City of Beaumont
Wastewater Treatment Plant Salt Mitigation Upgrade Project
Change Order No. 16

May 28, 2020

			Amount	Calendar Days	Comp. Date
Contractor:	W.M. Lyles Co.	**Original Contract:**	$ 53,312,000.00	820	1/26/2021
Project Name:	Wastewater Treatment Plant Salt Mitigation Upgrade Project	**Previous Approved Changes:**	$1,720,431.30	95	5/1/2021
Contract No.:	C18	**This Change: Amount**	$667,487.82	0	
CO Number:	16	**Revised Contract:**	$55,699,919.12	915	5/1/2021
		Previous Phase 1 Completion Date			4/26/2020
		Revised Phase 1 Completion Date			4/26/2020

This change order covers changes to the subject contract as described herein. The Contractor shall supply all labor, equipment and materials to complete the Change Order items for the lump sum price agreed upon herein. All Change Order items must be submitted to the City for approval prior to fabrication.

Brian P. Knoll

Digitally signed by Brian P. Knoll
DN: C=US, E=brian.knoll@webbassociates.com, O=Albert A. Webb Associates, OU=Vice President, CN=Brian P. Knoll
Date: 2020.06.01 14:45:57 -07'00'

Item No.	PCO No.	Description of Changes	Amount	Phase 1 Time Extension (CD*)	Phase 2 / Project Completion Time Extension (CD*)
1	33	WSP-OP-036R2 / CLAR-23 EQ Basin Modifications & Solid Handling Elect. Changes	$667,487.82	0	0
2					
3					
4					
		NET CHANGE IN CONTRACT AMOUNT – INCREASE ~~(OR DECREASE)~~	$667,487.82	0	0

*Calendar Days

The amount of the Contract will be increased/~~decreased~~ by the amount of Six Hundred Sixty-seven Thousand Four Hundred Eighty-seven Dollars and eighty-two cents ($667,487.82). The Contract Time will be increased by zero (0) calendar days.

The Contractor agrees to furnish all labor, equipment and materials and to perform all other necessary work, inclusive of the directly or indirectly related work, within the approved time extension required to complete the above Change Order items. The undersigned Contractor approves the foregoing Change Order as to the changes, if any, in the Contract Price specified for each item including any and all supervision costs and other miscellaneous costs relating to the change in Work, and as to the extension of time allowed, if any, for the completion of the entire Work on account of said Change Order. The City and the Contractor hereby agree that this Change Order constitutes full mutual accord and satisfaction for all time, all costs, and all impacts related directly or indirectly to this Change Order. The Contractor hereby agrees that this Change Order represents the full equitable adjustment owed under the Contract, and further agrees on behalf of himself and all subcontractors to waive all right to file any further claims or request for equitable adjustment arising out of or as a result of this Change Order or the cumulative effect of this Change Order on the performance of the overall Work under the Contract. This document will become a supplement of the contract and all provisions will apply hereto. It is understood that the Change Order shall be effective when approved by the City.

Recommended: _____, *Date*: 5-28-2020
MWH Constructors, Senior Resident Engineer

Accepted: _____, *Date*: 5/29/20
W.M. Lyles Co., Contractor

Approved: _____, *Date*: 6/1/2020
Albert A. Webb Associates, Program Manager

Approved: _____, *Date*: _____
City of Beaumont, City Manager

MWH CONSTRUCTORS

City of Beaumont
Wastewater Treatment Plant Salt Mitigation Upgrade Project

Technical Justification:

PCO-33	
Design Adjustment: WML COP-036R2	CLAR – 24 Modifications to Equalization Basin and Solid Handling Building

Reason for Design Changes:

Owner Requested Change: To eliminates the possibility of flooding the Influent Pump Station in the event that the discharge EQ Valve fails in the open position, it is imperative to modify the discharge system from the Equalization (EQ) Basin by deleting the valve vault (as detailed on C-34) and adding a pump station and flow meter to the EQ Basin that discharges directly to the Fine Screens structure.

With the EQ Basin being a critical system for plant operation and the addition of pumps, receiving power and control from the Solids Handling Building emergency power for the electrical gear is now required. Provision for an emergency generator hook up and monitoring will be added as well.

The attached drawings show the extent of the required changes. The design and scope changes are summarized as follows:

- The EQ basin will be rotated such that the tipping buckets are located on the south end and the (formerly) south wall and interior wall will be raised to the same elevation as the remaining walls. A new EQ Pump Station will be located on the north end of the basin.
- The site grading is to be modified to bring the grade to within 42” + of the top of wall of the EQ basin on all sides. The grading to the north is also modified to promote better drainage.
- The piping from the EQ basin to the valve vault, and from the valve vault to Manhole #5, as well as the vault itself are to be deleted. A new 16” line from the EQ Pump Station to the Fine Screens is to be installed (the same pipe number, #6, is to be reused for this pipeline).
- The electrical feed for the new EQ Pump Station will originate in the electrical room of the Solids Handling Building. A manual transfer switch, generator receptacle and MCC-EQ have been added to the electrical design. Several site duct banks are modified.
- The attached drawings also show changes related to RFC 12 and RFIs 69 and 76, which have already been addressed but did not have updated drawings included.

Cost Impact:

MWHC/Aqua/Webb/SKM evaluated the contractor’s cost proposal, WML COP-036, for a contract increase of $699,425.74.

After review and comments returned to the contractor, the contractor revised its cost proposal and resubmitted it with a revised extra cost in the amount of $677,403.50. After a second round of review and a recommendation from the contractor to change one of the vendors the cost proposal was then revised (WML COP-036.2) reducing the proposal to $667,487.82.

Accordingly, MWHC recommends a change order increasing the contract in the amount of $667,487.82 to compensate W. M. Lyle for all costs associated with the changes described above.

CITY OF BEAUMONT WWTP SALT MITIGATION UPGRADE PROJECT

CHANGE ORDER PROPOSAL (COP) # 036.2
(By Contractor)

To (Engineer/CM):	**From (Contractor)**:
MWH Constructors Attention: Charles Reynolds Phone: 702-497-8024 Email: Charles.w.reynolds@stantec.com	W.M. Lyles Co. Attention: Oscar Mendoza Phone: 619-565-6064 Email: omendoza@wmlylesco.com

PCO/DCM No.: DCM-018/CLAR-024

Subject: EQ Basin Modifications

Reference Documents: Reference Drawings Attached

DESCRIPTION

Please see additional responses/clarifications.

Comment 1a: There is ~25 feet of 10" pipe. There is a net increase of ~30 hours of labor. This seems excessive for this 10" pipe.

- Response: The added BG pipe install is for the four (4) 10” lines going from the EQ basin to the transition coupling above grade. This added labor is for 107 LF of 10” horizontal and vertical piping along with four 10” restrained mechanical joint 90°s. The labor amount for this 10” pipe is reasonable if not lean.

Comment 1b: An open cut for a 20' deep pipe is a considerable amount of labor/equipment cost. The credit vs addition still does not seem proportional. Also note that the majority of the 10" pipe will be in the excavation for the EQ basin and will likely not require additional excavation. Also note that the average bury depth of the 16" pipe is 5-6 feet, not 8 feet.

- Response: The backfill of the EQ basin was not estimated as if we were to halt operations in order to install the 16” EQ basin return (it was not shown on the original design). It is possible to install the pipe within the excavation but we would need to add increased costs for the lost production and remobilization to the backfill process before we reduced the costs for the pipeline excavation. Updated drawings C-4 shows a finished grade on the west side of the EQ around 2548.50’-2548.25’. Drawing C-4 shows the grade break of 2548.25’ being 6’-0” away from the structure. The man run of the pipe is 4’-6” away from the face of the structure. With a finished grade of 2548.50’ and an pipe invert of 2543.00’ (coordinate 44 on C-23) to 2540.25’ (coordinates 53 & 14 on C-20) the excavation depth varies from 5’-11” to 8’-8”.

Comment 2a: This does not explain why the concrete cost is $1,600.

- Response: It’s unclear how the $1,600/cy value was obtained. See attached WML breakdown with detailed descriptions and quantities for the concrete scope of work.

Comment 2b: Attached is the quote. Keep in mind that this quote is for a larger and taller structure.

- Response: American Buildings stands firm with their estimate; however, an alternative cost estimate/quote from Star Building is included in this COP.

COST ESTIMATE

Total Cost : $ 667,487.82 – see attached breakdown
SCHEDULE IMPACT
None
Received by MWH Constructors (Date):
RESPONSE
Response By: **Date**:

Final Distribution: Juan C. Ahumada, W.M. Lyles Co.
Brian Knoll, Webb Associates
MWH Inspector

W. M. Lyles Co.
42142 Roick Drive
Temecula, CA 92590

Date: 14-Apr-20

Reference #: CLAR - 024

Attention: Charles W. Reynolds

JOB LOCATION: City of Beaumont WWTP Salt Mitigation Upgrade Project

DESCRIPTION: EQ Basin Modifications

Item:			Unit	Total MH	Total MH Cost	Eq. Cost	Material	Subcont.	Total Cost
1	Pipe & Equipment Installation	1	LS	207.5	$ 19,384.65	$ 2,080.97	$ 195,396.71	$ -	$ 216,862.33
2	Structural Modifications	1	LS	305	$ 25,022.03	$ 7,957.12	$ 13,164.36	$292,950.41	$ 339,093.92
3	Site Grading Modifications	1	LS	308	$ 26,944.65	$ 13,125.80	$ 4,124.67	$ -	$ 44,195.12
		1	LS	0	$ -	$ -	$ -	$ -	$ -
		1	LS	0	$ -	$ -	$ -	$ -	$ -
		1	LS	0	$ -	$ -	$ -	$ -	$ -
Total Costs				820.5	$ 71,351.33	$ 23,163.89	$ 212,685.74	$292,950.41	$ 600,151.37

Subtotal		$	600,151.37
Mark-up - Labor	15%	$	10,702.70
Mark-up - Equipment	15%	$	3,474.58
Mark-up - Materials	15%	$	31,902.86
Mark-up - Subcontractor	5%	$	14,647.52
Bond	1.0%	$	6,608.79
Total This Change Order		**$**	**667,487.82**

Comments:

City of Beaumont WWTP Salt Mitigation Upgrade Project

Pipe & Equipment Installation ###

A. Labor

Description	Lab Pipe FM			Lab Pipe			Operator			Carp FM			Carp			Lab		
	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT
Pump Install & Anchoring	28			28			8											
Added BG Pipe Install	15			30			15											
Deleted BG Pipe Install	(8)			(16)			(8)											
Added AG Pipe Install	52			104														
Deleted AG Pipe Install	(6)			(12)														
Wall/Slab Penetrations & Seals										20			20			6		
Added Pipe Support Install	24			48														
Deleted Pipe Support Install	(3)			(6)														
Deleted valve vault excavation & backfill	(4)			(16)			(16)											
Deleted setting valve vault	(1)			(2)			(1)											
Deleted pipeline excavation & backfill	(32)			(128)			(64)											
Added pipeline excavation & backfill	16			64			32											
Pipe Encasement @ Fine Screens	8			8			8			8			4					
Pipe Encasement @ EQ	(5)			(5)			(5)			(5)			(2.5)					
Additional Commissioning Plan and Execution																		
	84	0	0	97	0	0	(31)	0	0	23	0	0	22	0	0	6	0	0

Name	Rate ST	PT	DT	Hours ST	PT	DT	Extension	
Lab Pipe FM	$80.30	$103.90	$129.98	84	0	0	$6,745.55	
Lab Pipe	$77.69	$99.97	$124.75	97	0	0	$7,535.76	
Operator	$98.83	$128.99	$161.66	-31	0	0	-$3,063.86	
Carp FM	$87.53	$115.33	$145.63	23	0	0	$2,013.21	
Carp	$83.61	$109.45	$137.79	21.5	0	0	$1,797.55	
Lab	$74.22	$94.78	$117.82	6	0	0	$445.33	
Cement Mason	$80.55	$102.25	$126.45	2	0	0	$161.11	
Start-up Eng.	$750.00	$0.00	$0.00	5	0	0	$3,750.00	Rate: $750/Day
0	$0.00	$0.00	$0.00	0	0	0	$0.00	
				207.5	0	0		
				Total Labor =			**$19,384.65**	

B. Equipment

Description	17.120	32.037	31.028	30.048	20.041	77.020
Pump Install & Anchoring	25		8			
Added BG Pipe Install	15			15		
Deleted BG Pipe Install	(8)			(8)		
Added AG Pipe Install	52	52				
Deleted AG Pipe Install	(6)	(6)				
Wall/Slab Penetrations & Seals	20					
Added Pipe Support Install	24	8				
Deleted Pipe Support Install	(3)					
Deleted valve vault excavation & backfill	(4)			(16)		
Deleted setting valve vault	(1)		(1)			
Deleted pipeline excavation & backfill	(32)				(64)	
Added pipeline excavation & backfill	16				32	
Pipe Encasement @ Fine Screens	8			8		
Pipe Encasement @ EQ	(5)			(5)		
	101	54	7	(6)	(32)	0

Number	Description	Rate	Hours	Extension
17.120	Foreman Truck	$29.60	101	$2,989.60
32.037	ReachliftXtremeXR1055	$58.61	54	$3,164.94
31.028	Hydro Crane - 80 TonLink BeltRTC-8080 II 80 Ton	$164.01	7	$1,148.07
30.048	Loader Backhoe 410John Deere410L	$64.30	-6	-$385.80
20.041	ExcavatorJohn Deere350GLC	$151.12	-32	-$4,835.84
77.020	Scissor LiftJLG2646ES	$20.04	0	$0.00
17.120	Foreman Truck	$29.60	0	$0.00
			124	
		Total Equipment =		**$2,080.97**

C. Materials

	Quantity	Unit	Price	Extension	
Gorman Pumps	1	LS	$ 96,800.00	$96,800.00	
Gorman Pumps - Start-up	1	LS	$ 5,000.00	$5,000.00	
Gorman Pumps - Anchor Bolts	1	LS	$ 750.00	$750.00	
8" Plug Valves	5	EA	$ 2,306.00	$11,530.00	
8" Check Valves	3	EA	$ 1,618.00	$4,854.00	
ARV	1	EA	$ 1,421.00	$1,421.00	
Inplant - DIP & Fittings	1	LS	$ 42,727.00	$42,727.00	
Westpac - BNGs & Supports	1	LS	$ 5,839.22	$5,839.22	
Building Supplimental Steel for Pipe Supports	1	LS	$ 3,000.00	$3,000.00	
Pipe Support Engineering	1	LS	$ 1,000.00	$1,000.00	
Wall Sleeves & Link Seals	5	EA	$ 625.00	$3,125.00	
Slab Sleeves & Sealant	4	EA	$ 450.00	$1,800.00	
Concrete	2	CY	$ 150.00	$300.00	
Pipe Labels	1	LS	$ 150.00	$150.00	
Consumables	207.5	MH	$ 3.50	$726.25	
				$0.00	
Tax	7.750%			$13,874.24	
Freight	1	EA	$ 2,500.00	$2,500.00	$500 valves, $1500 pipe, $500 misc
			Total Material =	**$195,396.71**	

D. Subcontractor

	Quantity	Unit	Price	Extension
			Total Subcontract =	**$0.00**

City of Beaumont WWTP Salt Mitigation Upgrade Project

Structural Modifications ###

A. Labor

Description	Lab Pipe FM			Lab Pipe			Operator			Carp FM			Carp			Lab FM			Cement Mason			Lab					
	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT
EQ Wall - Formwork Fabrication										8			16														
EQ Wall - Form & Strip							16			16			32									8					
EQ Wall - Accessories										1			8														
EQ Wall - Place Concrete																2						8					
EQ Wall - Place Additional Grout																2						8					
EQ Wall - Patch and Sack Finish																			8			8					
Pump Station - Form and Strip										8			32									8					
Pump Station - Place Concrete, Finish & Cure																4			16			16					
Pump Station - Surface Prep and Install Dowels																4						12					
Concrete Pads										4			16						4			4					
Grout Equipment and Supports																			16								
Install Canopy Anchors										4			16														
	0	0	0	0	0	0	16	0	0	41	0	0	120	0	0	12	0	0	44	0	0	72	0	0	0	0	0

Name	Rate ST	Rate PT	Rate DT	Hours ST	Hours PT	Hours DT	Extension
Lab Pipe FM	$80.30	$103.90	$129.98	0	0	0	$0.00
Lab Pipe	$77.69	$99.97	$124.75	0	0	0	$0.00
Operator	$98.83	$128.99	$161.66	16	0	0	$1,581.35
Carp FM	$87.53	$115.33	$145.63	41	0	0	$3,588.77
Carp	$83.61	$109.45	$137.79	120	0	0	$10,032.83
Lab FM	$77.56	$99.78	$124.49	12	0	0	$930.69
Cement Mason	$80.55	$102.25	$126.45	44	0	0	$3,544.42
Lab	$74.22	$94.78	$117.82	72	0	0	$5,343.98
0	$0.00	$0.00	$0.00	0	0	0	$0.00
				305	0	0	
				Total Labor =			**$25,022.03**

B. Equipment

Description	17.12	32.037	31.028	30.048	20.041	77.02	14.037		
EQ Wall - Formwork Fabrication	8	16							
EQ Wall - Form & Strip	16		32						
EQ Wall - Accessories	1								
EQ Wall - Place Concrete									
EQ Wall - Place Additional Grout									
EQ Wall - Patch and Sack Finish						16			
Pump Station - Form and Strip	16								
Pump Station - Place Concrete, Finish & Cure									
Pump Station - Surface Prep and Install Dowels									
Concrete Pads	4								
Grout Equipment and Supports									
Install Canopy Anchors	4								
	49	16	32	0	0	16	0	0	0

Number	Description	Rate	Hours	Extension
17.12	Foreman Truck	$29.60	49	$1,450.40
32.037	ReachliftXtremeXR1055	$58.61	16	$937.76
31.028	Hydro Crane - 80 TonLink BeltRTC	$164.01	32	$5,248.32
30.048	Loader Backhoe 410John Deere41	$64.30	0	$0.00
20.041	ExcavatorJohn Deere350GLC	$151.12	0	$0.00
77.02	Scissor LiftJLG2646ES	$20.04	16	$320.64
14.037	Water TruckFordF750 2000 Gallon	$46.23	0	$0.00
		Total Equipment =		**$7,957.12**

C. Materials

	Quantity	Unit	Price	Extension
4000 PSI Concrete	42	CY	$150.00	$6,300.00
Additional Pumped Grout	7	CY	$150.00	$1,050.00
Forms, lumber, waterstop, chamfer	1	LS	$ 2,300.00	$2,300.00
Anchor Bolts	1	LS	$1,500.00	$1,500.00
Consumables	305	MH	$3.50	$1,067.50
				$0.00
Tax	7.750%			$946.86
Commissioning, Schedule Support				
Freight				
			Total Material =	**$13,164.36**

D. Subcontractor

	Quantity	Unit	Price	Extension
Electrical and Instrumentation	1	LS	$201,987.41	$201,987.41
Rebar	1	LS	$31,393.00	$31,393.00
PEMB Canopy	1	LS	$46,750.00	$46,750.00
Pipe and Concrete Coating	1	LS	$8,300.00	$8,300.00
Seismic Calcs Engineering Services	1	LS	$2,500.00	$2,500.00
Coring for Hand Holes	8	HR	$130.00	$1,040.00
Concrete Pumping	49	CY	$20.00	$980.00
			Total Subcontract =	**$292,950.41**

City of Beaumont WWTP Salt Mitigation Upgrade Project

Site Grading Modifications ###

A. Labor

Description	Lab Pipe FM			Lab Pipe			Operator			Carp FM			Carp			Lab FM			Cement Mason			Lab					
	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT	ST	PT	DT
Dig and Grade 3' Wide Gravel Swale	32			64			32																				
Place Swale Filter Fabric and Gravel	16			32			16																				
Rough Grading per Civil Dwgs	8						48																				
Finegrading Grading per Civil Dwgs	8						32																				
Credit Dig, Pour, Backfill DB 101.1, 106, 303	(24)			(48)			(24)																				
Dig, Pour and Backfill DB 303.1, 303.2, 303.3	30			56			30																				
	70	0	0	104	0	0	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Name	Rate ST	Rate PT	Rate DT	Hours ST	Hours PT	Hours DT	Extension
Lab Pipe FM	$80.30	$103.90	$129.98	70	0	0	$5,621.29
Lab Pipe	$77.69	$99.97	$124.75	104	0	0	$8,079.57
Operator	$98.83	$128.99	$161.66	134	0	0	$13,243.78
Carp FM	$87.53	$115.33	$145.63	0	0	0	$0.00
Carp	$83.61	$109.45	$137.79	0	0	0	$0.00
Lab FM	$77.56	$99.78	$124.49	0	0	0	$0.00
Cement Mason	$80.55	$102.25	$126.45	0	0	0	$0.00
Lab	$74.22	$94.78	$117.82	0	0	0	$0.00
0	$0.00	$0.00	$0.00	0	0	0	$0.00
				308	0	0	

Total Labor = $26,945

B. Equipment

Description	17.12	32.037	31.028	30.048	20.041	40.094	14.037	35.064	34.021
Dig and Grade Gravel Swale	32			32					
Place Swale Filter Fabric and Gravel	16			16					
Rough Grading per Civil Dwgs	8						16		
Finegrading Grading per Civil Dwgs	8								32
Credit Dig, Pour, Backfill DB 101.1, 106, 303	(24)			(24)					
Dig, Pour and Backfill DB 303.1, 303.2, 303.3	30			30					
	70	0	0	54	0	0	16	0	32

Number	Description	Rate	Hours	Extension
17.12	Foreman Truck	$29.60	70	$2,072.00
32.037	ReachliftXtremeXR1055	$58.61	0	$0.00
31.028	Hydro Crane - 80 TonLink BeltRT	$164.01	0	$0.00
30.048	Loader Backhoe 410John Deere4	$64.30	54	$3,472.20
20.041	ExcavatorJohn Deere350GLC	$151.12	0	$0.00
40.094	Air CompressorIngersol Rand185	$20.19	0	$0.00
14.037	Water TruckFordF750 2000 Gallc	$46.23	16	$739.68
35.064	LoaderJohn Deere644J	$123.00	0	$0.00
34.021	Skip LoaderJohn Deere210LE	$38.81	32	$1,241.92
O/S Rent	Scraper	$175.00	32	$5,600.00

Total Equipment = $13,125.80

C. Materials

	Quantity	Unit	Price	Extension
Filter Fabric	2000	SF	$0.175	$350.00
3/4" Rock	50	TN	$24.00	$1,200.00
2500 PSI Concrete (Difference)	8	CY	$150	$1,200.00
Consumables	308	MH	$3.5	$1,078.00
				$0.00
Tax	7.750%			$296.67
Freight				

Total Material = $4,124.67

D. Subcontractor

Quantity	Unit	Price	Extension
			$0.00
			$0.00
			$0.00

Total Subcontract = $0.00

CITY OF BEAUMONT WWTP SALT MITIGATION UPGRADE PROJECT

CHANGE ORDER PROPOSAL (COP) # 036.1
(By Contractor)

To (Engineer/CM):	**From (Contractor)**:
MWH Constructors Attention: Charles Reynolds Phone: 702-497-8024 Email: Charles.w.reynolds@stantec.com	W.M. Lyles Co. Attention: Oscar Mendoza Phone: 619-565-6064 Email: omendoza@wmlylesco.com

PCO/DCM No.: DCM-018/CLAR-024

Subject: EQ Basin Modifications

Reference Documents: Reference Drawings Attached

DESCRIPTION

Please see responses to DCM-18 comments.

Comment 1:

a. The labor credit is only for the reduction in t stallation (Laying) of the pipe which has been reduced. The added labor is for the installation of additional 10" pipe fittings and labor and includes a credit for the reduction of laying of the 16" pipe. The labor for the installation of the additional 10" pipe & fittings was greater than the reduction in the labor associated with the linear footage of pipe.
b. The original trench was estimated as being op t without shoring. Excavation, sloping and backfill are included in the credit hours. Additional labor for excavation and backfill includes the four pipes from the EQ Basin to the Pump Station which are approx. 18' deep, along with the 16" pipe from the pump station to the fine screens which is approx. 8' deep ***open cut*** (2540.25 inv, 2548.00 +/- FS).
c. The additional labor is for the following penetrations (1) wall pen @ fine screen w/link seal (1) floor pen at fine screens w/sealant (3) floor pen at pump station w/sealant & (4) wall pen at eq w/link seal. This comes out to an average total 4.6 man hours (1.53 crew hours) per penetration to install and seal. The floor penetration deleted is not a wall spool or sleeve which required separate installation and sealant. This would have been a pipe spool bolted to the MJ 90 below grade. The credit for the deletion of this spool is included in the pipe install credit labor.
d. Checked labor for equipment and we feel no changes are needed
e. Adjustment made.
f. Material for below grade site was ordered and delivered to the jobsite prior to the clarification being issued. This material is non-returnable and no credit can be given. Material can be handed over to the plant staff or city if they would like.
g. Labor for encasement at fine screens has been reduced and a credit for the EQ has been added. We come up with a difference of 2 cy. Concrete material quantity has been reduced.
h. The labor for the reused below grade 16" fittings are not included in the labor hours for the additional pipe and fittings. The labor hours included are the additional hours required for the additional 16" & 10" below grade fittings. Originally there were (5) 16" MJ fittings and 190 LF of 16" pipe. In the change order there are (5 ea) 16" MJ fittings, (145 lf) 16" pipe, (4 ea) 10" MJ Fittings & (100 lf) 10" pipe. The additional labor hours in the "Added BG Pipe Install" include the credit for the reduction of the (45 lf) of 16" pipe and the addition of the (4 ea) 10" MJ fittings and (100 lf) of 10" pipe. The labor hours for the below grade fittings were already "reused" as requested in this comment.

Comment 2:

a. Wall extra work was the same crew size for the flatwork was reduced to provide extra savings.
b. See attached email from G&W explaining the canopy cost.

Comment 3:

a. Per our calculations, the overall fill for this section of the job is close to the original fill. Please provide backup for the 3000 yards stated if credit is needed.
b. The labor and equipment shown is for the extra time required to maintain a proper flow/slope into the added gravel swales.
c. Construction Note 113 calls for Gravel Swales per 130/CD-4. There are new swales that run from the north side of the EQ basin to the southeast wall.
d. The concrete was mislabel as 4000 psi. This is 2500 psi ductbank concrete.

COST ESTIMATE

Environmental Water Solutions, Inc.
a McKenna Engineering Company

www.ewsinc.org

SCOPE OF SUPPLY

Date: **November 15, 2019** **pages**

To: **Juan C. Ahumada - Project Executive**
W. M. LYLES CO. | Southern Division

From: **David Sperber** **P-714-932-2002**

Reference: **Salt Mitigation WWTP Upgrade – City of Beaumont**

EWS Ref #: **A-036-E01**

Gentlemen:

We are pleased to present the equipment listed below for the above referenced project. Attached to our general scope, please find specific descriptions and terms and conditions. Prices quoted are based on these descriptions. We look forward to working with you on this project.

Salt Mitigation WWTP Upgrade – City of Beaumont

Gorman Rupp Triplex Pump Station per Drawing EQM-4

Complete packaged pump station including three (3) Gorman Rupp T8A3S-B /WW pumps in a triplex configuration. The Triplex base will have all three (3) pumps on the same base with a vertical v-belt base arrangement connected to a 40 hp TEFC motor. The unit base shall be comprised of a base plate, perimeter flange, and reinforcements. Base plate will be fabricated of steel not less than 1/4" thick and will incorporate openings for access to all internal cavities to permit complete grouting of the unit base after installation. Perimeter flange and reinforcements will be designed to prevent flexing or warping under operating conditions. Base plate and/or flanges will be drilled for hardware used to secure unit base to concrete pad. Unit base will contain provisions for lifting the complete pump unit during shipping and handling.

Anchor Bolt Design Calculations and Non-Witnessed Factory testing as required by the specification are included.
Field Service is included with each of the site visits will have one day on site for a total of Two (2) trips and Two (2) days onsite
Exception to Section 2.2 Anchor Bolts – Anchor Bolts by others
Not included – Controls, Piping, Fittings

Gorman Rupp Triplex T8A3S -B common base pump package	$88,800 USD
Freight (estimated)	$3,000 USD
Start-up Two (2) trips and Two (2) days onsite	$5,000 USD
TOTAL PRICE	**$96,800 USD**

1162 E Dominguez St
Carson, CA 90746
310-667-4390 310-667-4395 Fax

Estimated Submittals	2-3 weeks
Estimated Resubmittals	1-2 weeks
Estimated Production Time (based on release and approval)	8-10 weeks

Please note that a Class H motor currently has a 14-week lead time. If this is required by the engineer, the production time will increase accordingly

Comments, Clarifications, Exceptions
All prices are quoted FOB Factory
Payment Terms are to be negotiated
Standard Terms and Conditions attached are part of our proposal
This proposal is not a binding contract unless specifically accepted by EWS
Exception to Section 2.2 Anchor Bolts – Anchor Bolts by others
Not included – Controls, Piping, Fittings

Not included unless otherwise noted:

Sales Tax (provide resale card if not applicable)
Interconnecting piping or wiring unless otherwise specified
Finish paint
Storage
Accountability for delivered materials or equipment (you must notify us within 48 hours of delivery of any shortage)
Transit damage (you must notify the freight -carrier at the time of delivery, and us within 48 hours of any damage)
Field Vibration or sound level testing
Seismic Calculations (except Anchor Bolt Calculations)
Factory witness, including travel
Lubricant
Spare parts
Any accessories unless noted specifically by the manufacturer

Thank you for the opportunity to be of service.

Submitted for: ENVIRONMENTAL WATER SOLUTIONS, INC

By: _____FOR _____

Accepted for _____

By: _____

Accepted for: ENVIRONMENTAL WATER SOLUTIONS, INC.

By: _____

STANDARD TERMS AND CONDITIONS OF SALE FOR UNITS, PACKAGES, SYSTEMS, & PARTS

Effective 7/1/2014

The foregoing quotation ("quotation") is subject to the following Environmental Water Solutions, Inc. [Seller] Standard Terms and Conditions which supersedes Buyer's [Buyer] proposed terms and conditions, if any. The quotation and these standard terms and conditions shall be referred to hereinafter collectively as the "quotation."
This quotation contains the entire agreement of the parties and all proposals, negotiations, representations, or agreements made or entered into prior to or contemporaneously with this quotation are excluded whether oral or in writing. Prices and specifications set forth in this quotation are based upon the terms and conditions set forth herein.

ANY TERMS PROPOSED IN BUYER'S ACCEPTANCE OF THIS QUOTATION WHICH ADD TO, VARY FROM, OR CONFLICT WITH THE TERMS HEREOF ARE HEREBY OBJECTED TO AND REJECTED AND SHALL NOT CONSTITUTE ANY PART OF ANY CONTRACT RESULTING FROM THIS QUOTATION. ANY SUCH PROPOSED TERMS SHALL HAVE NO FORCE OR EFFECT AND THE TERMS HEREIN SHALL CONSTITUTE THE COMPLETE AND EXCLUSIVE STATEMENT OF THE TERMS AND CONDITIONS OF ANY CONTRACT RESULTING FROM THIS QUOTATION AND MAY BE MODIFIED ONLY BY WRITTEN INSTRUMENT EXECUTED BY THE AUTHORIZED REPRESENTATIVES OF BOTH PARTIES.

1. Prices are EXW (Ex Works Incoterms) unless otherwise specified. Freight charges are not included in the quoted price, unless so stated. If order is not picked up by the Buyer, Seller may, in its discretion, select the carrier unless specified in advance by the Buyer. Purchase prices are stated in United States Dollars and payment shall be in United States currency.
2. Invoice terms are net 20 days unless otherwise specified. If Buyer fails to fulfill the terms of payment, Seller at its option may defer further shipment. Account past due shall bear interest at the rate of 1 ½% per month or at the highest rate permitted by law until paid. In addition to such late payment charges, Buyer shall pay Seller any and all costs associated with collection thereof, including reasonable attorneys' fees. Seller reserves the right to modify or withdraw credit terms at any time without notice and may require down payments, C.O.D., payment in advance, progress payments, or payment guarantees.
3. Prices do not include sales, use, excise or any similar tax. Any tax or other governmental charge upon the production, sales, shipment, or use of the product which Seller is required to pay or collect from Buyer shall be paid by Buyer to Seller unless Buyer furnishes Seller with a tax exemption certificate acceptable to the applicable taxing authority. Buyer shall be responsible for obtaining any necessary governmental clearances, including import and foreign exchange licenses, which may be required by any government other than the government of the United States.
4. Seller shall not be liable for any failure to perform its obligations under any contract resulting from this quotation when such failure arises directly or indirectly from or is contributed to by any act of God, acts of Buyer, acts of civil or military authority, terrorism, priorities, fire, strikes or other labor disputes, accidents, floods, epidemics, war, riot, delays in transportation, lack of or inability to obtain raw materials, components, labor, fuel or supplies, or other circumstances beyond Seller's reasonable control whether similar or dissimilar to the foregoing.
5. Shipping dates are given to the best of Seller's knowledge based upon conditions existing at the time any contract resulting from this quotation is entered into and specifications contained therein but are not of the essence of or in any way terms of the contract or representation of fact. Seller will, in good faith, endeavor to ship by the estimated shipping date, but shall not be responsible for any delay or any damage arising from failure to ship on the estimated shipping date. If Seller's completion of an order/contract is delayed by Buyer, that portion of the order/contract that is completed or ready for shipment, will be invoiced at that time, to be paid per the payment terms of the order/contract. Equipment held for the Buyer will be at the risk and expense of the Buyer, including applicable storage charges.
6. Any order resulting from this quotation cannot be cancelled, altered, or rescheduled except with the written consent of the Seller and upon terms which will indemnify the Seller against all loss associated thereby. All additional costs incurred by the Seller due to changes to the order by Buyer shall be paid by the Buyer. Goods may be returned only when specifically authorized by the Seller. Seller's Cancellation Terms will apply for order or goods cancelled or returned by the Buyer.
7. Title to the products and risk of loss with respect thereto shall pass to Buyer upon release thereof by Seller to a common carrier or upon tender of the products to an agent, employee, or representative of Buyer.
8. If Buyer has not made a claim to Seller within thirty (30) days after receipt of the products, the products shall be considered accepted and conforming to contract requirements.
9. Installation, startup of equipment, factory inspection or testing, and any materials or services shall be the responsibility of the Buyer unless otherwise specifically included in the Seller's quotation or contract
10. Seller warrants to Buyer for a period of 18 months from the date of shipment or 12 months from placement into service, whichever first occurs, that any product delivered under any contract resulting from this quotation will at the time of shipment be free from defects in material and workmanship. If, within said warranty period, any such product is found, by Seller following its examination, to be defective in material or workmanship, Seller's sole obligation under this warranty will be to repair or replace such defective product at its option and expense, when received Freight Prepaid at the business establishment of Seller, or a repair facility authorized by Seller during regular working hours. Seller's obligation under this warranty shall not include any transportation charges, cost of removal and reinstallation, duty, taxes or any other charges whatsoever which will be paid by the Buyer. No goods may be returned by the Buyer without Seller's prior written consent. Seller does not warrant any products, accessories, or components not manufactured by Seller, but to the extent possible agrees to provide Buyer with the benefits of the manufacturer's warranty, if any. Seller shall not be liable for damage to or wear of products caused in whole or in part by abnormal conditions, improper application; maintenance; or use, failure to provide proper inlet conditions or flow, corrosives, abrasives or foreign objects, or other external causes.
    THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.
11. Neither party shall disclose to third parties nor use for its own purposes any confidential information or trade secrets of the other party.
12. The rights of the Buyer herein shall neither be assignable or transferable without written consent from the Seller. If bankruptcy or insolvency proceedings are instituted by or against the Buyer, or if Buyer makes an assignment for the benefit of creditors, Buyer will be deemed in default and Seller will have the right to terminate its obligations by written notice to the Buyer, but such termination will not affect Buyer's obligation to pay for items delivered and work in progress.
13. In the event Buyer claims that Seller has breached any of its obligations under any contract resulting from this quotation, whether in warranty or otherwise, Seller may request and require return of the product and refund the Buyer's purchase price (if product is in same condition as when shipped by Seller) upon Seller's receipt of returned product. If Seller so requests the return of the product, the product shall be redelivered to Seller in accordance with Seller's instructions. Redelivered freight charges will be to Seller's account. In the event Seller elects to require return of the product, Seller shall absolutely have no further obligation to Buyer under any contract resulting from this quotation except to refund such purchase price upon redelivery of the product and Buyer will be deemed to have waived any and all claims arising from such contracts.
    THE REMEDIES PROVIDED FOR IN THIS AND THE PRECEDING PARAGRAPH SHALL CONSTITUTE THE SOLE RECOURSE OF BUYER AGAINST SELLER FOR BREACH OF ANY OF SELLER'S OBLIGATIONS UNDER ANY CONTRACT RESULTING FROM THIS QUOTATION, WHETHER THE CLAIM IS MADE IN TORT, CONTRACT, OR IN ADMIRALTY, INCLUDING CLAIMS BASED ON WARRANTY, NEGLIGENCE, OR OTHERWISE.NOTWITHSTANDING ANY OTHER PROVISION OF THIS AGREEMENT, IN NO EVENT SHALL SELLER BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, NOR SHALL SELLER'S LIABILITY FOR ANY CLAIMS OR DAMAGE ARISING OUT OF OR CONNECTED WITH ANY CONTRACT RESULTING FROM THIS QUOTATION, OR THE MANUFACTURE, SALE, DELIVERY OR USE OF THE PRODUCT, EXCEED THE PURCHASE PRICE OF THE PRODUCT.
14. In the event (1) Buyer modifies any product sold pursuant to any contract resulting from this quotation without the express written consent of Seller or (2) Buyer fails to implement any changes in the product directed by Seller or (3) any product to be furnished under any contract resulting from this quotation is made in accordance with drawings, samples, or manufacturing specifications provided or designated by Buyer, Buyer agrees to defend, indemnify and hold harmless Seller from any and all claims, demands, actions, or causes of action or costs or expenses however incurred.

15. In the event any product to be furnished under any contract resulting from this quotation is to be made in accordance with drawings, samples or manufacturing specifications provided or designated by Buyer, Buyer agrees to indemnify and hold Seller harmless from any and all damages, costs and expenses arising from a claim that such product furnished to Buyer by Seller or the use thereof, infringes any Letters Patent, foreign or domestic, and Buyer agrees at its own expense to undertake the defense of any suit against Seller brought upon such claim or claims. In the event any product to be furnished under any contract resulting from this quotation is not for a U.S. Government application and is not to be made in accordance with drawings, samples or manufacturing specifications provided or designated by Buyer, but rather is the design of Seller, Seller agrees to hold Buyer and its customers harmless against any damages awarded by a court of final jurisdiction in any suit for infringement of any United States Letters Patent by reason of the sale or use of such product as furnished by Seller under any contract resulting from this quotation. In the event any claim is asserted or threatened, as to which Buyer may seek indemnification hereunder, Seller shall have the sole right to contest, compromise, litigate, or otherwise dispose of said claim, including the right to substitute non-infringing products, and Buyer agrees to cooperate fully with Seller with respect thereto. The foregoing undertaking of Seller shall not apply unless Seller shall have been informed in writing immediately by Buyer of any charge or suit alleging such infringement and shall have been given the opportunity to assume the defense thereof with counsel of its choosing, and further, such undertaking shall not apply if (i) the claimed infringement is settled without the consent of Seller, or (ii) the infringement results from the use of a product delivered hereunder which is modified by Buyer or others without authorization by Seller or (iii) used in combination with a product not delivered by Seller where such infringement would not have occurred from the lone use of the product delivered under any contract resulting from this quotation.
16. The parties agree that should any provision contained in this Agreement be unenforceable under present or future laws or in a court of with jurisdiction over this agreement, the unenforceable provision will be replaced by a provision which lawfully enforces the parties' intention underlying the unenforceable provision, and the remaining provisions of this Agreement will remain in full force and effect.
17. No provision of this Agreement is waived by any act or knowledge on the part of either party, except by a written instrument signed by an authorized representative of that party. The waiver by either party of any right or a party's failure to enforce a provision of this Agreement is not a continuing waiver or a waiver of any other rights or of any material breach or failure of performance of the other party.
18. All articles herein will survive the termination or expiration of this Agreement or completion of any order.
19. Any contract resulting from this quotation shall be governed by the Uniform Commercial Code as adopted in the State of California as effective and in force on the date hereof. Wherever a term defined by said Uniform Commercial Code is used herein, the definition contained in the Uniform Commercial Code is to control, provided, however, the term "Ex Works" shall be as defined in the Incoterms. No action for breach of sale, any contract resulting from this quotation or any covenant or warranty arising therefrom shall be brought more than one year after the cause of action has accrued.
20. Dispute Resolution. It is the intent of the parties hereto to use alternative dispute resolution proceedings ("ADR"), by first requiring participation in mediation and then requiring mandatory binding arbitration.
    a. Arbitration: Subject to the mediation provision below, any dispute, claim or controversy arising out of or relating to this Agreement or the breach, termination, enforcement, interpretation or validity thereof, including the determination of the scope or applicability of this agreement to arbitrate, shall be determined by arbitration in Los Angeles County, California, before one arbitrator. At the option of the first to commence an arbitration, the arbitration shall be administered either by JAMS pursuant to its Streamlined Arbitration Rules and Procedures, or by the American Arbitration Association ("AAA") pursuant to its Commercial Arbitration Rules. Judgment on the Award may be entered in any court having jurisdiction. This clause shall not preclude parties from seeking provisional remedies in aid of arbitration from a court of appropriate jurisdiction.
    b. Allocation of Fees and Costs: The arbitrator may, in the Award, allocate all or part of the costs of the arbitration, including the fees of the arbitrator and the reasonable attorneys' fees of the prevailing party.
    c. Mediation Before Arbitration: The parties agree that any and all disputes, claims or controversies arising out of or relating to this Agreement shall be submitted to JAMS or AAA, or its successor, for mediation, and if the matter is not resolved through mediation, then it shall be submitted to final and binding arbitration pursuant to the arbitration clause set forth above. Either party may commence mediation by providing to JAMS or AAA and the other party a written request for mediation, setting forth the subject of the dispute and the relief requested. The parties will cooperate with JAMS or AAA and with one another in selecting a mediator from JAMS' or AAA's panel of neutrals, and in scheduling the mediation proceedings. The parties covenant that they will participate in the mediation in good faith, and that they will share equally in its costs. All offers, promises, conduct and statements, whether oral or written, made in the course of the mediation by any of the parties, their agents, employees, experts and attorneys, and by the mediator or any JAMS or AAA employees, are confidential, privileged and inadmissible for any purpose, including impeachment, in any arbitration or other proceeding involving the parties, provided that evidence that is otherwise admissible or discoverable shall not be rendered inadmissible or non-discoverable as a result of its use in the mediation. Either party may initiate arbitration with respect to the matters submitted to mediation by filing a written demand for arbitration at any time following the initial mediation session or 45 days after the date of filing the written request for mediation, whichever occurs first. The mediation may continue after the commencement of arbitration if the parties so desire. Unless otherwise agreed by the parties, the mediator shall be disqualified from serving as arbitrator in the case. The provisions of this Clause may be enforced by any Court of competent jurisdiction, and the party seeking enforcement shall be entitled to an award of all costs, fees and expenses, including attorneys' fees, to be paid by the party against whom enforcement is ordered.
    d. Not a Condition of Employment. Employee and Company both acknowledge and agree that the decision to use ADR including arbitration was for each party's benefit and convenience and that use of arbitration or other form of ADR was not a condition of employment of Employee by Company. Employee understands and acknowledges that by agreeing to mandatory arbitration he relinquishes his right to have his claims or defense heard by a judge and jury.
21. BOTH SELLER AND BUYER AGREE TO INDEMNIFY, DEFEND AND HOLD THE OTHER PARTY HARMLESS FROM ANY AND ALL LOSSES, LIABILITIES, DAMAGES, CLAIMS (INCLUDING, WITHOUT LIMITATION, CLAIMS FOR PERSONAL INJURY, BODILY INJURY, ILLNESS, DEATH OR PROPERTY DAMAGE), COSTS, EXPENSES (INCLUDING, WITHOUT LIMITATION, REASONABLE ATTORNEY'S FEES), PENALTIES, FINES AND JUDGMENTS OF ANY NATURE WHATSOEVER (COLLECTIVELY "LOSSES"),CAUSED BY OR ARISING OUT OF ANY NEGLIGENT ACTION, OR OMISSION, OR WILLFUL MISCONDUCT, OR ENVIRONMENTAL LIABILITY OF THE INDEMNIFYING PARTY, OR ANY OTHER BREACH OF THIS AGREEMENT BY THE INDEMNIFYING PARTY.
    NOT WITHSTANDING THE ABOVE, IN NO EVENT SHALL BUYER OR SELLER IS LIABLE TO EACH OTHER FOR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OR FOR LOSS OF ORDERS.
    Where Services provided to or on behalf of the Buyer are sold, resold, or otherwise transferred to a third party, the third party, and its customers, assignees, and other successors in interest to these Services, shall have no rights greater than those granted Buyer herein. Buyer shall defend, indemnify and hold Seller harmless, its officers, directors, and employees, from and against any and all claims, losses, liabilities or expenses of third parties (including without limitation attorney's fees) which Buyer could not itself recover hereunder.

Oscar Mendoza

From: Stephen Crump <crumpco@pacbell.net>
Sent: Wednesday, January 8, 2020 12:34 PM
To: Michael Bonser
Subject: Re: Beaumont Change Order Quote

Five (5) 8” Val Matic ***100% Port*** ANSI Class 125 Flanged Cam-Centric Plug Valves with BS Worm Gear Act, fusion epoxy in/out, model # 5708F/6A02XF @ $2,306.00 ea

Three (3) 8” Val Matic Swing-Flex Check Valve, fusion epoxy in/out @ $1,618.00 ea

+ freight

+ sales taxes.

CRUMP & CO, INC.
Stephen A. Crump
PO 94836, Pasadena, Ca. 91109
(Phone) 626-794-1685
(Fax) 626-577-4488
(Cell) 626-893-7207
A Manufactures Representative Firm
Leaving Green Footprints - Think before you print.

On Wednesday, January 8, 2020, 7:11:52 AM PST, Michael Bonser <mbonser@wmlylesco.com> wrote:

Stephen,

I’m working on a change order for the Beaumont project. Attached is the PO.

We will need pricing for the following:

Five (5) 8” Val Matic 100% Port ANSI Class 125 Flanged Cam-Centric Plug Valves with BS Worm Gear Act

Three (3) 8” Val Matic Swing-Flex Check Valve

I can send you copies of the approved submittals if you would like.

Can you have please pricing to us by Tuesday January 14th?

Thanks,

Michael Bonser | Project Manager/Estimator

W. M. LYLES CO. | Southern Division

42142 Roick Dr. | Temecula, CA 92590

O 951-973-7393 | C 951-757-2330

www.wmlyles.com

Oscar Mendoza

From: Oscar Mendoza
Sent: Friday, January 31, 2020 3:34 PM
To: Oscar Mendoza
Subject: FW: Beaumont Salt Mitigation Project - Change order request for proposal

From: Juan Ahumada <jahumada@wmlylesco.com>
Date: January 31, 2020 at 3:05:56 PM PST
To: Michael Bonser <mbonser@wmlylesco.com>
Subject: FW: Beaumont Salt Mitigation Project - Change order request for proposal

Juan C. Ahumada | Project Executive
W. M. LYLES CO. | Southern Division
42142 Roick Dr. | Temecula, CA 92590
O 951-973-7393 | C 951-972-2056
www.wmlyles.com

From: Stephen Crump <crumpco@pacbell.net>
Sent: Tuesday, November 5, 2019 9:40 AM
To: Juan Ahumada <jahumada@wmlylesco.com>
Subject: Beaumont Salt Mitigation Project - Change order request for proposal

Juan:

1-3", sewage combo air valve, # 803AXF (does not include optional backwash kit): $1,421.00 each

-Delivery is based on current material availability and is subject to prior sales

-Pricing is valid for 30 days

-Quotation above is based on model numbers and quantities shown. Any deviation from this quotation can result in a change of price and availability for the items listed herein.

All sales are subject to the Val-Matic Valve & Manufacturing Corp. (Val-Matic), Terms of Sale effective on receipt of the purchase order, which are incorporated in full by this reference. The Terms of Sale are available at http://www.valmatic.com/terms.html, and can be provided to the purchaser upon request.

CRUMP & CO, INC.

Stephen A. Crump

PO 94836, Pasadena, Ca. 91109

(Phone) 626-794-1685

(Fax) 626-577-4488

(Cell) 626-893-7207

A Manufactures Representative Firm

Leaving Green Footprints - Think before you print.

W. M. LYLES CO.
CONTRACTOR
Progress Through Performance

Project Number: 55.1173
Project Name: City of Beaumont WWTP Salt Mitigation Upgrade Project
Project Owner: City of Beaumont

BURIED IS QUOTED WITH FULL PNT SYS, ALL ELSE IS STD PRIMER

INPLANT SALES

BG Pipe & Fittings

System Description	Area	Pipe Material	Type	Quantity	Unit	Size (IN)	Description	Unit Price	Total Price
Suction to Pumps	EQ Basin Pump Station	DI	Fitting	3	EA	10	MJ 90° Bend, (CML x 098000 *buried*)	$ 201.00	$ 603.00
Suction to Pumps	EQ Basin Pump Station	DI	MJ Kit	6	EA	10	DI Mega Lug with 316SS Bolts	$ 94.00	$ 564.00
Suction to Pumps	EQ Basin Pump Station	DI	Spool	3	EA	10	DI PE x PE Spool, 7'-0" Long (CML x 098000 *buried*)	$ 664.00	$ 1,992.00
Suction to Pumps	EQ Basin Pump Station	DI	Coupling	4	EA	10	Restrained Flange Coupling Adapter	$ 547.00	$ 2,188.00
Suction to Pumps	EQ Basin Pump Station	DI	Spool	3	EA	10	DI PE x PE Spool, 18'-0" Long (CML x 098000 *buried*)	$ 1,542.00	$ 4,626.00
Suction to Pumps	EQ Basin Pump Station	DI	Fitting	3	EA	10x8	DI Flg Reducing 90°, (CML x 098000)	$ 369.00	$ 1,107.00
Suction to Pumps	EQ Basin Pump Station	DI	Spool	2	EA	8	DI Flg x Flg Spool, 1'-6" Long (CML x 098000)	$ 316.00	$ 632.00
Suction to Pumps	EQ Basin Pump Station	DI	Fitting	1	EA	8	DI Flg Tee, (CML x 098000)	$ 333.00	$ 333.00
Suction to Pumps	EQ Basin Pump Station	DI	Fitting	1	EA	10x8	DI Flg Conc Reducer, (CML x 098000)	$ 259.00	$ 259.00
Suction to Pumps	EQ Basin Pump Station	DI	Spool	1	EA	10	DI Flg x Flg Spool, 6'-3" Long (CML x 098000)	$ 888.00	$ 888.00
Suction to Pumps	EQ Basin Pump Station	DI	Spool	1	EA	10	DI Flg 90°, (CML x 098000)	$ 376.00	$ 376.00
Suction to Pumps	EQ Basin Pump Station	DI	Spool	1	EA	10	DI PE x PE Spool, 18'-0" Long (CML x 098000 *buried*)	$ 1,542.00	$ 1,542.00
Suction to Pumps	EQ Basin Pump Station	DI	Fitting	1	EA	10	MJ 90° Bend, (CML x 098000 *buried*)	$ 201.00	$ 201.00
Suction to Pumps	EQ Basin Pump Station	DI	MJ Kit	2	EA	10	DI Mega Lug with 316SS Bolts	$ 94.00	$ 188.00
Suction to Pumps	EQ Basin Pump Station	DI	Spool	1	EA	10	DI PE x PE Spool, 10'-0" Long (CML x 098000 *buried*)	$ 872.00	$ 872.00
Discharge from Pumps	EQ Basin Pump Station	DI	Spool	3	EA	8	DI Flg 90°, (CML x 098000)	$ 234.00	$ 702.00
Discharge from Pumps	EQ Basin Pump Station	DI	Spool	3	EA	8	DI Vic x Vic Spool, 1'-0" Long (CML x 098000)	$ 214.00	$ 642.00
Discharge from Pumps	EQ Basin Pump Station	DI	Coupling	6	EA	8	Victaulic Style 341 Flange Adapter, Orange enamel, Grade "M" Gasket, w/SS Bolts	$ 229.00	$ 1,374.00
Discharge from Pumps	EQ Basin Pump Station	DI	Fitting	3	EA	16x8	DI Flg Reducing Tee (CML x 098000)	$ 956.00	$ 2,868.00
Discharge from Pumps	EQ Basin Pump Station	DI	Spool	1	EA	16	DI Flg x Flg Spool, 5'-8" Long (CML x 098000)	$ 1,570.00	$ 1,570.00
Discharge from Pumps	EQ Basin Pump Station	DI	Spool	1	EA	16	DI Flg x Flg Spool, 1'-6" Long (CML x 098000)	$ 907.00	$ 907.00
Discharge from Pumps	EQ Basin Pump Station	DI	Spool	2	EA	16	DI Flg x Flg Spool, 2'-6" Long (CML x 098000)	$ 1,027.00	$ 2,054.00
Discharge from Pumps	EQ Basin Pump Station	DI	Fitting	2	EA	16	DI Flg 90°, (CML x 098000)	$ 753.00	$ 1,506.00
Discharge from Pumps	EQ Basin Pump Station	DI	Fitting	1	EA	16	DI Blind Flg, (CML x 098000)	$ 265.00	$ 265.00
Discharge from Pumps	EQ Basin Pump Station	DI	Fitting	2	EA	16	DI Flg Tee, (CML x 098000)	$ 866.00	$ 1,732.00
Discharge from Pumps	EQ Basin Pump Station	DI	Fitting	1	EA	16	DI Blind Flg w/2" Tap, (CML x 098000)	$ 288.00	$ 288.00
Discharge from Pumps	EQ Basin Pump Station	DI	Spool	1	EA	16	DI Flg x Flg Spool, 3'-9" Long (CML x 098000)	$ 1,231.00	$ 1,231.00
Discharge from Pumps	EQ Basin Pump Station	DI	Coupling	1	EA	16	Restrained Flange Coupling Adapter	$ 1,126.00	$ 1,126.00
Discharge from Pumps	EQ Basin Pump Station	DI	Spool	1	EA	16	DI PE x PE Spool, 7'-0" Long (CML x 098000 *buried*)	$ 1,215.00	$ 1,215.00
Discharge from Pumps	Yard	DI	Fitting	4	EA	16	MJ 90° Bend, (CML x 098000 *buried*)	$ 481.00	$ 1,924.00
Discharge from Pumps	Yard	DI	MJ Kit	8	EA	16	C-905, DR-25 Mega Lug with 316SS Bolts	$ 244.00	$ 1,952.00
Discharge from Pumps	Yard	DI	Restraint	3	EA	16	C-905 Bell Restraint for DR-25	$ 340.00	$ 1,020.00
Discharge from Pumps	Yard	DI	Restraint	1	EA	16	MJ Sleeve, (CML x 098000 *buried*)	$ 319.00	$ 319.00
Discharge from Pumps	Yard	DI	MJ Kit	2	EA	16	C-905, DR-25 Mega Lug with 316SS Bolts	$ 250.00	$ 500.00
Discharge from Pumps	Fine Screen	DI	Fitting	1	EA	16	DI Vic 90° (CML x 098000)	$ 1,125.00	$ 1,125.00
Discharge from Pumps	Fine Screen	DI	Coupling	2	EA	16	Victaulic Style 341 Flange Adapter, Orange enamel, Grade "M" Gasket, w/SS Bolts	$ 1,018.00	$ 2,036.00
								TOTAL	$ 42,727.00

SOLD TO:

WM LYLES COMPANY
PO BOX 4377
FRESNO, CA. 93744-4377

JOB ADDRESS:

W.M. LYLES CO.
715 W. 4TH STREET
BEAUMONT, CA 92223

WP
PRODUCTS INC.
WESTERN PACIFIC PRODUCTS
13326 Elliot Ave. Chino, Ca. 91710
(951)340-4012

Quote

Date

1/8/2020

www.WestPacProducts.com
Bolts-Gaskets-Strut/Fittings-PipeSupports

Quote # CO-MIKE Rep SP FOB Chino Ca.

Description	Qty	U/M	Cost	Total
150#				
8" A307B BOLT SET STEEL PLAIN	14	ea	12.00	168.00T
10" A307B BOLT SET STEEL PLAIN	6	ea	28.00	168.00T
16" A307B BOLT SET STEEL PLAIN	17	ea	69.00	1,173.00T
8" 150# FF 1/8" EPDM GASKETS	14	ea	6.00	84.00T
10" 150# FF 1/8" EPDM GASKETS	6	ea	9.00	54.00T
16" 150# FF 1/8" EPDM GASKETS	17	ea	18.00	306.00T
1 1/8-7 HEAVY HEX NUT STEEL PLAIN	1	ea	1.02	1.02T
SanBerdo-new7.75			7.75%	151.44

Total $2,105.46

SOLD TO:

WM LYLES COMPANY
PO BOX 4377
FRESNO, CA. 93744-4377

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715 W. 4TH STREET
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Quote # CO-MIKE Rep SP FOB Chino Ca.

Description	Qty	U/M	Cost	Total
150#				
8" A307B BOLT SET STEEL PLAIN	14	ea	12.00	168.00T
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16" A307B BOLT SET STEEL PLAIN	17	ea	69.00	1,173.00T
8" 150# FF 1/8" EPDM GASKETS	14	ea	6.00	84.00T
10" 150# FF 1/8" EPDM GASKETS	6	ea	9.00	54.00T
16" 150# FF 1/8" EPDM GASKETS	17	ea	18.00	306.00T
1 1/8-7 HEAVY HEX NUT STEEL PLAIN	1	ea	1.02	1.02T
8" FLANGE ADJUSTABLE GALVANIZED PIPE SUPPORTS-34" TALL	3	ea	366.00	1,098.00T
10" ADJUSTABLE GALVANIZED PIPE SUPPORTS-3" TALL W/UBOLT	1	ea	389.00	389.00T
16" ADJUSTABLE GALVANIZED PIPE SUPPORTS-52" TALL W/UBOLT	3	ea	588.00	1,764.00T
8" CLEVIS HANGER HDG-44"C/L W/EYE-BOLTS	3	ea	210.00	630.00T
3/4-10 HEX NUT GALVANIZED	12	ea	0.35	4.20T
SanBerdo-new7.75			7.75%	452.54

Total $6,291.76

Southern Contracting Company
P.O. Box 445 San Marcos, CA 92079-0445
Tel 760-744-0760 Fax 760-744-6475
website: www.southerncontracting.com
email: info@southerncontracting.com

Change Order Request

103801 — Wastewater Treatment Plant Salt Mitigation Upgrade

COR Subject: CLAR 024 DCM 018

To
Juan C. Ahumada
W.M. Lyles
42142 Roick Drive
Temecula, CA 92590
951-973-7393

Return To
Dan Alcantar
Southern Contracting Company
760-744-0760x621
619-778-0681
DAlcantar@southerncontracting.com

Contract No:	**55.1173**
COR Number:	**103801-COR#016**
COR Revision Number:	**0**
COR Date:	1/16/2020
Work Type:	Price / Do Not Proceed
Owner COR No:	CLAR 024 DCM 018
Days Valid:	**5**

Scope Of Work / Time Extension Request

The work associated with DCM18 CLAR 24 is a change to Southern Contracting Company's scope of work in which a change in Contract Price and Time is to be considered.
Accordingly, Southern Contracting Company requests a Contract Change Order in the amount of $201,987.41

Scope of Work is as follows:
- Provide labor and materials to address electrical changes associated with the EQ Basin Changes, it has been determined to modify the discharge system from the Equalization Basin.
Station will be located on the north end of the basin.
The electrical feed for the new EQ Pump Station will originate in the electrical room of the Solids Handling Building. A manual transfer switch, generator receptacle and MCC-EQ have been added to the electrical design. Several site ductbanks are modified. Instrumentation and Controls changes.

Exclusions:
-Digging, backfill, concrete formed or poured, dry packing, surface restoration, permits, inspections.

Change in time: NA

Southern Contracting reserves all rights to additional costs and time for changes not identified in the documents furnished, and is not responsible for additional costs or time for work which is not part of our contract scope of work, unless stipulated above. Should additional information or clarification be required, please contact me at your convenience.

Summary

Total: **$201,987.41**

Reservation of Rights

This COR does not include any amount for impacts such as interference, disruptions, rescheduling, changes in the sequence of work, delays and/or associated acceleration. We expressly reserve the right to submit our request for any of these items.

Signed By: 

Dated: 1/16/2020

Daniel Alcantar

PM

Bid Summary Report

103801 Beaumont Chang Orders Estimator: Dan Alcantar **Job #2336**

Job Name: 103801 Beaumont Chang Orders

Contractor:

Estimator: Dan Alcantar

Notes:

Bid Date:

Summary Description	Material			Labor		
	Extended	%	Adjusted	Extended	%	Adjusted
COR#016 DCM 18 CLAR 024 rev1	$25,926.62	100.00%	$25,926.62	735.97	100.00%	735.97

Top Sheet

Raw Cost		$178,977.15	Sales per Month	$0.00
Tax		$2,009.31	Return per Month	$0.00
Raw Cost with Tax		$180,986.46	Price per Square Foot	$0.00
Overhead		$19,001.07	Hours per Square Foot	0.00
Profit		$0.00	Square Feet	0.00
Total Return Amount		$19,001.07	Job Months	0.00
Total Return %		9.41%	Hours per Week	0.00
Price		$199,987.53	Workers per Day	0.00
Bond		$1,999.88	Total Hours	735.97
Sell Price		**$201,987.41**	Mark Up Sales Tax	Yes
Adjusted Sell ()		$0.00	Use Bond Table	Yes
Adjusted Sell Return	0.00 %	$0.00		

Labor

Class Description	Percent of Total	Hours Distributed	Hourly Rate	Burden Rate	Burden Percent	Labor Cost
General Foreman	10.00%	73.60	$94.89	$0.00	0.00%	$6,983.59
Foreman	25.00%	183.99	$88.33	$0.00	0.00%	$16,252.00
Journeyman	40.00%	294.39	$81.76	$0.00	0.00%	$24,069.08
Appr-85%	25.00%	183.99	$71.01	$0.00	0.00%	$13,065.26
Totals	100.00%	735.97	$82.03	$0.00	0.00%	$60,369.93

Mark Ups

	Total		OVERHEAD %		OVERHEAD Amount		PROFIT %	PROFIT Amount
Materials	$25,926.62	+	15.00%		$29,815.61	+	0.00%	$29,815.61
Labor	$60,369.93	+	15.00%		$69,425.42	+	0.00%	$69,425.42

Bid Summary Report

103801 Beaumont Chang Orders **Estimator: Dan Alcantar** **Job #2336**

Supplier Quotes	$78,455.00	+	5.00%	$82,377.75	+	0.00%	$82,377.75
SubContractors	$0.00	+	15.00%	$0.00	+	0.00%	$0.00
Direct Job Expense	$14,225.60	+	15.00%	$16,359.44	+	0.00%	$16,359.44
Equipment Rental	$0.00	+	15.00%	$0.00	+	0.00%	$0.00
Totals	**$178,977.15**		**10.62%**	**$197,978.22**		**0.00%**	**$197,978.22**

Tax Report

	Taxed Amount	Tax Rate %	Tax Amount
Materials	$25,926.62	7.75%	$2,009.31
Labor	$60,369.93	0.00%	$0.00
Supplier Quotes	$62,415.00	0.00%	$0.00
SubContractors	$0.00	0.00%	$0.00
Direct Job Expense	$0.00	0.00%	$0.00
Equipment Rental	$0.00	0.00%	$0.00
		Total Tax:	$2,009.31

Supplier Quotes

Name	Supplier	Tax (0.0 %)	Unit Cost	Multiplier	Amount
Intrumentation and controls		No	$16,040.00	1.00	$16,040.00
MCC- Switchgear		Yes	$62,415.00	1.00	$62,415.00
				Total:	$78,455.00

Direct Job Expense

Name	Supplier	Tax (0.0 %)	Unit Cost	Multiplier	Amount
Site Truck		No	$26.15	472.00	$12,342.80
FM Truck		No	$26.15	72.00	$1,882.80
				Total:	$14,225.60

Item #	Item Name	Quantity	Ext Price	Ext Labor
Label Set: Combined, Combined, Combined, Combined, Combin			**$25,926.62**	**735.97**
Cost Code: 010 - Conduit/Raceway			$5,589.19	103.81
2,598	1/4" SS WEDGE ANCHOR	20.00	$46.00	4.02
2,600	1/2" SS WEDGE ANCHOR	26.00	$299.00	6.53
2,614	1/4x1" SS SCREWS	30.00	$10.19	5.28
2,621	1/4" SS SADDLE WASHER	20.00	$5.09	0.00
2,624	1/4" SS WASHER	40.00	$4.40	0.00
2,631	1/4" SS NUT	30.00	$4.02	0.00
2,658	1 5/8 STRUT-STAINLESS	4.00	$47.50	0.75
2,684	3/4 GRC/PVC COATED	65.00	$282.74	6.53
2,685	1 GRC/PVC COATED	290.00	$1,633.09	36.42
2,687	1 1/2 GRC/PVC COATED	10.00	$86.67	1.88
2,692	4 GRC/PVC COATED	10.00	$311.53	4.77
2,697	3/4 GRC/PVC COUP	24.00	$108.62	2.71
2,711	3/4 GRC/PVC ELBOW	8.00	$128.98	5.53
2,712	1 GRC/PVC ELBOW	4.00	$73.97	3.27
2,765	1 GRC/PVC HUB	10.00	$514.34	6.28
2,772	4 GRC/PVC HUB	1.00	$331.61	1.76
2,822	3/4 GRC/PVC LB BODY	4.00	$215.75	3.27
2,860	1G OCAL FD BOX -3/4"	1.00	$60.96	0.88
2,971	3/4 GRC/PVC CLAMP BAK	20.00	$232.44	1.26
2,972	1 GRC/PVC CLAMP BAK	30.00	$454.54	2.26
3,000	1 GRC/PVC CLAMP	30.00	$289.57	7.91
60,040	Stanchion Installation	1.00	$311.18	1.50
60,041	Aluminium Back Board by section	1.00	$137.00	1.00
Cost Code: 020 - Wire/Cable			$10,772.65	285.19
4	16 TSP - SHIELDED CABLE BELDEN	230.00	$165.60	2.89
74	12 XHHW CU STRANDED	1,800.00	$274.86	13.56
75	10 XHHW CU STRANDED	7,500.00	$1,716.53	75.36
76	8 XHHW CU STRANDED	1,800.00	$596.14	22.61

Item #	Item Name	Quantity	Ext Price	Ext Labor
78	4 XHHW CU STRANDED	5,500.00	$4,012.63	96.71
82	1/0 XHHW CU STRANDED	100.00	$194.82	2.76
91	600 XHHW CU STRANDED	350.00	$3,538.57	21.10
4,082	10 GA TERMINATION	24.00	$26.40	5.43
4,083	8 GA TERMINATION	6.00	$6.60	1.88
4,085	4 GA TERMINATION	18.00	$22.50	7.91
4,089	1/0 TERMINATION	2.00	$3.00	1.51
4,098	600 MCM TERMINATION	18.00	$45.00	32.78
60,050	Wire Tags Tube Style	68.00	$170.00	0.68
Cost Code: 030 - Power Distribution			$5,995.00	88.38
7,704	4 SECTION MCC	1.00	$0.00	60.29
8,909	400 AMP XFER SWITCH	1.00	$0.00	20.10
60,052	Generator Recept 400 AMP	1.00	$3,998.00	6.00
60,053	400 amp plug	1.00	$1,997.00	2.00
Cost Code: 040 - Lighitng			$660.00	7.79
10,531	WALL PACK 50W	4.00	$0.00	7.79
60,051	Type 10 fixture	4.00	$660.00	0.00
Cost Code: 050 - Wiring Devices			$7.40	11.74
13,151	DPLX 20/3 GFCI	1.00	$7.40	0.44
13,214	RCPT 400A 4W-4P	1.00	$0.00	11.30
Cost Code: 080 - Grounding Systems			$142.33	2.83
187	3/0 BARE CU STRANDED	50.00	$142.33	2.83
Cost Code: 110 - Undergound			$2,760.05	236.23
3,188	1 PVC 40 (TRENCH)	3,100.00	$1,419.97	155.74
3,190	1 1/2 PVC 40 (TRENCH)	600.00	$445.42	32.03
3,191	2 PVC 40 (TRENCH)	480.00	$424.48	27.13
3,195	4 PVC 40 (TRENCH)	100.00	$242.12	6.91
3,217	1 PVC ELBOW	6.00	$25.05	2.64
3,219	1 1/2 PVC ELBOW	2.00	$11.45	1.26
3,224	4 PVC ELBOW	4.00	$182.54	7.54

[Items and ByProducts]

Item #	Item Name	Quantity	Ext Price	Ext Labor
3,461	1 PVC FEMALE ADPT	6.00	$3.30	1.36
3,463	1 1/2 PVC FEMALE ADPT	2.00	$1.75	0.63
3,468	4 PVC FEMALE ADPT	1.00	$3.97	1.00
[Items and ByProducts] Total:			**$25,926.62**	**735.97**

CITY OF BEAUMONT WASTE WATER TREATMENT PLANT
SALT MITIGATION UPGRADE PROJECT

CLARIFICATION 24

To (Construction Manager):	Stantec Attention: Charles Reynolds Phone: 702-497-8024 Email: Charles.w.reynolds@stantec.com
From (Engineer):	AQUA/SKM Engineering Attention: Dallin Stephens Phone: 801-683-3746 Email: dallin.stephens@aquaeng.com

Subject: EQ Basin Modifications	**Location: Civil and EQ Basin**

Reference Documents: Multiple Drawings (see attached table), Specification Sections 432313, 262816

CLARIFICATION

Note the following:

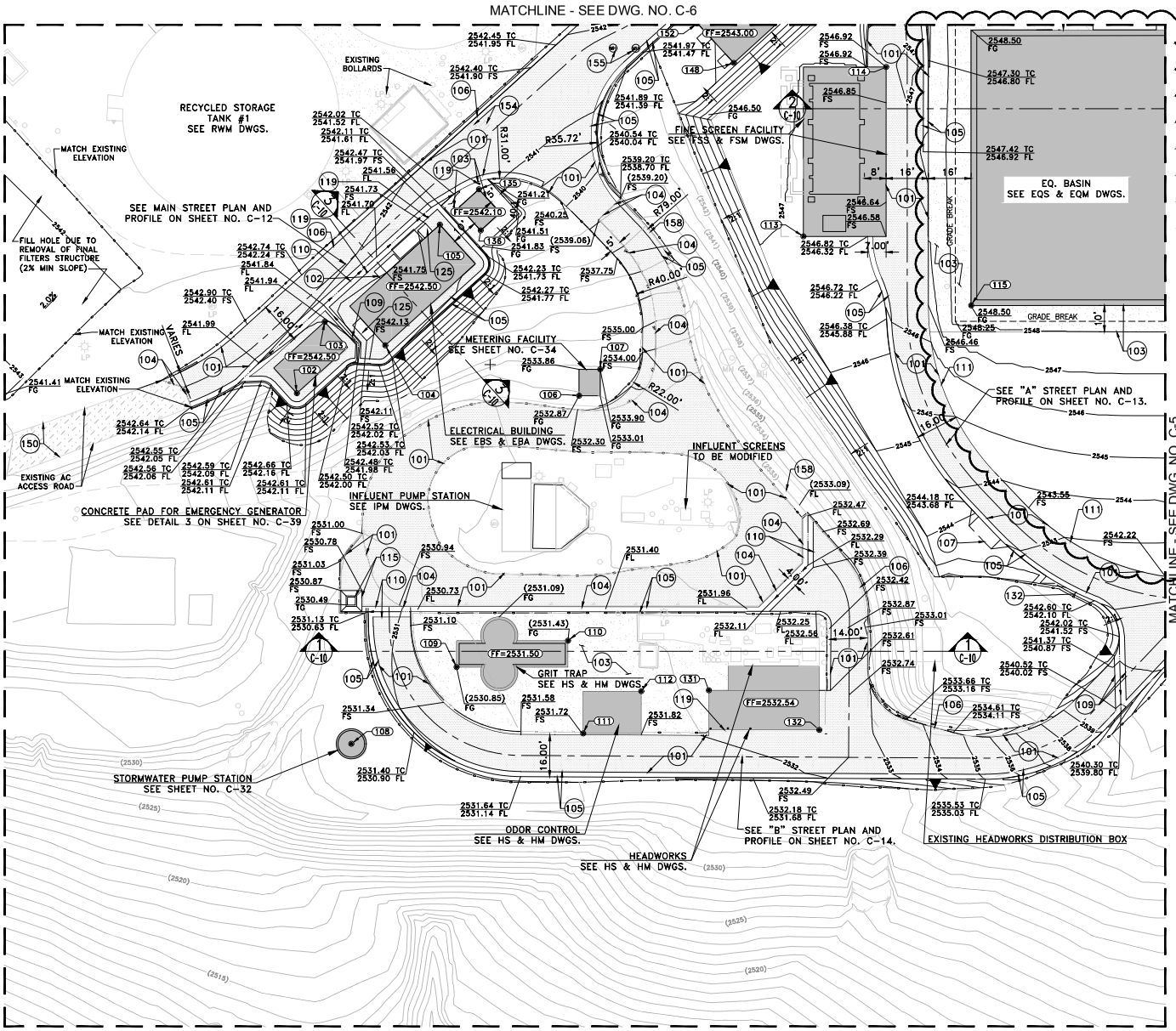
After discussion with the City, it has been determined to modify the discharge system from the Equalization Basin by deleting the valve vault (as detailed on C-34) and adding a pump station to the Equalization Basin that discharges directly to the Fine Screens structure. This change eliminates the possibility of flooding the Influent Pump Station in the event that the valve in the Valve Vault were to fail open. The attached drawings show the extent of the required changes, but in general, the changes are summarized as follows:

1. The EQ basin will be rotated such that the tipping buckets are located on the south end and the (formerly) south wall and interior wall will be raised to the same elevation as the remaining walls. The new EQ Pump Station will be located on the north end of the basin.
2. The site grading is to be modified to bring the grade to within 42" ± of the top of wall of the EQ basin on all sides. The grading to the north is also modified to promote better drainage.
3. The piping from the EQ basin to the valve vault, and from the valve vault to Manhole #5, as well as the vault itself are to be deleted. A new 16" line from the EQ Pump Station to the Fine Screens is to be installed (the same pipe number, #6, is to be reused for this pipeline).
4. The electrical feed for the new EQ Pump Station will originate in the electrical room of the Solids Handling Building. A manual transfer switch, generator receptacle and MCC-EQ have been added to the electrical design. Several site ductbanks are modified.
5. The attached drawings also show changes related to RFC 12 and RFIs 69 and 76, which have already been addressed but did not have updated drawings included.

