



Steven M. Clouse WRC Electrical System Improvements Phase 2A

Solicitation Number: CO-00443

Job No.: 21-6507

ADDENDUM 3

August 23, 2021

To Respondent of Record:

This addendum, applicable to work referenced above, is an amendment to the proposal request, plans and specifications and as such will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the Addendum number and issue date on the space provided in submitted copies of the Proposal.

RESPONSES TO QUESTIONS

1. Specification Section 1660 2.01 B states all conduits and ducts shall contain equipment grounding conductors in accordance with the NEC and the minimum size of the grounding conductor shall be #12 AWG unless otherwise indicated on the drawings. Please clarify whether this applies to conduits containing #14 AWG digital control wires & conduits containing shielded analog instrument cables routed to PLC/RIO cabinets, typically shown on the Interface Diagrams.

Response: Assuming the reference is for specification section 16660: #14 ground conductors shall be run with all control and instrumentation circuits as shown on the interface diagram drawings (e.g. 10E27). Refer to Changes to the Plans, items "b. 05E16," "g. 10E27," "h. 10E28," "n. 10E58," "o. 10E59," "p. 30E07," "q. 30E08," "r. 30E09," and "s. 40E05."

2. Sheet 10E05 ductbank section 10M Conduit # 30, circuits GS-1C1 & GS-1C2 goes to ATS-PS1-1 and ATS-PS1-2 located in separate parts of the electrical building but are routed in the same conduit from the manhole. Please review and advise. Similarly, conduit #5 contains circuits to LP-PS11 and LP-PS12. Please review and advise as this would increase the number of conduits in the ductbank from manhole LMH-14. Same situations occur in DB Section AQ on 10E33.

Response: These circuits are in the same conduit in the ductbank. Tee fittings or pullboxes can be used for exposed conduit inside the building as required for routing of circuits to different equipment. No additional conduits needed in ductbank. Refer to specification 16000.3.01.D.

3. Sheet 00E09 is the only detail D35 for electrical manhole (non-roadway) provided. Is this to be applied to the 13kV electrical manhole EMH-52 shown on Sheet 00E12? Also, please provide details for fiber handholes (FHH) both roadway and non-roadway. EHH-N on sheet 30E02 shows to be located on the roadway in Solids Handling area.

Response: Detail D35 applies to all manholes, including those containing 13.2 kV cables. Added detail D36 shows all handholes (roadway and non-roadway). Refer to Changes to the Plans, item "a. 00E09".

4. We are currently looking to possibly by the project listed above, however it looks as though we are not listed as one of the manufacturers. Would it be possible to give us an explanation as to why we were not listed on this project? We would love to get approved for this project as well.

Response: Based on the source of the question, it is assumed that it refers to the list of providers included in specification 17300-1.05-C. Any request for substitution shall be submitted by the contractor, following the appropriate procedure after award of contract as outlined in the Contract Documents including, but not limited to, section 5.11 of Article V of the General Conditions and section 01300 of the Technical Specifications.

5. Please confirm who is responsible for the following:
Any Ovation Programming such as database, hardware configuration, logic, alarming, historian, and graphics required to keep the Emerson Ovation DCS operational.
Note: The Ovation DCS will generate nuisance alarms when DCS hardware components are demolished.

Response: The ASP is responsible for this work. Refer to Changes to the Specifications, item 1.

6. Regarding the above referenced project, Siemens is specifically listed as an acceptable manufacturer for the following Division 16 specification sections:
16196 – LV AC Surge Protective Devices (SPDs)
16425 – LV Distribution Switchboards
16430 – Pad Mounted Transformers
16461 – Distribution Dry-Type Transformers
16470 - Panelboards
16475 – LV Enclosed Circuit Breakers and Disconnect Switches

However, Siemens is not specifically listed as an acceptable manufacturer for the following Division 16 Specification 16480 – Low Voltage Motor Control Centers Provided that performance requirements of the specifications are met, will Siemens be an acceptable manufacturer for Low Voltage Motor Control Centers?

Response: Any request for substitution shall be submitted by the contractor, following the appropriate procedure after award of contract as outlined in the Contract Documents including, but not limited to, section 5.11 of Article V of the General Conditions and section 01300 of the Technical Specifications.

7. On the “Rebid” drawings, it looks like they took out Area (20) Aeration Stage 1 from the project. With that being said. I noticed that all the Gas Analyzers, Temp Ind. Transmitters & Intrusion Switches are still on the instrument list in spec section #17410. These Analyzers, Transmitters & Switches are all in Area (20) Are we still to provide these Analyzers, Transmitters & Switches as part of our scope or will they be deleted as well? Please advise.

Response: All of these are removed from the project. Refer to Changes to the Specifications, items 2 and 3.

8. 17305, Appendix A – Application Engineering Services. I’m a little confused. Is this document for “Reference only” or is Tesco Controls doing the HMI Software Programming? Please advise.

Response: This Appendix is the SAWS standard and guideline which the programmer must follow. Refer to Changes to the Specifications, item 1.

9. 17305, Appendix B – Application Engineering Services. I’m a little confused. Is this document for “Reference only” or is Tesco Controls doing the PLC Software Programming? Please advise.

Response: This Appendix is the SAWS standard and guideline which the programmer must follow. Refer to Changes to the Specifications, item 1.

10. Sheet 10E11 & 10E40 refers to Section D on Sheet 20E71 for Power Terminal Boxes PTB-PS2-1 & PTB-PS1-1. Please provide the detail sheet..

Response: Detail added to sheet 10E11. Refer to Changes to the Plans, items “d. 10E11” and “k. 10E40”

CHANGES TO THE SPECIFICATIONS

1. Specification 17305 APPLICATION ENGINEERING SERVICES, Paragraph 1.01:
 - a. Add section K as follows:

“K. As a result of various treatment processes being cutover to the new Rockwell FactoryTalk System, the ASP shall modify all monitoring and control functionality for the existing Emerson Ovation system such that the I/O database, hardware configuration, control logic, alarming, historian, and graphic screens, communication diagnostics, etc. for those affected processes shall be removed from the Ovation System. In addition, the ASP shall disable all alarms related to those affected processes from Emerson’s Ovation System”
 - b. Add section L as follows:

“L. The appendices provided at the end of this Specification Section are for the PCSI’s reference when performing application work on the new SCADA System. The PCSI selected for the Project shall reference these documents when conducting workshops, use them as guidelines to generate application-specific submittals, and subsequently performing all work related to HMI and PLC programming.”

2. Section 17318 INSTRUMENTATION:
 - a. Delete paragraph 2.08 OXYGEN GAS DETECTOR and all subparagraphs.
 - b. Delete paragraph 2.09 COMBUSTIBLE GAS DETECTOR and all subparagraphs.

3. Section 17410 PROCESS INSTRUMENTATION LIST, 1.05.A, pages 17410-2 and 17410-3:
 - a. Delete lines 15 through 35, inclusive.

CHANGES TO THE PLANS

1. Remove the following sheets and replace with the attached sheets:
 - a. 00E09
 - b. 05E16
 - c. 10E05
 - d. 10E11
 - e. 10E13
 - f. 10E19
 - g. 10E27
 - h. 10E28
 - i. 10E31
 - j. 10E33
 - k. 10E40
 - l. 10E42
 - m. 10E48
 - n. 10E58
 - o. 10E59
 - p. 30E07
 - q. 30E08
 - r. 30E09
 - s. 40E05

CLARIFICATIONS

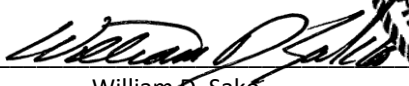
1. Clarified manhole details, added handhole detail.
2. Added terminal boxes at primary clarifiers. Refer to Changes to the Plans items "c. 10E05," "e. 10E13," "f. 10E19," "i. 10E31," "j. 10E33," "l. 10E42," and "m. 10E48."
3. Clarified programming responsibilities.
4. Clarified equipment ground wires

END OF ADDENDUM


This Addendum, including these four (4) pages is twenty-three (23) pages with attachments in its entirety.

Attachments:

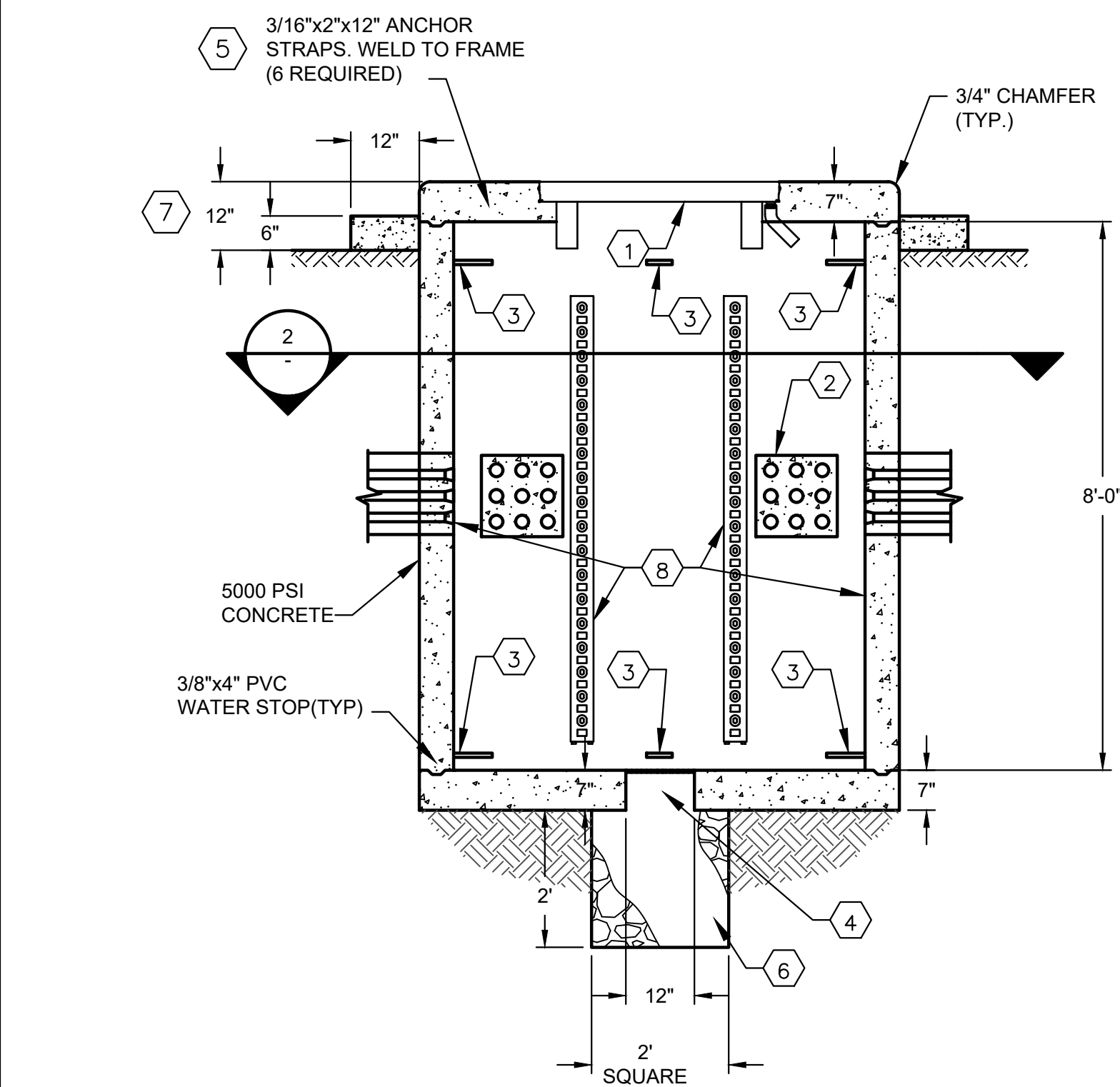
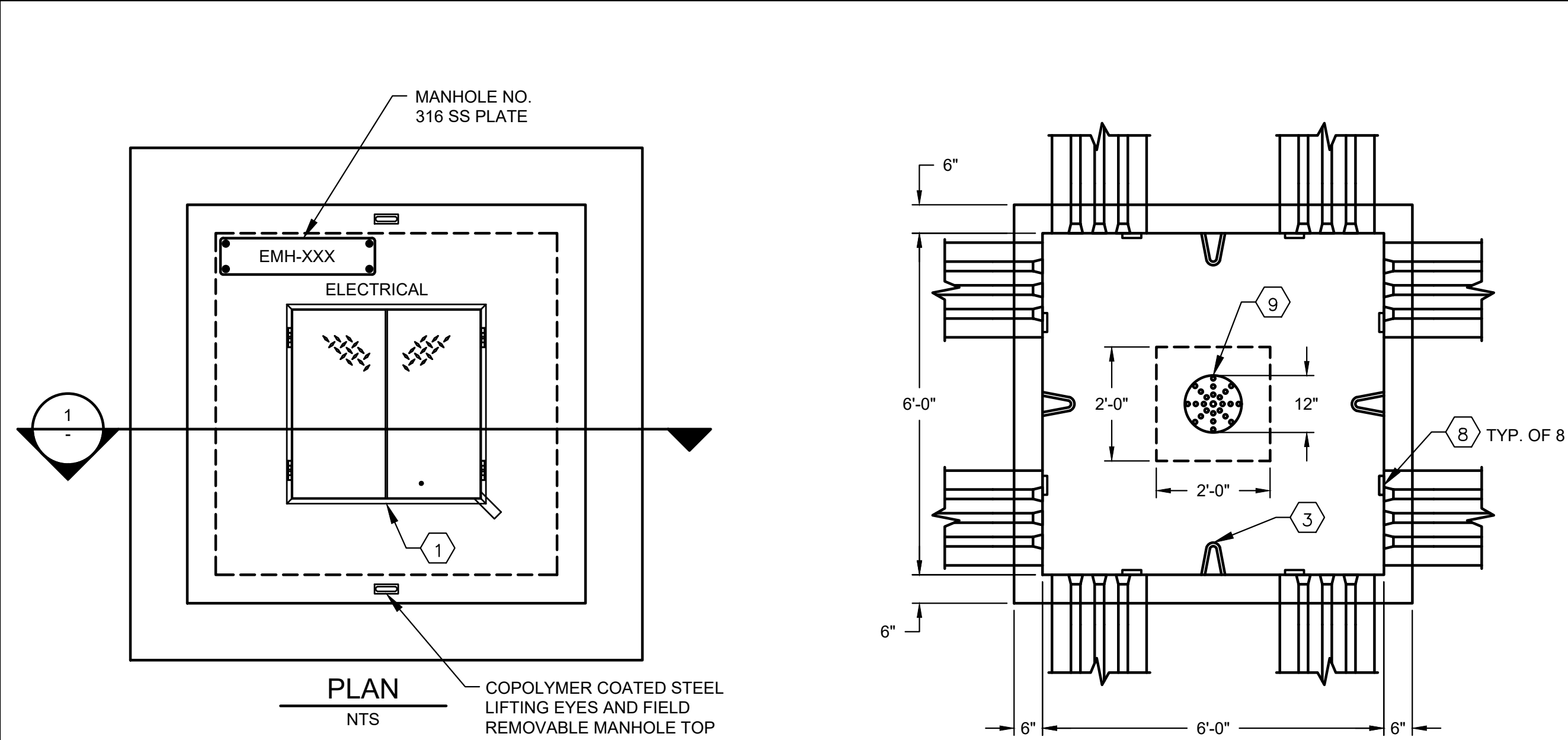
Drawings, 11x17 (HALF size): 19



William D. Sako
Gupta & Associates, Inc.
TBPE # F-2593


8/23/2021

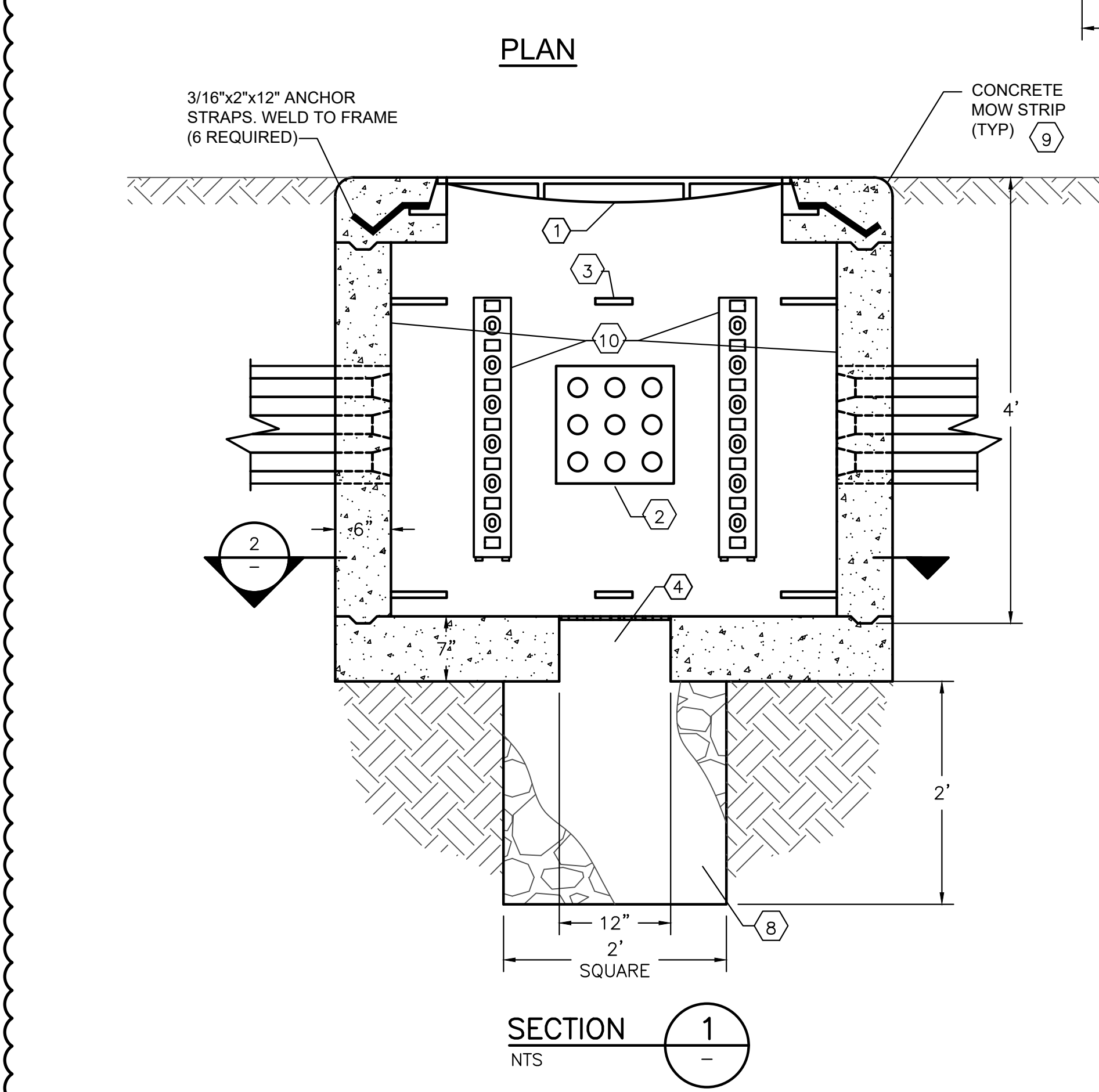
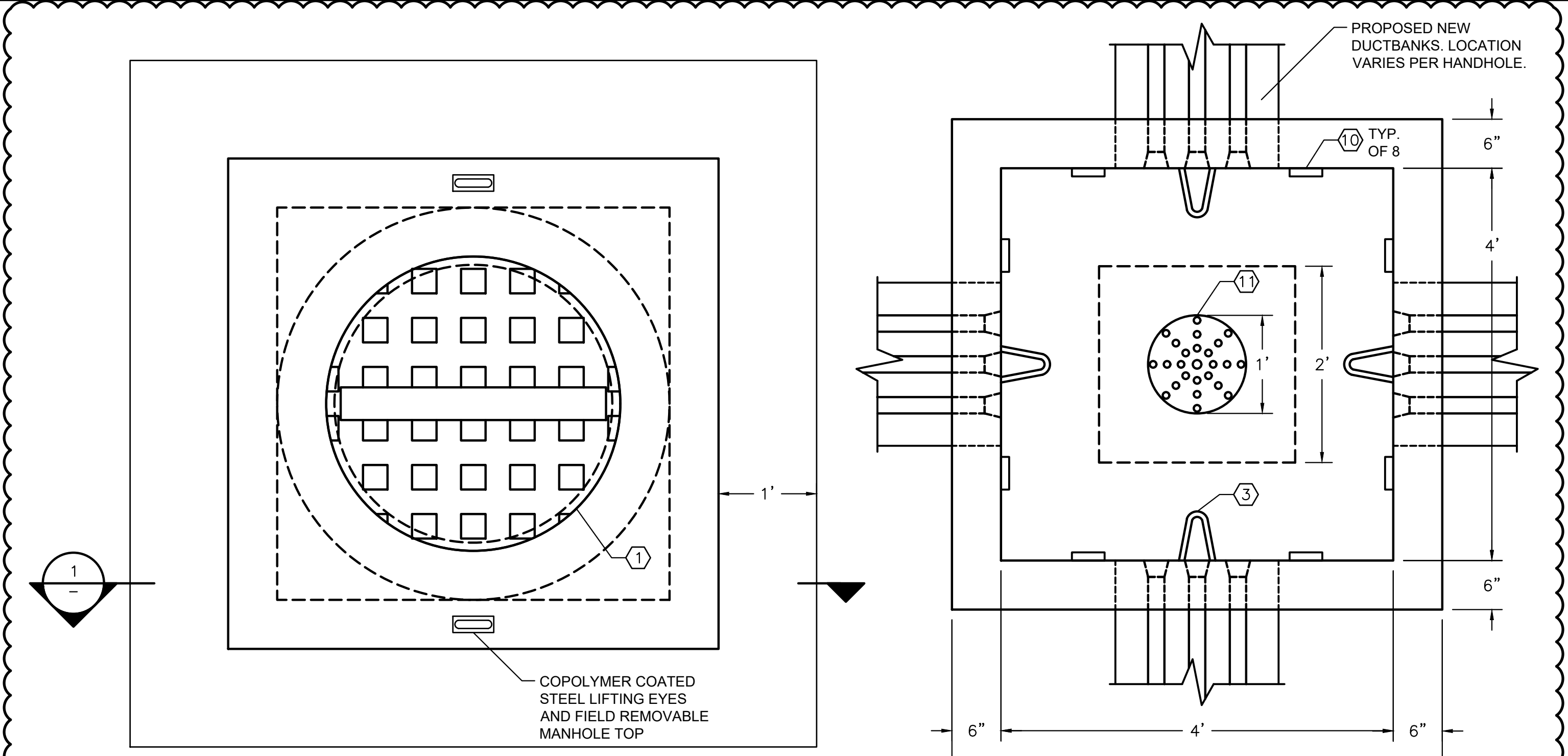
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(NON-ROADWAY) ELECTRICAL MANHOLE (EMH, LMH, CMH, ETC.)
DETAIL D35
 NTS

SECTION 2
 NTS

- NOTES:**
- 1 MANHOLE COVER AS SPECIFIED, STAMPED ELECTRICAL OR COMMUNICATION AS REQUIRED.
 - 2 ALL CONDUITS SHALL BE TERMINATED IN MANHOLE WITH INSULATED BUSHING AND LOCATED ON WALL TO MINIMIZE BENDS IN CONDUCTORS.
 - 3 PROVIDE PULLING IRONS AS SPECIFIED.
 - 4 12" SUMP OPENING.
 - 5 316 SS ANCHORS.
 - 6 FILL WITH PEA GRAVEL.
 - 7 MANHOLE SHALL BE 12" ABOVE GRADE WHEN LOCATED IN GRASSY AREAS, PROVIDE A 12" MOW STRIP 6" TALL AROUND MANHOLE.
 - 8 MOUNTING RACKS AS SPECIFIED.
 - 9 REMOVABLE PLASTIC GRATE.
 - 10 REFER TO SPECIFICATION 16600 "UNDERGROUND SYSTEM" FOR ADDITIONAL INFORMATION.



ELECTRICAL HANDHOLE (EHH, CHH, FHH, ETC.)
DETAIL D36
 NTS

- NOTES:**
- 1 HANDHOLE COVER SHALL BE AS SPECIFIED, AND SHALL BE STAMPED ELECTRICAL OR COMMUNICATION AS REQUIRED BY CONTRACTOR.
 - 2 ALL CONDUITS SHALL BE TERMINATED IN HANDHOLE WITH BELL ENDS AND CENTER ON THE ENTERING WALL.
 - 3 PROVIDE PULLING IRONS AS SPECIFIED.
 - 4 HANDHOLES SHALL BE EQUIPPED WITH 12" SUMP OPENING.
 - 5 HANDHOLE EXTENSIONS SHALL BE USED WHENEVER BOX IS BELOW EXISTING GRADE.
 - 6 ANCHORS SHALL BE 316 SS OR FIBERGLASS AS SPECIFIED.
 - 7 HANDHOLES SHALL BE FLUSH WITH THE PAVEMENT WHEN INSTALLED IN ROADWAYS.
 - 8 TO BE FILLED WITH PEA GRAVEL.
 - 9 HANDHOLE SHALL BE 12" ABOVE GRADE WHEN LOCATED IN GRASSY AREAS, CONTRACTOR SHALL PROVIDE A 12" MOW STRIP 6" TALL AROUND HANDHOLE.
 - 10 MOUNTING RACKS SHALL BE AS SPECIFIED.
 - 11 SHALL BE PLASTIC GRATE.
 - 12 HANDHOLES SHALL BE EQUIPPED WITH SUMP.
 - 13 REFER TO SPECIFICATION 16600 "UNDERGROUND SYSTEM" FOR ADDITIONAL INFORMATION.

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SAN ANTONIO WATER SYSTEM

REV. NO.	DATE	DRWN	REMARKS
A	08/23/21	ER	ADDENDUM NO. 3

SAN ANTONIO WATER SYSTEM
 STEVEN M. CLOUSE WRC
 ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
 ELECTRICAL

DESIGNED BY:	L.PRICE
DRAWN BY:	E.RANGEL
SHEET CHKD BY:	G.LUKE
APPROVED BY:	W.SAKO
DATE:	JULY 2021
SAWS JOB NO.:	21-6507
FILE NAME:	1951_00E09

SHEET NO.
00E09
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INTERFACE DIAGRAM (1)			
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING (3)	RIO
A044	BLOWER NO.1	CP C6 RIHW1-101	RIO-HW1-1 (2)
A046	BLOWER NO.2	CP C6 RIHW1-102	
-	FUTURE BLOWER NO.3	CP - - - - -	
SG1-TS1	AUTOMATIC TRANSFER SWITCH ATS-SG1-1	ATS C3 RIHW1-104	
SG-1	POWER METER PM-MCC-SG1-1	PM M1 RIHW1-105	
SG2-TS2	AUTOMATIC TRANSFER SWITCH ATS-SG1-2	ATS C3 RIHW1-106	
SG-2	POWER METER PM-MCC-SG1-2	PM M1 RIHW1-107	
PT-201	PAD MOUNTED TRANSFORMER PMT-201	PMT C3 RIHW1-108	
PT-202	PAD MOUNTED TRANSFORMER PMT-202	PMT C3 RIHW1-109	
HW-11	ELECTRICAL ROOM TEMPERATURE TIT-HW1-1	TIT A1 RIHW1-110	
HW-12	CONTROL ROOM TEMPERATURE TIT-HW1-2	TIT A1 RIHW1-111	
HW11	ELECTRICAL ROOM INTRUSION ZS-HW1-1	ZS C1 C2 RIHW1-112	
HW12	ELECTRICAL ROOM INTRUSION ZS-HW1-2	ZS C1 RIHW1-113	
HW13	CONTROL ROOM INTRUSION ZS-HW1-3	ZS C1 RIHW1-114	
HW1-	UPS INTRUSION ALARM ZS-SG1-RIO UPS INTRUSION ON BYPASS HS-SG1-RIO	CP C2 RIHW1-115	
HW1-NET	NETWORK INTRUSION ALARM ZS-HW1-NE	CP C1 RIHW1-116	
SG1-RIO	RIO PANEL INTRUSION ALARM ZS-SG1-RIO RIO PANEL HIGH TEMP. THS-SG1-RIO	CP C2 RIHW1-117	
-	13.2KV SWITCHGEAR	TB C8 RIHW1-118	
-		TB A6 RIHW1-118	

- NOTES:
- (1) CONDUIT SIZES SHOWN ARE MINIMUM. COMBINATION OF SIMILAR CIRCUIT TYPES PERMISSIBLE. ADJUST CONDUIT SIZING ACCORDINGLY AND REFLECT FINAL CONFIGURATION ON AS-BUILT DOCUMENTATION.
 - (2) TERMINATE ALL WIRING ON TERMINAL BLOCKS INSIDE PANEL. NO NON-TERMINATED WIRES ALLOWED.
 - (3) INSTALL ALL WIRING WHETHER SHOWN ON FLOOR PLANS OR NOT.
 - (4) SUBSTITUTE CAT-6 CABLE FOR CAT-5E WHERE REQUIRED BY CONTRACT DOCUMENTS.

