



# January 2017 Recommended Contracting Actions

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Presented By:  
Program Management Consultant

# Recommended Contracting Actions Summary

## Construction Change Orders

<i>Construction Change Orders</i>		
<b>WP-42A.1/A.3, 4<sup>th</sup> Street Pump Station Change Order 09</b> <ul style="list-style-type: none"><li>Fuel level Sensors, Floodwall coping, and Trash Rack Modifications</li></ul>	ICS, Inc.	<b>\$12,506.80</b>
<b>Total Construction Change Orders</b>		<b>\$12,506.80</b>



**Technical Advisory Group Recommendation**

Meeting Date: 01/17/2017

**RECOMMENDATION FOR ACTION:**

The Technical Advisory Group has reviewed and recommends approval of the following Contract Action(s).

**SUMMARY OF CONTRACTING ACTION:**

Per the contract review and approval procedures, Section 5.C(2), that were adopted by the Diversion Authority on November 10, 2016, the Owner’s Program Management Consultant (PMC) or Engineer of Record (EOR) shall submit a construction Change Order request to the Technical Advisory Group. The Technical Advisory Group shall review the Change Order request during its next regular meeting after receiving the Change Order request, and make a recommendation as to approval or denial of the Change Order request.

The Owner’s Representative has reviewed and recommends the following Contract Action(s):

Description	Budget Estimate (\$)
ICS, Inc. <i>Change Order #09</i>	<b>\$12,506.80</b>
WP-42A.1/A.3, 4 <sup>th</sup> Street Pump Station and Floodwall – Fuel level Sensors, Floodwall Coping, and Trash Rack Modifications.	

**Summary of Contracting History and Current Contract Action:**

Original Agreement or Amendment	Budget (\$) Change	Previous Project Cost	Revised Project Cost	Project Start	Project Completion	Comments
WP-42A.1/A.3 contract	17,361,616.35	0.00	17,361,616.35	11-Dec-14	11-Nov-16	Awarded 4 <sup>th</sup> Street Pump Station and 2 <sup>nd</sup> Street South Floodwall
Change Order 1	268,555.24	17,361,616.35	17,630,171.59	11-Dec-14	11-Nov-16	Fargo Highrise parking lot modifications and other costs
Change Order 2	176,462.97	17,630,171.59	17,806,634.56	11-Dec-14	11-Nov-16	Unknown underground structures and other costs
Change Order 3	(10,570.93)	17,806,634.56	17,796,063.63	11-Dec-14	11-Nov-16	Deduct exterior electrical work and install fence, bollards, and lights at Fargo Highrise
Change Order 4	15,174.67	17,796,063.63	17,811,238.30	11-Dec-14	11-Nov-16	Time extensions and multiple cost adjustments for Engineer- and Owner-directed items.
Change Order 5	70,363.71	17,811,238.30	17,881,601.31	11-Dec-14	11-Nov-16	Last of suspended changes, sanitary overflow connection, T&M budget for ACM removal

Change Order 6	147,079.47	17,881,601.31	18,028,681.48	11-Dec-14	11-Nov-16	Last of suspended changes, erosion blanket, still wells, unsuitable materials and additional asbestos wrapped pipe.
Change Order 7	11,147.81	18,028,681.48	18,036,371.39	11-Dec-14	13-Sept-17	Sanitary Overflow Brackets, ST-4 Flared End with Grate, Sluice Gate Actuator Covers and 2" nuts, Updated Lot Grading Plan, Milestone and Project Completion Date Resets, and Time Additions.
Change Order 8	2,386.00	18,036,371.39	18,038,757.39	11-Dec-14	13-Sept-17	Reprogramming Display and Generator Building Fuel Storage Area Drain
Change Order 9	12,506.80	18,038,757.39	18,051,264.19	11-Dec-14	13-Sept-17	Fuel Sensors, Floodwall Coping, and Trash Rack Modifications

DISCUSSION

Change Order No. 9 increases the Contract Price by a total of **\$12,506.80** as listed below:

- Fuel Level Sensors.** The generator fuel tank’s fuel level sensing system is specified to alarm at three (3) levels: low level alarm at 15% capacity, a high level alarm at 95%, and a high-high level alarm at 98% capacity. This Owner requested change will add three level sensing points: 25%, 50%, and 75% capacity, to allow better monitoring of fuel levels. Four systems were proposed by Fusion, the Contractor’s electrical Subcontractor and the Owner selected Option A as the preferred option. The 2<sup>nd</sup> Street pump station was outfitted with a similar sensing system that monitors these additional fuel tank levels. This change adds \$1,906.80 to the Contract Price. The Owner’s Representative and Engineer have reviewed this cost and found it to be reasonable.
- Floodwall Coping.** At the Owner’s request, higher pitched floodwall coping is being incorporated on the in-town floodwalls to discourage personal access to the top of the wall once complete. This change is consistent with changes made on 42F.1S and 42F.1N. This adds \$4,205.00 to the Contract Price for the Contractor to furnish and install higher pitched wall caps than were originally specified. The Owner’s Representative and Engineer have reviewed this cost and found it to be reasonable.
- Trash Rack Modifications.** The installed trash racks do not operate smoothly and jam frequently during operation. The Engineer, with assistance from the Contractor, has researched and developed a solution that includes fabricating and installing additional guide rollers on each of the trash racks. This change adds \$6,393.00 to the Contract Price to fabricate, install, and test the guide rollers. The Owner’s Representative and Engineer have reviewed this cost and found it to be reasonable.

ATTACHMENT(S):

- Draft Change Order No. 9
- Fuel Level Sensor Cost Letter from ICS dated 1/3/2017
- Floodwall Coping Cost Letter from ICS dated 1/3/2017
- Trash Rack Modifications Cost Letter from ICS dated 1/5/2017

Submitted by:



Tyler Smith, P.E.  
CH2M  
Project Manager  
Metro Flood Diversion Project

January 16, 2017

Date

Mark Bittner, Fargo Director of Engineering

Concur: January 17, 2017 Non-Concur: \_\_\_\_\_

April Walker, Fargo City Engineer

Concur: January 17, 2017 Non-Concur \_\_\_\_\_

David Overbo, Clay County Engineer

Concur: \_\_\_\_\_ Non-Concur: \_\_\_\_\_

Jason Benson, Cass County Engineer

Concur: January 17, 2017 Non-Concur \_\_\_\_\_

Nathan Boerboom, Diversion Authority Project  
Manager

Concur: January 17, 2017 Non-Concur: \_\_\_\_\_

Robert Zimmerman, Moorhead City Engineer

Concur: January 17, 2017 Non-Concur \_\_\_\_\_



**Change Order No.** 09

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Date of Issuance:	<u>01/26/2017</u>	Effective Date:	<u>12/01/2016</u>
Owner:	<u>Metro Flood Diversion Authority</u>	Owner's Contract No.:	<u>WP-42A.1/A.3</u>
Owner's Representative:	<u>CH2M HILL Engineers, Inc.</u>	Owner's Representative Project No.:	<u>435534</u>
Contractor:	<u>ICS, Inc.</u>	Contractor's Project No.:	<u>1114</u>
Engineer:	<u>Houston-Moore Group, LLC</u>	Work Package No.:	<u>WP-42A.1/A.3</u>
Project:	<u>Fargo-Moorhead Area Diversion</u>	Contract Name:	<u>4<sup>th</sup> Street Pump Station and Gatewell and 2<sup>nd</sup> Street Floodwall South</u>

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The Contract is modified as follows upon execution of this Change Order:

**Description:**

1. FUEL LEVEL SENSORS  
Add \$1,906.80 to the Contract Price to accommodate additional fuel level sensors that will monitor the 25%, 50%, and 75% fuel levels in the generator fuel tank.
2. FLOODWALL COPING  
Add \$4205.00 to the Contract Price for the contractor to furnish and install higher pitched wall coping for the floodwall south of 2<sup>nd</sup> Street.
3. TRASH RACK MODIFICATIONS  
Add \$6,393.00 to the Contract Price to accommodate the installation of modifications to the trash racks.

**Attachments:**

- Change Order 9 Unit Price Schedule dated 1/11/2017

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES
Original Contract Price:	Original Contract Times:
	Milestone 4.02.A.02: <u>November 1, 2015</u>
	Milestone 4.02.A.02a: <u>NA</u>
	Milestone 4.02.A.03: <u>July 31, 2015</u>
	Milestone 4.02.A.04: <u>August 20, 2015</u>
	Milestone 4.02.A.05: <u>November 13, 2015</u>
	Milestone 4.02.A.06: <u>January 26, 2016</u>
	Milestone 4.02.A.07: <u>September 5, 2016</u>
	Substantial Completion 4.02 B: <u>September 5, 2016</u>
<b>17,361,616.35</b>	Final Completion 4.02 B: <u>November 11, 2016</u>

