



# City of Beaumont Wastewater Treatment Plant Salt Mitigation Upgrade Project Change Order No. 12

Dec 16, 2019

		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:	\$1,132,168.20	95 5/1/2021
Contract No.:	C18-80	This Change: Amount	\$91,417.26	0
CO Number:	12	Revised Contract:	\$54,535,585.46	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.

Item No.	PCO No.	Description of Changes	Amount	Phase 1 Time Extension (CD*)	Phase 2 / Project Completion Time Extension (CD*)
1	25	DCM-17, CLAR-23, WML COP-026R1 RO-Sulfuric Acid Chemical Piping Material Change	\$1,514.16	0	0
2	29	RFI #094, WML COP-029 Solids Feed Pump TE/TSH Thermocouple Elements	\$2,354.10	0	0
3	30	DCM #16, CLAR-20, WML COP-030 Solids Handling Bldg. Changes	\$87,549.00	0	0
4			\$0.00	0	0
<b>NET CHANGE IN CONTRACT AMOUNT – INCREASE (OR-DECREASE)</b>			<b>\$91,417.26</b>	<b>0</b>	<b>0</b>

\*Calendar Days

The amount of the Contract will be increased/decreased by the amount of Ninety-One Thousand Four Hundred Seventeen Dollars and twenty-six cents (\$91,417.26). 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: Charles J. Janda, Date: 12-16-2019  
MWH Constructors, Senior Resident Engineer

Accepted: [Signature], Date: 12-16-19  
W.M. Lyles Co. Contractor

Approved: \_\_\_\_\_, Date: 12-16-2019  
Albert A. Webb Associates, Program Manager

Approved: \_\_\_\_\_, Date: \_\_\_\_\_  
City of Beaumont, City Manager



Technical Justification:

PCO-25	
Design Adjustment: CLAR-23 / DCM-17 WML COP-026R1	RO Chemical - Sulfuric Acid Piping Material Change

City of Beaumont (Owner) has directed the Engineer to evaluate a potential alternative for currently specified PVDF piping for sulfuric acid service (93 to 96% concentration). As noted in Clarification #12, the sulfuric acid piping at the Tank Farm #1 was specified to be PVDF pipe and inside the MBR building 2" X 1/2" PVDF Proline piping (double containment). Alloy 20 piping was evaluated as an alternative that would potentially offer cost savings compared to PVDF piping and also provide a higher degree of service reliability (PVDF does not perform well if the sulfuric acid is above the design concentration of 96%).

Following the evaluation, it was determined that Alloy 20 piping may be used in lieu of currently specified PVDF piping. In addition, following shall apply:

Design and Scope Changes:

- Alloy 20 piping shall be Sch 40 piping with ID matching the current design.
- Alloy 20 piping shall be butt welded except at locations where it connects to valves and appurtenances. At these locations, connections shall be flanged. All gasket materials shall be compatible for sulfuric acid service (90% to 100% concentration).
- Based on the input from Owner, exposed Sulfuric Acid piping in the MBR building and Tank Farm shall not have double containment and shall be single wall, sch 40, 1/2" ID, Alloy 20 pipe. As noted in Clarification 12.1, buried Sulfuric Acid service piping shall be double contained piping consisting of SCH 80 CPVC containment pipe and 1/2" (ID) Tygon 2375-C tubing.
- Valves and appurtenances (strainers and injection quill) currently shown in the plans shall remain with following changes:
  - o Provide a cost for Alloy 20 valves and appurtenances with flanged connections.
  - o In order to potentially avoid additional costs and long lead times PVDF valves and strainers as currently specified may be acceptable (with flanged connections). Please provide a cost for this alternate option.
- Post field fabrication, piping system shall receive pickle and passivation protection both internal and external.
- Sulfuric Acid chemical pump skid piping shall be changed from CPVC material to PVDF.

Cost Impact:

The contractor's initial quote offered a cost credit of -\$19,969.00 excluding pickling & passivation. Design Engineer review comments required pickling & passivation for both internal and external of piping system, which required additional fittings, labor cost and outside vendor. MWHC evaluated the extra cost proposal by the Contractor.

MWHC recommends a contract cost increase of \$1,514.16 to be executed in a change order for changes to the complete sulfuric acid chemical dosing system; MBR\RO Building deliver piping, Pumping Skid and Sulfuric Acid Storage Tank Piping.

**CITY OF BEAUMONT WWTP SALT MITIGATION UPGRADE PROJECT**

**CHANGE ORDER PROPOSAL (COP) # 026R1  
(By Contractor)**

<b>To (Engineer/CM):</b> MWH Constructors Attention: Charles Reynolds Phone: 702-497-8024 Email: Charles.w.reynolds@mwhconstructors.com	<b>From (Contractor):</b> W.M. Lyles Co. Attention: Juan C. Ahumada Phone: 951-972-2056 Email: jahumada@wmlylesco.com
<b>PCO/DCM No.:</b> DCM no.17	
<b>Subject:</b> RO Chemical – Sulfuric Acid Piping Material Change	
<b>Reference Documents:</b> Clarification no. 17	
<b>DESCRIPTION</b>	
<p>Please review the attached change order proposal associated with the piping changes indicated in clarification no. 17. Below is a summary of these changes.</p> <p>Changing of the above grade sulfuric acid piping material from double contained PVDF to butt-welded alloy 20.</p> <p>In our proposal we are including flanged PVDF diaphragm valves in lieu of ball valves on the sulfuric acid piping. Cut sheets for the diaphragm valves check valve and strainers which we have taken into consideration in our pricing is included in this proposal.</p> <p>Also, included in this proposal is the additional costs associated from H2O Innovations for changing the piping on the sulfuric acid skid to PVDF as indicated in the email from Boris Petkovic dated 11/08/19.</p> <p>This proposal is valid for 30 days.</p>	
<b>COST ESTIMATE</b>	
Total additional cost of \$1,514.16, see attached breakdown.	
<b>SCHEDULE IMPACT</b>	
None	

<b>Received by MWH Constructors (Date):</b>	
<b>RESPONSE</b>	
<b>Response By:</b>	<b>Date:</b>

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: 2-Oct-19

Reference #: Clarification No. 17 r1

Attention: Charles W. Reynolds

JOB LOCATION: City of Beaumont WWTP Slat Mitigation Upgrade Project

DESCRIPTION: RO Chemical - Sulfuric Acid Piping Material Change

Item:		Unit	Total MH	Total MH Cost	Eq. Cost	Material	Subcont.	Total Cost
1	Pipe Installation	LS	-16	\$ (1,234.40)	\$ (515.52)	\$ (11,281.23)	\$ 15,700.00	\$ 2,668.84
		LS	0	\$ -	\$ -	\$ -	\$ -	\$ -
Total Costs			-16	\$ (1,234.40)	\$ (515.52)	\$ (11,281.23)	\$ 15,700.00	\$ 2,668.84

Subtotal		\$	2,668.84
Mark-up - Labor	15%	\$	(185.16)
Mark-up - Equipment	15%	\$	(77.33)
Mark-up - Materials	15%	\$	(1,692.19)
Mark-up - Subcontractor	5%	\$	785.00
Bond	1.0%	\$	14.99
<b>Total This Change Order</b>		<b>\$</b>	<b>1,514.16</b>

Comments:



Location	Size	Description	Qty	Unit	Unit Price	Total
Tank Fill	2"	Flanged Female Camlock fitting (316SS)	2	EA	\$ 305.21	\$ 610.42
Tank Fill	2"	Alloy 20 Weld Neck Flange	8	EA	\$ 210.06	\$ 1,680.45
Tank Fill	2"	Alloy 20 Butt Weld 90°	3	EA	\$ 106.39	\$ 319.18
Tank Fill	2"	Alloy 20 Pipe	16	LF	\$ 60.70	\$ 971.17
Tank OF	2"	Alloy 20 Weld Neck Flange	1	EA	\$ 86.14	\$ 86.14
Tank OF	2"	Alloy 20 Butt Weld 90°	1	EA	\$ 106.39	\$ 106.39
Tank OF	2"	Alloy 20 Pipe	8	LF	\$ 60.70	\$ 485.58
Tank Outlet	2"	Alloy 20 Weld Neck Flange	4	EA	\$ 210.06	\$ 840.22
Tank Outlet	2"	Alloy 20 Butt Weld 90°	1	EA	\$ 106.39	\$ 106.39
Tank Outlet	2"	Alloy 20 Butt Weld 45°	1	EA	\$ 86.14	\$ 86.14
Tank Outlet	2"	Alloy 20 Butt Weld Tee	1	EA	\$ 214.15	\$ 214.15
Tank Outlet	2"x1/2"	Alloy 20 Butt Reducer	1	EA	\$ 115.94	\$ 115.94
Tank Outlet	2 1/2"	316SS Blind Flange w/1" hole	1	EA	\$ 88.66	\$ 88.66
Tank Outlet	1/2"	Alloy 20 Plain End x Threaded Nipple	1	EA	\$ 47.74	\$ 47.74
Tank Outlet	1/2"	Alloy 20 Threaded Coupling	1	EA	\$ 41.46	\$ 41.46
Tank Outlet	1/2"	PVDF Male NPT x Tube Adapter	1	EA	\$ 4.77	\$ 4.77
Tank Outlet	2 1/2"	CPVC Vanstone Flange	1	EA	\$ 17.88	\$ 17.88
Skid Feed	2"	CPVC Vanstone Flange	1	EA	\$ 8.63	\$ 8.63
Skid Feed	2"	316SS Blind Flange w/1" hole	1	EA	\$ 75.02	\$ 75.02
Skid Feed	1/2"	Alloy 20 Plain End x Threaded Nipple	1	EA	\$ 47.74	\$ 47.74
Skid Feed	1/2"	Alloy 20 Threaded Coupling	1	EA	\$ 41.46	\$ 41.46
Skid Feed	1/2"	PVDF Male NPT x Tube Adapter	1	EA	\$ 4.77	\$ 4.77
Skid Feed	1/2"	Alloy 20 Weld Neck Flange	1	EA	\$ 54.56	\$ 54.56
Skid Feed	1/2"	Alloy 20 Butt Weld 90°	4	EA	\$ 46.04	\$ 184.14
Skid Feed	1/2"	Alloy 20 Pipe	5	LF	\$ 18.68	\$ 93.42
Skid Discharge	1/2"	Alloy 20 Weld Neck Flange	4	EA	\$ 54.56	\$ 218.24
Skid Discharge	1/2"	Alloy 20 Pipe	140	LF	\$ 18.68	\$ 2,615.69
Skid Discharge	1/2"	Alloy 20 Butt Weld 90°	23	EA	\$ 46.04	\$ 1,058.81
Skid Discharge	1/2"	Alloy 20 Butt Weld Tee	1	EA	\$ 119.62	\$ 119.62
Additional	1/2"	Alloy 20 Weld Neck Flange	16	EA	\$ 54.56	\$ 872.96
Additional	1/2"	316SS BNG w/Viton Gaskets	16	EA	\$ 12.25	\$ 196.00
Misc	2 1/2"	316SS BNG w/Viton Gaskets	1	EA	\$ 28.60	\$ 28.60
Misc	2"	316SS BNG w/Viton Gaskets	5	EA	\$ 24.50	\$ 122.50
Misc	1/2"	316SS BNG w/Viton Gaskets	14	EA	\$ 12.25	\$ 171.50
Valves	1/2"	Flanged PVDF Diaphragm Valve	2	EA	\$ 233.51	\$ 467.02
Valves	2"	Flanged PVDF Diaphragm Valve	3	EA	\$ 725.58	\$ 2,176.75
Valves	2"	Flanged PVDF Check Valve	1	EA	\$1,047.01	\$ 1,047.01
Valves	2"	PVDF Strainer	2	EA	\$2,101.52	\$ 4,203.04
Consumable		Welding Rod	1	LS	\$ 300.00	\$ 300.00
Consumable		Welding Gas	1	LS	\$ 200.00	\$ 200.00

Total \$20,130.16



WM Lyles (Temecula, CA)

November 18, 2019

Quote Number: 2519614

PREPARED FOR:

Mike Bonser  
WM Lyles  
42142 Roick Dr  
Temecula, CA 92590  
951.757.2330

Owner: City of Beaumont Wastewater Treatment Plant

SHIP TO:

**ATTN: Field Department Services**  
**12201 Pangborn Ave**  
**Downey, CA 90241**  
\*\*\*Please reference your quote  
number on your PO.\*\*\*  
**Thank you**

Turnaround: 5-7 Days	Quote valid for 90 days	Payment Terms: Net 30
Prepared By: Carlos Huizar	Direct Phone: 562-658-9803	Email: <a href="mailto:chuizar@astropak.com">chuizar@astropak.com</a>

Specification: Pickle and Passivate I.D and Gel O.D welds

Line Item	Description	Quantity	Unit Price	Total
1	SS Spool w/ (2) Flanges (6"L x 2"D)	2	LOT	
2	SS Spool w/ (2) 90°s and (2) Flanges (10"L x 2"D)	1	LOT	
3	SS Spool w/ (2) 90°s and (2) Flanges (3'L x 2"D)	1	LOT	
4	SS Spool w/ (1) 90° and (2) Flanges (1'L x 2"D)	1	LOT	
5	SS Spool w/ (1) Flange (5.5'L x 2"D)	1	LOT	
6	SS Spool w/ Tee and (3) Flanges (2'L x 2"D)	1	LOT	
7	SS Spool w/ (1) 45°, (1) 90° & (2) Flanges	1	LOT	
8	SS Spool w/ Tee and (3) Flanges (9'L x 1/2"D)	1	LOT	
9	SS Spool w/ (2) 90°s and (2) Flanges (14'L x 1/2"D)	1	LOT	
10	SS Spool w/ Tee and (3) Flanges (14'L x 1/2"D)	1	LOT	
11	SS Spool w/ (2) 90°s and (2) Flanges (10'L x 1/2"D)	11	LOT	
12	SS Spool w/ (1) 90° and (2) Flanges (12'L x 1/2"D)	1	LOT	
13	Pick up and Delivery	1	LOT	\$ 5,578.00
<b>GRAND TOTAL:</b>				<b>\$ 5,578.00</b>

12201 Pangborne Ave  
Downey, CA 90241

P: 888.ASTRO.PAK | [info@astropak.com](mailto:info@astropak.com)

OFFICES IN: California | Indiana | Massachusetts | New Jersey | North Carolina | Puerto Rico | Kansas | Florida





1048 La Mirada Court  
 Vista, CA 92081  
 (760) 598-2206

DATE: 8-Nov-19

Quote No : **CO-007rev1**

**Quote**

**Client :** Administrator, City of Beaumont  
 Client PO# : \_\_\_\_\_  
 Contact : Amer Jakher  
 Project MR#: \_\_\_\_\_  
 City : Beaumont, CA  
 Country : USA  
 Telephone : 951 769 8520

**Project Information:**  
 Project Name: City of Beaumont RO System  
 Project Number: U18865  
 Location: Beaumont, CA  
 Client : City of Beaumont  
 Contact : [borisp@aguaeng.com](mailto:borisp@aguaeng.com)

Quantity	Unit	Description	Unit price	Amount
		Chemical Dosing Skids, each with 2 on-line redundant dosing pumps, piping, valves, instruments, frame, PLC and HMI programming - One (1) ammonia sulfate skid and one (1) sulfuric acid skid (parts and labor).	\$ 37,926.00	\$ 37,926.00
<div style="border: 2px dashed red; border-radius: 15px; padding: 10px; width: fit-content; margin: 0 auto;"> <p>The total in this updated change order reflects an additional \$9,146 to the original change order amount (\$28,780) to change the valves, fittings, piping and materials on the sulfuric skid to PVDF/PFA/Viton for suitability for 93%-98% sulfuric acid.</p> </div>				
<p>At this time, H2O does not feel that this change will cause a delay in the construction of the project and are therefore, not requesting an extension to the Contract Time. However, H2O reserves the right to review the impact of this change along with all other changes on the Contract Time at a future date.</p>				

Total without tax	\$ 37,926.00
Admin fee	\$ -
<b>TOTAL</b>	<b>\$ 37,926.00</b>

\*Please note that taxes are not included and will be added as applicable

**Payment**  
 - As per existing contract  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Prepared by**  
 \_\_\_\_\_  
 Dan Dragland  
 \_\_\_\_\_  
 11/8/2019  
 \_\_\_\_\_  
 Date Signature

**Authorized by**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Date Signature

**Notes**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## QUOTATION



Billing Inquiries: (951) 340-4444

Sell To:  
 W M Lyles Company           J  
 P O Box 4377  
 Attn: Karen Higham  
  
 Fresno, CA 93744

Page: 1 of 2  
**Bid Number:** 6680282  
**Quote Date:** 10/15/2019  
**Entered By:** Francisco Alvarado  
**Description:** FA1-CHANGE ORDER-MICHEAL BOSNER

Ship To:  
 W M Lyles Company           J  
 14903 River Road  
  
 Corona, CA 92880

**Account Number:** 079562  
**Contact Name:**  
**Contact Phone:** (951) 973-7393

Note: The following does not include Shipping & Handling, Tax, or other applicable charges.