A specification for the new EQ pumps (Section 432313) and manual transfer switches (Section 262816) is also included as part of this clarification.

Prepared By (Name): Dallin Stephens, AQUA Engineering	**Date**: 10/21/19
Distributed By:	**Date**:

Drawing	Modifications
C-4	Point #115 was added to the drawing and coordinate table; grading was updated
C-5	Grading by the eq. basin was updated.
C-6	Point #145 and #146 was updated on the coordinate table and drawing; grading was updated.
C-7	Added gravel swales; grading was updated.
C-20	Line 6 was updated; NPW piping was adjusted; valve vault was deleted
C-23	EQ pump Station added to the drawing
EQS-1	Basin was rotated; pump station pad added; wall heights adjusted.
EQS-3	Wall heights adjusted and wall reinforcing adjusted.
EQS-4	Wall heights adjusted
EQS-5	Grout elevations updated. Corner wall reinf detail and wall intersection detail added.
EQS-6	New sheet added.
EQS-7	New sheet added.
EQS-8	New sheet added.
EQM-1	Pump station and 16" pipe added. 20" pipe from influent pump station location updated; 16" drain pipe deleted
EQM-2	Grout dimension added. 24" pipe location updated; detail added for 20" influent pipe
EQM-3	New sheet added.
EQM-4	New sheet added.
EQM-5	New sheet added.
FSS-1	Updated 24" pipe to 30" pipe. Added 16" pipe.
FSS-2	Updated 24" pipe to 30" pipe. Added 16" pipe.
FSS-5	Updated grating support dimensions.
FSM-1	Updated manhole and drain lines locations. Added 16" line from eq basin.
FSM-3	Added pipe numbers to the Pipe Schedule
FSM-4	New sheet added showing 16" pipe from EQ basin
SCH-19	Schedule updated with additional valves
SCH-24	Schedule updated with additional meter
SCH-26	Schedule updated with additional pumps
PI-04	Removed valve vault and associated equipment removed. Routed Equalization Basin communications through RIO-SH, instead of RIO-HW
PI-04A	Added sheet to show EQ Basin Pumps
PI-05	Added piping from Equalization Basin to Fine Screens
I-14	Removed inputs/outputs from valve vault. Relocated EQ Basin level alarms. Feedback added for EQ Basin Flow and Odor Control instrumentation.
I-18	Added inputs/outputs for Equalization Basin instrumentation.
SE-01	Renamed and relocated handholes HH-106 and HH-106A to HH-303 and HH-303A.
SE-02	Removed HH-106 and HH-106A, ductbanks DB-101.1 and DB-50, and valve vault. Relocated ductbanks DB-104 and DB-104.1 and handhole HH-104. Added handhole HH-104A and ductbanks DB-104.4 and DB-104.5.
SE-04	Rotated Equalization Basin. Added EQ Basin Pump Station, handholes HH-303, HH-303A, and ductbanks DB-303.3, and DB-303.2. Removed DB-106.
LE-02	Removed handhole HH-50A. Relocated handhole HH-104. Added handhole HH-104A.
LE-03	Relocated handhole HH-104. Added handhole HH-104A.
LE-06	Removed valve vault and handholes HH-106 and HH-106A. Rotated Equalization Basin. Added EQ Basin Pump Station and handholes HH-303 and HH-303A.
LE-20	Updated MCC-SH layout. Added MCC-EQ, Generator Receptacle Enclosure and MTS-SH.
E-03	Removed valve FV-1533.
E-10	Relocated LP-SH from SWBD-SH. Added connection to MCC-EQ from SWBD-SH.
E-11	Updated MCC-SH layout. Added MCC-EQ. Relocated LP-SH to MCC-EQ.
E-12	Removed valve FV-1533. Updated loads for SWGR-HW and DP-HW1.
E-13	Removed LIT-1501 and LIT-1502. Updated loads at LP-HW1, LP-HW2 and MVSWGR.
E-16	Added loads for MCC-EQ. Added EQ Basin Pump Station equipment to LP-SH load. Removed load for solids building lighting from SWBD-SH.
E-17	Updated drawing reference for level sensors and switches at Equalization Basin. Removed valve vault instrumentation. Added flow meter for equalization basin pumps.
E-19	Added filter to VFD Control Schematic for EQ Basin Pumps P-1531, P-1532 and P-1533
CE-01	Conduit P0301 rerouted through MCC-EQ. Added conduits P0304 and P1171. Updated ductbank references for conduits P300A, P1101, P1102, P1111, P1112A, P1112B, P1113, P1122A, P1151, P1152, P1161, P1172A, P1172B, P1181, P1182A, P1202, P1212, P1231A, P1241 and P1251.
CE-02	Conduits P1501, P1502, P1511 and P1514 routed through LP-SH, instead of LP-HW. Updated ductbank reference for conduit P1611. Removed conduit P1533 to FV-1533. Added conduits P1531, P1532, P1533 and P1541 to EQ basin pumps and flow meter.
CE-04	Updated handhole and ductbank routing for conduits C1112, C1112A, C1122, C1122A, C1172, C1182, C1202, C1212, C1231, C1241 and C1251.
CE-05	Updated conduit C1503, C1504, C1511 and C1514 to route through RIO-SH. Removed conduit C1534. Added conduit C1531. Updated ductbank routing for conduit C1611.
CE-07	Removed conduit S1533. Updated conduits S1501 and S1502 to route through RIO-SH. Added conduits S1541 and S1541A. Updated handhole and ductbank routing for conduit S1114, S1124 and S1161.
CE-09	Updated ductbank routing for conduit F1161.
CE-10	Removed conduit SP1533. Updated conduits SP1501 and SP1503 to route through RIO-SH. Updated handhole and ductbank routing for conduits SP1101, SP1112, SP1114, SP1161, SP1511 and SP1514. Added conduits SP0303 and SP0304.
CE-11	Removed conduit S1533+. Updated combined conduit P1501+ to include P1541 and route through LP-SH. Updated combined conduit C1503+ to route through RIO-SH. Updated combined conduit S1501+ to include S1541 and route through RIO-SH. Updated ductbank routing for conduit P1101+.
CE-13	Removed HH-50A and rerouted conduits to HH-104 and HH-104A. Updated routing to handholes HH-104 and HH-104A.
CE-14	Updated routing for handholes HH-104 and HH-104A. Removed HH-50 routing.
CE-18	Removed EQ return valve vault conduits and equipment. Removed handholes HH-106 and HH-106A. Relocated EQ basin level sensors and level switches.
CE-26	Added MCC-EQ. Updated HH-303 and added HH-303A to show conduit routing for equipment in EQ Basin Pump Station and relocated level sensors and switches.
CE-28	Removed ductbanks DB-101.1 and DB-50.
CE-29	Removed ductbank DB-106. Updated ductbanks DB-104, DB-104.1, DB-104.2 and DB-104.3. Added ductbanks DB-104.4 and DB-104.5.
CE-30	Updated DB-303.1 to add new conduits. Added DB-303.2 and DB-303.3.



CONSTRUCTION NOTES

(101) CONSTRUCT 4" AC PAVEMENT OVER 6" AB-CLASS II BASE AND DETAIL 124 ON SHEET NO. CD-3.

(102) CONSTRUCT 8" CONCRETE OVER 6" AB-CLASS II BASE AND DETAIL 122 ON SHEET NO. CD-3.

(103) INSTALL 3" OF 3/4" CRUSHED ROCK OVER COMPACTED NATIVE

(104) SAWCUT EXISTING AC PAVEMENT AND JOIN PER DETAIL 131 ON SHEET NO. CD-4.

(105) CONSTRUCT 6" CURB & GUTTER PER COUNTY OF RIVERSIDE STD. DWG. 200

(106) CONSTRUCT 6" "D" CURB PER COUNTY OF RIVERSIDE STD. DWG. 204

(107) CONSTRUCT DRIVEWAY APPROACH PER COUNTY OF RIVERSIDE STD. DWG. NO. 207

(109) CONSTRUCT 2' CROSS GUTTER PER DETAIL 129 ON SHEET NO. CD-4.

(110) CONSTRUCT 4' CROSS GUTTER PER DETAIL 128 ON SHEET NO. CD-4.

(111) CONSTRUCT REDWOOD HEADER PER DETAIL 125 ON SHEET NO. CD-3.

(112) CONSTRUCT RETAINING WALL TYPE 1 (CASE 1) PER CALTRANS STANDARD B3-1A

(115) INSTALL CATCH BASIN PER DETAIL 112 AND 113 ON SHEET NO. CD-2.

(119) CONSTRUCT STANDARD PIPE BOLLARD PER DETAIL 120 ON SHEET NO. CD-3.

(125) CONSTRUCT CONCRETE LANDING PER DETAIL 122 ON SHEET NO. CD-3.

(150) EXISTING AC PAVEMENT

(154) EXISTING UTILITY VAULT, PROTECT IN PLACE, UNLESS A TRAFFIC RATED CONVERSION IS NEEDED, TO BE ASSESSED ON SITE.

(155) EXISTING MANHOLE, PROTECT IN PLACE, ADJUST TO GRADE AS REQUIRED.

(158) EXISTING CURB

COORDINATE TABLE

POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
102	2542.50	2280627.32	6336473.18	FF S COR GENERATOR
103	2542.50	2280654.42	6336483.72	FF W COR GENERATOR
104	2542.50	2280645.50	6336506.64	FF S COR ELECTRICAL BLDG
105	2542.50	2280691.20	6336527.30	FF N COR ELECTRICAL BLDG
106	2534.00	2280626.44	6336580.01	FF SW COR METERING FACILITY
107	2534.00	2280636.44	6336588.01	FF NE COR METERING FACILITY
108	2531.00	2280494.51	6336493.75	TOP CENTER STORMWATER PUMP STATION
109	2531.50	2280523.61	6336533.61	FF SW COR GRIT TRAP
110	2531.50	2280535.61	6336575.86	FF NE COR GRIT TRAP
111	2532.25	2280498.48	6336581.58	FF SW COR ODOR CONTROL
112	2531.90	2280514.48	6336603.58	FF NE COR ODOR CONTROL
113	2548.58	2280686.75	6336664.99	FS SW COR FINE SCREEN
114	2548.83	2280750.61	6336666.28	FS NE COR FINE SCREEN
115	2552.00	2280660.61	6336728.48	TOW SW COR EQ BASIN
131	2532.54	2280914.84	6336629.15	FF ODOR CONTROL
132	2532.54	2280499.84	6336670.98	FF SE COR HEADWORKS
135	2542.10	2280704.82	6336542.12	FF NE COR TRANSFORMER PAD
136	2542.10	2280689.03	6336542.77	FF SW COR TRANSFORMER PAD
148	2543.02	2280752.45	6336638.83	FF SW COR CHEMICAL STORAGE
152	2543.02	2280767.50	6336624.84	FF NW COR CHEMICAL STORAGE

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	9/5/18	SLB	ASB	BPK
REVISIONS				
1	7/26/19	ASB	ASB	SLB
2	10/11/19	ASB	SLB	

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE

CIVIL

AREA 8 GRADING AND PAVING PLAN

AQUA ENGINEERING

533 W. 2600 S., SUITE 275, BOUNTIFUL, UT 84010
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RIVERSIDE, CA. 92506
(951) 686-1070
FAX (951) 788-1256

AREA 7 | AREA 8
AREA 5 | AREA 6
AREA 1 | AREA 2 | AREA 3

1" = 20'
10 0 20

0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
C-4

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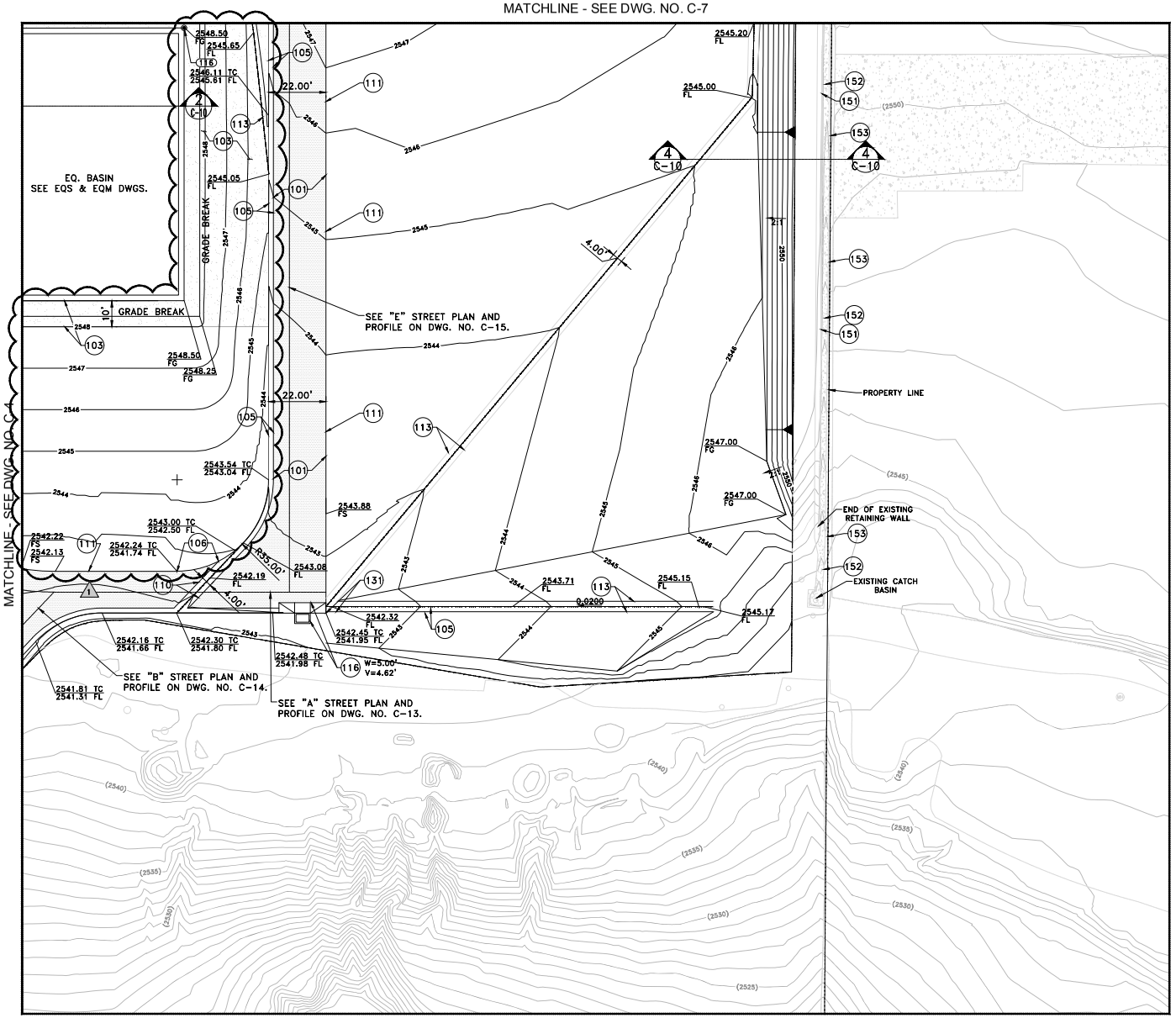


CONSTRUCTION NOTES

(101) CONSTRUCT 4" AC PAVEMENT OVER 6" AB-CLASS II BASE AND DETAIL 124 ON SHEET NO. CD-3.

(103) INSTALL 3" OF 3/4" CRUSHED ROCK OVER COMPACTED NATIVE

(105) CONSTRUCT 6" CURB & GUTTER PER COUNTY OF RIVERSIDE STD. DWG. 200

(106) CONSTRUCT 6" "D" CURB PER COUNTY OF RIVERSIDE STD. DWG. 204

(110) CONSTRUCT 4' CROSS GUTTER PER DETAIL 128 ON SHEET NO. CD-4.

(111) CONSTRUCT REDWOOD HEADER PER DETAIL 125 ON SHEET NO. CD-3.

(113) INSTALL GRAVEL SWALE PER DETAIL 130 ON SHEET NO. CD-4.

(116) CONSTRUCT CATCH BASIN NO. 1 PER RCFC&WCD STD. DWG. NO. CB100 AND LOCAL DEPRESSION PER LD201 CASE "B".

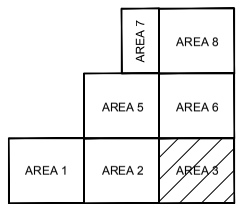
(131) CONSTRUCT SWALE TO CURB TRANSITION PER DETAIL 134 ON SHEET NO. CD-4.

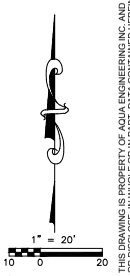
(151) EXISTING RETAINING WALL

(152) EXISTING V-DITCH

(153) EXISTING FENCE

COORDINATE TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
116	2552.00	2280785.11	6338864.64	TOW NE COR EQ BASIN





0 1/2 1

DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	9/5/18	SLB	ASB	BPK
REVISIONS				
1	10/11/19	ASB	ASB	SLB

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
CIVIL
AREA 3 GRADING AND PAVING PLAN

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FAX (951) 788-1256

SHEET
C-5

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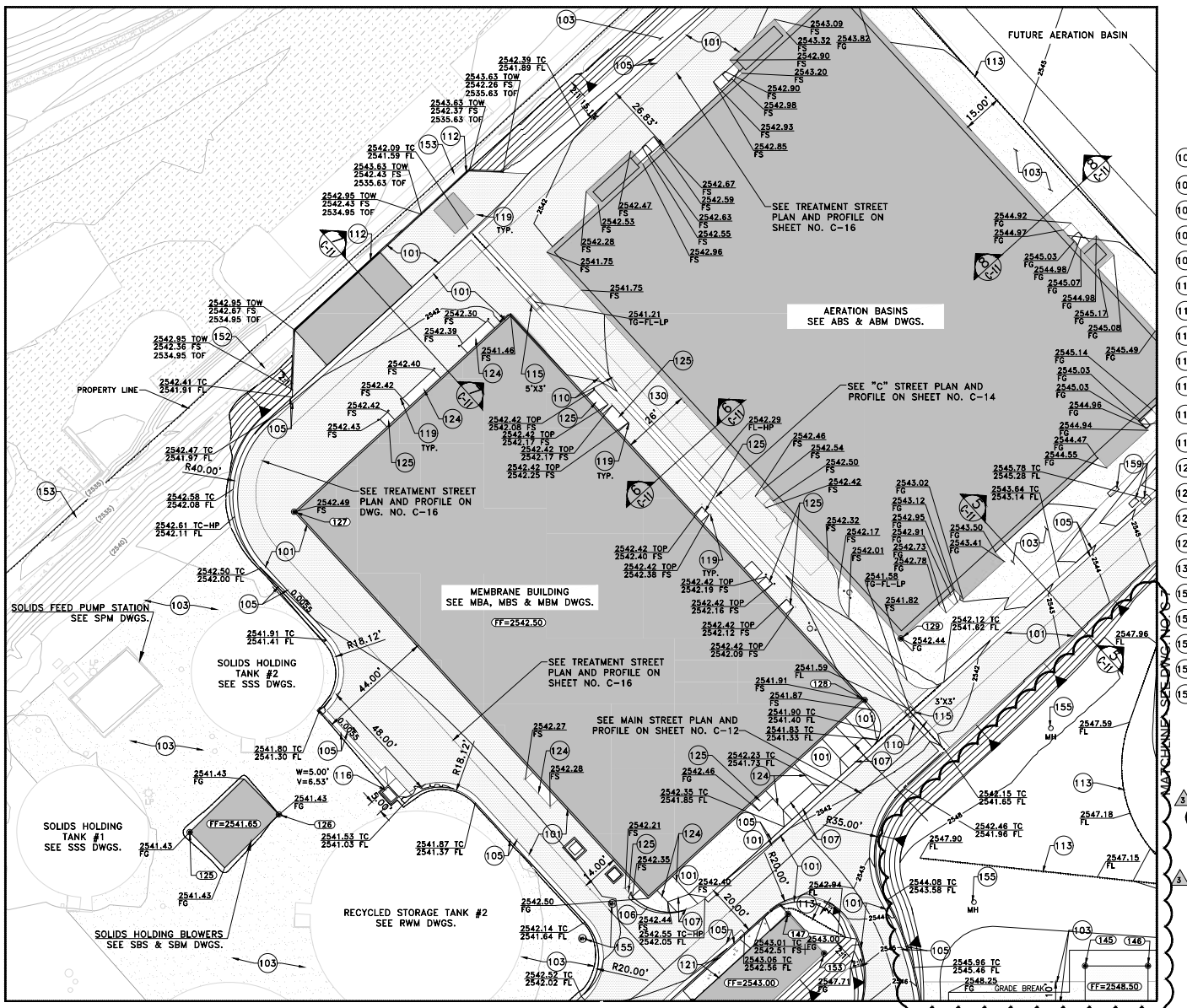

CONSTRUCTION NOTES

101 CONSTRUCT 4" AC PAVEMENT OVER 6" AB-CLASS II BASE AND DETAIL 124 ON SHEET NO. CD-3.

103 INSTALL 3" OF 3/4" CRUSHED ROCK OVER COMPACTED NATIVE

105 CONSTRUCT 6" CURB & GUTTER PER COUNTY OF RIVERSIDE STD. DWG. 200

106 CONSTRUCT 6" "D" CURB PER COUNTY OF RIVERSIDE STD. DWG. 204

107 CONSTRUCT DRIVEWAY APPROACH PER COUNTY OF RIVERSIDE STD. DWG. NO. 207

110 CONSTRUCT 4' CROSS GUTTER PER DETAIL 128 ON SHEET NO. CD-4.

111 CONSTRUCT REDWOOD HEADER PER DETAIL 125 ON SHEET NO. CD-3.

112 CONSTRUCT RETAINING WALL TYPE 1 (CASE 1) PER CALTRANS STANDARD B3-1A

113 INSTALL GRAVEL SWALE PER DETAIL 130 ON SHEET NO. CD-4.

115 INSTALL CATCH BASIN PER DETAIL 112 AND 113 ON SHEET NO. CD-2.

116 CONSTRUCT CATCH BASIN NO. 1 PER RCFC&WCD STD. DWG. NO. CB100 AND LOCAL DEPRESSION PER LD201 CASE "B".

119 CONSTRUCT STANDARD PIPE BOLLARD PER DETAIL 120 ON SHEET NO. CD-3.

121 CONSTRUCT 5' EXTENDED SIDEWALK PER DETAIL 127 ON SHEET NO. CD-3.

122 CONSTRUCT SIDEWALK PER DETAIL 126 ON SHEET. NO. CD-3.

124 CONSTRUCT CONCRETE APPROACH PER DETAIL PER DETAIL 121 ON SHEET NO. CD-3.

125 CONSTRUCT CONCRETE LANDING PER DETAIL 122 ON SHEET NO. CD-3.

130 INSTALL HANDICAPPED STALL PER DETAIL 132 ON SHEET NO. CD-4.

150 EXISTING AC PAVEMENT

152 EXISTING V-DITCH

153 EXISTING FENCE

155 EXISTING MANHOLE, PROTECT IN PLACE, ADJUST TO GRADE AS REQUIRED.

159 EXISTING UTILITY VAULT, TO BE RELOCATED.

COORDINATE TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
125	2541.65	2280832.06	6336452.96	FF W COR SOLIDS HOLDING BLOWERS
126	2541.65	2280858.79	6336466.98	FF E COR SOLIDS HOLDING BLOWERS
127	2542.50	2280954.28	6336472.83	FF NW COR MEMBRANE BUILDING
128	2542.50	2280882.49	6336690.52	FF SE COR MEMBRANE BUILDING
129	2547.25	2280805.95	6336704.38	TOW S COR AERATION BASIN
145	2548.50	2280781.00	6336774.62	FF NW COR EQ BASIN PUMP STATION
146	2548.50	2280781.03	6336788.62	FF NE COR EQ BASIN PUMP STATION
147	2543.02	2280800.89	6336661.25	FF NE COR CHEMICAL STORAGE
153	2543.02	2280785.83	6336675.07	FF SE COR CHEMICAL STORAGE

AREA 7 | AREA 8
AREA 5 | AREA 6
AREA 1 | AREA 2 | AREA 3

1" = 20'
10 0 20

DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE
0 1/2 1

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	9/5/18	SLB	ASB	BPK
REVISIONS				
1	2/11/19	ASB	ASB	SLB
2	7/25/19	ASB	ASB	SLB
3	10/11/19	ASB	ASB	SLB

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
CIVIL
AREA 5 GRADING AND PAVING PLAN

AQUA ENGINEERING
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ENGINEERING CONSULTANTS

SHEET
C-6

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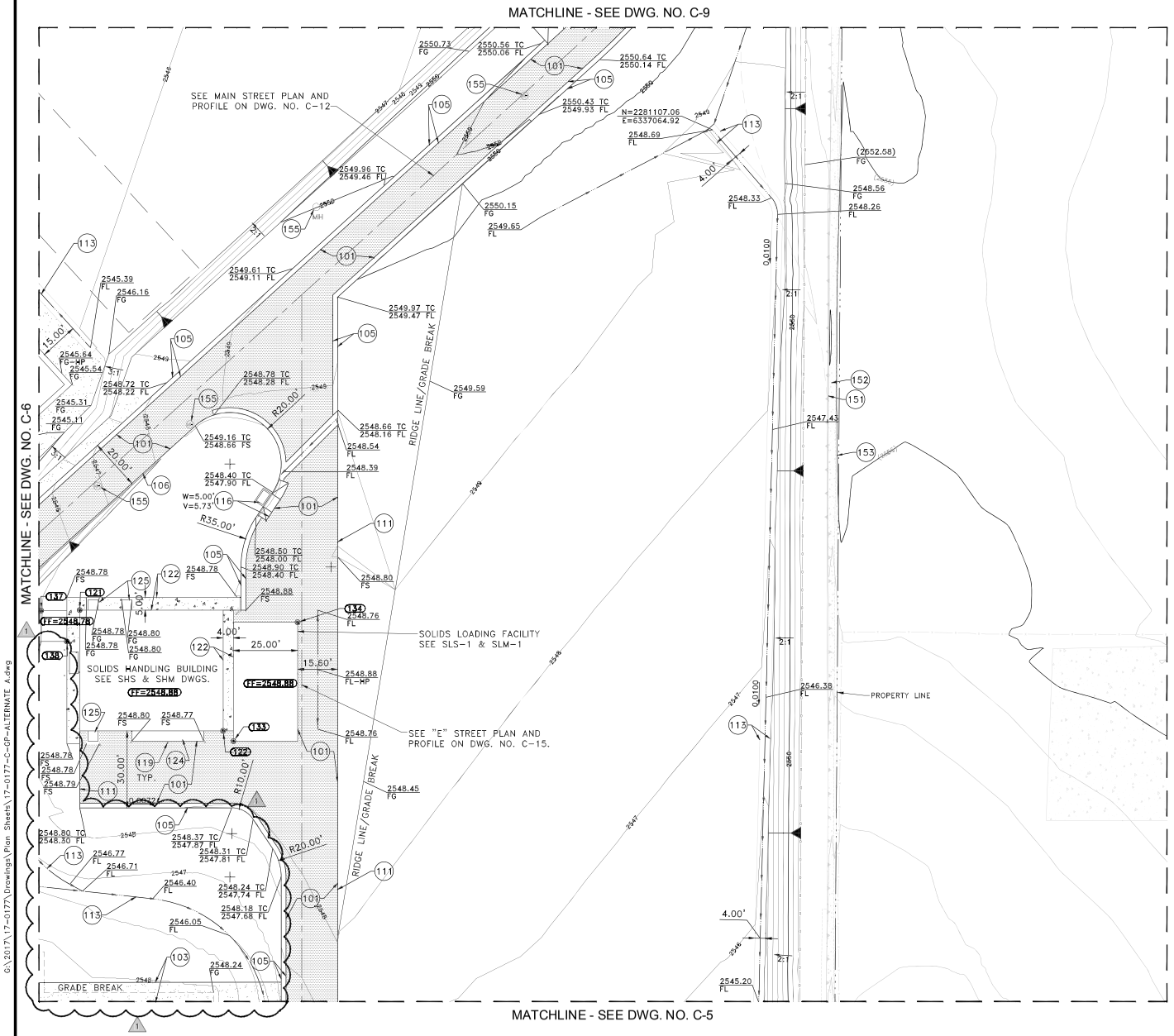

CONSTRUCTION NOTES

(101) CONSTRUCT 4" AC PAVEMENT OVER 6" AB-CLASS II BASE AND DETAIL 124 ON SHEET NO. CD-3.

(103) INSTALL 3" OF 3/4" CRUSHED ROCK OVER COMPACTED NATIVE

(105) CONSTRUCT 6" CURB & GUTTER PER COUNTY OF RIVERSIDE STD. DWG. 200

(106) CONSTRUCT 6" "D" CURB PER COUNTY OF RIVERSIDE STD. DWG. 204

(110) CONSTRUCT 4' CROSS GUTTER PER DETAIL 128 ON SHEET NO. CD-4.

(111) CONSTRUCT REDWOOD HEADER PER DETAIL 125 ON SHEET NO. CD-3.

(113) INSTALL GRAVEL SWALE PER DETAIL 130 ON SHEET NO. CD-4.

(116) CONSTRUCT CATCH BASIN NO. 1 PER RCFC&WCD STD. DWG. NO. CB100 AND LOCAL DEPRESSION PER LD201 CASE "B".

(122) CONSTRUCT SIDEWALK PER DETAIL 126 ON SHEET. NO. CD-3.

(124) CONSTRUCT CONCRETE APPROACH PER DETAIL PER DETAIL 121 ON SHEET NO. CD-3.

(151) EXISTING RETAINING WALL

(152) EXISTING V-DITCH

(153) EXISTING FENCE

(155) EXISTING MANHOLE, PROTECT IN PLACE, ADJUST TO GRADE AS REQUIRED.

COORDINATE TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
121	2548.88	2280920.01	6336818.51	FF NW COR SOLIDS HANDLING BUILDING
122	2548.88	2280873.01	6336874.35	FF SE COR SOLIDS HANDLING BUILDING
133	2548.88	2280868.93	6336878.35	FF SW COR SOLIDS LOADING FACILITY
134	2548.88	2280915.26	6336903.35	FF NW COR SOLIDS LOADING FACILITY
137	2548.78	2280919.79	6336803.51	TOP NW COR TRANSFORMER VAULT
138	2548.78	2280907.79	6336813.51	TOP SE COR TRANSFORMER VAULT

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
C	9/5/18	SLB	ASB	BPK
REVISIONS				
1	10/11/19	ASB	ASB	SLB

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
CIVIL
AREA 6 GRADING AND PAVING PLAN

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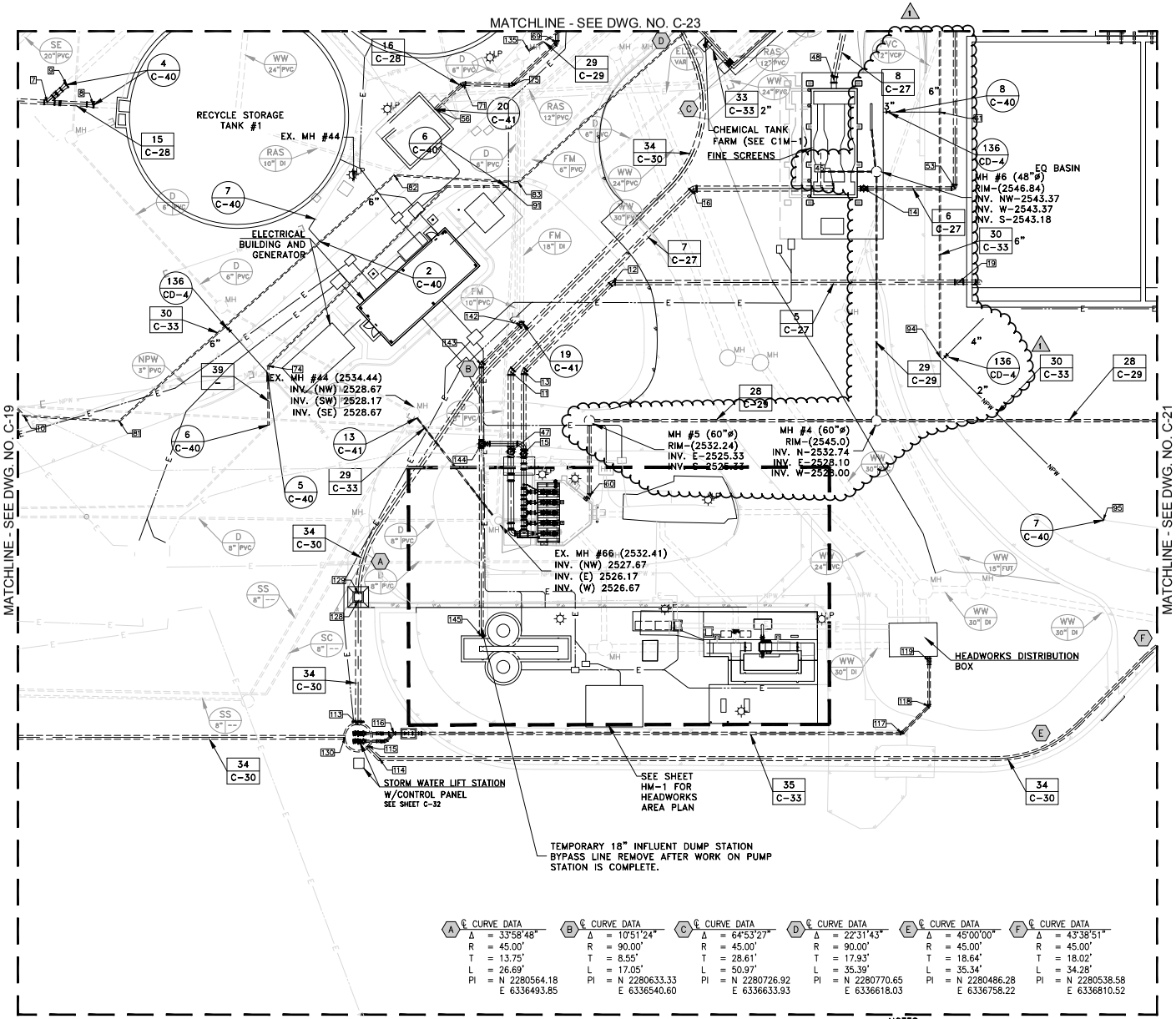
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
C-7



COORDINATE TABLE					
Point No.	N	E	Inv. Elev.	Fitting	Size
7	2280739.48	6336373.83	2536.50	WYE	18"
8	2280738.58	6336391.48	2536.50	REDUCER	18"X24"
9	2280746.34	6336381.43	2536.50	REDUCER	18"X24"
10	2280618.43	6336364.96	2538.50	45° BEND	6"
11	2280635.52	6336552.67	2527.46	45° BEND	24"
12	2280669.89	6336591.86	2529.83	45° BEND	20"
13	2280615.61	6336557.67	2527.33	45° BEND	20"
14	2280706.25	6336688.78	2540.25	–	16"
15	2280603.88	6336557.67	2527.17	90° BEND	20"
16	2280706.17	6336623.12	2534.73	45° BEND	24"
19	2280670.09	6336725.48	2540.67	90° BEND	20"
41	2280735.74	6336718.18	2544.00	TEE	6"X3"
45	2280706.25	6336677.28	2541.00	90° BEND	24"
47	2280604.64	6336552.67	2527.17	90° BEND	24"
48	2280748.25	6336677.28	2540.92	135° BEND	24"
53	2280706.25	6336724.03	2540.25	90° BEND	16"
56	2280736.77	6336653.64	2535.00	90° BEND	16"
60	2280587.61	6336583.02	2524.33	45° BEND	16"
69	2280762.34	6336570.49	2535.00	45° BEND	16"
71	2280746.69	6336534.33	2535.00	45° BEND	16"
74	2280637.77	6336459.16	2530.31	45° BEND	6"
75	2280746.00	6336552.88	2535.00	45° BEND	16"
81	2280616.51	6336401.63	2538.50	45° BEND	6"
82	2280711.33	6336507.84	2538.50	45° BEND	6"
83	2280708.63	6336555.55	2538.50	45° BEND	6"
91	2280707.00	6336550.96	2531.00	45° BEND	6"
94	2280641.34	6336718.18	2544.00	45° BEND	6"
95	2280578.31	6336781.21	2540.00	COUPLING	2"
113	2280499.51	6336493.75	2522.65	–	24"
114	2280486.28	6336501.99	2523.47	45° BEND	18"
115	2280490.98	6336497.29	2523.41	–	18"
116	2280496.01	6336507.51	2526.75	WYE	10"
117	2280496.01	6336703.47	2529.75	45° BEND	10"
118	2280506.56	6336714.02	2532.75	45° BEND	10"
119	2280523.86	6336714.02	2535.00	90° BEND	10"
128	2280547.11	6336493.82	2522.89	–	24"
129	2280550.11	6336493.83	2522.99	–	24"
130	2280494.51	6336488.75	2527.00	–	18"
135	2280759.46	6336559.58	2529.14	–	6"
142	2280653.78	6336556.86	2531.50	45° BEND	18"
143	2280638.21	6336541.29	2530.50	45° BEND	18"
144	2280607.74	6336541.29	2527.00	TEE	18"
145	2280533.61	6336541.28	2527.50	–	18"

A	℄ CURVE DATA
	Δ = 33°58'48"
	R = 45.00'
	T = 13.75'
	L = 26.69'
	PI = N 2280564.18
	E 6336493.85

B	℄ CURVE DATA
	Δ = 10°51'24"
	R = 90.00'
	T = 8.55'
	L = 17.05'
	PI = N 2280633.33
	E 6336540.60

C	℄ CURVE DATA
	Δ = 64°53'27"
	R = 45.00'
	T = 28.61'
	L = 50.97'
	PI = N 2280726.92
	E 6336633.93

D	℄ CURVE DATA
	Δ = 22°31'43"
	R = 90.00'
	T = 17.93'
	L = 35.39'
	PI = N 2280770.65
	E 6336618.03

E	℄ CURVE DATA
	Δ = 45°00'00"
	R = 45.00'
	T = 18.64'
	L = 35.34'
	PI = N 2280486.28
	E 6336758.22

F	℄ CURVE DATA
	Δ = 43°38'51"
	R = 45.00'
	T = 18.02'
	L = 34.28'
	PI = N 2280538.58
	E 6336810.52

NOTES:
1. SEE SHEET C-33 FOR YARD PIPING AND MANHOLE SCHEDULES.
2. CONTRACTOR TO FIELD VERIFY CROSSINGS AND CONNECTION POINTS.

AREA 1 | AREA 2 | AREA 3 | AREA 4 | AREA 5 | AREA 6 | AREA 7 | AREA 8

1" = 20'

DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	9/5/18	SLB	SLB	BPK
REVISIONS				
1	10/11/19	SLB	SLB	BPK

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
CIVIL
AREA 2 YARD PIPING PLAN

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FAX (951) 788-1256

SHEET SLB
C-20

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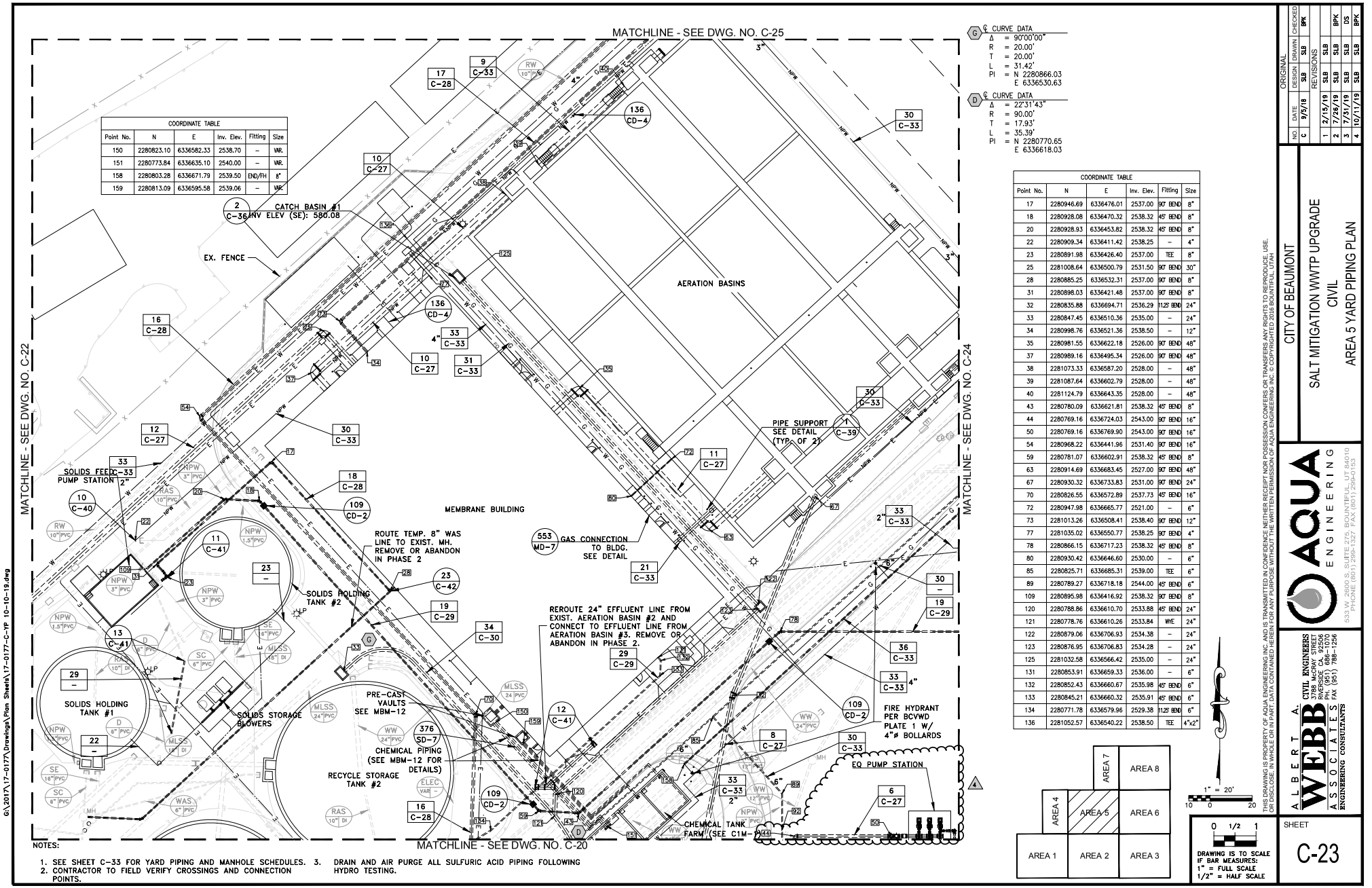

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Δ = 90°00'00"
R = 20.00'
T = 20.00'
L = 31.42'
PI = N 2280866.03
E 6336530.63

℄ CURVE DATA
Δ = 22°31'43"
R = 90.00'
T = 17.93'
L = 35.39'
PI = N 2280770.65
E 6336618.03

COORDINATE TABLE					
Point No.	N	E	Inv. Elev.	Fitting	Size
150	2280823.10	6336582.33	2538.70	–	WR.
151	2280773.84	6336635.10	2540.00	–	WR.
158	2280803.28	6336671.79	2539.50	END/FH	8"
159	2280813.09	6336595.58	2539.06	–	WR.

COORDINATE TABLE					
Point No.	N	E	Inv. Elev.	Fitting	Size
17	2280946.69	6336476.01	2537.00	90° BEND	8"
18	2280928.08	6336470.32	2538.32	45° BEND	8"
20	2280928.93	6336453.82	2538.32	45° BEND	8"
22	2280909.34	6336411.42	2538.25	–	4"
23	2280891.98	6336426.40	2537.00	TEE	8"
25	2281008.64	6336500.79	2531.50	90° BEND	30"
28	2280885.25	6336532.31	2537.00	90° BEND	8"
31	2280898.03	6336421.48	2537.00	90° BEND	8"
32	2280835.88	6336694.71	2536.29	11.25° BEND	24"
33	2280847.45	6336510.36	2535.00	–	24"
34	2280998.76	6336521.36	2538.50	–	12"
35	2280981.55	6336622.18	2526.00	90° BEND	48"
37	2280989.16	6336495.34	2526.00	90° BEND	48"
38	2281073.33	6336587.20	2528.00	–	48"
39	2281087.64	6336602.79	2528.00	–	48"
40	2281124.79	6336643.35	2528.00	–	48"
43	2280780.09	6336621.81	2538.32	45° BEND	8"
44	2280769.16	6336724.03	2543.00	90° BEND	16"
50	2280769.16	6336769.90	2543.00	90° BEND	16"
54	2280968.22	6336441.96	2531.40	90° BEND	16"
59	2280781.07	6336602.91	2538.32	45° BEND	8"
63	2280914.69	6336683.45	2527.00	90° BEND	48"
67	2280930.32	6336733.83	2531.00	90° BEND	24"
70	2280826.55	6336572.89	2537.73	45° BEND	16"
72	2280947.98	6336665.77	2521.00	–	6"
73	2281013.26	6336508.41	2538.40	90° BEND	12"
77	2281035.02	6336550.77	2538.25	90° BEND	4"
78	2280866.15	6336717.23	2538.32	45° BEND	8"
80	2280930.42	6336646.60	2530.00	–	6"
85	2280825.71	6336685.31	2539.00	TEE	6"
89	2280789.27	6336718.18	2544.00	45° BEND	6"
109	2280895.98	6336416.92	2538.32	90° BEND	8"
120	2280788.86	6336610.70	2533.88	45° BEND	24"
121	2280778.76	6336610.26	2533.84	WYE	24"
122	2280879.06	6336706.93	2534.38	–	24"
123	2280876.95	6336706.83	2534.28	–	24"
125	2281032.58	6336566.42	2535.00	–	24"
131	2280853.91	6336659.33	2536.00	–	6"
132	2280852.43	6336660.67	2535.98	45° BEND	6"
133	2280845.21	6336660.32	2535.91	45° BEND	6"
134	2280771.78	6336579.96	2529.38	11.25° BEND	6"
136	2281052.57	6336540.22	2538.50	TEE	4"x2"

NOTES:
1. SEE SHEET C-33 FOR YARD PIPING AND MANHOLE SCHEDULES.
2. CONTRACTOR TO FIELD VERIFY CROSSINGS AND CONNECTION POINTS.
3. DRAIN AND AIR PURGE ALL SULFURIC ACID PIPING FOLLOWING HYDRO TESTING.

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	9/5/18	SLB	SLB	BPK
REVISIONS				
1	2/15/19	SLB	SLB	BPK
2	7/26/19	SLB	SLB	BPK
3	7/31/19	SLB	SLB	DS
4	10/11/19	SLB	SLB	BPK

CITY OF BEAUMONT
SALT MITIGATION WWTP UPGRADE
CIVIL
AREA 5 YARD PIPING PLAN

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RIVERSIDE, CA. 92506
(951) 686-1070
FAX (951) 788-1256
ENGINEERING CONSULTANTS

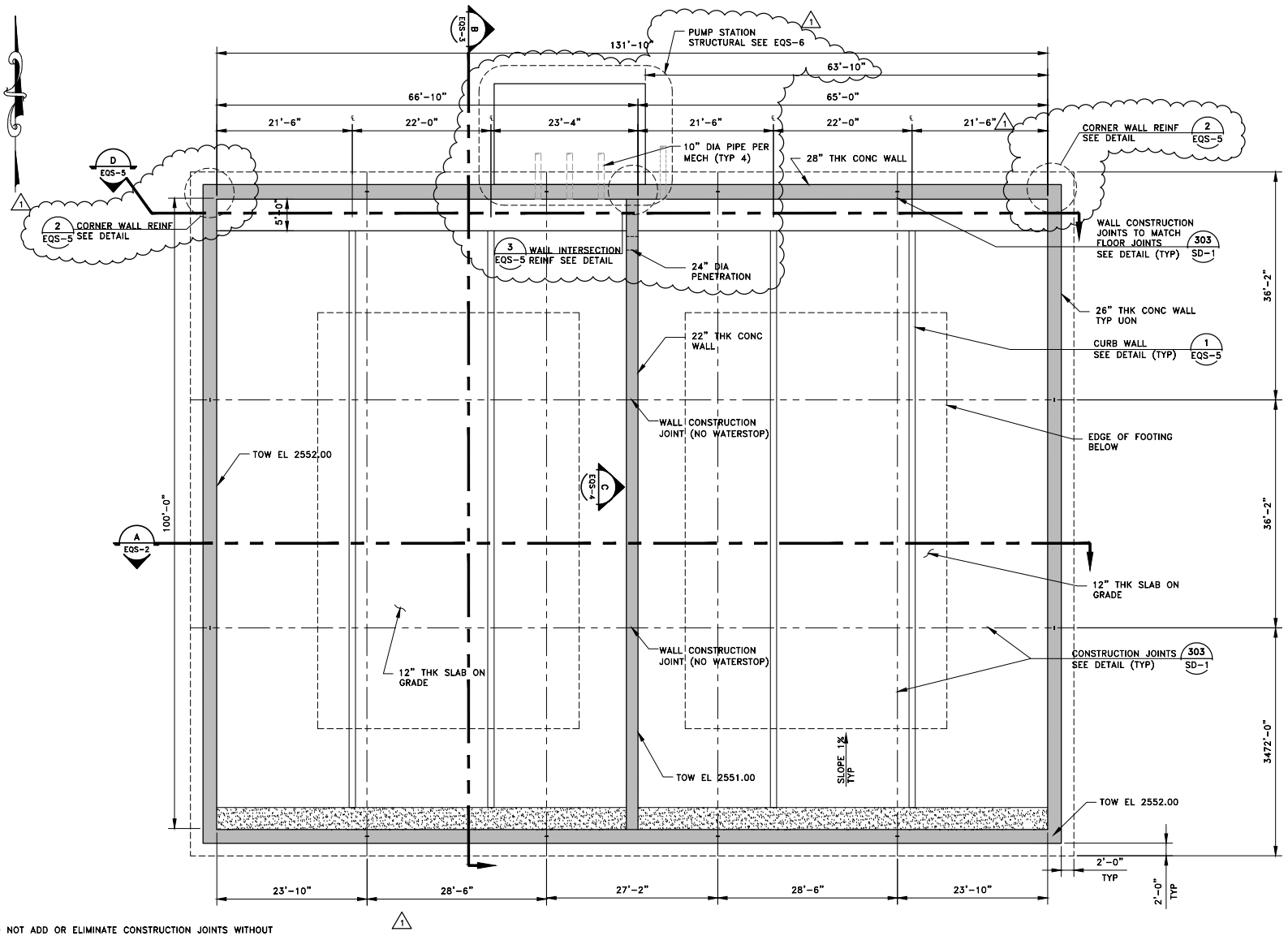
AREA 1 | AREA 2 | AREA 3
AREA 4 | AREA 5 | AREA 6
AREA 7 | AREA 8

1" = 20'
10 0 20

DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
C-23

G:\2017\17-0177\Drawings\Plan Sheets\17-0177-C-YP 10-10-19.dwg



NOTES:

1. DO NOT ADD OR ELIMINATE CONSTRUCTION JOINTS WITHOUT APPROVAL OF ENGINEER.
2. PIPE PENETRATIONS SMALLER THAN 4" ARE NOT SHOWN. REFER TO MECHANICAL DRAWINGS FOR ALL PENETRATIONS.
3. REFER TO SECTION 312000 OF THE TECHNICAL SPECIFICATIONS FOR DETAILS REGARDING SUB-GRADE PREPARATION AND REQUIREMENTS.
4. PROVIDE ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS AS SHOWN IN DETAIL 305 ON SHEET SD-1 AND DETAIL 312 ON SHEET SD-2.

STRUCTURAL PLAN

SCALE: 1/8 = 1'-0"

0 8 16
Scale in Feet

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	CN	SML	EN
REVISIONS				
1	10/11/19	CN	SML	EN

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
STRUCTURAL PLAN

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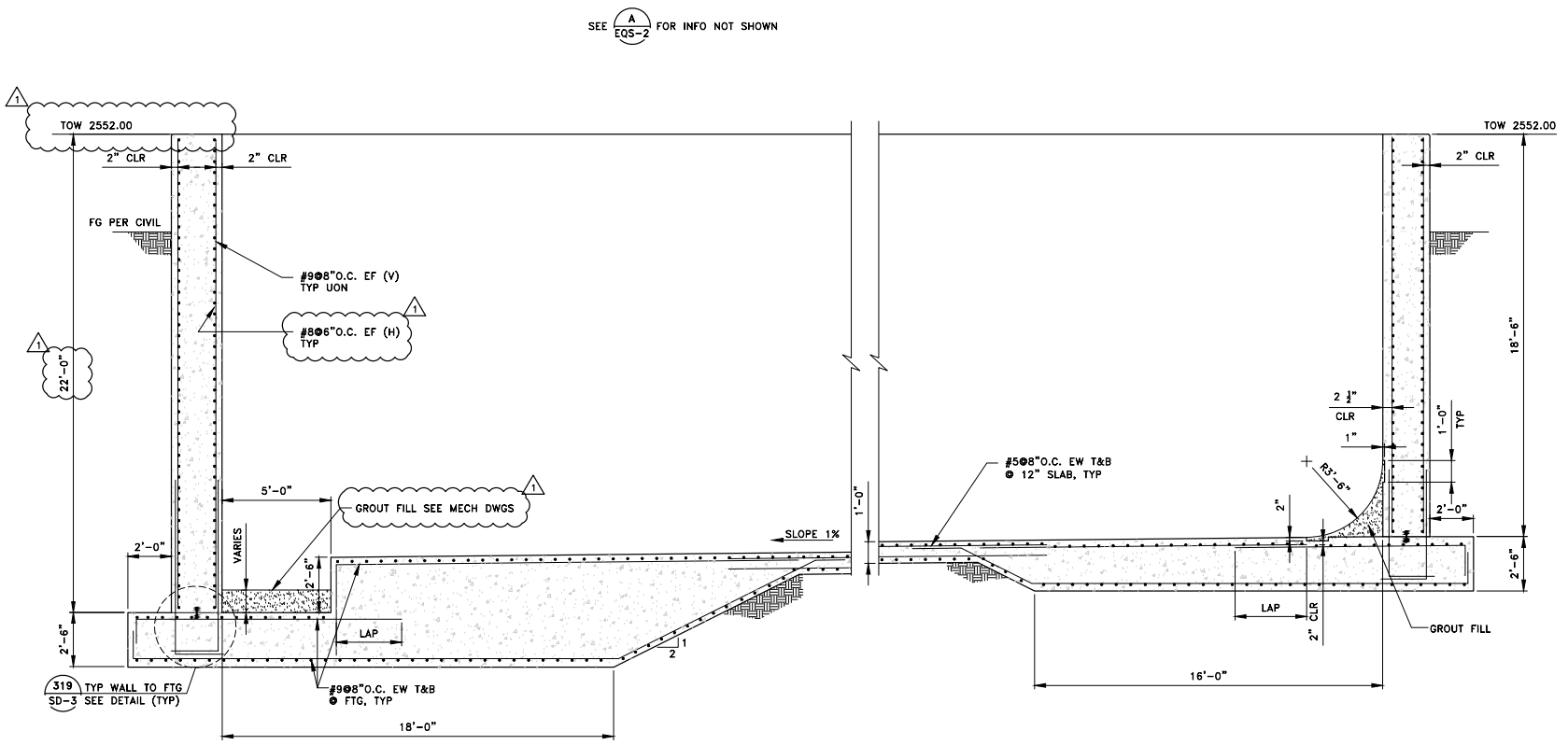
0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
EQS-1



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

0 2 4
Scale in Feet

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	CN	SML	EN
REVISIONS				
1	10/11/19	CN	SML	EN

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
STRUCTURAL SECTION

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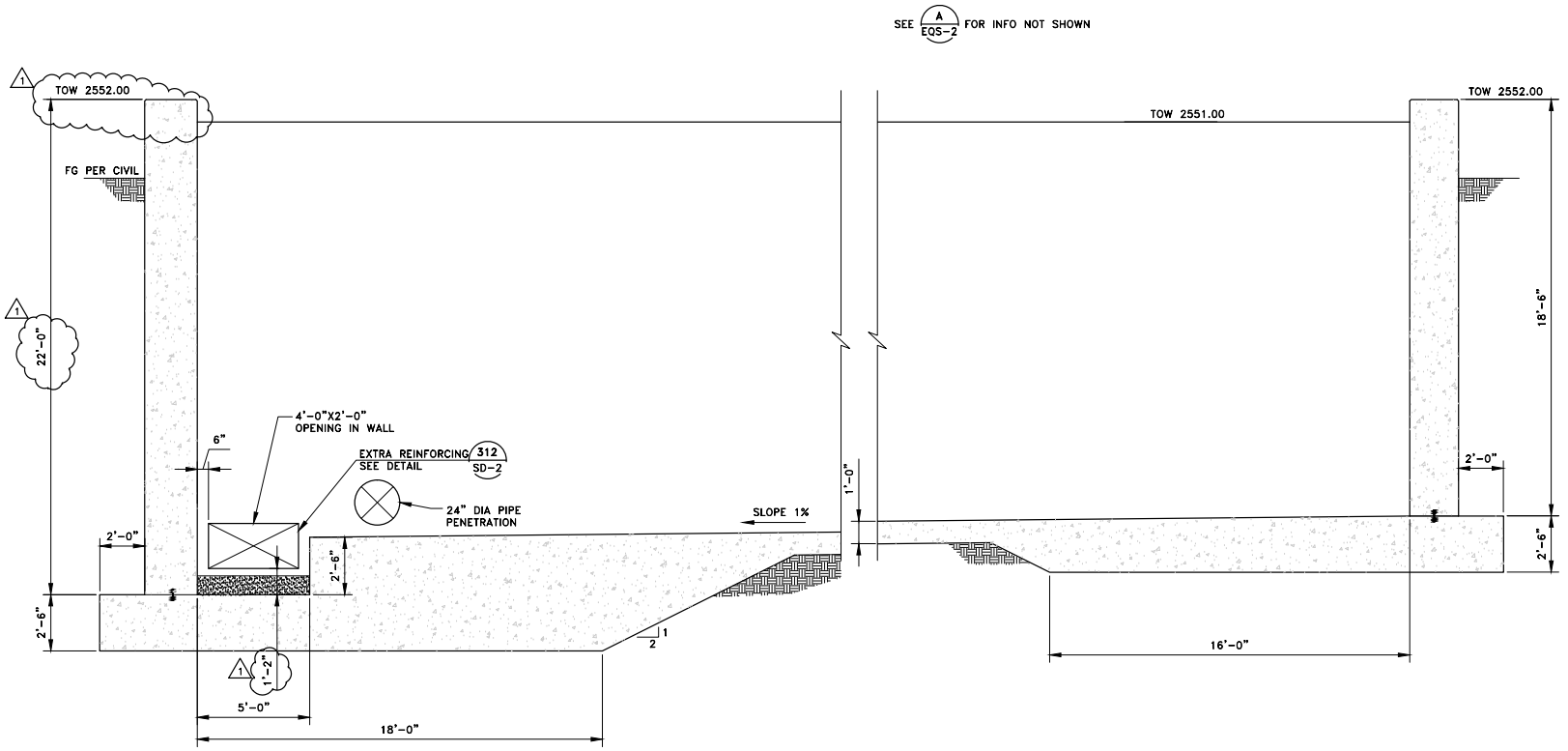
0 1/2 1
DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
EQS-3



ELEVATION C
SCALE: 3/8" = 1'-0" EQS-1

0 2 4
Scale in Feet

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	CN	SML	EN
REVISIONS				
1	10/11/19	CN	SML	EN

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
STRUCTURAL ELEVATION

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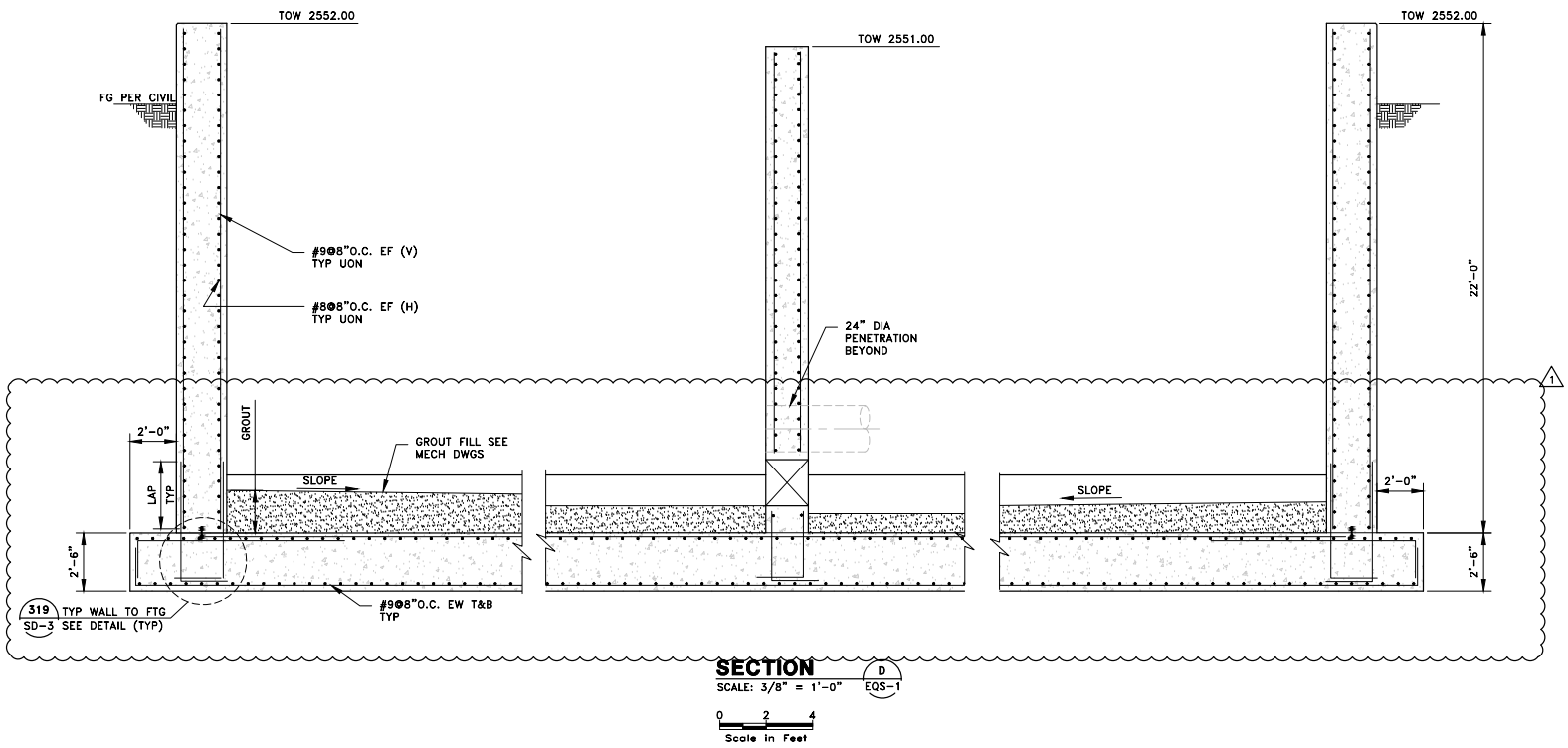
ENGINEERING CONSULTANTS

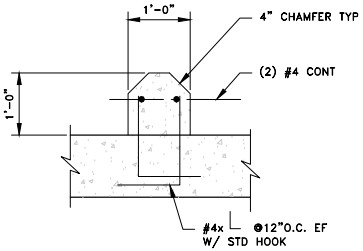
0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
EQS-4



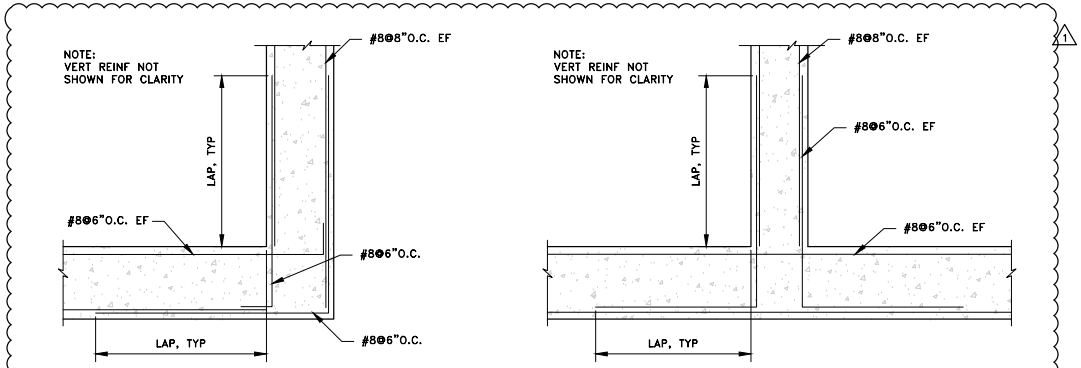
SECTION D
SCALE: 3/8" = 1'-0" EQS-1

0 2 4
Scale in Feet



CURB WALL DETAIL 1
SCALE: 1" = 1'-0" EQS-1

0 1 2
Scale in Feet



CORNER WALL REINF DETAIL 2
SCALE: 1/2"=1'-0" EQS-1

0 2 4
Scale in Feet

WALL INTERSECTION REINF DETAIL 3
SCALE: 1/2"=1'-0" EQS-1

0 2 4
Scale in Feet

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	CN	SML	EN
REVISIONS				
1	10/11/19	CN	SML	EN

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
STRUCTURAL SECTION AND DETAIL

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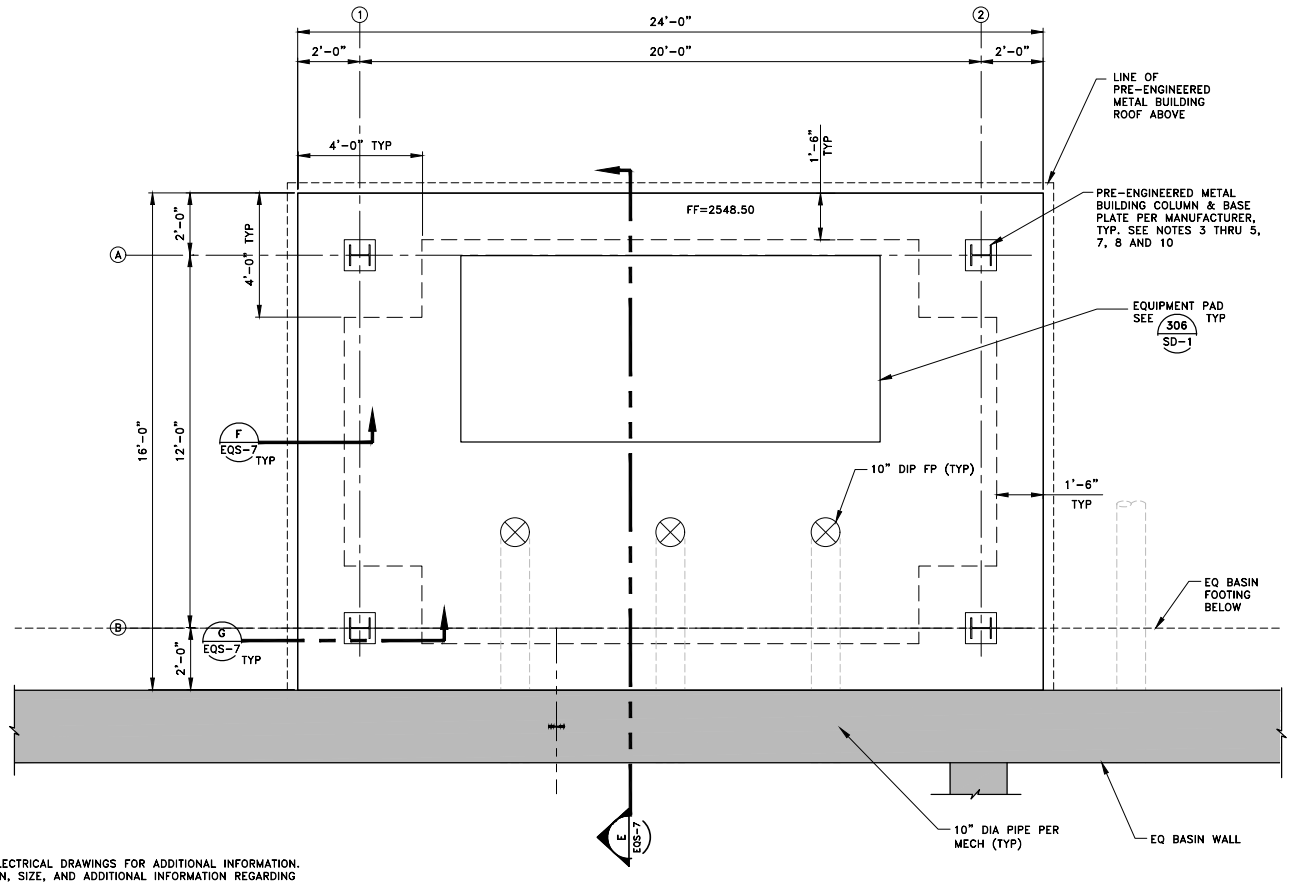
0 1/2 1
DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
EQS-5

THIS SHEET ADDED FOR REVISION 1



STRUCTURAL PLAN

SCALE: 1/2" = 1'-0"

0 2 4
Scale in Feet

NOTES:

1. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. SEE MECHANICAL DRAWINGS FOR LOCATION, SIZE, AND ADDITIONAL INFORMATION REGARDING EQUIPMENT.
3. ALL STRUCTURAL MEMBERS OF THE PRE-ENGINEERED METAL BUILDING SHALL BE HOT-DIPPED GALVANIZED.
4. PRE-ENGINEERED METAL BUILDING COLUMN FOOTING DESIGN IS BASED ON PRELIMINARY LOADS. FINAL COLUMN FOOTING SIZES WILL BE VERIFIED BY THE SEOR AFTER THE RECEIPT OF OTHER PRE-ENGINEERED METAL BUILDING DEFERRED SUBMITTAL. FOOTING REVISIONS (IF ANY WILL BE ADDRESSED BY ADDENDUM OR REVISION).
5. NO COLUMNS FOR THE PRE-ENGINEERED METAL BUILDING SHALL BE MANUFACTURED OR INSTALLED PRIOR TO SEOR REVIEW AND APPROVAL OF PRE-ENGINEERED BUILDING DEFERRED SUBMITTAL.
6. CONTRACTOR SHALL VERIFY ALL EQUIPMENT PAD SIZE, LOCATIONS, AND ANCHORING REQUIREMENTS WITH THE MANUFACTURER OR SUPPLIER
7. ANCHOR BOLTS FOR PRE-ENGINEERED BUILDING AND EQUIPMENT SHALL BE:
   A. POST-INSTALLED ANCHORS.
   B. DESIGNED, SEALED, AND SIGNED BY A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER. DESIGN SHALL BE SUBMITTED TO SEOR FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
   C. PROVIDED BY THE CONTRACTOR.
   D. DESIGNER SHALL COORDINATE ANCHOR BOLT SIZE, SPACING, AND EMBEDMENT DEPTH WITH SUPPLIER REQUIREMENTS AND BASE MATERIAL & CONFIGURATION PER THESE DRAWINGS.
8. SEE SPECIFICATION SECTION 133400 FOR PRE-ENGINEERED METAL BUILDING REQUIREMENTS.
9. FOR SUBGRADE PREPARATION REQUIREMENTS SEE SPECIFICATION SECTION 312000.
10. PRE-ENGINEERED METAL BUILDING SHALL BE DESIGNED TO HAVE ALL OPEN BAYS, I.E. NO CROSS-BRACING ALLOWED.

