

Received

MAY 27 2020

WILLIAMSON COUNTY, TEXAS

CHANGE ORDER NUMBER: 2HNTB Corporation
Round Rock1. CONTRACTOR: QA Construction Services Inc.Project: Great Oaks WLRelocation2. Change Order Work Limits: Sta. 502+25 to Sta. 512+27

Roadway: _____

3. Type of Change(on federal-aid non-exempt projects): Minor (Major/Minor)

CSJ

4. Reasons: 4B (3 Max. - In order of importance - Primary first)Number: 3185

5. Describe the work being revised:

4B: Third Party Accommodation. Third party requested work. This Change Order adds revisions to the Brushy Creek MUD water line design that did not make it into the original plans.6. Work to be performed in accordance with Items: see attached7. New or revised plan sheet(s) are attached and numbered: BCMUD 1-14 revs., Fern Bluff MUD 1-10 revs.8. New Special Provisions/Specifications to the contract are attached: ☐ Yes ☒ No9. 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).

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.

The following information must be providedTime Ext. #: N/A Days added on this CO: 0Amount added by this change order: \$140,830.73THE CONTRACTOR Date 5/27/2020By Typed/Printed Name Jose A. RuizTyped/Printed Title Estimator / Project Manager

RECOMMENDED FOR EXECUTION:

 5/27/2020
DateN/A
Design Engineer Date 05/27/2020
Program Manager Date

Design Engineer's Seal:

County Commissioner Precinct 1 Date
☐ APPROVED ☐ REQUEST APPROVALCounty Commissioner Precinct 2 Date
☐ APPROVED ☐ REQUEST APPROVALCounty Commissioner Precinct 3 Date
☐ APPROVED ☐ REQUEST APPROVALCounty Commissioner Precinct 4 Date
☐ APPROVED ☐ REQUEST APPROVALCounty Judge Date
☐ APPROVED

WILLIAMSON COUNTY, TEXAS

CHANGE ORDER NUMBER: 2

Project # Great Oaks WL Relocation-3185

TABLE A: Force Account Work and Materials Placed into Stock

	LABOR	HOURLY RATE			HOURLY RATE

TABLE B: Contract Items:

				ORIGINAL + PREVIOUSLY REVISED		ADD or (DEDUCT)	NEW		
ITEM-LINE	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	ITEM COST	QUANTITY	QUANTITY	ITEM COST	OVERRUN/ UNDERRUN
509-13	TRENCH SAFETY SYSTEMS (ALL DEPTHS)	LF	\$2.00	2,786.00	\$5,572.00	375.00	3,161.00	\$6,322.00	\$750.00
510-W-15	PIPE, 4" DIA., DI CL-350 (ALL DEPTHS), INCLUDING RESTRAINED JOINTS, EXCAVATION, BACKFILL, AND TEMPORARY AND PERMANENT PAVEMENT AND CONCRETE REPAIRS	LF	\$55.00	247.00	\$13,585.00	(247.00)	0.00	\$0.00	(\$13,585.00)
510-W-16	PIPE, 6" DIA., DI CL-350 (ALL DEPTHS), INCLUDING RESTRAINED JOINTS, EXCAVATION, BACKFILL, AND TEMPORARY AND PERMANENT PAVEMENT AND CONCRETE REPAIRS	LF	\$75.00	228.00	\$17,100.00	375.00	603.00	\$45,225.00	\$28,125.00
510-W-17	PIPE, 12"DIA., DI CL-350 (ALL DEPTHS), INCLUDING RESTRAINED JOINTS, EXCAVATION, BACKFILL, AND TEMPORARY AND PERMANENT PAVEMENT AND CONCRETE REPAIRS	LF	\$115.00	721.00	\$82,915.00	118.00	839.00	\$96,485.00	\$13,570.00
510-W-18	PIPE, 12" DIA., PVC C-900 (ALL DEPTHS), INCLUDING RESTRAINED JOINTS, EXCAVATION, BACKFILL, AND TEMPORARY AND PERMANENT PAVEMENT AND CONCRETE REPAIRS	LF	\$90.00	875.00	\$78,750.00	3.00	878.00	\$79,020.00	\$270.00
510-W-19	PIPE, 24"DIA., DI CL-250 (ALL DEPTHS), INCLUDING RESTRIANED DJOINTS, EXCAVATION, BACKFILL, AND TEMPORARY AND PERMANENT PAVEMENT AND CONCRETE REPAIRS	LF	\$210.00	727.00	\$152,670.00	124.00	851.00	\$178,710.00	\$26,040.00
510-W-20	DUCTILE IRON FITTINGS	TON	\$8,500.00	12.70	\$107,950.00	1.95	14.65	\$124,525.00	\$16,575.00
510-W-21	WET CONNECTIONS, 4" DIA. X 4" DIA.	EA	\$5,000.00	1.00	\$5,000.00	(1.00)	0.00	\$0.00	(\$5,000.00)
510-W-CO1	WET CONNECTIONS, 3" DIA. X 3" DIA.	EA	\$4,500.00	0.00	\$0.00	1.00	1.00	\$4,500.00	\$4,500.00
510-W-25	RESTRAIN EXISTING PIPE, 4" DIA.; INCLUDES BELL JOINT RESTRAINTS, MATERIALS, BAOR AND OTHER INCREDITALS NECESSARY TO COMPLETE, PIPE SHALL BE RESTRAINED UP TO THE NEXT JOINT	EA	\$3,500.00	1.00	\$3,500.00	(1.00)	0.00	\$0.00	(\$3,500.00)
SP-510-W-CO1	RESTRAIN EXISTING PIPE, 3" DIA.; INCLUDES BELL JOINT RESTRAINTS, MATERIALS, LABOR AND OTHER INCIDENTALS NECESSARY TO COMPLETE, PIPE SHALL BE RESTRAINED UP TO THE NEXT JOINT	EA	\$3,500.00	0.00	\$0.00	1.00	1.00	\$3,500.00	\$3,500.00
511-CO1	6" PRESSURE RELEASE VALVE ASSEMBLY (PRV)	EA	\$56,685.73	0.00	\$0.00	1.00	1.00	\$56,685.73	\$56,685.73
511-29	VALVE, GATE VALVE 4"	EA	\$3,500.00	2.00	\$7,000.00	(2.00)	0.00	\$0.00	(\$7,000.00)
511-30	VALVE, GATE VALVE 6"	EA	\$4,300.00	4.00	\$17,200.00	3.00	7.00	\$30,100.00	\$12,900.00
511-32	VALVE, GATE VALVE 12"	EA	\$7,000.00	5.00	\$35,000.00	1.00	6.00	\$42,000.00	\$7,000.00
TOTALS					\$526,242.00			\$667,072.73	\$140,830.73

CHANGE ORDER REASON(S) CODE CHART

1. Design Error or Omission	1A. Incorrect PS&E 1B. Other
2. Differing Site Conditions (unforeseeable)	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
3. County Convenience	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
4. Third Party Accommodation	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
5. Contractor Convenience	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
6. Untimely ROW/Utilities	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

Williamson County Road Bond Program

**Great Oaks Waterline Relocation
Williamson County Project No. 3185**

Change Order No. 2

Reason for Change

This Change Order adds revisions to the Brushy Creek MUD water line design that did not make it into the original plans. These revisions include changes requested by the Brushy Creek MUD (BCMUD) to the water line alignment for the 12" and 24" pipe north of Oakridge Drive. The BCMUD also requested to change the size of Water Line C from 4" to a 6" water line, add pipe restraint on the existing 3" water line and the addition of a 6" Pressure Release Valve Assembly (PRV). These changes are necessary, because the specification for minimum size water line is 6 inches.

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

ITEM-LINE	DESCRIPTION	QTY	UNIT
510-W-CO1	WET CONNECTIONS, 3" DIA. X 3" DIA.	1.00	EACH
SP-510-W-CO1	RESTRAIN EXISTING PIPE, 3" DIA.; INCLUDES BELL JOINT RESTRAINTS, MATERIALS, LABOR AND OTHER INCIDENTALS NECESSARY TO COMPLETE. PIPE SHALL BE ESTRAINED UP TO THE NEXT JOINT	1.00	EACH
511-CO1	6" PRESSURE RELEASE VALVE ASSEMBLY (PRV)	1.00	EACH

This Change Order results in a net increase of \$140,830.73 to the Contract amount, for an adjusted Contract total of \$1,495,929.84. The original Contract amount was \$1,325,000.00. As a result of this and all Change Orders to-date, \$170,929.84 has been added to the Contract, resulting in a 12.9% net increase in the Contract cost. No time will be added to the Contract for this Change Order.

HNTB Corporation

James Klotz, P.E.

510-W-44

6'PRV PRICING

Material - PRV	EA	1	45000.00	45000.00
- Bedding	TN	4	19.00	76.00
Equipment - Trucking	HR	1	125.00	125.00
- Excavator	DAY	1	650.00	650.00
- Loader	DAY	1	675.00	675.00
Labor - Foreman	HR	10	55.38	553.80
- Operator	HR	10	28.00	280.00
- Pipe Layer	HR	10	22.00	220.00
- General labor	HR	10	22.00	220.00
- General labor	HR	10	22.00	220.00

Material	\$45038.50	x 1.15	=	51794.28
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Equipment	1450.00	x 1.15	=	1667.50
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Labor	1493.80	x 1.55	=	2315.39	
			x 1.15	=	2662.70

TOTAL =				\$56124.48
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\$56124.48	x 1.01 BOND	=	\$56685.73
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FERGUSON ENTERPRISES, LLC
FERGUSON WATERWORKS #1254
200 PARK CENTRAL BLVD
GEORGETOWN, TX 78626
Phone: 512-930-2262
Fax: 512-930-2388

Deliver To:
From: Colten Boothe
Comments:

22:07:34 MAR 01 2020

Page 1 of 2

FERGUSON WATERWORKS #1106

Price Quotation
Phone: 512-930-2262
Fax: 512-930-2388

Bid No: B442180
Bid Date: 03/01/20
Quoted By: CJB

Cust Phone:
Terms: NET 10TH PROX

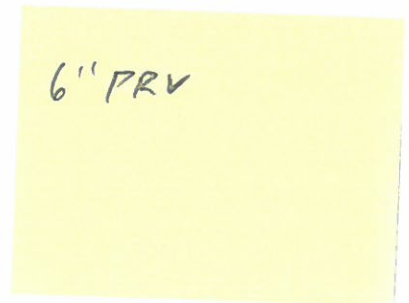
Customer: QA CONSTRUCTION SERVICES IN
GREAT OAKS WATERLINE RELO
5811 BLUE BLUFF ROAD
AUSTIN, TX 78724

Ship To: QA CONSTRUCTION SERVICES IN
GREAT OAKS WATERLINE RELO
5811 BLUE BLUFF ROAD
AUSTIN, TX 78724

Cust PO#: 6" PRV ASSEMBLY

Job Name: GREAT OAKS WATERLINE RELO

Item	Description	Quantity	Net Price	UM	Total
	***** NOTE: 6" PRV ASSEMBLY W/ 3" BYPASS COMPLETELY ASSEMBLED WITH ALL PIPE, VALVES, AND FITTINGS IN A PRECAST CONCRETE VAULT AND CONCRETE TOP WITH ALUMINUM HATCHWAY CAST IN PER CORR WT-17 DRAWING. VAULT IS STUBBED OUT WITH DUCTILE IRON PIPE FOR EASY HOOKUP. ***** ----- ***** NOTE: IF A STARTUP IS REQUIRED, \$1200 PER DAY. ONE DAY IS DEFINED AS 8 HOURS AND INCLUDES TRAVEL TIME. ***** -----				
SP-PRVVAULT6	6 PRV W/VAULT FULLY ASSEMBLED	1	45038.500	EA	45038.50
	SUBTOTAL				45038.50



Net Total: \$45038.50
Tax: \$0.00
Freight: \$0.00
Total: \$45038.50



HOW ARE WE DOING? WE WANT YOUR FEEDBACK!

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

<https://survey.medallia.com/?bidsorder&fc=1254&on=47723>

Fax: 512-930-2388

22:07:34 MAR 01 2020

Reference No: B442180

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

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

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

LEAD LAW WARNING: It is illegal to install products that are not "lead free" in accordance with US Federal or other applicable law in potable water systems anticipated for human consumption. Products with *NP in the description are NOT lead free and can only be installed in non-potable applications. Buyer is solely responsible for product selection.



HOW ARE WE DOING? WE WANT YOUR FEEDBACK!

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

<https://survey.medallia.com/?bidsorder&fc=1254&on=47723>

WET CONNECTIONS, 4" DIA. X 4" DIA.

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
21	WET CONNECTIONS, 4" DIA. X 4" DIA.	EA	-1	\$ 5,000.00	\$ (5,000.00)
Total Credit for WET CONNECTIONS, 3" DIA. X 3" DIA					\$ (5,000.00)

RESTRAIN EXISTING PIPE, 3" DIAMETER;

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
25	RESTRAIN EXISTING PIPE, 3" DIAMETER;	EA	1	\$ 3,500.00	\$ 3,500.00
Total Cost for Additional RESTRAIN EXISTING PIPE, 3" DIA					\$ 3,500.00

RESTRAIN EXISTING PIPE, 4" DIAMETER;

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
26	RESTRAIN EXISTING PIPE, 4" DIAMETER;	EA	-1	\$ 3,500.00	\$ (3,500.00)
Total Credit for RESTRAIN EXISTING PIPE, 4" DIA					\$ (3,500.00)

VALVE, GATE VALVE, 4"

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
30	VALVE, GATE VALVE, 4"	EA	-2	\$ 3,500.00	\$ (7,000.00)
Total Credit for VALVE, GATE VALVE, 4"					\$ (7,000.00)

VALVE, GATE VALVE, 6"

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
31	VALVE, GATE VALVE, 6"	EA	2	\$ 4,300.00	\$ 8,600.00
Total Cost for Additional VALVE, GATE VALVE, 6"					\$ 8,600.00

VALVE, GATE VALVE, 12"

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
33	VALVE, GATE VALVE, 12"	EA	-1	\$ 7,000.00	\$ (7,000.00)
Total Credit for VALVE, GATE VALVE, 12"					\$ (7,000.00)

VALVE, GATE VALVE, 24"

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
34	VALVE, GATE VALVE, 24"	EA	-1	\$ 25,000.00	\$ (25,000.00)
Total Credit for VALVE, GATE VALVE, 24"					\$ (25,000.00)

6" PRESSURE REDUCING VALVE ASSEMBLY

16 -

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
37	6" PRESSURE REDUCING VALVE ASSEMBLY - Material	EA	1	\$ 45,000.00	\$ 45,000.00
	Bedding - Material	TN	4	\$ 19.00	\$ 76.00
	Trucking Delivery - Equipment	HR	1	\$ 125.00	\$ 125.00
	Excavator - Equipment	DAY	1	\$ 650.00	\$ 650.00
	Loader - Equipment	DAY	1	\$ 675.00	\$ 675.00
	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)					\$ 48,019.80
Lead Time: 5 - 6 Weeks					
Additional Days : 2 Days after receive material					
		Cost	Overhead		
Total Material Cost		\$ 45,076.00	0%	\$	-
Equipment		\$ 1,450.00	55%	\$	797.50
Labor		\$ 1,493.80	55%	\$	821.59
		Overhead Cost		\$	1,619.09
		Subtotal		\$	49,638.89
		Mark-up		15%	\$ 7,445.83
		Insurance & Bond Adjustments		3%	\$ 1,712.54
		Total Cost for 6" PRESSURE REDUCING VALVE ASSEMBLY		\$	58,797.27

TREE REMOVAL (4" - 12" DIA)

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
31	TREE REMOVAL (4" - 12" DIA)	EA	4	\$ 2,000.00	\$ 8,000.00
Total Cost for Additional TREE REMOVAL (4" - 12" DIA)					\$ 8,000.00



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

Change Order #1

3/14/2020

Project: Great Oaks Drive Waterline Relocations
Owner: Williamson County

ROCK BERM

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
Equipment					\$ 490.00
Labor					\$ 489.52
Overhead Cost					\$ 538.74
Subtotal					\$ 1,943.26
Mark-up					15% \$ 291.49
Insurance & Bond Adjustments					3% \$ 67.04
Total Cost for Rock Berm					\$ 2,301.79

JACKING OR BORING

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
9	JACKING OR BORING, 24" STEEL PIPE	LF	42	\$ 375.00	\$ 15,750.00
	270 LF- 228 LF = 42 LF (42 LF x \$375.00/LF = \$15,750.00)				
Total Cost for Additional JACKING OR BORING					\$ 15,750.00

PIPE, 4" DIA., DI CL-350

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
15	PIPE, 4" DIA., DI CL-350	LF	-247	\$ 55.00	\$ (13,585.00)
	270 LF- 228 LF = 42 LF (42 LF x \$375.00/LF = \$15,750.00)				
Total Credit for PIPE, 4" DIA., DI CL-350					\$ (13,585.00)

PIPE, 6" DIA., DI CL-350

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
16	PIPE, 6" DIA., DI CL-350	LF	162	\$ 75.00	\$ 12,150.00
	390 - 228 LF = 162 LF (162 LF x \$75.00/LF = \$12,150)				
Total Cost for Additional Pipe, 6" DIA., DI CL-350					\$ 12,150.00

PIPE, 12" DIA., DI CL-350

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
17	PIPE, 12" DIA., DI CL-350	LF	33	\$ 115.00	\$ 3,795.00
	754 LF - 721 LF = 33 LF (33 LF x \$115.00/LF = \$3,795)				
Total Cost for Additional Pipe, 12" DIA., DI CL-350					\$ 3,795.00

PIPE, 12" DIA., PVC

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
18	PIPE, 12" DIA., PVC	LF	30	\$ 90.00	\$ 2,700.00
	905 LF - 875 LF = 30 LF (30 LF x \$90.00/LF = \$2,700)				
Total Cost for Additional Pipe, 12 DIA., PVC					\$ 2,700.00

PIPE, 24" DIA., DI CL-350

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
19	PIPE, 24" DIA., DI CL-350	LF	39	\$ 210.00	\$ 8,190.00
	766 LF - 727 LF = 39 LF (39 LF x \$210.00/LF = \$8,190)				
Total Cost for Additional Pipe, 24" DIA., DI CL-350					\$ 8,190.00

WET CONNECTIONS, 3" DIA. X 3" DIA.

BID ITEM #	DESCRIPTION	UNIT	Qty	UNIT PRICE	TOTAL PRICE
20	WET CONNECTIONS, 3" DIA. X 3" DIA.	EA	1	\$ 4,500.00	\$ 4,500.00
Total Cost for Additional WET CONNECTIONS, 3" DIA. X 3" DIA					\$ 4,500.00

WILLIAMSON COUNTY

GREAT OAKS DRIVE WATERLINE RELOCATIONS

PRECINCT NUMBER 1

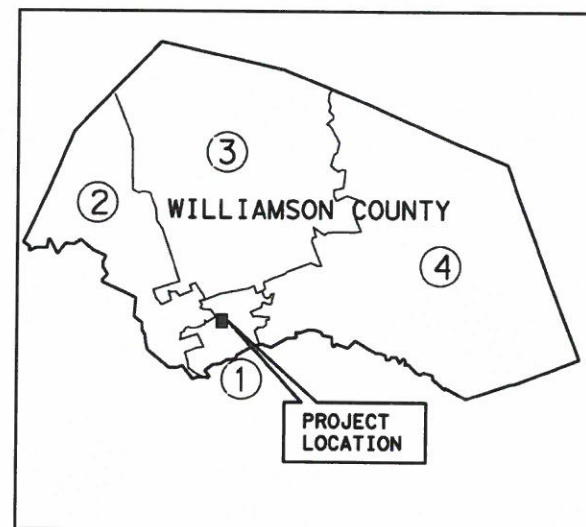
WILLIAMSON COUNTY PROJECT NO. IFB 3185

**FINAL PLANS
FOR CONSTRUCTION**

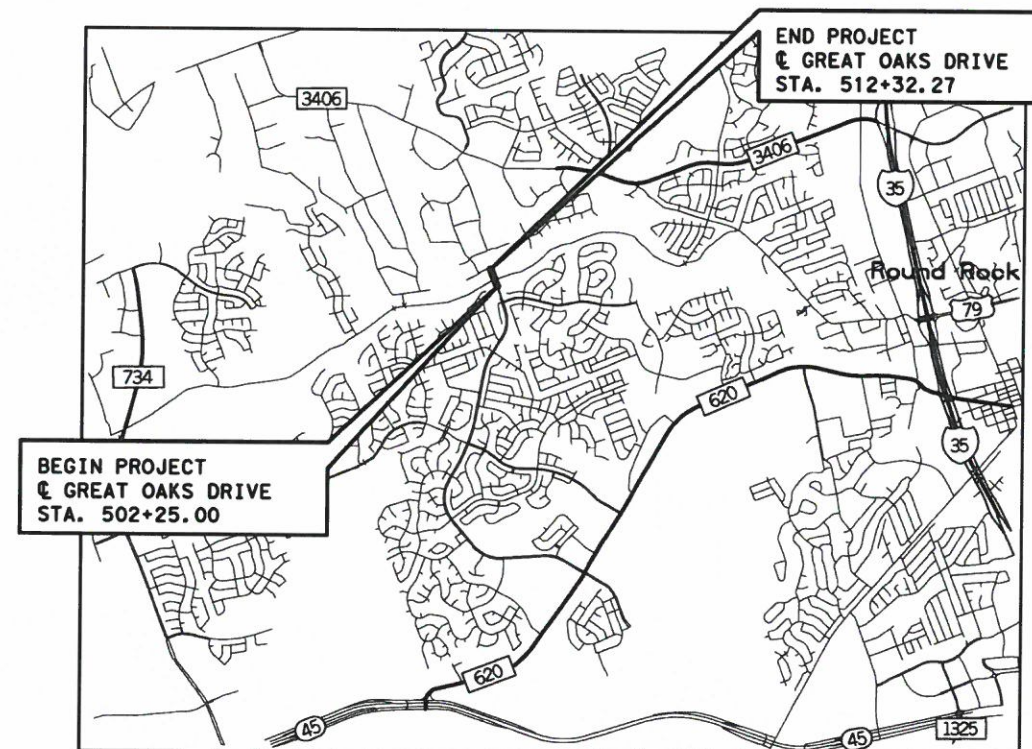
PROJECT LIMITS: ALONG GREAT OAKS DRIVE FROM BRIGHTWATER BLVD TO OAK RIDGE DRIVE
CONSTRUCTION INCLUDES: RELOCATION OF EXISTING FERN BLUFF MUD AND BRUSHY CREEK MUD WATER LINES
INCLUDING VALVES, FIRE HYDRANTS, AND APPURTENANCES.

CLASSIFICATION & DESIGN SPEED:			
GREAT OAKS DR	MAJOR COLLECTOR	45 MPH	
BRUSHY CREEK RD	MAJOR COLLECTOR	35 MPH	
HAIRY MAN RD	MAJOR COLLECTOR	35 MPH	
AVERAGE DAILY TRAFFIC (ADT):			
GREAT OAKS DR	12,120 (2018)	19,960 (2040)	
BRUSHY CREEK RD	8,900 (2018)	14,660 (2040)	
HAIRY MAN RD	5,060 (2014)	8,340 (2040)	
DESIGN HOURLY VOLUME (DHV):			
GREAT OAKS DR	1,212 (2018)	1,996 (2040)	
BRUSHY CREEK RD	890 (2018)	1,466 (2040)	
HAIRY MAN RD	506 (2018)	834 (2040)	
DIRECTIONAL DISTRIBUTION (D):			
GREAT OAKS DR	0.58		
BRUSHY CREEK RD	0.56		
HAIRY MAN RD	0.51		
PERCENT TRUCKS (T):			
GREAT OAKS DR	0.2%		
BRUSHY CREEK RD	0.7%		
HAIRY MAN RD	0.8%		

REQUIRED SIGNS SHALL BE PLACED IN ACCORDANCE WITH STANDARD SHEETS BC(1)-14 THRU BC(12)-14 AND THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."



KEY MAP
(N. T. S.)



VICINITY MAP
(N. T. S.)

TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES ADOPTED ON NOVEMBER 1, 2014 AND ALL APPLICABLE SPECIAL PROVISIONS AND SPECIAL SPECIFICATIONS AS INDICATED IN THE BID DOCUMENTS SHALL GOVERN ON THIS PROJECT.

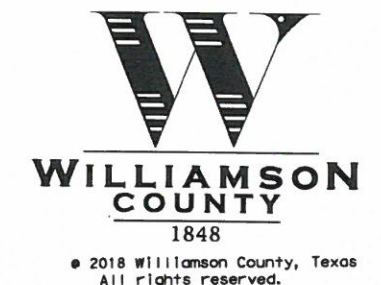


PREPARED BY:
Stanley R. Fees

(DESIGN CONSULTANT)

1/23/2020

DATE



APPROVED BY:
WILLIAMSON COUNTY
Bill Gravell, Jr. 1/28/2020
BILL GRAVELL, JR. DATE
WILLIAMSON COUNTY JUDGE

APPROVED BY:
WILLIAMSON COUNTY
Terry Cook 1/29/2020
COMMISSIONER TERRY COOK DATE
WILLIAMSON COUNTY COMMISSIONER
PRECINCT 1

APPROVED BY:
HNTB CORPORATION
Richard L. Ridings, P.E. 1/24/2020
RICHARD L. RIDINGS, P.E. DATE
ROAD BOND MANAGEMENT TEAM

SHEET INDEX

SHEET NUMBER	SHEET TITLE
C-001	COVER
C-002 - C-003	GENERAL NOTES
C-101	KEY MAP - WATER
C-201 - C-205	PROP. BCMUD 12", 24", & 6" WL RELOCATIONS
C-206	BCMUD 12" WL ABANDONMENT PLAN
C-501	EROSION CONTROL STANDARD DETAILS
C-502 - C-504	CORR WATER STANDARD DETAILS
TCP (1-3)-18	TRAFFIC CONTROL PLAN DETAILS
TCP (1-4)-18	TRAFFIC CONTROL PLAN DETAILS



WILLIAMSON COUNTY
GREAT OAKS BRUSHY CREEK MUD
WATER RELOCATIONS

TOTAL LENGTH OF 12" WATER LINE: 750 LF
TOTAL LENGTH OF 24" WATER LINE: 768 LF
TOTAL LENGTH OF 6" WATER LINE: 380 LF

PROJECT LIMITS: HAIRY MAN RD. STA 13+50 TO 17+00; GREAT OAKS DR. STA 502+00 TO 512+30

RELOCATION OF EXISTING BRUSHY CREEK MUD 12", 24", AND 6" WATER LINES, INCLUDING
VALVES, FIRE HYDRANTS, APPURTENANCES, AND RECONNECTIONS



VICINITY MAP
(NOT TO SCALE)

REV. NO.	REVISION DESCRIPTION	(C)ORRECT, (A)DD, (V)OID SHEET NUMBERS	APPR'D BY:	DATE
1	ADJUSTED SHEETS	(C) C-201, C-202, C-203, C-204, C-205	SF	2/07/2020
2	ADDED DETAILS	(A) C-504	SF	2/07/2020

OWNER INFORMATION

OWNER:
BRUSHY CREEK MUD
16318 GREAT OAKS DRIVE
ROUND ROCK, TEXAS 78681

CONTACT:
PAUL HANSON
OFFICE: 512-255-7871 EXT: 230
PHANSON@BCMUD.ORG

ALTERNATE CONTACT:
BILL CARR
OFFICE: 512-255-7871 EXT: 401
MOBILE: 512-912-6205

DESIGNER:
COBB FENDLEY
505 E. HUNTLAND DR. SUITE 100
AUSTIN, TEXAS 78752

CONTACT:
STANLEY R. FEES, P.E.
512-834-9798

100% SUBMITTAL



 FEBRUARY 7, 2020
STANLEY R. FEES, P.E.
COBB FENDLEY, INC. DATE

APPROVAL:

BRUSHY CREEK MUD DATE

 **CobbFendley**
TBPE NO. 274 / TBPLS NO. 10046701
505 EAST HUNTLAND DRIVE, SUITE 100
AUSTIN, TEXAS 78752
512.834.9798 | FAX 512.834.7277
WWW.COBBFENDLEY.COM

Dwg Info: G:\CFA\2014\0308801_Willamson_County_2013_Road_Bond\MUN\07F_Great-Oaks-Brushy-Creek-MUD\DESIGN\C-001-COVR.dwg -- Tab: COVER-COVB-W -- Plotted: 2/7/2020 5:40 AM By: KRISTEN VAN HOOSIER

Dwg Info: G:\CFA\2014\0308B01_Williamson_County_2013_Road_Bond\MUN\07F_Great-Oaks-Brushy-Creek-MUD\DESIGN\C-002-GNOT.dwg -- Tab: GEN-NOTE-0-W -- Plotted: 2/7/2020 5:40 AM By: KRISTEN VAN HOOSIER

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ROUND ROCK STANDARD SPECIFICATIONS MANUAL.
- ANY EXISTING UTILITIES, PAVEMENT, CURBS, SIDEWALKS, STRUCTURES, TREES, ETC., NOT PLANNED FOR DESTRUCTION OR REMOVAL THAT ARE DAMAGED OR REMOVED SHALL BE REPAIRED OR REPLACED AT HIS EXPENSE.
- THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES WITH THE CONSTRUCTION PLANS FOUND IN THE FIELD SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER WHO SHALL BE RESPONSIBLE FOR REVISING THE PLANS ARE APPROPRIATE.
- MANHOLE FRAMES, COVERS, VALVES, CLEANOUTS, ETC. SHALL BE RAISED TO FINISHED GRADE PRIOR TO FINAL PAVING CONSTRUCTION.
- THE CONTRACTOR SHALL GIVE BRUSHY CREEK MUD 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION. TELEPHONE 512-255-7871 EXT: 230.
- ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE REVEGETATED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. REVEGETATION OF ALL DISTURBED OR EXPOSED AREAS SHALL CONSIST OF SODDING OR SEEDING, AT THE CONTRACTOR'S OPTION. HOWEVER, THE TYPE OF REVEGETATION MUST EQUAL OR EXCEED THE TYPE OF VEGETATION PRESENT BEFORE CONSTRUCTION.
- PRIOR TO ANY CONSTRUCTION, THE ENGINEER SHALL CONVENE A PRECONSTRUCTION CONFERENCE BETWEEN BRUSHY CREEK MUD, HIMSELF, THE CONTRACTOR, OTHER UTILITY COMPANIES, ANY AFFECTED PARTIES AND ANY OTHER ENTITY THE CITY OR ENGINEER MAY REQUIRE.
- THE CONTRACTOR AND THE ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCTION THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE BRUSHY CREEK MUD ACCURATE "AS-BUILT" DRAWINGS FOLLOWING COMPLETION OF ALL CONSTRUCTION. THESE "ASBUILT" DRAWINGS SHALL MEET WITH THE SATISFACTION OF THE ENGINEERING AND DEVELOPMENT SERVICES DEPARTMENT PRIOR TO FINAL ACCEPTANCE.
- THE BRUSHY CREEK MUD BOARD SHALL NOT BE PETITIONED FOR ACCEPTANCE UNTIL ALL NECESSARY EASEMENT DOCUMENTS HAVE BEEN SIGNED AND RECORDED.
- WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINED HIS WORK TO WITHIN THE PERMANENT AND ANY TEMPORARY EASEMENTS. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. CLEAN-UP SHALL BE TO THE SATISFACTION OF THE CITY ENGINEER.
- PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL APPLY FOR AND SECURE ALL PROPER PERMITS FROM THE APPROPRIATE AUTHORITIES.

TRENCH SAFETY

- IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U. S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED,SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR EACH PROJECT WILL BE PROVIDED TO CONTRACTOR.
- IN ACCORDANCE WITH THE U. S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN PERSONS ARE IN TRENCHES 4 FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT,SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
- IF TRENCH SAFETY SYSTEM DETAILS WERE NOT PROVIDED IN THE PLANS BECAUSE TRENCHES WERE ANTICIPATED TO BE LESS THAN 5 FEET IN DEPTH AND DURING CONSTRUCTION IT IS FOUND THAT TRENCHES ARE IN FACT 5 FEET OR MORE IN DEPTH OR TRENCHES LESS THAN 5 FEET IN DEPTH ARE IN AN AREA WHERE HAZARDOUS GROUND MOVEMENT IS EXPECTED, ALL CONSTRUCTION SHALL CEASE,THE TRENCHED AREA SHALL BE BARRICADED AND THE ENGINEER NOTIFIED IMMEDIATELY. CONSTRUCTION SHALL NOT RESUME UNTIL APPROPRIATE TRENCH SAFETY SYSTEM DETAILS, AS DESIGNED BY A PROFESSIONAL ENGINEER, ARE RETAINED AND COPIES SUBMITTED TO BRUSHY CREEK MUD AND THE CITY OF ROUND ROCK.

STREET AND DRAINAGE

- ALL TESTING SHALL BE DONE BY AN INDEPENDENT LABORATORY AT THE OWNER'S EXPENSE. ANY RETESTING SHALL BE PAID FOR BY THE CONTRACTOR. A CITY INSPECTOR SHALL BE PRESENT DURING ALL TESTS. TESTING SHALL BE COORDINATED WITH THE CITY INSPECTOR AND HE SHALL BE GIVEN A MINIMUM OF 24 HOURS NOTICE PRIOR TO ANY TESTING. TELEPHONE 218-5555 (INSPECTIONS).
- BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95%MAXIMUM DENSITY TO WITHIN 3" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 3" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANT LIFE.
- DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT INCLUDING GAS, ELECTRIC, TELEPHONE, CABLE TV, WATER SERVICES, ETC., SHALL BE A MINIMUM OF 30" BELOW SUBGRADE.

