND HOLD DOWN SPRINGS FOR EACH RELAY PROVIDED. REFER TO TEMPORARY MOTOR CONTROL PANEL 'A' SCHEMATIC DIAGRAMS ON SHEETS E-23 AND E-24 FOR QUANTITIES.
10. PROVIDE AND INSTALL EQUIPMENT GROUND BAR SYSTEM. PANDUIT CATALOG # UGB2/0-414-18. PROVIDE BONDING STANDOFFS (PANDUIT UGB-B-S0).
11. PROVIDE AND INSTALL LAMACOID NAMEPLATE (TYPICAL). LETTERING SHALL BE 1/2" MINIMUM. SECURE NAMEPLATE WITH STAINLESS STEEL SCREWS.
12. PROVIDE AND INSTALL PILOT LIGHT, PUSH-TO-TEST LED TYPE. COLOR CAP PER TEMPORARY MOTOR CONTROL PANEL 'A' SCHEMATIC DIAGRAMS ON SHEET E-XX. ALLEN BRADLEY 800H-QRBH2(COLOR CODE). PILOT LIGHT TO BE MOUNTED ON THE EXTERIOR OF TEMPORARY MOTOR CONTROL PANEL 'A'.
13. PROVIDE AND INSTALL BLACK 30.5 mm PUSHBUTTON. FUNCTION PER TEMPORARY MOTOR CONTROL PANEL 'A' SCHEMATIC DIAGRAMS ON SHEETS E-23 AND E-24. ALLEN BRADLEY 800H-AR2A. PUSHBUTTON TO BE MOUNTED ON THE EXTERIOR OF TEMPORARY MOTOR CONTROL PANEL 'A'.

GENERAL NOTES :

1. MINIMUM CONDUCTOR SIZE SHALL #12 AWG.
2. ALL CONDUCTORS SHALL BE COPPER.
3. PROVIDE AND INSTALL ALL ASSOCIATED END BARRIERS AS SHOWN OR REQUIRED.
4. ALL DIN RAIL SHALL BE ALUMINUM. QUANTITY AS REQUIRED.
5. PROVIDE AND INSTALL CORROSION INHIBITOR, HOFFMAN # AHCI10E.

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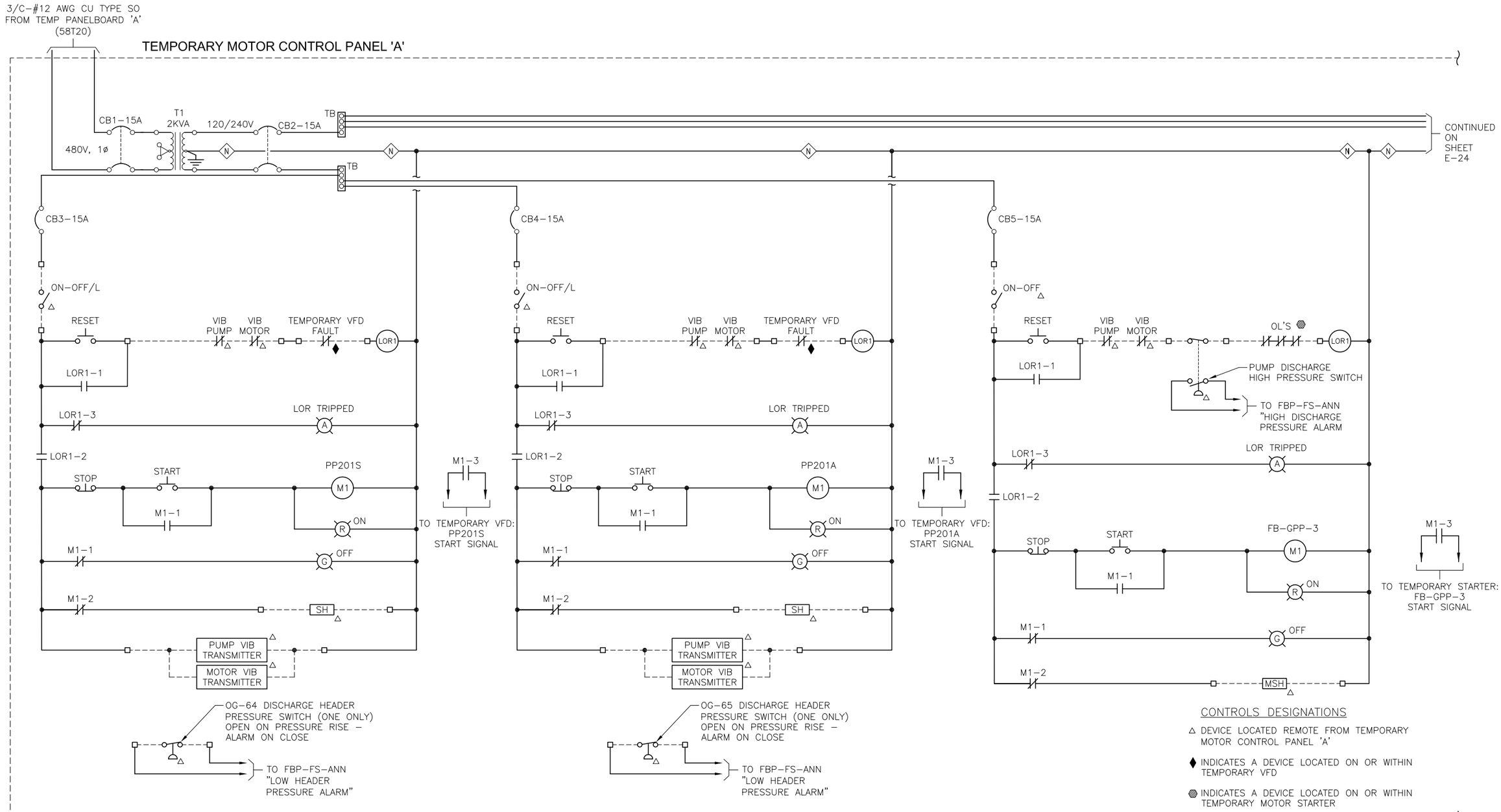
TEMPORARY MOTOR CONTROL PANEL A ELEVATION AND DETAILS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER

E-22

FILE: 171501742E01



GENERAL PURPOSE EFFLUENT WATER PUMP FB–GPP–2
AKA PP201S

GENERAL PURPOSE EFFLUENT WATER PUMP FB–GPP–1
AKA PP201A

GENERAL PURPOSE EFFLUENT WATER PUMP FB–GPP–3

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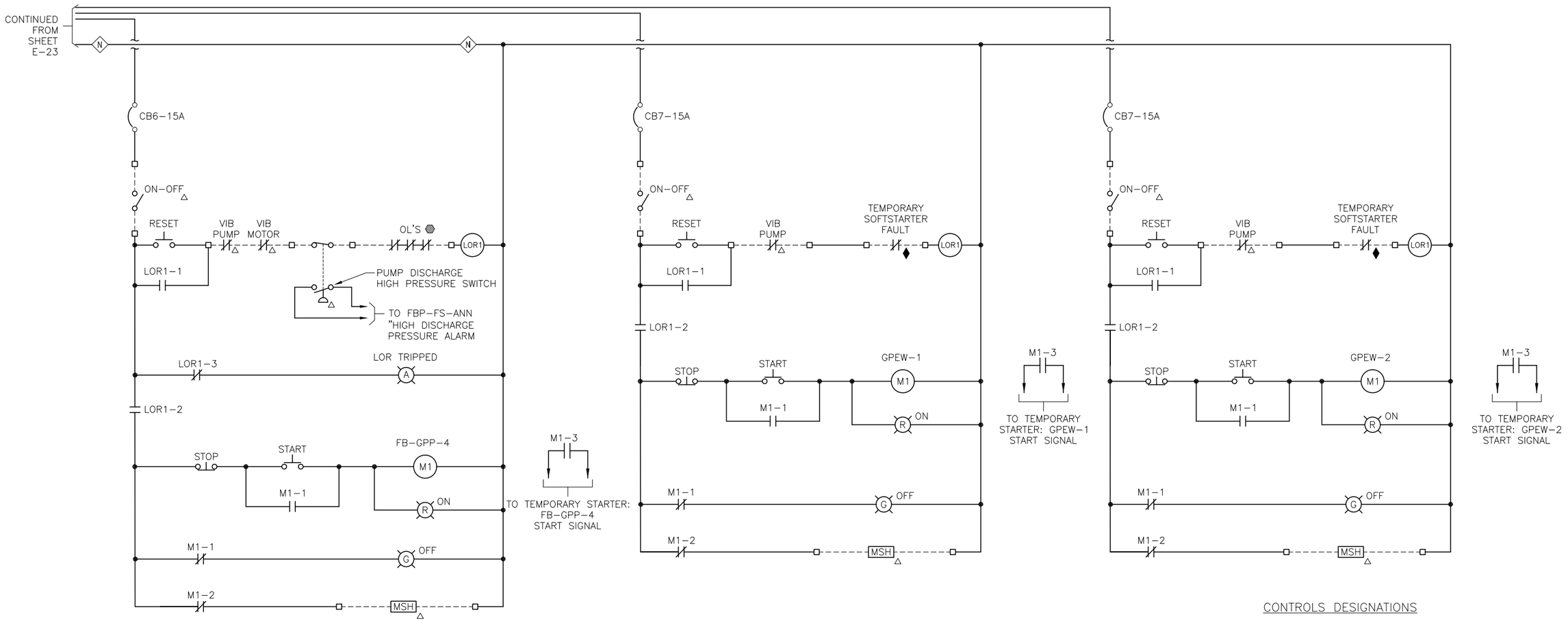
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TEMPORARY MOTOR CONTROL PANEL A WIRING SCHEMATIC

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–23
FILE: 171501742E01

TEMPORARY MOTOR CONTROL PANEL 'A'



CONTROLS DESIGNATIONS

△ DEVICE LOCATED REMOTE FROM TEMPORARY MOTOR CONTROL PANEL 'A'

CONTROLS DESIGNATIONS

△ DEVICE LOCATED REMOTE FROM TEMPORARY MOTOR CONTROL PANEL 'A'

♦ INDICATES A DEVICE LOCATED ON OR WITHIN TEMPORARY SOFTSTARTER

▨ INDICATES A DEVICE LOCATED ON OR WITHIN TEMPORARY MOTOR STARTER

GENERAL PURPOSE EFFLUENT WATER PUMP FB-GPP-4

MOSAIC GPEW-1

MOSAIC GPEW-2

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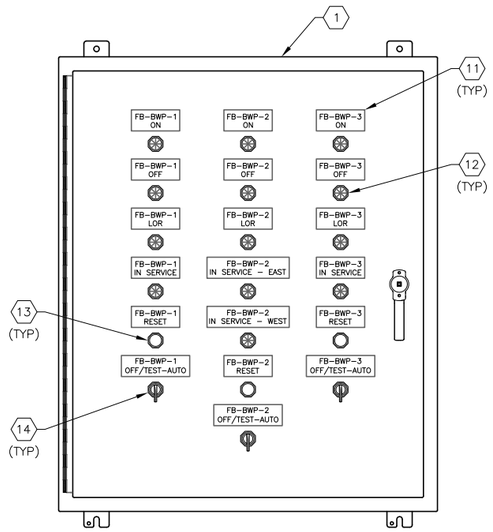
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TEMPORARY MOTOR CONTROL PANEL A WIRING SCHEMATIC (CONT)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-24

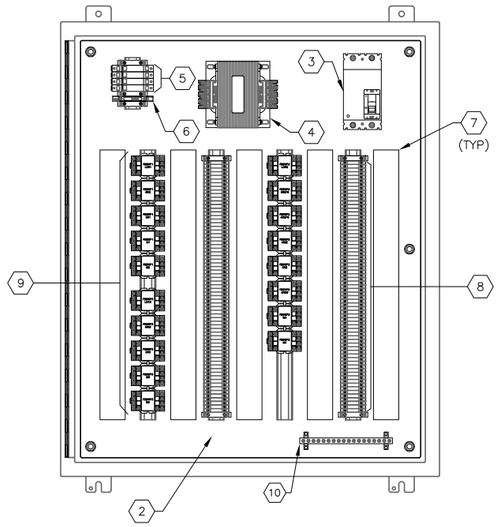
FILE: 171501742E01



TEMPORARY MOTOR
CONTROL PANEL 'B'
FRONT ELEVATION

SCALE : N.T.S.

A
E-20 E-25



TEMPORARY MOTOR
CONTROL PANEL 'B'
INTERIOR ELEVATION

SCALE : N.T.S.

KEYED NOTES:

1. PROVIDE AND INSTALL 36" X 30" X 12", NEMA 1 ENCLOSURE WITH STEEL BACK PANEL AND 3–POINT LATCHING DOOR. PROVIDE WITH DOOR STOP KIT. HOFFMAN CATALOG #A36H30DLP3PT.
2. STEEL BACK PANEL. HOFFMAN CATALOG #A36P30 BACK PANEL.
3. PROVIDE AND INSTALL 600V, 2–POLE, 15A CIRCUIT BREAKER. SQUARE–D HDL 26015.
4. PROVIDE AND INSTALL 480V–120V, 1ø, 1KVA CONTROL POWER TRANSFORMER. SQUARE D CATALOG #9070T1000D1.
5. PROVIDE AND INSTALL 120V CIRCUIT BREAKERS. 15 AMPERE SQUARE–D QOU115 AS REQUIRED.
6. PROVIDE AND INSTALL FUSE TERMINAL BLOCK WITH 1 AMP FUSE. PHOENIX CONTACT UK 5–HESI.
7. PROVIDE AND INSTALL 2"X2" PANDUIT (OR EQUAL) WIRING SYSTEM WITH COVERS (TYPICAL).
8. PROVIDE AND INSTALL DIN–RAIL MOUNTED TERMINAL BLOCKS, ALLEN–BRADLEY 1492–W10. ALL DIN–RAIL SHALL BE ALUMINUM. VERIFY QUANTITY PRIOR TO FABRICATION.
9. PROVIDE AND INSTALL 4PDT RELAYS WITH 10 AMP CONTACTS AND 120V AC COILS. ALLEN BRADLEY CATALOG #700HF34A1–3–4 WITH PUSH–TO–TEST MANUAL OVERRIDE AND LED INDICATOR. PROVIDE RELAY BASE AND HOLD DOWN SPRINGS FOR EACH RELAY PROVIDED. REFER TO TEMPORARY MOTOR CONTROL PANEL 'B' SCHEMATIC DIAGRAMS ON SHEETS E–26 AND E–27 FOR QUANTITIES.
10. PROVIDE AND INSTALL EQUIPMENT GROUND BAR SYSTEM. PANDUIT CATALOG # UGB2/0–414–18. PROVIDE BONDING STANDOFFS (PANDUIT UGB–B–S0).
11. PROVIDE AND INSTALL LAMACOID NAMEPLATE (TYPICAL). LETTERING SHALL BE 1/2" MINIMUM. SECURE NAMEPLATE WITH STAINLESS STEEL SCREWS.
12. PROVIDE AND INSTALL PILOT LIGHT, PUSH–TO–TEST LED TYPE. COLOR CAP PER TEMPORARY MOTOR CONTROL PANEL 'B' SCHEMATIC DIAGRAMS ON SHEETS E–26 AND E–27. ALLEN BRADLEY 800H–QRBH2(COLOR CODE). PILOT LIGHT TO BE MOUNTED ON THE EXTERIOR OF TEMPORARY MOTOR CONTROL PANEL 'B'.
13. PROVIDE AND INSTALL BLACK 30.5 mm PUSHBUTTON. FUNCTION PER TEMPORARY MOTOR CONTROL PANEL 'B' SCHEMATIC DIAGRAMS ON SHEET E–XX. ALLEN BRADLEY 800H–AR2A. PUSHBUTTON TO BE MOUNTED ON THE EXTERIOR OF TEMPORARY MOTOR CONTROL PANEL 'B'.
14. PROVIDE AND INSTALL 2–POSITION, MAINTAINED, SELECTOR SWITCH. ALLEN BRADLEY 800H–HR2A2. FUNCTION PER TEMPORARY MOTOR CONTROL PANEL 'B' SCHEMATIC DIAGRAMS ON SHEETS E–26 AND E–27. SELECTOR SWITCH TO BE MOUNTED ON THE EXTERIOR OF TEMPORARY MOTOR CONTROL PANEL 'B'.

GENERAL NOTES :

1. MINIMUM CONDUCTOR SIZE SHALL #12 AWG.
2. ALL CONDUCTORS SHALL BE COPPER.
3. PROVIDE AND INSTALL ALL ASSOCIATED END BARRIERS AS SHOWN OR REQUIRED.
4. ALL DIN RAIL SHALL BE ALUMINUM. QUANTITY AS REQUIRED.
5. PROVIDE AND INSTALL CORROSION INHIBITOR, HOFFMAN # AHCI10E.

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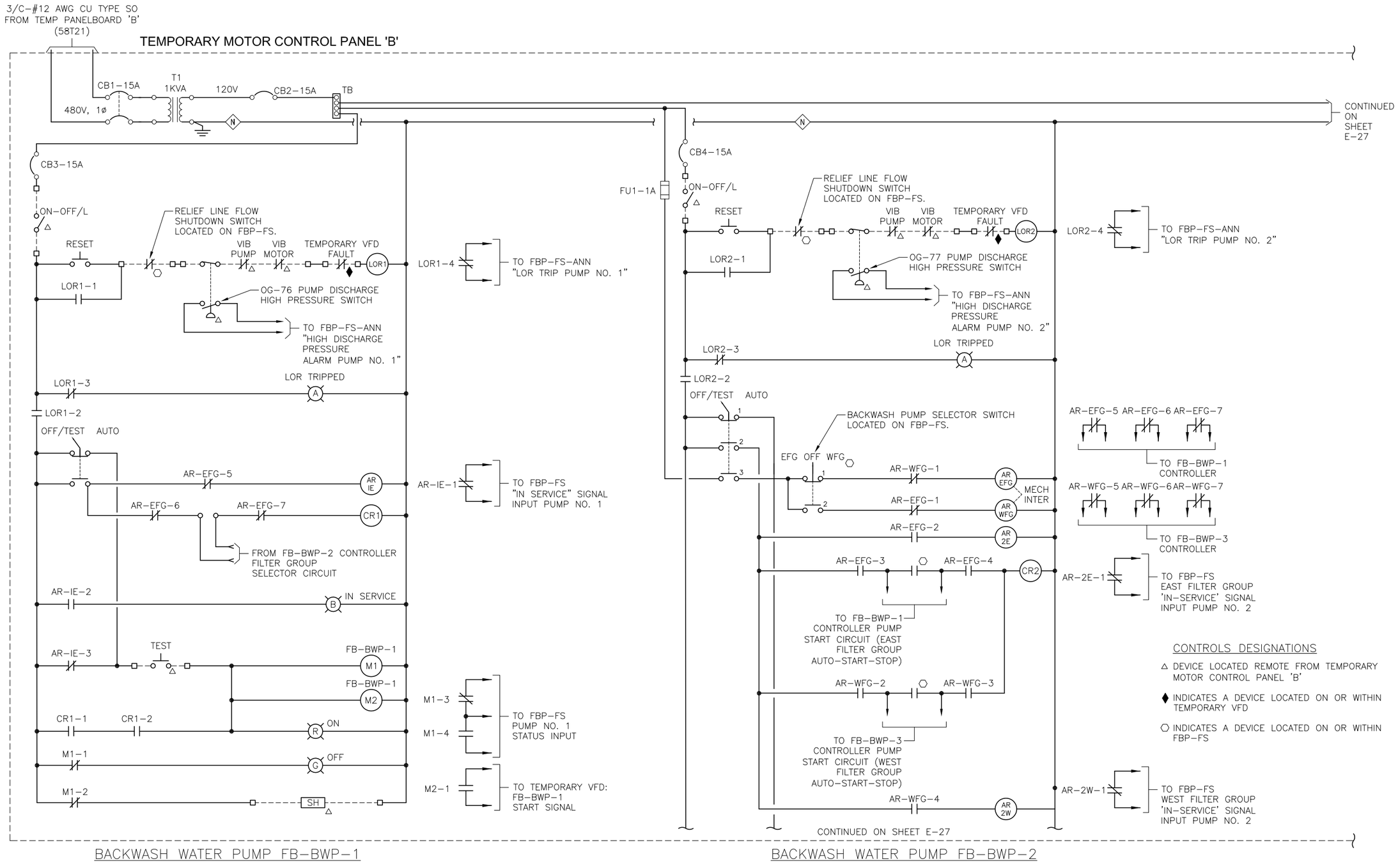
TEMPORARY MOTOR CONTROL PANEL B ELEVATION AND DETAILS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER

E–25

FILE: 171501742E01



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TEMPORARY MOTOR CONTROL PANEL B WIRING SCHEMATIC

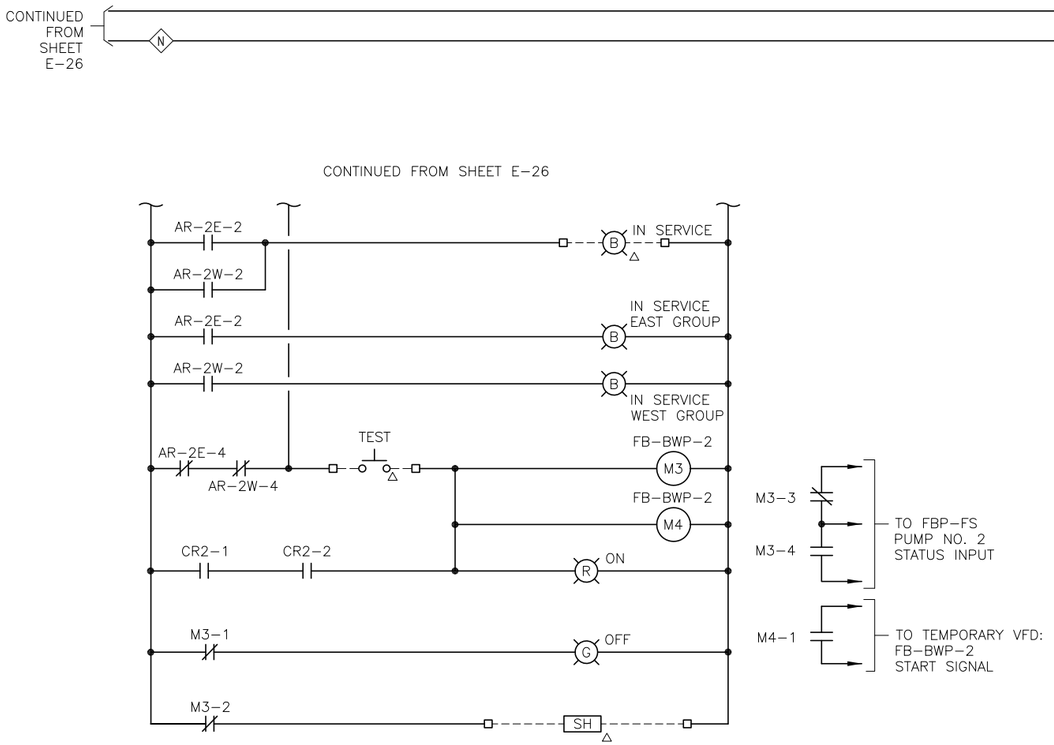
TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-26

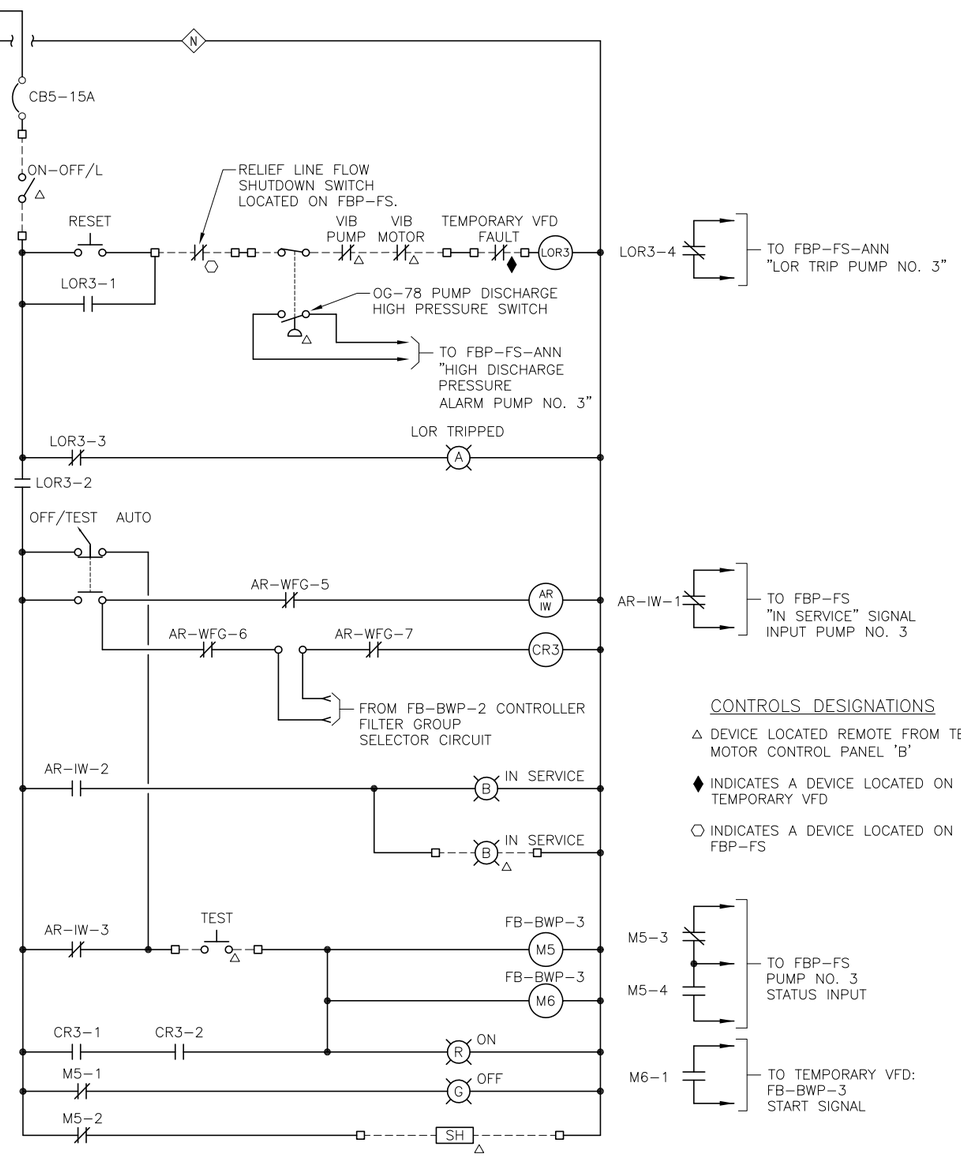
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TEMPORARY MOTOR CONTROL PANEL 'B'

CONTINUED FROM SHEET E-26



BACKWASH WATER PUMP FB-BWP-2



CONTROLS DESIGNATIONS

△ DEVICE LOCATED REMOTE FROM TEMPORARY MOTOR CONTROL PANEL 'B'

♦ INDICATES A DEVICE LOCATED ON OR WITHIN TEMPORARY VFD

⬡ INDICATES A DEVICE LOCATED ON OR WITHIN FBP-FS

BACKWASH WATER PUMP FB-BWP-3

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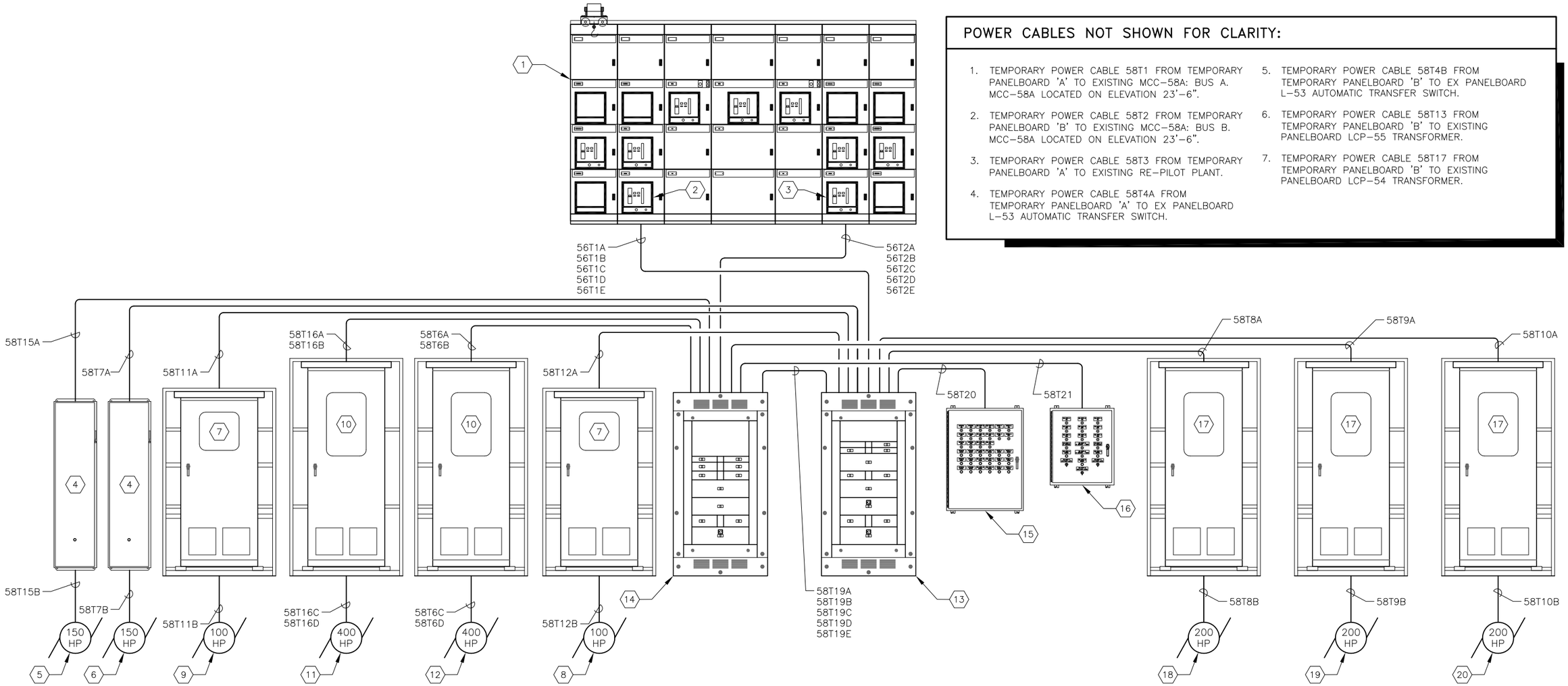
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TEMPORARY MOTOR CONTROL PANEL A WIRING SCHEMATIC (CONT)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-27

FILE: 171501742E01



POWER CABLES NOT SHOWN FOR CLARITY:

1. TEMPORARY POWER CABLE 58T1 FROM TEMPORARY PANELBOARD 'A' TO EXISTING MCC-58A: BUS A. MCC-58A LOCATED ON ELEVATION 23'-6".
2. TEMPORARY POWER CABLE 58T2 FROM TEMPORARY PANELBOARD 'B' TO EXISTING MCC-58A: BUS B. MCC-58A LOCATED ON ELEVATION 23'-6".
3. TEMPORARY POWER CABLE 58T3 FROM TEMPORARY PANELBOARD 'A' TO EXISTING RE-PILOT PLANT.
4. TEMPORARY POWER CABLE 58T4A FROM TEMPORARY PANELBOARD 'A' TO EX PANELBOARD L-53 AUTOMATIC TRANSFER SWITCH.
5. TEMPORARY POWER CABLE 58T4B FROM TEMPORARY PANELBOARD 'B' TO EX PANELBOARD L-53 AUTOMATIC TRANSFER SWITCH.
6. TEMPORARY POWER CABLE 58T13 FROM TEMPORARY PANELBOARD 'B' TO EXISTING PANELBOARD LCP-55 TRANSFORMER.
7. TEMPORARY POWER CABLE 58T17 FROM TEMPORARY PANELBOARD 'B' TO EXISTING PANELBOARD LCP-54 TRANSFORMER.

KEYED NOTES:

1. EXISTING SWITCHGEAR 56 LOCATED ON ELEVATION 11'-0"
2. EXISTING 480V, 3-POLE, 1,200A CIRCUIT BREAKER IN SWITCHGEAR 56 SERVING MCC-58 BUS 'A'.
3. EXISTING 480V, 3-POLE, 1,200A CIRCUIT BREAKER IN SWITCHGEAR 56 SERVING MCC-58 BUS 'B'.
4. TEMPORARY NEMA SIZE 5 STARTER (TO BE LOCATED ON ELEV 11'-0").
5. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP: FB-GPP-3 (LOCATED ON ELEV 3'-6").
6. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP: FB-GPP-4 (LOCATED ON ELEV 3'-6").
7. TEMPORARY NEMA SIZE 4 STARTER (TO BE LOCATED ON ELEV 11'-0").
8. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP: MOSAIC GPEW-1 (LOCATED ON ELEV 3'-6").
9. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP: MOSAIC GPEW-2 (LOCATED ON ELEV 3'-6").
10. TEMPORARY 400 HP VFD (TO BE LOCATED ON ELEV 11'-0").
11. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP 2: PP201S (LOCATED ON ELEV 3'-6").
12. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP 1: PP201A (LOCATED ON ELEV 3'-6").
13. TEMPORARY PANELBOARD 'A' (TO BE LOCATED ON ELEV 11'-0").
14. TEMPORARY PANELBOARD 'B' (TO BE LOCATED ON ELEV 11'-0").
15. TEMPORARY MOTOR CONTROL PANEL 'A' (TO BE LOCATED ON ELEV 11'-0").
16. TEMPORARY MOTOR CONTROL PANEL 'B' (TO BE LOCATED ON ELEV 11'-0").
17. TEMPORARY 200 HP VFD (TO BE LOCATED ON ELEV 11'-0").
18. EXISTING BACKWASH WATER PUMP 1: FB-BWP-1 (LOCATED ON ELEV 3'-6").
19. EXISTING BACKWASH WATER PUMP 2: FB-BWP-2 (LOCATED ON ELEV 3'-6").
20. EXISTING BACKWASH WATER PUMP 3: FB-BWP-3 (LOCATED ON ELEV 3'-6").

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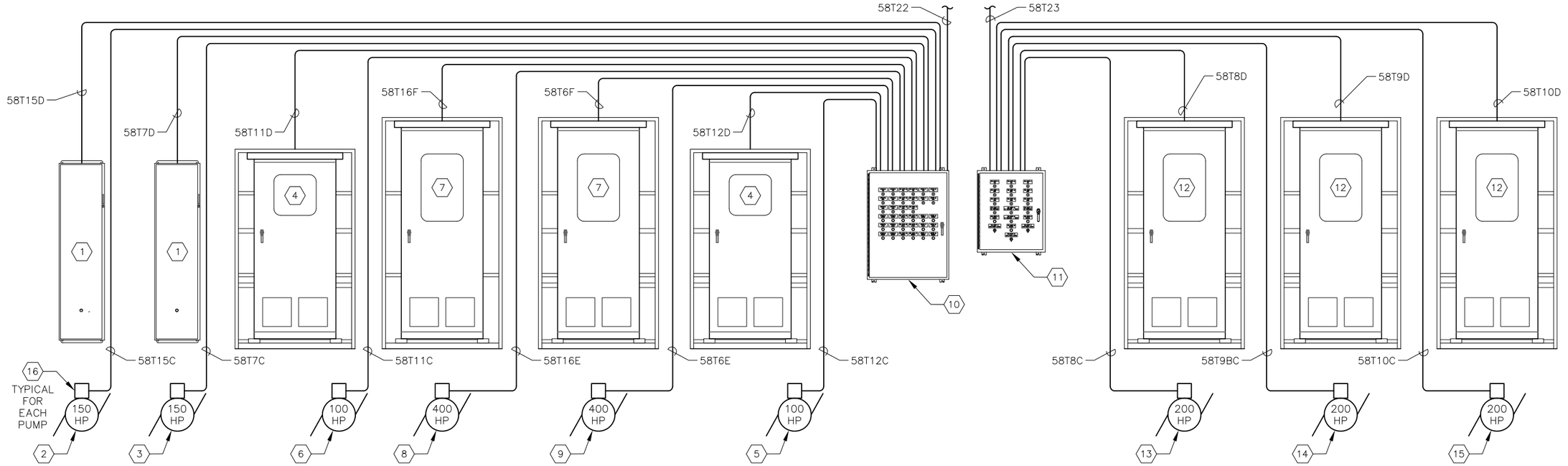
HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

TEMPORARY POWER WIRING RISER DIAGRAM

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-28

FILE: 171501742E01



KEYED NOTES:

1. TEMPORARY NEMA SIZE 5 STARTER (TO BE LOCATED ON ELEV 11'–0").
2. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP: FB–GPP–3 (LOCATED ON ELEV 3'–6").
3. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP: FB–GPP–4 (LOCATED ON ELEV 3'–6").
4. TEMPORARY 100 HP SOFTSTARTER (TO BE LOCATED ON ELEV 11'–0").
5. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP: MOSAIC GPEW–1 (LOCATED ON ELEV 3'–6").
6. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP: MOSAIC GPEW–2 (LOCATED ON ELEV 3'–6").
7. TEMPORARY 400 HP VFD (TO BE LOCATED ON ELEV 11'–0").
8. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP 2: PP201S (LOCATED ON ELEV 3'–6").
9. EXISTING GENERAL PURPOSE EFFLUENT WATER PUMP 1: PP201A (LOCATED ON ELEV 3'–6").
10. TEMPORARY MOTOR CONTROL PANEL 'A' (TO BE LOCATED ON ELEV 11'–0").
11. TEMPORARY MOTOR CONTROL PANEL 'B' (TO BE LOCATED ON ELEV 11'–0").
12. TEMPORARY 200 HP VFD (TO BE LOCATED ON ELEV 11'–0").
13. EXISTING BACKWASH WATER PUMP 1: FB–BWP–1 (LOCATED ON ELEV 3'–6").
14. EXISTING BACKWASH WATER PUMP 2: FB–BWP–2 (LOCATED ON ELEV 3'–6").
15. EXISTING BACKWASH WATER PUMP 3: FB–BWP–3 (LOCATED ON ELEV 3'–6").
16. EXISTING JUNCTION BOX LOCATED ADJACENT TO EXISTING PUMP MOTOR. TYPICAL AT ALL PUMP MOTOR LOCATIONS.

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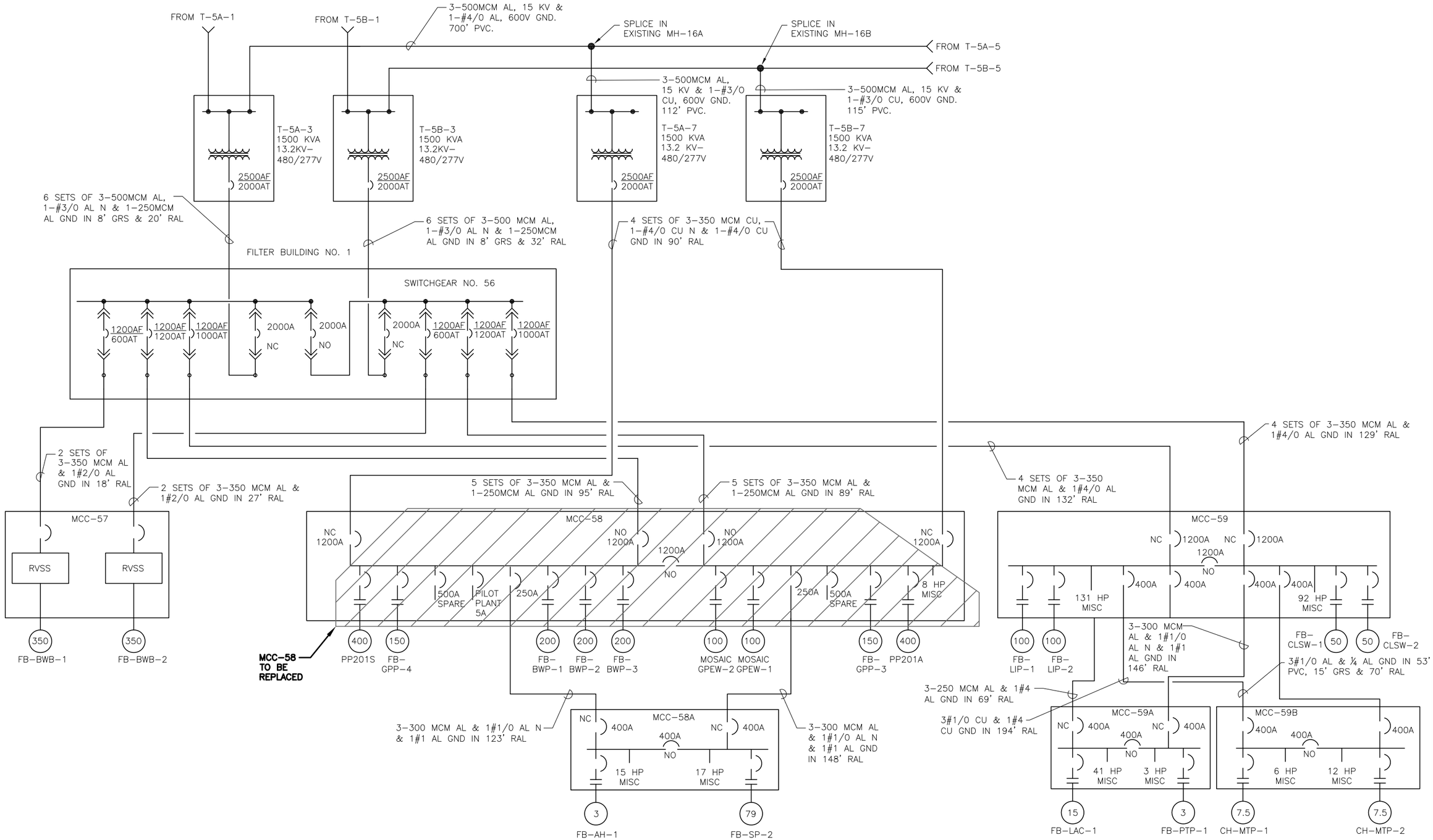
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FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

TEMPORARY CONTROL WIRING RISER DIAGRAM

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–29

FILE: 171501742E01



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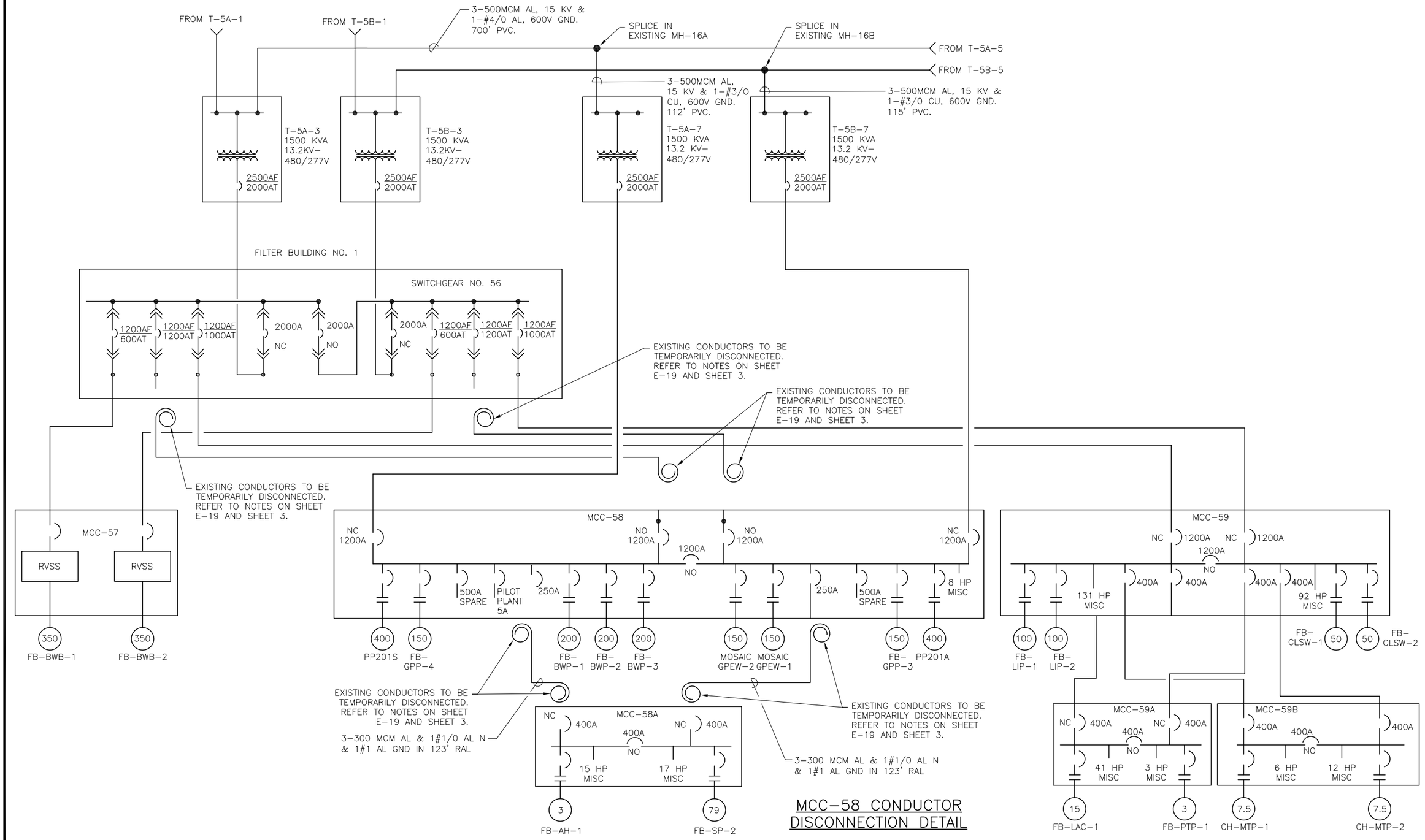
HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

FILTER BUILDING NO. 1 EXISTING ONE-LINE DIAGRAM

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-30

FILE: 171501742E01



MCC-58 CONDUCTOR DISCONNECTION DETAIL

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HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

FILTER BUILDING NO. 1 TEMPORARY ONE-LINE DIAGRAM (SHEET 1 OF 3)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-31

FILE: 171501742E01

FROM T-5A-1

FROM T-5B-1

3-500MCM AL, 15 KV & 1-#4/0 AL, 600V GND. 700' PVC.

SPLICE IN EXISTING MH-16A

SPLICE IN EXISTING MH-16B

FROM T-5A-5

FROM T-5B-5

3-500MCM AL, 15 KV & 1-#3/0 CU, 600V GND. 112' PVC.

3-500MCM AL, 15 KV & 1-#3/0 CU, 600V GND. 115' PVC.

T-5A-3
1500 KVA
13.2KV-
480/277V

2500AF
2000AT

T-5B-3
1500 KVA
13.2KV-
480/277V

2500AF
2000AT

T-5A-7
1500 KVA
13.2 KV-
480/277V

2500AF
2000AT

T-5B-7
1500 KVA
13.2 KV-
480/277V

2500AF
2000AT

4 SETS OF 3-350 MCM CU, 1-#4/0 CU N & 1-#4/0 CU GND IN 90' RAL

FILTER BUILDING NO. 1

SWITCHGEAR NO. 56

1200AF 600AT | 1200AF 1200AT | 1200AF 1000AT | 2000A NC | 2000A NO | 2000A NC | 1200AF 600AT | 1200AF 1200AT | 1200AF 1000AT

EXISTING CONDUCTORS TO BE TEMPORARILY DISCONNECTED. REFER TO NOTES ON SHEET E-19 AND SHEET 3.

EXISTING CONDUCTORS TO BE TEMPORARILY DISCONNECTED. REFER TO NOTES ON SHEET E-19 AND SHEET 3.

EXISTING CONDUCTORS TO BE TEMPORARILY DISCONNECTED. REFER TO NOTES ON SHEET E-19 AND SHEET 3.

REMOVE PORTION OF EXISTING MCC-58.

MCC-57

RVSS

RVSS

350
FB-BWB-1

350
FB-BWB-2

NC 1200A

NC 1200A

MCC-59

NC 1200A NC 1200A

1200A NO

400A | 400A | 400A | 400A

131 HP MISC

92 HP MISC

100
FB-LIP-1

100
FB-LIP-2

3-300 MCM AL & 1#1/0 AL N & 1#1 AL GND IN 146' RAL

FB-CLSW-1 50

50 FB-CLSW-2

3#1/0 AL & ¼ AL GND IN 53' PVC, 15' GRS & 70' RAL

3-300 MCM AL & 1#1/0 AL N & 1#1 AL GND IN 123' RAL

3-250 MCM AL & 1#4 AL GND IN 69' RAL

3#1/0 CU & 1#4 CU GND IN 194' RAL

3-300 MCM AL & 1#1/0 AL N & 1#1 AL GND IN 123' RAL

MCC-58A

NC 400A | 400A NO | NC 400A

15 HP MISC

17 HP MISC

3
FB-AH-1

79
FB-SP-2

MCC-59A

NC 400A | 400A NO | NC 400A

41 HP MISC

3 HP MISC

15
FB-LAC-1

3
FB-PTP-1

MCC-59B

400A | 400A NO | 400A

6 HP MISC

12 HP MISC

7.5
CH-MTP-1

7.5
CH-MTP-2

MCC-58 DEMOLITION DETAIL

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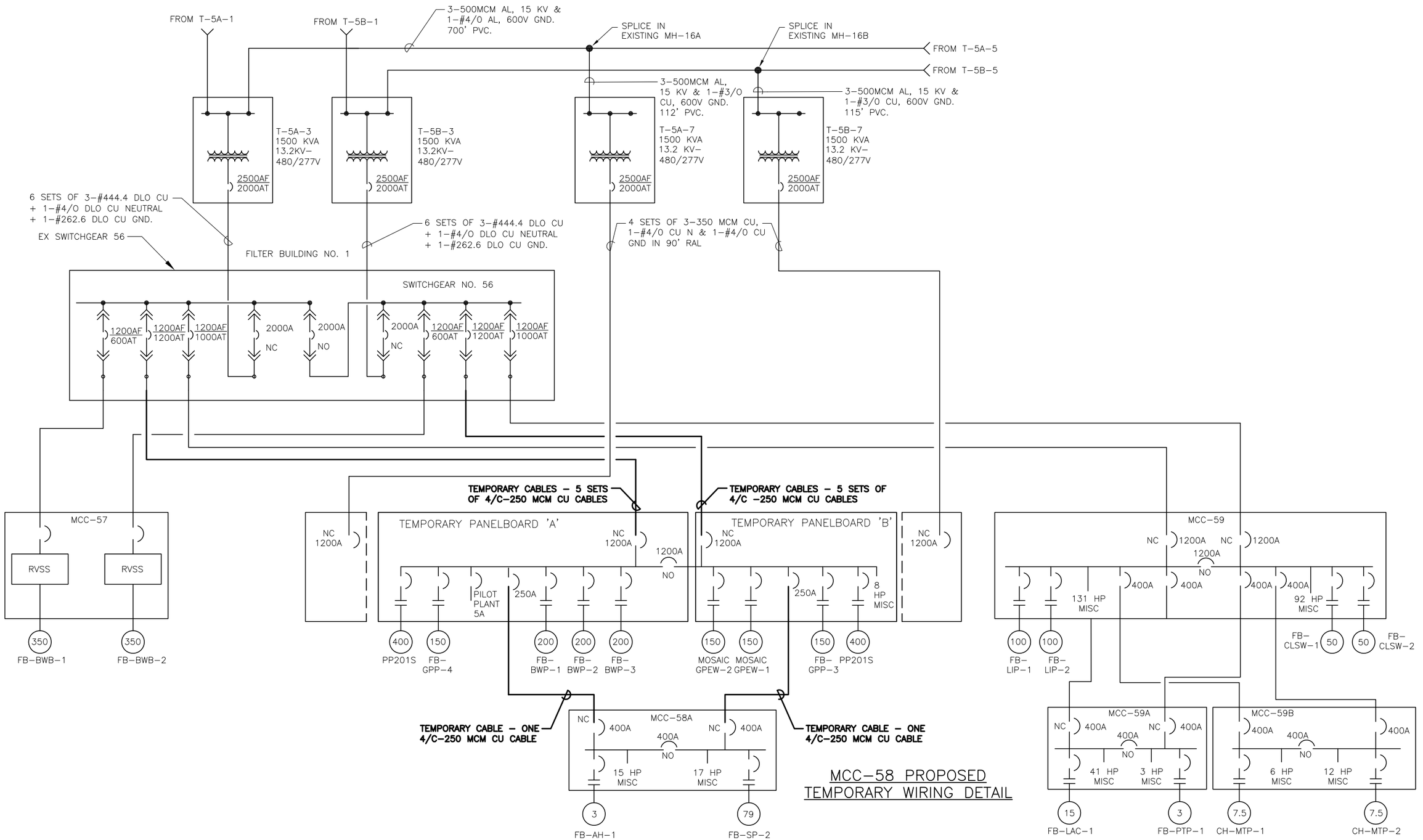
HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

FILTER BUILDING NO. 1 TEMPORARY ONE-LINE DIAGRAM (SHEET 2 OF 3)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-32

FILE: 171501742E01



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HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

FILTER BUILDING NO. 1 TEMPORARY ONE-LINE DIAGRAM (SHEET 3 OF 3)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-33

FILE: 171501742E01

TEMPORARY AND CABLE SCHEDULE

CONDUIT No.	SIZE	NUMER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
58T1		4/C–#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'A'	EX MCC–58A: BUS A	
58T2		4/C–#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'B'	EX MCC–58A: BUS B	
58T3		4/C–4/O AWG CU TYPE W CABLE	TEMP PANELBOARD 'A'	EX PILOT PLANT	FIELD ROUTE TEMPORARY POWER CABLE. INSURE CABLE IS PROTECTED TO AVOID DAMAGE AND LOCATED AS TO AVOID TRIPPING HAZARDS.
58T4A		4/C–#4 AWG CU TYPE W CABLE	TMP PANELBOARD 'A'	EX LP 53 TRANSFER SW.	FIELD ROUTE TEMPORARY POWER CABLE. INSURE CABLE IS PROTECTED TO AVOID DAMAGE AND LOCATED AS TO AVOID TRIPPING HAZARDS.
58T4B		4/C–#4 AWG CU TYPE W CABLE	TMP PANELBOARD 'B'	EX LP 53 TRANSFER SW.	FIELD ROUTE TEMPORARY POWER CABLE. INSURE CABLE IS PROTECTED TO AVOID DAMAGE AND LOCATED AS TO AVOID TRIPPING HAZARDS.
58T6A		4/C–#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'A'	TEMP PP201S 400 HP VFD	
58T6B		4/C–#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'A'	TEMP PP201S 400 HP VFD	
58T6C		4/C–#250 kcmil CU TYPE W CABLE	TEMP PP201S 400 HP VFD	EX MOTOR PP201S	
58T6D		4/C–#250 kcmil CU TYPE W CABLE	TEMP PP201S 400 HP VFD	EX MOTOR PP201S	
58T6E		11/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	EX JB AT PP210S	PP201S ON/OFF–L, VIBRATION ALARM SIGNALS, VIBRATION TRANSMITTER 120V POWER, SPACE HEATER AND PRESSURE SWITCH OG–64 ALARM.
58T6F		5/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	TEMP PP201S 400 HP VFD	TEMP VFD FAULT SIGNAL AND VFD START SIGNAL.
58T7A	CTY	4/C–4/O AWG CU TYPE W CABLE	TEMP PANELBOARD 'A'	TEMP NEMA SIZE 5 STARTER	
58T7B	CTY	4/C–4/O AWG CU TYPE W CABLE	TEMP NEMA 5 SIZE STARTER	EX MOTOR FB–GPP–4	
58T7C		9/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	EX JB AT FB–GPP–4	FB–GPP–4 ON/OFF–L, VIBRATION ALARM SIGNALS, SPACE HEATER AND PRESSURE SWITCH ALARM.
58T7D		5/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	TEMP FB–GPP–4 STARTER	TEMP FB–GPP–4 STARTER OVERLOADS AND PUMP RUN SIGNAL.
58T8A		4/C–#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'A'	TEMP BWP–1 200 HP VFD	
58T8B		4/C–#250 kcmil CU TYPE W CABLE	TEMP BWP–1 200 HP VFD	EX MOTOR BWP–1	
58T8C		9/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'B'	EX JB AT BWP–1	BWP–1 ON/OFF–L, VIBRATION ALARM SIGNALS, SPACE HEATER AND PRESSURE SWITCH OG–76 ALARM.
58T8D		5/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'B'	TEMP BWP–1 200 HP VFD	TEMP VFD FAULT SIGNAL AND VFD START SIGNAL.
58T9A		4/C–#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'B'	TEMP BWP–2 200 HP VFD	
58T9B		4/C–#250 kcmil CU TYPE W CABLE	TEMP BWP–2 200 HP VFD	EX MOTOR BWP–2	
58T9C		9/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'B'	EX JB AT BWP–2	BWP–2 ON/OFF–L, VIBRATION ALARM SIGNALS, SPACE HEATER AND PRESSURE SWITCH OG–77 ALARM.
58T9D		5/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'B'	TEMP BWP–2 200 HP VFD	TEMP VFD FAULT SIGNAL AND VFD START SIGNAL.
58T10A		4/C–#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'A'	TEMP BWP–3 200 HP VFD	
58T10B		4/C–#250 kcmil CU TYPE W CABLE	TEMP BWP–3 200 HP VFD	EX MOTOR BWP–3	
58T10C		9/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'B'	EX JB AT BWP–3	BWP–3 ON/OFF–L, VIBRATION ALARM SIGNALS, SPACE HEATER AND PRESSURE SWITCH OG–78 ALARM.
58T10D		5/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'B'	TEMP BWP–3 200 HP VFD	TEMP VFD FAULT SIGNAL AND VFD START SIGNAL.
58T11A	CTY	4/C–2/0 AWG CU TYPE W CABLE	TEMP PANELBOARD 'B'	TEMP 100 HP SOFTSTARTER	
58T11B		4/C–2/0 AWG CU TYPE W CABLE	TEMP 100 HP SOFTSTARTER	EX MOTOR MOSAIC GPEW–2	
58T11C		7/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	EX JB AT MOSAIC GPEW–2	MOSAIC GPEW–2 ON/OFF–L, PUMP VIBRATION ALARM SIGNAL AND SPACE HEATER.
58T11D		5/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	TEMP GPEW–2 STARTER	TEMP MOSAIC GPEW–2 SOFTSTARTER FAULT SIGNAL AND SOFTSTARTER RUN SIGNAL.
58T12A	CTY	4/C–2/0 AWG CU TYPE W CABLE	TEMP PANELBOARD 'A'	TEMP 100 HP SOFTSTARTER	
58T12B		4/C–2/0 AWG CU TYPE W CABLE	TEMP 100 HP SOFTSTARTER	EX MOTOR MOSAIC GPEW–1	
58T12C		7/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	EX JB AT MOSAIC GPEW–1	MOSAIC GPEW–1 ON/OFF–L, PUMP VIBRATION ALARM SIGNAL AND SPACE HEATER.
58T12D		5/C–#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	TEMP GPEW–1 STARTER	TEMP MOSAIC GPEW–1 SOFTSTARTER FAULT SIGNAL AND SOFTSTARTER RUN SIGNAL.

CONTINUED ON SHEET E–35

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HOWARD F. CURREN
FILTER BUILDING MOTOR CONTROL CENTER REPLACEMENT – BUILDING NO. 1 MCC 58

TEMPORARY CABLE SCHEDULE (SHEET 1 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E–34

FILE: 171501742E01

TEMPORARY CABLE SCHEDULE (CONTINUED)

CONDUIT No.	SIZE	NUMER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
58T13		4/C-3 AWG CU TYPE W CABLE	TEMP PANELBOARD 'B'	EX LCP 55 TRANSFORMER	FIELD ROUTE TEMPORARY POWER CABLE. INSURE CABLE IS ROUTED TO AVOID DAMAGE AND TRIPPING HAZARDS.
58T15A	CTY	4/C-4/0 AWG CU TYPE W CABLE	TEMP PANELBOARD 'B'	TEMP NEMA SIZE 5 STARTER	
58T15B	CTY	4/C-4/0 AWG CU TYPE W CABLE	TEMP NEMA 5 SIZE STARTER	EX MOTOR FB-GPP-3	
58T15C		9/C-#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	EX JB AT FB-GPP-3	FB-GPP-3 ON/OFF-L, VIBRATION ALARM SIGNALS, SPACE HEATER AND PRESSURE SWITCH ALARM.
58T15D		5/C-#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	TEMP FB-GPP-3 STARTER	TEMP FB-GPP-3 STARTER OVERLOADS AND PUMP RUN SIGNAL.
58T16A		4/C-#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'B'	TEMP PP201A 400 HP VFD	
58T16B		4/C-#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'B'	TEMP PP201A 400 HP VFD	
58T16C		4/C-#250 kcmil CU TYPE W CABLE	TEMP PP201A 400 HP VFD	EX MOTOR PP201A	
58T16D		4/C-#250 kcmil CU TYPE W CABLE	TEMP PP201A 400 HP VFD	EX MOTOR PP201A	
58T16E		11/C-#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	EX JB AT PP210A	PP201A ON/OFF-L, VIBRATION ALARM SIGNALS, VIBRATION TRANSMITTER 120V POWER, SPACE HEATER AND PRESSURE SWITCH OG-65 ALARM.
58T16F		5/C-#14 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	TEMP PP201A 400 HP VFD	TEMP VFD FAULT SIGNAL AND VFD START SIGNAL.
58T17		4/C-2/0 AWG CU TYPE W CABLE	TEMP PANELBOARD 'B'	EX LCP 54 TRANSFORMER	FIELD ROUTE TEMPORARY POWER CABLE. INSURE CABLE IS ROUTED TO AVOID DAMAGE AND TRIPPING HAZARDS.
56T1A		4/C-#250 kcmil CU TYPE W CABLE	SWITCHGEAR NO. 56 'A'	TEMP PANELBOARD 'A'	REFER TO PLANS FOR RACEWAYS AND CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
56T1B		4/C-#250 kcmil CU TYPE W CABLE	SWITCHGEAR NO. 56 'A'	TEMP PANELBOARD 'A'	REFER TO PLANS FOR RACEWAYS AND CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
56T1C		4/C-#250 kcmil CU TYPE W CABLE	SWITCHGEAR NO. 56 'A'	TEMP PANELBOARD 'A'	REFER TO PLANS FOR RACEWAYS AND CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
56T1D		4/C-#250 kcmil CU TYPE W CABLE	SWITCHGEAR NO. 56 'A'	TEMP PANELBOARD 'A'	REFER TO PLANS FOR RACEWAYS AND CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
56T1E		4/C-#250 kcmil CU TYPE W CABLE	SWITCHGEAR NO. 56 'A'	TEMP PANELBOARD 'A'	REFER TO PLANS FOR RACEWAYS AND CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
56T2A		4/C-#250 kcmil CU TYPE W CABLE	SWITCHGEAR NO. 56 'B'	TEMP PANELBOARD 'B'	REFER TO PLANS FOR RACEWAYS AND CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
56T2B		4/C-#250 kcmil CU TYPE W CABLE	SWITCHGEAR NO. 56 'B'	TEMP PANELBOARD 'B'	REFER TO PLANS FOR RACEWAYS AND CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
56T2C		4/C-#250 kcmil CU TYPE W CABLE	SWITCHGEAR NO. 56 'B'	TEMP PANELBOARD 'B'	REFER TO PLANS FOR RACEWAYS AND CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
56T2D		4/C-#250 kcmil CU TYPE W CABLE	SWITCHGEAR NO. 56 'B'	TEMP PANELBOARD 'B'	REFER TO PLANS FOR RACEWAYS AND CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
56T2E		4/C-#250 kcmil CU TYPE W CABLE	SWITCHGEAR NO. 56 'B'	TEMP PANELBOARD 'B'	REFER TO PLANS FOR RACEWAYS AND CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
58T19A	CTY	4/C-#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'A'	TEMP PANELBOARD 'B'	REFER TO PLANS FOR CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
58T19B	CTY	4/C-#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'A'	TEMP PANELBOARD 'B'	REFER TO PLANS FOR CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
58T19C	CTY	4/C-#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'A'	TEMP PANELBOARD 'B'	REFER TO PLANS FOR CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
58T19D	CTY	4/C-#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'A'	TEMP PANELBOARD 'B'	REFER TO PLANS FOR CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
58T19E	CTY	4/C-#250 kcmil CU TYPE W CABLE	TEMP PANELBOARD 'A'	TEMP PANELBOARD 'B'	REFER TO PLANS FOR CABLE TRAY TO BE UTILIZED FOR CABLE INSTALLATION.
58T20	CTY	3/C-#12 AWG CU TYPE SO CABLE	TEMP PANELBOARD 'A'	TEMP CONTROL PANEL 'A'	SINGLE-PHASE, 480V POWER.
58T21	CTY	3/C-#12 AWG CU TYPE SO CABLE	TEMP PANELBOARD 'B'	TEMP CONTROL PANEL 'B'	SINGLE-PHASE, 480V POWER.
58T22	CTY	14/C-#12 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'A'	FBP-FS-ANN/FBP-FS	CABLE INCLUDES SPARES.
58T22	CTY	36/C-#12 AWG CU TYPE SO CABLE	TEMP CONTROL PANEL 'B'	FBP-FS-ANN/FBP-FS	CABLE INCLUDES SPARES.

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TEMPORARY CABLE SCHEDULE (SHEET 2 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER
E-35
FILE: 171501742E01

SQUARE D
by Schneider Electric

Job Name:	HOWARD F. CURREN WWTP FILTER BLD.	Square D Quotation #:	40003048
Job Location:	TAMPA, FL	Quotation Revision #:	
		Sales Contact:	Brent Gibbs
		Sales Contact Location:	283
Purchaser:	MAYER ELECTRIC SUPPLY COMPANY INC	Customer:	CITY OF TAMPA
Purchaser PO #:	500HAR1232618	Customer PO #:	
User:	CITY OF TAMPA	Architect:	TRICON CONSULTING ENGINEERS
User Location:		Cons. Engineer:	
Drawing Status:	RECORD		

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SQUARE D FACTORY ORDER NUMBER: 40003048–001

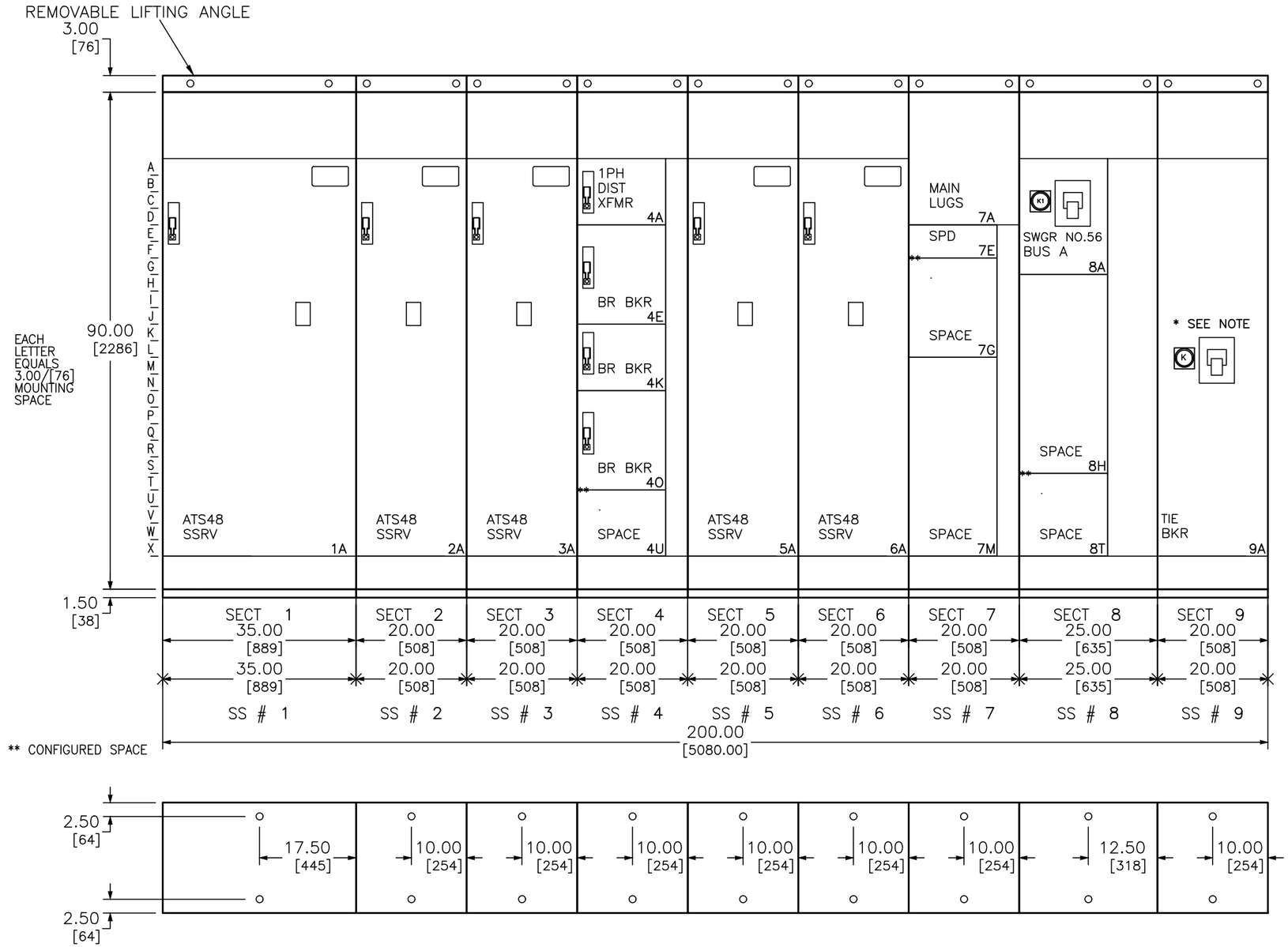
Equipment Designation	Equipment Type	Drawing Type	Drawing Number	Page	Revision Level
MCC 58 LEFT SIDE A–BUS	MODEL 6 MCC	ELEVATION	F40003048–001–01	1	E
			F40003048–001–01	2	E
			F40003048–001–01	3	E
		ONE LINE DIAGRAM	040003048–001–01	1	E
			040003048–001–01	2	E
		UNIT INFORMATION	I40003048–001–01	1	E
			I40003048–001–01	2	E
			I40003048–001–01	3	E
		ELEMENTARY DIAGRAM	E40003048–001–01	1	E
			E40003048–001–01	2	E
			E40003048–001–01	3	E
			E40003048–001–01	4	E
			E40003048–001–01	5	E
			E40003048–001–02	1	E
			E40003048–001–03	1	E
			E40003048–001–03	2	E
			E40003048–001–03	3	E
			E40003048–001–03	4	E
			E40003048–001–03	5	E
			E40003048–001–04	1	E
			E40003048–001–04	2	E
			E40003048–001–04	3	E
			E40003048–001–04	4	E
			E40003048–001–04	5	E
			E40003048–001–05	1	E
			E40003048–001–06	1	E
			E40003048–001–07	1	E
			E40003048–001–08	1	E
			E40003048–001–08	2	E
			E40003048–001–08	3	E
			E40003048–001–08	4	E
			E40003048–001–08	5	E

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SQUARE D FACTORY ORDER NUMBER: 40003048-001

Equipment Designation	Equipment Type	Drawing Type	Drawing Number	Page	Revision Level
			E40003048-001-09	1	E
			E40003048-001-10	1	E
			E40003048-001-11	1	E
			E40003048-001-12	1	E
			E40003048-001-12	2	E
			E40003048-001-12	3	E
			E40003048-001-12	4	E
			E40003048-001-12	5	E
		WIRING DIAGRAM	W40003048-001-01	1	A
			W40003048-001-02	1	A
			W40003048-001-03	1	A
			W40003048-001-04	1	A
			W40003048-001-08	1	A
			W40003048-001-12	1	A

REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	B	PER CUSTOMER CHANGES	NMK	04/10/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019
				C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019



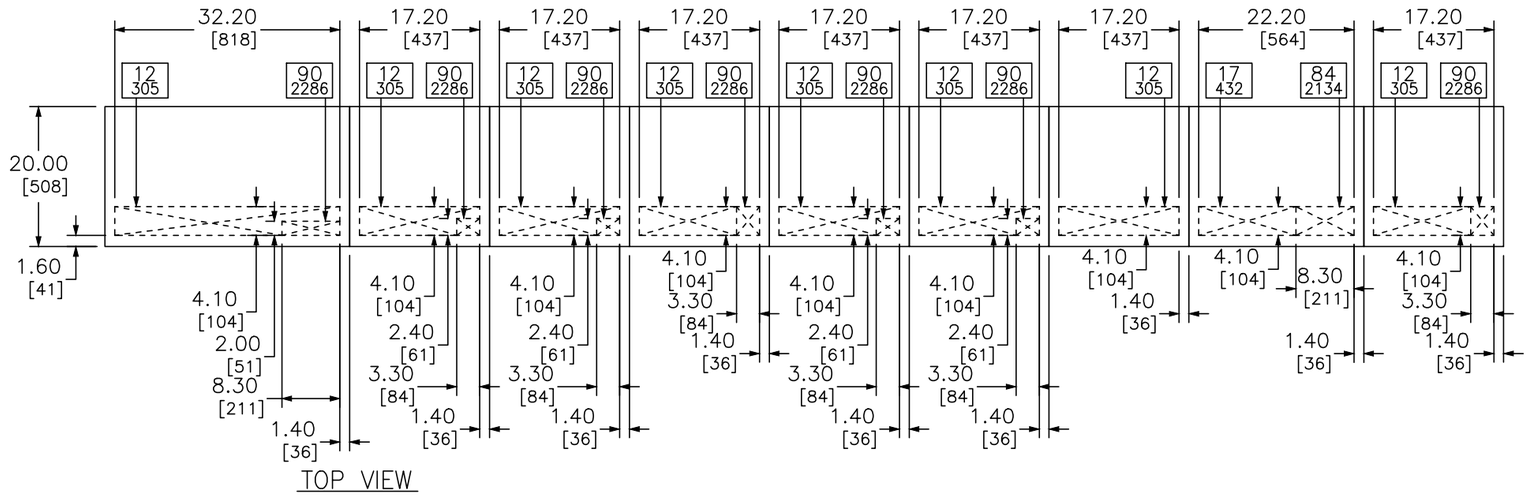
* SINGLE CYLINDER INTERLOCK WITH K1–K2 INTERCHANGE

ANCHOR DETAIL

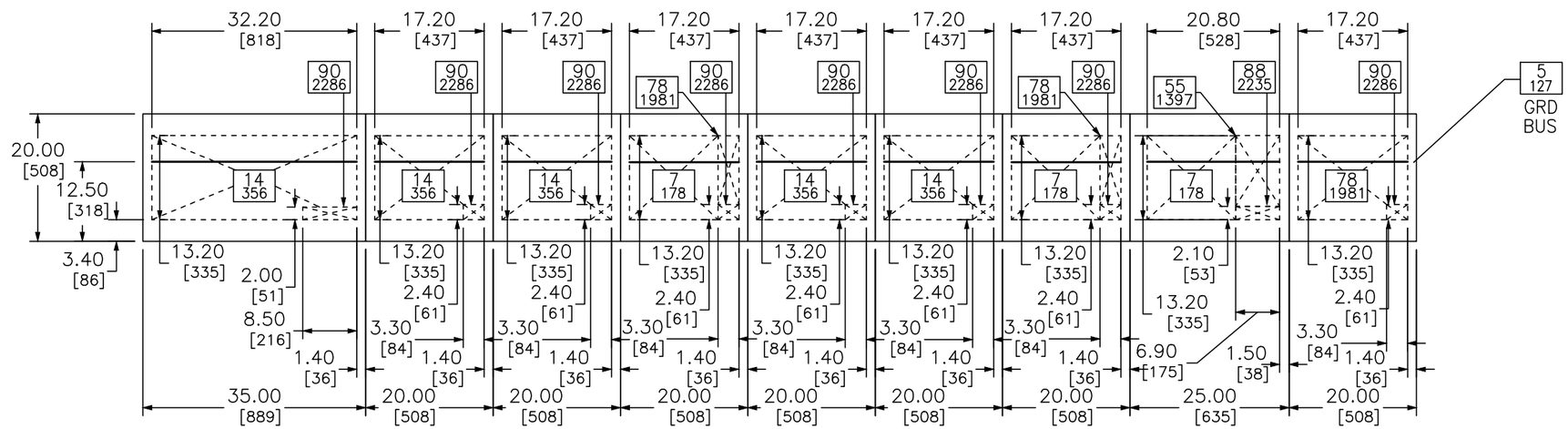
DUAL DIMENSIONS: INCHES / MILLIMETERS

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A–BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEVATION
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019	DWG#	**F40003048–001–01**
DRAWING STATUS:	RECORD	PG	1 OF 3 REV E

REV	DESCRIPTION	BY	DATE	B	PER CUSTOMER CHANGES	NMK	04/10/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019



TOP VIEW



FLOOR VIEW

CROSSED AREA REPRESENTS CONDUIT ENTRY AREA. NUMBERS IN BOXES INDICATE VERTICAL CLEARANCE TO NEAREST OBSTRUCTION.

DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEVATION
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# F40003048-001-01	PG 2 OF 3 REV E

REV	DESCRIPTION	BY	DATE	A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019	B	PER CUSTOMER CHANGES	NMK	04/10/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019

GENERAL NOTES

Class 1 Type B Wiring

PRODUCT DESCRIPTION AND RATINGS

POWER SYSTEM DATA:

480V 3PH 3W 60Hz
SHORT CIRCUIT RATING: 65kA
POWER ENTERS: Main Lug Top Section 7
CONTROL POWER: 120Vac

BUS SYSTEM DATA:

MAIN HORIZONTAL BUS: 1200 Amp Copper/Tin Plated / 1.5"
BUS BRACING: 65kA
VERTICAL BUS: 300 Amp Tin Plated Copper
HORIZONTAL GROUND BUS: .25" X 2.0" (6.35mm X 50.8mm) Tin Plated Copper
Units Securely Grounded To Structure

ENCLOSURE DATA:

ENCLOSURE TYPE: 20" DEEP Type 1A
EXTERIOR COLOR: Electrodeposition Finish ANSI 49 Medium Light Grey
INTERIOR COLOR: Electrodeposition Finish White
REMOVABLE 3" [76mm] LIFTING ANGLE

STRUCTURE MODIFICATIONS:

Ground Bus Lug : Main Section
Rodent Barriers 1,9
Manual Bus Shutters 4,7,8
Fishtape Unit Plugs 4,7
600A Vertical Bus 4
Copper Vertical Ground Bus 4,7,8
Wire Retainers 4,7,8
Master Nameplate 1

EQUIPMENT WEIGHT:

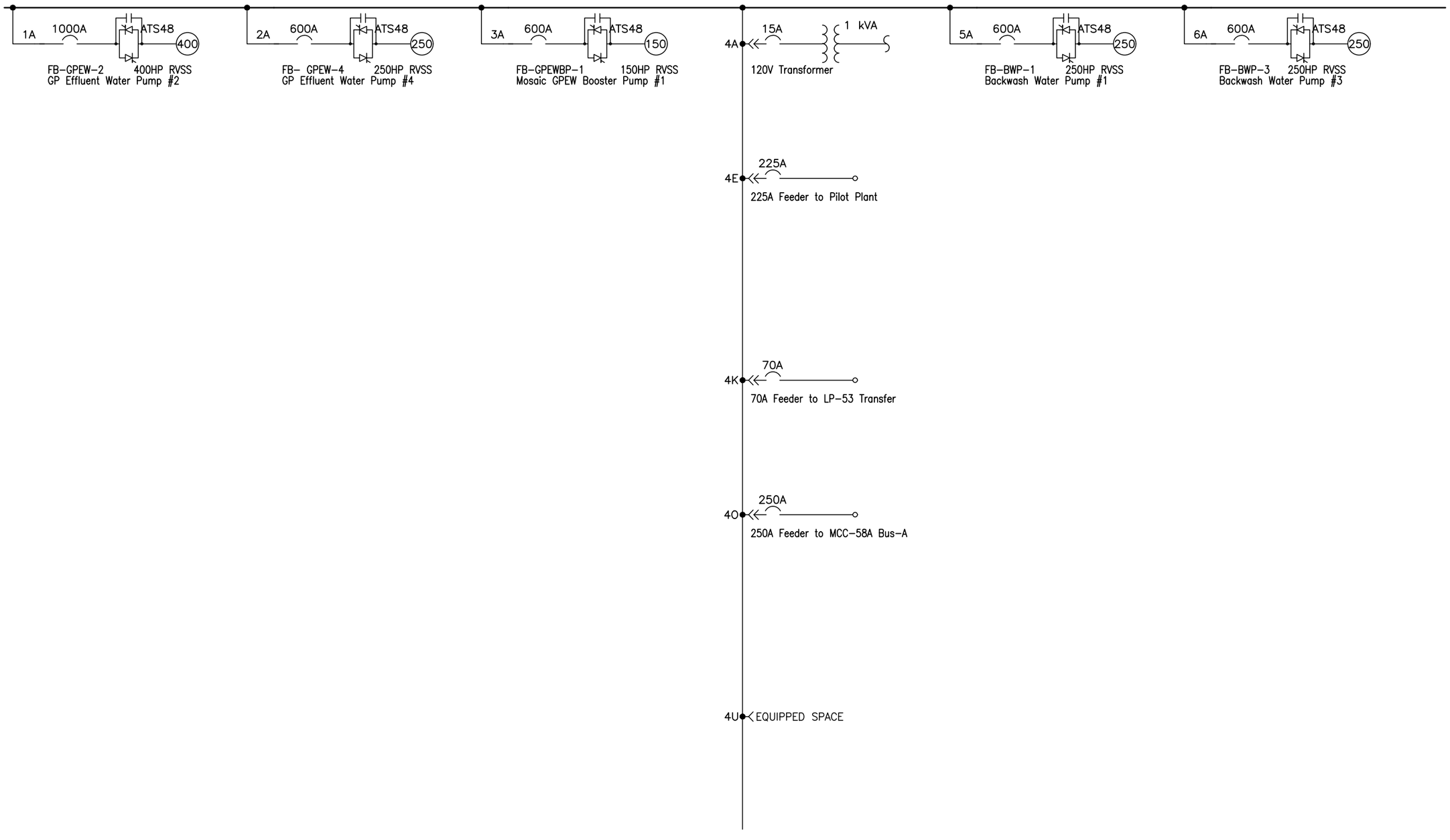
SHIPPING SPLIT # 1: 760.00 Lbs. (344.74 Kg.)
SHIPPING SPLIT # 2: 700.00 Lbs. (317.52 Kg.)
SHIPPING SPLIT # 3: 700.00 Lbs. (317.52 Kg.)
SHIPPING SPLIT # 4: 750.00 Lbs. (340.20 Kg.)
SHIPPING SPLIT # 5: 700.00 Lbs. (317.52 Kg.)
SHIPPING SPLIT # 6: 700.00 Lbs. (317.52 Kg.)
SHIPPING SPLIT # 7: 750.00 Lbs. (340.20 Kg.)
SHIPPING SPLIT # 8: 770.00 Lbs. (349.27 Kg.)
SHIPPING SPLIT # 9: 700.00 Lbs. (317.52 Kg.)
TOTAL LINEUP WEIGHT (APPROX): 6530.00 Lbs. (2962.01 Kg.)

PRODUCT ACCESSORIES:

Certified Test Report
Full Size Door Mounted Drawings

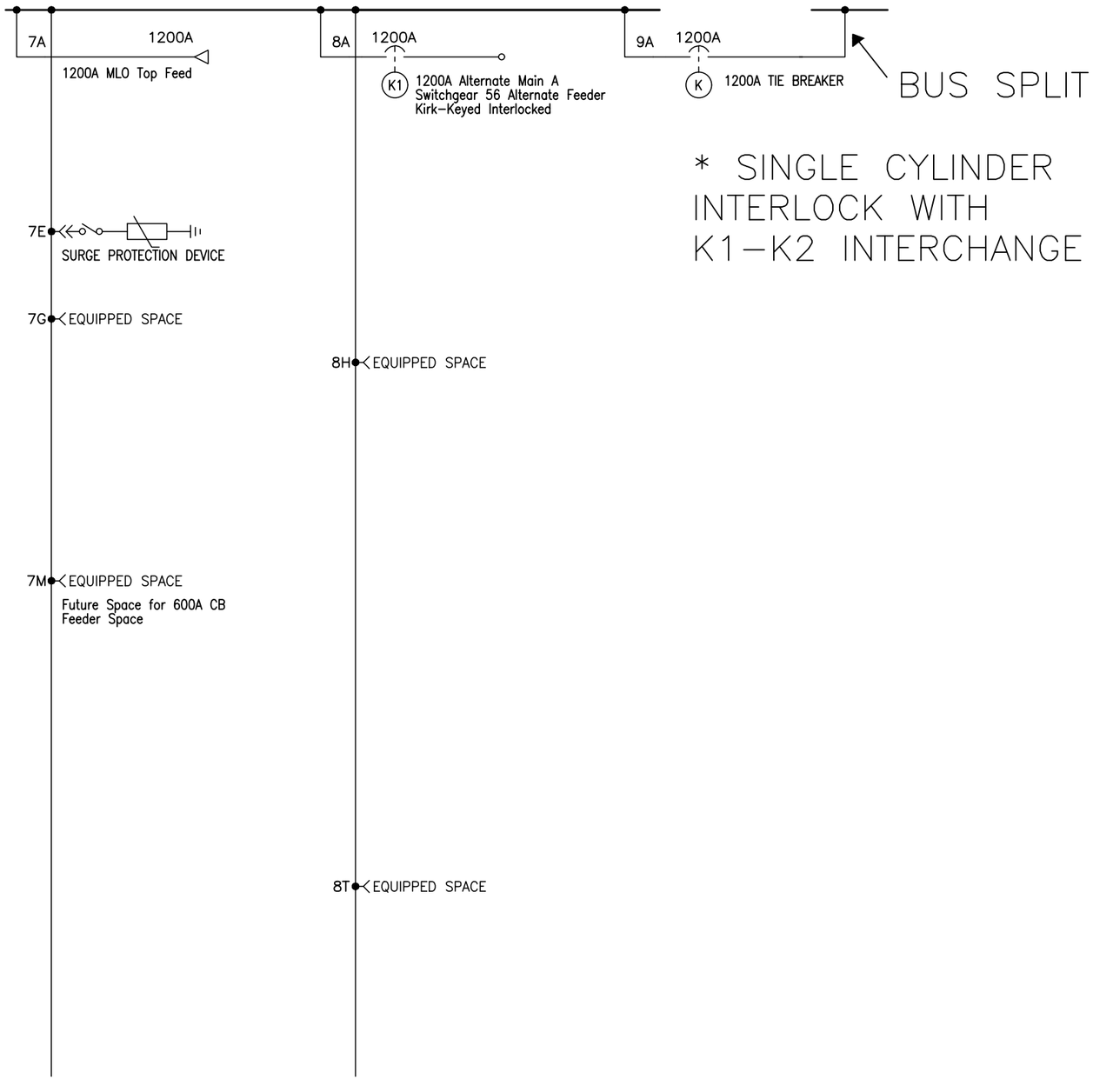
JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEVATION
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# F40003048-001-01	PG 3 OF 3 REV E

REV	DESCRIPTION	BY	DATE	A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	D	APPROVAL RESUBMITTAL	VL	08/19/2019
B	PER CUSTOMER CHANGES	NMK	04/10/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019



JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **040003048-001-01**	PG 1 OF 2 REV E

REV	DESCRIPTION	BY	DATE	B	PER CUSTOMER CHANGES	NMK	04/10/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019



JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **040003048-001-01**	PG 2 OF 2 REV E

REV	DESCRIPTION	BY	DATE	B	PER CUSTOMER CHANGES	NMK	04/10/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019
F	UNIT FEATURES UPDATED	KJ	12/04/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019

UNIT LOC	UNIT NAMEPLATES (GRAY SURFACE/WHITE LETTERS)	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	FUSE SIZE PRI	FUSE SIZE SEC	INTERLOCKS NO	INTERLOCKS NC	PILOT DEVICES: LED 30 mm ** ON LIGHT	PILOT DEVICES: LED 30 mm ** OFF LIGHT	PILOT DEVICES: LED 30 mm ** ADDL P/L	PILOT DEVICES: LED 30 mm ** SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
1A	FB–GPEW–2 400HP RVSS GP Effluent Water Pump #2	ATS48 SSRV	C66	400	PL 1200	**1000**	CONTROL TRANSFORMER W/SPDT PWR DISC	500	5.0	6.25			RED	GREEN	CLEAR RED	START/STOP PB	#14 AWG SIS SUITABLE CONTROL WIRE, AC AMMETER, AUX RUN CONTACTS, ETM, INT INTLK 1A/1B FORM C, SHUNT TRIP,	E40003048–001–01
																	STD WIRE LABELS, WIRED ON–DELAY TIMER, WIRED RELAY, WIRED RELAY, ALARM SWITCH, SEVERE DUTY, SEL–849, SEL–3421	
2A	FB– GPP–4 250HP RVSS GP Effluent Water Pump #4	ATS48 SSRV	C32	250	LL 600	**600**	CONTROL TRANSFORMER W/SPDT PWR DISC	500	5.0	6.25			RED	GREEN	CLEAR RED	START/STOP PB	#14 AWG SIS SUITABLE CONTROL WIRE, AC AMMETER, AUX RUN CONTACTS, ETM, INT INTLK 1A/1B FORM C, SHUNT TRIP,	E40003048–001–03
																	STD WIRE LABELS, WIRED ON–DELAY TIMER, WIRED RELAY, WIRED RELAY, ALARM SWITCH, SEL–849, SEL–3421	
3A	FB–GPEWBP–1 150HP RVSS Mosaic GPEW Booster Pump #1	ATS48 SSRV	C25	150	LL 600	**600**	CONTROL TRANSFORMER W/SPDT PWR DISC	500	5.0	6.25			RED	GREEN	CLEAR RED	START/STOP PB	#16 AWG SIS SUITABLE CONTROL WIRE, AC AMMETER, AUX RUN CONTACTS, ETM, INT INTLK 1A/1B FORM C, SHUNT TRIP,	E40003048–001–04
																	STD WIRE LABELS, WIRED ON–DELAY TIMER, WIRED RELAY, WIRED RELAY, ALARM SWITCH, SEVERE DUTY, SEL–849, SEL–3421	
4A	120V Transformer	1PH DIST XFMR	1 kVA		HJ 150	**15**											115 C TEMP RISE, COPPER WINDING, FISHTAPE UNIT PLUGS, UNIT MOUNTED	E40003048–001–02
4E	225A Feeder to Pilot Plant	BRANCH BKR			JJ 250	**225**											3/0–350 1 LUG/PH, 80% RATED, AL MECH LUG AL/CU CABLE, FISHTAPE UNIT PLUGS	E40003048–001–05
UNIT LOC	UNIT NAMEPLATES	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	PRI	SEC	NO	NC	ON LIGHT	OFF LIGHT	ADDL P/L	SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
									FUSE SIZE		INTERLOCKS		PILOT DEVICES: LED 30 mm **					

MCC NAMEPLATE – (GRAY SURFACE/WHITE LETTERS)

MCC 58 left Side A–Bus

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.
JOB LOCATION:	TAMPA FL
DRAWN BY:	VICKI LUSK
ENGR:	KEVIN JOHNSON
DATE:	SEPTEMBER 26, 2019
DRAWING STATUS:	RECORD

EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A–BUS
EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWING TYPE:	UNIT INFORMATION
DWG#	I40003048–001–01

REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE
F	UNIT FEATURES UPDATED	KJ	12/04/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019
				A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	D	APPROVAL RESUBMITTAL	VL	08/19/2019

UNIT LOC	UNIT NAMEPLATES	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	FUSE SIZE PRI	FUSE SIZE SEC	INTERLOCKS NO	INTERLOCKS NC	PILOT DEVICES: LED 30 mm ** ON LIGHT	PILOT DEVICES: LED 30 mm ** OFF LIGHT	PILOT DEVICES: LED 30 mm ** ADDL P/L	PILOT DEVICES: LED 30 mm ** SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
4K	70A Feeder to LP-53 Transfer	BRANCH BKR			HJ 150	**70**											14-3/0AWG 1 LUG/PH, 80% RATED, AL MECH LUG AL/CU CABLE, FISHTAPE UNIT PLUGS	E40003048-001-06
4O	250A Feeder to MCC-58A Bus-A	BRANCH BKR			JJ 250	**250**											3/0-350 1 LUG/PH, 80% RATED, AL MECH LUG AL/CU CABLE, FISHTAPE UNIT PLUGS	E40003048-001-07
4U		SPACE																
5A	FB-BWP-1 250HP RVSS Backwash Water Pump #1	ATS48 SSRV	C32	250	LL 600	**600**	CONTROL TRANSFORMER W/SPDT PWR DISC	500	5.0	6.25			RED	GREEN	CLEAR RED	START/STOP PB	#16 AWG SIS SUITABLE CONTROL WIRE, AC AMMETER, AUX RUN CONTACTS, ETM, INT INTLK 1A/1B FORM C, SHUNT TRIP,	E40003048-001-12
																	STD WIRE LABELS, WIRED ON-DELAY TIMER, WIRED RELAY, WIRED RELAY, ALARM SWITCH, SEL-849, SEL-3421	
6A	FB-BWP-3 250HP RVSS Backwash Water Pump #3	ATS48 SSRV	C32	250	LL 600	**600**	CONTROL TRANSFORMER W/SPDT PWR DISC	500	5.0	6.25			RED	GREEN	CLEAR RED	START/STOP PB	#16 AWG SIS SUITABLE CONTROL WIRE, AC AMMETER, AUX RUN CONTACTS, ETM, INT INTLK 1A/1B FORM C, SHUNT TRIP,	E40003048-001-08
																	STD WIRE LABELS, WIRED ON-DELAY TIMER, WIRED RELAY, WIRED RELAY, ALARM SWITCH, SEL-849, SEL-3421	
7A	1200A MLO Top Feed	MAIN LUGS															3/0-600KCMIL 4 LUGS/PH, AL MECH LUG AL/CU CABLE	
7E	SURGE PROTECTION DEVICE	SPD	240kA		SW 30												FISHTAPE UNIT PLUGS, SOLIDLY GROUNDED, SURGE COUNTER	E40003048-001-09
7G		SPACE																
7M	Future Space for 600A CB Feeder Space	SPACE																

UNIT LOC	UNIT NAMEPLATES	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	PRI	SEC	NO	NC	ON LIGHT	OFF LIGHT	ADDL P/L	SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
									FUSE SIZE		INTERLOCKS		PILOT DEVICES: LED 30 mm **					

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	UNIT INFORMATION
ENGR:	KEVIN JOHNSON		
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG#	I40003048-001-01

REV	DESCRIPTION	BY	DATE
F	UNIT FEATURES UPDATED	KJ	12/04/2019

A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	D	APPROVAL RESUBMITTAL	VL	08/19/2019
C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019

UNIT LOC	UNIT NAMEPLATES	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	FUSE SIZE PRI	FUSE SIZE SEC	INTERLOCKS NO	INTERLOCKS NC	PILOT DEVICES: LED 30 mm ** ON LIGHT	PILOT DEVICES: LED 30 mm ** OFF LIGHT	PILOT DEVICES: LED 30 mm ** ADDL P/L	PILOT DEVICES: LED 30 mm ** SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
8A	1200A Alternate Main A Switchgear 56 Alternate Feeder Kirk–Keyed Interlocked	BRANCH BKR			PL 1200	**1200**											24VDC TRIP UNIT PWR SUPP, 3/0–500KCMIL 4 LUGS/PH, 80% RATED, AL MECH LUG AL/CU CABLE,	E40003048–001–10
																	COMMS UNWIRED ETHERNET MODBUS TCP, ELECTRONIC POWER TRIP UNIT, KEY INTERLOCK, LSI TRIP FUNCTION, MAINTENANCE SWITCH,	
																	KEY INTERLOCK,	
8H		SPACE																
8T		SPACE																
9A	1200 amp tie breaker Kirk–key interlocked	TIE BKR			PL 1200	**1200**											3/0–500KCMIL 4 LUGS/PH, 80% RATED, AL MECH LUG AL/CU CABLE, BASIC ELECTRONIC TRIP UNIT, FIXED L,	E40003048–001–11
																	ADJ. I TRIP FUNCTION, KEY INTERLOCK	
UNIT LOC	UNIT NAMEPLATES	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	PRI	SEC	NO	NC	ON LIGHT	OFF LIGHT	ADDL P/L	SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
									FUSE SIZE		INTERLOCKS		PILOT DEVICES: LED 30 mm **					

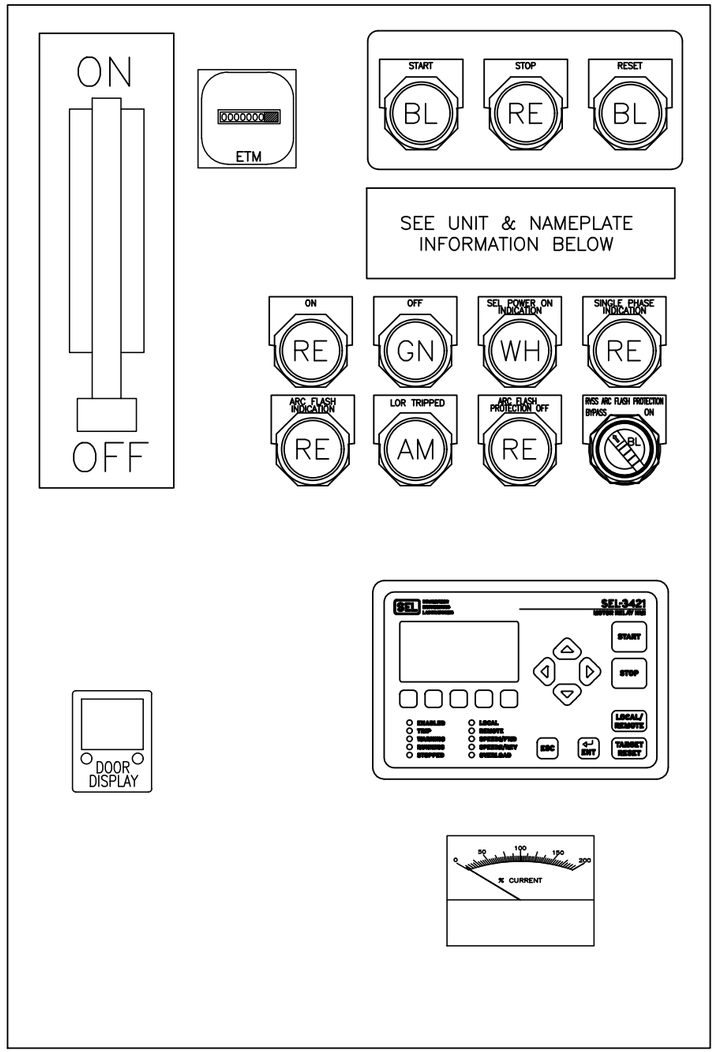
JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.
JOB LOCATION:	TAMPA FL
DRAWN BY:	VICKI LUSK
ENGR:	KEVIN JOHNSON
DATE:	SEPTEMBER 26, 2019
DRAWING STATUS:	RECORD

EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A–BUS
EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWING TYPE:	UNIT INFORMATION

SQUARE D by Schneider Electric

DWG# I40003048–001–01 | PG 3 OF 3 | REV F

REV	DESCRIPTION	BY	DATE	J	ADDED S29450	VL	11/12/2019	L	UPDATED PER QC	TR	12/05/2019
H	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	K	UPDATED FUSE PINS	TB	11/16/2019	G	CORRECTED WL	VL	11/11/2019



ITEM	CATALOG	DESCRIPTION
1	PLF34100AABCSA	POWERPACT P FRAME 1000A, LSI TRIP
2	180R601	CURRENT TRANSFORMER MODEL 180R
3	ATS48C66Y	ALTISTART 48 SOFT START 660 AMP
4	3090TB6	6 POLE SHORT CIRCUIT TERMINAL BLOCK
5	FNQ-R-1 1/2	FUSE - CLASS CC
6	FNQ-R-5	FUSE - CLASS CC
7	FNQ-R-6 1/4	FUSE - CLASS CC
8	9070TF500D1	500VA CONTROL TRANSFORMER
9	KP38LYA31	AMBER LED PILOT LIGHT - STANDARD, NEMA 4/13
10	KR1BH43	BLACK PUSH BUTTON - MOMENTARY, NEMA 4/13
11	00-823961	ANALOG AMMETER
12	RE22R2MYMR	TIMING RELAY - TYPE RE22
13	CAD32G7	RELAY TeSys IEC TYPE 120V
14	9001SKPF1R31	FLASHING PILOT LIGHT-RED
15	KR1RH6	RED PUSH BUTTON - MOMENTARY, NEMA 4/13
16	26403-12030	KESSLER-ELLIS ELAPSED TIME METER H57.55/UL 120V
17	KP38LRR31	RED LED PILOT LIGHT - STANDARD, NEMA 4/13
18	KP38LGG31	GREEN LED PILOT LIGHT - STANDARD, NEMA 4/13
19	LC1F630G7	IEC CONTACTOR 120V / 630A
20	LA9D09980	COIL SUPPRESSOR
21	FNQ-R-1/2	FUSE - CLASS CC
22	KP38LWW31	WHITE LED PILOT LIGHT - STANDARD, NEMA 4/13
23	CAD32G7	RELAY TeSys IEC TYPE 120V W/TIME DELAY AUX
	LADT0	TIME DELAY AUXILIARY CONTACT
24	DFCC3	3 POLE 30A CLASS CC FUSE HOLDER
25	FNQ-R-1	FUSE - CLASS CC
26	KR1BH5	BLACK PUSH BUTTON - MOMENTARY, NEMA 4/13
27	9001-KS11BH24	SELECTOR SW - 2 POS MAINT, NEMA 4/13
28	CAD32G7	RELAY TeSys IEC TYPE 120V
	LAD6K10F	MECHANICAL LATCH BLOCK
29	CAD32G7	RELAY TeSys IEC TYPE 120V
	LADN22	AUXILIARY CONTACT BLOCK IEC

MCC FACTORY ALTISTART 48 PARAMETER SETTINGS:

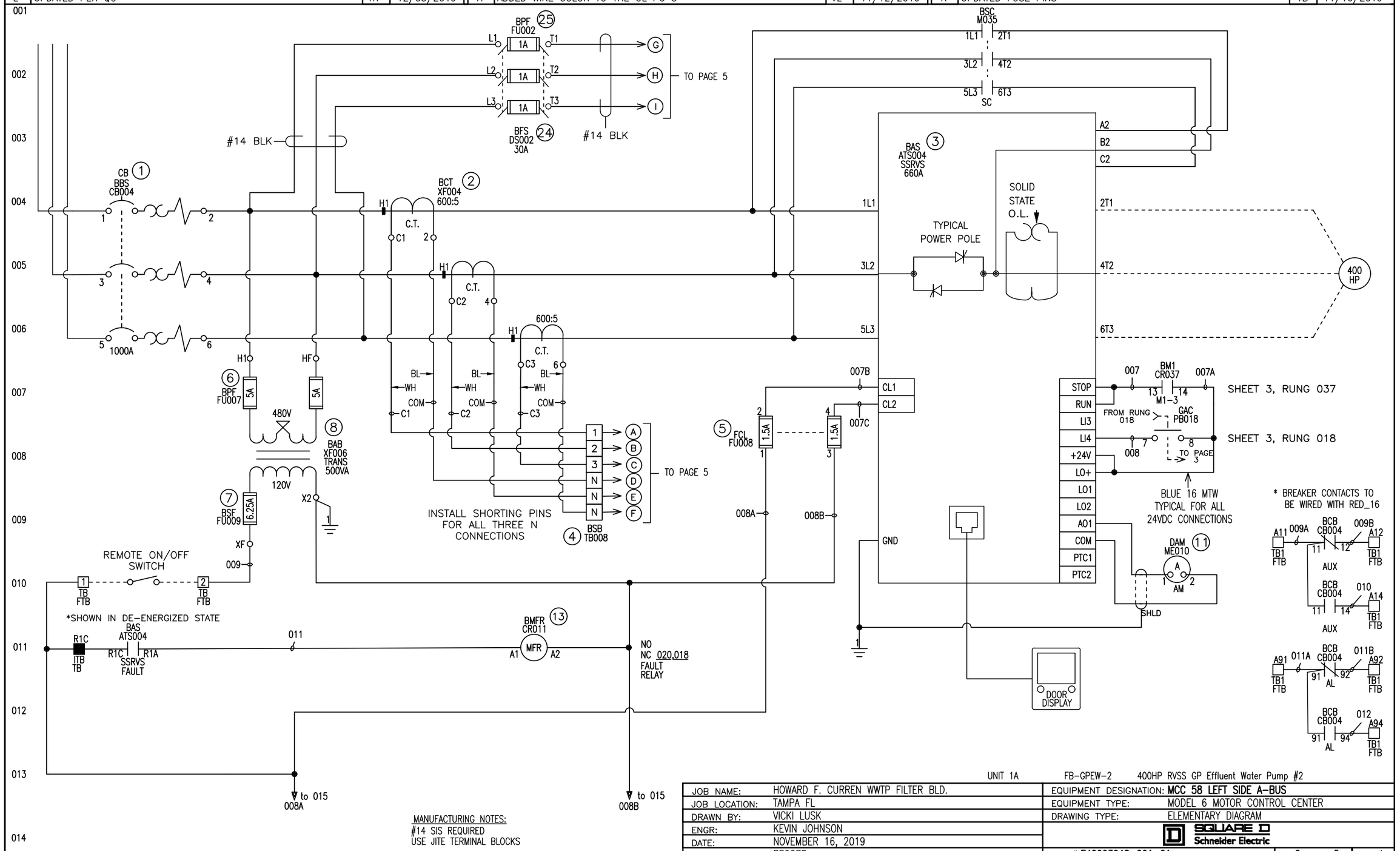
1. **Assign LI4 = LIR : FAULT RESET**
2. **ASSIGN PRO = THP : 20 SEVERE DUTY**
3. **ASSIGN R3 = RNL : MOTOR POWERD**

NOTE:
USE CAUTION WHEN CHANGING FACTORY-SET PARAMETERS. FACTORY-SET DRIVE PARAMETERS ARE CRITICAL FOR ALTISTART CONTROL AND POWER CONFIGURAIONS. DESCRIPTION OF PARAMETERS AND CODES CAN BE FOUND IN THE "PROGRAMMING" SECTION OF INSTRUCTION BULLETIN 30072-450-61 SHIPPED WITH THE CONTROLLER.

UNIT 1A FB-GPEW-2 400HP RVSS GP Effluent Water Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-01	PG 1 OF 5 REV L

REV	DESCRIPTION	BY	DATE	G	CORRECTED WL	VL	11/11/2019	J	ADDED S29450	VL	11/12/2019
L	UPDATED PER QC	TR	12/05/2019	H	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	K	UPDATED FUSE PINS	TB	11/16/2019



MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

UNIT 1A FB-GPEW-2 400HP RVSS GP Effluent Water Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-01	PG 2 OF 5 REV L

REV	DESCRIPTION	BY	DATE
L	UPDATED PER QC	TR	12/05/2019
G	CORRECTED WL	VL	11/11/2019
H	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019
J	ADDED S29450	VL	11/12/2019
K	UPDATED FUSE PINS	TB	11/16/2019

015 008A from 013

016

017

018

019

008A

020

021

022

023

024

025

026

027

028 023 to 029

TDR 1 TD016 (12) — TR1 ON DELAY — 1A1 ITB TB — 1A2 ITB TB — A1 A2

UA1 ITB TB

TDR 1 TD016 — 25 15 16 TR1 — ITB TB

TDR 1 TD016 — 25 28 TR1 — 017A

TDRU CR017 (12) — TRU — A1 Y1 A2 — UA2 ITB TB

GAC PBD18 RESET (10) — 3 4 — 017 — TO PAGE 2 RUNG 008

VIB PUMP — 3 TB FTB

VIB MOTOR — 4 TB FTB

BMFR CR011 — 016 13 14 MFR — 018A

BLOR1 CR018 (13) — LOR1 — A1 A2

BLOR1 CR018 — 03 04 LOR1-1

019

BMFDR CR019 (23) — MFDR — A1 A2

BMFR CR011 — 21 22 MFR

BM1 CR037 — 31 32 M1-4 — 020B

MOTOR SPACE HEATER — 11 TB FTB — 12 TB FTB

BCR4 CR046 — 020 21 22 CR4-1 — 020A

DAG LT021 (14) — R — X1 X2

5 TB FTB — 6 TB FTB — 7 TB FTB — 8 TB FTB

DAH RVSS ARC FLASH PROTECTION SSLT022 BYPASS ON (27) — 1 2 — X0

021

ARC FLASH PROTECTION OFF

TDRU CR017 — 15 25 28 TRU — 022

BM1 CR037 — 61 62 M1

BLOR1 CR018 — 43 44 LOR1-2

GAB STOP PB025 (15) — 1 2

024

023A — X0 5 6 — 023B

TO PAGE 4 RUNG 045

UNLATCH PRS CR026 — U — E1 E2

GAA PB026 START (26) — 3 4 — 025 — 3 4 — 025A — 9 TB FTB — 10 TB FTB

BTDR TD048 — 25 28 TDR-2

LATCH PRS CR026 (28) — L — A1 A2

NO 025,037 NC POWER RETURN START RELAY

053 BBYP 053A — 18 TB FTB 8A — 13 14 BYP-2 — 19 TB FTB 8A

GPP2 — 03 04 GPP2-1

FROM LINE ITEM 002 FB-GPEW-1 UNIT 8A

MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

008B to 029

008B from 013

008B

NO 017 NC 017

NO 023 NC ONE SHOT TIMER

NO 019,024 NC 044 LOCK OUT RELAY 1

NO 054 NC FAULT DELAY RELAY

ARC FLASH PROTECTION OFF

029 023 from 028

030

031

032

033

034

035

036

037

038

039

040

041

BM1 CR037 — 21 22 M1-2 — 030

DAB LT030 (18) — G — X1 X2 — OFF

008B

R3C ITB TB — BAS ATS004 — R3C R3A SSRVS RUNNING — 032

BSS1-1 CR032 (13) — SS1-1 — A1 A2 — NO 056 NC 058 PUMP STATUS RELAY

R2C ITB TB — BAS ATS004 — R2C R2A SSRVS END STARTUP — 035

BSCPR CR034 (13) — SCPR — A1 A2 — NO 035 NC SHORTING CONTACTOR PILOT RELAY

BSCPR CR034 — 03 04 SCPR — 036

BSC M035 (19) — SC — A1 A2

BSC SU036 (20) — SUP — 1 TS 2

NO 001,002,002 NC SHORTING CONTACTOR

PRS CR026 — 03 L 04 — 038

BM1 CR037 (29) — M1 — A1 A2

FB-GPP-1

NO 007,039,057 NC 020,024,030 RUN RELAY

039

DAA LT038 (17) — R — X1 X2 — ON

BM1 CR037 — 03 M1 04

DTM TM039 (16) — ETM — 1 2

PUMP VIB TRANSMITTER

MOTOR VIB TRANSMITTER

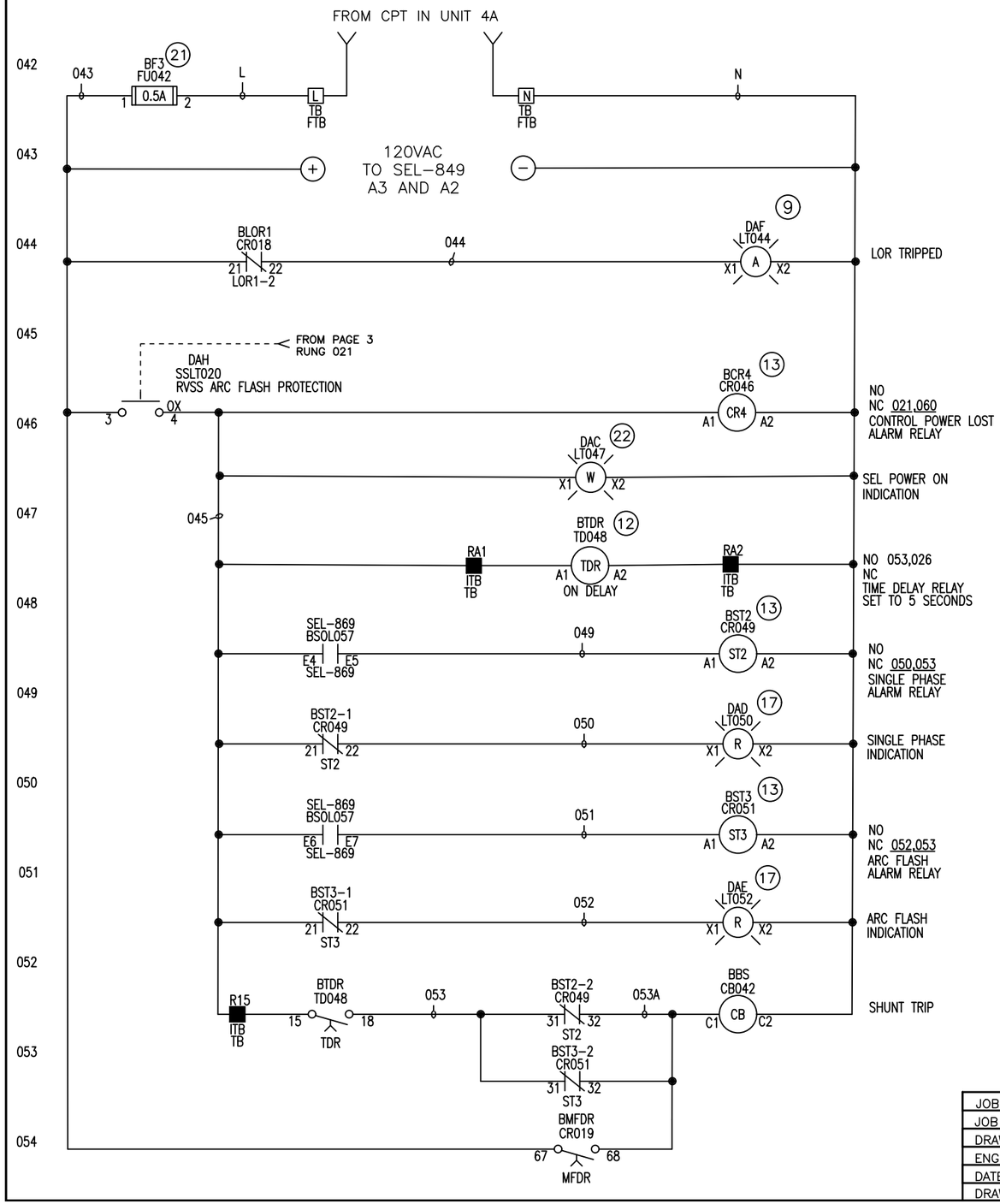
13 TB FTB — 14 TB FTB

X1 TB FTB — X2 TB FTB

UNIT 1A FB-GPEW-2 400HP RVSS GP Effluent Water Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG#	E40003048-001-01

REV	DESCRIPTION	BY	DATE	H	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	K	UPDATED FUSE PINS	TB	11/16/2019
G	CORRECTED WL	VL	11/11/2019	J	ADDED S29450	VL	11/12/2019	L	UPDATED PER QC	TR	12/05/2019

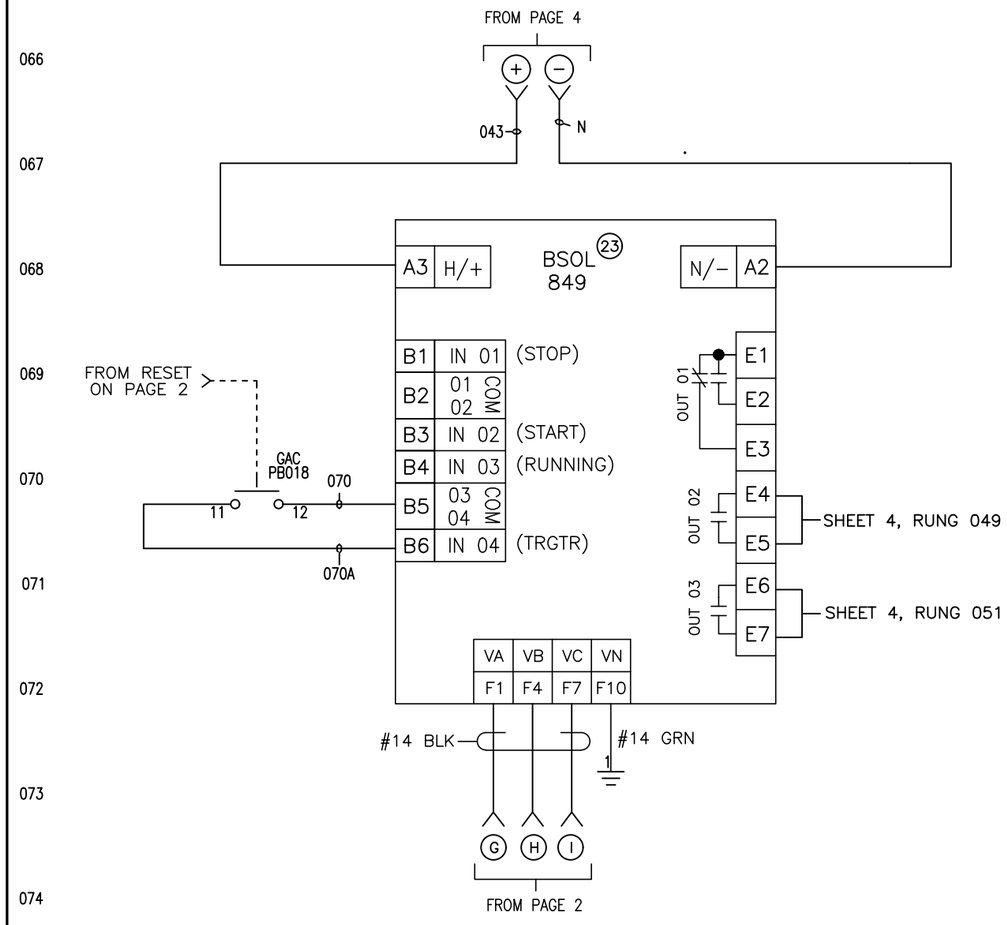


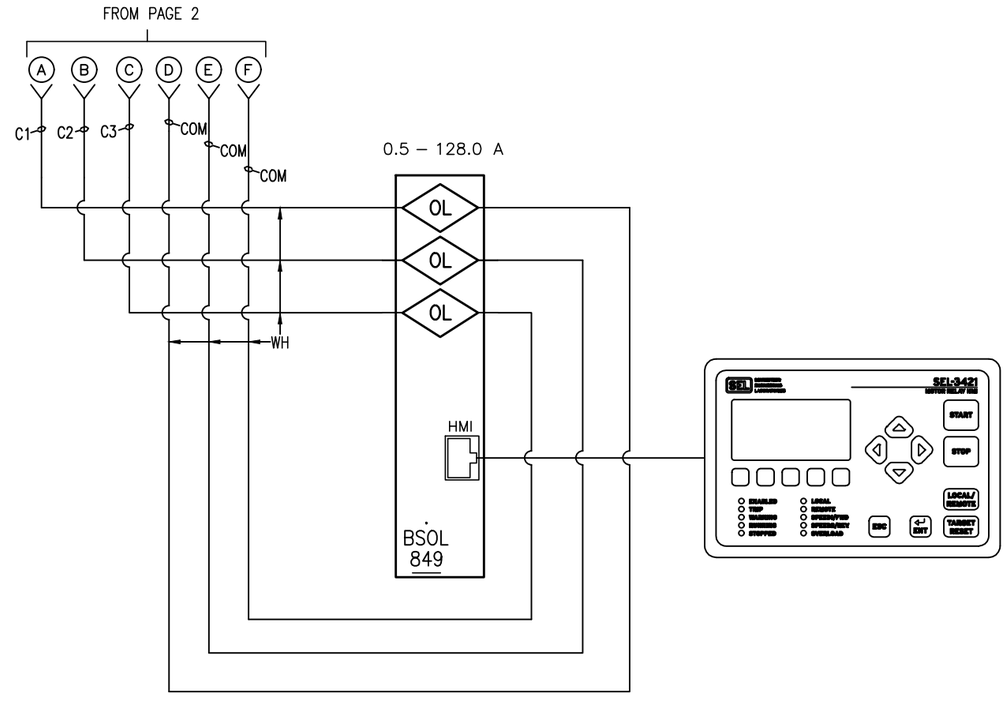
MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

UNIT 1A FB-GPEW-2 400HP RVSS GP Effluent Water Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-001-01**	PG 4 OF 5 REV L

REV	DESCRIPTION	BY	DATE	H	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	K	UPDATED FUSE PINS	TB	11/16/2019
G	CORRECTED WL	VL	11/11/2019	J	ADDED S29450	VL	11/12/2019	L	UPDATED PER QC	TR	12/05/2019





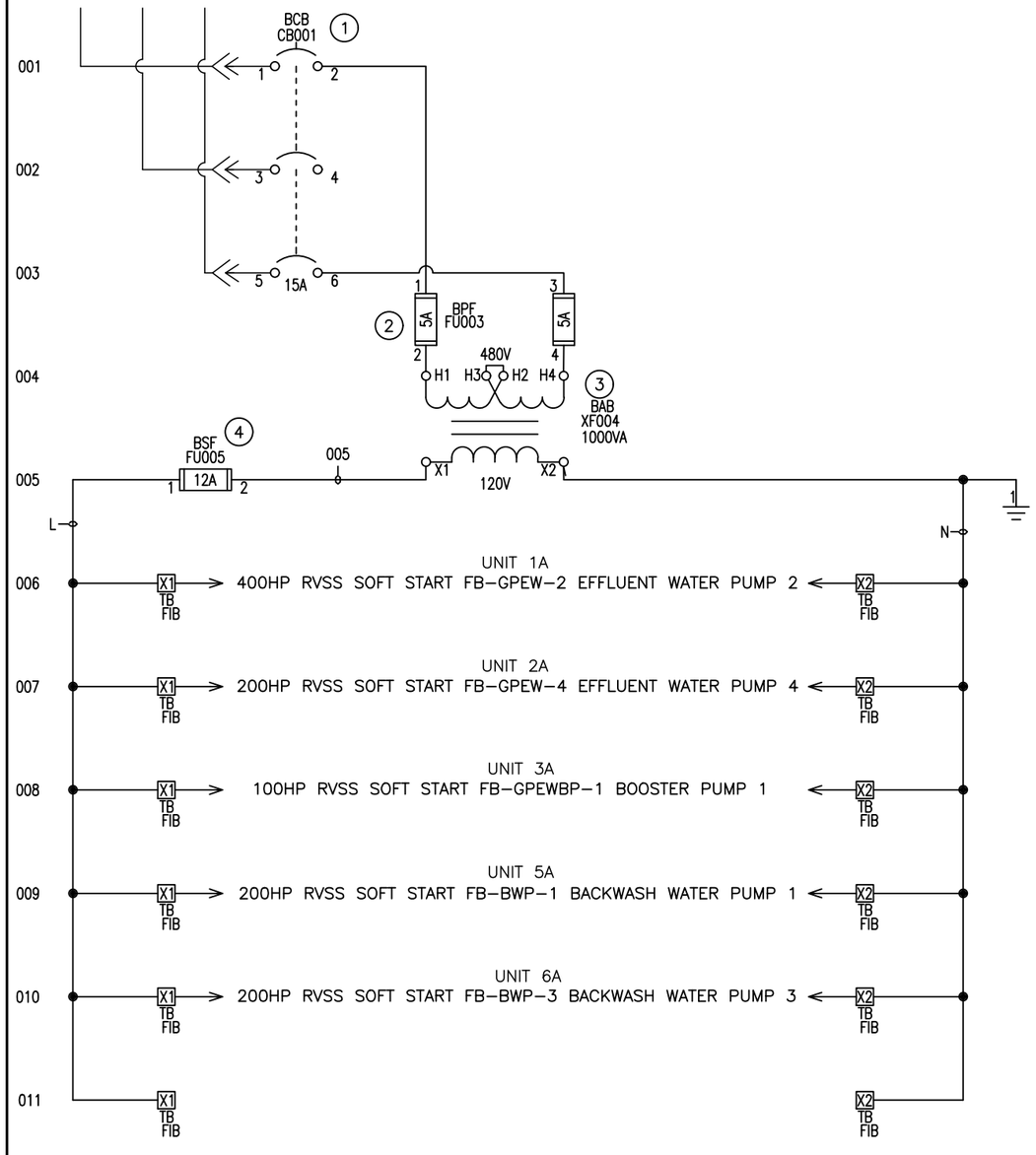
MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

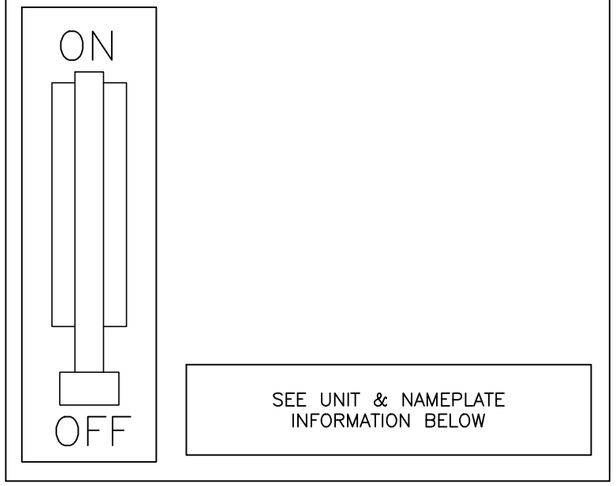
UNIT 1A FB-GPEW-2 400HP RVSS GP Effluent Water Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-01	PG 5 OF 5 REV L

REV	DESCRIPTION	BY	DATE								
C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019	A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018
				E	RELEASED TO MANUFACTURING	VL	09/26/2019	B	PER CUSTOMER CHANGES	NMK	04/10/2019

ITEM	CATALOG	DESCRIPTION
1	HJL36015	POWERPACT H–FRAME TM CIRCUIT BREAKER 15A
2	FNQ–R–5	FUSE – CLASS CC
3	9070T1000D1	INDUSTRIAL CONTROL TRANSFORMER, CLASS 9070
4	FRN–R–12	DUAL ELEMENT FUSE –CLASS RK5



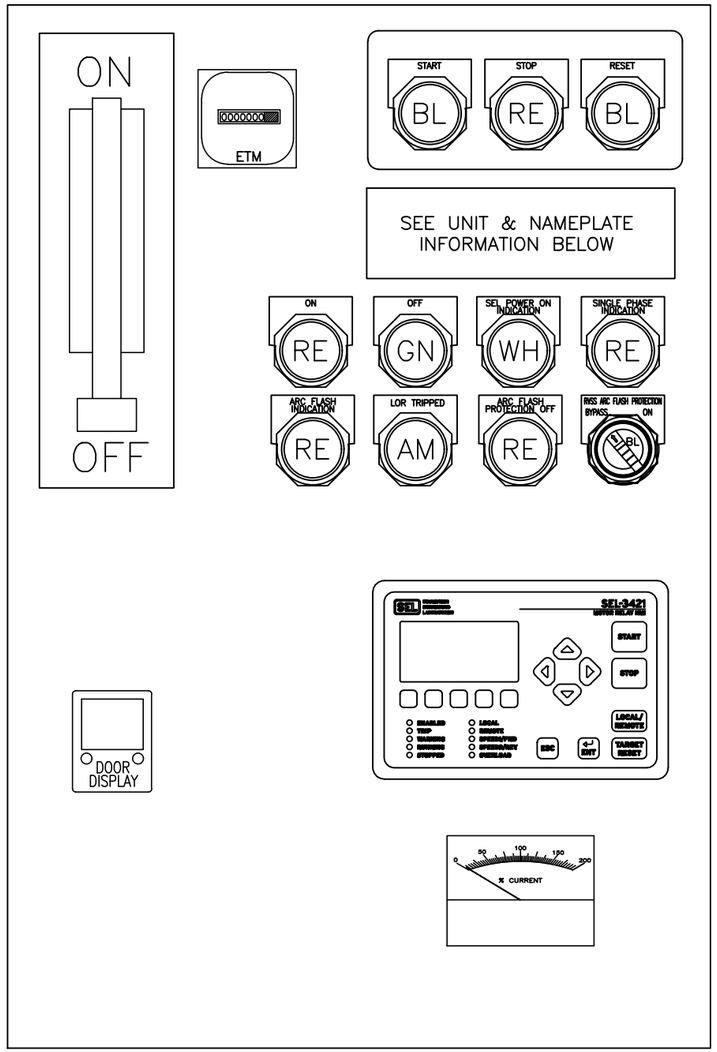


MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

UNIT 4A 120V Transformer

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A–BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048–001–02**	PG 1 OF 1 REV E

REV	DESCRIPTION	BY	DATE	J	ADDED S29450	VL	11/12/2019	L	UPDATED FUSE PINS	TB	11/16/2019
H	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	K	UPDATED CT INFO	DJO	11/15/2019	M	UPDATED PER QC	TR	12/05/2019



ITEM	CATALOG	DESCRIPTION
1	LLL36600U31X	CIRCUIT BREAKER 600A
	S29450	CB AUX/ALARM
2	5NR501	CURRENT TRANSFORMER MODEL 5NR
3	ATS48C32Y	ALTISTART 48 SOFT START 320 AMP
4	3090TB6	6 POLE SHORT CIRCUIT TERMINAL BLOCK
5	FNQ-R-1	FUSE – CLASS CC
6	FNQ-R-5	FUSE – CLASS CC
7	FNQ-R-6 1/4	FUSE – CLASS CC
8	9070TF500D1	500VA CONTROL TRANSFORMER
9	KP38LYA31	AMBER LED PILOT LIGHT – STANDARD, NEMA 4/13
10	KR1BH43	BLACK PUSH BUTTON – MOMENTARY, NEMA 4/13
11	00-823961	ANALOG AMMETER
12	KR1RH13	RED PUSH BUTTON – MOMENTARY, NEMA 4/13
13	CAD32G7	RELAY TeSys IEC TYPE 120V
14	RE22R2MYMR	TIMING RELAY – TYPE RE22
15	26403-12030	KESSLER-ELLIS ELAPSED TIME METER H57.55/UL 120V
16	KP38LRR31	RED LED PILOT LIGHT – STANDARD, NEMA 4/13
17	KP38LGG31	GREEN LED PILOT LIGHT – STANDARD, NEMA 4/13
18	LC1F330G7	IEC CONTACTOR 330A
19	LA9D09980	COIL SUPPRESSOR
20	KR1BH5	BLACK PUSH BUTTON – MOMENTARY, NEMA 4/13
21	FNQ-R-1/2	FUSE – CLASS CC
22	KP38LWW31	WHITE LED PILOT LIGHT – STANDARD, NEMA 4/13
23	CAD32G7	RELAY TeSys IEC TYPE 120V W/TIME DELAY AUX
	LADT0	TIME DELAY AUXILIARY CONTACT
24	DFCC3	3 POLE 30A CLASS CC FUSE HOLDER
25	9001-KS11BH24	SELECTOR SW – 2 POS MAINT, NEMA 4/13
26	9001SKPF1R31	FLASHING PILOT LIGHT-RED
27	CAD32G7	RELAY TeSys IEC TYPE 120V
	LAD6K10F	MECHANICAL LATCH BLOCK

MCC FACTORY ALTISTART 48 PARAMETER SETTINGS:

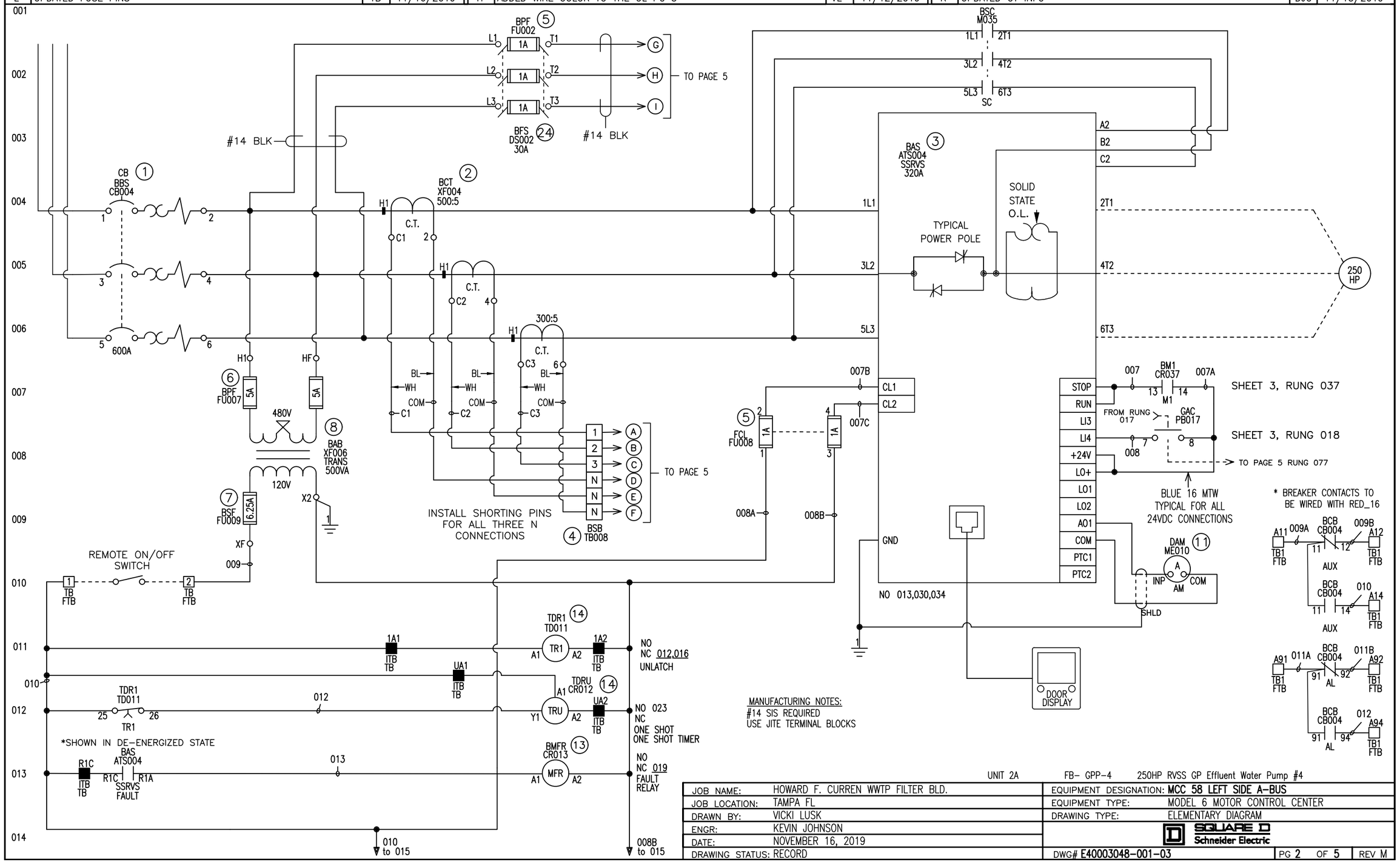
1. **Assign LI4 = LIR : FAULT RESET**
2. **ASSIGN PRO = THP : 20 SEVERE DUTY**
3. **ASSIGN R3 = RNL : MOTOR POWERD**

NOTE:
USE CAUTION WHEN CHANGING FACTORY-SET PARAMETERS. FACTORY-SET DRIVE PARAMETERS ARE CRITICAL FOR ALTISTART CONTROL AND POWER CONFIGURAIONS. DESCRIPTION OF PARAMETERS AND CODES CAN BE FOUND IN THE "PROGRAMMING" SECTION OF INSTRUCTION BULLETIN 30072-450-61 SHIPPED WITH THE CONTROLLER.

UNIT 2A FB- GPP-4 250HP RVSS GP Effluent Water Pump #4

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-001-03**	PG 1 OF 5 REV M

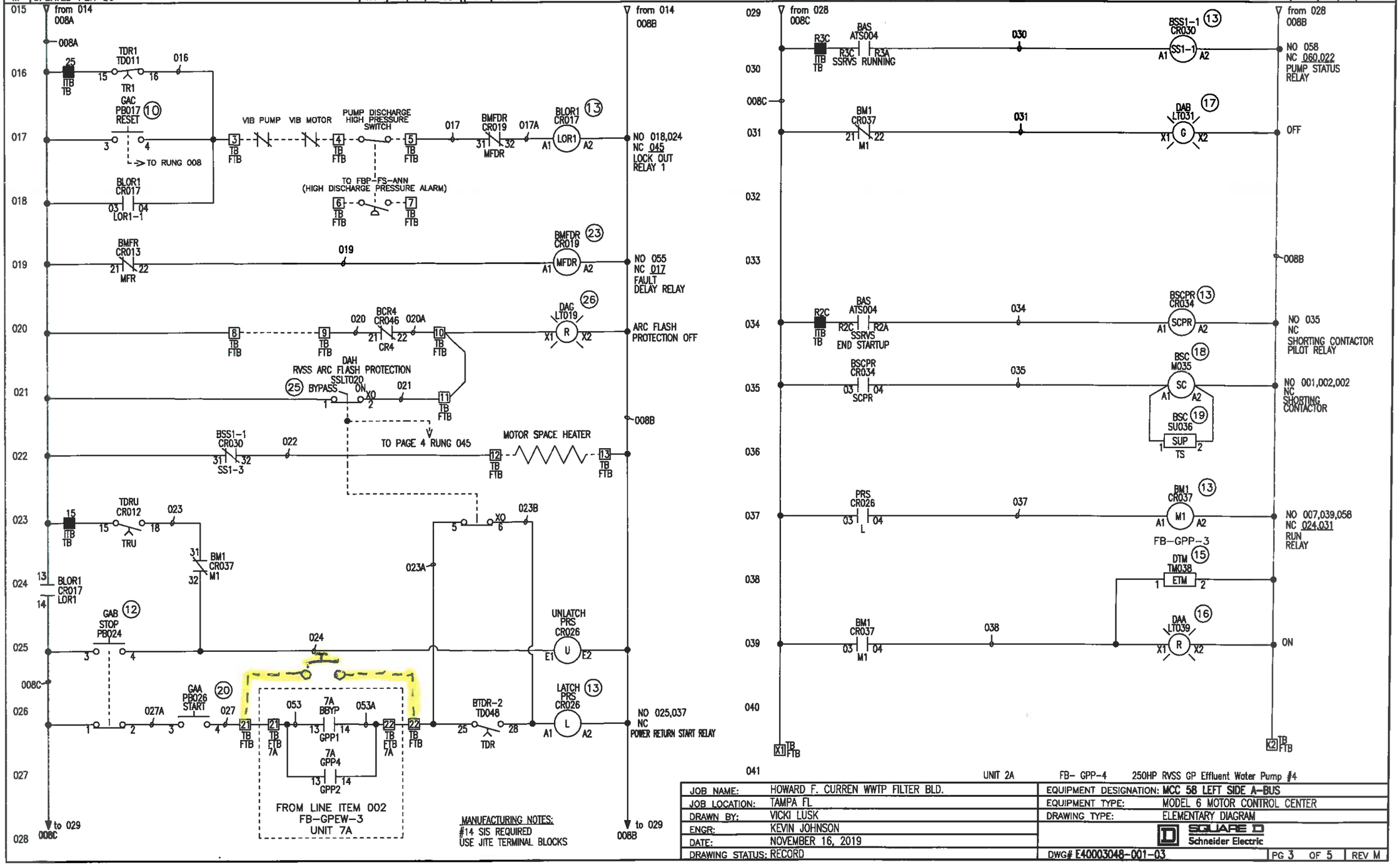
REV	DESCRIPTION	BY	DATE	M	UPDATED PER QC	TR	12/05/2019	J	ADDED S29450	VL	11/12/2019
L	UPDATED FUSE PINS	TB	11/16/2019	H	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	K	UPDATED CT INFO	DJO	11/15/2019



UNIT 2A FB- GPP-4 250HP RVSS GP Effluent Water Pump #4

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-03	PG 2 OF 5 REV M

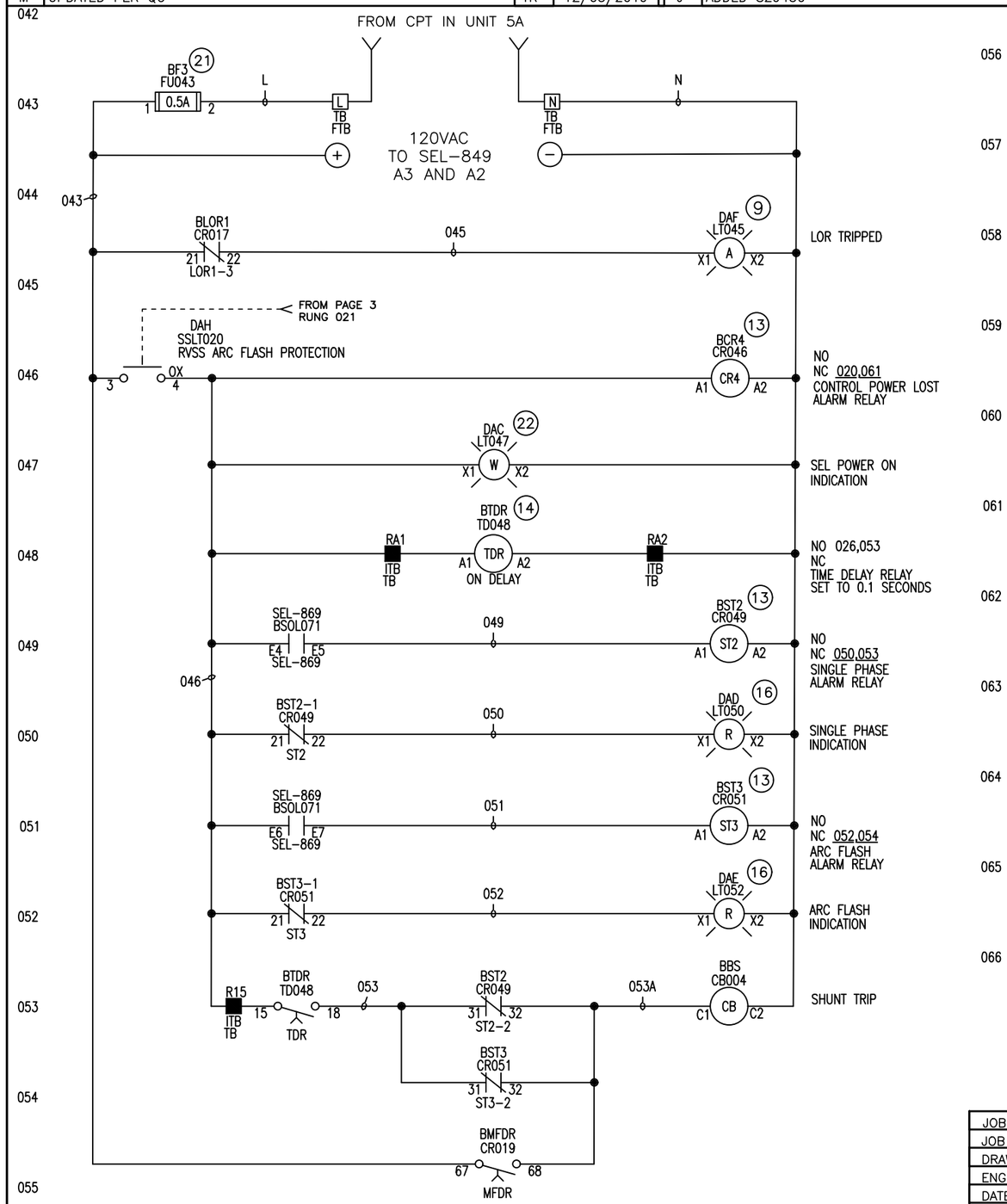
REV	DESCRIPTION	BY	DATE							
M	UPDATED PER QC	TR	12/05/2019	H	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	K	UPDATED CT INFO	DJO 11/15/2019
				J	ADDED S29450	VL	11/12/2019	L	UPDATED FUSE PINS	TB 11/16/2019



UNIT 2A FB- GPP-4 250HP RVSS GP Effluent Water Pump #4

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-03	PG 3 OF 5 REV M

REV	DESCRIPTION	BY	DATE	H	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	K	UPDATED CT INFO	DJO	11/15/2019
M	UPDATED PER QC	TR	12/05/2019	J	ADDED S29450	VL	11/12/2019	L	UPDATED FUSE PINS	TB	11/16/2019



*NOTE 1 : IF LOCKOUT RELAY IS DE ENERGIZED MOTOR SPACE HEATER WILL BE INACTIVE. SHOULD MOTOR SPACE HEATER BE MOVED IN THE CIRCUIT TO BE BEFORE LOR1 CONTACT ?

*NOTE 2 : VERIFY LOGIC OF TR1, TRU AND LOR1. APPEARS LOR1 WILL REMOVE VOLTAGE FROM TRU BEFORE UNLATCH OCCURS.

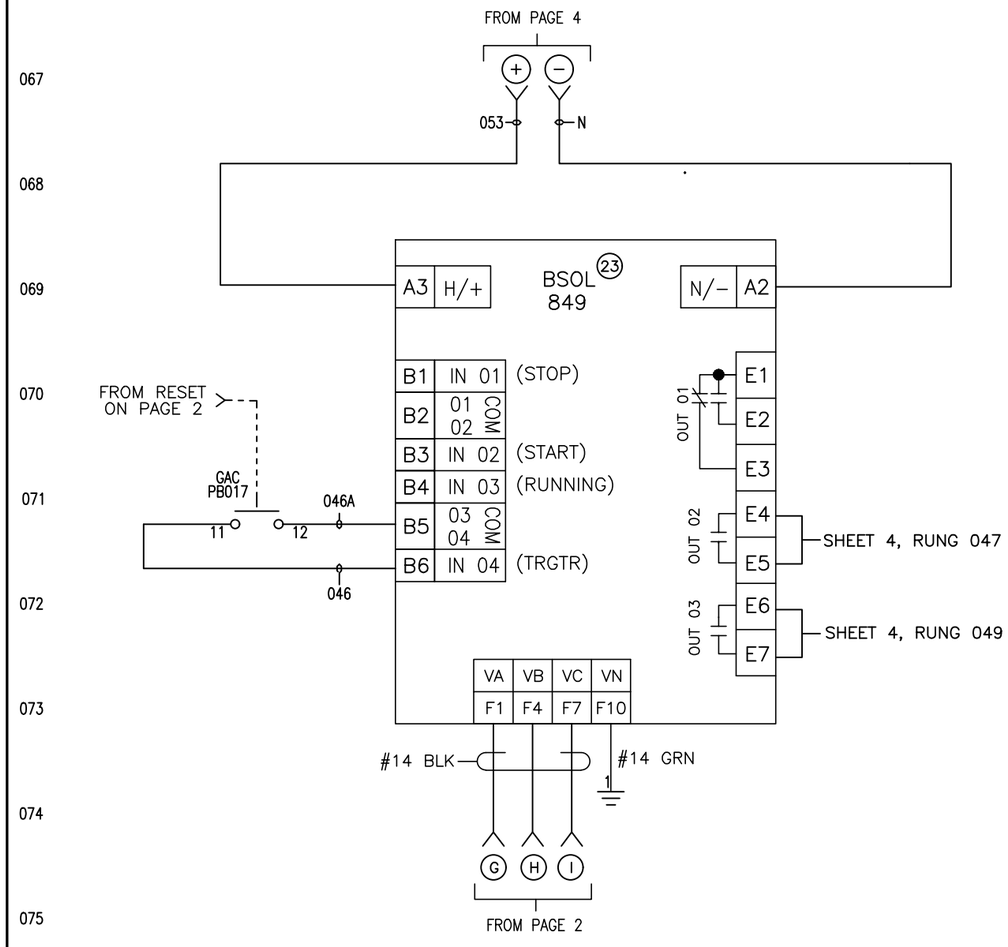
*NOTE 3 : VERIFY LOGIC OF LOR1 AND TDRU. CONCERNED THAT A LOGIC RACE CONDITION MAY OCCUR FOR UNLATCH FUNCTION.

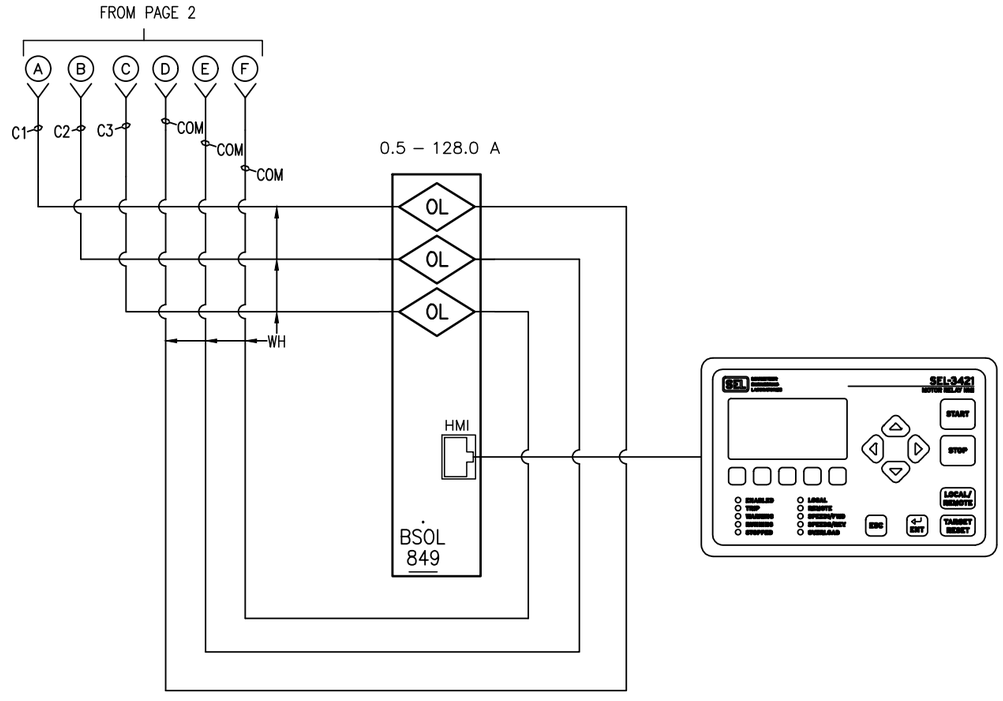
MANUFACTURING NOTES:
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UNIT 2A FB- GPP-4 250HP RVSS GP Effluent Water Pump #4

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-03	PG 4 OF 5 REV M

REV	DESCRIPTION	BY	DATE	H	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	K	UPDATED CT INFO	DJO	11/15/2019
M	UPDATED PER QC	TR	12/05/2019	J	ADDED S29450	VL	11/12/2019	L	UPDATED FUSE PINS	TB	11/16/2019



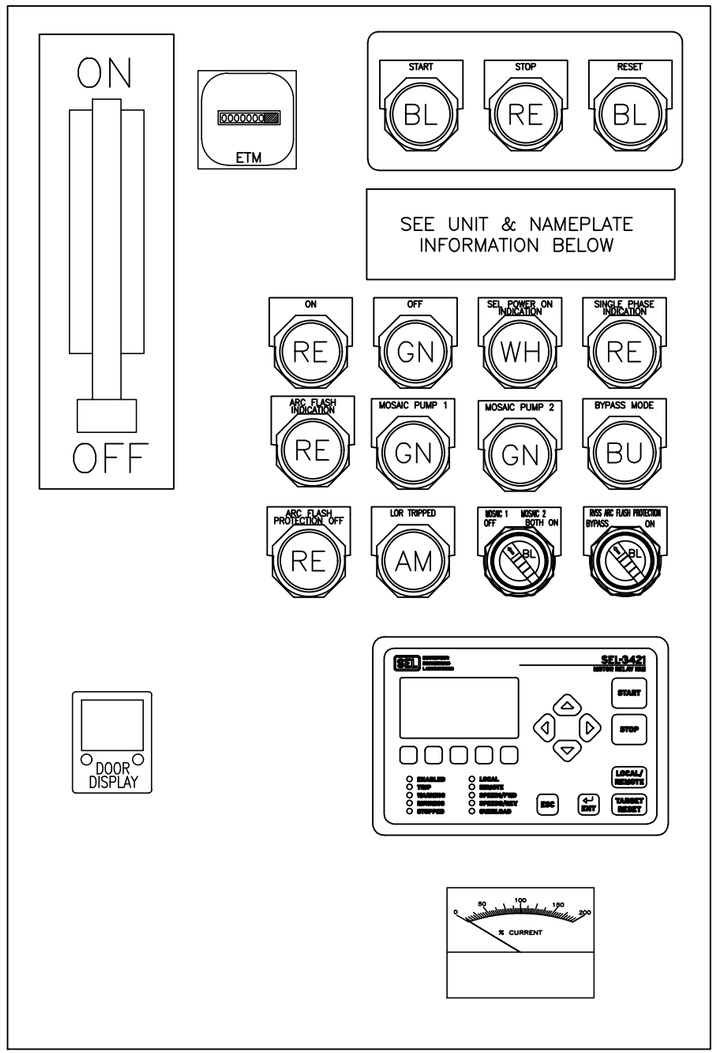


MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

UNIT 2A FB– GPP–4 250HP RVSS GP Effluent Water Pump #4

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A–BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048–001–03	PG 5 OF 5 REV M

REV	DESCRIPTION	BY	DATE	J	CORRECTED WL	VL	11/11/2019	L	ADDED S29450	VL	11/12/2019
N	UPDATED PER QC	TR	12/05/2019	K	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	M	UPDATED FUSE PINS	TB	11/16/2019



MCC FACTORY ALTISTART 48 PARAMETER SETTINGS:

1. **Assign LI4 = LIR : FAULT RESET**
2. **ASSIGN PRO = THP : 20 SEVERE DUTY**
3. **ASSIGN R3 = RNL : MOTOR POWERD**

NOTE:
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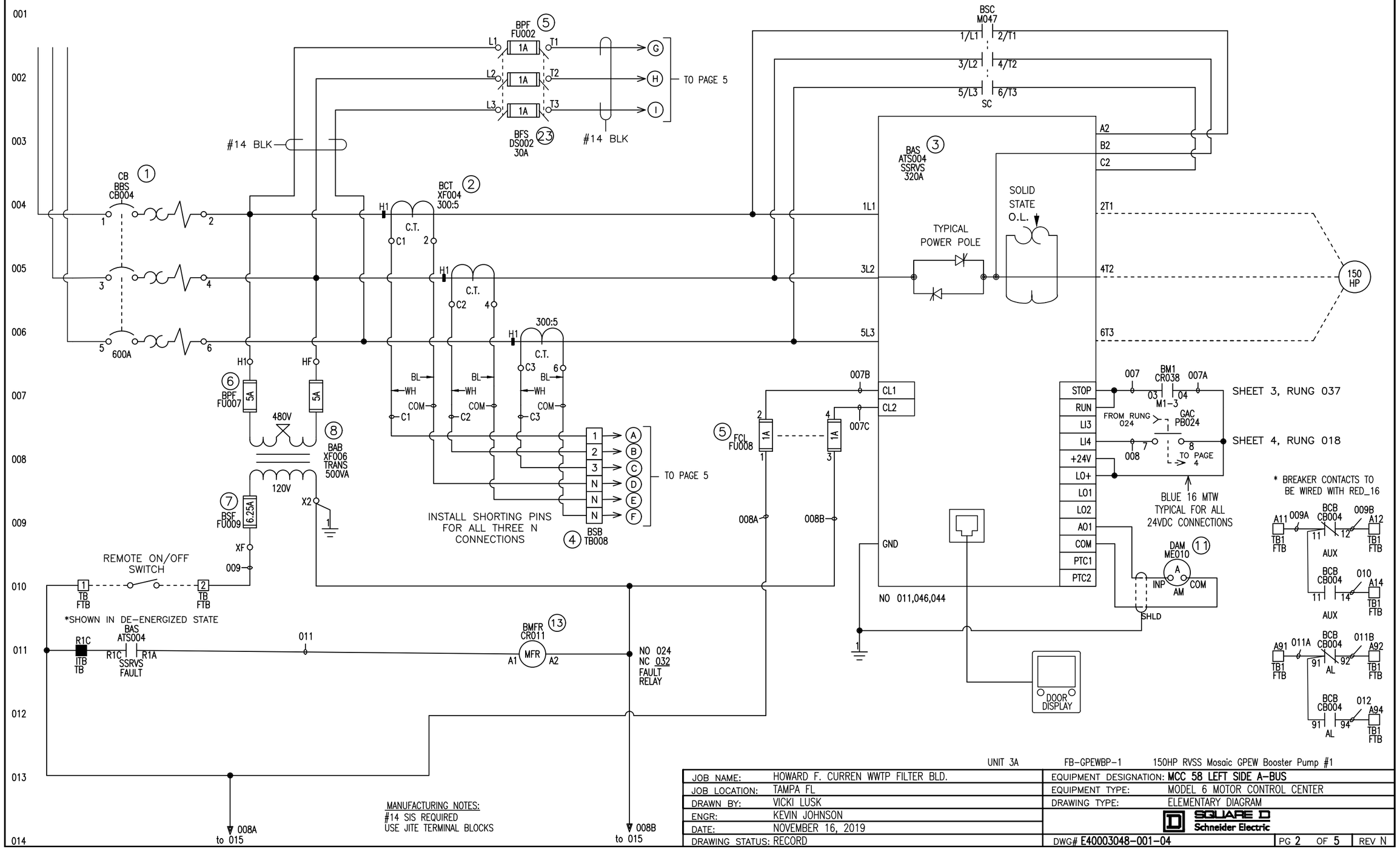
ITEM	CATALOG	DESCRIPTION
1	LLL36600U31XAABCSA	CIRCUIT BREAKER 600A WITH SHUNT TRIP
2	2NR301	CURRENT TRANSFORMER MODEL 2NR
3	ATS48C32Y	ALTISTART 48 SOFT START 320 AMP
4	3090TB6	6 POLE SHORT CIRCUIT TERMINAL BLOCK
5	FNQ-R-1	FUSE - CLASS CC
6	FNQ-R-5	FUSE - CLASS CC
7	FNQ-R-6 1/4	FUSE - CLASS CC
8	9070TF500D1	500VA CONTROL TRANSFORMER
9	KP38LWW31	WHITE LED PILOT LIGHT - STANDARD, NEMA 4/13
10	KR1BH43	BLACK PUSH BUTTON - MOMENTARY, NEMA 4/13
11	00-823961	ANALOG AMMETER
12	RE22R2MYMR	TIMING RELAY - TYPE RE22
13	CAD32G7	RELAY TeSys IEC TYPE 120V
14	9001SKPF1R31	FLASHING PILOT LIGHT-RED
15	KR1RH6	RED PUSH BUTTON - MOMENTARY, NEMA 4/13
16	26403-12030	KESSLER-ELLIS ELAPSED TIME METER H57.55/UL 120V
17	KP38LRR31	RED LED PILOT LIGHT - STANDARD, NEMA 4/13
18	KP38LGG31	GREEN LED PILOT LIGHT - STANDARD, NEMA 4/13
19	LC1F265F7	CONTACTOR TESYS LC1-F - 3P - AC-3 440V 265A - COIL 110VAC
20	LA9D09980	COIL SUPPRESSOR
21	FNQ-R-1/2	FUSE - CLASS CC
22	KP38LYA31	AMBER LED PILOT LIGHT - STANDARD, NEMA 4/13
23	DFCC3	3 POLE 30A CLASS CC FUSE HOLDER
24	KP38LLL31	BLUE LED PILOT LIGHT - STANDARD, NEMA 4/13
25	9001-KS88BH3	SELECTOR SW - 4 POS MAINT, NEMA 4/13
26	9001-KS11BH24	SELECTOR SW - 2 POS MAINT, NEMA 4/13
28	CAD32G7	RELAY TeSys IEC TYPE 120V W/TIME DELAY AUX
	LADT0	TIME DELAY AUXILIARY CONTACT
29	CAD32G7	RELAY TeSys IEC TYPE 120V
	LAD6K10F	MECHANICAL LATCH BLOCK
30	CAD32G7	RELAY TeSys IEC TYPE 120V
	LADN22	AUXILIARY CONTACT BLOCK IEC
31	KR1BH5	BLACK PUSH BUTTON - MOMENTARY, NEMA 4/13

UNIT 3A FB-GPEWBP-1 150HP RVSS Mosaic GPEW Booster Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG#	**E40003048-001-04**

PG 1 OF 5 REV N

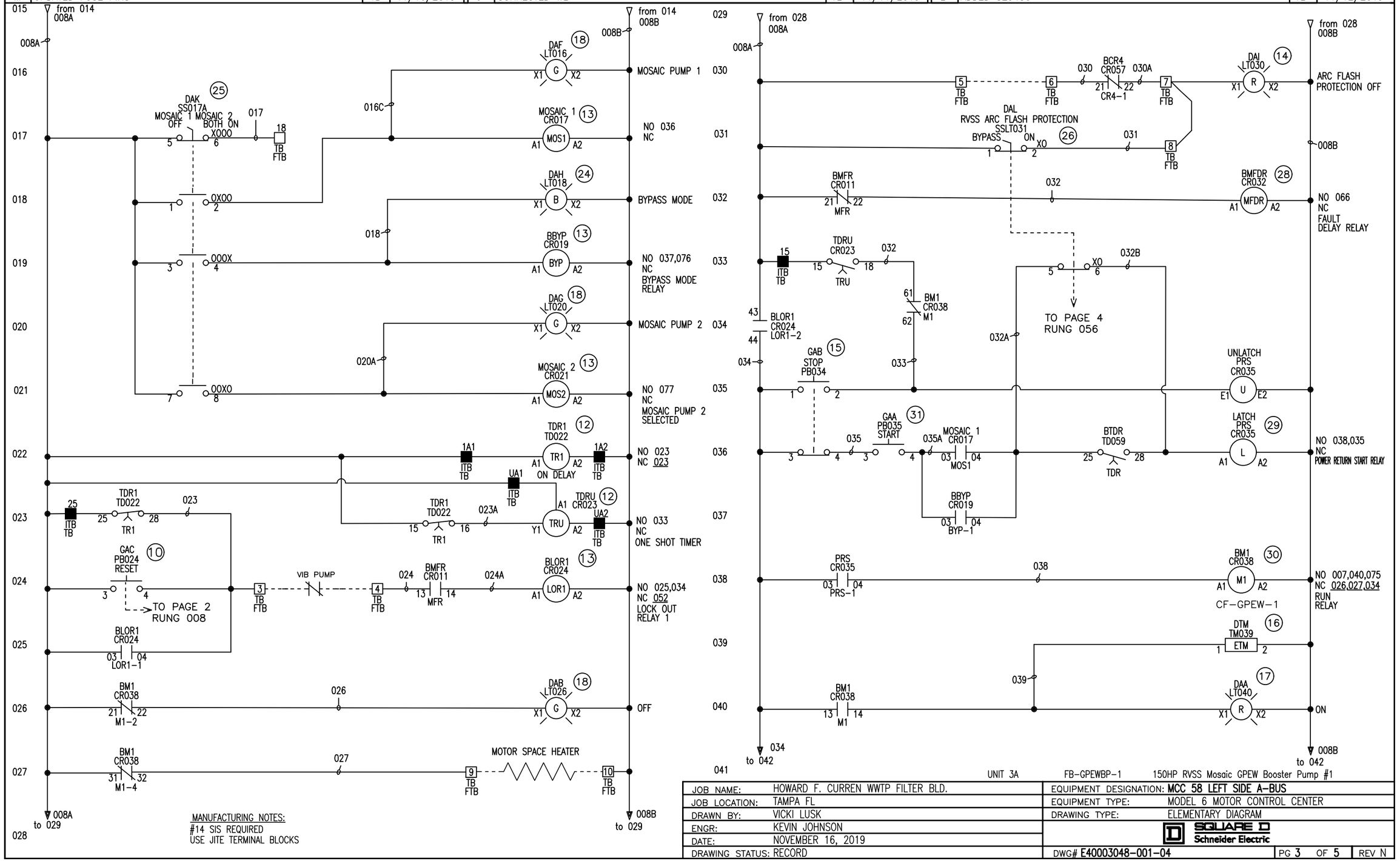
REV	DESCRIPTION	BY	DATE	J	CORRECTED WL	VL	11/11/2019	L	ADDED S29450	VL	11/12/2019
N	UPDATED PER QC	TR	12/05/2019	K	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	M	UPDATED FUSE PINS	TB	11/16/2019



UNIT 3A FB-GPEWBP-1 150HP RVSS Mosaic GPEW Booster Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG#	E40003048-001-04

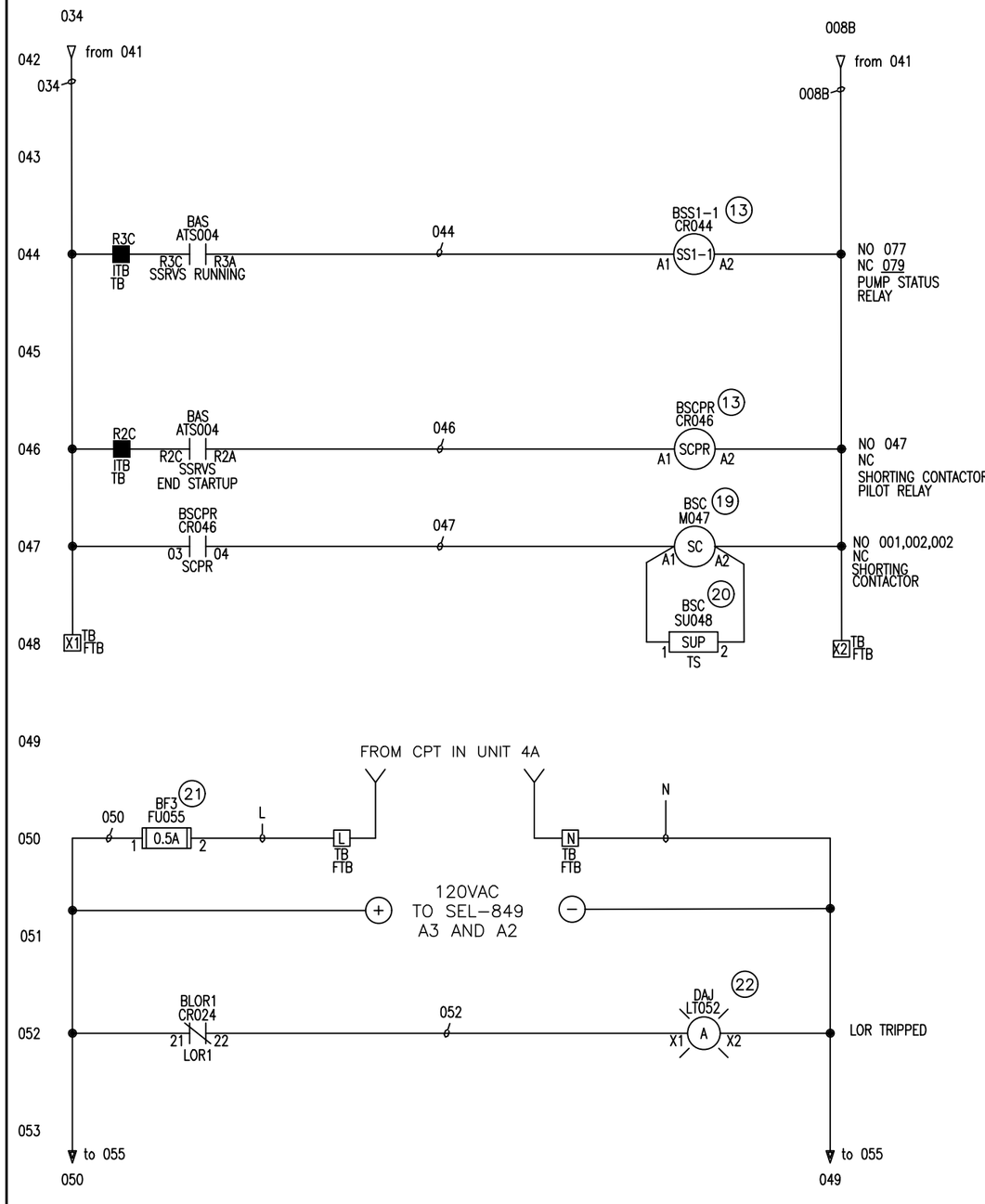
REV	DESCRIPTION	BY	DATE	N	UPDATED PER QC	TR	12/05/2019	K	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019
M	UPDATED FUSE PINS	TB	11/16/2019	J	CORRECTED WL	VL	11/11/2019	L	ADDED S29450	VL	11/12/2019

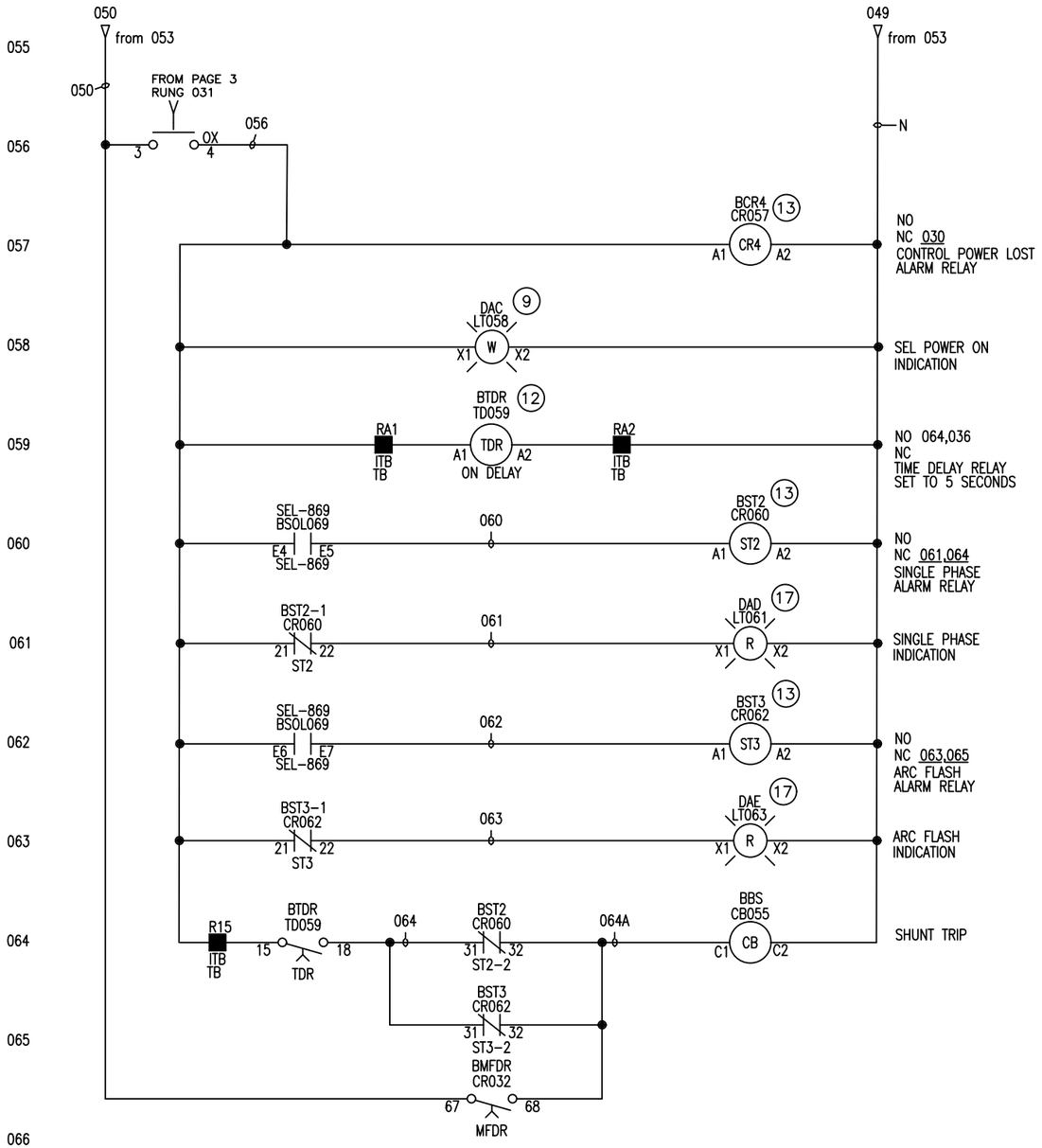


UNIT 3A FB-GPEWBP-1 150HP RVSS Mosaic GPEW Booster Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-04	PG 3 OF 5 REV N

REV	DESCRIPTION	BY	DATE	M	UPDATED FUSE PINS	TB	11/16/2019	J	CORRECTED WL	VL	11/11/2019
L	ADDED S29450	VL	11/12/2019	N	UPDATED PER QC	TR	12/05/2019	K	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019

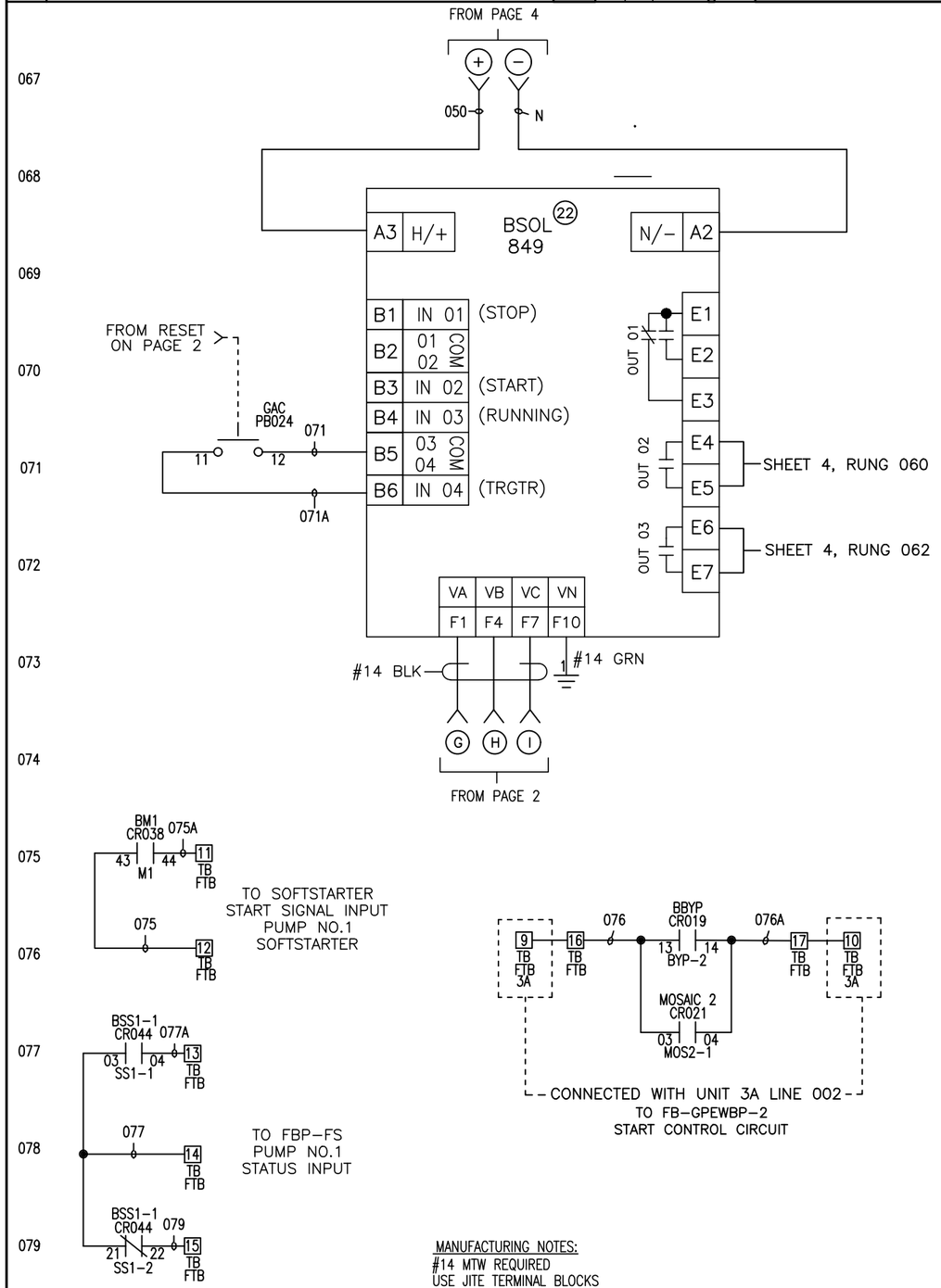


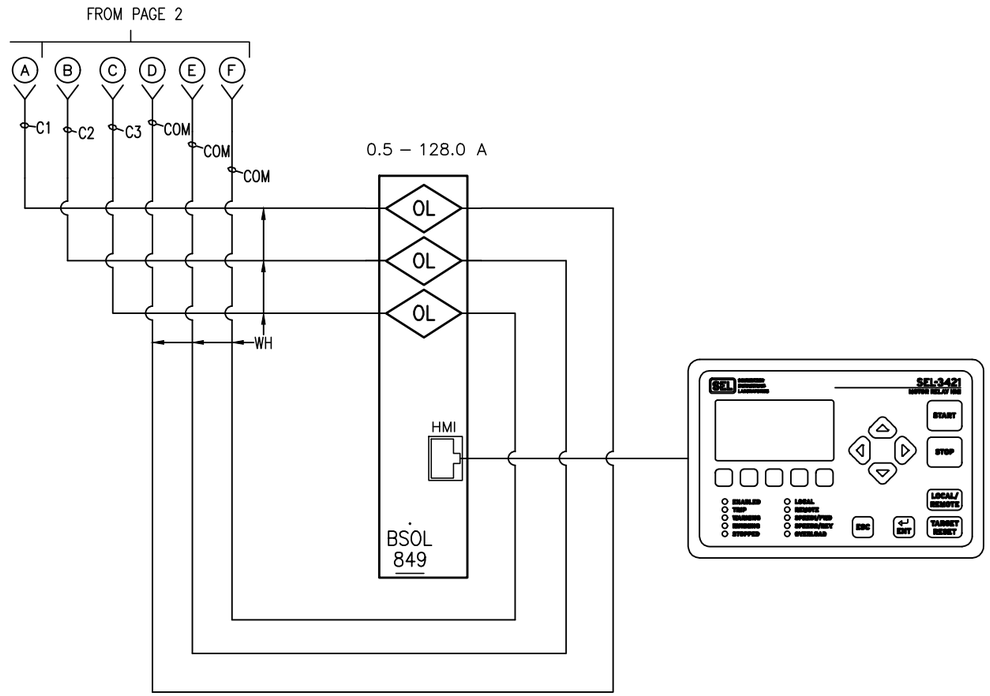


UNIT 3A FB-GPEWBP-1 150HP RVSS Mosaic GPEW Booster Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-001-04**	PG **4** OF **5** REV N

REV	DESCRIPTION	BY	DATE	N	UPDATED PER QC	TR	12/05/2019	K	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019
M	UPDATED FUSE PINS	TB	11/16/2019	J	CORRECTED WL	VL	11/11/2019	L	ADDED S29450	VL	11/12/2019





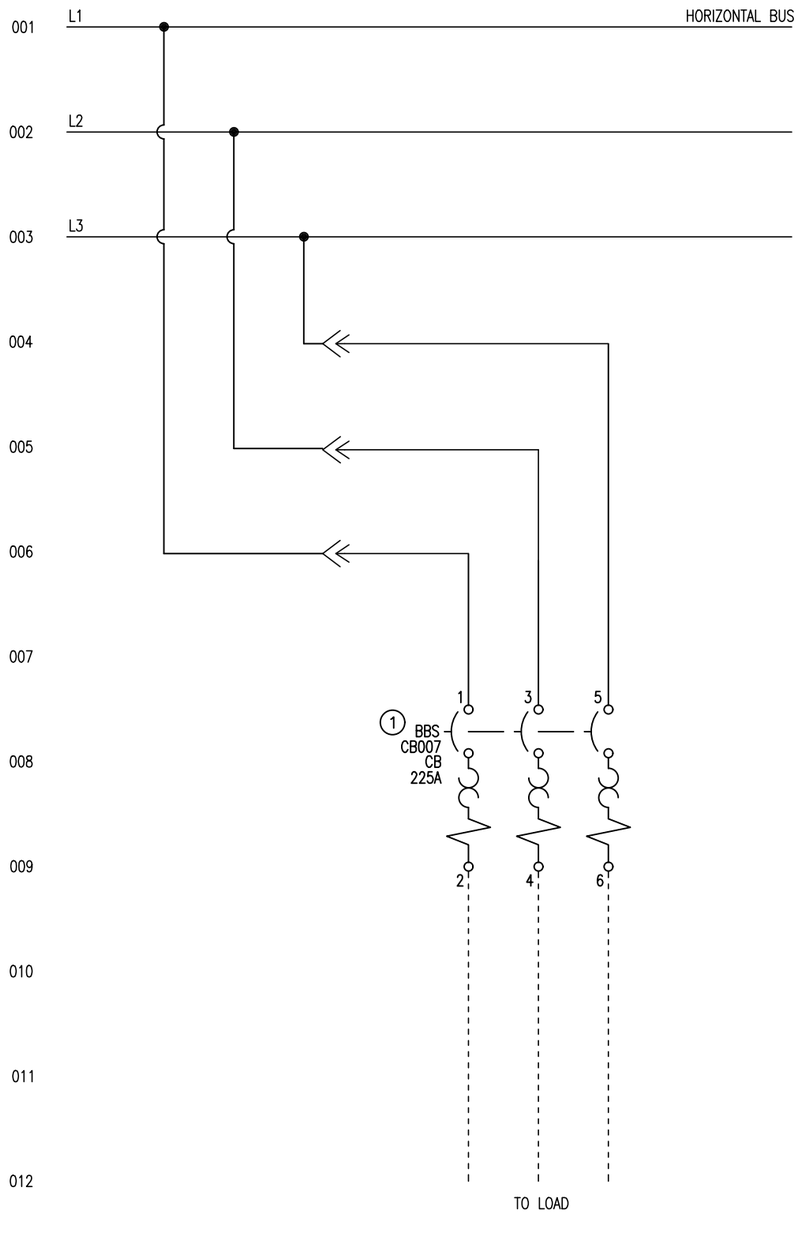
MANUFACTURING NOTES:
#14 MTW REQUIRED
USE JITE TERMINAL BLOCKS

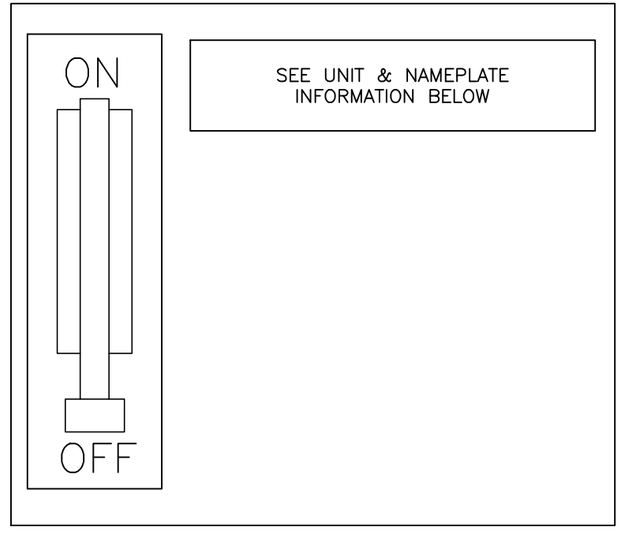
UNIT 3A FB-GPEWBP-1 150HP RVSS Mosaic GPEW Booster Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-04	PG 5 OF 5 REV N

REV	DESCRIPTION	BY	DATE								
B	PER CUSTOMER CHANGES	NMK	04/10/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019	A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018
				E	RELEASED TO MANUFACTURING	VL	09/26/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

ITEM	CATALOG	DESCRIPTION
1	JJP36225	POWERPACT J-FRAME TM CIRCUIT BREAKER 225A



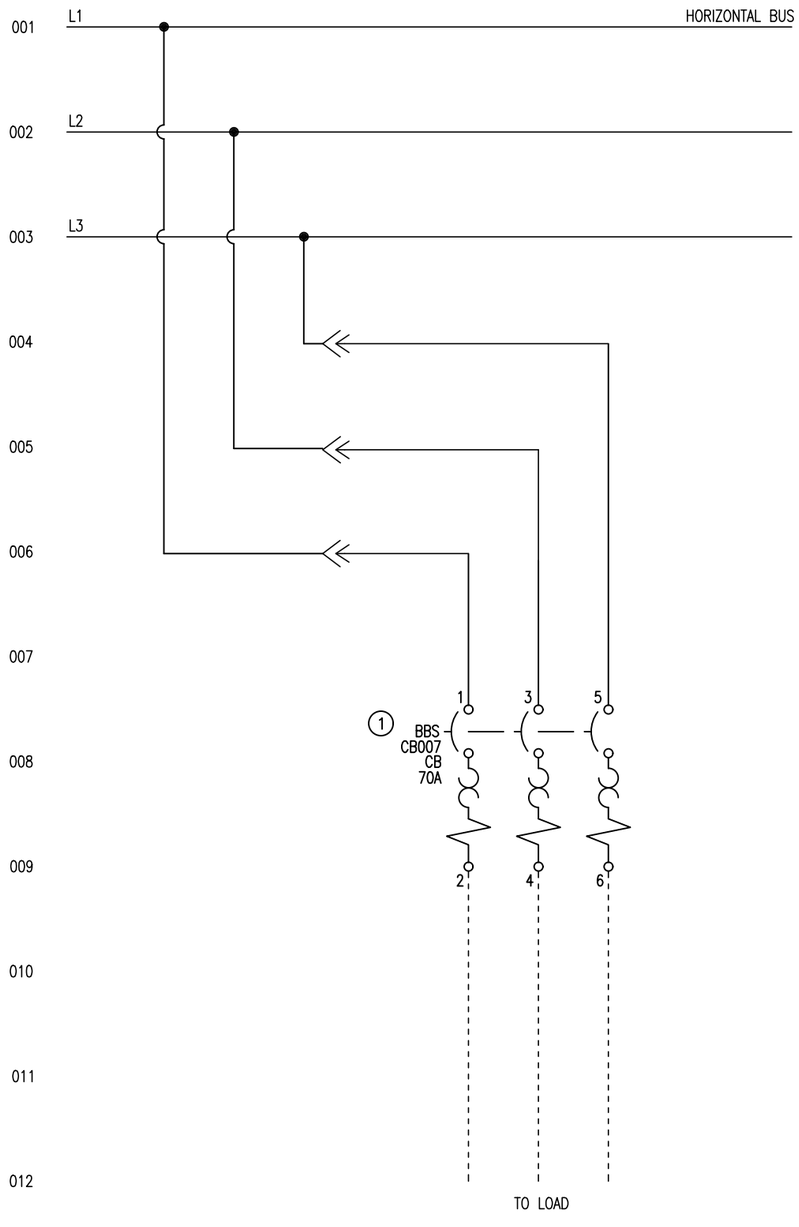


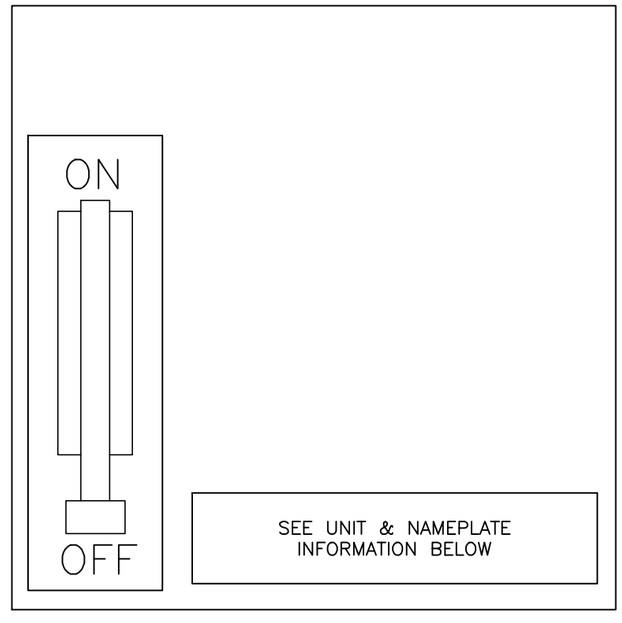
UNIT 4E 225A Feeder to Pilot Plant

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-001-05**	PG 1 OF 1 REV E

REV	DESCRIPTION	BY	DATE
B	PER CUSTOMER CHANGES	NMK	04/10/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019
E	RELEASED TO MANUFACTURING	VL	09/26/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018
C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

ITEM	CATALOG	DESCRIPTION
1	HJL36070	POWERPACT H–FRAME TM CIRCUIT BREAKER 70A



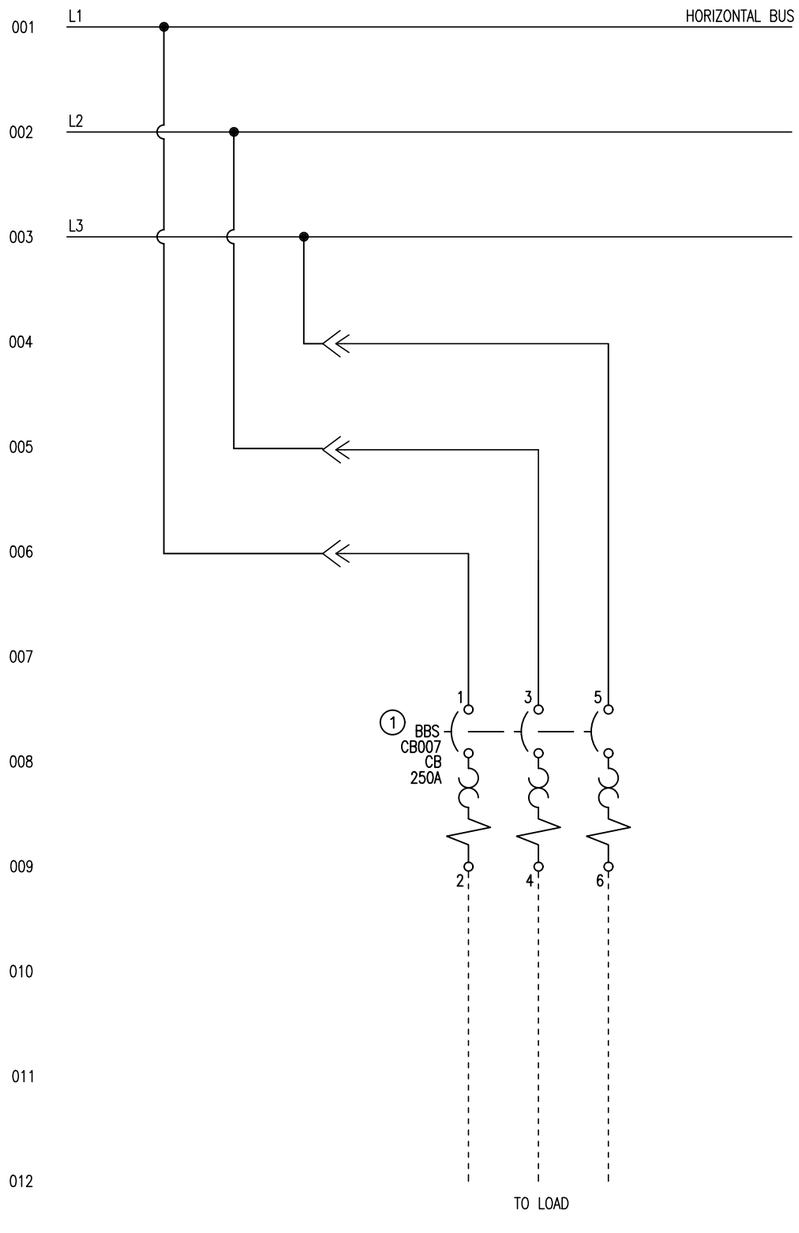


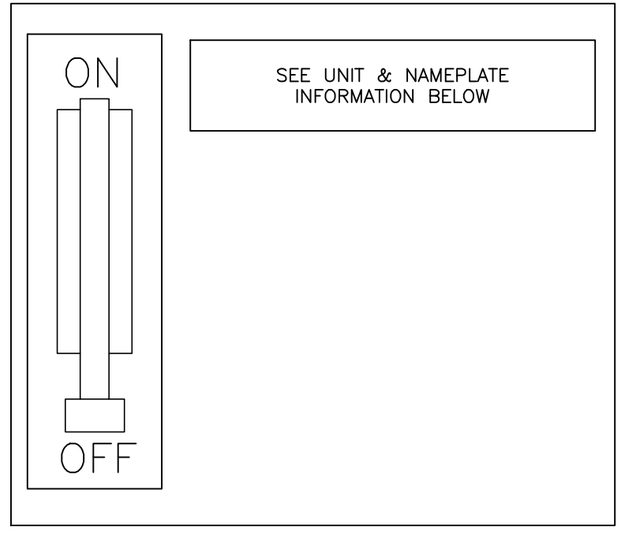
UNIT 4K 70A Feeder to LP–53 Transfer

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A–BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048–001–06**	PG 1 OF 1 REV E

REV	DESCRIPTION	BY	DATE
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018
B	PER CUSTOMER CHANGES	NMK	04/10/2019
C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019
E	RELEASED TO MANUFACTURING	VL	09/26/2019

ITEM	CATALOG	DESCRIPTION
1	JJP36250	POWERPACT J-FRAME TM CIRCUIT BREAKER 250A

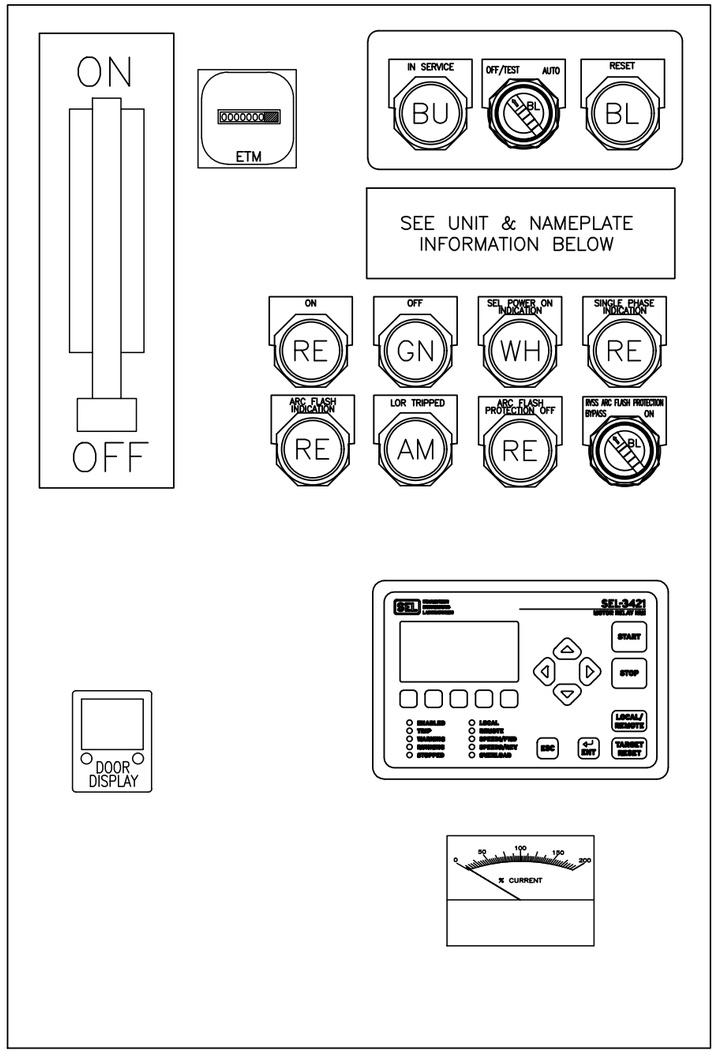




UNIT 40 250A Feeder to MCC-58A Bus-A

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-001-07**	PG 1 OF 1 REV E

REV	DESCRIPTION	BY	DATE	J	REVISED TERMINALS AT INTERWIRING	VL	11/13/2019	L	UPDATED CT INFO	DJO	11/15/2019
N	UPDATED PER QC	TR	12/05/2019	K	REVISED PINS	VL	11/14/2019	M	UPDATED FUSE PINS	TB	11/16/2019



ITEM	CATALOG	DESCRIPTION
1	LLL36600U31XAABCSA	CIRCUIT BREAKER 600A WITH SHUNT TRIP
2	5NR501	CURRENT TRANSFORMER MODEL 5NR
3	ATS48C66Y	ALTISTART 48 SOFT START 660 AMP
4	3090TB6	6 POLE SHORT CIRCUIT TERMINAL BLOCK
5	FNQ-R-1	FUSE – CLASS CC
6	FNQ-R-5	FUSE – CLASS CC
7	FNQ-R-6 1/4	FUSE – CLASS CC
8	9070TF500D1	500VA CONTROL TRANSFORMER
9	KP38LYA31	AMBER LED PILOT LIGHT – STANDARD, NEMA 4/13
10	KR1BH43	BLACK PUSH BUTTON – MOMENTARY, NEMA 4/13
11	00-823961	ANALOG AMMETER
12	KP38LLL31	BLUE LED PILOT LIGHT – STANDARD, NEMA 4/13
13	CAD32G7	RELAY TeSys IEC TYPE 120V W/TIME DELAY AUX
	LADT0	TIME DELAY AUXILIARY CONTACT
13	CAD32G7	RELAY TeSys IEC TYPE 120V
14	RE22R2MYMR	TIMING RELAY – TYPE RE22
15	9001-KS11BH24	SELECTOR SW – 2 POS MAINT, NEMA 4/13
16	26403-12030	KESSLER-ELLIS ELAPSED TIME METER H57.55/UL 120V
17	KP38LRR31	RED LED PILOT LIGHT – STANDARD, NEMA 4/13
18	KP38LGG31	GREEN LED PILOT LIGHT – STANDARD, NEMA 4/13
19	LC1F330G7	IEC CONTACTOR 330A
20	LA9D09980	COIL SUPPRESSOR
21	FNQ-R-1/2	FUSE – CLASS CC
22	KP38LWW31	WHITE LED PILOT LIGHT – STANDARD, NEMA 4/13
23	CAD32G7	RELAY TeSys IEC TYPE 120V
	LADN22	AUX CONTACT BLOCK
25	DFCC3	3 POLE 30A CLASS CC FUSE HOLDER
26	9001SKPF1R31	FLASHING PILOT LIGHT-RED

MCC FACTORY ALTISTART 48 PARAMETER SETTINGS:

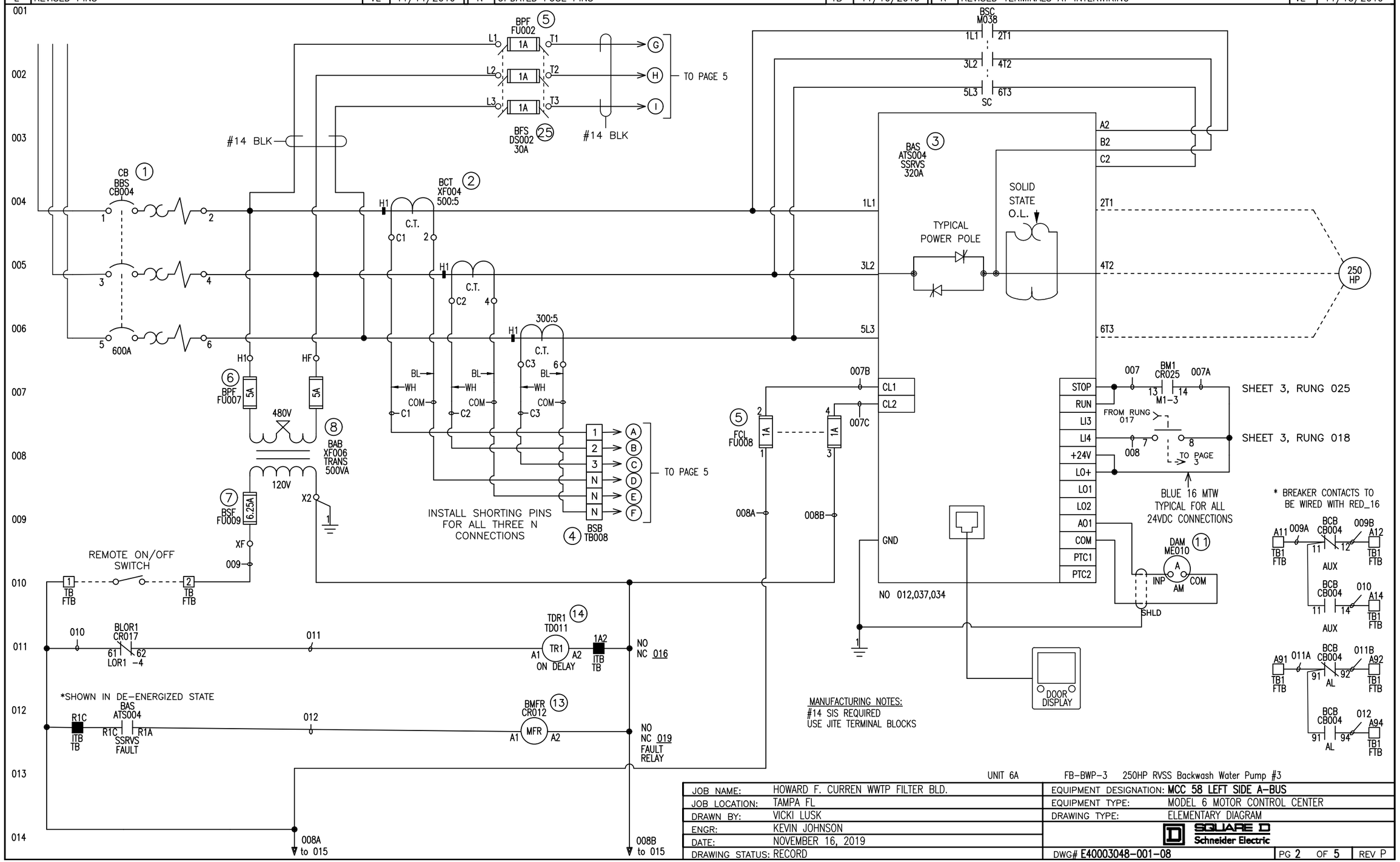
1. **Assign LI4 = LIR : FAULT RESET**
2. **ASSIGN PRO = THP : 20 SEVERE DUTY**
3. **ASSIGN R3 = RNL : MOTOR POWERD**

NOTE:
USE CAUTION WHEN CHANGING FACTORY-SET PARAMETERS. FACTORY-SET DRIVE PARAMETERS ARE CRITICAL FOR ALTISTART CONTROL AND POWER CONFIGURAIONS. DESCRIPTION OF PARAMETERS AND CODES CAN BE FOUND IN THE "PROGRAMMING" SECTION OF INSTRUCTION BULLETIN 30072-450-61 SHIPPED WITH THE CONTROLLER.