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	CN	SML	EN
REVISIONS				
1	10/11/19	CN	SML	EN

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
PUMP STATION STRUCTURAL PLAN

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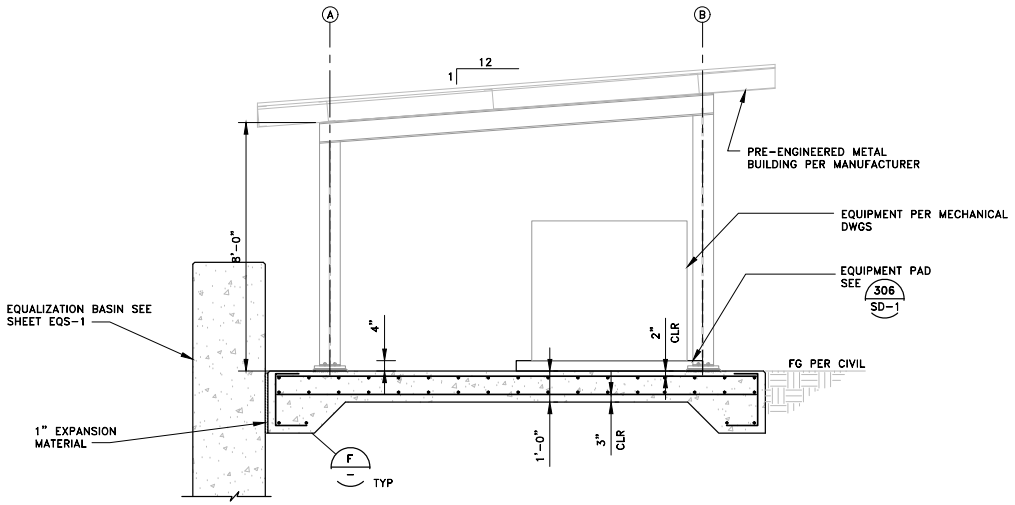
0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
EQS-6



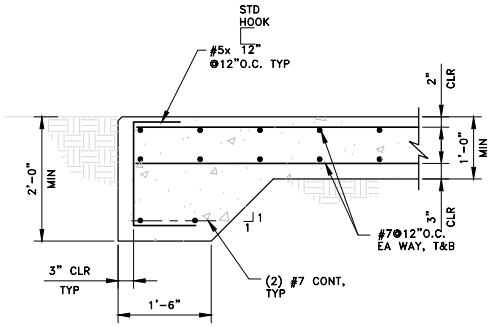
SECTION E
SCALE: 1/2" = 1'-0" EQS-6

0 2 4
Scale In Feet

THIS SHEET ADDED FOR REVISION 1

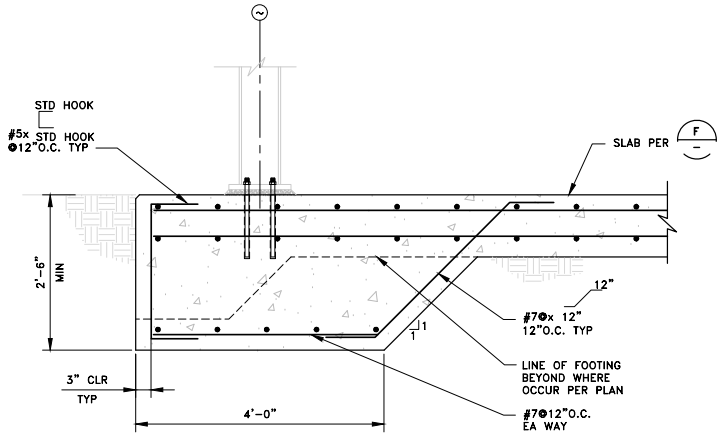
NOTES:

1. SEE NOTES ON SHEET EQS-6.



TYP TURN DOWN FOOTING SECTION F
SCALE: 1" = 1'-0" EQS-6

0 1 2
Scale In Feet



TYP COLUMN FOOTING SECTION G
SCALE: 1" = 1'-0" EQS-6

0 1 2
Scale In Feet

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	CN	SML	EN
REVISIONS				
1	10/11/19	CN	SML	EN

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
PUMP STATION STRUCTURAL SECTIONS

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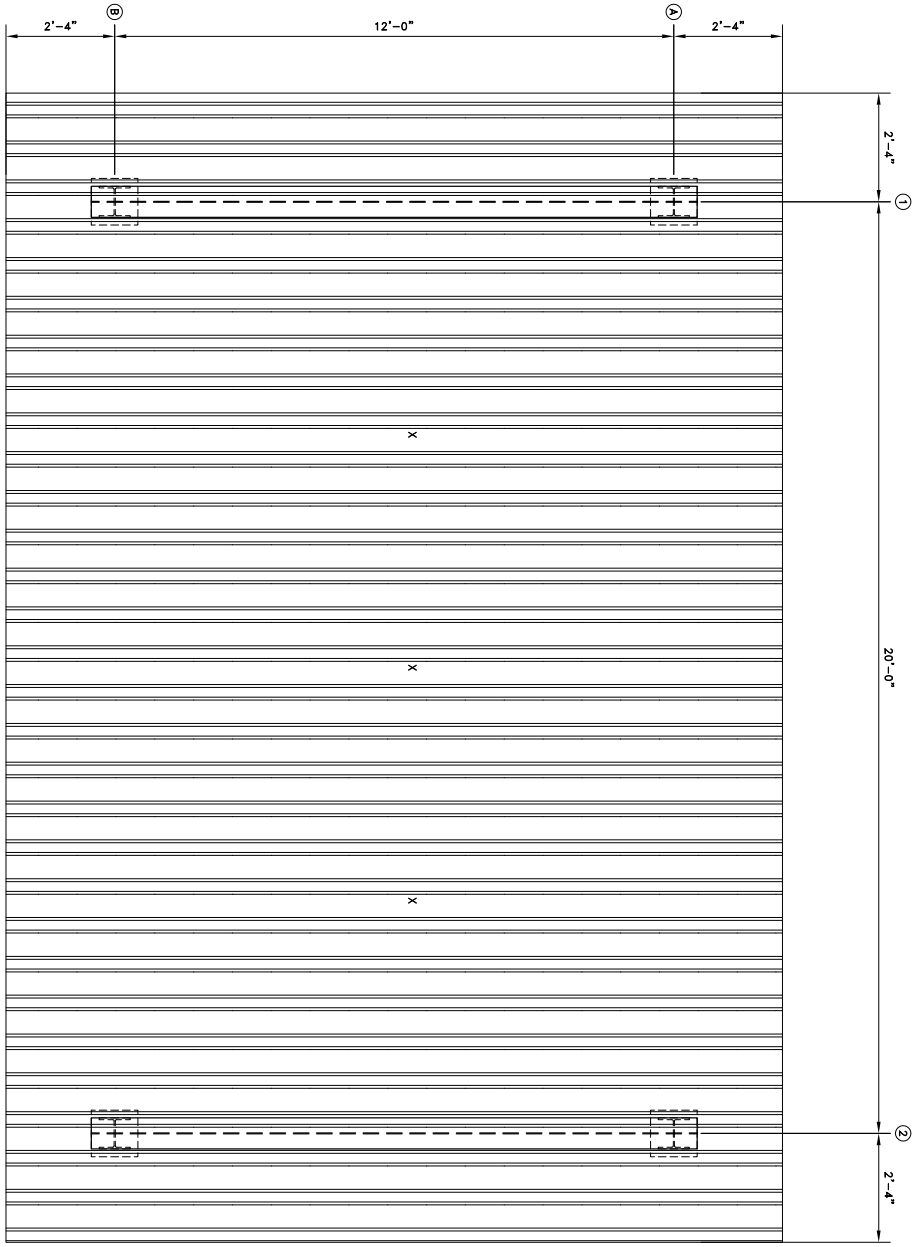
0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
EQS-7



ROOF PLAN

SCALE: 3/4"=1'-0"

Scale In Feet 0 1 2

NOTES:

1. APPROXIMATE PIPE HANGER LOCATIONS ARE INDICATED WITH AN "X" POINT LOADS ARE ESTIMATED TO BE 1,000 LBS. CONTRACTOR SHALL COORDINATE FINAL LOCATIONS AND LOADS WITH PRE-ENGINEERED METAL BUILDING SUPPLIER.

1 THIS SHEET HAS BEEN ADDED TO THE SET

DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE 0 1/2 1

SHEET EQS-8

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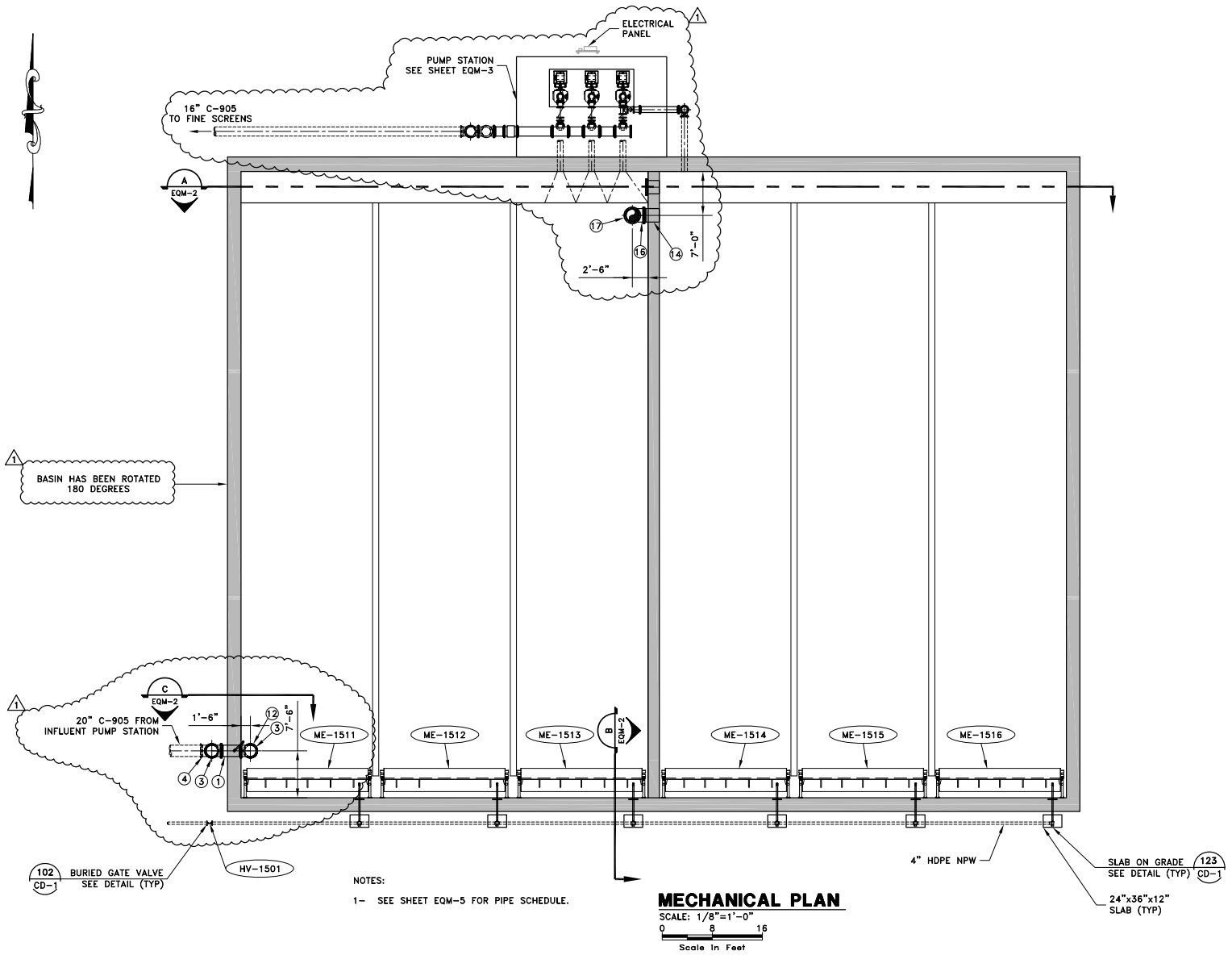
CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
PUMP STATION ROOF PLAN

ORIGINAL

NO.	DATE	DESIGN	DRAWN	CHECKED
C	10/11/19	DPS	DCH	JRL

REVISIONS



NOTES:

1- SEE SHEET EQM-5 FOR PIPE SCHEDULE.

MECHANICAL PLAN

SCALE: 1/8"=1'-0"

0 8 16

Scale In Feet

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	DPS	RSW	JRL
REVISIONS				
1	10/11/19	DPS	DNS	JRL

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
MECHANICAL PLAN

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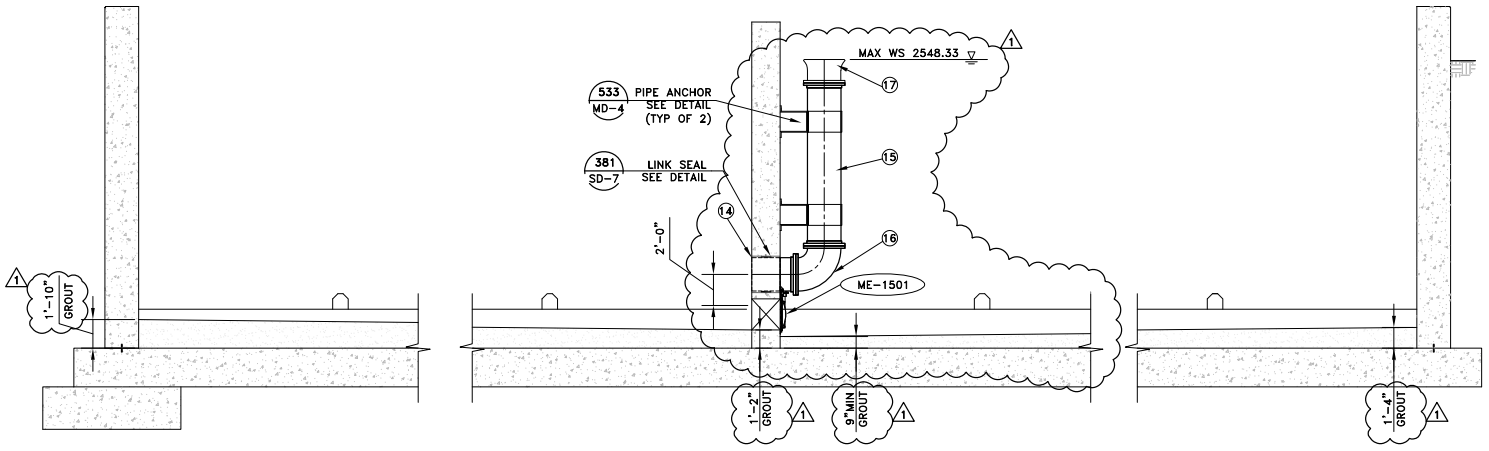
0 1/2 1

DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

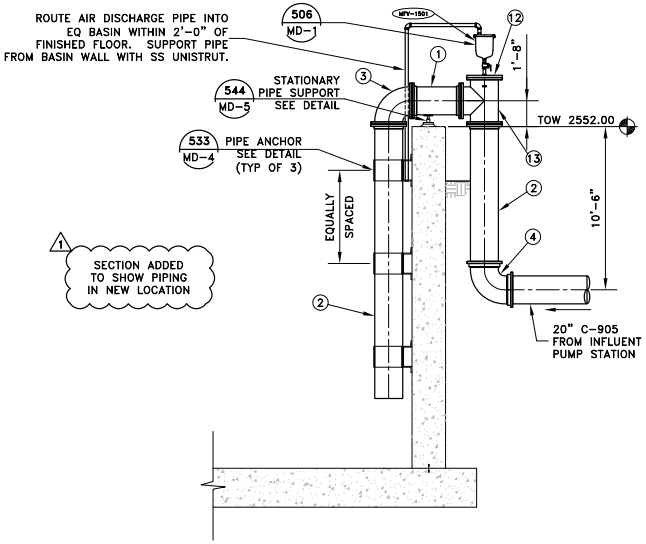
SHEET

EQM-1

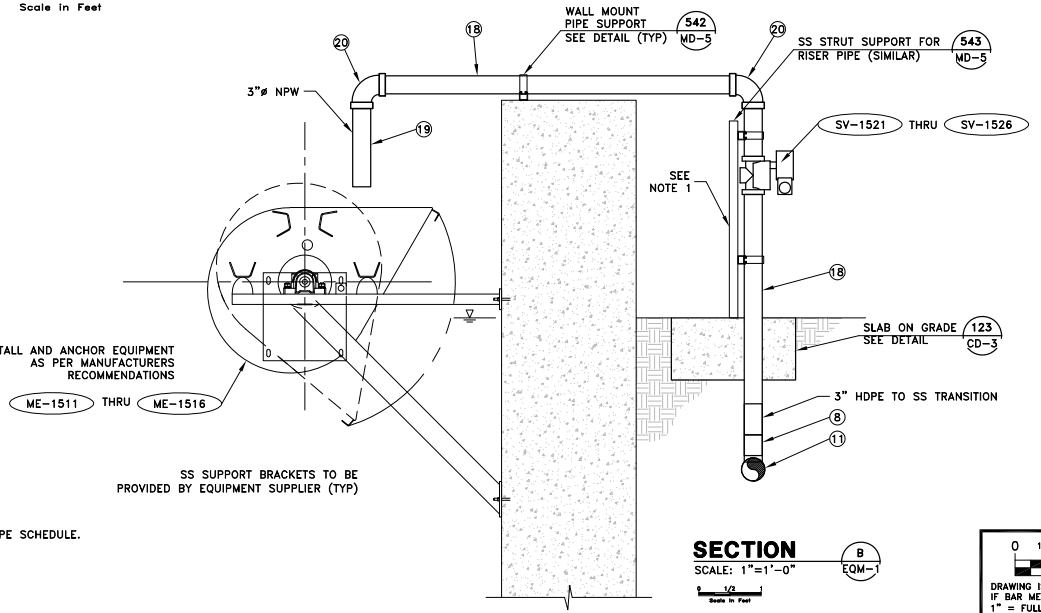
BDP 10/17/2019 X:\Beaumont\Salt Mitigation WWTP Upgrade WEBB170227\Drafting\EQ BASIN\EQM-1.dwg



SECTION A EQM-1
SCALE: 1/4"=1'-0"
0 4 8
Scale In Feet



SECTION C EQM-1
SCALE: 1/4"=1'-0"
0 4 8
Scale In Feet



SECTION B EQM-1
SCALE: 1"=1'-0"
0 1/2 1
Scale In Feet

NOTES:

1- SEE SHEET EQM-5 FOR PIPE SCHEDULE.

DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	DPS	BDP	JRL
REVISIONS				
1	10/11/19	DPS	DNS	JRL

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
MECHANICAL SECTIONS

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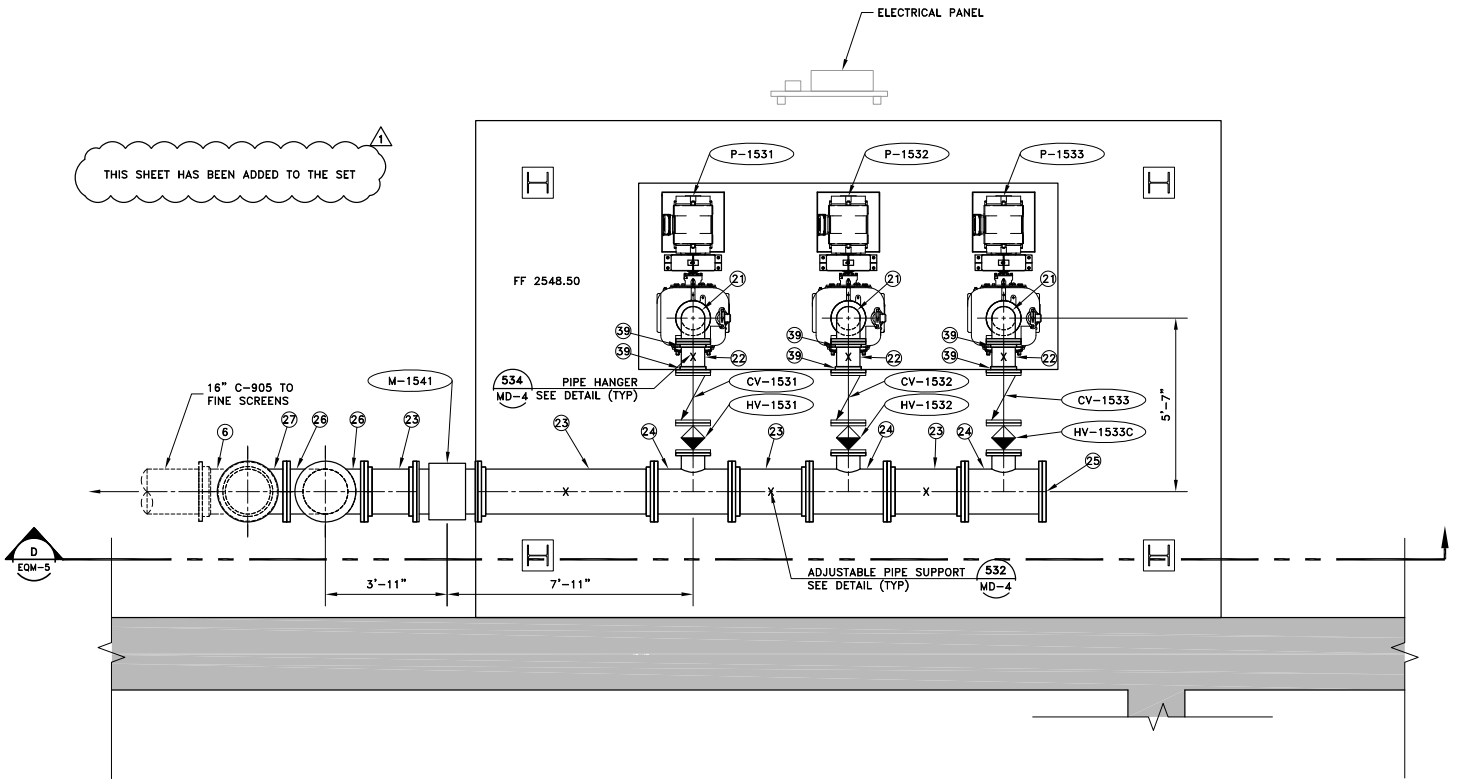
SHEET
EQM-2

BDP 10/16/2019 X:\Beaumont\Salt Mitigation WWTP Upgrade WEBB170227\Drafting\EQ BASIN\EQM-2.dwg



UPPER PLAN

SCALE: 1/2"=1'-0"

0 2 4

Scale in Feet

NOTES:

1- PROVIDE PIPE SUPPORTS OR HANGERS AS SHOWN IN DETAILS 532 MD-4 & 534 MD-4 IN LOCATIONS SHOWN WITH AN "X".

2- COORDINATE EQUIPMENT INSTALLATION REQUIREMENTS WITH MANUFACTURER. VERIFY DIMENSIONS, CONNECTIONS, SUPPORTS, WEIGHTS AND DETAILS.

3- SEE ELECTRICAL DRAWINGS FOR CONTROL AND INSTRUMENT DETAILS AND REQUIREMENTS.

4- COATINGS SHALL MEET THE REQUIREMENTS OF SECTION 098000.

5- SEE SHEET EQM-5 FOR PIPE SCHEDULE.

ORIGINAL

NO.	DATE	DESIGN	DRAWN	CHECKED
C	10/11/19	DPS	DNS	JRL

REVISIONS

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
PUMP STATION MECHANICAL UPPER PLAN

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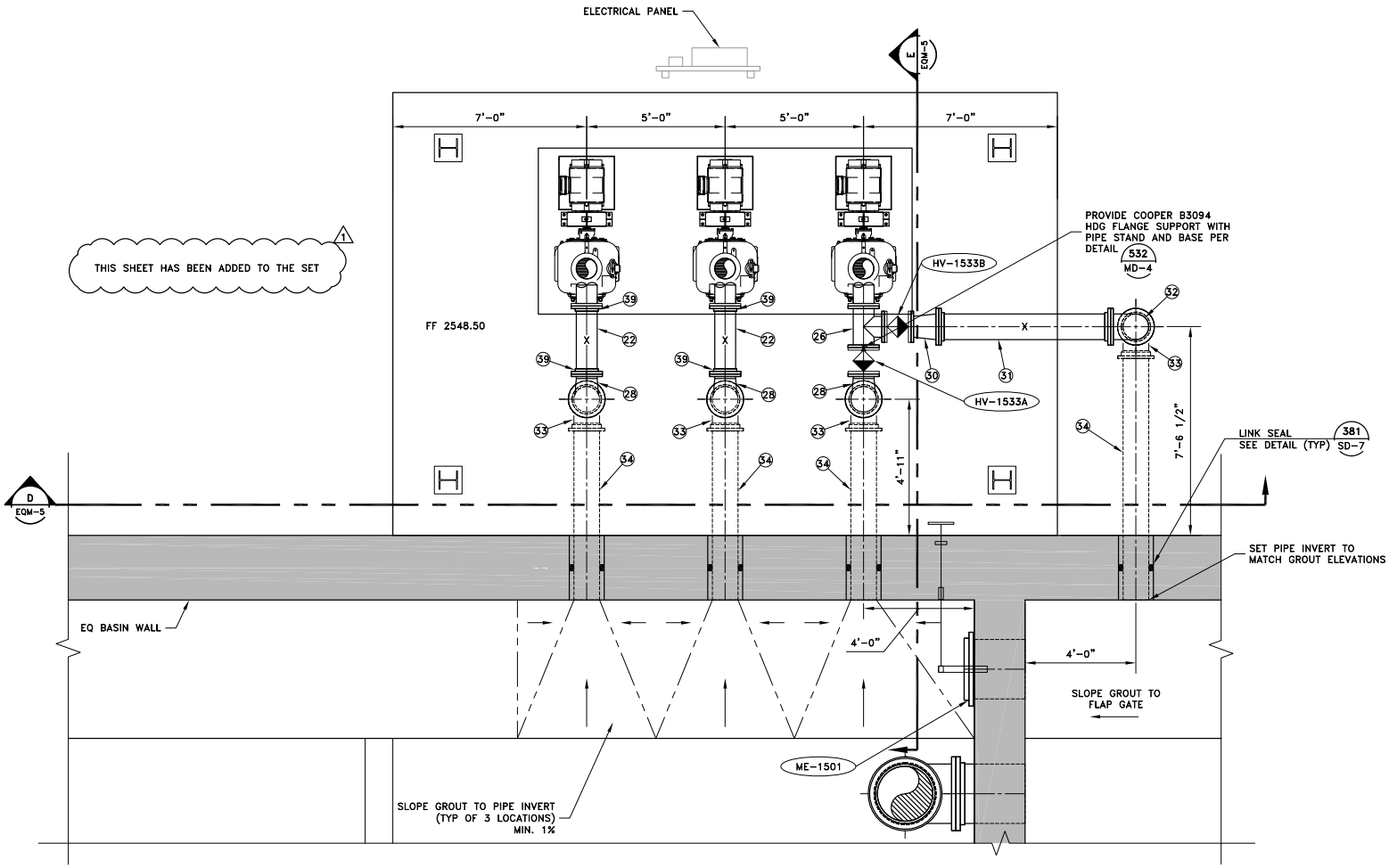
0 1/2 1

DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET

EQM-3

BDP 10/17/2019 X:\Beaumont\Salt Mitigation WWTP Upgrade WEBB170227\Drafting\EQ BASIN\EQM-3.dwg



LOWER PLAN

SCALE: 1/2"=1'-0"

0 2 4

Scale in Feet

NOTES:

1– PROVIDE PIPE SUPPORTS OR HANGERS AS SHOWN IN DETAILS 532 MD-4 & 534 MD-4 IN LOCATIONS SHOWN WITH AN "X".

2– COORDINATE EQUIPMENT INSTALLATION REQUIREMENTS WITH MANUFACTURER. VERIFY DIMENSIONS, CONNECTIONS, SUPPORTS, WEIGHTS AND DETAILS.

3– SEE ELECTRICAL DRAWINGS FOR CONTROL AND INSTRUMENT DETAILS AND REQUIREMENTS.

4– COATINGS SHALL MEET THE REQUIREMENTS OF SECTION 098000.

5– SEE SHEET EQM-5 FOR PIPE SCHEDULE.

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	10/11/19	DPS	RSW	JRL
REVISIONS				

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
PUMP STATION MECHANICAL LOWER PLAN

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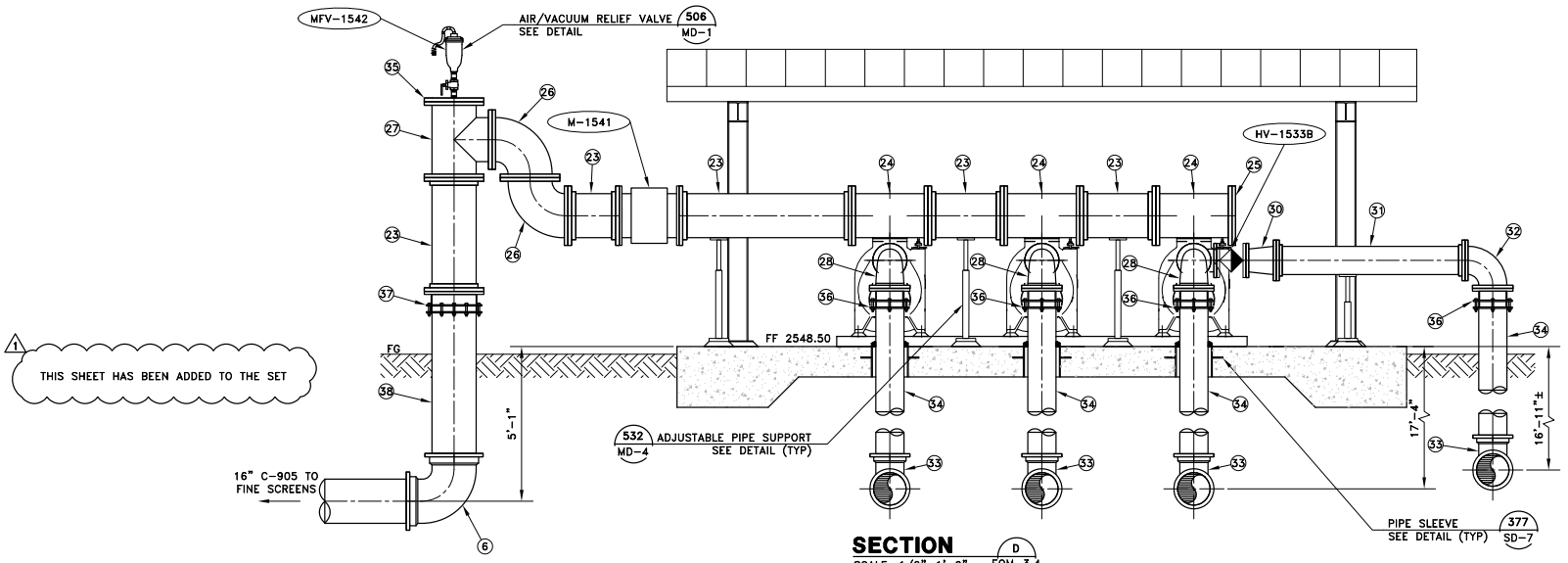
FAX (951) 788-1256

0 1/2 1

DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

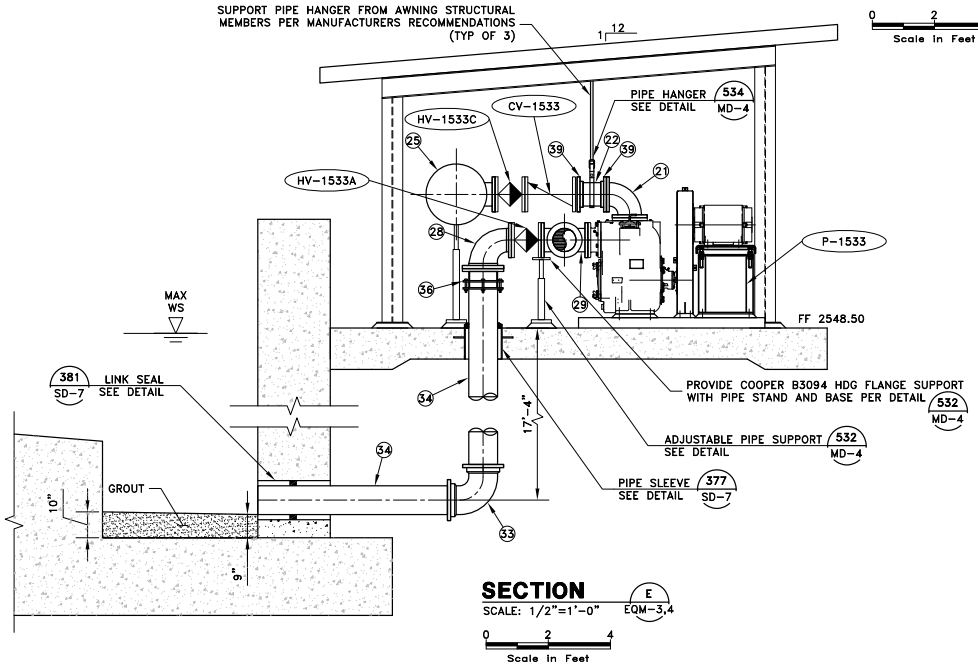
SHEET

EQM-4



SECTION D
SCALE: 1/2"=1'-0" EQM-3,4

0 2 4
Scale In Feet



SECTION E
SCALE: 1/2"=1'-0" EQM-3,4

0 2 4
Scale In Feet

PIPE SCHEDULE				
NO.	DESCRIPTION	SIZE	JOINT	MATERIAL
1	SPOOL	20"	FLG	DIP
2	SPOOL	20"	FLGxPE	DIP
3	90° BEND	20"	FLG	DIP
4	90° BEND	20"	MJ	DIP
5	SPOOL	16"	PE	DIP
6	90° BEND	16"	MJ	DIP
7	SLEEVE	16"	MJ	DIP
8	SPOOL	4"	PE	HDPE
9	90° BEND	4"	PE	HDPE
10	CONCENTRIC REDUCER	4"x3"	PE	HDPE
11	REDUCING TEE	4"x3"	PE	HDPE
12	COMPANION FLANGE W/ 2" TAP	20"	FLG	DIP
13	TEE	20"	FLG	DIP
14	SPOOL	24"	FLGxPE	DIP
15	SPOOL	24"	FLG	DIP
16	90° BEND	24"	FLG	DIP
17	FLARE	24"	FLG	DIP
18	SPOOL	3"	THD	SCH 40 SS
19	SPOOL	3"	THDxPE	SCH 40 SS
20	90° BEND	3"	THD	SCH 40 SS
21	90° BEND	8"	FLG	DIP
22	SPOOL	8"	VIC	DIP
23	SPOOL	16"	FLG	DIP
24	REDUCING TEE	8"x16"	FLG	DIP
25	BLIND FLANGE	16"	FLG	DIP
26	90° BEND	16"	FLG	DIP
27	TEE	16"	FLG	DIP
28	90° REDUCING BEND	8"x10"	FLG	DIP
29	TEE	8"	FLG	DIP
30	REDUCER	8"x10"	FLG	DIP
31	SPOOL	10"	FLG	DIP
32	90° BEND	10"	FLG	DIP
33	90° BEND	10"	MJ	DIP
34	SPOOL	10"	PE	DIP
35	COMPANION FLANGE W/ 2" TAP	16"	FLG	DIP
36	FLANGE ADAPTER	10"	FLG	DIP
37	FLANGE ADAPTER	16"	FLG	DIP
38	SPOOL	16"	PE	DIP
39	FLANGE	8"	VIC	DIP

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	10/11/19	DPS	DNS	JRL
REVISIONS				

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
EQUALIZATION BASIN
PUMP STATION MECHANICAL SECTIONS

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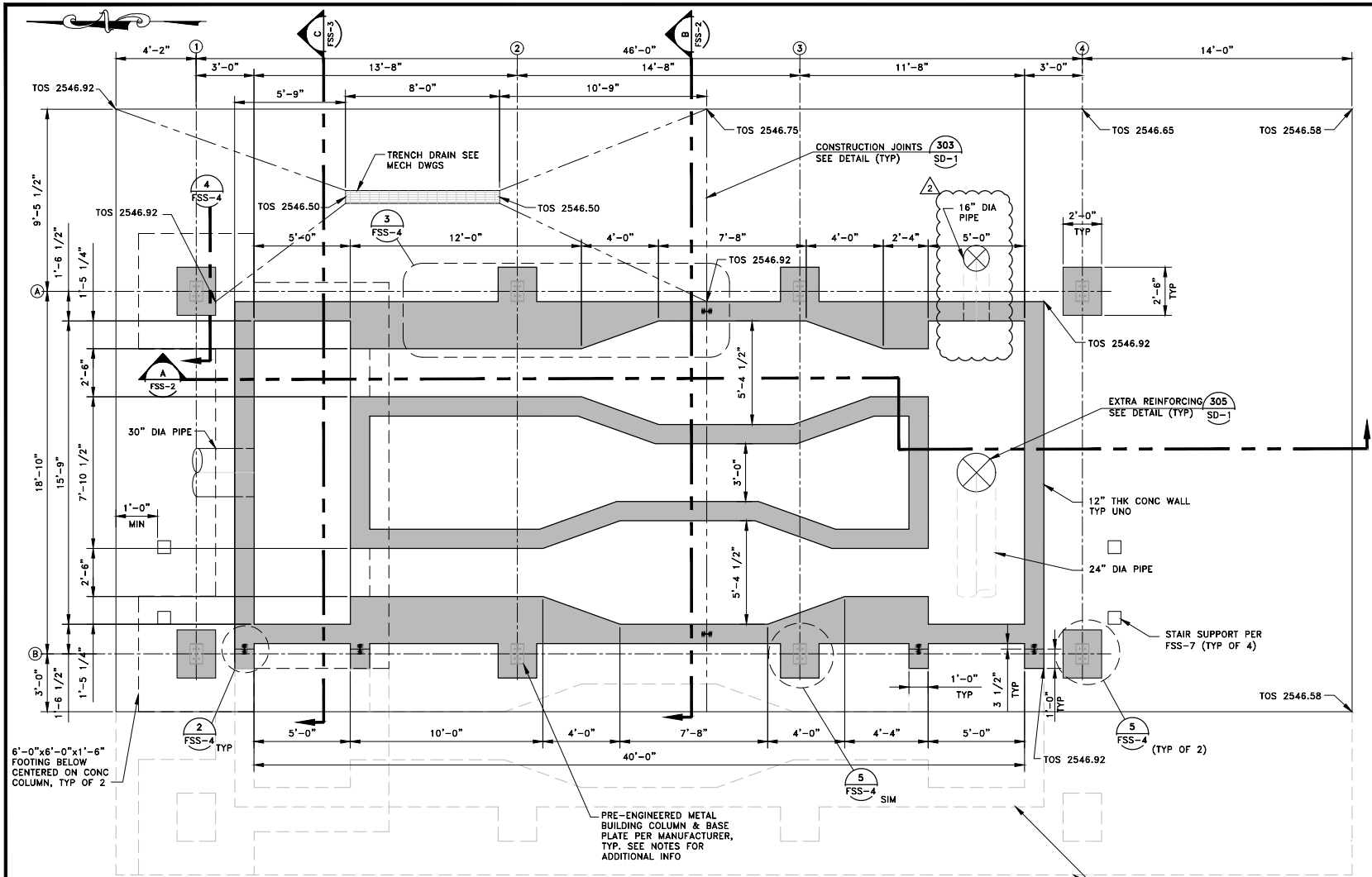
0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
EQM-5

BDP 10/16/2019 X:\Beaumont\Salt Mitigation WWTP Upgrade WEBB170227\Drafting\EQ BASIN\EQM-5.dwg



STRUCTURAL PLAN

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

0 2 4
Scale in Feet

NOTES:

1. REFER TO SECTION 312000 OF THE TECHNICAL SPECIFICATIONS FOR DETAILS REGARDING SUB-GRADE PREPARATION AND REQUIREMENTS.
2. PRE-ENGINEERED METAL BUILDING COLUMN/FOOTING DESIGN IS BASED ON PRELIMINARY LOADS. FINAL COLUMN/FOOTING SIZES WILL BE VERIFIED BY THE STRUCTURAL ENGINEER AFTER THE RECEIPT OF PRE-ENGINEERED METAL BUILDING DEFERRED SUBMITTAL. FOOTING/COLUMN REVISIONS (IF ANY) WILL BE ADDRESSED BY ADDENDUM OR REVISION.
3. NO FOOTINGS/COLUMNS FOR THE PRE-ENGINEERED METAL BUILDING SHALL BE PLACED UNTIL REVIEW AND APPROVAL OF PRE-ENGINEERED METAL BUILDING DEFERRED SUBMITTAL.
4. REFER TO SPECIFICATION SECTION 133400 FOR PRE-ENGINEERED BUILDING REQUIREMENTS.
5. CONTRACTOR SHALL COORDINATE ANCHOR BOLT DESIGN AND EMBEDMENT DEPTH WITH PRE-ENGINEERED METAL BUILDING SUPPLIER.
6. PROVIDE ADDITIONAL REINFORCEMENT AROUND PIPE PENETRATIONS AS SHOWN IN DETAIL 305 ON SHEET SD-1 AND DETAIL 312 ON SHEET SD-2.
7. FOR WALL CORNER AND INTERSECTION REINFORCEMENT REQUIREMENTS, SEE DETAILS 302 ON SHEET SD-1.
8. SEE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF ADDITIONAL OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
9. CONTRACTOR SHALL VERIFY ALL EQUIPMENT PAD SIZE, LOCATIONS, AND ANCHORING REQUIREMENTS WITH THE MANUFACTURER OR SUPPLIER.
10. PRE-ENGINEERED METAL BUILDING SHALL BE DESIGNED TO HAVE ALL OPEN BAYS, I.E. NO CROSS-BRACING ALLOWED.
11. DO NOT ADD OR ELIMINATE C.J. WITHOUT APPROVAL OF ENGINEER.
12. PIPE PENETERATIONS SMALLER THAN 4" ARE NOT SHOWN. REFER TO MECHANICAL DRAWINGS FOR ALL PENETRATIONS.

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	CN	SML	EN
REVISIONS				
1	11/29/18	CN	SML	EN
2	10/11/19	CN	SML	EN

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
FINE SCREEN
STRUCTURAL PLAN

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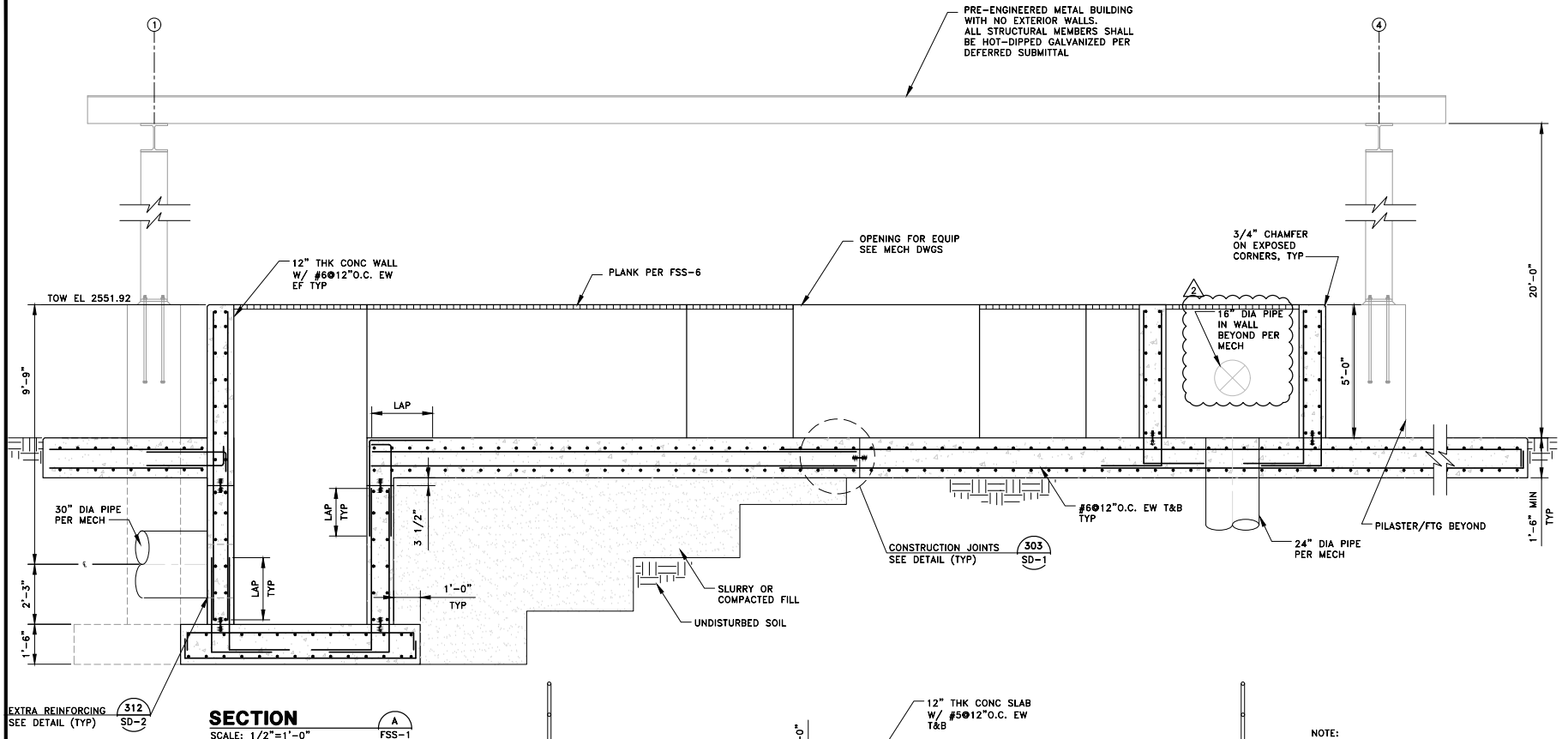
0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
FSS-1



NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	CN	SML	EN
REVISIONS				
1	11/29/18	CN	SML	EN
2	10/11/19	CN	SML	EN

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
FINE SCREEN
STRUCTURAL SECTIONS

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0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
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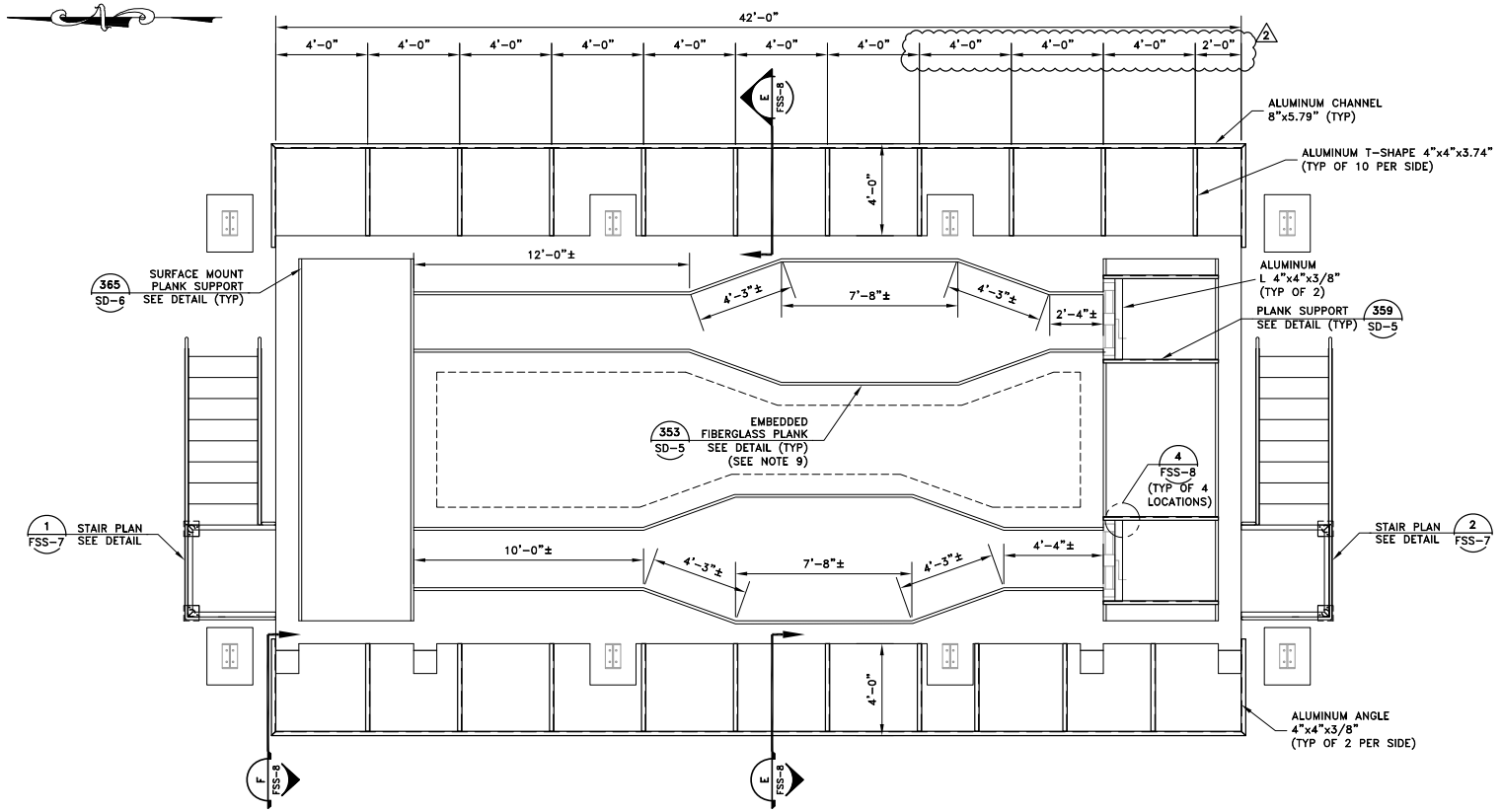
SHEET
FSS-2



NOTES:

1- WALKWAY DESIGN DETAILS ARE PROVIDED AS GUIDANCE ONLY.

2- WALKWAY DESIGN SHALL BE A DEFERRED SUBMITTAL AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3- WALKWAY, ALUMINUM HANDRAIL, GRATING, AND PLANK DESIGN SHALL BE IN ACCORDANCE WITH THE FOLLOWING SECTIONS.
   051200 (STRUCTURAL STEEL)
   051400 (STRUCTURAL ALUMINUM)
   055213 (PIPE AND TUBE RAILINGS)
   055300 (METAL GRATINGS)
   065300 (FIBERGLASS PLANK)

4- WALKWAY DESIGN SHALL BE IN ACCORDANCE WITH CBC AND OSHA AND SHALL BE PREPARED, STAMPED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF CALIFORNIA.

5- WALKWAY DESIGN MUST PRESERVE INDICATED WALKWAY WIDTHS AND CLEARANCES MINOR ADJUSTMENTS MAY BE ALLOWED FOLLOWING THE ENGINEERS APPROVAL.

6- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FROM METAL FABRICATOR FOR ALL MISCELLANEOUS METALS, WALKWAY, SUPPORTS, ETC.

7- ALUMINUM IN CONTACT WITH OTHER METALS AND/OR CONCRETE SHALL BE COATED PER SPECIFICATION SECTION 098000.

8- ALL ANCHOR BOLTS AND BOLTS IN CONTACT WITH ALUMINUM SHALL BE 304 STAINLESS STEEL.

9- ALL PLANK SUPPORT ANGLE IN SCREEN CHANNELS TO BE EMBEDDED.

GRATING/PLANK FRAMING PLAN

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

0 2 4
Scale In Feet

NO.	DATE	ORIGINAL DESIGN	DRAWN	CHECKED
C	09/05/18	DPS	BDP	JRL
REVISIONS				
1	11/15/18	DPS	KRB	JRL
2	10/11/19	DPS	BDP	JRL

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
FINE SCREENS
GRATING/PLANK FRAMING PLAN

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0 1/2 1
DRAWING IS TO SCALE
IF BAR MEASURES:
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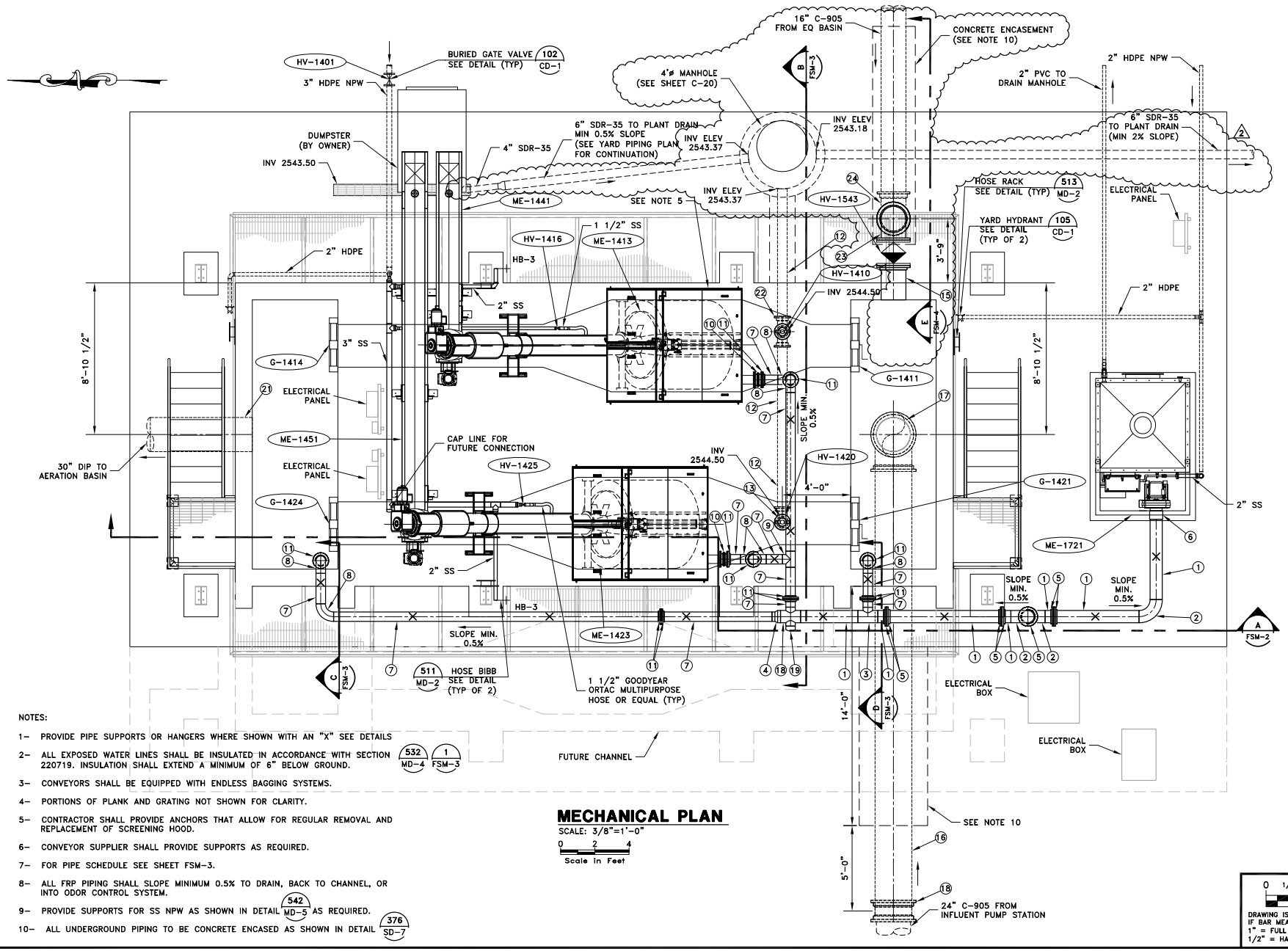
1/2" = HALF SCALE

SHEET
FSS-5



MECHANICAL PLAN

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

0 2 4

Scale in Feet

NOTES:

1- PROVIDE PIPE SUPPORTS OR HANGERS WHERE SHOWN WITH AN "X" SEE DETAILS

2- ALL EXPOSED WATER LINES SHALL BE INSULATED IN ACCORDANCE WITH SECTION 220719. INSULATION SHALL EXTEND A MINIMUM OF 6" BELOW GROUND. (532 MD-4) (1 FSM-3)

3- CONVEYORS SHALL BE EQUIPPED WITH ENDLESS BAGGING SYSTEMS.

4- PORTIONS OF PLANK AND GRATING NOT SHOWN FOR CLARITY.

5- CONTRACTOR SHALL PROVIDE ANCHORS THAT ALLOW FOR REGULAR REMOVAL AND REPLACEMENT OF SCREENING HOOD.

6- CONVEYOR SUPPLIER SHALL PROVIDE SUPPORTS AS REQUIRED.

7- FOR PIPE SCHEDULE SEE SHEET FSM-3.

8- ALL FRP PIPING SHALL SLOPE MINIMUM 0.5% TO DRAIN, BACK TO CHANNEL, OR INTO ODOR CONTROL SYSTEM.

9- PROVIDE SUPPORTS FOR SS NPW AS SHOWN IN DETAIL (542 MD-5) AS REQUIRED.