Product #	Description/Notes	Uom	Qty	Price	Total
/ML302585426	2" ALLOY 20 WELD NECK FLANGE 150# STD TEXAS	EA	13	210.0560	2,730.73
/ML302585427	2" ALLOY 20 BW 90 TEXAS	EA	5	106.3920	531.96
/ML302585429	2" SMLS S40 ALLOY 20 PIPE TEXAS	FT	40	60.6980	2,427.92
/ML302585430	2" ALLOY 20 BW 45 TEXAS	EA	1	86.1355	86.14
/ML302585687	2" ALLOW 20 BW TEE TEXAS	EA	1	214.1480	214.15
/ML302585697	2" X 1/2" ALLOY 20 BW REDUCER TEXAS	EA	1	115.9400	115.94
/ML302585700	2-1/2" 316SS BLIND FLANGE WITH 1" IPS HOLE IN THE CENTER	EA	1	88.6600	88.66
/ML302585701	1/2"X6" ALLOY 20 NIPPLE TOE SCH 40	EA	2	47.7400	95.48
/ML302585703	1/2" 3M ALLOY 20 THR COUPLING TX	EA	2	41.4645	82.93
/ML302585716	2" 316SS BLIND FLANGE W/ 1" IPS HOLE IN THE CENTER	EA	1	75.0200	75.02
/ML302585719	1/2" ALLOY 20 WELDNECK FLANGE 150LB STD TEXAS	EA	5	54.5600	272.80
/ML302585725	1/2" ALLOY 20 BW 90 TEXAS	EA	27	46.0350	1,242.95
/ML302585736	1/2" ALLOY 20 PIPE CUT AT 5'	FT	5	18.6835	93.42
/ML302585737	1/2" ALLOY 20 PIPE SRL	FT	140	18.6835	2,615.69
/ML302585738	1/2" ALLOY 20 BW TEE TX	EA	1	119.6195	119.62
	PVDF DIAPHRAGM VALVES				
070.158584	1/2 PVDF/PPG FLG DIA VLV TEF	EA	1	233.5120	233.51
070.158589	2 PVDF/PPG FLG DIA VLV TEF	EA	1	725.5840	725.58
5117.020	PVDF/VIT B CK VLV 2" FLG ASAHI SUGGESTED GASKETS	EA	1	1,047.0064	1,047.01
3862.005	TEF AV GSK 1/2"	EA	1	17.0632	17.06
3862.020	TEF AV GSK 2"	EA	1	26.5408	26.54
	Y STRAINER				
5329.620	PVDF LINE STRAINER 2" FLG	EA	1	2,101.5200	2,101.52

## QUOTATION



Billing Inquiries: (951) 340-4444

Sell To:  
 W M Lyles Company           J  
 P O Box 4377  
 Attn: Karen Higham  
  
 Fresno, CA 93744

Page: 2 of 2  
**Bid Number:** 6680282  
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**Contact Name:**  
**Contact Phone:** (951) 973-7393

Ship To:  
 W M Lyles Company           J  
 14903 River Road  
  
 Corona, CA 92880

Note: The following does not include Shipping & Handling, Tax, or other applicable charges.

Product #	Description/Notes	Uom	Qty	Price	Total
200.243303	2"S/STEEL T316 MALE KAMLOK X FLANGE	EA	1	212.8550	212.86
1300D520	Q-D GSKT 2" VIT	EA	1	10.4020	10.40
0703.197	PVDF HOSE ADPT 1/2"MT X 3/4"H	EA	2	3.4485	6.90
0930.027	O-CLIP 1" 304SS	EA	2	1.3230	2.65
3655G020	CPVC VAN STONE FLG N80 2" SLOANE	EA	1	8.6292	8.63
3655G025	CPVC VAN STONE FLG N80 2.5" SLOA	EA	1	17.8767	17.88
	---- Package Subtotal:           15,203.95				

**Subtotal:**                   15,203.95

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



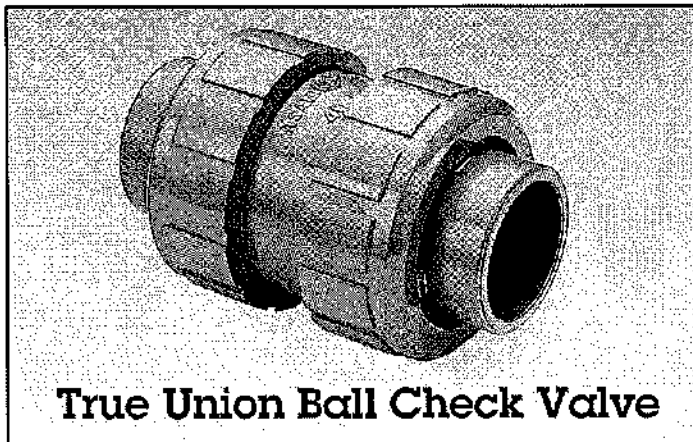
JOB ADDRESS:  
 WP-WESTERN PACIFIC  
 13326 ELLIOT AVE  
 CHINO CA 91710

# Quote

Date  
 10/16/2019

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

Quote #	Beaumont	Rep	SP	FOB	Chino Ca.
Description	Qty	U/M	Cost	Total	
1/2" 150# FF 1/8" VITON GASKETS	5	ea	5.00	25.00T	
2-1/2" 150# FF 1/8" VITON GASKETS	1	ea	18.00	18.00T	
2" 150# FF 1/8" VITON GASKETS	14	ea	14.00	196.00T	
1/2" 150# BOLT SET 316 STAINLESS STEEL	5	ea	7.25	36.25T	
2" 150# BOLT SET 316 STAINLESS STEEL	14	ea	10.50	147.00T	
2 1/2" 150# BOLT SET 316 STAINLESS STEEL	1	ea	10.60	10.60T	
SanBerdo-new7.75			7.75%	33.55	
			<b>Total</b>	\$466.40	



**True Union Ball Check Valve**

**Specifications**

**Sizes:** True Union: 1/2" - 2"  
Single Union: 3" - 4"

**Models:** Socket, Threaded, Flanged (ANSI), Butt End

**Bodies:** PVC, CPVC, PP and PVDF

**Seats:** EPDM, FKM, PTFE

**Seals:** EPDM, FKM, PTFE

**Option:** Foot Valve

**Sizes 1/2" - 4" PVC/EPDM/FKM Models  
NSF-61 Certified**

**Standard Features (Sizes 1/2" - 2")**

- Uniseat/seal of EPDM or FKM
- Ball is the only moving part. It unseats to permit flow in one direction but seals against seat to prevent back flow
- May be used vertically or horizontally
- Minimum shut-off of 5psi
- All sizes rated for full vacuum service
- Solid thermoplastic ball

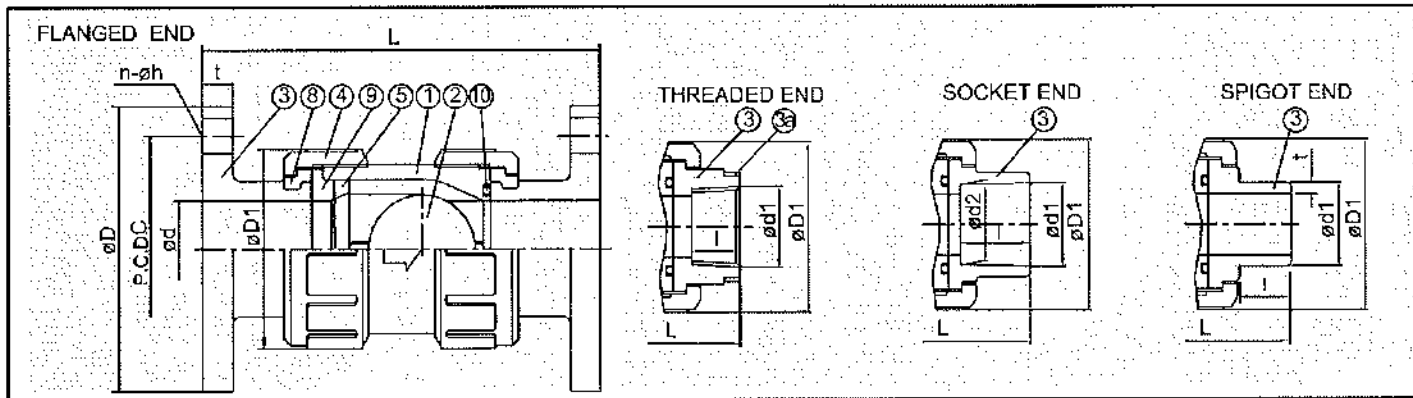
**Options:**

- PTFE coated FKM uniseat/seal
- Spring-loaded ball to assist ball in seating faster

**Parts List – True Union (Sizes 1/2" - 2")**

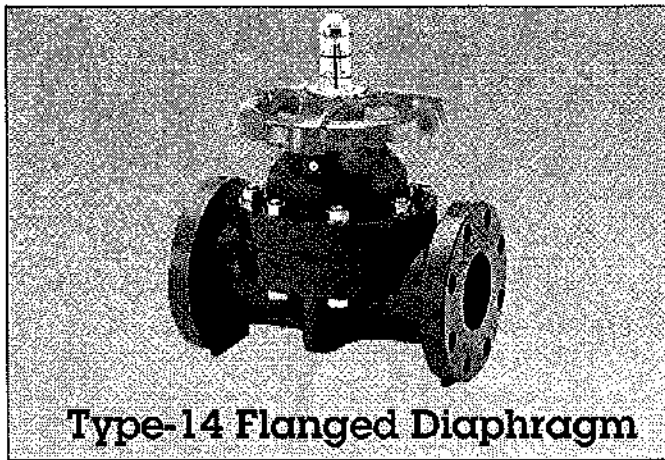
PARTS			
NO.	DESCRIPTION	PCS.	MATERIAL
1	Body	1	<del>PVC, CPVC, PP, PVDF</del>
2	Ball	1	<del>PVC, CPVC, PP, PVDF</del>
3	End Connector	2	<del>PVC, CPVC, PP, PVDF</del>
4	Union Nut	2	<del>PVC, CPVC, PP, PVDF</del>
5	Stop Ring (A)	1	<del>PVC, CPVC, PP, PVDF</del>
8	Stop Ring (B)*	1	PVDF
9	Seat	1	<del>EPDM, FKM, PTFE</del>
10	O-Ring	1	<del>EPDM, FKM, PTFE</del>
3a	Ring**	1	Stainless Steel 304

\* Used for flanged end.  
\*\* Used for CPVC body, threaded end; 1/2" - 1".



**Dimensions (Sizes 1/2" - 2") (in.)**

NOMINAL SIZE	FLANGED							THREADED							SOCKET							SPIGOT (BUTT END)										
	ANSI CLASS 150														PVC, CPVC			PP, PVDF (DIN)				PP, PVDF (IPS)				PVC, PVDF						
															ASTM SCH 80			DIN 16962								DIN 3442			PP		PVDF	
	D	C	n	h	L	t		d1	L	L	d	D1	d1	øD	L	d1	øD2	L	d1	øD1	L	d1	L	L	L	L	L	L	L	L		
1/2	15	3.50	2.38	4	0.62	3.12	0.17	1/2 - 14NPT	0.59	3.39	0.59	1.99	0.948	0.836	0.858	3.43	0.768	0.765	0.87	3.19	0.83	0.87	3.31	0.787	0.728	0.068	0.075	4.0				
3/4	20	3.88	2.75	4	0.62	3.10	0.55	3/4 - 14NPT	0.67	4.08	0.79	2.36	1.058	1.040	0.718	3.85	0.985	0.957	0.63	3.70	1.03	1.00	4.43	0.984	0.866	0.106	0.075	4.3				
1	25	4.26	3.12	4	0.62	3.50	0.55	1 - 11-1/2NPT	0.79	4.45	0.98	2.76	1.325	1.310	0.875	4.87	1.240	1.202	0.71	3.50	1.30	1.13	4.35	1.260	0.866	0.118	0.064	4.7				
1 1/4	32	4.84	3.50	4	0.62	3.50	0.55	1 1/4 - 11-1/2NPT	0.87	5.00	1.27	3.78	1.670	1.655	0.938	4.92	-	-	-	-	1.30	1.13	4.35	1.260	0.866	0.118	0.064	4.7				
1 1/2	40	5.00	3.88	4	0.62	3.50	0.55	1 1/2 - 11-1/2NPT	0.95	5.84	1.57	3.78	1.912	1.894	1.094	5.94	1.947	1.937	0.93	5.82	1.89	1.57	5.57	1.868	0.866	0.121	0.118	5.7				
2	50	6.00	4.75	4	0.75	4.43	0.63	2 - 9NPT	1.10	8.97	2.01	4.17	2.367	2.289	1.156	8.77	2.461	2.445	1.06	6.69	2.36	1.50	6.48	2.480	1.417	0.228	0.118	8.5				



**Type-14 Flanged Diaphragm**

**Standard Features (Sizes 1/2" - 2")**

- Flanged (ANSI) face-to-face dimensions are equivalent to most commonly used metallic valves
- Rugged body and bonnet are of solid thermoplastic for maximum corrosion resistance
- Uniquely designed body and bonnet together with diaphragms of new sealing designs by computer dynamic analysis for superior sealing
- Weir design for excellent throttling
- Bubble-tight sealing, even in applications such as slurries or suspended particles
- Bonnet seals to protect internal from corrosive environments
- Built-in travel stop to prevent overtightening or compressive strain on diaphragm
- Integrally molded bottom stand for simple yet firm panel mounting
- Indicator at the top for indication of valve position and prevention of overtightening
- PVDF gas barrier, which protects EPDM backing from gas permeation, is standard for all valves with PTFE diaphragm
- Low profile
- Bayonet structure to connect compressor and diaphragm - Easy diaphragm replacement

**Options**

- 2" square nut
- Stem extensions (single and two-piece design)
- Locking device for tamper proofing
- Chainwheel operator

**Specifications**

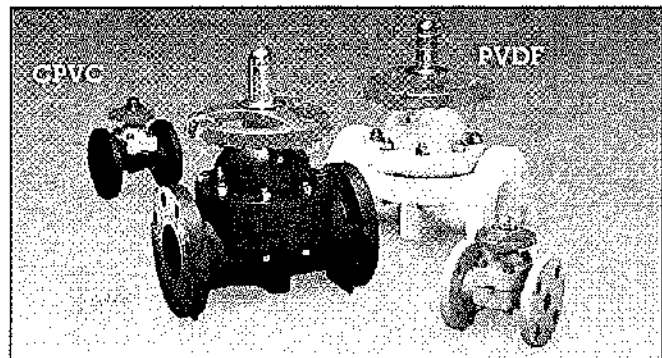
**Sizes:** 1/2" - 4"  
**Body Materials:** PVC, CPVC, PP and PVDF  
**Bonnet Materials:** PVC, PP, PPG and PVDF  
**Diaphragms:** EPDM and 3-Layer EPDM/PVDF/PTFE  
 Also available in Nitrile and FKM

