

ORDINANCE NO. _____

AN ORDINANCE APPROVING A WATER AND WASTEWATER UTILITY RELOCATION STANDARD UTILITY AGREEMENT (“AGREEMENT”) BY AND BETWEEN THE CITY OF DENTON (“CITY”) AND THE TEXAS DEPARTMENT OF TRANSPORTATION (“TXDOT”), FOR THE REIMBURSEMENT OF ELIGIBLE COSTS INCURRED IN THE ADJUSTMENT, REMOVAL, AND RELOCATION OF CITY FACILITIES OF BOTH WATER AND WASTEWATER UTILITIES ALONG FM 1515 FROM BONNIE BRAE ST TO MASCH BRANCH ROAD MORE SPECIFICALLY CALLED TXDOT PROJECTS CONSTRUCTION CSJ# 0191-01-011 AND ROW CSJ#0191-01-012 (“UTILITY RELOCATIONS PROJECT, WITHIN THE COUNTY AND CITY OF DENTON, TEXAS; AUTHORIZING THE CITY MANAGER TO EXECUTE AND DELIVER THE STANDARD UTILITY AGREEMENT NO. : U00023607; PROVIDING FOR THE EXPENDITURE OF FUNDS IN AN AMOUNT NOT TO EXCEED \$5,419,747.05 FOR WATER AND WASTEWATER UTILITY RELOCATION EFFORTS; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, TxDOT has deemed it necessary to make certain highway improvements as designated by the State and approved by the Federal Highway Administration within the limits of the highway as indicated for the FM 1515 from Bonnie Brae St to Masch Branch Road (“Utility Relocation Project”); and

WHEREAS, TxDOT has expanded their right-of-way along FM 1515’s corridor within the Denton city limits in anticipation of TxDOT’s Widening project with a current project letting schedule of early 2026; and

WHEREAS, the proposed Utility Relocation Project will necessitate the adjustment, removal, and/or relocation of certain facilities of the City as indicated in the following statement of work:

- 1) Water Line: Install approximately 6,823 LF of 16" PVC, 83 LF of 12" PVC, and 116 LF of 8" PVC.
- 2) Wastewater: Install approximately 244 LF of 15" and 100 LF of 12"; and

WHEREAS, the City of Denton is responsible for relocating the City’s utilities currently located within the recently acquired TxDOT right-of-way; and

WHEREAS, in an effort to meet TxDOT’s anticipated roadway construction schedule, the City’s Utility Relocation Project will relocate both water and wastewater utilities conflicts out of TxDOT’s proposed roadway alignment between Bonnie Brea and Masch Branch Road; and

WHEREAS, TxDOT will participate in the costs of the adjustment, removal, and relocation of certain facilities to the extent as may be eligible for State and/or Federal participation; and

WHEREAS, TxDOT, upon receipt of evidence it deems sufficient, acknowledges the City’s interest in certain lands and facilities that entitle it to reimbursement for the adjustment, removal, and relocation of certain of its facilities located upon the lands as indicated in the statement of work; and

WHEREAS, TxDOT will, upon satisfactory completion of the adjustment, removal, and/or relocation and upon receipt of final billing prepared in an approved form and manner and accounting for any intermediate payments, make payment in the amount of 90 percent (90%) of the eligible costs as shown in the final billing prior to audit and after such audit shall make an additional final payment totaling the reimbursement amount found eligible for State reimbursement; and

WHEREAS, The City of Denton is responsible for the minimum required water main relocations which should be fully reimbursable in accordance with TxDOT ROW Utilities Manual, and Texas Administrative Code Title 43, Chapter 21; and

WHEREAS, the City Council having considered the importance of the project to the citizens of Denton and finding that it is in the public's health and safety interest, is of the opinion that it should approve the Agreements; NOW, THEREFORE,

THE COUNCIL OF THE CITY OF DENTON HEREBY ORDAINS:

SECTION 1. The recitals contained in the preamble of this ordinance are hereby incorporated into the body of this ordinance are true and correct.

SECTION 2. The City Manager is authorized to expend funds in an amount not to exceed Five million, Four Hundred Ninety Thousand, Seven Hundred Forty-Seven Dollars and 05/100 (\$5,419,747.05) for the FM 1515 from Bonnie Brae to Masch Branch Road Utility Relocation Project in the City and County of Denton.

SECTION 3. The City Manager, or designee, is hereby authorized to execute on behalf of the City the Water and Wastewater Standard Utility Agreement No. U00023607, a copy of which is attached hereto as Exhibits " A" and made a part hereof for all purposes.

SECTION 4. The City Manager, or designee, is further authorized to carry out all obligations and duties of the City as set forth in the Agreement, including but not limited to the expenditure of funds.

SECTION 5. That this ordinance shall become effective immediately upon its passage and approval.

[Signatures to appear on the following page]

	<u>Aye</u>	<u>Nay</u>	<u>Abstain</u>	<u>Absent</u>
Gerard Hudspeth, Mayor:	_____	_____	_____	_____
Vicki Byrd, District 1:	_____	_____	_____	_____
Brian Beck, District 2:	_____	_____	_____	_____
Suzi Rumohr, District 3:	_____	_____	_____	_____
Joe Holland, District 4:	_____	_____	_____	_____
Brandon Chase McGee, At Large Place 5:	_____	_____	_____	_____
Jill Jester, At Large Place 6:	_____	_____	_____	_____

PASSED AND APPROVED this the _____ day of _____, 2025.

GERARD HUDSPETH, MAYOR

ATTEST:
INGRID REX, INTERIM CITY SECRETARY

By: _____

APPROVED AS TO LEGAL FORM:
MACK REINWAND, CITY ATTORNEY

By: Benjamin N. Samples, II

Exhibit A

(Standard Utility Agreement U00018749)



Standard Utility Agreement

U Number: **N/A** Utility ID: **U00023607**

District: Dallas
ROW Project ID (TxC): R00006053
ROW CSJ: 1951-01-012
Construction CSJ: 1951-01-011
Highway Project Letting Date: 12/2026 RTL

County: Denton
Highway: FM 1515
From: Masch Branch Rd
To: Bonnie Brea St

This Agreement by and between the State of Texas, acting by and through the Texas Transportation Commission, ("**State**"), and City of Denton, ("**Utility**"), acting by and through its duly authorized representative, shall be effective on the date of approval and execution by and on behalf of the **State**.

WHEREAS, the **State** has deemed it necessary to make certain highway improvements as designated by the **State** and approved by the Federal Highway Administration within the limits of the highway as indicated above (the "**Highway Project**");

WHEREAS, the proposed Highway Project will necessitate the adjustment, removal, and/or relocation of certain facilities of the **Utility** as indicated in the following statement of work: CSJ 011 Water Line: Install approximately 6,823 LF of 16" PVC, 83 LF of 12" PVC, and 116 LF of 8" PVC. CSJ 011 Wastewater Line: Install approximately 244 LF of 15" and 100 LF of 12" ; and more specifically as shown in the **Utility's** plans, specifications and estimated costs, which are attached hereto as Attachment "A".

WHEREAS, the **State** will participate in the costs of the adjustment, removal, and relocation of certain facilities to the extent as may be eligible for State and/or Federal participation.

WHEREAS, the **State**, upon receipt of evidence it deems sufficient, acknowledges the **Utility's** interest in certain lands and facilities that entitle it to reimbursement for the adjustment, removal, and relocation of certain of its facilities located upon the lands as indicated in the statement of work above.

NOW, THEREFORE, BE IT AGREED:

The **State** will pay to the **Utility** the costs incurred in adjustment, removal, and relocation of the **Utility's** facilities up to the amount said costs may be eligible for **State** participation.

All conduct under this agreement, including but not limited to the adjustment, removal, and relocation of the facility, the development and reimbursement of costs, any environmental requirements, and retention of records will be in accordance with all applicable federal and state laws, rules and regulations, including, without limitation, the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, 42 U.S.C. §§ 4601, et seq., the National Environmental Policy Act, 42 U.S.C. §§ 4321, et seq., the Buy America provisions of 23 U.S.C. § 313 and 23 CFR 635.410, as amended, Texas Transportation Code § 223.045, the Utility Relocations, Adjustments, and Reimbursements provisions of 23 CFR 645, Subpart A, and the Utility Accommodation provisions of 23 CFR 645, Subpart B.

The **Utility** shall supply, upon request by the **State**, proof of compliance with the aforementioned laws, rules, regulations, and guidelines prior to the commencement of the adjustment, removal, and relocation of the facility.

The **Utility** shall not commence any physical work, including without limitation site preparation, on the State's right of way or future right of way, until TxDOT provides the **Utility** with written authorization to proceed with the physical

Initial

Date

TxDOT

Initial

Date

Utility

work upon TxDOT's completion and clearance of its environmental review of the Highway Project. Any such work by the Utility prior to TxDOT's written authorization to proceed will not be eligible for reimbursement and the Utility is responsible for entering any property within the proposed limits of the Highway Project that has not yet been acquired by TxDOT. This written authorization to proceed with the physical work is in addition to the authorization to commence work outlined below. Notwithstanding the foregoing, the provisions of this paragraph are required only when TxDOT has not obtained completion and clearance of its environmental review of the Highway Project prior to the execution of this Agreement by the State and the Utility.

The **Utility** shall comply with the Buy America provisions of 23 U.S.C. § 313, 23 CFR 635.410, as amended, and the Steel and Iron Preference provisions of Texas Transportation Code § 223.045 and, when products that are composed predominately of steel and/or iron are incorporated into the permanent installation of the utility facility, use domestically manufactured products. TxDOT Form 1818 (Material Statement), along with all required attachments, must be submitted, prior to the commencement of the adjustment, removal, and relocation of the facility, as evidence of compliance with the aforementioned provisions. Failure to submit the required documentation or to comply with the Buy America, and Steel and Iron Preference requirements shall result in: (1) the **Utility** becoming ineligible to receive any contract or subcontract made with funds authorized under the Intermodal Surface Transportation Efficiency Act of 1991; (2) the **State** withholding reimbursement for the costs incurred by the **Utility** in the adjustment, removal, and relocation of the **Utility's** facilities; and (3) removal and replacement of the non-compliant products.

The **Utility** agrees to develop relocation or adjustment costs by accumulating actual direct and related indirect costs in accordance with a work order accounting procedure prescribed by the **State**, or may, with the **State's** approval, accumulate actual direct and related indirect costs in accordance with an established accounting procedure developed by the **Utility**. Bills for work hereunder are to be submitted to the **State** not later than one (1) year after completion of the work. Failure to submit the request for final payment, in addition to all supporting documentation, within one (1) year after completion of the work may result in forfeiture of payment for said work.

When requested, the **State** will make intermediate payments at not less than monthly intervals to the **Utility** when properly billed. Such payments will not exceed 90 percent (90%) of the eligible cost as shown in each such billing. Intermediate payments shall not be construed as final payment for any items included in the intermediate payment.

The **State** will, upon satisfactory completion of the adjustment, removal, and/or relocation and upon receipt of final billing prepared in an approved form and manner and accounting for any intermediate payments, make payment in the amount of 90 percent (90%) of the eligible costs as shown in the final billing prior to audit and after such audit shall make an additional final payment totaling the reimbursement amount found eligible for **State** reimbursement.

Alternatively, if the approved accounting method is a lump sum, the **State** agrees to pay the **Utility** an agreed lump sum of \$N/A as supported by the attached estimated costs. The **State** will, upon satisfactory completion of the adjustments, removals, and relocations and upon receipt of a final billing, make payment to the **Utility** in the agreed amount.

Upon execution of this agreement by both parties hereto, the **State** will, by written notice, authorize the **Utility** to perform such work diligently and to conclude said adjustment, removal, and relocation by the stated completion date which is attached hereto in Attachment "C". The completion date shall be extended for delays caused by events outside the **Utility's** control, including an event of Force Majeure, which shall include a strike, war or act of war (whether an actual declaration of war is made or not), insurrection, riot, act of public enemy, accident, fire, flood or other act of God, sabotage, or other events, interference by the **State** or any other party with the **Utility's** ability to proceed with the work, or any other event in which the **Utility** has exercised all due care in the prevention thereof so that the causes of other events are beyond the control and without the fault or negligence of the **Utility**.

This agreement in its entirety consists of the following elements:

Initial

Date

TxDOT

Initial

Date

Utility

Standard Utility Agreement – ROW-U-35;

- Plans, Specifications, and Estimated Costs (Attachment “A”);
- Accounting Method (Attachment “B”);
- Schedule of Work (Attachment “C”);
- Statement Covering Contract Work – ROW-U-48 (Attachment “D”);
- Utility Joint Use Agreement – ROW-U-JUA and/or Utility Installation Request – Form 1082 (Attachment “E”);
- Eligibility Ratio (Attachment “F”);
- Betterment Calculation and Estimate (Attachment “G”); and
- Proof of Property Interest – ROW-U-Affidavit (Attachment “H”).

All attachments are included herein as if fully set forth. In the event it is determined that a substantial change from the statement of work contained in this agreement is required, reimbursement therefore shall be limited to costs covered by a modification or amendment of this agreement or a written change or extra work order approved by the **State** and the **Utility**.

This agreement is subject to cancellation by the **State** at any time up to the date that work under this agreement has been authorized, and such cancellation will not create any liability on the part of the **State**. However, the **State** will review and reimburse the **Utility** for eligible costs incurred by the **Utility** in preparation of this Agreement.

The State Auditor may conduct an audit or investigation of any entity receiving funds from the **State** directly under this contract or indirectly through a subcontract under this contract. Acceptance of funds directly under this contract or indirectly through a subcontract under this contract acts as acceptance of the authority of the State Auditor, under the direction of the Legislative Audit Committee, to conduct an audit or investigation in connection with those funds. An entity that is the subject of an audit or investigation must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.

The **Utility** by execution of this agreement does not waive any of the rights that the **Utility** may have within the limits of the law.

It is expressly understood that the **Utility** conducts the adjustment, removal, and relocation at its own risk, and that the **State** makes no warranties or representations regarding the existence or location of utilities currently within its right of way.

Initial Date
TxDOT

Initial Date
Utility

The signatories to this agreement warrant that each has the authority to enter into this agreement on behalf of the party represented.

UTILITY

Utility: City of Denton
Name of Utility

By: _____
Authorized Signature

Sara Hensley
Print or Type Name

Title: City Manager

Date: _____

EXECUTION RECOMMENDED:

Director of TP&D (or designee), Dallas District

THE STATE OF TEXAS

Executed and approved for the Texas Transportation Commission for the purpose and effect of activating and/or carrying out the orders, established policies or work programs heretofore approved and authorized by the Texas Transportation Commission.

By: _____
District Engineer (or designee)

Date: _____

Initial Date
TxDOT

Initial Date
Utility

Attachment "A"

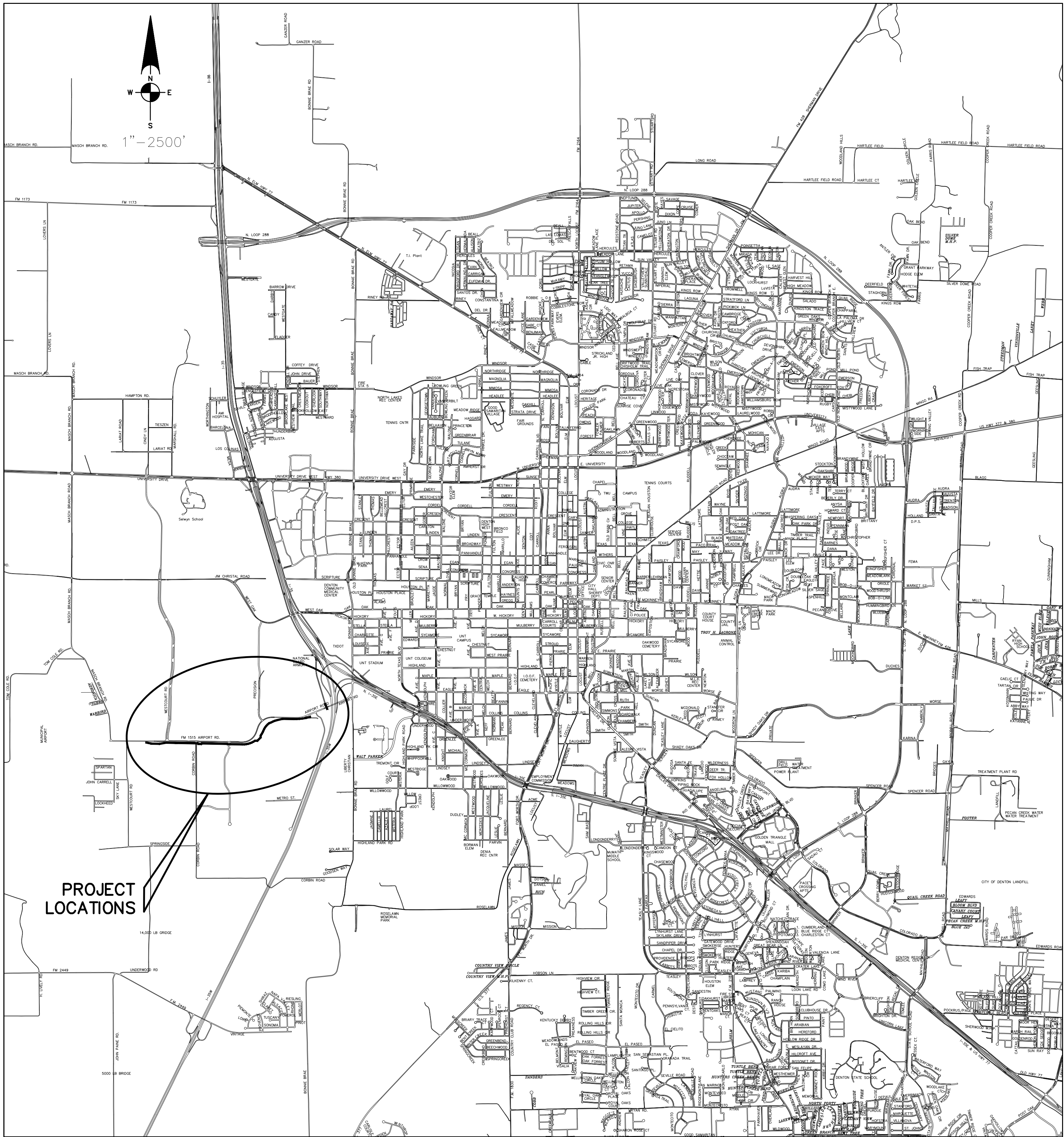
Plans, Specifications, and Estimated Costs

All material items within the cost estimate that must meet Buy America or Steel and Iron Preference Provision requirements must be indicated with an asterisk (*).

- ☐ Currently, **this project does not plan to use** iron and steel subject to Buy America requirements. In the event that Buy America compliant materials are used during construction on this project, compliance documentation will be provided.
- ☐ There are non-domestic iron and steel materials in this project that fall under the De Minimis equation. Calculation showing the total cost does not exceed one-tenth of one percent (0.1 %) of the individual utility agreement amount or \$2,500.00, whichever is greater is required.
- ☒ We understand the Buy America Compliance Requirements for iron and steel and will supply the required documentation to TxDOT indicating compliance with this provision. The following documents will be supplied prior to installation of the materials:
- 1) Form 1818 - Material Statement
 - 2) Material Test Reports or Certifications

Initial Date
TxDOT

Initial Date
Utility



FM 1515 UTILITY RELOCATIONS

UTILITIES RELOCATIONS WATER, SANITARY SEWER

PROJECT # 630511523.

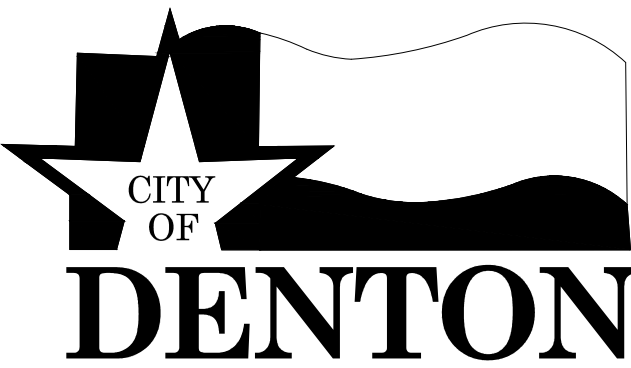
CSJ: 1951-01-011

RCSJ: 1951-01-012

U00023607

NOVEMBER , 2024

CITY of DENTON



ENGINEERING SERVICES

SHEET LIST

- | | |
|-------|---|
| 1 | COVER SHEET |
| 2 | GENERAL NOTES |
| 3 | QUANTITY SUMMARY |
| 4 | EROSION CONTROL NARRATIVE |
| 5-11 | EROSION CONTROL SHEETS |
| 12-13 | TRAFFIC CONTROL NARRATIVE |
| 14 | PROJECT LAYOUT SHEETS & CONTROL POINTS |
| 15-21 | 16" MAIN WATERLINE PLAN AND PROFILE SHEETS |
| 22-23 | SANITARY SEWER CROSSING PLAN AND PROFILE SHEETS |
| 24-28 | WATERLINE CROSSING PLAN AND PROFILE SHEETS |
| 29-37 | STANDARD DETAILS |

* THE DETAILS SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

PROJECT NOTES:

GENERAL CONSTRUCTION NOTES:

- GOVERNING SPECIFICATIONS REGARDING CONSTRUCTION AND MATERIALS FOR THIS PROJECT ARE CONTAINED WITHIN THE PROJECT MANUAL.
- PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL BE FAMILIAR WITH THE PLANS, ALL NOTES, AND THE SPECIFICATIONS CONTAINED WITHIN THE BID DOCUMENTS. FAILURE ON THE PART OF THE CONTRACTOR TO BE FAMILIAR WITH ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THIS WORK SHALL IN NO WAY RELIEVE THE CONTRACTOR OF RESPONSIBILITY OF PERFORMING THE WORK IN ACCORDANCE WITH ALL SUCH APPLICABLE STANDARDS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE AND NOTIFY THE OWNER'S REPRESENTATIVE OF ANY OMISSIONS, DISCREPANCIES, OR DIMENSIONAL ERRORS PRIOR TO BEGINNING OR FABRICATING ANY WORK, OTHERWISE THE CORRECTIONS (AND ASSOCIATED COST) WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE LOCATION OF ALL UNDERGROUND PIPING, FRANCHISE UTILITIES AND OTHER UNDERGROUND STRUCTURES AND UTILITIES ARE BASED ON ORIGINAL CONSTRUCTION PLANS AND LIMITED FIELD SURVEY. THE CITY OF DENTON ASSUMES NO RESPONSIBILITY FOR FAILURE TO SHOW ANY OR ALL OF THESE FACILITIES OR TO SHOW THEM IN THEIR EXACT LOCATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL AFFECTED UTILITIES, WHETHER OR NOT THEY ARE SHOWN ON THE PLANS, TO VERIFY THE MATERIALS, LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING FACILITIES PRIOR TO CONSTRUCTION OR PURCHASE OF MATERIAL AND TO PROVIDE ALL NECESSARY PIPE, FITTINGS AND APPURTENANCES TO MAKE ALL CONNECTIONS AS SHOWN IN THESE PLANS. SUCH VERIFICATION SHALL BE CONSIDERED SUBSIDIARY TO THE COST OF THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE CONTRACTOR SHALL SAWCUT EXISTING CURB AND GUTTER, PAVEMENT, DRIVEWAYS, ALLEYS AND SIDEWALKS AT AREAS WHERE PAVEMENT OR CONCRETE IS TO BE REMOVED, SAWCUTS WILL BE CONSIDERED SUBSIDIARY TO THE PRICE BID FOR THE RESPECTIVE ITEM.
- THE CONTRACTOR SHALL PRESERVE AND PROTECT OR REMOVE AND REPLACE (WITH PRIOR APPROVAL OF AFFECTED PROPERTY OWNER) ANY TREES, SHRUBS, HEDGES, GUARDRAILS, FENCES, RETAINING WALLS, LANDSCAPING, BUILDINGS, WALKS, MAILBOXES, SPRINKLERS, ETC. IN OR NEAR PROPOSED CONSTRUCTION AREA WHICH ARE NOT SPECIFICALLY DESIGNATED ON THE PLANS FOR REMOVAL AND/ OR REPLACEMENT. USE ORANGE CONSTRUCTION FENCE TO PROTECT TREES/SHRUBS TO REMAIN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL MAKE NECESSARY PROVISION FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, GAS MAINS, TELEPHONE CABLES, SANITARY SEWER LINES, ELECTRIC CABLES, DRAINAGE PIPES, UTILITY SERVICES, ALL OTHER UTILITIES, AND THE STRUCTURES BOTH ABOVE AND BELOW GROUND DURING CONSTRUCTION. THE CONTRACTOR IS LIABLE FOR ALL DAMAGES DONE TO SUCH EXISTING FACILITIES AS A RESULT OF THE CONTRACTOR'S OPERATIONS.
- NO TREES MAY BE REMOVED OUTSIDE THE PERMANENT EASEMENT WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE. THE CONTRACT AMOUNT WILL BE REDUCED BY \$5,000 FOR EACH TREE WHICH IS REMOVED WHERE NOT AUTHORIZED.
- THE PROPOSED IMPROVEMENTS AT TIMES WILL BE CONSTRUCTED CLOSE TO OTHER EXISTING UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW GROUND. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, GAS MAINS, TELEPHONE CABLES, SANITARY SEWER LINES, WATER LINES, TV CABLES, DRAINAGE PIPES, UTILITY SERVICES, AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW GROUND DURING CONSTRUCTION. THE CONTRACTOR IS LIABLE FOR ALL DAMAGES DONE TO SUCH EXISTING FACILITIES AS A RESULT OF THE CONTRACTOR'S OPERATIONS.
- NO EXCESS EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAYS WITHOUT WRITTEN PERMISSION FROM THE PROPERTY OWNER. IF THE CONTRACTOR PLACES EXCESS MATERIAL IN AREAS WITHOUT WRITTEN PERMISSION, HE WILL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM SUCH FILL, AND HE SHALL REMOVE THE MATERIAL AT HIS OWN COST IF THE CITY SO DIRECTS.
- THE CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNER TO VERIFY CONDITION OF EXISTING IRRIGATION STRUCTURES. ALL IRRIGATION STRUCTURES AFFECTED BY CONSTRUCTION WILL BE REPAIRED TO A CONDITION AS GOOD OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION WITH NO SEPARATE PAY ITEM.
- ALL IMPROVEMENTS NOT SCHEDULED FOR REPLACEMENT DURING CONSTRUCTION WHICH ARE DAMAGED OR DESTROYED BY THE CONTRACTOR SHALL BE RESTORED TO EQUAL OR BETTER CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY OF DENTON OR THE AFFECTED PROPERTY OWNER.
- THE CONTRACTOR SHALL RESTORE ALL UNPAVED VEGETATED AREAS DISTURBED BY CONSTRUCTION TO ORIGINAL CONDITION OR BETTER. UNPAVED AREAS SHALL BE RESTORED WITH A SEASONALLY APPROPRIATE SEED MIX. IN AREAS WHERE SEEDING FAILS TO REESTABLISH VEGETATION, SOLID SOD SHALL BE USED. CONTRACTOR IS EXPECTED TO MINIMIZE SOD REPLACEMENT BY LIMITING IMPACT TO EXISTING SODDED AREA.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING GENERAL SAFETY AT AND ADJACENT TO THE PROJECT AREA, INCLUDING THE PERSONAL SAFETY OF THE CONSTRUCTION CREW AND GENERAL PUBLIC AND THE SAFETY OF PUBLIC AND PRIVATE PROPERTY.
- CONSTRUCTION STAKING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL BE CONSIDERED SUBSIDIARY TO THE BASE BID FOR THE PROJECT.
- THE CONTRACTOR SHALL PRESERVE AND PROTECT OR REMOVE AND REPLACE ALL EXISTING ROADSIDE SIGNS IN OR NEAR THE PROPOSED CONSTRUCTION AREA WHICH ARE NOT SPECIFICALLY DESIGNATED ON THE PLANS FOR REMOVAL AND/OR REPLACEMENT. THIS WORK WILL BE CONSIDERED INCIDENTAL AND NOT A SEPARATE PAY ITEM.
- THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL CONCRETE CURB AND GUTTER IN OR NEAR THE PROPOSED CONSTRUCTION AREA WHICH ARE NOT SPECIFICALLY DESIGNATED ON THE PLANS FOR REMOVAL AND/OR REPLACEMENT.
- THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING SIDEWALK APPROACHES IN OR NEAR THE PROPOSED CONSTRUCTION AREA WHICH ARE NOT SPECIFICALLY DESIGNATED ON THE PLANS FOR REMOVAL AND/OR REPLACEMENT.
- PREPARING ROW/REMOVAL OF EXISTING ITEMS TO BE DONE ONLY IN AREAS WHERE WORK IS OCCURRING.
- UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL PROVIDE AS-BUILT PLANS IDENTIFYING ALL DEVIATIONS OR VARIATIONS OF ORIGINAL PLANS. THIS WORK WILL BE CONSIDERED INCIDENTAL AND NOT A SEPARATE PAY ITEM.
- THE CONTRACTOR IS TO ENSURE THAT ALL CONSTRUCTION ACTIVITY IS CONTAINED WITHIN THE LIMITS OF CONSTRUCTION SHOWN ON THE PLANS.
- THE CONTRACTOR'S PERSONNEL SHALL WEAR IDENTIFYING CLOTHING OR HATS AT ALL TIMES.
- THE CITY HAS ACQUIRED PERMANENT AND TEMPORARY CONSTRUCTION EASEMENTS AS SHOWN ON THE DRAWINGS. THE CONTRACTOR MAY ACQUIRE ADDITIONAL TEMPORARY CONSTRUCTION EASEMENTS AT HIS OWN COST, IF HE SO CHOOSES. IF THE CONTRACTOR ACQUIRES ADDITIONAL TEMPORARY EASEMENTS, HE SHALL PROVIDE COPIES OF THE WRITTEN AGREEMENTS TO THE CITY. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGES AS A RESULT OF THE USE OF ADDITIONAL TEMPORARY EASEMENTS OR WORK CONDUCTED ON PRIVATE PROPERTY AND/OR OUTSIDE THE PROJECTS EXTENTS.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE TERMS AND CONDITIONS SET FORTH IN TEMPORARY CONSTRUCTION EASEMENTS. UNLESS GRANTED BY THE PROPERTY OWNER, INGRESS AND EGRESS TO THE WORK SITE SHALL BE ONLY THROUGH THE TEMPORARY CONSTRUCTION EASEMENTS, EXISTING UTILITY EASEMENTS OR R.O.W. IN THE AREAS WHERE NO CONSTRUCTION EASEMENTS ARE AVAILABLE, CONTRACTOR SHALL LIMIT ACTIVITIES TO WITHIN THE EXISTING UTILITY EASEMENT OR ROW.
- THE CONTRACTOR SHALL RECONSTRUCT IN PLACE AND WITH LIKE MATERIALS ANY DRIVES, ROADS, SIDEWALKS, IRRIGATION SYSTEMS, CULVERT PIPES, DRAINAGE DITCHES, FENCES, UTILITY SERVICES, OR OTHER FACILITIES WHICH ARE REMOVED OR DAMAGED DURING CONSTRUCTION. UTILITY SERVICES WHICH ARE CUT OR DAMAGED SHALL BE IMMEDIATELY REPAIRED.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH RELOCATION OR TEMPORARY SUPPORT OF POWER POLES. THIS IS TRUE EVEN IF THE PLANS DO NOT SHOW THE POLES IN QUESTION.
- EXCAVATION WITHIN 5 FEET OF AN EXISTING ELECTRIC POLE WILL REQUIRE POLE BRACING AND TRENCH SHORING. CONTACT DENTON MUNICIPAL ELECTRIC TO REQUEST POLE BRACING (940-349-7509). LEAD TIME FOR BRACING VARIES SO CONTRACTOR IS ADVISED TO CONTACT DME AT EARLIEST TIME POSSIBLE.
- CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF TPDES GENERAL PERMIT NO. TXR150000 PART V.C AND PART VI WHICH GOVERN THE APPROPRIATE DISPOSAL PROCEDURES FOR CONCRETE TRUCK WASH OUT ON A CONSTRUCTION SITE.

UTILITY NOTES:

- THE LOCATION OF ALL WATER, SANITARY SEWER, TELEPHONE, FIBER-OPTIC, GAS, ELECTRIC AND CABLE TELEVISION UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE AND HAVE BEEN DERIVED FROM PUBLIC RECORD DOCUMENTS BURIED UTILITY LINES AND INFRASTRUCTURE MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. ACCURATE LOCATIONS AND SIZES OF BURIED UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AFTER CONSULTATION WITH THE RESPECTIVE UTILITY OWNERS OR PROPERTY OWNERS.
- THE CONTRACTOR SHALL VERIFY THAT NECESSARY CROSSING CLEARANCES BETWEEN EXISTING AND PROPOSED UTILITIES EXIST PRIOR TO CONSTRUCTION OF ANY SUCH CROSSINGS.
- THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL UNDERGROUND AND OVERHEAD FACILITIES AND BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO THEM. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT MANAGER AT ONCE OF ANY CONFLICTS WITH PROPOSED CONSTRUCTION.
- THE CONTRACTOR SHALL CONTACT 811 AND THE UTILITY COMPANIES, AS WELL AS ANY OTHER UTILITY COMPANY WITH UTILITY LINES ENCOUNTERED IN THE FIELD, WHETHER THE UTILITY LINES ARE SHOWN IN THE PLANS OR NOT, AT LEAST 48 HOURS PRIOR TO EXCAVATING.
- THERE MAY HAVE BEEN UTILITY IMPROVEMENTS WITHIN THE PROJECT LIMITS AFTER SURVEY WAS COMPLETED. CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY IF THERE ARE EXISTING UTILITY CONFLICTS NOT SHOWN ON THE PLANS.

EROSION CONTROL:

- THE CONTRACTOR SHALL PREPARE, IMPLEMENT, AND MAINTAIN AN EROSION CONTROL PLAN AND THE ASSOCIATED EROSION CONTROL MEASURES IN ACCORDANCE WITH THE GUIDELINES CONTAINED IN THESE PLANS.
- IN THE EVENT THAT SIGNIFICANT EROSION OCCURS AS A RESULT OF CONSTRUCTION THE CONTRACTOR SHALL RESTORE ALL AFFECTED AREAS TO ORIGINAL CONDITION.
- THE CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND SIDEWALKS ADJACENT TO THE PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY CLEAN STREETS AND CORRECT EROSION CONTROLS ON SITE TO PREVENT ADDITIONAL RELEASES OF MUD OR DELETERIOUS MATERIALS ONTO PUBLIC ROADWAYS OR PRIVATE PROPERTY.

HAULING EQUIPMENT:

- THE USE OF RUBBER-TIRED EQUIPMENT WILL BE REQUIRED FOR MOVING DIRT OR OTHER MATERIALS ALONG OR ACROSS PAVED SURFACES. WHERE THE CONTRACTOR DESIRES TO MOVE ANY EQUIPMENT NOT LICENSED FOR OPERATION ON PUBLIC HIGHWAYS, ON OR ACROSS PAVEMENT, THEY SHALL PROTECT THE PAVEMENT FROM DAMAGE AS DIRECTED/APPROVED BY THE PROJECT MANAGER.
- THROUGHOUT CONSTRUCTION OPERATIONS, THE CONTRACTOR WILL BE REQUIRED TO CONDUCT THEIR HAULING OPERATIONS IN A MANNER SUCH THAT VEHICLES WILL NOT HAUL OVER PREVIOUSLY RECOMPACTED SUBGRADE OR COMPACTED BASE MATERIAL EXCEPT IN SHORT SECTIONS FOR DUMPING MANIPULATIONS.

WATER AND SANITARY SEWER NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER AND SEWER CONNECTIONS IN WORKING ORDER AT ALL TIMES. IN NO CASE SHALL SERVICES BE ALLOWED TO REMAIN OUT OF SERVICE OVERNIGHT.
- THE CONTRACTOR SHALL BE LIABLE FOR DAMAGES TO BUSINESSES, HOMES, OR BASEMENTS FROM BACKUP WHICH MAY RESULT DURING THE INSTALLATION OF NEW SEWER PIPE. THE CONTRACTOR WILL BE ALLOWED TO OPEN CLEAN OUTS WHERE AVAILABLE. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CLEAN-UP ASSOCIATED WITH OPENING CLEAN OUTS AND FOR REPLACEMENT OF REMOVED CAPS.
- THE CONTRACTOR SHALL FURNISH AND INSTALL PIPE DETECTION TAPE IN ACCORDANCE CITY OF DENTON SPECIFICATION 33.05.97.
- VERTICAL OR HORIZONTAL SEPARATION BETWEEN SANITARY SEWER AND WATERLINES AT CROSSINGS MUST ADHERE TO TCEQ GUIDELINES FOUND IN TAC 290 OR 217.
- VERTICAL OR HORIZONTAL SEPARATION BETWEEN SANITARY SEWER OR WATER AND STORM DRAIN LINES MUST BE AT A MINIMUM OF 2' UNLESS SPECIFIED IN THE PLANS.
- THE CONTRACTOR SHALL PREPARE AND PRESENT A PLAN TO THE CITY ON HOW TIE-INS BETWEEN EXISTING LATERALS AND THE NEW SANITARY SEWER SHALL BE COORDINATED. NO EXISTING LATERAL LINES WILL BE ALLOWED TO REMAIN UNCONNECTED TO THE COLLECTION SYSTEM OVERNIGHT. TEMPORARY TIE-IN WORK SHALL BE SUBSIDIARY TO THE COST OF PIPE INSTALLATION AND WILL NOT BE PAID FOR SEPARATELY.
- THE CONTRACTOR SHALL PREPARE AND PRESENT A PLAN ON HOW TO SUPPORT WATER, STORM DRAIN OR OTHER LINES THAT SPAN THE CONSTRUCTION TRENCH PRIOR TO BEGINNING ANY WORK OF THE PROJECT.
- SERVICE LINE LOCATIONS ARE APPROXIMATE. CONTRACTOR IS TO VERIFY ACTUAL LOCATION IN FIELD PRIOR TO INSTALLING NEW SERVICE LINES. NO PAYMENT SHALL BE MADE FOR REINSTALLATION OF SERVICE LINES DUE TO CONTRACTOR OVERSIGHT OF THIS NOTE.
- EXISTING SERVICES MAY NOT MATCH TO SIZE OF NEW SERVICE LINES. CONTRACTOR SHALL SUPPLY CONNECTORS/ADAPTORS TO MAKE SERVICE SIZE TRANSITIONS AT NO ADDITIONAL COST.
- EXISTING IN-SERVICE MANHOLES ARE TO BE PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO IN-SERVICE MANHOLES CAUSED BY THE CONTRACTOR SHALL BE REMEDIED BY THE CONTRACTOR AT NO COST TO THE CITY.
- MAXIMUM ALLOWABLE JOINT DEFLECTION IS 1" FOR WATER PIPE.
- EXISTING AND PROPOSED WATER, SEWER, OR STORM DRAINAGE APPURTENANCES (I.E., VALVE STACKS, MANHOLE FRAMES, ETC.) LOCATED IN PROPOSED STREET RECONSTRUCTION ZONES SHALL BE ADJUSTED TO MATCH THE GRADE OF STREET. THESE ADJUSTMENTS SHALL BE CONSIDERED INCIDENTAL WORK AND NOT PAID FOR SEPARATELY.

