

CHANGE ORDER

Project Title: **EASTERN CORRIDOR UTILITIES**

EDA Project No. **05-01-05734**

Drawing No. **N/A**

Sheet No. **N/A**

Order No. **2**
CGRS PR No. **2**

1. Reason for change:

PLC & Cellular Modem for Monitoring Panel

2. Description of Change:

See attached narrative.

3. Change in Contract Cost:

☒ increase of **\$ 5,016.81**
☐ decrease of
☐ no change

4. Change in Contract Time:

☐ increase of
☐ decrease of
☒ no change


5. Contract Adjustment Summary:

Original Contract Sum: \$ **1,989,995.00**

Previous Approved Changes: \$ **37,000.00**

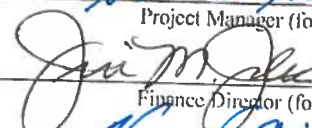
Adjusted Contract Sum: \$ **5,016.81**

New Contract Sum: \$ **2,032,011.81**

SUBMITTED:  Date: **9-27-19**
Contractor

APPROVED:  Date: **9-30-19**
Town Engineer

APPROVED:  Date: **9-30-19**
Project Manager (for certain change orders per LMC)

APPROVED:  Date: **10-16-19**
Finance Director (for certain change orders per LMC)

APPROVED:  Date: **10-15-2019**
Administrator (for certain change orders per LMC)

APPROVED: _____ Date: _____
Board of Trustees (for certain change orders per LMC)

CHANGE ORDER SUMMARY

Town Change Order #	CGRS PR #	Date of Request	Amount	Description	Contract Sum	Status
					\$ 1,989,995.00	
1	1A	7/29/2019	\$ 37,000.00	Add - Excavate, clean & video existing 24" RCP & 27" steel	\$ 2,026,995.00	In Progress
2	2	7/12/2019	\$ 5,016.81	Add - PLC & Modem	\$ 2,032,011.81	In Progress

COST REASONABLENESS JUSTIFICATION

JVA has reviewed this PR and finds it necessary to add a PLC and Cellular Modem to the Monitoring Panel. The costs for this PR are reasonable and comparable based on historical costs for this type of material and labor.



JVA, Incorporated
1319 Spruce Street
Boulder, CO 80302
303.444.1951
info@jvajva.com

September 5, 2019

www.jvajva.com

Mr. Philip Strom
Town of Lyons
432 5th Avenue
Lyons, CO 80540

RE: Eastern Corridor Utilities - Proposal Request #2
Justification Letter
Town of Lyons
2686c - Eastern Corridor Utilities

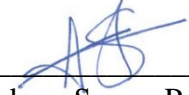
Dear Philip:

On July 31, 2019, JVA sent Proposal Request 2 (PR 2) to CGRS Inc. (Contractor) for the revision of one bid item to the contract. Line Item 55 of the contractor's bid, the "East Corridor Monitor Panel", was revised to include an additional PLC and a Red Lion Cellular Modem, Model #SN/RAM-6901. These items are necessary for the remote monitoring and for a fully functional Eastern Corridor Lift Station monitoring panel.

The PLC and Red Lion Cellular Modem were included in the original scope of work and drawings. During a pre-bid meeting on December 19, 2019, the Town of Lyons (Town) indicated that the modem and PLC would be provided by the Town and the Contractor would not need to provide the equipment as part of the project scope. However, in subsequent discussions with the Town, it has been determined that the Town does not have the capability to provide these items and have requested that the PLC and modem be included in the Contractor's scope. PR 2 revises the contract to include these items in the Contractor's scope.

The Contractor provided an estimate for PR 2 on August 5, 2019. The electrical engineering subconsultant, ESC Engineering, has indicated that the cost proposed by the contractor is reasonable and in line with industry standards to provide and installed the specified equipment. PR 2 is necessary for the installation of a fully functional monitor panel at the Eastern Corridor Lift Station that can transmit information to the operators and subsequently ensure proper operation of the lift station. If you require additional information or have questions, please give me a call at 303-565-4965 or send me and email at asparn@jvajva.com.

Sincerely,
JVA, INCORPORATED

By: 
Andrew Sparn, P.E.
Project Manager / Associate

CC: Victoria Simonsen, Town of Lyons
Tracy Sanders, Town of Lyons
Erika Archer, Town of Lyons
Shar Shadowen, P.E., Interwest Consulting Group
Josh McGibbon, P.E., JVA, Inc.

Attachment #2

Tuesday, September 24, 2019

[About Us](#) | [Products](#) | [Product Conditions](#) | [Customer Service](#) | [Sell To Us](#) | [Policies & Terms](#) | [Contact Us](#)

Product Search ☐ Show orderable products
☐ Search in current results ☐ Show ready to ship products

[Return to Previous Page](#)

[Rockwell Automation > PLC & HMI > Small Controllers > MicroLogix > 1761-L32BWB/E](#)

Rockwell Automation (RA) ▼

Overview

Allen-Bradley 1761-L32BWB MicroLogix 1000 Controller 32 I/O, E

[Image](#)

Drives

[Architecture Drives](#)
[Component Drives](#)
[Control Matched Motors](#)
[Drive Accessories](#)
[Drive Spare Parts](#)
[Legacy Drives](#)
[Reliance AC Drives](#)
[Reliance DC Drives](#)

Industrial Control

[Electronic Motor Protection](#)
[Electronic Power Control](#)
[Global Logic Product](#)
[IEC Power Products](#)
[NEMA Products](#)
[Power Supplies](#)
[Spare Parts IC](#)

Motion

[Cables & Connectors](#)
[Custom Motion Products](#)
[Linear Motor & Actuator](#)
[Motion Spare Parts](#)
[Rotary Motor & Actuator](#)
[Servo Drives](#)

Other

[Custom Parts](#)

PLC & HMI

[Cond Monitoring Acq](#)
[Condition Monitoring Accessories](#)
[Controllers](#)
[I/O Products](#)
[Industrial Computers](#)
[Net Price Products PLC](#)
[Networks & Communication](#)
[Operator Interfaces](#)
[Power & Energy Management](#)
[Small Controllers](#)

RA Legacy Products

[Other Products](#)

Sensing, Safety & Connectivity

[Condition Sensing](#)
[Connectivity](#)
[Encoders](#)
[Limit Switches](#)
[Photo Sensors](#)
[Proximity Controls](#)
[Safety Components](#)
[Signal Interface](#)
[SSCB Spare Parts](#)

Mfr. Part Number: **1761-L32BWB/E**
Manufacturer: Allen-Bradley / Rockwell Automation
Description: Allen-Bradley 1761-L32BWB MicroLogix 1000, 24VDC, 20-In-24VDC/12-Out-Relays, E
Full Description: Allen-Bradley 1761-L32BWB MicroLogix 1000, 24V DC Power, (20) 24V DC Digital Inputs, (12) Relay Outputs, Series E
UPC / GTIN: 10662468554487
Status: **Discontinued by manufacturer**

Inventory & Prices

Condition: **NSS (New Surplus Sealed)**
Warranty: **One Year PLCH Replacement Warranty**
Availability: **1** available for **pre-order**
Shipping Date: **Ships in 3 working days**
Retail Price: **\$625.00**
Your Price: **\$1,306.00**
Quantity: [Add to Cart >](#) [Save to Wish List](#)



PLC pricing

Similar Parts	Mfr	Cond	Description	Retail	Price	Disc	Qty
1761-L32BWB/E	RA	NSO	Allen-Bradley 1761-L32BWB MicroLogix 1000, 24VDC, 20-In-24VDC/12-Out-Relays, E	\$625.00	\$1,285.00	106%	1
1761-L32BWB/E	RA	UPP	Allen-Bradley 1761-L32BWB MicroLogix 1000, 24VDC, 20-In-24VDC/12-Out-Relays, E	\$625.00	\$366.00	-41%	3

Specs & Technical Data

Specifications: I/O: 32; Digital Inputs: 20 inputs 24V DC sink/source; Analog Inputs: 0; Digital Outputs: 12 contact outputs; Analog Outputs: 0; Isolation: 1500V AC; Memory Type: EEPROM; Memory Size: 1K words (approximately 737 instruction words, 437 data-table words); Communication Port: RS-232-C (Can be configured for communication through 1761-NET-AIC in a DH-485 network).

Miscellaneous: MicroLogix 1000 offers high speed, powerful instructions and flexible communications to applications that require compact, cost-effective solutions. The controller is offered in 10-point, 16-point or 32-point digital I/O versions. Analog versions are available with 20 digital I/O points, with 4 analog inputs (two voltage and two current) and 1 analog output (configurable for either voltage or current).

Related Products



1762-IT4/A
\$177.00



1764-24BWA/B
\$699.00



1761-NET-ENI/D
\$599.00



1761-CBL-AM00/C
\$29.00



1761-L32BWA/E
\$449.00



1761-L16BWA/E
\$290.00



1761-L16AWA/E
\$425.00



1761-CBL-PM02/C
\$52.00

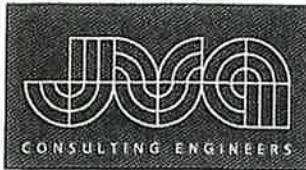


1761-CBL-PM02/C
\$65.00



1762-IF4/B
\$145.00

PROJECT NUMBER	ITEM NUMBER/ PROJECT LOCATION	ITEM DESCRIPTION/ PROJECT LOCATION	DATE LET	UNIT/ QUANTITY	ENGR. EST.	AVERAGE BID	AWARDED BID
===== 614-87702		Ethernet Radio (Pair)		Each	=====		
NH0853-106		US 85 AND WCR 18 Intersection	07/19/18	1.00	11500.00	6961.67	6000.00
	WEIGHTED AVERAGE FOR THE THIRD QUARTER			1.00	11500.00	6961.67	6000.00
	WEIGHTED AVERAGE FOR THE YEAR			1.00	11500.00	6961.67	6000.00
===== 614-87704		Ethernet Radio (Single Client)		Each	=====		
STAR400-347		Various intersections across	04/12/18	71.00	2500.00	5954.67	3000.00
	WEIGHTED AVERAGE FOR THE SECOND QUARTER			71.00	2500.00	5954.67	3000.00
NH0853-106		US 85 AND WCR 18 Intersection	07/19/18	1.00	5500.00	3588.83	3000.00
	WEIGHTED AVERAGE FOR THE THIRD QUARTER			1.00	5500.00	3588.83	3000.00
FSA0142-063		SH 14: S-CURVE RECONSTRUCTION	12/13/18	4.00	4000.00	3591.31	3616.23
	WEIGHTED AVERAGE FOR THE FOURTH QUARTER			4.00	4000.00	3591.31	3616.23
	WEIGHTED AVERAGE FOR THE YEAR			76.00	2618.42	5733.35	3032.43
===== 614-87708		Cellular Modem (CDMA)		Each	=====		
ITSSW01-833		ABOUT 1.5 MILES NORTH OF THE	01/18/18	4.00	3000.00	1431.75	1492.00
	WEIGHTED AVERAGE FOR THE FIRST QUARTER			4.00	3000.00	1431.75	1492.00
	WEIGHTED AVERAGE FOR THE YEAR			4.00	3000.00	1431.75	1492.00
===== 615-00030		Emb Prot Ty 3		Each	=====		
ER0252-466		PR MONUMENT CREEK BRANCH	01/11/18	1.00	1500.00	1418.34	1200.00
ER144A-002		SH 144 East and West of Goodr	03/08/18	1.00	500.00	1774.01	920.89
	WEIGHTED AVERAGE FOR THE FIRST QUARTER			2.00	1000.00	1596.18	1060.45



www.jvajva.com

<input type="checkbox"/> Boulder 1319 Spruce Street Boulder, CO 80302 303.444.1951	<input type="checkbox"/> Fort Collins 25 Old Town Square Suite 200 Fort Collins, CO 80524 970.225.9099	<input type="checkbox"/> Winter Park PO Box 1860 47 Cooper Creek Way Suite 328 Winter Park, CO 80482 970.722.7677	<input type="checkbox"/> Glenwood Springs 214 8th Street Suite 210 Glenwood Springs, CO 81601 970.404.3100	<input type="checkbox"/> Denver 1512 Larimer Street Suite 710 Denver, CO 80202 303.444.1951
---	--	--	---	---

P R O P O S A L R E Q U E S T

PROJECT NAME:	Eastern Corridor Utilities	DATE:	07/12/2019
OWNER:	Town of Lyons	PR NUMBER:	02
CONTRACTOR:	CGRS, Inc.	JOB NO.	2686c

Submit an itemized proposal for changes in the Contract Sum/Time for proposed modification to the Contract Documents described herein. Submit proposal within ten days (10), or notify the Engineer in writing of the date on which you anticipate submitting your proposal.

THIS IS NOT A CHANGE ORDER, UNLESS it is signed and the final amount is approved by all parties.

The proposal is to request the revision of one bid item to the Contract. The contractor's bid and Section 01025 – Measurement and Payment are attached for reference. Acceptance of this proposal will result in the revision of line item 55, "East Corridor Monitor Panel" to include an additional PLC and a Red Lion Cellular Modem, Model # SN/RAM-6901, both at a unit price to be determined per occurrence, to be used for 1 occurrence. Please provide a new lump sum payment for the revised line item 55 with the additions.

Please find the one attached document for reference: "2686 – Sheet E5.0" and "Section 01025 – Measurement and Payment"

CONTRACTOR BLOCK

The work will affect the project as summarized below. Backup attached includes all costs of labor, materials, taxes, overhead, profit, time impact and all other changes and/or charges involved as required by the Contract Documents.

ADD/DEDUCT

GEC 4362.44 + 15% = \$5016.81

CONTRACTOR TIME will be ☐ Increased ☐ Decreased ☒ Unchanged by _____ Days
documentation attached ☒

CONTRACTOR'S SIGNATURE

DATE

*This information shall be valid for thirty (30) calendar days from the date of signature.

REVIEW BLOCK

ENGINEER:

Michael De
Signature

Approve



Reject



Amount

Time

\$5,016.81	<input type="checkbox"/>
------------	--------------------------

Comments:

Date:

8/9/2019

OWNER:

Signature

Approve



Reject



Amount

Time

If the amt/time differ from the submitted, FINAL approval and signature from GC required below.