WATER AND WASTEWATER

- PIPE MATERIAL FOR WATER MAINS SHALL BE PVC (AWWA C-900, MIN. CLASS 200), OR DUCTILE IRON (AWWA C-100, MIN. CLASS 200). WATER SERVICES (2" OR LESS) SHALL BE POLYETHYLENE TUBING (BLACK, 200 PSI, DR 9).
- PIPE MATERIAL FOR PRESSURE WASTEWATER MAINS SHALL BE PVC (AWWA C-900, MIN. CLASS 150), OR DUCTILE IRON (AWWA C-100, MIN. CLASS 200). PIPE MATERIAL FOR GRAVITY WASTEWATER MAINS SHALL BE PVC (ASTM D2241 OR D3034, MAX. DR-26), DUCTILE IRON (AWWA C-100, MIN. CLASS 200).
- UNLESS OTHERWISE ACCEPTED BY THE CITY ENGINEER, DEPTH OF COVER FOR ALL LINES OUT OF THE PAVEMENT SHALL BE 42" MIN., AND DEPTH OF COVER FOR ALL LINES UNDER PAVEMENT SHALL BE A MIN. OF 30" BELOW SUBGRADE.
- ALL FIRE HYDRANT LEADS SHALL BE DUCTILE IRON PIPE (AWWA C-100, MIN. CLASS 200).
- ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8-MIL POLYETHYLENE AND SEALED WITH DUCT TAPE OR EQUAL ACCEPTED BY THE CITY ENGINEER.
- THE CONTRACTOR SHALL CONTACT THE BRUSHY CREEK MUD AT 512-255-7871 EXT: 230 TO COORDINATE UTILITY TIE-INS AND NOTIFY BCMUD AT LEAST 48 HOURS PRIOR TO CONNECTING TO EXISTING LINES.
- ALL MANHOLES SHALL BE CONCRETE WITH CAST IRON RING AND COVER. ALL MANHOLES LOCATED

OUTSIDE OF THE PAVEMENT SHALL HAVE BOLTED COVERS. TAPPING OF FIBERGLASS MANHOLES SHALL NOT BE ALLOWED.

- THE CONTRACTOR, AT HIS EXPENSE, SHALL PERFORM QUALITY TESTING FOR ALL WASTEWATER PIPE INSTALLED AND PRESSURE PIPE HYDROSTATIC TESTING OF ALL WATER LINES CONSTRUCTED AND SHALL PROVIDE ALL EQUIPMENT (INCLUDING PUMPS AND GAUGES), SUPPLIES AND LABOR NECESSARY TO PERFORM THE TESTS. QUALITY AND PRESSURE TESTING SHALL BE MONITORED BY CITY OF ROUND ROCK PERSONNEL.
- THE CONTRACTOR SHALL COORDINATE TESTING WITH THE BRUSHY CREEK MUD INSPECTOR AND PROVIDE NO LESS THAN 24 HOURS NOTICE PRIOR TO PERFORMING STERILIZATION, QUALITY TESTING OR PRESSURE TESTING.
- THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES UNLESS AUTHORIZED BY THE CITY OF ROUND ROCK AND BRUSHY CREEK MUD.
- ALL VALVE BOXES AND COVERS SHALL BE CAST IRON.
- ALL WATER SERVICE, WASTEWATER SERVICE AND VALVE LOCATIONS SHALL BE APPROPRIATELY MARKED AS FOLLOWS:

WATER SERVICE "W" ON TOP OF CURB
WASTEWATER SERVICE "S" ON TOP OF CURB
VALVE "V" ON FACE OF CURB

TOOLS FOR MARKING THE CURB SHALL BE PROVIDED BY THE CONTRACTOR. OTHER APPROPRIATE MEANS OF MARKING SERVICE AND VALVE LOCATIONS SHALL BE PROVIDED IN AREAS WITHOUT CURBS. SUCH MEANS OF MARKING SHALL BE AS SPECIFIED BY THE ENGINEER AND ACCEPTED BY THE CITY OF ROUND ROCK AND BRUSHY CREEK MUD.

- CONTACT CITY OF ROUND ROCK ENGINEERING AND DEVELOPMENT SERVICES DEPARTMENT AT 218-5555 AND BRUSHY CREEK MUD (PAUL HANSON, 512-255-7871 EXT: 230) FOR ASSISTANCE IN OBTAINING EXISTING WATER AND WASTEWATER LOCATIONS.
- THE CITY OF ROUND ROCK FIRE DEPARTMENT SHALL BE NOTIFIED 48 HOURS PRIOR TO TESTING OF ANY BUILDING SPRINKLER PIPING IN ORDER THAT THE FIRE DEPARTMENT MAY MONITOR SUCH TESTING.
- SAND, AS DESCRIBED IN SPECIFICATION ITEM 510 PIPE, SHALL NOT BE USED AS BEDDING FOR WATER AND WASTEWATER LINES. ACCEPTABLE BEDDING MATERIALS ARE PIPE BEDDING STONE, PEA GRAVEL AND IN LIEU OF SAND, A NATURALLY OCCURRING OR MANUFACTURED STONE MATERIAL CONFORMING TO ASTM C33 FOR STONE QUALITY AND MEETING THE FOLLOWING GRADATION SPECIFICATION:

SIEVE SIZE	PERCENT RETAINED BY WEIGHT
1/2"	0
3/8"	0-2
#4	40-85
#10	95-100

- THE CONTRACTOR IS HEREBY NOTIFIED THAT CONNECTING TO, SHUTTING DOWN, OR TERMINATING EXISTING UTILITY LINES MAY HAVE TO OCCUR AT OFF-PEAK HOURS. SUCH HOURS ARE USUALLY OUTSIDE NORMAL WORKING HOURS AND POSSIBLY BETWEEN 12 A.M. AND 6 A.M.
- ALL WASTEWATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) REGULATIONS, 30 TAC CHAPTER 213 AND 317, AS APPLICABLE. WHENEVER TCEQ AND CITY OF ROUND ROCK SPECIFICATIONS CONFLICT, THE MORE STRINGENT SHALL APPLY.

TRAFFIC MARKING NOTES

- ANY METHODS, STREET MARKINGS AND SIGNAGE NECESSARY FOR WARNING MOTORISTS, WARNING PEDESTRIANS OR DIVERTING TRAFFIC DURING CONSTRUCTION SHALL CONFORM TO THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION.
- ALL PAVEMENT MARKINGS, MARKERS, PAINT, TRAFFIC BUTTONS, TRAFFIC CONTROLS AND SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES AND, THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITIONS.

EROSION AND SEDIMENTATION CONTROL NOTES

- EROSION CONTROL MEASURES, SITE WORK AND RESTORATION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF ROUND ROCK EROSION AND SEDIMENTATION CONTROL ORDINANCE.
- ALL SLOPES SHALL BE SODDED OR SEEDDED WITH APPROVED GRASS, GRASS MIXTURES OR GROUND COVER SUITABLE TO THE AREA AND SEASON IN WHICH THEY ARE APPLIED.
- SILT FENCES, ROCK BERMS, SEDIMENTATION BASINS AND SIMILARLY RECOGNIZED TECHNIQUES AND MATERIALS SHALL BE EMPLOYED DURING CONSTRUCTION TO PREVENT POINT SOURCE SEDIMENTATION LOADING OF DOWNSTREAM FACILITIES. SUCH INSTALLATION SHALL BE REGULARLY INSPECTED BY THE CITY OF ROUND ROCK FOR EFFECTIVENESS. ADDITIONAL MEASURES MAY BE REQUIRED IF, IN THE OPINION OF THE CITY ENGINEER, THEY ARE WARRANTED.
- ALL TEMPORARY EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL FINAL INSPECTION AND APPROVAL OF THE PROJECT BY THE ENGINEER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL TEMPORARY EROSION CONTROL STRUCTURES AND TO REMOVE EACH STRUCTURE AS APPROVED BY THE ENGINEER.
- ALL MUD, DIRT, ROCKS, DEBRIS, ETC., SPILLED, TRACKED OR OTHERWISE DEPOSITED ON EXISTING PAVED STREETS, DRIVES AND AREAS USED BY THE PUBLIC SHALL BE CLEANED UP IMMEDIATELY.

SURVEY NOTES

- BEARING VALUES BASED ON THE TEXAS STATE PLAN COORDINATE SYSTEM, NAD-83, CENTRAL (4203). COORDINATES ARE SURFACE VALUES BASED ON A COMBINED SURFACE ADJUSTMENT FACTOR OF 1.00012. ELEVATIONS BASED UPON GEOID 2012A, PER WESTERN DATA GPS REFERENCE NETWORK.

TREE LIST

POINT #	DRIP DIA.	SIZE	DESCRIPTION	STATUS
3331	60'	30"	PECAN	PROTECT

GENERAL NOTES

GREAT OAKS BRUSHY CREEK MUD
WATER RELOCATIONS
WILLIAMSON COUNTY, TEXAS



PROJ. NO.: 1703-011-10 7F
DESIGN: K. VAN HOOSIER
DRAWN: K. VAN HOOSIER
CHECK: L. PRICE
APPR: S. FEES
DATE: FEBRUARY 7, 2020



THESE DESIGN DOCUMENTS ARE NOT TO BE USED FOR CONSTRUCTION PRIOR TO REGULATORY SIGNATURE AND PERMIT.

SHEET
C-002
2 of 14



Williamson County
Project: Great Oaks Drive Waterline Relocations

GENERAL NOTES: August 26, 2019 Version

Basis of Estimate				
Item	Description	**Rate	Basis	Quantity
164	Seed for Erosion Control (Item 164) (Temp) (Cool) (TY 4)	5000 SY/AC	SY	SY

** For Informational Purposes Only

GENERAL

References to manufacturer's trade name or catalog numbers are for the purpose of identification only. Similar materials from other manufacturers are permitted if they are of equal quality, comply with the specifications for this project, and are approved.

If work is performed at Contractor's option, when inclement weather is impending, and the work is damaged by subsequent precipitation, the Contractor is responsible for all costs associated with replacing the work, if required.

The roadbed shall be free of organic material prior to placing any section of the pavement structure.

Equip all construction equipment used in roadway work with highly visible omnidirectional flashing warning lights.

Provide a smooth, clean saw-cut along the existing asphalt pavement structure, as directed. Consider subsidiary to the pertinent Items.

Supply litter barrels in enough numbers at locations as directed to control litter within the project. Consider subsidiary to pertinent Items.

Use a self-contained vacuum broom to sweep the roadway and keep it free of sediment as directed. The contractor will be responsible for any sweeping above and beyond the normal maintenance required to keep fugitive sediment off the roadway as directed by the Construction Observer. This work is subsidiary.

Protect all areas of the right of way, which are not included in the actual limits of the proposed construction areas, from disturbance. Restore any area disturbed because of the Contractor's operations to a condition as good as, or better than, before the beginning of work at no cost to the County.

Damage to existing pipes and SETs due to Contractor operations shall be repaired at Contractor's expense.

All locations used for storing construction equipment, materials, and stockpiles of any type, within the right of way, will be as directed. Use of right of way for these purposes will be restricted to those locations where driver sight distance to businesses and side street intersections is not

General Notes

Sheet A

Williamson County
Project: Great Oaks Drive Waterline Relocations

Within the limits of the project, provide standard barricades, warning signs, delineators, lights, 28-inch cones, and flaggers in enough numbers and combinations, as directed.

For Mainlanes use night-work and same-night remove-and-replace operations.

No closures will be allowed on the weekends, which include the following holidays: January 1st, the last Monday in May, July 4th, the first Monday in September, the fourth Thursday in November, December 25th, Easter weekend, and the working day prior to or immediately after any of the aforementioned holidays. Unless otherwise approved, no closures will be allowed on the weekends of special events that could be impacted by the construction. Ensure all equipment, vehicles, workers, etc., associated with these closures are off the roadways and all lanes re-opened, at least, by noon of the Friday before these holidays and special events.

General Notes

Sheet D

Williamson County
Project: Great Oaks Drive Waterline Relocations

obstructed and at other locations where an unsightly appearance will not exist. The Contractor will not have exclusive use of right of way but will cooperate in the use of the right of way with the city/county and various public utility companies as required.

The Project Superintendent will be capable of speaking English and will be available to contact at all times when work is being performed, including subcontractor work. The Superintendent will be available and on-call 24 hours a day.

Use materials from prequalified material producers list as shown on the Texas Department of Transportation (TxDOT) – Construction Division's (CST) materials producers list. Refer to TxDOT's website for list of pre-qualified manufacturers. No substitutions will be allowed for materials found on the list. Submit list of approved suppliers/materials from TxDOT website to show items are TxDOT approved. Submit this list with request for material approval.

When any abandoned well is encountered, cease construction operations in this area and notify the Construction Observer who will coordinate the proper plugging procedures. A water well driller licensed in the State of Texas must be used to plug a well.

Erosion control and stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days. Track all exposed soil, stockpiles, and slopes. Tracking consists of operating a tracked vehicle or equipment up and down the slope, leaving track marks perpendicular to the direction of the slope. Re-track slopes and stockpiles after each rain event or every 14 days, whichever occurs first. This work is subsidiary.

Perform maintenance of vehicles or equipment at designated maintenance sites. Keep a spill kit on-site during fueling and maintenance. This work is subsidiary.

Maintain positive drainage for permanent and temporary work for the duration of the project. Be responsible for any items associated with the temporary or interim drainage and all related maintenance. This work is subsidiary.

Suspend all activities near any significant recharge features, such as sinkholes, caves, or any other subterranean openings that are discovered during construction or core sampling. Do not proceed until the designated Geologist or TCEQ representative is present to evaluate and approve remedial action.

ITEM 502 – BARRICADES, SIGNS, AND TRAFFIC HANDLING

Unless otherwise approved, one (1) lane in each direction shall remain open at all times.

No work will be allowed between 8:00 PM to 5:00 AM without approval from Construction Observer. Nighttime lane closures will only be allowed with approval from Construction Observer and only from 8:00 PM to 5:00 AM, unless otherwise shown on the plans.

No Daytime Lane Closures will be allowed, unless otherwise shown on the plans or as directed by the GEC.

General Notes

Sheet B

Williamson County
Project: Great Oaks Drive Waterline Relocations

The GEC is the authority to approve additional lane closures, prior to any work.

Maintain a written record of documentation of "The Additional Approved Lane Closures."

Submit and secure concurrence, prior to the publication of any notices or placement of any traffic control devices for implementation of the traffic control plan, hereinafter called a Lane Closure Notice (LCN).

Present to GEC, an LCN for traffic control, which is proposed for implementation, a minimum of four (4) full working days preceding any proposed implementation date. Indicate the estimated date, time, duration, and location for the proposed work. As a part of the LCN submit a written description of the lane closure(s) depicting the proposed traffic control devices used, based on the appropriate plan sheet, TxDOT or Texas Manual on Uniform Traffic Control Devices (TMUTCD) standards, and an operational description of the work to be performed.

Present to GEC, LCN's proposed to detour traffic, a minimum of *seven (7)* full calendar days preceding any proposed implementation date.

Present to GEC, LCN's proposed for night work, a minimum of *seven (7)* full calendar days preceding any proposed implementation date.

Receive concurrence prior to LCN implementation.

Meet with the Construction Observer prior to roadway and lane closures to ensure that sufficient equipment, materials, devices, and workers will be used. Discuss contingency plans at that time. Consider inclement weather prior to implementing the lane closures.

Submit a cancellation of any lane closures, no later than noon on the day preceding the proposed work.

Coordinate Main Lane closures with adjacent projects.

Take immediate action to modify Closures / Traffic Control, if at any time backup (roadway queuing) becomes unreasonable (greater than 20 minutes). Have in place, a contingency plan of how this will occur.

Utilize Shadow Vehicle with Truck Mounted Attenuator for setup and removal of each lane closure.

Do not set up any Lane Closure / TCP when the pavement is wet prior to the "setup," unless otherwise directed. Revise Traffic Control, when inclement weather is imminent, as directed.

Incorporate and maintain a 3H: 1V safety wedge into the proposed construction for any roadway edge of 2 inches or greater adjacent to a roadway under traffic.

General Notes

Sheet C



512.834.9798 | FAX 512.834.4553
WWW.COBBFENDLEY.COM

GENERAL NOTES

GREAT OAKS BRUSHY CREEK MUD
WATER RELOCATIONS
WILLIAMSON COUNTY, TEXAS



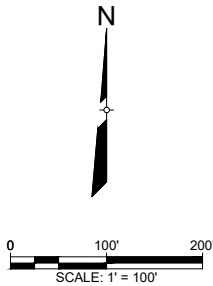
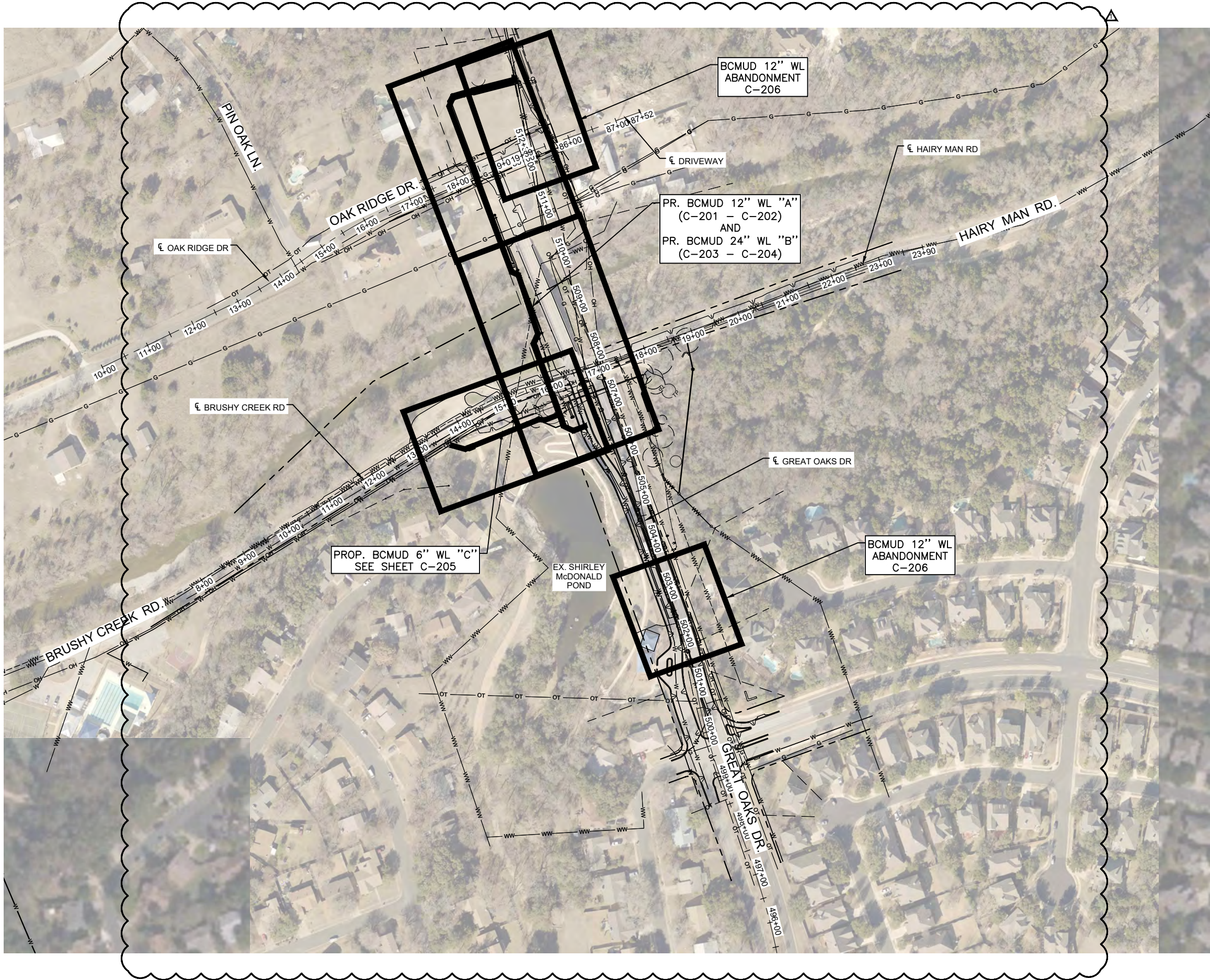
PROJ. NO.: 1703-011-10 7F
DESIGN: K. VAN HOOSIER
DRAWN: K. VAN HOOSIER
CHECK: L. PRINCE
APPR.: S. FEES
DATE: FEBRUARY 7, 2020



THESE DESIGN DOCUMENTS ARE NOT TO BE
USED FOR CONSTRUCTION PRIOR TO
REGULATORY SIGNATURE AND PERMIT.

SHEET
C-003
3 of 14

Dwg Info: G:\CFA\2014\0308801_Williamson_County_2013_Road_Bond\MUN\07F_Great-Oaks-Brushy-Creek-MUD\DESIGN\C-100-KETM.dwg — Tab: KEY-MAP-02-W — Plotted: 2/7/2020 5:44 AM By: KRISTEN VAN HOOSIER



REV. NO.	REVISION DESCRIPTION	APPROVED BY: SF	DATE
1	CHANGED 2\"/>		2/07/2020
2	ADJUSTED 12\"/>		

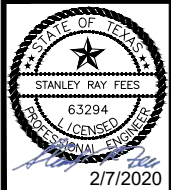
**CobbFendley**
WATER & SEWER
505 EAST HUNTLAND DRIVE, SUITE 100
AUSTIN, TEXAS 78752
512.834.9798 | FAX 512.834.9553
WWW.COBBFENDLEY.COM

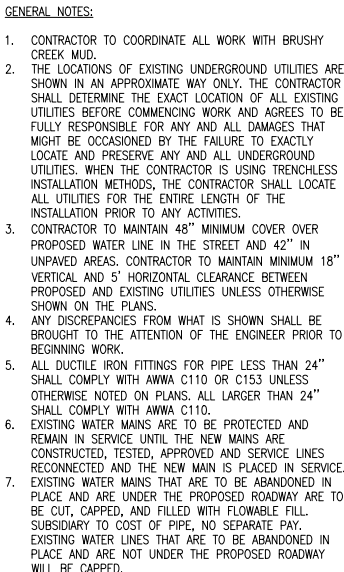
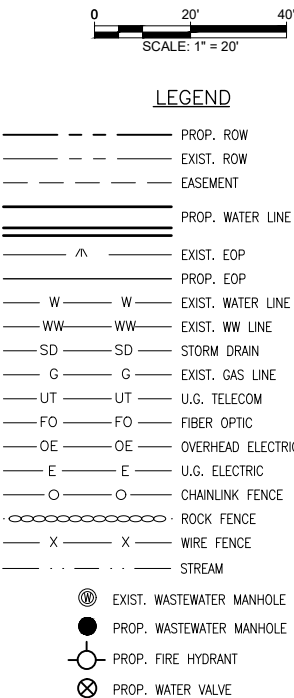
KEY MAP - WATER

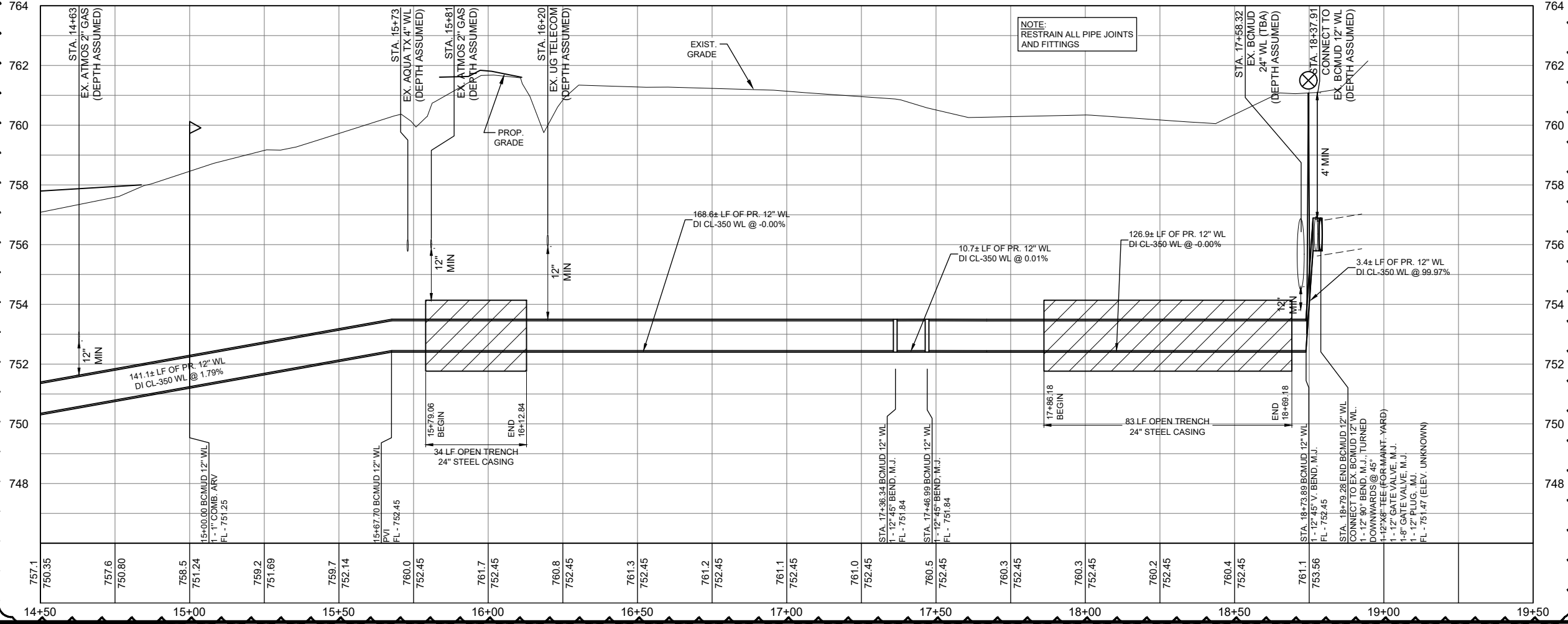
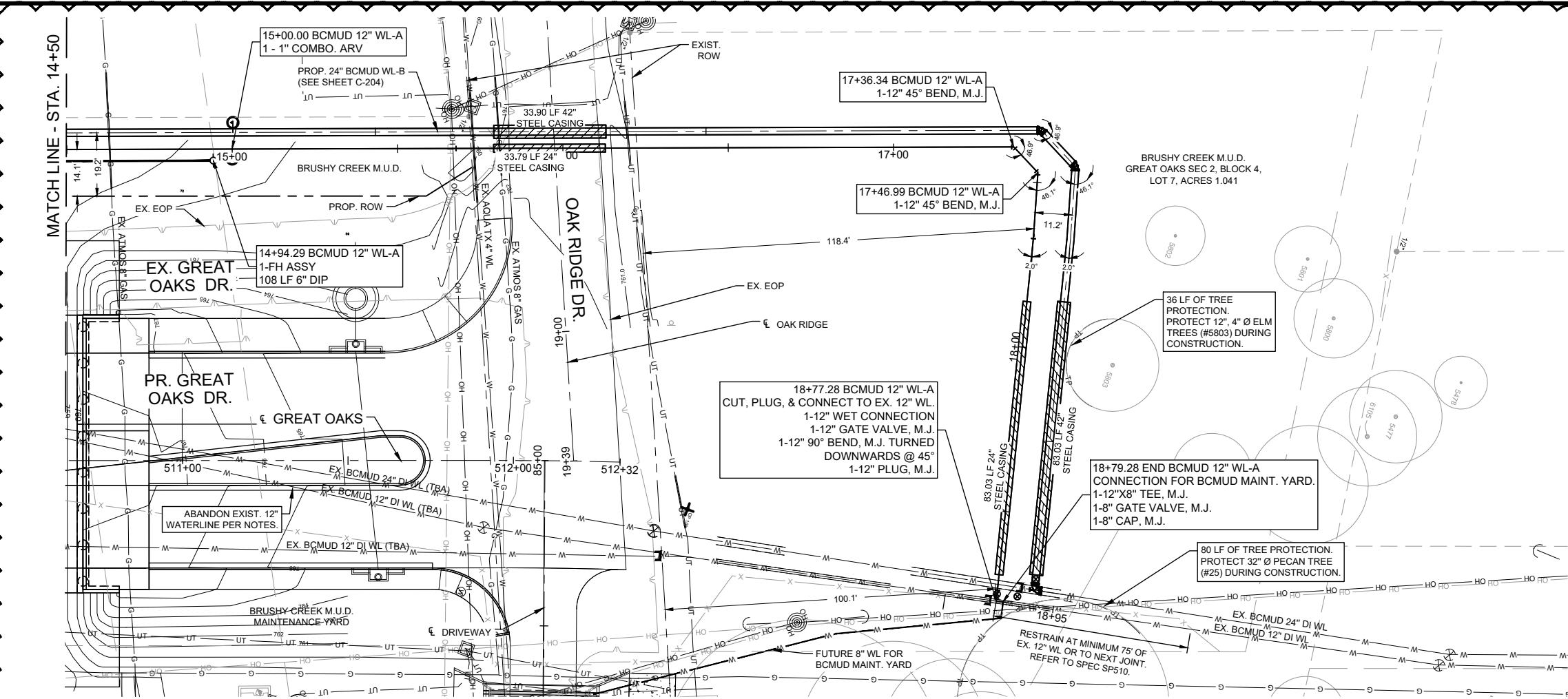
GREAT OAKS BRUSHY CREEK MUD
WATER RELOCATIONS
WILLIAMSON COUNTY, TEXAS



PROJ. NO.: 1703-011-10 7F
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DATE: FEBRUARY 7, 2020

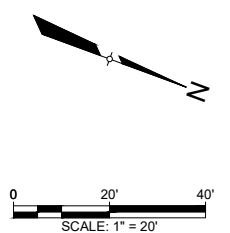


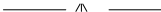
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CONSTRUCTION SEQUENCE:
PROP. BCMUD 24" WL WILL BE
RELOCATED PRIOR TO
BCMUD 12" AND 6" WL.

NOTE:
THIS PROJECT LIES WITHIN
THE EDWARDS AQUIFER
CONTRIBUTING ZONE



- ## LEGEND
- | | |
|---|---------------------------|
|  | PROP. ROW |
|  | EXIST. ROW |
|  | EASEMENT |
|  | PROP. WATER LINE |
|  | EXIST. EOP |
|  | PROP. EOP |
|  W  W | EXIST. WATER LINE |
|  WW  WW | EXIST. WW LINE |
|  SD  SD | STORM DRAIN |
|  G  G | EXIST. GAS LINE |
|  UT  UT | U.G. TELECOM |
|  FO  FO | FIBER OPTIC |
|  OE  OE | OVERHEAD ELECTRIC |
|  E  E | U.G. ELECTRIC |
|  O  O | CHAINLINK FENCE |
|  ······ | ROCK FENCE |
|  X  X | WIRE FENCE |
|  ······ | STREAM |
|  | EXIST. WASTEWATER MANHOLE |
|  | PROP. WASTEWATER MANHOLE |
|  | PROP. FIRE HYDRANT |
|  | PROP. WATER VALVE |

2 GENERAL NOTES:

CONTRACTOR TO COORDINATE ALL WORK WITH BRUSHY
CREEK MUD.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE
SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR
SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING
UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE
FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES THAT
MIGHT BE OCCASIONED BY THE FAILURE TO EXACTLY
LOCATE AND PRESERVE ANY AND ALL UNDERGROUND
UTILITIES. WHEN THE CONTRACTOR IS USING TRENCHLESS
INSTALLATION METHODS, THE CONTRACTOR SHALL LOCATE
ALL UTILITIES FOR THE ENTIRE LENGTH OF THE
INSTALLATION PRIOR TO ANY ACTIVITIES.

CONTRACTOR TO MAINTAIN 48" MINIMUM COVER OVER
PROPOSED WATER LINE IN THE STREET AND 42" IN
UNPAVED AREAS. CONTRACTOR TO MAINTAIN MINIMUM 18"
VERTICAL AND 5' HORIZONTAL CLEARANCE BETWEEN
PROPOSED AND EXISTING UTILITIES UNLESS OTHERWISE
SHOWN ON THE PLANS.