TRAFFIC CONTROL AND SAFETY:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING GENERAL SAFETY AT AND ADJACENT TO THE PROJECT AREA, INCLUDING THE PERSONAL SAFETY OF THE CONSTRUCTION CREW AND GENERAL PUBLIC AND THE SAFETY OF PUBLIC AND PRIVATE PROPERTY.
- THE CONTRACTOR WILL PROVIDE, CONSTRUCT, AND MAINTAIN BARRICADES AND SIGNS IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.
- THE CONTRACTOR SHALL KEEP THE ROADWAY CLEAN AND FREE OF DIRT OR OTHER MATERIALS. THE PROJECT MANAGER HAS THE RIGHT TO HALT CONSTRUCTION ACTIVITY UNTIL THE ROADWAY IS CLEANED TO THE SATISFACTION OF THE PROJECT MANAGER.
- TRAFFIC MUST BE HANDLED THROUGHOUT THE PROJECT DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SAFE PASSAGE FOR VEHICULAR AND PEDESTRIAN TRAFFIC WITH MINIMAL INCONVENIENCE TO THE PUBLIC, AS SHOWN IN THE PLANS OR AS DIRECTED/APPROVED BY THE PROJECT MANAGER.
- DO NOT STORE ANY CONSTRUCTION MATERIAL OR EQUIPMENT AT ANY LOCATION THAT WILL CONSTITUTE A HAZARD AND WILL ENDANGER TRAFFIC.
- THE CONTRACTOR WILL PROVIDE THREE (3) WEEKS ADVANCE NOTIFICATION TO THE CITY OF IMPENDING/UPCOMING CLOSURES FOR ALL TEMPORARY AND/OR PERMANENT VEHICULAR, BIKE OR PEDESTRIAN LANE, RAMP, CONNECTOR, FRONTAGE, SHOULDER, ETC. CLOSURES OR DETOURS.
- TEMPORARY DRAINAGE IS THE RESPONSIBILITY OF THE CONTRACTOR.
- AT NO TIME SHALL TWO CONSECUTIVE INTERSECTING ROADWAYS BE CLOSED DURING CONSTRUCTION. CONTRACTOR SHALL LIMIT CLOSURE OF THE INTERSECTIONS TO MINIMIZE INCONVENIENCE TO PUBLIC.
- COVER PERMANENT SIGNS WITH APPROPRIATE MATERIAL IF NOT USED. THIS IS SUBSIDIARY TO THE TRAFFIC CONTROL BID ITEM(S).
- ADVANCE WARNING SIGNS AND LANE CLOSURES MUST BE MOVED UP PERIODICALLY IN ORDER TO KEEP UP WITH THE MOVING WORK ZONE. AS WORK PROGRESSES, THE LANE CLOSURE SIGNING AND APPROPRIATE BARRICADES MUST FOLLOW APPLICABLE STANDARDS.
- PROVIDE ALL-WEATHER ACCESS FOR LANDOWNERS AT EXISTING ROADS AND DRIVES AT ALL TIMES. PROPERTIES WHERE ACCESS TO EXISTING ROADS AND DRIVES IS INTERRUPTED MUST HAVE MULTIPLE INGRESS/EGRESS POINTS AVAILABLE OR ALTERNATE ACCESS MUST BE PROVIDED BY CONTRACTOR. ALL PROPERTIES OCCUPIED THAT WILL BE DENIED ACCESS TO THEIR DRIVEWAYS SHALL BE NOTIFIED BY THE CONTRACTOR TWO WORKING DAYS PRIOR TO THE CLOSURE OF THEIR ACCESS.
- THE CONTRACTOR SHALL SUBMIT WRITTEN REQUEST TO THE CITY FOR APPROVAL OF ALL AREAS TO BE USED FOR STAGING, MOBILIZATION, EQUIPMENT, AND MATERIAL STORAGE AND GENERAL PROJECT CONSTRUCTION MANAGEMENT. REQUESTS SHALL BE SUBMITTED TO THE CITY AT LEAST FIVE (5) DAYS PRIOR TO NOTICE TO PROCEED.
- THE CONTRACTOR SHALL PREPARE, IMPLEMENT AND MAINTAIN A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE GUIDELINES CONTAINED IN THESE PLANS.
- ALL BARRICADES, WARNING SIGNS, LIGHT DEVICES, ETC. FOR THE GUIDANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS MUST CONFORM TO THE INSTALLATION SHOWN IN THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AS CURRENTLY AMENDED, PUBLISHED BY THE TEXAS DEPARTMENT OF TRANSPORTATION.
- THE CONTRACTOR SHALL INSTALL METAL PLATES OVER OPEN TRENCHES, UNCOVERED MANHOLES OR OPEN INLETS ADJACENT TO TRAFFIC OVERNIGHT OR WHEN NO WORK IS BEING PERFORMED FOR MULTIPLE DAYS.
- THROUGHOUT CONSTRUCTION SHALL PROVIDE PROTECTIVE FENCING OR BARRIERS AROUND OPEN TRENCHES, UNCOVERED MANHOLES OR OPEN INLETS LOCATED OUTSIDE OF VEHICULAR TRAFFIC AREAS WHEN NO WORK IS OCCURRING OR OVERNIGHT.
- FOLLOW OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) REGULATIONS AND WORK A SAFE DISTANCE FROM ALL POWER LINES. WHENEVER WORK IS TO BE PERFORMED NEAR OVERHEAD LINES, OSHA REQUIRES THAT WORKMEN AND ANY EQUIPMENT OR TOOLS BEING OPERATED OR HANDLED BE KEPT A SAFE DISTANCE FROM POWER LINES. OSHA ALSO REQUIRES THAT THE POWER LINES SHALL EITHER BE DE-ENERGIZED AND GROUNDED OR OTHER PROTECTIVE MEASURES SHALL BE TAKEN BEFORE WORK IS STARTED. OSHA HAS PRESCRIBED CERTAIN DISTANCES THAT WORKMEN, TOOLS, AND EQUIPMENT MUST BE KEPT FROM OVERHEAD LINES. 10 FEET IS THE DISTANCE FOR POWER LINES OF 50,000 VOLTS OR LESS. 11 FEET IS THE DISTANCE FOR POWER LINES OF 138,000 VOLTS.

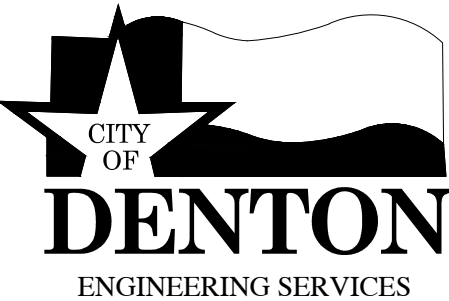
FINAL CLEAN UP:

- UPON COMPLETION OF THE WORK AND BEFORE FINAL ACCEPTANCE AND FINAL PAYMENT IS MADE, THE CONTRACTOR SHALL CLEAR AND REMOVE FROM THE SITE ALL SURPLUS AND DISCARDED MATERIALS AND DEBRIS OF EVERY KIND AND LEAVE THE ENTIRE PROJECT IN A SMOOTH, NEAT AND SIGHTLY CONDITION.

UTILITY COMPANIES:

ATMOS (LOCAL-GAS) 106 N. BRADSHAW DENTON, TX 76205 (940) 380-7470	CITY OF DENTON-COMMUNICATIONS (940) 349-7172	GRANDE COMMUNICATIONS 500 TITTLE DR. SUITE 400 LEWISVILLE, TX 75056 (940) 270-7016 ATTN: CHRIS LANGSTON
ATMOS ENERGY 142 N. FM 730 BOYD, TX 76023 (940) 433-8902 ATTN: OMAR CAMPOS	CITY OF DENTON-ELECTRIC (940) 349-7509 EMERGENCY: (940) 349-8400 ATTN: DOUG BREON	VERIZON 2094 MCGEE LEWISVILLE, TX 75077 (940) 318-0264
CHARTER CABLE 15100 TRINITY BLVD. FORT WORTH, TX 76155 (817) 298-3635	TXDOT 2624 W. PRAIRIE DENTON, TX 76201 (940) 349-1414	EXPLORER/CITGO PIPELINE CO. 6846 S. CANTON SUITE 300 TULSA, OK 74136 (918) 493-5172 CHANCE GIFSON
CO-SERV 7701 S. STEMMONS CORINTH, TX 76210 (940) 321-7800 ATTN: JODY PADRON	AT&T 1460 ROUNDTABLE DALLAS, TX 76247 ATTN: ERIC WILLIAMS	TEXAS 811 (800) 344-8377

- THE EXISTING UTILITIES SHOWN ON THESE PLANS WERE COMPILED FROM VARIOUS SOURCES AND ARE INTENDED TO SHOW THE GENERAL EXISTENCE AND LOCATION OF THE UTILITY INFORMATION ON THE PLANS. THE CONTRACTOR SHALL CONTACT A UTILITY LOCATING SERVICE 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES AND DETERMINE IF THERE ARE ANY CONFLICTS WITH THE PROPOSED FACILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY WHEN CONFLICTS WITH EXISTING UTILITIES ARE DISCOVERED.

ENTERED BY	M.S.	PROJECT #	630511523		FM 1515 UTILITY RELOCATIONS	COVER AND DETAILS	DATE	SCALE	HOR 1"= NTS VER 1"= NTS
DESIGNED BY	M.S.	DATE	REVISION				NOV. 2024		
CHECKED BY	J.W.								
PROJ. ENGR.	J.W.						SHEET No.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\COVER.GN, EROSION.DWG						2 of 37		

QUANTITY SUMMARY:

Spec. Section No.	Description	UOM	Total QTY	SHT 13	SHT 14	SHT 15	SHT 16	SHT 17	SHT 18	SHT 19	SHT 20	SHT 21	SHT 22	SHT 23	SHT 24	SHT 25	SHT 26
02 41 14	Remove Water Valve	EA	10	2	1	2	1		1	2		1					
02 41 14	Remove Hydrant, lead line and valve	EA	10	2	2	1	2	1	2								
33 05 05	Excavation Protection	LF	7953	1000	965	1022	1033	1000	1000	1024	312	174	28	10	256	62	67
33 14 14	HDPE Water Main (8")	LF	115											10		38	67
33 14 14	HDPE Water Main (12")	LF	83												83		
35 14 14	HDPE Water Main (16")	LF	6825	970	950	1000	1000	893	960	1024			28				
33 14 11	PVC Water Main (8")	LF	45	30	15												
33 14 11	PVC Water Main (12")	LF	55			22	33										
33 05 15	HDPE Water Main in Casing (8")	LF	414											109		119	186
33 05 15	HDPE Water Main in Casing (12")	LF	256												256		
33 05 15	HDPE Water Main in Casing (16")	LF	291	30				107	40				114				
33 05 64	DDC vault	EA	1	1													
TXDOT 7216	Insertion Valve (8")	EA	2														2
33 14 17	Water Service Connection (2")	EA	2	1	1												
33 14 25	City Performed Tapping Sleeve and Valve Connection (12" x 12")	EA	1			1											
33 14 20	Gate Valve (8")	EA	3		1									1		1	
33 14 20	Gate Valve (12")	EA	3			1	1								1		
33 14 20	Gate Valve (16")	EA	12	3		2	1	2	2	1			1				
33 14 25	Connection to Existing Main (8")	EA	6	1	1									1		1	2
33 14 25	Connection to Existing Main (12")	EA	2				1								1		
33 14 25	Connection to Existing Main (16")	EA	2	1									1				
33 14 40	Fire Hydrant	EA	8	2	1	1	1	1	1	1							
33 31 14	Sanitary Sewer Gravity Main (12")	LF	101									101					
33 31 14	Sanitary Sewer Gravity Main (15")	LF	176								176						
33 05 15	Sanitary Sewer Gravity Main in Casing (12")	LF	251									251					
33 05 15	Sanitary Sewer Gravity Main in Casing (15")	LF	244								244						
33 05 07	Steel Casing by Open Cut (24")	LF	283					107	40		136						
33 05 07	Steel Casing by Bore (24")	LF	252	30							108		114				
33 05 07	Steel Casing by Open Cut (20")	LF	73									73					
33 05 07	Steel Casing by Bore (20")	LF	178									178					
33 05 07	Steel Casing by Open Cut (18")	LF	173												173		
33 05 07	Steel Casing by Bore (18")	LF	83												83		
33 05 07	Steel Casing by Open Cut (12")	LF	24													24	
33 05 07	Steel Casing by Bore (12")	LF	390											109		95	186
33 05 61; 33 05 62	Concrete Manhole (5' ID) (0'-6' Deep)	EA	4								3	1					
33 05 76	Fiberglass Manhole (5' ID)	EA	2									2					
30 05 61; 33 05 62	Extra Concrete Manhole (5' ID)	VF	23								15	8					
33 05 76	Extra Fiberglass Manhole (5' ID)	VF	34									34					
02 41 14	Remove Utility Manhole	EA	4								3	1					
32 01 29	Concrete Pavement Repair	SY	60				27		18	15							
32 01 17	Asphalt Pavement Repair	SY	28			28											
32 93 00	Seeding	SY	17674	2222	2144	2271	2296	2222	2222	2276	693	387	62	22	569	138	149
32 01 29	Concrete Flume Repair	SY	9			9											
33 05 61; 33 05 62	External Drop for Manhole	EA	1								1						

NOTE:
THESE QUANTITIES ARE FOR REFERENCE ONLY. THE OFFICIAL BID QUANTITIES ARE CONTAINED IN SECTION 00 42 44 OF THE PROJECT MANUAL.

ENTERED BY	M.S.	PROJECT #	630511523		FM 1515 UTILITY RELOCATIONS COVER AND DETAILS	DATE	SCALE	
DESIGNED BY	M.S.	DATE	REVISION			NOV. 2024		
CHECKED BY	J.W.					SHEET No. 3 of 37	HOR 1"= NTS	
PROJ. ENGR.	J.W.						VER 1"= NTS	
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EROSION CONTROL PLAN

THE CONTRACTOR IS RESPONSIBLE FOR CREATING THE EROSION CONTROL PLAN FOR THE PROJECT. THE PLAN SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS CONTAINED IN THE PROJECT MANUAL (SEE SECTION 01 57 13 AND 31 25 14) AND THE EROSION CONTROL PLAN NARRATIVE SHEETS. THE EROSION CONTROL PLAN SHALL BE REVIEWED AND APPROVED BY THE CITY OF DENTON WATERSHED DEPARTMENT PRIOR TO IMPLEMENTATION. THE FOLLOWING NOTES SHALL SUPERCEDE ANY CONTRARY REQUIREMENTS IN THE PROJECT MANUAL.

1. ENSURE EROSION CONTROL PLAN INCLUDES SEDIMENT CONTROL AT LIMITS OF CONSTRUCTION OR AREAS ADJACENT TO CONSTRUCTION THAT CAN RECEIVE DISCHARGE FROM AREA OF PROPOSED WORK.
2. FINAL STABILIZATION SHALL BE COMPLETE PRIOR TO TERMINATION OF COVERAGE UNDER THE CONSTRUCTION GENERAL PERMIT. FINAL STABILIZATION MEASURES SHALL BE A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF AT LEAST 70 PERCENT OF THE NATIVE BACKGROUND VEGETATIVE COVER FOR ALL UNPAVED AREAS NOT COVERED BY STRUCTURES.
3. AS A CONDITION OF APPROVAL, APPLICANTS CONDUCTING LAND DISTURBING ACTIVITIES WILL COMPLETE THE ONLINE CONSTRUCTION SITE SURVEY. THIS SURVEY CAN BE FOUND AT WWW.CITYOFDENTON.COM/WATERSHED , TAB TO SURVEY IS AT TOP RIGHT OF SCREEN.
4. SITES HAVING GREATER THAN 1 ACRE OF LAND DISTURBANCE REQUIRES A STORM WATER POLLUTION PREVENTION PLAN THAT SHALL ADDRESS TO THE REQUIREMENTS OF SECTION 01 57 13. PROVIDE A COPY OF THE STORMWATER POLLUTION PREVENTION PLAN TO THE WATERSHED PROTECTION DIVISION FOR REVIEW, WATERSHED@CITYOFDENTON.COM
5. CONSTRUCTION SITE NOTICE MUST BE POSTED AT CONSTRUCTION SITE PRIOR TO INITIAL INSPECTION OF STORMWATER CONTROLS.
6. PROJECT SITE OPERATOR MUST CONTACT WATERSHED PROTECTION DIVISION FOR INITIAL INSPECTION PRIOR TO PERMIT ISSUANCE TO ENSURE COMPLIANCE WITH STORMWATER REGULATIONS AND PROPER INSTALLATION OF APPROPRIATE BMPS.

CONTACT: ZACHARY.ROWEN@CITYOFDENTON.COM (940) 349-8203 OR JENNIFER.ROVEZZI@CITYOFDENTON.COM (940) 349-7141
7. FOR PROJECT AREAS LESS THAN 1 ACRE, THE EROSION CONTROL PLAN PREPARATION SHALL BE PAID FOR AS EROSION CONTROL PLAN. FOR PROJECTS GREATER THAN 1 ACRE, EROSION CONTROL PLAN PREPARATION SHALL BE A SUBSIDIARY ITEM TO THE SWPPP BID ITEM.
8. REGARDLESS OF THE CONSTRUCTION SITE SIZE, INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES SHALL BE PAID FOR UNDER THE SWPPP DEVICE INSTALLATION BID ITEM AND REMOVAL OF EROSION CONTROL MEASURES SHALL BE PAID FOR UNDER THE SWPPP DEVICE REMOVAL BID ITEM.
9. IGNORE REFERENCE TO NCTCOG SPECIFICATIONS IN THE EROSION CONTROL STANDARD DETAILS. SECTION 31 25 14 OF PROJECT MANUAL CONTAINS THE SPECIFICATIONS GOVERNING THE DETAILS.

SITE DESCRIPTION

PROJECT NAME AND LOCATIONS:

FM 1515 UTILITY RELOCATION WESTERN EDGE OF CITY OF DENTON

CONTACT AND PHONE NO.: JOETTA DAILEY 940-349-7153

MAJOR SOIL DISTRIBUTION ACTIVITIES:
UTILITY EXCAVATION

TOTAL PROJECT AREA (ACRES): 2.42 ACRES

POST-CONSTRUCTION CHANGE IN RUNOFF POTENTIAL:
NEGLEGIBLE

EXISTING CONDITION OF SOIL, VEGETATIVE COVER: WELL
ESTABLISHED SOIL: IN PARKWAY BEHIND CURB 95% VEGETATION COVER.

DESCRIPTION OF WATER DISCHARGE NOT ASSOCIATED WITH CONSTRUCTION: NONE

NAME OF RECEIVING WATERS: HICKORY CREEK MAIN CHANNEL
AND DRY FORK 1 BRANCH

IDENTIFY STORM WATER DISCHARGE POINTS:
EXISTING STREAMS IN HICKORY CREEK BASIN, EXISTING STORM INLETS ON FM 1515

A DESCRIPTION AND TIME FRAME FOR THE INSTALLATION OF STABILIZATION PRACTICES IN CONJUNCTION WITH CONSTRUCTION:
BMPS WILL BE INSTALLED PRIOR TO CONSTRUCTION.

SOIL STABILIZATION PRACTICES:

HYDROMULCHING.

TEMPORARY SEEDING.

X PERMANENT PLANTING, SODDING OR SEEDING.

MULCHING.

X SOIL RETENTION BLANKET

BUFFER ZONES.

PRESERVATION OF NATURAL RESOURCES.

DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAS CEASED TEMPORARILY OR PERMANENTLY, SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE SCHEDULED WITHIN 21.

STRUCTURAL PRACTICES:

X SILT FENCES

HAY BALES

X EROSION CONTROL LOGS

X ROCK BERMS

X DIVERSION, INTERCEPTOR OR PERIMETER DIKES

DIVERSION, INTERCEPTOR OR PERIMETERS SWALES.

DIVERSION, DIKE AND SWALE COMBINATION.

PAVED FLUMES.

X ROCK BEDDING AT CONSTRUCTION EXIT (STABILIZED ENTRANCE).

X TIMBER MATTING AT CONSTRUCTION EXITS (STABILIZED ENTRANCE)

CHANNEL LINERS.

SEDIMENT TRAPS

SEDIMENT BASINS

X STORM INLET SEDIMENT TRAP

STONE OUTLET SEDIMENT

CURBS AND GUTTERS

STORM SEWERS

VELOCITY CONTROL STRUCTURES

GEOTEXTILES.

OTHERS: IF SILT FENCES PROVE TO BE INADEQUATE EROSION CONTROL MEASURE, THE CONTRACTOR SHALL INSTALL AND MAINTAIN TRIANGULAR SEDIMENTS DIKES AT NO ADDITIONAL COST.

SEQUENCE OF STORMWATER MANAGEMENT AND CONSTRUCTION ACTIVITIES:

BMP INSTALLATION, EXCAVATION, UTILITY INSTALLATION, BMP REMOVAL.

MAINTENANCE PROCEDURES FOR CONTROL MEASURES USED: BMP

INSPECTIONS WILL BE PERFORMED WEEKLY AND WITHIN 24-HOURS OF THE END OF A 0.5 INCH OR GREATER STORM EVENT.

STORM WATER MANAGEMENT: STORM WATER WILL BE CONVEYED BY OVERLAND SHEET FLOW TO THE NEAREST INLET OR STORM LOCATION.

PERMANENT EROSION CONTROL MEASURES: SODDING OR EROSION CONTROL BLANKETS.

PERMANENT STORM WATER MANAGEMENT MEASURES: CURB AND GUTTER, STORM INLETS, STORM DRAINS.

OTHER EROSION AND SEDIMENTATION CONTROL

MAINTENANCE:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER. IF REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN 7 CALENDAR DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT. THE AREAS ADJACENT TO CREEKS AND DRAINAGEWAYS SHALL HAVE PRIORITY, FOLLOWED BY DEVICES PROTECTION STORM SEWER INLETS.

INSPECTION:

AN INSPECTION WILL BE PERFORMED BY THE CONTRACTOR EVERY 14 DAYS AS WELL AS AFTER EVERY ½” OR MORE OF RAIL (RECORDED ON A NON FREEZING RAIN GAUGE TO BE LOCATED AT THE PROJECT SITE). AN INSPECTION AND MAINTENANCE REPORT WILL BE MADE PER INSPECTION BASED ON THE INSPECTION RESULTS, THE CONTROLS SHALL BE CORRECTED BEFORE THE NEXT SCHEDULED INSPECTION.

WASTE MATERIALS:

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL STATE AND LOCAL CITY SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION AND THE TRASH WILL BE HAULED TO A LOCAL DUMP. NO CONSTRUCTION MATERIALS WILL BE BURIED ON SITE.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING)

AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES ARE CONSIDERED TO BE HAZARDOUS; PAINTS, ACIDS FOR CLEANING MASONRY SURFACES, GASOLINE, MOTOR OIL, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SOIL STABILIZATION OR CONCRETE CURING COMPOUND AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS AND MEETS REPORTING REQUIREMENTS, THE NATION RESPONSE CENTER SHOULD BE CONTACTED AT 800-424-8802, AND ANY REQUIRED CHANGES MADE TO SWPPP. IN THE EVENT OF A LIFE THREATENING SPILL THE DENTON FIRE DEPARTMENT SHOULD BE NOTIFIED AS WELL AS THE APPROPRIATE CITY INSPECTORS.

SANITARY WASTE RESPONSIBILITY OF CONTRACTOR.

OFFSITE EXCAVATION SOURCE LOCATION: NONE

OFFSITE FILL SOURCE LOCATION: NONE

OFFSITE VEHICLE TRACKING:

X HAUL ROADS DAMPED FOR DUST CONTROL

X LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN

X EXCESS DIRT ON ROAD TO BE REMOVED DAILY

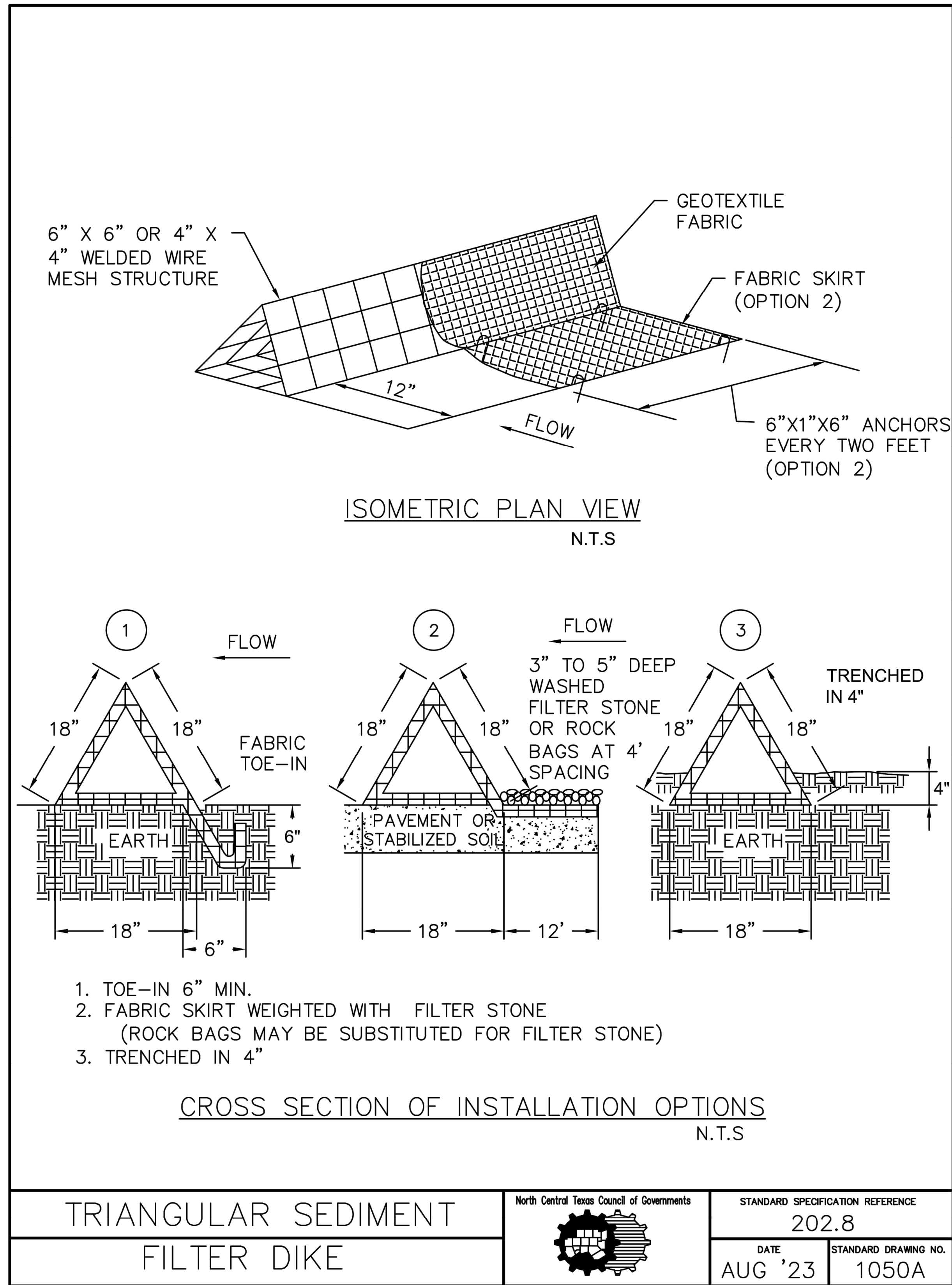
X STABILIZED CONSTRUCTION ENTRANCE

OTHERS:

CERTIFICATION THAT SITE DISTURBANCES AND/OR DISCHARGES WILL NOT EFFECT LISTED ENDANGERED SPECIES AND THEIR HABITAT.

WHAT METHOD IS USED TO SATISFY THE ENDANGERED SPECIES REQUIREMENTS? NOT APPLICABLE

ENTERED BY	M.S.	PROJECT #		630511523		FM 1515 UTILITY RELOCATIONS	EROSION CONTROL 1	DATE	SCALE	HOR 1"= NTS VER 1"= NTS	
DESIGNED BY	M.S.	DATE	REVISION	NOV. 2024							
CHECKED BY	J.W.			SHEET No. 4 of 37							
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TRIANGULAR SEDIMENT FILTER DIKE GENERAL NOTES:

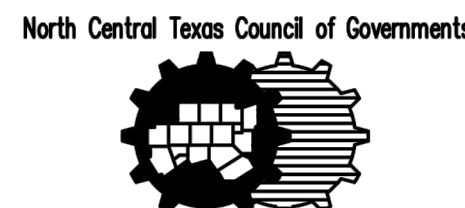
1. DIKES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
2. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE, AND FABRIC SHALL BE OVERLAPPED A MINIMUM OF 12".
3. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF TYPE 'A' RIP RAP, OR TOED-IN 6" WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED TO A DEPTH OF 4 INCHES.
4. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 6-INCH WIRE STAPLES ON 2-FOOT CENTERS ON BOTH EDGES AND SKIRTS.
5. FILTER MATERIAL SHALL BE LAPPED OVER ENDS 6" TO COVER DIKE TO DIKE JOINTS. JOINTS SHALL BE FASTENED WITH GALVANIZED SHOAT RINGS.
6. THE DIKE STRUCTURE SHALL BE W2.9-6" X 6" OR 4" X 4" WELDED WIRE MESH, 18" ON A SIDE.
7. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
8. THE FILTER DIKE SHALL BE REMOVED WHEN FINAL STABILIZATION IS ACHIEVED OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED.
9. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES APPROXIMATELY 6-INCHES IN DEPTH. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

TRIANGULAR SEDIMENT
FILTER DIKE



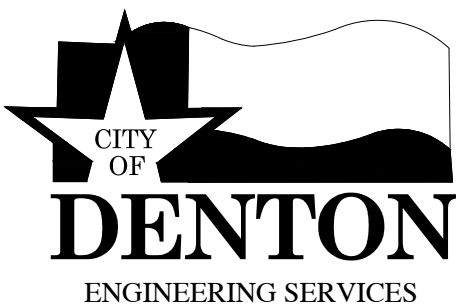
STANDARD SPECIFICATION REFERENCE
202.8
DATE
AUG '23
STANDARD DRAWING NO.
1050A

TRIANGULAR SEDIMENT FILTER DIKE
GENERAL NOTES



STANDARD SPECIFICATION REFERENCE
202.8
DATE
AUG '23
STANDARD DRAWING NO.
1050B

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FM 1515 UTILITY RELOCATIONS
EROSION CONTROL 2

DATE
NOV. 2024
SHEET No.
5 of 37

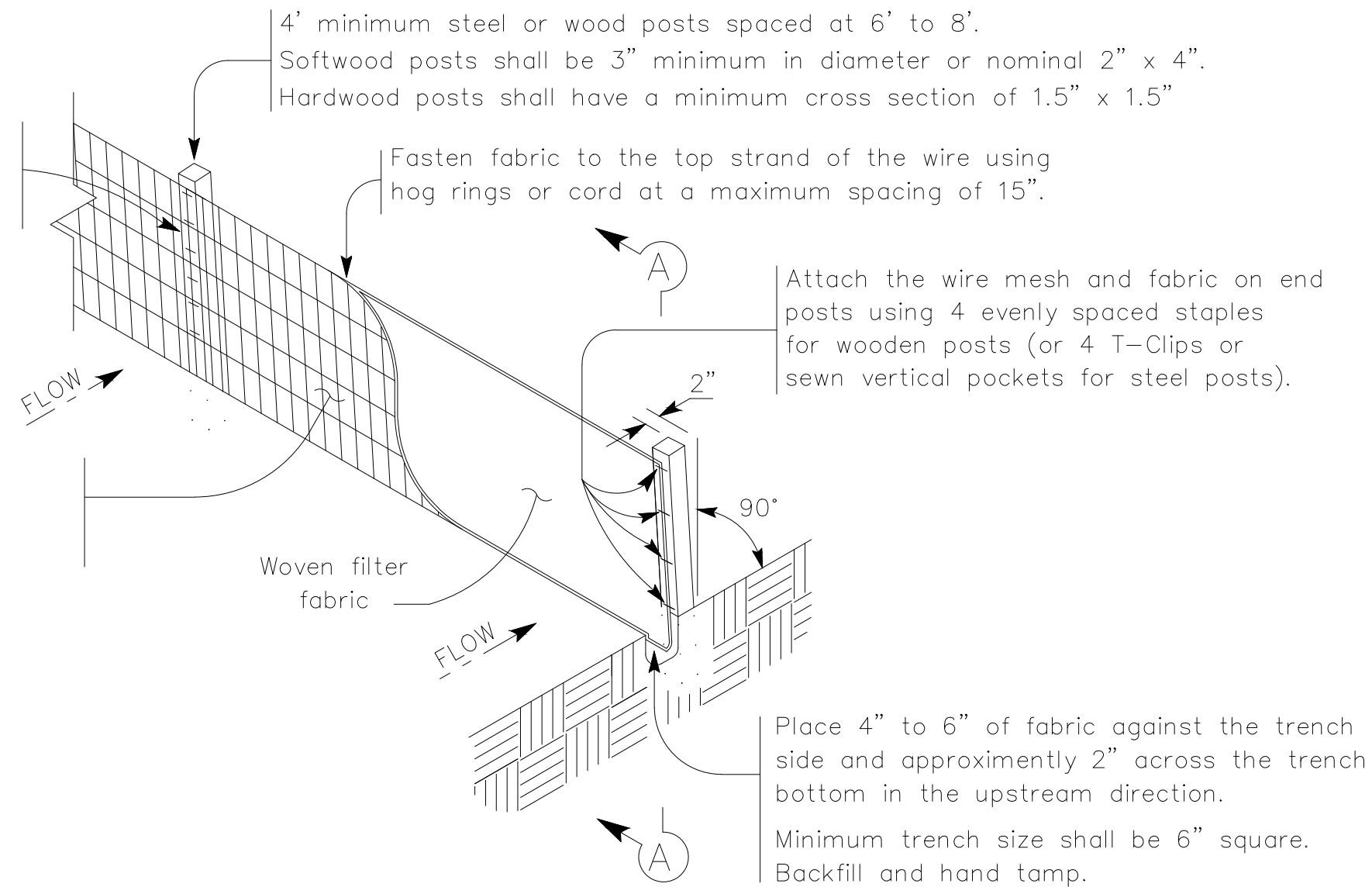
SCALE
HOR 1"= NTS
VER 1"= NTS

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DATE
FILE

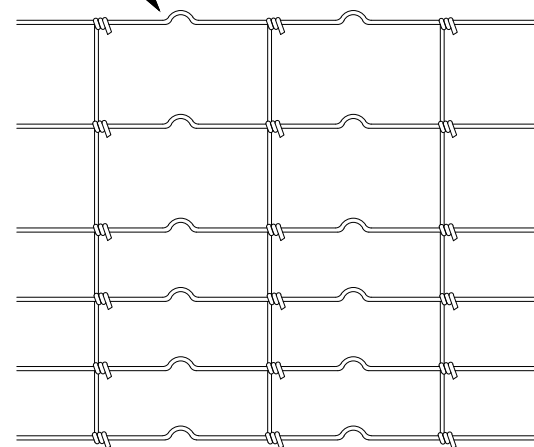
Connect the ends of the successive reinforcement sheets or rolls a minimum of 6 times with hog rings.

Galvanized welded wire mesh (W.W.M.) (12.5 GA. SWG Min.) with a maximum opening size of 2"x 4" or Woven Mesh (W.M.) (See woven mesh option detail)



TEMPORARY SEDIMENT CONTROL FENCE

Top of Fence

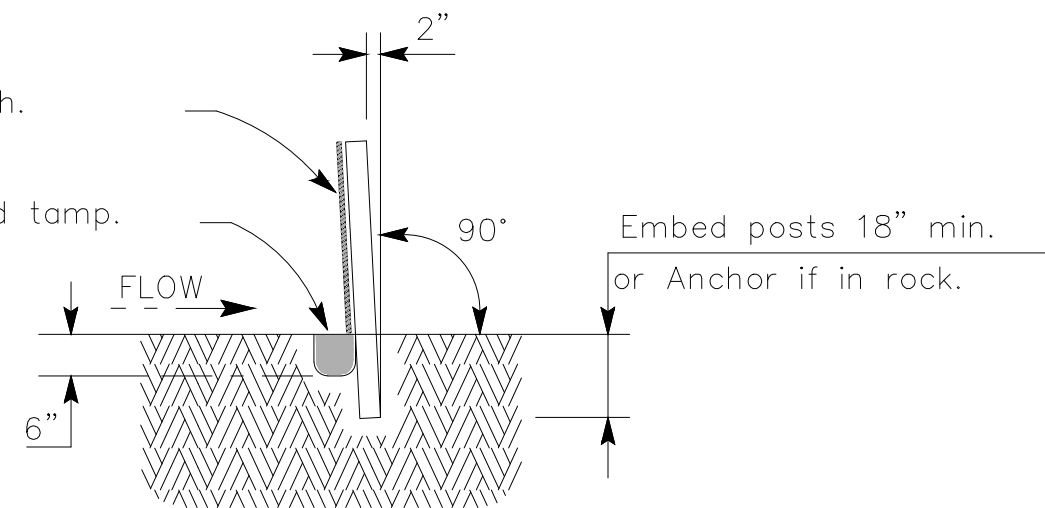


HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA. SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

Filter fabric 3' min. width.

Backfill & hand tamp.



