

WILLIAMSON COUNTY, TEXAS

CHANGE ORDER NUMBER: 5

1. CONTRACTOR: Jordan Foster Construction

2. Change Order Work Limits: Sta. 105+00 to Sta. 106+00

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

4. Reasons: 2G (3 Max. - In order of importance - Primary first)

Project: 1812-282

Roadway: Seward Junction

CSJ
Number: _____

5. Describe the work being revised:

2G: Differing Site Conditions (Unforeseeable). Unadjusted utility (unforeseeable). This Change Order compensates the Contractor for additional work to install a new 6" and a new 8" wastewater line, a new 6" water line, and remove an existing wastewater vault that has been abandoned. The installation of the new underground utilities are necessary because the existing lines are in conflict with the proposed construction at the intersection of SH 29 and Seward Junction Southwest. The utilities belong to the City of Liberty Hill.

6. Work to be performed in accordance with Items: See attached.

7. New or revised plan sheet(s) are attached and numbered: 1 - 7

8. New Special Provisions/Specifications to the contract are attached: ☐ Yes ☒ No

9. New Special Provisions to Item N/A No. N/A, Special Specification Item N/A are attached.

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

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 provided

Time Ext. #: N/A Days added on this CO: 0

Amount added by this change order: \$272,222.65

THE CONTRACTOR

Date 7-24-2020

By

Typed/Printed Name John Goodrich, P.E.

Typed/Printed Title Executive Vice President

RECOMMENDED FOR EXECUTION:

Project Manager

Date

Design Engineer

Date

Program Manager

Date

Design Engineer's Seal:

N/A

County Commissioner Precinct 1

Date

☐ APPROVED

☐ REQUEST APPROVAL

County Commissioner Precinct 2

Date

☐ APPROVED

☐ REQUEST APPROVAL

County Commissioner Precinct 3

Date

☐ APPROVED

☐ REQUEST APPROVAL

County Commissioner Precinct 4

Date

☐ APPROVED

☐ REQUEST APPROVAL

County Judge

Date

☐ APPROVED

WILLIAMSON COUNTY, TEXAS

CHANGE ORDER NUMBER: 5

Project # 1812-282

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	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	ITEM COST	QUANTITY	QUANTITY	ITEM COST	OVERRUN/ UNDERRUN
999-001	INSURANCE, BONDS & MOBILIZATION	LS	\$12,852.98	0.00	\$0.00	1.00	1.00	\$12,852.98	\$12,852.98
999-002	CUT, PLUG, & ABANDONED EXISTING UTILITIES	LS	\$9,357.90	0.00	\$0.00	1.00	1.00	\$9,357.90	\$9,357.90
999-003	INSTALL & REMOVE SILT FENCE	LF	\$5.46	0.00	\$0.00	245.00	245.00	\$1,337.70	\$1,337.70
999-004	8" C900 DR18, FORCE MAIN-FITTINGS, RESTRAINED JOINTS	LF	\$187.11	0.00	\$0.00	197.00	197.00	\$36,860.67	\$36,860.67
999-005	6" C900 DR18, FORCE MAIN-FITTINGS, RESTRAINED JOINTS	LF	\$180.61	0.00	\$0.00	182.00	182.00	\$32,871.02	\$32,871.02
999-006	6" C900 DR18, WATERLINE-FITTINGS, RESTRAINED JOINTS	LF	\$182.85	0.00	\$0.00	201.00	201.00	\$36,752.85	\$36,752.85
999-007	18" STEEL ENCASEMENT (OPEN CUT)	LF	\$186.65	0.00	\$0.00	176.00	176.00	\$32,850.40	\$32,850.40
999-008	16" STEEL ENCASEMENT (OPEN CUT)	LF	\$162.09	0.00	\$0.00	355.00	355.00	\$57,541.95	\$57,541.95
999-009	WET CONNECTION	EA	\$5,367.63	0.00	\$0.00	6.00	6.00	\$32,205.78	\$32,205.78
999-010	6" GATE VALVE WITH BOX	EA	\$1,232.80	0.00	\$0.00	2.00	2.00	\$2,465.60	\$2,465.60
999-011	TRENCH SAFETY	LF	\$2.76	0.00	\$0.00	580.00	580.00	\$1,600.80	\$1,600.80
999-012	BYPASS PUMPING	DAY	\$5,175.00	0.00	\$0.00	3.00	3.00	\$15,525.00	\$15,525.00
TOTALS					\$0.00			\$272,222.65	\$272,222.65

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

Seward Junction Improvements Williamson County Project No. 1812-282

Change Order No. 5

Reason for Change

This Change Order compensates the Contractor for additional work to install new 6" and an 8" wastewater lines, a new 6" water line and remove an existing wastewater vault that has been abandoned. The installation of the new underground utilities is necessary because the existing lines are in conflict with the proposed construction of the intersection of SH 29 and Seward Junction Southwest. The utilities belong to the City of Liberty Hill.

The new underground utility lines will be encased since they are under County Right of Way. The wastewater service will be maintained by pumping around the relocation area from manhole to manhole. The wastewater vault was shown in the plans, but no action was provided as to what to do with the structure and no method of payment was stated. The City's Utility Engineer generated the new plan sheets for the lowering of the lines and eliminating the vault. These lines are located along the south side and parallel to SH 29 across Texas Material's existing driveway. The Contractor's pricing was compared to other projects in the program and are comparable. This Change Order applies to the Seward Junction Southwest portion of the project.

Following is a summary of new items required for this Change Order.

ITEM	DESCRIPTION	QTY	UNIT
999-001	INSURANCE, BONDS, & MOBILIZATION	1	LS
999-002	CUT, PLUG, AND ABANDON EXISTING UTILITIES	1	LS
999-003	INSTALL & REMOVE SILT FENCE	245	LF
999-004	8" C900 DR18 FORCE MAIN-RESTRAINED JOINTS	197	LF
999-005	6" C900 DR18 FORCE MAIN-RESTRAINED JOINTS	182	LF
999-006	6" C900 DR18 WATER MAIN-RESTRAINED JOINTS	201	LF
999-007	18" STEEL ENCASEMENT (OPEN CUT)	176	LF
999-008	16" STEEL ENCASEMENT (OPEN CUT)	355	LF

999-009	WET CONNECTION	6	EA
999-010	6" GATE VALVE WITH VALVE BOXES	2	EA
999-011	TRENCH SAFETY	580	LF
999-012	BYPASS PUMPING	3	DAY

This Change Order results in a net increase of \$272,222.65 to the Contract amount, for an adjusted Contract total of \$13,685,753.57. The original Contract amount was \$13,270,258.10. As a result of this and all Change Orders to-date, \$415,495.47 has been added to the Contract, resulting in an 3.13% net increase in the Contract cost. No additional days will be added to or deducted from the Contract as a result of this Change Order.

HNTB Corporation

James Klotz, P.E.



CITY OF LIBERTY HILL
SH 29 AT CR 213 UTILITY RELOCATION
BID SCHEDULE



No.	Item Description	Quantity	Unit	Unit Price	Total Price
1	INSURANCE, BONDS, & MOBILIZATION (<5% OF TOTAL BID)	1	LS	\$ 12,852.98	\$ 12,852.98
2	DEMOLITION PLAN & CUT, PLUG, & ABANDON EXISTING UTILITIES	1	LS	\$ 9,357.90	\$ 9,357.90
3	INSTALL AND REMOVE SILT FENCING, PER L.F.	245	LF	\$ 5.46	\$ 1,337.70
4	8" C900 DR18 FORCE MAIN INCLUDING FITTINGS, THRUST BLOCKS, & RESTRAINED JOINTS	197	LF	\$ 187.11	\$ 36,860.67
5	6" C900 DR18 FORCE MAIN INCLUDING FITTINGS, THRUST BLOCKS, & RESTRAINED JOINTS	182	LF	\$ 180.61	\$ 32,871.02
6	6" C900 DR18 WATER MAIN INCLUDING FITTINGS, THRUST BLOCKS, & RESTRAINED JOINTS	201	LF	\$ 182.85	\$ 36,752.85
7	18" STEEL CASING (OPEN CUT)	176	LF	\$ 186.65	\$ 32,850.40
8	16" STEEL CASING (OPEN CUT)	355	LF	\$ 162.09	\$ 57,541.95
9	WET CONNECTIONS TO EXISTING PIPELINES	6	EA	\$ 5,367.63	\$ 32,205.78
10	6" GATE VALVE WITH VALVE BOX	2	EA	\$ 1,232.80	\$ 2,465.60
11	TRENCH SAFETY PLAN	580	LF	\$ 2.76	\$ 1,600.80
12	BYPASS PUMPING	3	DY	\$ 5,175.00	\$ 15,525.00
BID TOTAL				\$272,222.65	

L:\PROJECTS 2008\21487 City of Liberty Hill General\SH 29 at CR 213 Utility Relocation\CAD\Plans\1 Cover Sheet.dwg, 2/20/2020 9:43:05 AM, JEREMY

These drawings are the sole property of STEGER & BIZZELL ENGINEERING, INC. The use of these drawings is hereby restricted to the original site for which they were prepared. Reproduction or reuse of these drawings in whole or in part without written permission of STEGER & BIZZELL ENGINEERING, INC. is strictly prohibited.

SH 29 AT CR 213 UTILITY RELOCATION

for the

City of Liberty Hill

Williamson County, Texas

APPROVED FOR
CONSTRUCTION



WARNING!
There are existing water pipelines, underground telephone cables and other above and below ground utilities in the vicinity of this project. The Contractor shall contact all appropriate companies prior to any construction in the area and determine if any conflicts exist. If so, the Contractor shall immediately contact the Engineer who shall revise the design as necessary.

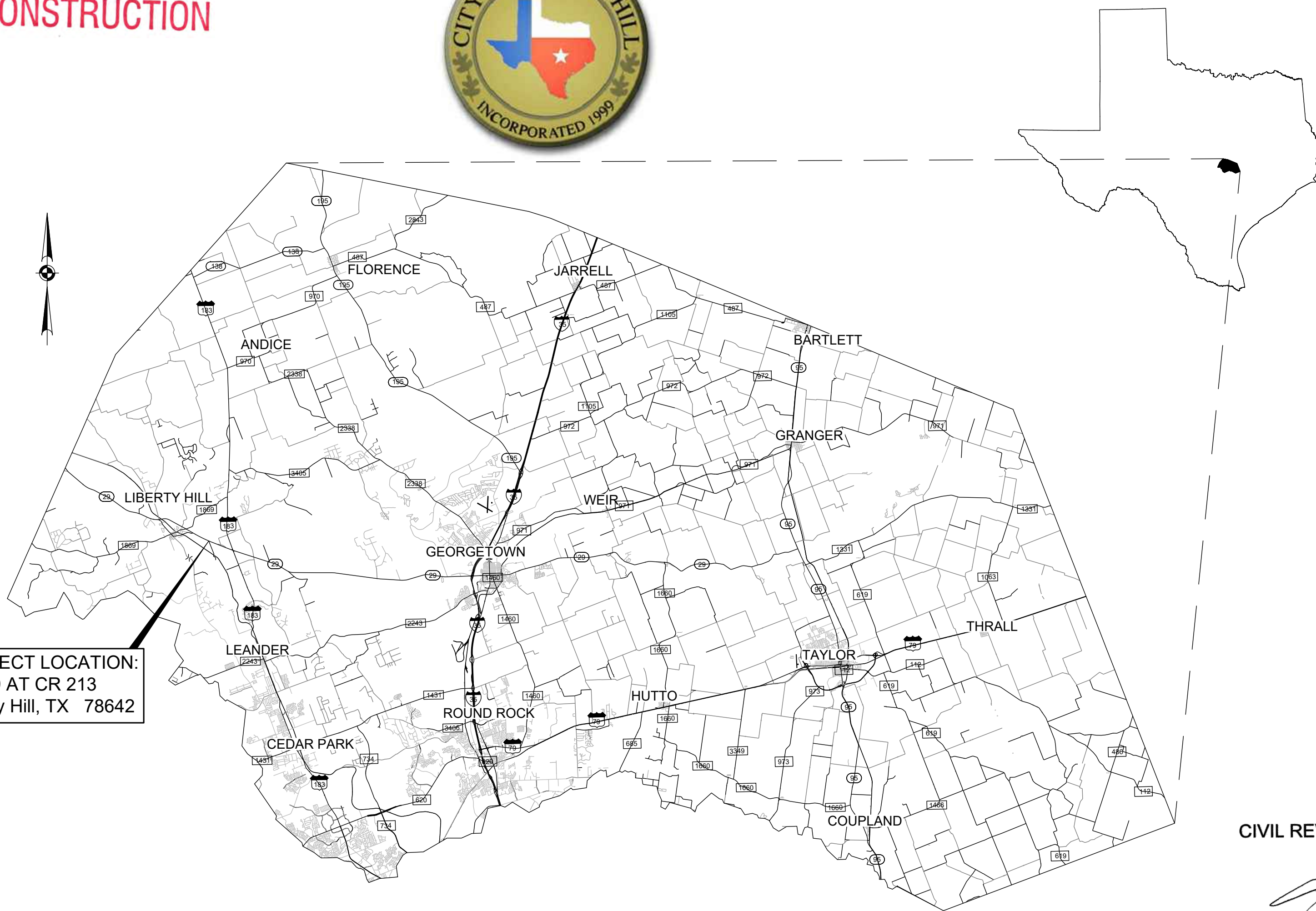
Mayor & City Council

Mayor
Mayor Pro Tem
Council Member
Council Member
Council Member
Council Member

Rick Hall
Liz Rundzieher
Kathy Canady
Steve McIntosh
Tony DeYoung
Gram Lankford

Director of Public Works Wayne Bonnet

PROJECT LOCATION:
SH 29 AT CR 213
Liberty Hill, TX 78642



Williamson County

SCALE: 1"=4 MILES (FULL SIZE PLANS)

Sheet Number	Sheet Title
1	Cover Sheet
2	General Notes (Sheet 1 of 2)
3	General Notes (Sheet 2 of 2)
4	Site Plan Piping Details
5	Piping Cross-Sections
6	Standard Details (Sheet 1 of 2)
7	Standard Details (Sheet 2 of 2)

CIVIL REVIEW

Aaron J. Laughlin, P.E.