<p>[Increase] [<del>Decrease</del>] from previously approved Change Orders No. <u>01</u> thru <u>07</u>:</p> <p style="text-align: right;"><b>677,141.04</b></p>	<p>[Increase] [<del>Decrease</del>] from previously approved Change Orders No. <u>01</u> thru <u>06</u>:</p> <p>Milestone 4.02.A.02: <u>30 days</u>  Milestone 4.02.A.02.a: <u>14 days</u>  Milestone 4.02.A.03: <u>29 days</u>  Milestone 4.02.A.04: <u>29 days</u>  Milestone 4.02.A.05: <u>30 days</u>  Milestone 4.02.A.06: <u>309 days</u>  Milestone 4.02.A.07: <u>309 days</u>  Substantial Completion 4.02 B: <u>309 days</u>  Final Completion 4.02 B: <u>306 days</u></p>
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<p>Contract Price prior to this Change Order:</p> <p style="text-align: right;"><b>18,038,757.39</b></p>	<p>Contract Times prior to this Change Order:</p> <p>Milestone 4.02.A.02: <u>December 1, 2015</u>  Milestone 4.02.A.02a: <u>November 15, 2015</u>  Milestone 4.02.A.03: <u>August 29, 2015</u>  Milestone 4.02.A.04: <u>September 18, 2015</u>  Milestone 4.02.A.05: <u>December 13, 2015</u>  Milestone 4.02.A.06: <u>December 3, 2016</u>  Milestone 4.02.A.07: <u>July 11, 2017</u>  Substantial Completion 4.02 B: <u>July 11, 2017</u>  Final Completion 4.02 B: <u>September 13, 2017</u></p>
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<p>[Increase] [<del>Decrease</del>] of this Change Order:</p> <p style="text-align: right;"><b>12,506.80</b></p>	<p>[Increase] [<del>Decrease</del>] of this Change Order:</p> <p>Milestone 4.02.A.07: <u>2 days</u>  Substantial Completion 4.02 B: <u>2 days</u></p>
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<p>Contract Price incorporating this Change Order:</p> <p style="text-align: right;"><b>18,051,264.19</b></p>	<p>Contract Times with all approved Change Orders:</p> <p>Milestone 4.02.A.02: <u>December 1, 2015</u>  Milestone 4.02.A.02a: <u>November 15, 2015</u>  Milestone 4.02.A.03: <u>August 29, 2015</u>  Milestone 4.02.A.04: <u>September 18, 2015</u>  Milestone 4.02.A.05: <u>December 13, 2015</u>  Milestone 4.02.A.06: <u>December 3, 2016</u>  Milestone 4.02.A.07: <u>July 13, 2017</u>  Substantial Completion 4.02 B: <u>July 13, 2017</u>  Final Completion 4.02 B: <u>September 13, 2017</u></p>
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<p><b>RECOMMENDED:</b></p> <p>By: _____</p> <p style="text-align: center;">Owner's Representative (Authorized Signature)</p> <p>Title: <u>Construction Manager</u></p> <p>Date: <u>01/26/2017</u></p>	<p><b>ACCEPTED:</b></p> <p>By: _____</p> <p style="text-align: center;">Owner (Authorized Signature)</p> <p>Title: _____</p> <p>Date: _____</p>	<p><b>ACCEPTED:</b></p> <p>By: _____</p> <p style="text-align: center;">Contractor (Authorized Signature)</p> <p>Title: _____</p> <p>Date: _____</p>
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WP-42A.1/A.3

4th Street Pump Station and Gatewell - 2nd Street Floodwall South

Change Order 9 Unit Price Schedule

DATE: 1/11/2016



WP-42A.1/A.3 - 4th Street Pump Station and Gatewell - 2nd Street Floodwall South											
ITEM	DESCRIPTION	UNIT	Current Budget (thru CO-06)			Net Change			New Budget		
			QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT
0001	Mobilization	LS	1	\$ 350,000.00	\$ 350,000.00	0	\$ -	\$ -	1	\$ 350,000.00	\$ 350,000.00
0002	Remove Sanitary Sewer Manhole	EA	2	\$ 1,100.00	\$ 2,200.00	0	\$ -	\$ -	2	\$ 1,100.00	\$ 2,200.00
0003	F&I Pipe SDR 26 - 10" Dia PVC	LF	145	\$ 70.00	\$ 10,150.00	0	\$ -	\$ -	145	\$ 70.00	\$ 10,150.00
0004	Remove Sanitary Sewer Pipe All Sizes All Types	LF	140	\$ 11.00	\$ 1,540.00	0	\$ -	\$ -	140	\$ 11.00	\$ 1,540.00
0005	Rem & Repl Sanitary Sewer Casting - Floating Manhole	EA	1	\$ 800.00	\$ 800.00	0	\$ -	\$ -	1	\$ 800.00	\$ 800.00
0006	Sanitary Sewer Manhole	EA	2	\$ 4,500.00	\$ 9,000.00	0	\$ -	\$ -	2	\$ 4,500.00	\$ 9,000.00
0007	Sanitary Sewer Exterior Drop Manhole	EA	1	\$ 12,000.00	\$ 12,000.00	0	\$ -	\$ -	1	\$ 12,000.00	\$ 12,000.00
0008	F&I 5" Hydrant	EA	2	\$ 6,000.00	\$ 12,000.00	0	\$ -	\$ -	2	\$ 6,000.00	\$ 12,000.00
0009	Salvage Hydrant	EA	2	\$ 600.00	\$ 1,200.00	0	\$ -	\$ -	2	\$ 600.00	\$ 1,200.00
0010	F&I Pipe C900 DR 18 - 6" Dia PVC	LF	479	\$ 60.00	\$ 28,740.00	0	\$ -	\$ -	479	\$ 60.00	\$ 28,740.00
0011	F&I Pipe C900 DR 18 - 10" Dia PVC	LF	416	\$ 65.00	\$ 27,040.00	0	\$ -	\$ -	416	\$ 65.00	\$ 27,040.00
0012	Remove Water Main Pipe All Sizes All Types	LF	697	\$ 11.00	\$ 7,667.00	0	\$ -	\$ -	697	\$ 11.00	\$ 7,667.00
0013	F&I Gate Valve 6" Dia	EA	5	\$ 2,200.00	\$ 11,000.00	0	\$ -	\$ -	5	\$ 2,200.00	\$ 11,000.00
0014	F&I Gate Valve 10" Dia	EA	3	\$ 4,000.00	\$ 12,000.00	0	\$ -	\$ -	3	\$ 4,000.00	\$ 12,000.00
0015	Watermain Fittings	LBS	4,157	\$ 12.00	\$ 49,884.00	0	\$ -	\$ -	4,157	\$ 12.00	\$ 49,884.00
0016	F&I Overflow Structure	EA	1	\$ 18,000.00	\$ 18,000.00	0	\$ -	\$ -	1	\$ 18,000.00	\$ 18,000.00
0017	F&I Manhole 4' Dia Reinf Conc	EA	3	\$ 5,000.00	\$ 15,000.00	0	\$ -	\$ -	3	\$ 5,000.00	\$ 15,000.00
0018	F&I Manhole 5' Dia Reinf Conc	EA	1	\$ 5,000.00	\$ 5,000.00	0	\$ -	\$ -	1	\$ 5,000.00	\$ 5,000.00
0019	F&I Manhole 6' Dia Reinf Conc	EA	2	\$ 20,000.00	\$ 40,000.00	0	\$ -	\$ -	2	\$ 20,000.00	\$ 40,000.00
0020	F&I Manhole 7' Dia Reinf Conc	EA	3	\$ 22,000.00	\$ 66,000.00	0	\$ -	\$ -	3	\$ 22,000.00	\$ 66,000.00
0021	F&I Manhole Type E Reinf Conc	EA	2	\$ 70,000.00	\$ 140,000.00	0	\$ -	\$ -	2	\$ 70,000.00	\$ 140,000.00
0022	F&I Manhole Type E Reinf Conc (ST-4)	EA	1	\$ 250,000.00	\$ 250,000.00	0	\$ -	\$ -	1	\$ 250,000.00	\$ 250,000.00
0023	F&I Manhole Type E Reinf Conc (ST-3)	EA	1	\$ 225,000.00	\$ 225,000.00	0	\$ -	\$ -	1	\$ 225,000.00	\$ 225,000.00
0024	F&I Manhole Type E Reinf Conc (ST-2)	EA	1	\$ 225,000.00	\$ 225,000.00	0	\$ -	\$ -	1	\$ 225,000.00	\$ 225,000.00
0025	F&I Manhole Type E Reinf Conc (ST-1)	EA	1	\$ 225,000.00	\$ 225,000.00	0	\$ -	\$ -	1	\$ 225,000.00	\$ 225,000.00
0026	Remove Storm Sewer Manhole	EA	5	\$ 600.00	\$ 3,000.00	0	\$ -	\$ -	5	\$ 600.00	\$ 3,000.00
0027	F&I Inlet - Manhole (MHI) 4' Dia Reinf Conc	EA	1	\$ 5,000.00	\$ 5,000.00	0	\$ -	\$ -	1	\$ 5,000.00	\$ 5,000.00
0028	F&I Inlet - Manhole (MHI) 6' Dia Reinf Conc	EA	1	\$ 15,000.00	\$ 15,000.00	0	\$ -	\$ -	1	\$ 15,000.00	\$ 15,000.00
0029	F&I Inlet - Single Box (SBI) Reinf Conc	EA	1	\$ 5,000.00	\$ 5,000.00	0	\$ -	\$ -	1	\$ 5,000.00	\$ 5,000.00