UNIT 6A FB-BWP-3 250HP RVSS Backwash Water Pump #3

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-08	PG 1 OF 5 REV N

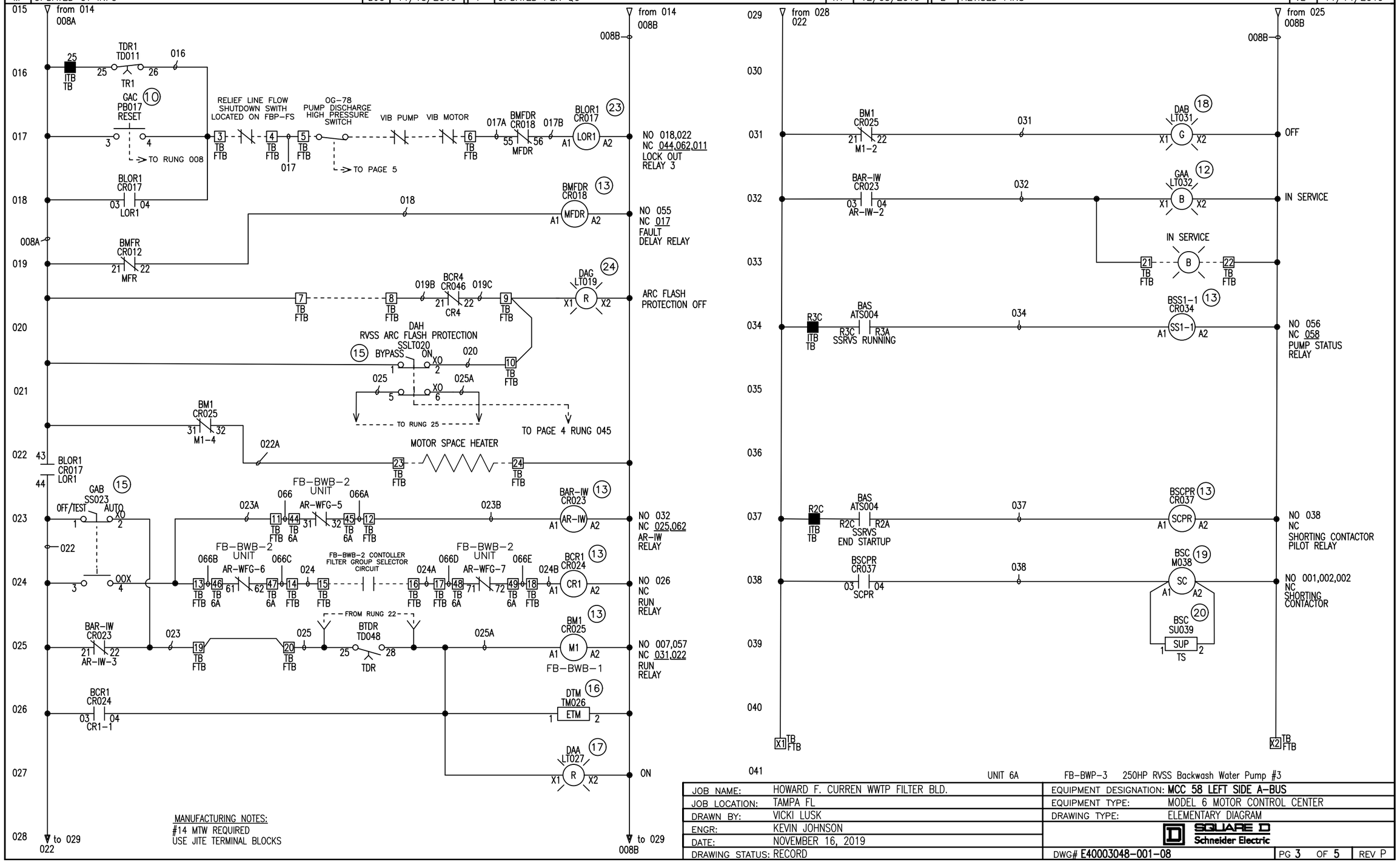
REV	DESCRIPTION	BY	DATE	M	UPDATED CT INFO	DJO	11/15/2019	P	UPDATED PER QC	TR	12/05/2019
L	REVISED PINS	VL	11/14/2019	N	UPDATED FUSE PINS	TB	11/16/2019	K	REVISED TERMINALS AT INTERWIRING	VL	11/13/2019



UNIT 6A FB-BWP-3 250HP RVSS Backwash Water Pump #3

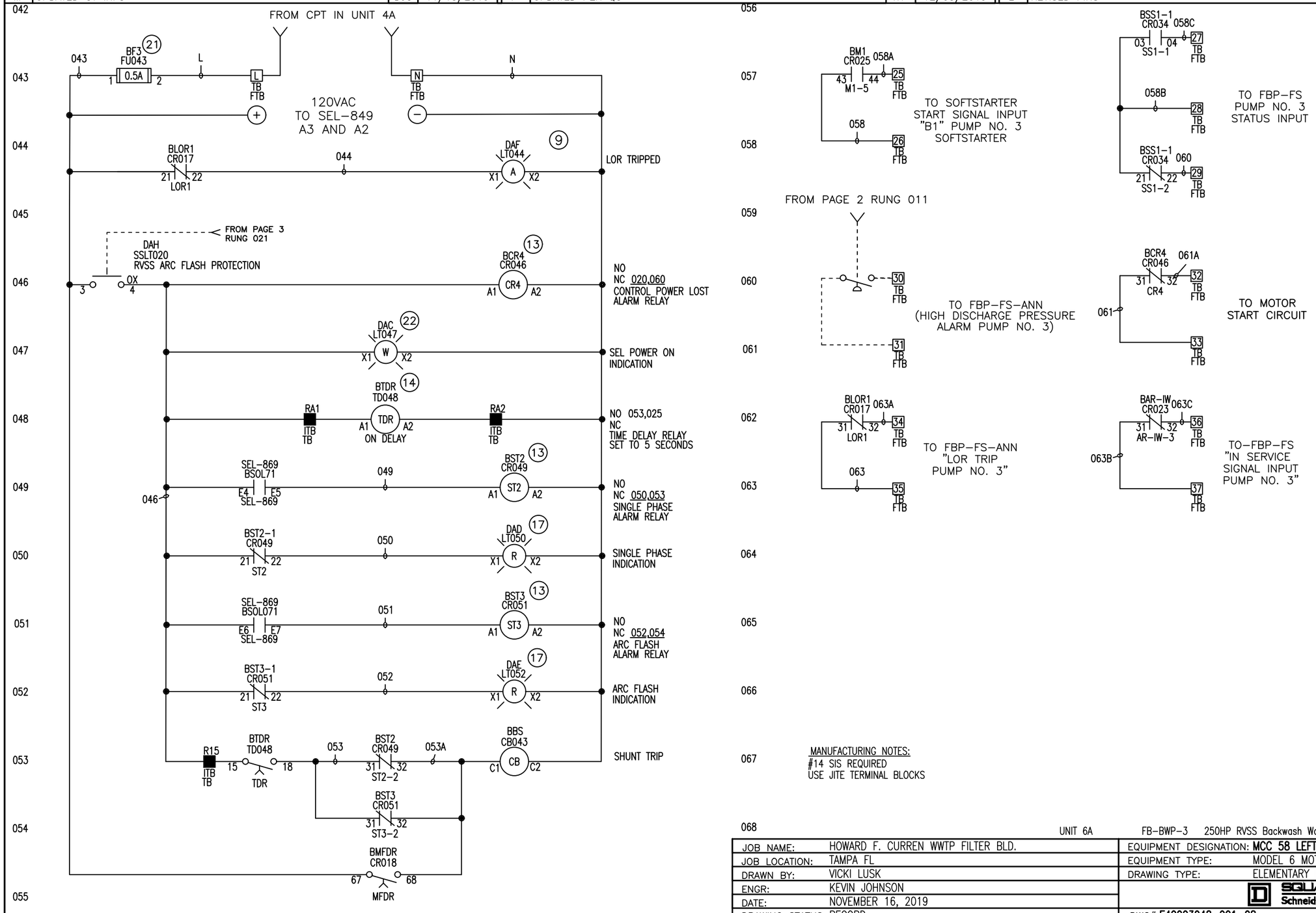
JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-08	PG 2 OF 5 REV P

REV	DESCRIPTION	BY	DATE	N	UPDATED FUSE PINS	TB	11/16/2019	K	REVISED TERMINALS AT INTERWIRING	VL	11/13/2019
M	UPDATED CT INFO	DJO	11/15/2019	P	UPDATED PER QC	TR	12/05/2019	L	REVISED PINS	VL	11/14/2019



JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG#	**E40003048-001-08**

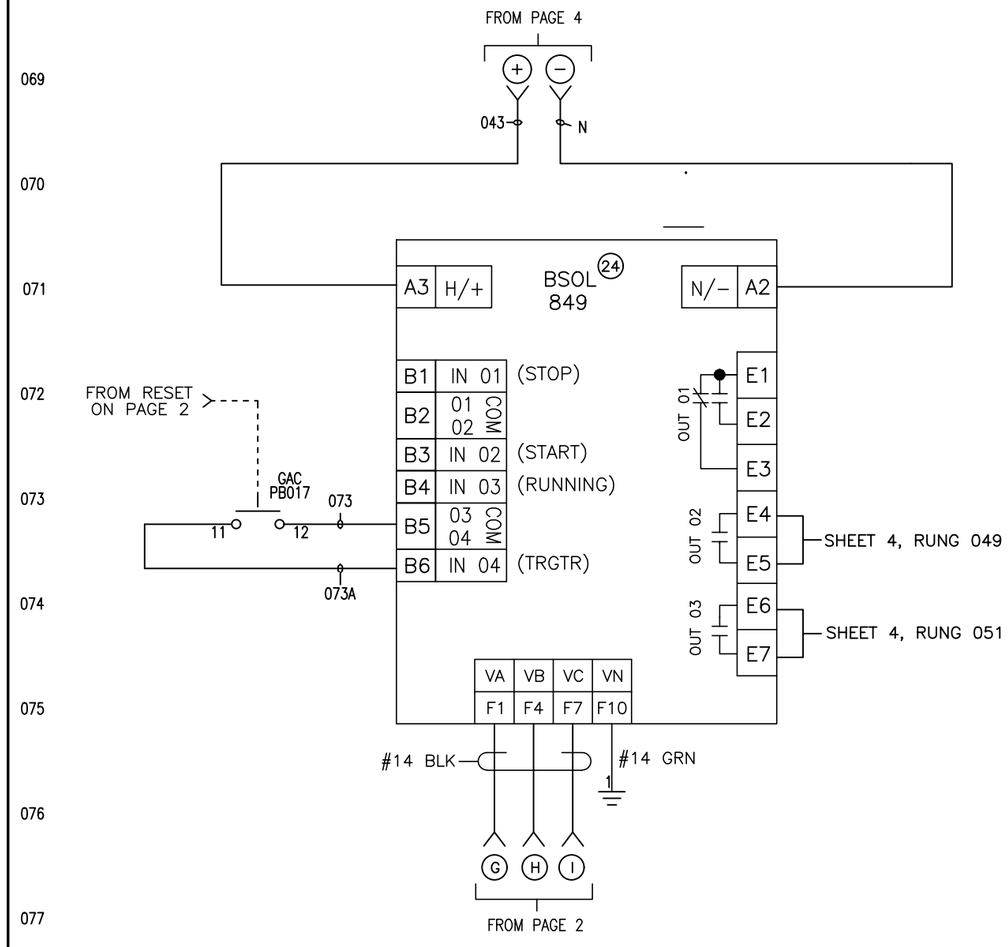
REV	DESCRIPTION	BY	DATE	N	UPDATED FUSE PINS	TB	11/16/2019	K	REVISED TERMINALS AT INTERWIRING	VL	11/13/2019
M	UPDATED CT INFO	DJO	11/15/2019	P	UPDATED PER QC	TR	12/05/2019	L	REVISED PINS	VL	11/14/2019

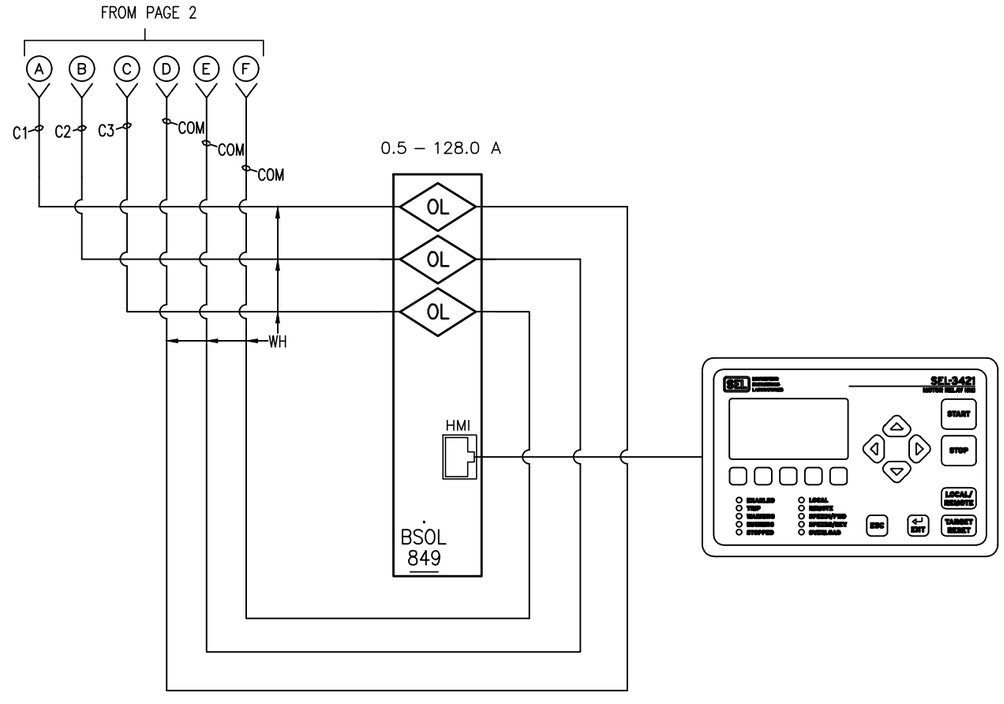


UNIT 6A FB-BWP-3 250HP RVSS Backwash Water Pump #3

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-08	PG 4 OF 5 REV P

REV	DESCRIPTION	BY	DATE	N	UPDATED FUSE PINS	TB	11/16/2019	K	REVISED TERMINALS AT INTERWIRING	VL	11/13/2019
M	UPDATED CT INFO	DJO	11/15/2019	P	UPDATED PER QC	TR	12/05/2019	L	REVISED PINS	VL	11/14/2019





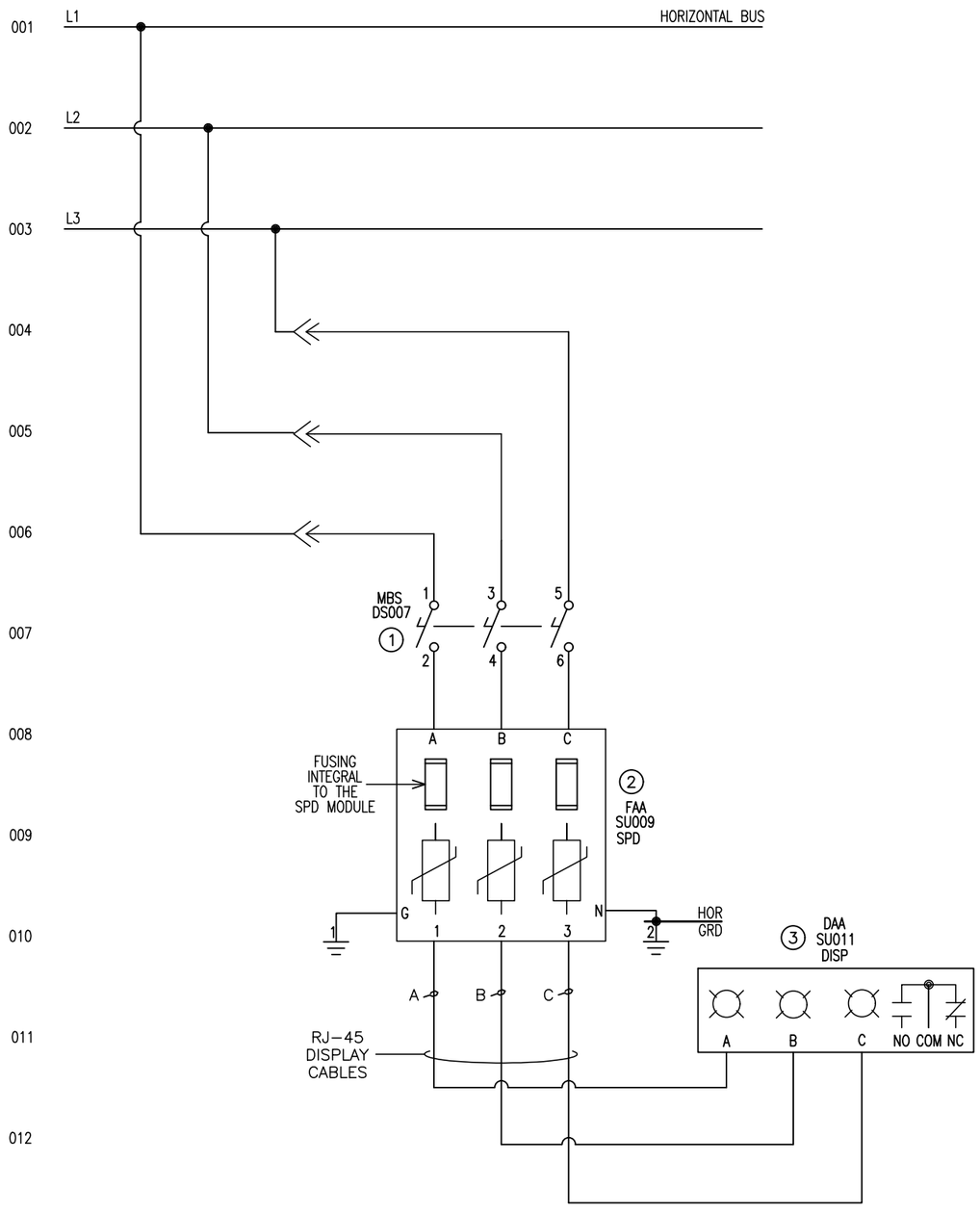
MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

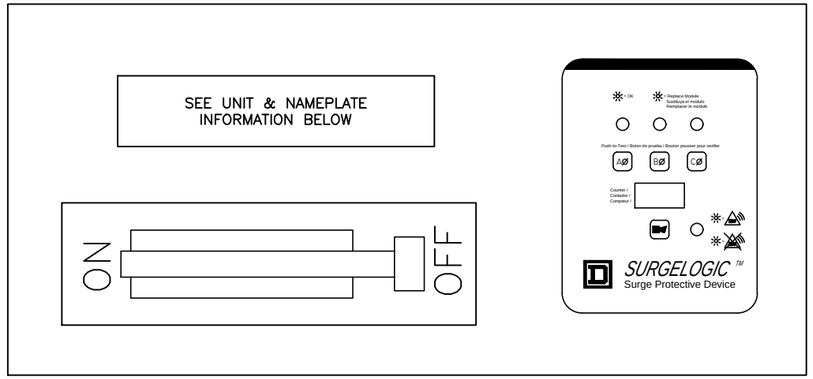
UNIT 6A FB-BWP-3 250HP RVSS Backwash Water Pump #3

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-08	PG 5 OF 5 REV P

REV	DESCRIPTION	BY	DATE	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018
B	PER CUSTOMER CHANGES	NMK	04/10/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019

ITEM	CATALOG	DESCRIPTION
1	40566-678-50	3 POLE LINE BASE ASY
2	TVS4IMA24M	SURGE PROTECTION DEVICE 240KA
3	TVS3DSPVC	SPD DISPLAY



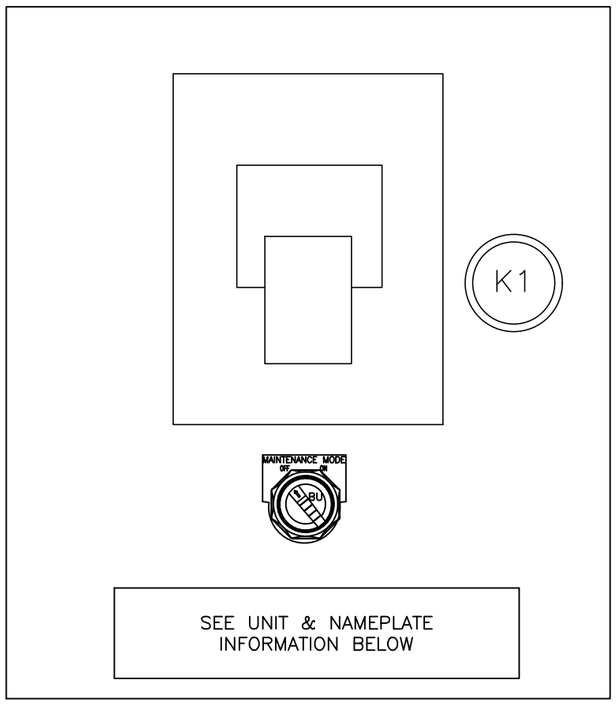


UNIT 7E SURGE PROTECTION DEVICE

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-09	PG 1 OF 1 REV E

REV	DESCRIPTION	BY	DATE	G	REVISED TO TOP INCOMING AND DAA SWITCH	VL	12/04/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019
F	ADDED WIRE COLOR NOTE	VL	11/14/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019

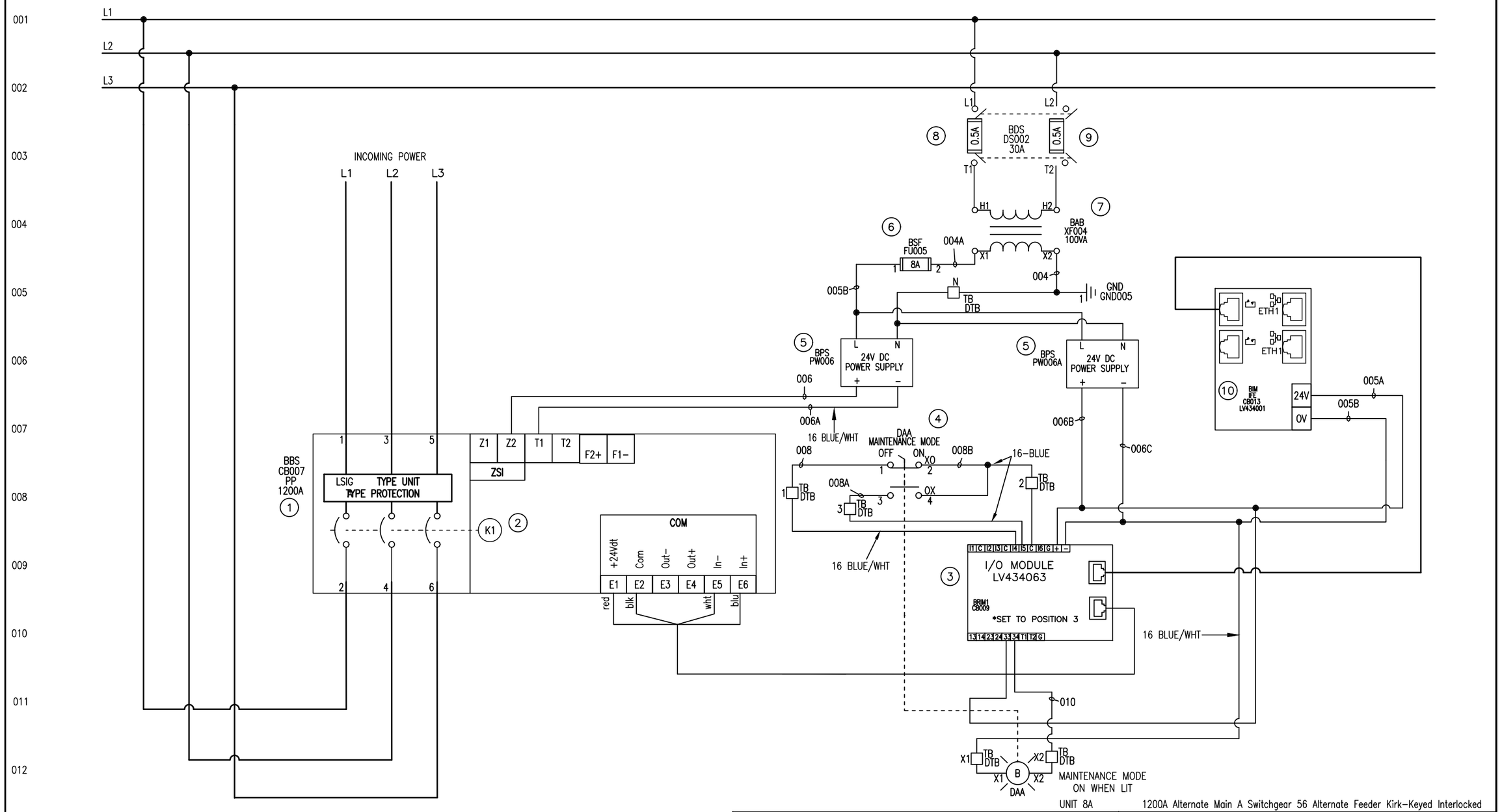
ITEM	CATALOG	DESCRIPTION
1	PLM34120U63AE1LUJK	POWERPACT P FRAME 1200A, LSIG TRIP
2	KFL003710	SK41685-1 KIRK KEY
3	LV434063	I/O MODULE
4	9001-K11J35LH13	SELECTOR SW - 2 POS MAINT - ILLUM, NEMA 4/13
5	2938840	MINI POWER SUPPLY 24VDC
6	FRN-R-1	DUAL ELEMENT FUSE -CLASS RK5
7	9070EL2D9B	100VACONTROL TRANSFORMER
8	FNQ-R-1/2	FUSE - CLASS CC
9	HUA21787	DISCONNECT SWITCH 2 POLE 30A 600V
10	LV434001	IFE-V2 DIRECT ETHERNET MODULE



UNIT 1A MAIN BREAKER
UNIT 2E MONITORING UNIT FOR MAIN

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-10	PG 1 OF 2 REV G

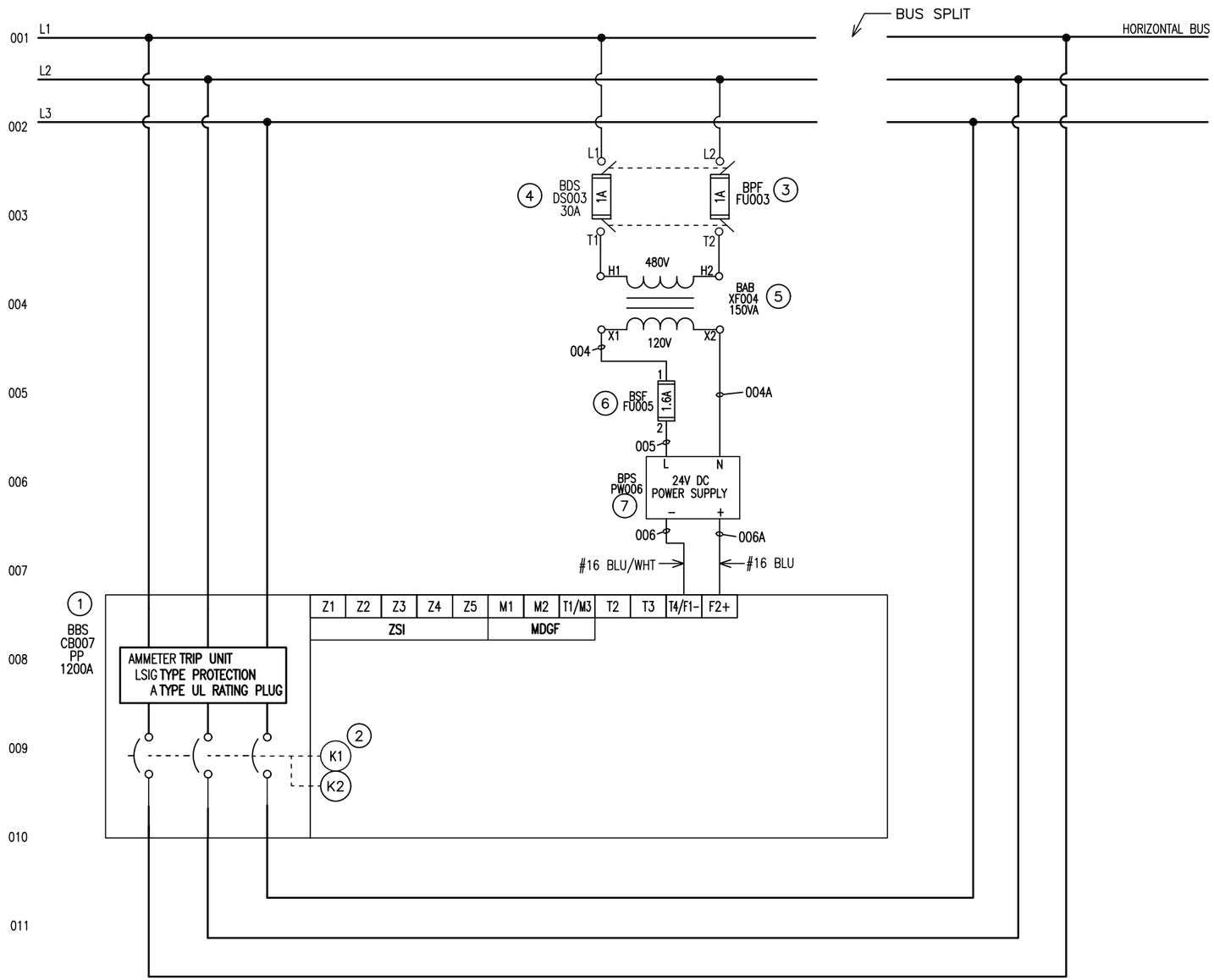
REV	DESCRIPTION	BY	DATE	B	PER CUSTOMER CHANGES	NMK	04/10/2019	F	ADDED WIRE COLOR NOTE	VL	11/14/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	E	RELEASED TO MANUFACTURING	VL	09/26/2019	G	REVISED TO TOP INCOMING AND DAA SWITCH	VL	12/04/2019



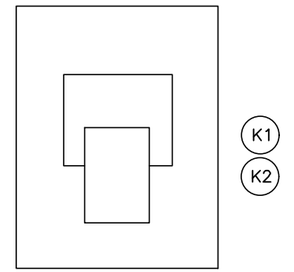
UNIT 8A 1200A Alternate Main A Switchgear 56 Alternate Feeder Kirk-Keyed Interlocked

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-001-10**	PG 2 OF 2 REV G

REV	DESCRIPTION	BY	DATE	B	PER CUSTOMER CHANGES	NMK	04/10/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019
F	ADDED PWR SUPPLY	VL	10/22/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019



ITEM	CATALOG	DESCRIPTION
1	PLM34120U63AE1LUJK	POWERPACT P FRAME 1200A, LSIG TRIP
2	KFL003710	SK41685–1 KIRK KEY
3	HUA21787	DISCONNECT SWITCH 2 POLE 30A 600V
4	FNQ–R–1	FUSE – CLASS CC
5	9070EL3D9	150VA CONTROL TRANSFORMER
6	FNQ–R–1 6/10	FUSE – CLASS CC
7	2938840	MINI POWER SUPPLY 24VDC

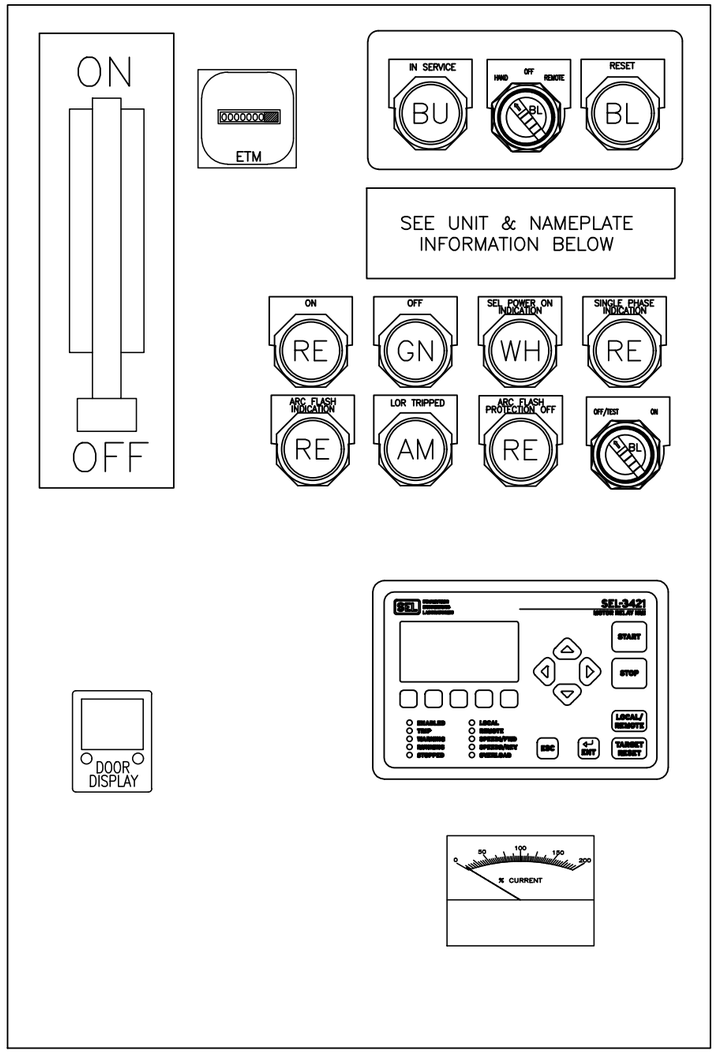


SEE UNIT & NAMEPLATE INFORMATION BELOW

UNIT 9A 1200 AMP TIE BREAKER KIRK–KEY INTERLOCED

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A–BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048–001–11	PG 1 OF 1 REV F

REV	DESCRIPTION	BY	DATE	M	REVISED PINS	VL	11/14/2019	P	UPDATED FUSE PINS	TB	11/16/2019
L	REVISED TERMINALS AT INTERWIRING	VL	11/13/2019	N	UPDATED CT INFO	DJO	11/15/2019	R	UPDATED PER QC	TR	12/05/2019



ITEM	CATALOG	DESCRIPTION
1	LLL36600U31XAABCSA	CIRCUIT BREAKER 600A WITH SHUNT TRIP
2	5NR501	CURRENT TRANSFORMER MODEL 5NR
3	ATS48C32Y	ALTISTART 48 SOFT START 320 AMP
4	3090TB6	6 POLE SHORT CIRCUIT TERMINAL BLOCK
5	FNQ-R-1	FUSE - CLASS CC
6	FNQ-R-5	FUSE - CLASS CC
7	FNQ-R-6 1/4	FUSE - CLASS CC
8	9070TF500D1	500VA CONTROL TRANSFORMER
9	KP38LYA31	AMBER LED PILOT LIGHT - STANDARD, NEMA 4/13
10	KR1BH43	BLACK PUSH BUTTON - MOMENTARY, NEMA 4/13
11	00-823961	ANALOG AMMETER
12	KP38LLL31	BLUE LED PILOT LIGHT - STANDARD, NEMA 4/13
13	CAD32G7	RELAY TeSys IEC TYPE 120V
14	RE22R2MYMR	TIMING RELAY - TYPE RE22
15	9001-KS11BH24	SELECTOR SW - 2 POS MAINT, NEMA 4/13
16	26403-12030	KESSLER-ELLIS ELAPSED TIME METER H57.55/UL 120V
17	KP38LRR31	RED LED PILOT LIGHT - STANDARD, NEMA 4/13
18	KP38LGG31	GREEN LED PILOT LIGHT - STANDARD, NEMA 4/13
19	LC1F330G7	IEC CONTACTOR 330A
20	LA9D09980	COIL SUPPRESSOR
21	FNQ-R-1/2	FUSE - CLASS CC
22	KP38LWW31	WHITE LED PILOT LIGHT - STANDARD, NEMA 4/13
23	CAD32G7	RELAY TeSys IEC TYPE 120V
	LADN22	AUX CONTACT BLOCK
24	CAD32G7	RELAY TeSys IEC TYPE 120V W/TIME DELAY AUX
	LADT0	TIME DELAY AUXILIARY CONTACT
25	DFCC3	3 POLE 30A CLASS CC FUSE HOLDER
26	9001SKPF1R31	FLASHING PILOT LIGHT-RED

MCC FACTORY ALTISTART 48 PARAMETER SETTINGS:

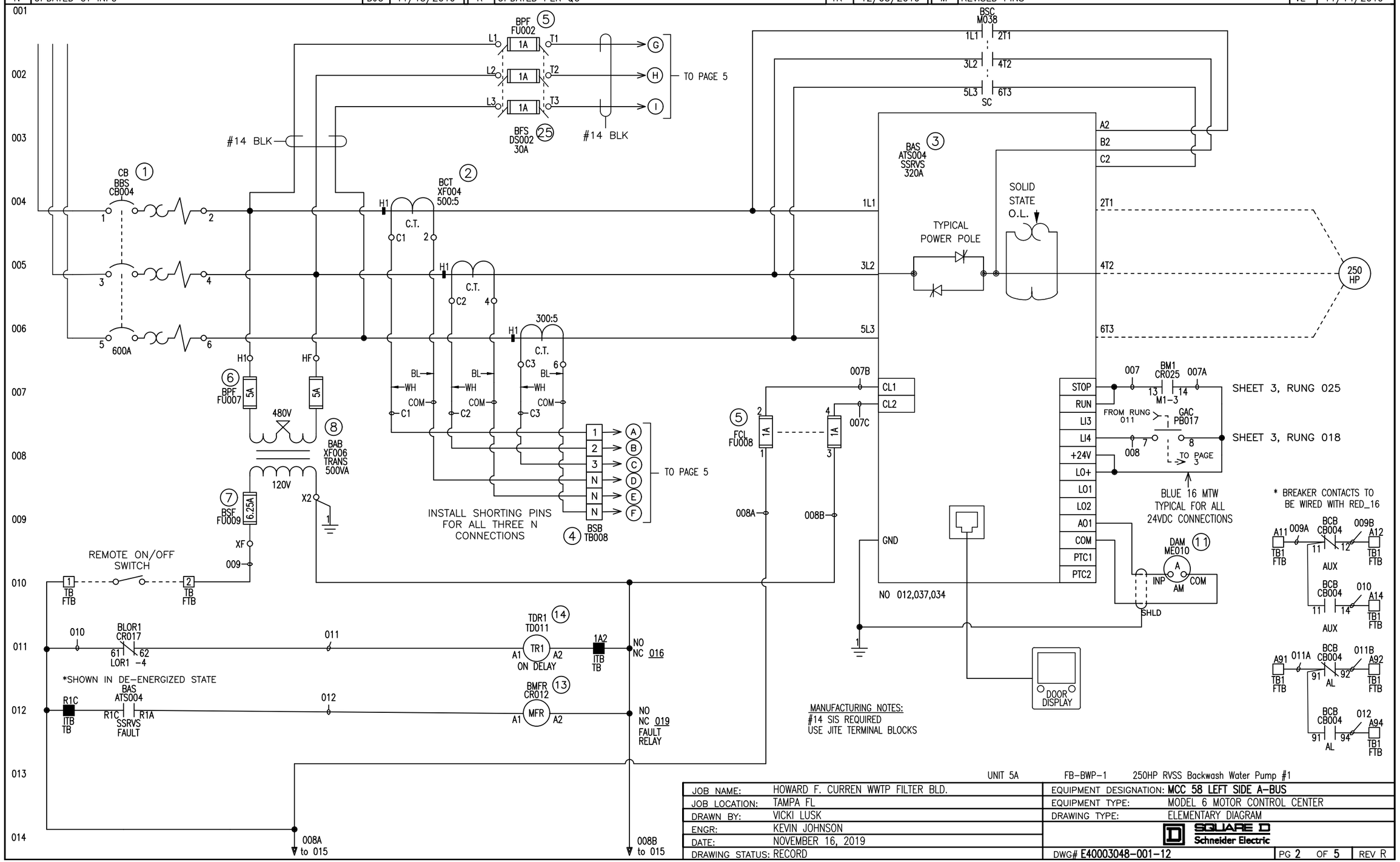
1. **Assign LI4 = LIR : FAULT RESET**
2. **ASSIGN PRO = THP : 20 SEVERE DUTY**
3. **ASSIGN R3 = RNL : MOTOR POWERD**

NOTE:
USE CAUTION WHEN CHANGING FACTORY-SET PARAMETERS. FACTORY-SET DRIVE PARAMETERS ARE CRITICAL FOR ALTISTART CONTROL AND POWER CONFIGURAIONS. DESCRIPTION OF PARAMETERS AND CODES CAN BE FOUND IN THE "PROGRAMMING" SECTION OF INSTRUCTION BULLETIN 30072-450-61 SHIPPED WITH THE CONTROLLER.

UNIT 5A FB-BWP-1 250HP RVSS Backwash Water Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-001-12**	PG 1 OF 5 REV R

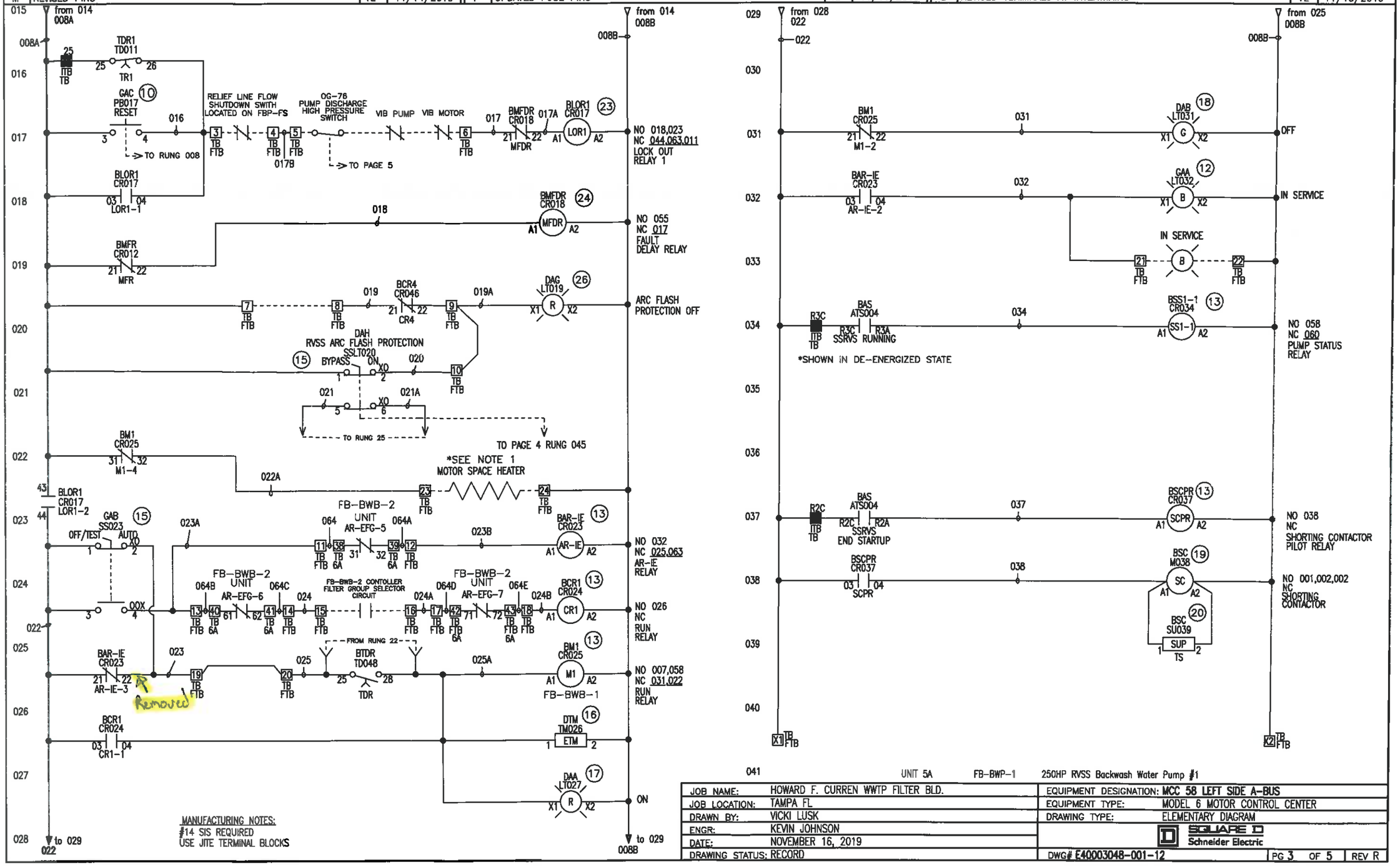
REV	DESCRIPTION	BY	DATE	P	UPDATED FUSE PINS	TB	11/16/2019	L	REVISED TERMINALS AT INTERWIRING	VL	11/13/2019
N	UPDATED CT INFO	DJO	11/15/2019	R	UPDATED PER QC	TR	12/05/2019	M	REVISED PINS	VL	11/14/2019



UNIT 5A FB-BWP-1 250HP RVSS Backwash Water Pump #1

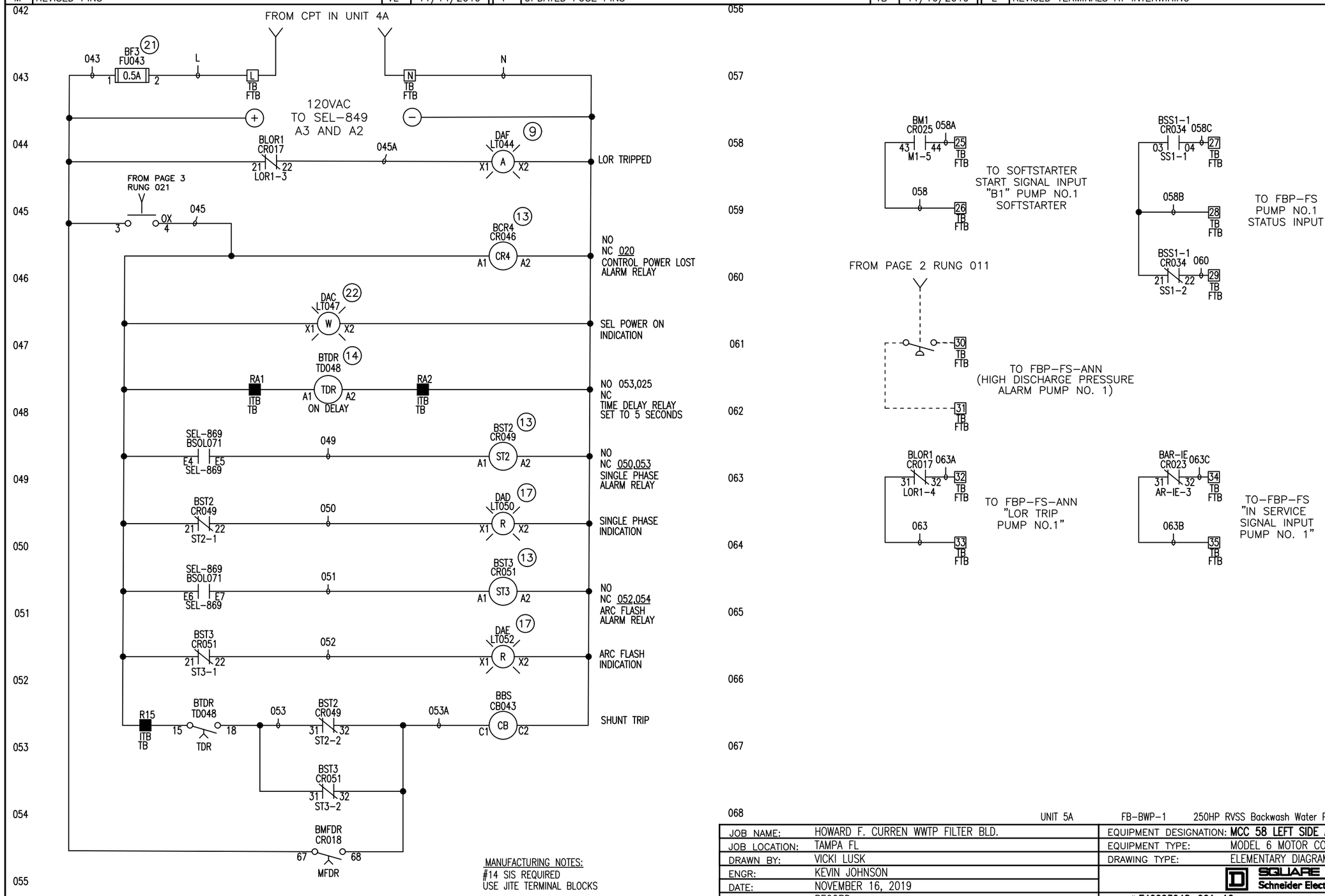
JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-12	PG 2 OF 5 REV R

REV	DESCRIPTION	BY	DATE	N	UPDATED CT INFO	DJO	11/15/2019	R	UPDATED PER QC	TR	12/05/2019
M	REVISED PINS	VL	11/14/2019	P	UPDATED FUSE PINS	TB	11/16/2019	L	REVISED TERMINALS AT INTERWIRING	VL	11/13/2019



JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG#	E40003048-001-12

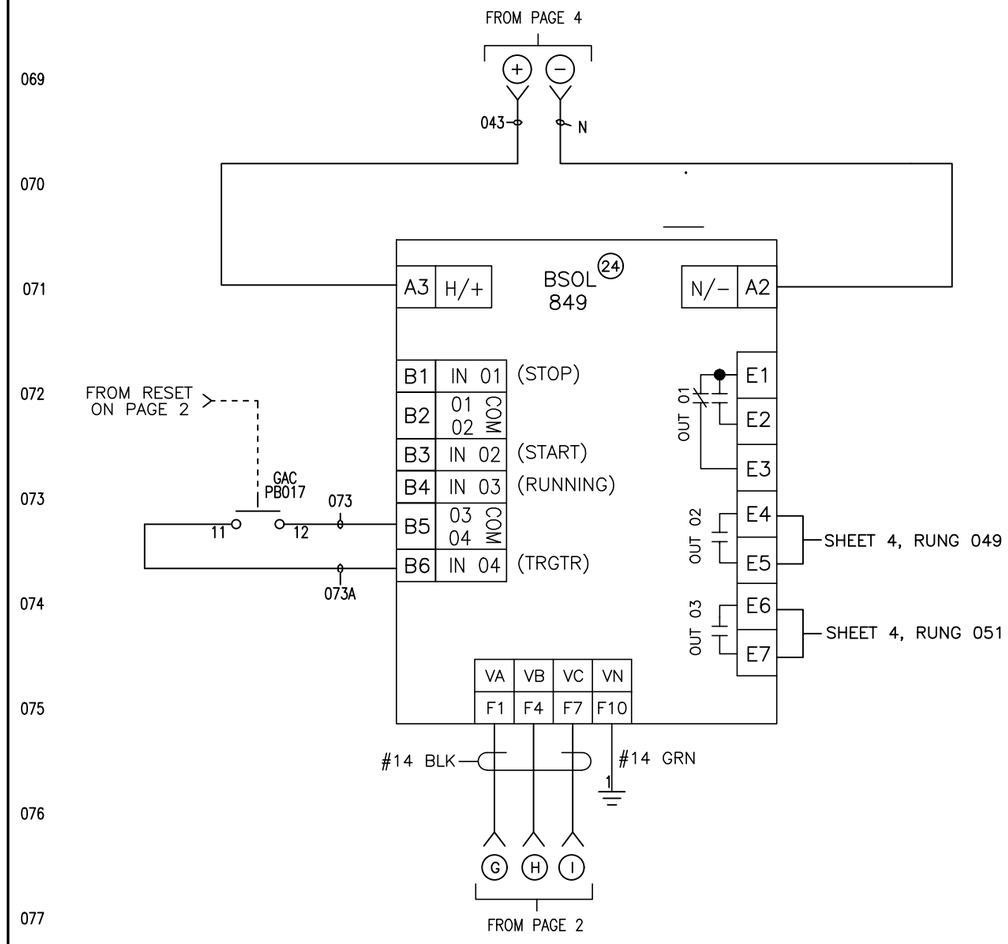
REV	DESCRIPTION	BY	DATE	N	UPDATED CT INFO	DJO	11/15/2019	R	UPDATED PER QC	TR	12/05/2019
M	REVISED PINS	VL	11/14/2019	P	UPDATED FUSE PINS	TB	11/16/2019	L	REVISED TERMINALS AT INTERWIRING	VL	11/13/2019

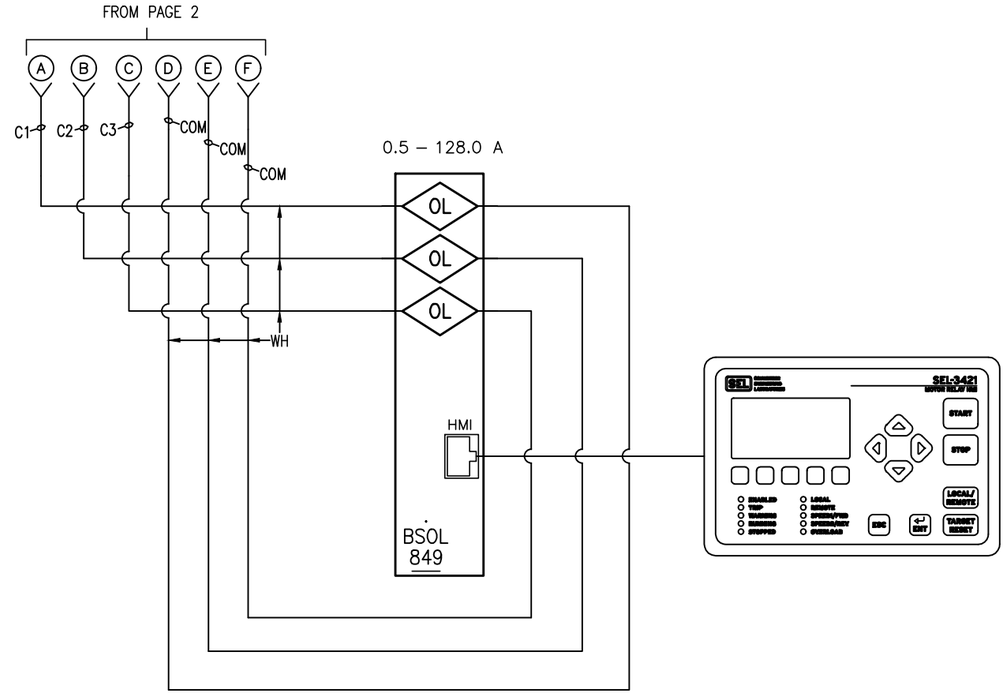


UNIT 5A FB-BWP-1 250HP RVSS Backwash Water Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-001-12	PG 4 OF 5 REV R

REV	DESCRIPTION	BY	DATE	M	REVISED PINS	VL	11/14/2019	P	UPDATED FUSE PINS	TB	11/16/2019
L	REVISED TERMINALS AT INTERWIRING	VL	11/13/2019	N	UPDATED CT INFO	DJO	11/15/2019	R	UPDATED PER QC	TR	12/05/2019





MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

UNIT 5A FB-BWP-1 250HP RVSS Backwash Water Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 16, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-001-12**	PG 5 OF 5 REV R

REV	DESCRIPTION	BY	DATE	E	RELEASED TO MANUFACTURING	VL	09/26/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

F.O. # **40003048-001**
Section **1** of **9**
NEMA **Type 1A**
1200 A Horizontal Bus
0 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-001**
Section **2** of **9**
NEMA **Type 1A**
1200 A Horizontal Bus
0 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-001**
Section **3** of **9**
NEMA **Type 1A**
1200 A Horizontal Bus
0 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-001**
Section **4** of **9**
NEMA **Type 1A**
1200 A Horizontal Bus
600 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-001**
Section **5** of **9**
NEMA **Type 1A**
1200 A Horizontal Bus
0 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-001**
Section **6** of **9**
NEMA **Type 1A**
1200 A Horizontal Bus
0 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-001**
Section **7** of **9**
NEMA **Type 1A**
1200 A Horizontal Bus
300 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-001**
Section **8** of **9**
NEMA **Type 1A**
1200 A Horizontal Bus
300 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-001**
Section **9** of **9**
NEMA **Type 1A**
1200 A Horizontal Bus
0 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	NAMEPLATE INFORMATION
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **N40003048-001-01**	PG 1 OF 3 REV E

REV	DESCRIPTION	BY	DATE	E	RELEASED TO MANUFACTURING	VL	09/26/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

SHORT–CIRCUIT–CURRENT RATING

WHEN PROTECTED BY _____ CIRCUIT BREAKER OR _____ AMPERE MAXIMUM CLASS _____ FUSES, THE SHORT–CIRCUIT–CURRENT RATING OF THIS MOTOR–CONTROL–CENTER SECTION IS _____ AMPS RMS SYMMETRICAL, _____ VOLTS MAXIMUM.

DO NOT INSTALL THIS SECTION ON CIRCUITS WITH AVAILABLE FAULT CURRENTS HIGHER THAN THIS VALUE.

DO NOT INSTALL THIS SECTION ON CIRCUITS WITH AVAILABLE FAULT CURRENTS HIGHER THAN THE LOWEST SHORT–CIRCUIT–CURRENT RATING OF ANY INSTALLED UNIT.

REFER TO INDIVIDUAL UNIT RATING LABELS TO DETERMINE UNIT SHORT–CIRCUIT–CURRENT RATINGS.

ADDITIONAL OR REPLACEMENT UNITS OR SECTIONS MUST BE OF THE SAME MANUFACTURER AND TYPE WITH A SHORT–CIRCUIT–CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT.

80438–788–01 SQUARE D REV –

SHORT–CIRCUIT–CURRENT RATING

THE SHORT–CIRCUIT–CURRENT RATING OF THIS MOTOR–CONTROL–CENTER SECTION IS 65000 AMPS RMS SYMMETRICAL, 480 VOLTS MAXIMUM.

DO NOT INSTALL THIS SECTION ON CIRCUITS WITH AVAILABLE FAULT CURRENTS HIGHER THAN THIS VALUE.

DO NOT INSTALL THIS SECTION ON CIRCUITS WITH AVAILABLE FAULT CURRENTS HIGHER THAN THE LOWEST SHORT–CIRCUIT–CURRENT RATING OF ANY INSTALLED UNIT.

REFER TO INDIVIDUAL UNIT RATING LABELS TO DETERMINE UNIT SHORT–CIRCUIT–CURRENT RATINGS.

ADDITIONAL OR REPLACEMENT UNITS OR SECTIONS MUST BE OF THE SAME MANUFACTURER AND TYPE WITH A SHORT–CIRCUIT–CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT.

80438–789–01 SQUARE D REV –

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A–BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	NAMEPLATE INFORMATION
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# N40003048–001–01	PG 2 OF 3 REV E

REV	DESCRIPTION	BY	DATE	E	RELEASED TO MANUFACTURING	VL	09/26/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

CERTIFICATE OF FACTORY TESTS

Motor Control Centers

Purchaser: _____ P.O. #: _____

Job Name: **HOWARD F. CURREN WWTP FILTER BLD.** F.O. #: **40003048-001**

MCC Designation: **MCC 58 left Side A-Bus**

Job Location: **TAMPA FL**

Description of Tests	Tested and Accepted By	Date
1. Inspection of Motor Control Center (SPB QA046.401XX and QCF-604)		
2. Factory Test for Industrial System (NEMA ICS 1) or (IEC 60439-1)		
3. Performance Tests (NEMA ICS 1) or (IEC 60439-1)		
A. Visual Inspection		
B. Adjustments and Settings		
C. Operating Tests		
D. Dielectric Tests		
E. Continuity Tests		
4. Ground Fault Protection (UL 845)		

The above tests are approved by:

_____ Date _____

_____

Title

I hereby certify that the above tests have been performed on the equipment noted on the above factory order (F.O.) number, and that this equipment successfully met the acceptance criteria of these tests. This statement is made to the best of my knowledge and belief.

Respectfully submitted,

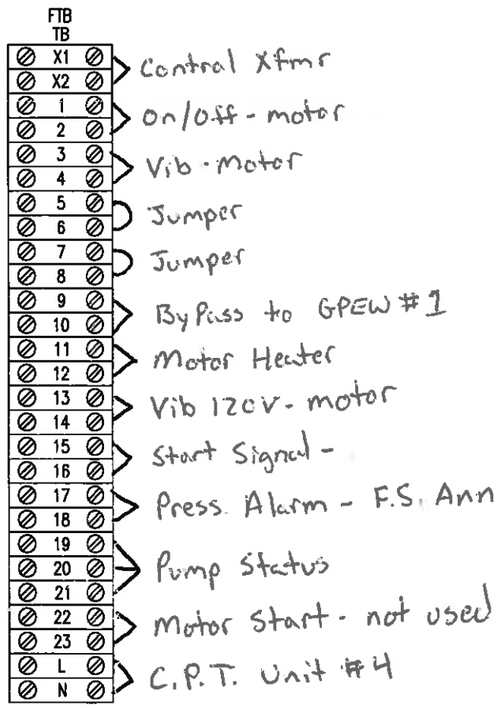
SQUARE D COMPANY

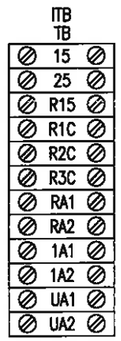
QAF-601
2/10

Quality Assurance Manager

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	NAMEPLATE INFORMATION
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# N40003048-001-01	PG 3 OF 3 REV E

REV	DESCRIPTION	BY	DATE	-	----	--	--/--/--	-	----	--	--/--/--
A	RELEASED TO MANUFACTURING	VL	09/26/2019	-	----	--	--/--/--	-	----	--	--/--/--



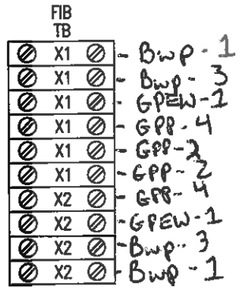


WIRE COUNT = 33

UNIT 1A 400HP RVSS Soft Start PP201S Effluent Water Pump 2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# W40003048-001-01	PG 1 OF 1 REV A

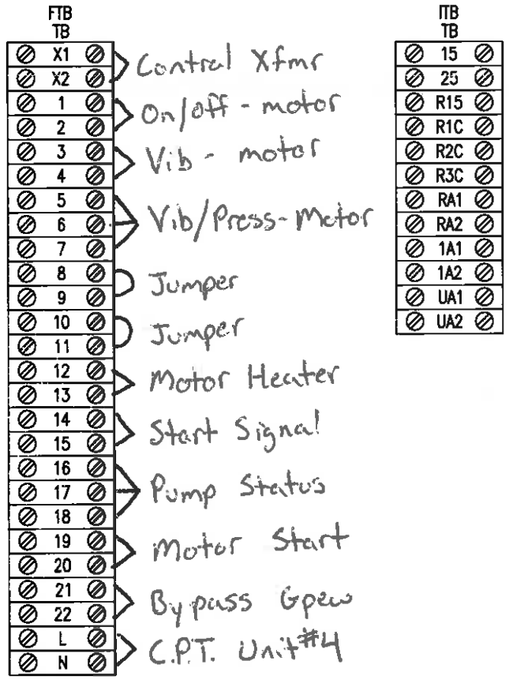
REV	DESCRIPTION	BY	DATE	-	----	--	--/--/--	-	----	--	--/--/--
A	RELEASED TO MANUFACTURING	VL	09/26/2019	-	----	--	--/--/--	-	----	--	--/--/--



UNIT 4A 120V Transformer

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# W40003048-001-02	PG 1 OF 1 REV A

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	RELEASED TO MANUFACTURING	VL	09/26/2019	–	-----	--	--/--/--	–	----	--	--/--/--

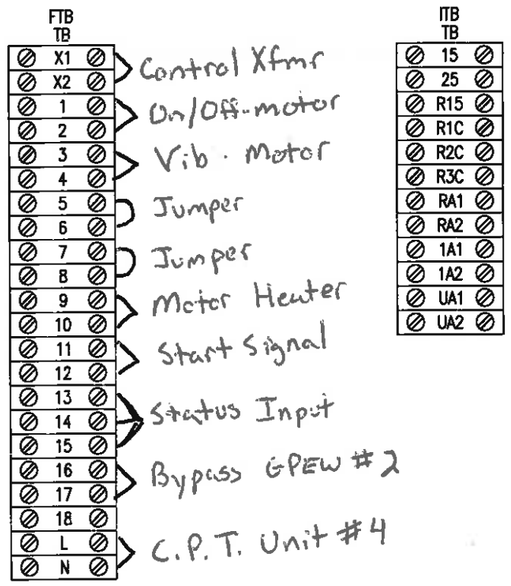


WIRE COUNT = 33

UNIT 2J 150HP FB-GPP-4 Effluent Water Pump

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# W40003048-001-03	PG 1 OF 1 REV A

REV	DESCRIPTION	BY	DATE								
B	ADDED TERMINAL BLOCK 18 ON RUNG 017	TB	11/11/2019	-	----	--	--/--/--	A	RELEASED TO MANUFACTURING	VL	09/26/2019
				-	----	--	--/--/--	-	----	--	--/--/--



WIRE COUNT = 33

UNIT 3A 100HP RVSS Soft Start GPEW-1 Effluent Water Pump

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC 58 LEFT SIDE A-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	NOVEMBER 11, 2019		
DRAWING STATUS:	RECORD	DWG# W40003048-001-04	PG 1 OF 1 REV B

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	RELEASED TO MANUFACTURING	VL	09/26/2019	–	----	--	--/--/--	–	----	--	--/--/--

FTB
TB

X1	
X2	
1	
2	
3	
4	
5	
6	
7	
8	
9	
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11	
12	
13	
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27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
L	
N	

ITB
TB

25	
R15	
R1C	
R2C	
R3C	
RA1	
RA2	
1A2	

WIRE COUNT = 33

UNIT 6A 200HP RVSS Soft Start FB-BWP-3 Backwash Water Pump 3

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **W40003048-001-08**	PG 1 OF 1 REV A

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	RELEASED TO MANUFACTURING	VL	09/26/2019	–	----	--	--/--/--	–	----	--	--/--/--

FTB
TB

X1	
X2	
1	
2	
3	
4	
5	
6	
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8	
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10	
11	
12	
13	
14	
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16	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
39	
L	
N	

ITB
TB

1A2	
R15	
R1C	
R2C	
R3C	
RA1	
RA2	
25	

WIRE COUNT = 33

UNIT 5A 200HP RVSS Soft Start FB-BWP-1 Backwash Water Pump 1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC 58 LEFT SIDE A-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **W40003048-001-12**	PG 1 OF 1 REV A

SQUARE D
by Schneider Electric

Job Name:	HOWARD F. CURREN WWTP FILTER BLD.	Square D Quotation #:	40003048
Job Location:	TAMPA, FL	Quotation Revision #:	
		Sales Contact:	Brent Gibbs
		Sales Contact Location:	283
Purchaser:	MAYER ELECTRIC SUPPLY COMPANY INC	Customer:	CITY OF TAMPA
Purchaser PO #:	500HAR1232618	Customer PO #:	
User:	CITY OF TAMPA	Architect:	TRICON CONSULTING ENGINEERS
User Location:		Cons. Engineer:	
Drawing Status:	RECORD		

TABLE OF CONTENTS

SQUARE D FACTORY ORDER NUMBER: 40003048-002

Equipment Designation	Equipment Type	Drawing Type	Drawing Number	Page	Revision Level
MCC-58 RIGHT SIDE B-BUS	MODEL 6 MCC	ELEVATION	F40003048-002-01	1	E
			F40003048-002-01	2	E
			F40003048-002-01	3	E
		ONE LINE DIAGRAM	O40003048-002-01	1	E
			O40003048-002-01	2	E
		UNIT INFORMATION	I40003048-002-01	1	F
			I40003048-002-01	2	F
			I40003048-002-01	3	F
		ELEMENTARY DIAGRAM	E40003048-002-01	1	G
			E40003048-002-01	2	G
			E40003048-002-02	1	E
			E40003048-002-03	1	K
			E40003048-002-03	2	K
			E40003048-002-03	3	K
			E40003048-002-03	4	K
			E40003048-002-03	5	K
			E40003048-002-04	1	E
			E40003048-002-05	1	E
			E40003048-002-06	1	E
			E40003048-002-07	1	E
			E40003048-002-08	1	E
			E40003048-002-09	1	N
			E40003048-002-09	2	N
			E40003048-002-09	3	N
			E40003048-002-09	4	N
			E40003048-002-09	5	N
			E40003048-002-09	6	N
			E40003048-002-10	1	F
			E40003048-002-11	1	L
			E40003048-002-11	2	L
			E40003048-002-11	3	L
			E40003048-002-11	4	L

These products are manufactured in a facility which is quality systems registered to ISO 9000

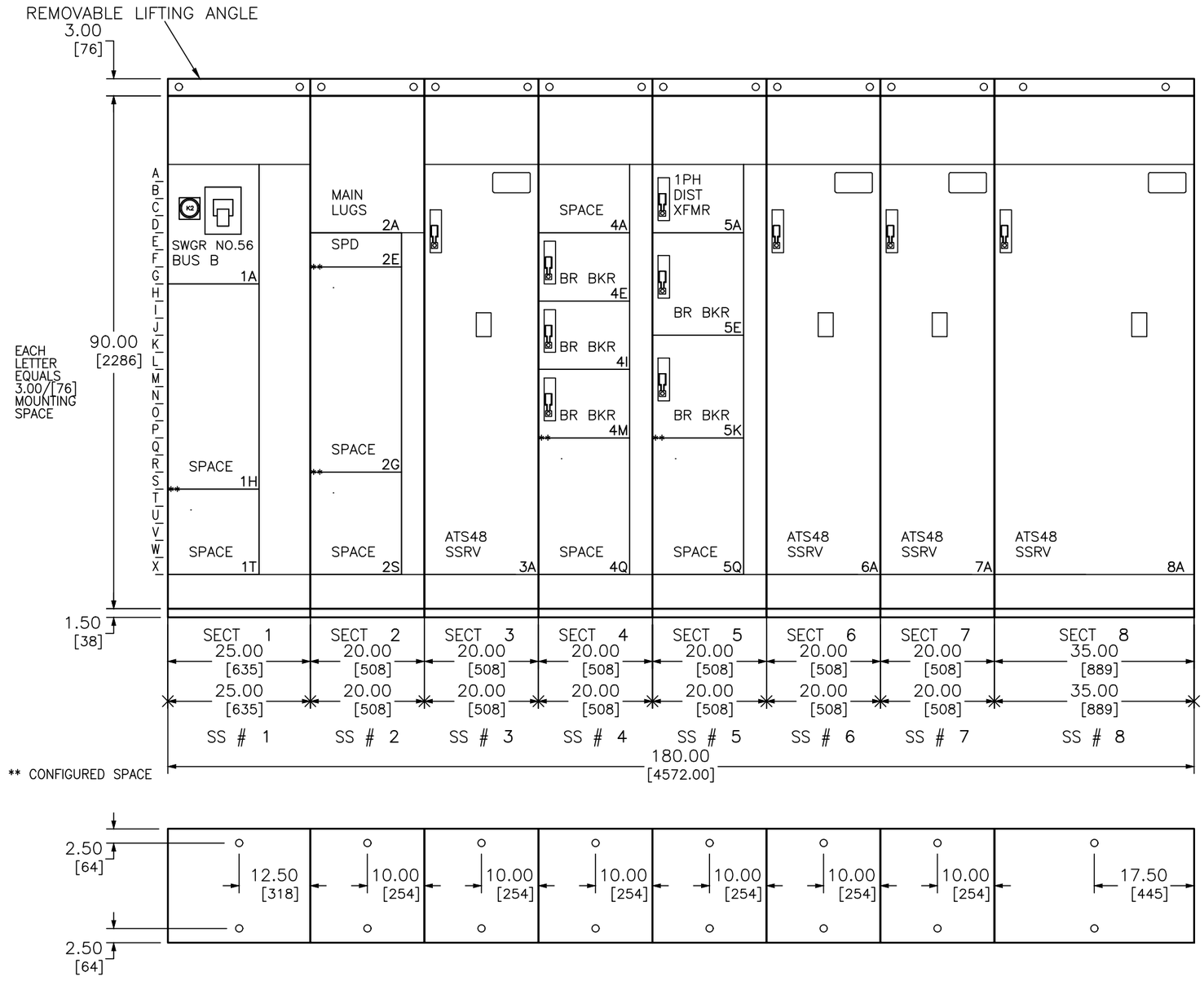
TABLE OF CONTENTS

SQUARE D FACTORY ORDER NUMBER: 40003048-002

Equipment Designation	Equipment Type	Drawing Type	Drawing Number	Page	Revision Level
			E40003048-002-11	5	L
			E40003048-002-12	1	L
			E40003048-002-12	2	L
			E40003048-002-12	3	L
			E40003048-002-12	4	L
			E40003048-002-12	5	L
		WIRING DIAGRAM	W40003048-002-03	1	A
			W40003048-002-09	1	A
			W40003048-002-10	1	A
			W40003048-002-11	1	A
			W40003048-002-12	1	B

These products are manufactured in a facility which is quality systems registered to ISO 9000

REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019
				C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019

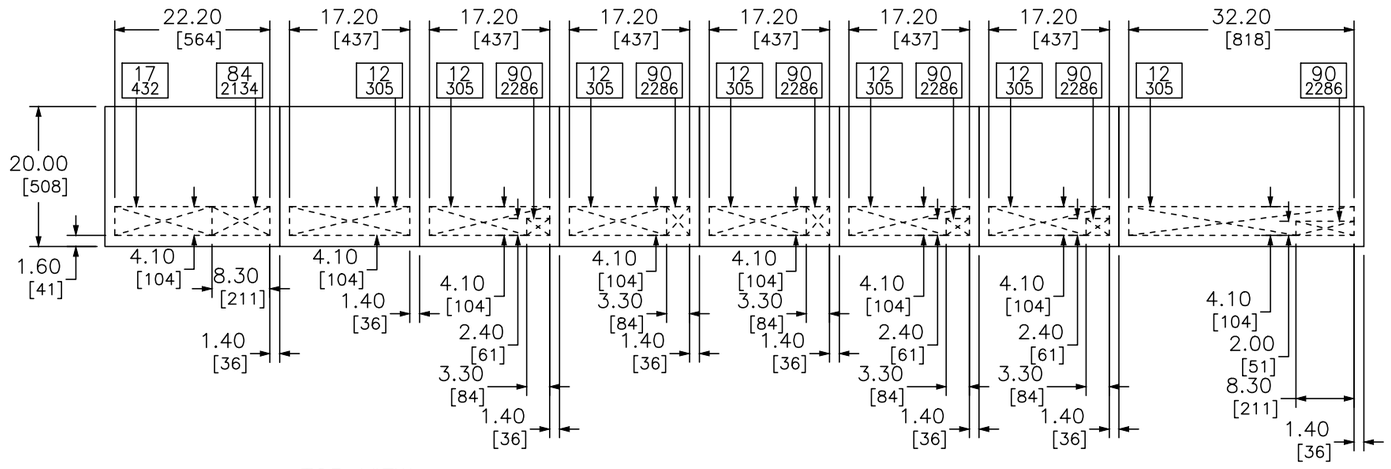


ANCHOR DETAIL

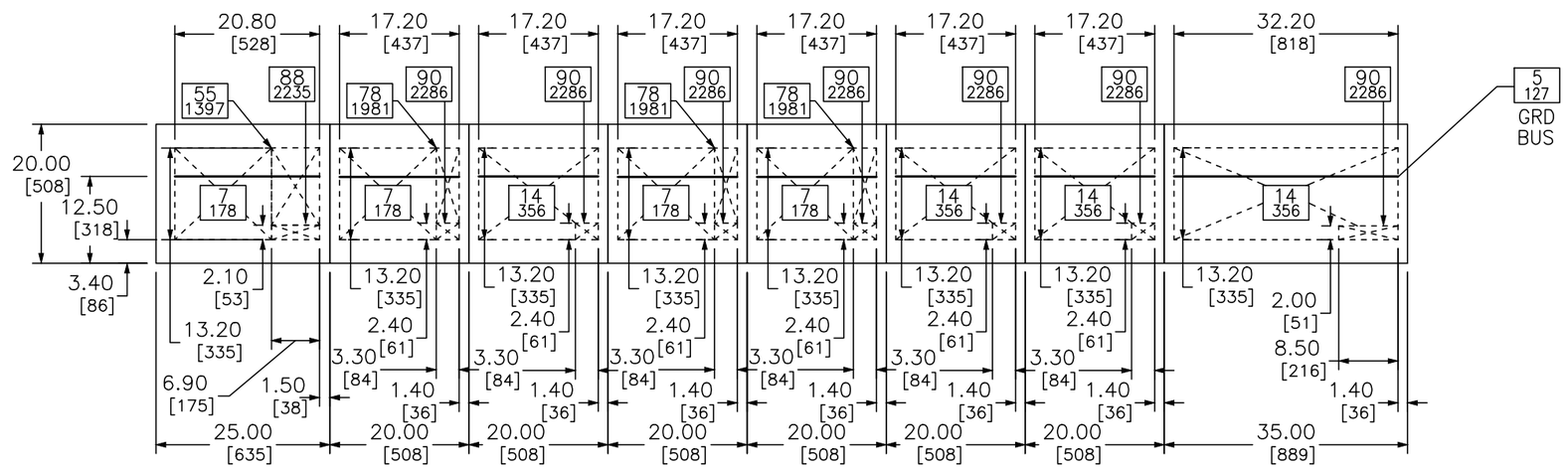
DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEVATION
ENGR:	KEVIN JOHNSON		
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG#	F40003048-002-01

REV	DESCRIPTION	BY	DATE	B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019



TOP VIEW



DUAL DIMENSIONS: INCHES
MILLIMETERS

FLOOR VIEW

CROSSED AREA REPRESENTS CONDUIT ENTRY AREA. NUMBERS IN BOXES INDICATE VERTICAL CLEARANCE TO NEAREST OBSTRUCTION.

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEVATION
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# F40003048-002-01	PG 2 OF 3 REV E

REV	DESCRIPTION	BY	DATE	B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019

GENERAL NOTES

Class 1 Type B Wiring

PRODUCT DESCRIPTION AND RATINGS

POWER SYSTEM DATA:

480V 3PH 3W 60Hz
SHORT CIRCUIT RATING: 65kA
POWER ENTERS: Main Lug Top Section 2
CONTROL POWER: 120Vac

BUS SYSTEM DATA:

MAIN HORIZONTAL BUS: 1200 Amp Copper/Tin Plated / 1.5"
BUS BRACING: 65kA
VERTICAL BUS: 300 Amp Tin Plated Copper
HORIZONTAL GROUND BUS: .25" X 2.0" (6.35mm X 50.8mm) Tin Plated Copper
Units Securely Grounded To Structure

ENCLOSURE DATA:

ENCLOSURE TYPE: 20" DEEP Type 1A
EXTERIOR COLOR: Electrodeposition Finish ANSI 49 Medium Light Grey
INTERIOR COLOR: Electrodeposition Finish White
REMOVABLE 3" [76mm] LIFTING ANGLE

STRUCTURE MODIFICATIONS:

Ground Bus Lug : Main Section
Rodent Barriers 1,8
Manual Bus Shutters 1,2,4,5
Fishtape Unit Plugs 2,4,5
600A Vertical Bus 5
Copper Vertical Ground Bus 1,2,4,5
Wire Retainers 1,2,4,5
Master Nameplate 1

EQUIPMENT WEIGHT:

SHIPPING SPLIT # 1: 770.00 Lbs. (349.27 Kg.)
SHIPPING SPLIT # 2: 750.00 Lbs. (340.20 Kg.)
SHIPPING SPLIT # 3: 700.00 Lbs. (317.52 Kg.)
SHIPPING SPLIT # 4: 750.00 Lbs. (340.20 Kg.)
SHIPPING SPLIT # 5: 750.00 Lbs. (340.20 Kg.)
SHIPPING SPLIT # 6: 700.00 Lbs. (317.52 Kg.)
SHIPPING SPLIT # 7: 700.00 Lbs. (317.52 Kg.)
SHIPPING SPLIT # 8: 760.00 Lbs. (344.74 Kg.)
TOTAL LINEUP WEIGHT (APPROX): 5880.00 Lbs. (2667.17 Kg.)

PRODUCT ACCESSORIES:

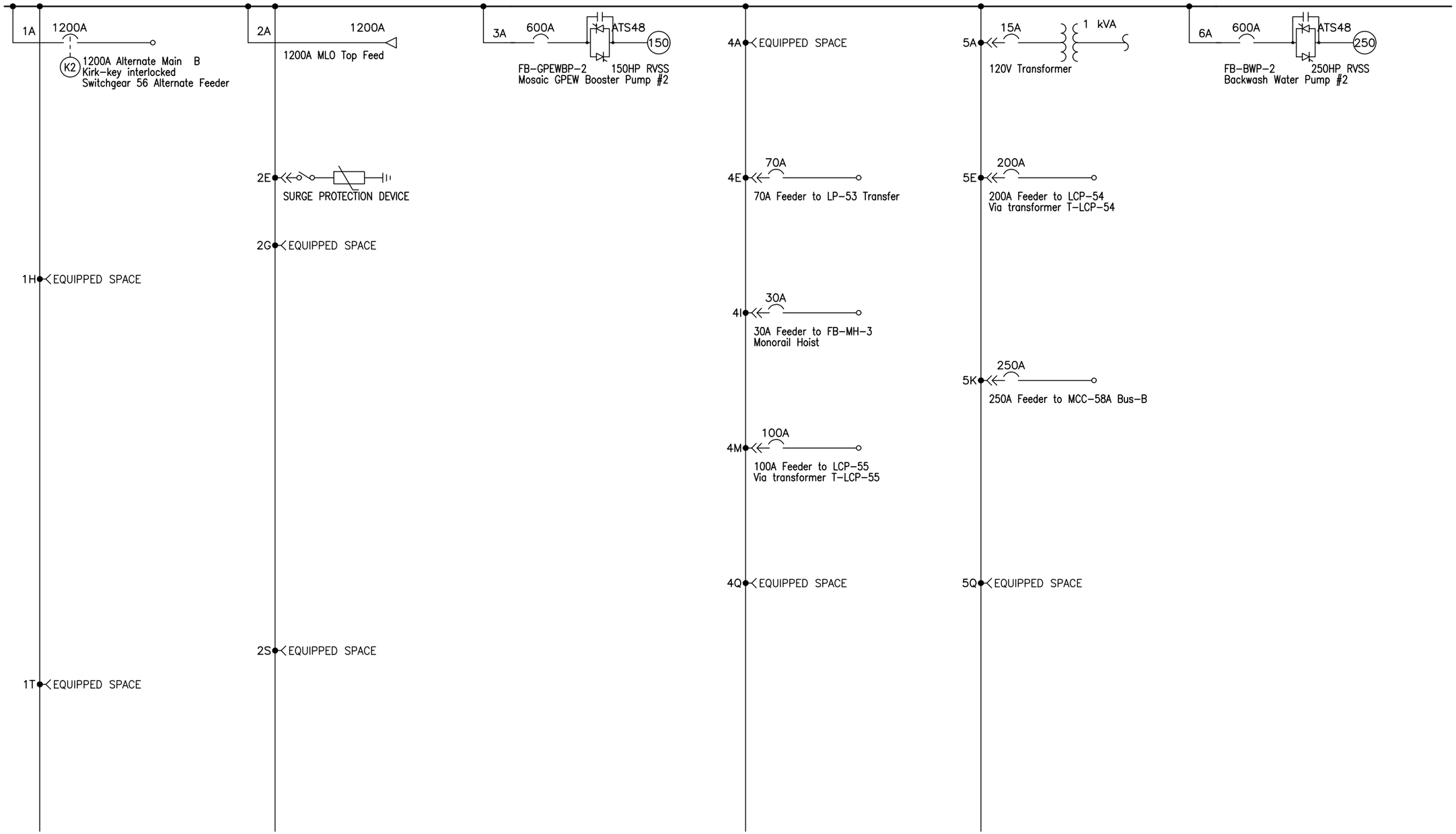
Certified Test Report
Full Size Door Mounted Drawings

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEVATION
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# F40003048-002-01	PG 3 OF 3 REV E

REV	DESCRIPTION	BY	DATE
D	APPROVAL RESUBMITTAL	VL	08/19/2019

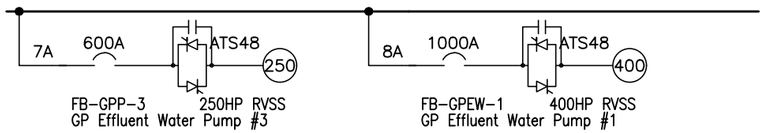
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018
B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019

C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019
E	RELEASED TO MANUFACTURING	VL	09/26/2019



JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:	KEVIN JOHNSON		
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# 040003048-002-01	PG 1 OF 2 REV E

REV	DESCRIPTION	BY	DATE	B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019



JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC-58 RIGHT SIDE B-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **040003048-002-01**	PG **2** OF **2** REV E

REV	DESCRIPTION	BY	DATE	F	MASTER NAMEPLATE UPDATED	KJ	12/03/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019
E	RELEASED TO MANUFACTURING	VL	09/26/2019	B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019

UNIT LOC	UNIT NAMEPLATES (GRAY SURFACE/WHITE LETTERS)	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	FUSE SIZE PRI	FUSE SIZE SEC	INTERLOCKS NO	INTERLOCKS NC	PILOT DEVICES: LED 30 mm ** ON LIGHT	PILOT DEVICES: LED 30 mm ** OFF LIGHT	PILOT DEVICES: LED 30 mm ** ADDL P/L	PILOT DEVICES: LED 30 mm ** SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
1A	1200A Alternate Main B Kirk-key interlocked Switchgear 56 Alternate Feeder	BRANCH BKR			PL 1200	**1200**											24VDC TRIP UNIT PWR SUPP, 3/0-500KCMIL 4 LUGS/PH, 80% RATED, AL MECH LUG AL/CU CABLE,	E40003048-002-01
																	COMMS UNWIRED ETHERNET MODBUS TCP, ELECTRONIC POWER TRIP UNIT, KEY INTERLOCK, LSI TRIP FUNCTION, MAINTENANCE SWITCH,	
																	KEY INTERLOCK	
1H		SPACE																
1T		SPACE																
2A	1200A MLO Top Feed	MAIN LUGS															3/0-600KCMIL 4 LUGS/PH, AL MECH LUG AL/CU CABLE	
2E	SURGE PROTECTION DEVICE	SPD	240kA		SW 30												FISHTAPE UNIT PLUGS, SOLIDLY GROUNDED, SURGE COUNTER	E40003048-002-02
2G		SPACE																
2S		SPACE																
3A	FB-GPEWBP-2 100HP RVSS Mosaic GPEW Booster Pump #2	ATS48 SSRV	C25	150	LL 600	**600**	CONTROL TRANSFORMER W/SPDT PWR DISC	500	5.0	6.25			RED	GREEN	CLEAR RED	START/STOP PB	#14 AWG SIS SUITABLE CONTROL WIRE, AC AMMETER, AUX RUN CONTACTS, ETM, INT INTLK 1A/1B FORM C, SHUNT TRIP,	E40003048-002-03
																	STD WIRE LABELS, WIRED ON-DELAY TIMER, WIRED RELAY, WIRED RELAY, ALARM SWITCH, SEVERE DUTY, SEL-849, SEL-3421	
4A		SPACE																
4E	70A Feeder to LP-53 Transfer	BRANCH BKR			HJ 150	**70**											14-3/0AWG 1 LUG/PH, 80% RATED, AL MECH LUG AL/CU CABLE, FISHTAPE UNIT PLUGS	E40003048-002-04
4I	30A Feeder to FB-MH-3 Monorail Hoist	BRANCH BKR			HJ 150	**30**											14-3/0AWG 1 LUG/PH, 80% RATED, AL MECH LUG AL/CU CABLE, FISHTAPE UNIT PLUGS	E40003048-002-05
UNIT LOC	UNIT NAMEPLATES	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	PRI	SEC	NO	NC	ON LIGHT	OFF LIGHT	ADDL P/L	SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
									FUSE SIZE		INTERLOCKS		PILOT DEVICES: LED 30 mm **					

MCC NAMEPLATE – (GRAY SURFACE/WHITE LETTERS)

MCC 58 Right Side B-Bus

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.
JOB LOCATION:	TAMPA FL
DRAWN BY:	VICKI LUSK
ENGR:	KEVIN JOHNSON
DATE:	SEPTEMBER 26, 2019
DRAWING STATUS:	RECORD

EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWING TYPE:	UNIT INFORMATION

SQUARE D by Schneider Electric

DWG# I40003048-002-01 | PG 1 OF 3 | REV F

REV	DESCRIPTION	BY	DATE
F	MASTER NAMEPLATE UPDATED	KJ	12/03/2019

REV	DESCRIPTION	BY	DATE
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018
C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019
E	RELEASED TO MANUFACTURING	VL	09/26/2019

UNIT LOC	UNIT NAMEPLATES	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	FUSE SIZE PRI	FUSE SIZE SEC	INTERLOCKS NO	INTERLOCKS NC	PILOT DEVICES: LED 30 mm ** ON LIGHT	PILOT DEVICES: LED 30 mm ** OFF LIGHT	PILOT DEVICES: LED 30 mm ** ADDL P/L	PILOT DEVICES: LED 30 mm ** SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
4M	100A Feeder to LCP-55 Via transformer T-LCP-55	BRANCH BKR			HJ 150	**100**											14-3/0AWG 1 LUG/PH, 80% RATED, AL MECH LUG AL/CU CABLE, FISHTAPE UNIT PLUGS	E40003048-002-06
4Q		SPACE																
5A	120V Transformer	1PH DIST XFMR	1 kVA		HJ 150	**15**											115 C TEMP RISE, COPPER WINDING, FISHTAPE UNIT PLUGS, UNIT MOUNTED	E40003048-002-10
5E	200A Feeder to LCP-54 Via transformer T-LCP-54	BRANCH BKR			JJ 250	**200**											3/0-350 1 LUG/PH, 80% RATED, AL MECH LUG AL/CU CABLE, FISHTAPE UNIT PLUGS	E40003048-002-07
5K	250A Feeder to MCC-58A Bus-B	BRANCH BKR			JJ 250	**250**											3/0-350 1 LUG/PH, 80% RATED, AL MECH LUG AL/CU CABLE, FISHTAPE UNIT PLUGS	E40003048-002-08
5Q		SPACE																
6A	FB-BWP-2 250HP RVSS Backwash Water Pump #2	ATS48 SSRV	C32	250	LL 600	**600**	CONTROL TRANSFORMER W/SPDT PWR DISC	500	5.0	6.25			RED	GREEN	CLEAR RED	START/STOP PB	#14 AWG SIS SUITABLE CONTROL WIRE, AC AMMETER, AUX RUN CONTACTS, ETM, INT INTLK 1A/1B FORM C, SHUNT TRIP,	E40003048-002-09
																	STD WIRE LABELS, WIRED ON-DELAY TIMER, WIRED RELAY, WIRED RELAY, ALARM SWITCH, SEL-849, SEL-3421	
7A	FB-GPP-3 250HP RVSS GP Effluent Water Pump #3	ATS48 SSRV	C32	250	LL 600	**600**	CONTROL TRANSFORMER W/SPDT PWR DISC	500	5.0	6.25			RED	GREEN	CLEAR RED	START/STOP PB	#14 AWG SIS SUITABLE CONTROL WIRE, AC AMMETER, AUX RUN CONTACTS, ETM, INT INTLK 1A/1B FORM C, SHUNT TRIP,	E40003048-002-11
																	STD WIRE LABELS, WIRED ON-DELAY TIMER, WIRED RELAY, WIRED RELAY, ALARM SWITCH, SEL-849, SEL-3421	
UNIT LOC	UNIT NAMEPLATES	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	PRI	SEC	NO	NC	ON LIGHT	OFF LIGHT	ADDL P/L	SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
									FUSE SIZE		INTERLOCKS		PILOT DEVICES: LED 30 mm **					

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.
JOB LOCATION:	TAMPA FL
DRAWN BY:	VICKI LUSK
ENGR:	KEVIN JOHNSON
DATE:	SEPTEMBER 26, 2019
DRAWING STATUS:	RECORD

EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWING TYPE:	UNIT INFORMATION

SQUARE D by Schneider Electric

DWG# I40003048-002-01 | PG 2 OF 3 | REV F

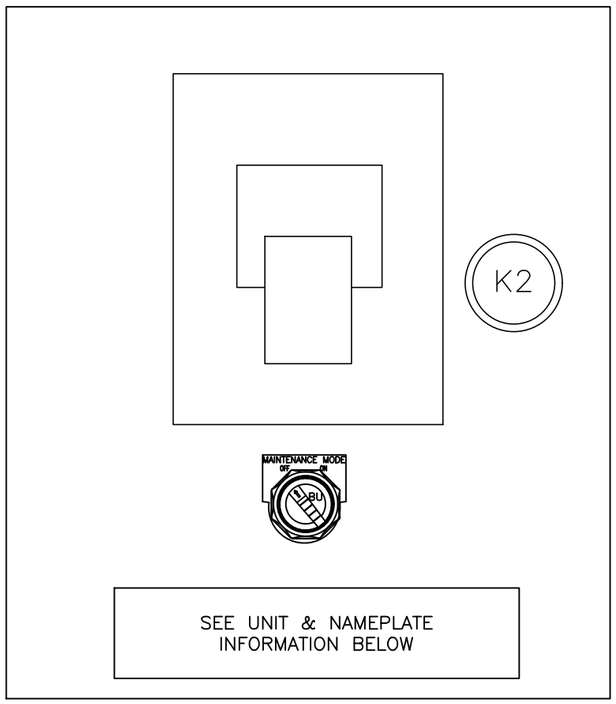
REV	DESCRIPTION	BY	DATE								
F	MASTER NAMEPLATE UPDATED	KJ	12/03/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019
				A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	D	APPROVAL RESUBMITTAL	VL	08/19/2019

UNIT LOC	UNIT NAMEPLATES	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	FUSE SIZE		INTERLOCKS		PILOT DEVICES: LED 30 mm **				OTHER UNIT FEATURES	ELEMENTARY #
									PRI	SEC	NO	NC	ON LIGHT	OFF LIGHT	ADDL P/L	SS / PB		
8A	FB-GPEW-1 400HP RVSS GP Effluent Water Pump #1	ATS48 SSRV	C66	400	PL 1200	1000	CONTROL TRANSFORMER W/SPDT PWR DISC	500	5.0	6.25			RED	GREEN	CLEAR RED	START/STOP PB	#14 AWG SIS SUITABLE CONTROL WIRE, AC AMMETER, AUX RUN CONTACTS, ETM, INT INTLK 1A/1B FORM C, SHUNT TRIP,	E40003048-002-12
																	STD WIRE LABELS, WIRED ON-DELAY TIMER, WIRED RELAY, WIRED RELAY, ALARM SWITCH, SEVERE DUTY, SEL-849, SEL-3421	
UNIT LOC	UNIT NAMEPLATES	UNIT TYPE	SIZE	HP	FRAME AMPS	TRIP AMPS	CONTROL SOURCE	VA	PRI	SEC	NO	NC	ON LIGHT	OFF LIGHT	ADDL P/L	SS / PB	OTHER UNIT FEATURES	ELEMENTARY #
									FUSE SIZE		INTERLOCKS		PILOT DEVICES: LED 30 mm **					

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	UNIT INFORMATION
ENGR:	KEVIN JOHNSON		
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG#	I40003048-002-01

REV	DESCRIPTION	BY	DATE
A	REVISED PER CUSTOMER COMMENTS	VW	08/28/2019
B	REVISED PER CUSTOMER COMMENTS	VW	08/28/2019
C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019
E	RELEASED TO MANUFACTURING	VL	09/26/2019

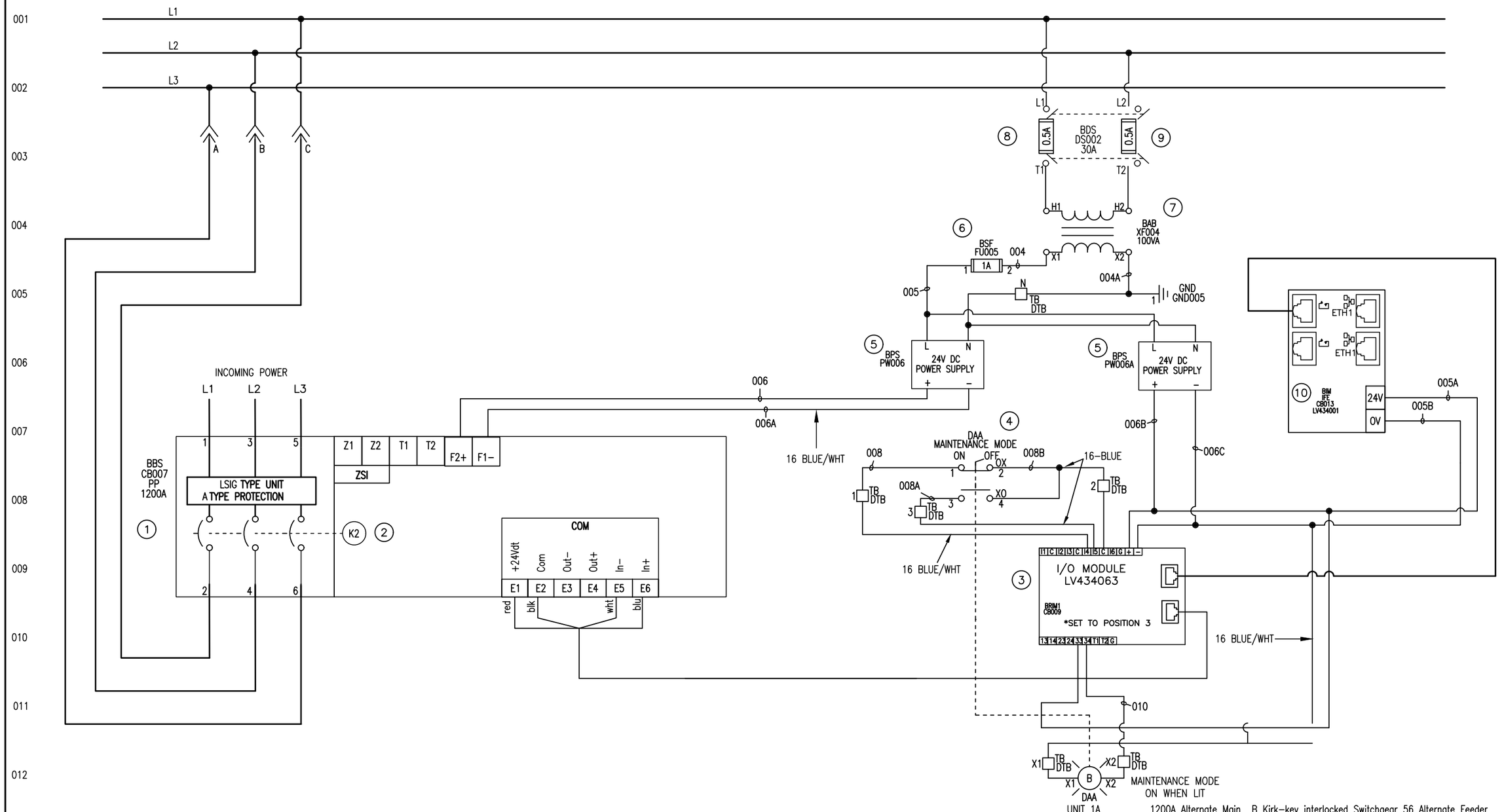
ITEM	CATALOG	DESCRIPTION
1	PLM34120U63AE1LUJK	POWERPACT P FRAME 1200A, LSIG TRIP
2	KFL003710	SK41685-1 KIRK KEY
3	LV434063	I/O MODULE
4	9001-K11J35LH13	SELECTOR SW - 2 POS MAINT - ILLUM, NEMA 4/13
5	2938840	MINI POWER SUPPLY 24VDC
6	FRN-R-1	DUAL ELEMENT FUSE -CLASS RK5
7	9070EL2D9B	100VACONTROL TRANSFORMER
8	FNQ-R-1/2	FUSE - CLASS CC
9	HUA21787	DISCONNECT SWITCH 2 POLE 30A 600V
10	LV434001	IFE-V2 DIRECT ETHERNET MODULE



UNIT 1A 1200A Alternate Main B Kirk-key interlocked Switchgear 56 Alternate Feeder

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-01	PG 1 OF 2 REV G

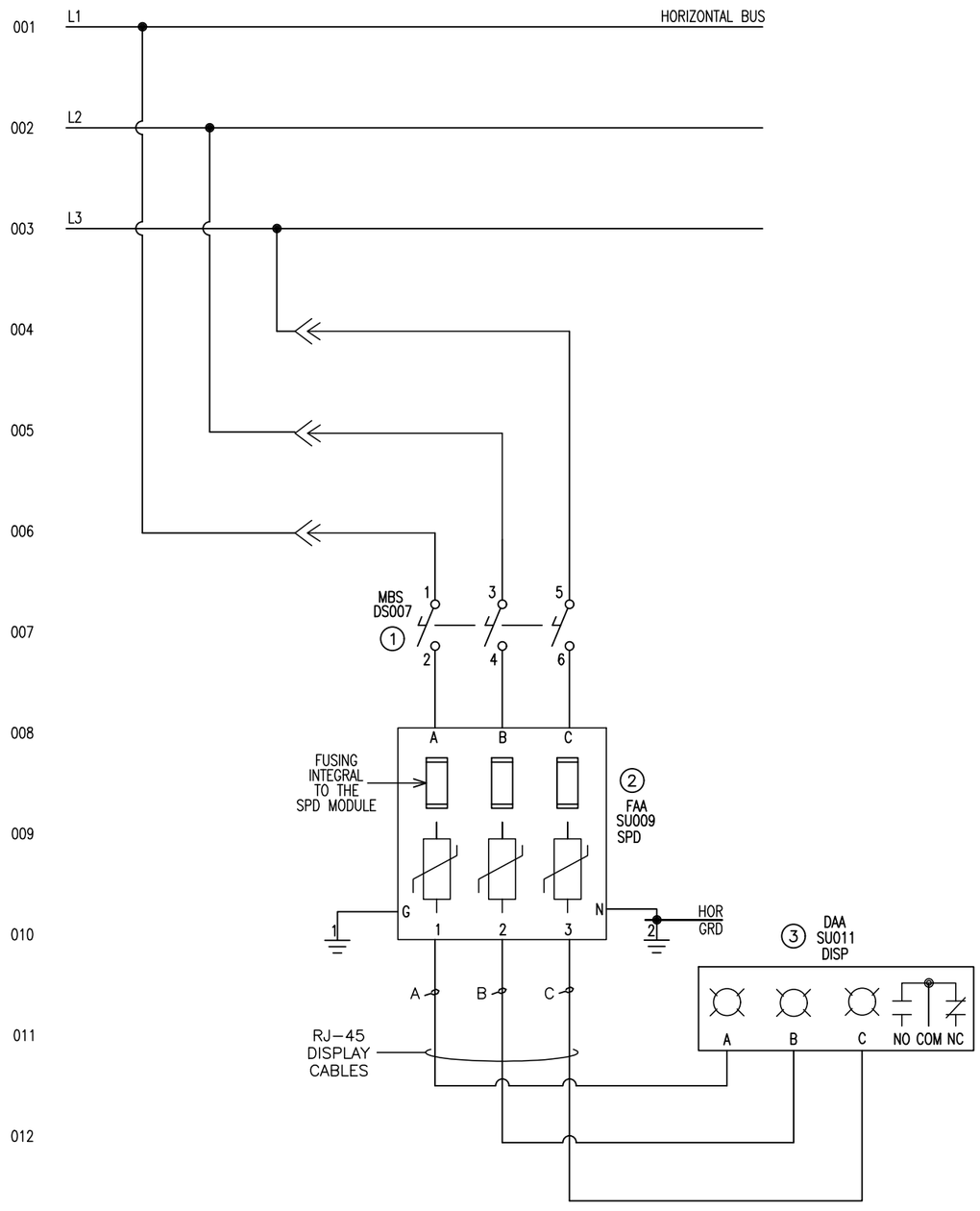
REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE
F	ADDED WIRE COLOR NOTE	VL	11/14/2019	G	CHANGED TO TOP INCOMING	KJ	12/02/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019
				C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019

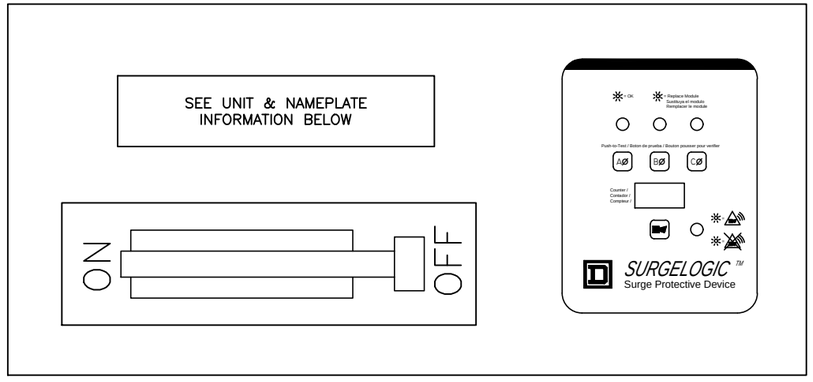


JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC-58 RIGHT SIDE B-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG#	**E40003048-002-01** PG 2 OF 2 REV G

REV	DESCRIPTION	BY	DATE	B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	E	RELEASED TO MANUFACTURING	VL	09/26/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019

ITEM	CATALOG	DESCRIPTION
1	40566-678-50	3 POLE LINE BASE ASY
2	TVS4IMA24M	SURGE PROTECTION DEVICE 240KA
3	TVS3DSPVC	SPD DISPLAY

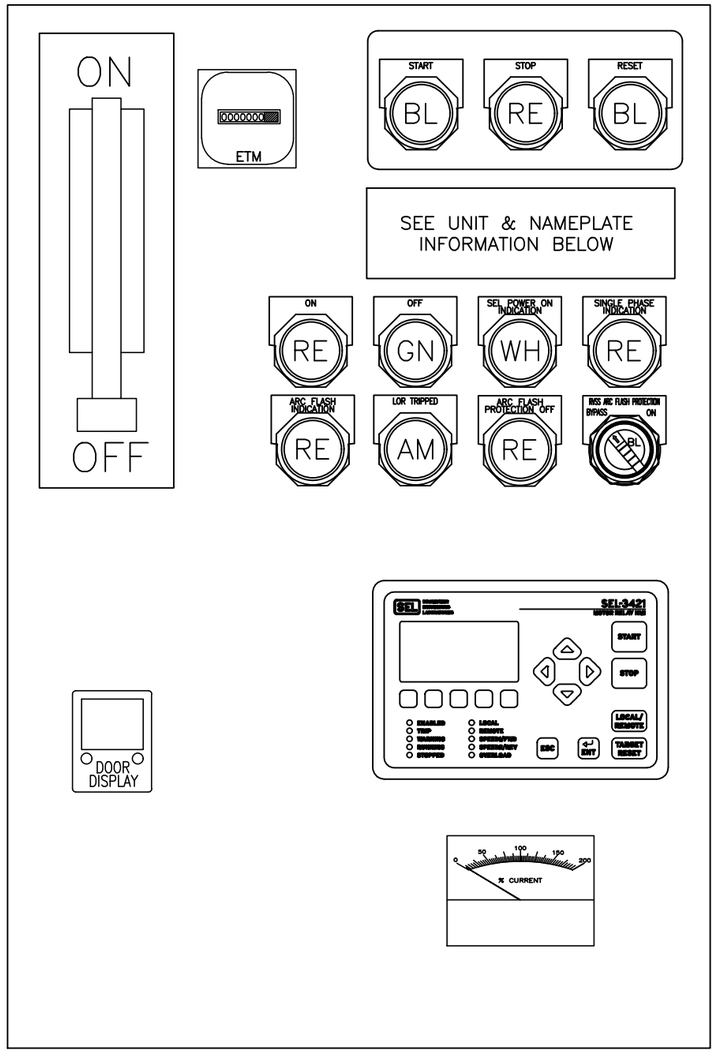




UNIT 2E SURGE PROTECTION DEVICE

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-02	PG 1 OF 1 REV E

REV	DESCRIPTION	BY	DATE	G	REV ATS RATING	VL	11/01/2019	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019
L	UPDATED PER QC	NMK	12/05/2019	H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019



ITEM	CATALOG	DESCRIPTION
1	LLL36600U31XAABCSA	CIRCUIT BREAKER 600A WITH SHUNT TRIP
2	2NR301	CURRENT TRANSFORMER MODEL 2NR
3	ATS48C25Y	ALTISTART 48 SOFT START 250 AMP
4	3090TB6	6 POLE SHORT CIRCUIT TERMINAL BLOCK
5	FNQ–R–1	FUSE – CLASS CC
6	FNQ–R–5	FUSE – CLASS CC
7	FNQ–R–6 1/4	FUSE – CLASS CC
8	9070TF500D1	500VA CONTROL TRANSFORMER
9	00–823961	ANALOG AMMETER
10	KR1BH43	BLACK PUSH BUTTON – MOMENTARY, NEMA 4/13
11	RE22R2MYMR	TIMING RELAY – TYPE RE22
12	KP38LWW31	WHITE LED PILOT LIGHT – STANDARD, NEMA 4/13
13	CAD32G7	RELAY TeSys IEC TYPE 120V
14	KR1BH5	BLACK PUSH BUTTON – MOMENTARY, NEMA $\frac{4}{13}$
15	KR1RH6	RED PUSH BUTTON – MOMENTARY, NEMA 4/13
16	26403–12030	KESSLER–ELLIS ELAPSED TIME METER H57.55/UL 120V
17	KP38LRR31	RED LED PILOT LIGHT – STANDARD, NEMA 4/13
18	KP38LGG31	GREEN LED PILOT LIGHT – STANDARD, NEMA 4/13
19	LC1F265F7	CONTACTOR TESYS LC1–F – 3P – AC–3 440V 265A – COIL 110VAC
20	LA9D09980	COIL SUPPRESSOR
21	FNQ–R–1/2	FUSE – CLASS CC
22	CAD32G7	RELAY TeSys IEC TYPE 120V W/TIME DELAY AUX
	LADT0	TIME DELAY AUXILIARY CONTACT
23	DFCC3	3 POLE 30A CLASS CC FUSE HOLDER
24	CAD32G7	RELAY TeSys IEC TYPE 120V
	LAD6K10F	MECHANICAL LATCH BLOCK
25	9001–KS11BH24	SELECTOR SW – 2 POS MAINT, NEMA 4/13
26	CAD32G7	RELAY TeSys IEC TYPE 120V
	LADN22	AUXILIARY CONTACT BLOCK IEC
28	9001SKPF1R31	FLASHING PILOT LIGHT–RED
29	KP38LYA31	AMBER LED PILOT LIGHT – STANDARD, NEMA 4/13

MCC FACTORY ALTISTART 48 PARAMETER SETTINGS:

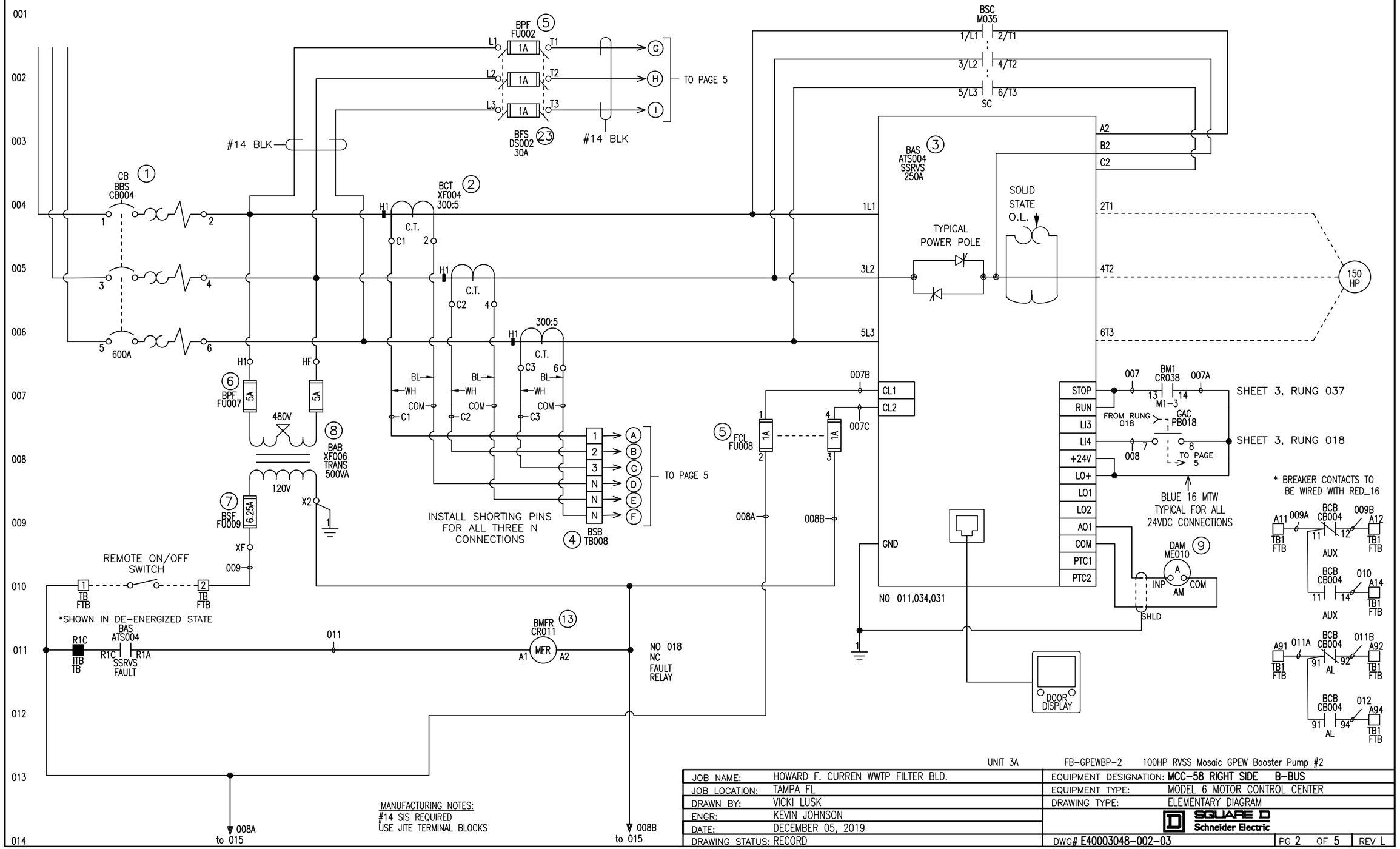
1. **Assign LI4 = LIR : FAULT RESET**
2. **ASSIGN PRO = THP : 20 SEVERE DUTY**
3. **ASSIGN R3 = RNL : MOTOR POWERD**

NOTE:
USE CAUTION WHEN CHANGING FACTORY–SET PARAMETERS. FACTORY–SET DRIVE PARAMETERS ARE CRITICAL FOR ALTISTART CONTROL AND POWER CONFIGURAIONS. DESCRIPTION OF PARAMETERS AND CODES CAN BE FOUND IN THE "PROGRAMMING" SECTION OF INSTRUCTION BULLETIN 30072–450–61 SHIPPED WITH THE CONTROLLER.

UNIT 3A FB–GPEWBP–2 100HP RVSS Mosaic GPEW Booster Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC–58 RIGHT SIDE B–BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048–002–03	PG 1 OF 5 REV L

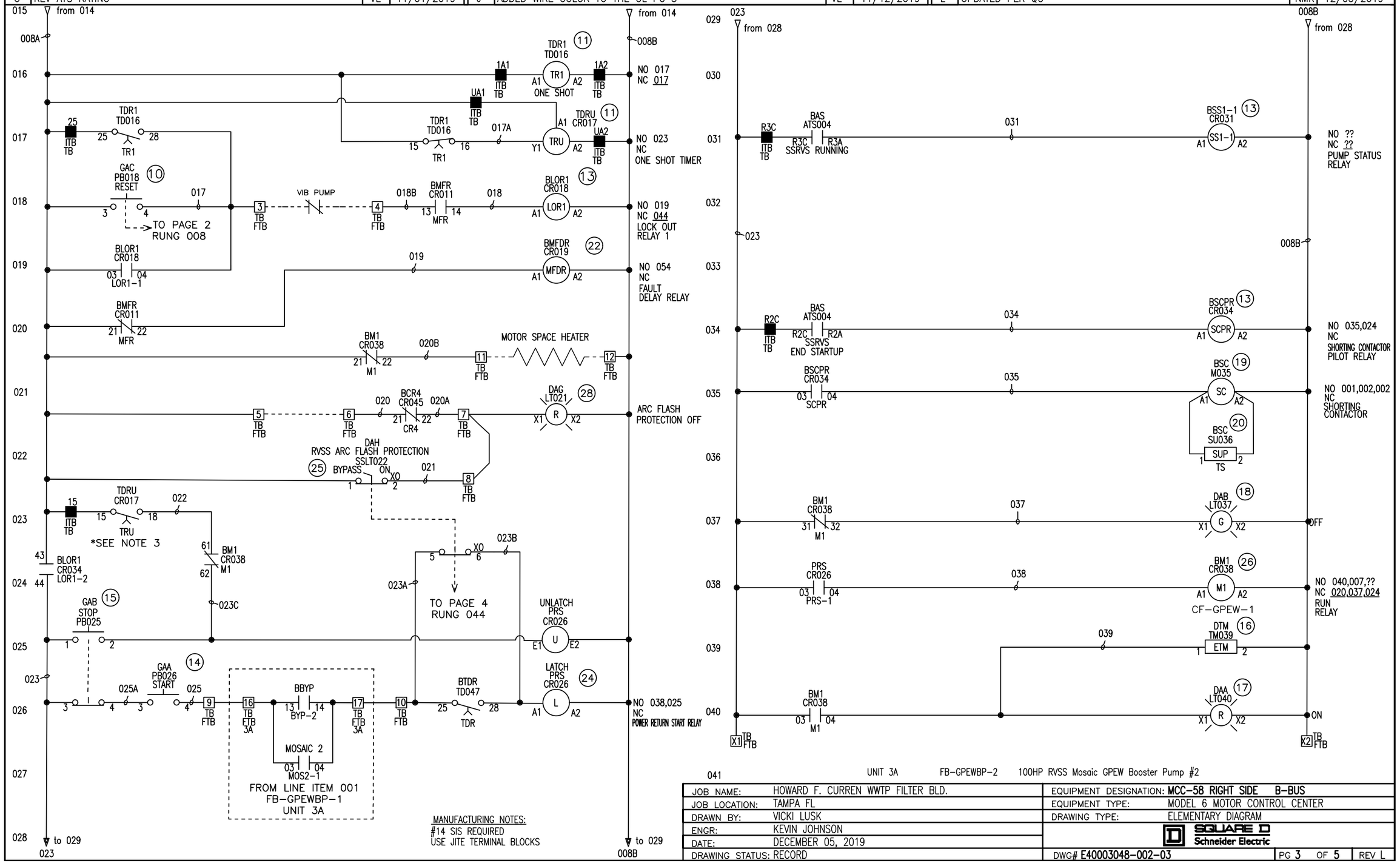
REV	DESCRIPTION	BY	DATE	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	UPDATED PER QC	NMK	12/05/2019
H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019	G	REV ATS RATING	VL	11/01/2019



UNIT 3A FB-GPEWBP-2 100HP RVSS Mosaic GPEW Booster Pump #2

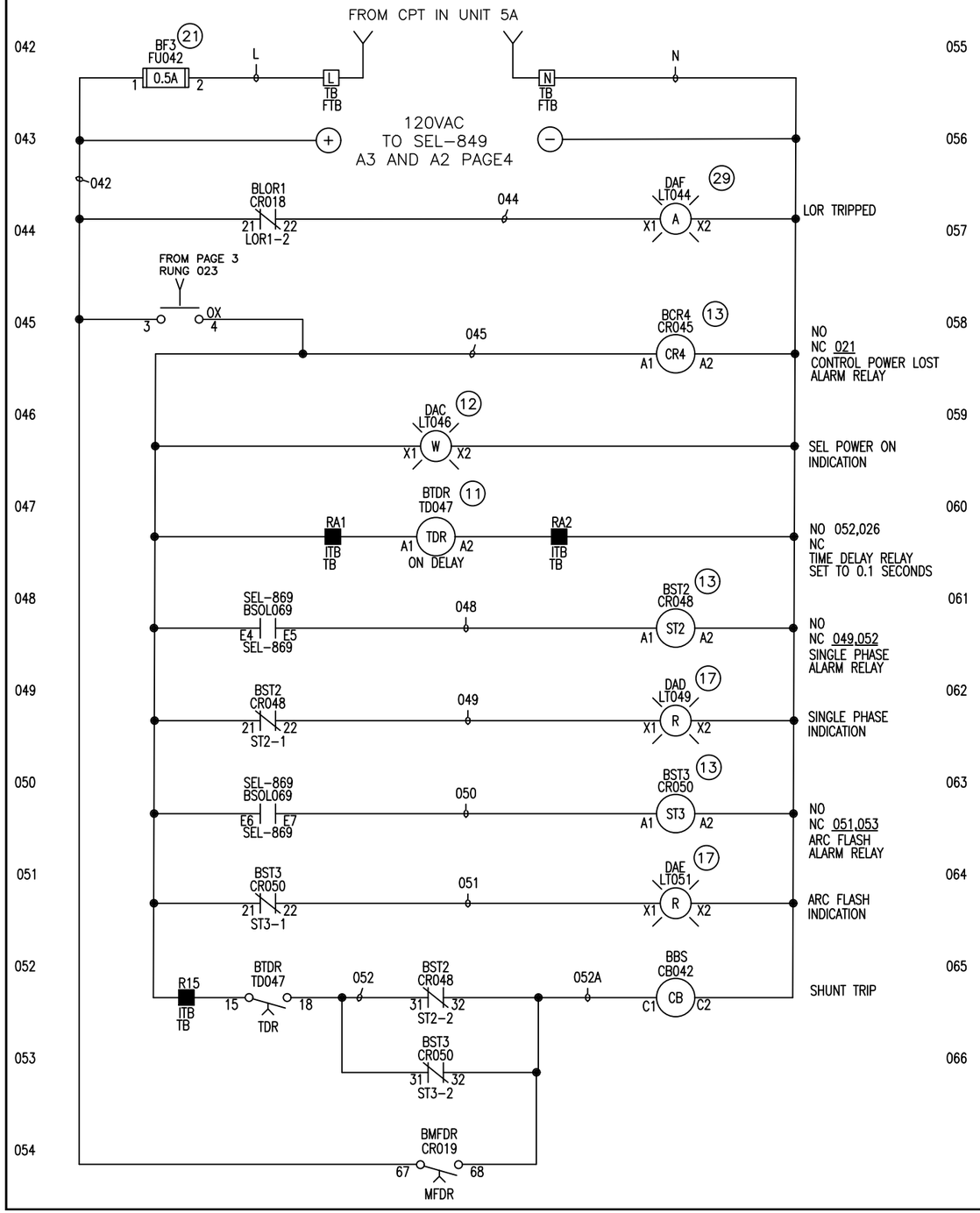
JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-03	PG 2 OF 5 REV L

REV	DESCRIPTION	BY	DATE	H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019
G	REV ATS RATING	VL	11/01/2019	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	UPDATED PER QC	NMK	12/05/2019



JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG#	E40003048-002-03

REV	DESCRIPTION	BY	DATE	H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019
G	REV ATS RATING	VL	11/01/2019	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	UPDATED PER QC	NMK	12/05/2019

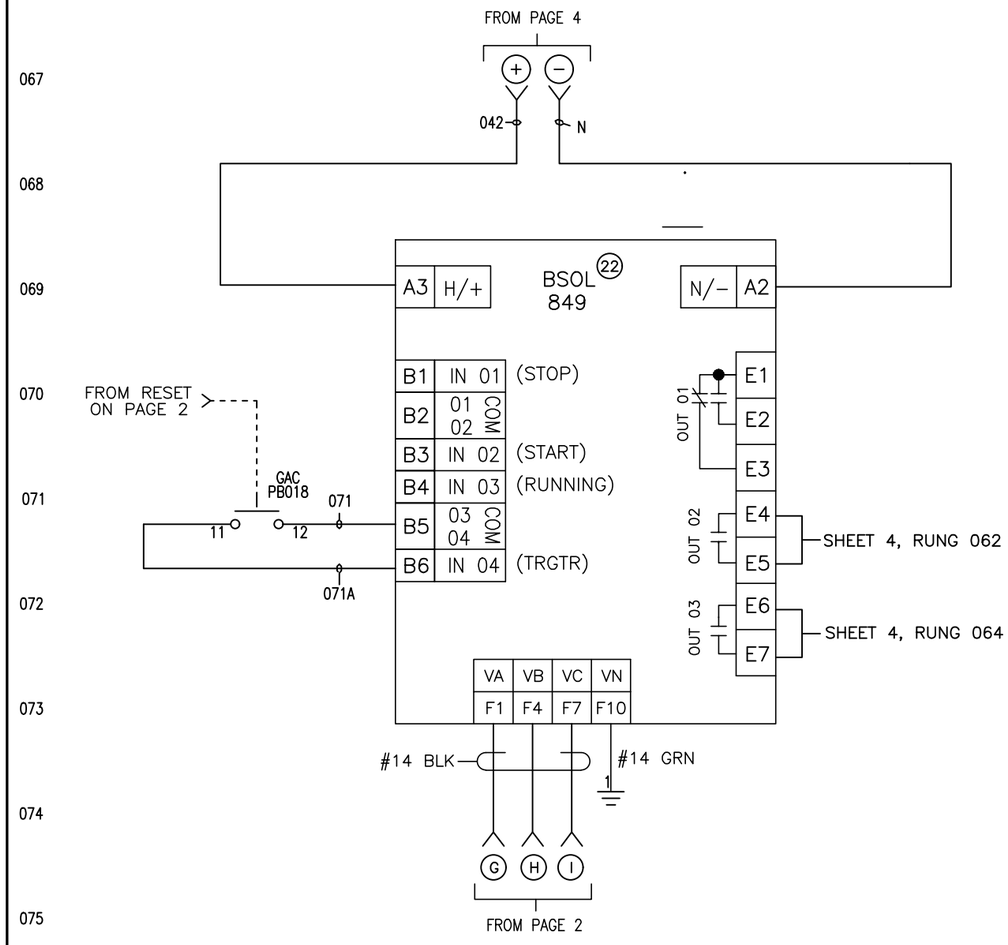


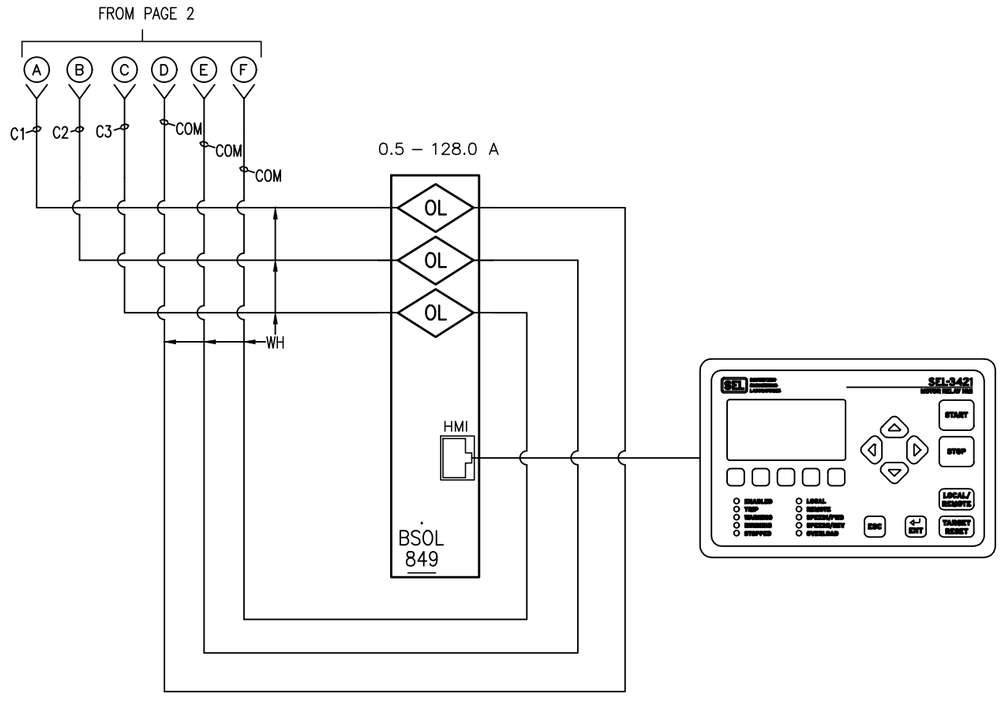
MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

UNIT 3A FB-GPEWBP-2 100HP RVSS Mosaic GPEW Booster Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-03	PG 4 OF 5 REV L

REV	DESCRIPTION	BY	DATE	H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019
G	REV ATS RATING	VL	11/01/2019	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	UPDATED PER QC	NMK	12/05/2019





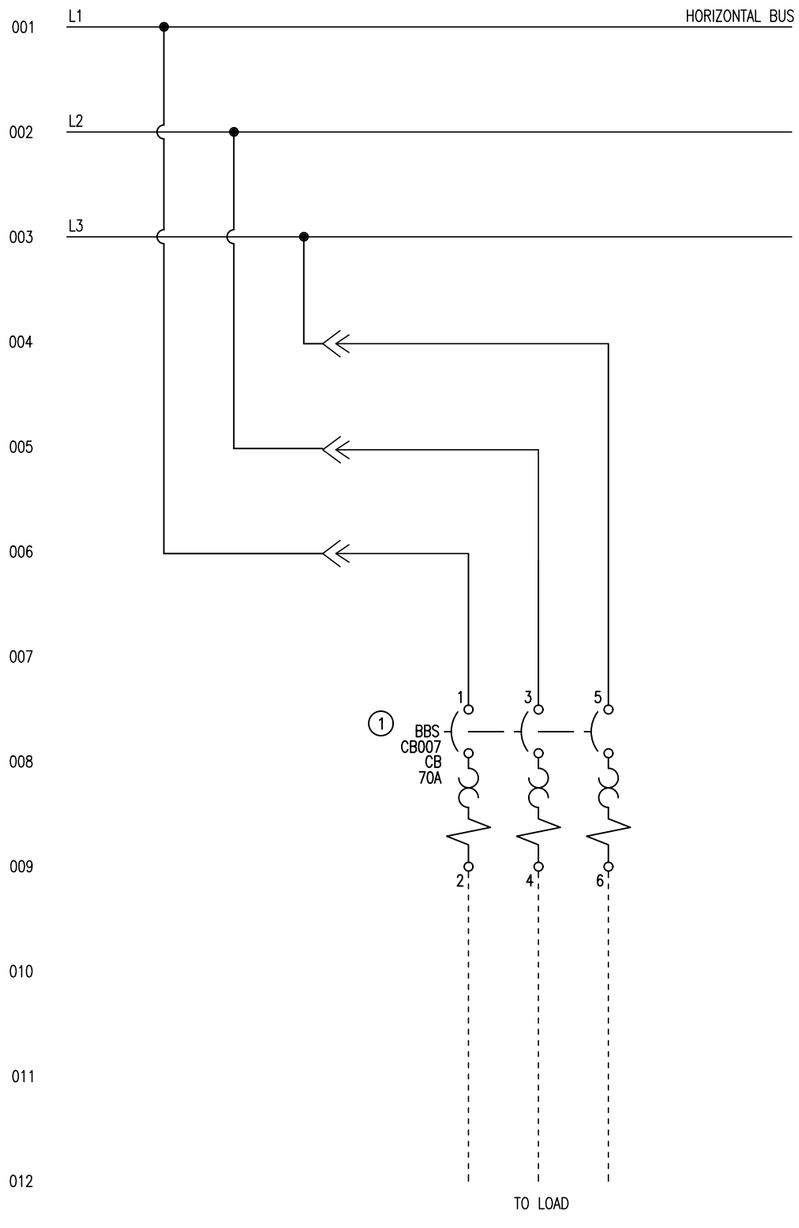
MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

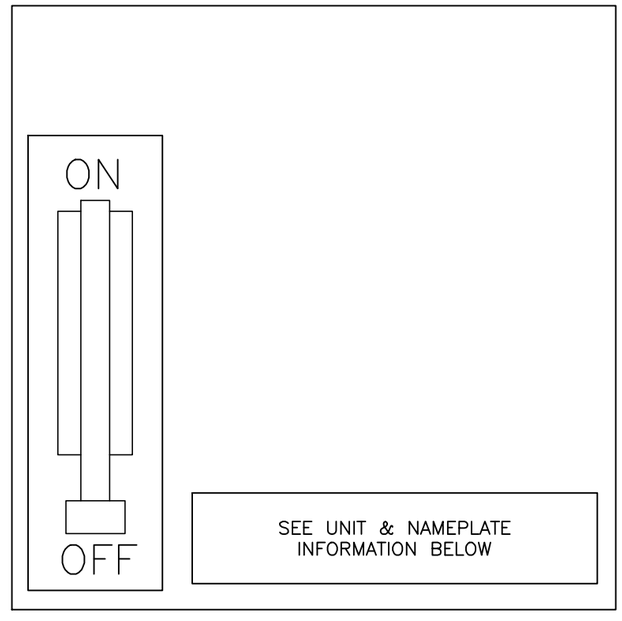
UNIT 3A FB-GPEWBP-2 100HP RVSS Mosaic GPEW Booster Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-03	PG 5 OF 5 REV L

REV	DESCRIPTION	BY	DATE
B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019
E	RELEASED TO MANUFACTURING	VL	09/26/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018
C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

ITEM	CATALOG	DESCRIPTION
1	HJL36070	POWERPACT H–FRAME TM CIRCUIT BREAKER 70A



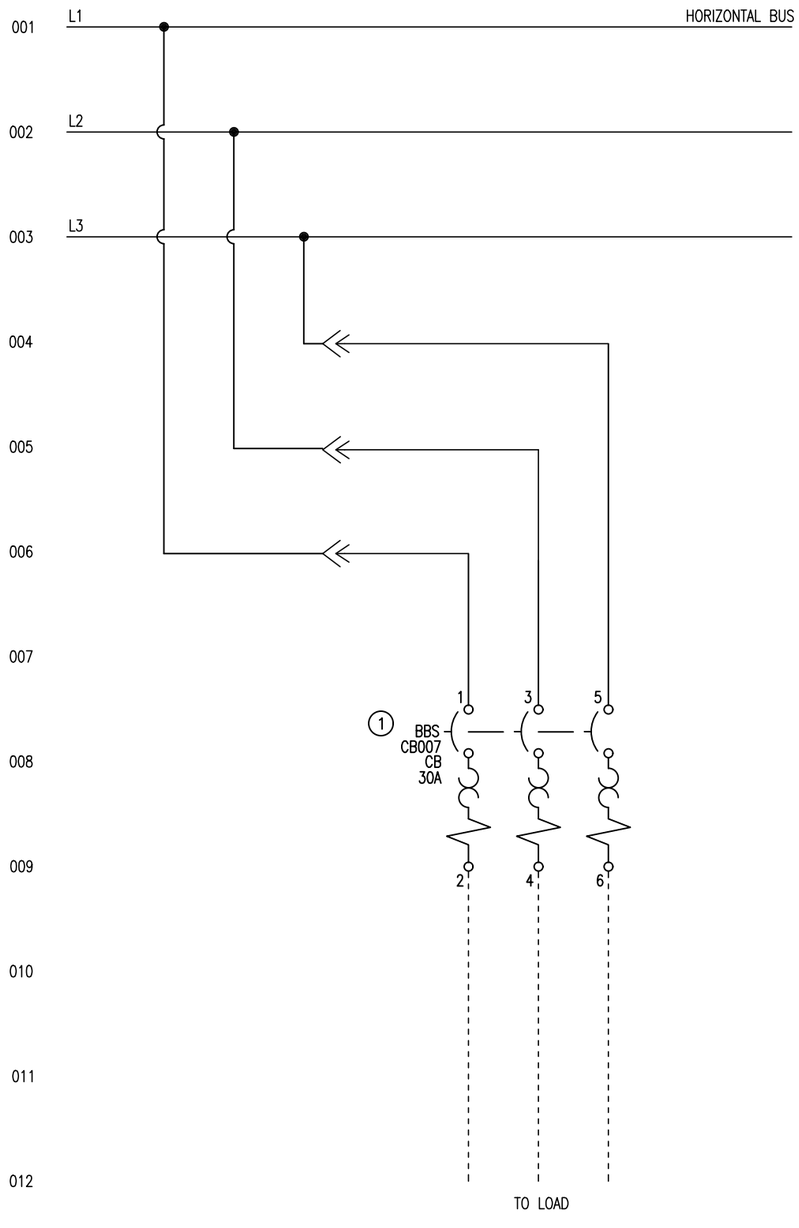


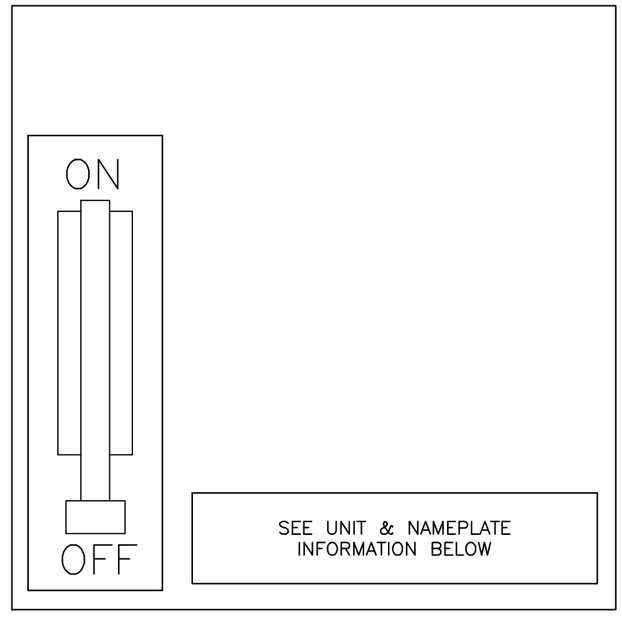
UNIT 4E 70A Feeder to LP–53 Transfer

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC–58 RIGHT SIDE B–BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048–002–04**	PG 1 OF 1 REV E

REV	DESCRIPTION	BY	DATE
B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019
E	RELEASED TO MANUFACTURING	VL	09/26/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018
C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

ITEM	CATALOG	DESCRIPTION
1	HJL36030	POWERPACT H–FRAME TM CIRCUIT BREAKER 30A



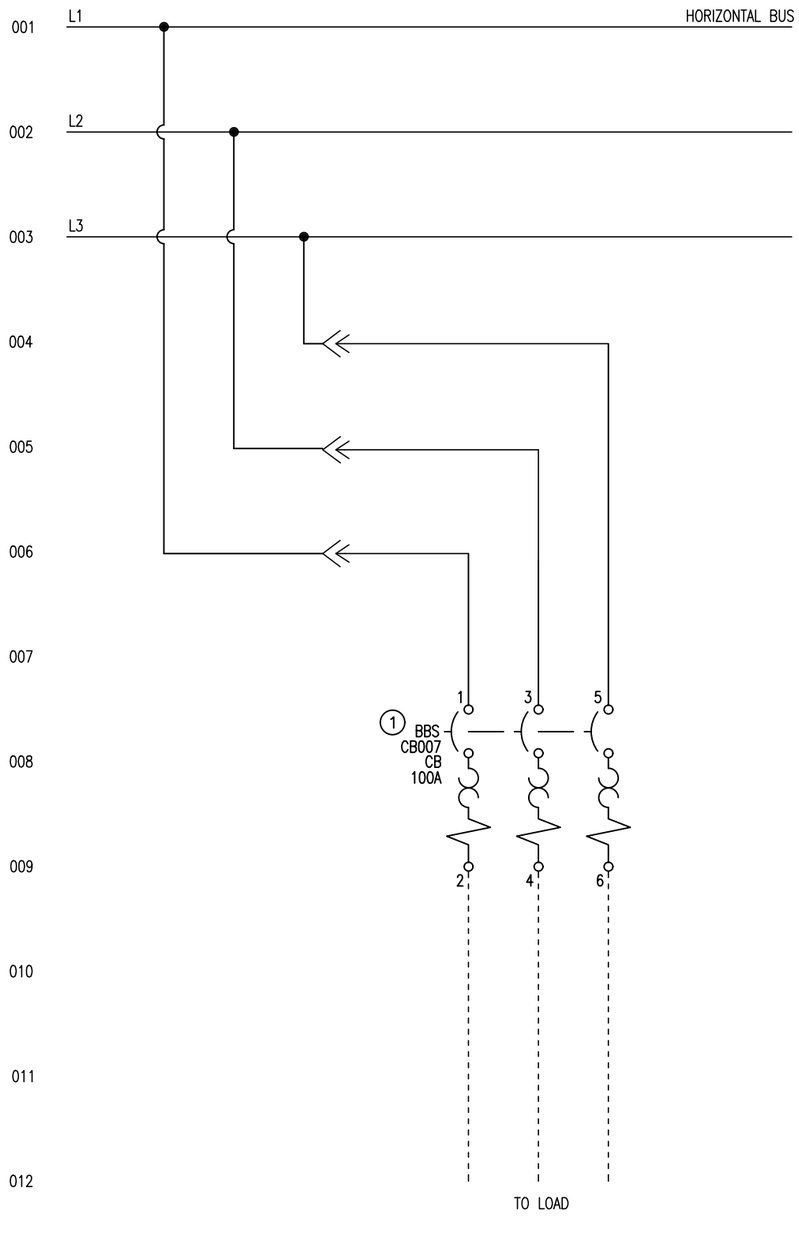


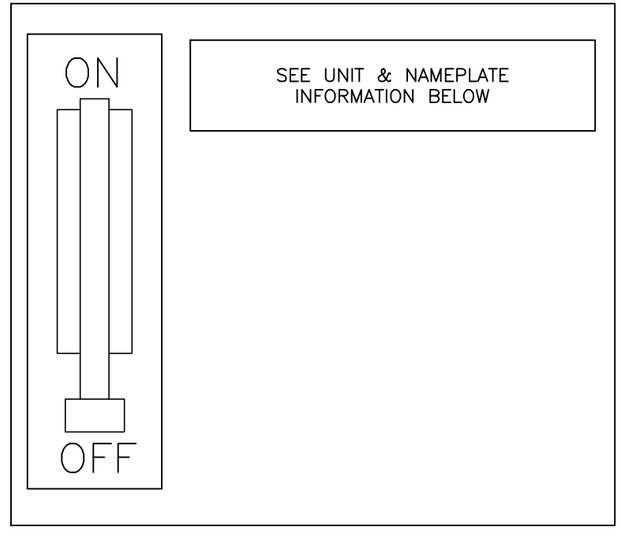
UNIT 41 30A Feeder to FB–MH–3 Monorail Hoist

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC–58 RIGHT SIDE B–BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048–002–05**	PG 1 OF 1 REV E

REV	DESCRIPTION	BY	DATE	D	APPROVAL RESUBMITTAL	VL	08/19/2019	B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	E	RELEASED TO MANUFACTURING	VL	09/26/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

ITEM	CATALOG	DESCRIPTION
1	HJL36100	POWERPACT H-FRAME TM CIRCUIT BREAKER 100A



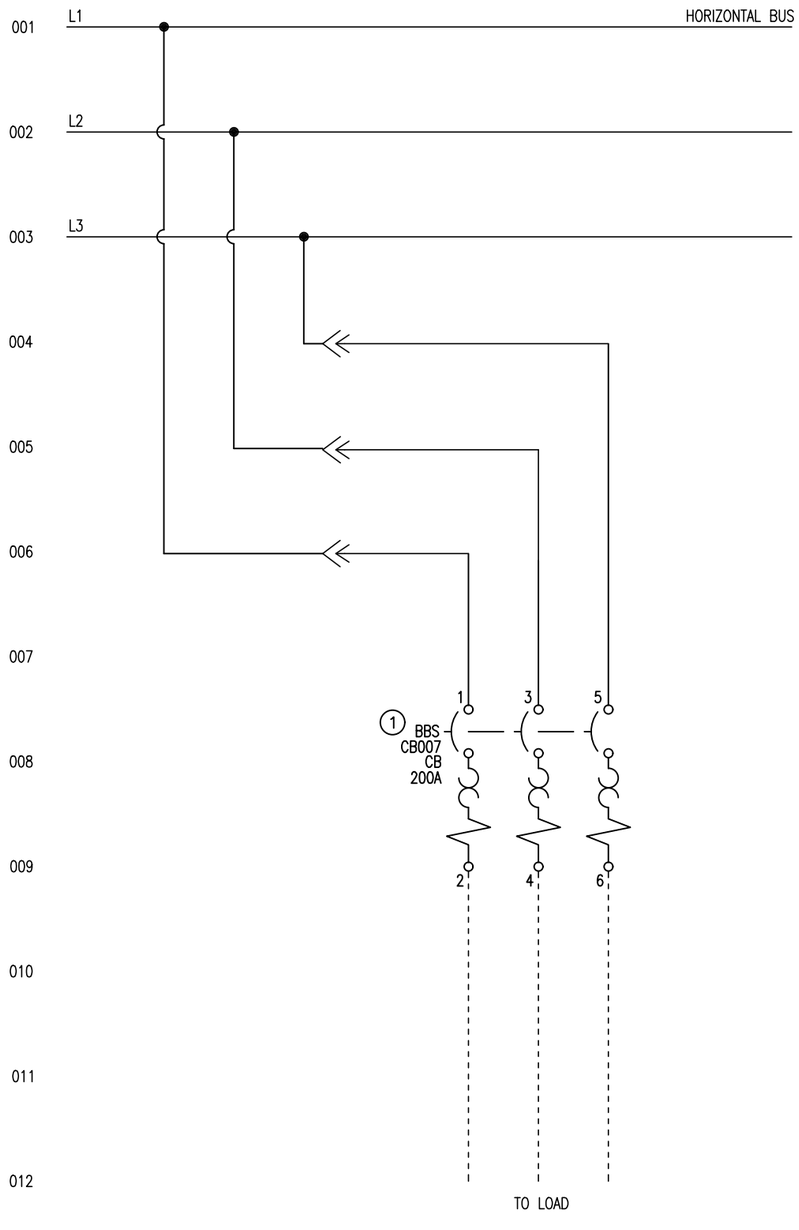


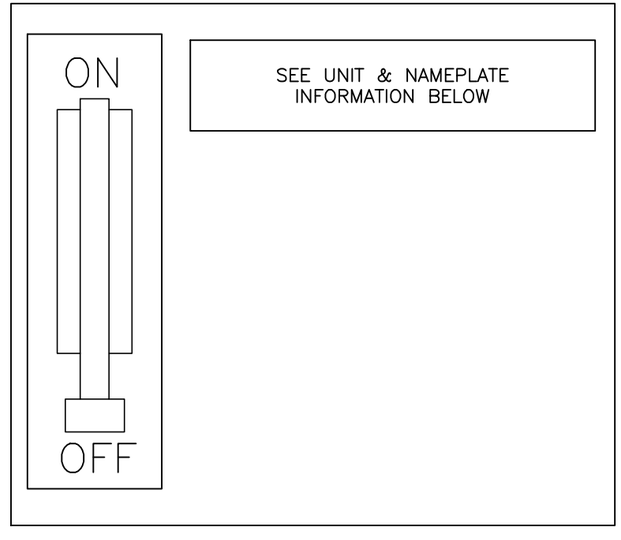
UNIT 4M 100A Feeder to LCP-55 Via transformer T-LCP-55

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC-58 RIGHT SIDE B-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-002-06**	PG 1 OF 1 REV E

REV	DESCRIPTION	BY	DATE
B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019
C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019
E	RELEASED TO MANUFACTURING	VL	09/26/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018
D	APPROVAL RESUBMITTAL	VL	08/19/2019

ITEM	CATALOG	DESCRIPTION
1	JJP36200	POWERPACT J–FRAME TM CIRCUIT BREAKER 200A



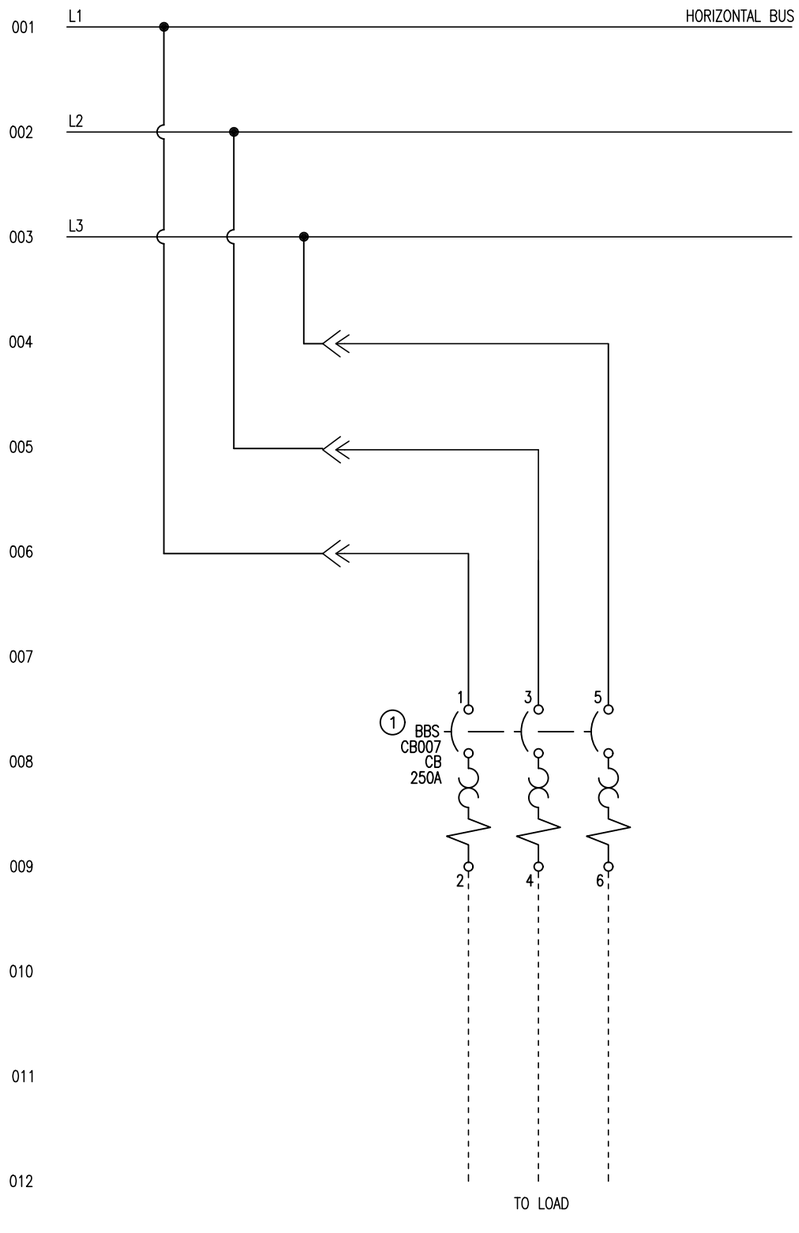


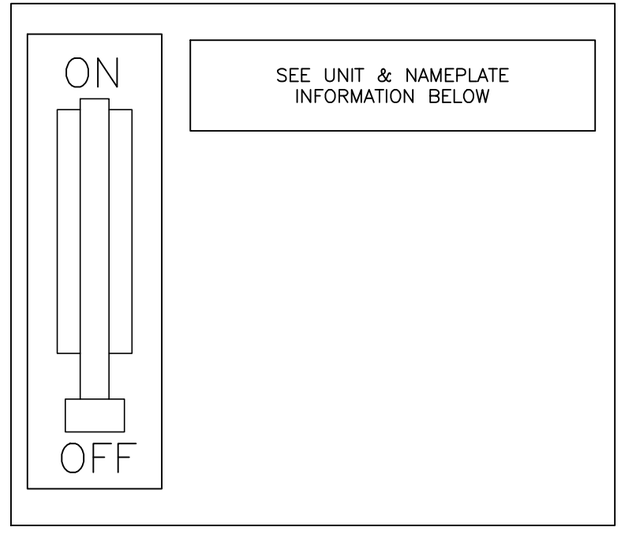
UNIT 5E 200A Feeder to LCP–54 Via transformer T–LCP–54

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC–58 RIGHT SIDE B–BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048–002–07**	PG 1 OF 1 REV E

REV	DESCRIPTION	BY	DATE	D	APPROVAL RESUBMITTAL	VL	08/19/2019	B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019
A	REVISED PER CUSTOMER COMMENTS	LW	08/28/2018	E	RELEASED TO MANUFACTURING	VL	09/26/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

ITEM	CATALOG	DESCRIPTION
1	JJP36250	POWERPACT J-FRAME TM CIRCUIT BREAKER 250A

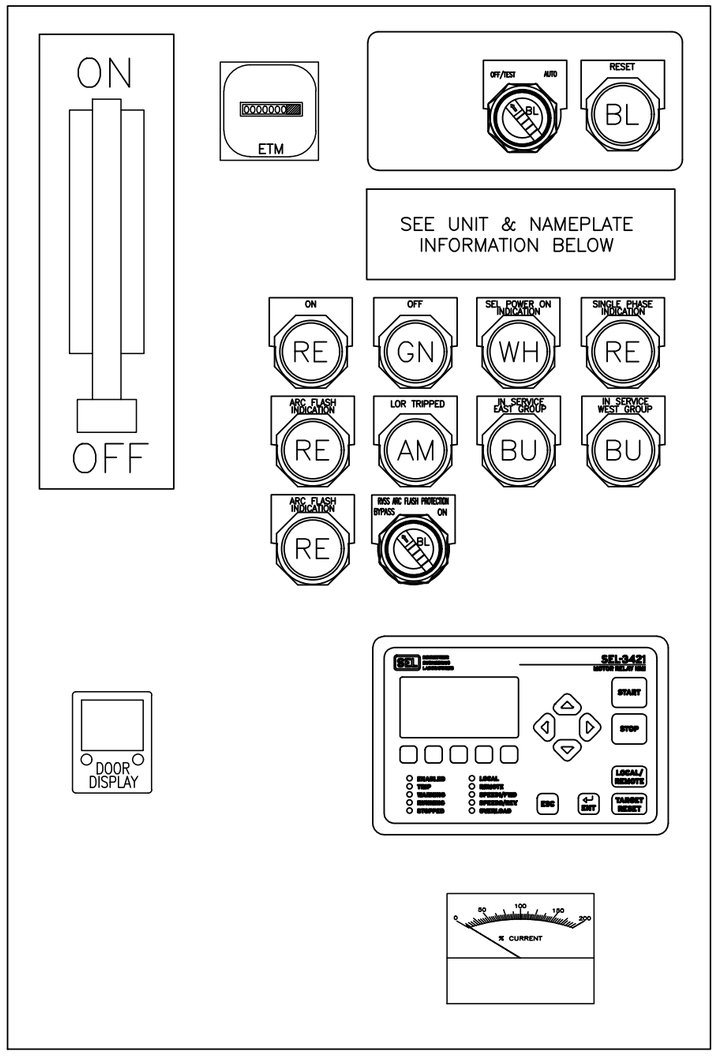




UNIT 5K 250A Feeder to MCC-58A Bus-B

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC-58 RIGHT SIDE B-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-002-08**	PG 1 OF 1 REV E

REV	DESCRIPTION	BY	DATE	P	UPDATED PER QC	NMK	12/05/2019	L	MOVED WIRE TO LOAD SIDE OF SECONDARY FUSE	NLM	11/15/2019
N	REV 020 AND 020A WIRE LABELS	VL	11/18/2019	K	UPDATED CT INFO	DJO	11/15/2019	M	LABELS	TR	11/18/2019



ITEM	CATALOG	DESCRIPTION
1	LLL36600U31XAABCSA	CIRCUIT BREAKER 600A WITH SHUNT TRIP
2	5NR501	CURRENT TRANSFORMER MODEL 5NR
3	ATS48C32Y	ALTISTART 48 SOFT START 320 AMP
4	3090TB6	6 POLE SHORT CIRCUIT TERMINAL BLOCK
5	FNQ–R–1	FUSE – CLASS CC
6	FNQ–R–5	FUSE – CLASS CC
7	FNQ–R–6 1/4	FUSE – CLASS CC
8	9070TF500D1	500VA CONTROL TRANSFORMER
9	KP38LYA31	AMBER LED PILOT LIGHT – STANDARD, NEMA 4/13
10	KR1BH43	BLACK PUSH BUTTON – MOMENTARY, NEMA 4/13
11	00–823961	ANALOG AMMETER
12	KP38LLL31	BLUE LED PILOT LIGHT – STANDARD, NEMA 4/13
13	CAD32G7	RELAY TeSys IEC TYPE 120V
14	RE22R2MYMR	TIMING RELAY – TYPE RE22
15	9001–KS11BH24	SELECTOR SW – 2 POS MAINT, NEMA 4/13
16	26403–12030	KESSLER–ELLIS ELAPSED TIME METER H57.55/UL 120V
17	KP38LRR31	RED LED PILOT LIGHT – STANDARD, NEMA 4/13
18	KP38LGG31	GREEN LED PILOT LIGHT – STANDARD, NEMA 4/13
19	LC1F330G7	IEC CONTACTOR 330A
20	LA9D09980	COIL SUPPRESSOR
21	FNQ–R–1/2	FUSE – CLASS CC
22	KP38LWW31	WHITE LED PILOT LIGHT – STANDARD, NEMA 4/13
23	CAD32G7	RELAY TeSys IEC TYPE 120V
	LADN22	AUXILIARY CONTACT BLOCK IEC
24	DFCC3	3 POLE 30A CLASS CC FUSE HOLDER
25	9001SKPF1R31	FLASHING PILOT LIGHT–RED
26	CAD32G7	RELAY TeSys IEC TYPE 120V W/TIME DELAY AUX
	LADT0	TIME DELAY AUXILIARY CONTACT

MCC FACTORY ALTISTART 48 PARAMETER SETTINGS:

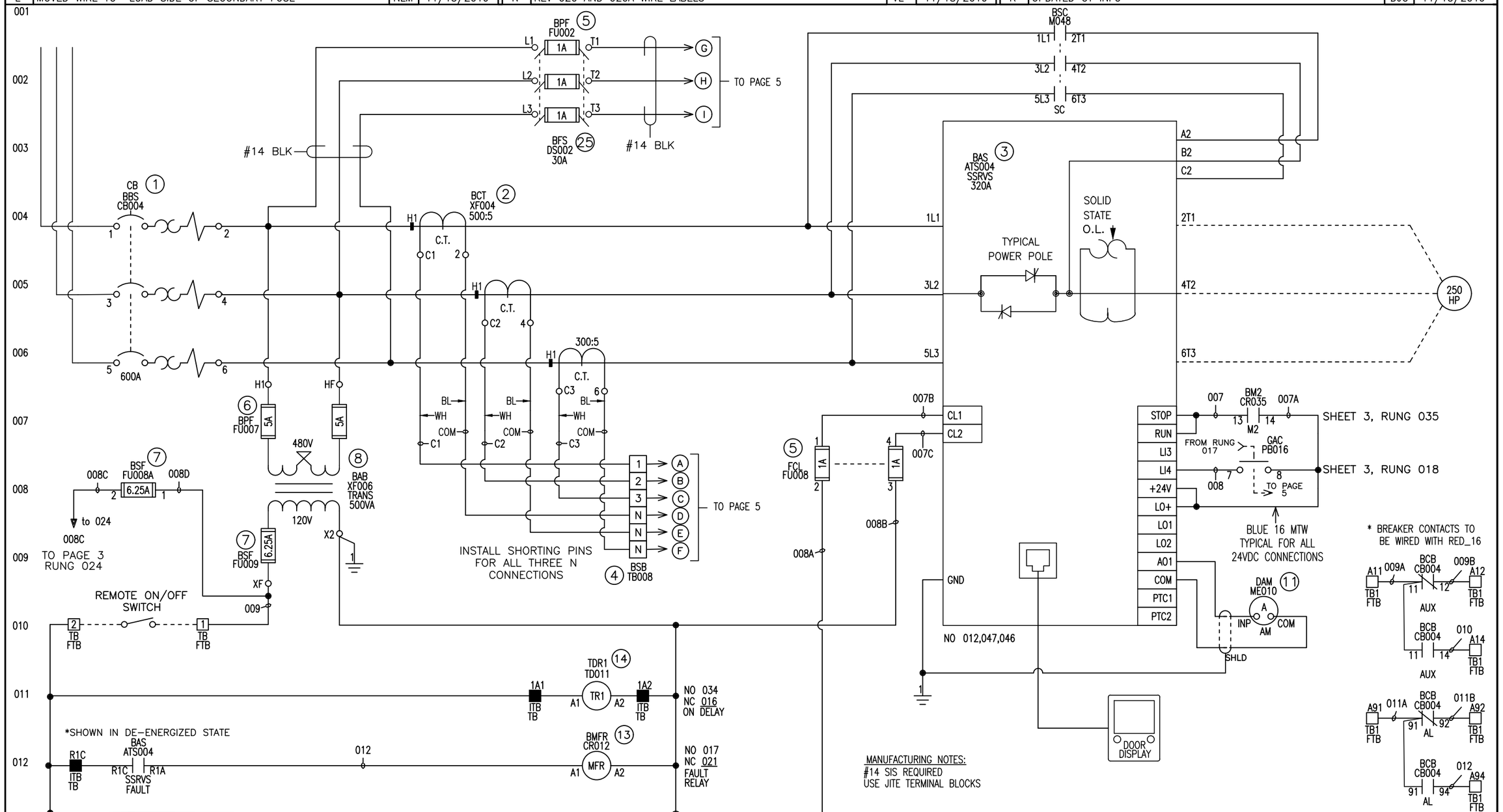
1. **Assign LI4 = LIR : FAULT RESET**
2. **ASSIGN PRO = THP : 20 SEVERE DUTY**
3. **ASSIGN R3 = RNL : MOTOR POWERD**

NOTE:
USE CAUTION WHEN CHANGING FACTORY–SET PARAMETERS. FACTORY–SET DRIVE PARAMETERS ARE CRITICAL FOR ALTISTART CONTROL AND POWER CONFIGURAIONS. DESCRIPTION OF PARAMETERS AND CODES CAN BE FOUND IN THE "PROGRAMMING" SECTION OF INSTRUCTION BULLETIN 30072–450–61 SHIPPED WITH THE CONTROLLER.

UNIT 6A FB–BWP–2 250HP RVSS Backwash Water Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC–58 RIGHT SIDE B–BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048–002–09**	PG 1 OF 6 REV P

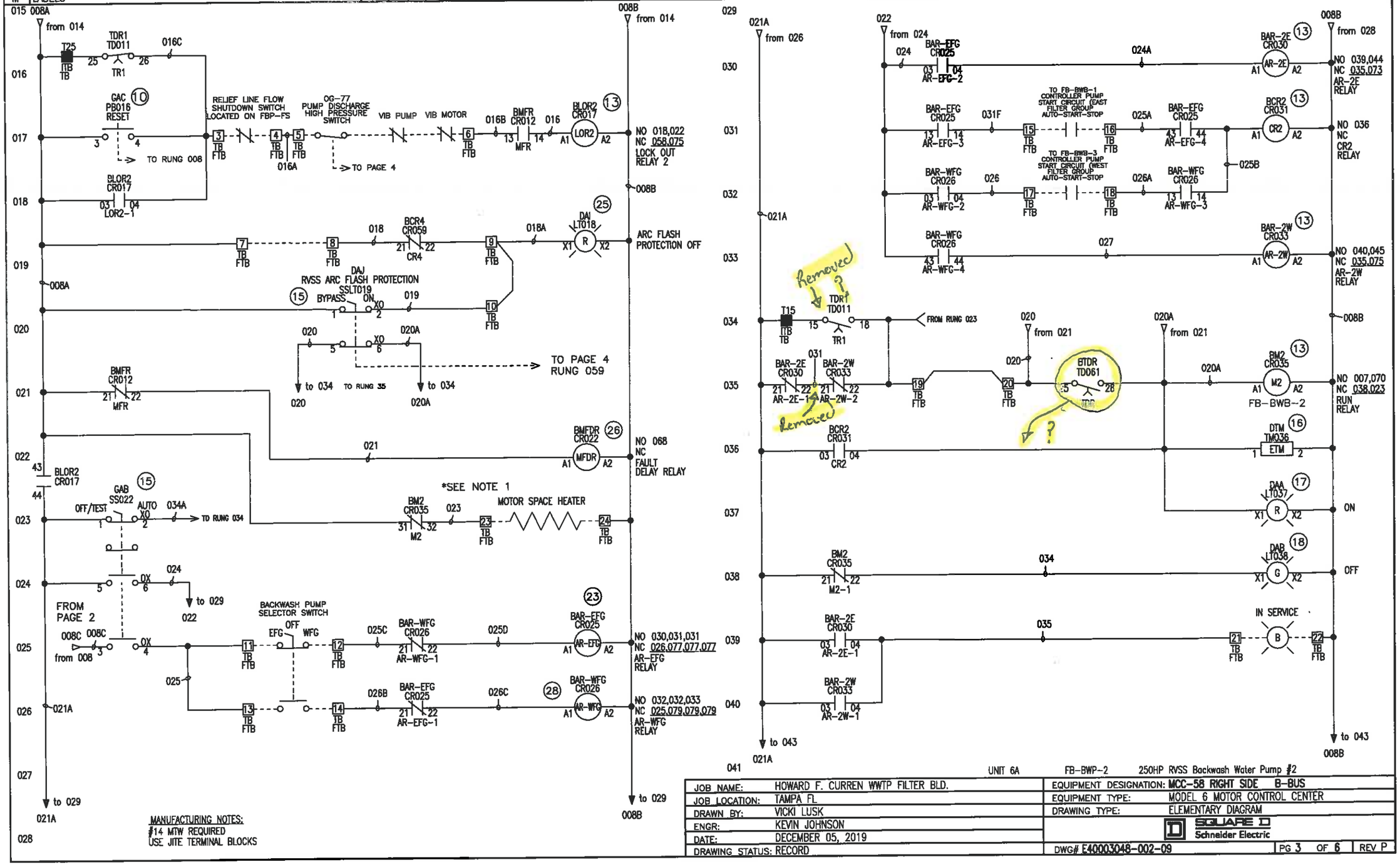
REV	DESCRIPTION	BY	DATE	M	LABELS	TR	11/18/2019	P	UPDATED PER QC	NMK	12/05/2019
L	MOVED WIRE TO LOAD SIDE OF SECONDARY FUSE	NLM	11/15/2019	N	REV 020 AND 020A WIRE LABELS	VL	11/18/2019	K	UPDATED CT INFO	DJO	11/15/2019



UNIT 6A FB-BWP-2 250HP RVSS Backwash Water Pump #2

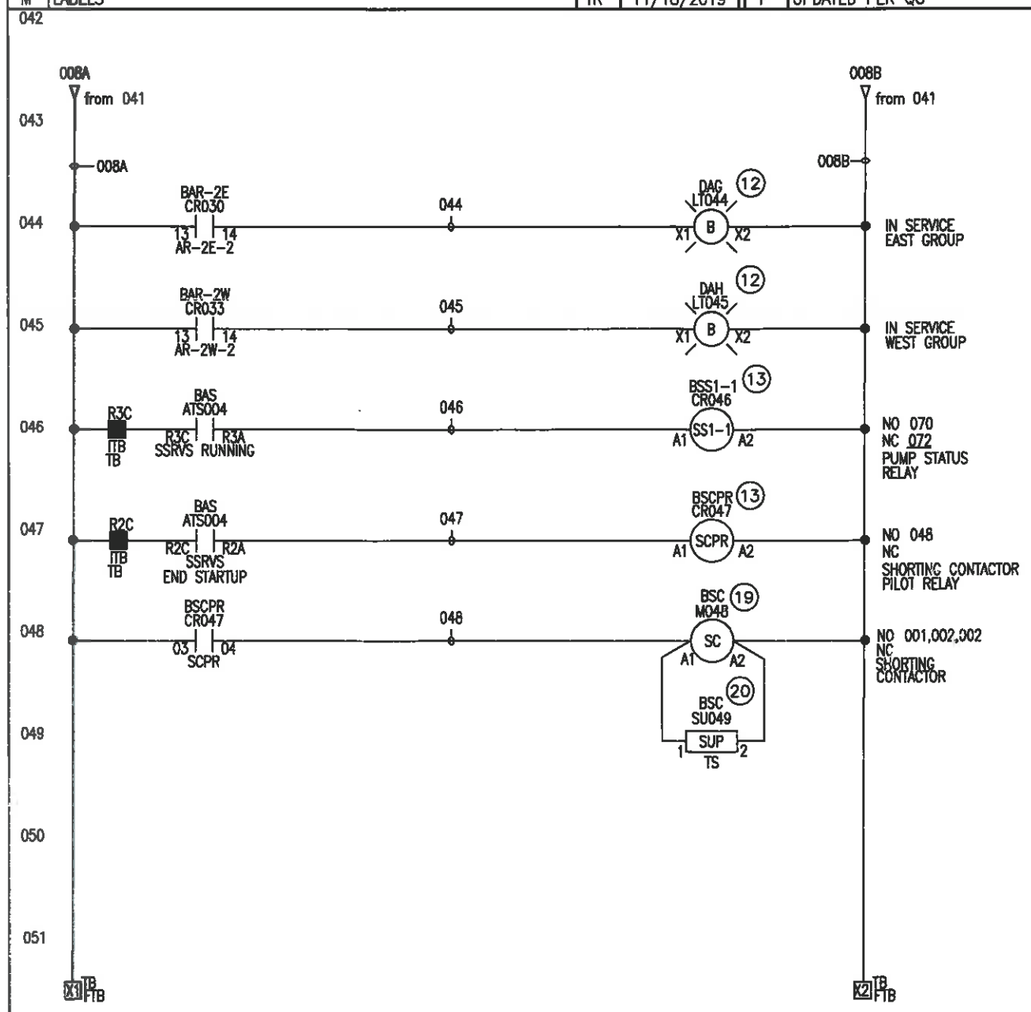
JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-09	PG 2 OF 6 REV P

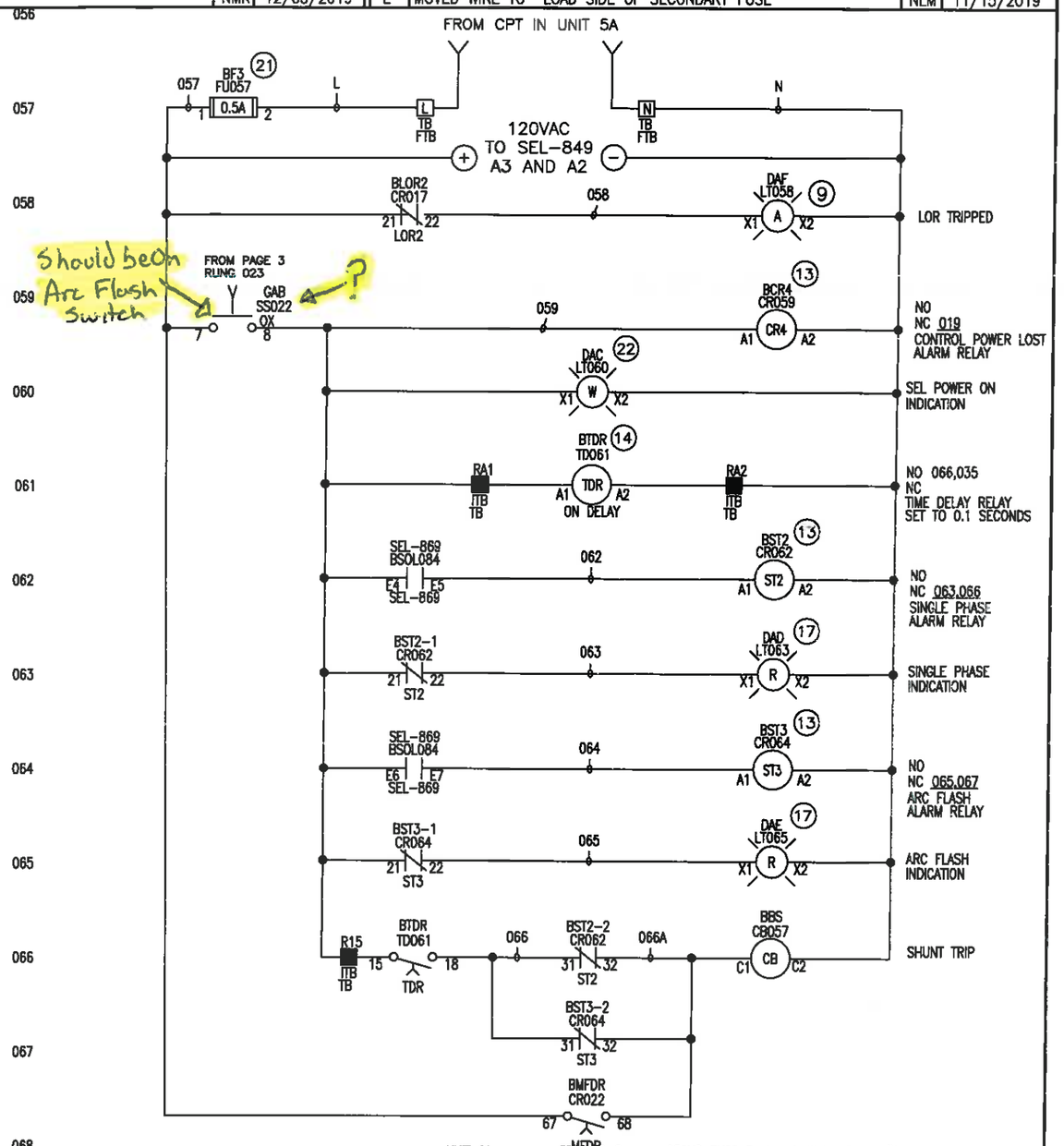
REV	DESCRIPTION	BY	DATE	N	REV 020 AND 020A WIRE LABELS	VL	11/18/2019	K	UPDATED CT INFO	DJO	11/15/2019
M	LABELS	TR	11/18/2019	P	UPDATED PER QC	NMK	12/05/2019	L	MOVED WIRE TO LOAD SIDE OF SECONDARY FUSE	NLM	11/15/2019



JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019	DWG#	E40003048-002-09
DRAWING STATUS:	RECORD	PG 3 OF 6	REV P

REV	DESCRIPTION	BY	DATE	N	REV 020 AND 020A WIRE LABELS	VL	11/18/2019	K	UPDATED CT INFO	DJO	11/15/2019
M	LABELS	TR	11/18/2019	P	UPDATED PER QC	NMK	12/05/2019	L	MOVED WIRE TO LOAD SIDE OF SECONDARY FUSE	NLM	11/15/2019





JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-09	PG 4 OF 6 REV P

REV	DESCRIPTION	BY	DATE	N	REV 020 AND 020A WIRE LABELS	VL	11/18/2019	K	UPDATED CT INFO	DJO	11/15/2019
M	LABELS	TR	11/18/2019	P	UPDATED PER QC	NMK	12/05/2019	L	MOVED WIRE TO LOAD SIDE OF SECONDARY FUSE	NLM	11/15/2019

069

070

BM2 CR035 070A
43 M2-5 44
25 TB FTB

070
26 TB FTB

TO SOFTSTARTER START SIGNAL INPUT "B1" PUMP NO. 2 SOFTSTARTER

071

BSS1-1 CR046 070C
03 SS1-1 04
27 TB FTB

070B
28 TB FTB

TO FBP–FS PUMP NO. 2 STATUS INPUT

BSS1-1 CR046 072
21 SS1-2 22
29 TB FTB

072

FROM PAGE 2 RUNG 011

073

30 TB FTB

TO FBP–FS–ANN (HIGH DISCHARGE PRESSURE ALARM PUMP NO. 2)

074

31 TB FTB

BAR-2E CR030 073A
31 AR-2E-3 32
32 TB FTB

TO–FBP–FS EAST FILTER GROUP "IN–SERVICE" SIGNAL INPUT PUMP NO.2

073
33 TB FTB

075

BLOR2 CR017 075A
31 LOR2-4 32
34 TB FTB

TO FBP–FS–ANN "LOR TRIP PUMP NO. 2"

BAR-2W CR033 075C
31 AR-2W-3 32
36 TB FTB

TO–FBP–FS WEST FILTER GROUP "IN–SERVICE" SIGNAL INPUT PUMP NO.2

076

075
35 TB FTB

075B
37 TB FTB

077

077 BAR-EFG CR025 077A
38 TB FTB 31 AR-EFG-5 32 39 TB FTB

077B BAR-EFG CR025 077C
40 TB FTB 61 AR-EFG-6 62 41 TB FTB

077D BAR-EFG CR025 077E
42 TB FTB 71 AR-EFG-7 72 43 TB FTB

TO FB–BWB–1 CONTROLLER

078

079

079 BAR-WFG CR026 079A
44 TB FTB 31 AR-WFG-5 32 45 TB FTB

079B BAR-WFG CR026 079C
46 TB FTB 61 AR-WFG-6 62 47 TB FTB

079D BAR-WFG CR026 079E
48 TB FTB 71 AR-WFG-7 72 49 TB FTB

TO FB–BWB–3 CONTROLLER

080

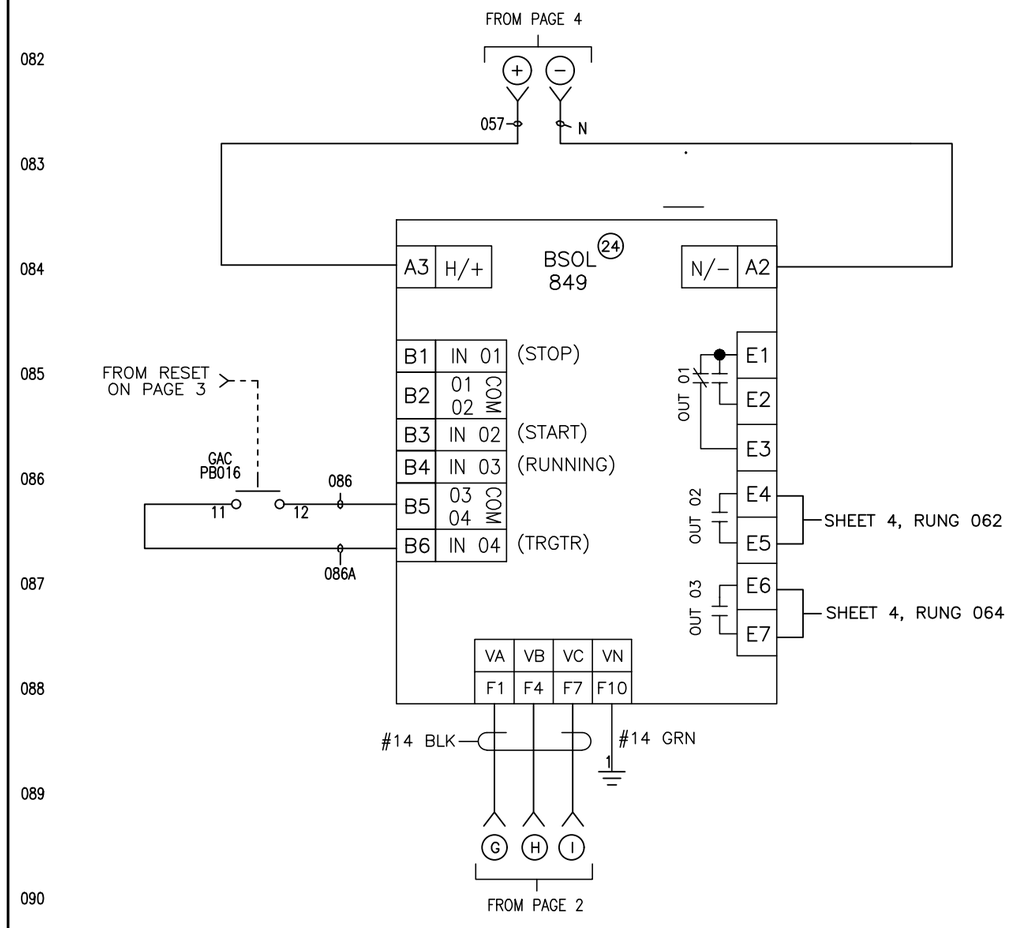
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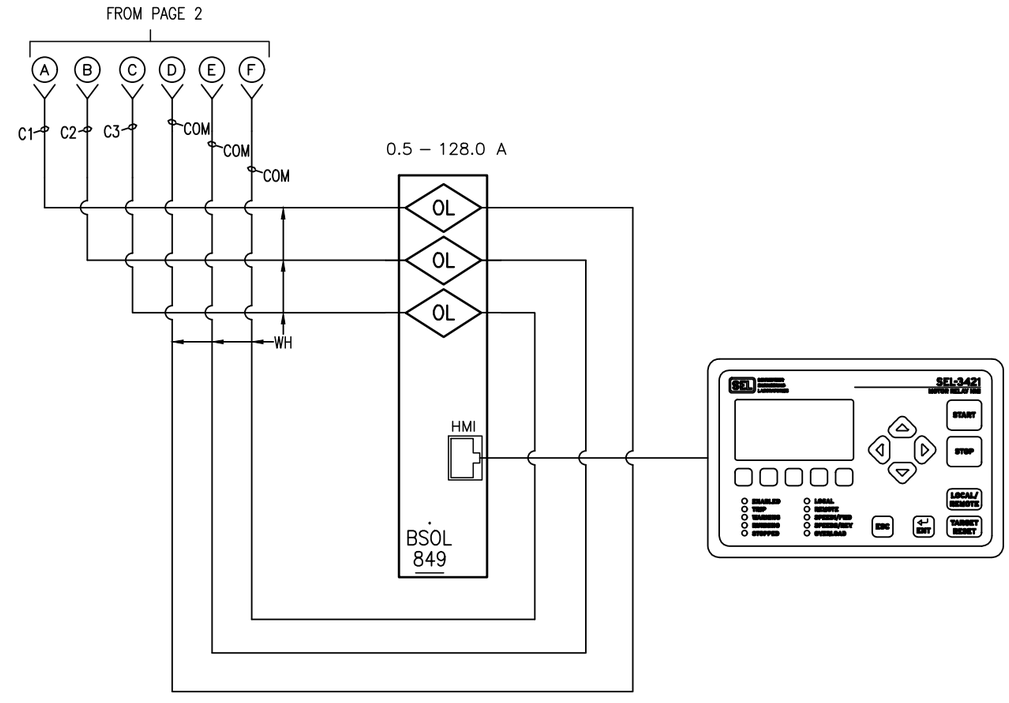
MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

UNIT 6A FB–BWP–2 250HP RVSS Backwash Water Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC–58 RIGHT SIDE B–BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048–002–09	PG 5 OF 6 REV P

REV	DESCRIPTION	BY	DATE	N	REV 020 AND 020A WIRE LABELS	VL	11/18/2019	K	UPDATED CT INFO	DJO	11/15/2019
M	LABELS	TR	11/18/2019	P	UPDATED PER QC	NMK	12/05/2019	L	MOVED WIRE TO LOAD SIDE OF SECONDARY FUSE	NLM	11/15/2019





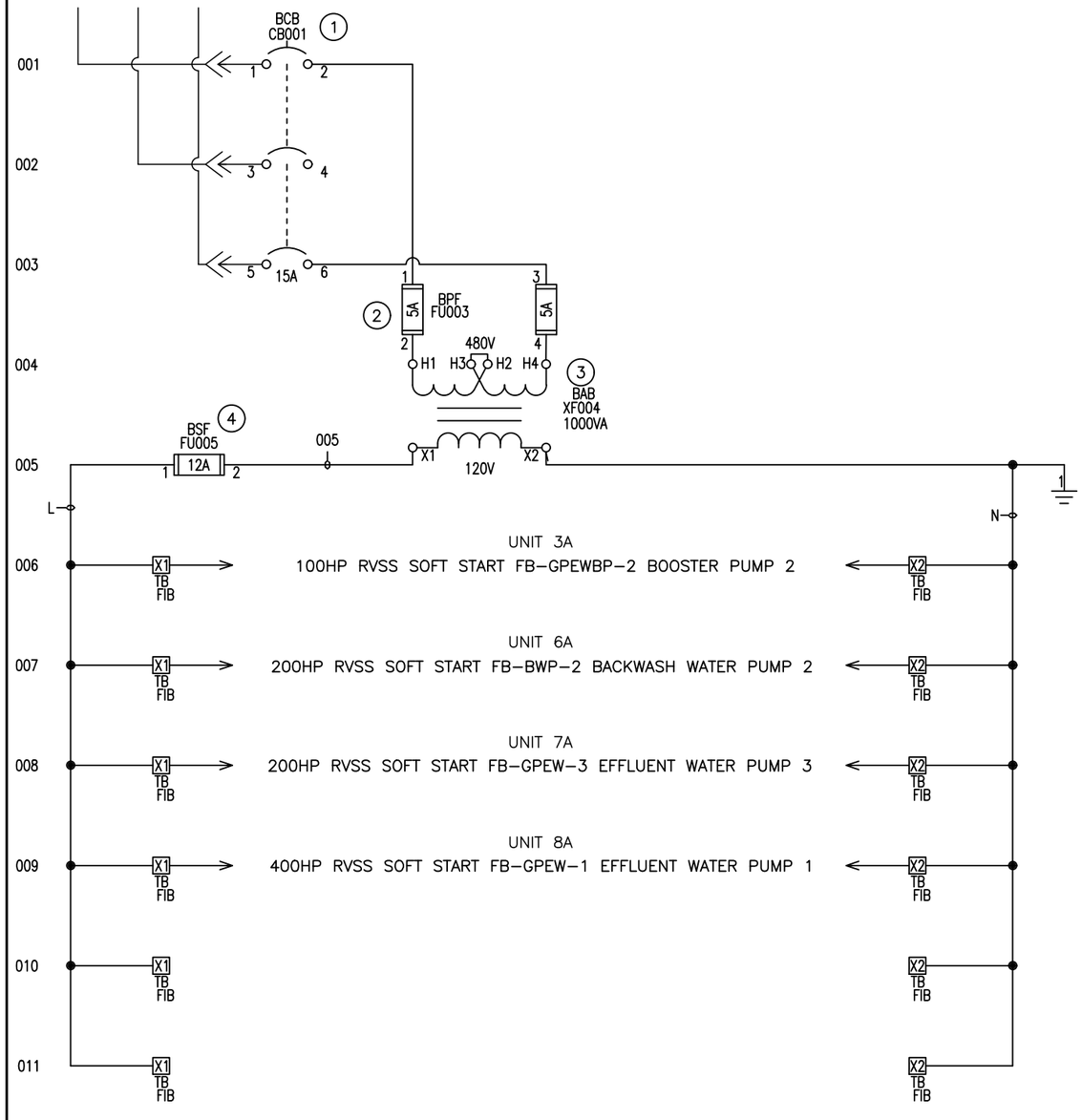
MANUFACTURING NOTES:
#14 MTW REQUIRED
USE JITE TERMINAL BLOCKS

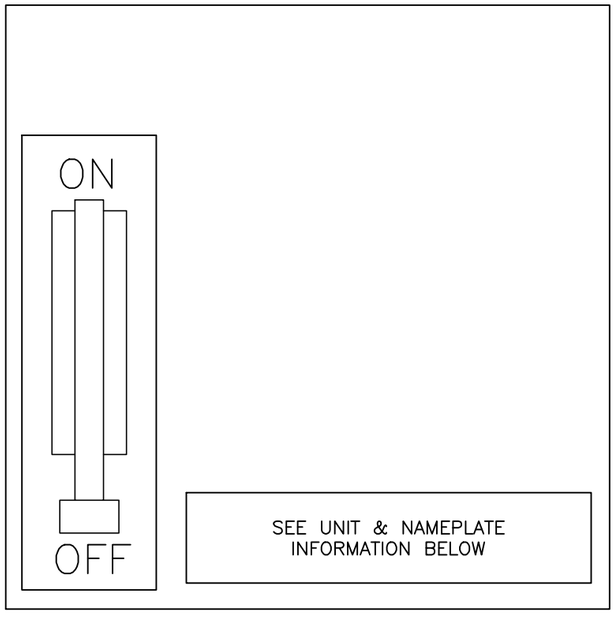
UNIT 6A FB-BWP-2 250HP RVSS Backwash Water Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-09	PG 6 OF 6 REV P

REV	DESCRIPTION	BY	DATE	B	REVISED PER CUSTOMER CHANGES	NMK	04/10/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019
F	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	D	APPROVAL RESUBMITTAL	VL	08/19/2019	E	RELEASED TO MANUFACTURING	VL	09/26/2019

ITEM	CATALOG	DESCRIPTION
1	HJL36015	POWERPACT H–FRAME TM CIRCUIT BREAKER 15A
2	FNQ–R–5	FUSE – CLASS CC
3	9070T1000D1	INDUSTRIAL CONTROL TRANSFORMER, CLASS 9070
4	FRN–R–12	DUAL ELEMENT FUSE –CLASS RK5



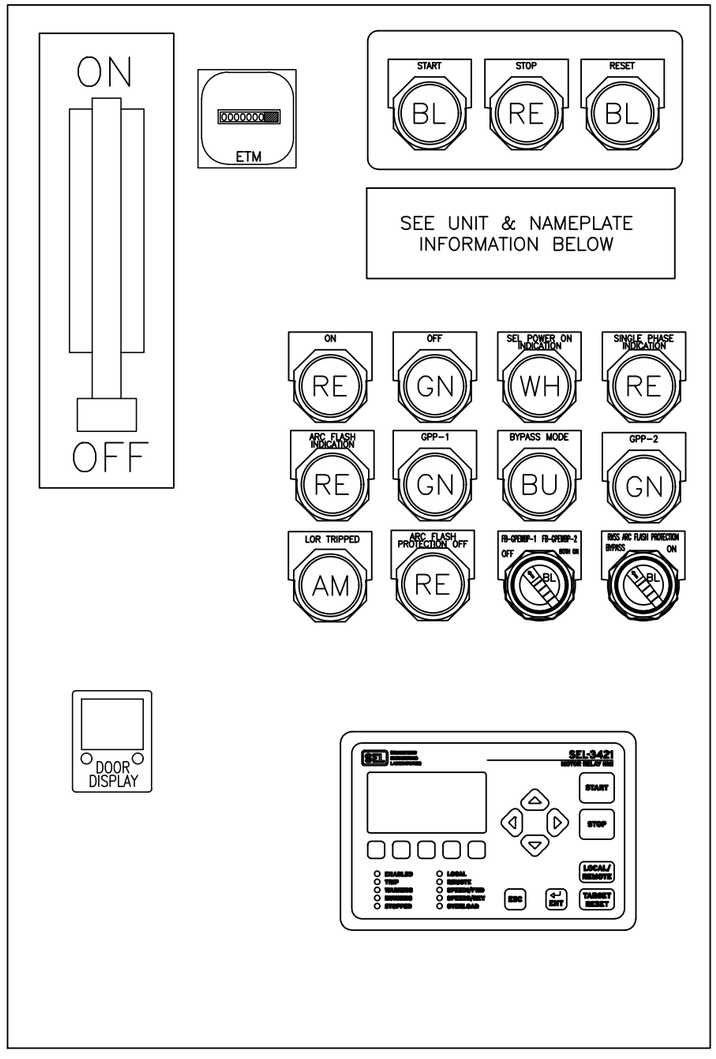


MANUFACTURING NOTES:
#14 MTW REQUIRED
USE JITE TERMINAL BLOCKS

UNIT 5A 120V Transformer

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC–58 RIGHT SIDE B–BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048–002–10**	PG 1 OF 1 REV F

REV	DESCRIPTION	BY	DATE	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	UPDATED CT INFO	DJO	11/15/2019
H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019	M	UPDATED PER QC	NMK	12/05/2019



ITEM	CATALOG	DESCRIPTION
1	LLL36600U31XAABCSA	CIRCUIT BREAKER 300A WITH SHUNT TRIP
2	5NR501	CURRENT TRANSFORMER MODEL 5NR
3	ATS48C32Y	ALTISTART 48 SOFT START 320 AMP
4	3090TB6	6 POLE SHORT CIRCUIT TERMINAL BLOCK
5	FNQ-R-1	FUSE - CLASS CC
6	FNQ-R-5	FUSE - CLASS CC
7	FNQ-R-6 1/4	FUSE - CLASS CC
8	9070TF500D1	500VA CONTROL TRANSFORMER
9	KP38LYA31	AMBER LED PILOT LIGHT - STANDARD, NEMA 4/13
10	KR1BH43	BLACK PUSH BUTTON - MOMENTARY, NEMA 4/13
11	00-823961	ANALOG AMMETER
12	KR1RH6	RED PUSH BUTTON - MOMENTARY, NEMA 4/13
13	CAD32G7	RELAY TeSys IEC TYPE 120V
14	RE22R2MYMR	TIMING RELAY - TYPE RE22
15	26403-12030	KESSLER-ELLIS ELAPSED TIME METER H57.55/UL 120V
16	KP38LRR31	RED LED PILOT LIGHT - STANDARD, NEMA 4/13
17	KP38LGG31	GREEN LED PILOT LIGHT - STANDARD, NEMA 4/13
18	LC1F330G7	IEC CONTACTOR 330A
19	LA9D09980	COIL SUPPRESSOR
20	CAD32G7	RELAY TeSys IEC TYPE 120V
	LADN22	AUXILIARY CONTACT BLOCK IEC
21	FNQ-R-1/2	FUSE - CLASS CC
22	KP38LWW31	WHITE LED PILOT LIGHT - STANDARD, NEMA 4/13
23	CAD32G7	RELAY TeSys IEC TYPE 120V W/TIME DELAY AUX
	LADT0	TIME DELAY AUXILIARY CONTACT
24	DFCC3	3 POLE 30A CLASS CC FUSE HOLDER
25	9001-KS11BH24	SELECTOR SW - 2 POS MAINT, NEMA 4/13
26	9001SKPF1R31	FLASHING PILOT LIGHT-RED
27	CAD32G7	RELAY TeSys IEC TYPE 120V
	LAD6K10F	MECHANICAL LATCH BLOCK
28	KP32L31	BLUE PILOT LIGHT - STANDARD, NEMA 4/13
28	9001-KS88BH3	SELECTOR SW - 4 POS MAINT, NEMA 4/13
30	KR1BH5	BLACK PUSH BUTTON - MOMENTARY, NEMA 4/13

MCC FACTORY ALTISTART 48 PARAMETER SETTINGS:

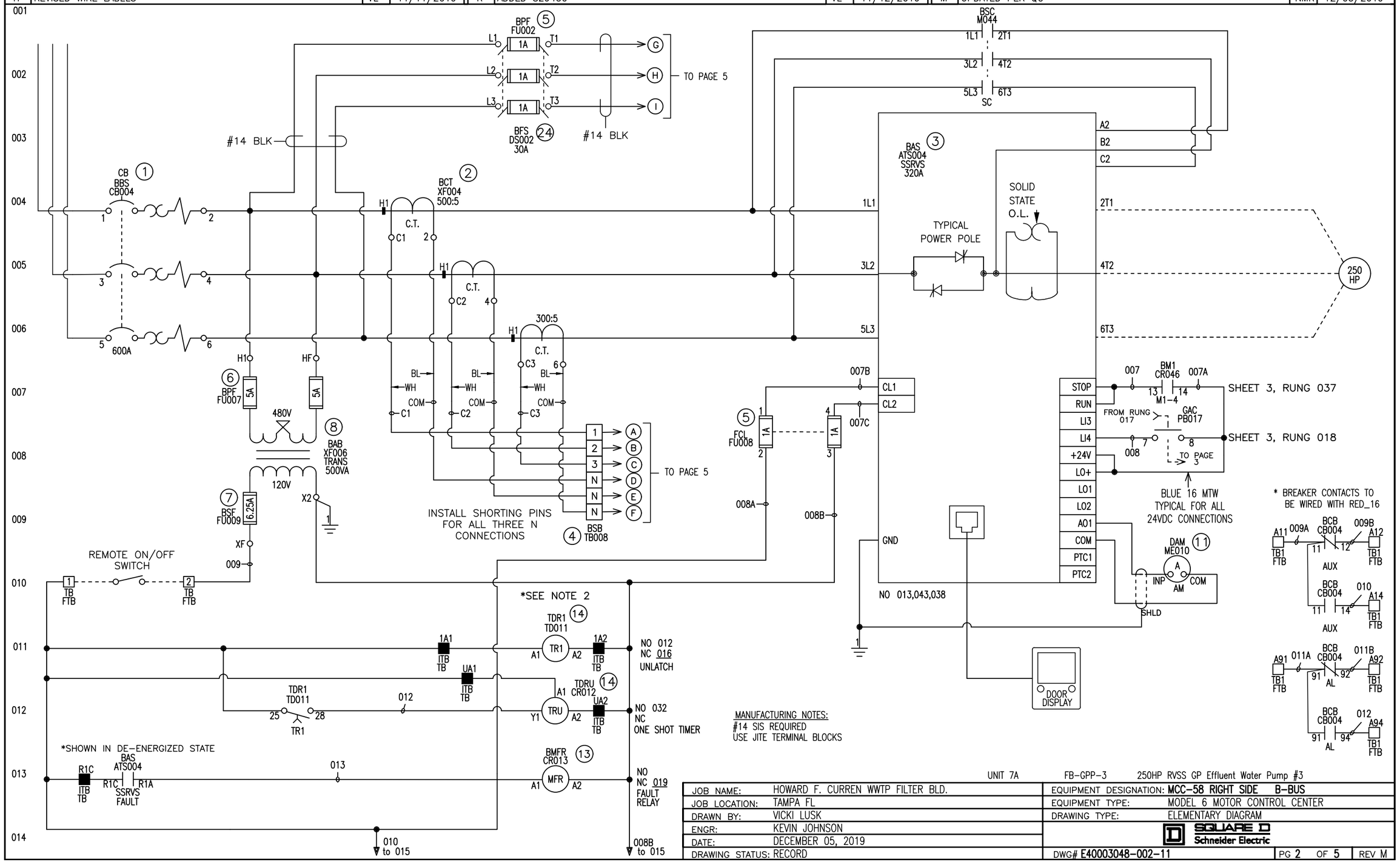
1. **Assign LI4 = LIR : FAULT RESET**
2. **ASSIGN PRO = THP : 20 SEVERE DUTY**
3. **ASSIGN R3 = RNL : MOTOR POWERD**

NOTE:
USE CAUTION WHEN CHANGING FACTORY-SET PARAMETERS. FACTORY-SET DRIVE PARAMETERS ARE CRITICAL FOR ALTISTART CONTROL AND POWER CONFIGURAIONS. DESCRIPTION OF PARAMETERS AND CODES CAN BE FOUND IN THE "PROGRAMMING" SECTION OF INSTRUCTION BULLETIN 30072-450-61 SHIPPED WITH THE CONTROLLER.