2/18/2020
Date

CITY OF LIBERTY HILL - APPROVED BY:

Wayne Bonnet - Director of Public Works

2/18/20
Date

NOTE:

Contractor is to furnish a set of construction plans back to the Engineer at the end of the project with all deviation noted in red on the plan sheets. Contractor shall not receive final payment until complete Record Drawings set is returned to the Engineer.



ADDRESS	1978 S. AUSTIN AVENUE	GEORGETOWN, TX 78626
METRO	512.930.9412	TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS FIRM No.10003700
SERVICES	>>ENGINEERS >>PLANNERS >>SURVEYORS	
WEB	STEGEBIZZELL.COM	

Project Number: 21487
Sheet No.: 1 of 7

L:\PROJECTS 2008\21487 City of Liberty Hill General\SH 29 at CR 213 Utility Relocation\CAD\Plans\2 General Notes (Sheet 1 of 2).dwg, 2/20/2020 9:44:19 AM, JEREMY

These drawings are the sole property of STEGER & BIZZELL ENGINEERING, INC. The use of these drawings is hereby restricted to the original site for which they were prepared. Reproduction or reuse of these drawings in whole or in part without written permission of STEGER & BIZZELL ENGINEERING, INC. is strictly prohibited.

GENERAL NOTES:

1.

All construction shall be in accordance with the City of Round Rock Standard Specifications Manual or as shown on the plans.
2.

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 contractor's expense.
3.

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 as appropriate.
4.

Manhole frames, covers, valves, cleanouts, etc. shall be raised to finished grade prior to final paving construction.
5.

The Contractor shall give the City of Liberty Hill 48 hours notice before beginning each phase of construction. Telephone 512-745-7060 (Wayne Bonnet).
6.

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.
7.

Prior to any construction, the Engineer shall convene a preconstruction conference between the City of Liberty Hill, himself, the Contractor, other utility companies, any affected parties and any other entity the City or Engineer may require.
8.

The Contractor and the Engineer shall keep accurate records of all construction that deviates from the plans. The Engineer shall furnish the City of Liberty Hill accurate "As-Built" drawings following completion of all construction. These "As-Built" drawings shall meet with the satisfaction of the Engineering and Development Services Department prior to final acceptance.
9.

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.
10.

Prior to any construction, the Contractor shall apply for and secure all proper permits from the appropriate authorities.
11.

The contractor is responsible for the preparation & maintenance of a storm water pollution prevention plan (SWPPP) if required.
12.

Verify location of existing utilities prior to construction of the facilities proposed in this contract. Take care to avoid damage to existing utilities; repair any utility damaged in the course of construction of any part of this contract to its original operating condition immediately, with repair crews working 24 hours per day until damage is repaired. There shall be no separate pay for repair work.
13.

All tie ins to the existing lines need to occur between 1:00 AM and 4:00 AM. Contractor shall coordinate with City staff 72 hours prior to taking any lines out of service. Prior to performing any tie-ins on force mains, the Contractor shall coordinate with City staff on pumping out the lift station down to the minimum operating level. During tie-in activities on force mains, the Contractor shall provide at their own cost a vactor truck at the lift station to pump out the lift station as needed to keep the lift station from overflowing. Contractor assumes all liabilities for any cost associated with a lift station overflow occurring during any force main downtime period due to Contractor's construction activities.

TRENCH SAFETY NOTES:

1.

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.
2.

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.
3.

Contractor is responsible for all trench safety plans.

WATER AND WASTEWATER NOTES:

1.

Pipe material for wastewater force mains shall be PVC (ASTM D2241 or D3034, SDR-26) or, Ductile Iron (AWWA C-100, min. class 200).
2.

The Contractor shall contact the City Engineer at 512-930-9412 to coordinate utility tie-ins and notify him at least 48 hours prior to connecting to existing lines.
3.

The Contractor can purchase water from plant fill station.
4.

Line flushing or any activity using a large quantity of water must be scheduled with the City Engineer, at telephone 512-930-9412.
5.

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 Liberty Hill personnel.
6.

The Contractor shall coordinate testing with the City of Liberty Hill Inspector and provide no less than 24 hours notice prior to performing sterilization, quality testing or pressure testing.
7.

The Contractor shall not open or close any valves unless authorized by the City of Liberty Hill .
8.

Sand, as described in Specification, 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
9.

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.
10.

All wastewater construction shall be in accordance with the Texas Commission on Environmental Quality (TCEQ) Regulations, 30 TAC Chapter 213 and 217, as applicable. Whenever TCEQ and City of Liberty Hill Specifications conflict, the more stringent shall apply.
11.

Wastewater PVC pipe shall be green and water PVC pipe shall be blue.
12.

All material that touches drinking water shall be NSF approved.

STREET AND DRAINAGE NOTES:

1.

All testing shall be done by an independent laboratory at the Contractor'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 512-745-7060 (Wayne Bonnet).
2.

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 4" shall be clean topsoil free from all clods and suitable for sustaining plant life.
3.

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.
4.

Cement stabilized backfill is required for all open cut trenches under existing pavement. Stabilized backfill shall extend 5 feet beyond limits of paving.

ADDITIONAL WASTEWATER NOTES

1.

If a conflict exists between the various documents, the documents will take precedence in the following order:

a.

Municipal Utility Specifications

b.

Change Orders

c.

Addenda Issue During Bidding

d.

Project Specifications

e.

Construction Plans
2.

The following pipe diameters, pipe material and national standard specifications are proposed for this project:

Diameter	Linear Feet	Pipe Material	National Standard for Pipe Material	National Standard
6"	TBD	PVC C900	ASTM D 1784	
8"	TBD	PVC C900	ASTM D 1784	
3.

The bedding class for each diameter of flexible pipe and each flexible pipe material is as follows:

Pipe diameter

- 8" Pipe Material

- Bedding Class - IB
4.

The structural integrity of the collection line due to high soil P.I.'s will require the bedding around the pipe to be 6" minimum below the pipe, 6" minimum on each side of the pipe, and 12" minimum above the pipe.
5.

If faults, caverns, or subsidence are discovered during construction, construction shall be halted to allow the features to be inspected by the design engineer or a geological or geotechnical engineer. Based on this inspection, revisions approval to the design may be required.
6.

The trench walls shall be vertical to at least one foot above the pipe.
7.

The trench backfill shall be free of stones greater than 6 inches in diameter and free of organic or any other unstable material.
8.

The minimum allowable tensile strength and cell class for each flexible pipe shall be as follows: Pipe Material: SDR-26 Tensile Strength: 7,000 Cell Class (PVC only): 12454-B Pipe Material: DR-26 Tensile Strength: 7,000 Cell Class (PVC only): 12454-B
9.

Inspection must be provided during critical phases of construction by a qualified inspector under the direction of a P.E. Critical phases of construction are deemed at a minimum to include testing of pipe and manholes for leakage, testing of flexible pipe for installed deflection, and any other as directed by the City.The City and design engineer shall provide inspection as appropriate.
10.

TCEQ approval letters for plans and specifications review contain the requirement that once the project is completed, a P.E. registered in the state of Texas must certify that the construction was performed substantially in accordance with the approved plans and specifications. If flexible pipe was installed, a P.E. must also certify that all pipe was subjected to and passed the required deflection test. The design engineer, with concurrence of the City, will certify the installation.

TRAFFIC MARKING NOTES:

1.

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.
2.

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.
3.

Contractor is responsible for all traffic control required for the project and will include all cost associated with traffic control in the base bid.
4.

Contractor shall submit plan for approval prior to construction.

EROSION AND SEDIMENTATION CONTROL NOTES:

1.

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.
2.

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 Contractor and the City of Liberty Hill for effectiveness. Additional measures may be required if, in the opinion of the City Engineer, they are warranted.
3.

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.
4.

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.

TEMPORARY EROSION CONTROL NOTES

1.

The Contractor shall install erosion/sedimentation controls and tree protective fencing prior to any site preparation work (clearing, grubbing or excavation).
2.

The placement of erosion/sedimentation controls shall be in accordance with the EROSION & SEDIMENTATION CONTROL as shown on the plan & profile sheets.
3.

Any significant variation in materials or locations of controls or fences from those shown on the approved plans must be approved by the City Engineer.
4.

The Contractor is required to inspect all controls and fences at weekly intervals and after significant rainfall events to insure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six (6) inches.
5.

Prior to final acceptance, haul roads and waterway crossings constructed for temporary Contractor access must be removed, accumulated sediment removed from the waterway, and the area restored to the original grade and revegetated. All land clearing debris shall be disposed of in approved spoil disposal sites.
6.

Field revisions to the EROSION & SEDIMENTATION CONTROL may be required by the Engineer during the course of construction to be correct control inadequacies.

PERMANENT EROSION CONTROL NOTES

1.

All disturbed areas shall be restored as noted below:

a.

A minimum of four inches of imported sandy loam topsoil or approved equal shall be placed in all drainage channels (except rock) and on all cleared areas.

b.

The seeding for permanent erosion control shall be applied over areas disturbed by construction as follows, unless specified elsewhere:

i.

From September 15 to March 1, seeding shall be with a combination of 1 pound per 1,000 square feet of unhulled Bermuda and 7 pounds per 1,000 square feet of Winter Rye with a purity of 95% with 90% germination.

ii.

From March 2 to September 14, seeding shall be with hulled Bermuda at a rate of 3 pounds per 1,000 square feet with a purity of 95% with 85% germination.

c.

Fertilizer shall be slow release granular or pelleted type and shall have an analysis of 15-15-15 and shall be applied at the rate of 23 pounds per acre once at the time of planting and again once during the time of establishment.

d.

The planted area shall be irrigated or sprinkled in a manner that will not erode the top soil, but will sufficiently soak the soil to a depth of six inches. The irrigation shall occur at ten-day intervals during the first two months. Rainfall occurrences of 1/2 inch or more shall postpone the watering schedule for one week.

e.

Mulch type used shall be Mulch, applied at a rate of 1,500 pounds per acre.

APPROVED FOR
CONSTRUCTION

NO.	REVISION	BY	DATE

AJL, JJY	JAN 2020
DESIGNED BY:	DATE
JJY	JAN 2020
DRAWN BY:	DATE
CRS	FEB 2020
CHECKED BY:	DATE
AJL	FEB-18-2020
APPROVED BY:	DATE



ADDRESS	1978 S. AUSTIN AVENUE	GEORGETOWN, TX 78626
METRO	512.930.9412	Texas REGISTERED ENGINEERING FIRM F-181
SERVICES	TBPLS FIRM No.10003700	WEB STEGERBIZZELL.COM
	>>ENGINEERS	>>PLANNERS >>SURVEYORS

GENERAL NOTES (SHEET 1 OF 2)
for
SH 29 AT CR 213 UTILITY RELOCATION
City of Liberty Hill
Williamson County, Texas

Project No:
21487

SHEET
2
of 7

L:\PROJECTS 2008\21487 City of Liberty Hill General\SH 29 at CR 213 Utility Relocation\CAD\Plans\3 General Notes (Sheet 2 of 2).dwg, 2/20/2020 9:44:30 AM, JEREMY

These drawings are the sole property of STEGER & BIZZELL ENGINEERING, INC. The use of these drawings is hereby restricted to the original site for which they were prepared. Reproduction or reuse of these drawings in whole or in part without written permission of STEGER & BIZZELL ENGINEERING, INC. is strictly prohibited.

TCEQ WATER DISTRIBUTION SYSTEM
GENERAL CONSTRUCTION NOTES

1. This water distribution system must be constructed in accordance with the current Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems 30 Texas Administrative Code (TAC) Chapter 290 Subchapter D. When conflicts are noted with local standards, the more stringent requirement shall be applied. At a minimum, construction for public water systems must always meet TCEQ's "Rules and Regulations for Public Water Systems."
2. All newly installed pipes and related products must conform to American National Standards Institute (ANSI)/NSF International Standard 61 and must be certified by an organization accredited by ANSI [§290.44(a)(1)].
3. Plastic pipe for use in public water systems must bear the NSF International Seal of Approval (NSF-pw) and have an ASTM design pressure rating of at least 150 psi or a standard dimension ratio of 26 or less [§290.44(a)(2)].
4. No pipe which has been used for any purpose other than the conveyance of drinking water shall be accepted or relocated for use in any public drinking water supply [§290.44(a)(3)].
5. All water line crossings of wastewater mains shall be perpendicular [§290.44(e)(4)(B)].
6. Water transmission and distribution lines shall be installed in accordance with the manufacturer's instructions. However, the top of the water line must be located below the frost line and in no case shall the top of the water line be less than 24 inches below ground surface [§290.44(a)(4)].
7. The maximum allowable lead content of pipes, pipe fittings, plumbing fittings, and fixtures is 0.25 percent [§290.44(b)].
8. The contractor shall install appropriate air release devices with vent openings to the atmosphere covered with 16-mesh or finer, corrosion resistant screening material or an acceptable equivalent [§290.44(d)(1)].
9. The contractor shall not place the pipe in water or where it can be flooded with water or sewage during its storage or installation [§290.44(f)(1)].
10. When waterlines are laid under any flowing or intermittent stream or semi-permanent body of water the waterline shall be installed in a separate watertight pipe encasement. Valves must be provided on each side of the crossing with facilities to allow the underwater portion of the system to be isolated and tested [§290.44(f)(2)].
11. Pursuant to 30 TAC §290.44(a)(5), the hydrostatic leakage rate shall not exceed the amount allowed or recommended by the most current AWWA formulas for PVC pipe, cast iron and ductile iron pipe. Include the formulas in the notes on the plans.