Comments:

Date:

FINAL APPROVED PROPOSAL REQUEST

(if submitted values were changed during review)

CONTRACTOR:

DATE:

Amount

Time

If different than submitted

When signed by the Owner, Engineer, and the Final Amount/Time is approved by the General Contractor, this document becomes effective immediately as a Change Order, and the Contractor shall proceed with the change(s) herein.

**EASTERN CORRIDOR UTILITIES
TOWN OF LYONS
00310B**

	CONTRACTOR QUALIFICATIONS	YES	NO
1	Has the Contractor completed similar types of projects within the last 5 years?	x	
2	Can the Contractor provide references for each of the projects in response to no. 1 above?	x	
3	Can the Contractor provide the required Insurance and Bonding Requirements listed in the General Conditions of the Contract?	x	
4	Can the Contractor commit the necessary manpower and equipment to provide the services within the required time frames?	x	

	Contractor Shall Provide References Here:
R1	City of Brighton Core Water Pipe Replacement; Matt Amidei (City of Brighton) Project Engineer; 303.655.2183
R2	City of Brighton Design/Build 8.3 MG tank upgrades; Matt Amidei (City of Brighton) Project Engineer; 303.655.2183
R3	Broomfield Heit & Koenig Pit Infrastructure; Jeffrey J. Griggs (Sunrise Engineering); 307.775.9500
R4	CO Central Water Conservancy District Koenig Pit Storage Pump Station; Randy Ray (CCWCD) Project Engineer; 970.330.540
R5	Loveland Fire Training Center; Kevin Brazelton, PE (United Civil Design Group); 970.530.4044

Item #	Description	Units	Qty	Unit Price	Total
DIVISION 00 and 01 - General Conditions and Requirements					
001	Contract General Conditions and Mobilization	LS	1	\$45,000.00	45000
002	Dewatering	LS	1	\$55,000.00	55000
003	Initial Construction Surveying	LS	1	\$8,000.00	8000
004	Supplemental Construction Surveying	HR	20	\$210.00	4200
005	Construction Materials Testing	HR	40	\$175.00	7000
Traffic Control					
006	Flaggers	HR	100	\$41.00	4100
007	Construction Signs (Size D)	EA	12	\$140.00	1680
008	Concrete Barriers	LF	200	\$120.00	24000
009	Crash Attenuators	EA	4	\$1,400.00	5600
010	Drum Channelizing Device	EA	50	\$70.00	3500
DIVISION 02 - Sitework					
011	Remove/Replace Asphalt	SY	50	\$95.00	4750
012	Remove/Replace Concrete	SY	20	\$140.00	2800
013	Pressure Cleanout	EA	5	\$7,500.00	37500
014	Sanitary Cleanout	EA	1	\$1,800.00	1800
015	Connection to Stone Canyon Lift Station Manhole	LS	1	\$11,000.00	11000
016	4-inch DR 9 HDPE Pipe - Horizontal Directional Drilling	LF	1340	\$65.00	87100
017	Cut Off Walls	EA	5	\$2,200.00	11000
Erosion Control					
018	Vehicle Tracking Control	EA	7	\$2,400.00	16800
019	Silt Fence	LF	5670	\$4.00	22680
020	Concrete Washout Area	EA	3	\$2,400.00	7200
021	Sediment Control Log	LF	400	\$10.00	4000
022	Culvert Inlet Protection	EA	2	\$400.00	800

**EASTERN CORRIDOR UTILITIES
TOWN OF LYONS
00310B**

023	Clear and Grub	LS	1	\$12,000.00	12000
024	Seeding	AC	3.3	\$4,950.00	16335
	Site Piping				
025	4-inch DR 9 HDPE Pipe - Open Cut	LF	2080	\$127.00	264160
026	4-inch Ductile Iron Pipe	LF	20	\$260.00	5200
027	6-inch Ductile Iron Pipe	LF	20	\$250.00	5000
028	6-inch PVC SDR 35 Pipe	LF	60	\$230.00	13800
029	8-inch Ductile Iron Pipe	LF	50	\$275.00	13750
030	8-inch PVC SDR 35 Pipe	LF	20	\$260.00	5200
031	12-inch by 8-inch Reducer	EA	4	\$1,500.00	6000
032	10-inch PVC SDR 35 Pipe	LF	140	\$240.00	33600
033	12-inch Ductile Iron Pipe	LF	40	\$320.00	12800
034	12-inch by 6-inch Tee	EA	2	\$2,100.00	4200
035	12-inch by 12-inch Tee	EA	2	\$2,400.00	4800
036	12-inch Ductile Iron Pipe Plug	EA	2	\$1,400.00	2800
037	24-inch Welded Steel Casing and Ramming	LF	254	\$1,410.00	358140
	Site Valves				
038	4-inch Plug Valve	EA	3	\$3,200.00	9600
039	6-inch Gate Valve	EA	2	\$2,200.00	4400
040	12-inch Gate Valve	EA	4	\$4,600.00	18400
041	2-inch Blowoff Valve Assembly	EA	2	\$4,800.00	9600
042	6-inch Fire Hydrant Assembly	EA	1	\$9,000.00	9000
	DIVISION 03 - Concrete				
043	Concrete Wet Well	EA	1	\$88,000.00	88000
044	4-Foot Diameter Manhole	EA	2	\$15,000.00	30000
045	8-Foot Diameter Manhole (overflow storage)	EA	1	\$65,000.00	65000
046	Overflow Storage Vaults - 2,500 gallons	EA	2	\$21,000.00	42000
	DIVISION 11 - Equipment				
047	Submersible Grinder Pumps	EA	2	\$58,000.00	116000
	DIVISION 13 - Special Construction				
048	Odor Control System	EA	2	\$19,600.00	39200
	DIVISION 15 - Mechanical				
049	Pressure Reducing Valve Vaults (PRV) - 6, 7, & 8	EA	3	\$71,000.00	213000
050	4-inch Ball Check Valve	EA	2	\$900.00	1800
	Piping				
051	4-inch Ductile Iron Pipe	LF	40	\$260.00	10400
052	4-inch Schedule 40 PVC Pipe	LF	40	\$245.00	9800
053	6-inch Vent and Vent Piping	EA	3	\$4,600.00	13800
	DIVISION 16 - Electrical				
054	PRV-7 & East Corridor Lift Station Electrical	LS	1	\$78,000.00	78000
055	East Corridor Monitoring Panel	LS	1	\$92,000.00	92000
056	PRV-6 Electrical	LS	1	\$7,000.00	7000
057	PRV-8 Electrical	LS	1	\$7,000.00	7000
058	Odor Control System Electrical	LS	1	\$2,700.00	2700
TOTAL:				\$1,989,995.00	



CHANGE ORDER COST SUMMARY

Date Submitted: 7/31/2019
 Project Name/Number: Town of Lyons Eastern Corridor Utilities (JVA #2686c)
 Change Order Number: COP#187-001
 General Contractor: CGRS Inc.
 Description of Change: Supply PLC & Cellular Modem for Monitor Panel
 Per JVA Proposal Request -02 Dated 7/12/19

Equipment				\$0.00
Material 1 (Allen Bradley ML1100 PLC)				\$1,258.00
Material 2 (Red-Lion Cellular Modem)				\$1,659.00
Subtotal				\$2,917.00
Sales Tax	0.00%			\$0.00
Subtotal Material				\$2,917.00
Freight/Delivery Charges				\$0.00
Material Return/Cancellation Costs				\$0.00
Gas & Oil				\$0.00
Other Direct Costs (Electrical Permit)				\$0.00
Subtotal Direct Job Expenses				\$0.00
Installation Labor		MH @	\$55.00	\$0.00
Estimating Labor	8	MH @	\$65.00	\$520.00
Project Management	4	MH @	\$85.00	\$340.00
Total Direct Labor				\$860.00
Tool Replacement @ 8%				\$0.00
Safety Supplies @ 5%				\$0.00
Subtotal Labor				\$860.00
Total Prime Cost				\$3,777.00
Overhead @ 10%				\$377.70
Subcontract Cost				\$0.00
Total Cost With Subcontracts				\$4,154.70
Profit @ 5%				\$207.74
Total Cost & Profit Before Other Cost				\$4,362.44
Special Insurance/Other Charges				\$0.00
Bonds, Performance & Payment				\$0.00
Total Price of Change Proposal				\$4,362.44

*Extension of time required is 0 days.

*This proposal is for acceptance within 15 days and is subject to escalation thereafter or subject to voidance.

Submitted By: Claude Beaton

Date: 7/31/2019

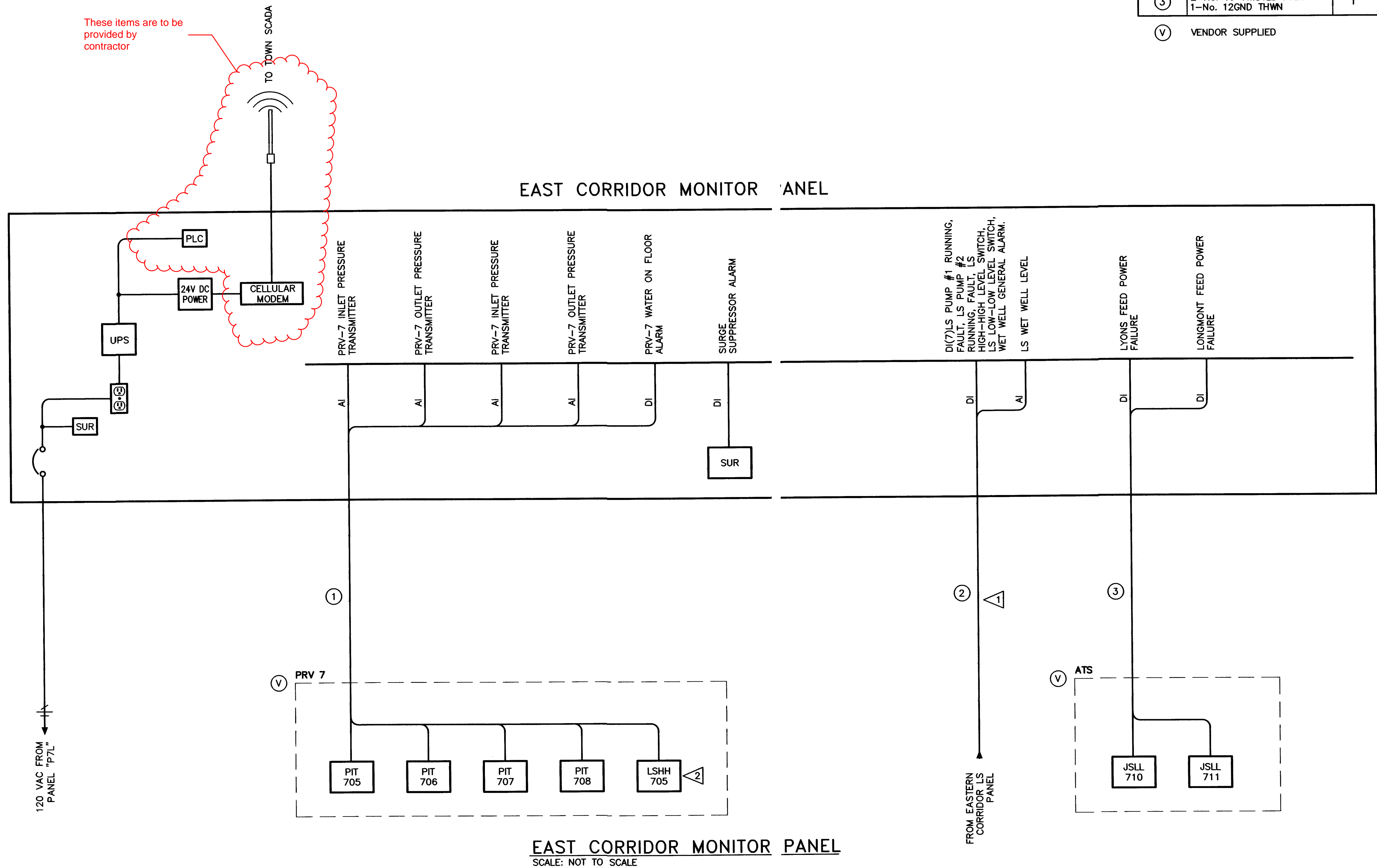
Approved By: _____

Date: _____

200 S Wilcox Street • #302 • Castle Rock, CO 80104 • 720.989.1106 • CO Lic. #100638

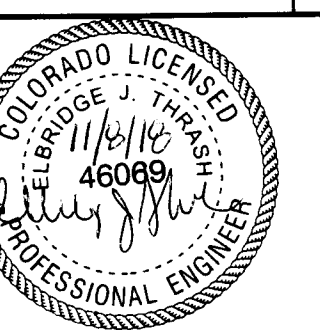
CONTROL AND INSTRUMENT CABLE			
MARK	CONDUCTORS	CONDUIT	DESCRIPTION
①	4-No. 16 SHIELDED TWISTED PAIR INSTRUMENT CABLE. 1-No. 16 TWISTED PAIR 1-No. 12GND THWN	3/4"	DIGITAL CONTROL / STATUS ANALOG STATUS
②	1-No. 16 SHIELDED TWISTED PAIR INSTRUMENT CABLE. 15-No. 16 THWN 1-No. 12GND THWN	1"	DIGITAL STATUS ANALOG STATUS
③	2-No. 16 TWISTED PAIR 1-No. 12GND THWN	1"	DIGITAL STATUS

Ⓥ VENDOR SUPPLIED



FLAG NOTES:

- 1 SAME CONDUIT AND CONDUCTORS AS EAST CORRIDOR LIFT STATION CONTROL PANEL.
- 2 IF DEVICE IS 24VDC, SAME CONDUIT MAYBE USED. OTHERWISE SEPARATE CONDUIT REQUIRED.



DESIGNED BY:	CF
DRAWN BY:	DA
CHECKED BY:	JVM
DOB #:	2686c
DATE:	JULY 2017
© JVA, INC.	