UNIT 7A FB-GPP-3 250HP RVSS GP Effluent Water Pump #3

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC-58 RIGHT SIDE B-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-002-11**	PG 1 OF 5 REV M

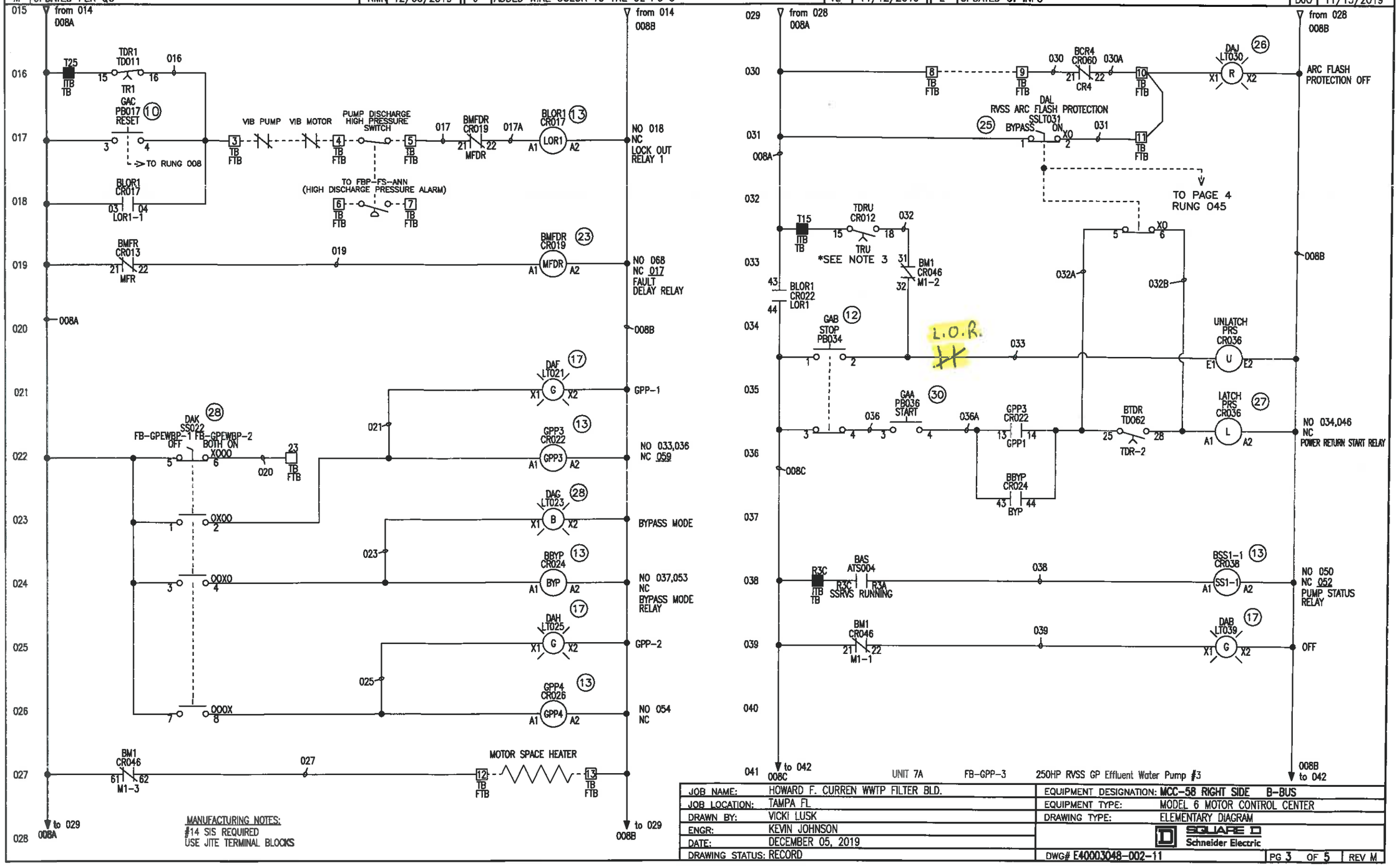
REV	DESCRIPTION	BY	DATE	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	UPDATED CT INFO	DJO	11/15/2019
H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019	M	UPDATED PER QC	NMK	12/05/2019



UNIT 7A FB-GPP-3 250HP RVSS GP Effluent Water Pump #3

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-11	PG 2 OF 5 REV M

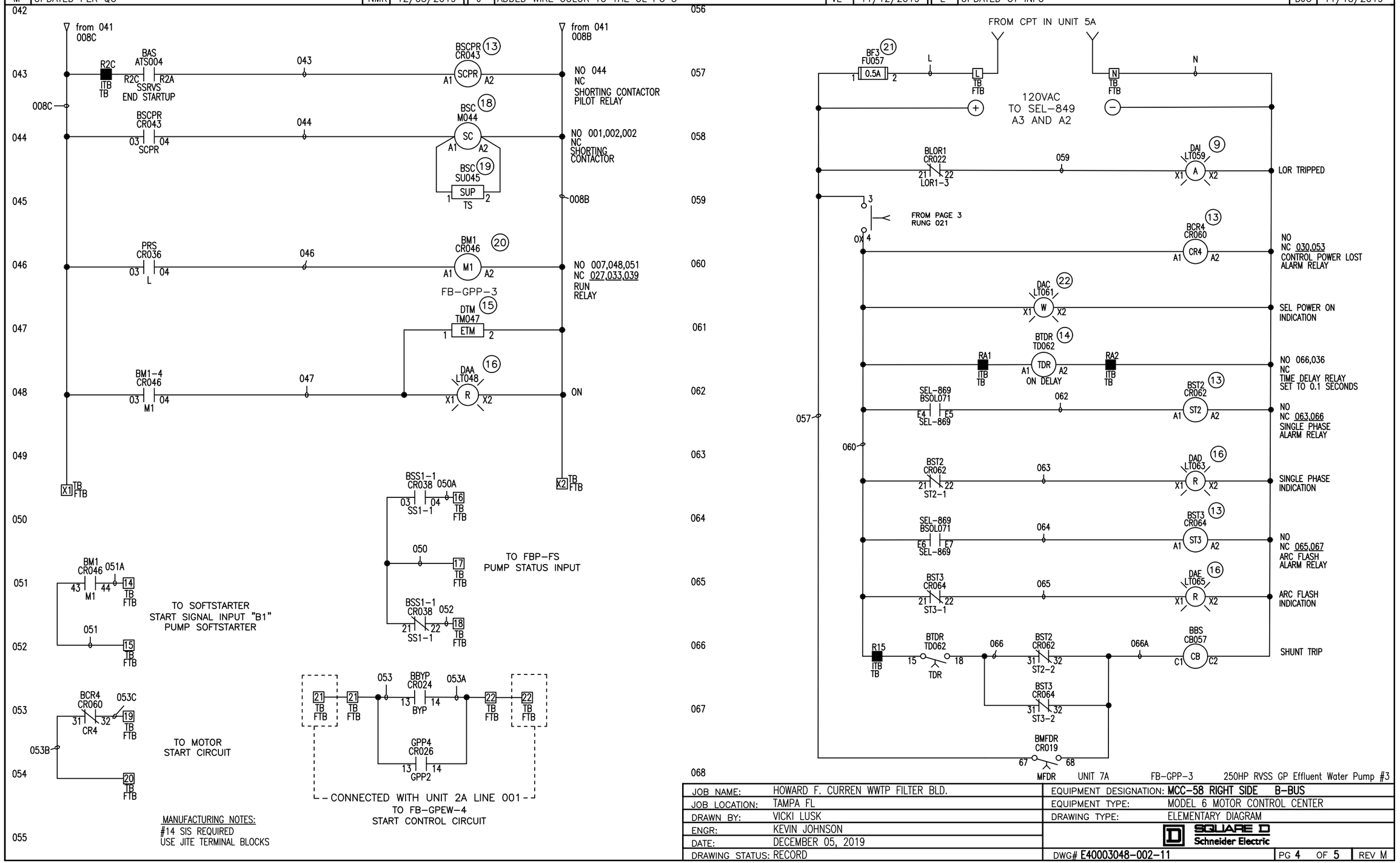
REV	DESCRIPTION	BY	DATE
M	UPDATED PER QC	NMK	12/05/2019
J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019
H	REVISED WIRE LABELS	VL	11/11/2019
K	ADDED S29450	VL	11/12/2019
L	UPDATED CT INFO	DJO	11/15/2019



UNIT 7A FB-GPP-3 250HP RVSS GP Effluent Water Pump #3

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG#	E40003048-002-11

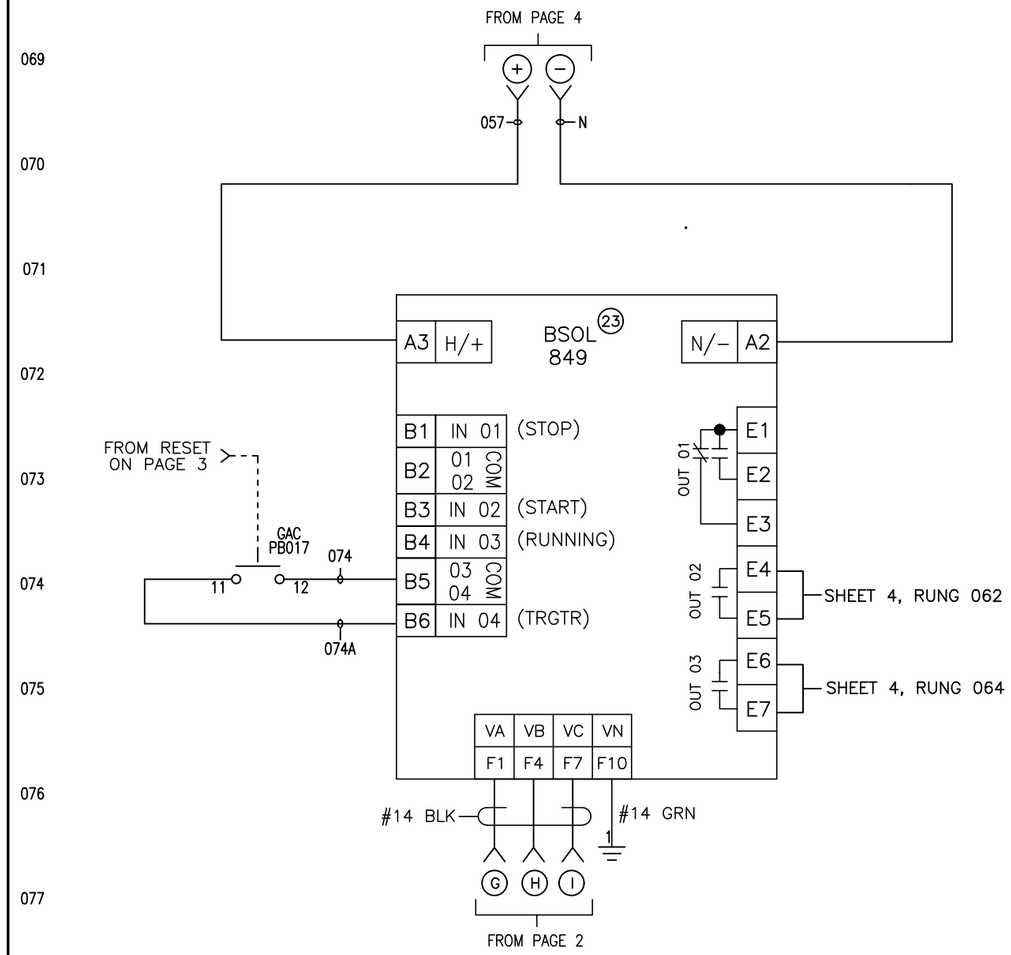
REV	DESCRIPTION	BY	DATE	H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019
M	UPDATED PER QC	NMK	12/05/2019	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	UPDATED CT INFO	DJO	11/15/2019

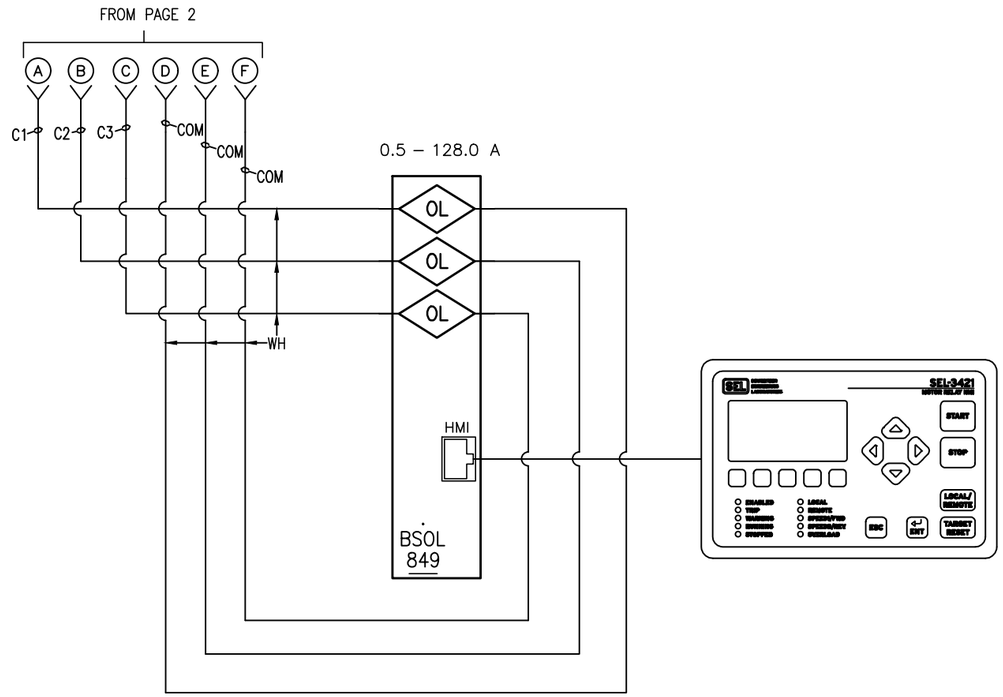


UNIT 7A FB-GPP-3 250HP RVSS GP Effluent Water Pump #3

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-11	PG 4 OF 5 REV M

REV	DESCRIPTION	BY	DATE	H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019
M	UPDATED PER QC	NMK	12/05/2019	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	UPDATED CT INFO	DJO	11/15/2019



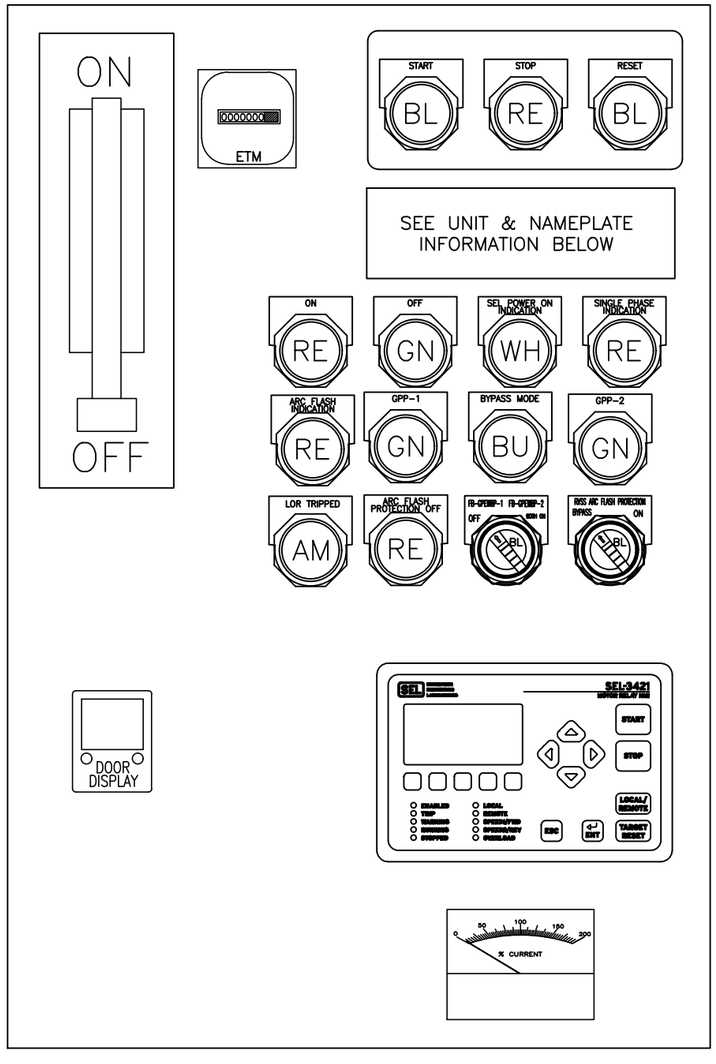


MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

UNIT 7A FB-GPP-3 250HP RVSS GP Effluent Water Pump #3

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-11	PG 5 OF 5 REV M

REV	DESCRIPTION	BY	DATE	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	DELETED LABL 022 & ADDED LABEL TO RUNG 017	AEM	11/19/2019
H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019	M	UPDATED PER QC	NMK	12/05/2019



ITEM	CATALOG	DESCRIPTION
1	PLF34100AABCSA	POWERPACT P FRAME 1000A, LSI TRIP
2	180R601	CURRENT TRANSFORMER MODEL 180R
3	ATS48C66Y	ALTISTART 48 SOFT START 660 AMP
4	3090TB6	6 POLE SHORT CIRCUIT TERMINAL BLOCK
5	FNQ-R-1 1/2	FUSE – CLASS CC
6	FNQ-R-5	FUSE – CLASS CC
7	FNQ-R-6 1/4	FUSE – CLASS CC
8	9070TF500D1	500VA CONTROL TRANSFORMER
9	KP32L31	BLUE PILOT LIGHT – STANDARD, NEMA 4/13
10	KR1BH43	BLACK PUSH BUTTON – MOMENTARY, NEMA 4/13
11	KP38LYA31	AMBER LED PILOT LIGHT – STANDARD, NEMA 4/13
12	00-823961	ANALOG AMMETER
13	CAD32G7	RELAY TeSys IEC TYPE 120V
14	RE22R2MYMR	TIMING RELAY – TYPE RE22
15	KR1RH6	RED PUSH BUTTON – MOMENTARY, NEMA 4/13
16	26403-12030	KESSLER-ELLIS ELAPSED TIME METER H57.55/UL 120V
17	KP38LRR31	RED LED PILOT LIGHT – STANDARD, NEMA 4/13
18	KP38LGG31	GREEN LED PILOT LIGHT – STANDARD, NEMA 4/13
19	LC1F630G7	IEC CONTACTOR 120V / 630A
20	LA9D09980	COIL SUPPRESSOR
21	FNQ-R-1/2	FUSE – CLASS CC
22	KP38LWW31	WHITE LED PILOT LIGHT – STANDARD, NEMA 4/13
23	CAD32G7	RELAY TeSys IEC TYPE 120V W/TIME DELAY AUX
	LADT0	TIME DELAY AUXILIARY CONTACT
24	CAD32G7	RELAY TeSys IEC TYPE 120V
	LADN22	AUXILIARY CONTACT BLOCK IEC
25	DFCC3	3 POLE 30A CLASS CC FUSE HOLDER
26	FNQ-R-1	FUSE – CLASS CC
27	9001SKPF1R31	FLASHING PILOT LIGHT-RED
28	9001-KS88BH3	SELECTOR SW – 4 POS MAINT, NEMA 4/13
29	9001-KS11BH24	SELECTOR SW – 2 POS MAINT, NEMA 4/13
30	CAD32G7	RELAY TeSys IEC TYPE 120V
	LAD6K10F	MECHANICAL LATCH BLOCK
31	KR1BH5	BLACK PUSH BUTTON – MOMENTARY, NEMA 4/13

MCC FACTORY ALTISTART 48 PARAMETER SETTINGS:

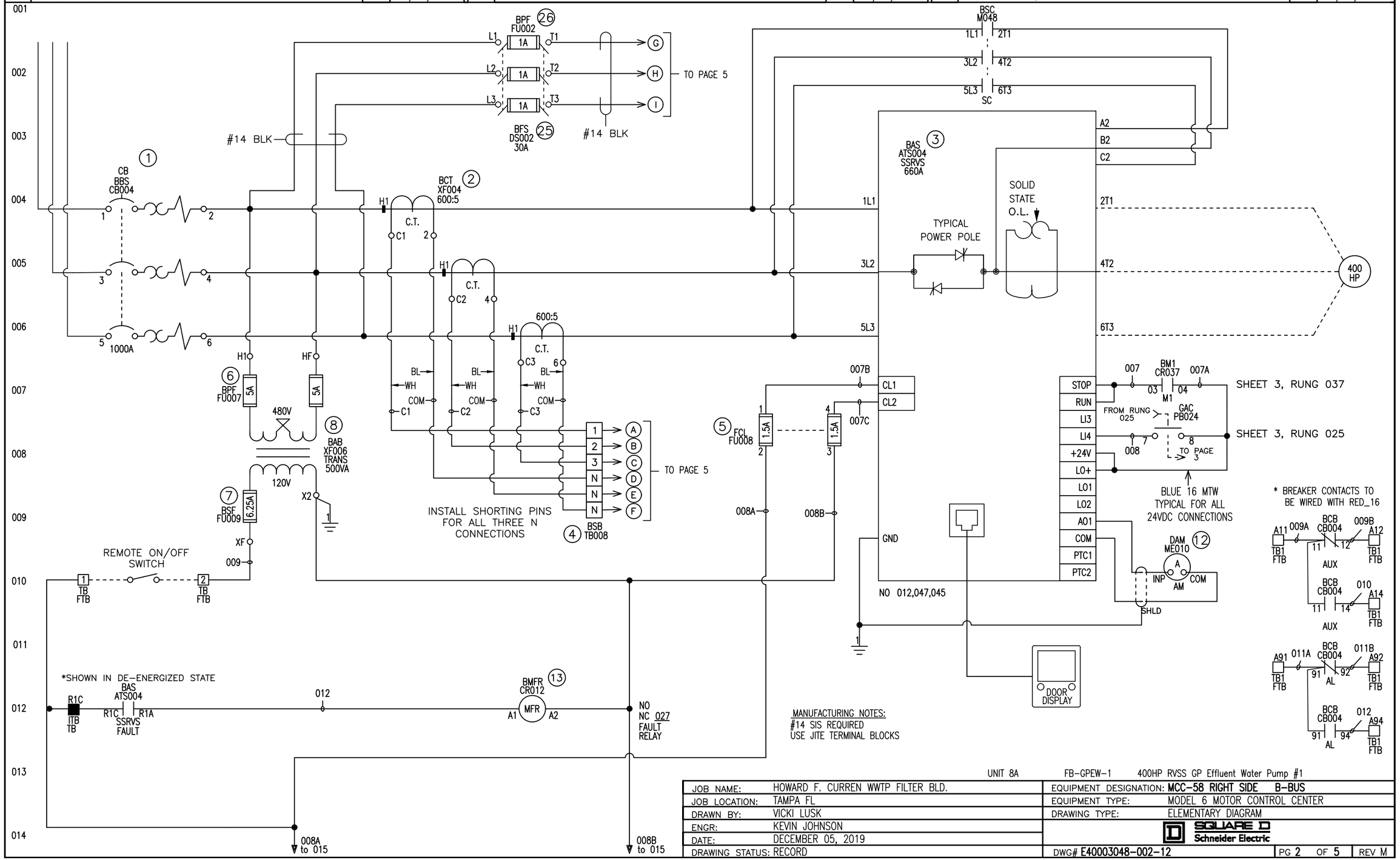
1. **Assign LI4 = LIR : FAULT RESET**
2. **ASSIGN PRO = THP : 20 SEVERE DUTY**
3. **ASSIGN R3 = RNL : MOTOR POWERD**

NOTE:
USE CAUTION WHEN CHANGING FACTORY-SET PARAMETERS. FACTORY-SET DRIVE PARAMETERS ARE CRITICAL FOR ALTISTART CONTROL AND POWER CONFIGURAIONS. DESCRIPTION OF PARAMETERS AND CODES CAN BE FOUND IN THE "PROGRAMMING" SECTION OF INSTRUCTION BULLETIN 30072-450-61 SHIPPED WITH THE CONTROLLER.

UNIT 8A FB-GPEW-1 400HP RVSS GP Effluent Water Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC-58 RIGHT SIDE B-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# **E40003048-002-12**	PG 1 OF 5 REV M

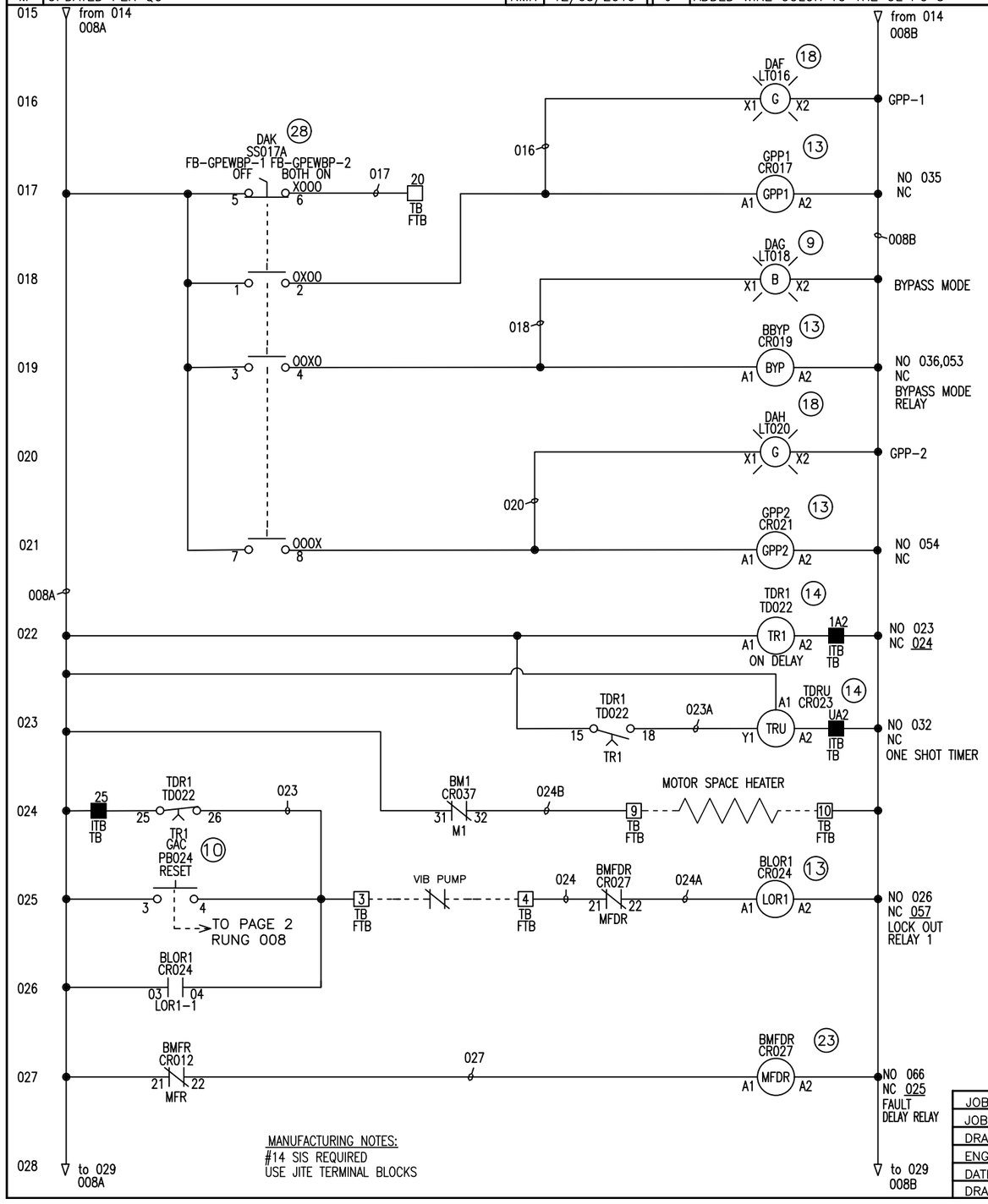
REV	DESCRIPTION	BY	DATE	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	DELETED LABL 022 & ADDED LABEL TO RUNG 017	AEM	11/19/2019
H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019	M	UPDATED PER QC	NMK	12/05/2019

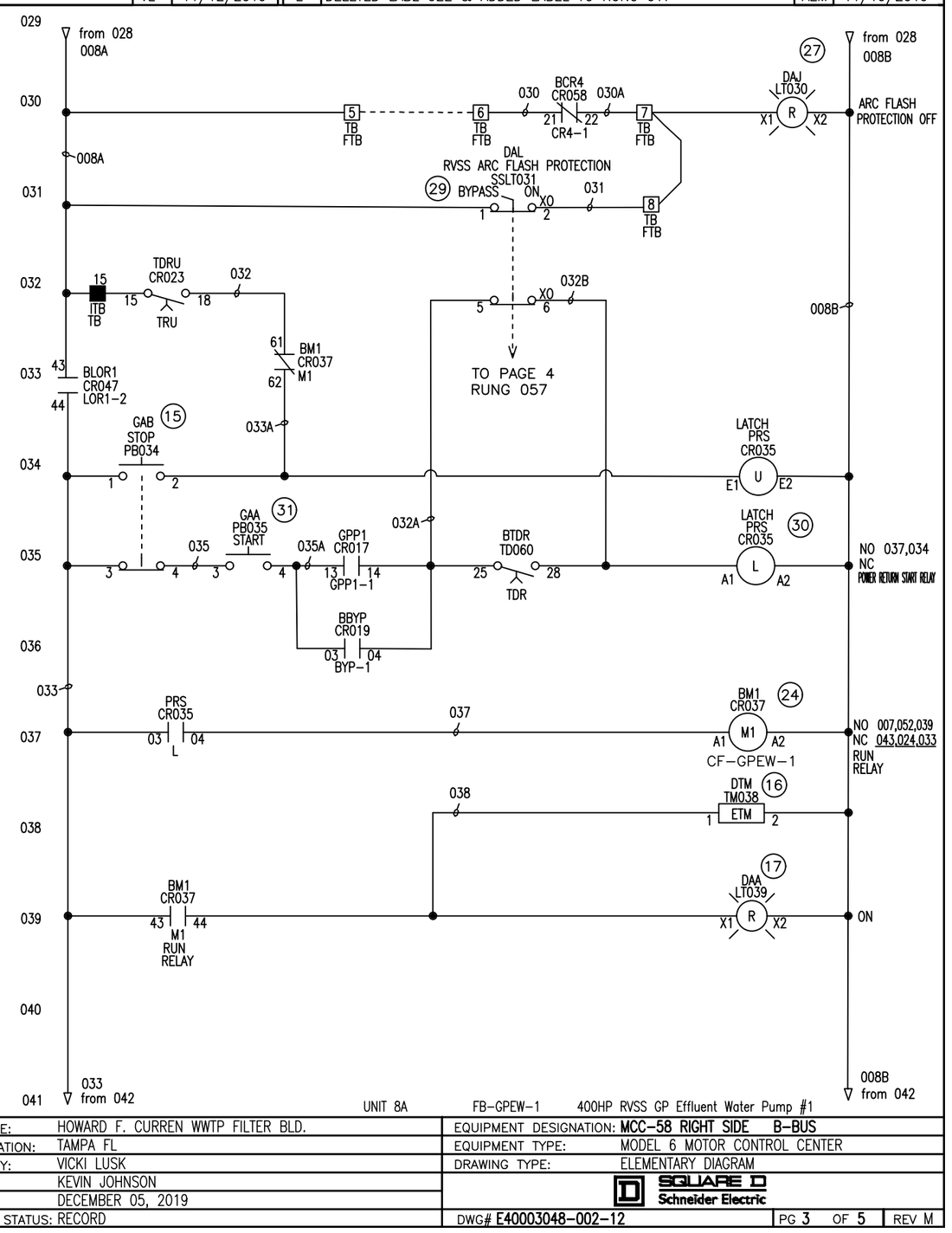


UNIT 8A FB-GPEW-1 400HP RVSS GP Effluent Water Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-12	PG 2 OF 5 REV M

REV	DESCRIPTION	BY	DATE	H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019
M	UPDATED PER QC	NMK	12/05/2019	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	DELETED LABL 022 & ADDED LABEL TO RUNG 017	AEM	11/19/2019

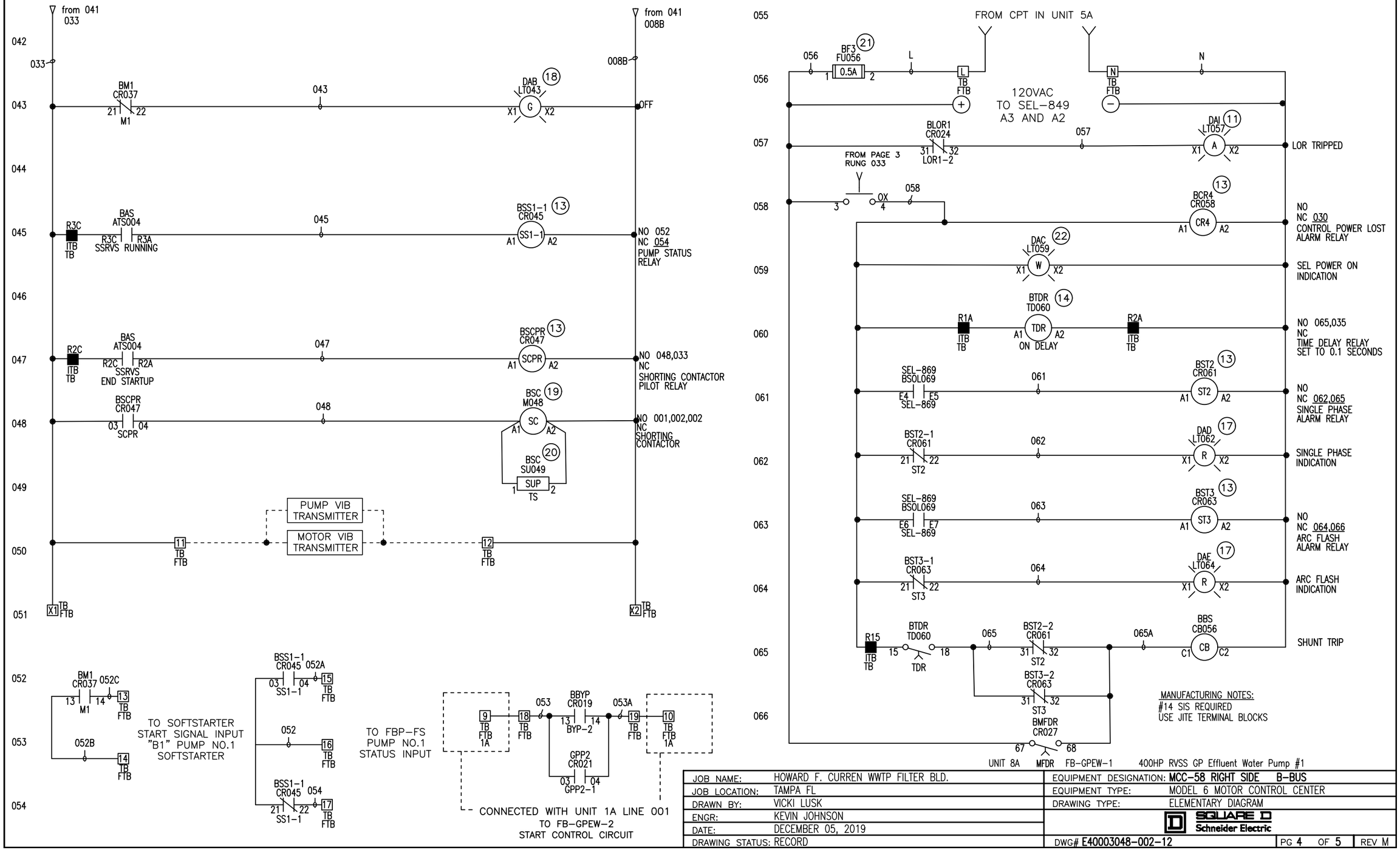




JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG# E40003048-002-12	PG 3 OF 5 REV M

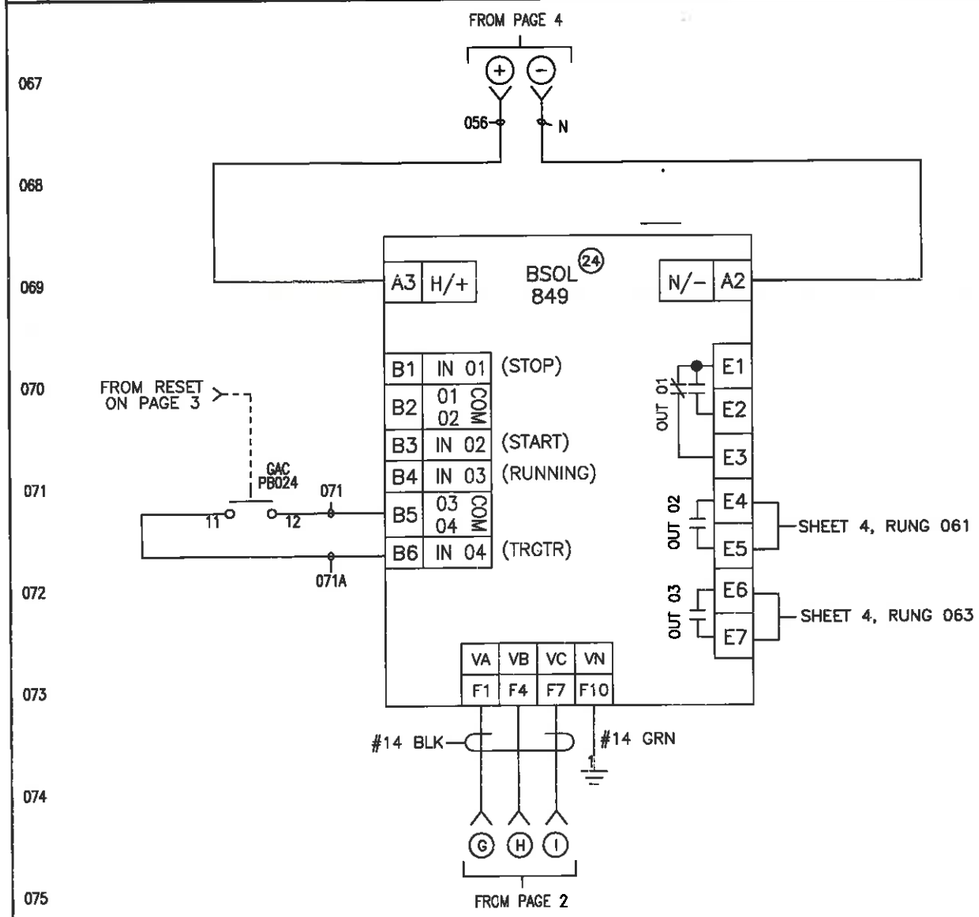
UNIT 8A FB-GPEW-1 400HP RVSS GP Effluent Water Pump #1

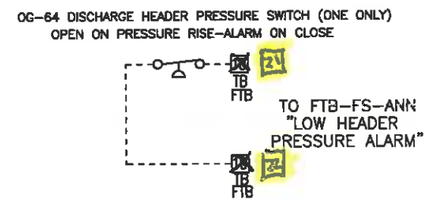
REV	DESCRIPTION	BY	DATE	H	REVISED WIRE LABELS	VL	11/11/2019	K	ADDED S29450	VL	11/12/2019
M	UPDATED PER QC	NMK	12/05/2019	J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019	L	DELETED LABL 022 & ADDED LABEL TO RUNG 017	AEM	11/19/2019

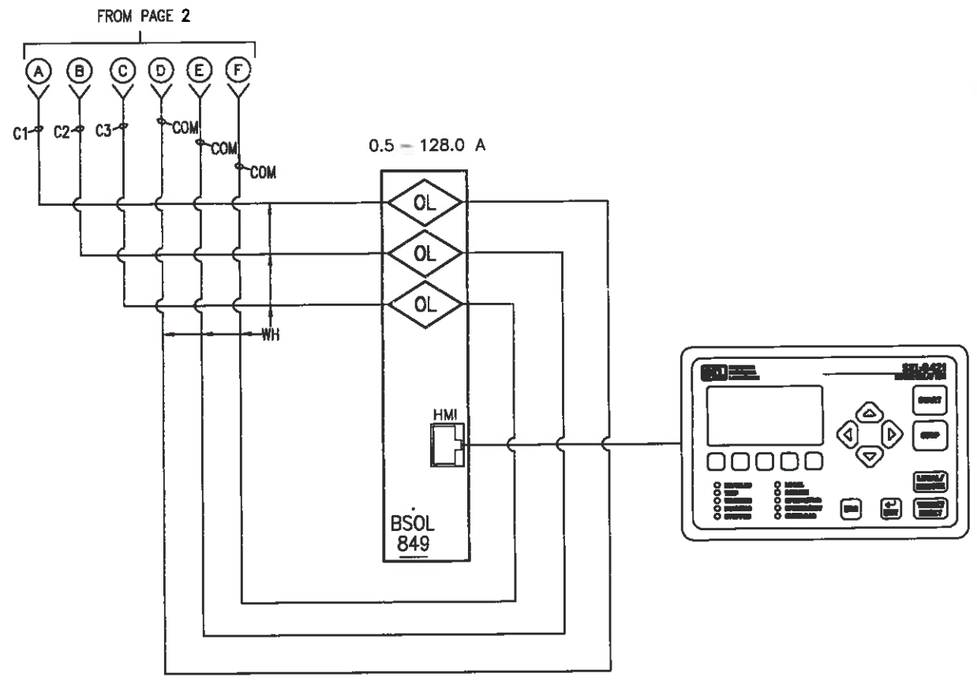


JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	ELEMENTARY DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	DECEMBER 05, 2019		
DRAWING STATUS:	RECORD	DWG#	E40003048-002-12

REV	DESCRIPTION	BY	DATE
M	UPDATED PER QC	NMK	12/05/2019
H	REVISED WIRE LABELS	VL	11/11/2019
J	ADDED WIRE COLOR TO THE OL PG 5	VL	11/12/2019
K	ADDED S29450	VL	11/12/2019
L	DELETED LABL 022 & ADDED LABEL TO RUNG 017	AEM	11/19/2019







MANUFACTURING NOTES:
#14 SIS REQUIRED
USE JITE TERMINAL BLOCKS

UNIT 8A FB-GPEW-1 400HP RVSS GP Effluent Water Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.
JOB LOCATION:	TAMPA FL
DRAWN BY:	VICKI LUSK
ENGR:	KEVIN JOHNSON
DATE:	DECEMBER 05, 2019
DRAWING STATUS:	RECORD

EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWING TYPE:	ELEMENTARY DIAGRAM

SQUARE D Schneider Electric

DWG# E40003048-002-12 PG 5 OF 5 REV M

REV	DESCRIPTION	BY	DATE	E	RELEASED TO MANUFACTURING	VL	09/26/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

F.O. # **40003048-002**
Section **1** of **8**
NEMA **Type 1A**
1200 A Horizontal Bus
300 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-002**
Section **2** of **8**
NEMA **Type 1A**
1200 A Horizontal Bus
300 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-002**
Section **3** of **8**
NEMA **Type 1A**
1200 A Horizontal Bus
0 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-002**
Section **4** of **8**
NEMA **Type 1A**
1200 A Horizontal Bus
300 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-002**
Section **5** of **8**
NEMA **Type 1A**
1200 A Horizontal Bus
600 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-002**
Section **6** of **8**
NEMA **Type 1A**
1200 A Horizontal Bus
0 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-002**
Section **7** of **8**
NEMA **Type 1A**
1200 A Horizontal Bus
0 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

F.O. # **40003048-002**
Section **8** of **8**
NEMA **Type 1A**
1200 A Horizontal Bus
0 A Vertical Bus
Service Entrance? **N**
Neutral Bus? **N**
Supplemental Info: **REV 05**
3 Phase, **3** Wire, **60** Hz

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC-58 RIGHT SIDE B-BUS**
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	NAMEPLATE INFORMATION
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# **N40003048-002-01**	PG 1 OF 3 REV E

REV	DESCRIPTION	BY	DATE	E	RELEASED TO MANUFACTURING	VL	09/26/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

SHORT–CIRCUIT–CURRENT RATING

WHEN PROTECTED BY _____ CIRCUIT BREAKER OR _____ AMPERE MAXIMUM CLASS _____ FUSES, THE SHORT–CIRCUIT–CURRENT RATING OF THIS MOTOR–CONTROL–CENTER SECTION IS _____ AMPS RMS SYMMETRICAL, _____ VOLTS MAXIMUM.

DO NOT INSTALL THIS SECTION ON CIRCUITS WITH AVAILABLE FAULT CURRENTS HIGHER THAN THIS VALUE.

DO NOT INSTALL THIS SECTION ON CIRCUITS WITH AVAILABLE FAULT CURRENTS HIGHER THAN THE LOWEST SHORT–CIRCUIT–CURRENT RATING OF ANY INSTALLED UNIT.

REFER TO INDIVIDUAL UNIT RATING LABELS TO DETERMINE UNIT SHORT–CIRCUIT–CURRENT RATINGS.

ADDITIONAL OR REPLACEMENT UNITS OR SECTIONS MUST BE OF THE SAME MANUFACTURER AND TYPE WITH A SHORT–CIRCUIT–CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT.

80438–788–01 SQUARE D REV –

SHORT–CIRCUIT–CURRENT RATING

THE SHORT–CIRCUIT–CURRENT RATING OF THIS MOTOR–CONTROL–CENTER SECTION IS 65000 AMPS RMS SYMMETRICAL, 480 VOLTS MAXIMUM.

DO NOT INSTALL THIS SECTION ON CIRCUITS WITH AVAILABLE FAULT CURRENTS HIGHER THAN THIS VALUE.

DO NOT INSTALL THIS SECTION ON CIRCUITS WITH AVAILABLE FAULT CURRENTS HIGHER THAN THE LOWEST SHORT–CIRCUIT–CURRENT RATING OF ANY INSTALLED UNIT.

REFER TO INDIVIDUAL UNIT RATING LABELS TO DETERMINE UNIT SHORT–CIRCUIT–CURRENT RATINGS.

ADDITIONAL OR REPLACEMENT UNITS OR SECTIONS MUST BE OF THE SAME MANUFACTURER AND TYPE WITH A SHORT–CIRCUIT–CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT.

80438–789–01 SQUARE D REV –

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC–58 RIGHT SIDE B–BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	NAMEPLATE INFORMATION
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# N40003048–002–01	PG 2 OF 3 REV E

REV	DESCRIPTION	BY	DATE	E	RELEASED TO MANUFACTURING	VL	09/26/2019
D	APPROVAL RESUBMITTAL	VL	08/19/2019	C	CHANGES MADE PER CUSTOMER COMMENTS	AEM	07/01/2019

CERTIFICATE OF FACTORY TESTS

Motor Control Centers

Purchaser: _____ P.O. #: _____

Job Name: **HOWARD F. CURREN WWTP FILTER BLD.** F.O. #: **40003048-002**

MCC Designation: **MCC-58 Right Side B-Bus**

Job Location: **TAMPA FL**

Description of Tests	Tested and Accepted By	Date
1. Inspection of Motor Control Center (SPB QA046.401XX and QCF-604)		
2. Factory Test for Industrial System (NEMA ICS 1) or (IEC 60439-1)		
3. Performance Tests (NEMA ICS 1) or (IEC 60439-1)		
A. Visual Inspection		
B. Adjustments and Settings		
C. Operating Tests		
D. Dielectric Tests		
E. Continuity Tests		
4. Ground Fault Protection (UL 845)		

The above tests are approved by:

_____ Date _____

_____

Title

I hereby certify that the above tests have been performed on the equipment noted on the above factory order (F.O.) number, and that this equipment successfully met the acceptance criteria of these tests. This statement is made to the best of my knowledge and belief.

Respectfully submitted,

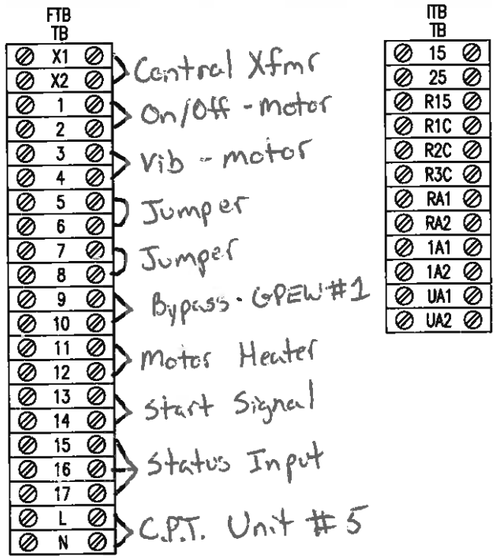
SQUARE D COMPANY

QAF-601
2/10

Quality Assurance Manager

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	NAMEPLATE INFORMATION
ENGR:	KEVIN JOHNSON		SQUARE D by Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# N40003048-002-01	PG 3 OF 3 REV E

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	RELEASED TO MANUFACTURING	VL	09/26/2019	–	----	--	--/--/--	–	----	--	--/--/--

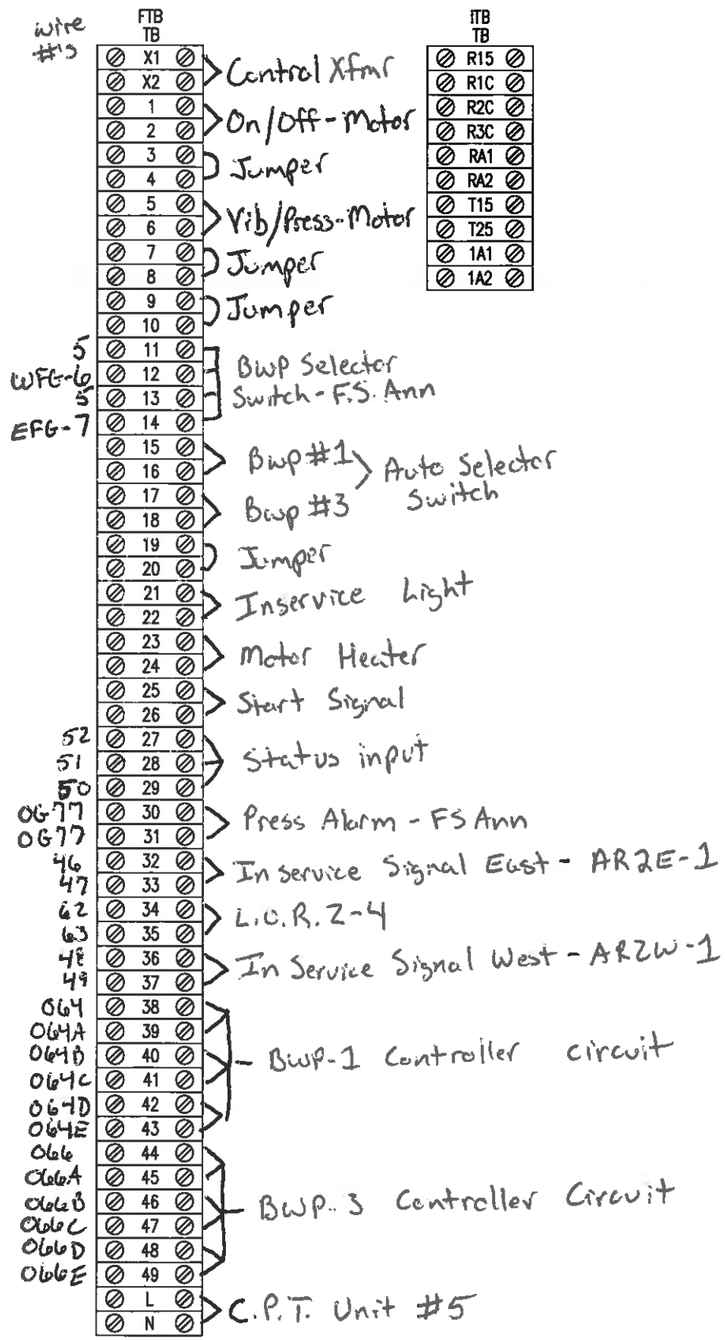


WIRE COUNT = 33

UNIT 3A FB-GPEWBP-2 100HP RVSS Mosaic GPEW Booster Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# W40003048-002-03	PG 1 OF 1 REV A

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	RELEASED TO MANUFACTURING	VL	09/26/2019	–	----	--	--/--/--	–	----	--	--/--/--



WIRE COUNT = 33

UNIT 6A FB-BWP-2 250HP RVSS Backwash Water Pump #2

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# W40003048-002-09	PG 1 OF 1 REV A

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	RELEASED TO MANUFACTURING	VL	09/26/2019	–	----	--	--/--/--	–	----	--	--/--/--

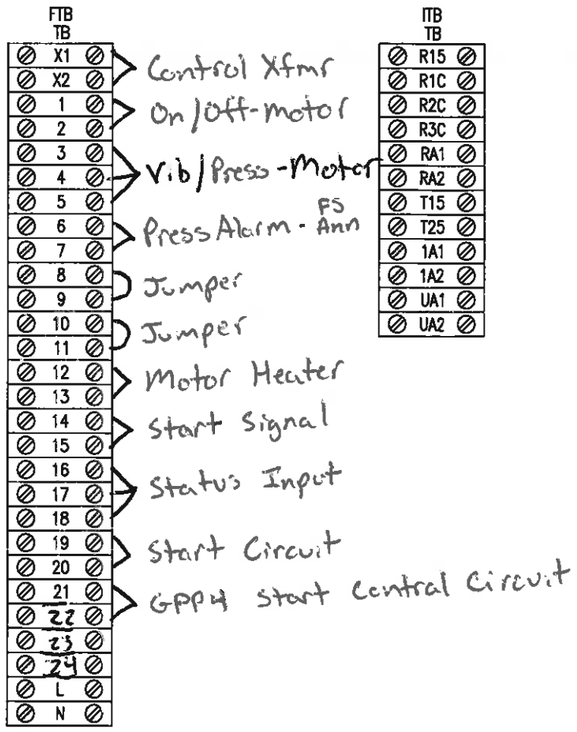
FIB
TB

X1	
X1	
X1	
X1	
X1	
X1	
X2	
X2	
X2	
X2	

UNIT 5A 120V Transformer

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	**MCC-58 RIGHT SIDE B-BUS**	
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER	
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	WIRING DIAGRAM	
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric	
DATE:	SEPTEMBER 26, 2019			
DRAWING STATUS:	RECORD	DWG#	**W40003048-002-10**	PG 1 OF 1 REV A

REV	DESCRIPTION	BY	DATE							
–	----	--	--/--/--	–	----	--	--/--/--	A	RELEASED TO MANUFACTURING	VL	09/26/2019
				–	----	--	--/--/--	–	----	--	--/--/--

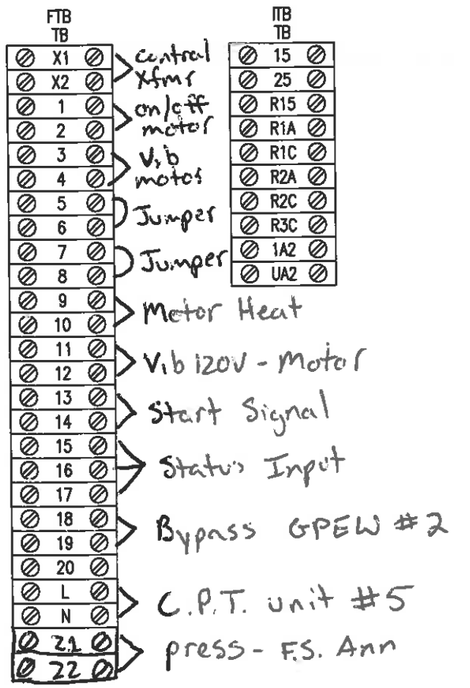


WIRE COUNT = 33

UNIT 7A FB-GPP-3 250HP RVSS GP Effluent Water Pump #3

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.	EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
JOB LOCATION:	TAMPA FL	EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWN BY:	VICKI LUSK	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	KEVIN JOHNSON		SQUARE D Schneider Electric
DATE:	SEPTEMBER 26, 2019		
DRAWING STATUS:	RECORD	DWG# W40003048-002-11	PG 1 OF 1 REV A

REV	DESCRIPTION	BY	DATE
–	----	--	--/--/--
–	----	--	--/--/--
–	----	--	--/--/--
A	RELEASED TO MANUFACTURING	VL	09/26/2019
B	ADDED TERMINAL BLOCK ON RUNG 017	TB	11/11/2019



WIRE COUNT = 33

UNIT 8A FB-GPEW-1 400HP RVSS GP Effluent Water Pump #1

JOB NAME:	HOWARD F. CURREN WWTP FILTER BLD.
JOB LOCATION:	TAMPA FL
DRAWN BY:	VICKI LUSK
ENGR:	KEVIN JOHNSON
DATE:	NOVEMBER 11, 2019
DRAWING STATUS:	RECORD

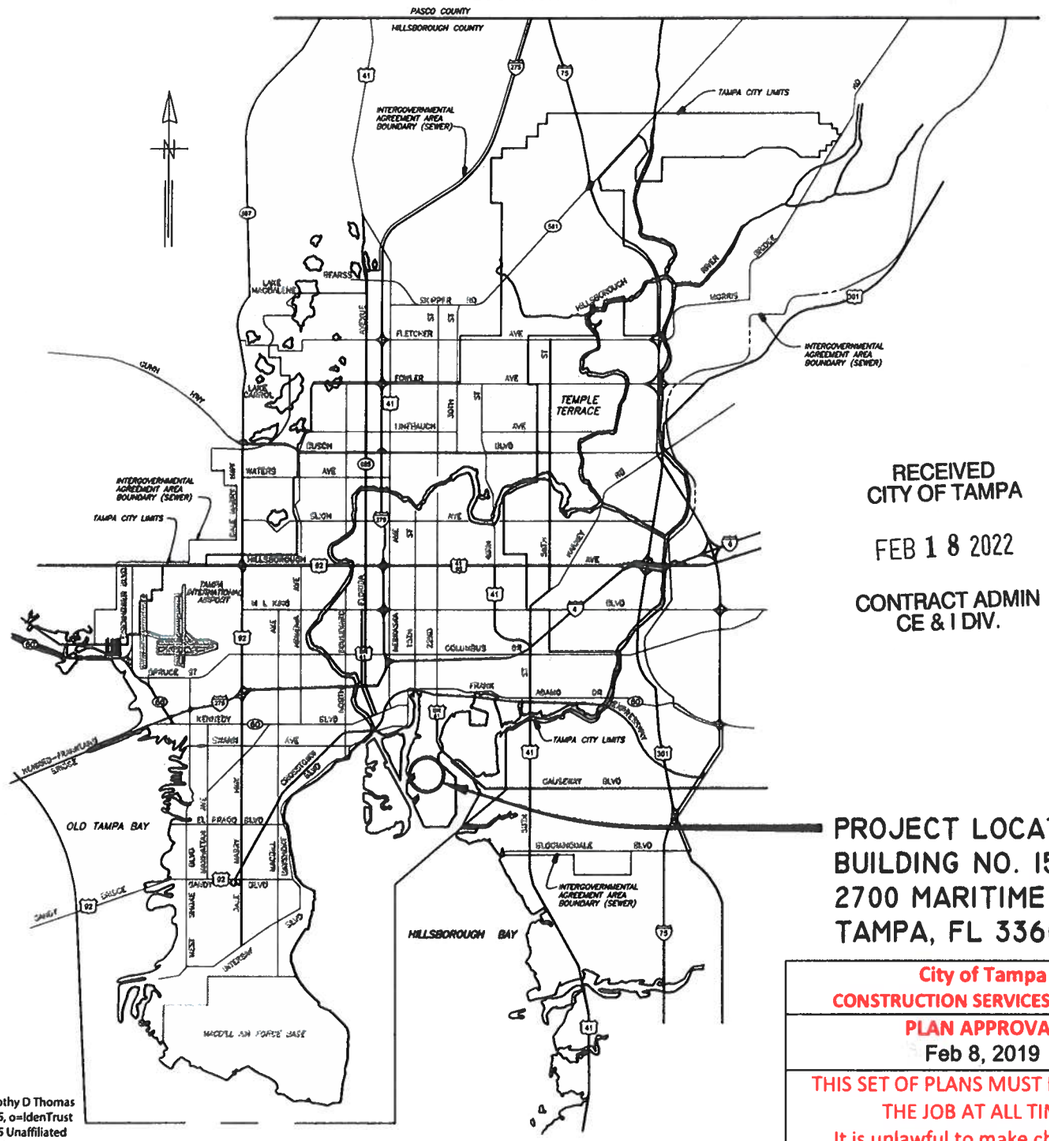
EQUIPMENT DESIGNATION:	MCC-58 RIGHT SIDE B-BUS
EQUIPMENT TYPE:	MODEL 6 MOTOR CONTROL CENTER
DRAWING TYPE:	WIRING DIAGRAM

SQUARE D Schneider Electric

DWG# W40003048-002-12 | PG 1 OF 1 | REV B

Filter Building No. 1 MCC Replacement_Year 2022

LOCATION MAP



PROJECT LOCATION
BUILDING NO. 15
2700 MARITIME BLVD.
TAMPA, FL 33605

RECEIVED
CITY OF TAMPA
FEB 18 2022
CONTRACT ADMIN
CE & I DIV.

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019

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REVIEWED FOR CODE COMPLIANCE

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A01098000001508582E42C00005387
2019.02.06 11:35:45 -05'00'

TIMOTHY THOMAS, P.E. No. 47079

PLANS

FOR

CITY OF TAMPA FLORIDA
WASTEWATER DEPARTMENT

FOR
THE CONSTRUCTION OF THE

HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

CONTRACT: 17-C-00027

MARCH 2018

Red line "As Builts"
Date: 2/17/22
Approved: KEC
Approved:

CITY OF TAMPA FLORIDA • ORGANIZED JULY 15 1887 • MUSCOTTE

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd,
Suite 250
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

DRAWING INDEX

SHEET No.	SHEET TITLE
1	COVER SHEET
2	INDEX, SCHEDULES AND GENERAL NOTES
3	TEMPORARY POWER SEQUENCE OF WORK
4	SITE PLAN FOR MCC-59 AND MCC-59A REPLACEMENT
E-1	ELECTRICAL LEGEND AND ABBREVIATIONS
E-2	EXISTING FIELD EQUIPMENT OVERALL SITE PLAN
E-3	POST AERATION AND CHLORINATION TANKS POWER PLAN
E-4	EXISTING CONDITIONS PLAN ELEVATION 11'-0"
E-5	EXISTING CONDITIONS PLAN ELEVATION 3'-6"
E-6	EXISTING CONDITIONS PLAN ELEVATION 23'-6"
E-7	PIPE TUNNEL ACCESS PLAN ELEVATION 3'-6"
E-8	EXISTING MCC-59 FRONT ELEVATION (SHEET 1 OF 2)
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E-10	PROPOSED MCC-59 FRONT ELEVATION (SHEET 1 OF 2)
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E-12	MCC-59 ELECTRICAL ONE-LINE DIAGRAM (SHEET 1 OF 2)
E-13	MCC-59 ELECTRICAL ONE-LINE DIAGRAM (SHEET 2 OF 2)
E-14	MCC-59 TYPICAL MOTOR CONTROL SCHEMATICS (SHEET 1 OF 3)
E-15	MCC-59 TYPICAL MOTOR CONTROL SCHEMATICS (SHEET 2 OF 3)
E-16	MCC-59 TYPICAL MOTOR CONTROL SCHEMATICS (SHEET 3 OF 3)
E-17	MCC-59 CONDUIT AND CABLE SCHEDULE (SHEET 1 OF 3)
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E-20	EXISTING MCC-59A FRONT ELEVATION
E-21	PROPOSED MCC-59A FRONT ELEVATION
E-22	PROPOSED MCC-59A INSTALLATION DETAILS
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E-36	TEMPORARY CABLE SCHEDULE

GENERAL NOTES

THE WORK CONSIST OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, AND TECHNICAL SUPERVISIDN TO INSTALL NEW MOTOR CONTROL CENTER 59 (MCC-59) ANO MOTOR CONTROL CENTER 59A (MCC-59A) AS INDICATED AND SHOWN. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTIDN.
2. ALL WIRING SHALL BE IDENTIFIED WITH NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
3. FIELD VERIFY ALL EQUIPMENT LOCATIONS ANO CDNNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
4. ALL NEW EQUIPMENT SHALL BE PERMANENTLY IDENTIFIED WITH A BLACK ON WHITE LAMACOID TAG ENGRAVED WITH MINIMUM 3/16 INCH LETTERING.
5. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS. NO SPLICES OR CONOUCTOR TERMINATIDNS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
6. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
7. REPLACE THE EXISTING MCC-59 AND MCC-59A AS SHDWN AND SPECIFIED.
8. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 2D17, 6TH EDITION, THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) SERIES 7D/NATIONAL ELECTRICAL CODE (NEC) 2D14 EDITION AND CHAPTER 5 OF THE CITY DF TAMPA CODE.
9. TEST AND START-UP REPDRTS 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 FILTER BUILDING NO. 1, MCC-59 AND MCC-59A REPLACEMENT. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

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

SPECIFICALLY:

A. DEMOLITION

1) PRIOR TO DEMOLITION, THE PROPOSED 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 BELOW). THE CONTRACTOR SHALL SUPPLY AND INSTALL ANY AND ALL CONDUIT, CABLING, ETC. THAT MAY BE REQUIRED TO FACILITATE THE TEMPORARY POWER CONNECTIONS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CUT SHEETS DETAILING HIS TEMPORARY POWER SYSTEM PROPOSAL FOR ENGINEER'S APPROVAL. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING POWER AT ALL TIMES TO THE SAID FACILITIES AND PERFORMING ALL ASSOCIATED MAINTENANCE FUNCTIONS. IF DURING HIS PRECONSTRUCTION INVESTIGATION, THE CONTRACTOR UNCOVERS AN ALTERNATE METHOD FOR SUPPLYING TEMPORARY POWER TO ALL, OR PART OF, THE REQUIRED LOADS; HE WILL NOTIFY THE ENGINEER, IN WRITING, THROUGH THE RFI PROCESS. AFTER ENGINEER'S PRELIMINARY APPROVAL, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CUT SHEETS FOR THE PROPOSED TEMPORARY POWER SYSTEM AS WELL AS THE AMOUNT OF CREDIT OFFERED TO THE CITY FOR FINAL APPROVAL.

2) VERIFY EXISTING POWER CONNECTIONS IN THE FIELD PRIOR TO COMMENCING DEMOLITION WORK.

3) REMOVE EXISTING MCC-59 AND MCC-59A AND PREPARE EXISTING CONCRETE PAD AS REQUIRED TO INSTALL THE NEW MOTOR CONTROL CENTERS.

4) INSTALL MOTOR CONTROL CENTERS AND MAKE CABLE CONNECTIONS AS SHOWN.

5) PERFORM A SHORT CIRCUIT AND COORDINATION STUDY AS DETAILED IN SECTION 16085 OF THESE SPECIFICATIONS. THE STUDY SHALL BE USED TO DETERMINE THE PROPER SETTINGS FOR THE MCC-59 AND MCC-59A CIRCUIT BREAKERS, ETC. THE SHORT CIRCUIT STUDY SHALL BE SIGNED, SEALED AND APPROVED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.

Red line "As Builts"
Date: 2/17/22
Approved:

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.

POWER OUTAGES WILL BE PERMITTED ONLY ON DAYS THAT BACKWASHING IS NOT SCHEDULED – THE CONTRACTOR SHALL COORDINATE THESE TIMES WITH THE CITY OF TAMPA.

THE SEQUENCE OF WORK FOR PROVIDING TEMPORARY POWER DURING THE INSTALLATION OF MCC-59 AND MCC-59A SHALL BE AS FOLLOWS:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE PROPOSED TEMPORARY POWER AND CONTROL EQUIPMENT AS NOTED ON THE DRAWINGS.
2. PROVIDE AND INSTALL TEMPORARY CONDUCTORS BETWEEN EXISTING MCC-58 AND MCC-59/MCC-59A TEMPORARY EQUIPMENT AS INDICATED ON THE DRAWINGS.
3. THE CONTRACTOR SHALL MEGGER ALL TEMPORARY CABLES AFTER INSTALLATION.
4. ONCE THE TEMPORARY EQUIPMENT HAS BEEN ENERGIZED AND TESTED, THE CONTRACTOR SHALL BEGIN THE TRANSFER OF POWER AND CONTROLS FROM INDIVIDUAL PIECES OF EQUIPMENT FROM THE MCC-59 OR MCC-59A SYSTEM TO THE TEMPORARY SYSTEM. THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF TAMPA AS TO DATE/TIME OF TRANSFER AND EQUIPMENT TO BE TRANSFERRED. CONTRACTOR SHALL OPEN APPROPRIATE CIRCUIT BREAKERS AND PERFORM LOCK-OUT, TAG-OUT PROCEDURES.
7. ONCE ALL COMPONENTS OF THE SYSTEM ARE ON THE TEMPORARY POWER/CONTROL SYSTEM EXISTING CONDUITS MAY BE REMOVED AND THE INSTALLATION OF MCC-59 AND MCC-59A MAY COMMENCE.
8. ONCE THE PHYSICAL INSTALLATION OF MCC-59 AND MCC-59A IS COMPLETE (PRIOR TO PERMANENT POWER), THE CONTRACTOR SHALL MEGGER ALL CONDUCTORS.
9. ONCE TESTING IS COMPLETE AND MCC-59 AND MCC-59A HAVE BEEN ACCEPTED BY THE CITY, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY CONDUIT AND CONDUCTORS. CONTRACTOR SHALL PLUG ANY OPENING CREATED FOR TEMPORARY CONDUIT.

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019
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REVIEWED FOR CODE COMPLIANCE

APPROVED
By Ralph Rowe, PX406 at 1:20 pm, Feb 08, 2019

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A010980000001508582E42C00005387
2019.02.06 11:36:10 -05'00'

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250, Tampa, FL 33602, 813.227.9190, Certificate of Authorization No. 8363

JOB No.	171700842					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

INDEX, SCHEDULES AND GENERAL NOTES

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: 2

FILE: 171700842E01

TEMPORARY POWER SEQUENCE OF WORK (CONTINUEO):

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 OETAIL THE NATURE OF THE OUTAGE, ALL EQUIPMENT AFFECTEO BY THE OUTAGE, THE AMOUNT OF TIME REQUIREO FOR THE OUTAGE ANO A CONTINGENCY PLAN FOR THE OUTAGE. THE OUTAGE REQUEST SHALL BE SUBMITTEO TO THE CITY A MINIMUM OF 2 WEEKS PRIOR TO THE OATE OF THE REQUESTEO 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 PROVIOING TEMPORARY POWER DURING THE INSTALLATION OF MCC-59 AND MCC-59A SHALL BE AS FOLLOWS:

1. FOR EACH OF THE STEPS IDENTIFIEO BELOW, THE CONTRACTOR SHALL SUBMIT TO THE CITY OF TAMPA, IN WRITING, A REQUEST TO COMMENCE WITH THE PROCEOURE. THE CONTRACTOR SHALL NOT BEGIN ANY OF THE PROCEOURES LISTED BELOW WITHOUT WRITTEN AUTHORIZATION FROM THE CITY OF TAMPA.
2. PROVIDE AND INSTALL BOTH TEMPORARY MOTOR CONTROL CENTERS, TEMPORARY 15 KVA TRANSFORMER ANO TEMPORARY PANELBOARO 'PP'. THIS SHALL INCLUOE ALL CABLE TRAY AND ASSOCIATEO CABLES TO BE UTILIZEO SOLELY BETWEEN THE TEMPORARY POWER EQUIPMENT (EXISTING MCC-5B TO TEMPORARY MCC-59, TEMPORARY MCC-59 TO TEMPORARY MCC-59A, TEMPORARY MCC-59A TO TEMPORARY PANELBOARD 'PP'). THE CONTRACTOR SHALL MEGGER ALL TEMPORARY CABLES AFTER INSTALLATION.
3. INSTALL (AS COMPLETE AS POSSIBLE) EITHER TEMPORARY FEEOER 59T17 OR 59T17A (BASED ON EASE OF INSTALLATION). OPEN ASSOCIATEO FEEOER CIRCUIT BREAKERS IN MCC-59 ANO MCC-59B AND REMOVE EXISTING FEEOER CONDUCTORS. COMPLETE INSTALLATION OF TEMPORARY FEEDER. ONCE THIS EFFORT IS COMPLETEO MIMIC PROCESS FOR OTHER BUS AND FEEDER.
4. UTILIZING TEMPORARY CABLE TRAY AND EXISTING CONOUIT TRAPEZE SUPPORTS, FIELD ROUTE TEMPORARY CABLES FROM TEMPORARY MCC-59 ANO TEMPORARY MCC-59A TO ASSOCIATEO DEVICES.
5. FOR ALL TEMPORARY CABLE INSTALLATIONS, THE TRANSITION FROM THE PUMPS (LOCATEO ON ELEVATION 3'-6") TO THE ASSOCIATEO TEMPORARY PANELBOAROS AND TEMPORARY MOTOR CONTROL PANELS (LOCATED ON ELEVATION 11'-0") SHALL BE VIA THE OPENING IN THE ELEVATION 11'-0" FLOOR SLAB (REFER TO ORAWINGS). ALL TEMPORARY CABLES SHALL BE SECUREO TO CONOUIT TRAPEZE SUPPORT SYSTEM, HANDRAILS, OR OTHER MEANS AS APPROVEO BY THE CITY OF TAMPA.
6. AT NO TIME SHALL MORE THAN ONE (1) PUMP BE REMOVED FROM SERVICE IN OROER TO INSTALL TEMPORARY CONNECTIONS. TEMPORARY CONNECTIONS TO PUMP MOTORS SHALL NOT BE MADE CONCURRENTLY.
7. AFTER SUCCESSFUL MEGGER TESTS ON BOTH TEMPORARY POWER AND CONTROL CABLES, CLOSE THE ASSOCIATEO TEMPORARY MCC CIRCUIT BREAKER AND TEST MOTOR FOR PROPER OPERATION.
8. AFTER ALL MOTORS ANO OEVICES ARE ON TEMPORARY POWER, OPEN THE CIRCUIT BREAKERS IN SWITCHGEAR 56 WHICH FEEO MCC-59 BUS 1 AND MCC-59 BUS 2. LOCKOUT CIRCUIT BREAKERS. REMOVE THE ASSOCIATEO FEEDER CONDUCTORS.
9. DISCONNECT CONOUCTORS FROM ASSOCIATED CIRCUIT BREAKERS/STARTERS WITHIN MCC-59. REMOVE EXISTING MCC-59 AND CONDUCTORS.
10. DISCONNECT CONOUCTORS FROM ASSOCIATED CIRCUIT BREAKERS/STARTERS WITHIN MCC-59A. REMOVE EXISTING MCC-59A ANO CONDUCTORS.
11. NEW CONDUCTORS SHALL BE INSTALLED AND MEGGER TESTED. THE ORDER OF THE TEMPORARY CONNECTION PROCESSES SHALL BE REVERSED WITH EACH TEMPORARY CONNECTION BEING REPLACEO IN KIND WITH THE PROPOSEO PERMANENT CONNECTION. THEREFORE, THE LAST PERMANENT CONNECTIONS TO BE MADE SHALL BE THE MCC-59 BUS 1 ANO MCC-59 BUS 2 FEEOERS FROM SWITCHBOARO 5B. THIS SHALL ALLOW FOR POWER TO TEMPORARY MCC-59 ANO TEMPORARY MCC-59A TO BE THE LAST TEMPORARY CONNECTION.
12. ONCE THE PHYSICAL INSTALLATION OF THE NEW MCC-59 AND MCC-59A IS COMPLETE, ALL NEW FEEDER CONOUCTORS HAVE BEEN INSTALLED AND ALL TESTS HAVE BEEN ACCEPTEO/APPROVED, THE CONTRACTOR SHALL REMOVE THE ASSOCIATEO LOCKS ON THE CIRCUIT BREAKERS IN SWITCHGEAR 56 AND THEN CLOSE THE CIRCUIT BREAKERS. THE CONTRACTOR SHALL THEN CLOSE MCC-59'S MAIN CIRCUIT BREAKER BUS 1 ANO MAIN CIRCUIT BREAKER BUS 2. FOLLOWING, THE CONTRACTOR SHALL CLOSE MCC-59'S FEEOER CIRCUIT BREAKERS TO MCC-59A AND ASSOCIATEO MCC-59A MAIN CIRCUIT BREAKERS.
13. ONCE TESTING IS COMPLETE ANO BOTH MOTOR CONTROL CENTERS HAVE BEEN ACCEPTEO BY THE CITY, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EOUIPMENT, CABLE TRAY, CONDUIT ANO CONOUCTORS.

TEMPORARY CONDUIT SYSTEM NOTE:

TEMPORARY CONDUIT SYSTEMS NEEO NOT BE SPECIFICATION GRAOE. SCHEDULE BD PVC CONOUIT MAY BE USED UNLESS EXPOSEO TO POSSIBLE MECHANICAL DAMAGE – USE GALVANIZEO STEEL RIGIO CONOUIT IN THOSE LOCATIONS. THE CONTRACTOR HAS THE OPTION OF USING ALUMINUM OR GALVANIZED STEEL CABLE TRAY. ALTERNATE CORROSION RESISTANT MOUNTING HAROWARE (SCREWS, BOLTS, NUTS, WASHERS, ETC.) MAY BE USEO IN LIEU OF 316 STAINLESS STEEL. CONSTRUCTION CHANNEL, TUBING, ETC. MAY BE GALVANIZEO STEEL. THE TEMPORARY CONOUIT SYSTEM MUST BE TOTALLY REMOVEO PRIOR TO CONTRACT CLOSE-OUT. ALL OAMAGED SURFACES MUST BE RESTORED AS NEAR TO ORIGINAL CONDITION AS POSSIBLE.

City of Tampa
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PLAN APPROVAL
Feb 8, 2019
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Red line "As Builts"
Date: 2/17/22
Approved: TLee
Approved:

Timothy O Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy O Thomas, 0.9.2342.19200300.100.1.1=A01098000001508582E42C00005387
2019.02.06 11:39:18 -05'00'

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JOB No.	171700842					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

TEMPORARY POWER SEQUENCE OF WORK

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: 3

FILE: 171700842E01

City of Tampa
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GUY VERGER BOULEVARD

NOT TO SCALE

EXISTING FIELD EQUIPMENT OVERALL SITE PLAN. REFER TO SHEET E-2.

EXISTING FILTER BUILDING NO. 1. LOCATION OF MOTOR CONTROL CENTER 59 AND MOTOR CONTROL CENTER 59A REPLACEMENT

Red line "As Builts"
Date: 2/17/22
Approved: [illegible]
Approved:

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A0109800 00001508582E42C00005387
2019.02.06 11:39:40 -05'00'

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City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

SITE PLAN FOR MCC-59 AND MCC-59A REPLACEMENT

TIMOTHY THOMAS, P.E. No. 47078

SHEET NUMBER 4

FILE: 171700842E01

CONDUIT RUN EXPOSED

CONDUIT RUN CONCEALED UNDERGROUND

CONDUIT RUN CONCEALED IN FLOOR OR SLAB

GROUNDING ELECTRODE CONDUCTOR

CONDUIT STUB OUT AND CAP

GROUND ROD

JUNCTION BOX

JUNCTION BOX WITH FLEXIBLE CONNECTION

480V
15 KVA, 1*
120/240V

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

3P
30A

THERMAL MAGNETIC CIRCUIT BREAKER WITH NUMBER OF POLES AND AMPERE RATING

XX

COMBINATION MAGNETIC STARTER WITH CONTROL POWER TRANSFORMER (SIZED FOR LOAD). LETTERS INDICATE TYPE :
N – NON-REVERSING
R – REVERSING
2S – TWO-SPEED
C – CONTACTOR
SS – SOLID STATE SOFT START

XXX

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

FUSE

XX

MOTOR

THERMAL OVERLOAD

UTILITY METER

TRANSFER SWITCH

ELECTRIC PANELBOARD

DISCONNECT OR SAFETY SWITCH

FLOAT SWITCH. OPENS ON LOW LEVEL.

FLOAT SWITCH. CLOSES ON LOW LEVEL.

NORMALLY OPEN (N.O.) CONTACT

NORMALLY CLOSED (N.C.) CONTACT

GROUND CONNECTION

R

INDICATING PILOT LIGHT LETTER INDICATES COLOR OF LENS
R = RED
A = AMBER

OISCONNECT OR TOGGLE SWITCH

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

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

LIMIT SWITCH NORMALLY CLOSED CONTACT. CONTACT OPENS WHEN ACTUATED

TORQUE SWITCH NORMALLY CLOSED CONTACT. CONTACT OPENS WHEN ACTUATED

PUMP THERMAL SENSOR

5D/51/51G

SOLID STATE TRIP UNIT WITH FUNCTIONS NOTED:
5D INSTANTANEOUS TRIP
51 TIME DELAY TRIP
51G GROUND FAULT TRIP

ABBREVIATIONS:

4C	4 CONDUCTOR
A	AMPS
AF	AMPERE FRAME
AM	AMMETER
AT	AMPERE TRIP
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ATL	ACROSS-THE-LINE
C	CONDUIT
CLF	CURRENT LIMITING FUSE
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

T EXISTING THEROMSTAT

$ SINGLE POLE SWITCH

J JUNCTION BOX

J JUNCTION BOX

X EMERGENCY LIGHT

I ON/OFF SWITCH IN SINGLE DEVICE JUNCTION BOX
'L' INDICATES ON/OFF SWITCH INCLUDES MECHANICAL LOCKDUT DEVICE

I ● ON/OFF SWITCH WITH TEST PUSHBUTTON IN TWO DEVICE JUNCTION BOX
'L' INDICATES ON/OFF SWITCH INCLUDES MECHANICAL LOCKDUT DEVICE

● ● ● TEST/ON/OFF PUSHBUTTON STATION IN THREE DEVICE JUNCTION BOX
'L' INDICATES STATION INCLUDES MECHANICAL LOCKOUT DEVICE

EXISTING WELDING OUTLET

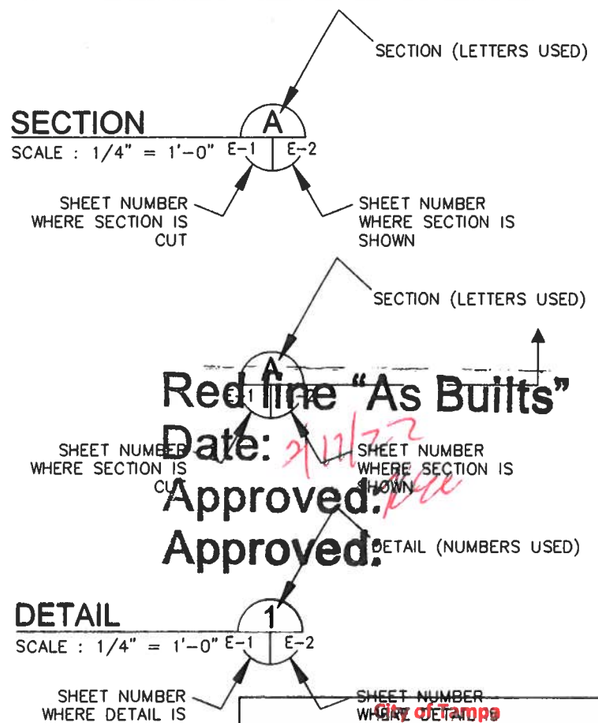
P PRESSURE SWITCH

P PRESSURE SWITCH

SEAL WATER SOLENOID

S SEAL WATER SOLENOID

EXAMPLE OF SECTION CUT AND DETAIL



Red line "As Builts"
Date: 2/12/22
Approved:
Approved:

CITY OF TAMPA
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019

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Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A01098000001508582E42C00005387
2019.02.06 11:40:15 -05'00'

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250
Tampa, FL 33602
813.227.9100
Certificate of Authorization No. 8363

JOB No.	171700842					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: AS SHOWN

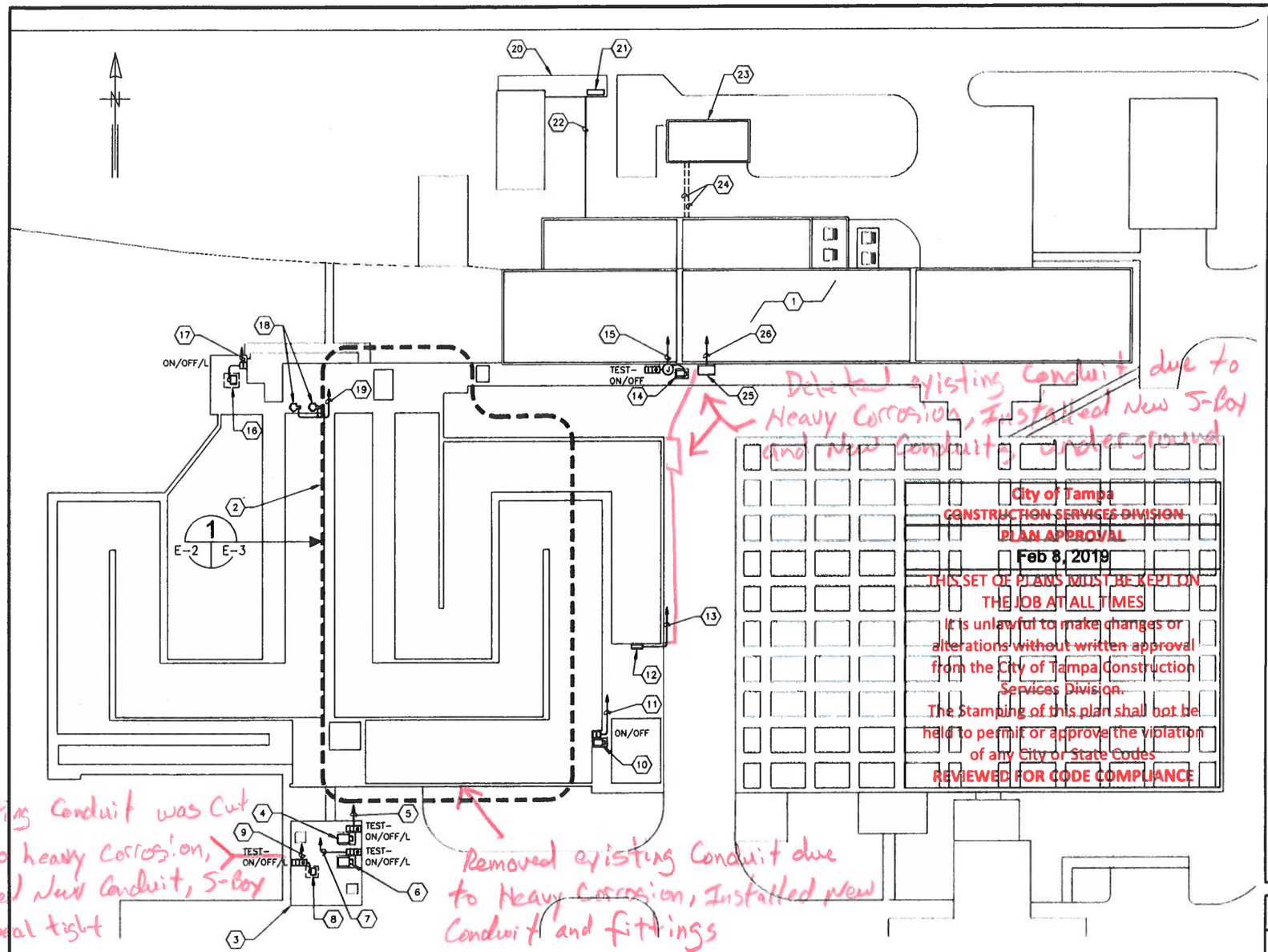
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

ELECTRICAL LEGEND AND ABBREVIATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-1

FILE: 171700842E01



Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.10 0.1.1=A010980000001 508582E42C00005387
2019.02.06 11:40:34 -05'00'

TIMOTHY THOMAS LICENSED No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

EXISTING FIELD EQUIPMENT OVERALL SITE PLAN

SCALE : N.T.S.

1 / 4 E-2

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019
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KEYED NOTES:

1. EXISTING FILTER BUILDING NO. 1. REFER TO SHEETS E-4, E-5 AND E-6.
2. EXISTING POST AERATION AND CHLDRINATION TANKS. REFER TO SHEET E-3 FDR WORK REQUIRED.
3. EXISTING JUNCTION CHAMBER ND. 4.
4. EXISTING 48DV, 3ø, 1D HP MECHANICAL MIXER, JC-4-MM-1.
5. EXISTING CONDUIT AND CONDUCTORS 59M39 AND 59M39A.
6. EXISTING 48DV, 3ø, 1D HP MECHANICAL MIXER, JC-4-MM-2.
7. EXISTING CONDUIT AND CONDUCTORS 59M4D AND 59M4DA.
8. EXISTING 48DV, 3ø, 1 HP SAMPLE PUMP JC-4-SSP-1 (IN WET WELL).
9. EXISTING CONDUIT AND CONDUCTORS 59M36.
10. EXISTING 48DV, 3ø, 1 HP SAMPLE PUMP: PRE-SULFONATED NO. 1 SAMPLE PUMP (REUSE ISLAND).
11. EXISTING CONDUIT AND CONDUCTORS 59M45, 59M45A AND 59M45B.
12. EXISTING 277/48DV, 3ø, PANELBOARD 'PNL-1'. PANELBOARD CURRENTLY FEEDS SLUICE GATES SG-13, SG-14, SG-15 AND SG-16.
13. EXISTING CONDUIT AND CONDUCTORS 59M34.
14. EXISTING 48DV, 3ø, 1 HP SAMPLE PUMP [illegible]
15. EXISTING CONDUIT AND CONDUCTORS 59M38.
16. EXISTING 48DV, 3ø, 2D HP DEWATERING PUMP SA-DP-1.
17. EXISTING CONDUIT AND CONDUCTORS 59M41.
18. EXISTING 48DV, 3ø, SLUICE GATE SA-SG-5 AND CA-SG-6.
19. EXISTING CONDUIT AND CONDUCTORS 59M75
20. EXISTING METHANOL CHEMICAL HANDLING EQUIPMENT PLATFORM (CHEP).
21. APPROXIMATE LOCATION OF EXISTING MCC-59B.
22. CURRENTLY, MCC-59B IS FED FROM MCC-59 VIA TWO (2) 48DV FEEDERS (ONE FROM EACH BUS). ONE FEEDER EXITS MCC-59 OVERHEAD, TRAVELS THROUGH FILTER BUILDING NO. 1 (OVERHEAD), EXITS FILTER BUILDING NO. 1 ABOVEGROUND AND TRAVELS ACROSS TO CHEMICAL HANDLING EQUIPMENT PLATFORM VIA AN ELEVATED PIPE SUPPORT. THE GENERAL LOCATION OF THE PIPE SUPPORT IS IDENTIFIED BY THIS NDTE. REFER TO SHEET E-4 (59M17A) FOR CONDUIT ROUTING WITHIN FILTER BUILDING NO. 1. THE SECOND FEEDER EXITS THE BOTTOM OF MCC-59, TRAVELS THE ELEVATION 3'-6" LEVEL AND CONTINUES UNDERGROUND TO THE CHEMICAL HANDLING EQUIPMENT PLATFORM. THE EXACT ROUTING IS NOT KNOWN.
23. EXISTING DECHLORINATION BUILDING.
24. EXISTING CONDUIT TO BE REUSED WITH NEW CONDUCTORS PROVIDED. CONDUIT/CONDUCTORS SOURCE IS PANEL 'PP'. REFER TO NOTES ON SHEET E-5 AND E-2D.
25. EXISTING FLOW METER TO REMAIN.
26. PROVIDE NEW CONDUIT AND CONDUCTORS (59M44) TO LB-53-SUB.

Red line "As Builts"
Date: 2/17/22
Approved: Keen
Approved:

GENERAL NOTES:

1. ALL EXISTING INSTALLATIONS DENOTED ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMNECING CONSTRUCTION.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDUIT LDCATIDNS, ROUTING AND DISTANCES PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS.
3. NOT ALL CONDUIT FIELD ROUTING IS DEPICTED FOR CLARITY.

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd. Suite 250 Tampa, FL 33602 813.227.9100 Certificate of Authorization No. 8363

JOB No.	171700842					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: AS SHOWN

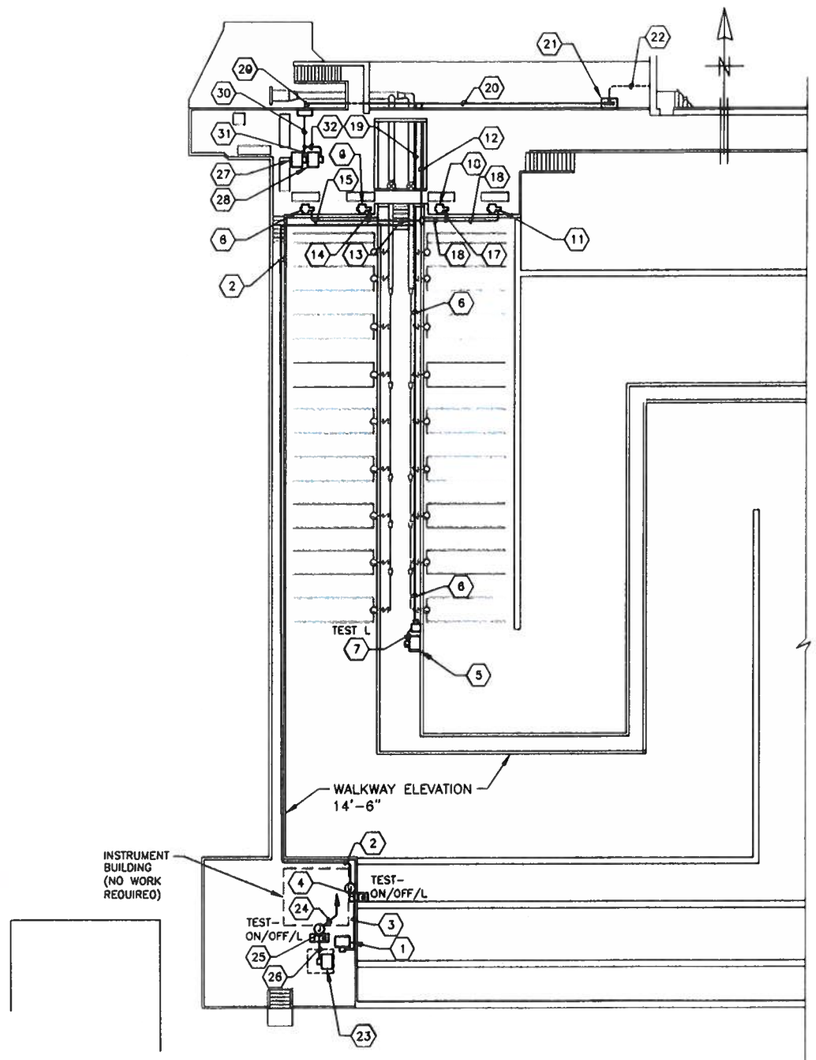
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

EXISTING FIELD EQUIPMENT OVERALL SITE PLAN

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER E-2

FILE: 171700842E01



POST AERATION AND CHLORINATION TANKS POWER PLAN

SCALE : N.T.S.

1
E-2 | E-3

KEYED NOTES:

1. EXISTING 48DV, 3ø, 1 HP SAMPLE PUMP CA-SSP-1.
2. EXISTING CONDUIT AND CONDUCTORS: 59M7.
3. EXISTING CONDUIT AND CONDUCTORS: 59M7A.
4. EXISTING CONDUIT AND CONDUCTORS: 59M7B.
5. EXISTING 48DV, 3ø, 1 HP SAMPLE PUMP CA-SSP-2.
6. EXISTING CONDUIT AND CONDUCTORS: 59M8.
7. EXISTING CONDUIT AND CONDUCTORS: 59M8A.
8. EXISTING 48DV, 3ø, SLUICE GATE: CA-SG-1.
9. EXISTING 48DV, 3ø, SLUICE GATE: CA-SG-2.
10. EXISTING 48DV, 3ø, SLUICE GATE: CA-SG-3.
11. EXISTING 48DV, 3ø, SLUICE GATE: CA-SG-4.
12. EXISTING CONDUIT AND CONDUCTORS: 59M5.
13. EXISTING CONDUIT AND CONDUCTORS: 59M5A.
14. EXISTING CONDUIT AND CONDUCTORS: 59M5B.
15. EXISTING CONDUIT AND CONDUCTORS: 59M5C.
18. EXISTING CONDUIT AND CONDUCTORS: 59M5D.
17. EXISTING CONDUIT AND CONDUCTORS: 59M5E.
18. EXISTING CONDUIT AND CONDUCTORS: 59M5F.
19. EXISTING CONDUIT AND CONDUCTORS: 59M7, 59M8 & 59N16. 59N16 REQUIRES NO WORK AND IS NOT LISTED IN THE CONDUIT AND CABLE SCHEDULES.
20. EXISTING CONDUIT AND CONDUCTORS: 59M5, 59M7, 59M8, 59M46 & 59N16. 59N16 REQUIRES NO WORK AND IS NOT LISTED IN THE CONDUIT AND CABLE SCHEDULES.
21. EXISTING WALL MOUNTED PARTITIONED PULLBOX OF NEMA 4 CONSTRUCTION WITH GASKETED SCREW HELO COVER. NO WORK REQUIRED.
22. EXISTING DIRECT BURIED CONDUITS AT ELEVATION 9'-0" AND 9'-6". FOR CONTINUATION REFER TO FILTER BUILDING FLOOR PLAN SHEET E-5.
23. EXISTING 48DV, 3ø, 1 HP SAMPLE PUMP CA-SSP-4 (IN WET WELL).
24. EXISTING CONDUIT AND CONDUCTORS 59M37.
25. EXISTING CONDUIT AND CONDUCTORS 59M37B.
26. EXISTING CONDUIT AND CONDUCTORS 59M37A.
27. EXISTING 48DV, 3ø, 1 HP SAMPLE PUMP CA-SSP-3A.
28. EXISTING 48DV, 3ø, 1 HP SAMPLE PUMP CA-SSP-3B.
29. EXISTING CONDUIT AND CONDUCTORS: 59M46.
30. EXISTING CONDUIT AND CONDUCTORS: 59M46A.
31. EXISTING CONDUIT AND CONDUCTORS: 59M46B.
32. EXISTING CONDUIT AND CONDUCTORS: 59M46C.

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2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDUIT LOCATIONS, ROUTING AND DISTANCES PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS.
3. NOT ALL CONDUIT FIELO ROUTING IS DEPICTED FOR CLARITY.

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019

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Date: 2/17/22
Approved: TAL
Approved:

TIMOTHY THOMAS LICENSE No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A0109800000015085 82E42C00005387
2019.02.06 11:40:55 -05'00'

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Tampa, FL 33602
813.227.9100
Certificate of Authorization No. 6363

JOB No.	171700842					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

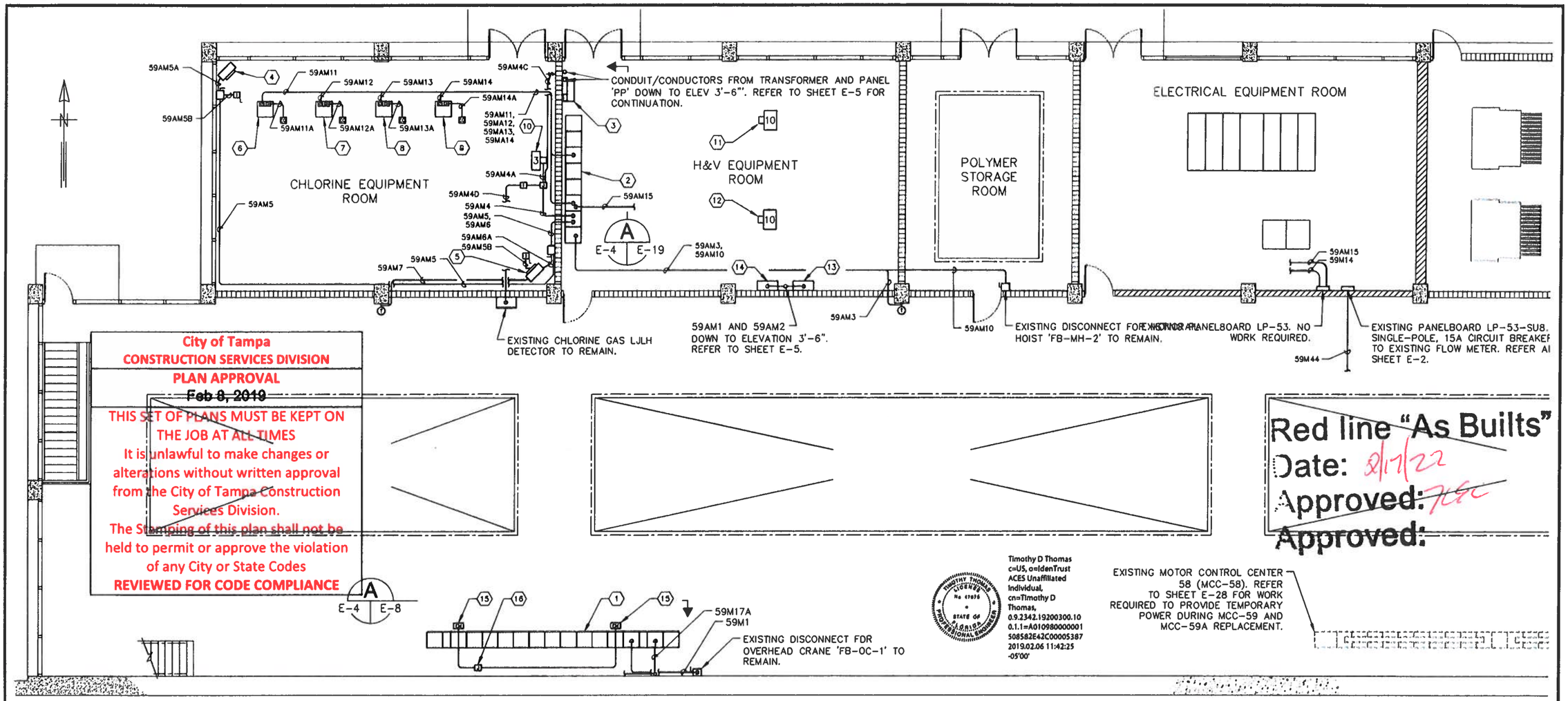
SCALE: AS SHOWN

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

POST AERATION AND CHLORINATION TANKS POWER PLAN

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-3
FILE: 171700842E01



City of Tampa
CONSTRUCTION SERVICES DIVISION
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Date: 2/17/22
Approved: TCC
~~Approved:~~

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.10 0.1.1=A0109800000001 508582E42C00005387 2019.02.06 11:42:25 -05'00'

FILTER BUILDING NO.1 (015) : PLAN ELEVATION 11'-0" (1 / 4 | E-4)

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

KEYED NOTES:

1. EXISTING 277/480V, 1,2DDA MOTOR CONTROL CENTER 59 (MCC-59) TO BE REPLACED. REFER ALSO TO SHEET E-8 FOR EXISTING FRONT ELEVATION.
2. EXISTING 277/480V, 4DDA MOTOR CONTROL CENTER 59A (MCC-59A) TO BE REPLACED. REFER ALSO TO SHEET E-20 FOR EXISTING FRONT ELEVATION.
3. EXISTING 480V, 3-POLE CIRCUIT BREAKER (CURRENTLY TAPPED INTO MCC-59A 8US), 277/480V, 3ø 1DDA PANELBDARD 'PP' AND 48D-120/24DV, SINGLE-PHASE 25 KVA TRANSFORMER TO BE REMOVED AND REPLACED. REFER ALSO TO SHEET E-2D.
4. EXISTING 480V, 3ø UNIT HEATER 'F8-UH-1' TO REMAIN.
5. EXISTING 480V, 3ø UNIT HEATER 'FB-UH-2' TO REMAIN.
6. EXISTING 480V, 3ø CHLORINE EVAPORATOR 'FB-EV-1' TO REMAIN.
7. EXISTING 480V, 3ø CHLORINE EVAPORATOR 'F8-EV-2' TO REMAIN.
8. EXISTING 480V, 3ø CHLORINE EVAPORATOR 'FB-EV-3' TD REMAIN.
9. EXISTING 48DV, 3ø CHLORINE EVAPORATOR 'FB-EV-4' TO REMAIN.
10. EXISTING 48DV, 3ø 3 HP EXHAUST FAN 'FB-REF-2' TO REMAIN.
11. EXISTING 48DV, 3ø 10 HP SUPPLY FAN 'F8-S-1A' TO REMAIN.
12. EXISTING 48DV, 3ø 10 HP SUPPLY FAN 'F8-S-1B' TO REMAIN.
13. EXISTING 48DV, 3ø 10 HP VFD FOR SUPPLY FAN 'F8-S-1A' TO REMAIN.
14. EXISTING 480V, 3ø 10 HP VFD FOR SUPPLY FAN 'FB-S-1B' TO REMAIN.
15. EXISTING EMERGENCY LIGHT (TYPICAL OF 2). NEW EMERGENCY LIGHTS SHALL BE PROVIDED FOR NEW MCC-59. REFER TO KEYED NOTE BELOW FOR POWER.
16. EXISTING JUNCTION BOX (MOUNTED ON WALL) CONTAINING 12DV AC CIRCUIT. EXISTING 120V AC CIRCUIT SHALL 8E REUSED.

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Tampa, FL 33602
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Certificate of Authorization No. 8363

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DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION	

SCALE: AS SHOWN

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

EXISTING CONDITIONS PLAN
ELEVATION 11'-0"

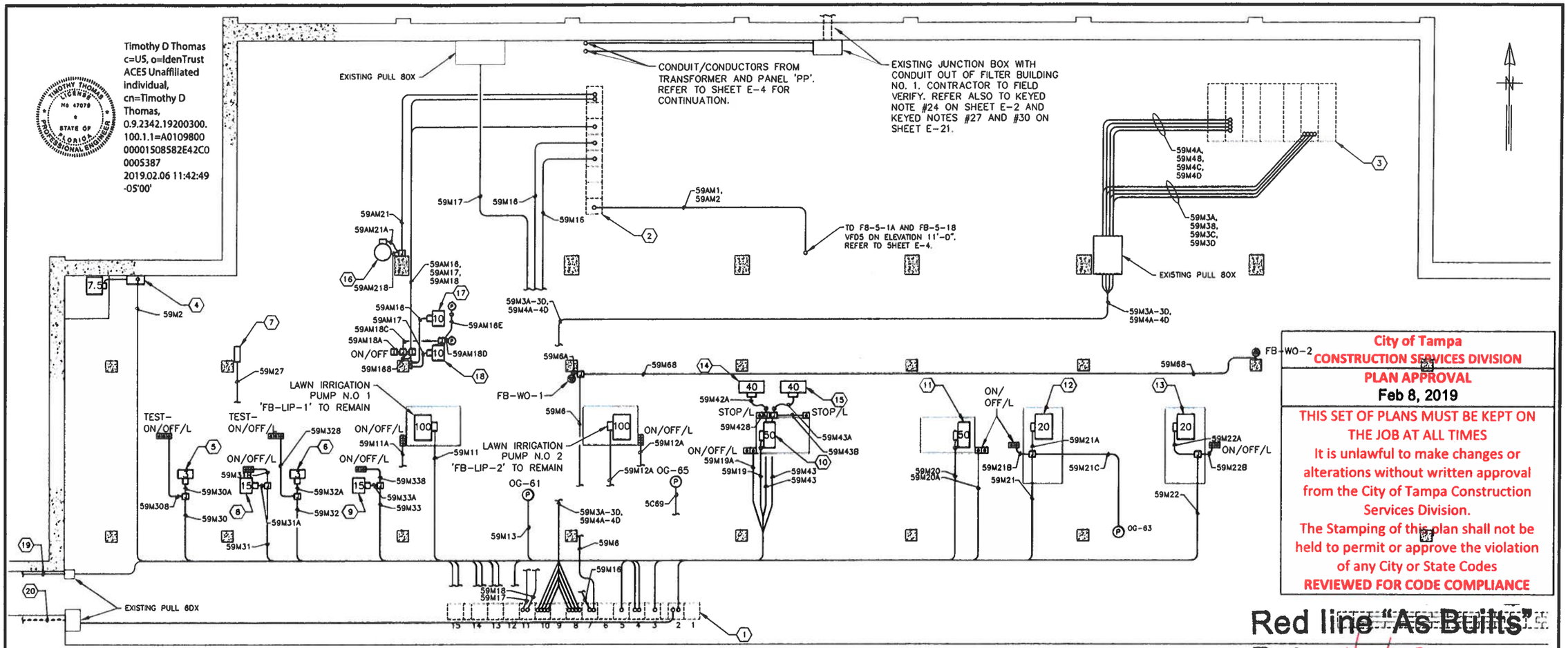
TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-4

FILE: 171700842E04

Timothy D Thomas
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2019.02.06 11:42:49 -05'00'

TIMOTHY THOMAS LICENSE No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER



FILTER BUILDING NO.1 (015) : PLAN ELEVATION 3'-6"

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

1 / 4 | E-5

KEYED NOTES:

1. EXISTING FOOTPRINT OF 277/480V, 1,200A MCC-59 (TO BE REPLACED) ABOVE ON ELEVATION 11'-0".
2. EXISTING FOOTPRINT OF 277/480V, 400A MCC-59A (TO BE REPLACED) ABOVE ON ELEVATION 11'-0".
3. EXISTING FOOTPRINT OF 277/480V, 2,000A SWITCHGEAR 56 (TO REMAIN) ABOVE ON ELEVATION 11'-0". REFER TO SHEET E-28 FOR WORK REQUIRED TO PROVIDE TEMPORARY POWER DURING MCC-59 AND MCC-59A REPLACEMENT.
4. EXISTING SUMP PUMP CONTROLLER FOR SUMP PUMP FB-SP-1.
5. EXISTING EFFLUENT WATER STRAINER NO. 1 'FB-EWS-1' TO REMAIN.
6. EXISTING EFFLUENT WATER STRAINER NO. 2 'FB-EWS-2' TO REMAIN.
7. EXISTING EFFLUENT WATER STRAINERS CONTROL PANEL TO REMAIN.
8. EXISTING STRAINER BACKWASH WATER PUMP NO. 1 'FB-SBW-1' TO REMAIN.
9. EXISTING STRAINER BACKWASH WATER PUMP NO. 2 'FB-SBW-2' TO REMAIN.
10. EXISTING CHLORINE SOLUTION WATER PUMP NO. 1 'FB-CHSW-1' TO REMAIN.
11. EXISTING CHLORINE SOLUTION WATER PUMP NO. 2 'FB-CHSW-2' TO REMAIN.
12. EXISTING THICKENING TANK DILUTION WATER PUMP NO. 1 'FB-TDP-1' TO REMAIN.
13. EXISTING THICKENING TANK DILUTION WATER PUMP NO. 2 'FB-TDP-2' TO REMAIN.
14. EXISTING DECHLORINATION PUMP NO. 1 TO REMAIN.
15. EXISTING DECHLORINATION PUMP NO. 2 TO REMAIN.
16. EXISTING CHLORINE SOLUTION SUPPLY/DRAIN VALVE TO REMAIN.
17. EXISTING CHLORINE SUPPLY PUMP NO. 1 'FB-CSSP-1' TO REMAIN.
18. EXISTING CHLORINE SUPPLY PUMP NO. 2 'FB-CSSP-2' TO REMAIN.
19. 59M3, FOR CONTINUATION REFER TO SHEET E-7.
20. EXISTING DIRECT BURIED CONDUITS. FOR CONTINUATION REFER TO POST AERATION AND CHLORINATION TANKS POWER PLAN SHEET E-3.

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019

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Red line "As Builts"
Date: 2/7/22
Approved:
Approved:

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777 S. Harbour Island Blvd, Suite 250, Tampa, FL 33602, 813.227.9190
Certificate of Authorization No. 8363

JOB No.	171700842					
DESIGNED	TDT					
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CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: AS SHOWN

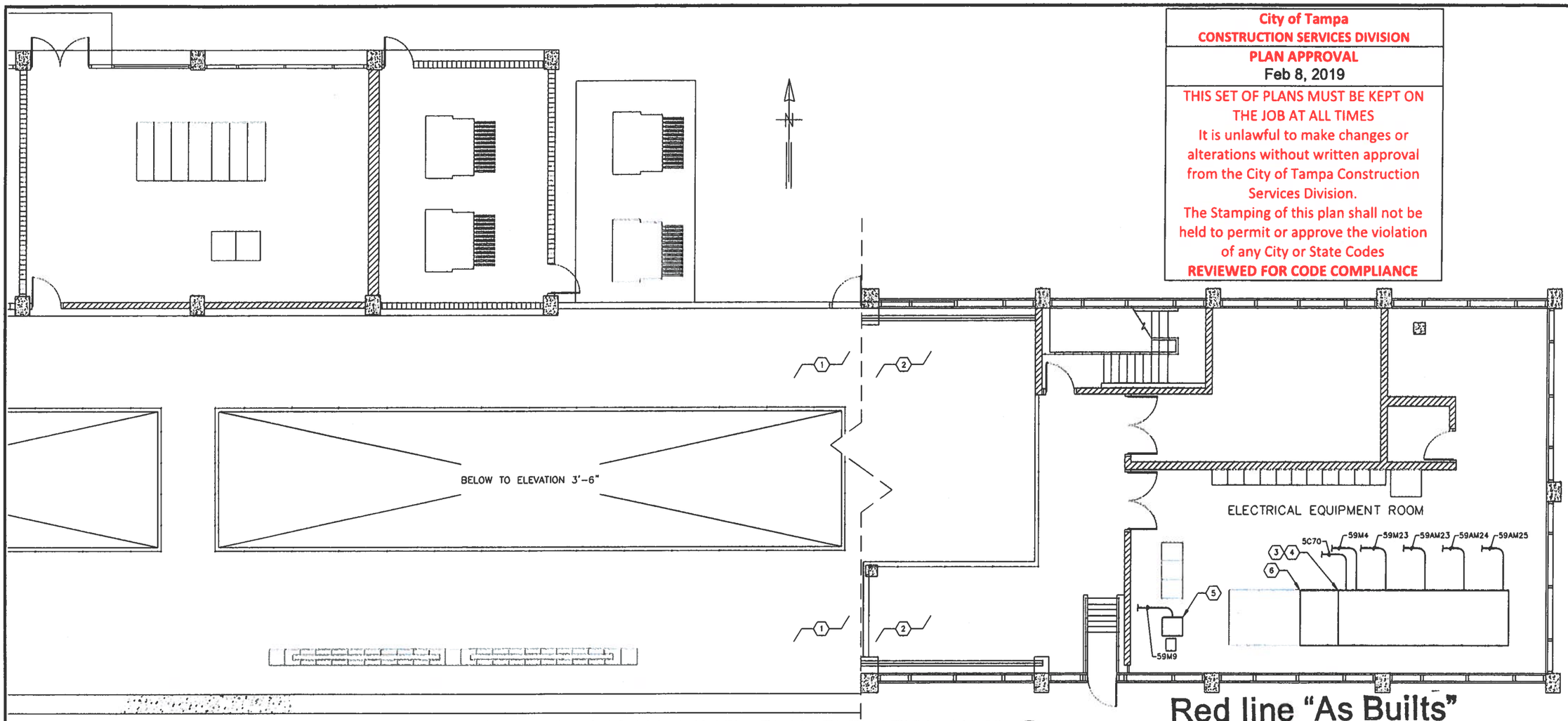
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

EXISTING CONDITIONS PLAN ELEVATION 3'-6"

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-5

FILE: 171700842E01



City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019

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FILTER BUILDING NO.1 (015) : PLAN ELEVATION 23'-6"

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

1 / 4 / E-4

KEYED NOTES:

1. EXISTING PLAN AT ELEVATION 11'-0".
2. EXISTING PLAN AT ELEVATION 23'-6".
3. EXISTING FBP-FS AT ELEVATION 23'-6".
4. EXISTING FBP-ANN AT ELEVATION 23'-6".
5. EXISTING RESIDUAL CHLORINE ANALYZER AT ELEVATION 23'-6".
6. EXISTING CONTROL CONSOLE AT ELEVATION 23'-6".

Red line "As Builts"
Date: 2/17/22
Approved: KH
Approved:

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A0109800 00001508582E42C 00005387
2019.02.06 11:43:14 -05'00'

TIMOTHY THOMAS LICENSE No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

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813.227.9100
Certificate of Authorization No. 8383

JOB No.	171700842
DESIGNED	TDT
DRAWN	JLH
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DATE	3/2018

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SCALE: AS SHOWN

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

EXISTING CONDITIONS PLAN ELEVATION 23'-6"

TIMOTHY THOMAS, P.E. No. 47079

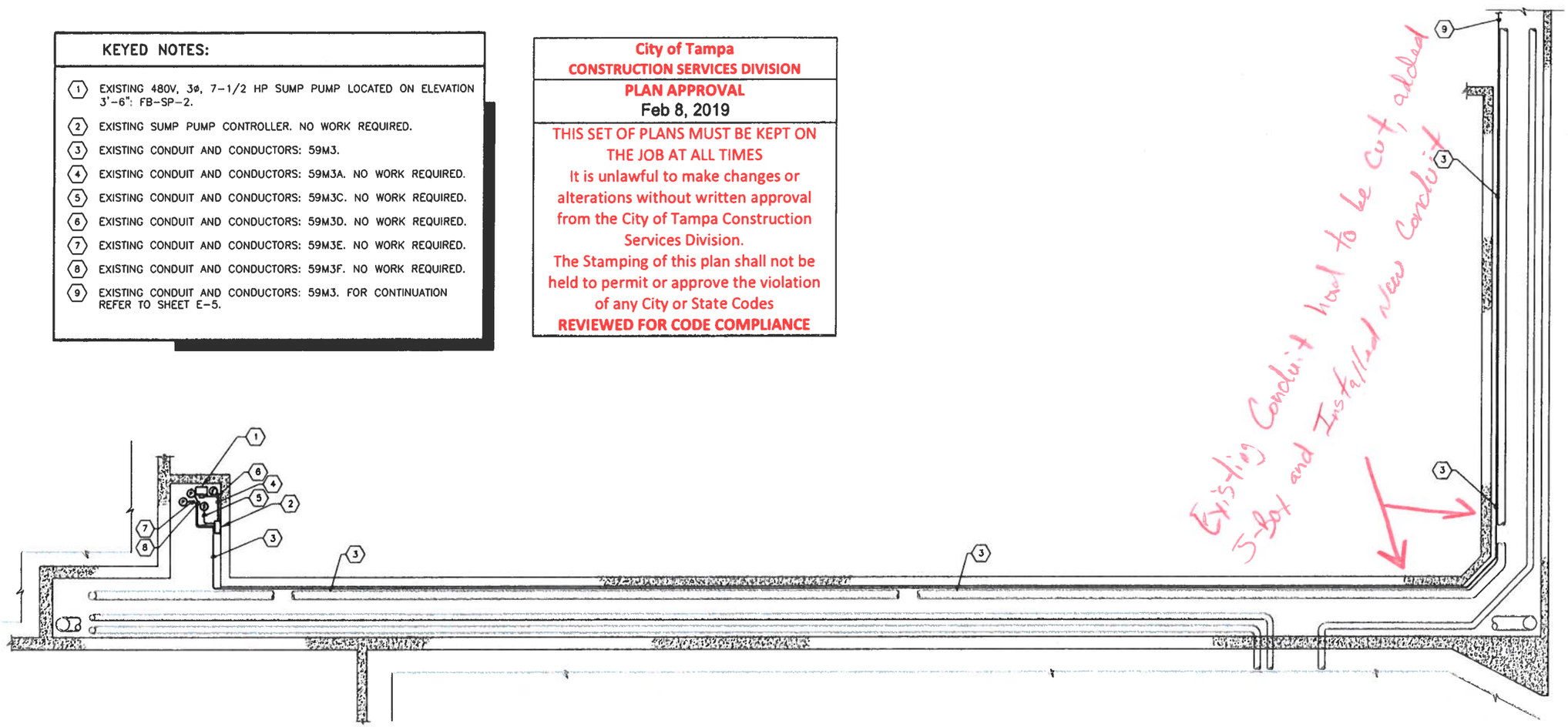
SHEET NUMBER: E-6
FILE: 171700842E01

KEYED NOTES:

1. EXISTING 480V, 3ø, 7-1/2 HP SUMP PUMP LOCATED ON ELEVATION 3'-6": FB-SP-2.
2. EXISTING SUMP PUMP CONTROLLER. NO WORK REQUIRED.
3. EXISTING CONDUIT AND CONDUCTORS: 59M3.
4. EXISTING CONDUIT AND CONDUCTORS: 59M3A. NO WORK REQUIRED.
5. EXISTING CONDUIT AND CONDUCTORS: 59M3C. NO WORK REQUIRED.
6. EXISTING CONDUIT AND CONDUCTORS: 59M3D. NO WORK REQUIRED.
7. EXISTING CONDUIT AND CONDUCTORS: 59M3E. NO WORK REQUIRED.
8. EXISTING CONDUIT AND CONDUCTORS: 59M3F. NO WORK REQUIRED.
9. EXISTING CONDUIT AND CONDUCTORS: 59M3. FOR CONTINUATION REFER TO SHEET E-5.

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
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PIPE TUNNEL ACCESS
PLAN ELEVATION 3'-6"
SCALE : N.T.S.

Red line "As Builts"
Date: 2/22/17
Approved: TYC
Approved:

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A01098000001508582E42C00005387
2019.02.06 11:43:34 -05'00'

TIMOTHY THOMAS LICENSE No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250
Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 8363

JOB No.	171700842
DESIGNED	TDT
DRAWN	JLH
CHECKED	TDT
DATE	3/2018

No.	DATE	BY	APP	REVISION DESCRIPTION

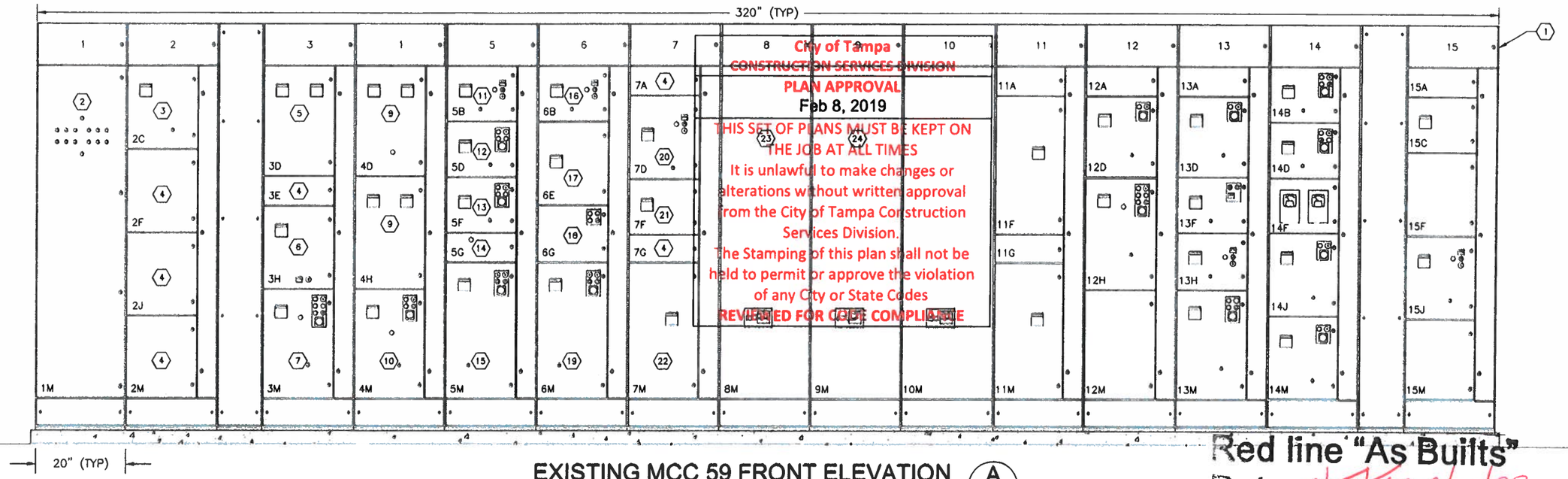
SCALE: AS SHOWN

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

PIPE TUNNEL ACCESS PLAN
ELEVATION 3'-6"

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-7
FILE: 171700842E07



City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019
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It is unlawful to make changes or alterations without written approval from the City of Tampa Construction Services Division.
The Stamping of this plan shall not be held to permit or approve the violation of any City or State Codes
REVIEWED FOR CODE COMPLIANCE

EXISTING MCC 59 FRONT ELEVATION

SCALE : N.T.S.

A E-4 | E-8

Red line "As Builts"
Date: ~~2/17/17~~ 2/17/22
Approved: ~~Alec~~
Approved:

KEYED NOTES:

1. 277/480V, 1,200A, 3ø, 3-WIRE MCC-59. CONTRACTOR SHALL REMOVE EXISTING MCC ANO PROVIOE NEW MCC-59 PER SPECIFICATIONS.
2. STAR CONTROL CONSOLE. GENERAL NOTE 1.
3. 480V, 400AF/150AT 3-POLE CIRCUIT BREAKER FOR MCC-59B (BUS NO. 1). GENERAL NOTE 2.
4. SPARE BUCKET. REFER TO PROPOSEO MCC-59 ELEVATION ANO MCC-59 ONE-LINE DIAGRAM FOR SPARES REQUIRED IN THE NEW MCC-59.
5. 24" BUCKET CONTAINING ONE 480V, 100AF/40AT 3-POLE CIRCUIT BREAKER FOR OVERHEAD CRANE 'FB-OC-1'. NOTE 2. THE BUCKET ALSO CONTAINS ONE CIRCUIT BREAKER FOR SECTION 1M FEEDER. GENERAL NOTE 2.
6. 480V STARTER FOR OEWATERING PUMP 'SA-OP-1'. GENERAL NOTE 2.
7. 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR CHLORINE SOLUTION WATER PUMP NO. 2 'FB-CHSW-2'. GENERAL NOTE 2.
8. 24" BUCKET CONTAINING ONE 480V, 100AF/20AT 3-POLE CIRCUIT BREAKER FOR SUMP PUMP NO. 1 'FB-SP-1'. NOTE 2. THE BUCKET ALSO CONTAINS ONE 480V, 100AF/20AT 3-POLE CIRCUIT BREAKER FOR SUMP PUMP NO. 2 'FB-SP-2'. GENERAL NOTES 2 ANO 4.
9. 24" BUCKET CONTAINING ONE 480V, 100AF/20AT 3-POLE CIRCUIT BREAKER FOR SLUICE GATES CA-SG-1 THRU CA-SG-4. NOTE 2. THE BUCKET ALSO CONTAINS ONE 480V, 100AF/80AT 3-POLE CIRCUIT BREAKER FOR WELOING OUTLETS 'FB-WO-1'. GENERAL NOTE 2.
10. 480V, 100AF/90AT 3-POLE CIRCUIT BREAKER FOR OECHLORINATION PUMP NO. 2. GENERAL NOTE 2.
11. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR SAMPLE PUMP NO. 3 'CA-SSP-3'. GENERAL NOTE 2.
12. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR SAMPLE PUMP NO. 1 'CA-SSP-1'. GENERAL NOTE 2.
13. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR CHLORINE SAMPLING PUMP, PRE-SULFONATEO SAMPLE PUMP ANO POST-SULFONATING SAMPLE PUMP. NEW, INOIVIOUAL CIRCUIT BREAKERS SHALL BE PROVIOEO FOR THE SAMPLING PUMPS IN THE PROPOSEO MCC-59.
14. 6" BUCKET CONTAINING A RESET PUSHBUTTON FOR THE PRE-SULFONATEO SAMPLE PUMP. GENERAL NOTE 1.
15. 480V, 200AF/200AT 3-POLE CIRCUIT BREAKER FOR LAWN IRRIGATION PUMP NO. 2 'FB-LIP-2'. GENERAL NOTE 2.
16. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR SAMPLE PUMP NO. 4 'CA-SSP-4'. GENERAL NOTE 2.
17. 480V, 100AF/15AT 2-POLE CIRCUIT BREAKER FOR OPEN CHANNEL FLOW METER. GENERAL NOTE 1.
18. 12" BUCKET SERVING AS RELAY COMPARTMENT. GENERAL NOTE 2.
19. 480V, 200AF/200AT 3-POLE CIRCUIT BREAKER FOR LAWN IRRIGATION PUMP NO. 1 'FB-LIP-1'. GENERAL NOTE 2.
20. 480V, 100AF/25AT 3-POLE CIRCUIT BREAKER FOR MECHANICAL MIXER 'JC-4-MM-1'. GENERAL NOTE 2.
21. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR SLUICE GATES SG5 ANO SG6. GENERAL NOTE 2.
22. 480V, 400AF/400AT 3-POLE CIRCUIT BREAKER FOR MCC-59A (BUS NO. 1). GENERAL NOTE 2.
23. 480V, 1200AF/1200AT 3-POLE CIRCUIT BREAKER FROM SWITCHGEAR NO. 56 BUS NO. 1 FEEOER. GENERAL NOTE 2.
24. 480V, 1200AF/1200AT 3-POLE TIE CIRCUIT BREAKER. GENERAL NOTE 2.

GENERAL NOTES:

1. THIS EXISTING OEVICE WILL BECOME OBSOLETE UNOER THIS CONTRACT. OUPLICATION IN THE NEW MCC-59 PROPOSEO IS NOT REQUIREO.
2. THIS EXISTING OEVICE SHALL BE OUPLICATEO IN THE NEW MCC-59 PROPOSEO. REFER ALSO TO SHEETS E-12 ANO E-13 FOR PROPOSEO MCC-59 ONE-LINE OIAGRAM.
3. REFER TO SHEET E-9 FOR CONTINUATION OF NOTES FOR EXISTING MCC-59 FRONT ELEVATION.
4. REFER TO SHEET E-7 FOR LOCATION OF SUMP PUMP NO. 2 'FB-SP-2'.

TIMOTHY THOMAS LICENSED No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

Timothy O Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy O Thomas, 0.9.2342.19200300.100.1.1=A0109800000015 08582E42C00005387
2019.02.06 11:43:56 -05'00'

TRICON CONSULTING ENGINEERS
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813.227.9100
Certificate of Authorization No. 6363

JOB No.	171700842					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

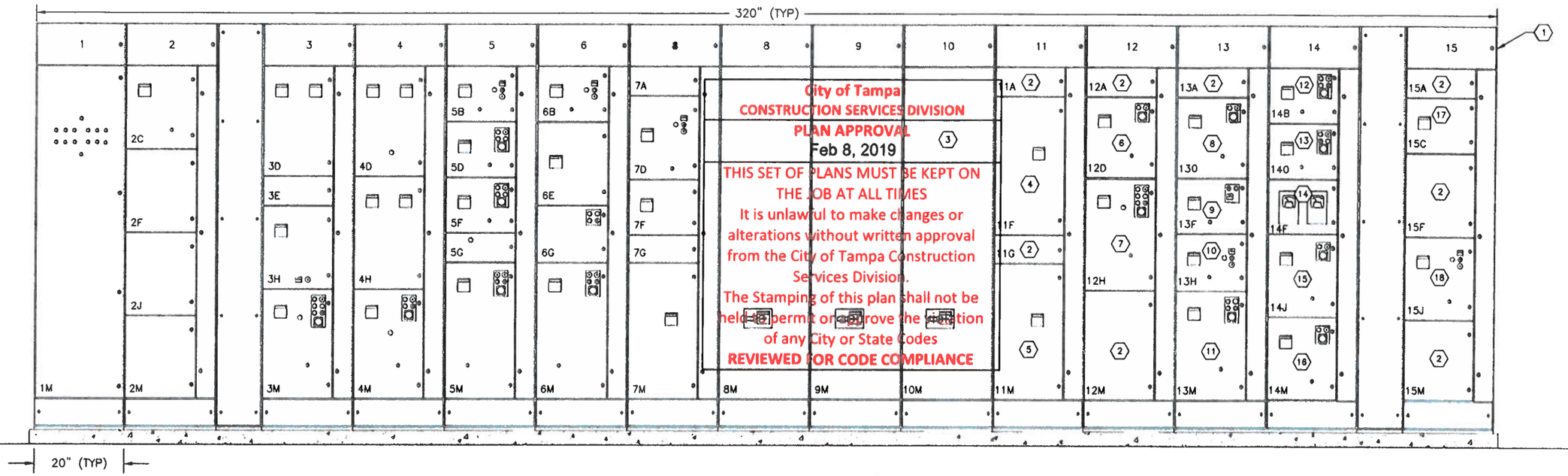
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

EXISTING MCC-59 FRONT ELEVATION (SHEET 1 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER E-8

FILE: 171700842E01



EXISTING MCC 59 FRONT ELEVATION

SCALE : N.T.S.

A
E-4 | E-8

KEYED NOTES:

1. 277/480V, 1,200A, 3ø, 3-WIRE MCC-59. CONTRACTOR SHALL REMOVE EXISTING MCC AND PROVIDE NEW MCC-59 PER SPECIFICATIONS.
2. SPARE BUCKET. REFER TO PROPOSED MCC-59 ELEVATION AND MCC-59 ONE-LINE DIAGRAM FOR SPARES REQUIRED IN THE NEW MCC-59.
3. 480V, 1200AF/1200AT 3-POLE CIRCUIT BREAKER FROM SWITCHGEAR NO. 56 BUS NO. 2 FEEDER. GENERAL NOTE 2.
4. 480V, 400AF/150AT 3-POLE CIRCUIT BREAKER FOR MCC-59B (BUS NO. 2). GENERAL NOTE 2.
5. 480V, 400AF/400AT 3-POLE CIRCUIT BREAKER FOR MCC-59A (BUS NO. 2). GENERAL NOTE 2.
6. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR EFFLUENT WATER STRAINER DRIVE 'FB-EWS-2'. GENERAL NOTE 2.
7. 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR CHLORINE SOLUTION WATER PUMP NO. 1 'FB-CHSW-1'. GENERAL NOTE 2.
8. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR EFFLUENT WATER STRAINER DRIVE 'FB-EWS-1'. GENERAL NOTE 2.
9. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR SEWAGE SAMPLE PUMP NO. 5. GENERAL NOTE 2.
10. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR SAMPLE PUMP 'JC-4-SSP-1'. GENERAL NOTE 2.
11. 480V, 100AF/90AT 3-POLE CIRCUIT BREAKER FOR OECHLORINATION PUMP NO. 1. GENERAL NOTE 2.
12. 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER FOR DILUTION WATER PUMP NO. 1 'FB-TOP-1'. GENERAL NOTE 2.
13. 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER FOR DILUTION WATER PUMP NO. 2 'FB-TOP-2'. GENERAL NOTE 2.
14. METERS FOR THICKENING TANK DILUTION WATER PUMPS. NOTE 1.
15. 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER FOR EFFLUENT WATER STRAINER BACKWASH PUMP 'FB-SBW-1'. GENERAL NOTE 2.
16. 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER FOR EFFLUENT WATER STRAINER BACKWASH PUMP 'FB-SBW-2'. GENERAL NOTE 2.
17. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR SLUICE GATE SG13 THRU SG16. GENERAL NOTE 2.
18. 480V, 100AF/25AT 3-POLE CIRCUIT BREAKER FOR MECHANICAL MIXER 'JC-4-MM-2'. GENERAL NOTE 2.

GENERAL NOTES:

1. THIS EXISTING DEVICE WILL BECOME OBSOLETE UNDER THIS CONTRACT. DUPLICATION IN THE NEW MCC-59 PROPOSED IS NOT REQUIRED.
2. THIS EXISTING DEVICE SHALL BE DUPLICATED IN THE NEW MCC-59 PROPOSED. REFER ALSO TO SHEETS E-12 AND E-13 FOR PROPOSED MCC-59 ONE-LINE DIAGRAM.

Red line "As Builts"
Date: 2/17/20
Approved: TDT
Approved:

Timothy D Thomas
c=US, a=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A01098000000150858 2E42C000005387
2019.02.06 11:45:11 -05'00'

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250, Tampa, FL 33602, 813.227.9100
Certificate of Authorization No. 6363

JOB No.	171700842
DESIGNED	TDT
DRAWN	JLH
CHECKED	TDT
DATE	3/2018

No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

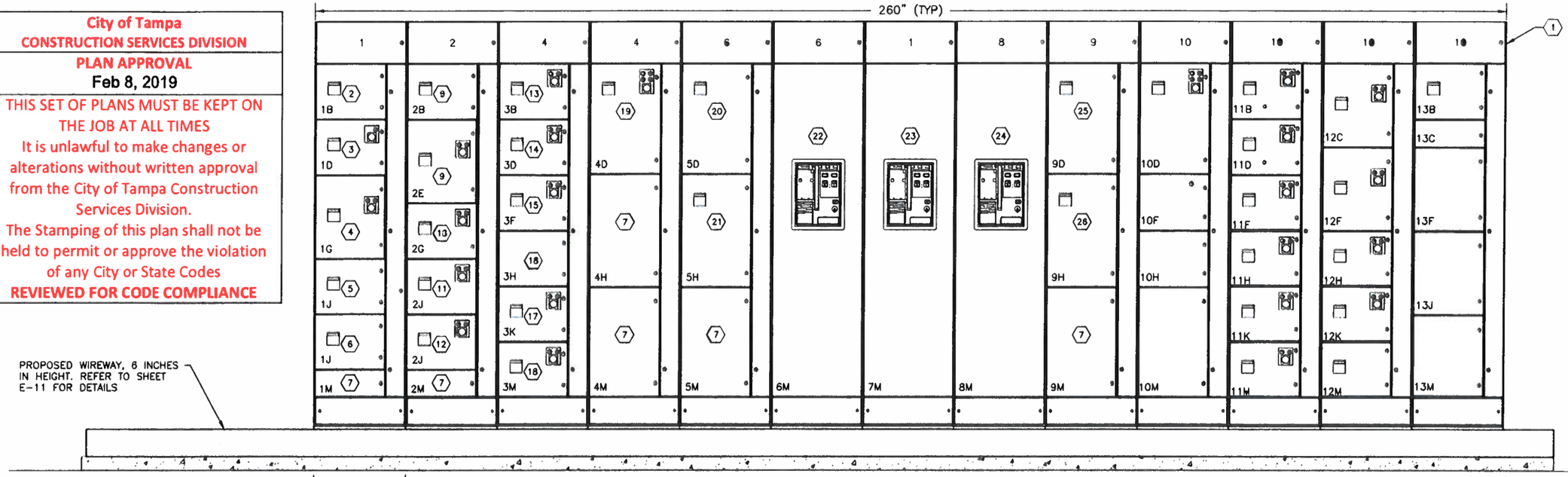
EXISTING MCC-59 FRONT ELEVATION (SHEET 2 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-9

FILE: 171700842E01

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019
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REVIEWED FOR CODE COMPLIANCE



PROPOSED MCC 59 FRONT ELEVATION

SCALE : N.T.S.

KEYED NOTES:

1. 277/480V, 1,200A, 3ø, 3-WIRE MCC-59.
2. 480V, 100AF/40AT 3-POLE CIRCUIT BREAKER FOR OVERHEAD CRANE, FB-OH-1.
3. DEWATERING PUMP NO. 1, SA-OP-1, 15 HP ACROSS-THE-LINE STARTER.
4. CHLORINE SOLUTION WATER PUMP NO. 1, FB-CHSW-1, 50 HP ACROSS-THE-LINE STARTER.
5. 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR SUMP PUMP NO. 1, FB-SP-1.
6. 480V, 100AF/20AT 3-POLE CIRCUIT BREAKER FOR SLUICE GATES CA-SG-1, CA-SG-2, CA-SG-3 AND CA-SG-4.
7. PROPOSED SPACE.
8. 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER FOR WELDING OUTLETS FB-WO-1 AND FB-WO-2.
9. DECHLORINATION PUMP NO. 1, 40 HP ACROSS-THE-LINE STARTER.
10. EFFLUENT WATER STRAINER DRIVE NO. 1, FB-EWS-1, 3 HP ACROSS-THE-LINE STARTER.
11. JUNCTION CHAMBER 4 SAMPLE PUMP JC-4-SSP-1, 1 HP ACROSS-THE-LINE STARTER.
12. CHLORINE SAMPLING PUMP, BACKUP FINAL, CA-SSP-1, 1 HP ACROSS-THE-LINE STARTER.
13. SEWAGE SAMPLING PUMP NO. 5 FB-SSP-5, 1 HP ACROSS-THE-LINE STARTER.
14. MECHANICAL MIXER, JC-4-MM-1, 10 HP ACROSS-THE-LINE STARTER.
15. SAMPLE PUMP NO. 4, POST STATIC MIX, CA-SSP-3A, 1 HP ACROSS-THE-LINE STARTER.
16. PROPOSED SPACE.
17. THICKENING TANKS DILUTION WATER PUMP NO. 1, FB-TOP-1, 20 HP ACROSS-THE-LINE STARTER.
18. EFFLUENT WATER STRAINER BACK WASH PUMP NO. 1, FB-SBW-1, 15 HP ACROSS-THE-LINE STARTER.
19. LAWN IRRIGATION PUMP NO. 1, FB-LIP-1, 100 HP ACROSS-THE-LINE STARTER.
20. 480V, 400AF/400AT 3-POLE CIRCUIT BREAKER FOR MCC-59A BUS NO. 1 FEEDER.
21. 480V, 400AF/150AT 3-POLE CIRCUIT BREAKER FOR MCC-59B BUS NO. 1 FEEDER.
22. 480V, 1,200AF/1,200AT ELECTRICALLY OPERATED, 3-POLE CIRCUIT BREAKER FOR SWITCHGEAR 56 BUS NO. 1 FEEDER.
23. 480V, 1,200AF/1,200AT ELECTRICALLY OPERATED, 3-POLE TIE CIRCUIT BREAKER.
24. 480V, 1,200AF/1,200AT ELECTRICALLY OPERATED, 3-POLE CIRCUIT BREAKER FOR SWITCHGEAR 56 BUS NO. 2 FEEDER.
25. 480V, 400AF/400AT 3-POLE CIRCUIT BREAKER FOR MCC-59A BUS NO. 2 FEEDER.
26. 480V, 400AF/150AT 3-POLE CIRCUIT BREAKER FOR MCC-59B BUS NO. 2 FEEDER.

Red line "As Builts"
Date: 2/7/22
Approved:
Approved:

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A01098000000150 8582E42C00005387
2019.02.06 11:45:42 -05'00'

GENERAL NOTES:

1. REFER TO SHEET E-11 FOR CONTINUATION OF NOTES FOR PROPOSED MCC-59 FRONT ELEVATION.
2. REFER ALSO TO SHEETS E-12 AND SHEET E-13 FOR PROPOSED MCC-59 ONE-LINE DIAGRAM.
3. VERTICAL BUS FOR SECTIONS 5 AND 9 SHALL BE 800 AMPERE.

TRICON Consulting Engineers
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813.227.9100
Certificate of Authorization No. 8363

JOB No.	171700842					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

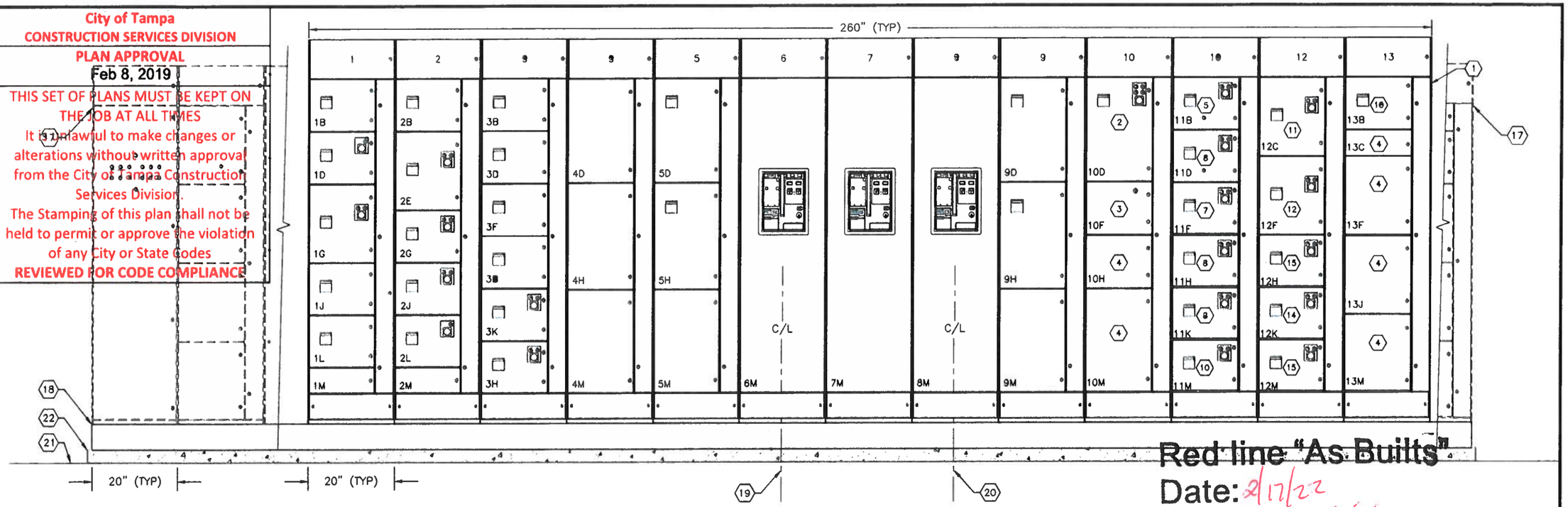
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

PROPOSED MCC-59
FRONT ELEVATION
(SHEET 1 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-10
FILE: 171700842E01

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019
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REVIEWED FOR CODE COMPLIANCE



PROPOSED MCC 59 FRONT ELEVATION
SCALE : N.T.S.

Red line "As Builts"
Date: 2/17/22
Approved: KEC
Approved:

KEYED NOTES:

1. 277/480V, 1,200A, 3ø, 3-WIRE MCC-59.
2. LAWN IRRIGATION PUMP NO. 2, FB-LIP-2, 100 HP ACROSS-THE-LINE STARTER.
3. LAWN IRRIGATION PUMPS RELAY COMPARTMENT. REFER TO MOTOR CONTROL SCHEMATICS.
4. PROPOSED SPACE.
5. MECHANICAL MIXER, JC-4-MM-2, 10 HP ACROSS-THE-LINE STARTER.
6. THICKENING TANKS DILUTION WATER PUMP NO. 2, FB-TOP-2, 20 HP ACROSS-THE-LINE STARTER.
7. SAMPLE PUMP, POST STATIC MIX, CA-SSP-3B, 1 HP ACROSS-THE-LINE STARTER.
8. SAMPLE PUMP, POST AIR CL2, CA-SSP-2, 1 HP ACROSS-THE-LINE STARTER.
9. PRE-SULFONATED NO. 1 SAMPLE PUMP (REUSE ISLAND), 1 HP ACROSS-THE-LINE STARTER.
10. 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR SUMP PUMP NO. 2, FB-SP-2.
11. DECHLORINATION PUMP NO. 2, 40 HP ACROSS-THE-LINE STARTER.
12. CHLORINE SOLUTION WATER PUMP NO. 2, FB-CHSW-2, 50 HP ACROSS-THE-LINE STARTER.
13. EFFLUENT WATER STRAINER BACK WASH PUMP NO. 2, FB-SBW-2, 15 HP ACROSS-THE-LINE STARTER.
14. EFFLUENT WATER STRAINER DRIVE NO. 2, FB-EWS-2, 3 HP ACROSS-THE-LINE STARTER.
15. SAMPLE PUMP, FINAL EFF SUBMERSIBLE, CA-SSP-4, 1 HP ACROSS-THE-LINE STARTER.
16. 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER FOR SLUICE GATES SG-13 - SG-16.
17. OUTLINE OF EXISTING MCC-59 TO BE REMOVED AND REPLACED.
18. PROPOSED WIREWAY, 6 INCHES IN HEIGHT. REFER ALSO TO SPECIFICATIONS. TO ACCOMMODATE ALL EXISTING CONDUCTORS AND CONDUIT, THE PROPOSED WIREWAY SHALL BE PROVIDED WITH THE SAME DIMENSIONS OF THE EXISTING MCC-59 TO BE REMOVED.
19. EXISTING CENTERLINE OF SECTION WHICH WILL CONTAIN THE SWITCHGEAR 56 BUS NO. 1 FEEDER CIRCUIT BREAKER. DUE TO THE SIZES/QUANTITIES OF THE CONDUIT/CONDUCTORS ASSOCIATED WITH THE SWITCHGEAR BUS NO. 1 FEEDER, THE CONTRACTOR SHALL ALIGN THE PROPOSED MCC SECTION CONTAINING THIS CIRCUIT BREAKER IN THIS POSITION.
20. EXISTING CENTERLINE OF SECTION WHICH WILL CONTAIN THE SWITCHGEAR 56 BUS NO. 2 FEEDER CIRCUIT BREAKER. DUE TO THE SIZES/QUANTITIES OF THE CONDUIT/CONDUCTORS ASSOCIATED WITH THE SWITCHGEAR BUS NO. 2 FEEDER, THE CONTRACTOR SHALL ALIGN THE PROPOSED MCC SECTION CONTAINING THIS CIRCUIT BREAKER IN THIS POSITION.
21. ELEVATION 11'-0" FLOOR SLAB.
22. EXISTING MCC-59 HOUSEKEEPING PAD TO REMAIN.

GENERAL NOTES:

1. REFER ALSO TO SHEETS E-12 AND SHEET E-13 FOR PROPOSED MCC-59 ONE-LINE DIAGRAM.
2. VERTICAL BUS FOR SECTIONS 5 AND 9 SHALL BE 800 AMPERE.

TIMOTHY THOMAS LICENSE No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

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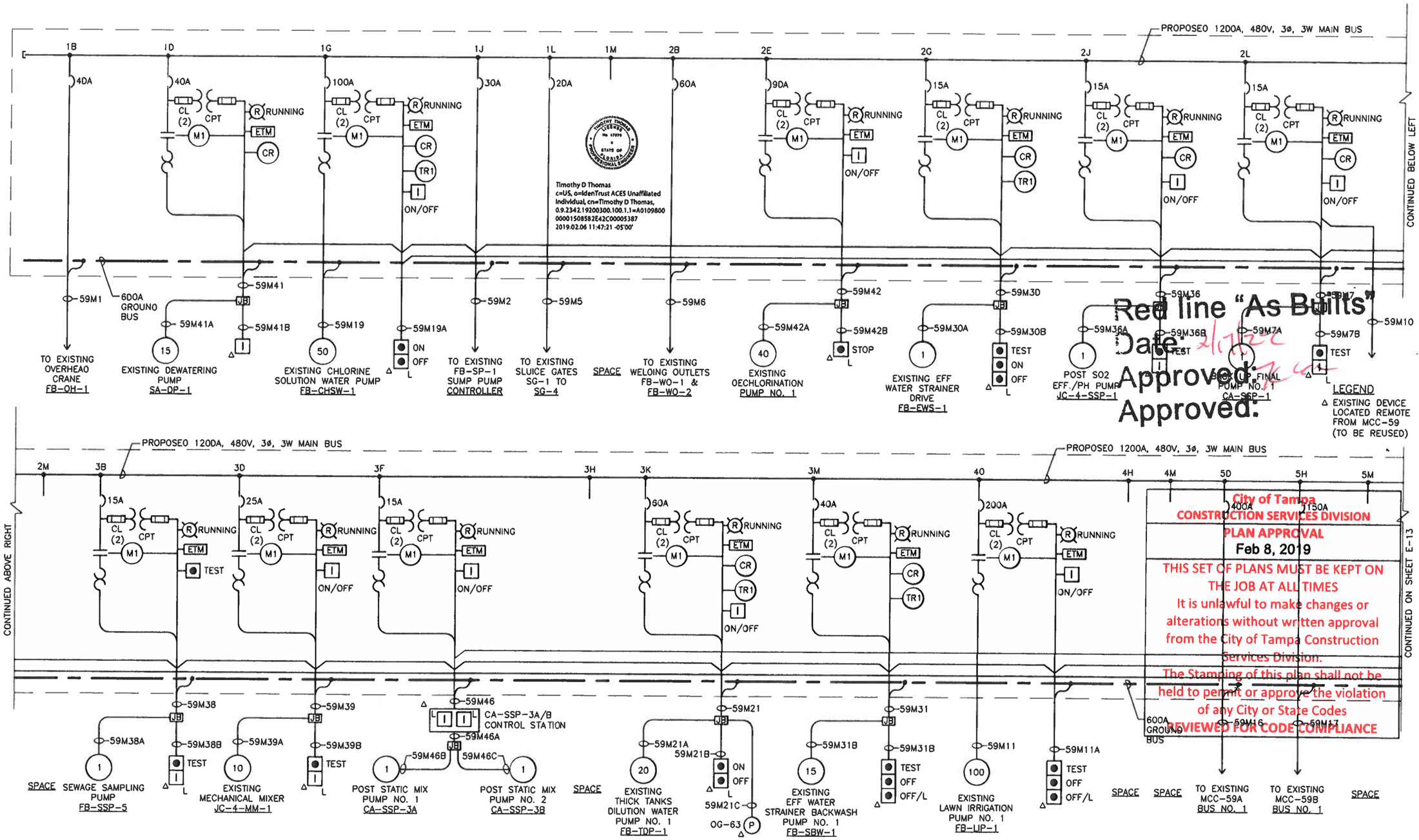
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

PROPOSED MCC-59
FRONT ELEVATION
(SHEET 2 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-11

FILE: 171700842E01



Timothy D Thomas
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2019.02.06 11:47:21 -05'00'

Red line "As Builts"
Date 2/17/22
Approved:
Approved:

City of Tampa
CONSTRUCTION SERVICES DIVISION
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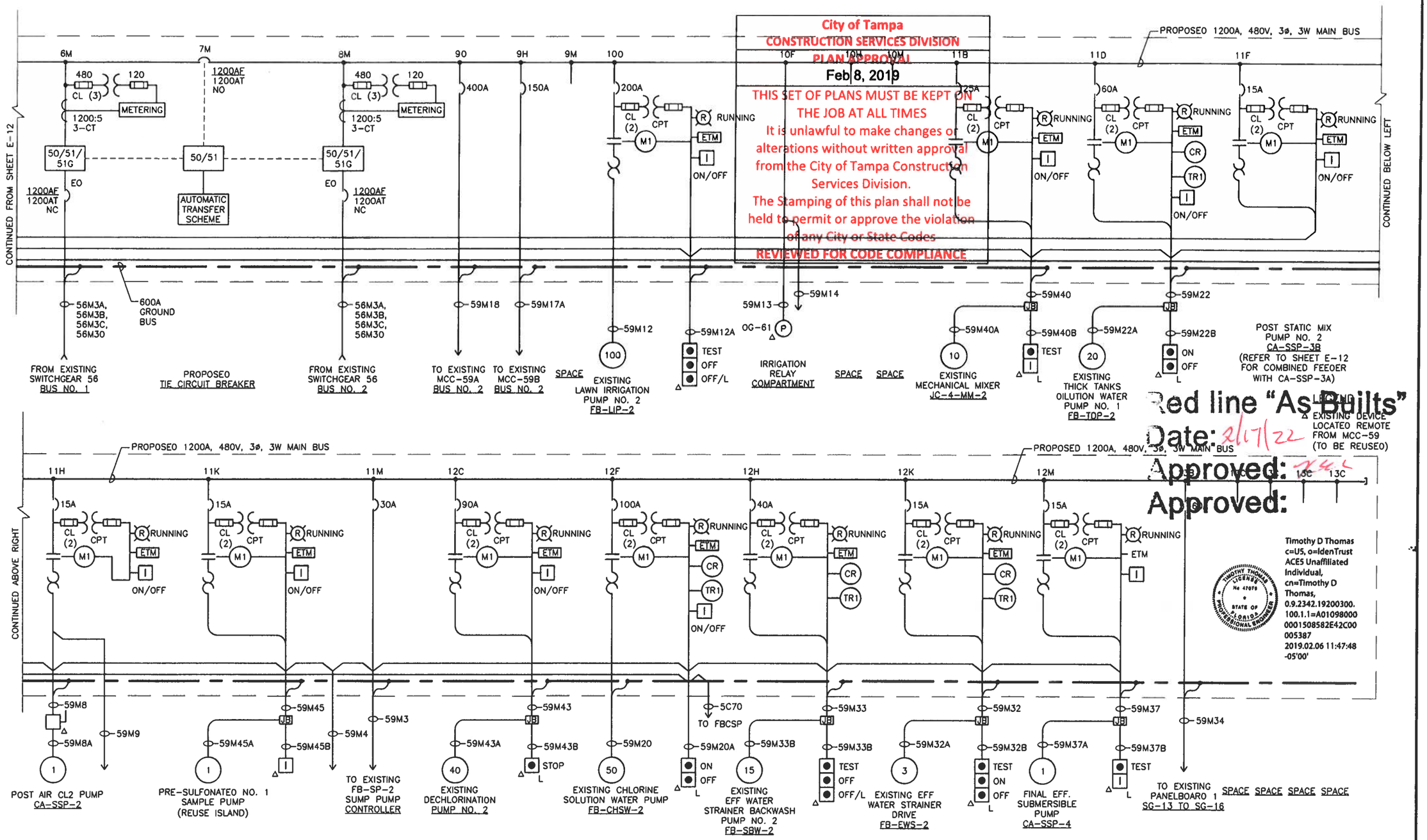
SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

MCC-59 ELECTRICAL ONE-LINE DIAGRAM (SHEET 1 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-12
FILE: 171700842E01



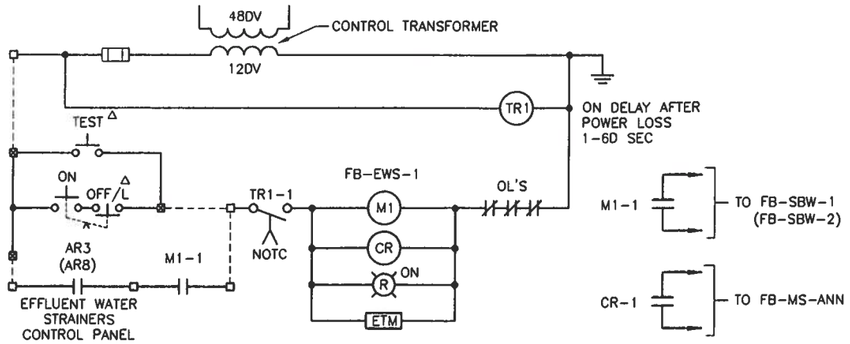
TRICON CONSULTING ENGINEERS	777 S. Harbour Island Blvd, Suite 250 Tampa, FL 33602 813.227.9193 Certificate of Authorization No. 8363	JOB No.	171700842					SCALE	City of Tampa Wastewater Department
		DESIGNED	TDT						HOWARD F. CURREN AWTP
		DRAWN	JLH					NOT TO SCALE	MOTOR CONTROL CENTER 59
		CHECKED	TDT						AND 59A REPLACEMENT
		DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION	

MCC-59 ELECTRICAL ONE-LINE DIAGRAM (SHEET 2 OF 2)

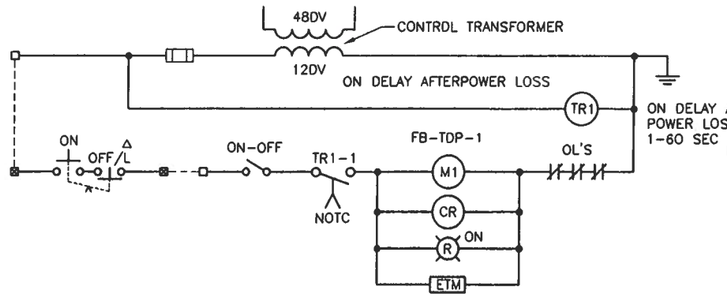
TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER E-13

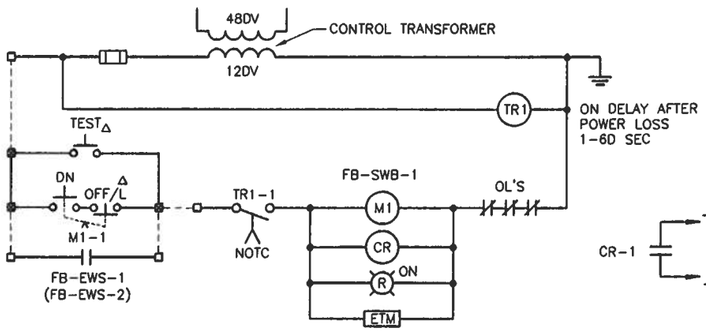
FILE: 171700842E01



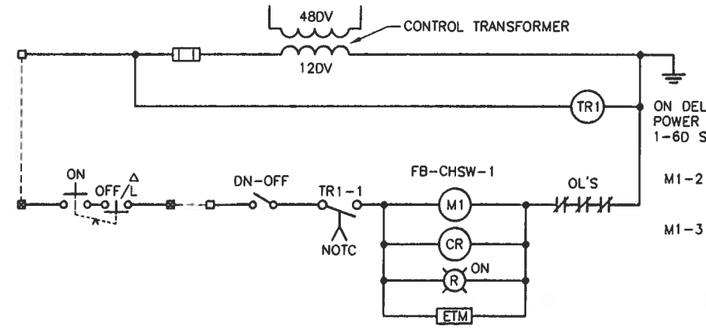
EFFLUENT WATER STRAINER DRIVE
FB-EWS-1
(MCC-59)
FB-EWS-2 IS SIMILAR



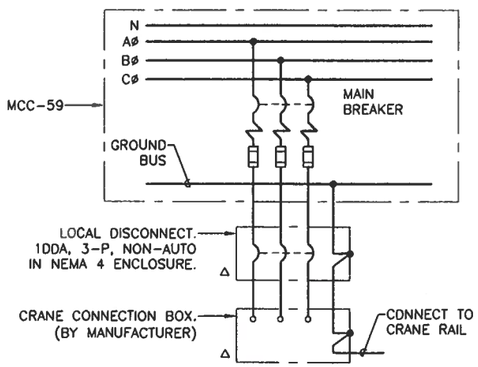
THICKENING TANK DILUTION WATER PUMP
FB-TDP-1
(MCC-59)
FB-TDP-2 IS SIMILAR



STRAINER BACKWASH WATER PUMP
FB-SBW-1
(MCC-59)
FB-SBW-2 IS SIMILAR



CHLORINE SOLUTION WATER PUMP
FB-CHSW-1
(MCC-59)
FB-CHSW-2 IS SIMILAR



CRANE HOIST FB-OH-1
(MCC-59)

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A01098000000150858 2E42C00005387
2019.02.06 11:48:37 -05'00'

CONTROLS DESIGNATIONS

△ EXISTING DEVICE LOCATED REMOTE FROM MCC-59 (TO BE REUSED)
□ INDICATES TERMINAL BLOCK WITHIN MCC-59
⊠ INDICATES TERMINAL ON FIELD DEVICE

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019
THIS SET OF PLANS MUST BE KEPT ON THE JOB AT ALL TIMES
It is unlawful to make changes or alterations without written approval from the City of Tampa Construction Services Division.
The Stamping of this plan shall not be held to permit or approve the violation of any City or State Codes
REVIEWED FOR CODE COMPLIANCE

Red line "As Builts"
Date: 12/12/21
Approved:
Approved:

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250 Tampa, FL 33602
813.227.9190
Certificate of Authorization No. 6353

JOB No.	171700842
DESIGNED	TDT
DRAWN	JLH
CHECKED	TDT
DATE	3/2018

No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

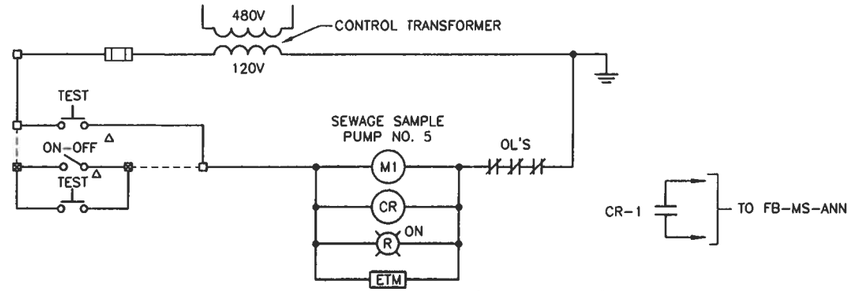
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

MCC-59 TYPICAL MOTOR CONTROL SCHEMATICS (SHEET 1 OF 3)

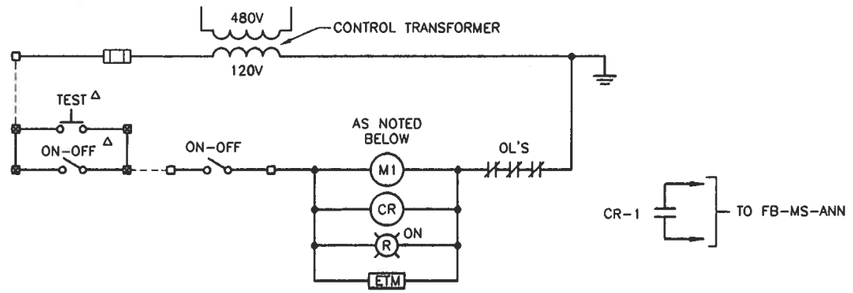
TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-14

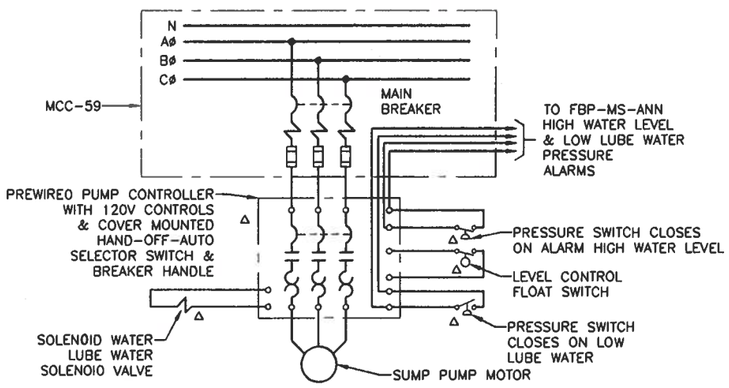
FILE: 171700842E01



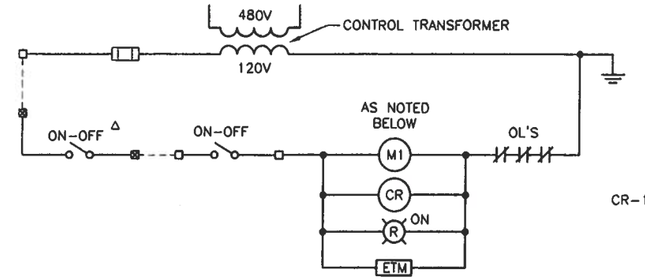
COMBINED EFF. SEWAGE SAMPLE PUMP 5 'FB-SSP-5'
(MCC-59)



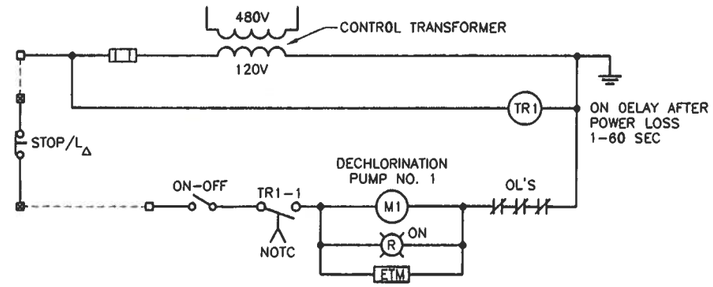
BACK UP FINAL PUMP #1 'CA-SSP-1'
(MCC-59)
FINAL EFF. SUBMERSIBLE PUMP 'CA-SSP-4',
POST SO2 EFF./PH PUMP 'JC-4-SSP-1',
MECHANICAL MIXER JC-4-MM-1
AND MECHANICAL MIXER JC-4-MM-2
ARE SIMILAR



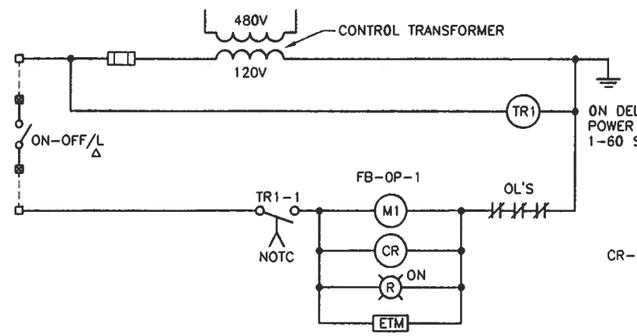
SUMP PUMP FB-SP-1
(MCC-59)
FB-SP-2 IS SIMILAR



POST AIR CL2 PUMP 'CA-SSP-2'
(MCC-59)
PRE-SULFONATED SAMPLE PUM NO. 1,
POST STATIC MIX PUMP #1 'CA-SSP-3A',
AND POST STATIC MIX PUMP #2 'CA-SSP-3B',
ARE SIMILAR).



DECHLORINATION PUMP NO. 1
(MCC-59)
DECHLORINATION PUMP NO. 2 IS SIMILAR



DEWATERING PUMP SA-DP-1
(MCC-59)

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
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REVIEWED FOR CODE COMPLIANCE

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A01098000001508582E42C00005387
2019.02.06 11:49:03 -05'00'

TIMOTHY THOMAS LICENSED No 47079 STATE OF CALIFORNIA PROFESSIONAL ENGINEER

Red line "As Builts"
Date: 2/17/22
Approved:
Approved:
Approved:

CONTROLS DESIGNATIONS
△ EXISTING OEVICE LOCATED REMOTE FROM MCC-59 (TO BE REUSED)
□ INDICATES TERMINAL BLOCK WITHIN MCC-59
⊠ INDICATES TERMINAL ON FIELD OEVICE

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250, Tampa, FL 33602, 813.227.8190, Certificate of Authorization No. 8363

JOB No.	1717008.42					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

MCC-59 TYPICAL MOTOR CONTROL SCHEMATICS (SHEET 2 OF 3)

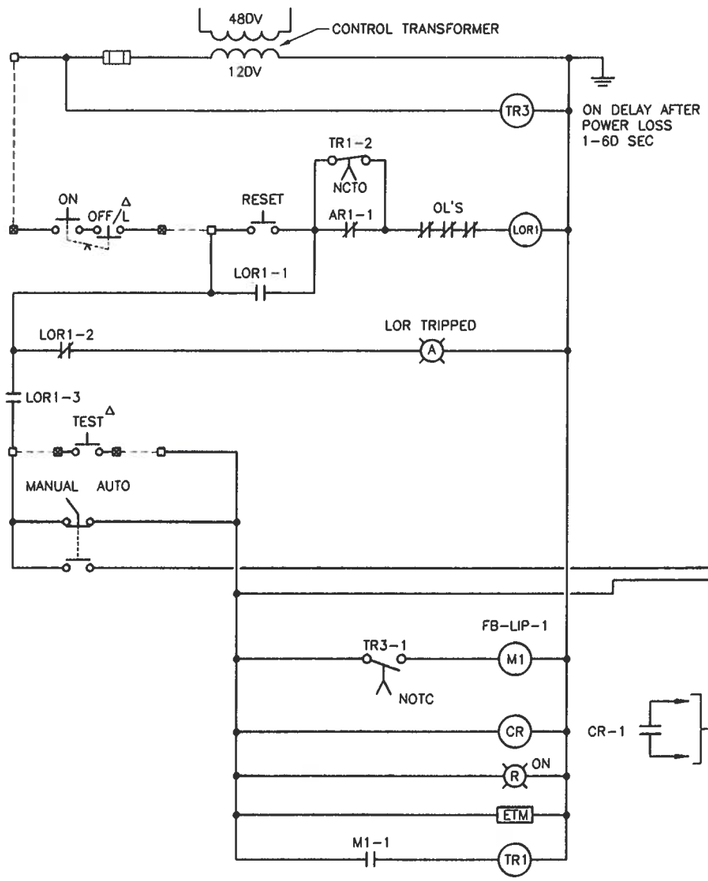
TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-15

FILE: 1717008.42E01

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019

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REVIEWED FOR CODE COMPLIANCE



LAWN IRRIGATION PUMP NO. 1
FB-LIP-1
(MCC-59)

LAWN IRRIGATION CONTROL PANEL (CONTRACT TO FIELD VERIFY)

PUMP START CONTACT

MCC-59 BUCKET 1DF

FB-LIP-1 FB-LIP-2

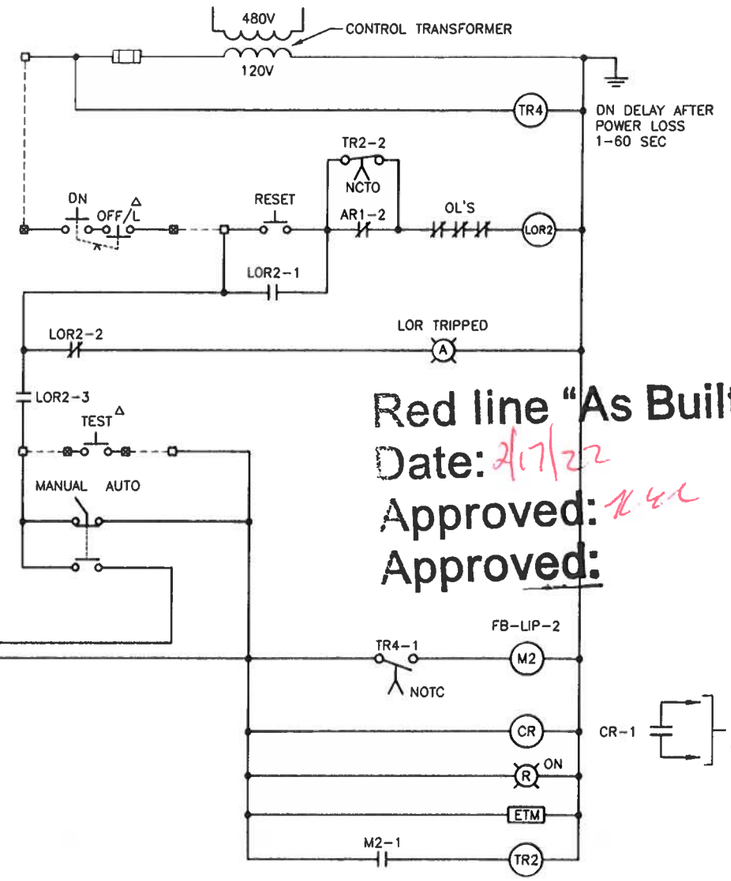
TR1-1 NOTC
TR2-1 NOTC

TO FBP-FS-ANN "LOW DISCHARGE HEADER PRESSURE" ALARM

AR

120V 60HZ CIRCUIT 24 FROM PANELBOARD LP-53

DISCHARGE HEADER PRESSURE SWITCH OG-61 (ONE ONLY) OPENS ON PRESSURE RISE AND ALARM & TRIPS



LAWN IRRIGATION PUMP NO. 2
FB-LIP-2
(MCC-59)

Red line "As Builts"
Date: 2/17/22
Approved: K.A.C
Approved:

CONTROLS DESIGNATIONS

△ EXISTING DEVICE LOCATED REMOTE FROM MCC-59 (TO BE REUSED)
□ INDICATES TERMINAL BLOCK WITHIN MCC-59
⊠ INDICATES TERMINAL ON FIELD DEVICE

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A01098000001508582E42C00005387
2019.02.06 11:50:02 -05'00'

TIMOTHY THOMAS LICENSE No. 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250 Tampa, FL 33602 813.227.2100 Certificate of Authorization No. 6363

JOB No.	171700842					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

MCC-59 TYPICAL MOTOR CONTROL SCHEMATICS (SHEET 3 OF 3)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-16

FILE: 171700842E01

MCC-59 CONDUIT AND CABLE SCHEDULE

CONDUIT No.	SIZE	NUMER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
59M4	1"	3-#8 + 1-#10 GND	MCC-59	FB-OH-1 DISCONNECT	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M2	1"	3-#12 + 4-#14 + 1-#12 GND	MCC-59	FB-SP-1 CONTROLLER	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M4	1"	3-#12 + 4-#14 + 1-#12 GND	MCC-59	FB-SP-2 CONTROLLER	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUCTOR QUANTITY, CONDUIT SIZING/ROUTING.
59M4	2"	64-#14 (10 SPARE)	MCC-59	FBP-MS-ANN	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT/CONDUCTOR SIZING AND ROUTING.
59M9	3/4"	3-#12 + 1-#12 GND	MCC-59	J.B. AT MOTOR CA-SG-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M5B	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR CA-SG-1	MOTOR CA-SG-4	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M6A	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR CA-SG-1	J.B. AT MOTOR CA-SG-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M6A	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR CA-SG-2	MOTOR CA-SG-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M5D	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR CA-SG-3	MOTOR CA-SG-3	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M6A	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR CA-SG-4	MOTOR CA-SG-4	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M9	1-1/4"	3-#4 + 1-#8 GND	MCC-59	J.B. AT FB-WO-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M6A	1-1/4"	3-#4 + 1-#8 GND	J.B. AT FB-WO-1	FB-WO-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M6A	1-1/4"	3-#4 + 1-#8 GND	J.B. AT FB-WO-1	FB-WO-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M4	1"	3-#12 + 2-#14 + 1-#12 GND	MCC-59	J.B. AT MOTOR CA-SSP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M7A	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR CA-SSP-1	MOTOR CA-SSP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M7A	3/4"	2-#14	J.B. AT MOTOR CA-SSP-1	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M9	1"	3-#12 + 1-#12 GND	MCC-59	DISCONNECT AT CA-SSP-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M6A	3/4"	3-#12 + 1- #12 GND	J.B. AT MOTOR CA-SSP-2	MOTOR CA-SSP-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M9	1"	9-#14 (3 SPARE)	MCC-59	RESIDUAL CHLOR ANALYZER	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. FOR EXISTING RESIDUAL CHLORINE ANALYZER LOCATION REFER TO SHEET E-6.
59M10	1"	10-#14 (3 SPARE)	MCC-59	SAMPLE PUMP CON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M10	2"	3-#3/0 + 1-#4 GND	MCC-59	LAWN IRR PUMP FB-LIP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M11A	3/4"	4-#14	MCC-59	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M10	2"	3-#3/0 + 1-#4 GND	MCC-59	LAWN IRR PUMP FB-LIP-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M12A	3/4"	4-#14	MCC-59	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M13	3/4"	4-#14	MCC-59	PRESS SWITCH OG-61	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M14	3/4"	2-#12 + 1-#12 GND	MCC-59	PANELBOARD LP-53	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. PANELBOARD LP-53 LOCATED IN ELECTRICAL EQUIPMENT ROOM (SHEET E-4). CIRCUIT 24
59M16	3"	3-500MCM + 1-#3 GND	MCC-59	MCC-59B (BUS NO. 1)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M17	3"	3-#1/0 + 1-#4 GND	MCC-59	MCC-59B (BUS NO. 1)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M17A	3"	3-#1/0 + 1-#4 GND	MCC-59	MCC-59B (BUS NO. 2)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M16	3"	3-500MCM + 1-#3 GND	MCC-59	MCC-59A (BUS NO. 2)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M19	1-1/2"	3-#2 + 1-#6 GND	MCC-59	MOTOR FB-CHSW-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M19A	3/4"	4-#14	MCC-59	P.B. STATION AT FB-CHSW-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M22	1-1/2"	3-#2 + 1-#6 GND	MCC-59	MOTOR FB-CHSW-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M22A	3/4"	4-#14	MCC-59	P.B. STATION AT FB-CHSW-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M22	1-1/4"	3-#8 + 4-#14 + 1-#10 GND	MCC-59	MOTOR FB-TDP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M21B	1"	3-#8 + 1-#10 GND	J.B. AT MOTOR FB-TDP-1	MOTOR FB-TDP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M21B	3/4"	2-#14	J.B. AT MOTOR FB-TDP-1	P.B. STATION AT FB-TDP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M21C	3/4"	2-#14	J.B. AT MOTOR FB-TDP-1	PRESS SWITCH OG-63	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M22	1-1/4"	3-#8 + 2-#14 + 1- #10 GND	MCC-59	MOTOR FB-TDP-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M22A	1"	3-#8 + 1-#10 GND	J.B. AT MOTOR FB-TDP-2	MOTOR FB-TDP-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M22A	3/4"	2-#14	J.B. AT MOTOR FB-TDP-2	P.B. STATION AT FB-TDP-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M23	1"	9-#14 (3 SPARE)	MCC-59	FBP-MS INDICATING LIGHTS	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. FOR EXISTING FBP-MS LOCATION REFER TO SHEET E-6.
59M27	1-1/4"	16-#14 (4 SPARE)	MCC-59	EFF WATER STR CON PANEL	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.

CONTINUED ON SHEET E-18

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CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
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REVIEWED FOR CODE COMPLIANCE

Red line "As Builts"
Date: 2/17/22
Approved:
Approved.

TIMOTHY THOMAS LICENSE No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A0109800000015085B2E42C00005387
2019.02.06 11:50:34 -05'00'

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250 Tampa, FL 33602 813.227.9100 Certificate of Authorization No. 8363

JOB No.	171700842						
DESIGNED	TDT						
DRAWN	JLH						
CHECKED	TDT	1	2/5/19	TDT	TDT	CONDUCTOR REVISIONS	
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION	

SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

MCC-59 CONDUIT AND CABLE SCHEDULE (SHEET 1 OF 3)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-17

FILE: 171700842E01

MCC-59 CONDUIT AND CABLE SCHEDULE (CONTINUED)

59M30	1"	3-#12 + 4-#14 + 1-#12 GND	MCC-59	J.B. AT MOTOR FB-EWS-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M30A	3/4"	3-#10 + 1-#12 GND	J.B. AT MOTOR FB-EWS-1	MOTOR FB-EWS-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M30B	3/4"	4-#14	J.B. AT MOTOR FB-EWS-1	P.B. STATION AT FB-EWS-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M31	1"	3-#10 + 4-#14 + 1-#12 GND	MCC-59	J.B. AT MOTOR FB-SBW-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M31A	3/4"	3-#10 + 1-#12 GND	J.B. AT MOTOR FB-SBW-1	MOTOR FB-SBW-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M31B	3/4"	4-#14	J.B. AT MOTOR FB-SBW-1	P.B. STATION AT FB-SBW-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M37	1"	3-#12 + 4-#14 + 1-#12 GND	MCC-59	J.B. AT MOTOR FB-EWS-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M42A	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR FB-EWS-2	MOTOR FB-EWS-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M32B	3/4"	4-#14	J.B. AT MOTOR FB-EWS-2	P.B. STATION AT FB-EWS-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M39	1"	3-#10 + 4-#14 + 1-#12 GND	MCC-59	J.B. AT MOTOR FB-SBW-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M33A	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR FB-SBW-2	MOTOR FB-SBW-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M33B	3/4"	4-#14	J.B. AT MOTOR FB-SBW-2	P.B. STATION AT FB-SBW-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M46	2"	3-#4 + 1-#6	MCC-59	PANELBOARD 1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. REFER TO SHEET E-2 FOR PANELBOARD 1 LOCATION.
59M39	1"	3-#12 + 2-#14 + 1-#12 GND	MCC-59	J.B. AT MOTOR JC-4-SSP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M33A	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR JC-4-SSP-1	MOTOR JC-4-SSP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M36B	3/4"	2-#14	J.B. AT MOTOR JC-4-SSP-1	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M46	1"	3-#12 + 2-#14 + 1-#12 GND	MCC-59	J.B. AT MOTOR CA-SSP-4	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M37A	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR CA-SSP-4	MOTOR CA-SSP-4	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M42A	3/4"	2-#14	J.B. AT MOTOR CA-SSP-4	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M39	1"	3-#12 + 2-#14 + 1-#12 GND	MCC-59	J.B. AT MOTOR FB-SSP-5	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M38A	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR FB-SSP-5	MOTOR SEW SP 5 FB-SSP-5	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M36B	3/4"	2-#14	J.B. AT MOTOR FB-SSP-5	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M39	1"	3-#8 + 2-#14 + 1-#10 GND	MCC-59	J.B. AT MOTOR JC-4-MM-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M39A	3/4"	2-#14	MCC-59	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M40	1"	3-#8 + 2-#14 + 1-#10 GND	MCC-59	J.B. AT MOTOR JC-4-MM-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M35A	3/4"	3-#8 + 2-#14 + 1-#10 GND	J.B. AT MOTOR JC-4-MM-2	MOTOR JC-4-MM-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M40B	3/4"	2-#14	MCC-59	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M46	1"	3-#10 + 2-#14 + 1-#10 GND	MCC-59	J.B. AT MOTOR SA-DP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M41A	3/4"	3-#12 + 1-#12 GND	J.B. AT MOTOR SA-DP-1	MOTOR SA-DP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M41A	3/4"	2-#14	J.B. AT MOTOR SA-DP-1	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M42	1-1/4"	3-#6 + 4-#14 + 1-#8 GND	MCC-59	J.B. AT MOTOR	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M42A	1-1/4"	3-#6 + 1-#8 GND	J.B. AT MOTOR	DECHLORINATION MOTOR 1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M42A	3/4"	2-#14	J.B. AT MOTOR	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M43	1-1/4"	3-#6 + 4-#14 + 1-#8 GND	MCC-59	J.B. AT MOTOR	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M33A	1-1/4"	3-#6 + 1-#8 GND	J.B. AT MOTOR	DECHLORINATION MOTOR 2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M33A	3/4"	2-#14	J.B. AT MOTOR	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M46	3/4"	2-#12 + 1-#12 GND	LP-53-SUB	EXISTING FLOW METER	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59M46	1"	3-#12 + 2-#14 + 1-#12 GND	MCC-59	J.B. AT PRE-SULFONATED	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M45A	3/4"	3-#12 + 1-#12 GND	J.B. AT PRE-SULFONATED	PRE-SULFONATED MOTOR	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M45A	3/4"	2-#14	J.B. AT PRE-SULFONATED	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M46	1"	6-#12 + 4-#14 + 1-#12 GND	MCC-59	CA-SSP-3A/B CONT. STA.	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M36B	3/4"	6-#12 + 1-#12 GND	CA-SSP-3A/B CONT. STA.	J.B. AT CA-SSP-3A/B	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M36B	3/4"	3-#12 + 1-#12 GND	J.B. AT CA-SSP-3A/B	MOTOR AT CA-SSP-3A	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59M46C	3/4"	3-#12 + 1-#12 GND	J.B. AT CA-SSP-3A/B	MOTOR AT CA-SSP-3B	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.

CONTINUED ON SHEET E-19

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019
THIS SET OF PLANS MUST BE KEPT ON THE JOB AT ALL TIMES
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The Stamping of this plan shall not be held to permit or approve the violation of any City or State Codes
REVIEWED FOR CODE COMPLIANCE

Red line "As Builts"
Date: 2/1/22
Approved:
Approved:

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A0109800000015085B2E42C00005387
2019.02.06 11:51:01 -05'00'

TIMOTHY THOMAS LICENSED No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250 Tampa, FL 33602 813.227.9100 Certificate of Authorization No. 8363

JOB No.	171700842						
DESIGNED	TDT						
DRAWN	JLH						
CHECKED	TDT						
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION	

SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

MCC-59 CONDUIT AND CABLE SCHEDULE (SHEET 2 OF 3)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-18
FILE: 171700842E01

MCC-59 CONDUIT AND CABLE SCHEDULE (CONTINUED)

CONDUIT No.	SIZE	NUMER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
5C69	3/4"	2-#14	PRESS SWITCH OG-65	FBCSP-ANN	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
5C70	3/4"	6-#14	MCC-59	FBCSP INDICATING LIGHTS	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
56M3A	3-1/2"	3-#350MCM + 1-#4/0 GND	SWITCHGEAR 56	MCC-59 (BUS NO. 1)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
56M3B	3-1/2"	3-#350MCM + 1-#4/0 GND	SWITCHGEAR 56	MCC-59 (BUS NO. 1)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
56M3C	3-1/2"	3-#350MCM + 1-#4/0 GND	SWITCHGEAR 56	MCC-59 (BUS NO. 1)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
56M3D	3-1/2"	3-#350MCM + 1-#4/0 GND	SWITCHGEAR 56	MCC-59 (BUS NO. 1)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
56M4A	3-1/2"	3-#350MCM + 1-#4/0 GND	SWITCHGEAR 56	MCC-59 (BUS NO. 2)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
56M4B	3-1/2"	3-#350MCM + 1-#4/0 GND	SWITCHGEAR 56	MCC-59 (BUS NO. 2)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
56M4C	3-1/2"	3-#350MCM + 1-#4/0 GND	SWITCHGEAR 56	MCC-59 (BUS NO. 2)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
56M4D	3-1/2"	3-#350MCM + 1-#4/0 GND	SWITCHGEAR 56	MCC-59 (BUS NO. 2)	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.

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Date: 2/17/22
Approved:
Approved:

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A01098000001508582E42C00005387
2019.02.06 11:51:26 -05'00'

TIMOTHY THOMAS LICENSE No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250 Tampa, FL 33602 813.227.9100 Certificate of Authorization No. 8363

JOB No.	171700842
DESIGNED	TDT
DRAWN	JLH
CHECKED	TDT
DATE	3/2018

No.	DATE	BY	APP	REVISION DESCRIPTION

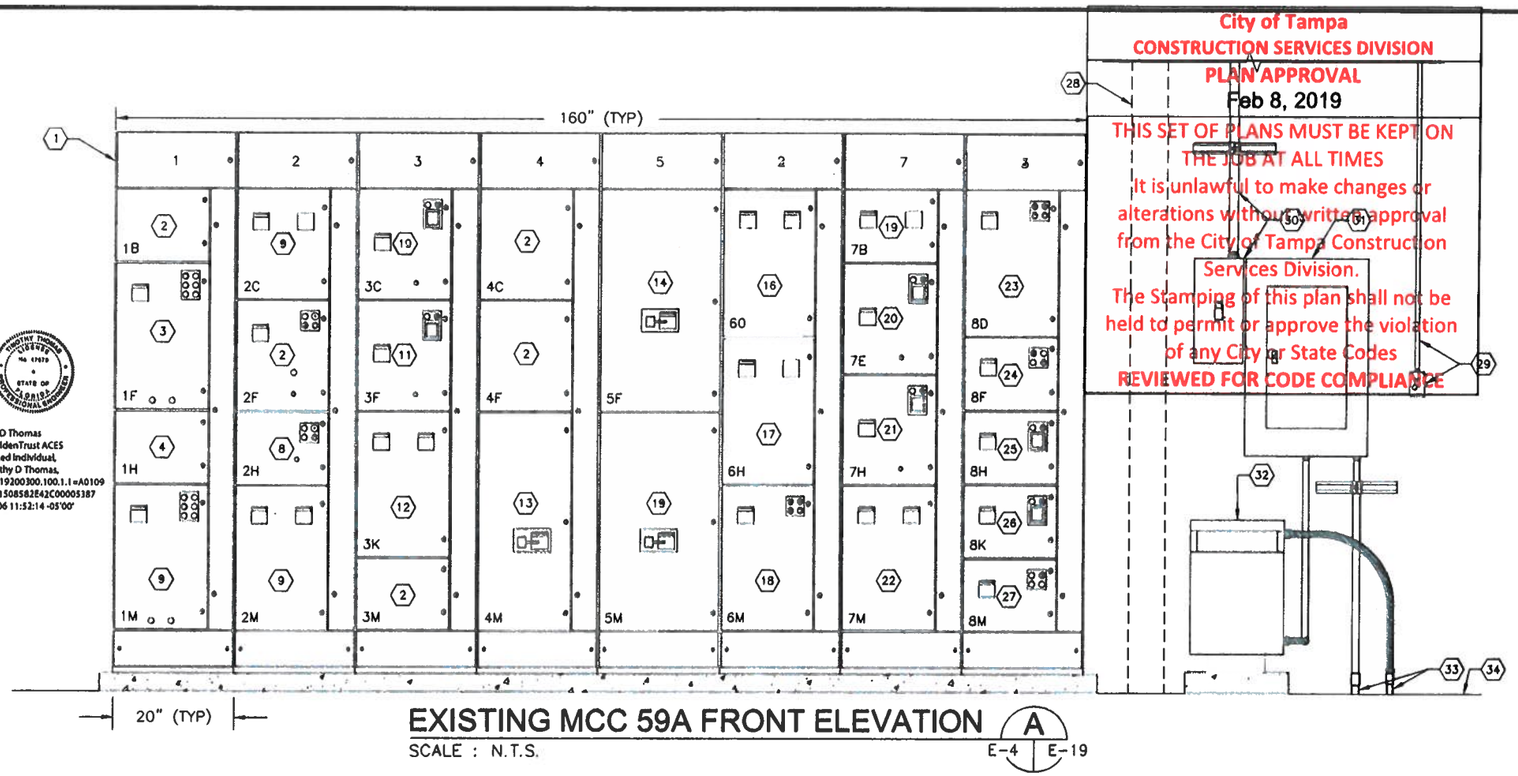
SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

MCC-59 CONDUIT AND CABLE SCHEDULE (SHEET 3 OF 3)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-19
FILE: 171700842E01



EXISTING MCC 59A FRONT ELEVATION (A)

SCALE : N.T.S.

E-4 | E-19

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A0109800000015085821E42C00005387
2019.02.06 11:52:14 -05'00'

City of Tampa
CONSTRUCTION SERVICES DIVISION
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Red line "As Builts"
Date:
Approved:
Approved:

KEYED NOTES:

28. EXISTING PIPE OOWN TO ELEVATION 3'-6". NO WORK REQUIREO.
29. EXISTING LIGHT SWITCH ANO ASSOCIATEO CONOUIT/CONDUCTORS. NO WORK REQUIREO.
30. EXISTING 480V, 3-POLE, 100A ENCLOSED CIRCUIT BREAKER ANO ASSOCIATEO CONOUIT/CONDUCTORS TO BE REMOVED. EXISTINC 100A FEEOER IS TAPPEO OIRECTLY TO MCC-59A BUS. REFER TO SHEET E-21 FOR NEW WORK REQUIREO.
31. EXISTING 480V, 3-PHASE, 4-WIRE, 100A MCC BOARD 'EP' ANO ASSOCIATEO CONOUIT/CONOUCTORS TO BE REMOVED. REFER TO SHEET E-21 FOR NEW WORK REQUIREO.
32. EXISTING 480-120/240V, SINGLE-PHASE, 5 KVA TRANSFORMER ANO ASSOCIATEO CONOUIT/CONOUCTORS TO BE REMOVEO. REFER TO SHEET E-21 FOR NEW WORK REQUIREO.
33. EXISTING CONOUITS WHICH PENETRATE SLAB OOWN TO ELEVATION 3'-6" SHALL REMAIN ANO BE REUSEO AFTER CLEANINC. REFER TO SHEET E-21 FOR NEW WORK REQUIREO.
34. ELEVATION 11'-0" FLOOR SLAB.

GENERAL NOTES:

1. THIS EXISTING OEVICE WILL BECOME OBSOLETE UNOER THIS CONTRACT. OUPLICATION IN THE NEW MCC-59A PROPOSEO IS NOT REQUIREO.
2. THIS EXISTING OEVICE SHALL BE OUPLICATEO IN THE NEW MCC-59A PROPOSEO. REFER ALSO TO SHEET E-23 FOR PROPOSEO MCC-59A ONE-LINE OIAGRAM.

KEYED NOTES:

1. 277/480V, 600A, 3ø, 3-WIRE MCC-59A. CONTRACTOR SHALL REMOVE EXISTINC MCC ANO PROVIOE NEW MCC-59A PER SPECIFICATIONS.
2. SPARE BUCKET. REFER TO PROPOSEO MCC-59A ELEVATION ANO MCC-59A ONE-LINE OIAGRAM FOR SPARES REQUIREO IN THE NEW MCC-59A.
3. SUPPLY FAN NO. 1A 'FB-S-1A', 10 HP ACROSS-THE-LINE HICH SPEEO ANO LOW SPEEO STARTERS. CIRCUIT BREAKER ONLY WILL BE REQUIREO IN THE NEW MCC-59A.
4. THERMOSTAT CONTROLS. NEW THERMOSTAT CONTROLS TO BE PROVIDEO IN NEW MCC-59A. GENERAL NOTE 2.
5. 480V, 100AF/25AT 3-POLE CIRCUIT BREAKER FOR SUPPLY FAN NO. 1B 'FB-S-1B'. CIRCUIT BREAKER ONLY WILL BE REQUIREO IN THE NEW MCC-59A.
8. 480V, 100AF/40AT 3-POLE CIRCUIT BREAKER FOR POLYMER FEEO PUMPS. CENERAL NOTE 1.
7. EXHAUST FAN 'FB-REF-2', 3 HP ACROSS-THE-LINE STARTER. CENERAL NOTE 2.
8. UNIT HEATER CONTROLS. NEW UNIT HEATER CONTROLS TO BE PROVIOEO IN NEW MCC-59A. CENERAL NOTE 2.
9. 24" BUCKET CONTAININC ONE 480V, 100AF/20AT 3-POLE CIRCUIT BREAKER FOR UNIT HEATER NO. 1 'FB-UH-1'. NOTE 2. THE BUCKET ALSO CONTAINS ONE 480V, 100AF/20AT 3-POLE CIRCUIT BREAKER FOR UNIT HEATER NO. 2 'FB-UH-2'. GENERAL NOTE 2.
10. 480V, 100AF/20AT 3-POLE CIRCUIT BREAKER FOR LIQUIO ALUM CIRCULATION PUMP NO. 1 'FB-LAC-1'. GENERAL NOTE 1.
11. 480V, 100AF/20AT 3-POLE CIRCUIT BREAKER FOR LIQUIO ALUM CIRCULATION PUMP NO. 2 'FB-LAC-2'. GENERAL NOTE 1.
12. 24" BUCKET CONTAINING ONE 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR CHLORINE EVAPORATOR NO. 1 'FB-EV-1'. NOTE 2. THE BUCKET ALSO CONTAINS ONE 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR CHLORINE EVAPORATOR NO. 3 'FB-EV-3'. GENERAL NOTE 2.
13. 480V, 400AF/400AT 3-POLE CIRCUIT BREAKER FOR MCC-59 BUS NO. 1 FEEDER. CENERAL NOTE 2.
14. 480V, 400AF/400AT 3-POLE TIE CIRCUIT BREAKER. CENERAL NOTE 2.
15. 480V, 400AF/400AT 3-POLE CIRCUIT BREAKER FOR MCC-59 BUS NO. 2 FEEOER. GENERAL NOTE 2.
16. 24" BUCKET CONTAINING ONE 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR CHLORINE EVAPORATOR NO. 2 'FB-EV-2'. NOTE 2. THE BUCKET ALSO CONTAINS ONE 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR CHLORINE EVAPORATOR NO. 4 'FB-EV-4'. GENERAL NOTE 2.
17. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR MONORAIL HOIST NO. 2 'FB-MH-2'. CENERAL NOTE 2.
18. 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER FOR CHLORINE SOLUTION SUPPLY PUMP NO. 2. GENERAL NOTE 2.
19. 480V, 100AF/20AT 3-POLE CIRCUIT BREAKER FOR "AIR COMPRESSOR BLUE". GENERAL NOTE 1.
20. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR POLYMER FEEO PUMP NO. 1 'FB-APP-1'. GENERAL NOTE 1.
21. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR POLYMER FEEO PUMP NO. 2 'FB-APP-2'. GENERAL NOTE 1.
22. 24" BUCKET CONTAINING ONE 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR POLYMER ACTIVATION UNIT NO. 1 'FB-PAU-1'. GENERAL NOTE 1. THE BUCKET ALSO CONTAINS ONE 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR POLYMER ACTIVATION UNIT NO. 1 'FB-PAU-1'. GENERAL NOTE 1.
23. 480V, 100AF/60AT 3-POLE CIRCUIT BREAKER FOR CHLORINE SOLUTION SUPPLY PUMP NO. 1. GENERAL NOTE 2.
24. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR CHLORINE SOLUTION SUPPLY/ORAIN VALVE CONTROLS. GENERAL NOTE 2.
25. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR LIQUIO POLYMER TANK MIXER NO. 1 'FB-PTM-1'. GENERAL NOTE 1.
26. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR LIQUIO POLYMER TANK MIXER NO. 2 'FB-PTM-2'. GENERAL NOTE 1.
27. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR LIQUIO POLYMER TRANSFER PUMP NO. 1 'FB-PTP-1'. GENERAL NOTE 1.

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250, Tampa, FL 33602, 813.227.9190, Certificate of Authorization No. 8363

JOB No.	171700842					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

EXISTING MCC-59A FRONT ELEVATION

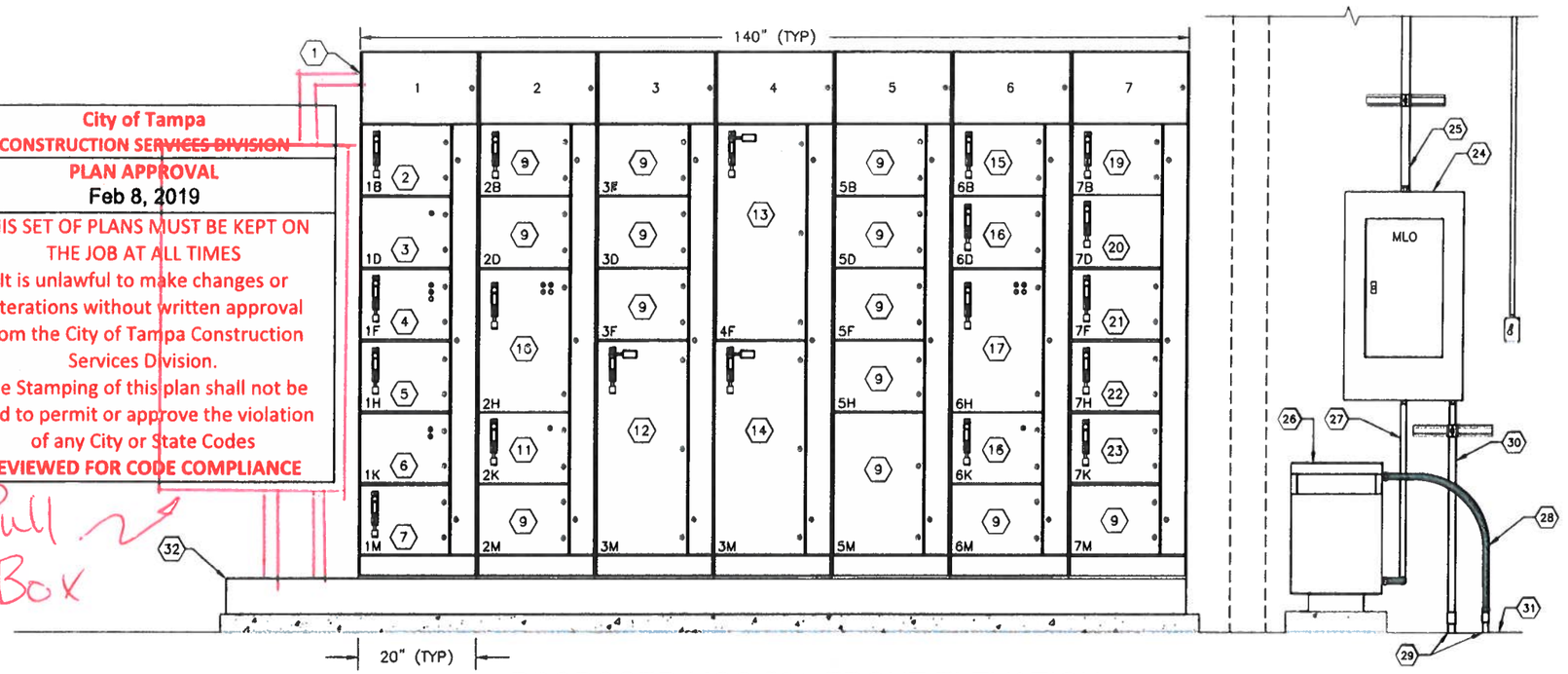
TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-20

FILE: 171700842E01

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CONSTRUCTION SERVICES DIVISION
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Pull Box



PROPOSED MCC 59A FRONT ELEVATION

SCALE : N.T.S.

GENERAL NOTES:

1. REFER TO SHEET E-23 FOR PROPOSED MCC-59A ONE-LINE DIAGRAM.

Red line "As Builts"
Date: 2/11/22
Approved: TLC
Approved:

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A0109800 00001508582E42C 00005387
2019.02.06 11:53:05 -05'00'

KEYED NOTES:

1. 277/480V, 600A, 3ø, 3-WIRE MCC-59A.
2. 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR SUPPLY FAN 'FB-S-1A'.
3. SUPPLY FANS THERMOSTAT CONTROLS. REFER TO CONTROL SCHEMATICS SHEET E-24.
4. EXHAUST FAN 'FB-REF-2', 3 HP ACROSS-THE-LINE STARTER.
5. 480V, 20A CONTACTOR FOR UNIT HEATER NO. 1 'FB-UH-1'.
6. UNIT HEATER CONTROLS. REFER TO CONTROL SCHEMATICS SHEET E-24.
7. 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR CHLORINE EVAPORATOR NO. 1 'FB-EV-1'.
8. 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR CHLORINE EVAPORATOR NO. 3 'FB-EV-3'.
9. PROPOSED SPACE.
10. CHLORINE SOLUTION SUPPLY PUMP NO. 1, FB-CSSP-1, 10 HP SOFTSTARTER.
11. PROPOSED SPACE.
12. 480V, 400AF/400AT 3-POLE CIRCUIT BREAKER FOR MCC-59 BUS NO. 1 FEEOER.
13. 480V, 400AF/400AT 3-POLE TIE CIRCUIT BREAKER.
14. 480V, 400AF/400AT 3-POLE CIRCUIT BREAKER FOR MCC-59 BUS NO. 2 FEEDER.
15. 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR CHLORINE EVAPORATOR NO. 2 'FB-EV-2'.
16. 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR CHLORINE EVAPORATOR NO. 4 'FB-EV-4'.
17. CHLORINE SOLUTION SUPPLY PUMP NO. 2, FB-CSSP-2, 10 HP SOFTSTARTER.
18. PROPOSED SPACE.
19. 480V, 100AF/30AT 3-POLE CIRCUIT BREAKER FOR SUPPLY FAN 'FB-S-1B'.
20. 480V, 20A 3-POLE CONTACTOR FOR UNIT HEATER NO. 2 'FB-UH-2'.
21. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR MONORAIL HOIST 'FB-MH-2'.
22. 480V, 100AF/100AT 3-POLE CIRCUIT BREAKER FOR PANELBOARD 'PP'.
23. 480V, 100AF/15AT 3-POLE CIRCUIT BREAKER FOR CHLORINE SOLUTION SUPPLY/ORAIN VALVE CONTROLS.
24. PROVIOE AND INSTALL NEW 480V, 3-PHASE, 3-WIRE 100A M.L.O. PANELBOARD 'PP', PANELBOARD SHALL BE SUITABLE FOR USE ON 480V, 3-PHASE, 3-WIRE SYSTEM. SIEMENS TYPE P2 WITH BQD CIRCUIT BREAKERS OR EQUAL. REFER TO SHEET E-22 FOR PROPOSED PANEL SCHEDULE.
25. PROVIOE AND INSTALL 3-#3 + 1- #8 IN 1-1/4" CONDUIT TO MCC-59A (59AM27).
26. PROVIDE AND INSTALL NEW 480-120/240V, SINGLE-PHASE, 25 KVA TRANSFORMER. GROUNO TRANSFORMER PER NEC REQUIREMENTS.
27. PROVIOE AND INSTALL 2-#6 + 1-#10 GND IN 1-1/4" CONOUIT. PROVIDE FLEXIBLE CONNECTION TO TRANSFORMER.
28. PROVIOE AND INSTALL 2-#6 + 1-#10 GNO IN 1" CONOUIT. PROVIDE FLEXIBLE CONNECTION TO TRANSFORMER. REFER ALSO TO NOTE #27.
29. EXISTING CONOUIT PENETRATION OOWN TO LEVEL 3'-6". CONTRACTOR SHALL REUSE THIS RACEWAY AFTER CLEANING. REFER TO SHEET E-5 FOR CONTINUATION.
30. CONTRACTOR TO FIELO VERIFY EXISTING CONOUCTOR SIZES ANO QUANTITIES SERVEO BY EXISTING PANELBOARO 'PP' AND OUPLICATE EXISTING CONOUCTORS/CONOUIT. REFER ALSO TO NOTE #27.
31. ELEVATION 11'-0" FLOOR SLAB.
32. PROPOSED WIREWAY, 6 INCHES IN HEIGHT. REFER ALSO TO SPECIFICATIONS AND SHEET E-22 FOR MCC-59A INSTALLATION DETAILS.

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250, Tampa, FL 33602, 813.227.9100, Certificate of Authorization No. 6363

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DESIGNED	TDT
DRAWN	JLH
CHECKED	TDT
DATE	3/2018

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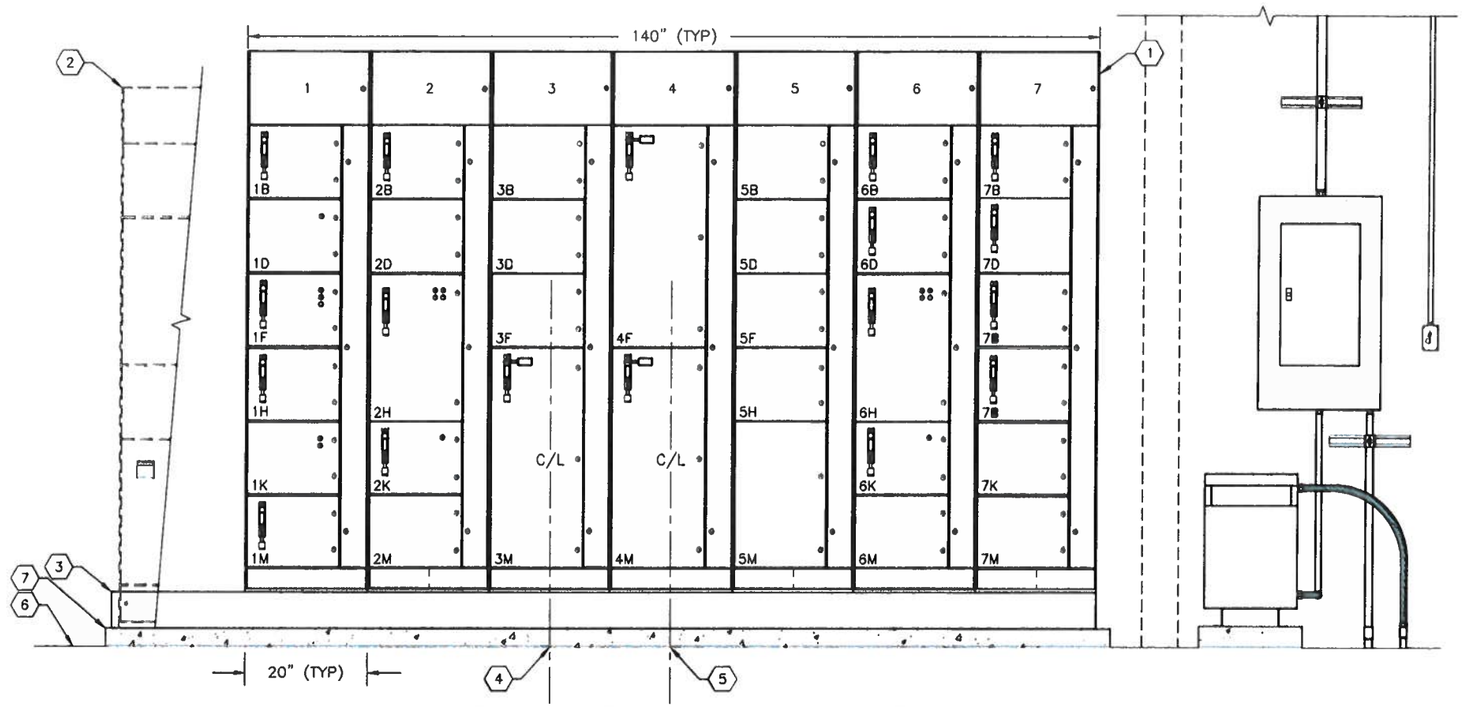
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

PROPOSED MCC-59A FRONT ELEVATION

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-21

FILE: 171700842E01



PROPSED MCC 59A INSTALLATION ELEVATION

SCALE : N.T.S.

480V DISTRIBUTION PANELBOARD "PP" SCHEDULE

MAINS: 100A M.L.O.
AIC RATING: 14K RMS. AMPS. SYMM.
LOCATION: H&V EQUIPMENT ROOM
VOLTAGE: VOLTAGE: 480V, 3PH, 3W, 60HZ.

