



ADDENDUM NO. 3

DATE: March 19, 2020

PROJECT NAME: Wastewater Aeration System Improvements

CIP #: 957

BID NO.: 20/17/B

BID DATE: April 8, 2020

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of the Contract Documents and modifies or supplements the Project Manual or the Drawings as indicated below. All other provisions of the Contract Documents shall remain unchanged. This Addendum is hereby made a part of the Contract Documents to the same extent as those provisions contained in the original documents and all itemized listings thereof. Bidders shall acknowledge receipt of this Addendum in the appropriate space on the Bid Proposal form.

A. PROJECT MANUAL

1. BID FORM

- a. DELETE Bid Form and REPLACE with new Bid Form

2. BIDDING DOCUMENTS

- a. DELETE first paragraph on page 3 and REPLACE with the following:

- 1) "Bids will be received by the City of Santa Fe electronically via email. Submit Bids (in one email) to Jessica Chavez (jjchavez@santafenm.gov) and Frances Dunaway (fdunaway@santafenm.gov). Bids are due; April 8, 2020 at 3:00 PM local prevailing time. **Any bid received after this deadline will not be considered.**"



CONTRACT DOCUMENTS, VOLUME 1 OF 2, TECHNICAL SPECIFICATIONS

3. SECTION 11224A - SURFACE-MOUNTED PROPELLER MIXERS
 - a. DELETE Section in its entirety.
4. SECTION 11317 - SUBMERSIBLE MIXERS: HIGH-SPEED
 - a. ADD Section in its entirety.
5. SECTION 11371 - HIGH SPEED TURBO BLOWERS
 - a. DELETE paragraph 3.04.A and REPLACE with the following:

"A. The manufacturer shall furnish experienced start-up service personnel to inspect the final installation and supervise the field start-up tests of the equipment and software. The services of the representative shall be provided per section C below. If there are difficulties in operation of the equipment due to the manufacturer's fabrication and programming or Contractor's installation, additional service shall be provided at no extra cost to Owner."
 - b. DELETE paragraph 3.04.C.1 and REPLACE with the following:

"1. Phase 1 – Start-Up: During this phase, the services of the representative shall be provided for five 8-hour days."
 - c. DELETE paragraph 3.04.C.3 and REPLACE with the following:

"3. Phase 3 – Post Operational Performance Test: During this phase, the services of the representative shall be provided for three 8-hour days."
6. SECTION 13477 - ELECTRICAL ACTUATORS
 - a. DELETE this section and REPLACE with new Section 13477
7. SECTION 15052 - COMMON WORK RESULTS FOR GENERAL PIPING - PLANT
 - a. DELETE table under paragraph 3.03.A Piping Schedule and REPLACE with the following table:

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PIPING SCHEDULE											
Process Abbrev.	Service	Nominal Diameter (inches)	Material	Pressure Class Special Thickness Class Schedule Wall Thickness	Pipe Spec. Section	Joints/ Fittings	Test Pressure/ Method	Lining	Coating	Service Conditions	Comments
AIR	Aeration Air										
	Underground	14	Type 304L SST		15286 - Stainless Steel Pipe	WLD or FL, FL where shown	15 psig/AM	None	None		
	Aboveground- External Wall Aeration Basins and Blower Building Interior and Exterior	8-16	Type 304L SST		15286 - Stainless Steel Pipe	WLD of FL, FL where shown	15 psig/AM	None	None		
	Aboveground - Over Aeration Basins	4-14	Type 304L SST	SCH 10S	15286 - Stainless Steel Pipe	WLD or FL, FL where shown	15 psig/AM	None	None		
D	Drain										
	Underground	2-12	DIP	CL 53	15211 - Ductile Iron Pipe: AWWA C151	FL	200 psig/HH	GL	EPP		
	Aboveground	3-6	DIP	CL 53	15211 - Ductile Iron Pipe: AWWA C151	FL	200 psig/HH	CM	EPP		
PD	Pumped Drainage										
	Underground	2 and less	GSP	SCH 40		SCRD	100 psig/HH	None	PTW		
		3-10	DIP	150	15211 - Ductile Iron Pipe: AWWA C151	Mech Rest. MJ	50 psig/HH	CM	2 layers PEE		



PIPING SCHEDULE											
Process Abbrev.	Service	Nominal Diameter (inches)	Material	Pressure Class Special Thickness Class Schedule Wall Thickness	Pipe Spec. Section	Joints/ Fittings	Test Pressure/ Method	Lining	Coating	Service Conditions	Comments
NPW	Non-Potable Water										
	Underground										
		4-10	DIP	150	15211 - Ductile Iron Pipe: AWWA C151	Mech Rest. MJ	125 psig/HH	CM	2 layers PEE		
	Aboveground										
FIL	Filtrate										
	Underground										
		4-12	DIP	150	15211 - Ductile Iron Pipe: AWWA C151	Mech Rest. MJ	200 psig/HH	GL	2 layers PEE		
	Aboveground										
		4-12	DIP	CL 53	15211 - Ductile Iron Pipe: AWWA C151	FL	200 psig/HH	GL	EPP		
FIL	Filtrate Accessory/CAV										
	Underground										
		1-4	CPVC	SCH 80	15259 - CPVC	B&SP/ SCRD	200 psig/HH	None	None		
	Aboveground										
		1-4	CPVC	SCH 80	15259 - CPVC	B&SP/ SCRD	200 psig/HH	None	UV Resistant Paint		



PIPING SCHEDULE											
Process Abbrev.	Service	Nominal Diameter (inches)	Material	Pressure Class Special Thickness Class Schedule Wall Thickness	Pipe Spec. Section	Joints/ Fittings	Test Pressure/ Method	Lining	Coating	Service Conditions	Comments
SC	Scum										
	Underground - From Aeration Basins	4-14	Type 304L SST	SCH 10S	15286 - Stainless Steel Pipe	WLD or FL, FL where shown	15 psig/AM	None	None		
Abbreviations: 1. The following abbreviations used in the column of test method refer to the respective methods as specified in Section 15956 - Piping Systems Testing. AM Air method GR Gravity method HH High head method LH Low head method SC Special case 2. Abbreviations to designate piping include the following: B&SP Bell and spigot CI Cast iron CISP Cast iron soil pipe CL Class, followed by the designation CM Cement mortar CPVC Chlorinated Polyvinyl Chloride CTP Coal tar pitch DIP Ductile iron piping EPP Epoxy polyurethane coating FL Flange						GA Gauge, preceded by the designation GE Grooved end joint GL Glass lined GSP Galvanized steel pipe MJ Mechanical joint NPS Nominal pipe size, followed by the number in inches psi pounds per square inch psig pounds per square inch gauge PE Polyethylene PEE Polyethylene encasement PTW Polyethylene tape wrap PVC Polyvinyl Chloride SCH Schedule, followed by the designation SCRD Screwed-On SST Stainless steel SW Solvent welded VCP Vitrified clay piping WLD Weld					



8. SECTION 15121 - PIPE COUPLINGS
 - a. DELETE paragraph 2.02.G.1 and REPLACE with the following:
 - "1. Manufacturers: One of the following or equal:
 - a. Victaulic, Style 257C.
 - b. EBAA Flex-Tend."
 - b. DELETE paragraph 2.04.C.1 and REPLACE with the following:
 - "1. Manufacturers: One of the following or equal:
 - a. Victaulic, Style 257C.
 - b. EBAA Flex-Tend."
9. SECTION 15259 - CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE: ASTM F441
 - a. ADD Section in its entirety.
10. SECTION 16990A - CONDUIT SCHEDULE AREA 22A
 - a. REPLACE this section with attached new Section 16990A - CONDUIT SCHEDULE AREA 22 PART 1
11. SECTION 16990B - CONDUIT SCHEDULE AREA 22
 - a. REPLACE this section with attached new Section 16990B - CONDUIT SCHEDULE AREA 22 PART 2
12. SECTION 16990C - CONDUIT SCHEDULE AREA 50
 - a. REPLACE this section with attached new Section 16990C
13. SECTION 16990D - CONDUIT SCHEDULE AREA 83
 - a. REPLACE this section with attached new Section 16990D
14. SECTION 16990E - CONDUIT SCHEDULE AREA 20
 - a. ADD new Section 16990E

CONTRACT DOCUMENTS, VOLUME 2 OF 2, CONSTRUCTION PLANS

1. Sheet 01C02 - YARD PIPING PLAN II
 - a. ADD the following next to callout of manhole due east of Dewatering Building:

"Depth: 4.5' Diameter: 4'



2. Sheet 01C02 - YARD PIPING PLAN II
 - a. ADD the following next to callout of manhole downstream and south of diversion structure:

"Depth: 5' Diameter: 4'
3. Sheet 04C01 - DETAIL 1
 - a. ADD the following note to the existing pipe penetrations:

"BUILD VAULT AROUND EXISTING FILTRATE PIPE WITH HYDROPHILIC WATERSTOP AROUND THE PIPE. ADJUST REINFORCING AROUND PENETRATION PER S180/TYP."
4. Sheet 04C02 - DETAILS I
 - a. ADD the following next to callout of manhole in Detail I:

"Depth: 8.5' Diameter: 7'
5. Sheet 04C06 - DETAILS V – Section B
 - a. DELETE "HEAVY DUTY CAST IRON GRILL AND SEAT W/ CONT BANDING AS SPEC" callout and replace with the following:

HEAVY-DUTY STEEL GRATING PER SPEC, SET INTO ANGLE IRON FRAME EMBEDDED AND ANCHORED TO CONC TROUGH
6. Sheet 99TS04 - Typical Detail -IV
 - a. DELETE this sheet and REPLACE with new Sheet 99TS04
7. Sheet 99TS05 - Typical Detail -V
 - a. DELETE this sheet and REPLACE with new Sheet 99TS05
8. Sheet 50M04 - AERATION CONNECTION DETAILS
 - a. REPLACE Key Note #4 with the following:

"FLANGED TO FLANGED CONNECTION PER P310/TYP, SEE STRUCTURAL FOR WALL PENETRATION."



9. Sheet 01E01 - SITE PLAN DETAIL
 - a. DELETE this sheet and REPLACE with new Sheet 01E01
10. Sheet 02E01 - DUCT BANK SECTIONS
 - a. DELETE this sheet and REPLACE with new Sheet 02E01
11. Sheet 04E01 - PANELBOARD SCHEDULES
 - a. DELETE this sheet and REPLACE with new Sheet 04E01
12. Sheet 04E02 - DISCONNECT AND LUMINAIRE SCHEDULE
 - a. DELETE this sheet and REPLACE with new Sheet 04E02
13. Sheet 20E01 - ADMIN BUILDING POWER AND CONTROL PANEL
 - a. DELETE this sheet and REPLACE with new Sheet 20E01
14. Sheet 22E01 - ANOXIC POWER AND CONTROL PANEL PLAN
 - a. DELETE this sheet and REPLACE with new Sheet 22E01
15. Sheet 22E02 - SOUTH AERATION BASIN POWER AND CONTROL PANEL PLAN
 - a. DELETE this sheet and REPLACE with new Sheet 22E02
16. Sheet 22E03 - NORTH AERATION BASIN POWER AND CONTROL PANEL PLAN
 - a. DELETE this sheet and REPLACE with new Sheet 22E03
17. Sheet 51E02 - DAF 1&2 BUILDING ELECTRICAL ROOM POWER AND CONTROL
 - a. DELETE this sheet and REPLACE with new Sheet 51E02
18. Sheet 83E01 - EQUALIZATION TANK AND PUMP STATION POWER AND CONTROL PANEL PLAN
 - a. DELETE this sheet and REPLACE with new Sheet 83E01



QUESTIONS/RESPONSES

1. **Comment:** Specification 1500 section 1.15, Temporary Process Pumping, states that pumps used to bypass pump have to be capable of matching the plants flow rates, but it appears that the flow rates for the plant are not provided. Can the anticipated flow rates for the plant be provided?

Response: The by-pass pumping requirements are stated in Section 01440. The plant flows are listed on the design criteria sheet and in the specifications.

2. **Comment:** The diagram in addendum #2 for the pre-purchased equipment states that the D-pass Diffusers for the North and South Basins are not part of the bid. Can be confirmed that all the D-pass diffusers and manifolds that are in the North and South Basin are not to be installed as part of this project, and can it also be clarified the extent of the air piping shown on Sheets 22M02, 22M03, 22M04 that is going to be required to be installed through this project?

Response: The scope of the pre-purchase items in Addendum No.2 were provided for reference. The Owner is pre-purchasing the diffusers for the North and South Basins D pass, manifold, and plugs for the existing diffusers as shown on the drawings. The contractor is responsible for installing diffusers, manifold, connection to air piping, and plugging the existing diffusers and installing the other pre-purchase items list in the specifications, drawings and addenda.

3. **Comment:** Addendum #2 states the locations for the solid sludge disposal in the diagram that was provided, but it does not state where the 5' of liquid required to be pumped out by the contractor is to be pumped. Can a clarification be provided where the contractor will be able to pump the liquid that remains after the city drains the Aeration basins?

Response: This comment has been addressed in Addendum No. 2.

4. **Comment:** The revised bid form does not have a bid item for the Scum Pipe Cleaning that was originally part of this project. Can it be confirmed that this scope has been removed from the scope of work, and if not, will the bid item be added back to the bid form?

Response: The scum pipe cleaning has been removed from the contract documents.



5. **Comment:** The revised bid form has a base bid plus allowance line that states it is for items 1-8. Should the base bid plus allowances line be revised to say items 1-9?

Response: This comment has been addressed in Addendum No. 3

6. **Comment:** Sheets 20D01 and 20D02 are duplicate sheets although they have different title blocks. Please provide the correct Sheet 20D02.

Response: This comment has been addressed in Addendum No. 2

7. **Comment:** Sheets 99TS03 and 99TS04 are duplicate sheets although they have different title blocks. Please provide the correct Sheet 99TS04.

Response: This comment has been addressed in Addendum No. 3

8. **Comment:** Sheet 50S01 calls out construction joint detail S110. Detail S110 was not supplied. Please provide Detail S110.

Response: This comment has been addressed in Addendum No. 3

9. **Comment:** Plan Sheet 50M01: Enlarged Pump Station Plan Scale is inconsistent w/ given dimensions. Please rectify Scale.

Response: This comment has been addressed in Addendum No. 2

10. **Comment:** The response to Question # 37 in addendum #2 indicates that the information is provided in Addendum #2, but after reviewing the provided information it appears that the needed information to get the total height of the manholes to be rehabilitated on Sheet 01C02 is not provided. Can the Rim and Invert Elevations or the height for the two manholes associated with key note 1 on Sheet 01C02 be provided? In addition, can the diameter of these manholes be provided?

Response: This comment has been addressed in Addendum No. 3

11. **Comment:** A diagram was provided in Addendum #2 that shows the Sludge Disposal options, and the provided diagram states that disposing the sludge at the Rio Rancho Landfill is to be included as Additive Alternate Bid A. It appears that a revised bid form was not provided as part of Addendum #2. Will a revised bid form be provided as part of the Addendum #3 so the sludge disposal at the Rio Rancho Landfill can be included with the bid?

Response: This comment has been addressed in Addendum No. 1



12. **Comment:** Plan Sheet 04C06, section B calls for Cast Iron Grill and Seat w/ cont. banding as Spec. Yet Cast Iron Grates are not mentioned in 05500, only Steel and Aluminum are mentioned. Please provide a spec for Cast Iron Grating.

Response: This comment has been addressed in Addendum No. 3

13. **Comment:** Plan Sheets 50M01 – 03, note states that ALL JOINTS ARE TO USE VICATULIC COUPLINGS EXCEPT FOR CONNECTIONS TO VALVES, FLOW METERS, AND PUMPS. . . Given the proximity of valves and other Flange required connections, could this requirement be omitted for the 6" & 4" FIL to facilitate installation?

Response: Bid shall be per the contract documents.

14. **Comment:** Spec 15121, 2.04, C, "Settlement Couplings" requires Victaulic Style W257. This type of Coupling is called out on 6" pipe 10". Per Victaulic.com W257 Cplgs are only available from 14" to 72". Would the EBAA Flex-Tend be considered equal?

Response: This comment has been addressed in Addendum No. 3

15. **Comment:** Add #2, Question #34: Please confirm that the Contractor is to provide the Actuator for the Rotating Pipe Skimmer.

Response: This comment has been addressed in Addendum No. 2. No actuator is needed. Provide handwheel as shown on drawing.

16. **Comment:** Plan Sheet 01C04, key Note #7 calls to Relocate the 4" Scum Line. Per the Pipe Schedule (15052) this is Type 304SST. Would another material be more appropriate at this location, Ductile or PVC?

Response: Bid shall be per the contract documents and pipe schedule. If the pipe material is found to be different than 304L SST during construction alternative materials and cost adjustment may be discussed at that time.

17. **Comment:** Can you please clarify the startup requirements for the HST Blowers in Spec 11371. Section 3.04 of the attached spec though. How much time should be added to the scope for startup? Section 3.04.A states minimum 3 days per blower plus 3 for the MCU. Then section 3.04.B dictates 5 days for the MCU and section 3.04.C lays out 3 separate startup phases. Please advise.

Response: This comment has been addressed in Addendum No. 3.



18. **Comment:** Detail A/Sheet 04C05 shows Typical Air release assembly. What type of Piping will be required for this Air Release material? Would Sch 40 PVC be Acceptable?

Response: This comment has been addressed in Addendum No. 3. See revised pipe schedule and specification section.

19. **Comment:** Spec 15286, 2.01, C, Table: Would the Aeration and Blower Piping be considered "DIGESTER GAS"? If not which type of material ought to be used for these services?

Response: Review piping schedule in Section 15052 for service type.

20. **Comment:** Plan Sheet 22S02, Section D refers to detail P310. Please provide Detail P310.

Response: This comment has been addressed in Addendum No. 3

21. **Comment:** Plan Sheet 22S02, Section D calls for 12" dia. SST FLxPE Wall Pipe. While Plan Sheet 50M04 shows a 6" FLxFL Connection through a Wall Sleeve, rather than a FLxPE Wall Pipe. Please Clarify. **Rotating Pipe Skimmer Torque Requirements might require Cast-in-place Wall Pipe rather than Pipe through Wall sleeve w/ Link Seals**

Response: This comment has been addressed in Addendum No. 3. Structural sheet sets requirements for wall penetration, 50M04 points to structural for all penetration. 50M04 does not specify a 6" FLxFL, size and connection are as required on 22S02.

22. **Comment:** Plan Sheet 50M04, note #4 refers to detail S310 as a FL to FL Connection. Detail S310/99TS05 refers to an Anchor Bolt – Embed & Sleeve Detail. Please provide the correct detail (reference) for the FLxFL Connection.

Response: This comment has been addressed in Addendum No. 3

23. **Comment:** Detail Sheet 99TS03 & 99TS04 are the same details. Was a different Detail Sheet supposed to be here?

Response: This comment has been addressed in Addendum No. 3



24. **Comment:** Can the Non-Collusion Affidavit for Subcontractors be submitted for the listed subcontractors by the successful contractor upon award, or will this document need to be submitted at the time of bid for the listed subcontractors?

Response: This will need to be submitted at the time of bid. Purchasing will verify required documents are included at time of bid opening.

25. **Comment:** Sheet 50S01 has a note that states to coat the walls of the equalization tank's wet well, but it does not state to coat the floor, sump area or any of the Drywell walls or floor. Can it be confirmed that the walls in the two wet wells are the only surfaces to be coated with the EPX-C-2 Coating System, and if additional surfaces are to be coated, can a list be provided that states all the surfaces in the equalization tank that need to be coated?

Response: Provide coating for the walls as shown in the contract documents.

26. **Comment:** Detail A347 on Sheet 99TS01 has multiple mounting options for the handrail, and Sheets 50S03 and 50S02 appear not to state the mounting method that is to be used for the Equalization Basin. Is the Guardrail to be embed mounted or surface mounted?

Response: Provided surface mounted detail as shown in Detail A347.

27. **Comment:** After evaluating the distance between the proposed Equalization Basin and the limits of pavement to remain as shown on Sheet 02C01, the contractor will have very limited space to form/construct the front wall and front slab portion of the Drywell after temporary shoring is installed. Will it be possible to move the location of the Equalization basin slightly West to allow for additional working area?

Response: Bid shall be per contract documents. During construction this can be evaluated with and RFI as a potential cost reduction.

28. **Comment:** It was mentioned at the pre-bid that the fire hydrant located just to the north of the 4" NPW line shown on Sheet 01C02 is may be relocated, but it appears that the plans do not show this Fire hydrant being affected by this project. Is the previously mentioned fire hydrant being relocated or affected by this project?

Response: The hydrant on 01C02 is to be protected in place. See keynote 12 on 01C03 for hydrant location discussed in the field.



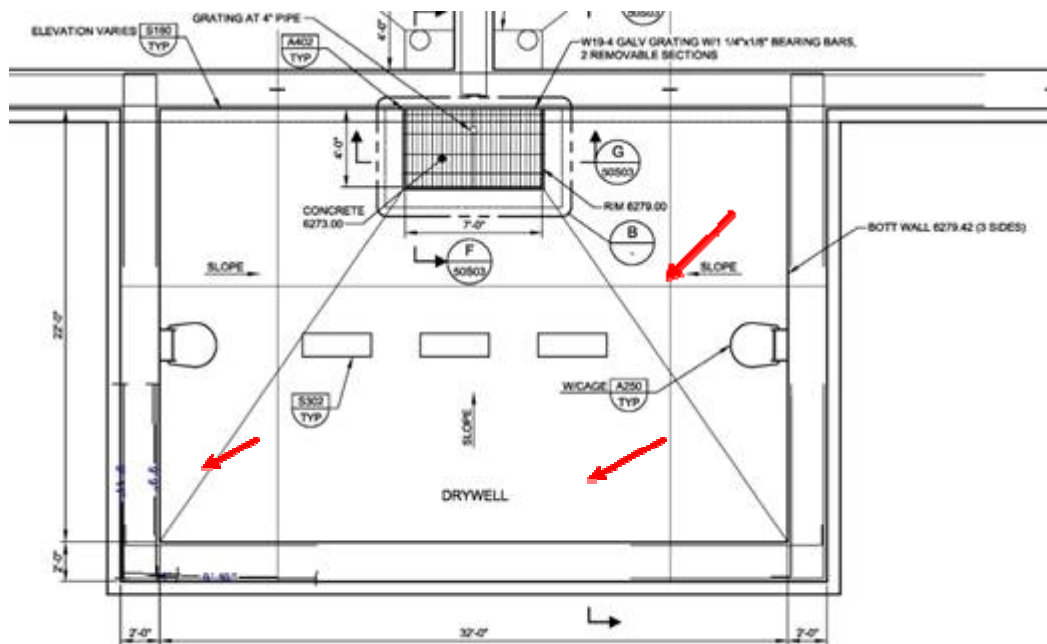
29. **Comment:** It appears that Sheets 20M01 and 20M02 do not state the diameter of the pipe that is used for the Blowoff Valves for each of the three Blower Units. Can the diameter of pipe be provided so a quote can be procured for this pipe?

Response: The size of the blow off valve and silencer is per manufacture's recommendation.

30. **Comment:** Sheet 50S01 has call outs for required CJ joints that are indicated to follow detail S110, but it appears that detail S110 is not included in the structural detail Sheets 99TS03 through 99TS05. Can detail S110 be provided and will the contractor be able to relocate the CJ joints if these are construction joints?

Response: First comment has been addressed in Addendum No. 3. Bid shall be per contract documents with CJ locations as shown.

31. **Comment:** Sheet 50S01 appears to show required CJ joints for the Drywell as shown in the below image. These indicated joints greatly limit the size of the pours if they are construction joints and will also increase the time of construction. Are these joints required and if so, can the contractor change to location and number of the CJ joints to allow for larger panels to be placed?



Response: Bid shall be per contract documents with CJs in locations shown.



32. **Comment:** Sheet 51M01 appears to indicate that 3 Hand wheels that are to be removed and replaced with Motorized Actuators. Can it be confirmed that there are only 3 handwheels being replaced with Motorized Actuators in the DAF Building, and can the Item ID on the Actuator Schedule included in Spec 13447 on page 10-11 be included on Sheet 51M01 so the budding contractors can identify which actuators are located in the DAF Building?

Response: See Sheet 51N02 for the number of new actuators.

33. **Comment:** The actuator schedule on Sheet 13447-10 and 13447-11 indicates reference drawings P942-M-401 and P942-M-401, but it appears that these sheets are not included in the plan set. It also appears that the mechanical and yard piping drawings do not include call outs for the electric actuators that refer back to the schedule contained in Specification 13447. Some of the power and control drawings refer to the actuators, but the call outs seem to not match the provided schedule. In addition, all the actuators referred to on the schedule cannot be located in the power and control plans. Can Call Outs be included in the Mechanical drawings and Yard Piping drawings for all the Actuators so the bidding contractors can confirm the location and counts for these items?

Response: This comment has been addressed in Addendum No. 3

34. **Comment:** It appears that there is not a mechanical drawing for the work that is associated with the Anoxic Basin. Sheet 22E01 has call outs for the 12 Actuators that were mentioned at the pre bid meeting, and Sheet 22E01 nor the schedule on Sheet 13447-10 and 13447-11 of the specifications mention the removal of the existing hand wheel actuators. Can a mechanical drawing be provided that clearly states that work the is associated with the Anoxic Basin?

Response: This comment has been addressed in Addendum No. 3

35. **Comment:** Bid Form, Page 23 states that a two year warranty for material and workmanship shall be provided. Also says to state the name, address and phone number of nearest authorized maintenance rep. Is this for the supplied material? Please clarify who is providing the two year warranty and maintenance contract.

Response: Provide warranty for material, equipment and workmanship per Section - 01783.



36. **Comment:** Bid Form, page 35 calls the a non-collusion affidavit of subcontractors. This will be impossible to file with our original bid copy. We can possible provide this after the bid. Is this acceptable? City's purchasing office will open bids and ensure all forms are part of bid. Must be filed in bid packet.

Response: This will need to be submitted at the time of bid. Purchasing will verify required documents are included at time of bid opening.

37. **Comment:** Specs say that the City will drain the existing basins to 5'. If we are to pump off the water on top of the sludge, where do we pump it to? Will the sludge be quantified as liquid cubic yards or solid? Has the City determined if the sludge can be disposed onsite or will it have to be hauled to Rio Rancho?

Response: Additional Information for clarification to comment question 7, in Addendum #2.

Base Bid: Contractor to remove sludge from Aeration Basin and place in drying beds. Contractor will be responsible to add lime to raise the pH of sludge. The sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then at 11.5 or higher for additional 22 hours. City staff can assist in providing testing to determine pH levels before land application process can occur.

Additive alternate Bid A: Contractor to remove sludge from Aeration Basin and place in drying beds to drain liquid. Before sending drained sludge to landfill, two tests are required Liquid paint filter test (PFLT) and Toxicity characteristic leaching procedure (TCLP). City staff can assist in providing PFLT, Coordination will be required to send samples to offsite lab for TCLP. Results need to be obtained before transport to Rio Rancho.

Carollo Engineers, Inc.

By 
Willie F. Farmer, P.E.

Addendum No. 3

BID FORM

BID FORM**CIP #957Paseo Real Wastewater Aeration Improvement Project**

Bidder will complete the work in accordance with the Contract Documents for the following prices (All amounts shown are lump sum, complete in place, excluding NMGR):

ITEM No.	DESCRIPTION	QUANTITY	UNIT	PRICE (Excluding NMGR)
1	MOBILIZATION	1	LS	\$
2	DEMOBILIZATION	1	LS	\$
3	TURBO BLOWER BUILDING ROOF REPLACEMENT ALLOWANCE	1	LS	\$ 80,000
4	AERATION BASINS CLEANING ALLOWANCE	365 yd ³	\$ _____/yd ³	\$
4a	DRYING BEDS SOLIDS DISPOSAL TO LOCAL FIELD ALLOWANCE	365 yd ³	\$ _____/yd ³	\$
4b	DRYING BEDS SOLIDS DISPOSAL TO LANDFILL ALLOWANCE	365 yd ³	\$ _____/yd ³	\$
5	UNKNOWN SUBSURFACE CONDITIONS ALLOWANCE	1	LS	\$ 25,000
6	MATERIAL TESTING ALLOWANCE	1	LS	\$ 20,000
7	UTILITY RELOCATION ALLOWANCE	1	LS	\$ 50,000
8	ELECTRICAL CABLE AND CONDUIT ALLOWANCE	1	LS	\$ 70,000
9	LUMP SUM FOR BALANCE OF ALL WORK NOT INCLUDED IN ITEMS 1-8	1	LS	\$
BASE BID PLUS ALLOWANCES: BID ITEMS 1 – 9:				\$
New Mexico Gross Receipts Tax (NMGR) @8.4375%				\$
TOTAL BASE BID AMOUNT PLUS ALLOWANCES AND NMGR:				

TOTAL BASE BID AMOUNT PLUS ALLOWANCES AND NMGR (IN WORDS):

THE SUM OF _____

_____ DOLLARS AND _____ CENTS.

Addendum No. 3

SPECIFICATIONS

ADD ENTIRE SECTION

SECTION 11317

SUBMERSIBLE MIXERS: HIGH-SPEED

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Requirements for providing submersible mixers and accessory items required for a complete and operable system.
- B. As specified in Section 15050 - Common Work Results for Mechanical Equipment.
- C. Tag numbers:
 - 1. Equalization Basin Mixer 1 Unit No. 1: MIX-83-01-01.
 - 2. Equalization Basin Mixer 2 Unit No. 2: MIX-83-02-01.

1.02 REFERENCES

- A. American Bearing Manufacturers' Association (ABMA):
 - 1. 9 - Load Ratings and Fatigue Life for Ball Bearings.
 - 2. 11 - Load Ratings and Fatigue Life for Roller Bearings.
- B. American Gear Manufacturers' Association (AGMA):
- C. ASTM International (ASTM):
 - 1. A36/A 36M - Standard Specification for Carbon Structural Steel.
 - 2. A325 - Specification for High-Strength Bolts for Structural Steel Joints.
- D. Steel Structures Painting Council (SSPC):
 - 1. SP-1 - Solvent Cleaning.
 - 2. SP-10 - Near White Blast Cleaning/Surface Preparation.
- E. Institute of Electrical and Electronics Engineers (IEEE):
 - 1. 112 - Standard Test Procedure for Polyphase Induction Motors and Generators.

1.03 SYSTEM DESCRIPTION

- A. Design requirements:
 - 1. The mixers shall be capable of handling dewatered filtrate.
 - 2. The mixers shall be able to be raised and lowered and shall be easily removed for inspection or service without the need for personnel to enter mixing vessel.
 - 3. A sliding guide bracket shall be an integral part of the mixer unit. The entire weight of the mixer unit shall be guided by a single bracket which must be able to handle all thrust created by the mixer.
 - 4. The mixer, with its appurtenances and cable, shall be capable of continuous submergence under water without loss of watertight integrity to a depth of 30 feet.
 - 5. Each mixer shall be of the integral-gear or direct drive, close-coupled submersible type. All components of the mixer, including the motor and gearbox, shall provide continuous underwater operation while the mixer blades are completely submerged.

- B. Performance requirements:
1. The mixer shall be selected and positioned in the equalization tank to achieve a minimum horizontal liquid velocity of 1 foot per second (fps) and or a uniformed concentration of dewatered filtrate solids in the liquid under all conditions at the locations within the equalization tanks in which the mixers are mounted.
 2. Mixer system shall be capable of providing mixing energy to each section of the tank at no less that 0.05 horsepower/ 1000 gallons and minimum velocity gradient, G (seconds⁻¹) or between 110 and 120.
- C. Design requirements:

CHARACTERISTICS	VALUE
WIDTH (FEET) PER EQ TANK	30
SWD (FEET) PER EQ TANK	19.6
LENGTH (FEET) PER EQ TANK	37.50
VOLUME (GAL) PER EQ TANK	165,000
NUMBER OF MIXERS IN EACH TANK	1
MINIMUM MIXER MOTOR HORSEPOWER RATING	5
MINIMUM NUMBER OF BLADES	3
MINIMUM PROPELLER SPEED	575
SPEED CONTROL	CONSTANT

1.04 SUBMITTALS

- A. Submit as specified in Section 01330 - Submittal Procedures.
- B. Product data: As specified in Section 15050 - Common Work Results for Mechanical Equipment:
1. Motor information:
 - a. Graphs of efficiency and power factor from 1/2 to full load.
 - b. Factory test reports with test reference standard indicated. Include IEEE 112 Form B.
 - c. Load calculations for allowable number of starts per hour.
- C. Shop drawings: As specified in Section 15050 - Common Work Results for Mechanical Equipment.
- D. Calculations: As specified in Section 15050 - Common Work Results for Mechanical Equipment:
1. Mechanical calculations and details including gear reducers.
- E. Vendor operation and maintenance manuals: As specified in Section 01782 - Operation and Maintenance Data.
- F. Commissioning submittals:
1. Provide Manufacturer's Certificate of Source Testing as specified in Section 01756 - Commissioning.
 2. Provide Manufacturer's Certificate of Installation and Functionality Compliance as specified in Section 01756 - Commissioning.

1.05 WARRANTY

- A. Provide warranty as specified in Section 01783 - Warranties and Bonds.

PART 2 PRODUCT

2.01 MANUFACTURERS

- A. The following or engineered pre-approved equal:
 - 1. Sulzer-ABS XRW 300
 - 2. Flygt Model 4650

2.02 SUBMERSIBLE MIXERS

- A. Each mixer shall be of the integral design, close coupled submersible type.
- B. Components of the mixer, including motor shall be capable of continuous underwater operation.
- C. Capable of continuous operation completely unsubmerged for 2 hours.
- D. Materials:
 - 1. Major mixer components: Type 316 stainless steel construction.
 - 2. Oil housing cover plate: Corrosion resistant composite.
 - 3. Exposed nuts and bolts: Type 316 stainless steel.
 - 4. Propeller: Type 316 stainless steel.
- E. Elastomers:
 - 1. Machine and fit mating surfaces where watertight sealing is required with a double set of Nitrile rubber or Viton™ o-rings.
 - 2. Accomplish sealing by metal-to-metal contact between machined surfaces resulting in controlled compression of the o-rings without requiring a specific torque limit.
 - a. No secondary sealing compounds, rectangular gaskets, elliptical O-rings, grease, or other devices are allowed.
- F. Propeller:
 - 1. Dynamically balanced, non-clogging backward curved design.
 - 2. Laser cut and weld each blade to the hub to ensure that the propeller is properly balanced.
 - 3. Capable of handling solids, fibrous materials, heavy sludge, and other matter found in normal sewage applications.
 - 4. Design includes 3 vanes inches in diameter with a blade angle of 8 degrees.
- G. Cable entry:
 - 1. Cable entry housing integral part of the back plate.
 - 2. Single sealing systems will not be accepted.
 - 3. Double set of elastomer grommets in order to ensure a redundant system in the event of cable entry failure.
 - 4. The cable entry shall be comprised of 2 cylindrical elastomer grommets, each flanked by washers and a ferrule designed with close tolerance fit against the cable outside diameter and the entry inside diameter. This will provide a leak proof seal at the cable entrance without the need for specific torque requirements.

5. The assembly shall bear against the stator casing opening and be compressed by a gland nut threaded into it. Interaction between the gland nut and the ferrule should move the grommet along the cable axially instead of with a rotary motion.
 6. The junction chamber and motor compartment shall be separated by a terminal board which shall protect the motor interior from foreign material gaining access into the mixer top.
 7. Connection between the threaded compressed type binding posts permanently affixed to the terminal board and thus perfectly leak proof.
 8. Epoxies, silicones, or other secondary sealing systems shall not be considered acceptable.
- H. Bearings:
1. Bearing life: The minimum L-10 bearing life shall be 100,000 hours in accordance with ABMA 9 or ABMA 11.
 2. The outboard propeller bearing shall be an angular contact bearing.
 3. The motor shaft end shall be supported by 2 bearings.
 - a. A roller and an angular contact bearing shall take up the axial and radial loads while an angular contact bearing shall take up the axial loads.
 - b. The bearings shall be pre-loaded by a bearing loading nut located on the motor end of the shaft in order to reduce shaft deflection and increase bearing life and seal life.
 - c. Mixers without pre-loaded bearings will not be considered acceptable or equal.
- I. Thermal sensors:
1. Thermal sensors shall be used to monitor stator temperatures.
 2. The stator shall be equipped with 3 thermal switches embedded in the end coils of the stator winding. These shall be used in conjunction with, and supplemental to, external motor overload protection, and wired to the control panel.
- J. Jet ring assembly:
1. The mixer assembly shall incorporate a jet ring of full 360 degrees around the propeller.
 2. A maximum clearance of 1-1/2 inches shall be maintained between the propeller tip and the shroud in order to maintain hydraulic efficiency and power consumption.
- K. Oil housing:
1. The oil housing shall contain 2 compartments consisting of an inner and an outer section with 4 ports to connect and facilitate oil flow. In the event that the mixed media bypasses the other seal, this design will allow the outer compartment to collect the heavier (denser) fluids by mean of a simple gravity process.
- L. Mechanical seals:
1. Each mixer shall be provided with 2 sets of lapped end face type mechanical seals running in oil reservoirs for cooling and lubrication.
 - a. The mechanical seals shall contain positively driven rotary silicon carbide/tungsten carbide face rings.
 - b. In order to avoid seal failure due to sticking, clogging, and misalignment from elements contain in the mixed media, only the seal faces of the outer assembly and its retaining clips shall be exposed to the mixed media.

- c. All other components shall be contained in the oil housing.
- d. All seal faces must also be capable of relapping.
- 2. The seals shall require neither maintenance nor adjustment, but shall be easy to check and replace.
- 3. Shaft seals without positively driven rotating members shall not be considered acceptable or equal.