CONTROL & INSTRUMENTATION WIRE/CONDUIT SCHEDULE (1, 4)			
C1	2#14, #14G, 3/4"C	A1	1-1Pr#16 TSP, #14G, 3/4"C
C2	4#14, #14G, 3/4"C	A2	2-1Pr#16 TSP, #14G, 3/4"C
C3	6#14, #14G, 1"C	A3	3-1Pr#16 TSP, #14G, 3/4"C
C4	8#14, #14G, 1"C	A4	4-1Pr#16 TSP, #14G, 1"C
C5	10#14, #14G, 1"C	A5	5-1Pr#16 TSP, #14G, 1"C
C6	12#14, #14G, 1-1/4"C	A6	6-1Pr#16 TSP, #14G, 1-1/2"C
C7	14#14, #14G, 1-1/4"C	A7	7-1Pr#16 TSP, #14G, 2"C
C8	16#14, #14G, 1-1/4"C	A8	8-1Pr#16 TSP, #14G, 2"C
C9	18#14, #14G, 1-1/4"C	A9	9-1Pr#16 TSP, #14G, 2"C
C10	20#14, #14G, 1-1/4"C	A10	10-1Pr#16 TSP, #14G, 2"C
C11	22#14, #14G, 1-1/4"C	A11	11-1Pr#16 TSP, #14G, 2"C
C12	24#14, #14G, 1-1/4"C	M1	1-CAT-5e, #14G, 1"C
C14	28#14, #14G, 1-1/4"C	M2	2-CAT-5e, #14G, 1-1/2"C
C30	60#14, #14G, 3-1/2"C	M3	3-CAT-5e, #14G, 2"C
C37	74#14, #14G, 4"C	M4	4-CAT-5e, #14G, 2"C

CONTROL & INSTRUMENTATION
WIRE/CONDUIT TABLE NOTES:

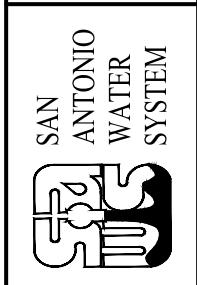
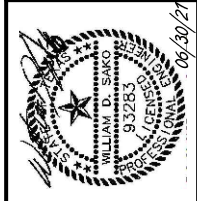
1) NOT ALL POSSIBLE COMBINATIONS ARE LISTED. INCLUDE A SEPARATE GROUND WIRE IN EACH CONDUIT RUN.

REPRESENTS PAIR OF WIRE
 EXAMPLE C10 = 20#14 WIRES
 EXAMPLE C20 = 40#14 WIRES

C#
 C = CONTROL

2) ANALOG CABLES ARE INTENDED TO BE INDIVIDUALLY INSULATED TWISTED SHIELDED PAIRS UNLESS OTHERWISE NOTED ON THE DRAWING.

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ADDENDUM NO. 3	REMARKS
08/23/21	ER
REV. NO.	DATE
DRWN	DATE
ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY	

SAN ANTONIO WATER SYSTEM
 STEVEN M. CLOUSE WRC
 ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
 ELECTRICAL
HEADWORKS
INTERFACE DIAGRAM

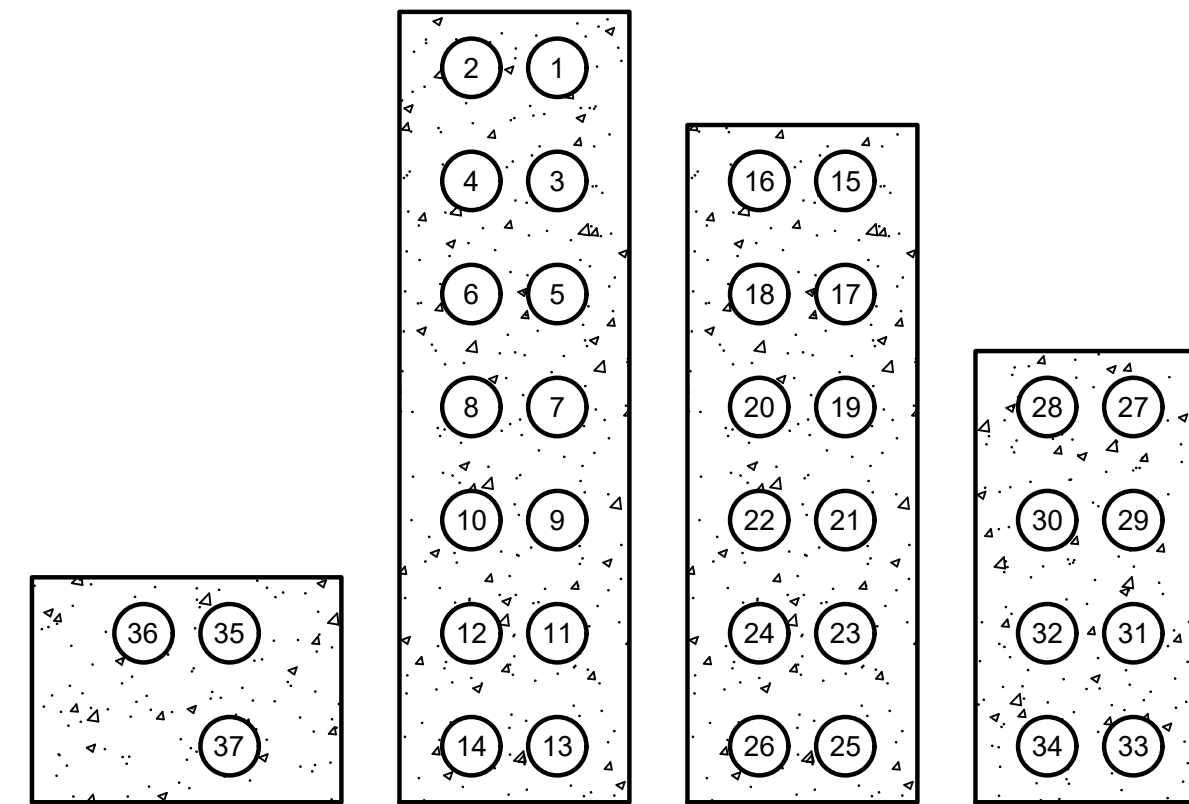
DESIGNED BY: T.HERNANDEZ
 DRAWN BY: E.RANGEL
 SHEET CHKD BY: V.K. GUPTA
 APPROVED BY: W.SAKO
 DATE: JULY 2021
 SAWS JOB NO.: 21-6507
 FILE NAME: 1951_05E16

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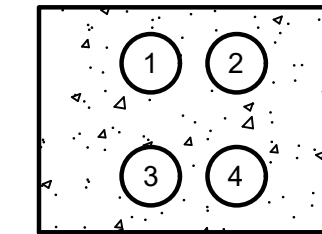
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GENERAL NOTES:

- REFER TO STANDARD DUCTBANK DETAILS.



DUCTBANK
SECTION 10M
10E02



DUCTBANK
SECTION 10U
10E02

TABLE FOR SECTION 10M				TABLE FOR SECTION 10M			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION	CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS1-4P, 5P,6P	2"C	MCC-PS-1 TO SLUDGE PUMPS	32	MCPS1-21P	2"C	MCC-PS-1 TO CHANNEL DRAIN PUMPS
2	MCPS1-3P, 19P,20P	2"C	MCC-PS-1 TO DEWATERING AND OTHER PUMPS	33	LPPS11-39,40	2"C	EB-PS-1 TO CHANNEL DRAIN PUMPS AREA
3	MCPS1-7P, 8P,9P	2"C	MCC-PS-1 TO MACERATOR AND SKIMMING PUMPS	34	SPARE	2"C	EB-PS-1 TO CHANNEL DRAIN PUMPS AREA
4	MCPS1-10P,16P,17P,11P,23P,24P	2"C	MCC-PS-1 TO PS-1 AREA CLARIFIERS, FANS.	35	SBPS1-4RP	2"C	SWBD-PS-1 TO CMS BUILDING
5	LPPS11-11,12,13,14,16 LPPS12-2,10	2"C	LP-PS-1 AND LP-PS-2 TO PS-1	36	SPARE	2"C	EB-PS-1 TO CMS BUILDING
6	SPARE	2"C	EB-PS-1 TO LMH-14	37	SPARE	2"C	EB-PS-1 TO CMS BUILDING
7	MCPS1-4C,5C,6C	2"C	MCC-PS-1 TO PS-1 SLUDGE PUMP AREA				
8	MCPS1-20C,3C, REB1-208A, REB1-215,201,204, INTPS11-101	2"C	MCC-PS-1 AND RIO-PS-1 TO PS-1				
9	MCPS1-7C,8C,9C,10C,23C,24C	2"C	MCC-PS-1 TO PS-1				
10	REB1-203,214	2"C	RIO-PS-1 TO LIT AND FIT				
11	MCPS1-18P	2"C	MCC-PS-1 TO DRAIN PNL#3-3				
12	SPARE	2"C	EB-PS-1 TO LMH-14				
13	MCPS1-12P, 13P,14P,15P	2"C	MCC-PS-1 TO DIVERSION STRUCTURE NO.1				
14	REB1-101,102,103,104	2"C	RIO-PS-1 TO DIVERSION STRUCTURE NO.1				
15	MCPS1A-3P, 4P,5P	2"C	MCC-PS-1A TO SLUDGE PUMPS				
16	MCPS1A-2P, 13P,14P	2"C	MCC-PS-1A TO DEWATERING AND OTHER PUMPS				
17	MCPS1A-6P, 7P,8P	2"C	MCC-PS-1A TO MACERATOR AND SKIMMING PUMPS				
18	MCPS1A-9P,10P,11P,12P,15P,16P	2"C	MCC-PS-1A TO PS-1A AREA CLARIFIERS, FANS.				
19	LPPS11-25,26,27,28,30 LPPS12-6,9	2"C	LP-PS-1 AND LP-PS-2 TO PS-1A				
20	SPARE	2"C	EB-PS-1 TO LMH-14				
21	MCPS1A-3C,4C,5C	2"C	MCC-PS-1A TO PS-1A SLUDGE PUMP AREA				
22	MCPS1A-14C,2C, REB1-308A, REB1-315,301,304, INTPS12-101	2"C	MCC-PS-1A AND RIO-PS-1 TO PS-1A				
23	MCPS1A-6C,7C,8C,9C,15C,16C	2"C	MCC-PS-1A TO PS-1A				
24	REB1-303,314	2"C	RIO-PS-1 TO LIT AND FIT				
25	SPARE	2"C	EB-PS-1 TO LMH-14				
26	SPARE	2"C	EB-PS-1 TO LMH-14				
27-28	GS-1P	4"C	GENERATOR TO TERMINATION BOX PTB-PS1-1				
29	SPARE	2"C	EB-PS-1 TO FOPP-PRI-CTR IN BUILDING NO.3				
30	GS-1C1, GS-1C2	2"C	ATS-PS-1 AND ATS-PS-2 TO GENERATOR				
31	SPARE	2"C	EB-PS-1 TO LMH-14				

TABLE FOR SECTION 10U			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	SBPS1-4LP	4"C	480V POWER TO IT/SCADA BUILDING
2	SBPS1-5RP	4"C	480V POWER TO IT/SCADA BUILDING
3	SPARE	2"C	-
4	SPARE	2"C	-

DUCTBANK
SECTION 10P
10E13

TABLE FOR SECTION 10P			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS1-16P	1"C	MCC-PS-1 TO PRIMARY CLARIFIER NO.1
2	REB1-201, LPPS11-11,12	1"C	RIO AND LP-PS-1 TO PRIMARY CLARIFIER NO.1
3	SPARE	1"C	CLARIFIER NO.1 J-BOX TO PS-1 J-BOX

DUCTBANK
SECTION 10R
10E19

TABLE FOR SECTION 10R			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS1A-11P	1"C	MCC-PS-1A TO PRIMARY CLARIFIER NO.3
2	REB1-301, LPPS11-25,26	1"C	RIO AND LP-PS-1 TO PRIMARY CLARIFIER NO.3
3	SPARE	1"C	CLARIFIER NO.3 J-BOX TO PS-1A J-BOX

DUCTBANK
SECTION 10Q
10E13

TABLE FOR SECTION 10Q			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS1-17P	1"C	MCC-PS-1 TO PRIMARY CLARIFIER NO.2
2	REB1-204, LPPS11-11,12	1"C	RIO AND LP-PS-1 TO PRIMARY CLARIFIER NO.2
3	SPARE	1"C	CLARIFIER NO.2 J-BOX TO PS-1 J-BOX

DUCTBANK
SECTION 10T
10E19

TABLE FOR SECTION 10T			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS1A-12P	1"C	MCC-PS-1A TO PRIMARY CLARIFIER NO.4
2	REB1-304, LPPS11-25,26	1"C	RIO AND LP-PS-1 TO PRIMARY CLARIFIER NO.4
3	SPARE	1"C	CLARIFIER NO.4 J-BOX TO PS-1A J-BOX

CONDUIT TAG	SHEET REFERENCE
MCPS1-XX	10E07
MCPS1A-XX	10E08
LPPS1X-XX	10E10
REB1-XX	10E27, 10E28
GS-1X	10E06
FOC-EB1	10E28
SBPS1-XX	10E06

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Dallas, Texas 75244
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Fax: 972-485-1725
email: gaisolutions.com



SAN ANTONIO WATER SYSTEM

REV. NO.	DATE	DRWN	ER	ADDENDUM NO.3	REMARKS
A	08/23/21				

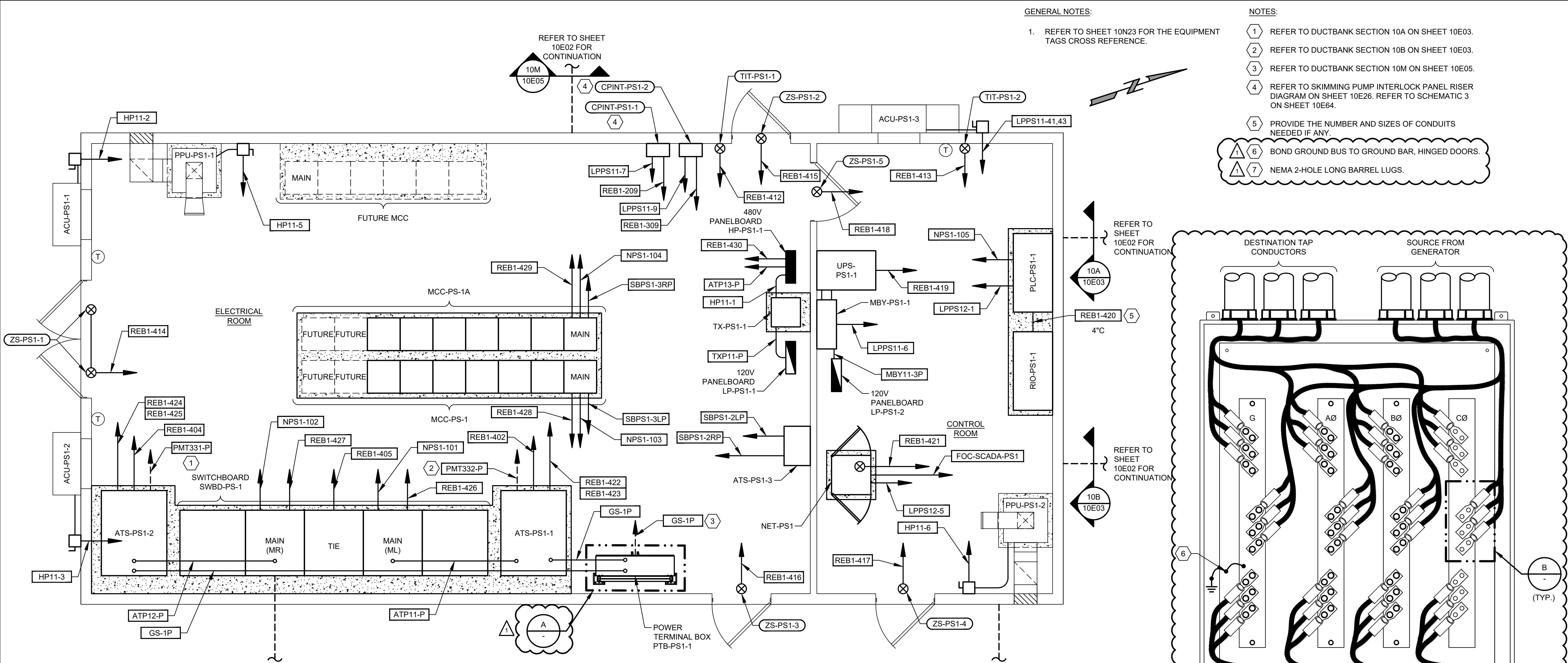
ONE INCH AT FULL SCALE IF NOT OTHERWISE NOTED

SAN ANTONIO WATER SYSTEM
STEVEN M. CLOUSE WRC
ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
ELECTRICAL
PRIMARY CLARIFIERS 1-4
DUCTBANK SECTIONS - III

DESIGNED BY:	A. SINGH
DRAWN BY:	E. RANGEL
SHEET CHECKED BY:	V.K. GUPTA
APPROVED BY:	W. SAKO
DATE:	JULY 2021
SAWS JOB NO.:	21-6507
FILE NAME:	1951_10E05

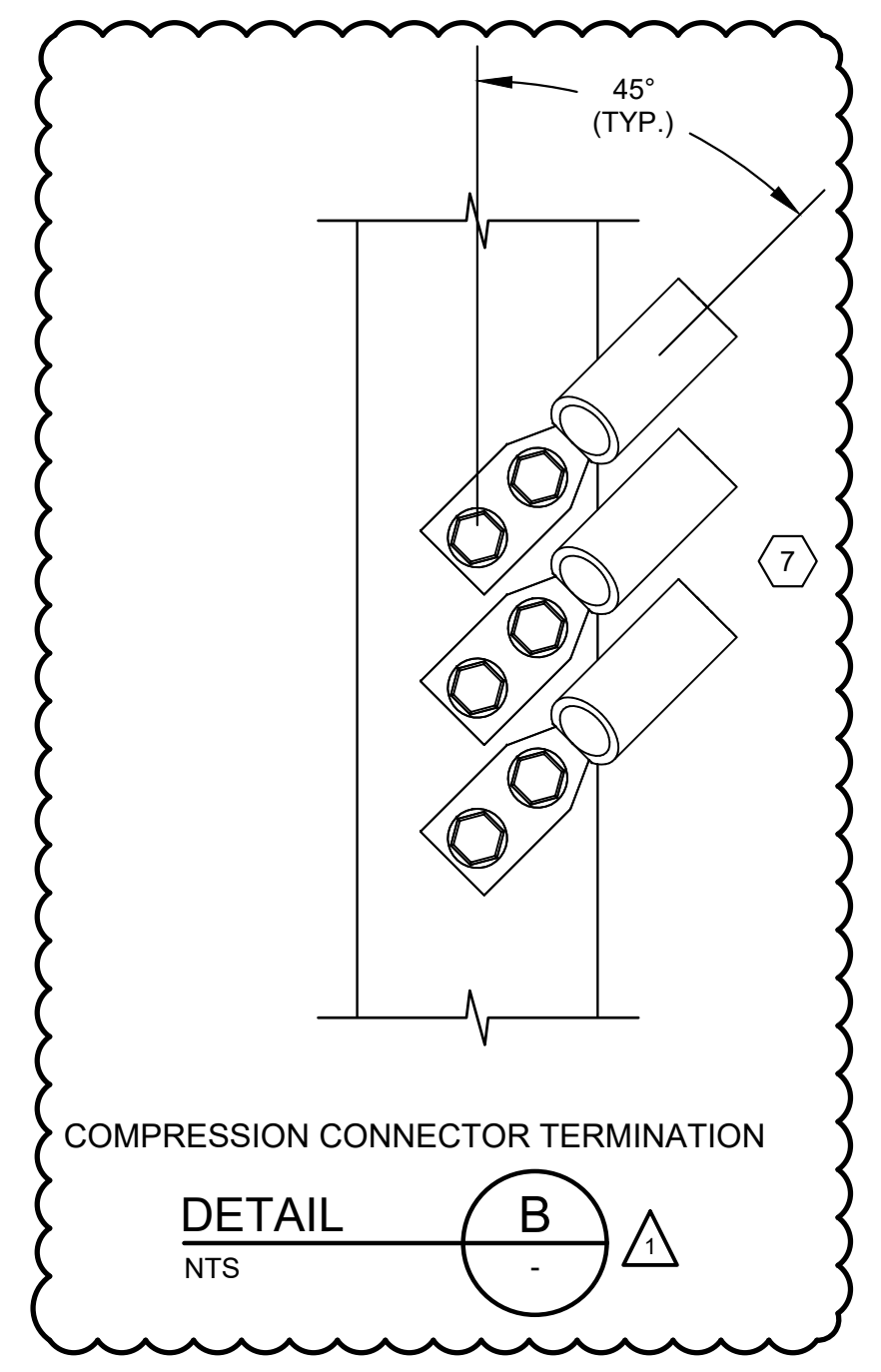
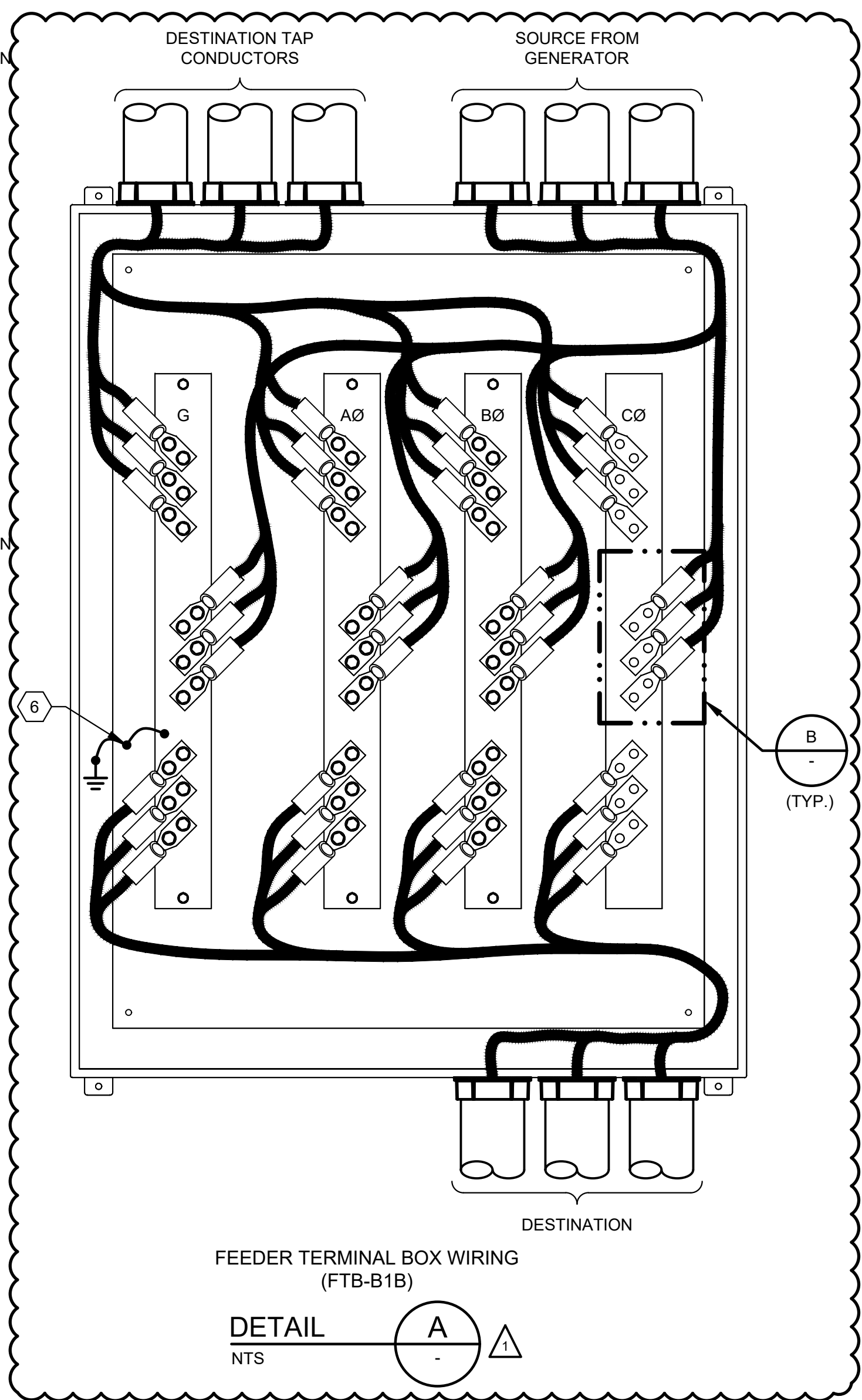
SHEET NO.
10E05
161 OF 328

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GENERAL NOTES:
 1. REFER TO SHEET 10N23 FOR THE EQUIPMENT TAGS CROSS REFERENCE.

NOTES:
 1 REFER TO DUCTBANK SECTION 10A ON SHEET 10E03.
 2 REFER TO DUCTBANK SECTION 10B ON SHEET 10E03.
 3 REFER TO DUCTBANK SECTION 10M ON SHEET 10E05.
 4 REFER TO SKIMMING PUMP INTERLOCK PANEL RISER DIAGRAM ON SHEET 10E26. REFER TO SCHEMATIC 3 ON SHEET 10E64.
 5 PROVIDE THE NUMBER AND SIZES OF CONDUITS NEEDED IF ANY.
 6 BOND GROUND BUS TO GROUND BAR, HINGED DOORS.
 7 NEMA 2-HOLE LONG BARREL LUGS.