SECTION A-A

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT. ²Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

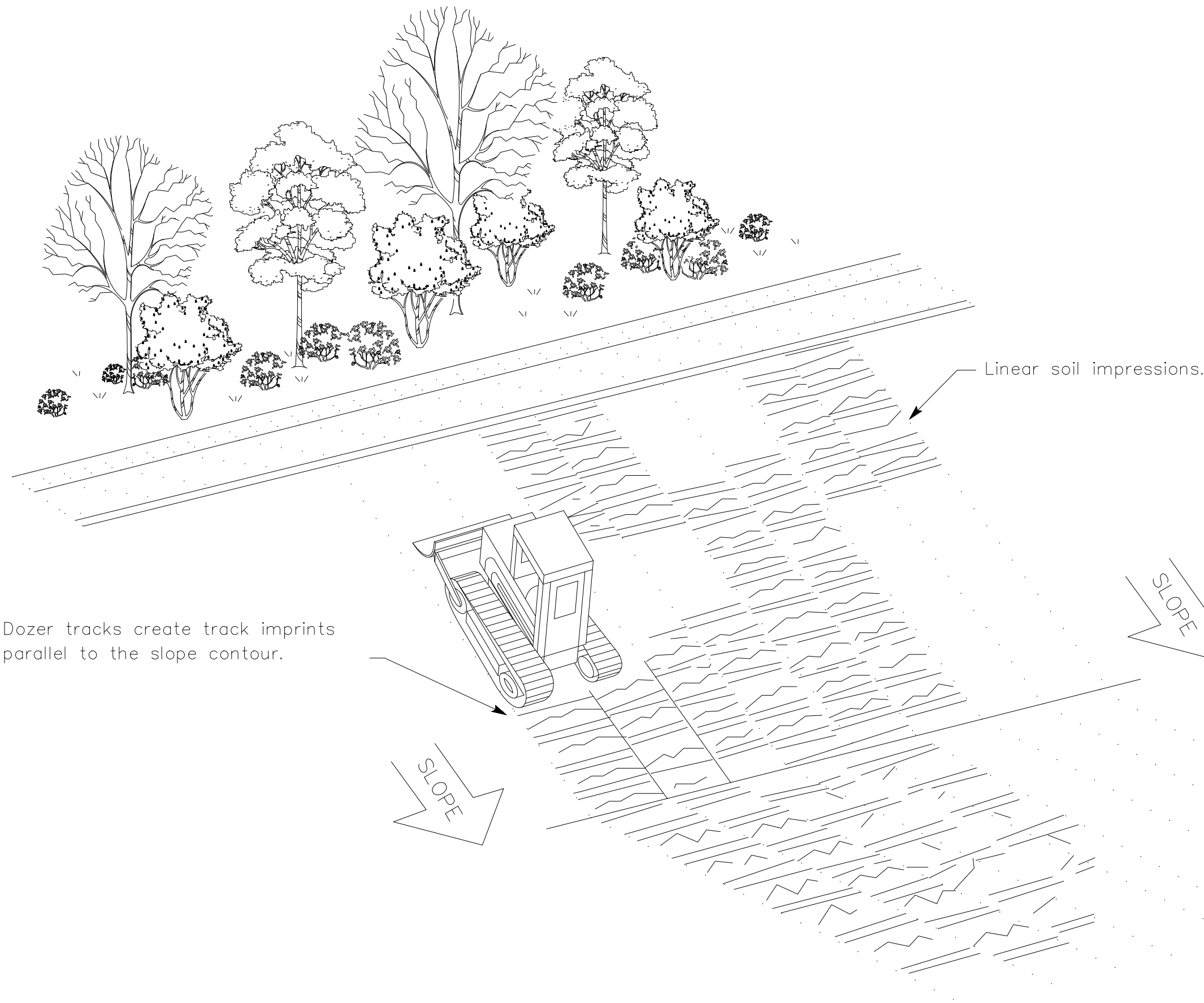
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

- Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
- Perform vertical tracking on slopes to temporarily stabilize soil.
- Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
- Do not exceed 12" between track impressions.
- Install continuous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING

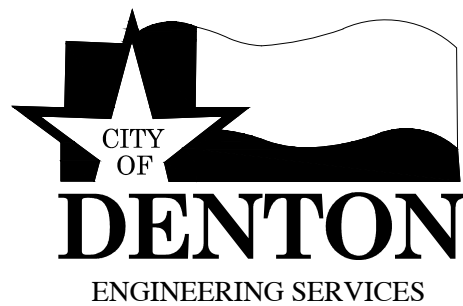


TEMPORARY EROSION,
SEDIMENT AND WATER
POLLUTION CONTROL MEASURES
FENCE & VERTICAL TRACKING

EC(1)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
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FM 1515 UTILITY RELOCATIONS

TXDOT EROSION CONTROL 1

DATE
NOV. 2024

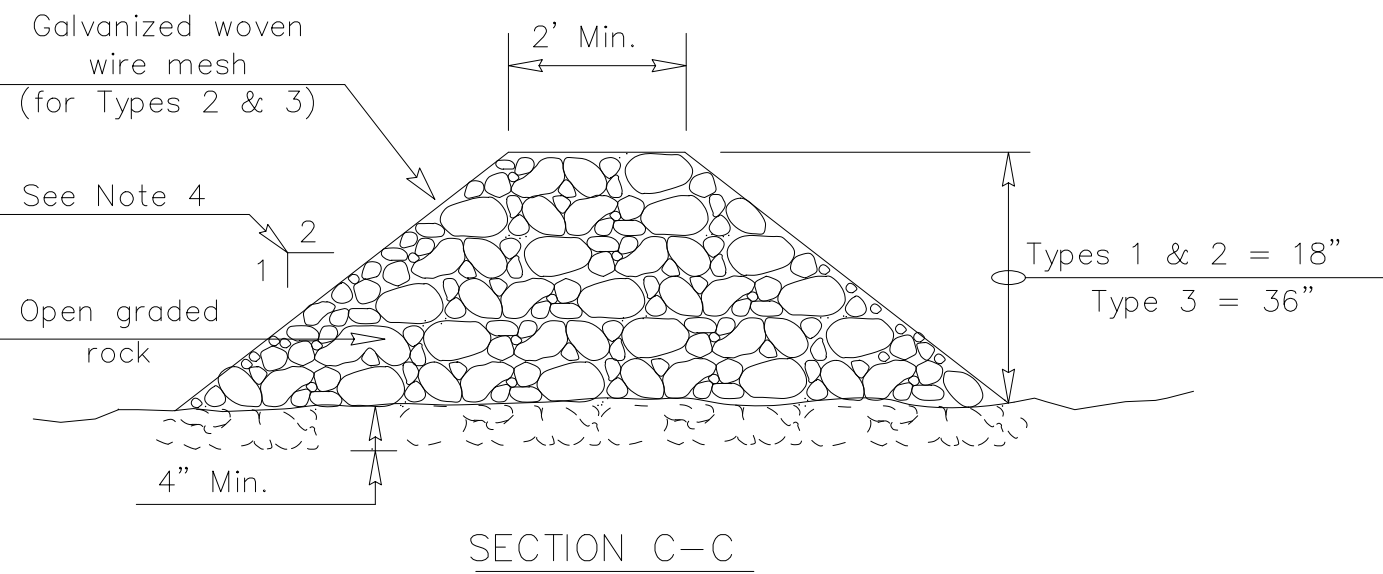
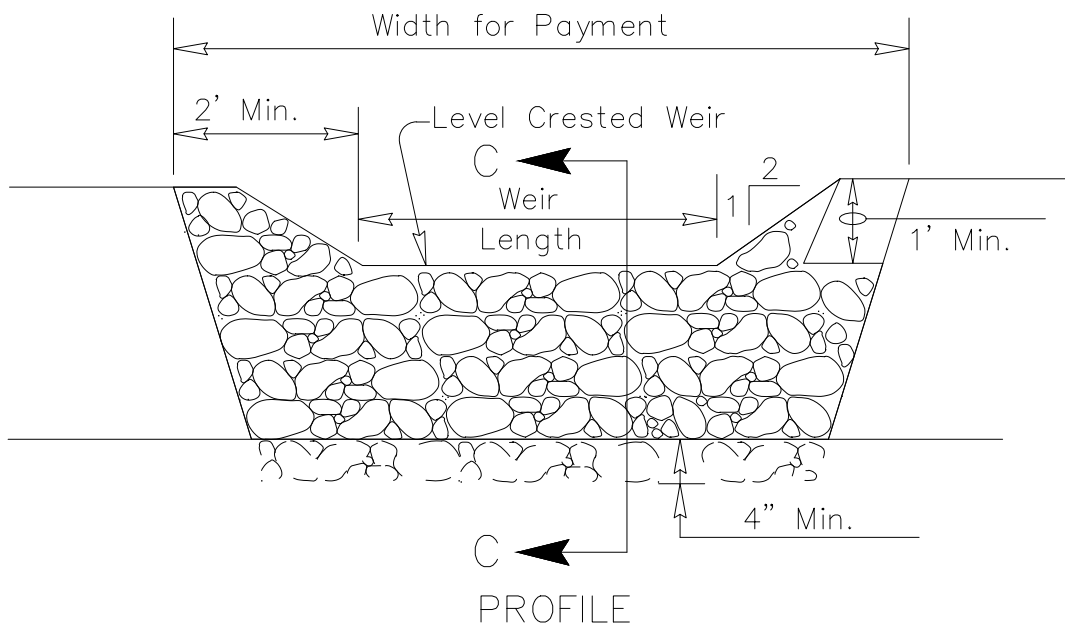
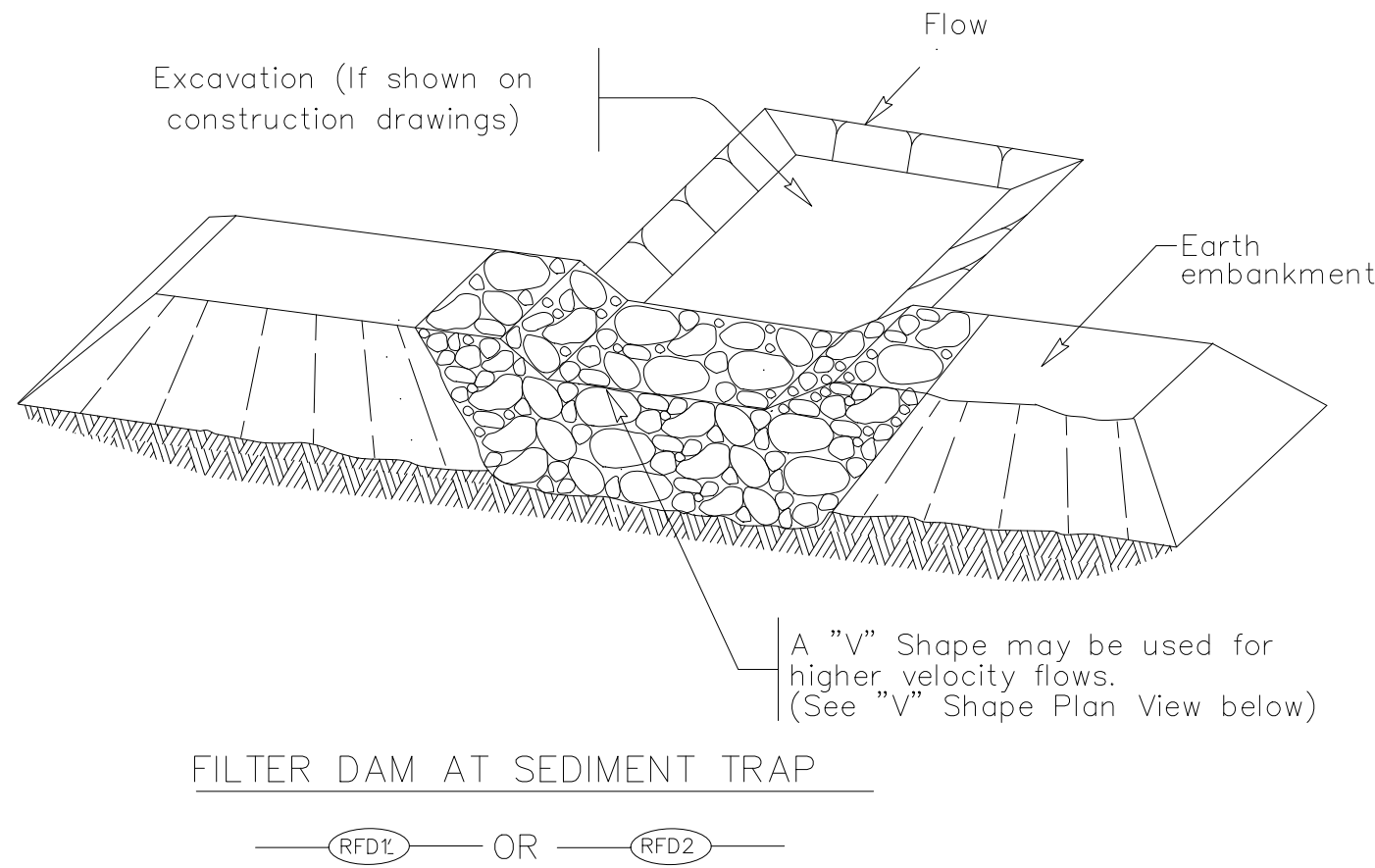
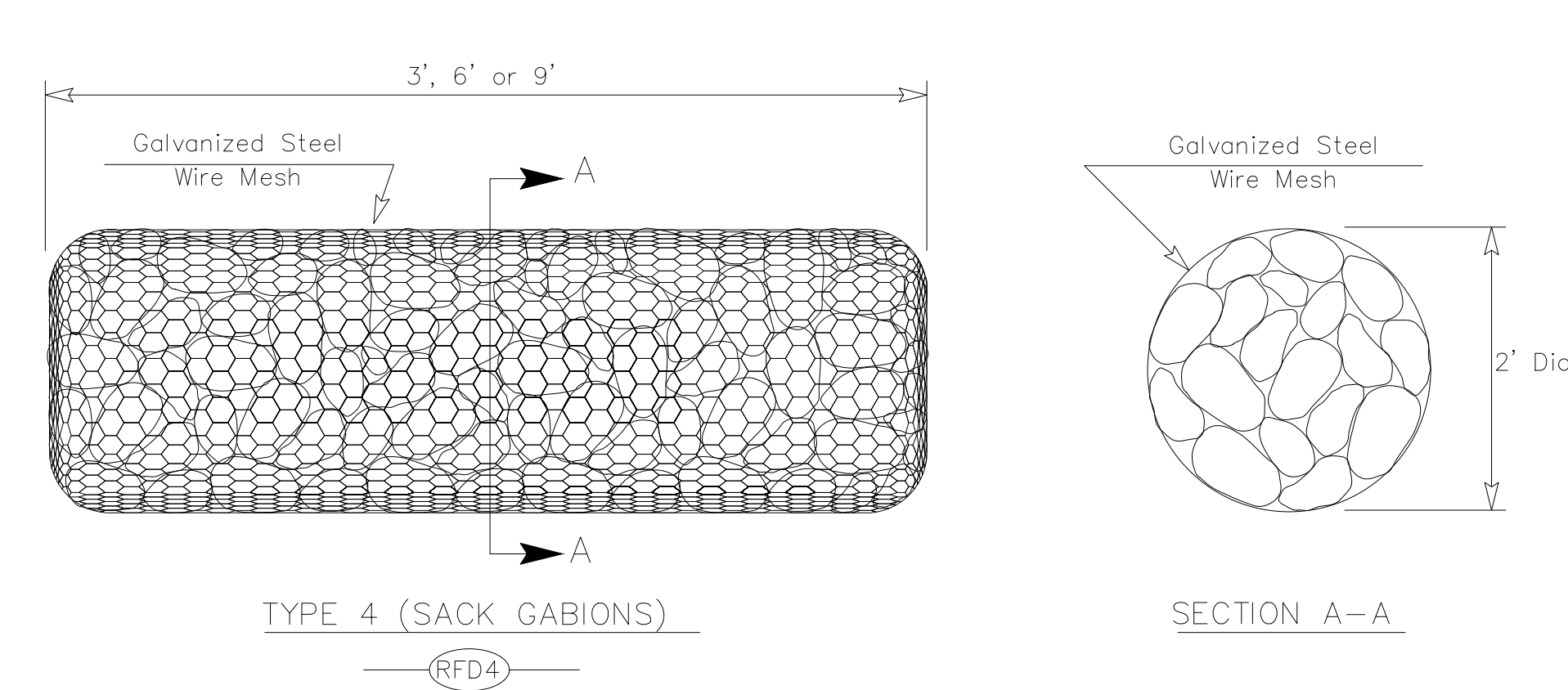
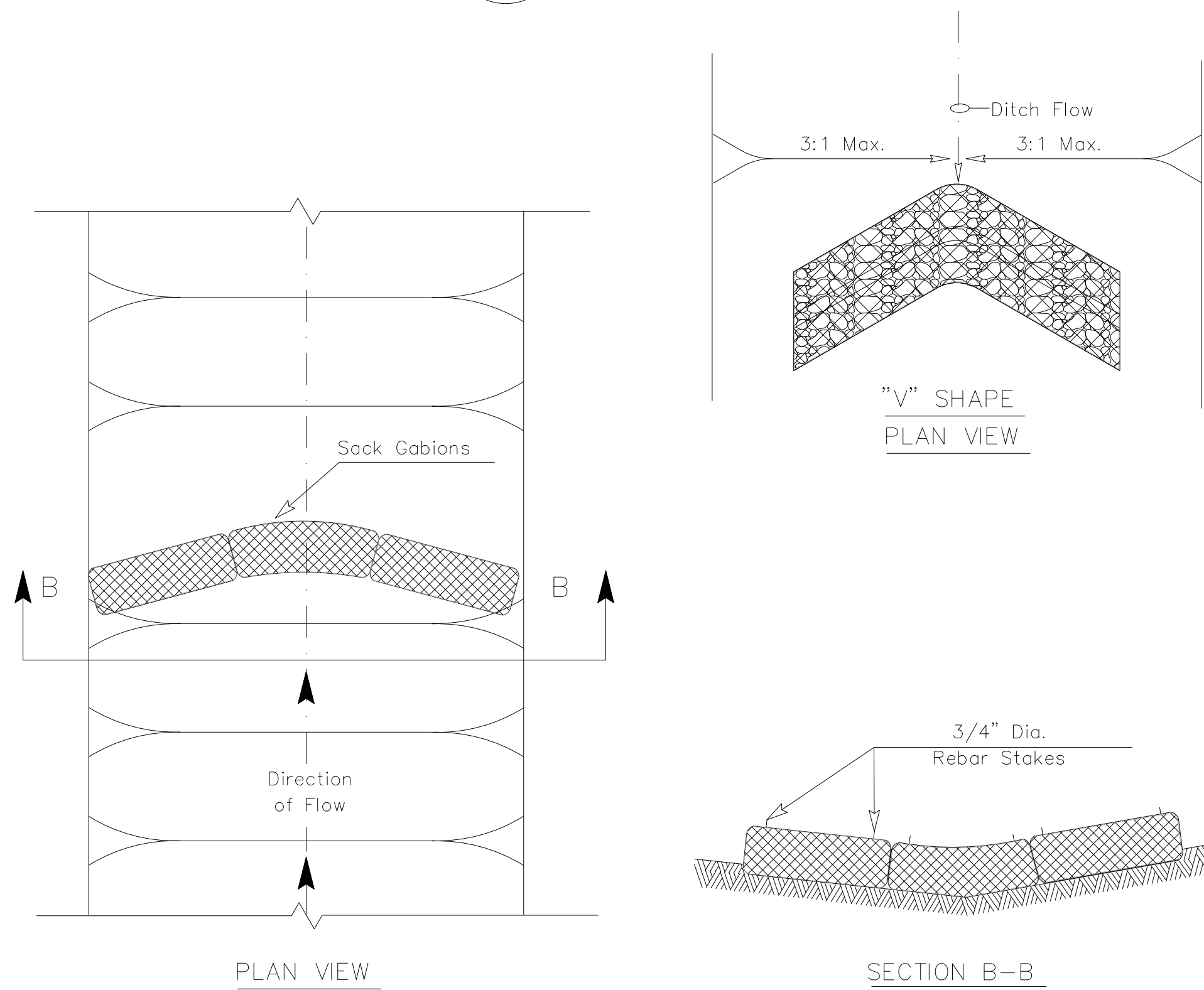
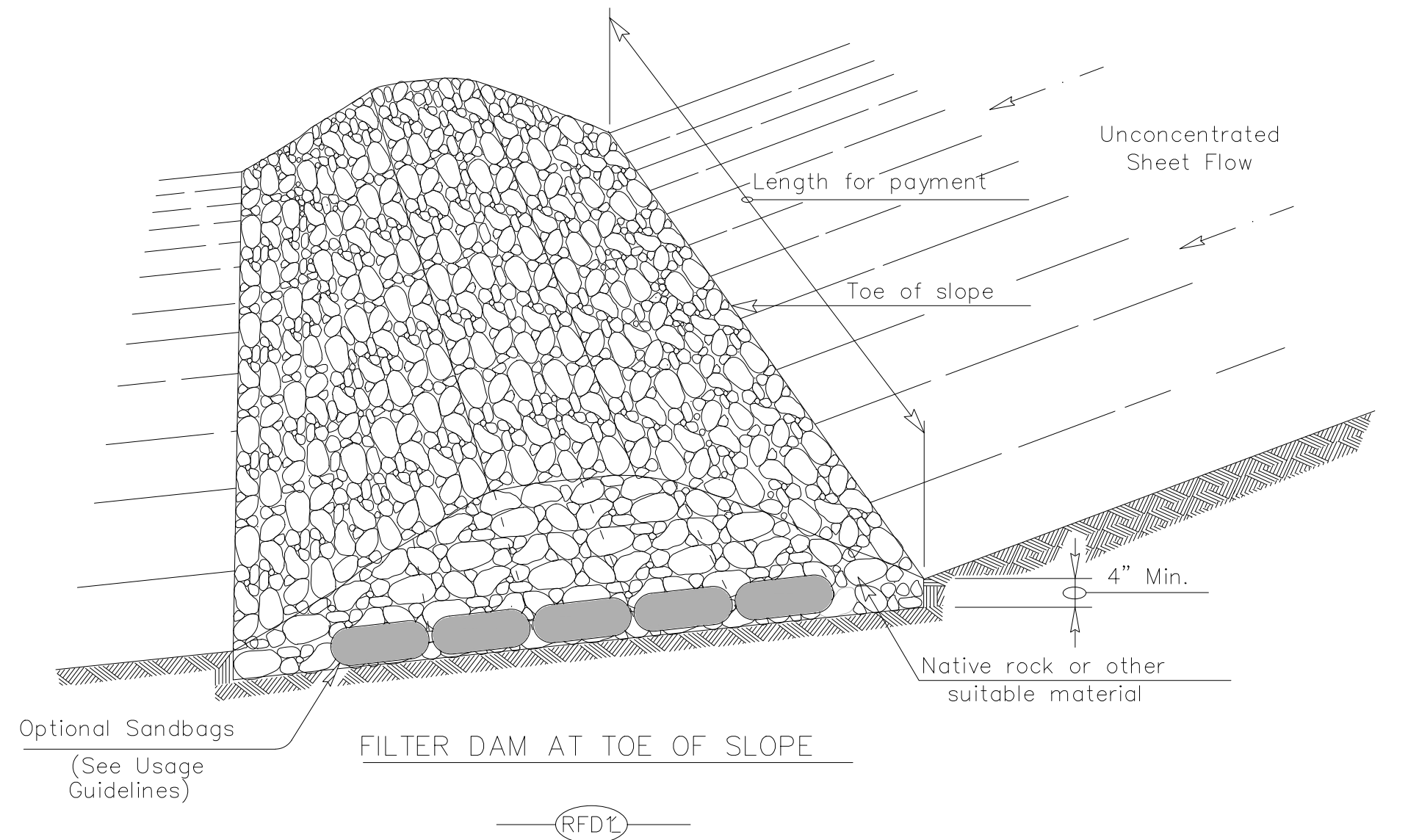
SHEET No.
6 of 37

SCALE

HOR 1"= 250'
VER 1"= N/A

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DATE:
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ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT² of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

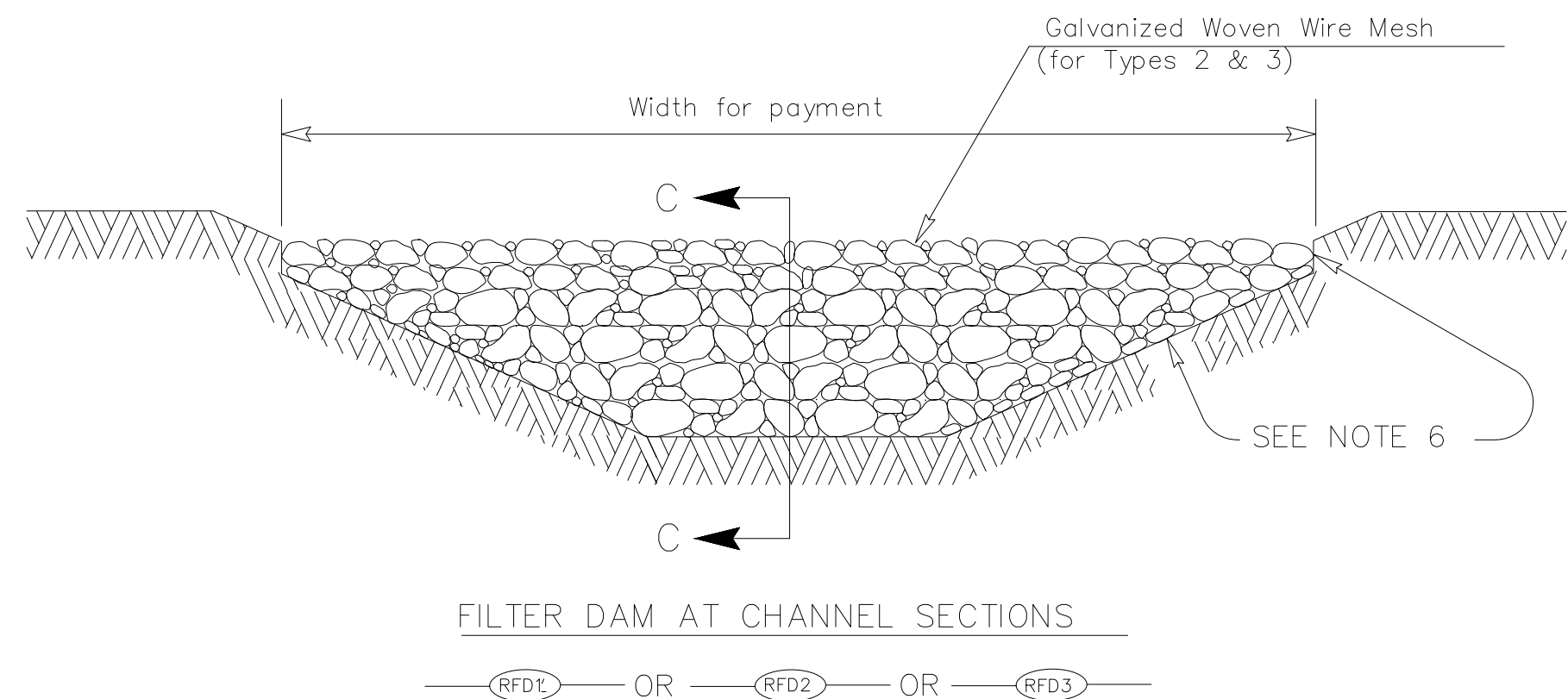
Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximately 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

Type 5: Provide rock filter dams as shown on plans.



GENERAL NOTES

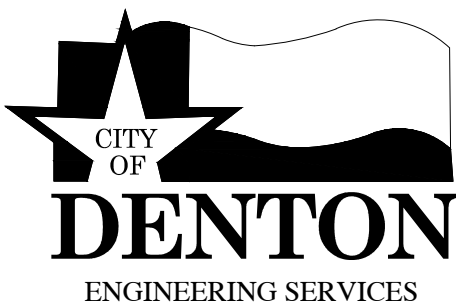
- If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
- Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
- The rock filter dam dimensions shall be as indicated on the SW3P plans.
- Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
- Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
- Filter dams should be embedded a minimum of 4" into existing ground.
- The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
- Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
- Sack Gabions should be staked down with 3/4" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 1/2" x 3 1/4"
- Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
- The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLAN SHEET LEGEND

- Type 1 Rock Filter Dam — RFD1
- Type 2 Rock Filter Dam — RFD2
- Type 3 Rock Filter Dam — RFD3
- Type 4 Rock Filter Dam — RFD4

		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES			
ROCK FILTER DAMS			
EC(2)-16			
FILE: ec216	DN: TxDOT	CK: KM	DW: VP
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REVISIONS		HIGHWAY	
		DIST	COUNTY
		SHEET NO.	

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FM 1515 UTILITY RELOCATIONS

TXDOT EROSION CONTROL 2

DATE
NOV. 2024

SHEET No.
7 of 37

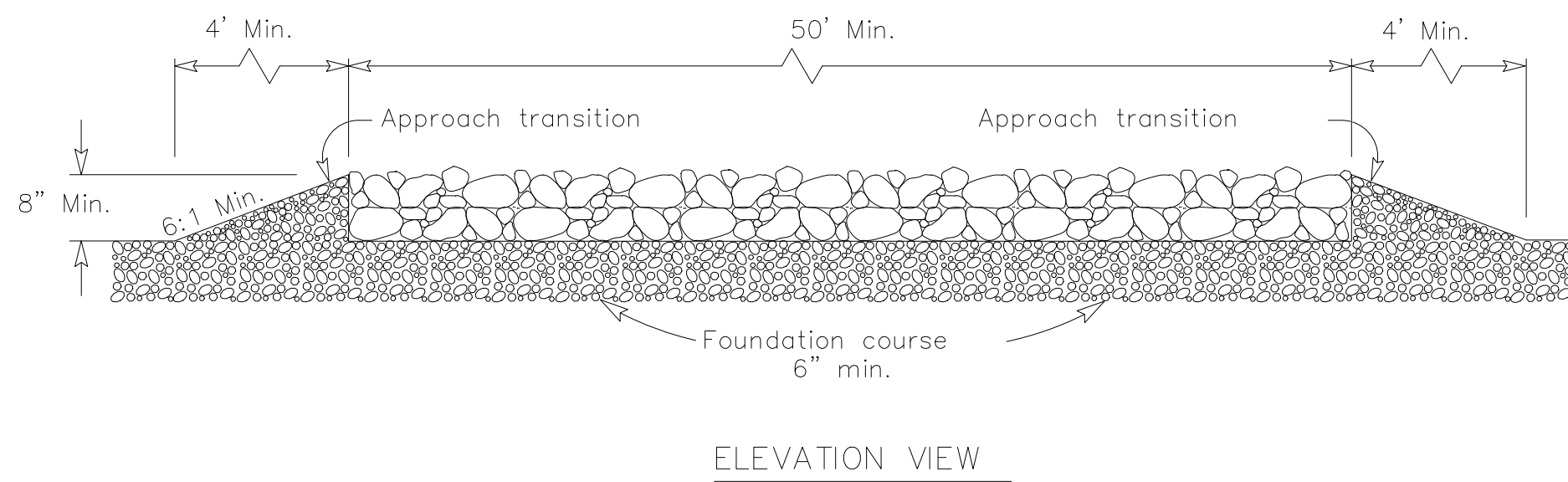
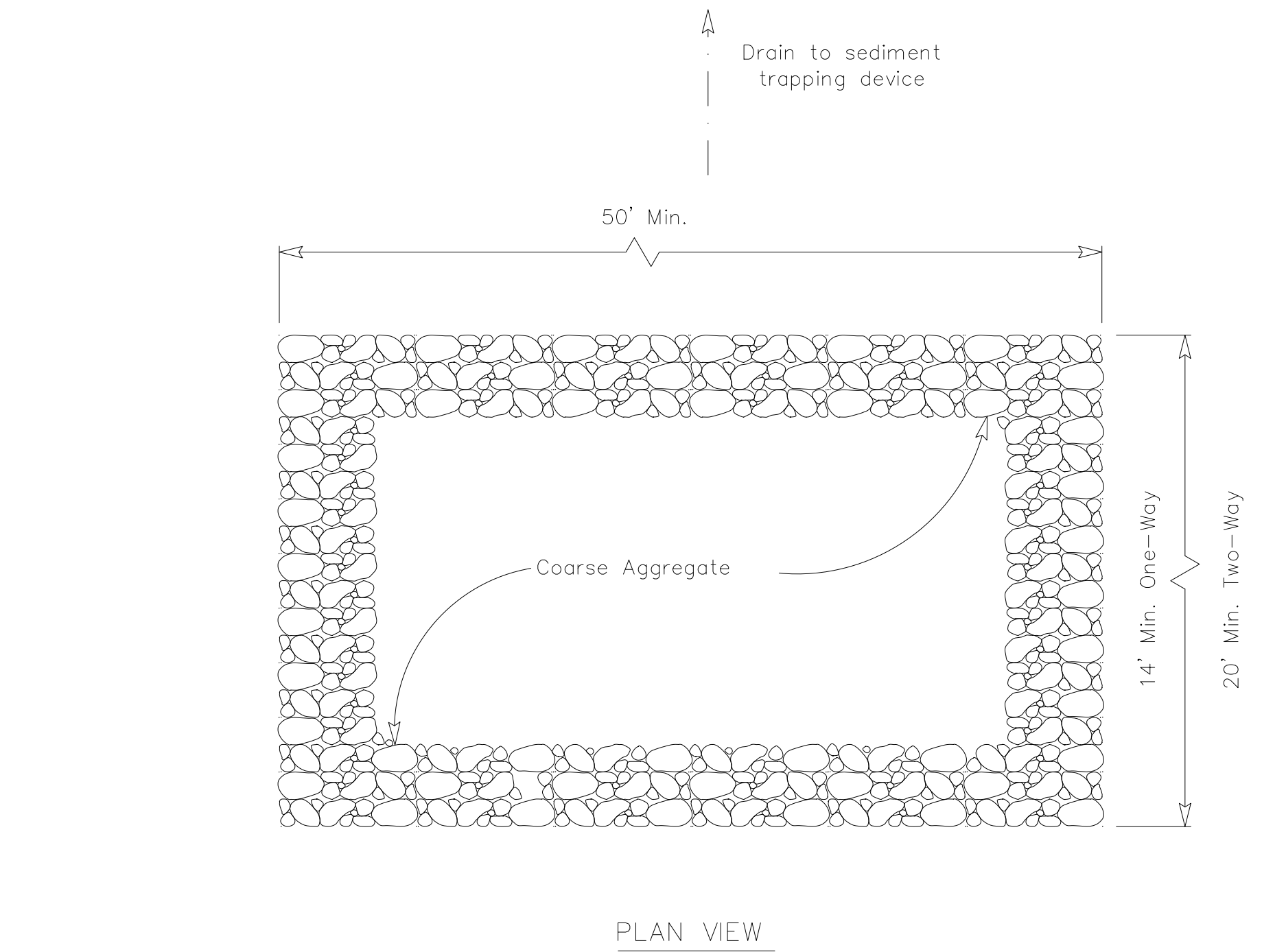
SCALE

HOR 1"= 250'

VER 1"= N/A

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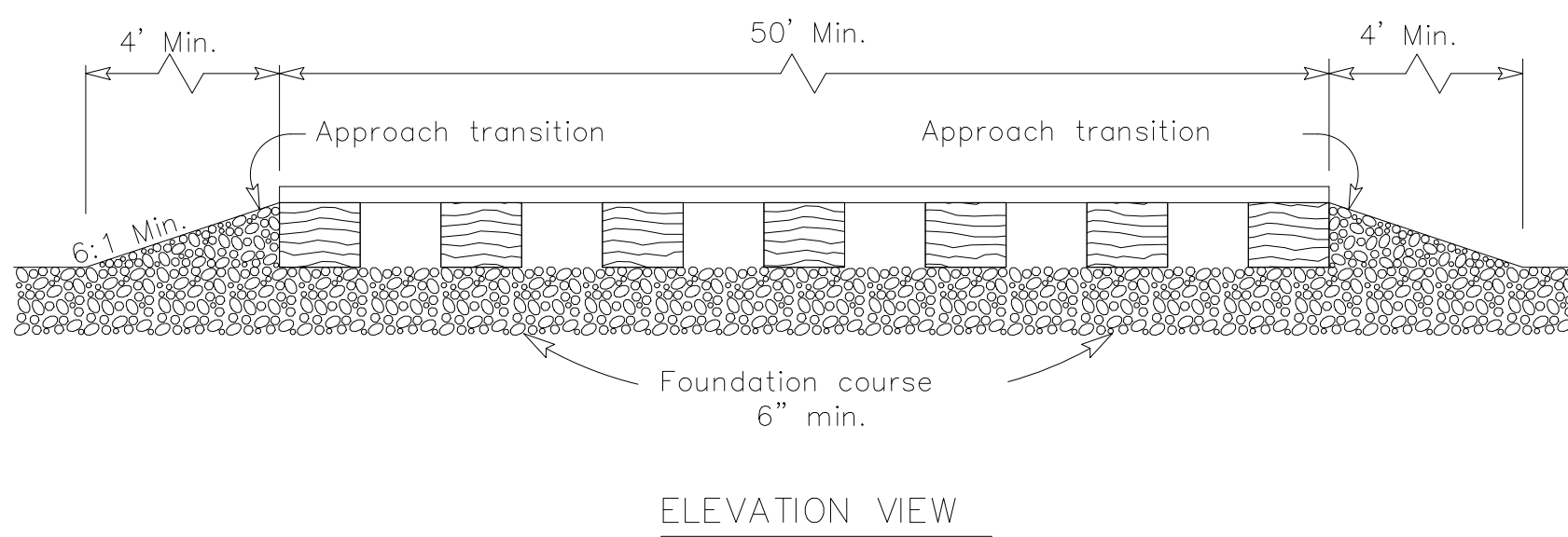
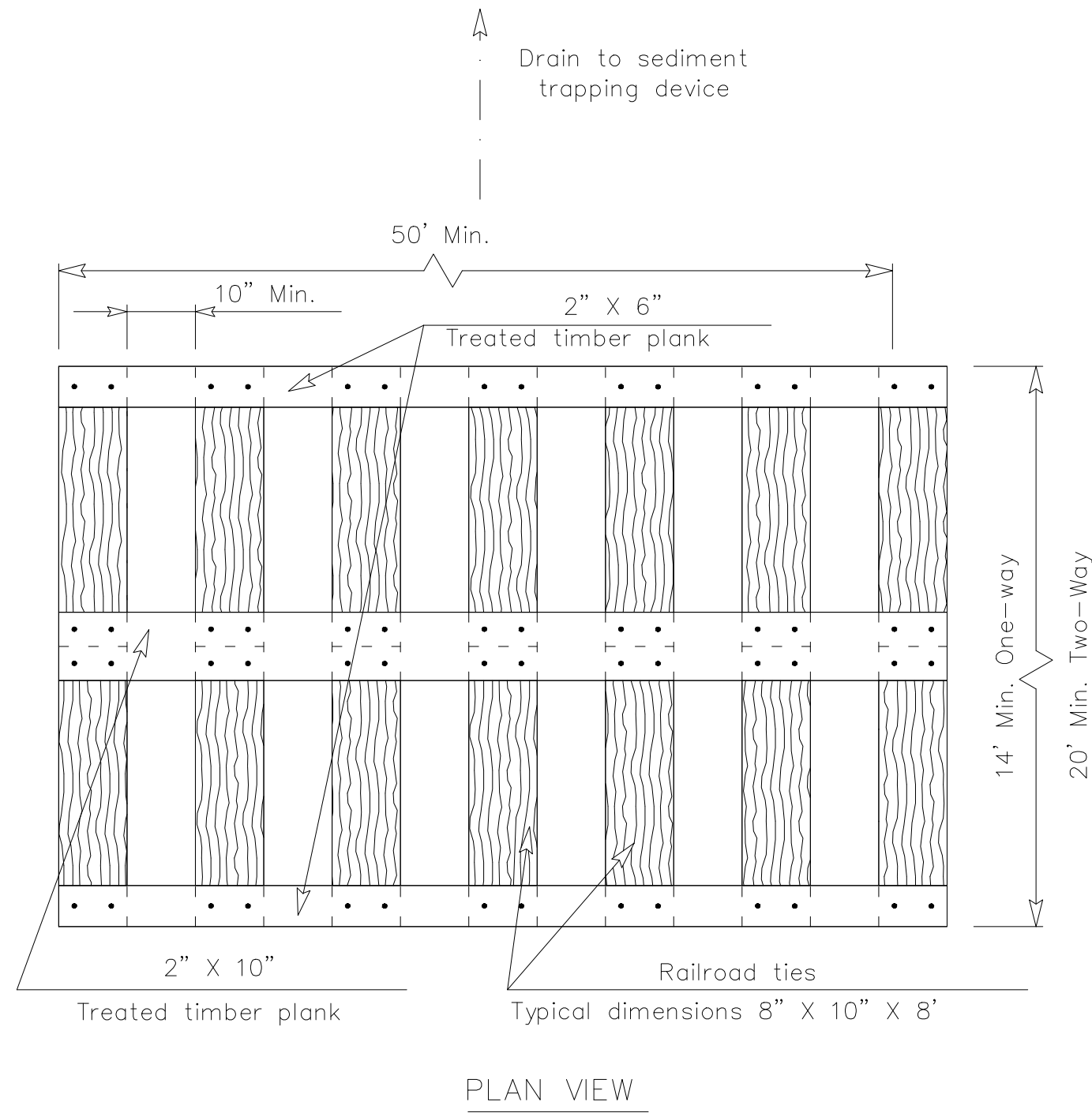
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CONSTRUCTION EXIT (TYPE 1)
ROCK CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