- o The hydrostatic leakage rate for polyvinyl chloride (PVC) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C-605 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;

$$Q = \frac{LD\sqrt{P}}{148,000}$$

Where:

- Q = the quantity of makeup water in gallons per hour,
 - L = the length of the pipe section being tested, in feet,
 - D = the nominal diameter of the pipe in inches, and
 - P = the average test pressure during the hydrostatic test in pounds per square inch (psi).
- o The hydrostatic leakage rate for ductile iron (DI) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C-600 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;

$$L = \frac{SD\sqrt{P}}{148,000}$$

Where:

- L = the quantity of makeup water in gallons per hour,
 - S = the length of the pipe section being tested, in feet,
 - D = the nominal diameter of the pipe in inches, and
 - P = the average test pressure during the hydrostatic test in pounds per square inch (psi).
12. The contractor shall maintain a minimum separation distance in all directions of nine feet between the proposed waterline and wastewater collection facilities including manholes. If this distance cannot be maintained, the contractor must immediately notify the project engineer for further direction. Separation distances, installation methods, and materials utilized must meet §290.44(e)(1)-(4).
 13. The separation distance from a potable waterline to a wastewater main or lateral manhole or cleanout shall be a minimum of nine feet. Where the nine-foot separation distance cannot be achieved, the potable waterline shall be encased in a joint of at least 150 psi pressure class pipe at least 18 feet long and two nominal sizes larger than the new conveyance. The space around the carrier pipe shall be supported at five-foot intervals with spacers or be filled to the springline with washed sand. The encasement pipe shall be centered on the crossing and both ends sealed with cement grout or manufactured sealant [§290.44(e)(5)].
 14. Fire hydrants shall not be installed within nine feet vertically or horizontally of any wastewater line, wastewater lateral, or wastewater service line regardless of construction [§290.44(e)(6)].
 15. Suction mains to pumping equipment shall not cross wastewater mains, wastewater laterals, or wastewater service lines. Raw water supply lines shall not be installed within five feet of any tile or concrete wastewater main, wastewater lateral, or wastewater service line [§290.44(e)(7)].

16. Waterlines shall not be installed closer than ten feet to septic tank drainfields [§290.44(e)(8)].
17. The contractor shall disinfect the new waterlines in accordance with AWWA Standard C-651-14 or most recent, then flush and sample the lines before being placed into service. Samples shall be collected for microbiological analysis to check the effectiveness of the disinfection procedure which shall be repeated if contamination persists. A minimum of one sample for each 1,000 feet of completed waterline will be required or at the next available sampling point beyond 1,000 feet as designated by the design engineer [§290.44(f)(3)].
18. Dechlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655-09 or most recent.

Texas Commission on Environmental Quality
Lift Station and Force Main
General Construction Notes

Edwards Aquifer Protection Program Construction Notes - Legal Disclaimer

The following/listed "construction notes" are intended to be advisory in nature only and do not constitute an approval or conditional approval by the Executive Director (ED), nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further actions may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code (TAC), Chapters 213 and 217, as well as local ordinances and regulations providing for the protection of water quality. Additionally, nothing contained in the following/listed "construction notes" restricts the powers of the ED, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. The holder of any Edwards Aquifer Protection Plan containing "construction notes" is still responsible for compliance with Title 30, TAC, Chapters 213 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to comply with any condition of the ED's approval, whether or not in contradiction of any "construction notes," is a violation of TCEQ regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, TAC § 213.10 (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. The following/listed "construction notes" in no way represent an approved exception by the ED to any part of Title 30 TAC, Chapters 213 and 217, or any other TCEQ applicable regulation

1. This lift station and/or force main must be constructed in accordance with 30 Texas Administrative Code (TAC) §213.5(c), the Texas Commission on Environmental Quality (TCEQ) Edwards Aquifer Rules, and any local government standard specifications.
2. Any modification to the activities described in the referenced Lift Station/Force Main (LSFM) System application following the date of approval may require the submittal of a LSFM System application to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval.
3. A written notice of construction must be submitted to the presiding TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include:
 - the name of the approved project;
 - the activity start date; and
 - the contact information of the prime contractor.
4. Upon completion of any lift station excavation, a geologist must certify that the excavation has been inspected for the presence of sensitive features. The certification must be signed, sealed, and dated by the geologist preparing the certification. Certification that the excavation has been inspected must be submitted to the appropriate regional office.
 - If sensitive feature(s) are identified, all regulated activities near the sensitive feature must be suspended immediately and may not proceed until the executive director has reviewed and approved the methods proposed to protect any sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality from the lift station.
 - Construction may continue if the geologist certifies that no sensitive feature or features were present.
5. If any sensitive features are discovered during the wastewater line trenching activities, all regulated activities near the sensitive feature must be suspended immediately. The applicant must immediately notify the appropriate regional office of the TCEQ of the feature discovery. A geologist's assessment of the location and extent of the feature discovered must be reported to that regional office in writing within two working days. The applicant must submit a plan for ensuring the structural integrity of the sewer line or for modifying the proposed collection system alignment around the feature. The regulated activities near the sensitive feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality while maintaining the structural integrity of the line.

6. All force main lines must be tested in accordance with 30 TAC §217.68. Testing method will be:
 - A pressure test must use 50 pounds per square inch above the normal operating pressure of a force main.
 - A temporary valve for pressure testing may be installed near the discharge point of a force main and removed after a test is successfully completed.
 - A pump isolation valve may be used as an opposite termination point.
 - A test must involve filling a force main with water.
 - A pipe must hold the designated test pressure for a minimum of 4.0 hours.
 - The leakage rate must not exceed 10.0 gallons per inch diameter per mile of pipe per day.

Austin Regional Office
12100 Park 35 Circle, Building A
Austin, Texas 78753-1808
Phone (512) 339-2929
Fax (512) 339-3795San Antonio Regional Office
14250 Judson Road
San Antonio, Texas 78233-4480
Phone (210) 490-3096
Fax (210) 545-4329

THESE LIFT STATION AND FORCE MAINS CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

APPROVED FOR
CONSTRUCTION

NO.	REVISION	BY	DATE

AJL, JJY	JAN 2020
DESIGNED BY:	DATE
JJY	JAN 2020
DRAWN BY:	DATE
CRS	FEB 2020
CHECKED BY:	DATE
AJL	FEB-18-2020
APPROVED BY:	DATE



ADDRESS	1978 S. AUSTIN AVENUE	GEORGETOWN, TX 78626
METRO	512.930.9412	Texas Registered Engineering Firm F-181
SERVICES	TBPLS FIRM No.10003700	WEB STEGERBIZZELL.COM
	>>ENGINEERS	>>PLANNERS >>SURVEYORS

GENERAL NOTES (SHEET 2 OF 2)
for
SH 29 AT CR 213 UTILITY RELOCATION
City of Liberty Hill
Williamson County, Texas

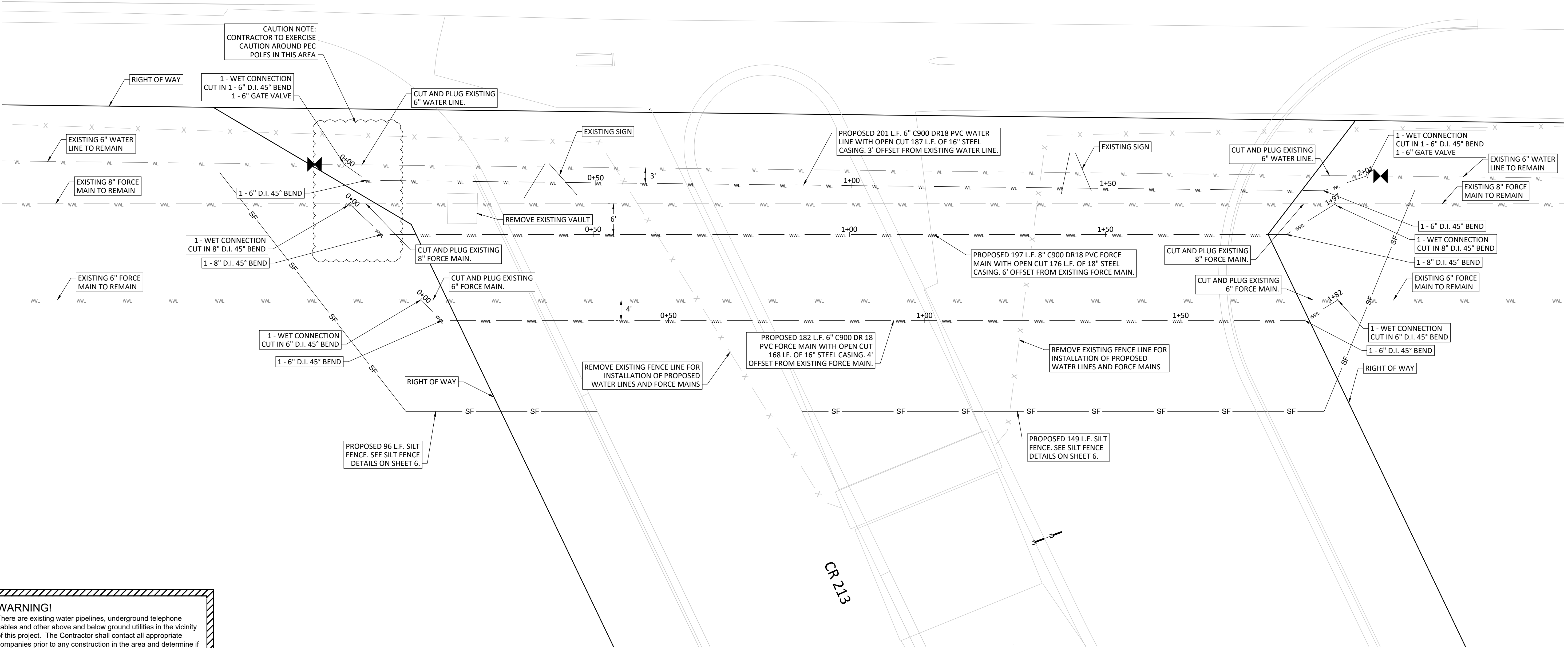
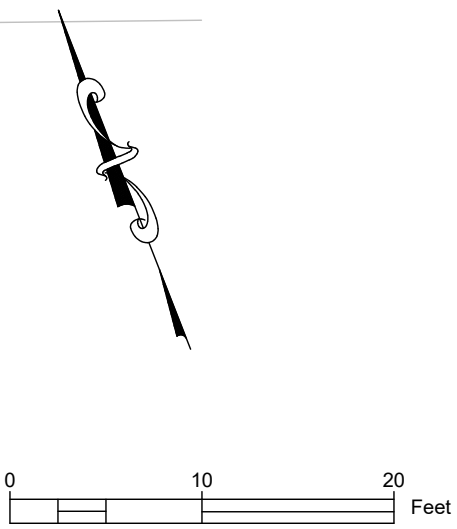
Project No:
21487

SHEET
3
of 7

These drawings are the sole property of STEGER & BIZZELL ENGINEERING, INC. The use of these drawings is hereby restricted to the original site for which they were prepared. Reproduction or reuse of these drawings in whole or in part without written permission of STEGER & BIZZELL ENGINEERING, INC. is strictly prohibited.

L:\PROJECTS 2008\21487 City of Liberty Hill General\SH 29 at CR 213 Utility Relocation\CAD\Plans\4 Site Plan Piping Details.dwg, 2/20/2020 9:45:04 AM, JEREMY

SH 29



WARNING!
There are existing water pipelines, underground telephone cables and other above and below ground utilities in the vicinity of this project. The Contractor shall contact all appropriate companies prior to any construction in the area and determine if any conflicts exist. If so, the Contractor shall immediately contact the Engineer who shall revise the design as necessary.

**APPROVED FOR
CONSTRUCTION**

NO.	REVISION	BY	DATE

AJL, JJY
DESIGNED BY:
JJY
DRAWN BY:
CRS
CHECKED BY:
AJL
APPROVED BY:

JAN 2020
DATE
JAN 2020
DATE
FEB 2020
DATE
FEB-18-2020
DATE



ADDRESS 1978 S. AUSTIN AVENUE GEORGETOWN, TX 78626
METRO 512.930.9412 TEXAS REGISTERED ENGINEERING FIRM F-181 WEB STEGERBIZZELL.COM
SERVICES TBPLS FIRM No.10003700
>>ENGINEERS >>PLANNERS >>SURVEYORS

SITE PLAN PIPING DETAILS
for
SH 29 AT CR 213 UTILITY RELOCATION
City of Liberty Hill
Williamson County, Texas

Project No:
21487

SHEET
4
of 7

L:\PROJECTS 2008\21487 City of Liberty Hill General\SH 29 at CR 213 Utility Relocation\CAD\Plans\5 Piping Cross-Sections.dwg, 2/20/2020 9:45:40 AM, JEREMY

These drawings are the sole property of STEGER & BIZZELL ENGINEERING, INC. The use of these drawings is hereby restricted to the original site for which they were prepared. Reproduction or reuse of these drawings in whole or in part without written permission of STEGER & BIZZELL ENGINEERING, INC. is strictly prohibited.