© JVA, INC.

TOWN OF LYONS
EASTERN CORRIDOR UTILITIES
LYONS, COLORADO

EAST CORRIDOR MONITOR PANEL

SHEET NO.

5.0

MEASUREMENT AND PAYMENT

SECTION 01025 MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 GENERAL

A. This section only amends the requirement of the CDOT Standard Specifications as specifically stated here-in.

1.2 AUTHORITY

A. The Contractor shall take all measurements and compute quantities. The Engineer will verify measurements and quantities. Exhibits, diagrams and spreadsheets may be necessary to assist in verifications. The Contractor shall not backfill or cover any Work until verified by the Engineer.

1.3 UNIT QUANTITIES SPECIFIED

A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Engineer determine payment. Quantities are defined below.

B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit prices contracted. Lump sum prices indicate items where the contractor is responsible for verifying and determining the Work during the bidding process and adjustments will not be made unless the Contractor can sufficiently demonstrate such adjustment.

C. If the actual Work requires a change to the contract that is equal to an increase or decrease of \$5,000 or more, then the Owner is required to obtain approval by the Town Board of Trustees. EDA approval will also be required for all proposed change orders.

1.4 MEASUREMENT OF QUANTITIES

A.	Acre	AC
B.	Cubic Yard	CY
C.	Each	EA
D.	Linear Foot	LF
E.	Lump Sum	LS
F.	Square Yard	SY
G.	Hour	HR

1.5 PAYMENT

A. Payment includes: Full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

B. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Engineer multiplied by the unit price for Work which is incorporated in or made necessary by the Work.

Section 01025 – Measurement and Payment

1.6 NON-PAYMENT FOR REJECTED PRODUCTS OR STORED MATERIALS

A. Payment will not be made for any of the following:

1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from the transporting vehicle.
4. Products placed beyond the lines and levels of the required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling and disposing of rejected Products.
7. Products not properly stored and secured.

DIVISION 00 AND 01 – GENERAL CONDITIONS AND REQUIREMENTS

Item 001 CONTRACT GENERAL CONDITIONS AND MOBILIZATION

A. Measurement

The quantity to be paid for this item shall be a lump sum payment.

B. Payment

The lump sum bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other Work associated with the contract general conditions; completing the clearing and grubbing, including tree, shrub and brush removal not covered under another bid item; disposing of materials off-site in accordance with the Contract Documents and Construction Documents and any applicable local, state or federal requirements; all costs included with the transport of all the tools, equipment, machinery, materials, offices, personnel and appurtenances necessary to complete the Work; de-mobilization; establishment and maintenance of a secure Work area; on-site construction yard; field office, including temporary utility services; any "start up" or incidental costs necessary to beginning other Contract items, including Bonding and Insurance; review of contract documents and field conditions; warranties; taxes; obtaining permits; fees; providing notices, construction schedule, schedule of values, shop drawings, product data, and samples; all materials, labor, equipment, transportation, and all other Work associated with providing dust control; project closeout including cleaning all streets and sidewalks affected by construction; completing punch list items; providing as-built drawings; and providing all other related and necessary labor, equipment, and materials to complete the Work not covered by other items in this section.

Mobilization will be paid for based on the percentage of the task completed at the time of the requested progress payment.

Item 002 DEWATERING

A. Measurement

The quantity to be paid for this item shall be a lump sum payment.

Section 01025 – Measurement and Payment

B. Payment

The lump sum bid price shall include, but is not limited to, all costs included with the dewatering of excavation, trenching, and pipe ramming locations. These costs may include permit fees, equipment rental fees, sampling and analysis, associated quality discharge requirements, and fuel. A permit from CDPHE is required for dewatering and must be obtained prior to dewatering operations. Strict adherence to the permit restrictions will be enforced by the Town Engineer, Inspector, or other authorized Town staff.

Dewatering will be paid for based on the percentage of the task completed at the time of the requested progress payment. No payment for dewatering for trenching and pipe ramming greater than the lump sum price shown on the Bid Form will be made unless written prior approval is obtained from the Engineer.

Item 003 INITIAL CONSTRUCTION SURVEYING

A. Measurement

The quantity to be paid for this item shall be a lump sum payment.

B. Payment

The lump sum bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other Work associated with the initial construction surveying, as required by the Contract Documents or Construction Documents. The bid price shall include all initial construction surveying, and providing all other related and necessary labor, equipment, and materials to complete the Work not covered by other items in this section. No payment for initial construction surveying greater than the lump sum price shown on the Bid Form will be made unless written prior approval is obtained from the Engineer.

Item 004 SUPPLEMENTAL CONSTRUCTION SURVEYING

A. Measurement

The quantity to be paid for this item shall be for the actual number of hours used for supplemental construction surveying beyond the initial construction surveying.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other Work associated with any supplemental construction surveying, as required by the Contract Documents or Construction Documents. The bid price shall include all supplemental construction surveying, and providing all other related and necessary labor, equipment, and materials to complete the Work not covered by other items in this section. No payment for supplemental construction surveying conducted outside of the limits of construction shown on the Drawings unless directed and approved by the Engineer will be included in the amount computed for payment.

Section 01025 – Measurement and Payment

Item 005 CONSTRUCTION MATERIALS TESTING

A. Measurement

The quantity to be paid for this item shall be for the actual number of hours used for construction materials testing.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other Work associated with any construction materials testing, as required by the Contract Documents or Construction Documents. The bid price shall include all lab testing, technician labor, report preparation and submittal, and providing all other related and necessary labor, equipment, and materials to complete the Work not covered by other items in this section. No payment for failed material tests, or construction materials testing conducted outside of the scope of work shown in the Contract Documents unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 006 FLAGGERS

A. Measurement

The quantity to be paid for this item shall be for the actual number of flagging hours required for traffic control.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other work associated with providing flagging for traffic control in accordance with the Contract Documents. The bid price shall include the hourly rate for flagging operations. No payment for flagging greater than the rate shown on the Bid Form will be made unless written prior approval is obtained from the Engineer.

Item 007 CONSTRUCTION SIGNS (SIZE D)

A. Measurement

The quantity to be paid for this item shall be for the actual number of construction signs required and utilized for traffic control.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other work associated with installing and maintaining construction signs for traffic control in accordance with the Contract Documents or Construction Documents for the improvements. No payment for construction signs greater than the price shown on the Bid Form will be made unless written prior approval is obtained from the Engineer.

Section 01025 – Measurement and Payment

Item 008 CONCRETE BARRIERS

A. Measurement

The quantity to be paid for this item shall be for the linear feet of concrete barriers required for traffic control.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other work associated with installing and maintaining concrete barriers for traffic control in accordance with the Contract Documents or Construction Documents for the improvements. No payment for construction barriers greater than the price shown on the Bid Form will be made unless written prior approval is obtained from the Engineer.

Item 009 CRASH ATTENUATORS

A. Measurement

The quantity to be paid for this item shall be for the number of crash attenuators required for traffic control.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other work associated with installing and maintaining crash attenuators for traffic control in accordance with the Contract Documents or Construction Documents for the improvements. No payment for crash attenuators greater than the price shown on the Bid Form will be made unless written prior approval is obtained from the Engineer.

Item 010 DRUM CHANNELIZING DEVICES

A. Measurement

The quantity to be paid for this item shall be for the number of drum channelizing devices required for traffic control.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other work associated with installing and maintaining drum channelizing devices for traffic control in accordance with the Contract Documents or Construction Documents for the improvements. No payment for drum channelizing devices greater than the price shown on the Bid Form will be made unless written prior approval is obtained from the Engineer.

DIVISION 02 – SITEWORK

Section 01025 – Measurement and Payment

Item 011 REMOVE / REPLACE ASPHALT

A. Measurement

The quantity to be paid for this item shall be for the actual number of square yards of asphalt pavement that is removed and replaced.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to remove asphalt, place and compact the asphalt and base in lifts and prepare the subgrade, as needed in all areas as specified on the Construction Documents and in accordance with the Town and CDOT requirements. The bid price shall include saw-cutting, milling, loading, hauling and disposal of asphalt. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. No payment for asphalt removal, asphalt pavement, or base section from outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 012 REMOVE / REPLACE CONCRETE

A. Measurement

The quantity to be paid for this item shall be for the actual number of square yards of concrete that is removed and replaced.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to remove concrete curb & gutter, sidewalk, driveway approaches, crossspans, drive lanes, and parking lot pavements; place concrete complete-in-place as shown on the Construction Documents. The bid price shall include saw-cutting, milling, loading, hauling and disposal of concrete; excavation, over-excavation to remove unsuitable material and replacement with suitable granular material; placement and removal of forms, doweling to existing concrete, placement of concrete for curb/gutter/sidewalk, driveways and crossspans, backfilling around the concrete or otherwise noted on the Construction Documents and disposal of debris, excess excavated material, and damaged materials; site clean-up, and all other related and necessary materials, Work and equipment required to construct the curb/gutter/sidewalk, driveways and crossspans in accordance with the Construction Documents. Repair or replacement of the concrete due to failed tests shall be completed at the Contractor(s) expense with no additional cost to the Town. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. No payment for concrete removal or concrete placed outside of the dimensions shown on the Drawings unless directed and approved by the Engineer will be included in the amount computed for payment.

Section 01025 – Measurement and Payment

Item 013 PRESSURE CLEANOUT

A. Measurement

The quantity to be paid for this item shall be for the actual number of pressure cleanouts installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install, complete-in-place, the pressure cleanouts as shown on the Construction Documents. The bid price shall include all piping, structural support, adaptors, pumper nozzle caps, cap chains, flanges, frames, covers, excavation, backfill, bedding, compaction, and all other costs not included under other bid items. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid items. No payment for pressure cleanouts placed outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 014 SANITARY CLEANOUT

A. Measurement

The quantity to be paid for this item shall be for the actual number of sanitary cleanouts installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install, complete-in-place, the sanitary cleanout as shown on the Construction Documents. The bid price shall include all piping, adaptors, caps, covers, excavation, backfill, bedding, compaction, and all other costs not included under other bid items. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid items. No payment for pressure cleanouts placed outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 015 CONNECTION TO STONE CANYON LIFT STATION MANHOLE

A. Measurement

The quantity to be paid for this item shall be for the actual number of connections

Section 01025 – Measurement and Payment

made to the Stone Canyon Lift Station.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed for the connection to the Stone Canyon Lift Station as shown on the Construction Documents. The bid price shall include, but not limited to, all pipe per the size and type specified, measured horizontally in place through valves and fittings, and pipe installation; restrained joint pipe systems and transition couplings; restrained joint devices including harness rods, megalugs, and thrust blocks; bends, joints, and joint material including gaskets, bolts, temporary fittings for testing, joint fasteners and other miscellaneous items required to construct the specified pipe joints; pipe marking tape; tracer wire and test stations; protection of existing facilities at all utility crossings whether shown on drawings or not; appurtenances including excavation, over-excavation to remove unsuitable material and replacement with suitable granular material; layout, survey, exploratory excavations including potholing prior to and during construction, soil groundwater analysis, and groundwater barriers; bedding, backfilling, compacting, compaction testing, and landscaping/topsoil/re-vegetation; trench supporting, including sheeting, bracing, and trench boxes; disposal and hauling of debris, excess excavated material, and damaged materials; water line testing; site clean-up, gravel repair, and removal/replacement of fencing; provisions for continuous use of paved streets, roadways, multi-use paths, driveways, and all other property both public and private, barricades, and safety provisions per OSHA and other applicable regulations; all other related and necessary materials, Work and equipment required to construct a complete operable pipeline in accordance with the Construction Documents; and all other costs not included under other bid items. Repair or replacement of the pipeline due to failed tests shall be completed at the Contractors expense with no additional cost to the Owner. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. No payment for pipe placed outside of the dimensions shown on the Drawings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 016 4-INCH DR 9 HDPE PIPE – HORIZONTAL DIRECTIONAL DRILLING

A. Measurement

The quantity to be paid for this item shall be for the actual number of linear feet of pipe installed, complete-in-place, including all required and associated fittings, measured on a horizontal plane based on the pipeline stationing as determined by surveys made after installation. Bid price shall be unclassified with respect to restrained or unrestrained joints.

The measurement of the length of each line or run of pipe of each size will begin and end at:

Section 01025 – Measurement and Payment

1. The end of the pipe where connected to an existing pipe, fitting or valve; or at the end of a dead-end run.
2. The centerline intersection of run and branch on tees, crosses, or laterals where a branch line connecting therewith is constructed under this contract.
3. The measurement of each line of pipe of each size which is to be paid for on a unit price basis will be continuous through, and shall include the full laying lengths of all fittings and valves installed between the ends of each line; except that the laying lengths of reducers and increasers will be divided equally between the connected pipe sizes. Connected piping for new hydrants will be measured for payment from the center or the main to the center of the fire hydrant or auxiliary gate valve.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, appurtenances, transportation, and all other Work associated with providing a fully functional horizontal directionally drilled pipeline as shown on the Contract Documents or Construction Documents for the improvements. The bid price shall include all pipe per the size and type specified, measured horizontally in place through valves and fittings, and pipe installation; pipe marking tape; tracer wire and test stations; protection of existing facilities at all utility crossings whether shown on drawings or not; appurtenances including excavation, over-excavation to remove unsuitable material and replacement with suitable granular material; layout, survey, exploratory excavations including potholing prior to and during construction, soil groundwater analysis, and groundwater barriers; bedding, backfilling, compacting, compaction testing, and landscaping/topsoil/re-vegetation; disposal and hauling of debris, excess excavated material, and damaged materials; pipeline testing; site clean-up, gravel repair, and removal/replacement of fencing; provisions for continuous use of paved streets, roadways, multi-use paths, driveways, and all other property both public and private, barricades, and safety provisions per OSHA and other applicable regulations; all other related and necessary materials, Work and equipment required to construct a complete operable pipeline in accordance with the Construction Documents; and all other costs not included under other bid items. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. Repair or replacement of the pipeline due to failed tests shall be completed at the Contractors expense with no additional cost to the Owner. No payment for pipe placed outside of the dimensions shown on the Drawings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 017 CUT OFF WALLS

A. Measurement

The quantity to be paid for this item shall be for the actual number of cut off walls.