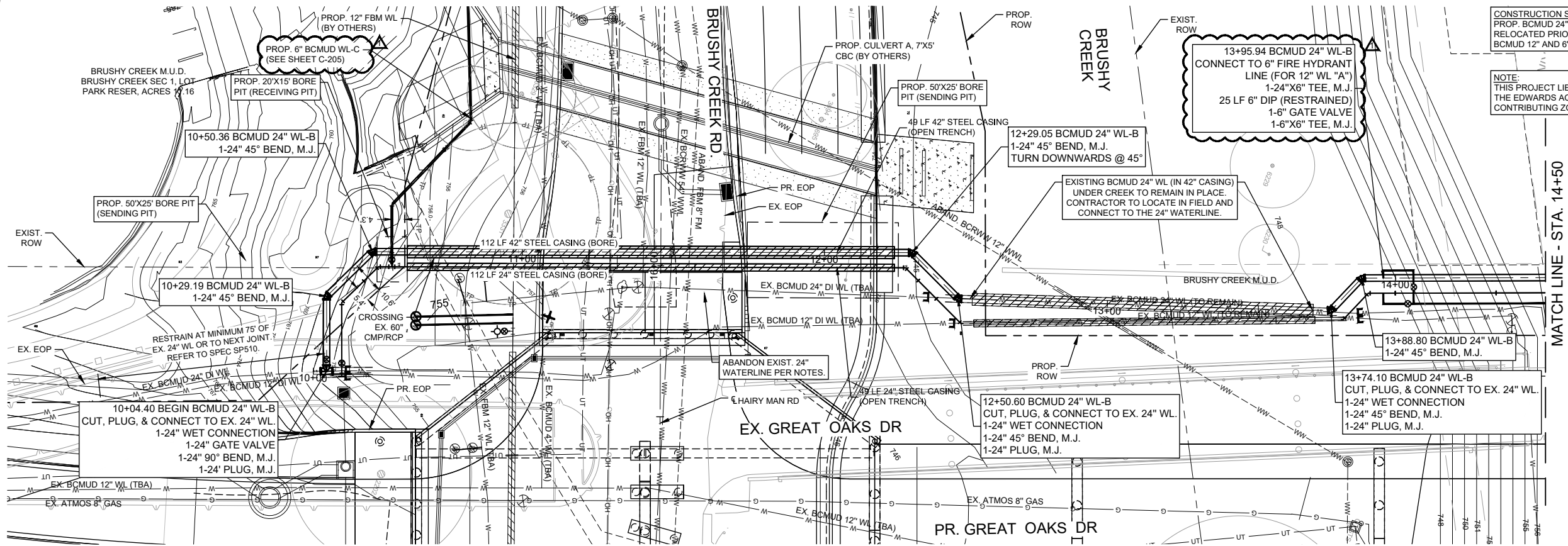
ANY DISCREPANCIES FROM WHAT IS SHOWN SHALL BE
BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR
TO BEGINNING WORK.

ALL DUCTILE IRON FITTINGS FOR PIPE LESS THAN 24"
SHALL COMPLY WITH AWWA C110 OR C153 UNLESS
OTHERWISE NOTED ON PLANS. ALL LARGER THAN 24"
SHALL COMPLY WITH AWWA C110.

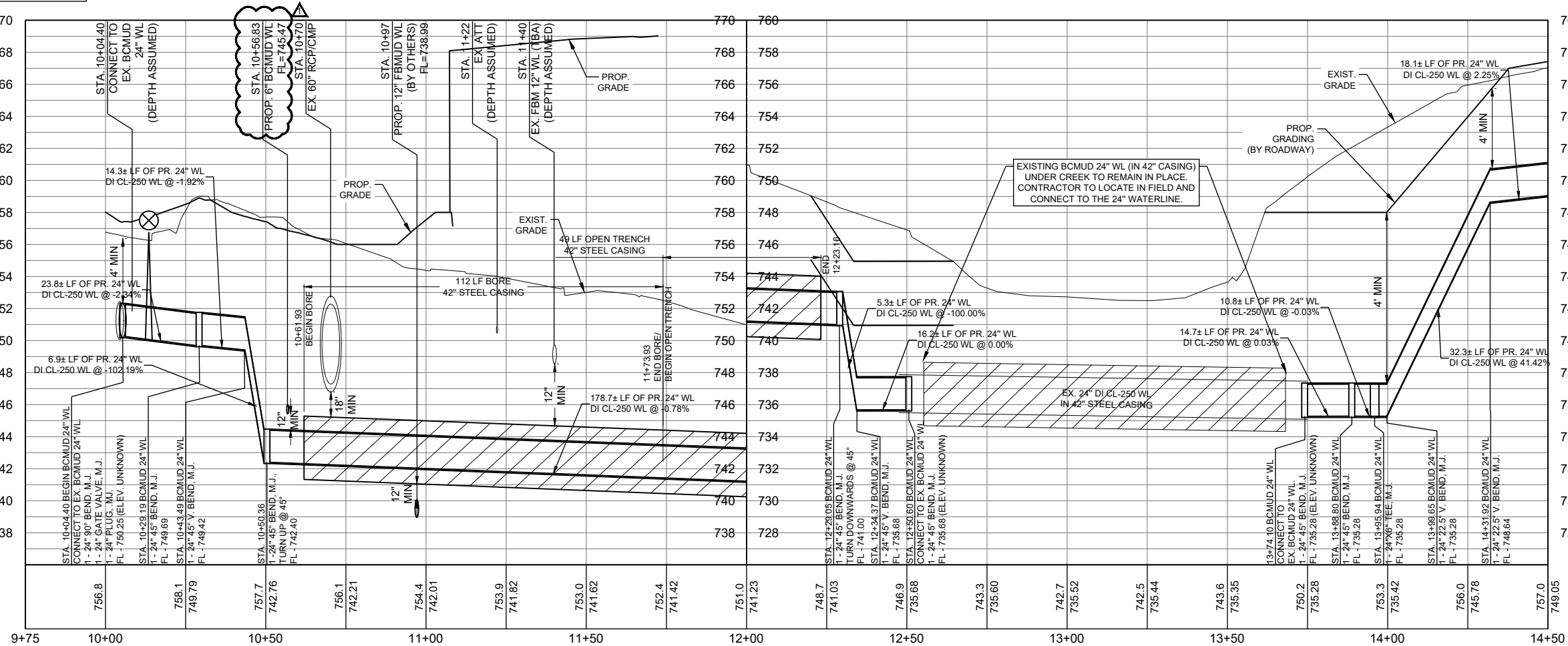
EXISTING WATER MAINS ARE TO BE PROTECTED AND
REMAIN IN SERVICE UNTIL THE NEW MAINS ARE
CONSTRUCTED, TESTED, APPROVED AND SERVICE LINES
RECONNECTED. THE NEW MAIN IS SCAVED IN SERVICE.
EXISTING WATER MAINS THAT ARE TO BE ABANDONED
IN PLACE AND ARE UNDER THE PROPOSED ROADWAY ARE TO
BE CUT, CAPPED, AND FILLED WITH FLOWABLE FILL.
SUBSIDIARY TO COST OF PIPE, NO SEPARATE PAY.
EXISTING WATER LINES THAT ARE TO BE ABANDONED IN
PLACE AND ARE NOT UNDER THE PROPOSED ROADWAY
WILL BE CAPPED.

PROFILE SCALE
1"=40' HORIZ.
1"=4' VERT.

[illegible]



NOTE:
RESTRAIN ALL PIPE JOINTS
AND FITTINGS



EXISTING
GRADE
FLOW
LINE
OF
PIPE

PROFILE SCALE
1"=40' HORIZ.
1"=8' VERT.

GENERAL NOTES:

1. CONTRACTOR TO COORDINATE ALL WORK WITH BRUSHY CREEK MUD.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES THAT MIGHT BE OCCASIONED BY THE FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. WHEN THE CONTRACTOR IS USING TRENCHLESS INSTALLATION METHODS, THE CONTRACTOR SHALL LOCATE ALL UTILITIES FOR THE ENTIRE LENGTH OF THE INSTALLATION PRIOR TO ANY ACTIVITIES.
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4. ANY DISCREPANCIES FROM WHAT IS SHOWN SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BEGINNING WORK.
5. ALL DUCTILE IRON FITTINGS FOR PIPE LESS THAN 24" SHALL COMPLY WITH AWWA C110 OR C153 UNLESS OTHERWISE NOTED ON PLANS. ALL LARGER THAN 24" SHALL COMPLY WITH AWWA C110.
6. EXISTING WATER MAINS ARE TO BE PROTECTED AND REMAIN IN SERVICE UNTIL THE NEW MAINS ARE CONSTRUCTED, TESTED, APPROVED AND SERVICE LINES RECONNECTED AND THE NEW MAIN IS PLACED IN SERVICE. EXISTING WATER MAINS THAT ARE TO BE ABANDONED IN PLACE AND ARE UNDER THE PROPOSED ROADWAY ARE TO BE CUT, CAPPED, AND FILLED WITH FLOWABLE FILL. SUBSIDIARY TO COST OF PIPE, NO SEPARATE PAY. EXISTING WATER LINES THAT ARE TO BE ABANDONED IN PLACE AND ARE NOT UNDER THE PROPOSED ROADWAY WILL BE CAPPED.
- 7.

SCALE: 1" = 20'

LEGEND

- PROP. ROW
- EXIST. ROW
- EASEMENT
- PROP. WATER LINE
- EXIST. EOP
- PROP. EOP
- EXIST. WATER LINE
- WW — EXIST. WW LINE
- SD — STORM DRAIN
- G — EXIST. GAS LINE
- UT — U.G. TELECOM
- FO — FIBER OPTIC
- OE — OVERHEAD ELECTRIC
- E — U.G. ELECTRIC
- O — CHAINLINK FENCE
- X — WIRE FENCE
- — STREAM
- ⊙ EXIST. WASTEWATER MANHOLE
- PROP. WASTEWATER MANHOLE
- ⊙ PROP. FIRE HYDRANT
- ⊗ PROP. WATER VALVE

CONSTRUCTION SEQUENCE:
PROP. BCMUD 24" WL WILL BE
RELOCATED PRIOR TO
BCMUD 12" AND 6" WL.

NOTE:
THIS PROJECT LIES WITHIN
THE EDWARDS AQUIFER
CONTRIBUTING ZONE

MATCH LINE - STA. 14+50

APPROVED
DATE
2/7/2020

REVISION DESCRIPTION
CHANGED 2" WL TO 6" WL
ADJUSTED FIRE HYDRANT LINE

REV
NO.

CobbFendley
ENGINEERS & ARCHITECTS
505 EAST MOUNTAIN DRIVE, SUITE 100
AUSTIN, TEXAS 78752
512.834.9798 | FAX 512.834.9553
WWW.COBBFENDLEY.COM

**BCMUD 24" WL "B" P&P -
STA. 10+00 TO 14+50**
GREAT OAKS BRUSHY CREEK MUD
WATER RELOCATIONS
WILLIAMSON COUNTY, TEXAS

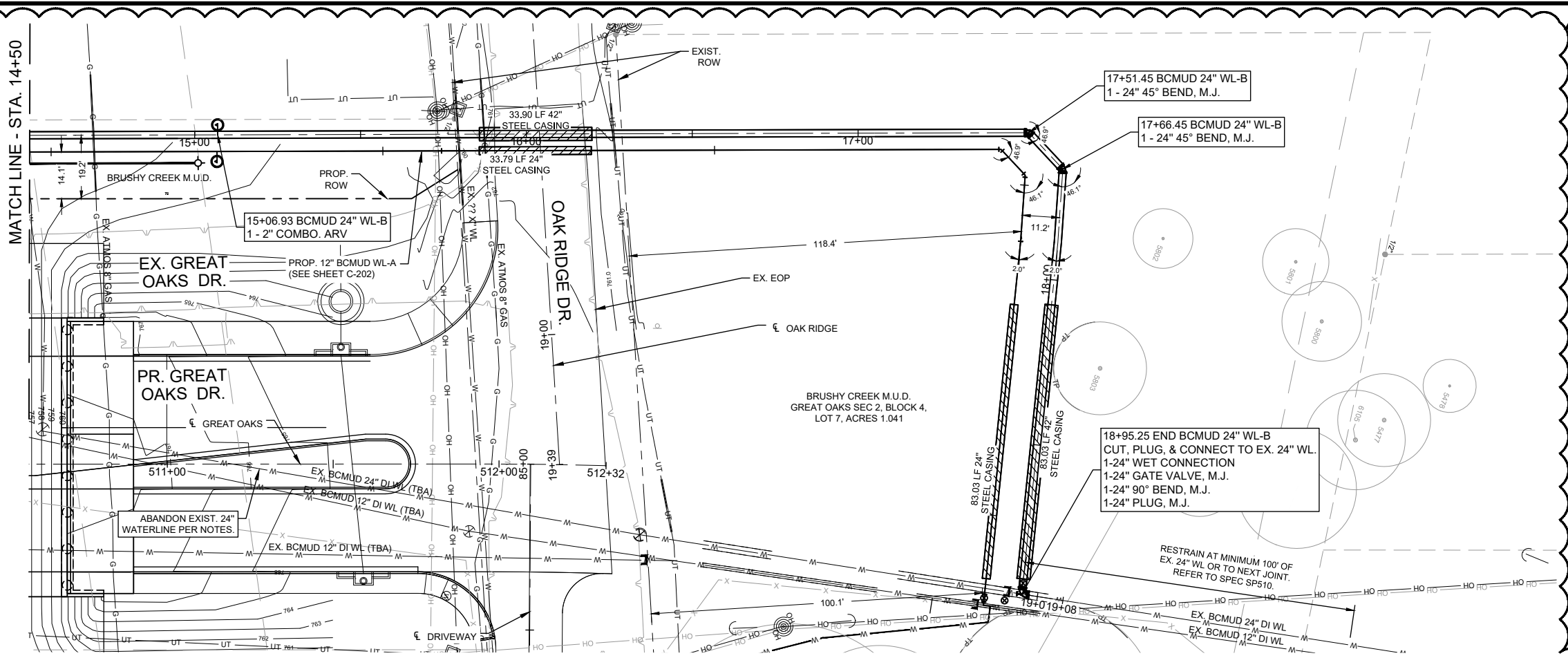
WILLIAMSON
COUNTY
1848

PROJ. NO.: 1703-011-10 7F
DESIGN: K. VAN HOOSER
DRAWN: K. VAN HOOSER
CHECK: L. PRICE
APPR: S. FEES
DATE: FEBRUARY 7, 2020

THESE DESIGN DOCUMENTS ARE NOT TO BE
USED FOR CONSTRUCTION PRIOR TO
REGULATORY SIGNATURE AND PERMIT.

SHEET
C-203
7 of 14

Dwg Info: G:\CFA\2014\030801_Williamson_County_2013_Road_Bond\MUN\07F_Great-Oaks-Brushy-Creek-MUD\DESIGN\C-301-WTR.dwg — Tab: WTR-B2 — Plotted: 2/7/2020 5:45 AM By: KRISTEN VAN HOOSER



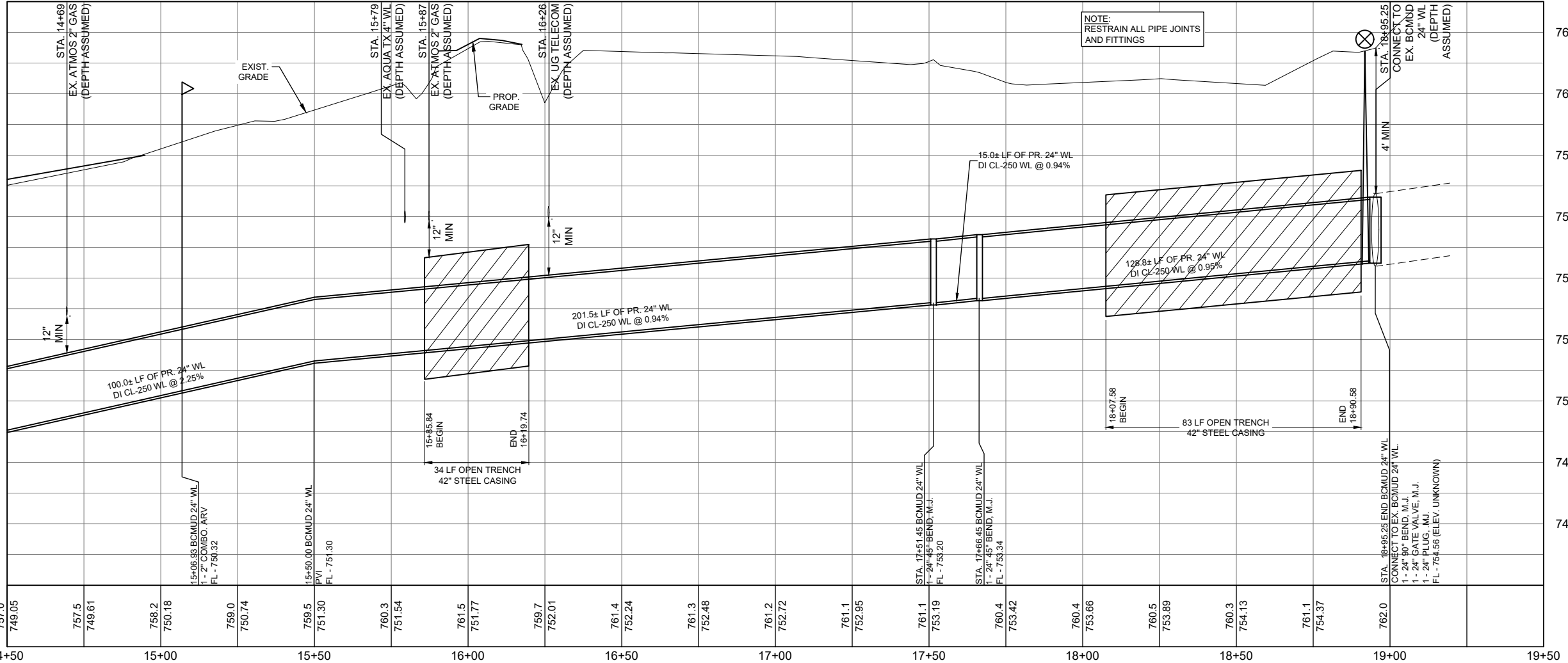
CONSTRUCTION SEQUENCE:
PROP. BCMUD 24" WL WILL BE RELOCATED PRIOR TO BCMUD 12" AND 6" WL.

NOTE:
THIS PROJECT LIES WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE

SCALE: 1" = 20'

LEGEND

- PROP. ROW
- EXIST. ROW
- EASEMENT
- PROP. WATER LINE
- EXIST. EOP
- PROP. EOP
- W --- W --- EXIST. WATER LINE
- WW --- WW --- EXIST. WW LINE
- SD --- SD --- STORM DRAIN
- G --- G --- EXIST. GAS LINE
- UT --- UT --- U.G. TELECOM
- FO --- FO --- FIBER OPTIC
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- O --- O --- CHAINLINK FENCE
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- ⊙ EXIST. WASTEWATER MANHOLE
- PROP. WASTEWATER MANHOLE
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PROFILE SCALE
1"=40' HORIZ.
1"=4' VERT.

CobbFendley
ENGINEERS & ARCHITECTS
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AUSTIN, TEXAS 78752
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WWW.COBBFENDLEY.COM

BCMUD 24" WL "B" P&P - STA. 14+50 TO END
GREAT OAKS BRUSHY CREEK MUD
WATER RELOCATIONS
WILLIAMSON COUNTY, TEXAS

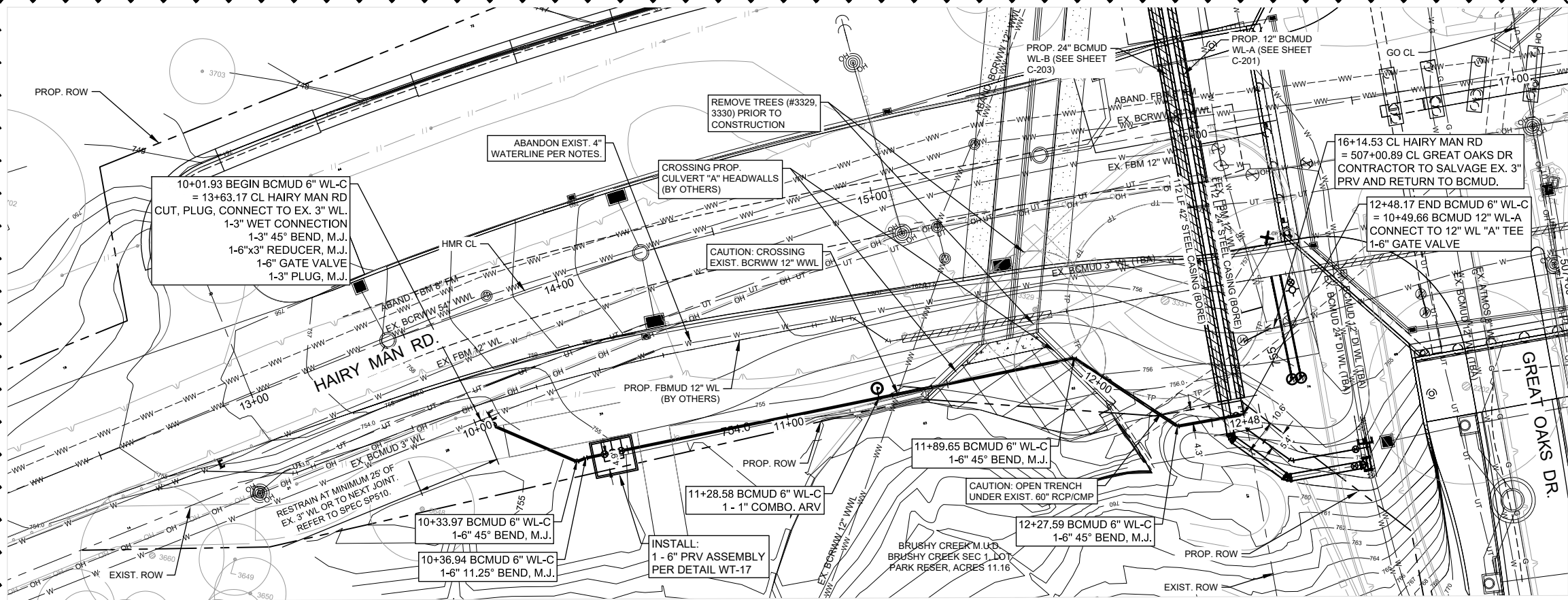
WILLIAMSON COUNTY
1848

PROJ. NO.: 1703-011-10 7F
DESIGN: K. VAN HOOSER
DRAWN: K. VAN HOOSER
CHECK: L. PRINCE
APPR.: S. FEES
DATE: FEBRUARY 7, 2020

STATE OF TEXAS
STANLEY RAY FEES
63294
PROFESSIONAL ENGINEER
2/7/2020

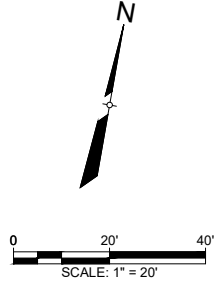
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SHEET
C-204
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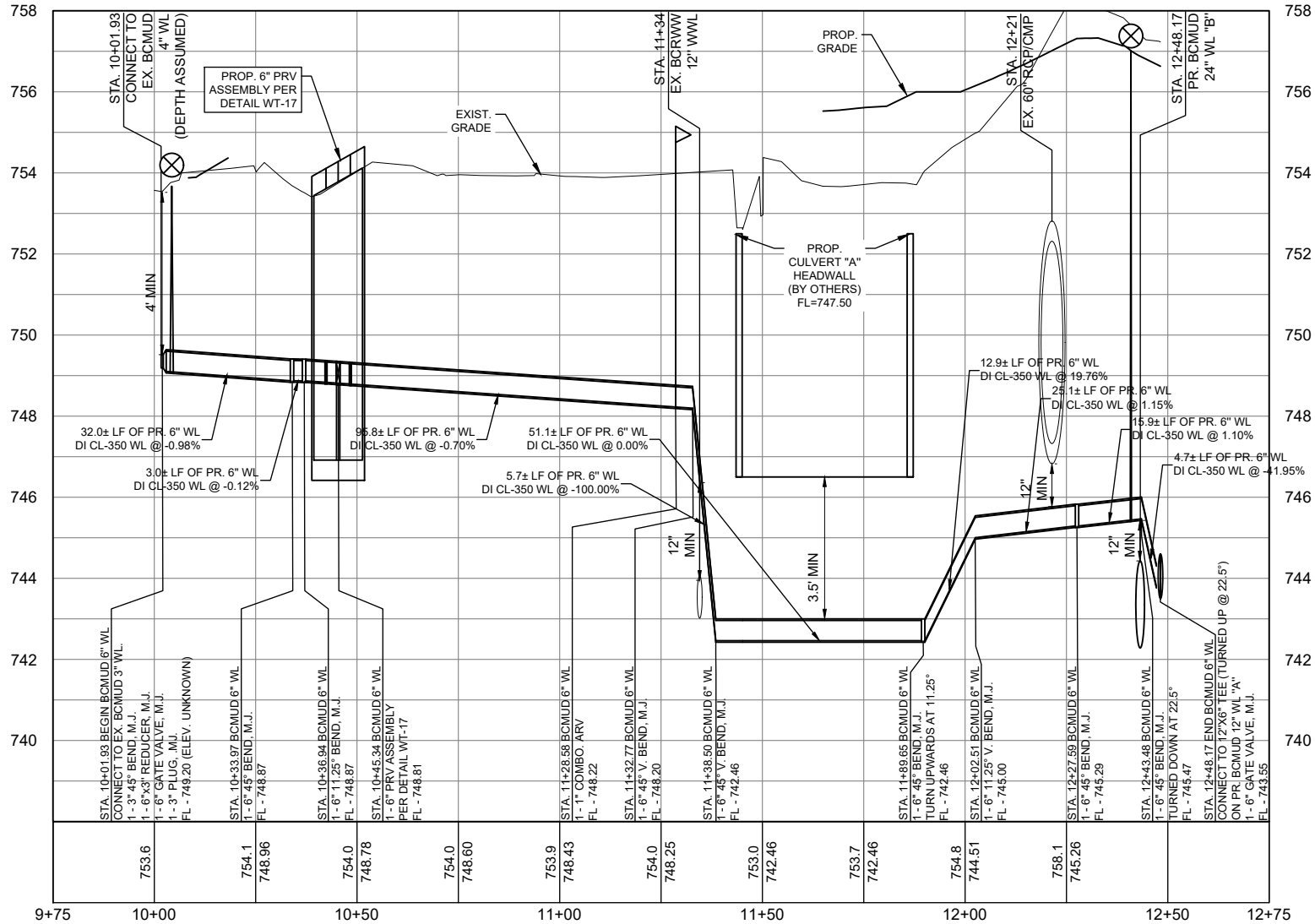
NOTE:
PROP. BCMUD 6" WL WILL
BE CONSTRUCTED AFTER
PROP. BCMUD 12" & 24" WL

NOTE:
THIS PROJECT LIES WITHIN
THE EDWARDS AQUIFER
CONTRIBUTING ZONE



LEGEND	
---	PROP. ROW
---	EXIST. ROW
---	EASEMENT
---	PROP. WATER LINE
---	EXIST. EOP
---	PROP. EOP
W	EXIST. WATER LINE
WW	EXIST. WW LINE
SD	STORM DRAIN
G	EXIST. GAS LINE
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FO	FIBER OPTIC
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O	CHAINLINK FENCE
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X	WIRE FENCE
---	STREAM
⊙	EXIST. WASTEWATER MANHOLE
●	PROP. WASTEWATER MANHOLE
⊕	PROP. FIRE HYDRANT
⊗	PROP. WATER VALVE

NOTE:
RESTRAIN ALL PIPE JOINTS
AND FITTINGS



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EXISTING
GRADE
FLOW LINE
OF PIPE

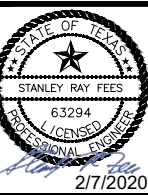
PROFILE SCALE
1"=40' HORIZ.
1"=4' VERT.

CobbFendley
ENGINEERS & ARCHITECTS
505 EAST HUNTLAND DRIVE, SUITE 100
AUSTIN, TEXAS 78752
512.834.9798 | FAX 512.834.9553
WWW.COBBFENDLEY.COM

BCMUD 6" WL "C" P&P -
STA. 10+00 TO END
GREAT OAKS BRUSHY CREEK MUD
WATER RELOCATIONS
WILLIAMSON COUNTY, TEXAS

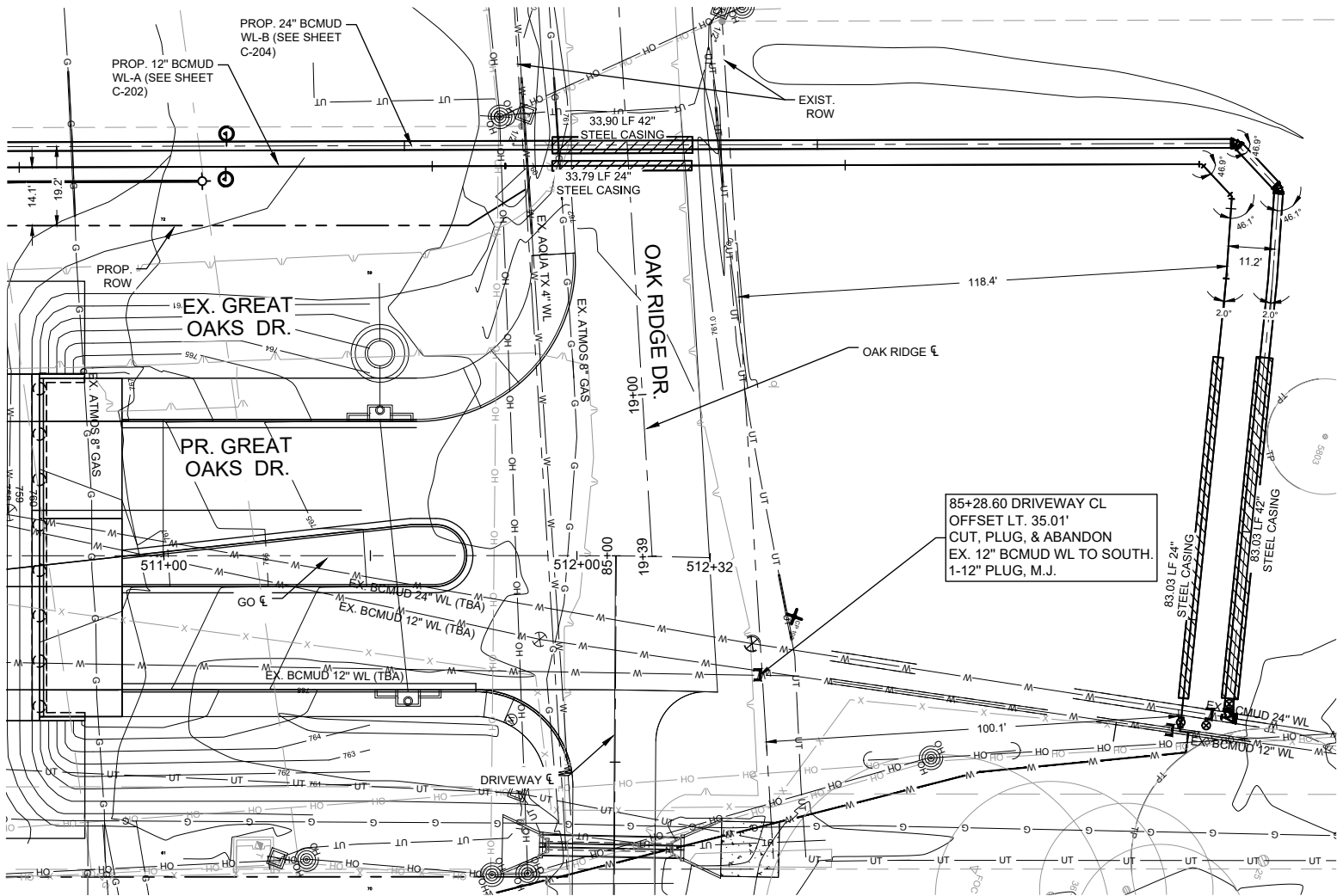
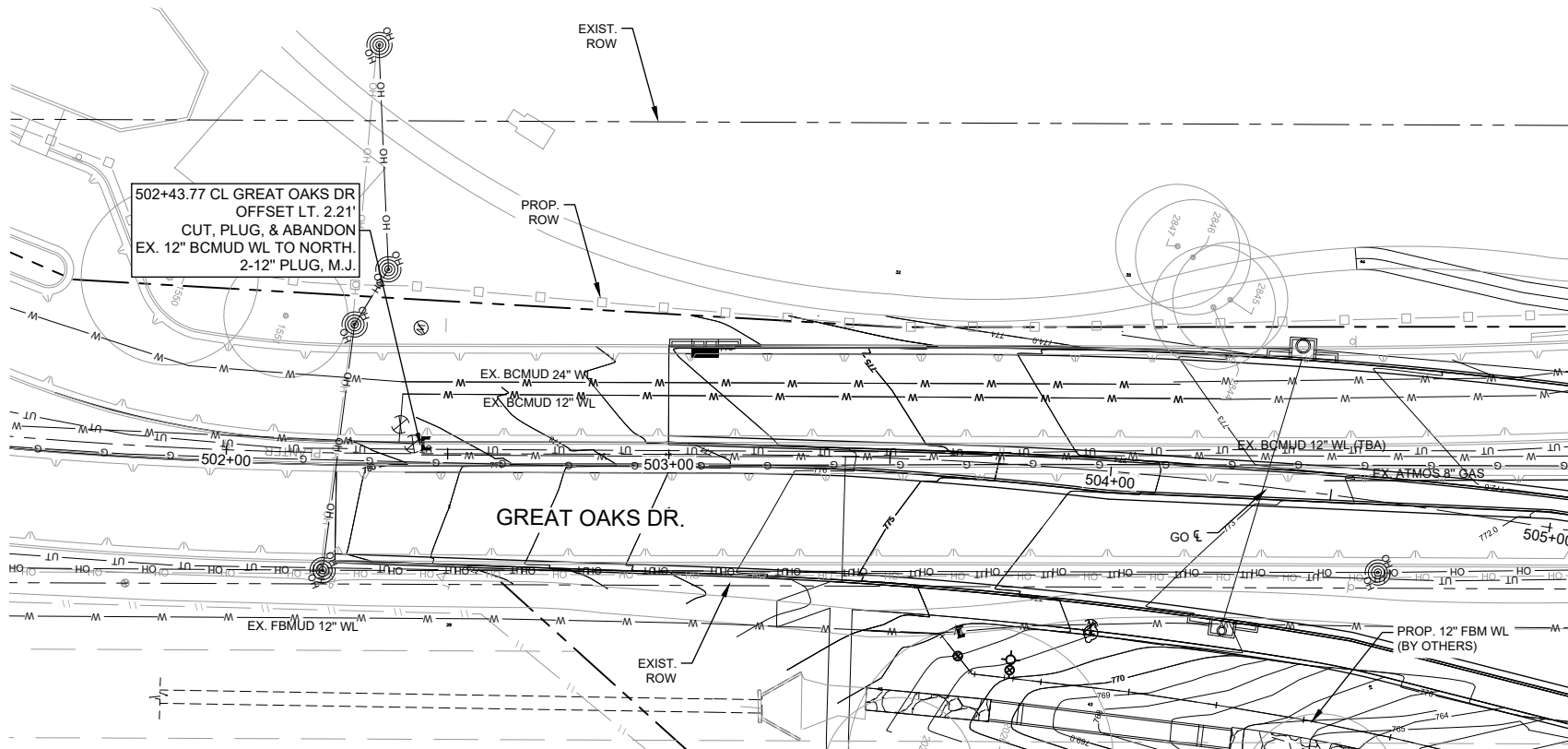


PROJ. NO.: 1703-011-10 7F
DESIGN: K. VAN HOOSIER
DRAWN: K. VAN HOOSIER
CHECK: L. PRINCE
APPR: S. FEES
DATE: FEBRUARY 7, 2020



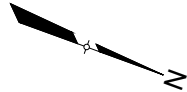
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REGULATORY SIGNATURE AND PERMIT.

