

WILLIAMSON COUNTY, TEXAS
CHANGE ORDER NUMBER: 3

1. CONTRACTOR: QA Construction Services Inc.
2. Change Order Work Limits: Sta. 10+00 to Sta. 19+00
3. Type of Change (on federal-aid non-exempt projects): Minor (Major/Minor)
4. Reasons: 2E, 4B, 1A (3 Max. - In order of importance - Primary first)


Project:	<u>Great Oaks WL Relocation</u>
Roadway:	_____
CSJ Number:	<u>3185</u>

5. Describe the work being revised:

2E: Differing Site Conditions (unforeseeable). Miscellaneous difference in site conditions (unforeseeable). This Change Order provides the final balancing of the overrun/underrun of Contract quantities on the project as a result of addressing field conditions not accounted for in the original plans. **4B: Third Party Accommodation. Third party requested work.** This Change Order adds items to the contract for the Fern Bluff 12" water line connections made after substantial completion was achieved for the rest of the project. **1A: Design Error or Omission. Incorrect PS&E.** This Change Order corrects item quantities from the bid form that did not match the plans. This Change Order also adds an item to access liquidated damages on the Contractor.

6. Work to be performed in accordance with Items: see attached
7. New or revised plan sheet(s) are attached and numbered: _____
8. New Special Provisions/Specifications to the contract are attached: Yes No
9. New Special Provisions to Item N/A No. N/A, Special Specification Item N/A are attached.

Each signatory hereby warrants that each has the authority to execute this Change Order (CO).

<p><i>The contractor must sign the Change Order and, by doing so, agrees to waive any and all claims for additional compensation due to any and all other expenses; additional changes for time, overhead and profit, or loss of compensation as a result of this change.</i></p> <p>THE CONTRACTOR Date <u>12/4/20</u></p> <p>By </p> <p>Typed/Printed Name <u>Aida Regalado</u></p> <p>Typed/Printed Title <u>Account Manager</u></p>	<p>The following information must be provided</p> <p>Time Ext. #: <u>N/A</u> Days added on this CO: <u>0</u></p> <p>Amount added by this change order: <u>(\$55,892.02)</u></p>
--	--

RECOMMENDED FOR EXECUTION:

 12/4/20
 Project Manager Date

N/A
 Design Engineer Date

 12/10/20
 Program Manager Date

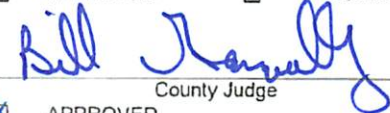
Design Engineer's Seal:

County Commissioner Precinct 1 Date
 APPROVED REQUEST APPROVAL

County Commissioner Precinct 2 Date
 APPROVED REQUEST APPROVAL

County Commissioner Precinct 3 Date
 APPROVED REQUEST APPROVAL

County Commissioner Precinct 4 Date
 APPROVED REQUEST APPROVAL

 12/15/20
 County Judge Date
 APPROVED

CHANGE ORDER REASON(S) CODE CHART

<p>1. Design Error or Omission</p>	<p>1A. Incorrect PS&E 1B. Other</p>
<p>2. Differing Site Conditions (unforeseeable)</p>	<p>2A. Dispute resolution (expense caused by conditions and/or resulting delay) 2B. Unavailable material 2C. New development (conditions changing after PS&E completed) 2D. Environmental remediation 2E. Miscellaneous difference in site conditions (unforeseeable)(Item 9) 2F. Site conditions altered by an act of nature 2G. Unadjusted utility (unforeseeable) 2H. Unacquired Right-of-Way (unforeseeable) 2I. Additional safety needs (unforeseeable) 2J. Other</p>
<p>3. County Convenience</p>	<p>3A. Dispute resolution (not resulting from error in plans or differing site conditions) 3B. Public relations improvement 3C. Implementation of a Value Engineering finding 3D. Achievement of an early project completion 3E. Reduction of future maintenance 3F. Additional work desired by the County 3G. Compliance requirements of new laws and/or policies 3H. Cost savings opportunity discovered during construction 3I. Implementation of improved technology or better process 3J. Price adjustment on finished work (price reduced in exchange for acceptance) 3K. Addition of stock account or material supplied by state provision 3L. Revising safety work/measures desired by the County 3M. Other</p>
<p>4. Third Party Accommodation</p>	<p>4A. Failure of a third party to meet commitment 4B. Third party requested work 4C. Compliance requirements of new laws and/or policies (impacting third party) 4D. Other</p>
<p>5. Contractor Convenience</p>	<p>5A. Contractor exercises option to change the traffic control plan 5B. Contractor requested change in the sequence and/or method of work 5C. Payment for Partnering workshop 5D. Additional safety work/measures desired by the contractor 5E. Other</p>
<p>6. Untimely ROW/Utilities</p>	<p>6A. Right-of-Way not clear (third party responsibility for ROW) 6B. Right-of-Way not clear (County responsibility for ROW) 6C. Utilities not clear 6D. Other</p>

Williamson County Road Bond Program

Great Oaks Water Line Relocation Williamson County Project No. 3185

Change Order No. 3

Reason for Change

This Change Order provides the final balancing for the overrun/underrun of Contract quantities on the project, as a result of addressing field conditions not accounted for in the original plans. This Change Order adds items to the Contract for the Fern Bluff MUD 12-inch water line connections made after Substantial Completion was achieved for the rest of the project. This Change Order also corrects various item quantities to match the work shown in the plans and installed in the field and adds Item 999-WC07 to assess liquidated damages on the Contractor.

Fern Bluff MUD was not able to shut off the flow of water in the water line during the project. After further investigation of the water line system, the Fern Bluff MUD found a way to turn off the water supply so that the connections to the new water line could be made. The Contractor agreed to re-mobilize back to the project to complete this work. Additional items were added to the contract to pay the contractor for this work.

The Contractor will be assessed 56 days of liquidated damages because they did not achieve Substantial Completion of the project within the planned contract duration. There were no changes to the contract that would justify additional time.

The following summarizes the new Contract item required for this Change Order.