**End Connection:** Flanged  
**Operator:** Handwheel

**Parts Type-14 Flanged (Sizes 1/2" - 2")**

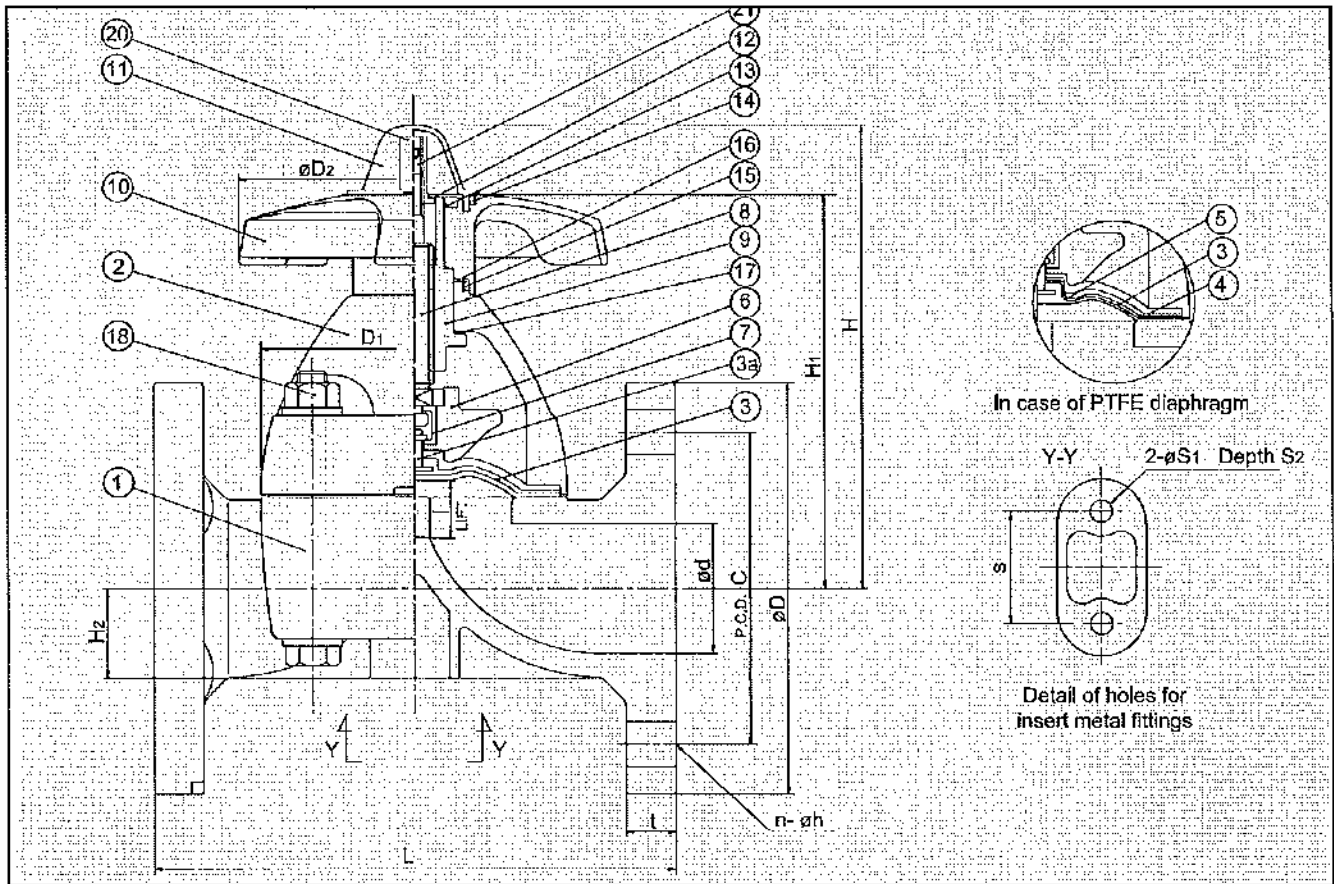
PARTS			
NO.	DESCRIPTION	PCS.	MATERIAL
1	Body	1	<del>PVC, CPVC, PP, PVDF</del>
2	Bonnet	1	<del>PVC, PPG, PP, PVDF</del>
3	Diaphragm	1	<del>EPDM, PTFE, FKM</del>
3a	Diaphragm Metal Insert	1	Stainless Steel 304
4	Cushion*	1	EPDM
5	PVDF Gas Barrier*	1	PVDF
6	Compressor	1	PVDF
7	Joint	1	Stainless Steel 304
8	Stem	1	Copper Alloy
9	Sleeve	1	Copper Alloy
10	Hand Wheel	1	PP
11	Gauge Cover	1	PC
12	Name Plate	1	PVC
13	Retaining Ring C Type	1	Stainless Steel 304
14	O-Ring (A)	1	EPDM
15	C-Ring (B)	1	EPDM
16	Thrust Ring (A)	1	UHMWPE
17	Thrust Ring (B)	1	UHMWPE
18	Bolt, Nut, Washer	4 Sets	Stainless Steel 304
20	Stopper (A)	1	Copper Alloy
21	Screw	1	Stainless Steel 304

\* Used on PTFE diaphragm.



# Type-14 Flanged

# Diaphragm Valves



Dimensions Type-14 Flanged (Sizes 1/2" - 2") (in.)

NOMINAL SIZE		ANSI CLASS 150															
INCHES	mm	d	C	D	n	h	D1	D2	L	L1	L2	H	H1	H2	S	S1	S2
1/2	15	0.63	2.38	3.50	4	0.62	2.13 x 2.60	3.46	0.39	4.25	0.43	4.09	3.39	0.48	0.98	0.28	0.51
3/4	20	0.79	2.75	3.88	4	0.62	2.13 x 2.60	3.46	0.39	5.88	0.51	4.17	3.46	0.57	0.98	0.28	0.51
1	25	0.98	3.12	4.26	4	0.62	2.64 x 3.15	3.46	0.47	5.88	0.59	4.37	3.66	0.73	0.98	0.28	0.51
1-1/4	32	1.26	3.50	4.62	4	0.62	2.64 x 3.15	3.46	0.47	6.38	0.63	4.57	3.82	0.89	0.98	0.28	0.51
1-1/2	40	1.57	3.88	5.00	4	0.62	4.25 x 4.25	6.14	0.63	6.94	0.69	6.97	5.67	1.08	1.27	0.35	0.59
2	50	2.05	4.75	6.00	4	0.75	4.84 x 4.84	6.14	0.88	7.94	0.79	7.52	6.22	1.42	1.77	0.35	0.59

Pressure vs. Temperature psi, water, non-shock

Cv Values /Wt.

NOMINAL SIZE	PVC				CPVC				PP				PVDF				NOMINAL SIZE		Cv	WT. FLG. (lbs)
	ALL DIAPHRAGMS		ALL DIAPHRAGMS		ALL DIAPHRAGMS		ALL DIAPHRAGMS		PTFE DIAPHRAGM											
	INCHES	mm	30° F	106° F	38° F	108° F	141° F	178° F	5° F	108° F	141° F	178° F	40° F	141° F	178° F	211° F	INCHES	mm		
1/2	15	150	100	150	115	85	40	150	115	85	70	150	120	95	70	1/2	15	4.8	1.50	
3/4	20	150	100	150	115	85	40	150	115	85	70	150	120	95	70	3/4	20	5.3	1.60	
1	25	150	100	150	115	85	40	150	115	85	70	150	120	95	70	1	25	8.5	2.40	
1-1/4	32	150	100	150	115	85	40	150	115	85	70	150	120	95	70	1-1/4	32	11	3.10	
1-1/2	40	150	100	150	115	85	40	150	115	85	70	150	120	95	70	1-1/2	40	26	6.20	
2	50	150	100	150	115	85	40	150	115	85	70	150	120	95	70	2	50	43	8.00	

# Type 14 Flanged

# Diaphragm Valves

## Parts Type 14 Flanged (2-1/2" – 4")

PARTS			
NO.	DESCRIPTION	PCS.	MATERIAL
1	Body	1	PVC, CPVC, PP, PVDF
2	Bonnet	1	PVC, PPG, PP, PVDF
3	Diaphragm	1	EPDM, PTFE, Others
3a	Diaphragm Metal Insert	1	Stainless Steel 304
4	Cushion*	1	EPDM
5	PVDF Gas Barrier*	1	PVDF
6	Compressor	1	PVDF
8	Stem	1	Copper Alloy
8a	Indicating Rod	1	Stainless Steel 304
9	Sleeve	1	Copper Alloy
10	Hand Wheel	1	PP
11	Gauge Cover	1	PC
12	Name Plate	1	PVC
13	Retaining Ring (C Type)	1	Stainless Steel 304
14	O-Ring (A)	1	EPDM
15	O-Ring (B)	1	EPDM
16	Thrust Ring (A)	1	UHMWPE
17	Thrust Ring (B)	1	UHMWPE
18	Bolt, Nut, Washer	4 Sets	Stainless Steel 304
20	Stopper (A)	1	Copper Alloy
88	Grease Nipple	1	Copper Alloy
89	Compressor Pin	1	Stainless Steel 304
90	Stud Bolt, Nut	4 Sets	Stainless Steel 304, Others
94	Metal of Compressor	1	Stainless Steel 304 <sup>1</sup>
1a	Inserted Nut	4	Copper Alloy <sup>2</sup>

\* Used on PTFE diaphragm

<sup>1</sup> Used for PVDF body

<sup>2</sup> Used for PVC, CPVC, PP bodies

## Troubleshooting

### What if fluid leaks when valve is fully closed?

1. Travel stop not set correctly. Adjust it per the Asahi Operation and Maintenance manual.
2. Solids built up inside valve. Clean inside, including weir and diaphragm.
3. Diaphragm and/or weir are worn or damaged. Change the part(s).

### What if valve cannot be fully opened?

1. Diaphragm is not properly engaged with compressor. Check engagement per Operation and Maintenance manual.

### What if fluid leaks to atmosphere?

1. Bonnet bolts not properly torqued. Re-torque according to Operation and Maintenance manual.
2. Line pressure exceeds maximum recommended line pressure. Check or reduce system line pressure.
3. Diaphragm has ruptured or has been chemically attacked. Replace diaphragm.

## Sample Specification

All Type-14 flanged diaphragm valves shall be of solid thermoplastic construction for body and bonnet with molded flanged ends. The valves shall come standard with a position indicator, travel stop (to prevent overtightening) and bonnet O-ring sealing arrangement. The valve shall be weir type with a square bonnet body sealing design and bayonet connection diaphragm (1/2"- 2") or round bonnet body sealing design (2-1/2"- 4"). All PTFE diaphragms shall be supplied with a PVDF gas barrier between the layers of EPDM and PTFE for aggressive chemical service. The face-to-face dimensions shall conform to Type G. PVC conforming to ASTM D1784 Cell Classification 12454-A, CPVC conforming to ASTM D1784 Cell Classification 23567A, PP conforming to ASTM D4101 Cell Classification PP0210B67272, PPG (bonnet only) conforming to ASTM D4101 Cell Classification PP0110M20A21130, and PVDF conforming to ASTM D3222 Cell Classification Type II. PVC, CPVC, PP and PVDF shall be rated to 150psi for elastomeric and PTFE diaphragms at 70° F., as manufactured by Asahi/America, Inc.

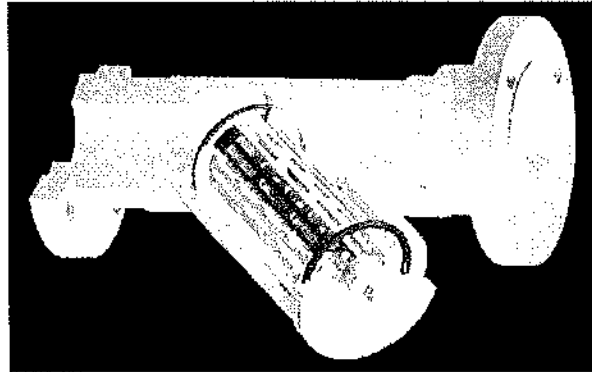




FLUOR-O-FLO®  
**PVDF & PTFE Y-Strainers**

**Removable PTFE Strainer Cartridge with Fluoropolymer Screen**

**Flanged • NPT • Tri-Clamp • Socket Weld**



Micromold's Y-Strainers remove particles or debris from process lines handling extremely corrosive or high-purity fluids. To ensure maximum corrosion resistance and purity, all wetted materials are fluoroplastics.

PVDF Y-Strainers are available in 1/8" through 4" and PTFE Y-Strainers are available in 1/8" through 3" pipe sizes.

Easily cleaned, removable PTFE cartridges securely support ETFE screens in standard 11, 17, 30 or 51 mesh sizes. Standard PEEK screens available in mesh sizes ranging from 400 to 65 (12 to 155 microns). Other mesh sizes and types available on special order.

Open area ratio of screen to pipe meets or exceeds 2:1 for all sizes when used with a mesh having a minimum 48% open area.

Standard end connections fit NPT threaded, Tri-Clamp, flanged, and socket- or butt-weld (PVDF only) piping systems. We can provide virtually any connection (True-Union, etc.) on special order.

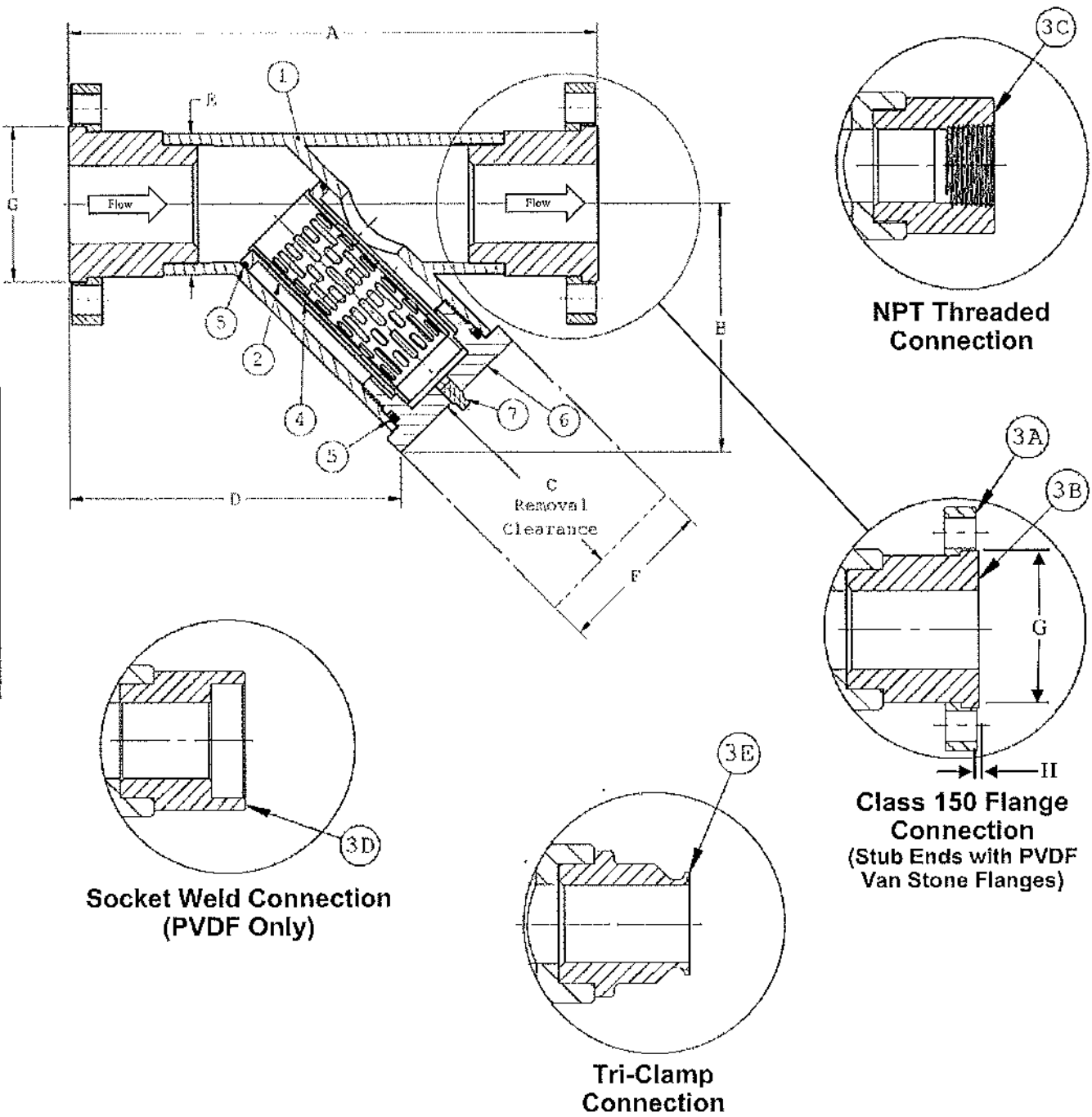
Units may be installed either horizontally or vertically.