**WP-42A.1/A.3**  
**4th Street Pump Station and Gatewell - 2nd Street Floodwall South**

Change Order 9 Unit Price Schedule  
 DATE: 1/11/2016



WP-42A.1/A.3 - 4th Street Pump Station and Gatewell - 2nd Street Floodwall South											
ITEM	DESCRIPTION	UNIT	Current Budget (thru CO-06)			Net Change			New Budget		
			QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT
0030	F&I Inlet - Double Box (DBI) Reinf Conc	EA	1	\$ 7,000.00	\$ 7,000.00	0	\$ -	\$ -	1	\$ 7,000.00	\$ 7,000.00
0031	F&I Inlet - Special (SPI) Reinf Conc	EA	2	\$ 2,000.00	\$ 4,000.00	0	\$ -	\$ -	2	\$ 2,000.00	\$ 4,000.00
0032	Riprap (Outlet)	CY	410	\$ 125.00	\$ 51,250.00	0	\$ -	\$ -	410	\$ 125.00	\$ 51,250.00
0033	Box Culvert End Section with Gate	EA	1	\$ 25,000.00	\$ 25,000.00	0	\$ -	\$ -	1	\$ 25,000.00	\$ 25,000.00
0034	PLUG PIPE 33" DIA.	EA	1	\$ 1,500.00	\$ 1,500.00	0	\$ -	\$ -	1	\$ 1,500.00	\$ 1,500.00
0035	PLUG PIPE 72" DIA.	EA	1	\$ 3,300.00	\$ 3,300.00	0	\$ -	\$ -	1	\$ 3,300.00	\$ 3,300.00
0036	PLUG PIPE 78" DIA.	EA	2	\$ 4,500.00	\$ 9,000.00	0	\$ -	\$ -	2	\$ 4,500.00	\$ 9,000.00
0037	F&I Pipe 18" Dia Reinf Conc	LF	291	\$ 95.00	\$ 27,645.00	0	\$ -	\$ -	291	\$ 95.00	\$ 27,645.00
0038	F&I Pipe 24" Dia Reinf Conc	LF	86	\$ 120.00	\$ 10,320.00	0	\$ -	\$ -	86	\$ 120.00	\$ 10,320.00
0039	F&I Pipe 30" Dia Reinf Conc	LF	137	\$ 220.00	\$ 30,140.00	0	\$ -	\$ -	137	\$ 220.00	\$ 30,140.00
0040	F&I Pipe 36" Dia Reinf Conc	LF	8	\$ 250.00	\$ 2,000.00	0	\$ -	\$ -	8	\$ 250.00	\$ 2,000.00
0041	F&I Pipe 48" Dia Reinf Conc	LF	79	\$ 300.00	\$ 23,700.00	0	\$ -	\$ -	79	\$ 300.00	\$ 23,700.00
0042	F&I Pipe 54" Dia Reinf Conc	LF	79	\$ 800.00	\$ 63,200.00	0	\$ -	\$ -	79	\$ 800.00	\$ 63,200.00
0043	F&I Pipe 72" Dia Reinf Conc	LF	51	\$ 900.00	\$ 45,900.00	0	\$ -	\$ -	51	\$ 900.00	\$ 45,900.00
0044	F&I Pipe 12" Dia PVC	LF	99	\$ 120.00	\$ 11,880.00	0	\$ -	\$ -	99	\$ 120.00	\$ 11,880.00
0045	Remove Storm Sewer Pipe All Sizes All Types	LF	2,788	\$ 85.00	\$ 236,980.00	0	\$ -	\$ -	2,788	\$ 85.00	\$ 236,980.00
0046	30" Flapgate	EA	-	\$ 25,000.00	\$ -	0	\$ -	\$ -	-	\$ 25,000.00	\$ -
0047	54" Flapgate	EA	1	\$ 30,000.00	\$ 30,000.00	0	\$ -	\$ -	1	\$ 30,000.00	\$ 30,000.00
0048	F&I Pipe w/GB 30" Dia Reinf Conc	LF	240	\$ 1,100.00	\$ 264,000.00	0	\$ -	\$ -	240	\$ 1,100.00	\$ 264,000.00
0049	F&I Pipe w/GB 36" Dia Reinf Conc	LF	88	\$ 1,200.00	\$ 105,600.00	0	\$ -	\$ -	88	\$ 1,200.00	\$ 105,600.00
0050	F&I Pipe w/GB 54" Dia Reinf Conc	LF	19	\$ 2,000.00	\$ 38,000.00	0	\$ -	\$ -	19	\$ 2,000.00	\$ 38,000.00
0051	F&I Box Culvert 8'x5' Wide Reinf Conc Cast in Place with depth of fill 1' to 10'	LF	495	\$ 1,500.00	\$ 742,500.00	0	\$ -	\$ -	495	\$ 1,500.00	\$ 742,500.00
0052	F&I Box Culvert 8'x5' Wide Reinf Conc Cast in Place with depth of fill 10' to 31'	LF	128	\$ 2,800.00	\$ 358,400.00	0	\$ -	\$ -	128	\$ 2,800.00	\$ 358,400.00
0053	F&I Box Culvert 8'x5' Wide Reinf Conc Precast	LF	186	\$ 1,300.00	\$ 241,800.00	0	\$ -	\$ -	186	\$ 1,300.00	\$ 241,800.00
0054	Remove Pavement All Thicknesses All Types	SY	8,226	\$ 10.00	\$ 82,260.00	0	\$ -	\$ -	8,226	\$ 10.00	\$ 82,260.00
0055	Subgrade Preparation	SY	10,496	\$ 4.50	\$ 47,232.00	0	\$ -	\$ -	10,496	\$ 4.50	\$ 47,232.00
0056	F&I Woven Geotextile	SY	10,496	\$ 2.50	\$ 26,240.00	0	\$ -	\$ -	10,496	\$ 2.50	\$ 26,240.00
0057	F&I Class 5 Agg - 6" Thick	SY	5,578	\$ 10.00	\$ 55,780.00	0	\$ -	\$ -	5,578	\$ 10.00	\$ 55,780.00
0058	F&I Class 5 Agg - 7" Thick	SY	2,212	\$ 12.00	\$ 26,544.00	0	\$ -	\$ -	2,212	\$ 12.00	\$ 26,544.00

**WP-42A.1/A.3**  
**4th Street Pump Station and Gatewell - 2nd Street Floodwall South**

Change Order 9 Unit Price Schedule  
 DATE: 1/11/2016



WP-42A.1/A.3 - 4th Street Pump Station and Gatewell - 2nd Street Floodwall South											
ITEM	DESCRIPTION	UNIT	Current Budget (thru CO-06)			Net Change			New Budget		
			QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT
0059	F&I Class 5 Agg - 8" Thick	SY	733	\$ 13.00	\$ 9,529.00	0	\$ -	\$ -	733	\$ 13.00	\$ 9,529.00
0060	F&I Class 5 Agg - 12" Thick	SY	1,973	\$ 20.00	\$ 39,460.00	0	\$ -	\$ -	1,973	\$ 20.00	\$ 39,460.00
0061	F&I Crushed Conc - 6" Thick	SY	120	\$ 13.00	\$ 1,560.00	0	\$ -	\$ -	120	\$ 13.00	\$ 1,560.00
0062	F&I Curb & Gutter Standard (Type II)	LF	2,030	\$ 40.00	\$ 81,200.00	0	\$ -	\$ -	2,030	\$ 40.00	\$ 81,200.00
0063	Remove Curb & Gutter	LF	1,924	\$ 10.00	\$ 19,240.00	0	\$ -	\$ -	1,924	\$ 10.00	\$ 19,240.00
0064	F&I Pavement 6" Thick Reinf Conc	SY	3,744	\$ 66.00	\$ 247,104.00	0	\$ -	\$ -	3,744	\$ 66.00	\$ 247,104.00
0065	F&I Pavement 7" Thick Reinf Conc	SY	1,484	\$ 75.00	\$ 111,300.00	0	\$ -	\$ -	1,484	\$ 75.00	\$ 111,300.00
0066	F&I Pavement 9" Thick Doweled Conc	SY	1,519	\$ 90.00	\$ 136,710.00	0	\$ -	\$ -	1,519	\$ 90.00	\$ 136,710.00
0067	F&I Sidewalk 4" Thick Reinf Conc	SY	1,401	\$ 60.00	\$ 84,060.00	0	\$ -	\$ -	1,401	\$ 60.00	\$ 84,060.00
0068	Remove Sidewalk All Thicknesses All Types	SY	1,112	\$ 15.00	\$ 16,680.00	0	\$ -	\$ -	1,112	\$ 15.00	\$ 16,680.00
0069	Temp Construction Entrance	EA	4	\$ 1,700.00	\$ 6,800.00	0	\$ -	\$ -	4	\$ 1,700.00	\$ 6,800.00
0070	Traffic Control - Type 1	LS	1	\$ 26,000.00	\$ 26,000.00	0	\$ -	\$ -	1	\$ 26,000.00	\$ 26,000.00
0071	F&I Aggregate for Asph Pavement Class 29	TON	930	\$ 80.00	\$ 74,400.00	0	\$ -	\$ -	930	\$ 80.00	\$ 74,400.00
0072	F&I Asphalt Cement PG 58-28	GAL	13,385	\$ 4.00	\$ 53,540.00	0	\$ -	\$ -	13,385	\$ 4.00	\$ 53,540.00
0073	F&I Impressioned 4" Thick Reinf Conc	SY	72	\$ 220.00	\$ 15,840.00	0	\$ -	\$ -	72	\$ 220.00	\$ 15,840.00
0074	F&I Det Warn Panels Cast Iron	SF	109	\$ 70.00	\$ 7,630.00	0	\$ -	\$ -	109	\$ 70.00	\$ 7,630.00
0075	F&I Sign Assembly	EA	18	\$ 220.00	\$ 3,960.00	0	\$ -	\$ -	18	\$ 220.00	\$ 3,960.00
0076	Relocate Sign Assembly	EA	13	\$ 220.00	\$ 2,860.00	0	\$ -	\$ -	13	\$ 220.00	\$ 2,860.00
0077	F&I Engineering Grade	SF	23	\$ 30.00	\$ 690.00	0	\$ -	\$ -	23	\$ 30.00	\$ 690.00
0078	F&I Diamond Grade Cubed	SF	6	\$ 40.00	\$ 252.00	0	\$ -	\$ -	6	\$ 40.00	\$ 252.00
0079	F&I High Intensity Prismatic	SF	28	\$ 35.00	\$ 966.00	0	\$ -	\$ -	28	\$ 35.00	\$ 966.00
0080	F&I Flexible Delineator	EA	2	\$ 130.00	\$ 260.00	0	\$ -	\$ -	2	\$ 130.00	\$ 260.00
0081	F&I Grooved Plastic Film Message	SF	80	\$ 50.00	\$ 4,000.00	0	\$ -	\$ -	80	\$ 50.00	\$ 4,000.00
0082	F&I Grooved Plastic Film 4" Wide	LF	1,485	\$ 10.00	\$ 14,850.00	0	\$ -	\$ -	1,485	\$ 10.00	\$ 14,850.00
0083	F&I Grooved Plastic Film 24" Wide	LF	72	\$ 40.00	\$ 2,880.00	0	\$ -	\$ -	72	\$ 40.00	\$ 2,880.00
0084	Paint Epoxy Message	SF	32	\$ 20.00	\$ 640.00	0	\$ -	\$ -	32	\$ 20.00	\$ 640.00
0085	Paint Epoxy Line 4" Wide	LF	3,244	\$ 6.00	\$ 19,464.00	0	\$ -	\$ -	3,244	\$ 6.00	\$ 19,464.00
0086	Paint Epoxy Line 8" Wide	LF	234	\$ 10.00	\$ 2,340.00	0	\$ -	\$ -	234	\$ 10.00	\$ 2,340.00
0087	Paint Epoxy Line 24" Wide	LF	-	\$ 20.00	\$ -	0	\$ -	\$ -	-	\$ 20.00	\$ -