ITEM-LINE	DESCRIPTION	QTY	UNIT
502-WC01	WATER BARRIERS AT BORE PIT	1.00	LS
506-WC01	ROCK FILTER DAMS (INSTALL) (TY I)	1.00	LS
510-W-45	ENCASEMENT OF FERN BLUFF WATER LINE AT EXISTING WASTEWATER LINE CROSSING	1.00	LS
999-WC03	BCMUD 8" WL FOR MAINTENANCE YARD	1.00	LS
999-WC04	STAINLESS STEEL BELL JOINT RESTRAINTS	1.00	LS
999-WC05	FERN BLUFF STANDBY	1.00	LS
999-WC06	EXTEND 24" ENCASEMENT	1.00	LS
999-WC07	LIQUIDATED DAMAGES	(56.00)	DAY
500-WC01	FERN BLUFF MOBILIZATION	1.00	LS
502-WC02	FERN BLUFF BARRICADES	1.00	LS

ITEM-LINE	DESCRIPTION	QTY	UNIT
104-WC01	FERN BLUFF REMOVE SIDEWALKS	100.00	SF
531-WC01	FERN BLUFF SIDEWALKS (4")	100.00	SF
999-WC08	FERN BLUFF BELL JOINT RESTRAINTS	1.00	LS
999-WC09	FERN BLUFF FLUSH AND CHLORINATE WL	1.00	LS

Item 502-WC01 Water Barriers at Bore Pit – Water filled barriers were added along Brushy Creek Road at the bore pit to protect traffic from the excavated open hole that was located within the clear zone.

Item 506-WC01 Rock Filter Dams (Install) (Ty I) - Added for use in ditch lines to prevent sediment from entering Brushy Creek.

Item 510-W-45 Encasement at Wastewater Line Crossing – The Fern Bluff 12-inch water line crossed an existing gas line. An encasement was added to the water line to provide the necessary protection between the lines.

Item 999-WC03 BCMUD 8" Waterline for Maintenance Yard – Due to the changes to the water lines on the project, the 8-inch water line within the BCMUD Maintenance Yard had to be relocated to connect to the new water line.

Item 999-WC04 Stainless Steel Bell Joint Restraints - The Designer required stainless steel bell joint restraints on the Fern Bluff 12-inch water line. The Contractor's bid did not include the cost for stainless steel materials and provided justification from other projects that indicated that the City of Round Rock does not require stainless steel bell joint restraints. This Change Order pays the difference in the cost of the materials only.

Item 999-WC05 Fern Bluff Standby – The Contractor incurred standby costs when Fern Bluff MUD was unable to shutout the flow of water in their lines at the scheduled time for the water line connection. Contractor crews and equipment waited to give Fern Bluff a chance to turn the water off. Payment of the standby costs is according to Item 4.6 Scope of Work and Item 9.7 Measurement and Payment in the TxDOT Standard Specifications.

Item 999-WC06 Extend Encasement pipe – The 24-inch encasement pipe for the 12-inch Fern Bluff water line was extended 76 feet. The plans called for a bore with no encasement pipe in this portion. Adding encasement pipe to this portion will facilitate any maintenance required in the future.

Item 500-WC01 Fern Bluff Mobilization – Pays the Contractor to re-mobilize back to the project after achieving Substantial Completion on the rest of the project.

Item 502-WC02 Fern Bluff Barricades – Pays the Contractor for barricades and traffic control devices used for lane closures during the water line connection work.

Item 105-WC01 Fern Bluff Remove Sidewalk – Pays the Contractor to remove sidewalk at the location of the Fern Bluff water line connection.

Item 531-WC01 Fern Bluff Sidewalks (4") – Pays the Contractor to replace sidewalk that had to be removed to make the Fern Bluff water line connection.

Item 999-WC08 Fern Bluff Bell Joint Restraints – Due to the possibility that water pressure will remain in the abandoned water line, caps and joint restraints will be installed on the ends of the abandoned water line, near the water line connections.

Item 999-WC09 Fern Bluff Flush and Chlorinate Water Line – The new water line will be flushed and re-chlorinated because it has been unused for three months prior to the new water line connections.

This Change Order results in a net decrease of \$55,892.02 from the Contract amount, for an adjusted Contract total of \$1,440,027.82. The original Contract amount was \$1,325,000.00. As a result of this and all Change Orders to-date, \$115,037.82 has been added to the Contract, resulting in an 8.68% net increase in the Contract cost. No (0) time will be added to the Contract for this Change Order.

HNTB Corporation

James Klotz, P.E.



QA Construction Services Inc.
5811 Blue Bluff Road
Austin, TX 78724
Phone: 512-637-6120

10/2/2020

Change Order No.4

Project: Great Oaks Drive Waterline Relocations
Owner: Williamson County

Re- Mobilization

ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
1	Bid Item #4 - Mobilization	EA	4%	\$ 132,500.00	\$ 5,300.00
Total Cost for Additional MOBILIZATION					\$ 5,300.00

500-WC02
NEW

BARRICADES, SIGNS, AND TRAFFIC HANDLING

ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
2	Bid Item #5 - BARRICADES, SIGNS, AND TRAFFIC HANDLING	Month	0.25	\$ 12,500.00	\$ 3,125.00
Total Cost for Additional BARRICADES, SIGNS, AND TRAFFIC HANDLING					\$ 3,125.00

502-WC02
NEW

Remove & Replace Sidewalks

ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
3	Remove & Haul-off Existing Concrete Sidewalks (20' x 5' x 4"H)	SF	100.00	\$ 6.00	\$ 600.00
	Cast in Place Concrete Sidewalks (20' x 5' x 4"H)	SF	100.00	\$ 8.00	\$ 800.00
Total Cost for Additional Remove & Replace Sidewalks					\$ 1,400.00

105-WC01
531-WC01
NEW

PIPE, 12" DIA., PVC C-900 (ALL DEPTHS),

ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
4	PIPE, 12" DIA., PVC C-900 (ALL DEPTHS),	LF	40.00	\$ 90.00	\$ 3,600.00
Total Cost for Additional PIPE, 12" DIA., PVC C-900 (ALL DEPTHS)					\$ 3,600.00

EXIST

BELL RESTRAINT - 304 SS Hardware

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
5	12 JT REST RED 304 SS HARDWARE, 304 SS HARDWARE BLK COLOR - Material	EA	4	\$ 201.88	\$ 807.52
	No- SS Hardware bell joint restraints - Credit	EA	4	\$ (57.00)	\$ (228.00)
	SPLIT RESTRAINT 12 JT REST BLK 304 SS HARDWARE- Material	EA	4	\$ 202.30	\$ 809.20
Total Cost for Additional BELL RESTRAINT - 304 SS Hardware					\$ 1,388.72