2.03 MOTOR

- A. General:
 - 1. The multi-pole motor shall be directly connected to the propeller to produce a propeller speed of not more than 860 revolutions per minute.
 - 2. The mixer motor shall be squirrel cage, induction, shell type design, housed in an air filled, watertight chamber.
 - 3. The stator winding shall be insulated with moisture resistant Class F insulation which will resist a temperature of 155 degrees Celsius (311 degrees Fahrenheit).
 - 4. The stator shall be dipped and baked 3 times in Class F varnish.
 - 5. The motor shall be designed for continuous duty, capable of sustaining a maximum of at least 10 evenly spaced starts per hour.
 - 6. The rotor bars and short circuit rings shall be made of aluminum.
- B. Electric motor type:
 - 1. Type: minimum of 4.7 horsepower, submersible electric motors connected for operation on a 460 volt, 3-phase, 60 hertz, alternating current service.
 - 2. Conductors: Conductors of adequate length with #14AWG7 size submersible cable.
 - 3. Cables: Shall be oil resistant chloroprene rubber jacketed. Each unit shall be fitted with lifting cable of adequate length and strength to permit raising and lowering the mixer.
- C. Motor efficiency and power factor:
 - 1. Efficiency: At full load and 75 percent load shall not be less than 74.5 percent.
 - 2. Power factor: At full load shall not be less than 73 percent.

2.04 MANUAL CRANE

- A. The manual crane shall be supplied for each mixer and shall be capable of being removed from the mixer mounting location and used at a second mounting location when utilized in conjunction with the 2-inch system 4 mixer support cable.
- B. The boom and winch shall be easily assembled and removed from the crane mast to better facilitate assembly and storage requirements, respectively.
- C. The crane shall be capable of rotating a mixer 360 degrees.
- D. The crane shall have a reach of 27 inches from the centerline of the crane mast to the centerline of the lifting cable.
- E. Load capacity: The crane shall be capable of hoisting 650 pounds.
- F. The winch shall be of marine grade construction.

- G. The main body of the crane (excluding the winch) shall be of Type 316 stainless steel material of construction.
- H. No less than 40 feet of Type 316 stainless steel cable (1/4 inch diameter) shall be supplied.
- I. The entire manual crane assembly shall weigh no more than 70 pounds.

2.05 MIXER MOUNT ASSEMBLY

- A. General:
 - 1. Stainless steel, mixer mount assembly kit shall be supplied by the mixer manufacturer for each mixer and used to mount the mixer during operation and to guide the unit during installation and removal from service.
- B. Fabrication:
 - 1. Upper, lower, intermediate brackets, and structural spool support for intermediate brackets: Type 316 stainless steel.
 - 2. The upper bracket shall be fitted with a special receptacle that securely holds and supports the davit while the mixer is raised, lowered, installed, or removed from the tank. The davit shall be sufficient to safely raise and lower the mixture.
 - 3. The mixer mount assembly shall include a field adjustable length of Type 316 stainless steel mixer support cable assembly of adequate length:
 - a. A 2 inch by 2 inch by 1/4 inch mast shall securely interface with the mixer manufacturer's upper, lower, and intermediate brackets and integrate in such a way to securely support the mixer during operation.
 - b. All support bracket assemblies shall be supplied by the mixer manufacturer only in order to ensure the integrity of the system under optional loads.
 - 4. The assembly shall also be provided with cable holders to secure the mixer electric power cable (1 every 5 feet). Their purpose shall be to prevent the electric cable from becoming entangled in the mixer propeller during operation.
 - a. In addition, the mast shall be constructed with a positioning locking plate which will work in conjunction with a lock pin on the upper holder to positively lock the mast in place at various operating angles.

2.06 FINISHES

- A. Mixer manufacturer shall factory prime and coat all surfaces coming into contact with sewage, other than stainless steel and hot dip galvanized steel, with manufacturer's standard coating.

2.07 SPARE PARTS

- A. Provide 1 set of the following items for each type and size required by the units:
 - 1. O-rings.
 - 2. Bearings.
 - 3. Mechanical Seals.
 - 4. Power Cable Grommet.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install products in accordance with manufacturer's instructions and as specified in Section 15050 - Common Work Results for Mechanical Equipment.

3.02 COMMISSIONING

- A. As specified in Section 01756 - Commissioning and this Section.
- B. Manufacturer services:
 - 1. Provide certificates:
 - a. Manufacturer's Certificate of Source Testing.
 - b. Manufacturer's Certificate of Installation and Functionality Compliance.
 - 2. Manufacturer's Representative onsite requirements:
 - a. Installation: 1 trip, 2-day minimum.
 - b. Functional Testing: 1 trip, 2-day minimum each.
 - 3. Training:
 - a. Maintenance: 4 hours per session, 1 session.
 - b. Operation: 2 hours per session, 1 session.
 - 4. Process operational period:
 - a. As required by Owner or Contractor.
- C. Source testing:
 - 1. Test as specified in Section 15958 - Mechanical Equipment Testing.
 - 2. Mixer:
 - a. Test witnessing: Witnessed.
 - b. Conduct Level 1 General Equipment Performance Test.
- D. Functional testing:
 - 1. Mixer:
 - a. Test witnessing: Witnessed.
 - b. Operate mixers for a minimum of 24 hours with the basins full of water.
 - c. After completion of 24-hour test, the equipment shall be removed from the tank and inspected by a factory-trained representative for leaks through the seals.
 - d. Demonstrate that the mixers are easily placed and removed without draining the tank and that the mixers easily move up and down the mast assembly without binding or crabbing.
 - e. Conduct Level 2 General Equipment Performance Test.
 - f. Conduct Level 2 Vibration Test.
 - g. Conduct Level 2 Noise Test.

END OF SECTION

REPLACE ENTIRE SECTION

SECTION 13447

ELECTRIC ACTUATORS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Electric motor-driven actuators for valves and gates as identified in the valves and gates schedule and on drawings.

1.02 REFERENCES

- A. American Water Works Association (AWWA):
 - 1. C504 - Standard for Rubber-Seated Butterfly Valves.
 - 2. C542 - Standard for Electric Motor Actuators for Valves and Slide Gates.
- B. National Electrical Manufacturers Association (NEMA):
 - 1. 250 - Enclosures for Electrical Equipment (1000 V Maximum).

1.03 DEFINITIONS

- A. NEMA:
 - 1. Type 4X enclosure in accordance with NEMA 250.
 - 2. Type 6P enclosure in accordance with NEMA 250.

1.04 SUBMITTALS

- A. Submit as specified in Section 01330 - Submittal Procedures and Section 15050 - Common Work Results for Mechanical Equipment.
- B. Provide a complete list/schedule of all actuators being provided with their associated tag names as indicated on the design drawings and/or specifications, service process area and the size of the valve they are actuating.
- C. Product data:
 - 1. Electrical ratings:
 - a. Voltage and number of phases.
 - b. Starting and running current.
 - c. Voltage levels and source for control and status.
 - 2. Description of integral control interface.
 - 3. Remote control station components.
 - 4. Environmental ratings, including NEMA enclosure rating and submergence capabilities.
 - 5. Gear ratios for both manual and motorized actuation.
 - 6. Opening and closing directions.
 - 7. Allowable starts per hour.
 - 8. List of all included options and accessories.
 - 9. Full travel times.
 - 10. Gearbox data including gear ratio, and gearbox efficiency.

- D. Shop drawings:
 - 1. Wiring diagrams:
 - a. Include all options and expansion cards furnished with each actuator.
 - 2. Dimensioned drawings of each valve and actuator combination.
 - 3. Dimensioned drawings of each valve gearbox.
 - 4. Electric motor data.
- E. Calculations:
 - 1. Operating torque.
 - 2. Maximum torque calculations for seating and unseating.
 - 3. Maximum operating torque at starting and normal operation.
 - 4. Signed by Professional Engineer.
- F. Provide draft vendor operation and maintenance manual as specified in Section 01782 - Operation and Maintenance Data:
 - 1. Include a list of all configurable parameters, and the final values for each.
 - 2. Include a troubleshooting chart covering the complete valve and controls/electrical power systems, showing description of trouble, probable cause, and suggested remedy.
- G. Commissioning submittals:
 - 1. Provide Manufacturer's Certificate of Source Testing as specified in Section 01756 - Commissioning.
 - a. Affidavit in accordance with AWWA C542.
 - 2. Provide Manufacturer's Certificate of Installation and Functionality Compliance as specified in Section 01756 - Commissioning.
- H. Project closeout documents:
 - 1. Provide final vendor operation and maintenance manual as specified in Section 01782 - Operation and Maintenance Data.

1.05 WARRANTY

- A. Provide warranty as specified in Section 01783 - Warranties and Bonds.

PART 2 PRODUCTS

2.01 CHARACTERISTICS FOR ACTUATORS ON LINES 4 INCHES AND LARGER

- A. Provide actuators complete and operable with all components and accessories required for operation.
- B. Power supply:
 - 1. Voltage and phases as indicated in the Motorized Actuator Schedule.
 - 2. Valve or gate motion independent of power supply phase rotation.
 - 3. Provide an internal backup power source or mechanical indicator to maintain settings and track valve position when main power is off.
 - 4. The actuators shall incorporate all major components such as the motor, starter, local controls, terminals, etc. housed within a self-contained, sealed enclosure.

- C. Size actuator to move gates or valves from full open to closed position within the time indicated in the Motorized Actuator Schedule:
 - 1. If an operating time is not indicated on the Motorized Actuator Schedule, size the actuator to move gates or valves at minimum 12 inches per minute under maximum load. Measure rate of closure for valves at maximum diameter of disc, plug, or ball.
 - 2. Size actuators so that gear boxes are not required where possible.

- D. Control interface:
 - 1. Configuration:
 - a. Provide a non-intrusive, non-contacting interface for configuring all input and output settings, control values, ranges, torque switch settings, valve positions switch settings, and options.
 - 1) Configurable from a handheld configuring tool or input devices on the actuator.
 - 2. Local interface, integral to actuator:
 - a. Non-intrusive, non-contacting selector switches:
 - 1) LOCAL-STOP-REMOTE:
 - a) Motor actuator operation is prevented with the switch in STOP.
 - 2) OPEN-CLOSE:
 - a) Controls the valve when LOCAL-STOP-REMOTE is in LOCAL.
 - b) Spring return to center.
 - c) Configurable between maintained (actuator runs until end of travel, high torque, or a LOCAL-STOP-REMOTE is switched to STOP) and momentary (actuator stops when lever is released).
 - b. Local display:
 - 1) Valve fully open and fully closed indicators.
 - 2) Numerical display showing actual valve or gate position in percent of travel.
 - 3. Local Control Panel - (LCP):
 - a. Provide LCP for all actuators located more than 5 feet above finished floor/grade or where indicated on the Drawings.
 - 1) Provide LCP with the following rating.
 - a) NEMA Type 4X enclosures for non-hazardous areas
 - b) Explosion-proof (XP) Class I Division 1 for hazardous areas.
 - c) All pilot devices shall be 30 millimeters.
 - d) Pilot lights shall be illuminated by LEDs.
 - 2) LOCAL-STOP-REMOTE selector switch.
 - 3) LOCAL mode control devices:
 - a) Operate valve when LOCAL-STOP-REMOTE integral to actuator is in REMOTE and LOCAL-STOP-REMOTE on remote control station is in LOCAL.
 - b) OPEN-STOP-CLOSE maintained switch or OPEN, STOP, and CLOSE pushbuttons where Maintained operation is indicated in the Intelligent Actuator Schedule.
 - c) OPEN-CLOSE spring-return switch or OPEN and CLOSE pushbuttons where momentary operation is indicated in the Intelligent Actuator Schedule.
 - 4) Pilots lights to indicate valve position:
 - a) Fully open.
 - b) Fully closed.

- b. Rotork's Remote Hand Station:
 - 1) Wall mounted.
 - 2) Configuration: Bluetooth configuration tool.
 - 3) Power: Via attached actuator.
 - 4) Enclosure:
 - a) IP68.
 - 5) Double sealed.
 - 4. Control inputs:
 - a. Capable of using 120 VAC inputs.
 - b. Controls the valve when LOCAL-STOP-REMOTE is in REMOTE.
 - c. Isolated inputs capable of operating from external control voltage source or internal power supply:
 - 1) Furnish 120 VAC control power supplies within the actuator.
 - d. Provide the following inputs:
 - 1) OPEN.
 - 2) CLOSE.
 - 3) STOP.
 - e. OPEN and CLOSE inputs configurable between maintained (actuator runs until end of travel, high torque, or a STOP input) and momentary (actuator stops when command is removed).
 - 5. Status outputs:
 - a. Monitor relay output: Dry contact, normally closed, opens when actuator is not in REMOTE or in the event of any internal fault or alarm condition.
 - b. Dry contact outputs configured for the functions indicated on the Drawings. Provide the following outputs for all actuators:
 - 1) Fully closed.
 - 2) Fully open.
 - 3) LOCAL-STOP-REMOTE in REMOTE position.
 - c. All output contacts rated for 5 amps, 120 VAC.
 - 6. Analog input:
 - a. Provide a 4-20 milliampere analog input for analog modulating valves when indicated on the Drawings.
 - b. Modulate valve to maintain position based on analog input value.
 - c. Maximum input impedance 250 ohms.
 - 7. Analog output:
 - a. Provide an isolated 4-20 milliampere analog output when indicated on the Drawings.
 - 1) Loop power sourced from the actuator power supply.
 - 2) Capable of driving into a load up to 500 ohms.
 - 3) Output proportional to process value(s) indicated on the Drawings.
 - 4) Valve or gate position.
 - 5) Operating torque.
- E. Features:
 - 1. Time delay on reversal: Incorporate time delay between stopping actuator and starting in opposite direction to limit excessive current, torque, and heating from instantaneous reversal.
 - 2. Data logging:
 - a. Store diagnostic data and reference data.
 - b. Historical operating data, including number of operations.
 - c. Starting torque, maximum running torque, and end of travel torque.
 - 1) Store reference data (recorded during commissioning) and data from last operation.

3. Provide display of logged data on the actuator, or provisions to download to a personal computer.
- F. Materials:
1. Construct motorized actuators of materials suitable for the environment in which the valve or gate is to be installed.
- G. Components:
1. Motors:
 2. Specifically designed for valve actuator service with high starting torque, totally enclosed non-ventilated construction.
 3. Torque ratings equal to or greater than that required for valve seating and dynamic torques with a 25 percent factor of safety.
 - a. Design requirements for rubber-seated AWWA butterfly valves:
 - 1) Design actuators for maximum gate or valve operating torque, in accordance with and using safety factors required in AWWA C504 and AWWA C542.
 - a) Valve actuator torque requirement for open-close service: Not less than the required valve-seating and dynamic torques under design operating conditions in accordance with AWWA C504.
 - b) Valve actuator torque requirement for modulating service: Not less than twice the required valve dynamic torque under design operating conditions in accordance with AWWA C504.
 - b. Design requirements for slide gates, gate valves, knife gate valves, globe valves, and diaphragm valves:
 - 1) Design valves and actuators for maximum operating torque, in accordance with and using safety factors required in AWWA C542.
 - 2) Design for the maximum torque and thrust running load over the full cycle.
 - 3) Maximum torque or thrust rating: The actuator stall torque or maximum thrust output shall not exceed the torque or thrust capability of the valve or gate, as determined by the valve or gate manufacturer.
 4. Capable of being removed and replaced without draining the actuator gear case.
 5. Motor bearings shall be amply proportioned of the anti-friction type and permanently lubricated.
 6. Rated for operating under the following conditions without exceeding temperature limits with ambient temperature of 40 degrees Celsius.
 - a. Continuous operation for 15 minutes or twice the open-to-close operating time (whichever is greater) at normal operating torque or 33 percent of maximum torque (whichever is greater).
 - b. 60 starts per hour for open/close service or 1,200 starts per hour for modulating service.
 7. Provide the following motor protection features:
 - a. Jammed valve (no valve motion detected through a time delay).
 - b. High motor temperature (sensed by an embedded thermostats).
 - c. High torque.
 - d. Single phasing protection.

- H. Enclosures:
1. Actuator housing ratings as indicated in the Motorized Actuator Schedule.
 2. Stainless steel external fasteners.
 3. Provide O-ring seals for each of the following areas:
 - a. Between the terminal compartment and the internal electrical elements.
 - b. Between the mechanical and electrical portions to protect from the ingress of oil, and to protect the mechanical components of oil from dust and moisture when the electrical terminal is open.
 4. Provide the following minimum enclosure ratings:
 - a. NEMA Type 4X enclosure for general applications.
 - b. NEMA Type 6P rated for actuators in underground vaults or where possible submergence is indicated in the Drawings.
 - 1) Suitable for a minimum of 48 hours submerged under 3 meters of water.
- I. Position sensing:
1. Electronic and adjustable using a solid-state encoder wheel.
 - a. Mechanical limit switches and potentiometers are not acceptable.
 2. Capable of retaining position and monitoring valve or gate motion when valve is manually actuated and when main power is not present.
 3. Valve range and position switch outputs field adjustable.
- J. Torque sensing:
1. Torque shutdown setting: 40 percent to 100 percent rated torque:
 - a. Adjustable in 1 percent increments.
 2. Torque display: 0 to 100 percent-rated torque.
 3. Capable of interrupting control circuit during both opening and closing and when valve torque overload occurs.
 4. Electrical or electronic torque sensing:
 - a. Extrapolating torque from mechanically measured motor speed is not acceptable due to response time.
 5. Independent of variations in frequency, voltage, or temperature.
 6. Provide a temporary inhibit of the torque sensing system during unseating or during starting in mid-travel against high inertia loads.
 7. Provide visible verification of torque switch status without any housing disassembly.
- K. Manual actuators:
1. Hand wheel for manual operation.
 - a. Maximum 80-pound pull on rim when operating gate or valve under maximum load.
 - b. Provide pull chain when motorized actuator is located more than 6 feet above floor surface.
 - 1) Chain shall be of sufficient length to reach approximately 4 feet above the operating level.
 - 2) Where the chain obstructs an aisle or walkway, provide holdback or other means to ensure chain does not create a nuisance or hazard to operating personnel.
 2. Declutch lever: Padlockable, capable of mechanically disengaging motor and related gearing and freeing hand wheel for manual operation.

- L. Gearing: Hardened alloy steel spur or helical gears and self-locking, alloy bronze worm gear set.
 - 1. Accurately cut to ensure minimum backlash.
- M. Bearings:
 - 1. Anti-friction bearing with caged balls or rollers throughout.
 - 2. Sealed-for-life type thrust bearings housed in a separate thrust base.
- N. Drive bushing:
 - 1. Easily detachable for machining to suit the valve stem or gearbox input shaft.
 - 2. Positioned in a detachable base of the actuator.
- O. Lubrication:
 - 1. Provide totally enclosed actuator gearing with oil or grease filled gear case suitable for operation at any angle.
 - 2. Actuators requiring special or exotic lubricants are not acceptable.

2.02 ACCESSORIES

- A. Termination module cover:
 - 1. For actuators on a valve network, provide a means to keep the valve network in service, in the event where the actuator must be removed.
 - 2. Provide sunshades for all outdoor installations of remote control stations that use an LCD or similar screen. Regular pushbutton, sector switches, and pilot light control stations will not require a sunshade.

2.03 SPARE PARTS AND SPECIAL TOOLS

- A. As specified in Section 01600 - Product Requirements.
- B. Spare parts:
 - 1. Provide the following (minimum 10 percent of total number of actuators of each model type furnished, but not less than 1 for each model of actuator furnished):
 - a. Stem nut.
 - b. Worm shaft subassembly.
 - c. Drive sleeve subassembly.
 - d. Complete actuator seal kit.
 - e. Actuator gearbox oil (sufficient quantity to fill 4 gearboxes).
 - f. Encoder.
 - g. Control module.
 - 2. Provide 1 spare motor for each size motor furnished.
- C. Setting tool:
 - 1. Provide a handheld setting tool capable of non-intrusive calibration and interrogation of the actuator.
 - a. Furnish 1 setting tool for every 10 actuators.
 - b. Capable of communicating with PC-based configuration software, and transferring the following in either direction between the computer and programmer and setting tool, and between the setting tool and actuator.
 - c. Actuator configurations:
 - 1) Capable of storing up to 10 different configurations.
 - d. Diagnostic data:
 - 1) Capable of storing 4 complete sets of diagnostic data.

PART 3 EXECUTION

3.01 GENERAL

- A. As specified in Section 15050 - Common Work Results for Mechanical Equipment.
- B. Position visual indicators so that they are most easily visible.

3.02 COMMISSIONING

- A. As specified in Section 01756 - Commissioning, Section 15958 - Mechanical Equipment Testing, and this Section.
- B. Manufacturer services:
 - 1. Provide certificates:
 - a. Manufacturer's Certificate of Source Testing:
 - 1) Proof-of-Design and Performance Test Reports in accordance with AWWA C542.
 - b. Manufacturer's Certificate of Installation and Functionality Compliance.
 - 2. Manufacturer's Representative on-site requirements:
 - a. Installation: 2 trips, 2-day minimum each.
 - b. Functional testing: 2 trips, 2-day minimum each.
 - 3. Training:
 - a. Maintenance: 4 hours per session, 2 sessions.
 - b. Operation: 2 hours per session, 2 sessions.
- C. Source testing:
 - 1. Design and Performance Test Reports in accordance with AWWA C542.
 - 2. Test each actuator with a simulated load.
 - a. Simulate a typical valve load.
 - 3. Electrical Instrumentation and Controls:
 - a. Test witnessing: not witnessed.
 - b. Conduct testing as specified in Section 17950 - Commissioning for Instrumentation and Controls.
- D. Functional testing:
 - 1. Installed actuator:
 - a. Test witnessing: Witnessed.
 - b. Conduct Level 2 General Equipment Performance Tests.
 - c. Conduct Level 2 Vibration Tests.
 - d. Conduct Level 2 Noise Tests.
 - 2. Electrical Instrumentation and Controls:
 - a. Test witnessing: Witnessed.
 - b. Conduct testing as specified in Section 17950 - Commissioning for Instrumentation and Controls.

3.03 MOTORIZED ACTUATOR SCHEDULE

- A. Provide all actuators indicated on the Drawings:
 - 1. Major process actuators are listed in the Intelligent Actuator Schedule in this Section and indicated on the Drawings.
 - 2. The Motorized Actuator Schedule does not include all number and types of actuators required for the Project.

- B. Abbreviations relating to type:
 - 1. BFV = Butterfly Valve.
 - 2. BV = Ball Valve.
 - 3. PV = Plug Valve.
 - 4. SG = Slide Gate.
 - 5. HW= Handwheel.

- C. Abbreviations relating to actuator type:
 - 1. O/C = Open and Close Service.
 - 2. MOD = Modulating Service.

- D. Abbreviations relating to controls:
 - 1. PA = Profibus PA.
 - 2. DP = Profibus DP.
 - 3. DN = DeviceNet.
 - 4. FF = Foundation Fieldbus H1.
 - 5. MB = Modbus RTU (RS-485).
 - 6. NET = Manufacturer's proprietary network.
 - 7. A = Analog (4-20 mA) control, modulating duty.
 - 8. D = Discrete control, modulating duty.
 - 9. D-O/C = Discrete Open/Close.

END OF SECTION

INTELLIGENT ACTUATOR SCHEDULE									
Item	Reference DWG	Type	Size	Actuator Type	NEMA Rating	Voltage/ Phase/ Hz	Notes	Open Time	Controls
FCV-22-01-02	22-N-01	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-01-04	22-N-01	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-01-06	22-N-01	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-01-09	22-N-02	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-01-14	22-N-02	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-01-17	22-N-02	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-01-20	22-N-04	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-01-25	22-N-05	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-02-02	22-N-06	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-02-04	22-N-06	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-02-06	22-N-06	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-02-09	22-N-07	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-02-14	22-N-08	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-02-17	22-N-09	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-02-20	22-N-09	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-22-02-25	22-N-10	PV	6"	MOD	4X	480/3/60	1	30 s	A
EDR-22-11-01	22-N-11	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C
EDR-22-11-02	22-N-11	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C
EDR-22-11-03	22-N-11	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C
EDR-22-12-01	22-N-11	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C

INTELLIGENT ACTUATOR SCHEDULE									
Item	Reference DWG	Type	Size	Actuator Type	NEMA Rating	Voltage/ Phase/ Hz	Notes	Open Time	Controls
EDR-22-12-02	22-N-11	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C
EDR-22-12-03	22-N-11	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C
EDR-22-13-01	22-N-12	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C
EDR-22-13-02	22-N-12	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C
EDR-22-13-03	22-N-12	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C
EDR-22-14-01	22-N-12	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C
EDR-22-14-02	22-N-12	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C
EDR-22-14-03	22-N-12	HW	--	O/C	4X	120/1/60	1,2	30 s	O/C
EAM-51-00-01	51-N-02	PV	6"	MOD	4X	480/3/60	1,2	30 s	A
EAM-51-00-02	51-N-02	PV	6"	MOD	4X	480/3/60	1,2	30 s	A
EAM-51-00-03	51-N-02	PV	6"	MOD	4X	480/3/60	1,2	30 s	A
FCV-83-01-02	83-N-01	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-83-01-03	83-N-01	PV	6"	O/C	4X	480/3/60	1	30 s	O/C
FCV-83-02-02	83-N-01	PV	6"	MOD	4X	480/3/60	1	30 s	A
FCV-83-02-03	83-N-01	PV	6"	O/C	4X	480/3/60	1	30 s	O/C
FCV-83-01-06	83-N-01	PV	6"	O/C	4X	480/3/60	1	30 s	O/C
Notes: (1) Provide actuators with remote control station. (2) New motorized actuator to be installed on existing equipment. Field verify characteristics prior to sizing motor actuator.									

ADD ENTIRE SECTION

SECTION 15259

CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE: ASTM F441

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: ASTM F441 CPVC pipe and fittings.

1.02 REFERENCES

- A. ASTM International (ASTM):
 - 1. D1784 - Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds.
 - 2. F438 - Standard Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40.
 - 3. F439 - Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80.
 - 4. F441 - Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80.
 - 5. F493 - Standard Specification for Solvent Cements for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe and Fittings.
 - 6. F645 - Standard Guide for Selection, Design and Installation of Thermoplastic Water-Pressure Piping Systems.

1.03 ABBREVIATIONS

- A. CPVC: Chlorinated polyvinyl chloride.

1.04 SUBMITTALS

- A. Submit as specified in Section 01330 - Submittal Procedures.
- B. Product data: As specified in Section 15052 - Common Work Results for General Piping.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Extruding and molding material: Virgin material containing no scrap, regrind, or rework material except where permitted in the referenced standards.
- B. Pipe:
 - 1. In accordance with ASTM F441 and Appendix, CPVC 4120.
 - 2. Extruded from Type IV, Grade 1, Class 23447 material in accordance with ASTM D1784.
 - 3. Schedule 80, unless otherwise indicated on the Drawings or specified in the Piping Schedule in Section 15052 - Common Work Results for General Piping.

4. Manufacturers: One of the following or equal:
 - a. Charlotte Pipe and Foundry Co.
 - b. Eslon Thermoplastics, Inc.
 - c. GF Harvel.
 - d. Spears Manufacturing Co.
 - e. Chemtrol.
- C. Fittings:
 1. In accordance with ASTM F438 or ASTM F439 for pressure fittings, as appropriate to the service and pressure requirement.
 2. Same material as the pipe and of equal or greater pressure rating.
 3. Supplied by pipe manufacturer.
- D. Solvent cement:
 1. In accordance with ASTM F493.
 2. Manufacturers: The following or equal:
 - a. IPS Corp.
 3. Certified by the manufacturer for the service of the pipe.
 4. Primer: As recommended by the solvent cement manufacturer.
- E. Unions 2-1/2 inches and smaller:
 1. Socket end screwed unions.
- F. Unions 3 inches and larger:
 1. Socket flanges with 1/8-inch full-face soft EPDM gasket.

2.02 SOURCE QUALITY CONTROL

- A. Mark pipe and fittings in accordance with ASTM F441.

PART 3 EXECUTION

3.01 DELIVERY, STORAGE, AND HANDLING

- A. Protect from sunlight, scoring, and distortion.
- B. Do not allow surface temperatures to exceed 120 degrees Fahrenheit.
- C. Store and handle as recommended by manufacturer in published instructions.

3.02 INSTALLATION

- A. General:
 1. Install piping in accordance with ASTM F645, or manufacturer's published instructions for installation of piping, as applicable to the particular type of piping.
 2. Provide molded transition fittings for transitions from plastic to metal or IPS pipe.
 - a. Do not thread pipe.
 3. Locate unions where indicated on the Drawings, and elsewhere where required for adequate access and assembly of the piping system.
 4. Provide serrated nipples for transition from plastic pipe to rubber hose.

- B. Installation of piping:
 - 1. Clean dirt and moisture from pipe and fittings.
 - 2. Bevel pipe ends in accordance with manufacturer's instructions with chamfering tool or file.
 - a. Remove burrs.
 - 3. Use solvent cement and primer formulated for CPVC.
 - 4. Use primer on pressure and non-pressure joints.
 - 5. Do not solvent weld joints when ambient temperatures are below 40 degrees Fahrenheit or above 90 degrees Fahrenheit unless solvent cements specially formulated for these conditions are utilized.

3.03 FIELD QUALITY CONTROL

- A. Test as specified in Section 15052 - Common Work Results for General Piping and Section 15956 - Piping Systems Testing.

END OF SECTION

SECTION 16990A

CONDUIT SCHEDULE AREA 22 PART 1

PART 1 GENERAL

1.01 SUMMARY

- A. Conduit requirements:
 - 1. As defined in Section 16050 and Section 16130.
- B. Cable requirements and definitions:
 - 1. As defined in Section 16050 and Section 16123.
 - 2. PULL: Pull Rope.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 CONDUIT SCHEDULE

- A. Conduit Schedule is presented on the following pages.

CONDUIT SCHEDULE AREA 22 PART 1

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-22-001	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-22-11-01 TO: CONDUIT TEE 4 #14 >> EDR-22-11-01 CONTROL	C-22-003
C-22-002	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-22-11-02 TO: CONDUIT TEE 4 #14 >> EDR-22-11-02 CONTROL	C-22-003
C-22-003	22E01	0.75"	8	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 4 #14 >> EDR-22-11-01 CONTROL 4 #14 >> EDR-22-11-02 CONTROL	C-22-005 C-22-001 C-22-002
C-22-004	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-22-11-03 TO: CONDUIT TEE 4 #14 >> EDR-22-11-03 CONTROL	C-22-005
C-22-005	22E01	1"	12	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 4 #14 >> EDR-22-11-01 CONTROL 4 #14 >> EDR-22-11-02 CONTROL 4 #14 >> EDR-22-11-03 CONTROL	C-22-021 C-22-003 C-22-003 C-22-004
C-22-006	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-22-12-01 TO: CONDUIT TEE 4 #14 >> EDR-22-12-01 CONTROL	C-22-008
C-22-007	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-22-12-02 TO: CONDUIT TEE 4 #14 >> EDR-22-12-02 CONTROL	C-22-008
C-22-008	22E01	0.75"	8	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 4 #14 >> EDR-22-12-01 CONTROL 4 #14 >> EDR-22-12-02 CONTROL	C-22-010 C-22-006 C-22-007
C-22-009	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-22-12-03 TO: CONDUIT TEE 4 #14 >> EDR-22-12-03 CONTROL	C-22-010
C-22-010	22E01	1"	12	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 4 #14 >> EDR-22-12-01 CONTROL 4 #14 >> EDR-22-12-02 CONTROL 4 #14 >> EDR-22-12-03 CONTROL	C-22-021 C-22-008 C-22-008 C-22-009
C-22-011	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-22-13-01 TO: CONDUIT TEE 4 #14 >> EDR-22-13-01 CONTROL	C-22-023
C-22-012	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-22-13-02 TO: CONDUIT TEE 4 #14 >> EDR-22-13-02 CONTROL	C-22-022
C-22-013	22E01	1.5"	40	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 4 #14 >> EDR-22-14-01 CONTROL 4 #14 >> EDR-22-14-02 CONTROL 4 #14 >> EDR-22-14-03 CONTROL 4 #14 >> EDR-22-11-01 CONTROL 4 #14 >> EDR-22-11-02 CONTROL 4 #14 >> EDR-22-11-03 CONTROL 4 #14 >> EDR-22-12-01 CONTROL 4 #14 >> EDR-22-12-02 CONTROL 4 #14 >> EDR-22-12-03 CONTROL 4 #14 >> EDR-11-13-03 CONTROL	C-22-022 C-22-015 C-22-015 C-22-015 C-22-015 C-22-015 C-22-015 C-22-015 C-22-015 C-22-015 C-22-015 C-22-014
C-22-014	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-11-13-03 TO: CONDUIT TEE 4 #14 >> EDR-11-13-03 CONTROL	C-22-013
C-22-015	22E01	1.5"	36	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 4 #14 >> EDR-22-14-01 CONTROL 4 #14 >> EDR-22-14-02 CONTROL 4 #14 >> EDR-22-14-03 CONTROL 4 #14 >> EDR-22-11-01 CONTROL 4 #14 >> EDR-22-11-02 CONTROL 4 #14 >> EDR-22-11-03 CONTROL 4 #14 >> EDR-22-12-01 CONTROL 4 #14 >> EDR-22-12-02 CONTROL 4 #14 >> EDR-22-12-03 CONTROL	C-22-013 C-22-020 C-22-020 C-22-020 C-22-021 C-22-021 C-22-021 C-22-021 C-22-021 C-22-021 C-22-021

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CONDUIT			CONDUCTORS			GROUND					
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION		CONNECTING SEGMENTS
C-22-016	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: TO:	EDR-22-14-01 CONDUIT TEE 4 #14 >> EDR-22-14-01 CONTROL	C-22-018
C-22-017	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: TO:	EDR-22-14-02 CONDUIT TEE 4 #14 >> EDR-22-14-02 CONTROL	C-22-018
C-22-018	22E01	0.75"	8	#14	XHHW-2	1	#14	XHHW-2	FR: TO:	CONDUIT TEE CONDUIT TEE 4 #14 >> EDR-22-14-01 CONTROL 4 #14 >> EDR-22-14-02 CONTROL	C-22-020 C-22-016 C-22-017
C-22-019	22E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: TO:	EDR-22-14-03 CONDUIT TEE 4 #14 >> EDR-22-14-03 CONTROL	C-22-020
C-22-020	22E01	1"	12	#14	XHHW-2	1	#14	XHHW-2	FR: TO:	CONDUIT TEE CONDUIT TEE 4 #14 >> EDR-22-14-01 CONTROL 4 #14 >> EDR-22-14-02 CONTROL 4 #14 >> EDR-22-14-03 CONTROL	C-22-015 C-22-018 C-22-018 C-22-019
C-22-021	22E01	1.5"	24	#14	XHHW-2	1	#14	XHHW-2	FR: TO:	CONDUIT TEE CONDUIT TEE 4 #14 >> EDR-22-11-01 CONTROL 4 #14 >> EDR-22-11-02 CONTROL 4 #14 >> EDR-22-11-03 CONTROL 4 #14 >> EDR-22-12-01 CONTROL 4 #14 >> EDR-22-12-02 CONTROL 4 #14 >> EDR-22-12-03 CONTROL	C-22-015 C-22-005 C-22-005 C-22-005 C-22-010 C-22-010 C-22-010
C-22-022	22E01	1.5"	44	#14	XHHW-2	1	#14	XHHW-2	FR: TO:	CONDUIT TEE CONDUIT TEE 4 #14 >> EDR-22-13-02 CONTROL 4 #14 >> EDR-22-14-01 CONTROL 4 #14 >> EDR-22-14-02 CONTROL 4 #14 >> EDR-22-14-03 CONTROL 4 #14 >> EDR-22-11-01 CONTROL 4 #14 >> EDR-22-11-02 CONTROL 4 #14 >> EDR-22-11-03 CONTROL 4 #14 >> EDR-22-12-01 CONTROL 4 #14 >> EDR-22-12-02 CONTROL 4 #14 >> EDR-22-12-03 CONTROL 4 #14 >> EDR-11-13-03 CONTROL	C-22-023 C-22-012 C-22-013 C-22-013 C-22-013 C-22-013 C-22-013 C-22-013 C-22-013 C-22-013 C-22-013 C-22-013
C-22-023	22E01	1.5"	48	#14	XHHW-2	1	#14	XHHW-2	FR: TO:	CONDUIT TEE JB-22-001 4 #14 >> EDR-22-13-02 CONTROL 4 #14 >> EDR-22-14-01 CONTROL 4 #14 >> EDR-22-14-02 CONTROL 4 #14 >> EDR-22-14-03 CONTROL 4 #14 >> EDR-22-11-01 CONTROL 4 #14 >> EDR-22-11-02 CONTROL 4 #14 >> EDR-22-11-03 CONTROL 4 #14 >> EDR-22-12-01 CONTROL 4 #14 >> EDR-22-12-02 CONTROL 4 #14 >> EDR-22-12-03 CONTROL 4 #14 >> EDR-11-13-03 CONTROL 4 #14 >> EDR-22-13-01 CONTROL	C-22-241 C-22-022 C-22-022 C-22-022 C-22-022 C-22-022 C-22-022 C-22-022 C-22-022 C-22-022 C-22-022 C-22-022 C-22-022
C-22-241	02E01	2"	48	#14	XHHW-2	1	#14	XHHW-2	FR: TO:	JB-22-201 MH-1 4 #14 >> EDR-22-13-02 CONTROL 4 #14 >> EDR-22-14-01 CONTROL 4 #14 >> EDR-22-14-02 CONTROL 4 #14 >> EDR-22-14-03 CONTROL 4 #14 >> EDR-22-11-01 CONTROL 4 #14 >> EDR-22-11-02 CONTROL 4 #14 >> EDR-22-11-03 CONTROL 4 #14 >> EDR-22-12-01 CONTROL 4 #14 >> EDR-22-12-02 CONTROL 4 #14 >> EDR-22-12-03 CONTROL 4 #14 >> EDR-11-13-03 CONTROL 4 #14 >> EDR-22-13-01 CONTROL	C-22-242 C-22-023 C-22-023 C-22-023 C-22-023 C-22-023 C-22-023 C-22-023 C-22-023 C-22-023 C-22-023 C-22-023 C-22-023