**WP-42A.1/A.3**  
**4th Street Pump Station and Gatewell - 2nd Street Floodwall South**

Change Order 9 Unit Price Schedule  
 DATE: 1/11/2016



WP-42A.1/A.3 - 4th Street Pump Station and Gatewell - 2nd Street Floodwall South											
ITEM	DESCRIPTION	UNIT	Current Budget (thru CO-06)			Net Change			New Budget		
			QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT
0088	Obliterate Pavement Markings	SF	182	\$ 35.00	\$ 6,370.00	0	\$ -	\$ -	182	\$ 35.00	\$ 6,370.00
0089	Temp Fence - Safety	LF	2,167	\$ 6.00	\$ 13,002.00	0	\$ -	\$ -	2,167	\$ 6.00	\$ 13,002.00
0090	Remove Fence	LF	202	\$ 27.00	\$ 5,454.00	0	\$ -	\$ -	202	\$ 27.00	\$ 5,454.00
0091	Temp Pumping	LS	1	\$ 95,000.00	\$ 95,000.00	0	\$ -	\$ -	1	\$ 95,000.00	\$ 95,000.00
0092	Clear & Grub	LS	1	\$ 15,000.00	\$ 15,000.00	0	\$ -	\$ -	1	\$ 15,000.00	\$ 15,000.00
0093	Remove Tree	EA	19	\$ 600.00	\$ 11,400.00	0	\$ -	\$ -	19	\$ 600.00	\$ 11,400.00
0094	Silt Fence - Standard	LF	784	\$ 4.00	\$ 3,136.00	0	\$ -	\$ -	784	\$ 4.00	\$ 3,136.00
0095	Floating Silt Fence	LF	93	\$ 30.00	\$ 2,790.00	0	\$ -	\$ -	93	\$ 30.00	\$ 2,790.00
0096	Sediment Control Log 6" to 8" Dia	LF	1,130	\$ 3.00	\$ 3,390.00	0	\$ -	\$ -	1,130	\$ 3.00	\$ 3,390.00
0097	Inlet Protection - New Inlet	EA	7	\$ 300.00	\$ 2,100.00	0	\$ -	\$ -	7	\$ 300.00	\$ 2,100.00
0098	Inlet Protection - Existing Inlet	EA	9	\$ 200.00	\$ 1,800.00	0	\$ -	\$ -	9	\$ 200.00	\$ 1,800.00
0099	Salvage Signal Standard	EA	1	\$ 300.00	\$ 300.00	0	\$ -	\$ -	1	\$ 300.00	\$ 300.00
0100	Lighting System	LS	1	\$ 20,000.00	\$ 20,000.00	0	\$ -	\$ -	1	\$ 20,000.00	\$ 20,000.00
0101	Propane Tanks Remove and Replace	LS	1	\$ 20,000.00	\$ 20,000.00	0	\$ -	\$ -	1	\$ 20,000.00	\$ 20,000.00
0102	Replace Unsalvagable Bollards	EA	40	\$ 1,000.00	\$ 40,000.00	0	\$ -	\$ -	40	\$ 1,000.00	\$ 40,000.00
0103	Revise Flashing Beacon System	LS	1	\$ 15,000.00	\$ 15,000.00	0	\$ -	\$ -	1	\$ 15,000.00	\$ 15,000.00
0104	Revise Traffic Control System	LS	1	\$ 20,000.00	\$ 20,000.00	0	\$ -	\$ -	1	\$ 20,000.00	\$ 20,000.00
0105	F&I Bus Shelter	EA	1	\$ 30,000.00	\$ 30,000.00	0	\$ -	\$ -	1	\$ 30,000.00	\$ 30,000.00
0106	F&I Sheet Piling - Steel	SF	168	\$ 65.00	\$ 10,920.00	0	\$ -	\$ -	168	\$ 65.00	\$ 10,920.00
0107	Topsoil - Strip	CY	5,870	\$ 5.00	\$ 29,350.00	0	\$ -	\$ -	5,870	\$ 5.00	\$ 29,350.00
0108	Topsoil - Spread	CY	2,784	\$ 5.00	\$ 13,920.00	0	\$ -	\$ -	2,784	\$ 5.00	\$ 13,920.00
0109	Embankment	CY	45,017	\$ 13.00	\$ 585,221.00	0	\$ -	\$ -	45,017	\$ 13.00	\$ 585,221.00
0110	Embankment Import	CY	8,617	\$ 22.00	\$ 189,574.00	0	\$ -	\$ -	8,617	\$ 22.00	\$ 189,574.00
0111	Excavation	CY	36,400	\$ 9.00	\$ 327,600.00	0	\$ -	\$ -	36,400	\$ 9.00	\$ 327,600.00
0112	Grading North of 2nd St S and West of 4th St S	LS	1	\$ 20,000.00	\$ 20,000.00	0	\$ -	\$ -	1	\$ 20,000.00	\$ 20,000.00
0113	Mulching Type 1 - Hydro	SY	16,703	\$ 0.50	\$ 8,351.50	0	\$ -	\$ -	16,703	\$ 0.50	\$ 8,351.50
0114	Seeding Type B	SY	16,703	\$ 0.35	\$ 5,846.05	0	\$ -	\$ -	16,703	\$ 0.35	\$ 5,846.05
0115	Overseeding	SY	33,405	\$ 0.25	\$ 8,351.25	0	\$ -	\$ -	33,405	\$ 0.25	\$ 8,351.25
0116	Weed Control Type B	SY	16,703	\$ 0.15	\$ 2,505.45	0	\$ -	\$ -	16,703	\$ 0.15	\$ 2,505.45

WP-42A.1/A.3

4th Street Pump Station and Gatewell - 2nd Street Floodwall South

Change Order 9 Unit Price Schedule  
DATE: 1/11/2016



WP-42A.1/A.3 - 4th Street Pump Station and Gatewell - 2nd Street Floodwall South											
ITEM	DESCRIPTION	UNIT	Current Budget (thru CO-06)			Net Change			New Budget		
			QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT
0117	Removable Floodwall	LS	1	\$ 120,000.00	\$ 120,000.00	0	\$ -	\$ -	1	\$ 120,000.00	\$ 120,000.00
0118	F&I Floodwall Reinf Bars - Steel	LB	63,445	\$ 1.10	\$ 69,789.50	0	\$ -	\$ -	63,445	\$ 1.10	\$ 69,789.50
0119	F&I Floodwall Reinf Bars - Epoxy Coated Steel	LB	59,852	\$ 1.30	\$ 77,807.60	0	\$ -	\$ -	59,852	\$ 1.30	\$ 77,807.60
0120	F&I Floodwall - Structural Conc	CY	828	\$ 1,100.00	\$ 910,800.00	0	\$ -	\$ -	828	\$ 1,100.00	\$ 910,800.00
0121	F&I Floodwall - Misc.	LS	1	\$ 225,000.00	\$ 225,000.00	0	\$ -	\$ -	1	\$ 225,000.00	\$ 225,000.00
0122	Demolition Pump Stations, Storm Sewers, Force Mains	LS	1	\$ 110,000.00	\$ 110,000.00	0	\$ -	\$ -	1	\$ 110,000.00	\$ 110,000.00
0123	Force Mains and Sump Pump Discharge	LS	1	\$ 600,000.00	\$ 600,000.00	0	\$ -	\$ -	1	\$ 600,000.00	\$ 600,000.00
0124	Pump Station - Structural and Architectural	LS	1	\$ 2,700,000.00	\$ 2,700,000.00	0	\$ -	\$ -	1	\$ 2,700,000.00	\$ 2,700,000.00
0125	Stormwater Pumps and Motors	LS	1	\$ 1,200,000.00	\$ 1,200,000.00	0	\$ -	\$ -	1	\$ 1,200,000.00	\$ 1,200,000.00
0126	Sump Pumps	LS	1	\$ 60,000.00	\$ 60,000.00	0	\$ -	\$ -	1	\$ 60,000.00	\$ 60,000.00
0127	Trash Racks and Miscellaneous Metals	LS	1	\$ 320,000.00	\$ 320,000.00	0	\$ -	\$ -	1	\$ 320,000.00	\$ 320,000.00
0128	Sluice Gates and Wall Thimbles	LS	1	\$ 250,000.00	\$ 250,000.00	0	\$ -	\$ -	1	\$ 250,000.00	\$ 250,000.00
0129	Generator Building - Structural and Architectural	LS	1	\$ 551,000.00	\$ 551,000.00	0	\$ -	\$ -	1	\$ 551,000.00	\$ 551,000.00
0130	Gatewell Structural	LS	1	\$ 870,000.00	\$ 870,000.00	0	\$ -	\$ -	1	\$ 870,000.00	\$ 870,000.00
0131	Gatewell - Miscellaneous Metals	LS	1	\$ 100,000.00	\$ 100,000.00	0	\$ -	\$ -	1	\$ 100,000.00	\$ 100,000.00
0132	Sheetpiling (Pump Station)	LS	1	\$ 1,200,000.00	\$ 1,200,000.00	0	\$ -	\$ -	1	\$ 1,200,000.00	\$ 1,200,000.00
0133	Health and Safety	LS	1	\$ 165,000.00	\$ 165,000.00	0	\$ -	\$ -	1	\$ 165,000.00	\$ 165,000.00
0134	Diesel Generator	LS	1	\$ 385,000.00	\$ 385,000.00	0	\$ -	\$ -	1	\$ 385,000.00	\$ 385,000.00
0135	Switchboard SWBDA, Motor Control Center MCLA, Automatic Transfer Switch, Panel HP1	LS	1	\$ 280,000.00	\$ 280,000.00	0	\$ -	\$ -	1	\$ 280,000.00	\$ 280,000.00
0136	Electrical-Interior	LS	1	\$ 105,000.00	\$ 105,000.00	0	\$ -	\$ -	1	\$ 105,000.00	\$ 105,000.00
0137	Electrical-Exterior	LS	1	\$ 138,066.65	\$ 138,066.65	0	\$ -	\$ -	1	\$ 138,066.65	\$ 138,066.65
0138	Instrumentation and Controls	LS	1	\$ 25,000.00	\$ 25,000.00	0	\$ -	\$ -	1	\$ 25,000.00	\$ 25,000.00
0139	Programming	LS	1	\$ 4,300.00	\$ 4,300.00	0	\$ -	\$ -	1	\$ 4,300.00	\$ 4,300.00
0140	HVAC - General	LS	1	\$ 20,000.00	\$ 20,000.00	0	\$ -	\$ -	1	\$ 20,000.00	\$ 20,000.00
0141	Plumbing General	LS	1	\$ 9,570.00	\$ 9,570.00	0	\$ -	\$ -	1	\$ 9,570.00	\$ 9,570.00
0142	Generator Accessories, Fuel Storage and Fuel System	LS	1	\$ 156,200.00	\$ 156,200.00	0	\$ -	\$ -	1	\$ 156,200.00	\$ 156,200.00
0143	Plug Pipe 30" Dia.	EA	1	\$ 860.00	\$ 860.00	0	\$ -	\$ -	1	\$ 860.00	\$ 860.00
0144	F&I Curb & Gutter Standard (Type I)	LF	281	\$ 43.00	\$ 12,083.00	0	\$ -	\$ -	281	\$ 43.00	\$ 12,083.00
0145	F&I Grooved Plastic Film 8" Wide	LF	224	\$ 13.00	\$ 2,912.00	0	\$ -	\$ -	224	\$ 13.00	\$ 2,912.00