999-WC09
NEW

Re-flush & Chlorination 12" Waterline

ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
6	Re- flush & Chlorination 12" Waterline	Ea	1.00	\$ 3,500.00	\$ 3,500.00
Total Cost for Additional Re-flush & Chlorination 12" Waterline					\$ 3,500.00

999-WC10
NEW

WET CONNECTIONS, 12" DIA. X 12" DIA. (Item Removed in CO No.3)

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
7	Bid Item #22 - WET CONNECTIONS, 12" DIA. X 12" DIA.	EA	2	\$ 8,000.00	\$ 16,000.00
Total Cost for WET CONNECTIONS, 12" DIA. X 12" DIA					\$ 16,000.00

EXIST

SEEDING FOR EROSION CONTROL (TEMP & COOL)(TY 4)

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
8	Bid Item #2 - SEEDING FOR EROSION CONTROL (TEMP & COOL)(TY 4)	SY	1500	\$ 1.00	\$ 1,500.00
Total Cost for SEEDING FOR EROSION CONTROL (TEMP & COOL)(TY 4)					\$ 1,500.00

EXIST

Breakdown:

1	Re- Mobilization	\$	5,300.00
2	BARRICADES, SIGNS, AND TRAFFIC HANDLING	\$	3,125.00
3	Remove & Replace Sidewalks	\$	1,400.00
4	PIPE, 12" DIA., PVC C-900 (ALL DEPTHS),	\$	3,600.00
5	BELL RESTRAINT - 304 SS Hardware	\$	1,388.72
6	Re-flush & Chlorination 12" Waterline	\$	3,500.00
7	WET CONNECTIONS, 12" DIA. X 12" DIA. (Item Removed in CO No.3)	\$	16,000.00
8	SEEDING FOR EROSION CONTROL (TEMP & COOL)(TY 4)	\$	1,500.00
Total Additional Cost		\$	35,813.72

By Contractor:



Jose Ruiz/ Project Estimator - QA Construction Services Inc.

10/2/2020

Date

Approved by:

Construction Observer: Clayton Weber, HNTB

Date

Program Manager: Michael Weaver, Prime Strategies

Date

Senior Director of Infrastructure: Robert B. Daigh, Williamson County

Date



QA Construction Services Inc.
5811 Blue Bluff Road
Austin, TX 78724
Phone: 512-637-6120

8/13/2020

Additional Work

Item 502-WC01

Project: Great Oaks Drive Waterline Relocations
Owner: Williamson County

ROCK BERMS

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
N/A	Rock Berm - Material	TN	16	\$ 25.00	\$ 400.00
	Wire Mesh - Material	Roll	1	\$ 25.00	\$ 25.00
	Trucking Delivery - Equipment	HR	1	\$ 150.00	\$ 150.00
	Skidsteer - Equipment	HR	4	\$ 85.00	\$ 340.00
	Labor - Foreman	HR	4	\$ 55.38	\$ 221.52
	Labor - Operator	HR	4	\$ 23.00	\$ 92.00
	Labor - Pipe Layer	HR	4	\$ 22.00	\$ 88.00
	Labor - General Labor	HR	4	\$ 22.00	\$ 88.00
Total Cost (Material & Labor)					\$ 1,404.52
		Cost	Overhead		
Total Material	\$ 425.00	0%	\$	-	
Equipment	\$ 490.00	55%	\$	269.50	
Labor	\$ 489.52	55%	\$	269.24	
			Overhead Cost	\$ 538.74	
Subtotal				\$	1,943.26
Mark-up				15%	\$ 291.49
Insurance & Bond Adjustments				1.5%	\$ 33.52
Total Cost for Rock Berm					\$ 2,268.27

Traffic Control

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
N/A	Traffic Control Plan	EA	1	\$ 1,800.00	\$ 1,800.00
	Traffic Control Implementation	Month	2	\$ 4,200.00	\$ 8,400.00
	Remove Signs	EA	1	\$ 600.00	\$ 600.00
Total Cost of Traffic Control Plan					\$ 10,800.00

Water Barrier Rental & Installation

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
N/A	BARRIER WALL 6' PLASTIC WATER FILL (Month 1)	LF	126	\$ 21.00	\$ 2,646.00
	BARRIER WALL 6' PLASTIC WATER FILL (Month 2)	LF	126	\$ 21.00	\$ 2,646.00
Total Cost for Water Barrier Rental & Installation					\$ 5,292.00

BELL RESTRAINT

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
N/A	WATER BARRIERS		46	\$ 201.88	\$ 9,286.48
			46	\$ (57.00)	\$ (2,622.00)
			4	\$ 202.30	\$ 809.20
			10	\$ 55.38	\$ 553.80
			10	\$ 28.00	\$ 280.00
			10	\$ 22.00	\$ 220.00
			10	\$ 22.00	\$ 220.00
			10	\$ 22.00	\$ 220.00
			10	\$ 22.00	\$ 220.00
			10	\$ 22.00	\$ 220.00
Total Cost (Material & Labor)					\$ 8,967.48
		Cost	Overhead		
	10,095.68	0%	\$	-	
	-	55%	\$	-	
Labor	1,493.80	55%	\$	821.59	
			Overhead Cost	\$ 821.59	
Subtotal				\$	9,789.07
Mark-up				15%	\$ 1,468.36
Insurance & Bond Adjustments				1.5%	\$ 168.86
Total Cost for BELL RESTRAINT - 304 SS Hardware					\$ 11,426.29

Breakdown:

- 1 - ROCK BERMS \$ 2,268.27
- 2 - Traffic Control \$ 10,800.00
- 3 - Water Barrier Rental & Installation \$ 5,292.00
- 4 - BELL RESTRAINT - 304 SS Hardware \$ 11,426.29

Total Cost for Change Order No.4 \$ 29,786.56



QA Construction Services Inc.
5811 Blue Bluff Road
Austin, TX 78724
Phone: 512-637-6120