10- ALL UNDERGROUND PIPING TO BE CONCRETE ENCASED AS SHOWN IN DETAIL (376 SD-7)

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	DPS	BDP	JRL
REVISIONS				
1	11/15/18	DPS	KRB	JRL
2	10/11/19	DPS	BDP	JRL

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
FINE SCREENS
MECHANICAL PLAN

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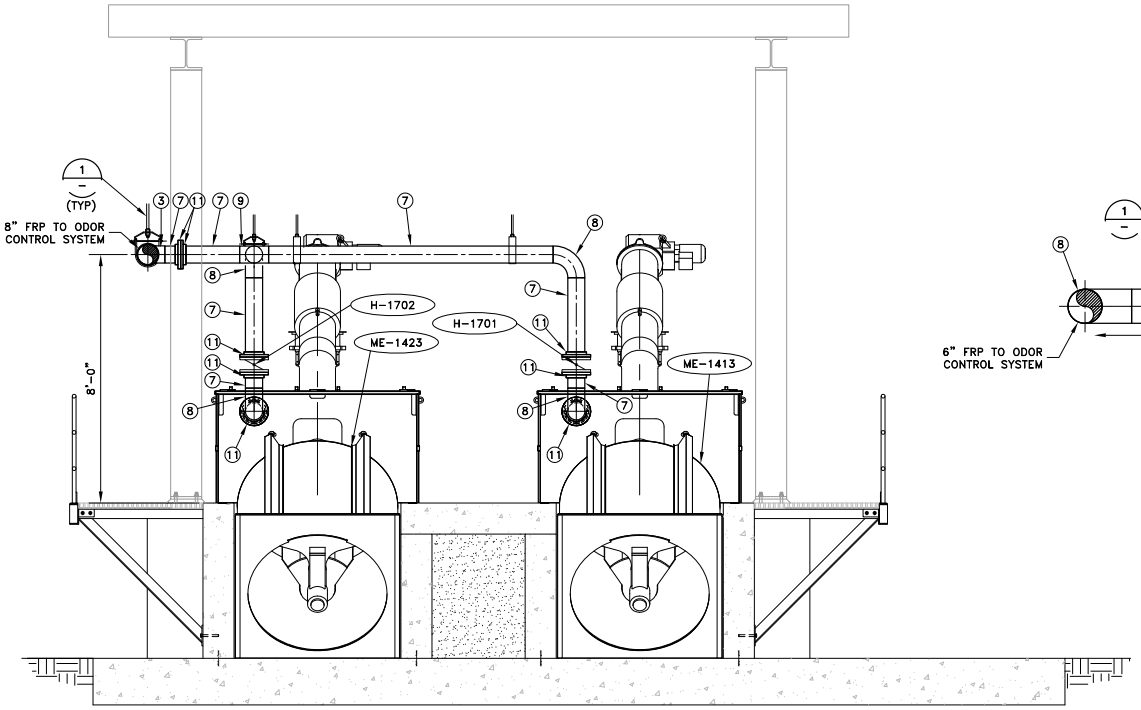
DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

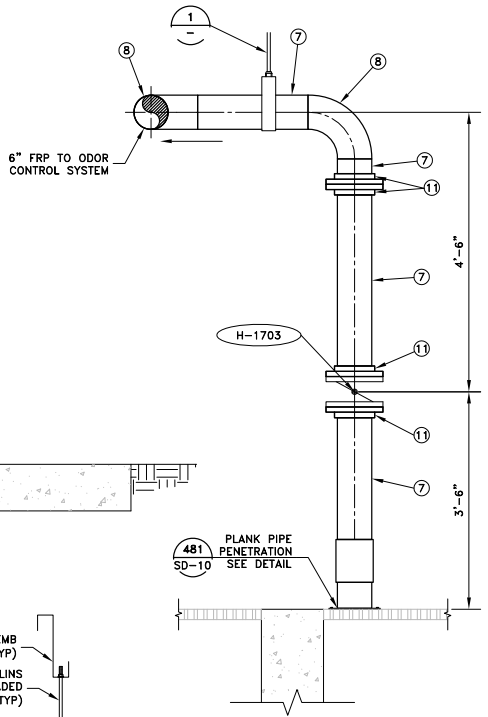
0 1/2 1

SHEET

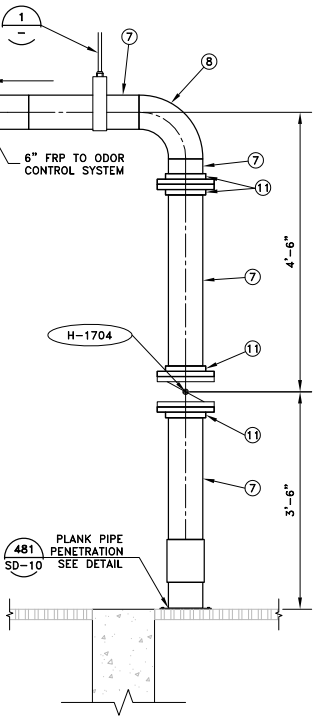
FSM-1



SECTION B
SCALE: 1/2"=1'-0"
FSM-1
0 2 4
Scale in Feet



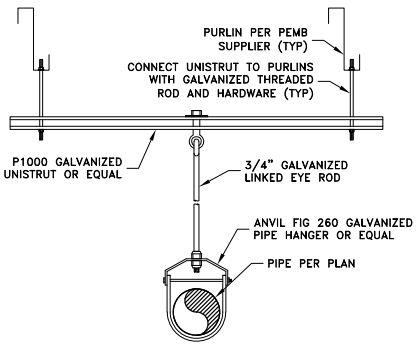
SECTION C
SCALE: 1"=1'-0"
FSM-1
0 2 4
Scale in Feet



SECTION D
SCALE: 1"=1'-0"
FSM-1
0 2 4
Scale in Feet

PIPE SCHEDULE				
NO.	DESCRIPTION	SIZE	JOINT	MATERIAL
1	SPOOL	8"	PE	FRP
2	90° BEND	8"	PE	FRP
3	REDUCING TEE	8"x6"	PE	FRP
4	CONCENTRIC REDUCER	8"x6"	PE	FRP
5	FLANGE	8"	PE	FRP
6	FERNCO COUPLER	8"	SOCKET	RUBBER
7	SPOOL	6"	PE	FRP
8	90° BEND	6"	PE	FRP
9	TEE	6"	PE	FRP
10	EXPANSION JOUNT	6"	FLG	–
11	FLANGE	6"	FLG	FRP
12	SPOOL	6"	PE	DIP
13	90° BEND	6"	MJ	DIP
14	WYE	6"	MJ	DIP
15	SPOOL	16"	FLGxPE	DIP
16	SPOOL	24"	PE	DIP
17	90° BEND	24"	MJ	DIP
18	REDUCING CROSS	8"x6"	PE	FRP
19	CAP	6"	PE	FRP
20	45° BEND	6"	MJ	DIP
21	SPOOL	30"	PE	DIP
22	TEE	6"	MJ	DIP
23	90° BEND	16"	FLG	DIP
24	90° BEND	16"	MJ	DIP
25	SPOOL	16"	PExVIC	DIP
26	FLANGE	16"	VIC	DIP

2
2



PIPE HANGER 1
SCALE: NTS

NO.	DATE	ORIGINAL DESIGN	ORIGINAL DRAWN	ORIGINAL CHECKED
C	09/05/18	DPS	BDP	JRL

REVISIONS			
1	11/15/18	DPS	KRB	JRL
2	10/11/19	DPS	BDP	JRL

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
FINE SCREENS
MECHANICAL SECTIONS

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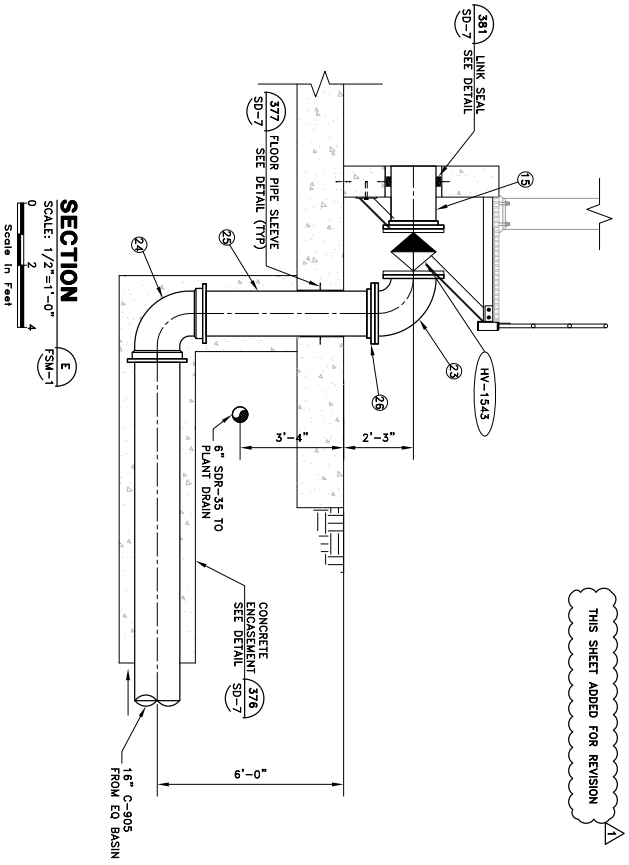
0 1/2 1
DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
FSM-3

BDP 10/16/2019 X:\Beaumont\Salt Mitigation WWTP Upgrade WEBB170227\Drafting\FINE SCREENS\FSM-3,4.dwg



DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

0 1/2 1

SHEET FSM-4

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CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
FINE SCREENS
MECHANICAL SECTION

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
C	09/05/18	DPS	BDP	JRL
REVISIONS				
1	10/11/19	DPS	BDP	JRL

V#	LOCATION	SERVICE	TYPE	SIZE	MATERIAL	CONNECTION	ACTUATOR	REMARKS
FV-8412	SOLIDS HOLDING BLOWERS	STANDBY BLOWER ISOLATION	BUTTERFLY	8"	DI	WAFER	ELEC	BRAY SERIES 30 (VITON) OR EQUAL WITH OPEN/CLOSE ELECTRIC ACTUATOR
FV-8501	SOLIDS HANDLING BUILDING	CENTRIFUGE #1 FEED CONTROL	PLUG	3"	CI	FL X FL	ELEC	VALMATIC 100% PORT ECCENTIRC PLUG VALVE OR EQUAL WITH MODULATING ELECTRIC ACTUATOR
HV-8521	SOLIDS HANDLING BUILDING	CENTRIFUGE #1 CIP WATER ISOLATION	BALL	1 1/2"	SS	THD	LV	APOLLO 76-100 SERIES OR EQUAL
SV-8521	SOLIDS HANDLING BUILDING	CENTRIFUGE #1 CIP WATER CONTROL	SOLENOID	1 1/2"	BRONZE	THD	-	RED HAT OR EQUAL
HV-8522	SOLIDS HANDLING BUILDING	CENTRIFUGE #1 SLOP WATER ISOLATION	BALL	1"	SS	THD	LV	APOLLO 76-100 SERIES OR EQUAL
SV-8522	SOLIDS HANDLING BUILDING	CENTRIFUGE #1 SLOP WATER CONTROL	SOLENOID	1"	BRONZE	THD	-	RED HAT OR EQUAL
HV-8503	SOLIDS HANDLING BUILDING	CENTRIFUGE #1 SLUDGE FEED SAMPLE	BALL	1 1/2"	SS	THD	LV	APOLLO 76-100 SERIES OR EQUAL
HV-8504	SOLIDS HANDLING BUILDING	CENTRIFUGE #1 CENTRATE SAMPLE	BALL	1"	SS	THD	LV	APOLLO 76-100 SERIES OR EQUAL
FV-8531	SOLIDS HANDLING BUILDING	CENTRIFUGE #2 FEED CONTROL	PLUG	3"	CI	FL X FL	ELEC	VALMATIC 100% PORT ECCENTIRC PLUG VALVE OR EQUAL WITH MODULATING ELECTRIC ACTUATOR
HV-8551	SOLIDS HANDLING BUILDING	CENTRIFUGE #2 CIP WATER ISOLATION	BALL	1 1/2"	SS	THD	LV	APOLLO 76-100 SERIES OR EQUAL
SV-8551	SOLIDS HANDLING BUILDING	CENTRIFUGE #2 CIP WATER CONTROL	SOLENOID	1 1/2"	BRONZE	THD	-	RED HAT OR EQUAL
HV-8552	SOLIDS HANDLING BUILDING	CENTRIFUGE #2 SLOP WATER ISOLATION	BALL	1"	SS	THD	LV	APOLLO 76-100 SERIES OR EQUAL
SV-8552	SOLIDS HANDLING BUILDING	CENTRIFUGE #2 SLOP WATER CONTROL	SOLENOID	1"	BRONZE	THD	-	RED HAT OR EQUAL
HV-8533	SOLIDS HANDLING BUILDING	CENTRIFUGE #2 SLUDGE FEED SAMPLE	BALL	1 1/2"	SS	THD	LV	APOLLO 76-100 SERIES OR EQUAL
HV-8534	SOLIDS HANDLING BUILDING	CENTRIFUGE #2 CENTRATE SAMPLE	BALL	1"	SS	THD	LV	APOLLO 76-100 SERIES OR EQUAL
HV-8601	SOLIDS HANDLING BUILDING	POLYMER TANK FILL ISOLATION	BALL	2"	PVC	THD	LV	HAYWARD TB SERIES TRUE UNION BALL VALVE OR EQUAL
CV-8601	SOLIDS HANDLING BUILDING	POLYMER TANK FILL LINE CHECK	CHECK	2"	PVC	TRUE UNION	-	HAYWARD TC SERIES TRUE UNION BALL CHECK VALVE OR EQUAL
CV-8603	SOLIDS HANDLING BUILDING	POLYMER RECIRC PUMP DISCHARGE CHECK	CHECK	2 1/2"	PVC	TRUE UNION	-	HAYWARD TC SERIES TRUE UNION BALL CHECK VALVE OR EQUAL
HV-8603A	SOLIDS HANDLING BUILDING	POLYMER RECIRC PUMP INLET ISOLATION	BALL	3"	PVC	THD	LV	HAYWARD TB SERIES TRUE UNION BALL VALVE OR EQUAL
HV-8603B	SOLIDS HANDLING BUILDING	POLYMER RECIRC PUMP DISCHARGE ISOLATION	BALL	2 1/2"	PVC	THD	LV	HAYWARD TB SERIES TRUE UNION BALL VALVE OR EQUAL
HV-8605	SOLIDS HANDLING BUILDING	POLYMER TANK DRAIN ISOLATION	BALL	2"	PVC	THD	LV	HAYWARD TB SERIES TRUE UNION BALL VALVE OR EQUAL
HV-8611	SOLIDS HANDLING BUILDING	POLYMER MIXING UNIT #1 SUCTION ISOLATION	BALL	2"	PVC	TRUE UNION	LV	ASAHI AMERICAN TYPE 21 PVC BALL VALVE OR EQUAL
HV-8612	SOLIDS HANDLING BUILDING	POLYMER MIXING UNIT #1 DISCHARGE ISOLATION	BALL	2"	PVC	TRUE UNION	LV	ASAHI AMERICAN TYPE 21 PVC BALL VALVE OR EQUAL
HV-8613	SOLIDS HANDLING BUILDING	POLYMER MIXING UNIT #1 WATER ISOLATION	BALL	2"	SS	THD	LV	APOLLO 76-100 SERIES OR EQUAL
HV-8621	SOLIDS HANDLING BUILDING	POLYMER MIXING UNIT #2 SUCTION ISOLATION	BALL	2"	PVC	TRUE UNION	LV	ASAHI AMERICAN TYPE 21 PVC BALL VALVE OR EQUAL
HV-8622	SOLIDS HANDLING BUILDING	POLYMER MIXING UNIT #2 DISCHARGE ISOLATION	BALL	2"	PVC	TRUE UNION	LV	ASAHI AMERICAN TYPE 21 PVC BALL VALVE OR EQUAL
HV-8623	SOLIDS HANDLING BUILDING	POLYMER MIXING UNIT #2 WATER ISOLATION	BALL	2"	SS	THD	LV	APOLLO 76-100 SERIES OR EQUAL
HV-8641	SOLIDS HANDLING BUILDING	POLYMER DILUTION WATER ISOLATION	BALL	3"	SS	THD	LV	APOLLO 76-100 SERIES OR EQUAL
CV-85501	CHEMICAL STORAGE AREA #1	SULFURIC ACID TANK FILL LINE CHECK	CHECK	2"	PVDF	TRUE UNION	-	ASAHI AMERICA BALL CHECK WITH PTFE SEAT AND O-RING OR EQUAL
HV-85501A	CHEMICAL STORAGE AREA #1	SULFURIC ACID TANK FILL LINE ISOLATION	BALL	2"	PVDF	TRUE UNION	LV	ASAHI AMERICA TYPE 21 PVDF BALL VALVE OR EQUAL
HV-85501B	CHEMICAL STORAGE AREA #1	SULFURIC ACID TANK DRAIN ISOLATION	BALL	2"	PVDF	TRUE UNION	LV	ASAHI AMERICA TYPE 21 PVDF BALL VALVE OR EQUAL
HV-85501C	CHEMICAL STORAGE AREA #1	SULFURIC ACID TANK DISCHARGE LINE ISOLATION	BALL	2"	PVDF	TRUE UNION	LV	ASAHI AMERICA TYPE 21 PVDF BALL VALVE OR EQUAL
CV-85001	CHEMICAL STORAGE AREA #1	LIQUID AMMONIUM SULFATE TANK FILL LINE CHECK	CHECK	2"	CPVC	TRUE UNION	-	ASAHI AMERICA BALL CHECK WITH PTFE SEAT AND O-RING OR EQUAL
HV-85001A	CHEMICAL STORAGE AREA #1	LIQUID AMMONIUM SULFATE TANK FILL LINE ISOLATION	BALL	2"	CPVC	TRUE UNION	LV	ASAHI AMERICA TYPE 21 CPVC BALL VALVE OR EQUAL
HV-85001B	CHEMICAL STORAGE AREA #1	LIQUID AMMONIUM SULFATE TANK DRAIN LINEISOLATION	BALL	2"	CPVC	TRUE UNION	LV	ASAHI AMERICA TYPE 21 CPVC BALL VALVE OR EQUAL
HV-85001C	CHEMICAL STORAGE AREA #1	LIQUID AMMONIUM SULFATE TANK DISCHARGE LINE ISOLATION	BALL	2"	CPVC	TRUE UNION	LV	ASAHI AMERICA TYPE 21 CPVC BALL VALVE OR EQUAL
HV-1531	EQUALIZATION BASIN	EQUALIZATION BASIN PUMP #1 ISOLATION	PLUG	8"	CI	FLXFL	WHL	VALMATIC 100% PORT ECCENTRIC PLUG VALVE OR EQUAL FOR BURIED SERVICE
CV-1531	EQUALIZATION BASIN	EQUALIZATION BASIN PUMP #1 ISOLATION	CHECK	8"	CI	FLXFL	-	VALMATIC SWING FLEX OR EQUAL
HV-1532	EQUALIZATION BASIN	EQUALIZATION BASIN PUMP #2 ISOLATION	PLUG	8"	CI	FLXFL	WHL	VALMATIC 100% PORT ECCENTRIC PLUG VALVE OR EQUAL FOR BURIED SERVICE
CV-1532	EQUALIZATION BASIN	EQUALIZATION BASIN PUMP #2 ISOLATION	CHECK	8"	CI	FLXFL	-	VALMATIC SWING FLEX OR EQUAL
HV-1533A	EQUALIZATION BASIN	EQUALIZATION BASIN PUMP #3 ISOLATION	PLUG	8"	CI	FLXFL	WHL	VALMATIC 100% PORT ECCENTRIC PLUG VALVE OR EQUAL FOR BURIED SERVICE
HV-1533B	EQUALIZATION BASIN	EQUALIZATION BASIN PUMP #3 ISOLATION	PLUG	8"	CI	FLXFL	WHL	VALMATIC 100% PORT ECCENTRIC PLUG VALVE OR EQUAL FOR BURIED SERVICE
HV-1533C	EQUALIZATION BASIN	EQUALIZATION BASIN PUMP #3 ISOLATION	PLUG	8"	CI	FLXFL	WHL	VALMATIC 100% PORT ECCENTRIC PLUG VALVE OR EQUAL FOR BURIED SERVICE
CV-1533	EQUALIZATION BASIN	EQUALIZATION BASIN PUMP #3 ISOLATION	CHECK	8"	CI	FLXFL	-	VALMATIC SWING FLEX OR EQUAL
MFV-1542	EQUALIZATION BASIN	EQUALIZATION BASIN RETURN AIR/VAC	COMBINATIO N	3"	DI	THD	-	VALMATIC SERIES 800 OR EQUAL
HV-1543	FINE SCREENS	EQUALIZATION BASIN RETURN ISOLATION	PLUG	16"	CI	FLXFL	WHL	VALMATIC 100% PORT ECCENTRIC PLUG VALVE OR EQUAL FOR BURIED SERVICE

3

BDP 10/14/2019 X:\Beaumont\Salt Mitigation WWTP Upgrade *WEBB170227\Drafting\Schedules\SCH-8 THRU 19.dwg

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	BP	DCH	JRL
REVISIONS				
1	07/26/19	EIT	CAL	JRL
2	09/16/19	EIT	BDP	JRL
3	10/14/19	EIT	BDP	JRL

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE

SCHEDULES

VALVE

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533 W. 2600 S., SUITE 275, BOUNTIFUL, UT 84010
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ENGINEERING CONSULTANTS

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DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

SHEET

SCH-19

METER SCHEDULE					
M#	LOCATION	SERVICE	TYPE	SIZE	REMARKS
M-1332	INFLUENT PUMP STATION	FINE SCREEN FEED FLOW METER	MAGMETER	24"	SEE INSTRUMENTATION SCHEDULE
M-1342	INFLUENT PUMP STATION	EQUALIZATION BASIN FEED FLOW METER	MAGMETER	20"	SEE INSTRUMENTATION SCHEDULE
M-1532	EQUALIZATION BASIN	EQUALIZATION BASIN RETURN FLOW METER	MAGMETER	16"	SEE INSTRUMENTATION SCHEDULE
M-1541	EQUALIZATION BASIN	FINE SCREENS FLOW METER	MAGMETER	16"	SEE INSTRUMENTATION SCHEDULE
M-2132	AERATION BASIN #1	PROCESS AIR FLOW METER	MASS FLOW INSERTION	N/A	SEE INSTRUMENTATION SCHEDULE
M-2232	AERATION BASIN #2	PROCESS AIR FLOW METER	MASS FLOW INSERTION	N/A	SEE INSTRUMENTATION SCHEDULE
M-2332	AERATION BASIN #3	PROCESS AIR FLOW METER	MASS FLOW INSERTION	N/A	SEE INSTRUMENTATION SCHEDULE
M-2432	AERATION BASIN #4	PROCESS AIR FLOW METER	MASS FLOW INSERTION	N/A	SEE INSTRUMENTATION SCHEDULE
M-3122	MEMBRANE BUILDING	MEMBRANE TRAIN #1 SCOUR AIR FLOW	MASS FLOW INSERTION	N/A	SEE INSTRUMENTATION SCHEDULE
M-3192	MEMBRANE BUILDING	PERMEATE PUMP #1 FLOW METER	MAGMETER	12"	PROVIDED WITH MBR EQUIPMENT
M-3222	MEMBRANE BUILDING	MEMBRANE TRAIN #2 SCOUR AIR FLOW	MASS FLOW INSERTION	N/A	SEE INSTRUMENTATION SCHEDULE
M-3292	MEMBRANE BUILDING	PERMEATE PUMP #2 FLOW METER	MAGMETER	12"	PROVIDED WITH MBR EQUIPMENT
M-3322	MEMBRANE BUILDING	MEMBRANE TRAIN #3 SCOUR AIR FLOW	MASS FLOW INSERTION	N/A	SEE INSTRUMENTATION SCHEDULE
M-3392	MEMBRANE BUILDING	PERMEATE PUMP #3 FLOW METER	MAGMETER	12"	PROVIDED WITH MBR EQUIPMENT
M-3422	MEMBRANE BUILDING	MEMBRANE TRAIN #4 SCOUR AIR FLOW	MASS FLOW INSERTION	N/A	SEE INSTRUMENTATION SCHEDULE
M-3492	MEMBRANE BUILDING	PERMEATE PUMP #4 FLOW METER	MAGMETER	12"	PROVIDED WITH MBR EQUIPMENT
M-3861	MEMBRANE BUILDING	MBR FEED PUMPS FLOW METER	MAGMETER	42"	SEE INSTRUMENTATION SCHEDULE
M-3893	MEMBRANE BUILDING	WAS/SCUM PUMPING FLOW METER	MAGMETER	8"	SEE INSTRUMENTATION SCHEDULE
M-30074	MEMBRANE BUILDING	RO FORWARDING PUMPS FLOW METER	MAGMETER	10"	PROVIDED WITH RO EQUIPMENT
M-47474	MEMBRANE BUILDING	RO CIP PUMP FLOW METER	MAGMETER	4"	PROVIDED WITH RO EQUIPMENT
M-5072	MEMBRANE BUILDING	SODIUM HYPOCHLORITE RECIRCULATION LINE	MAGMETER	1"	SEE INSTRUMENTATION SCHEDULE
M-6420	RECYCLED WATER LIFT STATION	NON-POTABLE WATER FLOW METER	MAGMETER	6"	SEE INSTRUMENTATION SCHEDULE
M-7122	RECYCLED WATER LIFT STATION	RECYCLED WATER FLOW METER	MAGMETER	18"	SEE INSTRUMENTATION SCHEDULE
M-8433	SOLIDS HOLDING BLOWERS	MIXING AIR FLOW METER	MASS FLOW INSERTION	8"	SEE INSTRUMENTATION SCHEDULE
M-8443	SOLIDS HOLDING BLOWERS	MIXING AIR FLOW METER	MASS FLOW INSERTION	8"	SEE INSTRUMENTATION SCHEDULE
M-8502	SOLIDS HANDLING BUILDING	CENTRIFUGE #1 FEED FLOW METER	MAGMETER	3"	SEE INSTRUMENTATION SCHEDULE
M-8532	SOLIDS HANDLING BUILDING	CENTRIFUGE #2 FEED FLOW METER	MAGMETER	3"	SEE INSTRUMENTATION SCHEDULE
M-8562	SOLIDS HANDLING BUILDING	CENTRIFUGE #3 FEED FLOW METER	MAGMETER	3"	SEE INSTRUMENTATION SCHEDULE

2

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	BP	DCH	JRL
REVISIONS				
1	07/26/19	BP	CAL	JRL
2	10/14/19	EIT	BDP	JRL

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE

SCHEDULES

METER

AQUA ENGINEERING
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ENGINEERING CONSULTANTS

0 1/2 1

DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET

SCH-24

P#	LOCATION	SERVICE	TYPE	HP (KW)	FLOW	TDH	REMARKS
P-8101	SOLIDS FEED PUMP STATION	WAS FEED TO DEWATERING CENTRIFUGES	PROGRESSIVE CAVITY	20	250 GPM	116 FT	NETZSCH MODEL NM090SY01L07V.3 FSIP OR EQUAL
P-8102	SOLIDS FEED PUMP STATION	WAS FEED TO DEWATERING CENTRIFUGES	PROGRESSIVE CAVITY	20	250 GPM	116 FT	NETZSCH MODEL NM090SY01L07V.3 FSIP OR EQUAL
P-8103	SOLIDS FEED PUMP STATION	WAS FEED TO DEWATERING CENTRIFUGES	PROGRESSIVE CAVITY	20	250 GPM	116 FT	NETZSCH MODEL NM090SY01L07V.3 FSIP OR EQUAL
P-8603	SOLIDS HANDLING BUILDING	POLYMER TANK RECIRCULATION	PROGRESSIVE CAVITY	3	55 GPM	5 FT	NETZSCH MODEL NM038BY01L06B OR EQUAL
P-1531	EQUALIZATION BASIN	EQUALIZATION BASIN RETURN PUMPING	SELF-PRIMING CENTRIFUGAL	30	1960 GPM	35 FT	GORMAN RUPP MODEL T8AB-3 (MIN 60% EFFICIENCY @ DESIGN POINT)
P-1532	EQUALIZATION BASIN	EQUALIZATION BASIN RETURN PUMPING	SELF-PRIMING CENTRIFUGAL	30	1960 GPM	35 FT	GORMAN RUPP MODEL T8AB-3 (MIN 60% EFFICIENCY @ DESIGN POINT)
P-1533	EQUALIZATION BASIN	EQUALIZATION BASIN RETURN PUMPING	SELF-PRIMING CENTRIFUGAL	30	1960 GPM	35 FT	GORMAN RUPP MODEL T8AB-3 (MIN 60% EFFICIENCY @ DESIGN POINT)

2

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	BP	DCH	JRL
REVISIONS				
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2	10/14/19	EIT	BDP	JRL

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
SCHEDULES
PUMP

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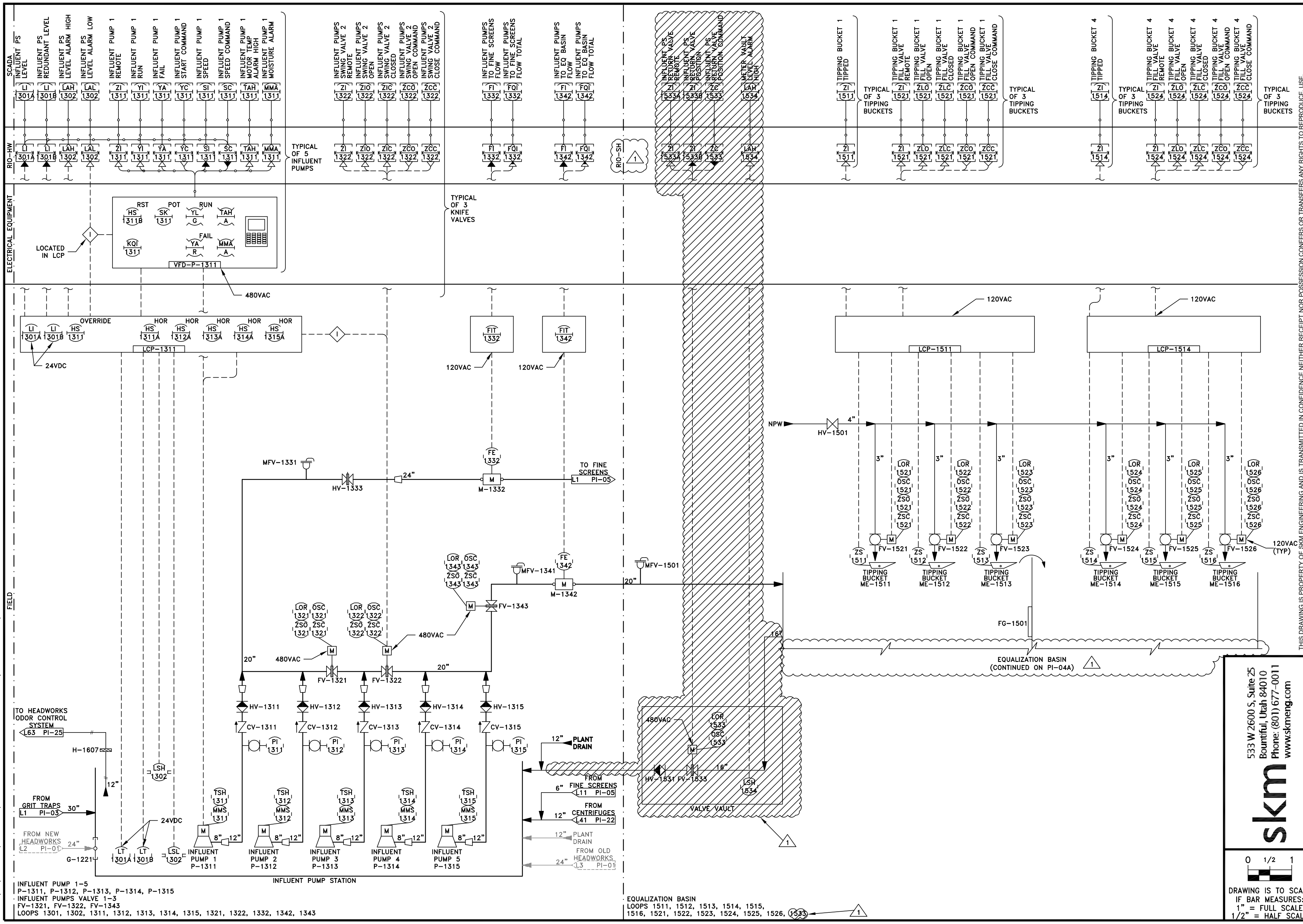
0 1/2 1
DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET
SCH-26



10/11/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\01 PI-04 INFLUENT PUMP STATION & EQ BASIN.DWG

skm
533 W 2600 S, Suite 25
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www.skmeng.com

DRAWING IS TO SCALE IF BAR MEASURES:
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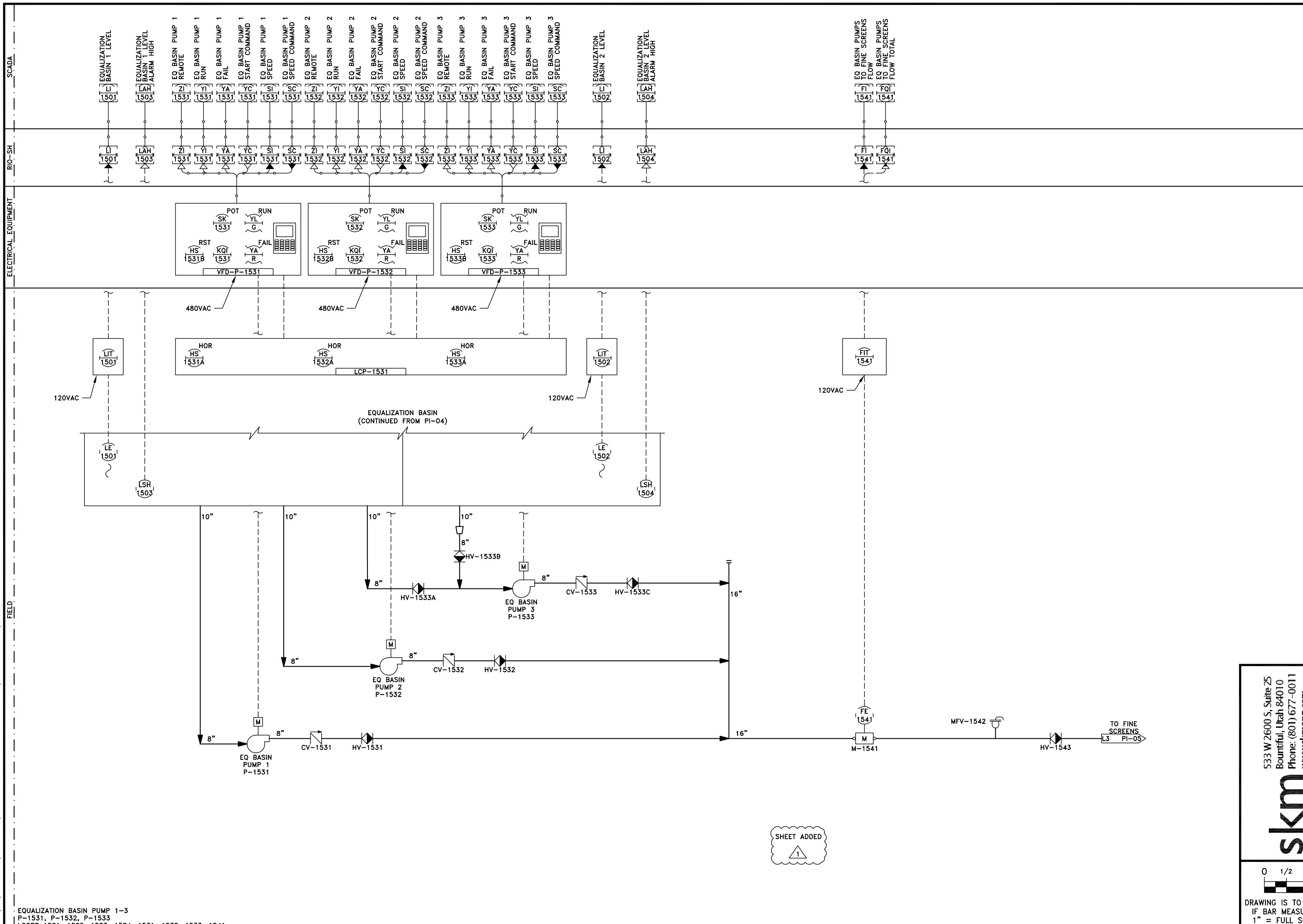
CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
INSTRUMENTATION - P&IDS
INFLUENT PUMP STATION & EQ BASIN

NO	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	10/11/19	MPJ	DCL	MPJ

SHEET 8 OF 172

PI-04



9/18/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\01 PI-04A EQUALIZATION BASIN PUMP STATION.DWG

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CITY OF BEAUMONT

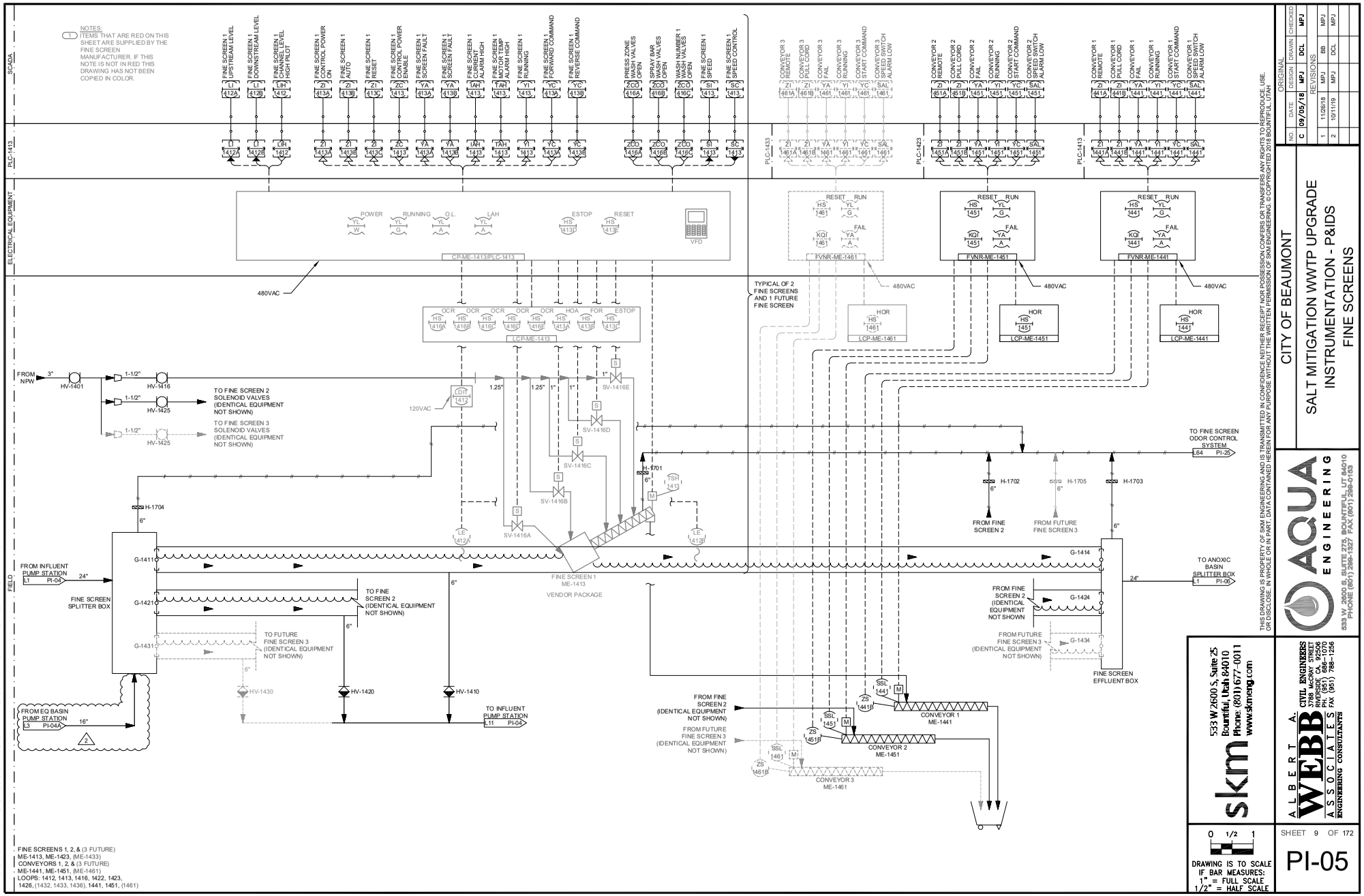
SALT MITIGATION WWTP UPGRADE
INSTRUMENTATION - P&IDS
EQUALIZATION BASIN PUMP STATION

NO	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	10/11/19	MPJ	DCL	MPJ

DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET 8A OF 172

PI-04A



NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	11/26/18	MPJ	BB	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
INSTRUMENTATION - P&IDS
FINE SCREENS

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DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

SHEET 9 OF 172

PI-05

9/18/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\01 PI\05 FINE SCREENS.DWG

TYPE	LOOP POWERED	SLOT:POINT	TAGNAME	DESCRIPTION	P&ID SHEET	STATUS
AI	No	1:00	AI-1161	PLANT INFLUENT DO	PI-01	EXISTING
AI	No	1:01	AI-1162	PLANT INFLUENT PH	PI-01	EXISTING
AI	No	1:02	AI-1163	PLANT INFLUENT CONDUCTIVITY	PI-01	EXISTING
AI	No	1:03	FI-1165	PLANT INFLUENT FLOW	PI-01	EXISTING
AI	Yes	1:04	LI-1301A	INFLUENT WET WELL LEVEL A	PI-04	NEW
AI	Yes	1:05	LI-1301B	INFLUENT WET WELL LEVEL B	PI-04	NEW
AI	No	1:06	LI-1501	EQUALIZATION BASIN 1 LEVEL	PI-04	NEW
AI	No	1:07	LI-1502	EQUALIZATION BASIN 2 LEVEL	PI-04	NEW
AI	No	1:08	ZI-1533	INFLUENT PUMP STATION RETURN VALVE POSITION	PI-04	NEW
AI	Yes	1:09	LI-1801	STORM DRAIN PS LEVEL	PI-17	NEW
AI	No	1:10	FI-1822	STORM DRAIN PUMPS FLOW	PI-17	NEW
AI	Yes	1:11	PI-6412	HYDROPNEUMATIC TANK PRESSURE	PI-19	NEW
AI	No	1:12	FI-6420	NPW PUMP STATION FLOW	PI-19	NEW
AI	Yes	1:13	LI-7101	RECYCLED WATER LEVEL	PI-19	NEW
AI	No	1:14	FI-7122	RECYCLED WATER LIFT PUMPS FLOW	PI-19	NEW
AI	Yes	1:15	LI-7131	RECYCLED WATER STORAGE TANK 1 LEVEL	PI-19	NEW
AI	Yes	1:16	LI-7141	RECYCLED WATER STORAGE TANK 2 LEVEL	PI-19	NEW
AI	No	2:1	FI-7151	PLANT EFFLUENT FLOW	PI-19	NEW
AI	Yes	2:2	LI-7401	SODIUM BISULFITE TANK LEVEL	PI-19A	NEW
AI	No	2:3	SI-7410	SODIUM BISULFITE PUMP 1 SPEED	PI-19A	NEW
AI	No	2:4	SI-7420	SODIUM BISULFITE PUMP 2 SPEED	PI-19A	NEW
AI	No	2:5	AI-7472	PLANT EFFLUENT PH	PI-19	NEW
AI	No	2:6	AI-7473	PLANT EFFLUENT CHLORINE RESIDUAL	PI-19	NEW
AI	Yes	2:7	LI-7501	SODIUM HYDROXIDE TANK LEVEL	PI-19A	NEW
AI	No	2:8	SI-7511	SODIUM HYDROXIDE PUMP 1 SPEED	PI-19A	NEW
AI	No	2:9	SI-7521	SODIUM HYDROXIDE PUMP 2 SPEED	PI-19A	NEW
AI	Yes	2:10	PI-8111	CENTRIFUGE FEED PUMPS PRESSURE	PI-20	NEW
AI	Yes	2:11	LI-8202	SOLIDS HOLDING TANK 1 LEVEL	PI-20	NEW
AI	Yes	2:12	LI-8302	SOLIDS HOLDING TANK 2 LEVEL	PI-20	NEW
AI	No	2:13	FI-8433	BLOWERS DISCHARCH LINE FLOW 1	PI-21	NEW
AI	No	2:14	FI-8443	BLOWERS DISCHARCH LINE FLOW 2	PI-21	NEW
AI	Yes	2:15	TI-1921	HEADWORKS ELECTRICAL BUILDING TEMPERATURE		NEW
AI	No	3:0	FI-1332	INFLUENT PUMPS TO FINE SCREENS FLOW	PI-04	NEW
AI	No	3:1	FI-1342	INFLUENT PUMPS TO EQ BASIN FLOW	PI-04	NEW
AI		3:2	AI-1641	ODOR CONTROL 1 INFLUENT METHANE LEVEL	PI-25	NEW
AI		3:3	AI-1741	ODOR CONTROL 2 INFLUENT METHANE LEVEL	PI-25	NEW
AI		3:4		INSTALLED SPARE		
AI		3:5		INSTALLED SPARE		
AI		3:6		INSTALLED SPARE		
AI		3:7		INSTALLED SPARE		
AI		3:8		INSTALLED SPARE		
AI		3:9		INSTALLED SPARE		
AI		3:10		INSTALLED SPARE		
AI		3:11		INSTALLED SPARE		
AI		3:12		INSTALLED SPARE		
AI		3:13		INSTALLED SPARE		
AI		3:14		INSTALLED SPARE		
AI		3:15		INSTALLED SPARE		
AO		5:00	QC-1164	FLOW SIGNAL TO PLANT INFLUENT SAMPLER	PI-04	EXISTING
AO		5:01	ZC-1533	INFLUENT PUMP STATION RETURN VALVE POSITION COMMAND	PI-04	NEW
AO		5:02	QC-6302	FLOW SIGNAL TO PLANT EFFLUENT SAMPLER	PI-19	EXISTING
AO		5:03	SC-7410	SODIUM BISULFITE PUMP 1 SPEED COMMAND	PI-19A	NEW
AO		5:04	SC-7420	SODIUM BISULFITE PUMP 2 SPEED COMMAND	PI-19A	NEW
AO		5:05	SC-7511	SODIUM HYDROXIDE PUMP 1 SPEED COMMAND	PI-19A	NEW
AO		5:06	SC-7521	SODIUM HYDROXIDE PUMP 2 SPEED COMMAND	PI-19A	NEW
AO		5:07		INSTALLED SPARE		
DI		8:00	LAH-1302	INFLUENT WET WELL HIGH LEVEL	PI-04	NEW
DI		8:01	LAL-1302	INFLUENT WET WELL LOW LEVEL	2-7	NEW
DI		8:02	FQI-1332	INFLUENT PUMPS TO FINE SCREENS FLOW PULSE	PI-04	NEW
DI		8:03	FQI-1342	INFLUENT PUMPS TO EQ FLOW PULSE	PI-04	NEW
DI		8:04	ZI-1533A	INFLUENT PUMP STATION RETURN VALVE REMOTE	PI-04	NEW
DI		8:05	LAH-1534	EQ RETURN VALVE FAULT FLOOD ALARM	PI-04	NEW
DI		8:06	LSH-1802	STORM DRAIN PS LEVEL ALARM HIGH	PI-17	NEW
DI		8:07	LSL-1802	STORM DRAIN PS LEVEL ALARM LOW	PI-17	NEW
DI		8:08	FQI-1822	STORM DRAIN PUMPS FLOW TOTAL PULSE	PI-17	NEW
DI		8:09	FQI-6420	NPW PUMP STATION FLOW TOTAL PULSE	PI-19	NEW
DI		8:10	LAL-7101	RECYCLED WATER LEVEL ALARM LOW	PI-19	NEW
DI		8:11	LAH-7102	RECYCLED WATER LEVEL ALARM HIGH	PI-19	NEW
DI		8:12	FQI-7122	RECYCLED WATER LIFT PUMPS FLOW TOTAL PULSE	PI-19	NEW
DI		8:13	FAH-7406	EYEWASH SHOWER FLOW ALARM HIGH	PI-19A	NEW
DI		8:14	ZI-7410	SODIUM BISULFITE PUMP 1 REMOTE	PI-19A	NEW
DI		8:15	YI-7410	SODIUM BISULFITE PUMP 1 RUNNING	PI-19	NEW
DI		8:16	YA-7410	SODIUM BISULFITE PUMP 1 FAIL	PI-19A	NEW
DI		8:17	ZI-7420	SODIUM BISULFITE PUMP 2 REMOTE	PI-19A	NEW
DI		8:18	YI-7420	SODIUM BISULFITE PUMP 2 RUNNING	PI-19A	NEW
DI		8:19	YA-7420	SODIUM BISULFITE PUMP 2 FAIL	PI-19A	NEW
DI		8:20	LA-7431	SODIUM BISULFITE DISCHARGE LEAK ALARM		NEW
DI		8:21	YI-7471	EFFLUENT SAMPLE PUMP RUNNING	PI-19	NEW
DI		8:22	ZI-7511	SODIUM HYDROXIDE PUMP 1 REMOTE	PI-19A	NEW
DI		8:23	YI-7511	SODIUM HYDROXIDE PUMP 1 RUNNING	PI-19	NEW
DI		8:24	YA-7511	SODIUM HYDROXIDE PUMP 1 FAIL	PI-19A	NEW
DI		8:25	ZI-7521	SODIUM HYDROXIDE PUMP 2 REMOTE	PI-19A	NEW
DI		8:26	YI-7521	SODIUM HYDROXIDE PUMP 2 RUNNING	PI-19A	NEW
DI		8:27	YA-7521	SODIUM HYDROXIDE PUMP 2 FAIL	PI-19A	NEW
DI		8:28	LA-7531	SODIUM HYDROXIDE DISCHARGE LEAK ALARM		NEW
DI		8:29	LAH-8203	SOLIDS HOLDING TANK 1 HIGH LEVEL ALARM	PI-20	NEW
DI		8:30	LAL-8203	SOLIDS HOLDING TANK 1 LOW LEVEL ALARM	PI-20	NEW
DI		8:31	LAH-8303	SOLIDS HOLDING TANK 2 HIGH LEVEL ALARM	PI-20	NEW
DI		9:00	LAL-8303	SOLIDS HOLDING TANK 2 LOW LEVEL ALARM	PI-20	NEW
DI		9:01	FQI-1332	INFLUENT PUMPS TO FINE SCREENS FLOW TOTAL PULSE	PI-04	NEW
DI		9:02	FQI-1342	INFLUENT PUMPS TO EQ BASIN FLOW TOTAL PULSE	PI-04	NEW
DI		9:03		INSTALLED SPARE		
DI		9:04		INSTALLED SPARE		

I/O LIST RIO-HW

TYPE	LOOP POWERED	SLOT:POINT	TAGNAME	DESCRIPTION	P&ID SHEET	STATUS
DI		9:05		INSTALLED SPARE		
DI		9:06		INSTALLED SPARE		
DI		9:07		INSTALLED SPARE		
DI		9:08		INSTALLED SPARE		
DI		9:09		INSTALLED SPARE		
DI		9:10		INSTALLED SPARE		
DI		9:11		INSTALLED SPARE		
DI		12:24		INSTALLED SPARE		
DI		9:13		INSTALLED SPARE		
DI		9:14		INSTALLED SPARE		
DI		9:15		INSTALLED SPARE		
DI		9:16		INSTALLED SPARE		
DI		9:17		INSTALLED SPARE		
DI		9:18		INSTALLED SPARE		
DI		9:19		INSTALLED SPARE		
DI		9:20		INSTALLED SPARE		
DI		9:21		INSTALLED SPARE		
DI		9:22		INSTALLED SPARE		
DI		9:23		INSTALLED SPARE		
DI		9:24		INSTALLED SPARE		
DI		9:25		INSTALLED SPARE		
DI		9:26		INSTALLED SPARE		
DI		9:27		INSTALLED SPARE		
DI		9:28		RIO-HW SPD FAIL		
DI		9:29		RIO-HW 24VDC PSA ALARM		
DI		9:30		RIO-HW 24VDC PSB ALARM		
DI		9:31		SW-HW-IO ALARM		
DI		11:00	ZI- 1321	INFLUENT PUMPS SWING VALVE 1 REMOTE	PI-04	NEW
DI		11:01	ZIO- 1321	INFLUENT PUMPS SWING VALVE 1 OPENED	PI-04	NEW
DI		11:02	ZIC- 1321	INFLUENT PUMPS SWING VALVE 1 CLOSED	PI-04	NEW
DI		11:03	ZI- 1322	INFLUENT PUMPS SWING VALVE 2 REMOTE	PI-04	NEW
DI		11:04	ZIO- 1322	INFLUENT PUMPS SWING VALVE 2 OPENED	PI-21	NEW
DI		11:05	ZIC- 1322	INFLUENT PUMPS SWING VALVE 2 CLOSED	PI-04	NEW
DI		11:06	ZI- 1343	INFLUENT PUMPS EQ VALVE REMOTE	PI-04	NEW
DI		11:07	ZIO- 1343	INFLUENT PUMPS EQ VALVE OPENED	PI-04	NEW
DI		11:08	ZIC 1343	INFLUENT PUMPS EQ VALVE CLOSED	PI-04	NEW
DI		11:09	LAH- 1503	EQUALIZATION BASIN 1 LEVEL HIGH ALARM	PI-04	NEW
DI		11:10	LAH- 1504	EQUALIZATION BASIN 2 LEVEL HIGH ALARM	PI-04	NEW
DI		11:11	FQI- 1332	INFLUENT PUMPS TO FINE SCREENS FLOW TOTAL	PI-04	NEW
DI		11:12	FQI- 1342	INFLUENT PUMPS TO EQ BASIN FLOW TOTAL	PI-04	NEW
DI		11:13	ZI- 1611	ODOR CONTROL 1 EXHAUST FAN REMOTE	PI-27	NEW
DI		11:14	YA- 1611	ODOR CONTROL 1 EXHAUST FAN FAIL	PI-27	NEW
DI		11:15	YI- 1611	ODOR CONTROL 1 EXHAUST FAN RUNNING	PI-27	NEW
DI		11:16	LAL- 1631	NUTRIENT TANK 1 LEVEL ALARM LOW	PI-27	NEW
DI		11:17	ZI- 1711	ODOR CONTROL 2 EXHAUST FAN REMOTE	PI-27	NEW
DI		11:18	YA- 1711	ODOR CONTROL 2 EXHAUST FAN FAIL	PI-27	NEW
DI		11:19	YI- 1711	ODOR CONTROL 2 EXHAUST FAN RUNNING	PI-27	NEW
DI		11:20	LAL 1731	NUTRIENT TANK 2 LEVEL ALARM LOW	PI-27	NEW
DI		11:21	ZI- 8411	BLOWER 2 DIVERSION VALVE 1 REMOTE	PI-21	NEW
DI		11:22	ZIO- 8411	BLOWER 2 DIVERSION VALVE 1 OPEN	PI-21	NEW
DI		11:23	ZIC- 8411	BLOWER 2 DIVERSION VALVE 1 CLOSED	PI-21	NEW
DI		11:24	ZI- 8412	BLOWER 2 DIVERSION VALVE 2 REMOTE	PI-21	NEW
DI		11:25	ZIO- 8412	BLOWER 2 DIVERSION VALVE 2 OPEN	PI-21	NEW
DI		11:26	ZIC- 8412	BLOWER 2 DIVERSION VALVE 2 CLOSED	PI-21	NEW
DI		11:27		INSTALLED SPARE		
DI		11:28		INSTALLED SPARE		
DI		11:29		INSTALLED SPARE		
DI		11:30		INSTALLED SPARE		
DI		11:31		INSTALLED SPARE		
DI		12:00		INSTALLED SPARE		
DI		12:01		INSTALLED SPARE		
DI		12:02		INSTALLED SPARE		
DI		12:03		INSTALLED SPARE		
DI		12:04		INSTALLED SPARE		
DI		12:05		INSTALLED SPARE		
DI		12:06		INSTALLED SPARE		
DI		12:07		INSTALLED SPARE		
DI		12:08		INSTALLED SPARE		
DI		12:09		INSTALLED SPARE		
DI		12:10		INSTALLED SPARE		
DI		12:11		INSTALLED SPARE		
DI		12:12		INSTALLED SPARE		
DI		12:13		INSTALLED SPARE		
DI		12:14		INSTALLED SPARE		
DI		12:15		INSTALLED SPARE		
DI		12:16		INSTALLED SPARE		
DI		12:17		INSTALLED SPARE		
DI		12:18		INSTALLED SPARE		
DI		12:19		INSTALLED SPARE		
DI		12:20		INSTALLED SPARE		
DI		12:21		INSTALLED SPARE		
DI		12:22		INSTALLED SPARE		
DI		12:23		INSTALLED SPARE		
DI		12:24		INSTALLED SPARE		
DI		12:25		INSTALLED SPARE		
DI		12:26		INSTALLED SPARE		
DI		12:27		INSTALLED SPARE		
DI		12:28		INSTALLED SPARE		
DI		12:29		INSTALLED SPARE		
DI		12:30		INSTALLED SPARE		
DI		12:31		INSTALLED SPARE		
DO		15:00	ZCO- 1321	INFLUENT PUMPS SWING VALVE 1 OPEN CMD	PI-04	NEW
DO		15:01	ZCC- 1321	INFLUENT PUMPS SWING VALVE 1 CLOSE CMD	PI-04	NEW
DO		15:02	ZCO- 1322	INFLUENT PUMPS SWING VALVE 2 OPEN CMD	PI-04	NEW

I/O LIST RIO-HW CONTINUED

TYPE	LOOP POWERED	SLOT:POINT	TAGNAME	DESCRIPTION	P&ID SHEET	STATUS
DO		15:03	ZCC- 1322	INFLUENT PUMPS SWING VALVE 2 CLOSE CMD	PI-04	NEW
DO		15:04	ZCO- 1343	INFLUENT PUMPS EQ VALVE OPEN CMD	PI-04	NEW
DO		15:05	ZCC- 1343	INFLUENT PUMPS EQ VALVE CLOSE CMD	PI-04	NEW
DO		15:06	YC- 1611	ODOR CONTROL 1 EXHAUST FAN RUN COMMAND	PI-27	NEW
DO		15:07	YC- 1711	ODOR CONTROL 2 EXHAUST FAN RUN COMMAND	PI-27	NEW
DO		15:08	YC- 7410	SODIUM BISULFITE PUMP 1 START COMMAND	PI-19A	NEW
DO		15:09	YC- 7420	SODIUM BISULFITE PUMP 2 START COMMAND	PI-19A	NEW
DO		15:10	YC- 7511	SODIUM HYDROXIDE PUMP 1 START COMMAND	PI-19A	NEW
DO		15:11	YC- 7521	SODIUM HYDROXIDE PUMP 2 START COMMAND	PI-19A	NEW
DO		15:12	ZCO- 8411	BLOWER 2 DIVERSION VALVE 1 OPEN COMMAND	PI-21	NEW
DO		15:13	ZCC- 8411	BLOWER 2 DIVERSION VALVE 1 CLOSE COMMAND	PI-21	NEW
DO		15:14	ZCO- 8412	BLOWER 2 DIVERSION VALVE 2 OPEN COMMAND	PI-21	NEW
DO		15:15	ZCC- 8412	BLOWER 2 DIVERSION VALVE 2 CLOSE COMMAND	PI-21	NEW
		15:16				
		15:17				
		15:18				
		15:19				
		15:20				
		15:21				
		15:22				
		15:23				
		15:24				
		15:25				
		15:26				
		15:27				
		15:28				
		15:29				
		15:30				
		15:31				
Ethernet			ZI-1101	EAST COURSE SCREENS FEED GATE REMOTE	PI-01	EXISTING
Ethernet			ZIO-1101	EAST COURSE SCREENS FEED GATE OPENED	PI-01	EXISTING
Ethernet			ZIC-1101	EAST COURSE SCREENS FEED GATE CLOSED	PI-01	EXISTING
Ethernet			ZCO-1101	EAST COURSE SCREENS FEED GATE OPEN CMD	PI-01	EXISTING
Ethernet			ZCC-1101	EAST COURSE SCREENS FEED GATE CLOSE CMD	PI-01	EXISTING
Ethernet			ZI-1102	WEST COURSE SCREENS FEED GATE REMOTE	PI-01	EXISTING
Ethernet			ZIO-1102	WEST COURSE SCREENS FEED GATE OPENED	PI-01	EXISTING
Ethernet			ZIC-1102	WEST COURSE SCREENS FEED GATE CLOSED	PI-01	EXISTING
Ethernet			ZCO-1102	WEST COURSE SCREENS FEED GATE OPEN CMD	PI-01	EXISTING
Ethernet			ZCC-1102	WEST COURSE SCREENS FEED GATE CLOSE CMD	PI-01	EXISTING
Ethernet			ZI-1111	COURSE SCREEN 1 INLET GATE REMOTE	PI-01	EXISTING
Ethernet			ZIO-1111	COURSE SCREEN 1 INLET GATE OPENED	PI-01	EXISTING
Ethernet			ZIC-1111	COURSE SCREEN 1 INLET GATE CLOSED	PI-01	EXISTING
Ethernet			ZCO-1111	COURSE SCREEN 1 INLET GATE OPEN CMD	PI-01	EXISTING
Ethernet			ZCC-1111	COURSE SCREEN 1 INLET GATE CLOSE CMD	PI-01	EXISTING
Ethernet			ZI-1113	COURSE SCREEN 1 OUTLET GATE REMOTE	PI-01	EXISTING
Ethernet			ZIO-1113	COURSE SCREEN 1 OUTLET GATE OPENED	PI-01	EXISTING
Ethernet			ZIC-1113	COURSE SCREEN 1 OUTLET GATE CLOSED	PI-01	EXISTING
Ethernet			ZCO-1113	COURSE SCREEN 1 OUTLET GATE OPEN CMD	PI-01	EXISTING
Ethernet			ZCC-1113	COURSE SCREEN 1 OUTLET GATE CLOSE CMD	PI-01	EXISTING
Ethernet			ZI-1151	EAST COURSE SCREENS OUTLET GATE REMOTE	PI-01	EXISTING
Ethernet			ZIO-1151	EAST COURSE SCREENS OUTLET GATE OPENED	PI-01	EXISTING
Ethernet			ZIC-1151	EAST COURSE SCREENS OUTLET GATE CLOSED	PI-01	EXISTING
Ethernet			ZCO-1151	EAST COURSE SCREENS OUTLET GATE OPEN CMD	PI-01	EXISTING
Ethernet			ZCC-1151	EAST COURSE SCREENS OUTLET GATE CLOSE CMD	PI-01	EXISTING
Ethernet			ZI-1152	GRIT BYPASS GATE REMOTE	PI-01	EXISTING
Ethernet			ZIO-1152	GRIT BYPASS GATE OPENED	PI-01	EXISTING
Ethernet			ZIC-1152	GRIT BYPASS GATE CLOSED	PI-01	EXISTING
Ethernet			ZCO-1152	GRIT BYPASS GATE OPEN CMD	PI-01	EXISTING
Ethernet			ZCC-1152	GRIT BYPASS GATE CLOSE CMD	PI-01	EXISTING
Ethernet			ZI-1202	GRIT TRAP 1 REMOTE	PI-03	NEW
Ethernet			YI-1202	GRIT TRAP 1 RUNNING	PI-03	NEW
Ethernet			YA-1202	GRIT TRAP 1 FAIL	PI-03	NEW
Ethernet			YC-1202	GRIT TRAP 1 START CMD	PI-03	NEW
Ethernet			ZI-1212	GRIT TRAP 2 REMOTE	PI-03	NEW
Ethernet			YI-1212	GRIT TRAP 2 RUNNING	PI-03	NEW
Ethernet			YA-1212	GRIT TRAP 2 FAIL	PI-03	NEW
Ethernet			YC-1212	GRIT TRAP 2 START CMD	PI-03	NEW

I/O LIST RIO-HW CONTINUED

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	08/14/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
INSTRUMENTATION - PLC DRAWINGS
INPUT OUTPUT LIST I

AQUA ENGINEERING
533 W. 2600 S. SUITE 275 BOUNTIFUL, UT 84010
PHONE (801) 298-1327 FAX (801) 298-0133

skm
533 W 2600 S, Suite 25
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ALBERT A. WEBB ASSOCIATES
CIVIL ENGINEERS
3788 McCRAY STREET
RIVERSIDE, CA. 92506
PH (951) 686-1070
FAX (951) 788-1256
ENGINEERING CONSULTANTS

0 1/2 1
DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET 50 OF 172

I-14

9/18/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\04 I-14 INPUT OUTPUT LIST I.DWG

TYPE	LOOP POWERED	SLOT:POINT	TAGNAME	DESCRIPTION	P&ID SHEET	STATUS
AI	No	1:00	ZI-8501B	CENTRIFUGE 1 FEED VALVE POSITION	PI-22	NEW
AI	No	1:01	FI-8502	CENTRIFUGE 1 FEED FLOW	PI-22	NEW
AI	No	1:02	ZI-8531B	CENTRIFUGE 2 FEED VALVE POSITION	PI-22	NEW
AI	No	1:03	FI-8532	CENTRIFUGE 2 FEED FLOW	PI-22	NEW
AI	No	1:04	ZI-8561B	CENTRIFUGE 3 FEED VALVE POSITION	PI-22	NEW
AI	No	1:05	FI-8562	CENTRIFUGE 3 FEED FLOW	PI-22	NEW
AI	No	1:06	TI-8781	SOLIDS HANDLING ELECTRICAL ROOM TEMPERATURE		NEW
AI	No	1:07	WI-9621	TRUCK SCALE WEIGHT	PI-24	NEW
AI	Yes	1:08	LI-8601	POLYMER TANK LEVEL	PI-23	NEW
AI	No	1:09	LI-1501	EQUALIZATION BASIN 1 LEVEL	PI-04A	NEW
AI	No	1:10	LI-1502	EQUALIZATION BASIN 2 LEVEL	PI-04A	NEW
AI	No	1:11	FI-1541	EQ BASIN PUMPS TO FINE SCREENS FLOW	PI-04A	NEW
AI		1:12				
AI		1:13				
AI		1:14				
AI		1:15				
AO		3:00	ZC-8501	CENTRIFUGE 1 FEED VALVE POSITION COMMAND	PI-22	NEW
AO		3:01	ZC-8531	CENTRIFUGE 2 FEED VALVE POSITION COMMAND	PI-22	NEW
AO		3:02	ZC-8561	CENTRIFUGE 3 FEED VALVE POSITION COMMAND	PI-22	NEW
AO		3:03				
AO		3:04				
AO		3:05				
AO		3:06				
AO		3:07				
DI		5:00	ZI-8501A	CENTRIFUGE 1 FEED VALVE REMOTE	PI-22	NEW
DI		5:01	FQI-8502	CENTRIFUGE 1 FEED FLOW TOTAL PULSE	PI-22	NEW
DI		5:02	ZI-8531A	CENTRIFUGE 2 FEED VALVE REMOTE	PI-22	NEW
DI		5:03	FQI-8532	CENTRIFUGE 2 FEED FLOW TOTAL PULSE	PI-22	NEW
DI		5:04	ZI-8561A	CENTRIFUGE 3 FEED VALVE REMOTE	PI-22	NEW
DI		5:05	FQI-8562	CENTRIFUGE 3 FEED FLOW TOTAL PULSE	PI-22	NEW
DI		5:07	LAH-1503	EQUALIZATION BASIN 1 LEVEL ALARM HIGH	PI-04A	NEW
DI		5:07	LAH-1504	EQUALIZATION BASIN 2 LEVEL ALARM HIGH	PI-04A	NEW
DI		5:08	FQI-1541	EQ BASIN PUMPS TO FINE SCREENS FLOW TOTAL PULSE	PI-04A	NEW
DI		5:09		INSTALLED SPARE		
DI		5:10		INSTALLED SPARE		
DI		5:11		INSTALLED SPARE		
DI		5:12		INSTALLED SPARE		
DI		5:13		INSTALLED SPARE		
DI		5:14		INSTALLED SPARE		
DI		5:17		INSTALLED SPARE		
DI		5:16		INSTALLED SPARE		
DI		5:17		INSTALLED SPARE		
DI		5:18		INSTALLED SPARE		
DI		5:19		INSTALLED SPARE		
DI		5:20		INSTALLED SPARE		
DI		5:21		INSTALLED SPARE		
DI		5:22		INSTALLED SPARE		
DI		5:23		INSTALLED SPARE		
DI		5:24		INSTALLED SPARE		
DI		7:22		INSTALLED SPARE		
DI		5:26		INSTALLED SPARE		
DI		5:27		INSTALLED SPARE		
DI		5:28		RIO-SH SPD FAIL		
DI		5:29		RIO-SH 24VDC PSA ALARM		
DI		5:30		RIO-SH 24VDC PSB ALARM		
DI		5:31		SW-SH-IO ALARM		
DI		7:00	ZI-1511	TIPPING BUCKET 1 TIPPED	PI-04	NEW
DI		7:01	ZI-1512	TIPPING BUCKET 2 TIPPED	PI-04	NEW
DI		7:02	ZI-1513	TIPPING BUCKET 3 TIPPED	PI-04	NEW
DI		7:03	ZI-1514	TIPPING BUCKET 4 TIPPED	PI-04	NEW
DI		7:04	ZI-1515	TIPPING BUCKET 5 TIPPED	PI-04	NEW
DI		7:05	ZI-1516	TIPPING BUCKET 6 TIPPED	PI-04	NEW
DI		7:06	ZI-1521	TIPPING BUCKET 1 FILL VALVE REMOTE	PI-04	NEW
DI		7:07	ZI-1521	TIPPING BUCKET 1 FILL VALVE OPEN	PI-04	NEW
DI		7:08	ZI-1521	TIPPING BUCKET 1 FILL VALVE CLOSED	PI-04	NEW
DI		7:09	ZI-1522	TIPPING BUCKET 2 FILL VALVE REMOTE	PI-04	NEW
DI		7:10	ZI-1522	TIPPING BUCKET 2 FILL VALVE OPEN	PI-04	NEW
DI		7:11	ZI-1522	TIPPING BUCKET 2 FILL VALVE CLOSED	PI-04	NEW
DI		7:12	ZI-1523	TIPPING BUCKET 3 FILL VALVE REMOTE	PI-04	NEW
DI		7:13	ZI-1523	TIPPING BUCKET 3 FILL VALVE OPEN	PI-04	NEW
DI		7:14	ZI-1523	TIPPING BUCKET 3 FILL VALVE CLOSED	PI-04	NEW
DI		7:15	ZI-1524	TIPPING BUCKET 4 FILL VALVE REMOTE	PI-04	NEW
DI		7:16	ZI-1524	TIPPING BUCKET 4 FILL VALVE OPEN	PI-04	NEW
DI		7:17	ZI-1524	TIPPING BUCKET 4 FILL VALVE CLOSED	PI-04	NEW
DI		7:18	ZI-1525	TIPPING BUCKET 5 FILL VALVE REMOTE	PI-04	NEW
DI		7:19	ZI-1525	TIPPING BUCKET 5 FILL VALVE OPEN	PI-04	NEW
DI		7:20	ZI-1525	TIPPING BUCKET 5 FILL VALVE CLOSED	PI-04	NEW
DI		7:21	ZI-1526	TIPPING BUCKET 6 FILL VALVE REMOTE	PI-04	NEW
DI		7:22	ZI-1526	TIPPING BUCKET 6 FILL VALVE OPEN	PI-04	NEW
DI		7:23	ZI-1526	TIPPING BUCKET 6 FILL VALVE CLOSED	PI-04	NEW
DI		7:24	FAH-8631	EYEWASH SHOWER FLOW ALARM HIGH	PI-23	NEW
DI		7:25		INSTALLED SPARE		
DI		7:26		INSTALLED SPARE		
DI		7:27		INSTALLED SPARE		
DI		7:28		INSTALLED SPARE		
DI		7:29		INSTALLED SPARE		
DI		7:30		INSTALLED SPARE		
DI		7:31		INSTALLED SPARE		
DI		8:00	ZI-9100A	DISCHARGE CONVEYOR SYSTEM ESTOP	PI-24	NEW
DI		8:01	ZI-9100B	DISCHARGE CONVEYOR SYSTEM REMOTE	PI-24	NEW
DI		8:02	SAL-9101	DISCHARGE CONVEYOR 1 ZERO SPEED ALARM	PI-24	NEW
DI		8:03	SAL-9102	DISCHARGE CONVEYOR 2 ZERO SPEED ALARM	PI-24	NEW