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-22-242	02E01	2"	48	#14	XHHW-2	1	#14	XHHW-2	FR: MH-1 TO: JB-20-001 4 #14 >> EDR-22-13-02 CONTROL 4 #14 >> EDR-22-14-01 CONTROL 4 #14 >> EDR-22-14-02 CONTROL 4 #14 >> EDR-22-14-03 CONTROL 4 #14 >> EDR-22-11-01 CONTROL 4 #14 >> EDR-22-11-02 CONTROL 4 #14 >> EDR-22-11-03 CONTROL 4 #14 >> EDR-22-12-01 CONTROL 4 #14 >> EDR-22-12-02 CONTROL 4 #14 >> EDR-22-12-03 CONTROL 4 #14 >> EDR-11-13-03 CONTROL 4 #14 >> EDR-22-13-01 CONTROL	C-22-243 C-22-241 C-22-241 C-22-241 C-22-241 C-22-241 C-22-241 C-22-241 C-22-241 C-22-241 C-22-241 C-22-241
C-22-243	02E01	2"	48	#14	XHHW-2	1	#14	XHHW-2	FR: JB-20-001 TO: LCP-220 4 #14 >> EDR-22-13-02 CONTROL 4 #14 >> EDR-22-14-01 CONTROL 4 #14 >> EDR-22-14-02 CONTROL 4 #14 >> EDR-22-14-03 CONTROL 4 #14 >> EDR-22-11-01 CONTROL 4 #14 >> EDR-22-11-02 CONTROL 4 #14 >> EDR-22-11-03 CONTROL 4 #14 >> EDR-22-12-01 CONTROL 4 #14 >> EDR-22-12-02 CONTROL 4 #14 >> EDR-22-12-03 CONTROL 4 #14 >> EDR-11-13-03 CONTROL 4 #14 >> EDR-22-13-01 CONTROL	C-22-242 C-22-242 C-22-242 C-22-242 C-22-242 C-22-242 C-22-242 C-22-242 C-22-242 C-22-242 C-22-242 C-22-242
P-22-001	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-11-01 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-11-01 POWER	P-22-003
P-22-002	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-11-02 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-11-02 POWER	P-22-003
P-22-003	22E01	0.75"	4	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> EDR-22-11-01 POWER 2 #12 >> EDR-22-11-02 POWER	P-22-005 P-22-001
P-22-004	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-11-03 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-11-03 POWER	P-22-005
P-22-005	22E01	0.75"	6	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> EDR-22-11-01 POWER 2 #12 >> EDR-22-11-03 POWER 2 #12 >> EDR-22-11-02 POWER	P-22-024 P-22-003 P-22-004
P-22-006	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-12-01 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-12-01 POWER	P-22-008
P-22-007	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-12-02 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-12-02 POWER	P-22-008
P-22-008	22E01	0.75"	4	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> EDR-22-12-02 POWER 2 #12 >> EDR-22-12-01 POWER	P-22-010 P-22-007 P-22-006
P-22-009	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-12-03 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-12-03 POWER	P-22-010
P-22-010	22E01	0.75"	6	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> EDR-22-12-02 POWER 2 #12 >> EDR-22-12-01 POWER 2 #12 >> EDR-22-12-03 POWER	P-22-022 P-22-008 P-22-008 P-22-009
P-22-011	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-13-01 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-13-01 POWER	P-22-013
P-22-012	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-13-02 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-13-02 POWER	P-22-013

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
P-22-013	22E01	0.75"	4	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> EDR-22-13-01 POWER 2 #12 >> EDR-22-13-02 POWER	P-22-020 P-22-011 P-22-012
P-22-014	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-13-03 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-13-03 POWER	P-22-020
P-22-015	22E01	0.75"	6	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> EDR-22-14-01 POWER 2 #12 >> EDR-22-14-02 POWER 2 #12 >> EDR-22-14-03 POWER	P-22-021 P-22-018 P-22-018 P-22-019
P-22-016	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-14-01 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-14-01 POWER	P-22-018
P-22-017	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-14-02 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-14-02 POWER	P-22-018
P-22-018	22E01	0.75"	4	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> EDR-22-14-01 POWER 2 #12 >> EDR-22-14-02 POWER	P-22-015 P-22-016 P-22-017
P-22-019	22E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: EDR-22-14-03 TO: CONDUIT TEE VIA DISCONNECT 2 #12 >> EDR-22-14-03 POWER	P-22-015
P-22-020	22E01	0.75"	6	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> EDR-22-13-01 POWER 2 #12 >> EDR-22-13-02 POWER 2 #12 >> EDR-22-13-03 POWER	P-22-021 P-22-013 P-22-013 P-22-014
P-22-021	22E01	1"	12	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> EDR-22-14-01 POWER 2 #12 >> EDR-22-14-02 POWER 2 #12 >> EDR-22-14-03 POWER 2 #12 >> EDR-22-13-01 POWER 2 #12 >> EDR-22-13-02 POWER 2 #12 >> EDR-22-13-03 POWER	P-22-022 P-22-015 P-22-015 P-22-015 P-22-020 P-22-020 P-22-020
P-22-022	22E01	1.5"	18	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> EDR-22-12-02 POWER 2 #12 >> EDR-22-12-01 POWER 2 #12 >> EDR-22-12-03 POWER 2 #12 >> EDR-22-14-01 POWER 2 #12 >> EDR-22-14-02 POWER 2 #12 >> EDR-22-14-03 POWER 2 #12 >> EDR-22-13-01 POWER 2 #12 >> EDR-22-13-02 POWER 2 #12 >> EDR-22-13-03 POWER	P-22-024 P-22-010 P-22-010 P-22-010 P-22-021 P-22-021 P-22-021 P-22-021 P-22-021 P-22-021
P-22-024	22E01	1.5"	24	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: LP-LA 2 #12 >> EDR-22-11-01 POWER 2 #12 >> EDR-22-11-03 POWER 2 #12 >> EDR-22-11-02 POWER 2 #12 >> EDR-22-12-02 POWER 2 #12 >> EDR-22-12-01 POWER 2 #12 >> EDR-22-12-03 POWER 2 #12 >> EDR-22-14-01 POWER 2 #12 >> EDR-22-14-02 POWER 2 #12 >> EDR-22-14-03 POWER 2 #12 >> EDR-22-13-01 POWER 2 #12 >> EDR-22-13-02 POWER 2 #12 >> EDR-22-13-03 POWER	P-22-005 P-22-005 P-22-022 P-22-022 P-22-022 P-22-022 P-22-022 P-22-022 P-22-022 P-22-022 P-22-022
P-22-025	22E01	1"	2	#4	XHHW-2	1	#8	XHHW-2	FR: XFMR-T1 TO: MCC-BB 2 #4 >> XFMR-T1 POWER	
X-22-242		0.75"	1	PULL	ROPE				FR: JB-22-201 TO: MH-1 1 PULL >>	

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PASEO REAL WWTP AERATION IMPROVEMENTS									REVISION	0
ANOXIC BASINS									DATE	3/19/20
CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS

END OF CONDUIT SCHEDULE

END OF SECTION

SECTION 16990B

CONDUIT SCHEDULE AREA 22 PART 2

PART 1 GENERAL

1.01 SUMMARY

- A. Conduit requirements:
 - 1. As defined in Section 16050 and Section 16130.
- B. Cable requirements and definitions:
 - 1. As defined in Section 16050 and Section 16123.
 - 2. 2/CS#16: 2 conductor, 16 gauge, twisted shielded pair.
 - 3. MFR: Manufacturer or vendor furnished cable.
 - 4. PULL: Pull Rope.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 CONDUIT SCHEDULE

- A. Conduit Schedule is presented on the following pages.

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-22-100	02E01	2"	8	#14	XHHW-2	1	#14	XHHW-2	FR: VCP-90-01 J-BOX TO: 8 #14 >> VCP-90-01 CONTROL	C-22-102
C-22-101	22E02	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: AIT-22-02-07 J-BOX TO: 2 #12 >> AIT-22-02-07 POWER	C-22-102
C-22-102	22E02	0.75"	2 8	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: J-BOX CONDUIT TEE TO: 8 #14 >> VCP-90-01 CONTROL 2 #12 >> AIT-22-02-07 POWER	C-22-104 C-22-100 C-22-101
C-22-103	22E02	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-20 CONDUIT TEE TO: 6 #14 >> FCV-22-20 CONTROL	C-22-104
C-22-104	22E02	1"	2 14	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE CONDUIT TEE TO: 8 #14 >> VCP-90-01 CONTROL 2 #12 >> AIT-22-02-07 POWER 6 #14 >> FCV-22-20 CONTROL	C-22-106 C-22-102 C-22-102 C-22-103
C-22-105	22E02	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-02-19 CONDUIT TEE TO: 2 #12 >> FIT-22-02-19 CONTROL	C-22-106
C-22-106	22E02	1"	4 14	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE CONDUIT TEE TO: 8 #14 >> VCP-90-01 CONTROL 2 #12 >> AIT-22-02-07 POWER 6 #14 >> FCV-22-20 CONTROL 2 #12 >> FIT-22-02-19 CONTROL	C-22-108 C-22-104 C-22-104 C-22-104 C-22-105
C-22-107	22E02	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: AIT-22-02-10 CONDUIT TEE TO: 2 #12 >> AIT-22-02-10 CONTROL	C-22-108
C-22-108	22E02	1.5"	6 14	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE J-BOX TO: 8 #14 >> VCP-90-01 CONTROL 2 #12 >> AIT-22-02-07 POWER 6 #14 >> FCV-22-20 CONTROL 2 #12 >> FIT-22-02-19 CONTROL 2 #12 >> AIT-22-02-10 CONTROL	C-22-109 C-22-106 C-22-106 C-22-106 C-22-106 C-22-107
C-22-109	22E02 22E03	3"	20 56	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: J-BOX J-BOX TO: 8 #14 >> VCP-90-01 CONTROL 2 #12 >> AIT-22-02-07 POWER 6 #14 >> FCV-22-20 CONTROL 2 #12 >> FIT-22-02-19 CONTROL 2 #12 >> AIT-22-02-10 CONTROL 6 #14 >> FCV-22-02-25 CONTROL 2 #12 >> FIT-22-02-24 CONTROL 6 #14 >> FCV-22-02-17 CONTROL 2 #12 >> FIT-22-02-16 CONTROL 2 #12 >> FIT-22-02-01 CONTROL 6 #14 >> FCV-22-02-02 CONTROL 2 #12 >> FIT-22-02-08 CONTROL 2 #12 >> FIT-22-02-13 CONTROL 2 #12 >> FIT-22-02-03 CONTROL 2 #12 >> FIT-22-02-05 CONTROL 6 #14 >> FCV-22-02-09 CONTROL 6 #14 >> FCV-22-02-14 CONTROL 6 #14 >> FCV-22-02-06 CONTROL 6 #14 >> FCV-22-02-04 CONTROL	C-22-251 C-22-108 C-22-108 C-22-108 C-22-108 C-22-140 C-22-140 C-22-140 C-22-140 C-22-140 C-22-140 C-22-140 C-22-140 C-22-140 C-22-140 C-22-140 C-22-140 C-22-140 C-22-140
C-22-114	22E02	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-02-25 CONDUIT TEE TO: 6 #14 >> FCV-22-02-25 CONTROL	C-22-116
C-22-115	22E02	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-02-24 CONDUIT TEE TO: 2 #12 >> FIT-22-02-24 CONTROL	C-22-116
C-22-116	22E02	0.75"	2 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE CONDUIT TEE TO: 6 #14 >> FCV-22-02-25 CONTROL 2 #12 >> FIT-22-02-24 CONTROL	C-22-118 C-22-114 C-22-115
C-22-117	22E02	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-02-17 CONDUIT TEE TO: 6 #14 >> FCV-22-02-17 CONTROL	C-22-118

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-22-118	22E02	1"	2 12	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> FCV-22-02-25 CONTROL 2 #12 >> FIT-22-02-24 CONTROL 6 #14 >> FCV-22-02-17 CONTROL	C-22-120 C-22-116 C-22-116 C-22-117
C-22-119	22E02	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-02-16 TO: CONDUIT TEE 2 #12 >> FIT-22-02-16 CONTROL	C-22-120
C-22-120	22E02	1"	4 12	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: J-BOX 6 #14 >> FCV-22-02-25 CONTROL 2 #12 >> FIT-22-02-24 CONTROL 6 #14 >> FCV-22-02-17 CONTROL 2 #12 >> FIT-22-02-16 CONTROL	C-22-140 C-22-118 C-22-118 C-22-118 C-22-119
C-22-121	22E02	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-02-01 TO: CONDUIT TEE 2 #12 >> FIT-22-02-01 CONTROL	C-22-123
C-22-122	22E02	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-02-02 TO: CONDUIT TEE 6 #14 >> FCV-22-02-02 CONTROL	C-22-123
C-22-123	22E02 22E04	0.75"	2 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-22-02-01 CONTROL 6 #14 >> FCV-22-02-02 CONTROL	C-22-125 C-22-121 C-22-122
C-22-124	22E02 22E04	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-02-08 TO: CONDUIT TEE 2 #12 >> FIT-22-02-08 CONTROL	C-22-125
C-22-125	22E02 22E04	0.75"	4 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-22-02-01 CONTROL 6 #14 >> FCV-22-02-02 CONTROL 2 #12 >> FIT-22-02-08 CONTROL	C-22-127 C-22-123 C-22-123 C-22-124
C-22-126	22E02 22E04	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-02-13 TO: CONDUIT TEE 2 #12 >> FIT-22-02-13 CONTROL	C-22-127
C-22-127	22E04	1"	6 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-22-02-01 CONTROL 6 #14 >> FCV-22-02-02 CONTROL 2 #12 >> FIT-22-02-08 CONTROL 2 #12 >> FIT-22-02-13 CONTROL	C-22-129 C-22-125 C-22-125 C-22-125 C-22-126
C-22-128	22E04	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-02-03 TO: CONDUIT TEE 2 #12 >> FIT-22-02-03 CONTROL	C-22-129
C-22-129	22E04	1"	8 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-22-02-01 CONTROL 6 #14 >> FCV-22-02-02 CONTROL 2 #12 >> FIT-22-02-08 CONTROL 2 #12 >> FIT-22-02-13 CONTROL 2 #12 >> FIT-22-02-03 CONTROL	C-22-131 C-22-127 C-22-127 C-22-127 C-22-127 C-22-128
C-22-130	22E04	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-02-05 TO: CONDUIT TEE 2 #12 >> FIT-22-02-05 CONTROL	C-22-131
C-22-131	22E04	1"	10 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-22-02-01 CONTROL 6 #14 >> FCV-22-02-02 CONTROL 2 #12 >> FIT-22-02-08 CONTROL 2 #12 >> FIT-22-02-13 CONTROL 2 #12 >> FIT-22-02-03 CONTROL 2 #12 >> FIT-22-02-05 CONTROL	C-22-135 C-22-129 C-22-129 C-22-129 C-22-129 C-22-129 C-22-130
C-22-132	22E02 22E04	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-02-09 TO: CONDUIT TEE 6 #14 >> FCV-22-02-09 CONTROL	C-22-134
C-22-133	22E02 22E04	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-02-14 TO: CONDUIT TEE 6 #14 >> FCV-22-02-14 CONTROL	C-22-134

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-22-134	22E02 22E04	1"	12	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> FCV-22-02-09 CONTROL 6 #14 >> FCV-22-02-14 CONTROL	C-22-135 C-22-132 C-22-133
C-22-135	22E02 22E04	1.5"	10 18	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-22-02-01 CONTROL 6 #14 >> FCV-22-02-02 CONTROL 2 #12 >> FIT-22-02-08 CONTROL 2 #12 >> FIT-22-02-13 CONTROL 2 #12 >> FIT-22-02-03 CONTROL 2 #12 >> FIT-22-02-05 CONTROL 6 #14 >> FCV-22-02-09 CONTROL 6 #14 >> FCV-22-02-14 CONTROL	C-22-137 C-22-131 C-22-131 C-22-131 C-22-131 C-22-131 C-22-131 C-22-134 C-22-134
C-22-136	22E02 22E04	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-02-06 TO: CONDUIT TEE 6 #14 >> FCV-22-02-06 CONTROL	C-22-137
C-22-137	22E02 22E04	1.5"	10 24	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: J-BOX 2 #12 >> FIT-22-02-01 CONTROL 6 #14 >> FCV-22-02-02 CONTROL 2 #12 >> FIT-22-02-08 CONTROL 2 #12 >> FIT-22-02-13 CONTROL 2 #12 >> FIT-22-02-03 CONTROL 2 #12 >> FIT-22-02-05 CONTROL 6 #14 >> FCV-22-02-09 CONTROL 6 #14 >> FCV-22-02-14 CONTROL 6 #14 >> FCV-22-02-06 CONTROL	C-22-139 C-22-135 C-22-135 C-22-135 C-22-135 C-22-135 C-22-135 C-22-135 C-22-135 C-22-136
C-22-138	22E02 22E04	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-02-04 TO: CONDUIT TEE 6 #14 >> FCV-22-02-04 CONTROL	C-22-139
C-22-139	22E02 22E04	3"	10 30	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: J-BOX 2 #12 >> FIT-22-02-01 CONTROL 6 #14 >> FCV-22-02-02 CONTROL 2 #12 >> FIT-22-02-08 CONTROL 2 #12 >> FIT-22-02-13 CONTROL 2 #12 >> FIT-22-02-03 CONTROL 2 #12 >> FIT-22-02-05 CONTROL 6 #14 >> FCV-22-02-09 CONTROL 6 #14 >> FCV-22-02-14 CONTROL 6 #14 >> FCV-22-02-06 CONTROL 6 #14 >> FCV-22-02-04 CONTROL	C-22-140 C-22-137 C-22-137 C-22-137 C-22-137 C-22-137 C-22-137 C-22-137 C-22-137 C-22-137 C-22-138
C-22-140	22E02	2"	14 42	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: J-BOX TO: J-BOX 6 #14 >> FCV-22-02-25 CONTROL 2 #12 >> FIT-22-02-24 CONTROL 6 #14 >> FCV-22-02-17 CONTROL 2 #12 >> FIT-22-02-16 CONTROL 2 #12 >> FIT-22-02-01 CONTROL 6 #14 >> FCV-22-02-02 CONTROL 2 #12 >> FIT-22-02-08 CONTROL 2 #12 >> FIT-22-02-13 CONTROL 2 #12 >> FIT-22-02-03 CONTROL 2 #12 >> FIT-22-02-05 CONTROL 6 #14 >> FCV-22-02-09 CONTROL 6 #14 >> FCV-22-02-14 CONTROL 6 #14 >> FCV-22-02-06 CONTROL 6 #14 >> FCV-22-02-04 CONTROL	C-22-109 C-22-120 C-22-120 C-22-120 C-22-120 C-22-139 C-22-139 C-22-139 C-22-139 C-22-139 C-22-139 C-22-139 C-22-139 C-22-139
C-22-141	22E03	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: AIT-22-01-10 TO: CONDUIT TEE 2 #12 >> AIT-22-01-10 CONTROL	C-22-143
C-22-142	22E03	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-01-16 TO: CONDUIT TEE 2 #12 >> FIT-22-01-16 CONTROL	C-22-143
C-22-143	22E03	0.75"	4	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> AIT-22-01-10 CONTROL 2 #12 >> FIT-22-01-16 CONTROL	C-22-145 C-22-141 C-22-142
C-22-144	22E03	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-01-17 TO: CONDUIT TEE 6 #14 >> FCV-22-01-17 CONTROL	C-22-145

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NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-22-145	22E03	0.75"	4 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: J-BOX 2 #12 >> AIT-22-01-10 CONTROL 2 #12 >> FIT-22-01-16 CONTROL 6 #14 >> FCV-22-01-17 CONTROL	C-22-146 C-22-143 C-22-143 C-22-144
C-22-146		1.5"	10 20	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: J-BOX TO: MH-2 8 #14 >> VCP-90-01 CONTROL 2 #12 >> AIT-22-02-07 POWER 6 #14 >> FCV-22-20 CONTROL 2 #12 >> FIT-22-02-19 CONTROL 2 #12 >> AIT-22-02-10 CONTROL 2 #12 >> AIT-22-01-10 CONTROL 2 #12 >> FIT-22-01-16 CONTROL 6 #14 >> FCV-22-01-17 CONTROL	C-22-108 C-22-108 C-22-108 C-22-108 C-22-108 C-22-145 C-22-145 C-22-145
C-22-151	22E03	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-01-01 TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL	C-22-153
C-22-152	22E03	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-01-02 TO: CONDUIT TEE 6 #14 >> FCV-22-01-02 CONTROL	C-22-153
C-22-153	22E03 22E04	0.75"	2 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL	C-22-155 C-22-151 C-22-152
C-22-154	22E04	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-01-13 TO: CONDUIT TEE 2 #12 >> FIT-22-01-13 CONTROL	C-22-155
C-22-155	22E04	0.75"	4 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL	C-22-157 C-22-153 C-22-153 C-22-154
C-22-156	22E04	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-022-01-08 TO: CONDUIT TEE 2 #12 >> FIT-022-01-08 CONTROL	C-22-157
C-22-157	22E04	1"	6 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL 2 #12 >> FIT-022-01-08 CONTROL	C-22-159 C-22-155 C-22-155 C-22-155 C-22-156
C-22-158	22E03 22E04	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-022-01-03 TO: CONDUIT TEE 2 #12 >> FIT-022-01-03 CONTROL	C-22-159
C-22-159	22E04	1"	8 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL 2 #12 >> FIT-022-01-08 CONTROL 2 #12 >> FIT-022-01-03 CONTROL	C-22-161 C-22-157 C-22-157 C-22-157 C-22-157 C-22-158
C-22-160	22E04	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-022-01-05 TO: CONDUIT TEE 2 #12 >> FIT-022-01-05 CONTROL	C-22-161
C-22-161	22E04	1"	10 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL 2 #12 >> FIT-022-01-08 CONTROL 2 #12 >> FIT-022-01-03 CONTROL 2 #12 >> FIT-022-01-05 CONTROL	C-22-165 C-22-159 C-22-159 C-22-159 C-22-159 C-22-159 C-22-160
C-22-162	22E04	1"	12	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> FCV-22-01-14 CONTROL 6 #14 >> FCV-22-01-09 CONTROL	C-22-165 C-22-164 C-22-163

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-22-163	22E04	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-01-09 TO: CONDUIT TEE 6 #14 >> FCV-22-01-09 CONTROL	C-22-162
C-22-164	22E04	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-01-14 TO: CONDUIT TEE 6 #14 >> FCV-22-01-14 CONTROL	C-22-162
C-22-165	22E04	1.5"	10 18	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL 2 #12 >> FIT-022-01-08 CONTROL 2 #12 >> FIT-022-01-03 CONTROL 2 #12 >> FIT-022-01-05 CONTROL 6 #14 >> FCV-22-01-14 CONTROL 6 #14 >> FCV-22-01-09 CONTROL	C-22-167 C-22-161 C-22-161 C-22-161 C-22-161 C-22-161 C-22-161 C-22-162 C-22-162
C-22-166	22E04	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-01-06 TO: CONDUIT TEE 6 #14 >> FCV-22-01-06 CONTROL	C-22-167
C-22-167	22E04	1.5"	10 24	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL 2 #12 >> FIT-022-01-08 CONTROL 2 #12 >> FIT-022-01-03 CONTROL 2 #12 >> FIT-022-01-05 CONTROL 6 #14 >> FCV-22-01-14 CONTROL 6 #14 >> FCV-22-01-09 CONTROL 6 #14 >> FCV-22-01-06 CONTROL	C-22-169 C-22-165 C-22-165 C-22-165 C-22-165 C-22-165 C-22-165 C-22-165 C-22-165 C-22-166
C-22-168	22E04	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-01-04 TO: CONDUIT TEE 6 #14 >> FCV-22-01-04 CONTROL	C-22-169
C-22-169	22E03 22E04	1.5"	10 30	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL 2 #12 >> FIT-022-01-08 CONTROL 2 #12 >> FIT-022-01-03 CONTROL 2 #12 >> FIT-022-01-05 CONTROL 6 #14 >> FCV-22-01-14 CONTROL 6 #14 >> FCV-22-01-09 CONTROL 6 #14 >> FCV-22-01-06 CONTROL 6 #14 >> FCV-22-01-04 CONTROL	C-22-171 C-22-167 C-22-167 C-22-167 C-22-167 C-22-167 C-22-167 C-22-167 C-22-167 C-22-167 C-22-167 C-22-167 C-22-168
C-22-170	22E03	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-01-09 TO: CONDUIT TEE 2 #12 >> FIT-22-01-09 CONTROL	C-22-171
C-22-171	22E03	1.5"	12 30	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL 2 #12 >> FIT-022-01-08 CONTROL 2 #12 >> FIT-022-01-03 CONTROL 2 #12 >> FIT-022-01-05 CONTROL 6 #14 >> FCV-22-01-14 CONTROL 6 #14 >> FCV-22-01-09 CONTROL 6 #14 >> FCV-22-01-06 CONTROL 2 #12 >> FIT-22-01-09 CONTROL	C-22-173 C-22-169 C-22-169 C-22-169 C-22-169 C-22-169 C-22-169 C-22-169 C-22-169 C-22-169 C-22-169 C-22-170
C-22-172	22E03	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-01-20 TO: CONDUIT TEE 6 #14 >> FCV-22-01-20 CONTROL	C-22-173

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-22-173	22E03	2"	12 36	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL 2 #12 >> FIT-022-01-08 CONTROL 2 #12 >> FIT-022-01-03 CONTROL 2 #12 >> FIT-022-01-05 CONTROL 6 #14 >> FCV-22-01-14 CONTROL 6 #14 >> FCV-22-01-09 CONTROL 6 #14 >> FCV-22-01-06 CONTROL 6 #14 >> FCV-22-01-04 CONTROL 2 #12 >> FIT-22-01-09 CONTROL 6 #14 >> FCV-22-01-20 CONTROL	C-22-175 C-22-171 C-22-171 C-22-171 C-22-171 C-22-171 C-22-171 C-22-171 C-22-171 C-22-171 C-22-171 C-22-171 C-22-171 C-22-172
C-22-174	22E03	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-22-01-24 TO: CONDUIT TEE 2 #12 >> FIT-22-01-24 CONTROL	C-22-175
C-22-175	22E03	2"	14 36	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL 2 #12 >> FIT-022-01-08 CONTROL 2 #12 >> FIT-022-01-03 CONTROL 2 #12 >> FIT-022-01-05 CONTROL 6 #14 >> FCV-22-01-14 CONTROL 6 #14 >> FCV-22-01-09 CONTROL 6 #14 >> FCV-22-01-06 CONTROL 6 #14 >> FCV-22-01-04 CONTROL 2 #12 >> FIT-22-01-09 CONTROL 6 #14 >> FCV-22-01-20 CONTROL 2 #12 >> FIT-22-01-24 CONTROL	C-22-177 C-22-173 C-22-173 C-22-173 C-22-173 C-22-173 C-22-173 C-22-173 C-22-173 C-22-173 C-22-173 C-22-173 C-22-174
C-22-176	22E03	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-01-25 TO: CONDUIT TEE 6 #14 >> FCV-22-01-25 CONTROL	C-22-177
C-22-177	22E03	2"	14 42	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: J-BOX 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL 2 #12 >> FIT-022-01-08 CONTROL 2 #12 >> FIT-022-01-03 CONTROL 2 #12 >> FIT-022-01-05 CONTROL 6 #14 >> FCV-22-01-14 CONTROL 6 #14 >> FCV-22-01-09 CONTROL 6 #14 >> FCV-22-01-06 CONTROL 6 #14 >> FCV-22-01-04 CONTROL 2 #12 >> FIT-22-01-09 CONTROL 6 #14 >> FCV-22-01-20 CONTROL 2 #12 >> FIT-22-01-24 CONTROL 6 #14 >> FCV-22-01-25 CONTROL	C-22-178 C-22-175 C-22-175 C-22-175 C-22-175 C-22-175 C-22-175 C-22-175 C-22-175 C-22-175 C-22-175 C-22-175 C-22-175 C-22-176
C-22-178	22E03	2"	20 48	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: J-BOX TO: J-BOX 2 #12 >> AIT-22-01-10 CONTROL 2 #12 >> FIT-22-01-16 CONTROL 6 #14 >> FCV-22-01-17 CONTROL 2 #12 >> FIT-01-01 CONTROL 6 #14 >> FCV-22-01-02 CONTROL 2 #12 >> FIT-22-01-13 CONTROL 2 #12 >> FIT-022-01-08 CONTROL 2 #12 >> FIT-022-01-03 CONTROL 2 #12 >> FIT-022-01-05 CONTROL 6 #14 >> FCV-22-01-14 CONTROL 6 #14 >> FCV-22-01-09 CONTROL 6 #14 >> FCV-22-01-06 CONTROL 6 #14 >> FCV-22-01-04 CONTROL 2 #12 >> FIT-22-01-09 CONTROL 6 #14 >> FCV-22-01-20 CONTROL 2 #12 >> FIT-22-01-24 CONTROL 6 #14 >> FCV-22-01-25 CONTROL 2 #12 >> AIT-22-01-07 CONTROL	C-22-252 C-22-145 C-22-145 C-22-145 C-22-177 C-22-177 C-22-177 C-22-177 C-22-177 C-22-177 C-22-177 C-22-177 C-22-177 C-22-177 C-22-177 C-22-177 C-22-177 C-22-177 C-22-177
C-22-179		0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: AIT-22-01-07 TO: J-BOX 2 #12 >> AIT-22-01-07 CONTROL	C-22-178

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-22-251	02E01	3"	20 56	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: JB-22-C101	C-22-261
									TO: MH-3	
									8 #14 >> VCP-90-01 CONTROL	C-22-109
									2 #12 >> AIT-22-02-07 POWER	C-22-109
									6 #14 >> FCV-22-20 CONTROL	C-22-109
									2 #12 >> FIT-22-02-19 CONTROL	C-22-109
									2 #12 >> AIT-22-02-10 CONTROL	C-22-109
									6 #14 >> FCV-22-02-25 CONTROL	C-22-109
									2 #12 >> FIT-22-02-24 CONTROL	C-22-109
									6 #14 >> FCV-22-02-17 CONTROL	C-22-109
									2 #12 >> FIT-22-02-16 CONTROL	C-22-109
									2 #12 >> FIT-22-02-01 CONTROL	C-22-109
									6 #14 >> FCV-22-02-02 CONTROL	C-22-109
									2 #12 >> FIT-22-02-08 CONTROL	C-22-109
									2 #12 >> FIT-22-02-13 CONTROL	C-22-109
									2 #12 >> FIT-22-02-03 CONTROL	C-22-109
									2 #12 >> FIT-22-02-05 CONTROL	C-22-109
									6 #14 >> FCV-22-02-09 CONTROL	C-22-109
									6 #14 >> FCV-22-02-14 CONTROL	C-22-109
									6 #14 >> FCV-22-02-06 CONTROL	C-22-109
									6 #14 >> FCV-22-02-04 CONTROL	C-22-109
C-22-252	02E01	3"	26 54	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: JB-22-C101	C-22-262
									TO: MH-3	
									2 #12 >> AIT-22-01-10 CONTROL	C-22-145
									2 #12 >> FIT-22-01-16 CONTROL	C-22-145
									6 #14 >> FCV-22-01-17 CONTROL	C-22-145
									2 #12 >> AIT-22-01-10 CONTROL	C-22-178
									2 #12 >> FIT-22-01-16 CONTROL	C-22-178
									6 #14 >> FCV-22-01-17 CONTROL	C-22-178
									2 #12 >> FIT-01-01 CONTROL	C-22-178
									6 #14 >> FCV-22-01-02 CONTROL	C-22-178
									2 #12 >> FIT-22-01-13 CONTROL	C-22-178
									2 #12 >> FIT-022-01-08 CONTROL	C-22-178
									2 #12 >> FIT-022-01-03 CONTROL	C-22-178
									2 #12 >> FIT-022-01-05 CONTROL	C-22-178
									6 #14 >> FCV-22-01-14 CONTROL	C-22-178
									6 #14 >> FCV-22-01-09 CONTROL	C-22-178
									6 #14 >> FCV-22-01-06 CONTROL	C-22-178
									6 #14 >> FCV-22-01-04 CONTROL	C-22-178
									2 #12 >> FIT-22-01-09 CONTROL	C-22-178
									6 #14 >> FCV-22-01-20 CONTROL	C-22-178
									2 #12 >> FIT-22-01-24 CONTROL	C-22-178
									6 #14 >> FCV-22-01-25 CONTROL	C-22-178
									2 #12 >> AIT-22-01-07 CONTROL	C-22-178
									2 #12 >> AIT-22-01-07 CONTROL	C-22-179
C-22-261	02E01	2.5"	20 56	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: MH-3	C-22-271
									TO: MH-2	
									8 #14 >> VCP-90-01 CONTROL	C-22-251
									2 #12 >> AIT-22-02-07 POWER	C-22-251
									6 #14 >> FCV-22-20 CONTROL	C-22-251
									2 #12 >> FIT-22-02-19 CONTROL	C-22-251
									2 #12 >> AIT-22-02-10 CONTROL	C-22-251
									6 #14 >> FCV-22-02-25 CONTROL	C-22-251
									2 #12 >> FIT-22-02-24 CONTROL	C-22-251
									6 #14 >> FCV-22-02-17 CONTROL	C-22-251
									2 #12 >> FIT-22-02-16 CONTROL	C-22-251
									2 #12 >> FIT-22-02-01 CONTROL	C-22-251
									6 #14 >> FCV-22-02-02 CONTROL	C-22-251
									2 #12 >> FIT-22-02-08 CONTROL	C-22-251
									2 #12 >> FIT-22-02-13 CONTROL	C-22-251
									2 #12 >> FIT-22-02-03 CONTROL	C-22-251
									2 #12 >> FIT-22-02-05 CONTROL	C-22-251
									6 #14 >> FCV-22-02-09 CONTROL	C-22-251
									6 #14 >> FCV-22-02-14 CONTROL	C-22-251
									6 #14 >> FCV-22-02-06 CONTROL	C-22-251
									6 #14 >> FCV-22-02-04 CONTROL	C-22-251

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CONDUIT			CONDUCTORS			GROUND							
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION		CONNECTING SEGMENTS		
C-22-262	02E01	2.5"	26 54	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR:	MH-3	C-22-272		
									TO:	MH-2			
									2	#12	>>	AIT-22-01-10 CONTROL	C-22-252
									2	#12	>>	FIT-22-01-16 CONTROL	C-22-252
									6	#14	>>	FCV-22-01-17 CONTROL	C-22-252
									2	#12	>>	AIT-22-01-10 CONTROL	C-22-252
									2	#12	>>	FIT-22-01-16 CONTROL	C-22-252
									6	#14	>>	FCV-22-01-17 CONTROL	C-22-252
									2	#12	>>	FIT-01-01 CONTROL	C-22-252
									6	#14	>>	FCV-22-01-02 CONTROL	C-22-252
									2	#12	>>	FIT-22-01-13 CONTROL	C-22-252
									2	#12	>>	FIT-022-01-08 CONTROL	C-22-252
									2	#12	>>	FIT-022-01-03 CONTROL	C-22-252
									2	#12	>>	FIT-022-01-05 CONTROL	C-22-252
									6	#14	>>	FCV-22-01-14 CONTROL	C-22-252
									6	#14	>>	FCV-22-01-09 CONTROL	C-22-252
									6	#14	>>	FCV-22-01-06 CONTROL	C-22-252
									6	#14	>>	FCV-22-01-04 CONTROL	C-22-252
									2	#12	>>	FIT-22-01-09 CONTROL	C-22-252
									6	#14	>>	FCV-22-01-20 CONTROL	C-22-252
2	#12	>>	FIT-22-01-24 CONTROL	C-22-252									
6	#14	>>	FCV-22-01-25 CONTROL	C-22-252									
2	#12	>>	AIT-22-01-07 CONTROL	C-22-252									
2	#12	>>	AIT-22-01-07 CONTROL	C-22-252									
C-22-271	02E01	2.5"	20 56	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR:	MH-2	C-22-281		
									TO:	MH-1			
									8	#14	>>	VCP-90-01 CONTROL	C-22-261
									2	#12	>>	AIT-22-02-07 POWER	C-22-261
									6	#14	>>	FCV-22-20 CONTROL	C-22-261
									2	#12	>>	FIT-22-02-19 CONTROL	C-22-261
									2	#12	>>	AIT-22-02-10 CONTROL	C-22-261
									6	#14	>>	FCV-22-02-25 CONTROL	C-22-261
									2	#12	>>	FIT-22-02-24 CONTROL	C-22-261
									6	#14	>>	FCV-22-02-17 CONTROL	C-22-261
									2	#12	>>	FIT-22-02-16 CONTROL	C-22-261
									2	#12	>>	FIT-22-02-01 CONTROL	C-22-261
									6	#14	>>	FCV-22-02-02 CONTROL	C-22-261
									2	#12	>>	FIT-22-02-08 CONTROL	C-22-261
									2	#12	>>	FIT-22-02-13 CONTROL	C-22-261
									2	#12	>>	FIT-22-02-03 CONTROL	C-22-261
									2	#12	>>	FIT-22-02-05 CONTROL	C-22-261
									6	#14	>>	FCV-22-02-09 CONTROL	C-22-261
									6	#14	>>	FCV-22-02-14 CONTROL	C-22-261
									6	#14	>>	FCV-22-02-06 CONTROL	C-22-261
6	#14	>>	FCV-22-02-04 CONTROL	C-22-261									
C-22-272	02E01	2.5"	26 54	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR:	MH-2	C-22-282		
									TO:	MH-1			
									2	#12	>>	AIT-22-01-10 CONTROL	C-22-262
									2	#12	>>	FIT-22-01-16 CONTROL	C-22-262
									6	#14	>>	FCV-22-01-17 CONTROL	C-22-262
									2	#12	>>	AIT-22-01-10 CONTROL	C-22-262
									2	#12	>>	FIT-22-01-16 CONTROL	C-22-262
									6	#14	>>	FCV-22-01-17 CONTROL	C-22-262
									2	#12	>>	FIT-01-01 CONTROL	C-22-262
									6	#14	>>	FCV-22-01-02 CONTROL	C-22-262
									2	#12	>>	FIT-22-01-13 CONTROL	C-22-262
									2	#12	>>	FIT-022-01-08 CONTROL	C-22-262
									2	#12	>>	FIT-022-01-03 CONTROL	C-22-262
									2	#12	>>	FIT-022-01-05 CONTROL	C-22-262
									6	#14	>>	FCV-22-01-14 CONTROL	C-22-262
									6	#14	>>	FCV-22-01-09 CONTROL	C-22-262
									6	#14	>>	FCV-22-01-06 CONTROL	C-22-262
									6	#14	>>	FCV-22-01-04 CONTROL	C-22-262
									2	#12	>>	FIT-22-01-09 CONTROL	C-22-262
									6	#14	>>	FCV-22-01-20 CONTROL	C-22-262
2	#12	>>	FIT-22-01-24 CONTROL	C-22-262									
6	#14	>>	FCV-22-01-25 CONTROL	C-22-262									
2	#12	>>	AIT-22-01-07 CONTROL	C-22-262									
2	#12	>>	AIT-22-01-07 CONTROL	C-22-262									