CONDUIT TAG	SHEET REFERENCE
HP11-XX	10E10
NPS1-XX	10E28
REB1-XX	10E27, 10E28
SBPS1-XX	10E06
LPPS1X-XX	10E10
ATP1X-XX	10E06

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SAN ANTONIO WATER SYSTEM

REV. NO.	DATE	DRWN	REMARKS
1	08/23/21	ER	ADDENDUM NO. 3

SAN ANTONIO WATER SYSTEM
 STEVEN M. CLOUSE WRC
 ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A

PRIMARY CLARIFIERS 1-4
 ELECTRICAL BUILDING EB-PS-1
 POWER AND INSTRUMENTATION PLAN

DESIGNED BY:	A. SINGH
DRAWN BY:	E. RANGEL
SHEET CHKD BY:	V.K. GUPTA
APPROVED BY:	W. SAKO
DATE:	JULY 2021
SAWS JOB NO.:	21-6507
FILE NAME:	1951_10E11

SHEET NO.
10E11
167 OF 328

100% SUBMITTAL - ISSUED FOR BID

8/17/2021 1:34 PM Z:\1951_SAWS_Dos Rios WRC Electrical System Improvements - Phase II\5 Drawings\Dos Rios Phase II\Electrical\Working\1951_10E13.dwg Emmanuel Rangel

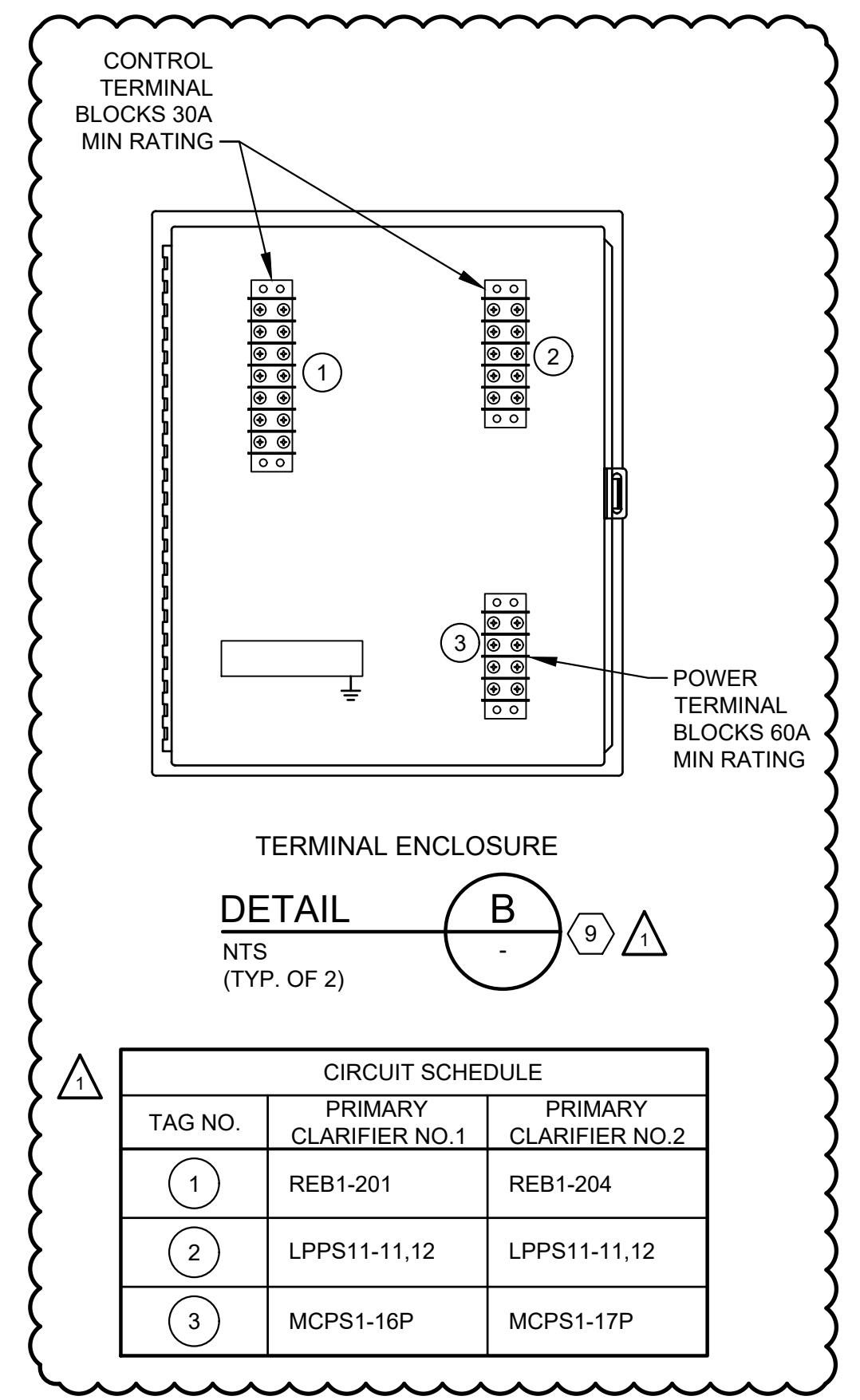
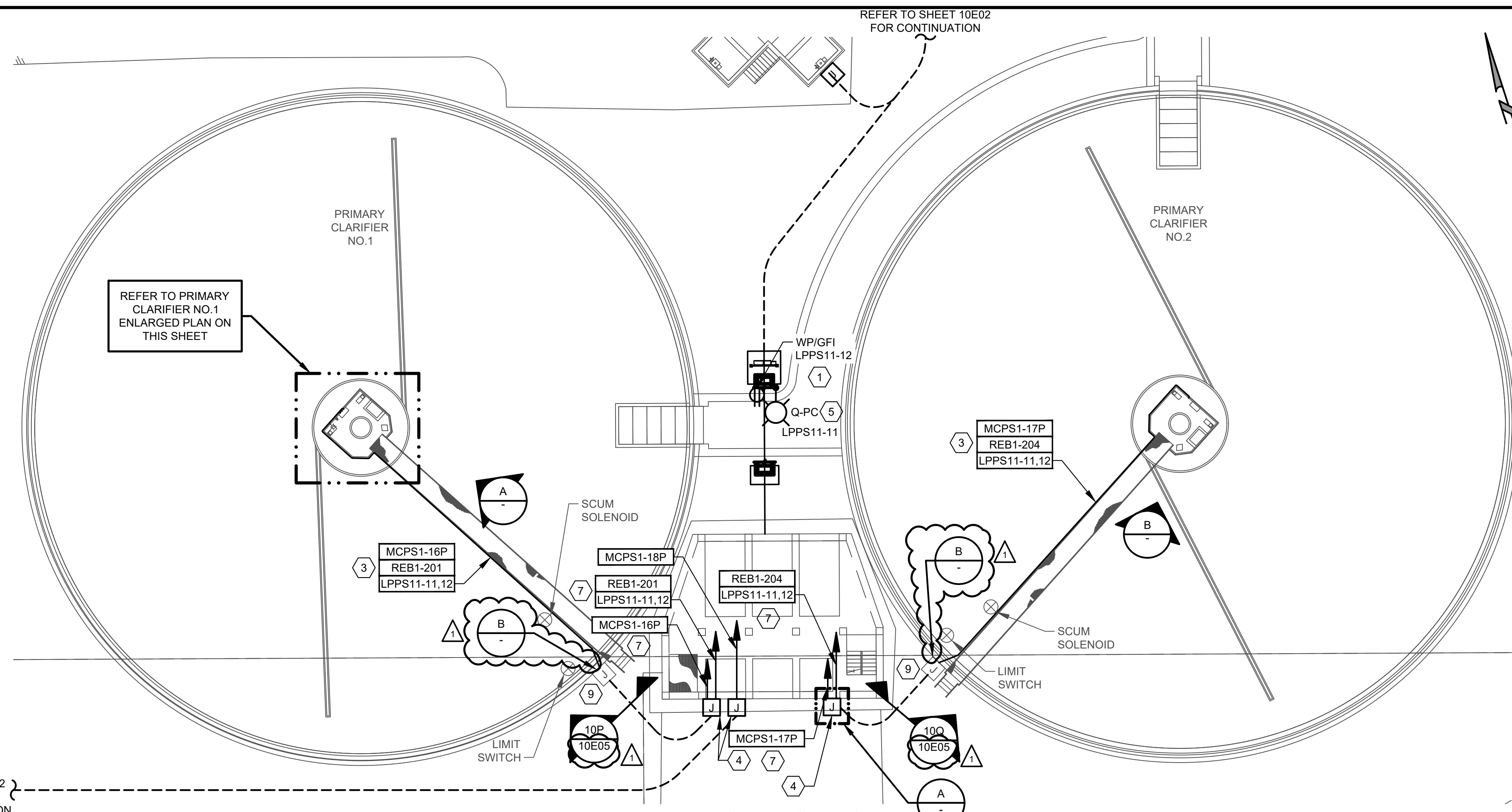
REFER TO SHEET 10E02 FOR CONTINUATION

GENERAL NOTES:

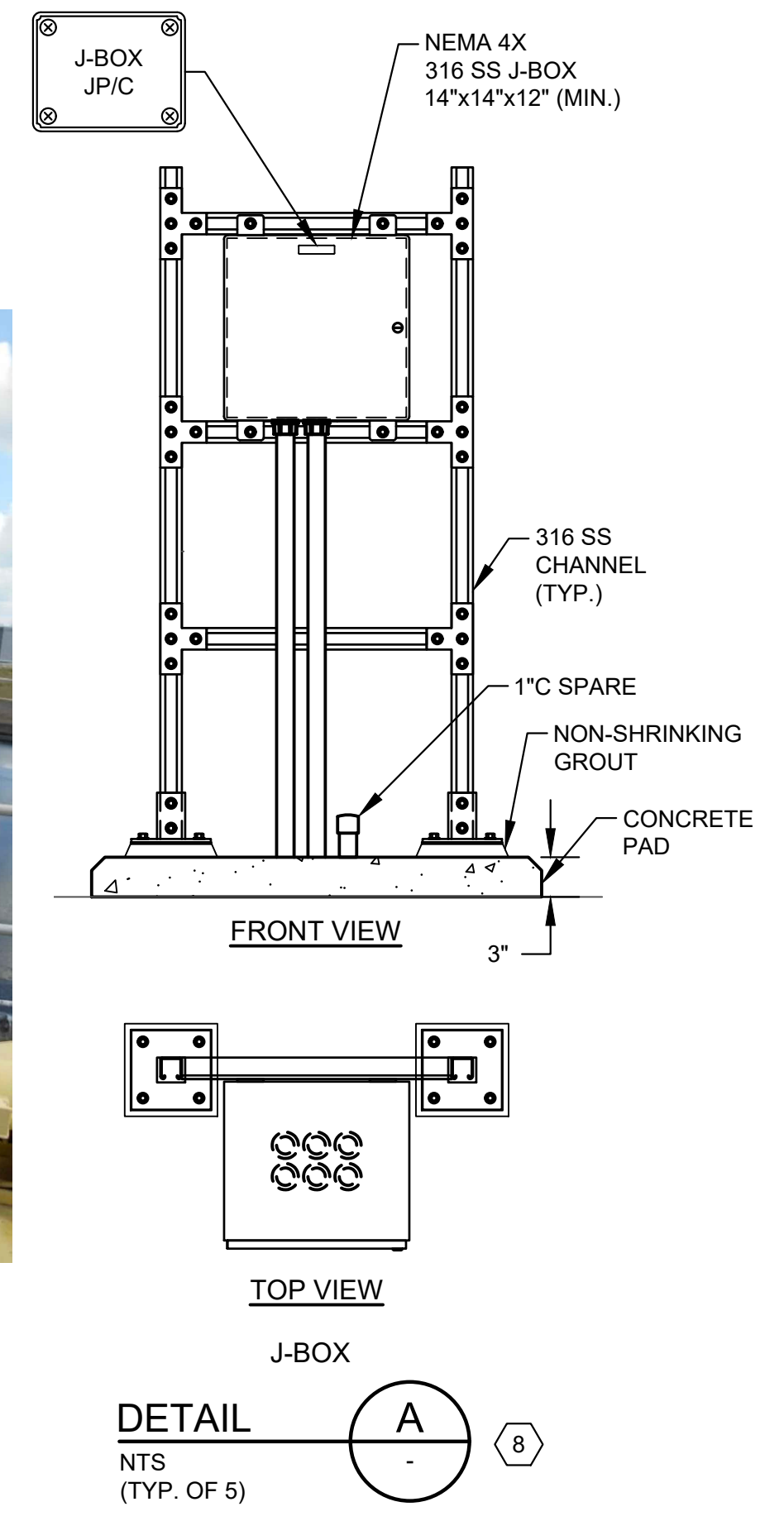
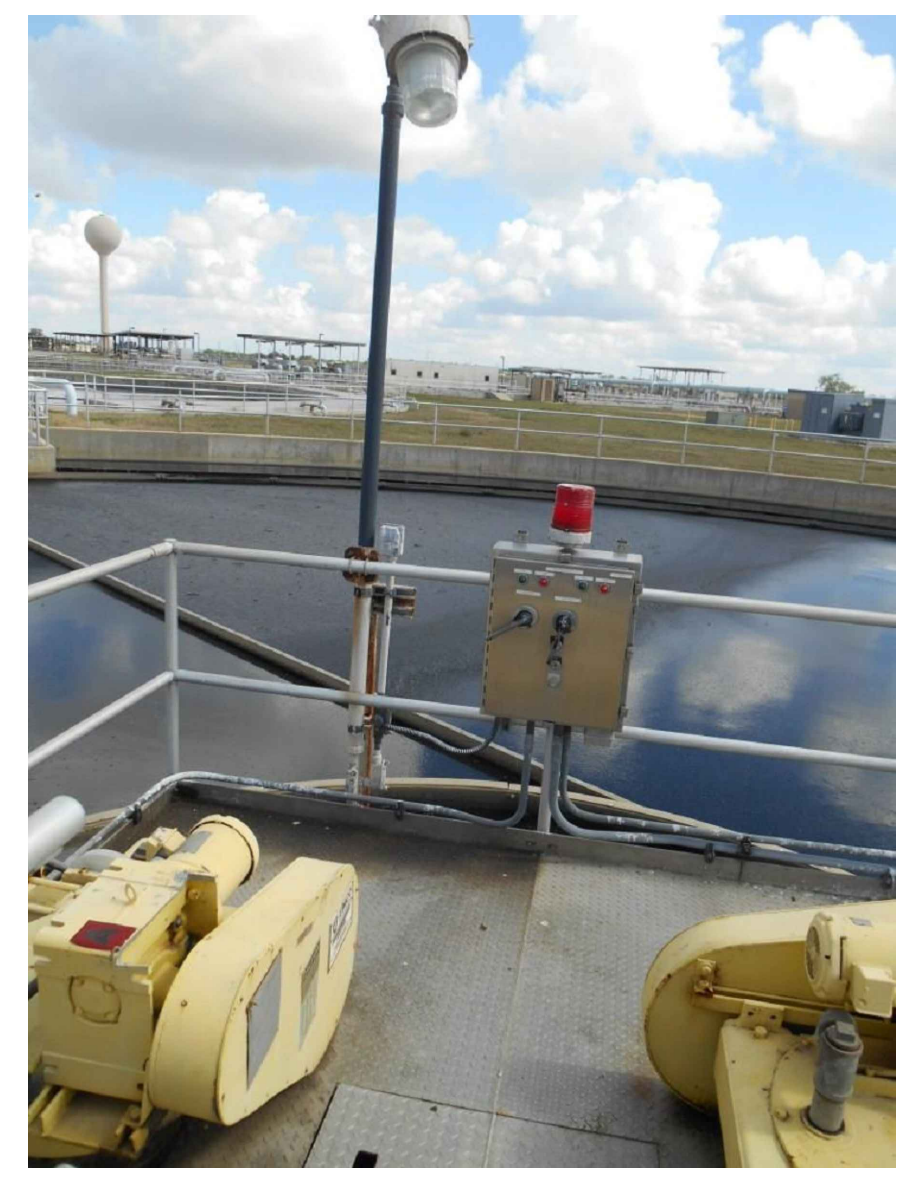
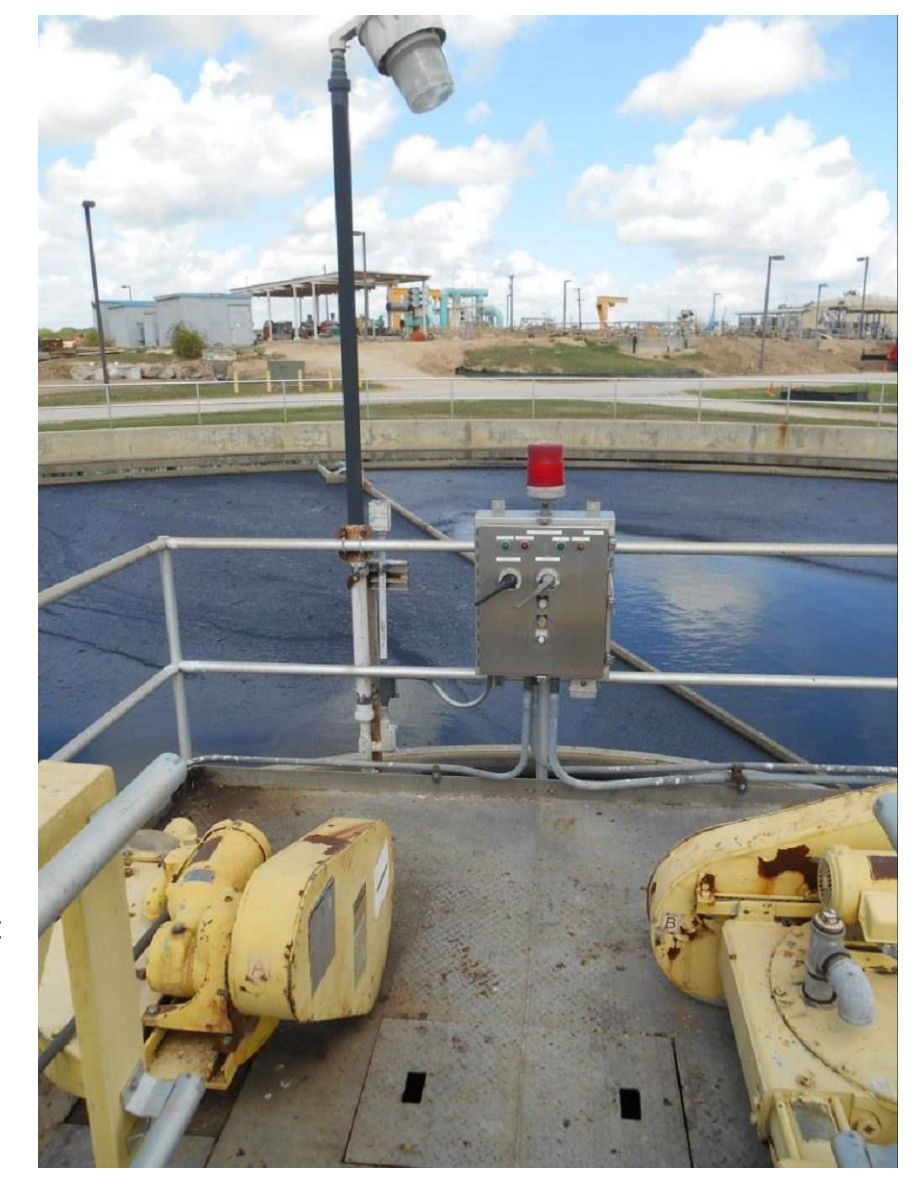
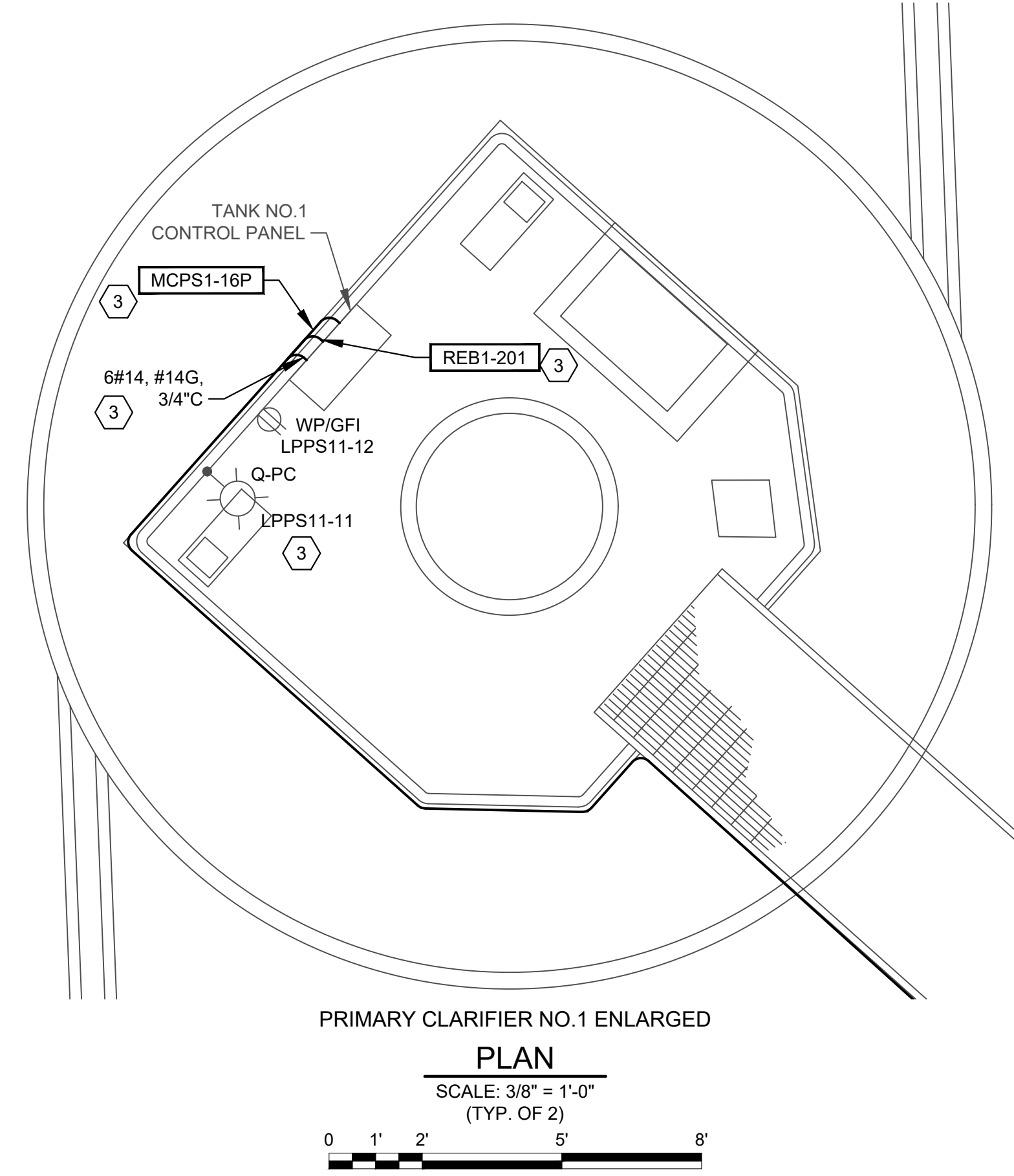
- REFER TO LIGHT FIXTURE SCHEDULE ON SHEET 00E26.
- CONDUITS SHALL BE SEALED AT CLASSIFICATION BOUNDARIES AND AS REQUIRED BY THE NEC.

NOTES:

- RECEPTACLE SHALL BE MOUNTED 4FT. ABOVE FLOOR (OUTSIDE OF ANY CLASSIFIED AREA).
- REFER TO 00E11 SHEETS FOR THE CLASSIFICATION OF THE AREA.
- INSTALL NEW WIRES IN EXISTING CONDUIT.
- WHERE THE J-BOXES ARE LOCATED AT THE PUMP STATION, ALIGN THEM WITH THE CENTER OF THE COLUMN SO THAT THE SPACE BETWEEN THE COLUMN IS NOT BLOCKED.
- INSTALL NEW LIGHT FIXTURE.
- NOTE NOT USED.
- REFER TO SHEET 10E17 FOR CONDUIT ROUTING.
- THE NUMBER OF CONDUITS AND SPARES WILL VARY FOR DUCTBANK FROM THE DRAIN PUMP STATION (WHERE PRESENT). DETAIL APPLIES TO PS-1 AND PS-1A.
- COORDINATE MODIFICATION WITH THE CLARIFIER CONTRACTOR. IF CLARIFIER CONTRACTOR HAS ALREADY INSTALLED PULL BOXES, RETURN TERMINAL BOXES TO OWNER AS SPARE PARTS.