WARNING!
There are existing water pipelines, underground telephone cables and other above and below ground utilities in the vicinity of this project. The Contractor shall contact all appropriate companies prior to any construction in the area and determine if any conflicts exist. If so, the Contractor shall immediately contact the Engineer who shall revise the design as necessary.

APPROVED FOR
CONSTRUCTION

NO.	REVISION	BY	DATE

AJL, JJY	JAN 2020
DESIGNED BY:	DATE
JJY	JAN 2020
DRAWN BY:	DATE
CRS	FEB 2020
CHECKED BY:	DATE
AJL	FEB-18-2020
APPROVED BY:	DATE

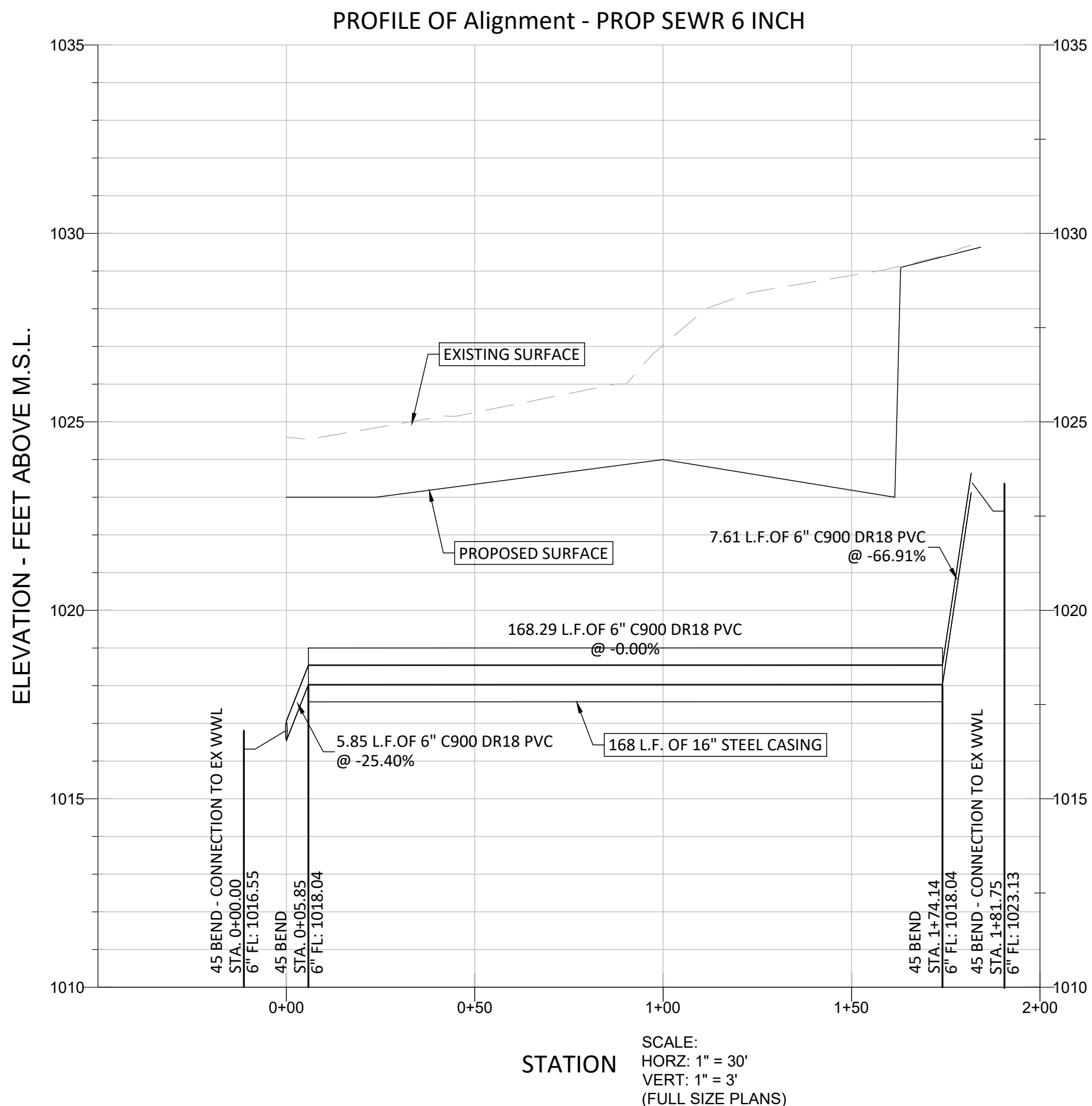
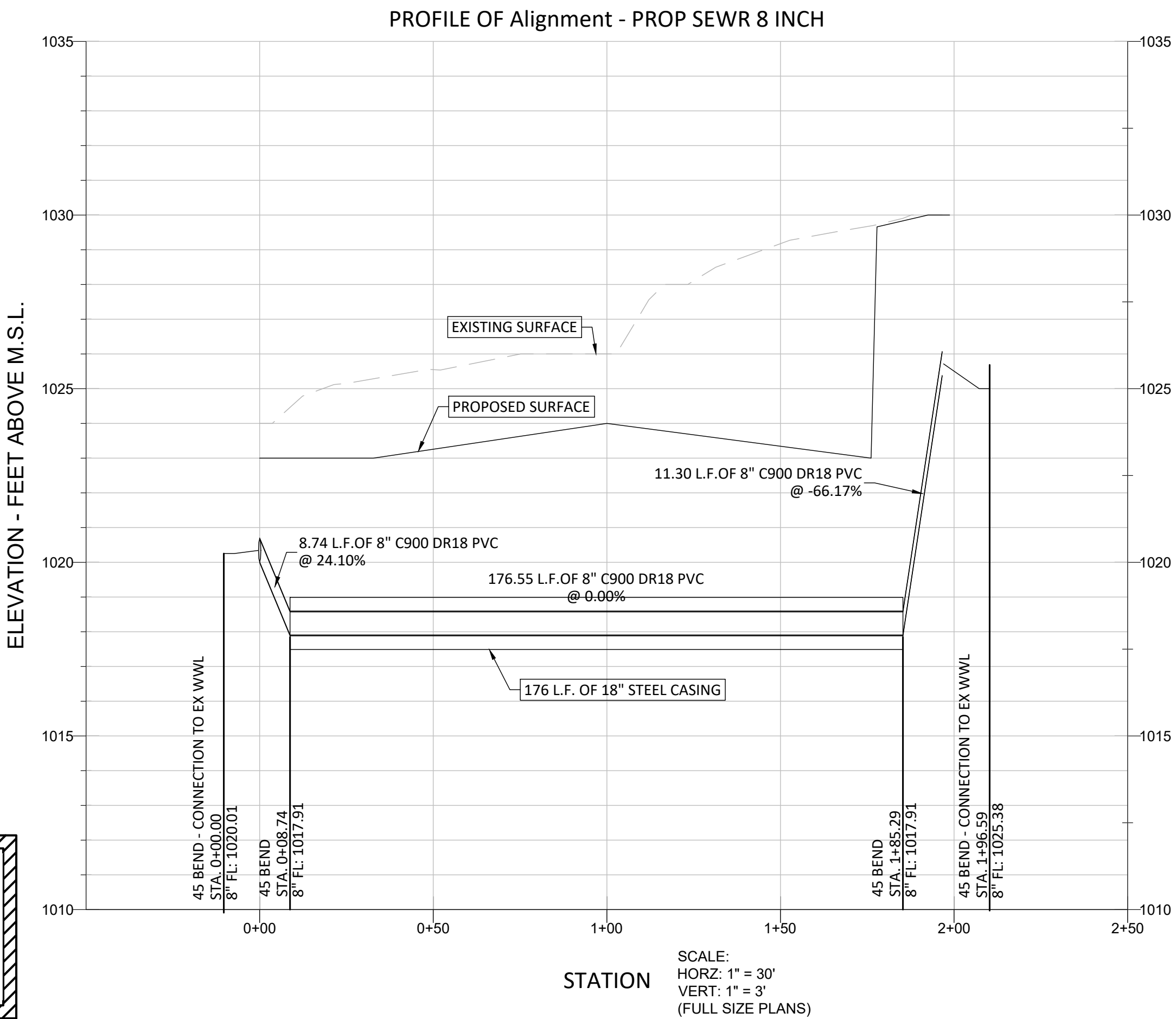
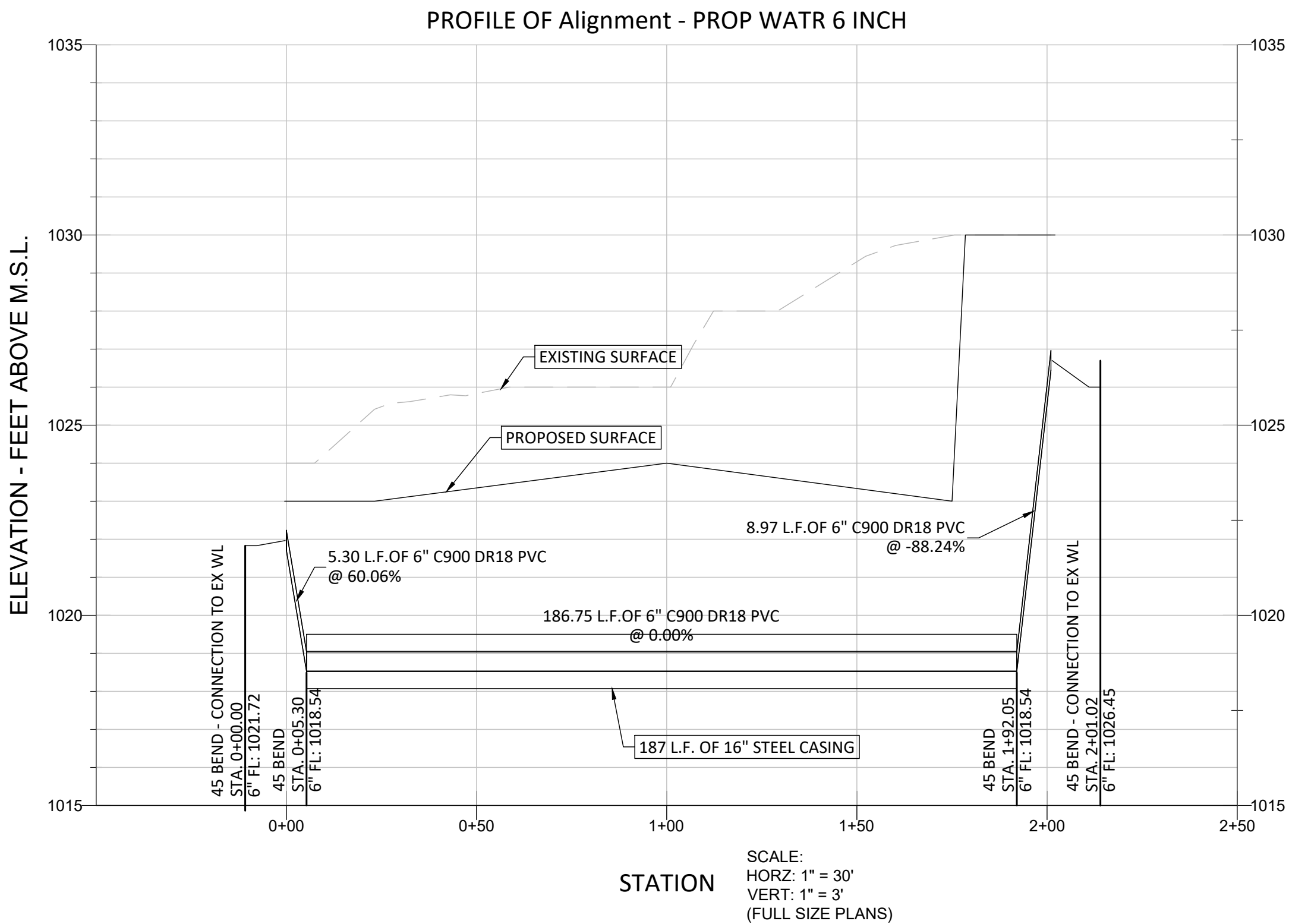