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pw://Carollo/Documents/Client/NM/Santa Fe/11283A10/Specifications/16990A (AD03)

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CONDUIT			CONDUCTORS			GROUND								
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION		CONNECTING SEGMENTS			
C-22-292	20E01	2.5"	26 54	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR:	JB-20-001				
									TO:	LCP-220				
										2	#12	>>	AIT-22-01-10 CONTROL	C-22-282
										2	#12	>>	FIT-22-01-16 CONTROL	C-22-282
										6	#14	>>	FCV-22-01-17 CONTROL	C-22-282
										2	#12	>>	AIT-22-01-10 CONTROL	C-22-282
										2	#12	>>	FIT-22-01-16 CONTROL	C-22-282
										6	#14	>>	FCV-22-01-17 CONTROL	C-22-282
										2	#12	>>	FIT-01-01 CONTROL	C-22-282
										6	#14	>>	FCV-22-01-02 CONTROL	C-22-282
										2	#12	>>	FIT-22-01-13 CONTROL	C-22-282
										2	#12	>>	FIT-022-01-08 CONTROL	C-22-282
										2	#12	>>	FIT-022-01-03 CONTROL	C-22-282
										2	#12	>>	FIT-022-01-05 CONTROL	C-22-282
										6	#14	>>	FCV-22-01-14 CONTROL	C-22-282
										6	#14	>>	FCV-22-01-09 CONTROL	C-22-282
										6	#14	>>	FCV-22-01-06 CONTROL	C-22-282
										6	#14	>>	FCV-22-01-04 CONTROL	C-22-282
										2	#12	>>	FIT-22-01-09 CONTROL	C-22-282
										6	#14	>>	FCV-22-01-20 CONTROL	C-22-282
	2	#12	>>	FIT-22-01-24 CONTROL	C-22-282									
	6	#14	>>	FCV-22-01-25 CONTROL	C-22-282									
	2	#12	>>	AIT-22-01-07 CONTROL	C-22-282									
	2	#12	>>	AIT-22-01-07 CONTROL	C-22-282									
L-22-001	20E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR:	MVP-10-000				
									TO:	CONDUIT TEE				
									2	#12	>> MVP-10-000 POWER			
L-22-002	20E01	0.75"	4	#12	XHHW-2	1	#12	XHHW-2	FR:	LCP-220	L-22-003			
									TO:	UPS LP-3750				
									2	#12	>> UPS POWER TO LCP-220			
									2	#12	>> 120VAC POWER TO LCP-220			
L-22-003	20E01	0.75"	4	#12	XHHW-2	1	#12	XHHW-2	FR:	LP-3750				
									TO:	UPS LP-3750				
									2	#12	>> UPS POWER TO LCP-220			
									2	#12	>> 120VAC POWER TO LCP-220			
L-22-101	22E02	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR:	J-BOX				
									TO:	J-BOX				
									2	#12	>> 120 VAC CIRCUIT			
L-22-102	22E03	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR:	J-BOX				
									TO:	J-BOX				
									2	#12	>> 120 VAC CIRCUIT			
P-22-101	22E02	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR:	FCV-22-02-20	P-22-102			
									TO:	DISCONNECT SWITCH				
									3	#10	>> FCV-22-02-20 POWER			
P-22-102	22E02	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR:	CONDUIT TEE	P-22-123			
									TO:	CONDUIT TEE				
									3	#10	>> FCV-22-02-20 POWER			
P-22-103	22E02	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR:	FCV-22-02-25	P-22-104			
									TO:	DISCONNECT SWITCH				
									3	#10	>> FCV-22-02-25 POWER			
P-22-104	22E02	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR:	DISCONNECT SWITCH	P-22-107			
									TO:	CONDUIT TEE				
									3	#10	>> FCV-22-02-25 POWER			
P-22-105	22E02	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR:	FCV-22-02-17	P-22-106			
									TO:	DISCONNECT SWITCH				
									3	#10	>> FCV-22-02-17 POWER			
P-22-106	22E02	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR:	DISCONNECT SWITCH	P-22-107			
									TO:	CONDUIT TEE				
									3	#10	>> FCV-22-02-17 POWER			
P-22-107	22E02	0.75"	6	#10	XHHW-2	1	#10	XHHW-2	FR:	CONDUIT TEE	P-22-122			
									TO:	J-BOX				
									3	#10	>> FCV-22-02-25 POWER			
									3	#10	>> FCV-22-02-17 POWER			
P-22-108	22E02	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR:	FCV-22-02-02				
									TO:	DISCONNECT SWITCH				
									3	#10	>> FCV-22-02-02 POWER			
P-22-109	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR:	DISCONNECT SWITCH	P-22-114			
									TO:	CONDUIT TEE				
									3	#10	>> FCV-22-02-02 POWER			
											P-22-111C			

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
P-22-110	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: FCV-22-02-09 TO: DISCONNECT SWITCH 3 #10 >> FCV-22-02-09 POWER	P-22-111
P-22-111	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT SWITCH TO: CONDUIT TEE 3 #10 >> FCV-22-02-09 POWER	P-22-110
P-22-112	22E02 22E04	0.75"	6	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 3 #10 >> FCV-22-02-02 POWER 3 #10 >> FCV-22-02-09 POWER	P-22-112 P-22-112 P-22-113
P-22-113	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: FCV-22-02-14 TO: DISCONNECT SWITCH 3 #10 >> FCV-22-02-14 POWER	P-22-112
P-22-114	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT SWITCH TO: CONDUIT TEE 3 #10 >> FCV-22-02-14 POWER	P-22-115 P-22-109
P-22-115	22E02 22E04	1"	9	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 3 #10 >> FCV-22-02-14 POWER 3 #10 >> FCV-22-02-02 POWER 3 #10 >> FCV-22-02-09 POWER	P-22-115 P-22-114 P-22-115 P-22-115
P-22-116	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: FCV-22-02-06 TO: DISCONNECT SWITCH 3 #10 >> FCV-22-02-06 POWER	P-22-117
P-22-117	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT SWITCH TO: CONDUIT TEE 3 #10 >> FCV-22-02-06 POWER	P-22-118 P-22-116
P-22-118	22E02 22E04	1.5"	12	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 3 #10 >> FCV-22-02-14 POWER 3 #10 >> FCV-22-02-02 POWER 3 #10 >> FCV-22-02-09 POWER 3 #10 >> FCV-22-02-06 POWER	P-22-120 P-22-115 P-22-115 P-22-115 P-22-117
P-22-119	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: FCV-22-02-04 TO: DISCONNECT SWITCH 3 #10 >> FCV-22-02-04 POWER	
P-22-120	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT SWITCH TO: CONDUIT TEE 3 #10 >> FCV-22-02-04 POWER	P-22-121 P-22-118
P-22-121	22E02 22E04	1.5"	15	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: J-BOX 3 #10 >> FCV-22-02-14 POWER 3 #10 >> FCV-22-02-02 POWER 3 #10 >> FCV-22-02-09 POWER 3 #10 >> FCV-22-02-06 POWER 3 #10 >> FCV-22-02-04 POWER	P-22-122 P-22-118 P-22-118 P-22-118 P-22-118 P-22-120
P-22-122	22E02	1.5"	21	#10	XHHW-2	1	#10	XHHW-2	FR: J-BOX TO: J-BOX 3 #10 >> FCV-22-02-25 POWER 3 #10 >> FCV-22-02-17 POWER 3 #10 >> FCV-22-02-14 POWER 3 #10 >> FCV-22-02-02 POWER 3 #10 >> FCV-22-02-09 POWER 3 #10 >> FCV-22-02-06 POWER 3 #10 >> FCV-22-02-04 POWER	P-22-123 P-22-107 P-22-107 P-22-121 P-22-121 P-22-121 P-22-121 P-22-121
P-22-123	22E02 22E03	1.5"	24	#10	XHHW-2	1	#10	XHHW-2	FR: J-BOX TO: CONDUIT TEE 3 #10 >> FCV-22-02-20 POWER 3 #10 >> FCV-22-02-25 POWER 3 #10 >> FCV-22-02-17 POWER 3 #10 >> FCV-22-02-14 POWER 3 #10 >> FCV-22-02-02 POWER 3 #10 >> FCV-22-02-09 POWER 3 #10 >> FCV-22-02-06 POWER 3 #10 >> FCV-22-02-04 POWER	P-22-127 P-22-102 P-22-122 P-22-122 P-22-122 P-22-122 P-22-122 P-22-122 P-22-122
P-22-125	22E02 22E03	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: FCV-22-01-17 TO: DISCONNECT SWITCH 3 #10 >> FCV-22-01-17 POWER	P-22-126

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CONDUIT			CONDUCTORS			GROUND					
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION		CONNECTING SEGMENTS
P-22-126	22E02 22E03	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	DISCONNECT SWITCH CONDUIT TEE	P-22-127
									3 #10	>> FCV-22-01-17 POWER	P-22-125
P-22-127	22E03	1.5"	27	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	CONDUIT TEE JB-22-P101	P-22-251
									3 #10	>> FCV-22-02-20 POWER	P-22-123
									3 #10	>> FCV-22-02-25 POWER	P-22-123
									3 #10	>> FCV-22-02-17 POWER	P-22-123
									3 #10	>> FCV-22-02-14 POWER	P-22-123
									3 #10	>> FCV-22-02-02 POWER	P-22-123
									3 #10	>> FCV-22-02-09 POWER	P-22-123
									3 #10	>> FCV-22-02-06 POWER	P-22-123
									3 #10	>> FCV-22-02-04 POWER	P-22-123
									3 #10	>> FCV-22-01-17 POWER	P-22-126
P-22-131	22E03	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	FCV-22-01-02 DISCONNECT SWITCH	P-22-132
									3 #10	>> FCV-22-01-02 POWER	
P-22-132	22E02 22E03 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	DISCONNECT SWITCH CONDUIT TEE	P-22-137
									3 #10	>> FCV-22-01-02 POWER	P-22-131
P-22-133	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	DISCONNECT SWITCH CONDUIT TEE	P-22-137
									3 #10	>> FCV-22-01-09 POWER	P-22-134
P-22-134	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	FCV-22-01-09 DISCONNECT SWITCH	P-22-133
									3 #10	>> FCV-22-01-09 POWER	
P-22-135	22E02	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	DISCONNECT SWITCH CONDUIT TEE	
									3 #10	>> FCV-22-01-09 POWER	P-22-134
P-22-136	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	FCV-22-01-14 DISCONNECT SWITCH	P-22-138
									3 #10	>> FCV-22-01-14 POWER	
P-22-137	22E02 22E04	0.75"	6	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	CONDUIT TEE CONDUIT TEE	P-22-138
									3 #10	>> FCV-22-01-02 POWER	P-22-132
									3 #10	>> FCV-22-01-09 POWER	P-22-133
P-22-138	22E02 22E04	1"	9	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	CONDUIT TEE CONDUIT TEE	P-22-141
									3 #10	>> FCV-22-01-14 POWER	P-22-136
									3 #10	>> FCV-22-01-02 POWER	P-22-137
									3 #10	>> FCV-22-01-09 POWER	P-22-137
P-22-139	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	FCV-22-01-06 DISCONNECT SWITCH	P-22-140
									3 #10	>> FCV-22-01-06 POWER	
P-22-140	22E02 22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	DISCONNECT SWITCH CONDUIT TEE	P-22-141
									3 #10	>> FCV-22-01-06 POWER	P-22-139
P-22-141	22E04	1.5"	12	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	CONDUIT TEE CONDUIT TEE	P-22-144
									3 #10	>> FCV-22-01-14 POWER	P-22-138
									3 #10	>> FCV-22-01-02 POWER	P-22-138
									3 #10	>> FCV-22-01-09 POWER	P-22-138
									3 #10	>> FCV-22-01-06 POWER	P-22-140
P-22-142	22E04	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: TO:	FCV-22-01-04 DISCONNECT SWITCH	P-22-143
									3 #10	>> FCV-22-01-04 POWER	

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CONDUIT			CONDUCTORS			GROUND			DESCRIPTION	CONNECTING SEGMENTS
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE		
P-22-145	22E03	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: FCV-22-01-20 TO: DISCONNECT SWITCH 3 #10 >> FCV-22-01-20 POWER	P-22-146
P-22-146	22E03	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT SWITCH TO: CONDUIT TEE 3 #10 >> FCV-22-01-20 POWER	P-22-147 P-22-145
P-22-147	22E03	1.5"	18	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 3 #10 >> FCV-22-01-14 POWER 3 #10 >> FCV-22-01-02 POWER 3 #10 >> FCV-22-01-09 POWER 3 #10 >> FCV-22-01-06 POWER 3 #10 >> FCV-22-01-04 POWER 3 #10 >> FCV-22-01-20 POWER	P-22-150 P-22-144 P-22-144 P-22-144 P-22-144 P-22-144 P-22-146
P-22-148	22E03	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: FCV-22-01-25 TO: DISCONNECT SWITCH 3 #10 >> FCV-22-01-25 POWER	P-22-149
P-22-149	22E03	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT SWITCH TO: CONDUIT TEE 3 #10 >> FCV-22-01-25 POWER	P-22-150 P-22-148
P-22-150	22E03	1.5"	21	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: J-BOX 3 #10 >> FCV-22-01-14 POWER 3 #10 >> FCV-22-01-02 POWER 3 #10 >> FCV-22-01-09 POWER 3 #10 >> FCV-22-01-06 POWER 3 #10 >> FCV-22-01-04 POWER 3 #10 >> FCV-22-01-20 POWER 3 #10 >> FCV-22-01-25 POWER	P-22-151 P-22-147 P-22-147 P-22-147 P-22-147 P-22-147 P-22-147 P-22-149
P-22-151	22E03	1.5"	21	#10	XHHW-2	1	#10	XHHW-2	FR: J-BOX TO: JB-22-P101 3 #10 >> FCV-22-01-14 POWER 3 #10 >> FCV-22-01-02 POWER 3 #10 >> FCV-22-01-09 POWER 3 #10 >> FCV-22-01-06 POWER 3 #10 >> FCV-22-01-04 POWER 3 #10 >> FCV-22-01-20 POWER 3 #10 >> FCV-22-01-25 POWER	P-22-251 P-22-150 P-22-150 P-22-150 P-22-150 P-22-150 P-22-150 P-22-150
P-22-251	02E01	3"	48	#10	XHHW-2	1	#10	XHHW-2	FR: JB-22-P101 TO: MH-2 3 #10 >> FCV-22-02-20 POWER 3 #10 >> FCV-22-02-25 POWER 3 #10 >> FCV-22-02-17 POWER 3 #10 >> FCV-22-02-14 POWER 3 #10 >> FCV-22-02-02 POWER 3 #10 >> FCV-22-02-09 POWER 3 #10 >> FCV-22-02-06 POWER 3 #10 >> FCV-22-02-04 POWER 3 #10 >> FCV-22-01-17 POWER 3 #10 >> FCV-22-01-14 POWER 3 #10 >> FCV-22-01-02 POWER 3 #10 >> FCV-22-01-09 POWER 3 #10 >> FCV-22-01-06 POWER 3 #10 >> FCV-22-01-04 POWER 3 #10 >> FCV-22-01-20 POWER 3 #10 >> FCV-22-01-25 POWER	P-22-261 P-22-127 P-22-127 P-22-127 P-22-127 P-22-127 P-22-127 P-22-127 P-22-127 P-22-127 P-22-151 P-22-151 P-22-151 P-22-151 P-22-151 P-22-151 P-22-151
P-22-261	02E01	2.5"	48	#10	XHHW-2	1	#10	XHHW-2	FR: MH-3 TO: MH-2 3 #10 >> FCV-22-02-20 POWER 3 #10 >> FCV-22-02-25 POWER 3 #10 >> FCV-22-02-17 POWER 3 #10 >> FCV-22-02-14 POWER 3 #10 >> FCV-22-02-02 POWER 3 #10 >> FCV-22-02-09 POWER 3 #10 >> FCV-22-02-06 POWER 3 #10 >> FCV-22-02-04 POWER 3 #10 >> FCV-22-01-17 POWER 3 #10 >> FCV-22-01-14 POWER 3 #10 >> FCV-22-01-02 POWER 3 #10 >> FCV-22-01-09 POWER 3 #10 >> FCV-22-01-06 POWER 3 #10 >> FCV-22-01-04 POWER 3 #10 >> FCV-22-01-20 POWER 3 #10 >> FCV-22-01-25 POWER	P-22-271 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251 P-22-251

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
P-22-271	02E01	2.5"	48	#10	XHHW-2	1	#10	XHHW-2	FR: MH-2 TO: MH-1 3 #10 >> FCV-22-02-20 POWER 3 #10 >> FCV-22-02-25 POWER 3 #10 >> FCV-22-02-17 POWER 3 #10 >> FCV-22-02-14 POWER 3 #10 >> FCV-22-02-02 POWER 3 #10 >> FCV-22-02-09 POWER 3 #10 >> FCV-22-02-06 POWER 3 #10 >> FCV-22-02-04 POWER 3 #10 >> FCV-22-01-17 POWER 3 #10 >> FCV-22-01-14 POWER 3 #10 >> FCV-22-01-02 POWER 3 #10 >> FCV-22-01-09 POWER 3 #10 >> FCV-22-01-06 POWER 3 #10 >> FCV-22-01-04 POWER 3 #10 >> FCV-22-01-20 POWER 3 #10 >> FCV-22-01-25 POWER	P-22-281 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261 P-22-261
P-22-281	02E01	2.5"	48	#10	XHHW-2	1	#10	XHHW-2	FR: MH-1 TO: JB-20-001 3 #10 >> FCV-22-02-20 POWER 3 #10 >> FCV-22-02-25 POWER 3 #10 >> FCV-22-02-17 POWER 3 #10 >> FCV-22-02-14 POWER 3 #10 >> FCV-22-02-02 POWER 3 #10 >> FCV-22-02-09 POWER 3 #10 >> FCV-22-02-06 POWER 3 #10 >> FCV-22-02-04 POWER 3 #10 >> FCV-22-01-17 POWER 3 #10 >> FCV-22-01-14 POWER 3 #10 >> FCV-22-01-02 POWER 3 #10 >> FCV-22-01-09 POWER 3 #10 >> FCV-22-01-06 POWER 3 #10 >> FCV-22-01-04 POWER 3 #10 >> FCV-22-01-20 POWER 3 #10 >> FCV-22-01-25 POWER	P-22-291 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271 P-22-271
P-22-291	20E01	1.5"	24	#10	XHHW-2	1	#10	XHHW-2	FR: JB-20-001 TO: PP-3760 VIA MCC-3705 PB 3 #10 >> FCV-22-02-20 POWER 3 #10 >> FCV-22-02-25 POWER 3 #10 >> FCV-22-02-17 POWER 3 #10 >> FCV-22-02-14 POWER 3 #10 >> FCV-22-02-02 POWER 3 #10 >> FCV-22-02-09 POWER 3 #10 >> FCV-22-02-06 POWER 3 #10 >> FCV-22-02-04 POWER	P-22-281 P-22-281 P-22-281 P-22-281 P-22-281 P-22-281 P-22-281 P-22-281 P-22-281
P-22-292	20E01	1.5"	24	#10	XHHW-2	1	#10	XHHW-2	FR: JB-20-001 TO: PP-3770 VIA MCC-3705 PB 3 #10 >> FCV-22-01-17 POWER 3 #10 >> FCV-22-01-14 POWER 3 #10 >> FCV-22-01-02 POWER 3 #10 >> FCV-22-01-09 POWER 3 #10 >> FCV-22-01-06 POWER 3 #10 >> FCV-22-01-04 POWER 3 #10 >> FCV-22-01-20 POWER 3 #10 >> FCV-22-01-25 POWER	P-22-281 P-22-281 P-22-281 P-22-281 P-22-281 P-22-281 P-22-281 P-22-281
S-22-001		0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: PIT-22-20-02 TO: CONDUIT TEE 1 2/CS-#16 >> PIT-22-20-02 SIGNAL	S-22-003
S-22-002		0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: TIT-22-20-01 TO: CONDUIT TEE 1 2/CS-#16 >> TIT-22-20-01 SIGNAL	S-22-003
S-22-003	02E01	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: J-BOX 1 2/CS-#16 >> PIT-22-20-02 SIGNAL 1 2/CS-#16 >> TIT-22-20-01 SIGNAL	S-22-004 S-22-001 S-22-002
S-22-004	20E01	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: J-BOX TO: LCP-220 1 2/CS-#16 >> PIT-22-20-02 SIGNAL 1 2/CS-#16 >> TIT-22-20-01 SIGNAL	S-22-003 S-22-003

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
S-22-108	22E02	1.5"	8	2/CS-#16		1	#14	XHHW-2	FR: AIT-22-02-07 TO: J-BOX 1 2/CS-#16 >> AE-22-02-07 SIGNAL DO 1 2/CS-#16 >> AE-22-02-23 SIGNAL DO 1 2/CS-#16 >> AE-22-02-21 SIGNAL NITRATE 1 2/CS-#16 >> AE-22-02-22 SIGNAL NH4 4 2/CS-#16 >> SPARES TO AIT-22-02-07	S-22-110
S-22-110	22E02	1.5"	8	2/CS-#16		1	#14	XHHW-2	FR: J-BOX TO: CONDUIT TEE 1 2/CS-#16 >> AE-22-02-07 SIGNAL DO 1 2/CS-#16 >> AE-22-02-23 SIGNAL DO 1 2/CS-#16 >> AE-22-02-21 SIGNAL NITRATE 1 2/CS-#16 >> AE-22-02-22 SIGNAL NH4 4 2/CS-#16 >> SPARES TO AIT-22-02-07	S-22-112 S-22-108 S-22-108 S-22-108 S-22-108 S-22-108
S-22-111	22E02	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-02-20 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-02-20 SIGNAL	S-22-112
S-22-112	22E02	2"	10	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 2/CS-#16 >> AE-22-02-07 SIGNAL DO 1 2/CS-#16 >> AE-22-02-23 SIGNAL DO 1 2/CS-#16 >> AE-22-02-21 SIGNAL NITRATE 1 2/CS-#16 >> AE-22-02-22 SIGNAL NH4 4 2/CS-#16 >> SPARES TO AIT-22-02-07 2 2/CS-#16 >> FCV-22-02-20 SIGNAL	S-22-114 S-22-110 S-22-110 S-22-110 S-22-110 S-22-110 S-22-111
S-22-113	22E02	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-02-19 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-02-19 SIGNAL	S-22-114
S-22-114	22E02	2"	11	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 2/CS-#16 >> AE-22-02-07 SIGNAL DO 1 2/CS-#16 >> AE-22-02-23 SIGNAL DO 1 2/CS-#16 >> AE-22-02-21 SIGNAL NITRATE 1 2/CS-#16 >> AE-22-02-22 SIGNAL NH4 4 2/CS-#16 >> SPARES TO AIT-22-02-07 2 2/CS-#16 >> FCV-22-02-20 SIGNAL 1 2/CS-#16 >> FIT-22-02-19 SIGNAL	S-22-116 S-22-112 S-22-112 S-22-112 S-22-112 S-22-112 S-22-112 S-22-113
S-22-115	22E02	1.5"	5	2/CS-#16		1	#14	XHHW-2	FR: AIT-22-02-10 TO: CONDUIT TEE 1 2/CS-#16 >> AE-22-02-10 SIGNAL DO 1 2/CS-#16 >> AE-22-02-18 SIGNAL DO 1 2/CS-#16 >> AE-22-02-26 SIGNAL DO 2 2/CS-#16 >> SPARES TO AIT-22-02-10	S-22-116
S-22-116	22E02	2"	16	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 2/CS-#16 >> AE-22-02-10 SIGNAL DO 1 2/CS-#16 >> AE-22-02-18 SIGNAL DO 1 2/CS-#16 >> AE-22-02-26 SIGNAL DO 2 2/CS-#16 >> SPARES TO AIT-22-02-10 1 2/CS-#16 >> AE-22-02-07 SIGNAL DO 1 2/CS-#16 >> AE-22-02-23 SIGNAL DO 1 2/CS-#16 >> AE-22-02-21 SIGNAL NITRATE 1 2/CS-#16 >> AE-22-02-22 SIGNAL NH4 4 2/CS-#16 >> SPARES TO AIT-22-02-07 2 2/CS-#16 >> FCV-22-02-20 SIGNAL 1 2/CS-#16 >> FIT-22-02-19 SIGNAL	S-22-150 S-22-115 S-22-115 S-22-115 S-22-115 S-22-114 S-22-114 S-22-114 S-22-114 S-22-114 S-22-114 S-22-114
S-22-117	22E02	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-02-25 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-02-25 SIGNAL	
S-22-119	22E02	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-02-24 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-02-24 SIGNAL	S-22-120 S-22-118
S-22-120	22E02	1"	3	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-02-25 SIGNAL 1 2/CS-#16 >> FIT-22-02-24 SIGNAL	S-22-122 S-22-118 S-22-119
S-22-121	22E02	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-02-17 TO: CONDUIT TEE 1 2/CS-#16 >> FCV-22-02-17 SIGNAL	S-22-122

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
S-22-122	22E02	1"	4	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-02-25 SIGNAL 1 2/CS-#16 >> FIT-22-02-24 SIGNAL 1 2/CS-#16 >> FCV-22-02-17 SIGNAL	S-22-124 S-22-120 S-22-120 S-22-121
S-22-123	22E02	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-02-16 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-02-16 SIGNAL	S-22-124
S-22-124	22E02	1.5"	5	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: J-BOX 2 2/CS-#16 >> FCV-22-02-25 SIGNAL 1 2/CS-#16 >> FIT-22-02-24 SIGNAL 1 2/CS-#16 >> FCV-22-02-17 SIGNAL 1 2/CS-#16 >> FIT-22-02-16 SIGNAL	S-22-149 S-22-122 S-22-122 S-22-122 S-22-123
S-22-125	22E02	0.75"	1	MFR	CABLE	1	#14	XHHW-2	FR: AE-22-02-26 TO: CONDUIT TEE 1 MFR >> AE-22-02-26 SIGNAL	S-22-127
S-22-126	22E02	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-02-01 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-02-01 SIGNAL	S-22-127
S-22-127	22E02	0.75"	1	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-02-26 SIGNAL 1 2/CS-#16 >> FIT-22-02-01 SIGNAL	S-22-125 S-22-126
S-22-128	22E02	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-22-02-02 TO: CONDUIT TEE 6 #14 >> FCV-22-02-02 SIGNAL	S-22-130
S-22-130	22E02 22E04	1"	6 1 1	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> FCV-22-02-02 SIGNAL 1 MFR >> AE-22-02-26 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL	S-22-132 S-22-128 S-22-125 S-22-129
S-22-131	22E04	0.75"	1	MFR	CABLE	1	#14	XHHW-2	FR: AE-22-02-15 TO: CONDUIT TEE 1 MFR >> AE-22-02-15 SIGNAL	S-22-132
S-22-132	22E04	1"	6 2 1	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> FCV-22-02-02 SIGNAL 1 MFR >> AE-22-02-26 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL 1 MFR >> AE-22-02-15 SIGNAL	S-22-134 S-22-130 S-22-130 S-22-130 S-22-131
S-22-133	22E04	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-02-08 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-02-08 SIGNAL	S-22-134
S-22-134	22E04	1.5"	6 2 2	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> FCV-22-02-02 SIGNAL 1 MFR >> AE-22-02-26 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL 1 MFR >> AE-22-02-15 SIGNAL 1 2/CS-#16 >> FIT-22-02-08 SIGNAL	S-22-136 S-22-132 S-22-132 S-22-132 S-22-132 S-22-133
S-22-135	22E04	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-02-13 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-02-13 SIGNAL	S-22-136
S-22-136	22E04	1.5"	6 2 3	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> FCV-22-02-02 SIGNAL 1 MFR >> AE-22-02-26 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL 1 MFR >> AE-22-02-15 SIGNAL 1 2/CS-#16 >> FIT-22-02-08 SIGNAL 1 2/CS-#16 >> FIT-22-02-13 SIGNAL	S-22-138 S-22-134 S-22-134 S-22-134 S-22-134 S-22-134 S-22-135
S-22-137	22E04	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-02-03 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-02-03 SIGNAL	S-22-138

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
S-22-138	22E04	1.5"	6 2 4	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> FCV-22-02-02 SIGNAL 1 MFR >> AE-22-02-26 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL 1 MFR >> AE-22-02-15 SIGNAL 1 2/CS-#16 >> FIT-22-02-08 SIGNAL 1 2/CS-#16 >> FIT-22-02-13 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL	S-22-140 S-22-136 S-22-136 S-22-136 S-22-136 S-22-136 S-22-136 S-22-137
S-22-139	22E04	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-02-05 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-02-05 SIGNAL	S-22-140
S-22-140	22E04	1.5"	6 2 5	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> FCV-22-02-02 SIGNAL 1 MFR >> AE-22-02-26 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL 1 MFR >> AE-22-02-15 SIGNAL 1 2/CS-#16 >> FIT-22-02-08 SIGNAL 1 2/CS-#16 >> FIT-22-02-13 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL 1 2/CS-#16 >> FIT-22-02-05 SIGNAL	S-22-144 S-22-138 S-22-138 S-22-138 S-22-138 S-22-138 S-22-138 S-22-138
S-22-141	22E04	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-02-09 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-02-09 SIGNAL	S-22-143
S-22-142	22E04	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-02-14 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-02-14 SIGNAL	S-22-143
S-22-143	22E04	1"	4	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-02-09 SIGNAL 2 2/CS-#16 >> FCV-22-02-14 SIGNAL	S-22-144 S-22-141 S-22-142
S-22-144	22E04	2"	6 2 9	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> FCV-22-02-02 SIGNAL 1 MFR >> AE-22-02-26 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL 1 MFR >> AE-22-02-15 SIGNAL 1 2/CS-#16 >> FIT-22-02-08 SIGNAL 1 2/CS-#16 >> FIT-22-02-13 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL 1 2/CS-#16 >> FIT-22-02-05 SIGNAL 2 2/CS-#16 >> FCV-22-02-09 SIGNAL 2 2/CS-#16 >> FCV-22-02-14 SIGNAL	S-22-146 S-22-140 S-22-140 S-22-140 S-22-140 S-22-140 S-22-140 S-22-140 S-22-140 S-22-143 S-22-143
S-22-145	22E04	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-02-06 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-02-06 SIGNAL	S-22-146
S-22-146	22E04	2"	6 2 11	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> FCV-22-02-02 SIGNAL 1 MFR >> AE-22-02-26 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL 1 MFR >> AE-22-02-15 SIGNAL 1 2/CS-#16 >> FIT-22-02-08 SIGNAL 1 2/CS-#16 >> FIT-22-02-13 SIGNAL 1 2/CS-#16 >> FIT-22-02-03 SIGNAL 1 2/CS-#16 >> FIT-22-02-05 SIGNAL 2 2/CS-#16 >> FCV-22-02-09 SIGNAL 2 2/CS-#16 >> FCV-22-02-14 SIGNAL 2 2/CS-#16 >> FCV-22-02-06 SIGNAL	S-22-148 S-22-144 S-22-144 S-22-144 S-22-144 S-22-144 S-22-144 S-22-144 S-22-144 S-22-144 S-22-145
S-22-147	22E04	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-02-04 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-02-04 SIGNAL	S-22-148

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Addendum No. 3 - March 19, 2020 16990B-19
pw://Carollo/Documents/Client/NM/Santa Fe/11283A10/Specifications/16990A (AD03)

11283A10

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
S-22-157	22E03	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-01-17 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-01-17 SIGNAL	S-22-158
S-22-158		1.5"	6	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: JB-22-S101 1 2/CS-#16 >> AE-22-01-10 SIGNAL DO 1 2/CS-#16 >> AE-22-01-18 SIGNAL DO 1 2/CS-#16 >> AE-22-01-26 SIGNAL DO 1 2/CS-#16 >> FIT-22-01-16 SIGNAL 2 2/CS-#16 >> FCV-22-01-17 SIGNAL	S-22-252 S-22-156 S-22-156 S-22-156 S-22-156 S-22-157
S-22-159	22E03	0.75"	1	MFR	CABLE	1	#14	XHHW-2	FR: AE-22-01-26 TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL	S-22-161
S-22-160	22E03	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-01-01 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-01-01 SIGNAL	S-22-161
S-22-161	22E03	0.75"	1 1	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL	S-22-163 S-22-159 S-22-160
S-22-162	22E03	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-01-02 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-01-02 SIGNAL	S-22-163
S-22-163	22E03 22E04	1"	1 3	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL	S-22-166 S-22-161 S-22-161 S-22-162
S-22-165	22E04	0.75"	1	MFR	CABLE	1	#14	XHHW-2	FR: AE-22-01-15 TO: CONDUIT TEE 1 MFR >> AE-22-01-15 SIGNAL	S-22-166
S-22-166	22E04	1.5"	2 3	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL 1 MFR >> AE-22-01-15 SIGNAL	S-22-168 S-22-163 S-22-163 S-22-163 S-22-165
S-22-167	22E04	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-01-13 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-01-13 SIGNAL	S-22-168
S-22-168	22E04	1.5"	2 4	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL 1 MFR >> AE-22-01-15 SIGNAL 1 2/CS-#16 >> FIT-22-01-13 SIGNAL	S-22-170 S-22-166 S-22-166 S-22-166 S-22-166 S-22-167
S-22-169	22E04	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-01-08 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-01-08 SIGNAL	S-22-170
S-22-170	22E04	1.5"	2 5	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL 1 MFR >> AE-22-01-15 SIGNAL 1 2/CS-#16 >> FIT-22-01-13 SIGNAL 1 2/CS-#16 >> FIT-22-01-08 SIGNAL	S-22-172 S-22-168 S-22-168 S-22-168 S-22-168 S-22-168 S-22-169
S-22-171	22E04	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-01-24 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-01-24 SIGNAL	S-22-172

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CONDUIT			CONDUCTORS			GROUND			DESCRIPTION	CONNECTING SEGMENTS
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE		
S-22-172	22E04	1.5"	2 6	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL 1 MFR >> AE-22-01-15 SIGNAL 1 2/CS-#16 >> FIT-22-01-13 SIGNAL 1 2/CS-#16 >> FIT-22-01-08 SIGNAL 1 2/CS-#16 >> FIT-22-01-24 SIGNAL	S-22-174 S-22-170 S-22-170 S-22-170 S-22-170 S-22-170 S-22-170 S-22-171
S-22-173	22E04	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-02-05 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-02-05 SIGNAL	S-22-174
S-22-174	22E04	1.5"	2 7	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL 1 MFR >> AE-22-01-15 SIGNAL 1 2/CS-#16 >> FIT-22-01-13 SIGNAL 1 2/CS-#16 >> FIT-22-01-08 SIGNAL 1 2/CS-#16 >> FIT-22-01-24 SIGNAL 1 2/CS-#16 >> FIT-22-02-05 SIGNAL	S-22-178 S-22-172 S-22-172 S-22-172 S-22-172 S-22-172 S-22-172 S-22-172 S-22-173
S-22-175	22E04	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-01-09 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-01-09 SIGNAL	S-22-177
S-22-176	22E04	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-01-14 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-01-14 SIGNAL	S-22-177
S-22-177	22E04	1"	4	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-01-09 SIGNAL 2 2/CS-#16 >> FCV-22-01-14 SIGNAL	S-22-178 S-22-175 S-22-176
S-22-178	22E04	2"	2 11	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL 1 MFR >> AE-22-01-15 SIGNAL 1 2/CS-#16 >> FIT-22-01-13 SIGNAL 1 2/CS-#16 >> FIT-22-01-08 SIGNAL 1 2/CS-#16 >> FIT-22-01-24 SIGNAL 1 2/CS-#16 >> FIT-22-02-05 SIGNAL 2 2/CS-#16 >> FCV-22-01-09 SIGNAL 2 2/CS-#16 >> FCV-22-01-14 SIGNAL	S-22-180 S-22-174 S-22-174 S-22-174 S-22-174 S-22-174 S-22-174 S-22-174 S-22-174 S-22-177 S-22-177
S-22-179	22E04	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-01-06 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-01-06 SIGNAL	S-22-180
S-22-180	22E04	2"	2 13	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL 1 MFR >> AE-22-01-15 SIGNAL 1 2/CS-#16 >> FIT-22-01-13 SIGNAL 1 2/CS-#16 >> FIT-22-01-08 SIGNAL 1 2/CS-#16 >> FIT-22-01-24 SIGNAL 1 2/CS-#16 >> FIT-22-02-05 SIGNAL 2 2/CS-#16 >> FCV-22-01-09 SIGNAL 2 2/CS-#16 >> FCV-22-01-14 SIGNAL 2 2/CS-#16 >> FCV-22-01-06 SIGNAL	S-22-182 S-22-178 S-22-178 S-22-178 S-22-178 S-22-178 S-22-178 S-22-178 S-22-178 S-22-178 S-22-178 S-22-179
S-22-181	22E04	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-01-04 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-01-04 SIGNAL	S-22-182