**WP-42A.1/A.3**  
**4th Street Pump Station and Gatewell - 2nd Street Floodwall South**

Change Order 9 Unit Price Schedule  
 DATE: 1/11/2016



WP-42A.1/A.3 - 4th Street Pump Station and Gatewell - 2nd Street Floodwall South											
ITEM	DESCRIPTION	UNIT	Current Budget (thru CO-06)			Net Change			New Budget		
			QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT	QUANTITY	UNIT PRICE	AMOUNT
0146	F&I Pipe 15" Dia Reinf Conc	LF	18	\$ 82.31	\$ 1,481.58	0	\$ -	\$ -	18	\$ 82.31	\$ 1,481.58
0147	Warming House Electrical Service	LS	1	\$ 49,834.89	\$ 49,834.89	0	\$ -	\$ -	1	\$ 49,834.89	\$ 49,834.89
0148	Bore 36" Pipe	LS	1	\$ 80,566.24	\$ 80,566.24	0	\$ -	\$ -	1	\$ 80,566.24	\$ 80,566.24
0149	Plug Pipe 6" Dia	EA	3	\$ 439.69	\$ 1,319.07	0	\$ -	\$ -	3	\$ 439.69	\$ 1,319.07
0150	F&I Flared End Section 48" Dia Reinf Conc	EA	1	\$ 5,119.28	\$ 5,119.28	0	\$ -	\$ -	1	\$ 5,119.28	\$ 5,119.28
0151	Connect Water Service	EA	2	\$ 2,643.38	\$ 5,286.76	0	\$ -	\$ -	2	\$ 2,643.38	\$ 5,286.76
0152	F&I Pipe 1" Dia Copper	LF	124	\$ 49.35	\$ 6,119.40	0	\$ -	\$ -	124	\$ 49.35	\$ 6,119.40
0153	F&I Pipe w/GB C900 DR 18 - 6" Dia PVC	LF	80	\$ 193.20	\$ 15,456.00	0	\$ -	\$ -	80	\$ 193.20	\$ 15,456.00
0154	Special Order Asbestos Fittings	EA	1	\$ 5,484.57	\$ 5,484.57	0	\$ -	\$ -	1	\$ 5,484.57	\$ 5,484.57
0155	Unknown Structures	LS	1	\$ 87,262.68	\$ 87,262.68	0	\$ -	\$ -	1	\$ 87,262.68	\$ 87,262.68
0156	CO-01 Field Changes	LS	1	\$ 14,998.89	\$ 14,998.89	0	\$ -	\$ -	1	\$ 14,998.89	\$ 14,998.89
0157	CO-02 Misc Requirements	LS	1	\$ 15,394.85	\$ 15,394.85	0	\$ -	\$ -	1	\$ 15,394.85	\$ 15,394.85
0158	Fargo Highrise Work	LS	1	\$ 6,362.42	\$ 6,362.42	0	\$ -	\$ -	1	\$ 6,362.42	\$ 6,362.42
0159	CO-04	LS	1	\$ 15,174.67	\$ 15,174.67	0	\$ -	\$ -	1	\$ 15,174.67	\$ 15,174.67
0160	Sanitary Overflow Connection	LS	1	\$ 10,363.71	\$ 10,363.71	0	\$ -	\$ -	1	\$ 10,363.71	\$ 10,363.71
0161	T&M Budget for Asbestos Pipe and Unsuitable Material Removal	LS	1	\$ 140,000.00	\$ 140,000.00	0	\$ -	\$ -	1	\$ 140,000.00	\$ 140,000.00
0162	CO-06	LS	1	\$ 67,079.47	\$ 67,079.47	0	\$ -	\$ -	1	\$ 67,079.47	\$ 67,079.47
0163	CO-07	LS	1	\$ 7,689.91	\$ 7,689.91	0	\$ -	\$ -	1	\$ 7,689.91	\$ 7,689.91
0164	Reprogramming Display	LS	1	\$ 1,386.00	\$ 1,386.00	0	\$ -	\$ -	1	\$ 1,386.00	\$ 1,386.00
0164	CO-09	LS	1		\$ -	0	\$ 12,506.80	\$ 12,506.80	1	\$ 12,506.80	\$ 12,506.80
<b>42A.1/A.3 - TOTAL AMOUNT</b>			<b>CURRENT BUDGET</b>		<b>\$ 18,038,757.39</b>	<b>NET CHANGE</b>		<b>\$ 12,506.80</b>	<b>NEW BUDGET</b>		<b>\$ 18,051,264.19</b>



P.O. Box 13158 • Grand Forks, ND 58208-3158  
(P) 701.775.8480 (F) 701.775.8479  
www.icsgf.com

01/03/17

CH2M  
Attn: Tyler Smith  
64 4<sup>th</sup> St. N.  
Fargo, ND 58102

**Re: In-Town Levees 2<sup>nd</sup> Street/Downtown Area-Phase 42A.1/42A.3 Work Package 42A.1/42A.3  
Adding Fuel Tank Sensors**

Mr. Smith,

The attached costs are to add level sensors to the fuel storage tank. The added sensors will monitor the 25%, 50% and 75% fuel levels in the fuel tank.

DESCRIPTION	U.M.	UNITS	UNIT PRICE	EXT. PRICE
Fuel Tank Sensors	LS	1.00	\$1,906.80	\$1,906.80
TOTAL PRICE:				\$1,906.80

The level sensors will be added per the attached quote from Fusion Automation OPTION A. The proposed sensor information is also attached to this quote.

If you have any questions regarding the above, please contact me at your earliest convenience.  
Sincerely,

Gary Beeter  
ICS, Inc.  
Vice President

Cc: Peter Chitwood/CH2M



## CHANGE ORDER PROPOSAL # E20

DATE: NOVEMBER 30TH, 2016

PROJECT: FARGO 4<sup>TH</sup> STREET PUMP HOUSE FLOOD RISK MANAGEMENT

SUMMARY: ADDITIONAL TANK READING LEVELS

Additional sensor to monitor 25%, 50% and 75% fuel levels in fuel tank like 2<sup>nd</sup> street.

**OPTION A:** HTF 3 float stem sensor

- Only measures 3 set levels
- Electronic feedback
- Labor for Install

**TOTAL \$1,816.00**

**OPTION B:** Deep Product Level Gauge

- Direct Reading Gauge
- High Density Polyethylene Plastic Float
- Measures fuel level from 0% to 100% full
- No PLC control; No electronic feedback

**TOTAL \$109.00**

**OPTION C:** Clock Gauge w/Alarm

- Direct Reading Gauge
- Alarm System
- Uses floats
- No PLC control; No electronic feedback
- Labor for Install

**TOTAL \$1,980.80**

**OPTION D:** Continuous Level Sensor

- Uses float
- Measures fuel level from 0% to 100% full
- Electronic Feedback
- Explosion Proof Rated
- Labor for Install

**TOTAL \$2,739.22**

Anne Mayer  
Fusion Automation Inc  
701-757-0852  
[Anne.Mayer@fusionautomationinc.com](mailto:Anne.Mayer@fusionautomationinc.com)

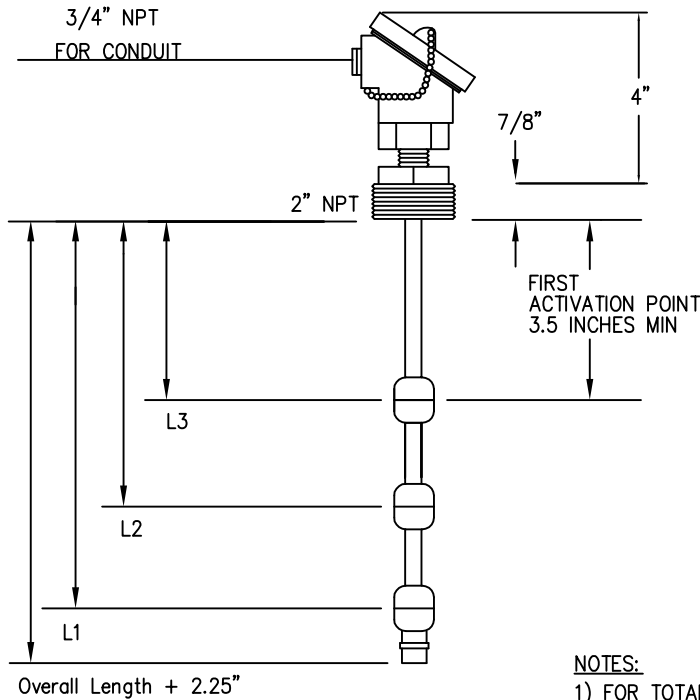
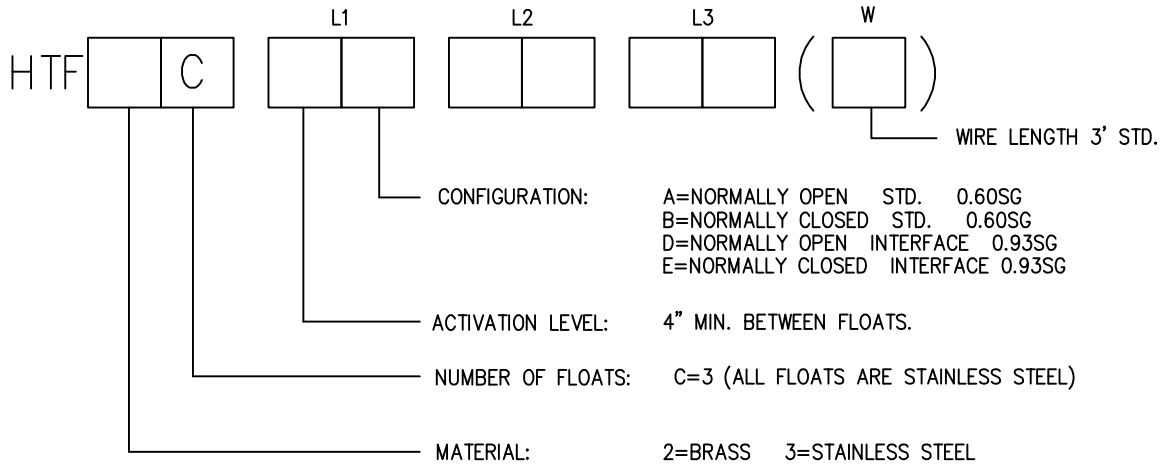
# Series HTF Standard Three Float Sensor