SHEET
C-205
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CONSTRUCTION SEQUENCE:
PROP. BCMUD 24" WL WILL BE
RELOCATED PRIOR TO BCMUD
12" AND 4" WL. THIS BCMUD 12"
WL ABANDONMENT WORK WILL
BE DONE AFTER THE
RELOCATIONS ARE COMPLETE.

NOTE:
THIS PROJECT LIES WITHIN
THE EDWARDS AQUIFER
CONTRIBUTING ZONE



0 20' 40'
SCALE: 1" = 20'

LEGEND

- PROP. ROW
- EXIST. ROW
- - - EASEMENT
- == PROP. WATER LINE
- - - EXIST. EOP
- PROP. EOP
- W --- W --- EXIST. WATER LINE
- WW --- WW --- EXIST. WW LINE
- SD --- SD --- STORM DRAIN
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- ⊙ EXIST. WASTEWATER MANHOLE
- PROP. WASTEWATER MANHOLE
- ⊕ PROP. FIRE HYDRANT
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AUSTIN, TEXAS 78752
512.834.9798 | FAX 512.834.9553
WWW.COBBFENDLEY.COM

**BCMUD 12" WL
ABANDONMENT PLAN**
GREAT OAKS BRUSHY CREEK MUD
WATER RELOCATIONS
WILLIAMSON COUNTY, TEXAS



PROJ. NO.: 1703-011-10 7F
DESIGN: K. VAN HOOSIER
DRAWN: K. VAN HOOSIER
CHECK: L. PRICE
APPR: S. FEES
DATE: FEBRUARY 7, 2020



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SHEET
C-206
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1. ALL TREES NOT LOCATED WITHIN THE LIMITS OF CONSTRUCTION AND OUTSIDE OF DISTURBED AREAS SHALL BE PRESERVED. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL TREES TO BE PRESERVED FROM HIS ACTIVITIES.

2. ALL TREES SHOWN TO BE RETAINED WITHIN THE LIMITS OF CONSTRUCTION ON THE PLANS SHALL BE PROTECTED DURING CONSTRUCTION WITH FENCING. SEE: TREE PROTECTION TREE WELLS (EC-02); TREE PROTECTION TREE LOCATION (EC-03) AND TREE PROTECTION FENCE-CHAIN LINK (EC-04).

3. TREE PROTECTION FENCES SHALL BE DIRECTED ACCORDING TO CITY STANDARDS FOR TREE PROTECTION, INCLUDING TYPES OF FENCING AND SIZING.

4. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR GRADING) AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.

5. EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIFLINES.

6. FENCES SHALL COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES LOCATED AT THE OUTERMOST LIMITS OF THE TREE BRANCHES (DRIFLINE) OR CRITICAL ROOT ZONE (CRZ), WHICHEVER IS GREATER, AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:

7A. SOIL COMPACTION IN CRZ AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIAL.

7B. CRZ DISTURBANCES DUE TO GRADE CHANGES OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE FORESTRY MANAGER.

7C. WOUNDS TO EXPOSED ROOTS, TRUNK, OR LIMBS BY MECHANICAL EQUIPMENT.

7D. OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CONCRETE TRUCK CLEANING, AND FIRES.

7E. EXCEPTIONS TO INSTALLING TREE FENCES AT THE TREE DRIFLINES OR CRZ, WHICHEVER IS GREATER, MAY BE PERMITTED IN THE FOLLOWING CASES:

7A. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, OR TREE WELL.

7B. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.

7C. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN 8 FEET TO THE BUILDING.

7D. WHERE THERE ARE SEVERE SPACE CONSTRAINTS DUE TO TRACT SIZE, OR OTHER SPECIAL REQUIREMENTS, CONTACT THE FORESTRY MANAGER TO DISCUSS ALTERNATIVES.

8. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE THAT IS CLOSER THAN 5 FEET TO A TREE TRUNK, THE TRUNK SHALL BE PROTECTED BY STRAPPED-ON PLANKING TO A HEIGHT OF 8 FEET (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.

9. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN AREAS OF UNPROTECTED ROOT ZONES UNDER THE DRIFLINE OR CRZ, WHICHEVER IS GREATER, THOSE AREAS SHOULD BE COVERED WITH 4 INCHES OF ORGANIC MULCH TO MINIMIZE SOIL COMPACTION.

10. ALL GRADING WITHIN CRZ AREAS SHALL BE DONE BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE. PRIOR TO GRADING, RELOCATE PROTECTIVE FENCING TO 2 FEET BEHIND THE GRADE CHANGE AREA.

11. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL AND BACKFILLED WITH GOOD QUALITY TOP SOIL WITHIN TWO DAYS. IF EXPOSED ROOT AREAS CANNOT BE BACKFILLED WITHIN 2 DAYS, AN ORGANIC MATERIAL WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION SHALL BE PLACED TO COVER THE ROOTS UNTIL BACKFILL CAN OCCUR.

12. PRIOR TO EXCAVATION OR GRADE CUTTING WITHIN TREE DRIFLINES, A CLEAN CUT SHALL BE MADE WITH A ROCK SAW OR SIMILAR EQUIPMENT, IN A LOCATION AND TO A DEPTH APPROVED BY THE FORESTRY MANAGER, TO MINIMIZE DAMAGE TO REMAINING ROOTS.

13. TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES WILL BE WATERED DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER; TREE CROWNS ARE TO BE SPRAYED PERIODICALLY TO REDUCE DUST ACCUMULATION ON LEAVES.

14. WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, A PLASTIC VAPOR BARRIER SHALL BE PLACED BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE CRZ.

15. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.

16. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN FOUR (4) INCHES SHALL BE PERMITTED WITHIN THE DRIFLINE OR CRZ OF TREES, WHICHEVER IS GREATER. NO TOPSOIL IS PERMITTED ON ROOT FLARES OF ANY TREE.

17. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND CONSTRUCTION EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS. ALL PRUNING MUST BE DONE ACCORDING TO CITY STANDARDS AND AS OUTLINED IN LITERATURE PROVIDED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA PRUNING TECHNIQUES).

18. ALL DAK TREE CUTS, INTENTIONAL OR UNINTENTIONAL, SHALL BE SEALED WITH AN APPROVED PRUNING SEALER IMMEDIATELY (WITHIN 10 MINUTES); TREE PAINT MUST BE KEPT ON SITE AT ALL TIMES.

19. THE FORESTRY MANAGER HAS THE AUTHORITY TO REQUIRE ADDITIONAL TREE PROTECTION BEFORE OR DURING CONSTRUCTION.

20. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED. REFER TO THE CITY OF ROUND ROCK TREE TECHNICAL MANUAL FOR APPROPRIATE REMOVAL METHODS.

21. PRIOR TO CONSTRUCTION, ALL TREE LIMBS OVER HIGHWAYS MUST BE PRUNED TO A HEIGHT OF 14 FEET USING THE TECHNIQUES DESCRIBED IN THE CITY OF ROUND ROCK TREE TECHNICAL MANUAL.

22. DEVIATIONS FROM THE ABOVE REQUIREMENTS AND NEGLIGENT DAMAGE TO TREES MAY BE CONSIDERED AS ORDINANCE VIOLATIONS.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

RECORDED SIGNED COPY ON FILE AT PUBLIC WORKS

APPROVED

08-25-11

DATE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (TYP TO SCALE)

CITY OF ROUND ROCK

DRAWING NO. EC-01

TREE PROTECTION NOTES

TEMPORARY ACCESS ROAD, EXISTING ROADWAY OR EASEMENT, AS APPROVED.

CRZ

BOARDS

WOOD CHIP MULCH AREA (4"-6" DEPTH)

FENCE AT CRZ PRIOR TO CLEARING, GRADING AND PAVING.

PERMEABLE PAVING AREA

CURB

FENCE LOCATION DURING PERMEABLE PAVING INSTALLATION.

LINEAR CONSTRUCTION THROUGH TREES

TREES IN PAVING AREA

NECESSARY WORK AREA (WOOD CHIP MULCH) (4" TO 6" DEPTH)

BUILDING

CRZ

ADD BOARDS STRAPPED TO TRUNK WHEN FENCE WILL BE LESS THAN 5' FROM TRUNK.

LIMIT OF CONSTRUCTION LINE AS SHOWN ON PLAN.

NATURAL AREAS

CRITICAL ROOT ZONE (CRZ) RADIUS (1 FT. PER INCH OF TRUNK DIAMETER)

FENCING AT CRZ.

INDIVIDUAL TREE

TREES NEAR CONSTRUCTION ACTIVITY

NOTE: LIMITS OF MULCH AREAS AND DISTANCE FROM TRUNKS TO WORK/ PERMEABLE PAVING AREAS SHALL BE SUBJECT TO THE APPROVAL OF THE FORESTRY MANAGER.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

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APPROVED

08-25-11

DATE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (TYP TO SCALE)

CITY OF ROUND ROCK

DRAWING NO. EC-03

TREE PROTECTION FENCE LOCATIONS

CRZ

DRIFLINE

TREE PROTECTION FENCE AT CRZ

CHAIN LINK FENCE

10' MAX

DRIFLINE (VARIES) FENCE LOCATION

(LIMITS OF CRITICAL ROOT ZONE) RADIUS=1 FOOT PER INCH OF TRUNK DIAMETER

TREE PROTECTION FENCE-CHAIN LINK

NOTE: LIMITS OF WOOD CHIP MULCH AREA AND DISTANCE FROM TRUNK TO WORK AREA SHALL BE SUBJECT TO THE APPROVAL OF THE FORESTRY MANAGER.

CRITICAL ROOT ZONE

VARIES

WOOD CHIP MULCH (6" DEPTH)

RADIUS=1 FOOT PER INCH OF TRUNK DIAMETER

AS NEEDED TO PROVIDE NECESSARY WORK SPACE, IF LESS THAN 5', THEN ADD BOARDS STRAPPED TO TRUNK.

TREE PROTECTION FENCE (MODIFIED)-CHAIN LINK

WOOD CHIP MULCH AREA (4"-6" DEPTH)

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

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APPROVED

08-25-11

DATE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (TYP TO SCALE)

CITY OF ROUND ROCK

DRAWING NO. EC-04

TREE PROTECTION FENCE CHAIN LINK

STREET R.O.W.

50' MIN.

GRADE TO PREVENT RUNOFF FROM LEAVING SITE

EXISTING GRADE

TRANSITION TO ROADWAY

CROSS SECTION

NOTES:

1. STONE SIZE SHALL BE 3" - 8" OPEN GRADED ROCK.

2. THICKNESS OF CRUSHED STONE PAD TO BE NOT LESS THAN 8".

3. LENGTH SHALL BE A MINIMUM OF 50' FROM ACTUAL ROADWAY, AND WIDTH NOT LESS THAN FULL WIDTH OF HIGHWAY/ROADS.

4. ENTRANCE SHALL BE PROPERLY GRADED TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

5. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY BY CONTRACTOR.

6. AS NECESSARY, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

RECORDED SIGNED COPY ON FILE AT PUBLIC WORKS

APPROVED

08-25-11

DATE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (TYP TO SCALE)

CITY OF ROUND ROCK

DRAWING NO. EC-09

STABILIZED CONSTRUCTION ENTRANCE DETAIL

RECOMMENDED TOE-IN METHOD

NON-WOVEN GEOTEXTILE FABRIC SILT FENCE

24" MIN.

STEEL FENCE POSTS (MAXIMUM 6' SPACING)

WOVEN WIRE SUPPORT (12-1 1/2 GAUGE NET, BACKING)

TRENCH (BACKFILLED)

CROSS SECTION

6" MIN.

FABRIC TOE-IN

NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MIN. OF ONE (1') FOOT.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEDMENT) WOOD FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.

3. THE TRENCH MUST BE A MINIMUM OF 8 INCHES DEEP AND 8 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE Laid IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

4. SILT FENCE SHALL BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE WHICH IN TURN IS SECURELY FASTENED TO THE STEEL FENCE POSTS.

5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPED EROSION FLOW OR DRAINAGE.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL EROSION.

8. SILT FENCE SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

RECORDED SIGNED COPY ON FILE AT PUBLIC WORKS

APPROVED

08-25-11

DATE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (TYP TO SCALE)

CITY OF ROUND ROCK

DRAWING NO. EC-10

SILT FENCE DETAIL

REV.	NO.	REVISION DESCRIPTION	APPROVED BY:	DATE

CobbFendley
CITY OF ROUND ROCK, TEXAS
505 EAST MOUNTAIN DRIVE, SUITE 100
AUSTIN, TEXAS 78752
512.834.9798 | FAX 512.834.4553
WWW.COBBFENDLEY.COM

EROSION CONTROL STANDARD DETAILS

GREAT OAKS BRUSHY CREEK MUD
WATER RELOCATIONS
WILLIAMSON COUNTY, TEXAS

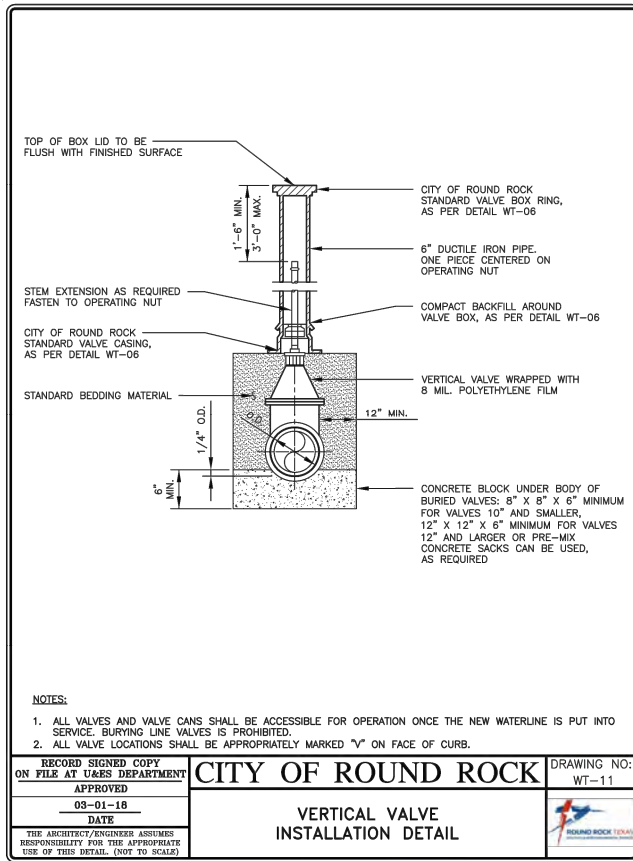
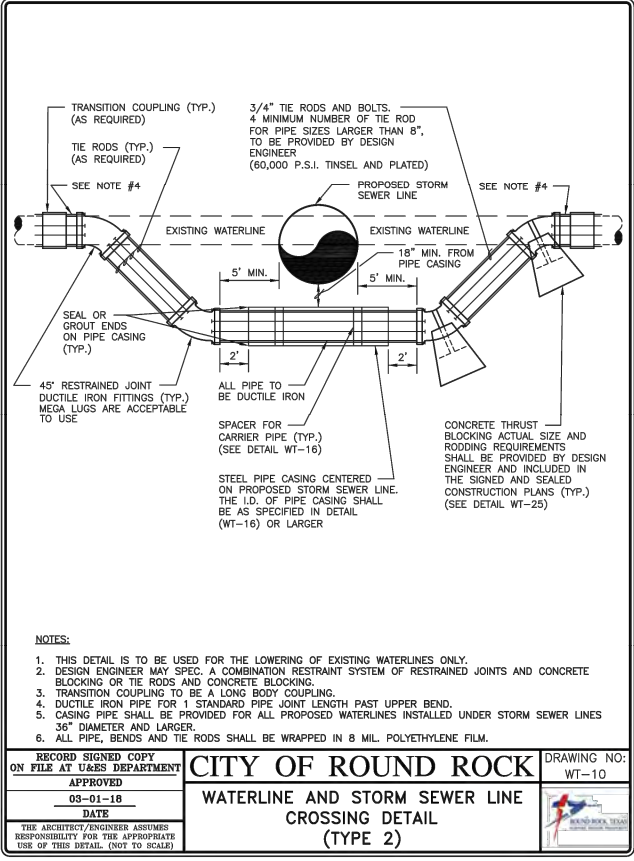
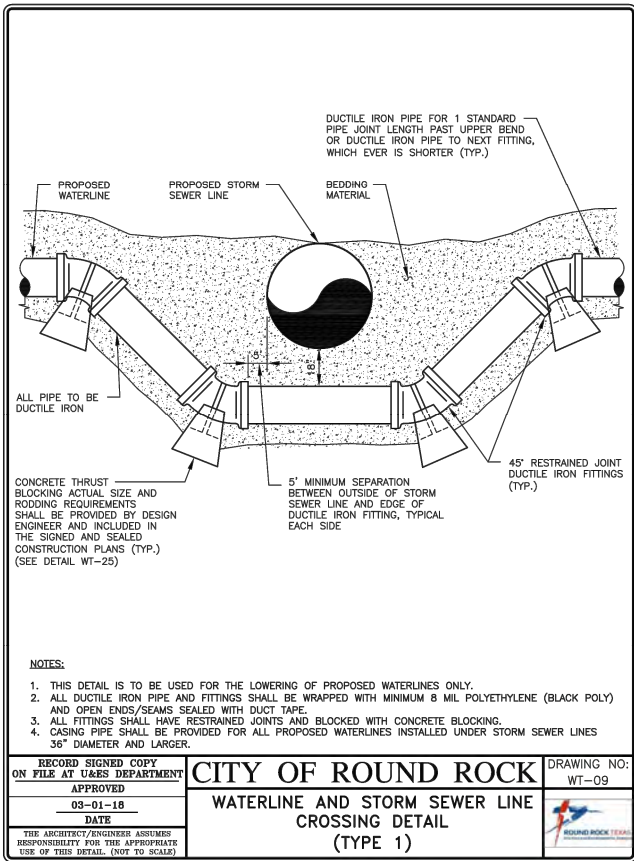
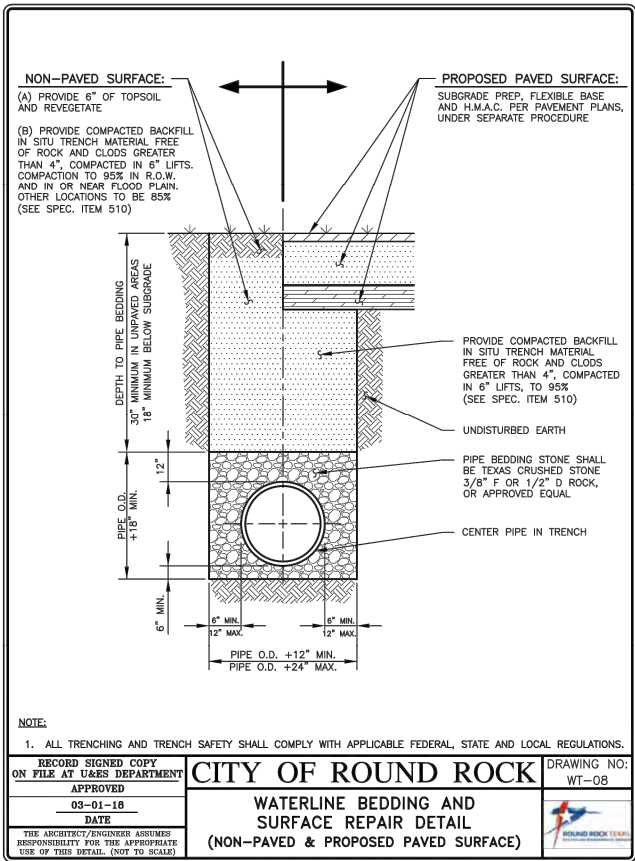
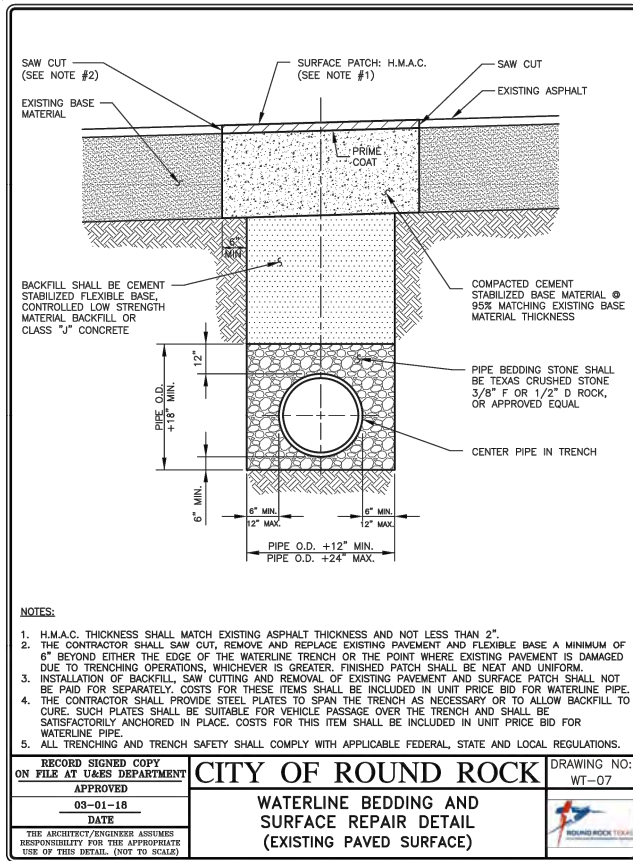
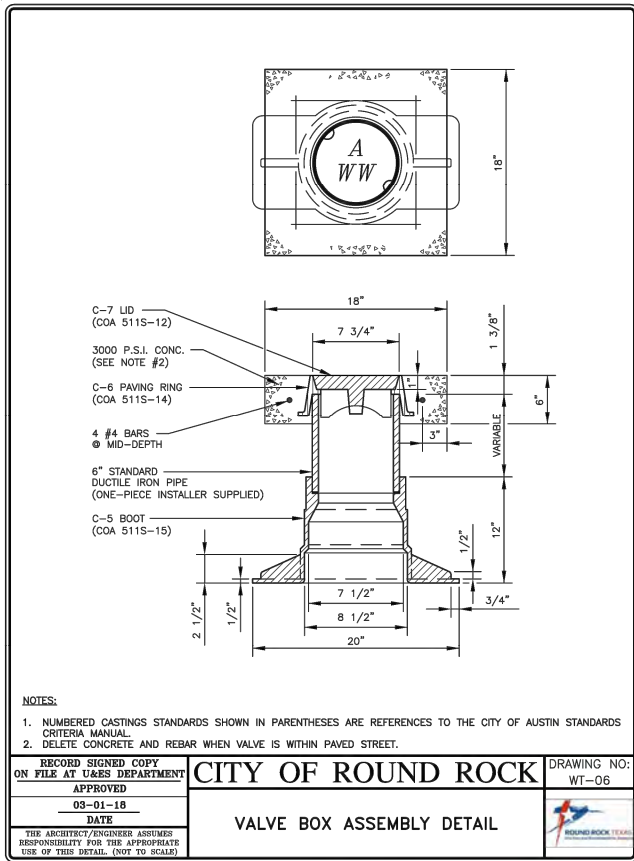
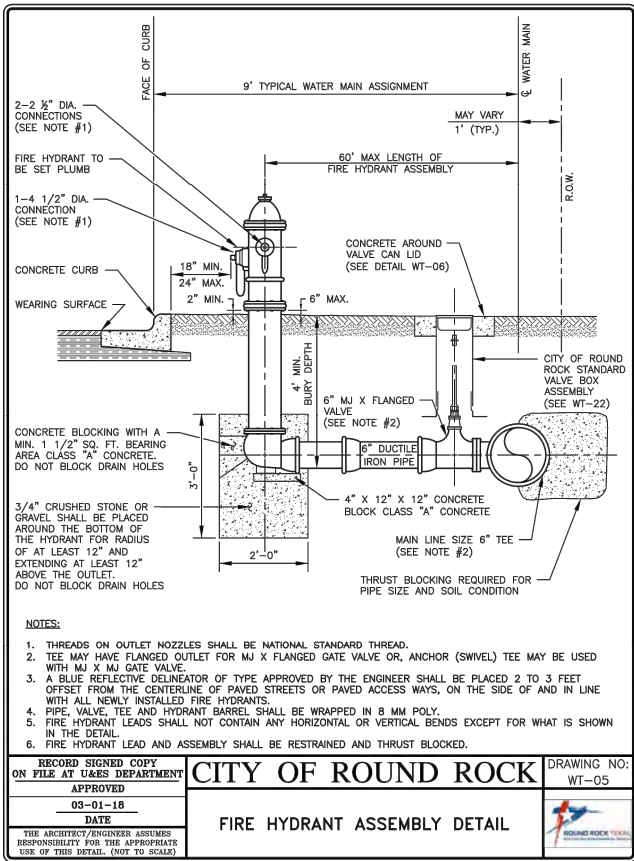
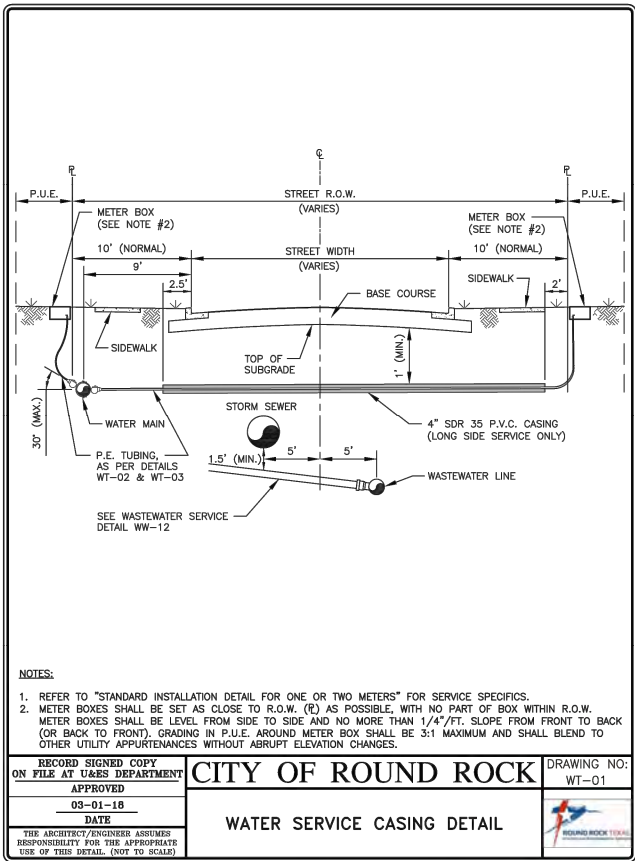
WILLIAMSON COUNTY
1848

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DRAWN: K. VAN HOOSIER
CHECK: L. PRICE
APPR.: S. FEES
DATE: FEBRUARY 7, 2020