I/O LIST RIO-SH

TYPE	LOOP POWERED	SLOT:POINT	TAGNAME	DESCRIPTION	P&ID SHEET	STATUS
DI		8:04	SAL-9602	DISCHARGE CONVEYOR 3 ZERO SPEED ALARM	PI-24	NEW
DI		8:05	SAL-9603	DISCHARGE CONVEYOR 4 ZERO SPEED ALARM	PI-24	NEW
		8:06	SAL-9604	DISCHARGE CONVEYOR 5 ZERO SPEED ALARM	PI-24	NEW
DI		8:07	ZI-9611	TRUCK FEED GATE 1 REMOTE	PI-24	NEW
DI		8:08	ZIO-9611	TRUCK FEED GATE 1 OPENED	PI-24	NEW
DI		8:09	ZIC-9611	TRUCK FEED GATE 1 CLOSED	PI-24	NEW
DI		8:10	ZI-9612	TRUCK FEED GATE 2 REMOTE	PI-24	NEW
DI		8:11	ZIO-9612	TRUCK FEED GATE 2 OPENED	PI-24	NEW
DI		8:12	ZIC-9612	TRUCK FEED GATE 2 CLOSED	PI-24	NEW
DI		8:13	ZI-9613	TRUCK FEED GATE 3 REMOTE	PI-24	NEW
DI		8:14	ZIO-9613	TRUCK FEED GATE 3 OPENED	PI-24	NEW
DI		8:15	ZIC-9613	TRUCK FEED GATE 3 CLOSED	PI-24	NEW
DI		8:16		INSTALLED SPARE		
DI		8:17		INSTALLED SPARE		
DI		8:18		INSTALLED SPARE		
DI		8:19		INSTALLED SPARE		
DI		8:20		INSTALLED SPARE		
DI		8:21		INSTALLED SPARE		
DI		8:22		INSTALLED SPARE		
DI		8:23		INSTALLED SPARE		
DI		8:24		INSTALLED SPARE		
DI		8:25		INSTALLED SPARE		
DI		8:26		INSTALLED SPARE		
DI		8:27		INSTALLED SPARE		
DI		8:28		INSTALLED SPARE		
DI		8:29		INSTALLED SPARE		
DI		8:30		INSTALLED SPARE		
DI		8:31		INSTALLED SPARE		
DO		12:00	ZCO-1521	TIPPING BUCKET 1 FILL VALVE OPEN COMMAND	PI-04	NEW
DO		12:01	ZCC-1521	TIPPING BUCKET 1 FILL VALVE CLOSE COMMAND	PI-04	NEW
DO		12:02	ZCO-1522	TIPPING BUCKET 2 FILL VALVE OPEN COMMAND	PI-04	NEW
DO		12:03	ZCC-1522	TIPPING BUCKET 2 FILL VALVE CLOSE COMMAND	PI-04	NEW
DO		12:04	ZCO-1523	TIPPING BUCKET 3 FILL VALVE OPEN COMMAND	PI-04	NEW
DO		12:05	ZCC-1523	TIPPING BUCKET 3 FILL VALVE CLOSE COMMAND	PI-04	NEW
DO		12:06	ZCO-1524	TIPPING BUCKET 4 FILL VALVE OPEN COMMAND	PI-04	NEW
DO		12:07	ZCC-1524	TIPPING BUCKET 4 FILL VALVE CLOSE COMMAND	PI-04	NEW
DO		12:08	ZCO-1525	TIPPING BUCKET 5 FILL VALVE OPEN COMMAND	PI-04	NEW
DO		12:09	ZCC-1525	TIPPING BUCKET 5 FILL VALVE CLOSE COMMAND	12:28	
DO		12:10	ZCO-1526	TIPPING BUCKET 6 FILL VALVE OPEN COMMAND	PI-04	NEW
DO		12:11	ZCC-1526	TIPPING BUCKET 6 FILL VALVE CLOSE COMMAND	PI-04	NEW
DO		12:12	YC-9100	DISCHARGE CONVEYOR SYSTEM START COMMAND	PI-24	NEW
DI		12:13		INSTALLED SPARE		
DO		12:14	ZCO-9611	TRUCK FEED GATE 1 OPEN COMMAND	PI-23	NEW
DO		12:15	ZCC-9611	TRUCK FEED GATE 1 CLOSE COMMAND	PI-24	NEW
DO		12:16	ZCO-9612	TRUCK FEED GATE 2 OPEN COMMAND	PI-24	NEW
DI		12:17	ZCC-9612	TRUCK FEED GATE 2 CLOSE COMMAND	PI-24	NEW
DO		12:18	ZCO-9613	TRUCK FEED GATE 3 OPEN COMMAND	PI-24	NEW
DO		12:19	ZCC-9613	TRUCK FEED GATE 3 CLOSE COMMAND	PI-24	NEW
DO		12:20		INSTALLED SPARE		
DO		12:21		INSTALLED SPARE		
DO		12:22		INSTALLED SPARE		
DO		12:23		INSTALLED SPARE		
DO		12:24		INSTALLED SPARE		
DO		12:25		INSTALLED SPARE		
DO		12:26		INSTALLED SPARE		
DO		12:27		INSTALLED SPARE		
DO		12:28		INSTALLED SPARE		
DO		12:29		INSTALLED SPARE		
DO		12:30		INSTALLED SPARE		
DO		12:31		INSTALLED SPARE		
Ethernet			ZI-8551	SOLIDS HANDLING FOUL AIR FAN REMOTE	22:28	
Ethernet			YI-8551	SOLIDS HANDLING FOUL AIR FAN RUNNING	PI-22	NEW
Ethernet			YA-8551	SOLIDS HANDLING FOUL AIR FAN OVERLOAD	PI-22	NEW
Ethernet			YC-8551	SOLIDS HANDLING FOUL AIR FAN START COMMAND	PI-22	NEW
Ethernet			YI-9101	DISCHARGE CONVEYOR 1 OVERLOAD	PI-24	NEW
Ethernet			YA-9101	DISCHARGE CONVEYOR 1 RUNNING	PI-24	NEW
Ethernet			YC-9101	DISCHARGE CONVEYOR 1 START COMMAND	PI-24	NEW
Ethernet			YI-9102	DISCHARGE CONVEYOR 2 OVERLOAD	PI-24	NEW
Ethernet			YA-9102	DISCHARGE CONVEYOR 2 RUNNING	PI-24	NEW
Ethernet			YC-9102	DISCHARGE CONVEYOR 2 START COMMAND	PI-24	NEW
Ethernet			YI-9601A	DISCHARGE CONVEYOR 1A RUNNING	PI-24	NEW
Ethernet			YA-9601A	DISCHARGE CONVEYOR 1A OVERLOAD	PI-24	NEW
Ethernet			YC-9601A	DISCHARGE CONVEYOR 1A START COMMAND	PI-24	NEW
Ethernet			YI-9601B	DISCHARGE CONVEYOR 1B RUNNING	PI-24	NEW
Ethernet			YA-9601B	DISCHARGE CONVEYOR 1B OVERLOAD	PI-24	NEW
Ethernet			YC-9601B	DISCHARGE CONVEYOR 1B START COMMAND	PI-24	NEW
Ethernet			YI-9602	DISCHARGE CONVEYOR 2 RUNNING	PI-24	NEW
Ethernet			YA-9602	DISCHARGE CONVEYOR 2 OVERLOAD	PI-24	NEW
Ethernet			YC-9602	DISCHARGE CONVEYOR 2 START COMMAND	PI-24	NEW
Ethernet			YI-9603	DISCHARGE CONVEYOR 3 RUNNING	PI-24	NEW
Ethernet			YA-9603	DISCHARGE CONVEYOR 3 OVERLOAD	PI-24	NEW
Ethernet			YC-9603	DISCHARGE CONVEYOR 3 START COMMAND	PI-24	NEW
Ethernet			YI-9604	DISCHARGE CONVEYOR 4 RUNNING	PI-24	NEW
Ethernet			YA-9604	DISCHARGE CONVEYOR 4 OVERLOAD	PI-24	NEW
Ethernet			YC-9604	DISCHARGE CONVEYOR 4 START COMMAND	PI-24	NEW
Ethernet			ZI-8603	POLYMER RECIRCULATION PUMP REMOTE	PI-23	NEW
Ethernet			YI-8603	POLYMER RECIRCULATION PUMP RUN	PI-23	NEW
Ethernet			YA-8603	POLYMER RECIRCULATION PUMP FAIL	PI-23	NEW
Ethernet			YC-8603	POLYMER RECIRCULATION PUMP START COMMAND	PI-23	NEW

I/O LIST RIO-SH CONTINUED

TYPE	LOOP POWERED	SLOT:POINT	TAGNAME	DESCRIPTION	P&ID SHEET	STATUS
Ethernet			ZI-1531	EQ BASIN PUMP 1 REMOTE	PI-04A	NEW
Ethernet			YI-1531	EQ BASIN PUMP 1 RUN	PI-04A	NEW
Ethernet			YA-1531	EQ BASIN PUMP 1 FAIL	PI-04A	NEW
Ethernet			YC-1531	EQ BASIN PUMP 1 START COMMAND	PI-04A	NEW
Ethernet			SI-1531	EQ BASIN PUMP 1 SPEED	PI-04A	NEW
Ethernet			SC-1531	EQ BASIN PUMP 1 SPEED COMMAND	PI-04A	NEW
Ethernet			ZI-1532	EQ BASIN PUMP 2 REMOTE	PI-04A	NEW
Ethernet			YI-1532	EQ BASIN PUMP 2 RUN	PI-04A	NEW
Ethernet			YA-1532	EQ BASIN PUMP 2 FAIL	PI-04A	NEW
Ethernet			YC-1532	EQ BASIN PUMP 2 START COMMAND	PI-04A	NEW
Ethernet			SI-1532	EQ BASIN PUMP 2 SPEED	PI-04A	NEW
Ethernet			SC-1532	EQ BASIN PUMP 2 SPEED COMMAND	PI-04A	NEW
Ethernet			ZI-1533	EQ BASIN PUMP 3 REMOTE	PI-04A	NEW
Ethernet			YI-1533	EQ BASIN PUMP 3 RUN	PI-04A	NEW
Ethernet			YA-1533	EQ BASIN PUMP 3 FAIL	PI-04A	NEW
Ethernet			YC-1533	EQ BASIN PUMP 3 START COMMAND	PI-04A	NEW
Ethernet			SI-1533	EQ BASIN PUMP 3 SPEED	PI-04A	NEW
Ethernet			SC-1533	EQ BASIN PUMP 3 SPEED COMMAND	PI-04A	NEW

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	09/16/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
INSTRUMENTATION - PLC DRAWINGS
INPUT OUTPUT LIST V

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0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
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SHEET 54 OF 172

I-18

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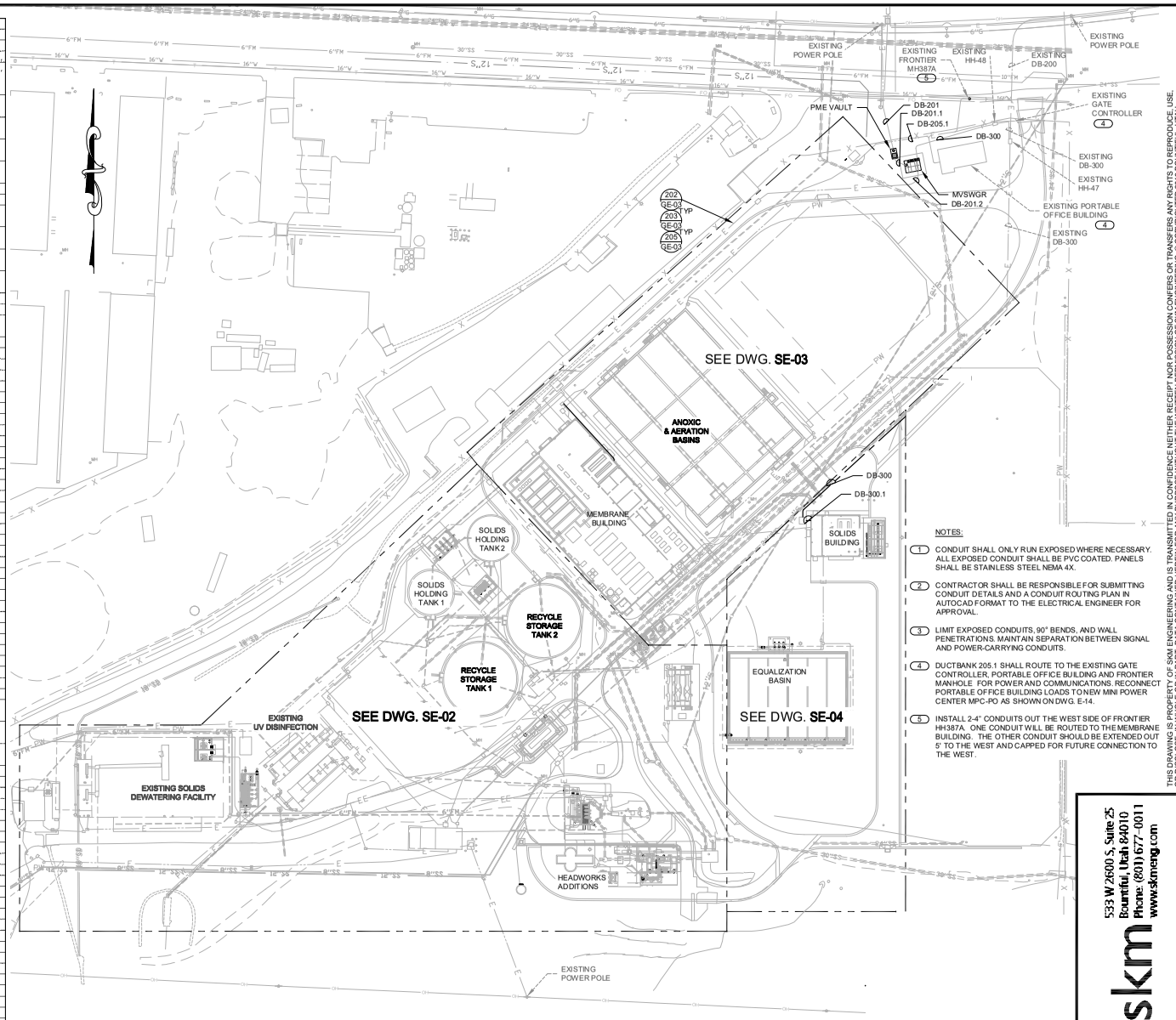
ITEM	SITE	LOCATION	TYPE	SERVES	NOTES
HH-1	4'x5'	EXISTING SWGR-HW	POWER	MAIN FEEDERS, HEADWORKS	CLEANOUT AND REUSE
HH-1A	2'x3'	EXISTING MCC-HW	SIGNAL	HEADWORKS	CLEANOUT AND REUSE
HH-2	4'x5'	OLD HEADWORKS / WET WELL	POWER	OLD HEADWORKS / WET WELL	CLEANOUT AND REUSE,
HH-2A	2'x3'	OLD HEADWORKS / WET WELL	SIGNAL	OLD HEADWORKS / WET WELL	CLEANOUT AND REUSE, REPLACE LID AND HATCH
HH-3	2'x3'	SC3 & 4 / RAS PUMPS	POWER	EXISTING BLOWERS	CLEANOUT AND ABANDON IN PLACE
HH-3A	2'x3'	SC3 & 4 / RAS PUMPS	SIGNAL	EXISTING BLOWERS	CLEANOUT AND ABANDON IN PLACE
HH-4	2'x3'	AB1 & 2 BLOWERS	POWER	AB1 & 2 BLOWERS	CLEANOUT AND ABANDON IN PLACE
HH-4A	2'x3'	AB1 & 2 BLOWERS	SIGNAL	AB1 & 2 BLOWERS	CLEANOUT AND ABANDON IN PLACE
HH-5	4'x5'	UV	POWER	UV, FILTERS	CLEANOUT AND REUSE
HH-5A	2'x3'	UV	SIGNAL	UV, FILTERS	CLEANOUT AND REUSE
HH-6	2'X3'	SC3	POWER	FILTERS	CLEANOUT AND ABANDON IN PLACE
HH-6A	2'x3'	FILTERS	SIGNAL	FILTERS	CLEANOUT AND ABANDON IN PLACE
HH-7	2.5'x4'	SC1 & 2	POWER	SC1 & SC2	CLEANOUT AND ABANDON IN PLACE
HH-7A	2'x3'	SC1 & 2	SIGNAL	SC1 & SC2	CLEANOUT AND ABANDON IN PLACE
HH-8	2'x3'	SOLIDS/UV	POWER	SOLIDS/UV	DEMO
HH-8A	2'x3'	SOLIDS/UV	SIGNAL	SOLIDS/UV	DEMO
HH-10A	2'x3'	EXISTING SWGR-HW	POWER	CENTRIFUGES, OFFICES	CLEANOUT AND ABANDON IN PLACE
HH-11A	2'x3'	OFFICES	POWER	OFFICES	CLEANOUT AND REUSE
HH-12	17"x30"	AB1 NE	POWER	AERATION BASIN 1	DEMO
HH-13	17"x30"	AB1 E	POWER	AERATION BASIN 1	DEMO
HH-14	17"x30"	AB1 SE	POWER	AERATION BASIN 1	DEMO
HH-2[illegible]	2'x3'	AB1 & AB2 COMBINED	POWER	AERATION BASIN 1 &2	DEMO
HH-15	17"x30"	AB2 SE		AERATION BASIN 2	DEMO
HH-16	17"x30"	AB2 E		AERATION BASIN 2	DEMO
HH-17	17"x30"	AB2 NE		AERATION BASIN 2	DEMO
HH-18	2'X3'	INFLUENT PUMP STATION	POWER	INFLUENT PUMPS	REPLACE WITH NEW
HH-19	17"x30"	AB3	POWER	AERATION BASIN 3	DEMO
HH-20	17"x30"	AB3	POWER	AERATION BASIN 3	DEMO
HH-21	17"x30"	AB3	POWER	AERATION BASIN 3	DEMO
HH-22	17"x30"	ABE	POWER	AERATION BASIN 3	DEMO
HH-23	17"x30"	AB3	POWER	AERATION BASIN 3	DEMO
HH-24	17"x30"	AB3	POWER	AERATION BASIN 3	DEMO
HH-25	17"x30"	AB3	POWER	AERATION BASIN 3	DEMO
HH-26	2'X3'	AB4	POWER	AERATION BASIN 4	DEMO
HH-27	17"x30"	AB4	POWER	AERATION BASIN 4	DEMO
HH-28	17"x30"	AB4	POWER	AERATION BASIN 4	DEMO
HH-29	17"x30"	AB4	POWER	AERATION BASIN 4	DEMO
HH-3[illegible]	17"x30"	AB4	POWER	AERATION BASIN 4	DEMO
HH-31	17"x30"	AB4	POWER	AERATION BASIN 4	DEMO
HH-102	2'X3'	AB5	POWER	AERATION BASIN 5	DEMO
HH-33	17"x30"	AB5	POWER	AERATION BASIN 5	DEMO
HH-34	17"x30"	AB5	POWER	AERATION BASIN 5	DEMO
HH-35	17"x30"	AB5	POWER	AERATION BASIN 5	DEMO
HH-36	17"x30"	AB5	POWER	AERATION BASIN 5	DEMO
HH-37	17"x30"	AB5	POWER	AERATION BASIN 5	DEMO
HH-38	2'X3'	UV AREA	POWER	CENTRIFUGES, OFFICES	CLEANOUT AND REUSE
HH-38A	2'X3'	UV AREA	SIGNAL	CENTRIFUGES, OFFICES	CLEANOUT AND REUSE
HH-39	2'X3'	CENTRIFUGE AREA	POWER	CENTRIFUGES, OFFICES	CLEANOUT AND REUSE
HH-39A	2'X3'	CENTRIFUGE AREA	SIGNAL	CENTRIFUGES, OFFICES	CLEANOUT AND REUSE
HH-42	2'X3'	EXISTING FILTERS	SIGNAL	SECONDARY PUMPS	CLEANOUT AND REUSE
HH-43	2'X3'	SC3	POWER	SC SPLITTER STRUCTURE	CLEANOUT AND ABANDON IN PLACE
HH-45	4'X5'	EXISTING SWGR-HW	POWER	EXISTING BLOWERS	CLEANOUT AND ABANDON IN PLACE
HH-46	2'x3'	AB5	POWER	SC3 & 4	CLEANOUT AND ABANDON IN PLACE
HH-301	4'X5'	HEADWORKS	POWER	EXISTING	CLEANOUT AND REUSE
HH-50A	2'x3'	HEADWORKS	SIGNAL	NEW	
HH-100	4'X6'	MEMBRANE BUILDING	POWER	NEW	
HH-101	4'x5'	HEADWORKS ELECTRICAL BLDG	POWER	NEW	
HH-101A	4'x5'	HEADWORKS ELECTRICAL BLDG	SIGNAL	NEW	
HH-102	4'x5'	HEADWORKS ELECTRICAL BLDG	POWER	NEW	
HH-102A	2.5'x4'	HEADWORKS ELECTRICAL BLDG	SIGNAL	NEW	
HH-103	4'x5'	HEADWORKS ELECTRICAL BLDG	POWER	NEW	
HH-103A	2.5'x4'	HEADWORKS ELECTRICAL BLDG	SIGNAL	NEW	
HH-104	2'x3'	GRIT TRAPS	POWER	NEW	
HH-105	2.5'x4'	FINE SCREENS	POWER	NEW	
HH-105A	2'x3'	FINE SCREENS	SIGNAL	NEW	
HH-107	2'x3'	MEMBRANE BUILDING	SIGNAL	NEW	
HH-108	2'x3'	RECYLED WATER PUMP STATION	POWER	NEW	
HH-108A	2'x3'	RECYLED WATER PUMP STATION	SIGNAL	NEW	
HH-201	4'x6'	AERATION BASIN	POWER	NEW	
HH-202	4'x5'	MEMBRANE BUILDING	POWER	NEW	
HH-202A	2.5'x4'	MEMBRANE BUILDING	SIGNAL	NEW	
HH-203	4'x5'	MEMBRANE BUILDING	POWER	NEW	
HH-203A	2.5'x4'	MEMBRANE BUILDING	SIGNAL	NEW	
HH-204	2'x3'	AERATION BASIN	POWER	NEW	
HH-204A	2'x3'	AERATION BASIN	SIGNAL	NEW	
HH-20	2'x3'	BRINE METERING	POWER	NEW	
HH-205A	2'x3'	BRINE METERING	SIGNAL	NEW	
HH-301	2.5'x4'	SOLIDS HANDLING	POWER	NEW	
HH-301A	2'x3'	SOLIDS HANDLING	SIGNAL	NEW	
HH-303	2'x3'	EQ BASIN	POWER	NEW	
HH-303A	2'x3'	EQ BASIN	SIGNAL	NEW	

HANDHOLE SCHEDULE

HANDHOLE HH-106 & HH-106A HAVE BEEN RENAMED TO HH-303 & HH-303A RESPECTIVELY. THESE HANDHOLES HAVE BEEN RELOCATED. SEE DWG. SE-04 FOR NEW LOCATION. (3)



OVERALL SITE PLAN

1:60

0 60 120

Scale in Feet

NOTES:

1. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. ALL EXPOSED CONDUIT SHALL BE PVC COATED. PANELS SHALL BE STAINLESS STEEL NEMA 4X.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN IN AUTOCAD FORMAT TO THE ELECTRICAL ENGINEER FOR APPROVAL.
3. LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
4. DUCTBANK 205.1 SHALL ROUTE TO THE EXISTING GATE CONTROLLER, PORTABLE OFFICE BUILDING AND FRONTIER MANHOLE FOR POWER AND COMMUNICATIONS. RECONNECT PORTABLE OFFICE BUILDING LOADS TO NEW MINI POWER CENTER MPC-PO AS SHOWN ON DWG. E-14.
5. INSTALL 2-4" CONDUITS OUT THE WEST SIDE OF FRONTIER HH387A. ONE CONDUIT WILL BE ROUTED TO THE MEMBRANE BUILDING. THE OTHER CONDUIT SHOULD BE EXTENDED OUT 5' TO THE WEST AND CAPPED FOR FUTURE CONNECTION TO THE WEST.

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	12/19/18	MPJ	MGJ	MPJ
2	08/15/19	MPJ	DCL	MPJ
3	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - SITE
OVERALL SITE PLAN

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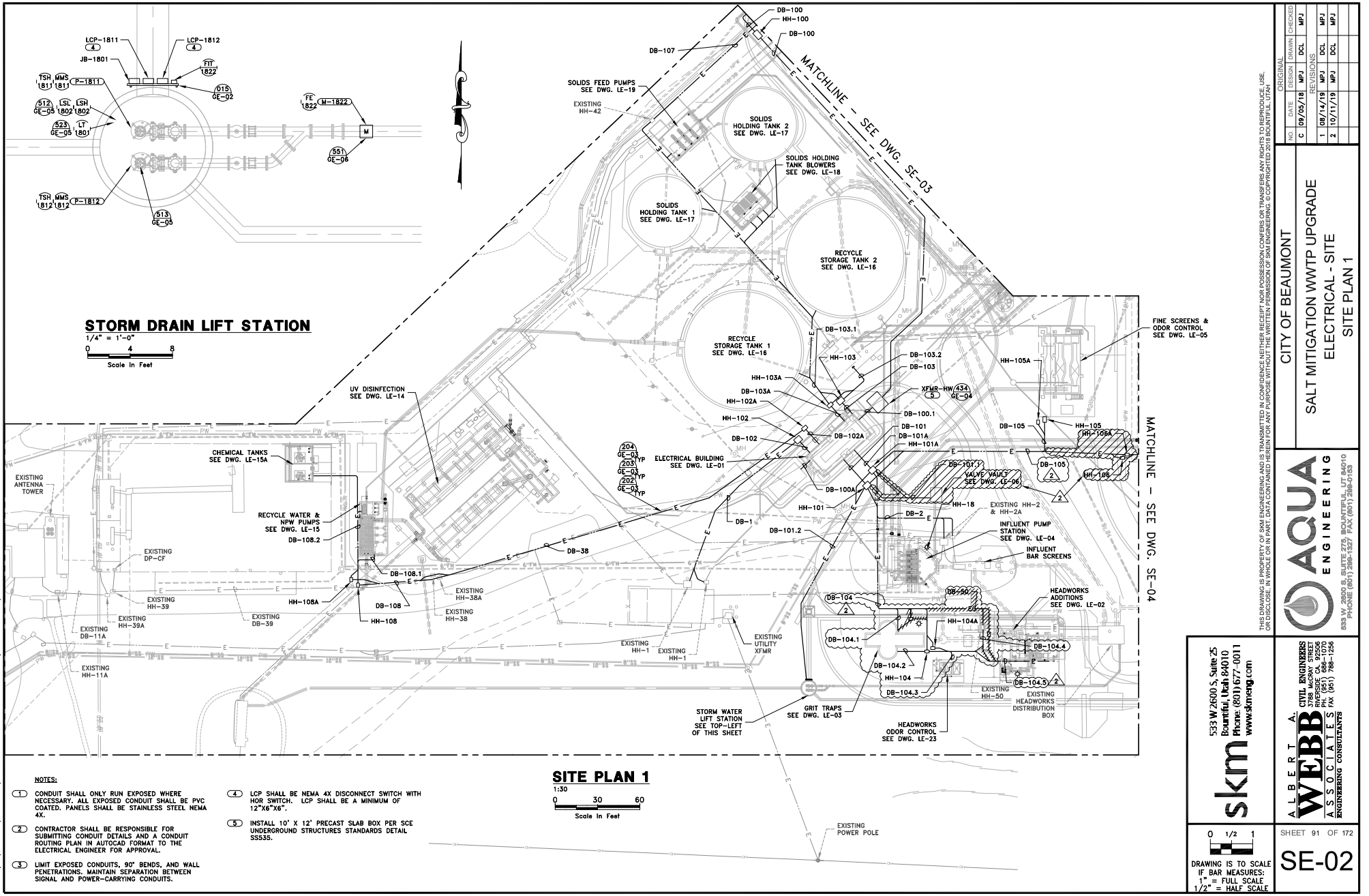
0 1/2 1

DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

SHEET 90 OF 172

SE-01

10/10/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\12 SE-01 OVERALL SITE PLAN.DWG



SITE PLAN 1

1:30

0 30 60

Scale In Feet

NOTES:

1. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. ALL EXPOSED CONDUIT SHALL BE PVC COATED. PANELS SHALL BE STAINLESS STEEL NEMA 4X.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN IN AUTOCAD FORMAT TO THE ELECTRICAL ENGINEER FOR APPROVAL.
3. LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
4. LCP SHALL BE NEMA 4X DISCONNECT SWITCH WITH HOR SWITCH. LCP SHALL BE A MINIMUM OF 12"X6"X6".
5. INSTALL 10' X 12' PRECAST SLAB BOX PER SCE UNDERGROUND STRUCTURES STANDARDS DETAIL SS535.

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	08/14/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

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SITE PLAN 1

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0 1/2 1

DRAWING IS TO SCALE IF BAR MEASURES:
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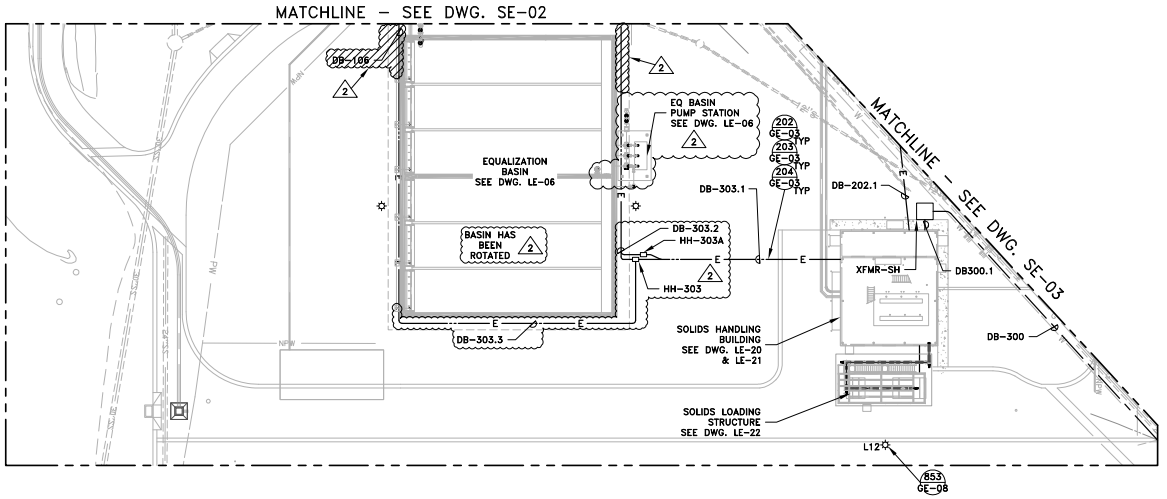
1/2" = HALF SCALE

SHEET 91 OF 172

SE-02



SITE PLAN 3

1:30

0 30 60

Scale in Feet

NOTES:

1. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. ALL EXPOSED CONDUIT SHALL BE PVC COATED. PANELS SHALL BE STAINLESS STEEL NEMA 4X.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN IN AUTOCAD FORMAT TO THE ELECTRICAL ENGINEER FOR APPROVAL.
3. LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.

L12 GE EVOLVE SERIES LED COBRA HEAD MODEL ERS1-0-F2-D1-5-40-2-GRAY-F WITH 2 HEADS, OR APPROVED EQUAL.

NO.	DATE	DESIGN	DRAWN	CHECKED
	ORIGINAL			
C	09/05/18	MPJ	DCL	MPJ
	REVISIONS			
1	12/19/18	MPJ	MGJ	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - SITE
SITE PLAN 3

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0 1/2 1

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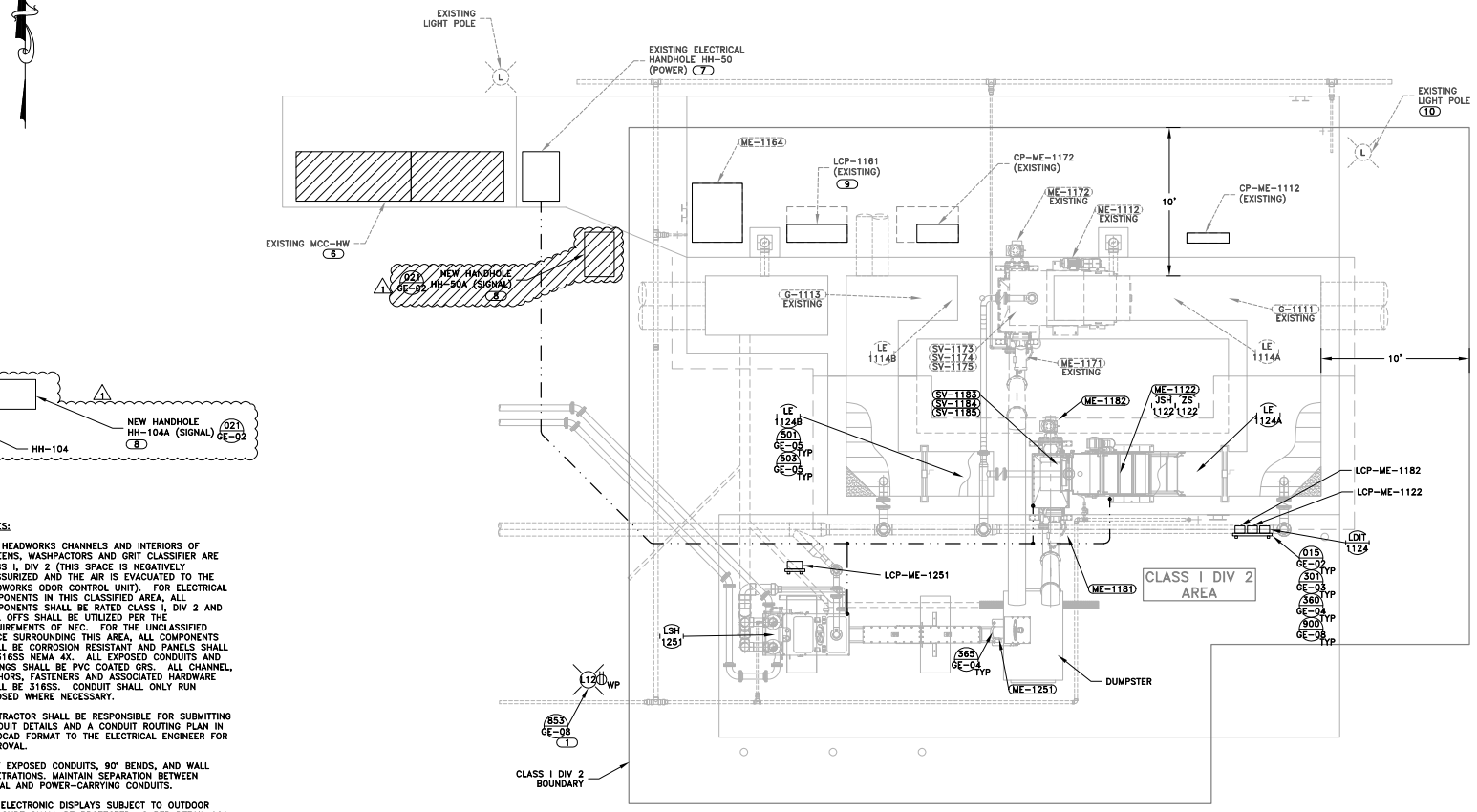
SE-04



NOTES:

1. THE HEADWORKS CHANNELS AND INTERIORS OF SCREENS, WASHPACTORS AND GRIT CLASSIFIER ARE CLASS I, DIV 2 (THIS SPACE IS NEGATIVELY PRESSURIZED AND THE AIR IS EVACUATED TO THE HEADWORKS ODOR CONTROL UNIT). FOR ELECTRICAL COMPONENTS IN THIS CLASSIFIED AREA, ALL COMPONENTS SHALL BE RATED CLASS I, DIV 2 AND SEAL OFTS SHALL BE UTILIZED PER THE REQUIREMENTS OF NEC. FOR THE UNCLASSIFIED SPACE SURROUNDING THIS AREA, ALL COMPONENTS SHALL BE CORROSION RESISTANT AND PANELS SHALL BE 316SS NEMA 4X. ALL EXPOSED CONDUITS AND FITTINGS SHALL BE PVC COATED GRS. ALL CHANNEL, ANCHORS, FASTENERS AND ASSOCIATED HARDWARE SHALL BE 316SS. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN IN AUTOCAD FORMAT TO THE ELECTRICAL ENGINEER FOR APPROVAL.
3. LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
4. ALL ELECTRONIC DISPLAYS SUBJECT TO OUTDOOR EXPOSURE SHALL BE PROTECTED AS PER DETAIL 901.
5. CONTRACTOR TO KEEP APPROPRIATE SEPARATION BETWEEN 480VAC, 120VAC AND 24VDC IN ALL JUNCTION AND PULL BOXES.
6. EXISTING MCC-HW IS TO BE REMOVED AND EXISTING CONDUITS ARE TO BE CAPPED.
7. POWER TO EXISTING EQUIPMENT AND NEW EQUIPMENT FOR THE HEADWORKS IS TO BE ROUTED THROUGH THIS EXISTING HANDHOLE. NEW WIRE SHALL BE INSTALLED BETWEEN THE NEW ELECTRICAL BUILDING AND EACH END DEVICE. NO SPLICES SHALL BE ALLOWED IN THE HANDHOLE.
8. INSTALL A NEW HANDHOLE IN THIS LOCATION FOR SIGNAL WIRE FOR THE NEW SCREEN, WASHPACTOR AND GRIT CLASSIFIER.
9. THE EXISTING LCP-1161 HOUSES THE FOUR TRANSMITTERS AIT-1161, AIT-1162, AIT-1163 & FIT-1165. THIS PANEL ALSO HAS EXISTING PLC-HW WHICH IS TO BE REMOVED.
10. RETROFIT THE EXISTING LIGHT POLE WITH NEW LED LIGHT FIXTURES. MATCH NEW LIGHT FIXTURE L12.
11. TIE NEW EQUIPMENT INTO EXISTING GROUND GRID.

ELECTRICAL LEGEND

- (L) EXISTING SITE LIGHT
- (L12) GE EVOLVE SERIES LED COBRA HEAD MODEL ERS1-0-F2-D1-5-40-2-GRAY-F WITH 2 HEADS, OR APPROVED EQUAL.
- DUPLEX OUTLET G: GFCI PROTECTED OUTLET WP: WEATHER-PROOF OUTLET GFCI PROTECTED.

HEADWORKS ELECTRICAL PLAN

1/4" = 1'-0"

0 4 8

Scale in Feet

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - LAYOUT
HEADWORKS ELECTRICAL PLAN

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0 1/2 1

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LE-02

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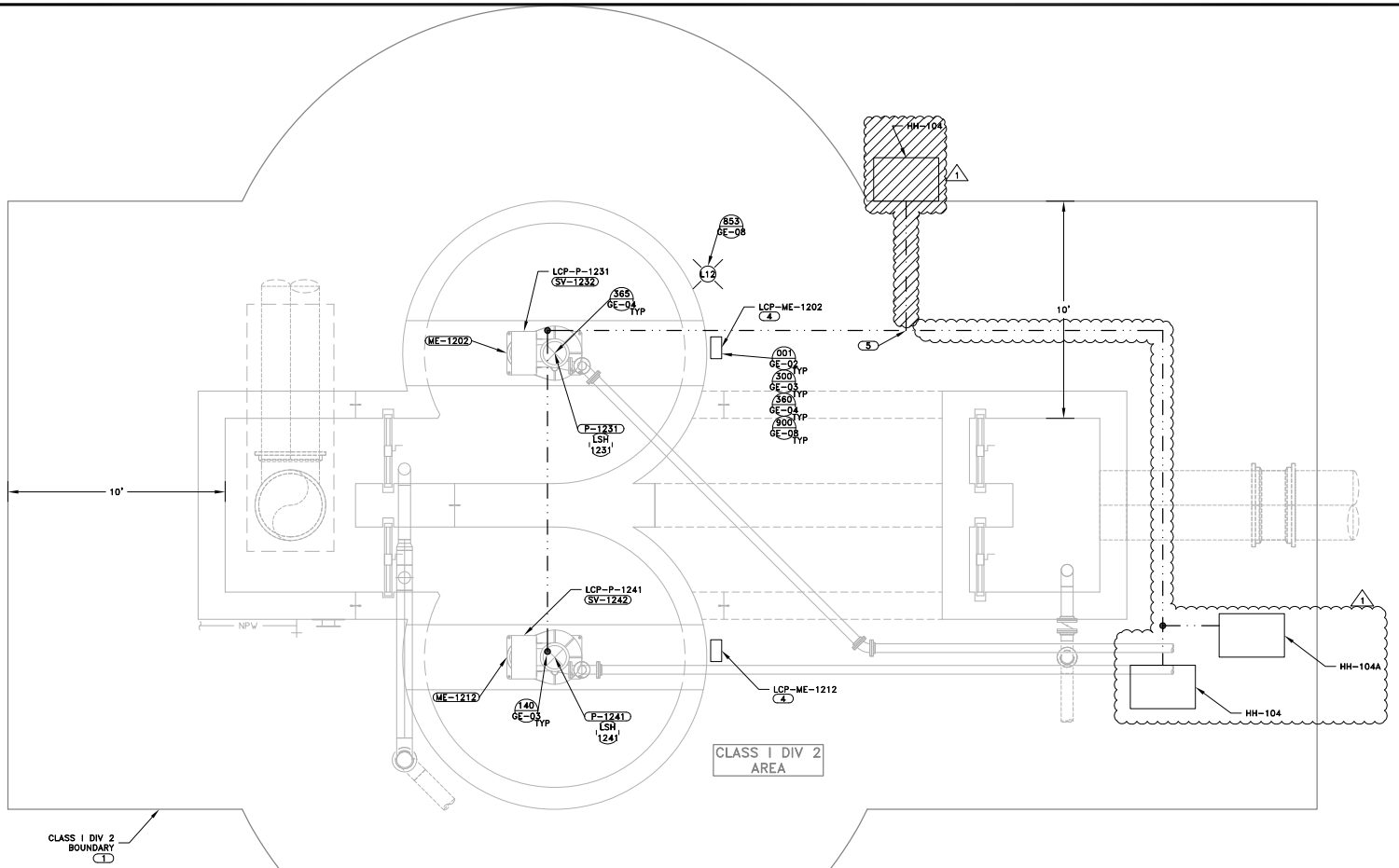

NOTES:

1. THE GRIT CHANNELS AND INTERIORS OF THE GRIT TRAPS ARE CLASS I, DIV 2 (THIS SPACE IS NEGATIVELY PRESSURIZED AND THE AIR IS EVACUATED TO THE HEADWORKS ODOR CONTROL UNIT). FOR ELECTRICAL COMPONENTS IN THIS CLASSIFIED AREA, ALL COMPONENTS SHALL BE RATED CLASS I, DIV 2 AND SEAL OFFS SHALL BE UTILIZED PER THE REQUIREMENTS OF NEC. FOR THE UNCLASSIFIED SPACE SURROUNDING THIS AREA, ALL COMPONENTS SHALL BE CORROSION RESISTANT AND PANELS SHALL BE 316SS NEMA 4X. ALL EXPOSED CONDUITS AND FITTINGS SHALL BE PVC COATED GRS. ALL CHANNEL, ANCHORS, FASTENERS AND ASSOCIATED HARDWARE SHALL BE 316SS. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN IN AUTOCAD FORMAT TO THE ELECTRICAL ENGINEER FOR APPROVAL.
3. LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
4. LCP SHALL BE NEMA 4X DISCONNECT SWITCH WITH HOR SWITCH. LCP SHALL BE A MINIMUM OF 12"X6"X6".
5. GROUND GRID SHALL BE CONNECTED TO MAIN GROUND GRID THROUGH DUCT BANK SYSTEM.

GRIT TRAPS ELECTRICAL PLAN

3/8" = 1'-0"

0 2 4

Scale in Feet

ELECTRICAL LEGEND

L12 — GE EVOLVE SERIES LED COBRA HEAD MODEL ERS1-0-F2-D1-5-40-2-GRAY-F WITH 2 HEADS, OR APPROVED EQUAL.

DUPLEX OUTLET
G: GFCI PROTECTED OUTLET
WP: WEATHER-PROOF OUTLET GFCI PROTECTED.

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - LAYOUT
GRIT TRAPS ELECTRICAL PLAN

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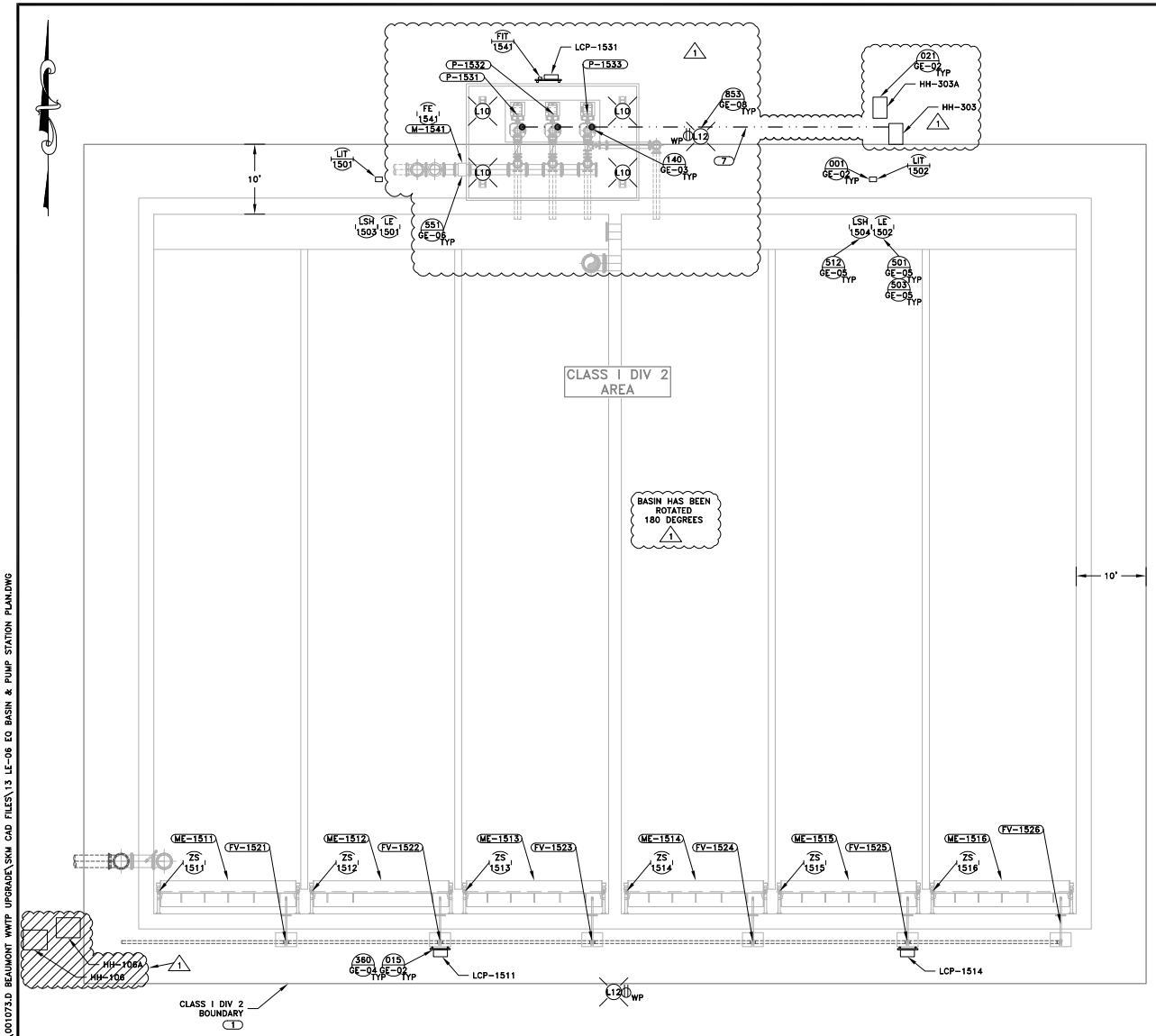
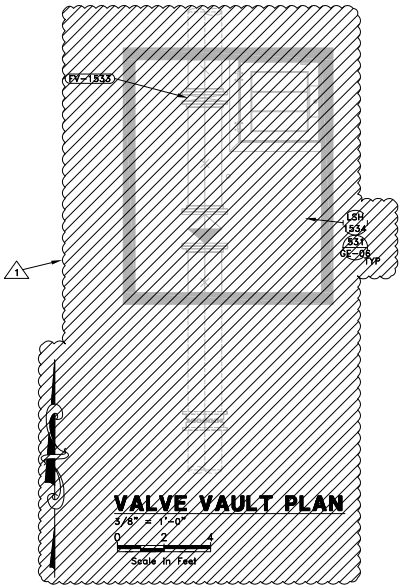
0 1/2 1

DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

LE-03

9/18/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\13 LE-03 GRIT TRAPS ELECTRICAL PLAN.DWG





VALVE VAULT PLAN

3/8" = 1'-0"

0 2 4

Scale in Feet

ELECTRICAL LEGEND

L10 — MAXLITE LED FULL CUTOFF 40W WALL LIGHT (WALL PACK) WITH PHOTO CELL CONTROL. MODEL MLLWP40LED50DSPC12 OR APPROVED EQUAL. (1)

L12 — GE EVOLVE SERIES LED COBRA HEAD MODEL ERS1-0-F2-D1-5-40-2-GRAY-F WITH 2 HEADS, OR APPROVED EQUAL.

DUPLEX OUTLET
G: GFCI PROTECTED OUTLET
WP: WEATHER-PROOF OUTLET GFCI PROTECTED.

EQ Basin & Pump Station Plan

1/8" = 1'-0"

0 8 16

Scale in Feet

NOTES:

1. THE INTERIOR OF THE EQ BASIN AND EXTENDING OUT 10 FEET HORIZONTALLY AND 1.5 FEET VERTICALLY IS RATED CLASS I, DIV2 (SEE NFPA 820 FIGURE A.5.2). IN THIS CLASSIFIED AREA, ALL ELECTRICAL COMPONENTS SHALL BE RATED CLASS I, DIV 2. SEAL OFFS SHALL BE UTILIZED PER THE REQUIREMENTS OF NEC. FOR THE UNCLASSIFIED SPACE SURROUNDING THIS AREA, ALL COMPONENTS SHALL BE CORROSION RESISTANT AND PANELS SHALL BE 316SS NEMA 4X. ALL EXPOSED CONDUITS AND FITTINGS SHALL BE PVC COATED GRS. ALL CHANNEL, ANCHORS, FASTENERS AND ASSOCIATED HARDWARE SHALL BE 316SS. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN IN AUTOCAD FORMAT TO THE ELECTRICAL ENGINEER FOR APPROVAL.
3. LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
4. MOUNT ALL LCP'S AND PANELS AT LEAST 3' ABOVE THE HIGHEST LIQUID LEVEL.
5. ALL ELECTRONIC DISPLAYS SUBJECT TO OUTDOOR EXPOSURE SHALL BE PROTECTED AS PER DETAIL 901.
6. CONTRACTOR TO KEEP APPROPRIATE SEPARATION BETWEEN 480VAC, 120VAC, 50VDC AND 24VDC IN ALL JUNCTION AND PULL BOXES.
7. GROUND GRID SHALL BE CONNECTED TO MAIN GROUND GRID THROUGH DUCT BANK SYSTEM.

(1)

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - LAYOUT
EQ BASIN & PUMP STATION PLAN

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0 1/2 1

DRAWING IS TO SCALE IF BAR MEASURES:
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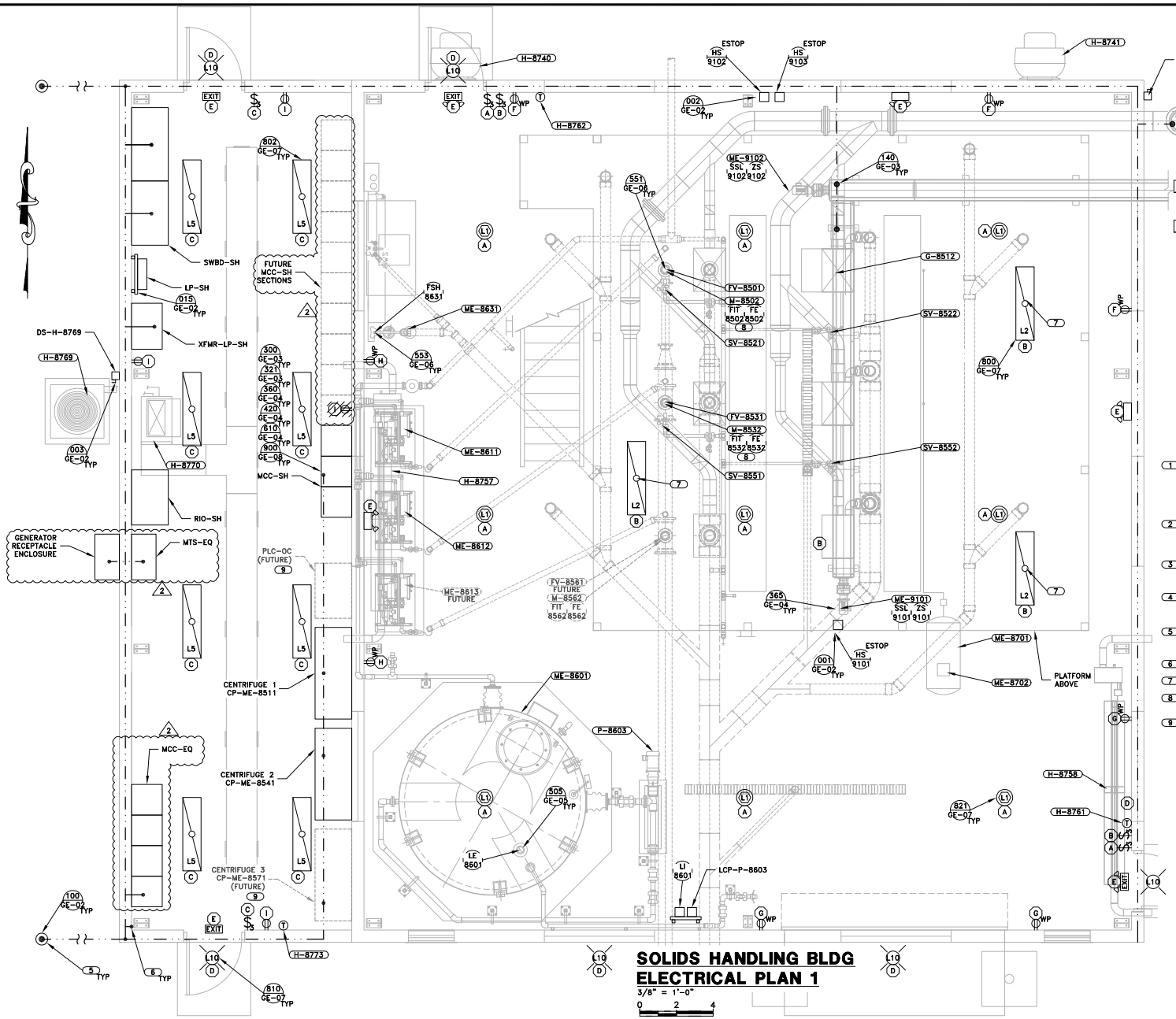
1/2" = HALF SCALE

SHEET 99 OF 172

LE-06



SOLIDS HANDLING BLDG ELECTRICAL PLAN 1

3/8" = 1'-0"

0 2 4

Scale In Feet

ELECTRICAL LEGEND

- L1 — DIALIGHT VIGILANT SERIES 144W HIGH BAY LED FIXTURE MODEL HEU3WN2CD OR APPROVED EQUAL.
- L2 — DAY-BRITE 59W 1'X4' WET LOCATION LED FIXTURE WITH EMERGENCY DRIVER. MODEL DWAE51L840-4-UNV-EMLED OR APPROVED EQUAL
- L5 — H.E. WILLIAMS 39W 1'X4' LED FIXTURE WITH EMERGENCY AND DIMMING DRIVERS. MODEL ATS1-14-L40/840-D-EM/10WLP-DIM-UNV OR APPROVED EQUAL
- L10 — MAXLITE LED FULL CUTOFF 40W WALL LIGHT (WALL PACK) WITH PHOTO CELL CONTROL. MODEL MLLWP40LED50DSPC12 OR APPROVED EQUAL.
- EXIT — CHLORIDE VE SERIES EXIT SIGN. MODEL VEGW OR APPROVED EQUAL.
- EXIT — CHLORIDE CCAX SERIES EMERGENCY LIGHT AND EXIT SIGN. MODEL CCAXL3GW OR APPROVED EQUAL.
- CHLORIDE VLLU SERIES EMERGENCY LIGHT. MODEL VLLU2 OR APPROVED EQUAL.
- DUPLEX OUTLET
  G: GFCI PROTECTED OUTLET
  WP: WEATHER-PROOF OUTLET GFCI PROTECTED.
- A — DEVICES WITH SAME LETTER CODE (I.E. A,B,C) REPRESENT DEVICES ON SAME CIRCUIT.

NOTES:

1. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. ALL EXPOSED CONDUIT IN THE ELECTRICAL ROOM SHALL BE GRS. ALL EXPOSED CONDUIT IN THE PROCESS ROOM ARE TO BE PVC COATED GRS. PANELS IN THE PROCESS ROOM ARE TO BE STAINLESS STEEL NEMA 4X.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN IN AUTOCAD FORMAT TO THE ELECTRICAL ENGINEER FOR APPROVAL.
3. LIMIT EXPOSED CONDUITS, 90° BENDS, AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
4. CONTRACTOR SHALL PROVIDE 2 CONCRETE ENCASED ELECTRODES IN FOOTINGS PER SPECIFICATIONS 60' PER CONDUCTOR.
5. CONTRACTOR SHALL INSTALL (2) 10'X3/4"ø COPPER GROUND RODS 10' MINIMUM SPACING AND 10' MINIMUM FROM BUILDING.
6. BOND ALL BUILDING STEEL TO GROUND PER NEC.
7. LIGHT MOUNTED BELOW PLATFORM.
8. GROUND FLOWMETER PER MANUFACTURER'S RECOMMENDATIONS.
9. STUB UP AND CAP CONDUITS THAT ARE GOING TO THE FUTURE CENTRIFUGE CP-ME-8571 AND PLC-OC.

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	09/16/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - LAYOUT
SOLIDS HANDLING BLDG ELECTRICAL PLAN 1

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DRAWING IS TO SCALE
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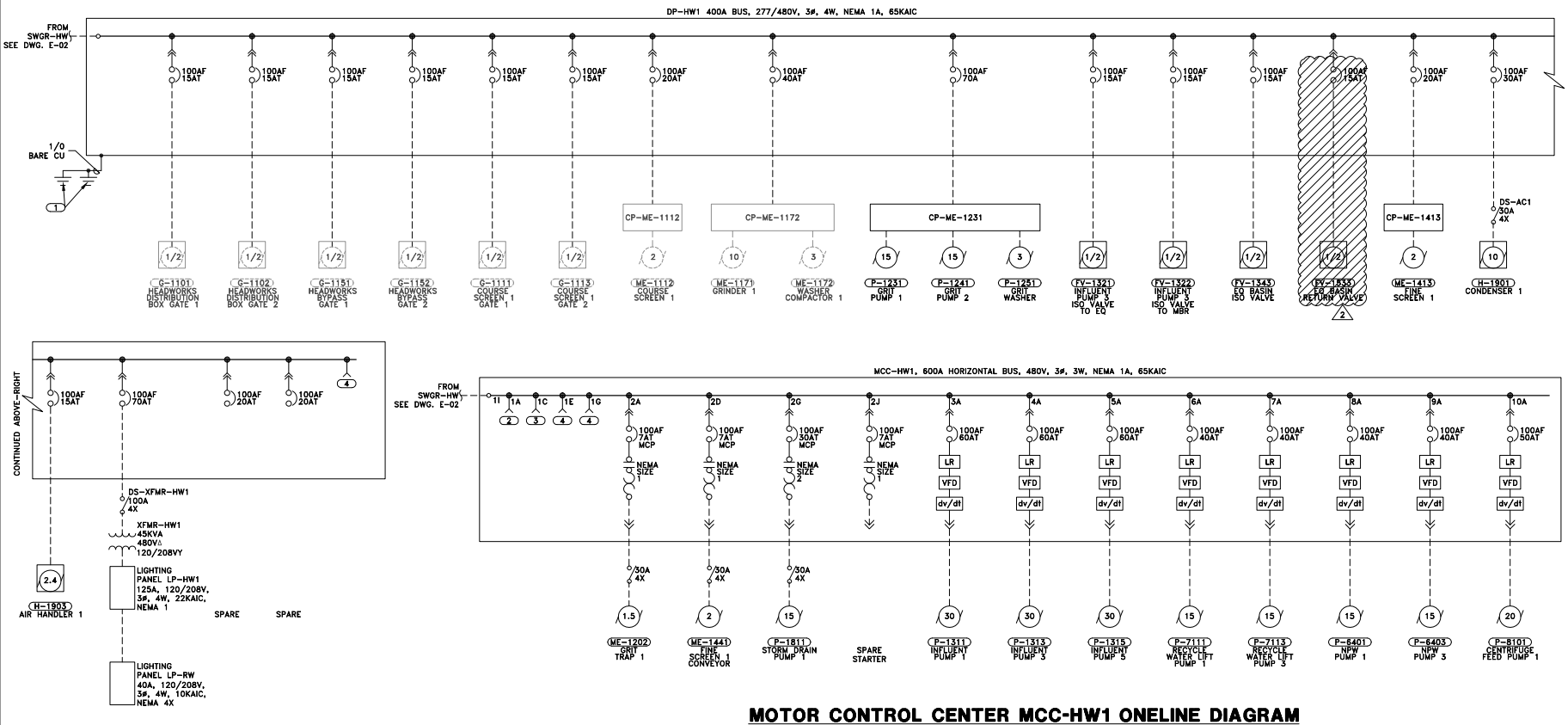
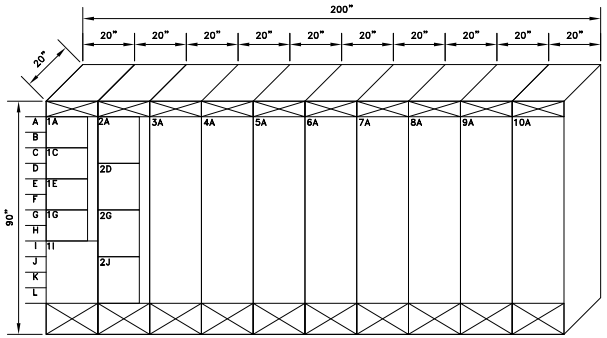
1/2" = HALF SCALE

LE-20

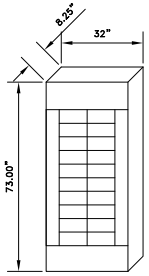


MOTOR CONTROL CENTER MCC-HW1 ONELINE DIAGRAM

DISTRIBUTION PANEL DP-HW1



MCC-HW1 ELEVATION
SCALE: 1/2" = 1'-0



DP-HW1 ELEVATION
SCALE: 1/2" = 1'-0

NOTES:

1. GROUND GRID
2. ETHERNET SWITCH
3. ETHERNET POWER SUPPLY
4. SPACE FOR FUTURE VFD, STARTER OR FEEDER BREAKER.

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	08/14/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - POWER DISTRIBUTION
MCC-HW1 ONELINE

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DRAWING IS TO SCALE IF BAR MEASURES:
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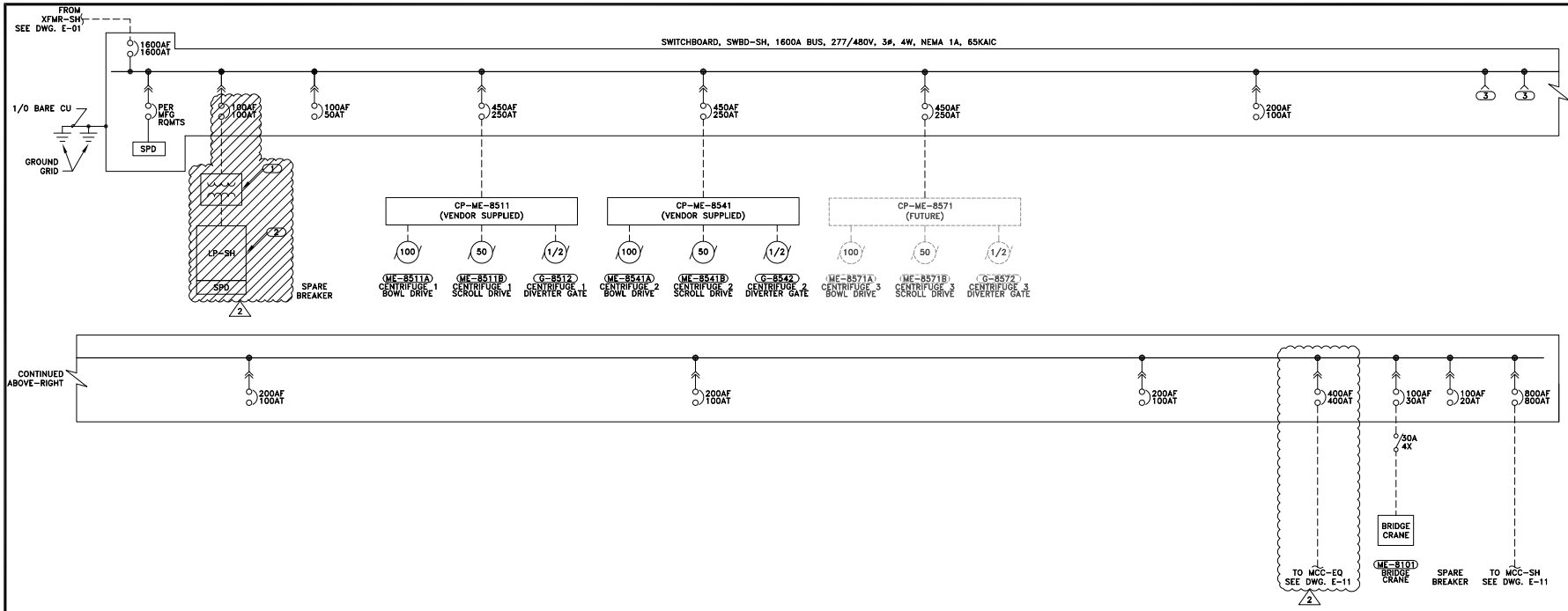
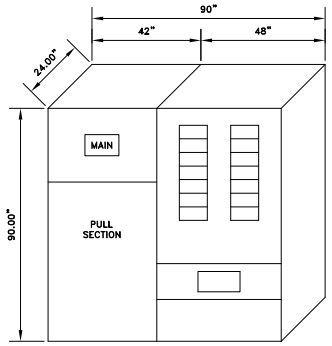
E-03



SWITCHBOARD SWBD-SH

NOTES:

1. 75KVA TRANSFORMER XFMR-LP-SH, 480V Δ PRIMARY 120V/208V Y SECONDARY FLOOR MOUNTED NEMA 3R.
2. LIGHTING PANEL LP-SH, 120V/208V, 3ø 4W, 200A, NEMA 1, 22KAIC.
3. SPACE FOR FUTURE FEEDER BREAKER.



SWBD-SH
SCALE: 1/2" = 1'-0

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	05/24/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - POWER DISTRIBUTION
SWBD-SH ONELINE

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0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
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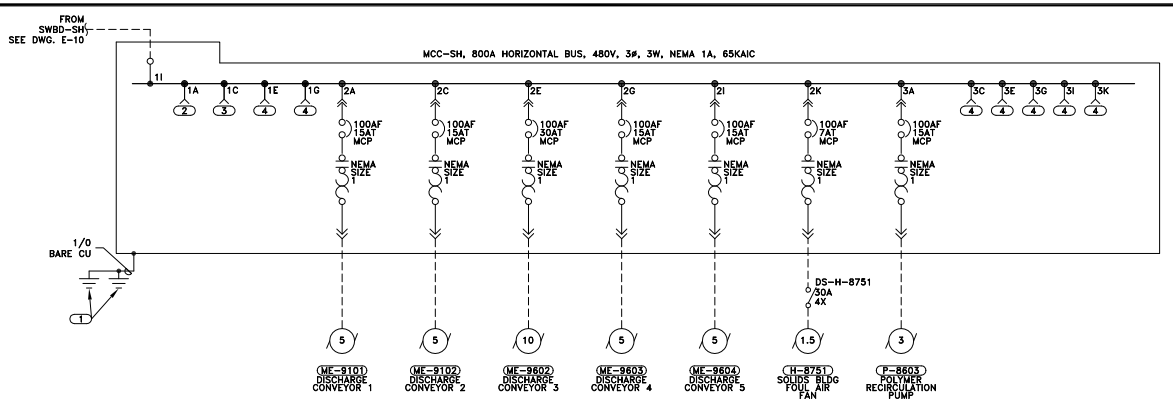
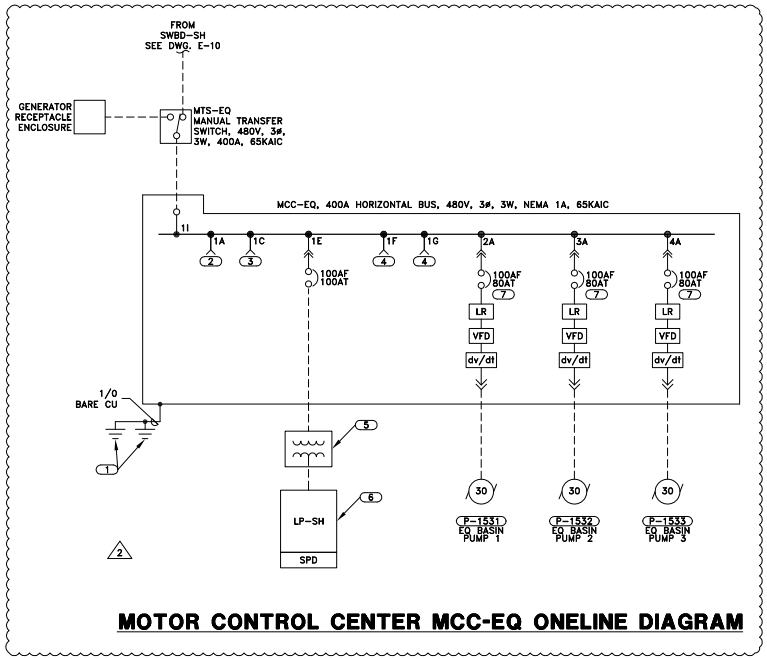
1/2" = HALF SCALE

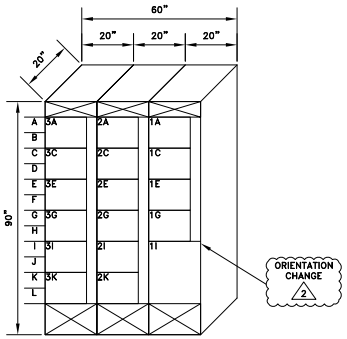
9/18/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\14 E-10 SWBD-SH ONELINE.DWG



MOTOR CONTROL CENTER MCC-SH ONELINE DIAGRAM

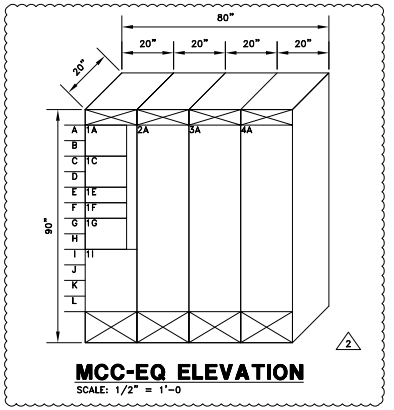


MOTOR CONTROL CENTER MCC-EQ ONELINE DIAGRAM



MCC-SH ELEVATION

SCALE: 1/2" = 1'-0



MCC-EQ ELEVATION

SCALE: 1/2" = 1'-0

NOTES:

1. GROUND GRID
2. ETHERNET SWITCH
3. ETHERNET POWER SUPPLY
4. SPACE FOR FUTURE VFD, STARTER OR FEEDER BREAKER.
5. 75KVA TRANSFORMER XFMR-LP-SH, 480V Δ PRIMARY 120V/208V Y SECONDARY FLOOR MOUNTED NEMA 3R.
6. LIGHTING PANEL LP-SH, 120V/208V, 3# 4W, 200A, NEMA 1, 22KAIC.
7. BREAKER AND VFD SHALL BE SIZED FOR FUTURE 40HP PUMPS.