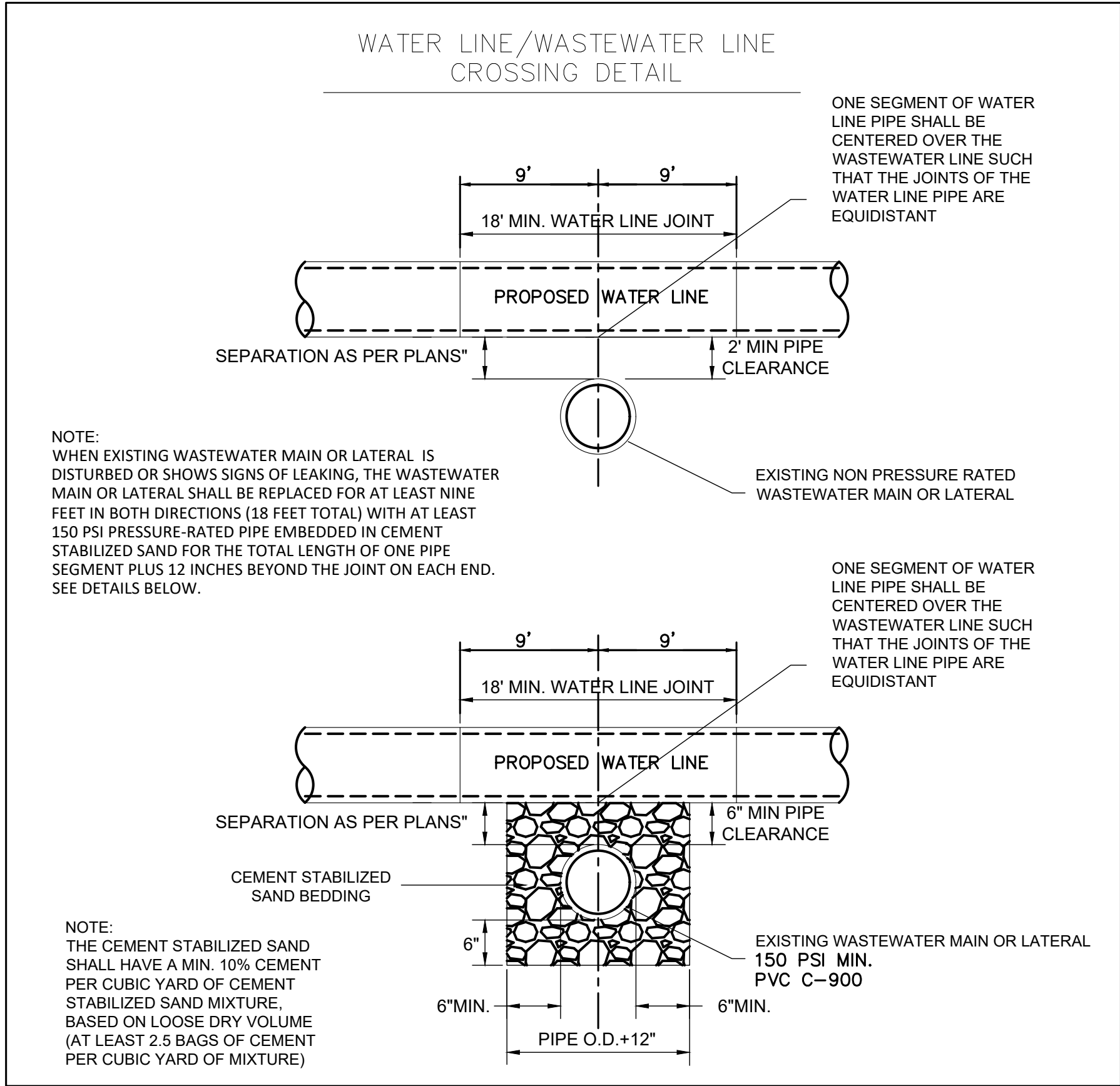
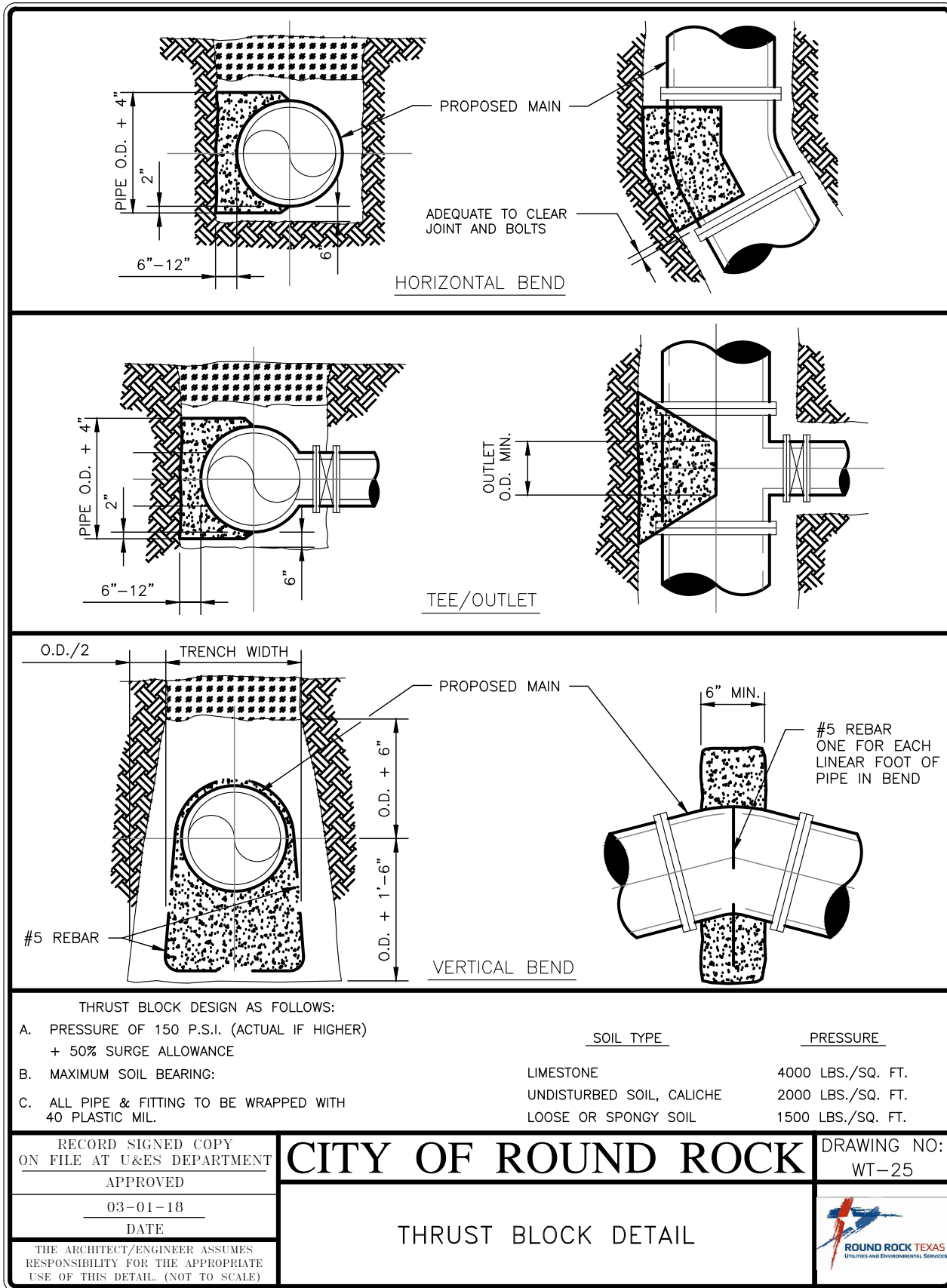
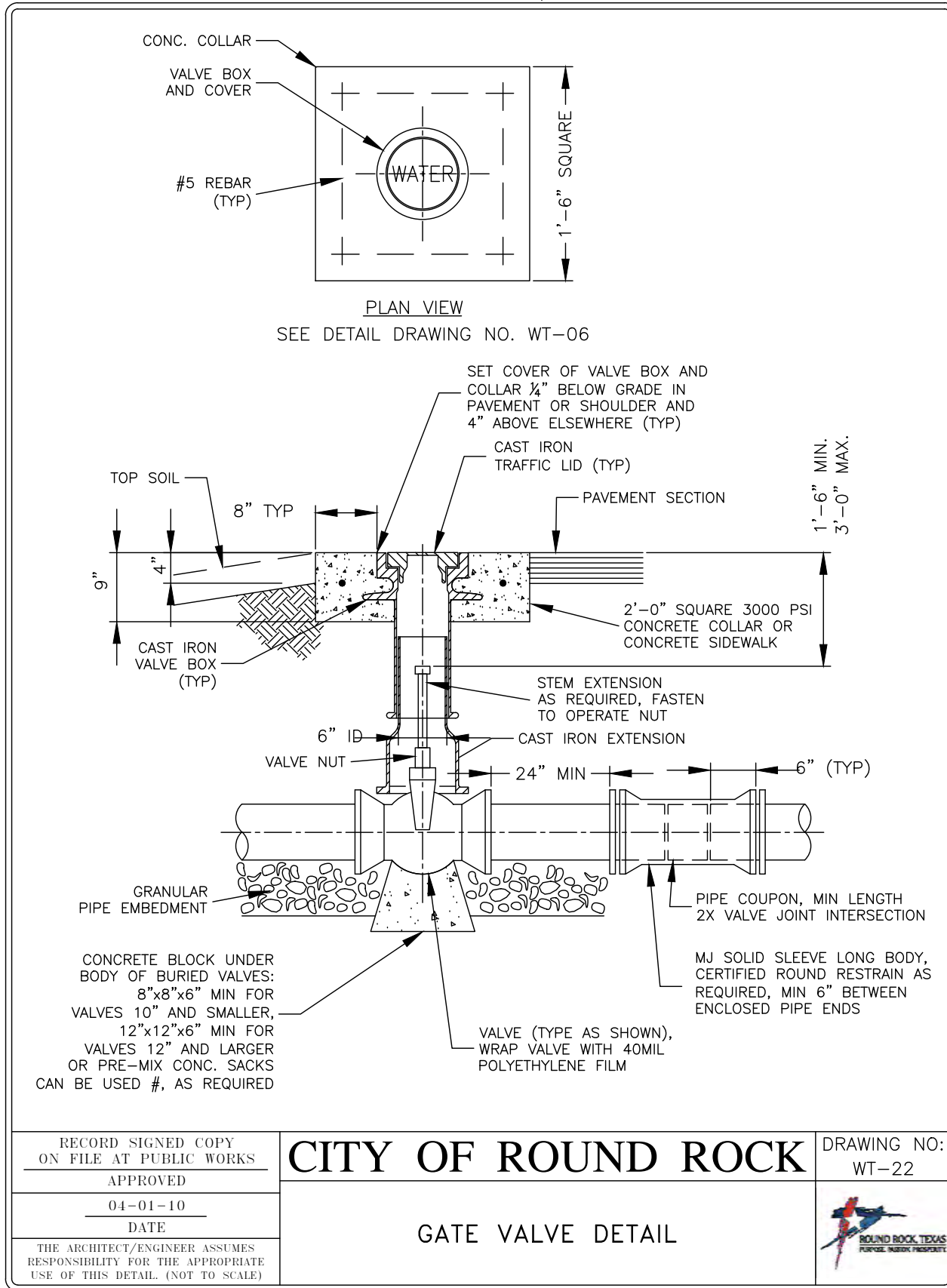
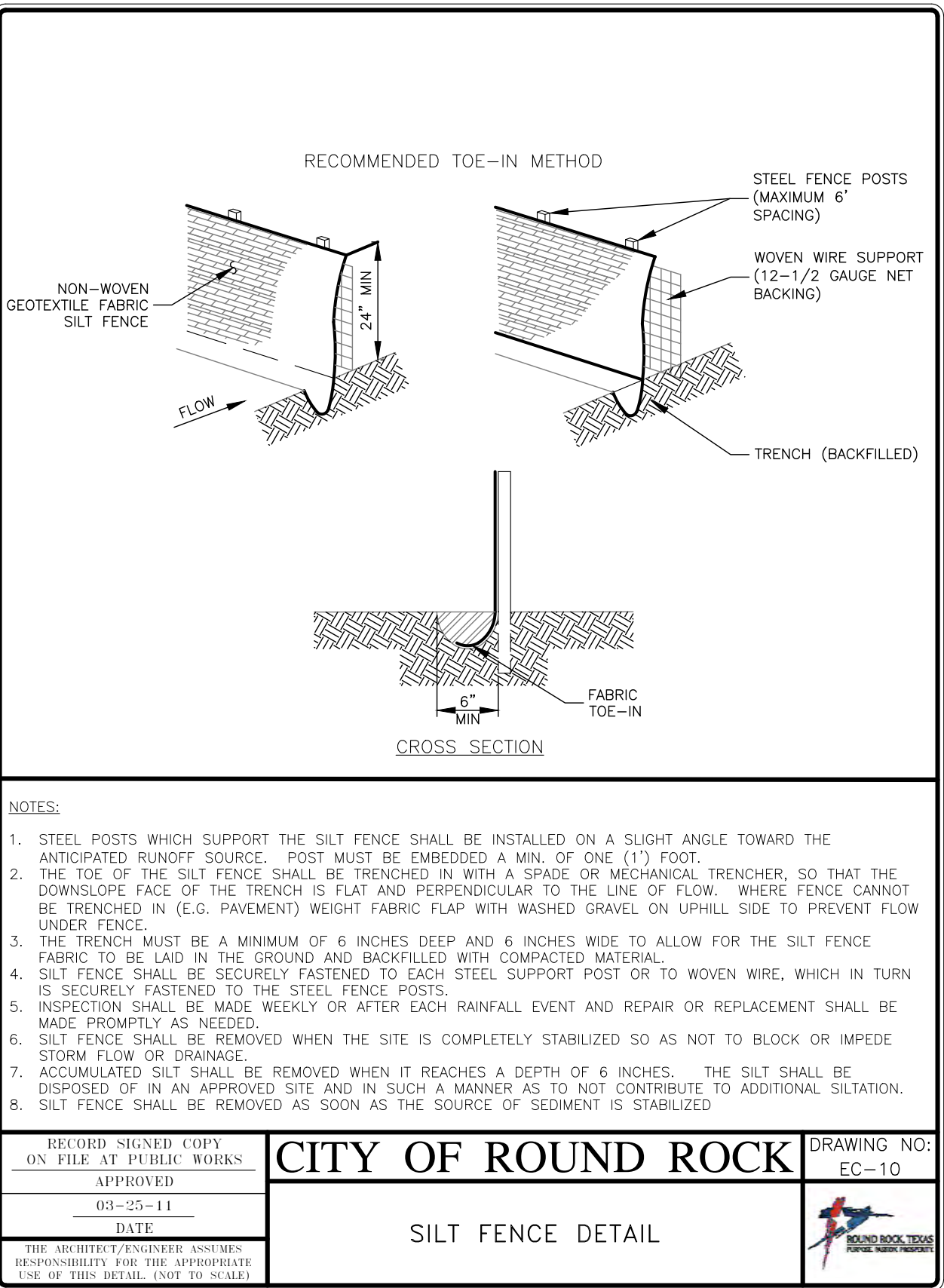
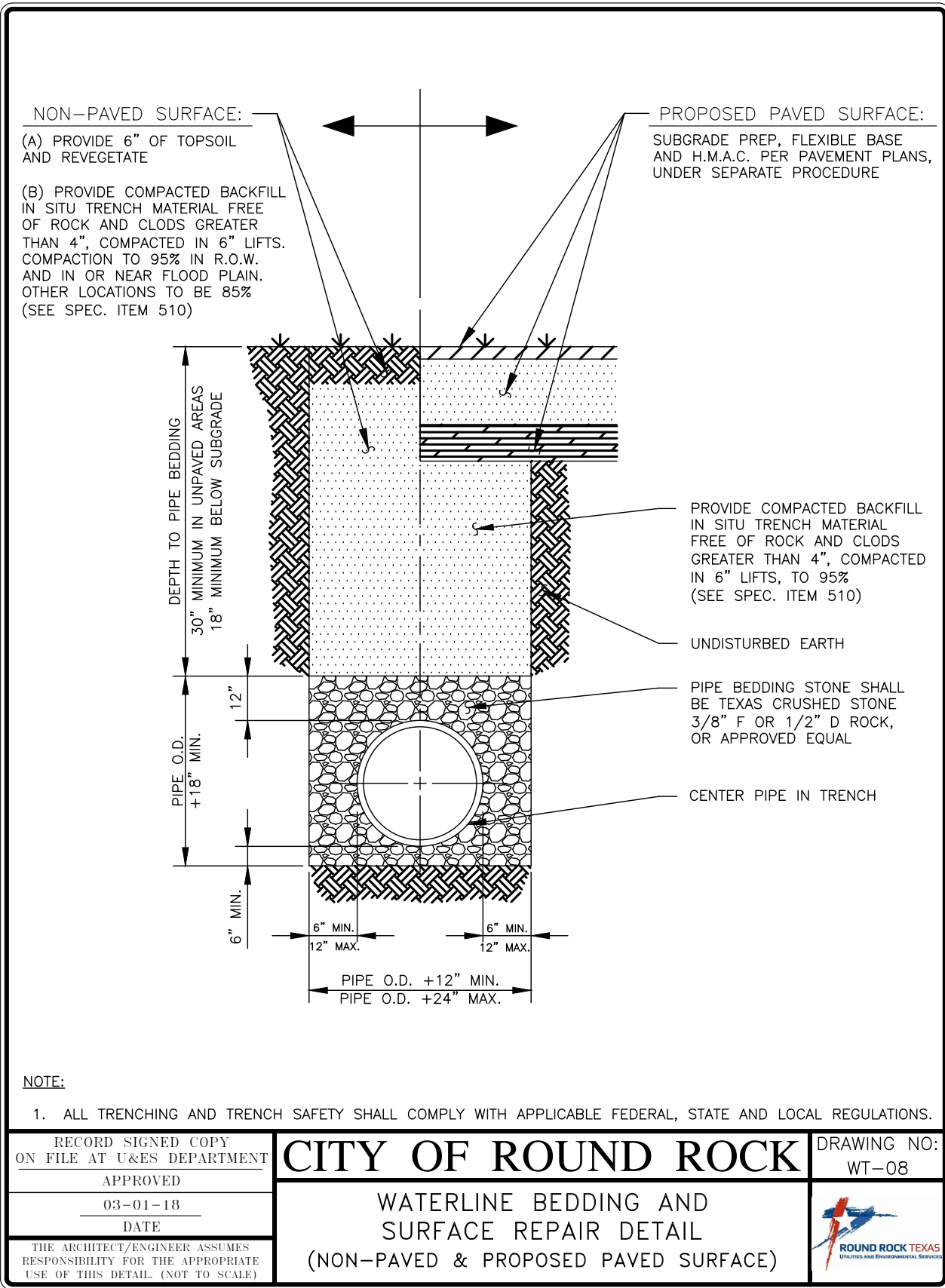
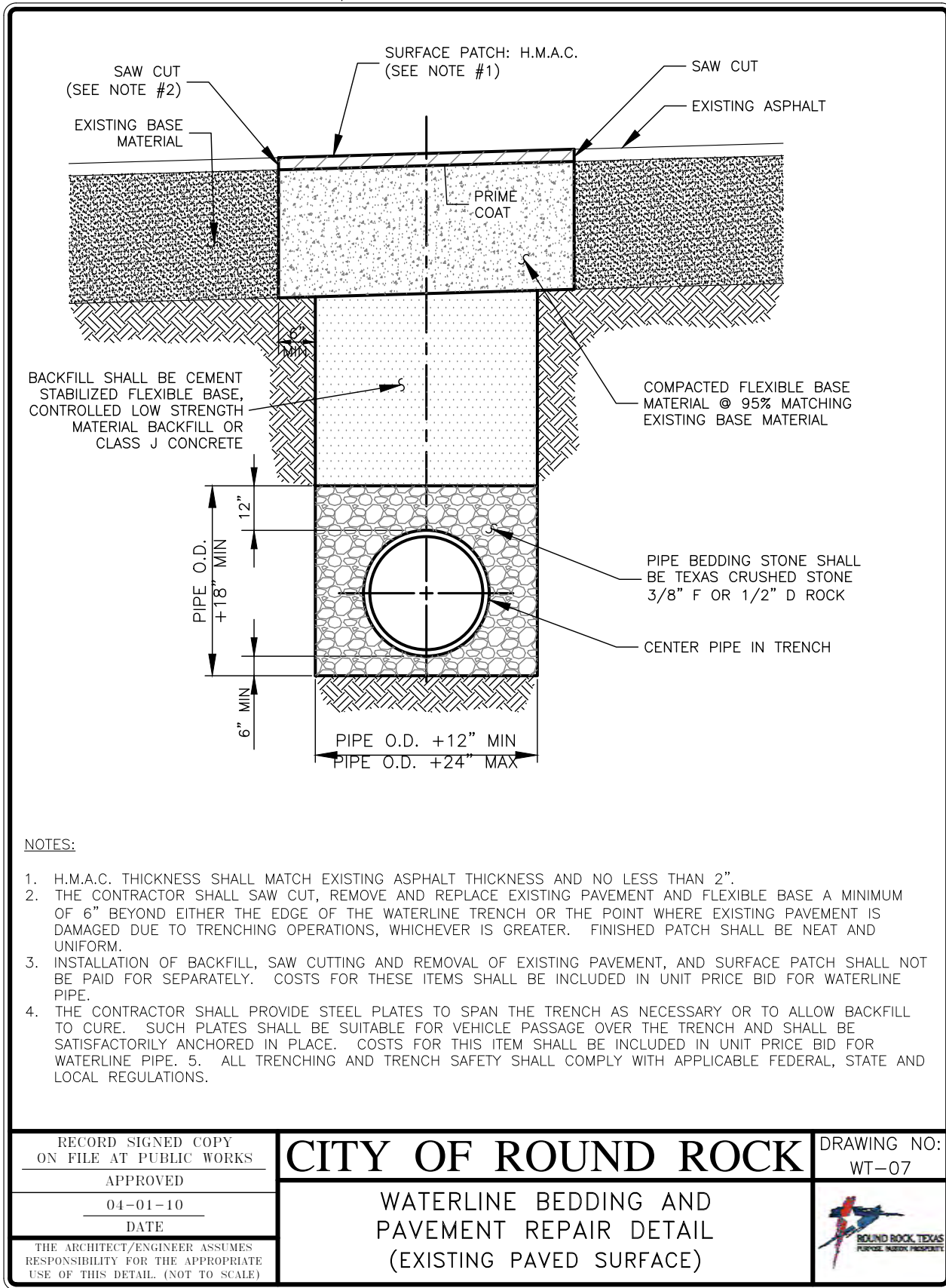