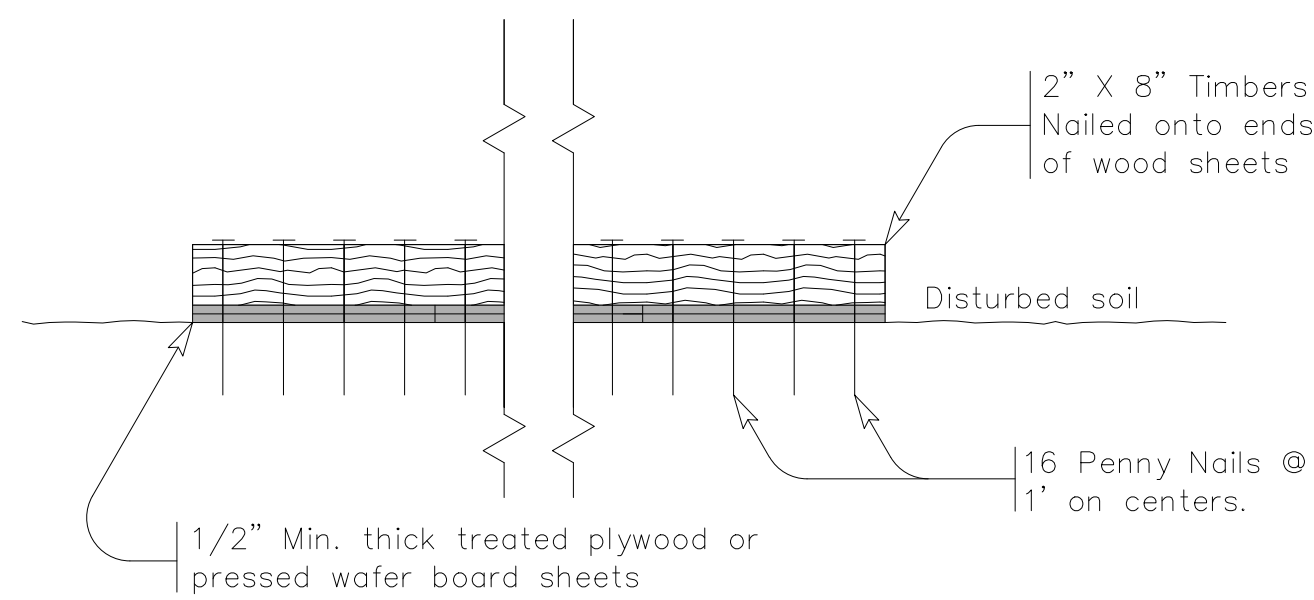
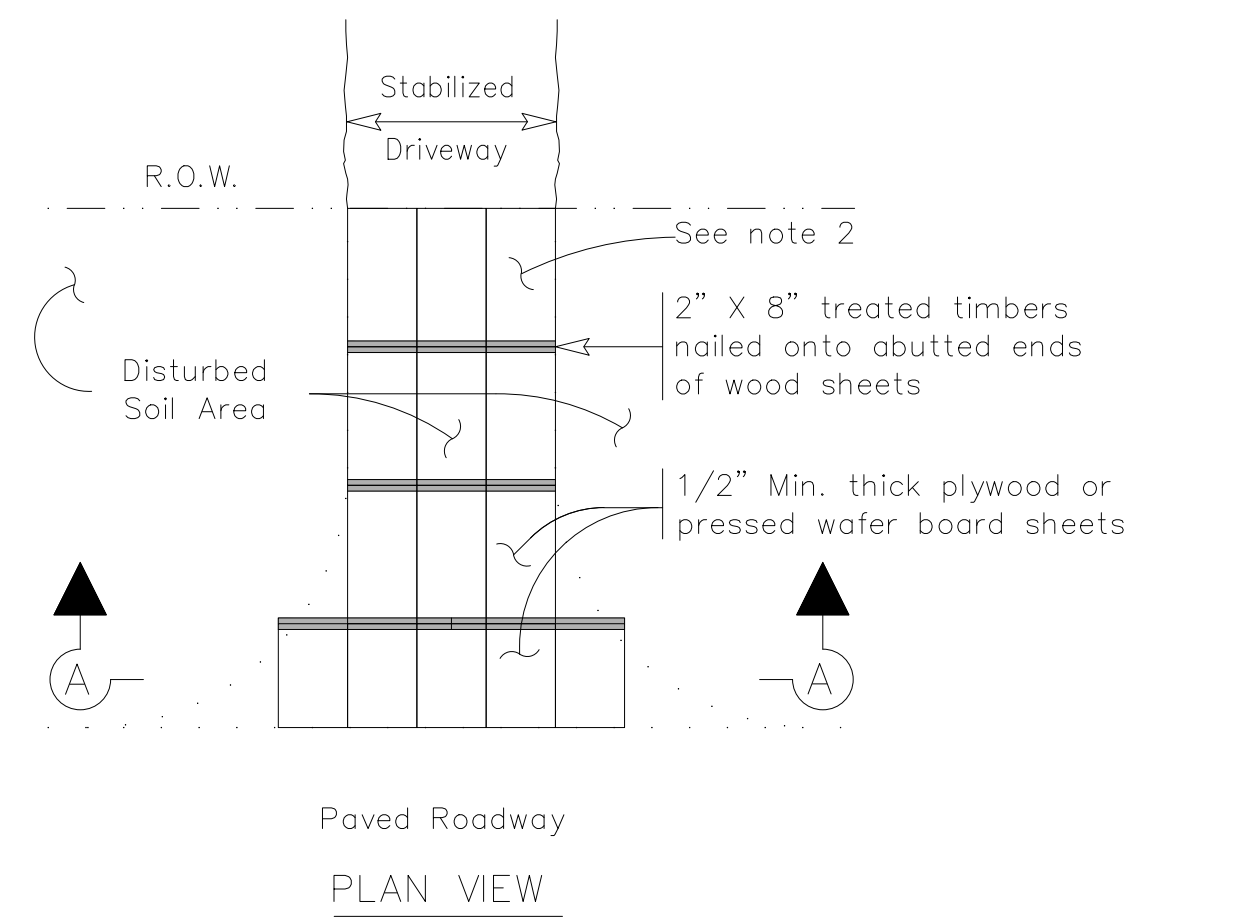
1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materials approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



CONSTRUCTION EXIT (TYPE 2)
TIMBER CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 2)

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with 1/2"x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



SECTION A-A
CONSTRUCTION EXIT (TYPE 3)
SHORT TERM

GENERAL NOTES (TYPE 3)

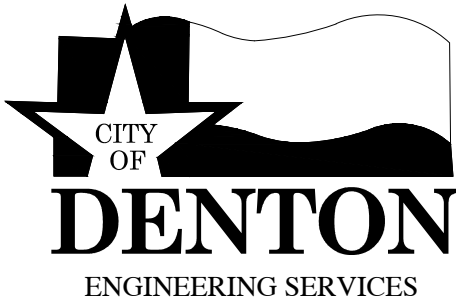
1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



TEMPORARY EROSION,
SEDIMENT AND WATER
POLLUTION CONTROL MEASURES
CONSTRUCTION EXITS
EC(3)-16

FILE: ec316	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
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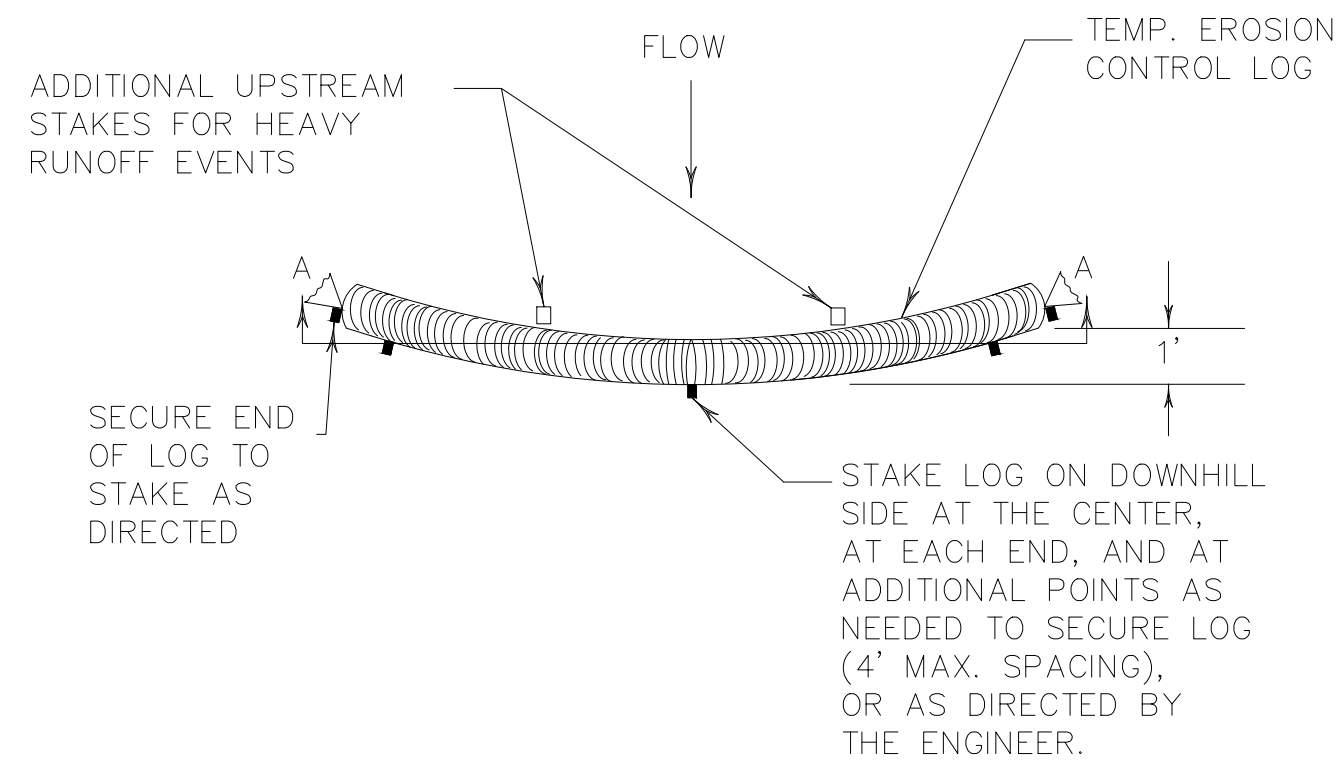
FM 1515 UTILITY RELOCATIONS
TXDOT EROSION CONTROL 3

DATE
NOV. 2024
SHEET No.
8 of 37

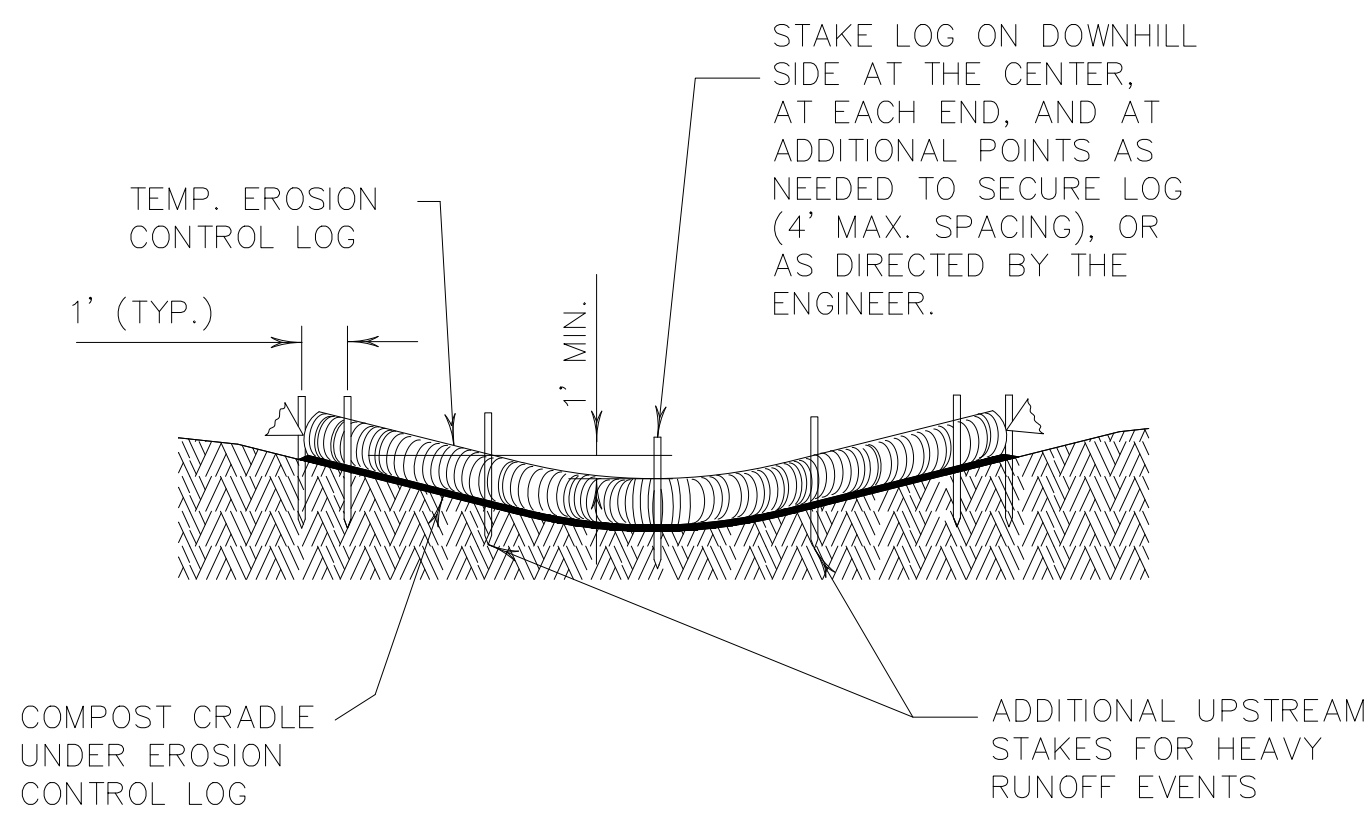
SCALE
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VER 1"= N/A

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PLAN VIEW



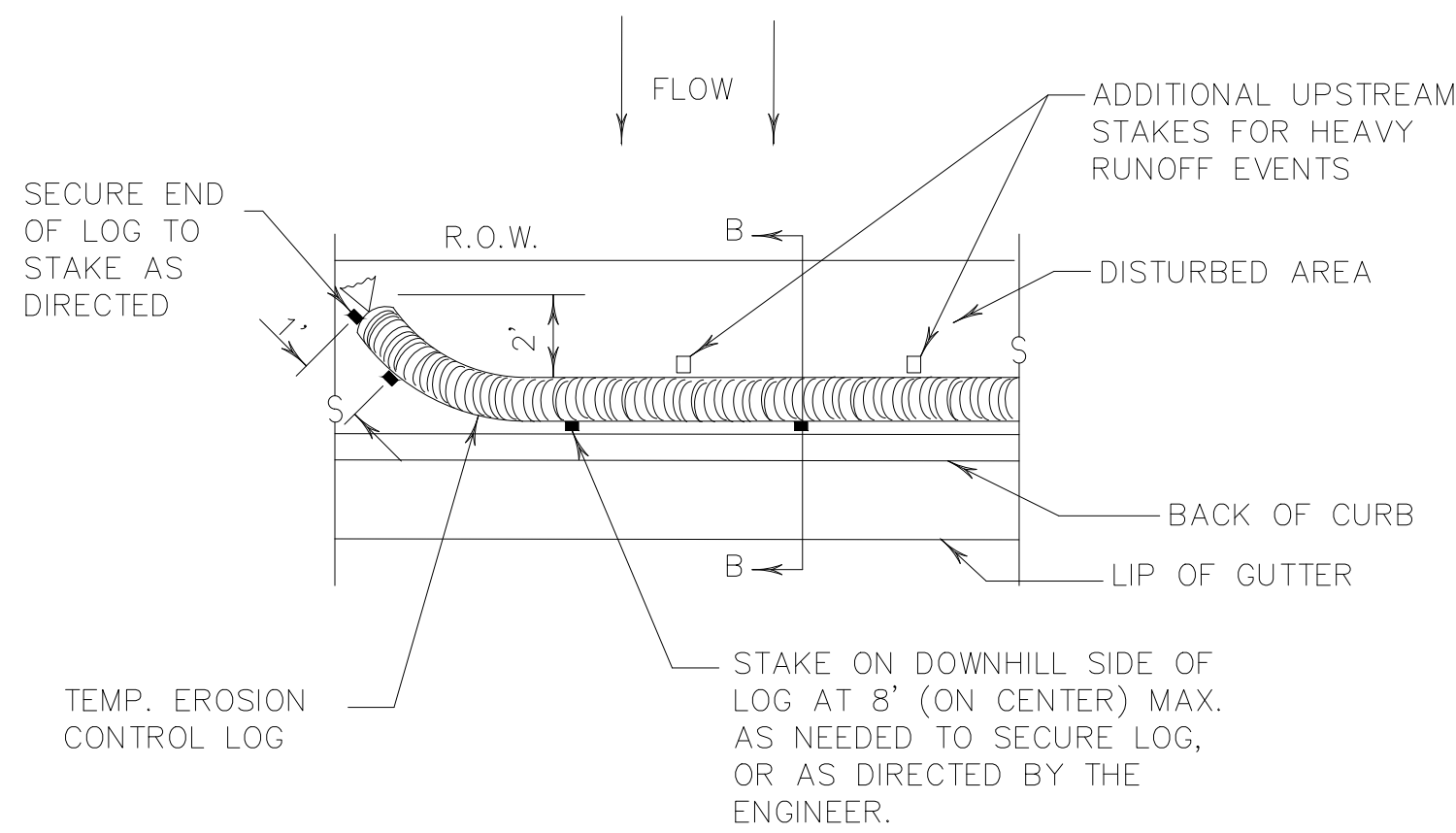
SECTION A-A

EROSION CONTROL LOG DAM

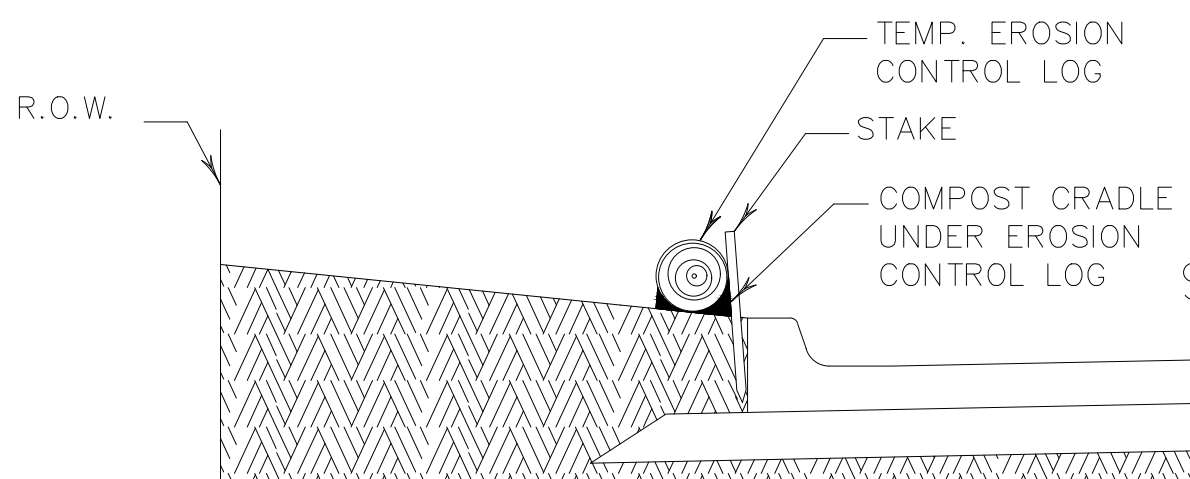
CL-D

LEGEND

- CL-D EROSION CONTROL LOG DAM
- CL-BOC EROSION CONTROL LOG AT BACK OF CURB
- CL-ROW EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
- CL-SST EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
- CL-SSL EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
- CL-DI EROSION CONTROL LOG AT DROP INLET
- CL-CI EROSION CONTROL LOG AT CURB INLET
- CL-GI EROSION CONTROL LOG AT CURB & GRATE INLET



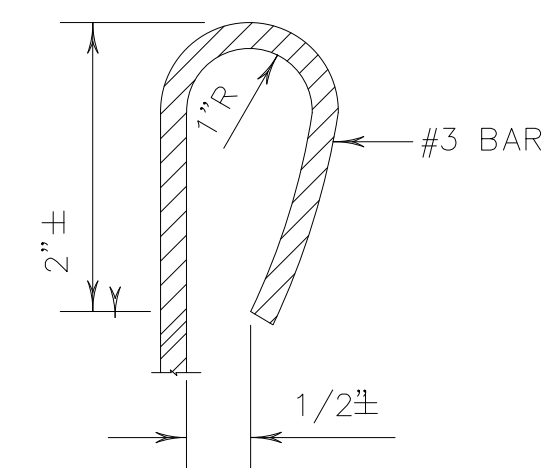
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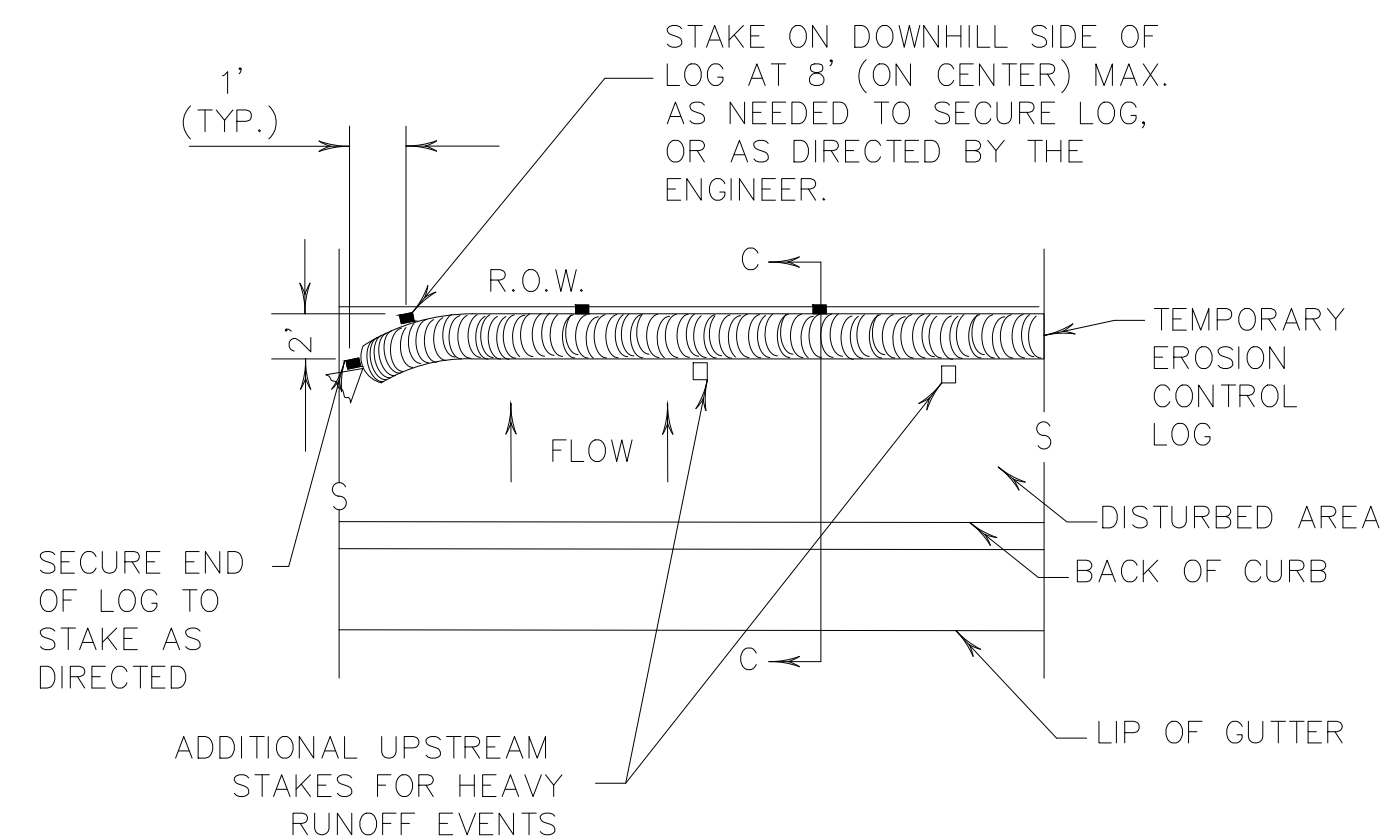
SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

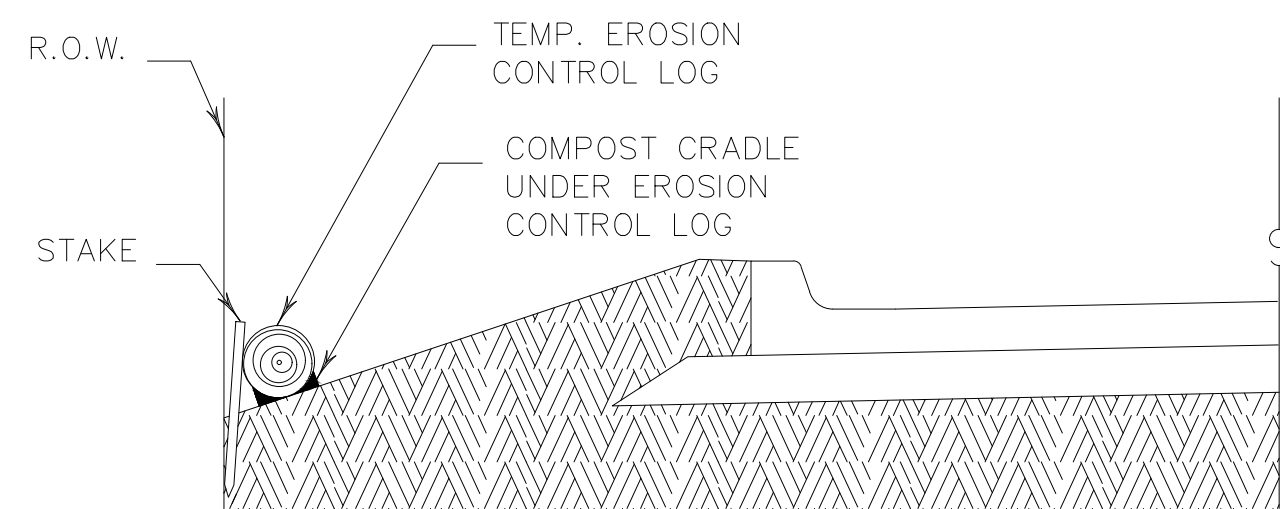
CL-BOC



REBAR STAKE DETAIL



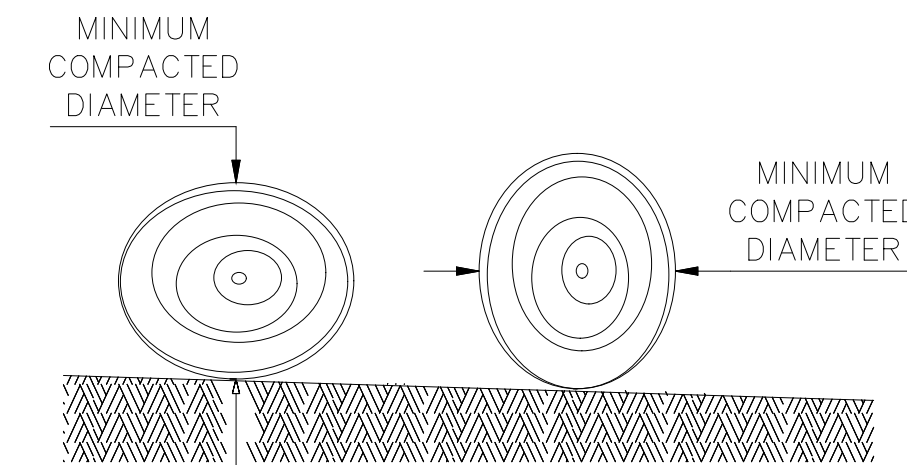
PLAN VIEW



SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

GENERAL NOTES:

- EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
- LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
- UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
- FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
- STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'-4" LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
- DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
- COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
- SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
- TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
- FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.

SEDIMENT BASIN & TRAP USAGE GUIDELINES

An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unstabilized area.

Log Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Control logs should be placed in the following locations:

- Within drainage ditches spaced as needed or min. 500' on center
- Immediately preceding ditch inlets or drain inlets
- Just before the drainage enters a water course
- Just before the drainage leaves the right of way
- Just before the drainage leaves the construction limits where drainage flows away from the project.

The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

SHEET 1 OF 3



Texas Department of Transportation

Design
Division
Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
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REVISIONS				
	DIST	COUNTY	SHEET NO.	

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FM 1515 UTILITY RELOCATIONS

TXDOT EROSION CONTROL 4

DATE
NOV. 2024

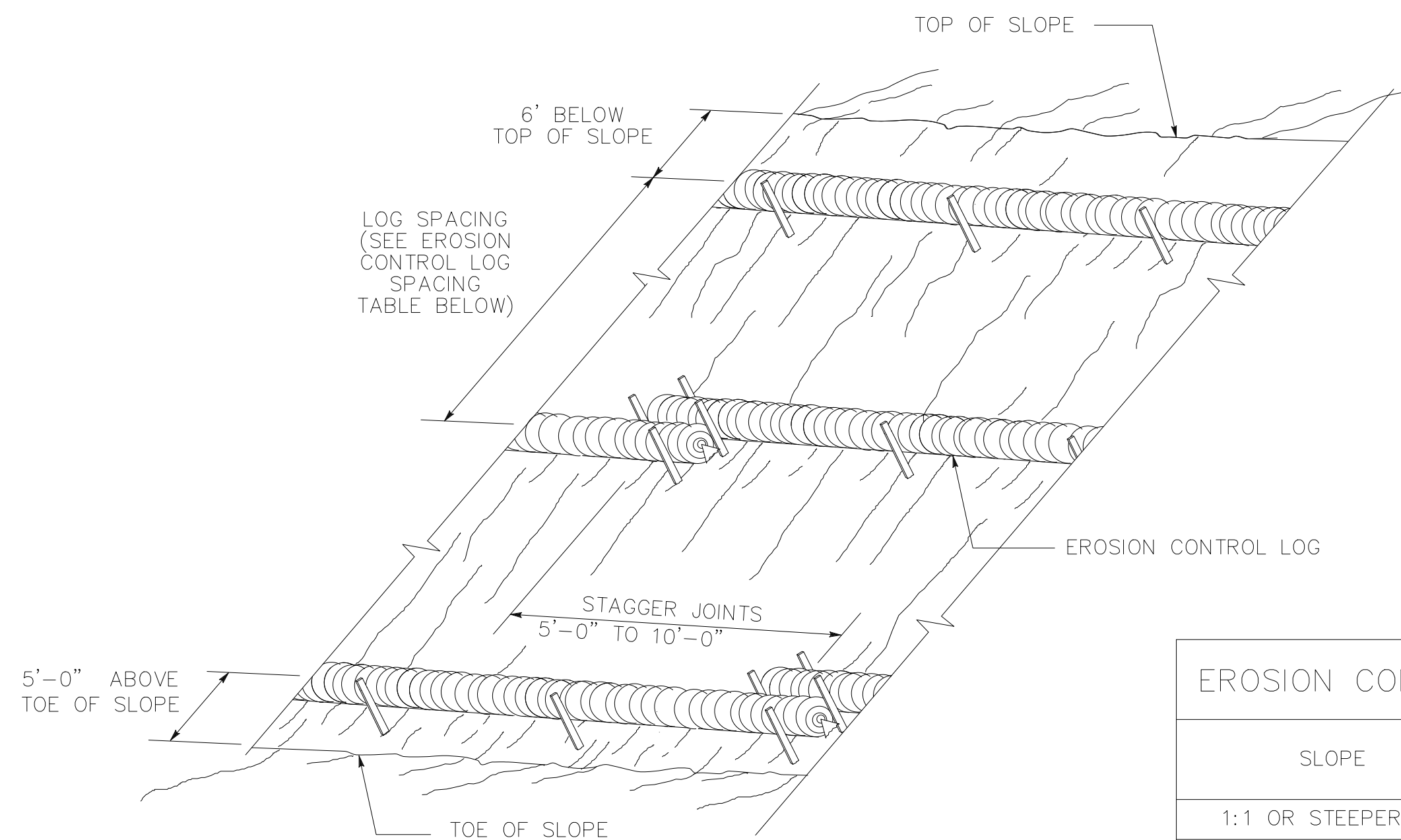
SHEET No.
9 of 37

SCALE

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VER 1"= N/A

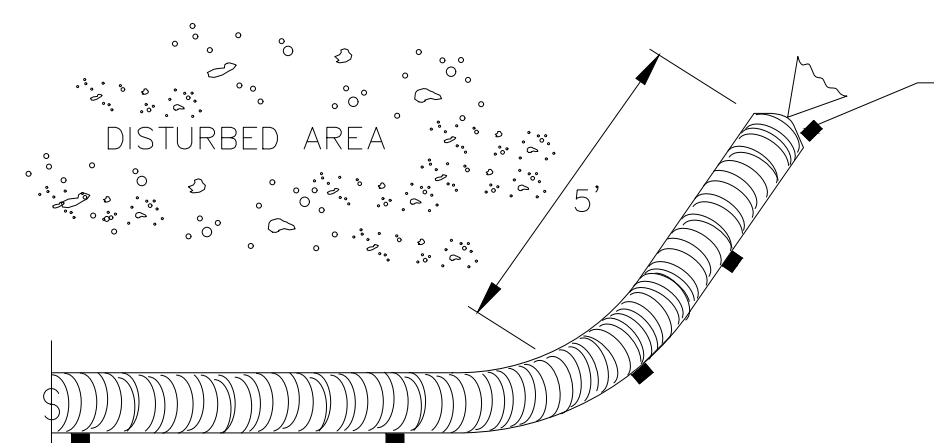
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EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