2

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	09/16/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

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MCC-SH ONELINE

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0 1/2 1
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SHEET 127 OF 172

E-11

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
DP-HW1			146.0
DP-HW2			159.1
MCC-HW1			179.8
MCC-HW2			155.4
RECYCLED WATER DIST. PUMP 1 P-7111		200.0	240.0
RECYCLED WATER DIST. PUMP 2 P-7112		200.0	240.0
RECYCLED WATER DIST. PUMP 3 P-7113		200.0	*
SOLIDS HOLDING TANK BLOWER 1 ME-6403		15.0	96.0
SOLIDS HOLDING TANK BLOWER 2 ME-6402		15.0	96.0
SOLIDS HOLDING TANK BLOWER 3 ME-6403		75.0	*
NON-MOTOR LOADS			
UV TRAIN 1 (A+1)	68.0		81.9
UV TRAIN 2 (B+1)	68.0		81.9
SUBTOTAL			1445.6
+ 25% OF LARGEST MOTOR			60.0
TOTAL AMPS @ 480V/3PHASE			1505.6
SERVICE SIZE (AMPS)			1600.0

LOAD UPDATED 2

LOAD UPDATED 2

SWGR-HW LOAD CALCULATIONS

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
GRIT TRAP 1		1.5	3.0
INFLUENT PUMP 1 P-1311		30.0	40.0
INFLUENT PUMP 3 P-1313		30.0	40.0
INFLUENT PUMP 5 P-1315		30.0	*
FINE SCREEN 1 CONVEYOR ME-1441		2.0	3.4
FINE SCREEN 3 CONVEYOR (FUTURE) ME-1461		2.0	3.4
NPW PUMP 1 P-6401		15.0	21.0
NPW PUMP 3 P-6403		15.0	21.0
RECYCLED WATER LIFT PUMP 1 P-7111		15.0	21.0
RECYCLED WATER LIFT PUMP 3 P-7113		15.0	*
CENTRIFUGE FEED PUMP 1 P-8101		20.0	27.0
SUBTOTAL			179.8
+ 25% OF LARGEST MOTOR			10.0
TOTAL AMPS @ 480V/3PHASE			189.8
SERVICE SIZE (AMPS)			400.0

MCC-HW1 LOAD CALCULATIONS

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
GRIT TRAP 2 ME-1212		1.5	3.0
INFLUENT PUMP 2 P-1312		30.0	40.0
INFLUENT PUMP 4 P-1314		30.0	40.0
FINE SCREEN 2 CONVEYOR ME-1451		2.0	3.4
NPW PUMP 2 P-6402		15.0	21.0
NPW PUMP 4 P-6404		15.0	*
RECYCLED WATER LIFT PUMP 2 P-7112		15.0	21.0
CENTRIFUGE FEED PUMP 2 P-8102		20.0	27.0
CENTRIFUGE FEED PUMP 3 P-8103		20.0	*
SUBTOTAL			155.4
+ 25% OF LARGEST MOTOR			10.0
TOTAL AMPS @ 480V/3PHASE			165.4
SERVICE SIZE (AMPS)			400.0

MCC-HW2 LOAD CALCULATIONS

PANEL: DP-HW1 | VOLTAGE: 277/480V | MAIN CB: NONE | BUS AMPS: 400 AMP
CB TYPE: BOLT-ON | MOUNTING: SURFACE | BUS A.I.C.: 65KA | BRANCH A.I.C.: N/A

CIRCUIT DESCRIPTION	BKR	CIRCUIT	PHASE A	PHASE B	PHASE C	CIRCUIT	BKR	CIRCUIT DESCRIPTION
		1	292					
G-1101 HEADWORKS DIST. BOX GATE 1 (EXISTING)	15/3	3	292			2		
		5		292		4		
		7	292	292		6		
G-1102 HEADWORKS DIST. BOX GATE 2 (EXISTING)	15/3	9	4999		292	8	40/3	CP-ME-1172 WASHER/COMPACTOR 1 (EXISTING)
		11		4999		10		
		13	292		4999	12		
G-1111 COURSE SCREEN 1 INLET GATE (EXISTING)	15/3	15	13497			14	70/3	CP-1291 GRIT PUMP SYSTEM
		17		292		16		
		19	292	13497		18		
G-1113 COURSE SCREEN 1 OUTLET GATE (EXISTING)	15/3	21	292			20	15/3	FV-1321 INFLUENT PUMP 3 ISO VALVE TO EQ
		23		292		22		
		25	292	292		24		
G-1151 HEADWORKS BYPASS GATE 1 (EXISTING)	15/3	27	292			26	15/3	FV-1302 INFLUENT PUMP 3 ISO VALVE TO MBR
		29		292		28		
		31	292	292		30		
G-1152 HEADWORKS BYPASS GATE 2 (EXISTING)	15/3	33	292			32	15/3	FV-1340 EQ BASIN ISO VALVE
		35		292		34		
		37	1329	292		36		
CP-ME-1413 FINE SCREEN 1	20/3	39		1329		38	15/3	~~FV-1533 EQ BASIN RETURN VALVE~~
		41		292	1329	40		
		43	2629		292	42		
H-1901 ELECTRICAL BUILDING CONDENSER 1	20/3	45	15000	2629		44	70/3	XFMR-HW1 / LP-HW1
		47		15000	2629	46		
		49	638		15000	48		
H-1903 ELECTRICAL BUILDING AIR HANDLER 1	15/3	51		638		50	20/3	SPARE
		53			638	52		
		55				54		
SPARE	20/3	57				56	15/3	SPACE
		59				58		
						60		
CONNECTED VA PER PHASE			40047.4	40047.4	40047.4	NOTES		
CONNECTED AMPS PER PHASE			144.6	144.6	144.6			
25% OF CONTINUOUS & LIGHTING LOAD (VA)			10011.8	10011.8	10011.8	2		
CODE VA PER PHASE			50059.2	50059.2	50059.2			
CODE AMPS PER PHASE			180.7	180.7	180.7			

LOAD REMOVED 2

DP-HW1 LOAD CALCULATIONS

PANEL: DP-HW2 | VOLTAGE: 277/480V | MAIN CB: NONE | BUS AMPS: 400 AMP
CB TYPE: BOLT-ON | MOUNTING: SURFACE | BUS A.I.C.: 65KA | BRANCH A.I.C.: N/A

CIRCUIT DESCRIPTION	BKR	CIRCUIT	PHASE A	PHASE B	PHASE C	CIRCUIT	BKR	CIRCUIT DESCRIPTION
		1	292					
CP-ME-1122 COURSE SCREEN 2	20/3	3	1329	292		2		
		5		1329	352	4	20/3	CP-ME-1423 FINE SCREEN 2
		7	4999		1329	6		
CP-ME-1182 WASHER/COMPACTOR 2	40/3	9	1329	4999		8		
		11		1329	4999	10	20/3	CP-ME-1433 FINE SCREEN 3 (FUTURE)
		13			1329	12		
		15	2393			14		
CP-ME-1681 HEADWORKS ODOR CONTROL UNIT	30/3	17	2659	2393		16	20/3	H-1902 ELECTRICAL BUILDING CONDENSER 2
		19		2659	2393	18		
		21	2393		2659	20		
CP-ME-5781 FINE SCREEN3 ODOR CONTROL UNIT	30/3	23	638	2393		22	15/3	H-1904 ELECTRICAL BUILDING AIR HANDLER 2
		25		638	2393	24		
		27	15000		638	26		
XFMR-HW2 / LP-HW2	70/3	29	5000	15000		28	20/2	MPC-SP
		31		5000	15000	30		
		33				32		
SPARE	20/3	35				34		SPACE
		37				36		
		39				38		
SPACE		41				40		SPACE
		43				42		
		45				44		
SPACE		47				46		SPACE
						48		
CONNECTED VA PER PHASE			36030.6	36030.6	31033.6	NOTES		
CONNECTED AMPS PER PHASE			130.1	130.1	112.0			
25% OF CONTINUOUS & LIGHTING LOAD (VA)			9008.4	9008.4	7758.4			
CODE VA PER PHASE			45041.9	45041.9	38791.9			
CODE AMPS PER PHASE			162.6	162.6	140.0			

DP-HW2 LOAD CALCULATIONS

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	05/08/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

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0 1/2 1
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E-12

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PANEL: LP-HW1		VOLTAGE: 120/208		MAIN CB: 125 AMP		BUS AMPS: 125 AMP		
CB TYPE: BOLT-ON		MOUNTING: SURFACE		BUS A.I.C. 22KA		BKR A.I.C. 22KA		
CIRCUIT DESCRIPTION	BKR	CIRCUIT	PHASE A	PHASE B	PHASE C	CIRCUIT	BKR	CIRCUIT DESCRIPTION
CTC-HW	20/1	1	1500					
			360			2	20/1	ELECTRICAL ROOM RECEPTACLES W
ELECTRICAL ROOM LIGHTING	20/1	3		400				
				50		4	20/1	ELECTRICAL ROOM EMERGENCY LIGHTING
EXISTING LDT-1114 SCREEN 1 LEVEL	20/1	5			180			
					480	6	20/1	EXISTING ME-1164 INFLUENT SAMPLER
EXISTING LDP-1161 HW INSTRUMENT PANEL	20/1	7	500					
			496			8	20/1	FINE SCREEN LIGHTS AND RECEPTACLES
~~LP-1901 EQ BASIN 1 LEVEL~~	20/1	9		NA				
				300		10	20/1	NPW PUMPS AREA LIGHTING
FIT-1823 STORM DRAIN FLOW	20/1	11			100			
					500	12	20/1	ME-4302 EFFLUENT SAMPLER
FIT-6420 NPW FLOW METER	20/1	13	100					
						14	20/1	SPARE
FIT-7122 RECYCLE WATER FLOW	20/1	15		100				
						16	20/1	SPARE
FIT-7251 PLANT EFFLUENT FLOW	20/1	17			100			
					100	18	20/1	AIT-7172 PW @WOCHLORINE ANALYZER
	20/1	19				20	20/1	
	20/1	21				22	20/1	
	20/1	23				24	20/1	
	20/1	25				26	20/1	
	20/1	27				28	20/1	
	20/1	29				30	20/1	
	20/1	31				32	20/1	
	20/1	33				34	20/1	
	20/1	35				36	20/1	
	20/1	37				38		
	20/1	39	1498					
				1498		40	40/3	LP-HW
	20/1	41						
					1500	42		
CONNECTED VA PER PHASE			4756.0	2348.0	3060.0	NOTES:		
CONNECTED AMPS PER PHASE			39.6	19.6	25.5			
25% OF CONTINUOUS & LIGHTING LOAD (VA)			450.0	100.0	45.0			
LARGEST MOTOR (25%)			0.0	0.0	0.0			
CODE VA PER PHASE			5006.0	2448.0	3105.0			
CODE AMPS PER PHASE			43.4	20.4	25.9			

3

LOAD REMOVED

LP-HW1 LOAD CALCULATIONS

PANEL: LP-HW2		VOLTAGE: 120/208		MAIN CB: 125 AMP		BUS AMPS: 125 AMP		
CB TYPE: BOLT-ON		MOUNTING: SURFACE		BUS A.I.C. 22KA		BKR A.I.C. 22KA		
CIRCUIT DESCRIPTION	BKR	CIRCUIT	PHASE A	PHASE B	PHASE C	CIRCUIT	BKR	CIRCUIT DESCRIPTION
GENERATOR BATTERY CHARGER	20/1	1	500					
			360			2	20/1	ELECTRICAL ROOM RECEPTACLES E
		3		2000				
GENERATOR BLOCK HEATER	50/2	5		840		4	20/1	SWGR-HW BATTERY CHARGER
					2300			
					180	6	20/1	FIT-1342 INFLUENT PUMP FLOW TO EQ
CTC-HW	30/1	7	1000					
			180			8	20/1	FIT-1332 INFLUENT PUMP FLOW TO SCREENS
LDT-1124 SCREEN 2 LEVEL	20/1	9		180				
				180		10	20/1	FIT-1633 EQ FLOW TO INFLUENT PUMPS
CP-1251A GRIT PUMP 1 PRIMING PANEL	20/1	11			360			
					480	12	20/1	~~LP-1901 EQ BASIN 2 LEVEL~~
CP-1241A GRIP PUMP 2 PRIMING PANEL	20/1	13	360					
						14	20/1	
	20/1	15				16	20/1	
	20/1	17				18	20/1	
	20/1	19				20	20/1	
	20/1	21				22	20/1	
	20/1	23				24	20/1	
	20/1	25				26	20/1	
	20/1	27				28	20/1	
	20/1	29				30	20/1	
	20/1	31				32	20/1	
	20/1	33				34	20/1	
	20/1	35				36	20/1	
	20/1	37				38	20/1	
	20/1	39				40	20/1	
	20/1	41				42	20/1	
CONNECTED VA PER PHASE			3200.0	3120.0	2640.0	NOTES:		
CONNECTED AMPS PER PHASE			26.7	26.0	31.2			
25% OF CONTINUOUS & LIGHTING LOAD (VA)			125.0	500.0	500.0			
LARGEST MOTOR (25%)			0.0	0.0	0.0			
CODE VA PER PHASE			3325.0	3620.0	3040.0			
CODE AMPS PER PHASE			27.7	30.2	35.3			

3

LOAD REMOVED

LP-HW2 LOAD CALCULATIONS

PANEL: MPC-SP		VOLTAGE: 120/208		MAIN CB: 50 AMP		BUS AMPS: 100 AMP		
CB TYPE: BOLT-ON		MOUNTING: SURFACE		BUS A.I.C. 22KA		BKR A.I.C. 22KA		
CIRCUIT DESCRIPTION	BKR	CIRCUIT	PHASE A	PHASE B	PHASE C	CIRCUIT	BKR	CIRCUIT DESCRIPTION
LIGHTING	20/1	1	300					
			100			2	20/1	LIT-7191 RECYCLED WATER TANK 3
RECEPTACLES	20/1	3		900				
				100		4	20/1	LIT-7141 RECYCLED WATER TANK 2
		5			1000			
SITE LIGHTING	20/2	7	1000		100	6	20/1	FIT-6433 SOLIDS TANK 1 AIR FLOW METER
			100			8	20/1	FIT-6433 SOLIDS TANK 2 AIR FLOW METER
	20/1	9						
						10	20/1	
	20/1	11				12	20/1	
	20/1	13				14	20/1	
	20/1	15				16	20/1	
	20/1	17				18	20/1	
	20/1	19				20	20/1	
	20/1	21				22	20/1	
	20/1	23				24	20/1	
	20/1	25				26	20/1	
	20/1	27				28	20/1	
	20/1	29				30	20/1	
CONNECTED VA PER PHASE			1500.0	900.0	1100.0	NOTES:		
CONNECTED AMPS PER PHASE			12.5	7.5	9.3			
25% OF CONTINUOUS & LIGHTING LOAD (VA)			375.0	200.0	250.0			
CODE VA PER PHASE			1875.0	1100.0	1350.0			
CODE AMPS PER PHASE			15.6	9.2	11.3			

MPC-SP LOAD CALCULATIONS

CIRCUIT/DESCRIPTION	KVA	HP	FLA
SWGR-HW			57.6
SWGR-MB			142.3
SWBD-SH			18.7
SUBTOTAL			218.8
+ 25% OF LARGEST MOTOR			3.6
TOTAL AMPS @ 12KV/3PHASE			222.4
SERVICE SIZE (AMPS)			400.0

3

MVSWGR LOAD CALCULATIONS

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
MCC-MB1			838.4
MCC-MB2			641.4
AERATION BLOWER 1 ME-2601		300.0	361.0
AERATION BLOWER 2 ME-2611		300.0	361.0
AERATION BLOWER 3 ME-2621		300.0	361.0
AERATION BLOWER 4 ME-2631 (FUTURE)		300.0	-
MEMBRANE BLOWER 1 ME-3701		200.0	240.0
MEMBRANE BLOWER 2 ME-3711		200.0	240.0
MEMBRANE BLOWER 3 ME-3721		200.0	240.0
MEMBRANE BLOWER 4 ME-3731 (FUTURE)		200.0	-
DP-MB			219.9
NON-MOTOR LOADS			
MEMBRANE BUILDING LIGHTING	45.0		54.2
SUBTOTAL			3556.9
+ 25% OF LARGEST MOTOR			90.3
TOTAL AMPS @ 480V/3PHASE			3647.1
SERVICE SIZE (AMPS)			4000.0

SWGR-MB LOAD CALCULATIONS

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
RECYCLE PUMP 1 P-2171		9.0	12.8
RECYCLE PUMP 3 P-2371		9.0	12.8
AB DRAIN PUMP 1 P-2761		7.5	11.0
WAS/SCUM PUMP 1 P-3891		10.0	14.0
PERMEATE PUMP 1 P-3181		50.0	65.0
PERMEATE PUMP 3 P-3381		50.0	65.0
PERMEATE PUMP 5 P-3581 (FUTURE)		50.0	-
RO FEED PUMP 1 P-30000A		40.0	52.0
RO FEED PUMP 3 P-30000C		40.0	52.0
MBR FEED PUMP 1 P-3811		60.0	77.0
MBR FEED PUMP 3 P-3831		60.0	77.0
MBR FEED PUMP 5 P-3851 (FUTURE)		60.0	-
RO HIGH PRESSURE PUMP 1 P-40200-1		100.0	124.0
RO HIGH PRESSURE PUMP 3 P-40200-3		100.0	124.0
RO HIGH PRESSURE PUMP 5 P-43400-5		100.0	124.0
CIP PUMP P-47000A		15.0	21.0
EXHAUST FAN 1 H-3901		2.0	3.4
EXHAUST FAN 1 H-3903		2.0	3.4
SUBTOTAL			838.4
+ 25% OF LARGEST MOTOR			31.0
TOTAL AMPS @ 480V/3PHASE			869.4
SERVICE SIZE (AMPS)			1000.0

MCC-MB1 LOAD CALCULATIONS

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
RECYCLE PUMP 2 P-2271		9.0	12.8
RECYCLE PUMP 4 P-2471		9.0	12.8
AB DRAIN PUMP 2 P-2762		7.5	11.0
WAS/SCUM PUMP 2 P-3892		10.0	14.0
PERMEATE PUMP 2 P-3281		50.0	65.0
PERMEATE PUMP 4 P-3481		50.0	65.0
RO FEED PUMP 2 P-30000B		40.0	52.0
RO FEED PUMP 4 P-30000D		40.0	-
MBR FEED PUMP 2 P-3821		60.0	77.0
MBR FEED PUMP 4 P-3841		60.0	77.0
RO HIGH PRESSURE PUMP 2 P-40200-2		100.0	124.0
RO HIGH PRESSURE PUMP 4 P-40200-4		100.0	124.0
RO HIGH PRESSURE PUMP 6 P-40200-6 (FUTURE)		100.0	-
EXHAUST FAN 2 H-3902		2.0	3.4
EXHAUST FAN 4 H-3904		2.0	3.4
SUBTOTAL			641.4
+ 25% OF LARGEST MOTOR			31.0
TOTAL AMPS @ 480V/3PHASE			672.4
SERVICE SIZE (AMPS)			1000.0

MCC-MB2 LOAD CALCULATIONS

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	04/22/19	MPJ	DCL	MPJ
2	05/14/19	MPJ	DCL	MPJ
3	10/11/19	MPJ	DCL	MPJ

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E-13

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CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
CENTRIFUGE 1 ME-8511		150.0	180.0
CENTRIFUGE 2 ME-8541		150.0	180.0
CENTRIFUGE 3 ME-8571 (FUTURE)		150.0	*
MCC-SH		34.5	52.2
AC CONDENSER 1 H-8769		5.0	7.6
AC CONDENSER 2 H-8771		5.0	7.6
BRIDGE CRANE		15.0	21.0
NON-MOTOR LOADS			
~~SOLIDS BUILDING LIGHTING~~	45.0		54.2
TRUCK LOAD OUT FACILITY	15.0		18.1
MCC-EQ	45.0		174.2
SUBTOTAL			640.7
+ 25% OF LARGEST MOTOR			25.0
TOTAL AMPS @ 480V/3PHASE			665.7
SERVICE SIZE (AMPS)			1600.0

LOAD DELETED 4

LOAD ADDED 4

4

SWBD-SH LOAD CALCULATIONS

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
DISCHARGE CONVEYOR 1 ME-9101		5.0	7.6
DISCHARGE CONVEYOR 2 ME-9102		5.0	7.6
DISCHARGE CONVEYOR 3 ME-9602		10.0	14.0
DISCHARGE CONVEYOR 4 ME-9603		5.0	7.6
DISCHARGE CONVEYOR 5 ME-9604		5.0	7.6
SOLIDS BUILDING FOUL AIR FAN H-8551		1.5	3.0
POLYMER RECIRCULATION PUMP P-8603		3.0	4.8
NON-MOTOR LOADS			
SUBTOTAL			52.2
+ 25% OF LARGEST MOTOR			13.0
TOTAL AMPS @ 480V/3PHASE			65.2
SERVICE SIZE (AMPS)			800.0

MCC-SH LOAD CALCULATIONS

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
EQ BASIN PUMP 1 P-1531		30.0	40.0
EQ BASIN PUMP 2 P-1532		30.0	40.0
EQ BASIN PUMP 3 P-1533		30.0	40.0
NON-MOTOR LOADS			
SOLIDS BUILDING LIGHTING TRANSFORMER	45.0		54.2
SUBTOTAL			174.2
+ 25% OF LARGEST MOTOR			13.0
TOTAL AMPS @ 480V/3PHASE			187.2
SERVICE SIZE (AMPS)			400.0

4

MCC-EQ LOAD CALCULATIONS

PANEL: LP-RW		VOLTAGE: 120/208		MAIN CB: 60 AMP		BUS AMPS: 100 AMP		
CB TYPE: BOLT-ON		MOUNTING: SURFACE		BUS A I C: 22KA		BUS A I C: 22KA		
CIRCUIT DESCRIPTION	BKR	CIRCUIT	PHASE A	PHASE B	PHASE C	CIRCUIT	BKR	CIRCUIT DESCRIPTION
EAST STANCHION LIGHTS & OUTLETS	20/1	1	490			2	20/1	BISULFITE TANK HEATER CONTROL PANEL
WEST STANCHION LIGHTS & OUTLETS	20/1	3		490		4	20/1	HYDROXIDE TANK HEATER CONTROL PANEL
LCP-7410 SODIUM BISULFITE PUMPS PANEL	20/1	5		500	330	6	20/1	LCP-7511 SODIUM HYDROXIDE PUMPS PANEL
BISULFITE PIPING HEAT TRACE	20/1	7	500		330	8	20/1	
HYDROXIDE PIPING HEAT TRACE	20/1	9		500		10	20/1	
	20/1	11				12	20/1	
	20/1	13				13	20/1	
	20/1	15				14	20/1	
	20/1	17				16	20/1	
						18	20/1	
CONNECTED VA PER PHASE			1490.0	1490.0	1660.0	NOTES:		
CONNECTED AMPS PER PHASE			12.5	12.5	13.3			
25% OF CONTINUOUS & LIGHTING LOAD (VA)			374.5	374.5	400.0			
LARGEST MOTOR (25%)			0.0	0.0	0.0			
CODE VA PER PHASE			1872.5	1872.5	2060.0			
CODE AMPS PER PHASE			15.6	15.6	16.7			

LP-RW LOAD CALCULATIONS

PANEL: LP-SH		VOLTAGE: 120/208		MAIN CB: 200 AMP		BUS AMPS: 200 AMP		
CB TYPE: BOLT-ON		MOUNTING: SURFACE		BUS A I C: 22KA		BUS A I C: 22KA		
CIRCUIT DESCRIPTION	BKR	CIRCUIT	PHASE A	PHASE B	PHASE C	CIRCUIT	BKR	CIRCUIT DESCRIPTION
CENTRIFUGE ROOM BAY LIGHTS	20/1	1	1296					
			508			2	20/1	FV-8501 CENTRIFUGE 1 FEED VALVE
CENTRIFUGE ROOM PLATFORM LIGHTS	20/1	3		308				
				108		4	20/1	FIT-8502 CENTRIFUGE 1 FLOW METER
ELECTRICAL ROOM LIGHTS	20/1	5			403			
					500	6	20/1	FV-8531 CENTRIFUGE 2 FEED VALVE
EXTERIOR LIGHTS	20/1	7	249					
			100			8	20/1	FIT-8532 CENTRIFUGE 2 FLOW METER
EXIT SIGNS	20/1	9		80				
				508		10	20/1	FV-8561 CENTRIFUGE 3 FEED VALVE (FUT)
CENTRIFUGE ROOM NORTH RECEPTACLES	20/1	11			540			
					100	12	20/1	FIT-8562 CENTRIFUGE 3 FLOW METER (FUT)
CENTRIFUGE ROOM SOUTH RECEPTACLES	20/1	13	540					
			1166			14	20/1	LCP-ME-8611 POLYMER SYSTEM 1
CENTRIFUGE ROOM WEST RECEPTACLES	20/1	15		360				
				1166		16	20/1	LCP-ME-8612 POLYMER SYSTEM 2
ELECTRICAL ROOM RECEPTACLES	20/1	17			360			
					1166	18	20/1	LCP-ME-8613 POLYMER SYSTEM 3 (FUT)
		18	2714					
H-8769 ELECTRICAL ROOM CONDENSER 1	40/2		406			20	20/1	LCP-SHDC
		21		2714				
						22	20/1	SPARE
		23			624			
H-8770 ELECTRICAL ROOM AIR HANDLER 1	20/2					24	20/1	SPARE
		25	624					
			1166			26	20/1	LCP-SHDD
		27		2714				
H-8771 ELECTRICAL ROOM CONDENSER 2	40/2			108		28	20/1	WIT-8821 TRUCK SCALE
		29			2714			
					360	30	20/1	LCP-1511 EQ BASIN 1 TIPPING BUCKET PANEL
		31	624					
H-8772 ELECTRICAL ROOM AIR HANDLER 2	20/2		360			32	20/1	LCP-1514 EQ BASIN 2 TIPPING BUCKET PANEL
		33		624				
				1205		34	20/1	ME-8581 CENTRIFUGES AIR COMPRESSOR
CENTRIFUGE ROOM WEST FAN	20/1	35			1166			
					800	36	20/1	ME-8582 CENTRIFUGES AIR DRYER
CENTRIFUGE ROOM EAST FAN	20/1	37	1166					
						38	20/1	SPARE
H-8595 CENTRIFUGE RM RADIANT HEATER 1	20/1	39		208				
						40	20/1	SPARE
H-8767 CENTRIFUGE RM RADIANT HEATER 2	20/1	41			208			
					208	42	20/1	LIT-1501 EQ BASIN WEST LEVEL TRANSMITTER
H-8750 CENTRIFUGE RM RADIANT HEATER 3	20/1	43	208					
			208			44	20/1	EQ BASIN NORTH AREA LIGHT & OUTLET
RD-SH	20/1	45		208	4			
				208		46	20/1	EQ BASIN SOUTH AREA LIGHT & OUTLET
LIT-1502 EQ BASIN EAST LEVEL TRANSMITTER	20/1	47			100			
					100	48	20/1	FIT-1541 EQ PUMPS FLOW METER
EQ PUMP STATION CANOPY WALL PACK (4)	20/1	49	180					
						50	20/1	SPARE
SPARE	20/1	51						
						52	20/1	SPARE
SPARE	20/1	53						
						54	20/1	SPARE
SPARE	20/1	55						
						56	20/1	SPARE
SPARE	20/1	57						
						58	20/1	SPARE
SPARE	20/1	59						
						60	20/1	SPARE
SPARE	20/1	61						
						62	20/1	SPARE
SPARE	20/1	63						
						64	20/1	SPARE
SPARE	20/1	65						
						66	20/1	SPARE
SPARE	20/1	67						
						68	20/1	SPARE
SPARE	20/1	69						
						70	20/1	SPARE
SPARE	20/1	71						
						72	20/1	SPARE
CONNECTED VA PER PHASE			9747.7	10140.4	9730.0	NOTES:		
CONNECTED AMPS PER PHASE			81.2	84.5	72.8			
25% OF CONTINUOUS & LIGHTING LOAD (VA)			2436.9	2536.6	2182.5			
		4						
CODE VA PER PHASE			12184.6	12676.0	10912.5			
CODE AMPS PER PHASE			101.5	105.7	90.9			

4

4

LP-SH LOAD CALCULATIONS

NO.	DATE	DESIGN	DRAWN	CHECKED
		ORIGINAL		
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	08/14/19	MPJ	DCL	MPJ
2	09/01/19	MPJ	DCL	MPJ
3	09/16/19	MPJ	DCL	MPJ
4	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - POWER DISTRIBUTION
CALCULATIONS 5

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ENGINEERING CONSULTANTS

0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

SHEET 132 OF 172

E-16

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SHEET	TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	RANGE	COMMENTS
PI-04	LI-1301A	INFLUENT PUMP STATION LEVEL DISPLAY A	PRECISION DIGITAL	TRIDENT PD765 X2	24VDC		OR APPROVED EQUAL
PI-04	LI-1301B	INFLUENT PUMP STATION LEVEL DISPLAY B	PRECISION DIGITAL	TRIDENT PD765 X2	24VDC		OR APPROVED EQUAL
PI-04	LT-1301A	INFLUENT PUMP STATION LEVEL TRANSDUCER A	KPSI	750	24VDC		LARGE HEAD; OR APPROVED EQUAL
PI-04	LT-1301B	INFLUENT PUMP STATION LEVEL TRANSDUCER B	KPSI	750	24VDC		LARGE HEAD; OR APPROVED EQUAL
PI-04	LSH-1302	INFLUENT PUMP STATION HIGH LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-04	LSL-1302	INFLUENT PUMP STATION LOW LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-04	PI-1311	INFLUENT PUMP 1 PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-04	PI-1312	INFLUENT PUMP 2 PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-04	PI-1313	INFLUENT PUMP 3 PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-04	PI-1314	INFLUENT PUMP 4 PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-04	PI-1315	INFLUENT PUMP 5 PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-04	FE/FIT-1332	INFLUENT PUMPS TO FINE SCREENS FLOW SENSOR/TRANSMITTER	ENDRESS & HAUSER	PROMAG W 500	120VAC		24"; 6000 IS THE TRANSMITTER, W 500 IS THE FLOWMETER; OR APPROVED EQUAL
PI-04	FE/FIT-1342	INFLUENT PUMPS TO EQ BASIN FLOW SENSOR/TRANSMITTER	ENDRESS & HAUSER	PROMAG W 500	120VAC		20"; 6000 IS THE TRANSMITTER, W 500 IS THE FLOWMETER; OR APPROVED EQUAL
PI-04	LSH-1534	EQ BASIN RETURN TO INFLUENT PS FLOW METER VAULT FLOOD DETECTION	GEMS	LS-74780	NO CONTACT		OR APPROVED EQUAL
PI-04A	LIT-1501	EQUALIZATION BASIN LEVEL TRANSMITTER	SIEMENS	HYDRORANGER 200	120VAC		OR APPROVED EQUAL
PI-04A	LE-1501	EQUALIZATION BASIN RADAR LEVEL SENSOR	SIEMENS	SITRANS LR200			PROVIDE WITH FLANGE ADAPTER; OR APPROVED EQUAL
PI-04A	LIT-1502	EQUALIZATION BASIN LEVEL TRANSMITTER	SIEMENS	HYDRORANGER 200	120VAC		OR APPROVED EQUAL
PI-04A	LE-1502	EQUALIZATION BASIN RADAR LEVEL SENSOR	SIEMENS	SITRANS LR200			PROVIDE WITH FLANGE ADAPTER; OR APPROVED EQUAL
PI-04A	LSH-1503	EQUALIZATION BASIN HIGH LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-04A	LSH-1504	EQUALIZATION BASIN HIGH LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-04A	FE/FIT-1541	EQ BASIN PUMPS TO FINE SCREENS FLOW SENSOR/TRANSMITTER	ENDRESS & HAUSER	PROMAG W 500	120VAC		16"; 6000 IS THE TRANSMITTER, W 500 IS THE FLOWMETER; OR APPROVED EQUAL
PI-06	AIT-2111	ANOXIC BASIN 1 ORP TRANSMITTER	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-06	AE-2111	ANOXIC BASIN 1 ORP SENSOR	HACH	DRD	AIT-2111		PROVIDE ORP SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-06	FE/FIT-2132	AERATION BASIN 1 AIR FLOW SENSOR/TRANSMITTER	FCI	ST51	120VAC		SPOOL PIECE WITH CONDITIONING PLATES; OR APPROVED EQUAL
PI-06	AIT-2151	AERATION BASIN 1 DISSOLVED OXYGEN TRANSMITTER 1	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-06	AE-2151	AERATION BASIN 1 DISSOLVED OXYGEN 1 SENSOR	HACH	LDO PROBE 2	AIT-2151		PROVIDE DO SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-06	AIT-2152	AERATION BASIN 1 DISSOLVED OXYGEN TRANSMITTER 2	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-06	AE-2152	AERATION BASIN 1 DISSOLVED OXYGEN 2 SENSOR	HACH	LDO PROBE 2	AIT-2152		PROVIDE DO SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-06	AE-2162	ANAEROBIC BASIN 1 ORP SENSOR	HACH	DRD	AIT-2111		PROVIDE ORP SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-06	AIT-2211	ANOXIC BASIN 2 ORP TRANSMITTER	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-06	AE-2211	ANOXIC BASIN 2 ORP SENSOR	HACH	DRD	AIT-2211		PROVIDE ORP SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-06	FE/FIT-2232	AERATION BASIN 2 AIR FLOW SENSOR/TRANSMITTER	FCI	ST51	120VAC		SPOOL PIECE WITH CONDITIONING PLATES; OR APPROVED EQUAL
PI-06	AIT-2251	AERATION BASIN 2 DISSOLVED OXYGEN TRANSMITTER 1	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-06	AE-2251	AERATION BASIN 2 DISSOLVED OXYGEN 1 SENSOR	HACH	LDO PROBE 2	AIT-2251		PROVIDE DO SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-06	AIT-2252	AERATION BASIN 2 DISSOLVED OXYGEN TRANSMITTER 2	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-06	AE-2252	AERATION BASIN 2 DISSOLVED OXYGEN 2 SENSOR	HACH	LDO PROBE 2	AIT-2252		PROVIDE DO SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-06	AE-2262	ANAEROBIC BASIN 2 ORP SENSOR	HACH	LDO PROBE 2	AIT-2211		PROVIDE DO SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-07	AIT-2311	ANOXIC BASIN 3 ORP TRANSMITTER	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-07	AE-2311	ANOXIC BASIN 3 ORP SENSOR	HACH	DRD	AIT-2311		PROVIDE ORP SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-07	FE/FIT-2332	AERATION BASIN 3 AIR FLOW SENSOR/TRANSMITTER 1	FCI	ST51	120VAC		SPOOL PIECE WITH CONDITIONING PLATES; OR APPROVED EQUAL
PI-07	AIT-2351	AERATION BASIN 3 DISSOLVED OXYGEN TRANSMITTER	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-07	AE-2351	AERATION BASIN 3 DISSOLVED OXYGEN 1 SENSOR	HACH	LDO PROBE 2	AIT-2351		PROVIDE DO SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-07	AIT-2352	AERATION BASIN 3 DISSOLVED OXYGEN TRANSMITTER 2	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-07	AE-2352	AERATION BASIN 3 DISSOLVED OXYGEN 2 SENSOR	HACH	LDO PROBE 2	AIT-2352		PROVIDE DO SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-07	AE-2362	ANAEROBIC BASIN 1 ORP SENSOR	HACH	DRD	AIT-2311		PROVIDE ORP SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-07	AIT-2411	ANOXIC BASIN 4 ORP TRANSMITTER	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-07	AE-2411	ANOXIC BASIN 4 ORP SENSOR	HACH	DRD	AIT-2411		PROVIDE ORP SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-07	FE/FIT-2432	AERATION BASIN 4 AIR FLOW SENSOR/TRANSMITTER	FCI	ST51	120VAC		SPOOL PIECE WITH CONDITIONING PLATES; OR APPROVED EQUAL
PI-07	AIT-2451	AERATION BASIN 4 DISSOLVED OXYGEN TRANSMITTER 1	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-07	AE-2451	AERATION BASIN 4 DISSOLVED OXYGEN 1 SENSOR	HACH	LDO PROBE 2	AIT-2451		PROVIDE DO SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-07	AIT-2452	AERATION BASIN 4 DISSOLVED OXYGEN TRANSMITTER 2	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-07	AE-2452	AERATION BASIN 4 DISSOLVED OXYGEN 2 SENSOR	HACH	LDO PROBE 2	AIT-2452		PROVIDE DO SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-07	AE-2462	ANAEROBIC BASIN 4 ORP SENSOR	HACH	DRD	AIT-2411		PROVIDE ORP SENSOR WITH APPROPRIATE CABLE LENGTH & HANDRAIL MOUNTING KIT; OR APPROVED EQUAL
PI-07	LSL-2752	DRAIN PUMP STATION LOW LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-07	LSH-2752	DRAIN PUMP STATION HIGH LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-07	LSHH-2752	DRAIN PUMP STATION HIGH-HIGH LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-07	PI-2763	DRAIN PUMP PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-07	FE/FIT-2764	DRAIN PUMP STATION FLOW SENSOR/TRANSMITTER	ENDRESS & HAUSER	PROMAG W 500	120VAC		6"; 6000 IS THE TRANSMITTER, W 500 IS THE FLOWMETER; OR APPROVED EQUAL
PI-08	LI-3801	MBR FEED PUMP WET WELL DISPLAY FOR LEVEL TRANSDUCER	PRECISION DIGITAL	TRIDENT PD765 X2	24VDC		OR APPROVED EQUAL
PI-08	LT-3801	MBR FEED PUMP WET WELL LEVEL TRANSDUCER	KPSI	750	24VDC		LARGE HEAD; OR APPROVED EQUAL
PI-08	LSH-3802	MBR FEED PUMP WET WELL HIGH LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-08	LSL-3802	MBR FEED PUMP WET WELL LOW LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-08	PI-3811	MBR FEED PUMP 1 PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-08	PI-3814	MBR FEED PUMP 1 SEAL WATER PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-08	FSL-3815	MBR FEED PUMP 1 SEAL WATER LOW FLOW SWITCH	DWYER	V6	NO/NC CONTACT		OR APPROVED EQUAL
PI-08	FI-3818	MBR FEED PUMP 1 SEAL WATER ROTAMETER FLOW GAUGE	KROHNE	VA40 SERIES			1/2"; OR APPROVED EQUAL
PI-08	PI-3821	MBR FEED PUMP 2 PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-08	PI-3824	MBR FEED PUMP 2 SEAL WATER PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-08	FSL-3825	MBR FEED PUMP 2 SEAL WATER LOW FLOW SWITCH	DWYER	V6	NO/NC CONTACT		OR APPROVED EQUAL
PI-08	FI-3826	MBR FEED PUMP 2 SEAL WATER ROTAMETER FLOW GAUGE	KROHNE	VA40 SERIES			1/2"; OR APPROVED EQUAL
PI-08	PI-3831	MBR FEED PUMP 3 PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-08	PI-3834	MBR FEED PUMP 3 SEAL WATER PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-08	FSL-3835	MBR FEED PUMP 3 SEAL WATER LOW FLOW SWITCH	DWYER	V6	NO/NC CONTACT		OR APPROVED EQUAL
PI-08	FI-3836	MBR FEED PUMP 3 SEAL WATER ROTAMETER FLOW GAUGE	KROHNE	VA40 SERIES			1/2"; OR APPROVED EQUAL
PI-08	PI-3841	MBR FEED PUMP 4 PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-08	PI-3844	MBR FEED PUMP 4 SEAL WATER PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-08	FSL-3845	MBR FEED PUMP 4 SEAL WATER LOW FLOW SWITCH	DWYER	V6	NO/NC CONTACT		OR APPROVED EQUAL
PI-08	FI-3846	MBR FEED PUMP 4 SEAL WATER ROTAMETER FLOW GAUGE	KROHNE	VA40 SERIES			1/2"; OR APPROVED EQUAL
PI-08	FE/FIT-3861	MBR FEED PUMPS FLOW TRANSMITTER	ENDRESS & HAUSER	PROMAG W 500	120VAC		42"; 6000 IS THE TRANSMITTER, W 500 IS THE FLOWMETER; OR APPROVED EQUAL
PI-09	AIT-3600	MBR INFLUENT CHANNEL TOTAL SUSPENDED SOLIDS TRANSMITTER	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-09	AE-3600	MBR INFLUENT CHANNEL TOTAL SUSPENDED SOLIDS SENSOR	HACH	SOLITAX	AIT-3600		PROVIDE WITH APPROPRIATE CABLE LENGTH; OR APPROVED EQUAL
PI-09	FE/FIT-3122	MEMBRANE BASIN 1 BLOWER AIR FLOW SENSOR/TRANSMITTER	FCI	ST51	120VAC		OR APPROVED EQUAL
PI-09	FE/FIT-3222	MEMBRANE BASIN 2 BLOWER AIR FLOW SENSOR/TRANSMITTER	FCI	ST51	120VAC		OR APPROVED EQUAL
PI-09	FE/FIT-3322	MEMBRANE BASIN 3 BLOWER AIR FLOW SENSOR/TRANSMITTER	FCI	ST51	120VAC		OR APPROVED EQUAL
PI-09	FE/FIT-3422	MEMBRANE BASIN 4 BLOWER AIR FLOW SENSOR/TRANSMITTER	FCI	ST51	120VAC		OR APPROVED EQUAL
PI-09	LSL-3862	SCUM LIFT STATION LOW LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-09	FE/FIT-3863	SCUM LIFT STATION AIR FLOW SENSOR/TRANSMITTER	ENDRESS & HAUSER	PROMAG W 500	120VAC		8"; 6000 IS THE TRANSMITTER, W 500 IS THE FLOWMETER; OR APPROVED EQUAL
PI-10	LI-4061	PERMEATE SPLITTER BOX DISPLAY FOR LEVEL TRANSDUCER	PRECISION DIGITAL	TRIDENT PD765 X2	24VDC		OR APPROVED EQUAL
PI-10	LT-4061	PERMEATE SPLITTER BOX LEVEL TRANSDUCER	KPSI	750	24VDC		LARGE HEAD; OR APPROVED EQUAL
PI-10	LSH-4062	PERMEATE SPLITTER BOX HIGH LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-10	LSL-4062	PERMEATE SPLITTER BOX LOW LEVEL SWITCH	USA BLUEBOOK	48233	NO CONTACT		AVOCADO STYLE FLOAT SWITCH NORMALLY OPEN WITH APPROPRIATE LENGTH CABLE, NO MERCURY; OR APPROVED EQUAL
PI-10	TE/TIT-4003	PERMEATE EFFLUENT TEMPERATURE	ROSEMOUNT	SERIES 78 & 3144P	24VDC		PROVIDE WITH 316SS THERMOWELL; OR APPROVED EQUAL
PI-10	AIT-4004	PERMEATE SPLITTER BOX pH LEVEL TRANSMITTER	HACH	SC200	120VAC		OR APPROVED EQUAL
PI-10	AE-4004	PERMEATE SPLITTER BOX pH LEVEL SENSOR	HACH	pHD	AIT-4004		PROVIDE WITH APPROPRIATE CABLE LENGTH; OR APPROVED EQUAL
PI-11	PIT-2641	BLOWERS TO AERATION BASINS PRESSURE TRANSMITTER	ROSEMOUNT	3051 SERIES	24VDC		OR APPROVED EQUAL
PI-11	TE/TIT-2642	BLOWERS TO AERATION BASINS TEMPERATURE SENSOR/TRANSMITTER	ROSEMOUNT	SERIES 78 & 3144P	24VDC		PROVIDE WITH 316SS THERMOWELL; OR APPROVED EQUAL
PI-11	PIT-3741	BLOWERS TO MEMBRANE BASINS PRESSURE TRANSMITTER	ROSEMOUNT	3051 SERIES	24VDC		OR APPROVED EQUAL
PI-11	TE/TIT-3742	BLOWERS TO MEMBRANE BASINS TEMPERATURE SENSOR/TRANSMITTER	ROSEMOUNT	SERIES 78 & 3144P	24VDC		PROVIDE WITH 316SS THERMOWELL; OR APPROVED EQUAL
PI-12	LIT-5002	SODIUM HYPOCHLORITE TANK RADAR LEVEL TRANSMITTER	FLOWLINE	ECHO PULSE LR20	24VDC		PROVIDED BY TANK MANUFACTURER
PI-12	LI-5002	SODIUM HYPOCHLORITE TANK LEVEL DISPLAY	PRECISION DIGITAL	TRIDENT PD765 X2	24VDC		OR APPROVED EQUAL
PI-12	PI-5071	SODIUM HYPOCHLORITE CIRCULATION PUMPS PRESSURE GAUGE	ASHCROFT	1279 SERIES			OR APPROVED EQUAL
PI-12	FE/FIT-5072	SODIUM HYPOCHLORITE CIRCULATION PUMPS FLOW SENSOR/TRANSMITTER	ENDRESS & HAUSER	PROMAG W 500	120VAC		1"; 6000 IS THE TRANSMITTER, W 500 IS THE FLOWMETER; OR APPROVED EQUAL
PI-13	WIT-5301	ANTISCALANT TOTE SCALE TRANSMITTER	SCALETRON	1020	120VAC		
PI-13	WE-5301	ANTISCALANT TOTE SCALE SENSOR	SCALETRON	4042-63	WIT-5301		
PI-13	FSH-5402	EMERGENCY WASH STATION 1 HIGH FLOW SWITCH	DWYER	LOW FLOW MODEL V6	NO/NC CONTACT		OR APPROVED EQUAL
PI-13	FSH-5412	EMERGENCY WASH STATION 2 HIGH FLOW SWITCH	DWYER	LOW FLOW MODEL V6	NO/NC CONTACT		OR APPROVED EQUAL
PI-13	FSH-5422	EMERGENCY WASH STATION 3 HIGH FLOW SWITCH	DWYER	LOW FLOW MODEL V6	NO/NC CONTACT		OR APPROVED EQUAL
PI-13A	LIT-85001	AMMONIUM SULFATE TANK RADAR LEVEL TRANSMITTER	FLOWLINE	ECHO PULSE LR20	24VDC		PROVIDED BY TANK MANUFACTURER
PI-13A	LIT-85501	SULFURIC ACID TANK RADAR LEVEL TRANSMITTER	FLOWLINE	ECHO PULSE LR20	24VDC		PROVIDED BY TANK MANUFACTURER
PI-14	AIT-30095	RO INFLUENT pH LEVEL TRANSMITTER	HACH	SC200	120VAC		MOUNTED TO SENSOR AE-30095; OR APPROVED EQUAL
PI-14	AE-30695	RO INFLUENT pH LEVEL SENSOR	HACH	pHD	AIT-30095		OR APPROVED EQUAL

3 INSTRUMENT DELETED, INSTRUMENTS MODIFIED, INSTRUMENT ADDED

INSTRUMENT SCHEDULE 1

10/11/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\14 E-17 INSTRUMENT SCHEDULE 1.DWG

NO.	DATE	DESIGN	DRAWN	CHECKED
	ORIGINAL			
C	09/05/18	MPJ	DCL	MPJ
	REVISIONS			
1	04/22/19	MPJ	DCL	MPJ
2	06/24/19	MPJ	DCL	MPJ
3	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - POWER DISTRIBUTION
INSTRUMENT SCHEDULE 1

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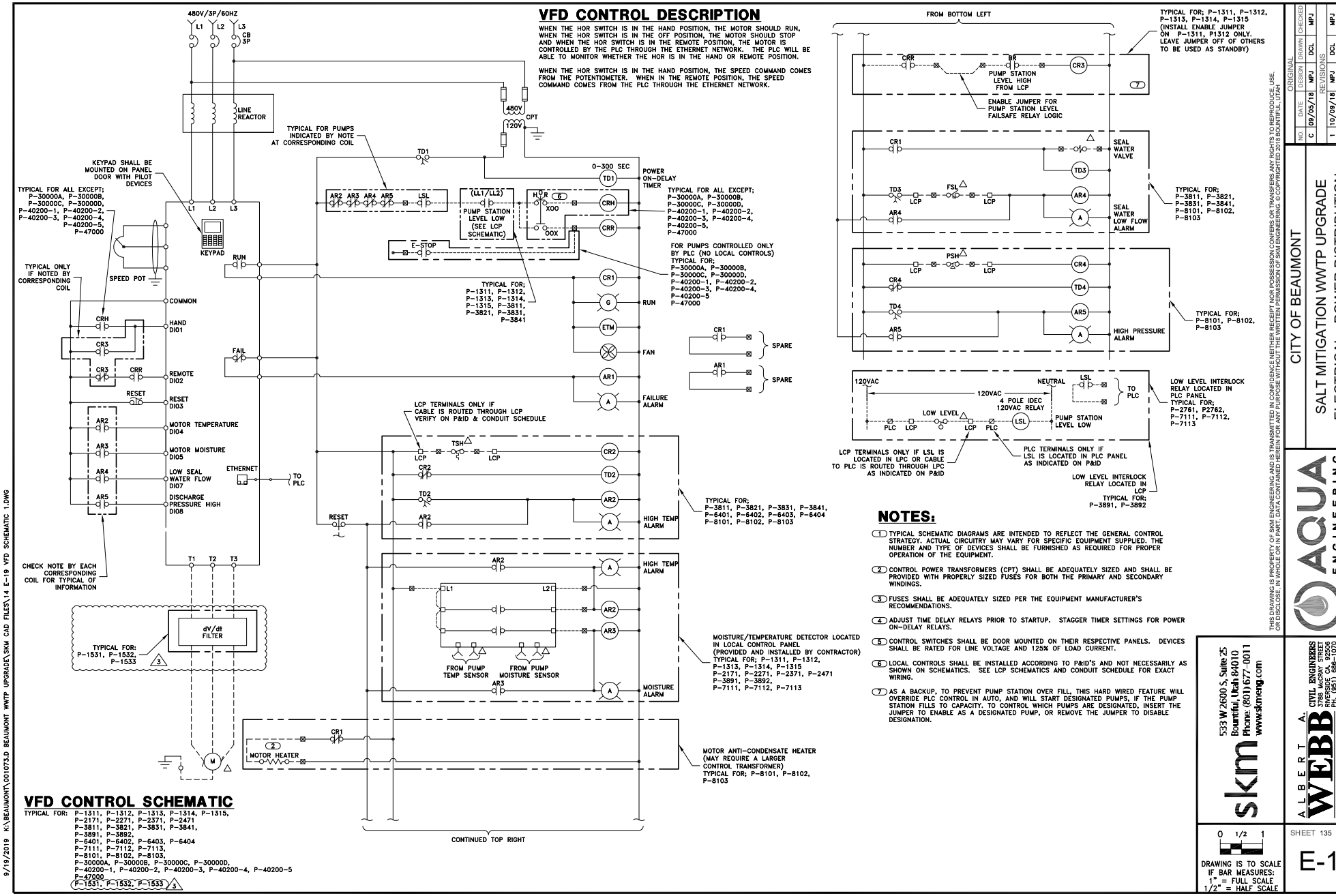
ENGINEERING CONSULTANTS

0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE



VFD CONTROL DESCRIPTION

WHEN THE HOR SWITCH IS IN THE HAND POSITION, THE MOTOR SHOULD RUN, WHEN THE HOR SWITCH IS IN THE OFF POSITION, THE MOTOR SHOULD STOP AND WHEN THE HOR SWITCH IS IN THE REMOTE POSITION, THE MOTOR IS CONTROLLED BY THE PLC THROUGH THE ETHERNET NETWORK. THE PLC WILL BE ABLE TO MONITOR WHETHER THE HOR IS IN THE HAND OR REMOTE POSITION.

WHEN THE HOR SWITCH IS IN THE HAND POSITION, THE SPEED COMMAND COMES FROM THE POTENTIOMETER. WHEN IN THE REMOTE POSITION, THE SPEED COMMAND COMES FROM THE PLC THROUGH THE ETHERNET NETWORK.

NOTES:

1. TYPICAL SCHEMATIC DIAGRAMS ARE INTENDED TO REFLECT THE GENERAL CONTROL STRATEGY. ACTUAL CIRCUITRY MAY VARY FOR SPECIFIC EQUIPMENT SUPPLIED. THE NUMBER AND TYPE OF DEVICES SHALL BE FURNISHED AS REQUIRED FOR PROPER OPERATION OF THE EQUIPMENT.
2. CONTROL POWER TRANSFORMERS (CPT) SHALL BE ADEQUATELY SIZED AND SHALL BE PROVIDED WITH PROPERLY SIZED FUSES FOR BOTH THE PRIMARY AND SECONDARY WINDINGS.
3. FUSES SHALL BE ADEQUATELY SIZED PER THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
4. ADJUST TIME DELAY RELAYS PRIOR TO STARTUP. STAGGER TIMER SETTINGS FOR POWER ON-DELAY RELAYS.
5. CONTROL SWITCHES SHALL BE DOOR MOUNTED ON THEIR RESPECTIVE PANELS. DEVICES SHALL BE RATED FOR LINE VOLTAGE AND 125% OF LOAD CURRENT.
6. LOCAL CONTROLS SHALL BE INSTALLED ACCORDING TO P&ID'S AND NOT NECESSARILY AS SHOWN ON SCHEMATICS. SEE LCP SCHEMATICS AND CONDUIT SCHEDULE FOR EXACT WIRING.
7. AS A BACKUP, TO PREVENT PUMP STATION OVER FILL, THIS HARD WIRED FEATURE WILL OVERRIDE PLC CONTROL IN AUTO, AND WILL START DESIGNATED PUMPS, IF THE PUMP STATION FILLS TO CAPACITY. TO CONTROL WHICH PUMPS ARE DESIGNATED, INSERT THE JUMPER TO ENABLE AS A DESIGNATED PUMP, OR REMOVE THE JUMPER TO DISABLE DESIGNATION.

VFD CONTROL SCHEMATIC

TYPICAL FOR: P-1311, P-1312, P-1313, P-1314, P-1315, P-2171, P-2271, P-2371, P-2471 P-3811, P-3821, P-3831, P-3841, P-3891, P-3892, P-6401, P-6402, P-6403, P-6404 P-7111, P-7112, P-7113, P-8101, P-8102, P-8103, P-30000A, P-30000B, P-30000C, P-30000D, P-40200-1, P-40200-2, P-40200-3, P-40200-4, P-40200-5 P-47000

P-1531, P-1532, P-1533 (3)

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	10/09/18	MPJ	DCL	MPJ
2	12/10/18	MPJ	MGJ	MPJ
3	10/11/19	MPJ	DCL	MPJ

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ELECTRICAL - POWER DISTRIBUTION
VFD SCHEMATIC 1

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0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

SHEET 135 OF 172

E-19

10/21/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\15 CE-01 CONDUIT SCHEDULE 1.DWG

POWER CONDUIT

CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED IN	DUCTBANKS	NOTES
P0100	6"	3 1/0 15KV MV-105 EPR, AL; 4/0 GND 600V XHHW, CU	12KVAC	MVSWGR	TRANSFORMER XFMR-HW		201.2, 100	
P0101	6 - 4"	5 SETS OF 4-400 MCM W/ 1/0 GND	277/480VAC	TRANSFORMER XFMR-HW	SWGR-HW		100.1	
P0102	5 - 4"	5 SETS OF 4-400 MCM W/ 1/0 GND	277/480VAC	STANDBY GENERATOR	SWGR-HW		100A	
P0103	2 - 4"	2 SETS OF 3-4/0 W/#2 GND	480VAC	SWGR-HW	MCC-HW1			
P0104	2 - 4"	2 SETS OF 3-4/0 W/#2 GND	480VAC	SWGR-HW	MCC-HW2			
P0105	4"	4 250MCM W/#2 GND	277/480VAC	SWGR-HW	DP-HW1			
P0106	4"	4 250MCM W/#2 GND	277/480VAC	SWGR-HW	DP-HW2			
P0107	1.5"	3#4 W/#6 GND	480VAC	DP-HW1	XFMR-HW1			
P0107A	2"	4#1 W/#6 GND	120/208VAC	XFMR-HW1	LP-HW1			
P0108	1.5"	3#4 W/#6 GND	480VAC	DP-HW2	XFMR-HW2			
P0108A	2"	4#1 W/#6 GND	120/208VAC	XFMR-HW2	LP-HW2			
P0109	1"	2#10 W/#12 GND	120VAC	LP-HW1	CTC-HW			
P0110	1"	2#10 W/#12 GND	120VAC	LP-HW2	CTC-HW			
P0111	1"	4#12 W/#12 GND	120VAC	CTC-HW	RIO-HW			
P0112	1.5"	2#12 W/#12 GND, 2#8 W/#10 GND	123/208VAC	LP-HW2	STANDBY GENERATOR		300.1	CHARGER AND BLOCK HEATER CIRCUITS
P0113	4"	3 500MCM W/1/0 GND	480VAC	SWGR-HW	DP-CF		102, 38	RUN NEW WIRE TO HH-38 AND SPLICE TO EXISTING CABLES
P0114	2 - 3"	2 SETS OF 3-4/0 W/#2 GND	480VAC	SWGR-HW	MCC-UV		102.1	RUN NEW WIRE TO HH-1 AND SPLICE TO EXISTING CABLES
P0115	3"	3 3/0 W/#4 GND	480VAC	SWGR-HW	DP-UV1		102.1	RUN NEW WIRE TO HH-1 AND SPLICE TO EXISTING CABLES
P0116	1"	3#8 W/#10 GND	480VAC	DP-HW2	MPC-SB		103, 103.1	
P0117	1"	4#8 W/#8 GND	123/208VAC	LP-HW1	LP-RW		102, 38, 106	
P0118	3/4"	2#12 W/#12 GND	120VAC	LP-RW	BISULFITE TANK HEAT CONTROL PANEL			
P0119	3/4"	2#12 W/#12 GND	120VAC	LP-RW	BISULFITE PIPING HEAT TRACE			
P0120	3/4"	2#12 W/#12 GND	120VAC	LP-RW	HYDROXIDE TANK HEAT CONTROL PANEL			
P0121	3/4"	2#12 W/#12 GND	120VAC	LP-RW	HYDROXIDE PIPING HEAT TRACE			
P0122	3/4"	2#12 W/#12 GND	120VAC	EXISTING LP-D (MCC-UV)	HYDROXIDE PIPING HEAT TRACE			
P0200	2-6"	UTILITY FEEDER	12KVAC	SCE POWER POLE	SCE PME		201	INSTALL PER SCE ELECTRICAL SERVICE REQUIREMENTS
P0201	2-6"	UTILITY PRIMARY CABLING	12KVAC	SCE PME	MVSWGR		201.1	INSTALL PER SCE ELECTRICAL SERVICE REQUIREMENTS
P0202	6"	3 4/0 15KV MV-105 EPR, AL; 4/0 GND 600V XHHW, CU	12KVAC	MVSWGR	TRANSFORMER XFMR-MB		201.2	
P0204	14 - 4"	UTILITY SECONDARY CABLING	277/480VAC	TRANSFORMER XFMR-MB	SWGR-MB		201.5	
P0205	14 - 4"	14 SETS OF 4 350MCM W/1/0 GND	277/480VAC	STANDBY GENERATOR	SWGR-MB		201.6	
P0206	2 - 4"	2 SETS OF 4 4/0 W/#2 GND	277/480VAC	ACTIVE HARMONIC FILTER	SWGR-MB			
P0207	4 - 4"	4 SETS OF 3 250 MCM W/#2 GND	480VAC	SWGR-MB	MCC-MB1			
P0208	4 - 4"	4 SETS OF 3 250 MCM W/#2 GND	480VAC	SWGR-MB	MCC-MB2			
P0209	2 - 4"	2 SETS OF 4 4/0 W/#2 GND	277/480VAC	SWGR-MB	DP-MB			
P0210	1.5"	3#3 W/#8 GND	480VAC	DP-MB	XFMR-MB1			
P0210A	2"	4 4/0 W/#1 GND	120/208VAC	XFMR-MB1	LP-MB1			
P0211	1.5"	3#4 W/#6 GND	480VAC	DP-MB	XFMR-MB2			
P0211A	2"	4#1 W/#6 GND	120/208VAC	XFMR-MB2	LP-Mb2			
P0212	1.5"	4#4 W/#6 GND	123/208VAC	LP-MB2	STANDBY GENERATOR		201.6	
P0213	1"	2#10 W/#12 GND	120VAC	LP-MB1	CTC-MB			
P0214	1"	2#10 W/#12 GND	120VAC	LP-MB2	CTC-MB			
P0215	1"	4#12 W/2#12 GND	120VAC	CTC-MB	RIO-MB			
P0216	1"	2#12 W/#12 GND	120VAC	LP-MB2	PLC-RO			
P0217	1.5"	4#4 W/#8 GND TC	120VAC	LP-MB2	LP-MB3			THRU 120VAC CABLE TRAY
P0218	1"	2#12W/#12 GND	120VAC	LP-MB1	FIRE ALARM CONTROL PANEL			
P0251	1"	2#10 W/#10 GND	120VAC	LP-MB1	AB1 & 2 SOUTH LIGHTS	P0251+	202, 204	
P0252	4"	2#10 W/#10 GND	120VAC	LP-MB1	AB1 & 2 NORTH LIGHTS	P2231+, P2251+, P2252+	203, 205	
P0253	1"	2#10 W/#10 GND	120VAC	LP-MB1	AB3 & 4 SOUTH LIGHTS	P0253+	202, 204	
P0254	1"	2#10 W/#10 GND	120VAC	LP-MB1	AB3 & 4 NORTH LIGHTS	P2331+, P2351+, P2352+	203, 205	
P0300	4"	3 1/0 15KV MV-105 EPR, AL; 4/0 GND 600V XHHW, CU	12KVAC	MVSWGR	XFMR-SH		300	ROUTE THRU EXISTING HANDHOLES HH-48 AND HH-47 REUSE EXISTING CONDUITS AS SHOWN ON SE-01 THRU SE-04
P0300A	5-4"	5 SETS OF 4-400MCM W/1/0 GND	277/480VAC	XFMR-SH	SWBD-SH		300.1	
P0301	1.5"	3#3 W/#6 GND	480VAC	MCC-EQ	XFMR-LP-SH			
P0301A	2"	4 4/0 W/#1 GND	123/208VAC	XFMR-LP-SH	LP-SH			
P0302	2-4"	2 SETS OF 3-600MCM W/1/0 GND	480VAC	SWBD-SH	MCC-SH			
P0303	1"	2#12 W/#12 GND	120VAC	LP-SH	RIO-SH			
P0304	4"	3 500 MCM W/1/0 GND	480VAC	SWBD-SH	MTS-EQ			
P0305	4"	3 500 MCM W/1/0 GND	480VAC	MTS-EQ	MCC-EQ			
P0306	4"	3 500 MCM W/1/0 GND	480VAC	MTS-EQ	GENERATOR RECEPTACLE			
P0400	1.5"	2 #4 W/ #6 GND	480VAC	DP-AB	MPC-PO		205.1	
P0401	1"	2 #12 W/#12 GND	120VAC	MPC-PO	EXISTING GATE CONTROLLER		205.1	
P1101	1"	3#10 W/#12 GND	480VAC	DP-HW1	EXISTING G-1101	P1101+	101, 104, 104.4	REUSE EXISTING CONDUIT FROM G-1101 TO HH-50
P1102	1"	3#10 W/#12 GND	480VAC	DP-HW1	EXISTING G-1102	P1101+	101, 104, 104.4	REUSE EXISTING CONDUIT FROM G-1102 TO HH-50
P1111	1"	3#10 W/#12 GND	480VAC	DP-HW1	EXISTING G-1111	P1101+	101, 104, 104.4	REUSE EXISTING CONDUIT FROM G-1111 TO HH-50
P1112	1"	WIRE FUTURE	480VAC	DP-HW1	FUTURE CP-ME-1112			STUB UP AND CAP
P1112A	1"	WIRE FUTURE	480VAC	FUTURE CP-ME-1112	ME-1112		101,104, 104.4	ROUTE NEW CONDUIT TO HH-50
P1112B	1"	3#10 W/#12 GND	480VAC	DP-HW1	EXISTING CP-ME-1112		101, 104, 104.4	REUSE EXISTING CONDUIT FROM CP-ME-1112 TO HH-50
P1113	1"	3#10 W/#12 GND	480VAC	DP-HW1	EXISTING G-1113	P1101+	101, 104, 104.4	REUSE EXISTING CONDUIT FROM G-1113 TO HH-50
P1122	1"	3#12 W/#12 GND	480VAC	DP-HW2	EXISTING CP-ME-1122			
P1122A	1"	VFD CABLE 4#12	480VAC	CP-ME-1122	ME-1122		101, 104, 104.5	
P1151	1"	3#10 W/#12 GND	480VAC	DP-HW1	EXISTING G-1151	P1101+	101, 104, 104.4	REUSE EXISTING CONDUIT FROM G-1151 TO HH-50
P1152	1"	3#10 W/#12 GND	480VAC	DP-HW1	EXISTING G-1152	P1101+	101, 104, 104.4	REUSE EXISTING CONDUIT FROM G-1152 TO HH-50
P1161	1"	2#10 W/#12 GND	120VAC	LP-HW1	EXISTING LCP-1161		101, 104, 104.4	REUSE EXISTING CONDUIT FROM LCP-1161 TO HH-50
P1164	1"	2#12 W/#12 GND	120VAC	EXISTING LCP-1161	EXISTING ME-1164			REUSE EXISTING CONDUIT AND WIRE
P1171	1"	WIRE FUTURE	480VAC	FUTURE CP-ME-1172	ME-1171		101, 104, 104.4	ROUTE NEW CONDUIT TO HH-50
P1172	1"	WIRE FUTURE	480VAC	DP-HW1	FUTURE CP-ME-1172			STUB UP AND CAP
P1172A	1"	WIRE FUTURE	480VAC	FUTURE CP-ME-1172	ME-1172		101, 104, 104.4	ROUTE NEW CONDUIT TO HH-50
P1172B	1"	3#8 W/#10 GND	480VAC	DP-HW1	EXISTING CP-ME-1172		101, 104, 104.4	REUSE EXISTING CONDUIT FROM CP-ME-1172 TO HH-50
P1181	1"	3#8 W/#10 GND	480VAC	CP-ME-1182	ME-1181		101, 104, 104.5	
P1182	1"	3#8 W/#10 GND	480VAC	DP-HW2	CP-ME-1182			
P1182A	1"	3#10 W/#12 GND	480VAC	CP-ME-1182	ME-1182		101, 104, 104.5	
P1202	1"	3#12 W/#12 GND	480VAC	MCC-HW1	ME-1202		101, 104, 104.1	
P1212	1"	3#12 W/#12 GND	480VAC	MCC-HW2	ME-1212		101, 104, 104.2	
P1231	1.25"	3#4 W/#6 GND	480VAC	DP-HW1	CP-1231			
P1231A	1"	3#8 W/#10 GND	480VAC	CP-1231	P-1231		101, 104, 104.1	
P1241	1"	3#8 W/#10 GND	480VAC	CP-1231	P-1241		101, 104, 104.2	
P1251	1"	3#10 W/#12 GND	480VAC	CP-1231	ME-1251		101, 104, 104.5	
P1311	1.5"	VFD CABLE 3#6 W/#8 GND	480VAC	MCC-HW1	JB-P-1311	P1311+	101, 2, 18	
P1312	1.5"	VFD CABLE 3#6 W/#8 GND	480VAC	MCC-HW2	JB-P-1312	P1312+	101, 2, 18	
P1313	1.5"	VFD CABLE 3#6 W/#8 GND	480VAC	MCC-HW1	JB-P-1313	P1313+	101, 2, 18	
P1314	1.5"	VFD CABLE 3#6 W/#8 GND	480VAC	MCC-HW2	JB-P-1314	P1314+	101, 2, 18	
P1315	1.5"	VFD CABLE 3#6 W/#8 GND	480VAC	MCC-HW1	JB-P-1315	P1315+	101, 2, 18	
P1321	1"	3#10 W/#12 GND	480VAC	DP-HW1	FV-1321	P1321+	101, 2, 18	
P1322	1"	3#10 W/#12 GND	480VAC	DP-HW1	FV-1322	P1321+	101, 2, 18	
P1332	1"	2#12 W/#12 GND	120VAC	LP-HW2	FIT-1332	P1332+	101, 2, 18	
P1342	1"	2#12 W/#12 GND	120VAC	LP-HW2	FIT-1342	P1332+	101, 2, 18	
P1343	1"	3#10 W/#12 GND	480VAC	DP-HW1	FV-1343	P1321+	101, 2, 18	
P1412	3/4"	2#12 W/#12 GND	120VAC	LCP-ME-1413	P-1241			
P1413	1"	3#12 W/#12 GND	480VAC	DP-HW1	CP-ME-1413			
P1413A	1"	VFD CABLE 3#12 W/#12 GND, 4#12	480VAC	CP-ME-1413	ME-1413		101, 105	
P1416	1"	10#12 W/5#12 GND	120VAC	CP-ME-1413	SV-1416A,B,C,D,E		101, 105	
P1422	3/4"	2#12 W/#12 GND	120VAC	LCP-ME-1423	LIT-1422			
P1423	1"	3#12 W/#12 GND	480VAC	DP-HW2	CP-ME-1423			
P1423A	1"	VFD CABLE 3#12 W/#12 GND, 4#12	480VAC	CP-ME-1423	ME-1423		101, 105	
P1426	1"	10#12 W/5#12 GND	120VAC	CP-ME-1423	SV-1426A,B,C,D,E		101, 105	
P1433	1"	3#12 W/#12 GND	480VAC	DP-HW2	CP-ME-1433			
P1433A	1"	VFD CABLE 3#12 W/#12 GND, 4#12	480VAC	CP-ME-1433	ME-1433		101, 105	
P1436	1"	10#12 W/5#12 GND	120VAC	CP-ME-1433	SV-1436A,B,C,D,E		101, 105	
P1441	1"	3#10 W/#12 GND	480VAC	MCC-HW1	ME-1441		101, 105	
P1451	1"	3#10 W/#12 GND	480VAC	MCC-HW2	ME-1451		101, 105	

CONDUIT UPDATED 3

CONDUIT ADDED 3

CONDUIT UPDATED 3

CONDUIT UPDATED 3

CONDUIT UPDATED 3

CONDUIT ADDED 3

CONDUIT UPDATED 3

CONDUIT UPDATED 3

CONDUIT UPDATED 3

NOTES:

1. CONDUITS THAT ARE COMBINED BETWEEN PULL POINTS ARE DENOTED WITH A + (PLUS) SYMBOL. SEE THE COMBINED CONDUITS SCHEDULE ON SHEET CE-11. CONDUITS THAT HAVE BEEN COMBINED SHALL BE LABELED WITH MULTIPLE CONDUIT TAGS, ONE FOR EACH CONDUIT THAT HAS BEEN COMBINED.
2. THE CONDUIT DEVELOPMENT AND SCHEDULE DOES NOT SHOW CONDUIT AND CONDUCTORS FOR LIGHTS, RECEPTACLES AND DATA JACKS. IT ALSO DOESN'T SHOW CONDUIT AND CONDUCTORS FOR THE MBR BUILDING'S HVAC AND APPLIANCES FOR THE OFFICE, BREAK ROOM, CONTROL ROOM, LAB, MECHANICAL ROOM AND RESTROOMS. THE CONTRACTOR IS RESPONSIBLE TO INCLUDE THESE CONDUITS AND CONDUCTORS IN THEIR WORK AND IN THEIR SUBMITTED CONDUIT ROUTING PLAN.