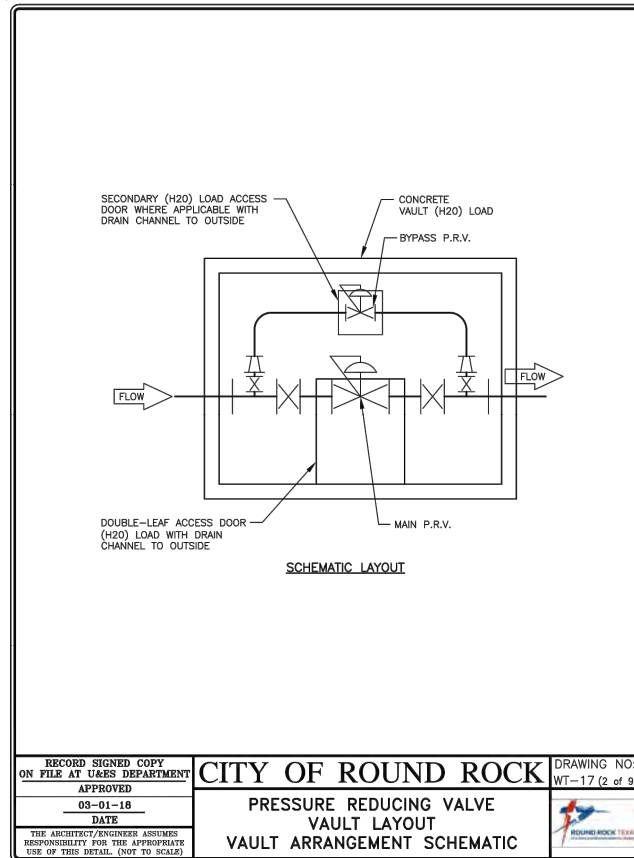
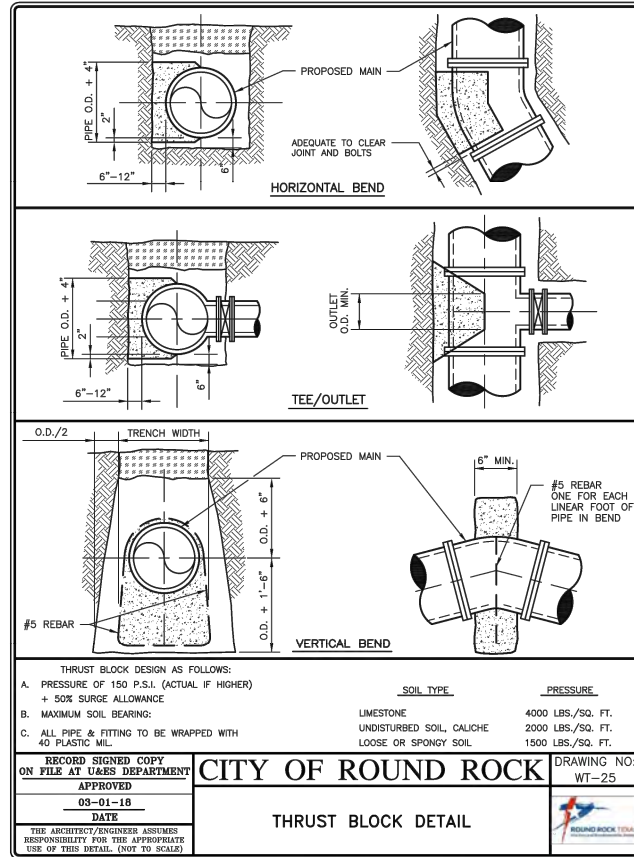
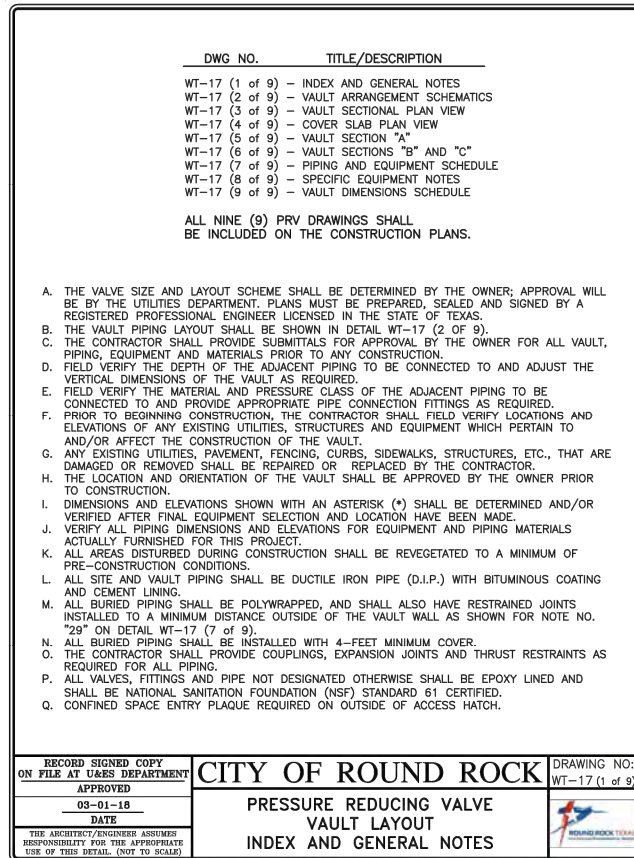
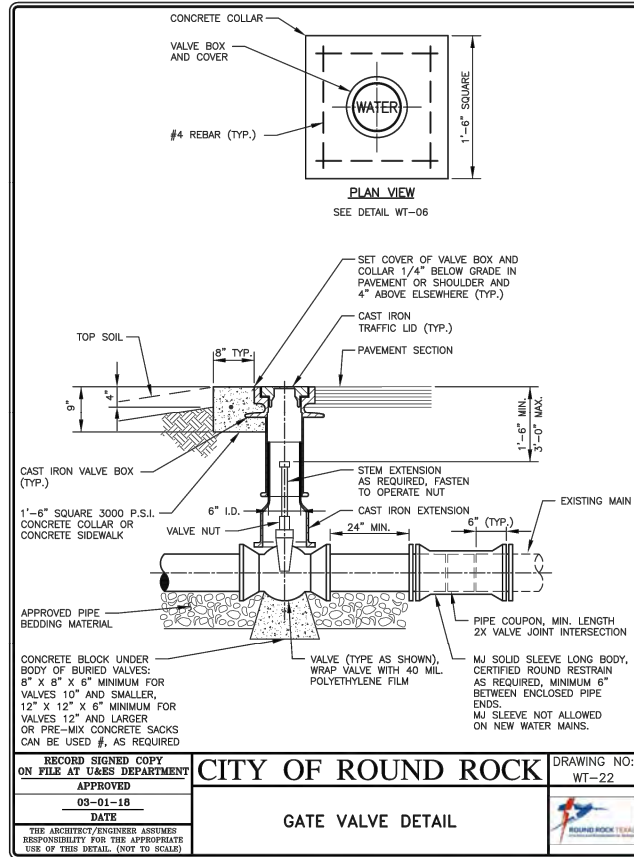
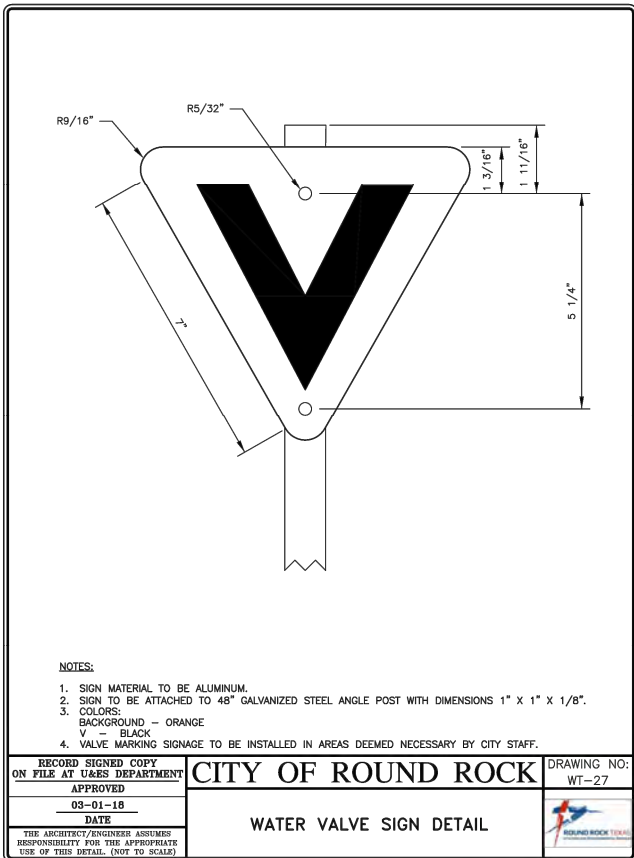
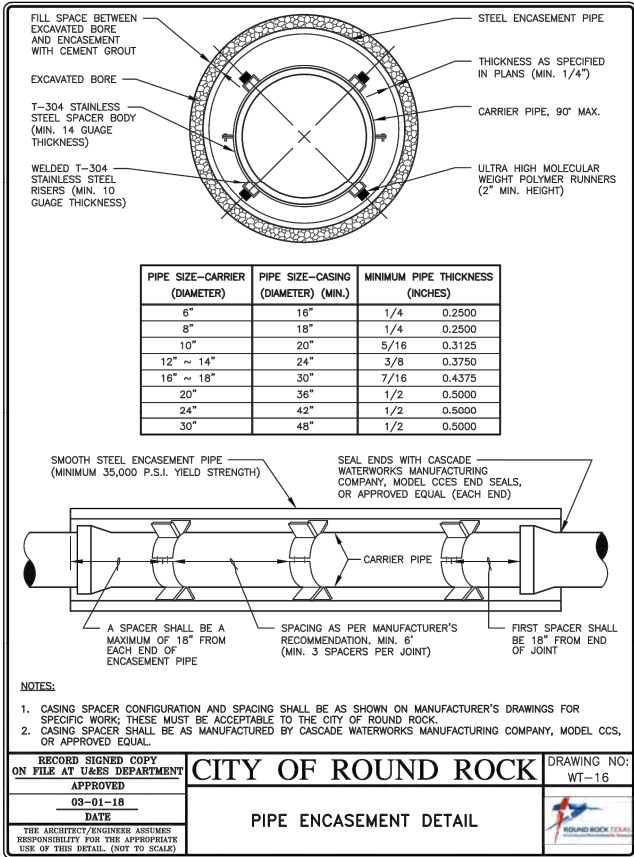
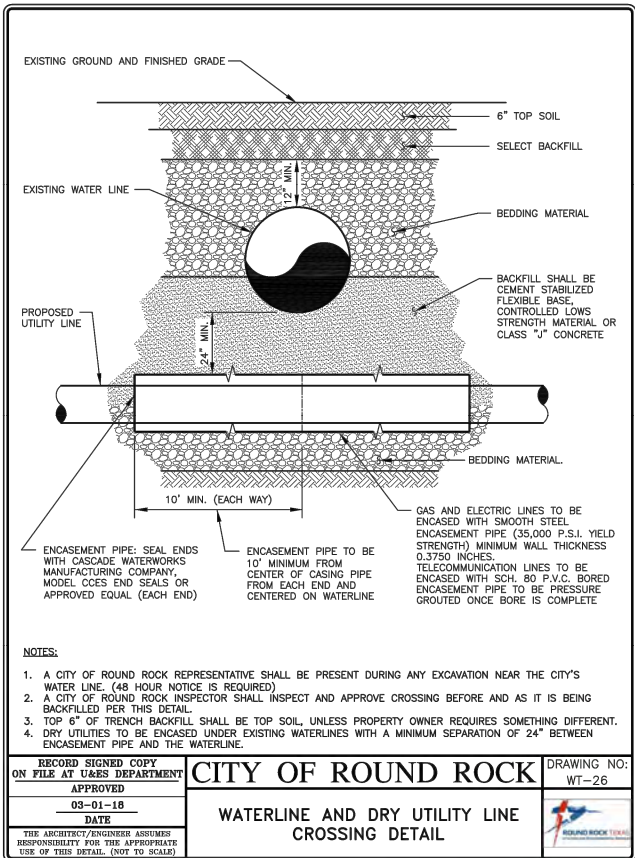
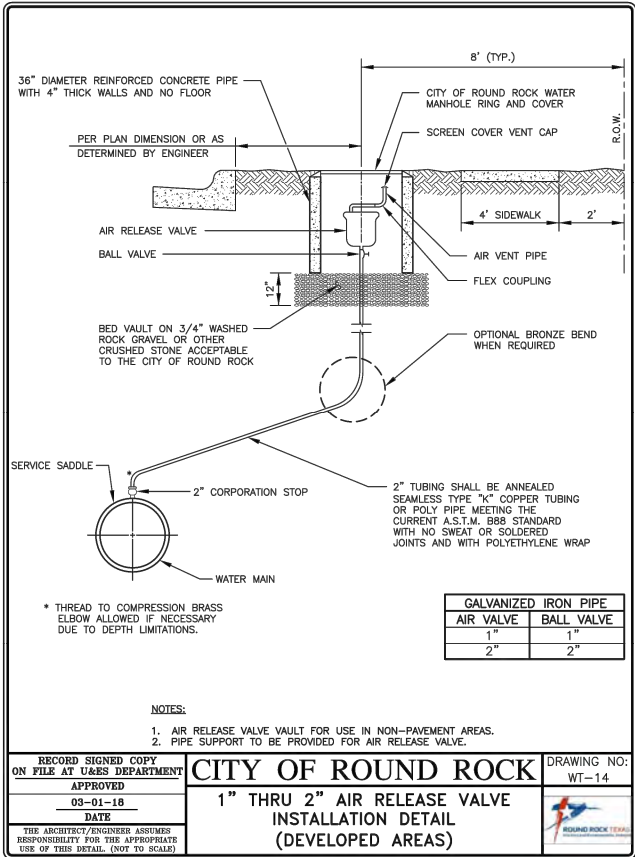
STATE OF TEXAS
STANLEY RAY FEES
63294
LICENSED PROFESSIONAL ENGINEER
2/7/2020

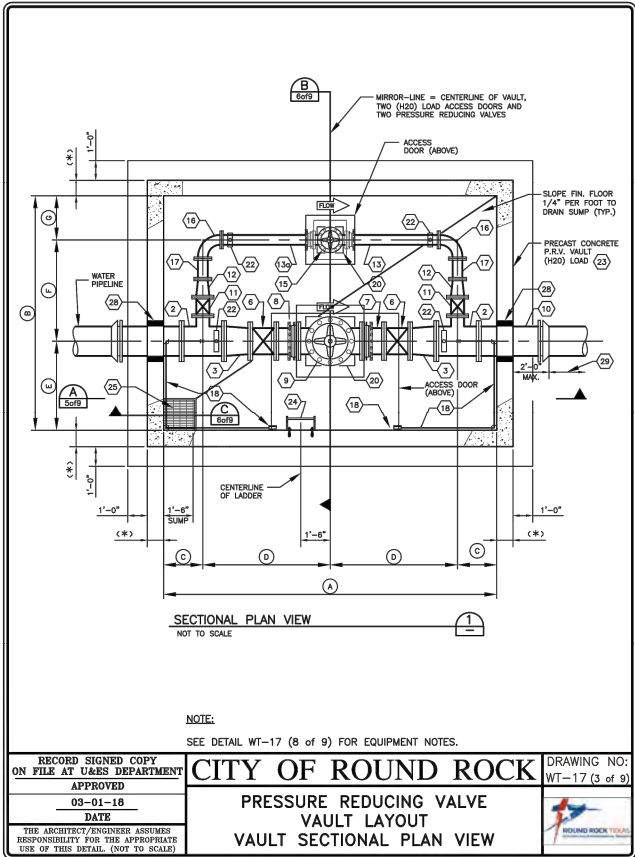
THESE DESIGN DOCUMENTS ARE NOT TO BE USED FOR CONSTRUCTION PRIOR TO REGULATORY SIGNATURE AND PERMIT.

SHEET
C-501
11 of 14



NOTE:
FOR DETAILS SHOWING "CITY OF ROUND ROCK" TO BE LABELED ON INSTALLED ITEMS, "BRUSHY CREEK MUD" SHALL BE LABELED INSTEAD.





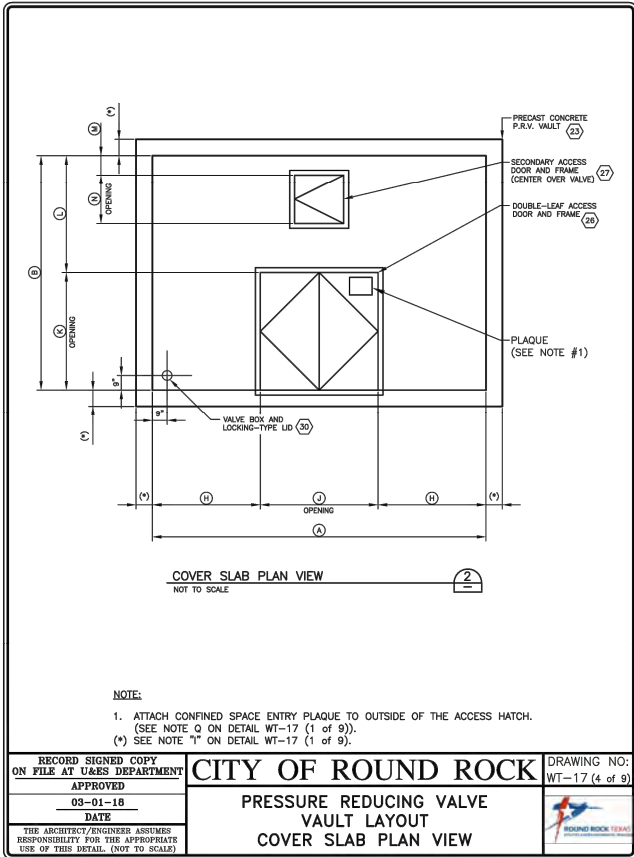
TAG NO.	DESCRIPTION	VAULT NO. 1	VAULT NO. 2	VAULT NO. 3	VAULT NO. 4	VAULT NO. 5	FITTING TYPE	SPECIFIC NOTES (SEE DRAWING DET. WT-20)
1.	SPOOL PIPE	8"	10"	12"	16"	24"	M.L. x FL.	1, 2, 3
2.	TEE W/1-1/2" THREADED TESTING PORT	8" x 4"	10" x 4"	12" x 4"	16" x 6"	24" x 12"	FL. x FL.	2, 3
3.	CONCENTRIC REDUCER	N.A.	N.A.	N.A.	N.A.	24" x 16"	FL. x FL.	2, 3
4.	SPOOL PIPE	8"	10"	12"	16"	24"	FL. x FL.	2, 3
5.	90° ELBOW	8"	10"	12"	16"	24"	FL. x FL.	2, 3
6.	RESILIENT WEDGE GATE VALVE	8"	10"	12"	16"	24"	FL. x FL.	3, 4
7.	SPOOL PIPE	8"	10"	12"	16"	24"	FL. x P.E.	2, 3
8.	DRESSER DISMANTLING JOINT	8"	10"	12"	16"	24"	FL. x FL.	3, 4
9.	PRESSURE REDUCING VALVE	8"	10"	12"	16"	24"	FL. x FL.	2, 3
10.	RESILIENT WEDGE GATE VALVE	4"	4"	4"	6"	12"	FL. x P.E.	2, 3
11.	CONCENTRIC REDUCER	4" x 3"	4" x 3"	N.A.	N.A.	N.A.	FL. x FL.	2, 3
12.	SPOOL PIPE	3"	3"	4"	6"	12"	FL. x P.E.	2, 3
13.	DRESSER DISMANTLING JOINT	3"	3"	4"	6"	12"	FL. x FL.	3, 4
14.	PRESSURE REDUCING VALVE	3"	3"	4"	6"	12"	FL. x FL.	3, 7
15.	90° ELBOW	3"	3"	4"	6"	12"	FL. x FL.	2, 3
16.	SPOOL PIPE	3"	3"	4"	6"	12"	FL. x FL.	2, 3
17.	PRESSURE GAUGE ASSEMBLY							8, 9
18.	CONCRETE PEDESTAL PIPE SUPPORT							10
19.	CONCRETE PEDESTAL VALVE SUPPORT							11
20.	PIPE STANCHION SADDLE SUPPORT							12
21.	PIPE STANCHION SADDLE SUPPORT							13
22.	WITH YOKE							14
23.	PRE-CAST CONCRETE VALVE VAULT							15
24.	ALUMINUM LADDER W/SAFETY EXTENSION							16
25.	GRATING AND FRAME							17
26.	DOUBLE-LEAF ACCESS DOOR (H20)	80" x 60"	80" x 60"	80" x 60"	80" x 60"	80" x 60"		18
27.	SECONDARY ACCESS DOOR (H20)	N.A.	N.A.	N.A.	36" x 36"	42" x 42"		19
28.	WALL PENETRATION SEAL	8"	10"	12"	16"	24"		19
29.	BURRED PIPING WITH 114 L.F. MIN. 141 L.F. MIN. 187 L.F. MIN. 229 L.F. MIN. 318 L.F. MIN.	8" DIA. x 114 L.F. MIN.	10" DIA. x 141 L.F. MIN.	12" DIA. x 187 L.F. MIN.	16" DIA. x 229 L.F. MIN.	24" DIA. x 318 L.F. MIN.		
30.	VALVE BOX AND LOCKING LID	5 1/4" DIA.	5 1/4" DIA.	5 1/4" DIA.	5 1/4" DIA.	5 1/4" DIA.		20

VAULT DESCRIPTION NOTE:
THE DESCRIPTION FOR THE PRESSURE REDUCING VALVE (P.R.V.) VAULTS IS AS FOLLOWS:
VAULT NO. 1 = VAULT WITH 8" P.R.V. AND 3" P.R.V. BYPASS
VAULT NO. 2 = VAULT WITH 10" P.R.V. AND 3" P.R.V. BYPASS
VAULT NO. 3 = VAULT WITH 12" P.R.V. AND 4" P.R.V. BYPASS
VAULT NO. 4 = VAULT WITH 16" P.R.V. AND 6" P.R.V. BYPASS
VAULT NO. 5 = VAULT WITH 18" P.R.V. AND 12" P.R.V. BYPASS

ALL VAULTS AND ACCESS DOORS SHALL BE DESIGNED TO WITHSTAND (H20) LOADING.
CITY OF ROUND ROCK DETAIL NO. WT-17 (8 of 9) MUST BE INCLUDED WITH P.R.V. AND VAULT DETAILS.

CITY OF ROUND ROCK
PRESSURE REDUCING VALVE
VAULT LAYOUT
PIPING AND EQUIPMENT SCHEDULE

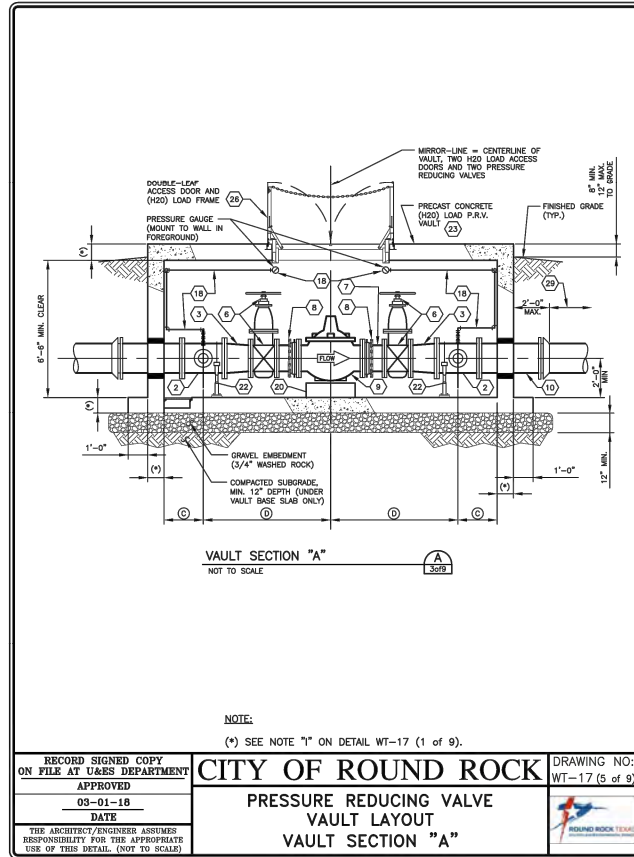
DRAWING NO: WT-17 (7 of 9)



TAG NO.	DESCRIPTION	VAULT NO. 1	VAULT NO. 2	VAULT NO. 3	VAULT NO. 4	VAULT NO. 5	FITTING TYPE	SPECIFIC NOTES (SEE DRAWING DET. WT-20)
1.	FULLY RESTRAINED JOINT FITTING.							
2.	DUCTILE IRON PIPE.							
3.	200 P.S.I. WORKING PRESSURE MINIMUM.							
4.	NON-RISING STEM WITH HANDWHEEL OPERATOR, A.W.W.A. C509 (CLOW, MUELLER, OR APPROVED EQUAL).							
5.	200 P.S.I. WORKING PRESSURE MINIMUM.							
6.	FULLY RESTRAINED (EBAA IRON SALES INC. SERIES 2100 MEGAFLANGE, OR APPROVED EQUAL).							
7.	GLOBE-STYLE, FULL-PORT WITH STEM INDICATOR AND 4 1/2" OIL FILLED, GAUGES ON THE INLET AND OUTLET PORTS. (WATTS ACV 115, CLA-VAL, OR APPROVED EQUAL). SEE NOTE 21 FOR REQUIRED LAYING LENGTHS.							
8.	PRESSURE GAUGE ASSEMBLY TO INCLUDE 1" DIAMETER THREADED TAP; 1/2" X 1" BUSHING; 1/2" QUARTER-TURN BALL VALVE; AND STAINLESS STEEL 316 GAUGE WITH 4 1/2" DIA. OIL FILLED, 0-160 P.S.I. RANGE, AND 1/2" GAUGE CONNECTION; INSTALLED WITH 1/2" COPPER PIPING ROUTED ALONG WALL TO WITHIN 6" OF TOP OF VAULT, WITH GAUGE MOUNTED IN A LOCATION THAT IS READABLE BY OPENING THE ACCESS DOOR. COORDINATE INSTALLATION WITH THE OWNER'S REPRESENTATIVE.							
9.	SUPPORT COPPER TUBING WITH PIPE STRAP AND 3/8" EXPANSION ANCHORS, INSTALLED AT MAXIMUM 3-FOOT O.C. EQUAL SPACING (ANVL INTERNATIONAL INCORPORATED FIG. 282, OR APPROVED EQUAL).							
10.	CONCRETE PEDESTAL PIPE SUPPORT WITH STEEL STRAP; MINIMUM 10" THICK CONCRETE PEDESTAL (WIDTH TO BE PIPE O.D. PLUS 10" EACH SIDE), WITH 3/4" THICK X 6" WIDE STAINLESS STEEL STRAP AND TWO 1 1/4" DIAMETER ANCHOR BOLTS. CONCRETE REINFORCING SHALL BE NO. 5 VERTICAL REBARS AND NO. 4 HORIZONTAL HOOPS PLACED AT 8" ON-CENTERS (ALL VERTICAL BARS TO BE EMBEDDED INTO SLAB TO A DEPTH RECOMMENDED BY EPOXY SYSTEM MANUFACTURER).							
11.	CONCRETE PEDESTAL VALVE SUPPORT; HORIZONTAL CONCRETE DIMENSIONS AND ANCHOR BOLT SIZE, LENGTH AND LOCATIONS TO BE DETERMINED BY THE VALVE MANUFACTURER TO FIT THE VALVE MOUNTING BASE SUPPLIED WITH THE VALVE. VERIFY ALL DIMENSIONS WITH THE VALVE MANUFACTURER. CONCRETE REINFORCING SHALL BE NO. 5 VERTICAL REBARS AND NO. 4 HORIZONTAL HOOPS PLACED AT 8" ON-CENTERS (ALL VERTICAL BARS TO BE EMBEDDED INTO SLAB TO A DEPTH AS RECOMMENDED BY EPOXY SYSTEM MANUFACTURER).							
12.	PIPE STANCHION SADDLE SUPPORT (ANVL INTERNATIONAL, INC., FIG. 258 AND FIG. 62, OR APPROVED EQUAL) WITH EXPANSION ANCHORS AS RECOMMENDED BY SUPPORT MANUFACTURER.							
13.	PIPE STANCHION SADDLE SUPPORT WITH YOKE (ANVL INTERNATIONAL, INC., FIG. 259 AND FIG. 62, OR APPROVED EQUAL) WITH EXPANSION ANCHORS AS RECOMMENDED BY SUPPORT MANUFACTURER.							
14.	PRECAST CONCRETE VAULT INSTALLED ON TOP OF CRUSHED ROCK BED. DUE TO THE CONSTRAINTS OF THE CONSTRUCTION, THE CONTRACTOR MAY ELECT TO PROVIDE A CAST-IN-PLACE CONCRETE VAULT, IN EITHER CASE, SEALED AND SIGNED DRAWINGS BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS MUST BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION. THE VAULT SHALL BE MINIMUM 4000 P.S.I., 28-DAY COMPRESSION STRENGTH CONCRETE WITH GRADE 60 REINFORCING STEEL DESIGNED FOR AASHTO H-20 WHEEL LOAD AND GROUNDWATER AT 0-FOOT BELOW FINISHED GRADE. (CONCRETE PRODUCTS INCORPORATED, OR APPROVED EQUAL).							
15.	LADDER PER DETAIL WT-18, ALL ALUMINUM CONSTRUCTION, WITH 7" STAND-OFF (FOR FLAT WALL) AND FLOOR MOUNTING BRACKETS AND SAFETY EXTENSION (HALLIDAY PRODUCTS SERIES L10 LADDER AND SERIES L1E EXTENSION). LADDER TO EXTEND TO VAULT FLOOR.							
16.	REMOVABLE FRP GRATING WITH FRP FRAME AND STAINLESS STEEL ANCHORS.							
17.	ALUMINUM DOUBLE-LEAF ACCESS DOOR, RATED FOR AASHTO H-20 WHEEL LOAD (HALLIDAY PRODUCTS SERIES H2W ACCESS DOOR, OR APPROVED EQUAL).							
18.	ALUMINUM ACCESS DOOR, RATED FOR AASHTO H-20 WHEEL LOAD (HALLIDAY PRODUCTS SERIES H1W ACCESS DOOR, OR APPROVED EQUAL).							
19.	WALL PENETRATION SHALL BE INSTALLED WITH MECHANICAL COMPRESSION-TYPE ANNULAR SEAL (THUNDERLINE-LINK-SEAL, BY PIPELINE SEAL AND INSULATOR INCORPORATED, OR APPROVED EQUAL).							
20.	VALVE BOX AND LOCKING LID, 5 1/4" DIAMETER CAST IRON RISER SECTION OF VALVE BOX, LENGTH AS REQUIRED FOR COVER SLAB THICKNESS AND LOCKING LID WITH "PLAIN" MARKING (TYLER/UNION MODEL 146241 AND MODEL 146462, OR APPROVED EQUAL).							
21.	GLOBE VALVE SHALL HAVE THE FOLLOWING LAY LENGTHS: 2"-9.38", 3"-12.00", 4"-15.00", 6"-20.00", 8"-25.38", 10"-29.75", 12"-34.00", 14"-39.00", 16"-41.38", 18"-48.00", 20"-48.00" AND 24"-48.00".							

CITY OF ROUND ROCK
PRESSURE REDUCING VALVE
VAULT LAYOUT
SPECIFIC EQUIPMENT NOTES

DRAWING NO: WT-17 (8 of 9)



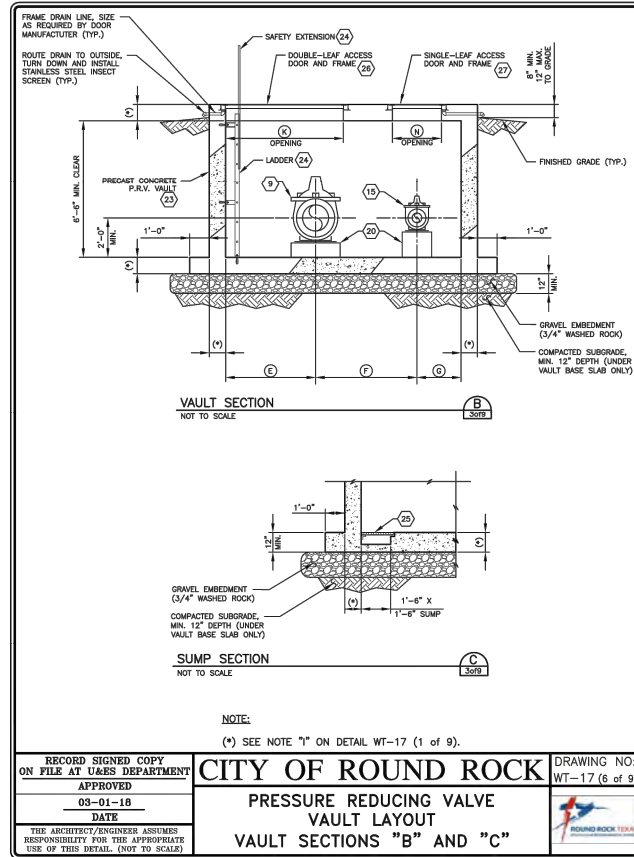
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C	1'-6"	2'-0"	2'-0"	2'-0"	2'-0"
D	4'-6"	5'-0"	5'-3"	6'-0"	6'-0"
E	4'-6"	4'-6"	4'-6"	4'-9"	4'-9"
F	3'-6"	3'-6"	3'-6"	5'-0"	6'-3"
G	2'-0"	2'-0"	2'-0"	2'-3"	2'-6"
H	3'-0"	4'-0"	4'-3"	5'-0"	7'-0"
I	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"
J	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"
K	6'-0"	6'-0"	6'-0"	7'-6"	7'-6"
L	N.A.	N.A.	N.A.	1'-0"	9"
M	N.A.	N.A.	N.A.	2'-6"	3'-6"
N	N.A.	N.A.	N.A.	2'-6"	3'-6"
O	N.A.	N.A.	N.A.	6'-9"	8'-3"

VAULT DIMENSIONS NOTE:
VAULT DIMENSIONS SHOWN ARE MINIMUM AND MUST BE VERIFIED FOR EQUIPMENT AND PIPING MATERIALS ACTUALLY FURNISHED FOR THE PRESSURE REDUCING VALVE VAULT TO BE CONSTRUCTED.

VAULT DESCRIPTION NOTE:
THE DESCRIPTION FOR THE PRESSURE REDUCING VALVE (P.R.V.) VAULTS IS AS FOLLOWS:
VAULT NO. 1 = VAULT WITH 8" P.R.V. AND 3" P.R.V. BYPASS
VAULT NO. 2 = VAULT WITH 10" P.R.V. AND 3" P.R.V. BYPASS
VAULT NO. 3 = VAULT WITH 12" P.R.V. AND 4" P.R.V. BYPASS
VAULT NO. 4 = VAULT WITH 16" P.R.V. AND 6" P.R.V. BYPASS
VAULT NO. 5 = VAULT WITH 18" P.R.V. AND 12" P.R.V. BYPASS

CITY OF ROUND ROCK
PRESSURE REDUCING VALVE
VAULT LAYOUT
VAULT DIMENSIONS SCHEDULE

DRAWING NO: WT-17 (9 of 9)



NOTE:
FOR DETAILS SHOWING "CITY OF ROUND ROCK" TO BE LABELED ON INSTALLED ITEMS, "BRUSHY CREEK MUD" SHALL BE LABELED INSTEAD.