CONDUIT SCHEDULE AREA 22 PART 2

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
S-22-182	22E03 22E04	2"	2 15	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL 1 MFR >> AE-22-01-15 SIGNAL 1 2/CS-#16 >> FIT-22-01-13 SIGNAL 1 2/CS-#16 >> FIT-22-01-08 SIGNAL 1 2/CS-#16 >> FIT-22-01-24 SIGNAL 1 2/CS-#16 >> FIT-22-02-05 SIGNAL 2 2/CS-#16 >> FCV-22-01-09 SIGNAL 2 2/CS-#16 >> FCV-22-01-14 SIGNAL 2 2/CS-#16 >> FCV-22-01-06 SIGNAL 2 2/CS-#16 >> FCV-22-01-04 SIGNAL	S-22-184 S-22-180 S-22-180 S-22-180 S-22-180 S-22-180 S-22-180 S-22-180 S-22-180 S-22-180 S-22-180 S-22-180 S-22-181
S-22-183	22E03	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-01-19 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-01-19 SIGNAL	S-22-184
S-22-184	22E03	2.5"	2 16	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL 1 MFR >> AE-22-01-15 SIGNAL 1 2/CS-#16 >> FIT-22-01-13 SIGNAL 1 2/CS-#16 >> FIT-22-01-08 SIGNAL 1 2/CS-#16 >> FIT-22-01-24 SIGNAL 1 2/CS-#16 >> FIT-22-02-05 SIGNAL 2 2/CS-#16 >> FCV-22-01-09 SIGNAL 2 2/CS-#16 >> FCV-22-01-14 SIGNAL 2 2/CS-#16 >> FCV-22-01-06 SIGNAL 2 2/CS-#16 >> FCV-22-01-04 SIGNAL 1 2/CS-#16 >> FIT-22-01-19 SIGNAL	S-22-186 S-22-182 S-22-182 S-22-182 S-22-182 S-22-182 S-22-182 S-22-182 S-22-182 S-22-182 S-22-182 S-22-182 S-22-182 S-22-183
S-22-185	22E03	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-01-20 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-01-20 SIGNAL	S-22-186
S-22-186	22E03	2.5"	2 18	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL 1 MFR >> AE-22-01-15 SIGNAL 1 2/CS-#16 >> FIT-22-01-13 SIGNAL 1 2/CS-#16 >> FIT-22-01-08 SIGNAL 1 2/CS-#16 >> FIT-22-01-24 SIGNAL 1 2/CS-#16 >> FIT-22-02-05 SIGNAL 2 2/CS-#16 >> FCV-22-01-09 SIGNAL 2 2/CS-#16 >> FCV-22-01-14 SIGNAL 2 2/CS-#16 >> FCV-22-01-06 SIGNAL 2 2/CS-#16 >> FCV-22-01-04 SIGNAL 1 2/CS-#16 >> FIT-22-01-19 SIGNAL 2 2/CS-#16 >> FCV-22-01-20 SIGNAL	S-22-188 S-22-184 S-22-184 S-22-184 S-22-184 S-22-184 S-22-184 S-22-184 S-22-184 S-22-184 S-22-184 S-22-184 S-22-184 S-22-184 S-22-185
S-22-187	22E03	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-22-01-24 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-22-01-24 SIGNAL	S-22-188
S-22-188	22E03	2.5"	2 19	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> AE-22-01-26 SIGNAL 1 2/CS-#16 >> FIT-22-01-01 SIGNAL 2 2/CS-#16 >> FCV-22-01-02 SIGNAL 1 MFR >> AE-22-01-15 SIGNAL 1 2/CS-#16 >> FIT-22-01-13 SIGNAL 1 2/CS-#16 >> FIT-22-01-08 SIGNAL 1 2/CS-#16 >> FIT-22-01-24 SIGNAL 1 2/CS-#16 >> FIT-22-02-05 SIGNAL 2 2/CS-#16 >> FCV-22-01-09 SIGNAL 2 2/CS-#16 >> FCV-22-01-14 SIGNAL 2 2/CS-#16 >> FCV-22-01-06 SIGNAL 2 2/CS-#16 >> FCV-22-01-04 SIGNAL 1 2/CS-#16 >> FIT-22-01-19 SIGNAL 2 2/CS-#16 >> FCV-22-01-20 SIGNAL 1 2/CS-#16 >> FIT-22-01-24 SIGNAL	S-22-190 S-22-186 S-22-186 S-22-186 S-22-186 S-22-186 S-22-186 S-22-186 S-22-186 S-22-186 S-22-186 S-22-186 S-22-186 S-22-186 S-22-186 S-22-187
S-22-189	22E03	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-22-01-25 TO: CONDUIT TEE 2 2/CS-#16 >> FCV-22-01-25 SIGNAL	S-22-190

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Addendum No. 3 - March 19, 2020 16990B-23
pw://Carollo/Documents/Client/NM/Santa Fe/11283A10/Specifications/16990A (AD03)

11283A10

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CONDUIT			CONDUCTORS			GROUND			DESCRIPTION	CONNECTING SEGMENTS
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE		
S-22-215	22E04	0.75"	2	MFR	CABLE	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 MFR >> FE-22-01-08 SIGNAL 1 MFR >> FE-22-01-13 SIGNAL	S-22-213 S-22-214
S-22-216	22E04	0.75"	1	MFR	CABLE	1	#14	XHHW-2	FR: FIT-22-01-08 TO: CONDUIT TEE 1 MFR >> FIT-22-01-08 SIGNAL	
S-22-217	22E04	0.75"	1	MFR	CABLE	1	#14	XHHW-2	FR: FIT-22-01-13 TO: CONDUIT TEE 1 MFR >> FIT-22-01-13 SIGNAL	
S-22-251	02E01	3"	6 2 34	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR: JB-22-S101 TO: MH-2 1 2/CS-#16 >> AE-22-02-10 SIGNAL DO S-22-150 1 2/CS-#16 >> AE-22-02-18 SIGNAL DO S-22-150 1 2/CS-#16 >> AE-22-02-26 SIGNAL DO S-22-150 2 2/CS-#16 >> SPARES TO AIT-22-02-10 S-22-150 1 2/CS-#16 >> AE-22-02-07 SIGNAL DO S-22-150 1 2/CS-#16 >> AE-22-02-23 SIGNAL DO S-22-150 1 2/CS-#16 >> AE-22-02-21 SIGNAL NITRATE S-22-150 1 2/CS-#16 >> AE-22-02-22 SIGNAL NH4 S-22-150 4 2/CS-#16 >> SPARES TO AIT-22-02-07 S-22-150 2 2/CS-#16 >> FCV-22-02-20 SIGNAL S-22-150 1 2/CS-#16 >> FIT-22-02-19 SIGNAL S-22-150 2 2/CS-#16 >> FCV-22-02-25 SIGNAL S-22-150 1 2/CS-#16 >> FIT-22-02-24 SIGNAL S-22-150 1 2/CS-#16 >> FCV-22-02-17 SIGNAL S-22-150 1 2/CS-#16 >> FIT-22-02-16 SIGNAL S-22-150 6 #14 >> FCV-22-02-02 SIGNAL S-22-150 1 MFR >> AE-22-02-26 SIGNAL S-22-150 1 2/CS-#16 >> FIT-22-02-03 SIGNAL S-22-150 1 MFR >> AE-22-02-15 SIGNAL S-22-150 1 2/CS-#16 >> FIT-22-02-08 SIGNAL S-22-150 1 2/CS-#16 >> FIT-22-02-13 SIGNAL S-22-150 1 2/CS-#16 >> FIT-22-02-03 SIGNAL S-22-150 1 2/CS-#16 >> FIT-22-02-05 SIGNAL S-22-150 2 2/CS-#16 >> FCV-22-02-09 SIGNAL S-22-150 2 2/CS-#16 >> FCV-22-02-14 SIGNAL S-22-150 2 2/CS-#16 >> FCV-22-02-06 SIGNAL S-22-150 2 2/CS-#16 >> FCV-22-02-04 SIGNAL S-22-150	S-22-261
S-22-252	02E01	3"	2 27	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR: JB-22-S101 TO: MH-2 1 2/CS-#16 >> AE-22-01-10 SIGNAL DO S-22-158 1 2/CS-#16 >> AE-22-01-18 SIGNAL DO S-22-158 1 2/CS-#16 >> AE-22-01-26 SIGNAL DO S-22-158 1 2/CS-#16 >> FIT-22-01-16 SIGNAL S-22-158 2 2/CS-#16 >> FCV-22-01-17 SIGNAL S-22-158 1 MFR >> AE-22-01-26 SIGNAL S-22-191 1 2/CS-#16 >> FIT-22-01-01 SIGNAL S-22-191 2 2/CS-#16 >> FCV-22-01-02 SIGNAL S-22-191 1 MFR >> AE-22-01-15 SIGNAL S-22-191 1 2/CS-#16 >> FIT-22-01-13 SIGNAL S-22-191 1 2/CS-#16 >> FIT-22-01-08 SIGNAL S-22-191 1 2/CS-#16 >> FIT-22-01-24 SIGNAL S-22-191 1 2/CS-#16 >> FIT-22-02-05 SIGNAL S-22-191 2 2/CS-#16 >> FCV-22-01-09 SIGNAL S-22-191 2 2/CS-#16 >> FCV-22-01-14 SIGNAL S-22-191 2 2/CS-#16 >> FCV-22-01-06 SIGNAL S-22-191 2 2/CS-#16 >> FCV-22-01-04 SIGNAL S-22-191 1 2/CS-#16 >> FIT-22-01-19 SIGNAL S-22-191 2 2/CS-#16 >> FCV-22-01-20 SIGNAL S-22-191 1 2/CS-#16 >> FIT-22-01-24 SIGNAL S-22-191 2 2/CS-#16 >> FCV-22-01-25 SIGNAL S-22-191	S-22-262

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CONDUIT			CONDUCTORS			GROUND						
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION		CONNECTING SEGMENTS	
S-22-261	02E01	3"	6 2 34	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR:	MH-3	S-22-271	
									TO:	MH-2		
									1	2/CS-#16	>> AE-22-02-10 SIGNAL DO	S-22-251
									1	2/CS-#16	>> AE-22-02-18 SIGNAL DO	S-22-251
									1	2/CS-#16	>> AE-22-02-26 SIGNAL DO	S-22-251
									2	2/CS-#16	>> SPARES TO AIT-22-02-10	S-22-251
									1	2/CS-#16	>> AE-22-02-07 SIGNAL DO	S-22-251
									1	2/CS-#16	>> AE-22-02-23 SIGNAL DO	S-22-251
									1	2/CS-#16	>> AE-22-02-21 SIGNAL NITRATE	S-22-251
									1	2/CS-#16	>> AE-22-02-22 SIGNAL NH4	S-22-251
									4	2/CS-#16	>> SPARES TO AIT-22-02-07	S-22-251
									2	2/CS-#16	>> FCV-22-02-20 SIGNAL	S-22-251
									1	2/CS-#16	>> FIT-22-02-19 SIGNAL	S-22-251
									2	2/CS-#16	>> FCV-22-02-25 SIGNAL	S-22-251
									1	2/CS-#16	>> FIT-22-02-24 SIGNAL	S-22-251
									1	2/CS-#16	>> FCV-22-02-17 SIGNAL	S-22-251
									1	2/CS-#16	>> FIT-22-02-16 SIGNAL	S-22-251
									6	#14	>> FCV-22-02-02 SIGNAL	S-22-251
									1	MFR	>> AE-22-02-26 SIGNAL	S-22-251
									1	2/CS-#16	>> FIT-22-02-03 SIGNAL	S-22-251
									1	MFR	>> AE-22-02-15 SIGNAL	S-22-251
									1	2/CS-#16	>> FIT-22-02-08 SIGNAL	S-22-251
									1	2/CS-#16	>> FIT-22-02-13 SIGNAL	S-22-251
									1	2/CS-#16	>> FIT-22-02-03 SIGNAL	S-22-251
									1	2/CS-#16	>> FIT-22-02-05 SIGNAL	S-22-251
									2	2/CS-#16	>> FCV-22-02-09 SIGNAL	S-22-251
									2	2/CS-#16	>> FCV-22-02-14 SIGNAL	S-22-251
									2	2/CS-#16	>> FCV-22-02-06 SIGNAL	S-22-251
									2	2/CS-#16	>> FCV-22-02-04 SIGNAL	S-22-251
									S-22-262	02E01	3"	2 27
TO:	MH-2											
1	2/CS-#16	>> AE-22-01-10 SIGNAL DO	S-22-252									
1	2/CS-#16	>> AE-22-01-18 SIGNAL DO	S-22-252									
1	2/CS-#16	>> AE-22-01-26 SIGNAL DO	S-22-252									
1	2/CS-#16	>> FIT-22-01-16 SIGNAL	S-22-252									
2	2/CS-#16	>> FCV-22-01-17 SIGNAL	S-22-252									
1	MFR	>> AE-22-01-26 SIGNAL	S-22-252									
1	2/CS-#16	>> FIT-22-01-01 SIGNAL	S-22-252									
2	2/CS-#16	>> FCV-22-01-02 SIGNAL	S-22-252									
1	MFR	>> AE-22-01-15 SIGNAL	S-22-252									
1	2/CS-#16	>> FIT-22-01-13 SIGNAL	S-22-252									
1	2/CS-#16	>> FIT-22-01-08 SIGNAL	S-22-252									
1	2/CS-#16	>> FIT-22-01-24 SIGNAL	S-22-252									
1	2/CS-#16	>> FIT-22-02-05 SIGNAL	S-22-252									
2	2/CS-#16	>> FCV-22-01-09 SIGNAL	S-22-252									
2	2/CS-#16	>> FCV-22-01-14 SIGNAL	S-22-252									
2	2/CS-#16	>> FCV-22-01-06 SIGNAL	S-22-252									
2	2/CS-#16	>> FCV-22-01-04 SIGNAL	S-22-252									
1	2/CS-#16	>> FIT-22-01-19 SIGNAL	S-22-252									
2	2/CS-#16	>> FCV-22-01-20 SIGNAL	S-22-252									
1	2/CS-#16	>> FIT-22-01-24 SIGNAL	S-22-252									
2	2/CS-#16	>> FCV-22-01-25 SIGNAL	S-22-252									
S-22-271	02E01	3"	6 2 34	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR:	MH-2	S-22-281	
									TO:	MH-1		
									1	2/CS-#16	>> AE-22-02-10 SIGNAL DO	S-22-261
									1	2/CS-#16	>> AE-22-02-18 SIGNAL DO	S-22-261
									1	2/CS-#16	>> AE-22-02-26 SIGNAL DO	S-22-261
									2	2/CS-#16	>> SPARES TO AIT-22-02-10	S-22-261
									1	2/CS-#16	>> AE-22-02-07 SIGNAL DO	S-22-261
									1	2/CS-#16	>> AE-22-02-23 SIGNAL DO	S-22-261
									1	2/CS-#16	>> AE-22-02-21 SIGNAL NITRATE	S-22-261
									1	2/CS-#16	>> AE-22-02-22 SIGNAL NH4	S-22-261
									4	2/CS-#16	>> SPARES TO AIT-22-02-07	S-22-261
									2	2/CS-#16	>> FCV-22-02-20 SIGNAL	S-22-261
									1	2/CS-#16	>> FIT-22-02-19 SIGNAL	S-22-261
									2	2/CS-#16	>> FCV-22-02-25 SIGNAL	S-22-261
									1	2/CS-#16	>> FIT-22-02-24 SIGNAL	S-22-261
									1	2/CS-#16	>> FCV-22-02-17 SIGNAL	S-22-261
									1	2/CS-#16	>> FIT-22-02-16 SIGNAL	S-22-261
									6	#14	>> FCV-22-02-02 SIGNAL	S-22-261
									1	MFR	>> AE-22-02-26 SIGNAL	S-22-261
									1	2/CS-#16	>> FIT-22-02-03 SIGNAL	S-22-261
1	MFR	>> AE-22-02-15 SIGNAL	S-22-261									
1	2/CS-#16	>> FIT-22-02-08 SIGNAL	S-22-261									
1	2/CS-#16	>> FIT-22-02-13 SIGNAL	S-22-261									
1	2/CS-#16	>> FIT-22-02-03 SIGNAL	S-22-261									
1	2/CS-#16	>> FIT-22-02-05 SIGNAL	S-22-261									
2	2/CS-#16	>> FCV-22-02-09 SIGNAL	S-22-261									
2	2/CS-#16	>> FCV-22-02-14 SIGNAL	S-22-261									
2	2/CS-#16	>> FCV-22-02-06 SIGNAL	S-22-261									
2	2/CS-#16	>> FCV-22-02-04 SIGNAL	S-22-261									

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CONDUIT			CONDUCTORS			GROUND						
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION		CONNECTING SEGMENTS	
S-22-272	02E01	3"	2 27	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR:	MH-2	S-22-282	
									TO:	MH-1		
									1	2/CS-#16	>> AE-22-01-10 SIGNAL DO	S-22-262
									1	2/CS-#16	>> AE-22-01-18 SIGNAL DO	S-22-262
									1	2/CS-#16	>> AE-22-01-26 SIGNAL DO	S-22-262
									1	2/CS-#16	>> FIT-22-01-16 SIGNAL	S-22-262
									2	2/CS-#16	>> FCV-22-01-17 SIGNAL	S-22-262
									1	MFR	>> AE-22-01-26 SIGNAL	S-22-262
									1	2/CS-#16	>> FIT-22-01-01 SIGNAL	S-22-262
									2	2/CS-#16	>> FCV-22-01-02 SIGNAL	S-22-262
									1	MFR	>> AE-22-01-15 SIGNAL	S-22-262
									1	2/CS-#16	>> FIT-22-01-13 SIGNAL	S-22-262
									1	2/CS-#16	>> FIT-22-01-08 SIGNAL	S-22-262
									1	2/CS-#16	>> FIT-22-01-24 SIGNAL	S-22-262
									1	2/CS-#16	>> FIT-22-02-05 SIGNAL	S-22-262
									2	2/CS-#16	>> FCV-22-01-09 SIGNAL	S-22-262
									2	2/CS-#16	>> FCV-22-01-14 SIGNAL	S-22-262
									2	2/CS-#16	>> FCV-22-01-06 SIGNAL	S-22-262
									2	2/CS-#16	>> FCV-22-01-04 SIGNAL	S-22-262
									1	2/CS-#16	>> FIT-22-01-19 SIGNAL	S-22-262
2	2/CS-#16	>> FCV-22-01-20 SIGNAL	S-22-262									
1	2/CS-#16	>> FIT-22-01-24 SIGNAL	S-22-262									
2	2/CS-#16	>> FCV-22-01-25 SIGNAL	S-22-262									
S-22-281	02E01	3"	6 2 34	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR:	MH-1	S-22-291	
									TO:	JB-20-01		
									1	2/CS-#16	>> AE-22-02-10 SIGNAL DO	S-22-271
									1	2/CS-#16	>> AE-22-02-18 SIGNAL DO	S-22-271
									1	2/CS-#16	>> AE-22-02-26 SIGNAL DO	S-22-271
									2	2/CS-#16	>> SPARES TO AIT-22-02-10	S-22-271
									1	2/CS-#16	>> AE-22-02-07 SIGNAL DO	S-22-271
									1	2/CS-#16	>> AE-22-02-23 SIGNAL DO	S-22-271
									1	2/CS-#16	>> AE-22-02-21 SIGNAL NITRATE	S-22-271
									1	2/CS-#16	>> AE-22-02-22 SIGNAL NH4	S-22-271
									4	2/CS-#16	>> SPARES TO AIT-22-02-07	S-22-271
									2	2/CS-#16	>> FCV-22-02-20 SIGNAL	S-22-271
									1	2/CS-#16	>> FIT-22-02-19 SIGNAL	S-22-271
									2	2/CS-#16	>> FCV-22-02-25 SIGNAL	S-22-271
									1	2/CS-#16	>> FIT-22-02-24 SIGNAL	S-22-271
									1	2/CS-#16	>> FCV-22-02-17 SIGNAL	S-22-271
									1	2/CS-#16	>> FIT-22-02-16 SIGNAL	S-22-271
									6	#14	>> FCV-22-02-02 SIGNAL	S-22-271
									1	MFR	>> AE-22-02-26 SIGNAL	S-22-271
									1	2/CS-#16	>> FIT-22-02-03 SIGNAL	S-22-271
1	MFR	>> AE-22-02-15 SIGNAL	S-22-271									
1	2/CS-#16	>> FIT-22-02-08 SIGNAL	S-22-271									
1	2/CS-#16	>> FIT-22-02-13 SIGNAL	S-22-271									
1	2/CS-#16	>> FIT-22-02-03 SIGNAL	S-22-271									
1	2/CS-#16	>> FIT-22-02-05 SIGNAL	S-22-271									
2	2/CS-#16	>> FCV-22-02-09 SIGNAL	S-22-271									
2	2/CS-#16	>> FCV-22-02-14 SIGNAL	S-22-271									
2	2/CS-#16	>> FCV-22-02-06 SIGNAL	S-22-271									
2	2/CS-#16	>> FCV-22-02-04 SIGNAL	S-22-271									
S-22-282	02E01	3"	2 27	MFR 2/CS-#16	CABLE	1	#14	XHHW-2	FR:	MH-1	S-22-292	
									TO:	JB-20-01		
									1	2/CS-#16	>> AE-22-01-10 SIGNAL DO	S-22-272
									1	2/CS-#16	>> AE-22-01-18 SIGNAL DO	S-22-272
									1	2/CS-#16	>> AE-22-01-26 SIGNAL DO	S-22-272
									1	2/CS-#16	>> FIT-22-01-16 SIGNAL	S-22-272
									2	2/CS-#16	>> FCV-22-01-17 SIGNAL	S-22-272
									1	MFR	>> AE-22-01-26 SIGNAL	S-22-272
									1	2/CS-#16	>> FIT-22-01-01 SIGNAL	S-22-272
									2	2/CS-#16	>> FCV-22-01-02 SIGNAL	S-22-272
									1	MFR	>> AE-22-01-15 SIGNAL	S-22-272
									1	2/CS-#16	>> FIT-22-01-13 SIGNAL	S-22-272
									1	2/CS-#16	>> FIT-22-01-08 SIGNAL	S-22-272
									1	2/CS-#16	>> FIT-22-01-24 SIGNAL	S-22-272
									1	2/CS-#16	>> FIT-22-02-05 SIGNAL	S-22-272
									2	2/CS-#16	>> FCV-22-01-09 SIGNAL	S-22-272
									2	2/CS-#16	>> FCV-22-01-14 SIGNAL	S-22-272
									2	2/CS-#16	>> FCV-22-01-06 SIGNAL	S-22-272
									2	2/CS-#16	>> FCV-22-01-04 SIGNAL	S-22-272
									1	2/CS-#16	>> FIT-22-01-19 SIGNAL	S-22-272
2	2/CS-#16	>> FCV-22-01-20 SIGNAL	S-22-272									
1	2/CS-#16	>> FIT-22-01-24 SIGNAL	S-22-272									
2	2/CS-#16	>> FCV-22-01-25 SIGNAL	S-22-272									

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CONDUIT			CONDUCTORS			GROUND					
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION		CONNECTING SEGMENTS
S-22-291	20E01	3"	6 2 34	#14 MFR 2/CS-#16	XHHW-2 CABLE	1	#14	XHHW-2	FR:	JB-20-001	
									TO:	LCP-220	
									1 2/CS-#16	>> AE-22-02-10 SIGNAL DO	S-22-281
									1 2/CS-#16	>> AE-22-02-18 SIGNAL DO	S-22-281
									1 2/CS-#16	>> AE-22-02-26 SIGNAL DO	S-22-281
									2 2/CS-#16	>> SPARES TO AIT-22-02-10	S-22-281
									1 2/CS-#16	>> AE-22-02-07 SIGNAL DO	S-22-281
									1 2/CS-#16	>> AE-22-02-23 SIGNAL DO	S-22-281
									1 2/CS-#16	>> AE-22-02-21 SIGNAL NITRATE	S-22-281
									1 2/CS-#16	>> AE-22-02-22 SIGNAL NH4	S-22-281
									4 2/CS-#16	>> SPARES TO AIT-22-02-07	S-22-281
									2 2/CS-#16	>> FCV-22-02-20 SIGNAL	S-22-281
									1 2/CS-#16	>> FIT-22-02-19 SIGNAL	S-22-281
									2 2/CS-#16	>> FCV-22-02-25 SIGNAL	S-22-281
									1 2/CS-#16	>> FIT-22-02-24 SIGNAL	S-22-281
									1 2/CS-#16	>> FCV-22-02-17 SIGNAL	S-22-281
									1 2/CS-#16	>> FIT-22-02-16 SIGNAL	S-22-281
									6 #14	>> FCV-22-02-02 SIGNAL	S-22-281
									1 MFR	>> AE-22-02-26 SIGNAL	S-22-281
									1 2/CS-#16	>> FIT-22-02-03 SIGNAL	S-22-281
									1 MFR	>> AE-22-02-15 SIGNAL	S-22-281
									1 2/CS-#16	>> FIT-22-02-08 SIGNAL	S-22-281
									1 2/CS-#16	>> FIT-22-02-13 SIGNAL	S-22-281
									1 2/CS-#16	>> FIT-22-02-03 SIGNAL	S-22-281
									1 2/CS-#16	>> FIT-22-02-05 SIGNAL	S-22-281
									2 2/CS-#16	>> FCV-22-02-09 SIGNAL	S-22-281
									2 2/CS-#16	>> FCV-22-02-14 SIGNAL	S-22-281
									2 2/CS-#16	>> FCV-22-02-06 SIGNAL	S-22-281
									2 2/CS-#16	>> FCV-22-02-04 SIGNAL	S-22-281
									S-22-292	20E01	3"
TO:	LCP-220										
1 2/CS-#16	>> AE-22-01-10 SIGNAL DO	S-22-282									
1 2/CS-#16	>> AE-22-01-18 SIGNAL DO	S-22-282									
1 2/CS-#16	>> AE-22-01-26 SIGNAL DO	S-22-282									
1 2/CS-#16	>> FIT-22-01-16 SIGNAL	S-22-282									
2 2/CS-#16	>> FCV-22-01-17 SIGNAL	S-22-282									
1 MFR	>> AE-22-01-26 SIGNAL	S-22-282									
1 2/CS-#16	>> FIT-22-01-01 SIGNAL	S-22-282									
2 2/CS-#16	>> FCV-22-01-02 SIGNAL	S-22-282									
1 MFR	>> AE-22-01-15 SIGNAL	S-22-282									
1 2/CS-#16	>> FIT-22-01-13 SIGNAL	S-22-282									
1 2/CS-#16	>> FIT-22-01-08 SIGNAL	S-22-282									
1 2/CS-#16	>> FIT-22-01-24 SIGNAL	S-22-282									
1 2/CS-#16	>> FIT-22-02-05 SIGNAL	S-22-282									
2 2/CS-#16	>> FCV-22-01-09 SIGNAL	S-22-282									
2 2/CS-#16	>> FCV-22-01-14 SIGNAL	S-22-282									
2 2/CS-#16	>> FCV-22-01-06 SIGNAL	S-22-282									
2 2/CS-#16	>> FCV-22-01-04 SIGNAL	S-22-282									
1 2/CS-#16	>> FIT-22-01-19 SIGNAL	S-22-282									
2 2/CS-#16	>> FCV-22-01-20 SIGNAL	S-22-282									
1 2/CS-#16	>> FIT-22-01-24 SIGNAL	S-22-282									
2 2/CS-#16	>> FCV-22-01-25 SIGNAL	S-22-282									
X-22-004	02E01	0.75"	1	PULL	ROPE				FR:	AIR VALVE VAULT	
									TO:	BLOWER BUILDING	
									1 PULL	>> SPARE	
X-22-100		2"	1	PULL	ROPE				FR:	VCP-90-10-01	
									TO:	J-BOX	
									1 PULL	>>	

END OF CONDUIT SCHEDULE

END OF SECTION

SECTION 16990C

CONDUIT SCHEDULE AREA 50

PART 1 GENERAL

1.01 SUMMARY

- A. Conduit requirements:
 - 1. As defined in Section 16050 and Section 16130.
- B. Cable requirements and definitions:
 - 1. As defined in Section 16050 and Section 16123.
 - 2. 2/CS#16: 2 conductor, 16 gauge, twisted shielded pair.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 CONDUIT SCHEDULE

- A. Conduit Schedule is presented on the following pages.

CONDUIT SCHEDULE AREA 50

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-50-001	51E01	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: EAM 51-00-02 TO: CONDUIT TEE 6 #14 >> EAM 51-00-02 CONTROL	C-50-003
C-50-002	51E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-51-00-02 TO: CONDUIT TEE 2 #12 >> FIT-51-00-02 POWER	C-50-003
C-50-003	51E01	0.75"	2 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> EAM 51-00-02 CONTROL 2 #12 >> FIT-51-00-02 POWER	C-50-005 C-50-001 C-50-002
C-50-004	51E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-50-00-04 TO: CONDUIT TEE 2 #12 >> FIT-50-00-04 POWER	C-50-005
C-50-005	51E01	0.75"	4 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 6 #14 >> EAM 51-00-02 CONTROL 2 #12 >> FIT-51-00-02 POWER 2 #12 >> FIT-50-00-04 POWER	C-50-003 C-50-003 C-50-004
C-50-006	51E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-50-00-01 TO: CONDUIT TEE 2 #12 >> FIT-50-00-01 POWER	C-50-007
C-50-007	51E01	0.75"	4	#12	XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-50-00-04 POWER 2 #12 >> FIT-50-00-01 POWER	C-50-009 C-50-004 C-50-006
C-50-008		0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: EAM-51-00-01 TO: CONDUIT TEE 6 #14 >> EAM-51-00-01 CONTROL	C-50-009
C-50-009		0.75"	4 6	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-50-00-04 POWER 2 #12 >> FIT-50-00-01 POWER 6 #14 >> EAM-51-00-01 CONTROL	C-50-011 C-50-007 C-50-007 C-50-008
C-50-010	51E01 51E02	0.75"	6	#14	XHHW-2	1	#14	XHHW-2	FR: EAM-51-00-03 TO: CONDUIT TEE 6 #14 >> EAM-51-00-03 CONTROL	C-50-011
C-50-011		1"	4 12	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 #12 >> FIT-50-00-04 POWER 2 #12 >> FIT-50-00-01 POWER 6 #14 >> EAM-51-00-01 CONTROL 6 #14 >> EAM-51-00-03 CONTROL	C-50-013 C-50-009 C-50-009 C-50-009 C-50-010
C-50-012		0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-51-00-03 TO: CONDUIT TEE 2 #12 >> FIT-51-00-03 POWER	C-50-013
C-50-013		1.5"	6 12	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: CONDUIT TEE TO: LCP-510 2 #12 >> FIT-50-00-04 POWER 2 #12 >> FIT-50-00-01 POWER 6 #14 >> EAM-51-00-01 CONTROL 6 #14 >> EAM-51-00-03 CONTROL 2 #12 >> FIT-51-00-03 POWER	C-50-011 C-50-011 C-50-011 C-50-011 C-50-012
C-50-014	51E02	1.5"	32	#14	XHHW-2	1	#14	XHHW-2	FR: MCC-5 (VFD) TO: PLC-510 8 #14 >> VFD 51-01-01 CONTROL 8 #14 >> VFD 51-02-01 CONTROL 8 #14 >> VFD 51-03-01 CONTROL 8 #14 >> VFD 51-04-01 CONTROL	
C-50-015	51E02	0.75"				1	#14	XHHW-2	FR: TO:	
C-50-020	51E01	0.75"	8	#14	XHHW-2	1	#14	XHHW-2	FR: LCP 51-00-02 TO: CONDUIT TEE 8 #14 >> LCP 51-00-02 CONTROL	C-50-022
C-50-021	51E01	0.75"	8	#14	XHHW-2	1	#14	XHHW-2	FR: LCP 51-00-01 TO: CONDUIT TEE 8 #14 >> LCP 51-00-01 CONTROL	C-50-022

CONDUIT SCHEDULE AREA 50

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-50-022	51E01	1"	16	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 8 #14 >> LCP 51-00-02 CONTROL 8 #14 >> LCP 51-00-01 CONTROL	C-50-024 C-50-020 C-50-021
C-50-023	51E01	0.75"	8	#14	XHHW-2	1	#14	XHHW-2	FR: LCP 51-00-03 TO: CONDUIT TEE 8 #14 >> LCP 51-00-03 CONTROL	C-50-024
C-50-024	51E01 51E02	1.5"	24	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: LCP-510 8 #14 >> LCP 51-00-02 CONTROL 8 #14 >> LCP 51-00-01 CONTROL 8 #14 >> LCP 51-00-03 CONTROL	C-50-022 C-50-022 C-50-023
P-50-001	51E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: EAM 51-00-02 TO: DISCONNECT 3 #10 >> EAM 51-00-02 POWER	
P-50-002	51E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT TO: CONDUIT TEE 3 #10 >> EAM 51-00-02 POWER	P-50-004
P-50-003	51E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: FIT 51-00-01 TO: CONDUIT TEE 3 #10 >> FIT 51-00-01 POWER	P-50-004
P-50-004	51E01	0.75"	6	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 3 #10 >> EAM 51-00-02 POWER 3 #10 >> FIT 51-00-01 POWER	P-50-002 P-50-003
P-50-005	51E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: EAM 51-00-01 TO: DISCONNECT 3 #10 >> EAM 51-00-01 POWER	
P-50-006	51E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT TO: CONDUIT TEE 3 #10 >> EAM 51-00-01 POWER	P-50-007
P-50-007	51E01	0.75"	6	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 3 #10 >> EAM 51-00-02 POWER 3 #10 >> EAM 51-00-01 POWER	P-50-010 P-50-002 P-50-006
P-50-008	51E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: EAM 51-00-03 TO: CONDUIT TEE 3 #10 >> EAM 51-00-03 POWER	
P-50-009	51E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT TO: CONDUIT TEE 3 #10 >> EAM 51-00-03 POWER	P-50-010
P-50-010	51E01 51E02	1"	9	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: LP-1 3 #10 >> EAM 51-00-02 POWER 3 #10 >> EAM 51-00-01 POWER 3 #10 >> EAM 51-00-03 POWER	P-50-007 P-50-007 P-50-009
S-50-001		0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: EAM-51-00-02 TO: CONDUIT TEE 2 2/CS-#16 >> EAM-51-00-02 SIGNAL	S-50-003
S-50-002		0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-51-00-02 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-51-00-02 SIGNAL	S-50-003
S-50-003		1"	3	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 2/CS-#16 >> EAM-51-00-02 SIGNAL 1 2/CS-#16 >> FIT-51-00-02 SIGNAL	S-50-005 S-50-001 S-50-002
S-50-004		0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-51-00-04 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-51-00-04 SIGNAL	S-50-005
S-50-005		1"	4	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 2/CS-#16 >> EAM-51-00-02 SIGNAL 1 2/CS-#16 >> FIT-51-00-02 SIGNAL 1 2/CS-#16 >> FIT-51-00-04 SIGNAL	S-50-007 S-50-003 S-50-003 S-50-004

CONDUIT SCHEDULE AREA 50

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
S-50-006		0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-51-00-01 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-51-00-01 SIGNAL	S-50-007
S-50-007		1.5"	5	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 2/CS-#16 >> EAM-51-00-02 SIGNAL 1 2/CS-#16 >> FIT-51-00-02 SIGNAL 1 2/CS-#16 >> FIT-51-00-04 SIGNAL 1 2/CS-#16 >> FIT-51-00-01 SIGNAL	S-50-009 S-50-005 S-50-005 S-50-005 S-50-006
S-50-008		0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: EAM-51-00-01 TO: CONDUIT TEE 2 2/CS-#16 >> EAM-51-00-01 SIGNAL	S-50-009
S-50-009		1.5"	7	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 2/CS-#16 >> EAM-51-00-02 SIGNAL 1 2/CS-#16 >> FIT-51-00-02 SIGNAL 1 2/CS-#16 >> FIT-51-00-04 SIGNAL 1 2/CS-#16 >> FIT-51-00-01 SIGNAL 2 2/CS-#16 >> EAM-51-00-01 SIGNAL	S-50-011 S-50-007 S-50-007 S-50-007 S-50-007 S-50-008
S-50-010		0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: EAM-51-00-03 TO: CONDUIT TEE 2 2/CS-#16 >> EAM-51-00-03 SIGNAL	S-50-011
S-50-011		1.5"	9	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 2 2/CS-#16 >> EAM-51-00-02 SIGNAL 1 2/CS-#16 >> FIT-51-00-02 SIGNAL 1 2/CS-#16 >> FIT-51-00-04 SIGNAL 1 2/CS-#16 >> FIT-51-00-01 SIGNAL 2 2/CS-#16 >> EAM-51-00-01 SIGNAL 2 2/CS-#16 >> EAM-51-00-03 SIGNAL	S-50-013 S-50-009 S-50-009 S-50-009 S-50-009 S-50-009 S-50-010
S-50-012		0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-51-00-03 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-51-00-03 SIGNAL	S-50-013
S-50-013		2"	10	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: LCP-510 2 2/CS-#16 >> EAM-51-00-02 SIGNAL 1 2/CS-#16 >> FIT-51-00-02 SIGNAL 1 2/CS-#16 >> FIT-51-00-04 SIGNAL 1 2/CS-#16 >> FIT-51-00-01 SIGNAL 2 2/CS-#16 >> EAM-51-00-01 SIGNAL 2 2/CS-#16 >> EAM-51-00-03 SIGNAL 1 2/CS-#16 >> FIT-51-00-03 SIGNAL	S-50-011 S-50-011 S-50-011 S-50-011 S-50-011 S-50-011 S-50-011 S-50-012
S-50-014		1.5"	8	2/CS-#16		1	#14	XHHW-2	FR: MCC-5 (VFD) TO: LCP-510 2 2/CS-#16 >> VFD-51-01-01 2 2/CS-#16 >> VFD-51-02-01 2 2/CS-#16 >> VFD-51-03-01 2 2/CS-#16 >> VFD-51-04-01	
L-50-001		0.75"	4	#12	XHHW-2	1	#12	XHHW-2	FR: PLC-510 TO: LP-1 4 #12 >> PLC-510 POWER	
L-50-002		0.75"	4	#12	XHHW-2	1	#12	XHHW-2	FR: UPS LP-1 TO: PLC-510 4 #12 >> PLC-510 UPS POWER	
S-50-015		0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: LCP-520 TO: LCP-510 1 2/CS-#16 >> FIT-52-00-01 SIGNAL (F-52-00-01A)	

END OF CONDUIT SCHEDULE

END OF SECTION

SECTION 16990D

CONDUIT SCHEDULE AREA 83

PART 1 GENERAL

1.01 SUMMARY

- A. Conduit requirements:
 - 1. As defined in Section 16050 and Section 16130.
- B. Cable requirements and definitions:
 - 1. As defined in Section 16050 and Section 16123.
 - 2. 2/CS#16: 2 conductor, 16 gauge, twisted shielded pair.
 - 3. 3/CS#16: 3 conductor, 16 gauge, twisted shielded triplet.
 - 4. PULL: Pull Rope.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 CONDUIT SCHEDULE

- A. Conduit Schedule is presented on the following pages.