UNIT No.	DESCRIPTION	POLE	BREAKER AMPS	BREAKER TYPE
1	1ø TRANSFORMER	2	50	BQD
2	SO2 EVAPORATOR NO. 1	3	20	BQD
1	SO2 EVAPORATOR NO. 2	3	20	BQD
1	SO2 EVAPORATOR NO. 3	3	20	BQD
8	DECHLOR BLDG UNIT HEATER NO. 1	3	20	BQD
8	DECHLOR BLDG UNIT HEATER NO. 2	3	20	BQD
1	SPARE	3	20	BQD
8	SPARE	3	20	BQD

NOTES:
1. CONTRACTOR TO FIELD VERIFY ALL CIRCUIT BREAKER BREAKERS SIZES.

Red line "As Builts"
Date: 3/1/22
Approved:
Approved:

KEYED NOTES:

1. PROPOSED 277/480V, 600A, 3ø, 3-WIRE MCC-59A. NEW MCC-59A WILL HAVE ONE (1) LESS SECTION THAN THE ORIGINAL MCC.
2. OUTLINE OF EXISTING MCC-59A TO BE REMOVED AND REPLACED.
3. PROPOSED WIREWAY, 6 INCHES IN HEIGHT. REFER ALSO TO SPECIFICATIONS. TO ACCOMMODATE ALL EXISTING CONDUCTORS AND CONDUIT, THE PROPOSED WIREWAY SHALL BE PROVIDED WITH THE SAME DIMENSIONS OF THE EXISTING MCC-59A TO BE REMOVED.
4. EXISTING CENTERLINE OF SECTION WHICH WILL CONTAIN THE MCC-59 BUS NO. 1 FEEDER CIRCUIT BREAKER. DUE TO THE SIZES/QUANTITIES OF THE CONDUIT/CONDUCTORS ASSOCIATED WITH THE MCC-59 BUS NO. 1 FEEDER, THE CONTRACTOR SHALL ALIGN THE PROPOSED MCC SECTION CONTAINING THIS CIRCUIT BREAKER IN THIS POSITION.
5. EXISTING CENTERLINE OF SECTION WHICH WILL CONTAIN THE TIE CIRCUIT BREAKER AND MCC-59 BUS NO. 2 FEEDER CIRCUIT BREAKER. DUE TO THE SIZES/QUANTITIES OF THE CONDUIT/CONDUCTORS ASSOCIATED WITH THE MCC-59 BUS NO. 2 FEEDER, THE CONTRACTOR SHALL ALIGN THE PROPOSED MCC SECTION CONTAINING THESE CIRCUIT BREAKERS IN THIS POSITION.
6. ELEVATION 11'-0" FLOOR SLAB.
7. EXISTING MCC-59A HOUSEKEEPING PAD TO REMAIN.

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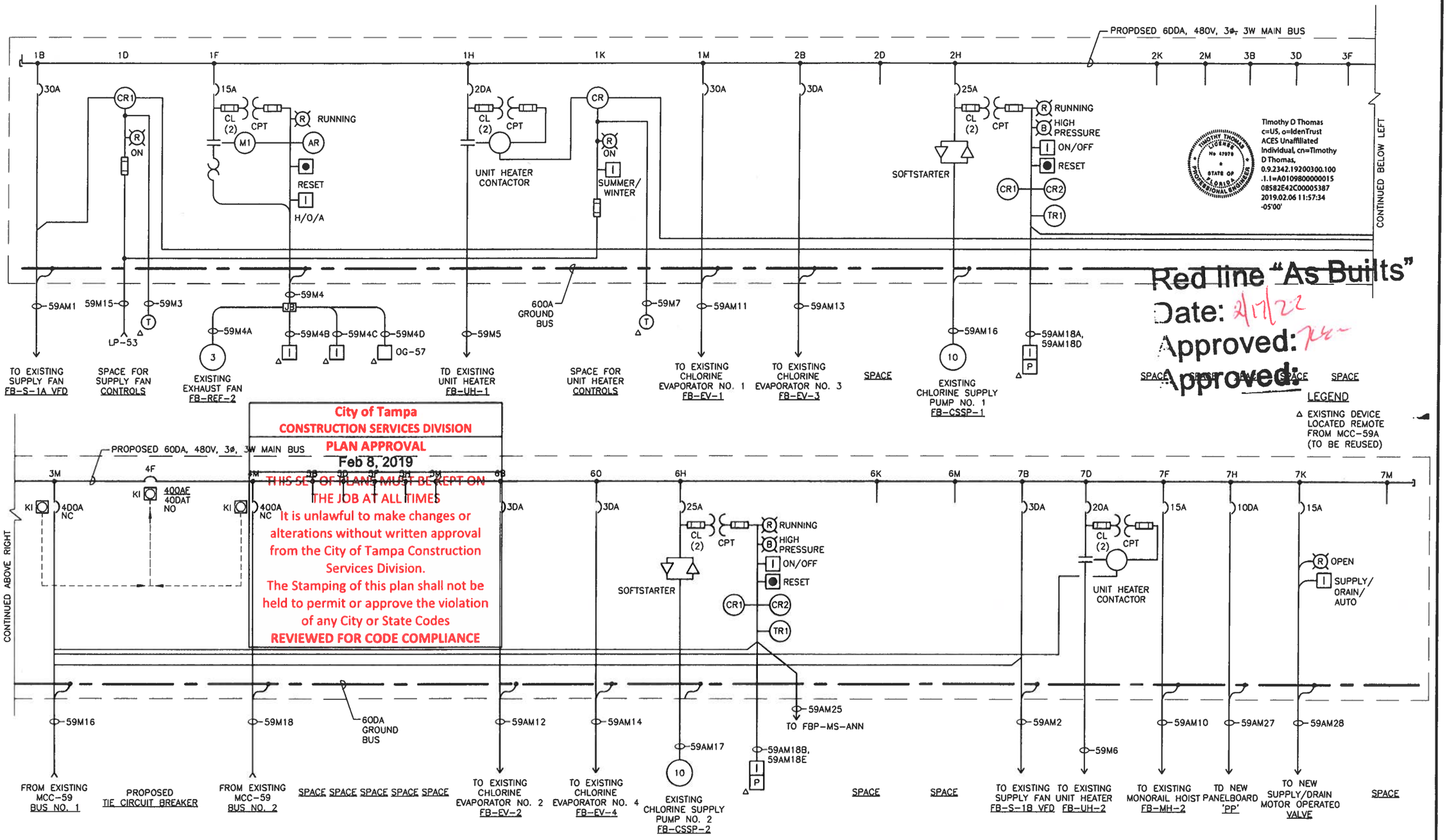
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

PROPOSED MCC-59A INSTALLATION DETAILS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER E-22

FILE: 171700842E01

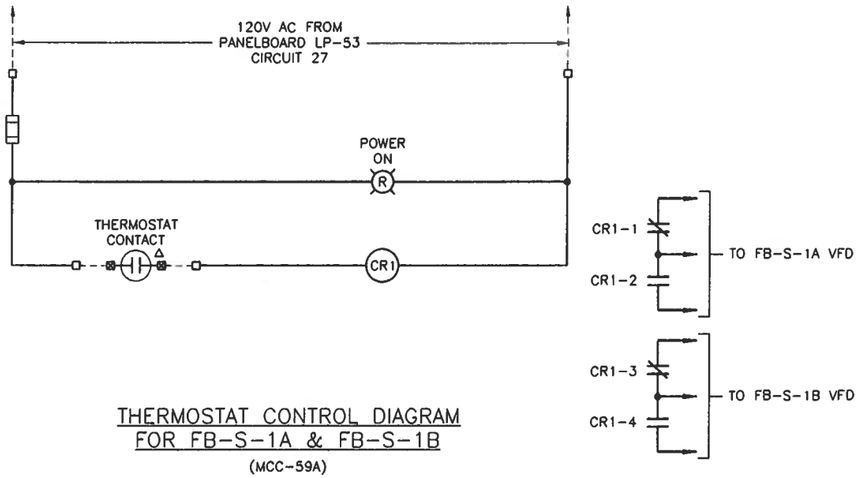


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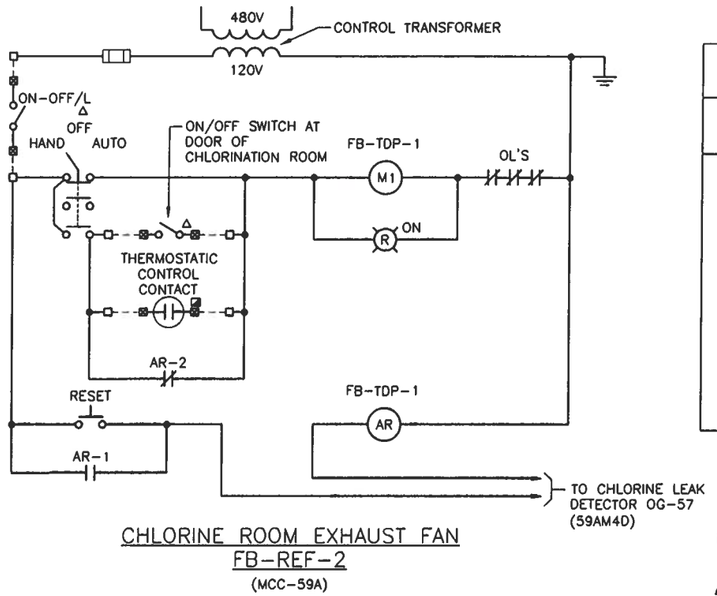
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Date: 2/17/22
Approved:
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City of Tampa Wastewater Department	HOWARD F. CURREN AWTP MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT
MCC-59A ELECTRICAL ONE-LINE DIAGRAM	
TIMOTHY THOMAS, P.E. No. 47079	
SHEET NUMBER	E-23
FILE:	171700842E01

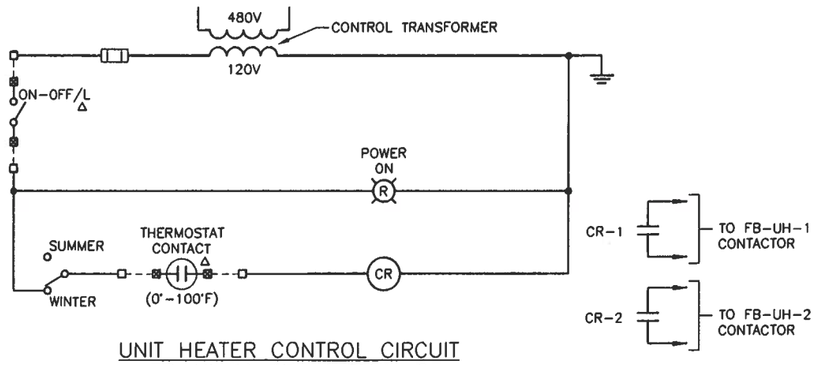
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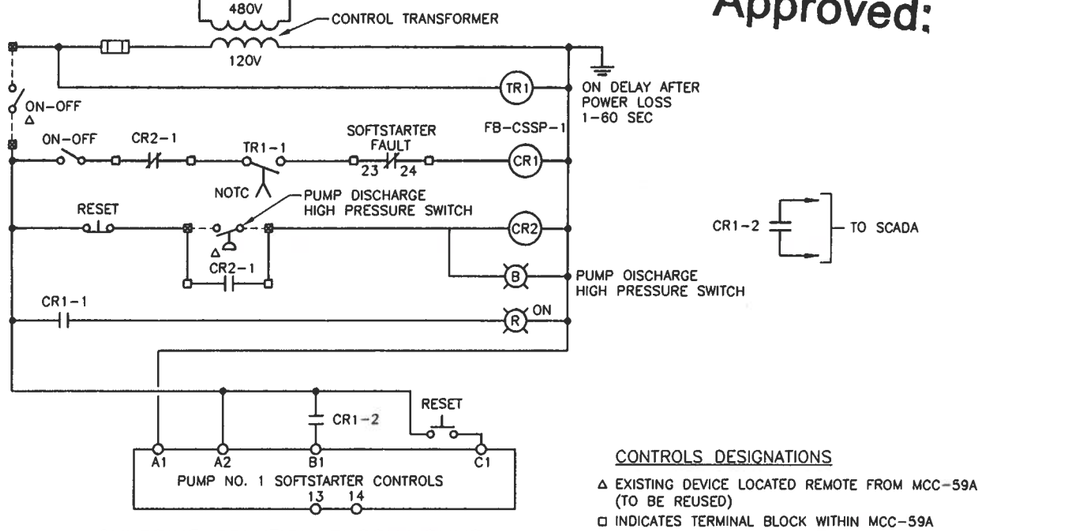
THERMOSTAT CONTROL DIAGRAM
FOR FB-S-1A & FB-S-1B
(MCC-59A)



CHLORINE ROOM EXHAUST FAN
FB-REF-2
(MCC-59A)



UNIT HEATER CONTROL CIRCUIT
FB-UH-1 AND FB-UH-2
(MCC-59A)



CHLORINE SOLUTION SUPPLY PUMP
FB-CSSP-1
(MCC-59A)
FB-CSSP-2 IS SIMILAR

CONTROLS DESIGNATIONS

- △ EXISTING DEVICE LOCATED REMOTE FROM MCC-59A (TO BE REUSED)
- □ INDICATES TERMINAL BLOCK WITHIN MCC-59A
- ⊠ INDICATES TERMINAL ON FIELD DEVICE
- ◪ INDICATES DEVICE LOCATED WITHIN THE EXISTING HVAC SYSTEM TEMPERATURE CONTROL PANEL (HVAC-TCP) (TO BE REUSED)

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Approved:

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2019.02.06 11:58:45 -05'00'

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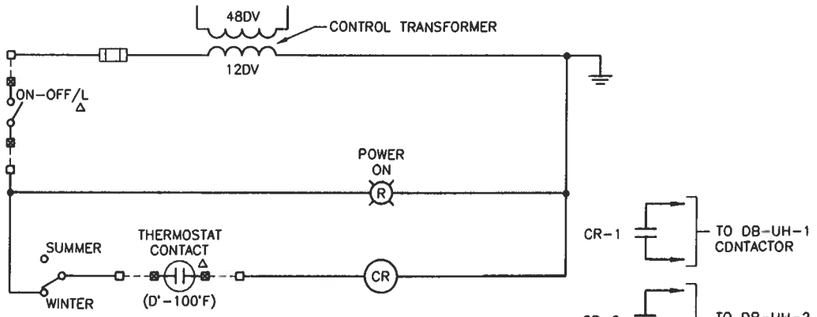
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

MCC-59A TYPICAL MOTOR CONTROL SCHEMATICS (SHEET 1 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-24

FILE: 171700842E01



UNIT HEATER CONTROL CIRCUIT
DB-UH-1 AND DB-UH-2
(FED FROM PANELBOARD PP)

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Date: 2/17/22
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Approved:

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2019.02.06 11:59:14 -05'00'

CONTROLS DESIGNATIONS

- △ EXISTING DEVICE LOCATED REMOTE FROM MCC-59A (TO BE REUSED)
- □ INDICATES TERMINAL BLOCK WITHIN MCC-59A
- ⊠ INDICATES TERMINAL ON FIELD DEVICE
- ◪ INDICATES DEVICE LOCATED WITHIN THE EXISTING HVAC SYSTEM TEMPERATURE CONTRDL PANEL (HVAC-TCP) (TO BE REUSED)

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City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

MCC-59A TYPICAL MOTOR CONTROL SCHEMATICS (SHEET 2 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-25

FILE: 171700842E01

MCC-59A CONDUIT AND CABLE SCHEDULE

CONDUIT No.	SIZE	NUMER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
59AM1	1"	3-#12 + 1-#12 GND	MCC-59A	FB-S-1A VFD PANEL	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM7	1"	3-#12 + 1-#12 GND	MCC-59A	FB-S-1B VFD PANEL	SHARES CONDUIT WITH 59AM1. CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM3	3/4"	2-#14	MCC-59A	THERMOSTAT	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUCTOR QUANTITY, CONDUIT SIZING/ROUTING.
59AM1	1-1/4"	3-#12 + 10-#14 + 1-#12 GND	MCC-59A	J.B. AT MOTOR FB-REF-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT/CONDUCTOR SIZING AND ROUTING.
59AM4D	3/4"	3-#12	J.B. AT MOTOR FB-REF-2	MOTOR FB-REF-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59AM4B	3/4"	2-#14	J.B. AT MOTOR FB-REF-2	PUSHBUTTON STATION	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59AM4C	3/4"	2-#14	J.B. AT MOTOR FB-REF-2	SWITCH AT DOOR	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59AM4D	3/4"	6-#14	J.B. AT MOTOR FB-REF-2	LEAK DETECTOR OG-57	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59AM6	3/4"	3-#12 + 2-#14 + 1-#12 GND	MCC-59A	DISC AT UNIT HEATER NO. 1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59AM17	3/4"	3-#12 + 1-#12 GND	DISC AT UNIT HEATER NO. 1	UNIT HEATER NO. 1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM6B	3/4"	2-#14	J.B. AT FB-UH-1	J.B. AT DISC	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59AM6	3/4"	3-#12 + 2-#14 + 1-#12 GND	MCC-59A	DISC AT UNIT HEATER NO. 1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59AM17	3/4"	3-#12 + 1-#12 GND	DISC AT UNIT HEATER NO. 2	UNIT HEATER NO. 2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM6B	3/4"	2-#14	J.B. AT FB-UH-2	J.B. AT DISC	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING.
59AM7	3/4"	2-#14	MCC-59A	THERMOSTAT	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. CONTRACTOR TO FIELD VERIFY CONDUCTOR QUANTITY, CONDUIT SIZING/ROUTING.
59AM10	3/4"	3-#12 + 1-#12 GND	MCC-59A	DISC AT FB-MH-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM10B	3/4"	3-#12 + 1-#12 GND	DISC AT FB-MH-2	FB-MH-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM14	3/4"	3-#12 + 6-#14 + 1-#12 GND	MCC-59A	CONTROL PANEL FB-EV-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM11A	3/4"	2-#14	CONTROL PANEL FB-EV-4	ELECTRIC OPERATOR	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM17	3/4"	3-#12 + 6-#14 + 1-#12 GND	MCC-59A	CONTROL PANEL FB-EV-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM18B	3/4"	2-#14	CONTROL PANEL FB-EV-2	ELECTRIC OPERATOR	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM14	3/4"	3-#12 + 6-#14 + 1-#12 GND	MCC-59A	CONTROL PANEL FB-EV-3	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM13A	3/4"	2-#14	CONTROL PANEL FB-EV-3	ELECTRIC OPERATOR	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM14	3/4"	3-#12 + 6-#14 + 1-#12 GND	MCC-59A	CONTROL PANEL FB-EV-4	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM14A	3/4"	2-#14	CONTROL PANEL FB-EV-4	ELECTRIC OPERATOR	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM18	3/4"	2-#12 + 1-#12 GND	MCC-59A	PANELBOARD LP-53	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING. PANELBOARD LP-53 LOCATED IN ELECTRICAL EQUIPMENT ROOM (SHEET E-4). CIRCUIT 27
59AM15	3/4"	3-#12 + 1-#12 GND	MCC-59A	FB-CSSP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM17	3/4"	3-#12 + 1-#12 GND	MCC-59A	FB-CSSP-2	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM18	3/4"	8-#14	MCC-59A	J.B. AT FB-CSSP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM18B	3/4"	2-#14	J.B. AT FB-CSSP-1	P.B. AT FB-CSSP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM18B	3/4"	2-#14	J.B. AT FB-CSSP-1	P.B. AT FB-CSSP-1	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM18C	3/4"	4-#14	J.B. AT FB-CSSP-1	J.B. AT MOTORS	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM18D	3/4"	2-#14	J.B. AT MOTORS	FB-CSSP-1 PRESSURE SW	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.

CONTINUED ON SHEET E-27

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City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

MCC-59A CONDUIT AND CABLE SCHEDULE (SHEET 1 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-26

FILE: 171700842E01

MCC-59A CONDUIT AND CABLE SCHEDULE

CONDUIT No.	SIZE	NUMER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
59AM21	1"	3-#12 + 6-#14 + 1-#12 GND	MCC-59A	J.B. AT SUPPLY/DRAIN MOV	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM21A	3/4"	3-#12 + 1-#12 GND	J.B. AT SUPPLY/DRAIN MOV	SUPPLY/DRAIN MOV MOTOR	CONDUCTORS TO BE NEW. EXISTING CONDUIT TD BE REUSED AFTER CLEANING.
59AM21A	3/4"	6-#14	J.B. AT SUPPLY/DRAIN MOV	MOV MDTOR CONTROLS	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM23	1-1/2"	24-#14 (8 SPARES)	MCC-59A	FBCSP-ANN	CONDUCTORS TO BE NEW. EXISTING CONDUIT TD BE REUSED AFTER CLEANING.
59AM24	1-1/2"	26-#14 (5 SPARES)	MCC-59A	FBP-CHS	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM25	1-1/2"	18-#14 (4 SPARES)	MCC-59A	FBP-MS-ANN	CONDUCTORS TO BE NEW. EXISTING CONDUIT TD BE REUSED AFTER CLEANING.
59AM26	3/4"	3-#12 + 1-#12 GND	MCC-59A	FBP-MS-ANN	CONDUCTORS TO BE NEW. EXISTING CONDUIT TO BE REUSED AFTER CLEANING.
59AM27	1-1/4"	3-#3 + 1-#8 GND	MCC-59A	PANELBOARD 'PP'	CONDUIT AND CONDUCTORS TO BE NEW.

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TIMOTHY THOMAS LICENSED No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

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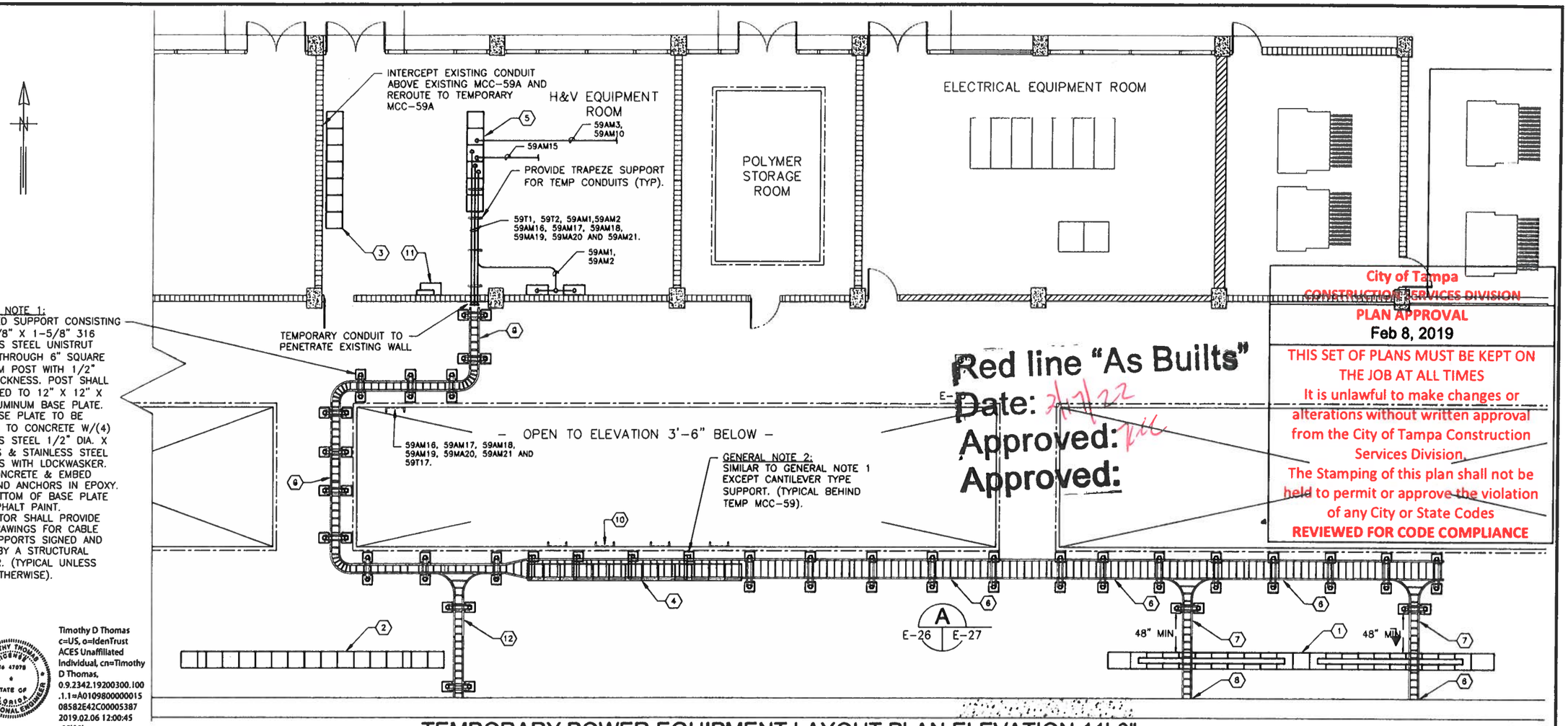
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MCC-59A CONDUIT AND CABLE SCHEDULE (SHEET 2 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-27

FILE: 171700842E01



GENERAL NOTE 1:
PROPOSED SUPPORT CONSISTING OF 1-5/8" X 1-5/8" 316 STAINLESS STEEL UNISTRUT BOLTED THROUGH 6" SQUARE ALUMINUM POST WITH 1/2" WALL THICKNESS. POST SHALL BE WELDED TO 12" X 12" X 3/4" ALUMINUM BASE PLATE. EACH BASE PLATE TO BE SECURED TO CONCRETE W/(4) STAINLESS STEEL 1/2" DIA. X 6" BOLTS & STAINLESS STEEL HEX NUTS WITH LOCKWASKER. ORILL CONCRETE & EMBED BOLTS AND ANCHORS IN EPOXY. COAT BOTTOM OF BASE PLATE WITH ASPHALT PAINT. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR CABLE TRAY SUPPORTS SIGNED AND SEALED BY A STRUCTURAL ENGINEER. (TYPICAL UNLESS NOTED OTHERWISE).

Timothy D Thomas
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2019.02.06 12:00:45 -05'00'

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TEMPORARY POWER EQUIPMENT LAYOUT PLAN ELEVATION 11'-0"

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

KEYED NOTES:

1. EXISTING 480V, 1,200A MCC-58. REFER TO SHEET E-34 FOR PROVIDING TEMPORARY POWER TO TEMPORARY MCC-59 AND TEMPORARY MCC-59A OURING CONSTRUCTION.
2. EXISTING 480V, 1,200A MCC-59 TO BE REPLACED.
3. EXISTING 480V, 400A MCC-59A TO BE REPLACED.
4. PROPOSED LOCATION FOR TEMPORARY 480V, 1,200A MCC-59. REFER TO SHEET E-34 FOR PROVIOING TEMPDRARY POWER FROM MCC-58.
5. PROPOSED LOCATION FOR TEMPORARY 480V, 400A MCC-59A. COORDINATE PROPOSED LOCATION WITH EXISTING LIGHT FIXTURES WITHIN ROOM. REFER TO SHEET E-34 FOR PROVIDING TEMPORARY POWER FROM MCC-58.
6. CONTRACTOR TO PROVIOE AND INSTALL 24" WIDE ALUMINUM CABLE TRAY. CABLE TRAY TO BE INSTALLED APPROXIMATELY 10'-0" ABOVE FINISHEO FLOOR AT ELEV 11'-0". CONTRACTOR TO FIELD AOJUST CABLE TRAY HEIGHT BASEO ON EXISTING MCC-58 ELEVATION OR AS REQUIRED. CABLE TRAY TO BE UTILIZEO FOR TEMPORARY POWER CABLES 58T1, 58T2, 58T3, AND 58T4.
7. CONTRACTOR TO PROVIOE AND INSTALL 12" WIDE ALUMINUM CABLE TRAY. CABLE TRAY TO BE INSTALLED APPROXIMATELY 10'-0" ABOVE FINISHED FLOOR AT ELEV 11'-0". CONTRACTOR TO FIELD ADJUST CABLE TRAY HEIGHT BASED ON EXISTING MCC-58 ELEVATION OR AS REQUIREO. CABLE TRAY TO BE UTILIZED FOR TEMPORARY POWER CABLES 58T1 AND 58T2 OR 58T3 AND 58T4.
6. CONTRACTOR TO SECURE CABLE TRAY TO EXISTING WALL.
9. CONTRACTOR TO PROVIOE AND INSTALL 12" WIOE ALUMINUM CABLE TRAY. CABLE TRAY TO BE INSTALLED APPROXIMATELY 10'-0" ABOVE FINISHED FLOOR AT ELEV 11'-0". CABLE TRAY TO BE UTILIZEO FOR TEMPORARY POWER CABLES 59T1, 59T2, AND ANY CONDUCTORS WHICH THE TRAY CAN ACCOMMODATE BASED ON FIELD ROUTING.
10. CONTRACTOR TO PROVIDE ANO INSTALL ALUMINUM CABLE TRAY SECUREO TO SIDE OF ELEV 11'-0" FLOOR SLAB FOR ACCESS OF TEMPORARY CONDUCTORS DOWN TO ELEVATION 3'-6" (TYPICAL).
11. CONTRACTOR TO PROVIDE ANO INSTALL TEMPORARY 480V-120/240V 15 KVA TRANSFORMER ANO 480V, 3ø, 3-WIRE PANELBOARD 'PP'. COORDINATE LOCATION WITH THE CITY OF TAMPA.
12. CONTRACTOR TO PROVIOE AND INSTALL 12" WIDE ALUMINUM CABLE TRAY. CABLE TRAY TO BE UTILIZED FOR TEMPORARY POWER CABLES 59T17A.

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250, Tampa, FL 33602, 813.227.9190, Certificate of Authorization No. 8363

JOB No.	171700842					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: AS SHOWN

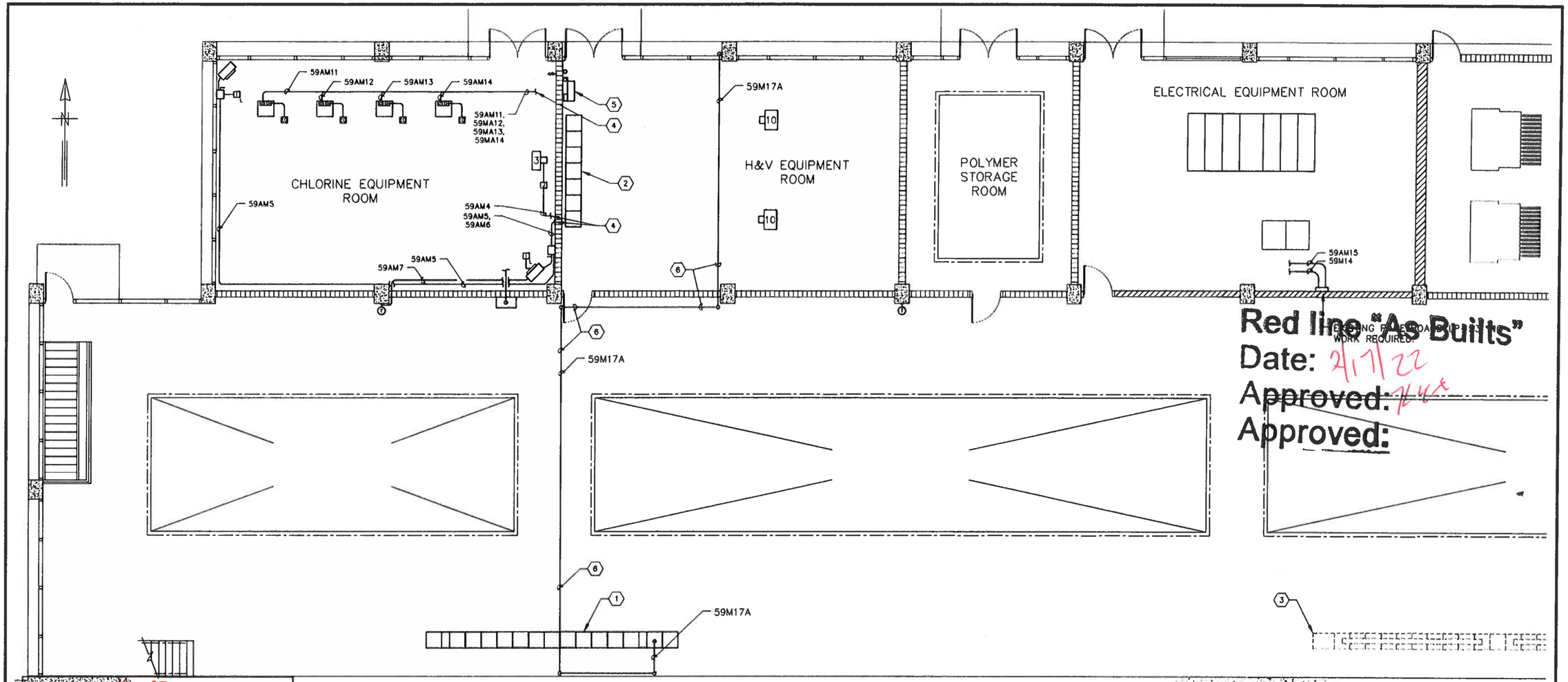
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

TEMPORARY POWER EQUIPMENT LAYOUT PLAN

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-28

FILE:



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ELEVATION 11'-0" TEMPORARY CONDUIT/CONDUCTOR NOTES

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

KEYED NOTES:

1. EXISTING MCC-59.
2. EXISTING MCC-59A.
3. EXISTING MCC-58.
4. EXISTING CONDUIT/CONDUCTORS TO BE INTERCEPTED AND TEMPORARILY REROUTED TO TEMPORARY MCC-59A. REFER ALSO TO SHEET E-28.
5. EXISTING 48DV, 3ø 3-WIRE 1DDA PANELBOARD 'PP' AND 48D-12D/24DV, SINGLE-PHASE 15 KVA TRANSFORMER TO BE TEMPORARILY DUPLICATED. REFER ALSO TO SHEET E-28.
6. 59M17A EXITS THE TOP OF EXISTING MCC-59, IS ROUTED TO THE SOUTH WALL OF FILTER BUILDING NO. 1 AND THEN GOES UP THE WALL TO THE CEILING (TO AVOID OVERHEAD CRANE). THE CONDUIT TRAVELS ACROSS THE CEILING AND EVENTUALLY IS ROUTED DOWN AND THROUGH THE H&V EQUIPMENT ROOM BEFORE EXITING THE BUILDING. THE CONDUIT RUN HAS NUMEROUS CONDUIT L.B.'S INSTALLED AND MAY BE INTERCEPTED AT ANY LOGICAL POINT.

TIMOTHY THOMAS LICENSED No. 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

Timothy D Thomas
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City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

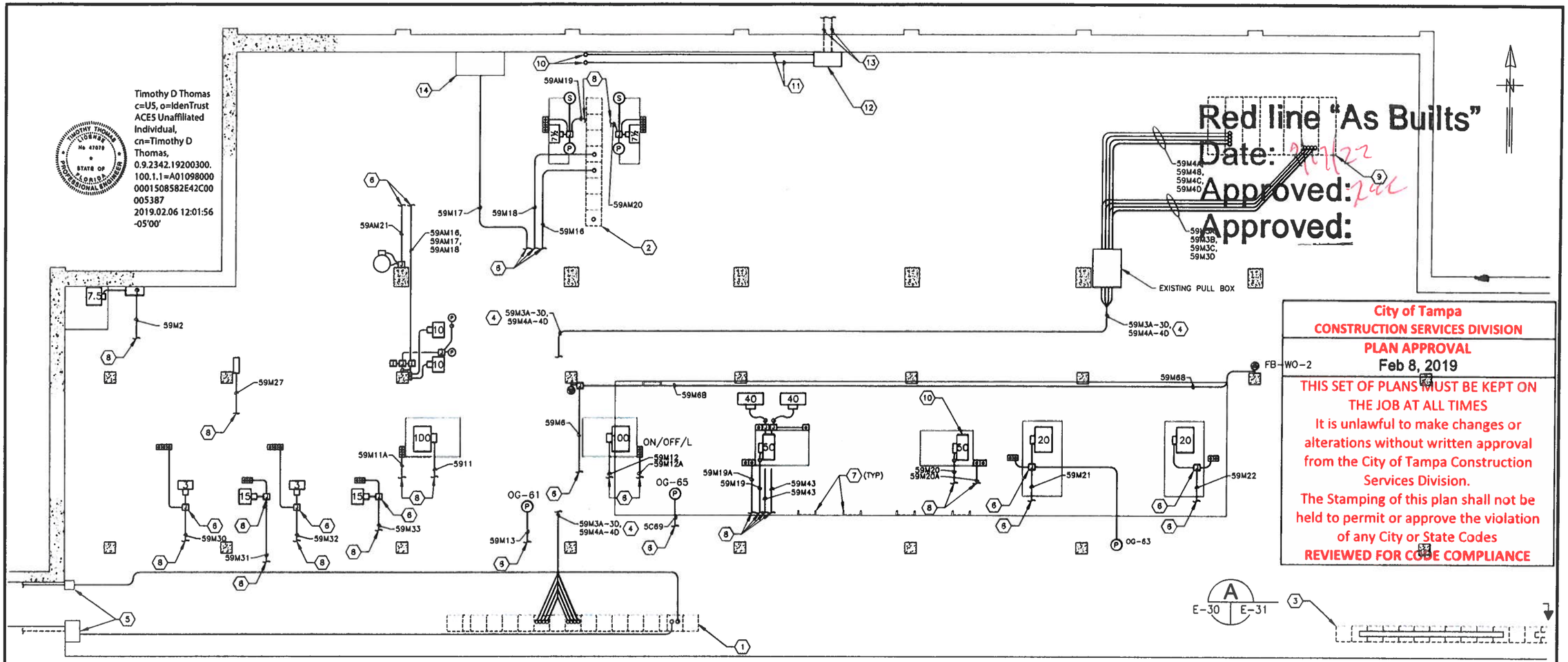
ELEVATION 11'-0" TEMPORARY CONDUIT/CONDUCTOR NOTES

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-29
FILE: 171700842E01

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Approved:



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ELEVATION 3'-6" TEMPORARY CONDUIT/CONDUCTOR NOTES

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

KEYED NOTES:

1. EXISTING FOOTPRINT OF 277/48DV, 1,2DDA MCC-59 (TO BE REPLACED) ABOVE ON ELEVATION 11'-0".
2. EXISTING FOOTPRINT OF 277/48DV, 4DDA MCC-59A (TO BE REPLACED) ABOVE ON ELEVATION 11'-0".
3. EXISTING FOOTPRINT OF 277/48DV, 1,2DDA MCC-58 (TO REMAIN) ABOVE ON ELEVATION 11'-0". REFER TO SHEET E-31 FOR WORK REQUIRED TO PROVIDE TEMPORARY POWER DURING MCC-59 AND MCC-59A REPLACEMENT.
4. EXISTING CONDUCTORS 59M3A-3D, 59M4A-4D WILL BE REPLACED, BUT WILL NOT BE REQUIRED DURING THE TIME IN WHICH TEMPORARY POWER IS IN PLACE, THEREFORE, NO TEMPORARY CONDUCTORS ARE REQUIRED.
5. EXISTING PULL BOX FOR CONDUITS DUT TO SHEETS E-2, E-3 AND E-7. CONTRACTOR MAY INTERCEPT EXISTING CONDUIT TO FIELD DEVICES AT THIS POINT.
6. EXISTING JUNCTION BOX (OR CONDULET BODY). CONTRACTOR MAY INSTALL TEMPORARY CONDUCTORS FROM TEMPORARY MCC TO DEVICES AT THIS POINT. PROVIDE FITTINGS, JUNCTION BOXES, OR OTHER FITTINGS AS REQUIRED.
7. CONTRACTOR TO PROVIDE AND INSTALL ALUMINUM CABLE TRAY SECURED TO SIDE OF ELEV 11'-0" FLOOR SLAB FOR ACCESS OF TEMPORARY CONDUCTORS DOWN TO ELEVATION 3'-6" (TYPICAL).
8. TEMPORARY CONDUCTORS TO BE ROUTED UP TO ELEVATION 11'-0" VIA CABLE TRAY. REFER TO NOTE #1D ON SHEET E-28.
9. EXISTING SWITCHGEAR 56 (TO REMAIN).
10. EXISTING CONDUITS DOWN FROM ELEVATION 11'-0". CONDUITS ORIGINATE FROM 15 KVA TRANSFORMER AND PANLEBOARD 'PP'. REFER TO SHEET E-21 FOR ASSOCIATED CONDUCTORS.
11. EXISTING CONDUITS ASSOCIATED WITH KEYED NOTE #1D ABOVE.
12. EXISTING PULL BOX.
13. EXISTING CONDUITS TO DECHLORINATION BUILDING. REFER TO SHEET E-21 FOR ASSOCIATED CONDUCTORS.
14. EXISTING PULL BOX UTILIZED FOR 59M17.

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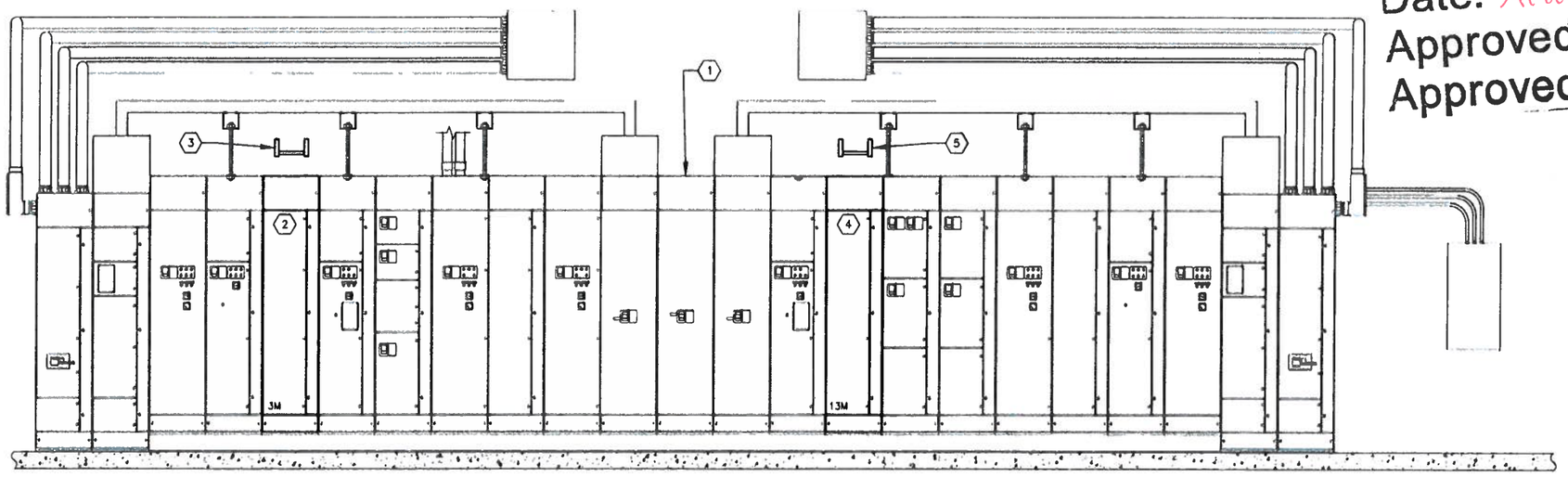
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

ELEVATION 3'-6" TEMPORARY CONDUIT/CONDUCTOR NOTES

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-30
FILE: 171700842E01

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Date: 2/17/22
Approved: KEC
Approved:



EXISTING MCC-58 FRONT ELEVATION (A)

SCALE : N.T.S.

E-30 | E-32

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KEYED NOTES:

1. EXISTING MOTOR CONTROL CENTER 58 (MCC-58).
2. EXISTING SECTION 3M CONSISTING OF PREPARED SPACE. CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY 480V, 600A, 3-POLE CIRCUIT BREAKER FOR TEMPORARY POWER TO TEMPORARY MCC-59.
3. CONTRACTOR TO PROVIDE AND INSTALL 12" WIDE ALUMINUM CABLE TRAY. CABLE TRAY TO BE INSTALLED APPROXIMATELY 10'-0" ABOVE FINISHED FLOOR AT ELEV 11'-0". CONTRACTOR TO FIELD ADJUST CABLE TRAY HEIGHT BASED ON EXISTING MCC-58 ELEVATION OR AS REQUIRED. CABLE TRAY TO BE UTILIZED FOR TEMPORARY POWER CABLES 58T1 AND 58T2. CONTRACTOR TO SECURE CABLE TRAY TO EXISTING WALL.
4. EXISTING SECTION 13M CONSISTING OF PREPARED SPACE. CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY 480V, 600A, 3-POLE CIRCUIT BREAKER FOR TEMPORARY POWER TO TEMPORARY MCC-59.
5. CONTRACTOR TO PROVIDE AND INSTALL 12" WIDE ALUMINUM CABLE TRAY. CABLE TRAY TO BE INSTALLED APPROXIMATELY 10'-0" ABOVE FINISHED FLOOR AT ELEV 11'-0". CONTRACTOR TO FIELD ADJUST CABLE TRAY HEIGHT BASED ON EXISTING MCC-58 ELEVATION OR AS REQUIRED. CABLE TRAY TO BE UTILIZED FOR TEMPORARY POWER CABLES 58T3 AND 58T4. CONTRACTOR TO SECURE CABLE TRAY TO EXISTING WALL.

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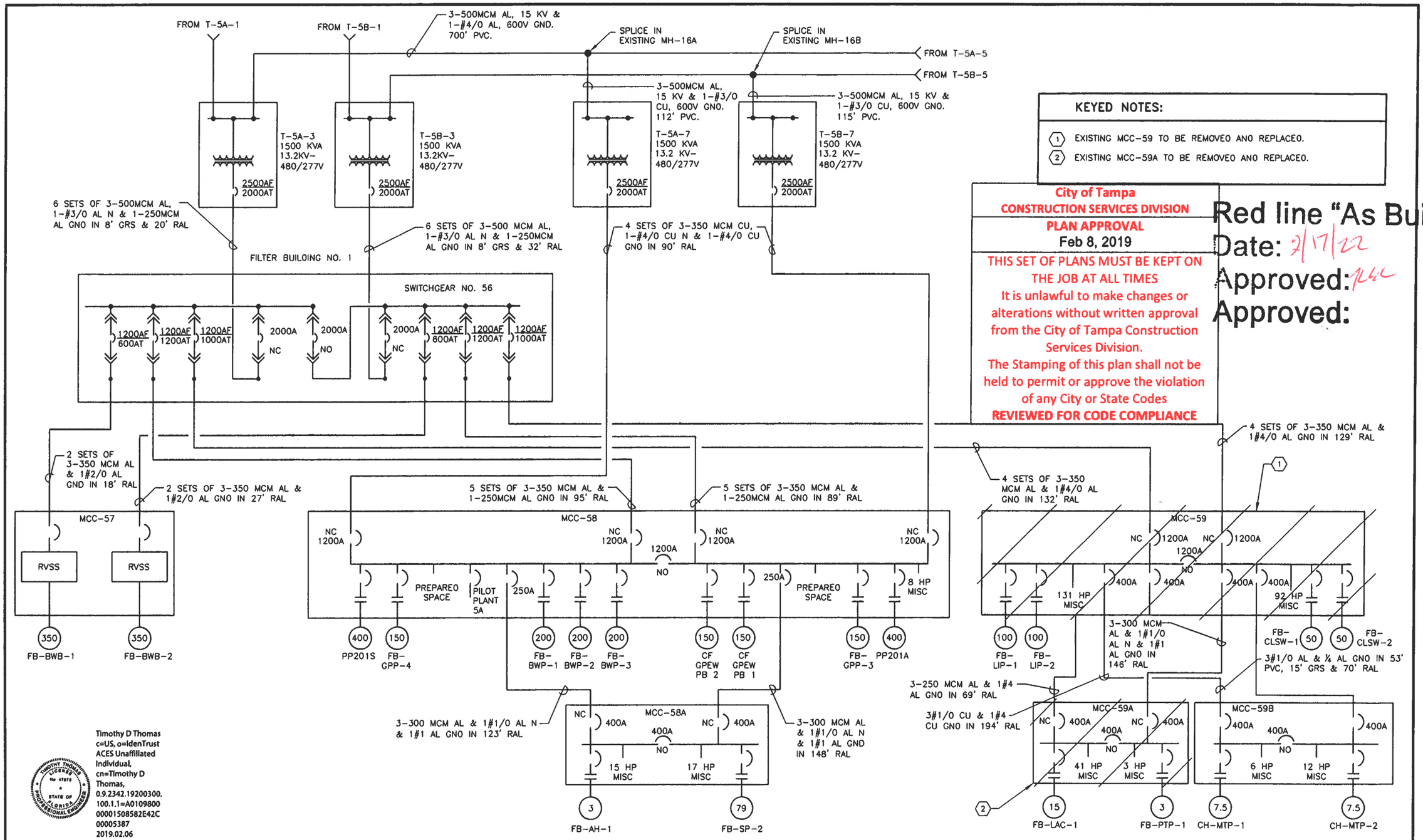
City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

EXISTING MCC-58
FRONT ELEVATION

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-31

FILE: 171700842E01



KEYED NOTES:

1. EXISTING MCC-59 TO BE REMOVED AND REPLACED.
2. EXISTING MCC-59A TO BE REMOVED AND REPLACED.

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Approved:

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City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

FILTER BUILDING NO. 1 EXISTING ONE-LINE DIAGRAM

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-32

FILE: 171700842E01

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FROM T-5A-1

FROM T-5B-1

3-500MCM AL, 15 KV & 1-#4/0 AL, 600V GND. 700' PVC.

SPLICE IN EXISTING MH-16A

SPLICE IN EXISTING MH-16B

FROM T-5A-5

FROM T-5B-5

3-500MCM AL, 15 KV & 1-#3/0 CU, 600V GND. 112' PVC.

3-500MCM AL, 15 KV & 1-#3/0 CU, 600V GND. 115' PVC.

T-5A-3
1500 KVA
13.2KV-480/277V
2500AF 2000AT

T-5B-3
1500 KVA
13.2KV-480/277V
2500AF 2000AT

T-5A-7
1500 KVA
13.2 KV-480/277V
2500AF 2000AT

T-5B-7
15DD KVA
13.2 KV-48D/277V
2500AF 2000AT

4 SETS OF 3-350 MCM CU, 1-#4/0 CU N & 1-#4/0 CU GND IN 90' RAL

SWITCHGEAR NO. 56

1200AF 600AT | 1200AF 1200AT | 1200AF 1000AT | 2000A NC | 2000A NO | 2000A NC | 1200AF 600AT | 1200AF 1200AT | 1200AF 1000AT

MCC-57
RVSS | RVSS
350 FB-BWB-1
350 FB-BWB-2

MCC-58
NC 1200A | NC 1200A | 1200A NO | NC 1200A | NC 1200A
400 PP201S
150 FB-GPP-4
600A | PILOT PLANT 5A | 250A
200 FB-BWP-1
200 FB-BWP-2
200 FB-BWP-3
150 CF GPEW PB 2
150 CF GPEW PB 1
250A | 600A
150 FB-GPP-3
400 PP201A
8 HP MISC

3-300 MCM AL & 1#1/D AL N & 1#1 AL GND IN 123' RAL

3-30D MCM AL & 1#1/D AL N & 1#1 AL GND IN 123' RAL

MCC-58A
NC 400A | 400A NO | NC 400A
15 HP MISC
17 HP MISC
3 FB-AH-1
79 FB-SP-2

MCC-59
NC 12DDA | NC 12D0A | 1200A NO
131 HP MISC
400A | 4DDA | 40DA | 4D0A
92 HP MISC
100 FB-LIP-1
10D FB-LIP-2
FB-CLSW-1 5D
50 FB-CLSW-2

MCC-59A
NC 4DDA | 4D0A NO | NC 40DA
41 HP MISC
3 HP MISC
15 FB-LAC-1
3 FB-PTP-1

MCC-59B
40DA | 40DA NO | 4D0A
6 HP MISC
12 HP MISC
7.5 CH-MTP-1
7.5 CH-MTP-2

KEYED NOTES:

1. EXISTING MCC-59 TO BE REMOVED AND REPLACED.
2. EXISTING MCC-59A TO BE REMOVED AND REPLACED.
3. EXISTING CONDUCTORS TO BE REMOVED AND REPLACED.
4. CONTRACTOR TO PROVIOE AND INSTALL TEMPORARY 48DV, 6DD AMPERE, 3-POLE CIRCUIT BREAKER FOR USE AS TEMPORARY FEEDER PROTECTION. REFER ALSO TO SHEET E-31.

Red line "As Builts"
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Approved:

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HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

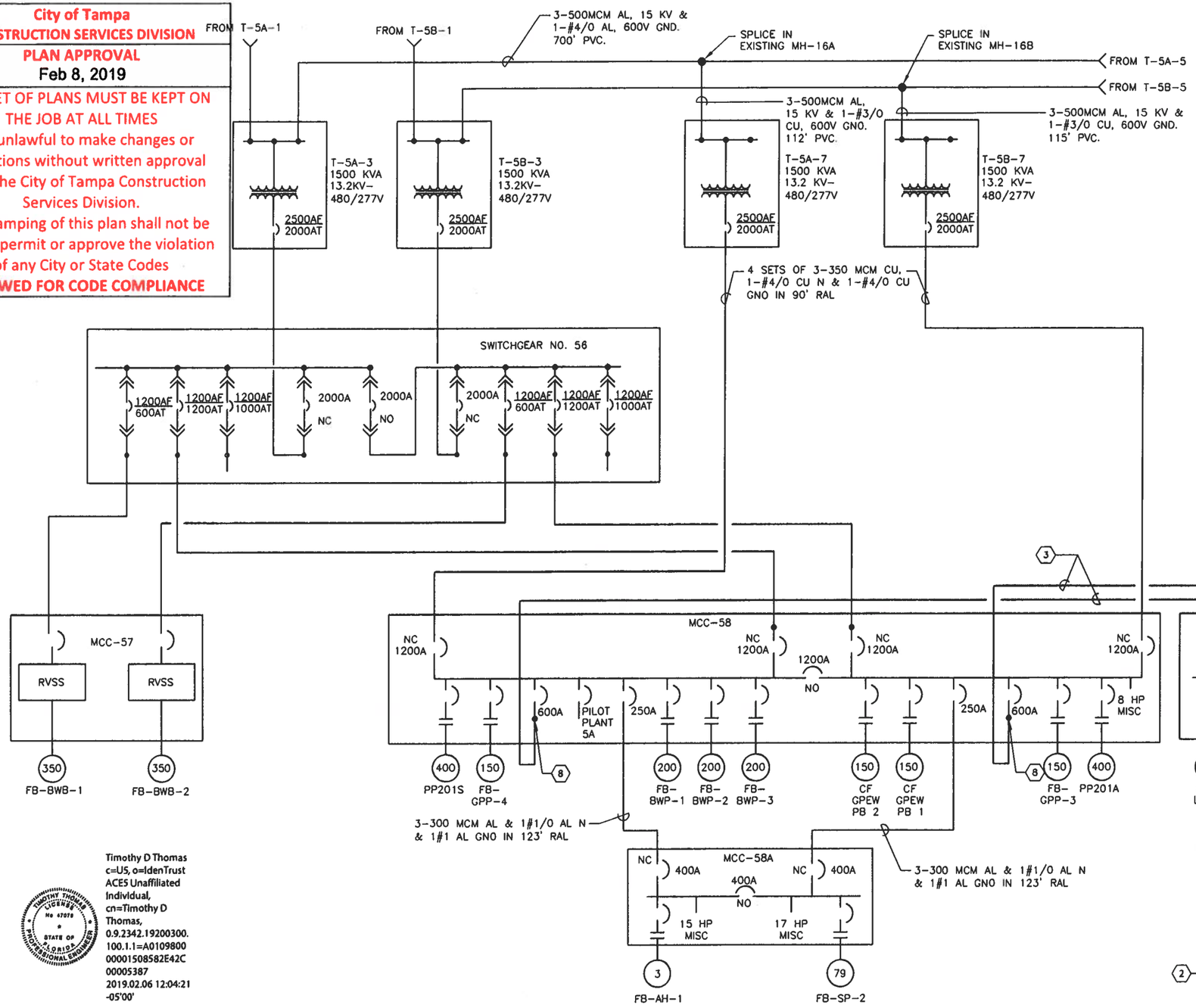
FILTER BUILDING NO. 1 TEMPORARY ONE-LINE DIAGRAM (SHEET 1 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-33

FILE: 171700842E01

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KEYED NOTES:

1. TEMPORARY MCC-59.
2. TEMPORARY MCC-59A.
3. TEMPORARY FEEDERS 58TM1, 58TM2, 58TM3 AND 58TM4.
4. TEMPORARY FEEDERS 59TM1.
5. TEMPORARY FEEDERS 59TM2.
6. TEMPORARY FEEDERS 59TM17.
7. TEMPORARY FEEDERS 59TM17A.
8. CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY 480V, 600 AMPERE, 3-POLE CIRCUIT BREAKER FOR USE AS TEMPORARY FEEDER PROTECTION. REFER ALSO TO SHEET E-31.

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Approved:

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City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59 AND 59A REPLACEMENT

FILTER BUILDING NO. 1 TEMPORARY ONE-LINE DIAGRAM (SHEET 2 OF 2)

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-34
FILE: 171700842E01

MCC-59 BUS 1 LOAD CALCULATION

EQUIPMENT	BUS No.	H.P.	DEMAND KVA	DEMAND AMPERES
MCC-59B, BUS #1	1		32.1	38.6
OVERHEAD CRANE (FB-OC-1)	1	10.0	11.6	14.0
DEWATERING PUMP (SA-DP-1)	1	15.0	17.6	21.0
CHLORINE SOL WATER PMP #1 (FB-CHSW-1)	1	50.0	54.0	65.0
SUMP PUMP 1 (FB-SP-1)	1	7.5	9.1	11.0
SLUICE GATES CA-SG-1 TO CA-SG-4	1	4.0	6.0	7.2
WELDING OUTLET (WO-01)	1		40.0	48.0
DECHLORINATION PUMP #1	1	40.0	43.2	52.0
EFF WATER STRAINER DRIVE (EWS-2)	1	0.3	0.6	0.7
SAMPLE PUMP (JC-4-SSP-1)	1	7.5	9.1	11.0
SEWAGE SAMPLE PUMP (FB-SSP-5)	1	7.5	9.1	11.0
MECHANICAL MIXER #1 (JC-4-MM-1)	1	10.0	11.6	14.0
SAMPLE PUMP 4 (CA-SSP-4)	1	0.5	0.8	1.0
FLOW METER POWER	1		0.5	0.5
THICK TANKS OIL. WATER #1 (TOP-1)	1	20.0	22.0	27.0
EFF. WATER STRAINER B/W PUMP #1 (SBW-1)	1	15.0	17.5	21.0
LAWN IRRIGATION PUMP #1 (FB-LIP-1)	1	100.0	112.0	124.0
MCC-59A, BUS #1	1		72.3	93.8
TOTAL MCC-59 BUS 1	1		469.1	560.8

(1)

MCC-59 BUS 2 LOAD CALCULATION

EQUIPMENT	BUS No.	H.P.	DEMAND KVA	DEMAND AMPERES
MCC-59B, BUS #2	2		32.1	38.6
LAWN IRRIGATION PUMP #1 (FB-LIP-1)	2	100.0	112.0	124.0
MECHANICAL MIXER #2 (JC-4-MM-2)	2	10.0	11.6	14.0
THICK TANKS DIL. WATER #2 (FB-TDP-2)	2	20.0	22.0	27.0
SAMPLE PUMP 2 (CA-SSP-2)	2	0.5	0.8	1.0
SAMPLE PUMP 3 (CA-SSP-3)	2	0.5	0.8	1.0
SUMP PUMP 2 (PT-SP-1)	2	7.5	9.1	11.0
DECHLORINATION PUMP #2	2	40.0	43.2	52.0
CHLORINE SOL WATER PMP #2 (FB-CHSW-2)	2	50.0	54.0	65.0
EFF WATER STRAINER B/W PUMP #2 (SBW-2)	2	15.0	17.5	21.0
EFF WATER STRAINER DRIVE (EWS-2)	2	0.3	0.6	0.7
SAMPLE PUMP 4 (CA-SSP-4)	2	7.5	9.1	11.0
SLUICE GATES SG-13 TO SG-16	2	4.0	6.0	7.2
MCC-59A, BUS #2	2		86.2	111.7
TOTAL MCC-59 BUS 1	1		414.1	496.2

(2)

KEYED NOTES:

(1) MCC-59 BUS 1 LOAD IS CALCULATED AS 571.8 AMPERES:
(2) MCC-59 BUS 2 LOAD IS CALCULATED AS 496.2 AMPERES:
(3) MCC-59A BUS 1 LOAD IS CALCULATED AS 104.8 AMPERES:
(4) MCC-59A BUS 2 LOAD IS CALCULATED AS 122.7 AMPERES:

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019

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REVIEWED FOR CODE COMPLIANCE

TEMPORARY CIRCUIT BREAKER AND CONDUCTOR CALCULATIONS

Red line "As Builts"
Date: 2/7/22
Approved:
Approved:

MCC-59

LOAD OF MCC-59 BUS 1 = 571.8 AMPERES

LOAD OF MCC-59 BUS 2 = 496.2 AMPERES

CIRCUIT BREAKERS TO BE UTILIZED FOR TEMPORARY POWER MCC-59 FEEDERS WILL BE 600 AMPERES.

TEMPORARY FEEDERS FOR MCC-59 BUS 1 AND MCC-59 BUS 2 SHALL CONSIST OF –

TWO (2) PARALLEL RUNS OF 4 CONDUCTOR 350 MCM CU TRAY CABLE. 75' RATING FOR A SINGLE 4 CONDUCTOR 350 MCM CU TRAY CABLE IS 310 AMPERES. WITH CONDUCTORS IN PARALLEL 2 X 310A = 620 AMPERES.

MCC-59A

LOAD OF MCC-59A BUS 1 = 104.8 AMPERES

LOAD OF MCC-59A BUS 2 = 122.7 AMPERES

CIRCUIT BREAKERS TO BE UTILIZED FOR TEMPORARY POWER MCC-59A FEEDERS WILL BE 400 AMPERES.

TEMPORARY FEEDERS FOR MCC-59A BUS 1 AND MCC-59A BUS 2 SHALL CONSIST OF –

TWO PARALLEL RUNS OF 4 CONDUCTOR 3/0 CU TRAY CABLE. 75' RATING FOR A SINGLE 4 CONDUCTOR 3/0 CU TRAY CABLE IS 200 AMPERES. WITH CONDUCTORS IN PARALLEL 2 X 200A = 400 AMPERES.

MCC-59A BUS 1 LOAD CALCULATION

EQUIPMENT	BUS No.	H.P.	DEMAND KVA	DEMAND AMPERES
SUPPLY FAN FB-S-1A	1	15.0	17.6	21.0
EXHAUST FAN FB-REF-2	1	3.0	3.2	4.8
UNIT HEATER FB-UH-1	1		3.6	12.0
CHLORINE EVAPORATOR #1 (FB-EV-1)	1		17.6	21.0
CHLORINE EVAPORATOR #3 (FB-EV-3)	1		17.6	21.0
CHLORINE SOLUTION PUMP #1 (FB-CSSP-1)	1	10.0	12.7	14.0
TOTAL MCC-59A BUS 1	1		72.3	93.8

(3)

MCC-59A BUS 2 LOAD CALCULATION

EQUIPMENT	BUS No.	H.P.	DEMAND KVA	DEMAND AMPERES
CHLORINE EVAPORATOR #2 (FB-EV-2)	2		17.6	21.0
CHLORINE EVAPORATOR #4 (FB-EV-4)	2		17.6	21.0
CHLORINE SOLUTION PUMP #2 (FB-CSSP-2)	2	10.0	12.7	14.0
SUPPLY FAN FB-S-1B	2	15.0	17.6	21.0
EXHAUST FAN FB-REF-2	2	3.0	3.2	4.8
UNIT HEATER FB-UH-2	2		3.6	12.0
MONORAIL HOIST (FB-MH-1)	2	3.0	3.2	4.8
PANELBOARD 'PP'	2	7.5	9.1	11.0
SUPPLY/DRAIN VALVE NOV	2	1.0	1.6	2.1
TOTAL MCC-59A BUS 2	2		86.2	111.7

(4)

TIMOTHY THOMAS LICENSED No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.10 0.1.1=A010980000001 508582E42C00005387
2019.02.06 12:04:57 -05'00'

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd. Suite 250 Tampa, FL 33602 813.227.8100 Certificate of Authorization No. 8363

JOB No.	171700842
DESIGNED	TDT
DRAWN	JLH
CHECKED	TDT
DATE	3/2018

No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

TEMPORARY POWER LOAD AND CONDUCTOR SIZING CALCULATIONS

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E-35
FILE: 171700842E07

TEMPORARY POWER CONDUIT AND CABLE SCHEDULE

CONDUIT No.	SIZE	NUMER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
58TM1	TRAY	4/C: 350 MCM CU + 1-#1 GND	MCC-58 BUS 1	TEMP MCC-59 BUS 1	CONDUCTORS TO BE NEW. INSTALLED IN 24" CABLE TRAY.
58TM2	TRAY	4/C: 350 MCM CU + 1-#1 GND	MCC-58 BUS 1	TEMP MCC-59 BUS 1	CONDUCTORS TO BE NEW. INSTALLED IN 24" CABLE TRAY.
58TM3	TRAY	4/C: 350 MCM CU + 1-#1 GND	MCC-58 BUS 2	TEMP MCC-59 BUS 2	CONDUCTORS TO BE NEW. INSTALLED IN 24" CABLE TRAY.
58TM4	TRAY	4/C: 350 MCM CU + 1-#1 GND	MCC-58 BUS 2	TEMP MCC-59 BUS 2	CONDUCTORS TO BE NEW. INSTALLED IN 24" CABLE TRAY.
59TM1	TRAY	TWO RUNS OF 4/C: 3/0 CU + 1-#3 GND	TEMP MCC-59 BUS 1	TEMP MCC-59A BUS 1	CONDUCTORS TO BE NEW. INSTALLED IN 12" CABLE TRAY AND 3" CONDUIT.
59TM2	TRAY	TWO RUNS OF 4/C: 3/0 CU + 1-#3 GND	TEMP MCC-59 BUS 2	TEMP MCC-59A BUS 2	CONDUCTORS TO BE NEW. INSTALLED IN 12" CABLE TRAY AND 3" CONDUIT.
59TM17	TRAY	4/C: 1/0 CU + 1-#6 GND	TEMP MCC-59 BUS 1	MCC-59B BUS 1	CONDUCTORS TO BE NEW. INSTALLED IN 12" CABLE TRAY AND 3" CONDUIT.
59TM17A	TRAY	4/C: 1/0 CU + 1-#8 GND	TEMP MCC-59 BUS 2	MCC-59B BUS 2	CONDUCTORS TO BE NEW. INSTALLED IN 12" CABLE TRAY AND 3" CONDUIT.

City of Tampa
CONSTRUCTION SERVICES DIVISION
PLAN APPROVAL
Feb 8, 2019

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REVIEWED FOR CODE COMPLIANCE

Red line "As Builts"
Date: 2/17/22
Approved: KAC
Approved:

TIMOTHY THOMAS LICENSE No 47079 STATE OF FLORIDA PROFESSIONAL ENGINEER

Timothy D Thomas
c=US, o=IdenTrust ACES Unaffiliated Individual, cn=Timothy D Thomas, 0.9.2342.19200300.100.1.1=A0109800 00001508582E42C00005387
2019.02.06 12:05:35 -05'00'

TRICON CONSULTING ENGINEERS
777 S. Harbour Island Blvd, Suite 250
Tampa, FL 33602
813.227.9100
Certificate of Authorization No. 6363

JOB No.	171700842						
DESIGNED	TDT						
DRAWN	JLH						
CHECKED	TDT	1	2/5/19	TDT	TDT	CONDUCTOR REVISIONS	
DATE	3/2018	No.	DATE	BY	APP	REVISION DESCRIPTION	

SCALE: NOT TO SCALE

City of Tampa Wastewater Department
HOWARD F. CURREN AWTP
MOTOR CONTROL CENTER 59
AND 59A REPLACEMENT

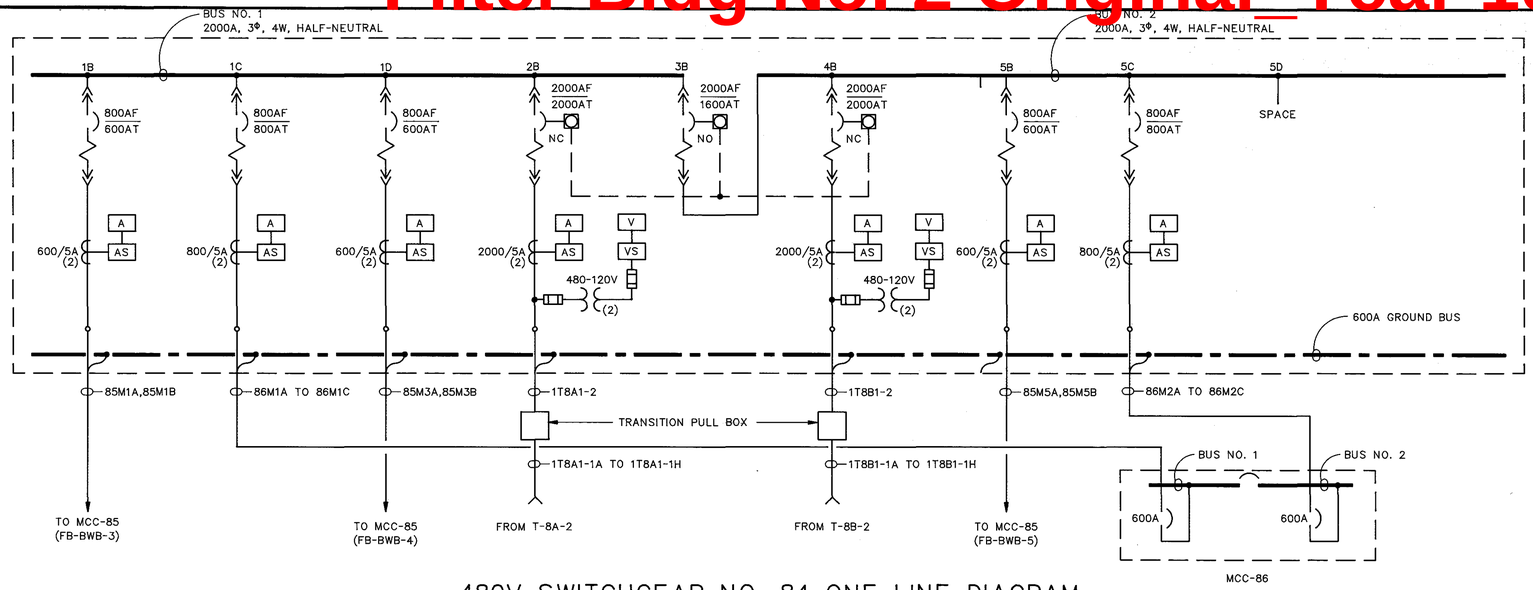
TEMPORARY CABLE SCHEDULE

TIMOTHY THOMAS, P.E. No. 47079

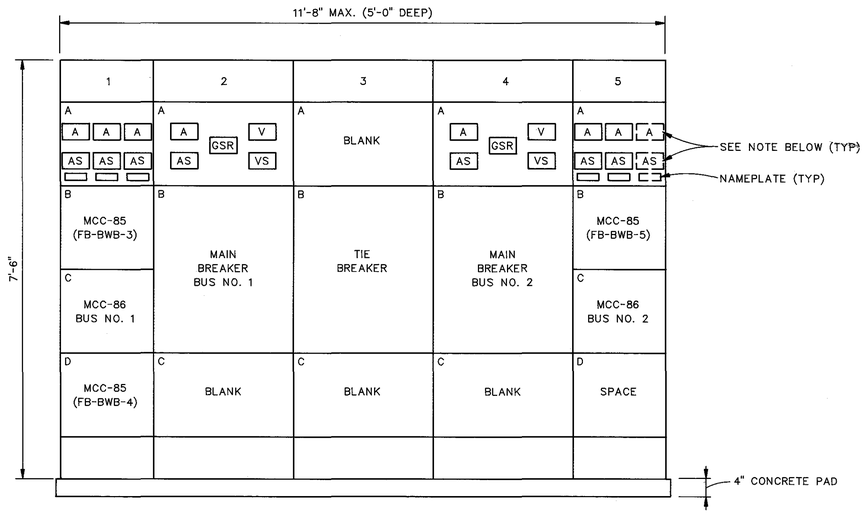
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FILE: 171700842E01

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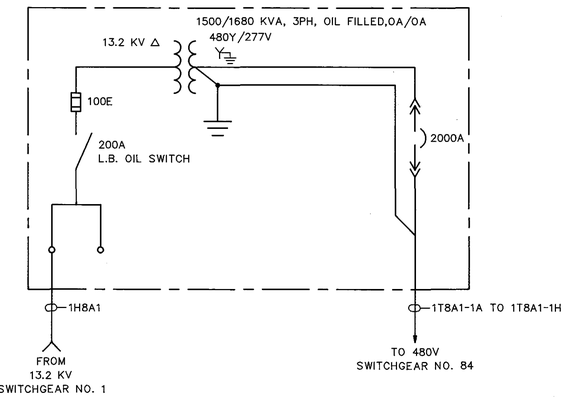


480V SWITCHGEAR NO. 84 ONE LINE DIAGRAM



480V SWITCHGEAR NO. 84 FRONT ELEVATION

NOTE: PROVIDE ALL CUTOUTS, DRILLINGS AND COVER PLATES FOR FUTURE AMMETERS AND AMMETER SWITCHES.



SUBSTATION TRANSFORMER T-8A-1

SIMILAR FOR T-8B-1

RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

44a

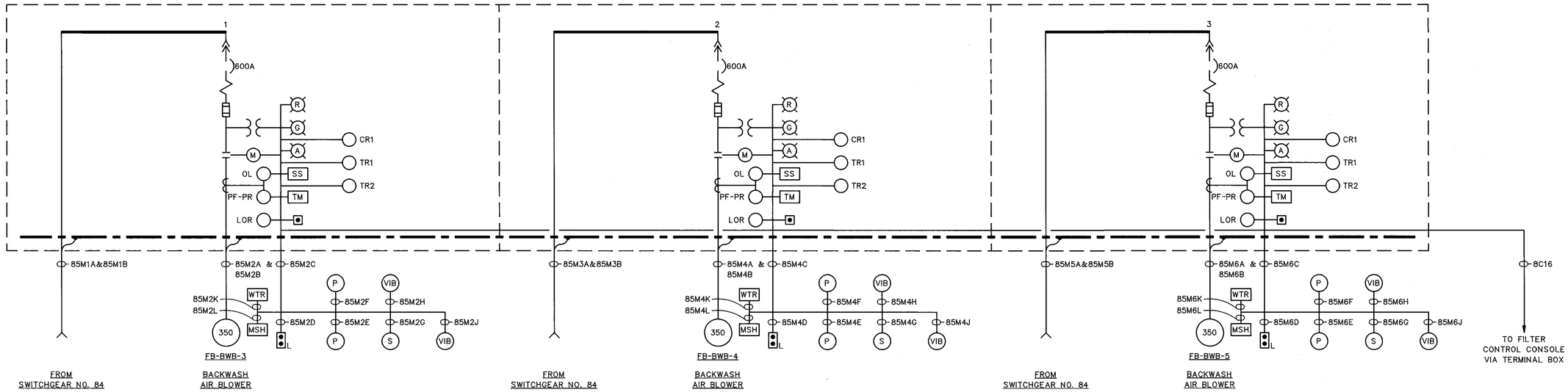
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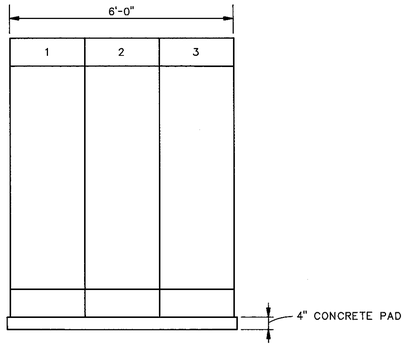
GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED BBK DRAWN AF CHECKED SSH	APPROVED _____ DATE _____ _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	NO. DATE APP REVISION	SCALE NO SCALE	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT PLANT EXPANSION PHASE I DIVISION 5H1 STRUCTURES AND EQUIPMENT

FILTER BUILDING NO. 2
ELECTRICAL
480V SWITCHGEAR NO. 84 ONE LINE DIAGRAM

PROJ NO.
DWG JEI
SHEET 157 OF 203
DATE JAN 1989 REV 0



MCC-85 ONE LINE DIAGRAM



MCC-85 FRONT ELEVATION

RECORD DRAWING

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FLDGMB; TAM0056 12/5/1988 (11:48:39)

209788

446

GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED BBK DRAWN ATK CHECKED SSH	APPROVED DATE DATE GREELEY AND HANSEN, ENGINEERS	NO. DATE APP REVISION	SCALE NO SCALE	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT PLANT EXPANSION PHASE I DIVISION 5H1 STRUCTURES AND EQUIPMENT	FILTER BUILDING NO. 2 ELECTRICAL MCC-85 ONE LINE DIAGRAM	PROJ NO. DWG JE2 SHEET 158 OF 203 DATE JAN 1989 REV 0

CITY OF TAMPA, FLORIDA

PLANS FOR HOOKERS POINT WASTEWATER TREATMENT PLANT EXPANSION PHASE I

DIVISION 5H1 STRUCTURES AND EQUIPMENT

SCREEN AND GRIT FACILITIES
DENITRIFICATION FILTER FACILITIES

PROJECT NO. C120473670

JANUARY 1989

RECORD DRAWING

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ENGINEER

GREELEY AND HANSEN
4350 West Cypress Street
Tampa, Florida 33607

GREELEY AND HANSEN

CIVIL
ARTHUR H. ADAMS, P.E.
FLORIDA REGISTERED
PROFESSIONAL ENGINEER
NO. 33552
DATE: January 1989
SIGNATURE:

ELECTRICAL
STANLEY S. HONG, P.E.
FLORIDA REGISTERED
PROFESSIONAL ENGINEER
NO. 39729
DATE: January 1989
SIGNATURE:

HVAC
EARL L. HECKMAN, P.E.
FLORIDA REGISTERED
PROFESSIONAL ENGINEER
NO. 39349
DATE:
SIGNATURE:

KLEIN AND HOFFMAN

STRUCTURAL
SATISH K. SACHDEV, P.E.
FLORIDA REGISTERED
PROFESSIONAL ENGINEER
NO. 38975
DATE:
SIGNATURE:

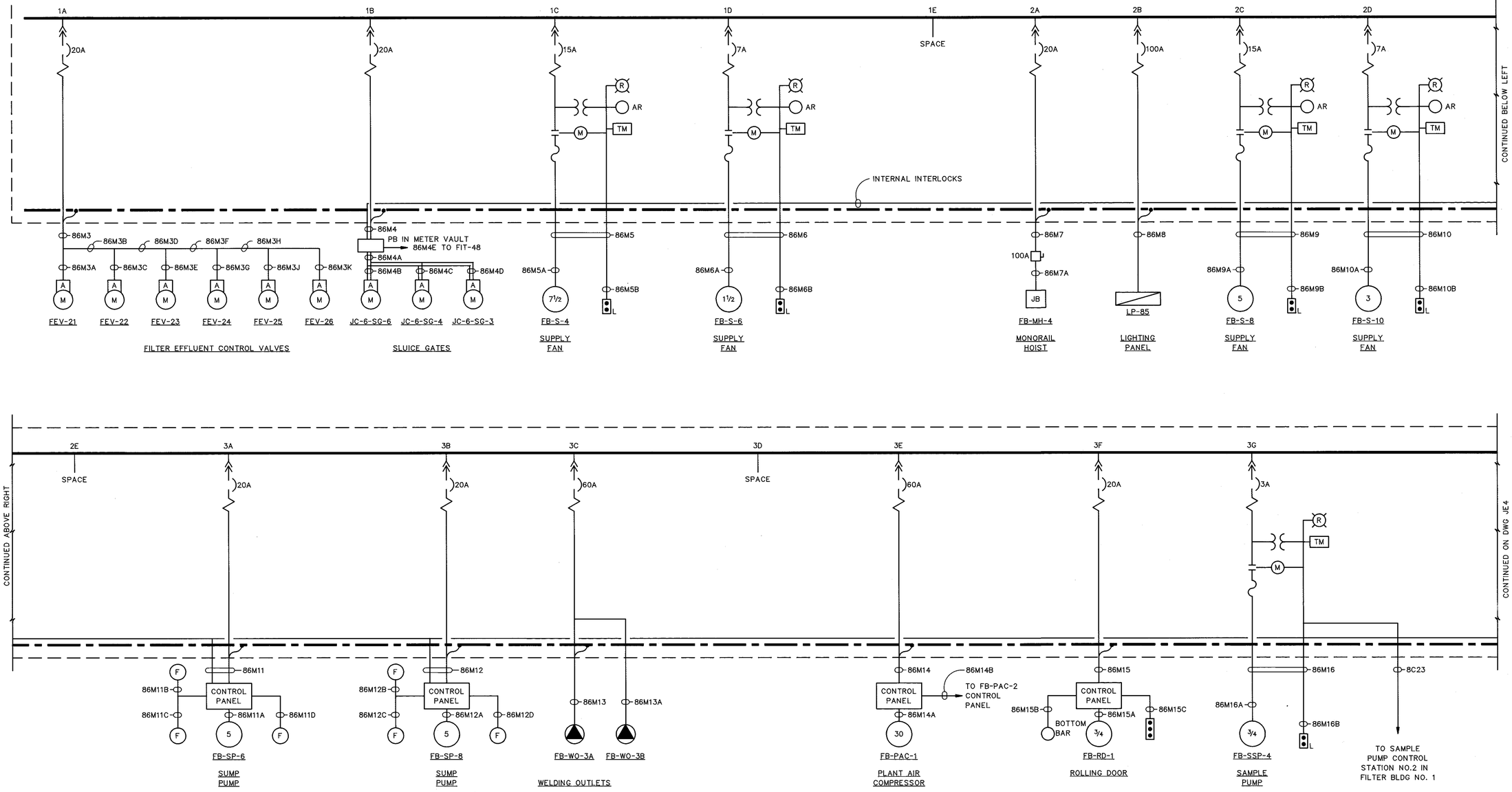
ADVANCED ENGINEERING, P.C.

CIVIL/OUTSIDE PIPING
EUGENE M. BENTLEY III, P.E.
FLORIDA REGISTERED
PROFESSIONAL ENGINEER
NO. 22465
DATE: January 1989
SIGNATURE:

FLORIDA LAND DESIGN & ENGINEERING

CIVIL/SURVEYING
GARY J. VOLENEC, P.E.
FLORIDA REGISTERED
PROFESSIONAL ENGINEER
NO. 32711
DATE: January 1989
SIGNATURE:

VOL. II



MCC-86 ONE LINE DIAGRAM

RECORD DRAWING

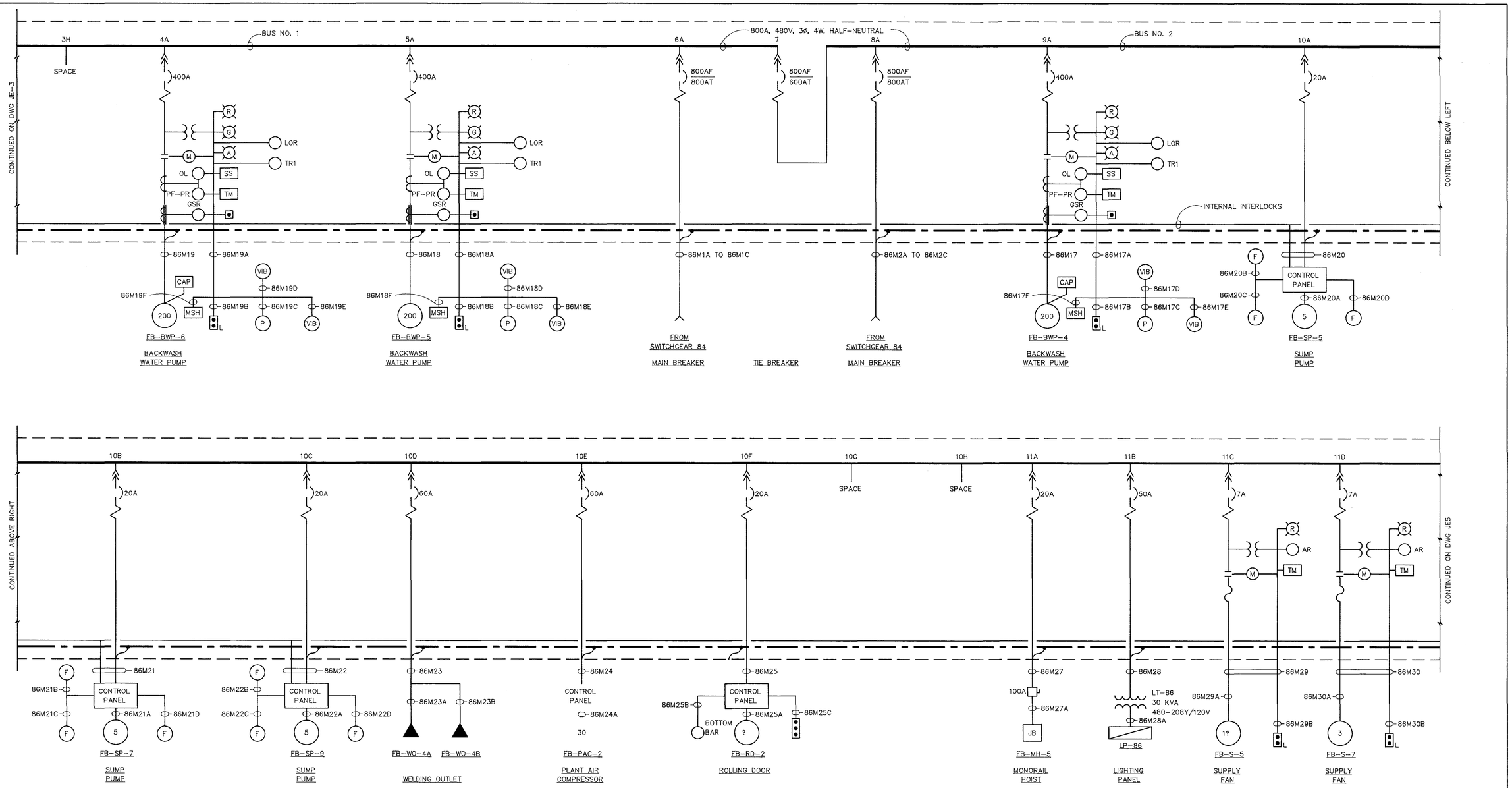
THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

PLOTTED: THURSDAY, 12/29/1988 (11:56:40)

GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED BBK DRAWN AF CHECKED SSH	APPROVED _____ DATE _____ _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	NO. DATE APP REVISION	SCALE NO SCALE	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT PLANT EXPANSION PHASE I DIVISION 5H1 STRUCTURES AND EQUIPMENT FILTER BUILDING NO. 2 ELECTRICAL MCC-86 ONE LINE DIAGRAM	PROJ NO. DWG JE3 SHEET 159 OF 203 DATE JAN 1989 REV 0

45

550288



MCC–86 ONE LINE DIAGRAM

RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRENTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

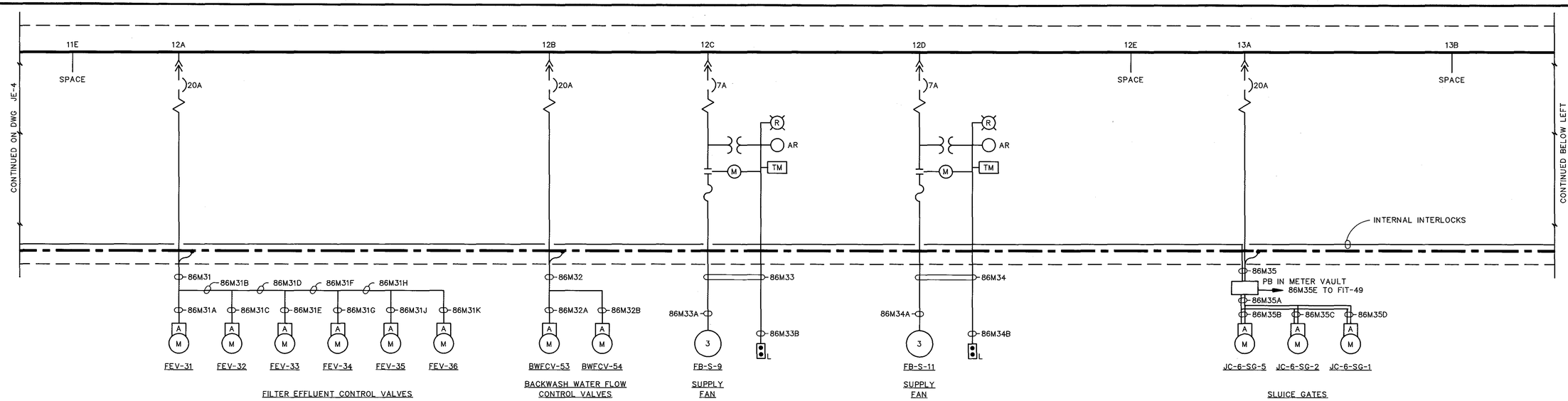
GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607–4135	DESIGNED BBK DRAWN ATK CHECKED SSH	APPROVED DATE DATE GREELEY AND HANSEN, ENGINEERS	NO.	DATE	APPD	REVISION	SCALE NO SCALE
			1	10/15/92	BBK	RECORD DWG REVISIONS	

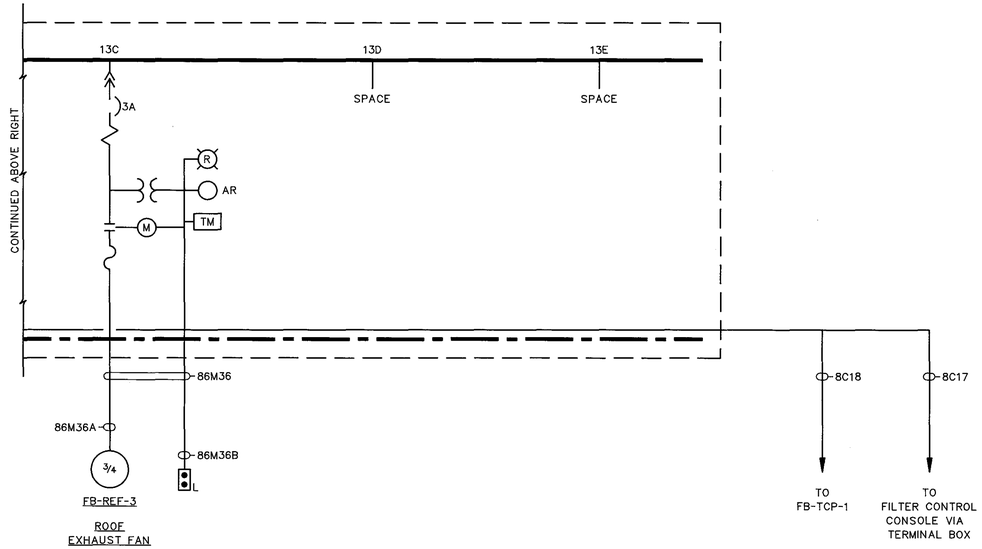
CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

ELECTRICAL
FILTER BUILDING NO. 2
MCC–86 ONE LINE DIAGRAM

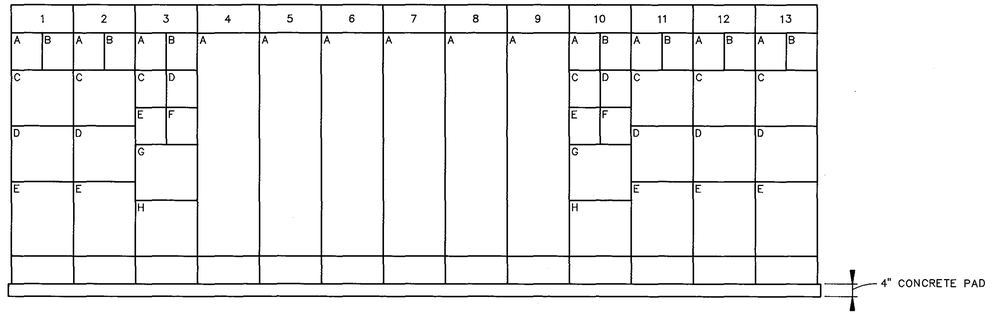
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DWG JE 4
SHEET 160 OF 203
DATE JAN 1989 REV 1

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MCC-86 ONE LINE DIAGRAM



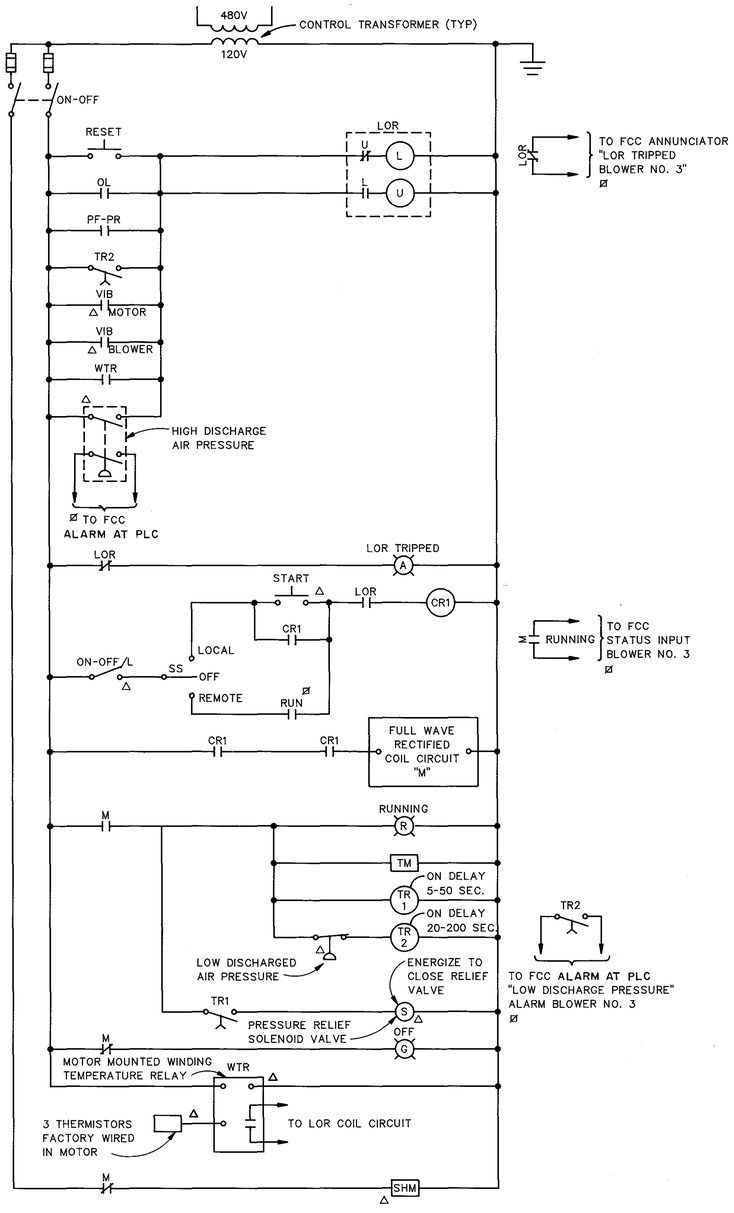
MCC-86 FRONT ELEVATION

RECORD DRAWING

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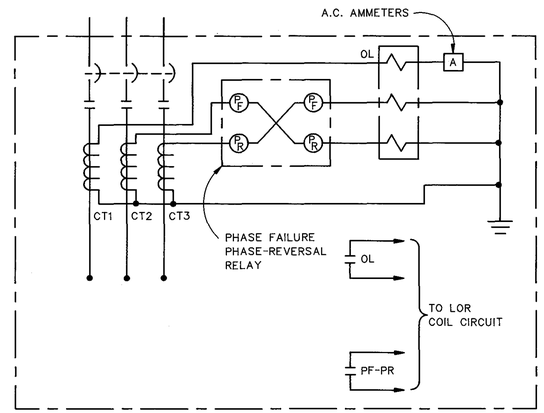
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GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED BBK DRAWN AF CHECKED SSH	APPROVED _____ DATE _____ _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	NO. DATE APP REVISION	SCALE NO SCALE	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT PLANT EXPANSION PHASE I DIVISION 5H1 STRUCTURES AND EQUIPMENT	FILTER BUILDING NO. 2 ELECTRICAL MCC-86 ONE LINE DIAGRAM	PROJ NO. DWG JE5 SHEET 161 OF 203 DATE JAN 1989 REV 0



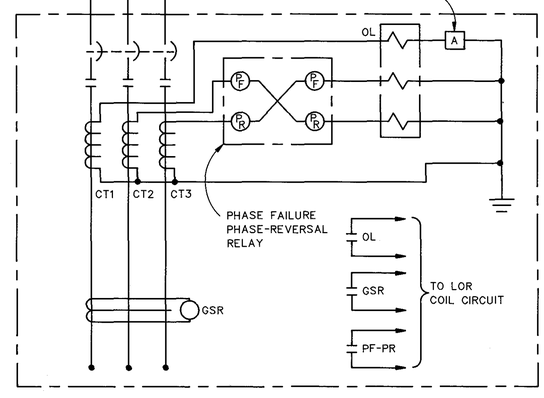
BACKWASH AIR BLOWER FB-BWB-3

SIMILAR FOR FB-BWB-4,-5



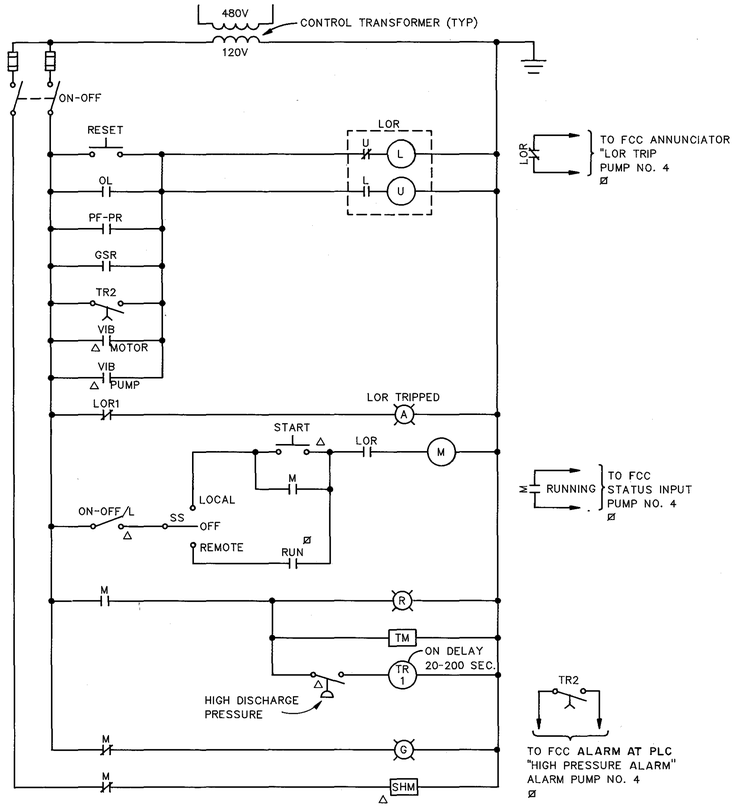
PHASE FAILURE-PHASE REVERSAL, OVERLOAD RELAYS AND AMMETER CONTROL CIRCUIT

TYPICAL FOR BACKWASH AIR BLOWER FB-BWB-3,-4 & -5



PHASE FAILURE-PHASE REVERSAL, OVERLOAD, GROUND SENSING RELAYS AND AMMETER CONTROL CIRCUIT

TYPICAL FOR BACKWASH WATER PUMPS FB-BWP-4,-5,-6



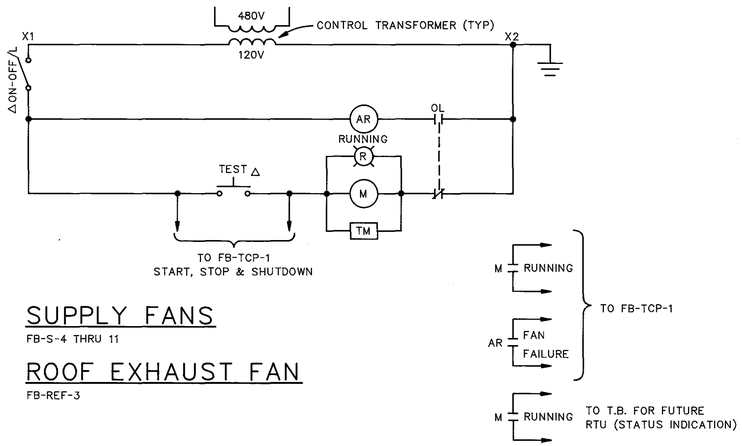
BACKWASH WATER PUMP FB-BWP-4

SIMILAR FOR FB-BWB-5, 6

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

FILENAME: TAMCHK15 (JCD/JMM 08-18-94)

GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED BBK DRAWN AF CHECKED SSH	APPROVED _____ DATE _____ _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	2	10/15/92		REC DWG REVISIONS	SCALE NO SCALE	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT PLANT EXPANSION PHASE I DIVISION 5H1 STRUCTURES AND EQUIPMENT	FILTER BUILDING NO. 2 ELECTRICAL SCHEMATIC DIAGRAM	PROJ NO. DWG JE6 SHEET 162 OF 203 DATE JAN 1989 REV 2
			NO.	DATE	APP	REVISION				

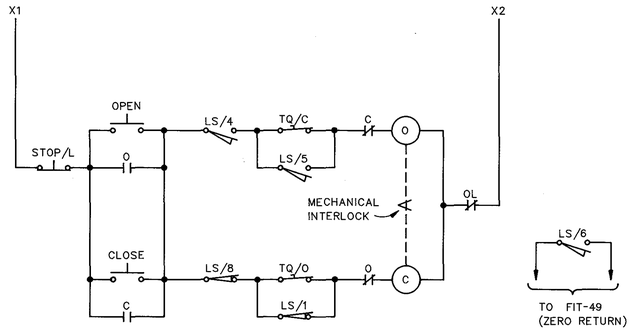


SUPPLY FANS

FB-S-4 THRU 11

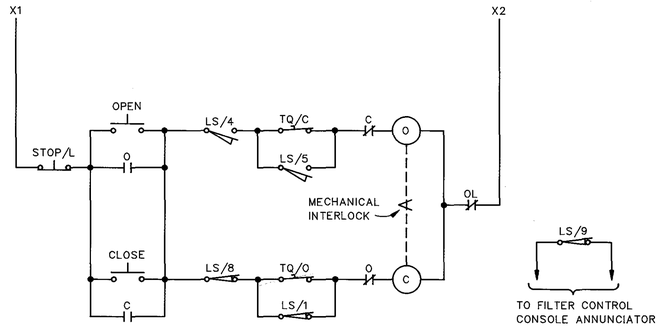
ROOF EXHAUST FAN

FB-REF-3



SLUICE GATE JC-6-SG-1

SIMILAR FOR JC-6-SG-2 THRU JC-6-SG-4



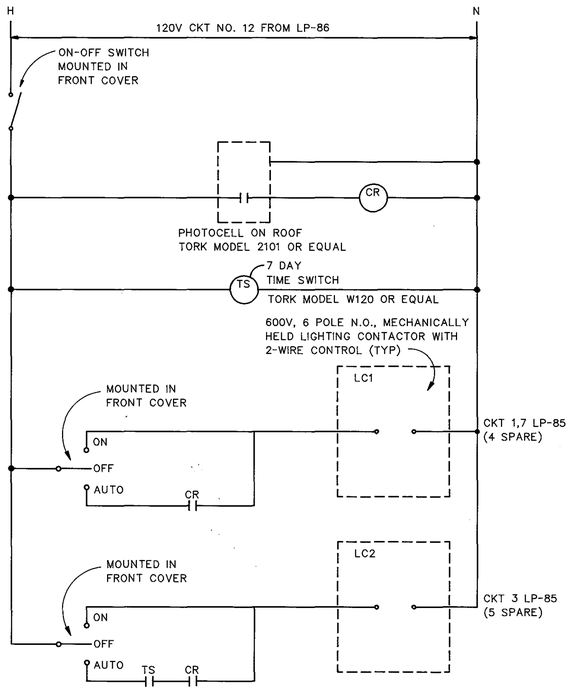
SLUICE GATES

JC-6-SG-5 & 6

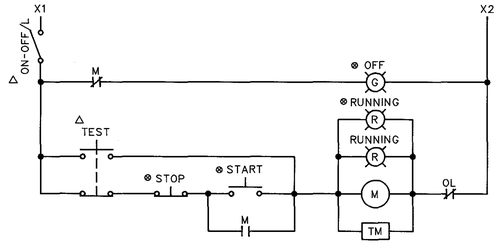
TYPICAL LIMIT SWITCH CONTACT DEVELOPMENT FOR MOTORIZED GATE AND VALVE OPERATORS					
ROTOR NO.	CONTACT NO.	OPERATOR POSITION			CONTACT FUNCTION
		FULL OPEN	INTER-MEDIATE	FULL CLOSED	
1	1	▬	– –	– –	BYPASS CKT
	2	▬	– –	– –	AUXILIARY
	3	– –	▬	▬	AUXILIARY
	4	– –	▬	▬	FORWARD (OPEN) LIMIT
2	5	– –	– –	▬	BYPASS CKT
	6	– –	– –	▬	AUXILIARY
	7	– –	▬	▬	AUXILIARY
	8	▬	▬	– –	REVERSE (CLOSED) LIMIT
3	9	▬	▬	– –	AUXILIARY
	10	▬	▬	– –	AUXILIARY
	11	– –	▬	▬	AUXILIARY
	12	– –	– –	▬	AUXILIARY
4	13	– –	▬	▬	AUXILIARY
	14	– –	▬	▬	AUXILIARY
	15	▬	– –	– –	AUXILIARY
	16	▬	– –	– –	AUXILIARY

TQ/C - CLOSING TORQUE SWITCH
TQ/O - OPENING TORQUE SWITCH
▬ INDICATES CONTACT CLOSED
– – INDICATES CONTACT OPEN

SEE SCHEMATIC DIAGRAMS FOR FUNCTION
OF THE "AUXILIARY" LIMIT SWITCH CONTACTS



LIGHTING CONTACTOR PANEL LCP-85



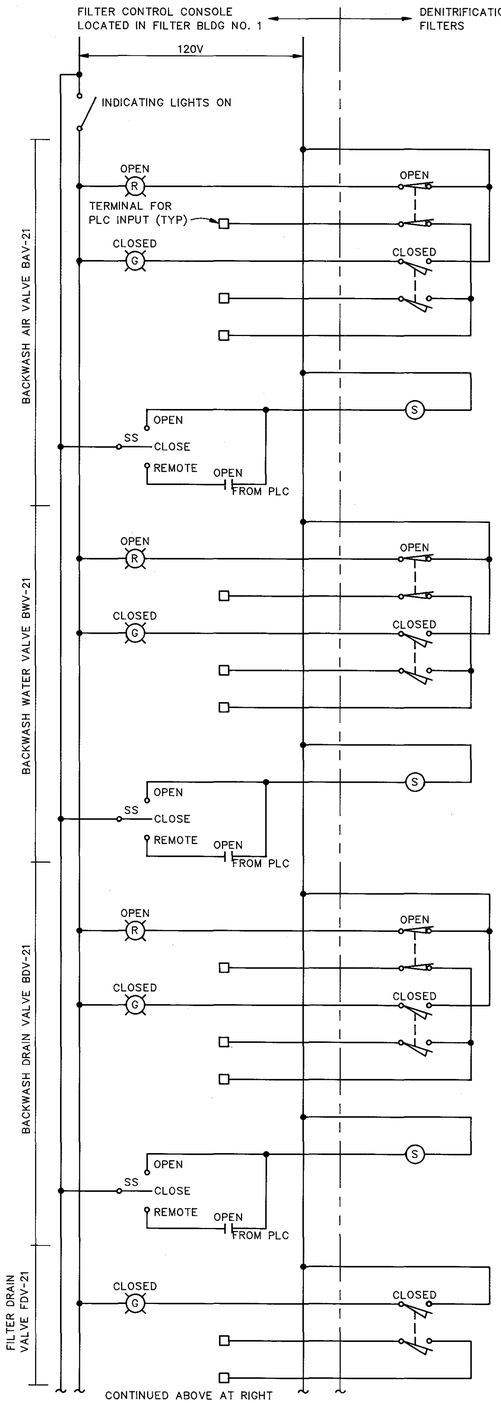
SEWAGE SAMPLE PUMP FB-SSP-4

⊗ DENOTES DEVICES LOCATED IN SAMPLE PUMP CONTROL STATION NO. 2 IN EXISTING FILTER BUILDING NO. 1

RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED BBK DRAWN LCC CHECKED SSH	APPROVED _____ DATE _____ _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	NO. DATE APP REVISION	SCALE NONE	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT PLANT EXPANSION PHASE I DIVISION 5H1 STRUCTURES AND EQUIPMENT	FILTER BUILDING NO.2 ELECTRICAL SCHEMATIC DIAGRAMS	PROJ NO. DWG JE7 SHEET 163 OF 203 DATE JAN 1989 REV 0



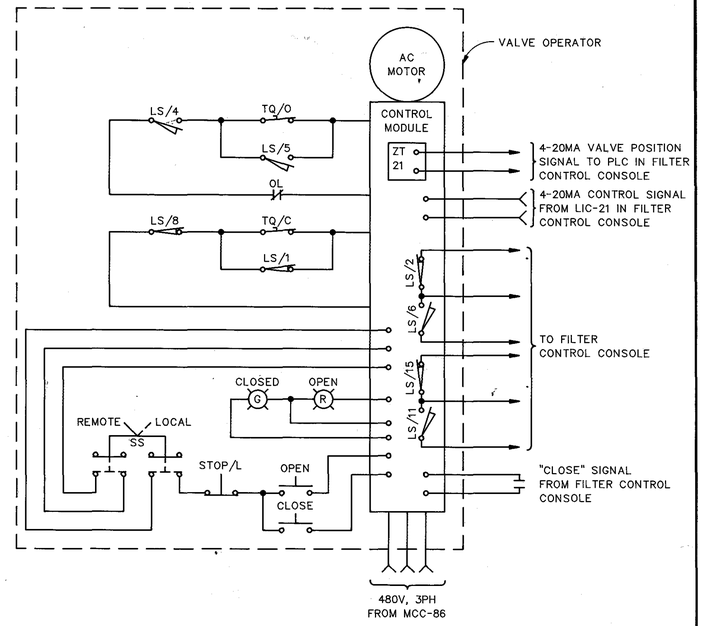
DENITRIFICATION FILTER CONTROL FILTER INFLUENT VALVE

TYPICAL LIMIT SWITCH CONTACT DEVELOPMENT FOR MOTORIZED GATE AND VALVE OPERATORS

ROTOR NO.	CONTACT NO.	OPERATOR POSITION: FULL OPEN	OPERATOR POSITION: INTER-MEDIATE	OPERATOR POSITION: FULL CLOSED	CONTACT FUNCTION
1	1	———	– – –	– – –	BYPASS CKT
	2	———	– – –	– – –	AUXILIARY
	3	– – –	———	———	INDICATOR LIGHT
	4	– – –	———	———	FORWARD (OPEN) LIMIT
2	5	– – –	– – –	———	BYPASS CKT
	6	– – –	– – –	———	AUXILIARY
	7	———	———	– – –	INDICATOR LIGHT
	8	———	———	– – –	REVERSE (CLOSED) LIMIT
3	9	———	———	– – –	AUXILIARY
	10	———	———	– – –	AUXILIARY
	11	– – –	– – –	———	AUXILIARY
	12	– – –	– – –	———	AUXILIARY
4	13	– – –	———	———	AUXILIARY
	14	– – –	———	———	AUXILIARY
	15	———	– – –	– – –	AUXILIARY
	16	———	– – –	– – –	AUXILIARY

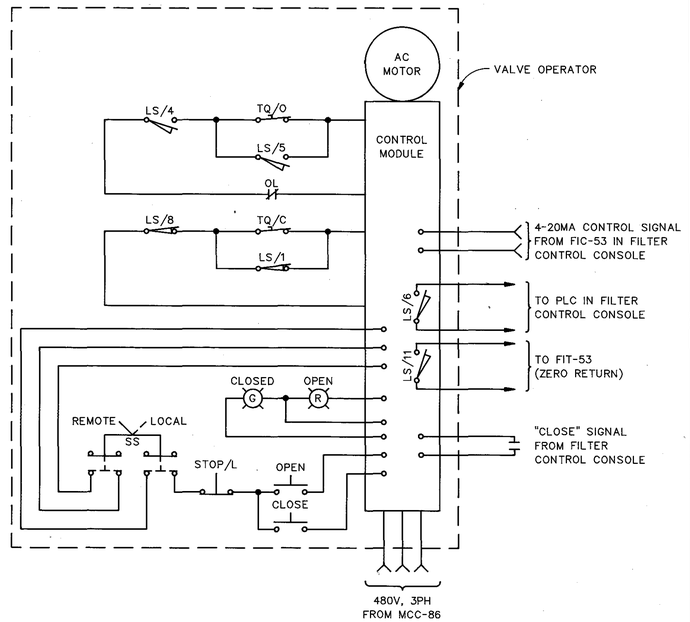
TQ/C - CLOSING TORQUE SWITCH
TQ/O - OPENING TORQUE SWITCH
——— INDICATES CONTACT CLOSED
– – – INDICATES CONTACT OPEN

SEE SCHEMATIC DIAGRAMS FOR FUNCTION OF THE "AUXILIARY" LIMIT SWITCH CONTACTS



FILTER EFFLUENT VALVE - FEV-21

SIMILAR FOR FEV-22 THRU FEV-26 AND FEV-31 THRU FEV-36



BACKWASH WATER FLOW CONTROL VALVE BWFCV-53

SIMILAR FOR BWFCV-54

RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN LCC
CHECKED SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION
2	10/16/92		REC DWG REVISIONS

SCALE: NO SCALE

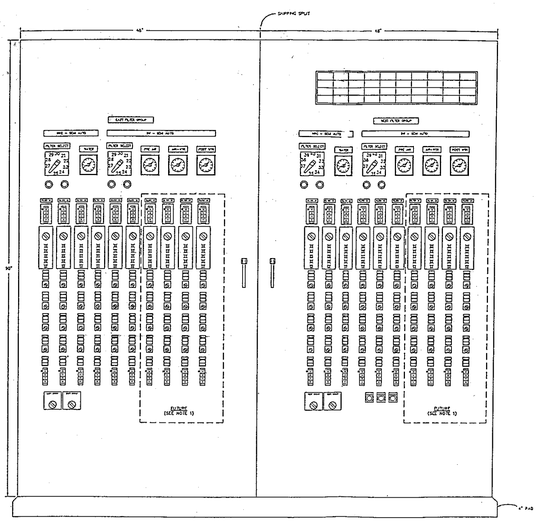
CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

FILTER BUILDING NO.2
ELECTRICAL
SCHEMATIC DIAGRAMS

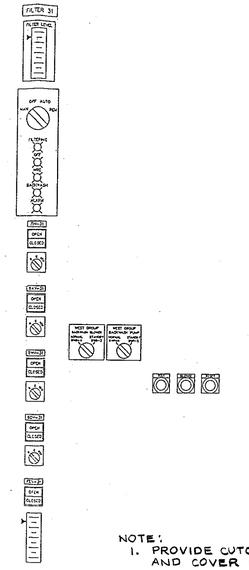
PROJ NO.
DWG JE8
SHEET 164 OF 203
DATE JAN 1989 REV 2

50

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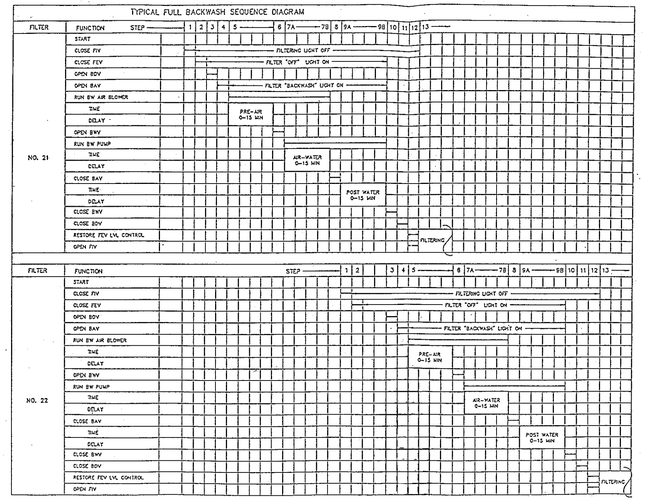


FRONT ELEVATION
FILTER CONTROL PANEL IN
FILTER BUILDING NO. 2



NOTE:
1. PROVIDE CUTOUTS AND COVER PLATES

TYPICAL FULL BACKWASH SEQUENCE DIAGRAM



FULL BACKWASH MODE DESCRIPTION

AUTO MODE

INITIATE AN AUTOMATIC BACKWASH WHEN ONE OF THE FOLLOWING CONDITIONS OCCUR.

- REQUEST FROM THE WORKSTATION KEYBOARD (EITHER GROUP OR INDIVIDUAL)
- INITIATE GROUP BACKWASH WHEN THE MASTER NRC COUNTER IN THE PLC COUNTS TO ZERO FOR THAT GROUP.
- WHEN FILTER HIGH LEVEL IS DETECTED INITIATE INDIVIDUAL FILTER BACKWASH.

GROUP BACKWASH CAUSES ALL FILTERS IN RESPECTIVE GROUP TO BACKWASH SEQUENTIALLY AS SHOWN ON AM8 WITH A GROUP NRC BETWEEN EACH PAIR OF FILTERS. FILTER BACKWASH INITIATED BY HIGH WATER LEVEL WITH FULLY OPEN EFFLUENT VALVE CAUSES IMMEDIATE ACTIVATION. SEQUENCE PAUSES AT END OF STEP 2 IF ANOTHER FILTER IN RESPECTIVE GROUP IS WASHING. SIMULTANEOUS HIGH LEVEL ACTIVATION FOR MULTIPLE FILTERS WILL ALLOW ONLY TWO FILTERS TO BE OFF LINE AT THE SAME TIME SEQUENCE WILL PROCEED BASED ON THE ORDER IN WHICH FILTERS GO OFF LINE. A FILTER WASHED DUE TO HIGH LEVEL WILL BE SKIPPED BY THE GROUP BACKWASH.

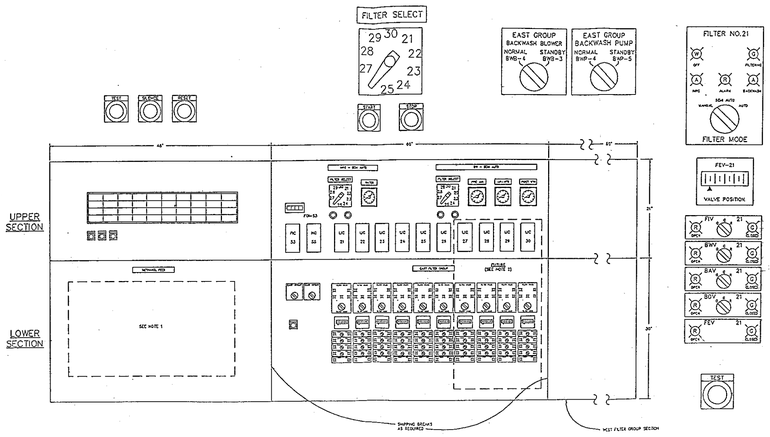
SEMI AUTO MODE

INTENDED TO PROVIDE BACKWASH FOR A SINGLE FILTER. SEQUENCE IS IDENTICAL EXCEPT IT USES THE PANEL DURATION TIMERS FOR PRE-AIR, AIR-WATER AND POST AIR.

AT THE END OF THE BACKWASH, IN THIS MODE, STEP 12 AND 13 ARE NOT INCLUDED. THE FILTER REMAINS IN "OFF" STATUS UNTIL SWITCHED TO AUTO MODE.

MANUAL MODE

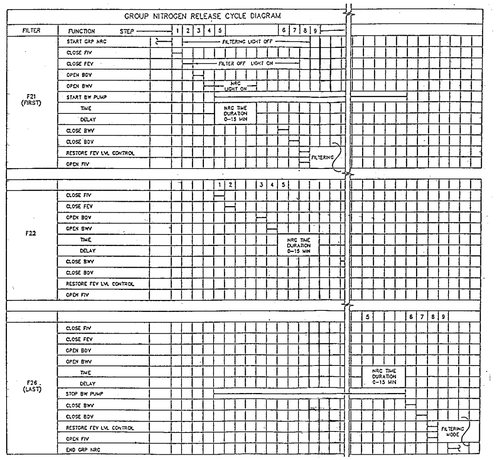
IN THIS MODE ALL OPEN - CLOSE - AUTO VALVE SECTOR SWITCHES ON THE RESPECTIVE CONSOLE OR PANEL ARE ACTIVE. THE MODE PERMITS MANUAL SEQUENCING OF VALVES. FILTERS SWITCHED FROM MANUAL TO SEMI-AUTO WILL BE PLACED INTO AN "OFF" CONFIGURATION WITH ALL VALVES FULL CLOSED AND REMAIN THIS WAY UNTIL THE SEMI-AUTO SEQUENCE IS STARTED.



NEW FILTER CONTROL CONSOLE
METHANOL CONTROL AND
ANNUNCIATOR SECTION

NEW FILTER CONTROL CONSOLE
EAST FILTER GROUP SECTION
(TYP. FOR WEST FILTER GROUP)

GROUP NITROGEN RELEASE CYCLE DIAGRAM



NOTES:
1. METHANOL CONTROL SECTION AS PER DWG AM7.
2. PROVIDE CUTOUTS AND COVER PLATES

FULL BACKWASH SEQUENCE DESCRIPTION

STEP	DESCRIPTION
	INITIATE A GROUP BACKWASH IN AUTO MODE AS DESCRIBED ABOVE
1.	CLOSE INFLUENT VALVE. WHEN VALVE IS CONFIRMED CLOSED TURN OFF "FILTERING" LIGHT ON THE PANEL AND MOVE TO NEXT STEP.
2.	CLOSE INFLUENT VALVE. WHEN VALVE IS CONFIRMED CLOSED TURN ON THE "OFF" LIGHT ON PANEL. VERIFY NO OTHER FILTERS ARE IN WASH, THEN PROCEED TO NEXT STEP. OTHERWISE WAIT FOR FILTER TO COMPLETE WASH THEN PROCEED TO NEXT STEP.
3.	CONFIRM BOTH INFLUENT AND EFFLUENT VALVES CLOSED. OPEN BACKWASH DRAIN VALVE WHEN FULL OPEN MOVE TO NEXT STEP.
4.	OPEN BACKWASH AIR VALVE. WHEN FULL OPEN MOVE TO NEXT STEP.
5.	START BACKWASH AIR BLOWER IF ITS NOT RUNNING. START THE PRE-AIR DURATION TIMER. USE THE PCL TIMER FOR AUTO MODE. USE THE PANEL TIMER FOR SEMI-AUTO MODE. TURN ON THE "BACKWASH" LIGHT ON THE PANEL.
6.	WHEN PRE-AIR TIMER EXPIRES, OPEN BACKWASH WATER VALVE. WHEN FULL OPEN MOVE TO NEXT STEP.
7.	START BACKWASH PUMP IF ITS NOT RUNNING. START THE AIR-WATER DURING TIMER. USE THE PLC TIMER FOR AUTO MODE. USE THE PANEL TIMER FOR SEMI-AUTO MODE.
8.	WHEN AIR-WATER TIMER EXPIRES, STOP THE BACKWASH AIR BLOWER AND CLOSE THE BACKWASH AIR VALVE. WHEN AIR VALVE IS FULL CLOSED MOVE TO THE NEXT STEP.
9.	START THE POST-WATER DURATION TIMER. USE THE PLC TIMER FOR AUTO MODE. USE THE PANEL TIMER FOR SEMI AUTO MODE. WHEN TIMER EXPIRES STOP BACKWASH PUMP AND MOVE TO NEXT STEP.
10.	CLOSE THIS FILTER'S WASH WATER VALVE. TURN OFF THE BACKWASH LIGHT ON THE PANEL. WHEN FULL CLOSED MOVE TO NEXT STEP.
11.	CLOSE THE BACKWASH DRAIN VALVE. WHEN FULL CLOSED, TURN OFF THE FILTER "OFF" PANEL LIGHT AND MOVE TO NEXT STEP.
12.	RESTORE LEVEL CONTROL SIGNAL TO THE EFFLUENT VALVE. ONCE RESTORED OPEN THE FILTER INFLUENT VALVE. WHEN FULLY OPENED TURN ON THE "FILTERING" LIGHT ON THE PANEL.
13.	VERIFY LEVEL CONTROL WORKING. FILTER RESTORED TO NORMAL

FOR THE SECOND FILTER IN THE PNR:

1-2.	INITIATE STEPS 1 AND 2 WHEN FIRST FILTER IN PAIR ENTERS POST WATER PHASE AND TIMER STARTS. FILTER STAYS AT STEP 2 UNTIL FIRST FILTER "OFF" LIGHT GOES OFF. THEN PROCEEDS TO STEP 3.
3-8.	SAME
9A.	SAME EXCEPT THE GROUP NRC SEQUENCE IS INITIATED AT THIS STEP AND BW PUMP REMAINS ON.
9B.	WHEN POST WATER TIMER EXPIRES, INITIATE STEPS 3 AND 4 OF NRC FILTER.
10-13.	WHEN NRC REACHES ITS STEP 5, THEN THIS FILTER CONTINUES WITH STEPS 10-13.
NOTE:	EACH STEP MUST BE CONFIRMED BEFORE SEQUENCE PROCEEDS. FAILURE OF SEQUENCE TO PROPERLY ADVANCE WILL RESULT IN ACTIVATION OF RESPECTIVE SWITCHPLATE ALARM LIGHT AND GENERAL FAILURE ALARM ON ANNUNCIATOR. WORKSTATION DISPLAYS SHALL PROVIDE INFORMATION ON WHICH STEP THE SEQUENCE FAILED AT.

NRC MODE DESCRIPTION

AUTO MODE

INITIATE AN AUTOMATIC GROUP NRC WHEN ONE OF THE FOLLOWING CONDITIONS OCCUR

- REQUEST FROM THE WORKSTATION KEYBOARD.
- WHEN THE MASTER NRC INTERVAL TIMER IN THE PLC EXPIRES.
- WHEN A PAIR OF FILTERS COMPLETES A FULL BACKWASH. THE GROUP NRC ACTUATES WHEN THE LAST FILTER REACHES STEP 9 OF ITS BACKWASH CYCLE WASHWATER VALVES ARE SEQUENCED TO KEEP THE BACKWASH PUMP OPERATING.

GROUP NRC BUMPS EACH FILTER GROUP SEQUENTIALLY. WHILE ONE FILTER IS WASHING, NEXT FILTER ON SEQUENCE SHALL BEGIN ITS SEQUENCE TO MINIMIZE THE DURATION OF THE GROUP NRC.

SEMI AUTO MODE

INTENDED TO PROVIDE NRC FOR A SINGLE FILTER. NRC CYCLE IS IDENTICAL EXCEPT IT USES THE PANEL DURATION TIMER IN THE SEQUENCE. ALSO IT DOES NOT OVERLAP WITH OTHER FILTERS AS SHOWN IN THE GROUP NRC. AT THE END OF THE NRC, IN THIS MODE, STEP 8 AND 9 ARE NOT INCLUDED. THE FILTER REMAINS IN "OFF" STATUS UNTIL SWITCHED TO AUTO MODE.

MANUAL MODE

IN THIS MODE ALL OPEN - CLOSE - AUTO VALVE SELECTOR SWITCHES ON THE RESPECTIVE CONSOLE OR PANEL ARE ACTIVE. THE MODE PERMITS MANUAL SEQUENCING OF VALVES. FILTER SWITCHED FROM MANUAL TO SEMI-AUTO WILL BE PLACED INTO AN "OFF" CONFIGURATION WITH ALL VALVES FULL CLOSED AND REMAIN THIS WAY UNTIL THE SEMI-AUTO SEQUENCE IS STARTED.

NRC SEQUENCE DESCRIPTION

STEP	DESCRIPTION
	INITIATE A GROUP NRC IN AUTO MODE AS DESCRIBED ABOVE
1.	CLOSE INFLUENT VALVE. WHEN VALVE IS CONFIRMED CLOSED, TURN OFF "FILTERING" LIGHT ON THE PANEL AND MOVE TO NEXT STEP.
2.	CLOSE EFFLUENT VALVE. WHEN VALVE IS CONFIRMED CLOSED, TURN ON THE "OFF" LIGHT ON PANEL. VERIFY NO OTHER FILTERS ARE IN WASH, THEN PROCEED TO NEXT STEP. OTHERWISE WAIT FOR FILTER TO COMPLETE WASH THEN PROCEED TO NEXT STEP.
3.	CONFIRM BOTH INFLUENT AND EFFLUENT VALVES CLOSED. OPEN BACKWASH DRAIN VALVE WHEN FULL OPEN. MOVE TO NEXT STEP.
4.	OPEN WASH WATER VALVE. WHEN FULL OPEN MOVE TO NEXT STEP.
5A.	START BACKWASH PUMP IF ITS NOT RUNNING. START THE NRC DURATION TIMER. USE THE PLC TIMER FOR AUTO MODE. USE THE PANEL TIMER FOR SEMI-AUTO MODE. TURN ON THE "NRC" LIGHT ON THE PANEL.
5B.	UNLESS THIS THE LAST FILTER IN THE GROUP, INITIATE STEPS 1 AND 2 FOR THE NEXT FILTER TO NRC.
5C.	WHEN THE NRC TIME DURATION EXPIRES TURN OFF THE NRC PANEL LIGHT. CONFIRM THAT THE NEXT FILTER HAS COMPLETED STEPS 1 AND 2. THEN INITIATE STEPS 3 AND 4 FOR THAT FILTER.
5D.	WHEN THE WASH WATER VALVE FOR THE NEXT FILTER HAS REACHED FULL OPEN (STEP 4) THEN MOVE THE NEXT STEP OF THIS FILTER.
6.	CONFIRM THAT AT LEAST 1 WASH WATER VALVE IS OPEN IN THE GROUP (USUALLY THE NEXT FILTER). THEN CLOSE THIS FILTER'S WASH WATER VALVE WHEN FULL CLOSED MOVE TO NEXT STEP.
7.	CLOSE THE BACKWASH DRAIN VALVE WHEN FULL CLOSED. TURN OFF THE FILTER "OFF" PANEL LIGHT AND MOVE TO NEXT STEP.
8.	RESTORE LEVEL CONTROL SIGNAL TO THE EFFLUENT VALVE. ONCE RESTORED OPEN THE FILTER INFLUENT VALVE WHEN FULL OPENED TURN ON THE "FILTERING" LIGHT ON THE PANEL.
9.	VERIFY LEVEL CONTROL WORKING. FILTER RESTORED TO NORMAL

FOR THE LAST FILTER IN THE GROUP:

1-5A.	SAME
5B.	WHEN THE NRC TIME DURATION EXPIRES, TURN OFF THE NRC PANEL LIGHT AND STOP THE BACKWASH PUMP. MOVE TO NEXT STEP.
6.	CONFIRM PUMP IS OFF, THEN CLOSE WASH WATER VALVE. WHEN FULL CLOSED MOVE TO NEXT STEP.
7-9.	SAME
NOTE:	EACH STEP MUST BE CONFIRMED BEFORE SEQUENCE PROCEEDS. FAILURE OF SEQUENCE TO PROPERLY ADVANCE WILL RESULT IN ACTIVATION OF RESPECTIVE SWITCHPLATE ALARM LIGHT AND GENERAL FAILURE ALARM ON ANNUNCIATOR. WORKSTATION DISPLAYS SHALL PROVIDE INFORMATION ON WHICH STEP THE SEQUENCE FAILED AT.

RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED M.H.M.
DRAWN M.H.M.
CHECKED M.G.W.

APPROVED
_____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION
1	10/21/92		ADDED DWG FOR RECORD SET

SCALE
NOT TO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5HI
STRUCTURES AND EQUIPMENT

FILTER BUILDING NO. 2
ELECTRICAL
CONTROL PANELS AND DIAGRAMS

PROJ NO. 2026
DWG JE8A
SHEET 16 OF 49
DATE JAN 1989
REV 1

524576

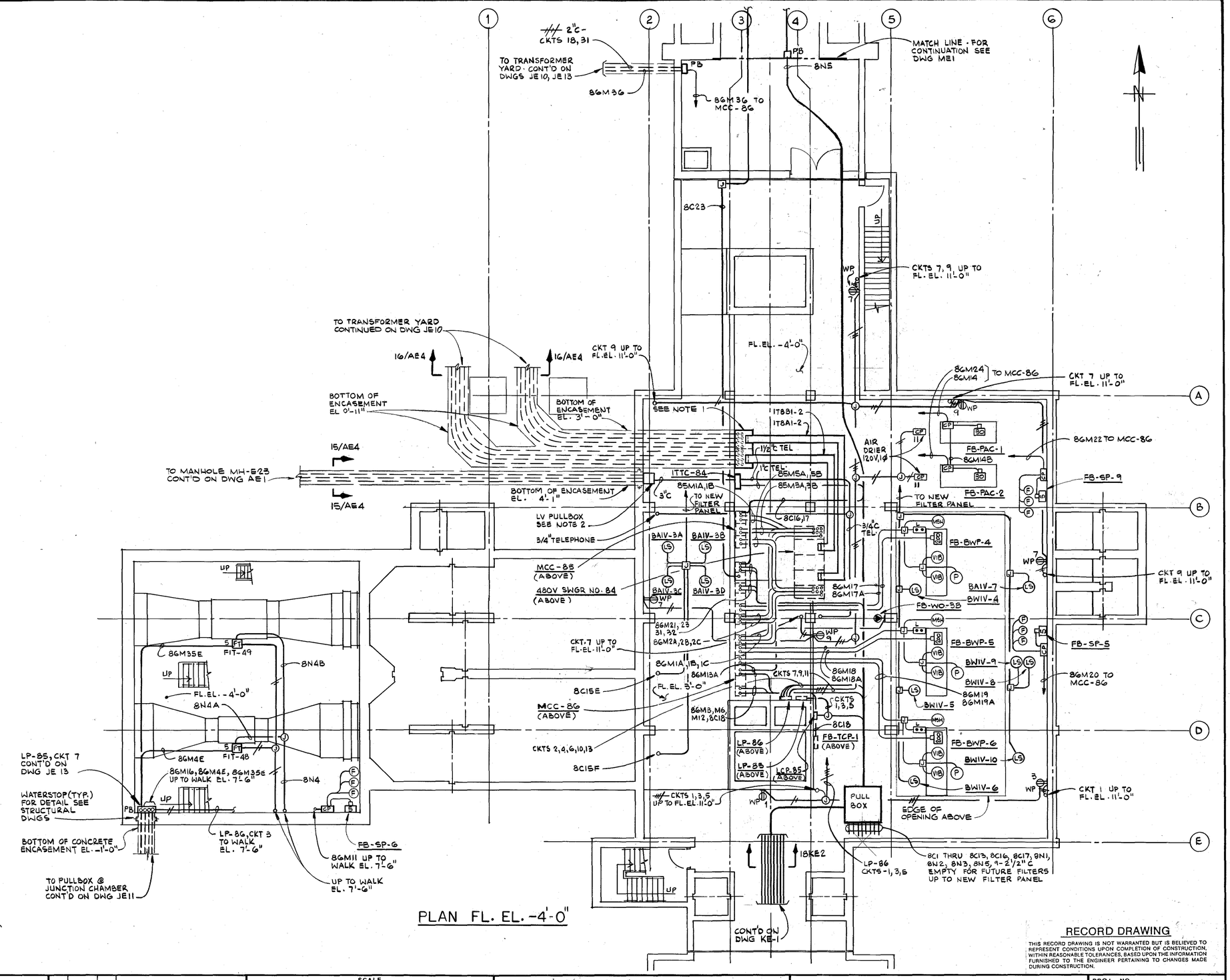
NOTES:

1. PROVIDE A NEMA 4 PARTITIONED PULLBOX MOUNTED 1'-0" A.F.F. FOR TERMINATION OF INCOMING CONDUITS FROM THE TRANSFORMER YARD. THE BOX SHALL HAVE A SCREW HELD REMOVABLE FRONT ACCESS COVER AND DRAIN FITTINGS. THE TOP OF EACH COMPARTMENT SHALL BE CUT OUT AND DRILLED FOR MOUNTING A WEATHERPROOF BUS DUCT FLANGED COLLAR END FITTING. ALL INCOMING CABLES SHALL BE TERMINATED AT THE END FITTING USING CLOSED END COMPRESSION TYPE LUGS.

2. PROVIDE A NEMA 4 PULLBOX WITH SCREW HELD REMOVABLE FRONT ACCESS COVER AND DRAIN FITTING MOUNTED 2'-0" A.F.F. FOR TERMINATION OF LOW VOLTAGE CONDUITS.

3. PROVIDE EXPANSION FITTINGS FOR ALL CONDUITS CROSSING EXPANSION JOINTS.

4. FOR COMPLETE CONDUIT AND CABLE NOS. TO ALL DEVICES SHOWN, SEE THE ONE LINE DIAGRAMS AND SCHEDULES.



PLAN FL. EL. -4'-0"

RECORD DRAWING

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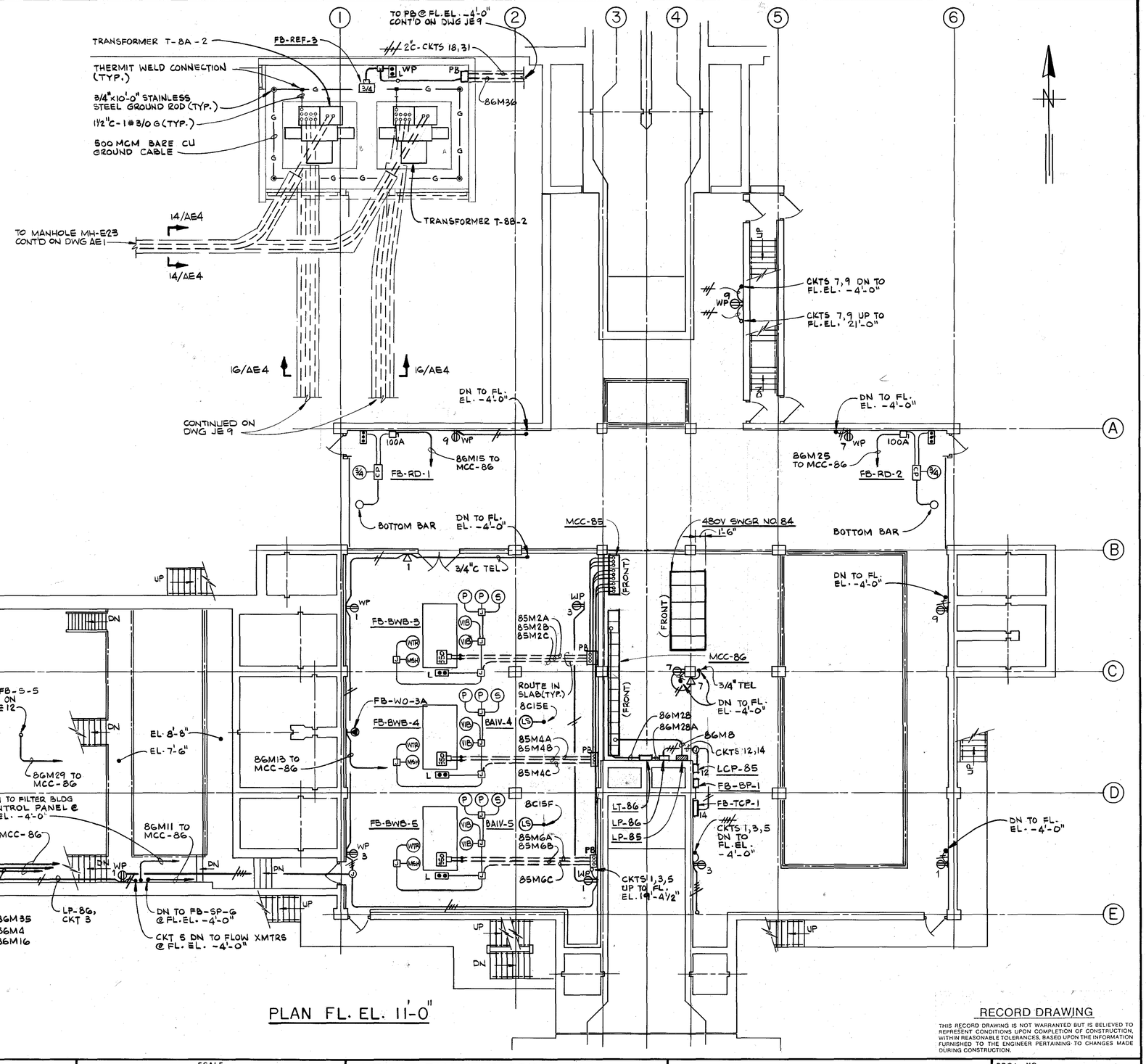
GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED RZ DRAWN MMN CHECKED SSH	APPROVED _____ DATE _____ _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	2 10/15/92 REC DWG REVISIONS NO. DATE APP REVISION	SCALE 8 0 8 16 FT 1/8"=1'-0"	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT PLANT EXPANSION PHASE I DIVISION 5H1 STRUCTURES AND EQUIPMENT	FILTER BUILDING NO. 2 ELECTRICAL POWER PLAN	PROJ NO. DWG JE9 SHEET 165 OF 203 DATE JAN 1989 REV 2

51

E13468

NOTES:

1. PROVIDE EXPANSION FITTINGS FOR ALL CONDUITS CROSSING EXPANSION JOINTS
2. FOR COMPLETE CONDUIT AND CABLE NOS. TO ALL DEVICES SHOWN, SEE THE ONE LINE DIAGRAMS AND SCHEDULES.



PLAN FL. EL. 11'-0"

RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED	RZ
DRAWN	MMN
CHECKED	SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION
1	10/15/92		REC DWG REVISIONS

SCALE 8 0 8 16 FT 1/8"=1'-0"

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

FILTER BUILDING NO. 2
ELECTRICAL
POWER PLAN

PROJ NO.
DWG JE10
SHEET 166 OF 203
DATE JAN 1989 REV 1

52

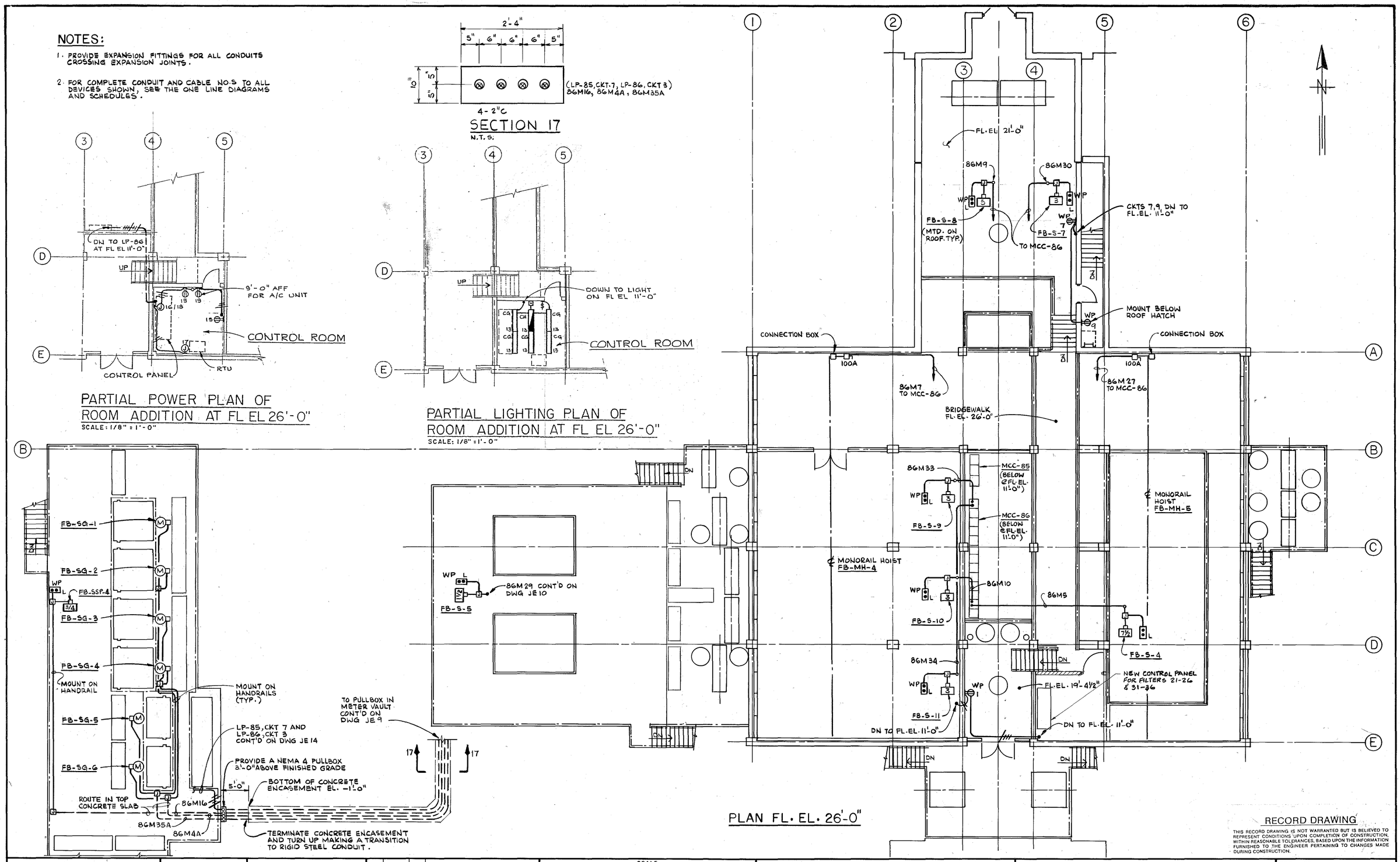
NOTES:

1. PROVIDE EXPANSION FITTINGS FOR ALL CONDUITS CROSSING EXPANSION JOINTS.
2. FOR COMPLETE CONDUIT AND CABLE NO.S TO ALL DEVICES SHOWN, SEE THE ONE LINE DIAGRAMS AND SCHEDULES.

PARTIAL POWER PLAN OF ROOM ADDITION AT FL EL 26'-0"
SCALE: 1/8" = 1'-0"

SECTION 17
N.T.S.

PARTIAL LIGHTING PLAN OF ROOM ADDITION AT FL EL 26'-0"
SCALE: 1/8" = 1'-0"



PLAN FL. EL. 26'-0"

RECORD DRAWING

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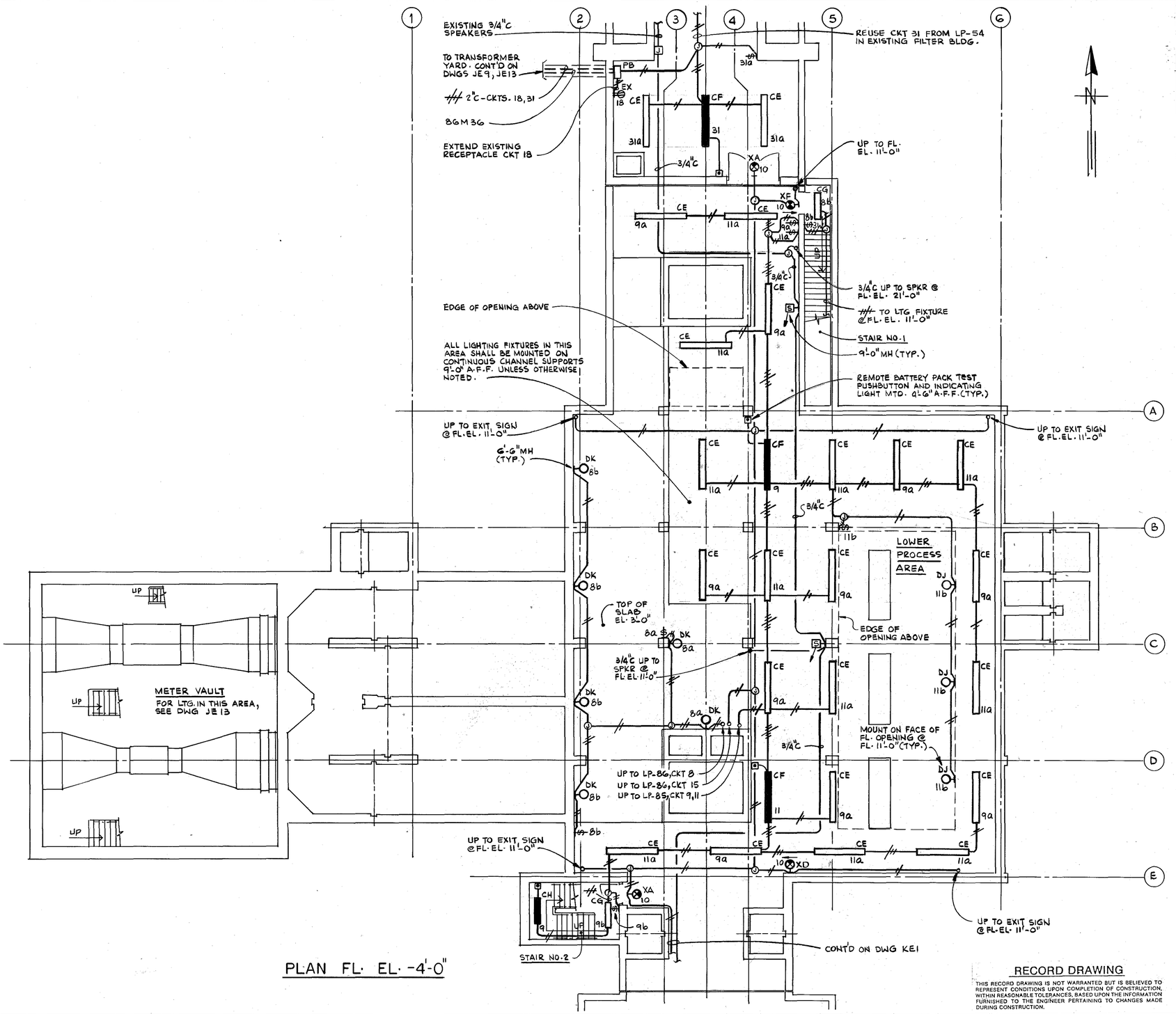
GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED RZ DRAWN MMN CHECKED SSH	APPROVED _____ DATE _____ _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	1 10/15/92 REC DWG REVISIONS NO. DATE APP REVISION

SCALE: 8 0 8 16 FT 1/8"=1'-0"

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

FILTER BUILDING NO. 2
ELECTRICAL
POWER PLAN

PROJ NO.
DWG JE11
SHEET 167 OF 203
DATE JAN 1989 REV 1



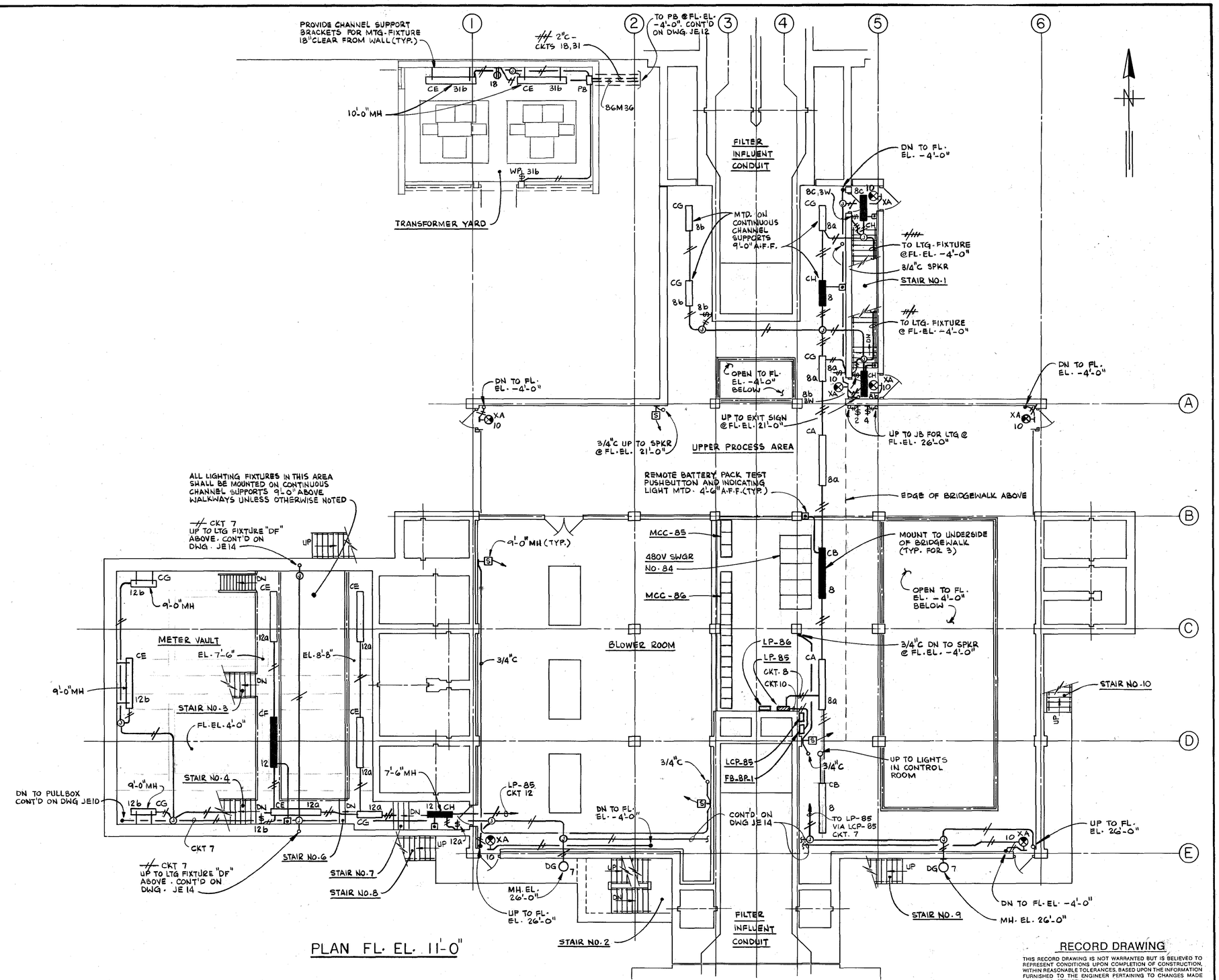
PLAN FL. EL. -4'-0"

RECORD DRAWING

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GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED RZ DRAWN MMN CHECKED SSH	APPROVED DATE DATE GREELEY AND HANSEN, ENGINEERS	NO. DATE APP REVISION	SCALE 8 0 8 16 FT 1/8"=1'-0"	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT PLANT EXPANSION PHASE I DIVISION 5H1 STRUCTURES AND EQUIPMENT	FILTER BUILDING NO. 2 ELECTRICAL LIGHTING PLAN	PROJ NO. DWG JE12 SHEET 168 OF 203 DATE JAN 1989 REV 0



PLAN FL. EL. 11'-0"

RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED RZ
DRAWN MMN
CHECKED SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION
1	10/15/92		REC DWG REVISIONS

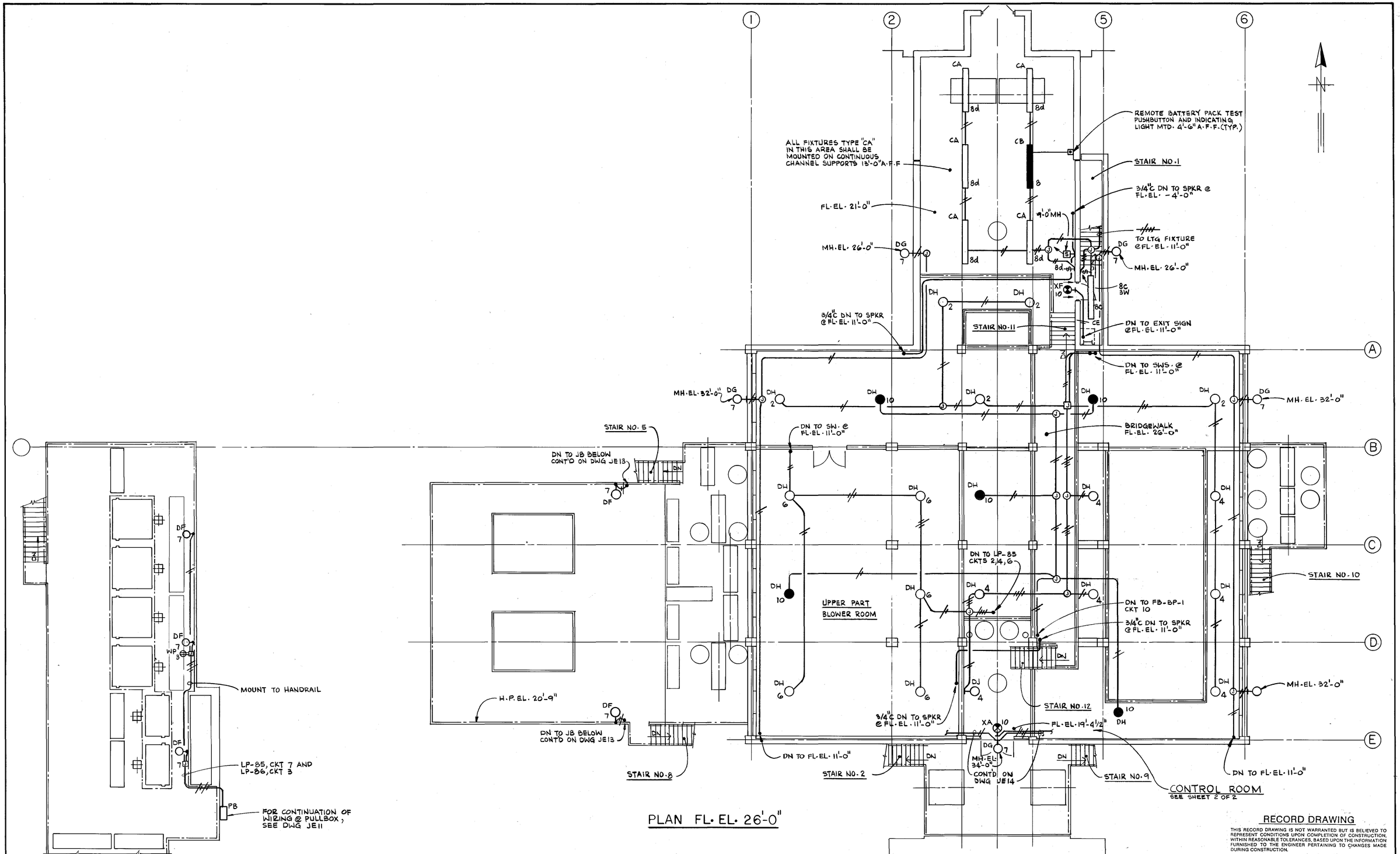
SCALE 8 0 8 16 FT 1/8"=1'-0"

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

FILTER BUILDING NO. 2
ELECTRICAL
LIGHTING PLAN

PROJ NO.
DWG JE13
SHEET 169 OF 203
DATE JAN 1989 REV 1

513468



PLAN FL. EL. 26'-0"

RECORD DRAWING

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GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED RZ DRAWN MMN CHECKED SSH	APPROVED _____ DATE _____ _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	1 10/15/92 REC DWG REVISIONS NO. DATE APP REVISION

SCALE: 8 0 8 16 FT — 1/8"=1'-0"

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

FILTER BUILDING NO. 2
ELECTRICAL
LIGHTING PLAN

PROJ NO.
DWG JE14
SHEET 170 OF 203
DATE JAN 1989 REV 1

CIRCUIT SCHEDULE - LIGHTING PANEL LP-85 (480/277 V)

Document Name: LTGPNL.TAMJE1 — Revision Date: 12-27-1988

CKT NO.	LOCATION	FL EL	MTG HGT	FIXT TYPE	LIGHTS MOTORS	RCPT	TOTAL WATTS	REMARKS
1	DENITRIFICATION FILTERS	19-0	13-0	DF	9@190		1710	VIA LCP-85
2	UPPER PROCESS AREA	11-0	23-0	DH	5@455		2275	
3	DENITRIFICATION FILTERS	19-0	13-0	DF	9@190		1710	VIA LCP-85
4	UPPER PROCESS AREA	11-0	23-0	DH	6@455			
	UPPER PROCESS AREA	19-4-1/2	12-0	DJ	1@295		3025	
5	FILTER PIPE GALLERY	-4-0	9-0	CE	5@160			
	FILTER PIPE GALLERY	-4-0	9-0	CF	3@160			
	FILTER PIPE GALL. STAIR	-4-0	9-0	CG	1@80			
	FILTER PIPE GALL. STAIR	1-1	9-0	CH	1@80		1440	
6	BLOWER ROOM	11-0	23-0	DH	5@455		2275	
7	SOUTH BLDG. PERIMETER		EL.34-0	DG	1@190			
	SOUTH BLDG. PERIMETER		EL.26-0	DG	2@190			
	WEST BLDG. PERIMETER		EL.32-0	DG	1@190			
	WEST BLDG. PERIMETER		EL.26-0	DG	1@190			
	EAST BLDG. PERIMETER		EL.32-0	DG	2@190			
	EAST BLDG. PERIMETER		EL.26-0	DG	1@190			
	METER VAULT	20-9	13-0	DF	2@190			
	JUNCTION CHAMBER	23-0	13-0	DF	3@190		2470	VIA LCP-85
8	STAIR NO. 1	-4-0	9-0	CG	1@80			
	STAIR NO. 1	11-0	9-0	CH	2@80			
	UPPER PROCESS AREA	11-0	9-0	CG	4@80			
	UPPER PROCESS AREA	11-0	9-0	CH	1@80			
	UPPER PROCESS AREA	11-0	14-0	CA	3@210			
	UPPER PROCESS AREA	11-0	14-0	CB	1@210			
	STAIR NO. 1	21-0	9-0	CE	1@160			
	UPPER PROCESS AREA	21-0	13-0	CA	5@210			
	UPPER PROCESS AREA	21-0	13-0	CB	1@210		2900	
9	LOWER PROCESS AREA	-4-0	9-0	CE	10@160			
	LOWER PROCESS AREA	-4-0	9-0	CF	1@160			
	STAIR NO. 2	-4-0	9-0	CG	1@80			
	STAIR NO. 2	1-1-1/2	9-0	CH	1@80		1920	
10	UPPER PROCESS AREA	11-0	23-0	DH	4@455			
	BLOWER ROOM	11-0	23-0	DH	1@455		2500	VIA FB-BP-1
11	LOWER PROCESS AREA	-4-0	9-0	CE	11@160			
	LOWER PROCESS AREA	-4-0	9-0	CF	1@160			
	LOWER PROCESS AREA	-4-0	15-0	DJ	3@295		2805	
12	METER VAULT	11-0	7-6	CH	1@80			
	METER VAULT	8-8	9-0	CG	1@80			
	METER VAULT	8-8	9-0	CE	2@160			
	METER VAULT	7-6	9-0	CE	2@160			
	METER VAULT	7-6	9-0	CF	1@160			
	METER VAULT	-4-0	9-0	CG	2@80			
	METER VAULT	-4-0	9-0	CE	1@160		1280	
13	CONTROL ROOM	26-0	10-4	CG	5@80			
	CONTROL ROOM	26-0	10-4	CH	1@80		480	
14-24	SPARES							

SURFACE MOUNTED-100A MAIN LUGS ONLY — TOTAL WATTS 26790

CIRCUIT SCHEDULE - LIGHTING PANEL LP-86 (120/208 V)

Document Name: LTGPNL.TAMJE2 — Revision Date: 12-28-1988

CKT NO.	LOCATION	FL EL	MTG HGT	FIXT TYPE	LIGHTS MOTORS	RCPT	TOTAL WATTS	REMARKS
1	LOWER PROCESS AREA	-4-0	2-0			1		
	BLOWER ROOM	11-0	2-0			2		
	BLOWER ROOM	11-0						TELEPHONE BELL
	METER VAULT	7-6	2-0			1		
	UPPER PROCESS AREA	19-4-1/2	2-0			1		
	UPPER PROCESS AREA	11-0	2-0			1	1250	
2	FILTER PIPE GALLERY	-4-0	3-0			1		
	DENITRIFICATION FILTERS	19-0						TELEPHONE BELLS (2)
	DENITRIFICATION FILTERS	19-0	2-0			3	900	
3	LOWER PROCESS AREA	-4-0	2-0			1		
	UPPER PROCESS AREA	11-0	2-0			1		
	BLOWER ROOM	11-0	2-0			2		
	JUNCTION CHAMBER	23-0	2-0			1	1000	
4	FILTER PIPE GALLERY	-4-0	3-0			2		
	FILTER PIPE GALLERY	-4-0						TELEPHONE BELL
	DENITRIFICATION FILTERS	19-0	2-0			1	650	
5	METER VAULT	-4-0					700	FIT-48, FIT-49
6	FILTER PIPE GALLERY	-4-0	3-0			2		
	DENITRIFICATION FILTERS	19-0						TELEPHONE BELL
	DENITRIFICATION FILTERS	19-0	2-0			2	850	
7	LOWER PROCESS AREA	-4-0	2-0			2		
	LOWER PROCESS AREA	3-0	2-0			1		
	UPPER PROCESS AREA	11-0	2-0			2		
	UPPER PROCESS AREA	11-0						TELEPHONE BELL
	UPPER PROCESS AREA	21-0	2-0			1	1250	
8	LOWER PROCESS AREA	3-0	6-6	DK	6@100		600	
9	LOWER PROCESS AREA	-4-0	2-0			2		
	UPPER PROCESS AREA	11-0	2-0			3		
	UPPER PROCESS AREA	21-0	14-0			1	1200	
10	LOWER PROCESS AREA	-4-0	8-0	XA	2@50			
	LOWER PROCESS AREA	-4-0	8-0	XF	1@50			
	LOWER PROCESS AREA	-4-0	8-0	XD	1@50			
	FILTER PIPE GALLERY	-4-0	8-0	XA	1@50			
	UPPER PROCESS AREA	11-0	8-0	XA	4@50			
	BLOWER ROOM	11-0	8-0	XA	1@50			
	STAIR NO. 1	11-0	8-0	XA	2@50			
	UPPER PROCESS AREA	19-4-1/2	8-0	XA	1@50			
	UPPER PROCESS AREA	21-0	8-0	XF	1@50		700	
11	LOWER PROCESS AREA	-4-0					200	(2) AIR DRYERS
12	UPPER PROCESS AREA	11-0					100	LCP-85
13	FILTER PIPE GALLERY	-4-0						FIT-53, FIT-54
	DENITRIFICATION FILTERS	19-0					1000	ACC-1, ACC-2
14	UPPER PROCESS AREA	11-0					500	FB-TCP-1
15	CONTROL ROOM	26-0	2-0			2	400	
16	CONTROL ROOM	26-0					1000	CONT PNL
17	CONTROL ROOM	26-0					750	RTU
18	CONTROL ROOM	26-0					1000	CONT PNL
19	CONTROL ROOM	26-0	9-0				1200	A/C UNIT
20-24	SPARES							

SURFACE MOUNTED-100A MAIN BREAKER — TOTAL WATTS 15250

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GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN TB
CHECKED SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION
1	10/15/82		REC DWG REVISIONS

SCALE: NO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

FILTER BUILDING NO. 2
ELECTRICAL
LIGHTING PANEL SCHEDULE

PROJ NO.
DWG JE15
SHEET 171 OF 203
DATE JAN 1989 REV 1

CONDUIT NUMBER & SIZE	CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS
Document Name: CABCON.TAMJE1				Revision Date: 12-27-1988
		MOTOR CONTROL CENTER MCC-85		
85M1A 3	3-350MCM&1#2GND	SWITCHGEAR NO. 84	MCC-85	FB-BWB-3
85M1B 3	3-350MCM&1#2GND	SWITCHGEAR NO. 84	MCC-85	FB-BWB-3
85M2A 3	3-350MCM&1#2GND	MCC-85	FB-BWB-3	
85M2B 3	3-350MCM&1#2GND	MCC-85	FB-BWB-3	
85M2C 1-1/4	12#14	MCC-85	JB NEAR FB-BWB-3	
85M2D 3/4	4#14	JB NEAR FB-BWB-3	PUSHBUTTON STATION	
85M2E 3/4	4#14	JB NEAR FB-BWB-3	PRESSURE SWITCH	HIGH DISCHARGE
85M2F 3/4	2#14	JB NEAR FB-BWB-3	PRESSURE SWITCH	LOW DISCHARGE
85M2G 3/4	2#14	JB NEAR FB-BWB-3	SOLENOID VALVE	
85M2H 3/4	2#14	JB NEAR FB-BWB-3	VIBRATION SWITCH	MOTOR
85M2J 3/4	2#14	JB NEAR FB-BWB-3	VIBRATION SWITCH	BLOWER
85M2K 3/4	4#14	JB NEAR FB-BWB-3	WINDING TEMP. RELAY	
85M2L 3/4	2#14	JB NEAR FB-BWB-3	MOTOR SPACE HEATER	
85M3A 3	3-350MCM&1#2GND	SWITCHGEAR NO. 84	MCC-85	FB-BWB-4
85M3B 3	3-350MCM&1#2GND	SWITCHGEAR NO. 84	MCC-85	FB-BWB-4
85M4A 3	3-350MCM&1#2GND	MCC-85	FB-BWB-4	
85M4B 3	3-350MCM&1#2GND	MCC-85	FB-BWB-4	
85M4C 1-1/4	12#14	MCC-85	JB NEAR FB-BWB-4	
85M4D 3/4	4#14	JB NEAR FB-BWB-4	PUSHBUTTON STATION	
85M4E 3/4	4#14	JB NEAR FB-BWB-4	PRESSURE SWITCH	HIGH DISCHARGE
85M4F 3/4	2#14	JB NEAR FB-BWB-4	PRESSURE SWITCH	LOW DISCHARGE
85M4G 3/4	2#14	JB NEAR FB-BWB-4	SOLENOID VALVE	
85M4H 3/4	2#14	JB NEAR FB-BWB-4	VIBRATION SWITCH	MOTOR
85M4J 3/4	2#14	JB NEAR FB-BWB-4	VIBRATION SWITCH	BLOWER
85M4K 3/4	4#14	JB NEAR FB-BWB-4	WINDING TEMP. RELAY	
85M4L 3/4	2#14	JB NEAR FB-BWB-4	MOTOR SPACE HEATER	
85M5A 3	3-350MCM&1#2GND	SWITCHGEAR NO. 84	MCC-85	FB-BWB-5
85M5B 3	3-350MCM&1#2GND	SWITCHGEAR NO. 84	MCC-85	FB-BWB-5
85M6A 3	3-350MCM&1#2GND	MCC-85	FB-BWB-5	
85M6B 3	3-350MCM&1#2GND	MCC-85	FB-BWB-5	
85M6C 1-1/4	12#14	MCC-85	JB NEAR FB-BWB-5	
85M6D 3/4	4#14	JB NEAR FB-BWB-5	PUSHBUTTON STATION	
85M6E 3/4	4#14	JB NEAR FB-BWB-5	PRESSURE SWITCH	HIGH DISCHARGE
85M6F 3/4	2#14	JB NEAR FB-BWB-5	PRESSURE SWTICH	LOW DISCHARGE
85M6G 3/4	2#14	JB NEAR FB-BWB-5	SOLENOID VALVE	
85M6H 3/4	2#14	JB NEAR FB-BWB-5	VIBRATION SWTICH	MOTOR
85M6J 3/4	2#14	JB NEAR FB-BWB-5	VIBRATION SWITCH	BLOWER
85M6K 3/4	4#14	JB NEAR FB-BWB-5	WINDING TEMP. RELAY	
85M6L 3/4	2#14	JB NEAR FB-BWB-5	MOTOR SPACE HEATER	

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GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN AF
CHECKED SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

FILTER BUILDING NO. 2
ELECTRICAL
CONDUIT AND CABLE SCHEDULE

PROJ NO.
DWG JE16
SHEET 172 OF 203
DATE JAN 1989 REV 0

Document Name: CABCON.TAMJE3 — Revision Date: 12-27-1988

MOTOR CONTRTOL CENTER MCC-86

CONDUIT NUMBER & SIZE		CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS
86M1A	3	3-350MCM,1#1/0N&1#2GND	SWITCHGEAR NO. 84	MCC-86	BUS NO. 1
86M1B	3	3-350MCM,1#1/0N&1#2GND	SWITCHGEAR NO. 84	MCC-86	BUS NO. 1
86M1C	3	3-350MCM,1#1/0N&1#2GND	SWITCHGEAR NO. 84	MCC-86	BUS NO. 1
86M2A	3	3-350MCM,1#1/0N&1#2GND	SWITCHGEAR NO. 84	MCC-86	BUS NO. 2
86M2B	3	3-350MCM,1#1/0N&1#2GND	SWITCHGEAR NO. 84	MCC-86	BUS NO. 2
86M2C	3	3-350MCM,1#1/0N&1#2GND	SWITCHGEAR NO. 84	MCC-86	BUS NO. 2
86M3	3/4	3#12&#12GND	MCC-86	JB NR FILTERS 21 & 31	
86M3A	3/4	3#12&#12GND	JB NR FILTERS 21 & 31	FEV-21	
86M3B	3/4	3#12&#12GND	JB NR FILTERS 21 & 31	JB NR FILTERS 22 & 32	
86M3C	3/4	3#12&#12GND	JB NR FILTERS 22 & 32	FEV-22	
86M3D	3/4	3#12&#12GND	JB NR FILTERS 22 & 32	JB NR FILTERS 23 & 33	
86M3E	3/4	3#12&#12GND	JB NR FILTERS 23 & 33	FEV-23	
86M3F	3/4	3#12&#12GND	JB NR FILTERS 23 & 33	JB NR FILTERS 24 & 34	
86M3G	3/4	3#12&#12GND	JB NR FILTERS 24 & 34	FEV-24	
86M3H	3/4	3#12&#12GND	JB NR FILTERS 24 & 34	JB NR FILTERS 25 & 35	
86M3J	3/4	3#12&#12GND	JB NR FILTERS 25 & 35	FEV-25	
86M3K	3/4	3#12&#12GND	JB NR FILTERS 25 & 35	FEV-26	
86M4	1	3#12,2#14&1#12GND	MCC-86	PB IN METER VAULT	
86M4A	2	3#12,6#14&1#12GND	PB IN METER VAULT	JB NEAR JC-6-SG-6	
86M4B	1	3#12,2#14&1#12GND	JB NEAR JC-6-SG-6	JC-6-SG-6	
86M4C	1	3#12,2#14&1#12GND	JB NEAR JC-6-SG-6	JC-6-SG-4	
86M4D	1	3#12,2#14&1#12GND	JB NEAR JC-6-SG-6	JC-6-SG-3	
86M4E	3/4	4#14	PB IN METER VAULT	FIT-48	
86M5	1	3#12&4#14	MCC-86	JB NEAR FB-S-4	
86M5A	3/4	3#12	JB NEAR FB-S-4	FB-S-4	
86M5B	3/4	4#14	JB NEAR FB-S-4	PUSHBUTTON STATION	
86M6	1	3#12&4#14	MCC-86	JB NEAR FB-S-6	
86M6A	3/4	3#12	JB NEAR FB-S-6	FB-S-6	
86M6B	3/4	4#14	JB NEAR FB-S-6	PUSHBUTTON STATION	
86M7	3/4	3#12&1#12GND	MCC-86	DISCONNECT CB	
86M7A	3/4	3#12&1#12GND	DISCONNECT CB	JB FOR FB-MH-4	
86M8	2	4#2&1#8GND	MCC-86	LP-85	
86M9	1	3#12&4#14	MCC-86	JB NEAR FB-S-8	
86M9A	3/4	3#12	JB NEAR FB-S-8	FB-S-8	
86M9B	3/4	4#14	JB NEAR FB-S-8	PUSHBUTTON STATION	
86M10	1	3#12&4#14	MCC-86	JB NEAR FB-S-10	
86M10A	3/4	3#12	JB NEAR FB-S-10	FB-S-10	
86M10B	3/4	4#14	JB NEAR FB-S-10	PUSHBUTTON STATION	
86M11	1	3#12,4#14&1#12GND	MCC-86	FB-SP-6 CONTROL PANEL	
86M11A	3/4	3#12	FB-SP-6 CONT. PNL	FB-SP-6	
86M11B	3/4	2#14	FB-SP-6 CONT. PNL	FLOAT SWITCH	
86M11C	3/4	2#14	FB-SP-6 CONT. PNL	FLOAT SWITCH	
86M11D	3/4	2#14	FB-SP-6 CONT. PNL	FLOAT SWITCH	
86M12	1	3#12,4#14&1#12GND	MCC-86	FB-SP-8 CONTROL PANEL	
86M12A	3/4	3#12	FB-SP-8 CONT. PNL	FB-SP-8	
86M12B	3/4	2#14	FB-SP-8 CONT. PNL	FLOAT SWITCH	
86M12C	3/4	2#14	FB-SP-8 CONT. PNL	FLOAT SWITCH	
86M12D	3/4	2#14	FB-SP-8 CONT. PNL	FLOAT SWITCH	
86M13	1-1/4	3#6&1#10GND	MCC-86	FB-WO-3A	
86M13A	1-1/4	3#6&1#10GND	MCC-86	FB-WO-3B	
86M14	1-1/4	3#6&1#10GND	MCC-86	FB-PAC-1 CONTROL PANEL	
86M14A	1-1/4	3#6&1#8GND	FB-PAC-1 CONT. PNL	FB-PAC-1	
86M14B	1	8#14	FB-PAC-1 CONT. PNL	FB-PAC-2 CONTROL PANEL	
86M15	3/4	3#12&1#12GND	MCC-86	FB-RD-1 CONTROL PANEL	
86M15A	3/4	3#12	FB-RD-1 CONT. PNL	FB-RD-1	
86M15B	3/4	2#14	FB-RD-1 CONT. PNL	BOTTOM BAR	
86M15C	3/4	6#14	FB-RD-1 CONT. PNL	PUSHBUTTON STATION	

Document Name: CABCON.TAMJE4 — Revision Date: 12-27-1988

MOTOR CONTROL CENTER MCC-86 (CONTINUED)

CONDUIT NUMBER & SIZE		CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS
86M16	1	3#12&4#14	MCC-86	JB NEAR FB-SSP-4	
86M16A	3/4	3#12	JB NEAR FB-SSP-4	FB-SSP-4	
86M16B	3/4	4#14	JB NEAR FB-SSP-4	PUSHBUTTON STATION	
86M17	3	3-350MCM&1#2GND	MCC-86	FB-BWP-4	
86M17A	1	10#14	MCC-86	JB NEAR FB-BW-4	
86M17B	3/4	4#14	JB NEAR FB-BWP-4	PUSHBUTTON STATION	
86M17C	3/4	2#14	JB NEAR FB-BWP-4	PRESSURE SWITCH	
86M17D	3/4	2#14	JB NEAR FB-BWP-4	VIBRATION SWITCH	MOTOR
86M17E	3/4	2#14	JB NEAR FB-BWP-4	VIBRATION SWTICH	PUMP
86M17F	3/4	2#14	JB NEAR FB-BWP-4	MOTOR SPACE HEATER	
86M18	3	3-350MCM&1#2GND	MCC-86	FB-BWP-5	
86M18A	1	10#14	MCC-86	JB NEAR FB-BWP-5	
86M18B	3/4	4#14	JB NEAR FB-BWP-5	PUSHBUTTON STATION	
86M18C	3/4	2#14	JB NEAR FB-BWP-5	PRESSURE SWITCH	
86M18D	3/4	2#14	JB NEAR FB-BWP-5	VIBRATION SWITCH	MOTOR
86M18E	3/4	2#14	JB NEAR FB-BWP-5	VIBRATION SWITCH	PUMP
86M18F	3/4	2#14	JB NEAR FB-BWP-5	MOTOR SPACE HEATER	
86M19	3	3-350MCM&1#2GND	MCC-86	FB-BWP-6	
86M19A	1	10#14	MCC-86	JB NEAR FB-BWP-6	
86M19B	3/4	4#14	JB NEAR FB-BWP-6	PUSHBUTTON STATION	
86M19C	3/4	2#14	JB NEAR FB-BWP-6	PRESSURE SWITCH	
86M19D	3/4	2#14	JB NEAR FB-BWP-6	VIBRATION SWITCH	MOTOR
86M19E	3/4	2#14	JB NEAR FB-BWP-6	VIBRATION SWITCH	PUMP
86M19F	3/4	2#14	JB NEAR FB-BWP-6	MOTOR SPACE HEATER	
86M20	1	3#12,4#14&1#12GND	MCC-86	FB-SP-5 CONTROL PANEL	
86M20A	3/4	3#12	FB-SP-5 CONT. PNL	FB-SP-5	
86M20B	3/4	2#14	FB-SP-5 CONT. PNL	FLOAT SWITCH	
86M20C	3/4	2#14	FB-SP-5 CONT. PNL	FLOAT SWITCH	
86M20D	3/4	2#14	FB-SP-5 CONT. PNL	FLOAT SWITCH	
86M21	1	3#12,4#14&1#12GND	MCC-86	FB-SP-7 CONTROL PANEL	
86M21A	3/4	3#12	FB-SP-7 CONT. PNL	FB-SP-7	
86M21B	3/4	2#14	FB-SP-7 CONT. PNL	FLOAT SWITCH	
86M21C	3/4	2#14	FB-SP-7 CONT. PNL	FLOAT SWITCH	
86M21D	3/4	2#14	FB-SP-7 CONT. PNL	FLOAT SWITCH	
86M22	1	3#12,4#14&1#12GND	MCC-86	FB-SP-9 CONTROL PANEL	
86M22A	3/4	3#12	FB-SP-9 CONT. PNL	FB-SP-9	
86M22B	3/4	2#14	FB-SP-9 CONT. PNL	FLOAT SWITCH	
86M22C	3/4	2#14	FB-SP-9 CONT. PNL	FLOAT SWITCH	
86M22D	3/4	2#14	FB-SP-9 CONT. PNL	FLOAT SWITCH	
86M23	1-1/4	3#6&1#10GND	MCC-86	JB NEAR FB-WO-4A	
86M23A	1-1/4	3#6&1#10GND	JB NEAR FB-WO-4A	FB-WO-4A	
86M23B	1-1/4	3#6&1#10GND	JB NEAR FB-WO-4A	FB-WO-4B	
86M24	1-1/4	3#6&1#10GND	MCC-86	FB-PAC-2 CONTROL PANEL	
86M24A	1-1/4	3#6&1#8GND	FB-PAC-2 CONT. PNL	FB-PAC-2	
86M25	3/4	3#12&1#12GND	MCC-86	FB-RD-2 CONTROL PANEL	
86M25A	3/4	3#12	FB-RD-2 CONT. PNL	FB-RD-2	
86M25B	3/4	2#14	FB-RD-2 CONT. PNL	BOTTOM BAR	
86M25C	3/4	6#14	FB-RD-2 CONT. PNL	PUSHBUTTON STATION	
86M26		NOT USED			
86M27	3/4	3#12&1#12GND	MCC-86	DISCONNECT CB	
86M27A	3/4	3#12&1#12GND	DISCONNECT CB	JB FOR FB-MH-5	
86M28	1-1/4	3#6&1#10GND	MCC-86	LT-86	
86M28A	2	4#2&1#8GND	LT-86	LP-86	
86M29	1	3#12&4#14	MCC-86	JB NEAR FB-S-5	
86M29A	3/4	3#12	JB NEAR FB-S-5	FB-S-5	
86M29B	3/4	4#14	JB NEAR FB-S-5	PUSHBUTTON STATION	
86M30	1	3#12&4#14	MCC-86	JB NEAR FB-S-7	
86M30A	3/4	3#12	JB NEAR FB-S-7	FB-S-7	
86M30B	3/4	4#14	JB NEAR FB-S-7	PUSHBUTTON STATION	

RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN ATK
CHECKED SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION

SCALE: NO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

FILTER BUILDING NO. 2
ELECTRICAL
CONDUIT AND CABLE SCHEDULE

PROJ NO.
DWG JE17
SHEET 173 OF 203
DATE JAN 1989 REV 0

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CONDUIT NUMBER & SIZE	CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS

Document Name: CABCON.TAMJE5 — Revision Date: 12-27-1988

MOTOR CONTROL CENTER MCC-86 (CONTINUED)

86M31	3/4	3#12&#12GND	MCC-86	JB NR FILTERS 31 & 21
86M31A	3/4	3#12&#12GND	JB NR FILTERS 31 & 21	FEV-31
86M31B	3/4	3#12&#12GND	JB NR FILTERS 31 & 21	JB NR FILTERS 32 & 22
86M31C	3/4	3#12&#12GND	JB NR FILTERS 32 & 22	FEV-32
86M31D	3/4	3#12&#12GND	JB NR FILTERS 32 & 22	JB NR FILTERS 33 & 23
86M31E	3/4	3#12&#12GND	JB NR FILTERS 33 & 23	FEV-33
86M31F	3/4	3#12&#12GND	JB NR FILTERS 33 & 23	JB NR FILTERS 34 & 24
86M31G	3/4	3#12&#12GND	JB NR FILTERS 34 & 24	FEV-34
86M31H	3/4	3#12&#12GND	JB NR FILTERS 34 & 24	JB NR FILTERS 35 & 25
86M31J	3/4	3#12&#12GND	JB NR FILTERS 35 & 25	FEV-35
86M31K	3/4	3#12&#12GND	JB NR FILTERS 35 & 25	FEV-36
86M32	3/4	3#12&1#12GND	MCC-86	JB NEAR BWFCV-53
86M32A	3/4	3#12&1#12GND	JB NEAR BWFCV-53	BWFCV-53
86M32B	3/4	3#12&1#12GND	JB NEAR BWFCV-53	BWFCV-54
86M33	1	3#12&4#14	MCC-86	JB NEAR FB-S-9
86M33A	3/4	3#12	JB NEAR FB-S-9	FB-S-9
86M33B	3/4	4#14	JB NEAR FB-S-9	PUSHBUTTON STATION
86M34	1	3#12&4#14	MCC-86	JB NEAR FB-S-11
86M34A	3/4	3#12	JB NEAR FB-S-11	FB-S-11
86M34B	3/4	4#14	JB NEAR FB-S-11	PUSHBUTTON STATION
86M35	1	3#12,2#14&1#12GND	MCC-86	PB IN METER VAULT
86M35A	2	3#12,6#14&1#12GND	PB IN METER VAULT	JB NEAR JC-6-SG-5
86M35B	1	3#12,2#14&1#12GND	JB NEAR JC-6-SG-5	JC-6-SG-5
86M35C	1	3#12,2#14&1#12GND	JB NEAR JC-6-SG-5	JC-6-SG-2
86M35D	1	3#12,2#14&1#12GND	JB NEAR JC-6-SG-5	JC-6-SG-1
86M35E	3/4	4#14	PB IN METER VAULT	FIT-49
86M36	1	3#12&4#14	MCC-86	JB NEAR FB-REF-3
86M36A	3/4	3#12	JB NEAR FB-REF-3	FB-REF-3
86M36B	3/4	4#14	JB NEAR FB-REF-3	PUSHBUTTON STATION

CONDUIT NUMBER & SIZE	CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS

Document Name: CABCON.TAMJE6 — Revision Date: 12-08-1988

DENITRIFICATION FILTERS CONTROL CONDUITS

8C1	2-1/2	45#12	FILTER PANEL IN FB2	JB NEAR FEV-21
8C1A	1-1/2	17#12	JB NEAR FEV-21	JB NEAR FIV-21
8C1B	3/4	3#12	JB NEAR FIV-21	FIV-21 SOLENOID VALVE
8C1C	1	6#12	JB NEAR FIV-21	FIV-21 LIMIT SWITCH
8C1D	1	8#12	JB NEAR FIV-21	JB NEAR BAV-21
8C1E	3/4	2#12	JB NEAR BAV-21	BAV-21 SOLENOID VALVE
8C1F	1	6#12	JB NEAR BAV-21	BAV-21 LIMIT SWITCH
8C1G	1	8#12	JB NEAR FEV-21	MOV FEV-21
8C1H	1	8#12	JB NEAR FEV-21	JB NEAR BDV-21
8C1J	3/4	2#12	JB NEAR BDV-21	BDV-21 SOLENOID VALVE
8C1K	1	6#12	JB NEAR BDV-21	BDV-21 LIMIT SWITCH
8C1L	1	8#12	JB NEAR FEV-21	JB NEAR BWV-21
8C1M	3/4	2#12	JB NEAR BWV-21	BWV-21 SOLENOID VALVE
8C1N	1	6#12	JB NEAR BWV-21	BWV-21 LIMIT SWITCH
8C1P	3/4	4#12	JB NEAR FEV-21	FDV-21 LIMIT SWITCH
8C2	2-1/2	45#12	FILTER PANEL IN FB2	JB NEAR FEV-22
8C2A	1-1/2	17#12	JB NEAR FEV-22	JB NEAR FIV-22
8C2B	3/4	3#12	JB NEAR FIV-22	FIV-22 SOLENOID VALVE
8C2C	1	6#12	JB NEAR FIV-22	FIV-22 LIMIT SWITCH
8C2D	1	8#12	JB NEAR FIV-22	JB NEAR BAV-22
8C2E	3/4	2#12	JB NEAR BAV-22	BAV-22 SOLENOID VALVE
8C2F	1	6#12	JB NEAR BAV-22	BAV-22 LIMIT SWITCH
8C2G	1	8#12	JB NEAR FEV-22	MOV FEV-22
8C2H	1	8#12	JB NEAR FEV-22	JB NEAR BDV-22
8C2J	3/4	2#12	JB NEAR BDV-22	BDV-22 SOLENOID VALVE
8C2K	1	6#12	JB NEAR BDV-22	BDV-22 LIMIT SWITCH
8C2L	1	8#12	JB NEAR FEV-22	JB NEAR BWV-22
8C2M	3/4	2#12	JB NEAR BWV-22	BWV-22 SOLENOID VALVE
8C2N	1	6#12	JB NEAR BWV-22	BWV-22 LIMIT SWITCH
8C2P	3/4	4#12	JB NEAR FEV-22	FDV-22 LIMIT SWITCH
8C3	2-1/2	45#12	FILTER PANEL IN FB2	JB NEAR FEV-23
8C3A	1-1/2	17#12	JB NEAR FEV-23	JB NEAR FIV-23
8C3B	3/4	3#12	JB NEAR FIV-23	FIV-23 SOLENOID VALVE
8C3C	1	6#12	JB NEAR FIV-23	FIV-23 LIMIT SWITCH
8C3D	1	8#12	JB NEAR FIV-23	JB NEAR BAV-23
8C3E	3/4	2#12	JB NEAR BAV-23	BAV-23 SOLENOID VALVE
8C3F	1	6#12	JB NEAR BAV-23	BAV-23 LIMIT SWITCH
8C3G	1	8#12	JB NEAR FEV-23	MOV FEV-23
8C3H	1	8#12	JB NEAR FEV-23	JB NEAR BDV-23
8C3J	3/4	2#12	JB NEAR BDV-23	BDV-23 SOLENOID VALVE
8C3K	1	6#12	JB NEAR BDV-23	BDV-23 LIMIT SWITCH
8C3L	1	8#12	JB NEAR FEV-23	JB NEAR BWV-23
8C3M	3/4	2#12	JB NEAR BWV-23	BWV-23 SOLENOID VALVE
8C3N	1	6#12	JB NEAR BWV-23	BWV-23 LIMIT SWITCH
8C3P	3/4	4#12	JB NEAR FEV-23	FDV-23 LIMIT SWITCH
8C4	2-1/2	45#12	FILTER PANEL IN FB2	JB NEAR FEV-24
8C4A	1-1/2	17#12	JB NEAR FEV-24	JB NEAR FIV-24
8C4B	3/4	3#12	JB NEAR FIV-24	FIV-24 SOLENOID VALVE
8C4C	1	6#12	JB NEAR FIV-24	FIV-24 LIMIT SWITCH
8C4D	1	8#12	JB NEAR FIV-24	JB NEAR BAV-24
8C4E	3/4	2#12	JB NEAR BAV-24	BAV-24 SOLENOID VALVE
8C4F	1	6#12	JB NEAR BAV-24	BAV-24 LIMIT SWITCH
8C4G	1	8#12	JB NEAR FEV-24	MOV FEV-24
8C4H	1	8#12	JB NEAR FEV-24	JB NEAR BDV-24
8C4J	3/4	2#12	JB NEAR BDV-24	BDV-24 SOLENOID VALVE
8C4K	1	6#12	JB NEAR BDV-24	BDV-24 LIMIT SWITCH
8C4L	1	8#12	JB NEAR FEV-24	JB NEAR BWV-24
8C4M	3/4	2#12	JB NEAR BWV-24	BWV-24 SOLENOID VALVE
8C4N	1	6#12	JB NEAR BWV-24	BWV-24 LIMIT SWITCH
8C4P	3/4	4#12	JB NEAR FEV-24	FDV-24 LIMIT SWITCH

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60

GREELEY AND HANSEN
ENGINEERS
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TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN TB
CHECKED SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION
1	10/15/92		REC DWG REVISIONS

SCALE: NO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

FILTER BUILDING NO. 2
ELECTRICAL
CONDUIT AND CABLE SCHEDULE

PROJ NO.
DWG JE18
SHEET 174 OF 203
DATE JAN 1989 REV 1

CONDUIT NUMBER & SIZE		CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS

Document Name: CABCON.TAMJE7 Revision Date: 12-28-1988

DENITRIFICATION FILTERS CONTROL CONDUITS (CONTINUED)

8C5	2-1/2	45#12	FILTER PANEL IN FB2	JB NEAR FEV-25	
8C5A	1-1/2	17#12	JB NEAR FEV-25	JB NEAR FIV-25	
8C5B	3/4	3#12	JB NEAR FIV-25	FIV-25 SOLENOID VALVE	
8C5C	1	6#12	JB NEAR FIV-25	FIV-25 LIMIT SWITCH	
8C5D	1	8#12	JB NEAR FIV-25	JB NEAR BAV-25	
8C5E	3/4	2#12	JB NEAR BAV-25	BAV-25 SOLENOID VALVE	
8C5F	1	6#12	JB NEAR BAV-25	BAV-25 LIMIT SWITCH	
8C5G	1	8#12	JB NEAR FEV-25	MOV FEV-25	
8C5H	1	8#12	JB NEAR FEV-25	JB NEAR BDV-25	
8C5J	3/4	2#12	JB NEAR BDV-25	BDV-25 SOLENOID VALVE	
8C5K	1	6#12	JB NEAR BDV-25	BDV-25 LIMIT SWITCH	
8C5L	1	8#12	JB NEAR FEV-25	JB NEAR BWV-25	
8C5M	3/4	2#12	JB NEAR BWV-25	BWV-25 SOLENOID VALVE	
8C5N	1	6#12	JB NEAR BWV-25	BWV-25 LIMIT SWITCH	
8C5P	3/4	4#12	JB NEAR FEV-25	FDV-25 LIMIT SWITCH	
8C6	2-1/2	45#12	FILTER PANEL IN FB2	JB NEAR FEV-26	
8C6A	1-1/2	17#12	JB NEAR FEV-26	JB NEAR FIV-26	
8C6B	3/4	3#12	JB NEAR FIV-26	FIV-26 SOLENOID VALVE	
8C6C	1	6#12	JB NEAR FIV-26	FIV-26 LIMIT SWITCH	
8C6D	1	8#12	JB NEAR FIV-26	JB NEAR BAV-26	
8C6E	3/4	2#12	JB NEAR BAV-26	BAV-26 SOLENOID VALVE	
8C6F	1	6#12	JB NEAR BAV-26	BAV-26 LIMIT SWITCH	
8C6G	1	8#12	JB NEAR FEV-26	MOV FEV-26	
8C6H	1	8#12	JB NEAR FEV-26	JB NEAR BDV-26	
8C6J	3/4	2#12	JB NEAR BDV-26	BDV-26 SOLENOID VALVE	
8C6K	1	6#12	JB NEAR BDV-26	BDV-26 LIMIT SWITCH	
8C6L	1	8#12	JB NEAR FEV-26	JB NEAR BWV-26	
8C6M	3/4	2#12	JB NEAR BWV-26	BWV-26 SOLENOID VALVE	
8C6N	1	6#12	JB NEAR BWV-26	BWV-26 LIMIT SWITCH	
8C6P	3/4	4#12	JB NEAR FEV-26	FDV-26 LIMIT SWITCH	
8C7	2-1/2	45#12	FILTER PANEL IN FB2	JB NEAR FEV-31	
8C7A	1-1/2	17#12	JB NEAR FEV-31	JB NEAR FIV-31	
8C7B	3/4	3#12	JB NEAR FIV-31	FIV-31 SOLENOID VALVE	
8C7C	1	6#12	JB NEAR FIV-31	FIV-31 LIMIT SWITCH	
8C7D	1	8#12	JB NEAR FIV-31	JB NEAR BAV-31	
8C7E	3/4	2#12	JB NEAR BAV-31	BAV-31 SOLENOID VALVE	
8C7F	1	6#12	JB NEAR BAV-31	BAV-31 LIMIT SWITCH	
8C7G	1	8#12	JB NEAR FEV-31	MOV FEV-31	
8C7H	1	8#12	JB NEAR FEV-31	JB NEAR BDV-31	
8C7J	3/4	2#12	JB NEAR BDV-31	BDV-31 SOLENOID VALVE	
8C7K	1	6#12	JB NEAR BDV-31	BDV-31 LIMIT SWITCH	
8C7L	1	8#12	JB NEAR FEV-31	JB NEAR BWV-31	
8C7M	3/4	2#12	JB NEAR BWV-31	BWV-31 SOLENOID VALVE	
8C7N	1	6#12	JB NEAR BWV-31	BWV-31 LIMIT SWITCH	
8C7P	3/4	4#12	JB NEAR FEV-31	FDV-31 LIMIT SWITCH	
8C8	2-1/2	45#12	FILTER PANEL IN FB2	JB NEAR FEV-32	
8C8A	1-1/2	17#12	JB NEAR FEV-32	JB NEAR FIV-32	
8C8B	3/4	3#12	JB NEAR FIV-32	FIV-32 SOLENOID VALVE	
8C8C	1	6#12	JB NEAR FIV-32	FIV-32 LIMIT SWITCH	
8C8D	1	8#12	JB NEAR FIV-32	JB NEAR BAV-32	
8C8E	3/4	2#12	JB NEAR BAV-32	BAV-32 SOLENOID VALVE	
8C8F	1	6#12	JB NEAR BAV-32	BAV-32 LIMIT SWITCH	
8C8G	1	8#12	JB NEAR FEV-32	MOV FEV-32	
8C8H	1	8#12	JB NEAR FEV-32	JB NEAR BDV-32	
8C8J	3/4	2#12	JB NEAR BDV-32	BDV-32 SOLENOID VALVE	
8C8K	1	6#12	JB NEAR BDV-32	BDV-32 LIMIT SWITCH	
8C8L	1	8#12	JB NEAR FEV-32	JB NEAR BWV-32	
8C8M	3/4	2#12	JB NEAR BWV-32	BWV-32 SOLENOID VALVE	
8C8N	1	6#12	JB NEAR BWV-32	BWV-32 LIMIT SWITCH	
8C8P	3/4	4#12	JB NEAR FEV-32	FDV-32 LIMIT SWITCH	

CONDUIT NUMBER & SIZE		CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS

Document Name: CABCON.TAMJE8 Revision Date: 12-08-1988

DENITRIFICATION FILTERS CONTROL CONDUITS (CONTINUED)

8C9	2-1/2	45#12	FILTER PANEL IN FB2	JB NEAR FEV-33	
8C9A	1-1/2	17#12	JB NEAR FEV-33	JB NEAR FIV-33	
8C9B	3/4	3#12	JB NEAR FIV-33	FIV-33 SOLENOID VALVE	
8C9C	1	6#12	JB NEAR FIV-33	FIV-33 LIMIT SWITCH	
8C9D	1	8#12	JB NEAR FIV-33	JB NEAR BAV-33	
8C9E	3/4	2#12	JB NEAR BAV-33	BAV-33 SOLENOID VALVE	
8C9F	1	6#12	JB NEAR BAV-33	BAV-33 LIMIT SWITCH	
8C9G	1	8#12	JB NEAR FEV-33	MOV FEV-33	
8C9H	1	8#12	JB NEAR FEV-33	JB NEAR BDV-33	
8C9J	3/4	2#12	JB NEAR BDV-33	BDV-33 SOLENOID VALVE	
8C9K	1	6#12	JB NEAR BDV-33	BDV-33 LIMIT SWITCH	
8C9L	1	8#12	JB NEAR FEV-33	JB NEAR BWV-33	
8C9M	3/4	2#12	JB NEAR BWV-33	BWV-33 SOLENOID VALVE	
8C9N	1	6#12	JB NEAR BWV-33	BWV-33 LIMIT SWITCH	
8C9P	3/4	4#12	JB NEAR FEV-33	FDV-33 LIMIT SWITCH	
8C10	2-1/2	45#12	FILTER PANEL FB2	B NEAR FEV-34	
8C10A	1-1/2	17#12	JB NEAR FEV-34	JB NEAR FIV-34	
8C10B	3/4	3#12	JB NEAR FIV-34	FIV-34 SOLENOID VALVE	
8C10C	1	6#12	JB NEAR FIV-34	FIV-34 LIMIT SWITCH	
8C10D	1	8#12	JB NEAR FIV-34	JB NEAR BAV-34	
8C10E	3/4	2#12	JB NEAR BAV-34	BAV-34 SOLENOID VALVE	
8C10F	1	6#12	JB NEAR BAV-34	BAV-34 LIMIT SWITCH	
8C10G	1	8#12	JB NEAR FEV-34	MOV FEV-34	
8C10H	1	8#12	JB NEAR FEV-34	JB NEAR BDV-34	
8C10J	3/4	2#12	JB NEAR BDV-34	BDV-34 SOLENOID VALVE	
8C10K	1	6#12	JB NEAR BDV-34	BDV-34 LIMIT SWITCH	
8C10L	1	8#12	JB NEAR FEV-34	JB NEAR BWV-34	
8C10M	3/4	2#12	JB NEAR BWV-34	BWV-34 SOLENOID VALVE	
8C10N	1	6#12	JB NEAR BWV-34	BWV-34 LIMIT SWITCH	
8C10P	3/4	4#12	JB NEAR FEV-34	FDV-34 LIMIT SWITCH	
8C11	2-1/2	45#12	FILTER PANEL IN FB2	JB NEAR FEV-35	
8C11A	1-1/2	17#12	JB NEAR FEV-35	JB NEAR FIV-35	
8C11B	3/4	3#12	JB NEAR FIV-35	FIV-35 SOLENOID VALVE	
8C11C	1	6#12	JB NEAR FIV-35	FIV-35 LIMIT SWITCH	
8C11D	1	8#12	JB NEAR FIV-35	JB NEAR BAV-35	
8C11E	3/4	2#12	JB NEAR BAV-35	BAV-35 SOLENOID VALVE	
8C11F	1	6#12	JB NEAR BAV-35	BAV-35 LIMIT SWITCH	
8C11G	1	8#12	JB NEAR FEV-35	MOV FEV-35	
8C11H	1	8#12	JB NEAR FEV-35	JB NEAR BDV-35	
8C11J	3/4	2#12	JB NEAR BDV-35	BDV-35 SOLENOID VALVE	
8C11K	1	6#12	JB NEAR BDV-35	BDV-35 LIMIT SWITCH	
8C11L	1	8#12	JB NEAR FEV-35	JB NEAR BWV-35	
8C11M	3/4	2#12	JB NEAR BWV-35	BWV-35 SOLENOID VALVE	
8C11N	1	6#12	JB NEAR BWV-35	BWV-35 LIMIT SWITCH	
8C11P	3/4	4#12	JB NEAR FEV-35	FDV-35 LIMIT SWITCH	
8C12	2-1/2	45#12	FILTER PANEL IN FB2	JB NEAR FEV-36	
8C12A	1-1/2	17#12	JB NEAR FEV-36	JB NEAR FIV-36	
8C12B	3/4	3#12	JB NEAR FIV-36	FIV-36 SOLENOID VALVE	
8C12C	1	6#12	JB NEAR FIV-36	FIV-36 LIMIT SWITCH	
8C12D	1	8#12	JB NEAR FIV-36	JB NEAR BAV-36	
8C12E	3/4	2#12	JB NEAR BAV-36	BAV-36 SOLENOID VALVE	
8C12F	1	6#12	JB NEAR BAV-36	BAV-36 LIMIT SWITCH	
8C12G	1	8#12	JB NEAR FEV-36	MOV FEV-36	
8C12H	1	8#12	JB NEAR FEV-368	JB NEAR BDV-36	
8C12J	3/4	2#12	JB NEAR BDV-36	BDV-36 SOLENOID VALVE	
8C12K	1	6#12	JB NEAR BDV-36	BDV-36 LIMIT SWITCH	
8C12L	1	8#12	JB NEAR FEV-36	JB NEAR BWV-36	
8C12M	3/4	2#12	JB NEAR BWV-36	BWV-36 SOLENOID VALVE	
8C12N	1	6#12	JB NEAR BWV-36	BWV-36 LIMIT SWITCH	
8C12P	3/4	4#12	JB NEAR FEV-36	FDV-36 LIMIT SWITCH	

RECORD DRAWING

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61

GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN TB
CHECKED SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION
1	10/15/92		REC DWG REVISIONS

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

FILTER BUILDING NO. 2
ELECTRICAL
CONDUIT AND CABLE SCHEDULE

PROJ NO.
DWG JE19
SHEET 175 OF 203
DATE JAN 1989 REV 1

CONDUIT NUMBER	SIZE	CONDUCTOR QUANTITY AND SIZE	FROM	TO	REMARKS
				REVISION DATE: 10-22-92	
		DENITRIFICATION FILTERS CONTROLS CONDUITS (CONTINUED)			
8C13	1-1/4	16#12	FILTER PANEL IN FB2	JB NEAR BWFCV-53	
8C13A	3/4	4#12	JB NEAR BWFCV-53	MOV BWFCV-53	
8C13B	3/4	4#12	JB NEAR BWFCV-53	MOV BWFCV-54	
8C13C	1	8#12	JB NEAR BWFCV-53	JB NEAR FILTER 21	
8C13D	3/4	2#12	JB NEAR FILTER 21	FILTER 21/22	LEVEL CONT CAB
8C13E	3/4	2#12	JB NEAR FILTER 21	FILTER 31/32	LEVEL CONT CAB
8C13F	3/4	4#12	JB NEAR FILTER 21	JB NEAR FILTER 26	
8C13G	3/4	2#12	JB NEAR FILTER 26	ALARM CONT CAB NO. 1	BACKWASH WATER RELIEF
8C13H	3/4	2#14	ALARM CONT CAB NO. 1	LEVEL PROBE	NOTE 1
8C13J	3/4	2#12	JB NEAR FILTER 26	ALARM CONT CAB NO. 2	BACKWASH WATER RELIEF
8C13K	3/4	2#14	ALARM CONT CAB NO. 2	LEVEL PROBE	NOTE 1
8C14	2	28#12	FILTER PANEL IN FB2	JB NEAR BWIV-5	
8C14A	3/4	4#12	JB NEAR BWIV-5	BWIV-4 LIMIT SWITCHES	
8C14B	3/4	4#12	JB NEAR BWIV-5	BWIV-5 LIMIT SWITCHES	
8C14C	3/4	4#12	JB NEAR BWIV-5	BWIV-6 LIMIT SWITCHES	
8C14D	3/4	4#12	JB NEAR BWIV-5	BWIV-7 LIMIT SWITCHES	
8C14E	3/4	4#12	JB NEAR BWIV-5	BWIV-8 LIMIT SWITCHES	
8C14F	3/4	4#12	JB NEAR BWIV-5	BWIV-9 LIMIT SWITCHES	
8C14G	3/4	4#12	JB NEAR BWIV-5	BWIV-10 LIMIT SWITCHES	
8C15	2	24#12	FILTER PANEL IN FB2	JB NEAR BAIV-3A	
8C15A	3/4	4#12	JB NEAR BAIV-3A	BAIV-3A LIMIT SWITCHES	
8C15B	3/4	4#12	JB NEAR BAIV-3A	BAIV-3B LIMIT SWITCHES	
8C15C	3/4	4#12	JB NEAR BAIV-3A	BAIV-3C LIMIT SWITCHES	
8C15D	3/4	4#12	JB NEAR BAIV-3A	BAIV-3D LIMIT SWITCHES	
8C15E	3/4	4#12	JB NEAR BAIV-3A	BAIV-4 LIMIT SWITCHES	
8C15F	3/4	4#12	JB NEAR BAIV-3A	BAIV-5 LIMIT SWITCHES	
8C16	2	3-12/C#12	FILTER PANEL IN FB2	MCC-85	6 SPARE
8C17	3	6-12/C#12	FILTER PANEL IN FB2	MCC-86	8 SPARE
8C18	3	5-12/C#12	MCC-86	FB-TCP-1	12 SPARE
8C19					NOT USED
8C20					NOT USED
8C21					NOT USED
8C22	1	8#12	FILTER PANEL IN FB2	JB NEAR FB-PAC-1	
8C22A	3/4	4#12	JB NEAR FB-PAC-1	FB-PAC-1 CONTROL PANEL	
8C22B	3/4	4#12	JB NEAR FB-PAC-1	FB-PAC-2 CONTROL PANEL	
8C23	1	6#12	MCC-86	SAMPLE PUMP CP NO. 2	

NOTE:
1. PROVIDE LIQUIDTIGHT FLEXIBLE CONDUIT WITH ENOUGH SLACK TO ALLOW THE PROBE TO MOVE 4 FEET VERTICALLY.