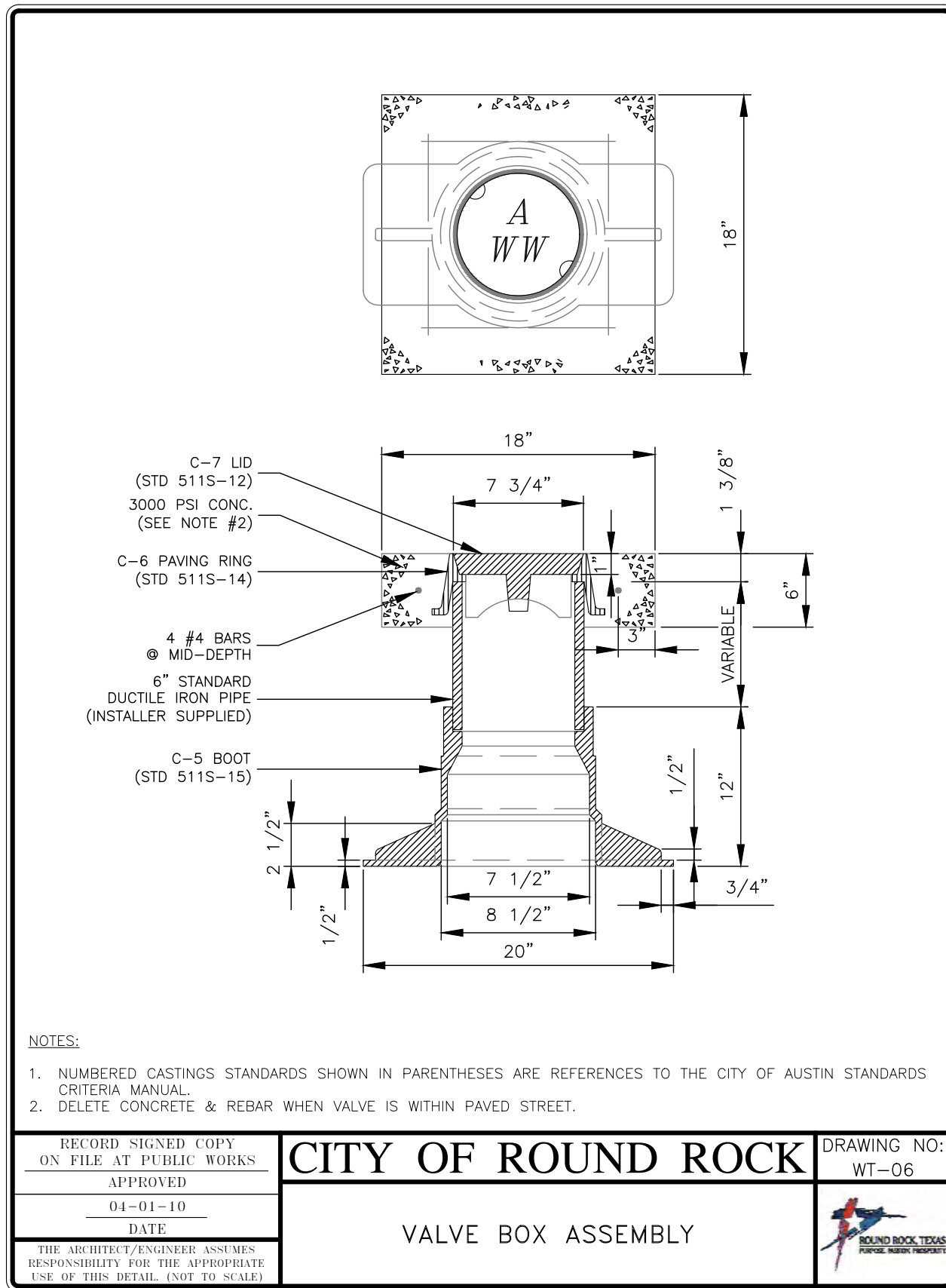
ADDRESS	1978 S. AUSTIN AVENUE	GEORGETOWN, TX 78626
METRO	512.930.9412	TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS FIRM No.10003700
SERVICES	>>ENGINEERS >>PLANNERS >>SURVEYORS	