Also available:

FLUOR-O-FLO® PVDF & PTFE Y-Strainers

- Sales Bulletin
- Installation and Maintenance Guide
- Strainer Screens Technical Bulletin





**Connection Availability and Size Ranges**

Strainer Material	NPT	Flanged	Socket Weld	Tri-Clamp
PVDF	<del>1/8" - 4"</del>	<del>1/2" - 4"</del>	<del>3/8" - 4"</del>	<del>1/2" - 4"</del>
PTFE	<del>1/8" - 3"</del>	<del>1/2" - 3"</del>	<del>N/A</del>	<del>1/2" - 3"</del>

All flanges are Van Stone type with stub ends (rotatable)



**Dimensions\***

Nominal Pipe Size	A	B	C	D	E (PVDF)	E (PTFE)	F	G	H	PLUG NPT
<del>1/8</del>	<del>8.3</del>	<del>2.8</del>	<del>2.9</del>	<del>4.7</del>	<del>1.32</del>	<del>1.50</del>	<del>1.60</del>	<del>NA</del>	<del>NA</del>	<del>1/8</del>
<del>1/4</del>	<del>8.3</del>	<del>2.8</del>	<del>2.9</del>	<del>4.7</del>	<del>1.32</del>	<del>1.50</del>	<del>1.60</del>	<del>NA</del>	<del>NA</del>	<del>1/8</del>
<del>3/8</del>	<del>8.3</del>	<del>2.8</del>	<del>2.9</del>	<del>4.7</del>	<del>1.32</del>	<del>1.50</del>	<del>1.60</del>	<del>NA</del>	<del>NA</del>	<del>1/8</del>
<del>1/2</del>	<del>8.3</del>	<del>2.8</del>	<del>2.9</del>	<del>4.7</del>	<del>1.32</del>	<del>1.50</del>	<del>1.60</del>	<del>1.62</del>	<del>0.065</del>	<del>1/8</del>
<del>3/4</del>	<del>9.9</del>	<del>3.5</del>	<del>3.7</del>	<del>5.5</del>	<del>1.90</del>	<del>2.00</del>	<del>2.20</del>	<del>1.99</del>	<del>0.065</del>	<del>1/8</del>
<del>1</del>	<del>9.9</del>	<del>3.5</del>	<del>3.7</del>	<del>5.5</del>	<del>1.90</del>	<del>2.00</del>	<del>2.20</del>	<del>2.37</del>	<del>0.065</del>	<del>1/8</del>
<del>1-1/4</del>	<del>11.1</del>	<del>5.5</del>	<del>5.8</del>	<del>7.4</del>	<del>2.88</del>	<del>2.88</del>	<del>3.00</del>	<del>2.74</del>	<del>0.065</del>	<del>1/8</del>
<del>1-1/2</del>	<del>11.1</del>	<del>5.5</del>	<del>5.8</del>	<del>7.4</del>	<del>2.88</del>	<del>2.88</del>	<del>3.00</del>	<del>3.12</del>	<del>0.065</del>	<del>1/8</del>
<del>2</del>	<del>12.2</del>	<del>6.3</del>	<del>6.2</del>	<del>7.7</del>	<del>3.50</del>	<del>3.75</del>	<del>3.94</del>	<del>3.87</del>	<del>0.065</del>	<del>1/8</del>
<del>3</del>	<del>14.7</del>	<del>8.9</del>	<del>8.7</del>	<del>9.9</del>	<del>5.00</del>	<del>5.25</del>	<del>5.44</del>	<del>5.12</del>	<del>0.065</del>	<del>1/4</del>
<del>4</del>	<del>17.3</del>	<del>11.5</del>	<del>10.7</del>	<del>11.9</del>	<del>6.63</del>	<del>N/A</del>	<del>7.20</del>	<del>6.62</del>	<del>0.065</del>	<del>1/4</del>

\* All dimensions shown in inches

**Construction**

Item No.	PVDF Y-Strainers	PTFE Y-Strainers
1	PVDF Body	MICROFLON™ PTFE Body
2	PTFE Cartridge	PTFE Cartridge
3A	PVDF Flange (Other materials available)	PVDF Flange (Other materials available)
3B	PVDF Stub End	PTFE Stub End
3C	PVDF NPT Connector	PTFE NPT Connector
3D	PVDF Socket Weld Connector	Not Available
3E	PVDF Tri-Clamp Connector	PTFE Tri-Clamp Connector
4	Fluoropolymer Screen	Fluoropolymer Screen
5	FEP Encapsulated Silicone Rubber O-Ring	FEP Encapsulated Silicone Rubber O-Ring
6	PVDF Knurled Cap	PTFE Knurled Cap
7	PTFE Drain Plug	PTFE Drain Plug

**Engineering Specifications**

FLUOR-O-FLO® Y-Strainers shall be (PVDF or virgin PTFE) construction with (socket weld, NPT threaded, Tri-Clamp, or flanged) end connections. The strainers shall have covers removable without the use of tools to facilitate cleaning, and have an FEP encapsulated silicone rubber o-ring seal. Strainer to have a (1/8" or 1/4") NPT removable drain plug. Strainers to have a minimum 2:1 ratio of open area to the size-corresponding cross-sectional pipe area when used with a mesh screen having a minimum open area of 48%. Strainers shall have a removable PTFE strainer cartridge with FEP encapsulated silicone rubber o-ring seal that is secured to and removable with the cover. Strainer cartridges shall have perforated PTFE inner and outer cartridge components to secure screen mesh. As manufactured by MICROMOLD PRODUCTS, INC.



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## Michael Bonser

---

**From:** Boris Petkovic <boris.petkovic@aquaeng.com>  
**Sent:** Friday, November 8, 2019 8:48 AM  
**To:** Michael Bonser; Dan Dragland  
**Cc:** Blair Kariniemi; Justin Logan; Juan Ahumada  
**Subject:** RE: Beaumont Submittal updates

Dan,  
We are okay for you to proceed in providing an updated cost proposal for the PVDF sulfuric acid skid.  
Thanks.  
Regards,

**Boris Petkovic, PE**  
Project Engineer

AQUA Engineering  
533 W 2600 S Suite 275, Bountiful, UT 84010  
C: 801.386.1502 | D: 801.683.3734  
O: 801.299.1327 | F: 801.299.0153

[aquaeng.com](http://aquaeng.com)

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**From:** Michael Bonser <mbonser@wmlylesco.com>  
**Sent:** Friday, November 8, 2019 9:23 AM  
**To:** Dan Dragland <Dan.Dragland@h2oinnovation.com>; Boris Petkovic <boris.petkovic@aquaeng.com>  
**Cc:** Blair Kariniemi <Blair.Kariniemi@h2oinnovation.com>; Justin Logan <justin.logan@aquaeng.com>; Juan Ahumada <jahumada@wmlylesco.com>  
**Subject:** RE: Beaumont Submittal updates

Dan/Boris,

We would like to formally submit the proposal for the changes to the sulfuric acid system mentioned in the email below. Are we at a point where we can get a formal proposal from H2O? If so, can you please send it over to us.

Thanks,

Michael Bonser | Project Manager  
W. M. LYLES CO. | Southern Division  
42142 Roick Dr. | Temecula, CA 92590  
O 951-973-7393 | C 951-757-2330  
[www.wmlyles.com](http://www.wmlyles.com)

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**From:** Dan Dragland <[Dan.Dragland@h2oinnovation.com](mailto:Dan.Dragland@h2oinnovation.com)>  
**Sent:** Thursday, November 7, 2019 7:49 PM  
**To:** Boris Petkovic <[boris.petkovic@aquaeng.com](mailto:boris.petkovic@aquaeng.com)>; Justin Logan <[justin.logan@aquaeng.com](mailto:justin.logan@aquaeng.com)>; Juan Ahumada

<[jahumada@wmlylesco.com](mailto:jahumada@wmlylesco.com)>; Michael Bonser <[mbonser@wmlylesco.com](mailto:mbonser@wmlylesco.com)>

**Cc:** Blair Kariniemi <[Blair.Kariniemi@h2oinnovation.com](mailto:Blair.Kariniemi@h2oinnovation.com)>

**Subject:** RE: Beaumont Submittal updates

Yes, a protective shield is included on the sulfuric skid.

**Dan Dragland**

Project Manager



Tel.: 760.598.2206 x107

Cell: 760.639.9290

Fax: 760.598.2208

[dan.dragland@h2oinnovation.com](mailto:dan.dragland@h2oinnovation.com)

[www.h2oinnovation.com](http://www.h2oinnovation.com)

1048 La Mirada Court, Vista, CA 92081, United States

---

**From:** Boris Petkovic <[boris.petkovic@aquang.com](mailto:boris.petkovic@aquang.com)>

**Sent:** Thursday, November 7, 2019 4:11 PM

**To:** Dan Dragland <[Dan.Dragland@h2oinnovation.com](mailto:Dan.Dragland@h2oinnovation.com)>; Justin Logan <[justin.logan@aquang.com](mailto:justin.logan@aquang.com)>; Juan Ahumada <[jahumada@wmlylesco.com](mailto:jahumada@wmlylesco.com)>; Michael Bonser <[mbonser@wmlylesco.com](mailto:mbonser@wmlylesco.com)>

**Cc:** Blair Kariniemi <[Blair.Kariniemi@h2oinnovation.com](mailto:Blair.Kariniemi@h2oinnovation.com)>

**Subject:** RE: Beaumont Submittal updates

Thanks Dan.

Does the sulfuric acid skid include the protection cover?

Regards,

**Boris Petkovic, PE**

Project Engineer

AQUA Engineering

533 W 2600 S Suite 275, Bountiful, UT 84010

C: 801.386.1502 | D: 801.683.3734

O: 801.299.1327 | F: 801.299.0153

[aquang.com](http://aquang.com)

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**From:** Dan Dragland <[Dan.Dragland@h2oinnovation.com](mailto:Dan.Dragland@h2oinnovation.com)>

**Sent:** Thursday, November 7, 2019 4:51 PM

**To:** Boris Petkovic <[boris.petkovic@aquang.com](mailto:boris.petkovic@aquang.com)>; Justin Logan <[justin.logan@aquang.com](mailto:justin.logan@aquang.com)>; Juan Ahumada <[jahumada@wmlylesco.com](mailto:jahumada@wmlylesco.com)>; Michael Bonser <[mbonser@wmlylesco.com](mailto:mbonser@wmlylesco.com)>

**Cc:** Blair Kariniemi <[Blair.Kariniemi@h2oinnovation.com](mailto:Blair.Kariniemi@h2oinnovation.com)>

**Subject:** Beaumont Submittal updates

All, here are the updates. We will have an updated P&ID and sulfuric skid drawing very soon.

U18865-C01-0001,08 (P&ID's): In progress.

U18865-C05-0001,05 (Equipment list):

<https://h2oinnovation.fileserverapp.com/files/8d4847c25c72702b69d1d810df1e6e3b.pdf>

U18865-C14-0001,05 (Instrument list):

<https://h2oinnovation.fileserverapp.com/files/a085e2982a5a06e8c51696c3331b2cba.pdf>

U18865-C20-0001,06 (Valve list):

<https://h2oinnovation.fileserverapp.com/files/964ec3913e120f35691990112037a5a4.pdf>

U18865-B01-0803,01 (Ammonium sulfate skid):

<https://h2oinnovation.fileserverapp.com/files/96a448ba9b4324fc9939bbeda1f7568e.pdf>

U18865-B01-0802,01 (Sulfuric acid skid): In progress.

U18865-C06-0014,03 (Chemical metering pumps):

<https://h2oinnovation.fileserverapp.com/files/dd85150fa6f197a9a7594bc483d16b52.pdf>

U18865-C06-0013,01 (Calibration column): Approved, no resubmittal required.

The ammonium sulfate skid is virtually identical to the other chemical skids that were already built and delivered. I will confirm once we update the sulfuric drawing if the sulfuric acid skid anchorage remains the same. I see no reason it would change, but since it would be a different skid, we are running it past the structural engineer.

The sulfuric skid that was quoted assumed a concentration of 78%. The CPVC piping and valve/fitting materials for the quoted sulfuric skid have a "fair" rating for 93%-98% sulfuric. That is not to say "unacceptable," but it would be much safer to use PVDF/PFA/Viton (fluoro) materials.

Changing all the valves, fittings and exposed materials would be a change order as fluoro is much more expensive. The amount would not be insignificant. From our review of the material and the amounts of each (valves, fittings), I can say it would be upwards of \$9000. Would that be acceptable?

Dan

**Dan Dragland**

Project Manager



Tel.: 760.598.2206 x107

Cell: 760.639.9290

Fax: 760.598.2208

[dan.dragland@h2oinnovation.com](mailto:dan.dragland@h2oinnovation.com)

[www.h2oinnovation.com](http://www.h2oinnovation.com)

1048 La Mirada Court, Vista, CA 92081, United States

PCO-029



**City of Beaumont**  
**Water Treatment Plant Salt Mitigation Upgrade Project**  
**Technical Justification:**

PCO-29	
Design Adjustment: RFI-094 WML COP-029	Solids Feed Pump TE/TSH Thermocouple Elements
<p>Engineer response to RFI-094 confirmed that thermocouple temperature elements are required on the motors of the Solids Feed Pumps for monitoring pump flow and motor status. Contract Specification did not require these pump motors to include temperature sensors.</p> <p><u>Design and Scope Changes:</u></p> <ul style="list-style-type: none"><li>• Temperature elements for monitoring the pump stator temperature and are to be tied into plant SCADA as shown on PI-20. These elements and associated controllers should be provided by the pump supplier.</li><li>• Note that the contract documents (PI-20, E-24, CE-08 and CE-19) shows the contractor’s responsibility for connecting these elements to the LCPS and the only change to the work is the inclusion of the temperature elements and controllers from the pump supplier).</li></ul> <p><u>Cost Impact:</u></p> <p>MWHC recommends a contract cost increase of \$2,354.10 to be executed in a change order for changes to the motors of the Solids Feed Pumps.</p>	



**CITY OF BEAUMONT WWTP SALT MITIGATION UPGRADE PROJECT**

**CHANGE ORDER PROPOSAL (COP) # 029  
(By Contractor)**

<b>To (Engineer/CM):</b> MWH Constructors Attention: Charles Reynolds Phone: 702-497-8024 Email: Charles.w.reynolds@mwhconstructors.com	<b>From (Contractor):</b> W.M. Lyles Co. Attention: Juan C. Ahumada Phone: 951-972-2056 Email: jahumada@wmlylesco.com
<b>PCO/DCM No.:</b> RFI #094	
<b>Subject:</b> Solids Feed Pump TE/TSHs	
<b>Reference Documents:</b> RFI #094	
<b>DESCRIPTION</b>	
Please review the attached change order proposal associated with the added TEs and their corresponding TSHs for the solids feed pumps as referenced in RFI #094.  This proposal is valid for 30 days.	
<b>COST ESTIMATE</b>	
Total Cost \$ 2,354.10, see attached breakdown.	
<b>SCHEDULE IMPACT</b>	
None	
<b>Received by MWH Constructors (Date):</b>	

**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: 21-Nov-19

Reference #: RFI #094

Attention: Charles W. Reynolds

JOB LOCATION: City of Beaumont WWTP Slat Mitigation Upgrade Project

DESCRIPTION: Solids Feed Pumps TE/TSHs

Item:	Unit	Total MH	Total MH Cost	Eq. Cost	Material	Subcont.	Total Cost
1 Solids Feed Pumps TE/TSHs	LS	0	\$ -	\$ -	\$ 2,026.78	\$ -	\$ 2,026.78
Total Costs		0	\$ -	\$ -	\$ 2,026.78	\$ -	\$ 2,026.78

Subtotal		\$ 2,026.78
Mark-up - Labor	15%	\$ -
Mark-up - Equipment	15%	\$ -
Mark-up - Materials	15%	\$ 304.02
Mark-up - Subcontractor	5%	\$ -
Bond	1.0%	\$ 23.31
<b>Total This Change Order</b>		<b>\$ 2,354.10</b>

Comments:



**CONTRACTOR'S REQUEST FOR INFORMATION (RFI) #094**

<b>To (Engineer):</b> MWH Constructors Attention: Charles Reynolds Phone: 702-497-8024 Email: Charles.w.reynolds@stantec.com	
<b>From (Contractor):</b> W.M. Lyles Co. Attention: Michael Bonser Phone: 951-757-2330 Email: mbonser@wmlylesco.com	
<b>Subject:</b> Solids Feed Pumps TE/TSHs	
<b>Reference:</b> E-24, PI-20	<b>Specification (Section and Page):</b> 432357
<b>REQUEST</b>	
<b>Information is requested as follows:</b>  P&ID drawing PI-20 shows temperature elements TE-8101, 8102 & 8103 on the solids feed pumps. Each TE has a corresponding TSH in LCP-8101. Drawing E-24 shows a signal coming from a “pump bearing thermocouple” going to a thermocouple controller inside of LCP-8101.  Specification section 432357 does not provide any information on the TEs or corresponding TSHs for the sludge pumps. Please provide a specification or information on these items and clarify the purpose of them.	
<b>Information Requested By (Name):</b> W.M. Lyles Co.	<b>Date:</b> 09/25/2019
<b>Response Requested By (Date):</b> 10/02/2019	
<b>Received by CM (Date):</b>	
<b>RESPONSE</b>	
<b>Response to Information Request:</b>  The temperature elements shown are for monitoring the pump stator temperature and are to be tied into plant SCADA as shown on PI-20. These elements and associated controllers should be provided by the pump supplier. See the attached cutsheets for reference in specifying the equipment.  Note that the contract documents (PI-20, E-24, CE-08 and CE-19) shows the contractor’s responsibility for connecting these elements to the LCPS and the only change to the work is the inclusion of the temperature elements and controllers from the pump supplier.	
<b>Response By (Name):</b> D. Stephens, AQUA Engineering	<b>Date:</b> 10/7/19

Final Distribution:



GMI Quote #03943R4

October 31, 2019

**To: WMLYLES CO**  
**42142 RIOCK DR.**  
**TEMECULA, CA 92590**  
**ATTN: ADAM HICKMAN**  
[ahickman@wmlylesco.com](mailto:ahickman@wmlylesco.com)

**VIA: EMAIL**

**Re: BEAUMONT, CITY OF**  
**SALT MITIGATION PROJ.**

**Bid Date:** 8/1/18 @ 3 PM

Dear Adam,

We are pleased to offer the following for your consideration:

<u>ITEM</u>	<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PRICE</u>
4	432357	<p align="center"><b>PROGRESSING CAVITY PUMPS</b>  <b><u>ADDER FOR RUN DRY PROTECTION</u></b></p> <p><i>Run Dry Protection consists of a temperature prove mounted in the stator and a temperature controller Omron E5CSV-RIT provided loose for customer to mount in their control panel.</i></p> <p>Three (3) units of cast iron construction, 1800 RPM, TEFC Motor, Class F insulation, rated for 250gpm @ 50psi, in line base plate mounted, Start Up and Training Assistance as manufactured by <b><u>NETZSCH</u></b>. <i>Please see the attached manufacturers' scope letter for details.</i></p>	\$1,881.00

Note:

**GENERAL NOTES:**

1. No taxes included in above pricing
2. Pricing valid for thirty (30) days from date of bid.



3. Price is F.O.B. factory with freight to jobsite included. Freight charges cannot be broken out of pricing.
4. Proposal subject to GMI Terms & Conditions attached and/or terms and conditions of individual companies quoted.
5. If this proposal makes reference to certain section numbers in the specifications, these are listed for reference only. We will not be responsible for furnishing all the equipment in these sections, but only that equipment which is specifically listed in our proposal; nor will we furnish any items of equipment which are omitted from the engineer's drawings or specifications unless specifically listed in our proposal.
6. It is the contractor's responsibility to thoroughly review the individual supplier's scope letters to ensure that they are in compliance with the specifications and all addenda. Neither Gierlich-Mitchell, Inc., nor their suppliers will be held responsible for any deficiencies between the manufacturer's proposal and the specifications, including all addenda.