APPROVED DATE
BY: SF 2/07/2020

REVISION DESCRIPTION
ADDED DETAILS

REV. NO. 1

CobbFendley
CITY OF ROUND ROCK
505 EAST HUNTLAND DRIVE, SUITE 100
AUSTIN, TEXAS 78752
512.834.9798 | FAX 512.834.4553
WWW.COBBFENDLEY.COM

WATER UTILITY STANDARD DETAILS
GREAT OAKS BRUSHY CREEK MUD
WATER RELOCATIONS
WILLIAMSON COUNTY, TEXAS

PROJ. NO.: 1703-011-10 7F
DESIGN: K. VAN HOOSIER
DRAWN: K. VAN HOOSIER
CHECK: L. PRINCE
APPR.: S. FEES
DATE: FEBRUARY 7, 2020

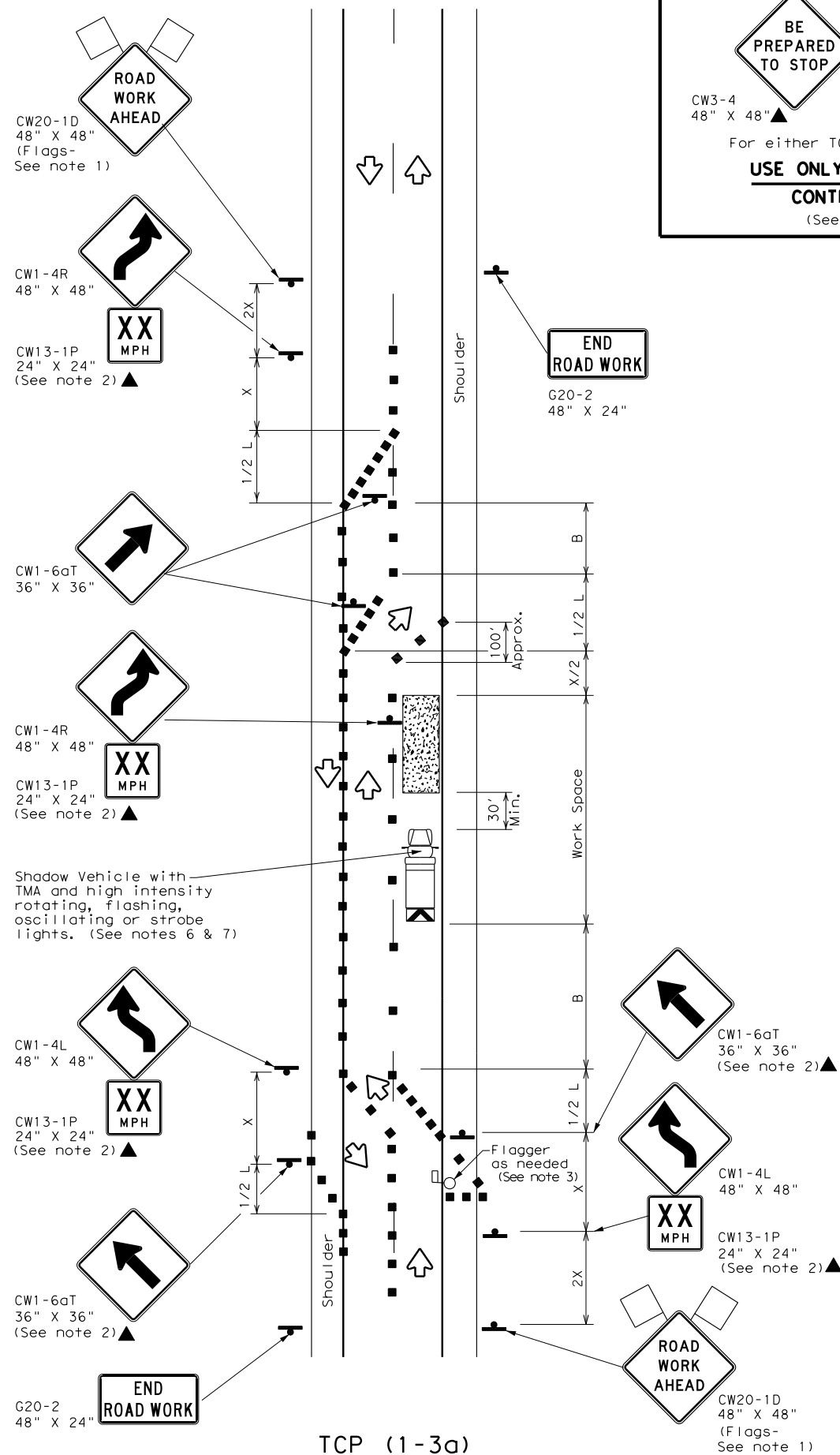
WILLIAMSON COUNTY
1848

STATE OF TEXAS
STANLEY RAY FEES
63294
2/7/2020

SHEET
C-504
14 of 14

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DATE: FILE:



TCP (1-3a)
2-LANE ROADWAY WITH PAVED SHOULDERS
ONE LANE CLOSED
ADEQUATE FIELD OF VIEW

BE PREPARED TO STOP

CW3-4 48" X 48"▲ CW20-7 48" X 48"▲

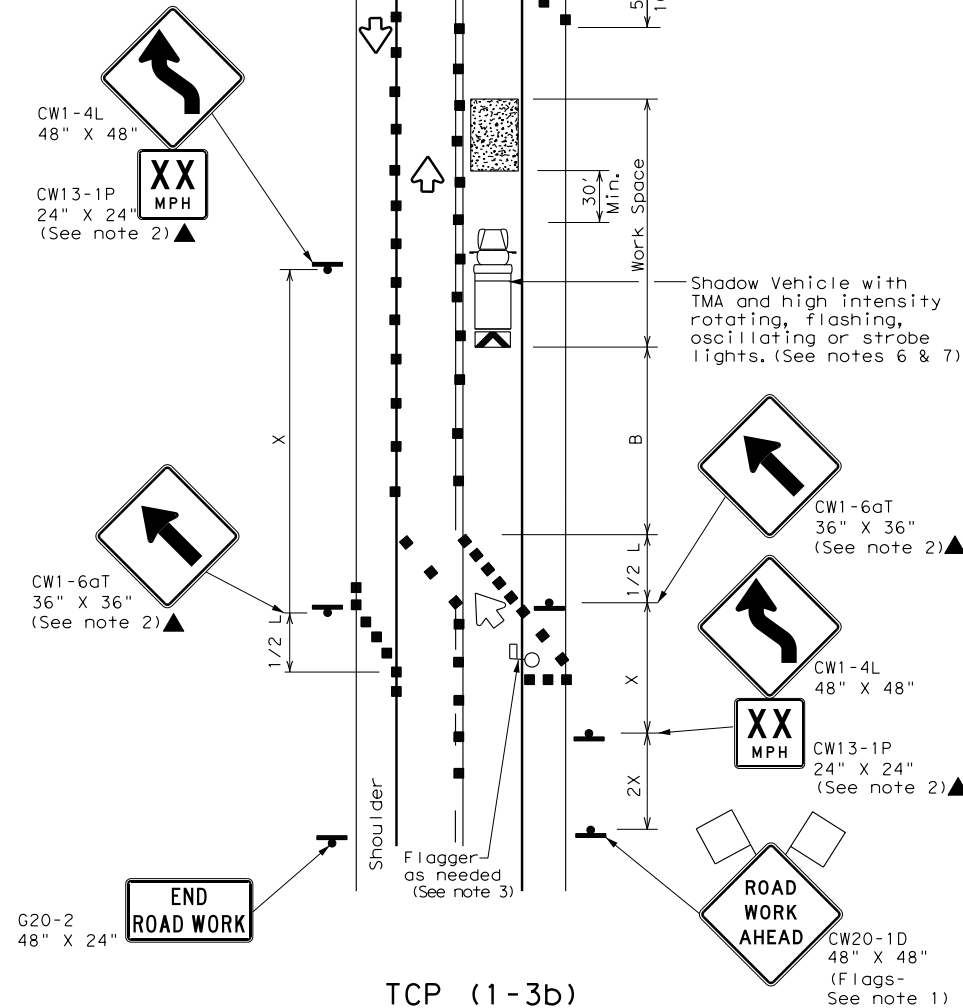
For either TCP(1-3a) or TCP(1-3b)

USE ONLY WHEN FLAGGERS CONTROL TRAFFIC

(See Notes 2 & 3)

Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. (See notes 2 & 6)

Channelizing devices placed across closed lane (See note 5)



TCP (1-3b)
2-LANE ROADWAY WITH PAVED SHOULDERS
ONE LANE CLOSED
INADEQUATE FIELD OF VIEW

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

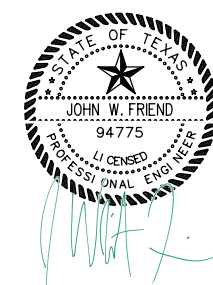
** Taper lengths have been rounded off.

L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

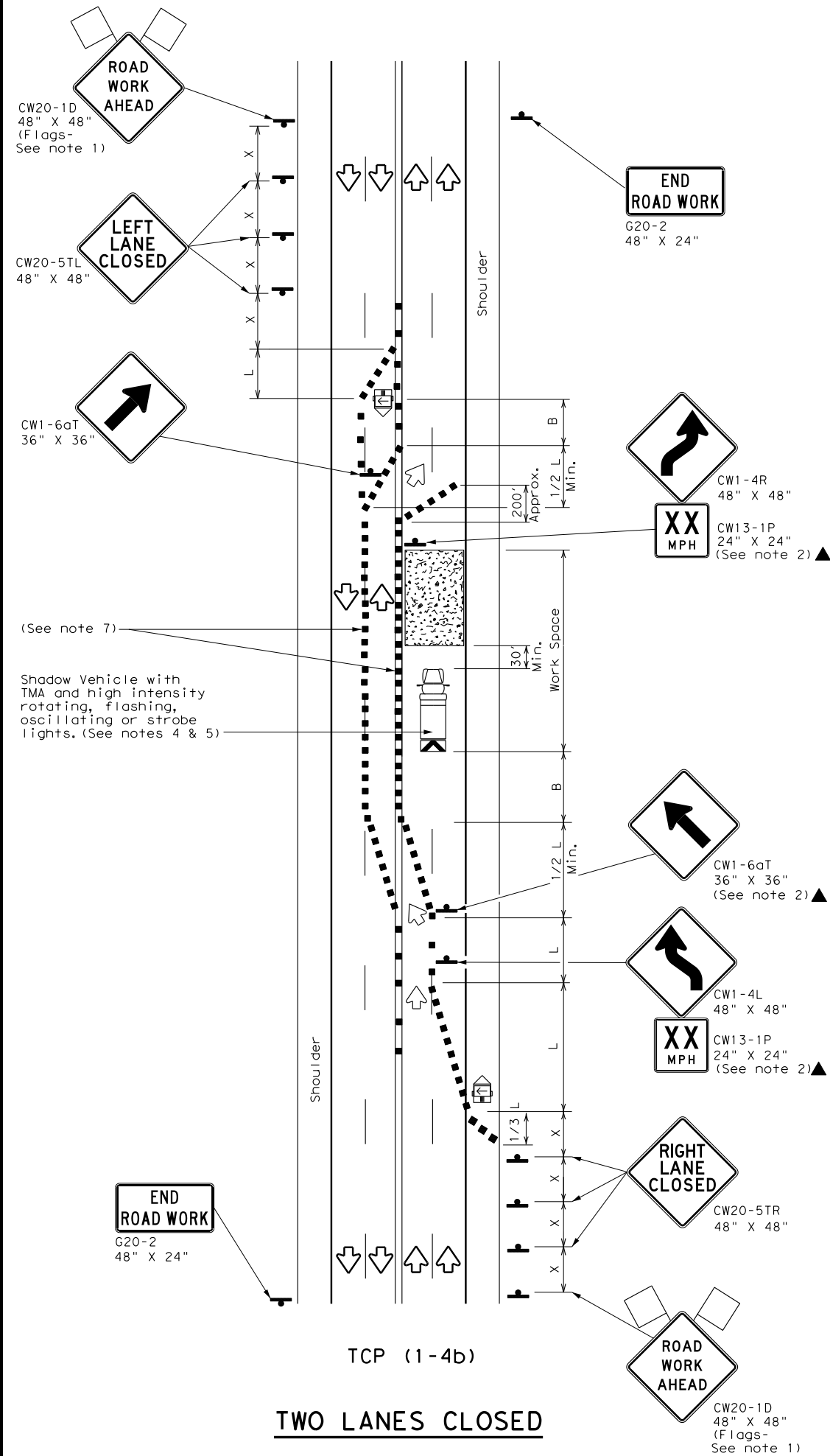
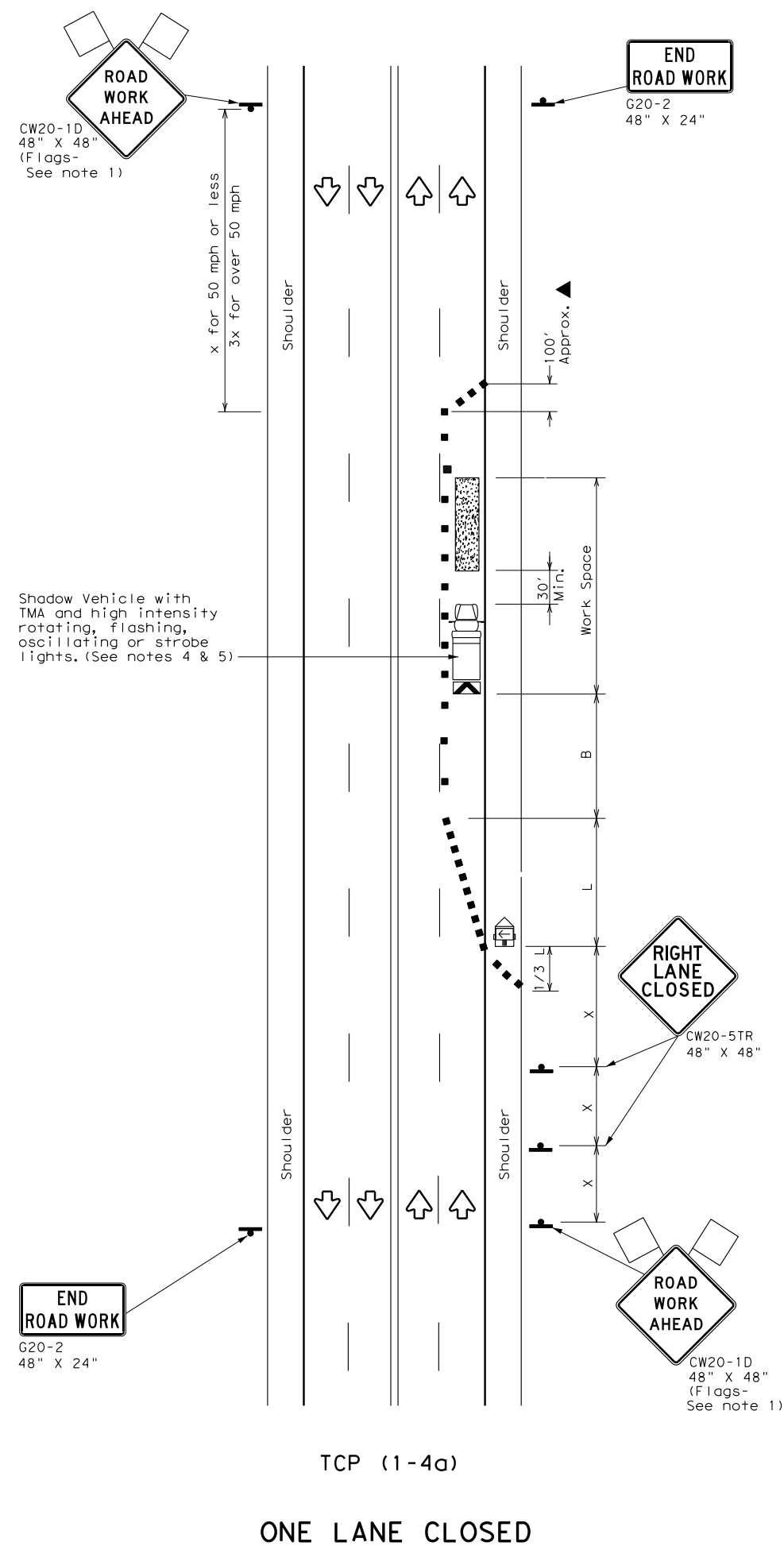
- Flags attached to signs where shown are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Additional flaggers may be positioned in advance of traffic queues to alert traffic to reduce speed.
- DO NOT PASS, PASS WITH CARE and construction regulatory speed zone signs may be installed downstream of the ROAD WORK AHEAD signs.
- When the work zone is made up of several work spaces, channelizing devices should be placed laterally across the closed lane to re-emphasize closure. Laterally placed channelizing devices should be repeated every 500 to 1000 feet in urban areas and every 1/4 to 1/2 mile in rural areas.
- A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20', or 15' if posted speed are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the area of conflicting markings not the entire work zone.



1/20/2020

		Traffic Operations Division Standard	
TRAFFIC CONTROL PLAN TRAFFIC SHIFTS ON TWO LANE ROADS TCP(1-3)-18			
FILE: tcp1-3-18.dgn	DN:	CK:	DW:
© TxDOT December 1985	CONT	SECT	JOB
REVISIONS		DIST	COUNTY
2-94 4-98	8-95 2-12	SHEET NO.	
1-97 2-18			

DATE:
FILE:



LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only
 ✱ Taper lengths have been rounded off.
 L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

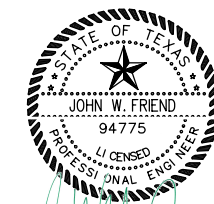
1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plan, or for routine maintenance work, when approved by the Engineer.
3. The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-4a)

6. If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opposing traffic with the arrow panel placed in the closed lane near the end of the merging taper.

TCP (1-4b)

7. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at $1/2S$ where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.



1/20/2020



Texas Department of Transportation

**Traffic
Operations
Division
Standard**

TRAFFIC CONTROL PLAN

LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP (1 - 4) - 18

FILE#	tcp1-4-18, dgn	DN#	CK#	DW#	CK#
© TxDOT	December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18					
		DIST		COUNTY	
				SHEET NO.	

Drawn by: C:\CFA\2014\0305501\Williamson_County_2013_Road_Bond\Map\07E_Great-Oaks-Fern-Bluff-JUD\DESCA\ C-001-CORR.dwg - Title: COVER-CORR-W - Plotted: 1/14/2020 12:28 AM By: KRISTEN VAN HOOSER

SHEET INDEX

SHEET NUMBER	SHEET TITLE
C-001	COVER
C-002 - C-003	GENERAL NOTES
C-100	KEY MAP - WATER
C-201 - C-202	PROP. FB MUD 12" WL PLAN & PROFILE
C-501 - C-502	EROSION CONTROL STANDARD DETAILS
C-503 - C-504	WATER UTILITY STANDARD DETAILS



WILLIAMSON COUNTY
GREAT OAKS FERN BLUFF MUD
WATER RELOCATION

TOTAL LENGTH OF 12" WATER LINE: 875 LF
PROJECT LIMITS: HAIRY MAN RD. STA 12+77 TO 18+70

RELOCATION OF EXISTING FERN BLUFF MUD 12" WATER LINE, INCLUDING FIRE
HYDRANTS, APPURTENANCES, AND RECONNECTIONS



VICINITY MAP
(NOT TO SCALE)

OWNER INFORMATION

OWNER:
FERN BLUFF MUD
7320 WYOMING SPRINGS DR.
ROUND ROCK, TEXAS 78681

CONTACT:
HECTOR ALANIS
OPERATIONS MANAGER
512-788-2081

DESIGNER:
COBB FENDLEY
505 E. HUNTLAND DR. SUITE 100
AUSTIN, TEXAS 78752

CONTACT:
STANLEY R. FEES, P.E.
512-834-9798

100% SUBMITTAL



Stanley R. Fees
STANLEY R. FEES, P.E.
COBB FENDLEY, INC.
JANUARY 13, 2020
DATE

APPROVALS:
[Signature]
FERN BLUFF MUD
1-31-2020
DATE

CobbFendley
TBPE NO. 274 / TBPLS NO. 10046701
505 EAST HUNTLAND DRIVE, SUITE 100
AUSTIN, TEXAS 78752
512.834.9798 | FAX 512.834.7277
WWW.COBBFENDLEY.COM

REV NO.	REVISION DESCRIPTION	(CORRECT, (ADD, (VOID SHEET NUMBERS	APPROD BY	DATE
1	CHANGED BORE PIT LOCATION	(C) C-202	ST	1/13/2020

Dwg Info: G:\CFA\2014\0308801_Williamson_County_2013_Road_Bond\MUN\07E_Great-Oaks-Fern-Bluff-MUD\DESIGN\C-002-GNOT.dwg - Tab: GEN-NOTE-01 - Plotted: 1/22/2020 4:49 PM By: KRISTEN VAN HOOSIER

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ROUND ROCK STANDARD SPECIFICATIONS MANUAL.
- ANY EXISTING UTILITIES, PAVEMENT, CURBS, SIDEWALKS, STRUCTURES, TREES, ETC., NOT PLANNED FOR DESTRUCTION OR REMOVAL THAT ARE DAMAGED OR REMOVED SHALL BE REPAIRED OR REPLACED AT HIS EXPENSE.
- THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES WITH THE CONSTRUCTION PLANS FOUND IN THE FIELD SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER WHO SHALL BE RESPONSIBLE FOR REVISING THE PLANS ARE APPROPRIATE.
- MANHOLE FRAMES, COVERS, VALVES, CLEANOUTS, ETC. SHALL BE RAISED TO FINISHED GRADE PRIOR TO FINAL PAVING CONSTRUCTION.
- THE CONTRACTOR SHALL GIVE FERN BLUFF MUD 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION. TELEPHONE 512-788-2081 (HECTOR ALANIS, OPERATIONS MANAGER).
- ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE REVEGETATED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. REVEGETATION OF ALL DISTURBED OR EXPOSED AREAS SHALL CONSIST OF SODDING OR SEEDING, AT THE CONTRACTOR'S OPTION. HOWEVER, THE TYPE OF REVEGETATION MUST EQUAL OR EXCEED THE TYPE OF VEGETATION PRESENT BEFORE CONSTRUCTION.
- PRIOR TO ANY CONSTRUCTION, THE ENGINEER SHALL CONVENE A PRECONSTRUCTION CONFERENCE BETWEEN FERN BLUFF MUD, HIMSELF, THE CONTRACTOR, OTHER UTILITY COMPANIES, ANY AFFECTED PARTIES AND ANY OTHER ENTITY THE CITY OR ENGINEER MAY REQUIRE.
- THE CONTRACTOR AND THE ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCTION THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE FERN BLUFF MUD ACCURATE "AS-BUILT" DRAWINGS FOLLOWING COMPLETION OF ALL CONSTRUCTION. THESE "ASBUILT" DRAWINGS SHALL MEET WITH THE SATISFACTION OF THE ENGINEERING AND DEVELOPMENT SERVICES DEPARTMENT PRIOR TO FINAL ACCEPTANCE.
- THE FERN BLUFF MUD COUNCIL SHALL NOT BE PETITIONED FOR ACCEPTANCE UNTIL ALL NECESSARY EASEMENT DOCUMENTS HAVE BEEN SIGNED AND RECORDED.
- WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE PERMANENT AND ANY TEMPORARY EASEMENTS. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. CLEAN-UP SHALL BE TO THE SATISFACTION OF THE CITY ENGINEER.
- PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL APPLY FOR AND SECURE ALL PROPER PERMITS FROM THE APPROPRIATE AUTHORITIES.

TRENCH SAFETY

- IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U. S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES OVER 5 FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL SHALL BE SLOPED,SHORED, SHEETED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN 5 FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHEN HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR EACH PROJECT WILL BE PROVIDED TO CONTRACTOR.
- IN ACCORDANCE WITH THE U. S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN PERSONS ARE IN TRENCHES 4 FEET DEEP OR MORE, ADEQUATE MEANS OF EXIT,SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
- IF TRENCH SAFETY SYSTEM DETAILS WERE NOT PROVIDED IN THE PLANS BECAUSE TRENCHES WERE ANTICIPATED TO BE LESS THAN5 FEET IN DEPTH AND DURING CONSTRUCTION IT IS FOUND THAT TRENCHES ARE IN FACT 5 FEET OR MORE IN DEPTH OR TRENCHES LESS THAN 5 FEET IN DEPTH ARE IN AN AREA WHERE HAZARDOUS GROUND MOVEMENT IS EXPECTED, ALL CONSTRUCTION SHALL CEASE,THE TRENCHED AREA SHALL BE BARRICADED AND THE ENGINEER NOTIFIED IMMEDIATELY. CONSTRUCTION SHALL NOT RESUME UNTIL APPROPRIATE TRENCH SAFETY SYSTEM DETAILS, AS DESIGNED BY A PROFESSIONAL ENGINEER, ARE RETAINED AND COPIES SUBMITTED TO THE CITY OF ROUND ROCK.

STREET AND DRAINAGE

- ALL TESTING SHALL BE DONE BY AN INDEPENDENT LABORATORY AT THE OWNER'S EXPENSE. ANY RETESTING SHALL BE PAID FOR BY THE CONTRACTOR. A CITY INSPECTOR SHALL BE PRESENT DURING ALL TESTS. TESTING SHALL BE COORDINATED WITH THE CITY INSPECTOR AND HE SHALL BE GIVEN A MINIMUM OF 24 HOURS NOTICE PRIOR TO ANY TESTING. TELEPHONE 218-5555 (INSPECTIONS).
- BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95%MAXIMUM DENSITY TO WITHIN 3" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 3" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANT LIFE.
- DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT INCLUDING GAS, ELECTRIC, TELEPHONE, CABLE TV, WATER SERVICES, ETC., SHALL BE A MINIMUM OF 30" BELOW SUBGRADE.

WATER AND WASTEWATER

- PIPE MATERIAL FOR WATER MAINS SHALL BE PVC (AWWA C-900, MIN. CLASS 200), OR DUCTILE IRON (AWWA C-100, MIN. CLASS 200). WATER SERVICES (2" OR LESS) SHALL BE POLYETHYLENE TUBING (BLACK, 200 PSI, DR 9).
- PIPE MATERIAL FOR PRESSURE WASTEWATER MAINS SHALL BE PVC (AWWA C-900, MIN. CLASS 150), OR DUCTILE IRON (AWWA C-100, MIN. CLASS 200). PIPE MATERIAL FOR GRAVITY WASTEWATER MAINS SHALL BE PVC (ASTM D2241 OR D3034, MAX. DR-26), DUCTILE IRON (AWWA C-100, MIN. CLASS 200).
- UNLESS OTHERWISE ACCEPTED BY THE CITY ENGINEER, DEPTH OF COVER FOR ALL LINES OUT OF THE PAVEMENT SHALL BE 42" MIN., AND DEPTH OF COVER FOR ALL LINES UNDER PAVEMENT SHALL BE A MIN. OF 30" BELOW SUBGRADE.
- ALL FIRE HYDRANT LEADS SHALL BE DUCTILE IRON PIPE (AWWA C-100, MIN. CLASS 200).
- ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8-MIL POLYETHYLENE AND SEALED WITH DUCT TAPE OR EQUAL ACCEPTED BY THE CITY ENGINEER.
- THE CONTRACTOR SHALL CONTACT THE FERN BLUFF MUD OPERATIONS MANAGER AT 512-788-2081 TO COORDINATE UTILITY TIE-INS AND NOTIFY HIM AT LEAST 48 HOURS PRIOR TO CONNECTING TO EXISTING LINES.
- ALL MANHOLES SHALL BE CONCRETE WITH CAST IRON RING AND COVER. ALL MANHOLES LOCATED

OUTSIDE OF THE PAVEMENT SHALL HAVE BOLTED COVERS. TAPPING OF FIBERGLASS MANHOLES SHALL NOT BE ALLOWED.

- THE CONTRACTOR MUST OBTAIN A BULK WATER PERMIT OR PURCHASE AND INSTALL A WATER METER FOR ALL WATER USED DURING CONSTRUCTION. A COPY OF THIS PERMIT MUST BE CARRIED AT ALL TIMES BY ALL WHO USE WATER.
- LINE FLUSHING OR ANY ACTIVITY USING A LARGE QUANTITY OF WATER MUST BE SCHEDULED WITH FERN BLUFF MUD (HECTOR ALANIS, OPERATIONS MANAGER, 512-788-2081 OR JANEY MILLER, GENERAL MANAGER, 512-788-0336) AND THE CITY OF ROUND ROCK WATER & WASTEWATER SUPERINTENDENT, TELEPHONE 218-5555.
- THE CONTRACTOR, AT HIS EXPENSE, SHALL PERFORM STERILIZATION OF ALL POTABLE WATER LINES CONSTRUCTED AND SHALL PROVIDE ALL EQUIPMENT (INCLUDING TEST GAUGES), SUPPLIES (INCLUDING CONCENTRATED CHLORINE DISINFECTING MATERIAL), AND NECESSARY LABOR REQUIRED FOR THE STERILIZATION PROCEDURE. THE STERILIZATION PROCEDURE SHALL BE MONITORED BY CITY OF ROUND ROCK PERSONNEL. WATER SAMPLES WILL BE COLLECTED BY THE CITY OF ROUND ROCK TO VERIFY EACH TREATED LINE HAS ATTAINED AN INITIAL CHLORINE CONCENTRATION OF 50 PPM. WHERE MEANS OF FLUSHING IS NECESSARY, THE CONTRACTOR, AT HIS EXPENSE, SHALL PROVIDE FLUSHING DEVICES AND REMOVE SAID DEVICES PRIOR TO FINAL ACCEPTANCE BY THE CITY OF ROUND ROCK.
- SAMPLING TAPS SHALL BE BROUGHT UP TO 3 FEET ABOVE GRADE AND SHALL BE EASILY ACCESSIBLE FOR CITY PERSONNEL. AT THE CONTRACTOR'S REQUEST, AND IN HIS PRESENCE, SAMPLES FOR BACTERIOLOGICAL TESTING WILL BE COLLECTED BY THE CITY OF ROUND ROCK NOT LESS THAN 24 HOURS AFTER THE TREATED LINE HAS BEEN FLUSHED OF THE CONCENTRATED CHLORINE SOLUTION AND CHARGED WITH WATER APPROVED BY THE CITY. THE CONTRACTOR SHALL SUPPLY A CHECK OR MONEY ORDER, PAYABLE TO THE CITY OF ROUND ROCK, TO COVER THE FEE CHARGED FOR TESTING EACH WATER SAMPLE. CITY OF ROUND ROCK FEE AMOUNTS MAY BE OBTAINED BY CALLING THE ENGINEERING AND DEVELOPMENT SERVICES DEPARTMENT AT 218-5555.
- THE CONTRACTOR, AT HIS EXPENSE, SHALL PERFORM QUALITY TESTING FOR ALL WASTEWATER PIPE INSTALLED AND PRESSURE PIPE HYDROSTATIC TESTING OF ALL WATER LINES CONSTRUCTED AND SHALL PROVIDE ALL EQUIPMENT (INCLUDING PUMPS AND GAUGES), SUPPLIES AND LABOR NECESSARY TO PERFORM THE TESTS. QUALITY AND PRESSURE TESTING SHALL BE MONITORED BY CITY OF ROUND ROCK PERSONNEL.
- THE CONTRACTOR SHALL COORDINATE TESTING WITH THE CITY OF INSPECTOR AND PROVIDE NO LESS THAN 24 HOURS NOTICE PRIOR TO PERFORMING STERILIZATION, QUALITY TESTING OR PRESSURE TESTING.
- THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES UNLESS AUTHORIZED BY THE CITY OF ROUND ROCK AND FERN BLUFF MUD.
- ALL VALVE BOXES AND COVERS SHALL BE CAST IRON.
- ALL WATER SERVICE, WASTEWATER SERVICE AND VALVE LOCATIONS SHALL BE APPROPRIATELY MARKED AS FOLLOWS:

WATER SERVICE "W" ON TOP OF CURB

WASTEWATER SERVICE "S" ON TOP OF CURB

VALVE "V" ON FACE OF CURB
- TOOLS FOR MARKING THE CURB SHALL BE PROVIDED BY THE CONTRACTOR. OTHER APPROPRIATE MEANS OF MARKING SERVICE AND VALVE LOCATIONS SHALL BE PROVIDED IN AREAS WITHOUT CURBS. SUCH MEANS OF MARKING SHALL BE AS SPECIFIED BY THE ENGINEER AND ACCEPTED BY THE CITY OF ROUND ROCK AND FERN BLUFF MUD.
- CONTACT CITY OF ROUND ROCK ENGINEERING AND DEVELOPMENT SERVICES DEPARTMENT AT 218-5555 AND FERN BLUFF MUD (HECTOR ALANIS, OPERATIONS MANAGER, 512-788-2081) FOR ASSISTANCE IN OBTAINING EXISTING WATER AND WASTEWATER LOCATIONS.
- THE CITY OF ROUND ROCK FIRE DEPARTMENT SHALL BE NOTIFIED 48 HOURS PRIOR TO TESTING OF ANY BUILDING SPRINKLER PIPING IN ORDER THAT THE FIRE DEPARTMENT MAY MONITOR SUCH TESTING.
- SAND, AS DESCRIBED IN SPECIFICATION ITEM 510 PIPE, SHALL NOT BE USED AS BEDDING FOR WATER AND WASTEWATER LINES. ACCEPTABLE BEDDING MATERIALS ARE PIPE BEDDING STONE, PEA GRAVEL AND IN LIEU OF SAND, A NATURALLY OCCURRING OR MANUFACTURED STONE MATERIAL CONFORMING TO ASTM C33 FOR STONE QUALITY AND MEETING THE FOLLOWING GRADATION SPECIFICATION:

SIEVE SIZE

PERCENT RETAINED BY WEIGHT

1/2"

0

3/8"

0-2

#4

40-85

#10

95-100

- THE CONTRACTOR IS HEREBY NOTIFIED THAT CONNECTING TO, SHUTTING DOWN, OR TERMINATING EXISTING UTILITY LINES MAY HAVE TO OCCUR AT OFF-PEAK HOURS. SUCH HOURS ARE USUALLY OUTSIDE NORMAL WORKING HOURS AND POSSIBLY BETWEEN 12 A.M. AND 6 A.M.

- ALL WASTEWATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) REGULATIONS, 30 TAC CHAPTER 213 AND 317, AS APPLICABLE. WHENEVER TCEQ AND CITY OF ROUND ROCK SPECIFICATIONS CONFLICT, THE MORE STRINGENT SHALL APPLY.

TRAFFIC MARKING NOTES

- ANY METHODS, STREET MARKINGS AND SIGNAGE NECESSARY FOR WARNING MOTORISTS, WARNING PEDESTRIANS OR DIVERTING TRAFFIC DURING CONSTRUCTION SHALL CONFORM TO THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION.
- ALL PAVEMENT MARKINGS, MARKERS, PAINT, TRAFFIC BUTTONS, TRAFFIC CONTROLS AND SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES AND, THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITIONS.

EROSION AND SEDIMENTATION CONTROL NOTES

- EROSION CONTROL MEASURES, SITE WORK AND RESTORATION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF ROUND ROCK EROSION AND SEDIMENTATION CONTROL ORDINANCE.
- ALL SLOPES SHALL BE SODDED OR SEEDED WITH APPROVED GRASS, GRASS MIXTURES OR GROUND COVER SUITABLE TO THE AREA AND SEASON IN WHICH THEY ARE APPLIED.
- SILT FENCES, ROCK BERMS, SEDIMENTATION BASINS AND SIMILARLY RECOGNIZED TECHNIQUES AND MATERIALS SHALL BE EMPLOYED DURING CONSTRUCTION TO PREVENT POINT SOURCE

SEDIMENTATION LOADING OF DOWNSTREAM FACILITIES. SUCH INSTALLATION SHALL BE REGULARLY INSPECTED BY THE CITY OF ROUND ROCK FOR EFFECTIVENESS. ADDITIONAL MEASURES MAY BE REQUIRED IF, IN THE OPINION OF THE CITY ENGINEER, THEY ARE WARRANTED.

- ALL TEMPORARY EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL FINAL INSPECTION AND APPROVAL OF THE PROJECT BY THE ENGINEER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL TEMPORARY EROSION CONTROL STRUCTURES AND TO REMOVE EACH STRUCTURE AS APPROVED BY THE ENGINEER.
- ALL MUD, DIRT, ROCKS, DEBRIS, ETC., SPILLED, TRACKED OR OTHERWISE DEPOSITED ON EXISTING PAVED STREETS, DRIVES AND AREAS USED BY THE PUBLIC SHALL BE CLEANED UP IMMEDIATELY.