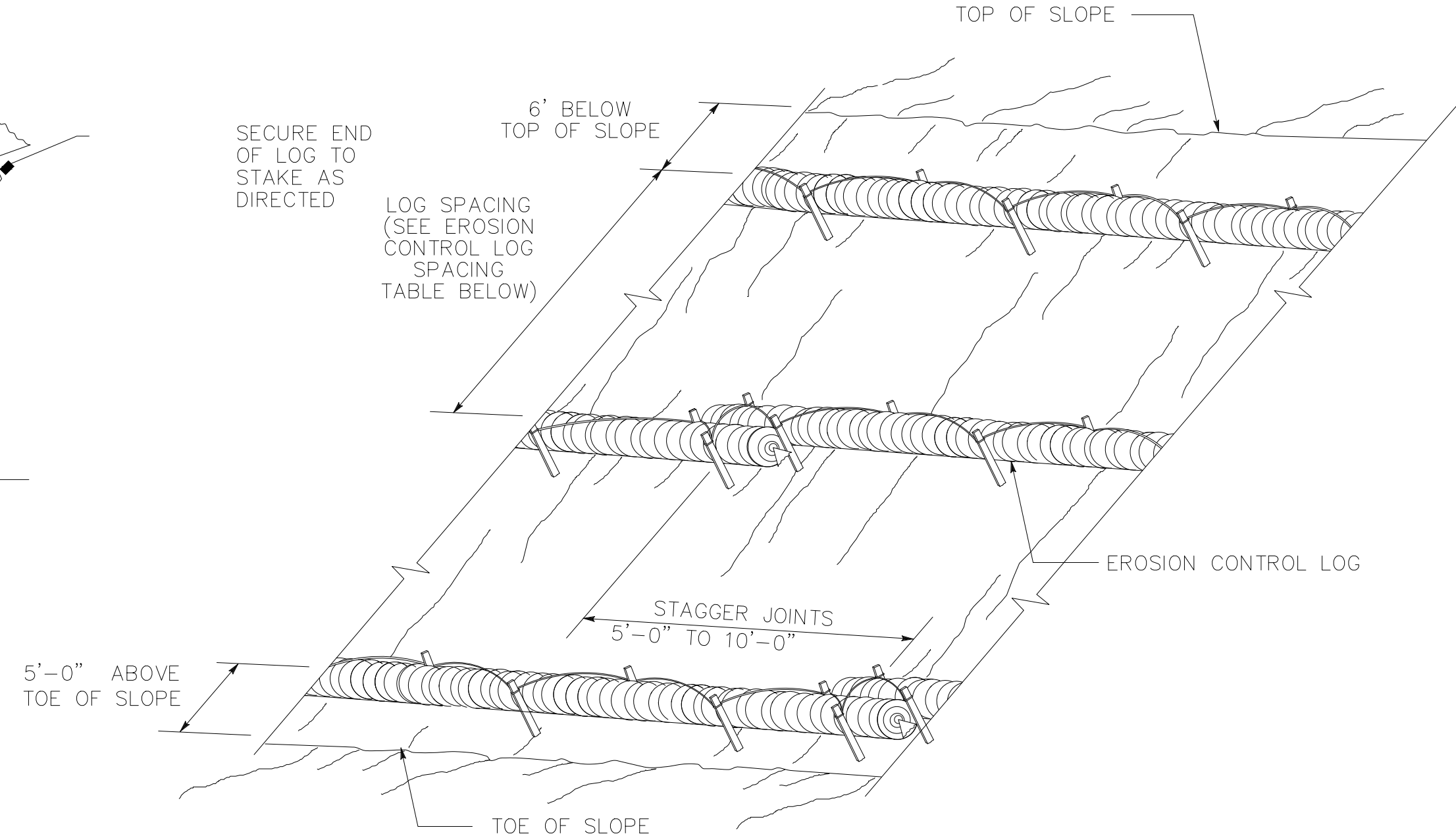
CL-SST



END SECTION RAP DETAIL

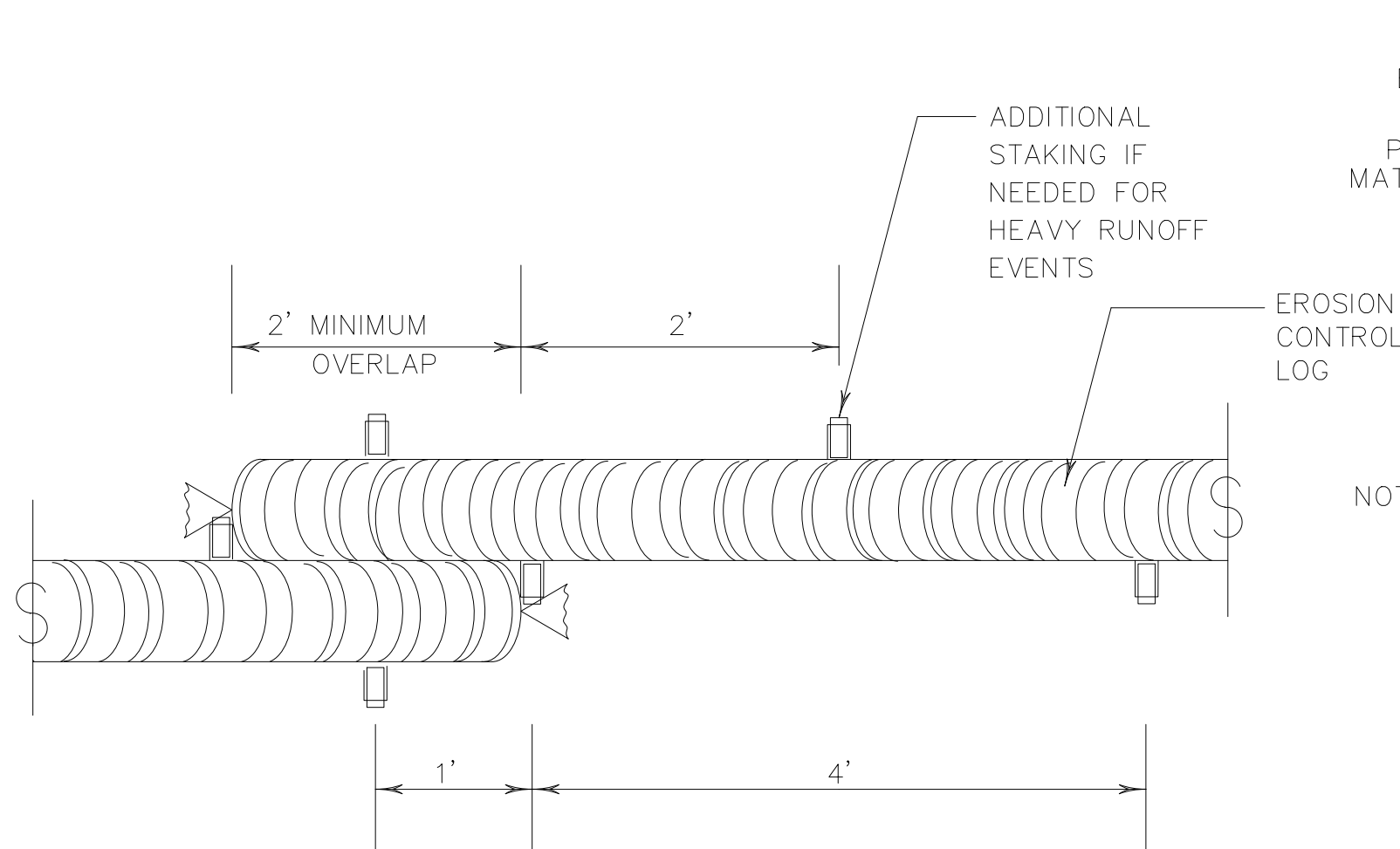
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:
SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;
HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART



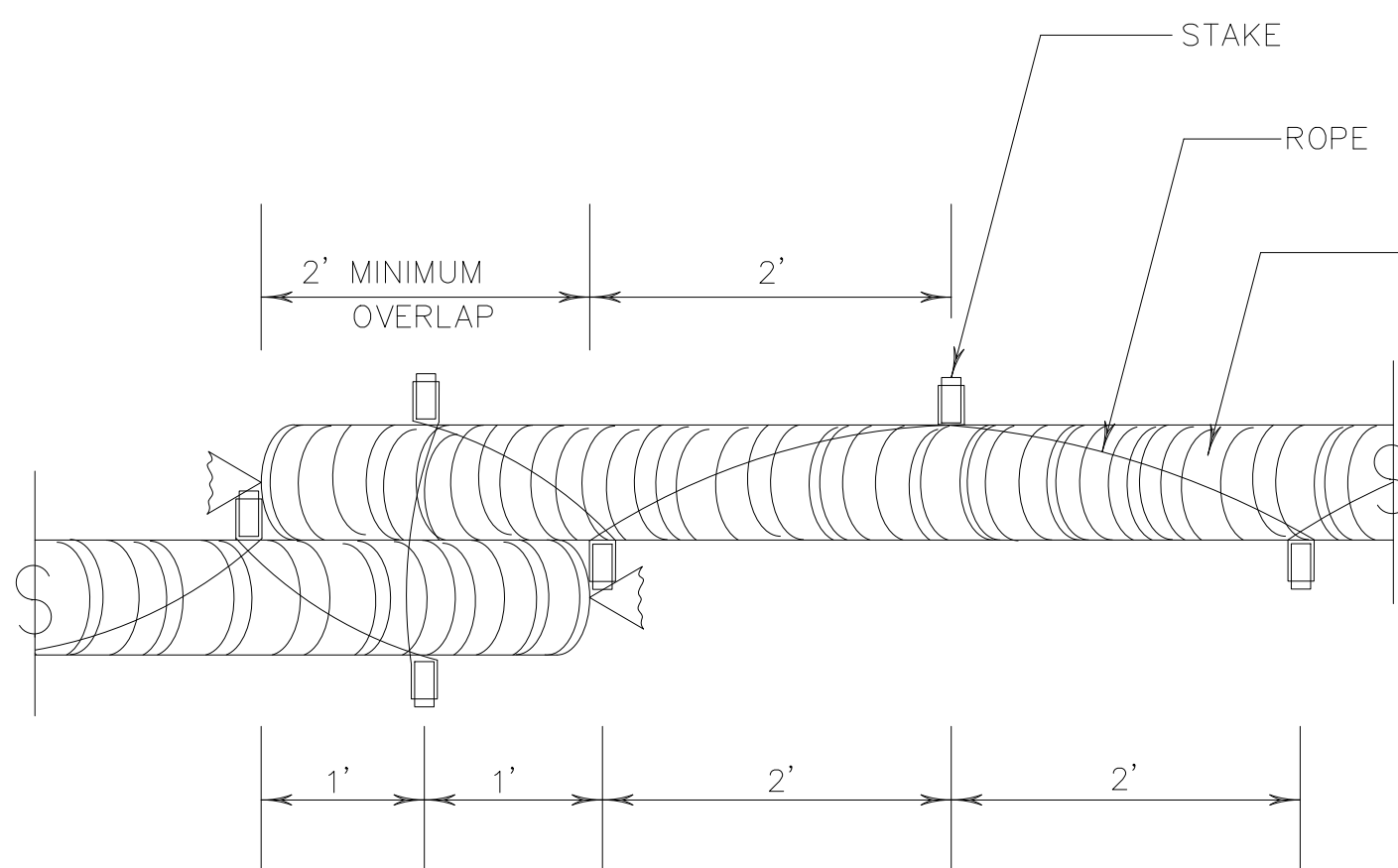
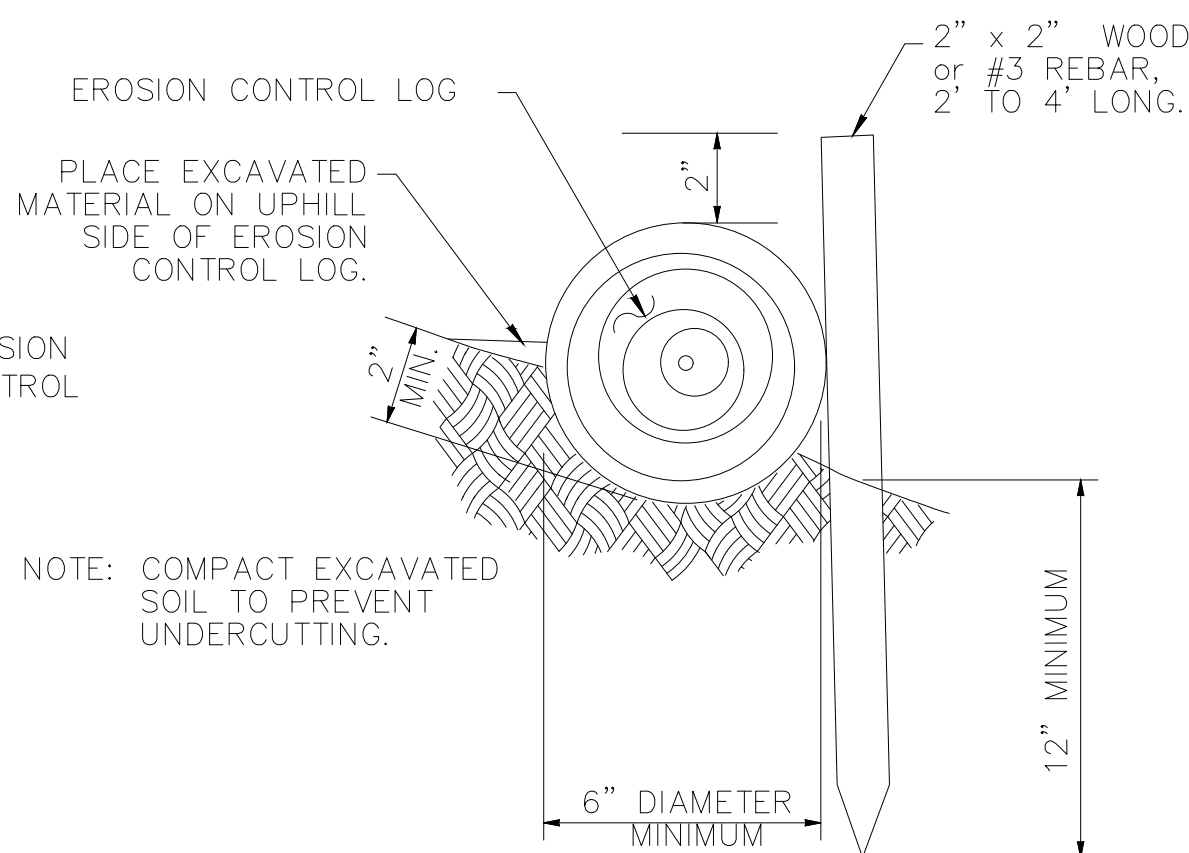
EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING

CL-SSL



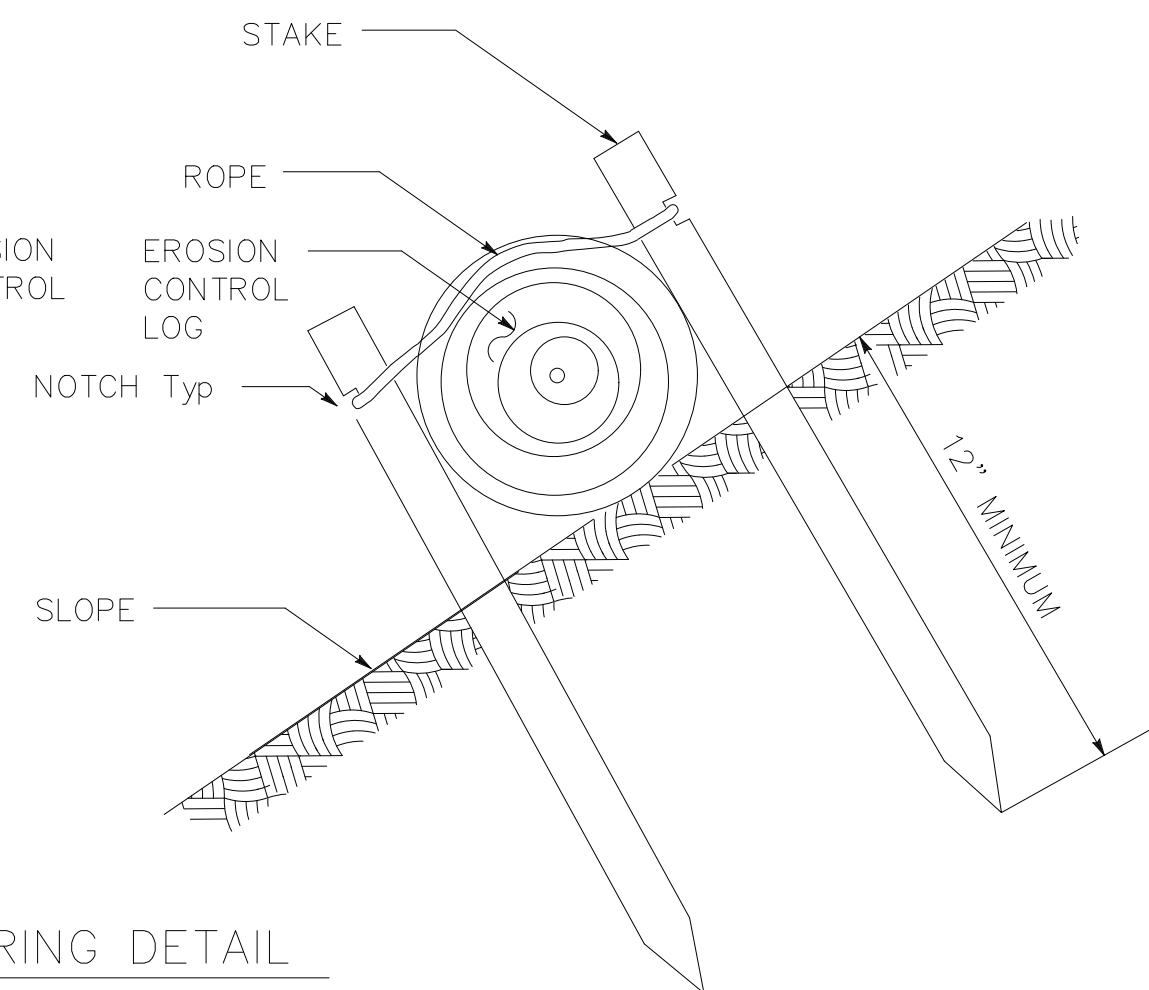
STAKE AND TRENCHING ANCHORING DETAIL

CL-SST



STAKE AND LASHING ANCHORING DETAIL

CL-SSL



SHEET 2 OF 3

TRENCH DEPTH TABLE	
LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"

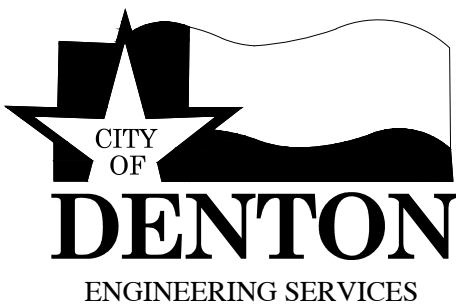
**Texas Department of Transportation**

**Design
Division
Standard**

TEMPORARY EROSION,
SEDIMENT AND WATER
POLLUTION CONTROL MEASURES
EROSION CONTROL LOG
EC(9)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
©TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

ENTERED BY	M.S.	PROJECT # 630511523	
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\TXDOT_EROSIONSHT.DWG		



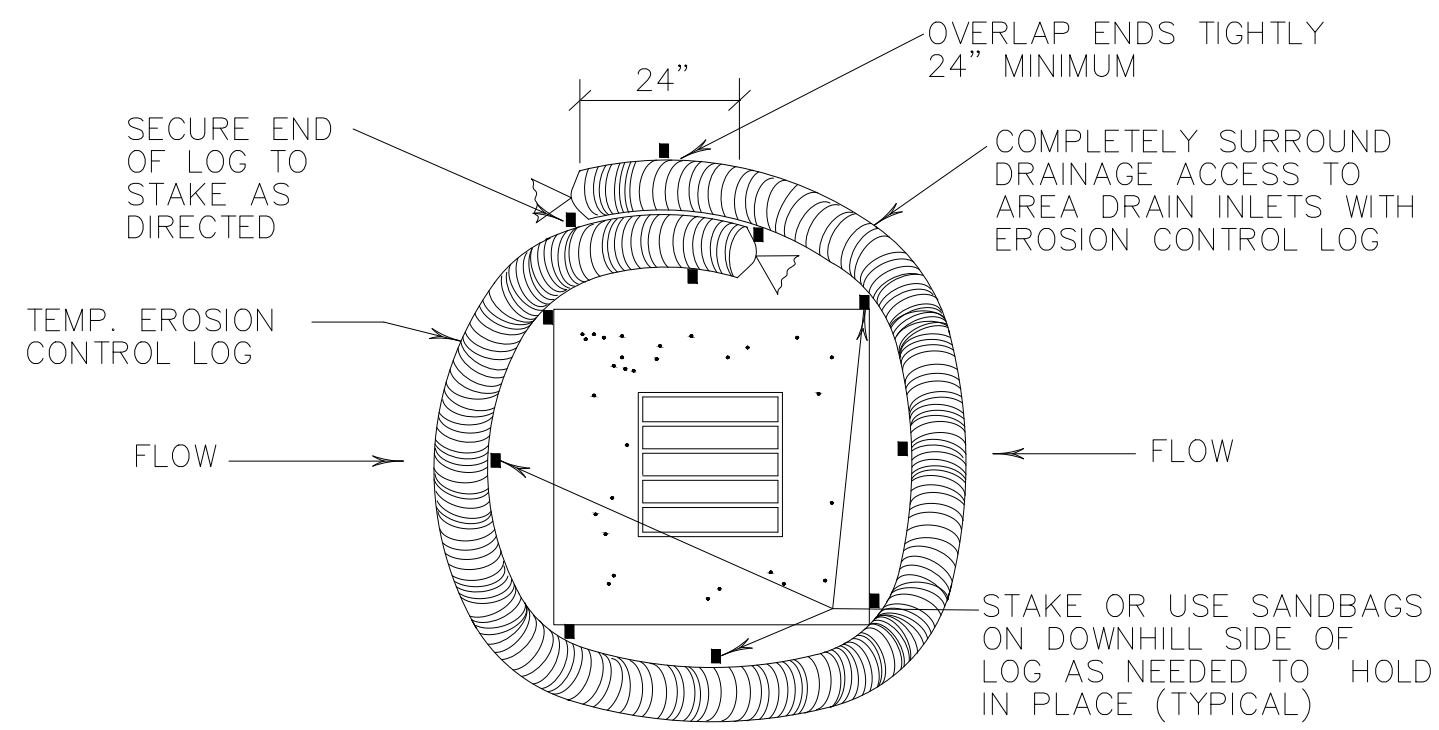
FM 1515 UTILITY RELOCATIONS

TXDOT EROSION CONTROL 5

DATE NOV. 2024	SCALE HOR 1"= 250' VER 1"= N/A
SHEET No. 10 of 37	

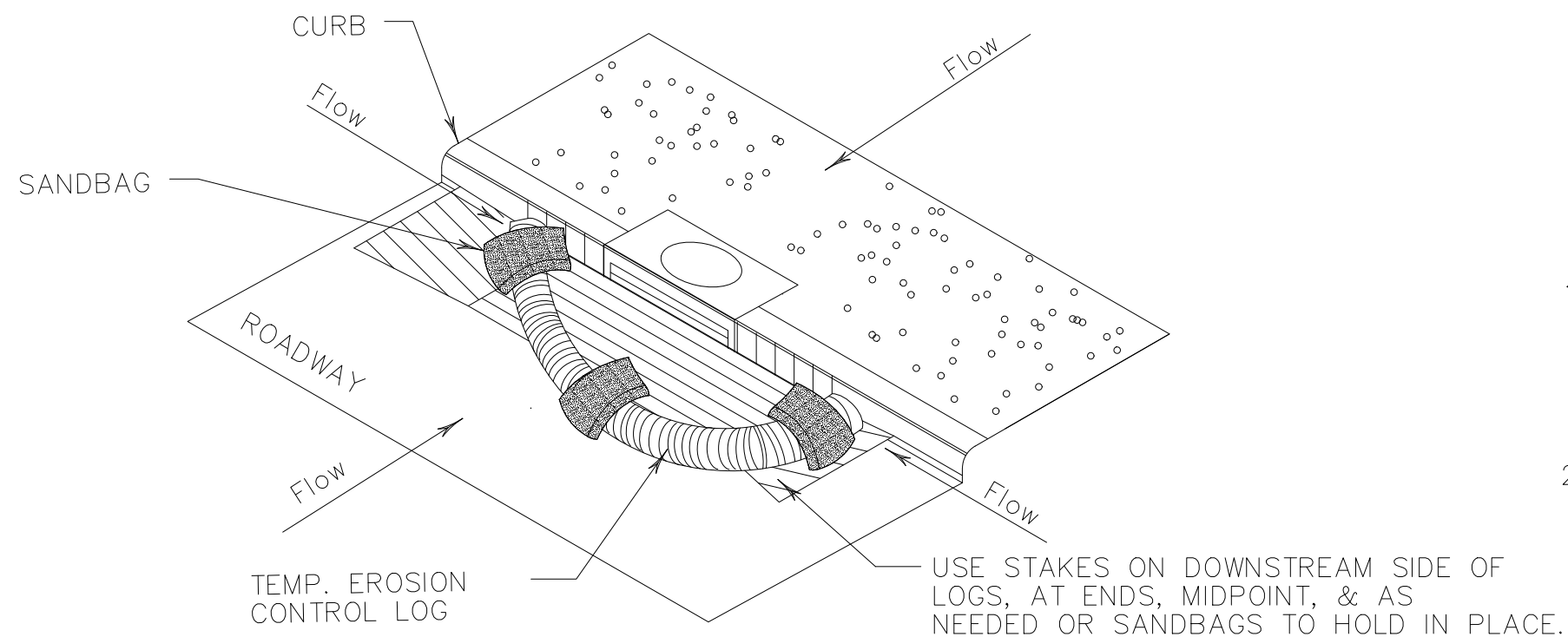
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:



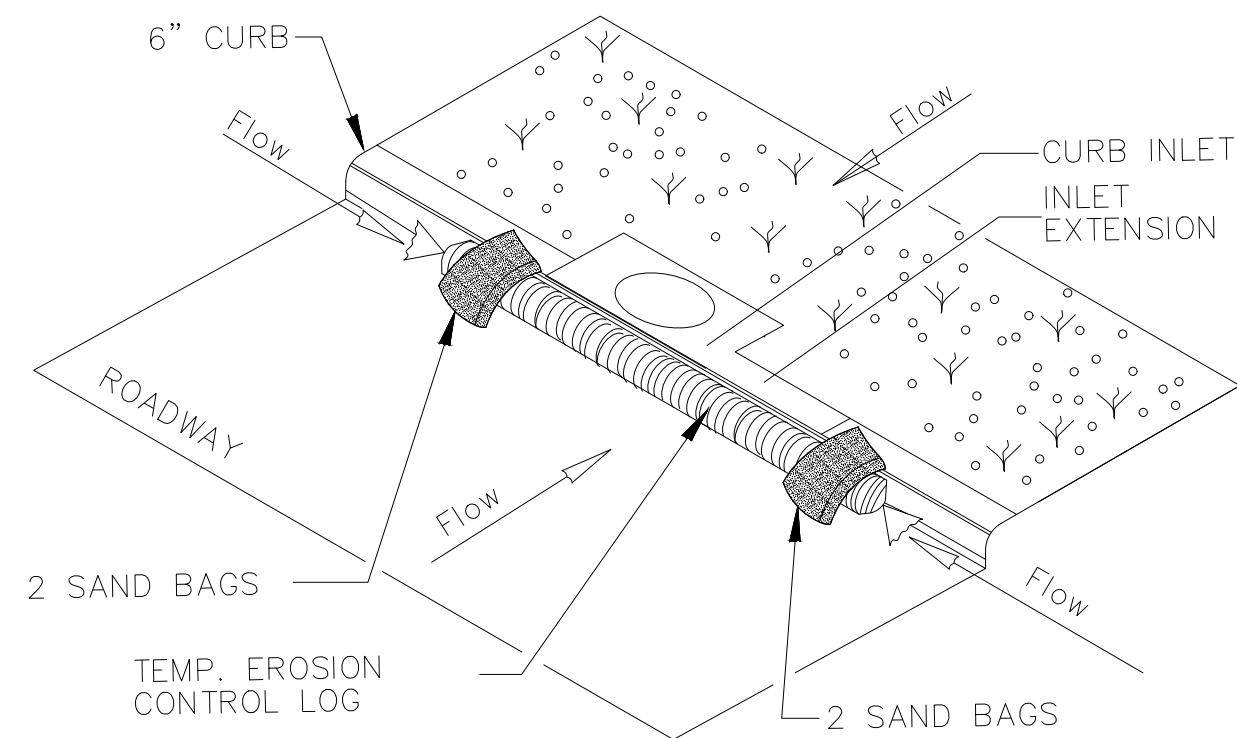
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

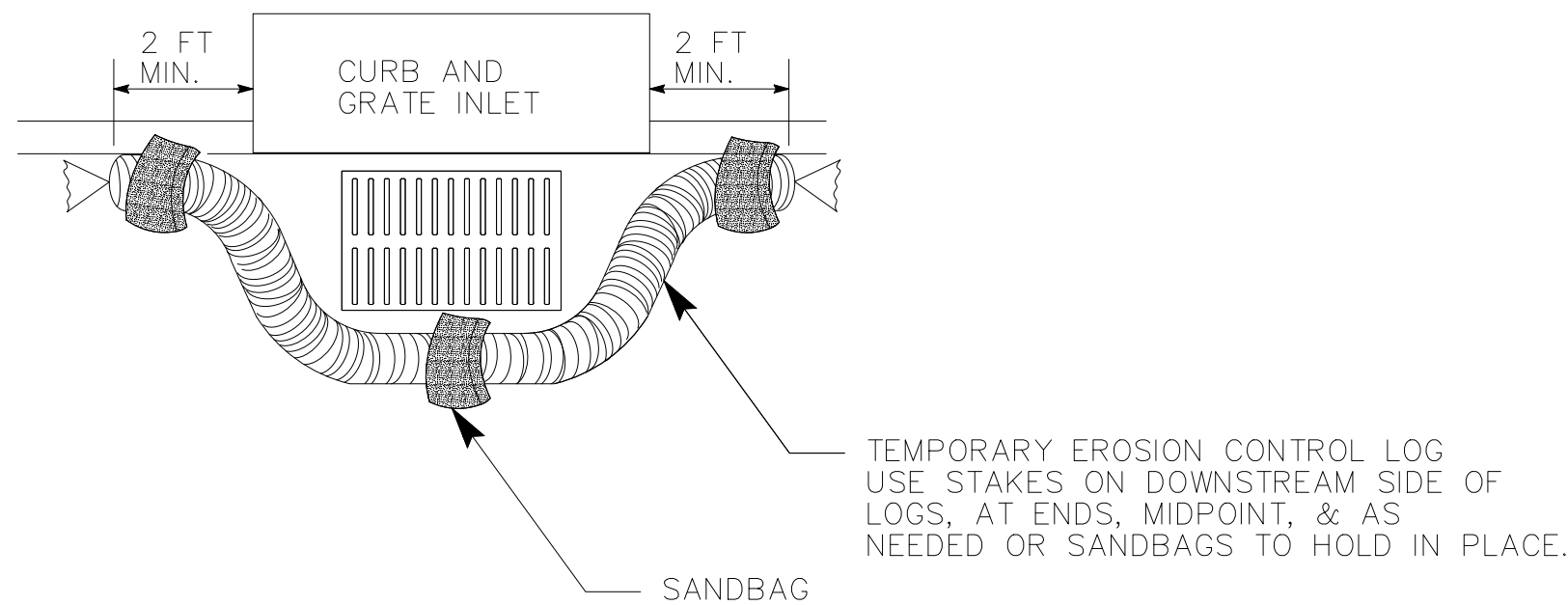
CL-CI



EROSION CONTROL LOG AT CURB INLET

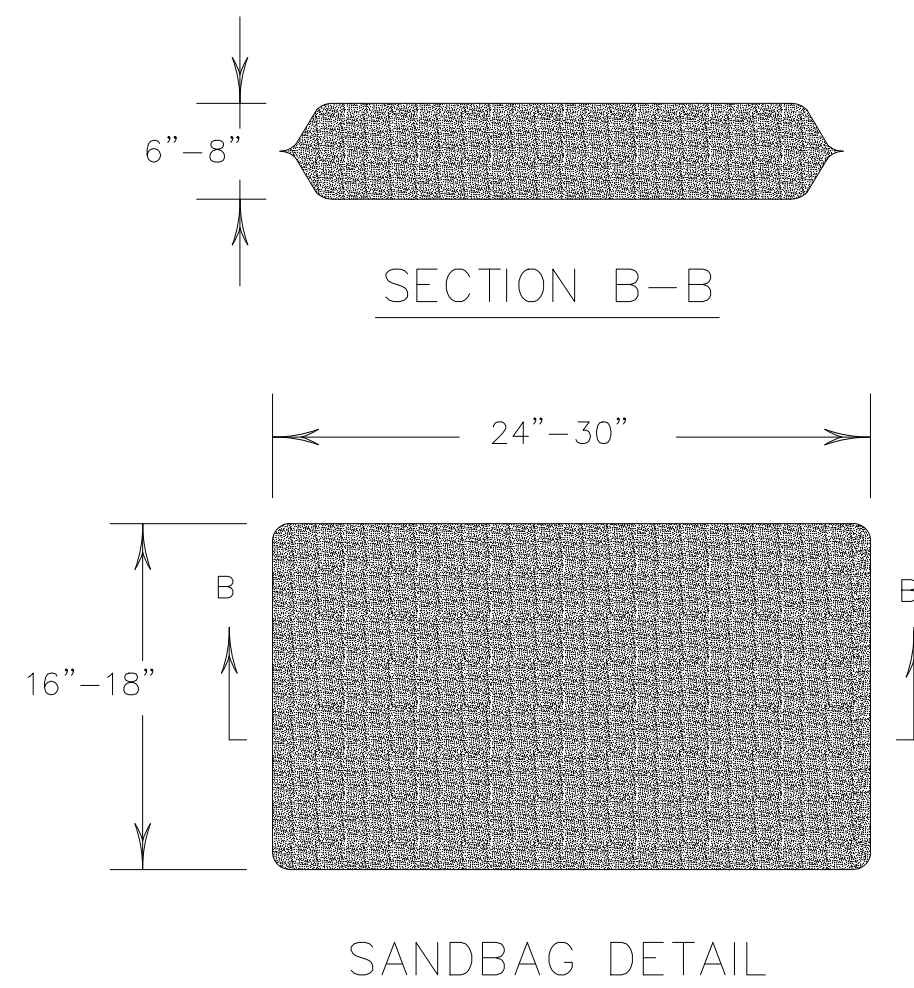
CL-CI

NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS
SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE
TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE
STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI



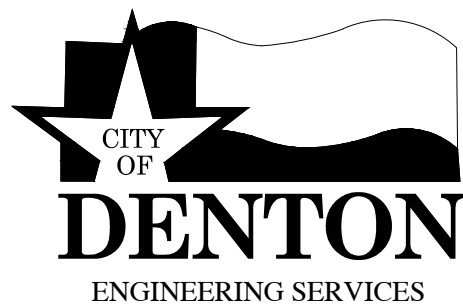
SHEET 3 OF 3



TEMPORARY EROSION,
SEDIMENT AND WATER
POLLUTION CONTROL MEASURES
EROSION CONTROL LOG
EC(9)-16

FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY	SHEET NO.	

ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\TXDOT_EROSIONSHT.DWG		



FM 1515 UTILITY RELOCATIONS

TXDOT EROSION CONTROL 6

DATE
NOV. 2024

SHEET No.
11 of 37

SCALE

HOR 1"= 250'

VER 1"= N/A

TRAFFIC CONTROL PLAN GUIDLINES:

ALL TRAFFIC CONTROL PLANS FOR THIS PROJECT SHALL BE CREATED BY THE CONTRACTOR AND SUBMITTED FOR REVIEW BY THE CITY PRIOR TO IMPLEMENTATION. THE PLANS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS CONTAINED IN THE PROJECT MANUAL. TRAFFIC CONTROL PLANS SHALL BE SUBJECT TO THE SITE-SPECIFIC REQUIREMENTS ADDRESSED BELOW.

CROSSING CORBIN AT FM 1515

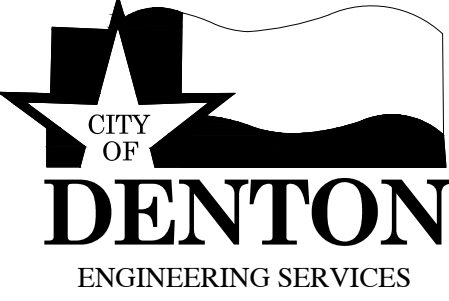
1. THE CONTRACTOR MAY CLOSE CORBIN AT FM 1515 TO INSTALL THE 16" WATERLINE CROSSING AT THIS LOCATION. THE TRAFFIC CONTROL PLAN MUST DIVERT TRAFFIC ON CORBIN TO USE SHELBY LN.
2. TRAFFIC CONTROL PLAN MUST RECEIVE TXDOT APPROVAL.

CROSSING DAKOTA AT FM 1515

1. THE CONTRACTOR MAY CLOSE DAKOTA AT FM 1515 TO INSTALL THE 16" WATERLINE CROSSING AT THIS LOCATION. THE TRAFFIC CONTROL PLAN MUST DIVERT TRAFFIC ON CORBIN TO USE SHELBY LN.
2. TRAFFIC CONTROL PLAN MUST RECEIVE TXDOT APPROVAL.

WORK IN TXDOT ROW BEHIND THE SHOULDER

1. SIGNAGE AND CHANNELIZING DEVICES MUST BE PROVIDED ACCORDING TO TXDOT DIAGRAM TCP (1-1A) WHICH CAN BE FOUND ON TXDOT DETAIL TCP (1-1) - 1B.

ENTERED BY	M.S.	PROJECT #	630511523		FM 1515 UTILITY RELOCATIONS TRAFFIC CONTROL NARRATIVE	DATE	SCALE	
DESIGNED BY	M.S.	DATE	REVISION			NOV. 2024		
CHECKED BY	J.W.					SHEET No.	HOR 1"= NTS	
PROJ. ENGR.	J.W.					12 of 37	VER 1"= NTS	
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\COVER,CN, EROSION.DWG							

DATE:
FILE:

WORK SPACE NEAR SHOULDER

WORK SPACE ON SHOULDER

WORK VEHICLES ON SHOULDER Conventional Roads

Posted Speed X	Formula	Minimum Desirable Taper Lengths X X			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10'	11'	12'	On a Taper	On a Tangent		
		Offset	Offset	Offset				
30	L = $\frac{WS}{60}$	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'

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

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 plans, or for routine maintenance work, when approved by the Engineer.
3. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
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.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.