NO.	DATE	DESIGN	DRAWN	CHECKED
		ORIGINAL		
C	09/05/18	MPJ	DCL	MPJ
		REVISIONS		
1	11/28/18	MPJ	BB	MPJ
2	05/14/19	MPJ	DCL	MPJ
3	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
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CONDUIT SCHEDULE 1

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0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET 143 OF 172

CE-01

CONDUIT UPDATED: P1501, P1502, P1511, P1514, P1611
CONDUIT ADDED: P1531, P1532, P1533, P1541
CONDUIT DELETED: P1533 (3)

POWER CONDUIT

CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED IN	DUCTBANKS	NOTES
P1461	1"	3#10 W/#12 GND	480VAC	MCC-HW2	ME-1461		101, 105	
P1501	1"	2#10 W/#10 GND	120VAC	LP-SH	LIT-1501	P1501+	303.1, 303.2	
P1502	1"	2#10 W/#10 GND	120VAC	LP-SH	LIT-1502	P1501+	303.1, 303.2	
P1511	1"	2#10 W/#10 GND	120VAC	LP-SH	LCP-1511		303.1, 303.3	
P1514	1"	2#10 W/#10 GND	120VAC	LP-SH	LCP-1514		303.1, 303.3	
P1531	1.5"	3#4 W/#8 GND	480VAC	MCC-EQ	P-1531		303.1, 303.2	
P1532	1.5"	3#4 W/#8 GND	480VAC	MCC-EQ	P-1532		303.1, 303.2	
P1533	1.5"	3#4 W/#8 GND	480VAC	MCC-EQ	P-1533		303.1, 303.2	
~~P1533~~	~~4"~~	~~3#10 W/#12 GND~~	~~480VAC~~	~~DP-HW1~~	~~FIT-1533~~		~~101-101-1~~	
P1541	1"	2#12 W/#12 GND	120VAC	LP-SH	FIT-1541	P1501+	303.1, 303.2	
P1611	1"	3#8 W/#10 GND	480VAC	DP-HW2	LCP-ME-1611		101, 104, 104.3	
P1611A	1"	3#12 W/#12 GND	480VAC	LCP-ME-1611	ME-1611			
P1621	1"	2#12 W/#12 GND	120VAC	LCP-ME-1611	SV-1621			
P1632	1"	2#12 W/#12 GND	120VAC	LCP-ME-1611	P-1632			
P1711	1"	3#8 W/#10 GND	480VAC	DP-HW2	LCP-ME-1711		101, 105	
P1711A	1"	3#12 W/#12 GND	480VAC	LCP-ME-1711	ME-1711			
P1721	1"	2#12 W/#12 GND	120VAC	LCP-ME-1711	SV-1721			
P1732	1"	2#12 W/#12 GND	120VAC	LCP-ME-1711	P-1732			
P1811	1"	3#8 W/#10 GND	480VAC	MCC-HW1	DS-P-1811		101, 101.2	
P1811A	2"	MFR CABLE	480VAC	DS-P-1811	P-1811			
P1821	1"	3#8 W/#10 GND	480VAC	MCC-HW2	DS-P-1821		101, 101.2	
P1821A	2"	MFR CABLE	480VAC	DS-P-1821	P-1821			
P1822	1"	2#12 W/#12 GND	120VAC	LP-HW1	FIT-1822		101, 101.2	
P1901	1"	3#10 W/#12 GND	480VAC	DP-HW1	H-1901			
P1902	1"	3#10 W/#12 GND	480VAC	DP-HW2	H-1902			
P1903	1"	3#12 W/#12 GND	480VAC	DP-HW1	H-1903			
P1904	1"	3#12 W/#12 GND	480VAC	DP-HW2	H-1904			
P2111	1"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-2111	P0251+, P2111+	202, 204	
P2131	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	FV-2131	P2131+, P2151+, P2152+	203, 205	
P2132	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	FIT-2132	P2131+, P2151+, P2152+	203, 205	
P2151	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-2151	P2151+, P2152+	203, 205	
P2152	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-2152	P2152+	203, 205	
P2171	1.25"	VFD CABLE 3#8 W/#10 GND	480VAC	MCC-MB1	LCP-P-2171		202, 204	
P2211	1"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-2211	P0251+, P2111+	202, 204	
P2231	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	FV-2231	P2231+, P2251+, P2252+	203, 205	
P2232	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	FIT-2232	P2231+, P2251+, P2252+	203, 205	
P2251	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-2251	P2251+, P2252+	203, 205	
P2252	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-2252	P2252+	203, 205	
P2271	1.25"	VFD CABLE 3#8 W/#10 GND	480VAC	MCC-MB2	LCP-P-2271		202, 204	
P2311	1"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-2311	P0253+, P2311+	202, 204	
P2331	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	FV-2331	P2331+, P2351+, P2352+	203, 205	
P2332	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	FIT-2332	P2331+, P2351+, P2352+	203, 205	
P2351	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-2351	P2351+, P2352+	203, 205	
P2352	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-2352	P2352+	203, 205	
P2371	1.25"	VFD CABLE 3#8 W/#10 GND	480VAC	MCC-MB1	LCP-P-2371		202, 204	
P2411	1"	2#12 W/#12 GND	120VAC	LP-MB2	H-~~3915~~	P0253+, P2311+	202, 204	
P2431	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	FV-2431	P2431+, P2451+, P2452+	203, 205	
P2432	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	FIT-2432	P2431+, P2451+, P2452+	203, 205	
P2451	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-2451	P2451+, P2452+	203, 205	
P2452	3/4"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-2452	P2452+	203, 205	
P2471	1.25"	VFD CABLE 3#8 W/#10 GND	480VAC	MCC-MB2	LCP-P-2471		202, 204	
P2601	2-4"	2 SETS OF 3-350MCM W/#1 GND	480VAC	SWGR-MB	LCP-ME-2601			
P2611	2-4"	2 SETS OF 3-350MCM W/#1 GND	480VAC	SWGR-MB	LCP-ME-2611			
P2621	2-4"	2 SETS OF 3-350MCM W/#1 GND	480VAC	SWGR-MB	LCP-ME-2621			
P2631	2-4"	WIRE FUTURE	480VAC	SWGR-MB	LCP-ME-2631			STUB UP AND CAP
P2651	1"	2#12 W/#12 GND	120VAC	LP-MB2	FV-2651			
P2761	1.25"	3#8 W/#10 GND	480VAC	MCC-MB1	LCP-2761		202, 204, 204.1	
P2761A	2"	MFR CABLE	480VAC	LCP-2761	P-2761			
P2762	1.25"	3#8 W/#10 GND	480VAC	MCC-MB2	LCP-2761		202, 204, 204.1	
P2762A	2"	MFR CABLE	480VAC	LCP-2761	P-2762			
P2764	1"	2#12 W/#12 GND	120VAC	LP-MB2	FIT-2764		202, 204, 204.1	
P3000	1"	2#12 W/#12 GND	120VAC	LP-MB2	AIT-3000			
P3001	1"	3#12 W/#12 GND	480VAC	DP-MB	DS-CP-3001			
P3001A	1"	3#12 W/#12 GND	480VAC	DS-CP-3001	CP-3001			
P3004	1"	2#12 W/#12 GND	120VAC	H-3967	CP-3004, SV-3064			ROUTE POWER THROUGH A 20A, 120VAC DISCONNECT SWITCH
P3121	1"	10#12 W/5#12 GND	120VAC	LP-MB3	FV-3121, FIT-3122, FV-3151A, FV-3151B, FV-3171			
P3181	1.25"	3#4 W/#8 GND, 2#14	480VAC	MCC-MB1	P-3181			
P3191	1"	4#12 W/2#12 GND	120VAC	LP-MB3	FV-3911, FIT-3192			
P3192	1"	10#12 W/5#12 GND	120VAC	LP-MB3	SV-3152, 3292, 3392, 3492, 3592			
P3193	1"	6#12 W/3#12 GND	120VAC	LP-MB3	AIT-3193, 3393, 3593			
P3221	1"	10#12 W/5#12 GND	120VAC	LP-MB3	FV-3221, FIT-3222, FV-3251A, FV-3251B, FV-3271			
P3281	1.25"	3#4 W/#8 GND, 2#14	480VAC	MCC-MB2	P-3281			
P3291	1"	4#12 W/2#12 GND	120VAC	LP-MB3	FV-3911, FIT-3292			
P3321	1"	10#12 W/5#12 GND	120VAC	LP-MB3	FV-3321, FIT-3322, FV-3351A, FV-3351B, FV-3371			
P3381	1.25"	3#4 W/#8 GND, 2#14	480VAC	MCC-MB1	P-3381			
P3391	1"	4#12 W/2#12 GND	120VAC	LP-MB3	FV-3911, FIT-3392			
P3421	1"	10#12 W/5#12 GND	120VAC	LP-MB3	FV-3421, FIT-3422, FV-3451A, FV-3451B, FV-3471			
P3481	1.25"	3#4 W/#8 GND, 2#14	480VAC	MCC-MB2	P-3481			
P3491	1"	4#12 W/2#12 GND	120VAC	LP-MB3	FV-3911, FIT-3492			
P3521	1"	WIRE FUTURE	120VAC	LP-MB3	FV-3521, FIT-3522, FV-3551A, FV-3551B, FV-3571			STUB UP AND CAP
P3581	1.25"	WIRE FUTURE	480VAC	MCC-MB1	P-3581			STUB UP AND CAP
P3591	1"	WIRE FUTURE	120VAC	LP-MB3	FV-3911, FIT-3592			STUB UP AND CAP
P3701	2-4"	2 SETS OF 3-4/0 W/#2 GND	480VAC	SWGR-MB	LCP-ME-3701			
P3711	2-4"	2 SETS OF 3-4/0 W/#2 GND	480VAC	SWGR-MB	LCP-ME-3711			
P3721	2-4"	2 SETS OF 3-4/0 W/#2 GND	480VAC	SWGR-MB	LCP-ME-3721			
P3731	2-4"	WIRE FUTURE	480VAC	SWGR-MB	LCP-ME-3731			STUB UP AND CAP
P3751	1"	2#12 W/#12 GND	120VAC	LP-MB2	FV-3751			
P3811	2"	3#3 W/#6 GND, 2#14	480VAC	MCC-MB1	P-3811			
P3821	2"	3#3 W/#6 GND, 2#14	480VAC	MCC-MB2	P-3821			
P3831	2"	3#3 W/#6 GND, 2#14	480VAC	MCC-MB1	P-3831			
P3841	2"	3#3 W/#6 GND, 2#14	480VAC	MCC-MB2	P-3841			
P3851	2"	WIRE FUTURE	480VAC	MCC-MB1	P-3851 (FUTURE)			STUB OUT AND CAP. CONDUIT NEAR FUTURE PUMP LOCATION
P3861	1"	2#12 W/#12 GND	120VAC	LP-MB2	FIT-3861			
P3891	1"	VFD CABLE 3#10 W/#10 GND	480VAC	MCC-MB1	LCP-3891			THRU 480VAC CABLE TRAY
P3891A	1.5"	MFR CABLE	480VAC	LCP-3861	P-3861			
P3892	1"	VFD CABLE 3#10 W/#10 GND	480VAC	MCC-MB2	LCP-3891			THRU 480VAC CABLE TRAY
P3892A	1.5"	MFR CABLE	480VAC	LCP-3861	P-3892			
P3893	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB2	FIT-3893			THRU 120VAC CABLE TRAY
P3901	3/4"	3#12 W/#12 GND TC	480VAC	MCC-MB1	H-3901			THRU 480VAC CABLE TRAY
P3902	3/4"	3#12 W/#12 GND TC	480VAC	MCC-MB2	H-3902			THRU 480VAC CABLE TRAY
P3903	3/4"	3#12 W/#12 GND TC	480VAC	MCC-MB1	H-3903			THRU 480VAC CABLE TRAY
P3904	3/4"	3#12 W/#12 GND TC	480VAC	MCC-MB2	H-3904			THRU 480VAC CABLE TRAY
P3905	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB1	H-3905			
P3906	1"	2#12 W/#12 GND	120VAC	LP-MB1	H-3906			
P3907	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB1	H-3907			THRU 120VAC CABLE TRAY
P3908	3/4"	2#12 W/#12 GND TC	120VAC	H-3907	H-3908	C3907+		THRU 120VAC CABLE TRAY
P3909	3/4"	2#12 W/#12 GND TC	120VAC	H-3907	H-3909	C3907+		THRU 120VAC CABLE TRAY

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3	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - CONDUITS AND DUCTBANKS
CONDUIT SCHEDULE 2

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DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

SHEET 144 OF 172

CE-02

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POWER CONDUIT

CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED IN	DUCTBANKS	NOTES
P9602	1"	3#10 W/#10 GND	480VAC	MCC-SH	ME-9602		303, 303.2	
P9603	1"	3#10 W/#10 GND	480VAC	MCC-SH	ME-9603		303, 303.2	
P9604	1"	3#10 W/#10 GND	480VAC	MCC-SH	ME-9604		303, 303.2	
P9611	1"	2#12 W/#12 GND	120VAC	LP-SH	LCP-SHDG			
P9621	1"	2#12 W/#12 GND	120VAC	LP-SH	WIT-9621			
P30000A	2"	VFD CABLE 3#4 W/#4 GND	480VAC	MCC-MB1	P-30000A			THRU 480VAC CABLE TRAY
P30000B	2"	VFD CABLE 3#4 W/#4 GND	480VAC	MCC-MB2	P-30000B			THRU 480VAC CABLE TRAY
P30000C	2"	VFD CABLE 3#4 W/#4 GND	480VAC	MCC-MB1	P-30000C			THRU 480VAC CABLE TRAY
P30000D	2"	VFD CABLE 3#4 W/#4 GND	480VAC	MCC-MB2	P-30000D			THRU 480VAC CABLE TRAY
P30094	1"	2-2#12 W/#12 GND TC	120VAC	LP-MB2	AIT-30094, AIT-30095			THRU 120VAC CABLE TRAY
P40001-1	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB2	RIO-RO1			THRU 120VAC CABLE TRAY
P40001-2	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB2	RIO-RO2			THRU 120VAC CABLE TRAY
P40001-3	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB2	RIO-RO3			THRU 120VAC CABLE TRAY
P40001-4	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB2	RIO-RO4			THRU 120VAC CABLE TRAY
P40001-5	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB2	RIO-RO5			THRU 120VAC CABLE TRAY
P40001-6	3/4"	WIRE FUTURE	120VAC	LP-MB2	FUTURE RIO-RO6			THRU 120VAC CABLE TRAY
P40200-1	2"	VFD CABLE 3-2/0 W/SYM. GNDS	480VAC	MCC-MB1	P-40200-1			THRU 480VAC CABLE TRAY
P40200-2	2"	VFD CABLE 3-2/0 W/SYM. GNDS	480VAC	MCC-MB2	P-40200-2			THRU 480VAC CABLE TRAY
P40200-3	2"	VFD CABLE 3-2/0 W/SYM. GNDS	480VAC	MCC-MB1	P-40200-3			THRU 480VAC CABLE TRAY
P40200-4	2"	VFD CABLE 3-2/0 W/SYM. GNDS	480VAC	MCC-MB2	P-40200-4			THRU 480VAC CABLE TRAY
P40200-5	2"	VFD CABLE 3-2/0 W/SYM. GNDS	480VAC	MCC-MB1	P-40200-5			THRU 480VAC CABLE TRAY
P40200-6	2"	WIRE FUTURE	120VAC	MCC-MB2	FUTURE P-40200-6			THRU 480VAC CABLE TRAY
P47000	1"	VFD CABLE 3#10 W/#10 GND	480VAC	MCC-MB1	P-47000			THRU 480VAC CABLE TRAY
P47284	2"	3#3 W/#6 GND TC	480VAC	DP-MB	PP-47284			THRU 480VAC CABLE TRAY
P47284A	1"	3#8 W/#10 GND	480VAC	PP-47284	HTR-47284			
P85100	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB2	P-85100A, P-85100B			THRU 120VAC CABLE TRAY, WIRE TO DEDICATED DUPLEX OUTLET
P85300	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB2	P-85300A, P-85300B			THRU 120VAC CABLE TRAY, WIRE TO DEDICATED DUPLEX OUTLET
P85600	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB2	P-85600A, P-85600B			THRU 120VAC CABLE TRAY, WIRE TO DEDICATED DUPLEX OUTLET
P85900	3/4"	2#12 W/#12 GND TC	120VAC	LP-MB2	P-85900A, P-85900B			THRU 120VAC CABLE TRAY, WIRE TO DEDICATED DUPLEX OUTLET

CONTROL CONDUIT

CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED	DUCTBANKS	NOTES
C0100	1"	12#14	24VDC	STANDBY GENERATOR	RIO-HW		100A	
C0101	1"	2#14	120VAC	SWGR-HW	STANDBY GENERATOR		100A	
C0200	1"	6#14	120VAC	STANDBY GENERATOR	RIO-MB		201.6	
C0201	1"	2#14	120VAC	SWGR-MB	STANDBY GENERATOR		201.6	
C0202	1"	6#14	120VAC	RIO-MB	ACTIVE HARMONIC FILTER			
C1112	1"	WIRE FUTURE	INTRINSICALLY SAFE	FUTURE CP-ME-1112	HH-50		101, 104	
C1112A	1"	WIRE FUTURE	120VAC	FUTURE CP-ME-1112	HH-50		101, 104, 104.4	
C1112B	1"	WIRE FUTURE	120VAC	FUTURE CP-ME-1112	FUTURE CP-ME-1172			
C1112C	1"	12#14	120VAC	EXISTING CP-ME-1112	LCP-1181			REUSE EXISTING CONDUIT AND WIRE
C1122	1"	2 #18 TSP	INTRINSICALLY SAFE	CP-ME-1122	ZS-1122, JSH-1122		101, 104, 104.5	
C1122A	1"	2#12 W/GND, 3#14 W/#14 GND	120VAC	CP-ME-1122	LCP-ME-1122		101, 104, 104.5	
C1172	1.25"	WIRE FUTURE	120VAC	FUTURE CP-ME-1172	HH-50		101, 104, 104.4	
C1182	1.25"	30#12 W/#12 GND	120VAC	CP-ME-1182	LCP-ME-1182		101, 104, 104.5	
C1182A	1"	12#14	120VAC	CP-ME-1122	CP-ME-1182			
C1183	1"	6#12 W/3#12 GND	120VAC	LCP-ME-1182	SV-1183, SV-1184, SV-1185			
C1202	1"	3#12	120VAC	MCC-HW1	LCP-ME-1202		101, 104, 104.1	
C1212	1"	3#12	120VAC	MCC-HW2	LCP-ME-1212		101, 104, 104.2	
C1231	1.5"	15#12 W/#12 GND	120VAC	CP-1231	LCP-P-1231		101, 104, 104.1	
C1231A	3/4"	6#14 W/2#14 GND	120VAC	LCP-P-1231	SV-1231, LSH-1231			
C1241	1.5"	15#12 W/#12 GND	120VAC	CP-1231	LCP-P-1241		101, 104, 104.2	
C1241A	3/4"	6#14 W/2#14 GND	120VAC	LCP-P-1241	SV-1241, LSH-1241			
C1251	2"	30#12 W/#12 GND	120VAC	CP-1231	LCP-ME-1251		101, 104, 104.5	
C1251A	3/4"	10#14 W/4#14 GND	120VAC	LCP-ME-1251	LSH-1251, SV-1252, SV-1253, SV-1254			
C1301	1"	4#14	INTRINSICALLY SAFE	LCP-1311	JB-1301			
C1311	1"	10#12 W/#12 GND	24VDC	RIO-HW	LCP-1311		101, 2	
C1311A	2"	30#12	120VAC	RIO-HW	LCP-1311		101, 2	
C1311B	2"	21#12	120VAC	MCC-HW1	LCP-1311		101, 2	
C1311C	2"	14#12	120VAC	MCC-HW2	LCP-1311		101, 2	
C1311D	N/A	4#14	120VAC	LCP-1311	JB-P-1311	P1311+, C1311D+		

UPDATED 4

CONDUIT UPDATED 4

CONDUIT UPDATED 4

UPDATED 4

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UPDATED 3

ADDED 3

DELETED 3

UPDATED 3

CONTROL CONDUIT

CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED	DUCTBANKS	NOTES
C1312	N/A	4#14	120VAC	LCP-1311	JB-P-1312	P1312+, C1311D+		
C1313	N/A	4#14	120VAC	LCP-1311	JB-P-1313	P1313+, C1311D+		
C1314	N/A	4#14	120VAC	LCP-1311	JB-P-1314	P1314+, C1311D+		
C1315	N/A	4#14	120VAC	LCP-1311	JB-P-1315	P1315+, C1311D+		
C1321	1"	10#14	120VAC	LCP-1311	FV-1321	C1321+		
C1322	1"	10#14	120VAC	LCP-1311	FV-1322	C1321+		
C1343	1"	10#14	120VAC	LCP-1311	FV-1343	C1321+		
C1413	1"	10#14	120VAC	MCC-HW1	CP-ME-1413			
C1413A	1.5"	30#12 W/#12 GND	120VAC	CP-ME-1413	LCP-ME-1413		101, 105	
C1423	1"	10#14	120VAC	MCC-HW1	CP-ME-1423			
C1423A	1.5"	30#12 W/#12 GND	120VAC	CP-ME-1423	LCP-ME-1423		101, 105	
C1433	1"	WIRE FUTURE	120VAC	MCC-HW1	FUTURE CP-ME-1433			STUB UP CONDUIT AND CAP
C1433A	1.5"	WIRE FUTURE	120VAC	FUTURE CP-ME-1433	FUTURE LCP-ME-1433		101, 105	STUB UP CONDUIT AND CAP
C1441	1"	12#12 W/#12 GND	120VAC	MCC-HW1	LCP-ME-1441		101, 105	
C1441A	1"	6#12 W/#12 GND	120VAC	LCP-ME-1441	SSL-1441, ZS-1441			
C1451	1"	12#12 W/#12 GND	120VAC	MCC-HW2	LCP-ME-1451		101, 105	
C1451A	1"	6#12 W/#12 GND	120VAC	LCP-ME-1451	SSL-1451, ZS-1451			
C1461	1"	WIRE FUTURE	120VAC	MCC-HW2	FUTURE LCP-ME-1461		101, 105	STUB UP CONDUIT AND CAP
C1503	1"	2#12 W/#12 GND	INTRINSICALLY SAFE	RIO-SH	LSH-1503	C1503+	303.1, 303.2	
C1504	1"	2#12 W/#12 GND	INTRINSICALLY SAFE	RIO-SH	LSH-1504	C1503+	303.1, 303.2	
C1511	2"	30#12	120VAC	RIO-SH	LCP-1511		303.1, 303.3	
C1511A	1"	3#14	INTRINSICALLY SAFE	LCP-1511	ZS-1511			
C1512	1"	3#14	INTRINSICALLY SAFE	LCP-1511	ZS-1512			
C1513	1"	3#14	INTRINSICALLY SAFE	LCP-1511	ZS-1513			
C1514	2"	30#12	120VAC	RIO-SH	LCP-1514		303.1, 303.3	
C1514A	1"	3#14	INTRINSICALLY SAFE	LCP-1514	ZS-1514			
C1515	1"	3#14	INTRINSICALLY SAFE	LCP-1514	ZS-1515			
C1516	1"	3#14	INTRINSICALLY SAFE	LCP-1514	ZS-1516			
C1521	1"	8#14 W/8#14 GND	120VAC	LCP-1511	FV-1521			
C1522	1"	8#14 W/8#14 GND	120VAC	LCP-1511	FV-1522			
C1523	1"	8#14 W/8#14 GND	120VAC	LCP-1511	FV-1523			
C1524	1"	8#14 W/8#14 GND	120VAC	LCP-1514	FV-1521			
C1525	1"	8#14 W/8#14 GND	120VAC	LCP-1514	FV-1522			
C1526	1"	8#14 W/8#14 GND	120VAC	LCP-1514	FV-1523			
C1531	1"	10#12 W/#12 GND	120VAC	RIO-SH	LCP-1531		303.1, 303.2	
C1534	1"	2#12	24VDC	RIO-HW	LSH-1534	S1533+	101, 101.1	
C1611	1"	12#12	120VAC	RIO-HW	LCP-ME-1611		101, 104, 104.3	
C1631	1"	2#14 W/#14 GND	120VAC	LCP-ME-1611	LSL-1631			
C1711	1"	12#12	120VAC	RIO-HW	LCP-ME-1711		101, 105	
C1731	1"	2#14 W/#14 GND	120VAC	LCP-ME-1711	LSL-1731			
C1802	1"	4#12 W/#12 GND	24VDC	RIO-HW	JB-1801	S1801+	101, 101.2	
C1811	1"	6#12	120VAC	MCC-HW1	LCP-P-1811		101, 101.2	
C1812	1"	6#12	120VAC	MCC-HW2	LCP-P-1812		101, 101.2	
C1901	1"	2#14	24VAC	H-1901	H-1903			
C1902	1"	2#14	24VAC	H-1902	H-1904			
C1903	1"	T-STAT CABLE	24VAC	H-1903	T-STAT			
C1904	1"	T-STAT CABLE	24VAC	H-1904	T-STAT			
C2171	1"	10#12 W/#12 GND	120VAC	MCC-MB1	LCP-P-2171	C2171+	202, 204	
C2271	1"	10#12 W/#12 GND	120VAC	MCC-MB2	LCP-P-2271	C2171+	202, 204	
C2371	1"	10#12 W/#12 GND	120VAC	MCC-MB1	LCP-P-2371	C2371+	202, 204	
C2471	1"	10#12 W/#12 GND	120VAC	MCC-MB2	LCP-P-2471	C2371+	202, 204	
C2752	1.5"	16#12 W/#12 GND	120VAC	RIO-MB	LCP-2761		202, 204, 204.1	
C2752A	2"	MFR CABLES	120VAC	LCP-2761	LSL-2752, LSH-2752, LSHH-2752			
C2761	1"	10#12	120VAC	MCC-MB1	LCP-2761		202, 204, 204.1	
C2762	1"	10#12	120VAC	MCC-MB2	LCP-2761		202, 204, 204.1	
C3001	1"	8#14	120VAC	RIO-MB	CP-3001			
C3007	1"	4#14	24VDC	RIO-MB	PSL-3007			
C3112	1.25"	25#14 W/4#14 GND	120VAC	RIO-MB	LSH-3112, LSL-3112, FV-3151A, FV-3151B, FV-3171			
C3181	1"	10#14 W/#14 GND	120VAC	MCC-MB1	LCP-3181			
C3181A	1"	3#14 W/#14 GND	24VDC	LCP-3181	PSH-3181A			
C3181B	1"	3#14 W/#14 GND	24VDC	LCP-3181	PSH-3181B			
C3191	1"	8#14	120VAC	RIO-MB	FV-3191			
C3192	1"	10#12	120VAC	RIO-MB	SV-3192, 3292, 3392, 3492, 3592			
C3212	1.25"	25#14 W/4#14 GND	120VAC	RIO-MB	LSH-3212, LSL-3212, FV-3251A, FV-3251B, FV-3271			
C3281	1"	10#14 W/#14 GND	120VAC	MCC-MB1	LCP-3281			
C3281A	1"	3#14 W/#14 GND	24VDC	LCP-3281	PSH-3281A			
C3281B	1"	3#14 W/#14 GND	24VDC	LCP-3281	PSH-3281B			
C3291	1"	8#14	120VAC	RIO-MB	FV-3291			
C3312	1.25"	25#14 W/4#14 GND	120VAC	RIO-MB	LSH-3312, LSL-3312, FV-3351A, FV-3351B, FV-3371			
C3381	1"	10#14 W/#14 GND	120VAC	MCC-MB1	LCP-3381			
C3381A	1"	3#14 W/#14 GND	24VDC	LCP-3381	PSH-3381A			
C3381B	1"	3#14 W/#14 GND	24VDC	LCP-3381	PSH-3381B			
C3391	1"	8#14	120VAC	RIO-MB	FV-3391			
C3412	1.25"	25#14 W/4#14 GND	120VAC	RIO-MB	LSH-3412, LSL-3412, FV-3451A, FV-3451B, FV-3471			
C3481	1"	10#14 W/#14 GND	120VAC	MCC-MB1	LCP-3481			
C3481A	1"	3#14 W/#14 GND	24VDC	LCP-3481	PSH-3481A			
C3481B	1"	3#14 W/#14 GND	24VDC	LCP-3481	PSH-3481B			
C3491	1"	8#14	120VAC	RIO-MB	FV-3491			
C3512	1.25"	WIRE FUTURE	120VAC	RIO-MB	LSH-3512, LSL-3512, FV-3551A, FV-3551B, FV-3571			STUB UP AND CAP
C3581	1"	WIRE FUTURE	120VAC	MCC-MB1	LCP-3581			STUB UP AND CAP
C3581A	1"	WIRE FUTURE	24VDC	LCP-3581	PSH-3581A			STUB UP AND CAP
C3581B	1"	WIRE FUTURE	24VDC	LCP-3581	PSH-3581B			STUB UP AND CAP
C3591	1"	WIRE FUTURE	120VAC	RIO-MB	FV-3591			STUB UP AND CAP
C3802	1"	MFR CABLES	24VDC	LCP-3811	LSH-3802, LSL-3802			
C3811	1"	8#14 W/#14 GND	24VDC	RIO-MB	LCP-3811			
C3812	1.25"	27#14	120VAC	MCC-MB1	LCP-3811			
C3812A	1"	20#14 W/5#14 GND	120VAC	LCP-3811	SV-3812, 3822, 3832, 3842, 3852, FSL-3815, 3825, 3835, 3845, 3855			
C3822	1.25"	18#14	120VAC	MCC-MB2	LCP-3811			
C3882	3/4"	MFR CABLE	120VAC	LCP-3891	LSL-3882			
C3891	1"	2 14#14 W/#14 GND TC	120VAC	MCC-MB1, MCC-MB2	LCP-3891			THRU 120VAC CABLE TRAY
C3906	1"	2#12	120VAC	RIO-MB	H-3906			
C3907	3/4"	2#12 TC	120VAC	RIO-MB	H-3907			
C3910	3/4"	2#12 TC	120VAC	RIO-MB	H-3910			
C3912	1"	2#12	120VAC	RIO-MB	H-3912			
C3914	1"	T-STAT CABLE	24VAC	H-3960	H-3914			
C3915	1"	T-STAT CABLE	24VAC	H-3961	H-3915			
C3966	1"	2#14	24VAC	H-3960	H-3966			
C3967	1"	2#14	24VAC	H-3961	H-3967			
C4002	1"	6#14 W/#14 GND	120VAC	PLC-RO	PLC-4001			

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ELECTRICAL - CONDUITS AND DUCTBANKS
CONDUIT SCHEDULE 5

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ENGINEERING CONSULTANTS

0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES: 1" = FULL SCALE 1/2" = HALF SCALE

CE-05

UPDATED 4

CONDUIT UPDATED: S1501, S1502; CONDUIT DELETED: S1533 CONDUIT ADDED: S1541, S1541A 4

SIGNAL CONDUIT

CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED	DUCTBANKS	NOTES
S0400	1.5"	WIRE FUTURE	SIGNAL	CTC-MB	EXISTING GATE CONTROLLER		205.1	
S1114	1"	WIRE FUTURE	SIGNAL	FUTURE CP-ME-1112	HH-50		101, 104	
S1124	1"	2 TSP	SIGNAL	CP-ME-1122	LDIT-1124		101, 104, 104.5	
S1124A	3/4"	MFR CABLE	SIGNAL	LDIT-1124	LE-1124A			
S1124B	3/4"	MFR CABLE	SIGNAL	LDIT-1124	LE-1124B			
S1161	1.5"	6 TSP	SIGNAL	EXISTING LCP-1161	RIO-HW		101, 104, 104.4	
S1164	1"	1 TSP	SIGNAL	EXISTING LCP-1161	EXISTING ME-1164			REUSE EXISTING CONDUIT AND WIRE
S1301	1"	2 TSP	INTRINSICALLY SAFE	LCP-1311	JB-1301			
S1311	1"	2 TSP	SIGNAL	RIO-HW	LCP-1311		101, 2	
S1332	1"	2 PAIR TW/SH	SIGNAL	RIO-HW	FIT-1332	S1332+	101, 2	
S1332A	1"	MFR CABLE	SIGNAL	FIT-1332	FE-1332			
S1342	1"	2 PAIR TW/SH	SIGNAL	RIO-HW	FIT-1342	S1332+	101, 2	
S1342A	1"	MFR CABLE	SIGNAL	FIT-1342	FE-1342			
S1412	1"	2 PAIR TW/SH #18	SIGNAL	CP-ME-1413	LIT-1412	S1741+	101, 105	
S1412A	1"	1 TSP #18	SIGNAL	LIT-1412	LE-1412A			
S1412B	1"	1 TSP #18	SIGNAL	LIT-1412	LE-1412B			
S1422	1"	2 PAIR TW/SH #18	SIGNAL	CP-ME-1423	LIT-1422	S1741+	101, 105	
S1422A	1"	1 TSP #18	SIGNAL	LIT-1422	LE-1422A			
S1422B	1"	1 TSP #18	SIGNAL	LIT-1422	LE-1422B			
S1432	1"	2 PAIR TW/SH #18	SIGNAL	CP-ME-1433	LIT-1432	S1741+	101, 105	STUB UP CONDUIT AND CAP
S1501	1"	1 TSP	SIGNAL	RIO-SH	LIT-1501	S1501+	303.1, 303.2	
S1501A	1"	MFR CABLE	SIGNAL	LIT-1501	LE-1501			
S1502	1"	1 TSP	SIGNAL	RIO-SH	LIT-1502	S1501+	303.1, 303.2	
S1502A	1"	MFR CABLE	SIGNAL	LIT-1502	LE-1502			
~~S1533~~	~~1"~~	~~2-TSP, 2#14~~	~~SIGNAL~~	~~RIO-HW~~	~~FV-1533~~	~~S1533+~~	~~101, 101.1~~	
S1541	1"	2 PAIR TW/SH	SIGNAL	RIO-SH	FIT-1541	S1501+	303.1, 303.2	
S1541A	1"	MFR CABLE	SIGNAL	FIT-1541	FE-1541			
S1641	1"	3 TSP	SIGNAL	RIO-HW	AIT-1641		101, 104, 104.3	
S1741	1"	3 TSP	SIGNAL	RIO-HW	AIT-1741	S1741+	101, 105	
S1801	1"	1 TSP	SIGNAL	RIO-HW	LIT-1801	S1801+	101, 101.2	
S1822	1"	2 PAIR TW/SH	SIGNAL	RIO-HW	FIT-1822	S1801+	101, 101.2	
S1822A	1"	MFR CABLE	SIGNAL	FIT-1822	FE-1822			
S1921	1"	1 TSP	SIGNAL	RIO-HW	TT-1921			
S2111	1"	2 TSP	SIGNAL	RIO-MB	AIT-2111	S2111+	202, 204	
S2111A	1"	MFR CABLE	SIGNAL	AIT-2111	AE-2111			
S2131	3/4"	2 TSP, 2#14	SIGNAL	RIO-MB	FV-2131	S2131+, S2151+, S2152+	203, 205	
S2132	3/4"	1 TSP	SIGNAL	RIO-MB	FIT-2132	S2131+, S2151+, S2152+	203, 205	
S2151	3/4"	1 TSP	SIGNAL	RIO-MB	AIT-2151	S2151+, S2152+	203, 205	
S2152	3/4"	1 TSP	SIGNAL	RIO-MB	AIT-2152	S2152+	203, 205	
S2162	1"	MFR CABLE	SIGNAL	AIT-2111	AE-2162			
S2211	1"	2 TSP	SIGNAL	RIO-MB	AIT-2211	S2111+	202, 204	
S2211A	1"	MFR CABLE	SIGNAL	AIT-2211	AE-2211			
S2231	3/4"	2 TSP, 2#14	SIGNAL	RIO-MB	FV-2231	S2231+, S2251+, S2252+	203, 205	
S2232	3/4"	1 TSP	SIGNAL	RIO-MB	FIT-2232	S2231+, S2251+, S2252+	203, 205	
S2251	3/4"	1 TSP	SIGNAL	RIO-MB	AIT-2251	S2251+, S2252+	203, 205	
S2252	3/4"	1 TSP	SIGNAL	RIO-MB	AIT-2252	S2252+	203, 205	
S2262	1"	MFR CABLE	SIGNAL	AIT-2211	AE-2262			
S2311	1"	2 TSP	SIGNAL	RIO-MB	AIT-2311	S2311+	202, 204	
S2311A	1"	MFR CABLE	SIGNAL	AIT-2311	AE-2311			
S2331	3/4"	2 TSP, 2#14	SIGNAL	RIO-MB	FV-2331	S2331+, S2351+, S2352+	203, 205	
S2332	3/4"	1 TSP	SIGNAL	RIO-MB	FIT-2332	S2331+, S2351+, S2352+	203, 205	
S2351	3/4"	1 TSP	SIGNAL	RIO-MB	AIT-2351	S2351+, S2352+	203, 205	
S2352	3/4"	1 TSP	SIGNAL	RIO-MB	AIT-2352	S2352+	203, 205	
S2362	1"	MFR CABLE	SIGNAL	AIT-2311	AE-2362			
S2411	1"	2 TSP	SIGNAL	RIO-MB	AIT-2411	S2311+	202, 204	
S2411A	1"	MFR CABLE	SIGNAL	AIT-2411	AE-2411			
S2431	3/4"	2 TSP, 2#14	SIGNAL	RIO-MB	FV-2431	S2431+, S2451+, S2452+	203, 205	
S2432	3/4"	1 TSP	SIGNAL	RIO-MB	FIT-2432	S2431+, S2451+, S2452+	203, 205	
S2451	3/4"	1 TSP	SIGNAL	RIO-MB	AIT-2451	S2451+, S2452+	203, 205	
S2452	3/4"	1 TSP	SIGNAL	RIO-MB	AIT-2452	S2452+	203, 205	
S2462	1"	MFR CABLE	SIGNAL	AIT-2411	AE-2462			
S2641	1"	2 TSP	SIGNAL	RIO-MB	FIT-2641, TIT-2642			
S2651	1"	2 TSP	SIGNAL	RIO-MB	FV-2651			
S2764	1"	2 PAIR TW/SH	SIGNAL	RIO-MB	FIT-2764		202, 204, 204.1	
S2764A	1"	MFR CABLE	SIGNAL	FIT-2764	FE-2764			
S3111	1"	5 TSP	SIGNAL	RIO-MB	LT-3111, FV-3121, FIT-3122, PIT-3142			
S3192	1"	2 PAIR TW/SH	SIGNAL	RIO-MB	FIT-3192			
S3193	1"	5 TSP	SIGNAL	RIO-MB	AIT-3193, AIT-3393, AIT-3593			
S3211	1"	5 TSP	SIGNAL	RIO-MB	LT-3211, FV-3221, FIT-3222, PIT-3242			
S3292	1"	2 PAIR TW/SH	SIGNAL	RIO-MB	FIT-3292			
S3311	1"	5 TSP	SIGNAL	RIO-MB	LT-3311, FV-3321, FIT-3322, PIT-3342			
S3392	1"	2 PAIR TW/SH	SIGNAL	RIO-MB	FIT-3392			
S3411	1"	5 TSP	SIGNAL	RIO-MB	LT-3411, FV-3421, FIT-3422, PIT-3442			
S3492	1"	2 PAIR TW/SH	SIGNAL	RIO-MB	FIT-3492			
S3511	1"	WIRE FUTURE	SIGNAL	RIO-MB	LT-3511, FV-3521, FIT-3522, PIT-3542			STUB UP AND CAP
S3592	1"	WIRE FUTURE	SIGNAL	RIO-MB	FIT-3592			STUB UP AND CAP
S3741	1"	2 TSP	SIGNAL	RIO-MB	PIT-3741, TIT-3742			
S3751	1"	2 TSP	SIGNAL	RIO-MB	FV-3751			
S3801	1"	1 TSP	SIGNAL	RIO-MB	LCP-3811			
S3801A	1"	MFR CABLE	SIGNAL	LCP-3811	LT-3801			
S3861	1"	2 PAIR TW/SH	SIGNAL	RIO-MB	FIT-3861			
S3861A	1"	MFR CABLE	SIGNAL	FE-3861	FIT-3861			
S3893	3/4"	2 PAIR TW/SH TC	SIGNAL	RIO-MB	FIT-3893			THRU SIGNAL CABLE TRAY
S3916	3/4"	1 TSP TC	SIGNAL	RIO-MB	TT-3916			THRU SIGNAL CABLE TRAY
S3917	3/4"	1 TSP TC	SIGNAL	RIO-MB	TT-3917			THRU SIGNAL CABLE TRAY
S3918	1"	1 TSP	SIGNAL	RIO-MB	TT-3918			
S3919	1"	1 TSP	SIGNAL	RIO-MB	TT-3919			
S3971	3/4"	1 TSP	SIGNAL	RIO-MB	TT-3971			
S3972	1"	1 TSP TC	SIGNAL	RIO-MB	AIT-3972			THRU SIGNAL CABLE TRAY
S3972A	1"	MFR CABLE	SIGNAL	AIT-3972	AE-3972			
S4001	1"	1 TSP	SIGNAL	PLC-RO	LCP-4001			
S4001A	3/4"	MFR CABLE	SIGNAL	LCP-4001	LT-4001			
S4003	1"	1 TSP	SIGNAL	RIO-MB	TT-4003			
S4004	1"	1 TSP TC	SIGNAL	PLC-RO	AIT-4004			
S4004A	3/4"	MFR CABLE	SIGNAL	AIT-4004	AE-4004			
S4602	1"	3 TSP	SIGNAL	RIO-MB	AIT-4602, AIT-4603, FIT-4603		203, 205	
S4602A	3/4"	MFR CABLE	SIGNAL	AIT-4602	AE-4602			
S4603	3/4"	MFR CABLE	SIGNAL	AIT-4603	AE-4603			
S4604	1"	1 TSP	SIGNAL	RIO-MB	ME-4604		203, 205	
S4605	1"	MFR CABLE	SIGNAL	FIT-4604	FE-4604			
S5002	1"	1 TSP	SIGNAL	PLC-RO	LI-5002	S5002+, S5002A+		
S5002A	1"	1 TSP	SIGNAL	LI-5002	RIO-MB	S5002A+		
S5002B	3/4"	1 TSP	SIGNAL	LIT-5002	LI-5002			
S5072	1"	2 PAIR TW/SH TC	SIGNAL	RIO-MB	FIT-5072			THRU SIGNAL CABLE TRAY
S5301	3/4"	1 TSP TC	SIGNAL	PLC-RO	WIT-5301			THRU SIGNAL CABLE TRAY
S5301A	1"	MFR CABLE	SIGNAL	WIT-5301	WE-5301			

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ENGINEERING CONSULTANTS

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DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

CE-07

10/11/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\15 CE-09 CONDUIT SCHEDULE 9.DWG

COMMUNICATIONS CONDUIT

CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED	DUCTBANKS	NOTES
F0101	1"	2 SHIELDED CAT6	COMMS	SWGR-HW	CTC-HW			
F0102	1"	2 SHIELDED CAT6	COMMS	MCC-HW1	CTC-HW			
F0103	1"	2 SHIELDED CAT6	COMMS	MCC-HW2	CTC-HW			
F0104	1"	2 SHIELDED CAT6	COMMS	RIO-HW	CTC-HW			
F0105	2"	24-STRAND FIBER SM OSP	COMMS	CTC-HW	CTC-CB		102, 38	REUSE EXISTING CONDUITS PAST HH-38
F0106	2"	24-STRAND FIBER SM OSP	COMMS	CTC-HW	CTC-MB		103, 103.1, 107	
F0200	1"	SHIELDED CAT6	COMMS	SWGR-MB	CTC-MB			
F0201	1"	2 SHIELDED CAT6	COMMS	MCC-MB1	CTC-MB			
F0202	1"	2 SHIELDED CAT6	COMMS	MCC-MB2	CTC-MB			
F0203	1"	2 SHIELDED CAT6	COMMS	RIO-MB	CTC-MB			
F0204	1"	2 SHIELDED CAT6	COMMS	PLC-RO	CTC-MB			
F0205	2"	6-STRAND FIBER SM OSP	COMMS	CTC-MB	MVSWGR		203, 205, 205.1	
F0206	1"	2 SHIELDED CAT6	COMMS	CTC-MB	FIRE ALARM CONTROL PANEL			
F0300	4"	24-STRAND FIBER SM OSP	COMMS	CTC-MB	RIO-SH		202, 202.1	
F0301	1"	2 SHIELDED CAT6	COMMS	RIO-SH	MCC-SH			
F0302	1"	SHIELDED CAT6	COMMS	RIO-SH	PLC-OC			
F0303	1"	SHIELDED CAT6	COMMS	PLC-OC	MCC-SH			
F0400	2"	WIRE BY OTHERS	COMMS	CTC-MB	EXISTING TELEPHONE PEDESTAL		203, 205, 205.1	
F1101	1"	MODBUS CABLE	COMMS	EXISTING G-1101	EXISTING LCP-1161			REUSE EXISTING CONDUIT & WIRE
F1101A	1"	MODBUS CABLE	COMMS	EXISTING G-1101	EXISTING G-1102			REUSE EXISTING CONDUIT & WIRE
F1102	1"	MODBUS CABLE	COMMS	EXISTING G-1102	EXISTING LCP-1161			REUSE EXISTING CONDUIT & WIRE
F1111	1"	MODBUS CABLE	COMMS	EXISTING G-1111	EXISTING LCP-1161			REUSE EXISTING CONDUIT & WIRE
F1112	1"	WIRE FUTURE	COMMS	CTC-HW	FUTURE CP-ME-1112			
F1112A	1"	SHIELDED CAT6	COMMS	EXISTING LCP-1161	EXISTING CP-ME-1112			REUSE EXISTING CONDUIT FROM CP-ME-1112 TO LCP-1161
F1113	1"	MODBUS CABLE	COMMS	EXISTING G-1112	EXISTING LCP-1161			REUSE EXISTING CONDUIT & WIRE
F1122	1"	SHIELDED CAT6	COMMS	CTC-HW	CP-ME-1122			
F1151	1"	2 MODBUS CABLES	COMMS	EXISTING G-1151	EXISTING LCP-1161			REUSE EXISTING CONDUIT & WIRE
F1151A	1"	MODBUS CABLE	COMMS	EXISTING G-1151	EXISTING G-1152			REUSE EXISTING CONDUIT & WIRE
F1152	1"	MODBUS CABLE	COMMS	EXISTING G-1152	EXISTING LCP-1161			REUSE EXISTING CONDUIT & WIRE
F1161	2"	12-STRAND SFIBER SM OSP	COMMS	CTC-HW	EXISTING LCP-1161		101, 104, 104.4	
F1172	1"	WIRE FUTURE	COMMS	CTC-HW	FUTURE CP-ME-1172			
F1172A	1"	SHIELDED CAT6	COMMS	EXISTING LCP-1161	EXISTING CP-ME-1172			REUSE EXISTING CONDUIT & WIRE
F1182	1"	SHIELDED CAT6	COMMS	CTC-HW	CP-ME-1182			
F1231	1"	SHIELDED CAT6	COMMS	CTC-HW	CP-1231			
F1413	1"	SHIELDED CAT6	COMMS	CTC-HW	CP-ME-1413			
F1423	1"	SHIELDED CAT6	COMMS	CTC-HW	CP-ME-1423			
F1433	1"	WIRE FUTURE	COMMS	CTC-HW	FUTURE CP-ME-1433			
F2601	1"	SHIELDED CAT6	COMMS	CTC-MB	LCP-ME-2601			
F2611	1"	SHIELDED CAT6	COMMS	CTC-MB	LCP-ME-2611			
F2621	1"	SHIELDED CAT6	COMMS	CTC-MB	LCP-ME-2621			
F2631	1"	WIRE FUTURE	COMMS	CTC-MB	LCP-ME-2631			
F3701	1"	SHIELDED CAT6	COMMS	CTC-MB	LCP-ME-3701			
F3711	1"	SHIELDED CAT6	COMMS	CTC-MB	LCP-ME-3711			
F3721	1"	SHIELDED CAT6	COMMS	CTC-MB	LCP-ME-3721			
F3731	1"	WIRE FUTURE	COMMS	CTC-MB	LCP-ME-3731			
F8111	2"	12-STRAND SFIBER SM OSP	COMMS	CTC-HW	SCC-UV		102, 1	REUSE EXISTING CONDUIT FROM HH-1A TO SCC-UV
F7211	1"	WIRE FUTURE	COMMS	CTC-HW	FUTURE VFD-P-7211			
F7212	1"	WIRE FUTURE	COMMS	CTC-HW	FUTURE VFD-P-7212			
F7213	1"	WIRE FUTURE	COMMS	CTC-HW	FUTURE VFD-P-7213			
F7410	2"	WIRE FUTURE, PULL STRING	COMMS	CTC-HW	HH-108		102, 38, 108	
F8401	1"	SHIELDED CAT6	COMMS	CTC-HW	ME-8401	F8401+	103, 103.1	
F8402	1"	SHIELDED CAT6	COMMS	CTC-HW	ME-8402	F8401+	103, 103.1	
F8403	1"	SHIELDED CAT6	COMMS	CTC-HW	ME-8403	F8401+	103, 103.1	
F8511	1"	2 SHIELDED CAT6	COMMS	CP-ME-8511	LCP-ME-8511			
F8511A	1"	SHIELDED CAT6	COMMS	RIO-SH	LCP-ME-8511			
F8541	1"	2 SHIELDED CAT6	COMMS	CP-ME-8541	LCP-ME-8541			
F8541A	1"	SHIELDED CAT6	COMMS	RIO-SH	LCP-ME-8541			
F8571	1"	WIRE FUTURE	COMMS	CP-ME-8571	LCP-ME-8571			STUB UP AND CAP
F8571A	1"	WIRE FUTURE	COMMS	RIO-SH	LCP-ME-8571			STUB UP AND CAP
F40001-1	3/4"	SHIELDED CAT6 TC	COMMS	PLC-RO	RIO-RO1			THRU SIGNAL CABLE TRAY
F40001-2	3/4"	SHIELDED CAT6 TC	COMMS	PLC-RO	RIO-RO2			THRU SIGNAL CABLE TRAY
F40001-3	3/4"	SHIELDED CAT6 TC	COMMS	PLC-RO	RIO-RO3			THRU SIGNAL CABLE TRAY
F40001-4	3/4"	SHIELDED CAT6 TC	COMMS	PLC-RO	RIO-RO4			THRU SIGNAL CABLE TRAY
F40001-5	3/4"	SHIELDED CAT6 TC	COMMS	PLC-RO	RIO-RO5			THRU SIGNAL CABLE TRAY

(2) CONDUIT UPDATED

NOTES:

(1) CONDUITS THAT ARE COMBINED BETWEEN PULL POINTS ARE DENOTED WITH A + (PLUS) SYMBOL. SEE THE COMBINED CONDUITS SCHEDULE ON SHEET CE-11. CONDUITS THAT HAVE BEEN COMBINED SHALL BE LABELED WITH MULTIPLE CONDUIT TAGS, ONE FOR EACH CONDUIT THAT HAS BEEN COMBINED.

(2) THE CONDUIT DEVELOPMENT AND SCHEDULE DOES NOT SHOW CONDUIT AND CONDUCTORS FOR LIGHTS, RECEPTACLES AND DATA JACKS. IT ALSO DOESN'T SHOW CONDUIT AND CONDUCTORS FOR THE MBR BUILDING'S HVAC AND APPLIANCES FOR THE OFFICE, BREAK ROOM, CONTROL ROOM, LAB, MECHANICAL ROOM AND RESTROOMS. THE CONTRACTOR IS RESPONSIBLE TO INCLUDE THESE CONDUITS AND CONDUCTORS IN THEIR WORK AND IN THEIR SUBMITTED CONDUIT ROUTING PLAN.

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2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - CONDUITS AND DUCTBANKS
CONDUIT SCHEDULE 9

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CE-09

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SPARE CONDUIT

CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	TO	COMBINED	DUCTBANKS	NOTES
SP0100	6"	PULL STRING	12KVAC	MVSWGR	XFMR-HW		201.2, 103	
SP0102	4"	PULL STRING	120VAC	STANDBY GENERATOR	SWGR-HW			
SP0103	4"	PULL STRING	480VAC	SWGR-HW	MCC-HW1			
SP0104	4"	PULL STRING	480VAC	SWGR-HW	MCC-HW2			
SP0105	4-2"	PULL STRING	SIGNAL	HH-101A	HH-105A		105	
SP0105A	2"	PULL STRING	COMMS	CTC-HW	HH-38		102, 38	
SP0106	2"	PULL STRING	COMMS	CTC-HW	CTC-MB		103, 103.1, 107	
SP0111	2-2"	PULL STRING	COMMS	CTC-HW	RIO-HW			
SP0113	4"	PULL STRING	480VAC	SWGR-HW	HH-38		102, 38	
SP0114	3"	PULL STRING	480VAC	SWGR-HW	HH-1		102, 1	
SP0116	1"	PULL STRING	480VAC	DP-HW2	HH-103		103	
SP0200	1"	PULL STRING	120VAC	STANDBY GENERATOR	RIO-MB		201.6	
SP0201	1"	PULL STRING	120VAC	STANDBY GENERATOR	SWGR-MB		201.6	
SP0202	6"	PULL STRING	12KVAC	MVSWGR	XFMR-MB		201.2	
SP0215	2-2"	PULL STRING	COMMS	CTC-MB	RIO-MB			
SP0251	1"	PULL STRING	120VAC	LP-MB2	JB-2111		202, 204	
SP0253	1"	PULL STRING	120VAC	LP-MB2	JB-2311		202, 204	
SP0300	4"	PULL STRING	12KVAC	MVSWGR	SWBD-SH		300	
SP0300A	2-2"	PULL STRING	COMMS	CTC-MB	RIO-SH		202, 202.1	
SP0302	4"	PULL STRING	480VAC	SWBD-SH	MCC-SH			
SP0303	2-2"	PULL STRING	480VAC	SWBD-SH	HH-303		303.1	
SP0304	2-2"	PULL STRING	480VAC	MCC-EQ	HH-303		303.1	
SP0400	2"	PULL STRING	COMMS	CTC-MB	EXISTING PORTABLE OFFICE		205.1	STUB UP AND CAP NEAR BUILDING
SP0401	1"	PULL STRING	120VAC	MPC-PO	EXISTING GATE CONTROLLER		205.1	
SP0402	1"	PULL STRING	COMMS	CTC-MB	EXISTING GATE CONTROLLER		205.1	
SP1101	4-2"	PULL STRING	120VAC, 480VAC	HH-101	HH-50		104, 104.4	
SP1112	2"	PULL STRING	SIGNAL	HH-101A	HH-50		104	
SP1114	2"	PULL STRING	SIGNAL	HH-101A	HH-104A		104	
SP1161	1.5"	PULL STRING	120VAC	EXISTING LCP-1161	RIO-HW		101, 104, 104.4	
SP1202	2-2"	PULL STRING	120VAC, 480VAC	HH-101	HH-104		104	
SP1311	1"	PULL STRING	SIGNAL	RIO-HW	LCP-1311		101, 2	
SP1311A	1"	PULL STRING	120VAC	RIO-HW	LCP-1311		101, 2	
SP1311B	2-2"	PULL STRING	SIGNAL	HH-101A	HH-2A		2	
SP1311C	2-2"	PULL STRING	120VAC, 480VAC	HH-101	HH-2		2	
SP1311D	2"	PULL STRING	120VAC	HH-18	LCP-1311			
SP1412	2"	PULL STRING	120VAC	CP-ME-1413	HH-105		101, 105	
SP1422	2"	PULL STRING	120VAC	CP-ME-1423	HH-105		101, 105	
SP1432	2"	PULL STRING	120VAC	FUTURE CP-ME-1433	HH-105		101, 105	
SP1501	2-2"	PULL STRING	SIGNAL	RIO-SH	HH-303A		303.1	
SP1503	2"	PULL STRING	120VAC	RIO-SH	HH-303		303.1	
SP1511	2"	PULL STRING	120VAC	RIO-SH	LCP-1511		303.1, 303.3	
SP1514	2"	PULL STRING	120VAC	RIO-SH	LCP-1514		303.1, 303.3	
SP1533	1"	PULL STRING	SIGNAL	RIO-HW	EQ VALVE VAULT		101, 101.1	
SP1711	1"	PULL STRING	120VAC	HH-101	LCP-ME-1711		101, 105	
SP2111	1"	PULL STRING	SIGNAL	RIO-MB	JB-2111		202, 204	
SP2171	1"	PULL STRING	480VAC	MCC-MB1	JB-2111		202, 204	
SP2152	1"	PULL STRING	120VAC	LP-MB2	JB-2131		203, 205	
SP2152A	1"	PULL STRING	SIGNAL	RIO-MB	JB-2131		203, 205	
SP2271	1"	PULL STRING	480VAC	MCC-MB2	JB-2111		202, 204	
SP2311	1"	PULL STRING	SIGNAL	RIO-MB	JB-2311		202, 204	
SP2371	1"	PULL STRING	480VAC	MCC-MB1	JB-2311		202, 204	
SP2352	1"	PULL STRING	120VAC	LP-MB2	JB-2331		203, 205	
SP2352A	1"	PULL STRING	120VAC	RIO-MB	JB-2331		203, 205	
SP2471	1"	PULL STRING	SIGNAL	MCC-MB2	JB-2311		202, 204	
SP2752	4-2"	PULL STRING	120VAC, 480VAC	HH-202	HH-204		204	
SP2784	4-2"	PULL STRING	SIGNAL	HH-202A	HH-204A		204	
SP4602	1"	PULL STRING	120VAC	LP-MB2	HH-205		203, 205	
SP4602A	2"	PULL STRING	SIGNAL	RIO-MB	HH-205A		203, 205	
SP5501	2-2"	PULL STRING	SIGNAL	PLC-OC	HH-302A		301, 302	
SP5601A	2-1"	PULL STRING	120VAC	LP-SH	HH-302		301, 302	
SP6111	2"	PULL STRING	COMMS	CTC-HW	HH-1A		102, 1	
SP6302A	1"	PULL STRING	120VAC	LP-HW1	HH-108		102, 38, 108	
SP7131	2"	PULL STRING	SIGNAL	RIO-HW	HH-103A		103	
SP7211	2"	PULL STRING	120VAC	FUTURE VFD-P-7211	FUTURE P-7211		103, 103.2	
SP7212	2"	PULL STRING	120VAC	FUTURE VFD-P-7212	FUTURE P-7212		103, 103.2	
SP7213	2"	PULL STRING	120VAC	FUTURE VFD-P-7213	FUTURE P-7213		103, 103.2	
SP8101	2"	PULL STRING	480VAC	MCC-HW1	HH-103		103	
SP8102	2"	PULL STRING	480VAC	MCC-HW2	HH-103		103	
SP9101	1"	PULL STRING	120VAC	RIO-SH	LCP-SHDC			
SP9111	2"	PULL STRING	120VAC	RIO-SH	LCP-SHDC			
SP9611	2"	PULL STRING	120VAC	RIO-SH	LCP-SHDS			

CONDUIT ADDED 2

CONDUIT UPDATED 2

CONDUIT UPDATED: SP1501, SP1503, SP1511, SP1514
CONDUIT DELETED: SP1533
2

NOTES:

1. CONDUITS THAT ARE COMBINED BETWEEN PULL POINTS ARE DENOTED WITH A + (PLUS) SYMBOL. SEE THE COMBINED CONDUITS SCHEDULE ON SHEET CE-11. CONDUITS THAT HAVE BEEN COMBINED SHALL BE LABELED WITH MULTIPLE CONDUIT TAGS, ONE FOR EACH CONDUIT THAT HAS BEEN COMBINED.

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CONDUIT SCHEDULE 10

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CE-10

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COMBINED CONDUIT UPDATED

COMBINED CONDUIT UPDATED

COMBINED CONDUIT UPDATED

COMBINED CONDUIT UPDATED

COMBINED CONDUIT DELETED

COMBINED CONDUITS

CONDUIT	SIZE	CONDUITS	SERVICE	FROM	TO	DUCTBANKS	NOTES
P0251+	1"	P0251, P2111, P2211	120VAC	LP-MB2	JB-0251	202, 204	
P0253+	1"	P0253, P2311, P2411	120VAC	LP-MB2	JB-0253	202, 204	
P1101+	2"	P1101, 1102, 1111, 1113, 1151, 1152	480VAC	DP-HW1	HH-50	101, 104, 104.4	PASSES THRU HH-101
P1311+	2"	P1311, C1311D	480VAC, 120VAC	HH-16	JB-P-1311		
P1312+	2"	P1312, C1312	480VAC, 120VAC	HH-18	JB-P-1312		
P1313+	2"	P1313, C1313	480VAC, 120VAC	HH-18	JB-P-1313		
P1314+	2"	P1314, C1314	480VAC, 120VAC	HH-18	JB-P-1314		
P1315+	2"	P1315, C1315	480VAC, 120VAC	HH-18	JB-P-1315		
P1321+	2"	P1321, P1322, P1343	480VAC	DP-HW1	HH-16	101, 2, 18	
P1332+	1"	P1332, P1342	120VAC	CP-HW2	HH-18	101, 2, 18	
P1501+	1"	P1501, P1502, P1541	120VAC	LP-SH	HH-303	303.1	
P2111+	1"	P2111, P2211	120VAC	JB-0251	JB-2211		
P2131+	1"	P2131, P2132	120VAC	JB-2151	JB-2131A		
P2151+	1"	P2131, P2132, P2151	120VAC	JB-2152	JB-2151		
P2152+	1.25"	P2131, P2132, P2151, P2152	120VAC	LP-MB2	JB-2152	203, 205	
P2231+	1"	P0252, P2231, P2232	120VAC	JB-2251	JB-2231		
P2251+	1.25"	P0252, P2231, P2232, P2251	120VAC	JB-2252	JB-2251		
P2252+	1.25"	P0252, P2231, P2232, P2251, P2252	120VAC	LP-MB2	JB-2252	203, 205	
P2311+	1"	P0254, P2311, P2411	120VAC	JB-0253	JB-2311		
P2331+	1"	P0254, P2331, P2332	120VAC	JB-2351	JB-2331A		
P2351+	1.25"	P0254, P2331, P2332, P2351	120VAC	JB-2352	JB-2351		
P2352+	1.25"	P0254, P2331, P2332, P2351, P2352	120VAC	LP-MB2	JB-2352	203, 205	
P2431+	1"	P2431, P2432	120VAC	JB-2451	JB-2431		
P2451+	1"	P2431, P2432, P2451	120VAC	JB-2452	JB-2451		
P2452+	1.25"	P2431, P2432, P2451, P2452	120VAC	LP-MB2	JB-2452	203, 205	
P6302+	1.5"	P6302, P6420, P7122, P7151, P7472	120VAC	LP-HW1	HH-108	102, 38, 108	
C1311D+	1.5"	C1311D, C1312, C1313, C1314, C1315	120VAC	LCP-1311	HH-18		
C1321+	1.5"	C1321, C1322, C1343	120VAC	LCP-1311	HH-18		
C1503+	1"	C1503, C1504	120VAC	RIO-SH	HH-303	303.1	
C2171+	1"	C2171, C2271	120VAC	HH-202	LCP-P-2271	204	
C2371+	1"	C2371, C2471	120VAC	HH-202	LCP-P-2371	204	
C3907+	1"	C3907, P3908, P3909	120VAC	H-3907	120VAC CABLE TRAY		
C3910+	1"	C3910, P3911	120VAC	H-3910	120VAC CABLE TRAY		
C5422+	1"	C5422, S5002A	24VDC/SIGNAL	RIO-MB	JB-5002	202, 206	
C7406+	1"	C7406, C7501	120VAC	RIO-HW	HH-108A	102, 38, 108	
C8101+	2"	C8101, C8102	120VAC	MCC-HW1	LCP-8101	103, 103.1	
C8411+	2"	C8411, C8412	120VAC	RIO-HW	HH-103	103	
C9201+	1.5"	C9201, C9301, C9401, C9501	120VAC	HH-301	HS-9201A, 9301A, 9401A, 9501A	301.1	
C9201A+	1.5"	C9201A, C9301A, C9401A, C9501A	120VAC	HH-303	HS-9201B, 9301B, 9401B, 9501B	303.2	
S1332+	1"	S1332, S1342	SIGNAL	RIO-HW	HH-2A	101, 2	
S1501+	1"	S1501, S1502, S1541	SIGNAL	RIO-SH	HH-303A	303.1	
S1533+	1"	S1533, C1534	SIGNAL	RIO-HW	HH-101	101	
S1741+	2"	S1412, S1422, S1741,S1432	SIGNAL	HH-101A	HH-105A	105	
S1801+	1"	S1801, S1822, C1802	SIGNAL	RIO-HW	HH-101	101	
S2111+	1"	S2111, S2211	SIGNAL	RIO-MB	JB-2111A	202, 204	
S2131+	1"	S2131, S2132	SIGNAL	JB-2151	JB-2131A		
S2151+	1"	S2131, S2132, S2151	SIGNAL	JB-2152	JB-2151		
S2152+	1.25"	S2131, S2132, S2151, S2152	SIGNAL	RIO-MB	JB-2152	203, 205	
S2231+	1"	S2231, S2232	SIGNAL	JB-2251	JB-2231		
S2251+	1"	S2231, S2232, S2251	SIGNAL	JB-2252	JB-2251		
S2252+	1.25"	S2231, S2232, S2251, S2252	SIGNAL	RIO-MB	JB-2252	203, 205	
S2311+	1"	S2311, S2411	SIGNAL	RIO-MB	JB-2411	202, 204	
S2331+	1"	S2331, S2332	SIGNAL	JB-2351	JB-2331A		
S2351+	1"	S2331, S2332, S2351	SIGNAL	JB-2352	JB-2351		
S2352+	1.25"	S2331, S2332, S2351, S2352	SIGNAL	RIO-MB	JB-2352	203, 205	
S2431+	1"	S2431, S2432	SIGNAL	JB-2451	JB-2431		
S2451+	1"	S2431, S2432, S2451	SIGNAL	JB-2452	JB-2451		
S2452+	1.25"	S2431, S2432, S2451, S2452	SIGNAL	RIO-MB	JB-2452	203, 205	
S5002+	1"	S5002, S8505I, S8550I	SIGNAL	PLC-RO	JB-5002	202, 206	
S5002A+	3/4"	S5002, S5002A	SIGNAL	LI-5002	JB-5002		
S6302+	2"	S6302, S6412, S6420, S7101, S7122, S7151, S7472	SIGNAL	RIO-HW	HH-108A	102, 38, 108	
S7131+	2"	S7131, S7141, S8202, C8203, S8302, C8303, S8433, S8443	SIGNAL	RIO-HW	HH-103A	103	
S7401+	2"	S7401, S7410, S7501, S7511	SIGNAL	RIO-HW	HH-108A	102, 38, 108	
S8202+	1"	S8202, C8203	SIGNAL	HH-103A	JB-8202	103, 103.1	
S8302+	1"	S8302, C8303	SIGNAL	HH-103A	JB-8302	103, 103.1	
F8401+	2"	F8401, F8402, F8403	COMMS	CTC-HW	HH-103A	103	

NOTES:

1. CONDUITS THAT ARE COMBINED BETWEEN PULL POINTS ARE DENOTED WITH A + (PLUS) SYMBOL. SEE THE COMBINED CONDUITS SCHEDULE ON SHEET CE-11. CONDUITS THAT HAVE BEEN COMBINED SHALL BE LABELED WITH MULTIPLE CONDUIT TAGS, ONE FOR EACH CONDUIT THAT HAS BEEN COMBINED.
2. THE CONDUIT DEVELOPMENT AND SCHEDULE DOES NOT SHOW CONDUIT AND CONDUCTORS FOR LIGHTS, RECEPTACLES AND DATA JACKS. IT ALSO DOESN'T SHOW CONDUIT AND CONDUCTORS FOR THE MBR BUILDING'S HVAC AND APPLIANCES FOR THE OFFICE, BREAK ROOM, CONTROL ROOM, LAB, MECHANICAL ROOM AND RESTROOMS. THE CONTRACTOR IS RESPONSIBLE TO INCLUDE THESE CONDUITS AND CONDUCTORS IN THEIR WORK AND IN THEIR SUBMITTED CONDUIT ROUTING PLAN.