Thank you for giving us the opportunity to quote you on this project. If you have any comments or questions, please feel free to contact our office at (714) 236-6070.

Respectfully yours,  
**GIERLICH-MITCHELL, INC.**

Tim Brekke  
Sales Engineer



## **TERMS AND CONDITIONS OF SALE**

Proposal No.

- 1. ACCEPTANCE.** This proposal is submitted to Purchaser subject to the terms and conditions hereinafter set forth. There are no agreements or representations, verbal or otherwise, outside of this proposal. Upon the acceptance hereof by Purchaser by signing an acceptance copy of this proposal and returning the same to Seller and upon execution of this proposal by an authorized representative of Seller, this proposal shall become a binding contract
- 2. DELIVERIES.** GIERLICH-MITCHELL, Inc. shall not be liable for delays in delivery due to fire, flood, natural causes, labor trouble (including strikes, slowdowns and lockouts), war, Government regulation, riot, civil disorders, interruption of or delay in transportation, power failure, inability to obtain materials and supplies, accidents, acts of God, or any other cause beyond Seller's reasonable control. Please let us know the delivery date required for this equipment. We will process this order using all means possible to insure "on time" delivery. Any information regarding delays in your schedule that will affect our equipment, must be made available to us. In most instances, our factories can delay shipment of equipment within reasonable limits to meet a revised schedule. Job delay information not passed on to us in time for us to reschedule delivery will not be considered sufficient cause to delay payment to us. If shipment is delayed at request of Purchaser or by Governmental actions, payment becomes due when the factory is ready to make shipment.
- 3. PAYMENT.** Terms are 15% upon submittal approval, 85% Net 30 days from date of shipment invoice. Interest charges of 1.5% per month will be added to any past due invoices. Seller may ship on a "when ready" basis and partial invoice that equipment shipped. Partial invoices are bound by the same terms and conditions as those invoices submitted upon complete shipment of equipment.
- 4. BACKCHARGES** not authorized by GIERLICH-MITCHELL, INC. written purchase order will not be honored.
- 5. RETENTIONS** not previously approved in writing by GIERLICH-MITCHELL, INC. will not be honored.
- 6. RESPONSIBILITY.** GIERLICH-MITCHELL, INC. shall not be responsible for damage to equipment if misused, stored or improperly installed. GIERLICH-MITCHELL, INC. SHALL NOT BE LIABLE FOR CONSEQUENTIAL, LIQUIDATED OR OTHER SPECIAL DAMAGES, CONSEQUENTIAL DAMAGES FOR THE PURPOSES OF THIS AGREEMENT SHALL INCLUDE BUT NOT BE LIMITED TO, LOSS OF USE, INCOME OR PROFIT, OR LOSS OF DAMAGE TO PROPERTY (INCLUDING, BUT WITHOUT LIMITATION, PRODUCTS MANUFACTURED, PROCESSED OR TRANSPORTED BY THE USE OF THE EQUIPMENT) OCCASIONED BY OR ARISING OUT OF THE OPERATION, USE, INSTALLATION, REPAIR OR REPLACEMENT OF THE EQUIPMENT OR OTHERWISE. Breach of any term or condition of this contract shall not be deemed to invalidate the remainder of this contract.
- 7. WARRANTY.** For benefit of the original user, GIERLICH-MITCHELL, INC., warrants all new equipment to be free from defects in material and workmanship; and will replace or repair, F.O.B. at its factories or other location designated by it, any part or parts returned to it which GIERLICH-MITCHELL, Inc. examination shall show to have failed under normal use and service by the original user within one year following initial shipment to the Purchaser. This warranty does not cover parts damaged by maintenance, installation, modification or adjustment. Such repair or replacement shall be free of charge for items except for those items that are consumable and normally replaced during maintenance.





THIS WARRANTY IS EXPRESSLY MADE BY GIERLICH-MITCHELL, INC. AND ACCEPTED BY PURCHASER IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, EXPRESS, IMPLIED OR STATUTORY.

This warranty shall not apply to equipment or parts thereof which have been altered or repaired without GIERLICH-MITCHELL, INC. authorization or damaged by improper installation or application, or subject to misuse, abuse, neglect or accident. This warranty applies only to equipment manufactured and sold by GIERLICH-MITCHELL, INC. In cases where equipment is manufactured by others, the manufacturer's warranty shall take precedence.

- 8. TAXES.** Prices are exclusive of all taxes, federal, state, local of any kind of nature.
- 9. PRICE PROTECTION.** Unless otherwise set forth herein, prices are firm based upon the following conditions:
- Receipt of a valid order within thirty (30) days from date or proposal.
  - Receipt of drawings and specifications necessary to proceed within one week of purchase order.
  - Receipt of customer's complete written approval and release for production within four weeks after approval drawings are submitted by GIERLICH-MITCHELL, INC.

Prices will be increased a maximum of one percent per month for any additional time required by contractor.

**10. TRANSPORTATION.** Unless otherwise set forth herein, all prices are F.O.B. our factories with full freight allowed. The consignee must report all claims for damages in transit to the carrier.

**11. COMPLIANCE WITH LAWS.** Purchaser shall be solely responsible for securing any necessary permits under and for compliance with all safety, health, sanitation and other laws, ordinances and regulations in connection with the installation and operation of the equipment.

**12. INDEMNIFICATION.** It is understood that Seller has relied upon data furnished by and on behalf of Purchaser with respect to the safety aspects of the equipment and that is Purchaser's responsibility to assure that the equipment will, when installed and put in use, be in compliance with safety requirements fixed by law and otherwise legally adequate to safeguard against injuries or damage to persons or property. Purchaser hereby agrees to defend, indemnify and hold harmless Seller, its' agents and employees, against any and all losses, costs, damages, claims, liabilities or expenses, including but not limited to reasonably attorney's fees arising out of or use or operation of the same, except claims for repair or replacement of defective parts as provided in Paragraph 7 hereof.

**13. RETURN GOODS.** Goods may not be returned without previous written permission. Returned material must be sent prepaid and is subject to a re-stocking charge.

**14. CANCELLATION.** The purchaser may cancel his order only upon written notice and payment of reasonable cancellation charges, taking into account expenses, commitments already made, and anticipated profit.

**15. TITLE.** Title to equipment specified herein, and to any and all additions and accessories thereto and substitutions therefore, shall remain with Seller until the purchase price thereof is paid in full.

**16. LIEN INFORMATION.** Please provide if applicable.



This signed acceptance of this quotation constitutes a contract and order to purchase in accordance with all Terms and Conditions referred to herein. Buyers purchase order is acceptable, providing purchase order references Terms and Conditions contained herein.

**Project:** BEAUMONT, CITY OF- SALT MITIGATION PROJ.

Accepted: \_\_\_\_\_

Accepted: Gierlich-Mitchell, Inc

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

## **STP3 TEMPERATURE PROBE**



The Temperature Sensors is a sensor element PT100 that converts the temperature of the fluid into an electrical signal.

Temperature Sensor - PT100

Characteristics:

Construction: 316 stainless steel rod.

Temperature ranges: -50 ... + 250 ° C.

Electrical connection: DIN 43650 connector

Electrical Terminal: 3 Wire

Sensor element: PT100

Accuracy: Class A

Protection: IP-65

Advantages

High reliability.

Construction and optional special assemblies.

Transmitter in the head.

Thread as specified.

Applications

Temperature measurement in industrial processes.

# Temperature Controllers

# E5CSV


CSM\_E5CSV\_DS\_E\_7\_3

## Easy Setting Using DIP Switch and Simple Functions in DIN 48 × 48 mm-size Temperature Controllers

- Easy setting using DIP switch.
- Models with two alarms added to Series, ideal for temperature alarm applications.
- Universal-input (thermocouple/platinum resistance thermometer) models also available.
- Clearly visible digital display with character height of 13.5 mm.
- Models available with black in addition to white cases.
- RoHS compliant.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

 Refer to *Safety Precautions for All Temperature Controllers*.

Refer to *E5CS/E5CSV Operation* for operating procedures.

## Model Number Structure

### Model Number Legend

#### Models with Terminal Blocks

E5CSV-□□□□-□  
1 2 3 4 5

#### 1. Control Outputs

- R: Relay
- Q: Voltage for driving SSR

#### 2. Alarm Outputs

- Blank: No alarm
- 1: 1 alarm
- 2: 2 alarms

#### 3. Input

- KJ: Thermocouple
- P: Platinum resistance thermometer
- T: Thermocouple/platinum resistance thermometer (universal-input)

#### 4. Power Supply Voltage

- Blank: 100 to 240 VAC
- D: 24 VAC/DC

#### 5. Case Color

- Blank: Black
- W: Light gray

**Note:** A functional explanation is provided here for illustration, but models are not necessarily available for all possible combinations. Refer to *Ordering Information* when ordering.

#### Examples

- Relay control output, without alarm, thermocouple input, light gray case: E5CSV-RKJ-W
- Relay control output, one alarm output, platinum resistance thermometer input, black case: E5CSV-R1P-W

## Ordering Information

### ■ List of Models

**Case Color: Light Gray, Thermocouple or Platinum Resistance Thermometer,  
Power Supply Voltage: 100 to 240 VAC**

Size	Type	Control modes	Alarms	Outputs	Model with thermocouple	Model with platinum resistance thermometer
E5CSV 48 x 48mm	Terminal block	ON/OFF or PID	1	Relay	E5CSV-R1KJ-W	E5CSV-R1P-W
				Voltage (for driving SSR)	E5CSV-Q1KJ-W	E5CSV-Q1P-W

**Case Color: Light Gray, Thermocouple, Power Supply Voltage: 24 VAC/VDC**

Size	Type	Control modes	Alarms	Outputs	Model with thermocouple
E5CSV 48 x 48mm	Terminal block	ON/OFF or PID	1	Relay	E5CSV-R1KJD-W

**Case Color: Light Gray, Universal-input, Power Supply Voltage: 100 to 240 VAC**

Size	Type	Control modes	Alarms	Outputs	Model with universal-input (thermocouple or platinum resistance thermometer)
E5CSV 48 x 48mm	Terminal block	ON/OFF or PID	0	Relay	E5CSV-RT
				Voltage (for driving SSR)	E5CSV-QT
			1	Relay	E5CSV-R1T
				Voltage (for driving SSR)	E5CSV-Q1T
			2 (See note.)	Relay	E5CSV-R2T
				Voltage (for driving SSR)	E5CSV-Q2T

**Note:** There is no alarm output 2 mode switch. The default setting for alarm output 2 is for the upper limit alarm mode. To change the setting, change the alarm type for alarm output 2 in initial setting level 5. For details, refer to the "E5CSV/E5CS-U Digital Temperature Controller User's Manual" (Cat. No. H140-E1-01).

**Case Color: Black, Universal-input, Power Supply Voltage: 24 VAC/VDC**

Size	Type	Control modes	Alarms	Outputs	Model with universal-input (thermocouple or platinum resistance thermometer)
E5CSV 48 x 48mm	Terminal block	ON/OFF or PID	0	Relay	E5CSV-RTD
				Voltage (for driving SSR)	E5CSV-QTD
			1	Relay	E5CSV-R1TD
				Voltage (for driving SSR)	E5CSV-Q1TD
			2 (See note.)	Relay	E5CSV-R2TD
				Voltage (for driving SSR)	E5CSV-Q2TD

**Note:** There is no alarm output 2 mode switch. The default setting for alarm output 2 is for the upper limit alarm mode. To change the setting, change the alarm type for alarm output 2 in initial setting level 5. For details, refer to the "E5CSV/E5CS-U Digital Temperature Controller User's Manual" (Cat. No. H140-E1-01).

### ■ Accessories (Order Separately)

#### Protective Cover

Type	Model
Hard Protective Cover	Y92A-48B

#### Terminal Cover

Model
E53-COV10

#### Terminal Cover

(For Controllers after the design change scheduled for October 2010)

Model
E53-COV17

**Note:** The E53-COV10 Terminal Cover cannot be mounted to Controllers that are manufactured after the design change scheduled for October 2010

#### DIN Track Mounting Adapter

Model
Y92F-52

#### Rubber Packing

Model
Y92S-29

**Note:** The Rubber Packing is provided with the Digital Controller.

# Specifications

## ■ Ratings

Supply voltage		100 to 240 VAC, 50/60 Hz 24 VAC, 50/60 Hz; 24 VDC
Operating voltage range		85% to 110% of rated supply voltage
Power consumption		100 to 240 VAC: 5 VA 24 VAC: 3 VA, 24 VDC: 2 W
Sensor input		Thermocouple input type: K, J, L Platinum resistance thermometer input type: Pt100, JPt100 Universal-input (thermocouple/platinum resistance thermometer) type: K, J, L, T, U, N, R, Pt100, JPt100
Control output	Relay output	SPST-NO, 250 VAC, 3A (resistive load)
	Voltage output (for driving the SSR)	12 VDC, 21 mA (with short-circuit protection circuit)
Control method		ON/OFF or 2-PID (with auto-tuning)
Alarm output		SPST-NO, 250 VAC, 1A (resistive load)
Setting method		Digital setting using front panel keys
Indication method		7-segment digital display (character height: 13.5 mm) and deviation indicators
Other functions		<ul style="list-style-type: none"> <li>Setting change prohibit (key protection)</li> <li>Input shift</li> <li>Temperature unit change (°C/°F)</li> <li>Direct/reverse operation</li> <li>Temperature range, Sensor switching (K/J/L, Pt100/JPt100)</li> <li>Switching is performed between a thermocouple and platinum resistance thermometer for universal-input models.</li> <li>Control period switching</li> <li>8-mode alarm output</li> <li>Sensor error detection</li> </ul>
Ambient operating temperature		-10 to 55°C (with no condensation or icing); with 3-year guarantee: -10 to 50°C
Ambient operating humidity		25% to 85%
Storage temperature		-25 to 65°C (with no condensation or icing)

Note: 1. Do not use an inverter output as the power supply. (Refer to *Safety Precautions for All Temperature Controllers*.)  
2. Models for 24 VAC/DC can also be manufactured.