ITEM 506-WC01

Additional Work

8/13/2020

Project: Great Oaks Drive Waterline Relocations
Owner: Williamson County

ROCK BERMS

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
N/A	Rock Berm - Material	TN	16	\$ 25.00	\$ 400.00
	Wire Mesh - Material	Roll	1	\$ 25.00	\$ 25.00
	Trucking Delivery - Equipment	HR	1	\$ 150.00	\$ 150.00
	Skitsteer - Equipment	HR	4	\$ 85.00	\$ 340.00
	Labor - Foreman	HR	4	\$ 55.38	\$ 221.52
	Labor - Operator	HR	4	\$ 23.00	\$ 92.00
	Labor - Pipe Layer	HR	4	\$ 22.00	\$ 88.00
	Labor - General Labor	HR	4	\$ 22.00	\$ 88.00
Total Cost (Material & Labor)					\$ 1,404.52
		Cost		Overhead	
Total Material Cost	\$ 425.00		0%	\$ -	
Equipment	\$ 490.00		55%	\$ 269.50	
Labor	\$ 489.52		55%	\$ 269.24	
Overhead Cost					\$ 538.74
Subtotal					\$ 1,943.26
Mark-up					\$ 291.49
Insurance & Bond Adjustments					\$ 33.52
Total Cost for Rock Berm					\$ 2,268.27

Traffic Control

BID ITEM #	DESCRIPTION
N/A	Traffic Control Plan
	Traffic Control Implementation
	Remove Signs

ROCK FILTER DAMS (INSTALL)
ROCK BERMS

Water Barrier Rental & Installation

BID ITEM #	DESCRIPTION
N/A	BARRIER WALL 6' PLASTIC WATER FILL (Month 1)
	BARRIER WALL 6' PLASTIC WATER FILL (Month 2)

MATERIALS \$425.00

x 1.15 MARKUP

\$488.75

BELL RESTRAINT - 304 SS Hardware

BID ITEM #	DESCRIPTION
N/A	12 JT REST RED 304 SS HARDWARE, 304 SS HARDWARE BLK
	No- SS Hardware bell joint restraints - Credit
	SPLIT RESTRAINT 12 JT REST BLK 304 SS HARDWARE- Mater
	Labor - Foreman
	Labor - Operator
	Labor - Pipe Layer
	Labor - General Labor #1
	Labor - General Labor #2

EQUIPMENT \$490.00

x 1.15 MARKUP

\$563.50

Lead Time: 10 Days
Time Loss: 10 Days

LABOR \$489.52

x 1.55

758.76

x 1.15

\$872.57

488.75 + 563.50 + 872.57 = 1924.82

\$1924.82 x 1.015

= \$1953.69

Breakdown:

- 1 - ROCK BERMS
- 2 - Traffic Control
- 3 - Water Barrier Rental & Installation
- 4 - BELL RESTRAINT - 304 SS Hardware

ENCASE 12" FBM WL

MATERIALS - ENCASEMENT PIPE	10 LF	85.00	850.00
- END SEALS	2 EA	78.02	156.04
- CASING SPACERS	2 EA	102.37	204.74
EQUIPMENT - TRUCKING	4 HR	125.00	500.00
- EXCAVATOR	2 DAY	650.00	1300.00
- LOADER	2 DAY	675.00	1350.00
LABOR - FOREMAN	6 HR	55.38	332.28
- OPERATOR	6 HR	28.00	168.00
- OPERATOR	6 HR	26.00	156.00
- PIPE LAYER	6 HR	22.00	132.00
- GEN. LABOR	6 HR	22.00	132.00
- GEN. LABOR	6 HR	22.00	132.00

MATERIALS	1210.78	x 1.15	=	1392.40
EQUIPMENT	3150.00	x 1.15	=	3622.50
LABOR	1052.28	x 1.55 = ^{1631.63} 124.00	=	1875.69
TOTAL =				6890.59

6890.59 x 1.01 BOND = \$ 6959.50

ITEM 999-WC03

CHANGE ORDER #4

Thursday, March 19, 2020

JOB NAME: Brushy Creek MUD - Maintenance Yard

JOB NO: 1936

Description of work: 8" Water line extened to final tie-in location, Approx 120 LF

<u>COST ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>UNIT PRICE</u>	<u>TOTALS</u>
Material non-quoted		LS	0	\$ -	\$ -
Material quoted	pipe, fittings, etc.	LS	1	\$ 2,392.00	\$ 2,392.00
Material total					\$ 2,392.00
FOREMAN		HRS	8.00	\$ 26.00	\$ 208.00
EQUIPMENT OP		HRS	8.00	\$ 22.00	\$ 176.00
EQUIPMENT OP		HRS	8.00	\$ 22.00	\$ 176.00
PIPE LAYER-LABOR		HRS	8.00	\$ 19.00	\$ 152.00
PIPE LAYER-LABOR		HRS	8.00	\$ 19.00	\$ 152.00
Labor subtotal					\$ 864.00
Labor burden					\$ 276.48
Labor total					\$ 1,140.48
Equipment (hourly)	trailer	HRS		\$ 2.50	\$ -
	skidsteer	HRS		\$ 35.00	\$ -
	backhoe	HRS	8	\$ 40.00	\$ 320.00
	breaker	HRS		\$ 45.00	\$ -
	excavator	HRS	4	\$ 80.00	\$ 320.00
	breaker	HRS		\$ 105.00	\$ -
	loader	HRS		\$ 75.00	\$ -
Trucking (f.o.b. jobsite)	equip move	LS		\$ 275.00	\$ -
	spoils removal	CY	25	\$ 6.00	\$ 150.00
Prime cost subtotal					\$ 4,322.48
Contingencies					\$ -
Prime cost total					\$ 4,322.48
Bid Subtotal					\$ 4,322.48
Operations and margin 15%					\$ 648.37
Prime Bid					\$ 4,970.85
Sales tax (exempt)					\$ -
Bonds/ permits					\$ -
Grand total					\$ 4,971.00

PAYMENT SUMMARY

\$ 4971.00	9872.00 x 1.05 = 10365.60	5% MARK UP
2007.00	10365.60 x 1.01 = 10469.26	1% BOND
2894.00		
<u>\$ 9872.00</u>	TOTAL PAY = \$ 10,469.26	

CHANGE ORDER #4B

Wednesday, March 11, 2020

JOB NAME: Brushy Creek MUD - Maintenance Yard

JOB NO: 1936

Description of work: 3/10/2020 Potholing existing utility lines (5) to provide info for route to extend 8" Water line extened to final tie-in location