Section 01025 – Measurement and Payment

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, and equipment needed to install cut off walls as specified on the Construction Documents. The bid price shall include the cut off walls, installation, and all other costs not included under other bid items.

Item 018 VEHICLE TRACKING CONTROL

A. Measurement

The quantity to be paid for this item shall be for the actual number of number of vehicle tracking control pads installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install, complete-in-place, clean, and maintain a vehicle tracking control pad as shown on the Construction Documents and removal of pad upon project completion. Erosion Control, including vehicle tracking control pads should be complete-in-place prior to commencing any installation, removal, and/or earthwork activities to the greatest extent possible. No payment for vehicle tracking control pads placed outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 019 SILT FENCE

C. Measurement

The quantity to be paid for this item shall be for the actual number of linear feet of silt fence that is installed.

D. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment and transportation needed install the silt fence as specified on the Construction Documents. The bid price shall include the silt fence, soil preparation, installation hardware, installation, and all other costs not included under other bid items. No payment for silt fence installed outside of the area shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 020 CONCRETE WASHOUT AREA

A. Measurement

The quantity to be paid for this item shall be for the actual number of number of concrete washouts installed.

Section 01025 – Measurement and Payment

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install, complete-in-place, clean, and maintain a concrete washout as shown on the Construction Documents and removal of the concrete waste and concrete washout upon project completion. Concrete washouts should be complete- in-place prior to commencing any concrete work within the project area. No payment for concrete washouts placed outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 021 SEDIMENT CONTROL LOG

A. Measurement

The quantity to be paid for this item shall be for the actual number of linear feet of sediment control logs installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install, complete-in-place, clean, and maintain sediment control logs as shown on the Construction Documents and removal of sediment control logs upon project completion. Erosion Control, including sediment control logs should be complete-in-place prior to commencing any removal and/or earthwork activities to the greatest extent possible. No payment for sediment control logs placed outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 022 CULVERT INLET PROTECTION

A. Measurement

The quantity to be paid for this item shall be for the actual number of inlet protection devices installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install, complete-in-place, clean, and maintain culvert inlet protection as shown on the Construction Documents and removal of culvert inlet protection upon project completion. Erosion Control, including gravel filters should be complete-in-place prior to commencing any removal and/or earthwork activities to the greatest extent possible. No payment for culvert inlet protection placed outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Section 01025 – Measurement and Payment

Item 023 CLEAR AND GRUB

A. Measurement

The quantity to be paid for this item shall be a lump sum payment.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment and transportation needed to clear and grub as shown on the Construction Documents. The bid price shall include removal of the existing trees, stumps, roots, brush, and grasses, as necessary to allow for the construction of the proposed improvements; and all other costs not included under other bid items. No payment for clearing and grubbing outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 024 SEEDING

A. Measurement

The quantity to be paid for this item shall be for the acres reseeded at the time of application for payment.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment and transportation needed to reseed all areas disturbed by the work within the project Right-of-Way, easements and construction staging area per the seed mix requirements as specified on the Construction Documents. The bid price shall include seed bed preparation, fertilizations, seeding, and all other costs not included under other bid items. No payment for reseeding placed outside of the area shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Items 025 – 036 SITE PIPING

A. Measurement

The quantity to be paid for these items shall be for the actual number of linear feet of pipe installed, complete-in-place, including all required and associated fittings, measured on a horizontal plane based on the pipeline stationing as determined by surveys made after installation. Bid prices shall be unclassified with respect to restrained or unrestrained joints.

The measurement of the length of each line or run of pipe of each size will begin and end at:

1. The end of the pipe where connected to an existing pipe, fitting or valve; or at the end of a dead-end run.

Section 01025 – Measurement and Payment

2. The centerline intersection of run and branch on tees, crosses, or laterals where a branch line connecting therewith is constructed under this contract.
3. The measurement of each line of pipe of each size which is to be paid for on a unit price basis will be continuous through, and shall include the full laying lengths of all fittings and valves installed between the ends of each line; except that the laying lengths of reducers and increasers will be divided equally between the connected pipe sizes. Connected piping for new hydrants will be measured for payment from the center of the main to the center of the fire hydrant or auxiliary gate valve.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install pipe complete-in-place as shown on the Construction Documents. The bid price shall include all pipe per the size and type specified, measured horizontally in place through valves and fittings, and pipe installation; restrained joint pipe systems and transition couplings; restrained joint devices including harness rods, megalugs, and thrust blocks; bends, joints, and joint material including gaskets, bolts, temporary fittings for testing, joint fasteners and other miscellaneous items required to construct the specified pipe joints; pipe marking tape; tracer wire and test stations; cathodic protection and appurtenances; protection of existing facilities at all utility crossings whether shown on drawings or not; appurtenances including excavation, over-excavation to remove unsuitable material and replacement with suitable granular material; layout, survey, exploratory excavations including potholing prior to and during construction, soil groundwater analysis, and groundwater barriers; bedding, backfilling, compacting, compaction testing, and landscaping/topsoil/re-vegetation; trench supporting, including sheeting, bracing, and trench boxes; disposal and hauling of debris, excess excavated material, and damaged materials; water line testing; site clean-up, gravel repair, and removal/replacement of fencing; provisions for continuous use of paved streets, roadways, multi-use paths, driveways, and all other property both public and private, barricades, and safety provisions per OSHA and other applicable regulations; all other related and necessary materials, Work and equipment required to construct a complete operable pipeline in accordance with the Construction Documents; and all other costs not included under other bid items. Repair or replacement of the pipeline due to failed tests shall be completed at the Contractors expense with no additional cost to the Owner. All Work and materials incidental to installing jacked or rammed pipe, including geotechnical monitoring and cathodic protection, will not be measured and paid for separately but shall be included in the Work. Additional potholing and utility locates beyond the initial utility locates provided by the Town, and all other Work related to potholing and utility locating, including removal and replacement of existing pavement, backfilling, shoring, and labor shall be measured and paid for separately under the “supplemental construction surveying” bid item. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. No payment for pipe placed outside of the dimensions shown on the Drawings unless directed and

Section 01025 – Measurement and Payment

approved by the Engineer will be included in the amount computed for payment.

Item 037

24-INCH WELDED STEEL CASING AND RAMMING

A. Measurement

The quantity to be paid for this item shall be for the actual number of linear feet of pipe installed by ramming, complete-in-place, included all required and associated fittings, grout, cathodic protection, measured on a horizontal plane based on the pipeline stationing as determined by surveys made after installation. Bid prices shall be unclassified with respect to restrained or unrestrained joints.

The measurement of the length of each line or run of pipe of each size will begin and end at:

1. The end of the pipe where connected to an existing pipe, fitting or valve; or at the end of a dead-end run.
2. The centerline intersection of run and branch on tees, crosses, or laterals where a branch line connecting therewith is constructed under this contract.
3. The measurement of each line of pipe of each size which is to be paid for on a unit price basis will be continuous through, and shall include the full laying lengths of all fittings and valves installed between the ends of each line; except that the laying lengths of reducers and increasers will be divided equally between the connected pipe sizes.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install casing pipe by ramming complete-in-place as shown on the Construction Documents. The bid price shall include all pipe per the size and type specified, measured horizontally in place, and pipe installation; grout; end seals; spacers; bends, joints, and joint material including gaskets, bolts, temporary fittings for testing, joint fasteners and other miscellaneous items required to construct the specified pipe joints; cathodic protection and appurtenances; protection of existing facilities at all utility crossings whether shown on drawings or not; appurtenances including excavation, over-excavation to remove unsuitable material and replacement with suitable granular material; layout, survey, exploratory excavations including potholing prior to and during construction, soil groundwater analysis, and groundwater barriers; compaction testing, and landscaping/topsoil/re-vegetation; trench supporting, including sheeting, bracing, and trench boxes; disposal and hauling of debris, excess excavated material, and damaged materials; pressure testing; site clean-up, gravel repair, and removal/replacement of fencing; provisions for continuous use of paved streets, roadways, multi-use paths, driveways, and all other property both public and private, barricades, and safety provisions per OSHA and other applicable regulations; all other related and necessary materials, Work and equipment required to construct a complete operable pipeline in accordance with the Construction Documents; and all other costs not included under other bid items. Repair or replacement of the pipeline due to failed tests shall be completed at the Contractors expense with no additional cost to the Owner. All Work and materials incidental to

Section 01025 – Measurement and Payment

installing jacked or rammed pipe, including geotechnical monitoring and cathodic protection, will not be measured and paid for separately but shall be included in the Work. Additional potholing and utility locates beyond the initial utility locates provided by the Town, and all other Work related to potholing and utility locating, including removal and replacement of existing pavement, backfilling, shoring, and labor shall be measured and paid for separately under the “supplemental construction surveying” bid item. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. No payment for pipe placed outside of the dimensions shown on the Drawings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 038 – 042 SITE VALVES

A. Measurement

The quantity to be paid for these items shall be for the actual number of valves installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed for the installation of the valves as shown on the Construction Documents. The bid price shall include all valves per the size and type specified, excavation, backfill, structural support (as shown on the Construction Documents), concrete pad, valve box, valve marker, bedding, mechanical joint restraints associated with valves, connection to water pipe, compaction, and all other costs not included under other bid items. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. No payment for valves placed outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

DIVISION 03 – CONCRETE

Item 043 CONCRETE WET WELL

A. Measurement

The quantity to be paid for this item shall be for the actual number of concrete wet wells installed.

B. Payment

Section 01025 – Measurement and Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install or construct, complete-in-place, the concrete wet wells as shown on the Construction Documents. The bid price shall include cast-in-place or pre-cast concrete base; concrete equipment pads; wet well sections; joint wrap, plastic gaskets; concrete adjustment shims; regular ring and cover; hatches; external joint wrap; vacuum testing; linings and coatings; appurtenances including excavation, over-excavation to remove unsuitable material and replacement with suitable granular material; bedding material, placement and compaction; backfilling and compacting; trench supporting; disposal of debris, excess excavated material, and damaged materials; and all other costs not included under other bid items. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. No payment for concrete wet wells placed outside of the dimensions/elevations shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 044 4-FOOT DIAMETER MANHOLE

A. Measurement

The quantity to be paid for this item shall be for the actual number of manholes installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install or construct, complete-in-place, the sanitary sewer manholes as shown on the Construction Documents. The bid price shall include cast-in-place or pre-cast concrete base; manhole sections; concrete eccentric cone section; joint wrap, plastic gaskets; linings and coatings; concrete adjustment shims; regular ring and cover; external joint wrap; vacuum testing; appurtenances including excavation, over-excavation to remove unsuitable material and replacement with suitable granular material; bedding material, placement and compaction; backfilling and compacting; trench supporting; disposal of debris, excess excavated material, and damaged materials; and all other costs not included under other bid items. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. No payment for manholes placed outside of the dimensions/elevations shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 045 8-FOOT DIAMETER MANHOLE (OVERFLOW STORAGE)

A. Measurement

Section 01025 – Measurement and Payment

The quantity to be paid for this item shall be for the actual number of manholes installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install or construct, complete-in-place, the sanitary sewer manholes as shown on the Construction Documents. The bid price shall include cast-in-place or pre-cast concrete base; manhole sections; concrete eccentric cone section; joint wrap, plastic gaskets; linings and coatings; concrete adjustment shims; regular ring and cover; external joint wrap; vacuum testing; appurtenances including excavation, over-excavation to remove unsuitable material and replacement with suitable granular material; bedding material, placement and compaction; backfilling and compacting; trench supporting; disposal of debris, excess excavated material, and damaged materials; and all other costs not included under other bid items. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. No payment for manholes placed outside of the dimensions/elevations shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 046 OVERFLOW STORAGE VAULTS – 2,500 GALLONS

A. Measurement

The quantity to be paid for this item shall be for the actual number of overflow storage vaults installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install or construct, complete-in-place, the overflow storage vaults as shown on the Construction Documents. The bid price shall include pre-cast concrete tanks; linings and coatings; and all other appurtenances required to install the pre-cast overflow storage vaults. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. All labor, materials, equipment, transportation, and Work associated with excavation shall be measured and paid for separately under the “Engineered Excavation – Stone Canyon Lift Station Overflow Storage Vaults” bid item. No payment for overflow storage vaults placed outside of the dimensions/elevations shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Section 01025 – Measurement and Payment

DIVISION 11 – EQUIPMENT

Item 047 SUBMERSIBLE GRINDER PUMPS

A. Measurement

The quantity to be paid for this item shall be for the actual number of submersible grinder pumps and associated control panel installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other Work needed to construct and install a fully functional submersible duplex pump system as shown on the Construction Documents. The bid price shall include all submersible grinder pumps, control panel, piping, fittings, lifting chains, guide bars, upper guide bar brackets, accessories and appurtenances incorporated within the assembly, and all other related and necessary labor, equipment, and materials to complete the Work not covered by other items in this section. No payment for submersible grinder pumps placed outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

DIVISION 13 – SPECIAL CONSTRUCTION

Item 048 ODOR CONTROL SYSTEM

A. Measurement

The quantity to be paid for this item shall be for the actual number of odor control systems installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other Work needed to construct and install a fully functional odor control system as shown on the Construction Documents. The bid price shall include an odor control air scrubber with all accessories, media, appurtenances, piping, fittings and valves incorporated within the assembly, an exhaust stack, a fan, the containment vessel and cover, a foul air intake, and all other related and necessary labor, equipment, and materials to complete the Work not covered by other items in this section. No payment for odor control systems placed outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

DIVISION 15 – MECHANICAL

Item 049 PRESSURE REDUCING VALVE VAULTS (PRV) – 6, 7, & 8

A. Measurement

Section 01025 – Measurement and Payment

The quantity to be paid for this item shall be for the actual number of pressure reducing vaults installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install, complete-in-place, the precast vault as shown on the Construction Documents. The bid price shall include, but not limited to, precast vault, hatch, linings and coatings, ductile iron piping, PVC piping, copper piping, pipe supports, tees, reducers, ball valves, pressure reducing valves, butterfly valves, excavation, backfill, structural support, bedding, compaction, and all other costs not included under other bid items. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All pressure reducing vault valves, piping, and appurtenances are shown on the Construction Documents. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid items. No payment for vaults placed outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 050 4-IN BALL CHECK VALVE

A. Measurement

The quantity to be paid for these items shall be for the actual number of valves installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed for the installation of the ball check valves as shown on the Construction Documents. The bid price shall include all valves per the size and type specified as shown on the Construction Documents. No payment for valves placed outside of the dimensions shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

Items 051 – 053 PIPING

A. Measurement

The quantity to be paid for these items shall be for the actual number of linear feet of pipe installed, complete-in-place, including all required and associated fittings, measured on a horizontal plane based on the pipeline stationing as determined by surveys made after installation. Bid prices shall be unclassified with respect to restrained or unrestrained joints.