Texas Department of Transportation

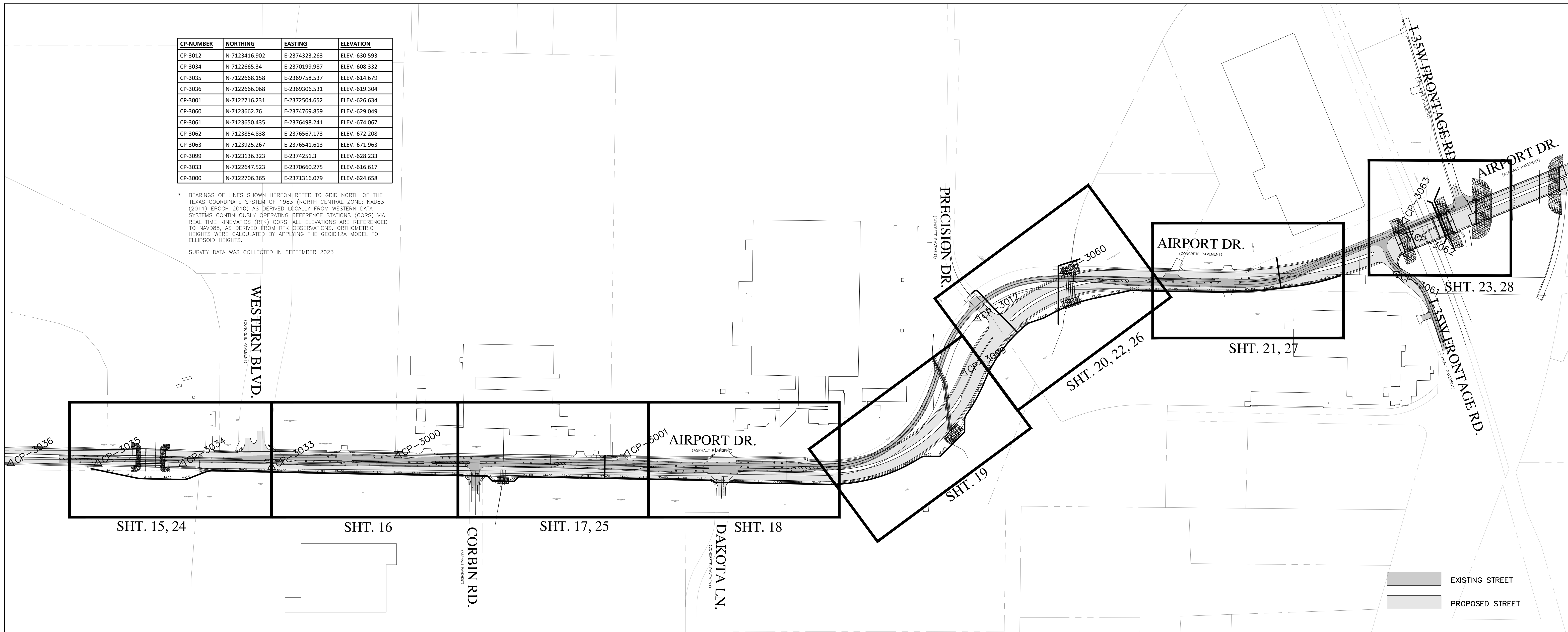
TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

FILE: fcp1-1-18. dgn		DN:		CK:		DW:		CK:	
 TxDOT December 1985		CONT		SECT		JOB		HIGHWAY	
REVISONS									
2-94 4-98									
8-95 2-12		DIST		COUNTY				SHEET NO.	
1-97 2-18									



CITY OF
DENTON
ENGINEERING SERVICES

HOR 1"= NTS
VER 1"= NTS



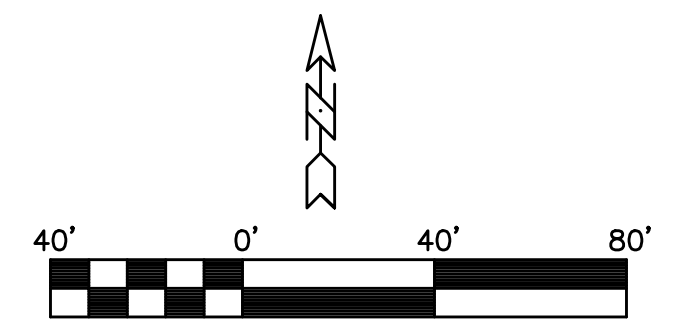
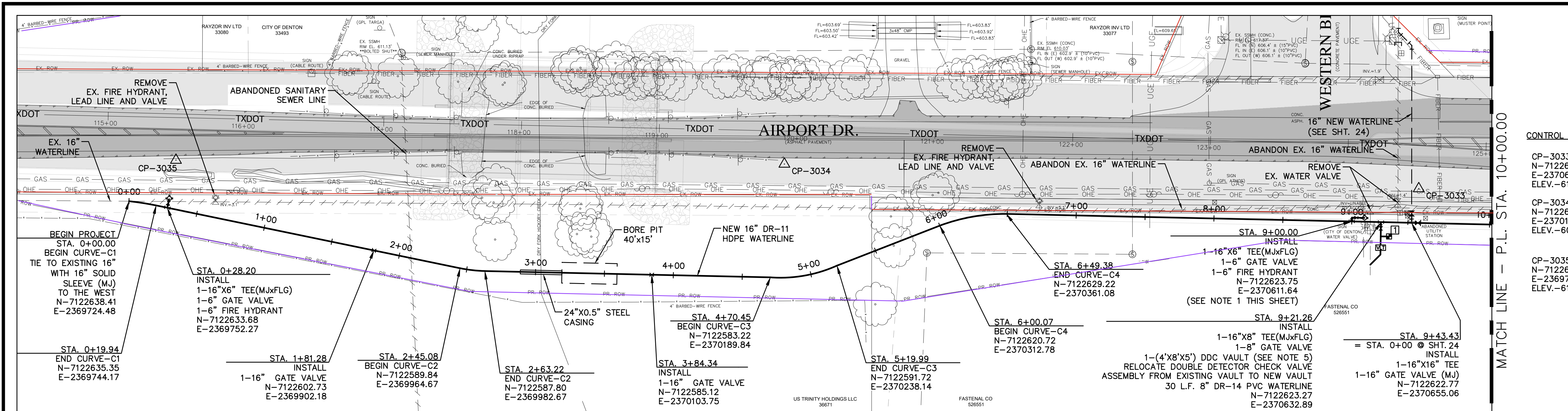
ENTERED BY	M.S.	PROJECT # 630511523	
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG			



SCALE

HOR 1" = 250'

VER 1" = N/A



- CONTROL POINTS:
- CP-3033
N-7122647.523
E-2370660.275
ELEV.-616.617
- CP-3034
N-7122665.34
E-2370199.987
ELEV.-608.332
- CP-3035
N-7122668.158
E-2369758.537
ELEV.-614.679

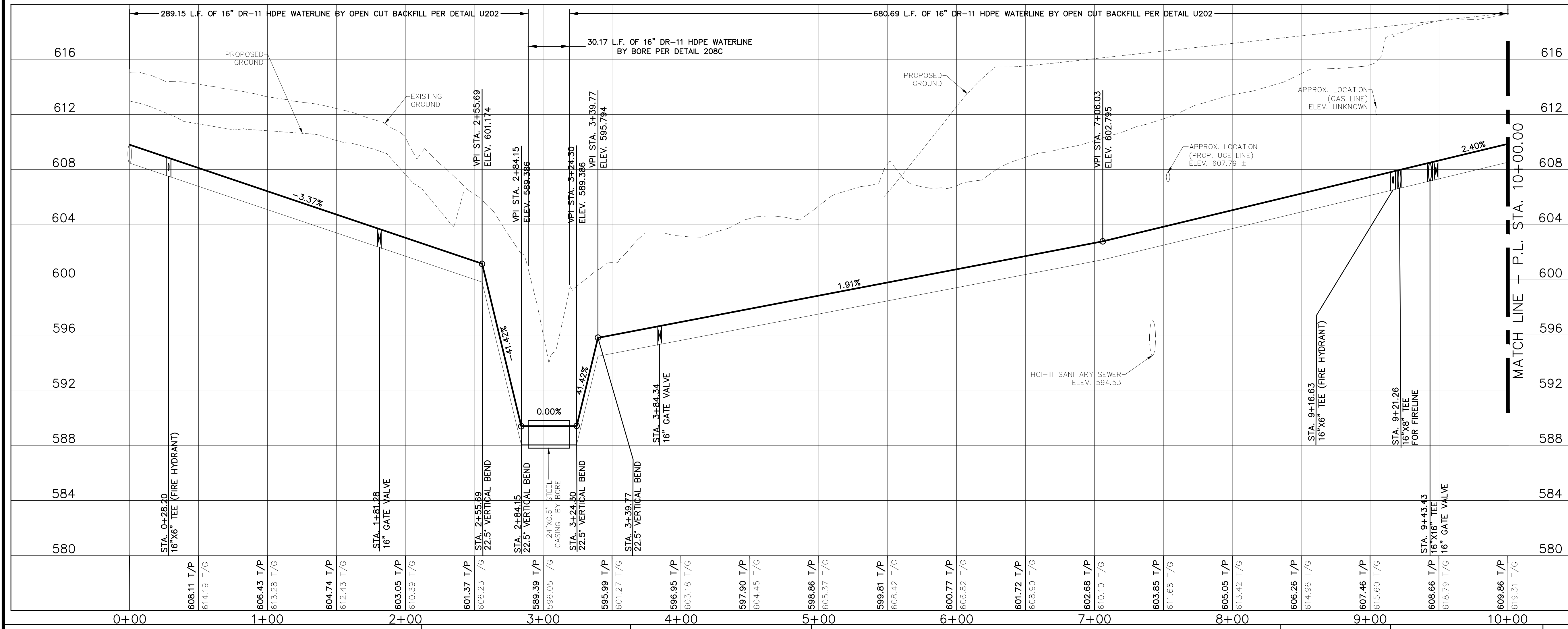
SYMBOL LEGEND	
	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

- EXISTING STREET
- PROPOSED STREET
- INSTALL NEW 2" WATER METER AND SERVICE

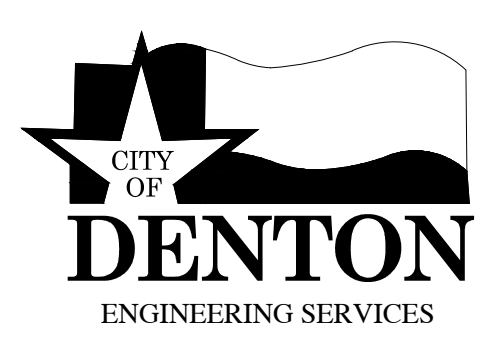
NOTES:

- FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401. A FLANGED SHOE CONNECTION MAY BE USED IN LIEU OF THE STANDARD MJ CONNECTION TO ELIMINATE THE NEED FOR A LEAD LINE.
- VPI's WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
- ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
- ALL TEES ARE MJxFLG UNLESS OTHERWISE NOTED ON THE PLANS.
- DOUBLE DETECTOR CHECK VALVE VAULT SHOULD BE PRECAST CONCRETE, OLD CASTLE MODEL DC-FORT WORTH OR APPROVED EQUAL.

CURVE TABLE		
Curve	Radius	Length
C1	200.64'	19.93'
C2	100.00'	18.14'
C3	100.00'	49.54'
C4	135.05'	49.31'



ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		

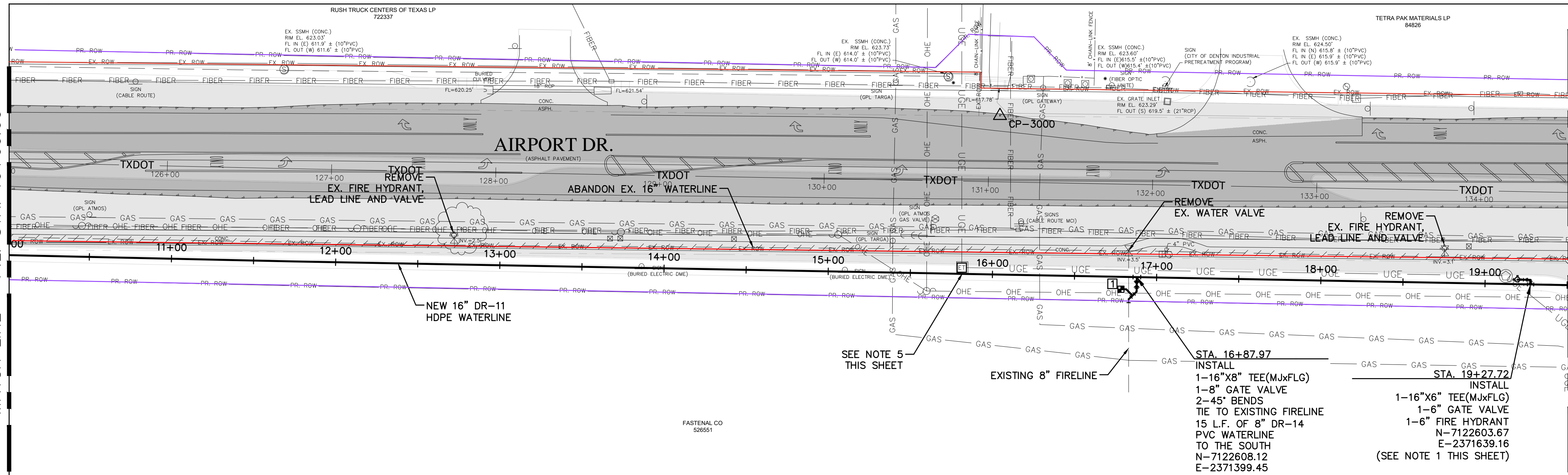


FM 1515 UTILITY RELOCATIONS

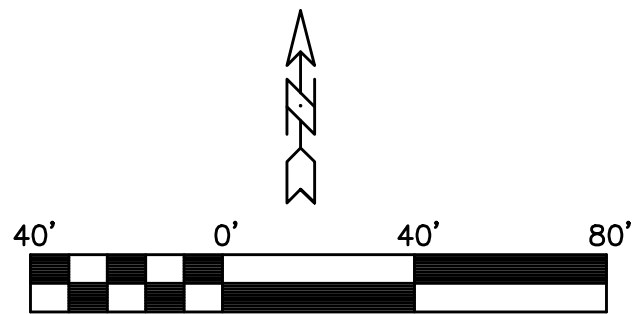
16" MAIN WATERLINE - WL1
STA 0+00 TO STA 10+00.00

DATE	NOV. 2024	SCALE
SHEET No.	15 of 37	HOR 1"= 40' VER 1"= 4'

MATCH LINE - P.L. STA. 10+00.00



MATCH LINE - P.L. STA. 19+50.00



SYMBOL LEGEND	
	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

	EXISTING STREET
	PROPOSED STREET

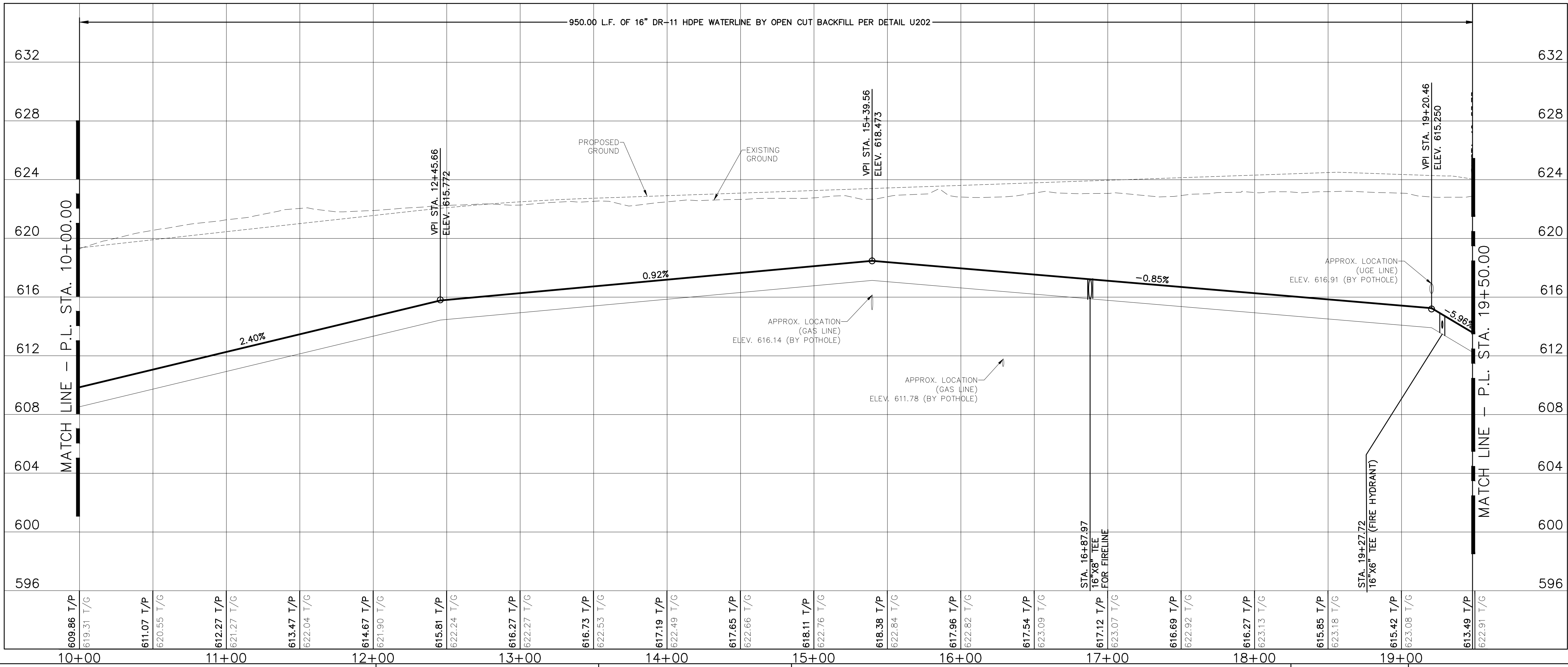
CONTROL POINTS:

CP-3000
N-7122706.365
E-2371318.079
ELEV.-624.658

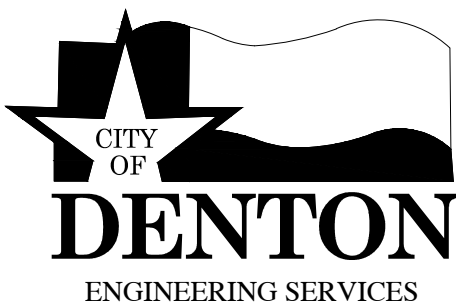
NOTES:

- FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401. A FLANGED SHOE CONNECTION MAY BE USED IN LIEU OF THE STANDARD MJ CONNECTION TO ELIMINATE THE NEED FOR A LEAD LINE.
- VPI's WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
- ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
- ALL TEES ARE MJxFLG UNLESS OTHERWISE NOTED ON THE PLANS.
- EXISTING DME UTILITY BOX TO BE REMOVED/ABANDONED BY OTHERS. UNDERGROUND CONDUITS TO BE ABANDONED PRIOR TO COMMENCEMENT OF CONSTRUCTION.

INSTALL NEW 2" WATER METER AND SERVICE



ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		

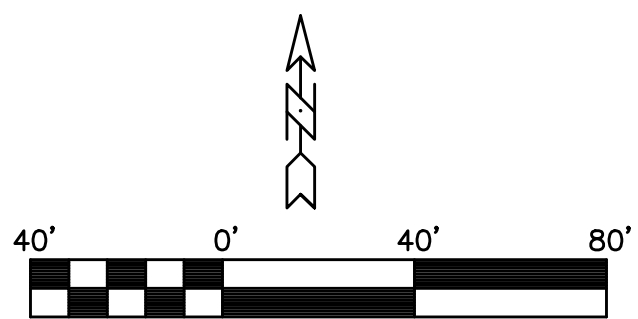
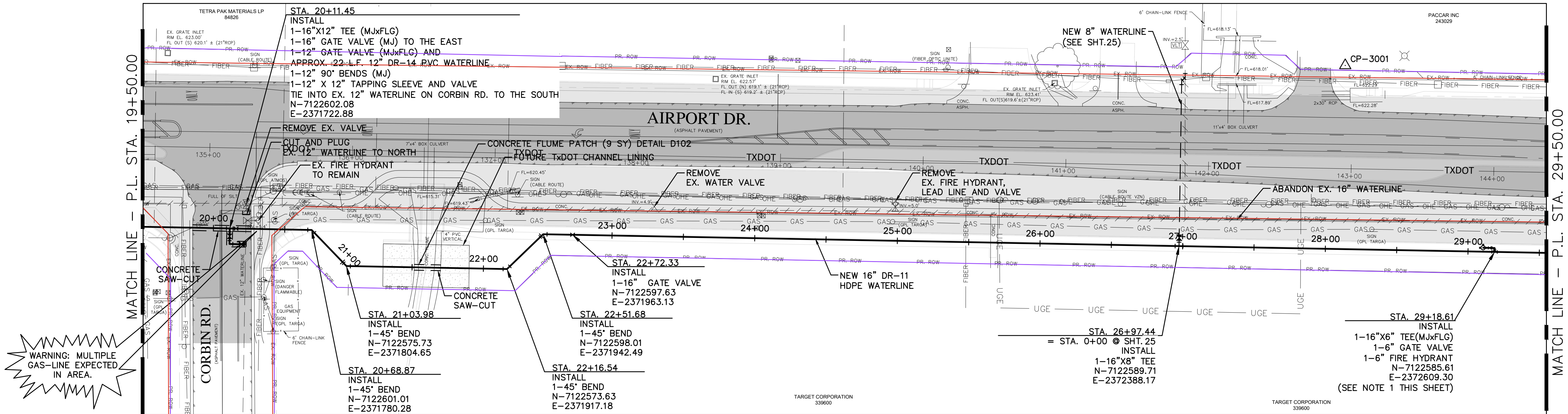


FM 1515 UTILITY RELOCATIONS

16" MAIN WATERLINE - WL1
STA 10+00.00 TO STA 19+50.00

DATE
NOV. 2024
SHEET No.
16 of 37

SCALE
HOR 1"= 40'
VER 1"= 4'



SYMBOL LEGEND	
	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

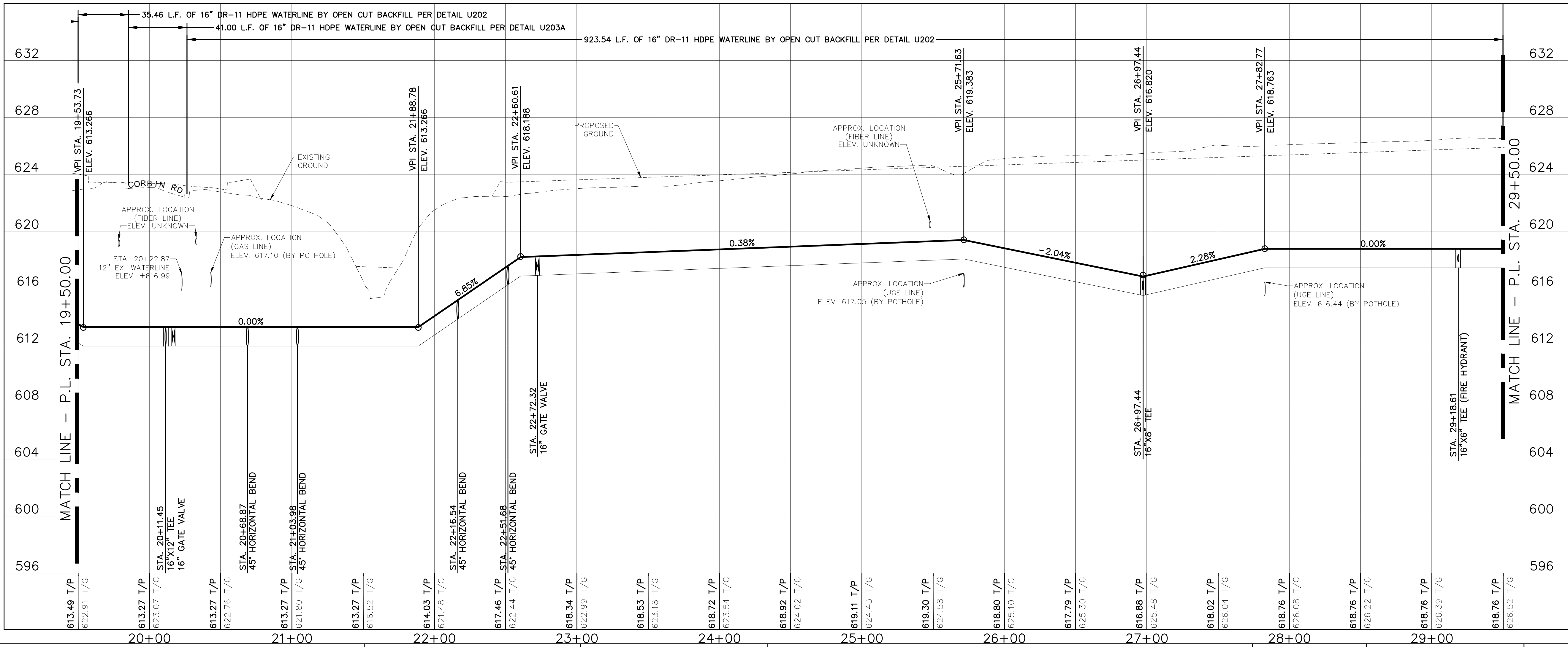
EXISTING STREET
PROPOSED STREET

CONTROL POINTS:

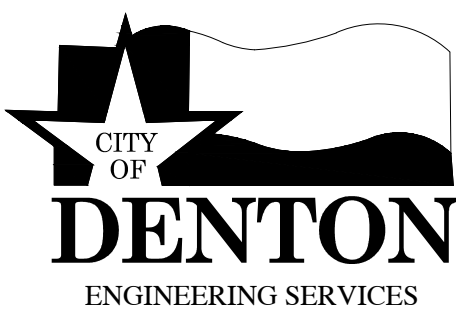
CP-3001
N-7122716.231
E-2372504.652
ELEV.-626.634

NOTES:

- FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401. A FLANGED SHOE CONNECTION MAY BE USED IN LIEU OF THE STANDARD MJ CONNECTION TO ELIMINATE THE NEED FOR A LEAD LINE.
- VPI'S WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
- ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
- ALL TEES ARE MJXFLG UNLESS OTHERWISE NOTED ON THE PLANS.



ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		

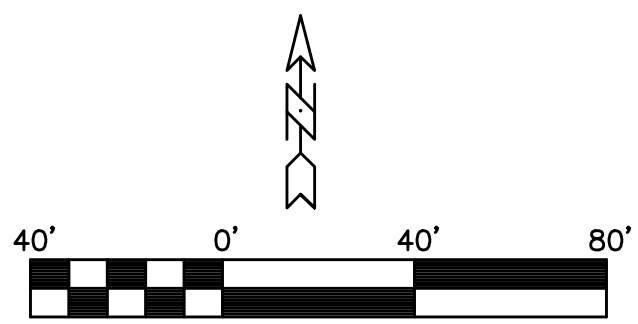
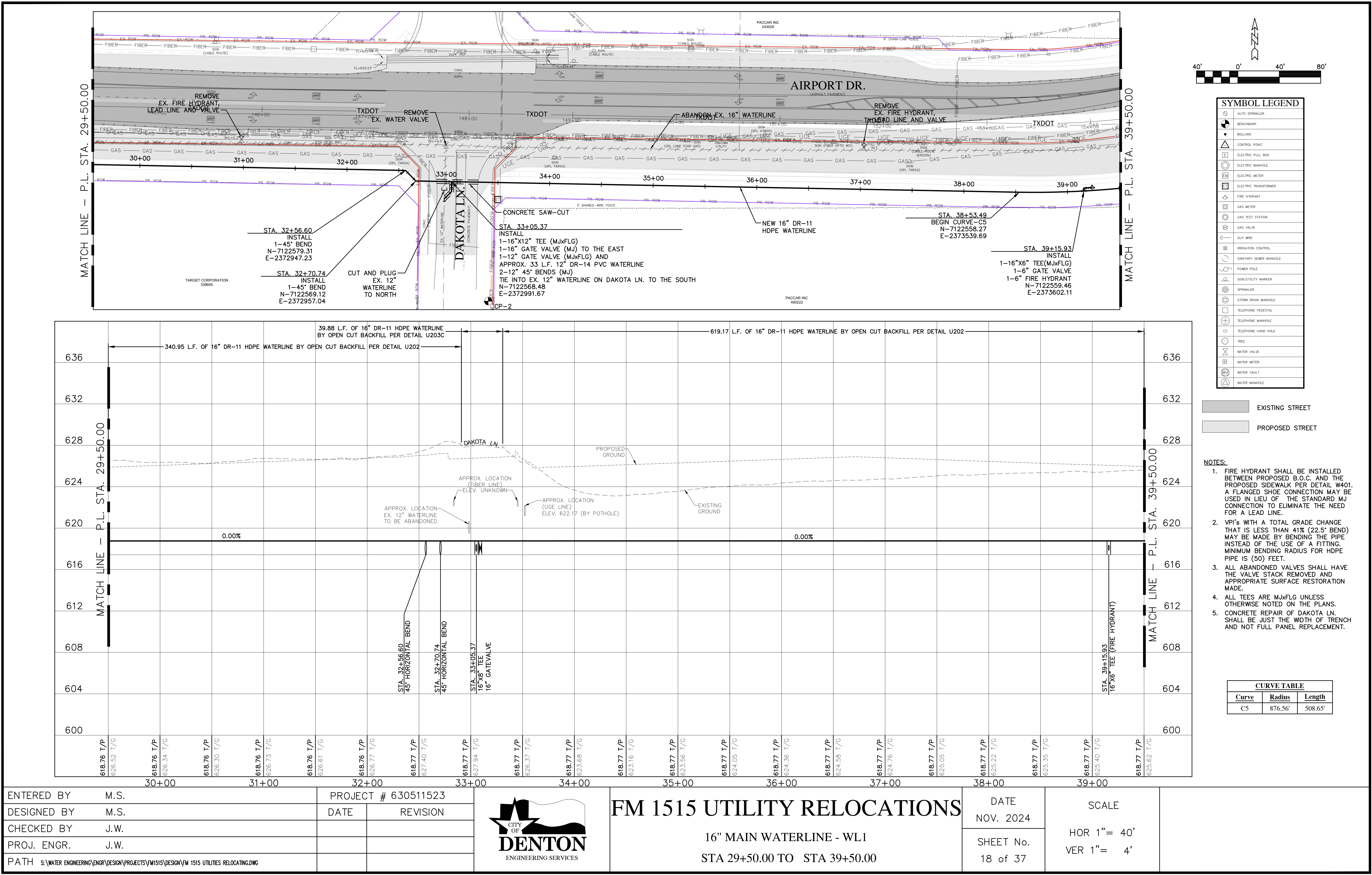


FM 1515 UTILITY RELOCATIONS

16" MAIN WATERLINE - WL1
STA 19+50.00 TO STA 29+50.00

DATE
NOV. 2024
SHEET No.
17 of 37

SCALE
HOR 1"= 40'
VER 1"= 4'



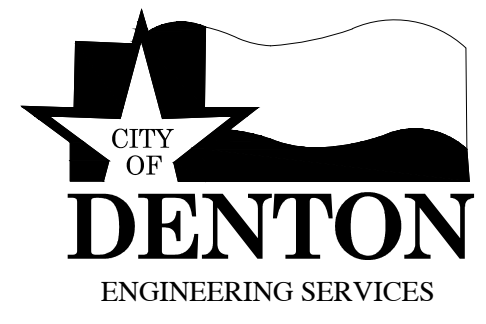
SYMBOL LEGEND	
	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

	EXISTING STREET
	PROPOSED STREET

- NOTES:
1. FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401. A FLANGED SHOE CONNECTION MAY BE USED IN LIEU OF THE STANDARD MJ CONNECTION TO ELIMINATE THE NEED FOR A LEAD LINE.
 2. VPI'S WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
 3. ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
 4. ALL TEES ARE MJxFLG UNLESS OTHERWISE NOTED ON THE PLANS.
 5. CONCRETE REPAIR OF DAKOTA LN. SHALL BE JUST THE WIDTH OF TRENCH AND NOT FULL PANEL REPLACEMENT.

CURVE TABLE		
Curve	Radius	Length
C5	876.56'	508.65'

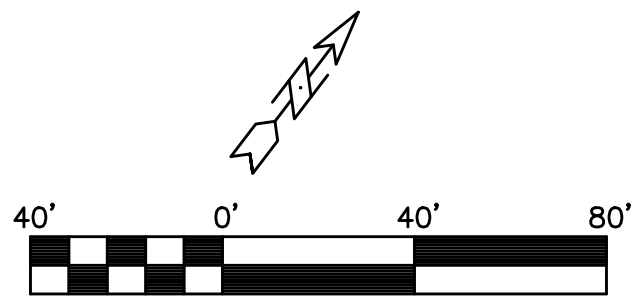
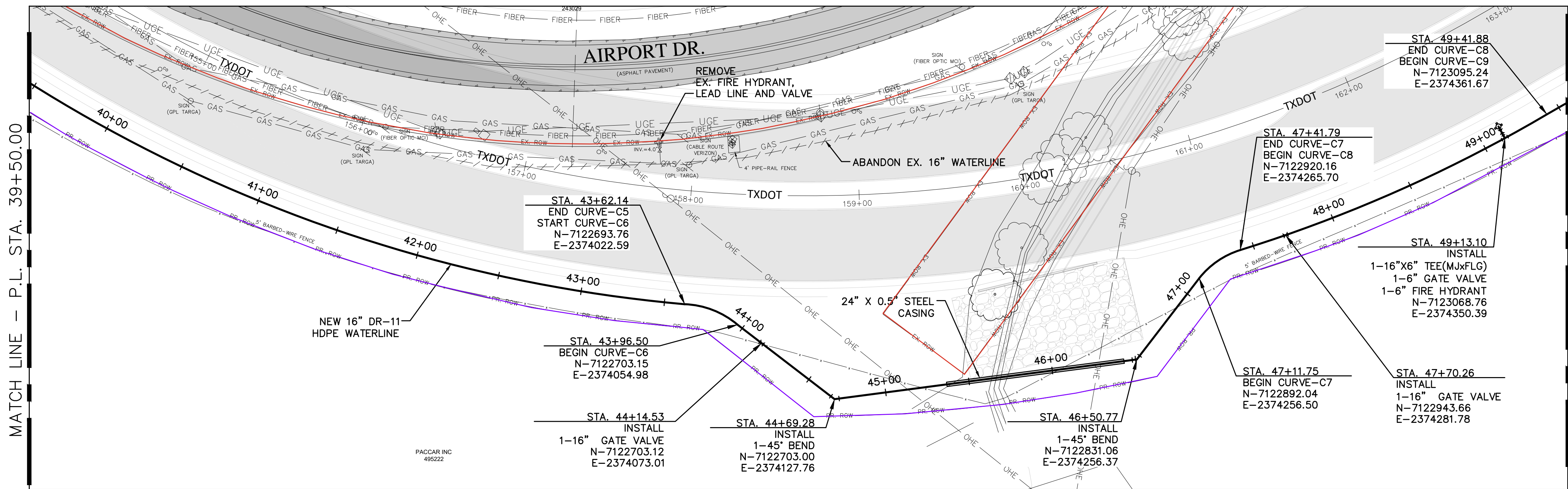
ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		



FM 1515 UTILITY RELOCATIONS

16" MAIN WATERLINE - WL1
STA 29+50.00 TO STA 39+50.00

DATE	NOV. 2024	SCALE
SHEET No.	18 of 37	HOR 1"= 40' VER 1"= 4'

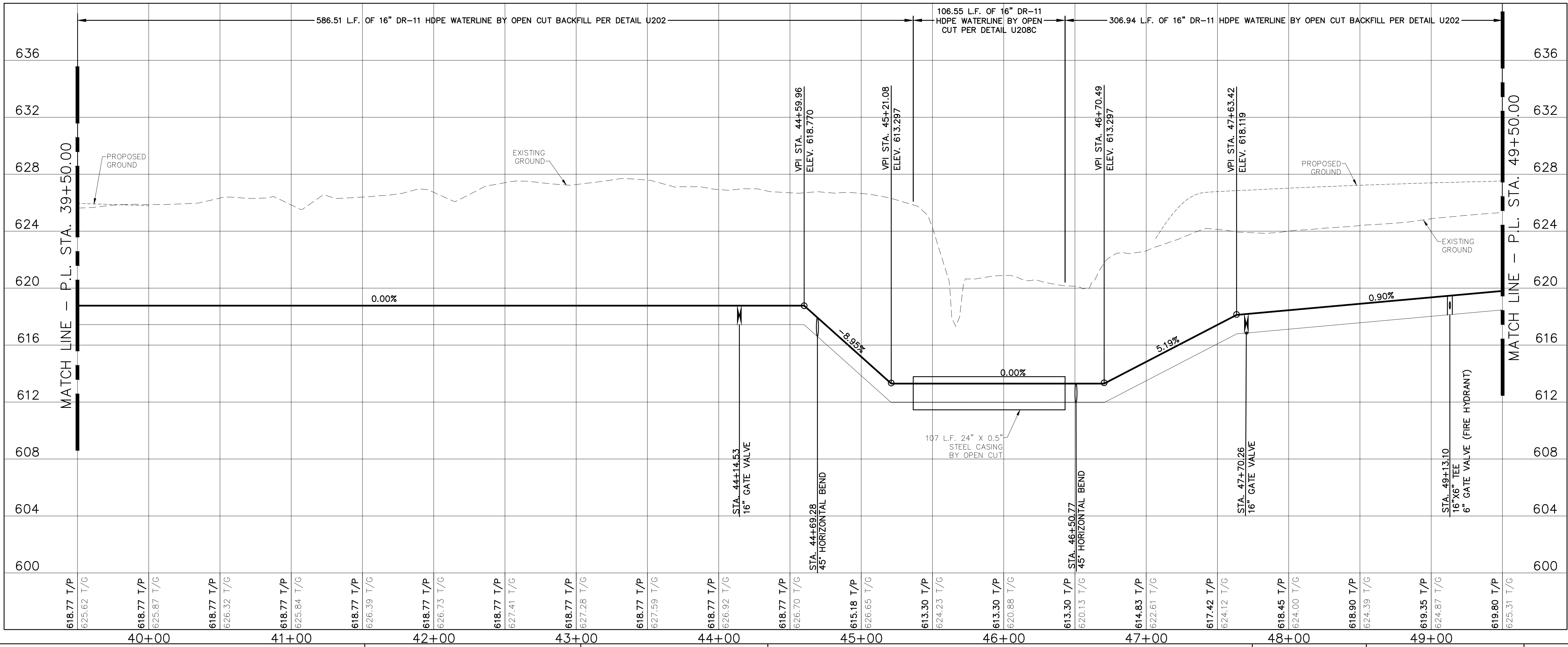


SYMBOL LEGEND	
	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

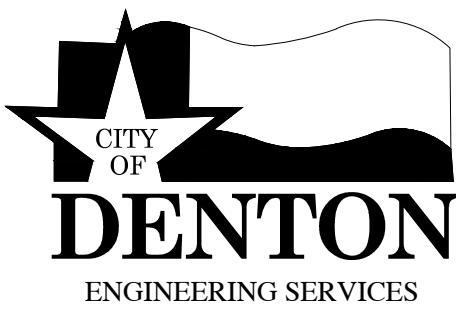
	EXISTING STREET
	PROPOSED STREET

- NOTES:
- FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401. A FLANGED SHOE CONNECTION MAY BE USED IN LIEU OF THE STANDARD MJ CONNECTION TO ELIMINATE THE NEED FOR A LEAD LINE.
 - VPI's WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
 - ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
 - ALL TEES ARE MxFLG UNLESS OTHERWISE NOTED ON THE PLANS.