# Highland Tank

## Engineering Bulletin

One Highland Road, Stoystown Pa.15563  
814-893-5701 - Fax 893-6126  
www.Highlandtank.com  
email: staff @ highlandtank.com



SPECIFICATIONS:

HOUSING:	CAST ALUMINUM NEMA 4X
FITTING:	BRASS OR STAINLESS STEEL
THREAD SIZE* :	2" - 11 1/2 NPT
FLOAT SIZE:	1.85" DIA. x 3.01" HIGH
CONTACT RATING:	FOR INTRINSICALLY SAFE CONTROL CIRCUIT ONLY
STEM SIZE:	1/2"
SPECIFIC GRAVITY:	0.6 STANDARD 0.93 INTERFACE
WIRE COLOR CODE FOR 10' OR LESS :	L1=RED L2=YELLOW L3=BLUE
WIRE COLOR CODE FOR GREATER THAN 10' :	L1 = RED & BLACK L2 = GREEN & WHITE L3 = BLUE & BROWN

NOTES:

- 1) FOR TOTAL LENGTHS OVER 8 FEET, CONTACT HIGHLAND TANK
- 2) ACTIVATION LEVEL TOLERANCE +/- .125"
- 3) CONSULT FACTORY FOR OPTIONAL MOUNTING OPTIONS



Option B



# KRUEGER SENTRY GAUGE®

## Direct Reading Gauge—Type D



Part Number—  
D-(size opening)-(tank depth)+(ext)-(list options)  
Sample—D-2-48+12

### What it is:

Top mounted liquid level gauge that can measure from 6 inches to 144 inches in depth. Bushing size can be 2", 1.5", or .75". Gauges are custom made in house to fit your tank. Can also accommodate for double walls and pipe risers.

### Additional Options - Not included:

**Audible Alarm Accessory:** This add on feature can turn your mechanical gauge into an audible Hi or Lo level alarm.

**LED At-A-Glance Accessory:** Another add on feature. This can give your mechanical gauge remote reading capability.

**Gauge Guard:** A cover that protects the exposed plastic components on top of the gauge.

### Replacement Parts -

**D-Kit** - Replaces all of the gauge components from the red lock nut and up. Includes: Red HDPE Plastic Nut, Duro Nitrile Gasket, Plastic Cellulose acetate inner and outer calibration.

**DG-Kit-ALN** - Replaces all of the gauge components from the red lock nut and up with upgraded parts. Includes: Aluminum Lock Nut, Duro Nitrile Gasket, Plastic Cellulose acetate outer calibration, Glass inner calibration.

### Instructions for Operation:

This gauge is a simple volume reading tool. The top of the red indicator is an indication of your approximate fuel level in your tank. Once installed, you simply view the calibration to monitor your tank level. Indicator is calibrated in eighths of a tank on one side, and quarters of a tank on the other.

Krueger Sentry Gauge  
1873 Siesta Lane  
Green Bay, WI 54313

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



Contact us for more info:  
Ph: 920-434-8860  
Fax: 920-434-8897

Email: [info@ksentry.com](mailto:info@ksentry.com)

## Model 918 Clock Gauge and Alarm Series

SPECIFICATION SHEET

The Morrison “clock gauge” displays the liquid level of product stored in an aboveground storage tank. Measures the liquid level in tanks up to 12 feet high. The 918 audible alarm sounds when the liquid level in the tank reaches the user’s specified level.

### Gauge features

- Easy to install in a single 2” tank top opening, easy to calibrate
- Gauge face displays level reading in feet and inches. The hour hand (short hand) displays the number of feet and the minute hand (long hand) accurately displays the number of inches
- Gallon or liter reading gauge models available
- Accurate to 1/8 of an inch
- Easily read from 30 feet away
- Vapor tight construction and fog free design
- Gauge rotates 360° making it easy for the face to be read from the desired orientation
- Visual indicators for high level (red) and low level (green)
- Floats fit through a 2” schedule 40 pipe nipple; reduces float entanglement when turbulent conditions are present
- **918T and 918FT** series are compatible for use with Diesel Exhaust Fluid (DEF)

The 918 alarm box can be paired with a variety of Morrison 918 clock gauges or level sensors. Alarm set point calibrated at installation. The alarm box is compliant with UL 913 and CSA 157 intrinsic safety standards.

### Alarm features

- Audible and visual indicators
- Self-powered by long-life replaceable lithium batteries
- Monitor up to four sensor signals
- User-defined alarm labels
- Visual alarm indicators easily identify which sensor is alarming
- Compatible with 918/918 TCP gauging equipment
- Low battery visual indicator
- Audible alarm sounds 90 dB alarm at four feet away
- Modular contacts make alarm devices easy to install
- In compliance with UL 913 and CSA 157 intrinsic safety standards
- Corrosion-resistant and water-resistant housing for long life
- Intrinsically safe for Class I, Division 1 and 2, Group D hazardous location



# Option C

## Model 918 Clock Gauge and Alarm (continued)

### Alarm features (continued)

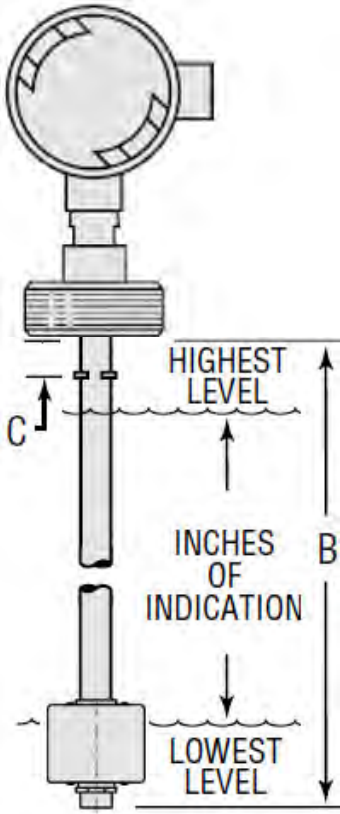
- Audible alarm auto silence mode (10 minutes)
- **918/918F** clock gauge with 918S, 918D, or 918Q alarms are Florida DEP EQ527 approved



	I.D. Number	A	B	C	D	E	F	G	H	I.D. Number	A	B	C	D	E	F	G	H
	918---0000 AG	N	M	ST	S	8.42	3.48	6.06	6.25	918MET0100 AG	Y	M	ST	M	8.42	3.48	6.06	7.45
EVR	918---0000AGEVR	N	M	ST	S	8.42	3.48	6.06	6.25	918MET0400 AG	Y	M	DT	M	8.42	3.48	6.06	7.45
	918---2000 AG	N	M	DT	S	8.42	3.48	6.06	6.25	918T--0400 AG	Y	M	DT	S	8.42	3.48	6.06	7.45
EVR	918---2000AGEVR	N	M	DT	S	8.42	3.48	6.06	6.25	918T--2000 AG	N	M	DT	S	8.42	3.48	6.06	7.45
	918C--0000 AG	N	M	ST	C		3.48	6.06	6.25	918FT-0400 AG	Y	F	DT	S	9.62	3.48	6.06	7.95
	918C--2000 AG	N	M	DT	C		3.48	6.06	6.25	918FT-2000 AG	N	F	DT	S	9.62	3.48	6.06	7.95
	918CF-0000 AG	N	F	ST	C		3.48	6.06	6.25	918MEFT400 AG	Y	F	DT	M	9.62	3.48	6.06	7.95
	918CF-2000 AG	N	F	DT	C		3.48	6.06	6.25	918METT400 AG	Y	M	DT	M	8.42	3.48	6.06	7.45
	918--0100 AG	Y	M	ST	S	8.42	3.48	6.06	7.45	918S--1000 AA	Y	Single channel tank alarm box only						1.80
	918--0400 AG	Y	M	DT	S	8.42	3.48	6.06	7.45	918D--1000 AA	Y	Dual channel tank alarm box only						1.80
	918C--0100 AG	Y	M	ST	C		3.48	6.06	6.25	918Q--1000 AA	Y	Quad channel tank alarm box only						1.80
	918C--0100 AG	Y	M	DT	C		3.48	6.06	6.25	<p style="text-align: center;"><b>SPECIFICATION OPTIONS:</b></p> <p><b>A</b>—Overfill Alarm Box: Included: Yes/No  <b>B</b>—Body Connection: Male (M), Female (F), BSP (B)  <b>C</b>—Float Device: Standard 2" Float (ST), Drop Tube Float (DT)  <b>D</b>—Face Plate: Standard (S), Metric (M), Custom (C)  <b>E</b>—Gauge height: (Inches)  <b>F</b>—Gauge width: (Inches)  <b>G</b>—Clock Diameter: (Inches)  <b>H</b>—Shipping Weight (lbs.)</p>								
	918CF-0400 AG	Y	F	ST	C		3.48	6.06	6.25									
	918CF-0400 AG	Y	F	DT	C		3.48	6.06	6.25									
	918F--0100 AG	Y	F	ST	S	9.62	3.48	6.06	7.95									
	918F--0400 AG	Y	F	DT	S	9.62	3.48	6.06	7.95									
EVR	918F--0000AGEVR	N	F	ST	S	9.62	3.48	6.06	6.25									
EVR	918F--2000AGEVR	N	F	DT	S	9.62	3.48	6.06	6.25									
	918MEB0100 AG	Y	M B	ST	M	8.42	3.48	6.06	7.45									
	918MEB0400 AG	Y	M B	DT	M	8.42	3.48	6.06	7.45									
EVR	918MEF0000AGEVR	N	F	ST	M	8.42	3.48	6.06	7.95									
EVR	918MEF2000AGEVR	N	F	DT	M	8.42	3.48	6.06	6.25									
	918MEF0100 AG	Y	F	ST	M	9.62	3.48	6.06	7.95									
	918MEF0400 AG	Y	F	DT	M	9.62	3.48	6.06	7.95									
EVR	918MET0000AGEVR	N	M	ST	M	8.42	3.48	6.06	6.25									
EVR	918MET2000AGEVR	N	M	DT	M	8.42	3.48	6.06	6.25									