SURVEY NOTES

- BEARING VALUES BASED ON THE TEXAS STATE PLAN COORDINATE SYSTEM, NAD-83, CENTRAL (4203). COORDINATES ARE SURFACE VALUES BASED ON A COMBINED SURFACE ADJUSTMENT FACTOR OF 1.00012. ELEVATIONS BASED UPON GEOID 2012A, PER WESTERN DATA GPS REFERENCE NETWORK.

TREE LIST

POINT #	DRIP DIA.	SIZE	DESCRIPTION	STATUS
3329	36'	18"	PECAN	REMOVE
3330	28'	14"	CEDAR ELM	REMOVE
3331	60'	30"	PECAN	PROTECT
2483	44'	16" 12"	CEDAR ELM	REMOVE
2480	38'	19"	PECAN	REMOVE
2482	40'	20"	PECAN	REMOVE
2479	56'	15" 14" 12"	PECAN	PROTECT
2511	58'	23" 12"	PECAN	REMOVE
2515	50'	25"	CEDAR ELM	REMOVE
2471	18'	9"	PECAN	REMOVE
3463	18'	9"	CEDAR ELM	REMOVE
2402	48'	24"	BOIS D' ARC	REMOVE
2053	40'	20"	CEDAR ELM	REMOVE
2401	46'	23"	LIVE OAK	PROTECT



512.834.9798
505 EAST HUNTLAND DRIVE, SUITE 100
AUSTIN, TEXAS 78752
WWW.COBBFENDLEY.COM

GENERAL NOTES

GREAT OAKS FERN BLUFF MUD
WATER RELOCATION
WILLIAMSON COUNTY, TEXAS



PROJ. NO. 1703-011-10 7E
DESIGN: K. VANHOOSIER
DRAWN: R. RODRIGUEZ
CHECK: L. PRINCE
APPR: S. FEES
DATE: JANUARY 22, 2020



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SHEET
C-002
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Dwg Info: G:\CFA\2014\0308B01_Williamson_County_2013_Road_Bond\MUN\07E_Great-Oaks-Fern-Bluff-MUD\DESIGN\C-002-GNOT.dwg -- Tab: GEN-NOTE-01-2 -- Plotted: 1/22/2020 4:49 PM By: KRISTEN VAN HOOSIER

Williamson County
Project: Great Oaks Drive Waterline Relocations

GENERAL NOTES: August 26, 2019 Version

Basis of Estimate				
Item	Description	**Rate	Basis	Quantity
164	Seed for Erosion Control (Item 164) (Temp) (Cool) (TY 4)	5000 SY/AC	SY	SY

** For Informational Purposes Only

GENERAL

References to manufacturer's trade name or catalog numbers are for the purpose of identification only. Similar materials from other manufacturers are permitted if they are of equal quality, comply with the specifications for this project, and are approved.

If work is performed at Contractor's option, when inclement weather is impending, and the work is damaged by subsequent precipitation, the Contractor is responsible for all costs associated with replacing the work, if required.

The roadbed shall be free of organic material prior to placing any section of the pavement structure.

Equip all construction equipment used in roadway work with highly visible omnidirectional flashing warning lights.

Provide a smooth, clean saw-cut along the existing asphalt pavement structure, as directed. Consider subsidiary to the pertinent Items.

Supply litter barrels in enough numbers at locations as directed to control litter within the project. Consider subsidiary to pertinent Items.

Use a self-contained vacuum broom to sweep the roadway and keep it free of sediment as directed. The contractor will be responsible for any sweeping above and beyond the normal maintenance required to keep fugitive sediment off the roadway as directed by the Construction Observer. This work is subsidiary.

Protect all areas of the right of way, which are not included in the actual limits of the proposed construction areas, from disturbance. Restore any area disturbed because of the Contractor's operations to a condition as good as, or better than, before the beginning of work at no cost to the County.

Damage to existing pipes and SETs due to Contractor operations shall be repaired at Contractor's expense.

All locations used for storing construction equipment, materials, and stockpiles of any type, within the right of way, will be as directed. Use of right of way for these purposes will be restricted to those locations where driver sight distance to businesses and side street intersections is not

General Notes

Sheet A

Williamson County
Project: Great Oaks Drive Waterline Relocations

Within the limits of the project, provide standard barricades, warning signs, delineators, lights, 28-inch cones, and flaggers in enough numbers and combinations, as directed.

For Mainlanes use night-work and same-night remove-and-replace operations.

No closures will be allowed on the weekends, which include the following holidays: January 1st, the last Monday in May, July 4th, the first Monday in September, the fourth Thursday in November, December 25th, Easter weekend, and the working day prior to or immediately after any of the aforementioned holidays. Unless otherwise approved, no closures will be allowed on the weekends of special events that could be impacted by the construction. Ensure all equipment, vehicles, workers, etc., associated with these closures are off the roadways and all lanes re-opened, at least, by noon of the Friday before these holidays and special events.

General Notes

Sheet D

Williamson County
Project: Great Oaks Drive Waterline Relocations

obstructed and at other locations where an unsightly appearance will not exist. The Contractor will not have exclusive use of right of way but will cooperate in the use of the right of way with the city/county and various public utility companies as required.

The Project Superintendent will be capable of speaking English and will be available to contact at all times when work is being performed, including subcontractor work. The Superintendent will be available and on-call 24 hours a day.

Use materials from prequalified material producers list as shown on the Texas Department of Transportation (TxDOT) – Construction Division's (CST) materials producers list. Refer to TxDOT's website for list of pre-qualified manufacturers. No substitutions will be allowed for materials found on the list. Submit list of approved suppliers/materials from TxDOT website to show items are TxDOT approved. Submit this list with request for material approval.

When any abandoned well is encountered, cease construction operations in this area and notify the Construction Observer who will coordinate the proper plugging procedures. A water well driller licensed in the State of Texas must be used to plug a well.

Erosion control and stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days. Track all exposed soil, stockpiles, and slopes. Tracking consists of operating a tracked vehicle or equipment up and down the slope, leaving track marks perpendicular to the direction of the slope. Re-track slopes and stockpiles after each rain event or every 14 days, whichever occurs first. This work is subsidiary.

Perform maintenance of vehicles or equipment at designated maintenance sites. Keep a spill kit on-site during fueling and maintenance. This work is subsidiary.

Maintain positive drainage for permanent and temporary work for the duration of the project. Be responsible for any items associated with the temporary or interim drainage and all related maintenance. This work is subsidiary.

Suspend all activities near any significant recharge features, such as sinkholes, caves, or any other subterranean openings that are discovered during construction or core sampling. Do not proceed until the designated Geologist or TCEQ representative is present to evaluate and approve remedial action.

ITEM 502 – BARRICADES, SIGNS, AND TRAFFIC HANDLING

Unless otherwise approved, one (1) lane in each direction shall remain open at all times.

No work will be allowed between 8:00 PM to 5:00 AM without approval from Construction Observer. Nighttime lane closures will only be allowed with approval from Construction Observer and only from 8:00 PM to 5:00 AM, unless otherwise shown on the plans.

No Daytime Lane Closures will be allowed, unless otherwise shown on the plans or as directed by the GEC.

General Notes

Sheet B

Williamson County
Project: Great Oaks Drive Waterline Relocations

The GEC is the authority to approve additional lane closures, prior to any work.

Maintain a written record of documentation of "The Additional Approved Lane Closures."

Submit and secure concurrence, prior to the publication of any notices or placement of any traffic control devices for implementation of the traffic control plan, hereinafter called a Lane Closure Notice (LCN).

Present to GEC, an LCN for traffic control, which is proposed for implementation, a minimum of four (4) full working days preceding any proposed implementation date. Indicate the estimated date, time, duration, and location for the proposed work. As a part of the LCN submit a written description of the lane closure(s) depicting the proposed traffic control devices used, based on the appropriate plan sheet, TxDOT or Texas Manual on Uniform Traffic Control Devices (TMUTCD) standards, and an operational description of the work to be performed.

Present to GEC, LCN's proposed to detour traffic, a minimum of *seven (7)* full calendar days preceding any proposed implementation date.

Present to GEC, LCN's proposed for night work, a minimum of *seven (7)* full calendar days preceding any proposed implementation date.

Receive concurrence prior to LCN implementation.

Meet with the Construction Observer prior to roadway and lane closures to ensure that sufficient equipment, materials, devices, and workers will be used. Discuss contingency plans at that time. Consider inclement weather prior to implementing the lane closures.

Submit a cancellation of any lane closures, no later than noon on the day preceding the proposed work.

Coordinate Main Lane closures with adjacent projects.

Take immediate action to modify Closures / Traffic Control, if at any time backup (roadway queuing) becomes unreasonable (greater than 20 minutes). Have in place, a contingency plan of how this will occur.

Utilize Shadow Vehicle with Truck Mounted Attenuator for setup and removal of each lane closure.

Do not set up any Lane Closure / TCP when the pavement is wet prior to the "setup," unless otherwise directed. Revise Traffic Control, when inclement weather is imminent, as directed.

Incorporate and maintain a 3H: 1V safety wedge into the proposed construction for any roadway edge of 2 inches or greater adjacent to a roadway under traffic.

General Notes

Sheet C

CobbFendley
TRAFFIC CONTROL SPECIALISTS
505 EAST MOUNTAIN DRIVE, SUITE 100
AUSTIN, TEXAS 78752
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WWW.COBBFENDLEY.COM

GENERAL NOTES

GREAT OAKS FERN BLUFF MUD
WATER RELOCATION
WILLIAMSON COUNTY, TEXAS

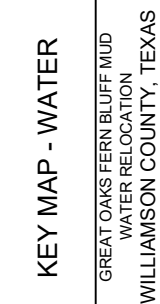
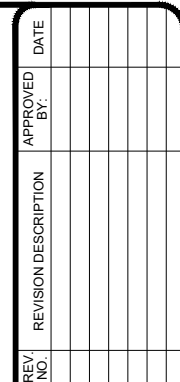


PROJ. NO. 1703-011-10 7E
DESIGN: K. VANHOOSIER
DRAWN: R. RODRIGUEZ
CHECK: L. PRINCE
APPR: S. FEES
DATE: JANUARY 22, 2020

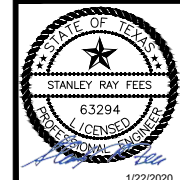


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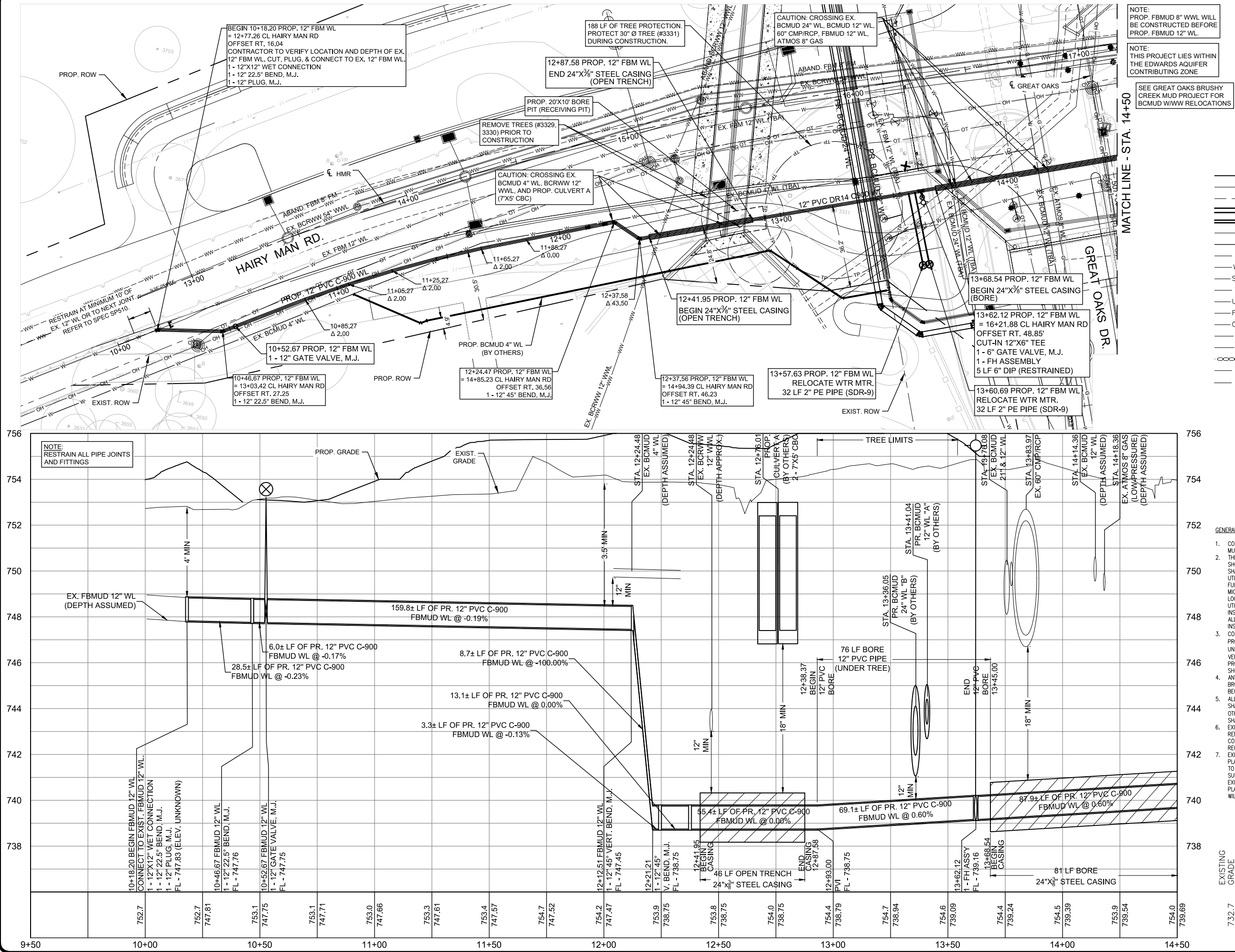
PROJ. NO. 1703-011-10 7E
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Dwg Info: G:\CFA\2014\030801_Williamson_County_2013_Road_Bond\MUN\07E_Great-Oaks-Fern-Bluff-MUD\DESIGN\C-301-WTR.dwg — Tab: WTR-01 — Plotted: 1/22/2020 4:50 PM By: KRISTEN VAN HOOSIER



GENERAL NOTES:

- CONTRACTOR TO COORDINATE ALL WORK WITH FERN BLUFF MUD.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES THAT MIGHT BE OCCASIONED BY THE FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. WHEN THE CONTRACTOR IS USING TRENCHLESS INSTALLATION METHODS, THE CONTRACTOR SHALL LOCATE ALL UTILITIES FOR THE ENTIRE LENGTH OF THE INSTALLATION PRIOR TO ANY ACTIVITIES.
- CONTRACTOR TO MAINTAIN 48" MINIMUM COVER OVER PROPOSED WATER LINE IN THE STREET AND 42" IN UNPAVED AREAS. CONTRACTOR TO MAINTAIN MINIMUM 18" VERTICAL AND 5' HORIZONTAL CLEARANCE BETWEEN PROPOSED AND EXISTING UTILITIES UNLESS OTHERWISE SHOWN ON THE PLANS.
- ANY DISCREPANCIES FROM WHAT IS SHOWN SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BEGINNING WORK.
- ALL DUCTILE IRON FITTINGS FOR PIPE LESS THAN 24" SHALL COMPLY WITH AWWA C110 OR C153 UNLESS OTHERWISE NOTED ON PLANS. ALL LARGER THAN 24" SHALL COMPLY WITH AWWA C110.
- EXISTING WATER MAINS ARE TO BE PROTECTED AND REMAIN IN SERVICE UNTIL THE NEW MAINS ARE CONSTRUCTED, TESTED, APPROVED AND SERVICE LINES RECONNECTED AND THE NEW MAIN IS PLACED IN SERVICE. EXISTING WATER MAINS THAT ARE TO BE ABANDONED IN PLACE AND ARE UNDER THE PROPOSED ROADWAY ARE TO BE CUT, CAPPED, AND FILLED WITH FLOWABLE FILL. SUBSIDIARY TO COST OF PIPE, NO SEPARATE PAY. EXISTING WATER LINES THAT ARE TO BE ABANDONED IN PLACE AND ARE NOT UNDER THE PROPOSED ROADWAY WILL BE CAPPED.

EXISTING
GRADE
FLOW LINE
OF PIPE

PROFILE SCALE
1"=40' HORIZ.
1"=4' VERT.

REV.	NO.	REVISION DESCRIPTION	APPROVED BY:	DATE

512.834.9798 | FAX 512.834.9553
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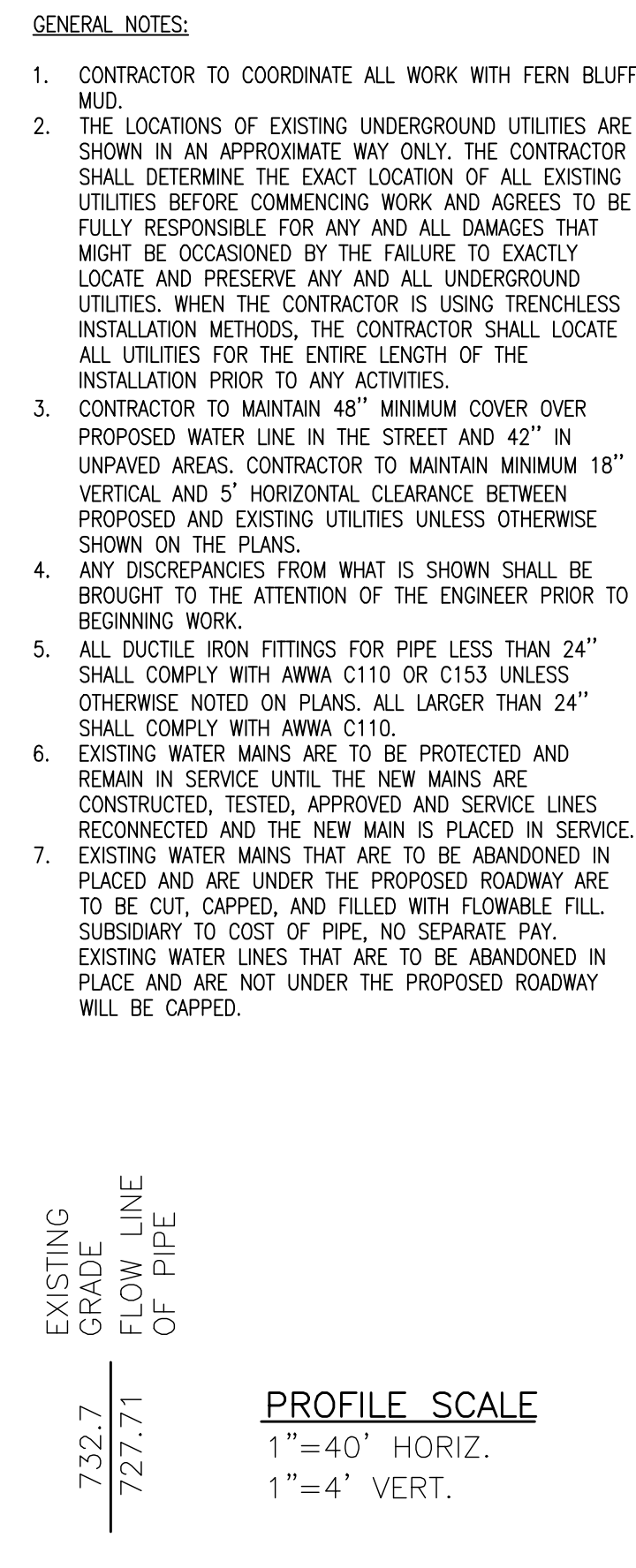
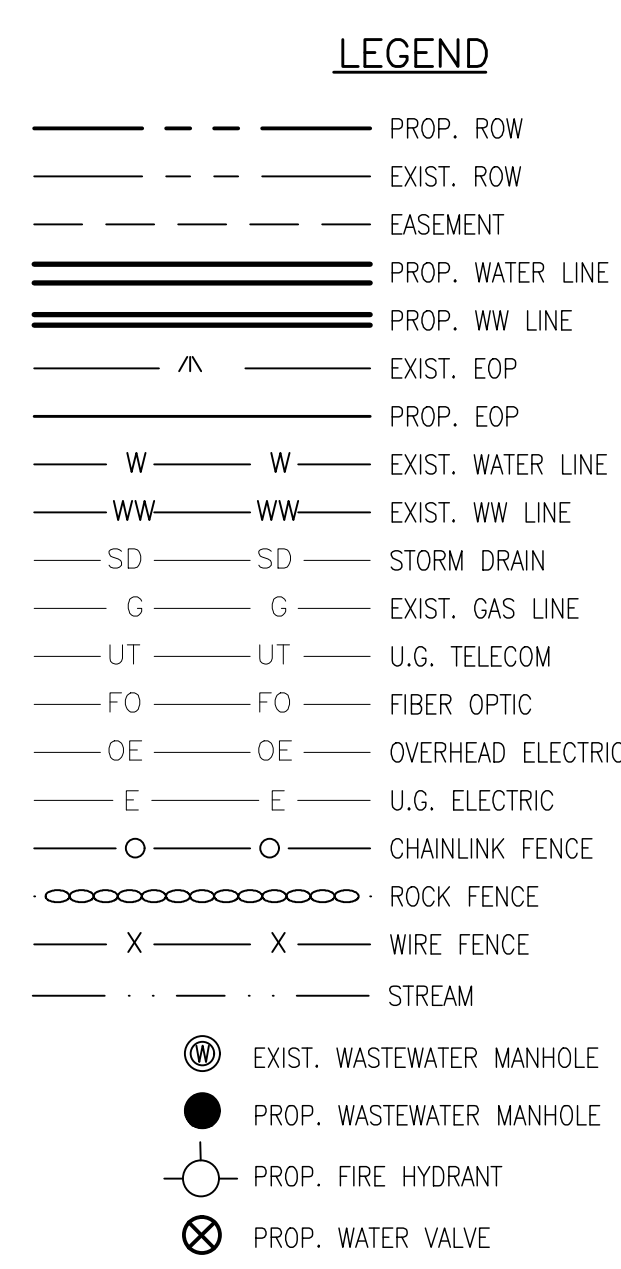
PROP. FBM 12" WL P&P -
STA. 10+00 TO 14+50

GREAT OAKS FERN BLUFF MUD
WATER RELOCATION
WILLIAMSON COUNTY, TEXAS

WILLIAMSON COUNTY
1848

PROJ. NO. 1703-011-10 7E
DESIGN: K. VANHOOSIER
DRAWN: R. RODRIGUEZ
CHECK: L. PRICE
APPR: S. FEES
DATE: JANUARY 22, 2020

SHEET
C-201
5 of 10



1. ALL TREES NOT LOCATED WITHIN THE LIMITS OF CONSTRUCTION AND OUTSIDE OF DISTURBED AREAS SHALL BE PRESERVED. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL TREES TO BE PRESERVED FROM HIS ACTIVITIES.

2. ALL TREES SHOWN TO BE RETAINED WITHIN THE LIMITS OF CONSTRUCTION ON THE PLANS SHALL BE PROTECTED DURING CONSTRUCTION WITH FENCING. SEE: TREE PROTECTION TREE WELLS (EC-02); TREE PROTECTION TREE LOCATION (EC-03) AND TREE PROTECTION FENCE-CHAIN LINK (EC-04).

3. TREE PROTECTION FENCES SHALL BE DIRECTED ACCORDING TO CITY STANDARDS FOR TREE PROTECTION, INCLUDING TYPES OF FENCING AND SIZING.

4. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR GRADING) AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.

5. EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRILINES.

6. FENCES SHALL COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES LOCATED AT THE OUTERMOST LIMITS OF THE TREE BRANCHES (DRIFLINE) OR CRITICAL ROOT ZONE (CRZ), WHICHEVER IS GREATER, AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:

7A. SOIL COMPACTION IN CRZ AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIAL.

7B. CRZ DISTURBANCES DUE TO GRADE CHANGES OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE FORESTRY MANAGER.

7C. WOUNDS TO EXPOSED ROOTS, TRUNK, OR LIMBS BY MECHANICAL EQUIPMENT.

7D. OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CONCRETE TRUCK CLEANING, AND FIRES.

7E. EXCEPTIONS TO INSTALLING TREE FENCES AT THE TREE DRILINES OR CRZ, WHICHEVER IS GREATER, MAY BE PERMITTED IN THE FOLLOWING CASES:

7F. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, OR TREE WELLS.

7G. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.

7H. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN 8 FEET TO THE BUILDING.

7I. WHERE THERE ARE SEVERE SPACE CONSTRAINTS DUE TO TRACT SIZE, OR OTHER SPECIAL REQUIREMENTS, CONTACT THE FORESTRY MANAGER TO DISCUSS ALTERNATIVES.

8. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE THAT IS CLOSER THAN 5 FEET TO A TREE TRUNK, THE TRUNK SHALL BE PROTECTED BY STRAPPED-ON PLANKING TO A HEIGHT OF 8 FEET (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.

9. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN AREAS OF UNPROTECTED ROOT ZONES UNDER THE DRIFLINE OR CRZ, WHICHEVER IS GREATER, THOSE AREAS SHOULD BE COVERED WITH 4 INCHES OF ORGANIC MULCH TO MINIMIZE SOIL COMPACTION.

10. ALL GRADING WITHIN CRZ AREAS SHALL BE DONE BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE. PRIOR TO GRADING, RELOCATE PROTECTIVE FENCING TO 2 FEET BEHIND THE GRADE CHANGE AREA.

11. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL AND BACKFILLED WITH GOOD QUALITY TOP SOIL WITHIN TWO DAYS. IF EXPOSED ROOT AREAS CANNOT BE BACKFILLED WITHIN 2 DAYS, AN ORGANIC MATERIAL WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION SHALL BE PLACED TO COVER THE ROOTS UNTIL BACKFILL CAN OCCUR.

12. PRIOR TO EXCAVATION OR GRADE CUTTING WITHIN TREE DRILINES, A CLEAN CUT SHALL BE MADE WITH A ROCK SAW OR SIMILAR EQUIPMENT, IN A LOCATION AND TO A DEPTH APPROVED BY THE FORESTRY MANAGER, TO MINIMIZE DAMAGE TO REMAINING ROOTS.

13. TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES WILL BE WATERED DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER; TREE CROWNS ARE TO BE SPRAYED PERIODICALLY TO REDUCE DUST ACCUMULATION ON LEAVES.

14. WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, A PLASTIC VAPOR BARRIER SHALL BE PLACED BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE CRZ.

15. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.

16. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN FOUR (4) INCHES SHALL BE PERMITTED WITHIN THE DRIFLINE OR CRZ OF TREES, WHICHEVER IS GREATER. NO TOPSOIL IS PERMITTED ON ROOT FLARES OF ANY TREE.

17. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND CONSTRUCTION EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS. ALL PRUNING MUST BE DONE ACCORDING TO CITY STANDARDS AND AS OUTLINED IN LITERATURE PROVIDED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA PRUNING TECHNIQUES).

18. ALL OAK TREE CUTS, INTENTIONAL OR UNINTENTIONAL, SHALL BE SEALED WITH AN APPROVED PRUNING SEALER IMMEDIATELY (WITHIN 10 MINUTES); TREE PAINT MUST BE KEPT ON SITE AT ALL TIMES.

19. THE FORESTRY MANAGER HAS THE AUTHORITY TO REQUIRE ADDITIONAL TREE PROTECTION BEFORE OR DURING CONSTRUCTION.

20. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED. REFER TO THE CITY OF ROUND ROCK TREE REMOVAL MANUAL FOR APPROPRIATE REMOVAL METHODS.

21. PRIOR TO CONSTRUCTION, ALL EXISTING TREE LIMBS OVER HIGHWAYS MUST BE PRUNED TO A HEIGHT OF 14 FEET USING THE TECHNIQUES DESCRIBED IN THE CITY OF ROUND ROCK TREE REMOVAL MANUAL.

22. DEVIATIONS FROM THE ABOVE REQUIREMENTS AND NEGLIGENT DAMAGE TO TREES MAY BE CONSIDERED AS ORDINANCE VIOLATIONS.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

RECORDED SIGNED COPY ON FILE AT PUBLIC WORKS

APPROVED

03-25-11

DATE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)

CITY OF ROUND ROCK

DRAWING NO. EC-01

TREE PROTECTION NOTES

TEMPORARY ACCESS ROAD, EXISTING ROADWAY OR EASEMENT, AS APPROVED.

CRZ

BOARDS

WOOD CHIP MULCH AREA (4"-6" DEPTH)

FENCE AT CRZ PRIOR TO CLEARING, GRADING AND PAVING.

PERMEABLE PAVING AREA

CURB

FENCE LOCATION DURING PERMEABLE PAVING INSTALLATION.

LINEAR CONSTRUCTION THROUGH TREES

TREES IN PAVING AREA

NECESSARY WORK AREA (WOOD CHIP MULCH) (4" TO 6" DEPTH)

BUILDING

CRZ

ADD BOARDS STRAPPED TO TRUNK WHEN FENCE WILL BE LESS THAN 5' FROM TRUNK.

NATURAL AREAS

CRITICAL ROOT ZONE (CRZ) RADIUS (1 FT. PER INCH OF TRUNK DIAMETER)

FENCING AT CRZ.

INDIVIDUAL TREE

TREES NEAR CONSTRUCTION ACTIVITY

NOTE: LIMITS OF MULCH AREAS AND DISTANCE FROM TRUNKS TO WORK/ PERMEABLE PAVING AREAS SHALL BE SUBJECT TO THE APPROVAL OF THE FORESTRY MANAGER.

GROUP OF TREES

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

RECORDED SIGNED COPY ON FILE AT PUBLIC WORKS

APPROVED

03-25-11

DATE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)

CITY OF ROUND ROCK

DRAWING NO. EC-03

TREE PROTECTION FENCE LOCATIONS

CRZ

DRIFLINE

TREE PROTECTION FENCE AT CRZ

CHAIN LINK FENCE

10' MAX

DRIFLINE (VARIES) FENCE LOCATION

(LIMITS OF CRITICAL ROOT ZONE) RADIUS=1 FOOT PER INCH OF TRUNK DIAMETER

TREE PROTECTION FENCE-CHAIN LINK

NOTE: LIMITS OF WOOD CHIP MULCH AREA AND DISTANCE FROM TRUNK TO WORK AREA SHALL BE SUBJECT TO THE APPROVAL OF THE FORESTRY MANAGER.

CRITICAL ROOT ZONE

RADIUS=1 FOOT PER INCH OF TRUNK DIAMETER

WOOD CHIP MULCH (6" DEPTH)

TREE PROTECTION FENCE (MODIFIED)-CHAIN LINK

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

RECORDED SIGNED COPY ON FILE AT PUBLIC WORKS

APPROVED

03-25-11

DATE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)

CITY OF ROUND ROCK

DRAWING NO. EC-04

TREE PROTECTION FENCE CHAIN LINK

STREET R.O.W.

50' MIN.

GRADE TO PREVENT RUNOFF FROM LEAVING SITE

EXISTING GRADE

CROSS SECTION

NOTES:

1. STONE SIZE SHALL BE 3" - 8" OPEN GRADED ROCK.

2. THICKNESS OF CRUSHED STONE PAD TO BE NOT LESS THAN 8".

3. LENGTH SHALL BE A MINIMUM OF 50' FROM ACTUAL ROADWAY, AND WIDTH NOT LESS THAN FULL WIDTH OF HIGHWAY/ROADWAY.

4. ENTRANCE SHALL BE PROPERLY GRADED TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

5. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. ALL SEDIMENT (SOILED) SHOULDER, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY BY CONTRACTOR.

6. AS NECESSARY, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

RECORDED SIGNED COPY ON FILE AT PUBLIC WORKS

APPROVED

03-25-11

DATE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)

CITY OF ROUND ROCK

DRAWING NO. EC-09

STABILIZED CONSTRUCTION ENTRANCE DETAIL

RECOMMENDED TOE-IN METHOD

NON-WOVEN GEOTEXTILE FABRIC SILT FENCE

STEEL FENCE POSTS (MAXIMUM 6' SPACING)

WOVEN WIRE SUPPORT (12-1/2 GAUGE NET BACKING)

TRENCH (BACKFILLED)

FABRIC TOE-IN

CROSS SECTION

NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MIN. OF ONE (1') FOOT.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PATCHMENT) WOOD FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.

3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 8 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE Laid IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

4. SILT FENCE SHALL BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE WHICH IN TURN IS SECURELY FASTENED TO THE STEEL FENCE POSTS.

5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPED EROSION FLOW OR DRAINAGE.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SITUATION.

8. SILT FENCE SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

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DATE

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CITY OF ROUND ROCK

DRAWING NO. EC-10

SILT FENCE DETAIL

ISOMETRIC

WOVEN WIRE SHEATHING

24" MIN.

2" MIN.

18" MIN.

CROSS SECTION

FLOW

NOTES:

1. USE ONLY OPEN GRADED ROCK (3/16 TO 3/8") DIAMETER FOR ALL CONDITIONS.

2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1" OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.

3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

4. IF SEDIMENT REACHES A DEPTH OF 6"; THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTATION PROBLEM.

5. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

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DATE

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CITY OF ROUND ROCK

DRAWING NO. EC-12

ROCK BERM DETAIL

ISOMETRIC

ASSURE DIRECT CONTACT WITH SURFACE OF GUTTER FLOWLINE

20 LB. SANDBAGS @ 3' O.C.

6" DIAMETER EROSION CONTROL LOG

PLAN

FLOW

2" MIN.