<u>COST ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>UNIT PRICE</u>	<u>TOTALS</u>
Material non-quoted		LS	0	\$ -	\$ -
Material quoted	pipe,fittings,etc.	LS			\$ -
Material total					\$ -
FOREMAN		HRS	10.00	\$ 26.00	\$ 260.00
EQUIPMENT OP		HRS	10.00	\$ 22.00	\$ 220.00
EQUIPMENT OP		HRS	10.00	\$ 22.00	\$ 220.00
PIPE LAYER-LABOR		HRS	10.00	\$ 19.00	\$ 190.00
PIPE LAYER-LABOR		HRS	10.00	\$ 19.00	\$ 190.00
Labor subtotal					\$ 1,080.00
Labor burden					\$ 345.60
Labor total					\$ 1,425.60
Equipment (hourly)	trailer	HRS		\$ 2.50	\$ -
	skidsteer	HRS		\$ 35.00	\$ -
	mini excavator	HRS	8	\$ 40.00	\$ 320.00
	breaker	HRS		\$ 45.00	\$ -
	excavator	HRS		\$ 80.00	\$ -
	breaker	HRS		\$ 105.00	\$ -
	loader	HRS		\$ 75.00	\$ -
Trucking (f.o.b. jobsite)	equip move	LS		\$ 275.00	\$ -
	spoils removal	CY		\$ 6.00	\$ -
Prime cost subtotal					\$ 1,745.60
Contingencies					\$ -
Prime cost total					\$ 1,745.60
Bid Subtotal					\$ 1,745.60
Operations and margin 15%					\$ 261.84
Prime Bid					\$ 2,007.44
Sales tax (exempt)					\$ -
Bonds/ permits					\$ -
Grand total					\$ 2,007.00

CHANGE ORDER #4C

Thursday, April 23, 2020

JOB NAME: Brushy Creek MUD - Maintenance Yard

JOB NO: 1936

Description of work: Remove and lower section of 8" Water line near existing utilities to avoid dry utilities as per BCMUD and Wilco engineering, No plans available or direction provided previously

<u>COST ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>UNIT PRICE</u>	<u>TOTALS</u>
Material non-quoted		LS	0	\$ -	\$ -
Material quoted	pipe, fittings, etc.	LS	1	\$ 546.00	\$ 546.00
Material total					\$ 546.00
FOREMAN		HRS	8.00	\$ 26.00	\$ 208.00
EQUIPMENT OP		HRS	8.00	\$ 22.00	\$ 176.00
EQUIPMENT OP		HRS	8.00	\$ 22.00	\$ 176.00
PIPE LAYER-LABOR		HRS	8.00	\$ 19.00	\$ 152.00
PIPE LAYER-LABOR		HRS	8.00	\$ 19.00	\$ 152.00
LABOR		HRS	8.00	\$ 18.00	\$ 144.00
Labor subtotal					\$ 1,008.00
Labor burden					\$ 322.56
Labor total					\$ 1,330.56
Equipment (hourly)	trailer	HRS		\$ 2.50	\$ -
	skidsteer	HRS		\$ 35.00	\$ -
	backhoe	HRS	8	\$ 40.00	\$ 320.00
	mini-ex	HRS	8	\$ 40.00	\$ 320.00
Trucking (f.o.b. jobsite)	equip move	LS		\$ 275.00	\$ -
	spoils removal	CY		\$ 6.00	\$ -
Prime cost subtotal					\$ 2,516.56
Contingencies					\$ -
Prime cost total					\$ 2,516.56
Bid Subtotal					\$ 2,516.56
Operations and margin 15%					\$ 377.48
Prime Bid					\$ 2,894.04
Sales tax (exempt)					\$ -
Bonds/ permits					\$ -
Grand total					\$ 2,894.00



ITEM 999-WC04

QA Construction Services Inc.
5811 Blue Bluff Road
Austin, TX 78724
Phone: 512-637-6120

8/13/2020

Additional Work

Project: Great Oaks Drive Waterline Relocations
Owner: Williamson County

ROCK BERMS

BID ITEM #	
N/A	Rock Berm - Mat
	Wire Mesh - Ma
	Trucking Delivery
	Skitsteer - Equip
	Labor - Foreman
	Labor - Operator
	Labor - Pipe Layer
Labor - General L	

BELL JOINT RESTRAINTS

SS RESTRAINTS \$ 9286.48

SS HARDWARE 809.20

\$ 10095.68

ALLOY RESTRAINTS (\$ 2622.00)

CREDIT

COST DIFFERENCE \$ 7475.68

BOND 1.015

\$ 7585.79

	PRICE	TOTAL PRICE
	25.00	\$ 400.00
	25.00	\$ 25.00
	150.00	\$ 150.00
	85.00	\$ 340.00
	55.38	\$ 221.52
	23.00	\$ 92.00
	22.00	\$ 88.00
	22.00	\$ 88.00
(Material & Labor)		\$ 1,404.52
Lead		\$ -
		\$ 269.50
		\$ 269.24
Lead Cost		\$ 538.74
		\$ 1,943.26
		\$ 291.49
		\$ 33.52
Rock Berm		\$ 2,268.27

Traffic Control

BID ITEM #	
N/A	Traffic Control Pl
	Traffic Control In
	Remove Signs

	PRICE	TOTAL PRICE
	1,800.00	\$ 1,800.00
	2,000.00	\$ 8,400.00
	600.00	\$ 600.00
rol Plan		\$ 10,800.00

Water Barrier Rental & Installation

BID ITEM #	
N/A	BARRIER WALL 6'
	BARRIER WALL 6'

	PRICE	TOTAL PRICE
	21.00	\$ 2,646.00
	21.00	\$ 2,646.00
Installation		\$ 5,292.00

BELL RESTRAINT - 304 SS Hardware

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE	
N/A	12 JT REST RED 304 SS HARDWARE, 304 SS HARDWARE BLK COLOR - Material	EA	46	\$ 201.88	\$ 9,286.48	
	No- SS Hardware bell joint restraints - Credit	EA	46	\$ (57.00)	\$ (2,622.00)	
	SPLIT RESTRAINT 12 JT REST BLK 304 SS HARDWARE- Material	EA	4	\$ 202.30	\$ 809.20	
	Labor - Foreman	HR	10	\$ 55.38	\$ 553.80	
	Labor - Operator	HR	10	\$ 28.00	\$ 280.00	
	Labor - Pipe Layer	HR	10	\$ 22.00	\$ 220.00	
	Labor - General Labor #1	HR	10	\$ 22.00	\$ 220.00	
	Labor - General Labor #2	HR	10	\$ 22.00	\$ 220.00	
	Total Cost (Material & Labor)					\$ 8,967.48