570 E. 7th Street, P.O. Box 238 | Dubuque, IA 52004-0238  
t. 563.583.5701 | 800.553.4840 | f. 563.583.5028

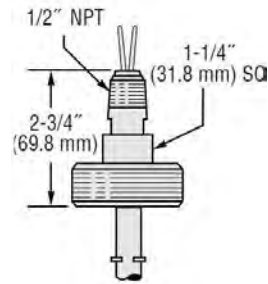
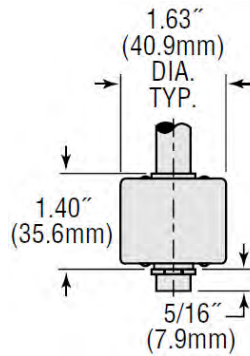
## CONTINUOUS LEVEL



Technical Specifications	
<b>Model:</b>	XT-800
<b>Specific Gravity:</b>	.82
<b>Max. Pressure:</b>	30
<b>Stem Length:</b>	Up to 72"
<b>Stem Construction:</b>	Tubing (for units < 72")
<b>Operating Temp.:</b>	80
<b>Stem Material:</b>	316 Stainless Steel
<b>Mounting Type:</b>	(3) 2" NPT
<b>Termination:</b>	Junction Box
<b>Output:</b>	4 - 20mA
<b>Float Material:</b>	316 Stainless Steel
<b>Float Type:</b>	316 Stainless Steel (156490)
<b>Media Type:</b>	Diesel
<b>Float Stops:</b>	Grip Rings
<b>Explosion Proof:</b>	FM Approved Explosion Proof

Ordering Information	
<b>Part Number:</b>	
<b>List Price:</b>	
<b>Lead Time:</b>	
<b>Min. Order Quantity:</b>	
<b>Shipping Weight:</b>	
<b>Model Description:</b>	

Dimensional Specifications	
<b>Indicating Length:</b>	56.5"
<b>C Dimension:</b>	1.25"
<b>Overall Length(B Dimension):</b>	61



## Small Size – Alloys

### XM/XT-800 Series – Compact Analog Sensors

- ▶ Stainless or Brass Construction
- ▶ 1/4" Resolution
- ▶ Lengths to 144 inches (366 cm)
- ▶ OEM Configurations Available

These compact transmitters feature the rugged durability of stainless steel or brass construction. The XM-800 series provides analog output, and can be combined with GEMS Digital Meter Receiver Stations and compact Level Cubes described in this catalog. Our versatile XT-800 Series adds a choice of signal conditioning for use with GEMS digital bargraph receivers or other digital display and control equipment.

#### Approvals

XM-800 and XT-800 Series transmitters may carry the following commercial approvals:

- FM Approved, Explosion-Proof (J-Box and Stainless Steel Float required).
- UL-Recognized.

XM-800 Series transmitters only:

- CSA Certified

XT-800 Series transmitters only:

- FM Approved, Intrinsic Safety (J-Box and Stainless Steel Float required).

#### 1. Mounting Types

Type 1 1/2" NPT	Type 2 1-1/4" NPT	Type 3 2" NPT	Type 4 3" 150# Flange	Type 6 2-1/2" Sanitary Flange

<b>Stem Material</b>	Brass or 316 Stainless Steel	316 Stainless Steel	
<b>Mounting Material</b>	Brass or 316 Stainless Steel	Carbon Steel or 316 Stainless Steel	316 Stainless Steel
<b>Float Stop Material</b>	Brass Units: Beryllium Copper Grip Rings; Stainless Steel Units: S.S. ARMCO PH-15-7MO Grip Rings		
<b>Operating Temperature*</b> With J. Box Mounted or XM Signal Conditioners	Oil: -40°F to +230°F (-40°C to 110°C), Water to +180°F (82.2°C)—Buna N Float -40°F to +230°F (-40°C to 110°C)—Stainless Steel Float		
<b>With Stem Mounted Signal Conditioners</b>	+5°F to +160°F (-15°C to +70°C)		
<b>Operating Pressure</b>	Dependent on Float Type; See Next Page		
<b>Overall Length, Max.</b>	72" (183 cm) Tubing; 144" (366 cm) Pipe (Types 3 & 4 only)		

\* Consult factory for higher temperature ranges.

**ORDER IT!**

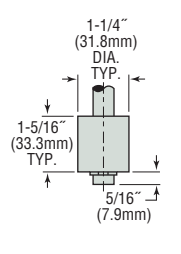
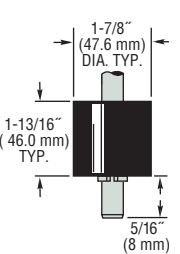
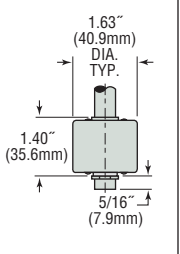
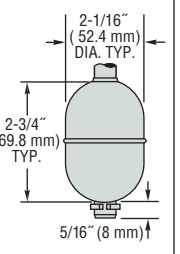
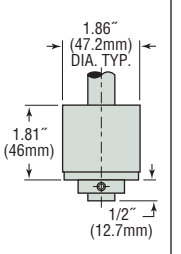
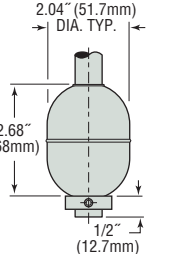
Ordering is Easy! See Page C-5.  
Easy online ordering too!

Lengths  
to 12 ft!



### 2. Float Types

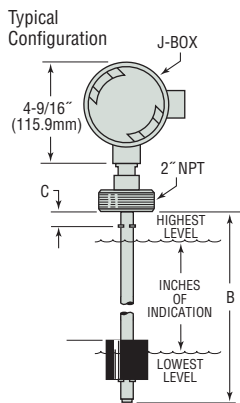
Based on the overall length required by your tank, select from two main subsets of floats below; further refine selection based on material and performance parameters.

Float Material	For Overall Lengths To 72"				For Lengths Greater Than 72" (144" Max.)	
	Buna N		Stainless Steel		Buna N	Stainless Steel
<b>Float Dimensions</b>						
<b>Compatible Mountings</b>	1, 2, 3, 4, 6	1, 3, 4	1, 3, 4, 6	1, 3, 4	3, 4	3, 4
<b>Part Number</b>	<b>164255<sup>2</sup></b>	<b>43359</b>	<b>156490</b>	<b>43590</b>	<b>69654</b>	<b>52084</b>
<b>Min. Liquid Spec. Gravity</b>	.55	.55	.70	.75	.55	.75
<b>Operating Pressure, Max.<sup>1</sup></b>	150 psi (10 bar)	150 psi (10 bar)	80 psi (6 bar)	300 psi (21 bar)	150 psi (10 bar)	300 psi (21 bar)
<b>Operating Temp., Max.</b>	Water: 180°F (82°C) Oil: 230°F (110°C)		230°F (110°C) <sup>3</sup>		Water: 180°F (82°C) Oil: 230°F (110°C)	230°F (110°C)*

Notes:

- @ Ambient Temperature
- Recommended for Type 2 mounting only.
- Consult factory for higher temperature range.

### 3. To Determine Dimensions



- B: Overall Length = Inches of Indication + C + X (See Table at Right)  
 C: Distance From Bottom of Mounting to Float Stop (Customer Specified):
- 1/4" (6.4mm) Minimum
  - 1-1/4" (31.8mm) Minimum on Type 1, XT Series only.

#### Calculating Length

- To find Overall Length when Inches or Indication is known:
- Inches of Indication + C\* + X = Overall Length
- To find Maximum Inches of Indication when Overall Length is known:
- Overall Length - C\* - X = Maximum Inches of Indication

\*C dimension is determined by customer.

#### Float Factor – X

Float Part Number	X
<b>164255</b>	2.0" (50.8)
<b>43359</b>	2.5" (63.5)
<b>156490</b>	2.062" (52.4)
<b>43590</b>	3.437" (87.3)
<b>69654</b>	2.687" (68.3)
<b>52084</b>	3.625" (92.1)


Inch (mm)

### 4. Input/Output

For XM-800 Series, no special output designation is necessary.  
 For XT-800 Series, specify the desired signal conditioning by Part Number.  
 Additional information about GEMS signal conditioning modules is found on Page C-16.

Series	Input Voltage	Output Signal	Part Number	Electrical Termination	Compatible Mountings		
					Type 1	Type 3	Type 4
XM-800	10 to 30 VDC	Proportional Voltage	—	Lead Wires (3), #22 AWG, 24" (60.9 cm), PTFE Jacket	•	•	•
	8 to 24 VDC*	0-5 VDC	<b>51965</b>	Lead Wires, #22 AWG, 24" (60.9 cm), PTFE Jacket	•	•	•
XT-800	14 to 30 VDC*	0-12 VDC	<b>51970</b>		•	•	•
	8 to 24 VDC*	0-5 VDC	<b>52536</b>	Junction Box		•	•
	15 to 30 VDC*	0-12 VDC	<b>52537</b>			•	•
	10 to 40 VDC	4-20 mA	<b>52555</b>	Panel Mount with Plug-in Base		•	•
	4-20 mA	<b>112300</b>	•		•	•	

\* Stem mounted.

 <p><b>Photocopy This Form</b> Use one form for each product type you are selecting. <small>This form may also be completed online at <a href="http://gemssensors.com">gemssensors.com</a> for RFQ.</small></p>	This is a <input type="checkbox"/> Request for a Quote      Name _____ <input type="checkbox"/> Order P.O.# _____      Company _____ Quantity Needed _____      Street _____ Date Required ____/____/____      City _____ State ____ Zip _____ Shipping Method: _____      Phone (____) _____ Partial Accepted: <input type="checkbox"/> Yes      Fax (____) _____ <input type="checkbox"/> No
--	--

## Float Type Level Transmitters – XM/XT-800 Series

### Application Environmental Conditions

This information is essential to the accurate and proper operation of your GEMS configurable sensors. Please complete fully and accurately.