CONDUIT SCHEDULE AREA 83

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CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-83-000	83E01	2"	52	#14	XHHW-2	1	#14	XHHW-2	FR: MCC-3705 TO: PLC-220 12 #14 >> MIX-83-01-01 CONTROL 12 #14 >> MIX-83-02-01 CONTROL 4 #14 >> FVNR-83-00-02 CONTROL 12 #14 >> VFD-83-11-01 CONTROL 12 #14 >> VFD-83-12-01 CONTROL	
C-83-001	83E01	0.75"	10	#14	XHHW-2	1	#14	XHHW-2	FR: LCP-83-01-03 TO: EDR-83-01-03 10 #14 >> LCP-83-01-03 CONTROL	
C-83-002	83E01	0.75"	10	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-83-01-03 TO: J-BOX 10 #14 >> EDR-83-01-03 CONTROL	C-83-021
C-83-007	83E01	0.75"	10	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-83-01-02 TO: J-BOX 10 #14 >> EDR-83-01-02 CONTROL	C-83-021
C-83-011	83E01	0.75"	10	#14	XHHW-2	1	#14	XHHW-2	FR: LCP-83-01-06 TO: FCV-83-01-06 10 #14 >> LCP-83-01-06 CONTROL	
C-83-012	83E01	0.75"	10	#14	XHHW-2	1	#14	XHHW-2	FR: FCV-83-01-06 TO: J-BOX 10 #14 >> FCV-83-01-06 CONTROL	C-83-021
C-83-016	83E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: J-BOX TO: CONDUIT TEE 2 #14 >> TE-83-01-01 2 #14 >> ME-83-01-01	
C-83-017	83E01	1.5"	20	#14	XHHW-2	1	#14	XHHW-2	FR: LCP-83-01-01 TO: CONDUIT TEE 16 #14 >> LCP-83-01-01 CONTROL 2 #14 >> TE-83-01-01 2 #14 >> ME-83-01-01	
C-83-018	83E01	1"	16	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: J-BOX 16 #14 >> LCP-83-01-01 CONTROL	C-83-021
C-83-019	83E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: LE-83-01-05 TO: J-BOX 4 #14 >> LE-83-01-05 CONTROL	C-83-021
C-83-021	83E01	2"	50	#14	XHHW-2	1	#14	XHHW-2	FR: J-BOX TO: J-BOX 16 #14 >> LCP-83-01-01 CONTROL 4 #14 >> LE-83-01-05 CONTROL 10 #14 >> FCV-83-01-06 CONTROL 10 #14 >> EDR-83-01-02 CONTROL 10 #14 >> EDR-83-01-03 CONTROL	C-83-025 C-83-018 C-83-019 C-83-012 C-83-007 C-83-002
C-83-025	83E01	3"	2 142	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: J-BOX TO: HH-2 2 #14 >> PMP-83-11-01 CONTROL 2 #14 >> PSH-83-12-02 CONTROL 16 #14 >> LCP-83-00-02 CONTROL 2 #14 >> LSH-83-00-03 CONTROL 2 #14 >> LSL-83-00-03 CONTROL 2 #14 >> PMP-83-12-01 CONTROL 2 #12 >> FIT-83-00-01 CONTROL 12 #14 >> LCP-83-12-01 CONTROL 12 #14 >> LCP-83-11-01 CONTROL 2 #14 >> PSH-83-11-02 CONTROL 4 #14 >> LE-83-02-05 CONTROL 16 #14 >> LCP-83-02-01 CONTROL 10 #14 >> EDR-83-02-02 CONTROL 10 #14 >> EDR-83-02-03 CONTROL 16 #14 >> LCP-83-01-01 CONTROL 4 #14 >> LE-83-01-05 CONTROL 10 #14 >> FCV-83-01-06 CONTROL 10 #14 >> EDR-83-01-02 CONTROL 10 #14 >> EDR-83-01-03 CONTROL	C-83-030 C-83-222 C-83-222 C-83-222 C-83-222 C-83-222 C-83-222 C-83-222 C-83-222 C-83-222 C-83-119 C-83-118 C-83-107 C-83-102 C-83-021 C-83-021 C-83-021 C-83-021 C-83-021

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NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-83-035	20E01	3"	2 142	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: JB-20-001 TO: LCP-220 2 #14 >> PMP-83-11-01 CONTROL C-83-032 2 #14 >> PSH-83-12-02 CONTROL C-83-032 16 #14 >> LCP-83-00-02 CONTROL C-83-032 2 #14 >> LSH-83-00-03 CONTROL C-83-032 2 #14 >> LSL-83-00-03 CONTROL C-83-032 2 #14 >> PMP-83-12-01 CONTROL C-83-032 2 #12 >> FIT-83-00-01 CONTROL C-83-032 12 #14 >> LCP-83-12-01 CONTROL C-83-032 12 #14 >> LCP-83-11-01 CONTROL C-83-032 2 #14 >> PSH-83-11-02 CONTROL C-83-032 4 #14 >> LE-83-02-05 CONTROL C-83-032 16 #14 >> LCP-83-02-01 CONTROL C-83-032 10 #14 >> EDR-83-02-02 CONTROL C-83-032 10 #14 >> EDR-83-02-03 CONTROL C-83-032 16 #14 >> LCP-83-01-01 CONTROL C-83-032 4 #14 >> LE-83-01-05 CONTROL C-83-032 10 #14 >> FCV-83-01-06 CONTROL C-83-032 10 #14 >> EDR-83-01-02 CONTROL C-83-032 10 #14 >> EDR-83-01-03 CONTROL C-83-032	
C-83-101	83E01	0.75"	10	#14	XHHW-2	1	#14	XHHW-2	FR: LCP-83-02-03 TO: EDR-83-02-03 10 #14 >> LCP-83-02-03 CONTROL	
C-83-102	83E01	0.75"	10	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-83-02-03 TO: CONDUIT TEE C-83-025 10 #14 >> EDR-83-02-03 CONTROL	
C-83-106	83E01	0.75"	10	#14	XHHW-2	1	#14	XHHW-2	FR: LCP-83-02-02 TO: EDR-83-02-02 10 #14 >> LCP-83-02-02 CONTROL	
C-83-107	83E01	0.75"	10	#14	XHHW-2	1	#14	XHHW-2	FR: EDR-83-02-02 TO: J-BOX C-83-025 10 #14 >> EDR-83-02-02 CONTROL	
C-83-116	83E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: J-BOX TO: CONDUIT TEE 2 #14 >> TE-83-02-01 2 #14 >> ME-83-02-01	
C-83-117	83E01	1.5"	20	#14	XHHW-2	1	#14	XHHW-2	FR: LCP-83-02-01 TO: CONDUIT TEE 16 #14 >> LCP-83-02-01 CONTROL 2 #14 >> TE-83-02-01 2 #14 >> ME-83-02-01	
C-83-118	83E01	1"	16	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE C-83-025 TO: J-BOX 16 #14 >> LCP-83-02-01 CONTROL	
C-83-119	83E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: LE-83-02-05 C-83-025 TO: J-BOX 4 #14 >> LE-83-02-05 CONTROL	
C-83-201	83E01	0.75"	2	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE C-83-202 TO: CONDUIT TEE 2 #14 >> PMP-83-12-01 CONTROL	
C-83-202	83E01	1.5"	22	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE C-83-222 TO: J-BOX 16 #14 >> LCP-83-00-02 CONTROL C-83-219 2 #14 >> LSH-83-00-03 CONTROL C-83-219 2 #14 >> LSL-83-00-03 CONTROL C-83-219 2 #14 >> PMP-83-12-01 CONTROL C-83-201	
C-83-203	83E01	0.75"	2	#14	XHHW-2	1	#14	XHHW-2	FR: PSH-83-12-02 C-83-222 TO: J-BOX 2 #14 >> PSH-83-12-02 CONTROL	
C-83-204	83E01	1"	12	#14	XHHW-2	1	#14	XHHW-2	FR: LCP-83-12-01 C-83-222 TO: J-BOX 12 #14 >> LCP-83-12-01 CONTROL	
C-83-205	83E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: LSH-83-00-03/LSL-83-00-03 C-83-219 TO: CONDUIT TEE 2 #14 >> LSH-83-00-03 CONTROL 2 #14 >> LSL-83-00-03 CONTROL	

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NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-83-206	83E01	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: FIT-83-00-01 TO: J-BOX 2 #12 >> FIT-83-00-01 CONTROL	C-83-222
C-83-211	83E01	0.75"	2	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: J-BOX 2 #14 >> PMP-83-11-01 CONTROL	C-83-222
C-83-212	83E01	1"	12	#14	XHHW-2	1	#14	XHHW-2	FR: LCP-83-11-01 TO: J-BOX 12 #14 >> LCP-83-11-01 CONTROL	C-83-222
C-83-213	83E01	0.75"	2	#14	XHHW-2	1	#14	XHHW-2	FR: PSH-83-11-02 TO: J-BOX 2 #14 >> PSH-83-11-02 CONTROL	C-83-222
C-83-216	83E01	0.75"	4	#14	XHHW-2	1	#14	XHHW-2	FR: J-BOX TO: CONDUIT TEE 2 #14 >> ME-83-00-02 CONTROL 2 #14 >> TE-83-00-02 CONTROL	
C-83-217	83E01	1.5"	20	#14	XHHW-2	1	#14	XHHW-2	FR: LCP-83-00-02 TO: CONDUIT TEE 16 #14 >> LCP-83-00-02 CONTROL 2 #14 >> ME-83-00-02 CONTROL 2 #14 >> TE-83-00-02 CONTROL	
C-83-218	83E01	1"	16	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 16 #14 >> LCP-83-00-02 CONTROL	C-83-219
C-83-219	83E01	1.5"	20	#14	XHHW-2	1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 16 #14 >> LCP-83-00-02 CONTROL 2 #14 >> LSH-83-00-03 CONTROL 2 #14 >> LSL-83-00-03 CONTROL	C-83-202 C-83-218 C-83-205 C-83-205
C-83-222	83E01	2"	2 52	#12 #14	XHHW-2 XHHW-2	1	#12	XHHW-2	FR: J-BOX TO: J-BOX 2 #14 >> PMP-83-11-01 CONTROL 2 #14 >> PSH-83-12-02 CONTROL 16 #14 >> LCP-83-00-02 CONTROL 2 #14 >> LSH-83-00-03 CONTROL 2 #14 >> LSL-83-00-03 CONTROL 2 #14 >> PMP-83-12-01 CONTROL 2 #12 >> FIT-83-00-01 CONTROL 12 #14 >> LCP-83-12-01 CONTROL 12 #14 >> LCP-83-11-01 CONTROL 2 #14 >> PSH-83-11-02 CONTROL	C-83-025 C-83-211 C-83-203 C-83-202 C-83-202 C-83-202 C-83-202 C-83-206 C-83-204 C-83-212 C-83-213
L-83-030	02E01	0.75"	1	PULL	ROPE				FR: HH-2 TO: MH-2 1 PULL >> LTG AND RECEIPT BY CONTRACTOR	
L-83-031	02E01	0.75"	1	PULL	ROPE				FR: MH-2 TO: MH-1 1 PULL >> LTG AND RECEIPT BY CONTRACTOR	
L-83-032	02E01	0.75"	1	PULL	ROPE				FR: MH-1 TO: JB-20-001 1 PULL >> LTG AND RECEIPT BY CONTRACTOR	
L-83-304	02E01	0.75"	1	PULL	ROPE				FR: JB-20-001 TO: LP-3750 1 PULL >> LTG AND RECEIPT BY CONTRACTOR	
P-83-001	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: EDR-83-01-03 TO: DISCONNECT 3 #10 >> EDR-83-01-03 POWER	
P-83-002	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: EDR-83-01-03 TO: J-BOX 3 #10 >> EDR-83-01-03 POWER	P-83-021
P-83-006	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: EDR-83-01-02 TO: DISCONNECT 3 #10 >> EDR-83-01-02 POWER	
P-83-007	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: EDR-83-01-02 TO: J-BOX 3 #10 >> EDR-83-01-02 POWER	P-83-021

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NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
P-83-011	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: FCV-83-01-06 TO: DISCONNECT 3 #10 >> FCV-83-01-06 POWER	
P-83-012	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: FCV-83-01-06 TO: J-BOX 3 #10 >> FCV-83-01-06 POWER	P-83-021
P-83-016	83E01	2"	3	#10	XHHW-2	1	#10	XHHW-2	FR: J-BOX TO: DISCONNECT 3 #10 >> MIX-83-01-01 POWER	
P-83-017	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT TO: J-BOX 3 #10 >> MIX-83-01-01 POWER	P-83-021
P-83-021	83E01	1.5"	12	#10	XHHW-2	1	#10	XHHW-2	FR: J-BOX TO: J-BOX 3 #10 >> FCV-83-01-06 POWER 3 #10 >> EDR-83-01-02 POWER 3 #10 >> EDR-83-01-03 POWER 3 #10 >> MIX-83-01-01 POWER	P-83-025 P-83-012 P-83-007 P-83-002 P-83-017
P-83-025	83E01	2"	30	#10	XHHW-2	1	#10	XHHW-2	FR: J-BOX TO: HH-2 3 #10 >> PMP-83-12-01 POWER 3 #10 >> PMP-83-00-02 POWER 3 #10 >> PMP-83-11-01 POWER 3 #10 >> MIX-83-02-01 POWER 3 #10 >> EDR-83-02-02 POWER 3 #10 >> EDR-83-02-03 POWER 3 #10 >> FCV-83-01-06 POWER 3 #10 >> EDR-83-01-02 POWER 3 #10 >> EDR-83-01-03 POWER 3 #10 >> MIX-83-01-01 POWER	P-83-030 P-83-222 P-83-222 P-83-222 P-83-117 P-83-107 P-83-102 P-83-021 P-83-021 P-83-021 P-83-021
P-83-030	02E01	2"	30	#10	XHHW-2	1	#10	XHHW-2	FR: HH-2 TO: MH-2 3 #10 >> PMP-83-12-01 POWER 3 #10 >> PMP-83-00-02 POWER 3 #10 >> PMP-83-11-01 POWER 3 #10 >> MIX-83-02-01 POWER 3 #10 >> EDR-83-02-02 POWER 3 #10 >> EDR-83-02-03 POWER 3 #10 >> FCV-83-01-06 POWER 3 #10 >> EDR-83-01-02 POWER 3 #10 >> EDR-83-01-03 POWER 3 #10 >> MIX-83-01-01 POWER	P-83-031 P-83-025 P-83-025 P-83-025 P-83-025 P-83-025 P-83-025 P-83-025 P-83-025 P-83-025 P-83-025 P-83-025
P-83-031	02E01	2"	30	#10	XHHW-2	1	#10	XHHW-2	FR: MH-2 TO: MH-1 3 #10 >> PMP-83-12-01 POWER 3 #10 >> PMP-83-00-02 POWER 3 #10 >> PMP-83-11-01 POWER 3 #10 >> MIX-83-02-01 POWER 3 #10 >> EDR-83-02-02 POWER 3 #10 >> EDR-83-02-03 POWER 3 #10 >> FCV-83-01-06 POWER 3 #10 >> EDR-83-01-02 POWER 3 #10 >> EDR-83-01-03 POWER 3 #10 >> MIX-83-01-01 POWER	P-83-032 P-83-030 P-83-030 P-83-030 P-83-030 P-83-030 P-83-030 P-83-030 P-83-030 P-83-030 P-83-030 P-83-030
P-83-032	02E01	2"	30	#10	XHHW-2	1	#10	XHHW-2	FR: MH-1 TO: JB-20-001 3 #10 >> PMP-83-12-01 POWER 3 #10 >> PMP-83-00-02 POWER 3 #10 >> PMP-83-11-01 POWER 3 #10 >> MIX-83-02-01 POWER 3 #10 >> EDR-83-02-02 POWER 3 #10 >> EDR-83-02-03 POWER 3 #10 >> FCV-83-01-06 POWER 3 #10 >> EDR-83-01-02 POWER 3 #10 >> EDR-83-01-03 POWER 3 #10 >> MIX-83-01-01 POWER	P-83-031 P-83-031 P-83-031 P-83-031 P-83-031 P-83-031 P-83-031 P-83-031 P-83-031 P-83-031 P-83-031 P-83-031
P-83-101	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: EDR-83-02-03 TO: DISCONNECT 3 #10 >> EDR-83-02-03 POWER	

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NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
P-83-102	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: EDR-83-02-03 TO: CONDUIT TEE 3 #10 >> EDR-83-02-03 POWER	P-83-025
P-83-106	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: EDR-83-02-02 TO: DISCONNECT 3 #10 >> EDR-83-02-02 POWER	
P-83-107	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT TO: J-BOX 3 #10 >> EDR-83-02-02 POWER	P-83-025
P-83-116	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: J-BOX TO: DISCONNECT 3 #10 >> MIX-83-02-01 POWER	
P-83-117	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT TO: J-BOX 3 #10 >> MIX-83-02-01 POWER	P-83-025
P-83-201	83E01	0.75"	3 2	#10 #14	XHHW-2 XHHW-2	1	#10	XHHW-2	FR: PMP-83-12-01 TO: CONDUIT TEE 3 #10 >> PMP-83-12-01 POWER 2 #14 >> PMP-83-12-01 CONTROL	
P-83-202	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 3 #10 >> PMP-83-12-01 POWER	P-83-221
P-83-211	83E01	0.75"	3 2	#10 #14	XHHW-2 XHHW-2	1	#10	XHHW-2	FR: PMP-83-11-01 TO: CONDUIT TEE 3 #10 >> PMP-83-11-01 POWER 2 #14 >> PMP-83-11-01 CONTROL	
P-83-212	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 3 #10 >> PMP-83-11-01 POWER	P-83-222
P-83-216	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: J-BOX TO: DISCONNECT 3 #10 >> PMP-83-00-02 POWER	
P-83-217	83E01	0.75"	3	#10	XHHW-2	1	#10	XHHW-2	FR: DISCONNECT TO: CONDUIT TEE 3 #10 >> PMP-83-00-02 POWER	P-83-221
P-83-221	83E01	0.75"	6	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 3 #10 >> PMP-83-12-01 POWER 3 #10 >> PMP-83-00-02 POWER	P-83-222 P-83-202 P-83-217
P-83-222	83E01	1"	9	#10	XHHW-2	1	#10	XHHW-2	FR: CONDUIT TEE TO: J-BOX 3 #10 >> PMP-83-12-01 POWER 3 #10 >> PMP-83-00-02 POWER 3 #10 >> PMP-83-11-01 POWER	P-83-025 P-83-221 P-83-221 P-83-212
P-83-304		1.5"	15	#10	XHHW-2	1	#10	XHHW-2	FR: JB-20-001 TO: PP-3760 3 #10 >> EDR-83-02-02 POWER 3 #10 >> EDR-83-02-03 POWER 3 #10 >> EDR-83-01-02 POWER 3 #10 >> EDR-83-01-03 POWER 3 #10 >> FCV-83-01-06 POWER	
P-83-305		0.75"	6	#10	XHHW-2	1	#10	XHHW-2	FR: JB-20-001 TO: MCC-3700 3 #10 >> PMP-83-12-01 POWER 3 #10 >> PMP-83-11-01 POWER	
P-83-306		1"	9	#10	XHHW-2	1	#10	XHHW-2	FR: JB-20-001 TO: MCC-3705 3 #10 >> PMP-83-00-02 POWER 3 #10 >> MIX-83-02-01 POWER 3 #10 >> MIX-83-01-01 POWER	
S-83-000	83E01	1"	4	2/CS-#16		1	#14	XHHW-2	FR: MCC-3705 TO: PLC-220 2 2/CS-#16 >> VFD-83-11-01 SIGNAL 2 2/CS-#16 >> VFD-83-12-01 SIGNAL	

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NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
S-83-007	83E01	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: EDR-83-01-02 TO: J-BOX 2 2/CS-#16 >> EDR-83-01-02 SIGNAL	S-83-021
S-83-012	83E01	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: FCV-83-01-06 TO: J-BOX 2 2/CS-#16 >> FCV-83-01-06 SIGNAL	S-83-021
S-83-016	83E01	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: LE-83-01-04 TO: CONDUIT TEE 1 2/CS-#16 >> LE-83-01-04 SIGNAL	S-83-121
S-83-021	83E01	1"	4	2/CS-#16		1	#14	XHHW-2	FR: J-BOX TO: J-BOX 2 2/CS-#16 >> FCV-83-01-06 SIGNAL 2 2/CS-#16 >> EDR-83-01-02 SIGNAL	S-83-025 S-83-012 S-83-007
S-83-025	83E01	2"	2 9	3/CS-#16 2/CS-#16		1	#14	XHHW-2	FR: J-BOX TO: HH-2 1 3/CS-#16 >> LCP-83-11-01 SIGNAL 1 3/CS-#16 >> LCP-83-12-01 SIGNAL 1 2/CS-#16 >> FIT-83-00-01 SIGNAL 1 2/CS-#16 >> LE-83-02-04 SIGNAL 1 2/CS-#16 >> LE-83-01-04 SIGNAL 2 2/CS-#16 >> EDR-83-02-02 SIGNAL 2 2/CS-#16 >> FCV-83-01-06 SIGNAL 2 2/CS-#16 >> EDR-83-01-02 SIGNAL	S-83-030 S-83-222 S-83-222 S-83-222 S-83-121 S-83-121 S-83-106 S-83-021 S-83-021
S-83-030	02E01	2"	2 9	3/CS-#16 2/CS-#16		1	#14	XHHW-2	FR: HH-2 TO: MH-2 1 3/CS-#16 >> LCP-83-11-01 SIGNAL 1 3/CS-#16 >> LCP-83-12-01 SIGNAL 1 2/CS-#16 >> FIT-83-00-01 SIGNAL 1 2/CS-#16 >> LE-83-02-04 SIGNAL 1 2/CS-#16 >> LE-83-01-04 SIGNAL 2 2/CS-#16 >> EDR-83-02-02 SIGNAL 2 2/CS-#16 >> FCV-83-01-06 SIGNAL 2 2/CS-#16 >> EDR-83-01-02 SIGNAL	S-83-031 S-83-025 S-83-025 S-83-025 S-83-025 S-83-025 S-83-025 S-83-025 S-83-025
S-83-031	02E01	2"	2 9	3/CS-#16 2/CS-#16		1	#14	XHHW-2	FR: MH-2 TO: MH-1 1 3/CS-#16 >> LCP-83-11-01 SIGNAL 1 3/CS-#16 >> LCP-83-12-01 SIGNAL 1 2/CS-#16 >> FIT-83-00-01 SIGNAL 1 2/CS-#16 >> LE-83-02-04 SIGNAL 1 2/CS-#16 >> LE-83-01-04 SIGNAL 2 2/CS-#16 >> EDR-83-02-02 SIGNAL 2 2/CS-#16 >> FCV-83-01-06 SIGNAL 2 2/CS-#16 >> EDR-83-01-02 SIGNAL	S-83-032 S-83-030 S-83-030 S-83-030 S-83-030 S-83-030 S-83-030 S-83-030 S-83-030
S-83-032	02E01	2"	2 9	3/CS-#16 2/CS-#16		1	#14	XHHW-2	FR: MH-1 TO: JB-20-001 1 3/CS-#16 >> LCP-83-11-01 SIGNAL 1 3/CS-#16 >> LCP-83-12-01 SIGNAL 1 2/CS-#16 >> FIT-83-00-01 SIGNAL 1 2/CS-#16 >> LE-83-02-04 SIGNAL 1 2/CS-#16 >> LE-83-01-04 SIGNAL 2 2/CS-#16 >> EDR-83-02-02 SIGNAL 2 2/CS-#16 >> FCV-83-01-06 SIGNAL 2 2/CS-#16 >> EDR-83-01-02 SIGNAL	S-83-035 S-83-031 S-83-031 S-83-031 S-83-031 S-83-031 S-83-031 S-83-031 S-83-031
S-83-035	20E01	2"	2 9	3/CS-#16 2/CS-#16		1	#14	XHHW-2	FR: JB-20-001 TO: LCP-220 1 3/CS-#16 >> LCP-83-11-01 SIGNAL 1 3/CS-#16 >> LCP-83-12-01 SIGNAL 1 2/CS-#16 >> FIT-83-00-01 SIGNAL 1 2/CS-#16 >> LE-83-02-04 SIGNAL 1 2/CS-#16 >> LE-83-01-04 SIGNAL 2 2/CS-#16 >> EDR-83-02-02 SIGNAL 2 2/CS-#16 >> FCV-83-01-06 SIGNAL 2 2/CS-#16 >> EDR-83-01-02 SIGNAL	S-83-032 S-83-032 S-83-032 S-83-032 S-83-032 S-83-032 S-83-032 S-83-032 S-83-032
S-83-106	83E01	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: EDR-83-02-02 TO: J-BOX 2 2/CS-#16 >> EDR-83-02-02 SIGNAL	S-83-025

CONDUIT SCHEDULE AREA 83

Paseo Real WWTP Aeration Improvements Design

EQUALIZATION TANK

ENGINEER

BMR

REVISION

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DATE

3/19/20

CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
S-83-116	83E01	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: LE-83-02-04 TO: CONDUIT TEE 1 2/CS-#16 >> LE-83-02-04 SIGNAL	S-83-121
S-83-121	83E01	0.75"	2	2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: J-BOX 1 2/CS-#16 >> LE-83-02-04 SIGNAL 1 2/CS-#16 >> LE-83-01-04 SIGNAL	S-83-025 S-83-116 S-83-016
S-83-201	83E01	0.75"	1	3/CS-#16		1	#14	XHHW-2	FR: LCP-83-12-01 TO: CONDUIT TEE 1 3/CS-#16 >> LCP-83-12-01 SIGNAL	S-83-221
S-83-206	83E01	0.75"	1	2/CS-#16		1	#14	XHHW-2	FR: FIT-83-00-01 TO: CONDUIT TEE 1 2/CS-#16 >> FIT-83-00-01 SIGNAL	S-83-222
S-83-211	83E01	0.75"	1	3/CS-#16		1	#14	XHHW-2	FR: LCP-83-11-01 TO: CONDUIT TEE 1 3/CS-#16 >> LCP-83-11-01 SIGNAL	S-83-221
S-83-221	83E01	0.75"	2	3/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: CONDUIT TEE 1 3/CS-#16 >> LCP-83-11-01 SIGNAL 1 3/CS-#16 >> LCP-83-12-01 SIGNAL	S-83-222 S-83-211 S-83-201
S-83-222	83E01	1"	2 1	3/CS-#16 2/CS-#16		1	#14	XHHW-2	FR: CONDUIT TEE TO: J-BOX 1 3/CS-#16 >> LCP-83-11-01 SIGNAL 1 3/CS-#16 >> LCP-83-12-01 SIGNAL 1 2/CS-#16 >> FIT-83-00-01 SIGNAL	S-83-025 S-83-221 S-83-221 S-83-206

END OF CONDUIT SCHEDULE

END OF SECTION

SECTION 16990E

CONDUIT SCHEDULE AREA 20

PART 1 GENERAL

1.01 SUMMARY

- A. Conduit requirements:
 - 1. As defined in Section 16050 and Section 16130.
- B. Cable requirements and definitions:
 - 1. As defined in Section 16050 and Section 16123.
 - 2. 2/CS#16: 2 conductor, 16 gauge, twisted shielded pair.
 - 3. 3/CS#16: 3 conductor, 16 gauge, twisted shielded triplet.
 - 4. CAT5e: Category 5 enhanced Ethernet cable.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 CONDUIT SCHEDULE

- A. Conduit Schedule is presented on the following pages.

CONDUIT SCHEDULE AREA 20

Paseo Real WWTP Aeration Improvements Design

ADMINISTRATION BUILDING

ENGINEER

MJP

REVISION

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DATE

3/19/20

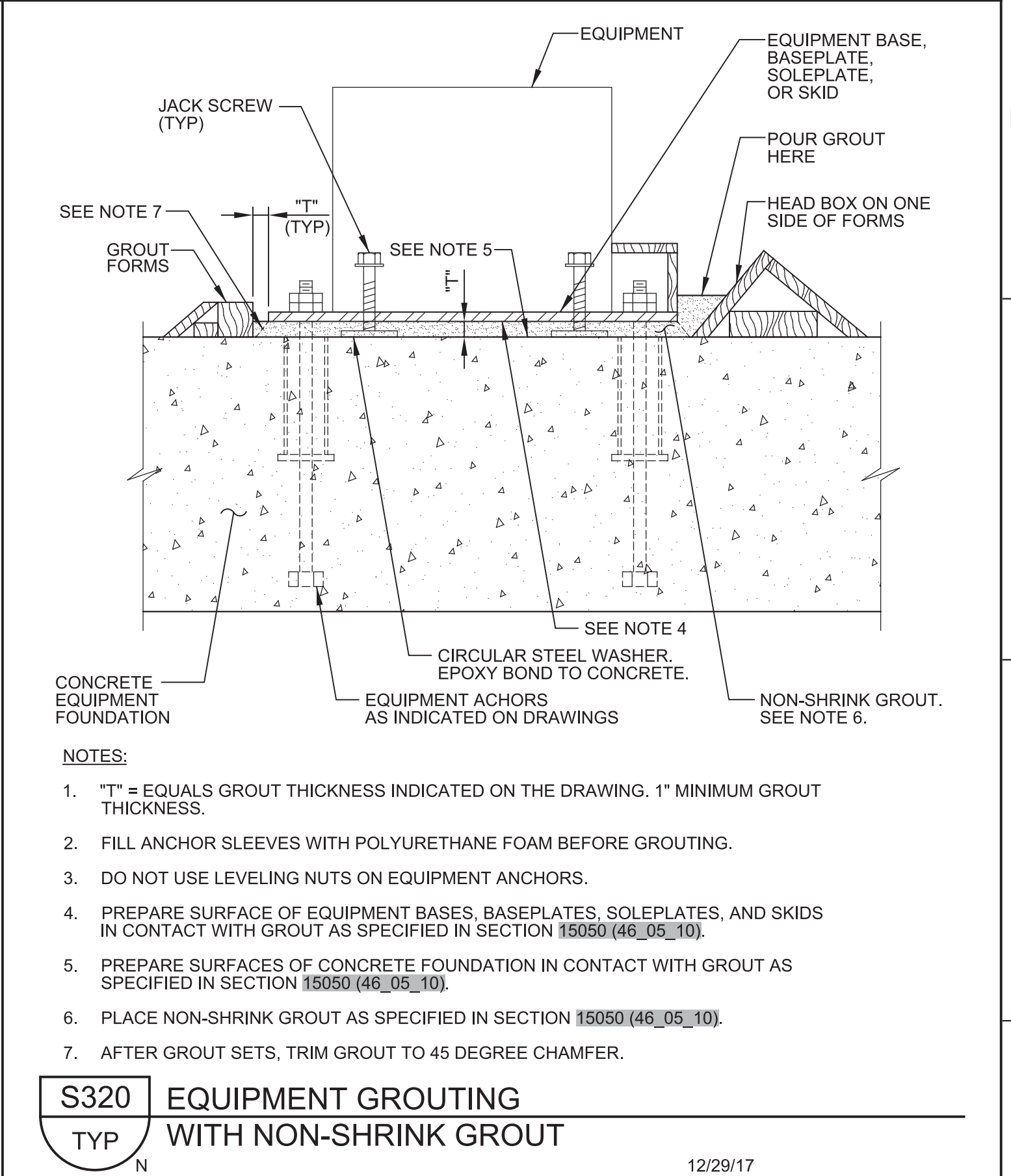
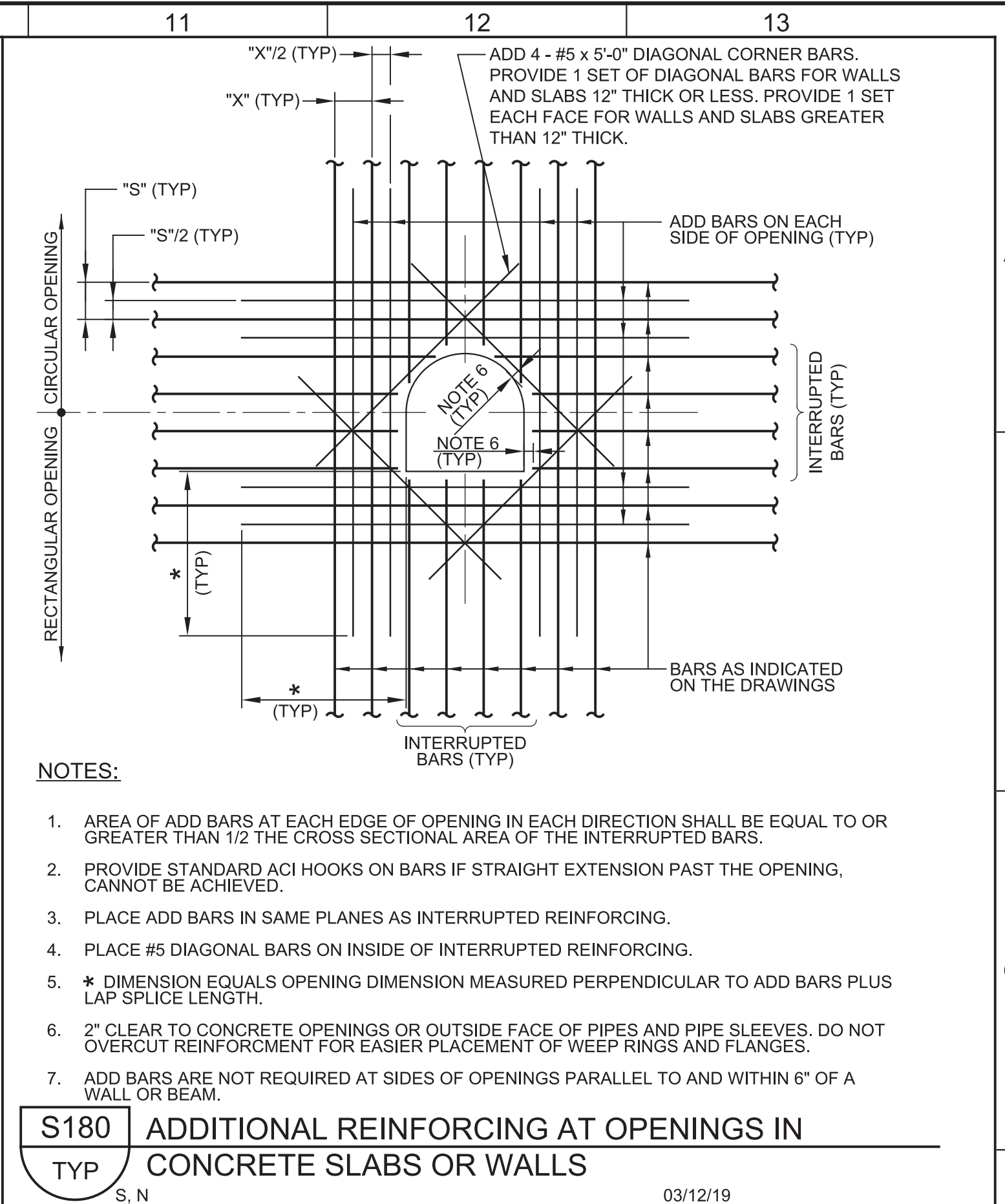
CONDUIT			CONDUCTORS			GROUND			DESCRIPTION	CONNECTING SEGMENTS
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE		
C-20-010	20E01	1.5"	28	#14	XHHW-2	1	#14	XHHW-2	FR: MCC-3700 TO: LCP-220 14 #14 >> PMP-83-11-01 14 #14 >> PMP-83-12-01	
C-20-011	20E01	2.5"	98	#14	XHHW-2	1	#14	XHHW-2	FR: MCC-3705 TO: LCP-220 14 #14 >> PMP-83-01-01 14 #14 >> PMP-83-02-01 14 #14 >> PMP-83-00-02 14 #14 >> PMP-22-01-28 14 #14 >> PMP-22-01-27 14 #14 >> PMP-22-02-28 14 #14 >> PMP-22-02-27	
L-20-002	20E01	0.75"	4	#10	XHHW-2	1	#10	XHHW-2	FR: LCP-220 TO: UPS LP-3750 2 #10 >> LCP-220 POWER 2 #10 >> LCP-220 POWER	
L-20-003	20E01	0.75"	4	#10	XHHW-2	1	#10	XHHW-2	FR: UPS LP-3750 TO: LP-3750 2 #10 >> LCP-220 POWER 2 #10 >> LCP-220 POWER	
N-20-001	20E01	0.75"	1		CAT5E	1	#14	XHHW-2	FR: MCP-10-000 TO: LCP-220 1 CAT5E >> MCP-10-000 NETWORK	
N-20-010	20E01	0.75"	1		CAT5E	1	#14	XHHW-2	FR: MCC-3700 TO: LCP-220 1 CAT5E >> MCC-3705 NETWORK	
N-20-003	20E01	0.75"	1		CAT5E	1	#14	XHHW-2	FR: BLR-22-21-00 TO: MCP-10-000 1 CAT5E >> BLR-22-21-00 NETWORK	
N-20-004	20E01	0.75"	1		CAT5E	1	#14	XHHW-2	FR: BLR-22-22-00 TO: MCP-10-000 1 CAT5E >> BLR-22-22-00 NETWORK	
N-20-005	20E01	0.75"	1		CAT5E	1	#14	XHHW-2	FR: BLR-22-23-00 TO: MCP-10-000 1 CAT5E >> BLR-22-23-00 NETWORK	
P-20-051	20E01	2"	3	#4/0	XHHW-2	1	#1/0	XHHW-2	FR: BLR-22-21-00 TO: MCC-3700 3 #4/0 >> BLR-22-21-00 POWER	
P-20-052	20E01	2"	3	#4/0	XHHW-2	1	#1/0	XHHW-2	FR: BLR-22-21-00 TO: MCC-3700 3 #4/0 >> BLR-22-22-00 POWER	
P-20-053	20E01	2"	3	#4/0	XHHW-2	1	#1/0	XHHW-2	FR: BLR-22-21-00 TO: MCC-3700 3 #4/0 >> BLR-22-23-00 POWER	
S-20-010	20E01	1.5"	2 4	3/CS-#16 2/CS-#16		1	#14	XHHW-2	FR: MCC-3700 TO: LCP-220 2 2/CS-#16 >> PMP-83-11-01 1 3/CS-#16 >> PMP-83-11-02 2 2/CS-#16 >> PMP-83-12-01 1 3/CS-#16 >> PMP-83-12-01	