The measurement of the length of each line or run of pipe of each size will begin and end at:

Section 01025 – Measurement and Payment

1. The end of the pipe where connected to an existing pipe, fitting or valve; or at the end of a dead-end run.
2. The centerline intersection of run and branch on tees, crosses, or laterals where a branch line connecting therewith is constructed under this contract.
3. The measurement of each line of pipe of each size which is to be paid for on a unit price basis will be continuous through, and shall include the full laying lengths of all fittings and valves installed between the ends of each line; except that the laying lengths of reducers and increasers will be divided equally between the connected pipe sizes. Connected piping for new hydrants will be measured for payment from the center or the main to the center of the fire hydrant or auxiliary gate valve.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install pipe complete-in-place as shown on the Construction Documents. The bid price shall include all pipe per the size and type specified, measured horizontally in place through valves and fittings, and pipe installation; restrained joint pipe systems and transition couplings; restrained joint devices including harness rods, megalugs, and thrust blocks; bends, joints, and joint material including gaskets, bolts, temporary fittings for testing, joint fasteners and other miscellaneous items required to construct the specified pipe joints; pipe marking tape; tracer wire and test stations; protection of existing facilities at all utility crossings whether shown on drawings or not; appurtenances including excavation, over-excavation to remove unsuitable material and replacement with suitable granular material; layout, survey, exploratory excavations including potholing prior to and during construction, soil groundwater analysis, and groundwater barriers; bedding, backfilling, compacting, compaction testing, and landscaping/topsoil/re-vegetation; trench supporting, including sheeting, bracing, and trench boxes; disposal and hauling of debris, excess excavated material, and damaged materials; water line testing; site clean-up, gravel repair, and removal/replacement of fencing; provisions for continuous use of paved streets, roadways, multi-use paths, driveways, and all other property both public and private, barricades, and safety provisions per OSHA and other applicable regulations; all other related and necessary materials, Work and equipment required to construct a complete operable pipeline in accordance with the Construction Documents; and all other costs not included under other bid items. Repair or replacement of the pipeline due to failed tests shall be completed at the Contractors expense with no additional cost to the Owner. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the “dewatering” bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid item. No payment for pipe placed outside of the dimensions shown on the Drawings unless directed and approved by the Engineer will be included in the amount computed for payment.

DIVISION 16 – ELECTRICAL

Section 01025 – Measurement and Payment

A. Measurement

The quantity to be paid for this item shall be a lump sum payment.

B. Payment

The lump sum bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other Work needed to construct and install a fully functional PRV-7 & East Corridor Lift Station as shown on the Construction Documents. This Work shall include installation of both the Lift Station Control Panel and the Monitoring Panel, electrical conduit, wiring, and instrumentation installation as required between the Lift Station, Panels, and PRV Vault. The bid price shall include securing the necessary permits and meeting permit requirements; performing all inspections; coordination of electrical equipment, instrumentation, connections, and PLC; excavation including ground ring trenches and service trenches; installing conduits, sockets, conductors, fuses, ground rods, electrodes, exothermic welds, motor feeds, signal cables, duct banks, pump control panels with antennas, load centers, surge protection devices, motor-rated snap switches, seal-offs, wall seals, grounding/bonding fittings, panel wire color placards, coated rack struts, strut bases, waterproof lighting switches, and miscellaneous feeds, rack-related fittings and hardware; labeling; panel scheduling; testing; start up; and providing all other related and necessary labor, equipment, and materials to complete the Work not covered by other items in this section. No payment for PRV-7 & East Corridor Lift Station greater than the lump sum price shown on the Bid Form will be made unless written prior approval is obtained from the Engineer.

Item 055 EAST CORRIDOR MONITORING PANEL

A. Measurement

The quantity to be paid for this item shall be a lump sum payment.

B. Payment

The lump sum bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other Work needed to construct and install a fully functional monitoring panel as shown on the Construction Documents. This Work will include design, build, start-up, and commission of panel including integration into Town's existing SCADA system. The bid price shall include securing the necessary permits and meeting permit requirements; performing all inspections; coordination of electrical equipment, instrumentation, connections, two PLCs, and a Red Lion Cellular Modem, Model # SN/RAM-6901; excavation including ground ring trenches and service trenches; installing conduits, sockets, conductors, fuses, ground rods, electrodes, exothermic welds, motor feeds, signal cables, duct banks, pump control panels with antennas, load centers, surge protection devices, motor-rated snap switches, seal-offs, wall seals, grounding/bonding fittings, panel wire color placards, coated rack struts, strut bases, waterproof lighting switches, and miscellaneous feeds, rack-related fittings and hardware; labeling; panel scheduling; testing; start up; and providing all other related and necessary labor, equipment, and materials to complete the Work not

Section 01025 – Measurement and Payment

covered by other items in this section. No payment for East Corridor Monitoring Panel greater than the lump sum price shown on the Bid Form will be made unless written prior approval is obtained from the Engineer.

Item 056 PRV-6 ELECTRICAL

A. Measurement

The quantity to be paid for this item shall be a lump sum payment.

B. Payment

The lump sum bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other Work needed to construct and install a fully functional PRV-6 as shown on the Construction Documents. The bid price shall include securing the necessary permits and meeting permit requirements; performing all inspections; coordination of electrical equipment, instrumentation, connections, and PLC; excavation including ground ring trenches and vault trenches; installing conduits, sockets, conductors, fuses, ground rods, electrodes, exothermic welds, duct banks, pump control panels with antennas, load centers, surge protection devices, motor-rated snap switches, wall seals, grounding/bonding fittings, panel wire color placards, coated rack struts, strut bases, waterproof lighting switches, and miscellaneous feeds, rack-related fittings and hardware; labeling; panel scheduling; testing; start up; and providing all other related and necessary labor, equipment, and materials to complete the Work not covered by other items in this section. No payment for PRV-6 greater than the lump sum price shown on the Bid Form will be made unless written prior approval is obtained from the Engineer.

Item 057 PRV-8 ELECTRICAL

A. Measurement

The quantity to be paid for this item shall be a lump sum payment.

B. Payment

The lump sum bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other Work needed to construct and install a fully functional PRV-8 as shown on the Construction Documents. The bid price shall include securing the necessary permits and meeting permit requirements; performing all inspections; coordination of electrical equipment, instrumentation, connections, and PLC; excavation including ground ring trenches and service trenches; installing conduits, sockets, conductors, fuses, ground rods, electrodes, exothermic welds, motor feeds, signal cables, duct banks, pump control panels with antennas, load centers, surge protection devices, motor-rated snap switches, seal-offs, wall seals, grounding/bonding fittings, panel wire color placards, coated rack struts, strut bases, waterproof lighting switches, and miscellaneous feeds, rack-related fittings and hardware; labeling; panel scheduling; testing; start up; and providing all other related and necessary labor, equipment, and materials to complete the Work not covered by other items in this section. No payment for PRV-8 greater than the lump sum price shown on the Bid

Section 01025 – Measurement and Payment

Form will be made unless written prior approval is obtained from the Engineer.

Item 058 ODOR CONTROL SYSTEMS ELECTRICAL

A. Measurement

The quantity to be paid for this item shall be a lump sum payment.

B. Payment

The lump sum bid price shall include, but is not limited to, all labor, materials, equipment, transportation, and all other Work needed to construct and install a fully functional odor control system as shown on the Construction Documents. The bid price shall include securing the necessary permits and meeting permit requirements, performing all inspections, electrical equipment coordination, excavation including ground ring trenches and vault trenches, installing conduit and conductors, labeling, panel scheduling, testing, start up, and providing all other related and necessary labor, equipment, and materials to complete the Work not covered by other items in this section. No payment for odor control systems greater than the lump sum price shown on the Bid Form will be made unless written prior approval is obtained from the Engineer.

ADDED WORK ITEMS

Item 059 4-INCH DR 9 HDPE PIPE – SLEEVING WITH CARBON SPACERS PLACED 6-FT O.C.

A. Measurement

The quantity to be paid for this item shall be for the actual number of linear feet of pipe installed by sleeving, complete-in-place, included all required and associated fittings, grout, carbon spacers placed every 6 feet on center, measured on a horizontal plane based on the pipeline stationing as determined by surveys made after installation. Bid prices shall be unclassified with respect to restrained or unrestrained joints.

The measurement of the length of each line or run of pipe of each size will begin and end at:

1. The end of the pipe where connected to an existing pipe, fitting or valve; or at the end of a dead-end run.
2. The centerline intersection of run and branch on tees, crosses, or laterals where a branch line connecting therewith is constructed under this contract.
3. The measurement of each line of pipe of each size which is to be paid for on a unit price basis will be continuous through, and shall include the full laying lengths of all fittings and valves installed between the ends of each line; except that the laying lengths of reducers and increasers will be divided equally between the connected pipe sizes. Connected piping for new hydrants will be measured for payment from the center or the main to the center of the fire hydrant or auxiliary gate valve.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, appurtenances, transportation, and all other Work associated with sleeving the 4-inch DR 9 in the existing 24" RCP with carbon spacers placed every 6 feet on center as shown on the Contract Documents or Construction Documents for the improvements. The bid price shall include all pipe per the size and type specified, measured horizontally in place through valves and fittings, and pipe installation; pipe marking tape; tracer wire and test stations; carbon spacers from CCI Piping Systems (Model # CSC8-0424-HDPE-CR); equipment to install spacers; bends, joints, and joint material including gaskets, bolts, temporary fittings for testing, joint fasteners and other miscellaneous items required to construct the specified pipe joints; protection of existing facilities at all utility crossings whether shown on drawings or not; appurtenances including excavation, over-excavation to remove unsuitable material and replacement with suitable granular material; layout, survey, exploratory excavations including potholing prior to and during construction, soil groundwater analysis, and groundwater barriers; bedding, backfilling, compacting, compaction testing, and landscaping/topsoil/re-vegetation; disposal and hauling of debris, excess excavated material, and damaged materials; pipeline testing; site clean-up, gravel repair, and removal/replacement of fencing; provisions for continuous use of paved streets, roadways, multi-use paths, driveways, and all other property both public and private, barricades, and safety provisions per OSHA and other applicable regulations; all other related and necessary materials, Work and equipment required to construct a complete operable pipeline in accordance with the Construction Documents; and all other costs not included under other bid items. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the "dewatering" bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the "traffic control" bid item. Repair or replacement of the pipeline due to failed tests shall be completed at the Contractors expense with no additional cost to the Owner. No payment for pipe placed outside of the dimensions shown on the Drawings unless directed and approved by the Engineer will be included in the amount computed for payment.

Item 060 EXCAVATE, CUT INTO 24" RCP, AND CONCRETE ENCASEMENT

A. Measurement

The quantity to be paid for this item shall be for the actual number of access points the contractor has installed on the existing 24" RCP for sleeving the 4" DR 9 in the 24" RCP.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install or construct, complete-in-place, the access points on the existing 24" RCP as shown on the Construction Documents. The bid price shall include excavation; cutting the 24" RCP for an access point of sleeving the 4" DR

Section 01025 – Measurement and Payment

9 through the 24" RCP with carbon spacers; cast-in-place or pre-cast concrete encasement; joint wrap, plastic gaskets; linings and coatings; external joint wrap; equipment and materials to encase the 4" DR 9 with concrete as shown on the Construction Documents; appurtenances including excavation, over-excavation to remove unsuitable material and replacement with suitable granular material; bedding material, placement and compaction; backfilling and compacting; trench supporting; disposal of debris, excess excavated material, and damaged materials; and all other costs not included under other bid items. All labor, materials, equipment, transportation, and Work associated with dewatering, dewatering permits, and associated quality discharge requirements, shall be measured and paid for separately under the "dewatering" bid item. All labor, materials, equipment, transportation, and Work associated with traffic and pedestrian control shall be measured and paid for separately under the "traffic control" bid item. No payment for access points placed outside of the dimensions/elevations shown on the Construction Documents or field markings unless directed and approved by the Engineer will be included in the amount computed for payment.

CHANGE ORDER

Project Title: **EASTERN CORRIDOR UTILITIES**

EDA Project No. **05-01-05734**

Drawing No. N/A

Sheet No. N/A

Order No. 3
CGRS PR No. 4

1. Reason for change:

Pressure Relief Valve in PRV #7

2. Description of Change:

See attached narrative.

3. Change in Contract Cost:

☒ increase of **\$ 10,822.00**
☐ decrease of
☐ no change

4. Change in Contract Time:

☐ increase of
☐ decrease of
☒ no change

5. Contract Adjustment Summary:

Original Contract Sum: \$ **1,989,995.00**
 Previous Approved Changes: \$ **42,016.81**
 Adjusted Contract Sum: \$ **10,822.00**
 New Contract Sum: \$ **2,042,833.81**

SUBMITTED:


Contractor

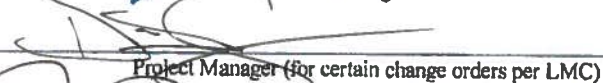
Date: **10-14-19**

APPROVED:


Town Engineer

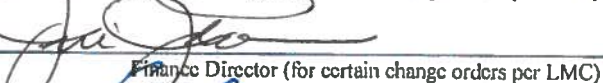
Date: **10-14-19**

APPROVED:


Project Manager (for certain change orders per LMC)

Date: **10-16-19**

APPROVED:


Finance Director (for certain change orders per LMC)

Date: **10-16-19**

APPROVED:


Administrator (for certain change orders per LMC)

Date: **10-15-2019**

APPROVED:

Board of Trustees (for certain change orders per LMC)

Date: _____

CHANGE ORDER SUMMARY

Town Change Order #	CGRS PR #	Date of Request	Change Order Amount	Description	Contract Sum	Status
					\$ 1,989,995.00	
1	1A	7/29/2019	\$ 37,000.00	Add - Excavate, clean & video existing 24" RCP & 27" steel lines	\$ 2,026,995.00	Completed
2	2	7/12/2019	\$ 5,016.81	Add - PLC & Modem	\$ 2,032,011.81	In Progress
3	4	8/22/2019	\$ 10,822.00	Add - Pressure Relief Valve in PRV #7	\$ 2,042,833.81	In Progress

COST REASONABLENESS JUSTIFICATION

JVA has reviewed this PR and finds it necessary to add a Pressure Relief Valve to PRV #7. The costs for this PR are reasonable and comparable based on historical costs for this type of material and labor.