CONDUIT NUMBER	SIZE	CONDUCTOR QUANTITY AND SIZE	FROM	TO	REMARKS
				REVISION DATE: 10-22-92	
		DENITRIFICATION FILTERS INSTRUMENTATION CONDUITS			
8N1	1-1/4	6-2/C#16 SHLD	FILTER PANEL IN FB2	JB NEAR FIT-53	
8N1A	1	2#14, 2-2/C#16 SHLD	JB NEAR FIT-53	FIT-53	
8N1B	1	2#14, 2-2/C#16 SHLD	JB NEAR FIT-53	FIT-54	
8N1C	1	4#14, 2-2/C#16 SHLD	JB NEAR FIT-53	JB NEAR BWFCV-53	
8N1D	3/4	2#14, 1-2/C#16 SHLD	JB NEAR BWFCV-53	MOV BWFCV-53	
8N1E	3/4	2#14, 1-2/C#16 SHLD	JB NEAR BWFCV-54	MOV BWFCV-54	
8N2	2	18-2/C#16 SHLD	FILTER PANEL IN FB2	JB NEAR FILTERS 21 & 31	
8N2A	1-1/4	6-2/C#16 SHLD	JB NEAR FILTERS 21 & 31	JB NEAR FILTER 21	
8N2B	3/4	2-2/C#16 SHLD	JB NEAR FILTER 21	FILTER 21/22	LEVEL CONT CAB
8N2C	3/4	2-2/C#16 SHLD	JB NEAR FILTER 21	MOV FEV-21	
8N2D	3/4	2-2/C#16 SHLD	JB NEAR FILTER 21	MOV FEV-22	
8N2E	2	12-2/C#16 SHLD	JB NEAR FILTERS 21 & 31	JB NEAR FILTERS 23 & 33	
8N2F	1-1/4	6-2/C#16 SHLD	JB NEAR FILTERS 23 & 33	JB NEAR FILTER 23	
8N2G	3/4	2-2/C#16 SHLD	JB NEAR FILTER 23	FILTER 23/24	LEVEL CONT CAB
8N2H	3/4	2-2/C#16 SHLD	JB NEAR FILTER 23	MOV FEV-23	
8N2J	3/4	2-2/C#16 SHLD	JB NEAR FILTER 23	MOV FEV-24	
8N2K	1-1/4	6-2/C#16 SHLD	JB NEAR FILTERS 23 & 33	JB NEAR FILTER 25	
8N2L	3/4	2-2/C#16 SHLD	JB NEAR FILTER 25	FILTER 25/26	LEVEL CONT CAB
8N2M	3/4	2-2/C#16 SHLD	JB NEAR FILTER 25	MOV FEV-25	
8N2N	3/4	2-2/C#16 SHLD	JB NEAR FILTER 25	MOV FEV-26	
8N3	2	18-2/C#16 SHLD	FILTER PANEL IN FB2	JB NEAR FILTERS 21 & 31	
8N3A	1-1/4	6-2/C#16 SHLD	JB NEAR FILTERS 21 & 31	JB NEAR FILTER 31	
8N3B	3/4	2-2/C#16 SHLD	JB NEAR FILTER 31	FILTER 31/32	LEVEL CONT CAB
8N3C	3/4	2-2/C#16 SHLD	JB NEAR FILTER 31	MOV FEV-31	
8N3D	3/4	2-2/C#16 SHLD	JB NEAR FILTER 31	MOV FEV-32	
8N3E	2	12-2/C#16 SHLD	JB NEAR FILTERS 21 & 31	JB NEAR FILTERS 23 & 33	
8N3F	1-1/4	6-2/C#16 SHLD	JB NEAR FILTERS 23 & 33	JB NEAR FILTER 33	
8N3G	3/4	2-2/C#16 SHLD	JB NEAR FILTER 33	FILTER 33/34	LEVEL CONT CAB
8N3H	3/4	2-2/C#16 SHLD	JB NEAR FILTER 33	MOV FEV-33	
8N3J	3/4	2-2/C#16 SHLD	JB NEAR FILTER 33	MOV FEV-34	
8N3K	1-1/4	6-2/C#16 SHLD	JB NEAR FILTERS 23 & 33	JB NEAR FILTER 35	
8N3L	3/4	2-2/C#16 SHLD	JB NEAR FILTER 35	FILTER 35/36	LEVEL CONT CAB
8N3M	3/4	2-2/C#16 SHLD	JB NEAR FILTER 35	MOV FEV-35	
8N3N	3/4	2-2/C#16 SHLD	JB NEAR FILTER 35	MOV FEV-36	
8N4	1	4-2/C#16 SHLD	FILTER PANEL IN FB2	JB NEAR FIT-48	
8N4A	3/4	2-2/C#16 SHLD	JB NEAR FIT-48	FIT-48	
8N4B	3/4	2-2/C#16 SHLD	JB NEAR FIT-48	FIT-49	
8N5	4	5-12PR#16 SHLD	FILTER PANEL IN FB2	FILTER CONTROL CONSOLE	12 SPARE PAIRS

RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN TB, ROO
CHECKED SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APPD	REVISION
1	10/26/92	BBK	RECORD DWG REVISIONS

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
PLANT EXPANSION
PHASE I DIVISION 5H1
STRUCTURES AND EQUIPMENT

ELECTRICAL
FILTER BUILDING NO. 2
CONDUIT AND CABLE SCHEDULE

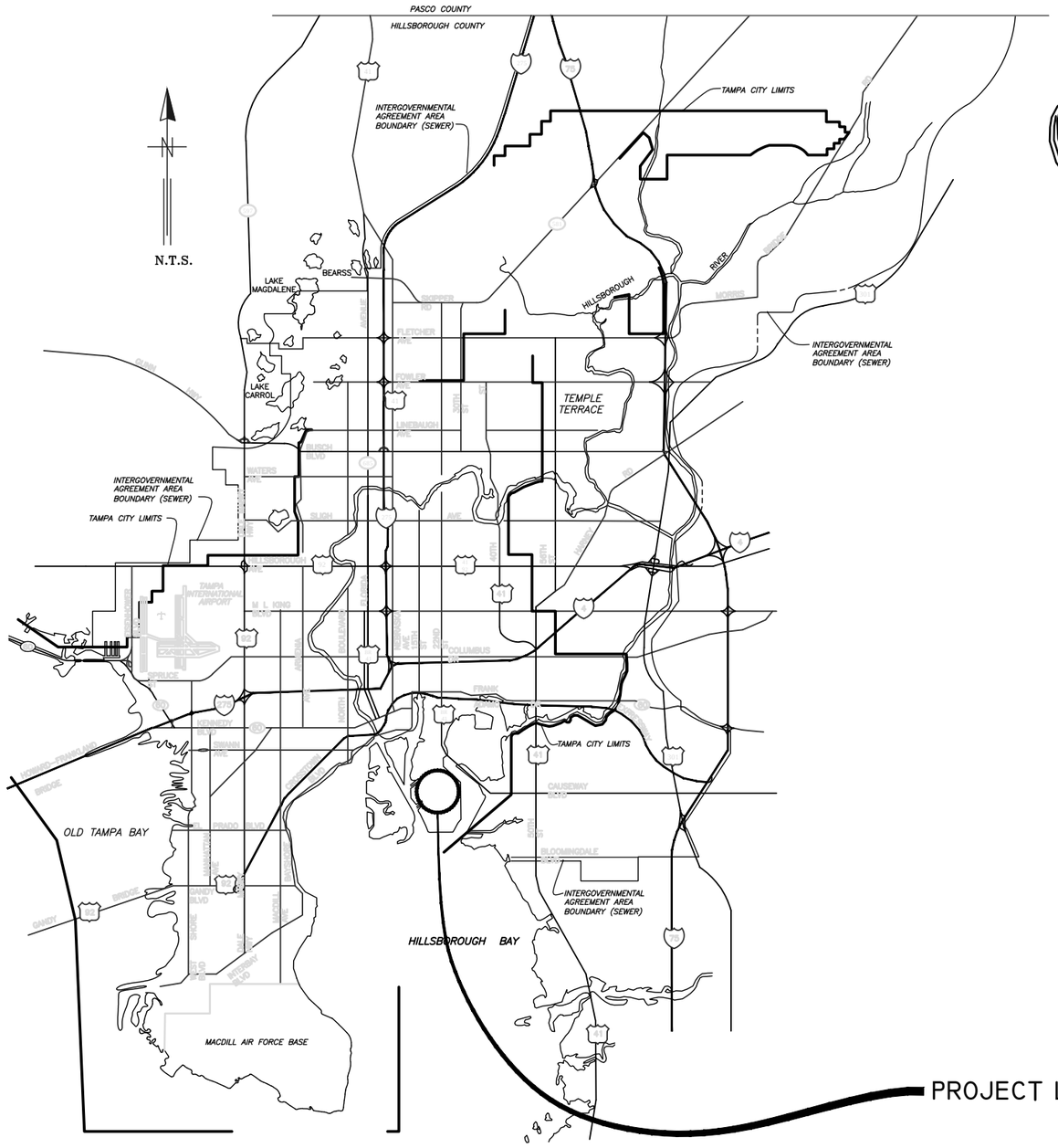
PROJ NO. 202G
DWG JE 20
SHEET 176 OF 203
DATE JAN 1989
REV 1

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Filter Bldg No. 2 Flowmeter Replacement_Year 2021

B____-____

LOCATION MAP



CITY of TAMPA

CITY OF TAMPA FLORIDA
MASCOTTE
ORGANIZED JULY 15 1887

WASTEWATER DEPARTMENT

PLANS FOR

HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

FILTER BUILDING NO. 2 FLOW METER REPLACEMENT

CONTRACT I9-C-00056

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

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

No.	DATE	REVISIONS
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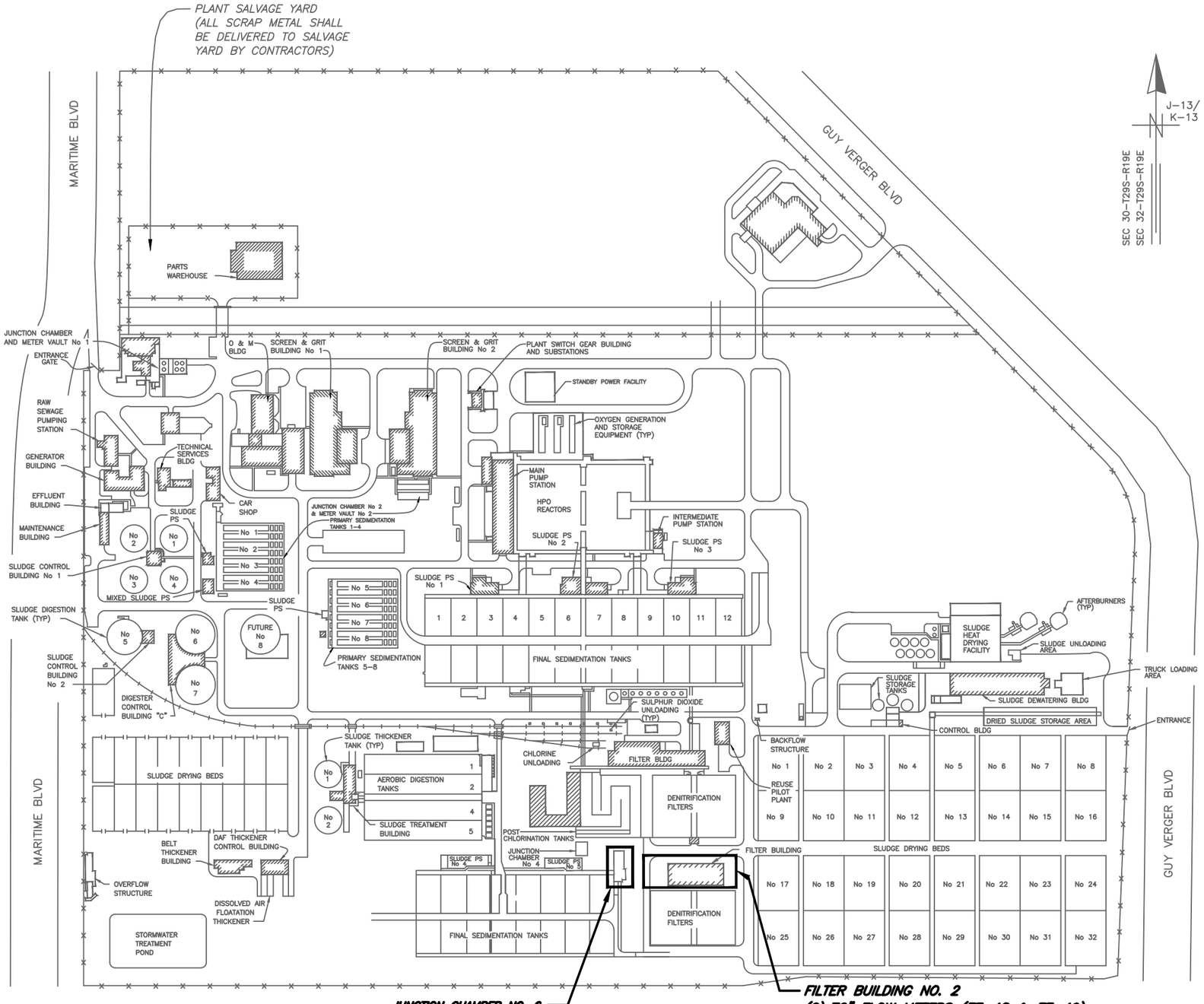
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DRN: WA/KLT
CKD:
DATE: Oct–19

CITY of TAMPA
WASTEWATER DEPARTMENT

HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT
COVER SHEET

SHEET 1

User: ssry Drawing Name: I:\sewer\SewerShare\WasteWater Projects\HFC AWTP Filter Building No.2 Flow Meter Replacements\Drafting\DWG\HFCAWTP FILTER BUILDING NO. 2 FLOW METER REPLACEMENTS KLT.dwg
Layout– Oct 24, 2019 – 11:15am



PROJECT MAP

N.T.S.

B____-____

INDEX

SHEET	DESCRIPTION
1	COVER SHEET
2	PROJECT MAP AND INDEX
3	GENERAL NOTES/AERIAL VIEW
4	PROPOSED STOP LOGS
5	FILTER BUILDING NO. 2 – DEMOLITION PLAN VIEW
6	FILTER BUILDING NO. 2 – DEMOLITION SECTION VIEW
7	JUNCTION CHAMBER NO. 6 – DEMOLITION PLAN VIEW
8	FILTER BUILDING NO. 2 – PROPOSED PLAN VIEW
9	FILTER BUILDING NO. 2 – PROPOSED SECTION A VIEW
10	FILTER BUILDING NO. 2 – PROPOSED SECTION B VIEW
11	JUNCTION CHAMBER NO. 6 – PROPOSED PLAN AND SECTION C VIEW
12	MISCELLANEOUS DETAILS
E-1	ELECTRICAL GENERAL NOTES AND SCOPE OF WORK
E-2	SLUICE GATE REPLACEMENT OVERALL ELECTRICAL SITE PLAN
E-3	ELECTRICAL INDEX, SCHEDULES AND GENERAL NOTES
E-4	FILTER BUILDING NO. 2 METER VAULT ELECTRICAL PLAN ELEVATION 4'-0"
E-5	FILTER BUILDING NO. 2 MCC-86 LOCATION ELEVATION 11'-0"
E-6	RSPS NO. 4 AND JC-6 PROPOSED ELECTRICAL PLAN
E-7	MOTOR CONTROL CENTER MCC-86 ELEVATIONS
E-8	FLOW METER TRANSMITTER DETAILS
E-9	SLUICE GATE CONTROL SCHEMATICS & CONTACT DEVELOPMENT
E-10	CONDUIT AND CABLE SCHEDULE

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

No.	DATE	REVISIONS
3		
2		
1		

DES: KJG
DRN: WA/KLT
CKD:
DATE: Oct-19

CITY of TAMPA
WASTEWATER DEPARTMENT

HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

PROJECT MAP AND INDEX

SHEET 2

User: ssry Drawing Name: \\sewer\SewerShare\WasteWater Projects\HFC AWTP Filter Building No.2 Flow Meter Replacements\Drafting\DWG\HFCAWTP FILTER BUILDING NO. 2 FLOW METER REPLACEMENTS KLT.dwg
Layout= Oct 24, 2019 - 11:15am

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Layout— Oct 24, 2019 - 11:15am

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GENERAL NOTES:

G–1 CONTRACTOR SHALL REPLACE THE 72" (FE–49) AND 48" (FE–48) INFLUENT METERS AND ASSOCIATED PIPING LOCATED INSIDE THE FILTER BUILDING NO. 2 IN TWO PHASES AS SHOWING ON THE DRAWINGS. EXISTING 48" (FE–48) INFLUENT METER SHALL BE REPLACED WITH A 72" INFLUENT METER AS SHOWN ON THE DRAWINGS.

G–2 CONTRACTOR SHALL REPLACE (4) 60"X84" INFLUENT FLUSH BOTTOM CLOSURE SLUICE GATE FLOOR STAND OPERATORS (JC6–SG–1, JC6–SG–2, JC6–SG–3, AND JC6–SG–4) AND (2) 60"X84" INFLUENT BYPASS SLUICE GATE (DOWNWARD–OPENING) FLOOR STAND OPERATORS (JC6–SG–5 AND JC6–SG–6) AT THE JUNCTION CHAMBER NO. 6 AS SHOWN ON THE DRAWINGS.

G–3 CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH TREATMENT PLANT PERSONNEL PLANT OPERATIONS. CONTRACTOR SHALL REPLACE (6) SLUICE GATE FLOOR STAND OPERATORS BEFORE REPLACEMENT OF THE FLOW METERS CAN START.

G–4 CONTRACTOR WILL BE ALLOWED TO WORK ON ONLY ONE METER AT A TIME, STARTING WITH THE REPLACEMENT OF THE 48" (FE–48) INFLUENT METER (PHASE 1). THE PROPOSED FE–48 INFLUENT METER SHALL OPERATE A MINIMUM OF (7) DAYS OF TROUBLE FREE TEST PERIOD PRIOR TO THE REMOVAL OF THE REMAINING INFLUENT METER (FE–49). AFTER INSTALLATION AND ACCEPTABLE OPERATIONAL PERIOD OF THE FE–48 INFLUENT METER, THE CONTRACTOR SHALL REPLACE THE EXISTING FE–49 INFLUENT METER (PHASE 2). SHOULD ANY PROBLEMS ARISE DURING THE TESTING PERIOD, CONTRACTOR SHALL REMEDY THE PROBLEM(S) AS SOON AS PRACTICAL AND THE TROUBLE FREE TEST PERIOD SHALL RESTART.

G–5 REPLACING INFLUENT METERS (FE–48 AND FE–49) REQUIRES THE REMOVAL OF THE EXISTING REMOVABLE SKYLIGHTS (10'X14'). CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING SKYLIGHT DURING REMOVAL OR REPLACEMENT. CONTRACTOR SHALL RESEAL SKYLIGHT AT JOB COMPLETION.

G–6 EXISTING DIMENSIONS ARE BASED ON AS–BUILT DRAWINGS. TRUE DIMENSIONS SHALL BE DETERMINED IN THE FIELD PRIOR TO LAYOUT AND SHOP DRAWINGS SUBMITTAL.

G–7 SHOP DRAWINGS SHALL BE SUBMITTED IN PDF FORMAT FOR ALL PROPOSED NEW ITEMS. ELECTRONIC PDF FORMAT SHALL BE HIGH QUALITY, EASILY READABLE, SEARCHABLE AND PROVIDED WITH BOOKMARKS.

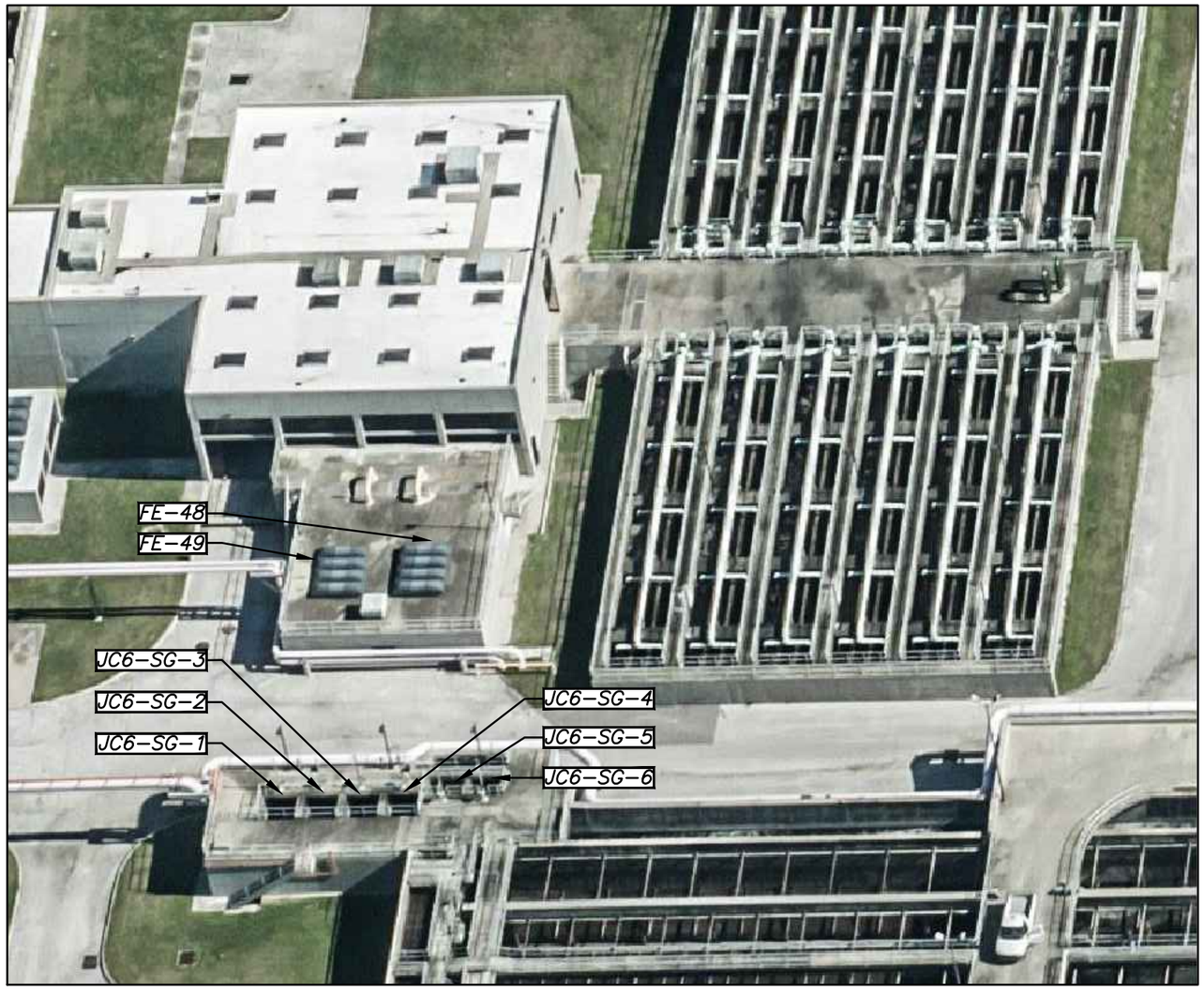
G–8 CONTRACTOR IS RESPONSIBLE FOR MEETING ALL FEDERAL, STATE, AND LOCAL GOVERNMENT REGULATIONS IN REGARDS TO WORKING CONDITIONS AND MATERIALS HANDLING AND DISPOSAL.

G–9 CONTRACTOR SHALL MEET ALL REQUIREMENTS AS LISTED IN THE SPECIFIC PROVISIONS AND INDIVIDUAL SPECIFICATION SECTIONS INCLUDED IN THE CONTRACT DOCUMENTS.

G–10 ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FLORIDA BUILDING CODE 6TH EDITION 2017, CHAPTER 5 OF THE CITY OF TAMPA CODE AND NATIONAL ELECTRIC CODE 2014 EDITION.

G–11 THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM FILTER INFLUENT CONDUIT. THE DEBRIS SHALL BE REMOVED FROM THE CONDUITS AND TEMPORARILY PLACED IN DRYING BEDS DESIGNATED BY THE CITY. AT THE COMPLETION THE PROJECT, THE CONTRACTOR SHALL COORDINATE TO HAVE THE CITY LOAD THE MATERIALS INTO TRUCKS FOR PROPER LANDFILL DISPOSAL. THE CITY WILL PAY THE CONTRACTOR BASED ON TONNAGE AS DETERMINED BY WEIGHT TICKETS AND THE CONTRACTOR'S UNIT COST BID PER TON ON DEBRIS REMOVED FROM THE DRYING BEDS. THE CITY ESTIMATES 320 TONS (200 CY) OF DEBRIS WILL NEED TO BE REMOVED.

G–12 THE CONTRACTOR SHALL PAINT ALL NEW PIPING AND EXISTING FILTER INFLUENT AND DRAIN PIPING INSIDE THE FILTER ROOM. ALL PAINTED PIPING SHALL BE COLOR CODED AND IDENTIFIED AS SPECIFIED.



PROJECT LOCATION AERIAL

No.	DATE	REVISIONS
3		
2		
1		

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

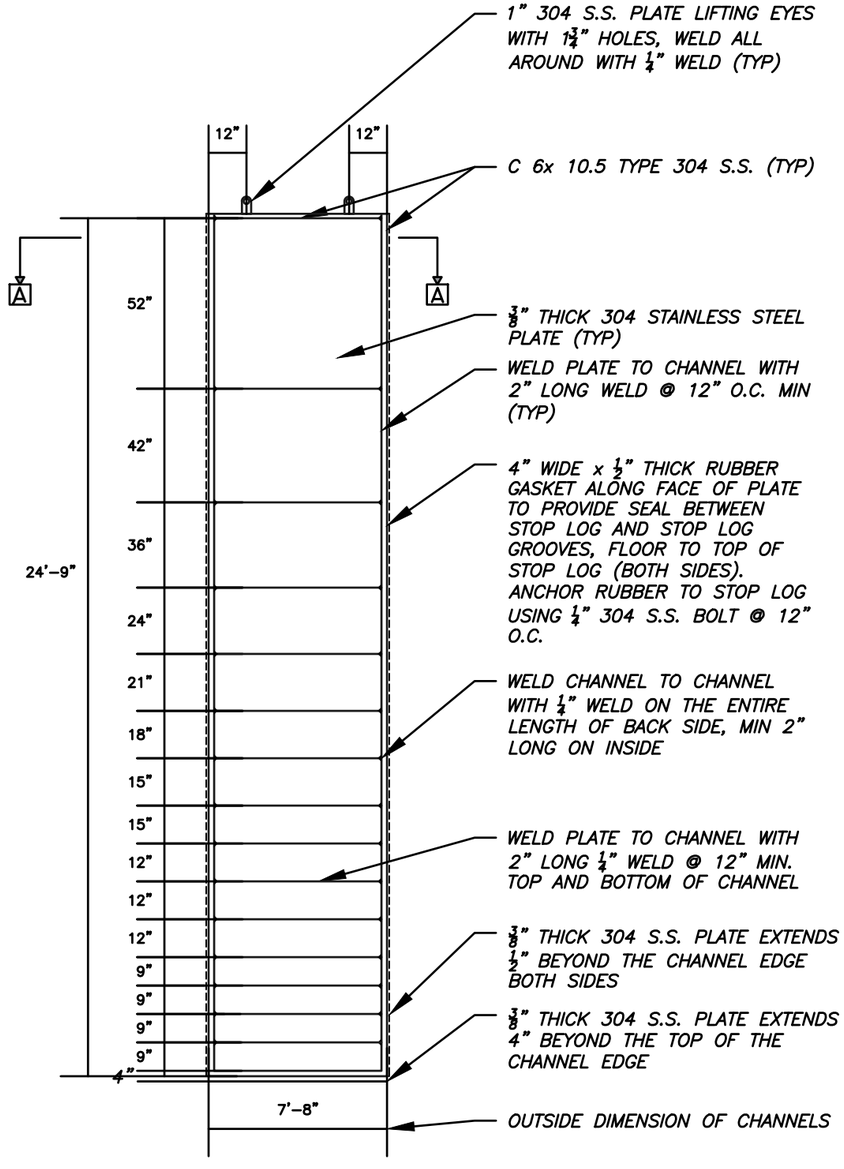
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CITY of TAMPA
WASTEWATER DEPARTMENT

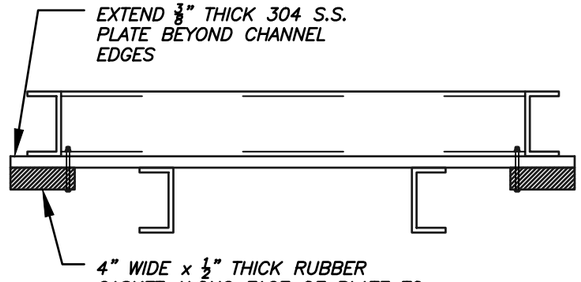
HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

GENERAL NOTES/AERIAL VIEW

SHEET 3



PROPOSED BACK OF STOP LOG
SCALE: 1/4" = 1' - 0"



PROPOSED SECTION A
N.T.S.

STOP LOG NOTES:

S-1 CONTRACTOR WILL BE REQUIRED TO FABRICATE AND INSTALL (3) 304 STAINLESS STEEL STOP LOGS AT THE FILTER INFLUENT CONDUIT. REFER TO SHEET 8 FOR EXACT LOCATION.

S-2 STOP LOGS SHALL BE CONSTRUCTED WITH 304L STAINLESS STEEL STRUCTURAL MEMBERS AND PLATES.

S-3 (3) STOP LOGS SHALL BE DESIGNED FOR THE FILTER INFLUENT CONDUIT TO RESIST A MAXIMUM WATER HEIGHT OF 20' WITH A MAXIMUM DEFLECTION OF 0.125" AND SHALL BE AS WATERTIGHT AS POSSIBLE WITH RUBBER MATERIAL SECURELY ATTACHED TO THEIR WETTED PERIMETER". APPROXIMATE HEIGHT OF EACH STOP LOG IS 24'-9" AND WIDTH OF EACH STOP LOG GROOVE OPENING IS APPROXIMATELY 7'-9".

S-4 THE EXISTING LOG GROOVES ARE 1/4" THICK FRP CHANNELS. THE SIZE OF THE GROOVE IS ONLY 6" WIDE BY 1 5/8" DEEP. CONTRACTOR SHALL MEASURE THE STOP LOG GROOVE IN MULTIPLE LOCATIONS FOR UNIFORMITY PRIOR TO STOP LOG FABRICATION.

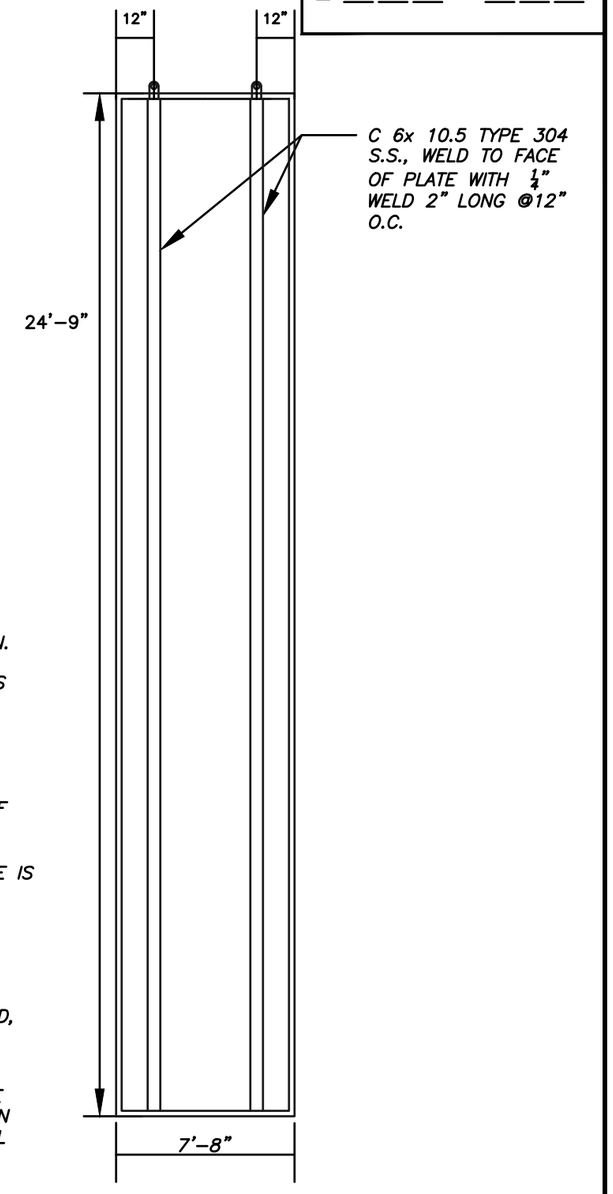
S-5 CONTRACTOR SHALL SUBMIT FABRICATION DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL. FABRICATION DRAWINGS MUST REFLECT FIELD VERIFIED MEASUREMENTS.

S-6 CONTRACTOR SHALL INSTALL STOP LOGS AS REQUIRED. AFTER STOP LOGS ARE INSTALLED, THE CONTRACTOR WILL BE REQUIRED TO SUPPLY DEWATERING PUMPS NECESSARY TO REMOVE THE REMAINING WATER IN THE INFUENT CONDUIT.

S-7 CONTRACTOR SHALL MINIMIZE ANY STOP LOG LEAKAGE AS NECESSARY TO FACILITATE THE WORK REQUIRED IN THIS CONTRACT. LEAKAGE MAY BE REDUCED BY INSTALLING VISQUEEN ROLL BEHIND THE (WATER SIDE) OF THE STOP LOGS, OR INJECT OAKUM OR A CHEMICAL GROUT. ALL ITEMS LISTED SHALL BE CONTAINED, REMOVED AND PROPERLY DISGARDED OF AFTER THE WORK HAS BEEN COMPLETED.

S-8 AT THE COMPLETION OF THIS PROJECT THE (3) STOP LOGS SHALL BECOME THE PROPERTY OF THE CITY OF TAMPA AND SHALL BE DELIVERED TO A TREATMENT PLANT SITE FOR STORAGE AS DIRECTED BY THE CITY.

B____-____



PROPOSED FRONT OF STOP LOG
SCALE: 1/4" = 1' - 0"

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

No.	DATE	REVISIONS
3		
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DES: KJG
DRN: WA/KLT
CKD:
DATE: Oct-19

CITY of TAMPA
WASTEWATER DEPARTMENT

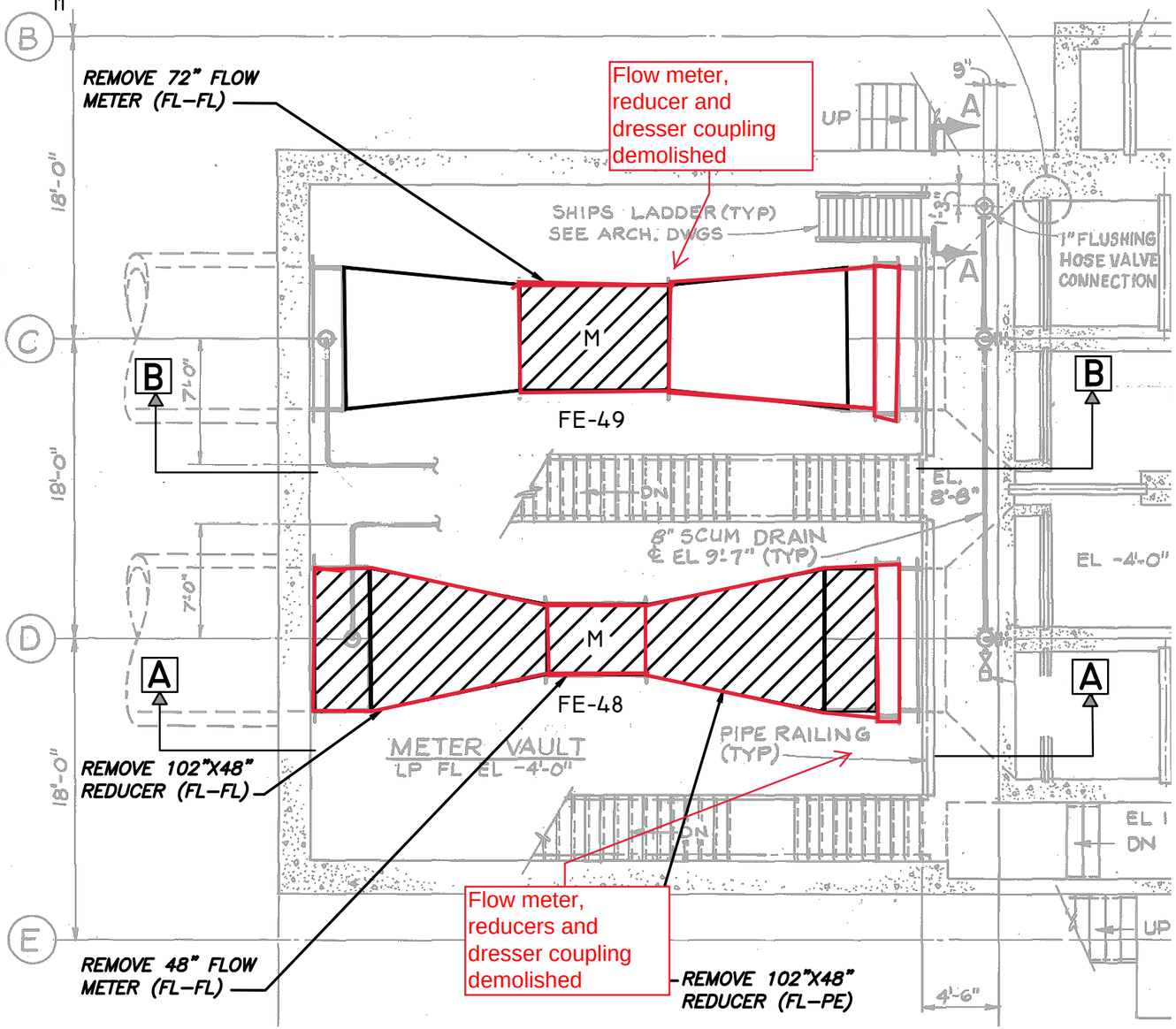
HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

PROPOSED STOP LOGS

SHEET 4

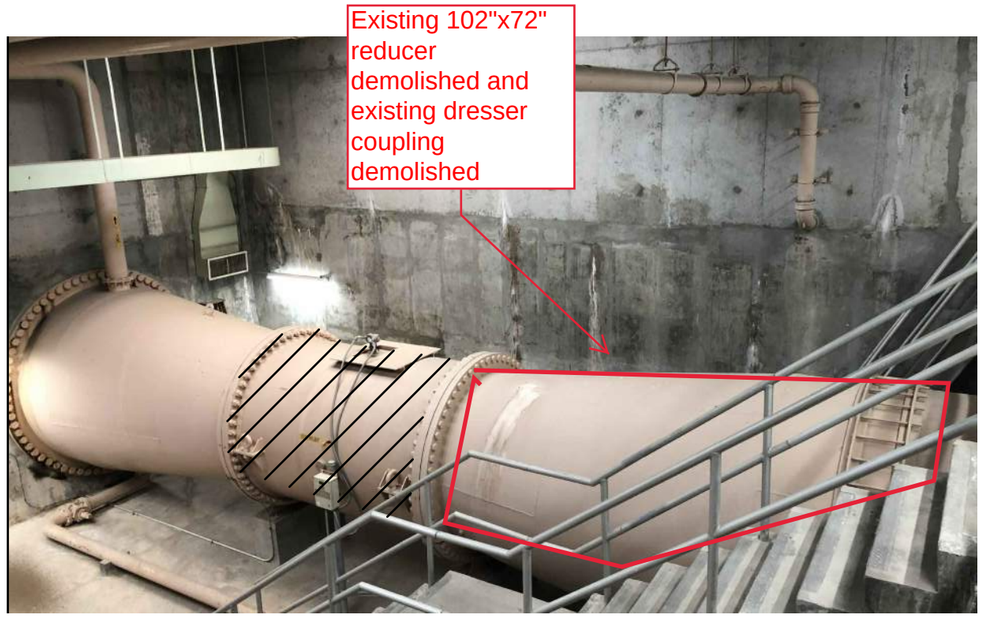
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Oct 24, 2019 - 11:15am
Layout--

B____-____



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

DEMOLITION PLAN VIEW - FILTER BUILDING NO. 2
SCALE: 1/8" = 1' - 0"



72" FLOW METER (FE-49)



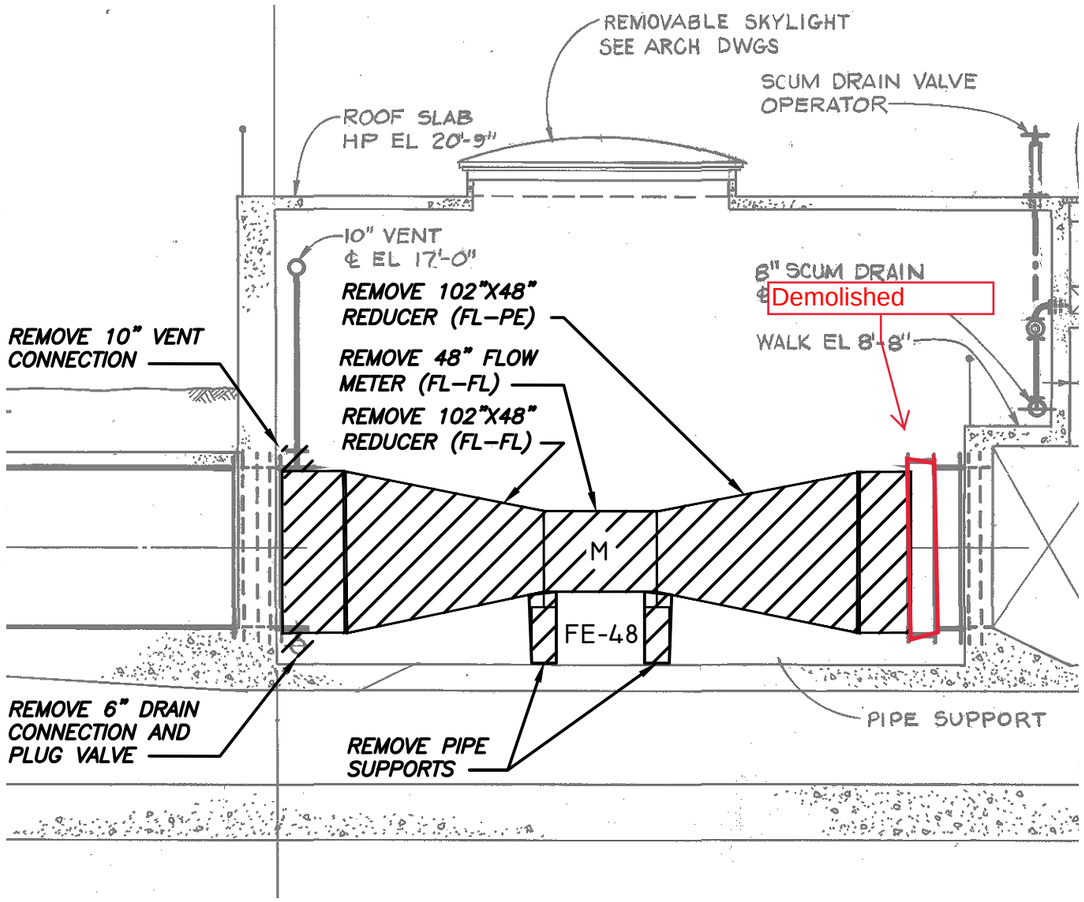
48" FLOW METER (FE-48)

	No.	DATE	REVISIONS			
JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	3			DES: KJG DRN: WA/KLT CKD: DATE: Oct–19	CITY of TAMPA WASTEWATER DEPARTMENT	HFC AWTP FILTER BUILDING NO. 2 FLOW METER REPLACEMENT FILTER BUILDING NO. 2 – DEMOLITION PLAN VIEW	SHEET 5
	2						
	1						

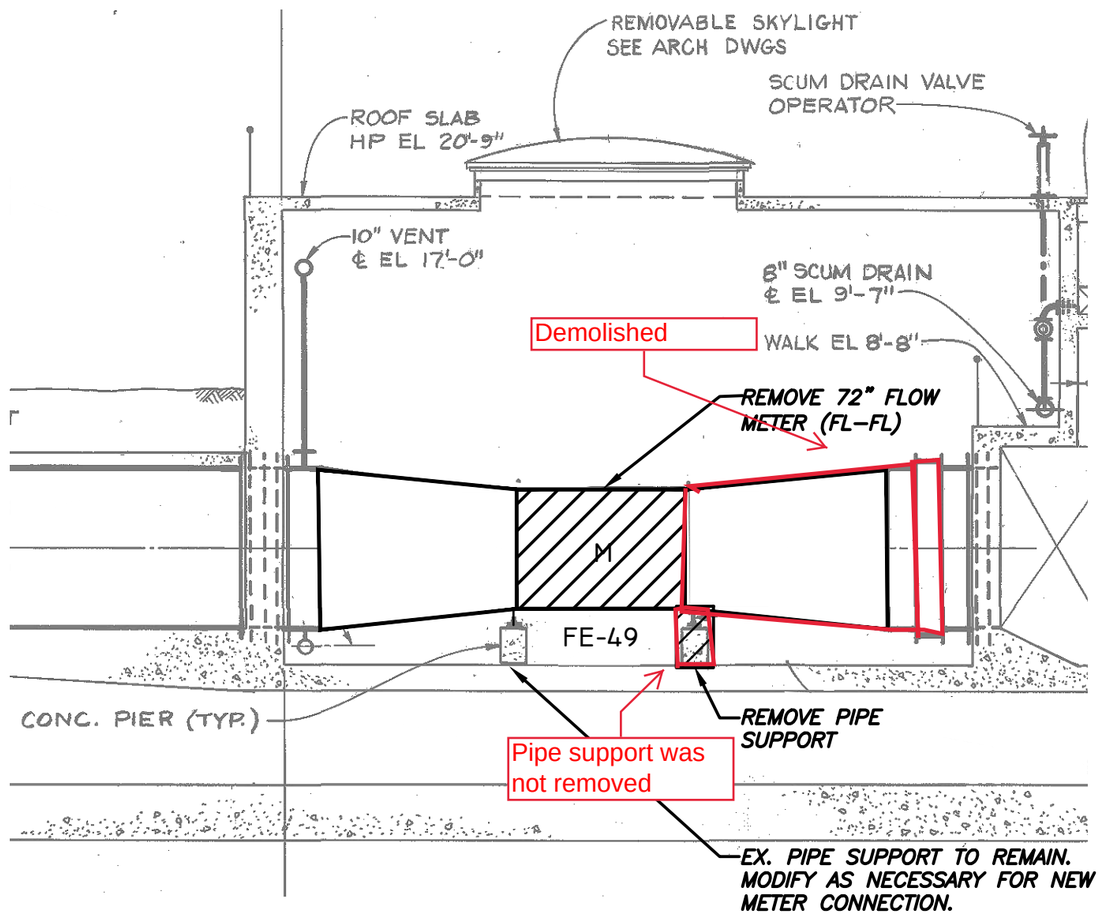
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DEMOLITION SECTION A VIEW - FILTER BUILDING NO. 2
SCALE: 1/8" = 1' - 0"



DEMOLITION SECTION B VIEW - FILTER BUILDING NO. 2
SCALE: 1/8" = 1' - 0"

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

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

No.	DATE	REVISIONS
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DES: KJG
DRN: WA/KLT
CKD:
DATE: Oct-19

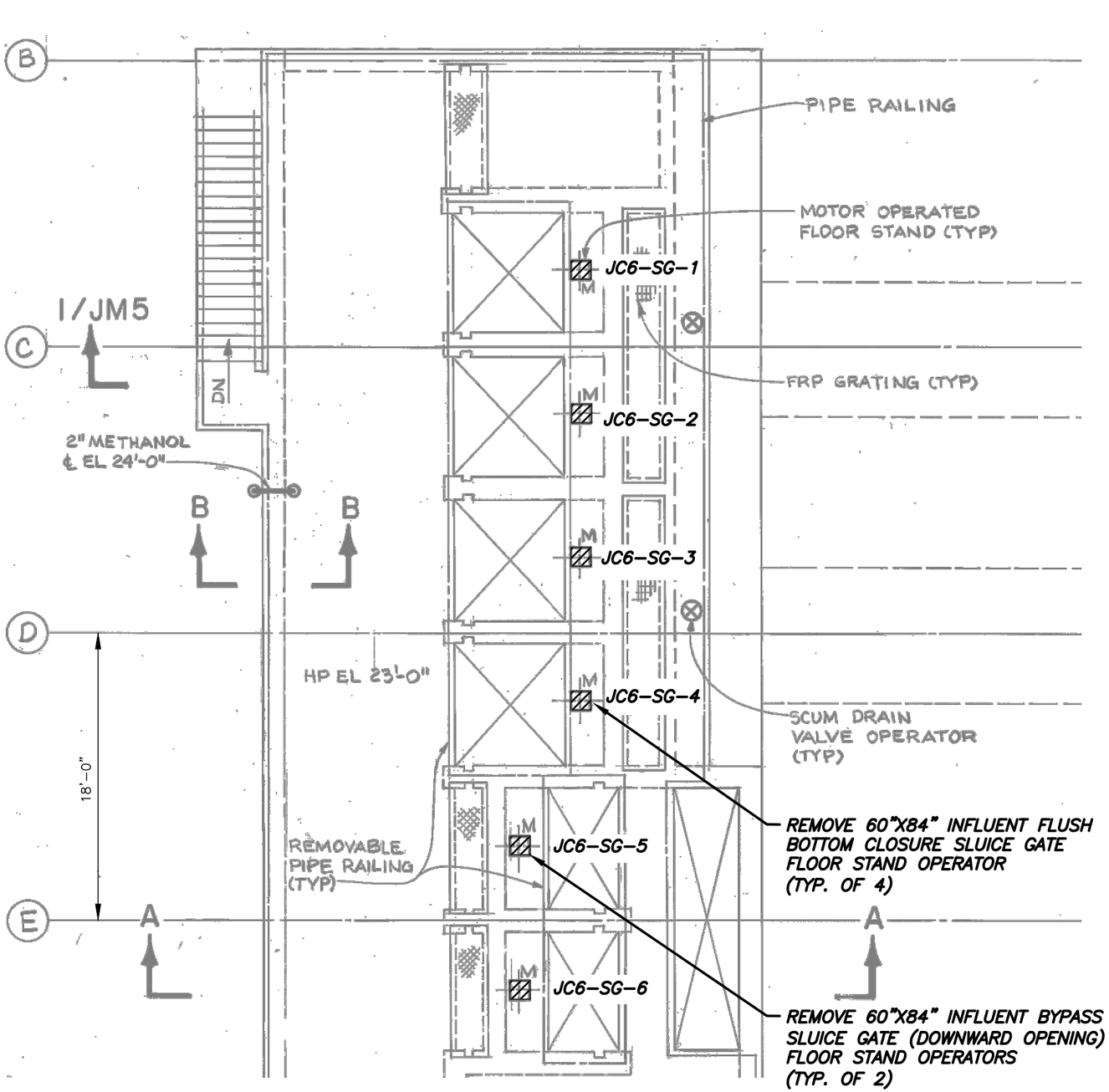
CITY of TAMPA
WASTEWATER DEPARTMENT

HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT
FILTER BUILDING NO. 2 - DEMOLITION SECTION VIEWS

SHEET 6

User: ssry Drawing Name: \\sewer\SewerShare\WasteWater Projects\HFC AWTP Filter Building No.2 Flow Meter Replacements\Drafting\DWG\HFCAWTP FILTER BUILDING NO. 2 FLOW METER REPLACEMENTS KLT.dwg
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DEMOLITION PLAN VIEW - JUNCTION CHAMBER NO. 6
SCALE: 1/8" = 1'-0"

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



FLUSH BOTTOM CLOSURE SLUICE GATES
(JC6-SG-1, JC6-SG-2, JC6-SG-3, JC6-SG-4)



SLUICE GATES (DOWNWARD OPENING) (JC6-SG-5, JC6-SG-6)

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

No.	DATE	REVISIONS
3		
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DES: KJG
DRN: WA/KLT
CKD:
DATE: Oct-19

CITY of TAMPA
WASTEWATER DEPARTMENT

HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT
JUNCTION CHAMBER NO. 6 -
DEMOLITION PLAN VIEW

SHEET 7

User: ssry Drawing Name: \\sewer\SewerShare\WasteWater Projects\HFC AWTP Filter Building No.2 Flow Meter Replacements\Drafting\DWG\HFCAWTP FILTER BUILDING NO. 2 FLOW METER REPLACEMENTS KLT.dwg
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~~EX. 102" DRESSER COUPLING (GASKET TO BE REPLACED)~~

New 102" x 72" FLGxPE Concentric Reducer and Dresser Coupling. Reducer Length is 13'-8"

~~PROP. 102" STEEL 5/8" THICK PIPE EXTENSION TO BE WELDED FULL CIRCUMFERENCE OF PIPE~~

PROP. 72" FLOW METER (FL-FL)

EX. REMOVABLE SKYLIGHTS 10'X14'(TO BE REMOVED) FOR METER REPLACEMENTS. (TYP. OF 2) (SEE NOTE G-5 SHEET 3)

PIPE RAILING (TYP)

REMOVABLE SKYLIGHT (TYP) SEE ARCH DWG'S

FRP GRATING (TYP)

METER ACCESS (TYP)

1" FLUSHING HOSE VALVE CONNECTION

PROP. STOP LOGS-PHASE 2

PROP. STOP LOGS-PHASE 1 AND 2

PROP. STOP LOGS-PHASE 1

8" SCUM DRAIN ℄ EL 9'-7" (TYP)

EL -4'-0"

10" ENT ℄ E. 21'-11" (TYP)

SCUM DRAIN VALVE OPERATOR (TYP)

METER VAULT LP FL EL -4'-0"

PIPE RAILING (TYP)

EL 11'-0"

HP EL 20'-9"

REMOVE ALL DEBRIS FROM FILTER INFLUENT CONDUIT (SEE NOTE G-11 SHEET 3)

New 102" Dresser coupling

PROP. 102"X72" STEEL 5/8" THICK REDUCER (FL-FL)

PROP. 102"X72" STEEL 5/8" THICK REDUCER (FL-PE)

PROP. 72" FLOW METER (FL-FL)

~~EX. 102" DRESSER COUPLING (GASKET TO BE REPLACED)~~

FE-49

FE-48

18'-0"

7'-0"

UP

DN

PROPOSED SECTIONAL PLAN VIEW EL. 14'-0" - FILTER BUILDING NO. 2

SCALE: 1/8" = 1' - 0"

PROPOSED - SECTIONAL PLAN VIEW EL. 26'-0" - FILTER BUILDING NO. 2

SCALE: 1/8" = 1' - 0"

SHADED AREAS ON THIS SHEET INDICATE PIPING AND EQUIPMENT TO BE INSTALLED

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

No.	DATE	REVISIONS
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DES: KJG
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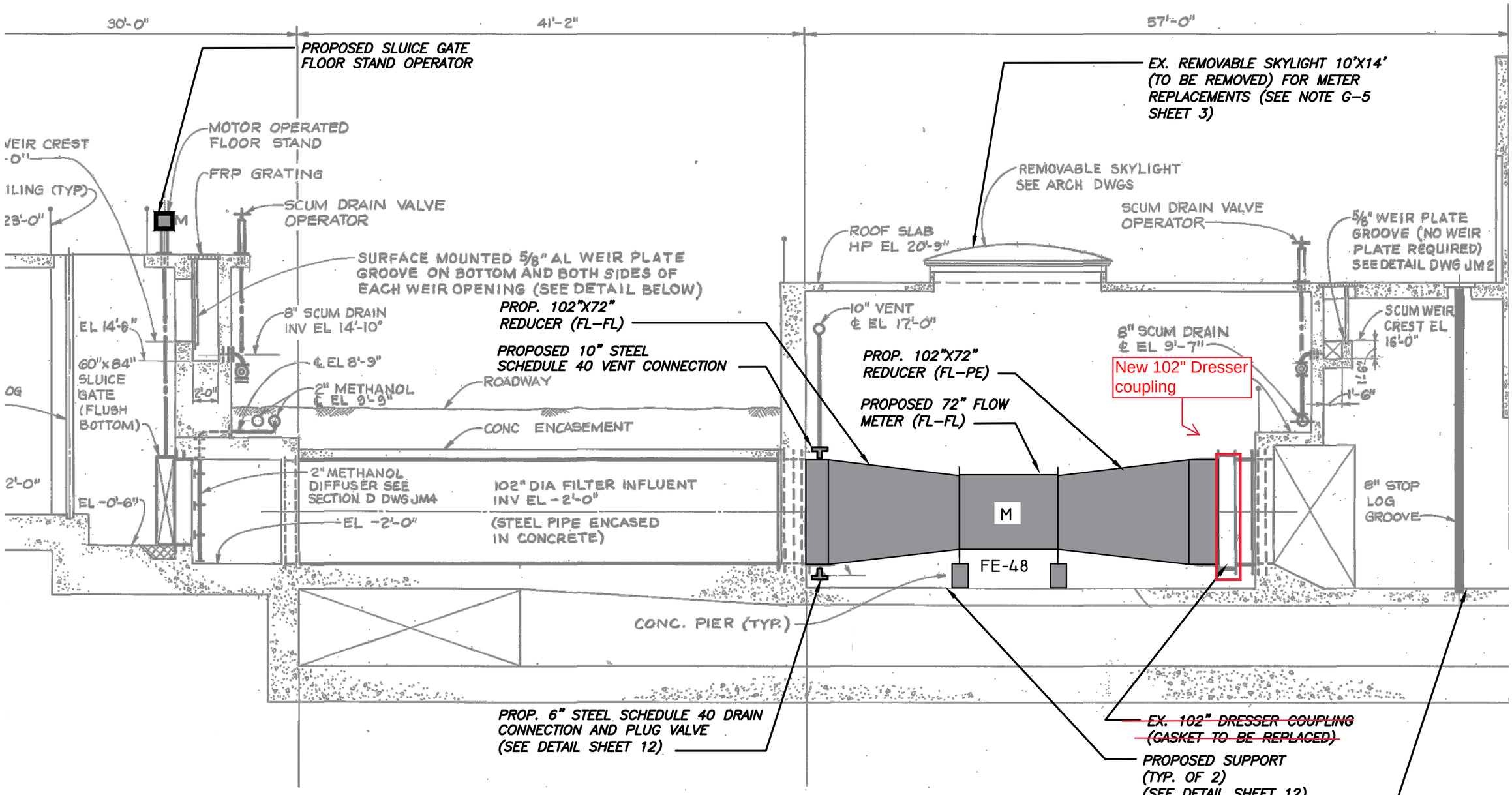
CITY of TAMPA
WASTEWATER DEPARTMENT

HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

FILTER BUILDING NO. 2-PROPOSED PLAN VIEW

SHEET 8

B____-____



PROPOSED SECTION A - FILTER BUILDING NO. 2

SCALE: 1/8" = 1' - 0"

No.	DATE	REVISIONS
3		
2		
1		

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DESIGN DIVISION HEAD
WASTEWATER DEPARTMENT

DES: KJG
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CITY of TAMPA
WASTEWATER DEPARTMENT

HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

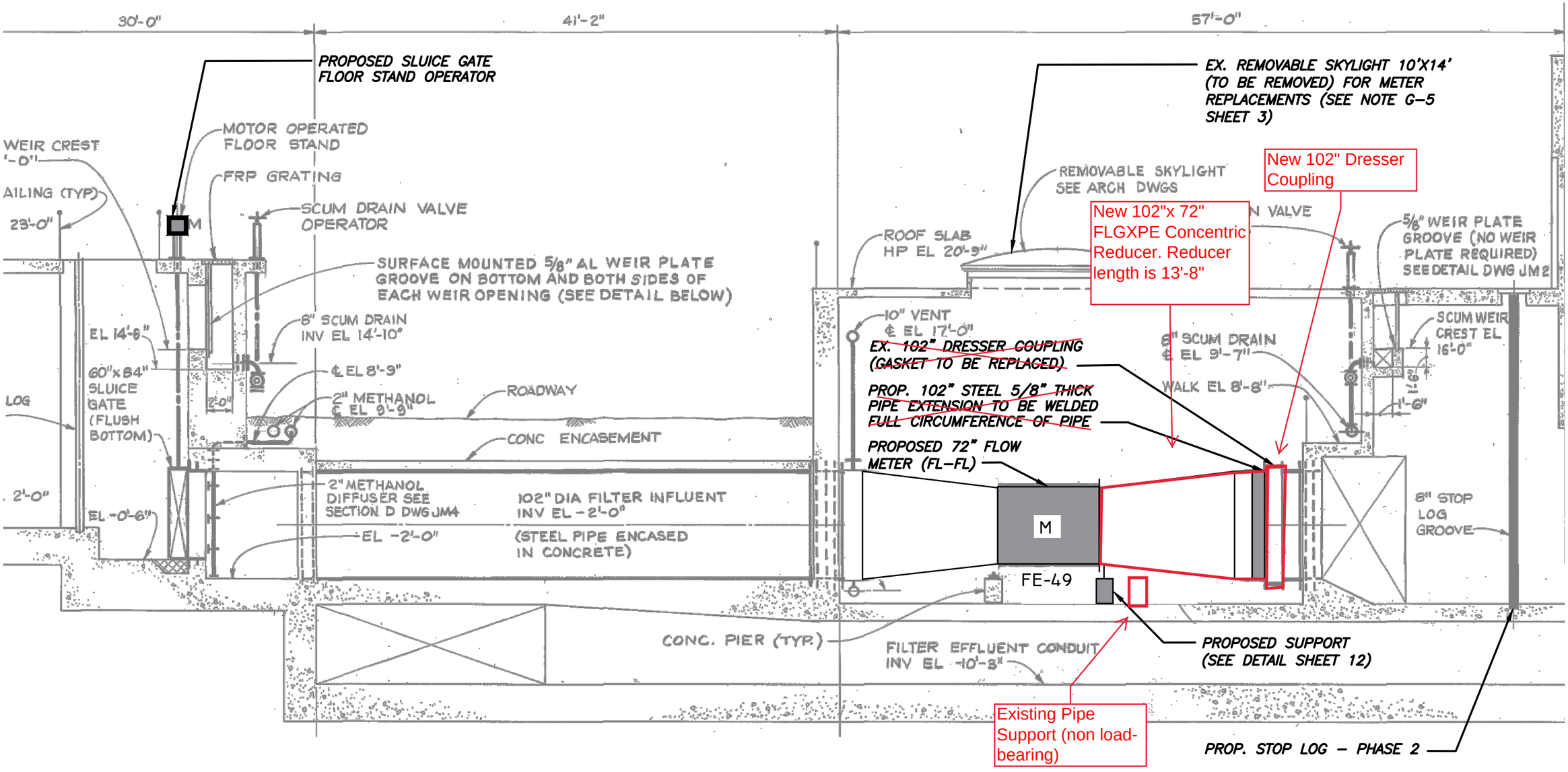
FILTER BUILDING NO. 2-PROP. SECTION A VIEW

SHEET 9

User: ssry Drawing Name: \\sewer\SewerShare\WasteWater Projects\HFC AWTP Filter Building No.2 Flow Meter Replacements\Drafting\DWG\HFCAWTP FILTER BUILDING NO. 2 FLOW METER REPLACEMENTS KLT.dwg
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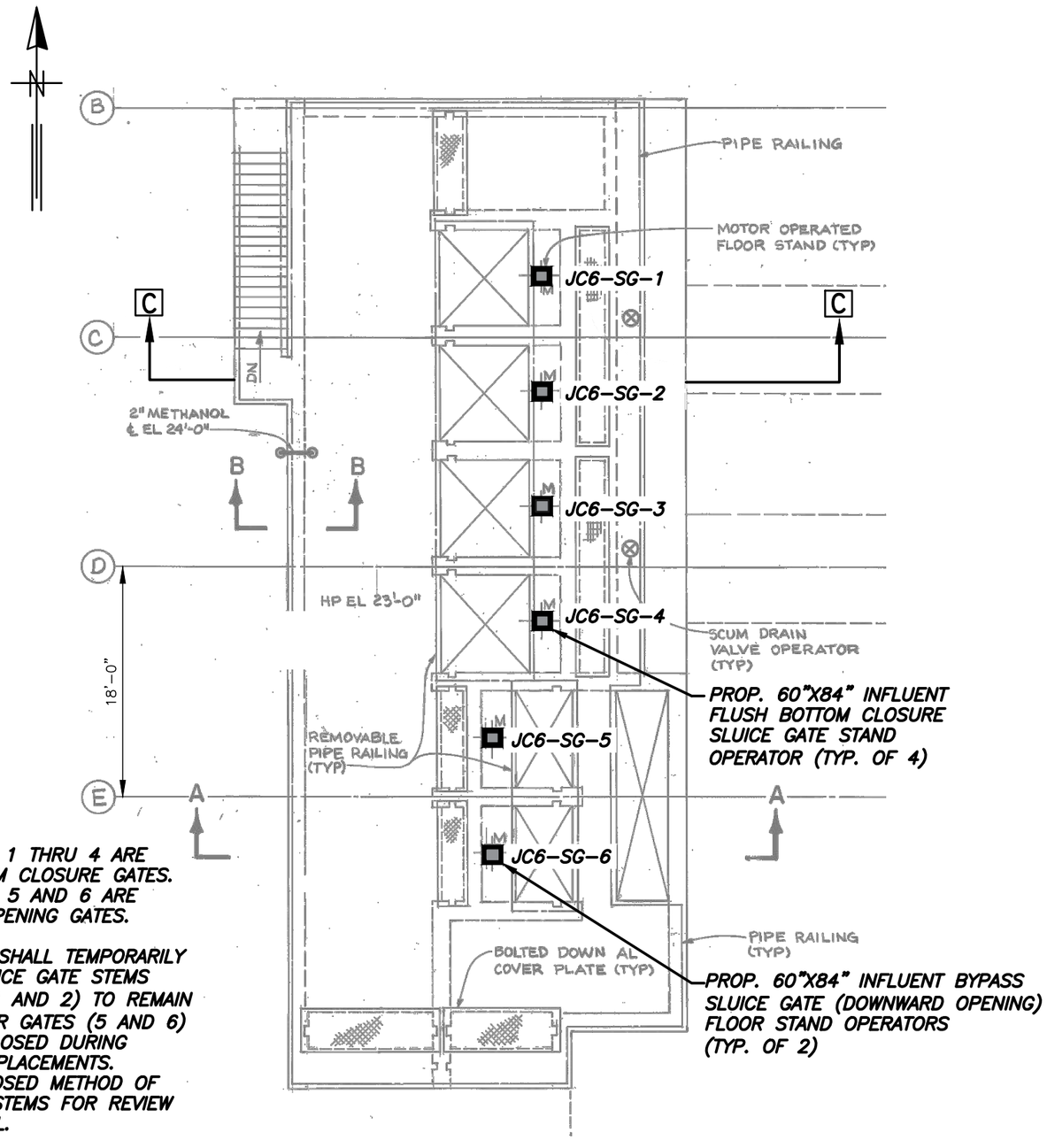
PROPOSED SECTION B - FILTER BUILDING NO. 2

SCALE: 1/8" = 1' - 0"

	No.	DATE	REVISIONS			
JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	3			DES: KJG DRN: WA/KLT CKD: DATE: Oct-19	CITY of TAMPA WASTEWATER DEPARTMENT	HFC AWTP FILTER BUILDING NO. 2 FLOW METER REPLACEMENT FILTER BUILDING NO. 2-PROP. SECTION B VIEW	SHEET 10
	2						
	1						

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Layout— Oct 24, 2019 - 11:15am

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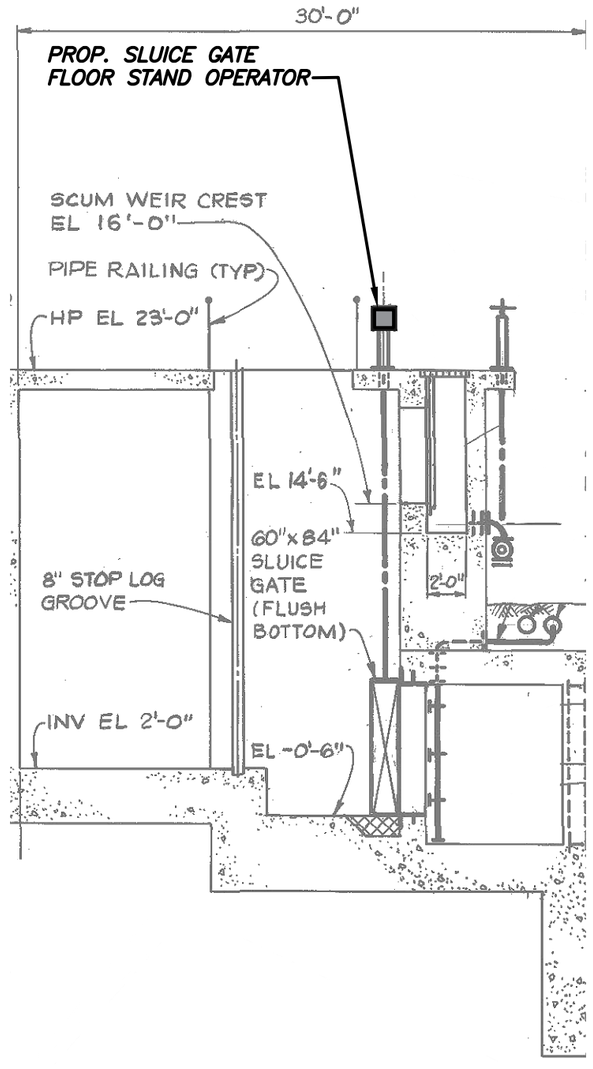


NOTE:

1. SLUICE GATES 1 THRU 4 ARE FLUSH BOTTOM CLOSURE GATES. SLUICE GATES 5 AND 6 ARE DOWNWARD OPENING GATES.
2. CONTRACTOR SHALL TEMPORARILY SUPPORT SLUICE GATE STEMS FOR GATES (1 AND 2) TO REMAIN OPEN AND FOR GATES (5 AND 6) TO REMAIN CLOSED DURING OPERATOR REPLACEMENTS. SUBMIT PROPOSED METHOD OF SUPPORTING STEMS FOR REVIEW AND APPROVAL.

PROPOSED PLAN VIEW - JUNCTION CHAMBER NO. 6

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



PROPOSED SECTION C - JUNCTION CHAMBER NO. 6

SCALE: 1/8" = 1 - 0"

SHADED AREAS ON THIS SHEET INDICATE PIPING AND EQUIPMENT TO BE INSTALLED

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

No.	DATE	REVISIONS
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2		
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DES: KJG
DRN: WA/KLT
CKD:
DATE: Oct-19

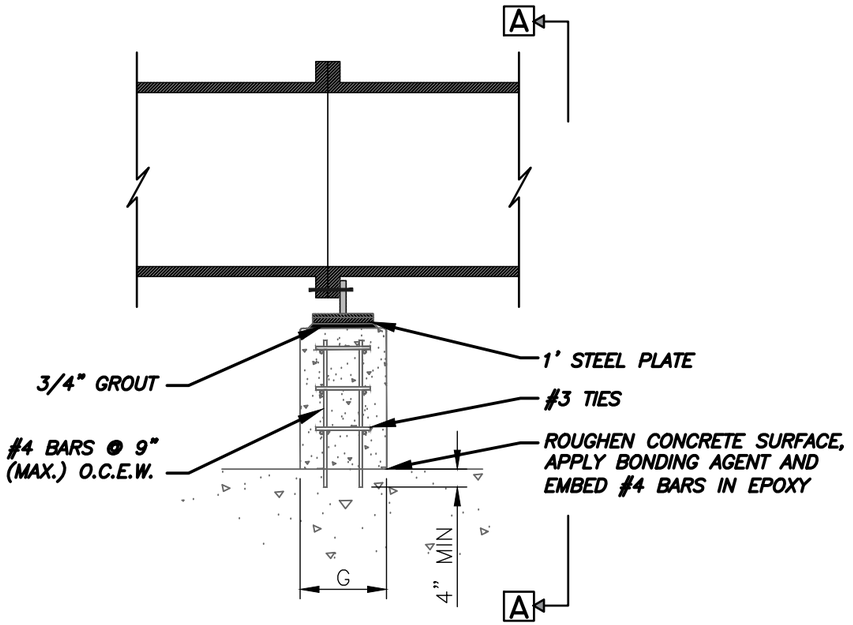
CITY of TAMPA
WASTEWATER DEPARTMENT

HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT
JUNCTION CHAMBER NO. 6 – PROPOSED PLAN AND SECTION C VIEW

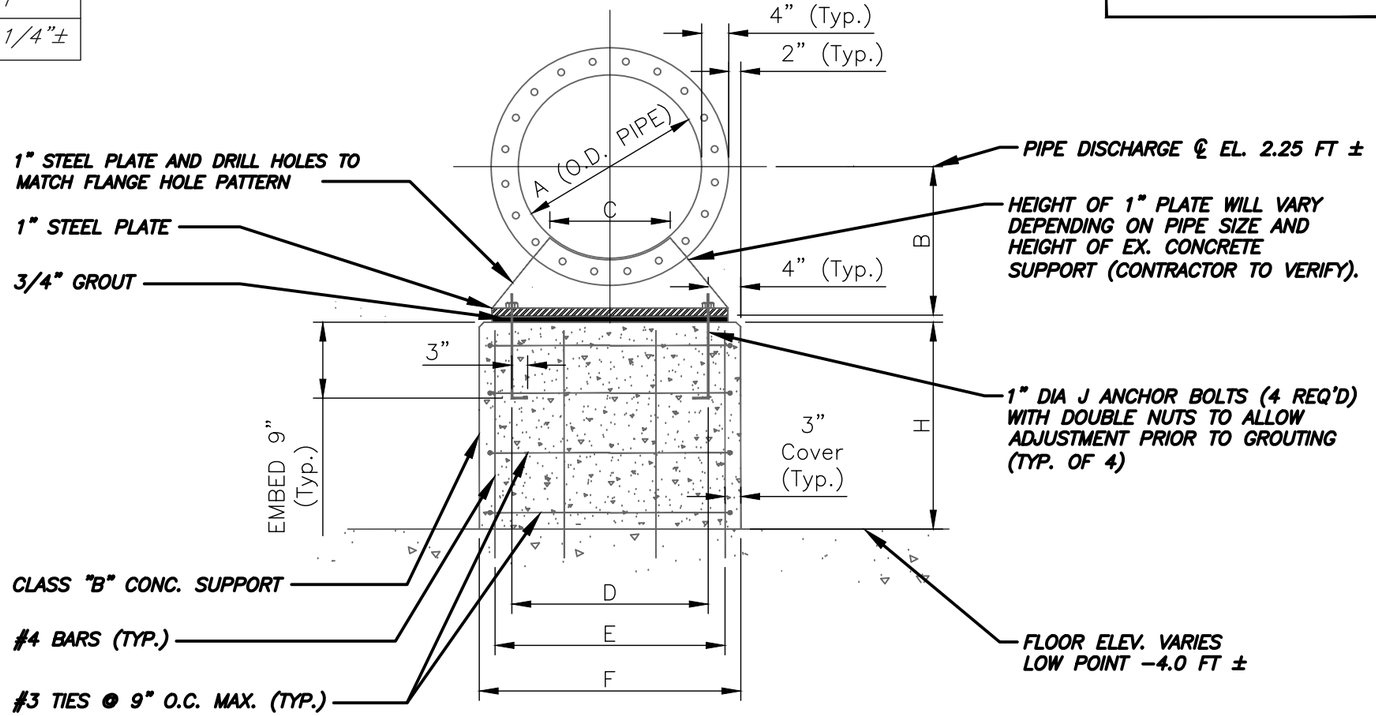
SHEET 11

B____-____

SCHEDULE							
A	B	C	D	E	F	G	H
72"	4'-0"	2'-7"	2'-10"	3'-4"	3'-10"	1'-4"	1'-8-1/4"±

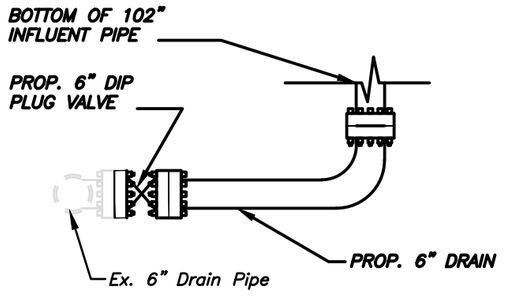


ELEVATION



SECTION A

PIPE SUPPORT DETAIL
N.T.S.



6" DRAIN CONNECTION
N.T.S.

No.	DATE	REVISIONS
3		
2		
1		

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

DES: KJG
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CITY of TAMPA
WASTEWATER DEPARTMENT

HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

MISCELLANEOUS DETAILS

SHEET 12

User: ssry Drawing Name: \\sewer\SewerShare\WasteWater Projects\HFC AWTP Filter Building No.2 Flow Meter Replacements\Drafting\DWG\HFCAWTP FILTER BUILDING NO. 2 FLOW METER REPLACEMENTS KLT.dwg
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GENERAL NOTES

THE WORK CONSISTS OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, AND TECHNICAL SUPERVISION FOR THE PROPOSED REPLACEMENT OF VARIOUS MOTOR OPERATED VALVE ACTUATORS AND FLOW METERS AS INDICATED AND SHOWN. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2. ALL WIRING SHALL BE IDENTIFIED WITH NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
3. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
4. ALL NEW EQUIPMENT SHALL BE PERMANENTLY IDENTIFIED WITH A BLACK ON WHITE LAMACOID TAG ENGRAVED WITH MINIMUM 3/16 INCH LETTERING.
5. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS. NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
6. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
7. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 6TH EDITION 2017, THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) SERIES 70/NATIONAL ELECTRICAL CODE (NEC) 2014 EDITION AND CHAPTER 6 OF THE CITY OF TAMPA CODE.
8. TEST AND START–UP REPORTS FOR THE PROPOSED MOTOR OPERATED VALVES AND FLOW METER REMOTE TRANSMITTERS 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 FILTER BUILDING NO. 2 FLOW METER REPLACEMENT. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

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

SPECIFICALLY:

A. <u>INSTALLATION</u>

1. PRIOR TO DEMOLITION, THE PROPOSED MOTOR OPERATED VALVE ACTUATORS AND FLOW METER REMOTE TRANSMITTERS SHALL BE ON SITE AND READY FOR INSTALLATION. NO TEMPORARY POWER SHALL BE REQUIRED DURING THE REPLACEMENT OF THE EQUIPMENT.
2. VERIFY EXISTING CONTROL AND POWER CONNECTIONS IN THE FIELD PRIOR TO COMMENCING DEMOLITION WORK.
3. REMOVE THE EXISTING MOTOR OPERATED VALVE ACTUATORS AND FLOW METERS. PREPARE THE EXISTING SPACES AS REQUIRED TO INSTALL THE NEW EQUIPMENT.
4. INSTALL THE MOTOR OPERATED VALVE ACTUATORS AND FLOW METERS.
5. INSTALL NEW CONDUIT, CONDUCTORS, JUNCTION BOXES, CHANNEL SUPPORTS AND CIRCUIT BREAKERS AS SHOWN, INDICATED OR REQUIRED.
6. MAKE CABLE CONNECTIONS AS SHOWN.
7. FE 48'S FLOW SIGNAL IS CONNECTED TO ANALOG INPUT 2 AND FE 49 IS CONNECTED TO ANALOG INPUT #1 ON THE RTU PLC LOCATED IN FILTER BUILDING #2. THE CONTRACTOR SHALL RECONNECT THESE EXISTING INPUTS IN THE RTU PLC.

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

JOB No.	2319018 42					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	10/2019	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: AS SHOWN

City of Tampa Wastewater Department

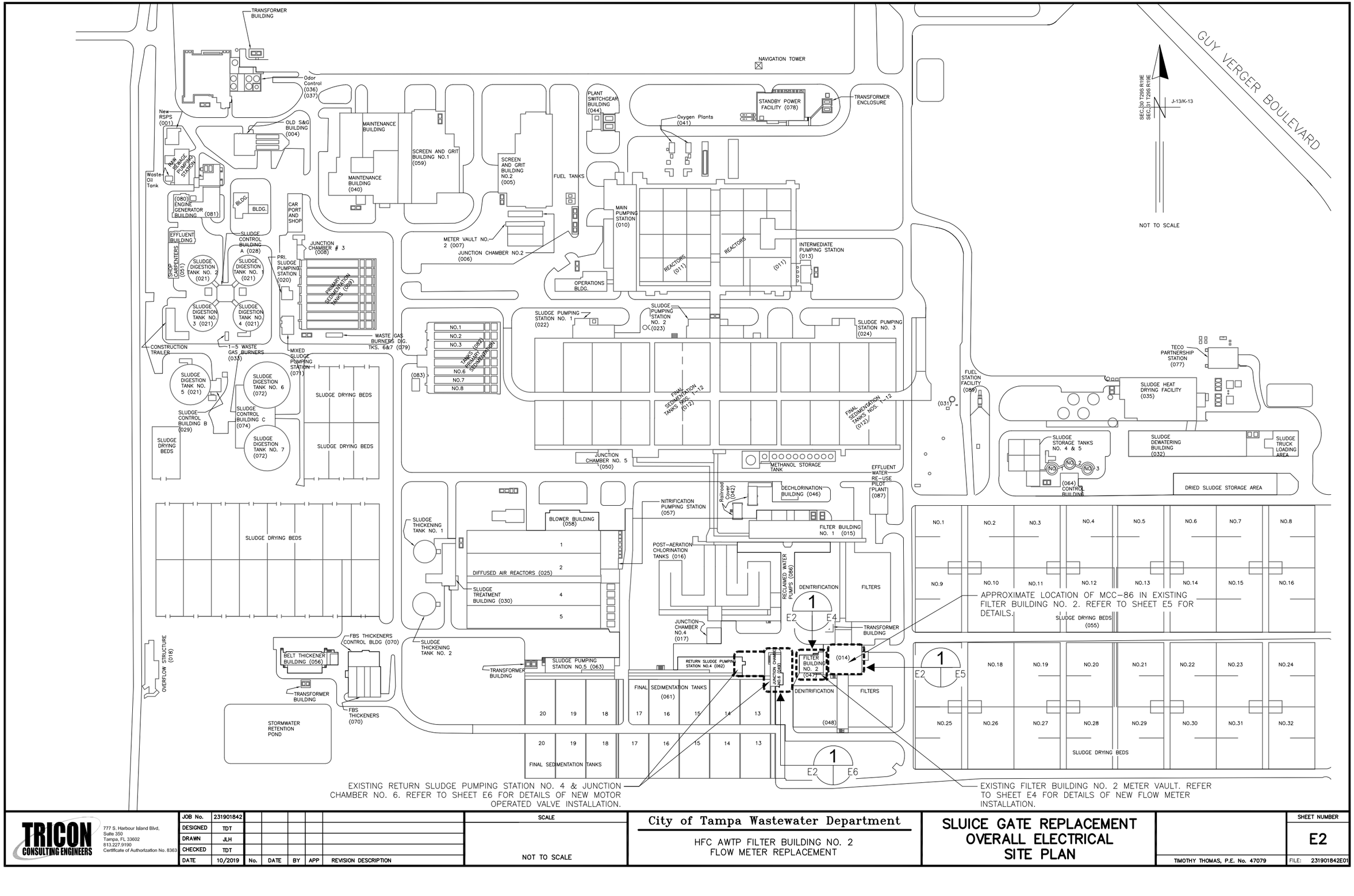
HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

GENERAL NOTES AND SCOPE OF WORK

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E1

FILE: 231901842E01



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

JOB No.	231901842					
DESIGNED	TDT					
DRAWN	JLH					
CHECKED	TDT					
DATE	10/2019	No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE

NOT TO SCALE

City of Tampa Wastewater Department

HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

SLUICE GATE REPLACEMENT OVERALL ELECTRICAL SITE PLAN

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER

E2

FILE: 231901842E01

CONDUIT RUN EXPOSED

CONDUIT RUN CONCEALED UNDERGROUND

CONDUIT RUN CONCEALED IN FLOOR OR SLAB

G — G GROUNDING ELECTRODE CONDUCTOR

CONDUIT STUB OUT AND CAP

GROUND ROD

JUNCTION BOX

JUNCTION BOX WITH FLEXIBLE CONNECTION

480V
15 KVA, 1*
120/240V

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

3P
30A

THERMAL MAGNETIC CIRCUIT BREAKER WITH NUMBER OF POLES AND AMPERE RATING

XX

COMBINATION MAGNETIC STARTER WITH CONTROL POWER TRANSFORMER (SIZED FOR LOAD). LETTERS INDICATE TYPE:
N – NON–REVERSING
R – REVERSING
2S – TWO–SPEED
C – CONTACTOR
SS – SOLID STATE SOFT START

XXX

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

FUSE

XX

MOTOR

THERMAL OVERLOAD

UTILITY METER

TRANSFER SWITCH

ELECTRIC PANELBOARD

DISCONNECT OR SAFETY SWITCH

FLOAT SWITCH. OPENS ON LOW LEVEL.

FLOAT SWITCH. CLOSES ON LOW LEVEL.

NORMALLY OPEN (N.O.) CONTACT

NORMALLY CLOSED (N.C.) CONTACT

GROUND CONNECTION

R

INDICATING PILOT LIGHT LETTER INDICATES COLOR OF LENS
R = RED
A = AMBER

DISCONNECT OR TOGGLE SWITCH

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

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

LIMIT SWITCH NORMALLY OPEN CONTACT. CONTACT CLOSES WHEN ACTUATED

TORQUE SWITCH NORMALLY CLOSED CONTACT. CONTACT OPENS WHEN ACTUATED

PUMP THERMAL SENSOR

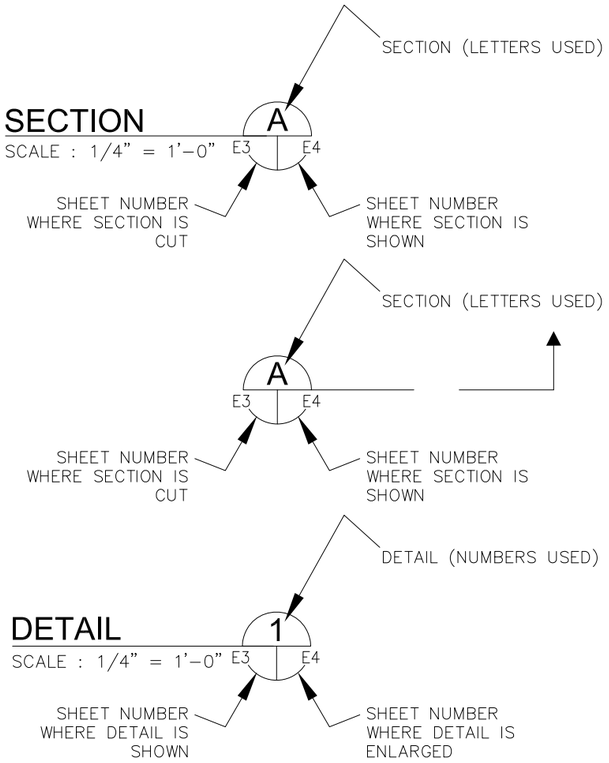
50/51/51G

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

ABBREVIATIONS:

4C	4 CONDUCTOR
A	AMPS
AF	AMPERE FRAME
AM	AMMETER
AT	AMPERE TRIP
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ATL	ACROSS–THE–LINE
C	CONDUIT
CLF	CURRENT LIMITING FUSE
CT	CURRENT TRANSFORMER
CU	COPPER
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



FIT — FLOW INDICATING TRANSMITTER

FE — FLOW METER ELEMENT

M — MOTOR OPERATED VALVE

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SCALE
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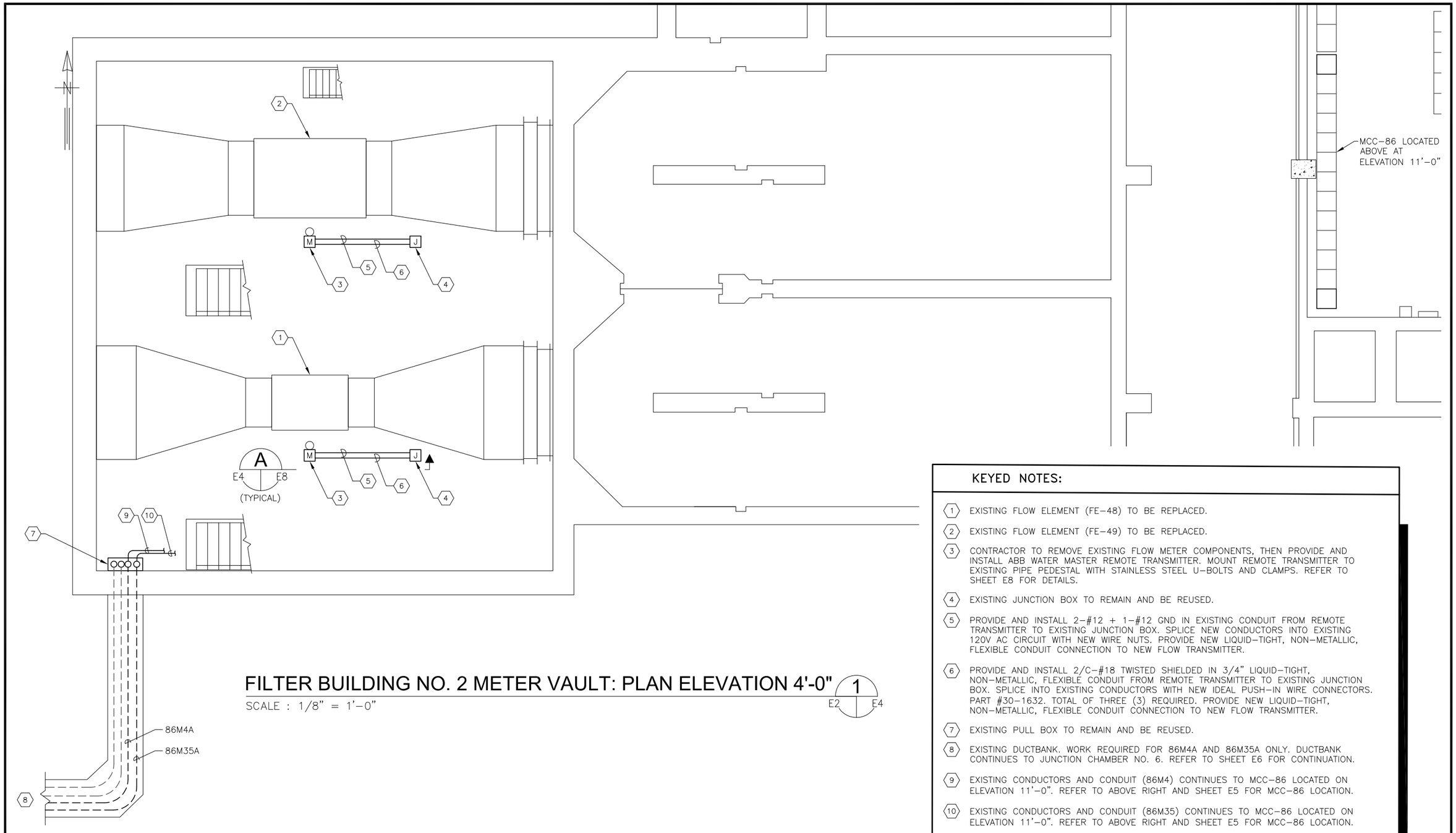
HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

INDEX, SCHEDULES AND GENERAL NOTES

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER
E3

FILE: 231901842E01



FILTER BUILDING NO. 2 METER VAULT: PLAN ELEVATION 4'-0" (1 / E2 – E4)

SCALE : 1/8" = 1'–0"

KEYED NOTES:

1. EXISTING FLOW ELEMENT (FE–48) TO BE REPLACED.
2. EXISTING FLOW ELEMENT (FE–49) TO BE REPLACED.
3. CONTRACTOR TO REMOVE EXISTING FLOW METER COMPONENTS, THEN PROVIDE AND INSTALL ABB WATER MASTER REMOTE TRANSMITTER. MOUNT REMOTE TRANSMITTER TO EXISTING PIPE PEDESTAL WITH STAINLESS STEEL U–BOLTS AND CLAMPS. REFER TO SHEET E8 FOR DETAILS.
4. EXISTING JUNCTION BOX TO REMAIN AND BE REUSED.
5. PROVIDE AND INSTALL 2–#12 + 1–#12 GND IN EXISTING CONDUIT FROM REMOTE TRANSMITTER TO EXISTING JUNCTION BOX. SPLICE NEW CONDUCTORS INTO EXISTING 120V AC CIRCUIT WITH NEW WIRE NUTS. PROVIDE NEW LIQUID–TIGHT, NON–METALLIC, FLEXIBLE CONDUIT CONNECTION TO NEW FLOW TRANSMITTER.
6. PROVIDE AND INSTALL 2/C–#18 TWISTED SHIELDED IN 3/4" LIQUID–TIGHT, NON–METALLIC, FLEXIBLE CONDUIT FROM REMOTE TRANSMITTER TO EXISTING JUNCTION BOX. SPLICE INTO EXISTING CONDUCTORS WITH NEW IDEAL PUSH–IN WIRE CONNECTORS. PART #30–1632. TOTAL OF THREE (3) REQUIRED. PROVIDE NEW LIQUID–TIGHT, NON–METALLIC, FLEXIBLE CONDUIT CONNECTION TO NEW FLOW TRANSMITTER.
7. EXISTING PULL BOX TO REMAIN AND BE REUSED.
8. EXISTING DUCTBANK. WORK REQUIRED FOR 86M4A AND 86M35A ONLY. DUCTBANK CONTINUES TO JUNCTION CHAMBER NO. 6. REFER TO SHEET E6 FOR CONTINUATION.
9. EXISTING CONDUCTORS AND CONDUIT (86M4) CONTINUES TO MCC–86 LOCATED ON ELEVATION 11'–0". REFER TO ABOVE RIGHT AND SHEET E5 FOR MCC–86 LOCATION.
10. EXISTING CONDUCTORS AND CONDUIT (86M35) CONTINUES TO MCC–86 LOCATED ON ELEVATION 11'–0". REFER TO ABOVE RIGHT AND SHEET E5 FOR MCC–86 LOCATION.

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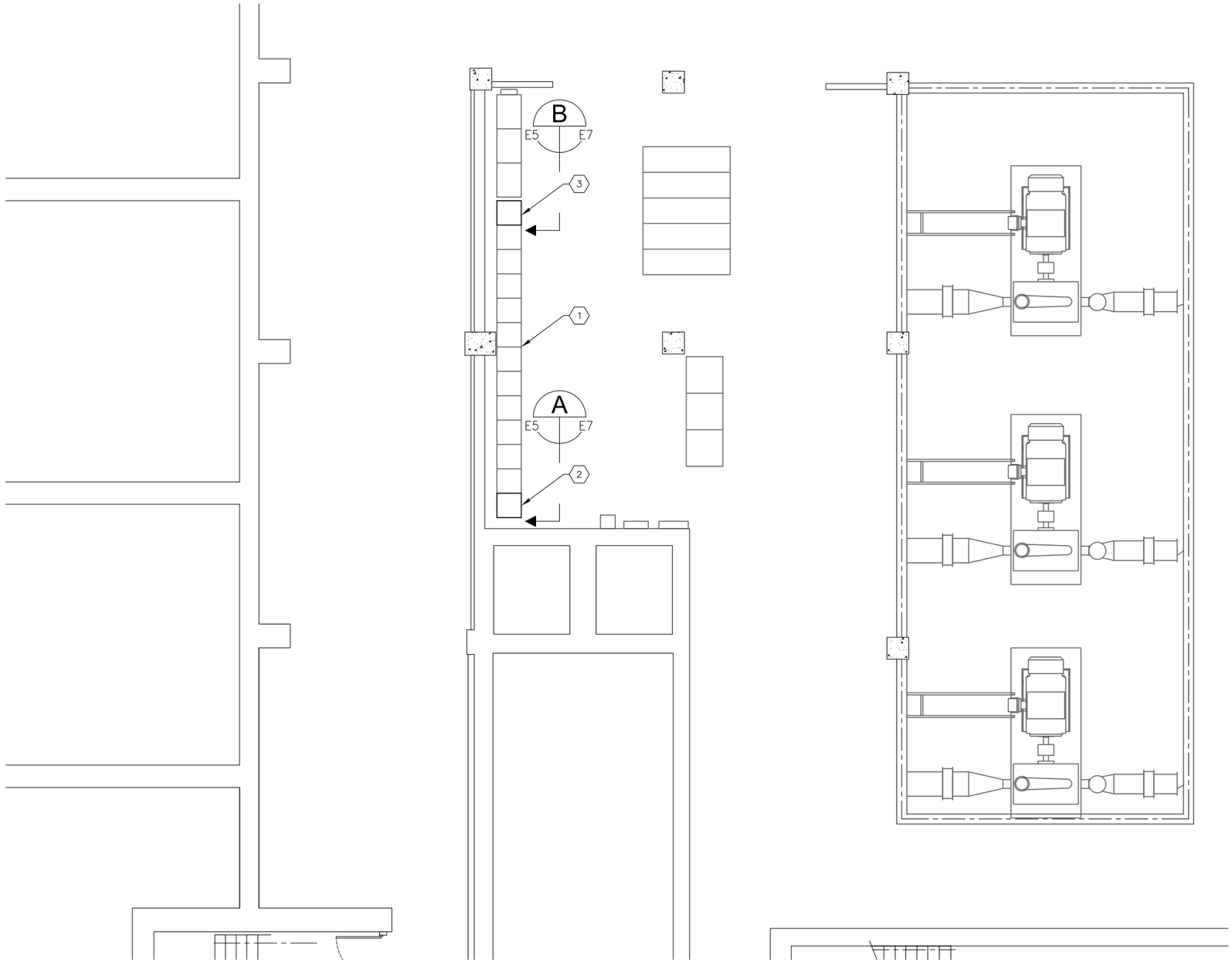
HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

FILTER BUILDING NO. 2 METER VAULT ELECTRIC PLAN ELEVATION 4'–0"

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E4

FILE: 231901842E01





KEYED NOTES:

1. EXISTING MOTOR CONTROL CENTER DESIGNATED 'MCC-86'.
2. CUBICLE 1 IN EXISTING MCC-86. REFER TO PARTIAL ELEVATION ON SHEET E7. CONTRACTOR SHALL REUSE EXISTING 20A CIRCUIT BREAKER DESIGNATED AS 'SLUICE GATES JC-6-3,4,6'.
3. CUBICLE 13 IN EXISTING MCC-86. REFER TO PARTIAL ELEVATION ON SHEET E7. CONTRACTOR SHALL REUSE EXISTING 20A CIRCUIT BREAKER DESIGNATED AS 'SLUICE GATES JC-6-1,2,5'.

FILTER BUILDING NO. 2: PLAN ELEVATION 11'-0"

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

1 (E2 / E5)

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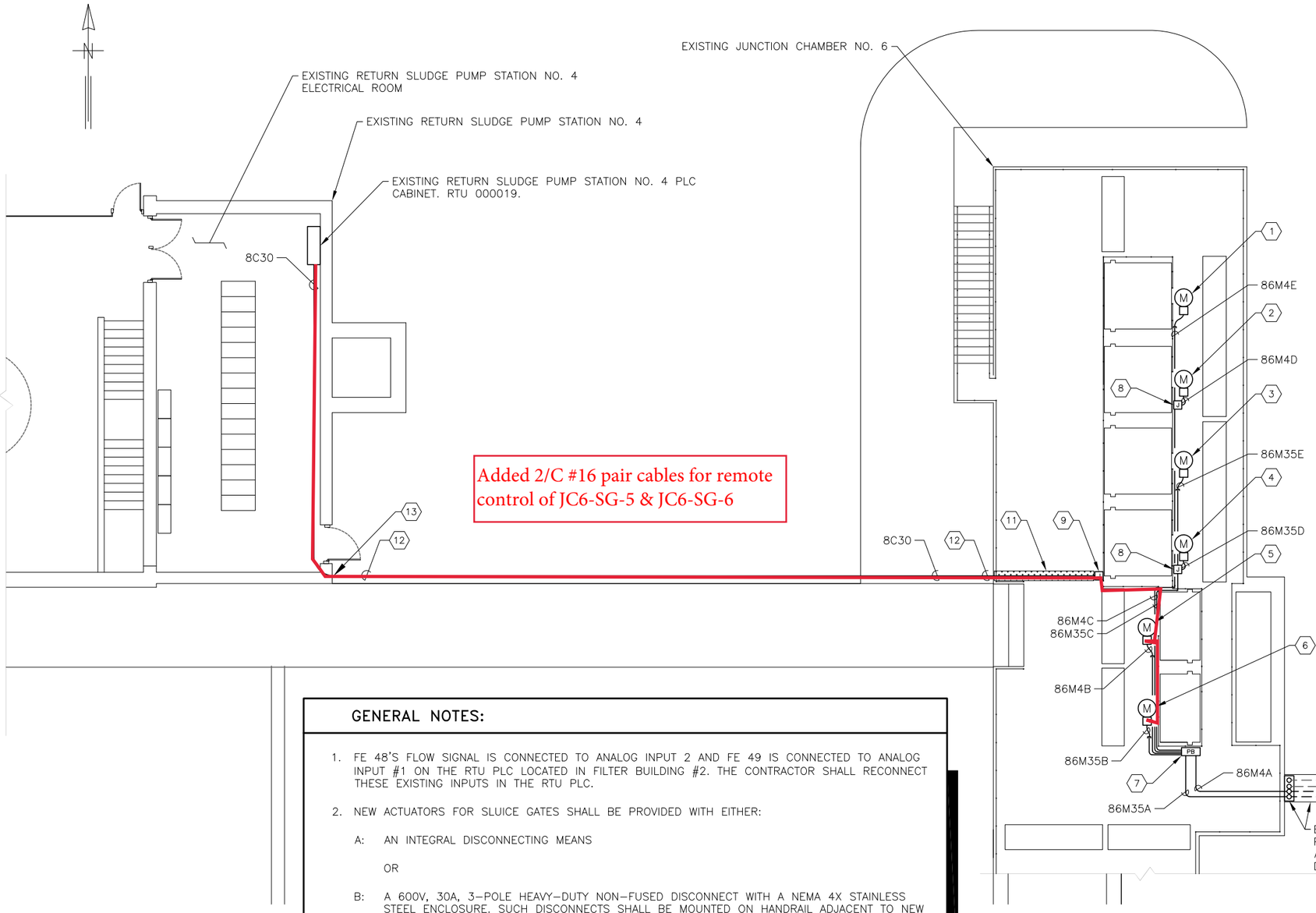
HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

FILTER BUILDING NO. 2
MCC-86 LOCATION
ELEVATION 11'-0"

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E5

FILE: 231901842E01



GENERAL NOTES:

1. FE 48'S FLOW SIGNAL IS CONNECTED TO ANALOG INPUT 2 AND FE 49 IS CONNECTED TO ANALOG INPUT #1 ON THE RTU PLC LOCATED IN FILTER BUILDING #2. THE CONTRACTOR SHALL RECONNECT THESE EXISTING INPUTS IN THE RTU PLC.
2. NEW ACTUATORS FOR SLUICE GATES SHALL BE PROVIDED WITH EITHER:
   - A: AN INTEGRAL DISCONNECTING MEANS
   - OR
   - B: A 600V, 30A, 3-POLE HEAVY-DUTY NON-FUSED DISCONNECT WITH A NEMA 4X STAINLESS STEEL ENCLOSURE. SUCH DISCONNECTS SHALL BE MOUNTED ON HANDRAIL ADJACENT TO NEW ACTUATORS WITH 1-5/8" X 1-5/8" STAINLESS STEEL UNISTRUT AND STAINLESS STEEL HARDWARE.

KEYED NOTES:

1. EXISTING ACTUATOR FOR SLUICE GATE JC-6-SG-1 TO BE REPLACED. PROVIDE AND INSTALL NEW 3/4"C. WITH 2/C-#16 TWISTED SHIELDED (BELDEDN 8719) FROM SLUICE GATE ACTUATOR TO NEW JUNCTION BOX SHOWN IN KEYED NOTE #9. FIELD ROUTE CONDUIT AND PROVIDE JUNCTION BOXES AS REQUIRED. PROVIDE FLEXIBLE, LIQUID-TIGHT, NON-METALLIC CONNECTION TO SLUICE GATE OPERATOR. (8C24)
2. EXISTING ACTUATOR FOR SLUICE GATE JC-6-SG-2 TO BE REPLACED. PROVIDE AND INSTALL NEW 3/4"C. WITH 2/C-#16 TWISTED SHIELDED (BELDEDN 8719) FROM SLUICE GATE ACTUATOR TO NEW JUNCTION BOX SHOWN IN KEYED NOTE #9. REQUIREMENTS SHALL BE AS INDICATED IN KEYED NOTE #1. (8C25)
3. EXISTING ACTUATOR FOR SLUICE GATE JC-6-SG-3 TO BE REPLACED. PROVIDE AND INSTALL NEW 3/4"C. WITH 2/C-#16 TWISTED SHIELDED (BELDEDN 8719) FROM SLUICE GATE ACTUATOR TO NEW JUNCTION BOX SHOWN IN KEYED NOTE #9. REQUIREMENTS SHALL BE AS INDICATED IN KEYED NOTE #1. (8C26)
4. EXISTING ACTUATOR FOR SLUICE GATE JC-6-SG-4 TO BE REPLACED. PROVIDE AND INSTALL NEW 3/4"C. WITH 2/C-#16 TWISTED SHIELDED (BELDEDN 8719) FROM SLUICE GATE ACTUATOR TO NEW JUNCTION BOX SHOWN IN KEYED NOTE #9. REQUIREMENTS SHALL BE AS INDICATED IN KEYED NOTE #1. (8C27)
5. EXISTING ACTUATOR FOR SLUICE GATE JC-6-SG-5 TO BE REPLACED. PROVIDE AND INSTALL NEW 3/4"C. WITH 2/C-#16 TWISTED SHIELDED (BELDEDN 8719) FROM SLUICE GATE ACTUATOR TO NEW JUNCTION BOX SHOWN IN KEYED NOTE #9. REQUIREMENTS SHALL BE AS INDICATED IN KEYED NOTE #1. (8C28)
6. EXISTING ACTUATOR FOR SLUICE GATE JC-6-SG-6 TO BE REPLACED. PROVIDE AND INSTALL NEW 3/4"C. WITH 2/C-#16 TWISTED SHIELDED (BELDEDN 8719) FROM SLUICE GATE ACTUATOR TO NEW JUNCTION BOX SHOWN IN KEYED NOTE #9. REQUIREMENTS SHALL BE AS INDICATED IN KEYED NOTE #1. (8C29)
7. EXISTING PULL BOX TO REMAIN AND BE REUSED.
8. EXISTING JUNCTION BOX TO REMAIN AND BE REUSED.
9. CONTRACTOR TO PROVIDE AND INSTALL NEW 8" X 6" NEMA 4X STAINLESS STEEL JUNCTION BOX. HAMMOND EJ863S16 WITH STAINLESS STEEL BACKPANEL. PROVIDE TWENTY FOUR (24) TERMINAL BLOCKS (ALLEN BRADLEY TYPE 1492-H) WITH END BARRIERS AND END ANCHORS. MOUNT TERMINAL BLOCKS ON ALUMINUM DIN RAIL. MOUNT JUNCTION BOX ON EXISTING HANDRAIL WITH 1-5/8" X 1-5/8" STAINLESS STEEL UNISTRUT AND STAINLESS STEEL HARDWARE.
10. EXISTING DUCTBANK. WORK REQUIRED FOR 86M4A AND 86M35A ONLY. DUCTBANK CONTINUES TO FILTER BUILDING NO. 2 METER VAULT. REFER TO SHEET E4 FOR CONTINUATION.
11. PROVIDE AND INSTALL DROP OVER CABLE PROTECTOR WITH SINGLE 2.25 INCH CHANNEL. ELECTRIDUCT PART #CP1X225-GP-DO. CABLE PROTECTOR INTERLOCKS WITH STANDARD 3'-0" LENGTHS. PROVIDE QUANTITY AS REQUIRED. CUT LAST PROTECTOR AS REQUIRED FOR PROPER FIT.
12. CONTRACTOR SHALL INSTALL NEW CONDUIT ON EXTERIOR OF THE FINAL SEDIMENTATION TANK WALL ADJACENT TO EXISTING CONDUIT.
13. CONTRACTOR SHALL CORE DRILL EXISTING WALL, INSTALL CONDUIT AND GROUT OPENING.

RETURN SLUDGE PUMP STATION NO. 4 AND JUNCTION CHAMBER NO. 6 SITE PLAN

SCALE : 1" = 12'-0"

1 E2 E6

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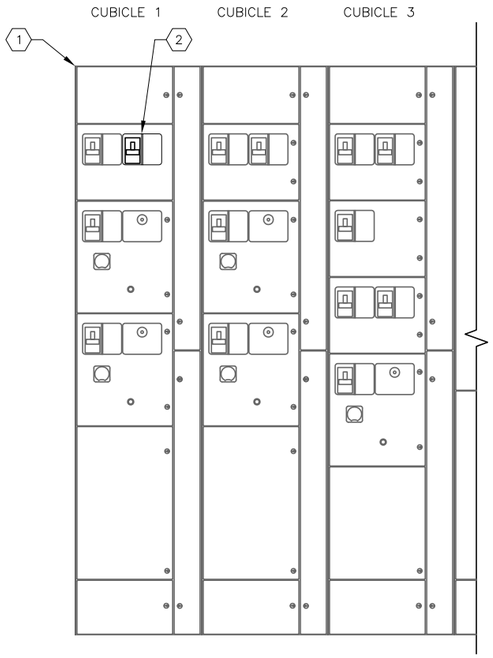
HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

RSPS NO. 4 AND JC-6
PROPOSED ELECTRICAL PLAN

TIMOTHY THOMAS, P.E. No. 47079

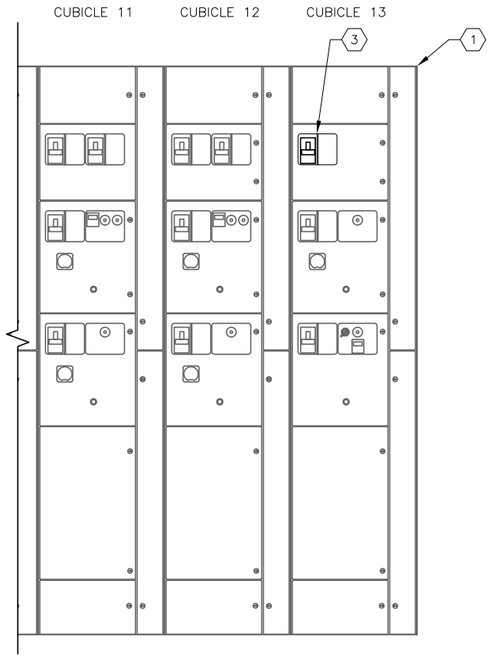
SHEET NUMBER E6

FILE: 231901842E01



MCC-86 PARTIAL
FRONT ELEVATION (A)
SCALE: NOT TO SCALE

A
E5
E7



MCC-86 PARTIAL
FRONT ELEVATION (B)
SCALE: NOT TO SCALE

B
E5
E7

KEYED NOTES:

1. EXISTING MOTOR CONTROL CENTER DESIGNATED 'MCC-86'.
2. CONTRACTOR SHALL REUSE EXISTING 3-POLE, 600V, 20A CIRCUIT BREAKER DESIGNATED AS 'SLUICE GATE JC-6-3,4,6'.
3. CONTRACTOR SHALL REUSE EXISTING 3-POLE, 600V, 20A CIRCUIT BREAKER DESIGNATED AS 'SLUICE GATE JC-6-1,2,5'.

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HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

MOTOR CONTROL CENTER MCC-86 ELEVATIONS

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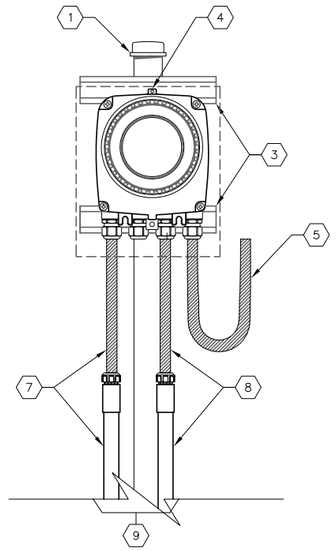
SHEET NUMBER: E7

FILE: 231901842E01



EXISTING REMOTE TRANSMITTER DETAILS A E4 E8

SCALE: NOT TO SCALE



NEW REMOTE TRANSMITTER INSTALLATION DETAILS A E4 E8

SCALE: NOT TO SCALE

KEYED NOTES:

1. CONTRACTOR SHALL REUSE EXISTING PIPE PEDESTAL.
2. CONTRACTOR TO REMOVE EXISTING FLOW METER TRANSMITTER AND PROVIDE AND INSTALL NEW ABB WATER MASTER REMOTE TRANSMITTER.
3. PROVIDE AND INSTALL 1–5/8" X 7/8" STAINLESS STEEL UNISTRUT FOR TRANSMITTER MOUNTING.
4. CONTRACTOR TO PROVIDE AND INSTALL ABB WATER MASTER REMOTE TRANSMITTER. MOUNT REMOTE TRANSMITTER TO EXISTING PIPE PEDESTAL WITH STAINLESS STEEL U–BOLTS AND CLAMPS.
5. CONTINUE LIQUID–TIGHT, NON–METALLIC, FLEXIBLE CONDUIT AS NEAR AS POSSIBLE TO FLOW METER ELEMENT. ALL SLACK SENSOR CABLE SHALL BE LOOPED AT TRANSMITTER AND SECURED WITH NYLON TIE–WRAPS.
6. EXISTING JUNCTION BOX CONTAINING CONDUCTORS FOR 120V AC POWER AND 4–20mA CONDUCTORS FOR ANALOG FLOW SIGNAL. EXISTING JUNCTION BOX TO REMAIN AND BE REUSED.
7. EXISTING CONDUCTORS FOR 120V AC POWER TO BE REPLACED. PROVIDE AND INSTALL 2–#12 + 1–#12 GND IN EXISTING CONDUIT FROM REMOTE TRANSMITTER TO EXISTING JUNCTION BOX. SPLICE INTO EXISTING 120V AC CIRCUIT WITH NEW WIRE NUTS. PROVIDE 3/4" LIQUID–TIGHT, NON–METALLIC, FLEXIBLE CONDUIT CONNECTION TO TRANSMITTER.
8. EXISTING CONDUCTORS FOR REMOTE TRANSMITTER 4–20mA ANALOG OUTPUT TO BE REPLACED. PROVIDE AND INSTALL 2/C–#18 TWISTED SHIELDED IN EXISTING CONDUIT FROM REMOTE TRANSMITTER TO EXISTING JUNCTION BOX. SPLICE INTO EXISTING CONDUCTORS WITH NEW IDEAL PUSH–IN WIRE CONNECTORS. PART #30–1632. TOTAL OF THREE (3) REQUIRED. PROVIDE 3/4" LIQUID–TIGHT, NON–METALLIC, FLEXIBLE CONDUIT CONNECTION TO TRANSMITTER.
9. CONDUITS CONTINUE TO EXISTING JUNCTION BOX INDICATED IN KEYED NOTE #6.

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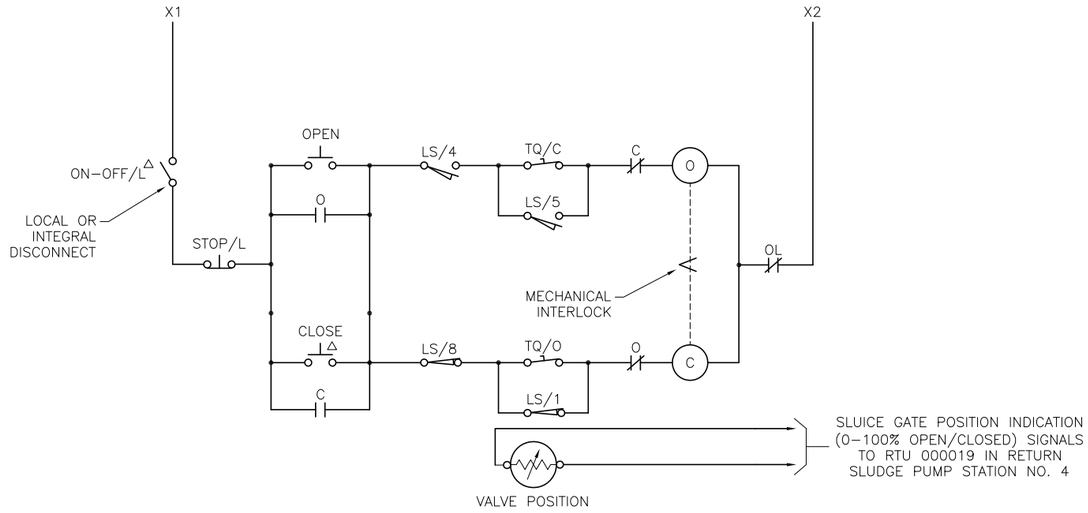
HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

FLOW METER TRANSMITTER DETAILS

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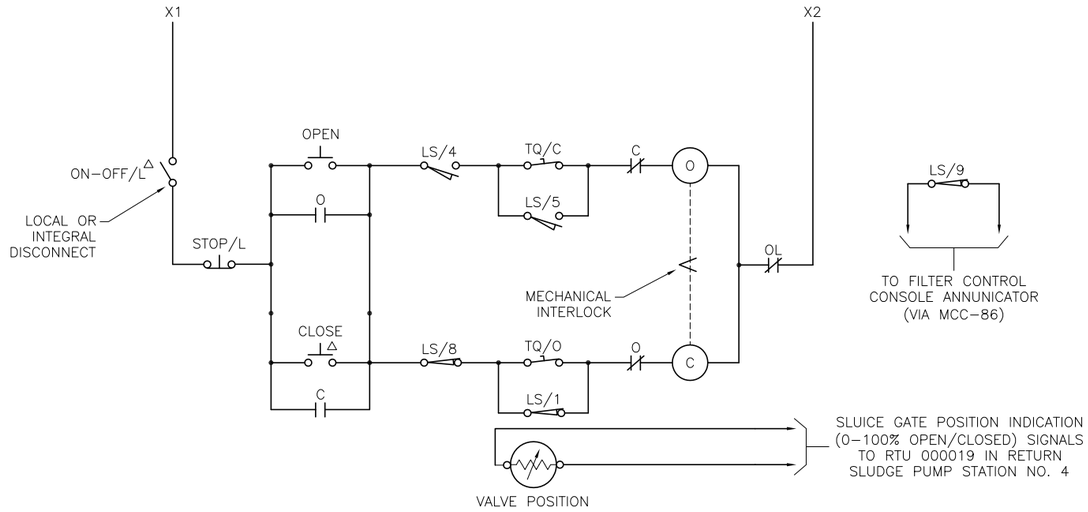
SLUICE GATE JC–6–SG–1 WIRING DIAGRAM
(TYPICAL FOR JC–6–SG–2 THRU JC–6–SG–4)

TYPICAL LIMIT SWITCH CONTACT DEVELOPMENT FOR MOTORIZED SLUICE GATE OPERATIONS

ROTOR NO.	CONTACT NO.	OPERATOR POSITION			CONTACT FUNCTION
		FULL OPEN	INTER–MEDIATE	FULL CLOSED	
1	1	X	— — —	— — —	BYPASS CIRCUIT
	2	X	— — —	— — —	AUXILIARY
	3	— — —	X	X	AUXILIARY
	4	— — —	X	X	FORWARD (OPEN LIMIT)
2	5	— — —	— — —	X	BYPASS CIRCUIT
	6	— — —	— — —	X	AUXILIARY
	7	X	X	— — —	AUXILIARY
	8	X	X	— — —	OPEN INDICATION LIGHT *
3	9	X	X	— — —	OPEN INDICATION LIGHT **
	10	X	X	— — —	REVERSE (CLOSED) LIMIT
	11	— — —	— — —	X	AUXILIARY
	12	— — —	— — —	X	AUXILIARY
4	13	— — —	X	X	CLOSED INDICATION LIGHT *
	14	— — —	X	X	CLOSED INDICATION LIGHT **
	15	X	— — —	— — —	AUXILIARY
	16	X	— — —	— — —	AUXILIARY

TQ/C – CLOSING TORQUE SWITCH
TQ/O – OPENING TORQUE SWITCH
X INDICATES CONTACT CLOSED
— — — INDICATES CONTACT OPEN

* INDICATING LIGHT IN GRSCP–5, 6
** INDICATING LIGHT IN GRSCP–7, 8



SLUICE GATE JC–6–SG–5 WIRING DIAGRAM
(TYPICAL FOR JC–6–SG–6)

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HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

SLUICE GATE CONTROL SCHEMATICS & CONTACT DEVELOPMENT

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E9

FILE: 231901842E01

CONDUIT AND CABLE SCHEDULE

CONDUIT No.	SIZE	NUMBER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
86M4	1"	3–#12 + 2–#14 + 1–#12 GND	MCC–86	PULL BOX IN METER VAULT	1" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS. (JC–6–SG–1, JC–6–SG–2 & JC–6–SG–5).
86M4A	2"	3–#12 + 2–#14 + 1–#12 GND	PULL BOX IN METER VAULT	PULL BOX NEAR JC–6–SG–6	2" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS. (JC–6–SG–1, JC–6–SG–2 & JC–6–SG–5).
86M4B	1"	3–#12 + 2–#14 + 1–#12 GND	PULL BOX NEAR JC–6–SG–6	JC–6–SG–5	1" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS AND NEW LIQUID–TIGHT, NON–METALLIC FLEXIBLE CONNECTION TO JC–6–SG–5.
86M4C	1"	3–#12 + 1–#12 GND	PULL BOX NEAR JC–6–SG–6	J.B NEAR JC–6–SG–2	1" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS. (JC–6–SG–1 & JC–6–SG–2).
86M4D	1"	3–#12 + 1–#12 GND	J.B. NEAR JC–6–SG–2	JC–6–SG–2	1" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS AND NEW LIQUID–TIGHT, NON–METALLIC FLEXIBLE CONNECTION TO JC–6–SG–2.
86M4E	1"	3–#12 + 1–#12 GND	J.B. NEAR JC–6–SG–2	JC–6–SG–1	1" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS AND NEW LIQUID–TIGHT, NON–METALLIC FLEXIBLE CONNECTION TO JC–6–SG–1.
86M35	1"	3–#12 + 2–#14 + 1–#12 GND	MCC–86	PULL BOX IN METER VAULT	1" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS. (JC–6–SG–3, JC–6–SG–4 & JC–6–SG–6).
86M35A	2"	3–#12 + 2–#14 + 1–#12 GND	PULL BOX IN METER VAULT	PULL BOX NEAR JC–6–SG–6	2" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS. (JC–6–SG–3, JC–6–SG–4 & JC–6–SG–6).
86M35B	1"	3–#12 + 2–#14 + 1–#12 GND	PULL BOX NEAR JC–6–SG–6	JC–6–SG–6	1" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS AND NEW LIQUID–TIGHT, NON–METALLIC FLEXIBLE CONNECTION TO JC–6–SG–6.
86M35C	1"	3–#12 + 1–#12 GND	PULL BOX NEAR JC–6–SG–6	J.B NEAR JC–6–SG–4	1" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS. (JC–6–SG–3 & JC–6–SG–4).
86M35D	1"	3–#12 + 1–#12 GND	J.B. NEAR JC–6–SG–4	JC–6–SG–4	1" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS AND NEW LIQUID–TIGHT, NON–METALLIC FLEXIBLE CONNECTION TO JC–6–SG–4.
86M35E	1"	3–#12 + 1–#12 GND	J.B. NEAR JC–6–SG–4	JC–6–SG–3	1" CONDUIT IS EXISTING TO BE REUSED AFTER CLEANING, PROVIDE NEW CONDUCTORS AND NEW LIQUID–TIGHT, NON–METALLIC FLEXIBLE CONNECTION TO JC–6–SG–3.
8C24	3/4"	ONE (1) 2/C–#16 TWISTED SHIELDED	JC–6–SG–1	JC NO. 6 PULL BOX	3/4" CONDUIT IS NEW, PROVIDE NEW CONDUCTORS. (BELDEN 8719).
8C25	3/4"	ONE (1) 2/C–#16 TWISTED SHIELDED	JC–6–SG–2	JC NO. 6 PULL BOX	3/4" CONDUIT IS NEW, PROVIDE NEW CONDUCTORS. (BELDEN 8719).
8C26	3/4"	ONE (1) 2/C–#16 TWISTED SHIELDED	JC–6–SG–3	JC NO. 6 PULL BOX	3/4" CONDUIT IS NEW, PROVIDE NEW CONDUCTORS. (BELDEN 8719).
8C27	3/4"	ONE (1) 2/C–#16 TWISTED SHIELDED	JC–6–SG–4	JC NO. 6 PULL BOX	3/4" CONDUIT IS NEW, PROVIDE NEW CONDUCTORS. (BELDEN 8719).
8C28	3/4"	Two (2) 2/C–#16 TWISTED SHIELDED	JC–6–SG–5	JC NO. 6 PULL BOX	3/4" CONDUIT IS NEW, PROVIDE NEW CONDUCTORS. (BELDEN 8719).
8C29	3/4"	Two (2) 2/C–#16 TWISTED SHIELDED	JC–6–SG–6	JC NO. 6 PULL BOX	3/4" CONDUIT IS NEW, PROVIDE NEW CONDUCTORS. (BELDEN 8719).
8C30	1–1/2"	Eight (8) 2/C–#16 TWISTED SHIELDED	JC NO. 6 PULL BOX	RTU 000019	3/4" CONDUIT IS NEW, PROVIDE NEW CONDUCTORS. (BELDEN 8719).

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

JOB No.	231901842
DESIGNED	TDT
DRAWN	JLH
CHECKED	TDT
DATE	10/2019

No.	DATE	BY	APP	REVISION DESCRIPTION

SCALE: AS SHOWN

City of Tampa Wastewater Department

HFC AWTP FILTER BUILDING NO. 2
FLOW METER REPLACEMENT

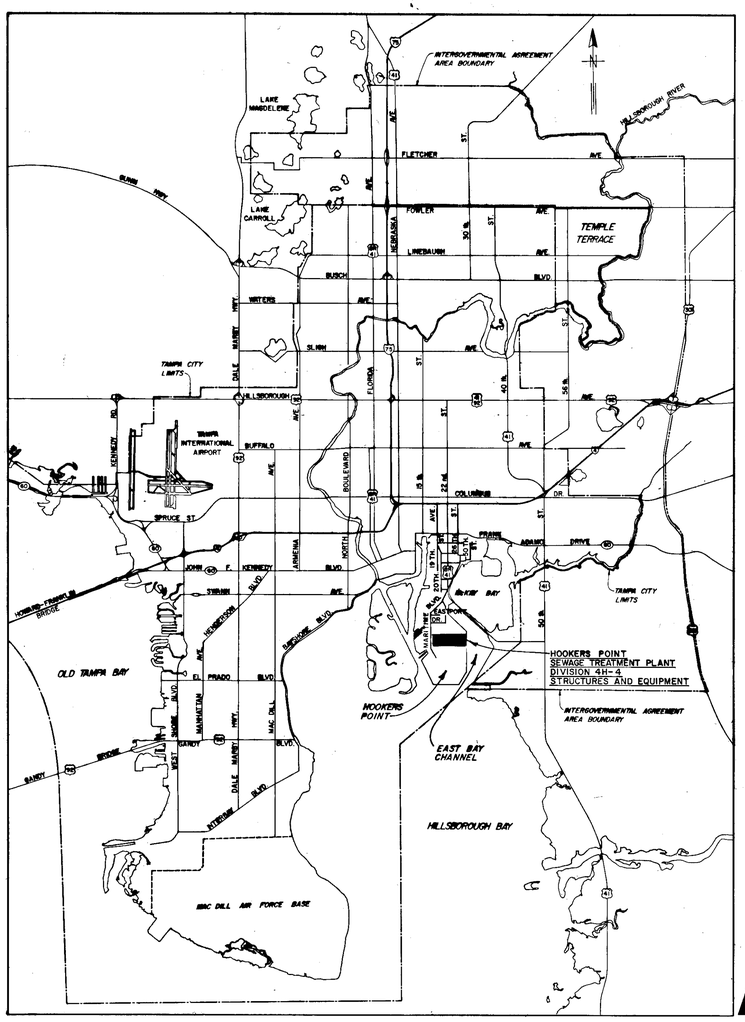
CONDUIT AND CABLE SCHEDULE

TIMOTHY THOMAS, P.E. No. 47079

SHEET NUMBER: E10

FILE: 231901842E01

RSPS Original_Year 1973



LOCATION MAP

CITY OF
TAMPA, FLORIDA

FOURTH WASTEWATER IMPROVEMENT PROGRAM

PLANS

FOR

SEWAGE DISPOSAL SYSTEM

HOOKERS POINT SEWAGE TREATMENT PLANT ADVANCED WASTE TREATMENT FACILITIES

DIVISION 4H-4
STRUCTURES AND EQUIPMENT

PAUL E. LANGDON JR. CERTIFICATE No. 15473 STATE OF FLORIDA REGISTERED ENGINEER

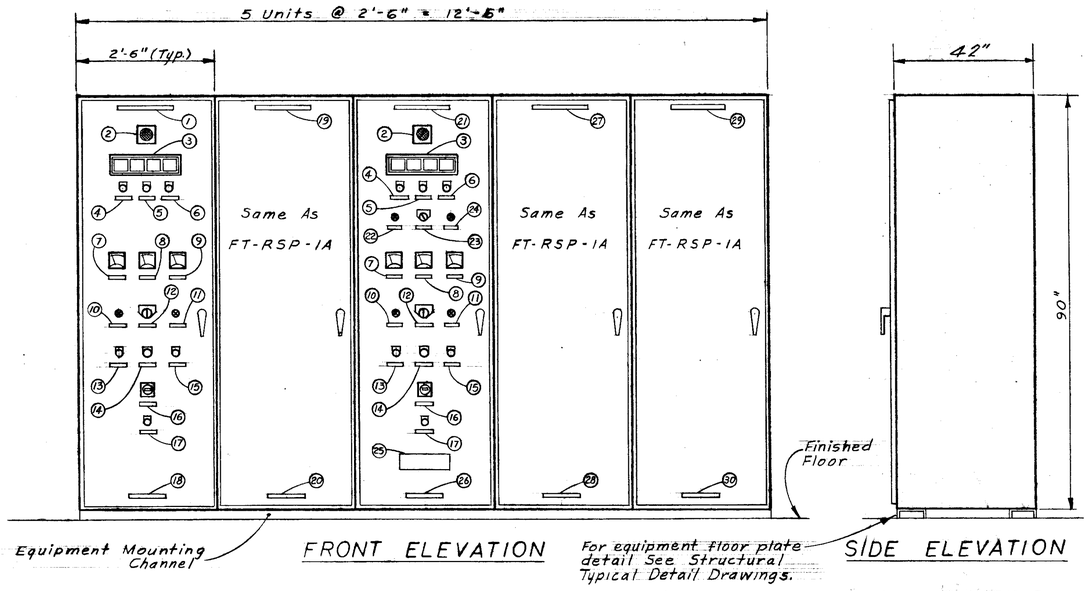
NOTE:
ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (N.O.S.) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

RECORD DRAWING
THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED DRAWN CHECKED	APPROVED DATE 12-16-73 SUPT., DEPT. OF SANITARY SEWERS DATE 12-16-73 GREELEY AND HANSEN, ENGINEERS	NO. DATE APP. REVISION	SCALE 8,000 0 8,000 16,000 FT. 1" = 8,000 FT.	CITY OF TAMPA, FLORIDA SEWAGE DISPOSAL SYSTEM HOOKERS POINT SEWAGE TREATMENT PLANT DIVISION 4H-4 STRUCTURES AND EQUIPMENT

LOCATION MAP

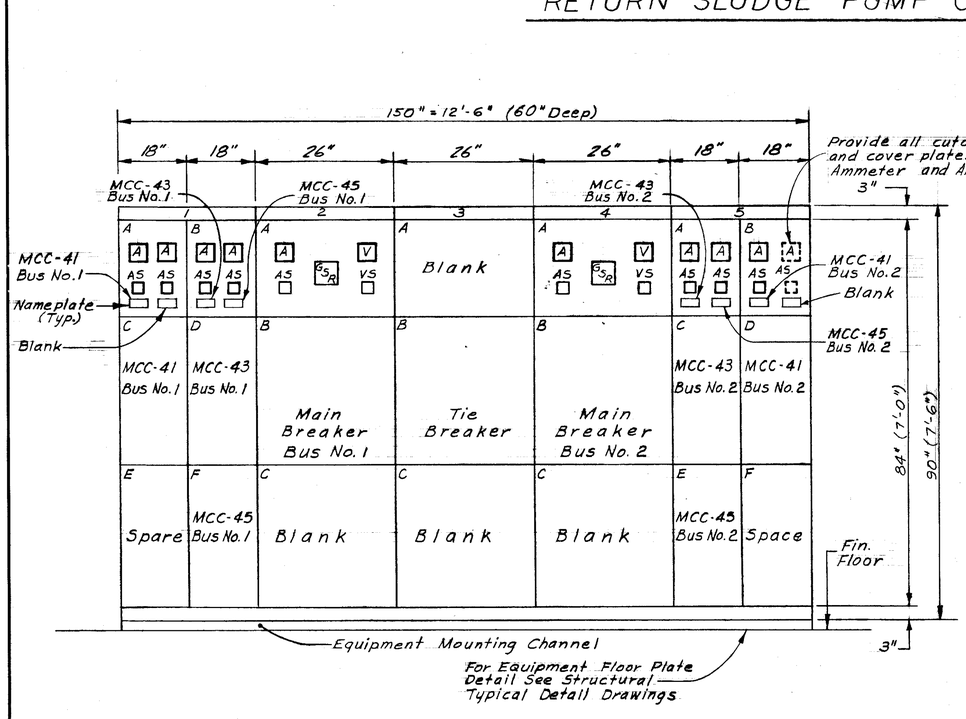
PROJ. NO. S 202-70-30D
DATE SEPT, 1973



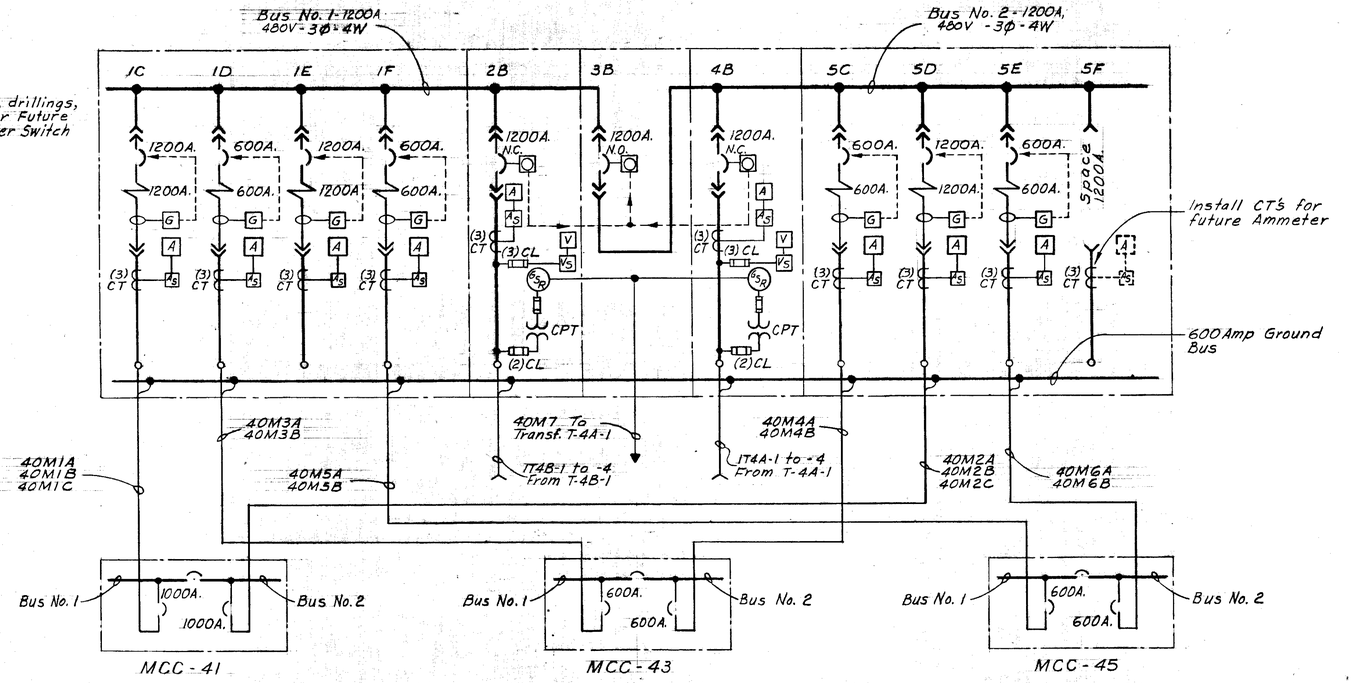
ITEM	DEVICE	NAMEPLATE
1		Return Sludge Pump FT-RSP-1A
		Return Sludge Pump FT-RSP-2A
		Return Sludge Pump FT-RSP-3A
2	Alarm Horn	
3	Annunciator	See Annunciator Legend
4	N.C. Pushbutton	Silence
5	N.O. Pushbutton	Test
6	N.O. Pushbutton	Reset
7	D.C. Ammeter	Exciter Field Amperes
8	Tach. Speed Indicator	Pump Speed
9	AC Ammeter	Line Amperes
10	Red Indicating Light	On
11	Green Indicating Light	Off
12	3-Position Momentary Contact Switch with Spring Return to Off.	Operation (Raise - Off - Lower)
13	N.O. Pushbutton	Start
14	N.C. Pushbutton	Emergency Stop
15	N.C. Pushbutton	Stop
16	Elapsed Time Meter	Motor Running Time
17	N.O. Pushbutton	Reset
18		Cubicle No. 1
19		Return Sludge Pump FT-RSP-1B
		Return Sludge Pump FT-RSP-2B
		Return Sludge Pump FT-RSP-3B
20		Cubicle No. 2
21		Return Sludge Pump FT-RSP-1C
		Return Sludge Pump FT-RSP-2C
		Return Sludge Pump FT-RSP-3C
22	Blue Indicating Light	Local
23	2 Position Selector Switch	Speed Control Point (Local-Remote)
24	Amber Indicating Light	Remote
25		(Manufacturer's Nameplate)
26		Cubicle No. 3
27		Return Sludge Pump FT-RSP-1D
		Return Sludge Pump FT-RSP-2D
		Return Sludge Pump FT-RSP-3D
28		Cubicle No. 4
29		Return Sludge Pump FT-RSP-1E
		Return Sludge Pump FT-RSP-2E
		Return Sludge Pump FT-RSP-3E
30		Cubicle No. 5

Annunciator Legend	
Window	Engraving
Cubicle Nos. 1 thru 5 Style-1 High x 4 Wide-Modularm	
1	Lockout Relay Trip
2	Seal Water Low Pressure
3	Low Load Trip
4	(Blank)

RETURN SLUDGE PUMP CONTROL CENTER MCC-42, -44, & -46



FRONT ELEVATION



ONE LINE DIAGRAM

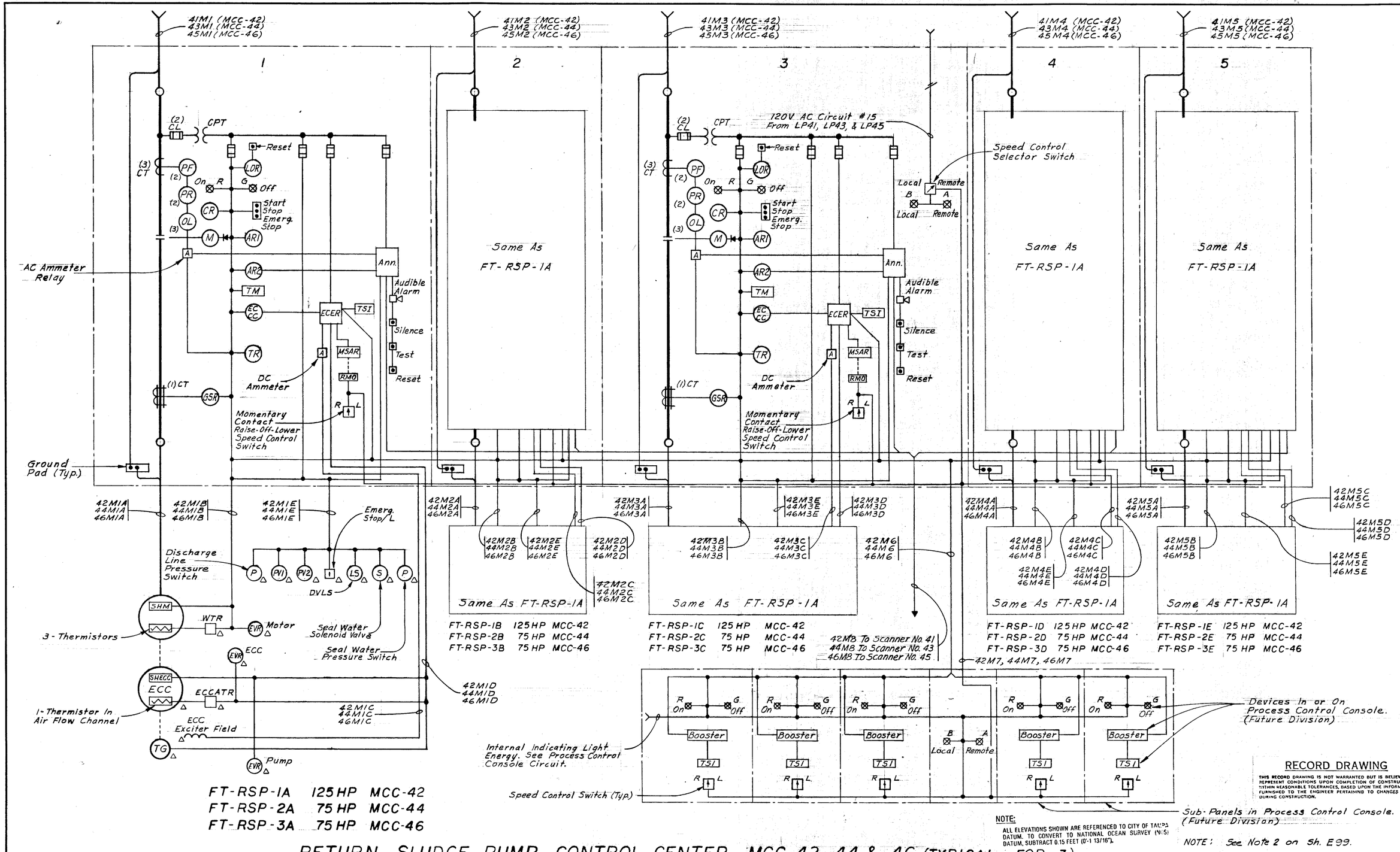
480V SWITCHGEAR NO. 40

NOTE:
ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

RECORD DRAWING
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GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED RAW, JLT DRAWN JLT CHECKED RAW	APPROVED DATE SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS	NO.	DATE	APP.	REVISION	SCALE NO SCALE	CITY OF TAMPA, FLORIDA SEWAGE DISPOSAL SYSTEM HOOKERS POINT SEWAGE TREATMENT PLANT DIVISION 4H-4 STRUCTURES AND EQUIPMENT	ELECTRICAL SLUDGE PUMPING STATIONS 480V SWGR. NO. 40 AND MCC—42,44,46 ONE LINE DIAGRAM AND ELEVATIONS	PROJ. NO. S 202-70-30D- SHEET E 72 OF 127 DATE SEPT, 1973 REV. 0

DWG 329 OF 384



RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

NOTE:
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RETURN SLUDGE PUMP CONTROL CENTER MCC-42,-44,& -46 (TYPICAL FOR 3)

GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED RAW
DRAWN JLT
CHECKED RAW

APPROVED
SUPT., DEPT. OF SANITARY SEWERS — DATE
GREELEY AND HANSEN, ENGINEERS — DATE

NO.	DATE	APP.	REVISION

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-4
STRUCTURES AND EQUIPMENT

ELECTRICAL
SLUDGE PUMPING STATIONS
PUMP CONTROL CENTERS MCC-42,44,46
ONE LINE DIAGRAM

PROJ. NO. S 202-70-30D-
SHEET E 73 OF 127
DATE SEPT, 1973 | REV. 0

F1A F1B F1C F1D F1E F1F F1G F2A F2B F2C F3A F3B F3C F3D

100A. 100A. 100A. 30A Space Space Space Space Space 400A. 225A. 400A. 225A. 400A. 225A. 100A. 20A. 100A. 20A. 100A. 20A.

Open-Close-Stop P.B.'s (Typ.)

41M28 41M29 41M30 41M31

Bus No. 1, 1200A 480V-3Ø,4W, Half Neutral

Connect to ØB & C

Continued Below Left

41M41 T.P. TRANS. 45 KVA-3Ø 480-480/277V. 4W

41M42 T-LP-41 Transformer 15 KVA-3Ø 480-120/208V.

41M41A 100A/70A 41M41A LTG. PANELBOARD LP-40 (100A M.L.O.)

41M42A LP-41 Lighting Panel

41M1 41M2 41M3 FT-RSP-1A FT-RSP-1B FT-RSP-1C

To Sludge Pump Starters in Pump Control Center MCC-42

41M33 to Sluice Gate FT-SG-2D

41M39 41M39A LP-41 Cct. #7 Position Indicators

100A. 41M27 2 Monorail Connection Box FT-MH-1

Monorail Hoist (See Note #1)

41M28 41M29 41M30 41M31 41M28A 41M29A 41M30A 41M28B 41M29B 41M30B 41M31A

FT-SG-1A FT-SG-1B FT-SG-1C FT-SG-1D FT-SG-2A FT-SG-2B FT-SG-2C

41M44 100A. 41M44A 10KVA 480-240V Transf. 41M44B FT-SG-13

4N8B - See Meters & Gauges Block Diagram

Sluice Gates

Bus No. 1 1200A, 480V-3Ø,4W; Half Neutral

Bus No. 2 1200A, 480V-3Ø,4W; Half Neutral To Cubicle R6

F4 Tie Breaker F5 F6 F7A F7B F7C F7D F8A F8B F8C

N.O. 1000A. 1000A. N.C. N.C. 1000A.

(3) C.T. (3) C.L. AS A V VS (3) C.L. (3) C.T.

600A. Ground Bus

Continued Above Right

Bus No. 1 1200A 3Ø,4W, H.N. To Cubicle R4

From 480V Swgr. No. 40 40M1A 40M1B 40M1C

40M2A 40M2B 40M2C From 480V Swgr. No. 40

LP-41 Cct. #8 Position Indicators

100A. 20A. 41M34 41M35 41M36 41M37

41M34 41M35 41M36 41M37 41M37 41M32

Bus No. 2, 1200A 480V-3Ø,4W, Half Neutral

Space Space

41M34A 41M35A 41M36A 41M37A 41M34B 41M35B 41M36B 41M37B

FT-SG-2D FT-SG-3B FT-SG-3D FT-SG-4B FT-SG-4D FT-SG-3A FT-SG-3C FT-SG-4A FT-SG-4C

Sluice Gates

41M33 To Cubicle F3A

4C20 To Scum Slide Gate Timer Control Panel in MCC-43.

41M38 41M38D 41M38E 41M38A 41M38F Pump Controller 7½ 41M38B 41M38C FT-SP-1 Sump Pump (See Note #1) 41M9 41M9A 41M9D 41M9C 41M9B

41M8A 41M10H 41M8B 41M10F 41M10D 41M10B 41M10G 41M10E 41M10C 41M10A 41M10

FT-SLG-1B FT-SLG-4B FT-SLG-3B FT-SLG-2B FT-SLG-2A FT-SLG-1A FT-SLG-4A FT-SLG-3A

Slide Gates

Continued Below Left

F8D F8E F9A F9B F9C F10

400A. 225A. 400A. 225A. Space

MBL 240/30 FV25 MBL 240/30 FV25

Fast Slow Off R A G Off-Auto CR Off Slow

Silence Test Reset Horn Ann. Panel See Note 2 Scanner No. 41

41M6 41M6A 41M6B 41M7 41M7A 41M7B 41M7C

15 Test L FT-S-1 15 T Test L FT-S-2

Supply Fans

41M4 41M5 FT-RSP-1D FT-RSP-1E

To Sludge Pump Starters in Pump Control Center MCC-42

LP-41 Cct. #9 & 11

4N9 to Scanner Receiver in Main Pumping Station VIA Instrumentation J.B., 4N1, MH-E7, and 4N1.

NOTES:

1. For schematic wiring diagram of Manorail Connection Box FT-MH-1, Sump Pump FT-SP-1 & Pump Controller, See Sh. E57 & E58
2. For Typical MCC Annunciator Wiring Diagram See Sh. E40, and for Annunciator Legend See Sh. E79.

NOTE:

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RECORD DRAWING

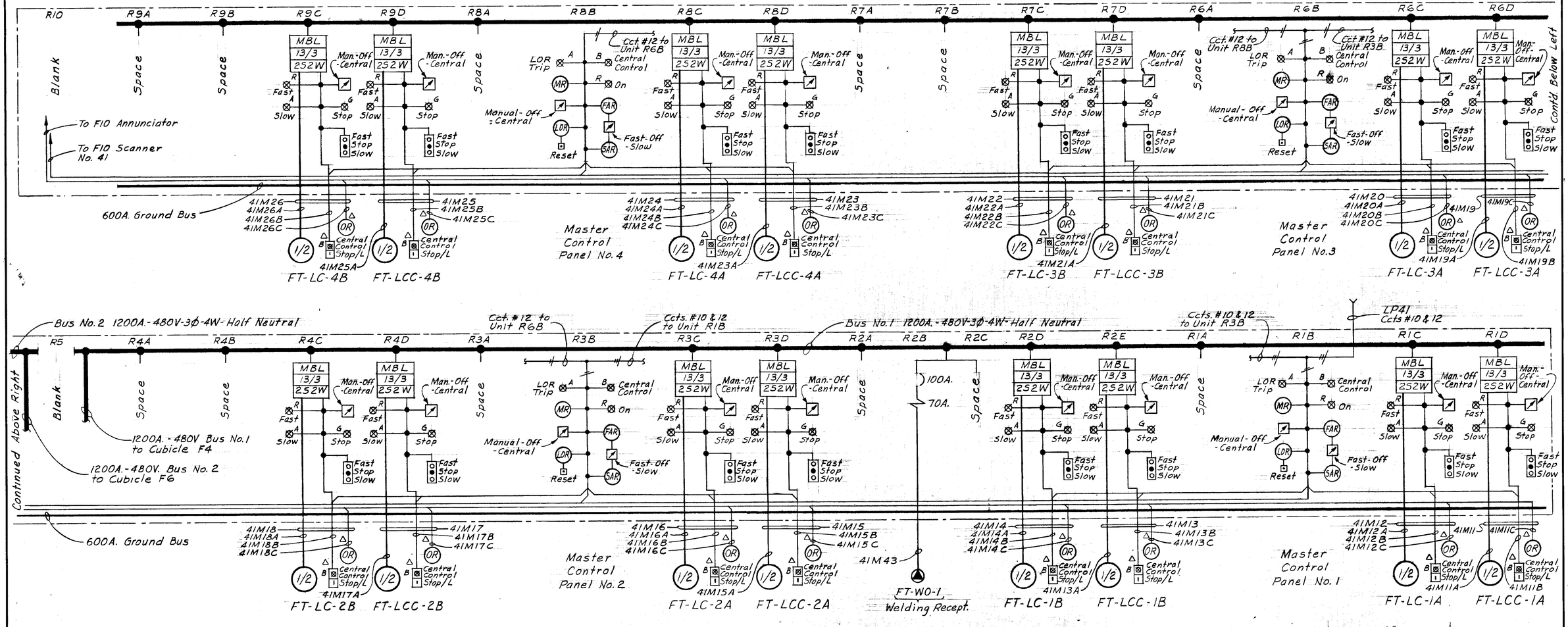
THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED JLT DRAWN JLT CHECKED RAW	APPROVED ____ DATE ____ SUPT., DEPT. OF SANITARY SEWERS ____ DATE ____ GREELEY AND HANSEN, ENGINEERS	NO. DATE APP. REVISION	SCALE NO SCALE	CITY OF TAMPA, FLORIDA SEWAGE DISPOSAL SYSTEM HOOKERS POINT SEWAGE TREATMENT PLANT DIVISION 4H-4 STRUCTURES AND EQUIPMENT

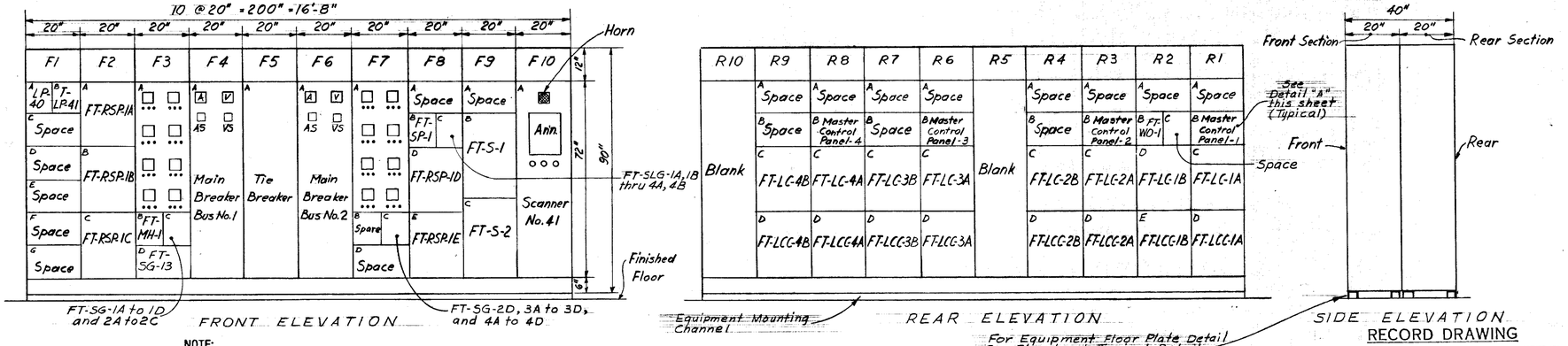
ELECTRICAL
SLUDGE PUMPING STATION NO. 1
MOTOR CONTROL CENTER MCC-41
ONE LINE DIAGRAM — FRONT

PROJ. NO. S 202-70-30D-
SHEET E 74 OF 127
DATE SEPT, 1973 REV. 0

DWG 331 OF 384



MOTOR CONTROL CENTER MCC-41 (REAR) ONE LINE DIAGRAM

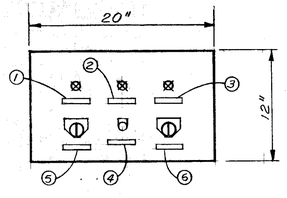


MOTOR CONTROL CENTER MCC-41

NOTE:
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For Equipment Floor Plate Detail See Structural Typical Detail Drawings.

RECORD DRAWING
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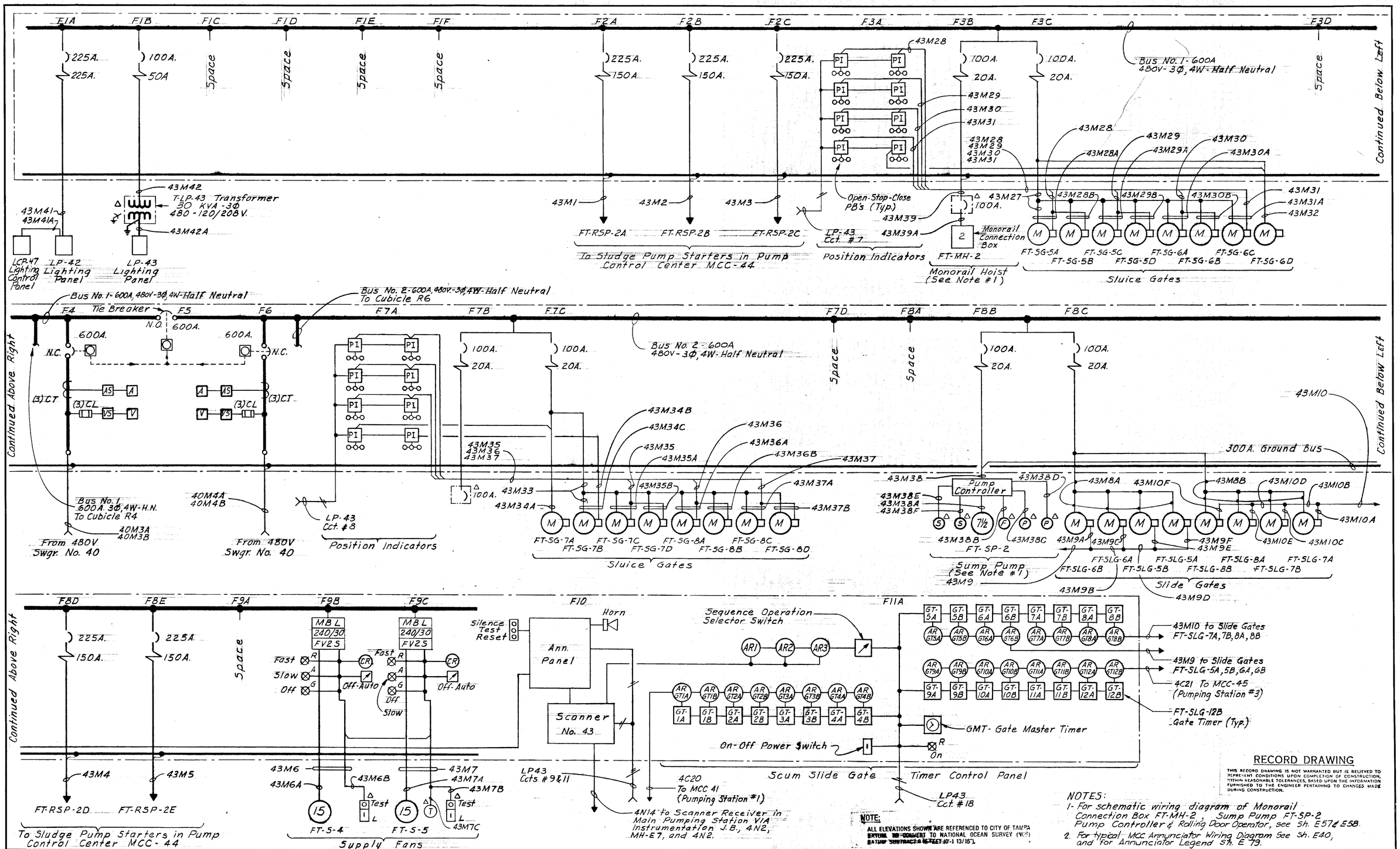
ITEM	DEVICE	NAMEPLATE
1	Blue Indicating Light	Central Control
2	Amber Indicating Light	LOR Trip
3	Red Indicating Light	On
4	N.O. Pushbutton	LOR Reset
5	3-Position Selector Switch	Operation: (Manual-Off-Central)
6	3-Position Selector Switch	Operation: (Fast-Off-Slow)

DETAIL "A"

(Typical for Master Control Panels No. 1 thru No. 12)

MCC-41 (Master Control Panels No. 1 thru No. 4)
MCC-43 (Master Control Panels No. 5 thru No. 8)
MCC-45 (Master Control Panels No. 9 thru No. 12)

GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED JLT DRAWN AR, JLT CHECKED RAW	APPROVED DATE SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS	NO.	DATE	APP.	REVISION	SCALE NO SCALE	CITY OF TAMPA, FLORIDA SEWAGE DISPOSAL SYSTEM HOOKERS POINT SEWAGE TREATMENT PLANT DIVISION 4H-4 STRUCTURES AND EQUIPMENT	ELECTRICAL SLUDGE PUMPING STATION NO. 1 MOTOR CONTROL CENTER MCC-41 ONE LINE DIAGRAM AND ELEVATIONS	PROJ. NO. S 202-70-30D- SHEET E 75 OF 127 DATE SEPT, 1973 REV. 0



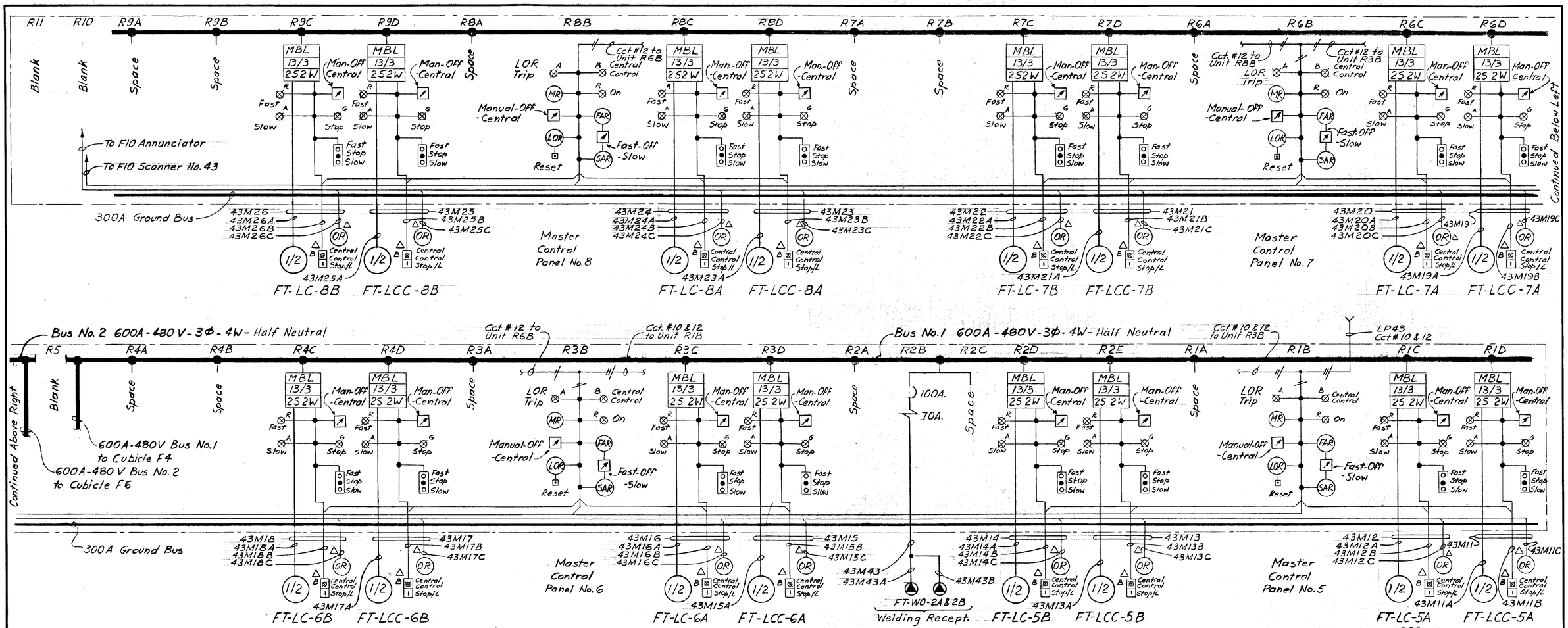
GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED JLT DRAWN JLT CHECKED RAW	APPROVED DATE SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS	NO.	DATE	APP.	REVISION	SCALE: NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-4
STRUCTURES AND EQUIPMENT

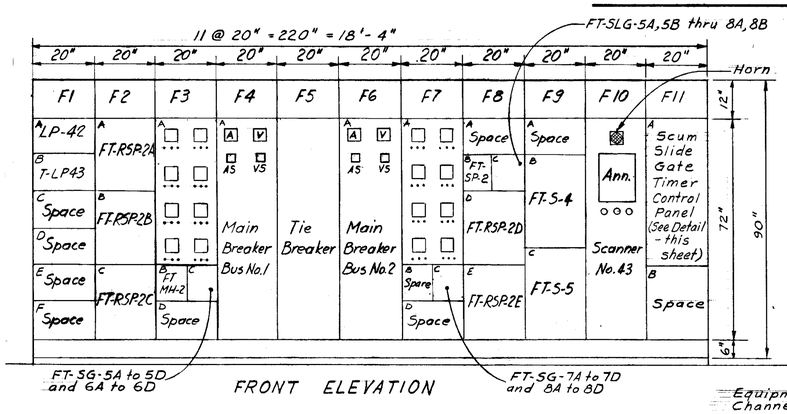
ELECTRICAL
SLUDGE PUMPING STATION NO. 2
MOTOR CONTROL CENTER MCC—43 ONE LINE DIAGRAM—FRONT

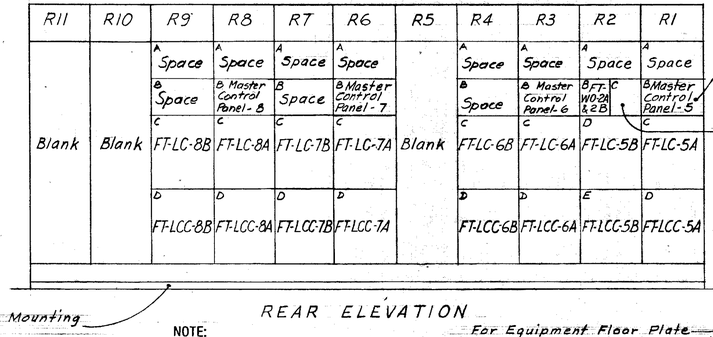
PROJ. NO. S 202-70-30D-
SHEET E 76 OF 127
DATE SEPT, 1973 REV. 0

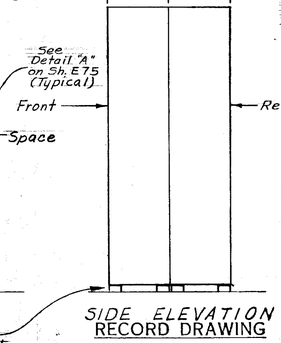
DWG 333 OF 384



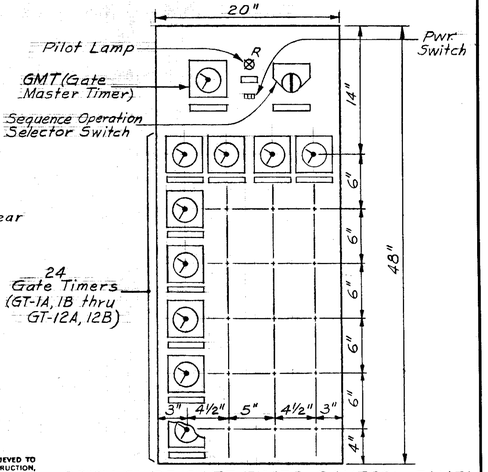
MOTOR CONTROL CENTER MCC-43 (REAR) ONE LINE DIAGRAM







THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.



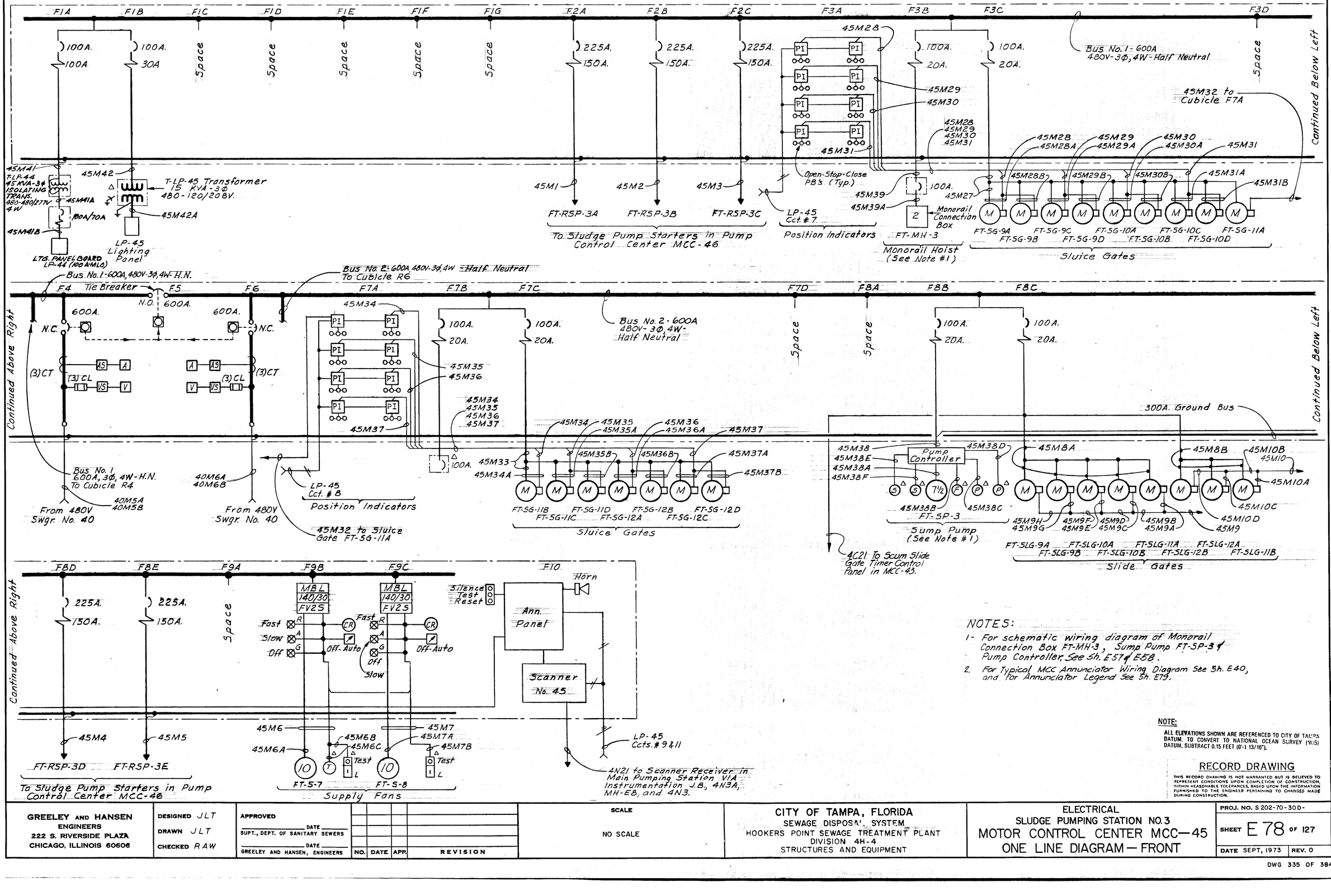
SCUM SLIDE GATE TIMER CONTROL PANEL

MOTOR CONTROL CENTER MCC-43

NOTE:
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GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED JLT DRAWN AR, JLT CHECKED RAW	APPROVED DATE SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS	NO. DATE APP. REVISION
SCALE: NO SCALE	CITY OF TAMPA, FLORIDA SEWAGE DISPOSAL SYSTEM HOOKERS POINT SEWAGE TREATMENT PLANT DIVISION 4H-4 STRUCTURES AND EQUIPMENT	ELECTRICAL SLUDGE PUMPING STATION NO.2 MOTOR CONTROL CENTER MCC-43 ONE LINE DIAGRAM AND ELEVATIONS	PROJ. NO. S 202-70-30D- SHEET E 77 OF 127 DATE SEPT, 1973 REV. 0

DWG 334 OF 384



NOTES:

1- For schematic wiring diagram of Monorail Connection Box FT-MH-3, Sump Pump FT-SP-3 & Pump Controller, See Sh. E57 & E58.

2. For Typical MCC Annunciator Wiring Diagram See Sh. E40, and for Annunciator Legend See Sh. E79.

NOTE:

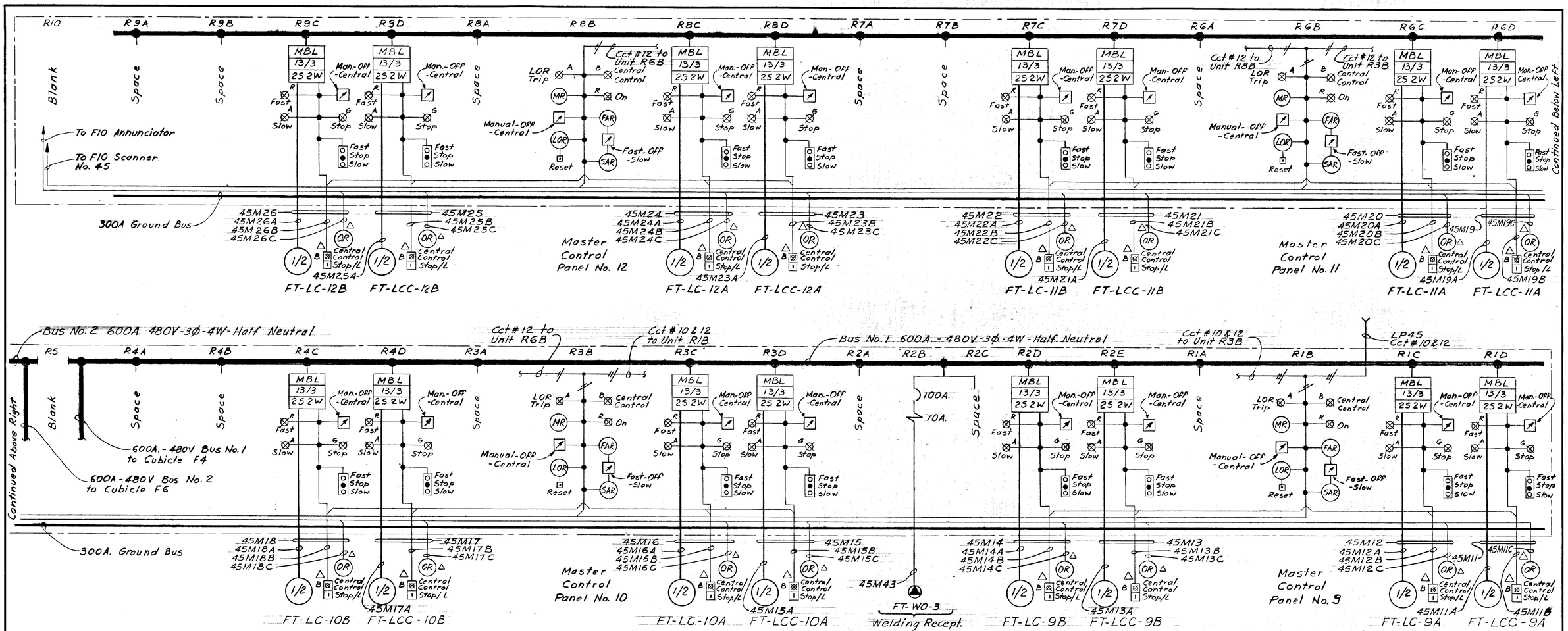
ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

RECORD DRAWING

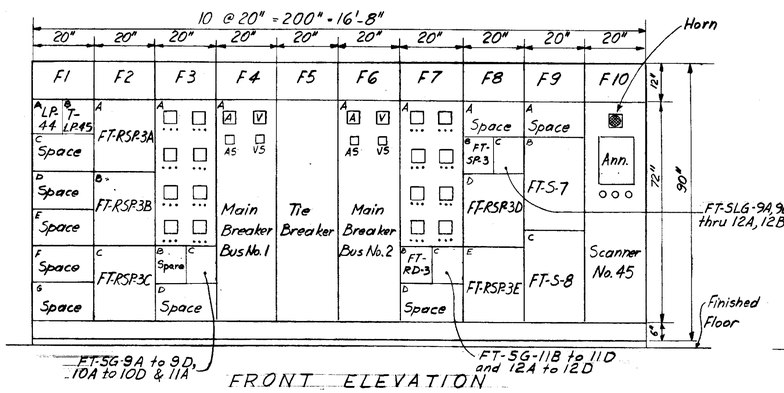
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GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED JLT DRAWN JLT CHECKED RAW	APPROVED DATE SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS	NO. DATE APP. REVISION	SCALE NO SCALE	CITY OF TAMPA, FLORIDA SEWAGE DISPOSAL SYSTEM HOOKERS POINT SEWAGE TREATMENT PLANT DIVISION 4H-4 STRUCTURES AND EQUIPMENT	ELECTRICAL SLUDGE PUMPING STATION NO. 3 MOTOR CONTROL CENTER MCC—45 ONE LINE DIAGRAM — FRONT	PROJ. NO. S 202-70-30D- SHEET E 78 OF 127 DATE SEPT, 1973 REV. 0

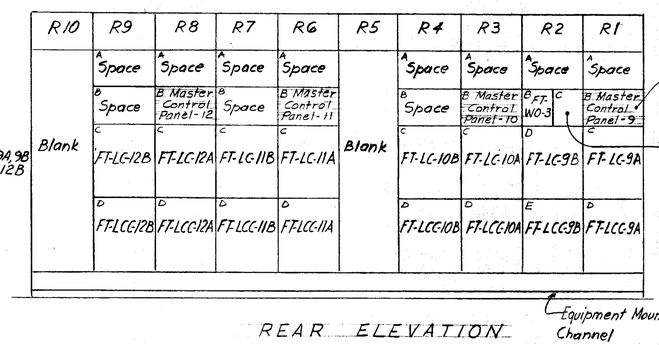
DWG 335 OF 384



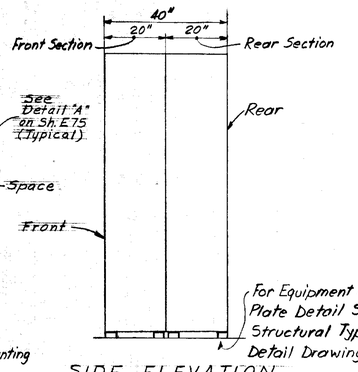
MOTOR CONTROL CENTER MCC-45 (REAR) ONE LINE DIAGRAM



FRONT ELEVATION



REAR ELEVATION



SIDE ELEVATION

MOTOR CONTROL CENTER MCC-41(-43,-45) ANNUNCIATOR LEGEND	
STYLE: 1 High x 4 Wide - DULARM	
WINDOW	ENGRAVING
1A	Master Control Panel No. 1 (5, 9) Overload Release Clutch Trip
2A	Master Control Panel No. 2 (6, 10) Overload Release Clutch Trip
3A	Master Control Panel No. 3 (7, 11) Overload Release Clutch Trip
4A	Master Control Panel No. 4 (8, 12) Overload Release Clutch Trip
1B	FT-SP-1 (-2, -3) Low Lube Water Pressure
2B	FT-SP-1 (-2, -3) High Water Level
3B	(Blank)
4B	(Blank)

MOTOR CONTROL CENTER MCC-45

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED JLT
DRAWN AR
CHECKED RAW

APPROVED
DATE
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DATE
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

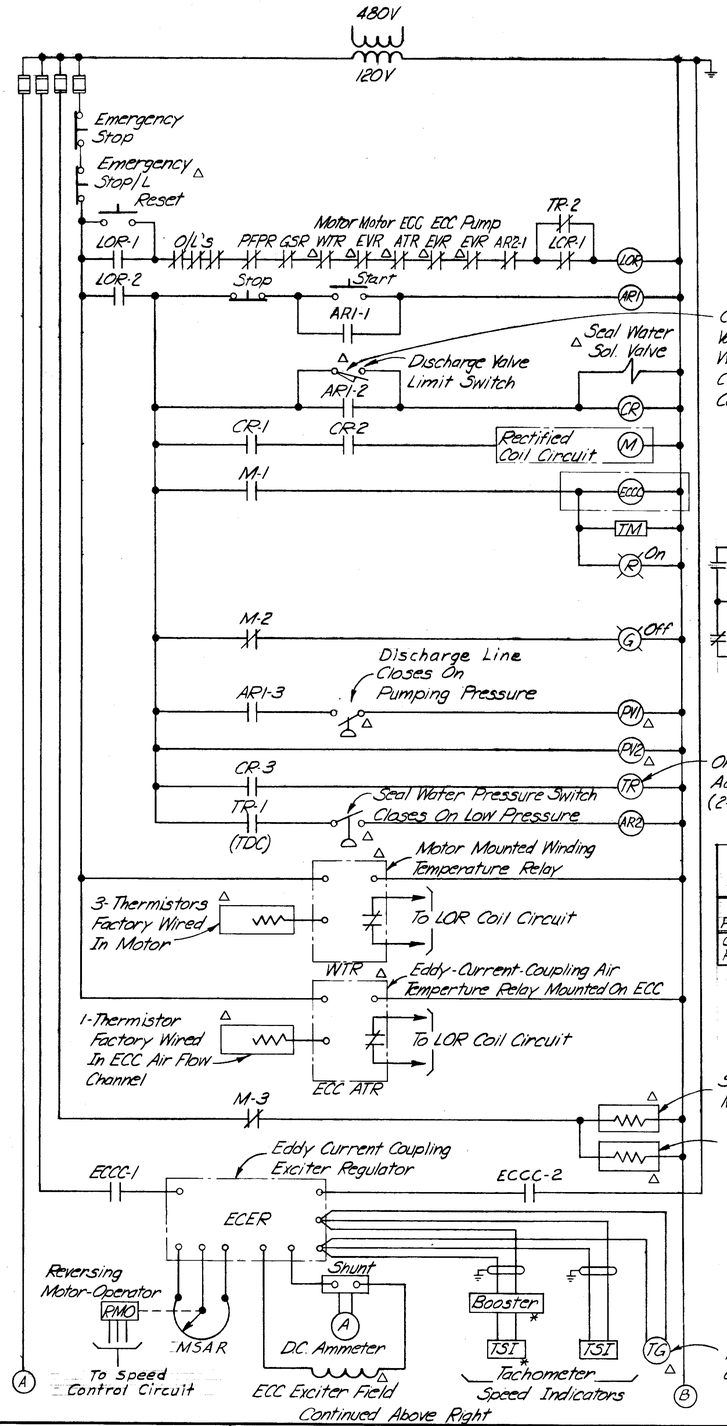
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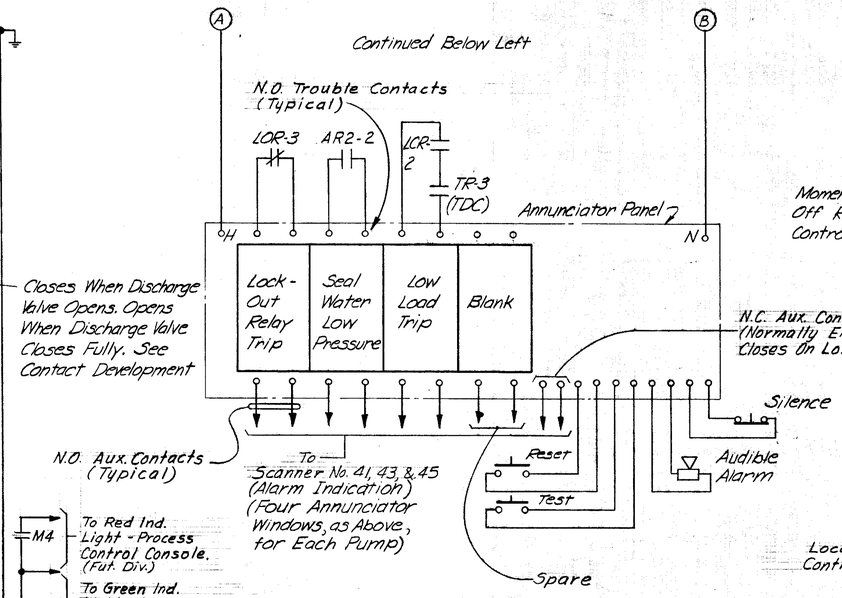
CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-4
STRUCTURES AND EQUIPMENT

ELECTRICAL
SLUDGE PUMPING STATION NO. 3
MOTOR CONTROL CENTER MCC—45
ONE LINE DIAGRAM AND ELEVATIONS

PROJ. NO. S 202-70-30D-
SHEET E 79 OF 127
DATE SEPT, 1973 | REV. 0

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PV1- Solenoid Pilot Valve for Pneumatic Operation of Pump Discharge Valve. Discharge Valve Opens When PV1 is Energized, and Closes When PV1 is De-Energized.

PV2- Solenoid Pilot Valve for Rapid Closing of Pump Discharge Valve. Discharge Valve Closes Rapidly When PV2 is De-Energized.

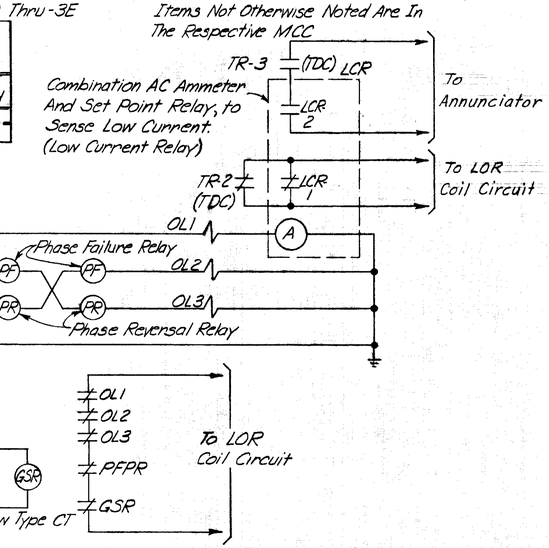
CONTROL CIRCUIT FOR RETURN SLUDGE PUMPS
FT-RSP-1A Thru-1E
FT-RSP-2A Thru-2E
FT-RSP-3A Thru-3E

△ At Motor or Equipment
* At Process Control Console (Fut. Div.)
Items Not Otherwise Noted Are In The Respective MCC

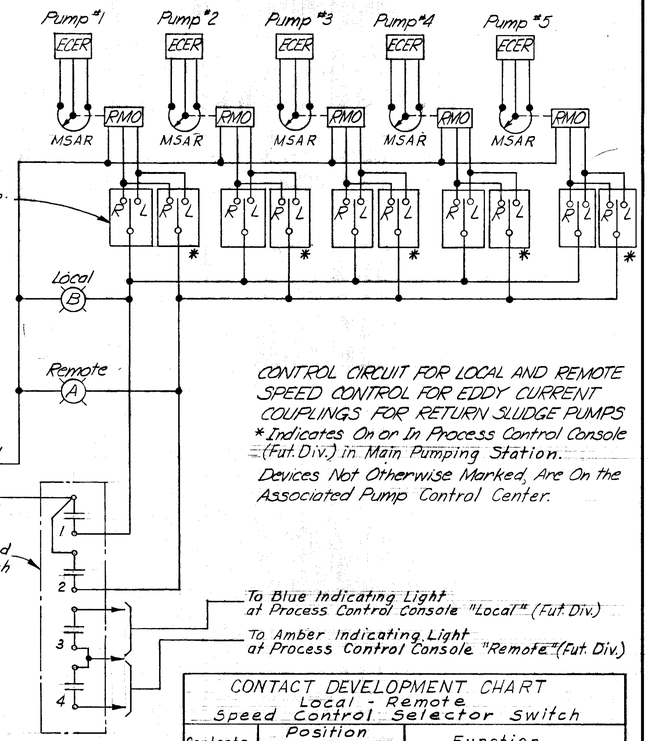
CONTACT DEVELOPMENT CHART
Discharge Valve Limit Switch

Valve Position	Fully Open	Intermediate	Fully Closed
Contact Position			

——— Indicates Closed Contact
- - - - - - - Indicates Open Contact



CONTROL CIRCUIT FOR RETURN SLUDGE PUMP LINE CURRENT AMMETER RELAY, PHASE FAILURE, PHASE REVERSAL, AND GROUND FAULT RELAYS



CONTROL CIRCUIT FOR LOCAL AND REMOTE SPEED CONTROL FOR EDDY CURRENT COUPLINGS FOR RETURN SLUDGE PUMPS

* Indicates On or In Process Control Console (Fut. Div.) in Main Pumping Station.

Devices Not Otherwise Marked, Are On the Associated Pump Control Center.

CONTACT DEVELOPMENT CHART
Local - Remote Speed Control Selector Switch

Contacts	Position Local	Position Remote	Function
1	X	O	Local speed switch energy.
2	O	X	Remote speed switch energy.
3	O	X	Remote Blue Ind. Light.
4	X	O	Remote Amber Ind. Light.

DEVICE LEGEND

AR	Auxiliary Relay	TM	Elapsed Time Meter
ATR	Air Temperature Relay	TR	Time Delay Relay
CR	Control Relay	TSI	Tachometer Speed Indicator
CT	Current Transformer	WTR	Winding Temperature Relay
DVLS	Discharge Valve Limit Switch		
ECC	Eddy Current Coupling		
ECCC	Eddy Current Coupling Contactor		
ECER	Eddy Current Coupling Exciter Regulator		
EVR	Excess Vibration Relay		
GSR	Ground Sensing Relay		
LCR	Low Current Relay		
LOR	Lockout Relay		
M	Motor Starter		
OL	Overload Relay		
PFPR	Phase Failure Phase Reversal Relay		
RMO	Reversing Motor-Operator		
MSAR	Manual Speed Adjustment Rheostat		
TDC	Time Delay Contact		
TG	Tachometer Generator		

NOTE: See Note 2 on Sh. E99.

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RECORD DRAWING
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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED M C
DRAWN T S
CHECKED R A W

APPROVED
SUPT., DEPT. OF SANITARY SEWERS — DATE
GREELEY AND HANSEN, ENGINEERS — DATE

NO.	DATE	APP.	REVISION

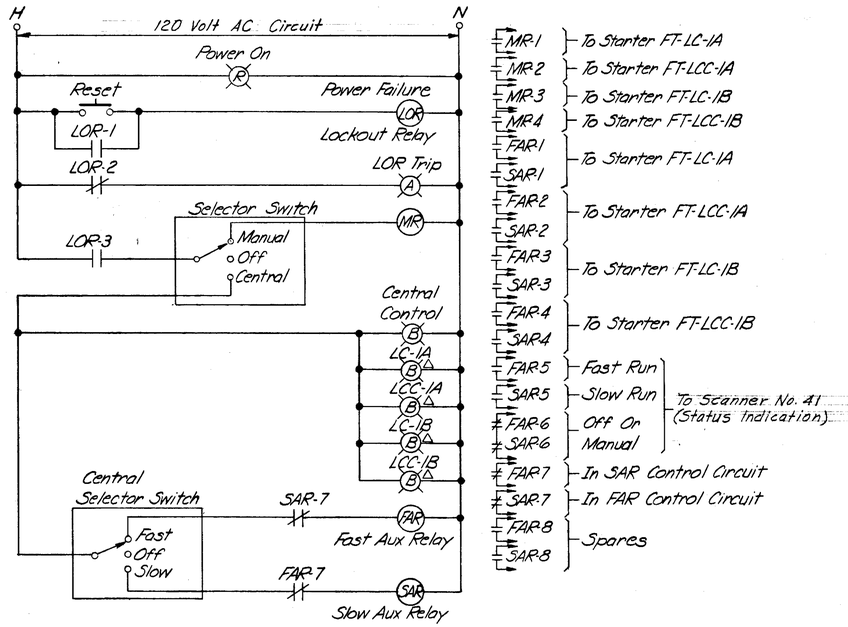
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CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-4
STRUCTURES AND EQUIPMENT

ELECTRICAL
SLUDGE PUMPING STATIONS
RETURN SLUDGE PUMPS SCHEMATIC DIAGRAMS

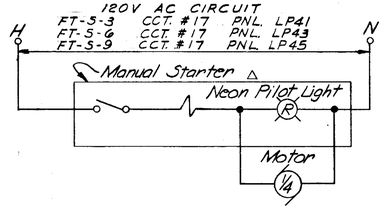
PROJ. NO. S 202-70-30D-
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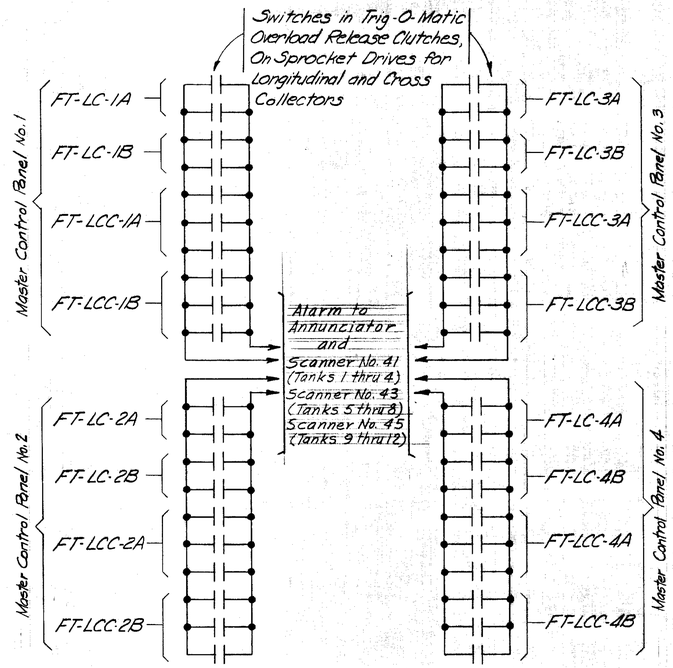
CONTROL CIRCUIT FOR MASTER CONTROLS FOR EACH SET OF 4-LONGITUDINAL AND CROSS COLLECTORS - SHOWN FOR FT-LC-1A, FT-LCC-1A, FT-LC-1B, FT-LCC-1B
Above Diagram is Typical for Each Similar Group of 4-Longitudinal And Cross Collectors, As Follows :

FT-LC-2A,	FT-LCC-2A,	FT-LC-2B,	FT-LCC-2B;
FT-LC-3A,	FT-LCC-3A,	FT-LC-3B,	FT-LCC-3B;
FT-LC-4A,	FT-LCC-4A,	FT-LC-4B,	FT-LCC-4B;
FT-LC-5A,	FT-LCC-5A,	FT-LC-5B,	FT-LCC-5B;
FT-LC-6A,	FT-LCC-6A,	FT-LC-6B,	FT-LCC-6B;
FT-LC-7A,	FT-LCC-7A,	FT-LC-7B,	FT-LCC-7B;
FT-LC-8A,	FT-LCC-8A,	FT-LC-8B,	FT-LCC-8B;
FT-LC-9A,	FT-LCC-9A,	FT-LC-9B,	FT-LCC-9B;
FT-LC-10A,	FT-LCC-10A,	FT-LC-10B,	FT-LCC-10B;
FT-LC-11A,	FT-LCC-11A,	FT-LC-11B,	FT-LCC-11B;
FT-LC-12A,	FT-LCC-12A,	FT-LC-12B,	FT-LCC-12B.

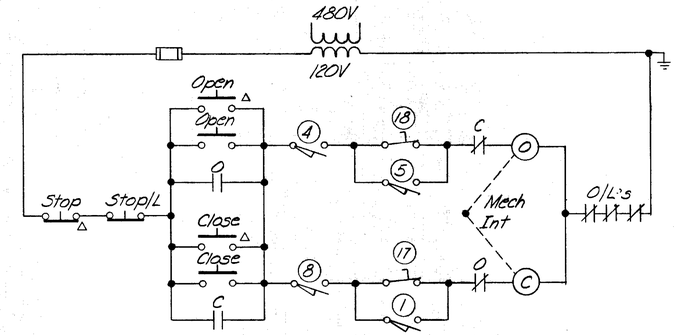


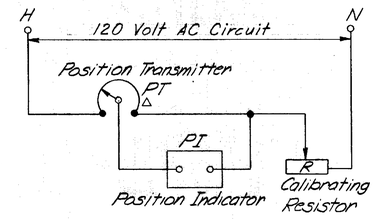
CONTROL CIRCUIT FOR WALL SUPPLY FANS FT-S-3, 6 AND 9 (1/4 HP EACH)

△ At Motor or Equipment

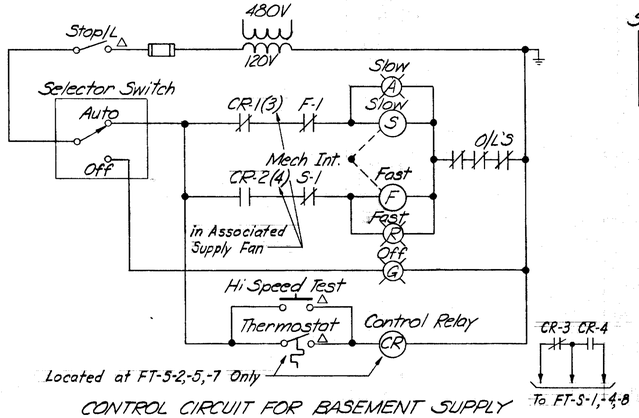


CONTROL WIRING SCHEME FOR TRIG-O-MATIC OVERLOAD RELEASE CLUTCHES - SHOWN FOR TANKS 1,2,3,4
Above Diagram is Typical for Tanks 5,6,7,8 and Tanks 9,10,11,12

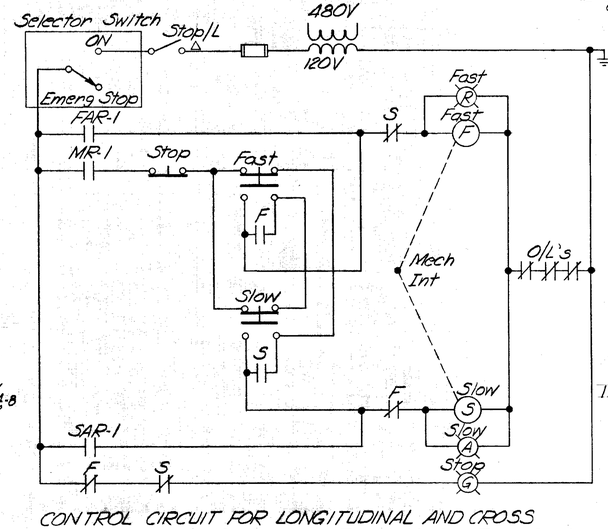




CONTROL CIRCUIT FOR INFLUENT SLUICE GATES
FT-SG-1A THRU 1D, 2A THRU 2D, 3A THRU 3D,
FT-SG-4A THRU 4D, 5A THRU 5D, 6A THRU 6D,
FT-SG-7A THRU 7D, 8A THRU 8D, 9A THRU 9D,
FT-SG-10A THRU 10D, 11A THRU 11D, 12A THRU 12D.
△ - Indicates Devices on Associated MCC, all other Devices and the Controller to be Packaged on the Unit.