REFER TO SHEET 10E02 FOR CONTINUATION



CONDUIT TAG	SHEET REFERENCE
MCPS1-XX	10E07
REB1-XX	10E27, 10E28
LPPS1X-XX	10E10

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SAN ANTONIO WATER SYSTEM

NO.	DATE	REV.	BY	DRWN	REMARKS
1	08/23/21	ER			ADDENDUM NO.3

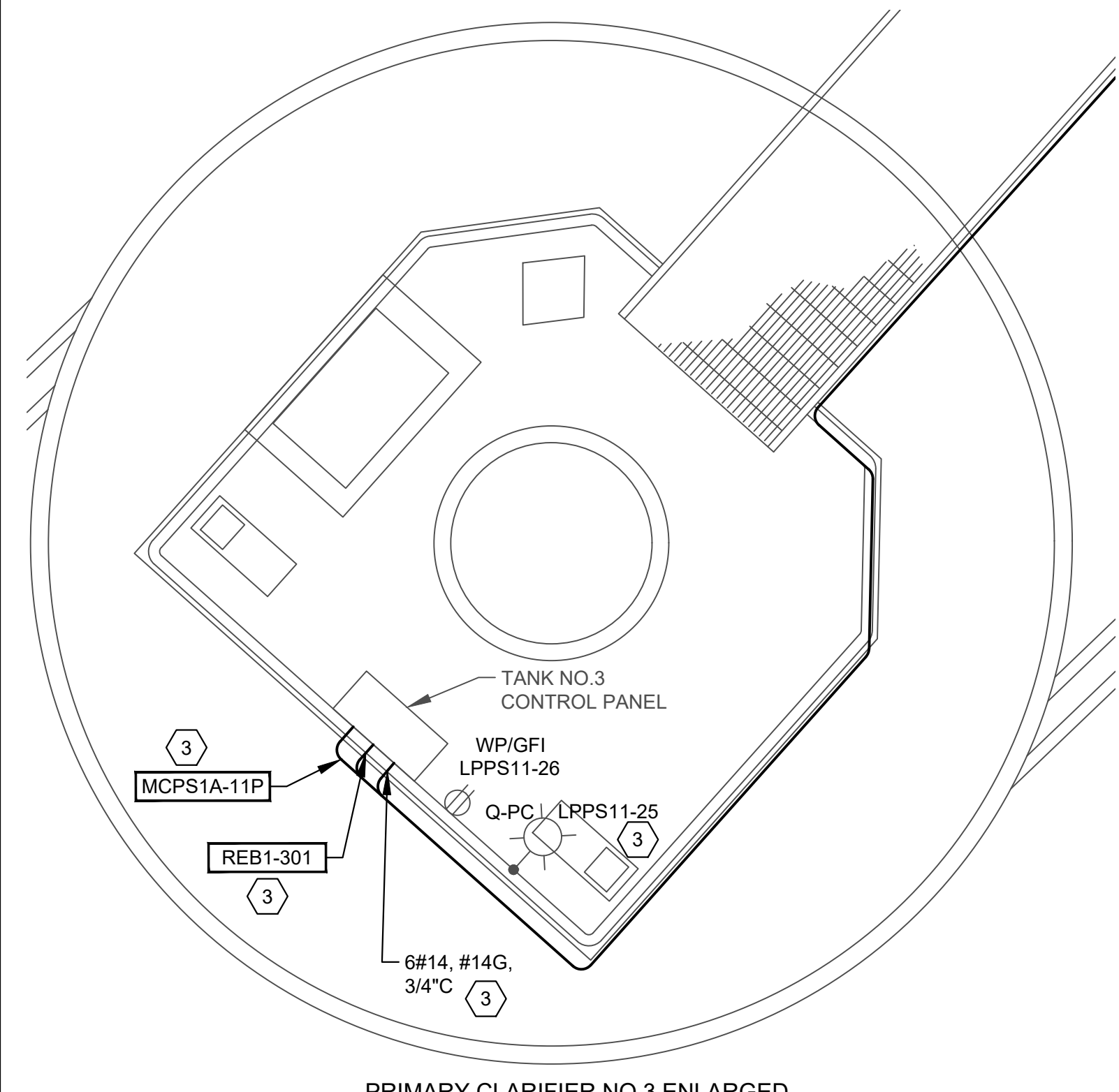
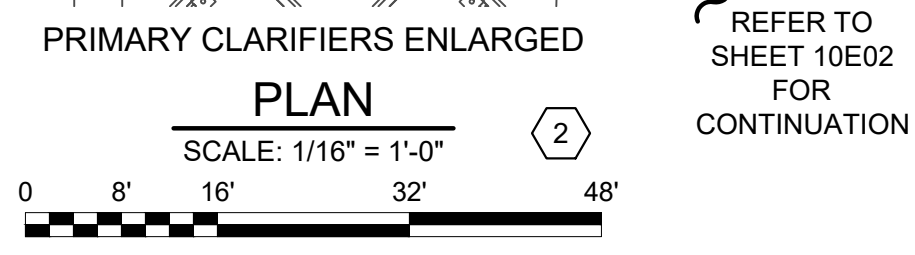
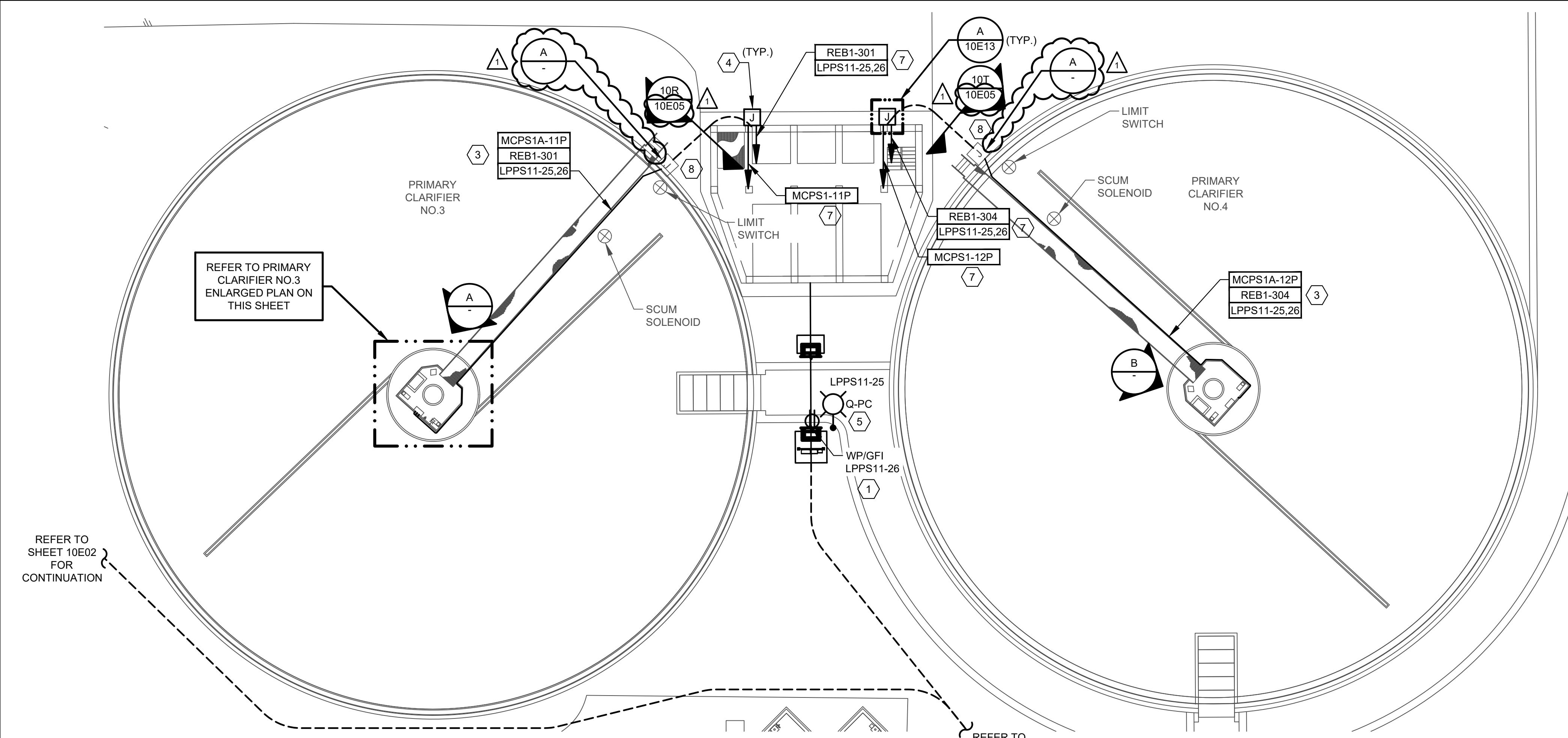
ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

SAN ANTONIO WATER SYSTEM
STEVEN M. CLOUSE WRC
ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
ELECTRICAL
PRIMARY CLARIFIERS 1-4
CLARIFIER NO.1 AND NO.2
POWER PLAN

DESIGNED BY: A. SINGH
DRAWN BY: E. RANGEL
SHEET CHKD BY: V.K. GUPTA
APPROVED BY: W. SAKO
DATE: JULY 2021
SAWS JOB NO.: 21-6507
FILE NAME: 1951_10E13

SHEET NO.
10E13
169 OF 328

8/17/2021 1:35 PM Z:\1951_SAWS Dos Rios WRC Electrical System Improvements - Phase II\5 Drawings\Dos Rios Phase II\Electrical\Working\1951_10E19.dwg Emmanuel Rangel



PRIMARY CLARIFIER NO.3
PHOTOGRAPH A



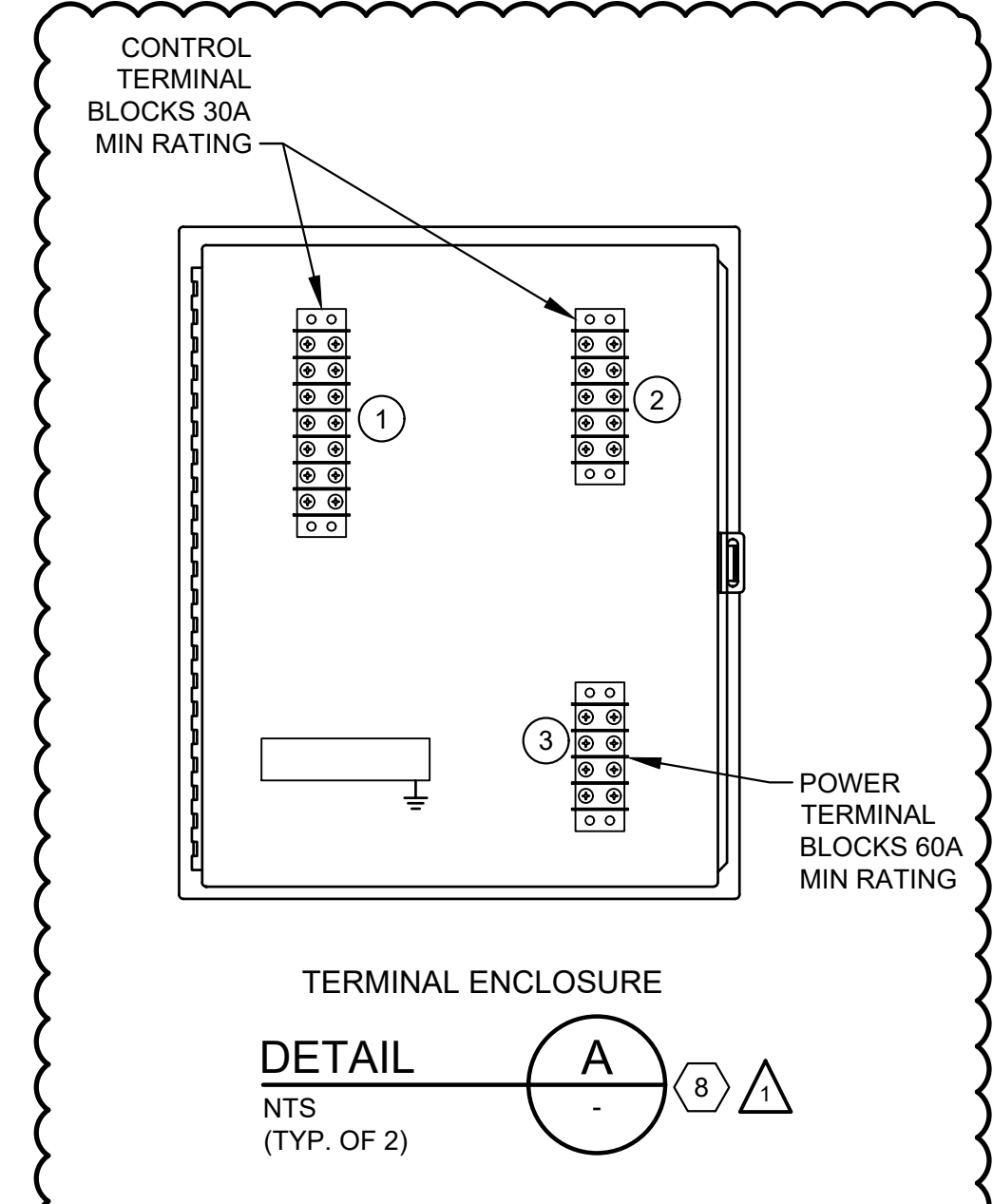
PRIMARY CLARIFIER NO.4
PHOTOGRAPH B

GENERAL NOTES:

- REFER TO LIGHT FIXTURE SCHEDULE ON SHEET 00E26.
- CONDUITS SHALL BE SEALED AT CLASSIFICATION BOUNDARIES AND AS REQUIRED BY THE NEC.

NOTES:

- RECEPTACLE SHALL BE MOUNTED 4FT. ABOVE FLOOR (OUTSIDE OF ANY CLASSIFIED AREA).
- REFER TO SHEET 00E11 FOR THE CLASSIFICATION OF THE AREA.
- INSTALL NEW WIRES IN EXISTING CONDUIT.
- WHERE THE J-BOXES ARE LOCATED AT THE PUMP STATION, ALIGN THEM WITH THE CENTER OF THE COLUMN SO THAT THE SPACE BETWEEN THE COLUMNS IS NOT BLOCKED.
- INSTALL NEW LIGHT FIXTURE.
- NOTE NOT USED.
- REFER TO SHEET 10E22 FOR CONDUIT ROUTING.
- COORDINATE MODIFICATION WITH THE CLARIFIER CONTRACTOR. IF CLARIFIER CONTRACTOR HAS ALREADY INSTALLED PULL BOXES, RETURN TERMINAL BOXES TO OWNER AS SPACE PARTS.



CONDUIT TAG	SHEET REFERENCE
MCPS1-XX	10E07
REB1-XX	10E27, 10E28
LPPS1X-XX	10E10

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SAN ANTONIO WATER SYSTEM

NO.	DATE	BY	REVISION
1	08/23/21	ER	ADDENDUM NO. 3

REMARKS

ONE INCH AT FULL SCALE IF NOT ONE INCH SCALE ACCORDINGLY

SAN ANTONIO WATER SYSTEM
STEVEN M. CLOUSE WRC
ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
PRIMARY CLARIFIERS 1-4
CLARIFIER NO.3 AND NO.4
POWER PLAN

DESIGNED BY: A. SINGH
DRAWN BY: E. RANGEL
SHEET CHECKED BY: V.K. GUPTA
APPROVED BY: W. SAKO
DATE: JULY 2021
SAWS JOB NO.: 21-6507
FILE NAME: 1951_10E19

SHEET NO.
10E19
175 OF 328

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INTERFACE DIAGRAM (1)			
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING (3)	RIO
PRIMARY CLARIFIERS 1, 2, 3, AND 4 AREA			
SGP-1	PST 1 SLUICE GATE (B081)	MOV C3 REB1-101	PLC-PS-1 (2)
SGP-2	PST 2 SLUICE GATE (B082)	MOV C3 REB1-102	
SGP-3	PST 3 SLUICE GATE (B083)	MOV C3 REB1-103	
SGP-4	PST 4 SLUICE GATE (B084)	MOV C3 REB1-104	
PUMP STATION PS-1			
CP-SC-1	PRIMARY SLUDGE COLLECTOR NO.1	LCP C3 REB1-201	PLC-PS-1 (2)
B029	SKIMMING MIXER NO.1	MCC-PS-1 C4 REB1-202	
LIT-B001	SKIMMING TANK 1 LEVEL	LIT A1 REB1-203	
CP-SC-2	PRIMARY SLUDGE COLLECTOR NO.2	LCP C3 REB1-204	
B073	MACERATOR MAC-1	C8 REB1-205	
B077	SKIMMING PUMP SP-1	C6 REB1-206	
B074	MACERATOR MAC-2	C8 REB1-207	
B078	SKIMMING PUMP SP-2	C6 REB1-208	
-	SKIMMINGS SEQUENCE RESET AT PS-1	PB C1 REB1-208A	
CPINT-PS-1	PS-1 SKIMMING PUMP INTERLOCK PANEL	CP C3 REB1-209	
B085	PRIMARY SLUDGE PUMP NO.1	C5 REB1-210	
B086	PRIMARY SLUDGE PUMP NO.2	C5 REB1-211	
B087	PRIMARY SLUDGE PUMP NO.3	C5 REB1-212	
-	DEWATERING PUMP NO.1 CONTROL PANEL	C2 REB1-213	
EF-PS1-1	EXHAUST FAN STATUS	C2 REB1-213A	
FIT-PSF-01	PS1 SLUDGE FLOW FIT	FIT A1 REB1-214	
SPSCP-1	SUMP PUMP	LCP C3 REB1-215	

INTERFACE DIAGRAM (1)				
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING (3)	RIO	
PUMP STATION PS-1A				
CP-SC-3	PRIMARY SLUDGE COLLECTOR NO.3	LCP C3 REB1-301	RIO-PS-1 (2)	
B030	SKIMMING MIXER NO.2	MCC-PS-1A C4 REB1-302		
LIT-B002	SKIMMING TANK 2 LEVEL	LIT A1 REB1-303		
B006	PRIMARY SLUDGE COLLECTOR NO.4	LCP C3 REB1-304		
B075	MACERATOR MAC-3	C8 REB1-305		
B079	SKIMMING PUMP SP-3	C6 REB1-306		
B076	MACERATOR MAC-4	C8 REB1-307		
B080	SKIMMING PUMP SP-4	C6 REB1-308		
-	SKIMMINGS SEQUENCE RESET AT PS-1A	PB C1 REB1-308A		
CPINT-PS1-2	PS-1A SKIMMING PUMP INTERLOCK PANEL	CP C3 REB1-309		
PUMP STATION PS-1A				
B088	PRIMARY SLUDGE PUMP NO.4	C5 REB1-310		
B089	PRIMARY SLUDGE PUMP NO.5	C5 REB1-311		
B090	PRIMARY SLUDGE PUMP NO.6	C5 REB1-312		
-	DEWATERING PUMP NO.2	C2 REB1-313		
EF-PS1A-1	EXHAUST FAN STATUS	C2 REB1-313A		
FIT-PSF-02	PS1A SLUDGE FLOW FIT	FIT A1 REB1-314		
SPSCP-2	SUMP PUMP	LCP C3 REB1-315		

GENERAL NOTES:

- REFER TO SHEET 10N23 FOR THE EQUIPMENT TAGS CROSS REFERENCE.

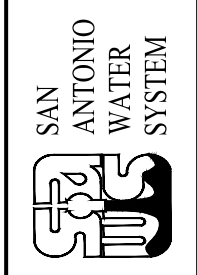
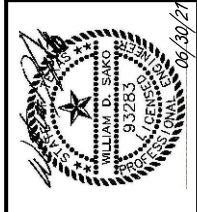
NOTES:

- CONDUIT SIZES SHOWN ARE MINIMUM. COMBINATION OF SIMILAR CIRCUIT TYPES PERMISSIBLE. ADJUST CONDUIT SIZING ACCORDINGLY AND REFLECT FINAL CONFIGURATION ON AS-BUILT DOCUMENTATION.
- TERMINATE ALL WIRING ON TERMINAL BLOCKS INSIDE PANEL. NO NON-TERMINATED WIRES ALLOWED.
- INSTALL ALL WIRING WHETHER SHOWN ON FLOOR PLANS OR NOT.
- SUBSTITUTE CAT-6 CABLE FOR CAT-5E WHERE REQUIRED BY CONTRACT DOCUMENTS.

CONTROL & INSTRUMENTATION WIRE/CONDUIT SCHEDULE (1)(4)			
C1	2#14, #14G 3/4"C	A1	1-1Pr#16 TSP, #14G, 3/4"C
C2	4#14, #14G 3/4"C	A2	2-1Pr#16 TSP, #14G, 3/4"C
C3	6#14, #14G 1"C	A3	3-1Pr#16 TSP, #14G, 3/4"C
C4	8#14, #14G 1"C	A4	4-1Pr#16 TSP, #14G, 1"C
C5	10#14, #14G 1"C	A5	5-1Pr#16 TSP, #14G, 1"C
C6	12#14, #14G 1-1/4"C	A6	6-1Pr#16 TSP, #14G, 1-1/2"C
C7	14#14, #14G 1-1/4"C	A7	7-1Pr#16 TSP, #14G, 2"C
C8	16#14, #14G 1-1/4"C	A8	8-1Pr#16 TSP, #14G, 2"C
C9	18#14, #14G 1-1/4"C	A9	9-1Pr#16 TSP, #14G, 2"C
C10	20#14, #14G 1-1/4"C	A10	10-1Pr#16 TSP, #14G, 2"C
C11	22#14, #14G 1-1/2"C	A11	11-1Pr#16 TSP, #14G, 2"C
C12	24#14, #14G 1-1/2"C	M1	1-CAT-5e, #14G, 1"C
C14	28#14, #14G 1-1/2"C	M2	2-CAT-5e, #14G, 1-1/2"C
C30	60#14, #14G 3-1/2"C	M3	3-CAT-5e, #14G, 2"C
C37	74#14, #14G 4"C	M4	4-CAT-5e, #14G, 2"C

CONTROL & INSTRUMENTATION WIRE/CONDUIT TABLE NOTES:

- NOT ALL POSSIBLE COMBINATIONS ARE LISTED. INCLUDE A SEPARATE GROUND WIRE IN EACH CONDUIT RUN.
 # REPRESENTS PAIR OF WIRE
 EXAMPLE C10 = 20#14 WIRES
 EXAMPLE C20 = 40#14 WIRES
 C#
 C = CONTROL
- ANALOG CABLES ARE INTENDED TO BE INDIVIDUALLY INSULATED TWISTED SHIELDED PAIRS UNLESS OTHERWISE NOTED ON THE DRAWING.



NO.	DATE	BY	REVISION
1	08/23/21	ER	ADDENDUM NO.3

REMARKS: ONE INCH AT FULL SCALE IF NOT OTHERWISE NOTED.

SAN ANTONIO WATER SYSTEM
 STEVEN M. CLOUSE WRC
 ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
PRIMARY CLARIFIERS 1-4
INTERFACE DIAGRAM - 1

DESIGNED BY:	A. SINGH
DRAWN BY:	E. RANGEL
SHEET CHKD BY:	V.K. GUPTA
APPROVED BY:	W. SAKO
DATE:	JULY 2021
SAWS JOB NO.:	21-6507
FILE NAME:	1951_10E27

SHEET NO.
10E27
 183 OF 328

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INTERFACE DIAGRAM 1			
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING 3	RIO
ELECTRICAL BUILDING EB-PS-1			
PMT-331	TRANSFORMER	XFMR C3 REB1-401	
ATS-PS1-1	AUTOMATIC TRANSFER SWITCH	ATS-1 C2 REB1-402	
PMT-332	TRANSFORMER	XFMR C3 REB1-403	
ATS-PS1-2	AUTOMATIC TRANSFER SWITCH	ATS-2 C2 REB1-404	
SWBD-PS-1	SWITCHBOARD ML BREAKER	SWBD-PS-1 C3 C15 REB1-405	
	SWITCHBOARD TIE BREAKER	SWBD-PS-1 C3	
	SWITCHBOARD MR BREAKER	SWBD-PS-1 C3	
	SWITCHBOARD MCC-PS1 BREAKER	SWBD-PS-1 C3	
	SWITCHBOARD MCC-PS1A BREAKER	SWBD-PS-1 C3	
TIT-PS1-1	ELECTRICAL ROOM TEMPERATURE	TIT A1 REB1-412	
TIT-PS1-2	CONTROL ROOM TEMPERATURE	TIT A1 REB1-413	
ZS-PS1-1	ELECTRICAL ROOM INTRUSION	ZS C1 REB1-414	
ZS-PS1-2	ELECTRICAL ROOM INTRUSION	ZS C1 REB1-415	
ZS-PS1-3	ELECTRICAL ROOM INTRUSION	ZS C1 REB1-416	
ZS-PS1-4	CONTROL ROOM INTRUSION	ZS C1 REB1-417	
ZS-PS1-5	CONTROL ROOM INTRUSION	ZS C1 REB1-418	
UPS-PS1-1	UPS ALARM / STATUS	UPS C2 REB1-419	
RIO-PS1-1	PS1 RIO1 INTRUSION / TEMP	PNL C2 REB1-420	
NET-PS1	NETWORK PANEL INTRUSION	PNL C1 REB1-421	
SPD-EB1-1	SPD	ATS-PS1-1 C1 REB1-422	
SPD-EB1-2	SPD	ATS-PS1-1 C1 REB1-423	
SPD-EB1-3	SPD	ATS-PS1-2 C1 REB1-424	
SPD-EB1-4	SPD	ATS-PS1-2 C1 REB1-425	
SPD-EB1-5	SPD	SWBD-PS-1 C1 REB1-426	
SPD-EB1-6	SPD	SWBD-PS-1 C1 REB1-427	
SPD-EB1-7	SPD	MCC-PS-1 C1 REB1-428	
SPD-EB1-8	SPD	MCC-PS-1A C1 REB1-429	
SPD-EB1-9	SPD	HP-PS1-1 C1 REB1-430	

PLC-PS1-1
2

INTERFACE DIAGRAM 1			
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING 3	RIO
PM-ML-PS1	SWITCHBOARD POWER METER ML	SWBD-PS-1 M1 NPS1-101	
PM-MR-PS1	SWITCHBOARD POWER METER MR	SWBD-PS-1 M1 NPS1-102	
PM-MCC-PS1	MCC-PS1 POWER METER	MCC-PS-1 M1 NPS1-103	
PM-MCC-PS1A	MCC-PS1A POWER METER	MCC-PS-1A M1 NPS1-104	
PLC-PS1-1	PLC	PNL NPS1-105	
	OTHER		
	SCADA/IT BUILDING	PNL FOC-SCADA-EBPS1 5	

NETWORK PANEL NET-PS1
2

GENERAL NOTES:

- REFER TO SHEET 10N23 FOR THE EQUIPMENT TAGS CROSS REFERENCE.

NOTES:

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- TERMINATE ALL WIRING ON TERMINAL BLOCKS INSIDE PANEL. NO NON-TERMINATED WIRES ALLOWED.
- INSTALL ALL WIRING WHETHER SHOWN ON FLOOR PLANS OR NOT.
- SUBSTITUTE CAT-6 CABLE FOR CAT-5E WHERE REQUIRED BY CONTRACT DOCUMENTS.
- INSTALL FIBER OPTIC CABLE IN 2".

CONTROL & INSTRUMENTATION WIRE/CONDUIT SCHEDULE 1 4			
C1	2#14, #14G 3/4"C	A1	1-1Pr#16 TSP, #14G, 3/4"C
C2	4#14, #14G 3/4"C	A2	2-1Pr#16 TSP, #14G, 3/4"C
C3	6#14, #14G 1"C	A3	3-1Pr#16 TSP, #14G, 3/4"C
C4	8#14, #14G 1"C	A4	4-1Pr#16 TSP, #14G, 1"C
C5	10#14, #14G 1"C	A5	5-1Pr#16 TSP, #14G, 1"C
C6	12#14, #14G 1-1/4"C	A6	6-1Pr#16 TSP, #14G, 1-1/2"C
C7	14#14, #14G 1-1/4"C	A7	7-1Pr#16 TSP, #14G, 2"C
C8	16#14, #14G 1-1/4"C	A8	8-1Pr#16 TSP, #14G, 2"C
C9	18#14, #14G 1-1/4"C	A9	9-1Pr#16 TSP, #14G, 2"C
C10	20#14, #14G 1-1/4"C	A10	10-1Pr#16 TSP, #14G, 2"C
C11	22#14, #14G 1-1/2"C	A11	11-1Pr#16 TSP, #14G, 2"C
C12	24#14, #14G 1-1/2"C	M1	1-CAT-5e, #14G, 1"C
C14	28#14, #14G 1-1/2"C	M2	2-CAT-5e, #14G, 1-1/2"C
C30	60#14, #14G 3-1/2"C	M3	3-CAT-5e, #14G, 2"C
C37	74#14, #14G 4"C	M4	4-CAT-5e, #14G, 2"C

**CONTROL & INSTRUMENTATION
WIRE/CONDUIT TABLE NOTES:**

- NOT ALL POSSIBLE COMBINATIONS ARE LISTED. INCLUDE A SEPARATE GROUND WIRE IN EACH CONDUIT RUN.

REPRESENTS PAIR OF WIRE
 EXAMPLE C10 = 20#14 WIRES
 EXAMPLE C20 = 40#14 WIRES
 C#
 C = CONTROL

- ANALOG CABLES ARE INTENDED TO BE INDIVIDUALLY INSULATED TWISTED SHIELDED PAIRS UNLESS OTHERWISE NOTED ON THE DRAWING.