PIPING CROSS-SECTIONS
for
SH 29 AT CR 213 UTILITY RELOCATION
City of Liberty Hill
Williamson County, Texas

Project No:
21487

SHEET
5
of 7





APPROVED FOR CONSTRUCTION

NO.	REVISION	BY	DATE

AJL, JJY
DESIGNED BY:
JJY
DRAWN BY:
CRS
CHECKED BY:
AJL
APPROVED BY:

JAN 2020
DATE
JAN 2020
DATE
FEB 2020
DATE
FEB-18-2020
DATE



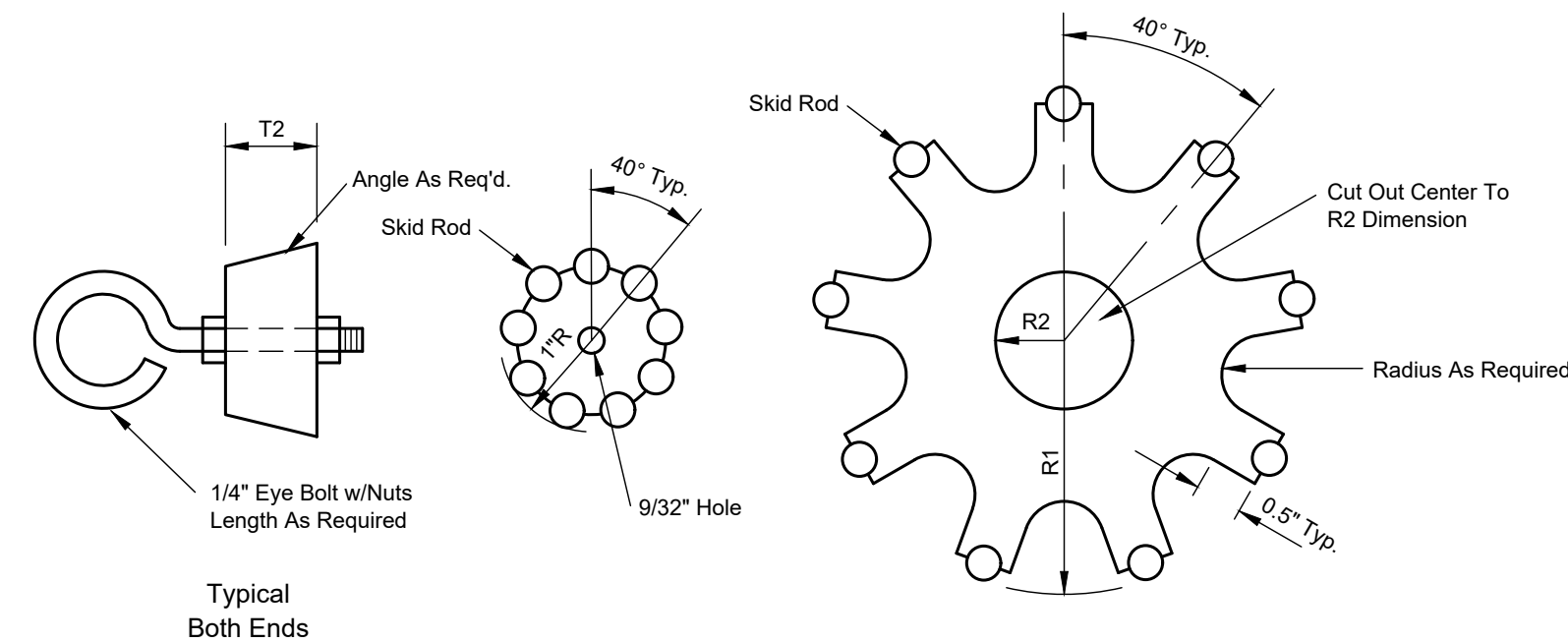
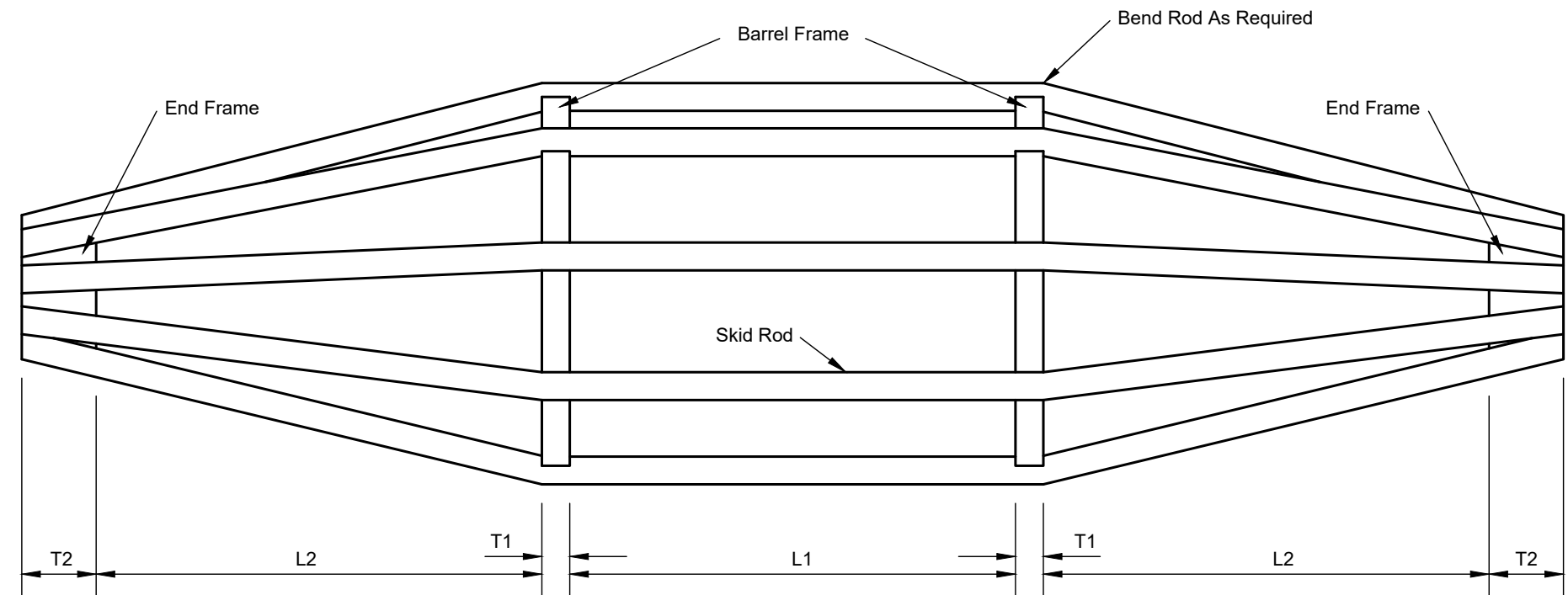
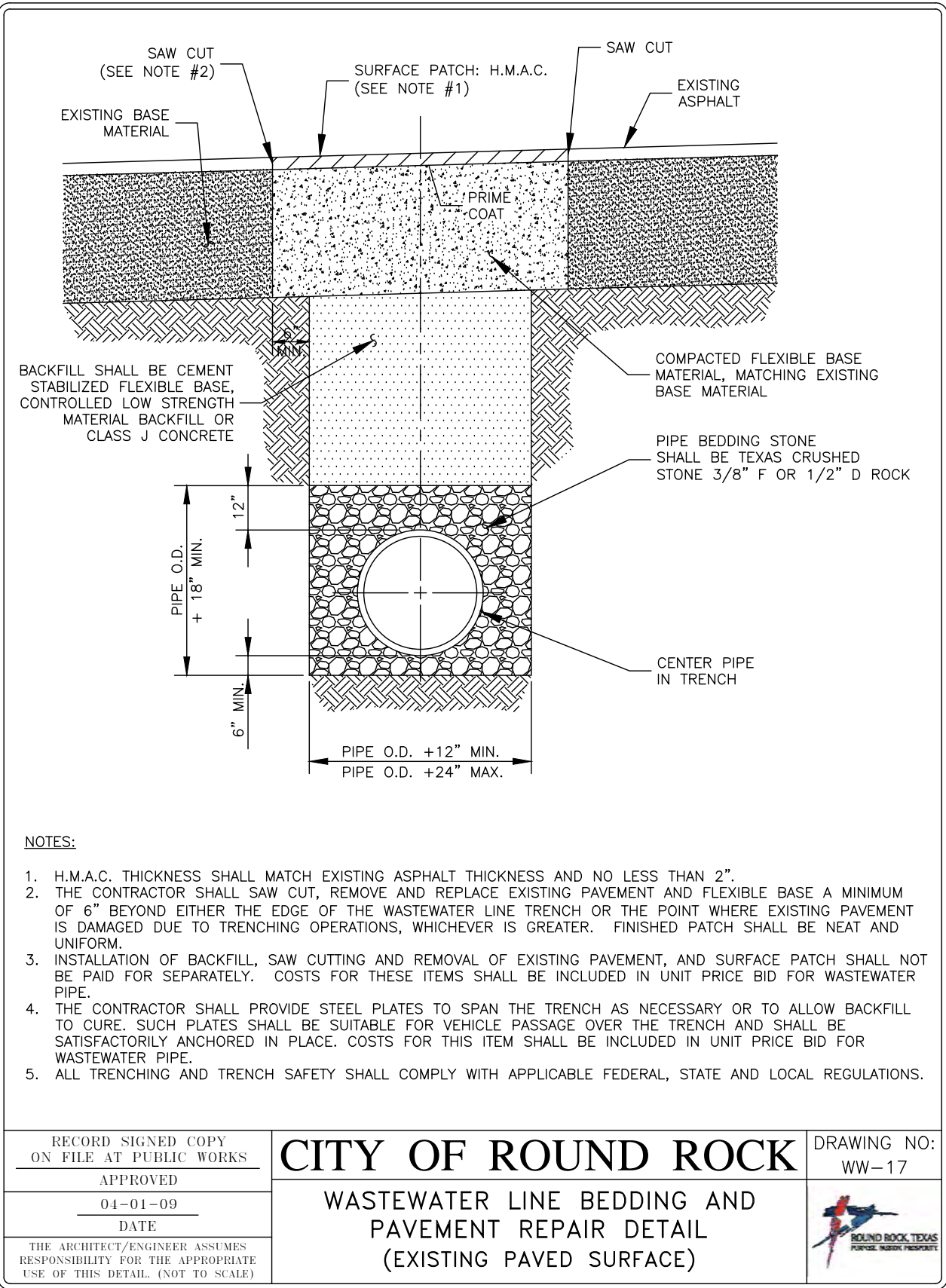
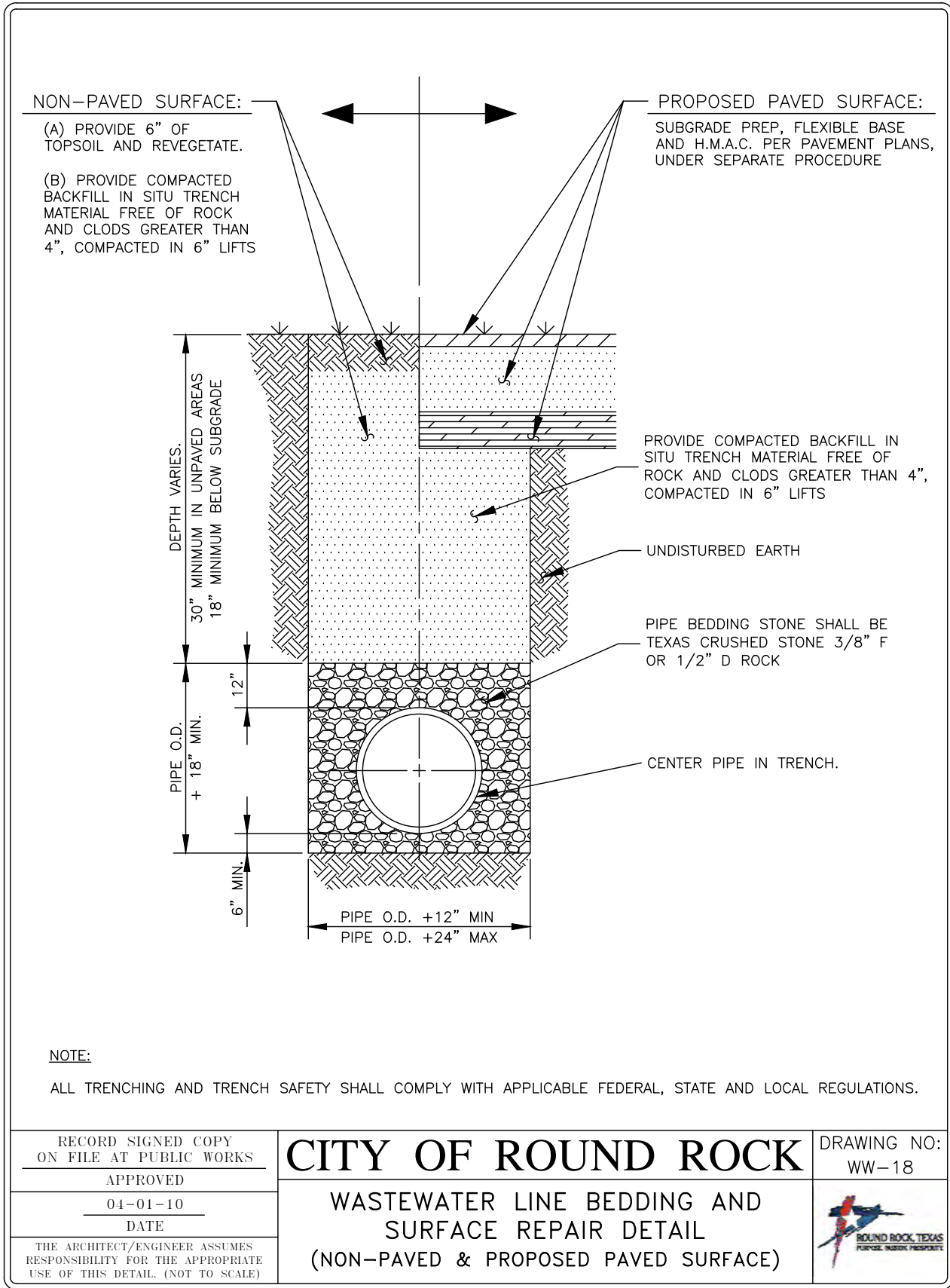
ADDRESS 1978 S. AUSTIN AVENUE GEORGETOWN, TX 78626
METRO 512.930.9412 TEXAS REGISTERED ENGINEERING FIRM F-181 WEB STEGERBIZZELL.COM
SERVICES TBPLS FIRM No.10003700
>>ENGINEERS >>PLANNERS >>SURVEYORS

STANDARD DETAILS (SHEET 1 OF 2)
for
SH 29 AT CR 213 UTILITY RELOCATION
City of Liberty Hill
Williamson County, Texas

Project No:
21487
SHEET
6
of 7

L:\PROJECTS 2008\21487 City of Liberty Hill General\SH 29 at CR 213 Utility Relocation\CAD\Plans\7 Standard Details (Sheet 2 of 2).dwg, 2/20/2020 9:46:31 AM, JEREMY

These drawings are the sole property of STEGER & BIZZELL ENGINEERING, INC. The use of these drawings is hereby restricted to the original site for which they were prepared. Reproduction or reuse of these drawings in whole or in part without written permission of STEGER & BIZZELL ENGINEERING, INC. is strictly prohibited.