JVA, Incorporated
1319 Spruce Street
Boulder, CO 80302
303.444.1951
info@jvajva.com

October 9, 2019

www.jvajva.com

Mr. Philip Strom
Town of Lyons
432 5th Avenue
Lyons, CO 80540

RE: Eastern Corridor Utilities - Proposal Request #4
Justification Letter
Town of Lyons
2686c - Eastern Corridor Lift Station

Dear Philip:

On October 2, 2019, JVA sent Proposal Request 4 (PR 4) to CGRS Inc. (Contractor) for the addition of one work item to the project scope for the purpose of adding a pressure relief valve to the pressure reducing valve in PRV 7. This addition of work has been recommended to protect the downstream distribution piping prior to the full development of the Eastern Corridor. It is recommended to reduce surge events and help protect the piping and equipment within the Public Works Building against high pressures in the event of the failure of PRV 7. The Town of Lyons (Town) requested the addition of this relief valve in order to mitigate risk of damage to piping and taps within the Public Works Building in the event of a failure of PRV 7.

During design, JVA recommended the addition of pressure relief valves downstream of all the pressure reducing valves (PRV 6, 7, and 8), however, they were removed from the scope for budget considerations. PR 4 includes the addition of a pressure relief valve on the low-pressure side of the piping in PRV 7. It is more cost effective and easier to install the relief valve now as the PRV vault is being installed as opposed to later once the line is pressurized and in service.

The scope of supply in PR 4 includes:

- 4-in Cla-Val Model 90-01 Pressure Reducing Valve & 4x4 flanged DIP tee (\$5,705)
- 4in Gate Valve (\$1,150)
- Conversion kit from reducing valve to relief valve (\$2,000)
 - Cla-Val Pressure Reducing Valve 50G-01BCL 150
 - Pilot Kit for Cla-Val PRV 50G-01BCL 150 (conversion from reducing to relief valve)
 - Y-strainer/Needle Valve
 - Assembly by Cla-Val Representative
- Installation/Labor of valve and appurtenances (\$755)
- Contractually allowable 15% markup (\$1,442)
- TOTAL = \$11,052

The prices for the above parts match quoted prices from the valve supplier and manufacturer's representative. The proposed costs are the market prices for these valves and appurtenances and

consistent with industry available specialty valves. The labor for the proposed work is reasonable for a day of work for a two-man crew and doesn't include a mobilization expense as the Contractor is already working within the PRV 7 vault.

If you require additional information or have questions, please give me a call at 303-565-4965 or send me and email at asparn@jvajva.com.

Sincerely,
JVA, INCORPORATED

By:



Andrew Sparn, P.E.
Project Manager / Associate

CC: Victoria Simonsen, Town of Lyons
Tracy Sanders, Town of Lyons
Erika Archer, Town of Lyons
Shar Shadowen, P.E., Interwest Consulting Group
Josh McGibbon, P.E., JVA, Inc.



www.jvajva.com

☒ Boulder

1319 Spruce Street
Boulder, CO 80302
303.444.1951

☐ Fort Collins

25 Old Town Square
Suite 200
Fort Collins, CO 80524
970.225.9099

☐ Winter Park

PO Box 1860
47 Cooper Creek Way
Suite 328
Winter Park, CO 80482
970.722.7677

☐ Glenwood Springs

214 8th Street
Suite 210
Glenwood Springs, CO
81601
970.404.3100

☐ Denver

1512 Larimer Street
Suite 710
Denver, CO 80202
303.444.1951

PROPOSAL REQUEST

PROJECT NAME: Eastern Corridor Utilities DATE: 10/01/2019
OWNER: Town of Lyons PR NUMBER: 04
CONTRACTOR: CGRS, Inc. JOB NO. 2686c

Submit an itemized proposal for changes in the Contract Sum/Time for proposed modification to the Contract Documents described herein. Submit proposal within ten days (10), or notify the Engineer in writing of the date on which you anticipate submitting your proposal.

THIS IS NOT A CHANGE ORDER, UNLESS it is signed and the final amount is approved by all parties.

The proposal is to request the addition of one bid item to the Contract. The contractor's bid and Section 01025 – measurement and Payment have been revised to reflect changes described in this proposal request and are attached for reference. Acceptance of this proposal will result in the addition of line item 62, "4-INCH PRESSURE RELIEF VALVE AND ASSOCIATED APPURTENANCES" at a unit price to be determined per occurrence, to be used for 1 occurrence. Please find the three attached documents for reference: "2686c – Pressure Relief Valve Detail", "CGRS Eastern Corridor Utilities – BID (Revised)", and "Section 01025 – Measurement and Payment (Revised)".

CONTRACTOR BLOCK

The work will affect the project as summarized below. Backup attached includes all costs of labor, materials, taxes, overhead, profit, time impact and all other changes and/or charges involved as required by the Contract Documents.

ADD/DEDUCT

+ \$10,822.00

CONTRACTOR TIME will be Increased Decreased Unchanged by Days
☐ ☐ ☒ documentation attached

CONTRACTOR'S SIGNATURE [Signature] DATE 10-3-19

*This information shall be valid for thirty (30) calendar days from the date of signature.

REVIEW BLOCK

ENGINEER: [Signature] Approve ☒ Reject ☐
Signature

Amount	Time
<u>\$10,822.00</u>	<input type="checkbox"/>

Comments: _____

Date: 10-3-2019

OWNER: _____ Approve ☐ Reject ☐
Signature

Amount	Time
	<input type="checkbox"/>

Comments: _____

Date: _____

If the amt/time differ from the submitted, FINAL approval and signature from GC required below.

FINAL APPROVED PROPOSAL REQUEST

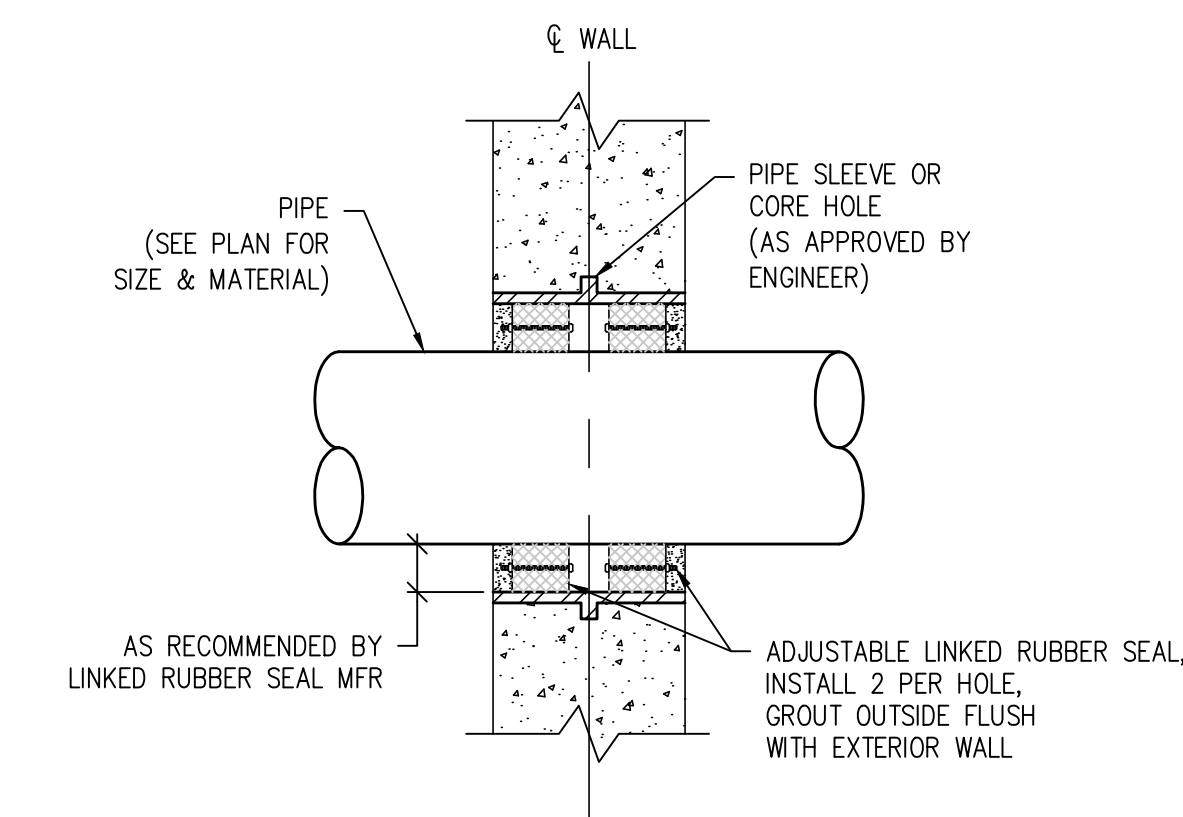
(if submitted values were changed during review)

CONTRACTOR: _____
DATE: _____

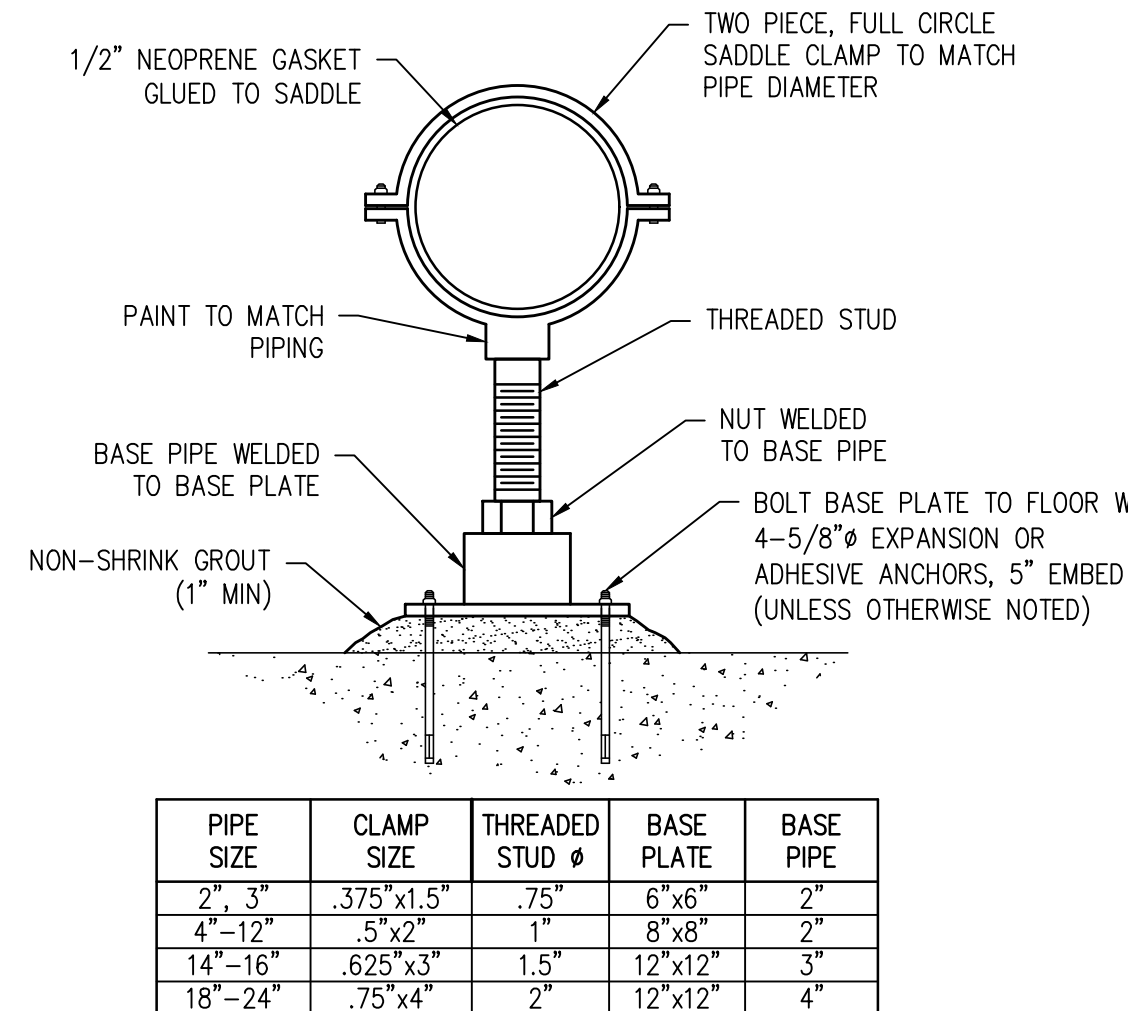
Amount	Time

If different than submitted

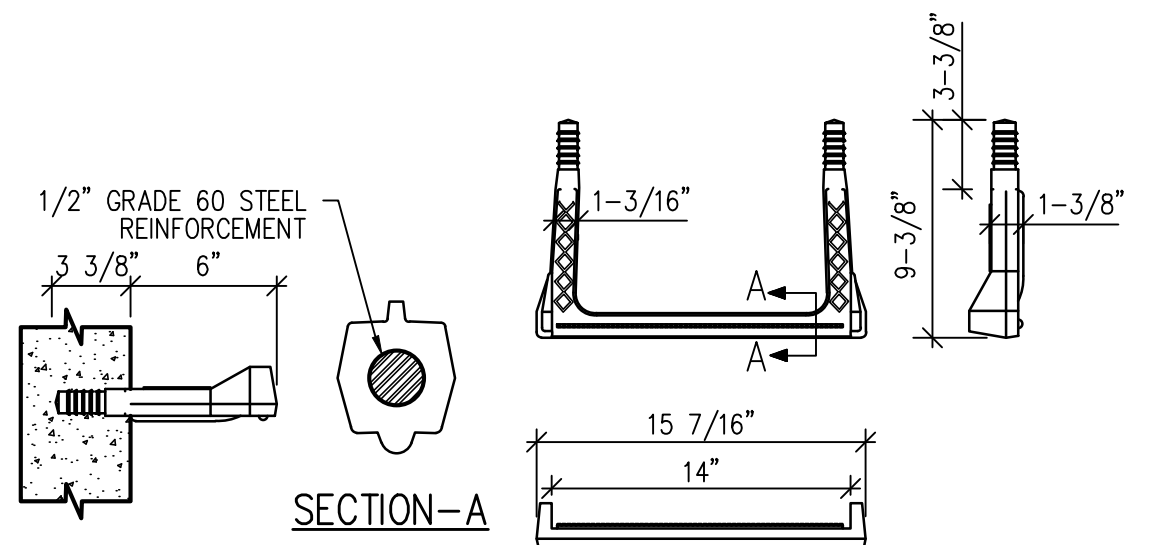
When signed by the Owner, Engineer, and the Final Amount/Time is approved by the General Contractor, this document becomes effective immediately as a Change Order, and the Contractor shall proceed with the change(s) herein.