END OF CONDUIT SCHEDULE

END OF SECTION

Addendum No. 3

DRAWINGS



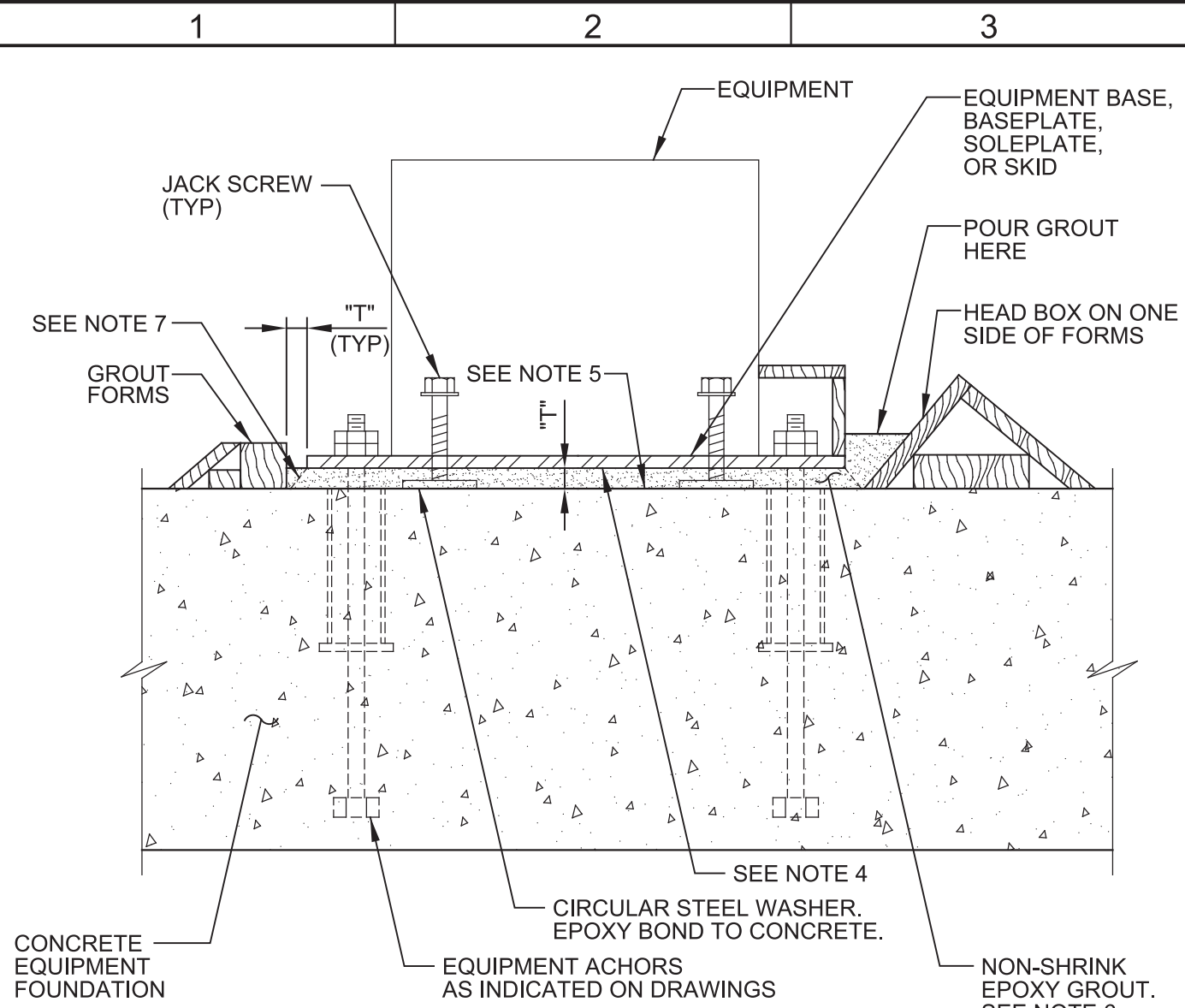
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STRUCTURAL		0  1"	99TS04
TYPICAL DETAILS - IV		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO.
			40 OF 129

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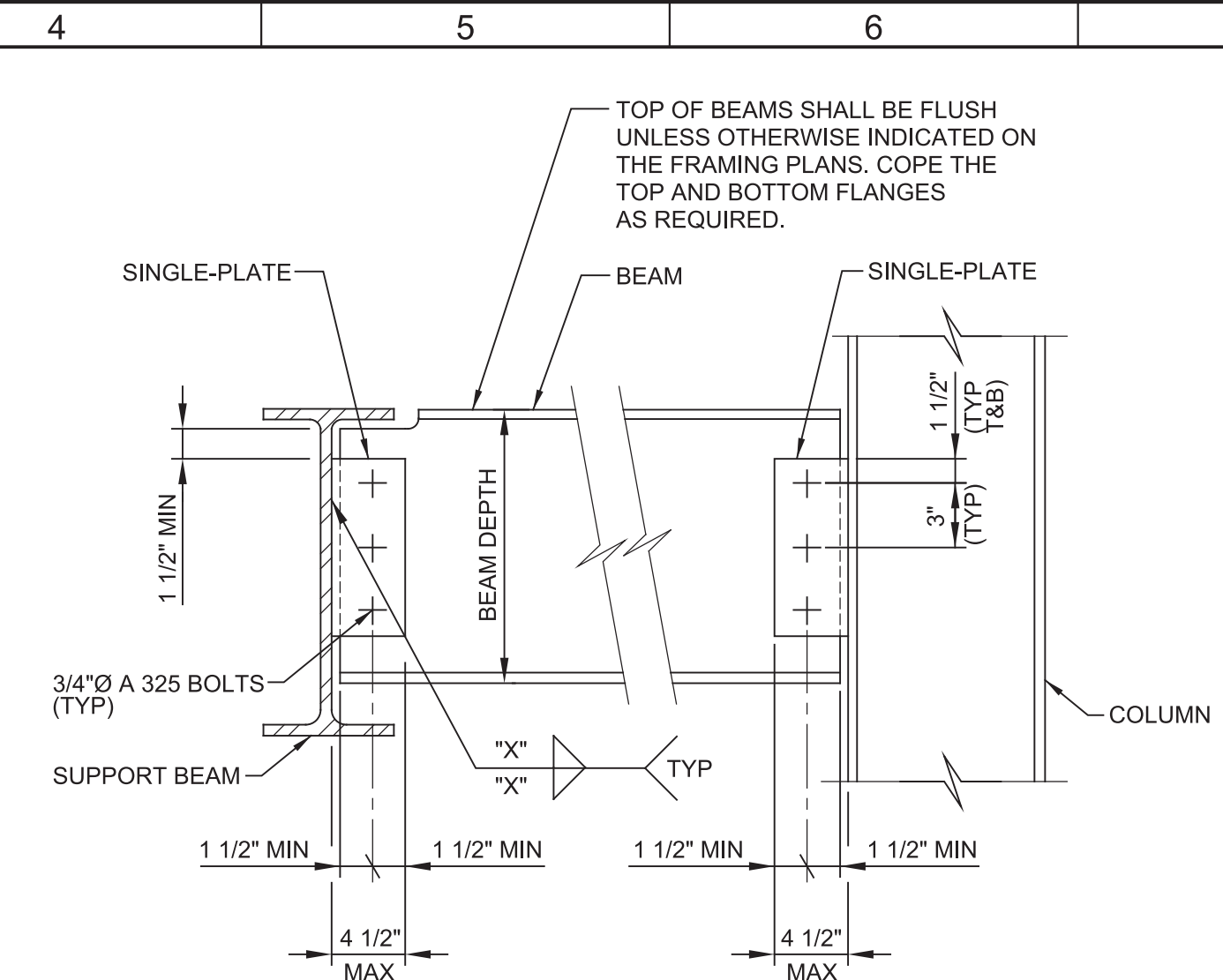
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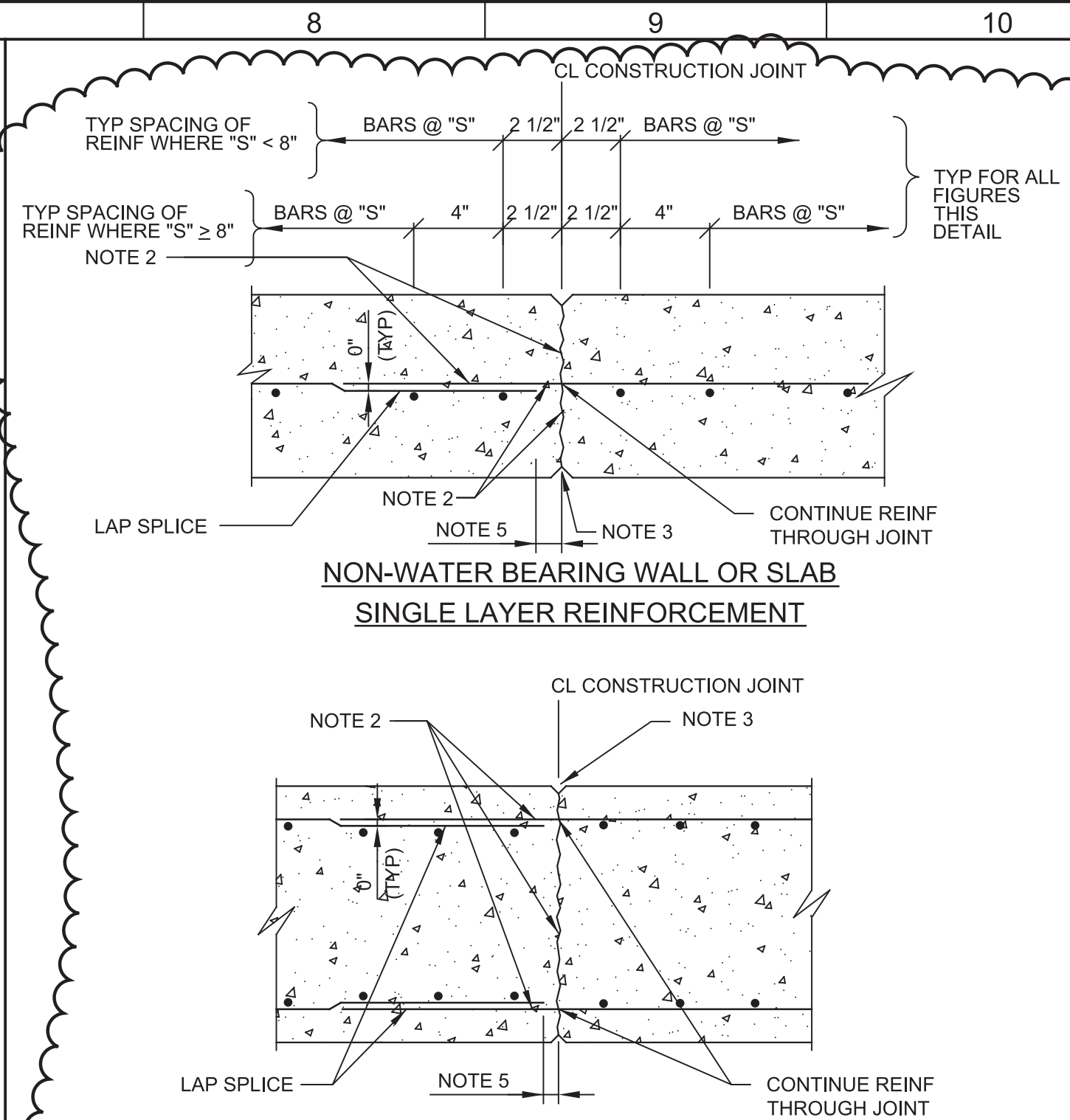
S322 EQUIPMENT GROUTING
TYP WITH NON-SHRINK EPOXY GROUT
N 12/29/17



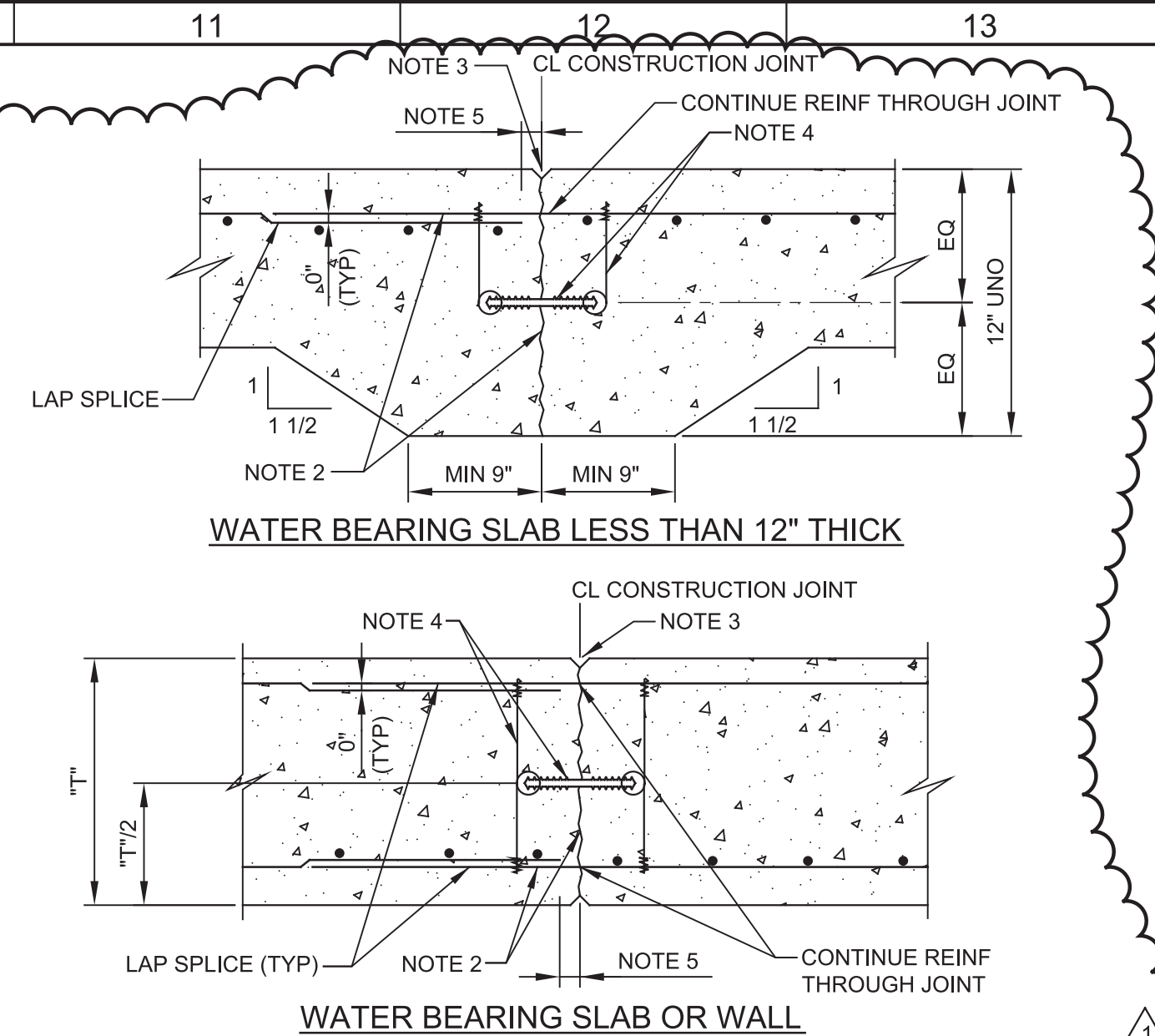
BEAM DEPTH (INCHES)	NUMBER OF BOLTS PER PLATE	PLATE THICKNESS (INCHES)	FILLET WELD SIZE "X" (INCHES)
8-10	2	1/4	3/16
12-16	3	1/4	3/16
18-21	5	3/8	5/16
24-30	7	3/8	5/16

NOTE:
1. SCHEDULE APPLIES TO ALL BEAMS UNLESS NUMBER OF BOLTS PER LEG IS OTHERWISE INDICATED ON THE FRAMING PLAN BY # WHERE NUMBER INSIDE SYMBOL = NUMBER OF BOLTS.

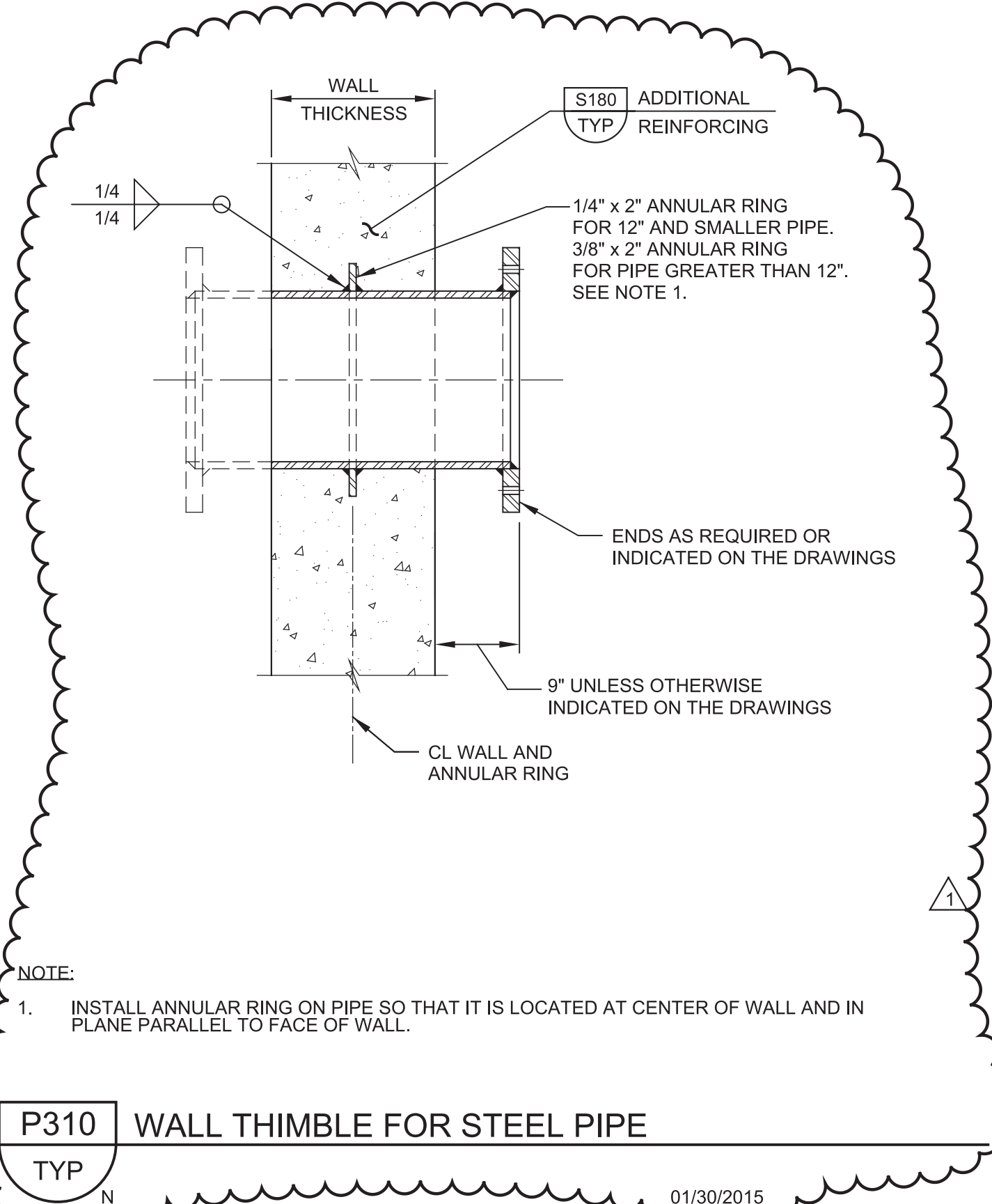
S506 STEEL SINGLE PLATE SHEAR CONNECTION
TYP 3/4" DIA BOLTS; ASTM A36 PLATES
N 03/27/19



S110 CONSTRUCTION JOINT
TYP S SHEET 1 OF 2 07/11/16



S110 CONSTRUCTION JOINT
TYP S SHEET 2 OF 2 07/11/16



P310 WALL THIMBLE FOR STEEL PIPE
TYP N 01/30/2015

REV	DATE	BY	DESCRIPTION
1	03/18/20	WFF	ISSUED FOR ADDENDUM 3

DESIGNED JDS
DRAWN KRJ
CHECKED
DATE DECEMBER 2019



Digitally signed by Joel D. Smason
Contact Info: Carollo Engineers, Inc.
Date: 2020.03.18 09:05:14 -0700



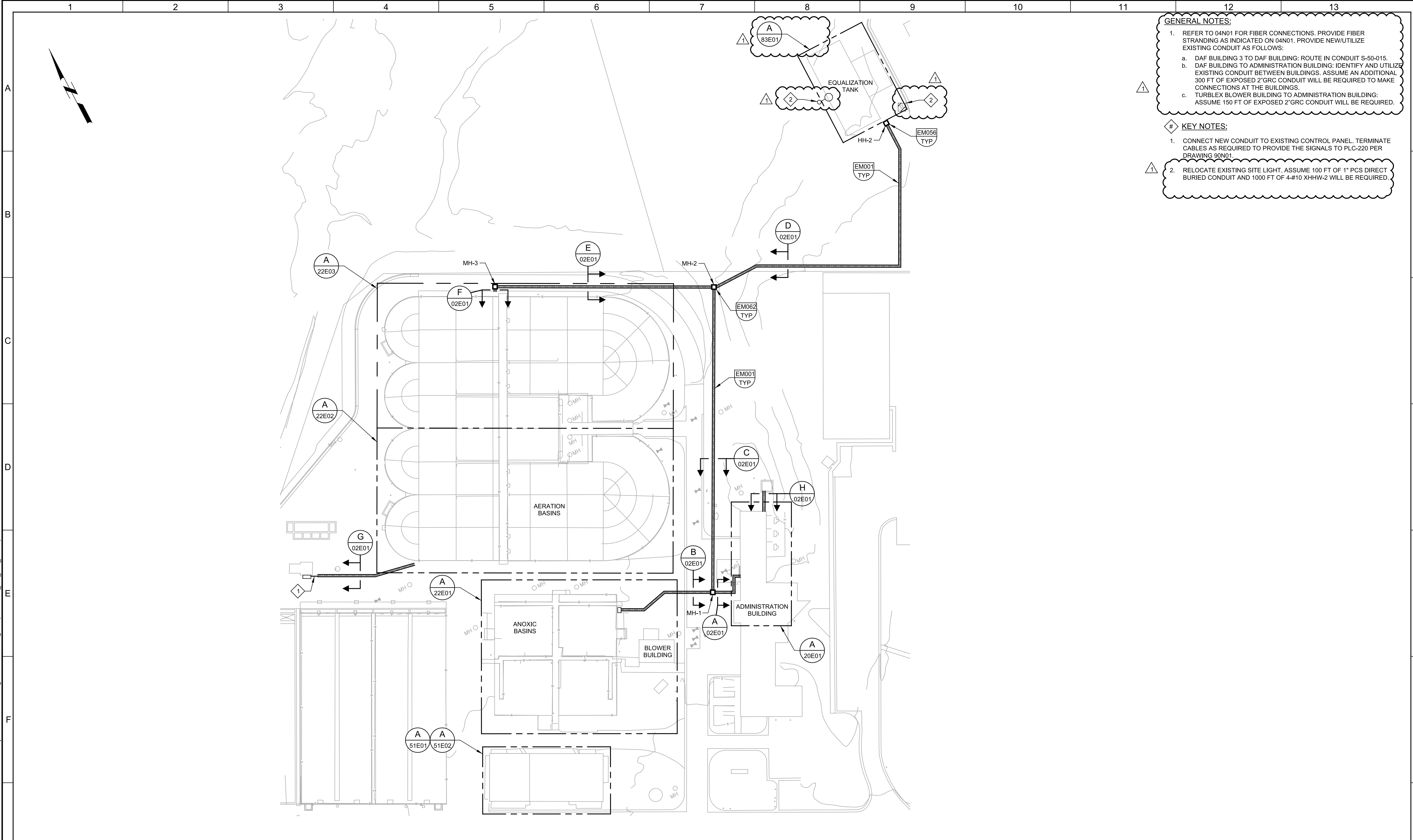
CITY OF SANTA FE
PUBLIC UTILITIES DEPARTMENT
WASTEWATER MANAGEMENT
DIVISION

CITY OF SANTA FE
SANTA FE PASEO REAL WWTP AERATION IMPROVEMENTS
STRUCTURAL
TYPICAL DETAILS - V

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
11283A.10
DRAWING NO.
99TS05
SHEET NO.
41 OF 129

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LAST SAVED BY: stfunes



GENERAL NOTES:

- REFER TO 04N01 FOR FIBER CONNECTIONS. PROVIDE FIBER STRANDING AS INDICATED ON 04N01. PROVIDE NEW/UTILIZE EXISTING CONDUIT AS FOLLOWS:
 - DAF BUILDING 3 TO DAF BUILDING: ROUTE IN CONDUIT S-50-015.
 - DAF BUILDING TO ADMINISTRATION BUILDING: IDENTIFY AND UTILIZE EXISTING CONDUIT BETWEEN BUILDINGS. ASSUME AN ADDITIONAL 300 FT OF EXPOSED 2"GRG CONDUIT WILL BE REQUIRED TO MAKE CONNECTIONS AT THE BUILDINGS.
 - TURBLEX BLOWER BUILDING TO ADMINISTRATION BUILDING: ASSUME 150 FT OF EXPOSED 2"GRG CONDUIT WILL BE REQUIRED.

KEY NOTES:

- CONNECT NEW CONDUIT TO EXISTING CONTROL PANEL. TERMINATE CABLES AS REQUIRED TO PROVIDE THE SIGNALS TO PLC-220 PER DRAWING 90N01.
- RELOCATE EXISTING SITE LIGHT. ASSUME 100 FT OF 1" PCS DIRECT BURIED CONDUIT AND 1000 FT OF 4-#10 XHHW-2 WILL BE REQUIRED.

				DESIGNED													VERIFY SCALES	JOB NO. 11283A.10
				DRAWN CLH													BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. 01E01
				CHECKED													0 1"	SHEET NO.
				DATE DECEMBER 2019													IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	62 OF 129
				1	2	3	4	5	6	7	8	9	10	11	12	13		

PROJECT NO. 11283A.10

FILE NAME: 11283A1001E01.dgn

CITY OF SANTA FE
PUBLIC UTILITIES DEPARTMENT
WASTEWATER MANAGEMENT
DIVISION

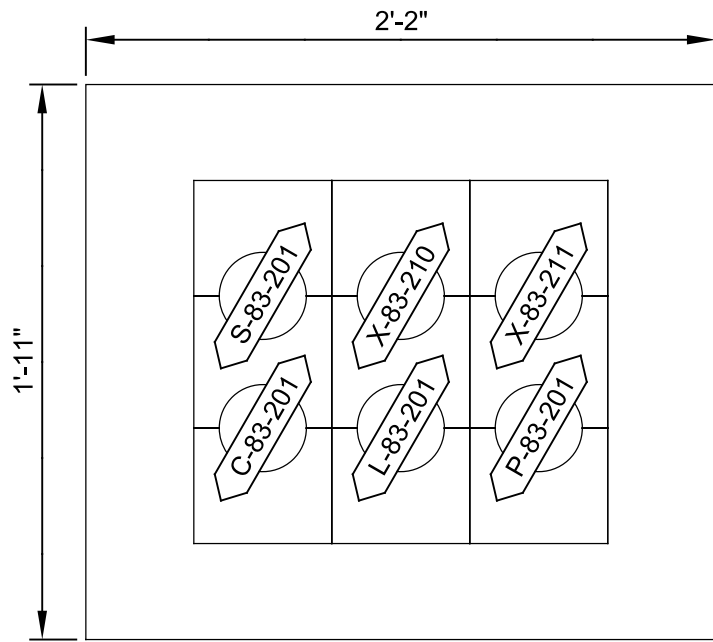
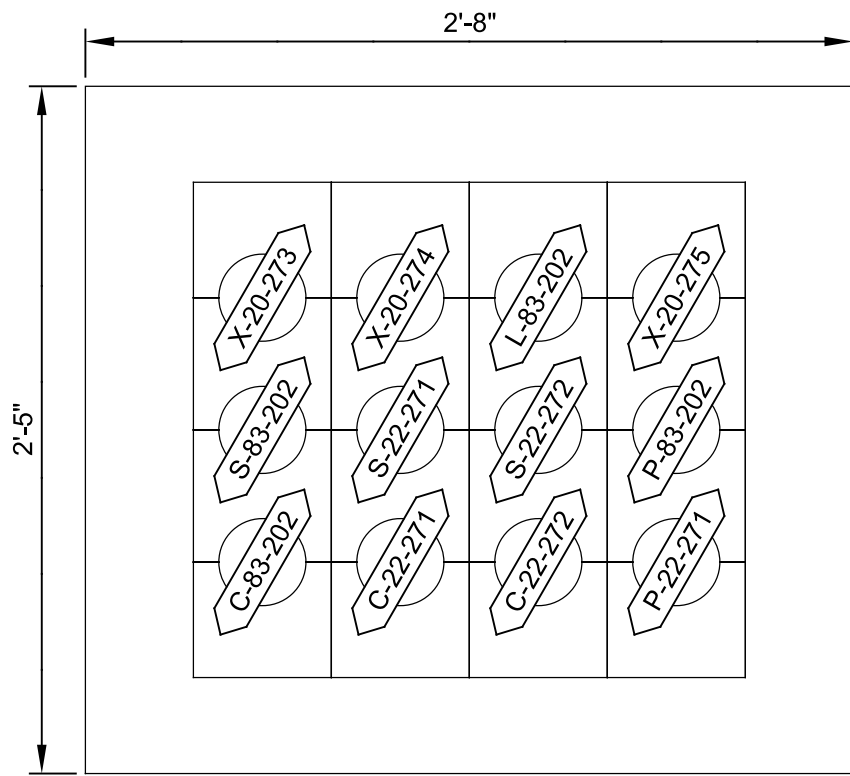
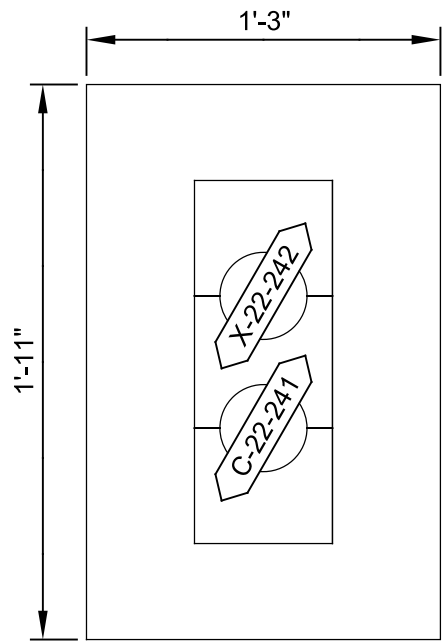
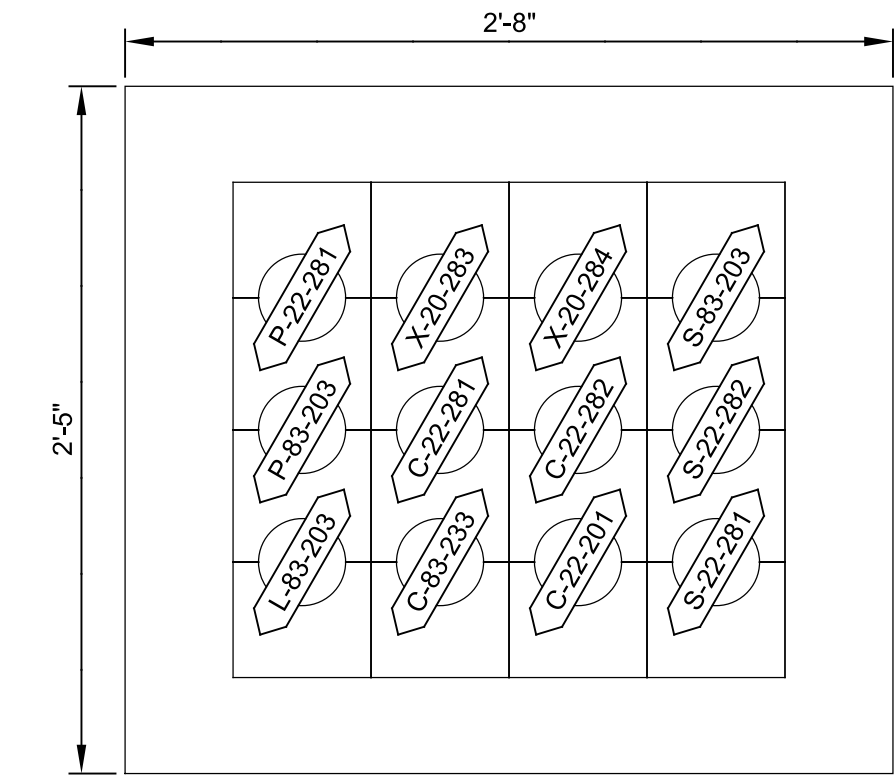
CITY OF SANTA FE

SANTA FE PASEO REAL WWTW AERATION IMPROVEMENTS

ELECTRICAL

SITE PLAN DETAIL

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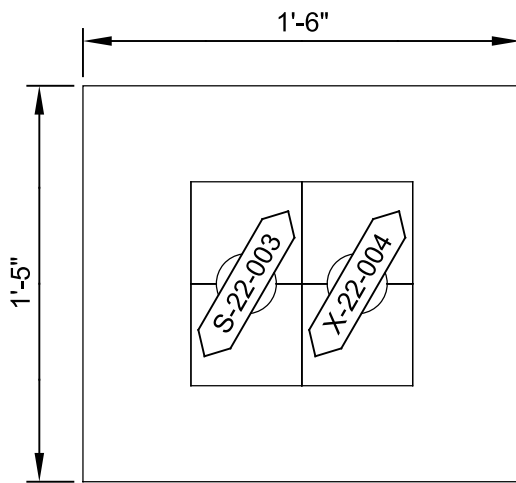
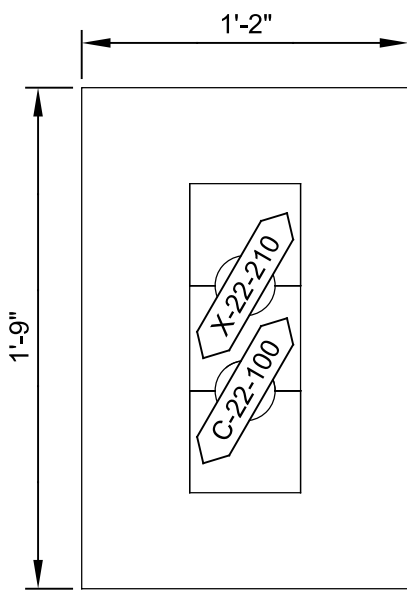
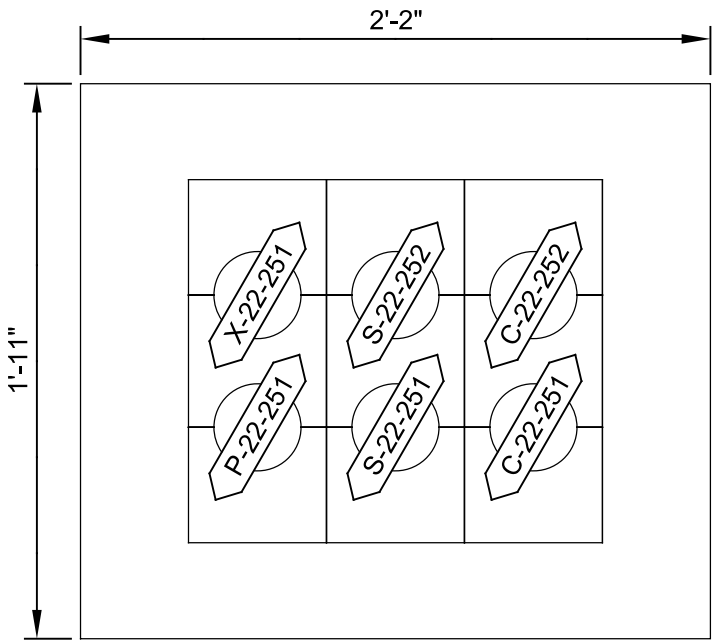
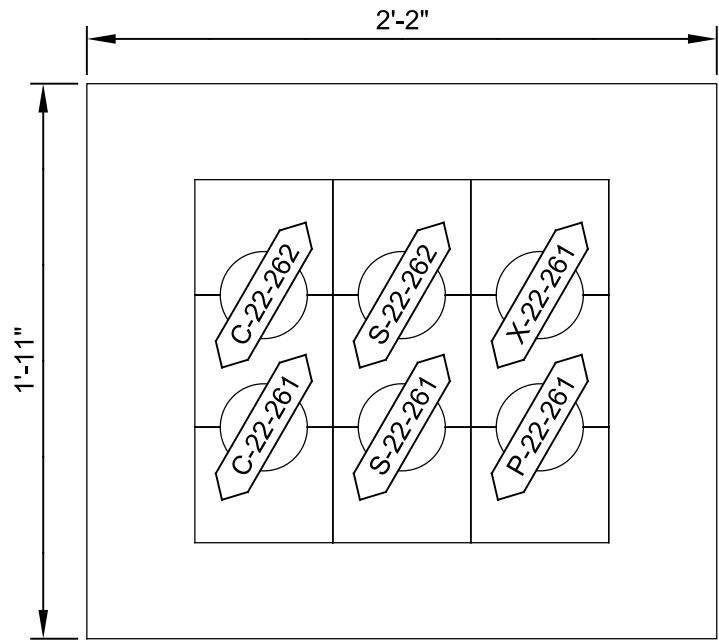


A DUCT BANK SECTION
01E01, 20E01

B DUCT BANK SECTION
01E01, 22E01

C DUCT BANK SECTION
01E01

D DUCT BANK SECTION
01E01



E DUCT BANK SECTION
01E01, 22E03

F DUCT BANK SECTION
01E01, 20E03

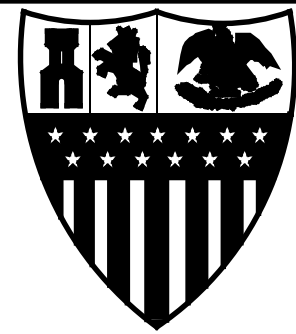
G DUCT BANK SECTION
01E01, 20E02

H DUCT BANK SECTION
01E01, 20E01

1				
2				
3				
4				
5				
6				
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9				
10				
11				
12				
13				