Lead Time: 10 Days
Time Loss: 10 Days

	Cost	Overhead	
Total Material Cost	\$ 10,095.68	0%	\$ -
Equipment	\$ -	55%	\$ -
Labor	\$ 1,493.80	55%	\$ 821.59
		Overhead Cost	\$ 821.59
Subtotal			\$ 9,789.07
Mark-up			15% \$ 1,468.36
Insurance & Bond Adjustments			1.5% \$ 168.86
Total Cost for BELL RESTRAINT - 304 SS Hardware			\$ 11,426.29

Breakdown:

1 -	ROCK BERMS	\$ 2,268.27
2 -	Traffic Control	\$ 10,800.00
3 -	Water Barrier Rental & Installation	\$ 5,292.00
4 -	BELL RESTRAINT - 304 SS Hardware	\$ 11,426.29

Total Cost for Change Order No.4 \$ 29,786.56



QA Construction Services Inc.
 5811 Blue Bluff Road
 Austin, TX 78724
 Phone: 512-637-6120

999-WC05

8/13/2020

Time Loss Cost Impact

Project: Great Oaks Drive Waterline Relocations
 Owner: Williamson County

Time Loss Cost Impact

There were delays with respect to shutouts for c

FERN BLUFF STANDBY TIME

Date	Day #1	TOTAL PRICE
5/19/2020	Supervision	325.00
	Crew #1 (Manuel Guerrero)	
	Labor - Foreman	276.90
	Labor - Operator	140.00
	Labor - Pipe Layer	110.00
	Labor - General Labor #1	110.00
	Labor - General Labor #2	110.00
	Labor - General Labor #3	110.00
	Crew #2 (Lucas Villareal)	
	Labor - Foreman	276.90
	Labor - Operator	140.00
	Labor - Pipe Layer	110.00
	Labor - General Labor #1	110.00
	Labor - General Labor #2	110.00
Labor - General Labor #3	110.00	
Excavator Rental Time Loss	750.00	
Wheel Loader (3CY Bucket)	725.00	
5/20/2020	Day #2	
	Supervision	325.00
	Crew #1 (Manuel Guerrero)	
	Labor - Foreman	276.90
	Labor - Operator	140.00
	Labor - Pipe Layer	110.00
	Labor - General Labor #1	110.00
	Labor - General Labor #2	110.00
	Labor - General Labor #3	110.00
	Crew #2 (Lucas Villareal)	
	Labor - Foreman	276.90
	Labor - Operator	140.00
	Labor - Pipe Layer	110.00
	Labor - General Labor #1	110.00
Labor - General Labor #2	110.00	
Labor - General Labor #3	110.00	
Excavator Rental Time Loss	750.00	
Wheel Loader (3CY Bucket)	725.00	
6/20/2020	Day #3	
	Supervision	325.00
	Crew #1 (Manuel Guerrero)	
	Labor - Foreman	276.90
	Labor - Operator	140.00
	Labor - Pipe Layer	110.00
	Labor - General Labor #1	110.00
	Labor - General Labor #2	110.00
	Labor - General Labor #3	110.00
	Crew #2 (Lucas Villareal)	
	Labor - Foreman	276.90
	Labor - Operator	140.00
	Labor - Pipe Layer	110.00
	Labor - General Labor #1	110.00
Labor - General Labor #2	110.00	
Labor - General Labor #3	110.00	
Excavator Rental Time Loss	750.00	
Wheel Loader (3CY Bucket)	725.00	
6/20/2020	Day #4	
	Supervision	325.00
	Crew #1 (Manuel Guerrero)	
	Labor - Foreman	276.90
	Labor - Operator	140.00
	Labor - Pipe Layer	110.00
	Labor - General Labor #1	110.00
	Labor - General Labor #2	110.00
	Labor - General Labor #3	110.00
	Crew #2 (Lucas Villareal)	
	Labor - Foreman	276.90
	Labor - Operator	140.00
	Labor - Pipe Layer	110.00
	Labor - General Labor #1	110.00
Labor - General Labor #2	110.00	
Labor - General Labor #3	110.00	
Excavator Rental Time Loss	750.00	
Wheel Loader (3CY Bucket)	725.00	

LABOR

\$ 1713.80

1.35 MARKUP

\$ 2313.63

EQUIPMENT

\$ 725.00

750.00

\$ 1475.00 NO MARKUP

2313.63 + 1475.00 = \$3788.63

3788.63 x 1.015 BOND = \$3845.46

PAY = \$3845.46

Labor - Foreman	HR	5	\$ 55.38	\$ 276.90
Labor - Operator	HR	5	\$ 28.00	\$ 140.00
Labor - Pipe Layer	HR	5	\$ 22.00	\$ 110.00
Labor - General Labor #1	HR	5	\$ 22.00	\$ 110.00
Labor - General Labor #2	HR	5	\$ 22.00	\$ 110.00
Labor - General Labor #3	HR	5	\$ 22.00	\$ 110.00
Excavator Rental Time Loss	Day	1	\$ 750.00	\$ 750.00
Wheel Loader (3CY Bucket)	Day	1	\$ 725.00	\$ 725.00
Time Loss: 4 Days				
Total Material Cost	\$	-	0%	\$ -
Equipment	\$	5,900.00	55%	\$ 3,245.00
Labor	\$	8,155.20	55%	\$ 4,485.36
			Overhead Cost	\$ 7,730.36
			Subtotal	\$ 21,785.56
			Mark-up	15% \$ 3,267.83
			Insurance & Bond Adjustments	1.5% \$ 375.80
Total Cost for Time Loss with respect to shutouts for connections: Fern Bluff MUD Shutouts				\$ 25,429.19

Breakdown:

1 - Time Loss Cost Impact \$ 25,429.19

Total Cost for Time Lost \$ 25,429.19

By Contractor:



Javier Barajas/ Project Manager - QA Construction Services Inc.