WALL PENETRATION WITH CORE HOLE DETAIL 2
NTS

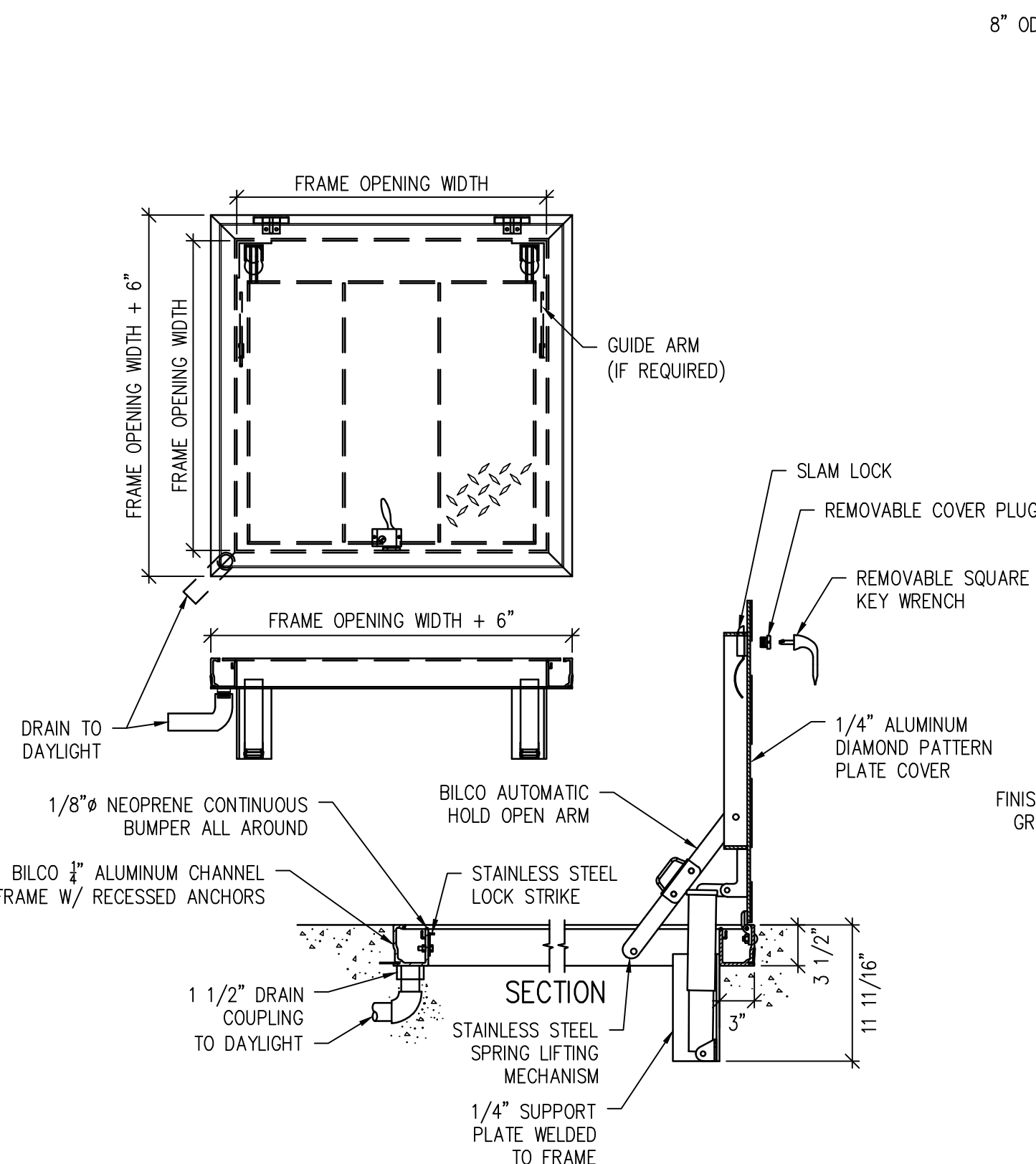


FLOOR PIPE SUPPORT DETAIL 3
NTS

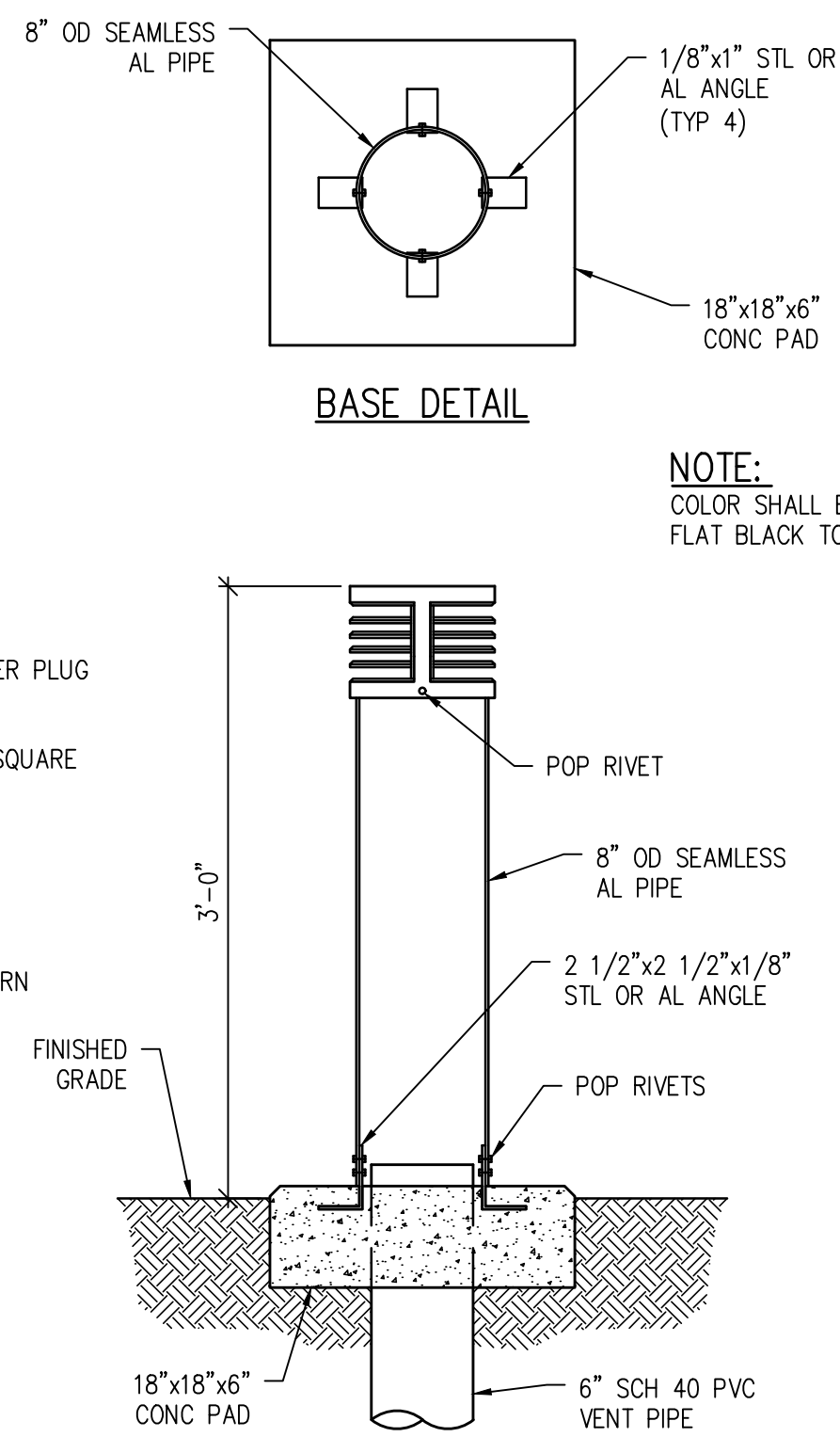


NOTE: COPOLYMER POLYPROPYLENE PLASTIC
AS MANUFACTURED BY M.A. INDUSTRIES (MODEL NO. PS2-PF) OR
AN APPROVED EQUIVALENT SPACED AT 15"