CONTROL CIRCUIT FOR BASEMENT SUPPLY FANS FT-S-1, 2, 4, & 5 (15 HP EACH)
FT-S-7 & 8 (10 HP EACH)



CONTROL CIRCUIT FOR LONGITUDINAL AND CROSS COLLECTORS - SHOWN FOR FT-LC-1A & FT-LCC-1A
Above Diagram is Typical for Each Longitudinal and Each Cross Collector. Also See Master Control Circuit Diagram

Limit Switch Contact Development

Rotor	Contact	Gate Position: Full Open	Intermediate	Full Closed	Function
1	①	———	- - -	- - -	By-Pass
	②	———	- - -	- - -	Spare
	③	———	- - -	- - -	Spare
	④	- - -	———	———	Open Limit Sw
2	⑤	———	- - -	- - -	By-Pass
	⑥	- - -	- - -	———	Spare
	⑦	———	———	- - -	Spare
	⑧	- - -	- - -	———	Close Limit Sw

⑰ Closing Torque Switch - Interrupts Control Circuit if Mechanical Overload Occurs During Closing Cycle
⑱ Opening Torque Switch - Interrupts Control Circuit if Mechanical Overload Occurs During Opening Cycle
——— Indicates Contact Closed
- - - Indicates Contact Open

INFLUENT SLUICE GATES FT-SG-1A THRU FT-SG-12D

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED M C
DRAWN T S
CHECKED R A W

APPROVED
DATE
SUPT., DEPT. OF SANITARY SEWERS
DATE
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

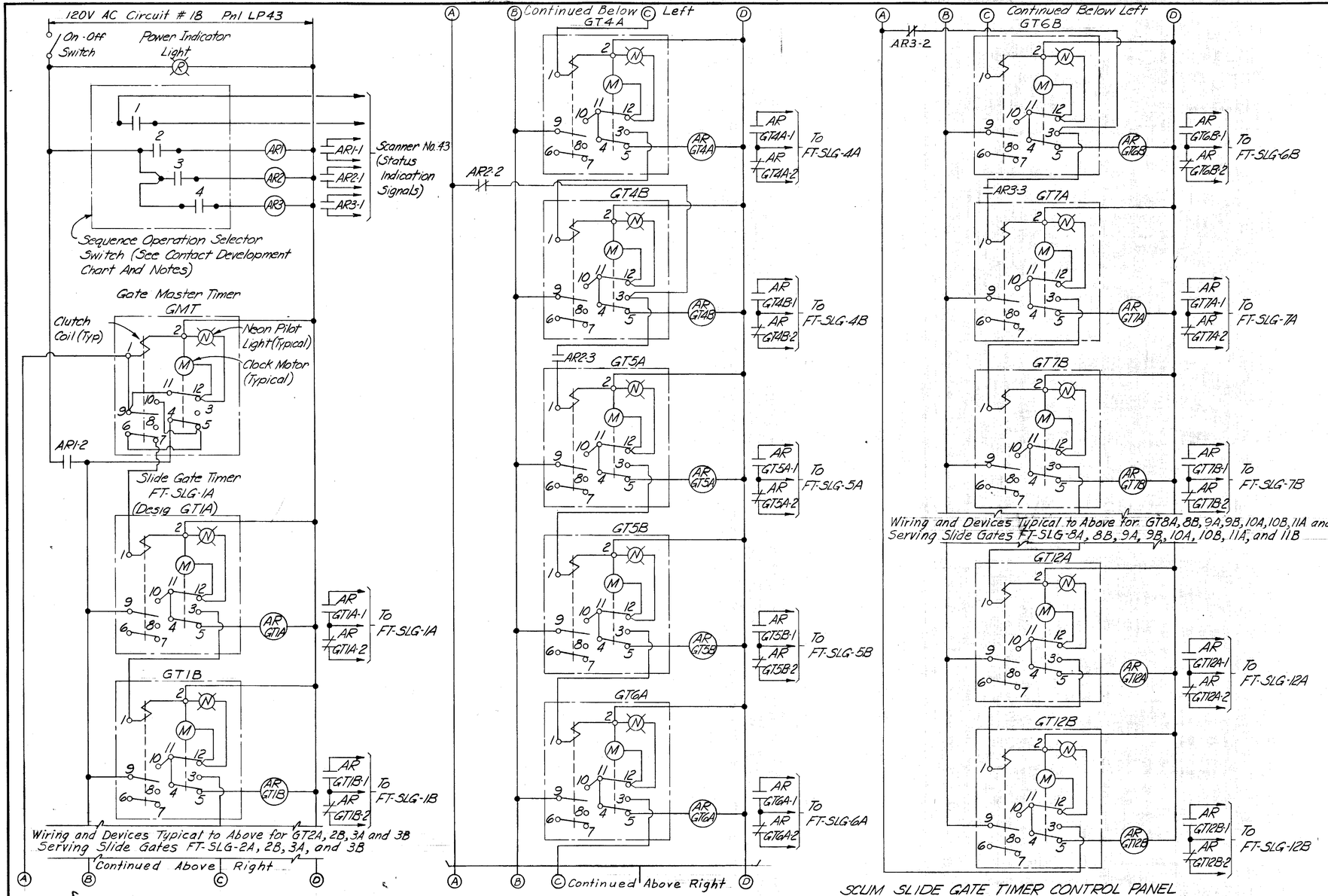
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CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-4
STRUCTURES AND EQUIPMENT

ELECTRICAL
SLUDGE PUMPING STATIONS
SCHEMATIC DIAGRAMS

PROJ. NO. S 202-70-30D-
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Switch Position		1 All Gates Closed	2 Time Gates 1A Thru 4B (Group A)	3 Time Gates 1A Thru 6B (Group B)	4 Time Gates 1A Thru 12B (Group C)
Contacts	1	X	O	O	O
	2	O	X	X	X
	3	O	O	X	X
	4	O	O	O	X

O – Indicates Contact Open
X – Indicates Contact Closed
The Switch Shall Be Unidirectional in Operation Clockwise - With Latches to Prevent Counter Clockwise Operation. The Unit Shall BE G.E. Type SBM, ESCO or Approved Equal With Knurled Head Handle And Position Pointer.

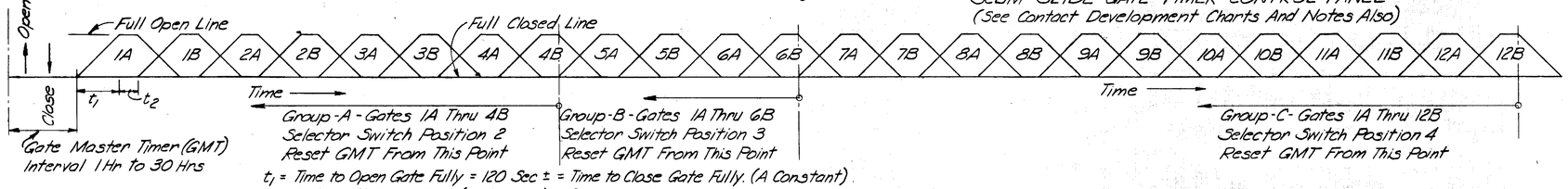
SEQUENCE OPERATION SELECTOR SWITCH CONTACT DEVELOPMENT CHART

	Reset	Timing	Timed Out	
Clutch	Off	On	On	Timer Control Functions
Motor	Off	On	Off	
9-10	O	X	X	Instantaneous Contacts
6-8	O	X	X	
6-7	X	O	O	
4-5	X	X	O	
4-3	O	O	X	Inter-Related Delayed Contacts
11-12	X	X	O	

O – Indicates Contact Open
X – Indicates Contact Closed
All Timers Shall Be Plug-In Reset Timers With "On Delay" Cycle - EAGLE Series HP5 or Equal.
GMT - Shall Be EAGLE HP510A6 120V-60HZ - Dial Range 30 Hours. Min. Setting - 1 Hour In ½ Hour Increments.
All Gate Timers - GT1A Thru GT12B - Shall Be EAGLE HP53A6 120V-60HZ - Dial Range 5 Minutes - Min. Setting 9 Seconds in 3 Second Increments.

GATE TIMERS GT1A Thru GT12B AND THE GATE MASTER TIMER. CONTACT DEVELOPMENT CHART

SCUM SLIDE GATE TIMER CONTROL PANEL
(See Contact Development Charts And Notes Also)



t_1 = Time to Open Gate Fully = 120 Sec ± = Time to Close Gate Fully. (A Constant)
t_2 = Gate Full Open Time (A Variable) = 0 to 120 Sec
$t_1 + t_2$ = Gate Timer Timed Cycle
t_1 + Max t_2 = Gate Timer Range = 240 Sec (Approximately 5 Minutes)

SCUM SLIDE GATES TIMED OPERATION CURVE

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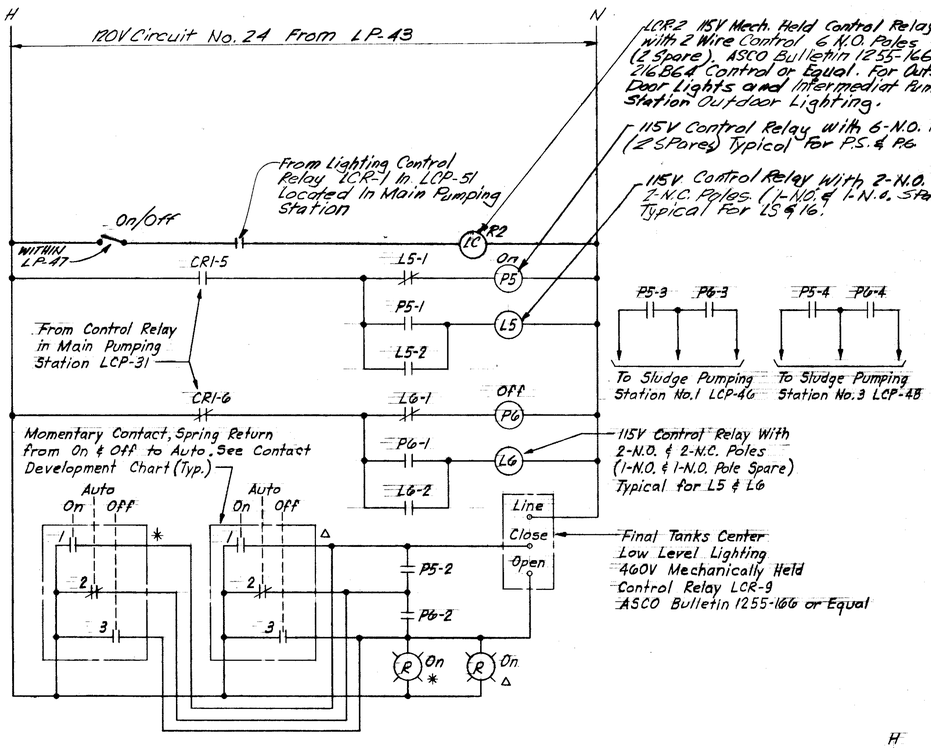
GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED M C DRAWN T S CHECKED R A W	APPROVED DATE SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS	NO.	DATE	APP.	REVISION	SCALE NO SCALE

CITY OF TAMPA, FLORIDA
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SLUDGE PUMPING STATIONS
SCHEMATIC DIAGRAMS

PROJ. NO. S 202-70-30 D-
SHEET E 82 OF 127
DATE SEPT, 1973 REV. 0

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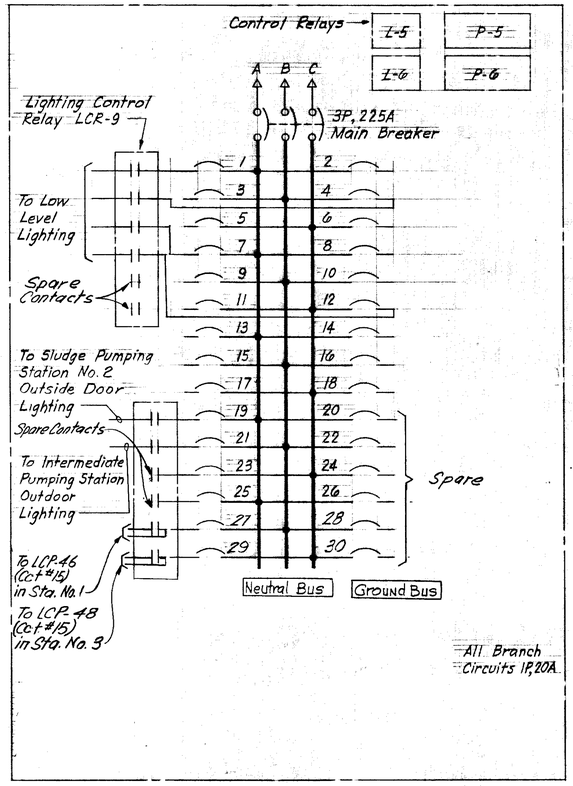
All Devices Are Located in LCP-47 Unless Otherwise Noted
* Indicates Device Located in Process Control Console (Fut. Div.) in Main Pumping Station.
△ Indicates Device Mounted in Front Cover of LCP-47

LIGHTING CONTROL PANEL LCP-47 CONTROL DIAGRAM

Outdoor Lighting Selector Switch					
Contacts		Positions: On	Auto (Normal After On and Off)	Off	Remarks
1 2	1	X			Spring Return to Auto
	2		X		
3	3			X	Spring Return to Auto

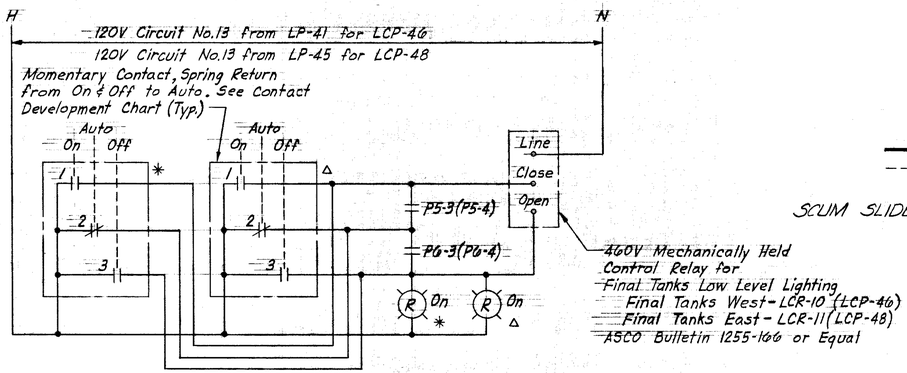
X- Indicates Contact Closed

Contact Development Chart for LCP-46,47,48



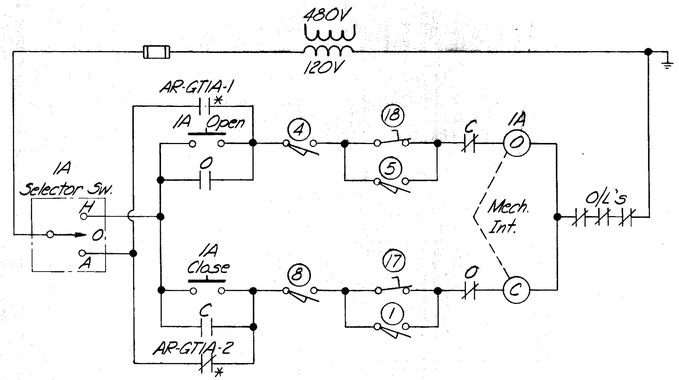
LIGHTING CONTROL PANEL LCP-47

277/480V, 3φ, 4W, 225A MAIN BREAKER
(Located in Sludge Pumping Station #2)



All Devices Are Located in LCP-46(LCP-48) Unless Otherwise Noted.
* Indicates Device Located in Process Control Console (Fut. Div.) in Main Pumping Station
△ Indicates Device Mounted in Front Cover of LCP-46 (LCP-48)

LIGHTING CONTROL PANELS LCP-46 & LCP-48 CONTROL DIAGRAM



SCUM SLIDE GATE OPERATOR FT-SLG-1A

The Following Scum Slide Gates Are Similar -

FT-SLG-1B	FT-SLG-2A	FT-SLG-2B	FT-SLG-3A
FT-SLG-3B	FT-SLG-4A	FT-SLG-4B	FT-SLG-5A
FT-SLG-5B	FT-SLG-6A	FT-SLG-6B	FT-SLG-7A
FT-SLG-7B	FT-SLG-8A	FT-SLG-8B	FT-SLG-9A
FT-SLG-9B	FT-SLG-10A	FT-SLG-10B	FT-SLG-11A
FT-SLG-11B	FT-SLG-12A	FT-SLG-12B	

See Scum Slide Gate Timer Control Panel Diagram on Sheet E82

* Indicates Devices in Scum Slide Gate Timer Control Panel, all Other Devices and Controller to be Packaged on Unit.

Limit Switch Contact Development					
Rotor	Contact	Gate Position: Full Open	Intermediate	Full Closed	Function
1	1				By-Pass
	2				Spare
	3				Spare
	4				Open Limit Sw
2	5				By-Pass
	6				Spare
	7				Spare
	8				Close Limit Sw

⑰ Closing Torque Switch - Interrupts Control Circuit If Mechanical Overload Occurs During Closing Cycle.
⑱ Opening Torque Switch - Interrupts Control Circuit If Mechanical Overload Occurs During Opening Cycle.
——— Indicates Contact Closed
- - - - Indicates Contact Open

SCUM SLIDE GATES FT-SLG-1A THRU FT-SLG-12B

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RECORD DRAWING
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Note: See Note 2 on Sh. E99.

GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED WK
DRAWN JF
CHECKED RAW

APPROVED
_____ DATE _____
SUPT., DEPT. OF SANITARY SEWERS
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

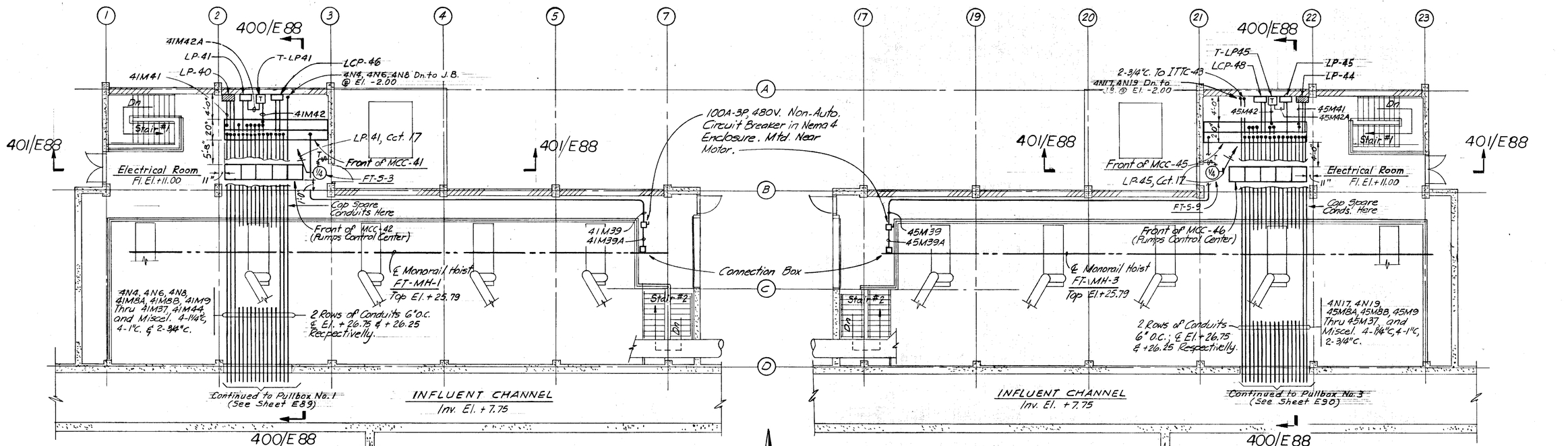
NO.	DATE	APP.	REVISION

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-4
STRUCTURES AND EQUIPMENT

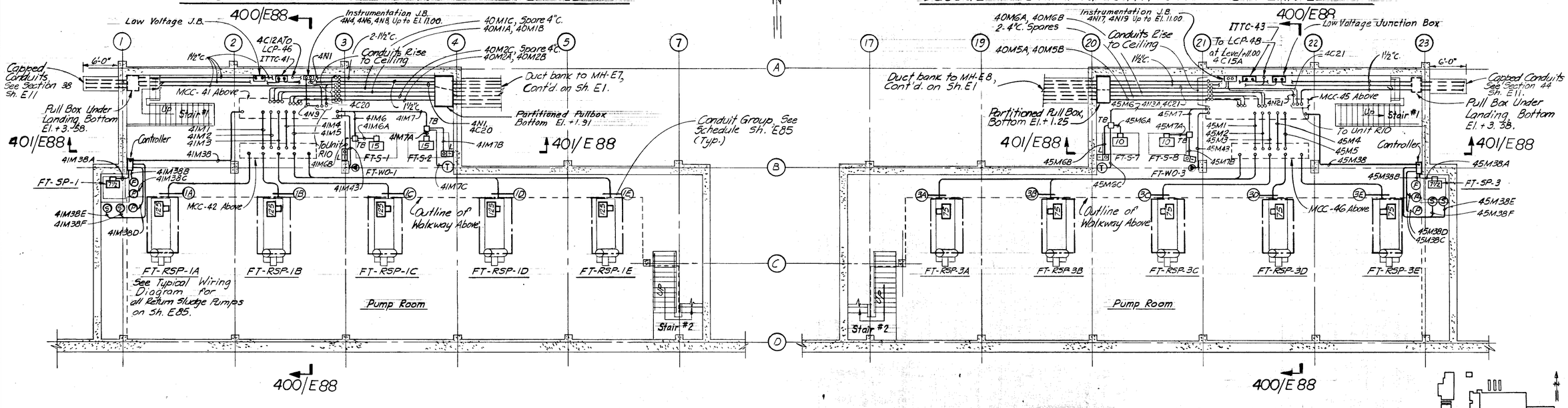
ELECTRICAL
SLUDGE PUMPING STATIONS
SCHEMATIC DIAGRAMS

PROJ. NO. S 202-70-30D-
SHEET E83 OF 127
DATE SEPT, 1973 REV. 0



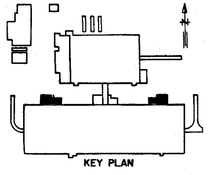
SLUDGE PUMPING STATION NO. 1 - PLAN EL. +11.00

SLUDGE PUMPING STATION NO. 3 - PLAN EL. +11.00



SLUDGE PUMPING STATION NO. 1 - PLAN EL. -2.00

SLUDGE PUMPING STATION NO. 3 - PLAN EL. -2.00



NOTE:
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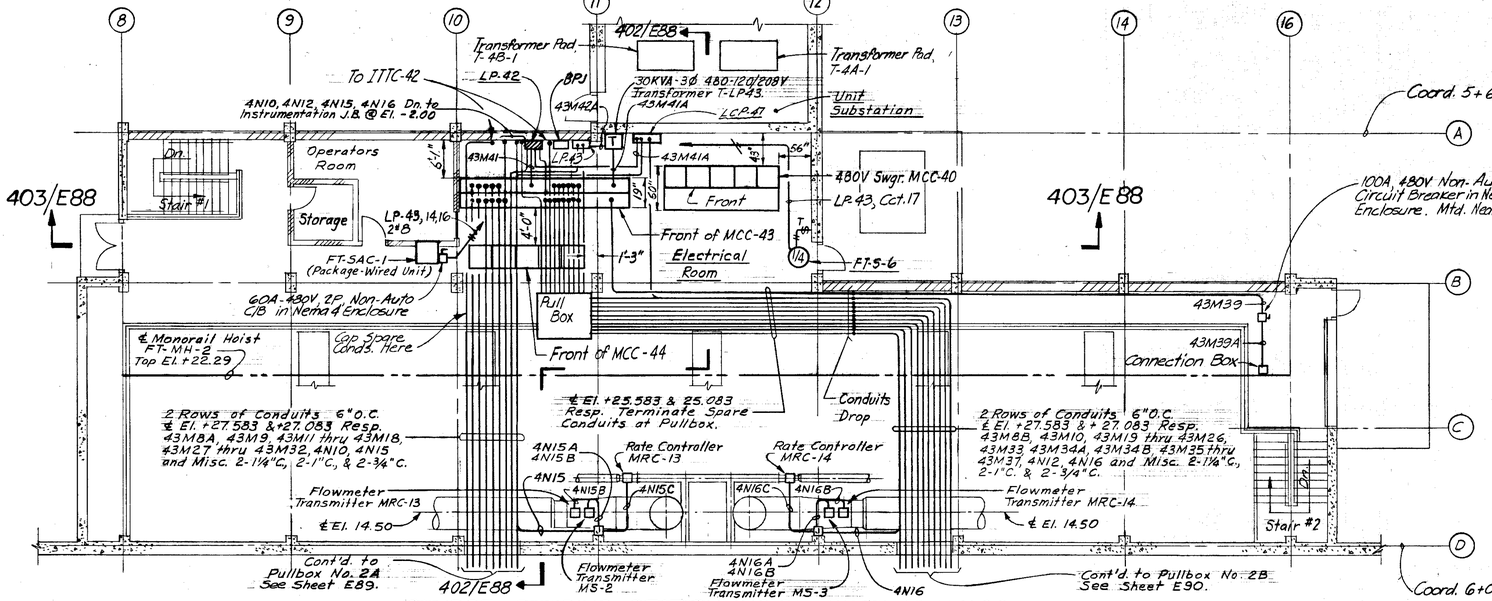
GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED ZV DRAWN ZV, JF CHECKED RAW	APPROVED DATE SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS	NO.	DATE	APP.	REVISION	SCALE 8 0 8 16 FT 1/8"=1'-0"

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-4
STRUCTURES ANND EQUIPMENT

ELECTRICAL
SLUDGE PUMPING STATIONS NO.1 AND NO. 3
POWER PLANS

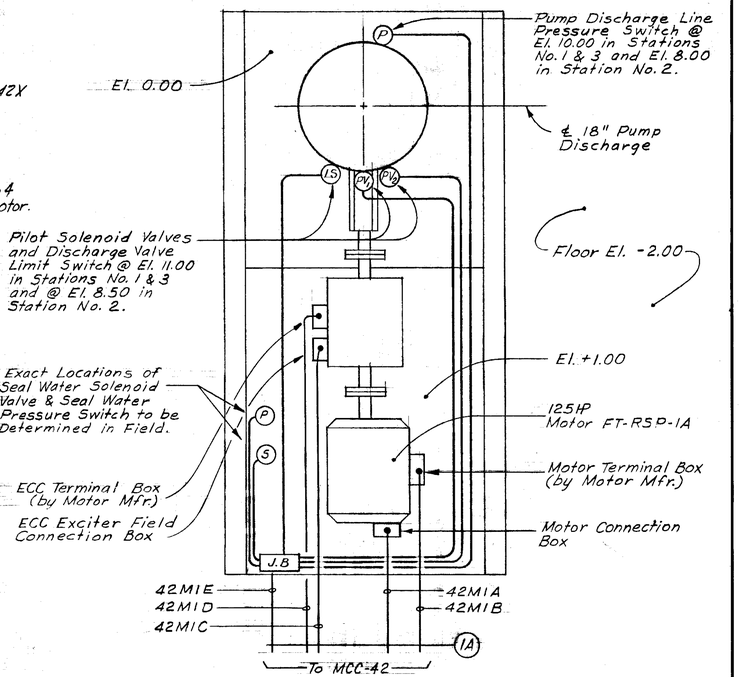
PROJ. NO. S 202-70-30D-
SHEET E84 OF 127
DATE: SEPT, 1973 | REV. 0

DWG 341 OF 384



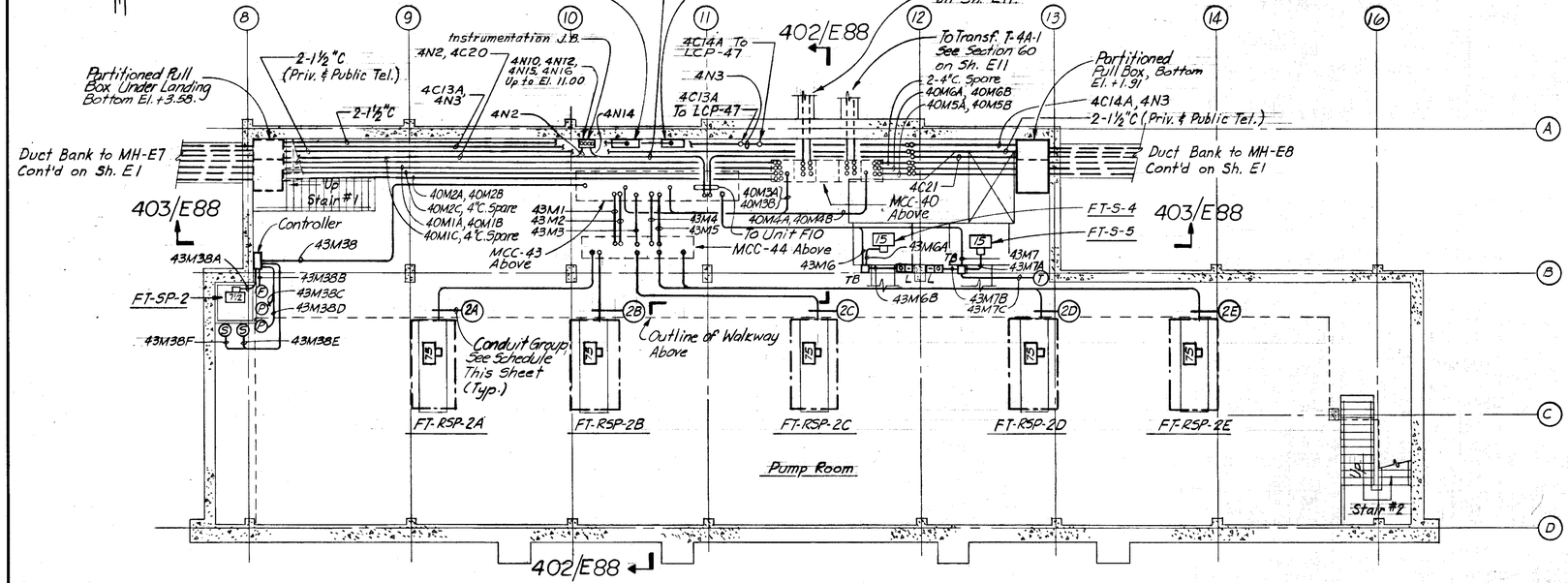
SLUDGE PUMPING STATION NO.2 — PLAN EL. +11.00

SCALE: 1/8" = 1'-0"



FINAL TANKS RETURN SLUDGE PUMP WIRING DIAGRAM

FT-RSP-1A Shown. FT-RSP-1B, 1C, 1D, 1E and 2A, 2B, 2C, 2D, 2E, 3A, 3B, 3C, 3D, & 3E Are Similar.

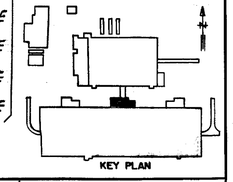


SLUDGE PUMPING STATION NO. 2 — PLAN EL. -2.00

SCALE: 1/8" = 1'-0"

Conduit Group Legend

1A	42M1A, 42M1B, 42M1C, 42M1D, 42M1E	See Plan on Sheet E84 Sludge Pumping Sta. #1 (El. -2.00)
1B	42M2A, 42M2B, 42M2C, 42M2D, 42M2E	
1C	42M3A, 42M3B, 42M3C, 42M3D, 42M3E	
1D	42M4A, 42M4B, 42M4C, 42M4D, 42M4E	
1E	42M5A, 42M5B, 42M5C, 42M5D, 42M5E	
2A	44M1A, 44M1B, 44M1C, 44M1D, 44M1E	See Plan - this sheet Sludge Pumping Sta. #2 (El. -2.00)
2B	44M2A, 44M2B, 44M2C, 44M2D, 44M2E	
2C	44M3A, 44M3B, 44M3C, 44M3D, 44M3E	
2D	44M4A, 44M4B, 44M4C, 44M4D, 44M4E	
2E	44M5A, 44M5B, 44M5C, 44M5D, 44M5E	
3A	46M1A, 46M1B, 46M1C, 46M1D, 46M1E	See Plan on Sheet E84 Sludge Pumping Sta. #3 (El. -2.00)
3B	46M2A, 46M2B, 46M2C, 46M2D, 46M2E	
3C	46M3A, 46M3B, 46M3C, 46M3D, 46M3E	
3D	46M4A, 46M4B, 46M4C, 46M4D, 46M4E	
3E	46M5A, 46M5B, 46M5C, 46M5D, 46M5E	



RECORD DRAWING

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NOTE:

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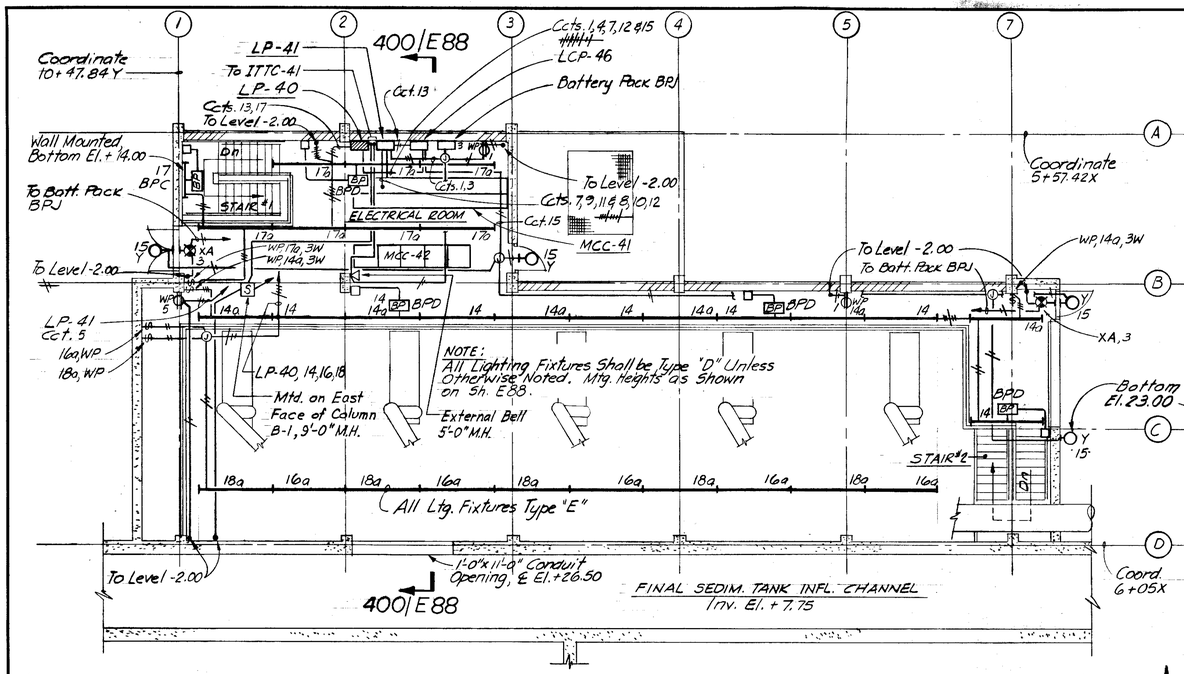
GREELEY AND HANSEN ENGINEERS 222 S. RIVERSIDE PLAZA CHICAGO, ILLINOIS 60606	DESIGNED ZV DRAWN ZV CHECKED RAW	APPROVED DATE SUPT., DEPT. OF SANITARY SEWERS DATE GREELEY AND HANSEN, ENGINEERS	NO.	DATE	APP.	REVISION	SCALE 8 0 8 16 FT 1/8"=1'-0"

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION I 4H-4
STRUCTURES AND EQUIPMENT

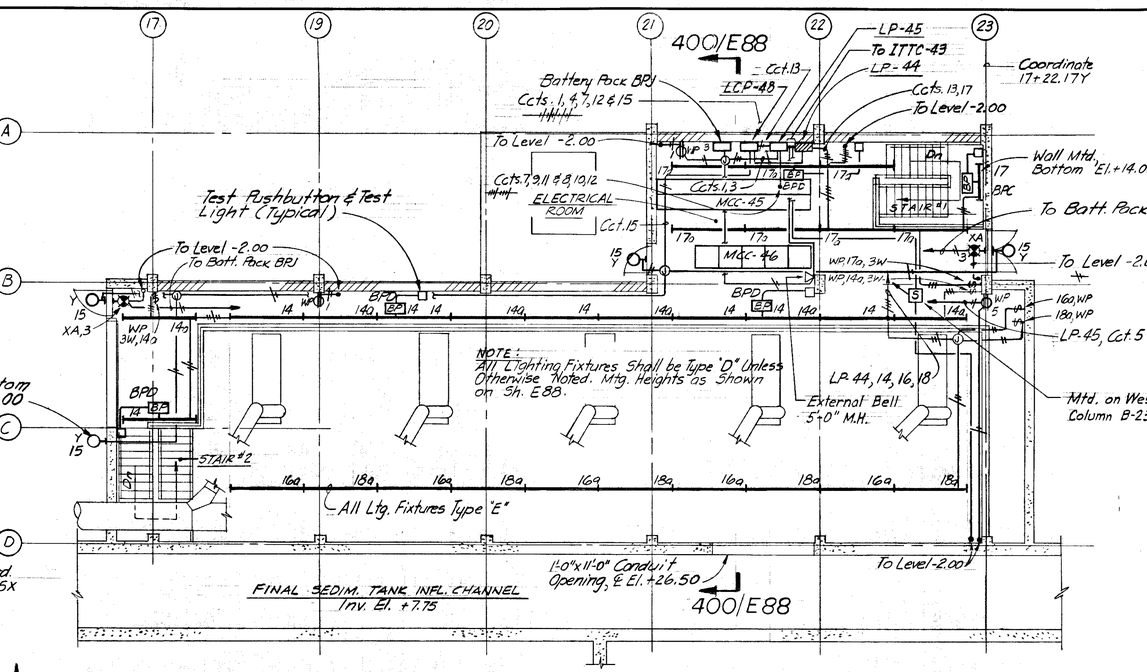
ELECTRICAL
SLUDGE PUMPING STATION NO.2
POWER PLANS

PROJ. NO. S 202-70-30D-
SHEET E 85 OF 127
DATE: SEPT, 1973 | REV. 0

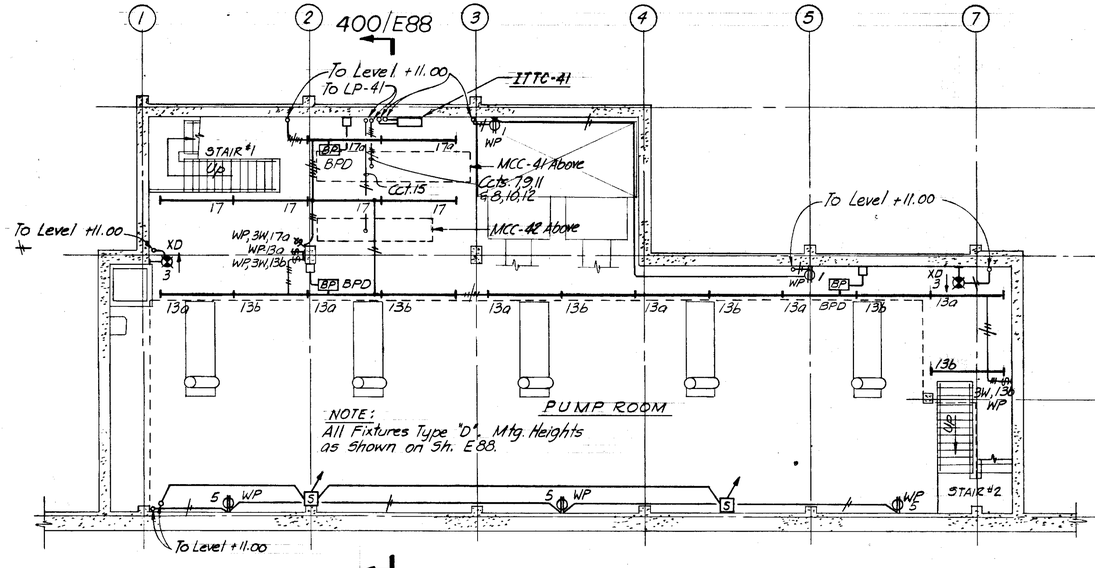
DWG 342 OF 384



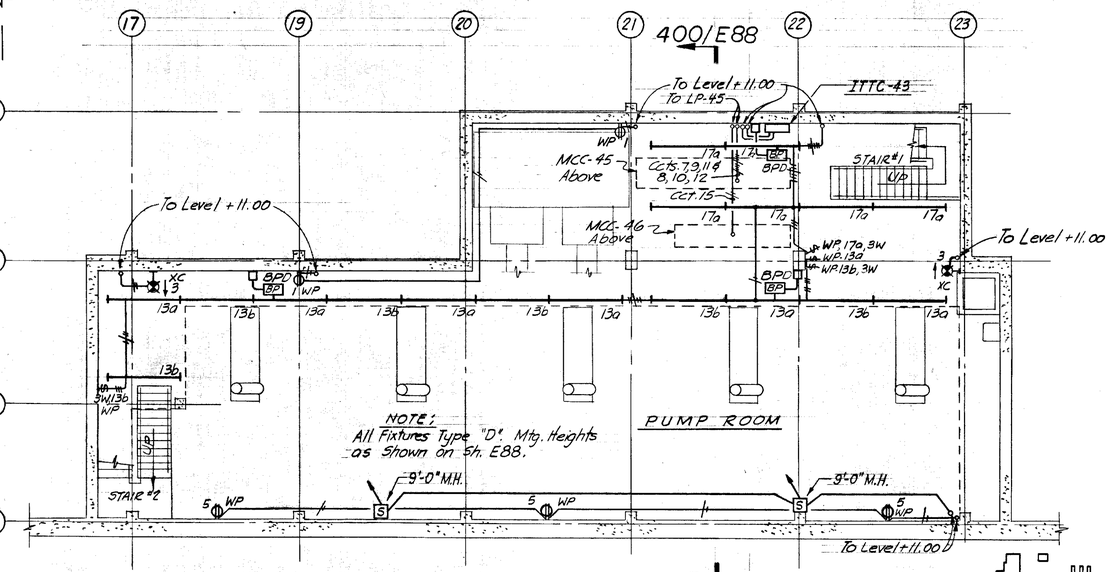
SLUDGE PUMPING STATION NO. 1 - PLAN EL. +11.00



SLUDGE PUMPING STATION NO. 3 - PLAN EL. +11.00



SLUDGE PUMPING STATION NO. 1 - PLAN EL. -2.00



SLUDGE PUMPING STATION NO. 3 - PLAN EL. -2.00

GENERAL NOTE:
Speaker System and Private Telephone System Conduits in Sludge Pumping Stations #1 & 3 Shall be 3¼".

NOTE:
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KEY PLAN

GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED ZV
DRAWN ZV
CHECKED RAW

APPROVED
SUPT., DEPT. OF SANITARY SEWERS DATE
GREELEY AND HANSEN, ENGINEERS DATE

NO.	DATE	APP.	REVISION

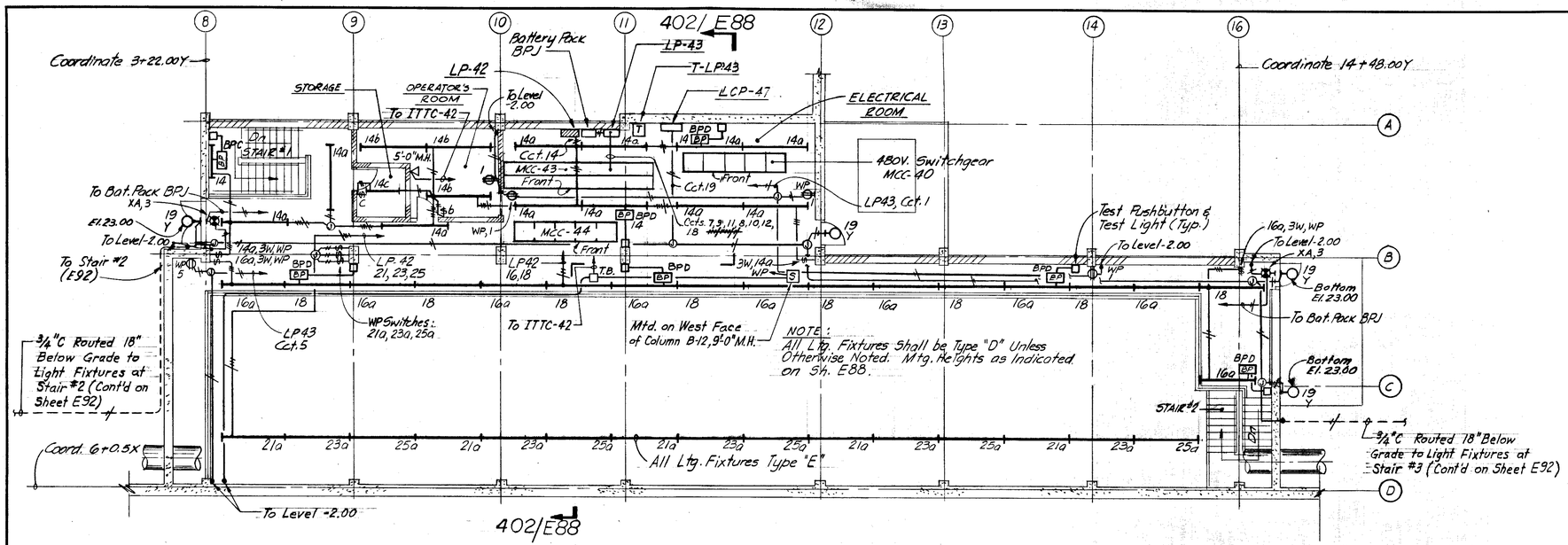
SCALE
8 0 8 16 FT
1"=1'-0"

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-4
STRUCTURES AND EQUIPMENT

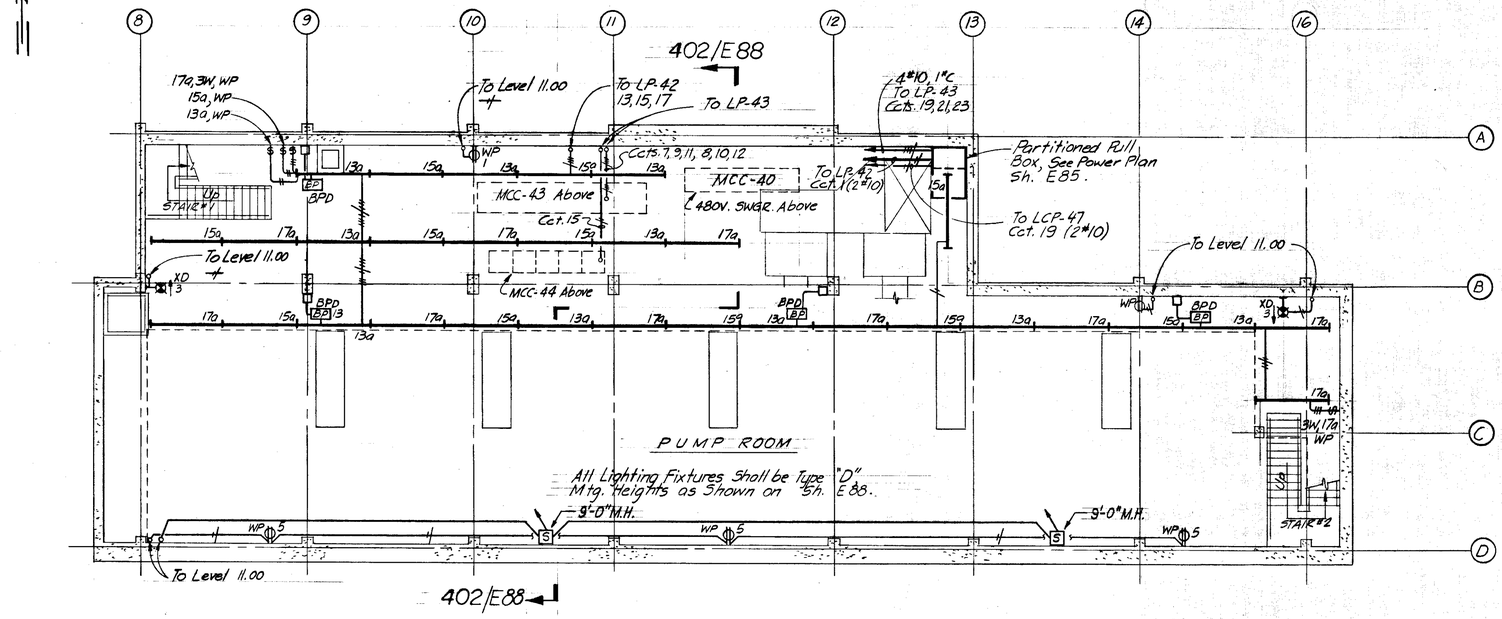
ELECTRICAL
SLUDGE PUMPING STATIONS NO.1 AND NO.3
LIGHTING PLANS

PROJ. NO. S 202-70-30D-
SHEET E86 OF 127
DATE SEPT, 1973 | REV. 0

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SLUDGE PUMPING STATION NO. 2 - PLAN EL. +11.00



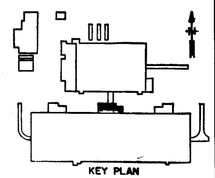
SLUDGE PUMPING STATION NO. 2 - PLAN EL. -2.00

NOTES

1. Speaker System & Private Tel. System Conduits in Sludge Pumping Station #2 Shall be 3/4".

NOTE:
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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED ZV
DRAWN ZV
CHECKED RAW

APPROVED
DATE
SUPT., DEPT. OF SANITARY SEWERS
DATE
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

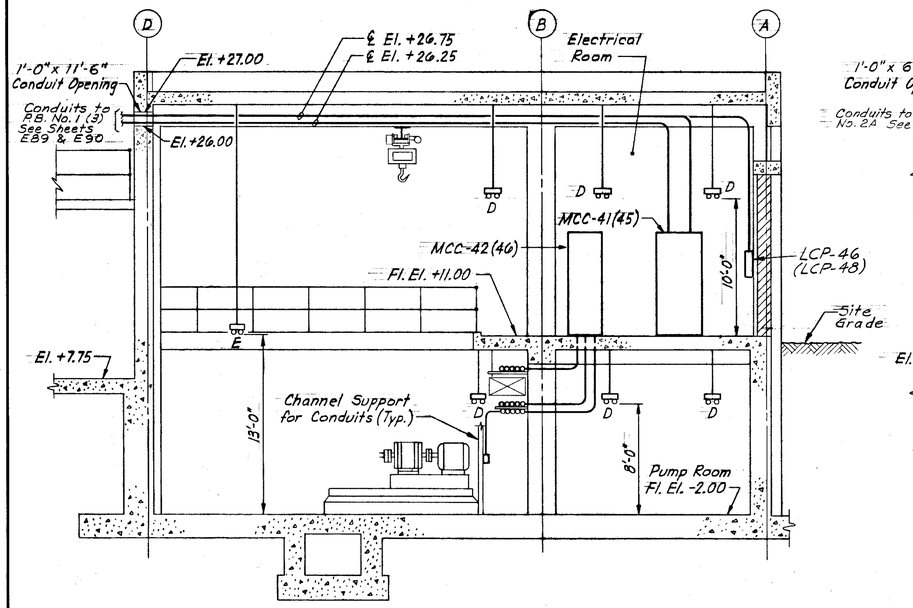
SCALE
8 0 8 16 FT
1/8"=1'-0"

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-4
STRUCTURES AND EQUIPMENT

ELECTRICAL
SLUDGE PUMPING STATION NO. 2
LIGHTING PLANS

PROJ. NO. S 202-70-30D-
SHEET E87 OF 127
DATE SEPT, 1973 | REV. 0

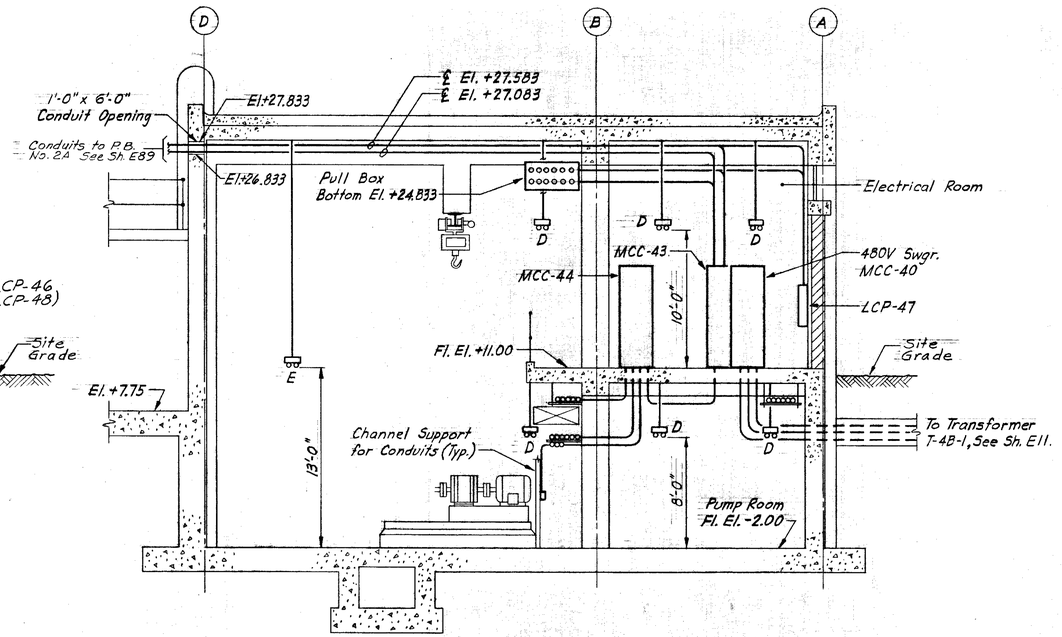
DWG 344 OF 384



SECTION 400/E84, E86

SCALE : 3/16" = 1'-0"

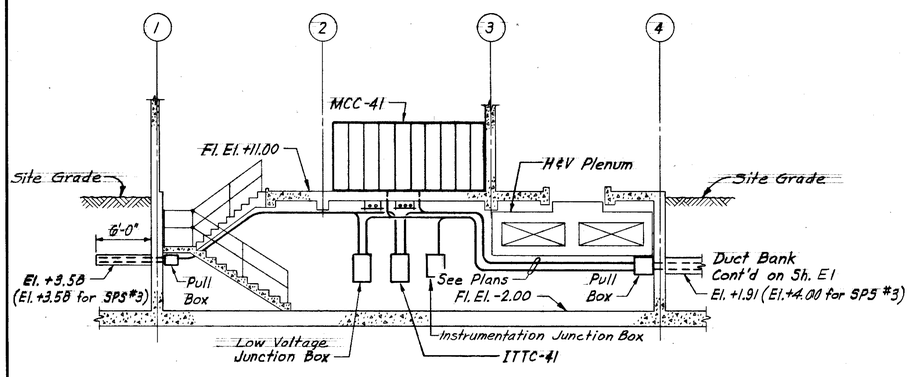
Sludge Pumping Station #1 Shown. (Sludge Pumping Station #3 Similar)



SECTION 402 /E85, E87

SCALE : 3/16" = 1'-0"

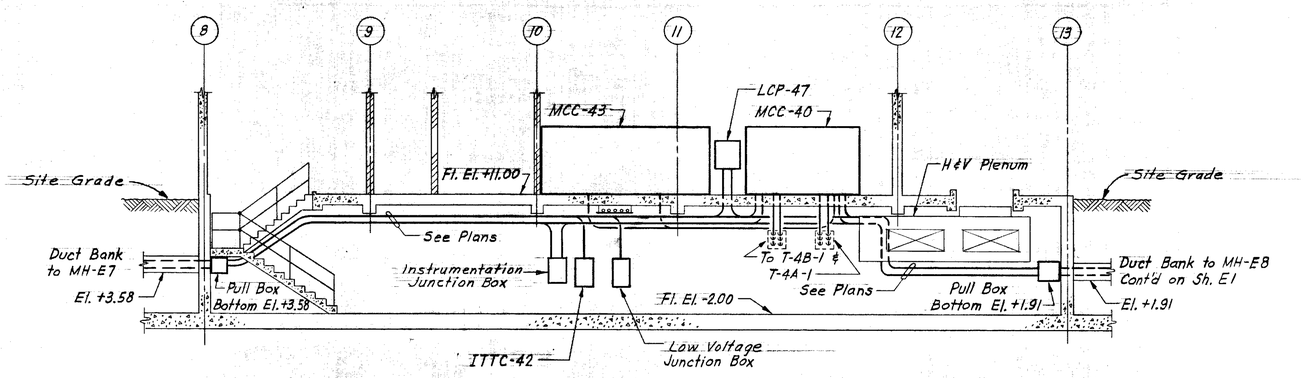
Sludge Pumping Station #2 Only.



SECTION 401 /E84

SCALE : 1/8" = 1'-0"

Sludge Pumping Station #1 Shown. Sludge Pumping Station #3 Opposite Hand.



SECTION 403 /E85

SCALE : 1/8" = 1'-0"

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GREELEY AND HANSEN
ENGINEERS
222 S. RIVERSIDE PLAZA
CHICAGO, ILLINOIS 60606

DESIGNED ZV
DRAWN JF
CHECKED RAW

APPROVED
DATE
SUPT., DEPT. OF SANITARY SEWERS
DATE
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION

SCALE
4 0 4 8 12 FT
3/16" = 1'-0"

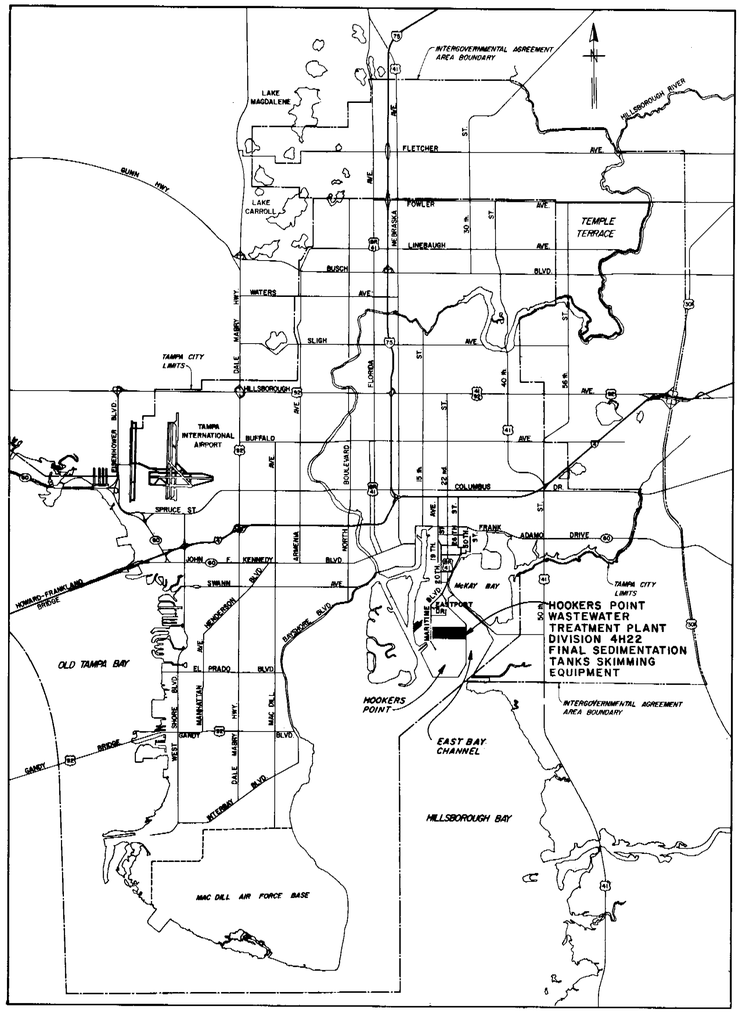
CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
HOOKERS POINT SEWAGE TREATMENT PLANT
DIVISION 4H-4
STRUCTURES AND EQUIPMENT

ELECTRICAL
SLUDGE PUMPING STATIONS
SECTIONS AND DETAILS

PROJ. NO. S 202-70-30D-
SHEET E 88 OF 127
DATE SEPT, 1973 | REV. 0

DWG 345 OF 384

RSPS Modification_Year 1991



LOCATION MAP
NOT TO SCALE

INDEX

SHEET NO.	DRAWING NO.	TITLE
		GENERAL
1	G1	LOCATION MAP AND INDEX
2	G2	SITE PLAN
		STRUCTURAL
3	S1	PLANS AND SECTIONS
4	S2	PLANS, SECTIONS AND DETAILS
5	S3	PLANS, SECTIONS AND DETAILS
		MECHANICAL
6	M1	PLAN AND SECTIONAL PLAN
7	M2	PLANS, SECTIONS AND DETAILS
8	M3	DETAILS AND OUTSIDE PIPING
		ELECTRICAL
9	E1	SYMBOL LIST
10	E2	SYMBOL LIST
11	E3	MCC-43 ONE LINE DIAGRAM
12	E4	SCHEMATIC DIAGRAM
13	E5	FINAL TANK POWER PLAN
14	E6	DETAILS
15	E7	CONDUIT AND CABLE SCHEDULE

GREELEY AND HANSEN
CIVIL
ARTHUR H. ADAMS, JR.
FLORIDA REGISTERED NO. 33552
PROFESSIONAL STATE ENGINEER
NO. 33552
DATE: .....
SIGNATURE: .....

ARTHUR H. ADAMS, JR. LICENSE NO. 33552 STATE OF FLORIDA REGISTERED ENGINEER

ELECTRICAL
STANLEY S. HONG, P.E.
FLORIDA REGISTERED NO. 39726
PROFESSIONAL ENGINEER
NO. 39726
DATE: 1-10-91
SIGNATURE: .....

STANLEY S. HONG CERTIFICATE NO. 39726 STATE OF FLORIDA REGISTERED ENGINEER

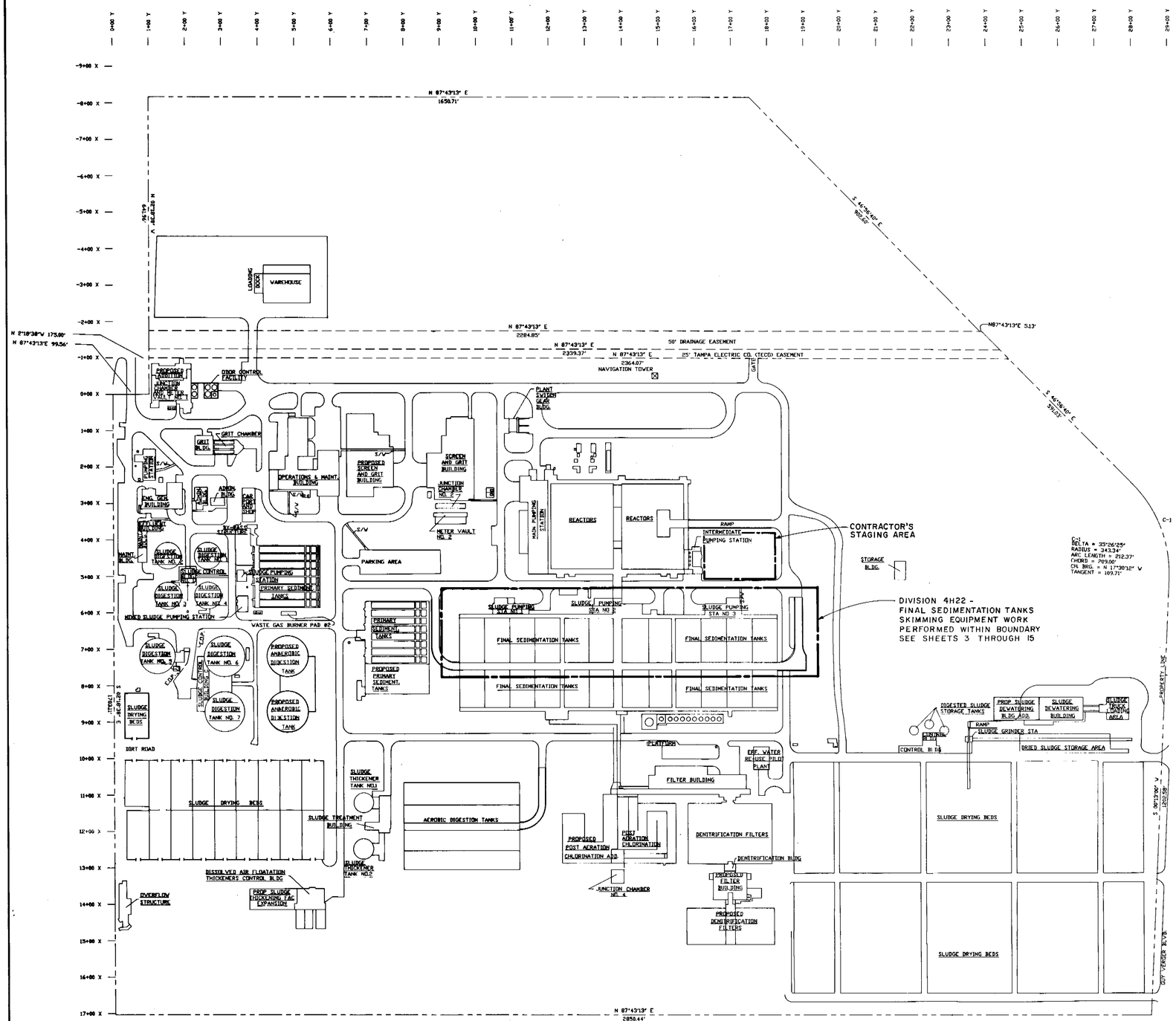
KLEIN AND HOFFMAN
STRUCTURAL
SATISH K. SACHDEV, P.E.
FLORIDA REGISTERED NO. 38976
PROFESSIONAL ENGINEER
NO. 38976
DATE: .....
SIGNATURE: .....

SATISH K. SACHDEV CERTIFICATE NO. LICENSE NO. 0038976 STATE OF FLORIDA REGISTERED ENGINEER

FDER PROJECT NO.
CS120473670

RECORD DRAWING
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GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED RPN DRAWN SK CHECKED DCH	APPROVED _____ DATE _____ _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	NO. 1 DATE 8-20-91 APP DCH REV. DWG. REVISIONS
SCALE: NO SCALE	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT DIVISION 4H22 FINAL SEDIMENTATION TANKS SKIMMING EQUIPMENT	GENERAL LOCATION MAP AND INDEX	PROJ NO DWG G1 SHEET 1 OF 15 DATE JULY 1989 REV 1



GENERAL NOTES:

1. NORTHWEST CORNER OF EXISTING PLANT SITE = COORDINATES N1,305,474.13 AND E357, 512.82 BASED ON THE STANDARD PLANE RECTANGULAR COORDINATE SYSTEM (TRANSVERSE MERCATOR) FOR THE WEST ZONE OF FLORIDA, AND THIS CORNER = 0+00X AND 0+00Y FOR PLANT COORDINATE SYSTEM.
2. ALL ELEVATIONS ARE REFERRED TO CITY OF TAMPA DATUM, WHICH IS 0.65 FEET ABOVE THE MEAN LOW WATER DATUM OF THE U.S. CORPS OF ENGINEERS AND 0.15 FEET BELOW THE MEAN SEA LEVEL DATUM OF THE U.S.C.&G.S.
3. THE 100-YEAR FLOOD RECURRENCE INTERVAL EQUATES TO ELEVATION 11.0 ABOVE THE MEAN SEA LEVEL DATUM.
4. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING PIPING, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF THE PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING PIPING, STRUCTURES AND OTHER FEATURES AFFECTING HIS WORK PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS ADVANCED NOTICE TO THE CITY IN ORDER TO COORDINATE CONSTRUCTION ACTIVITIES AFFECTING PLANT OPERATIONS. THIS SHALL INCLUDE ALL PIPING CONNECTIONS TO EXISTING LINES, TANKS, ETC., DEMOLITION WORK AND PARTICULAR AREAS OF CONSTRUCTION. THE CITY RESERVES THE RIGHT TO POSTPONE ANY CONSTRUCTION ACTIVITY THAT WOULD INTERFERE WITH THEIR PLANT OPERATIONS UNTIL SUCH TIME WHEN THE CONTRACTOR WILL BE NOTIFIED TO PROCEED.
6. * DENOTES DIMENSIONS, ELEVATIONS AND LOCATIONS TO BE VERIFIED OR DETERMINED AFTER FINAL SELECTION OF PIPING AND EQUIPMENT.

NOTE:
1. PROPOSED FACILITIES SHOWN ARE UNDER DIVISION 5H1.

RECORD DRAWING

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GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED DCH DRAWN MSB CHECKED DCH	APPROVED DATE DATE GREELEY AND HANSEN, ENGINEERS	9-20-91 DCH REV. DWG. REVISIONS NO DATE APP REVISION	SCALE 100 50 0 50 150 FT 1" = 150'	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT DIVISION 4H22 FINAL SEDIMENTATION TANKS SKIMMING EQUIPMENT	GENERAL SITE PLAN	PROJ. NO. DWG G2 SHEET 2 OF 15 DATE JULY 1989 REV 1

POWER AND LIGHTING SYMBOLS

- EXPOSED CONDUIT RUN
- CONDUIT RUN CONCEALED IN FLOOR OR UNDERGROUND
- CONDUIT RUN CONCEALED IN WALLS, ABOVE SUSPENDED CEILING, OR IN ROOF SLAB
- CONDUIT WITH #12AWG HOT AND NEUTRAL WIRES (LONG LINE IS NEUTRAL)
- HOME RUN TO LIGHTING PANELBOARD (LP-6 INDICATES PANELBOARD AND 1, 3, 5 INDICATES 20A-1P CKTS. 1, 3 AND 5) — LP6 1,3,5
- FLEXIBLE LIQUIDTIGHT CONDUIT
- G — GROUNDING CONDUCTOR
- E — UNDERGROUND DUCT ENCASED IN CONCRETE
- DB — DIRECT BURIAL CABLE
- CONDUIT-UP
- CONDUIT-DOWN
- LIGHTING PANELBOARD 120/208V,3Φ,4W,SN
- LIGHTING PANELBOARD 277/480V,3Φ,4W,SN
- E — TELEPHONE CABINET
- EQUIPMENT ENCLOSURE AS INDICATED ON PLAN
- MANUALLY OPERATED STARTER OR CIRCUIT BREAKER
- DS — DISCONNECT SWITCH
- M — FULL VOLTAGE MAGNETIC STARTER
- M — COMBINATION FULL VOLTAGE MAGNETIC STARTER WITH CIRCUIT BREAKER
- C — MAGNETIC CONTACTOR
- 5 — MOTOR-THREE PHASE (5HP)
- X — MOTOR-SINGLE PHASE (XXX)
- WH — ELECTRIC WATER HEATER
- GROUND ROD
- LIGHTING ROD
- ½ — PREWIRED THREE PHASE MOTOR AND CONTROLER

- CEILING MOUNTED INCANDESCENT OR MERCURY VAPOR LIGHTING FIXTURE. "A" INDICATES FIXTURE TYPE LISTED IN SCHEDULE
- WALL MOUNTED LIGHTING FIXTURE
- EXIT SIGN
- EMERGENCY INCANDESCENT OR MERCURY VAPOR LIGHTING FIXTURE
- FLUORESCENT FIXTURE
- EMERGENCY FLUORESCENT FIXTURE
- FLUORESCENT STRIP LIGHT
- POLE MOUNTED LIGHTING FIXTURE
- BP — BATTERY PACK FOR EMERGENCY FIXTURE
- SINGLE RECEPTACLE - 20A, 2 POLE, 3 WIRE
- DUPLEX RECEPTACLE - 20A, 2 POLE, 2 WIRE
- DUPLEX RECEPTACLE - 20A, 2 POLE, 3 WIRE, 208V
- 30A — SINGLE RECEPTACLE - 2 POLE, 3 WIRE, 208V, RATING NOTED
- 60A — 3 POLE, 3 WIRE, 480V, WELDING OUTLET (60A)
- C — CLOCK OUTLET
- SINGLE POLE SWITCH
- 2P — TWO POLE SWITCH
- 3 — THREE WAY SWITCH
- 4 — FOUR WAY SWITCH
- T — SWITCH WITCH THERMAL OVERLOAD PROTECTION
- M — MOMENTARY CONTACT SWITCH
- D — DOOR SWITCH
- P — SWITCH WITH PILOT LIGHT
- G — COMBUSTIBLE GAS DETECTION SENSOR
- PC — PHOTO ELECTRIC CELL
- J — OUTLET BOX WIT BLANK COVER
- JB — JUNCTION BOX
- PB — PULL BOX
- TB — TERMINAL BOX
- WATERTIGHT FLOOR OUTLET BOX
- FLOOR OUTLET BOX WITH DUPLEX RECEPTACLE - 20A, 2 POLE, 3 WIRE

- S — INTERCOMMUNICATION SPEATER OUTLET (GENERAL TEL. CO)
- V — INTERCOMMUNICATION SPEAKER VOLUME CONTROL OUTLET (GENERAL TEL. CO.)
- INTERCOMMUNICATION TELEPHONE OUTLET (GENERAL TEL. CO.)
- HORN
- INTERCOMMUNICATION TELEPHONE FLOOR OUTLET (GENERAL TEL. CO.)

GENERAL SYMBOLS

- START-STOP PUSHBUTTON
- ON/OFF/L — ON-OFF MAINTAINED CONTACT PUSHBUTTON WITH LOCK ATTACHMENT
- S/L — INDICATING LIGHT AND START-STOP PUSHBUTTON WITH LOCK ATTACHMENT ON STOP
- FORWARD-STOP-REVERSE OR SLOW-FAST-STOP PUSHBUTTON
- SINGLE PUSHBUTTON
- SELECTOR SWITCH ("HOA" INDICATES HAND OFF AUTO; "MOR" INDICATES MANUAL OFF REMOTE; ETC)
- L — ON-OFF SWITCH WITH LOCK ATTACHMENT ON OFF POSITION
- EP — ELECTRIC-PNEUMATIC SWITCH
- F — FLOAT SWITCH
- FL — FLOW SWITCH
- FS — FREEZESTAT
- LS — LIMIT SWITCH
- A / M — MOTOR OPERATED VALVE OR SLUICE GATE WITH INTEGRAL CONTROLLER PROVIDE A TOGGLE TYPE DISCONNECT SWITCH AT EACH VALVE
- P — PRESSURE SWITCH
- PE — PNEUMATIC-ELECTRIC SWITCH
- S — SOLENOID OPERATED VALVE
- T — TEMPERATURE SWITCH
- TG — TACHOMETER GENERATOR
- TS — TORQUE SWITCH
- DM — DAMPER MOTOR

NOTE:
MANY SYMBOLS SHOWN RELATE TO WORK UNDER ANOTHER DIVISION.

RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN ATK
CHECKED SSH

APPROVED
_____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION

SCALE
NO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
DIVISION 4H22
FINAL SEDIMENTATION TANKS
SKIMMING EQUIPMENT

ELECTRICAL
SYMBOL LIST

PROJ NO.
DWG E1
SHEET 9 OF 15
DATE JULY 1989
REV 0

GENERAL SYMBOLS

- [L] LEVEL TRANSMITTER (PRESSURE ANALOG TYPE)
- [LC] LEVEL TRANSMITTER (FLOAT TYPE)
- [T] TEMPERATURE TRANSMITTER
- [FT] FLOW TRANSMITTER

- MH DESIGNATES MOUNTING HEIGHT
- WP DESIGNATES WEATERPROOF EQUIPMENT
- XP DESIGNATES EXPLOSIONPROOF EQUIPMENT
- EWC DESIGNATES ELECTRICAL WATER COOLER
- MOV DESIGNATES MOTOR OPERATED VALVE

CONDUIT AND CABLE SCHEDULE LEGEND

(19) (M) (123A) — TYPICAL CONDUIT AND CABLE RUN NUMBER

- INDICATES SPECIFIC CONDUIT AND CABLE RUN FROM SOURCE DISTRIBUTION CENTER
- CODE LETTER INDICATING SOURCE DISTRIBUTION CENTER TYPE AND OR WIRING SYSTEM
- INDICATES SOURCE DISTRIBUTION CENTER NUMBER

EXAMPLE: 19M123A-INDICATES CONDUIT AND CABLE RUN NUMBER 123A OF A WIRING SYSTEM FROM MOTOR CONTROL CENTER NO. 19.

CODE LETTER	WIRING SYSTEM AND/OR SOURCE
M	CONTROL POWER AND INSTRUMENTATION WIRING FROM AND TO MOTOR CONTROL CENTERS, PUMP CONTROL PANELS AND 480V SWITCHGEAR (SEE NOTE BELOW)
H	13.2KV FEEDERS
MG	GENERATOR SYSTEM WIRING
EG	EGCP NO. 1 AND NO. 2 WIRES
EM	EGMP WIRING
LP	208/120V LIGHTING PANEL WIRING
B	48V AND 24V D.C. BATTERY WIRING

ONE LINE DIAGRAM SYMBOLS

- 600A — BUS-RATING AS SHOWN
- INCOMING LINE
- OUTGOING LINE
- 13.8KV CABLE TERMINATION
- DISCONNECTING DEVICE
- CONDUCTORS CONNECTED
- 100A — FUSE-RATING AS SHOWN
- 100A — SINGLE THROW DISCONNECT SWITCH-RATING AS SHOWN
- 100A/70A — FUSED DISCONNECT SWITCH-100A SWITCH, 70A FUSE
- INTERRUPTER SWITCH
- FUSED INTERRUPTER SWITCH
- 100A — LOW VOLTAGE AIR CIRCUIT BREAKER WITHOUT TRIP DEVICE 100A FRAME
- 225A/125A — LOW VOLTAGE AIR CIRCUIT BREAKER WITH 225A FRAME AND 125A TRIP
- 600A/400A — LOW VOLTAGE DRAWOUT TYPE AIR CIRCUIT BREAKER WITH 600A FRAME AND 400A THERMAL MAGNETIC (SOLID STATE SENSOR SIMILAR) TRIP
- [52] — MEDIUM VOLTAGE DRAWOUT TYPE AIR CIRCUIT BREAKER
- [G] — CIRCUIT BREAKER WITH SOLID STATE GROUND FAULT SENSOR

(27) PROTECTIVE RELAY

27-UNDERVOLTAGE	DBX-DEAD BUS AUXILIARY RELAY
32-REVERSE POWER	86-LOCKOUT
50-INSTANTANEOUS OVERCURRENT	87-DIFFERENTIAL CURRENT
51-A.C. TIME OVERCURRENT	G-DEVICE IN GROUND CIRCUIT
52-A.C. CIRCUIT BREAKER	N-DIVICE IN NEUTRAL CIRCUIT
60-VOLTAGE BALANCE	X-AUXILIARY RELAY
43-MANUAL-AUTOMATIC MASTER TRANSFER FUNCTION SELECTOR SWITCH	IR-INTERPOSING RELAY
	GSR-GROUND SENSING RELAY
	25/27-SYNCHRONIZING CHECK RELAY

225A/150A — LOW VOLTAGE AIR CIRCUIT BREAKER WITH COORDINATED CL FUSES 225A FRAME AND 150A TRIP

(ST) — LOW VOLTAGE AIR CIRCUIT BREAKER WITH SHUNT TRIP DEVICE

KEY INTERLOCK-DOTTED LINE WITH ARROWS INDICATES MOVEMENT OF KEY DURING INTERLOCK PROCEDURE

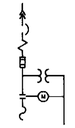
[A] METER, INSTRUMENT OR INSTRUMENT SWITCH

A-AMMETER	SI-SPEED INDICATOR
V-VOLTMETER	TM-ELAPSED TIME METER
W-WATTMETER	VAR-VARMETER
WHD-WATTHOUR DEMAND METER	CS-"52" BREAKER CONTROL SWITCH
W/VAR-COMBINATION WATTMETER/VARMETER	WT-WATTS TRANSDUCER
AS-AMMETER SWITCH	VART-VARS TRANSDUCER
VS-VOLTMETER SWITCH	VT-VOLTS TRANSDUCER
W/VSW-WATTMETER/VARMETER SWITCH	AT-AMPERES TRANSDUCER

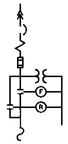
- GROUND CONNECTION
- LIGHTNING OR SURGE ARRESTOR
- SURGE CAPACITOR
- POWER TRANSFORMER WITH WINDING CONNECTIONS INDICATED
- CPT — CONTROL POWER TRANSFORMER
- PT — POTENTIAL TRANSFORMER

- CT — CURRENT TRANSFORMER
- CURRENT TRANSFORMER - 3PHASE WINDOW TYPE
- THERMAL OVERLOAD ELEMENT (OL)
- (5) — SQUIRREL CAGE MOTOR (INDICATE HORSEPOWER)
- (G) — GENERATOR
- (R) — INDICATING LIGHT (R-RED, G-GREEN, A-AMBER, B-BLUE, W-WHITE)

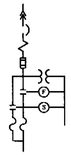
COMBINATION STARTER WITH CONTROL TRANSFORMERS AND OVERLOAD RELAYS; AND MAGNETIC CIRCUIT BREAKER WITH CURRENT LIMITER FUSES AS SHOWN



FULL VOLTAGE NON REVERSING



FULL VOLTAGE REVERSING



FULL VOLTAGE TWO SPEED

SCHEMATIC AND WIRING DIAGRAM SYMBOLS

(M) — OPERATING COIL

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

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

- NORMALLY OPEN CONTACT (NO.)
- NORMALLY CLOSED CONTACT (N.C.)
- NORMALLY OPEN CONTACT WITH TIME DELAY CLOSING (ON-DELAY)
- NORMALLY CLOSED CONTACT WITH TIME DELAY CLOSING (OFF-DELAY)
- NORMALLY CLOSED CONTACT WITH TIME DELAY OPENING (ON-DELAY)
- NORMALLY OPEN CONTACT WITH TIME DELAY OPENING (OFF-DELAY)
- (R) — INDICATING LIGHT (R-RED, G-GREEN, A-AMBER, B-BLUE, W-WHITE)
- 3-POSITION SELECTOR SWITCH
- NORMALLY OPEN PUSHBUTTON-MOMENTARY CONTACT
- NORMALLY CLOSED PUSHBUTTON-MOMENTARY CONTACT
- DOUBLE CIRCUIT PUSHBUTTON WITH SPRING RETURN TO NORMAL
- TRANSFORMER
- OL — OVERLOAD RELAY CONTACT
- THERMAL OVERLOAD ELEMENT (OL)
- ON-OFF SWITCH
- [R] — RESISTOR
- (S) — SOLENOID VALVE

NORMALLY OPEN N.O.	NORMALLY CLOSED N.C.	
		LIMIT SWITCH
		FLOAT SWITCH
		PRESSURE SWITCH
		FLOW SWITCH
		TEMPERATURE
		TORQUE
		SEMICONDUCTOR BLOCKING DIODE

RECORD DRAWING

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NOTES:

1 - MANY SYMBOLS SHOWN RELATE TO WORK UNDER ANOTHER DIVISION.
2 - REFER TO SYMBOLS AND EQUIPMENT LEGEND ON SHEET AE6 ALSO

GREELEY AND HANSEN
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4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

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NO	DATE	APP	REVISION

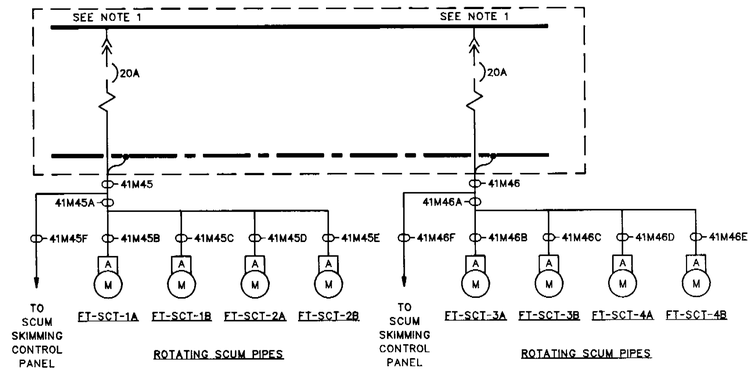
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CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
DIVISION 4H22
FINAL SEDIMENTATION TANKS
SKIMMING EQUIPMENT

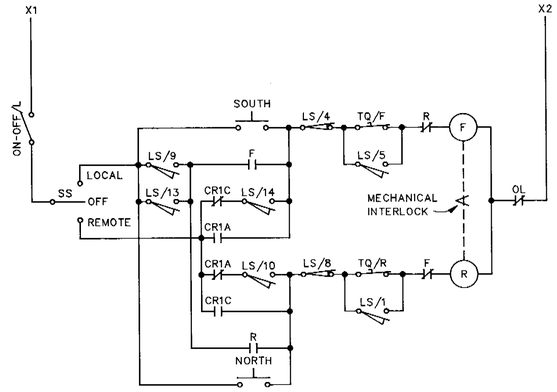
ELECTRICAL
SYMBOL LIST

PROJ NO.
DWG E2
SHEET 10 OF 15
DATE JULY 1989 REV 0

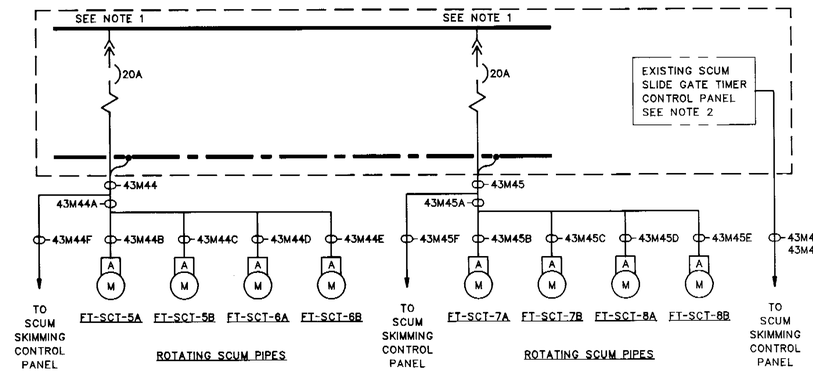
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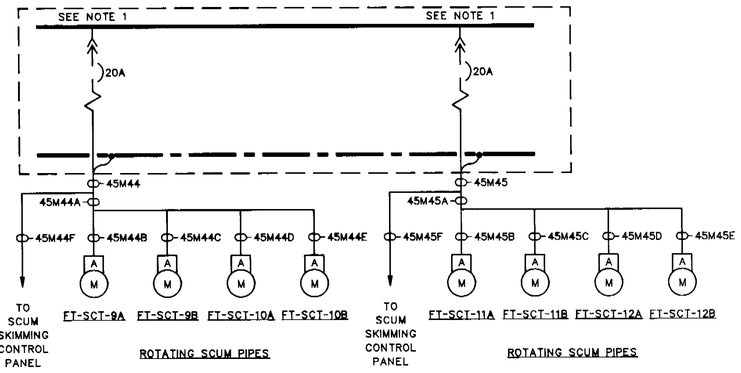
EXISTING MOTOR CONTROL CENTER MCC-41
PARTIAL ONE LINE DIAGRAM



ROTATING SCUM PIPE FT-SCT-1A
TYPICAL FOR FT-SCT-1B TO FT-SCT-12B



EXISTING MOTOR CONTROL CENTER MCC-43
PARTIAL ONE LINE DIAGRAM



EXISTING MOTOR CONTROL CENTER MCC-45
PARTIAL ONE LINE DIAGRAM

TYPICAL LIMIT SWITCH CONTACT DEVELOPMENT FOR MOTORIZED SCUM PIPE OPERATORS

ROTOR NO.	CONTACT NO.	OPERATOR POSITION: FULL SOUTH	OPERATOR POSITION: INTERMEDIATE A B	OPERATOR POSITION: FULL NORTH	CONTACT FUNCTION
1	1	▬	▬	– –	BYPASS CKT
	2	▬	– –	– –	AUXILIARY
	3	– –	▬	▬	AUXILIARY
	4	– –	– –	▬	FORWARD (SOUTH) LIMIT
2	5	– –	▬	– –	BYPASS CKT
	6	– –	– –	▬	AUXILIARY
	7	▬	▬	– –	AUXILIARY
	8	▬	– –	▬	REVERSE (NORTH) LIMIT
3	9	▬	▬	– –	CENTER LIMIT
	10	▬	– –	▬	CENTER LIMIT
	11	– –	▬	▬	AUXILIARY
	12	– –	– –	▬	AUXILIARY
4	13	– –	▬	▬	CENTER LIMIT
	14	– –	– –	▬	CENTER LIMIT
	15	▬	▬	– –	AUXILIARY
	16	▬	– –	– –	AUXILIARY

TQ/F - FOREWARD TORQUE SWITCH
TQ/R - REVERSE TORQUE SWITCH
▬ INDICATES CONTACT CLOSED
– – INDICATES CONTACT OPEN

NOTE:
TIME GAP BETWEEN A & B TO BE APPROXIMATELY 3/4 SECOND

SEQ-500 SEQUENCER TABLE

STEP	OUTPUT FUNCTION 501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	
001	X																								X				X	
002		X																							X					
003			X																						X					TANK 1
004				X																					X					
005					X																				X					
006						X																			X					
007							X																		X					
008								X																	X					
009									X																X					
010										X															X					
011											X														X					
012												X													X					
013													X												X					
014														X											X					
015															X										X					
016																X									X					
017																	X								X					
018																		X							X					
019																			X						X					
020																				X					X					
021																					X				X					TANK 4
022																						X			X					
023																							X		X					
024																								X	X					
025	X																									X				
026		X																								X				
027			X																							X				
028				X																						X				
029					X																					X				
030						X																				X				
031							X																			X				
032								X																		X				
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039															X											X				
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041																	X									X				
042																		X								X				
043																			X							X				
044																				X						X				
045																					X					X				TANK 8
046																						X				X				
047																							X			X				
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049	X																										X			
050		X																									X			
051			X																								X			TANK 9
052				X																							X			
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071																							X				X			
072																								X						
073																													X	

TANK 1 · TANK 2 · TANK 3 · TANK 4 · TANK 5 · TANK 6 · TANK 7 · TANK 8 · TANK 9 · TANK 10 · TANK 11 · TANK 12

NOTES:
1. INSTALL NEW CIRCUIT BREAKERS IN COMPARTMENTS AS DIRECTED.
2. DISCONNECT AND REMOVE THE TIMERS, SWITCHES AND DOOR FOR THE EXISTING SCUM SLIDE GATE TIMER CONTROL PANEL AND INSTALL A BLANK DOOR. DELIVER THE REMOVED EQUIPMENT TO THE CITY. CONNECT THE WIRING FROM THE NEW SCUM SKIMMER CONTROL PANEL TO THE EXIISTING TERMINAL BLOCKS FOR THE EXISTING SCUM SLIDE GATES.

RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN AF
CHECKED SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION

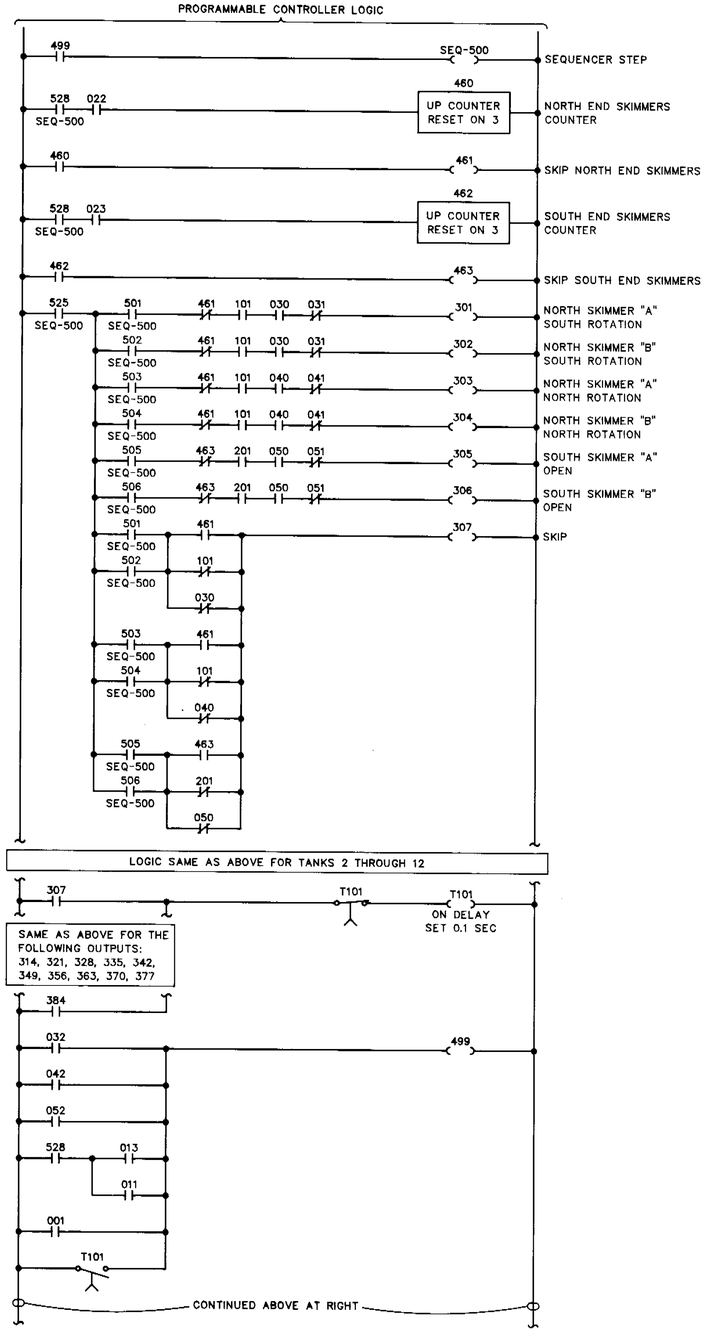
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CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
DIVISION 4H22
FINAL SEDIMENTATION TANKS
SKIMMING EQUIPMENT

ELECTRICAL
ONE LINE AND SCHEMATIC DIAGRAMS

PROJ NO.
DWG E3
SHEET 11 OF 15
DATE JULY 1989
REV 0

FILENAME: T&MSCI85 7/5/1989 (8:30)
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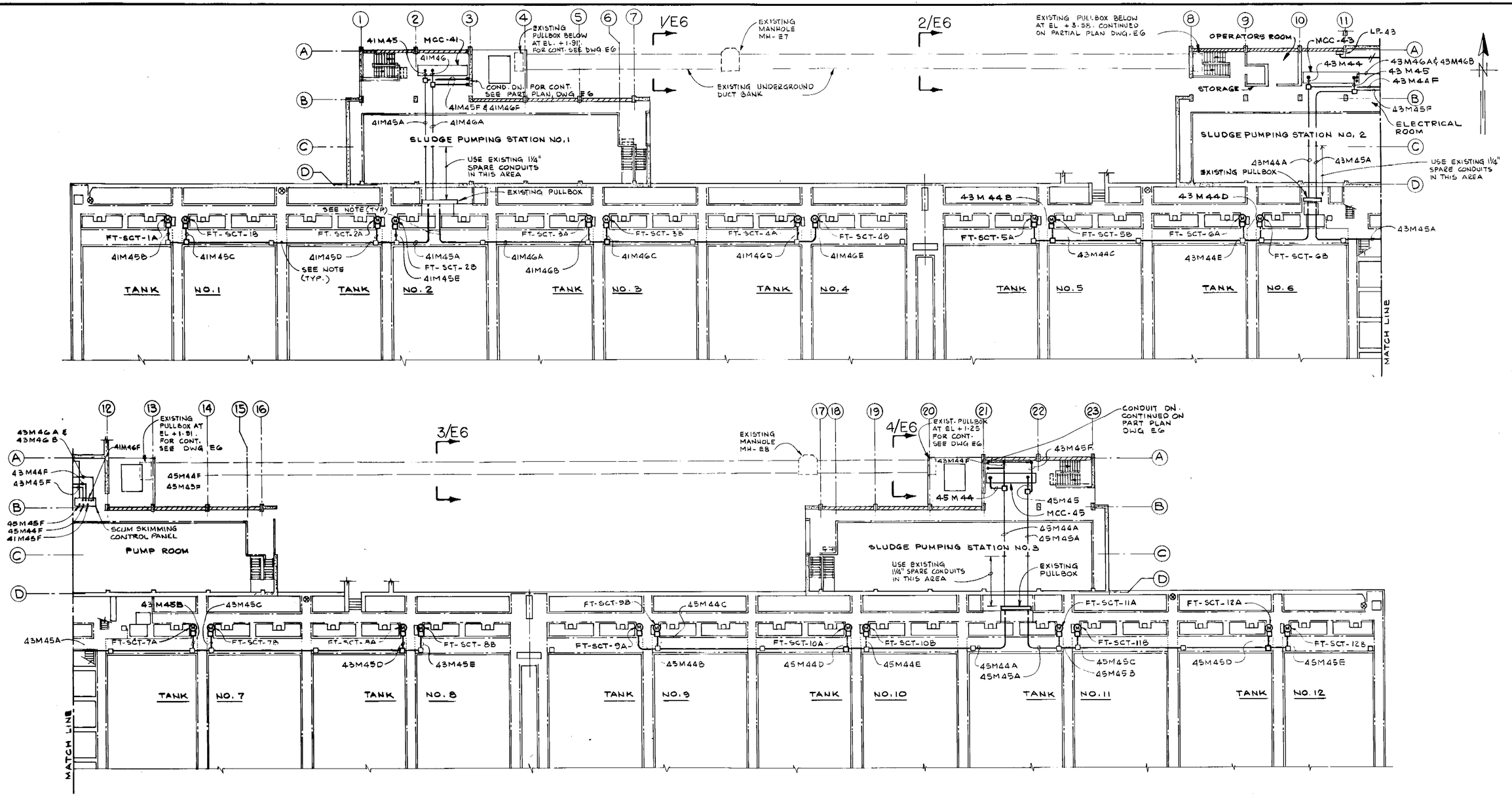
SCUM SKIMMER CONTROL PANEL

RECORD DRAWING

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GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED BBK DRAWN ATK CHECKED SSH	APPROVED DATE DATE GREELEY AND HANSEN, ENGINEERS	NO. DATE APP REVISION	SCALE NO SCALE	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT DIVISION 4H22 FINAL SEDIMENTATION TANKS SKIMMING EQUIPMENT	ELECTRICAL **SCHEMATIC DIAGRAM**	PROJ NO DWG E4 SHEET 12 OF 15 DATE JULY 1989 REV 0

FILENAME: TAMDWG4 7/12/1989 (11:42)



EXISTING FINAL SEDIMENTATION TANKS
PARTIAL PLAN – EL 20'-9"

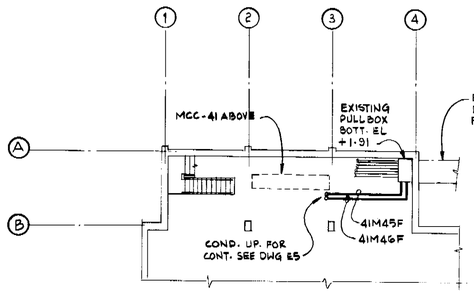
NOTE:
RUN CONDUITS THRU EXISTING STILE.

RECORD DRAWING

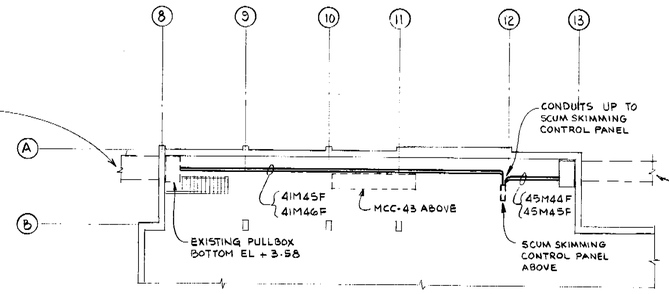
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GREELEY AND HANSEN ENGINEERS 4350 WEST CYPRESS STREET TAMPA, FLORIDA 33607-4135	DESIGNED BBK DRAWN MMN CHECKED SSH	APPROVED _____ DATE _____ _____ DATE _____ GREELEY AND HANSEN, ENGINEERS	1 9-20-91 DCH REV. DWG. REVISIONS NO DATE APP REVISION	SCALE 16 0 16 32 FT 1/16"=1'-0"	CITY OF TAMPA, FLORIDA HOOKERS POINT WASTEWATER TREATMENT PLANT DIVISION 4H22 FINAL SEDIMENTATION TANKS SKIMMING EQUIPMENT	ELECTRICAL FINAL TANK POWER PLAN	PROJ NO. DWG E5 SHEET 13 OF 15 DATE JULY 1989 REV 1

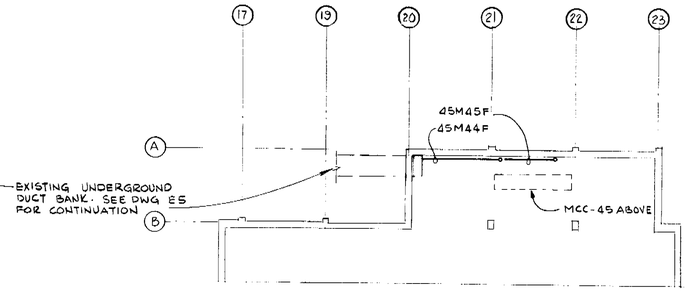
529788



PUMPING STATION NO 1

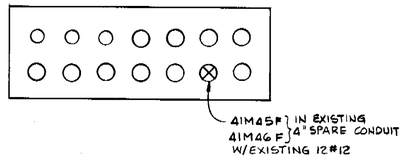


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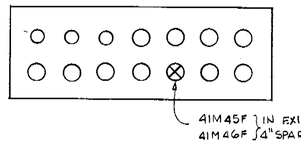


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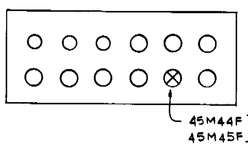
PARTIAL PLANS – SLUDGE PUMPING STATIONS - FLOOR EL +11.00



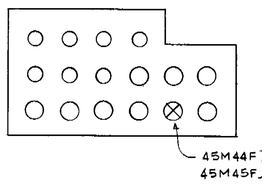
SECTION 1/E5



SECTION 2/E5



SECTION 3/E5



SECTION 4/E5

RECORD DRAWING

THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION, WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.

GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN MMN
CHECKED SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

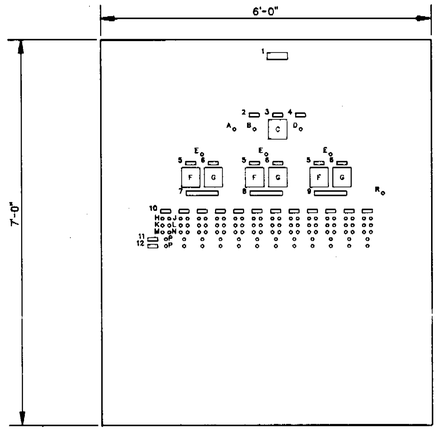
NO.	DATE	APP	REVISION

SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
DIVISION 4H22
FINAL SEDIMENTATION TANKS
SKIMMING EQUIPMENT

ELECTRICAL
DETAILS

PROJ NO.
DWG E6
SHEET 14 OF 15
DATE JULY 1989
REV 0



SCUM SKIMMER CONTROL PANEL

PANEL LEGEND

ITEM	DEVICE DESCRIPTION
A	PUSHBUTTON - MANAUL STEP
B	2 POSITION SELECTOR SWITCH - CONTINUOUS - TIMED
C	RECYCLE TIMER (0-24 HOURS)
D	3 POSITION SELECTOR SWITCH - SOUTH END - NO SKIP - NORTH END
E	2 POSITION SELECTOR SWITCH - ON - OFF
F	RECYCLE TIMER (0-10 MINUTES)
G	RECYCLE TIMER (0-30 MINUTES)
H	INDICATING LIGHT (R) - FST-SCT-"X"A SKIMMING NORTH ("X"=1 TO 12)
J	INDICATING LIGHT (R) - FST-SCT-"X"B SKIMMING NORTH ("X"=1 TO 12)
K	INDICATING LIGHT (R) - FST-SCT-"X"A SKIMMING SOUTH ("X"=1 TO 12)
L	INDICATING LIGHT (R) - FST-SCT-"X"B SKIMMING SOUTH ("X"=1 TO 12)
M	INDICATING LIGHT (R) - FST-SLG-"X"A SKIMMING ("X"=1 TO 12)
N	INDICATING LIGHT (R) - FST-SLG-"X"B SKIMMING ("X"=1 TO 12)
P	2 POSITION SELECTOR SWITCH - IN SERVICE - OUT OF SERVICE
P	LAMP TEST

NAMEPLATE LEGEND

NO.	ENGRAVING
1	SCUM SKIMMING CONTROL PANEL
2	SKIMMING CYCLE MODE
3	SKIMMING CYCLE TIMER
4	SKIMMER SKIP MODE - SKIPS SKIMMING EVERY OTHER CYCLE
5	SKIMMING TIME
6	IDLE TIME
7	NORTH SKIMMERS - SOUTH ROTATION
8	NORTH SKIMMERS - NORTH ROTATION
9	SOUTH SKIMMERS
10	TANK NO. "X" ("X" = 1 TO 12)
11	NORTH SKIMMERS
12	SOUTH SKIMMERS

CONDUIT NUMBER & SIZE	CONDUCTOR QUANTITY & SIZE	FROM	TO	REMARKS
Document Name: CABCON.TAMLE1				Revision Date: 7-15-1989
		MOTOR CONTROL CENTER MCC-41		
41M45	3/4	3#12&1#12GND	MCC-41	JB NEAR MCC-41 -
41M45A	1-1/2	3#12 20#14&1#12GND	JB NEAR MCC-41	JB NEAR FT-SCT-2B -
41M45B	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-2B	FT-SCT-1A -
41M45C	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-2B	FT-SCT-1B -
41M45D	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-2B	FT-SCT-2A -
41M45E	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-2B	FT-SCT-2B -
41M45F	1-1/2	20#14	JB NEAR MCC-41	SCUM SKIMMER CONT. PNL -
41M46	3/4	3#12&1#12GND	MCC-41	JB NEAR MCC-41 -
41M46A	1-1/2	3#12 20#14&1#12GND	JB NEAR MCC-41	JB NEAR FT-SCT-3A -
41M46B	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-3A	FT-SCT-3A -
41M46C	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-3A	FT-SCT-3B -
41M46D	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-3A	FT-SCT-4A -
41M46E	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-3A	FT-SCT-4B -
41M46F	1-1/2	20#14	JB NEAR MCC-41	SCUM SKIMMER CONT. PNL. -
		MOTOR CONTROL CENTER MCC-43		
43M44	3/4	3#12&1#12GND	MCC-43	JB NEAR MCC-43 -
43M44A	1-1/2	3#12 20#14&1#12GND	JB NEAR MCC-43	JB NEAR FT-SCT-6B -
43M44B	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-6B	FT-SCT-5A -
43M44C	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-6B	FT-SCT-5B -
43M44D	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-6B	FT-SCT-6A -
43M44E	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-6B	FT-SCT-6B -
43M44F	1-1/2	20#14	JB NEAR MCC-43	SCUM SKIMMER CONT. PNL. -
43M45	3/4	3#12&1#12GND	MCC-43	JB NEAR MCC-43 -
43M45A	1-1/2	3#12 20#14&1#12GND	JB NEAR MCC-43	JB NEAR FT-SCT-7A -
43M45B	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-7A	FT-SCT-7A -
43M45C	1	3#12.5#14&1#12GND	JB NEAR FT-SCT-7A	FT-SCT-7B -
43M45D	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-7A	FT-SCT-8A -
43M45E	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-7A	FT-SCT-8B -
43M45F	1-1/2	20#14	JB NEAR MCC-43	SCUM SKIMMER CONT. PNL -
43M46A	2	36#14	MCC-43	SCUM SKIMMER CONT. PNL -
43M46B	2	36#14	MCC-43	SCUM SKIMMER CONT. PNL -
		MOTOR CONTROL CENTER MCC-45		
45M44	3/4	3#12&1#12GND	MCC-45	JB NEAR MCC-45 -
45M44A	1-1/2	3#12.20#14&1#12GND	JB NEAR MCC-45	JB NEAR FT-SCT-10B -
45M44B	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-10B	FT-SCT-9A -
45M44C	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-10B	FT-SCT-9B -
45M44D	1	3#12.5#14&1#12GND	JB NEAR FT-SCT-10B	FT-SCT-10A -
45M44E	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-10B	FT-SCT-10B -
45M44F	1-1/2	20#14	JB NEAR MCC-45	SCUM SKIMMER CONT. PNL. -
45M45	3/4	3#12&1#12GND	MCC-45	JB NEAR MCC-45 -
45M45A	1-1/2	3#12 20#14&1#12GND	JB NEAR MCC-45	JB NEAR FT-SCT-11A -
45M45B	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-11A	FT-SCT-11A -
45M45C	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-11A	FT-SCT-11B -
45M45D	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-11A	FT-SCT-12A -
45M45E	1	3#12 5#14&1#12GND	JB NEAR FT-SCT-11A	FT-SCT-12B -
45M45F	1-1/2	20#14	JB NEAR MCC-45	SCUM SKIMMER CONT. PNL. -

RECORD DRAWING

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GREELEY AND HANSEN
ENGINEERS
4350 WEST CYPRESS STREET
TAMPA, FLORIDA 33607-4135

DESIGNED BBK
DRAWN AF
CHECKED SSH

APPROVED _____ DATE _____
_____ DATE _____
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP	REVISION

SCALE: NO SCALE

CITY OF TAMPA, FLORIDA
HOOKERS POINT WASTEWATER TREATMENT PLANT
DIVISION 4H22
FINAL SEDIMENTATION TANKS
SKIMMING EQUIPMENT

ELECTRICAL
SCUM SKIMMER CONTROL PANEL
CABLE AND CONDUIT SCHEDULE

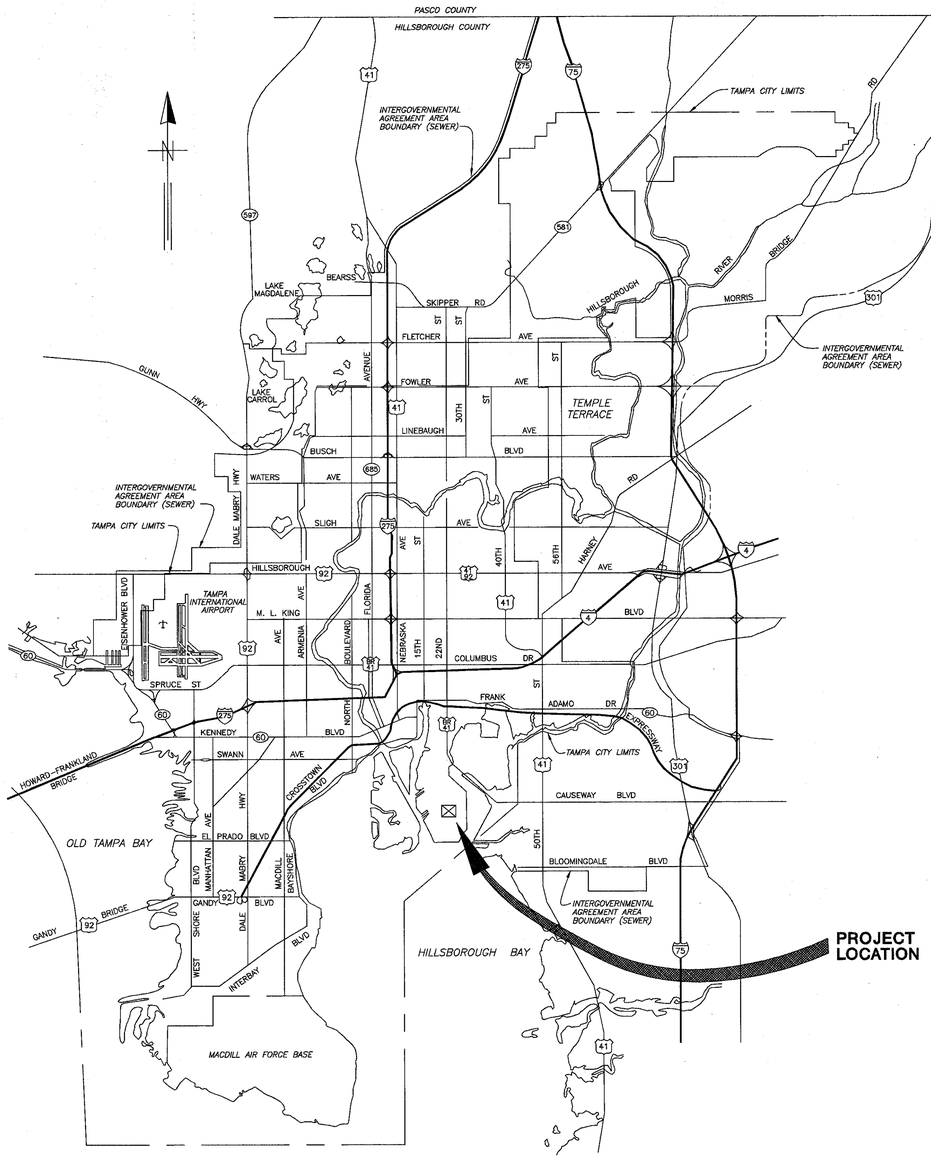
PROJ NO
DWG E7
SHEET 15 OF 15
DATE JULY 1989 REV 0

E0PTM TLPLNAME: TAMSSP 7/5/1988 (8:38)

RSPS Meter Replacement_Year 1997

R13

LOCATION MAP



CITY of TAMPA

CITY OF TAMPA FLORIDA • ORGANIZED JULY 15 1887 • MASCOTTE

DEPARTMENT OF SANITARY SEWERS

SEWAGE DISPOSAL SYSTEM

PLANS FOR

HOWARD F. CURREN AWTP
RETURN SLUDGE PUMPING STATIONS
REHABILITATION
PHASE I

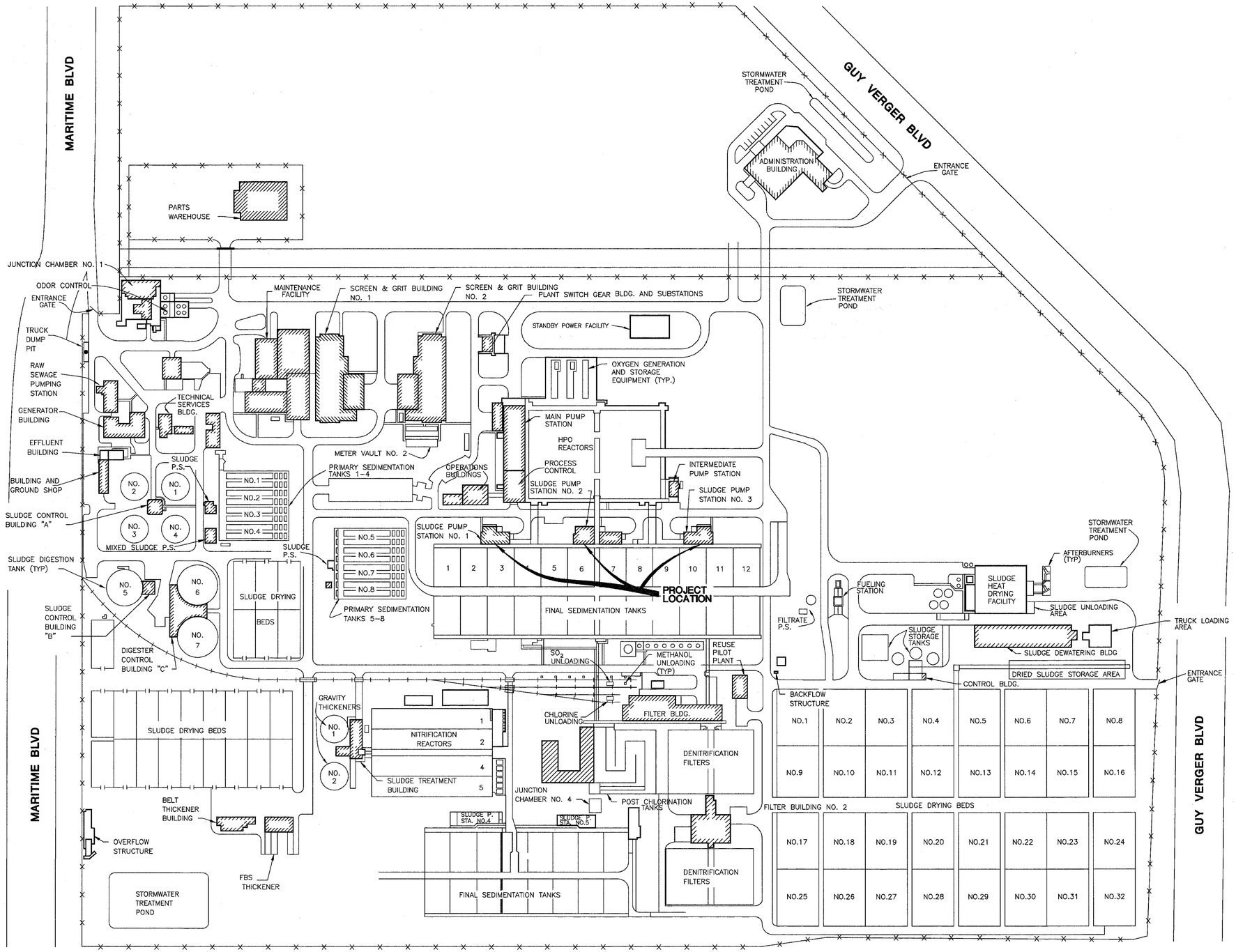
CONTRACT 2-97

TPIH

C:\R13\DWG\TP\G02S-1 1=50 STATION #4

ROMAN D. KORCHAK, P.E. #42626 ELECTRICAL SECTION HEAD DEPARTMENT OF SANITARY SEWERS	HENRY DORZBACK, P.E. #39449 CHIEF ENGINEER DEPARTMENT OF SANITARY SEWERS	RALPH L. METCALF II, P.E. DIRECTOR DEPARTMENT OF SANITARY SEWERS	DES: J.F. DRN: WA/CS CKD: A.H. DATE: 11/22/96	No. / DATE / REVISIONS 1 2 3 4 5	CITY of TAMPA, FLORIDA DEPARTMENT OF SANITARY SEWERS HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	**COVER SHEET** DESIGN W.O. CONSTRUCTION W.O. 5026	SHEET 1 OF 9

TPIH-1



CITY OF TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER
TREATMENT PLANT

2700 MARITIME BLVD.
TAMPA, FL 33605
(813) 247-3451
FAX: (813) 248-5269

INDEX

SHEET 1 COVER SHEET

SHEET 2 SITE PLAN & INDEX

SHEET 3 RETURN SLUDGE PUMPING STATION No. 2 REMOVAL OF METERS & PIPE, PLANS & SECTIONS

SHEET 4 RETURN SLUDGE PUMPING STATION No. 2 REMOVAL OF METERS & PIPE, PART PLAN, SECTIONS & DETAILS

SHEET 5 RETURN SLUDGE PUMPING STATION No. 2 PROPOSED KNIFE GATE VALVES PLANS & SECTIONS

SHEET 6 RETURN SLUDGE PUMPING STATION No. 1 & No. 3, PROPOSED KNIFE GATE VALVES PLANS

SHEET 7 RETURN SLUDGE PUMPING STATION No. 1 & No. 3, PROPOSD KNIFE GATE VALVES SECTIONS

SHEET 8 MISCELLANEOUS DETAILS

SHEET 9 ELECTRICAL DETAILS

TP11-2

STATION #4

C:\PLTJOBS\TP\5026-2

HENRY DORZBACK, P.E. #39449
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

RALPH L. METCALF II, P.E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

DES: J.F.
DRN: R.A.R.
CKD: A.H.
DATE: 11/22/96

No.	DATE	REVISIONS
1		
2		
3		
4		
5		

SCALE
NO SCALE

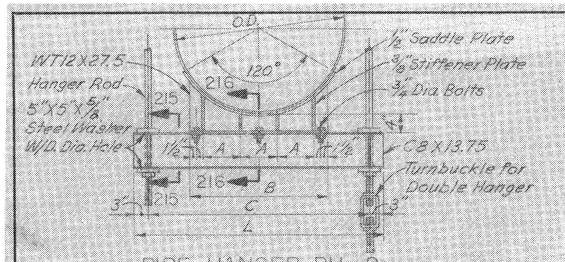
CITY OF TAMPA FLORIDA
DEPARTMENT OF SANITARY SEWERS
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

SITE PLAN AND INDEX

DESIGN W.O.
CONSTRUCTION W.O. 5026

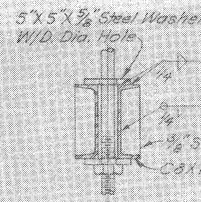
SHEET 2 OF 9

TP11-2



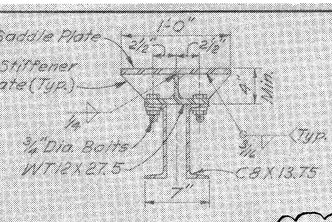
PIPE HANGER PH-2

SCALE: 3/4"=1'-0"



SECTION 215

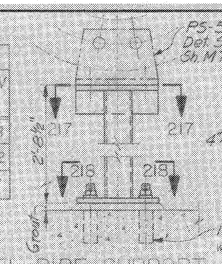
SCALE: 1 1/2"=1'-0"

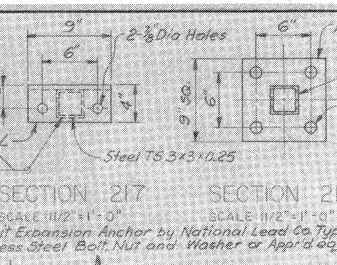


SECTION 216

SCALE: 1 1/2"=1'-0"

PIPE HANGER PH-2 SCHEDULE							
PIPE O.D.	A	B	C	L	D	ROD SIZE	LOCATION
36.75	8"	2'-6"	3'-4"	4'-0"	1 1/4"	1"	STA. NO. 1+3
36.75	8"	2'-6"	4'-0"	4'-6"	1 3/4"	1 1/2"	STA. NO. 2
42.00	9"	2'-9"	4'-0"	4'-6"	1 3/4"	1 1/2"	STA. NO. 2





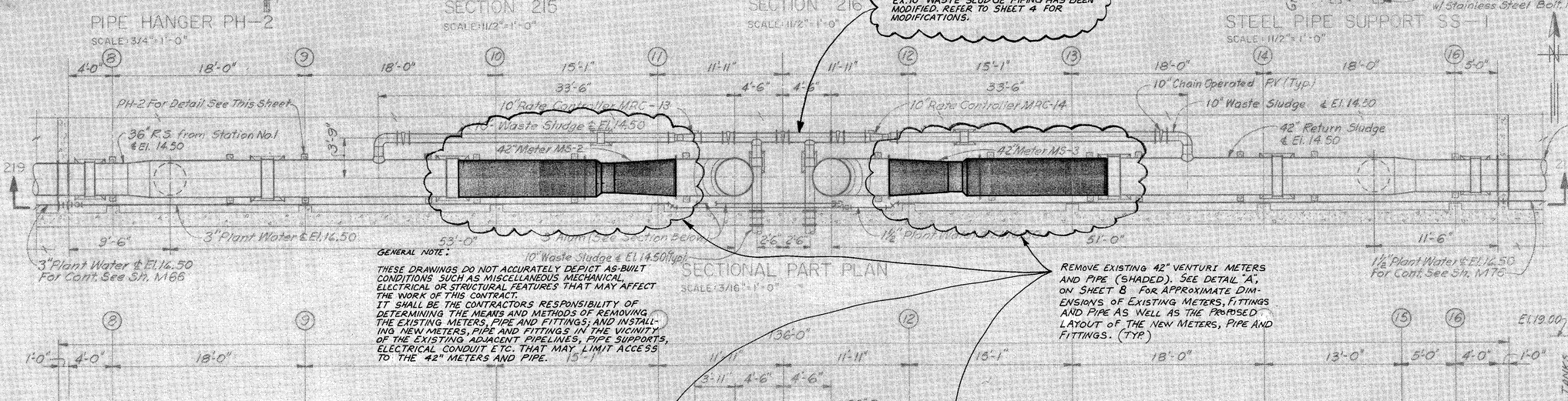
SECTION 217

SCALE: 1 1/2"=1'-0"

SECTION 218

SCALE: 1 1/2"=1'-0"

1" Two Unit Expansion Anchor by National Lead Co. Type I w/ Stainless Steel Bolt, Nut and Washer or Appr'd equal.



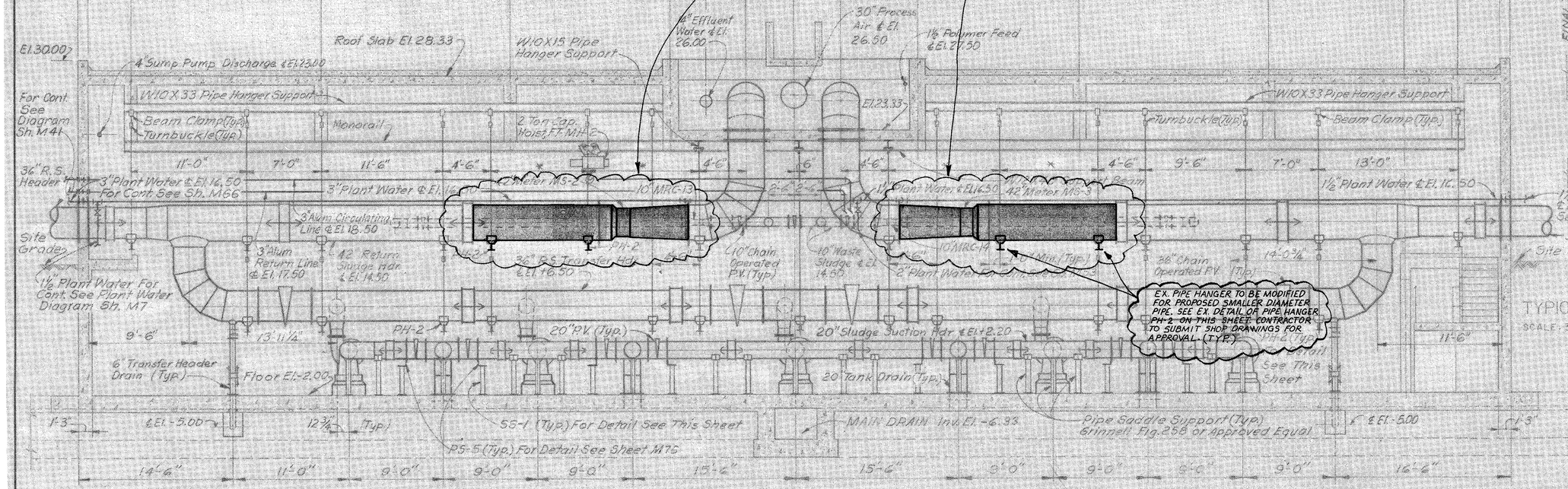
SECTIONAL PART PLAN

SCALE: 3/16"=1'-0"

GENERAL NOTE:

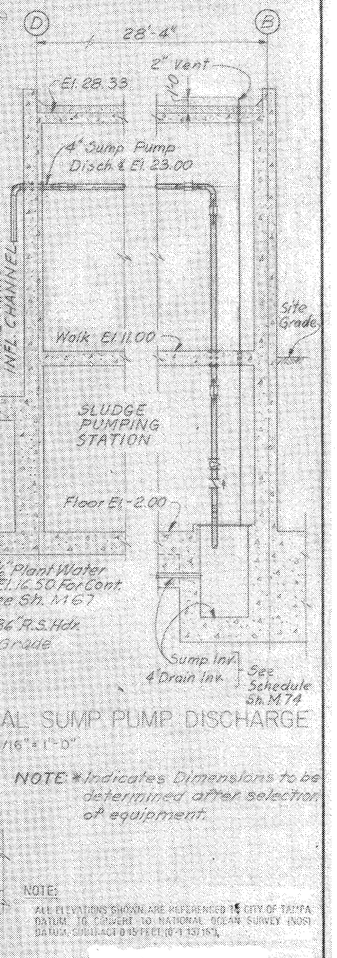
THESE DRAWINGS DO NOT ACCURATELY DEPICT AS-BUILT CONDITIONS SUCH AS MISCELLANEOUS MECHANICAL, ELECTRICAL OR STRUCTURAL FEATURES THAT MAY AFFECT THE WORK OF THIS CONTRACT.
IT SHALL BE THE CONTRACTORS RESPONSIBILITY OF DETERMINING THE MEANS AND METHODS OF REMOVING THE EXISTING METERS, PIPE AND FITTINGS; AND INSTALLING NEW METERS, PIPE AND FITTINGS IN THE VICINITY OF THE EXISTING ADJACENT PIPELINES, PIPE SUPPORTS, ELECTRICAL CONDUIT ETC. THAT MAY LIMIT ACCESS TO THE 42" METERS AND PIPE.

REMOVE EXISTING 42" VENTURI METERS AND PIPE (SHADED). SEE DETAIL "A", ON SHEET 8 FOR APPROXIMATE DIMENSIONS OF EXISTING METERS, FITTINGS AND PIPE AS WELL AS THE PROPOSED LAYOUT OF THE NEW METERS, PIPE AND FITTINGS. (TYP.)



SECTION 219/M72, M73

SCALE: 3/16"=1'-0"



TYPICAL SUMP PUMP DISCHARGE

SCALE: 3/16"=1'-0"

NOTE: * Indicates Dimensions to be determined after selection of equipment.

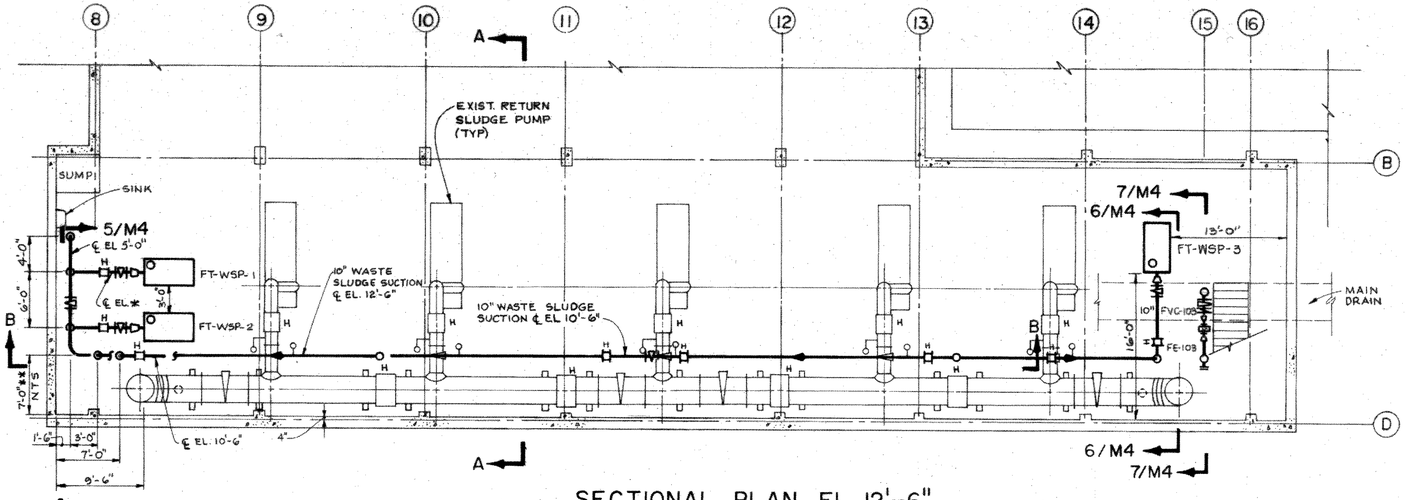
EX. PIPE HANGER TO BE MODIFIED FOR PROPOSED SMALLER DIAMETER PIPE. SEE EX. DETAIL OF PIPE HANGER PH-2 ON THIS SHEET. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL (TYP.)

NOTE:
ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.45 FEET (0.1 METER).

TP11-3

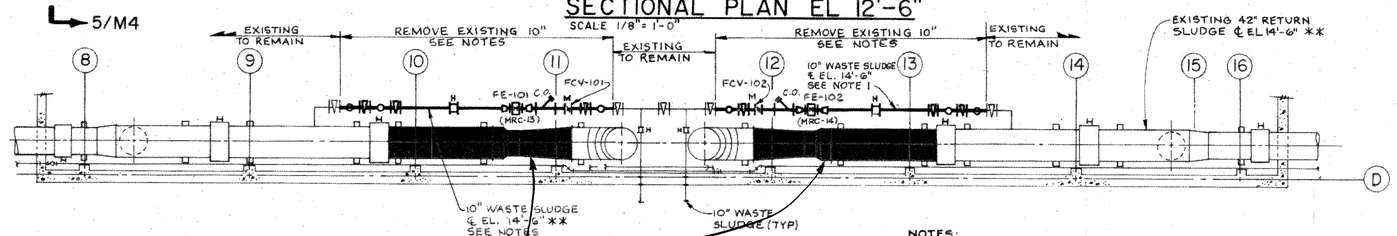
HENRY DORZBACK, P.E. 39449 CHIEF ENGINEER DEPARTMENT OF SANITARY SEWERS	RALPH L. METCALF, P.E. DIRECTOR DEPARTMENT OF SANITARY SEWERS	DES J.F. DRN D.A.N. CKD DATE	No. / DATE / REVISIONS: 1, 2, 3, 4, 5	SCALE: AS SHOWN	CITY OF TAMPA FLORIDA DEPARTMENT OF SANITARY SEWERS HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	RETURN SLUDGE PUMPING STATIONS REHABILITATION PHASE I — RETURN SLUDGE PUMPING STATION No. 2; REMOVAL OF METERS AND PIPE; PLANS AND DETAILS.	DESIGN W.O. CONSTRUCTION W.O. 5026	SHEET 3 OF 9

TP11-3



SECTIONAL PLAN EL 12'-6"

SCALE 1/8"= 1'-0"

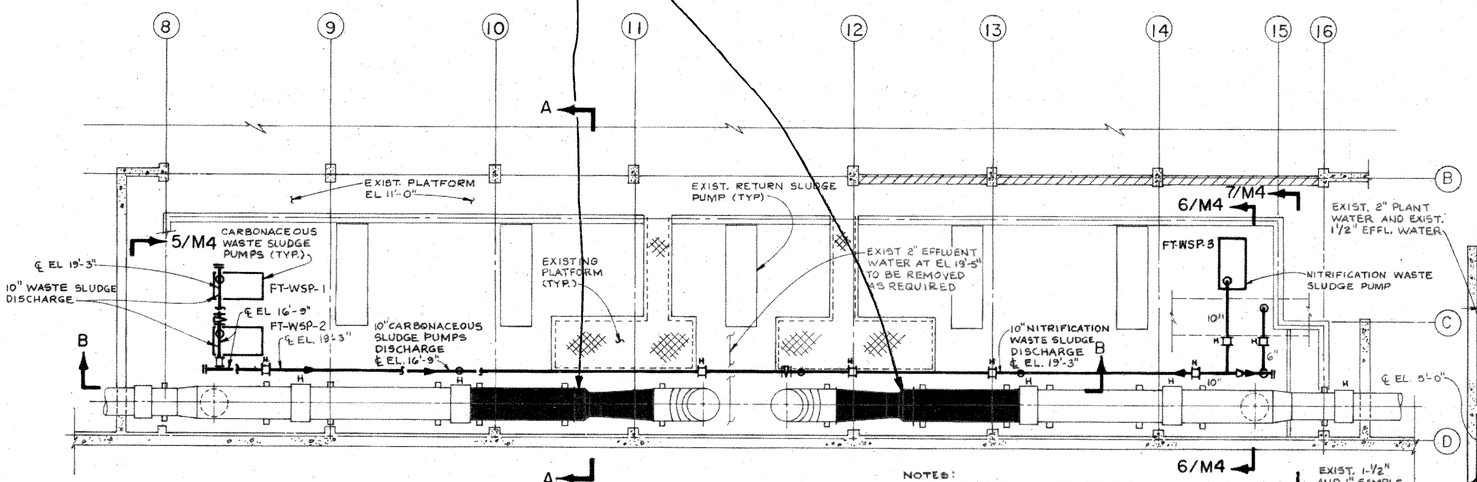


PARTIAL PLAN EL 14'-6"

SCALE 1/8"= 1'-0"

NOTES;
1. REMOVE EXISTING 10" PIPE AND METER PRIOR TO INSTALLING NEW PIPE AND METER (SEE "SEQUENCE OF OPERATIONS" IN SPECIFICATIONS)
2. METERS FE-101 AND FE-102 REPLACE EXISTING METERS MRC-13 AND MRC-14.
3. PROVIDE NEW PIPE SUPPORTS AS REQUIRED.

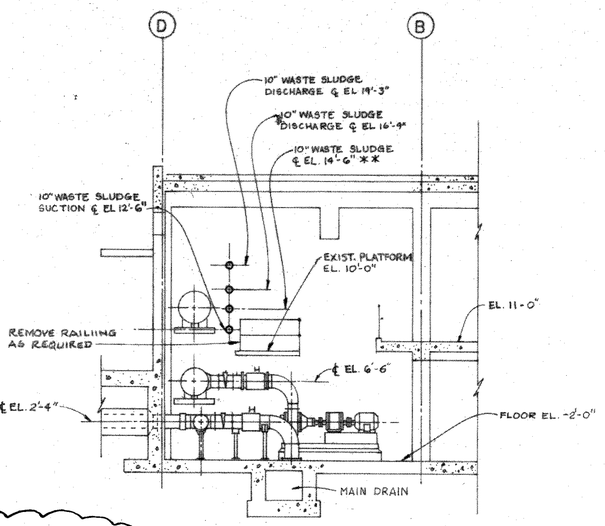
REMOVE EXISTING 42" VENTURI METERS AND PIPE. SEE DETAIL "A" ON SHEET 8 FOR PROPOSED LAYOUT OF THE NEW METERS, PIPE AND FITTINGS.



PLAN EL 19'-3"

SCALE 1/8" = 1'-0"

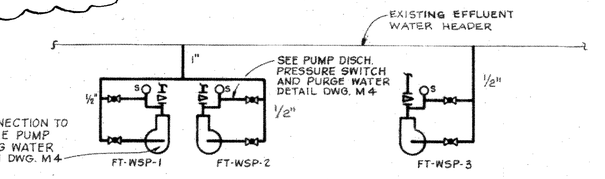
NOTES:
1. SEE DWG. M4 FOR EQUIPMENT PAD DETAIL FOR NEW WASTE SLUDGE PUMPS.
2. SEE DWG. M4 FOR PLANT AIR DIAGRAM.



NOTE:
THIS SHEET DOES NOT SHOW ADDITIONAL WORK TO BE DONE UNDER THIS CONTRACT. ITS INTENT IS TO PROVIDE ADDITIONAL DETAIL THAT MAY AFFECT THE REMOVAL OF THE EXISTING METERS AND PIPE; AND INSTALLATION OF NEW METERS AND PIPE.

SECTION A

SCALE 1/8"= 1'-0"

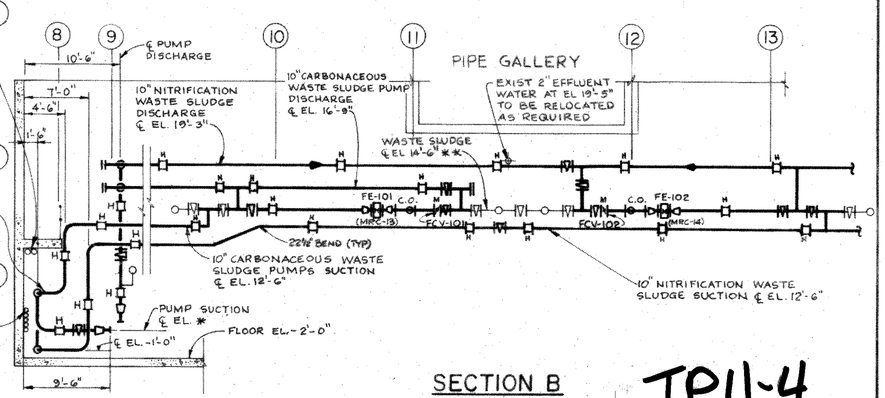


CARBONACEOUS WASTE SLUDGE PUMPS

NITRIFICATION WASTE SLUDGE PUMP

EFFLUENT WATER DIAGRAM

NOT TO SCALE



SECTION B

SCALE 1/8"= 1'-0"

TP11-4

HENRY DORZBACK, P.E. 39449 CHIEF ENGINEER DEPARTMENT OF SANITARY SEWERS	RALPH L. METCALFE, P.E. DIRECTOR DEPARTMENT OF SANITARY SEWERS	DES J.F. DRN D.A.N. CKD A.H. DATE 11/22/94	No. / DATE / REVISIONS: 1 2 3 4 5	SCALE: AS SHOWN	CITY OF TAMPA FLORIDA DEPARTMENT OF SANITARY SEWERS HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

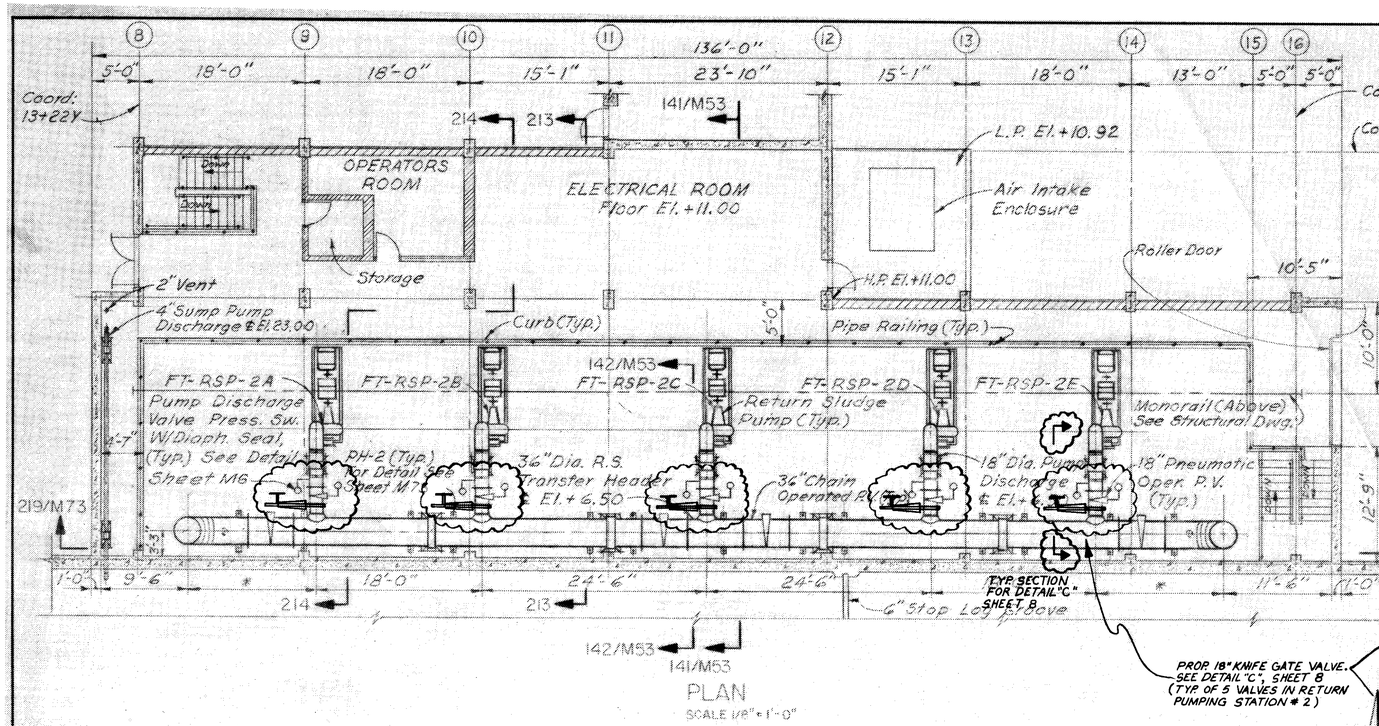
RETURN SLUDGE PUMPING STATIONS REHABILITATION PHASE I

RETURN SLUDGE PUMPING STATION No. 2; REMOVAL OF METERS AND PIPE; PART PLAN, SECTIONS AND DETAILS.

DESIGN W.O.

CONSTRUCTION W.O. 5026

SHEET 4 OF 9



HENRY DORZBACK, P.E. 39449 CHIEF ENGINEER DEPARTMENT OF SANITARY SEWERS	RALPH L. METCALF, P.E. DIRECTOR DEPARTMENT OF SANITARY SEWERS	DES J.F. DRN D.A.N. CKD H.H. DATE 11/22/dap	No. / DATE / REVISIONS: 1, 2, 3, 4, 5	SCALE AS SHOWN	CITY OF TAMPA FLORIDA DEPARTMENT OF SANITARY SEWERS HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATIONS REHABILITATION
PHASE I
RETURN SLUDGE PUMPING STATION No. 2; PROPOSED KNIFE GATE VALVES; PLANS AND SECTIONS

DESIGN W.O.

CONSTRUCTION W.O. 5026

SHEET 5 OF 9

TP 11-5

PROPOSED KNIFE GATE VALVES DOWNSTREAM OF PUMPS 1A AND 3A MAY HAVE TO BE ROTATED FROM WHAT IS SHOWN TO AVOID CONFLICT WITH WALKWAY AND RAILING. CONTRACTOR TO SUBMIT SHOP DRAWINGS.

PROP 18" KNIFE GATE VALVE. SEE DETAIL "B" SHEET 8 (TYP. OF 10)

TYPICAL SECTION FOR DETAIL "B" SHEET 8

PIPE HANGER PH-3

SCALE: 1/2" = 1'-0"

SLUDGE PUMPING STATION NO. 1 — PLAN

SCALE: 1/8" = 1'-0"

SLUDGE PUMPING STATION NO. 3 — PLAN

SCALE: 1/8" = 1'-0"

SLUDGE PUMPING STATION NO. 1 — SECTIONAL PLAN

SCALE: 1/8" = 1'-0"

SLUDGE PUMPING STATION NO. 3 — SECTIONAL PLAN

SCALE: 1/8" = 1'-0"

NOTE: * Indicates dimensions to be determined after selection of equipment.

TP11-6

HENRY DORZBACK, P.E. 39449 CHIEF ENGINEER DEPARTMENT OF SANITARY SEWERS	RALPH L. METCALFE, P.E. DIRECTOR DEPARTMENT OF SANITARY SEWERS	DES J.F. DRN D.A.N. CKD R.H. DATE 11/12/68	No. / DATE / REVISIONS: 1, 2, 3, 4, 5	SCALE: AS SHOWN	CITY OF TAMPA FLORIDA DEPARTMENT OF SANITARY SEWERS HOWARD F CURREN ADVANCED WASTEWATER TREATMENT PLANT

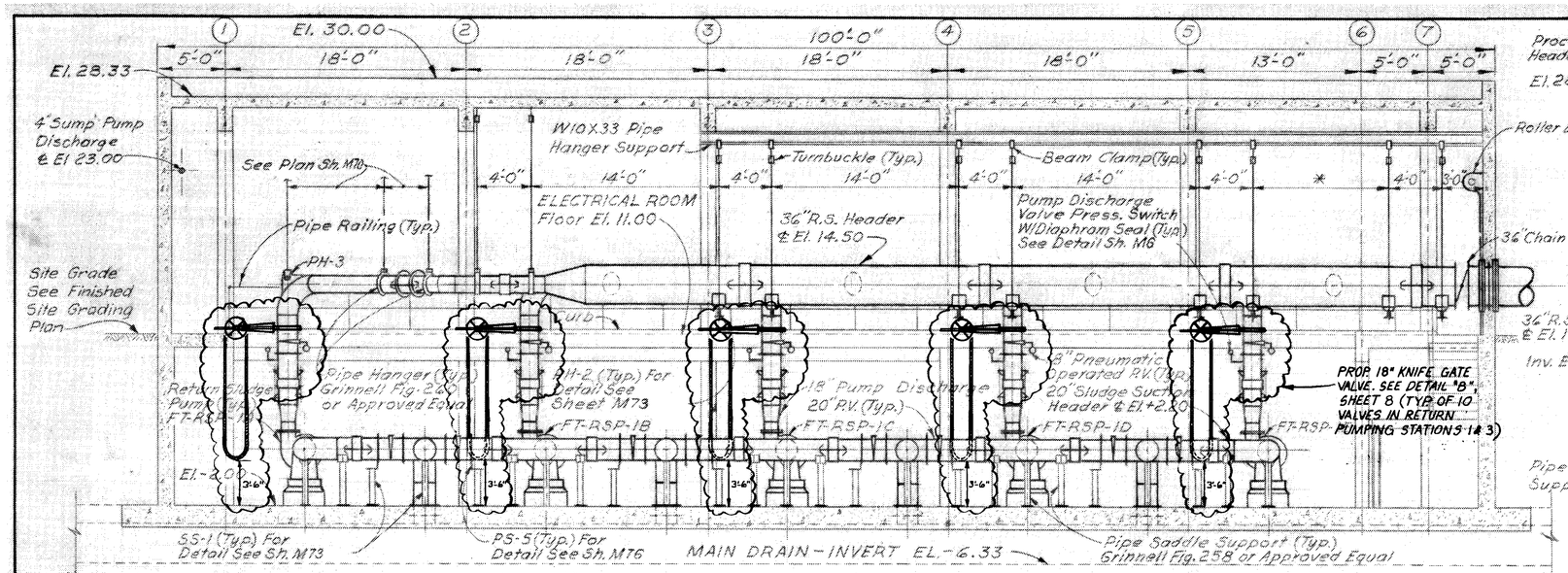
RETURN SLUDGE PUMPING STATIONS REHABILITATION PHASE I

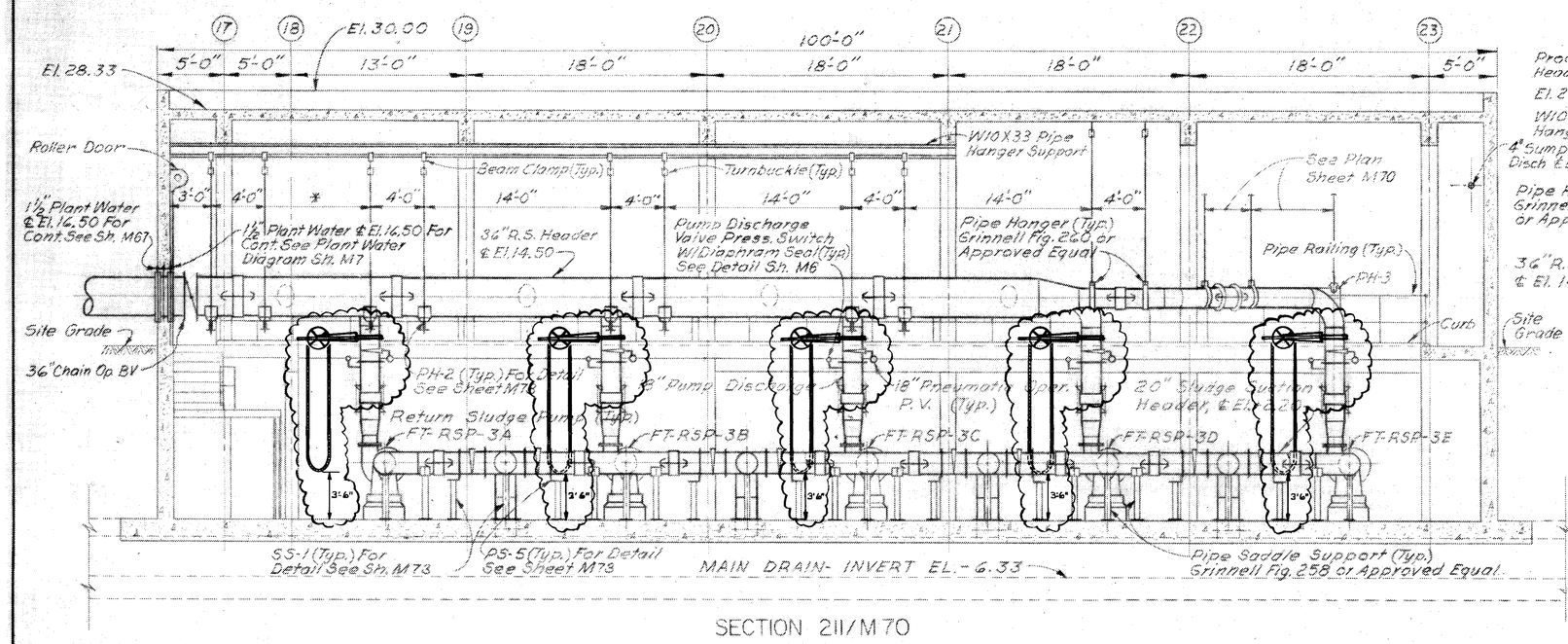
RETURN SLUDGE PUMPING STATION No. 1 AND No. 3; PROPOSED KNIFE GATE VALVES; PLANS

DESIGN W.O.

CONSTRUCTION W.O. 5026

SHEET 6 OF 9





NOTE:
ALL ELEVATIONS SHOWN ARE REFERENCED TO CITY OF TAMPA DATUM. TO CONVERT TO NATIONAL OCEAN SURVEY (NOS) DATUM, SUBTRACT 0.15 FEET (0'-1 13/16").

*NOTE: * Indicates Dimensions to be determined after Selection of equipment.*

TP11-7
KEY PLAN

HENRY DORZBACK, P.E. 39449
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

RALPH L. METCALF II, P.E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

DES J.F.
DRN D.A.N.
CKD A.H.
DATE 11/22/82

No.	DATE	REVISIONS
1		
2		
3		
4		
5		

SCALE
AS SHOWN

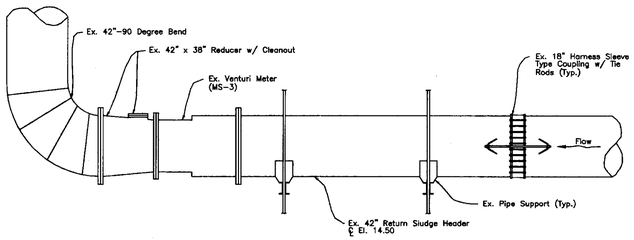
CITY OF TAMPA FLORIDA
DEPARTMENT OF SANITARY SEWERS
HOWARD F CURREN
ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATIONS REHABILITATION
PHASE I
RETURN SLUDGE PUMPING STATION No. 1 AND No. 3; PROPOSED KNIFE GATE VALVES; SECTIONS

DESIGN W.O.
CONSTRUCTION W.O. 5026

SHEET 7 OF 9

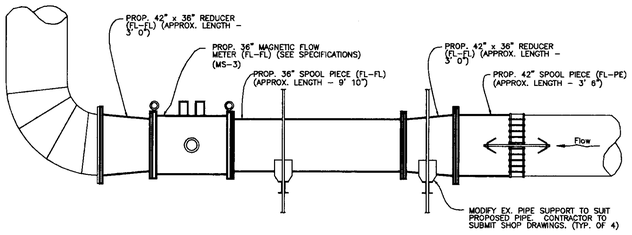
TP11-7



EXISTING

NOTES: 1) PROPOSED LAYOUT FOR FLOW METER (MS-2) IS A MIRROR IMAGE OF THIS VIEW.

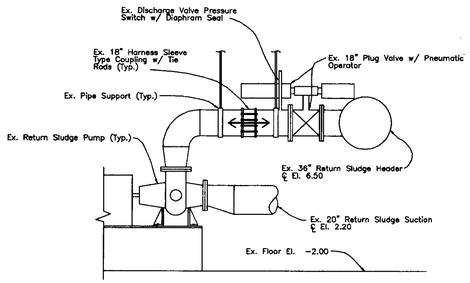
2) SEE SHEETS 3 AND 4 FOR EXISTING PIPE ARRANGEMENTS AND ADJACENT STRUCTURES.



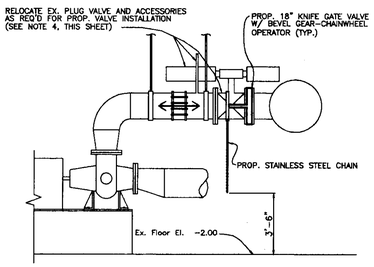
PROPOSED

DETAIL A - PROPOSED METER LAYOUT

(TYPICAL OF 2 MAGNETIC FLOW METERS (MS-2 & MS-3) IN PUMPING STATION #2)



EXISTING

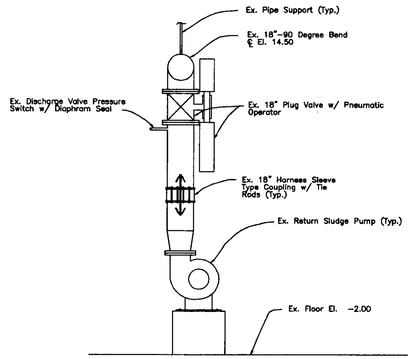


PROPOSED

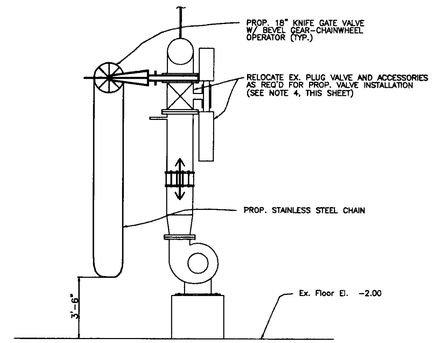
NOTE: SEE SHEET 5 FOR TYPICAL SECTION LINE OF THIS VIEW

DETAIL C - SECTIONAL VIEW OF DISCHARGE PIPING

(TYPICAL OF 5 VALVES IN PUMPING STATION #2)



EXISTING

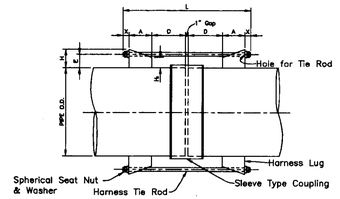


PROPOSED

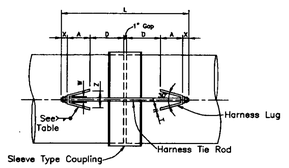
NOTE: SEE SHEET 6 FOR TYPICAL SECTION LINE OF THIS VIEW

DETAIL B - SECTIONAL VIEW OF DISCHARGE PIPING

(TYPICAL OF 10 VALVES IN PUMPING STATION #1 AND #3)



PLAN VIEW



SECTION

PIPE COUPLING DETAIL

N.T.S.

TYPE A HARNESSED SLEEVE TYPE COUPLING JOINT FOR STEEL PIPE – SCHEDULE

NOM. PIPE SIZE	WALL THICK-NESS	O.D. OF PIPE	MAX. PRESS. FOR HARNESS TIE ROD P.S.I.	MIDDLE RING		HARNESS TIE ROD				HARNESS LUG MINIMUM DIMENSION									
				LENGTH	THICKNESS	No.	DIA.	X	L	A	W	Z	T	E	H	Hₜ	D	HOLE	WELD
18	0.375	18.00	45	7	5/16	2	3/4	1 1/4	28	3 3/4	1 11/16	3 1/2	3/8	3 1/8	4 1/8	2	8 1/2	7/8	1/4
42	0.500	43.00	40	10	3/8	2	1 1/2	2	45 1/2	8 3/4	3	7 1/2	1/2	3 7/8	5 1/2	2 1/2	11 1/2	1 5/8	3/8

GENERAL NOTES

1) Existing dimensions are based on the best information available. Contractor shall field verify all dimensions prior to fabrication. Contractor shall submit detailed piping plans reflecting field verified dimensions to the Engineer for approval.

2) All hardware including bolts, nuts, washers, etc., shall be 316 stainless steel.

3) Proposed knife gate valves shall be Series L knife gate valves as manufactured by DeZurik or approved equal. Contractor shall furnish and install all hardware including bolts of sufficient length as required for the valve installations. See specifications for knife gate valve requirements.

4) Installation of knife gate valves will involve relocating existing pneumatically operated plug valves. The Contractor shall be responsible for relocating all air and effluent water piping, and electrical conduit as well as all other appurtenant discharge valve accessories. The pressure switch pipe connections to the 18-inch discharge pipe may also have to be relocated to facilitate installation of the proposed valves.

5) Any modifications to the existing harness type steel couplings such as welding new harness lugs to fabricated sections of steel pipe or other similar type changes shall be in accordance with the Type A Harness Sleeve Type Coupling detail on this sheet.

6) Contractor shall submit a procedural plan detailing the proposed methods for removing the existing venturi meters, pipe, and fittings; and installing the proposed meters, pipe and fittings. The plan shall include the proposed methods and necessary equipment, such as additional hoisting devices, required to accomplish the work within the limited access area due to adjacent pipelines, pipe supports, and structures.

7) All work included in this project shall be done as plant operations permit. The sequence of operations will include taking one side of the reactors off-line so that work can be performed on the pertinent return sludge pumping stations, either PS #1 or #3 and the corresponding half of PS #2. After this work is complete, the other reactor will be taken off-line so that the remaining work can be completed.

8) Contractor shall coordinate with the Engineer and plant personnel for the purpose of draining the sludge from the pipelines prior to disassembly of the existing pipe. However, the Contractor shall be prepared to remove and properly dispose some sludge spillage during the pipe removal.

9) The proposed steel piping shall have an interior cement mortar lining and the exterior surface shall be painted in accordance to the specifications.

10) See specifications for magnetic flow meter requirements.

11) All removed steel pipe, meters, and fittings shall be hauled to an on-site location as designated by the Engineer.

TP11-8

C:\R13\DWG\TP\5026-8 1/4"=1' STATION #4

HENRY DORZBACK, P.E. #39449
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

RALPH L. METCALF, P.E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

DES: J.F.
DRN: R.A.R.
CKD:
DATE: 11/22/96

No.	DATE	REVISIONS
1		
2		
3		
4		
5		

SCALE

1/4" = 1'-0"

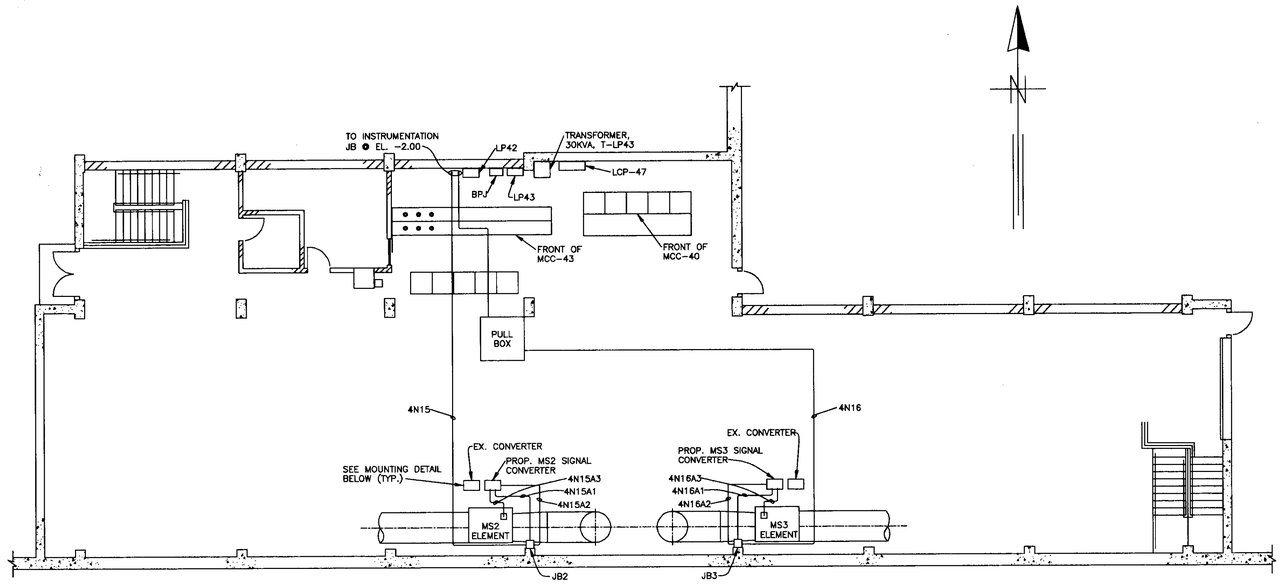
CITY OF TAMPA FLORIDA
DEPARTMENT OF SANITARY SEWERS
RENEWAL & REPLACEMENT
SEWAGE DISPOSAL SYSTEM

MISCELLANEOUS DETAILS

DESIGN W.O.

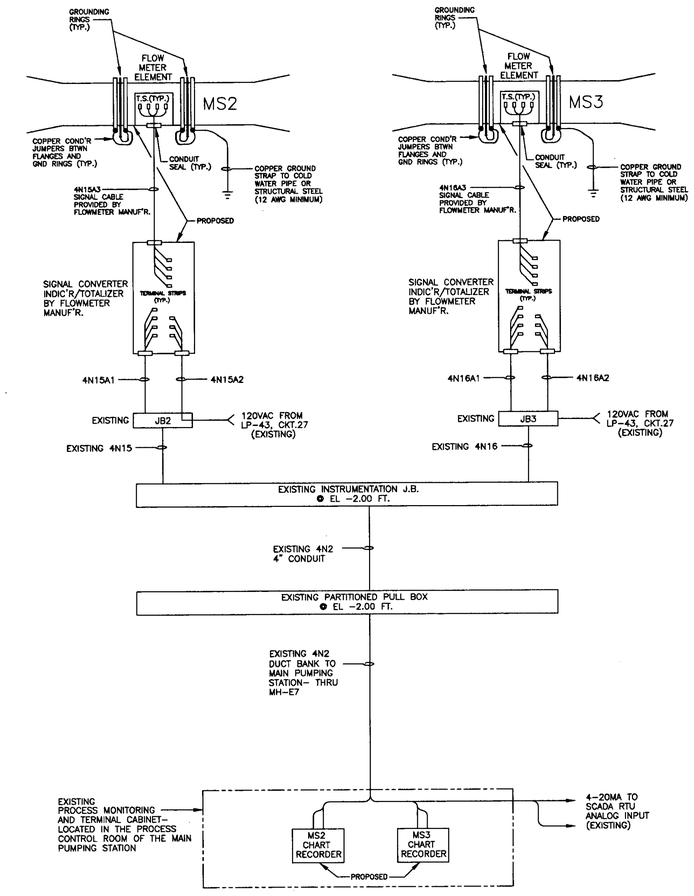
CONSTRUCTION W.O. 5026

SHEET 8 OF 9



SLUDGE PUMPING STATION NO.2 - PLAN EL. +11.00

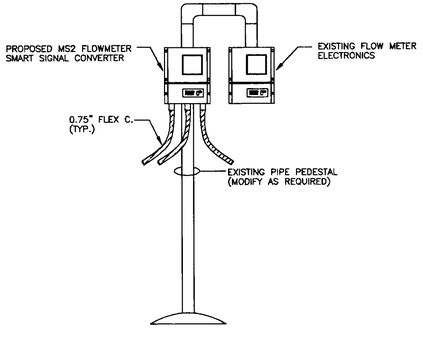
SCALE: 1/8" = 1'-0"



NOTE:
REMOVE AND REPLACE THE EXISTING CHART RECORDERS AS SHOWN AND SPECIFIED.

PARTS SCHEDULE					
SYMBOL	DESCRIPTION	MANUFACTURER	PART No.	RATINGS	REMARKS
MS2, MS3	MAGNETIC FLOW METER ELEMENT (TUBE)	FISCHER & PORTER	10D14XX	30VA	W/ GROUNDING RINGS, REMOTE ELECTRONICS AND SIGNAL CABLE.
	SMART DC SIGNAL CONV'R		50XM1000N	120V , 60HZ, PWR. 4-20MA, OUTPUT	W/ RATE & TOTAL INDICATION AND ZERO RETURN.
MS2, MS3 CHT. REC.	PAPERLESS CHART RECORDER	WESTRONICS	MPR100	120V , 60HZ, PWR.	W/ 4 MEG DATA CARD, PC SFTWRE, AND RS 232 BI-DIRECTIONAL COMM. PORT

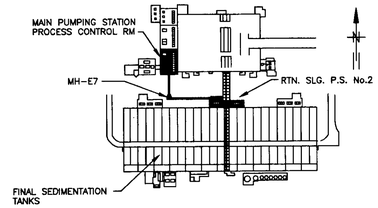
CONDUIT/CONDUCTOR SCHEDULE					
CONDUIT No.	SIZE	CONDUCTORS	FROM	TO	REMARKS
4N15	1.25"	3-2C#16SHLD 1-5C#16SHLD	JB2	INST. JB ● EL -2.00 FT	EXISTING
4N15A1	0.75"	1-2C#16SHLD	SIG. CONV'R	JB2	
4N15A2	0.75"	3-#12 AWG	LP43/JB2	SIG. CONV'R	
4N15A3	0.75"	SIGNAL CABLE	SIG. CONV'R	FLOW METER ELEMENT	PROVIDED BY FLOW METER MANUFACTURER
4N16	1.25"	3-2C#16SHLD 1-5C#16SHLD	JB3	INST. JB ● EL -2.00 FT	EXISTING
4N16A1	0.75"	1-2C#16SHLD	SIG. CONV'R	JB3	
4N16A2	0.75"	3-#12 AWG	LP43/JB3	SIG. CONV'R	
4N16A3	0.75"	SIGNAL CABLE	SIG. CONV'R	FLOW METER ELEMENT	PROVIDED BY FLOW METER MANUFACTURER



MS2 FLOWMETER CONVERTER MOUNTING DETAIL

(MS3 CONVERTER MOUNTING IS SIMILAR)

NOT TO SCALE



KEY PLAN

NTS

TP11-9

C:\R13\DWG\TP\5026-9 1/8"=1'STATION #6

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

HENRY DORZBACK, P.E.
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

RALPH L. METCALF II, P.E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

DES: R.K.
DRN: BK
CKD:
DATE:

No.	DATE	REVISIONS
1		
2		
3		
4		
5		

SCALE

SCALE AS SHOWN

CITY OF TAMPA FLORIDA
DEPARTMENT OF SANITARY SEWERS
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

ELECTRICAL DETAILS

DESIGN W.O. 5026

CONSTRUCTION W.O.

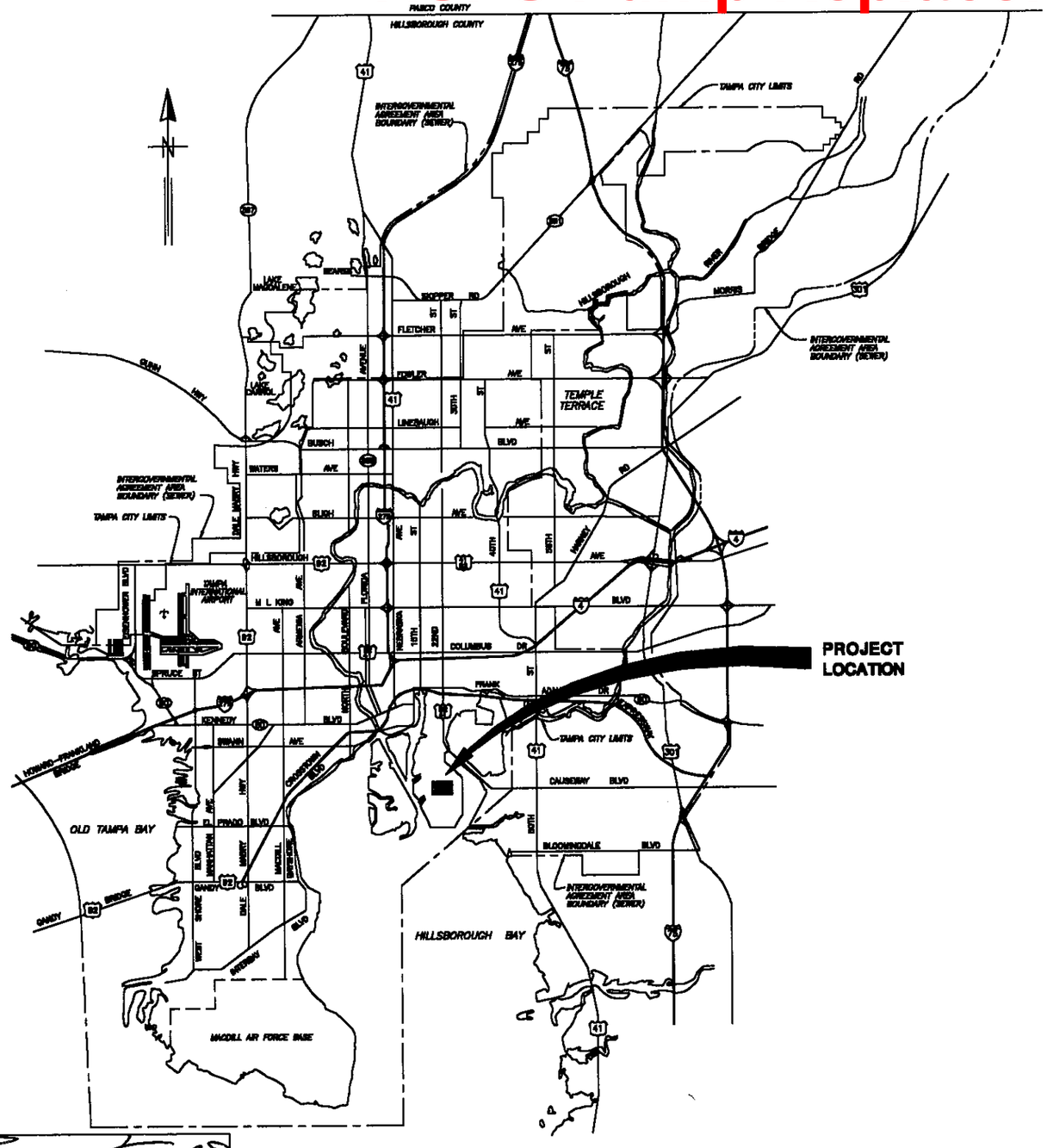
SHEET 9 OF 9

RSPS Pump Replacement_Year 1999

TPB3-1

R14

LOCATION MAP



CITY of TAMPA

CITY OF TAMPA FLORIDA
MASCOTTE
ORGANIZED JULY 15 1887

DEPARTMENT OF SANITARY SEWERS

PLANS FOR

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3

CONTRACT 16-99

1/8"=1' STATION#4

C:\R14\DWG\TP\5041

ROMAN D KORCHAK, PE #42626
ELECTRICAL SECTION HEAD
DEPARTMENT OF SANITARY SEWERS

HENRY DORZBACK, P.E. #39449
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

RALPH L. METCALF II, P.E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

DES: C.L.
DRN: R.A.R.
CKD:
DATE: 5/4/99

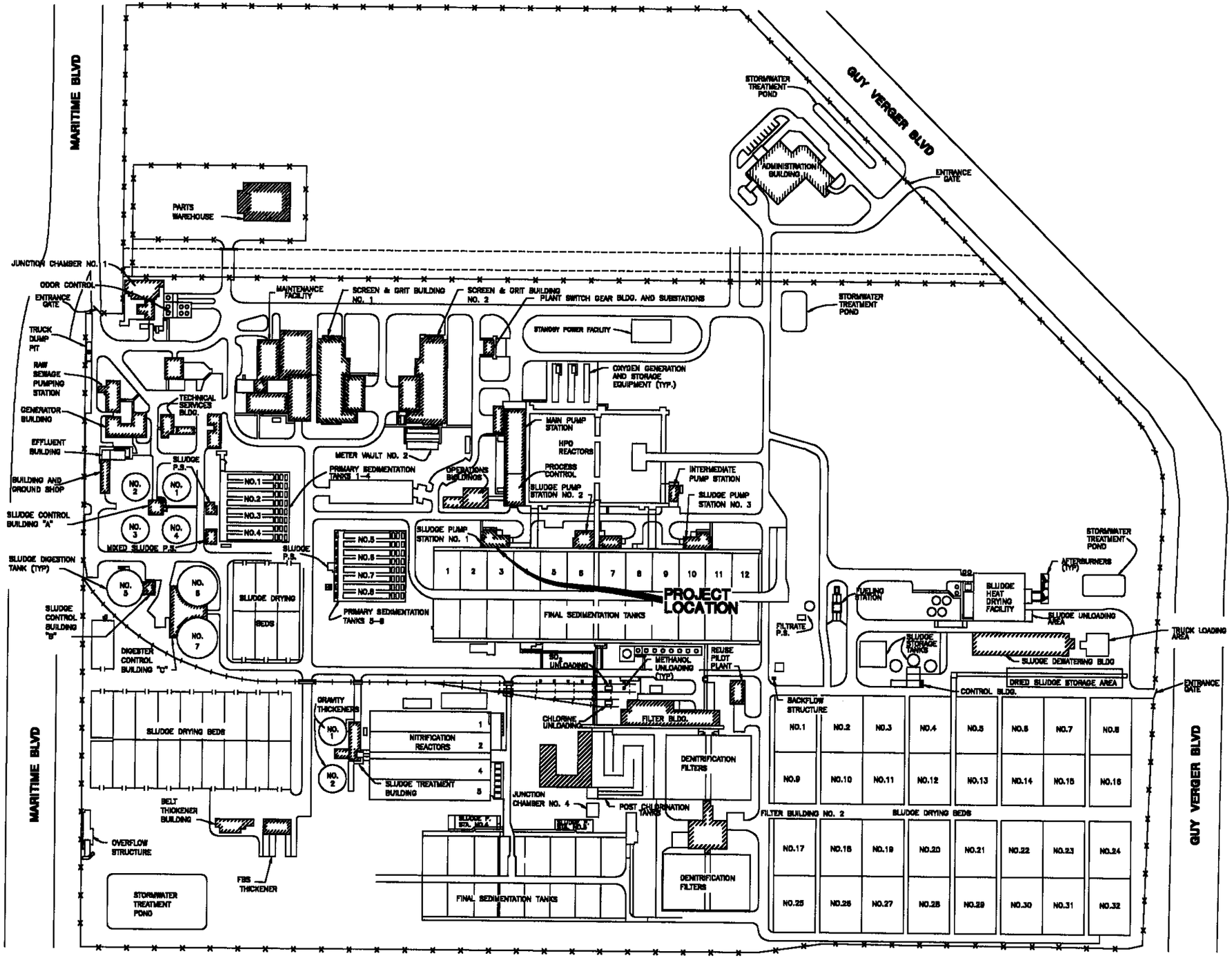
No.	DATE	REVISIONS
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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

COVER SHEET

W.O. 5041
SHEET 1 OF 27

TP33-2



N

NO SCALE

CITY OF TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER
TREATMENT PLANT

2700 MARITIME BLVD.
TAMPA, FL 33605
(813) 247-3451
FAX: (813) 248-5269

INDEX

SHEET 1 COVER SHEET
SHEET 2 SITE PLAN & INDEX
SHEET 3 DEMOLITION PLAN
SHEET 4 DEMOLITION SECTIONS
SHEET 5 PROPOSED CONSTRUCTION PLAN
SHEET 6 PROPOSED CONSTRUCTION SECTIONS
SHEET 7 MISCELLANEOUS DETAILS
SHEET 8 MISCELLANEOUS DETAILS & NOTES
SHEET E1/9 – E19/27 ELECTRICAL

R14

C:\R14\DWG\TP\5041 4 1/8"=1'

No.	DATE	REVISIONS	No.	DATE	REVISIONS
1			4		
2			5		
3			6		

DES: C.L.
DRN: R.A.R.
CKD: AH
DATE: 5/14

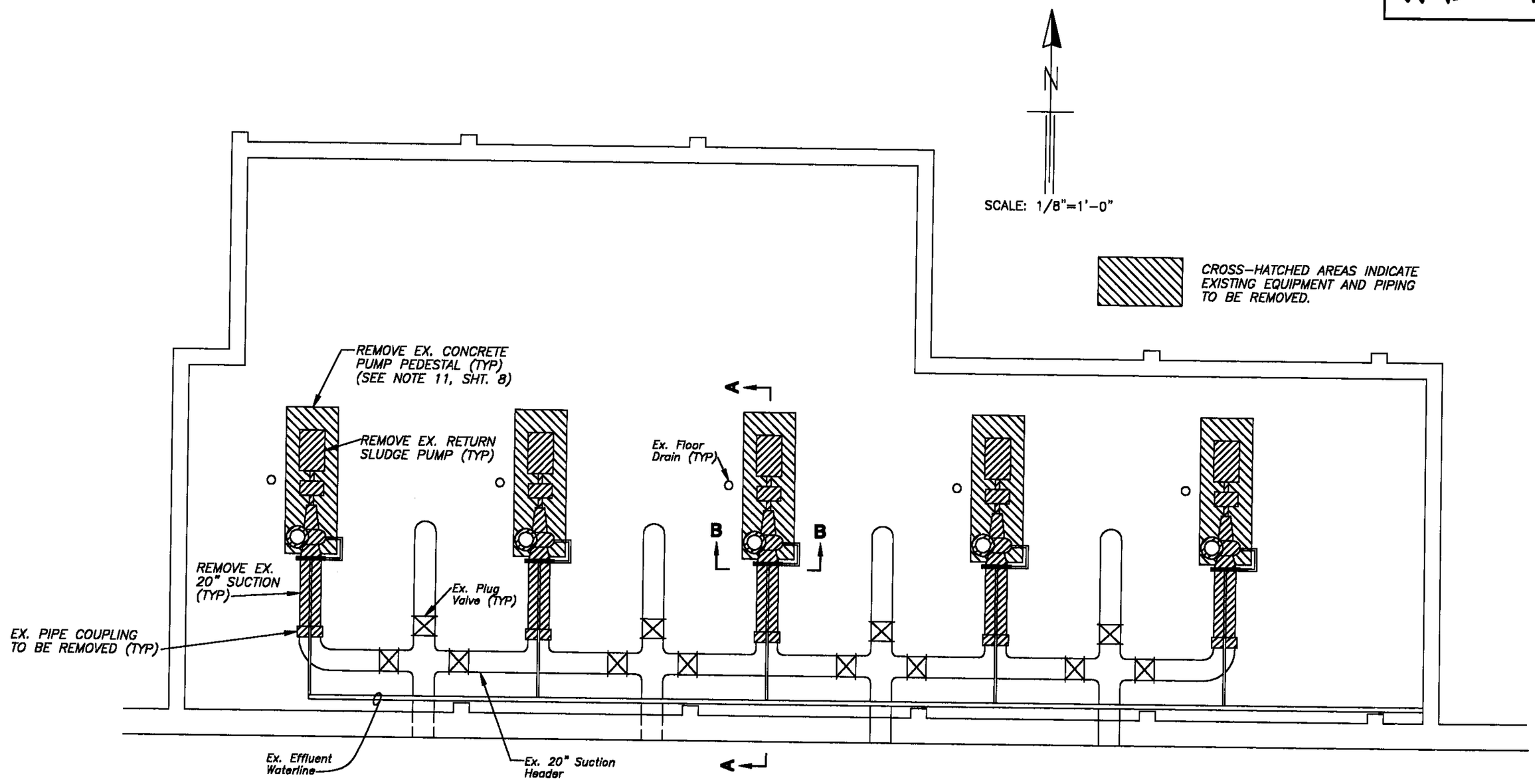
CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

SITE PLAN AND INDEX

W.O. 5041
SHEET 2 OF 27

TPB3-3

R14



No.	DATE	REVISIONS	No.	DATE	REVISIONS
1			4		
2			5		
3			6		

DES: C.L.
DRN: R.A.R.
CKD: [illegible]
DATE: 5/04

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
DEMOLITION PLAN

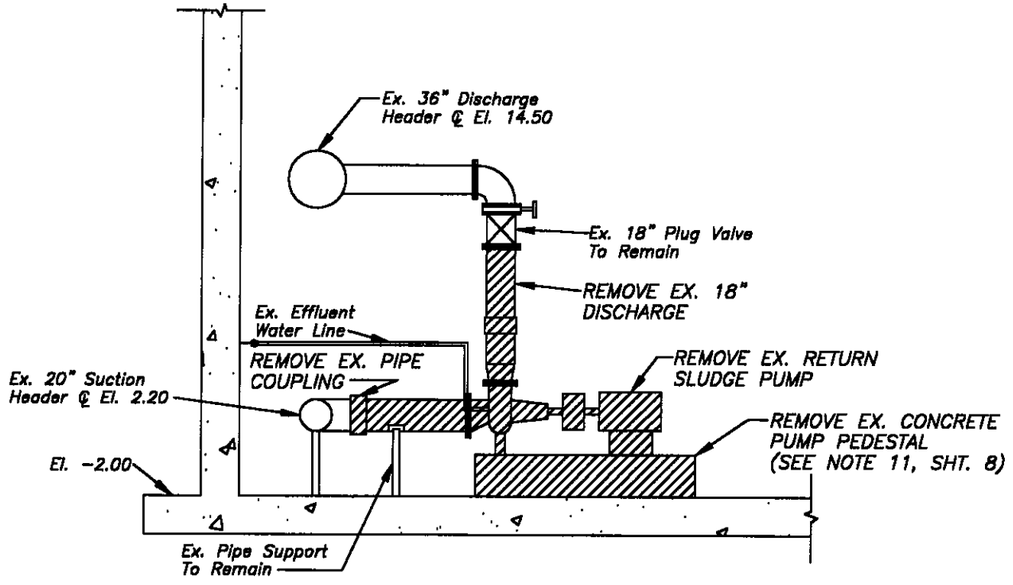
W.O. 5041
SHEET 3 OF 27

C:\R14\DWG\TP\5041 4 1/8"=1'

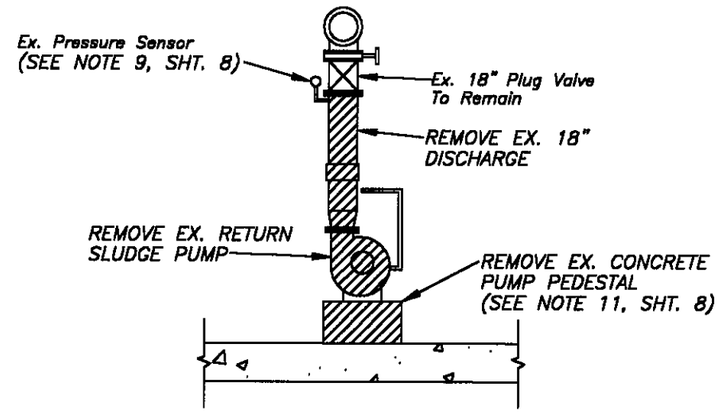
TPB3-4

R14

CROSS-HATCHED AREAS INDICATE EXISTING EQUIPMENT AND PIPING TO BE REMOVED.



SECTION A-A
SCALE: 1/8"=1'-0"



SECTION B-B
SCALE: 1/8"=1'-0"

No.	DATE	REVISIONS	No.	DATE	REVISIONS
1			4		
2			5		
3			6		

DES: C.L.
DRN: R.A.R.
CKD: DAS
DATE: 3/14

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

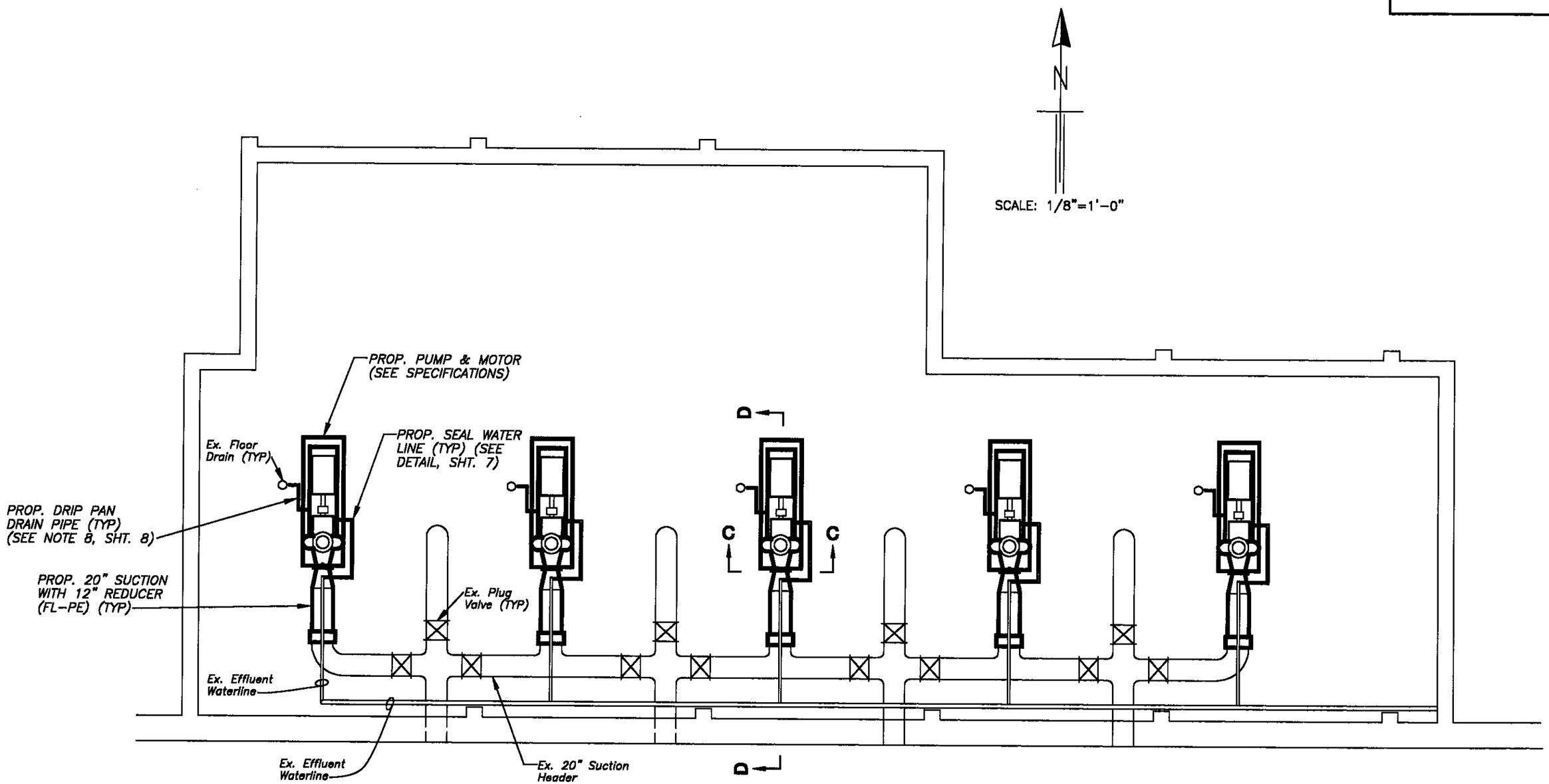
RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
DEMOLITION SECTIONS

W.O. 5041
SHEET 4 OF 27

C:\R14\DWG\TP\5041 1/8"=1' 4

TPB3-5

R14



No.	DATE	REVISIONS	No.	DATE	REVISIONS
1			4		
2			5		
3			6		

DES: C.L.
DRN: R.A.R.
CKD:
DATE: 5/04

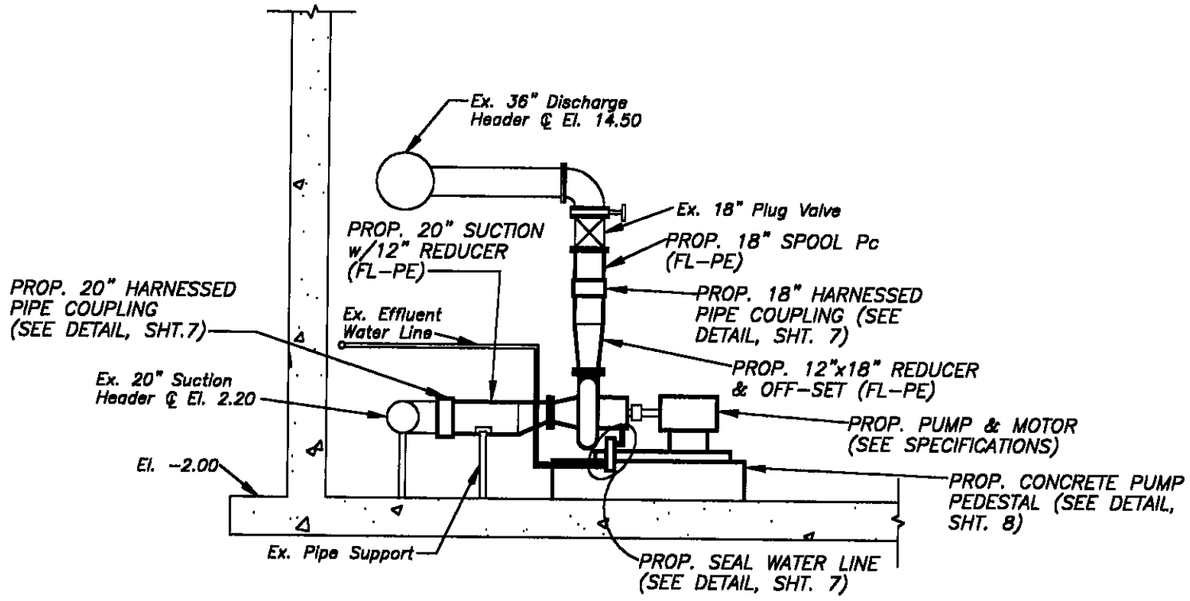
CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
PROPOSED CONSTRUCTION PLAN

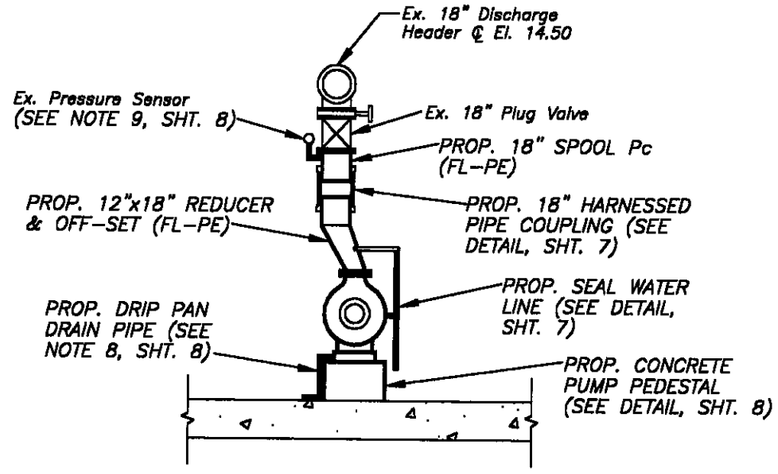
W.O. 5041
SHEET 5 OF 27

C:\R14\DWG\TP\5041 1/8"=1' 4

TPB3-6



SECTION C-C
SCALE: 1/8"=1'-0"



SECTION D-D
SCALE: 1/8"=1'-0"

No.	DATE	REVISIONS	No.	DATE	REVISIONS
1			4		
2			5		
3			6		

DES: C.L.
DRN: R.A.R.
CKD:
DATE: 3/04

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

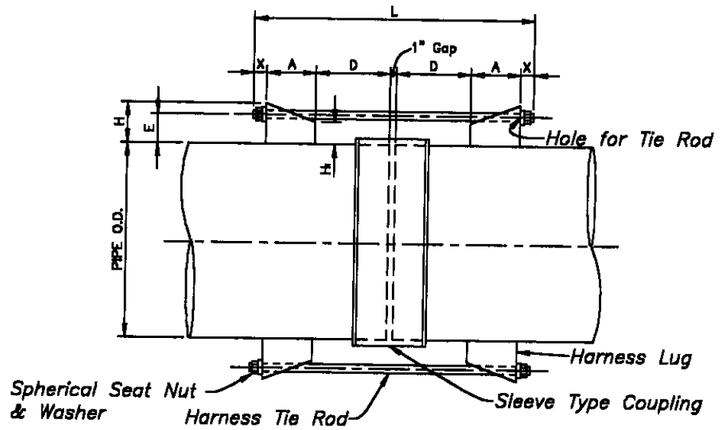
RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
PROPOSED CONSTRUCTION SECTIONS

W.O. 5041
SHEET 6 OF 27

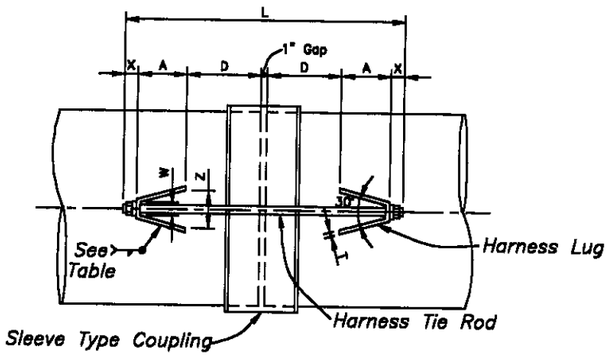
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TP03-7

R14



PLAN VIEW

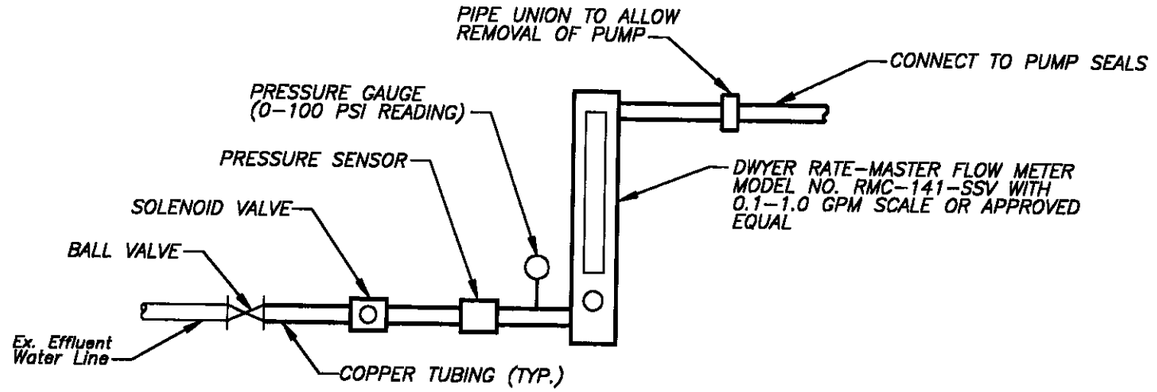


SECTION

PIPE COUPLING DETAIL

N.T.S.

TYPE A HARNESSED SLEEVE TYPE COUPLING JOINT FOR STEEL PIPE – SCHEDULE																				
NOM. PIPE SIZE	WALL THICK-NESS	O.D. OF PIPE	MAX. PRESS. FOR HARNESS TIE ROD P.S.I.	MIDDLE RING		HARNESS TIE ROD				HARNESS LUG MINIMUM DIMENSION									
				LENGTH	THICKNESS	No.	DIA.	X	L	A	W	Z	T	E	H	H_1	D	HOLE	WELD
18	0.375	18.00	45	7	5/16	2	3/4	1 1/4	28	3 3/4	1 11/16	3 1/2	3/8	3 1/8	4 1/8	2	8 1/2	7/8	1/4
20	0.375	20.00	25	7	3/8	2	5/8	1 1/8	26 1/4	3	1 1/2	2 7/8	3/8	3	3 7/8	2	8 1/2	3/4	1/4



SEAL WATER DETAIL

N.T.S.

C:\R14\DWG\TP\5041 4 1/8"=1'

No.	DATE	REVISIONS	No.	DATE	REVISIONS
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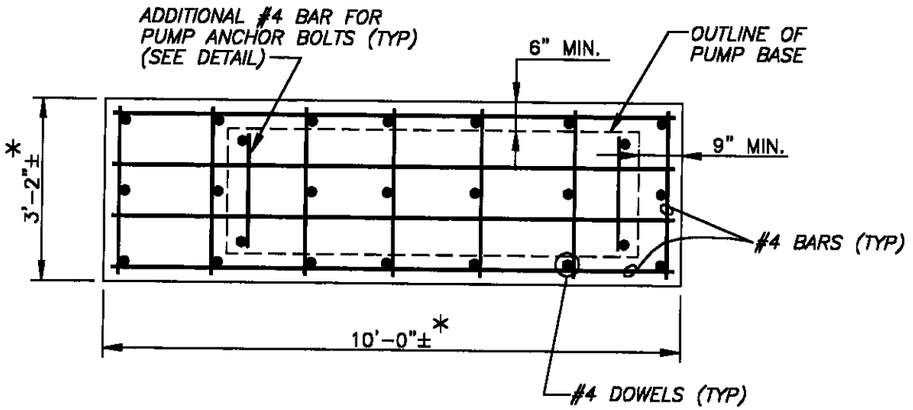
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DRN: R.A.R.
CKD:
DATE: 5/99

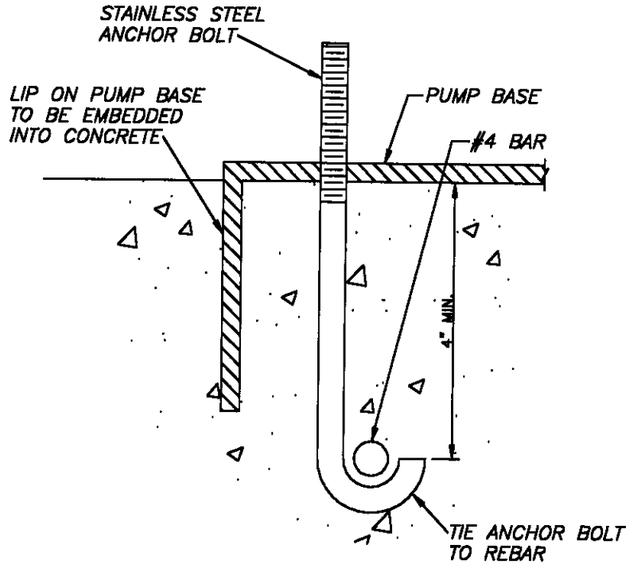
CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
MISCELLANEOUS DETAILS

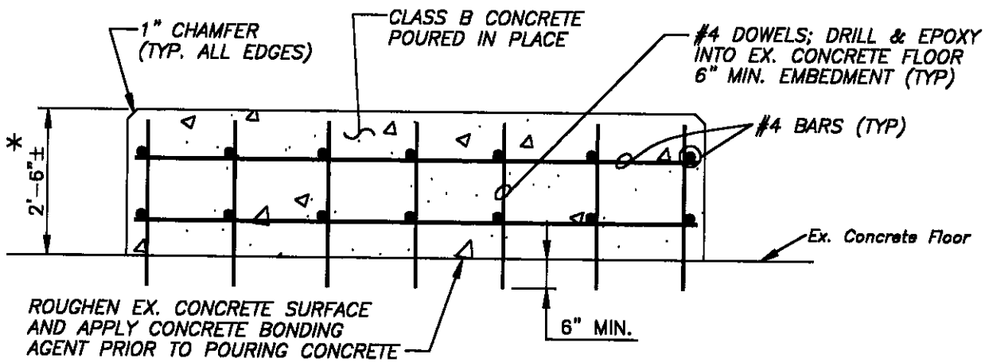
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ANCHOR BOLT DETAIL
N.T.S.



PUMP PEDESTAL DETAIL
N.T.S.

*DIMENSIONS SHOWN ARE APPROXIMATE ONLY. ACTUAL DIMENSIONS MAY VARY TO MEET FIELD CONDITIONS AND FINAL SELECTION OF EQUIPMENT.

CONSTRUCTION NOTES

1) The Contractor is responsible for obtaining all field measurements and verifying the locations, elevations, and dimensions of all existing piping, structures, and other features affecting his work prior to submittal of shop drawings or starting construction.

2) Existing pipe, fittings, and equipment indicated for removal shall be removed and delivered on-site as directed by Treatment Plant Personnel.

3) 18-inch and 20-inch piping shall be constructed of welded steel and shall be custom fabricated to suit the dimensions of the final selected equipment (see specifications for further details).

4) All pipe, fittings, valves, and equipment shall be painted and lined in accordance with the Contract Specifications.

5) All steel reinforcing shall be detailed in accordance with the latest "ACI Manual of Standard Practice for Detailing Concrete Structures".

6) Seal water piping shall be Type "K" hard drawn copper with cast-brass solder fittings. All joints shall be threaded or soldered. All piping shall be erected, joined, and coated in accordance with the Contract Specifications.

7) A qualified representative of the pump manufacturer shall be present at all critical phases of the construction to inspect the installation of the equipment. The representative will place the equipment into operation, make all necessary adjustments, and provide training for treatment plant personnel.

8) The pump and motor shall be mounted on a common steel frame. The frame shall be equipped with a drip pan to collect drainage from the pump seals. A PVC pipe shall be provided to drain the drip pan into the nearest floor drain. Size of the drain pipe shall match the size of the drain opening in the drip pan.

9) The existing pressure switch assemblies shall be removed from the existing discharge piping and installed on the new pipe. The Contractor shall supply riser pipe and a ball valve for each assembly.

10) All hardware including nuts, bolts, washers, etc. shall be constructed of 316 stainless steel.

11) The existing concrete pump pedestals shall be removed flush with the concrete floor. Areas of the existing floor that are disturbed by the removal of the pedestals and will remain exposed after the installation of the new pumps shall be made smooth. Any rebar or anchor bolts within these areas will be ground back a minimum of 1-inch and the hole filled with epoxy.