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
2	04/22/19	MPJ	DCL	MPJ
3	06/24/19	MPJ	DCL	MPJ
4	08/04/19	MPJ	DCL	MPJ
5	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - CONDUITS AND DUCTBANKS
CONDUIT SCHEDULE 11

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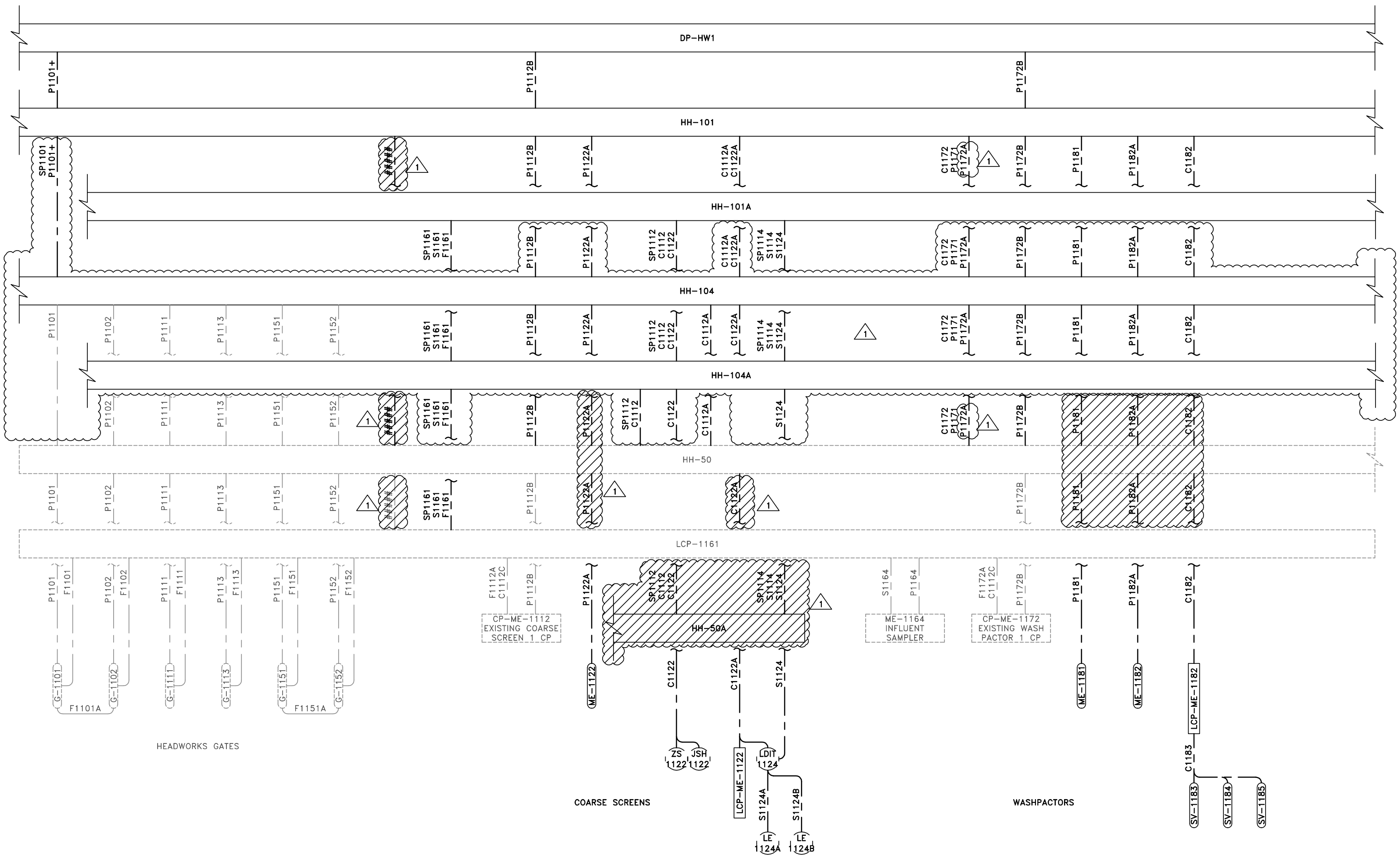
ENGINEERING CONSULTANTS

0 1/2 1

DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

CE-11



NOTES:

1. CONDUITS THAT ARE COMBINED BETWEEN PULL POINTS ARE DENOTED WITH A + (PLUS) SYMBOL. SEE THE COMBINED CONDUITS SCHEDULE ON SHEET CE-11. CONDUITS THAT HAVE BEEN COMBINED SHALL BE LABELED WITH MULTIPLE CONDUIT TAGS, ONE FOR EACH CONDUIT THAT HAS BEEN COMBINED.
2. THE CONDUIT DEVELOPMENT AND SCHEDULE DOES NOT SHOW CONDUIT AND CONDUCTORS FOR LIGHTS, RECEPTACLES AND DATA JACKS. IT ALSO DOESN'T SHOW CONDUIT AND CONDUCTORS FOR THE MBR BUILDING'S HVAC AND APPLIANCES FOR THE OFFICE, BREAK ROOM, CONTROL ROOM, LAB, MECHANICAL ROOM AND RESTROOMS. THE CONTRACTOR IS RESPONSIBLE TO INCLUDE THESE CONDUITS AND CONDUCTORS IN THEIR WORK AND IN THEIR SUBMITTED CONDUIT ROUTING PLAN.

10/11/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\15 CE-13 CONDUIT DEVELOPMENT 2.DWG

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0 1/2 1
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CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - CONDUITS AND DUCTBANKS
CONDUIT DEVELOPMENT 2

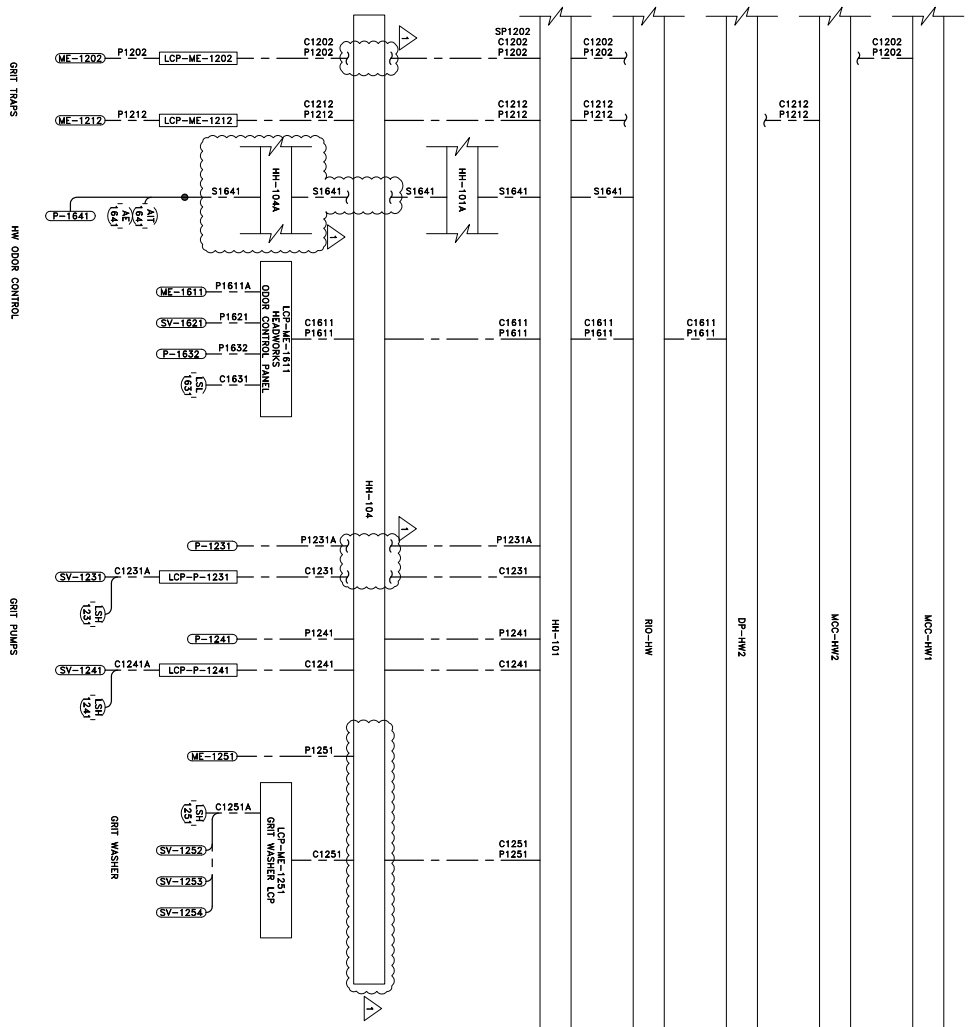
NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	10/11/19	MPJ	DCL	MPJ

SHEET 155 OF 172

CE-13

NOTES:

1. CONDUITS THAT ARE COMBINED BETWEEN PULL POINTS ARE DENOTED WITH A + (PLUS) SYMBOL. SEE THE COMBINED CONDUITS SCHEDULE ON SHEET E-11 FOR CONDUITS THAT HAVE BEEN COMBINED. SHALL BE LABELED WITH ALL THE CONDUIT TAGS, ONE FOR EACH CONDUIT THAT HAS BEEN COMBINED.
2. THE CONDUIT DEVELOPMENT AND SCHEDULE DOES NOT SHOW CONDUIT AND CONDUCTORS FOR LIGHTS, RECEPTACLES AND DATA JACKS. IT ALSO DOESN'T SHOW CONDUIT AND CONDUCTORS FOR THE MBR BUILDING'S HVAC AND APPLIANCES FOR THE OFFICE, BREAK ROOM, CONTROL ROOM, LAB AND MECHANICAL ROOM. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO INCLUDE THESE CONDUITS AND CONDUCTORS IN THEIR WORK AND IN THEIR SUBMITTED CONDUIT ROUTING PLAN.



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DRAWING IS TO SCALE IF BAR MEASURES: 1/2" = FULL SCALE

0 1/2 1

CE-14

SHEET 156 OF 172

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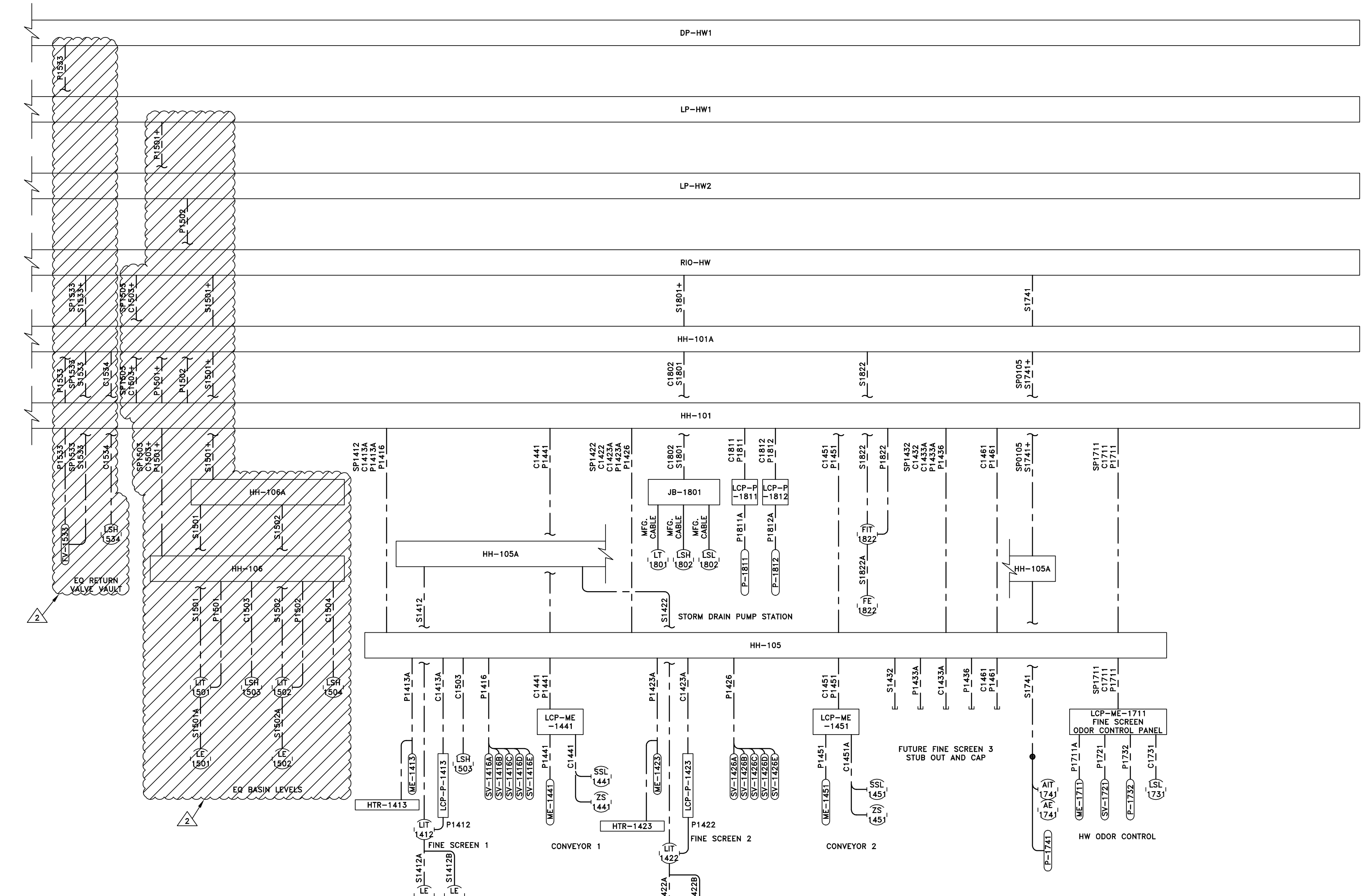
CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - CONDUITS AND DUCTBANKS
CONDUIT DEVELOPMENT 3

ORIGINAL				
NO.	DATE	DESIGN	DRAWN	CHECKED
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	10/11/19	MPJ	DCL	MPJ



NOTES:

1. CONDUITS THAT ARE COMBINED BETWEEN PULL POINTS ARE DENOTED WITH A + (PLUS) SYMBOL. SEE THE COMBINED CONDUITS SCHEDULE ON SHEET CE-11. CONDUITS THAT HAVE BEEN COMBINED SHALL BE LABELED WITH MULTIPLE CONDUIT TAGS, ONE FOR EACH CONDUIT THAT HAS BEEN COMBINED.

2. THE CONDUIT DEVELOPMENT AND SCHEDULE DOES NOT SHOW CONDUIT AND CONDUCTORS FOR LIGHTS, RECEPTACLES AND DATA JACKS. IT ALSO DOESN'T SHOW CONDUIT AND CONDUCTORS FOR THE MBR BUILDING'S HVAC AND APPLIANCES FOR THE OFFICE, BREAK ROOM, CONTROL ROOM, LAB, MECHANICAL ROOM AND RESTROOMS. THE CONTRACTOR IS RESPONSIBLE TO INCLUDE THESE CONDUITS AND CONDUCTORS IN THEIR WORK AND IN THEIR SUBMITTED CONDUIT ROUTING PLAN.

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0 1/2 1

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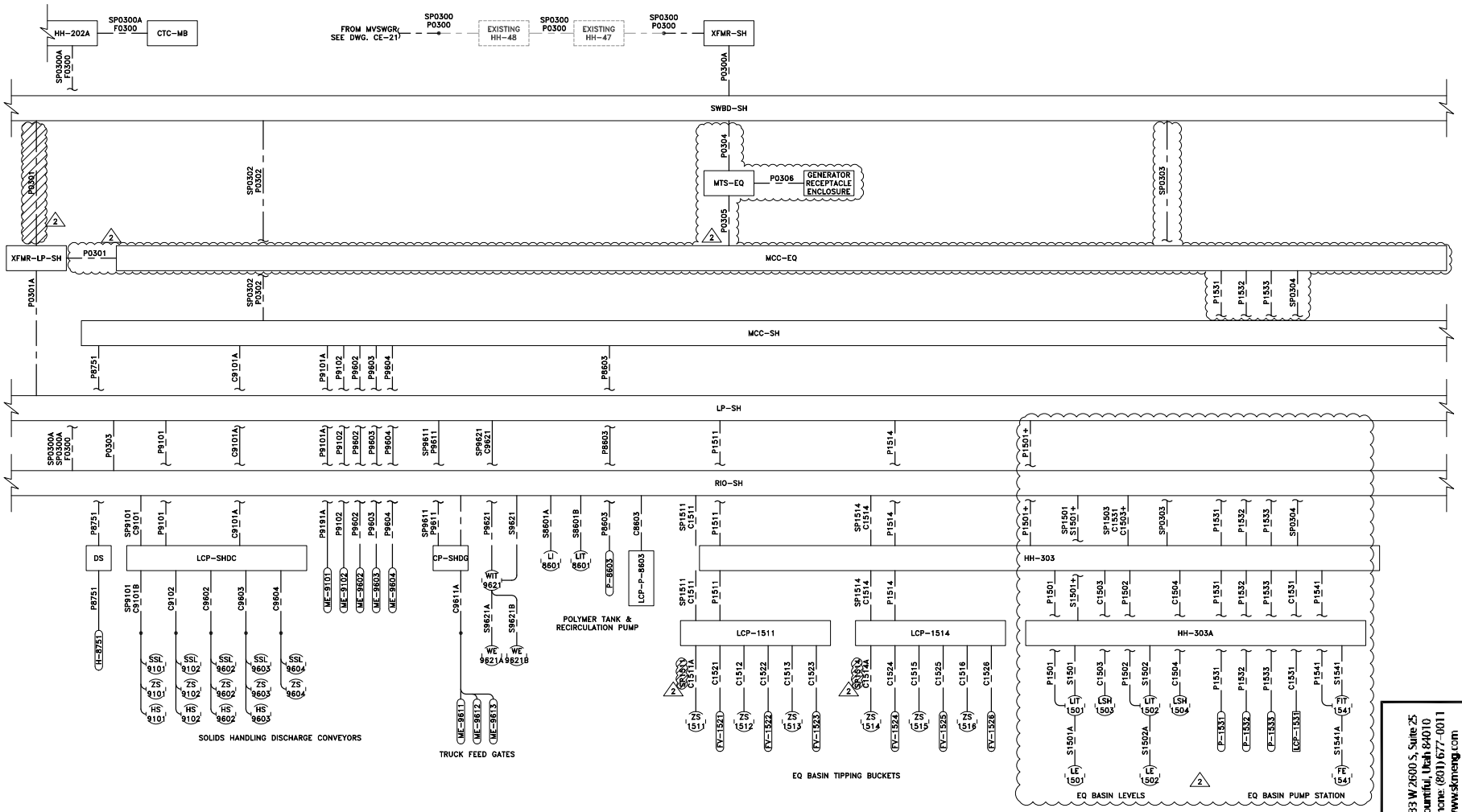
SALT MITIGATION WWTP UPGRADE
ELECTRICAL - CONDUITS AND DUCTBANKS
CONDUIT DEVELOPMENT 7

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	11/26/18	MPJ	BB	MPJ
2	10/11/19	MPJ	DCL	MPJ



NOTES:

1. CONDUITS THAT ARE COMBINED BETWEEN PULL POINTS ARE DENOTED WITH A + (PLUS) SYMBOL. SEE THE COMBINED CONDUITS SCHEDULE ON SHEET CE-11. CONDUITS THAT HAVE BEEN COMBINED SHALL BE LABELED WITH MULTIPLE CONDUIT TAGS, ONE FOR EACH CONDUIT THAT HAS BEEN COMBINED.
2. THE CONDUIT DEVELOPMENT AND SCHEDULE DOES NOT SHOW CONDUIT AND CONDUCTORS FOR LIGHTS, RECEPTACLES AND DATA JACKS. IT ALSO DOESN'T SHOW CONDUIT AND CONDUCTORS FOR THE MBR BUILDING'S HVAC AND APPLIANCES FOR THE OFFICE, BREAK ROOM, CONTROL ROOM, LAB, MECHANICAL ROOM AND RESTROOMS. THE CONTRACTOR IS RESPONSIBLE TO INCLUDE THESE CONDUITS AND CONDUCTORS IN THEIR WORK AND IN THEIR SUBMITTED CONDUIT ROUTING PLAN.

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	09/18/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - CONDUITS AND DUCTBANKS
CONDUIT DEVELOPMENT 15

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0 1/2 1
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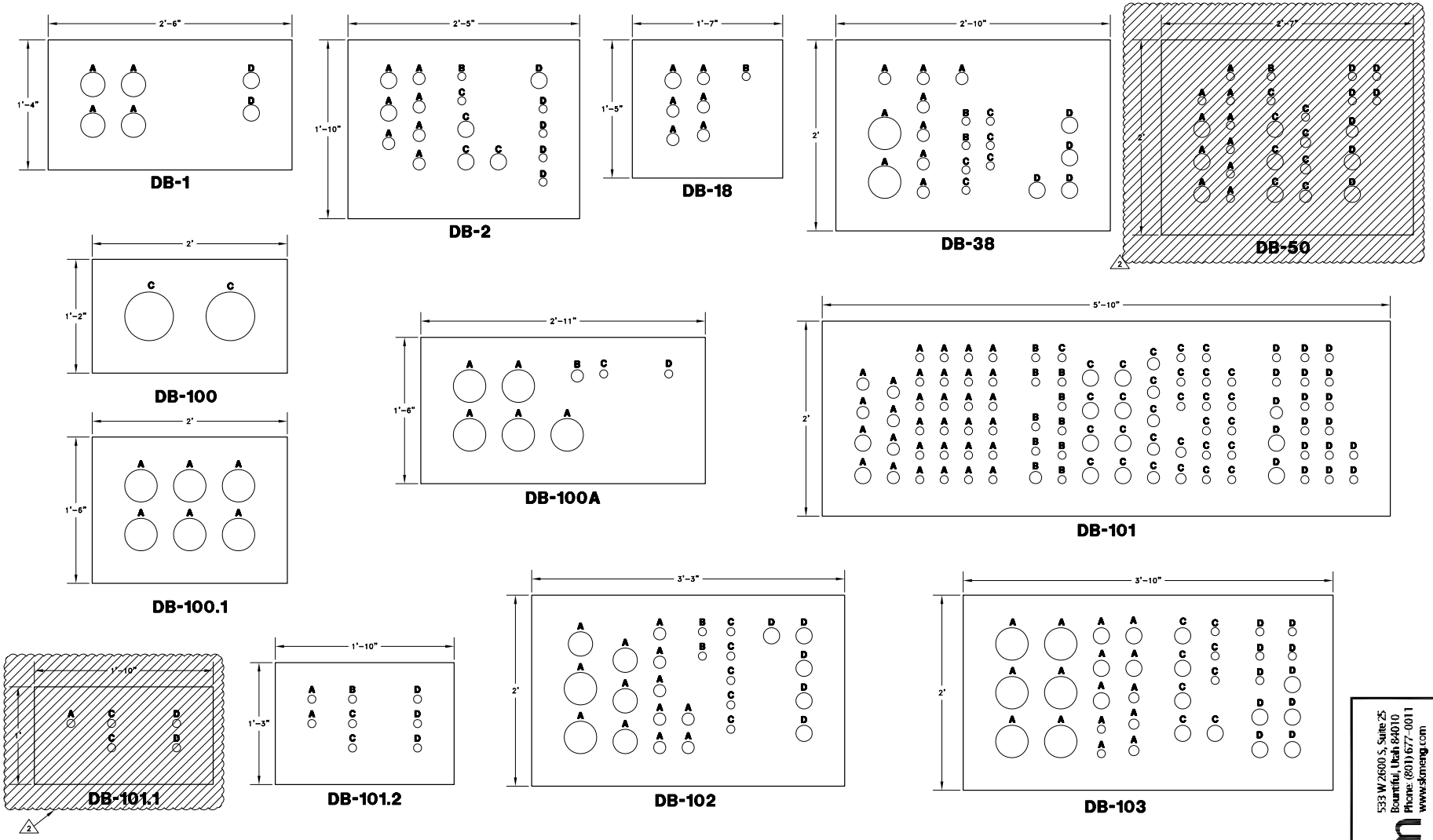
SHEET 168 OF 172

CE-26

10/21/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\15 CE-26 CONDUIT DEVELOPMENT 15.DWG



DUCTBANK CROSS SECTIONS

CONDUIT DESIGNATION KEY:

A	480VAC	
B	120/208/240VAC	
C	120VAC CONTROL	
D	SIGNAL, COMMUNICATION, OR 50VDC	

DISTANCES BETWEEN CONDUITS IN DUCTBANKS					
	480VAC	120VAC	120VAC CONTROL	SIGNAL	EDGE OF CONCRETE DB
480VAC	3"	4"	4"	12"	4"
120/208/240VAC	4"	3"	3"	6"	4"
120VAC CONTROL	4"	3"	3"	4"	4"
SIGNAL/COMMS/50VDC	12"	6"	4"	3"	4"
EDGE OF CONCRETE DB	4"	4"	4"	4"	NA

NOTES:

1. DUCTBANK CROSS SECTION DRAWING
2. CONDUITS FOR LIGHTING AND RECEPTACLES ARE NOT SHOWN IN DUCTBANK CROSS SECTIONS

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	08/14/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - CONDUITS AND DUCTBANKS
DUCTBANK CROSS SECTIONS 1

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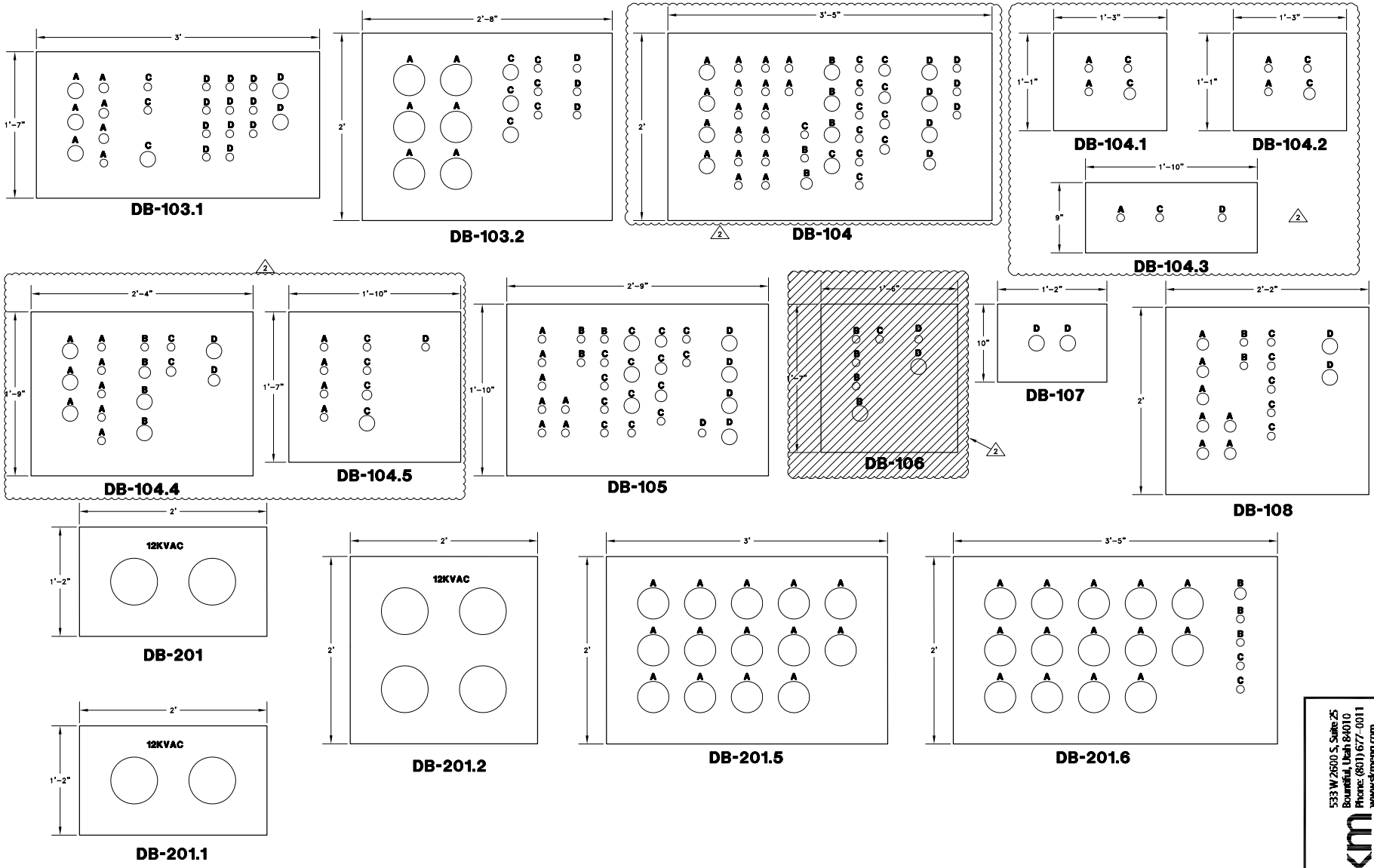
0 1/2 1
DRAWING IS TO SCALE
IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

CE-28



DUCTBANK CROSS SECTIONS

CONDUIT DESIGNATION KEY:

A	480VAC	
B	120/208/240VAC	
C	120VAC CONTROL	
D	SIGNAL, COMMUNICATION, OR 50VDC	

DISTANCES BETWEEN CONDUITS IN DUCTBANKS					
	480VAC	120VAC	120VAC CONTROL	SIGNAL	EDGE OF CONCRETE DB
480VAC	3"	4"	4"	12"	4"
120/208/240VAC	4"	3"	2"	6"	4"
120VAC CONTROL	4"	2"	2"	4"	4"
SIGNAL/COMMS/50VDC	12"	6"	4"	2"	4"
EDGE OF CONCRETE DB	4"	4"	4"	4"	NA

NOTES:

1. DUCTBANK CROSS SECTION DRAWING
2. CONDUITS FOR LIGHTING AND RECEPTACLES ARE NOT SHOWN IN DUCTBANK CROSS SECTIONS

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	08/14/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

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DUCTBANK CROSS SECTIONS 2

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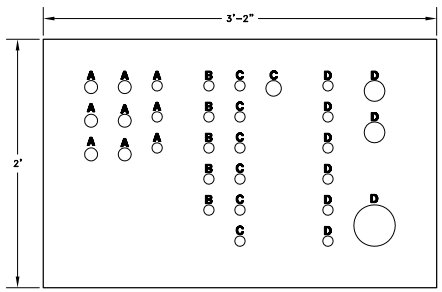
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

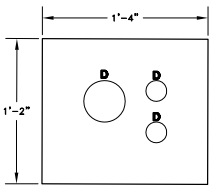
SHEET 171 OF 172

CE-29

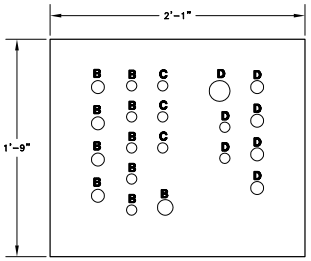
10/11/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\15 CE-29 DUCTBANK CROSS SECTIONS 2.DWG



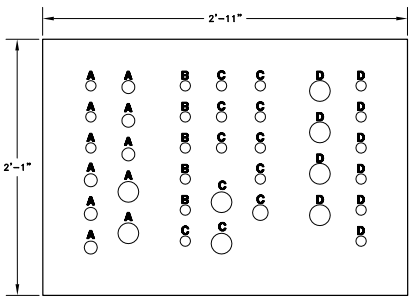
DB-202



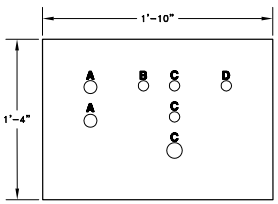
DB-202.1



DB-203



DB-204



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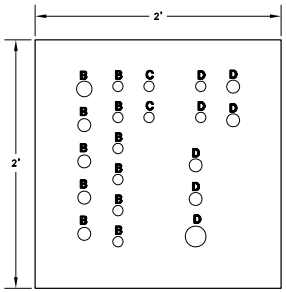
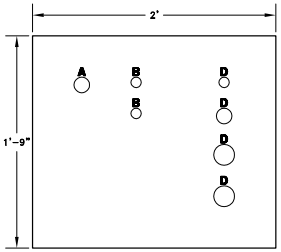


DB-205



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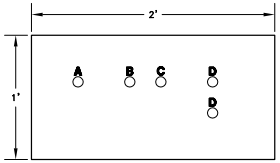
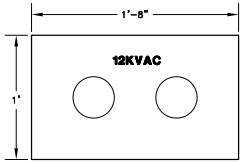
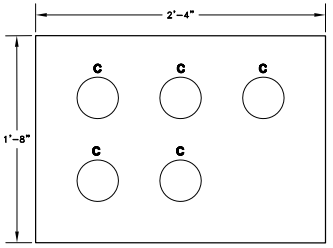


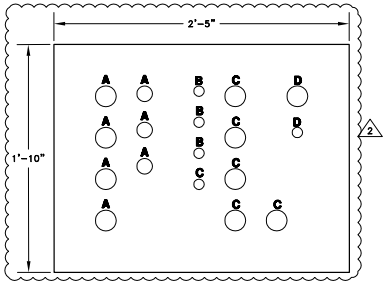
DB-206



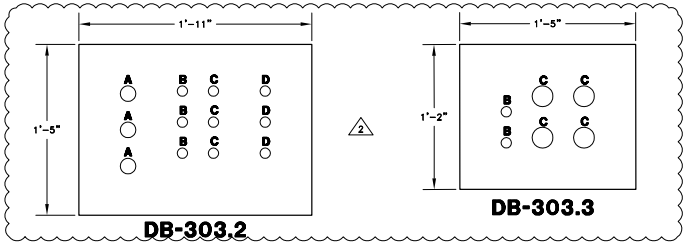
DB-300



DB-300.1



DB-303.1



DB-303.2

DB-303.3

DUCTBANK CROSS SECTIONS

CONDUIT DESIGNATION KEY:

A	480VAC	
B	120/208/240VAC	
C	120VAC CONTROL	
D	SIGNAL, COMMUNICATION, OR 50VDC	

DISTANCES BETWEEN CONDUITS IN DUCTBANKS					
	480VAC	120VAC	120VAC CONTROL	SIGNAL	EDGE OF CONCRETE DB
480VAC	3"	4"	4"	12"	4"
120/208/240VAC	4"	3"	3"	6"	4"
120VAC CONTROL	4"	3"	3"	4"	4"
SIGNAL/COMMS/50VDC	12"	6"	4"	3"	4"
EDGE OF CONCRETE DB	4"	4"	4"	4"	NA

NOTES:

1. DUCTBANK CROSS SECTION DRAWING
2. CONDUITS FOR LIGHTING AND RECEPTACLES ARE NOT SHOWN IN DUCTBANK CROSS SECTIONS

NO.	DATE	DESIGN	DRAWN	CHECKED
ORIGINAL				
C	09/05/18	MPJ	DCL	MPJ
REVISIONS				
1	06/24/19	MPJ	DCL	MPJ
2	10/11/19	MPJ	DCL	MPJ

CITY OF BEAUMONT

SALT MITIGATION WWTP UPGRADE
ELECTRICAL - CONDUITS AND DUCTBANKS
DUCTBANK CROSS SECTIONS 3

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CIVIL ENGINEERS
3788 McCRAY STREET
RIVERSIDE, CA. 92506
PH (951) 686-1070
FAX (951) 788-1256
ENGINEERING CONSULTANTS

0 1/2 1
DRAWING IS TO SCALE IF BAR MEASURES:
1" = FULL SCALE
1/2" = HALF SCALE

SHEET 172 OF 172

CE-30

10/11/2019 K:\BEAUMONT\001073.D BEAUMONT WWTP UPGRADE\SKM CAD FILES\15 CE-30 DUCTBANK CROSS SECTIONS 3.DWG

SECTION 262816 – ENCLOSED SWITCHES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Manual Transfer Switches
2. Generator Connection Enclosures

1.2 PERFORMANCE REQUIREMENTS

A. Seismic Performance: Enclosed switches shall withstand the effects of earthquake motions determined according to ASCE.

1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."

1.3 ACTION SUBMITTALS

A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated.

B. Shop Drawings: For enclosed switches and circuit breakers. Include plans, elevations, sections, details, and attachments to other work.

1. Wiring Diagrams: For power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

A. Seismic Qualification Certificates: For enclosed switches and circuit breakers, accessories, and components, from manufacturer.

B. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.6 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 MANUAL TRANSFER SWITCHES

A. The manual transfer switch shall be open transition, break-before-make type double throw safety switch. The manual transfer switch shall be heavy duty with a quick make, quick break operating mechanism, with full cover interlock, and indicator handle.

B. The switch shall be rated for the voltage and current and shall have the number of poles indicated on the Plans. Lugs shall be able to accommodate up to 600MCM cabling.

C. The transfer switch shall be listed by UL.

D. Enclosures shall be rated NEMA 12 for indoor use, and NEMA 3R for outdoor use, unless otherwise indicated on the Plans.

E. The manual transfer switch handle shall be padlockable.

F. Manual transfer switches shall be as manufactured by Square D, Eaton, Allen-Bradley, or approved equal.

2.2 GENERATOR CONNECTION ENCLOSURES

A. Provide a 480V, 3-Phase 3-Wire 400A, NEMA 3R enclosure fabricated from galvanized steel and power coated ANSI gray. The enclosure shall have mounting tabs for surface mounting and a drip shield above the door opening. The enclosure shall have a hinged front door provided with a latch that is padlockable.

B. The bottom of the enclosure shall contain a hinged door for the entry of portable cable. The door shall be secured by a latch accessible only from the inside of the enclosure.

C. The conduit entrance shall be through the top or back of the enclosure. Wire terminations for the building wire shall be to mechanical lugs sized for 400A and large enough to accommodate up to 600MCM cabling.

D. A dead front cover shall prevent access to the internal electrical components when the main access door is open.

E. Series 16 Cam inlets shall be mounted on an internal dead front inlet panel and shall accept standard E1016 type connectors. One set of cam inlets rated for up to 400A shall be provided. Cam inlets shall be color coded for phase (brown, orange and yellow) and ground (green).

F. The ground inlet shall be wired to the enclosure frame and a ground connection lug shall be provided for contractor termination of the building ground wire.

G. The internal dead front inlet panel shall contain slots between inlets to eliminate hysteresis, as required by the NEC.

H. A warning label to specify the proper sequence for connection and removal of portable cable as shall be mechanically fastened to front cover of the enclosure.

I. The Generator Connection Box shall meet or exceed all applicable NEC standards and shall be UL Listed. A label denoting the UL Listing shall be permanently affixed to the unit.

J. Generator connection enclosures shall be as manufactured by Union Connector, Lex, or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Enclosed switches and generator connection enclosures shall be installed, in accordance with the manufacturers' recommendations.

B. The enclosed switches and generator connection enclosures shall be installed as indicated on the Plans.

C. Provide grounding per NEC.

END OF SECTION 262816

SECTION 432313 – SELF-PRIMING CENTRIFUGAL PUMPS

PART 1 - GENERAL

1.1 SUMMARY

A. This specification covers the furnishing of self-priming centrifugal pump units as required and to the expectation of the Engineer with regard to the manufacture of the equipment.

B. All equipment must be supplied by the same pump Manufacturer including bowls, impellers, seals, and motors. Equipment furnished under this section shall be fabricated and assembled in full conformity with drawings, specifications, engineering data, instructions, and recommendations of the equipment manufacturer, unless exceptions are noted by Engineer.

C. The pump manufacturer must be ISO 9011:2008 revision certified.

D. The pumps shall be of the horizontal self-priming centrifugal type, equal in construction and performance to the "Super T" Series self-priming sewage pumps as manufactured by the Gorman-Rupp Company of Mansfield, Ohio, specifically designed for the handling of raw, unscreened sanitary domestic sewage.

1.2 RELATED SECTIONS

A. Common Motor Requirements for Equipment, Section 220513.

B. Pumps, General, Section 432010.

1.3 CONDITIONS OF OPERATION

A. Each pump must have the necessary characteristics and be properly selected to perform under the operating conditions shown in the pump schedule.

B. All internal passages, impeller vanes, and recirculation ports shall pass a 3" spherical solid.

C. Each pump at its rated speed shall be designed to retain adequate liquid in the pump casing to insure unattended automatic re-priming in a complete open system without suction or discharge check valves and with a dry suction leg. Upon completion of re-priming cycle, pumps shall deliver full rated capacity at rated TDH at the designed total dynamic suction lift.

1.4 SUBMITTALS

A. Provide complete fabrication and assembly drawings together with detailed specifications and data covering materials, parts, devices and accessories forming a part of the equipment furnished, shall be submitted in accordance with the submittals section. Information and submittals shall conform to the requirements of Section 013300 – Contractor Submittals. The data and specifications for each pumping unit shall not be limited to the following:

1. Name of manufacturer.

2. Type and model of pump including design rotative speed.

3. Dimensions including size, location and size of suction and discharge outlet connections, weight, and max overall dimensions.

4. Submit pump and motor performance data, pump curves showing operation points, NPSH, curve, submergence requirements, efficiency, bhp, pump range operating on a VFD and system head curves for each flow scenario.

5. Also provide diagrams showing installation requirements including minimum clearances from nearby walls, adjacent pump units, and all other pertinent information required to review the pump unit for performance and installation for each application.

B. Anchor Bolt Design Calculations.

C. Provide operation and maintenance manuals and information in accordance with the requirements of Section 017823 – Operation and Maintenance Data.

1.5 WARRANTY

A. The minimum warranty period shall be warranted for sixty (60) months excepting only those items that are normally consumed in service such as oils, grease, packing, gaskets, O-rings, etc. Th pump manufacturer shall be solely responsible for warranty of the pump equipment and components. The warranty shall become effective 60 days after installation (verified by pump manufacturer's representative) or ninety (90) days after shipment from the factory whichever occurs first.

1.6 QUALITY ASSURANCE

A. The pump manufacturer shall have at least ten (10) similar installations in the US with a minimum of five (5) years of continuous operation.

1.7 SEQUENCE OF OPERATION

A. The pump manufacturer shall provide a detailed control narrative describing the pump startup, running and shutdown sequence of operation. As the pumps are required to pull suction from the EQ basin, the narrative shall include a written strategy for priming each pump during the startup sequence.

PART 2 - PRODUCTS

2.1 PUMP DESIGN

A. Pumps shall be horizontal, self-priming centrifugal type, designed specifically for handling raw, unscreened, domestic sanitary sewage.

B. Materials and Construction Features:

1. Pump casing shall be cast iron Class 30 with integral volute scroll. Casing shall incorporate following features:

   a. Mounting feet sized to prevent tipping or binding when pump is completely disassembled for maintenance.

   b. Fill port cover plate, 3 1/2" diameter, shall be opened after loosening a hand nut/clamp bar assembly. In consideration for safety, a clamp bar screw must provide slow release of pressure, and the clamp bar shall be retained by detente lugs. A Teflon gasket shall prevent adhesion of the fill port cover to the casing.

   c. Casing drain plug shall be at least 1 1/4" NPT to insure complete and rapid draining.

   d. Liquid volume and recirculation port design shall be consistent with performance criteria listed under PART 1 - GENERAL of this section.

C. Suction Head shall be Class 30 cast iron. Its design must incorporate following maintenance features:

1. The suction head will be secured to the pump casing by using hex head cap screws and lock washers. Access to the impeller and mechanical seal shall be accomplished by removing the suction head.

2. Removal of any blockages in the impeller shall be accomplished by removing the suction head, or through a cleanout cover on the suction head. In consideration of safety, two clamp bar screws must provide slow release of pressure on two clamp bars securing the cleanout cover. A Teflon gasket shall prevent adhesion of the cleanout cover to the suction head casing.

3. Removal of the suction check valve shall be accomplished through the removable cleanout cover on the suction head.

4. In consideration for safety, a pressure relief valve shall be supplied in the suction head.

5. A replaceable Grey Iron 30 wear plate shall be secured up against the pump casing by the suction head. Measurement of the clearance between this wear plate and impeller shall be accomplished through the cleanout cover plate.

D. Rotating assembly, which includes impeller, shaft, mechanical shaft seal, lip seals, bearings, seal plate and bearing housing, must be removable as a single unit without disturbing the pump casing or piping. Design shall incorporate following features:

1. Seal plate and bearing housing shall be cast iron Class 30. Separate oil filled cavities, vented to atmosphere, shall be provided for shaft seal and bearings. Cavities must be cooled by the liquid pumped. Three lip seals will prevent leakage of oil.

   a. The bearing cavity shall have an oil level sight gauge and fill plug check valve. The clear sight gauge shall provide easy monitoring of the bearing cavity oil level and condition of oil without removal of the fill plug check valve. The check valve shall

vent the cavity but prevent introduction of moist air to the bearings.

b. The seal cavity shall have an oil level sight gauge and fill/vent plug. The clear sight gauge shall provide easy monitoring of the seal cavity oil level and condition of oil without removal of the fill/vent plug.

c. Double lip seal shall provide an atmospheric path providing positive protection of bearings, with capability for external drainage monitoring.

2. Impeller shall be ductile iron 65-45-12, two-vane, semi-open, non-clog, with integral pump out vanes on the back shroud. Impeller shall thread onto the pump shaft and be secured with a lock screw and conical washer.

3. Impeller shaft shall be 4150 Alloy Steel.

4. Bearings shall be anti-friction ball type of proper size and design to withstand all radial and thrust loads expected during normal operation. Bearings shall be oil lubricated from a dedicated reservoir. Pump designs which use the same oil to lubricate the bearings and shaft seal shall not be acceptable.

5. Shaft seal shall be cartridge type, mechanical, oil-lubricated, double floating, self-aligning. The stationary and rotating seal faces shall be tungsten titanium carbide alloy. Stainless steel 316 stationary seat. Fluorocarbon elastomers (DuPont Viton or equal). Stainless steel 18-8 cage and spring. Maximum temperature of liquid pumped, 160° F (71° C).

6. Pusher bolt capability to assist in removal of rotating assembly. Pusher bolt threaded holes shall be sized to accept same cap screws as used for retaining rotating assembly.

E. Adjustment of the impeller face clearance (distance between impeller and wear plate) shall be accomplished by external means.

1. Clearances shall be maintained by using external shims between the casing ring of the rotation assembly and the pump casing itself. Shims will be of various sizes to allow precise adjustment of this clearance. The clearance can be measured by removing the cleanout cover on the suction head.

2. Clearance adjustment which requires movement of the shaft only, thereby adversely affecting seal working length or impeller back clearance, shall not be acceptable.

F. Suction check valve shall be molded Neoprene with integral steel and nylon reinforcement.

G. Removal of the rotating assembly will be accomplished through the front or the back of the pump casing.

H. The motor shall be mounted using the standard V-Belt base.

I. The motor shall be driven by a VFD and shall meet the requirements of Common Motor Requirements for Equipment, Section 220513.

J. The motor shall be equipped with an anti-condensation space heater that shall be energized while the motor is not running.

K. The motor shall be equipped with normally closed contacts in each motor winding wired together in series to provide a shutdown condition should the motor get too hot.

2.2 ANCHOR BOLTS

A. Equipment manufacturer shall furnish all anchor bolts of ample size and strength required to securely anchor each item of equipment. Anchor bolts, hex nuts, and washers shall be # T-316 stainless steel unless noted otherwise. Anchor bolts shall be threaded rods with washers and nuts embedded. Expansion-type anchors will not be acceptable. Anchor bolt design shall be completed by a professional engineer licensed in the State of California and shall be included in the submittal.

B. Anchor bolts shall be set by the CONTRACTOR. Equipment shall be placed on the foundations, leveled, shimmed, bolted down, and grouted with a non-shrinking grout

PART 3 - EXECUTION

A. EXPERIENCE AND WORKMANSHIP

B. Pumps shall be the product of a manufacturer with a minimum of 5 years' experience in design and manufacture of self-priming centrifugal pumps handling sewage.

C. INSTALLATION

D. Pumps shall be installed per manufacturer's recommendations including all auxiliary devices and accessories to minimize vibration, vortexing, cavitation, and otherwise facilitate and maximize the performance and reliable life of the pump unit.

E. Contractor shall coordinate electrical and controls requirement with the pump manufacturer to ensure a properly installed and operating pump system. Contractor is responsible to provide all wiring, conduit, controls, and other aspects to complete the installation of the pumps. All electrical components shall comply with the requirements outlined in Division 26 and Section 220513 – Common Motor Requirements for Equipment.

F. All exterior installed items, including pumps, motors, valves, piping, wiring, and other components shall be suitable for exposed, outdoor installation including high ambient operating temperatures for the pump motors and exposure to direct sunlight.

G. Factory non-witnessed pump test head shall be performed. Each pumping unit to be supplied in the field shall be non-witness tested at the factory for capacity, power requirement, and efficiency at minimum head, rated head, shutoff head or point of discontinuity, and at as many other points as necessary for accurate performance curve plotting. Pump OEM can use a calibrated lab motor for these tests. All tests and test reports shall conform to the requirements and recommendations of the Hydraulic Institute Standards. If the pump fails to operate properly or fails to meet the specified conditions or requirements during shop testing, the pump manufacturer shall modify the pumping unit and perform additional tests. The pump manufacturer shall submit complete pump test reports, including test arrangement, instrumentation calibration data, test procedures, & test data in curve format. All test data shall be submitted to the engineer at least 5 days prior to

shipment.

H. Pump shall be furnished with all typical spare parts (or spare parts kit) and any specialty tools as typically supplied and recommended by the pump manufacturer. Submittals shall provide a detailed list of all included spare parts, including party numbers and quantities of each item.

I. Pump supplier shall include services of a qualified representative to oversee the installation, startup, testing, and training of operator personnel. A minimum of two (2) trips and two (2) days on site shall be included. Refer to Section 017900 – Demonstration and Training for details on startup requirements. The representative shall be present when the equipment is placed in operation, and shall revisit the job site as often as necessary until all trouble is corrected and the equipment installation and operation are satisfactory in the opinion of ENGINEER.

J. The manufacturer's representative shall furnish a written report certifying that the equipment has been properly installed and lubricated; is in accurate alignment; is free from any undue stress imposed by connecting piping or anchor bolts; and has been operated under full load conditions and that it operated satisfactorily.

K. All costs of these services shall be included in the contract price for the number of days and round trips to the site as required.

END OF SECTION

Project Name:	City of Beaumont Salt Mitigation	**Negotiation No:**	LA280626X8K2
General Order No:	MLA0009343	**Alternate No:**	R006 CLAR-24 C.O.

STANDARD LEAD TIME PRICE PER THE ATTACHED: $57,915.00

ADDER FOR VFD STARTUP: $4,500.00

Note that with power system short circuit and coordination studies and EESS site acceptance testing per EESS or NETA standard work scopes only, an extra year of warranty is provided by the factory to the customer at no extra cost.

Eaton's engineering services meets the ANSI/NETA Acceptance Testing Specifications testing organization qualification criteria to perform NETA testing. Eaton's engineering services utilizes the Electrical Power Testing Certification Program from the National Institute for Certification in Engineering Technologies (NICET), to certify field personnel in testing electrical power distribution equipment per ANSI/NETA standards.

GENERAL COMMENTS, CLARIFICATIONS, SPECIAL CONDITIONS

1. BOM attached - This bid is based upon our interpretation of any specifications, drawings, and/or other information provided. Any items or features not listed in the attached bill of material are not included.

2. Cable terminations use mechanical type lugs, not compression type lugs, unless shown in the description of the equipment. Mechanical lugs will accept either copper or aluminum cables. Standard termination lugs are provided based on the ampacity of each circuit. Optional lugs are available that generally allow for the next larger standard cable size. Oversized lugs and/or additional quantities of parallel cables must be accommodated by the contractor's installation method (e.g. insulated cable splices in the equipment gutter, power terminal blocks, etc.) and are not part of this quotation.

3. Not included unless shown as a separate item within this bill of materials: safety switches, enclosed circuit breakers, starters meter sockets, spare parts / renewal parts and other miscellaneous equipment, 600 Volt or 250V fuses (others supplied only if noted specifically), extended warranty, seismic calculations, and selective coordination.

4. Dry type transformers (DOE 2016) - primary or secondary terminal lugs are not included. DTDT supplied with factory standard impedance and reactance levels unless shown otherwise.

5. Panels and switchboards- Eaton is not responsible for Title 24 design compliance unless Title 24 requirements are an integral part of the design. SPD and customer metering is only included where shown on single line or panel schedules.

6. Regarding NEC/CEC article 240.87(B) – To comply with code requirements, Eaton will provide the arc reduction method for circuit breakers that are rated or can be adjusted to 1200A or higher.

7. Eaton not responsible for utility meter maximum centerline height or CEC/NEC 6'-7" center of OCPD handle violation if the surface for electrical equipment supplied by Eaton – enclosed control, fused or MCCB switching devices, panelboards, switchboards, LV switchgear, MV switchgear, etc. - is installed on a surface more than 1" (i.e. housekeeping pads) above the level plane in front of the equipment as required by utilities and NEC/CEC.

8. Order Entry- Eaton does not send utility approval drawings unless requested by customer. Customer to provide utility contact information. Lift gate truck requirement for switchboard delivery must be requested at or before time of order entry. Liquidated damages will not be accepted.

9. Shipment is FOB – point of shipment unless otherwise noted.

10. Sales tax is not included in above pricing.

PROJECT SPECIFIC COMMENTS AND CLARIFICATIONS

1. Change order includes comments/clarifications of original quote document..
2. No specifications provided for manual transfer switches. MTS-EQ' quoted per BOM.
3. Standard warranty included. Items started up by Eaton include additional year of warranty at no additional cost.
4. VFDs internal to MCC quoted per schematic on E-19 with only options specifically noted for 'P-1531, P-1532, P-1533'..

Project Name: City of Beaumont Salt Mitigation
General Order No: MLA0009343
Negotiation No: LA280626X8K2
Alternate No: R006 CLAR-24 C.O.

Bill of Materials

Item No.	Qty	Product	Description
	1	Switchboards	RUGTB
			Catalog No GTB08MAMA
			Designation Generator Receptacle Enclosure

Item No.	Qty	Product	Description
	1	Automatic Transfer Switches	Quote Date: 11/20/2019
			Product Family: Wall Mount Switch Type: Non Automatic Molded Case Switch 30A thru 1000A 480v, 60hz, 3 Phase, 3 Wire, 3 poles Transition Mode: Open Controller Type: Electromechanical Continuous Current: 400 Amps Withstand: 65kA Normal Source Terminals: (1) 4/0-600 CU/AL Emergency Source Terminals: (1) 4/0-600 CU/AL Load Side Terminals: (2) #1-500 CU/AL Neutral Terminals: No Neutral Bar Standard Features: 12c, 12d, 12g, 12h, 15e, 15f, 32e, 42, 49c, Optional Features: No Optional Features Selected
			Catalog No NTVELDA30400XSU
			Designation MTS-EQ

Item No.	Qty	Product	Description
	1	Motor Control Centers	60 Hz, Class 2B wiring, 480V 3-Phase Service, 65,000 Bracing, Short Circuit Rating, Bottom Incoming, NEMA 1 Gasketed 21" Front Mt Only enclosure, 600A Copper Main Horizontal Bus, ANeutral, Main Lugs. Used X-Space: 28, Blank X-Space: 20, Future X-Space: 0, MCC Lead Time Code: U.
			Designation MCC-EQ

Eaton Selling Policy 25-000 applies.

All orders must be released for manufacture within 90 days of date of order entry. If approval drawings are required, drawings must be returned approved for release within 60 days of mailing. If drawings are not returned accordingly, and/or if shipment is delayed for any reason, the price of the order will increase by 1.0% per month or fraction thereof for the time the shipment is delayed.

Project Name: City of Beaumont Salt Mitigation
General Order No: MLA0009343
Negotiation No: LA280626X8K2
Alternate No: R006
CLAR-24 C.O.

Item No.	Qty	Product	Description
	1	Dry Type Transformers	Transformer Type: General Purpose Vented 3 Phase, 75 KVA, 1 K-Factor 480 Primary Volts 208Y/120 Secondary Volts Temperature Rise 150C with 220C Insulation System Copper Winding Material Sound Reduction : 0 NEMA ST-20 Audible Sound Level: 50 Efficiency : DOE 10 CFR Part 431 (2016) UL Listed : Y Enclosure Type: NEMA 2 Operating Frequency: 60 HZ Electrostatically Shielded Catalog No V48M28T7516CUES Designation XFMR-LP-SH

Eaton Selling Policy 25-000 applies.

All orders must be released for manufacture within 90 days of date of order entry. If approval drawings are required, drawings must be returned approved for release within 60 days of mailing. If drawings are not returned accordingly, and/or if shipment is delayed for any reason, the price of the order will increase by 1.0% per month or fraction thereof for the time the shipment is delayed.

Scope Letter: 2 pages

TSI
Technical Systems Incorporated

2303 196th Street SW
Lynnwood, WA 98036
Tel: (425) 775-5696
Fax: (425) 775-9074
info@tsicontrols.com

January 27, 2020 Quote Number: CO#05

To: Southern Contracting
Attn: Dan Alcantar

Project: Beaumont WWTP Salt Mitigation
Beaumont Wastewater Treatment Plant

Reference: **CLAR-24 EQ Basin Modifications**

Bid Date: N/A Bid Time: N/A

Technical Systems, Inc. (TSI) is pleased to provide a quote for the above referenced project. Material for this project will be shipped FOB Lynnwood WA, complete, ready for field termination by others. TSI's price includes CA sales tax and does not include the cost to bond TSI's portion of the project.

TSI's price for the scope of work detailed on the following pages:

Change Order Proposal Pricing: **$16,040.00**

Change Scope as Follows:

- Supply new 16" Mag Flow Meter FE/FIT 1511
  - Remote Mount Transmitter, 30' Cable
  - ABB Watermaster Similar to other flow meters provided
  - Flow Tube in Class 1 Div 2 Area
  - Add Sunshield similar to other flow meters
  - Estimated 6 week lead time
- LSH-1534 Gems Pressure Switch – Deleted, purchased unit to be provided as spare
- Level Transmitters LE/LIT-1502 & 1502, Level Switches LSH 1503 & 1504
  - Already in scope, so be supplied as shown on updated drawings
  - Update Mounting as Necessary
- Incorporate IO changes for RIO-HW and RIO-SH
- Supply New Pump HOR Local Control Panel LCP-1531
  - Approximately 12x12x6", 316SS, NEMA 4X
  - (3) 3-position operator switches, NEMA 4X
  - Local HOR operation only, all pump control to be in respective MCC buckets

Terms: Net 30
FOB: Lynnwood WA
Freight: Prepaid

This quote is valid for 90 days.

Please call with any questions you may have concerning pricing or any technical questions.

Sincerely,

Colin Dightman-Kovak

Colin Dightman-Kovak
Technical Systems, Inc.
1-425-678-4116

Scope of Work

Misc Equipment:

Including:

1. Hardware Procurement
2. Required Testing
3. O&M, drawings updates

GENERAL

1. TSI supplies a bill of materials, CAD-based drawings, and Operations and Maintenance Manuals for all equipment furnished by TSI.

2. TSI supplies the required field startup services for this project.

3. Panels fabricated by TSI are UL 508 labeled.

STANDARD INCLUSIONS

We provide the following unless specifically excluded on our bill of material:

1) Equipment shipped FOB factory with freight allowed, tailgate, destination.
2) Field wiring diagrams showing interconnection of field instruments and instrumentation panels.
3) Instruction manuals as required.
4) All necessary field start-up and calibration of the equipment we supply.

STANDARD EXCLUSIONS

We do NOT include the following unless specifically included in our bill of material:

1) Pipe, tubing, valves or fittings between the instrument and the process.
2) Conduit, wire or cable not an integral part of the instrument.
3) Mounting brackets, stanchions, supports or mounting pads not an integral part of the instrument.
4) Labor to install the equipment.
5) The Cost, (if due to local union regulations), to have local craftsman make adjustments or wiring modifications to our equipment during start-up and calibration.
6) Any material or services not in our quoted sections.

7) This proposal is based on award of a supply purchase order and does not include any of the costs associated with bonding or subcontract administration. If bonding or a subcontract is required they can be provided for additional cost.

SPECIFIC EXCLUSIONS

1) Installation of Panels and Instruments.

Dan Alcantar

From: Colin Dightman-Kovak [colind@tsicontrols.com]
Sent: Monday, January 27, 2020 2:21 PM
To: Dan Alcantar
Cc: Mike Long
Subject: CLAR-24 Pricing
Attachments: 7781 CO-05 CLAR-24 EQ Basin Mods.pdf

Good Afternoon Dan,

Please see attached pricing for CLAR-24. Main components

-new 16" flow meter and sun shade
-new LCP for pump HOR control
-some modification of instruments in our scope already
-engineering/drawing for IO changes (but no new cards) in RIO panels

Thanks,

Colin Dightman-Kovak
Project Manager
Technical Systems, Inc.
Direct: (425) 678-4116

PACIFIC STEEL GROUP

Contractor: WM Lyles Date: 1/31/2020

Job Name: Salt Mitigation WWTP Upgrades PSG Job #: L18161

Extra No.: **14R**

Description:

Add Material and Labor for revisions to the Equalization Basin per Clar-24-EQ.
North Wall is 12" Taller
North Wall Verticals revised from #8 @ 8"o.c. to #8 @ 6"o.c. - Added 11,680 Lbs.
New Pump Station - Added 4,768 Lbs.
Added Duct Banks - Added 1,880 Lbs.

Material:	Quantity:	Unit:	Unit Price:	Comments:	Extended Price:
Rebar	18,328	LB	$ 0.60		$ 10,997.00
Specialty Rebar	-	LB	$ 1.50		$ -
Mesh	-	SQFT	$ 0.35		$ -
Couplers	-	Each	$ 1.75		$ -
Other	-	Each	$ -		$ -
					$ 10,997.00

Labor Impact:	Quantity:	Unit:	Unit Price:	Comments:	Extended Price:
Rebar	156	Hours	$ 93.04		$ 14,514.00
Specialty Rebar	-	Hours	$ 93.04		$ -
Mesh	-	Hours	$ 93.04		$ -
Couplers	-	Hours	$ 93.04		$ -
Other	-	Hours	$ 93.04		$ -
					$ 14,514.00

FWA Labor:	Quantity:	Unit:	Unit Price:	Comments:	Extended Price:
Ironworker	-	Hours	$ 93.04	Regular Base Pay	$ -
Overtime	-	Hours	$ 53.90	Premium Portion Only	$ -
Doubletime	-	Hours	$ 83.80	Premium Portion Only	$ -
					$ -

Other:	Quantity:	Unit:	Unit Price:	Comments:	Extended Price:
Engineering	10.00	Hours	$ 85.00		$ 850.00
Crane	-	Hours	$ 300.00		$ -
Delivery	1.00	Each	$ 550.00		$ 550.00
Other	-	Each	$ -		$ -
					$ 1,400.00

Sub Total =	$	26,911.00
Overhead & Profit @ 10% & 5% =	$	4,171.00
Sub Total =	$	31,082.00
Bond Fee =	$	311.00
Total Extra To Contract =	**$**	**31,393.00**

Oscar Mendoza

From: david parada <davidparadajr@yahoo.com>
Sent: Wednesday, January 29, 2020 12:55 PM
To: Oscar Mendoza
Cc: Lisa Greenelsh
Subject: Re: Emailing: CLAR-24- EQ Basin Modifications
Attachments: CLAR-24- EQ Basin Modifications.pdf

Lisa please send Oscar a scope letter for $8300 to coat additional mechanical at eq pump station and fine screen. coat additional concrete roughly 132 sq feet.
Lisa if you have any questions please ask Oscar with Lyles. this is for the Beaumont project

Thank you

David Parada Jr.

858 602 6037

On Wednesday, January 29, 2020, 11:10:35 AM EST, Oscar Mendoza <omendoza@wmlylesco.com> wrote:

Your message is ready to be sent with the following file or link attachments:

CLAR-24- EQ Basin Modifications

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

Oscar Mendoza

From: Bill Greer <bill@gwbuilders.com>
Sent: Tuesday, April 7, 2020 12:50 PM
To: Oscar Mendoza
Subject: RE: Pages from COP No. 036.1 EQ Basin Modifications CLAR-24 (003).pdf

Hello Oscar,

So I looked at this a little closer and have the following response.

1. The price is the price we have, I can't control Americans pricing and I can not hold them responsible for a quote a year old for a project in a different location. Per our conversation, I would be happy to see if Star can shave some cost off this if the owner willing to entertain a different supplier. We have been a Star dealer for over 35 years and even have in our scope at Imperial to modify an existing Star Canopy. They are more then capable of providing this canopy at the same quality as American. I can't guarantee their will be a significant savings, but I'm willing to find out for you. Please also see my additional comments because they do also affect the building.
2. Differences that also affect the price Between Beaumont EQ and Imperial Headworks Quote dated March of 2019
    a. Support beam holding three (3) 1,000 pound point loads. This has a material and labor impact.
    b. Wind speed in Beaumont is 20 mph more then in imperial city. This has an affect on the weight of steel, which affects the price.
    c. Beaumont has a 5.5 psf roof snow load While imperial city had none. Again affecting the weight of the steel.

Those items combined with the Market changes over the last year, give you the price we currently have.

Thank you,

Bill Greer
Vice President
G&W Builders
557 Mercury Lane
Brea CA 92821
714-529-9935

From: Oscar Mendoza <omendoza@wmlylesco.com>
Sent: Tuesday, April 07, 2020 9:51 AM
To: Bill Greer <bill@gwbuilders.com>
Subject: Pages from COP No. 036.1 EQ Basin Modifications CLAR-24 (003).pdf

Please see owner's note to comment 2B. I sent the your email explaining the cost and they sent me this quote from Imperial. Can you please provide me with a response back. Thanks,

G&W BUILDERS, INC.

QUOTE

A & B License Number 457076

Bill M. Greer. Vice President

557 MERCURY LANE BREA, CALIFORNIA 92821

(714) 529-9935 FAX (714) 529-0795

Brine WWTP Beaumont

WM Lyles Co.

April 13, 2020

Ph: 714-962-6828

Attn: Juan Ahumada

CODES AND LOADS:

- 2016 CALIFORNIA BUILDING CODE
- ADDITIONAL 5 POUND COLLATERAL LOAD ADDED TO ROOF FRAMING
- WIND SPEED: 135 MPH
- WIND EXPOSURE “C”
- LIVE LOAD: 20 PSF NON REDUCABLE
- Ss: 1.525 / S1: .653
- OCCUPANCY CLASSIFICATION III – HIGH HAZARD
- ROOF SNOW LOAD 5.5 PSF

EQ BASIN CANOPY STAR CANOPY

- Width: TOTAL WIDTH WITH OVERHANGS 16’-8”
  - 12’ CENTER TO CENTER OF COLUMN.
- Length: TOTAL LENGTH WITH OVERHANGS 24’-8”
  - 20’ CENTER TO CENTER OF COLUMNS.
- HEIGHT: 10’ AT LOW SIDE ROOF LINE/ 11’-4 11/16” HIGH SIDE ROOF LINE
  - 1:12 PITCH.

FRAMING:

- COLUMNS ARE STRAIGHT
- MAIN FRAMES TO BE GALVANIZED
- SECONDARY TO BE PRE-GALVANIZED
- X-ROD BRACING IN ROOF
- COLUMNS TO BE FIXED WITH NO WALL BRACING.
- ALL WALLS OPEN TO REMAIN OPEN
- SUPPORT FOR THREE (3) 1,000 POUND POINT LOADS LOCATED IN THE CENTER OF THE CANOPY.

COVERING:

- 24 GAUGE DOUBE-LOK (SINGLE SKIN STANDING SEAM)
  - KYNAR FINISH
  - EXACT COLOR TO BE CHOSEN BY OWNER FROM MANUFACTURERS STANDARD COLOR CHART
- HIGH SIDE AND LOW SIDE STANDARD METAL BUILDING EAVE TRIM.
  - KYNAR FINISH
  - EXACT COLOR TO BE CHOSEN BY OWNER FROM MANUFACTURERS STANDARD COLOR CHART.

GENERAL:

- ALL NECESSARY TAX AND FREIGHT
- ALL NECESSARY PLANS AND CALCULATIONS STAMPED BY CALIFORNIA LICENSED ENGINEER
- ALL NECESSARY LABOR AND EQUIPMENT TO PERFORM DESCRIBED WORK.
- PRICE IS BASED OFF PREVAILING WAGES AND REGULAR BUSINESS HOURS.
- PRICE ASSUMED 15' OFF ACCESS ON ALL SIDES OF THE CANOPY.

QUOTE LUMP SUM = $42,500.00

EXCLUSIONS

1. FOUNDATION/CONCRETE	**9. BONDS**	**15.**
2. PROTECTIVE COATING	**10. FIRE SPRINKLERS**	**16.**
3. GUTTERS AND DOWNSPOUTS	**11. Electrical**	**17.**
4. GRADING	**12. Mechanical**	**18. ROOF PENETRATION**
5. Finish Painting of Structural Steel	**13**	**19.**
6. ANCHOR BOLTS	**14.**	20. ANYTHING NOT LISTED.

GRAND TOTAL: $ 42,500 + 10% Escalation = **$ 46,750.00**

Labor - Concrete

Item Number:	CLAR-24
Description:	Labor - Concrete Summary
Item Number:	1
Bid Item:	1
Description:	EQ Basin Changes
Sheet:	EQS 1-5

Labor Item Description		Qty	Unit	Labor & Equipment Total Cost	Material Total Cost	Subcontractor Total Cost	Total Cost Total Cost
Form & Strip Edge Form - Slab		239	SF	$ 3,976	$ 837	$ -	$ 4,813
Form & Strip Walls		272	SF	$ 5,965	$ 953	$ -	$ 6,918
Fab Wall Forms	100%	272	SF	$ 1,965	$ -	$ -	$ 1,965
Place - Slab		27	CY	$ 2,710	$ -	$ -	$ 2,710
Place - Walls		11	CY	$ 763	$ -	$ -	$ 763
Purchase - Slab		30	CY	$ -	$ 4,500	$ -	$ 4,500
Purchase - Walls		12	CY	$ -	$ 1,800	$ -	$ 1,800
Finish - Slab		501	SF	$ 1,249	$ 501	$ -	$ 1,750
Cure - Slab		501	SF	$ 430	$ 50	$ -	$ 480
Cure - Walls		272	SF	$ 143	$ 27	$ -	$ 170
Point & Patch - Walls	100%	272	SF	$ 624	$ 27	$ -	$ 651
Sack & Patch - Walls	100%	272	SF	$ 850	$ 27	$ -	$ 877
				$ -	$ -	$ -	$ -
Install Chamfer		207	LF	$ 324	$ 311	$ -	$ 635
Install Waterstop		4	LF	$ 162	$ 20	$ -	$ 182
Install Wall Penetrations		7	EA	$ 227	$ 105	$ -	$ 332
Install Dowels		39	EA	$ 649	$ 585	$ -	$ 1,234
Install Sealant		8	LF	$ 156	$ 12	$ -	$ 168
Install Expansion Joint		60	SF	$ 162	$ 210	$ -	$ 372
Sandblast 2		81	SF	$ 574	$ -	$ -	$ 574
Install Anchors		16	EA	$ 1,622	$ 160	$ -	$ 1,782
Grout Supports		29	EA	$ 1,538	$ 145	$ -	$ 1,683
Place Grout		7	CY	$ 1,538	$ -	$ -	$ 1,538
Foreman Truck	100%	49.0	HR	$ 1,450	$ -	$ -	$ 1,450
Scissor Lift (% FORM)	100%	2.0	DAY	$ 320	$ -	$ -	$ 320
Reach Lift (% FORM)	100%	2.0	DAY	$ 936	$ -	$ -	$ 936
Crane - 80 Ton (% FORM)	100%	4.0	DAY	$ 5,240	$ -	$ -	$ 5,240
Concrete Pumping	28 Meter Pump	49.0	CY	$ -	$ -	$ 980	$ 980
BI 1 - EQ Basin Changes		**49**	**CY**	**$ 33,573**	**$ 10,270**	**$ 980**	**$ 44,823**