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 Gupta & Associates, Inc.
 CONSULTING ENGINEERING
 Registration No. F-2593
 13771 N. Metro Road
 Dallas, Texas 75244
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SAN ANTONIO WATER SYSTEM

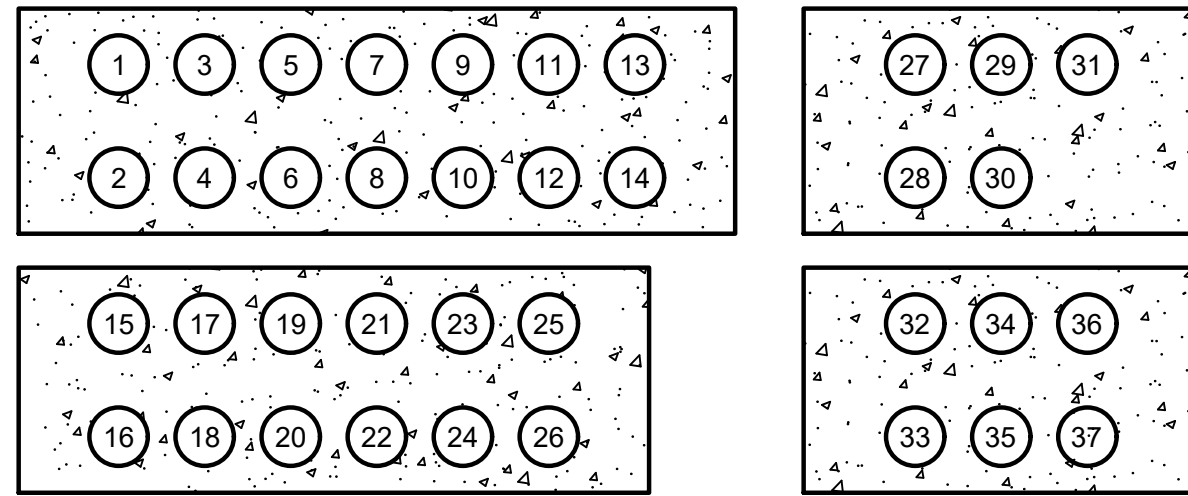
ADDENDUM NO. 3	REMARKS
08/23/21	ER
REV. NO.	DATE
DRWN	DATE

SAN ANTONIO WATER SYSTEM
 STEVEN M. CLOUSE WRC
 ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
 ELECTRICAL
PRIMARY CLARIFIERS 1-4
INTERFACE DIAGRAM - II

DESIGNED BY: A. SINGH
 DRAWN BY: E. RANGEL
 SHEET CHKD BY: V.K. GUPTA
 APPROVED BY: W. SAKO
 DATE: JULY 2021
 SAWS JOB NO.: 21-6507
 FILE NAME: 1951_10E28

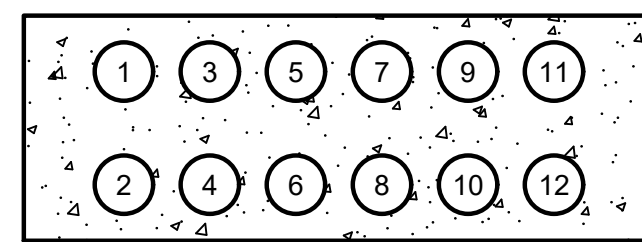
SHEET NO.
10E28
 184 OF 328

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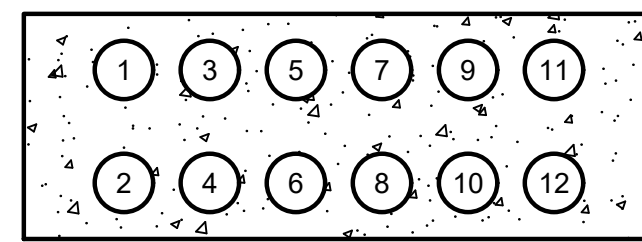
DUCTBANK
SECTION 10AD
10E30

CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS2-4P, 5P,6P	2" C	MCC-PS-2 TO SLUDGE PUMPS
2	MCPS2-3P, 19P,20P	2" C	MCC-PS-2 TO DEWATERING AND OTHER PUMPS
3	MCPS2-7P, 8P,9P	2" C	MCC-PS-2 TO MACERATOR AND SKIMMING PUMPS
4	MCPS2-10P,16P,17P,11P,21P,22P	2" C	MCC-PS-2 TO PS-2 AREA CLARIFIERS, FANS.
5	LPPS21-11,12,13,14,16 LPPS22-2,10	2" C	LP-PS2-1 AND LP-PS2-2 TO PS-2
6	SPARE	2" C	J-BOXES TO LMH-19
7	MCPS2-4C,5C,6C	2" C	MCC-PS-2 TO PS-2 SLUDGE PUMP AREA
8	MCPS2-20C,3C, REB2-208A, REB2-215,201,204, INTPS21-101	2" C	MCC-PS-2 AND RIO-PS2-1 TO PS-2
9	MCPS2-7C,8C,9C,10C,21C,22C	2" C	MCC-PS-2 TO PS-2
10	REB2-203,214	2" C	RIO-PS2-1 TO LIT AND FIT
11	SPARE	2" C	J-BOXES TO LMH-19
12	SPARE	2" C	J-BOXES TO LMH-19
13	MCPS2-12P, 13P,14P,15P	2" C	MCC-PS-2 TO DIVERSION STRUCTURE NO.2
14	REB2-101,102,103,104	2" C	RIO-PS-2 TO DIVERSION STRUCTURE NO.2
15	MCPS2A-3P, 4P,5P	2" C	MCC-PS-2A TO SLUDGE PUMPS
16	MCPS2A-2P, 13P,14P	2" C	MCC-PS-2A TO DEWATERING AND OTHER PUMPS
17	MCPS2A-6P, 7P,8P	2" C	MCC-PS-2A TO MACERATOR AND SKIMMING PUMPS
18	MCPS2A-9P,10P,11P,12P,15P,16P	2" C	MCC-PS-2A TO PS-2A AREA CLARIFIERS, FANS.
19	LPPS21-25,26,27,28,30 LPPS22-6,9	2" C	LP-PS2-1 AND LP-PS2-2 TO PS-2
20	SPARE	2" C	J-BOXES TO LMH-19
21	MCPS2A-3C,4C,5C	2" C	MCC-PS-2A TO PS-2A SLUDGE PUMP AREA
22	MCPS2A-14C,2C, REB2-308A, REB2-315,301,304, INTPS22-101	2" C	MCC-PS-2A AND RIO-PS2-1 TO PS-2A
23	MCPS2A-6C,7C,8C,9C,15C,16C	2" C	MCC-PS-2A TO PS-2A
24	REB2-303,314	2" C	RIO-PS2-1 TO LIT AND FIT
25	MCPS2A-17P	2" C	MCC-PS-2A TO DRAIN PNL-#3-2
26	SPARE	2" C	J-BOXES TO LMH-19
27-28	GS-2P	4" C	GENERATOR TO PTB-PS2-1
29	FOC-PS2-BLDG2	2" C	EB-PS-2 TO FOPP-PRI-CTR IN BUILDING NO.3
30	GS-2C1, GS-2C2	2" C	ATS-PS2-1 AND ATS-PS2-2 TO GENERATOR
31	SPARE	2" C	J-BOXES TO LMH-19
32	SPARE	2" C	LMH-19 TO J-BOXES
33	B1-EM1-C1, B1-EM1-C2	2" C	GENERATOR TO LMH-10
34	SPARE	2" C	J-BOXES TO LMH-19
35-37	B1B-EM1-P	4" C	GENERATOR TO LMH-10



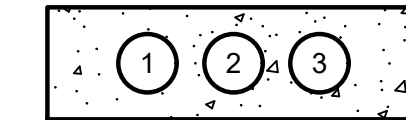
DUCTBANK
SECTION 10AE
10E30

CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS2-4P, 5P,6P	2" C	MCC-PS-2 TO SLUDGE PUMPS
2	MCPS2-3P, 19P,20P	2" C	MCC-PS-2 TO DEWATERING AND OTHER PUMPS
3	MCPS2-7P, 8P,9P	2" C	MCC-PS-2 TO MACERATOR AND SKIMMING PUMPS
4	MCPS2-10P,16P,17P,11P,21P,22P	2" C	MCC-PS-2 TO PS-2 AREA CLARIFIERS, FANS.
5	LPPS21-11,12,13,14,16 LPPS22-2,10	2" C	LP-PS2-1 AND LP-PS2-2 TO PS-2
6	SPARE	2" C	LMH-19 TO J-BOXES
7	MCPS2-4C,5C,6C	2" C	MCC-PS-2 TO PS-2 SLUDGE PUMP AREA
8	MCPS2-20C,3C, REB2-208A, REB2-215,201,204, INTPS21-101	2" C	MCC-PS-2 AND RIO-PS2-1 TO PS-2
9	MCPS2-7C,8C,9C,10C,21C,22C	2" C	MCC-PS-2 TO PS-2
10	REB2-203,214	2" C	RIO-PS2-1 TO LIT AND FIT
11	SPARE	2" C	LMH-19 TO J-BOXES
12	SPARE	2" C	LMH-19 TO J-BOXES



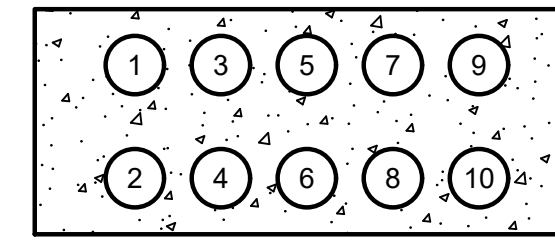
DUCTBANK
SECTION 10AF
10E30

CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS2A-3P, 4P,5P	2" C	MCC-PS-2A TO SLUDGE PUMPS
2	MCPS2A-2P, 13P,14P	2" C	MCC-PS-2A TO DEWATERING AND OTHER PUMPS
3	MCPS2A-6P, 7P,8P	2" C	MCC-PS-2A TO MACERATOR AND SKIMMING PUMPS
4	MCPS2A-9P,10P,11P,12P,15P,16P	2" C	MCC-PS-2A TO PS-2A AREA CLARIFIERS, FANS.
5	LPPS21-25,26,27,28,30 LPPS22-6,9	2" C	LP-PS2-1 AND LP-PS2-2 TO PS-2A
6	SPARE	2" C	LMH-19 TO J-BOXES
7	MCPS2A-3C,4C,5C	2" C	MCC-PS-2A TO PS-2A SLUDGE PUMP AREA
8	MCPS2A-14C,2C, REB2-308A, REB2-315,301,304, INTPS22-101	2" C	MCC-PS-2A AND RIO-PS2-1 TO PS-2A
9	MCPS2A-6C,7C,8C,9C,15C,16C	2" C	MCC-PS-2A TO PS-2A
10	REB2-303,314	2" C	RIO-PS2-1 TO LIT AND FIT
11	MCPS2A-17P	2" C	MCC-PS-2A TO DRAIN PNL-#3-2
12	SPARE	2" C	LMH-19 TO J-BOXES



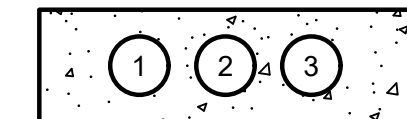
DUCTBANK
SECTION 10AG
10E52

CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS2-12P, 13P,14P,15P	2" C	MCC-PS-2 TO DIVERSION STRUCTURE NO.2
2	REB2-101,102,103,104	2" C	RIO-PS-2 TO DIVERSION STRUCTURE NO.2
3	SPARE	2" C	LMH-19 TO DIVERSION STRUCTURE NO.2



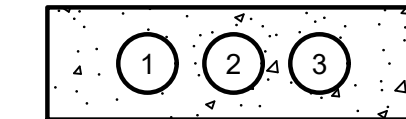
DUCTBANK
SECTION 10AH
10E30

CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1-2	GS-2P	4" C	GENERATOR TO PTB-PS2-1
3	FOC-PS2-BLDG2	2" C	EB-PS-2 TO FOPP-PRI-CTR IN BUILDING NO.3
4	GS-2C1, GS-2C2	2" C	ATS-PS2-1 AND ATS-PS2-2 TO GENERATOR
5	SPARE	2" C	LMH-19 TO LMH-20
6	B1-EM1-C1, B1-EM1-C2	2" C	-
7	SPARE	2" C	LMH-19 TO LMH-20
8-10	B1-EM1-P	4" C	-



DUCTBANK
SECTION 10AR
10E42

CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS2-16P	1" C	MCC-PS-2 TO PRIMARY CLARIFIER NO.5
2	REB2-201, LPPS21-11,12	1" C	RIO AND LP-PS-2 TO PRIMARY CLARIFIER NO.5
3	SPARE	1" C	CLARIFIER NO.5 J-BOX TO PS-2 J-BOX



DUCTBANK
SECTION 10AT
10E42

CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS2-17P	1" C	MCC-PS-2 TO PRIMARY CLARIFIER NO.6
2	REB2-204, LPPS21-11,12	1" C	RIO AND LP-PS-2 TO PRIMARY CLARIFIER NO.6
3	SPARE	1" C	CLARIFIER NO.6 J-BOX TO PS-2 J-BOX

GENERAL NOTES:

1. REFER TO STANDARD DUCTBANK DETAILS.

NOTES:

① WIRES FOR FIRST STAGE AERATION TO BE PULLED IN FUTURE PHASE.

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SAN ANTONIO WATER SYSTEM

08/23/21	ER	ADDENDUM NO.3	REMARKS
REV. NO.	DATE	DRWN	REMARKS

ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

SAN ANTONIO WATER SYSTEM
STEVEN M. CLOUSE WRC
ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
ELECTRICAL
PRIMARY CLARIFIERS 5-8
DUCTBANK SECTIONS - I

CONDUIT TAG	SHEET REFERENCE
MCPS2-XX	10E35
MCPS2A-XX	10E36
LPPS2X-XX	10E39
REB2-XX	10E58, 10E59
B1-EM1-CX	00E22, 20E86
GS-2X	10E34
FOC-EB2	10E59
B1B-EM1-P	00E22, 20E87

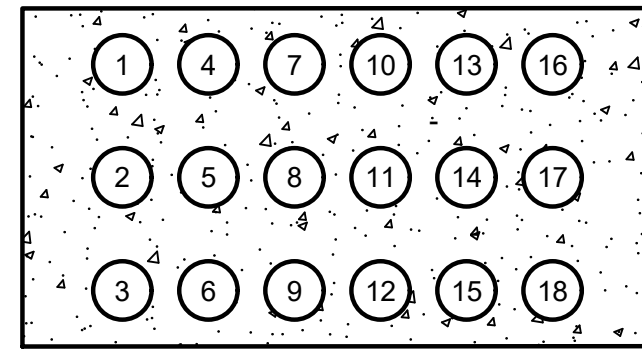
DESIGNED BY: A. SINGH
DRAWN BY: E. RANGEL
SHEET CHKD BY: V.K. GUPTA
APPROVED BY: W. SAKO
DATE: JULY 2021
SAWS JOB NO.: 21-6507
FILE NAME: 1951_10E31

SHEET NO.

10E31

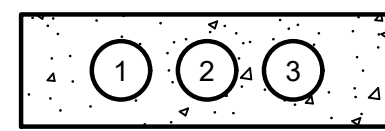
187 OF 328

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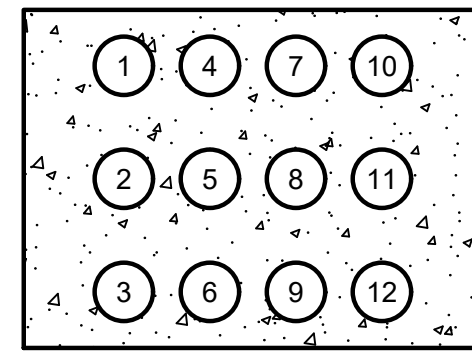
DUCTBANK
SECTION **10AM**
10E30

TABLE FOR SECTION 10AM			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1-2	EM1-3P	4"C	GENERATOR TO EB-HW-1
3	EM1-3C, EM1-4C	2"C	GENERATOR TO EB-HW-1
4	SPARE	4"C	GENERATOR TO LMH-20
5-6	EM1-4P	4"C	GENERATOR TO EB-HW-1
7-8	GS-1P	4"C	GENERATOR TO PTB-PS1-1
9	GS-1C1, GS-1C2	2"C	ATS-PS2-1 AND ATS-PS2 TO GENERATOR
10-11	GS-2P	4"C	GENERATOR TO PTB-PS2-1
12	GS-2C1, GS-2C2	2"C	ATS-PS2-1 AND ATS-PS2 TO GENERATOR
13-15	B1B-EM1-P	4"C	-
16	B1-EM1-C1, B1-EM1-C2	2"C	-
17	SPARE	2"C	GENERATOR TO LMH-20
18	SPARE	2"C	GENERATOR TO LMH-20



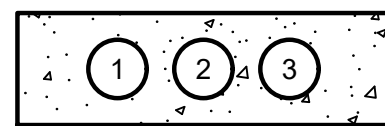
DUCTBANK
SECTION **10AW**
10E30

TABLE FOR SECTION 10AW			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS2A-17P	2"C	MCC-PS-2A TO DRAINAGE PUMP (NORTHWEST SIDE)
2	SPARE	2"C	DRAINAGE PUMP (NORTHWEST SIDE) TO EHH
3	SPARE	2"C	DRAINAGE PUMP (NORTHWEST SIDE) TO EHH



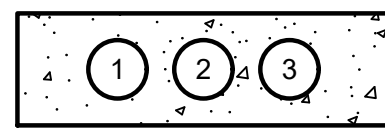
DUCTBANK
SECTION **10AP**
10E30

TABLE FOR SECTION 10AP			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCB-2P	3"C	MCC-B TO BLOWER NO.1
2	MCB-3P	3"C	MCC-B TO BLOWER NO.2
3	MCB-4P	3"C	MCC-B TO BLOWER NO.3
4	MCB-2C,3C,4C	3"C	MCC-B TO BLOWER LCPS
5	LPPS21-35,36,37	2"C	LP-PS21 TO BLOWER AREA
6	SPARE	2"C	BLOWER AREA TO EHH
7	MCB-7P	2"C	MCC-B TO TRANSFER PUMP
8	MCB-7C, LPPS21-35,37,38	2"C	MCC-B AND LP-PS2-1 TO TRANSFER AREA
9	REB2-436	2"C	RIO TO TRANSFER AREA
10	SPARE	2"C	TRANSFER AREA TO EHH
11	MCB-5P	2"C	MCC-B TO BUTTERFLY VALVE
12	SPARE	2"C	BUTTERFLY VALVE TO EHH



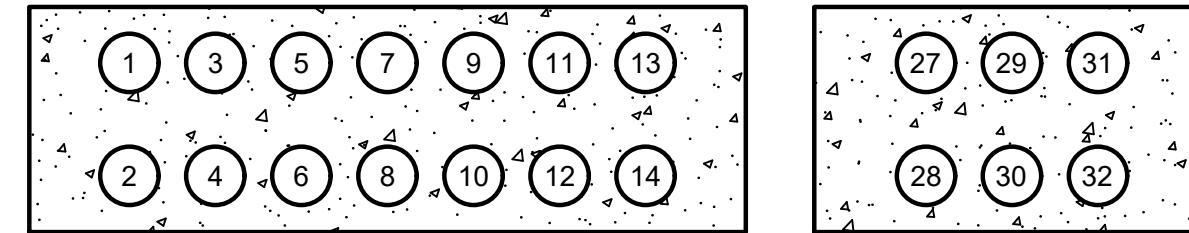
DUCTBANK
SECTION **10AU**
10E48

TABLE FOR SECTION 10AU			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS2A-11P	1"C	MCC-PS-2A TO PRIMARY CLARIFIER NO.7
2	REB2-301, LPPS21-25,26	1"C	RIO AND LP-PS-2 TO PRIMARY CLARIFIER NO.7
3	SPARE	1"C	CLARIFIER NO.7 J-BOX TO PS-2A J-BOX



DUCTBANK
SECTION **10AV**
10E48

TABLE FOR SECTION 10AV			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS2A-12P	1"C	MCC-PS-2A TO PRIMARY CLARIFIER NO.8
2	REB2-304, LPPS21-25,26	1"C	RIO AND LP-PS-2 TO PRIMARY CLARIFIER NO.8
3	SPARE	1"C	CLARIFIER NO.8 J-BOX TO PS-2A J-BOX



DUCTBANK
SECTION **10AQ**
10E30

TABLE FOR SECTION 10AQ			
CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	MCPS2-4P, 5P,6P	2"C	MCC-PS-2 TO SLUDGE PUMPS
2	MCPS2-3P, 19P,20P	2"C	MCC-PS-2 TO DEWATERING AND OTHER PUMPS
3	MCPS2-7P, 8P,9P	2"C	MCC-PS-2 TO MACERATOR AND SKIMMING PUMPS
4	MCPS2-10P,16P,17P,11P,21P,22P	2"C	MCC-PS-2 TO PS-2 AREA CLARIFIERS, FANS.
5	LPPS21-11,12,13,14,16 LPPS22-2,10	2"C	LP-PS2-1 AND LP-PS2-2 TO PS-2
6	SPARE	2"C	J-BOXES TO LMH-19
7	MCPS2-4C,5C,6C	2"C	MCC-PS-2 TO PS-2 SLUDGE PUMP AREA
8	MCPS2-20C,3C, REB2-208A, REB2-215,201,204, INTFPS21-101	2"C	MCC-PS-2 AND RIO-PS2-1 TO PS-2
9	MCPS2-7C,8C,9C,10C,21C,22C	2"C	MCC-PS-2 TO PS-2
10	REB2-203,214	2"C	RIO-PS2-1 TO LIT AND FIT
11	SPARE	2"C	J-BOXES TO LMH-19
12	SPARE	2"C	J-BOXES TO LMH-19
13	MCPS2-12P, 13P,14P,15P	2"C	MCC-PS-2 TO DIVERSION STRUCTURE NO.2
14	REB2-101,102,103,104	2"C	RIO-PS-2 TO DIVERSION STRUCTURE NO.2
15	MCPS2A-3P, 4P,5P	2"C	MCC-PS-2A TO SLUDGE PUMPS
16	MCPS2A-2P, 13P,14P	2"C	MCC-PS-2A TO DEWATERING AND OTHER PUMPS
17	MCPS2A-6P, 7P,8P	2"C	MCC-PS-2A TO MACERATOR AND SKIMMING PUMPS
18	MCPS2A-9P,10P,11P,12P,15P,16P	2"C	MCC-PS-2A TO PS-2A AREA CLARIFIERS, FANS.
19	LPPS21-25,26,27,28,30 LPPS22-6,9	2"C	LP-PS2-1 AND LP-PS2-2 TO PS-2
20	SPARE	2"C	LMH-19 TO J-BOXES
21	MCPS2A-3C,4C,5C	2"C	MCC-PS-2A TO PS-2A SLUDGE PUMP AREA
22	MCPS2A-14C,2C, REB2-308A, REB2-315,301,304, INTFPS22-101	2"C	MCC-PS-2A AND RIO-PS2-1 TO PS-2A
23	MCPS2A-6C,7C,8C,9C,15C,16C	2"C	MCC-PS-2A TO PS-2A
24	REB2-303,314	2"C	RIO-PS2-1 TO LIT AND FIT
25	MCPS2A-17P	2"C	MCC-PS-2A TO DRAIN PNL-#3-2
26	SPARE	2"C	LMH-19 TO J-BOXES
27-28	GS-2P	4"C	GENERATOR TO PTB-PS2-1
29	FOC-PS2-BLDG2	2"C	EB-PS-2 TO FOPP-PRI-CTR IN BUILDING NO.3
30	GS-2C1, GS-2C2	2"C	ATS-PS2-1 AND ATS-PS2-2 TO GENERATOR
31	SPARE	2"C	J-BOXES TO LMH-19

GENERAL NOTES:

- REFER TO STANDARD DUCTBANK DETAILS.

NOTES:

- WIRES FOR FIRST STAGE AERATION TO BE PULLED IN FUTURE PHASE.

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SAN ANTONIO WATER SYSTEM

NO.	DATE	REV.	DRWN	CHKD	APP'D	REMARKS
1	08/23/21	ER				ADDENDUM NO.3
2	08/10/21	WH				ADDENDUM NO.2

SAN ANTONIO WATER SYSTEM
STEVEN M. CLOUSE WRC
ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
PRIMARY CLARIFIERS 5-8
DUCTBANK SECTIONS - III

DESIGNED BY: A. SINGH
DRAWN BY: E. RANGEL
SHEET CHKD BY: V.K. GUPTA
APPROVED BY: W. SAKO
DATE: JULY 2021
SAWS JOB NO.: 21-6507
FILE NAME: 1951_10E33

SHEET NO.
10E33
189 OF 328

CONDUIT TAG	SHEET REFERENCE
EM1-3X	00E22
EM1-4X	00E22
GS-1X	10E06
GS-2X	10E34
B1B-EM1-P	20E87
B1-EM1-CX	20E86
MCPS2-XX	10E35
MCPS2A-XX	10E36
MCB-XX	10E37
LPPS2X-XX	10E39
REB2-XX	10E59
FOC-EB2	10E59

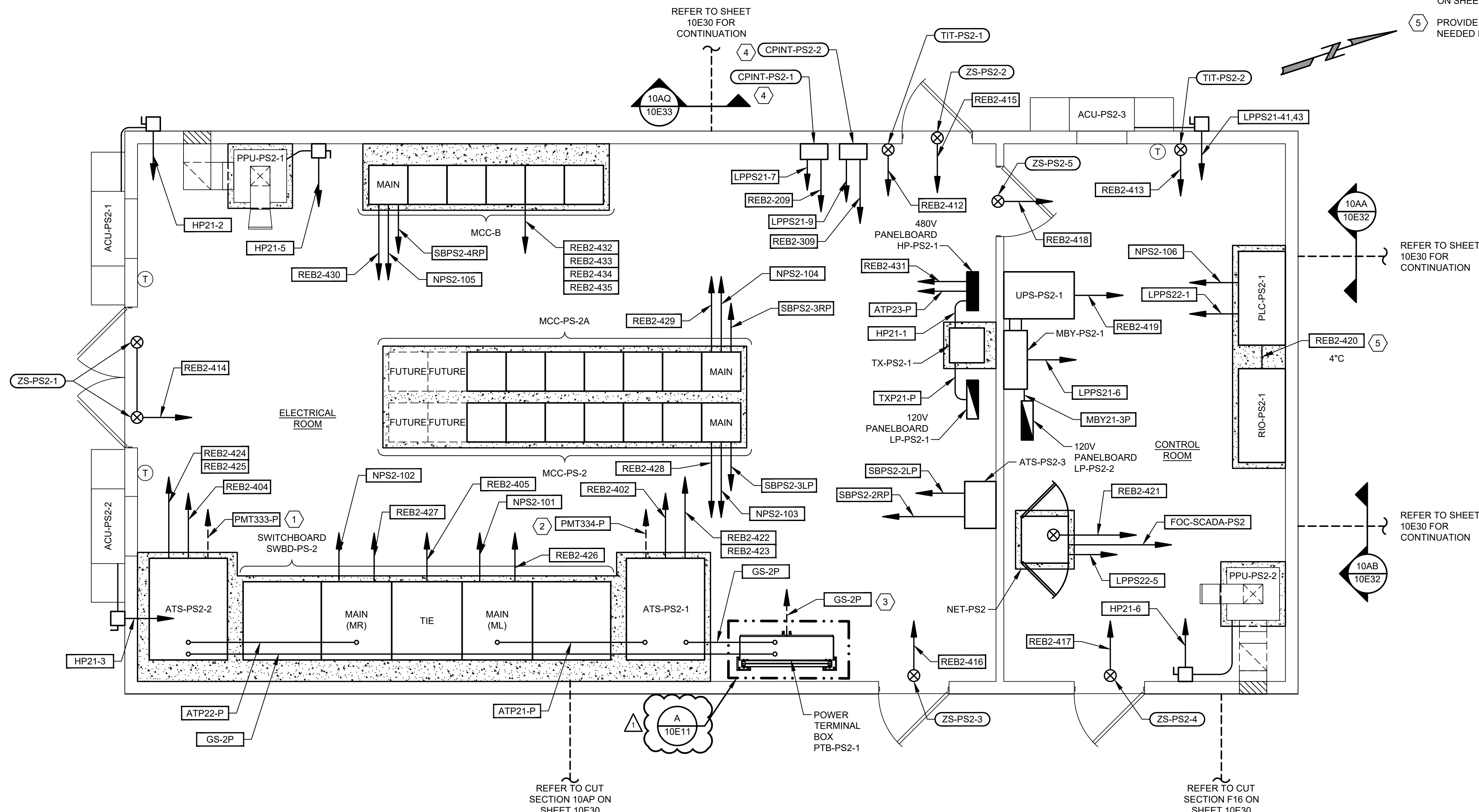
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GENERAL NOTES:

1. REFER TO SHEET 10N23 FOR THE EQUIPMENT TAGS CROSS REFERENCE.

NOTES:

- 1 REFER TO DUCTBANK SECTION 10AA ON SHEET 10E32.
- 2 REFER TO DUCTBANK SECTION 10AB ON SHEET 10E32.
- 3 REFER TO DUCTBANK SECTION 10AQ ON SHEET 10E33.
- 4 REFER TO SKIMMING PUMP INTERLOCK PANEL RISER DIAGRAM ON SHEET 10E26. REFER TO SCHEMATIC 3 ON SHEET 10E64.
- 5 PROVIDE THE NUMBER AND SIZES OF CONDUITS NEEDED IF ANY.