ASSURE DIRECT CONTACT WITH SURFACE OF GUTTER FLOWLINE

20 LB. SANDBAGS @ 3' O.C.

6" DIAMETER EROSION CONTROL LOG

CROSS SECTION

NOTES:

1. EROSION CONTROL LOG CONTAINMENT MESH SHALL BE 100% BIODEGRADABLE, PHOTODEGRADABLE OR RECYCLABLE; AND FILL MATERIAL SHALL CONSIST OF MULCH, ASPEN EXFOLSIOR FIBERS, CHIPPED SITE VEGETATION, COCONUT FIBERS, 100% RECYCLABLE FIBERS, OR ANY OTHER ACCEPTABLE MATERIAL EXCLUDING STRAW AND HAY.

2. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".

3. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM WATER BEGINS TO OVERTOP THE CURB.

4. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

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CITY OF ROUND ROCK

DRAWING NO. EC-13

CURB INLET PROTECTION WITH EROSION CONTROL LOG DETAIL

ISOMETRIC

EXTEND 2'-0" MIN BEYOND INLET OPENING AT EACH END

VARIES

3" OVERLAP AT FABRIC SPICES

CUT AWAY OF FILTER FABRIC

2"X4"-W1.4XW1.4 WIRE FABRIC STRUCTURE

12"

FLOW

CROSS SECTION

20 LB. SANDBAGS @ 3' O.C.

MINIMUM 4" HIGH CLEAR OPENING

20 LB. SANDBAGS @ 3' O.C. (SEE NOTE 1)

NOTES:

1. WHERE MINIMUM CLEARANCES CAUSE TRAFFIC TO DRIVE IN THE GUTTER, THE CONTRACTOR MAY SUBSTITUTE A 1" X 4" BOARD SECURED WITH CONCRETE NAILS 3" O.C. NAILED INTO THE GUTTER IN LIEU OF SANDBAGS TO HOLD THE FILTER FABRIC IN PLACE. UPON REMOVAL, CLEAN ANY DIRT/DEBRIS FROM NAILING LOCATIONS, APPLY CHEMICAL SANDBAGS AGENT AND APPLY NON-SHRINK GROUT FLUSH WITH SURFACE OF GUTTER.

2. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOOD RINGS AT THIS LOCATION.

3. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".

4. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM WATER BEGINS TO OVERTOP THE CURB.

5. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

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03-25-11

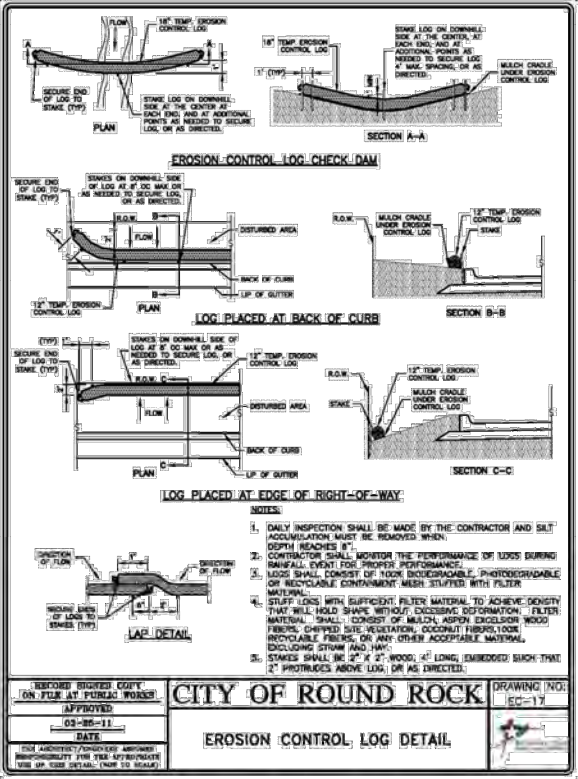
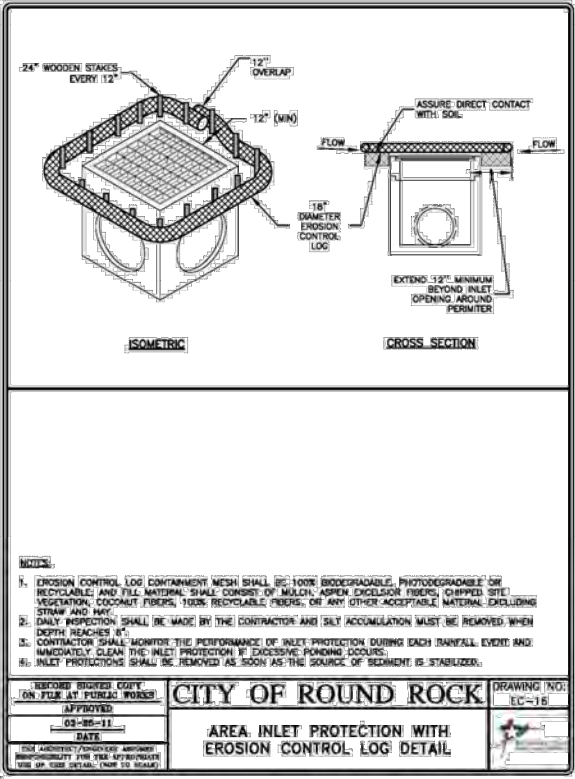
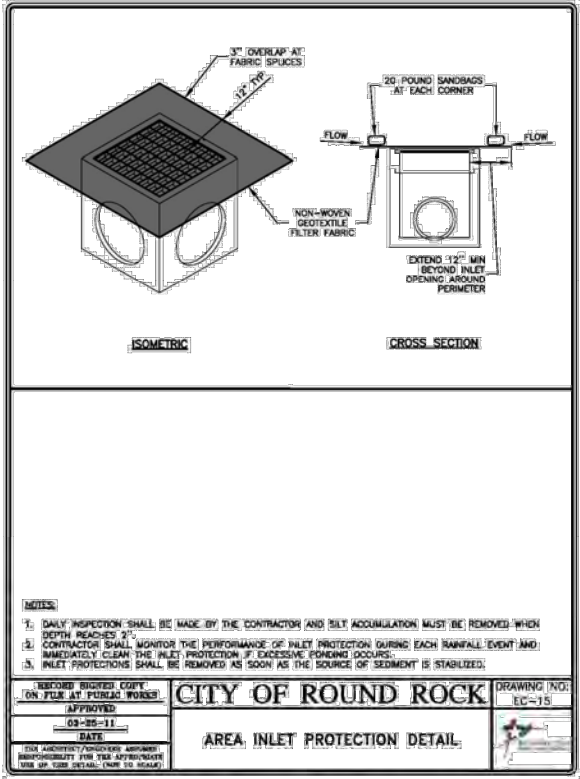
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THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL (NOT TO SCALE)

CITY OF ROUND ROCK

DRAWING NO. EC-14

CURB INLET PROTECTION DETAIL



REV. NO.	REVISION DESCRIPTION	APPROVED BY:	DATE

CobbFendley
505 EAST HUNTLAND DRIVE, SUITE 100
AUSTIN, TEXAS 78752
512.834.9798 | FAX 512.834.4553
WWW.COBBFENDLEY.COM

**EROSION CONTROL
STANDARD DETAILS**

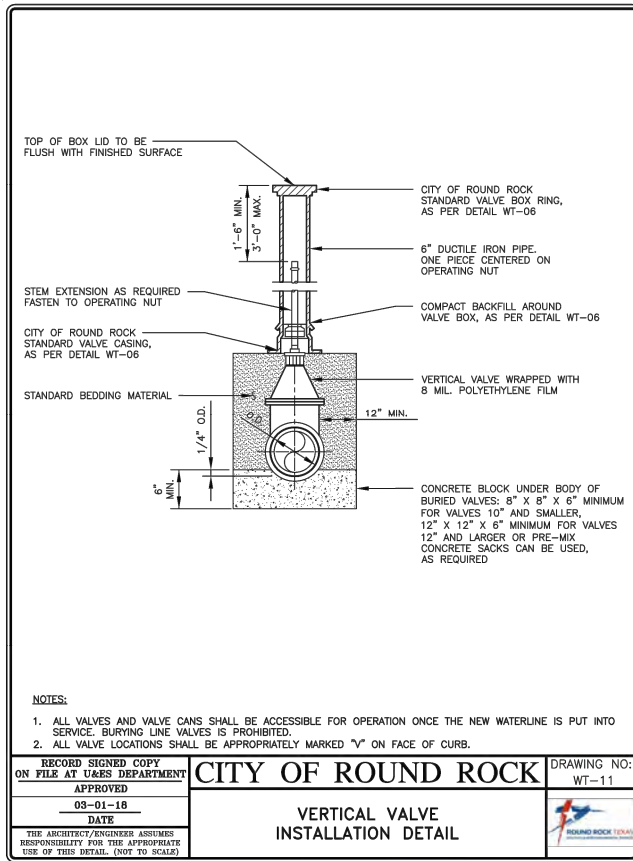
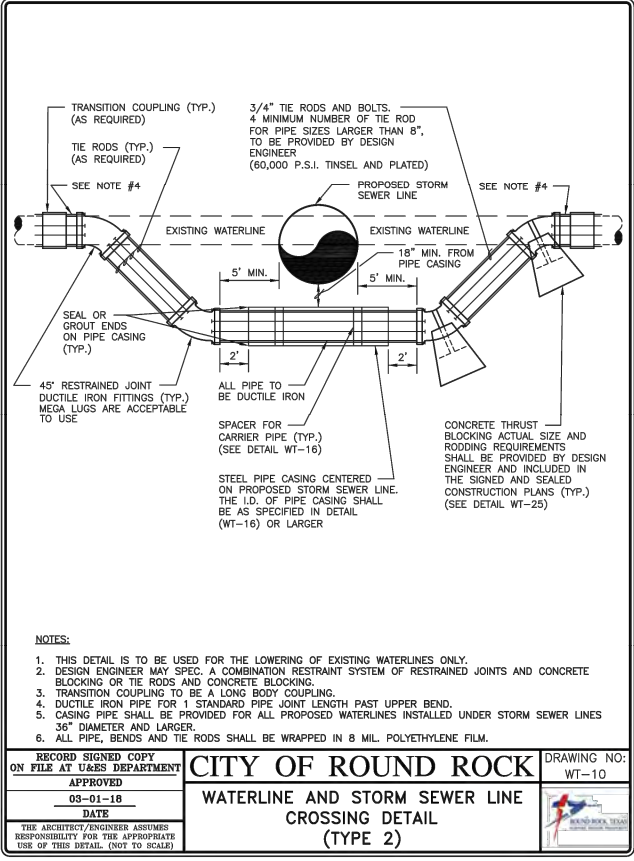
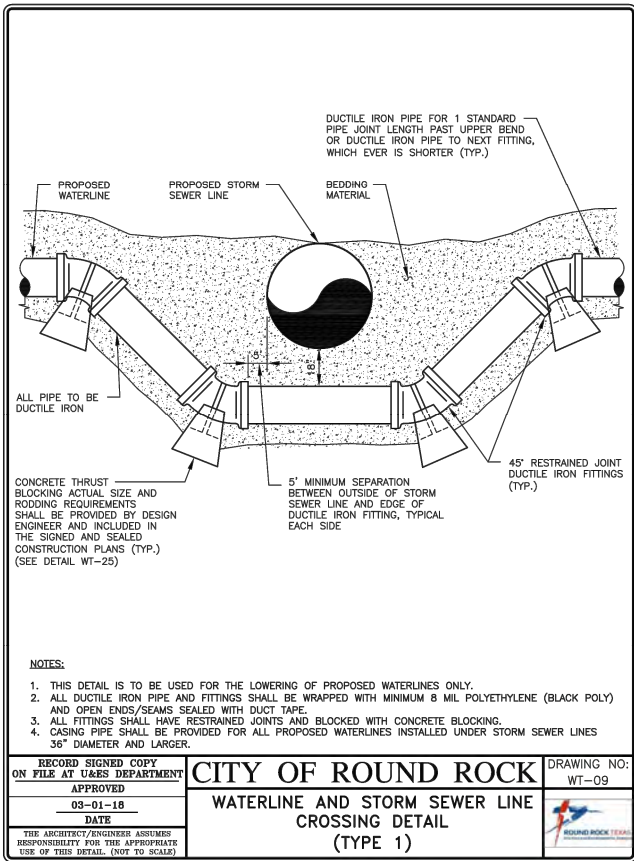
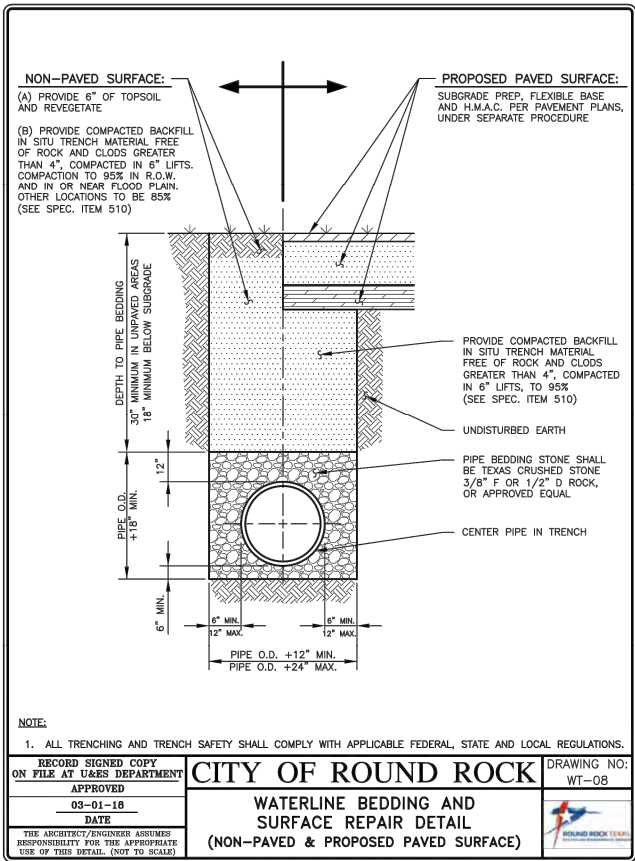
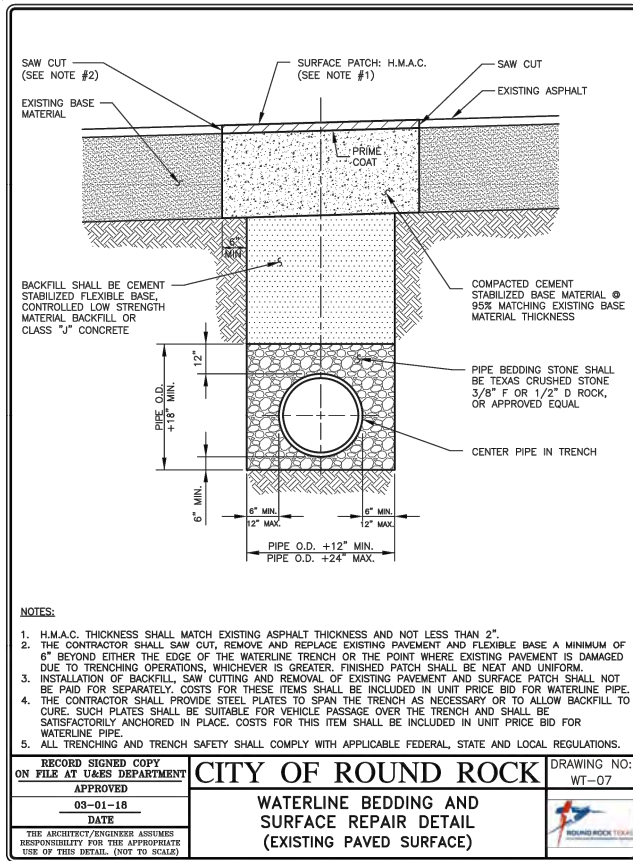
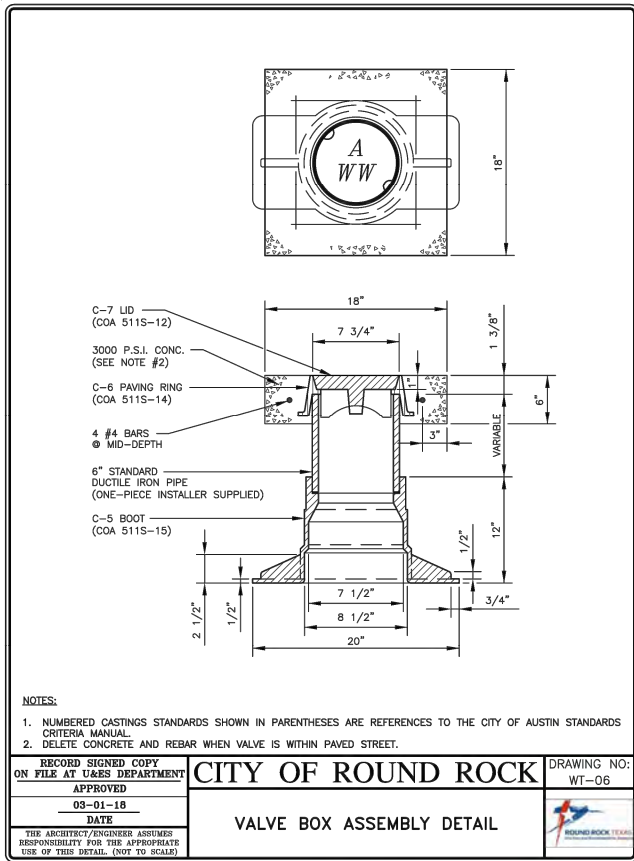
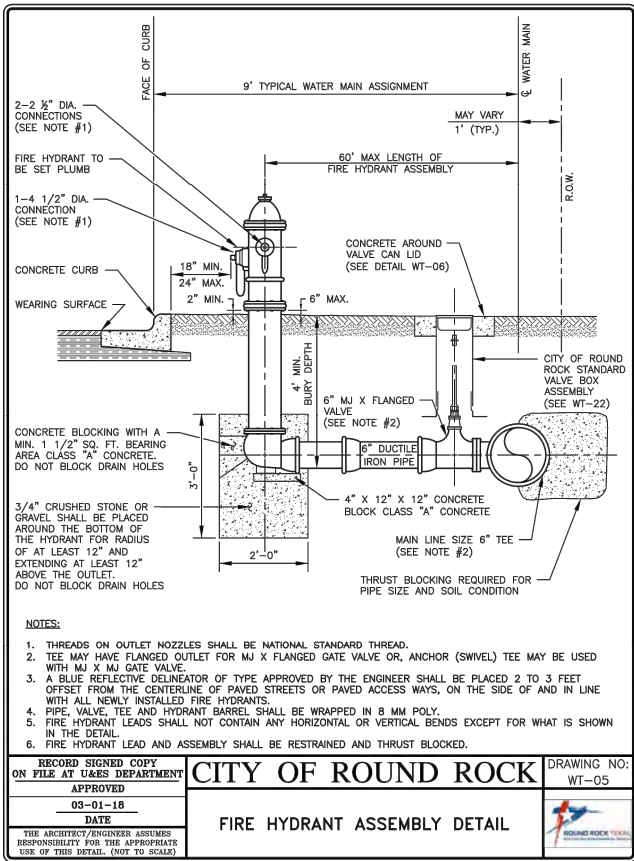
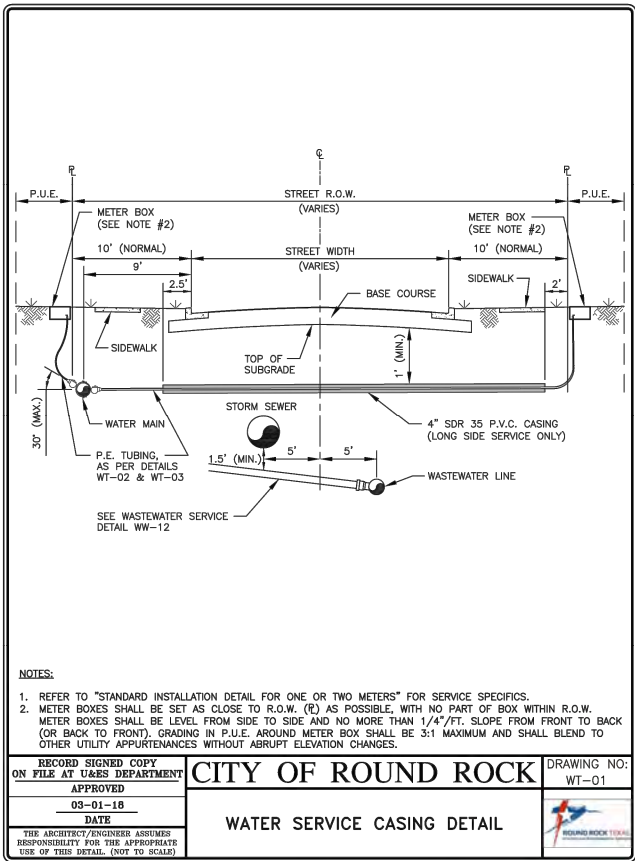
GREAT OAKS FERN BLUFF MUD
WATER RELOCATION
WILLIAMSON COUNTY, TEXAS

WILLIAMSON COUNTY
1848

PROJ. NO. 1703-011-10 7E
DESIGN: K. VANHOOSIER
DRAWN: R. RODRIGUEZ
CHECK: L. PRINCE
APPR: S. FEES
DATE: JANUARY 22, 2020

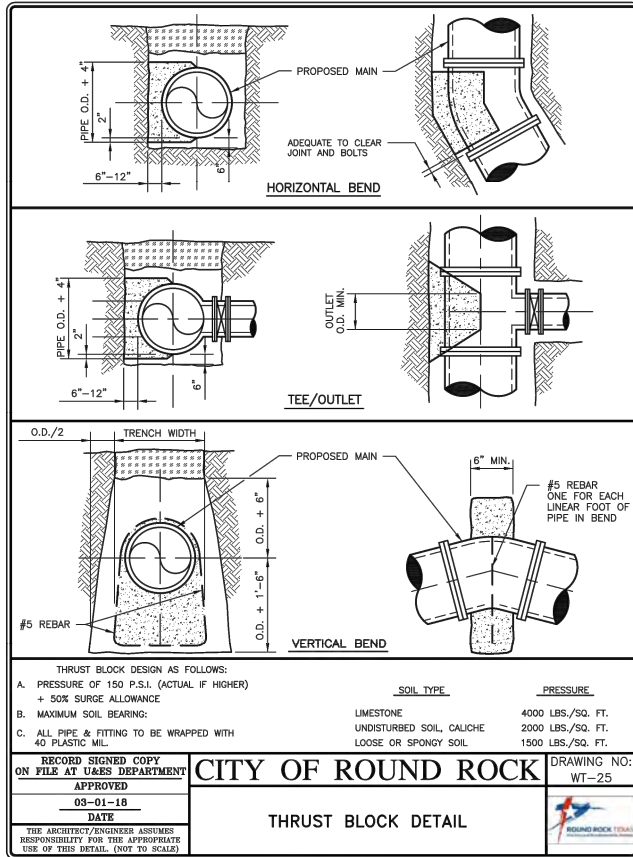
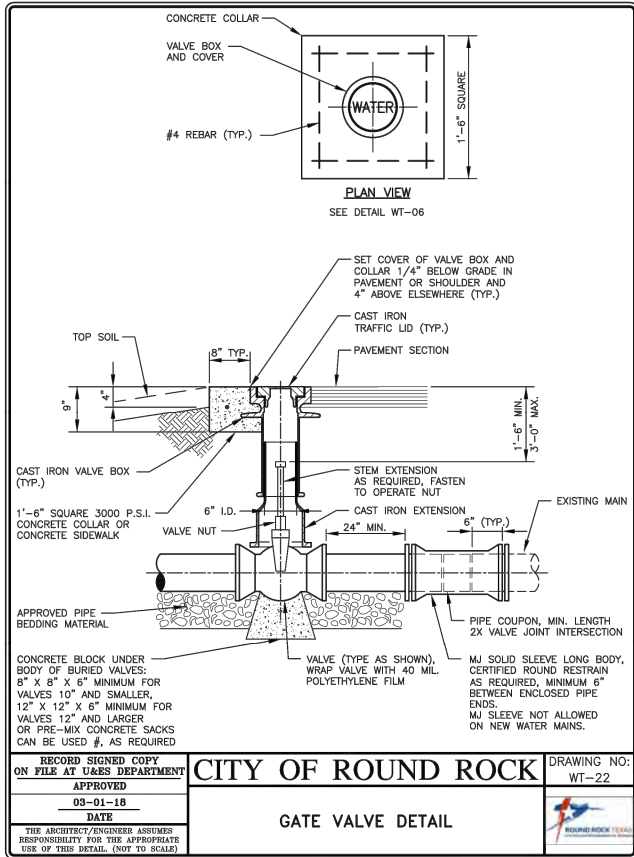
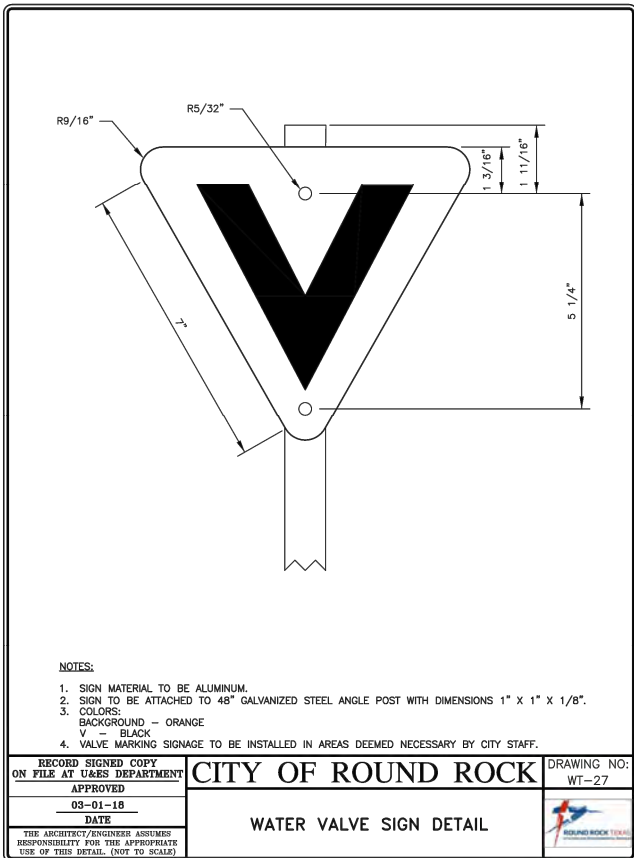
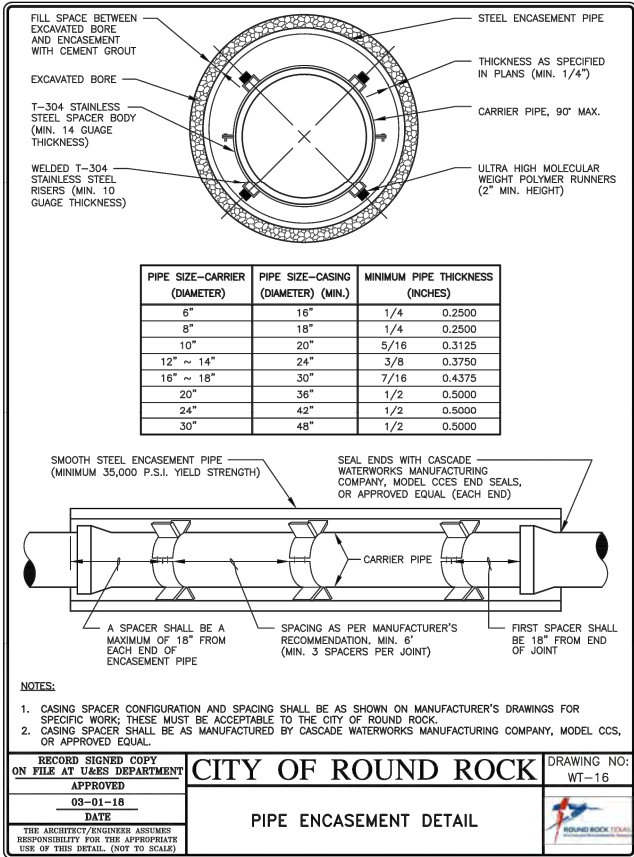
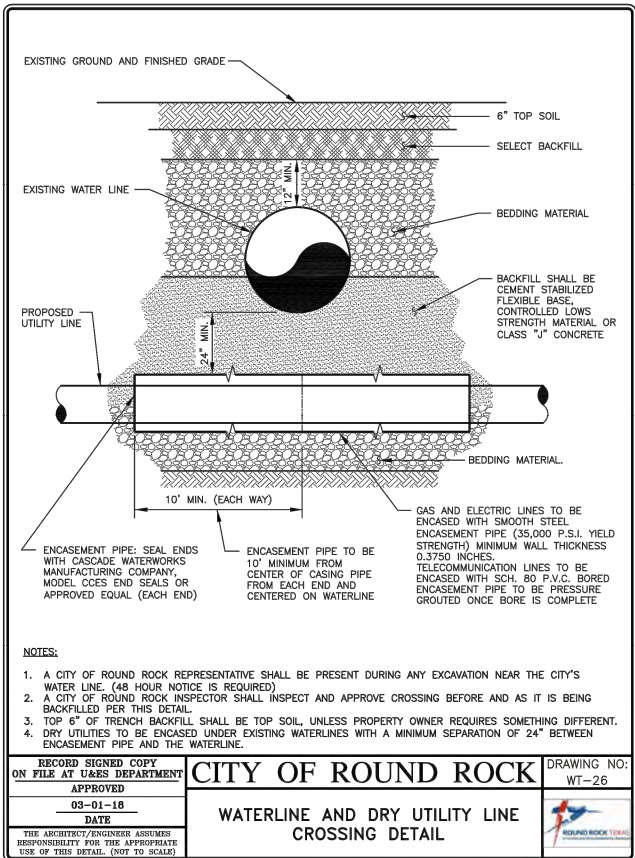
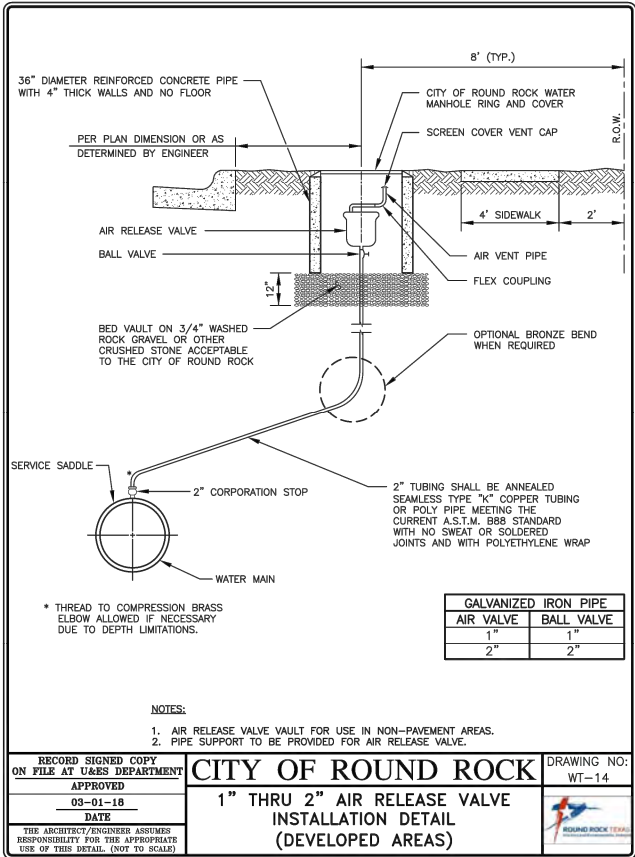
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Dwg Info: G:\CFA\2014\0308801_Williamson_County_2013_Road_Bond\MUN\07E_Great-Oaks-Fern-Bluff-MUD\DESIGN\C-502-CORR-WATR-WTR.dwg — Tab: DETL-WATR-01 — Plotted: 1/22/2020 4:51 PM By: KRISTEN VAN HOOSIER



NOTE:
FOR DETAILS SHOWING "CITY OF ROUND ROCK" TO BE LABELED ON INSTALLED ITEMS, GENERIC ITEMS SHALL BE INSTALLED INSTEAD. FOR EXAMPLE, FOR WATER ITEMS, JUST "WATER" SHALL BE LABELED.

Dwg Info: G:\CFA\2014\030801_Williamson_County_2013_Road_Bond\MUN\07E_Great-Oaks-Fern-Bluff-MUD\DESIGN\C-502-CORR-WATR.dwg - Tab: DETL-WATR-02 - Plotted: 1/22/2020 4:51 PM By: KRISTEN VAN HOOSIER



NOTE:
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APPROVED BY: DATE

REVISION DESCRIPTION

REV. NO.

CobbFendley
CITY OF ROUND ROCK
505 EAST HUNTLAND DRIVE, SUITE 100
AUSTIN, TEXAS 78752
512.834.9798 | FAX 512.834.4553
WWW.COBBFENDLEY.COM

WATER UTILITY STANDARD DETAILS
GREAT OAKS FERN BLUFF MUD
WATER RELOCATIONS
WILLIAMSON COUNTY, TEXAS

WILLIAMSON COUNTY
1848

PROJ. NO. 1703-011-10 7E
DESIGN: K. VANHOOSIER
DRAWN: R. RODRIGUEZ
CHECK: L. PRINCE
APPR: S. FEES
DATE: JANUARY 22, 2020

STANLEY RAY FEES
63294
PROFESSIONAL ENGINEER
1/22/2020

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REGULATORY SIGNATURE AND PERMIT.

SHEET
C-504
10 of 10