- 1. Liquid Media:** \_\_\_\_\_
- 2. Pressure:** Minimum \_\_\_\_\_ psig    Maximum \_\_\_\_\_ psig
- 3. Temperature:** Minimum \_\_\_\_\_ °F    Maximum \_\_\_\_\_ °F
- 4. Specific Gravity:** Minimum \_\_\_\_\_    Maximum \_\_\_\_\_

- 5. Viscosity:** \_\_\_\_\_ SSU
- 6. Tank Material:** \_\_\_\_\_  
**Tank Depth:** \_\_\_\_\_
- 7. Unit is Mounted In:**  Tank Top     Tank Bottom
- 8. Moisture Protection Required?**  Yes     No

#### 1. Series:

XM/XT-800 (1/4" Resolution)

#### 2. Mounting Type:

- Type 1 (1/2" NPT)     Type 2 (1-1/4" NPT)     Type 3 (2" NPT)  
 Type 4 (3" 150# flange)     Type 6 (2-1/2" sanitary flange)

#### 3. Materials:

- a. Stem:  
 Brass<sup>1</sup>     316 Stainless Steel
- b. Mounting:  
 Brass<sup>1</sup>     316 Stainless Steel  
 Carbon Steel (Type 4 flange only)
- c. Collar Float Stops<sup>2</sup>:  
 Brass     316 Stainless Steel

#### 4. Float Type<sup>1</sup>:

Match to Overall Length of Transmitter Stem

To 72 Inches	Over 72 Inches
<input type="checkbox"/> 164255 – Buna N <sup>2</sup>	<input type="checkbox"/> 69654 – Buna N
<input type="checkbox"/> 43359 – Buna N	<input type="checkbox"/> 52084 – Stainless Steel
<input type="checkbox"/> 156490 – Stainless Steel	
<input type="checkbox"/> 43590 – Stainless Steel	

**Notes:**

1. Stainless Steel float required for FM Approved Explosion Proof units.  
 2. Recommended for Type 2 mounting.

**Notes:**

1. Type 1, Type 2 and Type 3 only  
 2. Standard Float Stops supplied in PH 15-7 MO on S.S. units and Beryllium Copper on Brass units. Brass and S.S. Float Stops with Brass and S.S. units only, respectively.

#### 5. Dimensions:

Overall Length (complete one line only):

Float Selected	Indicating Length (Half Inches)	+	"C" Dimension ±1/16" (1.8 mm)	+	Float Factor X Inch (mm)	=	Overall Length
43359		+		+	2.5 (63.5)	=	
43590		+		+	3.44 (87.3)	=	
52084		+		+	3.63 (92.1)	=	
69654		+		+	2.69 (68.3)	=	
156490		+		+	2.06 (52.3)	=	
164255		+		+	2 (50.8)	=	

**Notes:**

1. Indicating Length: 1/2" increments  
 2. Minimum C Dimension = 1/4"; or 1/2" on units greater than 72" in length.

#### 7. Options:

- Explosion Proof J-Box\*     NEMA 4 J-Box  
 \* Required for FM Approved Explosion Proof units

Please contact Gems for any configuration or special requirements not covered on this form. **800-378-1600**

Quote: \$ \_\_\_\_\_    Date Quoted: \_\_\_\_/\_\_\_\_/\_\_\_\_

#### 6. Input/Output:

- a. Optional 24 VDC Power Supply:  
 115 VAC input     230 VAC input
- b. Signal Conditioners (XT-800 Series Only)  
 Output Shown in Parenthesis:  
 51965 (0-5 VDC – stem)  
 51970 (0-12 VDC – stem)  
 52536 (0-5 VDC – J-box)  
 52537 (0-12 VDC – J-box)  
 52555 (4-20 mA – J-box)  
 120650 (0-5 VDC – panel mount)  
 149600 (0-10 VDC – panel mount)  
 112300 (4-20 mA – panel mount)



**Gems Sensors & Controls**  
 One Cowles Road  
 Plainville, CT  
 06062-1198

tel 860.747.3000  
 fax 860.747.4244  
[www.gemssensors.com](http://www.gemssensors.com)



P.O. Box 13158 • Grand Forks, ND 58208-3158  
(P) 701.775.8480 (F) 701.775.8479  
www.icsgf.com

01/03/16

CH2M  
Attn: Tyler Smith  
64 4<sup>th</sup> St. N.  
Fargo, ND 58102

**Re: In-Town Levees 2<sup>nd</sup> Street/Downtown Area-Phase 42A.1/42A.3 Work Package 42A.1/42A.3  
Floodwall Coping Caps**

Mr. Smith,

The attached cost is for a design change to the floodwall coping for the south end of the floodwall. The request for pricing the change was from HMG.

DESCRIPTION	U.M.	UNITS	UNIT PRICE	EXT. PRICE
Material	LS	1.00	\$4,205.00	\$4,205.00
			TOTAL PRICE:	\$4,205.00

The City of Fargo has been adding a higher pitched floodwall coping to detour climbing on the floodwalls. The price is to all the taller wall caps to the wall south of the closure on 2<sup>nd</sup> street only. This project did not call for that design originally. The pricing above is to procure the new coping, offload onsite, and remove the original coping from site.

If you have any questions regarding the above, please contact me at your earliest convenience.  
Sincerely,

Gary Beeter  
ICS, Inc.  
Vice President

Cc: Peter Chitwood/CH2M



01/05/17

CH2M  
Attn: Tyler Smith  
64 4<sup>th</sup> St. N.  
Fargo, ND 58102

**Re: In-Town Levees 2<sup>nd</sup> Street/Downtown Area-Phase 42A.1/42A.3 Work Package 42A.1/42A.3  
Trash Rack Mods**

Mr. Smith,

The attached cost is for a design change to the Trash Rack Rake System in the pump station. Glen Krogman with HMG requested the change so that the trash racks would operate smoother.

DESCRIPTION	U.M.	UNITS	UNIT PRICE	EXT. PRICE
Material	LS	1.00	\$1269.00	\$1269.00
Labor	LS	1.00	\$5124.00	\$5124.00
TOTAL PRICE:				\$6393.00

The trash rack rake modifications were requested by HMG to improve functionality. Glen Krogman with HMG provided a sketch dated 12-07-16 showing the changes and is the basis for our pricing. It is our understanding that the design was based on a prototype that operated in the field. This price includes materials, labor for installation, as well as labor to help Glen in the field with fitting his prototypes.

If you have any questions regarding the above, please contact me at your earliest convenience.  
Sincerely,



Eric Bye  
ICS, Inc.  
Project Manager

Cc: Peter Chitwood/CH2M



Project: 42A1 42A3

Computed: *[Signature]*

Date: 12-7-16

Subject: 4<sup>th</sup> St Pump Sta

Checked:

Date:

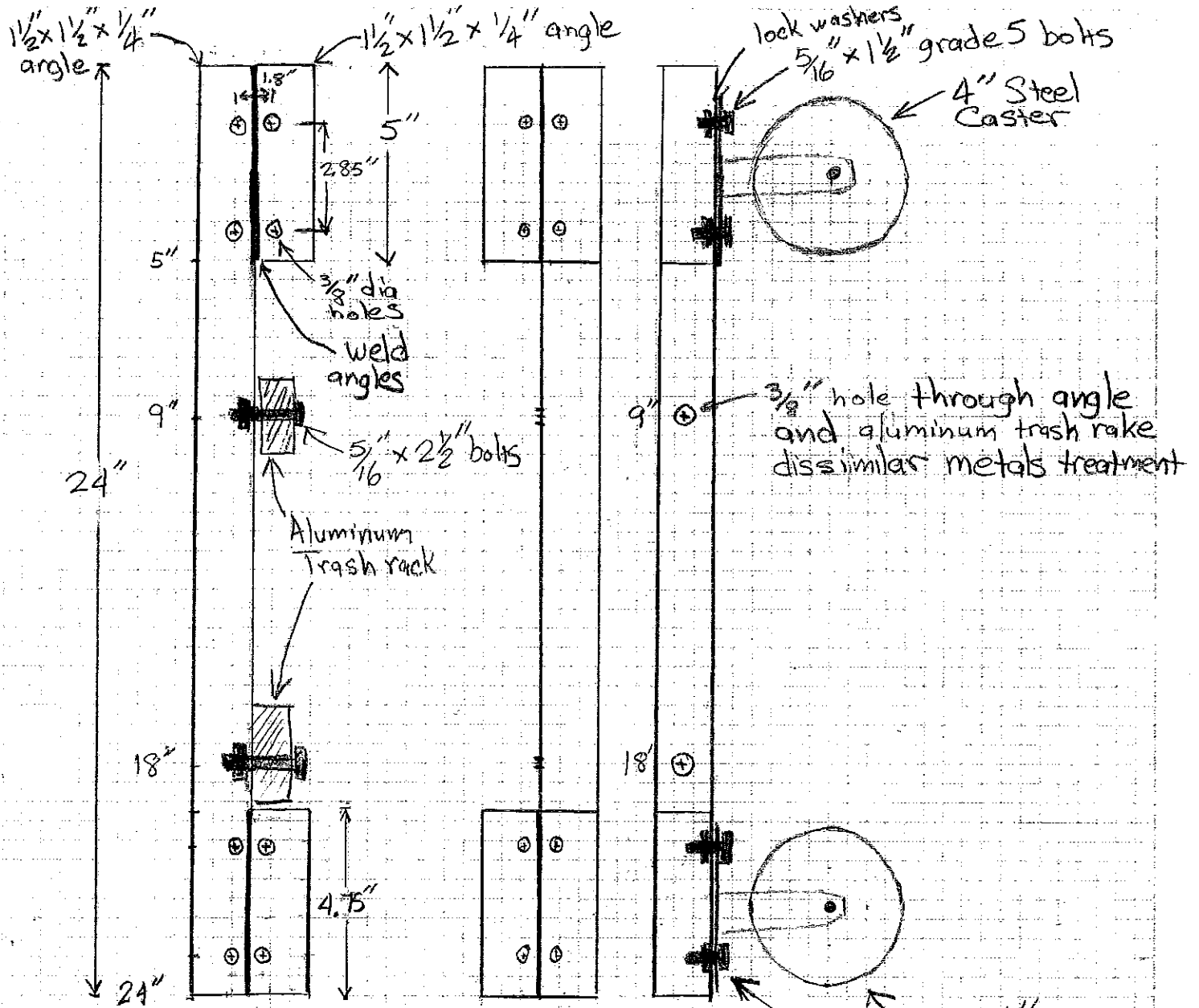
Task: Trash Rack Adjustment

Page:

of:

Job #:

No:



4 pieces galvanized

4 pieces galvanized

- 16 - 4" casters  
100018 STF-04RSC
- 64 - 5/16" grade 5
- 16 - 1 1/2" long
- 80 - 2 1/2" long bolts
- 64 - 5/16" nuts
- 80 - 5/16" lock washers

Casters are from Mac's Hardware per Glen Krogman

zinc coated

B20  
J 203