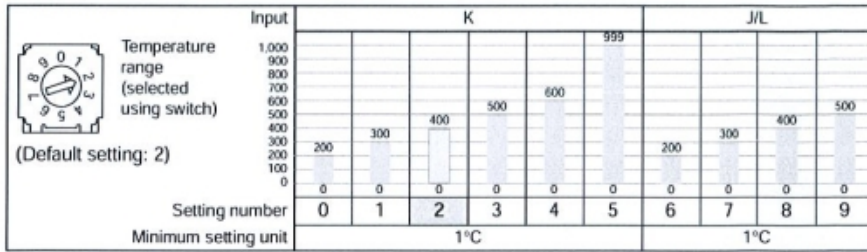
## ■ Characteristics

Setting accuracy	Thermocouple (See note 1.): (±0.5% of indication value or ±1°C, whichever is greater) ±1 digit max. Platinum resistance thermometer (See note 2.): (±0.5% of indication value or ±1°C, whichever is greater) ±1 digit max.	
Indication accuracy (ambient temperature of 23°C)		
Influence of temperature	R thermocouple inputs: (±1% of PV or ±10°C, whichever is greater) ±1 digit max. Other thermocouple inputs: (±1% of PV or ±4°C, whichever is greater) ±1 digit max. Platinum resistance thermometer inputs: (±1% of PV or ±2°C, whichever is greater) ±1 digit max.	
Influence of voltage		
Hysteresis (for ON/OFF control)	0.2% FS (0.1% FS for universal-input (thermocouple/platinum resistance thermometer) models)	
Proportional band (P)	1 to 999°C (automatic adjustment using auto-tuning/self-tuning)	
Integral time (I)	1 to 1,999 s (automatic adjustment using auto-tuning/self-tuning)	
Derivative time (D)	1 to 1,999 s (automatic adjustment using auto-tuning/self-tuning)	
Alarm output range	Absolute-value alarm: Same as the control range Other: 0 to input setting range full scale (°C or °F) Alarm hysteresis: 0.2°C or °F (fixed)	
Control period	2/20 s	
Sampling period	500 ms	
Insulation resistance	20 MΩ min. (at 500 VDC)	
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min between current-carrying terminals of different polarity	
Vibration resistance	Malfunction	10 to 55 Hz, 20 m/s <sup>2</sup> for 10 min each in X, Y, and Z directions
	Destruction	10 to 55 Hz, 0.75-mm single amplitude for 2 hr each in X, Y, and Z directions
Shock resistance	Malfunction	100 m/s <sup>2</sup> min., 3 times each in 6 directions
	Destruction	300 m/s <sup>2</sup> min., 3 times each in 6 directions
Life expectancy	Electrical	100,000 operations min. (relay output models)
Weight	Approx. 120 g (Controller only)	
Degree of protection	Front panel: Equivalent to IP66; Rear case: IP20; Terminals: IP00	
Memory protection	EEPROM (non-volatile memory) (number of writes: 1,000,000)	
EMC	EMI Radiated:	EN 55011 Group 1 Class A
	EMI Conducted:	EN 55011 Group 1 Class A
	ESD Immunity:	EN 61000-4-2: 4 kV contact discharge (level 2) 8 kV air discharge (level 3)
	Radiated Electromagnetic Field Immunity:	EN 61000-4-3: 10 V/m (80-1000 MHz, 1.4-2.0 GHz amplitude modulated) (level 3) 10 V/m (900 MHz pulse modulated)
	Conducted Disturbance Immunity:	EN 61000-4-6: 3 V (0.15 to 80 MHz) (level 2)
	Noise Immunity (First Transient Burst Noise):	EN 61000-4-4
	Burst Immunity:	2 kV power-line (level 3), 1 kV I/O signal-line (level 3)
	Surge Immunity:	EN 61000-4-5: Power line: Normal mode 1 kV; Common mode 2 kV Output line (relay output): Normal mode 1 kV; Common mode 2 kV
Voltage Dip/Interrupting Immunity:	EN 61000-4-11 0.5 cycle, 100% (rated voltage)	
Approved standards	UL 61010-1 (listing) CSA C22.2 No.1010-1	
Conformed standards	EN 61326, EN 61010-1, IEC 61010-1 VDE 0106 Part 100 (finger protection), when the terminal cover is mounted.	

Note: 1. The following exceptions apply to thermocouples.  
• U, L: ±2°C ±1 digit max.  
• R: ±3°C ±1 digit max. at 200°C or less  
2. The following exceptions apply to platinum resistance thermometers.  
Input set values 0, 1, 2, 3 for E5CSV: 0.5% FS ±1 digit max.

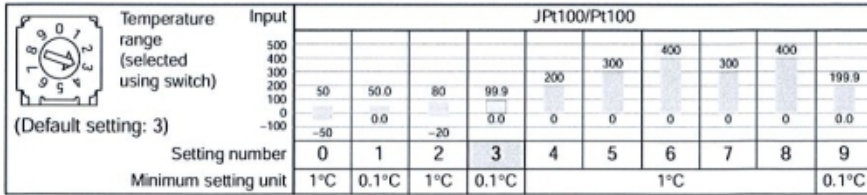
## Temperature Range

### Thermocouple Input Models



The shaded value indicates the default setting status.

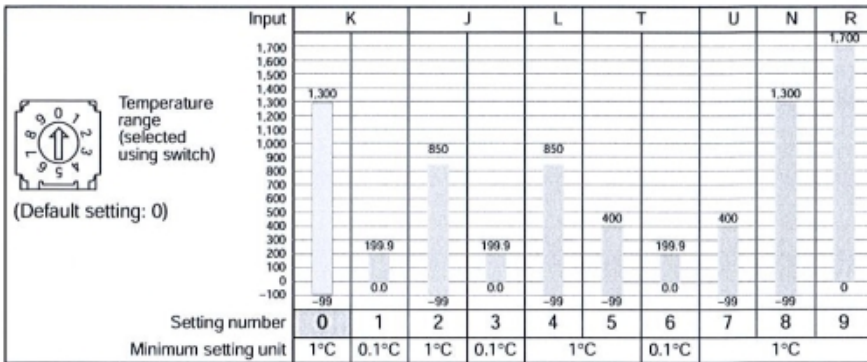
### Platinum Resistance Thermometer Input Models



The shaded value indicates the default setting status.

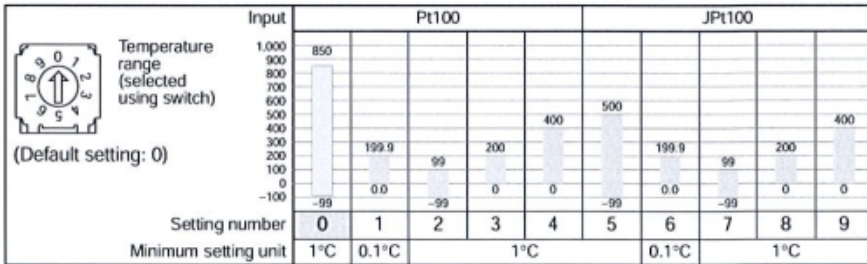
### Universal-input (Thermocouple/Platinum Resistance Thermometer) Models

- Using Thermocouple Sensors, Control Mode Switch 5: OFF



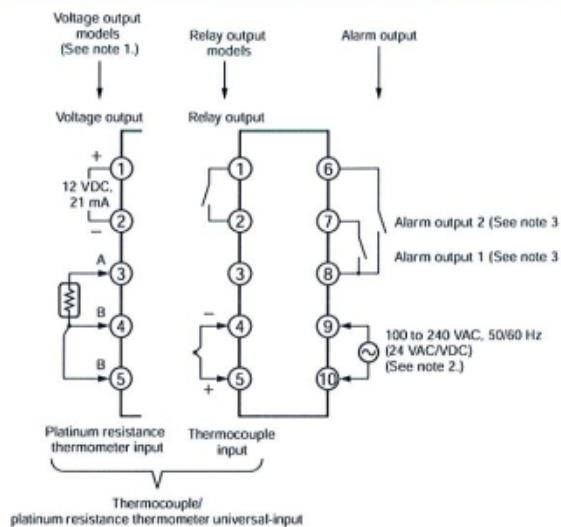
The shaded value indicates the default setting status.

- Using Platinum Resistance Thermometers, Control Mode Switch 5: ON



The shaded value indicates the default setting status.

## External Connection Diagram



- Note:**
1. The voltage output (12 VDC, 21 mA) is not electrically isolated from the internal circuits. When using a grounding thermocouple, do not connect output terminals 1 or 2 to ground. Otherwise, unwanted current paths will cause measurement errors.
  2. Models with 100 to 240 VAC and 24 VAC/VDC are separate. Models using 24 VDC have no polarity.
  3. The number of alarm outputs depends on the model.

## Nomenclature

### E5CSV Models with Terminal Blocks



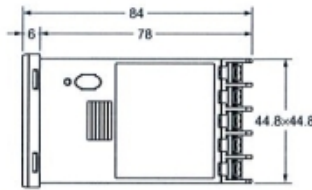


# Dimensions

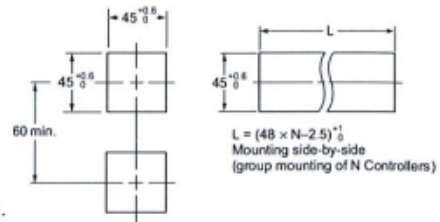
Note: All units are in millimeters unless otherwise indicated.

## Controller

E5CSV

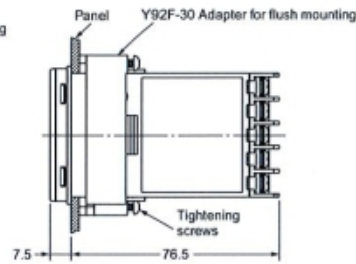
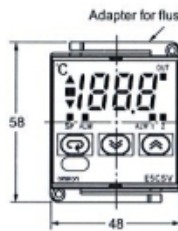


Panel Cutout Dimensions



Note: Terminals cannot be removed.

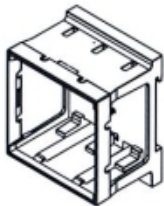
### E5CSV + Adapter for Flush Mounting (Provided)



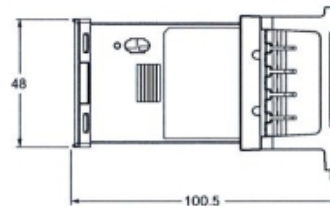
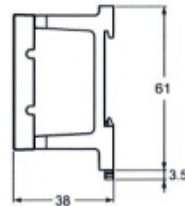
- Note: 1. The recommended panel thickness is 1 to 4 mm.
- 2. Group mounting is possible in one direction only.

### DIN Track Mounting Adapter

Y92F-52 Note: This Adapter cannot be used together with the Terminal Cover. Remove the Terminal Cover to use the Adapter.



Mounted to E5CSV



## ■ Accessories (Order Separately)

### Hard Protective Cover

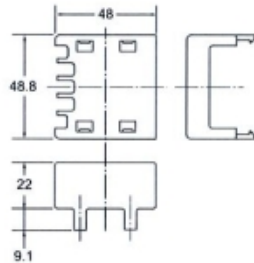
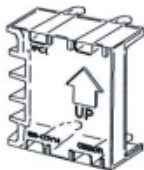
The Y92A-48B Protective Cover (hard type) is available for the following applications.

- To protect the set from dust and dirt.
- To prevent the panel from being accidentally touched causing displacement of set values.
- To provide effective protection against water droplets.



### Terminal Cover

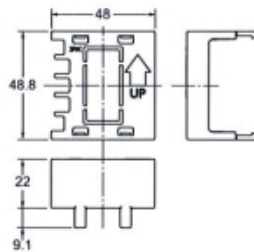
#### E53-COV10



#### E53-COV17



(For Controllers after the design change scheduled for October 2010)



### Rubber Packing

#### Y92S-29 (for DIN48 × 48)



Order the Rubber Packing separately if it becomes lost or damaged. The Rubber Packing can be used to achieve an IP66 degree of protection for models with terminal blocks.

(Deterioration, shrinking, or hardening of the rubber packing may occur depending on the operating environment. Therefore, periodic replacement is recommended to ensure the level of waterproofing specified in NEMA4. The time for periodic replacement depends on the operating environment. Be sure to confirm this point at your site. Consider one year a rough standard. OMRON shall not be liable for the level of water resistance if the customer does not perform periodic replacement.)

The Rubber Packing does not need to be attached if a waterproof structure is not required.

## Safety Precautions

Refer to *Safety Precautions for All Temperature Controllers*.

Refer to *E5CS/E5CSV Operation* for operating procedures.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

In the interest of product improvement, specifications are subject to change without notice.

## Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

## Warranty and Limitations of Liability

### WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

### LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

## Application Considerations

### SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

### PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

## Disclaimers

### CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

### DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

### PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

### ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

2012.12

In the interest of product improvement, specifications are subject to change without notice.

**OMRON Corporation**  
Industrial Automation Company

<http://www.ia.omron.com/>

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PCO -030



Technical Justification:

PCO-30	
Design Adjustment: CLAR-20 / DCM-16 WML COP-030	Solids Handling Building Changes
<p><u>Owner Requested Changes:</u></p> <p>The chemical storage equipment is being upgraded to provide a more cost-effective bulk chemical delivery and an improved chemical handling system inside the Solids Handling Building.</p> <p><u>Design and Scope Changes:</u></p> <p>This clarification addresses changes to the design in the Solids Handling Building, including the replacement of the (3) storage totes in the previous design with a polymer bulk storage tank. The current specification section 434143, HDXLPE Storage Tanks, applies to the new polymer tank. The tank characteristics are as follows:</p> <ul style="list-style-type: none"> <li>Tag Number: ME-8601</li> <li>Chemical Stored: Polymer</li> <li>Capacity: 6650 gal</li> <li>Diameter: 10'-2"</li> <li>Height: 14'-3"</li> <li>Heat Tracing: No</li> <li>Insulation: No</li> </ul> <p>Fitting Materials: Bellows Transition (base drains only)/B.O.S.S./PVC/SS/EPDM</p> <p>Equipment associated with the storage tank has been added, including a progressive cavity pump for polymer recirculation (P-8603). The current specification section 432357, Progressing Cavity Pumps, applies to this new pump with the following exception: The pump shall be designed for continuous and intermittent pumping of dewatering polymer, as opposed to the pumping of sludge, as described in section 1.1.A.1.</p> <p>Modifications have been made to the floor drain system and one of the radiant heaters, to accommodate these changes. Additionally, one of the overhead doors has been removed.</p> <p>Portions of the mezzanine have been removed, including one of the staircases. Other minor modifications have been made, associated to this removal.</p> <p>Equipment has been added, and modifications have been made in the Electrical Room to accommodate these changes.</p> <p>Miscellaneous electrical changes and additions are also included.</p> <p><u>Cost Impact:</u></p> <p>MWHC recommends a contract cost increase of \$87,549.00 to be executed in a change order for changes to the Solids Handling Building.</p>	

**CITY OF BEAUMONT WWTP SALT MITIGATION UPGRADE PROJECT**

**CHANGE ORDER PROPOSAL (COP) # 030  
(By Contractor)**

<b>To (Engineer/CM):</b> MWH Constructors Attention: Charles Reynolds Phone: 702-497-8024 Email: Charles.w.reynolds@mwhconstructors.com	<b>From (Contractor):</b> W.M. Lyles Co. Attention: Adam Hickman Phone: 559-801-1874 Email: ahickman@wmlylesco.com
<b>PCO/DCM No.:</b> DCM No. 16	
<b>Subject:</b> Solids Handling Building Changes	
<b>Reference Documents:</b> Clarification no. 20	
<b>DESCRIPTION</b>	
Please review the attached change order associated with changes included in clarification no. 20. This change order addresses the changes in the Solids Handling Building. These cover the removal of the Polymer Totes and Stands, associated piping modifications, hand rail and stair removal, platform modifications, removal of an overhead door and building modifications, modifications to the existing drain system, addition of a chemical tank and associated piping, addition of a progressive cavity pump. In addition electrical changes and modification associated with the above changes.	
Notes/Exclusions: <ul style="list-style-type: none"><li>• Chemically resistant anchors or hardware</li></ul>	
<b>COST ESTIMATE</b>	
Total cost \$ 87,549.00 – see attached breakdown	
<b>SCHEDULE IMPACT</b>	
None	
<b>Received by MWH Constructors (Date):</b>	

**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: 29-Nov-19

Reference #: Clarification 20 - DCM #16

Attention: Charles W. Reynolds

JOB LOCATION: City of Beaumont WWTP Salt Mitigation Upgrade Project

DESCRIPTION: Solids Handling Building Chemical Changes

Item:		Unit	Total MH	Total MH Cost	Eq. Cost	Material	Subcont.	Total Cost
1	Chemical Totes & Piping Credit	1 LS	-46	\$ (3,608.60)	\$ (659.63)	\$ (10,381.96)	\$ (10,590.00)	\$ (25,240.19)
2	Chemical Tank & Piping Additions	1 LS	83	\$ 6,372.07	\$ 1,161.92	\$ 66,402.69	\$ 14,967.67	\$ 88,904.35
3	Concrete Changes	1 LS	94	\$ 7,526.48	\$ 854.86	\$ 1,593.62	\$ 2,319.00	\$ 12,293.96
4		1 LS	0	\$ -	\$ -	\$ -	\$ -	\$ -
5		1 LS	0	\$ -	\$ -	\$ -	\$ -	\$ -
6		1 LS	0	\$ -	\$ -	\$ -	\$ -	\$ -
Total Costs			131	\$ 10,289.96	\$ 1,357.15	\$ 57,614.35	\$ 6,696.67	\$ 75,958.13