ELECTRICAL BUILDING
EB-PS-2
PLAN
SCALE: 3/8" = 1'-0"
0 1' 2' 5' 8'

CONDUIT TAG	SHEET REFERENCE
HP21-XX	10E39
NPS2-XX	10E59
REB2-XX	10E58, 10E59
SBPS2-XX	10E34
LPPS2X-XX	10E39
ATP2X-XX	10E34

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SAN ANTONIO WATER SYSTEM

REV. NO.	DATE	DRWN	ER	APPENDIX NO. 3	REMARKS
A	08/23/21				

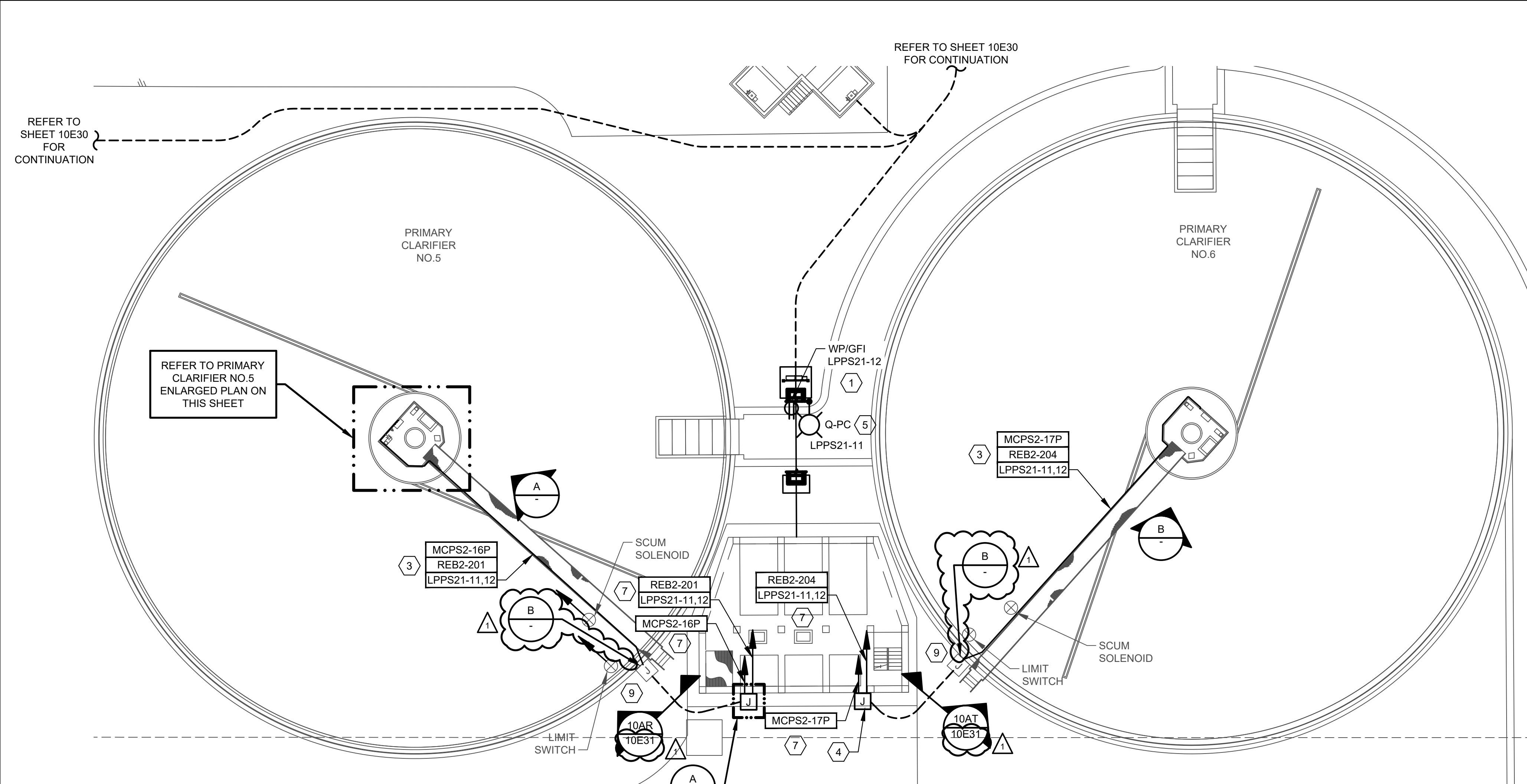
ONE INCH AT FULL SIZE IF NOT
ONE INCH SCALE ACCORDINGLY

SAN ANTONIO WATER SYSTEM
 STEVEN M. CLOUSE WRC
 ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
PRIMARY CLARIFIER 5-8
ELECTRICAL BUILDING EB-PS-2
POWER AND INSTRUMENTATION PLAN

DESIGNED BY: A. SINGH
 DRAWN BY: E. RANGEL
 SHEET CHKD BY: V.K. GUPTA
 APPROVED BY: W. SAKO
 DATE: JULY 2021
 SAWS JOB NO.: 21-6507
 FILE NAME: 1951_10E40

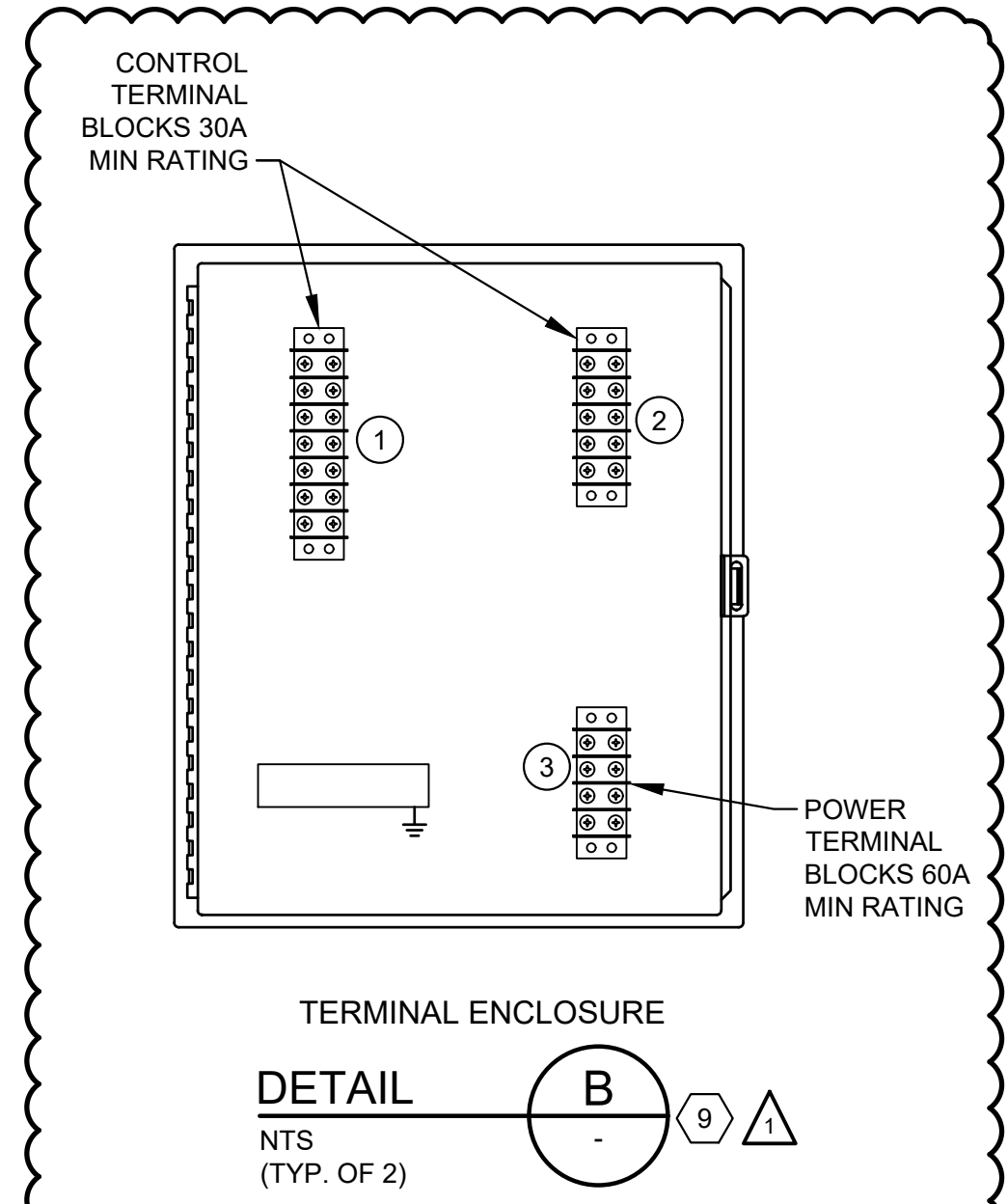
SHEET NO.
10E40
196 OF 328

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- GENERAL NOTES:**
- REFER TO LIGHT FIXTURE SCHEDULE ON SHEET 00E26.
 - CONDUITS SHALL BE SEALED AT CLASSIFICATION BOUNDARIES AND AS REQUIRED BY THE NEC.

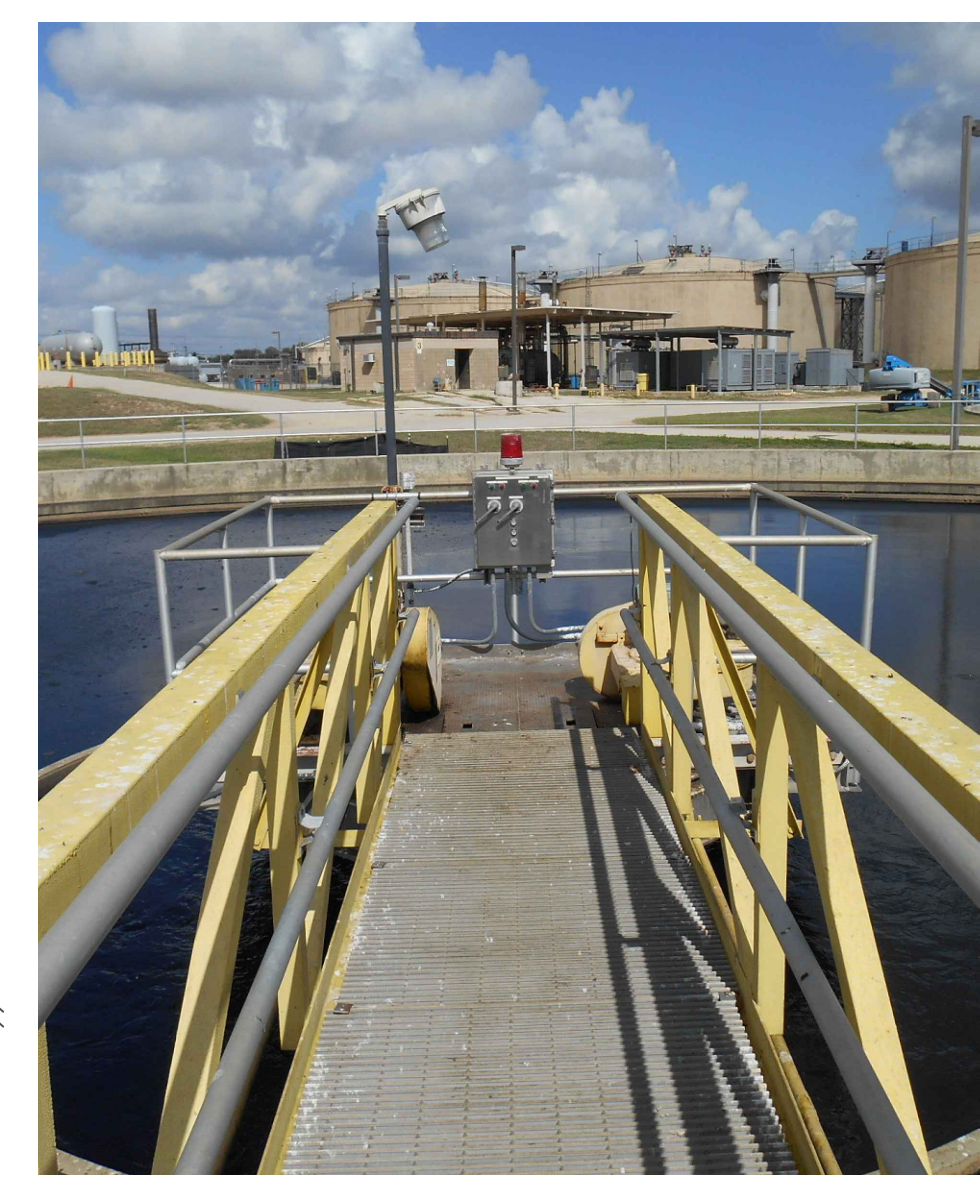
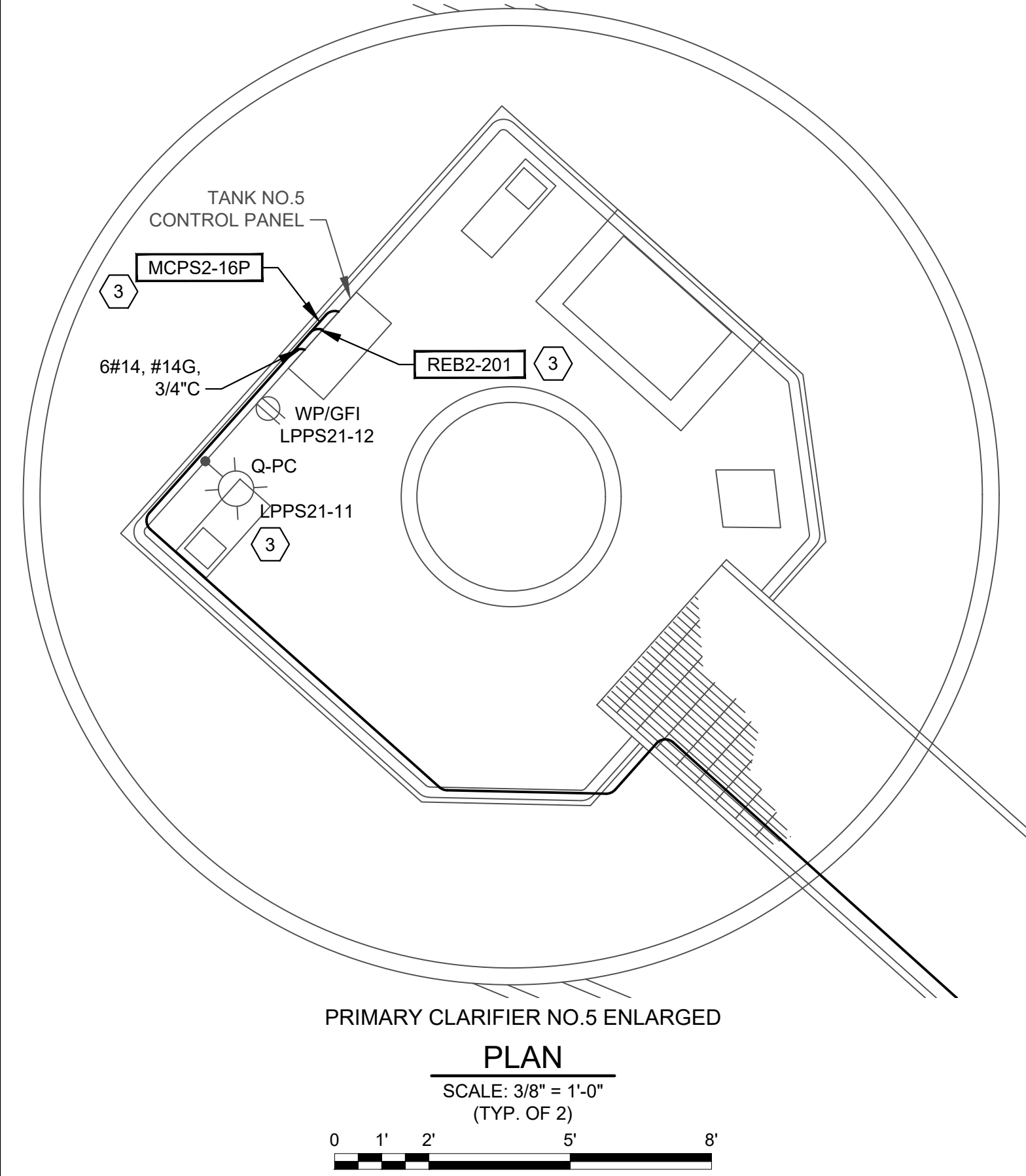
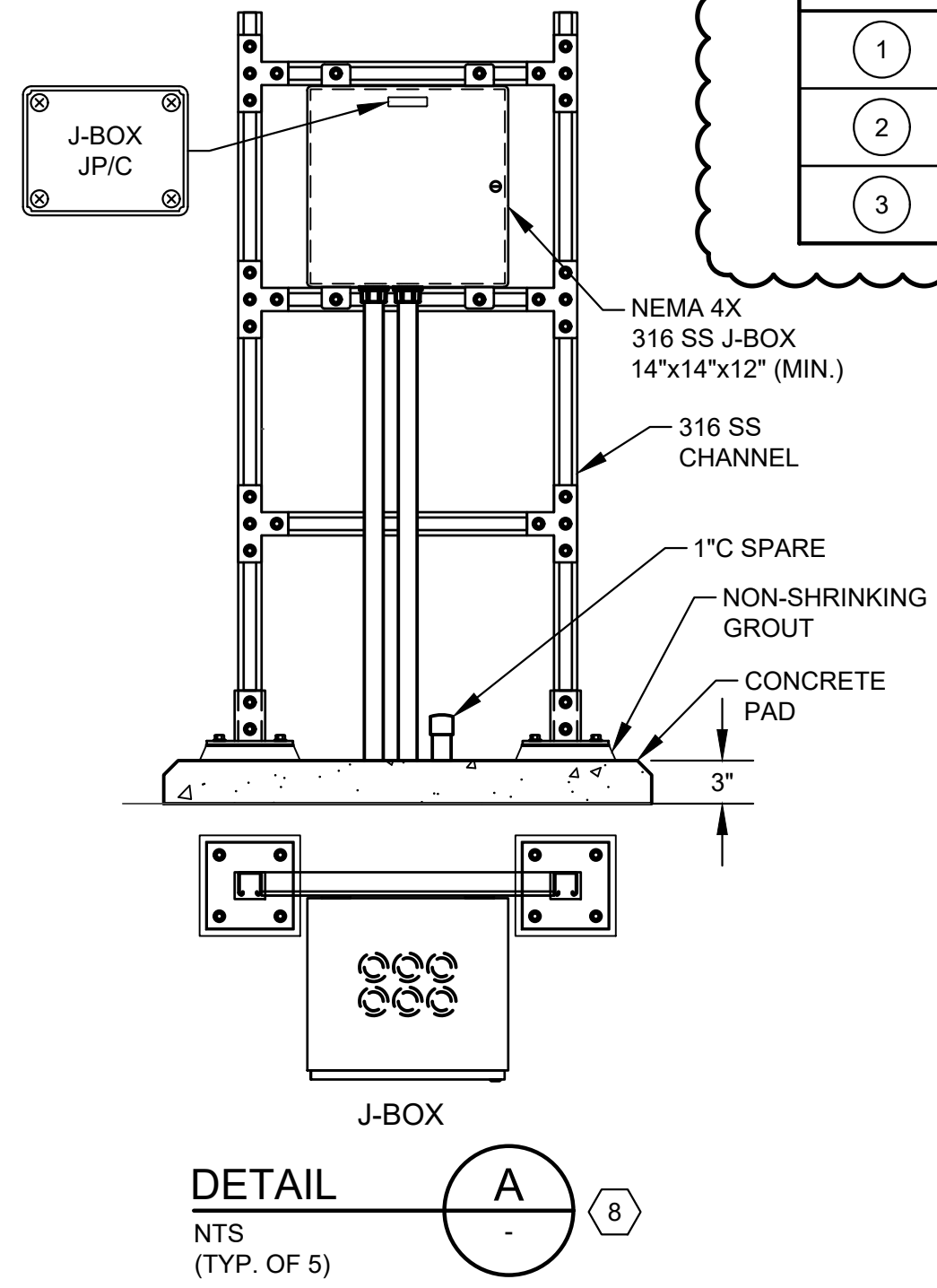
- NOTES:**
- RECEPTACLE SHALL BE MOUNTED 4FT. ABOVE FLOOR (OUTSIDE OF ANY CLASSIFIED AREA).
 - REFER TO SHEET 00E11 FOR THE CLASSIFICATION OF THE AREA.
 - INSTALL NEW WIRES IN EXISTING CONDUIT.
 - WHERE THE J-BOXES ARE LOCATED AT THE PUMP STATION, ALIGN THEM WITH THE CENTER OF THE COLUMN SO THAT THE SPACE BETWEEN THE COLUMNS IS NOT BLOCKED.
 - INSTALL NEW LIGHT FIXTURE.
 - NOTE NOT USED.
 - REFER TO 10E46 FOR CONDUIT ROUTING.
 - THE NUMBER OF CONDUITS AND SPARES WILL VARY FOR DUCTBANK FROM THE DRAIN PUMP STATION (WHERE PRESENT). DETAIL APPLIES TO PS-2 AND PS-2A.
 - COORDINATE MODIFICATION WITH THE CLARIFIER CONTRACTOR. IF CLARIFIER CONTRACTOR HAS ALREADY INSTALLED PULL BOXES, RETURN TERMINAL BOXES TO OWNER AS SPARE PARTS.



CIRCUIT SCHEDULE

TAG NO.	PRIMARY CLARIFIER NO.5	PRIMARY CLARIFIER NO.6
1	REB2-201	REB2-204
2	LPPS21-11,12	LPPS21-11,12
3	MCPS2-16P	MCPS2-17P

CONDUIT TAG	SHEET REFERENCE
MCPS2-XX	10E35
REB2-XX	10E58, 10E59
LPPS2X-XX	10E39



PRIMARY CLARIFIER NO.5 PHOTOGRAPH A



PRIMARY CLARIFIER NO.6 PHOTOGRAPH B

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WILLIAM D. SAKO
PROFESSIONAL ENGINEER
9328
LICENSED ELECTRICAL ENGINEER
STATE OF TEXAS
TOTAL 06/30/21

SAN ANTONIO WATER SYSTEM

SAWS

08/23/21	ER	ADDENDUM NO.3	REMARKS
REV. NO.	DATE	DRWN	REMARKS

ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

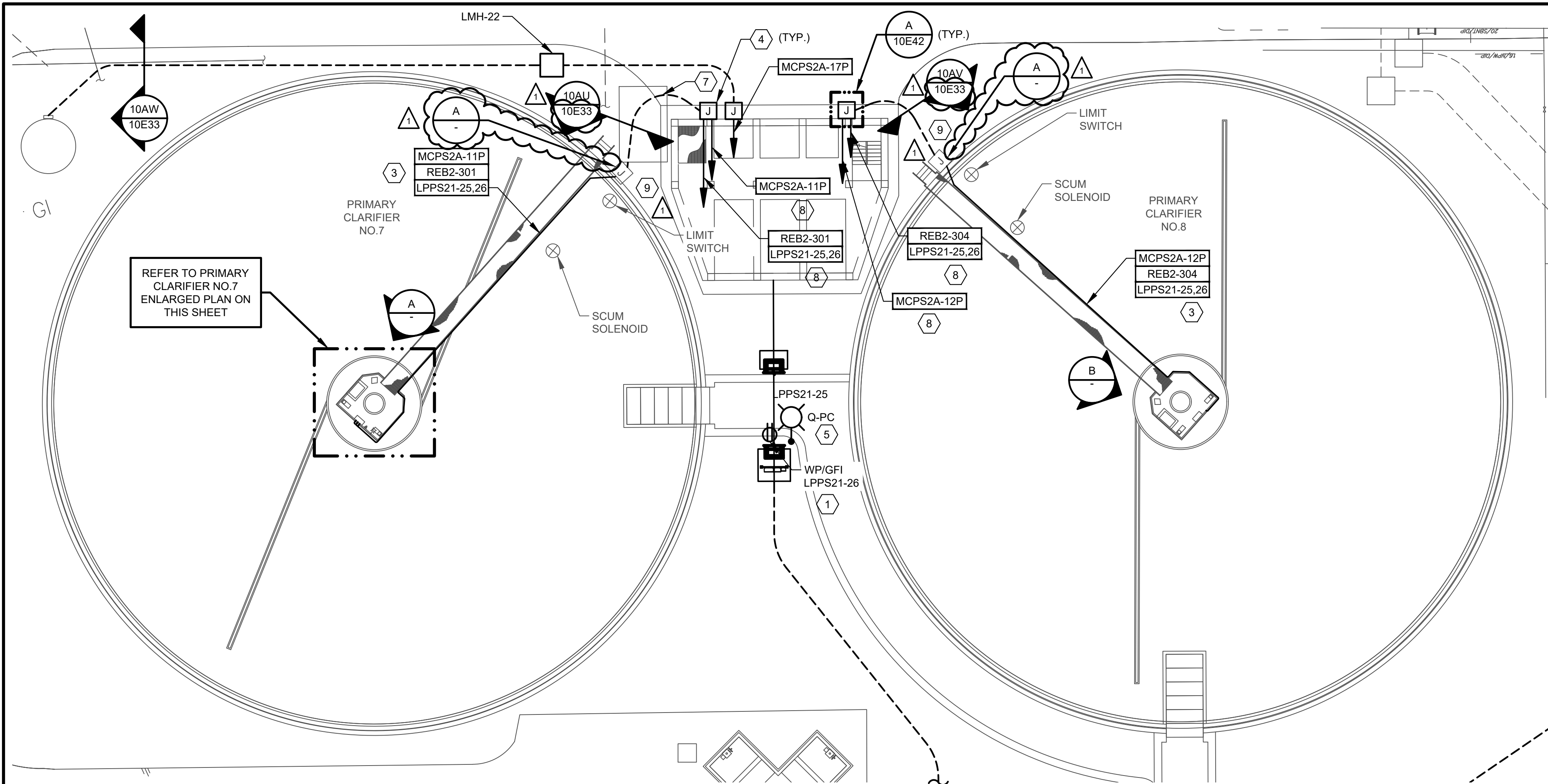
SAN ANTONIO WATER SYSTEM
STEVEN M. CLOUSE WRC
ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A

PRIMARY CLARIFIERS 5-8
CLARIFIER NO.5 AND NO.6
POWER PLAN

DESIGNED BY: A. SINGH
DRAWN BY: E. RANGEL
SHEET CHKD BY: V.K. GUPTA
APPROVED BY: W. SAKO
DATE: JULY 2021
SAWS JOB NO.: 21-6507
FILE NAME: 1951_10E42