8/13/2020

Date

Approved by:

Construction Observer: Clayton Weber, HNTB

Date

Program Manager: Michael Weaver, Prime Strategies

Date

Senior Director of Infrastructure: Robert B. Daigh, Williamson County

Date



QA Construction Services Inc.
5811 Blue Bluff Road
Austin, TX 78724
Phone: 512-637-6120

Additional Work for Encasement 24" DIA Pipe

8/25/2020

Project: Great Oaks Drive Waterline Relocations
Owner: Williamson County

ITEM 999-WC 06

HNTB
Response

Encasement 24" Dia Pipe

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE	
N/A	24 X .375 Steel CASING Pipe	LF	76	\$ 65.85	\$ 5,004.60	
	12 X 24 Stainless Steel CASING SPACER W/ UHMW	EA	12	\$ 83.33	\$ 999.96	
	12 X 24 End Sealant	EA	2	\$ 48.89	\$ 97.78	
	Excavator Equipment (No Charge)	Day	0	\$ 750.00	\$ -	
	Spacer & End Seals / Labor - Foreman	HR	4	\$ 55.38	\$ 221.52	
	Spacer & End Seals /Labor - Operator	HR	4	\$ 28.00	\$ 112.00	
	Spacer & End Seals /Labor - Pipe Layer	HR	4	\$ 22.00	\$ 88.00	
	Spacer & End Seals /Labor - General Labor #1	HR	4	\$ 22.00	\$ 88.00	
	Spacer & End Seals /Labor - General Labor #2	HR	4	\$ 22.00	\$ 88.00	
			Cost	Overhead		
	Total Material Cost		\$	6,102.34	0%	\$ -
Equipment		\$	-	55%	\$ -	
Labor		\$	597.52	55%	\$ 328.64	
		Overhead Cost		\$	328.64	
Subtotal				\$	7,028.50	
Mark-up				15%	\$ 1,054.27	
Insurance & Bond Adjustments				1.5%	\$ 121.24	
Total Cost for Encasement 24" DIA Pipe				\$	8,204.01	

By Contractor:

Jose Ruiz/ Project Estimator - QA Construction Services Inc.

8/25/2020
Date

Approved by:

Construction Observer: Clayton Weber, HNTB

Date

Program Manager: Michael Weaver, Prime Strategies

Date

Senior Director of Infrastructure: Robert B. Daigh, Williamson County

Date

Steel casing pipe 76.00 LF x \$65.85/LF = \$5004.60
 casing spacers 12.00 EA x \$83.33/EA = +999.96

 = \$6004.56
 1.5% BOND + 90.07

 \$ 6094.63



GREAT OAKS DRIVE WATERLINE RELOCATION (REVISED)

BIDTRACER MASTER BID ACCOUNT
BIDS ONLY!!!

NEWPORT NEWS, VA 23609

A) WATER

08) BORING, 12" PVC

Alt	Description/ Comments	UM	Qty	Final Bid Price	Extended Bid Price
DR14BP12	12 C900 DR14 PVC Gasket Joint Blue Pipe NOT FOUND ON PLANS	FT	76.00	\$17.060	\$1,296.56

08) BORING, 12" PVC Unit Price:	Qty: 76	\$17.06 / FT	Subtotal:	\$1,296.56
--	---------	--------------	-----------	-------------------

09) BORING, 24" STEEL

Alt	Description/ Comments	UM	Qty	Final Bid Price	Extended Bid Price
DSCP37524FT	24 X .375 Steel CASING Pipe FOUND 265FT ON PLANS	FT	228.00	\$65.850	\$15,013.80
A12X24SSCASSPAC	12 X 24 Stainless Steel CASING SPACER W/ UHMW RUNNER	EA	36.00	\$83.330	\$2,999.88
CCES1220	12 X 24 End Sealant	EA	4.00	\$48.890	\$195.56

09) BORING, 24" STEEL Unit Price:	Qty: 228	\$79.87 /	Subtotal:	\$18,209.24
--	----------	-----------	-----------	--------------------

10) BORING, 42" STEEL

Alt	Description/ Comments	UM	Qty	Final Bid Price	Extended Bid Price
42.375STL	42" x .500 STEEL CASING	FT	112.00	\$104.900	\$11,748.80
2442SSCS	24X42 SS CASING SPACER W/ UHMW RUNNER	EA	18.00	\$155.560	\$2,800.08
24X42ES	24X42 END SEAL	EA	2.00	\$105.560	\$211.12

10) BORING, 42" STEEL Unit Price:	Qty: 112	\$131.79 /	Subtotal:	\$14,760.00
--	----------	------------	-----------	--------------------

11) 24" STEEL ENCASEMENT

Alt	Description/ Comments	UM	Qty	Final Bid Price	Extended Bid Price
DSCP37524FT	24 X .375 Steel CASING Pipe	FT	285.00	\$65.850	\$18,767.25
A12X24SSCASSPAC	12 X 24 Stainless Steel CASING SPACER W/ UHMW RUNNER	EA	45.00	\$83.330	\$3,749.85
CCES1220	12 X 24 End Sealant	EA	10.00	\$48.890	\$488.90

11) 24" STEEL ENCASEMENT Unit Price:	Qty: 285	\$80.72 /	Subtotal:	\$23,006.00
---	----------	-----------	-----------	--------------------

12) 42" STEEL ENCASEMENT

Alt	Description/ Comments	UM	Qty	Final Bid Price	Extended Bid Price
42.375STL	42" X .500 STEEL CASING	FT	166.00	\$104.900	\$17,413.40
2442SSCS	24X42 SS CASING SPACER W/ UHMW RUNNER	EA	27.00	\$155.560	\$4,200.12
24X42ES	24X42 END SEAL	EA	6.00	\$105.560	\$633.36

12) 42" STEEL ENCASEMENT Unit Price:	Qty: 166	\$134.02 /	Subtotal:	\$22,246.88
---	----------	------------	-----------	--------------------



QA Construction Services Inc.
 5811 Blue Bluff Road
 Austin, TX 78724
 Phone: 512-637-6120

8/13/2020

Additional Work

Project: Great Oaks Drive Waterline Relocations
 Owner: Williamson County

ROCK BERMS

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
N/A	Rock Berm - Material	TN	16	\$ 25.00	\$ 400.00
	Wire Mesh - Material	Roll	1	\$ 25.00	\$ 25.00
	Trucking Delivery - Equipment	HR	1	\$ 150.00	\$ 150.00
	Skidsteer - Equipment	HR	4	\$ 85.00	\$ 340.00
	Labor - Foreman	HR	4	\$ 55.38	\$ 221.52
	Labor - Operator	HR	4	\$ 23.00	\$ 92.00
	Labor - Pipe Layer	HR	4	\$ 22.00	\$ 88.00
	Labor - General Labor	HR	4	\$ 22.00	\$ 88.00
Total Cost (Material & Labor)					\$ 1,404.52
		Cost		Overhead	
Total Material Cost		\$ 425.00	0%	\$	-
Equipment		\$ 490.00	55%	\$	269.50
Labor		\$ 489.52	55%	\$	269.24
Overhead Cost					\$ 538.74
Subtotal					\$ 1,943.26
Mark-up					15% \$ 291.49
Insurance & Bond Adjustments					1.5% \$ 33.52
Total Cost for Rock Berm					\$ 2,268.27