DESIGNED
DRAWN CLH
CHECKED
DATE DECEMBER 2019

**
ORIGINAL
SEALED BY
MARISSA J. PETTY
01-03-2020
NM 24703
**



CITY OF SANTA FE
PUBLIC UTILITIES DEPARTMENT
WASTEWATER MANAGEMENT
DIVISION

CITY OF SANTA FE
SANTA FE PASEO REAL WWTP AERATION IMPROVEMENTS
ELECTRICAL
DUCT BANK SECTIONS

VERIFY SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

JOB NO.
11283A.10
DRAWING NO.
02E01
SHEET NO.
63 OF 129

1	2	3	4	5	6			
PANEL PP-3760 - (DEMO)					3/18/2020			
LOCATION:	ADMINISTRATION BLDG ELEC. ROOM	NEMA: 1	PH A WEIGHTED VA	2498				
VOLTS:	480	FEED: BOTTOM	PH B WEIGHTED VA	2081				
PHASE & WIRE:	3PH 3W	MTG. SURFACE	PH C WEIGHTED VA	2081				
INTERRUPT:	65 KAIC	BUS RATING: 225						
OPTIONS:		MAIN: MLO	EQUIP SIZING VA	7494				
			PANEL AMPS	9.0				
I/C/F	DESCRIPTION	LOAD (VA)	BKR	CIR Ø CIR	BKR	LOAD (VA)	DESCRIPTION	I/C/F
	VALVE CV3501	333		1 A 2				
	SOUTH OXIDATION CHANNEL	333		3 B 4			SPARE	
	AERATION VALVE	333	20A-3P	5 C 6	20A-3P			
	CV3512	333		7 A 8		333	CV3720	
	BLOWER B3710	333	20A-3P	9 B 10	20A-3P	333	BLOWER B3730	
	SURGE VALVE	333		11 C 12		333	SURGE VALVE	
	TV3714	333		13 A 14				
	BLOWER B3710	333	20A-3P	15 B 16	20A-3P		SPARE	
	ISOLATION VALVE	333		17 C 18				
				19 A 20		333	CV3728	
	SPARE		20A-3P	21 B 22	20A-3P	333	BLOWER B3730	
				23 C 24		333	ISOLATION VALVE	
				25 A 26				
	SPARE		20A-3P	27 B 28	20A-3P		SPARE	
				29 C 30				
				31 A 32				
	SPARE		20A-3P	33 B 34	20A-3P		SPARE	
				35 C 36				
				37 A 38				
	SPARE		20A-3P	39 B 40	20A-3P		SPARE	
				41 C 42				

PANEL PP-3760										3/18/2020
LOCATION: ADMINISTRATION BLDG ELEC. ROOM VOLTS: 750 PHASE & WIRE: 3PH 3W INTERRUPT: 65 KAIC OPTIONS:			NEMA: 1 FEED: BOTTOM MTG: SURFACE BUS RATING: 225 MAIN: MLO			PH A WEIGHTED VA 12188 PH B WEIGHTED VA 12188 PH C WEIGHTED VA 12188 EQUIP SIZING VA 36564 PANEL AMPS 44.0				
I/C/F	DESCRIPTION	LOAD (VA)	BKR	CIR	Ø	CIR	BKR	LOAD (VA)	DESCRIPTION	I/C/F
C	FCV-22-02-02	1000		1	A	2		825	FCV-22-02-04	
C	SOUTH OXIDATION CHANNEL	1000	20A-3P	3	B	4	20A-3P	825	SOUTH OXIDATION CHANNEL	C
C	AERATION FLOW CONTROL VALVE	1000		5	C	6		825	AERATION FLOW CONTROL VALVE	C
C	FCV-22-02-06	825		7	A	8		825	FCV-22-02-09	C
C	SOUTH OXIDATION CHANNEL	825	20A-3P	9	B	10	20A-3P	825	SOUTH OXIDATION CHANNEL	C
C	AERATION FLOW CONTROL VALVE	825		11	C	12		825	AERATION FLOW CONTROL VALVE	C
C	FCV-22-02-14	825		13	A	14		825	FCV-22-02-17	C
C	SOUTH OXIDATION CHANNEL	825	20A-3P	15	B	16	20A-3P	825	SOUTH OXIDATION CHANNEL	C
C	AERATION FLOW CONTROL VALVE	825		17	C	18		825	AERATION FLOW CONTROL VALVE	C
C	FCV-22-02-20	1000		19	A	20		825	FCV-22-02-25	C
C	SOUTH OXIDATION CHANNEL	1000	20A-3P	21	B	22	20A-3P	825	SOUTH OXIDATION CHANNEL	C
C	AERATION FLOW CONTROL VALVE	1000		23	C	24		825	AERATION FLOW CONTROL VALVE	C
	SPARE			25	A	26				
			20A-3P	27	B	28	20A-3P		SPARE	
				29	C	30				
C	EDR-83-01-03	1000		31	A	32		1000	EDR-83-02-03	C
C	EQUALIZATION BASIN NO.1	1000	20A-3P	33	B	34	20A-3P	1000	EQUALIZATION BASIN NO.1	C
C	EFFLUENT VALVE	1000		35	C	36		1000	EFFLUENT VALVE	C
I	EDR-83-01-06	1000		37	A	38				
I	EQUALIZATION BASINS	1000	20A-3P	39	B	40	20A-3P		SPARE	
I	ISOLATION GATE	1000		41	C	42				

PANEL LP-LA											3/18/2020
LOCATION:	Hoffman Blower Building		NEMA:	1		PH A WEIGHTED VA		3750			
VOLTS:	240 / 120		FEED:	BOTTOM		PH B WEIGHTED VA		3750			
PHASE & WIRE:	1PH 3W		MTG. SURFACE								
INTERRUPT:	18 KAIC		BUS RATING: 150								
OPTIONS:	SPD		MAIN:		EQUIP SIZING VA		7500				
			MAIN RATING:		PANEL AMPS		31.3				
I/C/F	DESCRIPTION	LOAD (VA)	BKR	CIR	Ø	CIR	BKR	LOAD (VA)	DESCRIPTION	I/C/F	
	EDR-22-11-01	500	15A-1P	1	A	2	15A-1P	500	EDR-22-13-01		
	EDR-22-11-02	500	15A-1P	3	B	4	15A-1P	500	EDR-22-13-02		
	EDR-22-11-03	500	15A-1P	5	A	6	15A-1P	500	EDR-22-13-03		
	EDR-22-12-01	500	15A-1P	7	B	8	15A-1P	500	EDR-22-14-01		
	EDR-22-12-02	500	15A-1P	9	A	10	15A-1P	500	EDR-22-14-02		
	EDR-22-12-03	500	15A-1P	11	B	12	15A-1P	500	EDR-22-14-03		
	SPARE		15A-1P	13	A	14	15A-1P		SPARE		
	SPARE		15A-1P	15	B	16	15A-1P		SPARE		
	SPARE		20A-1P	17	A	18	20A-1P		SPARE		
	SPARE		20A-1P	19	B	20	20A-1P		SPARE		
	SPARE		20A-1P	21	A	22	20A-1P		SPARE		
	SPARE		20A-1P	23	B	24	20A-1P		SPARE		

PANEL PP-3770 - (DEMO)										3/18/2020
LOCATION: ADMINISTRATION BLDG ELEC. ROOM		NEMA: 1		PH A WEIGHTED VA		1665				
VOLTS: 480		FEED: BOTTOM		PH B WEIGHTED VA		1665				
PHASE & WIRE: 3PH 3W		MTG. SURFACE		PH C WEIGHTED VA		1665				
INTERRUPT: 65 KAIC		BUS RATING: 225								
OPTIONS:		MAIN: MLO		EQUIP SIZING VA		4995				
				PANEL AMPS		6.0				
I/C/F	DESCRIPTION	LOAD (VA)	BKR	CIR	Ø	CIR	BKR	LOAD (VA)	DESCRIPTION	I/C/F
	VALVE CV3601	333		1	A	2				
	NORTH OXIDATION CHANNEL	333	20A-3P	3	B	4	20A-3P		SPARE	
	AERATION VALVE	333		5	C	6				
	CV3720	333		7	A	8				
	BLOWER B3720	333	20A-3P	9	B	10	20A-3P		SPACE	
	SURGE VALVE	333		11	C	12				
		333		13	A	14				
	SPARE	333	20A-3P	15	B	16	20A-3P		SPACE	
		333		17	C	18				
	CV3728	333		19	A	20				
	BLOWER B3720	333	20A-3P	21	B	22	20A-3P		SPACE	
	ISOLATION VALVE	333		23	C	24				
				25	A	26				
	SPARE		20A-3P	27	B	28	20A-3P		SPACE	
				29	C	30				
				31	A	32				
	SPARE		20A-3P	33	B	34	20A-3P		SPACE	
				35	C	36				
				37	A	38				
	SPARE		20A-3P	39	B	40	20A-3P		SPACE	
				41	C	42				

PANEL PP-3770										3/18/2020
LOCATION: ADMINISTRATION BLDG ELEC. ROOM		NEMA: 1		PH A WEIGHTED VA		8469				
VOLTS: 480		FEED: BOTTOM		PH B WEIGHTED VA		8469				
PHASE & WIRE: 3PH 3W		MTG: SURFACE		PH C WEIGHTED VA		8469				
INTERRUPT: 65 KAIC		BUS RATING: 225								
OPTIONS:		MAIN: MLO		EQUIP SIZING VA		25407				
				PANEL AMPS		30.6				
I/C/F	DESCRIPTION	LOAD (VA)	BKR	CIR	Ø	CIR	BKR	LOAD (VA)	DESCRIPTION	I/C/F
C	FCV-22-01-02	1000		1	A	2		825	FCV-22-01-04	C
C	NORTH OXIDATION CHANNEL	1000	20A-3P	3	B	4	20A-3P	825	NORTH OXIDATION CHANNEL	C
C	AERATION FLOW CONTROL VALVE	1000		5	C	6		825	AERATION FLOW CONTROL VALVE	C
C	FCV-22-01-06	825		7	A	8		825	FCV-22-01-09	C
C	NORTH OXIDATION CHANNEL	825	20A-3P	9	B	10	20A-3P	825	NORTH OXIDATION CHANNEL	C
C	AERATION FLOW CONTROL VALVE	825		11	C	12		825	AERATION FLOW CONTROL VALVE	C
C	FCV-22-01-014	825		13	A	14		825	FCV-22-01-17	C
C	NORTH OXIDATION CHANNEL	825	20A-3P	15	B	16	20A-3P	825	NORTH OXIDATION CHANNEL	C
C	AERATION FLOW CONTROL VALVE	825		17	C	18		825	AERATION FLOW CONTROL VALVE	C
C	FCV-22-01-20	825		19	A	20		825	FCV-22-01-25	C
C	NORTH OXIDATION CHANNEL	825	20A-3P	21	B	22	20A-3P	825	NORTH OXIDATION CHANNEL	C
C	AERATION FLOW CONTROL VALVE	825		23	C	24		825	AERATION FLOW CONTROL VALVE	C
				25	A	26				
	SPARE		20A-3P	27	B	28	20A-3P		SPARE	
				29	C	30				
				31	A	32				
	SPARE		20A-3P	33	B	34	20A-3P		SPARE	
				35	C	36				
				37	A	38				
	SPARE		20A-3P	39	B	40	20A-3P		SPARE	
				41	C	42				

PANEL LP-3750										3/18/2020
LOCATION: ADMINISTRATION BLDG ELEC. ROOM		NEMA: 1	PH A WEIGHTED VA		2338					
VOLTS: 240V 120		FEED: BOTTOM	PH B WEIGHTED VA		2778					
PHASE & WIRE: 1PH 3W		MTG: SURFACE								
INTERRUPT: 18 KAIC		BUS RATING: 225								
OPTIONS: SPD		MAIN:	EQUIP SIZING VA		5556					
		MAIN RATING:	PANEL AMPS		23.2					
I/C/F	DESCRIPTION	LOAD (VA)	BKR	CIR	Ø	CIR	BKR	LOAD (VA)	DESCRIPTION	I/C/F
C	FIT3501	50	20A-1P	1	A	2	20A-2P		CAB3710	
C	FIT3601	50	20A-1P	3	B	4	20A-1P		CAB3720	
C	PDS3711	50	20A-1P	5	A	6	20A-1P		CAB3730	
C	PDS3721	50	20A-1P	7	B	8	20A-1P		SPACE	
C	PDS3731	50	20A-1P	9	A	10	20A-1P		CAB3700	
C	PDS3741	50	20A-1P	11	B	12	20A-1P	1000	MCP-3700	C
C	BMS PLUG STRIP		20A-1P	13	A	14	20A-1P	1000	LCP-220	C
C	BMS PLUG STRIP		20A-1P	15	B	16	20A-1P	1000	LCP-220 UPS	C
C	EQUALIZATION TANK LIGHTS	122	20A-1P	17	A	18	20A-1P		SPACE	
C	EQUALIZATION TANK RECEPTACLES	720	20A-1P	19	B	20	20A-1P		SPACE	
	SPARE		20A-1P	21	A	22	20A-1P		SPACE	
	SPARE		20A-1P	23	B	24	20A-1P		SPACE	

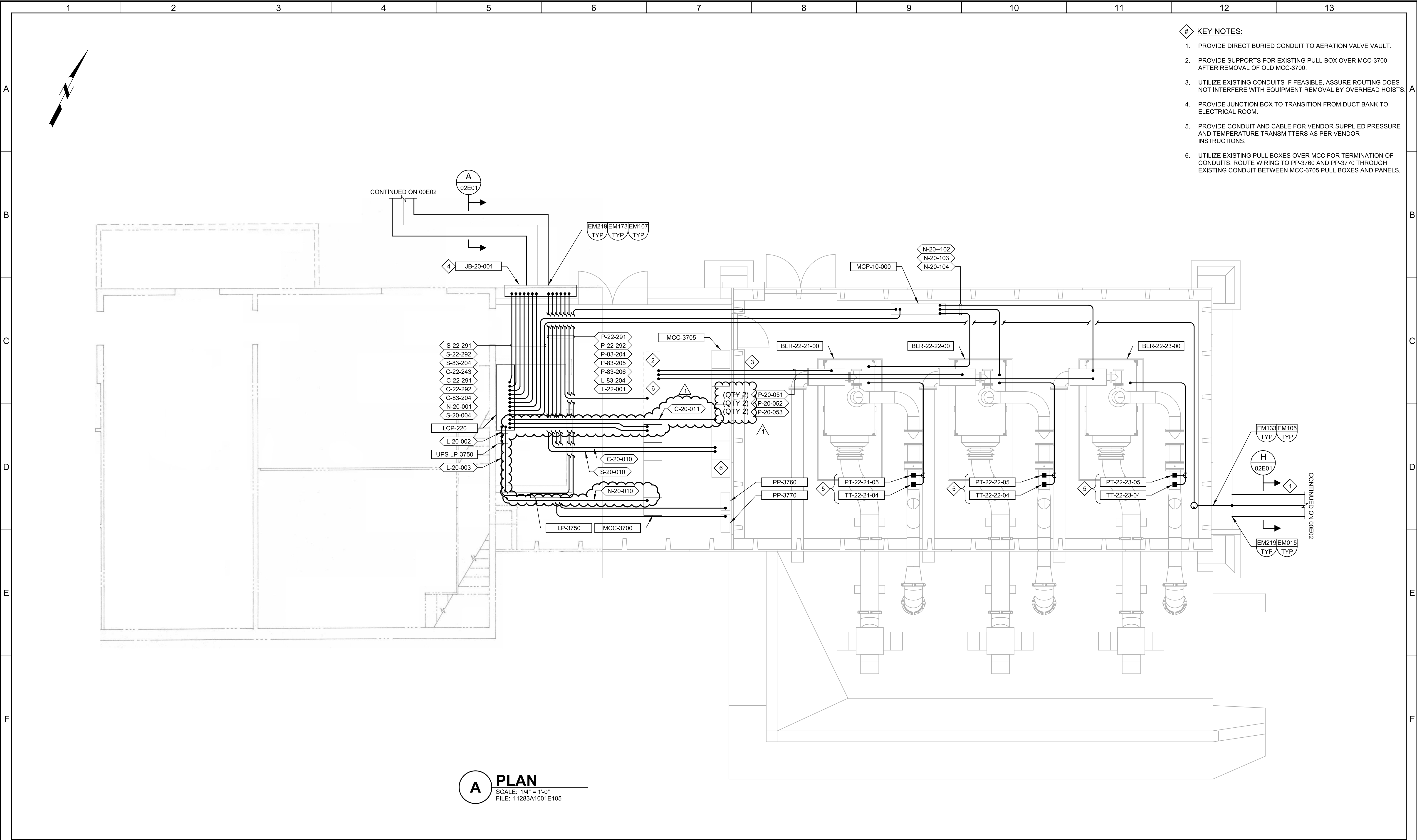
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				DRAWN CLH						SANTA FE PASEO REAL WWTP AERATION IMPROVEMENTS	BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.
				CHECKED						ELECTRICAL	0  1"	04E01
	03/18/20	MJP	ISSUED FOR ADDENDUM 3	DATE DECEMBER 2019						PANELBOARD SCHEDULES	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 73 OF 129
REV	DATE	BY	DESCRIPTION									

Plot Date: 15-MAR-2020 3:08:26 PM

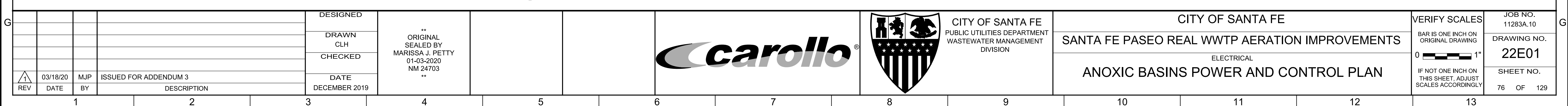
User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

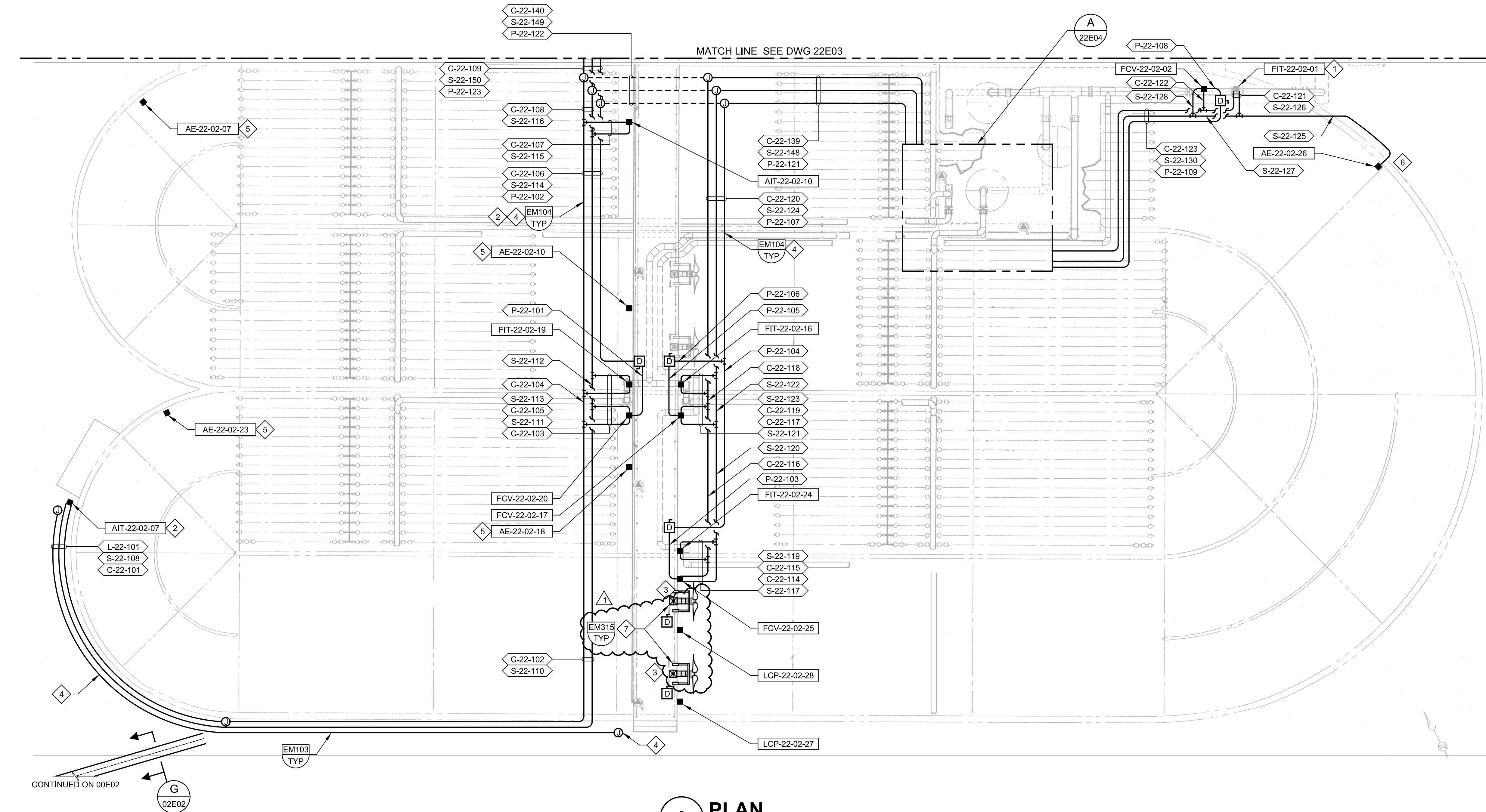
LAST SAVED BY: stfuckles



G					DESIGNED	** ORIGINAL SEALED BY MARISSA J. PETTY 01-03-2020 NM 24703 **						CITY OF SANTA FE		VERIFY SCALES	JOB NO. 11283A.10	G
					DRAWN CLH		SANTA FE PASEO REAL WWTP AERATION IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING			DRAWING NO.				
					CHECKED		ELECTRICAL		0  1"			20E01				
					DATE		ADMIN BUILDING		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY			SHEET NO.				
					DECEMBER 2019		POWER AND CONTROL PLAN					75 OF 129				



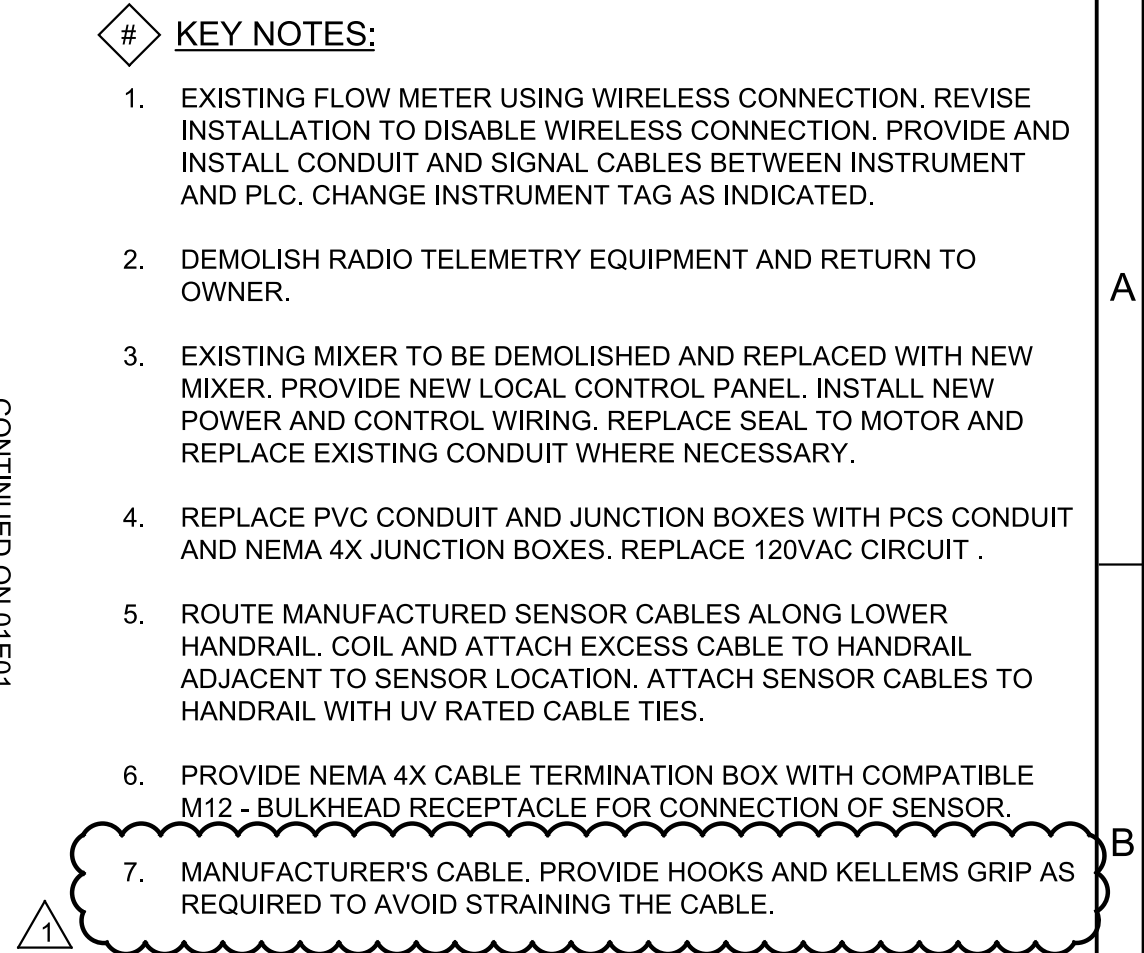
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LAST SAVED BY: stunkles



- # KEY NOTES:
- EXISTING FLOW METER USING WIRELESS CONNECTION. REVISE INSTALLATION TO DISABLE WIRELESS CONNECTION. PROVIDE AND INSTALL CONDUIT AND SIGNAL CABLES BETWEEN INSTRUMENT AND PLC. CHANGE INSTRUMENT TAG AS INDICATED.
 - DEMOLISH RADIO TELEMTRY EQUIPMENT AND RETURN TO OWNER.
 - EXISTING MIXER TO BE DEMOED AND REPLACED WITH NEW MIXER. PROVIDE NEW LOCAL CONTROL PANEL. INSTALL NEW POWER AND CONTROL WIRING. REPLACE SEAL TO MOTOR AND REPLACE THE EXISTING CONDUIT WHERE NECESSARY.
 - REPLACE PVC CONDUIT AND JUNCTION BOXES WITH PCS CONDUIT AND NEMA 4X JUNCTION BOXES. REPLACE 120VAC CIRCUIT AND RETERMINATE EQUIPMENT.
 - ROUTE MANUFACTURED SENSOR CABLES ALONG LOWER HANDRAIL COIL AND ATTACH EXCESS CABLE TO HANDRAIL ADJACENT TO SENSOR LOCATION. ATTACH SENSOR CABLES TO HANDRAIL WITH UV RATED CABLE TIES.
 - PROVIDE NEMA 4X CABLE TERMINATION BOX WITH COMPATIBLE M12 - BULKHEAD RECEPTACLE FOR CONNECTION OF SENSOR.
 - MANUFACTURER'S CABLE. PROVIDE HOOKS AND KELLEMS GRIP AS REQUIRED TO AVOID STRAINING THE CABLE.

A PLAN
SCALE: 3/32" = 1'-0"
FILE: 11283A1001E104

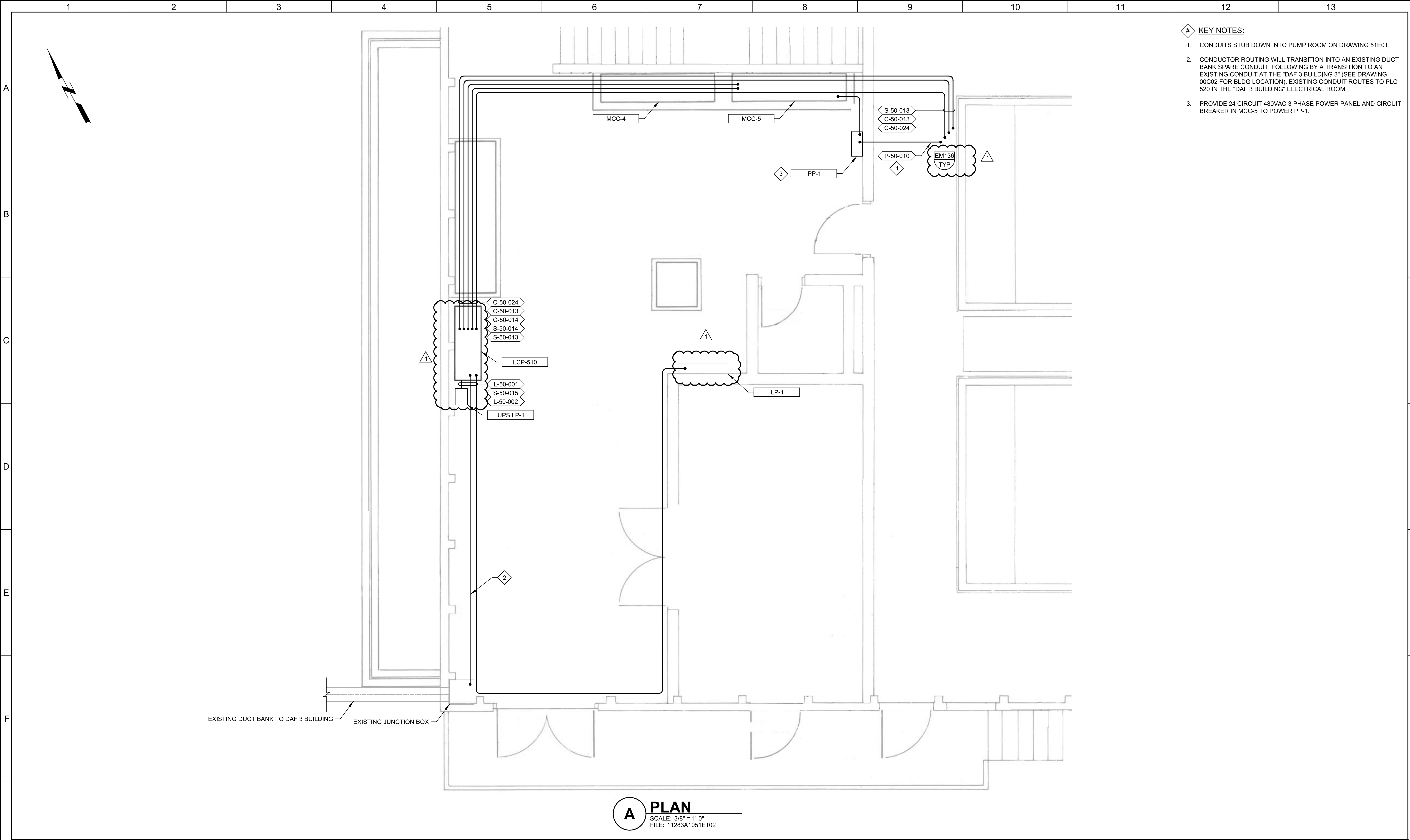
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			DRAWN CLH	SANTA FE PASEO REAL WWTP AERATION IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. 22E02								
			CHECKED	ELECTRICAL		0  1"	SHEET NO. 77 OF 129								
			DATE DECEMBER 2019	SOUTH AERATION BASIN POWER AND CONTROL PLAN		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY									
	03/18/20	MJP	ISSUED FOR ADDENDUM 3												
REV	DATE	BY	DESCRIPTION												



A PLAN
SCALE: $3/32" = 1'-0"$
FILE: 11283A1001E104

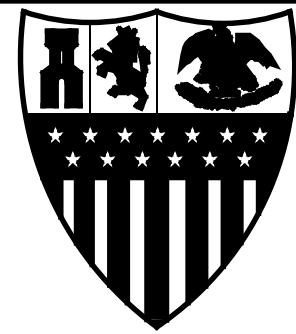
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				DRAWN CLH						SANTA FE PASEO REAL WWTP AERATION IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.	
				CHECKED						ELECTRICAL		0  1"	22E03	
 1 REV	03/18/20	MJP	ISSUED FOR ADDENDUM 3	DATE DECEMBER 2019						NORTH AERATION BASIN POWER AND CONTROL PLAN		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 78 OF 129	
	DATE	BY	DESCRIPTION											

Plot Date: 15-MAR-2020 3:36:03 PM
User: svcPW
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: stfunes



- # KEY NOTES:
1. CONDUITS STUB DOWN INTO PUMP ROOM ON DRAWING 51E01.
 2. CONDUCTOR ROUTING WILL TRANSITION INTO AN EXISTING DUCT BANK SPARE CONDUIT, FOLLOWING BY A TRANSITION TO AN EXISTING CONDUIT AT THE "DAF 3 BUILDING 3" (SEE DRAWING 00C02 FOR BLDG LOCATION). EXISTING CONDUIT ROUTES TO PLC 520 IN THE "DAF 3 BUILDING" ELECTRICAL ROOM.
 3. PROVIDE 24 CIRCUIT 480VAC 3 PHASE POWER PANEL AND CIRCUIT BREAKER IN MCC-5 TO POWER PP-1.

A PLAN
SCALE: 3/8" = 1'-0"
FILE: 11283A1051E102



CITY OF SANTA FE
PUBLIC UTILITIES DEPARTMENT
WASTEWATER MANAGEMENT
DIVISION

CITY OF SANTA FE
SANTA FE PASEO REAL WWTP AERATION IMPROVEMENTS
ELECTRICAL
DAF 1&2 BUILDING ELECTRICAL ROOM
POWER AND CONTROL

VERIFY SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

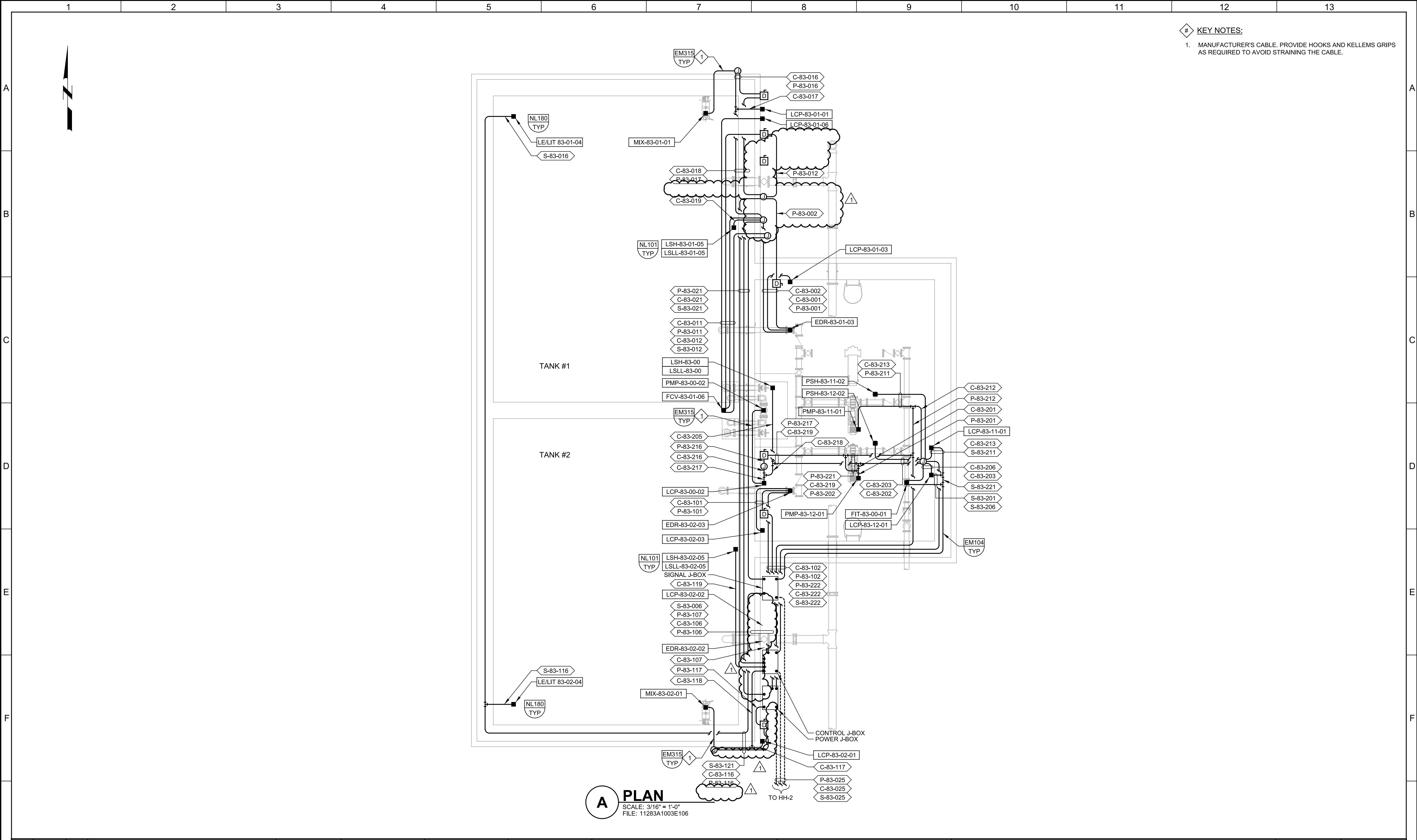
JOB NO.
11283A.10
DRAWING NO.
51E02
SHEET NO.
81 OF 129

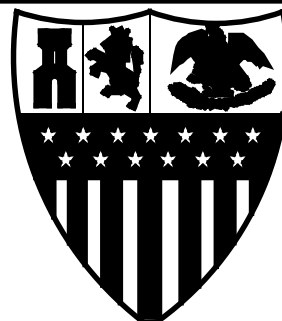
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LAST SAVED BY: stfuckles



				DESIGNED	** ORIGINAL SEALED BY MARISSA J. PETTY 01-03-2020 NM 24703 **					CITY OF SANTA FE		CITY OF SANTA FE		VERIFY SCALES	JOB NO. 11283A.10																							
				DRAWN CLH						PUBLIC UTILITIES DEPARTMENT WASTEWATER MANAGEMENT DIVISION		SANTA FE PASEO REAL WWTP AERATION IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.																							
				CHECKED								ELECTRICAL		0 1"	83E01																							
				DATE DECEMBER 2019						EQUALIZATION TANK AND PUMP STATION POWER AND CONTROL PLAN				IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 82 OF 129																							
				ISSUED FOR ADDENDUM 3																																		
REV	DATE	BY	DESCRIPTION																																			
1			2			3			4			5			6			7			8			9			10			11			12			13		