End Frame

Barrel Frame

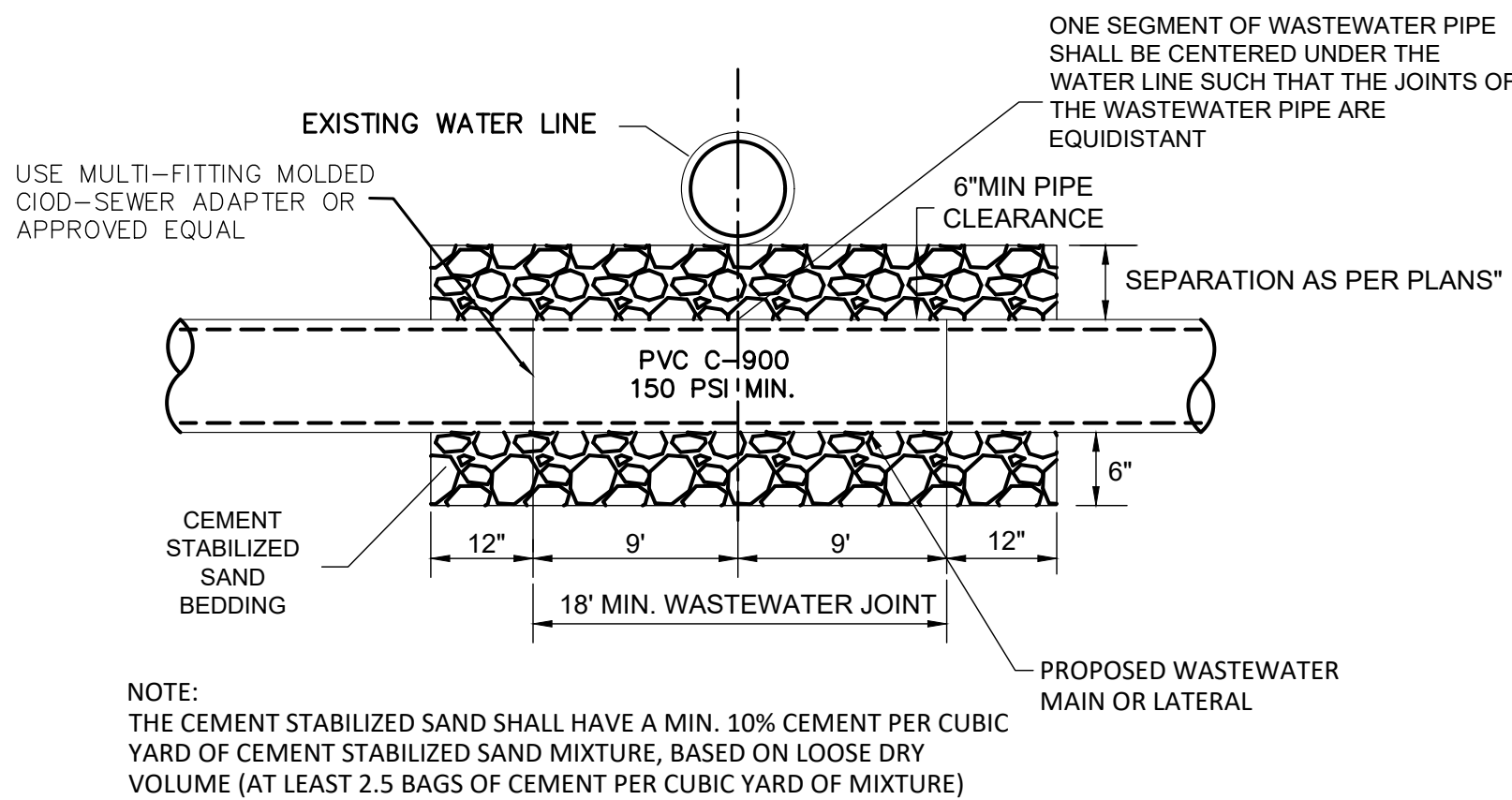
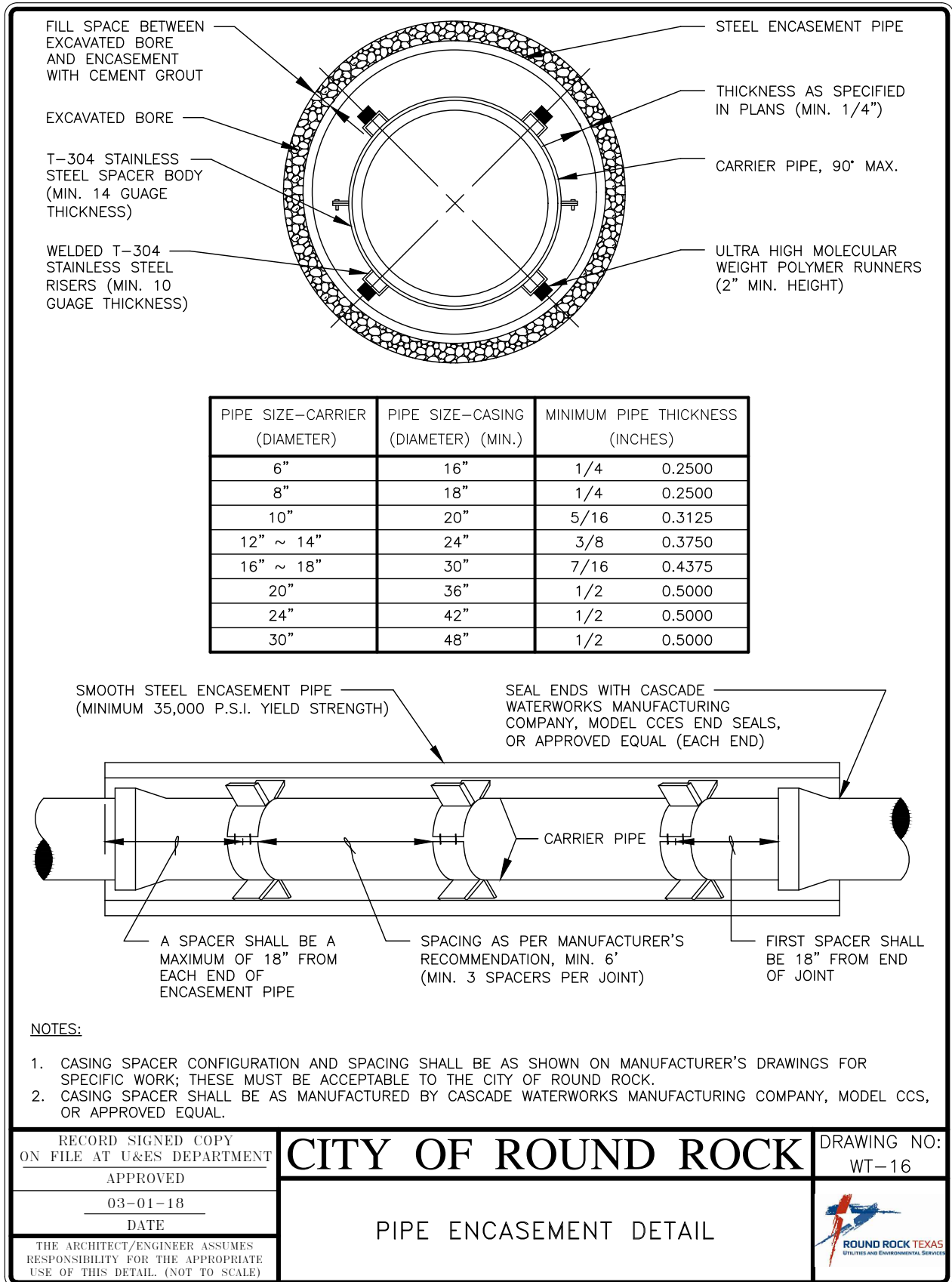
Note: Weld All Rods To Frame

Mandrel Shall Be Constructed From Metal Material That Can Withstand 200 PSI Without Being Deformed.

Mandrel Dimensions
5% Deflection
For O.D. Controlled PVC Pipe
(All Dimensions In Inches)

Size	Type	O.D. Average	Min. Wall Thickness	L1	L2	R1	R2	T1	T2	Rod Diameter	Mandrel O.D.
6"	D3034 SDR35	6.275	0.180	4.50	6	2.81	0.75	0.375	1.0	0.375	5.62
6"	D3034 SDR26	6.275	0.241	4.50	6	2.75	0.75	0.375	1.0	0.375	5.50
8"	D3034 SDR35	8.400	0.240	6.00	6	3.76	1.25	0.375	1.0	0.375	7.52
8"	D3034 SDR26	8.400	0.323	6.00	6	3.68	1.25	0.375	1.0	0.375	7.37
10"	D3034 SDR35	10.500	0.300	7.50	6	4.70	1.50	0.375	1.0	0.375	9.40
10"	D3034 SDR26	10.500	0.404	7.50	6	4.60	1.50	0.375	1.0	0.375	9.21
12"	D3034 SDR35	12.500	0.360	9.00	6	5.80	1.75	0.375	1.0	0.375	11.20
12"	D3034 SDR26	12.500	0.481	9.00	6	5.48	1.75	0.375	1.0	0.375	10.96
15"	D3034 SDR35	15.300	0.437	11.25	6	6.85	2.00	0.375	1.0	0.375	13.70
18"	F679 T-1	18.701	0.536	13.50	9	8.37	2.50	0.50	1.5	0.50	16.74
21"	F679 T-1	22.047	0.632	15.75	9	9.87	3.00	0.50	1.5	0.50	19.74
24"	F679 T-1	24.803	0.711	18.00	9	11.11	3.50	0.50	1.5	0.50	22.22
27"	F679 T-1	27.953	0.801	20.25	9	12.52	4.00	0.50	1.5	0.50	25.04

TYPICAL MANDREL DETAILS
N.T.S.



WATER LINE/WASTEWATER LINE CROSSING DETAIL
N.T.S.

APPROVED FOR
CONSTRUCTION

NO.	REVISION	BY	DATE

AJL, JJY
DESIGNED BY:
JJY
DRAWN BY:
CRS
CHECKED BY:
AJL
APPROVED BY:

JAN 2020
DATE
JAN 2020
DATE
FEB 2020
DATE
FEB-18-2020
DATE



ADDRESS	1978 S. AUSTIN AVENUE	GEORGETOWN, TX 78626
METRO	512.930.9412	TEXAS REGISTERED ENGINEERING FIRM F-181
SERVICES	TBPLS FIRM No.10003700	WEB STEGERBIZZELL.COM
	>>ENGINEERS	>>PLANNERS >>SURVEYORS

STANDARD DETAILS (SHEET 2 OF 2)
for
SH 29 AT CR 213 UTILITY RELOCATION
City of Liberty Hill
Williamson County, Texas

Project No:
21487

SHEET
7
of 7

ADDRESS 1978 S. AUSTIN AVENUE GEORGETOWN, TX 78626		PHONE 512.930.9412	TOLL FREE 866.678.3437	
			TOLL FREE 866.678.3437	
WEB STGERBIZZELL.COM		SERVICES > > ENGINEERS > > PLANNERS > > SURVEYORS		
TEXAS REGISTERED ENGINEERING FIRM F-181 TBPLS Firm No. 10003700				

The technical specs for the City of Liberty Hill utility relocations will be provided separately.

CITY OF LIBERTY HILL, TEXAS



TECHNICAL SPECIFICATIONS
FOR THE CONSTRUCTION OF

SH 29 AT CR 213 UTILITY RELOCATION

Job No. 21487

CITY OF LIBERTY HILL, TEXAS



TECHNICAL SPECIFICATIONS
FOR THE CONSTRUCTION OF

SH 29 AT CR 213 UTILITY RELOCATION



**APPROVED FOR
CONSTRUCTION**

Job No. 21487

TABLE OF CONTENTS

City of Round Rock Standard Specifications as Adopted by City of Liberty Hill

Item 102	Clearing and Grubbing
Item 111	Excavation
Item 130	Borrow
Item 201	Subgrade Preparation
Item 210	Flexible Base
Item 401	Structural Excavation Backfill
Item 402	Controlled Low Strength Materials
Item 509	Trench Safety Systems
Item 510	Pipe
Item 511	Water Valves
Item 601	Salvaging and Placing Topsoil
Item 604	Seeding for Erosion Control
Item 642	Silt Fence
Item 700	Mobilization