Subtotal	\$	75,958.13
Mark-up - Labor	15%	\$ 1,543.49
Mark-up - Equipment	15%	\$ 203.57
Mark-up - Materials	15%	\$ 8,642.15
Mark-up - Subcontractor	5%	\$ 334.83
Bond	1.0%	\$ 866.82
<b>Total This Change Order</b>	<b>\$</b>	<b>87,549.00</b>

Comments:











3000 YOUNGFIELD ST. SUITE 275 WHEAT RIDGE, CO 80215  
Ph. (720)508-3819 FAX (720)409-3843

**CHANGE ORDER NO.3**

**PTP #918-248-3**

**Location: WWTP Salt Mitigation Upgrades – Beaumont, CA**

**To: W.M Lyles Co.**

**Date: 10/31/2019**

**Attn: Adam Hickman**

**Request for Change Order, Your Purchase Order No. 55.1173-4022**

**Please adjust the above referenced Purchase Order to reflect the following changes:  
Delete the south stair in the Solids Handling Bldg per Clarification 20. Note: C/O No.1 &  
No.2 are still out for approval. C/O No.3 will be based as if C/O No.1 & No.2 are approved.**

**C.O. No.1 10-02-19 Pending**

**Credit for removing 315 LF of toe board at the Aeration Basins.**

**Original Contract: = \$97,371.00**

**Credit = <\$720.00> Note: Received verbal approval from Oscar Mendoza 10-30-19**

**Revised contract: = \$96,651.00**

**C.O. No.2 10-18-19 Pending**

**Add rail at the retaining wall. No toe Board required.**

**Contract: 2,621 L.F. = \$97,371.00**

**Add rail: + 126 L.F. = \$4,900.00**

**2,747L.F. = \$102,271.00**

**= \$720.00 C.O. #1 Credit Pending**

**Revise Contract = \$101,551.00**

**C.O. No.3 10-30-19 Pending**

**Delete stair per Clarification 20 at the Solids Handling Building**

**Contract: 2,747L.F. = \$102,271.00 Pending with C.O. #2**

**Delete Rail: -40 L.F. = <\$1,489.00>**

**Revised: 2,707L.F. = \$100,782.00**

**= \$720.00 C.O. #1 Credit Pending**

**Revised Contract = \$100,062.00**

**Peak to Peak Engineered Railings**

**Ray Muniz**

**[RMuniz@peaktopeakrailings.com](mailto:RMuniz@peaktopeakrailings.com)**

**(720)508-3819 Ext: 104**

**Accepted \_\_\_\_\_**

**Date \_\_\_\_\_**

**GMAT Inc dba Inland Overhead Door Company**  
**12401 S La Cadena Dr Colton CA 92324**  
**909-783-3131 fax 909-783-3478**

## Subcontractor Change Order

<b>Project:</b>	CITY OF BEAUMONT-WASTEWATER TREATMENT
<b>Contract:</b>	PLANT SALT MITIGATION UPGRADE PROJECT 715 W 4TH ST BEAUMONT CA 92223
<b>Date:</b>	10/22/2019


**Subcontractor:** GMAT Inc. dba Inland Overhead Door Company  
**Contract for:** W.M. Lyles Company Contractor  
P.O. Box 4377 Fresno CA 93744  
55.1173.010

DELETE ONE (1) 12x12 COILING DOOR AT SOILDS HANDLING BUILDING

Contract Amount	_____	\$33,500.00	_____
CHANGE ORDER 1		4,800.00	
Change Order 2	_____	-5,100.00	_____
Sub Total	_____	33,200.00	_____
			_____
			_____
Total Contract Amount		\$33,200.00	_____

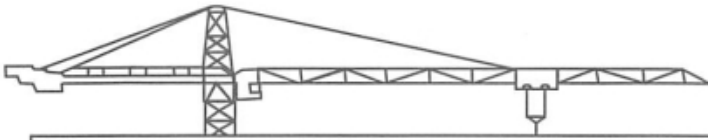
Subcontractor Sign-Date

Contractor Sign-Date



Ryan Shearer

\_\_\_\_\_



# ALLIED STEEL CO., INC.

*Structural Steel & Miscellaneous Metal Fabricators*



October 31, 2019

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

Attn: Mr. Adam Hickman

Re: City of Beaumont WWTP

Subject: Solids Handling Building Changes  
Clarification 20

This change eliminated one stair and supporting columns along with a portion of the platform on the Solids Handling Building for the above referenced project. The following is a cost breakdown for this change. Please note that the shop drawings is an increased cost but all else is a cost decrease.

Material credit (includes tax)	<\$ 1,330.00>
Shop labor credit (22) MH x \$ 85.00 =	<\$ 1,870.00>
Grating credit (includes tax)	<\$ 2,930.00>
Detailing costs (8) MH x \$ 80.00 =	\$ 640.00
<b>TOTAL CREDIT</b>	<b>&lt;\$ 5,490.00&gt;</b>

Please issue Allied Steel a change order for <\$ 5,490.00> to eliminate this work from our subcontract.

Sincerely,

Brian P. Chapman  
President



<b>Deliver To:</b> <b>From:</b> Nick Grantham <b>Comments:</b>
--

FERGUSON WATERWORKS #1083  
 Price Quotation  
 Phone: 858-391-3700  
 Fax: 858-391-5958

**Bid No:** B353916  
**Bid Date:** 10/28/19  
**Quoted By:** XNG

**Cust Phone:** 559-487-7926  
**Terms:** NET 10TH PROX

**Customer:** WM LYLES CO  
 551173-BEAUMONT WW TRTMT  
 PO BOX 4377  
 FRESNO, CA 93744

**Ship To:** WM LYLES CO  
 551173-BEAUMONT WW TRTMT  
 PO BOX 4377  
 FRESNO, CA 93744

**Cust PO#:** TRENCH DRAIN QUOTE

**Job Name:** 55.1173-BEAUMONT WW TRTMT

Item	Description	Quantity	Net Price	UM	Total
<del>NDS091</del>	<del>6X48 D/SLOPE CHAN # 091</del>	<del>2</del>	<del>119.570</del>	<del>EA</del>	<del>239.14</del>
<del>NDS092</del>	<del>6X48 D/SLOPE CHAN # 092</del>	<del>2</del>	<del>119.570</del>	<del>EA</del>	<del>239.14</del>
<del>NDS224</del>	<del>D/SLOPE DRN END CAP</del>	<del>2</del>	<del>15.015</del>	<del>EA</del>	<del>30.03</del>
<del>NDS126</del>	<del>BOT OUT ADPT D/SLOPE</del>	<del>1</del>	<del>34.160</del>	<del>EA</del>	<del>34.16</del>
<del>NDS200H</del>	<del>24X6 DI DURA SLOPE GRATE FRM</del>	<del>6</del>	<del>41.328</del>	<del>EA</del>	<del>247.97</del>
<del>NDS232</del>	<del>2 SLOT DI GRATE</del>	<del>6</del>	<del>55.270</del>	<del>EA</del>	<del>331.62</del>
<del>NDS123</del>	<del>END CAP &amp; DI FRM GRATE SCRW 12 PK</del>	<del>3</del>	<del>5.370</del>	<del>PK</del>	<del>16.11</del>
MUL043235	4 PVC SWR GXG 90 ELL	2	12.740	EA	25.48
MUL063307	6X4 PVC SWR GXG WYE	1	28.330	EA	28.33
MUL063304	4 PVC SWR GXG WYE	1	13.970	EA	13.97

**Net Total:** ~~\$1205.95~~ **\$67.78**  
**Tax:** ~~\$118.77~~ **\$5.25**  
**Freight:** ~~\$283.49~~  
**Total:** ~~\$1608.21~~ **\$73.03**

Quoted prices are based upon receipt of the total quantity for immediate shipment (48 hours). SHIPMENTS BEYOND 48 HOURS SHALL BE AT THE PRICE IN EFFECT AT TIME OF SHIPMENT UNLESS NOTED OTHERWISE. QUOTES FOR PRODUCTS SHIPPED FOR RESALE ARE NOT FIRM UNLESS NOTED OTHERWISE.

CONTACT YOUR SALES REPRESENTATIVE IMMEDIATELY FOR ASSISTANCE WITH DBE/MBE/WBE/SMALL BUSINESS REQUIREMENTS.

Seller not responsible for delays, lack of product or increase of pricing due to causes beyond our control, and/or based upon Local, State and Federal laws governing type of products that can be sold or put into commerce. This Quote is offered contingent upon the Buyer's acceptance of Seller's terms and conditions, which are incorporated by reference and found either following this document, or on the web at <https://www.ferguson.com/content/website-info/terms-of-sale>  
 Govt Buyers: All items are open market unless noted otherwise.

LEAD LAW WARNING: It is illegal to install products that are not "lead free" in accordance with US Federal or other applicable law in potable water systems anticipated for human consumption. Products with \*NP in the description are NOT lead free and can only be installed in non-potable applications. Buyer is solely responsible for product selection.  
 WATER FLOW RATE NOTICE: Lavatory Faucets with flow rates over 0.5 GPM are not allowed for 'public use' in California.



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Scan the QR code or use the link below to complete a survey about your bids:

<https://survey.medallia.com/?bidsorder&fc=1083&on=25463>





# QUOTATION

Billing Inquiries: (951) 340-4444

Sell To:  
 W M Lyles Company J  
 P O Box 4377  
 Attn: Karen Higham  
 Fresno, CA 93744

Page: 1 of 1  
 Bid Number: 6686160  
 Quote Date: 10/30/2019  
 Entered By: Darryl McCormick - 001  
 Description: DEM-BEAUMONT CLARIFICATION

Ship To:  
 W M Lyles Company J  
 14903 River Road

Account Number: 079562  
 Contact Name:  
 Contact Phone: (951) 973-7393

Corona, CA 92880

Note: The following does not include Shipping & Handling, Tax, or other applicable charges.

Product #	Description/Notes	Uom	Qty	Price	Total
3806G025	PVC 90 EL N80 2.5" S SLOANE	EA	4	4.8006	19.20
3817G025	PVC 45 EL N80 2.5" S SLOANE	EA	2	10.1682	20.34
<del>5090A025</del>	<del>PVC/EPDM TU B VLV 2.5" S ASAHI</del>	<del>EA</del>	<del>2</del>	<del>158.3680</del>	<del>316.74</del>
	<del>TYPE 21 230PSI</del>				
<del>5109S025</del>	<del>PVC/EPDM TU B CK VLV 2.5" S</del>	<del>EA</del>	<del>1</del>	<del>208.6070</del>	<del>208.61</del>
3855G025	PVC VAN STONE FLG N80 2.5"S	EA	3	8.1000	24.30
3836G025	PVC MALE ADPT N80 2.5"	EA	1	6.4125	6.41
3905H025	PVC HIGH-QUALITY PIPE N80 2.5"	EA	60	2.5326	151.96
3806G020	PVC 90 EL N80 2" S SLOANE	EA	10	2.0520	20.52
3801G020	PVC TEE N80 2" S SLOANE	EA	1	7.3062	7.31
5090A020	PVC/EPDM TU B VLV 2" SXT ASAHI	EA	1	71.7605	71.76
	TYPE-21 230PSI				
3905H020	PVC HIGH-QUALITY PIPE N80 2"	EA	60	1.5410	92.46
3855G020	PVC VAN STONE FLG N80 2" S	EA	2	5.2461	10.49
<del>5351.020</del>	<del>PVC LINE STRAINER 2" S</del>	<del>EA</del>	<del>1</del>	<del>159.9156</del>	<del>159.92</del>
	<del>YS10200S</del>				
<del>5109S020</del>	<del>PVC/EPDM TU B CK VLV 2" SXT</del>	<del>EA</del>	<del>1</del>	<del>181.9216</del>	<del>181.92</del>
1304.020	Q-D MALE CPLR 2"MT PP BLK	EA	1	12.8700	12.87
3835G020	PVC FEM ADPT N80 2" SXT SLOANE	EA	1	7.3926	7.39
0512.150	HERCO BRAID TUBING 2" FD GRD HD HEAVY-DUTY K3156-H32 X 50	EA	10	4.9200	49.20
3860.307	316SS BOLT PACK FOR 2" FLG BOLTS = 5/8" X 3"LONG	EA	1	12.9640	12.96
3863.020	EPDM AV GSK 2"	EA	1	6.7865	6.79
3860.308	316SS FLG BOLT PACK 2.5" - 3" BOLTS = 5/8" X 3.25"	EA	1	14.6685	14.67
3863.025	EPDM AV GSK 2.5"	EA	1	6.7865	6.79
	UNISTRUT/CLAMPS				
1950A653	1-5/8" UNISTRUT SLOTTED 304SS	EA	20	9.2000	184.00
1987A103	SS UNISTRUT CLAMP 2" (2-3/8" OD)	EA	8	5.8200	46.56
/GFN02588205	SS UNISTRUT CLAMP 2-1/2"2-5/8 OD	EA	7	6.9245	48.47
/GFN02588206	SS POST BASE	EA	7	68.2000	477.40
	---- Package Subtotal: 2,159.04				

~~Subtotal: 2,159.04~~

## QUOTATION



Billing Inquiries: (951) 340-4444

Sell To:  
 W M Lyles Company           J  
 P O Box 4377  
 Attn: Karen Higham  
  
 Fresno, CA 93744

Page: 1 of 1  
**Bid Number:** 6695383  
**Quote Date:** 11/25/2019  
**Entered By:** Jasmine Penaloza - 045  
**Description:** JP3 | PLASTIC | AHICKMAN

**Account Number:** 079562  
**Contact Name:** ADAM HICKMAN  
**Contact Phone:** (951) 973-7393

Ship To:  
 W M Lyles Company           J  
 14903 River Road  
  
 Corona, CA 92880

Note: The following does not include Shipping & Handling, Tax, or other applicable charges.

Product #	Description/Notes	Uom	Qty	Price	Total
3855S030	PVC VAN STONE FLG N80 3" S SPEAR	EA	2	9.2008	18.40
3905H030	PVC HIGH-QUALITY PIPE N80 3"	EA	20	2.7900	55.80
5351.020	PVC LINE STRAINER 2" S YS10200S	EA	1	140.8212	140.82
5060H020	+PHO+ PVC/EPDM TU B VLV 2" SXT +++++++ PHASING OUT ++++++	EA	2	75.5405	151.08
5060H025	PVC/EPDM TU B VLV 2.5" S HAYWARD	EA	1	167.5240	167.52
5060H030	PVC/EPDM TU B VLV 3" S HAYWARD	EA	1	173.4145	173.41
5102H020	PVC/VIT TU B CK VLV 2" SXT	EA	1	105.8155	105.82
5102H025	PVC/VIT TU B CK VLV 2.5" S	EA	1	240.5095	240.51
	---- Package Subtotal:           1,053.36				

**Subtotal:**                           1,053.36

<b>To:</b> W.M. Lyles Temecula, CA  <b>Attn:</b>  <b>Subject:</b> 55.1173-4024 - Beaumont Clarification 20	<b>Offer</b>	JB-B000374484
	<b>Date</b>	11/22/2019
	<b>Your contacts:</b>	
	Internal sales	Joseph Benjamin
	Phone:	(610) 280-1281
	Fax:	(610) 363-0971
	Email:	<a href="mailto:Joseph.Benjamin@NETZSCH.com">Joseph.Benjamin@NETZSCH.com</a>
	External sales	Andreas Schmidt
	Phone:	(484) 502-8115
Email:	<a href="mailto:Andreas.Schmidt@NETZSCH.com">Andreas.Schmidt@NETZSCH.com</a>	

**Pump Quotation - Commercial**

Thank you for your inquiry, we are pleased to offer suitable pumps with our payment and delivery terms:

Pos.	Description	Quantity	Unit price (net in USD)	Total price (net in USD)
0010	NETZSCH NEMO Progressive Cavity Pump model NM031BY01L06B with a 3 hp motor and reducer mounted inline on a Carbon Steel - 1020 baseplate as per the technical.	1	\$5,267	\$5,267
0020	**Shipping and Insurance to California			\$321

Delivery Time <sup>3</sup> :	6-8 weeks	Payment Terms:	Net 30	Total Offer:	\$5,588
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<b>Optional Price Adders:</b>	Unit price (List in USD)	Unit price (net in USD)
Protection against dry running by installing a thermal protection device to monitor the operating temperature of the stator. (Probe shipped mounted in stator and controller shipped loose)	\$1,170	\$819

\* Not included in COP

- 2. When corresponding, please refer to the offer number.
- 3. For details see Delivery on Page 2 for details

<b>Offer</b>	JB-B000374484
<b>Date</b>	11/22/2019

**Delivery shipping and payment conditions:**

**Delivery:**

The listed lead time is based on the specific design requirements, current inventory, or standard manufacturing lead times. All pumps are subject to prior sale. Please consult factory at the time of order to obtain a lead time.