SHEET NO.
10E42
198 OF 328

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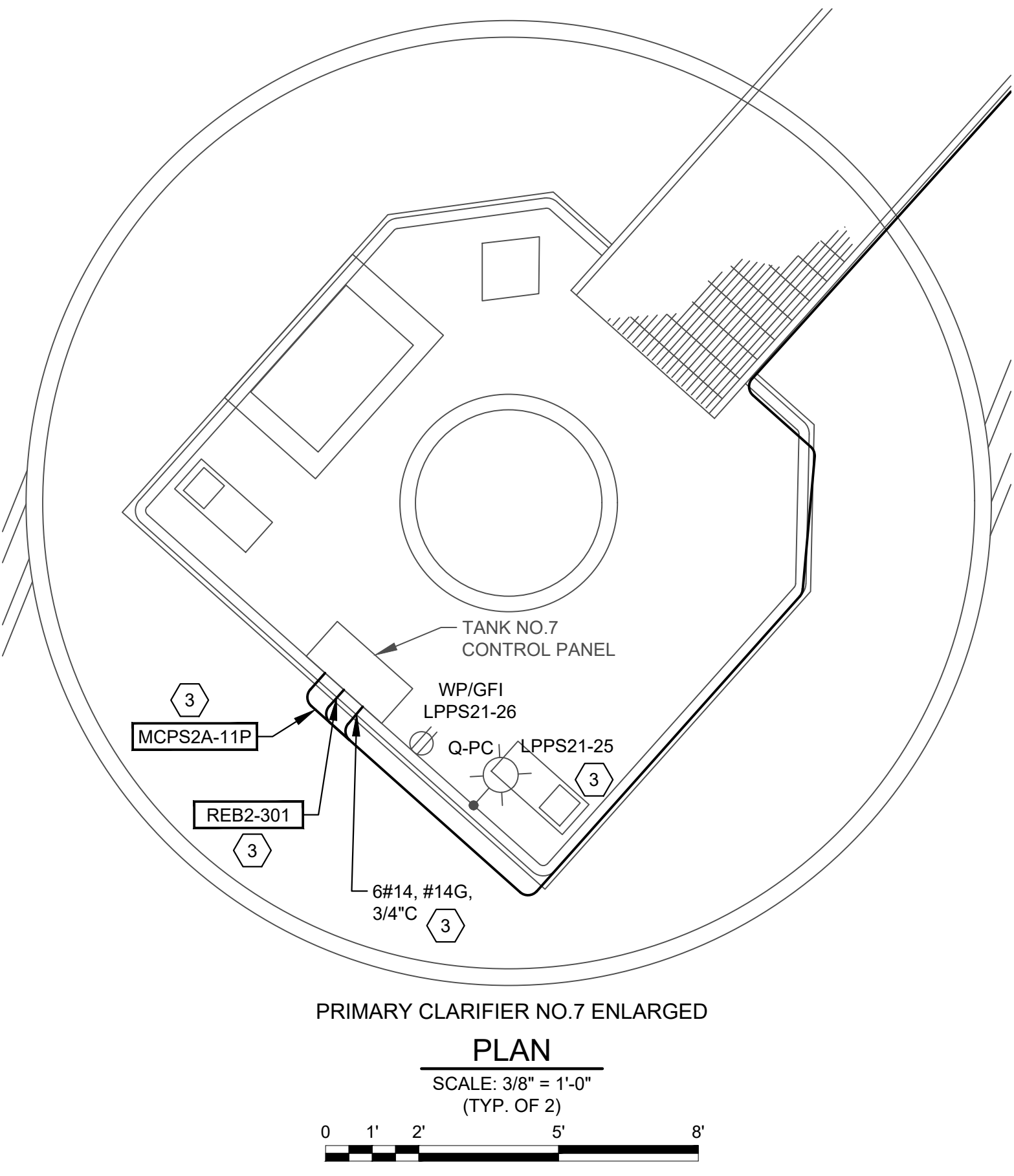
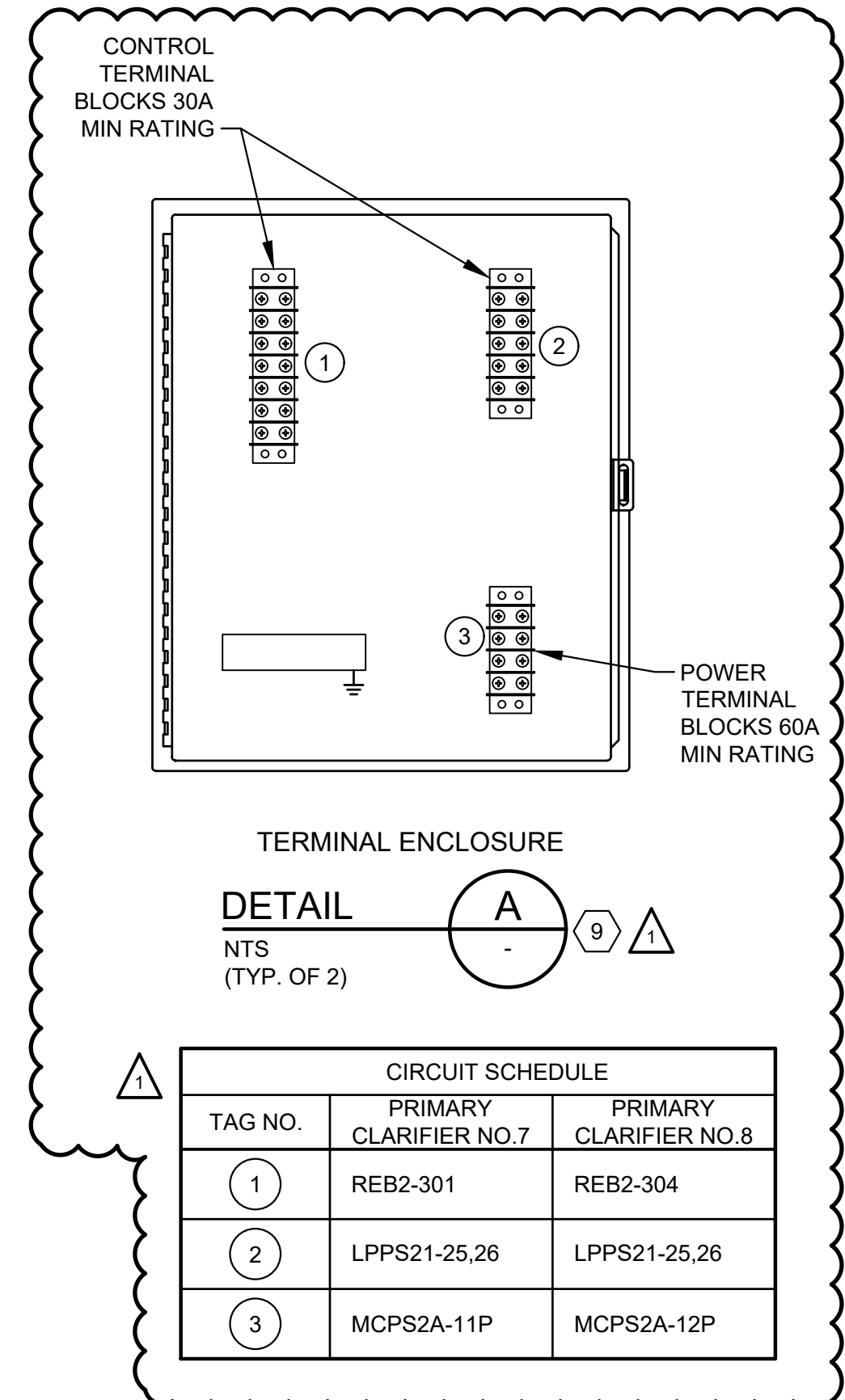
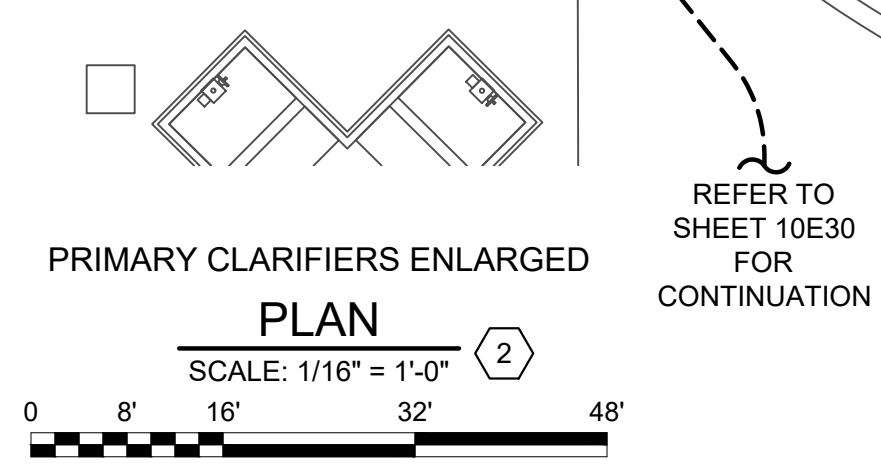
GENERAL NOTES:

1. REFER TO LIGHT FIXTURE SCHEDULE ON SHEET 00E26.
2. CONDUITS SHALL BE SEALED AT CLASSIFICATION BOUNDARIES AND AS REQUIRED BY THE NEC.

NOTES:

- 1 RECEPTACLE SHALL BE MOUNTED 4FT. ABOVE FLOOR (OUTSIDE OF ANY CLASSIFIED AREA).
- 2 REFER TO SHEET 00E11 FOR THE CLASSIFICATION OF THE AREA.
- 3 INSTALL NEW WIRES IN EXISTING CONDUIT.
- 4 WHERE THE J-BOXES ARE LOCATED AT THE PUMP STATION, ALIGN THEM WITH THE CENTER OF THE COLUMN SO THAT THE SPACE BETWEEN THE COLUMNS IS NOT BLOCKED.
- 5 INSTALL NEW LIGHT FIXTURE.
- 6 NOTE NOT USED.
- 7 IF NECESSARY RUN DUCTBANK THROUGH MANHOLE LMH-22 TO GET AROUND EXISTING STRUCTURES.
- 8 REFER TO SHEET 10E51 FOR CONDUIT ROUTING.
- 9 COORDINATE MODIFICATION WITH THE CLARIFIER CONTRACTOR. IF CLARIFIER CONTRACTOR HAS ALREADY INSTALLED PULL BOXES, RETURN TERMINAL BOXES TO OWNER AS SPARE PARTS.

REFER TO PRIMARY CLARIFIER NO.7 ENLARGED PLAN ON THIS SHEET



PRIMARY CLARIFIER NO.7 PHOTOGRAPH A



PRIMARY CLARIFIER NO.8 PHOTOGRAPH B

CONDUIT TAG	SHEET REFERENCE
MCPS2A-XX	10E35
REB2-XX	10E56, 10E59
LPPS21-XX	10E39

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SAN ANTONIO WATER SYSTEM

REV. NO.	DATE	DRWN	ER	ADDITIONAL NO.3	REMARKS
1	08/23/21				

ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

SAN ANTONIO WATER SYSTEM
STEVEN M. CLOUSE WRC
ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
ELECTRICAL
PRIMARY CLARIFIERS 5-8
CLARIFIER NO.7 AND NO.8
POWER PLAN

DESIGNED BY: A. SINGH
DRAWN BY: E. RANGEL
SHEET CHKD BY: V.K. GUPTA
APPROVED BY: W. SAKO
DATE: JULY 2021
SAWS JOB NO.: 21-6507
FILE NAME: 1951_10E48

SHEET NO.
10E48
204 OF 328

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INTERFACE DIAGRAM 1			
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING 3	RIO
PRIMARY CLARIFIERS 5, 6, 7, AND 8 AREA			
SGP-5	PST 5 SLUICE GATE (B099)	MOV C3 REB2-101	
SGP-6	PST 6 SLUICE GATE (B100)	MOV C3 REB2-102	
SGP-7	PST 7 SLUICE GATE (B101)	MOV C3 REB2-103	
SGP-8	PST 8 SLUICE GATE (B102)	MOV C3 REB2-104	
PUMP STATION PS-2			
CP-SC-5	PRIMARY SLUDGE COLLECTOR NO.5	LCP C3 REB2-201	
B065	SKIMMING MIXER NO.3	MCC-PS-2 C4 REB2-202	
LIT-B037	SKIMMING TANK 3 LEVEL	LIT A1 REB2-203	
CP-SC-6	PRIMARY SLUDGE COLLECTOR NO.6	LCP C3 REB2-204	
B091	MACERATOR MAC-5	C8 REB2-205	
B095	SKIMMING PUMP SP-5	C6 REB2-206	
B092	MACERATOR MAC-6	C8 REB2-207	
B096	SKIMMING PUMP SP-6	C6 REB2-208	
-	SKIMMINGS SEQUENCE RESET AT PS-2	PB C1 REB2-208A	
CPINT-PS2-1	PS-2 SKIMMING PUMP INTERLOCK PANEL	CP C3 REB2-209	
B103	PRIMARY SLUDGE PUMP NO.7	C5 REB2-210	
B104	PRIMARY SLUDGE PUMP NO.8	C5 REB2-211	
B105	PRIMARY SLUDGE PUMP NO.9	C5 REB2-212	
-	DEWATERING PUMP NO.3	C2 REB2-213	
EF-PS2-1	EXHAUST FAN STATUS	C2 REB2-213A	
FIT-PSF-03	PS2 SLUDGE FLOW FIT	FIT A1 REB2-214	
SPSCP-3	SUMP PUMP	LCP C3 REB2-215	

PLC-PS2-1

INTERFACE DIAGRAM 1			
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING 3	RIO
PUMP STATION PS-2A			
CP-SC-7	PRIMARY SLUDGE COLLECTOR NO.7	LCP C3 REB2-301	
B066	SKIMMING MIXER NO.4	MCC-PS-2A C4 REB2-302	
LIT-B038	SKIMMING TANK 4 LEVEL	LIT A1 REB2-303	
B042	PRIMARY SLUDGE COLLECTOR NO.8	LCP C3 REB2-304	
B093	MACERATOR MAC-7	C8 REB2-305	
B097	SKIMMING PUMP SP-7	C6 REB2-306	
B094	MACERATOR MAC-8	C8 REB2-307	
B093	SKIMMING PUMP SP-8	C6 REB2-308	
-	SKIMMINGS SEQUENCE RESET AT PS-2A	PB C1 REB2-308A	
CPINT-PS2-2	PS-2A SKIMMING PUMP INTERLOCK PANEL	CP C3 REB2-309	
PUMP STATION PS-2A			
B106	PRIMARY SLUDGE PUMP NO.10	C5 REB2-310	
B107	PRIMARY SLUDGE PUMP NO.11	C5 REB2-311	
B108	PRIMARY SLUDGE PUMP NO.12	C5 REB2-312	
-	DEWATERING PUMP NO.4	C2 REB2-313	
EF-PS2A-1	EXHAUST FAN STATUS	C2 REB2-313A	
FIT-PSF-04	PS2A SLUDGE FLOW FIT	FIT A1 REB2-314	
SPSCP-4	SUMP PUMP	LCP C3 REB2-315	

RIO-PS2-1

GENERAL NOTES:
1. REFER TO SHEET 10N23 FOR THE EQUIPMENT TAGS CROSS REFERENCE.

- NOTES:**
- 1 CONDUIT SIZES SHOWN ARE MINIMUM. COMBINATION OF SIMILAR CIRCUIT TYPES PERMISSIBLE. ADJUST CONDUIT SIZING ACCORDINGLY AND REFLECT FINAL CONFIGURATION ON AS-BUILT DOCUMENTATION.
 - 2 TERMINATE ALL WIRING ON TERMINAL BLOCKS INSIDE PANEL. NO NON-TERMINATED WIRES ALLOWED.
 - 3 INSTALL ALL WIRING WHETHER SHOWN ON FLOOR PLANS OR NOT.
 - 4 SUBSTITUTE CAT-6 CABLE FOR CAT-5E WHERE REQUIRED BY CONTRACT DOCUMENTS.

CONTROL & INSTRUMENTATION WIRE/CONDUIT SCHEDULE 1 4			
C#	SIZE	TEMP	DESCRIPTION
C1	2#14, #14G	3/4°C	A1 1-1Pr#16 TSP, #14G, 3/4°C
C2	4#14, #14G	3/4°C	A2 2-1Pr#16 TSP, #14G, 3/4°C
C3	6#14, #14G	1°C	A3 3-1Pr#16 TSP, #14G, 3/4°C
C4	8#14, #14G	1°C	A4 4-1Pr#16 TSP, #14G, 1°C
C5	10#14, #14G	1°C	A5 5-1Pr#16 TSP, #14G, 1°C
C6	12#14, #14G	1-1/4°C	A6 6-1Pr#16 TSP, #14G, 1-1/2°C
C7	14#14, #14G	1-1/4°C	A7 7-1Pr#16 TSP, #14G, 2°C
C8	16#14, #14G	1-1/4°C	A8 8-1Pr#16 TSP, #14G, 2°C
C9	18#14, #14G	1-1/4°C	A9 9-1Pr#16 TSP, #14G, 2°C
C10	20#14, #14G	1-1/4°C	A10 10-1Pr#16 TSP, #14G, 2°C
C11	22#14, #14G	1-1/2°C	A11 11-1Pr#16 TSP, #14G, 2°C
C12	24#14, #14G	1-1/2°C	M1 1-CAT-5e, #14G, 1°C
C14	28#14, #14G	1-1/2°C	M2 2-CAT-5e, #14G, 1-1/2°C
C30	60#14, #14G	3-1/2°C	M3 3-CAT-5e, #14G, 2°C
C37	74#14, #14G	4°C	M4 4-CAT-5e, #14G, 2°C

CONTROL & INSTRUMENTATION WIRE/CONDUIT TABLE NOTES:

1) NOT ALL POSSIBLE COMBINATIONS ARE LISTED. INCLUDE A SEPARATE GROUND WIRE IN EACH CONDUIT RUN.

REPRESENTS PAIR OF WIRE
EXAMPLE C10 = 20#14 WIRES
EXAMPLE C20 = 40#14 WIRES

C#
C = CONTROL

2) ANALOG CABLES ARE INTENDED TO BE INDIVIDUALLY INSULATED TWISTED SHIELDED PAIRS UNLESS OTHERWISE NOTED ON THE DRAWING.

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SAN ANTONIO WATER SYSTEM

ADDENDUM NO.3	REMARKS
08/23/21	ER
DATE	DRWN
REV. NO.	

ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

SAN ANTONIO WATER SYSTEM
STEVEN M. CLOUSE WRC
ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
ELECTRICAL
PRIMARY CLARIFIERS 5-8
INTERFACE DIAGRAM - 1

DESIGNED BY: A. SINGH
DRAWN BY: E. RANGEL
SHEET CHKD BY: V.K. GUPTA
APPROVED BY: W. SAKO
DATE: JULY 2021
SAWS JOB NO.: 21-6507
FILE NAME: 1951_10E58

SHEET NO.
10E58
214 OF 328

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INTERFACE DIAGRAM 1			
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING 3	RIO 2
ELECTRICAL BUILDING EB-PS-2			
PMT-333	TRANSFORMER	XFMR C3 REB2-401	PLC-PS2-1
ATS-PS2-1	AUTOMATIC TRANSFER SWITCH	ATS C2 REB2-402	
PMT-334	TRANSFORMER	XFMR C3 REB2-403	
ATS-PS2-2	AUTOMATIC TRANSFER SWITCH	ATS C2 REB2-404	
SWBD-PS-2	SWITCHBOARD ML BREAKER	SWBD-PS-2 C3 C15 REB2-405	
	SWITCHBOARD TIE BREAKER		
	SWITCHBOARD MR BREAKER		
	SWITCHBOARD MCC-PS2 BREAKER		
	SWITCHBOARD MCC-PS2A BREAKER		
TIT-PS2-1	ELECTRICAL ROOM TEMPERATURE	TIT A1 REB2-412	
TIT-PS2-2	CONTROL ROOM TEMPERATURE	TIT A1 REB2-413	
ZS-PS2-1	ELECTRICAL ROOM INTRUSION	ZS C1 REB2-414	
ZS-PS2-2	ELECTRICAL ROOM INTRUSION	ZS C1 REB2-415	
ZS-PS2-3	ELECTRICAL ROOM INTRUSION	ZS C1 REB2-416	
ZS-PS2-4	CONTROL ROOM INTRUSION	ZS C1 REB2-417	
ZS-PS2-5	CONTROL ROOM INTRUSION	ZS C1 REB2-418	
UPS-PS2-1	UPS ALARM / STATUS	UPS C2 REB2-419	
RIO-PS2-1	PS2 RIO1 INTRUSION / TEMP	PNL C2 REB2-420	
NET-PS2	NETWORK PANEL INTRUSION	PNL C1 REB2-421	
SPD-EB2-1	SPD	ATS-PS2-1 C1 REB2-422	
SPD-EB2-2	SPD	ATS-PS2-1 C1 REB2-423	
SPD-EB2-3	SPD	ATS-PS2-2 C1 REB2-424	
SPD-EB2-4	SPD	ATS-PS2-2 C1 REB2-425	
SPD-EB2-5	SPD	SWBD-PS-2 C1 REB2-426	
SPD-EB2-6	SPD	SWBD-PS-2 C1 REB2-427	
SPD-EB2-7	SPD	MCC-PS-2 C1 REB2-428	

INTERFACE DIAGRAM 1			
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING 3	RIO 2
SPD-EB2-8	SPD	MCC-PS-2A C1 REB2-429	PLC-PS2-1
SPD-EB2-9	SPD	MCC-B C1 REB2-430	
SPD-EB2-10	SPD	HP-PS2-1 C1 REB2-431	
OTHER			
P101	TRANSFER PUMP	C9 REB2-432	RIO-PS2-1
A054	PRIMARY CLARIFIER EC BLOWER NO.1	MCC-B C6 REB2-433	
A056	PRIMARY CLARIFIER EC BLOWER NO.2	MCC-B C6 REB2-434	
A058	PRIMARY CLARIFIER EC BLOWER NO.3	MCC-B C6 REB2-435	
PIT-101	DISCHARGE PRESSURE	PIT A1 REB2-436	
ELECTRICAL BUILDING EB-PS-2			
PM-ML-PS2	SWITCHBOARD POWER METER ML	SWBD-PS-2 M1 NPS2-101	NETWORK PANEL NET-PS2
PM-MR-PS2	SWITCHBOARD POWER METER MR	SWBD-PS-2 M1 NPS2-102	
PM-MCC-PS2	MCC-PS2 POWER METER	MCC-PS-2 M1 NPS2-103	
PM-MCC-PS2A	MCC-PS2A POWER METER	MCC-PS-2A M1 NPS2-104	
PM-MCC-B	MCC-B POWER METER	MCC-B M1 NPS2-105	
PLC-PS2-1	PLC	PNL NPS2-106	
FOPP-US5	FIBER PATCH PANEL (PRIMARY CONTROL BUILDING NO.3) FOPP-US5	PNL FOC-PS2-BLDG3 5	
-	SCADA/IT BUILDING	PNL FOC-SCADA-EBPS2 5	

GENERAL NOTES:

- REFER TO SHEET 10N23 FOR THE EQUIPMENT TAGS CROSS REFERENCE.

NOTES:

- CONDUIT SIZES SHOWN ARE MINIMUM. COMBINATION OF SIMILAR CIRCUIT TYPES PERMISSIBLE. ADJUST CONDUIT SIZING ACCORDINGLY AND REFLECT FINAL CONFIGURATION ON AS-BUILT DOCUMENTATION.
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- INSTALL ALL WIRING WHETHER SHOWN ON FLOOR PLANS OR NOT.
- SUBSTITUTE CAT-6 CABLE FOR CAT-5E WHERE REQUIRED BY CONTRACT DOCUMENTS.
- INSTALL FIBER OPTIC CABLE IN 2" C.

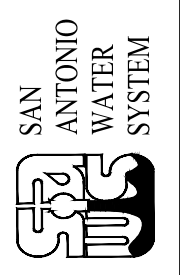
CONTROL & INSTRUMENTATION WIRE/CONDUIT SCHEDULE 1 4			
C1	2#14, #14G 3/4"C	A1	1-1Pr#16 TSP, #14G, 3/4"C
C2	4#14, #14G 3/4"C	A2	2-1Pr#16 TSP, #14G, 3/4"C
C3	6#14, #14G 1"C	A3	3-1Pr#16 TSP, #14G, 3/4"C
C4	8#14, #14G 1"C	A4	4-1Pr#16 TSP, #14G, 1"C
C5	10#14, #14G 1"C	A5	5-1Pr#16 TSP, #14G, 1"C
C6	12#14, #14G 1-1/4"C	A6	6-1Pr#16 TSP, #14G, 1-1/2"C
C7	14#14, #14G 1-1/4"C	A7	7-1Pr#16 TSP, #14G, 2"C
C8	16#14, #14G 1-1/4"C	A8	8-1Pr#16 TSP, #14G, 2"C
C9	18#14, #14G 1-1/4"C	A9	9-1Pr#16 TSP, #14G, 2"C
C10	20#14, #14G 1-1/4"C	A10	10-1Pr#16 TSP, #14G, 2"C
C11	22#14, #14G 1-1/2"C	A11	11-1Pr#16 TSP, #14G, 2"C
C12	24#14, #14G 1-1/2"C	M1	1-CAT-5e, #14G, 1"C
C14	28#14, #14G 1-1/2"C	M2	2-CAT-5e, #14G, 1-1/2"C
C30	60#14, #14G 3-1/2"C	M3	3-CAT-5e, #14G, 2"C
C37	74#14, #14G 4"C	M4	4-CAT-5e, #14G, 2"C

CONTROL & INSTRUMENTATION WIRE/CONDUIT TABLE NOTES:

- NOT ALL POSSIBLE COMBINATIONS ARE LISTED. INCLUDE A SEPARATE GROUND WIRE IN EACH CONDUIT RUN.

REPRESENTS PAIR OF WIRE
 EXAMPLE C10 = 20#14 WIRES
 EXAMPLE C20 = 40#14 WIRES
 C# = CONTROL

- ANALOG CABLES ARE INTENDED TO BE INDIVIDUALLY INSULATED TWISTED SHIELDED PAIRS UNLESS OTHERWISE NOTED ON THE DRAWING.



ADDENDUM NO. 3	REMARKS
08/23/21	ER
DATE	DRWN
REV. NO.	

SAN ANTONIO WATER SYSTEM
 STEVEN M. CLOUSE WRC
 ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
 PRIMARY CLARIFIERS 5-8
 INTERFACE DIAGRAM - II

DESIGNED BY:	A. SINGH
DRAWN BY:	E. RANGEL
SHEET CHKD BY:	V.K. GUPTA
APPROVED BY:	W. SAKO
DATE:	JULY 2021
SAWS JOB NO.:	21-6507
FILE NAME:	1951_10E59

SHEET NO.
10E59
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INTERFACE DIAGRAM				
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING	PLC	
BLEND TANK NO. 1				
617	RECIRCULATION PUMP NO. 1	C5 CI5 PL2-101	PROPOSED PLC-THK1	
618	RECIRCULATION PUMP NO. 2	C5		
619	RECIRCULATION PUMP NO. 3	C5		
STRAIN PRESS				
633	SLUDGE TRANSFER PUMP NO. 4	C5 CI5 PL2-102		
634	SLUDGE TRANSFER PUMP NO. 5	C5		
635	SLUDGE TRANSFER PUMP NO. 6	C5		
STRAIN PRESS - 1				
640	SUCTION VALVE	VS C5 PL2-110		
641	DISCHARGE VALVE	VS C5 PL2-111		
STRAIN PRESS - 2				
642	SUCTION VALVE	VS C5 PL2-112		
643	DISCHARGE VALVE	VS C5 PL2-113		
STRAIN PRESS - 3				
644	SUCTION VALVE	VS C5 PL2-114		
645	DISCHARGE VALVE	VS C5 PL2-115		
STRAIN PRESS - 4				
646	SUCTION VALVE	VS C5 PL2-116		
647	DISCHARGE VALVE	VS C5 PL2-117		
660	SUCTION PRESSURE	PIT A1 PL2-118		
661	DISCHARGE PRESSURE	PIT A1 PL2-119		
660	STRAIN PRESS DISCHARGE FLOW	FIT A1 PL2-120		
SLUDGE BLEND TANK - 1				
612	TANK LEVEL	LIT C5 PL2-125		
613	CLAUSE PRIMARY SLUDGE FLOW	FIT C5 PL2-126		
614	CLAUSE SKIMMING FLOW	FIT A1 PL2-127		
615	LEON SLUDGE FLOW	FIT A1 PL2-128		
616	SLUDGE TANK LOW LEVEL	LSL C2 PL2-129		

INTERFACE DIAGRAM				
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING	PLC	
SLUDGE BYPASS PUMP				
625	BYPASS PUMP	VFD C3 PL2-150	PROPOSED PLC-THK1	
		A2 PL2-151		
626	SLUDGE BYPASS FLOW	FIT A1 PL2-152		
LEON CREEK WAS STATION				
670	FLOW NO.1	FIT A1 PL2-160		
671	VALVE NO.1	VO C5 PL2-161		
672	FLOW NO.2	FIT A1 PL2-162		
673	VALVE NO.2	VO C5 PL2-163		
674	VALVE NO.2 / 3	VO C5 PL2-164		

LEGEND:

REFER TO EQUIPMENT TAG ON SHEET 30E06

GENERAL NOTES:

- CONDUIT SIZES SHOWN ARE MINIMUM. COMBINATION OF SIMILAR CIRCUIT TYPES PERMISSIBLE. ADJUST CONDUIT SIZING ACCORDINGLY AND REFLECT FINAL CONFIGURATION ON AS-BUILT DOCUMENTATION.
- TERMINATE ALL WIRING ON TERMINAL BLOCKS INSIDE PANEL. NO NON-TERMINATED WIRES ALLOWED.
- INSTALL ALL WIRING WHETHER SHOWN ON FLOOR PLANS OR NOT.