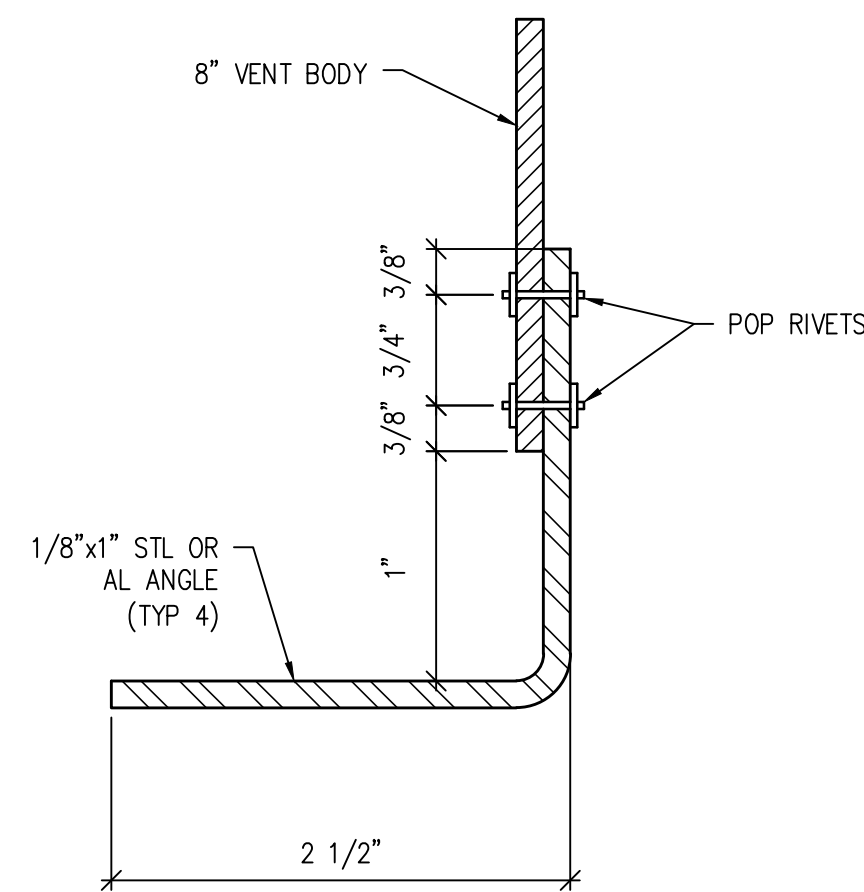
PLASTIC STEP DETAIL 4
NTS



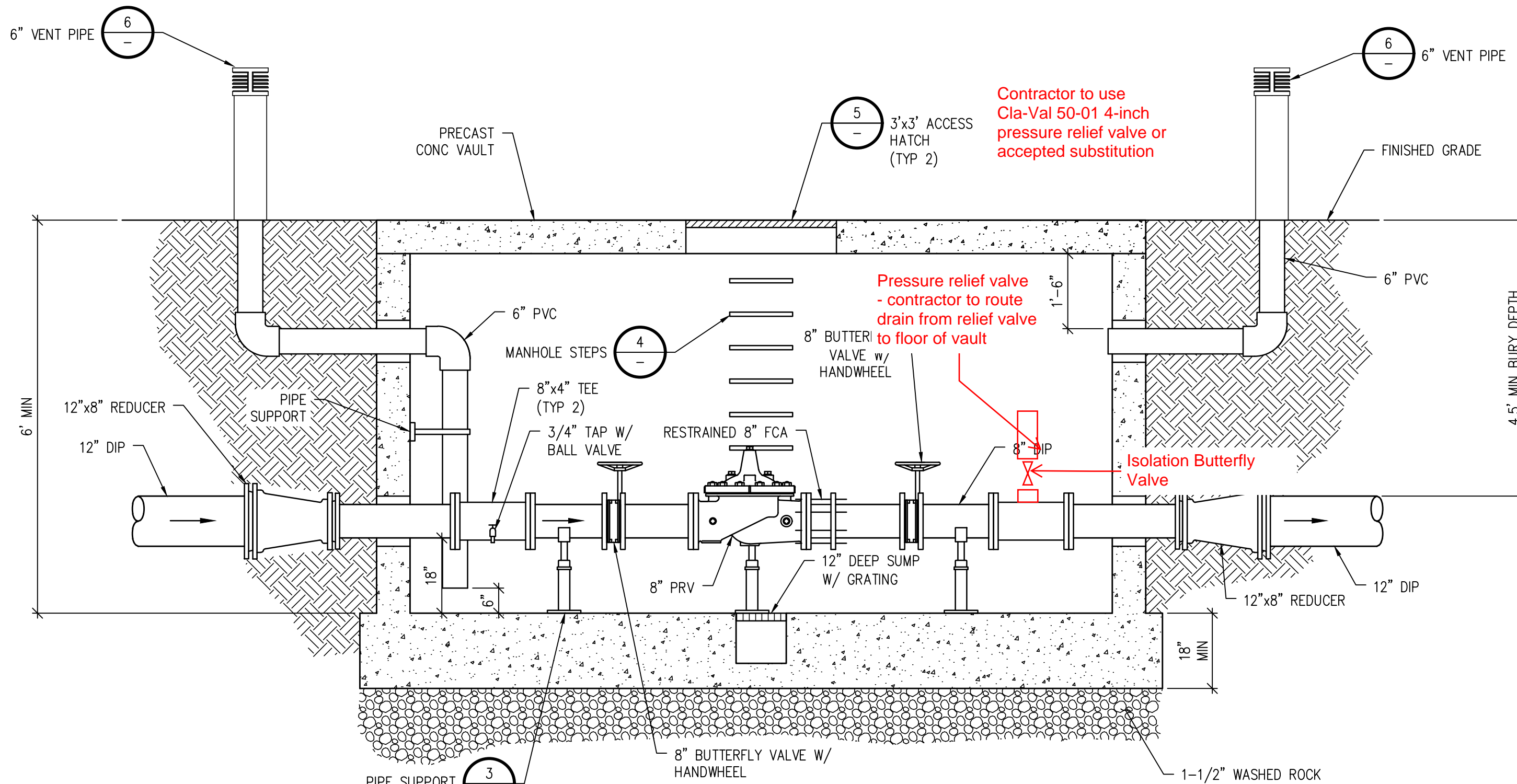
BILCO ACCESS HATCH 5
NTS



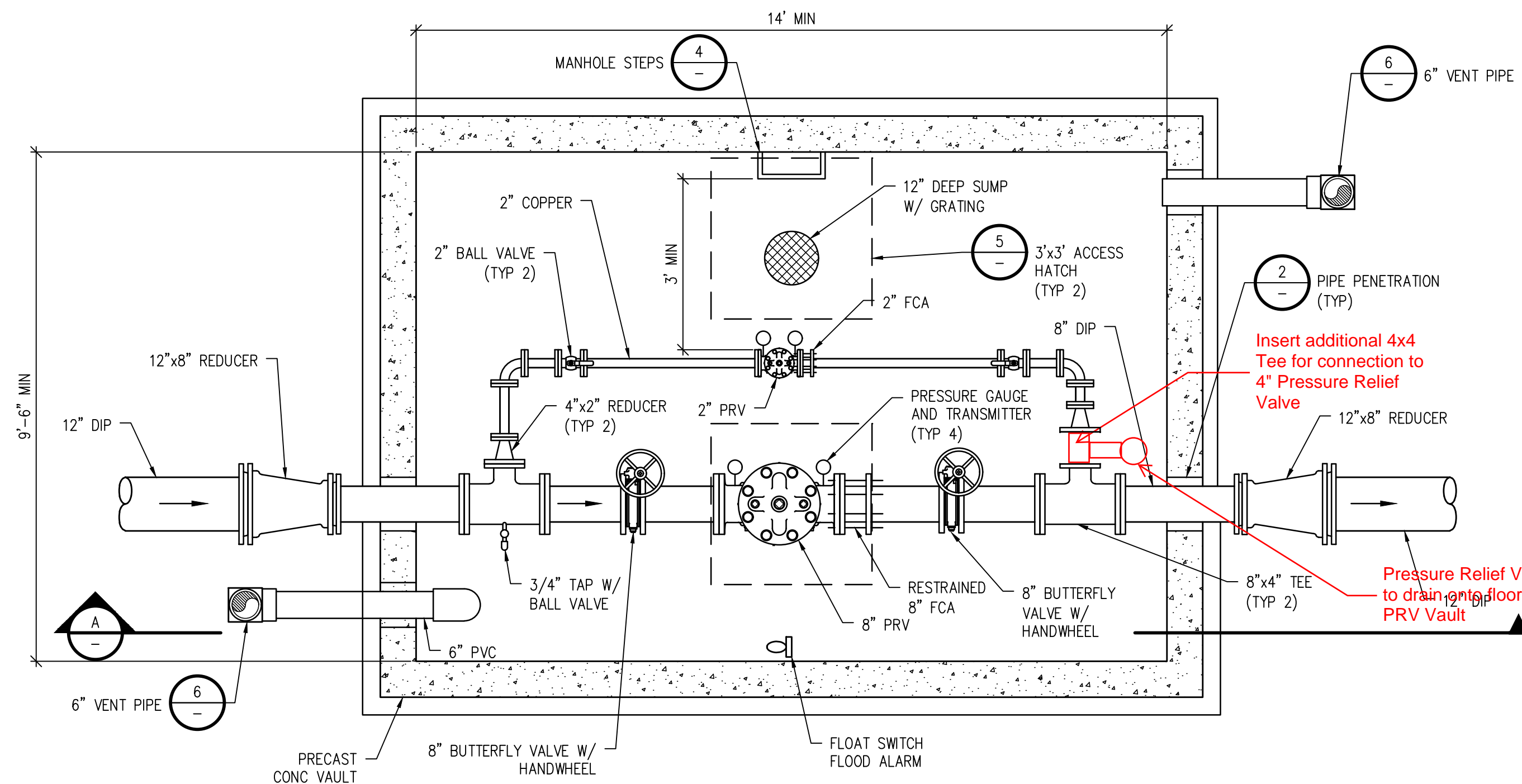
PVC VENT PIPE DETAIL 6
NTS



STEEL OR ALUMINUM ANGLE DETAIL



PRESSURE REDUCING VALVE VAULT SECTION A
1/2" = 1'-0"



PRESSURE REDUCING VALVE VAULT PLAN 1
1/2" = 1'-0"



Bid Tabulation - PR#4

Town of Lyons
Eastern Corridor Utilities Project

Item #	Description	Units	Qty	Unit Price	Total	Comments
DIVISION 00 and 01 - General Conditions and Requirements			CRGS			
001	Contract General Conditions and Mobilization	LS	1	\$45,000.00	\$45,000.00	
002	Dewatering	LS	1	\$55,000.00	\$55,000.00	
003	Initial Construction Surveying	LS	1	\$8,000.00	\$8,000.00	
004	Supplemental Construction Surveying	HR	20	\$210.00	\$4,200.00	
005	Construction Materials Testing	HR	40	\$175.00	\$7,000.00	
Traffic Control						
006	Flaggers	HR	100	\$41.00	\$4,100.00	
007	Construction Signs (Size D)	EA	12	\$140.00	\$1,680.00	
008	Concrete Barriers	LF	200	\$120.00	\$24,000.00	
009	Crash Attenuators	EA	4	\$1,400.00	\$5,600.00	
010	Drum Channelizing Device	EA	50	\$70.00	\$3,500.00	
DIVISION 02 - Sitework						
011	Remove/Replace Asphalt	SY	50	\$95.00	\$4,750.00	
012	Remove/Replace Concrete	SY	20	\$140.00	\$2,800.00	
013	Pressure Cleanout	EA	5	\$7,500.00	\$37,500.00	
014	Sanitary Cleanout	EA	1	\$1,800.00	\$1,800.00	
015	Connection to Stone Canyon Lift Station Manhole	LS	1	\$11,000.00	\$11,000.00	
016	4-inch DR 9 HDPE Pipe - Horizontal Directional Drilling	LF	1340	\$65.00	\$87,100.00	
017	Cut Off Walls	EA	5	\$2,200.00	\$11,000.00	
Erosion Control						
018	Vehicle Tracking Control	EA	7	\$2,400.00	\$16,800.00	
019	Silt Fence	LF	5670	\$4.00	\$22,680.00	
020	Concrete Washout Area	EA	3	\$2,400.00	\$7,200.00	
021	Sediment Control Log	LF	400	\$10.00	\$4,000.00	
022	Culvert Inlet Protection	EA	2	\$400.00	\$800.00	
023	Clear and Grub	LS	1	\$12,000.00	\$12,000.00	
024	Seeding	AC	3.3	\$4,950.00	\$16,335.00	
Site Piping						
025	4-inch DR 9 HDPE Pipe - Open Cut	LF	2080	\$127.00	\$264,160.00	
026	4-inch Ductile Iron Pipe	LF	20	\$260.00	\$5,200.00	
027	6-inch Ductile Iron Pipe	LF	20	\$250.00	\$5,000.00	
028	6-inch PVC SDR 35 Pipe	LF	60	\$230.00	\$13,800.00	
029	8-inch Ductile Iron Pipe	LF	50	\$275.00	\$13,750.00	
030	8-inch PVC SDR 35 Pipe	LF	20	\$260.00	\$5,200.00	
031	12-inch by 8-inch Reducer	EA	4	\$1,500.00	\$6,000.00	
032	10-inch PVC SDR 35 Pipe	LF	140	\$240.00	\$33,600.00	
033	12-inch Ductile Iron Pipe	LF	40	\$320.00	\$12,800.00	
034	12-inch by 6-inch Tee	EA	2	\$2,100.00	\$4,200.00	
035	12-inch by 12-inch Tee	EA	2	\$2,400.00	\$4,800.00	
036	12-inch Ductile Iron Pipe Plug	EA	2	\$1,400.00	\$2,800.00	



Bid Tabulation - PR#4

Town of Lyons
Eastern Corridor Utilities Project

037	24-inch Welded Steel Casing and Ramming	LF	254	\$1,410.00	\$358,140.00
	Site Valves				
038	4-inch Plug Valve	EA	3	\$3,200.00	\$9,600.00
039	6-inch Gate Valve	EA	2	\$2,200.00	\$4,400.00
040	12-inch Gate Valve	EA	4	\$4,600.00	\$18,400.00
041	2-inch Blowoff Valve Assembly	EA	2	\$4,800.00	\$9,600.00
042	6-inch Fire Hydrant Assembly	EA	1	\$9,000.00	\$9,000.00
	DIVISION 03 - Concrete				
043	Concrete Wet Well	EA	1	\$88,000.00	\$88,000.00
044	4-Foot Diameter Manhole	EA	2	\$15,000.00	\$30,000.00
045	8-Foot Diameter Manhole (overflow storage)	EA	1	\$65,000.00	\$65,000.00
046	Overflow Storage Vaults - 2,500 gallons	EA	2	\$21,000.00	\$42,000.00
	DIVISION 11 - Equipment				
047	Submersible Grinder Pumps	EA	2	\$58,000.00	\$116,000.00
	DIVISION 13 - Special Construction				
048	Odor Control System	EA	2	\$19,600.00	\$39,200.00
	DIVISION 15 - Mechanical				
049	Pressure Reducing Valve Vaults (PRV) - 6, 7, & 8	EA	3	\$71,000.00	\$213,000.00
050	4-inch Ball Check Valve	EA	2	\$900.00	\$1,800.00
	Piping				
051	4-inch Ductile Iron Pipe	LF	40	\$260.00	\$10,400.00
052	4-inch Schedule 40 PVC Pipe	LF	40	\$245.00	\$9,800.00
053	6-inch Vent and Vent Piping	EA	3	\$4,600.00	\$13,800.00
	DIVISION 16 - Electrical				
054	PRV-7 & East Corridor Lift Station Electrical	LS	1	\$78,000.00	\$78,000.00
055	East Corridor Monitoring Panel	LS	1	\$97,016.81	\$97,016.81
056	PRV-6 Electrical	LS	1	\$7,000.00	\$7,000.00
057	PRV-8 Electrical	LS	1	\$7,000.00	\$7,000.00
058	Odor Control System Electrical	LS	1	\$2,700.00	\$2,700.00
TOTALS					\$1,995,011.81
	PROPOSAL REQUEST #1A - ADDITIONAL BID ITEMS				
059	EXCAVATE AND CUT INTO 24" RCP	EA	2	\$6,000.00	\$12,000.00
060	EXCAVATE AND EXPOSE 27" STEEL LINE	EA	2	\$6,000.00	\$12,000.00
061	Cleaning and Tv'ing of existing 24" RCP and 27	Hours	20	\$650.00	\$13,000.00
TOTALS					\$37,000.00
	PROPOSAL REQUEST #4 - ADDITIONAL BID ITEMS				
062	4-INCH PRESSURE RELIEF VALVE AND ASSOCIATED APPURTENANCES	EA	1	\$10,822.00	\$10,822.00
TOTALS					\$10,822.00

REVISED FROM \$92,000 TO \$97,016.81 FOR PR #2

ADDED FOR PR 1A

ADDED FOR PR 1A

ADDED FOR PR 1A

ADDED FOR PR 1A

ADDED FOR PR 4

ADDED FOR PR 4

ADDED WORK ITEMS – PR 4

Item 062 INSTALLATION OF PRESSURE RELIEF VALVE IN PRV VAULT 7

A. Measurement

The quantity to be paid for this item shall be for the actual number of pressure relief valves and all necessary appurtenances installed.

B. Payment

The unit bid price shall include, but is not limited to, all labor, materials, equipment, and transportation needed to install, complete-in-place, the 4-inch pressure relief valve. The bid price shall include, but is not limited to, supply and installation of a 4-inch pressure relief valve, an 8-inch by 4-inch flanged tee, all necessary ductile iron piping, pipe fittings, valves, pipe penetrations, pipe supports, and all other costs not included under other bid items. All labor, materials, equipment, transportation, and work associated with the pressure reducing valve vault shall be measured and paid for separately under the “PRESSURE REDUCING VALVE VAULTS (PRV) – 6, 7, & 8” bid items. All labor, materials, equipment, transportation, and work associated with traffic and pedestrian control shall be measured and paid for separately under the “traffic control” bid items. No payment for additional work outside of the scope of the pressure relief valve unless directed and approved by the Engineer will be included in the amount computed for payment.