Traffic Control

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
N/A	Traffic Control Plan	EA	1	\$ 1,800.00	\$ 1,800.00
	Traffic Control Implementation	Month	2	\$ 4,200.00	\$ 8,400.00
	Remove Signs	EA	1	\$ 600.00	\$ 600.00
	Total Cost of Traffic Control Plan				

Water Barrier Rental & Installation

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
N/A	BARRIER WALL 6' PLASTIC WATER FILL (Month 1)	LF	126	\$ 21.00	\$ 2,646.00
	BARRIER WALL 6' PLASTIC WATER FILL (Month 2)	LF	126	\$ 21.00	\$ 2,646.00
	Total Cost for Water Barrier Rental & Installation				

BELL RESTRAINT - 304 SS Hardware

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
N/A	12 JT REST RED 304 SS HARDWARE, 304 SS HARDWARE BLK COLOR - Material	EA	46	\$ 201.88	\$ 9,286.48
	No- SS Hardware bell joint restraints - Credit	EA	46	\$ (57.00)	\$ (2,622.00)
	SPLIT RESTRAINT 12 JT REST BLK 304 SS HARDWARE- Material	EA	4	\$ 202.30	\$ 809.20
	Labor - Foreman	HR	10	\$ 55.38	\$ 553.80
	Labor - Operator	HR	10	\$ 28.00	\$ 280.00
	Labor - Pipe Layer	HR	10	\$ 22.00	\$ 220.00
	Labor - General Labor #1	HR	10	\$ 22.00	\$ 220.00
	Labor - General Labor #2	HR	10	\$ 22.00	\$ 220.00
	Total Cost (Material & Labor)				
		Cost		Overhead	
Total Material Cost		\$ 10,095.68	0%	\$	-
Equipment		\$ -	55%	\$	-
Labor		\$ 1,493.80	55%	\$	821.59
Overhead Cost					\$ 821.59
Subtotal					\$ 9,789.07
Mark-up					15% \$ 1,468.36
Insurance & Bond Adjustments					1.5% \$ 168.86
Total Cost for BELL RESTRAINT - 304 SS Hardware					\$ 11,426.29

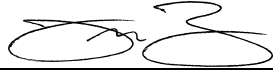
Lead Time: 10 Days
 Time Loss: 10 Days

Breakdown:

1 -	ROCK BERMS	\$ 2,268.27
2 -	Traffic Control	\$ 10,800.00
3 -	Water Barrier Rental & Installation	\$ 5,292.00
4 -	BELL RESTRAINT - 304 SS Hardware	\$ 11,426.29

Total Cost for Change Order No.4 \$ **29,786.56**

By Contractor:



Javier Barajas/ Project Manager - QA Construction Services Inc.

8/13/2020

Date

Approved by:

Construction Observer: Clayton Weber, HNTB

Date

Program Manager: Michael Weaver, Prime Strategies

Date

Senior Director of Infrastructure: Robert B. Daigh, Williamson County

Date



SPL No: SPL-WT-105
PRODUCT: MECHANICAL RESTRAINTS
ISSUE DATE: 8/1/2018

DEPARTMENT: UTILITIES AND ENVIRONMENTAL SERVICES
SERVICE: WATER
STANDARD DETAIL: -
SPECIFICATION: 510

PRODUCT	MANUFACTURER	PRODUCT IDENTIFICATION	NOTES
DUCTILE IRON PIPE MECHANICAL JOINT RESTRAINT	EBBA IRON SALES INC. TYLER UNION SIGMA STAR PIPE PRODUCTS SIP INDUSTRIES	1100 MEGALUG 1000 TUFGRIP ONE-LOK SERIES SLDE (DI) STARGRIP SERIES 3000 EZDP	1,2,4
PVC PIPE MECHANICAL JOINT RESTRAINT	EBBA IRON SALES INC. TYLER UNION SIGMA STAR PIPE PRODUCTS FORD METER BOX CO. SIP INDUSTRIES	2000PV MEGALUG 2000 TUFGRIP ONE-LOK SERIES SLDE (PVC) PVC STARGRIP SERIES 4000 SERIES 1500-CA EZPVCP	1,3,4
DUCTILE IRON PIPE BELL RESTRAINT	TYLER UNION SIGMA STAR PIPE PRODUCTS	SERIES 3000 (DI) ONE-LOCK SLCEH (DI) SERIES 1000C AND SERIES 1100C	1,2
PVC PIPE BELL RESTRAINT	TYLER UNION SIGMA STAR PIPE PRODUCTS FORD METER BOX CO. SIP INDUSTRIES	SERIES 3000 (PVC) ONE-LOC SLCEH (PVC) SERIES 1000 AND SERIES 1100 UFR 1390 (SS BOLTS) PTPVC	1,3

REQUIREMENTS:

PRODUCTS MUST MEET ALL REQUIREMENTS LISTED IN THE CITY OF ROUND ROCK UTILITY CRITERIA MANUAL, TECHNICAL SPECIFICATIONS AND STANDARD DETAILS. ALL PRODUCTS MUST BE SUITABLE FOR USE IN POTABLE WATER.

- 1) RESTRAINT DEVICES SHALL HAVE A WORKING PRESSURE THAT EQUALS OR EXCEEDS THE PRESSURE OF THE PIPE, FITTINGS, OR VALVES ON WHICH THEY ARE USED
- 2) RESTRAINT DEVICES FOR DI PIPE SHALL HAVE A BLACK COATING
- 3) RESTRAINT DEVICES FOR PVC PIPE SHALL HAVE A RED COATING
- 4) WEDGE-ACTION LUG-TYPE MECHANICAL JOINT RESTRAINTS SHALL NOT BE ATTACHED TO CAST IRON OR ASBESTOS CONCRETE PIPE