CONTROL & INSTRUMENTATION WIRE/CONDUIT SCHEDULE			
C1	2#14, #14G 3/4"C	A1	1-1Pr#16 TSP, #14G, 3/4"C
C2	4#14, #14G 3/4"C	A2	2-1Pr#16 TSP, #14G, 3/4"C
C3	6#14, #14G 1"C	A3	3-1Pr#16 TSP, #14G, 3/4"C
C4	8#14, #14G 1"C	A4	4-1Pr#16 TSP, #14G, 1"C
C5	10#14, #14G 1"C	A5	5-1Pr#16 TSP, #14G, 1"C
C6	12#14, #14G 1-1/4"C	A6	6-1Pr#16 TSP, #14G, 1-1/2"C
C7	14#14, #14G 1-1/4"C	A7	7-1Pr#16 TSP, #14G, 2"C
C8	16#14, #14G 1-1/4"C	A8	8-1Pr#16 TSP, #14G, 2"C
C9	18#14, #14G 1-1/4"C	A9	9-1Pr#16 TSP, #14G, 2"C
C10	20#14, #14G 1-1/4"C	A10	10-1Pr#16 TSP, #14G, 2"C
C11	22#14, #14G 1-1/2"C	A11	11-1Pr#16 TSP, #14G, 2"C
C12	24#14, #14G 1-1/2"C	M1	1-CAT-6e, #14G, 1"C
C14	28#14, #14G 1-1/2"C	M2	2-CAT-6e, #14G, 1"C
C30	60#14, #14G 3-1/2"C	M3	3-CAT-6e, #14G, 2"C
C37	74#14, #14G 4"C	M4	4-CAT-6e, #14G, 2"C

CONTROL & INSTRUMENTATION WIRE/CONDUIT TABLE NOTES:

1) NOT ALL POSSIBLE COMBINATIONS ARE LISTED. INCLUDE A SEPARATE GROUND WIRE IN EACH CONDUIT RUN.

REPRESENTS PAIR OF WIRE
 EXAMPLE C10 = 20#14 WIRES
 EXAMPLE C20 = 40#14 WIRES
 C# - CONTROL

2) ANALOG CABLES ARE INTENDED TO BE INDIVIDUALLY INSULATED TWISTED SHIELDED PAIRS UNLESS OTHERWISE NOTED ON THE DRAWING.

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SAN ANTONIO WATER SYSTEM

08/23/21	ER	ADDENDUM NO.3	REMARKS
REV. NO.	DATE	DRWN	REMARKS

SAN ANTONIO WATER SYSTEM
 STEVEN M. CLOUSE WRC
 ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
 SOLIDS HANDLING/CENTRIFUGES
 PLC - INTERFACE DIAGRAM

DESIGNED BY: L. PRICE
 DRAWN BY: M. HEUER
 SHEET CHKD BY: V.K. GUPTA
 APPROVED BY: W. SAKO
 DATE: JULY 2021
 SAWS JOB NO.: 21-6507
 FILE NAME: 1951_30E07

SHEET NO.
30E07
 259 OF 328

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INTERFACE DIAGRAM			
LOOP NO.	DESCRIPTION	FIELD WIRING	PLC-X
GRAVITY BELT AREA			
695	GBT-1 CONTROL PANEL	CP M1 FOC-GBT1	FIBER PATCH PANEL
696	GBT-2 CONTROL PANEL	CP M1 FOC-GBT2	
697	GBT-3 CONTROL PANEL	CP M1 FOC-GBT3	
698	GBT-4 CONTROL PANEL	CP M1 FOC-GBT4	
BLEND TANK			
680	BLEND TANK LEVEL	LIT A1 PL-201	PROPOSED PLC-THK
681	10" DR EAS FLOW TO BLEND TANK	FIT A1 PL-202	
682	6" DR EAS FLOW TO BLEND TANK	FIT A1 PL-203	
683	6" DR PRIMARY FLOW TO BLEND TANK	FIT A1 PL-204	
684	BLEND TANK HIGH LEVEL	LSH C2 PL-206	
684	BLEND TANK LOW LEVEL	LSL C2 PL-207	
688	RECIRCULATION PUMP RCP-1	MCC C6 PL-208	
689	RECIRCULATION PUMP RCP-2	MCC C6 PL-209	
715	POLYMER DAY TANK LEVEL	LIT A1 PL-214	
EXISTING BULK POLYMER			
710	TANK-1 LEVEL	LIT A1 A2 PL-225	
711	TANK-2 LEVEL	LIT A1	
712	TANK-3 LEVEL	LIT A1 A2 PL-226	
713	TANK-4 LEVEL	LIT A1	
SUPNATANT PUMP STATION			
1	ANALOG J-BOX	JA PL-220	
1	DIGITAL J-BOX	JC PL-221	

INTERFACE DIAGRAM			
LOOP NO.	DESCRIPTION	FIELD WIRING	PLC-X
GRAVITY BELT AREA			
690	GBT1 FEED PUMP NO.1	C9 PL1-230	PROPOSED PLC-THK
		A2 PL1-231	
		M1 2 PL1-232	
		CP C9 PL1-233	
691	GBT2 FEED PUMP NO.2	A2 PL1-234	
		M1 2 PL1-235	
		CP C9 PL1-240	
692	GBT3 FEED PUMP NO.3	A2 PL1-241	
		M1 2 PL1-242	
		CP C9 PL1-243	
693	GBT4 FEED PUMP NO.4	A2 PL1-244	
		M1 2 PL1-245	

LEGEND:

REFER TO EQUIPMENT TAG ON SHEET 30E06

NOTES:

- 1 REFER TO SHEET 30E15 FOR MORE INFORMATION.
- 2 CONNECT TO SWITCH IN POLYMER BUILDING CONTROL ROOM.

GENERAL NOTES:

1. CONDUIT SIZES SHOWN ARE MINIMUM. COMBINATION OF SIMILAR CIRCUIT TYPES PERMISSIBLE. ADJUST CONDUIT SIZING ACCORDINGLY AND REFLECT FINAL CONFIGURATION ON AS-BUILT DOCUMENTATION.
2. TERMINATE ALL WIRING ON TERMINAL BLOCKS INSIDE PANEL. NO NON-TERMINATED WIRES ALLOWED.
3. INSTALL ALL WIRING WHETHER SHOWN ON FLOOR PLANS OR NOT.

CONTROL & INSTRUMENTATION WIRE/CONDUIT SCHEDULE			
C1	2#14, #14G 3/4"C	A1	1-1Pr#16 TSP, #14G, 3/4"C
C2	4#14, #14G 3/4"C	A2	2-1Pr#16 TSP, #14G, 3/4"C
C3	6#14, #14G 1"C	A3	3-1Pr#16 TSP, #14G, 3/4"C
C4	8#14, #14G 1"C	A4	4-1Pr#16 TSP, #14G, 1"C
C5	10#14, #14G 1"C	A5	5-1Pr#16 TSP, #14G, 1"C
C6	12#14, #14G 1-1/4"C	A6	6-1Pr#16 TSP, #14G, 1-1/2"C
C7	14#14, #14G 1-1/4"C	A7	7-1Pr#16 TSP, #14G, 2"C
C8	16#14, #14G 1-1/4"C	A8	8-1Pr#16 TSP, #14G, 2"C
C9	18#14, #14G 1-1/4"C	A9	9-1Pr#16 TSP, #14G, 2"C
C10	20#14, #14G 1-1/4"C	A10	10-1Pr#16 TSP, #14G, 2"C
C11	22#14, #14G 1-1/2"C	A11	11-1Pr#16 TSP, #14G, 2"C
C12	24#14, #14G 1-1/2"C	M1	1-CAT-6e, #14G, 1"C
C14	28#14, #14G 1-1/2"C	M2	2-CAT-6e, #14G, 1"C
C30	60#14, #14G 3-1/2"C	M3	3-CAT-6e, #14G, 2"C
C37	74#14, #14G 4"C	M4	4-CAT-6e, #14G, 2"C

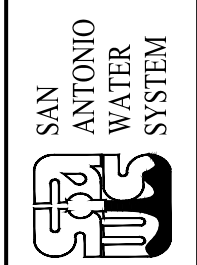
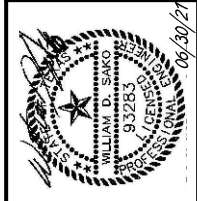
CONTROL & INSTRUMENTATION WIRE/CONDUIT TABLE NOTES:

1) NOT ALL POSSIBLE COMBINATIONS ARE LISTED. INCLUDE A SEPARATE GROUND WIRE IN EACH CONDUIT RUN.

REPRESENTS PAIR OF WIRE
 EXAMPLE C10 = 20#14 WIRES
 EXAMPLE C20 = 40#14 WIRES

C# = CONTROL

2) ANALOG CABLES ARE INTENDED TO BE INDIVIDUALLY INSULATED TWISTED SHIELDED PAIRS UNLESS OTHERWISE NOTED ON THE DRAWING.



08/23/21	ER	ADDENDUM NO.3	REMARKS
REV. NO.	DATE	DRWN	REMARKS

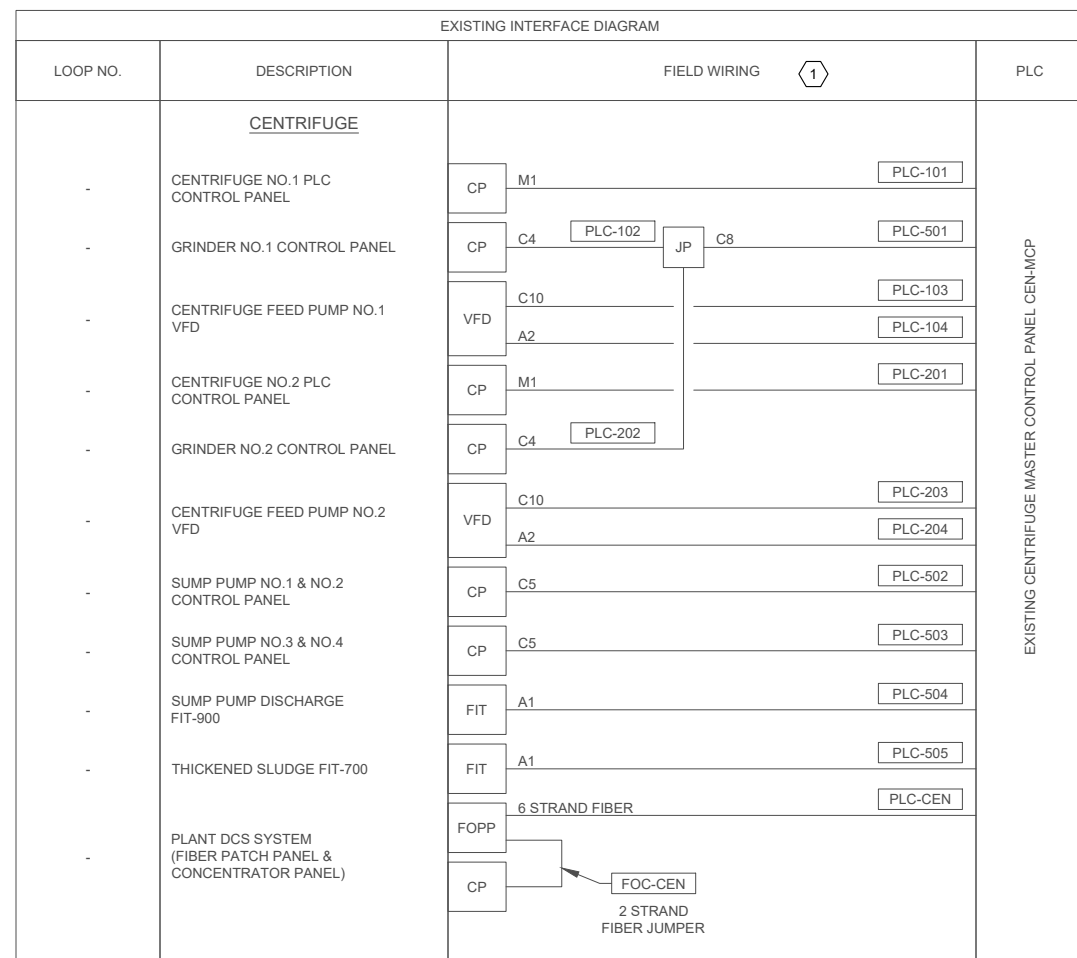
SAN ANTONIO WATER SYSTEM
 STEVEN M. CLOUSE WRC
 ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
 SOLIDS HANDLING/CENTRIFUGES
 PLC INTERFACE DIAGRAM

DESIGNED BY: L. PRICE
 DRAWN BY: E. RANGEL
 SHEET CHKD BY: V.K. GUPTA
 APPROVED BY: W. SAKO
 DATE: JULY 2021
 SAWS JOB NO.: 21-6507
 FILE NAME: 1951_30E08

SHEET NO.
30E08
 260 OF 328

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CKT NO.	BRKR SIZE	WIRE SIZE	COND. SIZE	LOAD	LOAD	COND. SIZE	WIRE SIZE	BRKR SIZE	CKT NO.
1	20/1	12	3/4"	CENTRIFUGE NO.1 & NO.2 RECEPTACLES	CENTRIFUGE NO.1 & NO.2 LIGHTING (LC-1)	3/4"	12	20/1	2
3	20/1	12	3/4"	CENTRIFUGE NO.3 & NO.4 RECEPTACLES	CENTRIFUGE NO.3 & NO.4 LIGHTING (LC-2)	3/4"	12	20/1	4
5	20/1	-	-	SPARE	THICKENED SLUDGE FIT-700	3/4"	12	20/1	6
7	20/1	12	3/4"	MASTER PLC PANEL	MASTER PLC PANEL	3/4"	12	20/1	8
9	20/1	12	3/4"	POLYMER UNIT NO.1	POLYMER UNIT NO.2	3/4"	12	20/1	10
11	20/1	-	3/4"	POLYMER UNIT NO.3 (FUTURE)	POLYMER UNIT NO.4 (FUTURE)	3/4"	-	20/1	12
13	20/1	12	3/4"	POLYMER BUILDING LIGHTS	POLYMER BUILDING RECEPTACLES	3/4"	12	20/1	14
15	20/1	12	3/4"	ELECTRICAL BUILDING LIGHTS	ELECTRICAL BUILDING RECEPTACLES	3/4"	12	20/1	16
17	20/1	12	3/4"	EXIT LIGHTS	BUILDING OUTDOOR LIGHTS	3/4"	12	20/1	18
19	20/1	12	3/4"	SUMP DISCHARGE FIT-900	BUILDING OUTDOOR RECEPTACLES	3/4"	12	20/1	20
21	20/1	12	3/4"	NEW PLC PANEL	NETWORK ENCLOSURE	3/4"	12	20/1	22
23	20/1	-	-	SPARE	SPARE	-	-	20/1	24
25	-	-	-	SPACE	SPACE	-	-	-	26
27	-	-	-	SPACE	SPACE	-	-	-	28
29	-	-	-	SPACE	SPACE	-	-	-	30

PANELBOARD NOTES:

- CONDUIT SIZE SHOWN IS THE MINIMUM SIZE REQUIRED FOR INDIVIDUAL CIRCUITS. MULTIPLE CIRCUITS MAY BE COMBINED IN A SINGLE CONDUIT FOR FIELD ROUTING PROVIDED NEC MAXIMUM CONDUIT FILL IS NOT EXCEEDED.
- EACH SINGLE PHASE 120V CIRCUIT SHALL HAVE A SEPARATE NEUTRAL WIRE.

- NOTES:**
- EXISTING PLC INTERFACE DIAGRAM WIRE AND CONDUITS FOR THE CENTRIFUGE AREA.
 - ALL WIRE AND CONDUITS SHALL STAY.
 - UPDATE PANEL DIRECTORY.
 - PROVIDE POWER TO NEW EQUIPMENT.

CONTROL & INSTRUMENTATION WIRE/CONDUIT SCHEDULE

CKT NO.	WIRE	CONDUIT	DESCRIPTION
C1	2#14, #14G 3/4"C	A1	1-1Pr#16 TSP, #14G, 3/4"C
C2	4#14, #14G 3/4"C	A2	2-1Pr#16 TSP, #14G, 3/4"C
C3	6#14, #14G 1"C	A3	3-1Pr#16 TSP, #14G, 3/4"C
C4	8#14, #14G 1"C	A4	4-1Pr#16 TSP, #14G, 1"C
C5	10#14, #14G 1"C	A5	5-1Pr#16 TSP, #14G, 1"C
C6	12#14, #14G 1-1/4"C	A6	6-1Pr#16 TSP, #14G, 1-1/2"C
C7	14#14, #14G 1-1/4"C	A7	7-1Pr#16 TSP, #14G, 2"C
C8	16#14, #14G 1-1/4"C	A8	8-1Pr#16 TSP, #14G, 2"C
C9	18#14, #14G 1-1/4"C	A9	9-1Pr#16 TSP, #14G, 2"C
C10	20#14, #14G 1-1/4"C	A10	10-1Pr#16 TSP, #14G, 2"C
C11	22#14, #14G 1-1/2"C	A11	11-1Pr#16 TSP, #14G, 2"C
C12	24#14, #14G 1-1/2"C	M1	1-CAT-6e, #14G, 1"C
C14	28#14, #14G 1-1/2"C	M2	2-CAT-6e, #14G, 1-1/2"C
C30	60#14, #14G 3-1/2"C	M3	3-CAT-6e, #14G, 2"C
C37	74#14, #14G 4"C	M4	4-CAT-6e, #14G, 2"C

CONTROL & INSTRUMENTATION WIRE/CONDUIT TABLE NOTES:

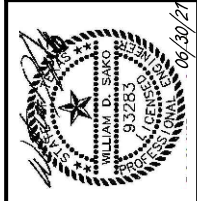
1) NOT ALL POSSIBLE COMBINATIONS ARE LISTED. INCLUDE A SEPARATE GROUND WIRE IN EACH CONDUIT RUN.

REPRESENTS PAIR OF WIRE
 EXAMPLE C10 = 20#14 WIRES
 EXAMPLE C20 = 40#14 WIRES

C#
 C = CONTROL

2) ANALOG CABLES ARE INTENDED TO BE INDIVIDUALLY INSULATED TWISTED SHIELDED PAIRS UNLESS OTHERWISE NOTED ON THE DRAWING.

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SAN ANTONIO WATER SYSTEM

REV. NO.	DATE	DRWN	ER	ADDENDUM NO.3	REMARKS
A	08/23/21				

ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

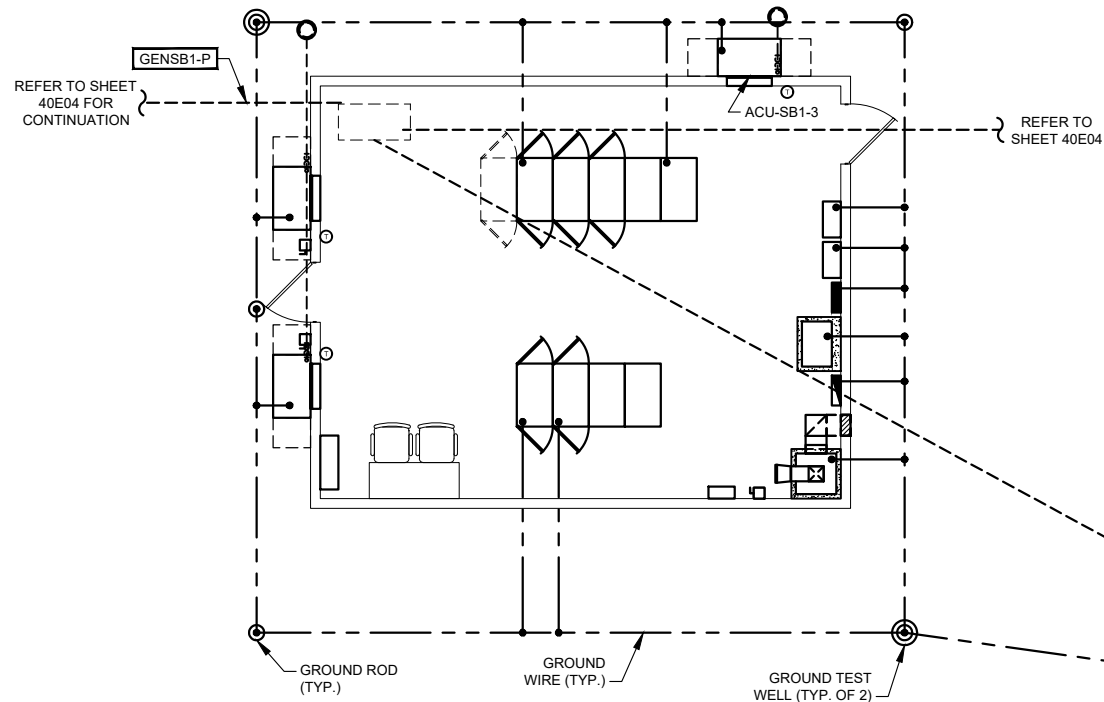
SAN ANTONIO WATER SYSTEM
 STEVEN M. CLOUSE WRC
 ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
 SOLIDS HANDLING/CENTRIFUGES
 EXISTING PLC INTERFACE
 DIAGRAM

DESIGNED BY: L. PRICE
 DRAWN BY: E. RANGEL
 SHEET CHKD BY: V.K. GUPTA
 APPROVED BY: W. SAKO
 DATE: JULY 2021
 SAWS JOB NO.: 21-6507
 FILE NAME: 1951_30E09

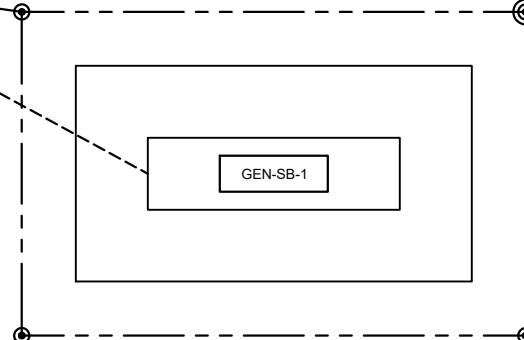
SHEET NO.
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SCADA/IT ROOM AND GENERATOR
GROUNDING
PLAN
SCALE: 3/16" = 1'-0"
0 2' 4' 10' 16'

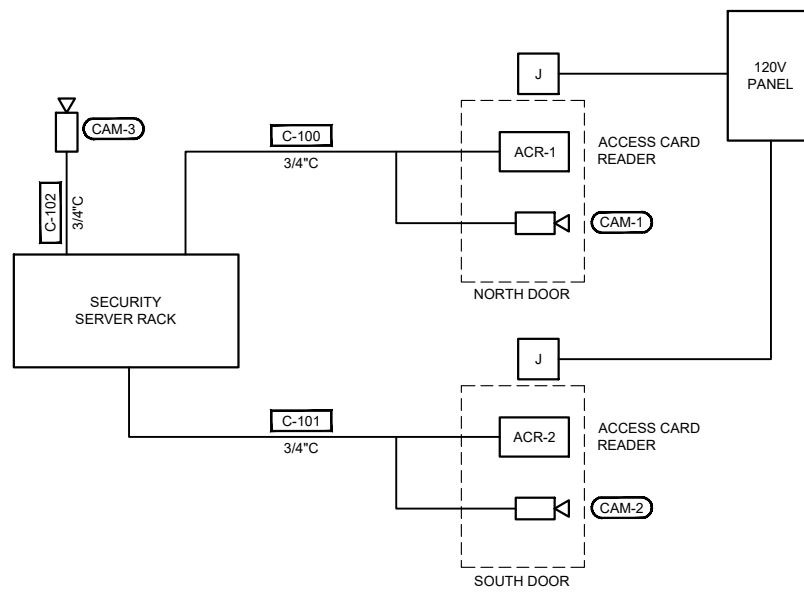


- NOTES:**
- DOOR SWITCHES WIRED IN SERIES.
 - CONDUIT SIZES SHOWN ARE MINIMUM. COMBINATION OF SIMILAR CIRCUIT TYPES PERMISSIBLE. ADJUST CONDUIT SIZING ACCORDINGLY AND REFLECT FINAL CONFIGURATION ON AS-BUILT DOCUMENTATION.
 - TERMINATE ALL WIRING ON TERMINAL BLOCKS INSIDE PANEL. NO NON-TERMINATED WIRES ALLOWED.
 - INSTALL ALL WIRING WHETHER SHOWN ON FLOOR PLANS OR NOT.
 - SUBSTITUTE CAT-6 CABLE FOR CAT-5E WHERE REQUIRED BY CONTRACT DOCUMENTS.

CONTROL & INSTRUMENTATION WIRE/CONDUIT SCHEDULE			
C1	2#14, #14G, 3/4"C	A1	1-1Pr#16 TSP, #14G, 3/4"C
C2	4#14, #14G, 3/4"C	A2	2-1Pr#16 TSP, #14G, 3/4"C
C3	6#14, #14G, 1"C	A3	3-1Pr#16 TSP, #14G, 3/4"C
C4	8#14, #14G, 1"C	A4	4-1Pr#16 TSP, #14G, 1"C
C5	10#14, #14G, 1"C	A5	5-1Pr#16 TSP, #14G, 1"C
C6	12#14, #14G, 1-1/4"C	A6	6-1Pr#16 TSP, #14G, 1-1/2"C
C7	14#14, #14G, 1-1/4"C	A7	7-1Pr#16 TSP, #14G, 2"C
C8	16#14, #14G, 1-1/4"C	A8	8-1Pr#16 TSP, #14G, 2"C
C9	18#14, #14G, 1-1/4"C	A9	9-1Pr#16 TSP, #14G, 2"C
C10	20#14, #14G, 1-1/4"C	A10	10-1Pr#16 TSP, #14G, 2"C
C11	22#14, #14G, 1-1/2"C	A11	11-1Pr#16 TSP, #14G, 2"C
C12	24#14, #14G, 1-1/4"C	M1	1-CAT-5e, #14G, 1"C
C14	28#14, #14G, 1-1/4"C	M2	2-CAT-5e, #14G, 1-1/2"C
C30	60#14, #14G, 3-1/2"C	M3	3-CAT-5e, #14G, 2"C
C37	74#14, #14G, 4"C	M4	4-CAT-5e, #14G, 2"C

- CONTROL & INSTRUMENTATION WIRE/CONDUIT TABLE NOTES:**
- NOT ALL POSSIBLE COMBINATIONS ARE LISTED. INCLUDE A SEPARATE GROUND WIRE IN EACH CONDUIT RUN.
REPRESENTS PAIR OF WIRE
EXAMPLE C10 = 20#14 WIRES
EXAMPLE C20 = 40#14 WIRES
 - ANALOG CABLES ARE INTENDED TO BE INDIVIDUALLY INSULATED TWISTED SHIELDED PAIRS UNLESS OTHERWISE NOTED ON THE DRAWING.

INTERFACE DIAGRAM			
EQUIPMENT NO.	DESCRIPTION	FIELD WIRING	PLC-4
-	ROOM TEMPERATURE	TIT A1 PLS-101	PLC-SCADA-1
-	TRANSFER SWITCH	ATS C3 PLS-102	
-	GENERATOR	CP C5 PLS-102A JIB PLS-103	
-	NORTH DOOR - SWITCH 1	C1 PLS-104	
-	SOUTH DOOR - SWITCH 1	DS1 C1 PLS-104A	
-	RTU ENCLOSURE INTRUSION ALARM	DS2 C1	
-		ZS C1 PLS-105	



SECURITY RISER
DIAGRAM

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SAN ANTONIO WATER SYSTEM

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ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

SAN ANTONIO WATER SYSTEM
STEVEN M. CLOUSE WRC
ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2A
ELECTRICAL
SCADA/IT BUILDING
GROUNDING PLAN & DETAILS

DESIGNED BY: T.HERNANDEZ
DRAWN BY: E.RANGEL
SHEET CHKD BY: V.K. GUPTA
APPROVED BY: W.SAKO
DATE: JULY 2021
SAWS JOB NO.: 21-6507
FILE NAME: 1951_40E05

SHEET NO.
40E05
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