**Shipping:**

**Total Gross Weight (lbs.) for all pumps offered:** 150 lbs.

**Shipping Terms: EXW Exton, PA**

**Est. transit time:** 7 working days

*\*\*Note: If customer schedules and arranges his own Shipping, shipping details to be provided at time of order.*

**Offer validity:** December 22, 2019

**Payment conditions:** Net 30

**Warranty and Terms of Sale:**

For a period of 12 months from the date of shipment, or transfer of ownership, NETZSCH Pumps North America, LLC provides a warranty against defective materials or improper workmanship. This quotation is limited to NETZSCH Pumps North America, LLC terms and condition of sale. No other terms and conditions will be accepted.

For information concerning our Terms and Conditions of Sale, and complete warranty information for NETZSCH Equipment and Accessory Items (Motors, Reducers, etc.) please review our current Terms and Conditions of Sale by clicking this link.



We trust our offer is of interest and look forward to discussing this with you in the near future.

Yours sincerely,

***Joseph Benjamin***

Sales Application Engineer

**NETZSCH Pumps North America, LLC**

Phone: 001 (610) 363-8010

Direct dial: 001 (610) 280-1281

Fax: 001 (610) 363-0971

E-Mail: [Joseph.Benjamin@NETZSCH.com](mailto:Joseph.Benjamin@NETZSCH.com)

Website: <http://www.pumps.NETZSCH.com>

NETZSCH Pumps North America, LLC.  
119 Pickering Way  
Exton, PA 19341

Trademarks by NETZSCH Pumps North America, LLC:  
M.Champ, TORNADO, TORNADO (Picture), N-IPO S, N-ELOR, abP-Module,  
pmT Pilot, NEMO, iFD Stator, NEMOLAST, T.AGRI, T.ENVI, T.PROC, T.RURA, T.SANO  
C.Pro, NE, NEMO CERATEC, M-Ovas, Blue-grey design, uNS-Seal.

Tel: +1 610-363-8010  
Fax: +1 610-363-0971  
Email: [npa@NETZSCH.com](mailto:npa@NETZSCH.com)  
Website: [www.pumps.NETZSCH.com](http://www.pumps.NETZSCH.com)



Adam Hickman  
 W.M. Lyles Company  
 42142 Roick Drive  
 Temecula, CA 92590  
 951-973-7393 ext  
[ahickman@wmlylesco.com](mailto:ahickman@wmlylesco.com)

Quote Number: DSN1216Q  
 Tank: 6650 Gallon Double Wall Safe Tank  
 Specification: 434143

Dear Adam,

Thank you for the opportunity to provide the following quote. The tank and all of the accessories are per the specification noted. We also included pricing for the radar level control units.

**BEAUMONT WWTP SALT MITIGATION UPGRADE- Tank/ Radar**

Spec Section	Title and Description
434143	<p><b>HIGH DENSITY CROSS-LINKED POLYETHYLENE STORAGE TANK</b></p> <ul style="list-style-type: none"> <li>• (1) 6,650 Gallon Poly Processing Double Wall Safe Tank</li> <li>• Safe Surge Manway</li> <li>• FRP Ladder</li> <li>• SST Seismic Restraints with CA Wet Stamped Job Specific Calculations</li> <li>• Float Level Indication</li> <li>• Fittings per specification</li> <li>• PTFE Flexi Joints</li> <li>• Material and Tank Testing</li> <li>• 3.2 B, C,D,E Field Service Technician one person one day included</li> <li>• 10' Dia. X 14'-4" Tall</li> </ul> <p><b>No Exceptions taken to specification 434143</b></p>
<b>Radar Level</b>	<p><b>Flowline</b>            Echo Pulse LR20 Radar Liquid Level Transmitter with 316L Antenna and PTFE inner shield-  <b>No Exceptions to the spec</b></p>
Spec Section	Comment
3.2 A and 3.3	Field Testing and Installation by Others (1 day site inspection/ training is included)
General	Anchor bolts by others
General	Piping beyond vessel connections is not included
Standard Terms	25% with order / balance 70% N20 after shipment / 5% retention 90 days
Sales Tax	Sales tax will be billed at the rate in effect at the time of shipment and not included above
Disclosure	Items not specifically identified within proposal are not included

### Tank Pricing

6650 Double Wall Safe Tank and all accessories noted in specification \$46,440.  
Freight for tank \$3,100.  
Radar \$2,590.  
Freight for Radar \$40.

### Terms and Conditions

Shipment	4-5 weeks- Tanks and Radar
Manufacturer's Warranty	Tanks: 3 years and 5 years per specification Radar: 1 year
FOB Point	Tank: Poly Processing Factory Radar: Flowline Factory
Prices Effective	30 days
Freight	Quoted as an option
Sales Tax	Not included unless otherwise indicated
Sales Tax	Will be charged unless a resale card is on file (CA)
Freight Billing	To be by purchaser specified at time of order placement
Terms	25% with order, balance net 20 days after shipment - OAC
Cancellation Charges	100% after fabrication commences
Damaged Freight	Must be noted on the freight bill to establish liability
Off-Loading / Installation	By others
Anchor Bolts	Not included unless otherwise indicated
Flange Gaskets / Bolt Kits	Not included unless otherwise indicated
Flexible Connections	Required for most connections to preserve tank warranty
Missing Parts	Claims must be made within 30 days of delivery

Thank you,

*Doug Roughen*

Doug Roughen | 3300 E. 19th Street | Signal Hill, CA 90755 | 562-986-5238 FAX 562-986-5246  
**Cell 949-633-9499 Preferred**



**G&W BUILDERS, INC.**  
 General Contractors  
 And Engineers  
 Lic. No. 457076 A & B

557 MERCURY LANE • BREA, CA 92821 • (714) 529-9935 • FAX (714) 529-0795

# REQUEST FOR CHANGE ORDER

**DATE: October 29, 2019**

**TO: W.M Lyles CO      PROJECT: Wastewater Treatment Plant Salt Mitigation Upgrade Project**  
**ATTENTION: Mr. Adam Hickman      REQUEST: #02**  
**ADDITIONAL INFORMATION ATTACHED: No      PAGES: 1 (INCLUDING THIS PAGE)      CONTRACT #: 55.1173.002**

	DESCRIPTION: Changes made to Solids Handling Building	AMOUNT
1.	Remove 12' x 12' Framed Opening and infill with IMP wall panel.	
2.	Relocate radiant heater to center bay.	
3.	Additional Labor to install girts and panels.	
<b>TOTAL ADD</b>		<b>\$2,000.00</b>

**REASON FOR CHANGES:**  
 1. Client has requested we infill the roll up door and move the radiant heater over a by . .  
  
 Previous Contract Total: \$1,624,523.00  
 New Contract Total: \$1,626,523.00

Requested by: Bill M. Greer      10/29/19  
 Sign and Date

Accepted by: \_\_\_\_\_  
 Sign and Date



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: Solids Handling Chnages**

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

**Contract No: 55.1173**  
**COR Number: 103801-COR#015**  
**COR Revision Number: 0**

**COR Date: 11/6/2019**  
**Work Type: Price / Do Not Proceed**

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

**Other Reference No: DCM#016**  
**CLAR#020**  
**Days Valid: 5**

### Scope Of Work / Time Extension Request

The work associated with DCM16 CLAR 20 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 \$11,467.67

Scope of Work is as follows:

- Provide labor and materials to install conduit and wire to the new Polymer Tank ME-8601 for the Motor and Level Element. Install LCP-8603.

This work includes changes to MCC-SH, Level Element LIT-8601. Documentation and drawing updates.

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: \$11,467.67**



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**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.

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Signed By:



**Daniel Alcantar**

**PM**

**Dated: 11/6/2019**

## 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
COE#015 DCM-016 CLAR-020 Solids Handling Changes	\$1,574.72	100.00%	\$1,574.72	58.32	100.00%	58.32

### Top Sheet

Raw Cost	\$9,767.03	Sales per Month	\$0.00
Tax	\$122.04	Return per Month	\$0.00
Raw Cost with Tax	\$9,889.07	Price per Square Foot	\$0.00
Overhead	\$1,465.05	Hours per Square Foot	0.00
Profit	\$0.00	Square Feet	0.00
Total Return Amount	\$1,465.05	Job Months	0.00
Total Return %	12.78%	Hours per Week	0.00
Price	\$11,354.13	Workers per Day	0.00
Bond	\$113.54	Total Hours	58.32
Sell Price	<b>\$11,467.67</b>	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	Percent	Labor Cost
General Foreman	10.00%	5.83	\$89.17	\$0.00	0.00%	\$520.00
Journeyman	50.00%	29.16	\$75.48	\$0.00	0.00%	\$2,200.84
Appr-85%	50.00%	29.16	\$63.90	\$0.00	0.00%	\$1,863.19
<b>Totals</b>	<b>110.00%</b>	<b>64.15</b>	<b>\$71.46</b>	<b>\$0.00</b>	<b>0.00%</b>	<b>\$4,584.03</b>

### Mark Ups

	OVERHEAD			PROFIT		
	Total	%	Amount	%	Amount	
Materials	\$1,574.72	+ 15.00%	\$1,810.93	+ 0.00%	\$1,810.93	
Labor	\$4,584.03	+ 15.00%	\$5,271.64	+ 0.00%	\$5,271.64	

## Bid Summary Report

103801 Beaumont Chang Orders Estimator: Dan Alcantar

Job #2336

Supplier Quotes	\$3,068.01	+	15.00%	\$3,528.21	+	0.00%	\$3,528.21
SubContractors	\$0.00	+	5.00%	\$0.00	+	0.00%	\$0.00
Direct Job Expense	\$540.27	+	15.00%	\$621.31	+	0.00%	\$621.31
Equipment Rental	\$0.00	+	15.00%	\$0.00	+	0.00%	\$0.00
<b>Totals</b>	<b>\$9,767.03</b>		<b>15.00%</b>	<b>\$11,232.09</b>		<b>0.00%</b>	<b>\$11,232.09</b>

### Tax Report

	Taxed Amount	Tax Rate %	Tax Amount
Materials	\$1,574.72	7.75%	\$122.04
Labor	\$4,584.03	0.00%	\$0.00
Supplier Quotes	\$0.00	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
		<b>Total Tax:</b>	<b>\$122.04</b>

### Supplier Quotes

Name	Supplier	Tax (0.0 %)	Unit Cost	Multiplier	Amount
Intrumentation and controls		No	\$3,068.00	1.00	\$3,068.00
Mods to MCC-SH EATON -No Cost		No	\$0.01	1.00	\$0.01
<b>Total:</b>					<b>\$3,068.01</b>

### Direct Job Expense

Name	Supplier	Tax (0.0 %)	Unit Cost	Multiplier	Amount
FM Truck		No	\$18.63	29.00	\$540.27
<b>Total:</b>					<b>\$540.27</b>

Job Name: 103801 Beaumont Chang Orders

Job Number: 2336

Extension Name: COE#015 DCM-016 CLAR-020 Solids Handling Changes

**[Items and ByProducts]**

Material Filter: <None>  
Report: COR - 2

Item #	Item Name	Quantity	Ext Price	Ext Labor
Label Set: Combined, Combined, Combined, Combined, Combin				
Cost Code: 010 - Conduit/Raceway				
2,600	1/2" SS WEDGE ANCHOR	4.00	\$46.00	1.00
2,614	1/4x1" SS SCREWS	12.00	\$4.08	2.11
2,624	1/4" SS WASHER	24.00	\$2.64	0.00
2,631	1/4" SS NUT	12.00	\$1.61	0.00
2,658	1 5/8 STRUT-STAINLESS	6.00	\$71.25	1.13
2,685	1 GRC/PVC COATED	40.00	\$225.25	5.02
2,712	1 GRC/PVC ELBOW	4.00	\$73.97	3.27
2,750	1X8 GRC/PVC NIP	4.00	\$31.13	1.76
2,765	1 GRC/PVC HUB	4.00	\$174.09	2.51
2,920	1 GRC/PVC 1H STRAP	2.00	\$13.41	0.10
2,972	1 GRC/PVC CLAMP BAK	2.00	\$25.64	0.15
60,040	Stanchion Installation	1.00	\$311.18	1.50
Cost Code: 020 - Wire/Cable				
4	16 TSP - SHIELDED CABLE BELDEN	250.00	\$180.00	3.14
44	12 THHN CU STRANDED	1,500.00	\$195.27	11.30
60,050	Wire Tags Tube Style	12.00	\$30.00	0.12
Cost Code: 110 - Underground				
3,188	1 PVC 40 (TRENCH)	200.00	\$91.61	10.05
3,217	1 PVC ELBOW	4.00	\$16.70	1.76
3,461	1 PVC FEMALE ADPT	2.00	\$1.10	0.45
Cost Code: 140-Instrumentation				
10,162	1PB STATION OIL-TIGHT	1.00	\$79.80	1.63
10,194	3POS SWING KNOB SWITCH	1.00	\$0.00	1.88
15,819	LE/LIT -LEVEL, FBO	1.00	\$0.00	4.40
15,840	SM PANEL -FBE	1.00	\$0.00	5.02
<b>[Items and ByProducts] Total:</b>			<b>\$1,574.72</b>	<b>\$8.32</b>

**Scope Letter: 2 pages**

Technical  
Systems  
Incorporated

October 10, 2019

Quote Number: CO#04

To: Southern Contracting  
Attn: Dan Alcantar

Project: Beaumont WWTP Salt Mitigation  
Beaumont Wastewater Treatment Plant

Reference: **CLAR-20 Solids Handling Building Changes**

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

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:****\$3,068.00****Change Scope as Follows:**

- Supply Display Unit LI-8601
  - o Precision Digital PD6700 Loop-Powered Display
  - o NEMA 4X, Grey Plastic Field Enclosure, 0.5W Power draw at 24vdc
  - o Note: LIT-8601 excluded as it is provided by tank vendor
- Supply LCP-P-8603
  - o H-O-R Switch
  - o 304SS Enclosure 6"x6"x4"
- Modify LCP-SHDC as indicated on E-25
  - o Show Lid Switches on drawings – no physical mods required
- Incorporated added I/O into RIO-SH per I-18

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.
- 2) LIT-8601 is provided by others
- 3) FVNR-P-8603 is provided by others as part of MCC-SH



# PACIFIC STEEL GROUP

**Contractor:** WM Lyles

**Date:** 10/30/2019

**Job Name:** Salt Mitigation WWTP Upgrades

**PSG Job #:** L18161

**Extra No.:** 13

**Description:** **Added Material and Labor for new Tank Pad per Clarification 20.**  
  
Please see attached correspondence.

Material:	Quantity:	Unit:	Unit Price:	Comments:	Extended Price:
Rebar	1,200	LB	\$ 0.60		\$ 720.00
Specialty Rebar	-	LB	\$ 1.50		\$ -
Mesh	-	SQFT	\$ 0.35		\$ -
Couplers	-	Each	\$ 1.75		\$ -
Other	-	Each	\$ -		\$ -
					\$ 720.00

Labor Impact:	Quantity:	Unit:	Unit Price:	Comments:	Extended Price:
Rebar	12	Hours	\$ 94.04		\$ 1,128.00
Specialty Rebar	-	Hours	\$ 94.04		\$ -
Mesh	-	Hours	\$ 94.04		\$ -
Couplers	-	Hours	\$ 94.04		\$ -
Other	-	Hours	\$ 94.04		\$ -
					\$ 1,128.00

FWA Labor:	Quantity:	Unit:	Unit Price:	Comments:	Extended Price:
Ironworker	-	Hours	\$ 94.04	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	2.00	Hours	\$ 70.00	Additional Detailing	\$ 140.00
Crane	-	Hours	\$ 300.00		\$ -
Delivery	-	Each	\$ 550.00		\$ -
Other	-	Each	\$ -		\$ -
					\$ 140.00

Sub Total = \$ 1,988.00

Overhead & Profit @ 10% & 5% = \$ 308.00

Sub Total = \$ 2,296.00

Bond Fee = \$ 23.00

Total Extra To Contract = **\$ 2,319.00**