No.	DATE	REVISIONS	No.	DATE	REVISIONS
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DATE: 5/04

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
MISCELLANEOUS DETAILS AND NOTES

W.O. 5041
SHEET 8 OF 27

R14
1/8"=1'
4
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TPB3-9

LEGEND

SYMBOL	DESCRIPTION
	FUSED DISCONNECT
R	PILOT LIGHT – R=RED, G=GREEN, A=AMBER
800/400	THERMAL–MAGNETIC CIRCUIT BREAKER, 800 AMP. FRAME, 400 AMP. TRIP
	TRANSFORMER
	START/STOP PUSHBUTTONS
1 0 2	SELECTOR SWITCH – THREE POSITION
SPD ADJ.	POTENTIOMETER
DOI	DIGITAL OPERATOR INTERFACE
ETM	ELAPSED TIME METER
AFD	ADJUSTABLE FREQUENCY DRIVE
TDR	TIME DELAY RELAY – X
	MOTOR THERMAL OVERLOAD
	PUSH BUTTON – NORMALLY OPEN
	PUSH BUTTON – NORMALLY CLOSED
	PUSH BUTTON – DOUBLE CONTACTS
STOP/L	PUSH BUTTON – WITH LOCK–OUT FEATURES
TDR–X	"OFF" DELAY RELAY
TDR–X	"ON" DELAY RELAY
△	DESIGNATES TERMINAL FOR FIELD CONNECTION.
CA00005	CONDUIT NO. – REFERENCE CONDUIT/ CONDUCTOR SCHEDULE
75	MOTOR, 75 HP

SYMBOL	DESCRIPTION
	LIMIT SWITCH – NORMALLY OPEN
	LIMIT SWITCH – NORMALLY CLOSED
LS	LIMIT SWITCH
	LIQUID LEVEL SWITCH – NORMALLY OPEN
	LIQUID LEVEL SWITCH – NORMALLY CLOSED
	PRESSURE SWITCH – NORMALLY OPEN
	PRESSURE SWITCH – NORMALLY CLOSED
P	PRESSURE SWITCH
J	JUNCTION BOX – SIZED PER NEC

SYMBOL	DESCRIPTION
	CONDUIT – DOWN
	CONDUIT – UP
	AUDIBLE ALARM
	SELECTOR SWITCH – NORMALLY OPEN
xM	MOTOR STARTER COIL, x DESIGNATES MOTOR ID. NO.
xx R	RELAY COIL, xx DESIGNATES ID. NO.
xxR–y	RELAY CONTACT – NORMALLY OPEN, xx DESIGNATES RELAY ID. NO. & y DESIGNATES CONTACT NO.
xxR–y	RELAY CONTACT – NORMALLY CLOSED, xx DESIGNATES RELAY ID. NO. & y DESIGNATES CONTACT NO.
xMOL	MOTOR OVERLOAD RELAY – x DESIGNATES MOTOR I.D. NO.
	SOLENOID VALVE
	FUSE

GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2. PROVIDE & INSTALL ALUMINUM CHANNEL (UNISTRUT) ERECTOR SYSTEMS TO MOUNT AND SUPPORT ENCLOSURES, BOXES, CONDUITS & OTHER EQUIPMENT. ALL UNISTRUT SHALL BE B–LINE ALUMINUM B22AL w/o SLOTS OR HOLES USING B–LINE B2000AL SERIES ALUMINUM CONDUIT CLAMPS.
3. ALL CONDUCTORS SHALL BE STRANDED COPPER, AWG 12 MIN. w/ THHN INSULATION, UNLESS OTHERWISE NOTED.
4. ALL WIRING SHALL BE IDENTIFIED w/ NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
5. VERIFY ALL MECHANICAL EQUIPMENT SIZES AND RATINGS PRIOR TO CONNECTING.
6. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
7. REFERENCE PLAN AND SECTION DRAWINGS FOR EQUIPMENT LOCATIONS.
8. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE w/ THE LATEST EDITION OF THE NEC AND ALL APPLICABLE LOCAL ORDINANCES.
9. COORDINATE ALL INSTALLATIONS w/ ALL OTHER TRADES.
10. ALL THREADED CONNECTIONS SHALL BE COATED w/ COPPER SHIELD ANTI–SEIZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & B).
11. ALL PANELS, DISCONNECTS, SWITCHES AND EQUIPMENT COVERPLATES SHALL BE LABELED w/ NAMEPLATES. NAMEPLATES SHALL BE THREE–PLY PHENOLIC BLACK–WHITE–BLACK ENGRAVED THROUGH THE FIRST BLACK LAYER. LETTERING SHALL BE 0.5 CM (3/16") MIN. EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.
12. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'–0" INTERVALS.
13. ALL CIRCUITS SHALL HAVE A GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT w/ POWER CONDUCTORS.
14. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS. NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
15. NEATLY COIL ALL SPARE CONDUCTORS & TAPE w/ VINYL ELECTRICAL TAPE (SCOTCH 33+). U.O.N.
16. PROVIDE A MINIMUM OF 3'–0" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE w/ ARTICLE 110 OF THE NEC.
17. ALL INSTALLATIONS SHALL BE IN ACCORDANCE w/ CITY OF TAMPA CODE 5–221–E.1.E.
18. ALL CONDUIT SHALL BE RIGID HEAVY WALL ALUMINUM CONDUIT.
19. ALL FASTENING HARDWARE (SCREWS, BOLTS, NUTS, ETC.) SHALL BE 316 STAINLESS STEEL. FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.
20. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.

ABBREVIATIONS

A	AMPERES	IG	ISOLATED GROUND
ABV	ABOVE	HP	HORSEPOWER
AFF	ABOVE FINISHED FLOOR	HT	HEIGHT
ATS	AUTOMATIC TRANSFER SWITCH	JB,JBOX	JUNCTION BOX
BLDG	BUILDING	KW	KILOWATTS
BRKR	BREAKER	LPX	LIGHTING PANEL X
C	CONDUIT	LTG	LIGHTING
CAB	CABINET	MACH	MACHINE
CAT	CATALOG	MCB	MAIN CIRCUIT BREAKER
CO	CONDUIT ONLY	MLO	MAIN LUGS ONLY
CLG	CEILING	MECH	MECHANICAL
CKT	CIRCUIT	MNTD	MOUNTED
CT	CURRENT TRANSFORMER	MNTG	MOUNTING
CTR	CENTER	ø	PHASE
CTRD	CENTERED	PB	PUSH BUTTON
DISC	DISCONNECT	PNL	PANEL
DN	DOWN	PPX	POWER PANEL X
DWG	DRAWING	PWR	POWER
EC	EMPTY CONDUIT	RECEPT	RECEPTACLE
ECC	EDDY CURRENT CLUTCH	REFRIG	REFRIGERATOR
ELEC	ELECTRICAL, ELECTRIC	SW	SWITCH
ELEV	ELEVATOR	SWBD	SWITCHBOARD
EM	EMERGENCY	TELE	TELEPHONE
EMT	ELECTRO METALLIC TUBING	THRU	THROUGH
EQUIP	EQUIPMENT	TR	TRIP
EWC	ELECTRICAL WATER COOLER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
EX	EXISTING	TYP	TYPICAL
EXH	EXHAUST	UON	UNLESS OTHERWISE NOTED
FA	FIRE ALARM	V	VOLT
FL	FLOOR	W	WIRE
F	FUSE	w/	WITH
FUT	FUTURE	WP	WEATHER PROOF
GFI	GROUND FAULT INTERRUPTING	XFMR	TRANSFORMER

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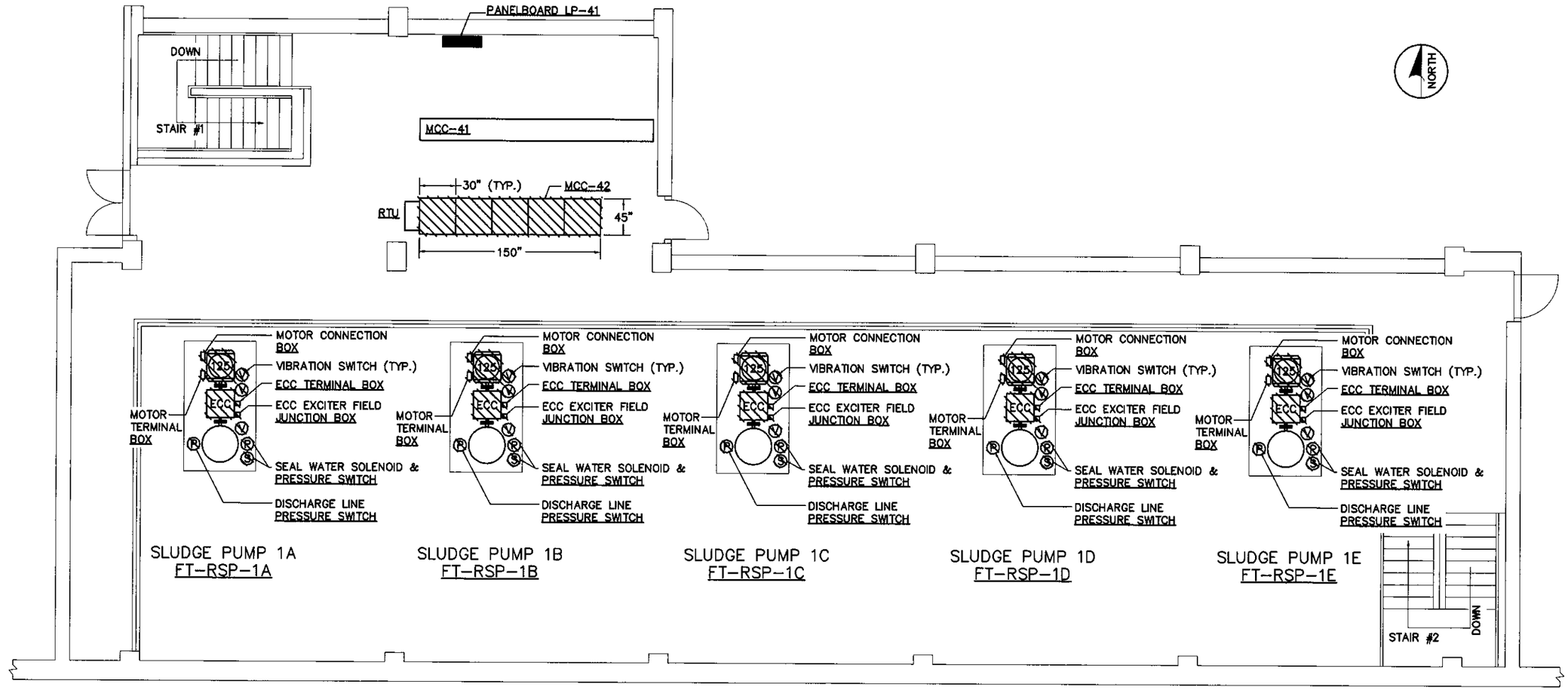
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DRN: RWB
CKD: BEH
DATE: 5/10/99

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION
REHABILITATION PHASE 3
ELECTRICAL LEGEND & ABBREVIATIONS

W.O. 5041
SHEET E-1/9
OF 27

TPB3-10



ELECTRICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

NOTES:

- ⊠ – DENOTES EXISTING EQUIPMENT TO BE REMOVED. ITEM SHALL BE REMOVED FROM PREMISES AND DISPOSED OF PROPERLY. UNLESS OTHERWISE NOTED REMOVE ALL ASSOCIATED CONDUIT & WIRING CONNECTED TO EQUIPMENT REMOVED, INCLUDING ABANDONED CONDUIT & WIRING.

1. CONTRACTOR SHALL VISIT THE SITE & FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS BEFORE SUBMITTING A BID OR COMMENCING CONSTRUCTION.
2. COORDINATE ALL DEMOLITION ACTIVITIES WITH OWNER & ALL TRADES.
3. REFERENCE DEMOLITION RISER DIAGRAM FOR ADDITIONAL DETAILS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF THE MOTORS AND ITS DRIVEN EQUIPMENT.
5. COORDINATE DEMOLITION WORK SHOWN IN THIS DRAWING WITH THE MECHANICAL DEMOLITION DRAWINGS.

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION
REHABILITATION PHASE 3
ELECTRICAL DEMOLITION PLAN

W.O. 5041
SHEET E-2/10
OF 27

TPB3-11

INSTALL JUNCTION BOX ON EXISTING CONDUIT. REMOVE CONDUIT AS SHOWN. PRESERVE CONDUCTOR LENGTHS FOR PROPOSED INSTALLATION.

42M8

TO LP-41

42M51

89-#14 & 12-2/C #16 SHLD., 2 1/2" C.

MCC-41

SECT. 1	SECT. 2	SECT. 3	SECT. 4	SECT. 5	SECT. 6	SECT. 7	SECT. 8	SECT. 9
	400AF 225AT SLDGE PUMP 1A		MAIN BRKR. BUS 1	TIE BRKR. BUS 1-2	MAIN BRKR. BUS 2		400AF 225AT SLDGE PUMP 1D	ANNUN. (SCANNER -41)
	400AF 225AT SLDGE PUMP 1B							
	400AF 225AT SLDGE PUMP 1C						400AF 225AT SLDGE PUMP 1E	

2-#12 & 1-#6 GND., 3/4" C.

MCC-42

RTU

SLUDGE PUMP FT-RSP-1A | SLUDGE PUMP FT-RSP-1B | SLUDGE PUMP FT-RSP-1C | SLUDGE PUMP FT-RSP-1D | SLUDGE PUMP FT-RSP-1E

ELEV. +11.00

42M5A
42M5B
42M5E

41M1
41M2
41M3

42M1A
42M1B
42M1E

41M4
41M5

42M2A
42M2B
42M2E

42M3A
42M3B
42M3E

42M4A
42M4B
42M4E

4-#14 & 1-2/C #16 SHLD., 1" C. (TO BE REMOVED)

2-#10, 1" C. (TO BE REMOVED)

42M1E — SOLENOID VALVE PV1-1A
42M1B
42M1A
DISCHARGE VALVE LIMIT SWITCH LS-1A
DISCHARGE LINE PRESSURE SWITCH
VALVE JUNCTION BOX 1A
SOLENOID VALVE PV2-1A
4-#14, 3/4" C. (SEE NOTE 4)
ESD
42M1F
CONTROL TERMINAL BOX 1A
SEE NOTE 2
MOTOR TERMINAL BOX
ECC VIBRATION SWITCH
ECC TERMINAL BOX
SEAL WATER PRESSURE SWITCH
ECC
SEAL WATER SOLENOID VALVE
PUMP VIBRATION SWITCH
ECC EXCITER FIELD JUNCTION BOX
MOTOR VIBRATION SWITCH
4-#14, 3/4" C. (SEE NOTE 4)

SLUDGE PUMP 1A
FT-RSP-1A

4-#14 & 1-2/C #16 SHLD., 1" C. (TO BE REMOVED)

2-#10, 1" C. (TO BE REMOVED)

42M2E — SOLENOID VALVE PV1-1B
42M2B
42M2A
DISCHARGE VALVE LIMIT SWITCH LS-1B
DISCHARGE LINE PRESSURE SWITCH
VALVE JUNCTION BOX 1B
SOLENOID VALVE PV2-1B
4-#14, 3/4" C. (SEE NOTE 4)
ESD
42M2F
CONTROL TERMINAL BOX 1B
SEE NOTE 2
MOTOR TERMINAL BOX
ECC VIBRATION SWITCH
ECC TERMINAL BOX
SEAL WATER PRESSURE SWITCH
ECC
SEAL WATER SOLENOID VALVE
PUMP VIBRATION SWITCH
ECC EXCITER FIELD JUNCTION BOX
MOTOR VIBRATION SWITCH
4-#14, 3/4" C. (SEE NOTE 4)

SLUDGE PUMP 1B
FT-RSP-1B

4-#14 & 1-2/C #16 SHLD., 1" C. (TO BE REMOVED)

2-#10, 1" C. (TO BE REMOVED)

42M3E — SOLENOID VALVE PV1-1C
42M3B
42M3A
DISCHARGE VALVE LIMIT SWITCH LS-1C
DISCHARGE LINE PRESSURE SWITCH
VALVE JUNCTION BOX 1C
SOLENOID VALVE PV2-1C
4-#14, 3/4" C. (SEE NOTE 4)
ESD
42M3F
CONTROL TERMINAL BOX 1C
SEE NOTE 2
MOTOR TERMINAL BOX
ECC VIBRATION SWITCH
ECC TERMINAL BOX
SEAL WATER PRESSURE SWITCH
ECC
SEAL WATER SOLENOID VALVE
PUMP VIBRATION SWITCH
ECC EXCITER FIELD JUNCTION BOX
MOTOR VIBRATION SWITCH
4-#14, 3/4" C. (SEE NOTE 4)

SLUDGE PUMP 1C
FT-RSP-1C

ELEV. -2.00

MATCH LINE - FOR CONTINUATION REFER TO REFERENCE SHEET E-4

NOTES:

⊠ - DENOTES EXISTING EQUIPMENT TO BE REMOVED. ITEM SHALL BE REMOVED FROM PREMISES AND DISPOSED OF PROPERLY. UNLESS OTHERWISE NOTED, REMOVE ALL ASSOCIATED CONDUIT & WIRING CONNECTED TO EQUIPMENT REMOVED, INCLUDING ABANDONED CONDUIT & WIRING.

1. CONTRACTOR SHALL VISIT THE SITE & FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS BEFORE SUBMITTING A BID OR COMMENCING CONSTRUCTION.
2. EXISTING CONDUIT & CONDUCTORS SHALL REMAIN FOR PROPOSED INSTALLATION. EXISTING CONDUCTORS SHALL BE DISCONNECTED FROM THE EQUIPMENT TO BE REMOVED DURING DEMOLITION. NEATLY COIL, LABEL & TAPE CONDUCTORS IN PREPARATION OF PROPOSED INSTALLATION.
3. COORDINATE ALL DEMOLITION ACTIVITIES WITH OWNER & ALL TRADES.
4. EXISTING CONDUCTORS TO REMAIN FOR PROPOSED INSTALLATION. PULL EXISTING CONDUCTORS BACK TO EXISTING CONTROL TERMINAL BOX. NEATLY COIL, LABEL, AND TAPE CONDUCTORS FOR NEW INSTALLATION.

ELECTRICAL DEMOLITION RISER DIAGRAM

(SHEET 1 OF 2)

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2			5		
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
ELECTRICAL DEMOLITION RISER DIAGRAM (1 OF 2)

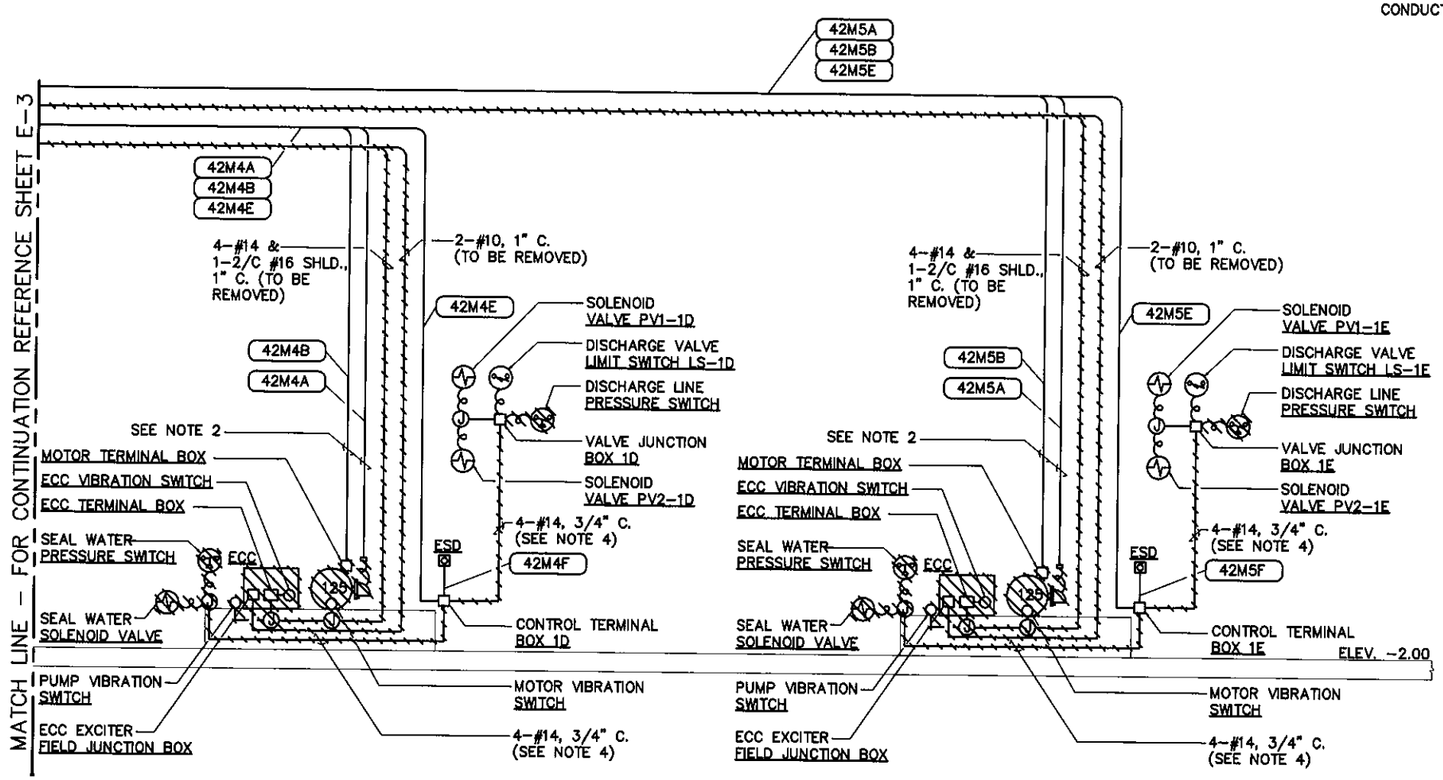
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SHEET E-3/11
OF 27

TPB3-12

NOTES:

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1. CONTRACTOR SHALL VISIT THE SITE & FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS BEFORE SUBMITTING A BID OR COMMENCING CONSTRUCTION.
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3. COORDINATE ALL DEMOLITION ACTIVITIES WITH OWNER & ALL TRADES.
4. EXISTING CONDUCTORS TO REMAIN FOR PROPOSED INSTALLATION. PULL EXISTING CONDUCTORS BACK TO EXISTING CONTROL TERMINAL BOX. NEATLY COIL, LABEL, AND TAPE CONDUCTORS FOR NEW INSTALLATION.



SLUDGE PUMP 1D
FT–RSP–1D

SLUDGE PUMP 1E
FT–RSP–1E

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ELECTRICAL DEMOLITION RISER DIAGRAM

(SHEET 2 OF 2)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: BEH
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CKD: BEH
DATE: 5/10/99

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

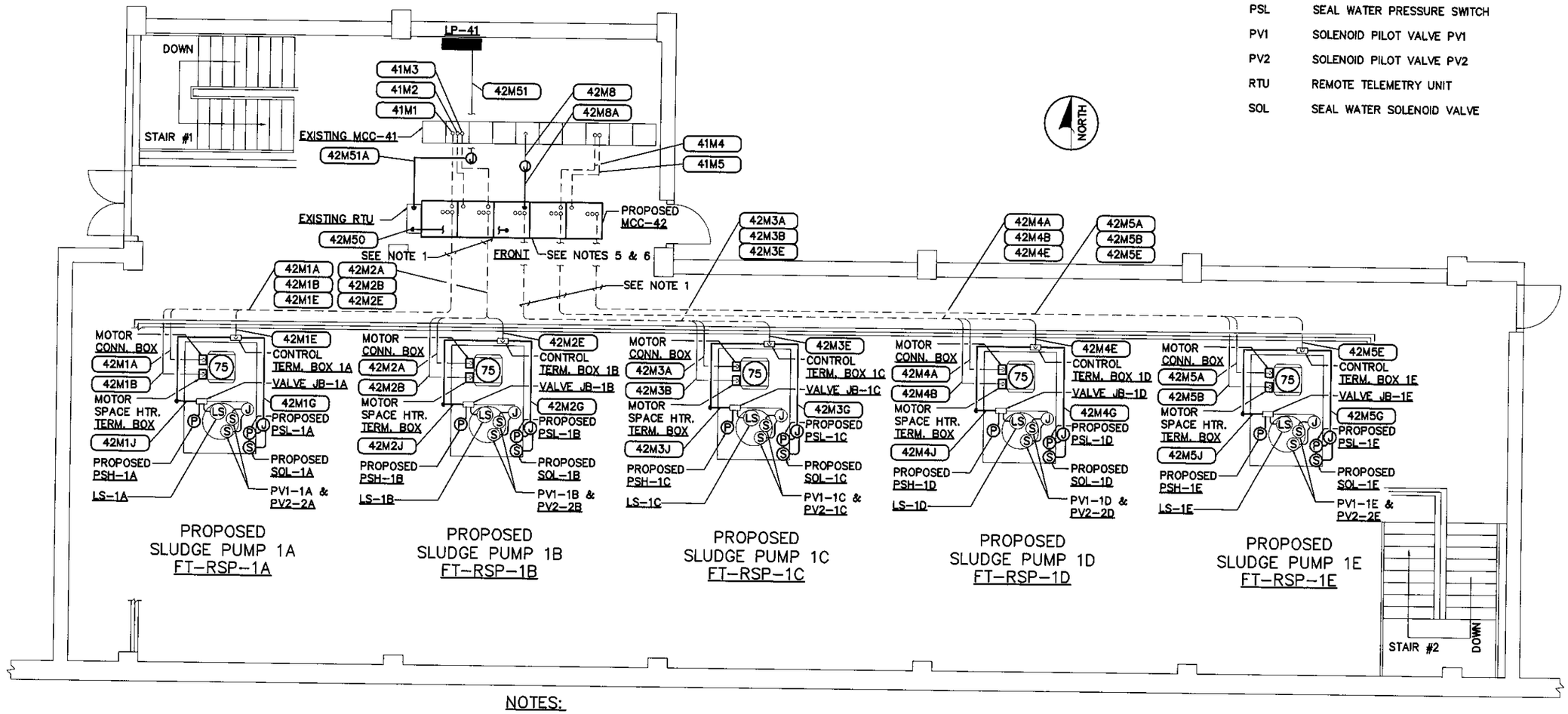
RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
ELECTRICAL DEMOLITION RISER DIAGRAM (2 OF 2)

W.O. 5041
SHEET E-4/12
OF 27

TPB3-13

DEVICE LEGEND

AFD	ADJUSTABLE FREQUENCY DRIVE
LS	DISCHARGE VALVE LIMIT SWITCH
ESD	EMERGENCY SHUTDOWN SWITCH
PSH	DISCHARGE LINE PRESSURE SWITCH
PSL	SEAL WATER PRESSURE SWITCH
PV1	SOLENOID PILOT VALVE PV1
PV2	SOLENOID PILOT VALVE PV2
RTU	REMOTE TELEMETRY UNIT
SOL	SEAL WATER SOLENOID VALVE



PROPOSED ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"

NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND, CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH AS NECESSARY TO PROVIDE CONNECTION TO THE PROPOSED EQUIPMENT AS SHOWN.
2. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY OF TAMPA CODE 5-221-E.1.E.
4. ALL EQUIPMENT SHALL BE INSTALLED AT AN ELEVATION ABOVE THE FLOOD PLANE ESTABLISHED BY FEMA AND/OR LOCAL AUTHORITIES.
5. THE DOOR ON EACH AFD CABINET IN MCC-42 SHALL BE HINGED ON THE RIGHT SIDE OF THE CABINET TO AVOID DOOR OPENING RESTRICTIONS FROM THE EXISTING BUILDING SUPPORT COLUMNS.
6. THE PROPOSED MCC-42 SHALL FIT WITHIN THE FOOTPRINT OCCUPIED BY THE EXISTING MCC-42 (150"W x 45"D x 90"H). CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING EXISTING CONDUIT STUB-UPS WITH THE NEW EQUIPMENT ENCLOSURE.

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

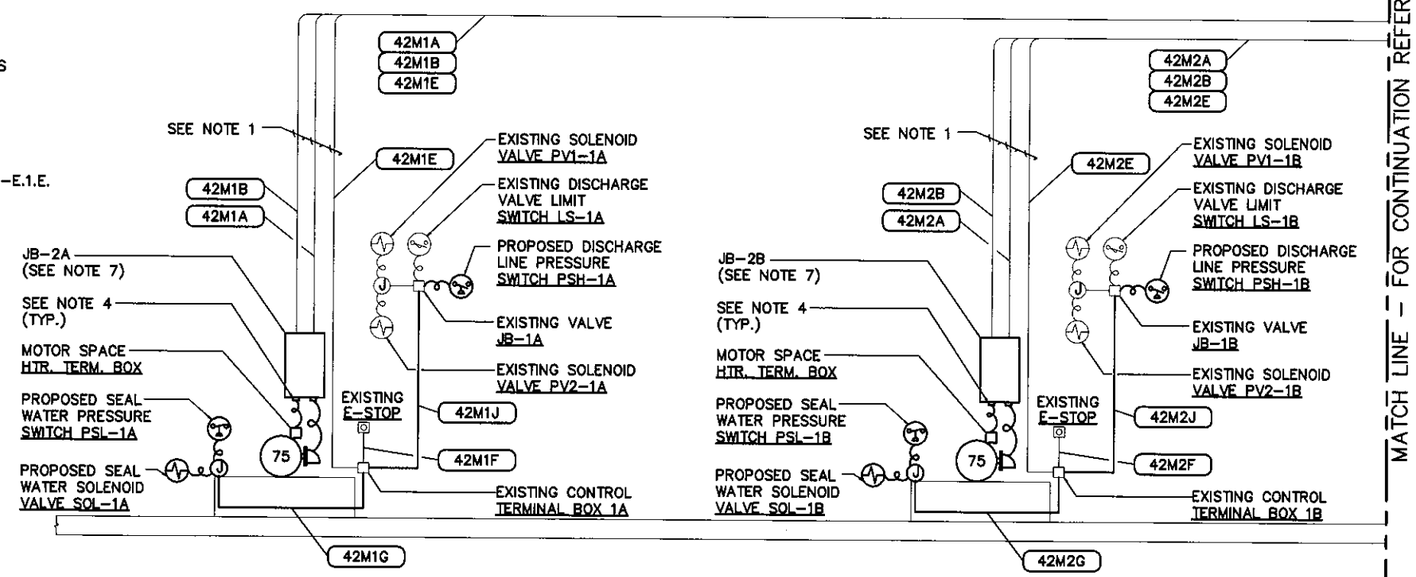
RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
PROPOSED ELECTRICAL PLAN

W.O. 5041
SHEET E-5/13
OF 27

TPB3-14

NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH AS NECESSARY TO PROVIDE CONNECTION TO THE PROPOSED EQUIPMENT AS SHOWN.
2. EXISTING 400AF, 225AT CIRCUIT BREAKER. THE MAGNETIC TRIP SETTING SHALL BE ADJUSTED TO THE "LO" POSITION. TYP. FOR SLUDGE PUMP 1A – SLUDGE PUMP 1E.
3. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
4. TERMINATE INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
5. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY OF TAMPA CODE 5-221-E.1.E.
6. ALL EQUIPMENT SHALL BE INSTALLED AT AN ELEVATION ABOVE THE FLOOD PLANE ESTABLISHED BY FEMA AND/OR LOCAL AUTHORITIES.
7. EXTEND EXISTING CONDUCTORS AS NECESSARY TO PROVIDE CONNECTION TO THE PROPOSED MOTOR AS SHOWN. IF EXISTING CONDUCTOR LENGTHS ARE NOT SUFFICIENT TO CONNECT TO THE PROPOSED MOTOR, INSTALL A 24"H x 16"W x 8"D NEMA 4X SS ENCLOSURE AS SHOWN TO CONTAIN CONDUCTOR SPLICES. SUPPORT ENCLOSURE WITH ALUMINUM UNISTRUT.



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PROPOSED ELECTRICAL RISER DIAGRAM

(SHEET 1 OF 2)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
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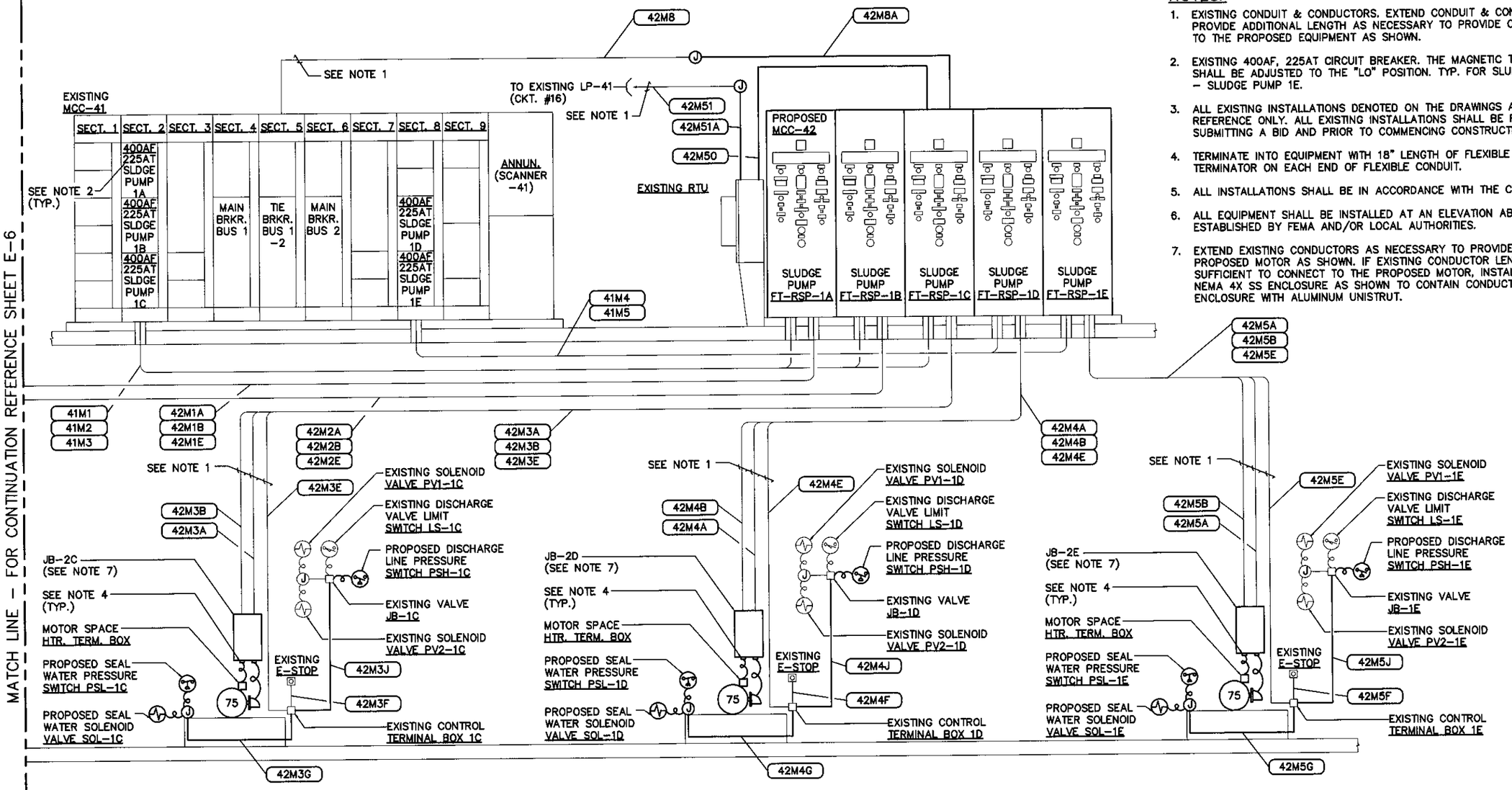
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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION
REHABILITATION PHASE 3
PROPOSED ELECTRICAL RISER DIAGRAM
(1 OF 2)

W.O. 5041
SHEET
E-6/14
OF 27

TP03-15



NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH AS NECESSARY TO PROVIDE CONNECTION TO THE PROPOSED EQUIPMENT AS SHOWN.
2. EXISTING 400AF, 225AT CIRCUIT BREAKER. THE MAGNETIC TRIP SETTING SHALL BE ADJUSTED TO THE "LO" POSITION. TYP. FOR SLUDGE PUMP 1A – SLUDGE PUMP 1E.
3. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
4. TERMINATE INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
5. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY OF TAMPA CODE 5-221-E.1.E.
6. ALL EQUIPMENT SHALL BE INSTALLED AT AN ELEVATION ABOVE THE FLOOD PLANE ESTABLISHED BY FEMA AND/OR LOCAL AUTHORITIES.
7. EXTEND EXISTING CONDUCTORS AS NECESSARY TO PROVIDE CONNECTION TO THE PROPOSED MOTOR AS SHOWN. IF EXISTING CONDUCTOR LENGTHS ARE NOT SUFFICIENT TO CONNECT TO THE PROPOSED MOTOR, INSTALL A 24"H x 16"W x 8"D NEMA 4X SS ENCLOSURE AS SHOWN TO CONTAIN CONDUCTOR SPLICES. SUPPORT ENCLOSURE WITH ALUMINUM UNISTRUT.

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PROPOSED ELECTRICAL RISER DIAGRAM

(SHEET 2 OF 2)

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3			6		
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DES: BEH
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
PROPOSED ELECTRICAL RISER DIAGRAM (2 OF 2)

W.O. 5041
SHEET E-7/15
OF 27

TPB3-16

EXISTING MCC-41

BUS 1: 480/277 VAC, 3ø, 4W; HALF NEUTRAL, 1200A

42,000 AIC

2A 400AF 225AT SEE NOTE 2

2B 400AF 225AT SEE NOTE 2

2C 400AF 225AT SEE NOTE 2

3P, 1000A

3P, 1000A TIE BREAKER BUS 1-2

3-250 KCMIL & 1-#1 GND., 3" C. (EXISTING)

3-250 KCMIL & 1-#1 GND., 3" C. (EXISTING)

3-250 KCMIL & 1-#1 GND., 3" C. (EXISTING)

40M1A
40M1B
40M1C

3-4" C. EA. CONT'G. 3-500 KCMIL, 1-#1/0 NEUT. & 1-250 KCMIL GND. (EXISTING)

FROM EXISTING SWITCHGEAR NO. 40

41M1

41M2

41M3

PROPOSED MCC-42

3P, 400A
250A CLF
TVSS
LINE REACTOR 2.5% IMPEDANCE (MIN.)
480 VAC
480 VAC
PHASE SHIFTING ISOLATION XFMR

3P, 400A
250A CLF
TVSS
LINE REACTOR 2.5% IMPEDANCE (MIN.)
480 VAC
480 VAC
PHASE SHIFTING ISOLATION XFMR

3P, 400A
250A CLF
TVSS
LINE REACTOR 2.5% IMPEDANCE (MIN.)
480 VAC
480 VAC
PHASE SHIFTING ISOLATION XFMR

15A CLF
AMPS
RPM
SPEED ADJ.
AFD-1A
RESET
LOR
R ON
G OFF
TDR
START
E-STOP
STOP
ENABLE/ DISABLE
REMOTE/ LOCAL
A REMOTE
B LOCAL
LR
R3
ETM
ANN.
RESET
TEST
SILENCE
AUDIBLE ALARM

15A CLF
AMPS
RPM
SPEED ADJ.
AFD-1B
RESET
LOR
R ON
G OFF
TDR
START
E-STOP
STOP
ENABLE/ DISABLE
REMOTE/ LOCAL
A REMOTE
B LOCAL
LR
R3
ETM
ANN.
RESET
TEST
SILENCE
AUDIBLE ALARM

15A CLF
AMPS
RPM
SPEED ADJ.
AFD-1C
RESET
LOR
R ON
G OFF
TDR
START
E-STOP
STOP
ENABLE/ DISABLE
REMOTE/ LOCAL
A REMOTE
B LOCAL
LR
R3
ETM
ANN.
RESET
TEST
SILENCE
AUDIBLE ALARM

MATCH LINE - FOR CONTINUATION REFERENCE SHEET E-9

42M1B
2-#14, 1-#14 GND & 3-#14 SPARE, 1" C. (EXISTING - SEE NOTE 1)

42M1A
3-250 KCMIL & 1-#1 GND., 3" C. (EXISTING - SEE NOTE 1)

MSH 75 HP

PROPOSED SLUDGE PUMP 1A
FT-RSP-1A

42M1E
8-#14, 1" C. (EXISTING - SEE NOTE 1)

DISCHARGE LINE PRESSURE SWITCH PSH-1A
SOLENOID VALVE PV1-1A
SOLENOID VALVE PV2-1A
E-STOP
DISCHARGE VALVE LIMIT SWITCH LS-1A
SEAL WATER SOLENOID VALVE SOL-1A
SEAL WATER PRESSURE SWITCH PSL-1A

42M2B
2-#14, 1-#14 GND & 3-#14 SPARE, 1" C. (EXISTING - SEE NOTE 1)

42M2A
3-250 KCMIL & 1-#1 GND., 3" C. (EXISTING - SEE NOTE 1)

MSH 75 HP

PROPOSED SLUDGE PUMP 1B
FT-RSP-1B

42M2E
8-#14, 1" C. (EXISTING - SEE NOTE 1)

DISCHARGE LINE PRESSURE SWITCH PSH-1B
SOLENOID VALVE PV1-1B
SOLENOID VALVE PV2-1B
E-STOP
DISCHARGE VALVE LIMIT SWITCH LS-1B
SEAL WATER SOLENOID VALVE SOL-1B
SEAL WATER PRESSURE SWITCH PSL-1B

42M3B
2-#14, 1-#14 GND & 3-#14 SPARE, 1" C. (EXISTING - SEE NOTE 1)

42M3A
3-250 KCMIL & 1-#1 GND., 3" C. (EXISTING - SEE NOTE 1)

MSH 75 HP

PROPOSED SLUDGE PUMP 1C
FT-RSP-1C

42M3E
8-#14, 1" C. (EXISTING - SEE NOTE 1)

DISCHARGE LINE PRESSURE SWITCH PSH-1C
SOLENOID VALVE PV1-1C
SOLENOID VALVE PV2-1C
E-STOP
DISCHARGE VALVE LIMIT SWITCH LS-1C
SEAL WATER SOLENOID VALVE SOL-1C
SEAL WATER PRESSURE SWITCH PSL-1C

42M8A
TO SCANNER 41

NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH TO THE PROPOSED EQUIPMENT SHOWN.
2. EXISTING 400AF, 225AT CIRCUIT BREAKER. THE MAGNETIC TRIP SETTING SHALL BE ADJUSTED TO THE "LO" POSITION.
3. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
4. ISOLATION TRANSFORMER SHALL HAVE:
   FOR 12-PULSE DRIVE - 480 VAC, DELTA CONFIGURED PRIMARY & TWO (2) 480 VAC ZIG ZAG (WYE) CONFIGURED SECONDARIES. THE TWO (2) SECONDARY ZIG ZAG CONNECTIONS SHALL BE PHASE SHIFTED 30 DEG. FROM ONE ANOTHER FOR INPUT TO THE AFD.

   FOR 18-PULSE DRIVE - 480 VAC, DELTA CONFIGURED PRIMARY & THREE (3) 480 VAC ZIG ZAG (WYE) CONFIGURED SECONDARIES. THE THREE (3) WYE/ZIG ZAG CONNECTIONS SHALL BE PHASE SHIFTED 20 DEG. FROM ONE ANOTHER FOR INPUT TO THE AFD.

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PROPOSED ELECTRICAL ONE-LINE DIAGRAM

(SHEET 1 OF 2)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
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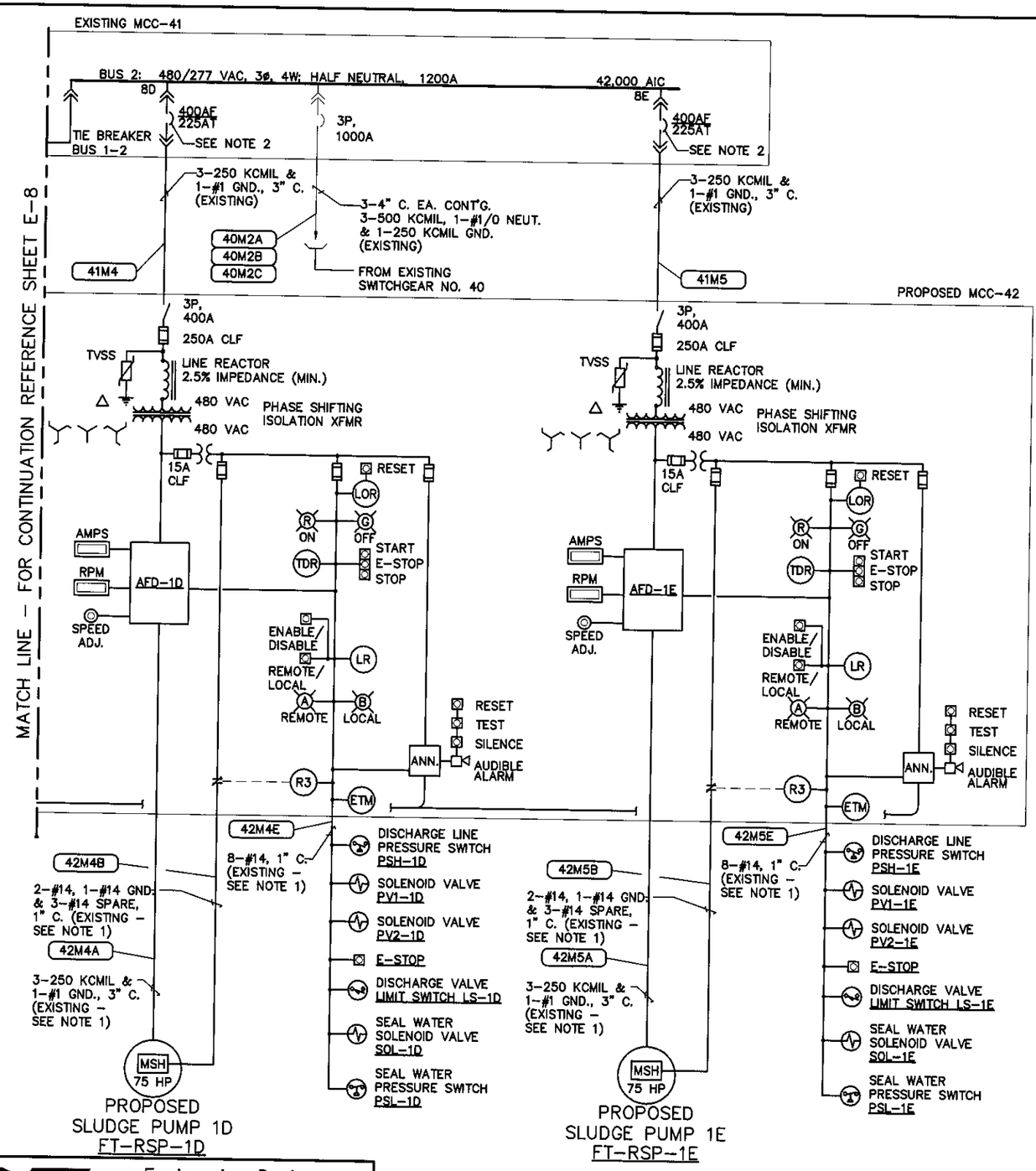
DES: BEH
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
PROPOSED ELECTRICAL ONE-LINE DIAGRAM (1 OF 2)

W.O. 5041
SHEET E-8/16
OF 27

TPB3-17



LOAD SUMMARY
480/277 VAC, 3ø, 4W

LOAD	FULL LOAD AMPERES	OPERATING LOAD AMPERES	FULL LOAD KVA	OPERATING LOAD KVA
EXISTING LOAD OF MCC-41 BUS "A"	574.4	355.9	477.5	295.9
EXISTING LOADS TO BE REMOVED:				
SLUDGE PUMP 1A (125 HP)	156.0	156.0	129.7	129.7
SLUDGE PUMP 1B (125 HP)	156.0	156.0	129.7	129.7
SLUDGE PUMP 1C (125 HP)	156.0		129.7	
SUB-TOTAL	468.0	312.0	389.1	259.4
PROPOSED LOADS TO BE ADDED:				
SLUDGE PUMP 1A (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 1B (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 1C (75 HP)	96.0		79.8	
SUB-TOTAL	288.0	192.0	239.4	159.6
NET LOAD TOTAL OF MCC-41 BUS "A"	394.4	235.9	327.8	196.1
EXISTING LOAD OF MCC-41 BUS "B"	374.0	373.0	310.9	310.0
EXISTING LOADS TO BE REMOVED:				
SLUDGE PUMP 1D (125 HP)	156.0	156.0	129.7	129.7
SLUDGE PUMP 1E (125 HP)	156.0	156.0	129.7	129.7
SUB-TOTAL	312.0	312.0	259.4	259.4
PROPOSED LOADS TO BE ADDED:				
SLUDGE PUMP 1A (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 1B (75 HP)	96.0	96.0	79.8	79.8
SUB-TOTAL	192.0	192.0	159.6	159.6
NET LOAD TOTAL OF MCC-41 BUS "B"	254.0	253.0	211.1	210.2
NET LOAD TOTAL OF MCC-41	648.4	488.9	538.9	406.3

NOTES:

1. EXISTING LOADS ON MCC-41 ARE BASED ON A LOAD STUDY CONDUCTED IN 1993. NO LOADS HAVE BEEN ADDED SINCE THIS LOAD STUDY WAS CONDUCTED.
2. LOAD SUMMARY REFLECTS OPERATING CONDITIONS IN WHICH A TOTAL OF FOUR (4) SLUDGE PUMPS OPERATE AT ONE TIME. ONE (1) SLUDGE PUMP SERVES AS A STAND-BY UNIT.

NOTES:

1. EXISTING CONDUIT & CONDUCTORS, EXTEND CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH TO THE PROPOSED EQUIPMENT SHOWN.
2. EXISTING 400AF, 225AT CIRCUIT BREAKER. THE MAGNETIC TRIP SETTING SHALL BE ADJUSTED TO THE "LO" POSITION.
3. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
4. ISOLATION TRANSFORMER SHALL HAVE:
   FOR 12-PULSE DRIVE - 480 VAC, DELTA CONFIGURED PRIMARY & TWO (2) 480 VAC ZIG ZAG (WYE) CONFIGURED SECONDARIES. THE TWO (2) SECONDARY ZIG ZAG CONNECTIONS SHALL BE PHASE SHIFTED 30 DEG. FROM ONE ANOTHER FOR INPUT TO THE AFD.

   FOR 18-PULSE DRIVE - 480 VAC, DELTA CONFIGURED PRIMARY & THREE (3) 480 VAC ZIG ZAG (WYE) CONFIGURED SECONDARIES. THE THREE (3) WYE/ZIG ZAG CONNECTIONS SHALL BE PHASE SHIFTED 20 DEG. FROM ONE ANOTHER FOR INPUT TO THE AFD.

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PROPOSED ELECTRICAL ONE-LINE DIAGRAM
(SHEET 2 OF 2)

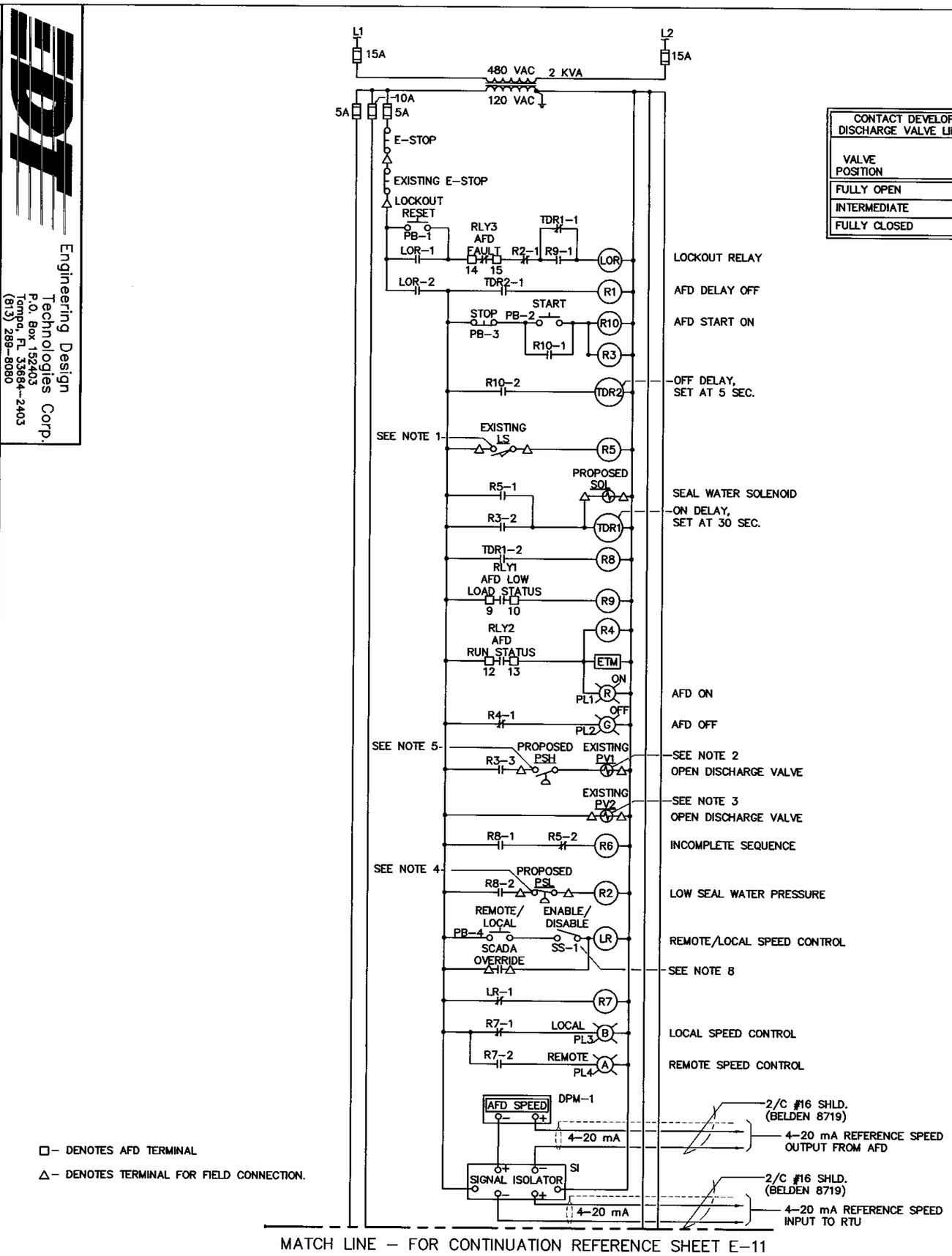
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
PROPOSED ELECTRICAL ONE-LINE DIAGRAM (2 OF 2)

W.O. 5041
SHEET E-9/17
OF 27



CONTACT DEVELOPMENT CHART DISCHARGE VALVE LIMIT SWITCH (LS)		
VALVE POSITION	CONTACT POSITION	
	OPEN	CLOSED
FULLY OPEN		X
INTERMEDIATE		X
FULLY CLOSED	X	

□– DENOTES AFD TERMINAL

△– DENOTES TERMINAL FOR FIELD CONNECTION.

MATCH LINE – FOR CONTINUATION REFERENCE SHEET E-11

AFD CONTROL SCHEMATIC

SHEET 1 OF 2

(IDENTICAL FOR SLUDGE PUMP 1A THROUGH SLUDGE PUMP 1E)

NOTES:

1. EXISTING DISCHARGE VALVE LIMIT SWITCH CLOSES WHEN DISCHARGE VALVE OPENS & OPENS WHEN THE DISCHARGE VALVE FULLY CLOSES. REFERENCE CONTACT DEVELOPMENT CHART.
2. EXISTING SOLENOID PILOT VALVE PV1 IS FOR THE PNEUMATIC OPERATION OF THE DISCHARGE VALVE. THE DISCHARGE VALVE OPENS WHEN PV1 IS ENERGIZED AND CLOSES WHEN PV1 IS DE-ENERGIZED.
3. EXISTING SOLENOID PILOT VALVE PV2 IS FOR THE RAPID CLOSING OF THE DISCHARGE VALVE. DISCHARGE VALVE CLOSES RAPIDLY WHEN PV2 IS DE-ENERGIZED.
4. PROPOSED SEAL WATER PRESSURE SWITCH CLOSES ON LOW PRESSURE
5. PROPOSED DISCHARGE LINE PRESSURE SWITCH CLOSES ON REACHING PUMPING PRESSURE.
6. THE SHIELD AND DRAIN WIRE FOR EACH ANALOG SIGNAL (4-20 mA) SHALL BE GROUNDED ON ONE END ONLY. THE SHIELD AND DRAIN WIRE AT THE OTHER END SHALL BE NEATLY TRIMMED AND TAPED w/ (2) LAYERS OF VINYL ELECTRICAL TAPE (SCOTCH 33+).
7. ENSURE FINAL LOGIC DESIGN DOES NOT CAUSE LOCKOUT RELAY (LOR) TRIP UNDER NORMAL START/STOP CONDITIONS.
8. MOUNT ENABLE/DISABLE SWITCH (SS-1) FOR REMOTE/LOCAL SPEED CONTROL INSIDE OF ENCLOSURE.
9. A PROGRAMMABLE LOGIC CONTROLLER (PLC) MAY BE PROVIDED IN EACH CABINET FOR THE CONTROL LOGIC SHOWN IN LIEU OF UTILIZING CONTROL RELAYS. PLC MUST BE SUBMITTED FOR APPROVAL.

DEVICE LEGEND

AFD	ADJUSTABLE FREQUENCY DRIVE
ESD	EMERGENCY SHUTDOWN SWITCH
E-STOP	EMERGENCY STOP
ETM	ELAPSE TIME METER
LOR	LOCKOUT RELAY
LR	MECHANICAL LATCHING RELAY
LS	DISCHARGE VALVE LIMIT SWITCH
PSH	DISCHARGE LINE PRESSURE SWITCH
PSL	SEAL WATER PRESSURE SWITCH
PV1	SOLENOID PILOT VALVE PV1
PV2	SOLENOID PILOT VALVE PV2
R	RELAY
RTU	REMOTE TELEMETRY UNIT
SOL	SEAL WATER SOLENOID VALVE
TDR	TIME DELAY RELAY

TPD3-18

No.	DATE	REVISIONS
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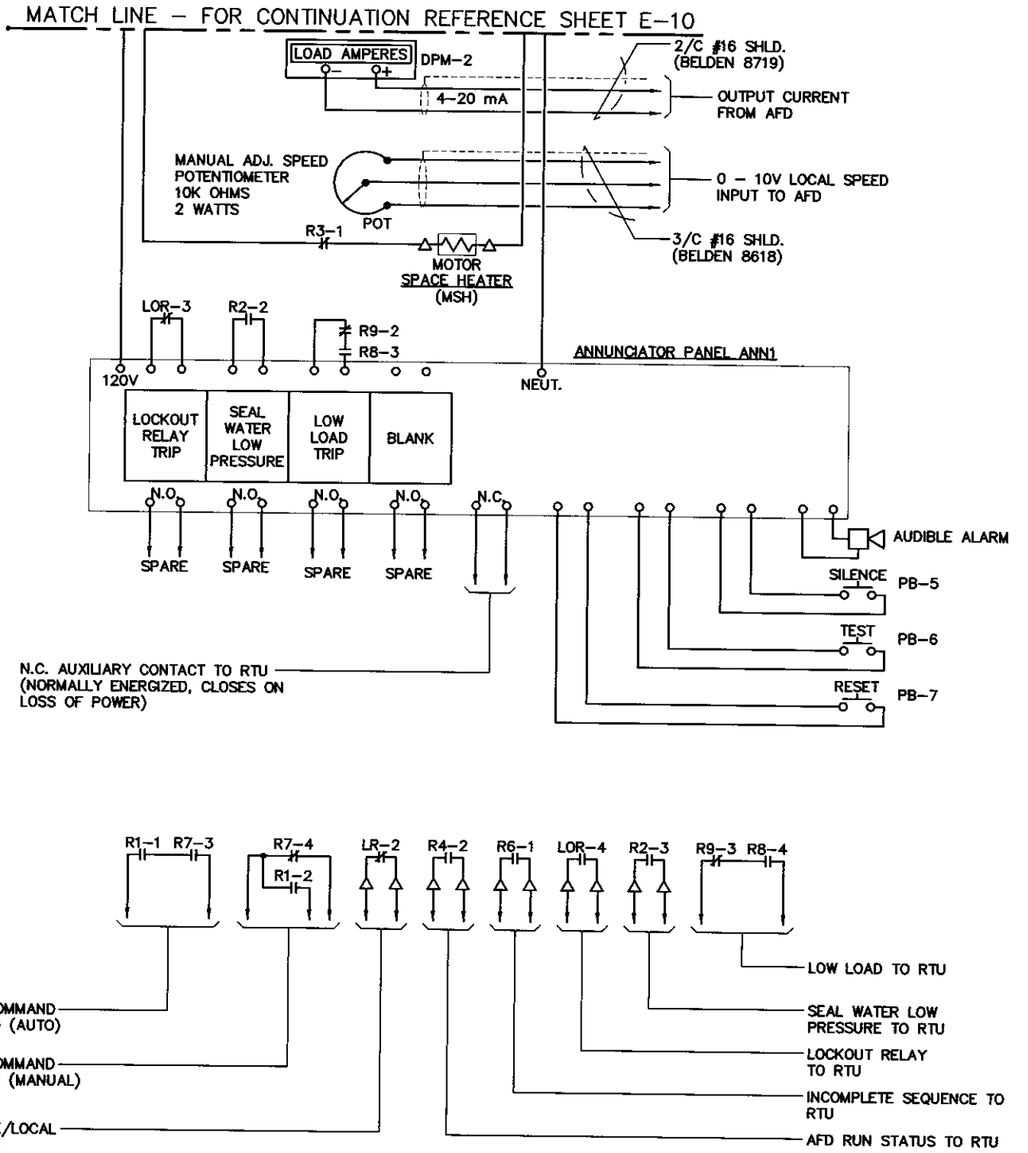
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CITY of TAMPA
ADVANCED WASTEWATER TREATMENT PLANT
HOWARD F. CURREN

RETURN SLUDGE PUMPING STATION
REHABILITATION PHASE 3
AFD CONTROL SCHEMATIC (1 OF 2)

W.O. 5041
SHEET E-10/18
OF 27

CONTACT DEVELOPMENT CHART DISCHARGE VALVE LIMIT SWITCH (LS)		
VALVE POSITION	CONTACT POSITION OPEN	CLOSED
FULLY OPEN		X
INTERMEDIATE		X
FULLY CLOSED	X	



AFD CONTROL SCHEMATIC

SHEET 2 OF 2
(IDENTICAL FOR SLUDGE PUMP 1A THROUGH SLUDGE PUMP 1E)

NOTES:

1. EXISTING DISCHARGE VALVE LIMIT SWITCH CLOSES WHEN DISCHARGE VALVE OPENS & OPENS WHEN THE DISCHARGE VALVE FULLY CLOSES. REFERENCE CONTACT DEVELOPMENT CHART.
2. EXISTING SOLENOID PILOT VALVE PV1 IS FOR THE PNEUMATIC OPERATION OF THE DISCHARGE VALVE. THE DISCHARGE VALVE OPENS WHEN PV1 IS ENERGIZED AND CLOSES WHEN PV1 IS DE-ENERGIZED.
3. EXISTING SOLENOID PILOT VALVE PV2 IS FOR THE RAPID CLOSING OF THE DISCHARGE VALVE. DISCHARGE VALVE CLOSES RAPIDLY WHEN PV2 IS DE-ENERGIZED.
4. PROPOSED SEAL WATER PRESSURE SWITCH CLOSES ON LOW PRESSURE
5. PROPOSED DISCHARGE LINE PRESSURE SWITCH CLOSES ON REACHING PUMPING PRESSURE.
6. THE SHIELD AND DRAIN WIRE FOR EACH ANALOG SIGNAL (4-20 mA) SHALL BE GROUNDED ON ONE END ONLY. THE SHIELD AND DRAIN WIRE AT THE OTHER END SHALL BE NEATLY TRIMMED AND TAPED w/ (2) LAYERS OF VINYL ELECTRICAL TAPE (SCOTCH 33+).

□– DENOTES AFD TERMINAL

△– DENOTES TERMINAL FOR FIELD CONNECTION.

DEVICE LEGEND

AFD	ADJUSTABLE FREQUENCY DRIVE
ESD	EMERGENCY SHUTDOWN SWITCH
E-STOP	EMERGENCY STOP
ETM	ELAPSE TIME METER
LOR	LOCKOUT RELAY
LR	MECHANICAL LATCHING RELAY
LS	DISCHARGE VALVE LIMIT SWITCH
PSH	DISCHARGE LINE PRESSURE SWITCH
PSL	SEAL WATER PRESSURE SWITCH
PV1	SOLENOID PILOT VALVE PV1
PV2	SOLENOID PILOT VALVE PV2
R	RELAY
RTU	REMOTE TELEMETRY UNIT
SOL	SEAL WATER SOLENOID VALVE
TDR	TIME DELAY RELAY

TPB3-19

No.	DATE	REVISIONS
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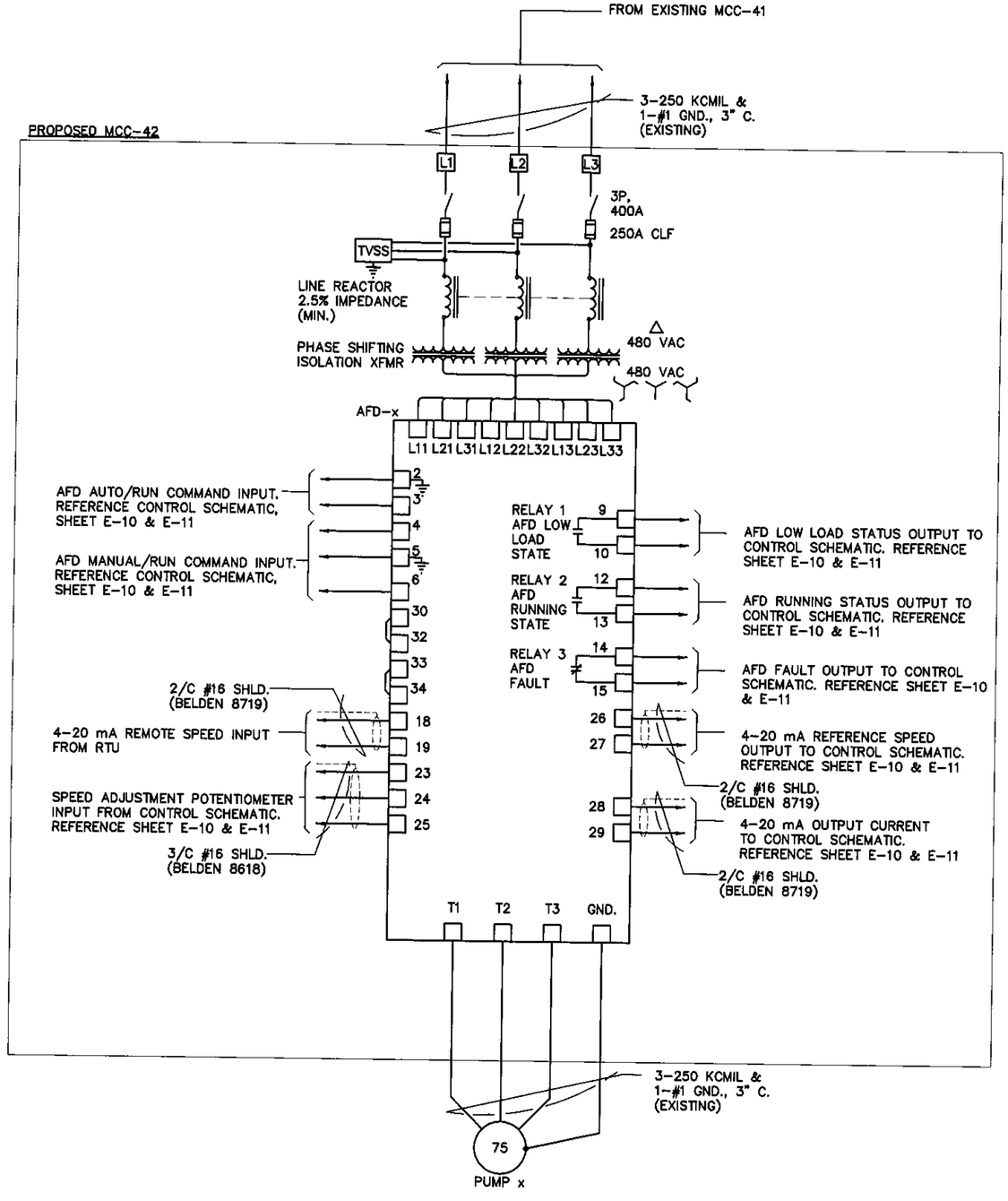
DES: BEH
DRN: RWB
CKD: BEH
DATE: 5/10/99

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION
REHABILITATION PHASE 3
AFD CONTROL SCHEMATIC (2 OF 2)

W.O. 5041
SHEET E-11/19
OF 27

TPB3-20



NOTES:

1. REPLACE x WITH THE FOLLOWING:
   - A FOR SLUDGE PUMP 1A
   - B FOR SLUDGE PUMP 1B
   - C FOR SLUDGE PUMP 1C
   - D FOR SLUDGE PUMP 1D
   - E FOR SLUDGE PUMP 1E
2. ALL CONTROL WIRING SHALL BE AWG #14 UNLESS OTHERWISE NOTED.
3. THE ADJUSTABLE FREQUENCY DRIVE AND THE ASSOCIATED COMPONENTS (FUSES, LINE REACTORS, PHASE SHIFTING TRANSFORMER, WIRING, ETC.) SHALL BE SIZED FOR FUTURE INSTALLATION OF A 100 HP VARIABLE TORQUE MOTOR LOAD. THE DRIVE SHALL NOT DEPEND ON ITS OVERLOAD CAPACITY TO OPERATE THE 100 HP LOAD.

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PROPOSED SLUDGE PUMP AFD CONNECTION DIAGRAM

(IDENTICAL FOR SLUDGE PUMP 1A THROUGH SLUDGE PUMP 1E)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: BEH
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

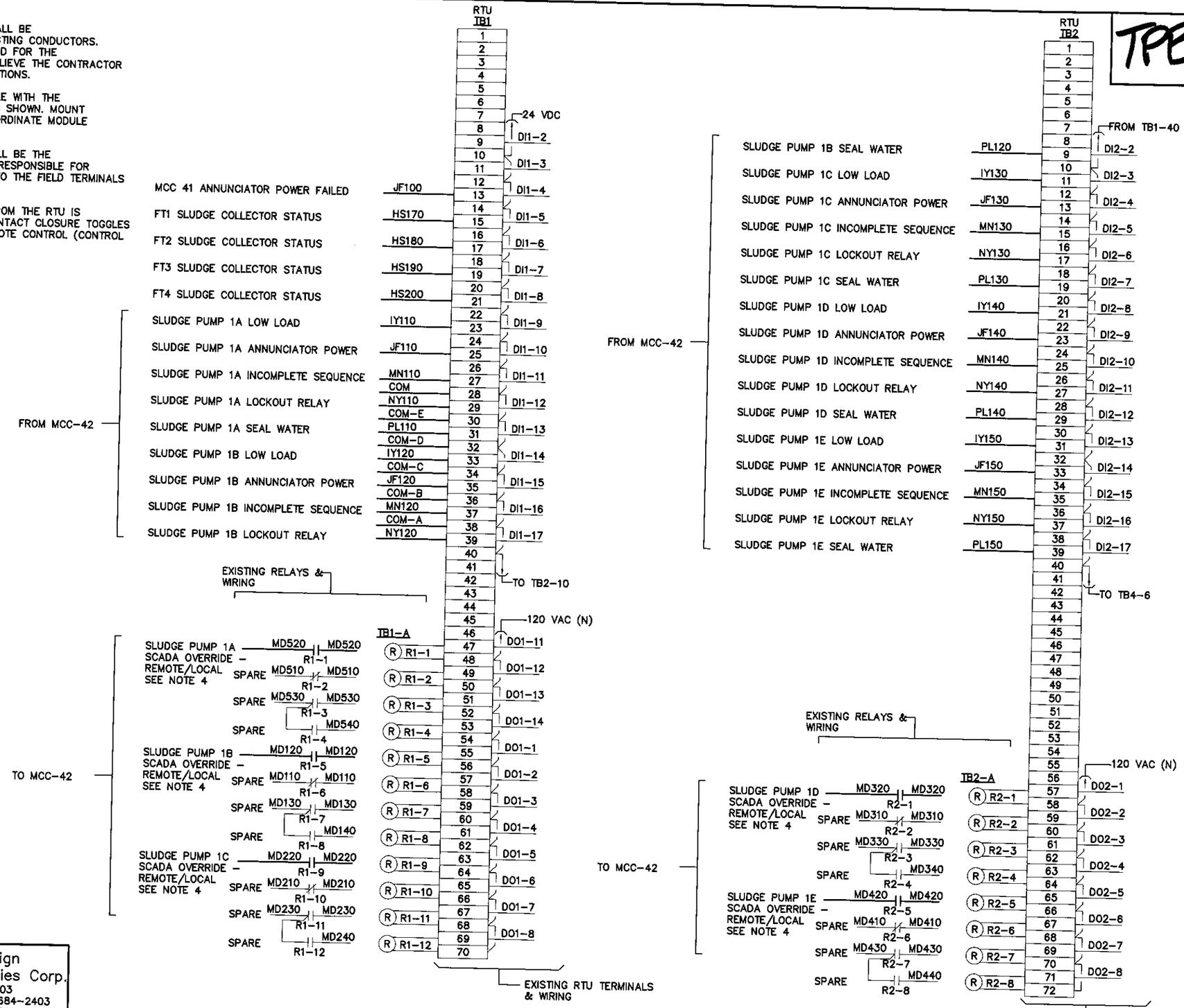
RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
AFD CONNECTION DIAGRAM

W.O. 5041
SHEET E-12/20
OF 27

TPB3-21

NOTES:

1. EXISTING FIELD CONNECTIONS & WIRING TO THE RTU SHALL BE FULLY DOCUMENTED BY CONTRACTOR BEFORE DISCONNECTING CONDUCTORS. EXISTING WIRING & TERMINAL CONNECTIONS ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR VERIFYING EXISTING CONNECTIONS.
2. PROVIDE GE FANUC ANALOG OUTPUT MODULE COMPATIBLE WITH THE EXISTING RTU PLC FOR THE PROPOSED ANALOG OUTPUTS SHOWN. MOUNT ANALOG OUTPUT MODULE IN EXISTING SPARE SLOT. COORDINATE MODULE INSTALLATION & CONNECTIONS WITH OWNER.
3. CONNECTIONS FROM FIELD TERMINALS IN RTU TO PLC WILL BE THE RESPONSIBILITY OF THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPOSED CONNECTIONS FROM THE FIELD DEVICES TO THE FIELD TERMINALS IN THE RTU.
4. SCADA OVERRIDE – REMOTE/LOCAL OUTPUT CONTACT FROM THE RTU IS A MOMENTARY CONTACT CLOSURE. EACH MOMENTARY CONTACT CLOSURE TOGGLES THE AFD SPEED CONTROL FROM LOCAL CONTROL TO REMOTE CONTROL (CONTROL FROM SCADA).



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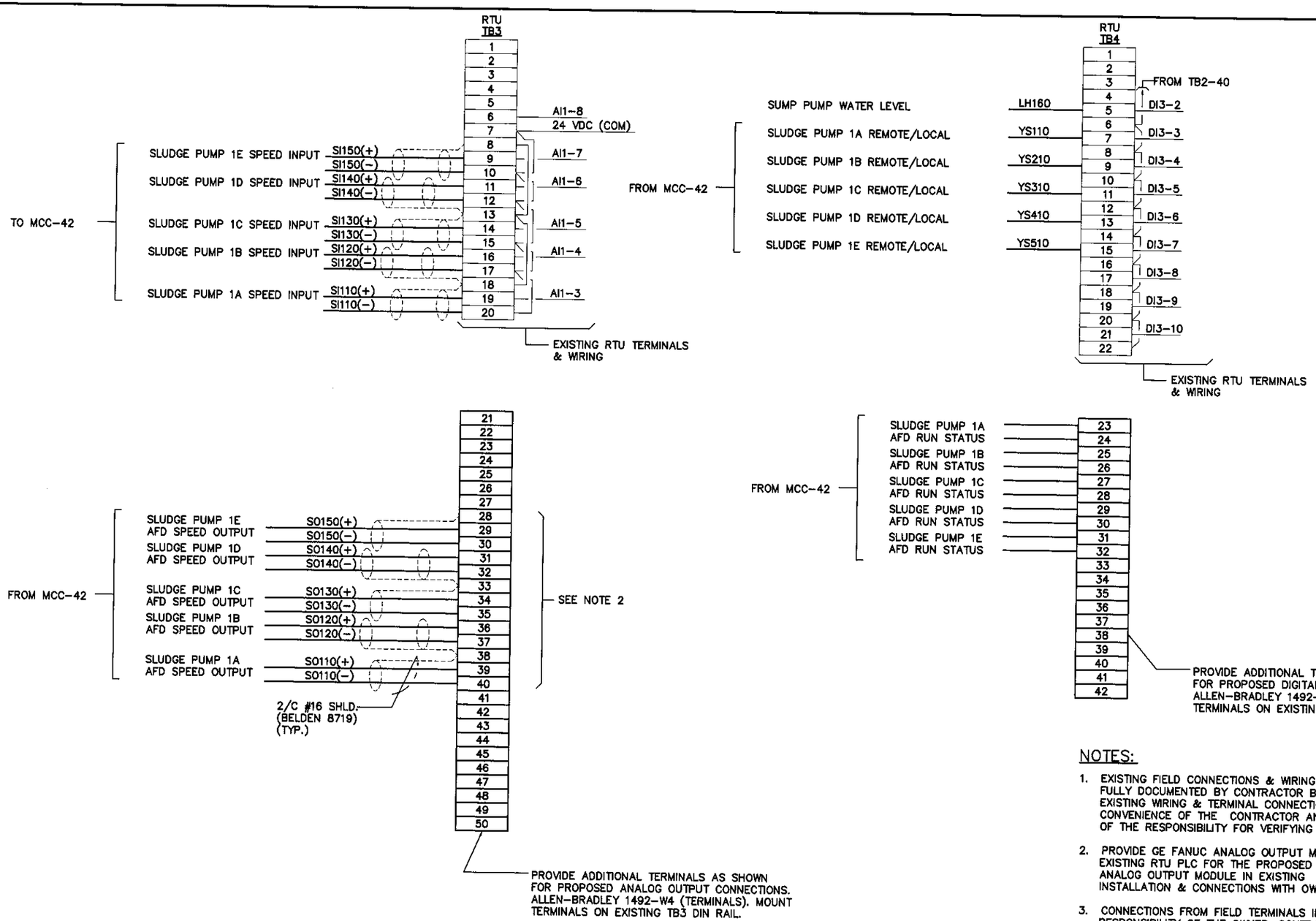
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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
RTU INTERCONNECTION DIAGRAM (1 OF 2)

W.O. 5041
SHEET E-13/21
OF 27

TPB3-22



NOTES:

1. EXISTING FIELD CONNECTIONS & WIRING TO THE RTU SHALL BE FULLY DOCUMENTED BY CONTRACTOR BEFORE DISCONNECTING CONDUCTORS. EXISTING WIRING & TERMINAL CONNECTIONS ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR VERIFYING EXISTING CONNECTIONS.
2. PROVIDE GE FANUC ANALOG OUTPUT MODULE COMPATIBLE WITH THE EXISTING RTU PLC FOR THE PROPOSED ANALOG OUTPUTS SHOWN. MOUNT ANALOG OUTPUT MODULE IN EXISTING SPARE SLOT. COORDINATE MODULE INSTALLATION & CONNECTIONS WITH OWNER.
3. CONNECTIONS FROM FIELD TERMINALS IN RTU TO PLC WILL BE THE RESPONSIBILITY OF THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPOSED CONNECTIONS FROM THE FIELD DEVICES TO THE FIELD TERMINALS IN THE RTU.
4. SCADA OVERRIDE – REMOTE/LOCAL OUTPUT CONTACT FROM THE RTU IS A MOMENTARY CONTACT CLOSURE. EACH MOMENTARY CONTACT CLOSURE TOGGLES THE AFD SPEED CONTROL FROM LOCAL CONTROL TO REMOTE CONTROL (CONTROL FROM SCADA).

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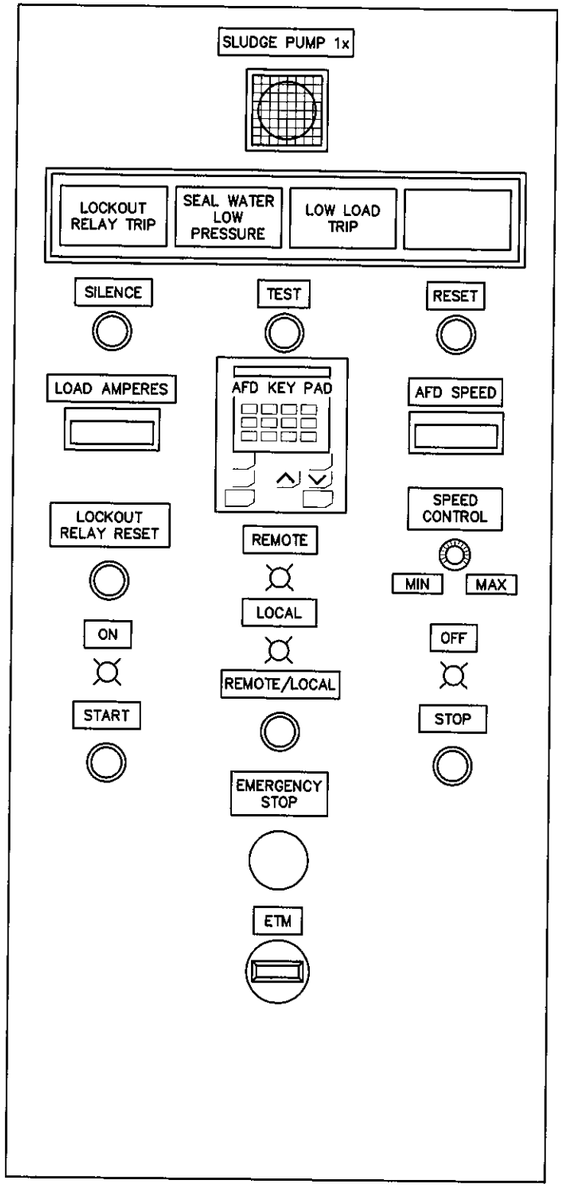
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
RTU INTERCONNECTION DIAGRAM (2 OF 2)

W.O. 5041
SHEET E-14/22
OF 27

TP33-23



NOTES:

1. REPLACE x WITH THE FOLLOWING:

   A FOR SLUDGE PUMP 1A

   B FOR SLUDGE PUMP 1B

   C FOR SLUDGE PUMP 1C

   D FOR SLUDGE PUMP 1D

   E FOR SLUDGE PUMP 1E

2. THE DOOR ON EACH AFD CABINET IN MCC-42 SHALL BE HINGED ON THE RIGHT SIDE OF THE CABINET TO AVOID DOOR OPENING RESTRICTIONS FROM EXISTING BUILDING SUPPORT COLUMNS.

PROPOSED AFD CABINET ELEVATION

(TYPICAL FOR SLUDGE PUMPS 1A – 1E)

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION
REHABILITATION PHASE 3
PROPOSED AFD CABINET ELEVATION

W.O. 5041
SHEET E-15/23
OF 27

TPB3-24

COMPONENT SCHEDULE

LABEL	DESCRIPTION	MANUFACTURER	MODEL	REMARKS
SOL-1A – SOL-1E	SEAL WATER SOLENOID VALVE	ASCO	EF8215	120 VAC, 2-WAY, N.C.
PSH-1A – PSH-1E	DISCHARGE LINE PRESSURE SWITCH	NEO-DYN	123P52C6R	EXPLOSIONPROOF w/ ADJ. RANGE 1 PSI DEC. TO 30 PSI INCR.
PSL-1A – PSL-1E	SEAL WATER PRESSURE SWITCH	NEO-DYN	132P58C6GHIJ	EXPLOSIONPROOF w/ ADJ. RANGE 1 PSI DEC. TO 30 PSI INCR.
AFD-1A – AFD-1E	RETURN SLUDGE PUMP ADJUSTABLE FREQ. DRIVE	ROBICON (BASIS OF DESIGN)	454GT	VARIABLE TORQUE, 100 HP, 130A INPUT, 124A OUTPUT
PL1	PILOT LIGHT (RED LENS)	SQUARE D	SKT-1R9	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
PL2	PILOT LIGHT (GREEN LENS)	SQUARE D	SKT-1G9	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
PL3	PILOT LIGHT (BLUE LENS)	SQUARE D	SKT-1L9	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
PL4	PILOT LIGHT (AMBER LENS)	SQUARE D	SKT-1A9	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
ETM	ELAPSED TIME METER	VEEDER-ROOT	87F1089 TYPE 77 9536-201	RECTANGULAR, AC, SCREW TERMINALS
DPM-1 (AFD SPEED), DPM-2 (LOAD AMPERES)	DIGITAL PANEL METER	NEWPORT	558A w/ NEMA 4 COVER SPC4	3 1/2-DIGITAL DISPLAY, 4-20 mA INPUT, LOOP POWERED
SI	SIGNAL ISOLATOR	MOORE INDUSTRIES	FCT/PRG/PRG/U/-RF [DIN]	FIELD CONFIGURABLE, 120 VAC POWER PROGRAMMABLE INPUT & OUTPUT
POT	POTENTIOMETER	CLAROSTAT	73JA	10K OHM, 2 WATT, 10 TURN POTENTIOMETER, w/ DIAL PLATE SS. SHAFT & GRADUATED DIAL
LOR, R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	CONTROL RELAYS	POTTER & BRUMFIELD	KUP17AC9-120 w/ 27E867 SOCKET, 20C254 HOLD DOWN SPRING & 40G432 INSULATOR PAD	120 VAC COIL, 10A CONTACTS, 4PDT
LR	LATCHING RELAY	POTTER & BRUMFIELD	KUR11A15-120 w/ 27E893 SOCKET & 20C318 HOLD DOWN SPRING	120 VAC COIL, 10A CONTACTS, 2PDT
TDR1, TDR2	TIME DELAY RELAY	POTTER & BRUMFIELD	CNM5 w/ 27E892 SOCKET	120 VAC COIL, 10A CONTACTS, ON DELAY OR OFF DELAY SETTABLE
E-STOP	EMERGENCY STOP	SQUARE D	SKR5R05H6	MOMENTARY PUSH BUTTON, NEMA 4X, WITH 2 1/4" RED MUSHROOM OPERATOR & LEGEND PLATE
PB-1, PB-2, PB-4, PB-5, PB-6, PB-7	PUSH BUTTON	SQUARE D	SKR1BH5	MOMENTARY PUSH BUTTON, NEMA 4X, w/ LEGEND PLATE
PB-3	PUSH BUTTON	SQUARE D	SKR1BH6	MOMENTARY PUSH BUTTON, NEMA 4X, w/ LEGEND PLATE
SS-1	SELECTOR SWITCH (ENABLE/DISABLE)	SQUARE D	SKS11BH1	2 POSITION SELECTOR SWITCH, NEMA 4X, w/ LEGEND PLATE
ANN-1	ANNUNCIATOR PANEL	RONAN	X11 SERIES	SOLID STATE WITH ALARM HORN & AUXILIARY RELAY CONTACT OUTPUTS. PROVIDE TERMINAL CONNECTIONS FOR SILENCE, TEST & RESET PUSH BUTTONS.
T1	CONTROL TRANSFORMER	SQUARE D	TF2000D1	2 KVA w/ FUSE CLIPS, 480V PRIMARY/120V SECONDARY
TVSS	LIGHTNING/SURGE ARRESTER	ADVANCED PROTECTION TECHNOLOGIES	TE/5XF	480 VAC, 3ø

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
ELECTRICAL COMPONENT SCHEDULE

W.O. 5041
SHEET E-16/24
OF 27

TPB3-25

EXISTING CONDUIT / CONDUCTOR SCHEDULE

CONDUIT NO.	COND. SIZE	NO. WIRES	WIRE SIZE	FROM	TO	REMARKS
40M1A	4"	3	500 KCMIL	MCC-40	MCC-41 (BUS 1)	
		1	#1/0 NEUT.			
		1	250 KCMIL GND.			
40M1B	4"	3	500 KCMIL	MCC-40	MCC-41 (BUS 1)	
		1	#1/0 NEUT.			
		1	250 KCMIL GND.			
40M1C	4"	3	500 KCMIL	MCC-40	MCC-41 (BUS 1)	
		1	#1/0 NEUT.			
		1	250 KCMIL GND.			
40M2A	4"	3	500 KCMIL	MCC-40	MCC-41 (BUS 2)	
		1	#1/0 NEUT.			
		1	250 KCMIL GND.			
40M2B	4"	3	500 KCMIL	MCC-40	MCC-41 (BUS 2)	
		1	#1/0 NEUT.			
		1	250 KCMIL GND.			
40M2C	4"	3	500 KCMIL	MCC-40	MCC-41 (BUS 2)	
		1	#1/0 NEUT.			
		1	250 KCMIL GND.			
41M1	3"	3	250 KCMIL	MCC-41	PROPOSED MCC-42 (SLUDGE PUMP 1A)	
		1	#1 GND.			
41M2	3"	3	250 KCMIL	MCC-41	PROPOSED MCC-42 (SLUDGE PUMP 1B)	
		1	#1 GND.			
41M3	3"	3	250 KCMIL	MCC-41	PROPOSED MCC-42 (SLUDGE PUMP 1C)	
		1	#1 GND.			
41M4	3"	3	250 KCMIL	MCC-41	PROPOSED MCC-42 (SLUDGE PUMP 1D)	
		1	#1 GND.			
41M5	3"	3	250 KCMIL	MCC-41	PROPOSED MCC-42 (SLUDGE PUMP 1E)	
		1	#1 GND.			
42M1A	3"	3	250 KCMIL	MCC-42	MOTOR FT-RSP-1A	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#1 GND.			
42M1B	1"	2	#14	MCC-42	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
42M1E	1"	8	#14	MCC-42	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
42M1F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
42M2A	3"	3	250 KCMIL	MCC-42	MOTOR FT-RSP-2A	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#1 GND.			
42M2B	1"	2	#14	MCC-42	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
42M2E	1"	8	#14	MCC-42	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
42M2F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
42M3A	3"	3	250 KCMIL	MCC-42	MOTOR FT-RSP-3A	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#1 GND.			
42M3B	1"	2	#14	MCC-42	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
42M3E	1"	8	#14	MCC-42	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3

NOTES:

1. THE CONDUITS & CONDUCTORS SHOWN ON THIS DRAWING ARE EXISTING & SHALL BE USED IN THE PROPOSED INSTALLATION.
2. EXISTING CONDUITS ARE PROVIDED FOR REFERENCE ONLY. CONDUIT SIZE, CONDUCTOR SIZE, & THE NUMBER OF CONDUCTORS ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. EXISTING CONDUIT & CONDUCTORS SHALL BE EXTENDED & MODIFIED AS NECESSARY TO CONNECT TO PROPOSED EQUIPMENT. PROVIDE ADDITIONAL CONDUIT & CONDUCTOR LENGTHS AS REQUIRED.
4. NEATLY COIL & TAPE SPARE CONDUCTORS.
5. DISCONNECT, NEATLY COIL & TAPE CONDUCTORS FOR SPEED CONTROL SWITCH (LP-41 CKT. #15) & UPDATE LP-41 PANELBOARD DIRECTORY. 120 VAC TO RTU (LP-41 CKT. #16) SHALL REMAIN.
6. TERMINATE CONDUIT FROM PROPOSED JUNCTION BOX INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
7. ALL CONDUCTOR SPLICES SHALL BE IN NEMA 4X STAINLESS STEEL ENCLOSURES, SPLICED CONDUCTORS NUMBERING MORE THAN SIX (6) SHALL BE SPLICED USING TERMINAL BLOCKS.

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION REHABILITATION PHASE 3
CONDUIT SCHEDULE

W.O. 5041
SHEET E-17/25
OF 27

TP33-26

EXISTING CONDUIT / CONDUCTOR SCHEDULE

CONDUIT NO.	COND. SIZE	NO. WIRES	WIRE SIZE	FROM	TO	REMARKS
42M3F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
42M4A	3"	3	250 KCMIL	MCC-42	MOTOR FT-RSP-4A	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#1 GND.			
42M4B	1"	2	#14	MCC-42	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
42M4E	1"	8	#14	MCC-42	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
42M4F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
42M5A	3"	3	250 KCMIL	MCC-42	MOTOR FT-RSP-5A	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#1 GND.			
42M5B	1"	2	#14	MCC-42	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
42M5E	1"	8	#14	MCC-42	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
42M5F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
42M8	2 1/2"	51	#14	MCC-42	SCANNER 41 (MCC-41)	SEE NOTE 3. TERMINATE CONDUIT IN PULL BOX.
		9	2/C #16 SHLD.			
42M51	3/4"	2	#12	RTU	LP-41	SEE NOTE 3 & 5. TERMINATE CONDUIT IN PULL BOX.
		1	#12 GND.			
		1	#12 SPARE			

NOTES:

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2. EXISTING CONDUITS ARE PROVIDED FOR REFERENCE ONLY. CONDUIT SIZE, CONDUCTOR SIZE, & THE NUMBER OF CONDUCTORS ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. EXISTING CONDUIT & CONDUCTORS SHALL BE EXTENDED & MODIFIED AS NECESSARY TO CONNECT TO PROPOSED EQUIPMENT. PROVIDE ADDITIONAL CONDUIT & CONDUCTOR LENGTHS AS REQUIRED.
4. NEATLY COIL & TAPE SPARE CONDUCTORS.
5. DISCONNECT, NEATLY COIL & TAPE CONDUCTORS FOR SPEED CONTROL SWITCH (LP-41 CKT. #15) & UPDATE LP-41 PANELBOARD DIRECTORY. 120 VAC TO RTU (LP-41 CKT. #16) SHALL REMAIN.
6. TERMINATE CONDUIT FROM PROPOSED JUNCTION BOX INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION
REHABILITATION PHASE 3
CONDUIT SCHEDULE

W.O. 5041
SHEET
E-18/26
OF 27

TPB3-27

PROPOSED CONDUIT / CONDUCTOR SCHEDULE

CONDUIT NO.	COND. SIZE	NO. WIRES	WIRE SIZE	FROM	TO	REMARKS
42M1G	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-1A & PSL-1A, SEE NOTES 1, 2 & 4
		1	#14 GND.			
42M1J	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	EXISTING PULL BOX	PROPOSED PSH-1A, EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID VALVES PV1 & PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
42M2G	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-1B & PSL-1B, SEE NOTES 1, 2 & 4
		1	#14 GND.			
42M2J	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	EXISTING PULL BOX	PROPOSED PSH-1B, EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID VALVES PV1 & PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
42M3G	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-1C & PSL-1C, SEE NOTES 1, 2 & 4
		1	#14 GND.			
42M3J	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	EXISTING PULL BOX	PROPOSED PSH-1C, EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID VALVES PV1 & PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
42M4G	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-1D & PSL-1D, SEE NOTES 1, 2 & 4
		1	#14 GND.			
42M4J	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	EXISTING PULL BOX	PROPOSED PSH-1D, EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID VALVES PV1 & PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
42M5G	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-1E & PSL-1E, SEE NOTES 1, 2 & 4
		1	#14 GND.			
42M5J	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	EXISTING PULL BOX	PROPOSED PSH-1E, EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID VALVES PV1 & PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
42M8A	2 1/2"	51	#14	PULL BOX	MCC-42	
		9	2/C #16 SHLD.			
42M50	3"	89	#14	RTU	MCC-42	
		12	2/C #16 SHLD.			
42M51A	3/4"	2	#12	PULL BOX	RTU	
		1	#12 GND.			
		1	#12 SPARE			

NOTES:

1. ROUTE CONDUIT ALONG BASE OF CONCRETE PUMP BASE & SECURE WITH ALUMINUM UNISTRUT & CONDUIT CLAMPS AT INTERVALS NOT TO EXCEED 5'-0".
2. PROVIDE LIQUIDTIGHT FLEXIBLE CONDUIT CONNECTION FROM JUNCTION BOX TO PROPOSED SEAL WATER SOLENOID VALVE & PROPOSED LOW SEAL WATER PRESSURE SWITCH.
3. PROVIDE LIQUIDTIGHT FLEXIBLE CONDUIT CONNECTION FROM EXISTING PULL BOX TO PROPOSED DISCHARGE LINE PRESSURE SWITCH. USE EXISTING LIQUIDTIGHT FLEXIBLE CONDUIT FROM EXISTING PULL BOX TO EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID VALVES PV1 & PV2.
4. INSTALL TERMINAL BLOCKS IN EXISTING CONTROL TERMINAL BOX. TERMINATE EXISTING CONDUCTORS FROM MCC-42 ON TERMINAL BLOCKS. EXTEND NEW CONDUCTORS FROM TERMINAL BLOCKS TO PROPOSED SEAL WATER SOLENOID VALVE & PROPOSED SEAL WATER PRESSURE SWITCH AS SHOWN.
5. INSTALL TERMINAL BLOCKS IN EXISTING CONTROL TERMINAL BOX. TERMINATE EXISTING CONDUCTORS FROM MCC-42 ON TERMINAL BLOCKS. EXTEND NEW CONDUCTORS FROM TERMINAL BLOCKS TO PROPOSED PRESSURE SWITCH & EXISTING LIMIT SWITCH & SOLENOID VALVES PV1 & PV2 AS SHOWN.

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DRN: RWB
CKD: BEH
DATE: 5/10/99

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

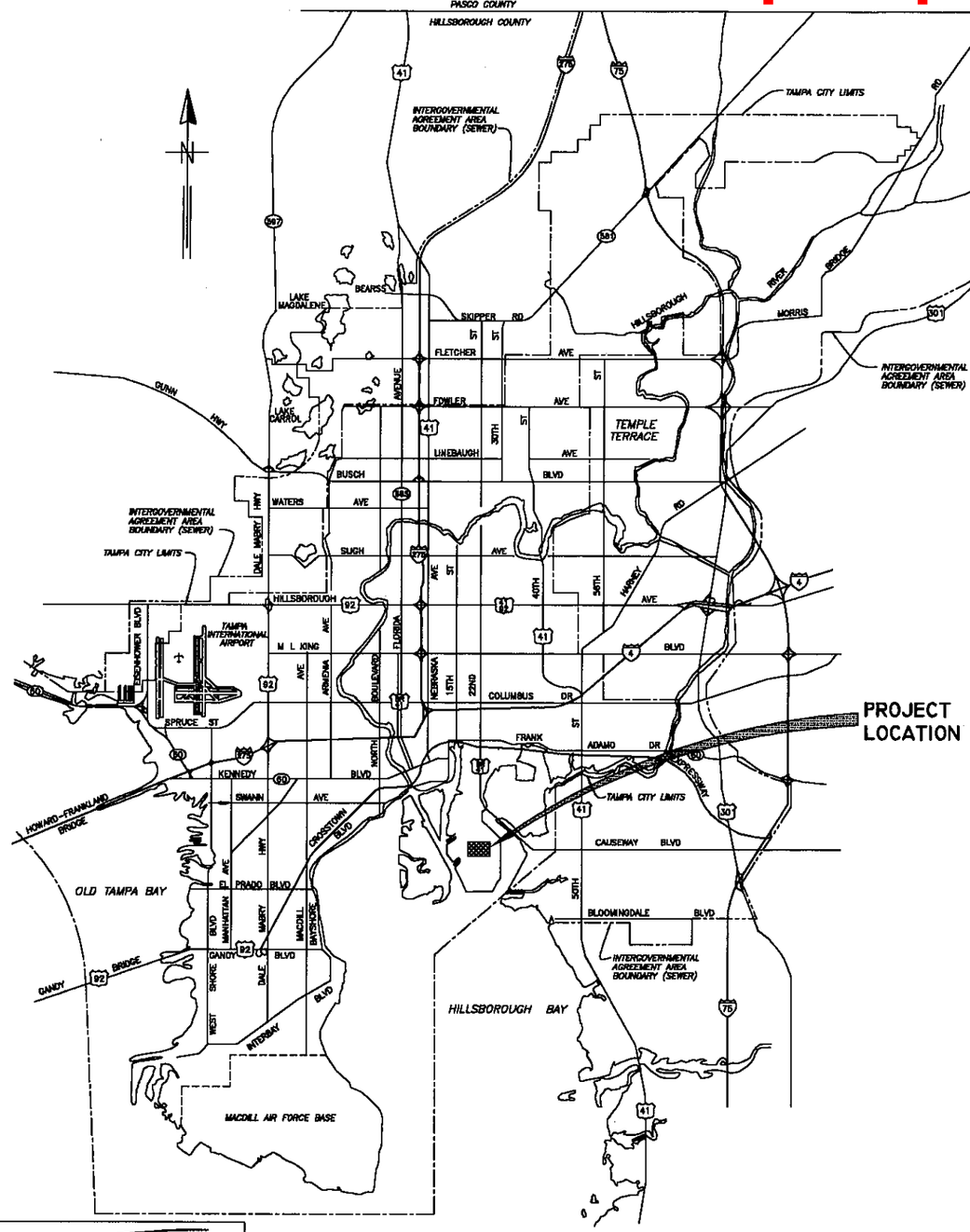
RETURN SLUDGE PUMPING STATION
REHABILITATION PHASE 3
CONDUIT SCHEDULE

W.O. 5041
SHEET
E-19/27
OF 27

RSPS Pump Replacement_Year 2002

TPB5-1

LOCATION MAP



CITY of TAMPA

CITY OF TAMPA FLORIDA
MASCOTTE
ORGANIZED JULY 15 1887

DEPARTMENT OF SANITARY SEWERS

PLANS FOR

RETURN SLUDGE PUMPING STATION No. 3 REHABILITATION

CONTRACT 7-02

ROMAN D KORCHAK, PE #42626
ELECTRICAL SECTION HEAD
DEPARTMENT OF SANITARY SEWERS

HENRY DORZBACK, P.E. #39449
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

RALPH L. METCALF II, P.E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

DES: CL
DRN: BK
CKD: DH
DATE: 2/02

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CITY of TAMPA
HOWARD F. CURREN
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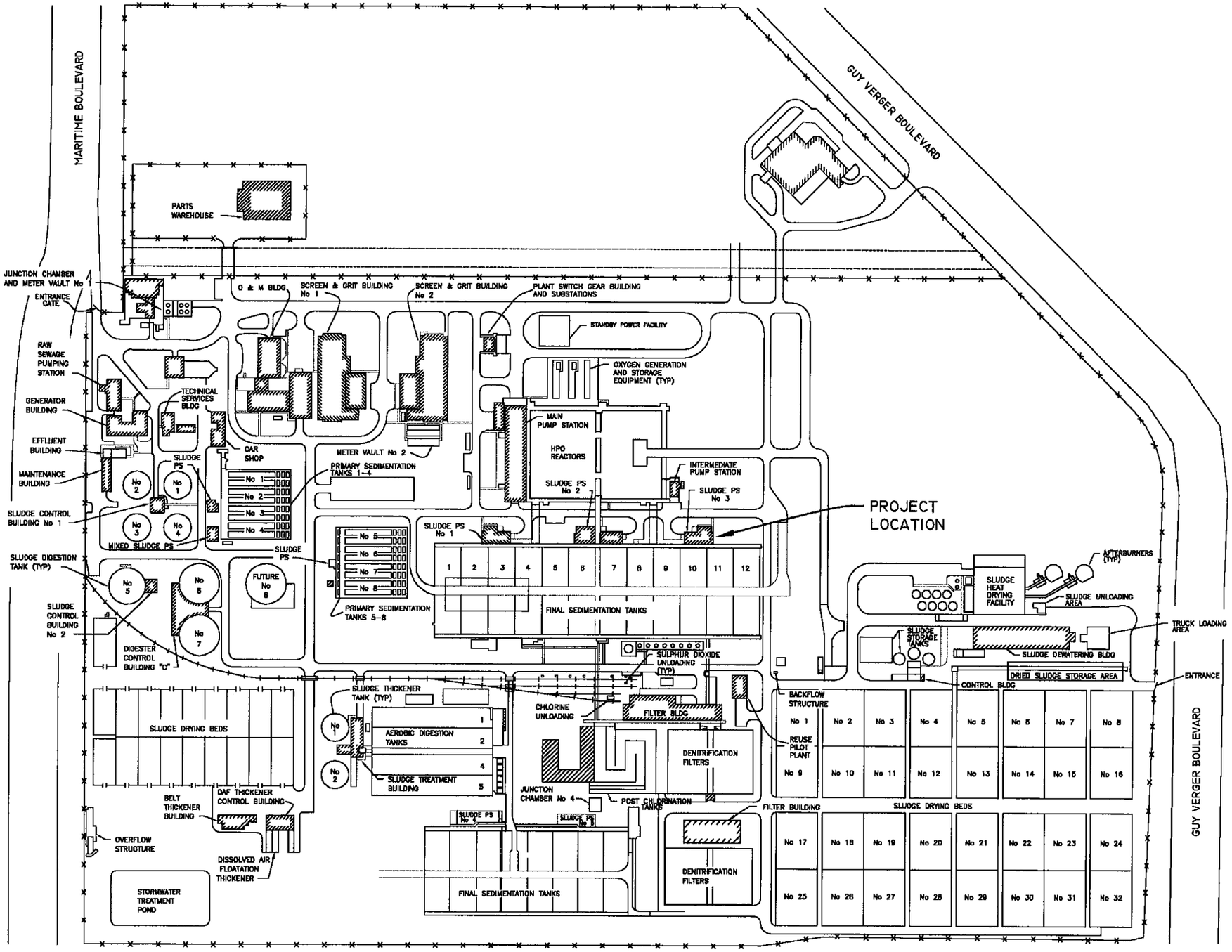
COVER SHEET

W.O. 5061
SHEET 1 OF 33

1/8"

tp\5061

TPB5-2



J-13/
K-13

SEC 30-T28S-R19E
SEC 32-T28S-R19E

INDEX

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1	COVER SHEET
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8	MISCELLANEOUS DETAILS & NOTES
E1/9 - E25/33	ELECTRICAL

1/8"

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DATE: 2/62

CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
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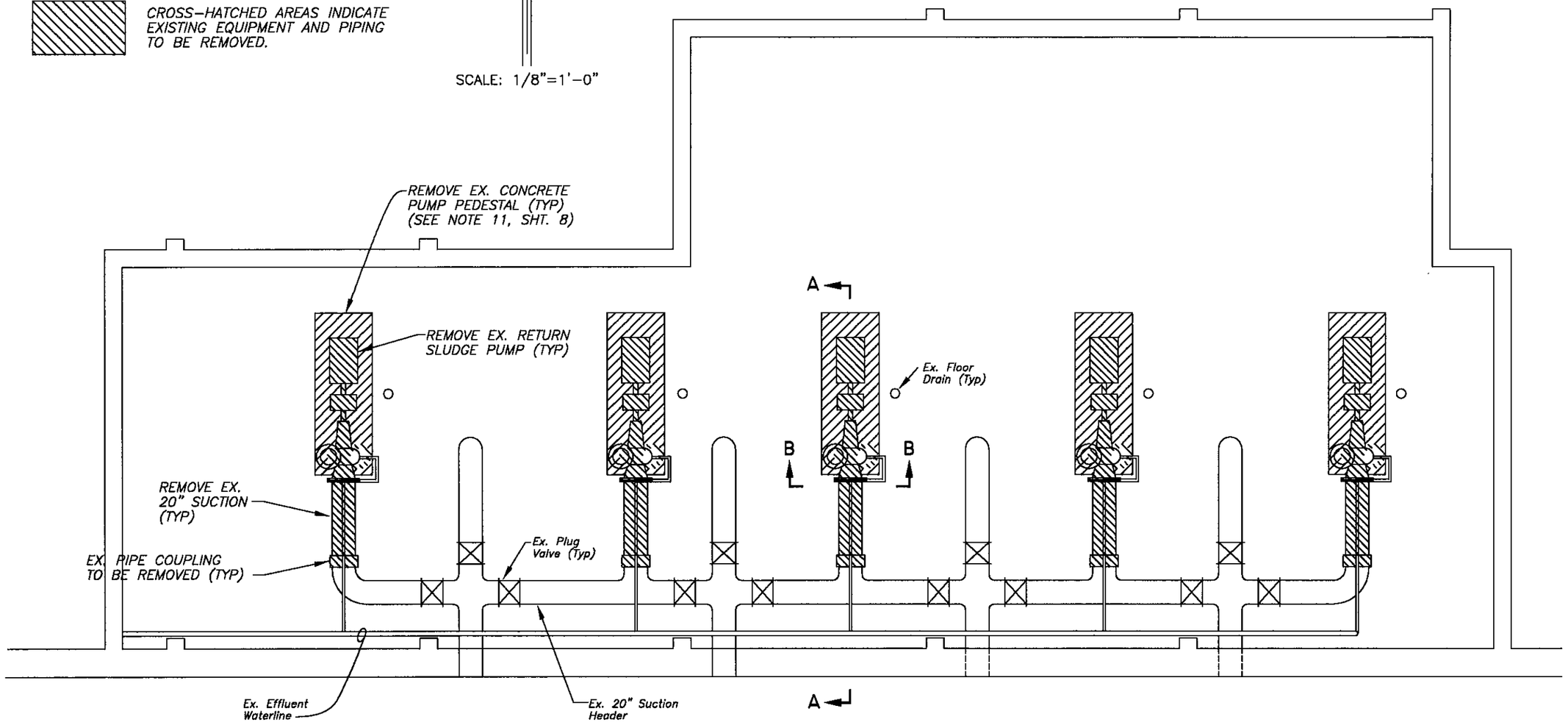
PROJECT MAP AND INDEX

W.O. 5061
SHEET 2 OF 33

CROSS–HATCHED AREAS INDICATE EXISTING EQUIPMENT AND PIPING TO BE REMOVED.

N

SCALE: 1/8"=1'–0"



1/8"

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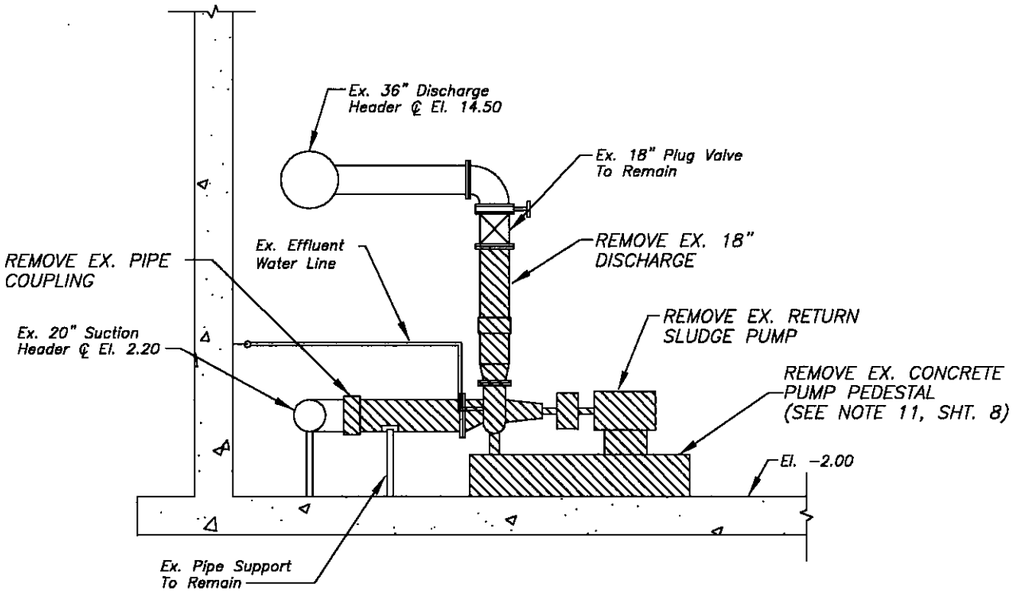
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CKD: D.H.
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SANITARY SEWERS DIVISION

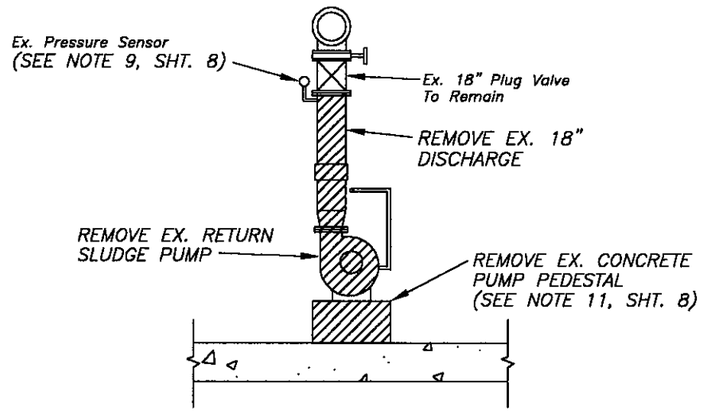
RETURN SLUDGE PUMPING STATION No. 3 REHABILITATION DEMOLITION PLAN

W.O. 5061
SHEET 3 OF 33

CROSS–HATCHED AREAS INDICATE EXISTING EQUIPMENT AND PIPING TO BE REMOVED.



SECTION A-A
SCALE: 1/8"=1'-0"



SECTION B-B
SCALE: 1/8"=1'-0"

1/8"

tp/2061

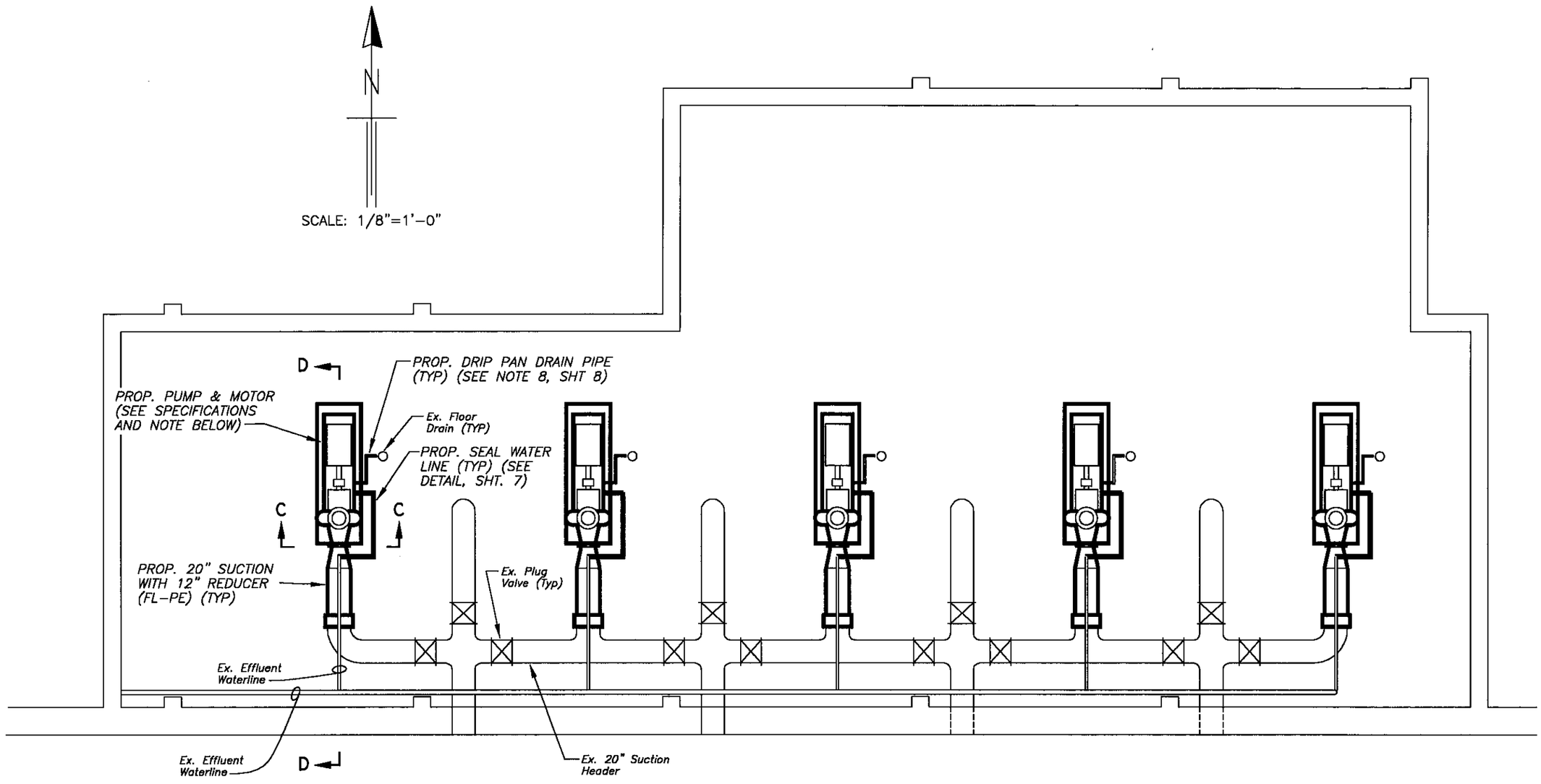
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DATE: 2/02

CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

RETURN SLUDGE PUMPING STATION
No. 3 REHABILITATION
DEMOLITION SECTIONS

W.O. 5061
SHEET 4 OF 33



NOTE:
THE PUMPING UNIT SHALL BE A SINGLE PASSAGE, NON-CLOG, SOLIDS HANDLING, HORIZONTALLY MOUNTED, SCREW-CENTRIFUGAL IMPELLER PUMP MANUFACTURED BY WEMCO-HYDROSTAL MODEL H12K-SD AND SHALL COMPLY WITH THE SPECIFICATIONS FOR THIS PROJECT. A SINGLE SOURCE CERTIFICATE OF CONDITIONS AND CIRCUMSTANCES WAS EXECUTED FOR THIS PUMPING EQUIPMENT. THE CERTIFICATE STATES THAT NO OTHER PUMPING EQUIPMENT SHALL BE CONSIDERED AN OR-EQUAL FOR THIS PROJECT IN ACCORDANCE WITH THE CITY'S STANDARDIZATION PROGRAM. THE "OR-EQUAL" CLAUSE APPLIES TO ALL OTHER EQUIPMENT IN THIS PROJECT, UNLESS SPECIFICALLY EXCLUDED BY A SINGLE SOURCE CERTIFICATE.

1/8"

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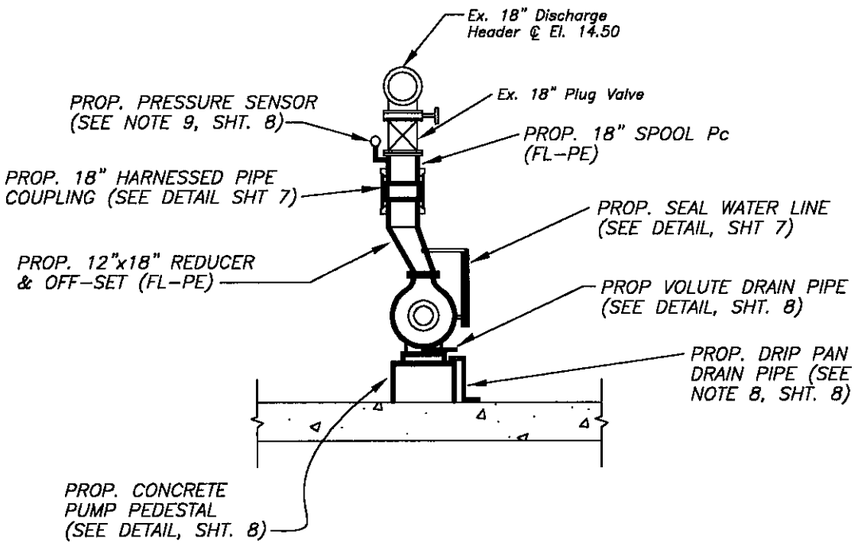
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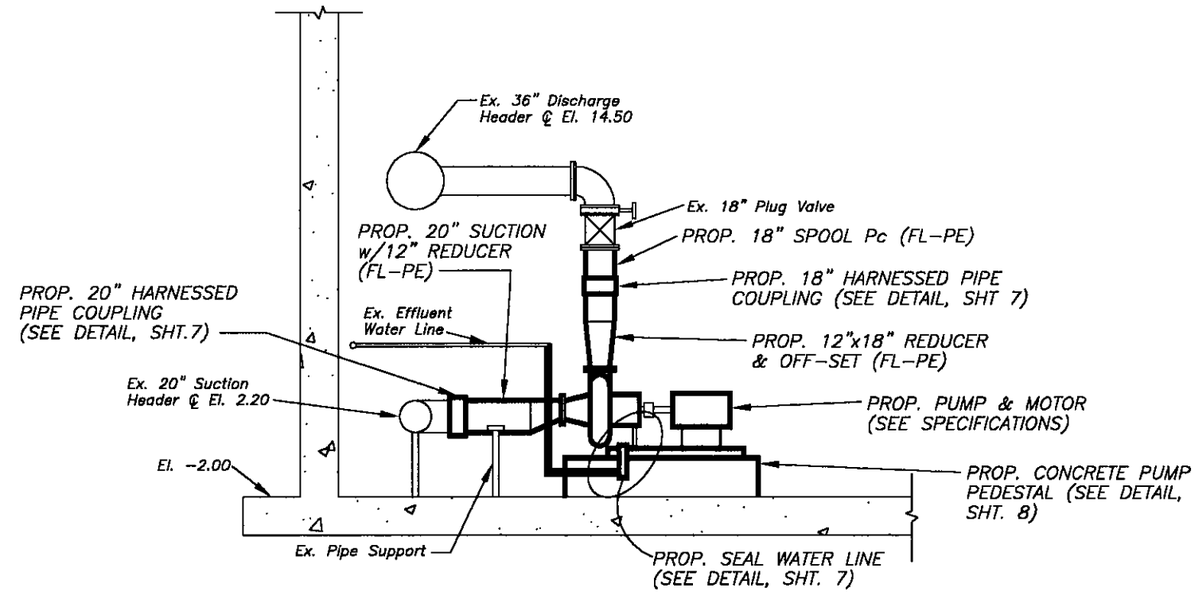
CITY of TAMPA
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SANITARY SEWERS DIVISION

RETURN SLUDGE PUMPING STATION No. 3 REHABILITATION PROPOSED CONSRUCTION PLAN

W.O. 5061
SHEET 5 OF 33



SECTION C-C
SCALE: 1/8"=1'–0"



SECTION D-D
SCALE: 1/8"=1'–0"

1/8"

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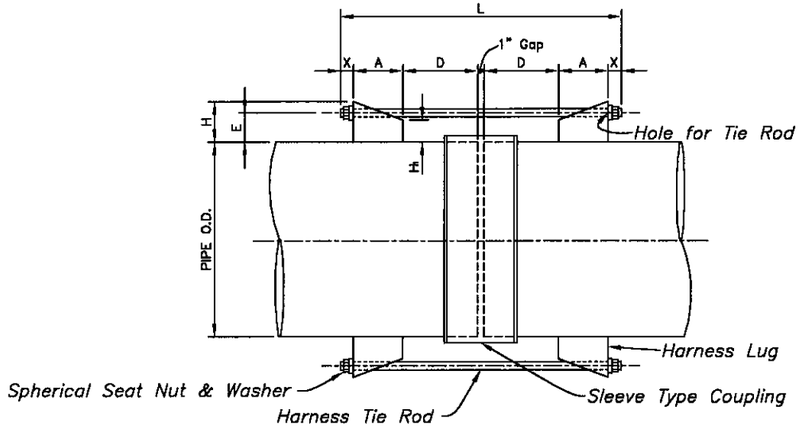
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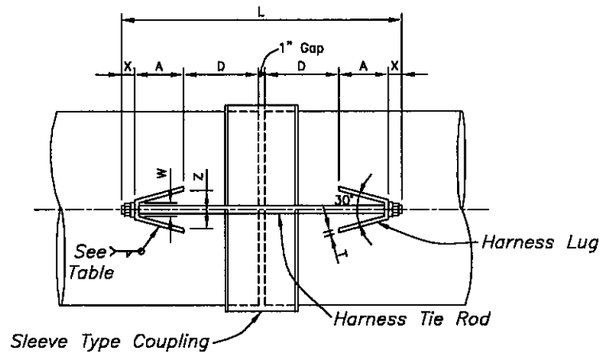
CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
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RETURN SLUDGE PUMPING STATION
No. 3 REHABILITATION
PROPOSED CONSTRUCTION SECTIONS

W.O. 5061
SHEET 6 OF 33



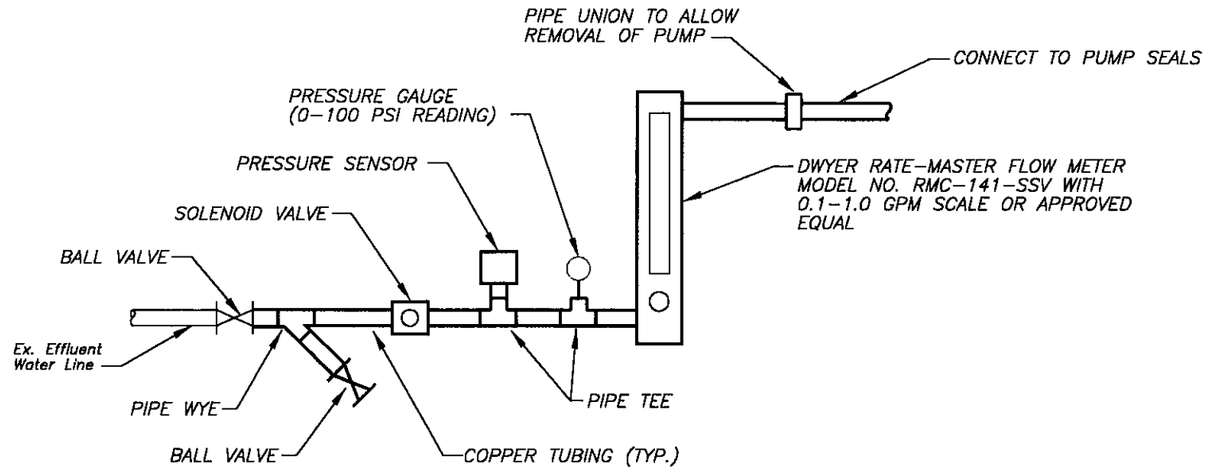
PLAN



SECTION

PIPE COUPLING DETAIL

Not To Scale



SEAL WATER DETAIL

Not To Scale

TYPE A HARNESSED SLEEVE TYPE COUPLING JOINT FOR STEEL PIPE – SCHEDULE																			
NOM. PIPE SIZE	WALL THICK–NESS	O.D. OF PIPE	MAX. PRESS. FOR HARNESS TIE ROD P.S.I.	MIDDLE RING		HARNESS TIE ROD				HARNESS LUG MINIMUM DIMENSION									
				LENGTH	THICKNESS	No.	DIA.	X	L	A	W	Z	T	E	H	H_1	D	HOLE	WELD
18	0.375	18.00	45	7	5/16	2	3/4	1 1/4	28	3 3/4	1 11/16	3 1/2	3/8	3 1/8	4 1/8	2	8 1/2	7/8	1/4
20	0.375	20.00	25	7	3/8	2	5/8	1 1/8	26 1/4	3	1 1/2	2 7/8	3/8	3	3 7/8	2	8 1/2	3/4	1/4

1/8"

tp/2061

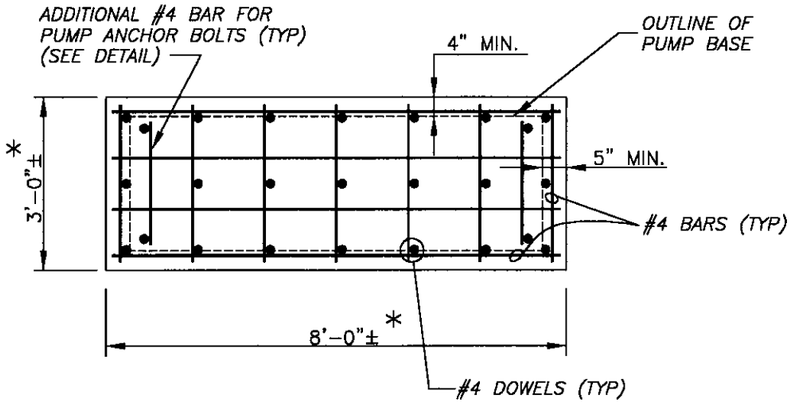
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CKD: A.H.
DATE: 2/02

CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

RETURN SLUDGE PUMPING STATION
No. 3 REHABILITATION
MISCELLANEOUS DETAILS

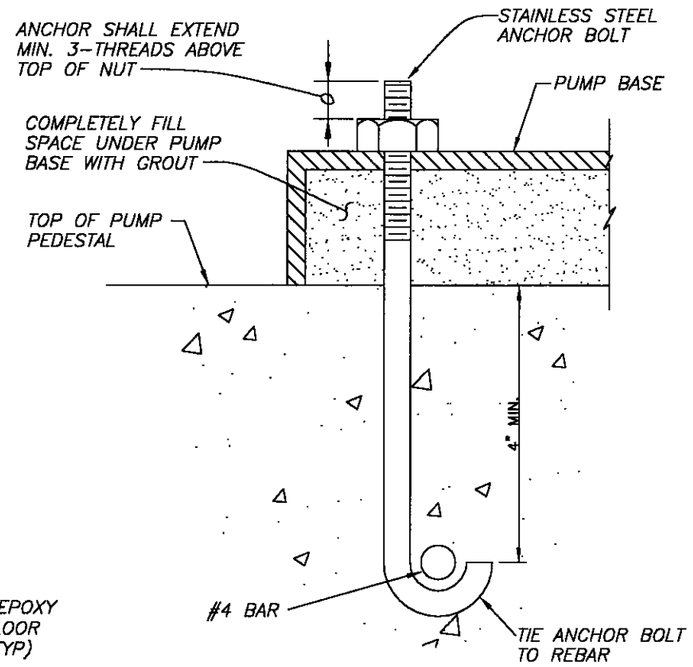
W.O. 5061
SHEET 7 OF 33



PUMP PEDESTAL DETAIL

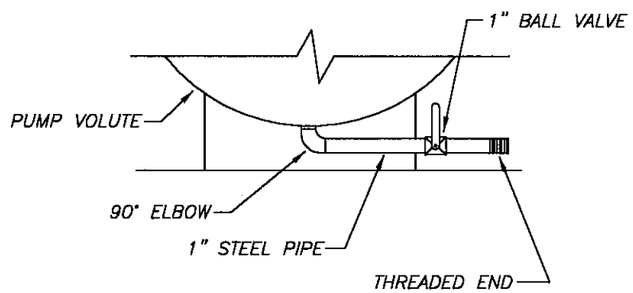
Not To Scale

*DIMENSIONS SHOWN ARE APPROXIMATE ONLY. ACTUAL DIMENSIONS MAY VARY TO MEET FIELD CONDITIONS AND FINAL DIMENSIONS OF EQUIPMENT.



ANCHOR BOLT DETAIL

Not To Scale



VOLUTE DRAIN DETAIL

Not To Scale

CONSTRUCTION NOTES

1) The Contractor is responsible for obtaining all field measurements and verifying the locations, elevations, and dimensions of all existing piping, structures, and other features affecting his work prior to submittal of shop drawings or starting construction.

2) Existing pipe, fittings, and equipment indicated for removal shall be removed and delivered to an area on-site as directed by Treatment Plant Personnel.

3) 18-inch and 20-inch piping shall be constructed of welded steel and shall be custom fabricated to suit the dimensions of the final selected equipment (see specifications for further details).

4) All pipe, fittings, valves, and equipment shall be painted and lined in accordance with the Contract Specifications.

5) All steel reinforcing shall be detailed in accordance with the latest "ACI Manual of Standard Practice for Detailing Concrete Structures".

6) Seal water piping shall be Type "K" hard drawn copper with cast-brass solder fittings. All joints shall be threaded or soldered. All piping shall be erected, joined, and coated in accordance with the Contract Specifications.

7) A qualified representative of the pump manufacturer shall be present at all critical phases of the construction to inspect the installation of the equipment. The representative will place the equipment into operation, make all necessary adjustments, and provide training for treatment plant personnel.

8) The pump and motor shall be mounted on a common steel frame. The frame shall be equipped with a drip pan to collect drainage from the pump seals. A PVC pipe shall be provided to drain the drip pan into the nearest floor drain. Size of the drain pipe shall match the size of the drain opening in the drip pan.

9) The existing pressure switch assemblies shall be removed and replaced. Contractor shall install a 1" riser pipe and ball valve on each pump's discharge pipe. Contractor shall supply all fittings required to connect the pressure switch to the riser pipe (see electrical sheets for further details).

10) All hardware including nuts, bolts, washers, etc. shall be constructed of 316 stainless steel.

11) The existing concrete pump pedestals shall be removed flush with the concrete floor. Areas of the existing floor that are disturbed by the removal of the pedestals and will remain exposed after the installation of the new pumps shall be made smooth. Exposed rebar or anchor bolts within these areas shall be ground back a minimum of 1-inch and the hole filled with epoxy.

1/8"

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CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

RETURN SLUDGE PUMPING STATION
No. 3 REHABILITATION
MISCELLANEOUS DETAILS & NOTES

W.O. 5061
SHEET 8 OF 33

LEGEND

SYMBOL	DESCRIPTION
	FUSED DISCONNECT
R	PILOT LIGHT – R=RED, G=GREEN, A=AMBER
800/400	THERMAL–MAGNETIC CIRCUIT BREAKER, 800 AMP. FRAME, 400 AMP. TRIP
	TRANSFORMER
	START/STOP PUSHBUTTONS
0 1 2	SELECTOR SWITCH – THREE POSITION
SPD ADJ.	POTENTIOMETER
DOI	DIGITAL OPERATOR INTERFACE
ETM	ELAPSED TIME METER
AFD	ADJUSTABLE FREQUENCY DRIVE
TDR	TIME DELAY RELAY – X
	MOTOR THERMAL OVERLOAD
	PUSH BUTTON – NORMALLY OPEN
	PUSH BUTTON – NORMALLY CLOSED
	PUSH BUTTON – DOUBLE CONTACTS
STOP/L	PUSH BUTTON – WITH LOCK–OUT FEATURES
TDR–X	"OFF" DELAY RELAY
TDR–X	"ON" DELAY RELAY
△	DESIGNATES TERMINAL FOR FIELD CONNECTION.
CA00005	CONDUIT NO. – REFERENCE CONDUIT/ CONDUCTOR SCHEDULE
75	MOTOR, 75 HP

SYMBOL	DESCRIPTION
	LIMIT SWITCH – NORMALLY OPEN
	LIMIT SWITCH – NORMALLY CLOSED
LS	LIMIT SWITCH
	LIQUID LEVEL SWITCH – NORMALLY OPEN
	LIQUID LEVEL SWITCH – NORMALLY CLOSED
	PRESSURE SWITCH – NORMALLY OPEN
	PRESSURE SWITCH – NORMALLY CLOSED
P	PRESSURE SWITCH
J	JUNCTION BOX – SIZED PER NEC

SYMBOL	DESCRIPTION
	CONDUIT – DOWN
	CONDUIT – UP
	AUDIBLE ALARM
	SELECTOR SWITCH – NORMALLY OPEN
xM	MOTOR STARTER COIL, x DESIGNATES MOTOR ID. NO.
xx R	RELAY COIL, xx DESIGNATES ID. NO.
xxR–y	RELAY CONTACT – NORMALLY OPEN, xx DESIGNATES RELAY ID. NO. & y DESIGNATES CONTACT NO.
xxR–y	RELAY CONTACT – NORMALLY CLOSED, xx DESIGNATES RELAY ID. NO. & y DESIGNATES CONTACT NO.
xMOL	MOTOR OVERLOAD RELAY – x DESIGNATES MOTOR I.D. NO.
	SOLENOID VALVE
	FUSE

GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2. PROVIDE & INSTALL ALUMINUM CHANNEL (UNISTRUT) ERECTOR SYSTEMS TO MOUNT AND SUPPORT ENCLOSURES, BOXES, CONDUITS & OTHER EQUIPMENT. ALL UNISTRUT SHALL BE B–LINE ALUMINUM B22AL w/o SLOTS OR HOLES USING B–LINE B2000AL SERIES ALUMINUM CONDUIT CLAMPS.
3. ALL CONDUCTORS SHALL BE STRANDED COPPER, AWG 12 MIN. w/ THHN INSULATION, UNLESS OTHERWISE NOTED.
4. ALL WIRING SHALL BE IDENTIFIED w/ NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
5. VERIFY ALL MECHANICAL EQUIPMENT SIZES AND RATINGS PRIOR TO CONNECTING.
6. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
7. REFERENCE PLAN AND SECTION DRAWINGS FOR EQUIPMENT LOCATIONS.
8. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE w/ THE LATEST EDITION OF THE NEC AND ALL APPLICABLE LOCAL ORDINANCES.
9. COORDINATE ALL INSTALLATIONS w/ ALL OTHER TRADES.
10. ALL THREADED CONNECTIONS SHALL BE COATED w/ COPPER SHIELD ANTI–SEIZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & B).
11. ALL PANELS, DISCONNECTS, SWITCHES AND EQUIPMENT COVERPLATES SHALL BE LABELED w/ NAMEPLATES. NAMEPLATES SHALL BE THREE–PLY PHENOLIC BLACK–WHITE–BLACK ENGRAVED THROUGH THE FIRST BLACK LAYER. LETTERING SHALL BE 0.5 CM (3/16") MIN. EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.
12. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'–0" INTERVALS.
13. ALL CIRCUITS SHALL HAVE A GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT w/ POWER CONDUCTORS.
14. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS. NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
15. NEATLY COIL ALL SPARE CONDUCTORS & TAPE w/ VINYL ELECTRICAL TAPE (SCOTCH 33+). U.O.N.
16. PROVIDE A MINIMUM OF 3'–0" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE w/ ARTICLE 110 OF THE NEC.
17. ALL INSTALLATIONS SHALL BE IN ACCORDANCE w/ CITY OF TAMPA CODE 5–221–E.1.E.
18. ALL CONDUIT SHALL BE RIGID HEAVY WALL ALUMINUM CONDUIT.
19. ALL FASTENING HARDWARE (SCREWS, BOLTS, NUTS, ETC.) SHALL BE 316 STAINLESS STEEL. FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.
20. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
21. THE ADJUSTABLE FREQUENCY DRIVE (AFD) SHALL BE MANUFACTURED BY ROBICON & SHALL COMPLY WITH THE DRAWINGS & SPECIFICATIONS FOR THIS PROJECT. A SINGLE SOURCE CERTIFICATE OF CONDITIONS AND CIRCUMSTANCES WAS EXECUTED FOR THIS AFD. THE CERTIFICATE STATES THAT NO OTHER AFD SHALL BE CONSIDERED AN OR–EQUAL FOR THIS PROJECT IN ACCORDANCE WITH THE CITY'S STANDARDIZATION PROGRAM. THE "OR–EQUAL" CLAUSE APPLIES TO ALL OTHER EQUIPMENT IN THIS PROJECT, UNLESS SPECIFICALLY EXCLUDED BY A SINGLE SOURCE CERTIFICATE.

ABBREVIATIONS

A	AMPERES	IG	ISOLATED GROUND
ABV	ABOVE	HP	HORSEPOWER
AFF	ABOVE FINISHED FLOOR	HT	HEIGHT
ATS	AUTOMATIC TRANSFER SWITCH	JB,JBOX	JUNCTION BOX
BLDG	BUILDING	KW	KILOWATTS
BRKR	BREAKER	LPX	LIGHTING PANEL X
C	CONDUIT	LTG	LIGHTING
CAB	CABINET	MACH	MACHINE
CAT	CATALOG	MCB	MAIN CIRCUIT BREAKER
CO	CONDUIT ONLY	MLO	MAIN LUGS ONLY
CLG	CEILING	MECH	MECHANICAL
CKT	CIRCUIT	MNTD	MOUNTED
CT	CURRENT TRANSFORMER	MNTG	MOUNTING
CTR	CENTER	ø	PHASE
CTRD	CENTERED	PB	PUSH BUTTON
DISC	DISCONNECT	PNL	PANEL
DN	DOWN	PPX	POWER PANEL X
DWG	DRAWING	PWR	POWER
EC	EMPTY CONDUIT	RECEPT	RECEPTACLE
ECC	EDDY CURRENT CLUTCH	REFRIG	REFRIGERATOR
ELEC	ELECTRICAL, ELECTRIC	SW	SWITCH
ELEV	ELEVATOR	SWBD	SWITCHBOARD
EM	EMERGENCY	TELE	TELEPHONE
EMT	ELECTRO METALLIC TUBING	THRU	THROUGH
EQUIP	EQUIPMENT	TR	TRIP
EWC	ELECTRICAL WATER COOLER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
EX	EXISTING	TYP	TYPICAL
EXH	EXHAUST	UON	UNLESS OTHERWISE NOTED
FA	FIRE ALARM	V	VOLT
FL	FLOOR	W	WIRE
F	FUSE	w/	WITH
FUT	FUTURE	WP	WEATHER PROOF
GFI	GROUND FAULT INTERRUPTING	XFMR	TRANSFORMER

EDT
Engineering Design Technologies Corp.
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Certificate of Authorization Number: 4795

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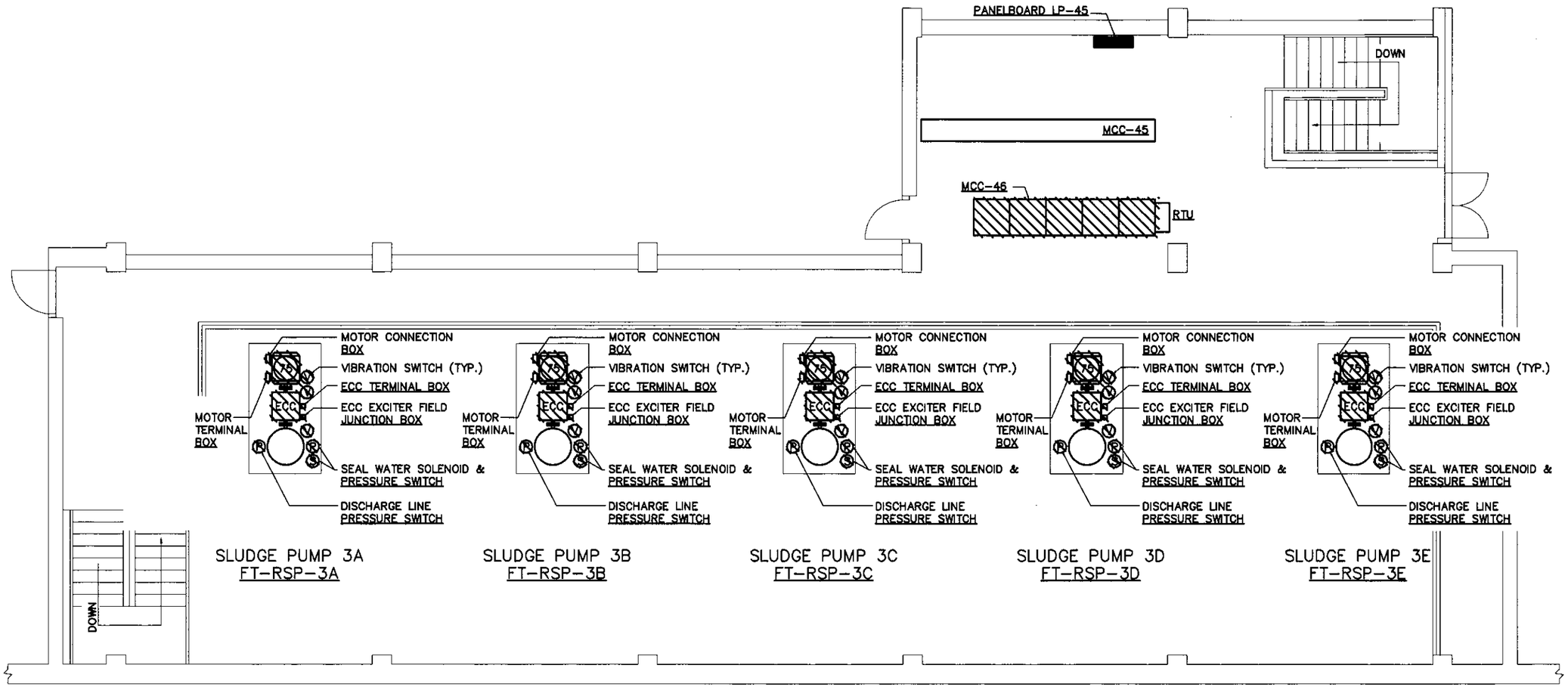
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
ELECTRICAL LEGEND & ABBREVIATIONS

W.O. 5061
SHEET E-1 OF E-25

TPB5-9



NORTH

ELECTRICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

NOTES:

- ⊠ – DENOTES EXISTING EQUIPMENT TO BE REMOVED. ITEM SHALL BE REMOVED FROM PREMISES AND DISPOSED OF PROPERLY. UNLESS OTHERWISE NOTED REMOVE ALL ASSOCIATED CONDUIT & WIRING CONNECTED TO EQUIPMENT REMOVED, INCLUDING ABANDONED CONDUIT & WIRING. REMOVED CONDUCTORS SHALL REMAIN THE PROPERTY OF THE CITY AND SHALL BE DISPOSED OF AS DIRECTED BY THE CITY.

1. CONTRACTOR SHALL VISIT THE SITE & FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS BEFORE SUBMITTING A BID OR COMMENCING CONSTRUCTION.
2. COORDINATE ALL DEMOLITION ACTIVITIES WITH OWNER & ALL TRADES.
3. REFERENCE DEMOLITION RISER DIAGRAM FOR ADDITIONAL DETAILS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF THE MOTORS AND ITS DRIVEN EQUIPMENT.
5. COORDINATE DEMOLITION WORK SHOWN IN THIS DRAWING WITH THE MECHANICAL DEMOLITION DRAWINGS.

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No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: BEH
DRN: RWB
CKD: BEH
DATE: 02/15/02

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
ELECTRICAL DEMOLITION PLAN

W.O. 5061
SHEET E-2 OF E-25

TPB5-11

INSTALL JUNCTION BOX ON EXISTING CONDUIT. REMOVE CONDUIT AS SHOWN. PRESERVE CONDUCTOR LENGTHS FOR PROPOSED INSTALLATION.

90-#14 & 12-2/C #16 SHLD., 2 1/2" C.

2-#12 & 1-#6 GND., 3/4" C.

RTU

46M8

MCC-45

SECT. 1 | SECT. 2 | SECT. 3 | SECT. 4 | SECT. 5 | SECT. 6 | SECT. 7 | SECT. 8 | SECT. 9 | ANNUN.

400AF 150AT SLDGE PUMP 3A

400AF 150AT SLDGE PUMP 3B

400AF 150AT SLDGE PUMP 3C

MAIN BRKR. BUS 1

TIE BRKR. BUS 1 -2

MAIN BRKR. BUS 2

400AF 150AT SLDGE PUMP 3D

400AF 150AT SLDGE PUMP 3E

MCC-46

SLUDGE PUMP FT-RSP-3A

SLUDGE PUMP FT-RSP-3B

SLUDGE PUMP FT-RSP-3C

SLUDGE PUMP FT-RSP-3D

SLUDGE PUMP FT-RSP-3E

ELEV. +11.00

46M5A
46M5B
46M5E

45M1
45M2
45M3
(SEE NOTE 5)

4-#14 & 1-2/C #16 SHLD., 1" C. (TO BE REMOVED)

46M1A
46M1B
46M1E

45M4
45M5
(SEE NOTE 5)

TO LP-45

2-#10, 1" C. (TO BE REMOVED)

46M2A
46M2B
46M2E

4-#14 & 1-2/C #16 SHLD., 1" C. (TO BE REMOVED)

46M51

2-#10, 1" C. (TO BE REMOVED)

46M3A
46M3B
46M3E

4-#14 & 1-2/C #16 SHLD., 1" C. (TO BE REMOVED)

46M4A
46M4B
46M4E

2-#10, 1" C. (TO BE REMOVED)

MATCH LINE - FOR CONTINUATION REFERENCE SHEET E-4

SLUDGE PUMP 3A
FT-RSP-3A

46M1E — SOLENOID VALVE PV1-3A

DISCHARGE VALVE LIMIT SWITCH LS-3A

DISCHARGE LINE PRESSURE SWITCH

VALVE JUNCTION BOX 3A

SOLENOID VALVE PV2-3A

4-#14, 3/4" C. (SEE NOTE 4)

46M1F

CONTROL TERMINAL BOX 3A

46M1B
46M1A
(SEE NOTE 5)

SEE NOTE 2

MOTOR TERMINAL BOX

ECC VIBRATION SWITCH

ECC TERMINAL BOX

SEAL WATER PRESSURE SWITCH

ECC

ESD

SEAL WATER SOLENOID VALVE

PUMP VIBRATION SWITCH

MOTOR VIBRATION SWITCH

ECC EXCITER FIELD JUNCTION BOX

4-#14, 3/4" C. (SEE NOTE 4)

SLUDGE PUMP 3B
FT-RSP-3B

46M2E — SOLENOID VALVE PV1-3B

DISCHARGE VALVE LIMIT SWITCH LS-3B

DISCHARGE LINE PRESSURE SWITCH

VALVE JUNCTION BOX 3B

SOLENOID VALVE PV2-3B

4-#14, 3/4" C. (SEE NOTE 4)

46M2F

CONTROL TERMINAL BOX 3B

46M2B
46M2A
(SEE NOTE 5)

SEE NOTE 2

MOTOR TERMINAL BOX

ECC VIBRATION SWITCH

ECC TERMINAL BOX

SEAL WATER PRESSURE SWITCH

ECC

ESD

SEAL WATER SOLENOID VALVE

PUMP VIBRATION SWITCH

MOTOR VIBRATION SWITCH

ECC EXCITER FIELD JUNCTION BOX

4-#14, 3/4" C. (SEE NOTE 4)

SLUDGE PUMP 3C
FT-RSP-3C

46M3E — SOLENOID VALVE PV1-3C

DISCHARGE VALVE LIMIT SWITCH LS-3C

DISCHARGE LINE PRESSURE SWITCH

VALVE JUNCTION BOX 3C

SOLENOID VALVE PV2-3C

4-#14, 3/4" C. (SEE NOTE 4)

46M3F

CONTROL TERMINAL BOX 3C

ELEV. -2.00

46M3B
46M3A
(SEE NOTE 5)

SEE NOTE 2

MOTOR TERMINAL BOX

ECC VIBRATION SWITCH

ECC TERMINAL BOX

SEAL WATER PRESSURE SWITCH

ECC

ESD

SEAL WATER SOLENOID VALVE

PUMP VIBRATION SWITCH

MOTOR VIBRATION SWITCH

ECC EXCITER FIELD JUNCTION BOX

4-#14, 3/4" C. (SEE NOTE 4)

NOTES:

⊘ – DENOTES EXISTING EQUIPMENT TO BE REMOVED. ITEM SHALL BE REMOVED FROM PREMISES AND DISPOSED OF PROPERLY. UNLESS OTHERWISE NOTED REMOVE ALL ASSOCIATED CONDUIT & WIRING CONNECTED TO EQUIPMENT REMOVED, INCLUDING ABANDONED CONDUIT & WIRING. REMOVED CONDUCTORS SHALL REMAIN THE PROPERTY OF THE CITY AND SHALL BE DISPOSED OF AS DIRECTED BY THE CITY.

1. CONTRACTOR SHALL VISIT THE SITE & FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS BEFORE SUBMITTING A BID OR COMMENCING CONSTRUCTION.
2. EXISTING CONDUIT & CONDUCTORS SHALL REMAIN FOR PROPOSED INSTALLATION. EXISTING CONDUCTORS SHALL BE DISCONNECTED FROM THE EQUIPMENT TO BE REMOVED DURING DEMOLITION. NEATLY COIL, LABEL & TAPE CONDUCTORS IN PREPARATION OF PROPOSED INSTALLATION.
3. COORDINATE ALL DEMOLITION ACTIVITIES WITH OWNER & ALL TRADES.
4. EXISTING CONDUCTORS TO REMAIN FOR PROPOSED INSTALLATION. PULL EXISTING CONDUCTORS BACK TO EXISTING CONTROL TERMINAL BOX. NEATLY COIL, LABEL, AND TAPE CONDUCTORS FOR NEW INSTALLATION.
5. EXISTING CONDUIT SHALL REMAIN FOR PROPOSED INSTALLATION. EXISTING CONDUCTORS SHALL BE DISCONNECTED FROM THE EQUIPMENT TO BE REMOVED & DISPOSED OF AS DIRECTED BY THE CITY.

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ELECTRICAL DEMOLITION RISER DIAGRAM
(SHEET 1 OF 2)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: BEH
DRN: RWB
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
ELECTRICAL DEMOLITION RISER DIAGRAM (1 OF 2)

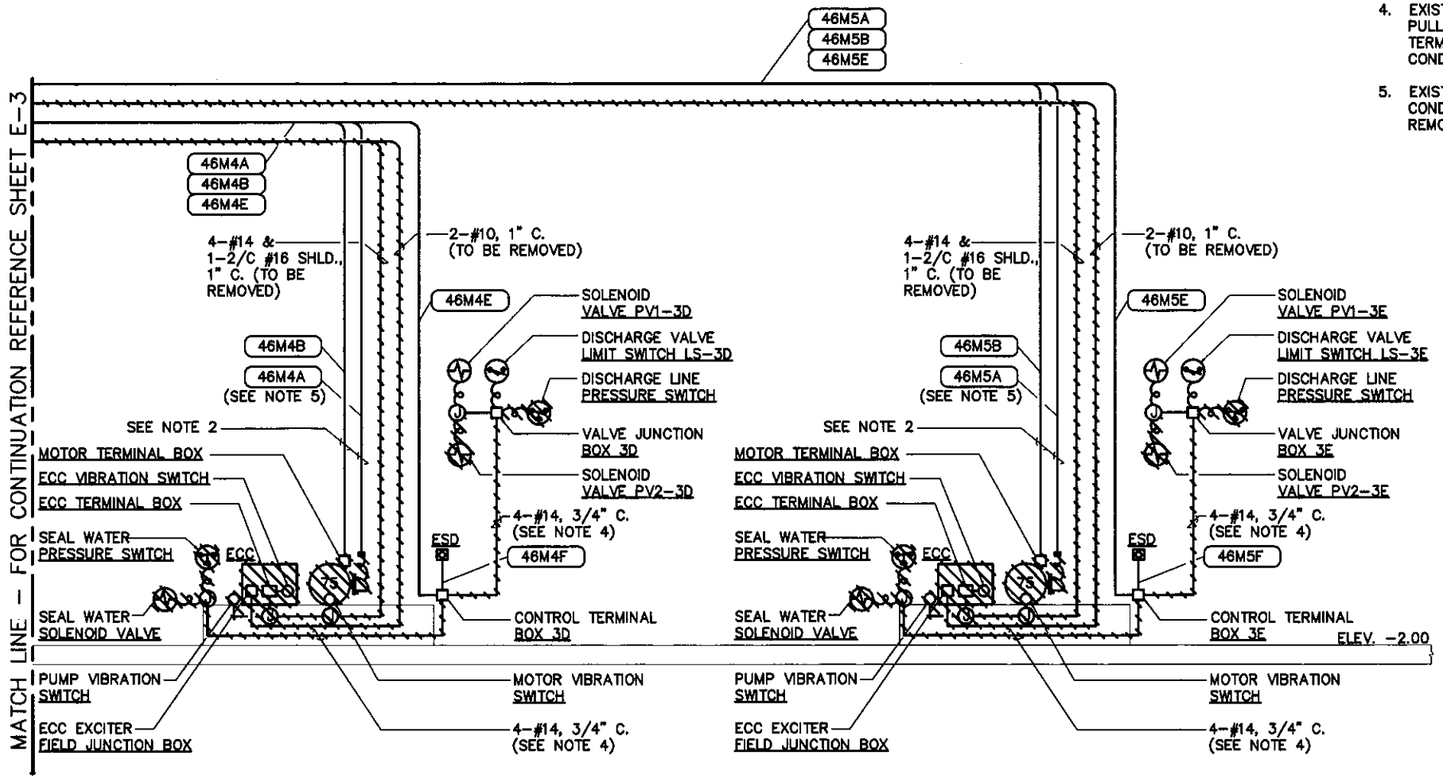
W.O. 5061
SHEET E-3 OF E-25

TPB5-12

NOTES:

⊠ – DENOTES EXISTING EQUIPMENT TO BE REMOVED. ITEM SHALL BE REMOVED FROM PREMISES AND DISPOSED OF PROPERLY. UNLESS OTHERWISE NOTED REMOVE ALL ASSOCIATED CONDUIT & WIRING CONNECTED TO EQUIPMENT REMOVED, INCLUDING ABANDONED CONDUIT & WIRING. REMOVED CONDUCTORS SHALL REMAIN THE PROPERTY OF THE CITY AND SHALL BE DISPOSED OF AS DIRECTED BY THE CITY.

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3. COORDINATE ALL DEMOLITION ACTIVITIES WITH OWNER & ALL TRADES.
4. EXISTING CONDUCTORS TO REMAIN FOR PROPOSED INSTALLATION. PULL EXISTING CONDUCTORS BACK TO EXISTING CONTROL TERMINAL BOX. NEATLY COIL, LABEL, AND TAPE CONDUCTORS FOR NEW INSTALLATION.
5. EXISTING CONDUIT SHALL REMAIN FOR PROPOSED INSTALLATION. EXISTING CONDUCTORS SHALL BE DISCONNECTED FROM THE EQUIPMENT TO BE REMOVED & DISPOSED OF AS DIRECTED BY THE CITY.



SLUDGE PUMP 3D
FT–RSP–3D

SLUDGE PUMP 3E
FT–RSP–3E

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ELECTRICAL DEMOLITION RISER DIAGRAM

(SHEET 2 OF 2)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
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DES: BEH
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

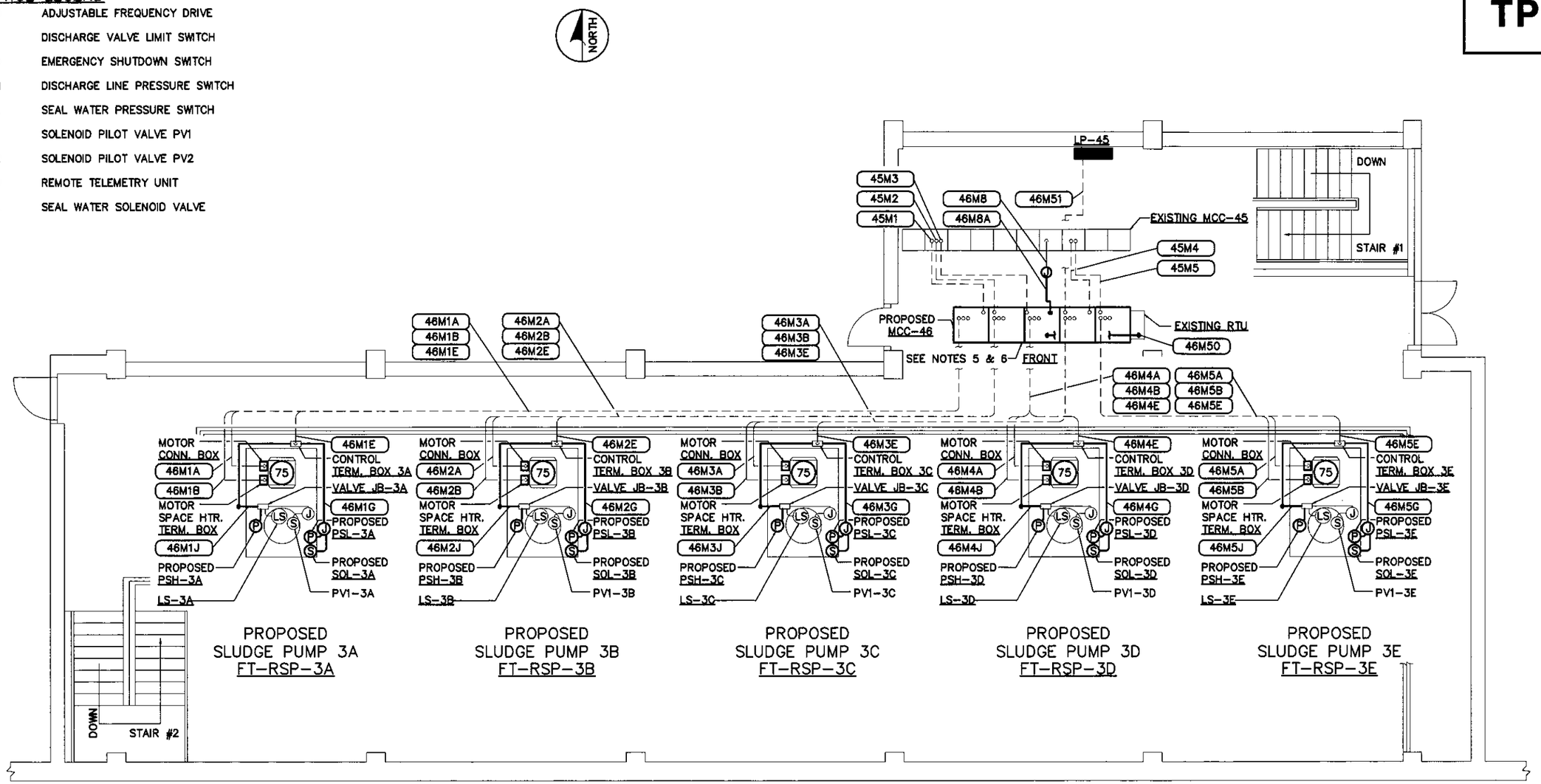
RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
ELECTRICAL DEMOLITION RISER DIAGRAM (2 OF 2)

W.O. 5061
SHEET E-4 OF E-25

TPB5-13

DEVICE LEGEND

AFD	ADJUSTABLE FREQUENCY DRIVE
LS	DISCHARGE VALVE LIMIT SWITCH
ESD	EMERGENCY SHUTDOWN SWITCH
PSH	DISCHARGE LINE PRESSURE SWITCH
PSL	SEAL WATER PRESSURE SWITCH
PV1	SOLENOID PILOT VALVE PV1
PV2	SOLENOID PILOT VALVE PV2
RTU	REMOTE TELEMETRY UNIT
SOL	SEAL WATER SOLENOID VALVE



PROPOSED ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"

NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND, CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH AS NECESSARY TO PROVIDE CONNECTION TO THE PROPOSED EQUIPMENT AS SHOWN.
2. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY OF TAMPA CODE 5-221-E.1.E.
4. ALL EQUIPMENT SHALL BE INSTALLED AT AN ELEVATION ABOVE THE FLOODPLAIN ESTABLISHED BY FEMA AND/OR LOCAL AUTHORITIES.
5. THE DOOR ON EACH AFD CABINET IN MCC-46 SHALL BE HINGED ON THE LEFT SIDE OF THE CABINET TO AVOID DOOR OPENING RESTRICTIONS FROM THE EXISTING BUILDING SUPPORT COLUMNS.
6. THE PROPOSED MCC-46 SHALL FIT WITHIN THE FOOTPRINT OCCUPIED BY THE EXISTING MCC-46 (150"W x 45"D x 90"H). CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING EXISTING CONDUIT STUB-UPS WITH THE NEW EQUIPMENT ENCLOSURE.

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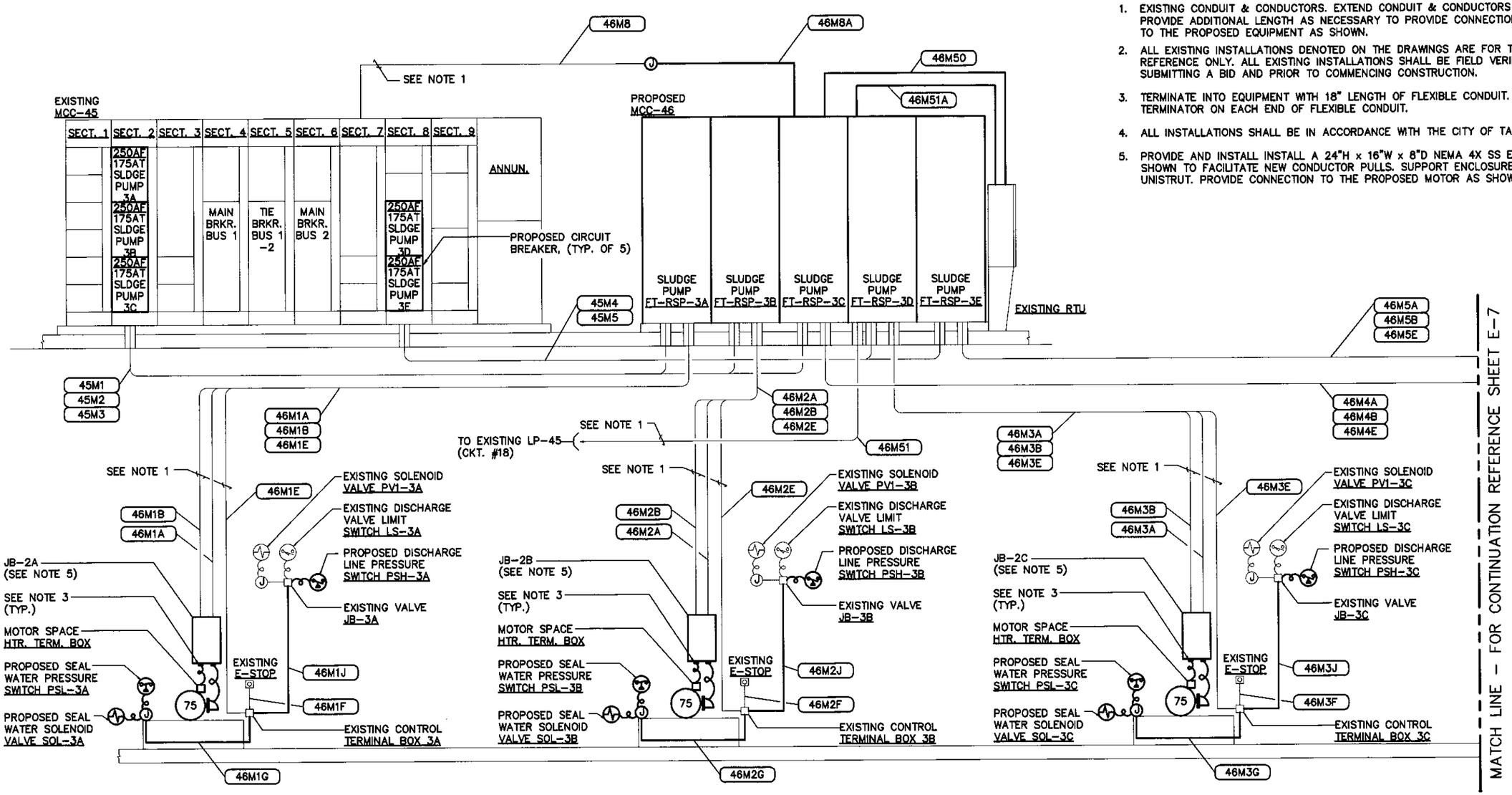
CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
PROPOSED ELECTRICAL PLAN

W.O. 5061
SHEET E-5 OF E-25

NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH AS NECESSARY TO PROVIDE CONNECTION TO THE PROPOSED EQUIPMENT AS SHOWN.
2. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. TERMINATE INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
4. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY OF TAMPA CODE 5-221-E.1.E.
5. PROVIDE AND INSTALL INSTALL A 24"H x 16"W x 8"D NEMA 4X SS ENCLOSURE AS SHOWN TO FACILITATE NEW CONDUCTOR PULLS. SUPPORT ENCLOSURE WITH ALUMINUM UNISTRUT. PROVIDE CONNECTION TO THE PROPOSED MOTOR AS SHOWN.



PROPOSED SLUDGE PUMP 3A
FT-RSP-3A

PROPOSED SLUDGE PUMP 3B
FT-RSP-3B

PROPOSED SLUDGE PUMP 3C
FT-RSP-3C

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PROPOSED ELECTRICAL RISER DIAGRAM

(SHEET 1 OF 2)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
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1			4		

DES: BEH
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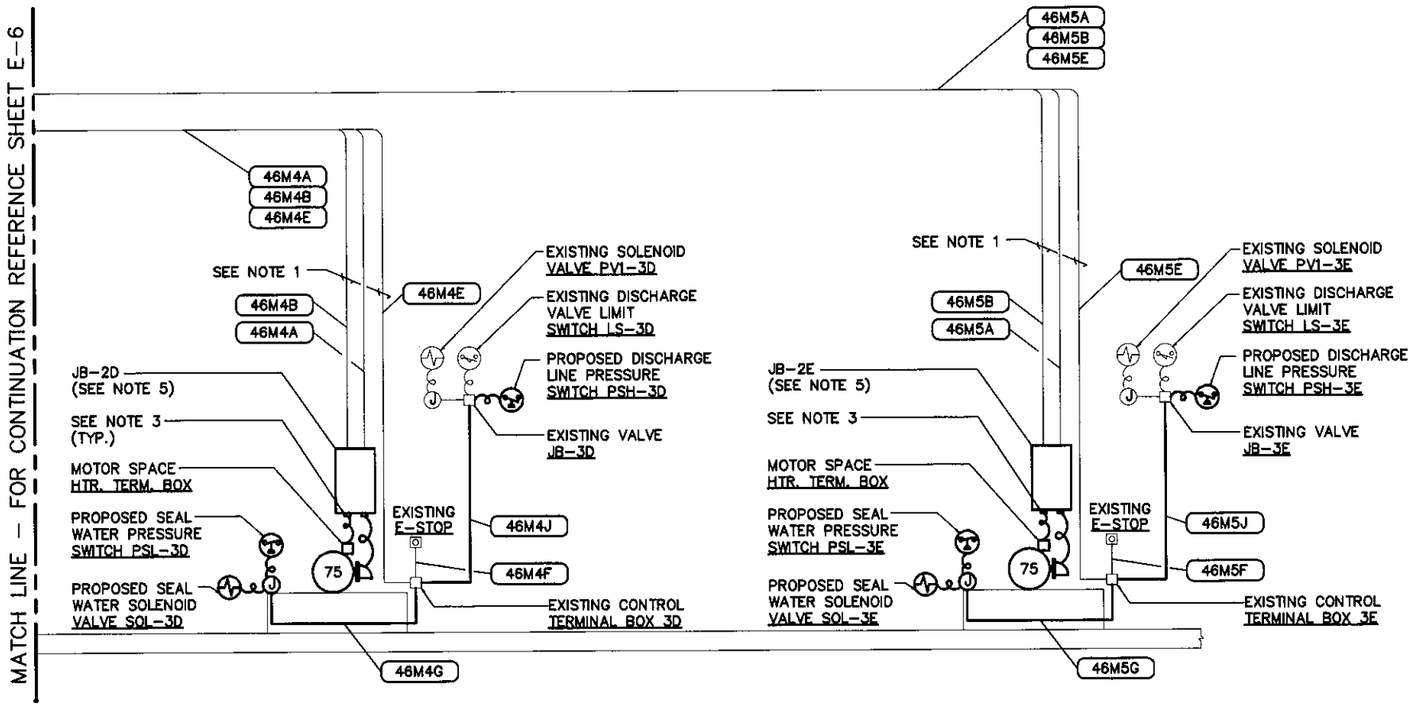
CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
PROPOSED ELECTRICAL RISER DIAGRAM (1 OF 2)

W.O. 5061
SHEET E-6 OF E-25

NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH AS NECESSARY TO PROVIDE CONNECTION TO THE PROPOSED EQUIPMENT AS SHOWN.
2. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. TERMINATE INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
4. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY OF TAMPA CODE 5-221-E.1.E.
5. PROVIDE AND INSTALL INSTALL A 24"H x 16"W x 8"D NEMA 4X SS ENCLOSURE AS SHOWN TO FACILITATE NEW CONDUCTOR PULLS. SUPPORT ENCLOSURE WITH ALUMINUM UNISTRUT. PROVIDE CONNECTION TO THE PROPOSED MOTOR AS SHOWN.



PROPOSED SLUDGE PUMP 3D
FT-RSP-3D

PROPOSED SLUDGE PUMP 3E
FT-RSP-3E

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PROPOSED ELECTRICAL RISER DIAGRAM

(SHEET 2 OF 2)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
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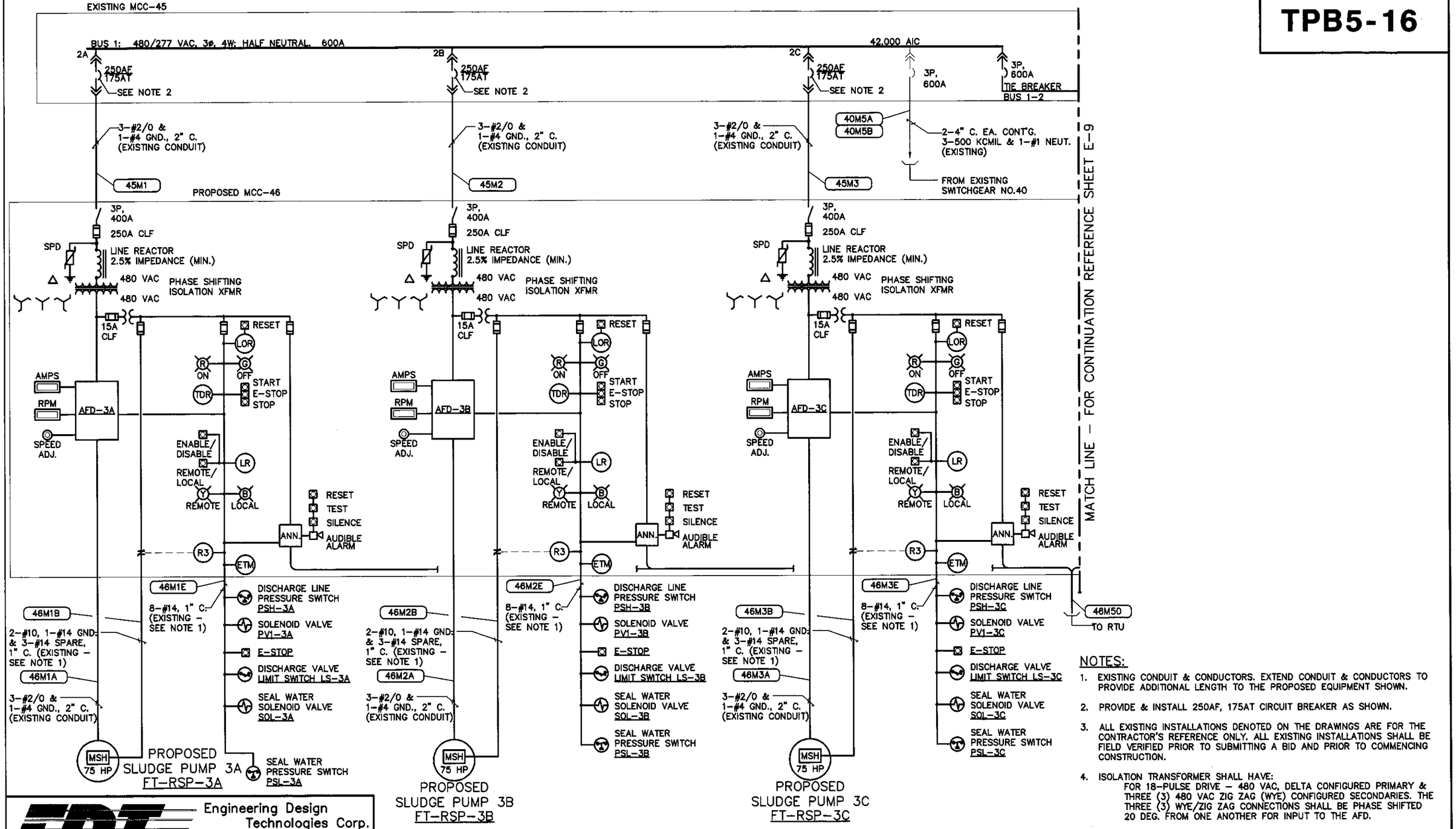
DES: BEH
DRN: RWB
CKD: BEH
DATE: 02/15/02

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
PROPOSED ELECTRICAL RISER DIAGRAM (2 OF 2)

W.O. 5061
SHEET E-7 OF E-25

TPB5-16



NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH TO THE PROPOSED EQUIPMENT SHOWN.
2. PROVIDE & INSTALL 250AF, 175AT CIRCUIT BREAKER AS SHOWN.
3. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
4. ISOLATION TRANSFORMER SHALL HAVE:
   FOR 18-PULSE DRIVE - 480 VAC, DELTA CONFIGURED PRIMARY & THREE (3) 480 VAC ZIG ZAG (WYE) CONFIGURED SECONDARIES. THE THREE (3) WYE/ZIG ZAG CONNECTIONS SHALL BE PHASE SHIFTED 20 DEG. FROM ONE ANOTHER FOR INPUT TO THE AFD.

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PROPOSED ELECTRICAL ONE-LINE DIAGRAM

(SHEET 1 OF 2)

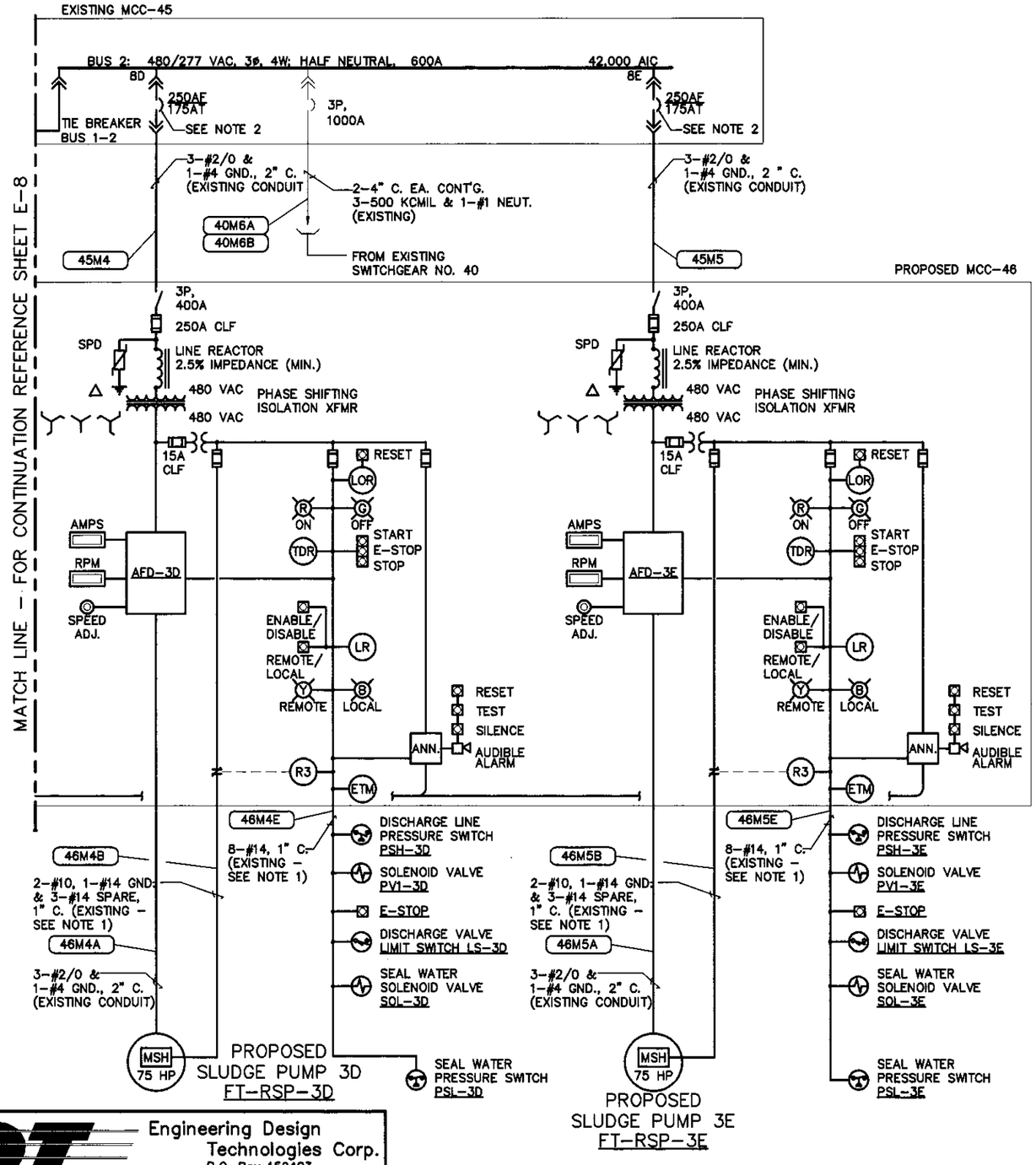
No.	DATE	REVISIONS	No.	DATE	REVISIONS
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DES: BEH
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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3
REHABILITATION
PROPOSED ELECTRICAL ONE-LINE DIAGRAM
(1 OF 2)

W.O. 5061
SHEET E-8 OF E-25



TPB5-17

LOAD SUMMARY
480/277 VAC, 3ø, 4W

LOAD	FULL LOAD AMPERES	OPERATING LOAD AMPERES	FULL LOAD KVA	OPERATING LOAD KVA
EXISTING LOAD OF MCC-45 BUS "1"	393.2	235.1	326.8	195.4
EXISTING LOADS TO BE REMOVED:				
SLUDGE PUMP 3A (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 3B (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 3C (75 HP)	96.0		79.8	
SUB-TOTAL	288.0	192.0	239.4	159.6
PROPOSED LOADS TO BE ADDED:				
SLUDGE PUMP 3A (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 3B (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 3C (75 HP)	96.0		79.8	
SUB-TOTAL	288.0	192.0	239.4	159.6
NET LOAD TOTAL OF MCC-45 BUS "1"	393.2	235.1	326.8	195.4
EXISTING LOAD OF MCC-45 BUS "2"	240.0	239.0	199.5	198.6
EXISTING LOADS TO BE REMOVED:				
SLUDGE PUMP 3D (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 3E (75 HP)	96.0	96.0	79.8	79.8
SUB-TOTAL	192.0	192.0	159.6	159.6
PROPOSED LOADS TO BE ADDED:				
SLUDGE PUMP 3D (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 3E (75 HP)	96.0	96.0	79.8	79.8
SUB-TOTAL	192.0	192.0	159.6	159.6
NET LOAD TOTAL OF MCC-45 BUS "2"	240.0	239.0	199.5	198.6
NET LOAD TOTAL OF MCC-45	633.2	474.1	526.3	394.0

NOTES:
1. EXISTING LOADS ON MCC-45 ARE BASED ON A LOAD STUDY CONDUCTED IN 1993. NO LOADS HAVE BEEN ADDED SINCE THIS LOAD STUDY WAS CONDUCTED.
2. LOAD SUMMARY REFLECTS OPERATING CONDITIONS IN WHICH A TOTAL OF FOUR (4) SLUDGE PUMPS OPERATE AT ONE TIME. ONE (1) SLUDGE PUMP SERVES AS A STAND-BY UNIT.

NOTES:
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4. ISOLATION TRANSFORMER SHALL HAVE:
   FOR 18-PULSE DRIVE - 480 VAC, DELTA CONFIGURED PRIMARY & THREE (3) 480 VAC ZIG ZAG (WYE) CONFIGURED SECONDARIES. THE THREE (3) WYE/ZIG ZAG CONNECTIONS SHALL BE PHASE SHIFTED 20 DEG. FROM ONE ANOTHER FOR INPUT TO THE AFD.

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PROPOSED ELECTRICAL ONE-LINE DIAGRAM
(SHEET 2 OF 2)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
PROPOSED ELECTRICAL ONE-LINE DIAGRAM (2 OF 2)

W.O. 5061
SHEET E-9 OF E-25

MATCH LINE – FOR CONTINUATION REFERENCE SHEET E-11

CONTACT DEVELOPMENT CHART DISCHARGE VALVE LIMIT SWITCH (LS)		
VALVE POSITION	CONTACT POSITION	
	OPEN	CLOSED
FULLY OPEN		X
INTERMEDIATE	X	X
FULLY CLOSED	X	

DEVICE LEGEND

AFD	ADJUSTABLE FREQUENCY DRIVE
ESD	EMERGENCY SHUTDOWN SWITCH
E-STOP	EMERGENCY STOP
ETM	ELAPSE TIME METER
LOR	LOCKOUT RELAY
LR	MECHANICAL LATCHING RELAY
LS	DISCHARGE VALVE LIMIT SWITCH
PSH	DISCHARGE LINE PRESSURE SWITCH
PSL	SEAL WATER PRESSURE SWITCH
PV1	SOLENOID PILOT VALVE PV1
PV2	SOLENOID PILOT VALVE PV2
R	RELAY
RTU	REMOTE TELEMETRY UNIT
SOL	SEAL WATER SOLENOID VALVE
TDR	TIME DELAY RELAY

□– DENOTES AFD TERMINAL

△– DENOTES TERMINAL FOR FIELD CONNECTION.

AFD CONTROL SCHEMATIC

SHEET 1 OF 2
(IDENTICAL FOR SLUDGE PUMP 3A THROUGH SLUDGE PUMP 3E)

NOTES:

1. EXISTING DISCHARGE VALVE LIMIT SWITCH CLOSES WHEN DISCHARGE VALVE OPENS & OPENS WHEN THE DISCHARGE VALVE FULLY CLOSES. REFERENCE CONTACT DEVELOPMENT CHART.
2. EXISTING SOLENOID PILOT VALVE PV1 IS FOR THE PNEUMATIC OPERATION OF THE DISCHARGE VALVE. THE DISCHARGE VALVE OPENS WHEN PV1 IS ENERGIZED AND CLOSES WHEN PV1 IS DE-ENERGIZED.
3. FUTURE SOLENOID PILOT VALVE PV2 WILL BE ADDED BY THE CITY WHEN THE NEED FOR THE RAPID CLOSING OF THE DISCHARGE VALVE ARISES. DISCHARGE VALVE WILL CLOSE RAPIDLY WHEN PV2 IS DE-ENERGIZED.
4. PROPOSED SEAL WATER PRESSURE SWITCH CLOSES ON LOW PRESSURE.
5. PROPOSED DISCHARGE LINE PRESSURE SWITCH CLOSES ON REACHING PUMPING PRESSURE.
6. THE SHIELD AND DRAIN WIRE FOR EACH ANALOG SIGNAL (4-20 mA) SHALL BE GROUNDED ON ONE END ONLY. THE SHIELD AND DRAIN WIRE AT THE OTHER END SHALL BE NEATLY TRIMMED AND TAPED w/ (2) LAYERS OF VINYL ELECTRICAL TAPE (SCOTCH 33+).
7. ENSURE FINAL LOGIC DESIGN DOES NOT CAUSE LOCKOUT RELAY (LOR) TRIP UNDER NORMAL START/STOP CONDITIONS.
8. MOUNT ENABLE/DISABLE SWITCH (SS-1) FOR REMOTE/LOCAL SPEED CONTROL INSIDE OF ENCLOSURE.
9. A PROGRAMMABLE LOGIC CONTROLLER (PLC) MAY BE PROVIDED IN EACH CABINET FOR THE CONTROL LOGIC SHOWN IN LIEU OF UTILIZING CONTROL RELAYS. PLC MUST BE SUBMITTED FOR APPROVAL.
10. START/STOP CONTROLS ARE MOMENTARY CHANGE OF STATE OF THE CONTACTS.
11. FUTURE SCADA RESET.
12. SINGLE SHOT OPERATION OF CONTACT UPON RESTORATION OF POWER AFTER A POWER FAILURE. SET DELAY FOR 5 SECONDS AFTER POWER FAILURE. MOMENTARY CONTACT CLOSURE SHALL BE SET FOR 2 SECONDS.

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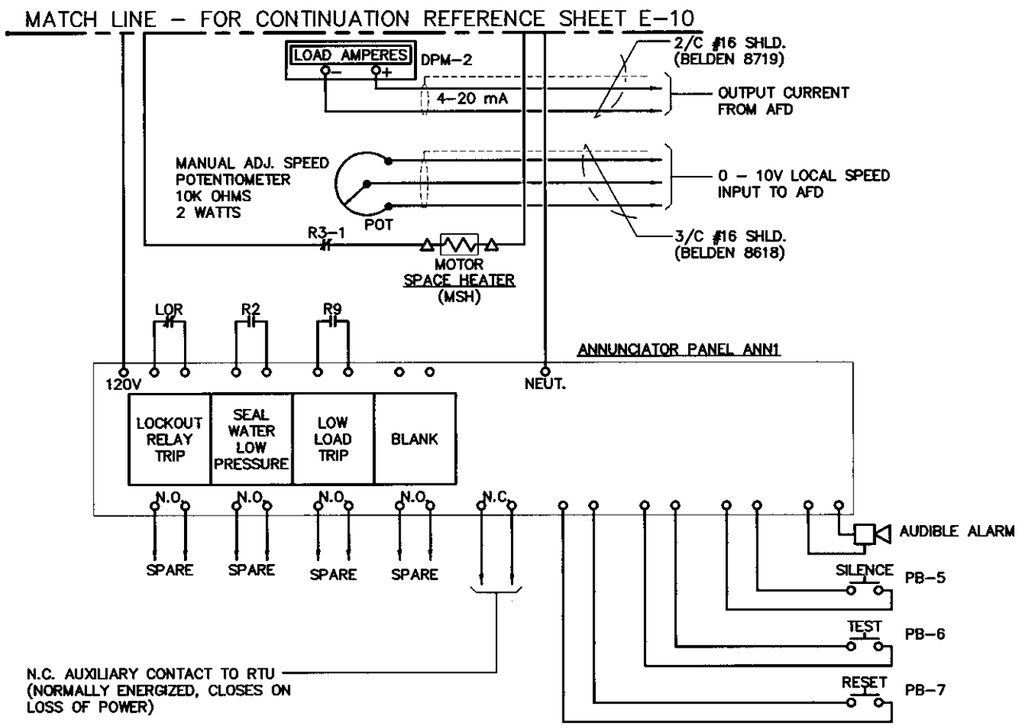
CITY of TAMPA
ADVANCED WASTEWATER TREATMENT PLANT
HOWARD F. CURREN

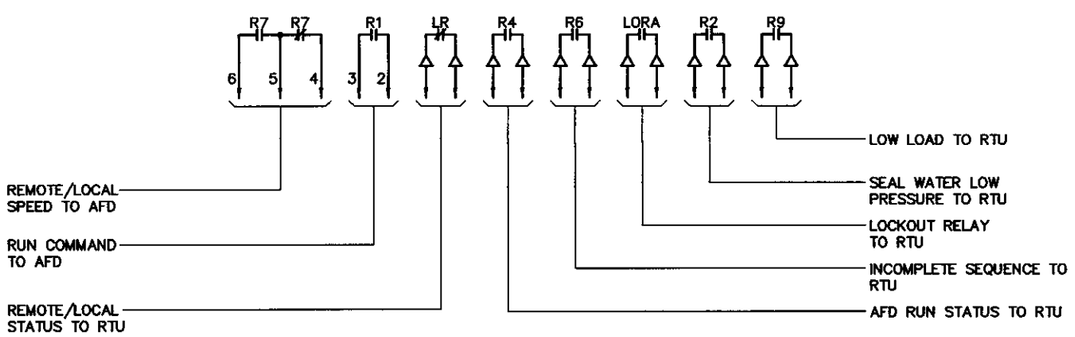
RETURN SLUDGE PUMPING STATION NO. 3
REHABILITATION
AFD CONTROL SCHEMATIC (1 OF 2)

W.O. 5061
SHEET E-10 OF E-25

TPB5-18

CONTACT DEVELOPMENT CHART DISCHARGE VALVE LIMIT SWITCH (LS)		
VALVE POSITION	CONTACT POSITION	
	OPEN	CLOSED
FULLY OPEN		X
INTERMEDIATE	X	X
FULLY CLOSED	X	





AFD CONTROL SCHEMATIC

SHEET 2 OF 2
(IDENTICAL FOR SLUDGE PUMP 3A THROUGH SLUDGE PUMP 3E)

NOTES:

1. EXISTING DISCHARGE VALVE LIMIT SWITCH CLOSES WHEN DISCHARGE VALVE OPENS & OPENS WHEN THE DISCHARGE VALVE FULLY CLOSES. REFERENCE CONTACT DEVELOPMENT CHART.
2. EXISTING SOLENOID PILOT VALVE PV1 IS FOR THE PNEUMATIC OPERATION OF THE DISCHARGE VALVE. THE DISCHARGE VALVE OPENS WHEN PV1 IS ENERGIZED AND CLOSES WHEN PV1 IS DE-ENERGIZED.
3. FUTURE SOLENOID PILOT VALVE PV2 WILL BE ADDED BY THE CITY WHEN THE NEED FOR THE RAPID CLOSING OF THE DISCHARGE VALVE ARISES. DISCHARGE VALVE WILL CLOSE RAPIDLY WHEN PV2 IS DE-ENERGIZED.
4. PROPOSED SEAL WATER PRESSURE SWITCH CLOSES ON LOW PRESSURE
5. PROPOSED DISCHARGE LINE PRESSURE SWITCH CLOSES ON REACHING PUMPING PRESSURE.
6. THE SHIELD AND DRAIN WIRE FOR EACH ANALOG SIGNAL (4–20 mA) SHALL BE GROUNDED ON ONE END ONLY. THE SHIELD AND DRAIN WIRE AT THE OTHER END SHALL BE NEATLY TRIMMED AND TAPED w/ (2) LAYERS OF VINYL ELECTRICAL TAPE (SCOTCH 33+).

□– DENOTES AFD TERMINAL

△– DENOTES TERMINAL FOR FIELD CONNECTION.

DEVICE LEGEND

AFD	ADJUSTABLE FREQUENCY DRIVE
ESD	EMERGENCY SHUTDOWN SWITCH
E-STOP	EMERGENCY STOP
ETM	ELAPSE TIME METER
LOR	LOCKOUT RELAY
LR	MECHANICAL LATCHING RELAY
LS	DISCHARGE VALVE LIMIT SWITCH
PSH	DISCHARGE LINE PRESSURE SWITCH
PSL	SEAL WATER PRESSURE SWITCH
PV1	SOLENOID PILOT VALVE PV1
PV2	SOLENOID PILOT VALVE PV2
R	RELAY
RTU	REMOTE TELEMETRY UNIT
SOL	SEAL WATER SOLENOID VALVE
TDR	TIME DELAY RELAY

TPB5-19

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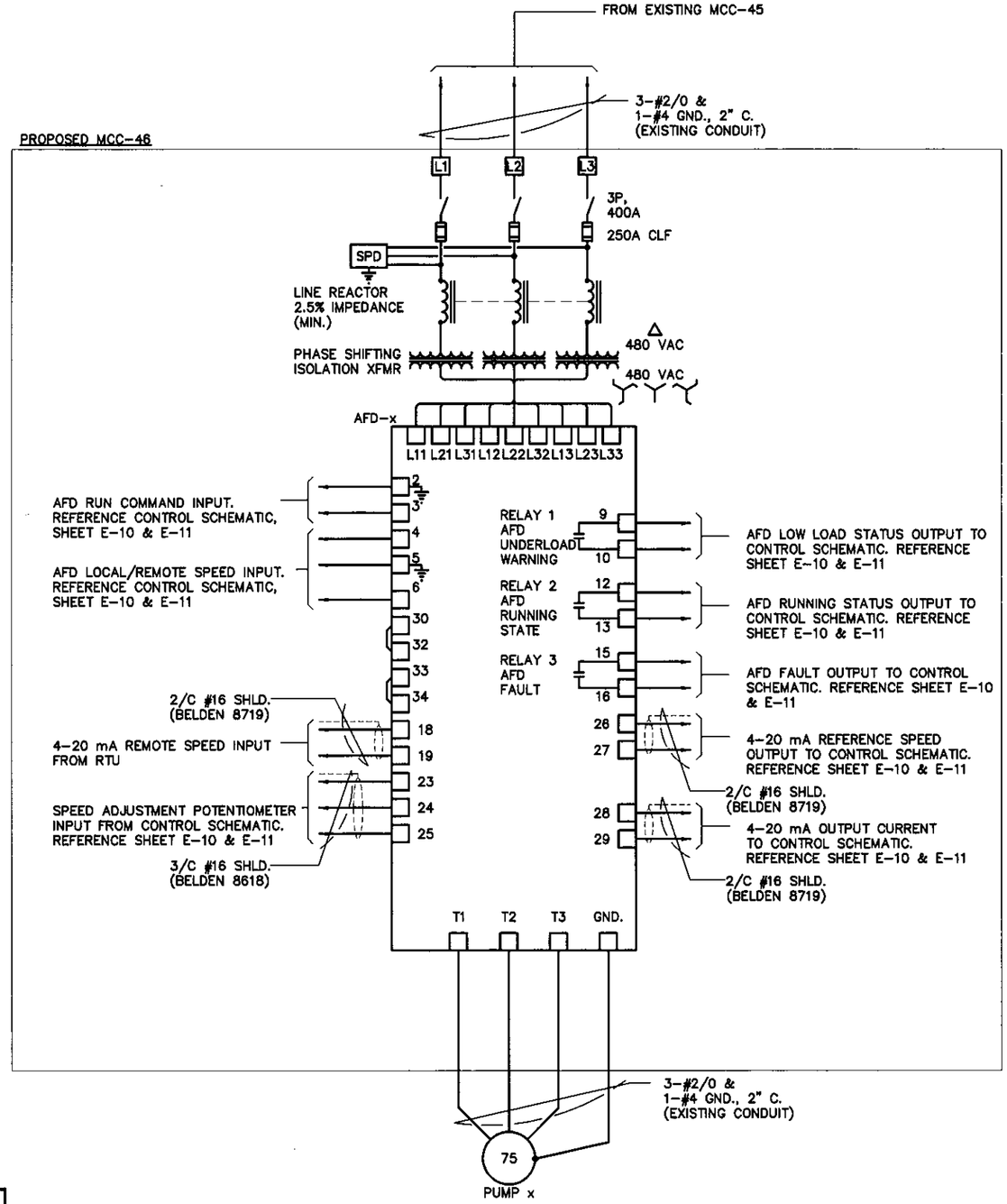
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CITY of TAMPA
ADVANCED WASTEWATER TREATMENT PLANT
HOWARD F. CURREN

RETURN SLUDGE PUMPING STATION NO. 3
REHABILITATION
AFD CONTROL SCHEMATIC (2 OF 2)

W.O. 5061
SHEET
E-11
OF E-25

TPB5-20



NOTES:

1. REPLACE x WITH THE FOLLOWING:
   - A FOR SLUDGE PUMP 3A
   - B FOR SLUDGE PUMP 3B
   - C FOR SLUDGE PUMP 3C
   - D FOR SLUDGE PUMP 3D
   - E FOR SLUDGE PUMP 3E
2. ALL CONTROL WIRING SHALL BE AWG #14 UNLESS OTHERWISE NOTED.
3. THE ADJUSTABLE FREQUENCY DRIVE AND THE ASSOCIATED COMPONENTS (FUSES, LINE REACTORS, PHASE SHIFTING TRANSFORMER, WIRING, ETC.) SHALL BE SIZED FOR FUTURE INSTALLATION OF A 100 HP VARIABLE TORQUE MOTOR LOAD. THE DRIVE SHALL NOT DEPEND ON ITS OVERLOAD CAPACITY TO OPERATE THE 100 HP LOAD.
4. PROVIDE THE NECESSARY PROGRAMMING MODIFICATIONS TO THE AFD OPERATING SOFTWARE TO ENSURE PROPER CONTROL OPERATION WITH THE CONTACT INPUT/OUTPUTS SHOWN IN THE SCHEMATIC.

PROPOSED SLUDGE PUMP AFD CONNECTION DIAGRAM

(IDENTICAL FOR SLUDGE PUMP 3A THROUGH SLUDGE PUMP 3E)

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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

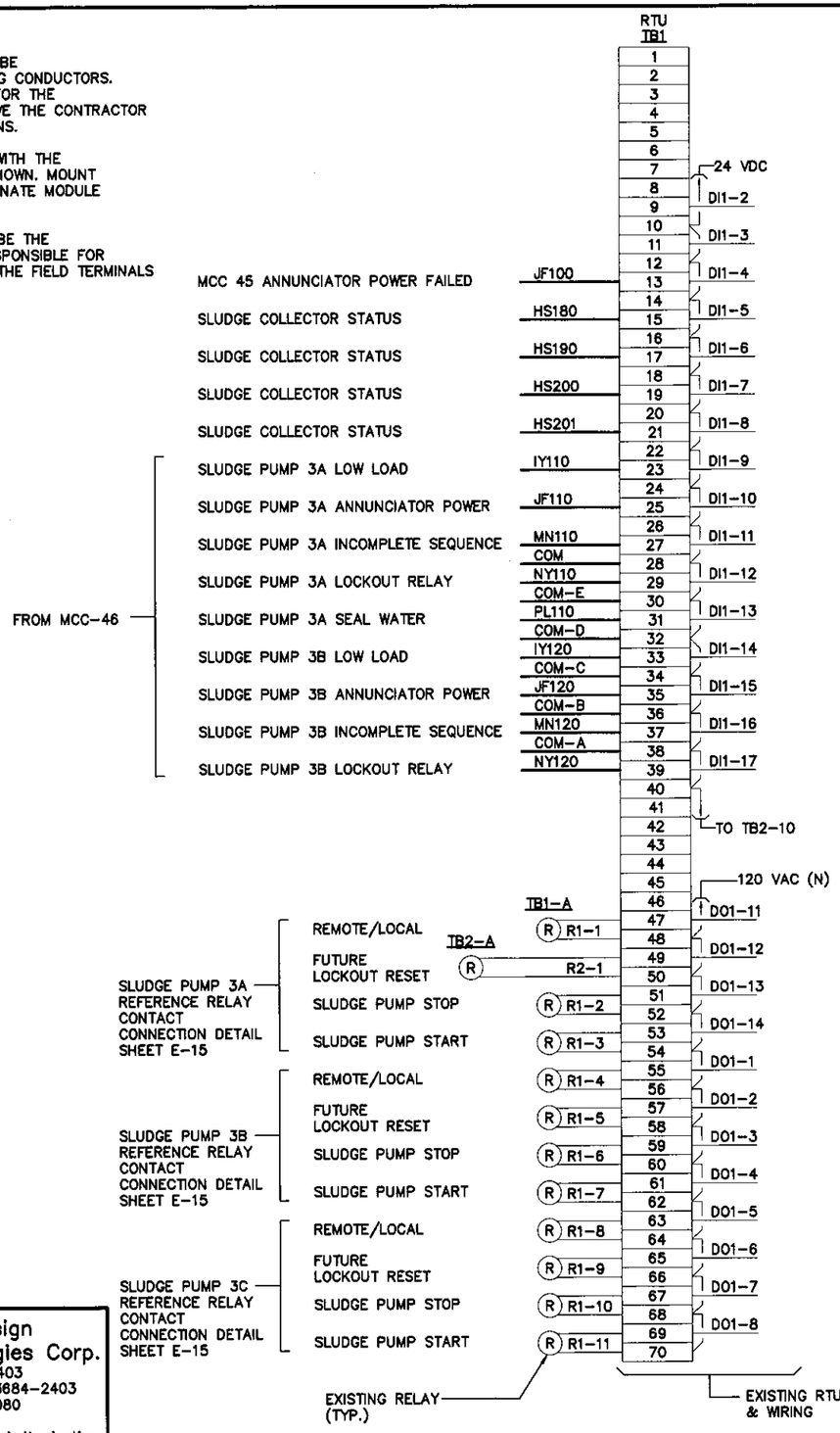
RETURN SLUDGE PUMPING STATION NO. 3
REHABILITATION
AFD CONNECTION DIAGRAM

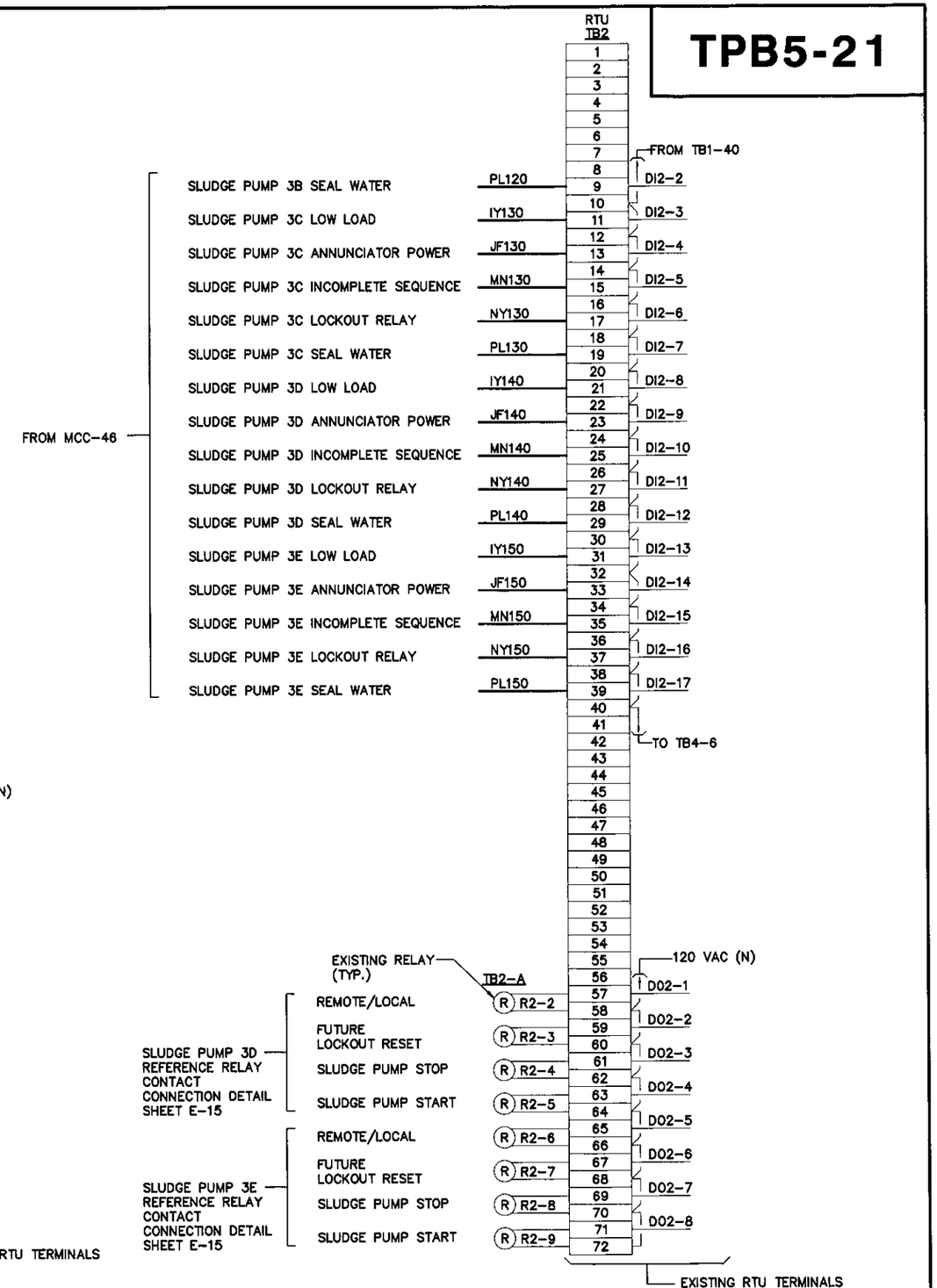
W.O. 5061
SHEET E-12
OF E-25

TPB5-21

NOTES:

1. EXISTING FIELD CONNECTIONS & WIRING TO THE RTU SHALL BE FULLY DOCUMENTED BY CONTRACTOR BEFORE DISCONNECTING CONDUCTORS. EXISTING WIRING & TERMINAL CONNECTIONS ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR VERIFYING EXISTING CONNECTIONS.
2. PROVIDE GE FANUC ANALOG OUTPUT MODULE COMPATIBLE WITH THE EXISTING RTU PLC FOR THE PROPOSED ANALOG OUTPUTS SHOWN. MOUNT ANALOG OUTPUT MODULE IN EXISTING SPARE SLOT. COORDINATE MODULE INSTALLATION & CONNECTIONS WITH OWNER.
3. CONNECTIONS FROM FIELD TERMINALS IN RTU TO PLC WILL BE THE RESPONSIBILITY OF THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPOSED CONNECTIONS FROM THE FIELD DEVICES TO THE FIELD TERMINALS IN THE RTU.





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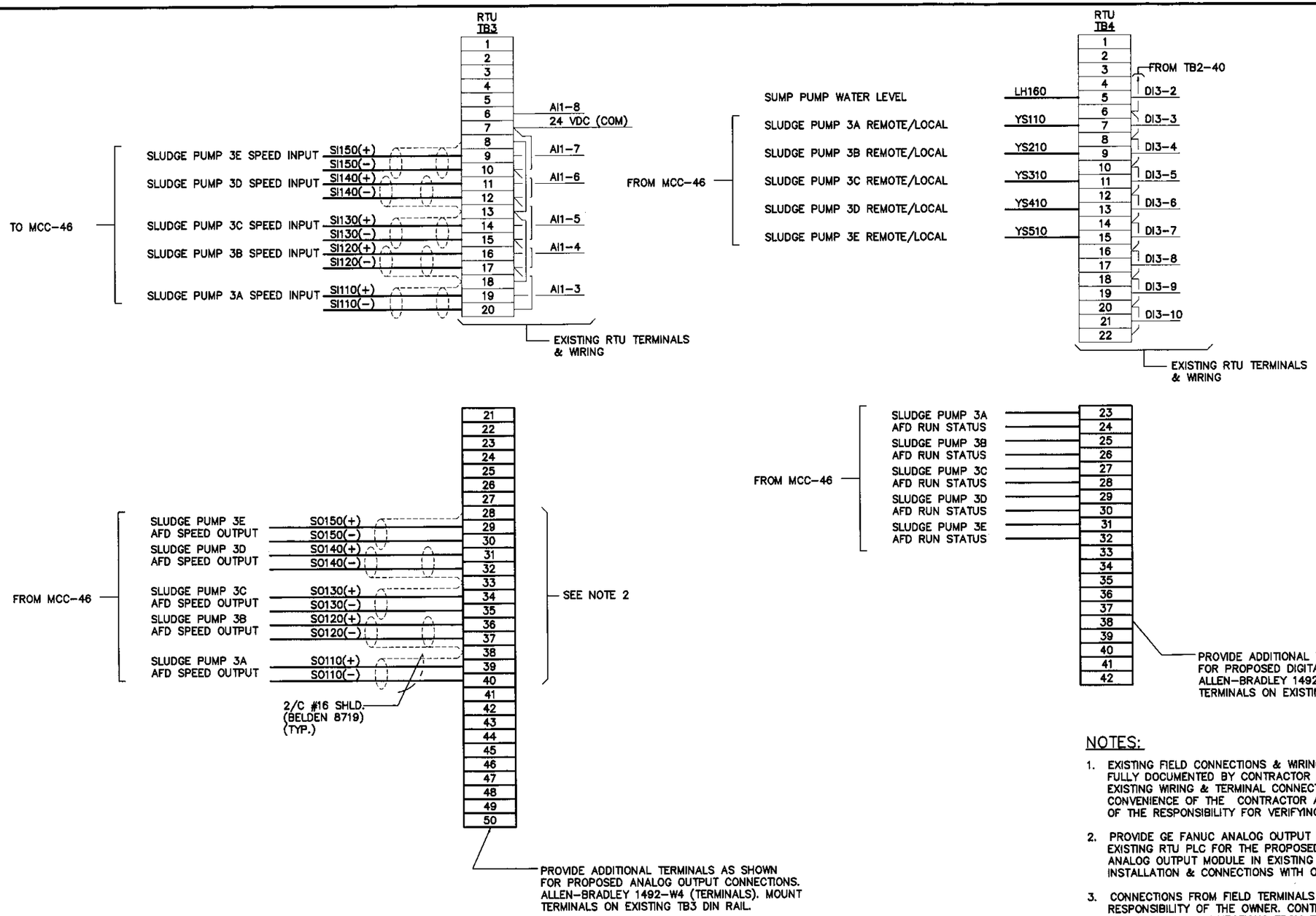
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HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
RTU INTERCONNECTION DIAGRAM (1 OF 2)

W.O. 5061
SHEET E-13 OF E-25

TPB5-22



NOTES:

1. EXISTING FIELD CONNECTIONS & WIRING TO THE RTU SHALL BE FULLY DOCUMENTED BY CONTRACTOR BEFORE DISCONNECTING CONDUCTORS. EXISTING WIRING & TERMINAL CONNECTIONS ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR VERIFYING EXISTING CONNECTIONS.
2. PROVIDE GE FANUC ANALOG OUTPUT MODULE COMPATIBLE WITH THE EXISTING RTU PLC FOR THE PROPOSED ANALOG OUTPUTS SHOWN. MOUNT ANALOG OUTPUT MODULE IN EXISTING SPARE SLOT. COORDINATE MODULE INSTALLATION & CONNECTIONS WITH OWNER.
3. CONNECTIONS FROM FIELD TERMINALS IN RTU TO PLC WILL BE THE RESPONSIBILITY OF THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPOSED CONNECTIONS FROM THE FIELD DEVICES TO THE FIELD TERMINALS IN THE RTU.
4. SCADA OVERRIDE – REMOTE/LOCAL OUTPUT CONTACT FROM THE RTU IS A MOMENTARY CONTACT CLOSURE. EACH MOMENTARY CONTACT CLOSURE TOGGLES THE AFD SPEED CONTROL FROM LOCAL CONTROL TO REMOTE CONTROL (CONTROL FROM SCADA).

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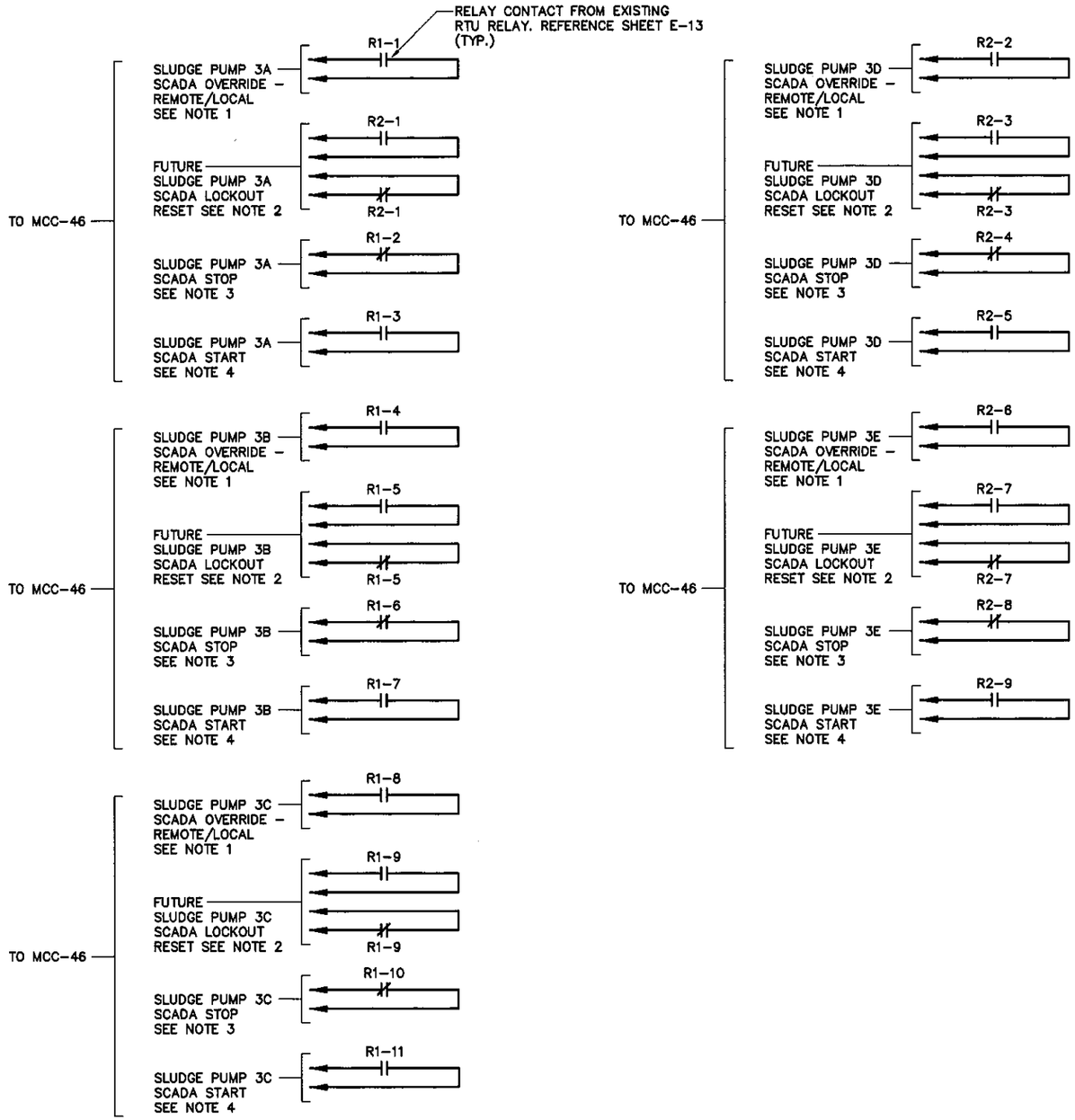
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
RTU INTERCONNECTION DIAGRAM (2 OF 2)

W.O. 5061
SHEET E-14 OF E-25



NOTES:

1. SCADA OVERRIDE – REMOTE/LOCAL OUTPUT CONTACT FROM THE RTU IS A MOMENTARY CONTACT CLOSURE. EACH MOMENTARY CONTACT CLOSURE TOGGLES THE AFD SPEED CONTROL FROM LOCAL CONTROL TO REMOTE CONTROL (CONTROL FROM SCADA).
2. LOCKOUT RESET – LOCKOUT RESET OUTPUT CONTACT FROM THE RTU IS A MOMENTARY OPEN CONTACT AND CONTACT CLOSURE. A MOMENTARY OPEN CONTACT AND CONTACT CLOSURE RESETS THE LOCKOUT RELAY. THIS IS A FUTURE CONNECTION. CONDUCTORS SHALL BE ROUTED TO THE RTU ENCLOSURE, LABELED, COILED AND STORED NEATLY FOR FUTURE CONNECTIONS.
3. SLUDGE PUMP STOP – SLUDGE PUMP STOP OUTPUT CONTACT FROM THE RTU IS A MOMENTARY OPEN CONTACT. A MOMENTARY OPEN CONTACT STOPS THE SLUDGE PUMP.
4. SLUDGE PUMP START – SLUDGE PUMP START OUTPUT CONTACT FROM THE RTU IS A MOMENTARY CONTACT CLOSURE. A MOMENTARY CONTACT CLOSURE STARTS THE SLUDGE PUMP.

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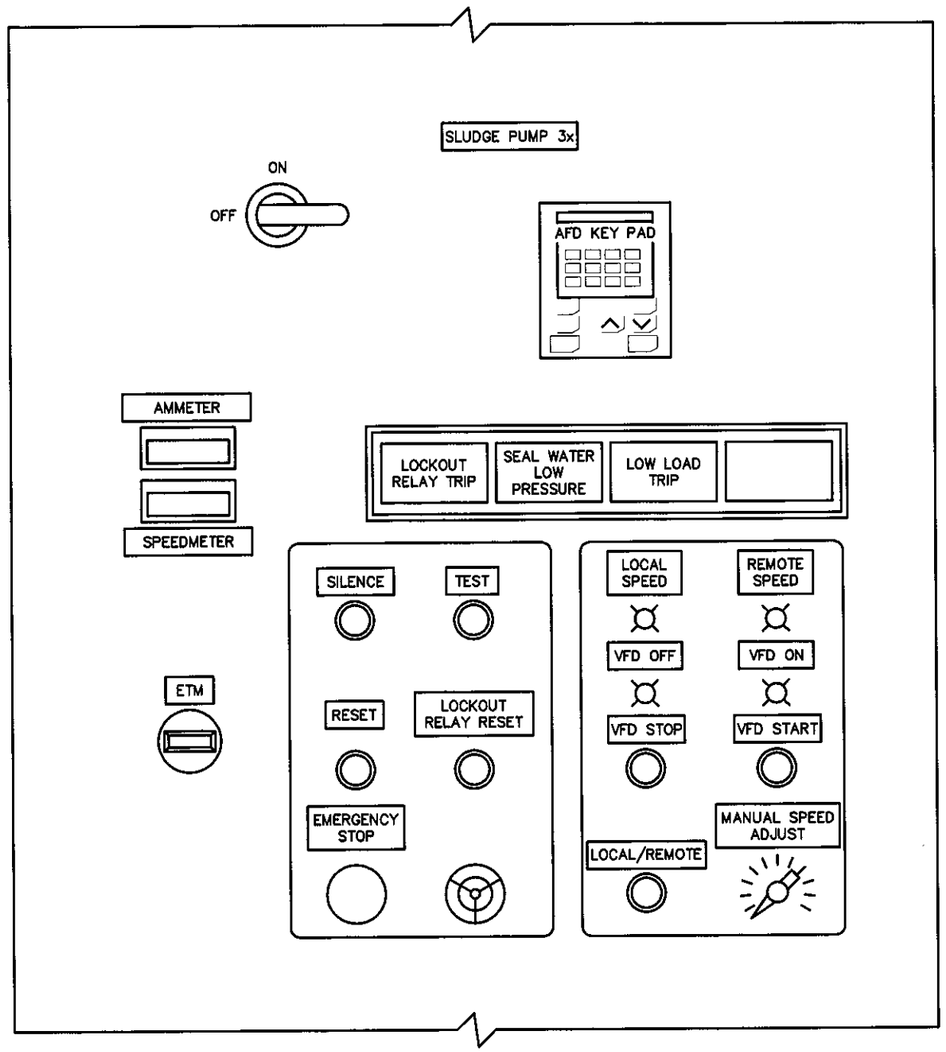
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
RTU RELAY CONTACT DETAIL

W.O. 5061
SHEET E-15 OF E-25



NOTES:

1. REPLACE x WITH THE FOLLOWING:
   - A FOR SLUDGE PUMP 3A
   - B FOR SLUDGE PUMP 3B
   - C FOR SLUDGE PUMP 3C
   - D FOR SLUDGE PUMP 3D
   - E FOR SLUDGE PUMP 3E
2. THE DOOR ON EACH AFD CABINET IN MCC–46 SHALL BE HINGED ON THE LEFT SIDE OF THE CABINET TO AVOID DOOR OPENING RESTRICTIONS FROM EXISTING BUILDING SUPPORT COLUMNS.
3. THE ADJUSTABLE FREQUENCY DRIVE (AFD) SHALL BE MANUFACTURED BY ROBICON & SHALL COMPLY WITH THE DRAWINGS & SPECIFICATIONS FOR THIS PROJECT. A SINGLE SOURCE CERTIFICATE OF CONDITIONS AND CIRCUMSTANCES WAS EXECUTED FOR THIS AFD. THE CERTIFICATE STATES THAT NO OTHER AFD SHALL BE CONSIDERED AN OR–EQUAL FOR THIS PROJECT IN ACCORDANCE WITH THE CITY'S STANDARDIZATION PROGRAM. THE "OR–EQUAL" CLAUSE APPLIES TO ALL OTHER EQUIPMENT IN THIS PROJECT, UNLESS SPECIFICALLY EXCLUDED BY A SINGLE SOURCE CERTIFICATE.

PROPOSED AFD CABINET PARTIAL FRONT DOOR ELEVATION

(TYPICAL FOR SLUDGE PUMPS 3A – 3E)

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RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
PROPOSED AFD CABINET ELEVATION

W.O. 5061
SHEET E-16 OF E-25

TPB5-25

NOTES:

1. THE ADJUSTABLE FREQUENCY DRIVE (AFD) SHALL BE MANUFACTURED BY ROBICON & SHALL COMPLY WITH THE DRAWINGS & SPECIFICATIONS FOR THIS PROJECT. A SINGLE SOURCE CERTIFICATE OF CONDITIONS AND CIRCUMSTANCES WAS EXECUTED FOR THIS AFD. THE CERTIFICATE STATES THAT NO OTHER AFD SHALL BE CONSIDERED AN OR-EQUAL FOR THIS PROJECT IN ACCORDANCE WITH THE CITY'S STANDARDIZATION PROGRAM. THE "OR-EQUAL" CLAUSE APPLIES TO ALL OTHER EQUIPMENT IN THIS PROJECT, UNLESS SPECIFICALLY EXCLUDED BY A SINGLE SOURCE CERTIFICATE.

COMPONENT SCHEDULE

LABEL	DESCRIPTION	MANUFACTURER	MODEL	REMARKS
SOL-3A - SOL-3E	SEAL WATER SOLENOID VALVE	ASCO	EF8210G88	120 VAC, 2-WAY, N.C., SS BODY
PSH-3A - PSH-3E	DISCHARGE LINE PRESSURE SWITCH	NEO-DYN	123P52C6R	HERMETICALLY SEALED w/ ADJ. RANGE 1 PSI DEC. TO 30 PSI INCR.
PSL-3A - PSL-3E	SEAL WATER PRESSURE SWITCH	NEO-DYN	132P58C6GHIJ	NEMA 4X w/ ADJ. RANGE 1 PSI DEC. TO 30 PSI INCR.
AFD-3A - AFD-3E	RETURN SLUDGE PUMP ADJUSTABLE FREQ. DRIVE	ROBICON	454GT	VARIABLE TORQUE, 100 HP, 130A INPUT, 124A OUTPUT
PL1	LED PILOT LIGHT (RED LENS)	ABB CONTROL INC.	CBG-KLFPTL1R	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
PL2	LED PILOT LIGHT (GREEN LENS)	ABB CONTROL INC.	CBG-KLFPTL1G	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
PL3	LED PILOT LIGHT (BLUE LENS)	ABB CONTROL INC.	CBG-KLFPTL1L	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
PL4	LED PILOT LIGHT (YELLOW LENS)	ABB CONTROL INC.	CBG-KLFPTL1Y	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
ETM	ELAPSED TIME METER	FOURTH DIMENSION INSTRUMENT (FDI)	106112	120 VAC
DPM-1 (AFD SPEED), DPM-2 (LOAD AMPERES)	DIGITAL PANEL METER	RED LION CONTROLS	PAXH	3 1/2-DIGITAL DISPLAY, 4-20 mA INPUT, LOOP POWERED
SI	SIGNAL ISOLATOR	MOORE INDUSTRIES	FCT/PRG/PRG/U/-RF [DIN]	FIELD CONFIGURABLE, 120 VAC POWER PROGRAMMABLE INPUT & OUTPUT
POT	POTENTIOMETER	CLAROSTAT	73JA	10K OHM, 2 WATT, 10 TURN POTENTIOMETER, w/ DIAL PLATE SS. SHAFT & GRADUATED DIAL
LOR, LORA, R1, R2, R2A, R3, R4, R5, R6, R7, R8, R9, R10, R11	CONTROL RELAYS	POTTER & BRUMFIELD	KUP17AC9-120 w/ 27E867 SOCKET, 20C254 HOLD DOWN SPRING & 40G432 INSULATOR PAD	120 VAC COIL, 10A CONTACTS, 4PDT
LR	LATCHING RELAY	POTTER & BRUMFIELD	KUR11A15-120 w/ 27E893 SOCKET & 20C318 HOLD DOWN SPRING	120 VAC COIL, 10A CONTACTS, 2PDT
TDR1, TDR2, TDR3	TIME DELAY RELAY	POTTER & BRUMFIELD	CNM5 w/ 27E892 SOCKET	120 VAC COIL, 10A CONTACTS, ON DELAY, OFF DELAY OR SINGLE SHOT SETTABLE
E-STOP	EMERGENCY STOP	ABB CONTROL INC.	CBG-PMP40R	MOMENTARY PUSH BUTTON, NEMA 4X, WITH RED MUSHROOM OPERATOR & LEGEND PLATE
PB-1, PB-2, PB-3, PB-4, PB-5, PB-6, PB-7	PUSH BUTTON	ABB CONTROL INC.	CBG-KP SERIES	MOMENTARY PUSH BUTTON, NEMA 4X, w/ LEGEND PLATE
SS-1	SELECTOR SWITCH (ENABLE/DISABLE)	ABB CONTROL INC.	CBG-2AML	2 POSITION SELECTOR SWITCH, NEMA 4X, w/ LEGEND PLATE
ANN-1	ANNUNCIATOR PANEL	RONAN	X11-1000 SERIES	SOLID STATE WITH ALARM HORN & AUXILIARY RELAY CONTACT OUTPUTS. PROVIDE TERMINAL CONNECTIONS FOR SILENCE, TEST & RESET PUSH BUTTONS.
T1	CONTROL TRANSFORMER	SQUARE D	TF2000D1	2 KVA w/ FUSE CLIPS, 480V PRIMARY/120V SECONDARY
TVSS	LIGHTNING/SURGE ARRESTER	ADVANCED PROTECTION TECHNOLOGIES	TE/5XF	480 VAC, 3ø

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3
REHABILITATION
ELECTRICAL COMPONENT SCHEDULE

W.O. 5061
SHEET E-17 OF E-25

EXISTING CONDUIT / CONDUCTOR SCHEDULE

CONDUIT NO.	COND. SIZE	NO. WIRES	WIRE SIZE	FROM	TO	REMARKS
40M5A	4"	3	500 KCMIL	SWITCHGEAR NO. 40	MCC-45 (BUS 1)	
		1	#1/0 NEUT.			
		1	#2/0 GND.			
40M5B	4"	3	500 KCMIL	SWITCHGEAR NO. 40	MCC-45 (BUS 1)	
		1	#1/0 NEUT.			
		1	#2/0 GND.			
40M6A	4"	3	500 KCMIL	SWITCHGEAR NO. 40	MCC-45 (BUS 2)	
		1	#1/0 NEUT.			
		1	#2/0 GND.			
40M6B	4"	3	500 KCMIL	SWITCHGEAR NO. 40	MCC-45 (BUS 2)	
		1	#1/0 NEUT.			
		1	#2/0 GND.			
45M1	2"	3	#2/0	MCC-45	PROPOSED MCC-46 (SLUDGE PUMP 3A)	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN.
		1	#4 GND.			
45M2	2"	3	#2/0	MCC-45	PROPOSED MCC-46 (SLUDGE PUMP 3B)	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN.
		1	#4 GND.			
45M3	2"	3	#2/0	MCC-45	PROPOSED MCC-46 (SLUDGE PUMP 3C)	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN.
		1	#4 GND.			
45M4	2"	3	#2/0	MCC-45	PROPOSED MCC-46 (SLUDGE PUMP 3D)	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN.
		1	#4 GND.			
45M5	2"	3	#2/0	MCC-45	PROPOSED MCC-46 (SLUDGE PUMP 3E)	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN.
		1	#4 GND.			
46M1A	2"	3	#2/0	MCC-46	MOTOR FT-RSP-3A	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN. SEE NOTE 6
		1	#4 GND.			
46M1B	1"	2	#10	MCC-46	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
46M1E	1"	8	#14	MCC-46	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
46M1F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
46M2A	2"	3	#2/0	MCC-46	MOTOR FT-RSP-3B	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN. SEE NOTE 6
		1	#4 GND.			
46M2B	1"	2	#10	MCC-46	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
46M2E	1"	8	#14	MCC-46	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
46M2F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
46M3A	2"	3	#2/0	MCC-46	MOTOR FT-RSP-3C	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN. SEE NOTE 6
		1	#4 GND.			
46M3B	1"	2	#10	MCC-46	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
46M3E	1"	8	#14	MCC-46	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3

NOTES:

1. THE CONDUITS & CONDUCTORS SHOWN ON THIS DRAWING ARE EXISTING & SHALL BE USED IN THE PROPOSED INSTALLATION, U.O.N.
2. EXISTING CONDUITS ARE PROVIDED FOR REFERENCE ONLY. CONDUIT SIZE, CONDUCTOR SIZE, & THE NUMBER OF CONDUCTORS ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. EXISTING CONDUIT & CONDUCTORS SHALL BE EXTENDED & MODIFIED AS NECESSARY TO CONNECT TO PROPOSED EQUIPMENT. PROVIDE ADDITIONAL CONDUIT & CONDUCTOR LENGTHS AS REQUIRED.
4. NEATLY COIL & TAPE SPARE CONDUCTORS.
5. DISCONNECT, NEATLY COIL & TAPE CONDUCTORS FOR SPEED CONTROL SWITCH (LP-45 CKT. #15) & UPDATE LP-45 PANELBOARD DIRECTORY. 120 VAC TO RTU (LP-45 CKT. #18) SHALL REMAIN.
6. TERMINATE CONDUIT FROM PROPOSED JUNCTION BOX INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
7. ALL CONDUCTOR SPLICES SHALL BE IN NEMA 4X STAINLESS STEEL ENCLOSURES, SPLICED CONDUCTORS NUMBERING MORE THAN SIX (6) SHALL BE SPLICED USING TERMINAL BLOCKS.

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DRN: RWB
CKD: BEH
DATE: 02/15/02

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
CONDUIT SCHEDULE

W.O. 5061
SHEET E-18 OF E-25

TPB5-27

EXISTING CONDUIT / CONDUCTOR SCHEDULE

CONDUIT NO.	COND. SIZE	NO. WIRES	WIRE SIZE	FROM	TO	REMARKS
46M3F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
46M4A	2"	3	#2/0	MCC-46	MOTOR FT-RSP-3D	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN. SEE NOTE 6.
		1	#4 GND.			
46M4B	1"	2	#10	MCC-46	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
46M4E	1"	8	#14	MCC-46	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
46M4F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
46M5A	2"	3	#2/0	MCC-46	MOTOR FT-RSP-3E	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN. SEE NOTE 6.
		1	#4 GND.			
46M5B	1"	2	#10	MCC-46	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
46M5E	1"	8	#14	MCC-46	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
46M5F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
46M8	2 1/2"	51	#14	MCC-46	SCANNER 45 (MCC-45)	SEE NOTE 3. TERMINATE CONDUIT IN PULL BOX.
		9	2/C #16 SHLD.			
46M51	3/4"	2	#12	RTU	LP-45	SEE NOTE 3 & 5.
		1	#12 GND.			
		1	#12 SPARE			

NOTES:

1. THE CONDUITS & CONDUCTORS SHOWN ON THIS DRAWING ARE EXISTING & SHALL BE USED IN THE PROPOSED INSTALLATION, U.O.N.
2. EXISTING CONDUITS ARE PROVIDED FOR REFERENCE ONLY. CONDUIT SIZE, CONDUCTOR SIZE, & THE NUMBER OF CONDUCTORS ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. EXISTING CONDUIT & CONDUCTORS SHALL BE EXTENDED & MODIFIED AS NECESSARY TO CONNECT TO PROPOSED EQUIPMENT. PROVIDE ADDITIONAL CONDUIT & CONDUCTOR LENGTHS AS REQUIRED.
4. NEATLY COIL & TAPE SPARE CONDUCTORS.
5. DISCONNECT, NEATLY COIL & TAPE CONDUCTORS FOR SPEED CONTROL SWITCH (LP-45 CKT. #15) & UPDATE LP-45 PANELBOARD DIRECTORY. 120 VAC TO RTU (LP-45 CKT. #18) SHALL REMAIN.
6. TERMINATE CONDUIT FROM PROPOSED JUNCTION BOX INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
7. ALL CONDUCTOR SPLICES SHALL BE IN NEMA 4X STAINLESS STEEL ENCLOSURES, SPLICED CONDUCTORS NUMBERING MORE THAN SIX (6) SHALL BE SPLICED USING TERMINAL BLOCKS.

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
CONDUIT SCHEDULE

W.O. 5061
SHEET E-19 OF E-25

PROPOSED CONDUIT / CONDUCTOR SCHEDULE

TPB5-28

CONDUIT NO.	COND. SIZE	NO. WIRES	WIRE SIZE	FROM	TO	REMARKS
46M1G	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-3A & PSL-3A, SEE NOTES 1, 2 & 4
		1	#14 GND.			
46M1J	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	EXISTING PULL BOX	PROPOSED PSH-3A, EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID PV1 & FUTURE SOLENOID PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
46M2G	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-3B & PSL-3B, SEE NOTES 1, 2 & 4
		1	#14 GND.			
46M2J	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	EXISTING PULL BOX	PROPOSED PSH-3B EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID PV1 & FUTURE SOLENOID PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
46M3G	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-3C & PSL-3C, SEE NOTES 1, 2 & 4
		1	#14 GND.			
46M3J	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	EXISTING PULL BOX	PROPOSED PSH-3C EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID PV1 & FUTURE SOLENOID PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
46M4G	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-3D & PSL-3D, SEE NOTES 1, 2 & 4
		1	#14 GND.			
46M4J	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	EXISTING PULL BOX	PROPOSED PSH-3D, EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID PV1 & FUTURE SOLENOID PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
46M5G	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-3E & PSL-3E, SEE NOTES 1, 2 & 4
		1	#14 GND.			
46M5J	3/4"	4	#14	EXISTING CONTROL TERMINAL BOX	EXISTING PULL BOX	PROPOSED PSH-3E, EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID PV1 & FUTURE SOLENOID PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
46M8A	2 1/2"	51	#14	PULL BOX	MCC-46	NEATLY COIL, TAPE & STORE CONDUCTORS INSIDE OF MCC-46 CABINET. COORD. w/ OWNER.
		9	2/C #16 SHLD.			
46M50	3 1/2"	140	#14	RTU	MCC-46	TERMINATE CONDUCTORS IN RTU & MCC AS SHOWN IN SHEETS E-13, E-14 & E-15.
		1	#14 GND.			
		12	2/C #16 SHLD.			
46M51A	3/4"	2	#12	MCC-46	RTU	RTU POWER FROM PANELBOARD LP-45
		1	#12 GND.			
		1	#12 SPARE			

NOTES:

1. ROUTE CONDUIT ALONG BASE OF CONCRETE PUMP BASE & SECURE WITH ALUMINUM UNISTRUT & CONDUIT CLAMPS AT INTERVALS NOT TO EXCEED 5'-0".
2. PROVIDE LIQUIDTIGHT FLEXIBLE CONDUIT CONNECTION FROM JUNCTION BOX TO PROPOSED SEAL WATER SOLENOID VALVE & PROPOSED LOW SEAL WATER PRESSURE SWITCH.
3. PROVIDE LIQUIDTIGHT FLEXIBLE CONDUIT CONNECTION FROM EXISTING PULL BOX TO PROPOSED DISCHARGE LINE PRESSURE SWITCH. USE EXISTING LIQUIDTIGHT FLEXIBLE CONDUIT FROM EXISTING PULL BOX TO EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID VALVE PV1
4. INSTALL TERMINAL BLOCKS IN EXISTING CONTROL TERMINAL BOX. TERMINATE EXISTING CONDUCTORS FROM MCC-46 ON TERMINAL BLOCKS. EXTEND NEW CONDUCTORS FROM TERMINAL BLOCKS TO PROPOSED SEAL WATER SOLENOID VALVE & PROPOSED SEAL WATER PRESSURE SWITCH AS SHOWN.
5. INSTALL TERMINAL BLOCKS IN EXISTING CONTROL TERMINAL BOX. TERMINATE EXISTING CONDUCTORS FROM MCC-46 ON TERMINAL BLOCKS. EXTEND NEW CONDUCTORS FROM TERMINAL BLOCKS TO PROPOSED PRESSURE SWITCH & EXISTING LIMIT SWITCH & SOLENOID VALVE PV1 AS SHOWN.

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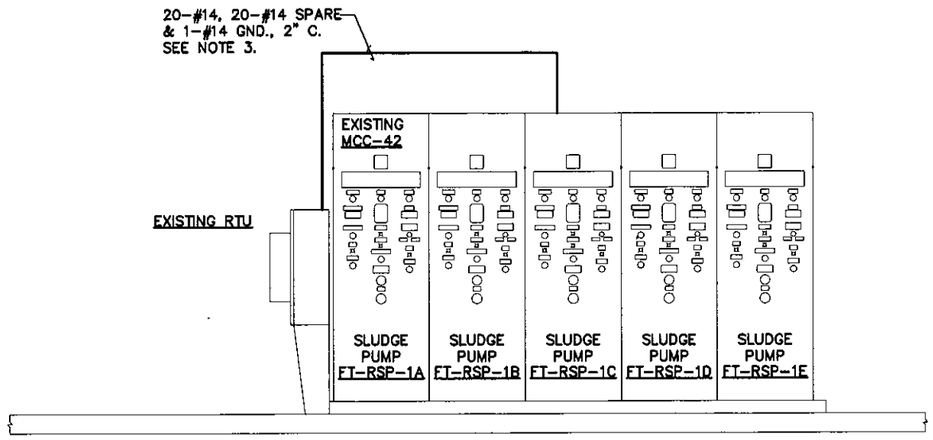
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CKD: BEH
DATE: 02/15/02

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 3 REHABILITATION
CONDUIT SCHEDULE

W.O. 5061
SHEET E-20 OF E-25



EXISTING ELECTRICAL RISER DIAGRAM

(RETURN SLUDGE PUMP STATION NO. 1)

NOTES:

1. BOLD LINES INDICATE PROPOSED CONSTRUCTION.
2. FIELD VERIFY ALL WIRING & CONNECTIONS IN RTU & AFD UNIT BEFORE MAKING PROPOSED CONNECTION.
3. SPARE CONDUCTORS ARE FOR THE FUTURE CONNECTIONS OF THE LOCK OUT RELAY RESET FROM THE SCADA.

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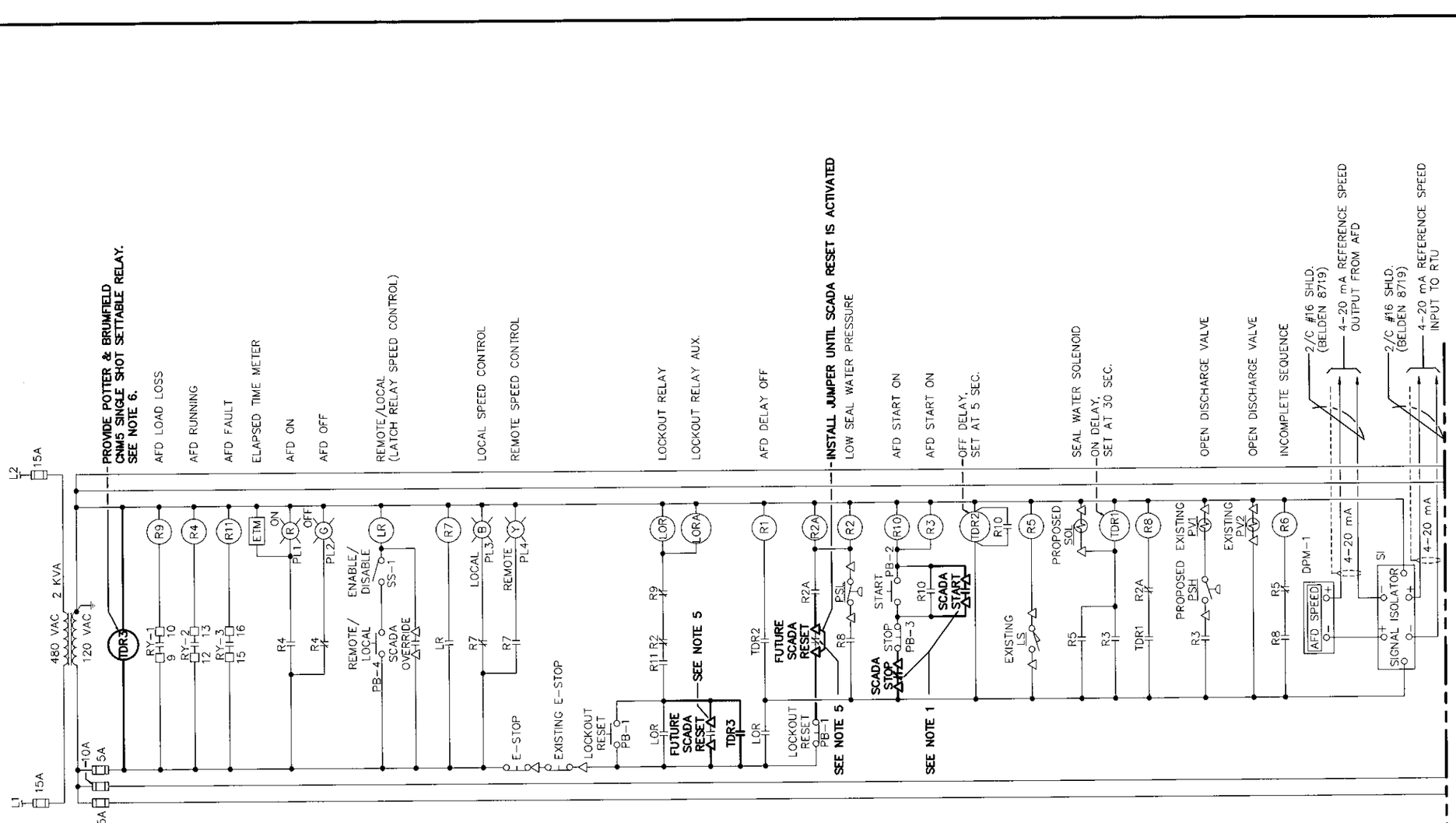
CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 1

EXISTING ELECTRICAL RISER DIAGRAM

W.O. 5061
SHEET E-21 OF E-25

TPB5-30



EXISTING AFD CONTROL SCHEMATIC

(IDENTICAL FOR SLUDGE PUMP 1A THROUGH SLUDGE PUMP 1E)

△– DENOTES TERMINAL FOR FIELD CONNECTION.

NOTES:

1. START/STOP CONTROLS ARE MOMENTARY CHANGE OF STATE OF THE CONTACTS.
2. BOLD LINES INDICATE PROPOSED CONSTRUCTION.
3. FIELD VERIFY ALL WIRING & CONNECTIONS IN RTU & AFD UNIT BEFORE MAKING PROPOSED CONNECTION.
4. CONTROL CONNECTIONS SHOWN FROM RTU SHALL BE CONNECTED DIRECTLY TO THE TERMINALS ON THE APPLICABLE COMPONENTS. REMOVE EXISTING WIRING & PROVIDE ADDITIONAL WIRING AS REQUIRED.
5. FUTURE SCADA RESET.
6. SINGLE SHOT OPERATION OF CONTACT UPON RESTORATION OF POWER AFTER A POWER FAILURE. SET DELAY FOR 5 SECONDS AFTER POWER FAILURE. MOMENTARY CONTACT CLOSURE SHALL BE SET FOR 2 SECONDS.

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 1

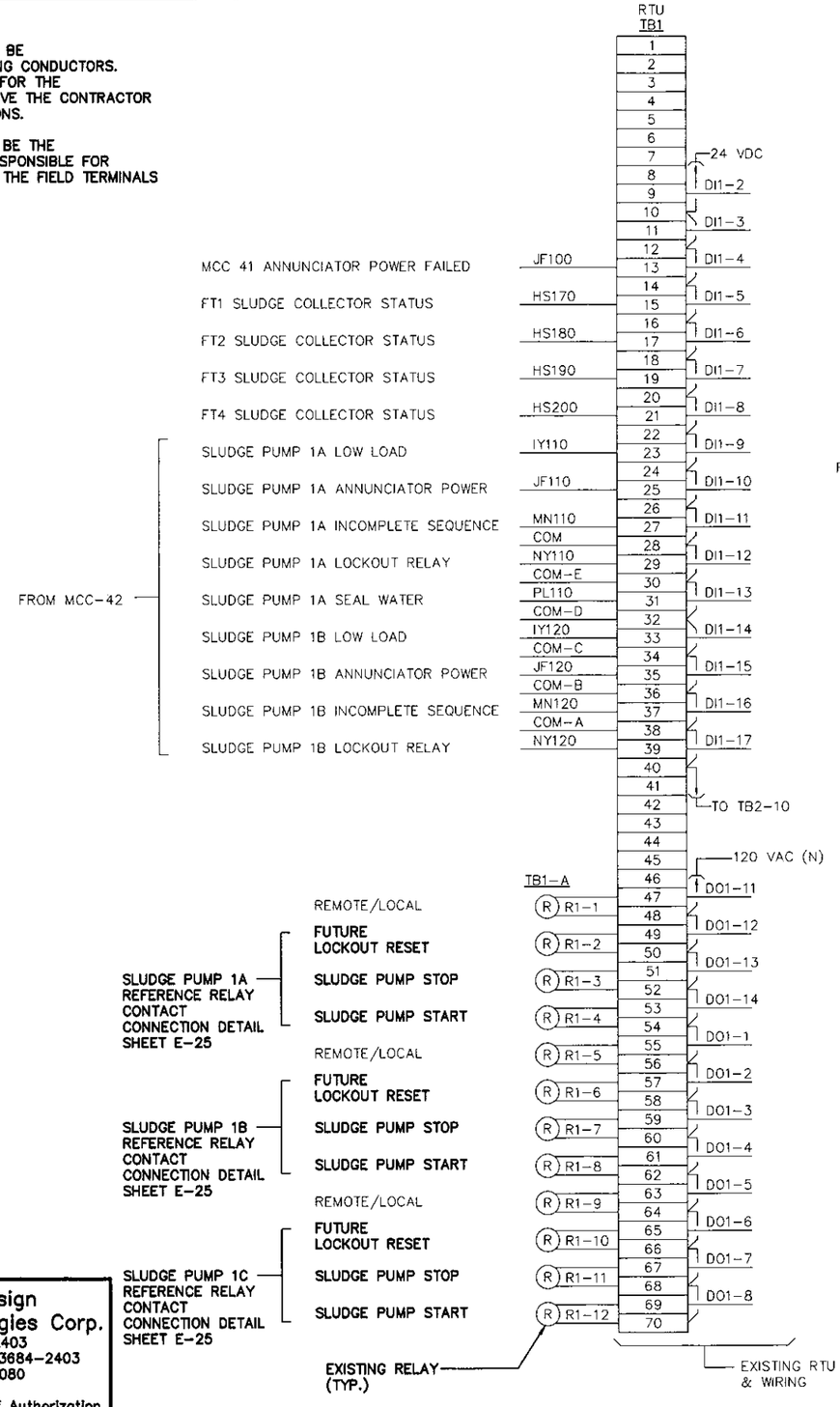
EXISTING AFD CONTROL SCHEMATIC

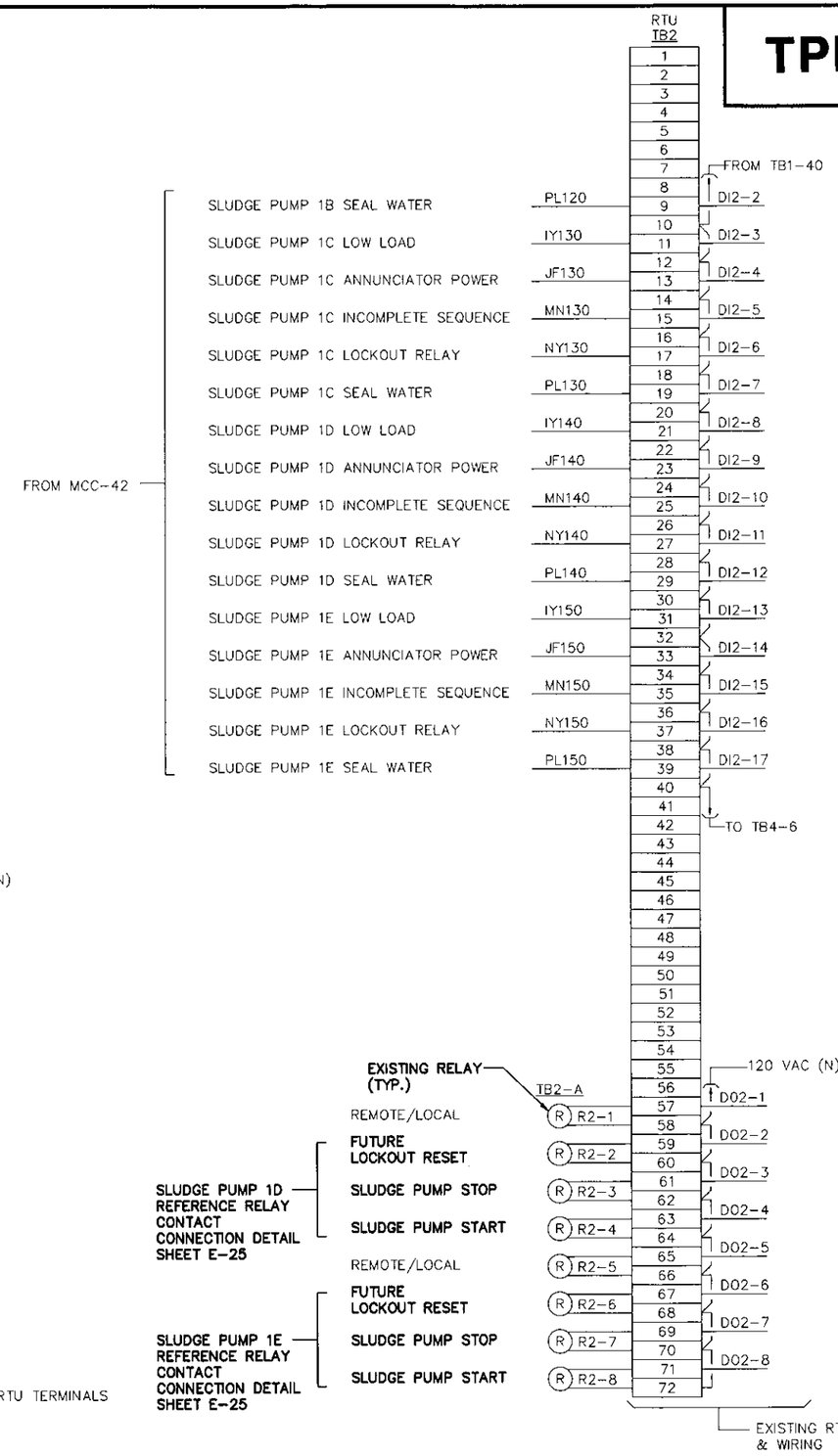
W.O. 5061
SHEET E-22
OF E-25

TPB5-31

NOTES:

1. EXISTING FIELD CONNECTIONS & WIRING TO THE RTU SHALL BE FULLY DOCUMENTED BY CONTRACTOR BEFORE DISCONNECTING CONDUCTORS. EXISTING WIRING & TERMINAL CONNECTIONS ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR VERIFYING EXISTING CONNECTIONS.
2. CONNECTIONS FROM FIELD TERMINALS IN RTU TO PLC WILL BE THE RESPONSIBILITY OF THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPOSED CONNECTIONS FROM THE FIELD DEVICES TO THE FIELD TERMINALS IN THE RTU.
3. BOLD LINES INDICATE PROPOSED CONSTRUCTION.





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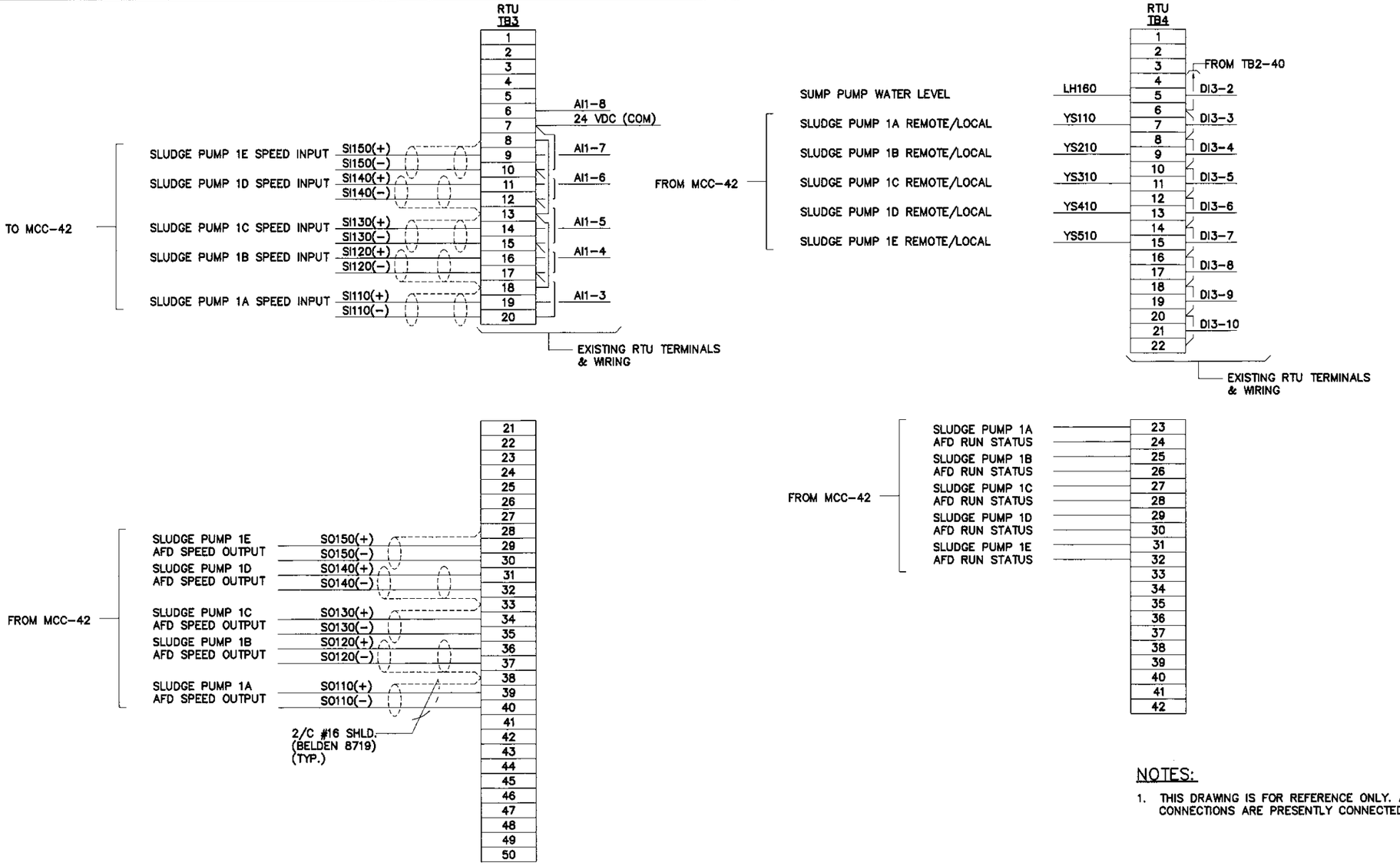
CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 1

RTU INTERCONNECTION DIAGRAM

W.O. 5061
SHEET E-23 OF E-25

TPB5-32



NOTES:

1. THIS DRAWING IS FOR REFERENCE ONLY. ALL ANALOG INPUT/OUTPUT CONNECTIONS ARE PRESENTLY CONNECTED.

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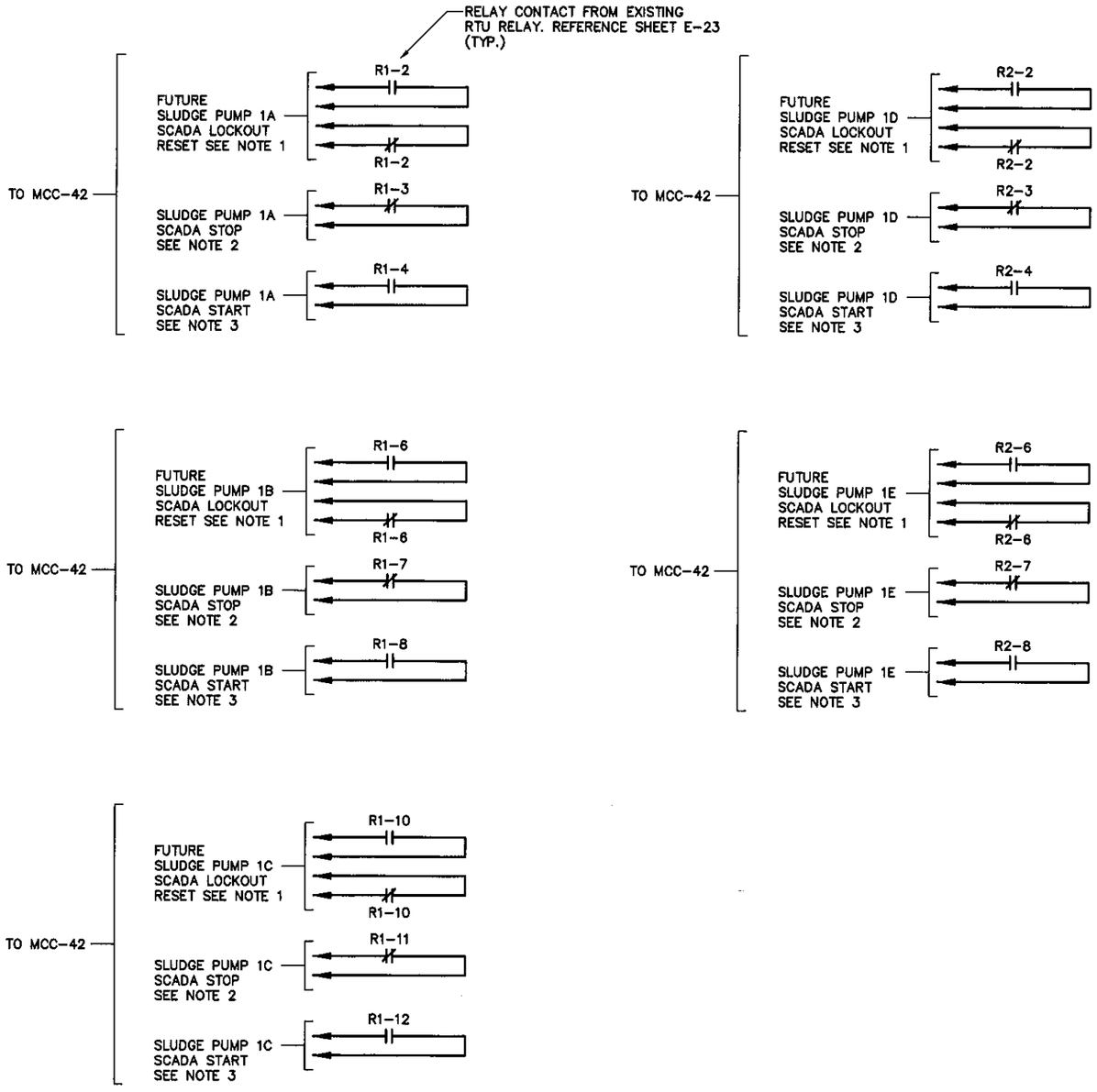
CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 1

RTU INTERCONNECTION DIAGRAM

W.O. 5061

SHEET E-24 OF E-25



NOTES:

1. LOCKOUT RESET – LOCKOUT RESET OUTPUT CONTACT FROM THE RTU IS A MOMENTARY OPEN CONTACT AND CONTACT CLOSURE. A MOMENTARY OPEN CONTACT AND CONTACT CLOSURE RESETS THE LOCKOUT RELAY. THIS IS A FUTURE CONNECTION. CONDUCTORS SHALL BE ROUTED TO THE RTU ENCLOSURE, LABELED, COILED & STORED NEATLY FOR FUTURE CONNECTIONS.
2. SLUDGE PUMP STOP – SLUDGE PUMP STOP OUTPUT CONTACT FROM THE RTU IS A MOMENTARY OPEN CONTACT. A MOMENTARY OPEN CONTACT STOPS THE SLUDGE PUMP
3. SLUDGE PUMP START – SLUDGE PUMP START OUTPUT CONTACT FROM THE RTU IS A MOMENTARY CONTACT CLOSURE. A MOMENTARY CONTACT CLOSURE STARTS THE SLUDGE PUMP.

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 1

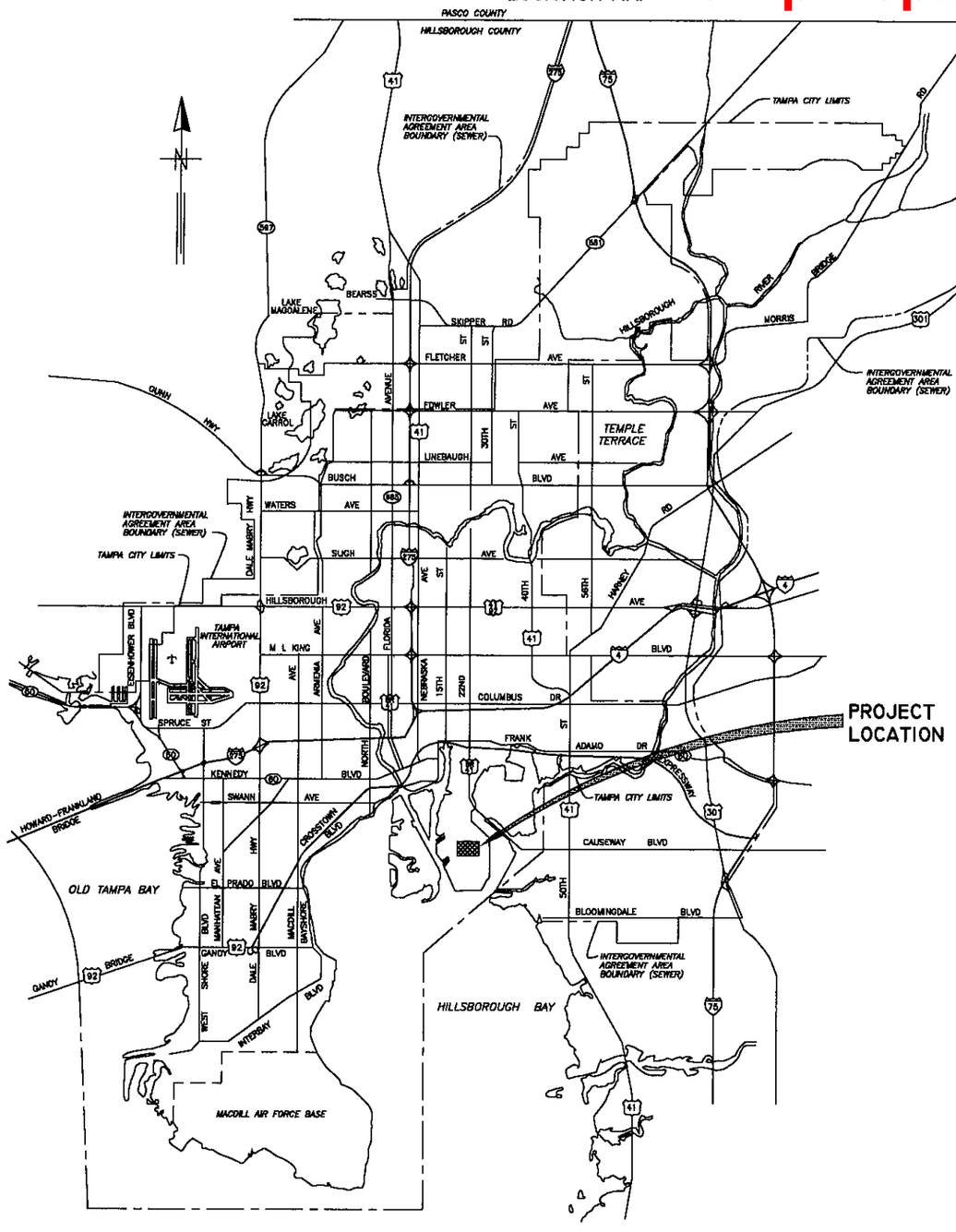
RTU RELAY CONTACT DETAIL

W.O. 5061
SHEET E-25 OF E-25

RSPS Pump Replacement_Year 2003

TPB5-34

LOCATION MAP



1/8"=1'

CITY of TAMPA

CITY OF TAMPA FLORIDA
MASCOTTE
ORGANIZED JULY 15 1887

DEPARTMENT OF SANITARY SEWERS

PLANS FOR

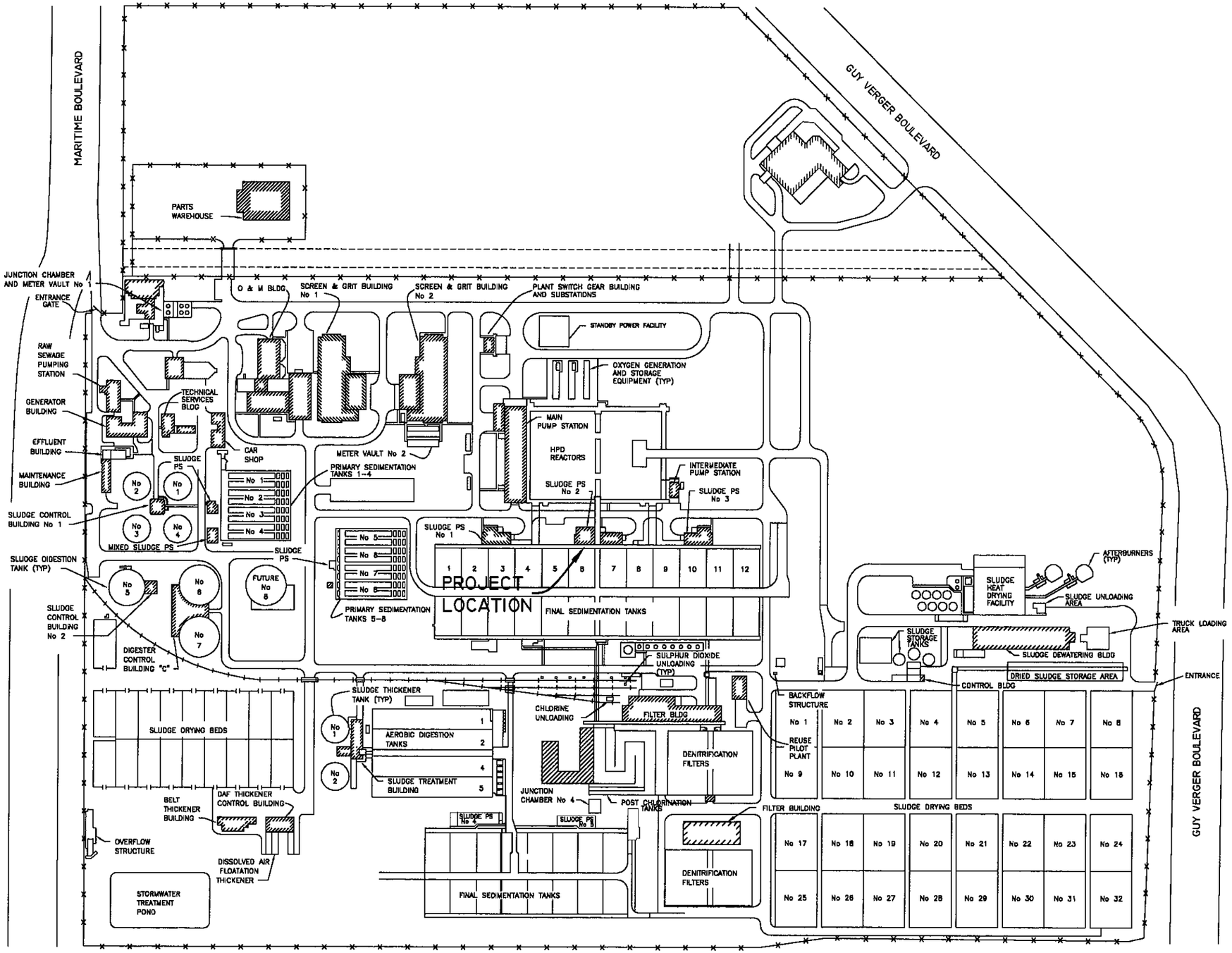
RETURN SLUDGE PUMPING STATION No. 2 REHABILITATION

CONTRACT II-03

tp\5073

H. L. Dorzback HENRY DORZBACK, P.E. #39449 CHIEF ENGINEER DEPARTMENT OF SANITARY SEWERS	Roman D. Korchak ROMAN D KORCHAK, PE #42626 ELECTRICAL SECTION HEAD DEPARTMENT OF SANITARY SEWERS	DES: CL DRN: CL CKD: DATE: 4/10	No.	DATE	REVISIONS	CITY of TAMPA HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT	COVER SHEET	W.O. 5073 SHEET 1 OF 8
			3					
			2					
			1					

TPB5-35



J-13/
K-13

SEC 30-T29S-R19E
SEC 32-T29S-R19E

CITY OF TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER
TREATMENT PLANT

2700 MARITIME BLVD.
TAMPA, FL 33605
(813) 247-3451
FAX: (813) 248-5269

INDEX

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3	DEMOLITION PLAN
4	DEMOLITION SECTIONS
5	PROP CONSTRUCTION PLAN
6	PROP CONSTRUCTION SECTIONS
7	MISCELLANEOUS DETAILS
8	MISCELLANEOUS DETAILS & NOTES
E1 - E20	ELECTRICAL

P/BT=1"

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DATE: 4/17/13

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

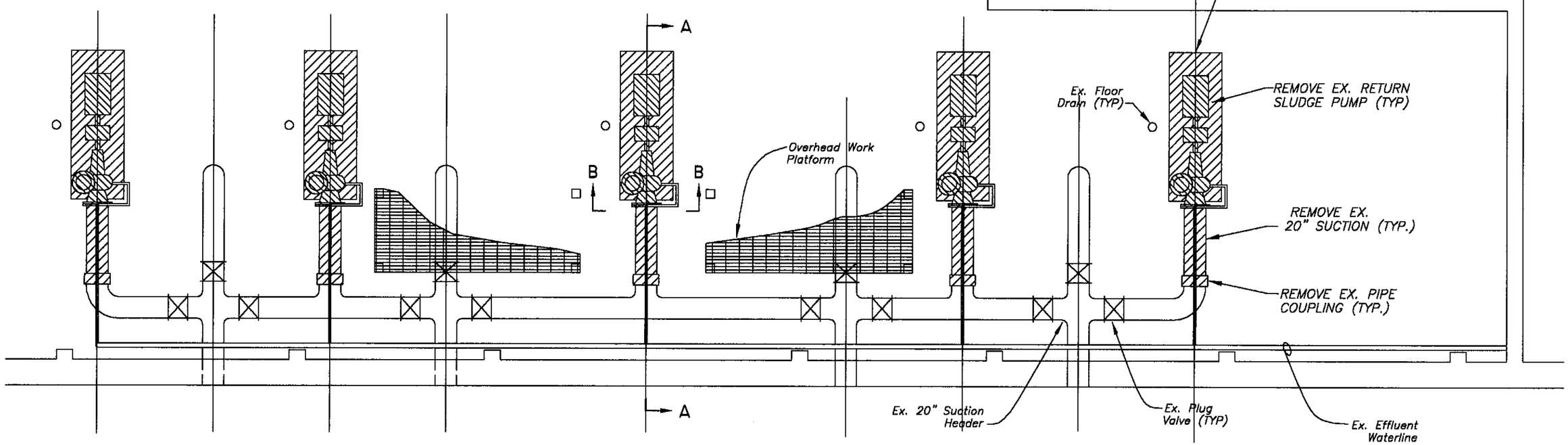
SITE PLAN AND INDEX

W.O. 5073
SHEET 2 OF 8

CROSS-HATCHED AREAS INDICATE EXISTING EQUIPMENT AND PIPING TO BE REMOVED.

N

SCALE: 1/8"=1'-0"



1/8"=1'

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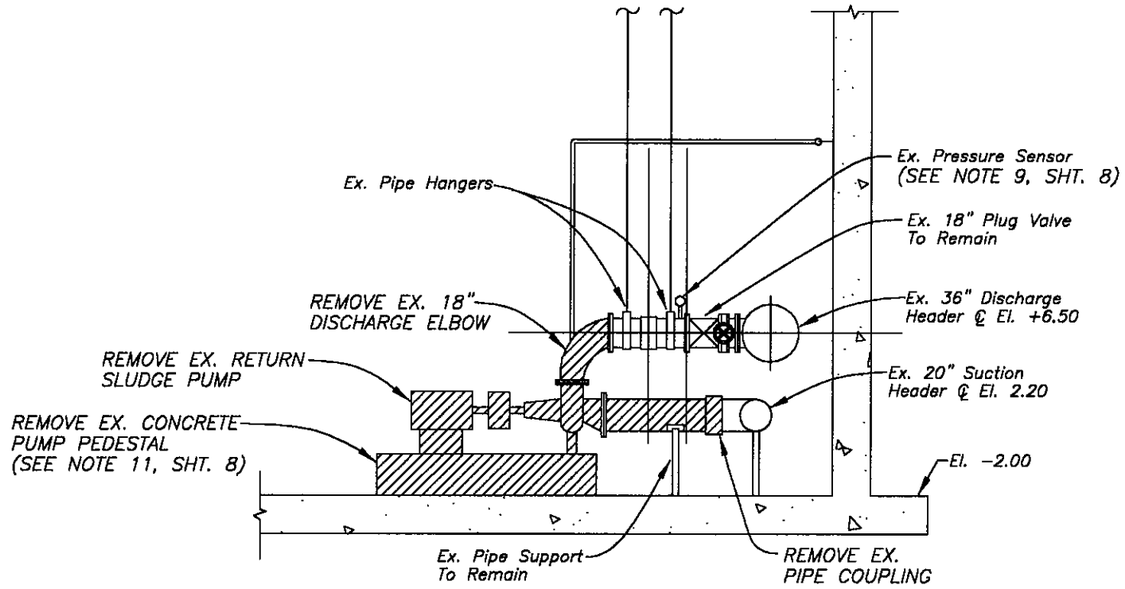
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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

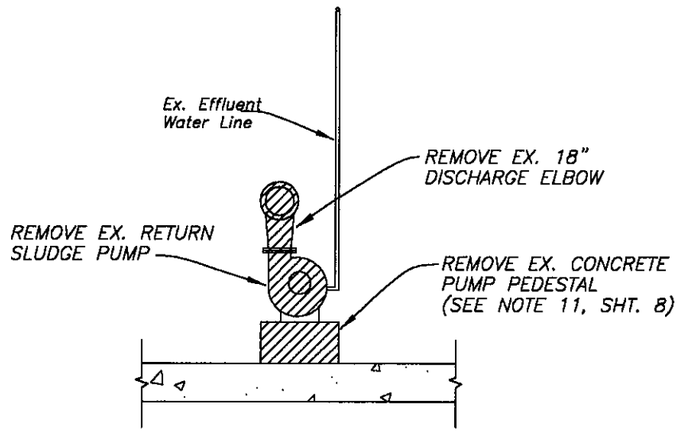
RETURN SLUDGE PUMPING STATION No. 2 REHABILITATION DEMOLITION PLAN

W.O. 5073
SHEET 3 OF 8

CROSS-HATCHED AREAS INDICATE EXISTING EQUIPMENT AND PIPING TO BE REMOVED.



SECTION A-A
SCALE: 1/8"=1'-0"



SECTION B-B
SCALE: 1/8"=1'-0"

1/8"=1'

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No.	DATE	REVISIONS	No.	DATE	REVISIONS
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DATE: 4/17/03

CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

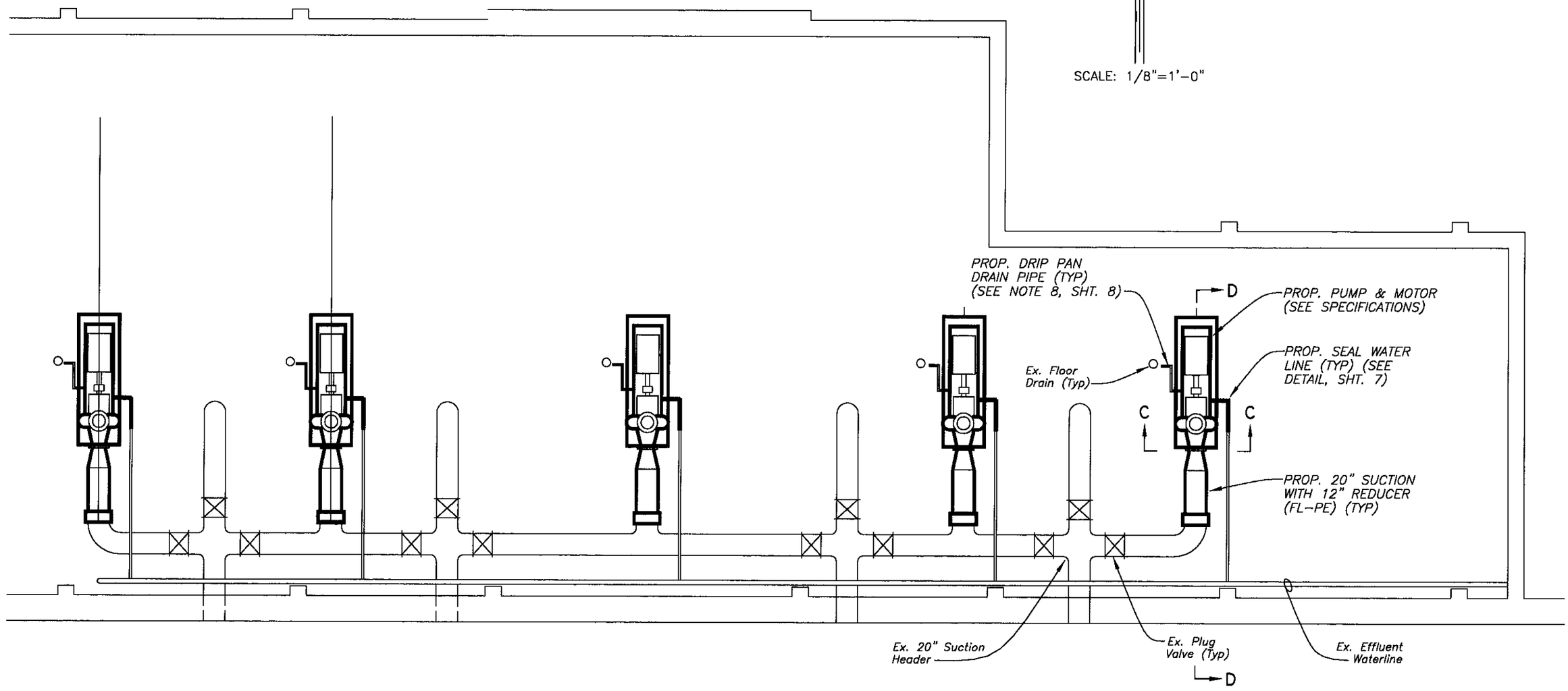
RETURN SLUDGE PUMPING STATION No. 2
REHABILITATION
DEMOLITION SECTIONS

W.O. 5073
SHEET 4 OF 8

TPB5-38

N

SCALE: 1/8"=1'-0"



1/8"=1'

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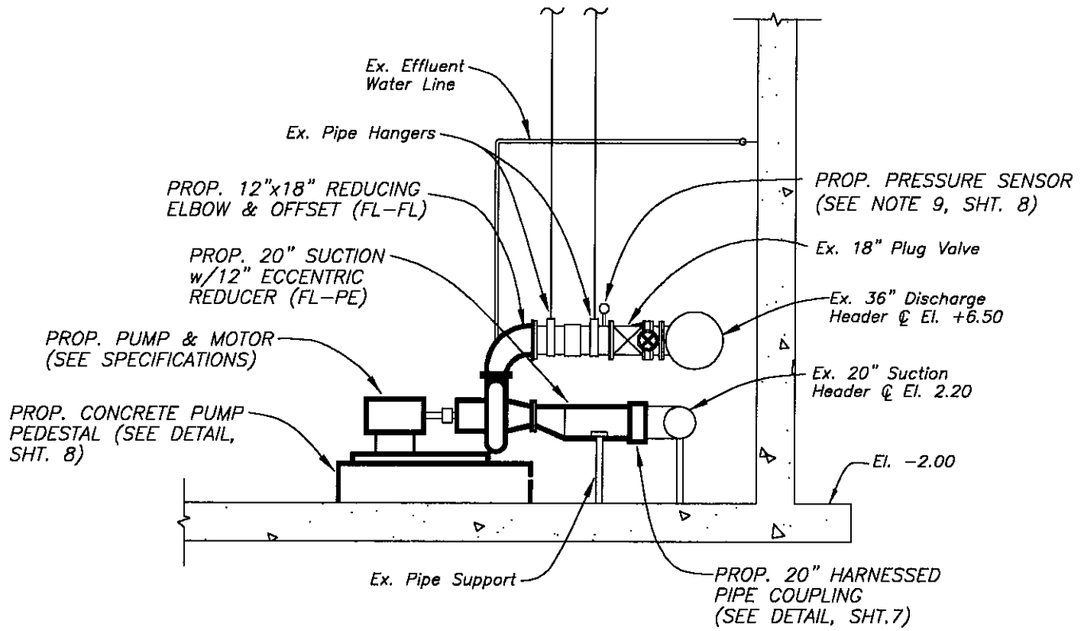
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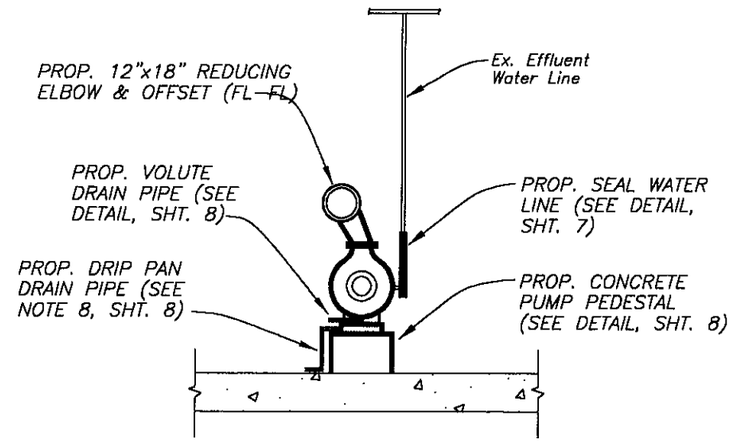
CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION No. 2
REHABILITATION
PROPOSED CONSTRUCTION PLANS

W.O. 5073
SHEET 5 OF 8



SECTION D-D
SCALE: 1/8"=1'–0"



SECTION C-C
SCALE: 1/8"=1'–0"

1/8"=1'

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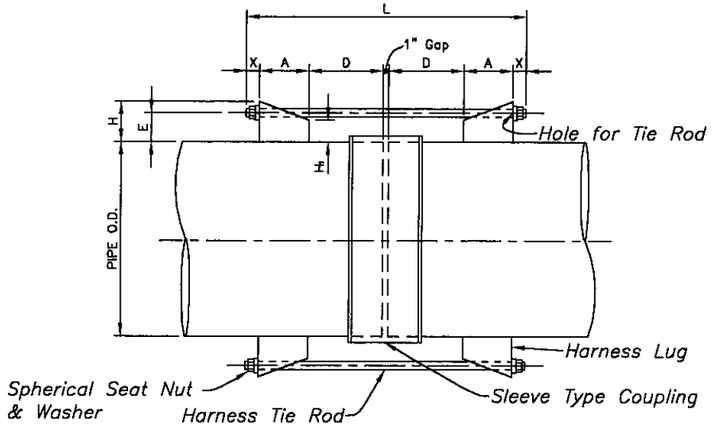
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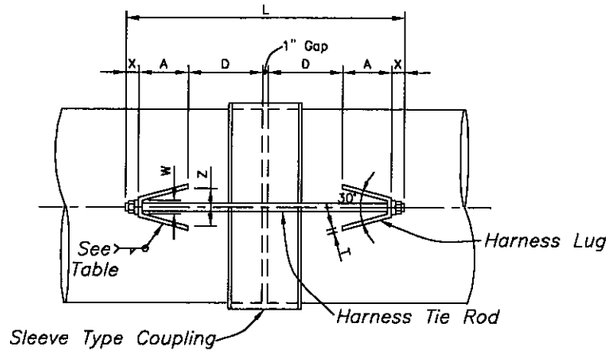
CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION No. 2
REHABILITATION
PROPOSED CONSTRUCTION SECTIONS

W.O. 5073
SHEET 6 OF 8



PLAN VIEW

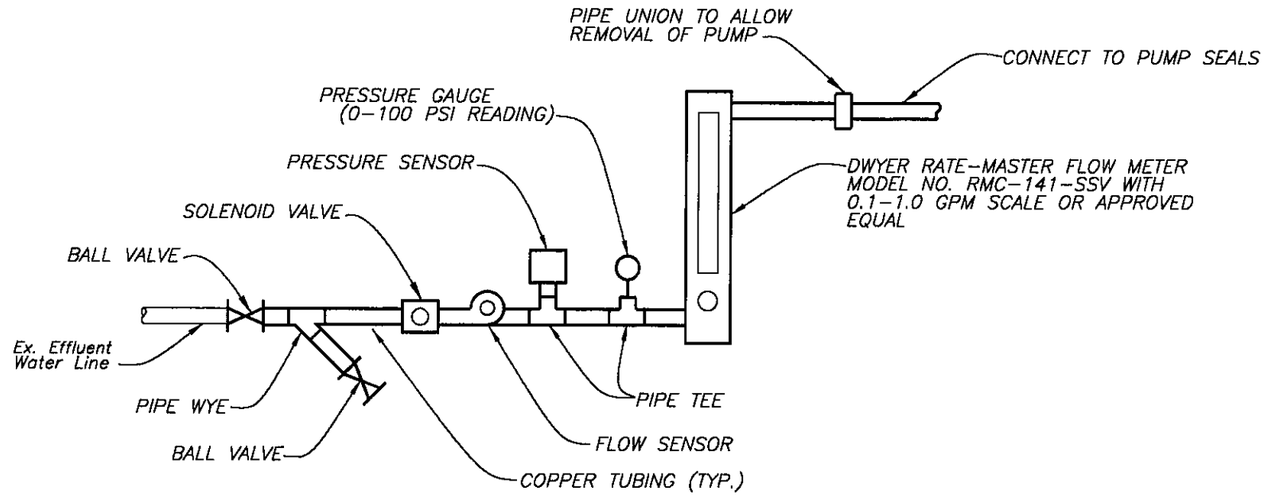


SECTION

PIPE COUPLING DETAIL

N.T.S.

TYPE A HARNESSED SLEEVE TYPE COUPLING JOINT FOR STEEL PIPE – SCHEDULE																			
NOM. PIPE SIZE	WALL THICK-NESS	O.D. OF PIPE	MAX. PRESS. FOR HARNESS TIE ROD P.S.I.	MIDDLE RING		HARNESS TIE ROD				HARNESS LUG MINIMUM DIMENSION									
				LENGTH	THICKNESS	No.	DIA.	X	L	A	W	Z	T	E	H	H_1	D	HOLE	WELD
18	0.375	18.00	45	7	5/16	2	3/4	1 1/4	28	3 3/4	1 11/16	3 1/2	3/8	3 1/8	4 1/8	2	8 1/2	7/8	1/4
20	0.375	20.00	25	7	3/8	2	5/8	1 1/8	26 1/4	3	1 1/2	2 7/8	3/8	3	3 7/8	2	8 1/2	3/4	1/4



SEAL WATER DETAIL

N.T.S.

1/8"=1'

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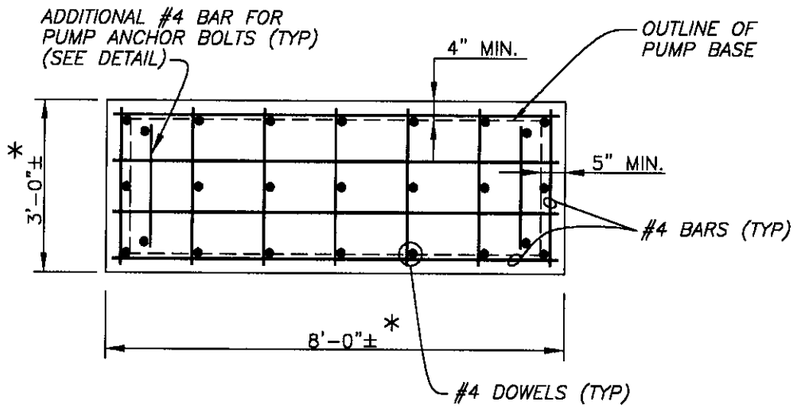
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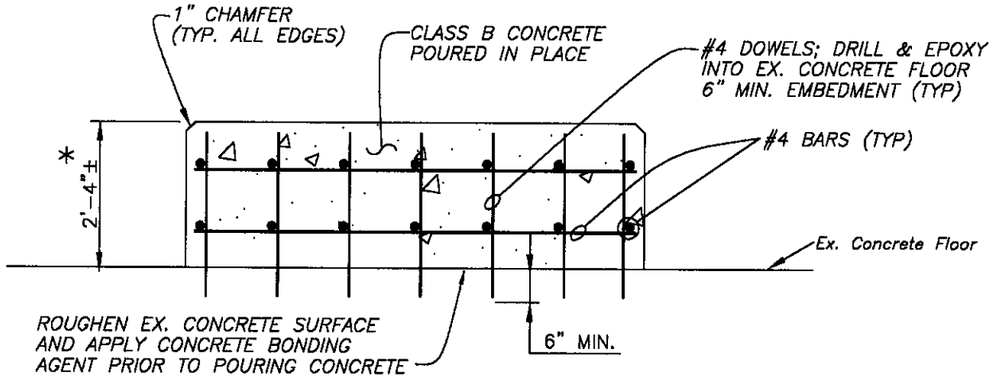
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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION No. 2
REHABILITATION
MISCELLANEOUS DETAILS

W.O. 5073
SHEET 7 OF 8

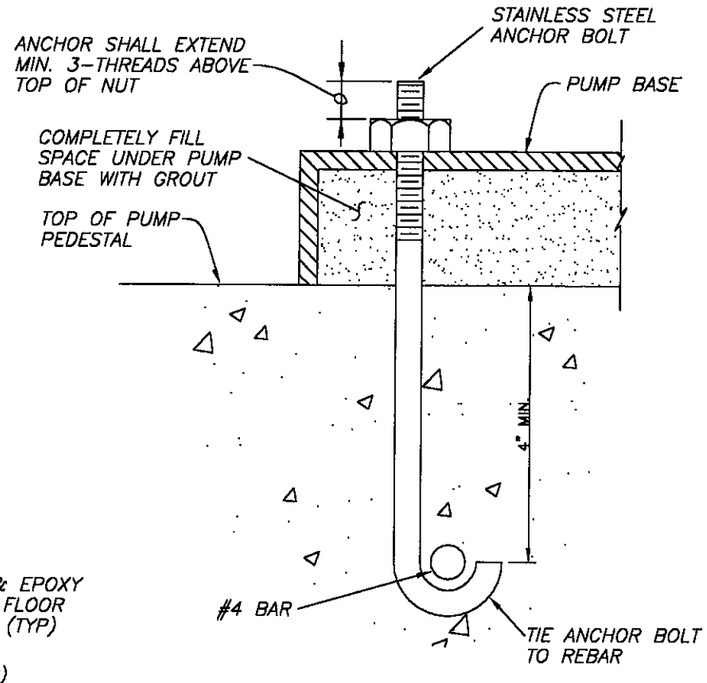




PUMP PEDESTAL DETAIL

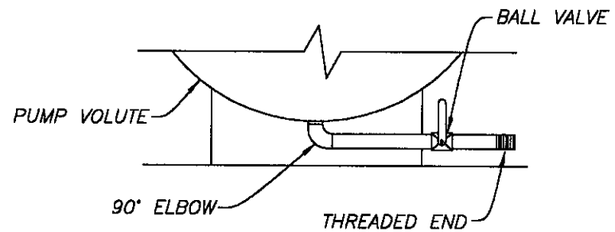
N.T.S.

*DIMENSIONS SHOWN ARE APPROXIMATE ONLY. ACTUAL DIMENSIONS MAY VARY TO MEET FIELD CONDITIONS AND FINAL DIMENSIONS OF EQUIPMENT.



ANCHOR BOLT DETAIL

N.T.S.



VOLUTE DRAIN DETAIL

N.T.S.

CONSTRUCTION NOTES

1) The Contractor is responsible for obtaining all field measurements and verifying the locations, elevations, and dimensions of all existing piping, structures, and other features affecting his work prior to submittal of shop drawings or starting construction.

2) Existing pipe, fittings, and equipment indicated for removal shall be removed and delivered to an area on-site as directed by Treatment Plant Personnel.

3) 18-inch and 20-inch piping shall be constructed of welded steel and shall be custom fabricated to suit the dimensions of the final selected equipment (see specifications for further details).

4) All pipe, fittings, valves, and equipment shall be painted and lined in accordance with the Contract Specifications.

5) All steel reinforcing shall be detailed in accordance with the latest "ACI Manual of Standard Practice for Detailing Concrete Structures".

6) Seal water piping shall be Type "K" hard drawn copper with cast-brass solder fittings. All joints shall be threaded or soldered. All piping shall be erected, joined, and coated in accordance with the Contract Specifications.

7) A qualified representative of the pump manufacturer shall be present at all critical phases of the construction to inspect the installation of the equipment. The representative will place the equipment into operation, make all necessary adjustments, and provide training for treatment plant personnel.

8) The pump and motor shall be mounted on a common steel frame. The frame shall be equipped with a drip pan to collect drainage from the pump seals. A PVC pipe shall be provided to drain the drip pan into the nearest floor drain. Size of the drain pipe shall match the size of the drain opening in the drip pan.

9) The existing pressure switch assemblies shall be removed and replaced. Contractor shall install a riser pipe and ball valve on each pump's discharge pipe. Size of riser pipe and ball valve shall be coordinated with requirements of pressure sensor (see electrical sheets for further details).

10) All hardware including nuts, bolts, washers, etc. shall be constructed of 316 stainless steel.

11) The existing concrete pump pedestals shall be removed flush with the concrete floor. Areas of the existing floor that are disturbed by the removal of the pedestals and will remain exposed after the installation of the new pumps shall be made smooth. Exposed rebar or anchor bolts within these areas shall be ground back a minimum of 1-inch and the hole filled with epoxy.

1/8"=1'

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CITY of TAMPA
HOWARD F. CURREN
ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION No. 2
REHABILITATION
MISCELLANEOUS DETAILS AND NOTES

W.O. 5073
SHEET 8 OF 8

LEGEND

SYMBOL	DESCRIPTION
	FUSED DISCONNECT
R	PILOT LIGHT – R=RED, G=GREEN, A=AMBER
800 / 400	THERMAL–MAGNETIC CIRCUIT BREAKER, 800 AMP. FRAME, 400 AMP. TRIP
	TRANSFORMER
	START/STOP PUSHBUTTONS
0 1 2	SELECTOR SWITCH – THREE POSITION
SPD ADJ.	POTENTIOMETER
DOI	DIGITAL OPERATOR INTERFACE
ETM	ELAPSED TIME METER
AFD	ADJUSTABLE FREQUENCY DRIVE
TDR	TIME DELAY RELAY – X
	MOTOR THERMAL OVERLOAD
	PUSH BUTTON – NORMALLY OPEN
	PUSH BUTTON – NORMALLY CLOSED
	PUSH BUTTON – DOUBLE CONTACTS
STOP/L	PUSH BUTTON – WITH LOCK–OUT FEATURES
TDR–X	"OFF" DELAY RELAY
TDR–X	"ON" DELAY RELAY
△	DESIGNATES TERMINAL FOR FIELD CONNECTION.
CA00005	CONDUIT NO. – REFERENCE CONDUIT/ CONDUCTOR SCHEDULE
75	MOTOR, 75 HP
	LIMIT SWITCH – NORMALLY OPEN
	LIMIT SWITCH – NORMALLY CLOSED
LS	LIMIT SWITCH

SYMBOL	DESCRIPTION
	FLOW SWITCH – NORMALLY OPEN
	FLOW SWITCH – NORMALLY CLOSED
F	FLOW SWITCH
	LIQUID LEVEL SWITCH – NORMALLY OPEN
	LIQUID LEVEL SWITCH – NORMALLY CLOSED
	PRESSURE SWITCH – NORMALLY OPEN
	PRESSURE SWITCH – NORMALLY CLOSED
P	PRESSURE SWITCH
J	JUNCTION BOX – SIZED PER NEC

SYMBOL	DESCRIPTION
	CONDUIT – DOWN
	CONDUIT – UP
	AUDIBLE ALARM
	SELECTOR SWITCH – NORMALLY OPEN
xM	MOTOR STARTER COIL, x DESIGNATES MOTOR ID. NO.
xxR	RELAY COIL, xx DESIGNATES ID. NO.
xxR–y	RELAY CONTACT – NORMALLY OPEN, xx DESIGNATES RELAY ID. NO. & y DESIGNATES CONTACT NO.
xxR–y	RELAY CONTACT – NORMALLY CLOSED, xx DESIGNATES RELAY ID. NO. & y DESIGNATES CONTACT NO.
xMOL	MOTOR OVERLOAD RELAY – x DESIGNATES MOTOR I.D. NO.
	SOLENOID VALVE
	FUSE

GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
2. PROVIDE & INSTALL ALUMINUM CHANNEL (UNISTRUT) ERECTOR SYSTEMS TO MOUNT AND SUPPORT ENCLOSURES, BOXES, CONDUITS & OTHER EQUIPMENT. ALL UNISTRUT SHALL BE B–LINE ALUMINUM B22AL w/o SLOTS OR HOLES USING B–LINE B2000AL SERIES ALUMINUM CONDUIT CLAMPS.
3. ALL CONDUCTORS SHALL BE STRANDED COPPER, AWG 12 MIN. w/ THHN INSULATION, UNLESS OTHERWISE NOTED.
4. ALL WIRING SHALL BE IDENTIFIED w/ NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
5. VERIFY ALL MECHANICAL EQUIPMENT SIZES AND RATINGS PRIOR TO CONNECTING.
6. FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
7. REFERENCE PLAN AND SECTION DRAWINGS FOR EQUIPMENT LOCATIONS.
8. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE w/ THE LATEST EDITION OF THE NEC AND ALL APPLICABLE LOCAL ORDINANCES.
9. COORDINATE ALL INSTALLATIONS w/ ALL OTHER TRADES.
10. ALL THREADED CONNECTIONS SHALL BE COATED w/ COPPER SHIELD ANTI–SEIZE COMPOUND MANUFACTURED BY THOMAS & BETTS (T & B).
11. ALL PANELS, DISCONNECTS, SWITCHES AND EQUIPMENT COVERPLATES SHALL BE LABELED w/ NAMEPLATES. NAMEPLATES SHALL BE THREE–PLY PHENOLIC BLACK–WHITE–BLACK ENGRAVED THROUGH THE FIRST BLACK LAYER. LETTERING SHALL BE 0.5 CM (3/16") MIN. EDGE OF NAMEPLATE SHALL BE BEVELED 45 DEG.
12. ALL CONDUIT SHALL BE SUPPORTED AT MAXIMUM 5'–0" INTERVALS.
13. ALL CIRCUITS SHALL HAVE A GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT w/ POWER CONDUCTORS.
14. ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS. NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
15. NEATLY COIL ALL SPARE CONDUCTORS & TAPE w/ VINYL ELECTRICAL TAPE (SCOTCH 33+). U.O.N.
16. PROVIDE A MINIMUM OF 3'–0" CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE w/ ARTICLE 110 OF THE NEC.
17. ALL INSTALLATIONS SHALL BE IN ACCORDANCE w/ CITY OF TAMPA CODE 5–111.6.1.5 (REFERENCE BUILDING AND CONSTRUCTION REGULATIONS; EFFECTIVE DATE MARCH 1, 2002).
18. ALL CONDUIT SHALL BE RIGID HEAVY WALL ALUMINUM CONDUIT.
19. ALL FASTENING HARDWARE (SCREWS, BOLTS, NUTS, ETC.) SHALL BE 316 STAINLESS STEEL. FASTENING HARDWARE CONSTRUCTED OF FERROUS MATERIAL ARE NOT ACCEPTABLE.
20. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.

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ABBREVIATIONS

A	AMPERES	IG	ISOLATED GROUND
ABV	ABOVE	HP	HORSEPOWER
AFF	ABOVE FINISHED FLOOR	HT	HEIGHT
ATS	AUTOMATIC TRANSFER SWITCH	JB,JBOX	JUNCTION BOX
BLDG	BUILDING	KW	KILOWATTS
BRKR	BREAKER	LPX	LIGHTING PANEL X
C	CONDUIT	LTG	LIGHTING
CAB	CABINET	MACH	MACHINE
CAT	CATALOG	MCB	MAIN CIRCUIT BREAKER
CLF	CURRENT LIMITING FUSE	MLO	MAIN LUGS ONLY
CO	CONDUIT ONLY	MECH	MECHANICAL
CLG	CEILING	MNTD	MOUNTED
CKT	CIRCUIT	MNTG	MOUNTING
CT	CURRENT TRANSFORMER	ø	PHASE
CTR	CENTER	PB	PUSH BUTTON
CTRD	CENTERED	PNL	PANEL
DISC	DISCONNECT	PPX	POWER PANEL X
DN	DOWN	PWR	POWER
DWG	DRAWING	RECEPT	RECEPTACLE
EC	EMPTY CONDUIT	REF.	REFERENCE
ECC	EDDY CURRENT CLUTCH	REFRIG	REFRIGERATOR
ELEC	ELECTRICAL, ELECTRIC	REFRIG	REFRIGERATOR
ELEV	ELEVATOR	SPD	SURGE PROTECTIVE DEVICE
EM	EMERGENCY	SWBD	SWITCHBOARD
EMT	ELECTRO METALLIC TUBING	TELE	TELEPHONE
EQUIP	EQUIPMENT	THRU	THROUGH
ESD	EMERGENCY SHUTDOWN SWITCH	TR	TRIP
EWC	ELECTRICAL WATER COOLER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
EX	EXISTING	TYP	TYPICAL
EXH	EXHAUST	UON	UNLESS OTHERWISE NOTED
FA	FIRE ALARM	V	VOLT
FL	FLOOR	W	WIRE
F	FUSE	w/	WITH
FUT	FUTURE	WP	WEATHER PROOF
GFI	GROUND FAULT INTERRUPTING	XFMR	TRANSFORMER

21. THE ADJUSTABLE FREQUENCY DRIVE (AFD) SHALL BE MANUFACTURED BY ROBICON & SHALL COMPLY WITH THE DRAWINGS & SPECIFICATIONS FOR THIS PROJECT. A SINGLE SOURCE CERTIFICATE OF CONDITIONS AND CIRCUMSTANCES WAS EXECUTED FOR THIS AFD. THE CERTIFICATE STATES THAT NO OTHER AFD SHALL BE CONSIDERED AN OR–EQUAL FOR THIS PROJECT IN ACCORDANCE WITH THE CITY'S STANDARDIZATION PROGRAM. THE "OR–EQUAL" CLAUSE APPLIES TO ALL OTHER EQUIPMENT IN THIS PROJECT, UNLESS SPECIFICALLY EXCLUDED BY A SINGLE SOURCE CERTIFICATE.

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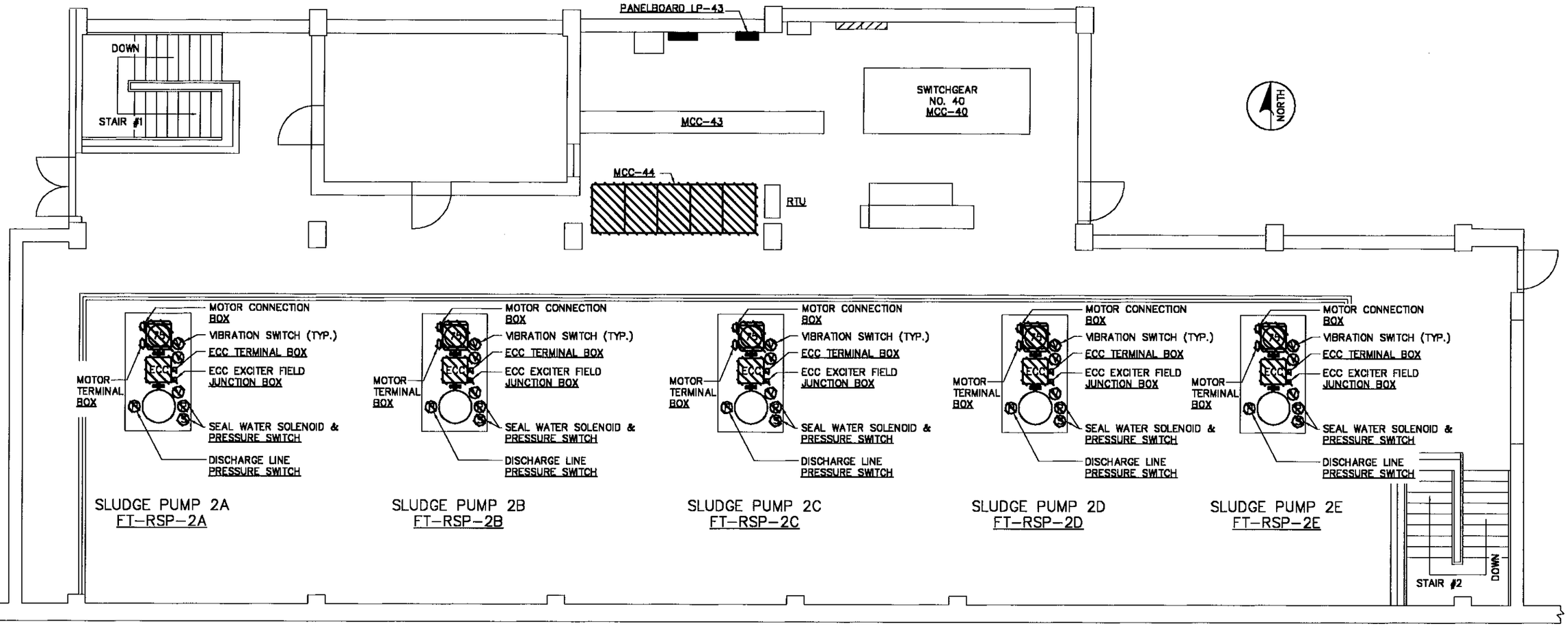
DES: MRS
DRN: RWB
CKD: BEH
DATE: 04/14/03

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
ELECTRICAL LEGEND & ABBREVIATIONS

W.O. 5073
SHEET E-1 OF E-20

TPB5-43



ELECTRICAL DEMOLITION PLAN

NOT TO SCALE

NOTES:

⊠ – DENOTES EXISTING EQUIPMENT TO BE REMOVED. ITEM SHALL BE REMOVED FROM PREMISES AND DISPOSED OF PROPERLY. UNLESS OTHERWISE NOTED REMOVE ALL ASSOCIATED CONDUIT & WIRING CONNECTED TO EQUIPMENT REMOVED, INCLUDING ABANDONED CONDUIT & WIRING. REMOVED CONDUCTORS SHALL REMAIN THE PROPERTY OF THE CITY AND SHALL BE DISPOSED OF AS DIRECTED BY THE CITY.

1. CONTRACTOR SHALL VISIT THE SITE & FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS BEFORE SUBMITTING A BID OR COMMENCING CONSTRUCTION.
2. COORDINATE ALL DEMOLITION ACTIVITIES WITH OWNER & ALL TRADES.
3. REFERENCE DEMOLITION RISER DIAGRAM FOR ADDITIONAL DETAILS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF THE MOTORS AND ITS DRIVEN EQUIPMENT.
5. COORDINATE DEMOLITION WORK SHOWN IN THIS DRAWING WITH THE MECHANICAL DEMOLITION DRAWINGS.

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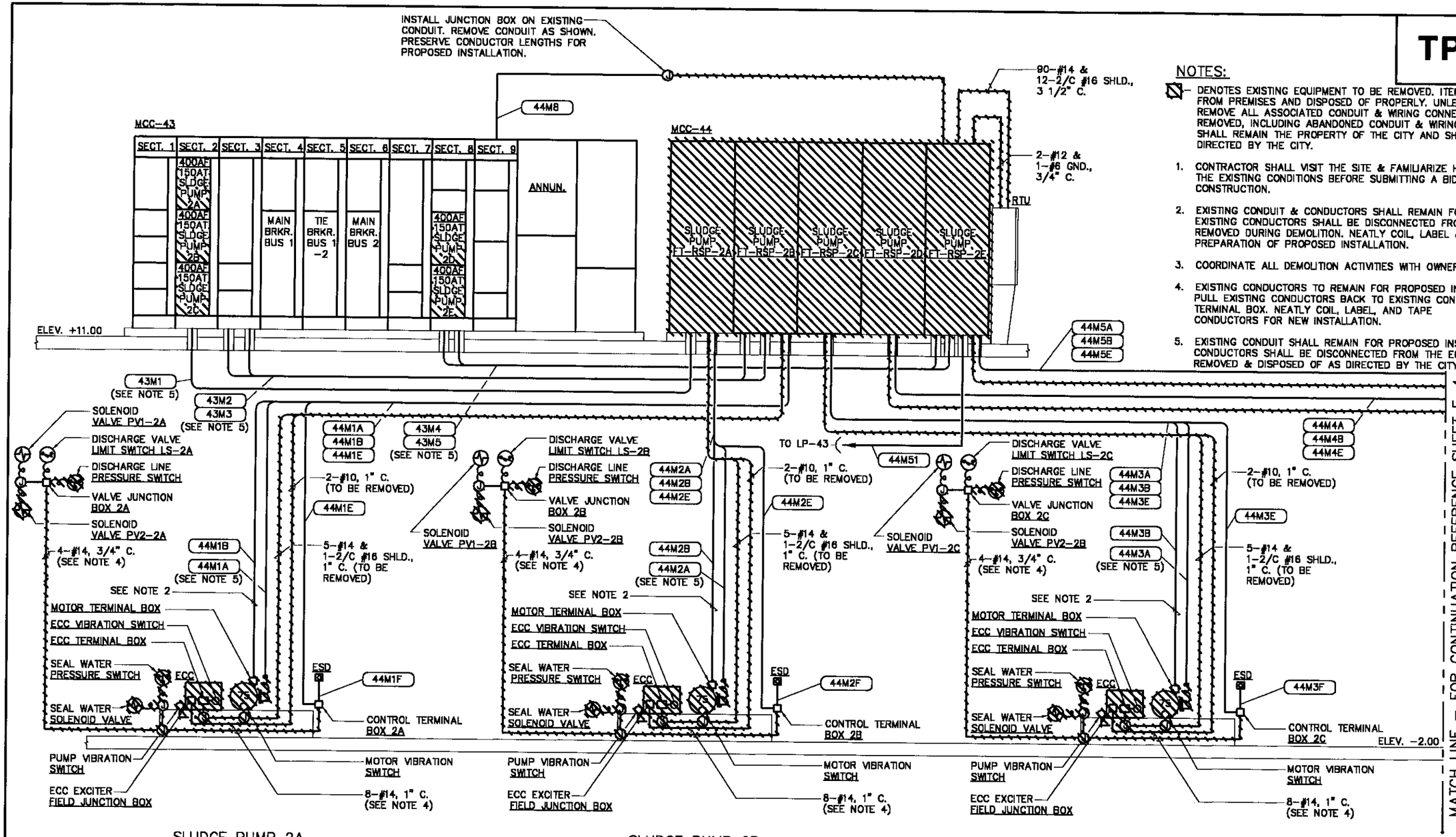
DES: MRS
DRN: RWB
CKD: BEH
DATE: 04/14/03

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
ELECTRICAL DEMOLITION PLAN

W.O. 5073
SHEET E-2 OF E-20

TPB5-44



NOTES:

- DENOTES EXISTING EQUIPMENT TO BE REMOVED. ITEM SHALL BE REMOVED FROM PREMISES AND DISPOSED OF PROPERLY. UNLESS OTHERWISE NOTED REMOVE ALL ASSOCIATED CONDUIT & WIRING CONNECTED TO EQUIPMENT REMOVED, INCLUDING ABANDONED CONDUIT & WIRING. REMOVED CONDUCTORS SHALL REMAIN THE PROPERTY OF THE CITY AND SHALL BE DISPOSED OF AS DIRECTED BY THE CITY.

1. CONTRACTOR SHALL VISIT THE SITE & FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS BEFORE SUBMITTING A BID OR COMMENCING CONSTRUCTION.
2. EXISTING CONDUIT & CONDUCTORS SHALL REMAIN FOR PROPOSED INSTALLATION. EXISTING CONDUCTORS SHALL BE DISCONNECTED FROM THE EQUIPMENT TO BE REMOVED DURING DEMOLITION. NEATLY COIL, LABEL & TAPE CONDUCTORS IN PREPARATION OF PROPOSED INSTALLATION.
3. COORDINATE ALL DEMOLITION ACTIVITIES WITH OWNER & ALL TRADES.
4. EXISTING CONDUCTORS TO REMAIN FOR PROPOSED INSTALLATION. PULL EXISTING CONDUCTORS BACK TO EXISTING CONTROL TERMINAL BOX. NEATLY COIL, LABEL, AND TAPE CONDUCTORS FOR NEW INSTALLATION.
5. EXISTING CONDUIT SHALL REMAIN FOR PROPOSED INSTALLATION. EXISTING CONDUCTORS SHALL BE DISCONNECTED FROM THE EQUIPMENT TO BE REMOVED & DISPOSED OF AS DIRECTED BY THE CITY.

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ELECTRICAL DEMOLITION RISER DIAGRAM

(SHEET 1 OF 2)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
ELECTRICAL DEMOLITION RISER DIAGRAM (1 OF 2)

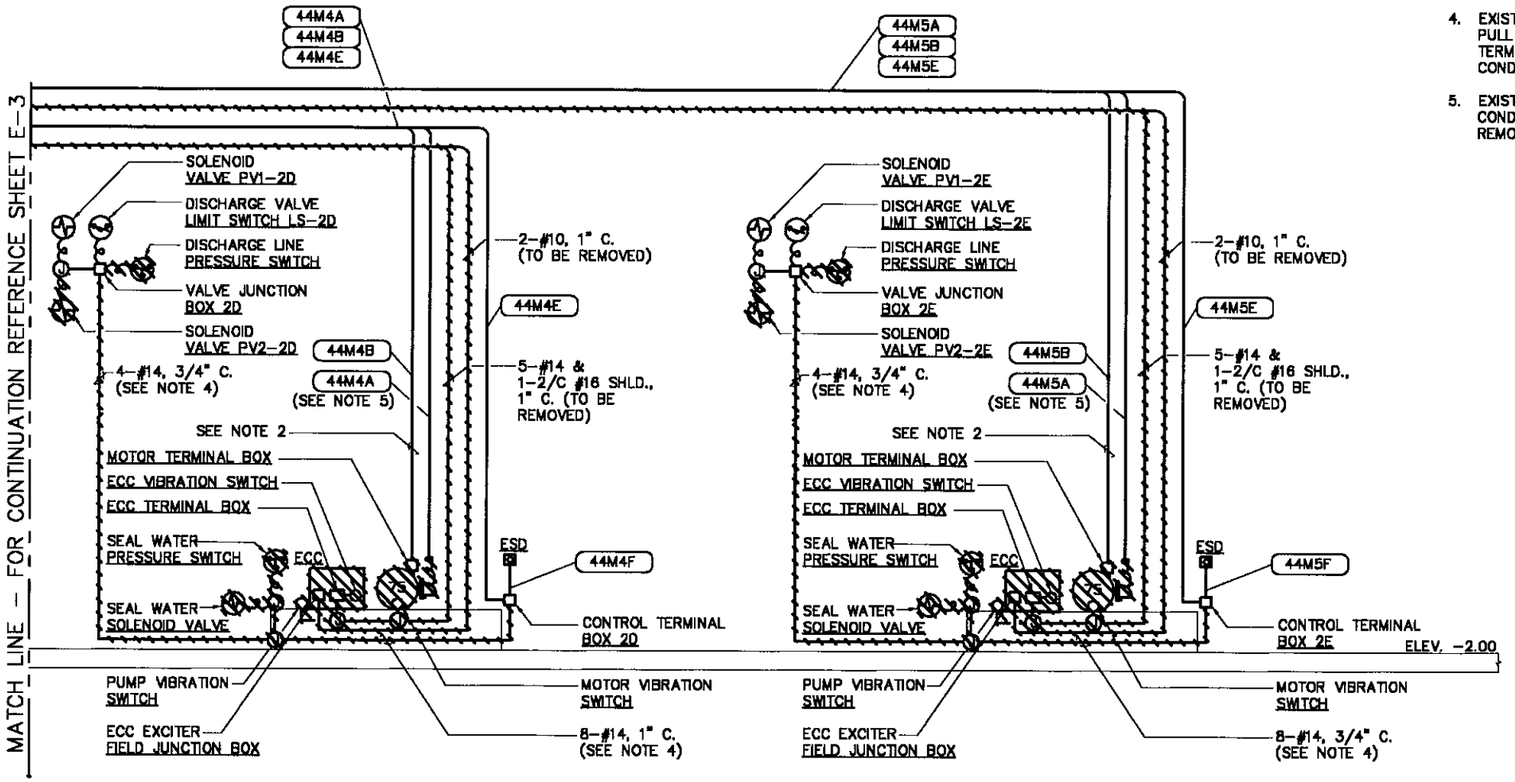
W.O. 5073
SHEET E-3 OF E-20

TPB5-45

NOTES:

⊠ – DENOTES EXISTING EQUIPMENT TO BE REMOVED. ITEM SHALL BE REMOVED FROM PREMISES AND DISPOSED OF PROPERLY. UNLESS OTHERWISE NOTED REMOVE ALL ASSOCIATED CONDUIT & WIRING CONNECTED TO EQUIPMENT REMOVED, INCLUDING ABANDONED CONDUIT & WIRING. REMOVED CONDUCTORS SHALL REMAIN THE PROPERTY OF THE CITY AND SHALL BE DISPOSED OF AS DIRECTED BY THE CITY.

1. CONTRACTOR SHALL VISIT THE SITE & FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS BEFORE SUBMITTING A BID OR COMMENCING CONSTRUCTION.
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SLUDGE PUMP 2D
FT-RSP-2D

SLUDGE PUMP 2E
FT-RSP-2E

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ELECTRICAL DEMOLITION RISER DIAGRAM

(SHEET 2 OF 2)

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

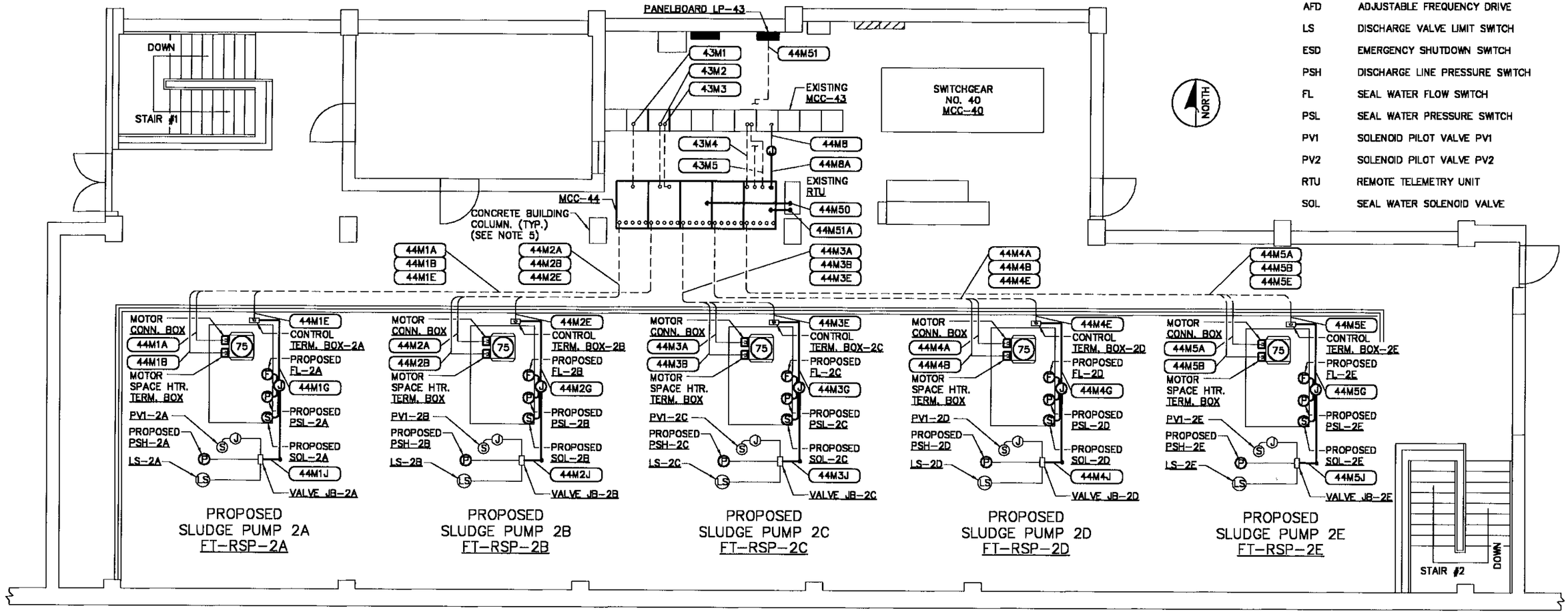
RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
ELECTRICAL DEMOLITION RISER DIAGRAM (2 OF 2)

W.O. 5073
SHEET E-4 OF E-20

TPB5-46

DEVICE LEGEND

AFD	ADJUSTABLE FREQUENCY DRIVE
LS	DISCHARGE VALVE LIMIT SWITCH
ESD	EMERGENCY SHUTDOWN SWITCH
PSH	DISCHARGE LINE PRESSURE SWITCH
FL	SEAL WATER FLOW SWITCH
PSL	SEAL WATER PRESSURE SWITCH
PV1	SOLENOID PILOT VALVE PV1
PV2	SOLENOID PILOT VALVE PV2
RTU	REMOTE TELEMETRY UNIT
SOL	SEAL WATER SOLENOID VALVE



PROPOSED ELECTRICAL PLAN

NOT TO SCALE

NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND, CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH AS NECESSARY TO PROVIDE CONNECTION TO THE PROPOSED EQUIPMENT AS SHOWN.
2. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY OF TAMPA CODE 5-111.6.1.5.
4. ALL EQUIPMENT SHALL BE INSTALLED AT AN ELEVATION ABOVE THE FLOODPLAIN ESTABLISHED BY FEMA AND/OR LOCAL AUTHORITIES.
5. THE DOOR ON EACH AFD CABINET IN MCC-44 SHALL BE HINGED ON THE LEFT SIDE OF THE CABINET TO AVOID DOOR OPENING RESTRICTIONS FROM THE EXISTING BUILDING SUPPORT COLUMNS. PROVIDE DOOR STOP KIT OR PROTECTIVE BUMPER ON DOOR TO PREVENT DAMAGE TO DOOR FROM CONCRETE BUILDING COLUMNS.
6. THE PROPOSED MCC-44 SHALL FIT WITHIN THE FOOTPRINT OCCUPIED BY THE EXISTING MCC-44 (150"W x 45"D x 90"H). CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING EXISTING CONDUIT STUB-UPS WITH THE NEW EQUIPMENT ENCLOSURE.

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2			5		
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

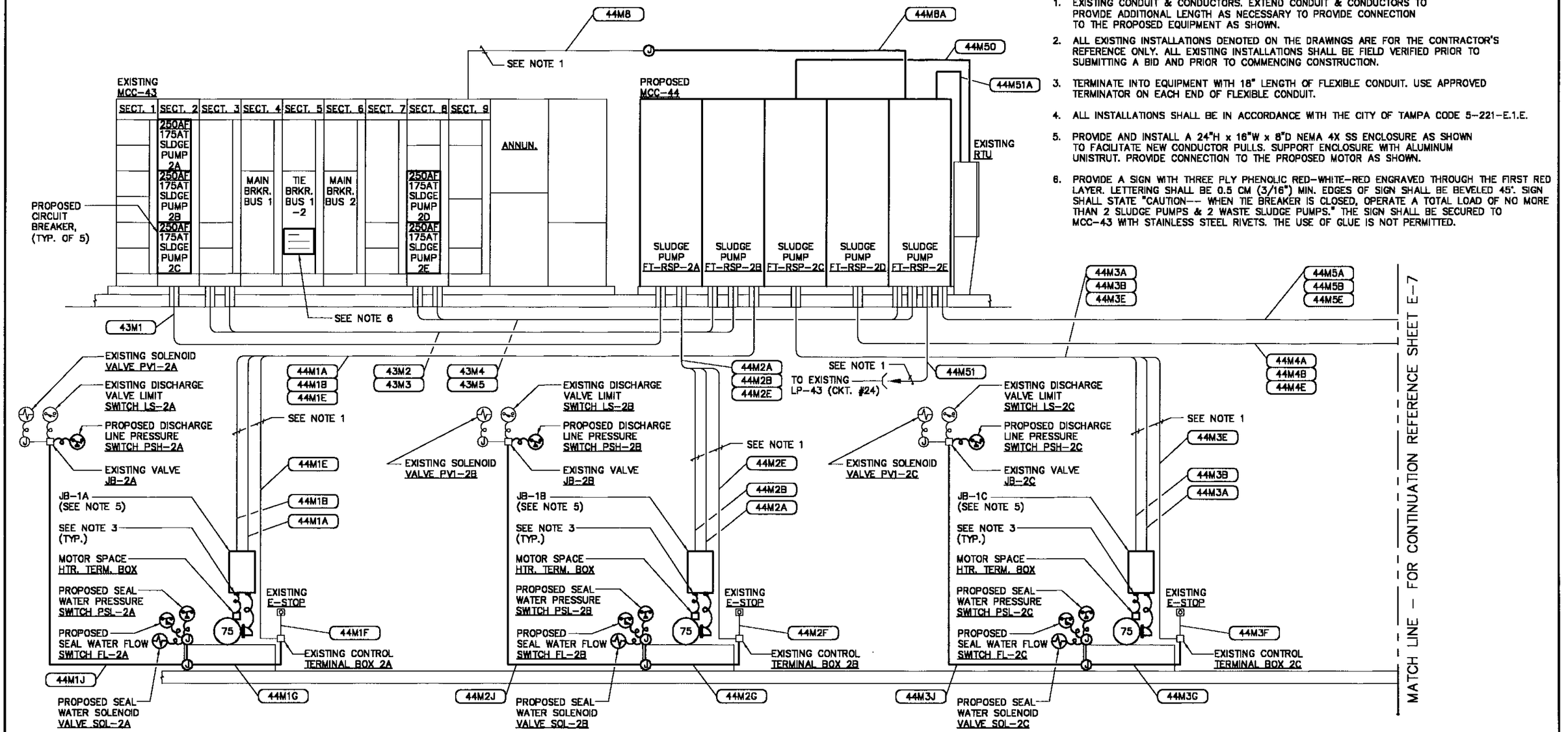
RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
PROPOSED ELECTRICAL PLAN

W.O. 5073
SHEET E-5 OF E-20

TPB5-47

NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH AS NECESSARY TO PROVIDE CONNECTION TO THE PROPOSED EQUIPMENT AS SHOWN.
2. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. TERMINATE INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
4. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY OF TAMPA CODE 5-221-E.1.E.
5. PROVIDE AND INSTALL A 24"H x 16"W x 8"D NEMA 4X SS ENCLOSURE AS SHOWN TO FACILITATE NEW CONDUCTOR PULLS. SUPPORT ENCLOSURE WITH ALUMINUM UNISTRUT. PROVIDE CONNECTION TO THE PROPOSED MOTOR AS SHOWN.
6. PROVIDE A SIGN WITH THREE PLY PHENOLIC RED-WHITE-RED ENGRAVED THROUGH THE FIRST RED LAYER. LETTERING SHALL BE 0.5 CM (3/16") MIN. EDGES OF SIGN SHALL BE BEVELED 45°. SIGN SHALL STATE "CAUTION-- WHEN TIE BREAKER IS CLOSED, OPERATE A TOTAL LOAD OF NO MORE THAN 2 SLUDGE PUMPS & 2 WASTE SLUDGE PUMPS." THE SIGN SHALL BE SECURED TO MCC-43 WITH STAINLESS STEEL RIVETS. THE USE OF GLUE IS NOT PERMITTED.



PROPOSED SLUDGE PUMP 2A
FT-RSP-2A

PROPOSED SLUDGE PUMP 2B
FT-RSP-2B

PROPOSED SLUDGE PUMP 2C
FT-RSP-2C

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PROPOSED ELECTRICAL RISER DIAGRAM

(SHEET 1 OF 2)

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DES: MRS
DRN: RWB
CKD: BEH
DATE: 04/14/03

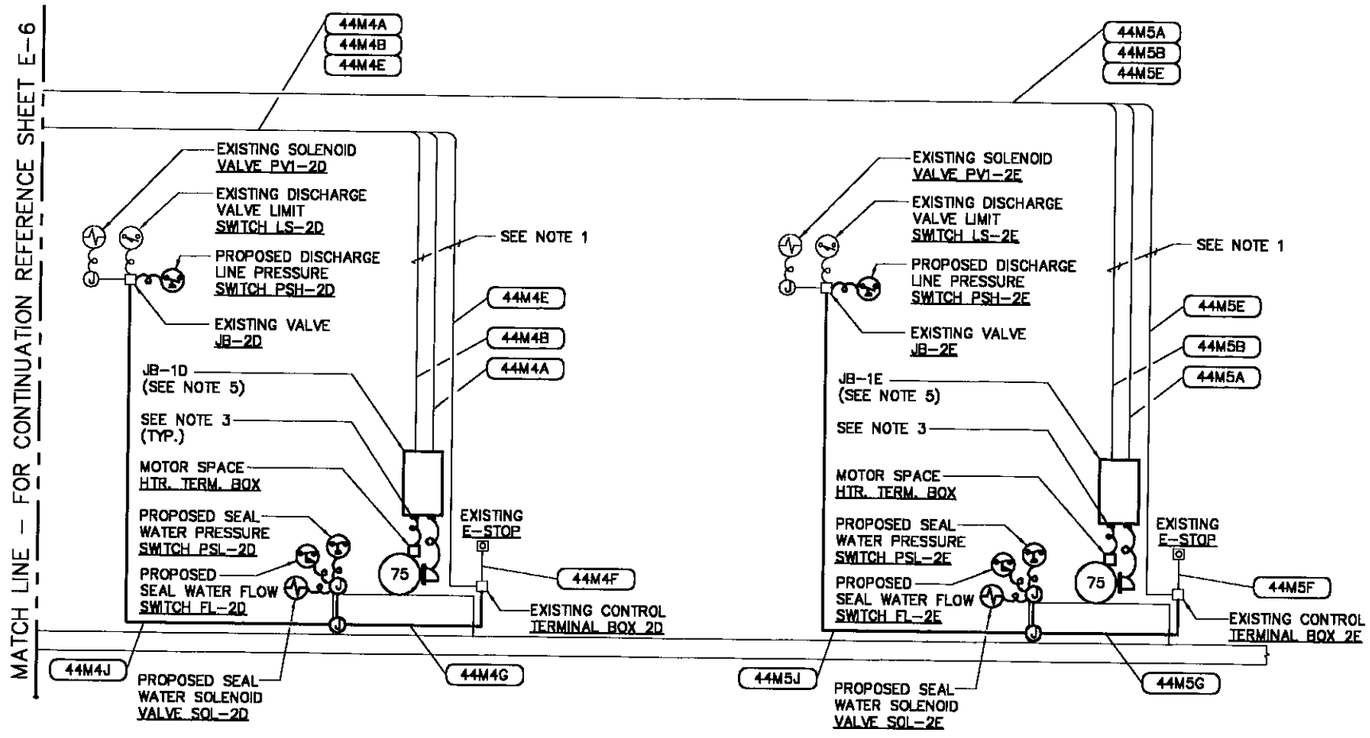
CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
PROPOSED ELECTRICAL RISER DIAGRAM (1 OF 2)

W.O. 5073
SHEET E-6 OF E-20

NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH AS NECESSARY TO PROVIDE CONNECTION TO THE PROPOSED EQUIPMENT AS SHOWN.
2. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. TERMINATE INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
4. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY OF TAMPA CODE 5-221-E.1.E.
5. PROVIDE AND INSTALL A 24"H x 16"W x 8"D NEMA 4X SS ENCLOSURE AS SHOWN TO FACILITATE NEW CONDUCTOR PULLS. SUPPORT ENCLOSURE WITH ALUMINUM UNISTRUT. PROVIDE CONNECTION TO THE PROPOSED MOTOR AS SHOWN.



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PROPOSED ELECTRICAL RISER DIAGRAM
(SHEET 2 OF 2)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
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DATE: 04/14/03

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
PROPOSED ELECTRICAL RISER DIAGRAM (2 OF 2)

W.O. 5073
SHEET E-7 OF E-20

TPB5-49

EXISTING MCC-43

BUS 1: 480/277 VAC, 3ø, 4W; HALF NEUTRAL, 600A

42,000 AIC

2A: 250AF 175AT — SEE NOTE 2 — 3-#2/0 & 1-#4 GND., 2" C. (EXISTING CONDUIT) — 43M1

2B: 250AF 175AT — SEE NOTE 2 — 3-#2/0 & 1-#4 GND., 2" C. (EXISTING CONDUIT) — 43M2

2C: 250AF 175AT — SEE NOTE 2 — 3-#2/0 & 1-#4 GND., 2" C. (EXISTING CONDUIT) — 43M3

3P, 600A — 40M3A / 40M3B — 2-4" C. EA. CONT'G. 3-500 KCMIL & 1-#2/0 GND. (EXISTING) — FROM EXISTING SWITCHGEAR NO.40

3P, 600A TIE BREAKER BUS 1-2

PROPOSED MCC-44

	2A	2B	2C
	3P, 400A	3P, 400A	3P, 400A
	250A CLF	250A CLF	250A CLF
	SPD	SPD	SPD
	LINE REACTOR 2.5% IMPEDANCE (MIN.)	LINE REACTOR 2.5% IMPEDANCE (MIN.)	LINE REACTOR 2.5% IMPEDANCE (MIN.)
	480 VAC PHASE SHIFTING ISOLATION XFMR 480 VAC	480 VAC PHASE SHIFTING ISOLATION XFMR 480 VAC	480 VAC PHASE SHIFTING ISOLATION XFMR 480 VAC
	15A CLF	15A CLF	15A CLF
	AMPS, RPM, SPEED ADJ.	AMPS, RPM, SPEED ADJ.	AMPS, RPM, SPEED ADJ.
	AFD-2A	AFD-2B	AFD-2C
	RESET, LOR, R ON, G OFF, TDR, START, E-STOP, STOP	RESET, LOR, R ON, G OFF, TDR, START, E-STOP, STOP	RESET, LOR, R ON, G OFF, TDR, START, E-STOP, STOP
	ENABLE/DISABLE, REMOTE/LOCAL, REMOTE, LOCAL, LR	ENABLE/DISABLE, REMOTE/LOCAL, REMOTE, LOCAL, LR	ENABLE/DISABLE, REMOTE/LOCAL, REMOTE, LOCAL, LR
	R3, ETM	R3, ETM	R3, ETM
	ANN., RESET, TEST, SILENCE, AUDIBLE ALARM	ANN., RESET, TEST, SILENCE, AUDIBLE ALARM	ANN., RESET, TEST, SILENCE, AUDIBLE ALARM
	44M50 — TO RTU		
	44M1B: 2-#14, 1-#14 GND. & 3-#14 SPARE, 1" C. (EXISTING - SEE NOTE 1)	44M2B: 2-#14, 1-#14 GND. & 3-#14 SPARE, 1" C. (EXISTING - SEE NOTE 1)	44M3B: 2-#14, 1-#14 GND. & 3-#14 SPARE, 1" C. (EXISTING - SEE NOTE 1)
	44M1A: 3-#2/0 & 1-#4 GND., 2" C. (EXISTING CONDUIT)	44M2A: 3-#2/0 & 1-#4 GND., 2" C. (EXISTING CONDUIT)	44M3A: 3-#2/0 & 1-#4 GND., 2" C. (EXISTING CONDUIT)
	MSH 75 HP	MSH 75 HP	MSH 75 HP
	PROPOSED SLUDGE PUMP 2A FT-RSP-2A	PROPOSED SLUDGE PUMP 2B FT-RSP-2B	PROPOSED SLUDGE PUMP 2C FT-RSP-2C
	44M1E: 8-#14, 1" C. (EXISTING - SEE NOTE 1)	44M2E: 8-#14, 1" C. (EXISTING - SEE NOTE 1)	44M3E: 8-#14, 1" C. (EXISTING - SEE NOTE 1)
	DISCHARGE LINE PRESSURE SWITCH PSH-2A	DISCHARGE LINE PRESSURE SWITCH PSH-2B	DISCHARGE LINE PRESSURE SWITCH PSH-2C
	SOLENOID VALVE PV1-2A	SOLENOID VALVE PV1-2B	SOLENOID VALVE PV1-2C
	E-STOP	E-STOP	E-STOP
	DISCHARGE VALVE LIMIT SWITCH LS-2A	DISCHARGE VALVE LIMIT SWITCH LS-2B	DISCHARGE VALVE LIMIT SWITCH LS-2C
	SEAL WATER SOLENOID VALVE SOL-2A	SEAL WATER SOLENOID VALVE SOL-2B	SEAL WATER SOLENOID VALVE SOL-2C
	SEAL WATER PRESSURE SWITCH PSL-2A	SEAL WATER PRESSURE SWITCH PSL-2B	SEAL WATER PRESSURE SWITCH PSL-2C
	SEAL WATER FLOW SWITCH FL-2A	SEAL WATER FLOW SWITCH FL-2B	SEAL WATER FLOW SWITCH FL-2C

MATCH LINE - FOR CONTINUATION REFERENCE SHEET E-9

NOTES:

1. EXISTING CONDUIT & CONDUCTORS. EXTEND CONDUIT & CONDUCTORS TO PROVIDE ADDITIONAL LENGTH TO THE PROPOSED EQUIPMENT SHOWN.
2. PROVIDE & INSTALL 250AF, 175AT CIRCUIT BREAKER AS SHOWN.
3. ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTOR'S REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
4. ISOLATION TRANSFORMER SHALL HAVE: FOR 18-PULSE DRIVE - 480 VAC, DELTA CONFIGURED PRIMARY & THREE (3) 480 VAC ZIG ZAG (WYE) CONFIGURED SECONDARIES. THE THREE (3) WYE/ZIG ZAG CONNECTIONS SHALL BE PHASE SHIFTED 20 DEG. FROM ONE ANOTHER FOR INPUT TO THE AFD.

PROPOSED ELECTRICAL ONE-LINE DIAGRAM

(SHEET 1 OF 2)

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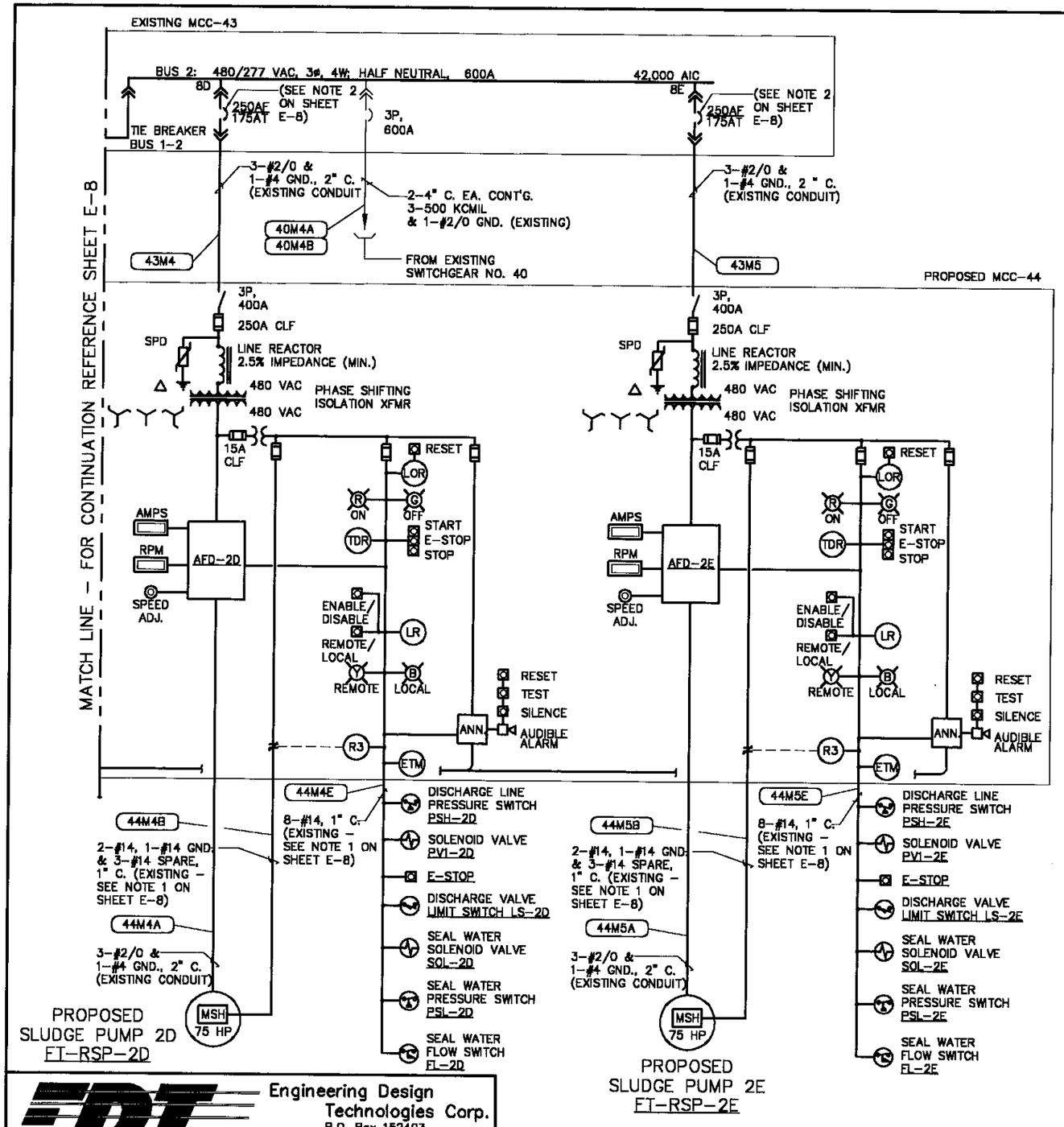
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DES: MRS
DRN: RWB
CKD: BEH
DATE: 04/14/03

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
PROPOSED ELECTRICAL ONE-LINE DIAGRAM (1 OF 2)

W.O. 5073
SHEET E-8 OF E-20



LOAD SUMMARY
480/277 VAC, 3ø, 4W

LOAD	FULL LOAD AMPERES	OPERATING LOAD AMPERES	FULL LOAD KVA	OPERATING LOAD KVA
MCC-43 , NORMAL OPERATION-- TIE BREAKER OPEN				
EXISTING LOAD OF MCC-43 BUS "1"	588.8	380.4	489.5	316.3
EXISTING LOADS TO BE REMOVED:				
SLUDGE PUMP 2A (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 2B (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 2C (75 HP)	96.0		79.8	
SUB-TOTAL	288.0	192.0	239.4	159.6
PROPOSED LOADS TO BE ADDED:				
SLUDGE PUMP 2A (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 2B (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 2C (75 HP)	96.0		79.8	
SUB-TOTAL	288.0	192.0	239.4	159.6
NET LOAD TOTAL OF MCC-43 BUS "1"	588.8	380.4	489.5	316.3
EXISTING LOAD OF MCC-43 BUS "2"	319.0	318.0	265.2	264.4
EXISTING LOADS TO BE REMOVED:				
SLUDGE PUMP 2D (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 2E (75 HP)	96.0	96.0	79.8	79.8
SUB-TOTAL	192.0	192.0	159.6	159.6
PROPOSED LOADS TO BE ADDED:				
SLUDGE PUMP 2D (75 HP)	96.0	96.0	79.8	79.8
SLUDGE PUMP 2E (75 HP)	96.0	96.0	79.8	79.8
SUB-TOTAL	192.0	192.0	159.6	159.6
NET LOAD TOTAL OF MCC-43 BUS "2"	319.0	318.0	265.2	264.4
NET LOAD TOTAL OF MCC-43	907.8	698.4	754.7	580.7

NOTES:

1. EXISTING LOADS ON MCC-43 ARE BASED ON A LOAD STUDY CONDUCTED IN 1993.
2. LOAD SUMMARY REFLECTS OPERATING CONDITIONS IN WHICH A TOTAL OF FOUR (4) SLUDGE PUMPS OPERATE AT ONE TIME. ONE (1) SLUDGE PUMP SERVES AS A STAND-BY UNIT.

LOAD		OPERATING LOAD AMPERES		OPERATING LOAD KVA
MCC-43, EMERGENCY OPERATION-- TIE BREAKER CLOSED				
NET LOAD TOTAL OF MCC-43		698.4		580.7
OPERATOR TO LOCKOUT THE FOLLOWING LOADS PRIOR TO CLOSING TIE BREAKER:				
1 WASTE SLUDGE PUMP (2 MAX. OPERATING)		< 65.0 >		< 54.0 >
3 SLUDGE PUMPS (2 MAX. OPERATING)		< 192.0 >		< 159.6 >
NET LOAD ON MCC-43		441.4		367.1

TPB5-50

NOTES:

1. SEE NOTES ON SHEET E-8.

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PROPOSED ELECTRICAL ONE-LINE DIAGRAM
(SHEET 2 OF 2)

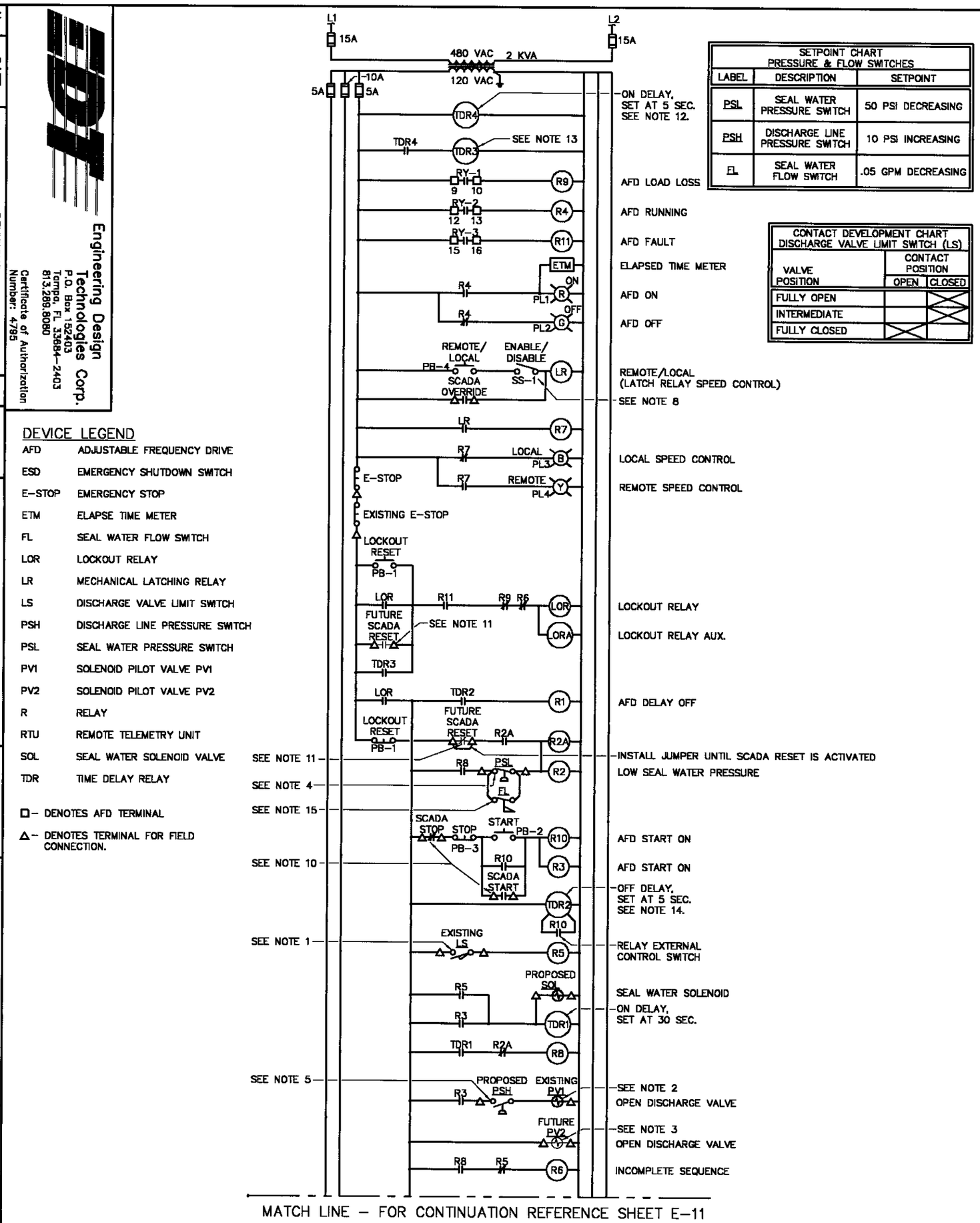
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
PROPOSED ELECTRICAL ONE-LINE DIAGRAM (2 OF 2)

W.O. 5073
SHEET E-9 OF E-20



SETPOINT CHART PRESSURE & FLOW SWITCHES		
LABEL	DESCRIPTION	SETPOINT
PSL	SEAL WATER PRESSURE SWITCH	50 PSI DECREASING
PSH	DISCHARGE LINE PRESSURE SWITCH	10 PSI INCREASING
FL	SEAL WATER FLOW SWITCH	.05 GPM DECREASING

CONTACT DEVELOPMENT CHART DISCHARGE VALVE LIMIT SWITCH (LS)		
VALVE POSITION	CONTACT POSITION	
	OPEN	CLOSED
FULLY OPEN		X
INTERMEDIATE		X
FULLY CLOSED	X	

DEVICE LEGEND

AFD	ADJUSTABLE FREQUENCY DRIVE
ESD	EMERGENCY SHUTDOWN SWITCH
E-STOP	EMERGENCY STOP
ETM	ELAPSE TIME METER
FL	SEAL WATER FLOW SWITCH
LOR	LOCKOUT RELAY
LR	MECHANICAL LATCHING RELAY
LS	DISCHARGE VALVE LIMIT SWITCH
PSH	DISCHARGE LINE PRESSURE SWITCH
PSL	SEAL WATER PRESSURE SWITCH
PV1	SOLENOID PILOT VALVE PV1
PV2	SOLENOID PILOT VALVE PV2
R	RELAY
RTU	REMOTE TELEMETRY UNIT
SOL	SEAL WATER SOLENOID VALVE
TDR	TIME DELAY RELAY

□– DENOTES AFD TERMINAL

△– DENOTES TERMINAL FOR FIELD CONNECTION.

AFD CONTROL SCHEMATIC

SHEET 1 OF 2
(IDENTICAL FOR SLUDGE PUMP 2A THROUGH SLUDGE PUMP 2E)

NOTES:

1. EXISTING DISCHARGE VALVE LIMIT SWITCH CLOSES WHEN DISCHARGE VALVE OPENS & OPENS WHEN THE DISCHARGE VALVE FULLY CLOSES. REFERENCE CONTACT DEVELOPMENT CHART.
2. EXISTING SOLENOID PILOT VALVE PV1 IS FOR THE PNEUMATIC OPERATION OF THE DISCHARGE VALVE. THE DISCHARGE VALVE OPENS WHEN PV1 IS ENERGIZED AND CLOSES WHEN PV1 IS DE-ENERGIZED.
3. FUTURE SOLENOID PILOT VALVE PV2 WILL BE ADDED BY THE CITY WHEN THE NEED FOR THE RAPID CLOSING OF THE DISCHARGE VALVE ARISES. DISCHARGE VALVE WILL CLOSE RAPIDLY WHEN PV2 IS DE-ENERGIZED.
4. PROPOSED SEAL WATER PRESSURE SWITCH CLOSES ON LOW PRESSURE. REFERENCE SETPOINT CHART.
5. PROPOSED DISCHARGE LINE PRESSURE SWITCH CLOSES ON REACHING PUMPING PRESSURE. REFERENCE SETPOINT CHART.
6. THE SHIELD AND DRAIN WIRE FOR EACH ANALOG SIGNAL (4–20 mA) SHALL BE GROUNDED ON ONE END ONLY. THE SHIELD AND DRAIN WIRE AT THE OTHER END SHALL BE NEATLY TRIMMED AND TAPED w/ (2) LAYERS OF VINYL ELECTRICAL TAPE (SCOTCH 33+).
7. ENSURE FINAL LOGIC DESIGN DOES NOT CAUSE LOCKOUT RELAY (LOR) TRIP UNDER NORMAL START/STOP CONDITIONS.
8. MOUNT ENABLE/DISABLE SWITCH (SS-1) FOR REMOTE/LOCAL SPEED CONTROL INSIDE OF ENCLOSURE.
9. A PROGRAMMABLE LOGIC CONTROLLER (PLC) MAY BE PROVIDED IN EACH CABINET FOR THE CONTROL LOGIC SHOWN IN LIEU OF UTILIZING CONTROL RELAYS. PLC MUST BE SUBMITTED FOR APPROVAL.
10. START/STOP CONTROLS ARE MOMENTARY CHANGE OF STATE OF THE CONTACTS.
11. FUTURE SCADA RESET.
12. ON DELAY OPERATION OF CONTACT UPON RESTORATION OF POWER AFTER A POWER FAILURE. SET DELAY FOR 5 SECONDS AFTER POWER RESTORATION.
13. INTERVAL OPERATION OF CONTACT. SET INTERVAL FOR 2 SECONDS.
14. TO AVOID LOSING SEAL WATER PRIOR TO SHUTTING PUMP "OFF", CONTRACTOR SHALL ADJUST THE TIMING OF TDR2 SO THE OFF DELAY TIME IS SET SLIGHTLY LESS THAN THE TIME REQUIRED TO CLOSE THE DISCHARGE VALVE.
15. PROPOSED SEAL WATER FLOW SWITCH CLOSES ON LOW FLOW. REFERENCE SETPOINT CHART.

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CITY of TAMPA
ADVANCED WASTEWATER TREATMENT PLANT
HOWARD F. CURREN

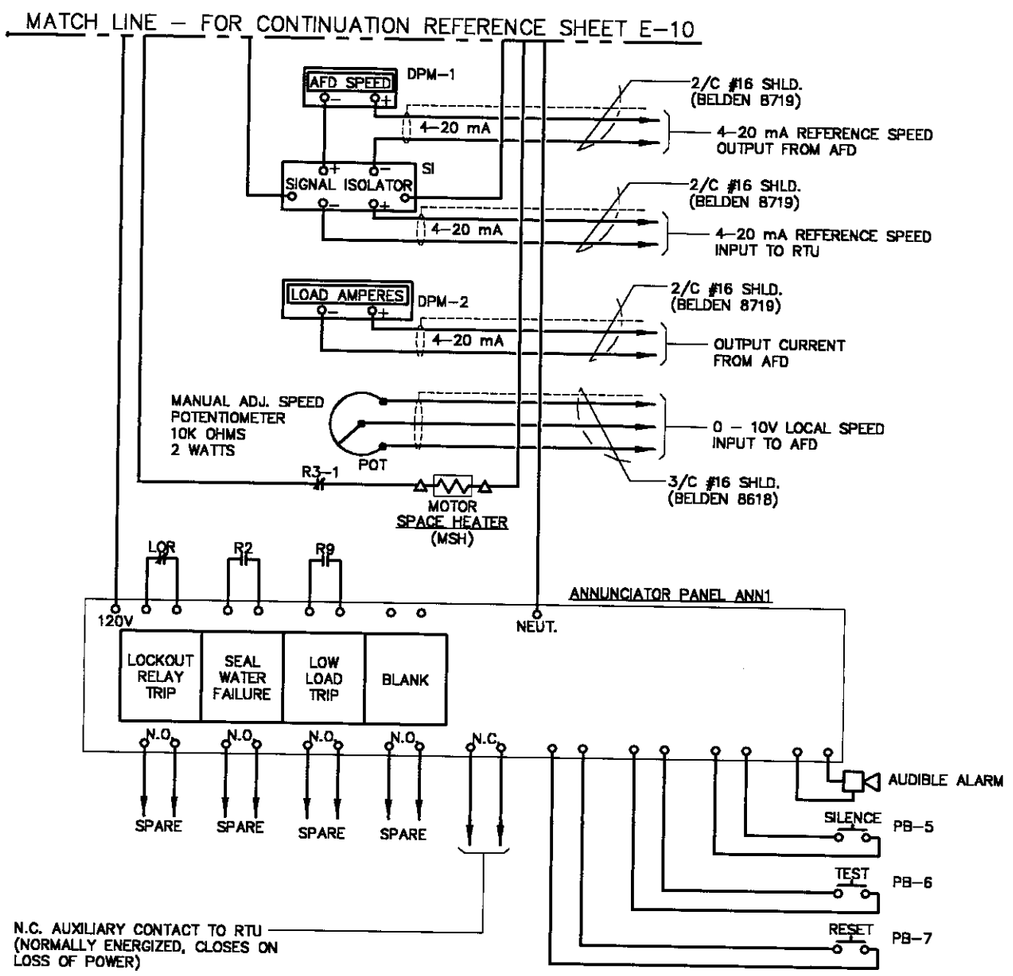
RETURN SLUDGE PUMPING STATION NO. 2
REHABILITATION
AFD CONTROL SCHEMATIC (1 OF 2)

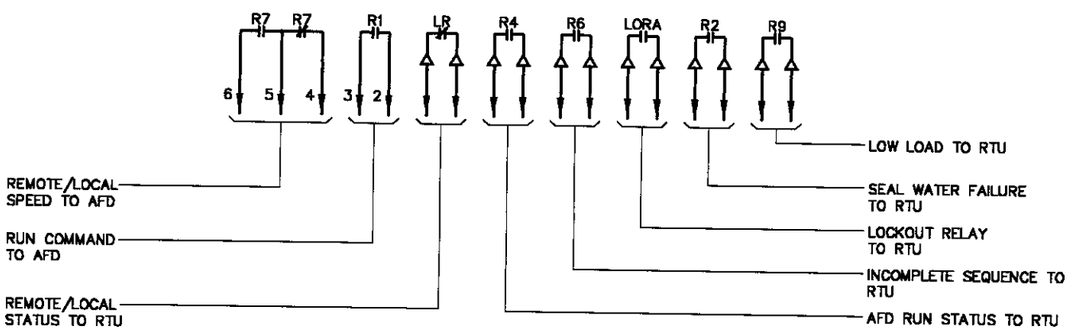
W.O. 5073
SHEET E-10 OF E-20

TPB5-51

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AFD CONTROL SCHEMATIC

SHEET 2 OF 2
(IDENTICAL FOR SLUDGE PUMP 2A THROUGH SLUDGE PUMP 2E)

NOTES:

1. THE SHIELD AND DRAIN WIRE FOR EACH ANALOG SIGNAL (4–20 mA) SHALL BE GROUNDED ON ONE END ONLY. THE SHIELD AND DRAIN WIRE AT THE OTHER END SHALL BE NEATLY TRIMMED AND TAPED w/ (2) LAYERS OF VINYL ELECTRICAL TAPE (SCOTCH 33+).

□– DENOTES AFD TERMINAL

△– DENOTES TERMINAL FOR FIELD CONNECTION.

DEVICE LEGEND

AFD	ADJUSTABLE FREQUENCY DRIVE
ESD	EMERGENCY SHUTDOWN SWITCH
E-STOP	EMERGENCY STOP
ETM	ELAPSE TIME METER
FL	SEAL WATER FLOW SWITCH
LOR	LOCKOUT RELAY
LR	MECHANICAL LATCHING RELAY
LS	DISCHARGE VALVE LIMIT SWITCH
PSH	DISCHARGE LINE PRESSURE SWITCH
PSL	SEAL WATER PRESSURE SWITCH
PV1	SOLENOID PILOT VALVE PV1
PV2	SOLENOID PILOT VALVE PV2
R	RELAY
RTU	REMOTE TELEMETRY UNIT
SOL	SEAL WATER SOLENOID VALVE
TDR	TIME DELAY RELAY

DES: MRS
DRN: RWB
CKD: BEH
DATE: 04/14/03

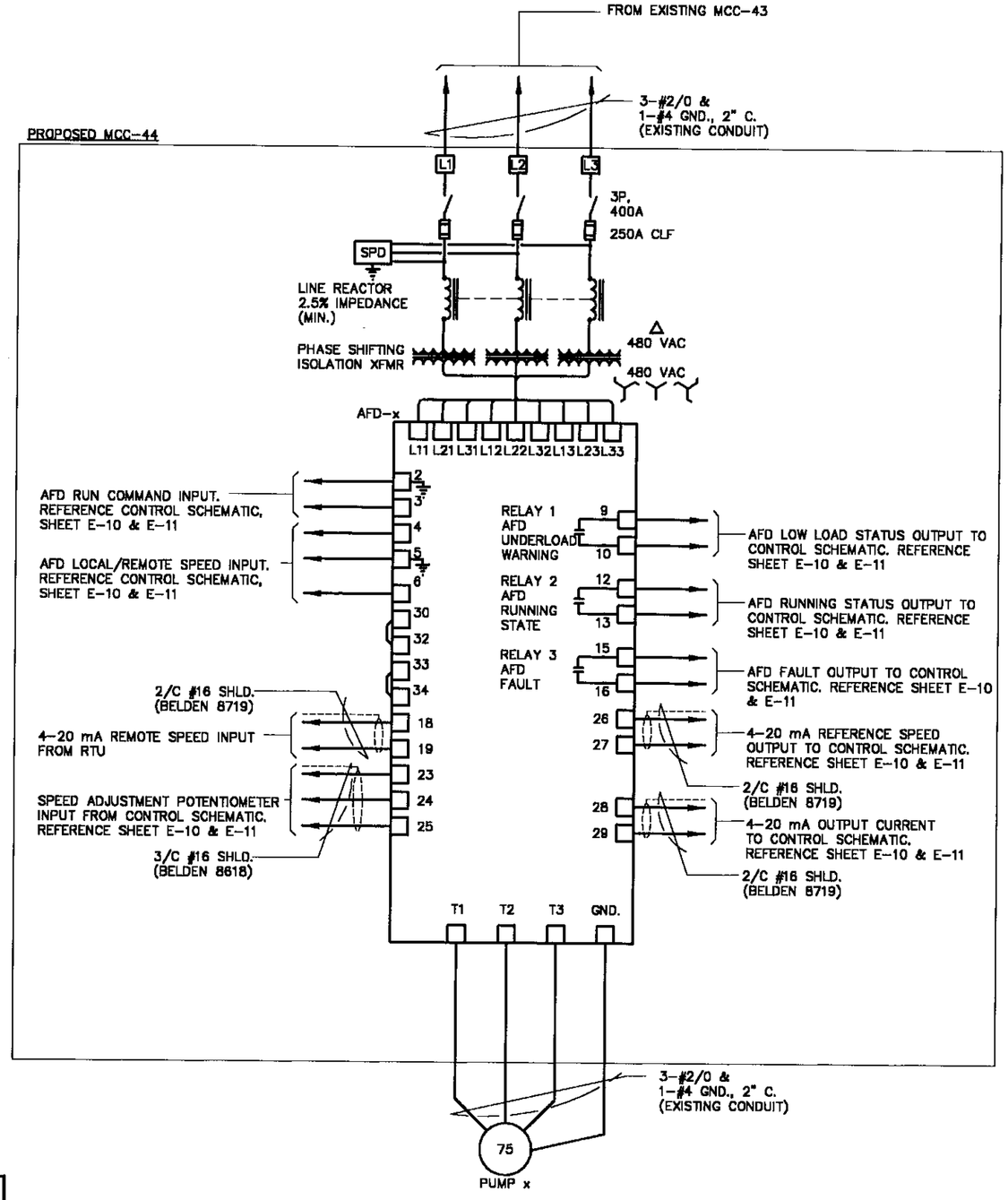
CITY of TAMPA
ADVANCED WASTEWATER TREATMENT PLANT
HOWARD F. CURREN

RETURN SLUDGE PUMPING STATION NO. 2
REHABILITATION
AFD CONTROL SCHEMATIC (2 OF 2)

W.O. 5073
SHEET E-11 OF E-20

TPB5-52

TPB5-53



NOTES:

1. REPLACE x WITH THE FOLLOWING:
   - A FOR SLUDGE PUMP 2A
   - B FOR SLUDGE PUMP 2B
   - C FOR SLUDGE PUMP 2C
   - D FOR SLUDGE PUMP 2D
   - E FOR SLUDGE PUMP 2E
2. ALL CONTROL WIRING SHALL BE AWG #14 UNLESS OTHERWISE NOTED.
3. THE ADJUSTABLE FREQUENCY DRIVE AND THE ASSOCIATED COMPONENTS (FUSES, LINE REACTORS, PHASE SHIFTING TRANSFORMER, WIRING, ETC.) SHALL BE SIZED FOR FUTURE INSTALLATION OF A 100 HP VARIABLE TORQUE MOTOR LOAD. THE DRIVE SHALL NOT DEPEND ON ITS OVERLOAD CAPACITY TO OPERATE THE 100 HP LOAD.
4. PROVIDE THE NECESSARY PROGRAMMING MODIFICATIONS TO THE AFD OPERATING SOFTWARE TO ENSURE PROPER CONTROL OPERATION WITH THE CONTACT INPUT/OUTPUTS SHOWN IN THE SCHEMATIC.

PROPOSED SLUDGE PUMP AFD CONNECTION DIAGRAM

(IDENTICAL FOR SLUDGE PUMP 2A THROUGH SLUDGE PUMP 2E)

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

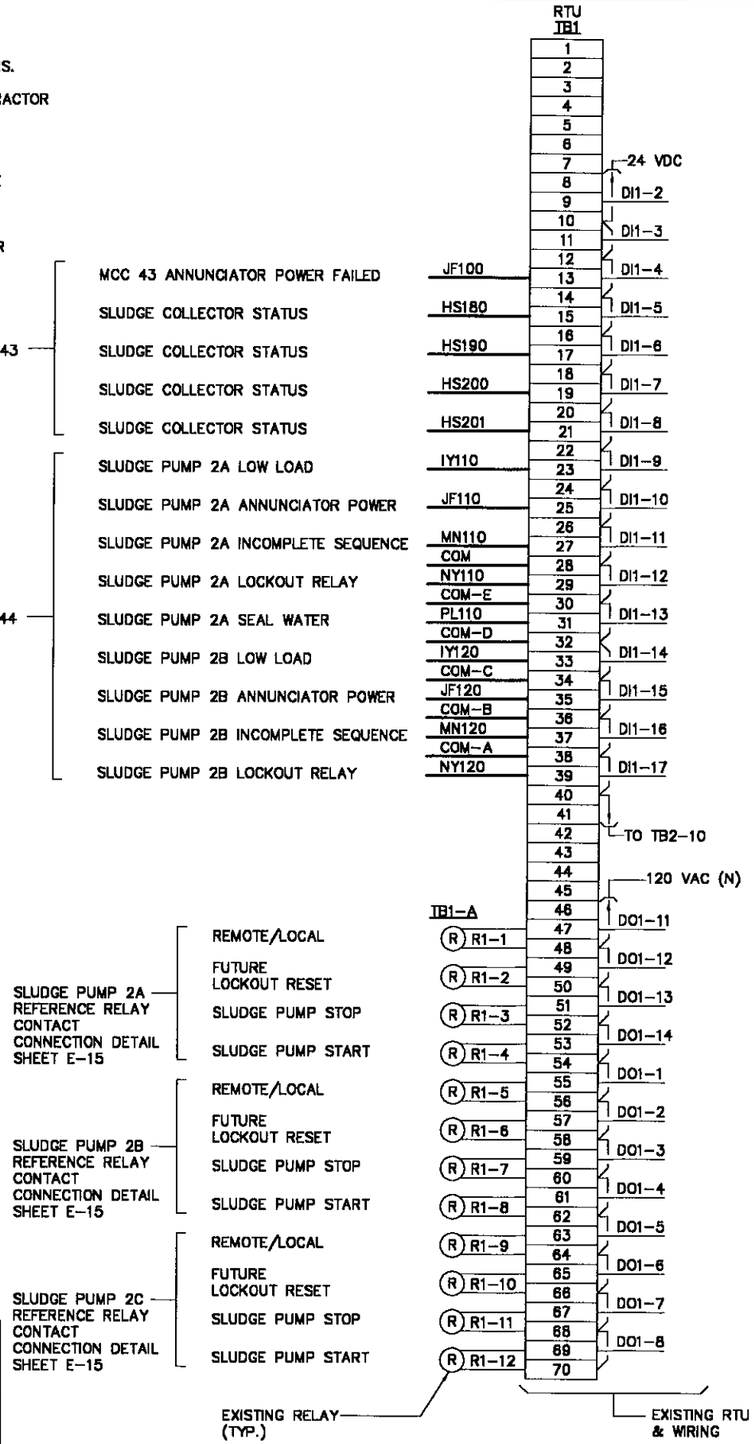
RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
AFD CONNECTION DIAGRAM

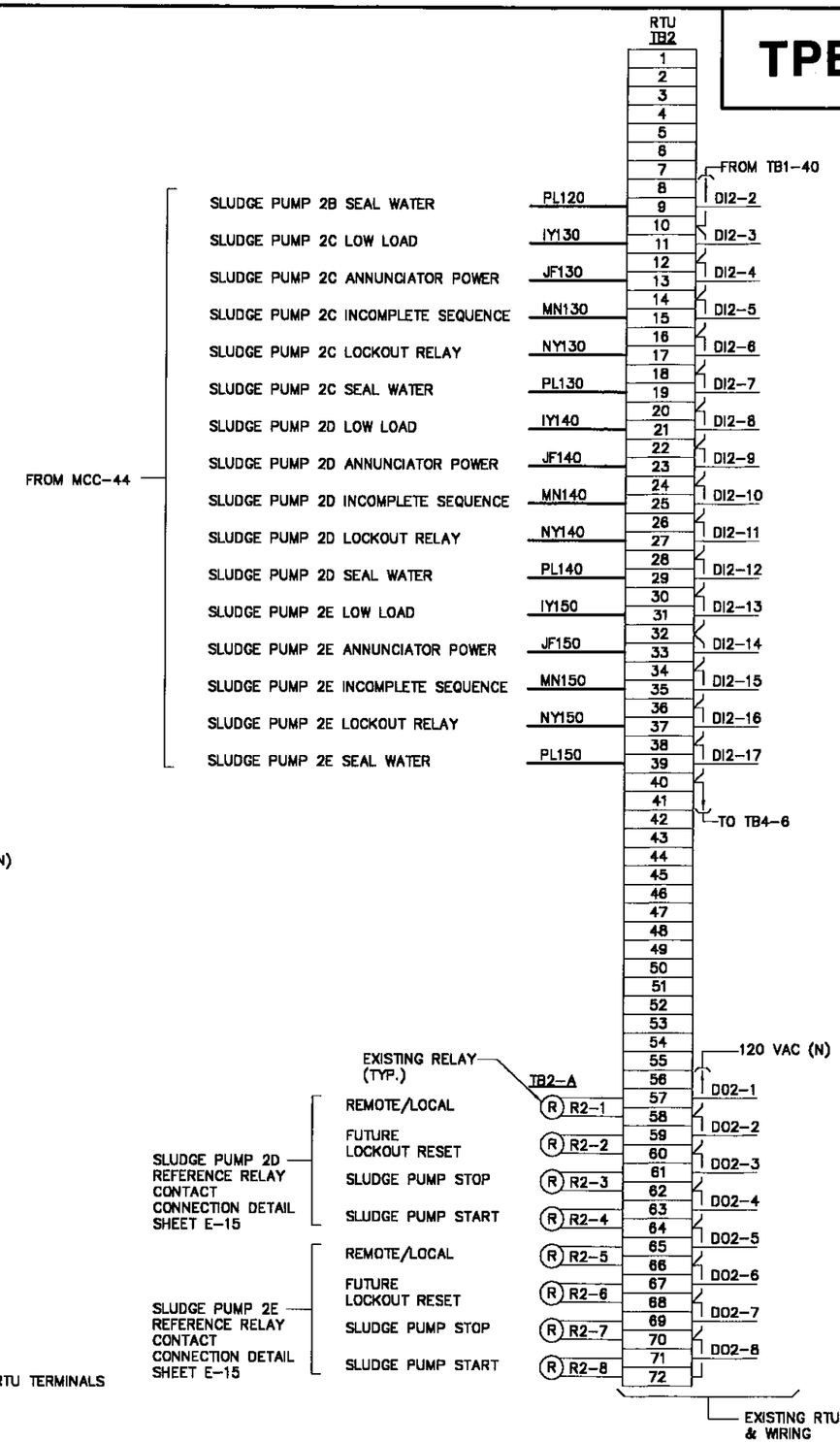
W.O. 5073
SHEET E-12 OF E-20

TPB5-54

NOTES:

1. EXISTING FIELD CONNECTIONS & WIRING TO THE RTU SHALL BE FULLY DOCUMENTED BY CONTRACTOR BEFORE DISCONNECTING CONDUCTORS. EXISTING WIRING & TERMINAL CONNECTIONS ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR VERIFYING EXISTING CONNECTIONS.
2. PROVIDE GE FANUC ANALOG OUTPUT MODULE COMPATIBLE WITH THE EXISTING RTU PLC FOR THE PROPOSED ANALOG OUTPUTS SHOWN. MOUNT ANALOG OUTPUT MODULE IN EXISTING SPARE SLOT. COORDINATE MODULE INSTALLATION & CONNECTIONS WITH OWNER.
3. CONNECTIONS FROM FIELD TERMINALS IN RTU TO PLC WILL BE THE RESPONSIBILITY OF THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPOSED CONNECTIONS FROM THE FIELD DEVICES TO THE FIELD TERMINALS IN THE RTU.





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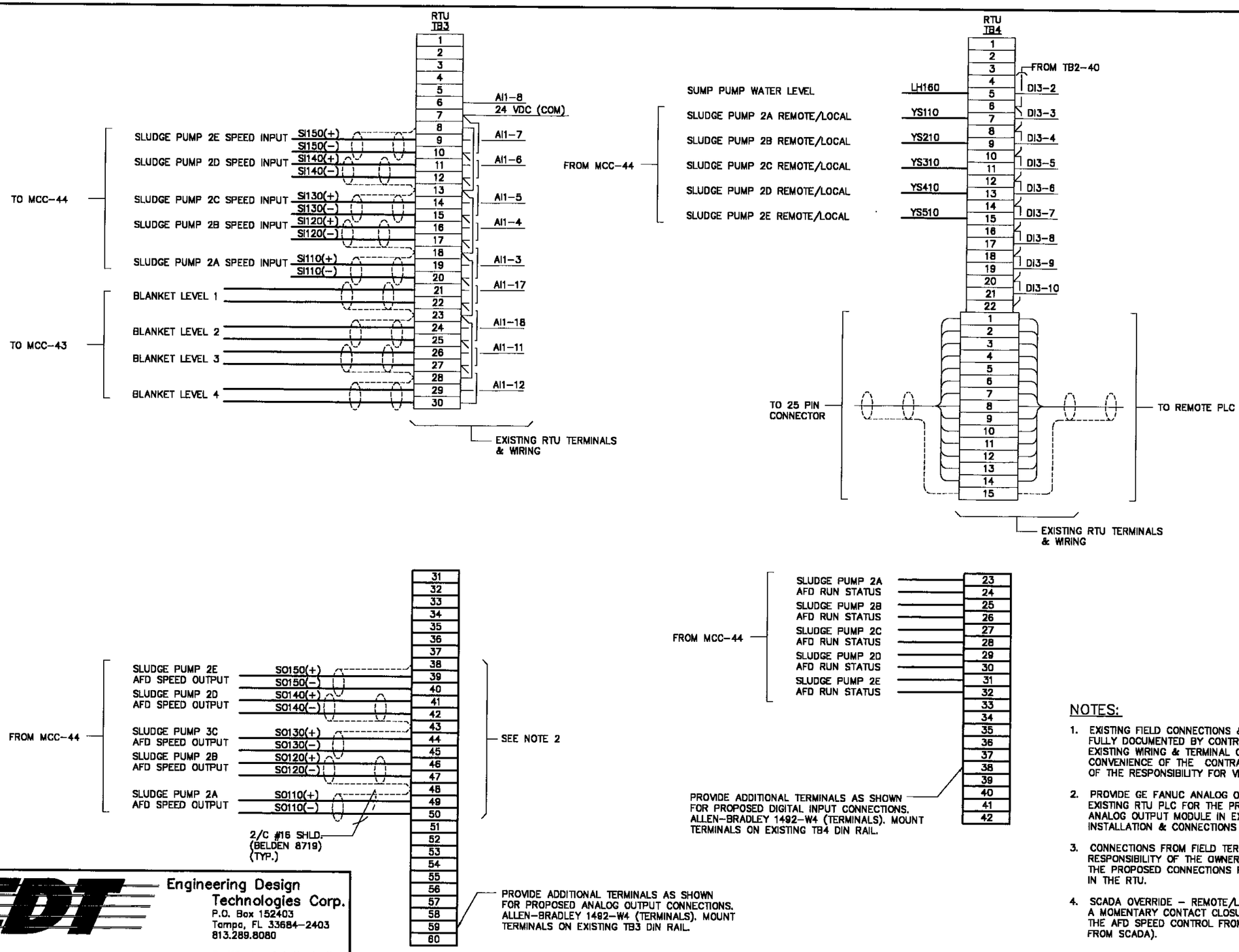
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
RTU INTERCONNECTION DIAGRAM (1 OF 2)

W.O. 5073
SHEET E-13 OF E-20

TPB5-55



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NOTES:

1. EXISTING FIELD CONNECTIONS & WIRING TO THE RTU SHALL BE FULLY DOCUMENTED BY CONTRACTOR BEFORE DISCONNECTING CONDUCTORS. EXISTING WIRING & TERMINAL CONNECTIONS ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR VERIFYING EXISTING CONNECTIONS.
2. PROVIDE GE FANUC ANALOG OUTPUT MODULE COMPATIBLE WITH THE EXISTING RTU PLC FOR THE PROPOSED ANALOG OUTPUTS SHOWN. MOUNT ANALOG OUTPUT MODULE IN EXISTING SPARE SLOT. COORDINATE MODULE INSTALLATION & CONNECTIONS WITH OWNER.
3. CONNECTIONS FROM FIELD TERMINALS IN RTU TO PLC WILL BE THE RESPONSIBILITY OF THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPOSED CONNECTIONS FROM THE FIELD DEVICES TO THE FIELD TERMINALS IN THE RTU.
4. SCADA OVERRIDE – REMOTE/LOCAL OUTPUT CONTACT FROM THE RTU IS A MOMENTARY CONTACT CLOSURE. EACH MOMENTARY CONTACT CLOSURE TOGGLES THE AFD SPEED CONTROL FROM LOCAL CONTROL TO REMOTE CONTROL (CONTROL FROM SCADA).

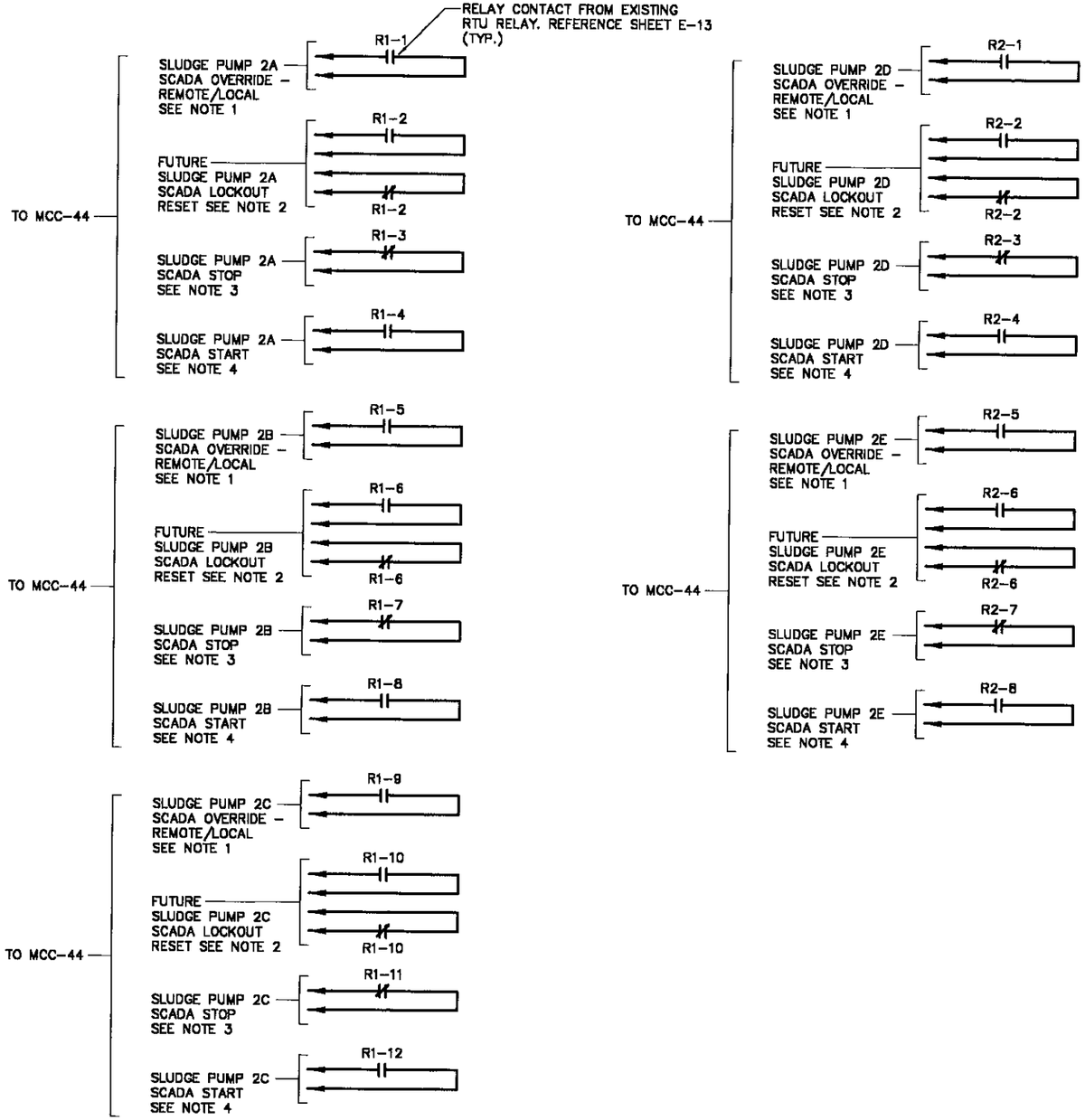
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DATE: 04/14/03

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
RTU INTERCONNECTION DIAGRAM (2 OF 2)

W.O. 5073
SHEET E-14 OF E-20



NOTES:

1. SCADA OVERRIDE – REMOTE/LOCAL OUTPUT CONTACT FROM THE RTU IS A MOMENTARY CONTACT CLOSURE. EACH MOMENTARY CONTACT CLOSURE TOGGLES THE AFD SPEED CONTROL FROM LOCAL CONTROL TO REMOTE CONTROL (CONTROL FROM SCADA).
2. LOCKOUT RESET – LOCKOUT RESET OUTPUT CONTACT FROM THE RTU IS A MOMENTARY OPEN CONTACT AND CONTACT CLOSURE. A MOMENTARY OPEN CONTACT AND CONTACT CLOSURE RESETS THE LOCKOUT RELAY. THIS IS A FUTURE CONNECTION. CONDUCTORS SHALL BE ROUTED TO THE RTU ENCLOSURE, LABELED, COILED AND STORED NEATLY FOR FUTURE CONNECTIONS.
3. SLUDGE PUMP STOP – SLUDGE PUMP STOP OUTPUT CONTACT FROM THE RTU IS A MOMENTARY OPEN CONTACT. A MOMENTARY OPEN CONTACT STOPS THE SLUDGE PUMP.
4. SLUDGE PUMP START – SLUDGE PUMP START OUTPUT CONTACT FROM THE RTU IS A MOMENTARY CONTACT CLOSURE. A MOMENTARY CONTACT CLOSURE STARTS THE SLUDGE PUMP.

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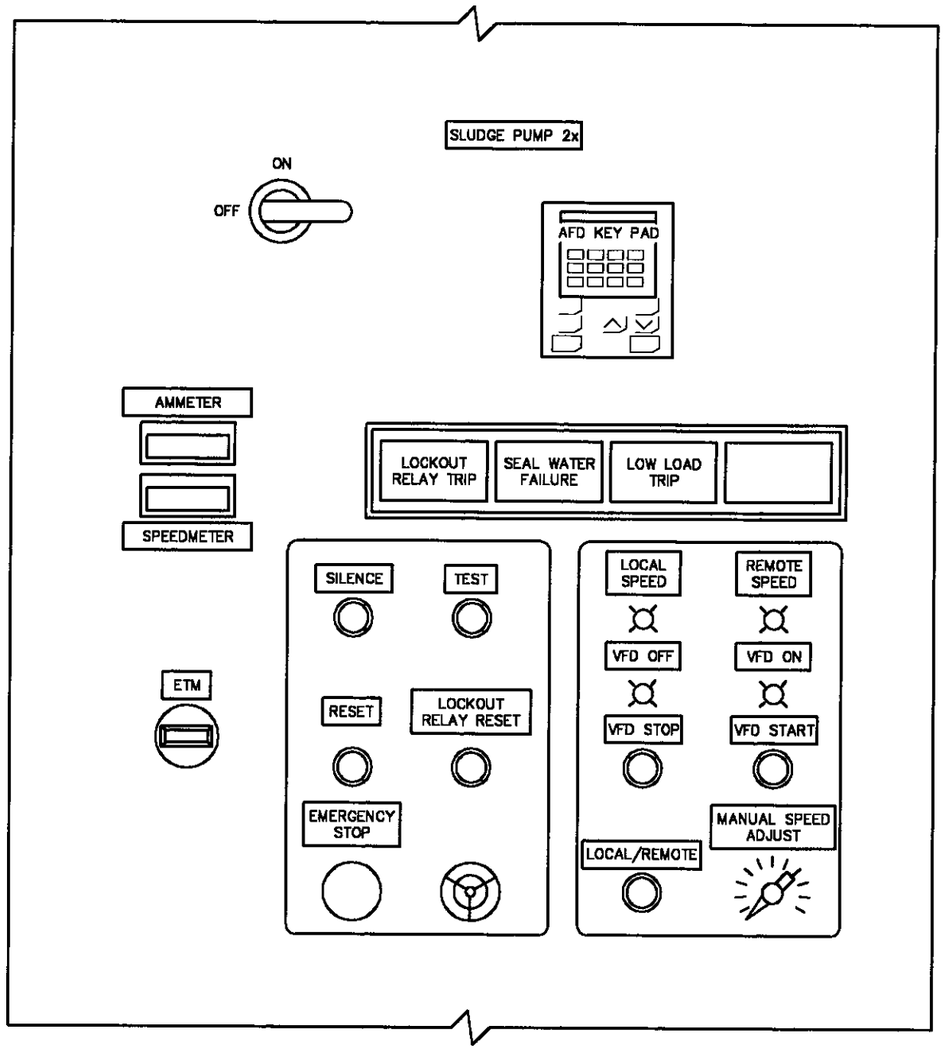
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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
RTU RELAY CONTACT DETAIL

W.O. 5073
SHEET E-15 OF E-20



NOTES:

1. REPLACE x WITH THE FOLLOWING:

   A FOR SLUDGE PUMP 2A

   B FOR SLUDGE PUMP 2B

   C FOR SLUDGE PUMP 2C

   D FOR SLUDGE PUMP 2D

   E FOR SLUDGE PUMP 2E

2. THE DOOR ON EACH AFD CABINET IN MCC–44 SHALL BE HINGED ON THE LEFT SIDE OF THE CABINET TO AVOID DOOR OPENING RESTRICTIONS FROM THE EXISTING BUILDING SUPPORT COLUMNS. PROVIDE DOOR STOP KIT OR PROTECTIVE BUMPER ON DOOR TO PREVENT DAMAGE TO DOOR FROM CONCRETE BUILDING COLUMNS.

3. THE ADJUSTABLE FREQUENCY DRIVE (AFD) SHALL BE MANUFACTURED BY ROBICON & SHALL COMPLY WITH THE DRAWINGS & SPECIFICATIONS FOR THIS PROJECT. A SINGLE SOURCE CERTIFICATE OF CONDITIONS AND CIRCUMSTANCES WAS EXECUTED FOR THIS AFD. THE CERTIFICATE STATES THAT NO OTHER AFD SHALL BE CONSIDERED AN OR–EQUAL FOR THIS PROJECT IN ACCORDANCE WITH THE CITY'S STANDARDIZATION PROGRAM. THE "OR–EQUAL" CLAUSE APPLIES TO ALL OTHER EQUIPMENT IN THIS PROJECT, UNLESS SPECIFICALLY EXCLUDED BY A SINGLE SOURCE CERTIFICATE.

PROPOSED AFD CABINET PARTIAL FRONT DOOR ELEVATION

(TYPICAL FOR SLUDGE PUMPS 2A – 2E)

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
PROPOSED AFD CABINET ELEVATION

W.O. 5073
SHEET E-16 OF E-20

TPB5-58

NOTES:

1. THE ADJUSTABLE FREQUENCY DRIVE (AFD) SHALL BE MANUFACTURED BY ROBICON & SHALL COMPLY WITH THE DRAWINGS & SPECIFICATIONS FOR THIS PROJECT. A SINGLE SOURCE CERTIFICATE OF CONDITIONS AND CIRCUMSTANCES WAS EXECUTED FOR THIS AFD. THE CERTIFICATE STATES THAT NO OTHER AFD SHALL BE CONSIDERED AN OR-EQUAL FOR THIS PROJECT IN ACCORDANCE WITH THE CITY'S STANDARDIZATION PROGRAM. THE "OR-EQUAL" CLAUSE APPLIES TO ALL OTHER EQUIPMENT IN THIS PROJECT, UNLESS SPECIFICALLY EXCLUDED BY A SINGLE SOURCE CERTIFICATE.

COMPONENT SCHEDULE

LABEL	DESCRIPTION	MANUFACTURER	MODEL	REMARKS
SOL-2A - SOL-2E	SEAL WATER SOLENOID VALVE	ASCO	EF8210G88	120 VAC, 2-WAY, N.C., SS BODY
PSH-2A - PSH-2E	DISCHARGE LINE PRESSURE SWITCH	NEO-DYN	123P52C6R	HERMETICALLY SEALED w/ ADJ. RANGE 1 PSI DEC. TO 30 PSI INCR.
PSL-2A - PSL-2E	SEAL WATER PRESSURE SWITCH	NEO-DYN	132P58C6GHIJ	NEMA 4X w/ ADJ. RANGE 1 PSI DEC. TO 30 PSI INCR.
AFD-2A - AFD-2E	RETURN SLUDGE PUMP ADJUSTABLE FREQ. DRIVE	ROBICON	454GT	VARIABLE TORQUE, 100 HP, 130A INPUT, 124A OUTPUT
PL1	LED PILOT LIGHT (RED LENS)	ABB CONTROL INC.	CBG-KLFPTL1R	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
PL2	LED PILOT LIGHT (GREEN LENS)	ABB CONTROL INC.	CBG-KLFPTL1G	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
PL3	LED PILOT LIGHT (BLUE LENS)	ABB CONTROL INC.	CBG-KLFPTL1L	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
PL4	LED PILOT LIGHT (YELLOW LENS)	ABB CONTROL INC.	CBG-KLFPTL1Y	PUSH TO TEST, 120 VAC, NEMA 4X, ROUND w/ LEGEND PLATE
ETM	ELAPSED TIME METER	FOURTH DIMENSION INSTRUMENT (FDI)	106112	120 VAC
DPM-1 (AFD SPEED), DPM-2 (LOAD AMPERES)	DIGITAL PANEL METER	RED LION CONTROLS	PAXH	3 1/2-DIGITAL DISPLAY, 4-20 mA INPUT, LOOP POWERED
SI	SIGNAL ISOLATOR	MOORE INDUSTRIES	FCT/PRG/PRG/U/-RF [DIN]	FIELD CONFIGURABLE, 120 VAC POWER PROGRAMMABLE INPUT & OUTPUT
POT	POTENTIOMETER	CLAROSTAT	73JA	10K OHM, 2 WATT, 10 TURN POTENTIOMETER, w/ DIAL PLATE SS. SHAFT & GRADUATED DIAL
LOR, LORA, R1, R2, R2A, R3, R4, R5, R6, R7, R8, R9, R10, R11	CONTROL RELAYS	POTTER & BRUMFIELD	KUP17A39-120 w/ 27E867 SOCKET, 20C254 HOLD DOWN SPRING & 40G432 INSULATOR PAD	120 VAC COIL, 10A CONTACTS, 4PDT
LR	LATCHING RELAY w/ DUST COVER & PLUG IN BASE	POTTER & BRUMFIELD	S89R11APP1-120	120 VAC COIL, 15A CONTACTS, DPDT
TDR1, TDR2, TDR3, TDR4	TIME DELAY RELAY	POTTER & BRUMFIELD	CNM5 w/ 27E892 SOCKET	120 VAC COIL, 10A CONTACTS, ON DELAY, OFF DELAY OR SINGLE SHOT SETTABLE
E-STOP	EMERGENCY STOP	ABB CONTROL INC.	CBG-PMP40R	MOMENTARY PUSH BUTTON, NEMA 4X, WITH RED MUSHROOM OPERATOR & LEGEND PLATE
PB-1, PB-2, PB-3, PB-4, PB-5, PB-6, PB-7	PUSH BUTTON	ABB CONTROL INC.	CBG-KP SERIES	MOMENTARY PUSH BUTTON, NEMA 4X, w/ LEGEND PLATE
SS-1	SELECTOR SWITCH (ENABLE/DISABLE)	ABB CONTROL INC.	CBG-2AML	2 POSITION SELECTOR SWITCH, NEMA 4X, w/ LEGEND PLATE
ANN-1	ANNUNCIATOR PANEL	RONAN	X11-1000 SERIES	SOLID STATE WITH ALARM HORN & AUXILIARY RELAY CONTACT OUTPUTS. PROVIDE TERMINAL CONNECTIONS FOR SILENCE, TEST & RESET PUSH BUTTONS.
T1	CONTROL TRANSFORMER	SQUARE D	TF2000D1	2 KVA w/ FUSE CLIPS, 480V PRIMARY/120V SECONDARY
SPD	LIGHTNING/SURGE ARRESTER	ADVANCED PROTECTION TECHNOLOGIES	TE/5XF	480 VAC, 3ø
FL-2A - FL-2E	SEAL WATER FLOW SWITCH	DWYER	V6-S-S-D-LF-S-JCT	WEATHERPROOF w/ ADJUSTABLE RANGE (.04 - .75 GPM)

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
ELECTRICAL COMPONENT SCHEDULE

W.O. 5073
SHEET E-17 OF E-20

EXISTING CONDUIT / CONDUCTOR SCHEDULE

CONDUIT NO.	COND. SIZE	NO. WIRES	WIRE SIZE	FROM	TO	REMARKS
40M3A	4"	3	500 KCMIL	SWITCHGEAR NO. 40	MCC-43 (BUS 1)	
		1	#2/0 GND.			
40M3B	4"	3	500 KCMIL	SWITCHGEAR NO. 40	MCC-43 (BUS 1)	
		1	#2/0 GND.			
40M4A	4"	3	500 KCMIL	SWITCHGEAR NO. 40	MCC-43 (BUS 2)	
		1	#2/0 GND.			
40M4B	4"	3	500 KCMIL	SWITCHGEAR NO. 40	MCC-43 (BUS 2)	
		1	#2/0 GND.			
43M1	2"	3	#2/0	MCC-43	PROPOSED MCC-44 (SLUDGE PUMP 2A)	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN.
		1	#4 GND.			
43M2	2"	3	#2/0	MCC-43	PROPOSED MCC-44 (SLUDGE PUMP 2B)	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN.
		1	#4 GND.			
43M3	2"	3	#2/0	MCC-43	PROPOSED MCC-44 (SLUDGE PUMP 2C)	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN.
		1	#4 GND.			
43M4	2"	3	#2/0	MCC-43	PROPOSED MCC-44 (SLUDGE PUMP 2D)	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN.
		1	#4 GND.			
43M5	2"	3	#2/0	MCC-43	PROPOSED MCC-44 (SLUDGE PUMP 2E)	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN.
		1	#4 GND.			
44M1A	2"	3	#2/0	MCC-44	MOTOR FT-RSP-2A	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN. SEE NOTE 6
		1	#4 GND.			
44M1B	1"	2	#14	MCC-44	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
44M1E	1"	8	#14	MCC-44	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
44M1F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
44M2A	2"	3	#2/0	MCC-44	MOTOR FT-RSP-2B	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN. SEE NOTE 6
		1	#4 GND.			
44M2B	1"	2	#14	MCC-44	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
44M2E	1"	8	#14	MCC-44	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
44M2F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
44M3A	2"	3	#2/0	MCC-44	MOTOR FT-RSP-2C	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN. SEE NOTE 6
		1	#4 GND.			
44M3B	1"	2	#14	MCC-44	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
44M3E	1"	8	#14	MCC-44	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3

NOTES:

1. THE CONDUITS & CONDUCTORS SHOWN ON THIS DRAWING ARE EXISTING & SHALL BE USED IN THE PROPOSED INSTALLATION, U.O.N.
2. EXISTING CONDUITS ARE PROVIDED FOR REFERENCE ONLY. CONDUIT SIZE, CONDUCTOR SIZE, & THE NUMBER OF CONDUCTORS ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. EXISTING CONDUIT & CONDUCTORS SHALL BE EXTENDED & MODIFIED AS NECESSARY TO CONNECT TO PROPOSED EQUIPMENT. PROVIDE ADDITIONAL CONDUIT & CONDUCTOR LENGTHS AS REQUIRED.
4. NEATLY COIL & TAPE SPARE CONDUCTORS.
5. DISCONNECT, NEATLY COIL & TAPE CONDUCTORS FOR SPEED CONTROL SWITCH (LP-43 CKT. #15) & UPDATE LP-43 PANELBOARD DIRECTORY. 120 VAC TO RTU (LP-43 CKT. #24) SHALL REMAIN.
6. TERMINATE CONDUIT FROM PROPOSED JUNCTION BOX INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
7. ALL CONDUCTOR SPLICES SHALL BE IN NEMA 4X STAINLESS STEEL ENCLOSURES, SPLICED CONDUCTORS NUMBERING MORE THAN SIX (6) SHALL BE SPLICED USING TERMINAL BLOCKS.

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
CONDUIT SCHEDULE

W.O. 5073
SHEET E-18 OF E-20

TPB5-60

EXISTING CONDUIT / CONDUCTOR SCHEDULE

CONDUIT NO.	COND. SIZE	NO. WIRES	WIRE SIZE	FROM	TO	REMARKS
44M3F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
44M4A	2"	3	#2/0	MCC-44	MOTOR FT-RSP-2D	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN. SEE NOTE 6.
		1	#4 GND.			
44M4B	1"	2	#14	MCC-44	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
44M4E	1"	8	#14	MCC-44	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
44M4F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
44M5A	2"	3	#2/0	MCC-44	MOTOR FT-RSP-2E	REMOVE #1/0 AL CONDUCTORS FROM EXISTING CONDUIT & REPLACE w/ NEW #2/0 CU CONDUCTORS AS SHOWN. SEE NOTE 6.
		1	#4 GND.			
44M5B	1"	2	#14	MCC-44	MOTOR SPACE HEATER TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTES 3 & 6
		1	#14 GND.			
		3	#14 SPARE			
46M5E	1"	8	#14	MCC-44	CONTROL TERMINAL BOX	EXISTING CONDUIT & WIRING. SEE NOTE 3
44M5F	3/4"	2	#14	CONTROL TERMINAL BOX	E-STOP PUSH BUTTON	EXISTING CONDUIT & WIRING.
44M8	3 1/2"	51	#14	MCC-44	SCANNER 43 (MCC-43)	SEE NOTE 3. TERMINATE CONDUIT IN PULL BOX.
		9	2/C #16 SHLD.			
44M51	3/4"	2	#12	RTU	LP-43	SEE NOTES 3 & 5.
		1	#12 GND.			
		1	#12 SPARE			

NOTES:

1. THE CONDUITS & CONDUCTORS SHOWN ON THIS DRAWING ARE EXISTING & SHALL BE USED IN THE PROPOSED INSTALLATION, U.O.N.
2. EXISTING CONDUITS ARE PROVIDED FOR REFERENCE ONLY. CONDUIT SIZE, CONDUCTOR SIZE, & THE NUMBER OF CONDUCTORS ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
3. EXISTING CONDUIT & CONDUCTORS SHALL BE EXTENDED & MODIFIED AS NECESSARY TO CONNECT TO PROPOSED EQUIPMENT. PROVIDE ADDITIONAL CONDUIT & CONDUCTOR LENGTHS AS REQUIRED.
4. NEATLY COIL & TAPE SPARE CONDUCTORS.
5. DISCONNECT, NEATLY COIL & TAPE CONDUCTORS FOR SPEED CONTROL SWITCH (LP-43 CKT. #15) & UPDATE LP-43 PANELBOARD DIRECTORY. 120 VAC TO RTU (LP-43 CKT. #24) SHALL REMAIN.
6. TERMINATE CONDUIT FROM PROPOSED JUNCTION BOX INTO EQUIPMENT WITH 18" LENGTH OF FLEXIBLE CONDUIT. USE APPROVED TERMINATOR ON EACH END OF FLEXIBLE CONDUIT.
7. ALL CONDUCTOR SPLICES SHALL BE IN NEMA 4X STAINLESS STEEL ENCLOSURES, SPLICED CONDUCTORS NUMBERING MORE THAN SIX (6) SHALL BE SPLICED USING TERMINAL BLOCKS.

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CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2 REHABILITATION
CONDUIT SCHEDULE

W.O. 5073
SHEET E-19 OF E-20

PROPOSED CONDUIT / CONDUCTOR SCHEDULE

CONDUIT NO.	COND. SIZE	NO. WIRES	WIRE SIZE	FROM	TO	REMARKS
44M1G	1"	8	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-2A & PSL-2A, SEE NOTES 1, 2 & 4
		1	#14 GND.			
44M1J	3/4"	4	#14	JUNCTION BOX	EXISTING PULL BOX JB-2A	PROPOSED PSH-2A, EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID PV1 & FUTURE SOLENOID PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
44M2G	1"	8	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-2B & PSL-2B, SEE NOTES 1, 2 & 4
		1	#14 GND.			
44M2J	3/4"	4	#14	JUNCTION BOX	EXISTING PULL BOX JB-2B	PROPOSED PSH-2B EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID PV1 & FUTURE SOLENOID PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
44M3G	1"	8	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-2C & PSL-2C, SEE NOTES 1, 2 & 4
		1	#14 GND.			
44M3J	3/4"	4	#14	JUNCTION BOX	EXISTING PULL BOX JB-2C	PROPOSED PSH-2C EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID PV1 & FUTURE SOLENOID PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
44M4G	1"	8	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-2D & PSL-2D, SEE NOTES 1, 2 & 4
		1	#14 GND.			
44M4J	3/4"	4	#14	JUNCTION BOX	EXISTING PULL BOX JB-2D	PROPOSED PSH-2D, EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID PV1 & FUTURE SOLENOID PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
44M5G	1"	8	#14	EXISTING CONTROL TERMINAL BOX	JUNCTION BOX	SOL-2E & PSL-2E, SEE NOTES 1, 2 & 4
		1	#14 GND.			
44M5J	3/4"	4	#14	JUNCTION BOX	EXISTING PULL BOX JB-2E	PROPOSED PSH-2E, EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID PV1 & FUTURE SOLENOID PV2, SEE NOTES 1, 3 & 5
		1	#14 GND.			
44M8A	3 1/2"	51	#14	PULL BOX	MCC-44	NEATLY COIL, TAPE & STORE CONDUCTORS INSIDE OF MCC-44 CABINET. COORD. w/ OWNER.
		9	2/C #16 SHLD.			
44M50	3 1/2"	140	#14	RTU	MCC-44	TERMINATE CONDUCTORS IN RTU & MCC AS SHOWN IN SHEETS E-13, E-14 & E-15.
		1	#14 GND.			
		12	2/C #16 SHLD.			
44M51A	3/4"	2	#12	MCC-44	RTU	RTU POWER FROM PANELBOARD LP-43
		1	#12 GND.			
		1	#12 SPARE			

TPB5-61

NOTES:

1. ROUTE CONDUIT ALONG BASE OF CONCRETE PUMP BASE & SECURE WITH ALUMINUM UNISTRUT & CONDUIT CLAMPS AT INTERVALS NOT TO EXCEED 5'-0".
2. PROVIDE LIQUIDTIGHT FLEXIBLE CONDUIT CONNECTION FROM JUNCTION BOX TO PROPOSED SEAL WATER SOLENOID VALVE & PROPOSED LOW SEAL WATER PRESSURE SWITCH.
3. PROVIDE LIQUIDTIGHT FLEXIBLE CONDUIT CONNECTION FROM EXISTING PULL BOX TO PROPOSED DISCHARGE LINE PRESSURE SWITCH. USE EXISTING LIQUIDTIGHT FLEXIBLE CONDUIT FROM EXISTING PULL BOX TO EXISTING DISCHARGE VALVE LIMIT SWITCH & EXISTING SOLENOID VALVE PV1
4. INSTALL TERMINAL BLOCKS IN EXISTING CONTROL TERMINAL BOX. TERMINATE EXISTING CONDUCTORS FROM MCC-44 ON TERMINAL BLOCKS. EXTEND NEW CONDUCTORS FROM TERMINAL BLOCKS TO PROPOSED SEAL WATER SOLENOID VALVE & PROPOSED SEAL WATER PRESSURE SWITCH AS SHOWN.
5. INSTALL TERMINAL BLOCKS IN EXISTING CONTROL TERMINAL BOX. TERMINATE EXISTING CONDUCTORS FROM MCC-44 ON TERMINAL BLOCKS. EXTEND NEW CONDUCTORS FROM TERMINAL BLOCKS TO PROPOSED PRESSURE SWITCH & EXISTING LIMIT SWITCH & SOLENOID VALVE PV1 AS SHOWN.

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Certificate of Authorization Number: 4795

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: MRS
DRN: RWB
CKD: BEH
DATE: 04/14/03

CITY of TAMPA
HOWARD F. CURREN ADVANCED WASTEWATER TREATMENT PLANT

RETURN SLUDGE PUMPING STATION NO. 2
REHABILITATION
CONDUIT SCHEDULE

W.O. 5073
SHEET E-20
OF E-20