CURVE TABLE		
Curve	Radius	Length
C5	876.56'	508.65'
C6	51.58'	34.36'
C7	50.05'	30.04'
C8	870.03'	200.09'
C9	729.84'	365.70'



ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		

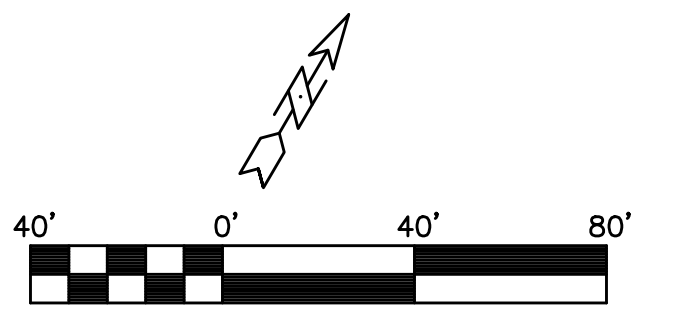
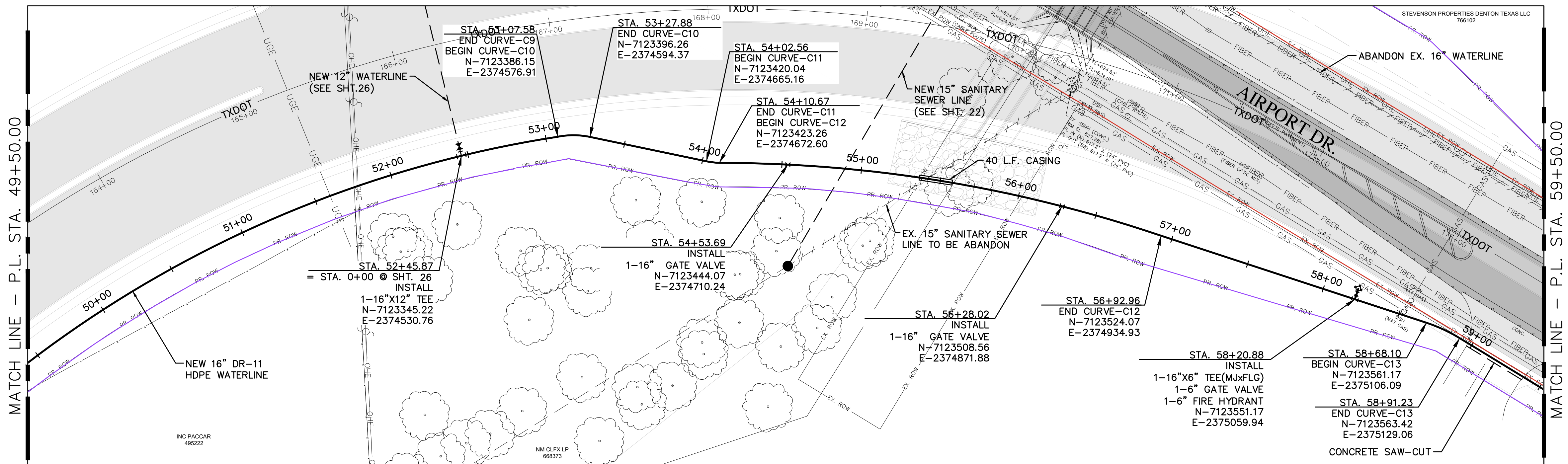


FM 1515 UTILITY RELOCATIONS

16" MAIN WATERLINE - WL1
STA 39+50.00 TO STA 49+50.00

DATE
NOV. 2024
SHEET No.
19 of 37

SCALE
HOR 1"= 40'
VER 1"= 4'

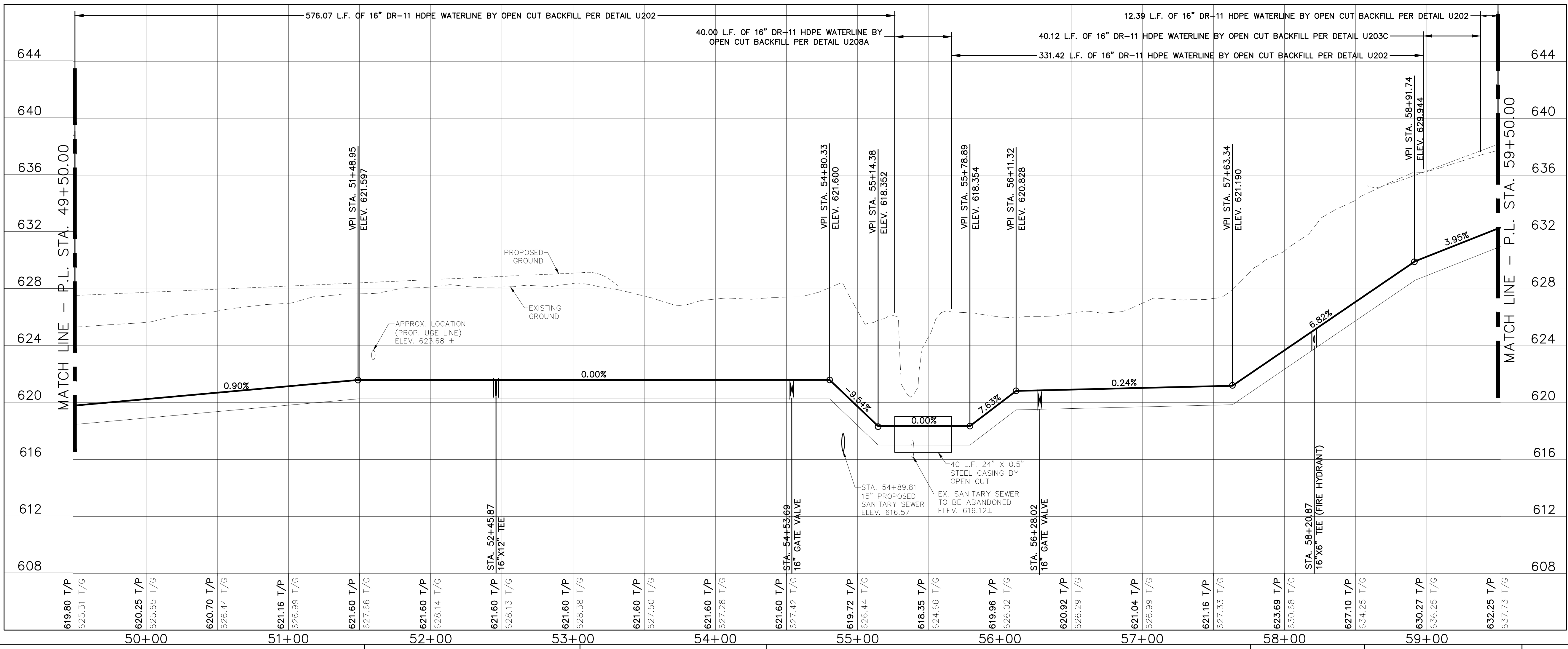


SYMBOL LEGEND	
	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

	EXISTING STREET
	PROPOSED STREET

- NOTES:
- FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401. A FLANGED SHOE CONNECTION MAY BE USED IN LIEU OF THE STANDARD MJ CONNECTION TO ELIMINATE THE NEED FOR A LEAD LINE.
 - VPI's WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
 - ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
 - ALL TEES ARE MJxFLG UNLESS OTHERWISE NOTED ON THE PLANS.
 - CONCRETE REPAIR SHALL BE JUST THE WIDTH OF TRENCH AND NOT FULL PANEL REPLACEMENT.

CURVE TABLE		
Curve	Radius	Length
C9	729.84'	365.70'
C10	51.15'	20.30'
C11	50.00'	8.12'
C12	865.24'	282.29'
C13	100.00'	23.13'



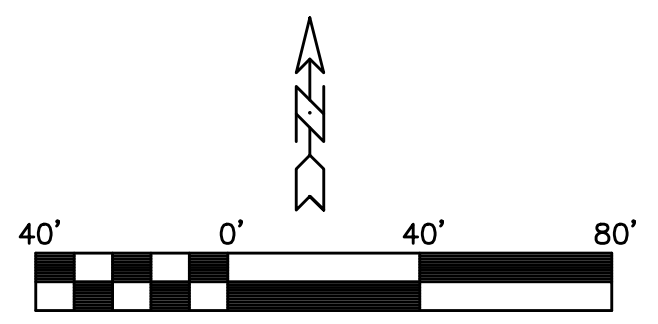
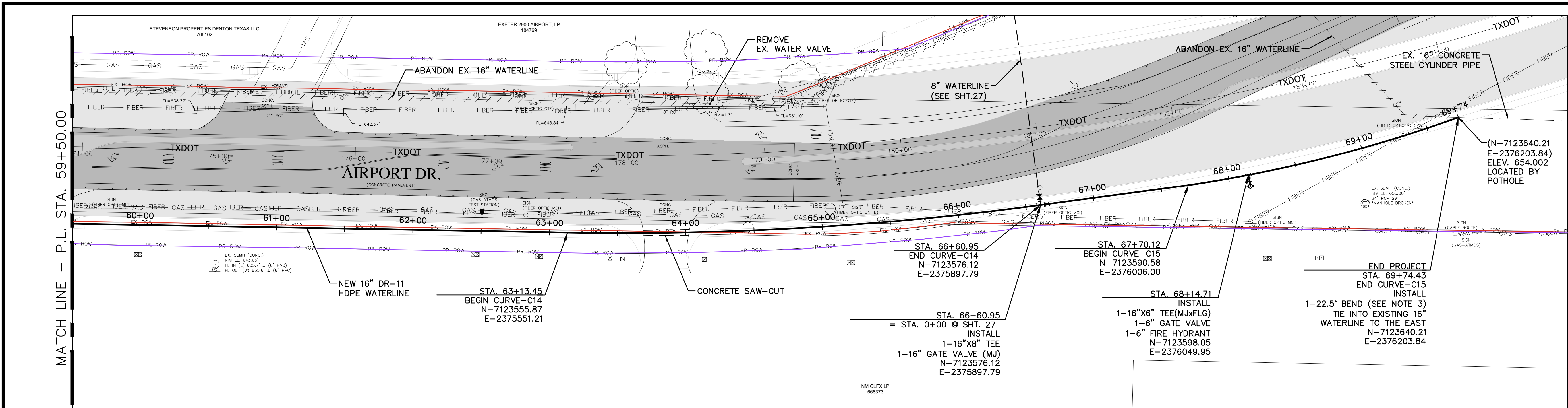
ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		



FM 1515 UTILITY RELOCATIONS

16" MAIN WATERLINE - WL1
STA 49+50.00 TO STA 59+50.00

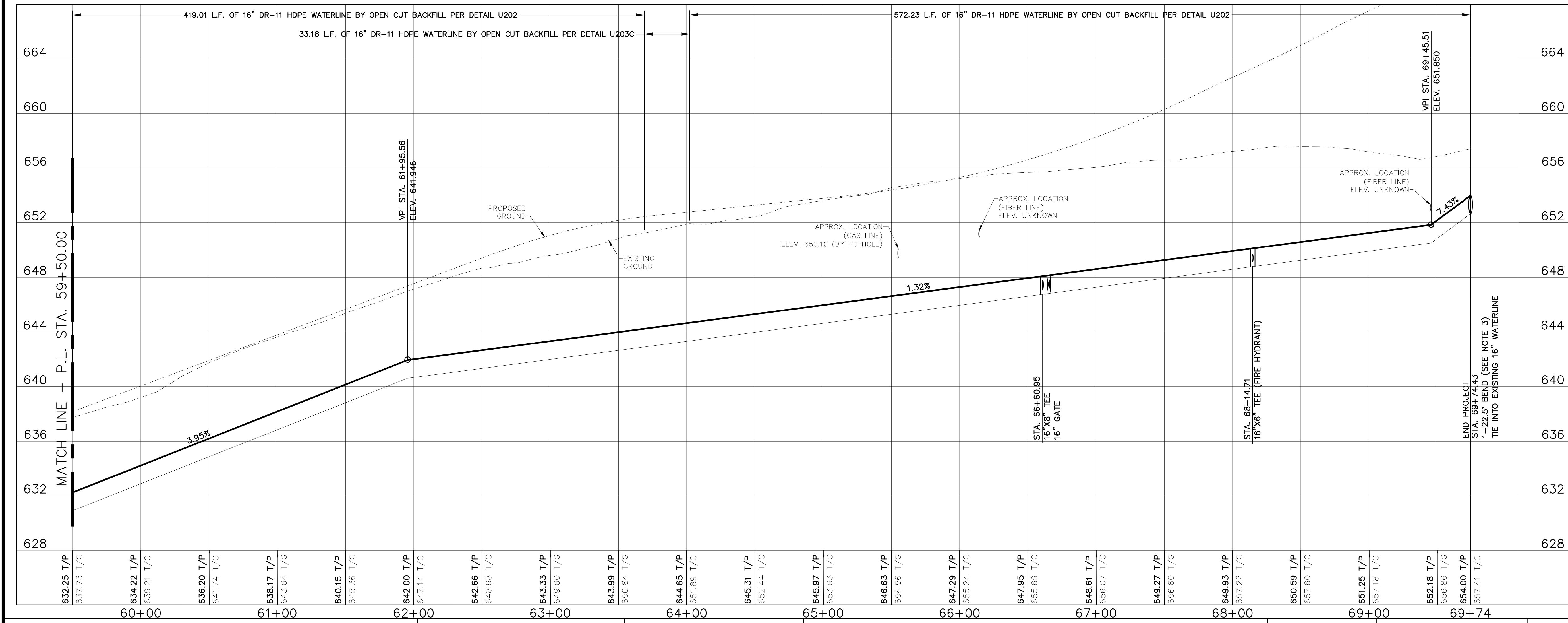
DATE	NOV. 2024	SCALE	HOR 1"= 40'
SHEET No.	20 of 37	VER 1"= 4'	



SYMBOL LEGEND	
	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

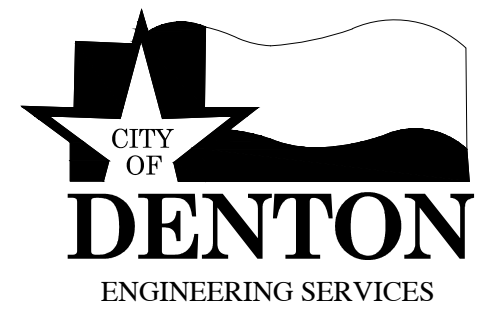
	EXISTING STREET
	PROPOSED STREET

- NOTES:
1. FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401. A FLANGED SHOE CONNECTION MAY BE USED IN LIEU OF THE STANDARD MJ CONNECTION TO ELIMINATE THE NEED FOR A LEAD LINE.
 2. VPI's WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
 3. 22.5' BEND WILL BE A CUSTOM MANUFACTURED FITTING THAT CAN JOIN THE EXISTING 16" CONCRETE STEEL CYLINDER PIPE TO THE PROPOSED 16" HDPE PIPE. HDPE CONNECTION SHALL MEET STANDARD DIP FITTING SIZING.
 4. ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
 5. ALL TEES ARE MxJFLG UNLESS OTHERWISE NOTED ON THE PLANS.
 6. CONCRETE REPAIR SHALL BE JUST THE WIDTH OF TRENCH AND NOT FULL PANEL REPLACEMENT.



CURVE TABLE		
Curve	Radius	Length
C14	2276.71'	347.50'
C15	1033.70'	204.30'

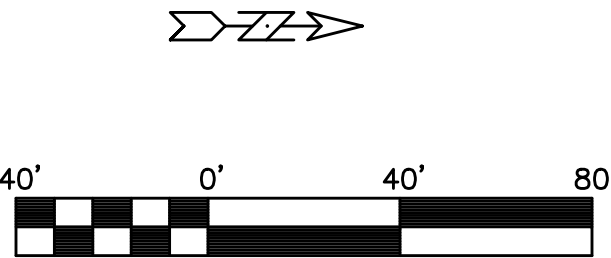
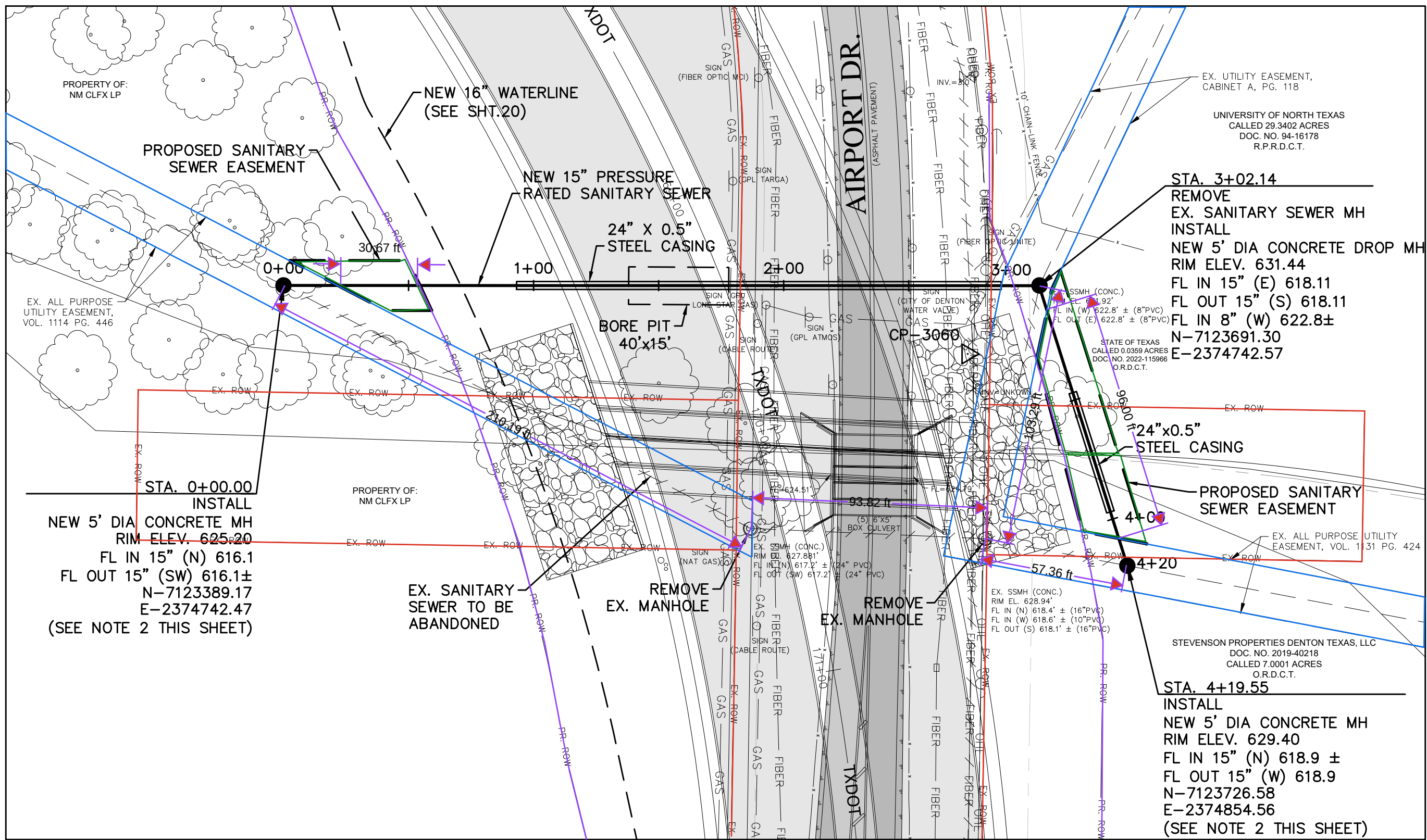
ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		



FM 1515 UTILITY RELOCATIONS

16" MAIN WATERLINE - WL1
STA 59+50.00 TO STA 69+74.42

DATE	NOV. 2024	SCALE	HOR 1"= 40' VER 1"= 4'
SHEET No.	21 of 37		



SYMBOL LEGEND	
	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

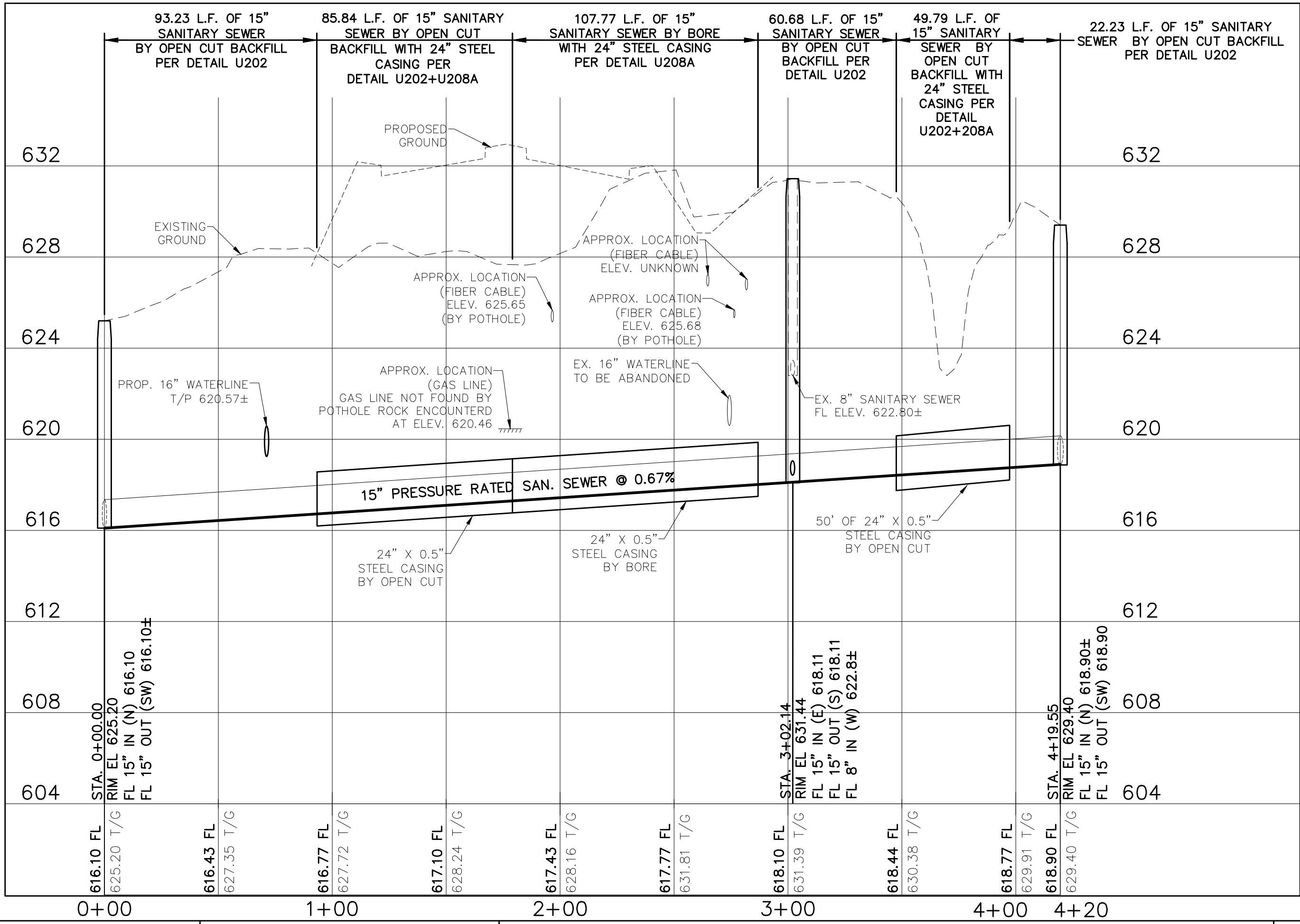
	EXISTING STREET
	PROPOSED STREET

CONTROL POINTS:

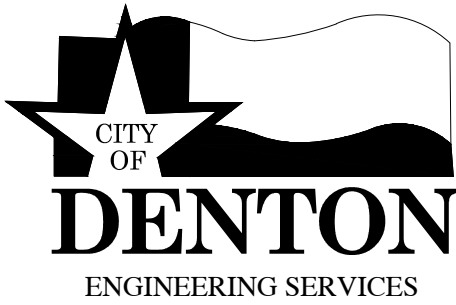
CP-3060
N-7123662.76
E-2374769.859
ELEV.-629.049

NOTES:

1. THE TARGA GAS LINE AT APPROX. STA. 1+80 COULD NOT BE LOCATED BY POTHOLING. DEPTH OF LINE CANNOT BE CONFIRMED.
2. STUBOUT CONNECTIONS FOR NEW MANHOLES WITH EXISTING PIPE COUPLINGS PER SECTION 33 31 14 3.4.C. NO FLEXIBLE COUPLINGS ALLOWED.
3. BYPASS PUMPING CAPACITY REQUIRED - 2400gpm MAXIMUM.



ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		

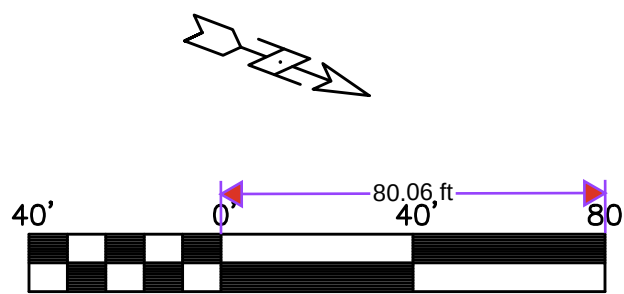
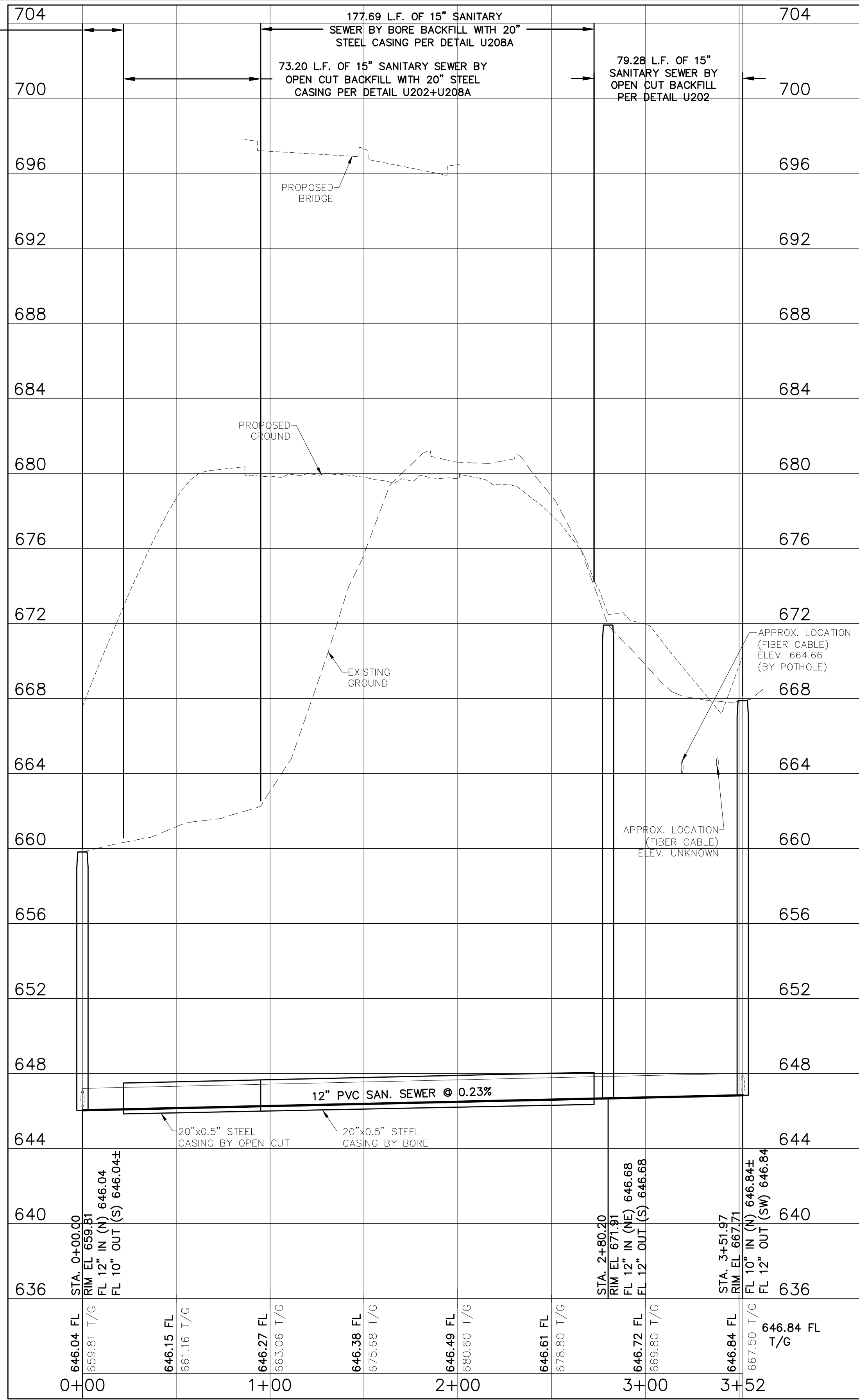
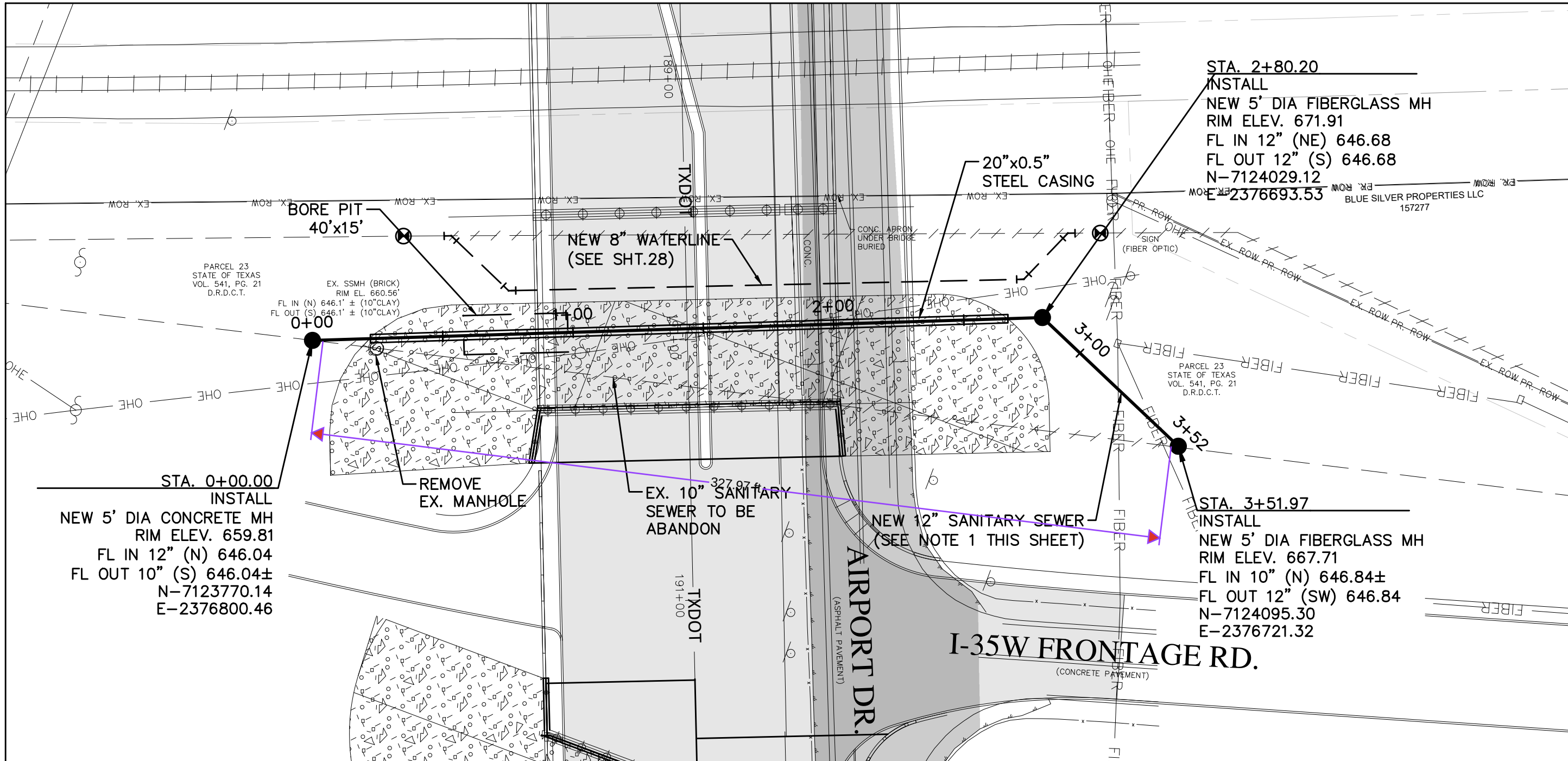


FM 1515 UTILITY RELOCATIONS

15" SANITARY SEWER - SS1

STA 0+00 TO STA 4+19.55

DATE	NOV. 2024	SCALE	
SHEET No.	22 of 37	HOR 1"= 40'	
		VER 1"= 4'	

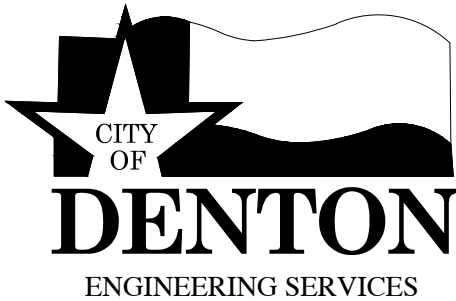


SYMBOL LEGEND	
	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

	EXISTING STREET
	PROPOSED STREET

- NOTES:
- CONTRACTOR MUST USE VERTICAL TRENCH SHORING BETWEEN STA. 2+72.60 AND END. NO BENCHING OR SLOPING ALLOWED.
 - BYPASS PUMPING CAPACITY REQUIRED -500gpm MAXIMUM.

ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		



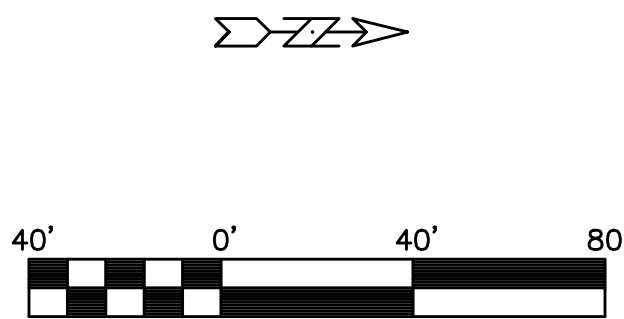
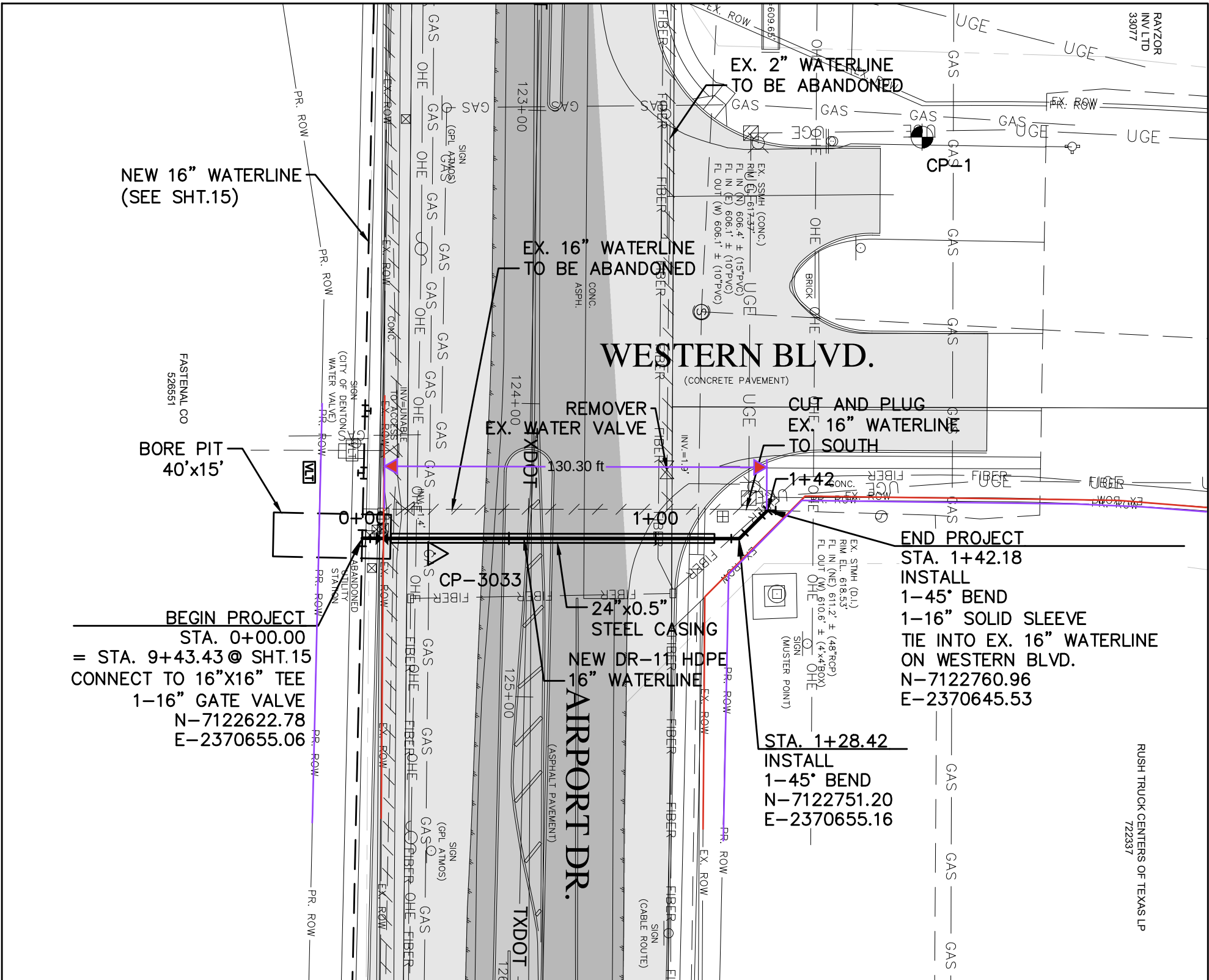
FM 1515 UTILITY RELOCATIONS

12" SANITARY SEWER - SS2
STA 0+00 TO STA 3+51.97

DATE
NOV. 2024

SHEET No.
23 of 37

SCALE
HOR 1"= 40'
VER 1"= 4'



SYMBOL LEGEND

	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

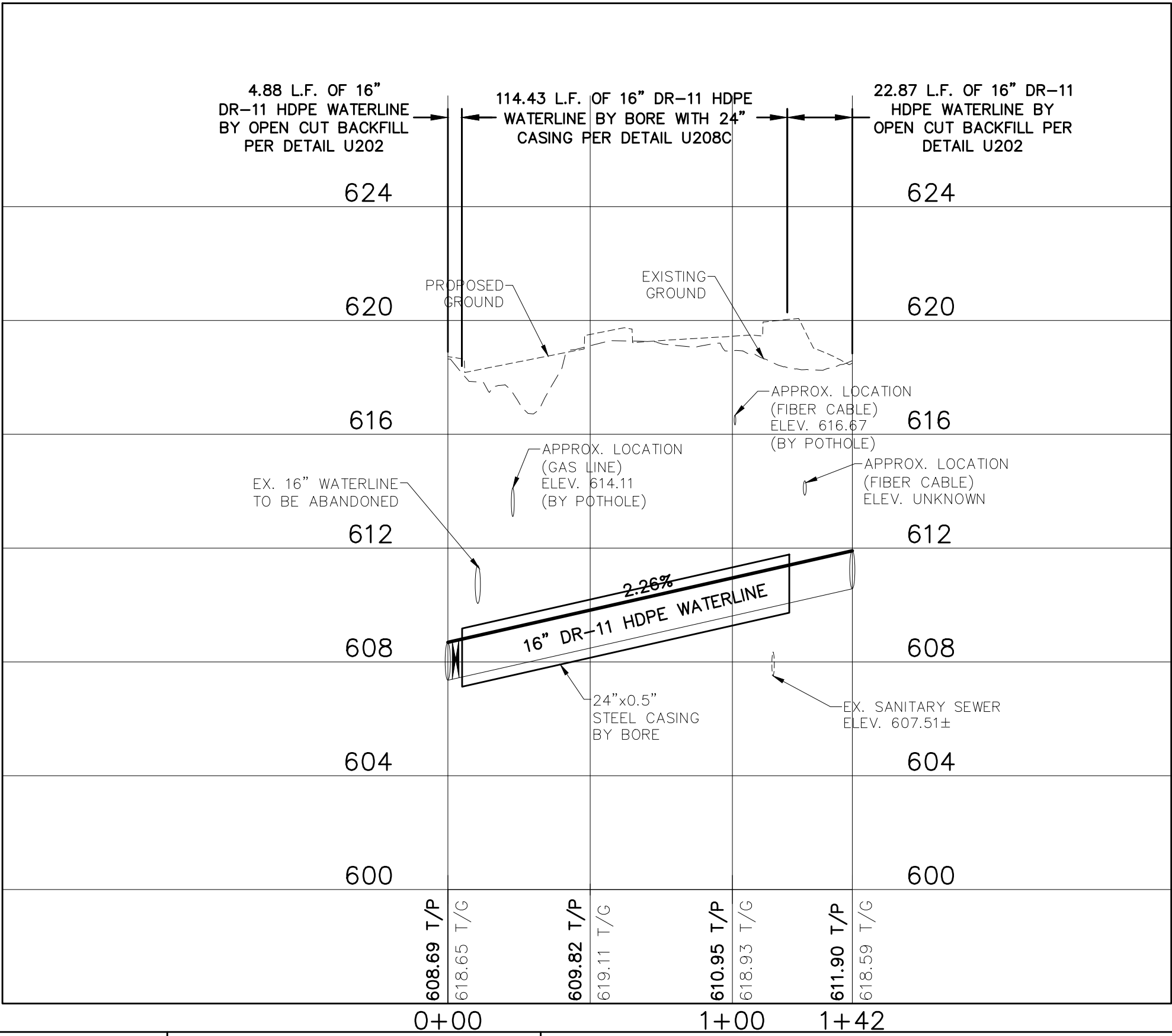
	EXISTING STREET
	PROPOSED STREET

CONTROL POINTS:

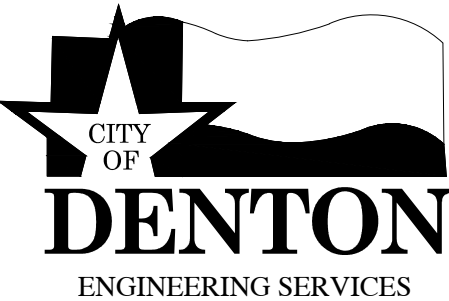
CP-3033
N-7122647.523
E-2370660.275
ELEV.-616.617

NOTES:

- FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401.
- VPI's WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
- ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
- ALL TEES ARE MxFLG UNLESS OTHERWISE NOTED ON THE PLANS.



ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		

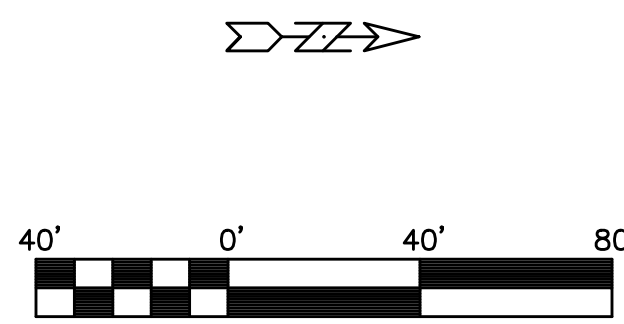
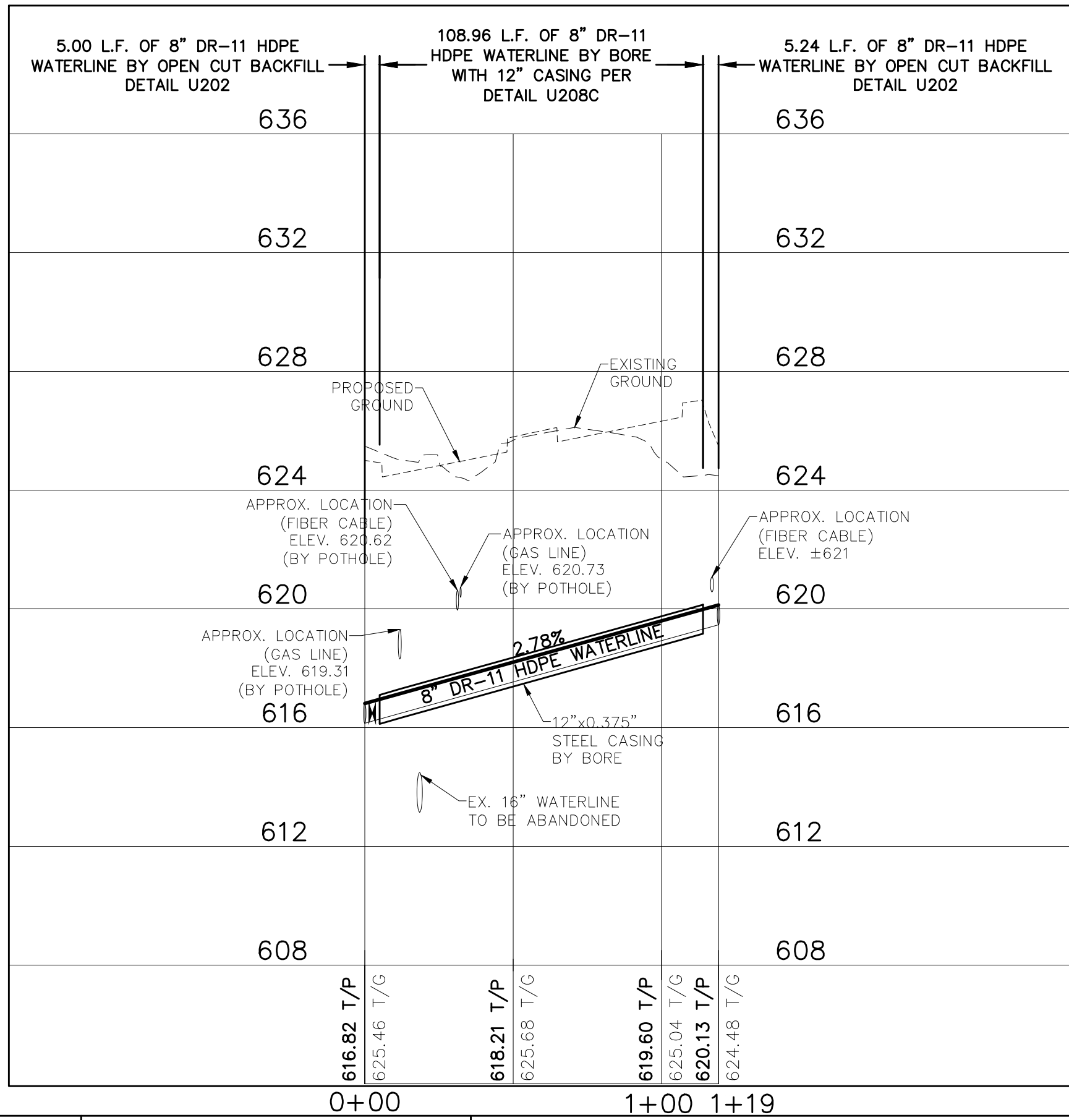
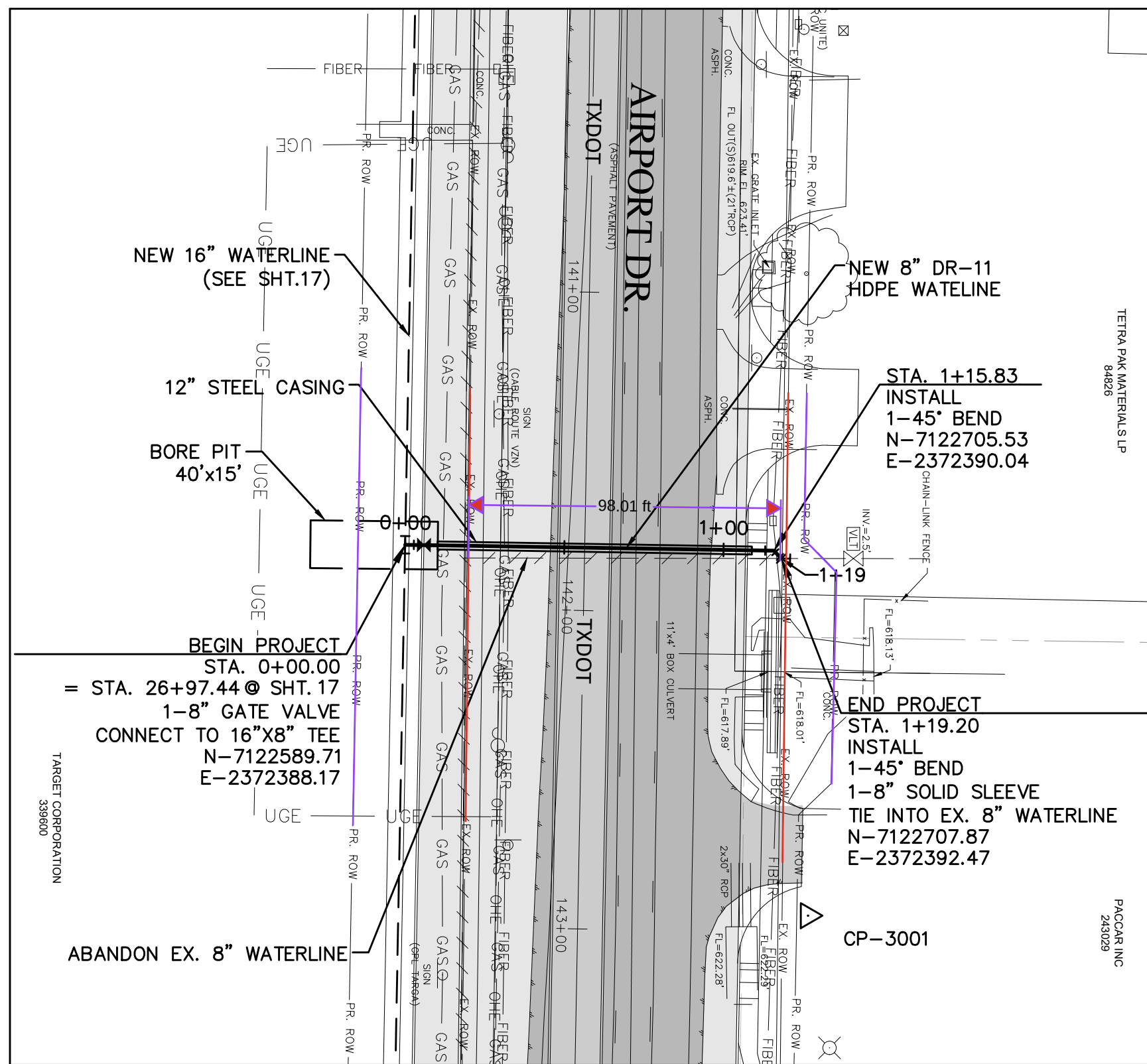


FM 1515 UTILITY RELOCATIONS

16" WATERLINE CROSSING - WL2
STA 0+00 TO STA 1+42.18

DATE
NOV. 2024
SHEET No.
24 of 37

SCALE
HOR 1"= 40'
VER 1"= 4'



SYMBOL LEGEND

	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

	EXISTING STREET
	PROPOSED STREET

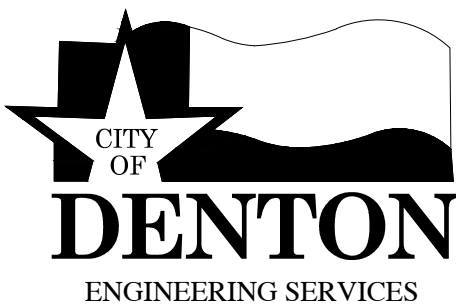
CONTROL POINTS:

CP-3001
N-7122716.231
E-2372504.652
ELEV.-626.634

NOTES:

- FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401.
- VPI's WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
- ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
- ALL TEES ARE MxFLG UNLESS OTHERWISE NOTED ON THE PLANS.

ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		



FM 1515 UTILITY RELOCATIONS

8" WATERLINE CROSSING - WL3

STA 0+00 TO STA 1+19.20

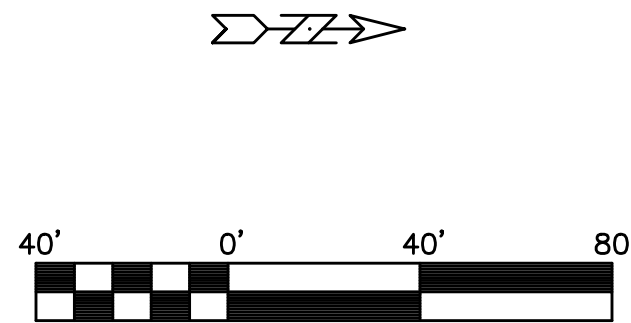
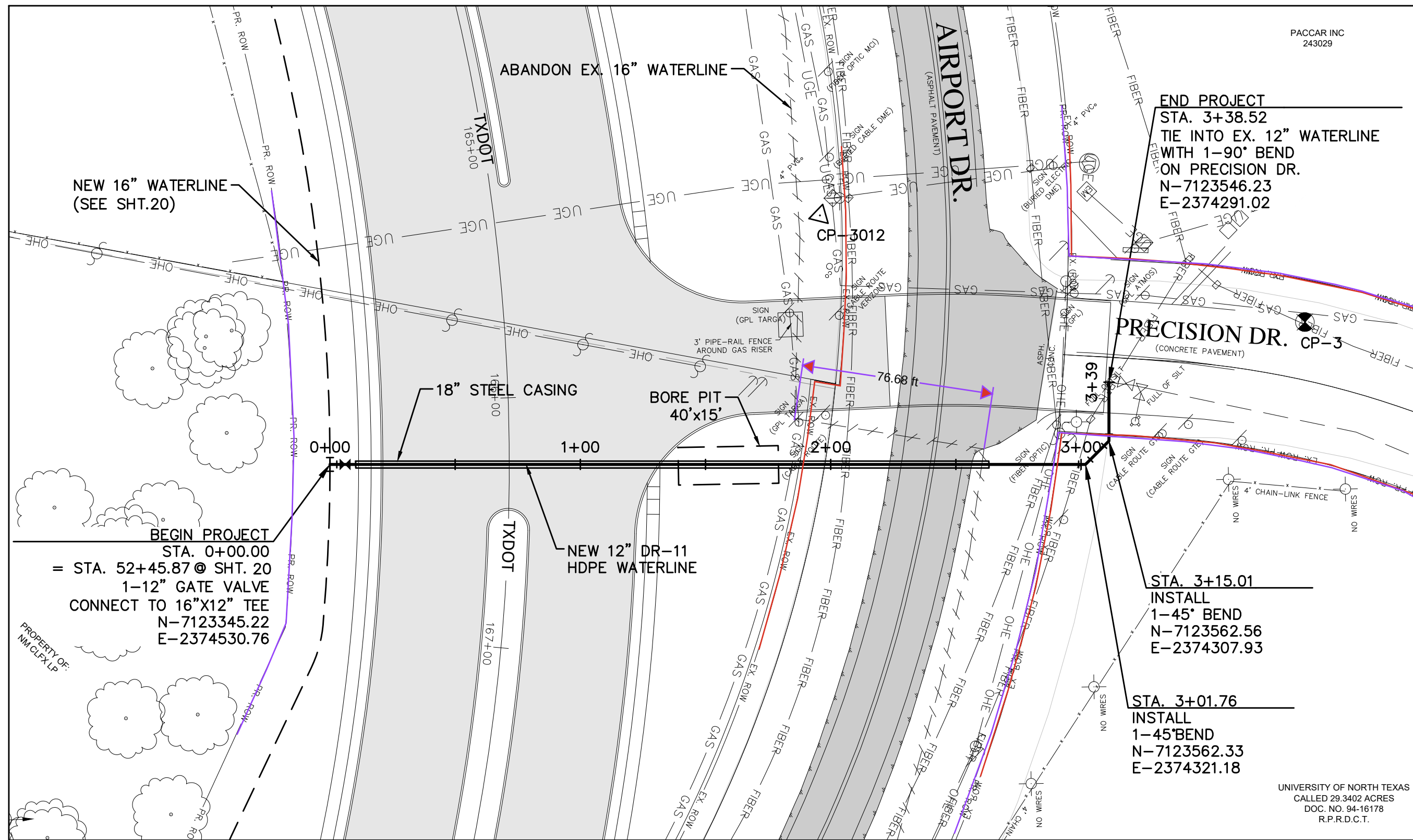
DATE
NOV. 2024

SHEET No.
25 of 37

SCALE

HOR 1"= 40'

VER 1"= 4'



SYMBOL LEGEND

	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

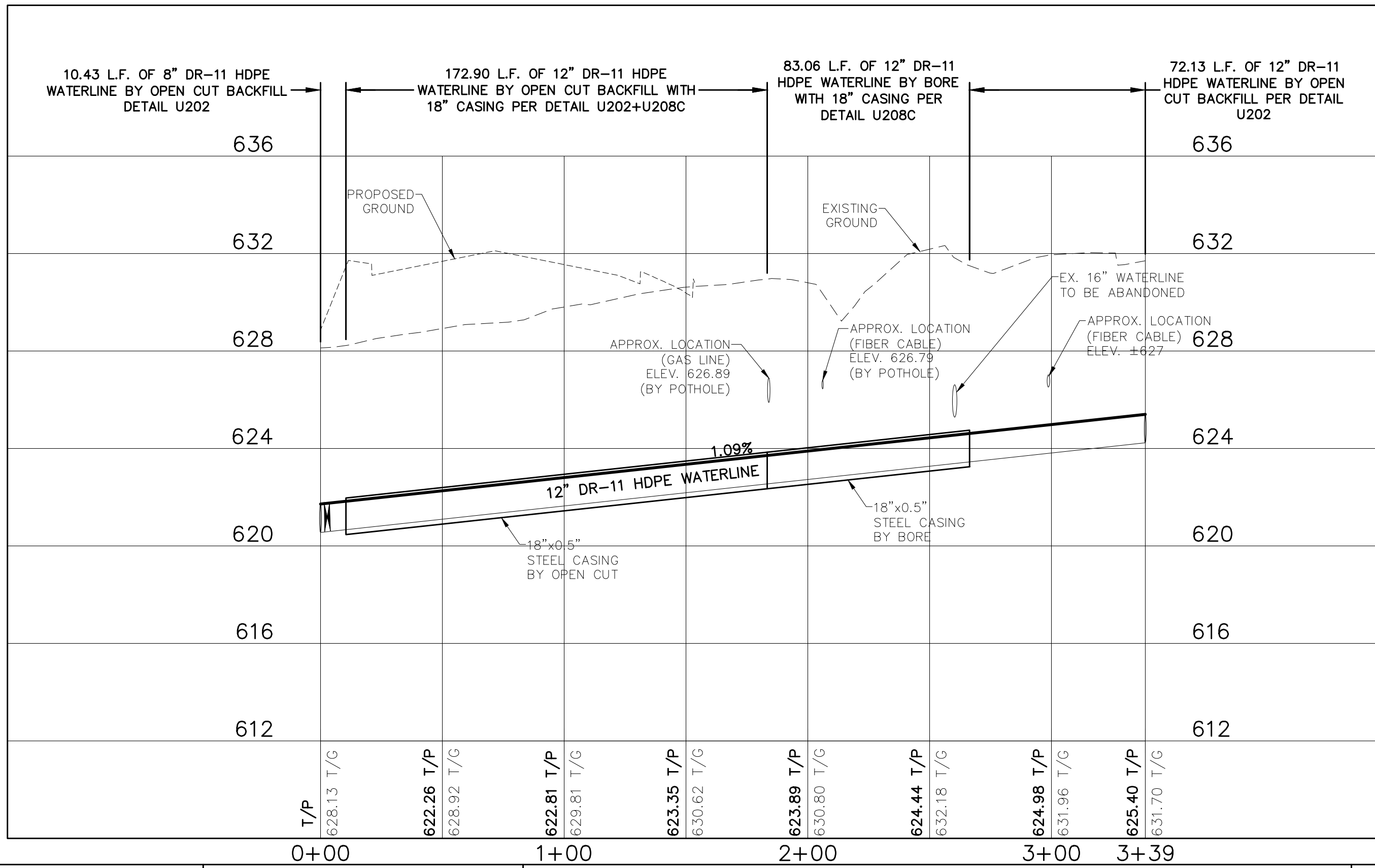
	EXISTING STREET
	PROPOSED STREET

CONTROL POINTS:

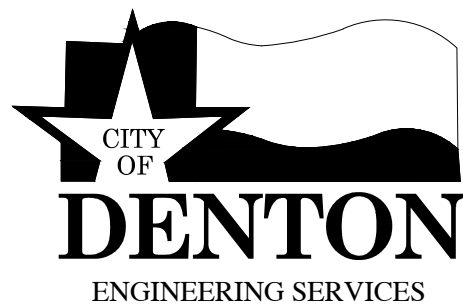
CP-3012
N=7123416.902
E=2374323.263
ELEV.=630.593

NOTES:

- FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401.
- VPI's WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
- ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
- ALL TEES ARE MxFLG UNLESS OTHERWISE NOTED ON THE PLANS.



ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		



FM 1515 UTILITY RELOCATIONS

12" WATERLINE CROSSING - WL4

STA 0+00 TO STA 3+38.53

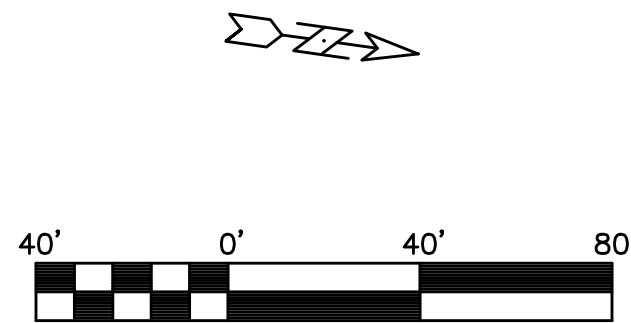
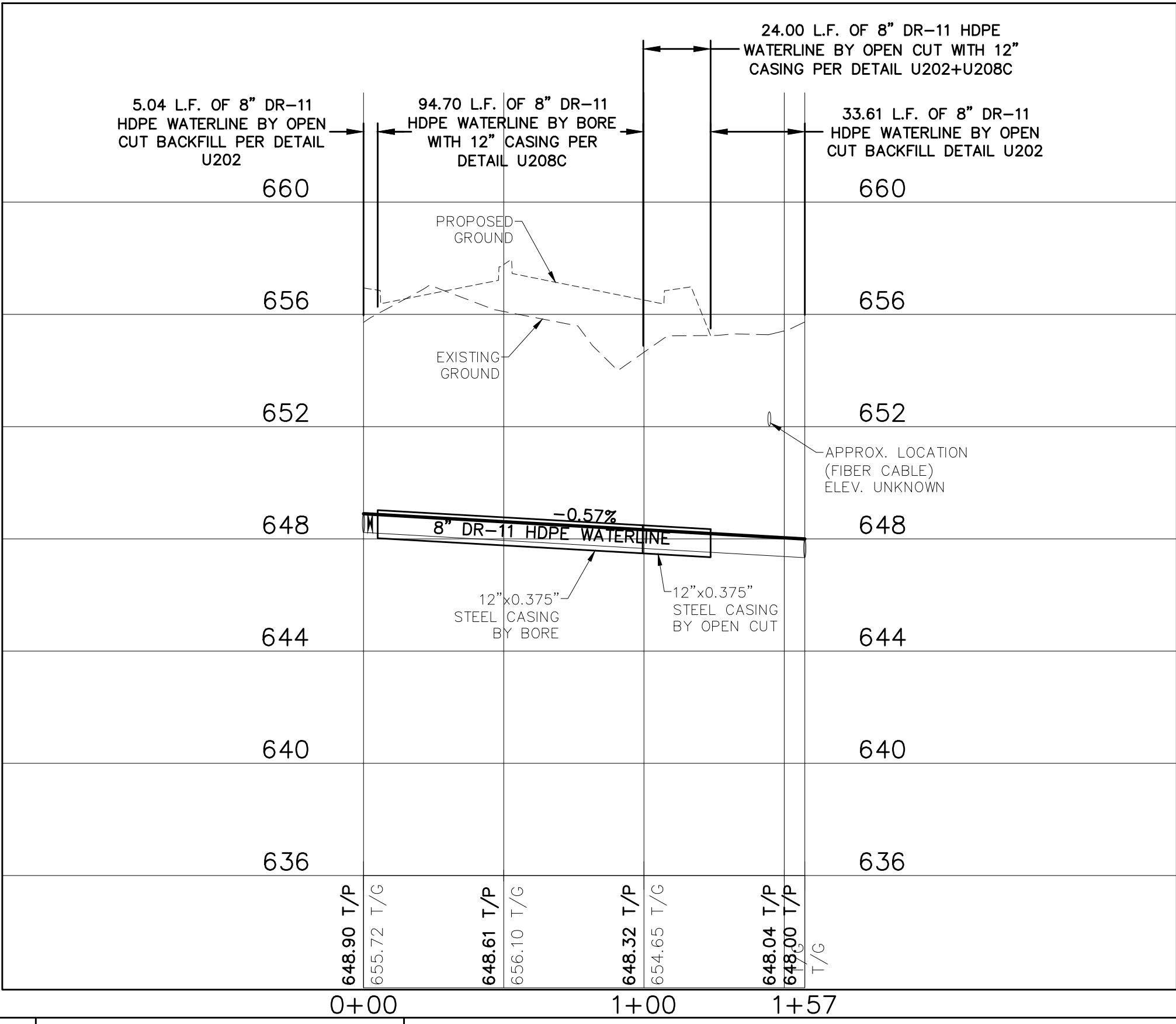
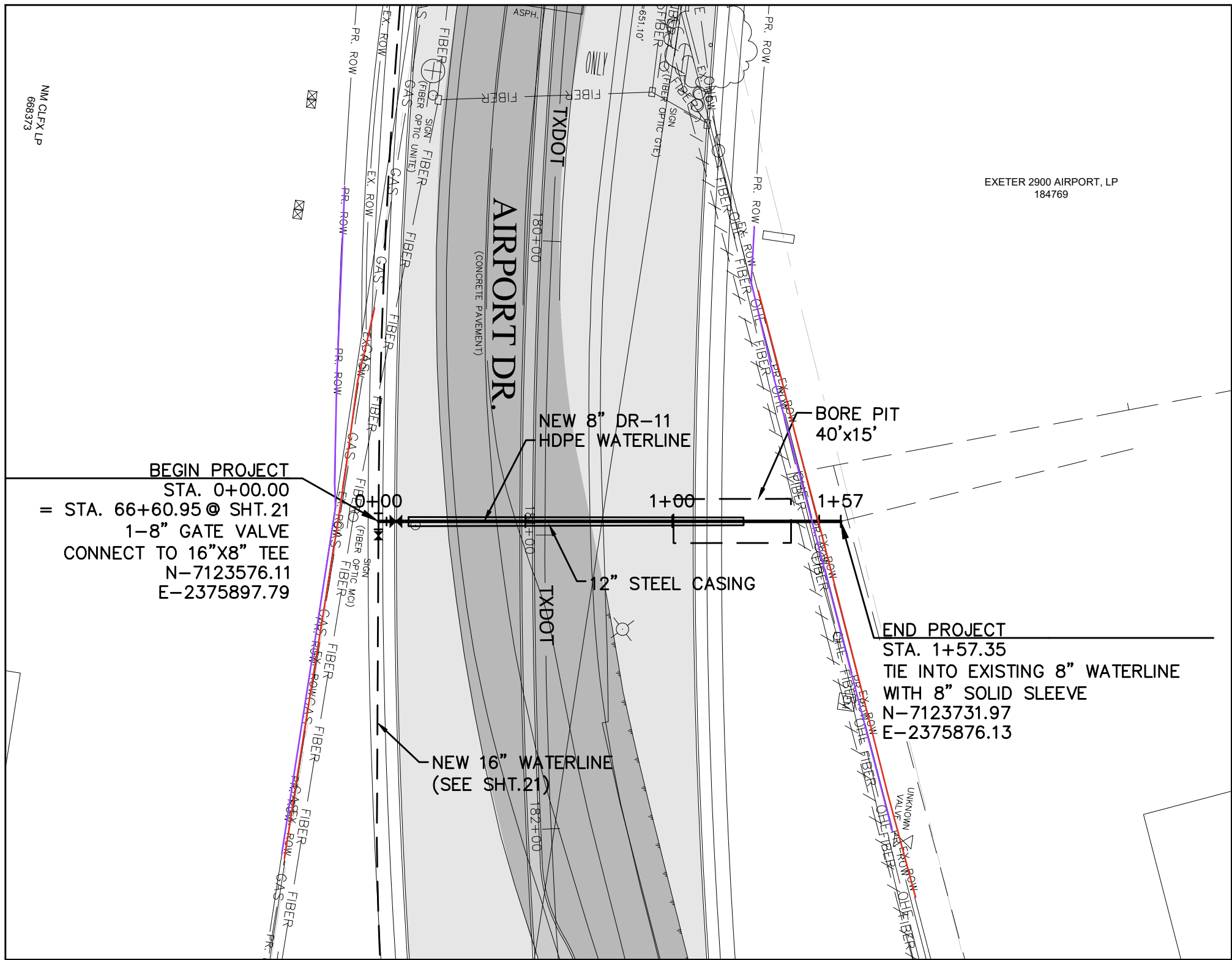
DATE
NOV. 2024

SHEET No.
26 of 37

SCALE

HOR 1"= 40'

VER 1"= 4'

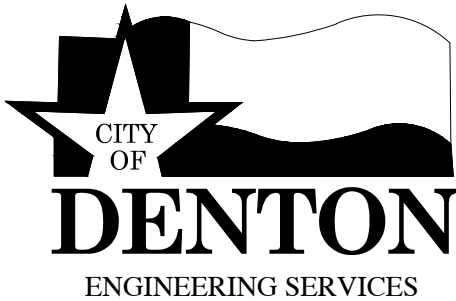


SYMBOL LEGEND	
	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

	EXISTING STREET
	PROPOSED STREET

- NOTES:
- FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401.
 - VPI's WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
 - ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
 - ALL TEES ARE MJxFLG UNLESS OTHERWISE NOTED ON THE PLANS.

ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		



FM 1515 UTILITY RELOCATIONS

8" WATERLINE CROSSING - WL5

STA 0+00 TO STA 1+57.35

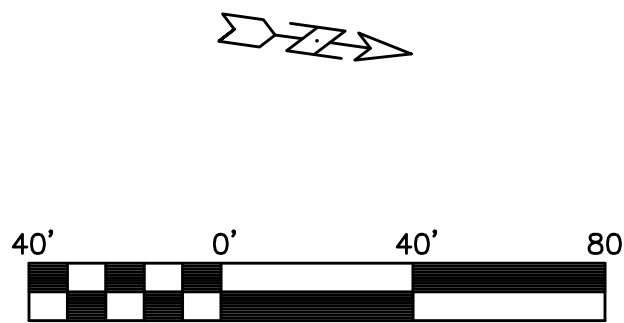
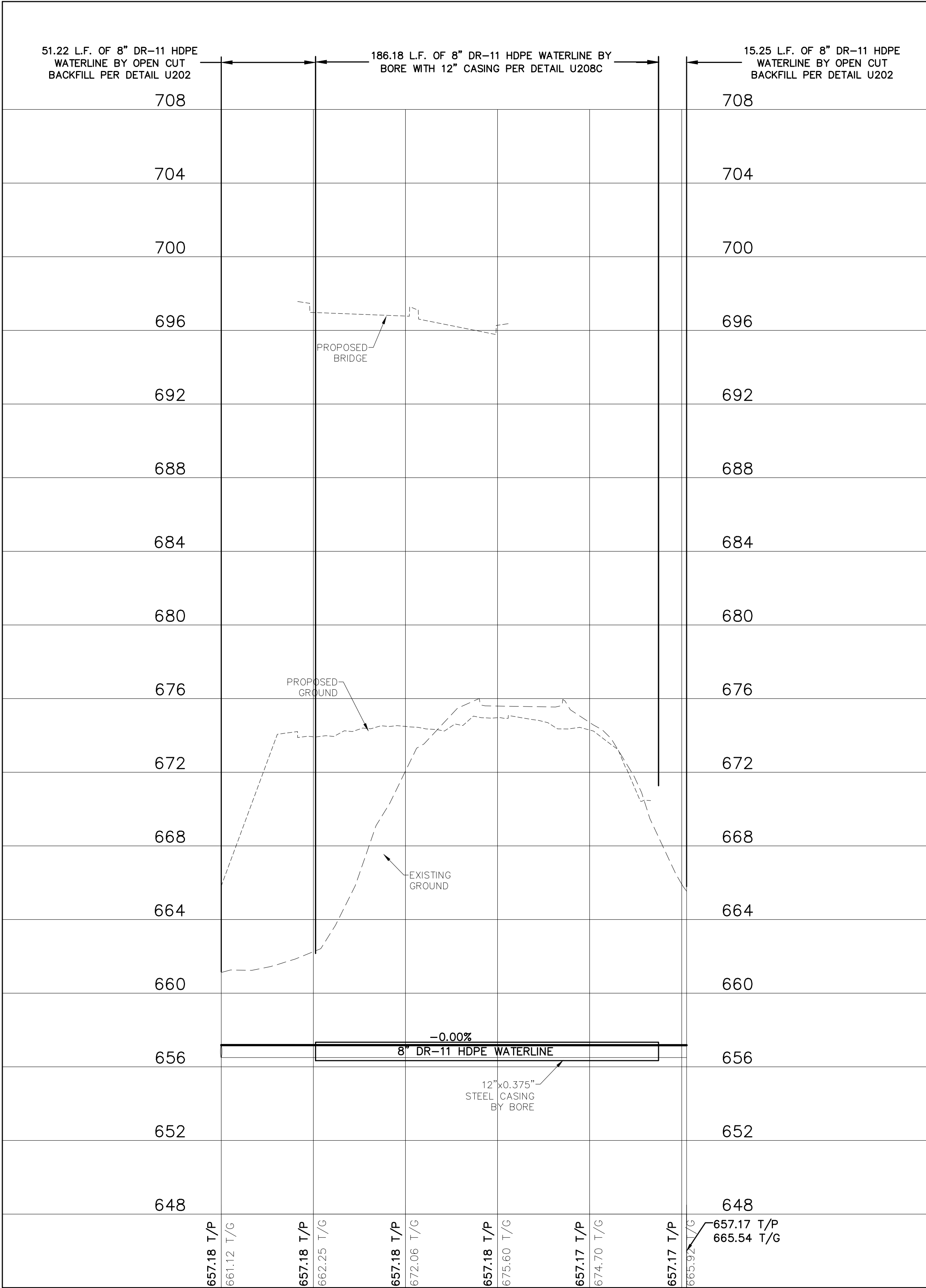
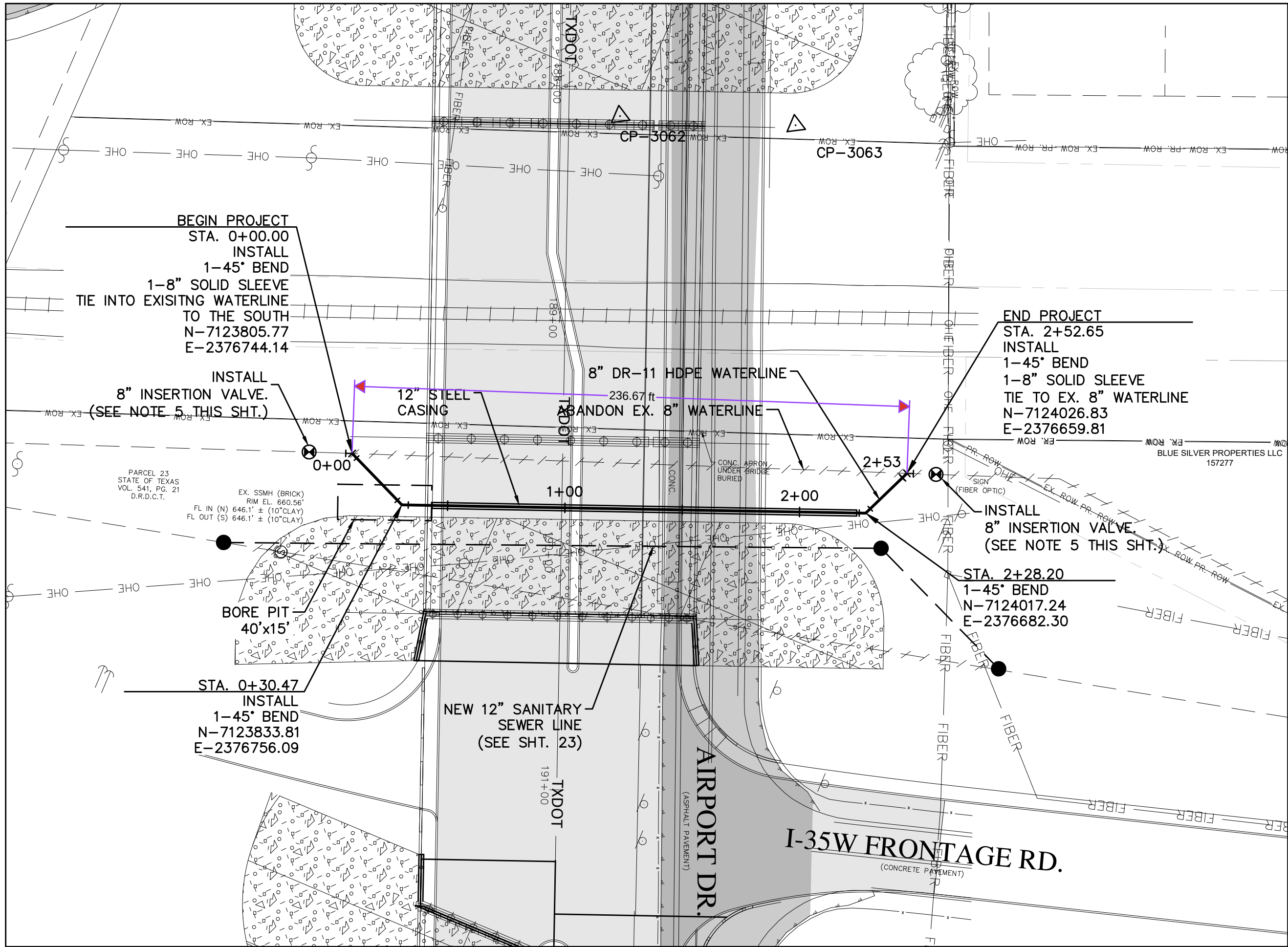
DATE
NOV. 2024

SHEET No.
27 of 37

SCALE

HOR 1"= 40'

VER 1"= 4'



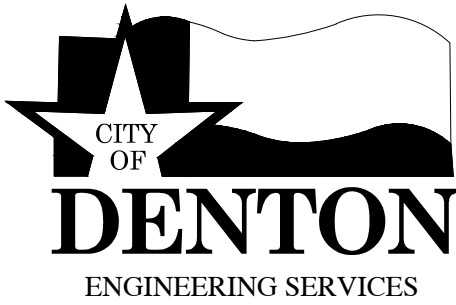
SYMBOL LEGEND	
	AUTO SPRINKLER
	BENCHMARK
	BOLLARD
	CONTROL POINT
	ELECTRIC PULL BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS METER
	GAS TEST STATION
	GAS VALVE
	GUY WIRE
	IRRIGATION CONTROL
	SANITARY SEWER MANHOLE
	POWER POLE
	SIGN/UTILITY MARKER
	SPRINKLER
	STORM DRAIN MANHOLE
	TELEPHONE PEDESTAL
	TELEPHONE MANHOLE
	TELEPHONE HAND HOLE
	TREE
	WATER VALVE
	WATER METER
	WATER VAULT
	WATER MANHOLE

	EXISTING STREET
	PROPOSED STREET

CONTROL POINTS:		
CP-3062	N-7123854.838	CP-3063
E-2376567.173	ELEV.-672.208	N-7123925.267
		E-2376541.613
		ELEV.-671.963

- NOTES:
- FIRE HYDRANT SHALL BE INSTALLED BETWEEN PROPOSED B.O.C. AND THE PROPOSED SIDEWALK PER DETAIL W401.
 - VPI's WITH A TOTAL GRADE CHANGE THAT IS LESS THAN 41% (22.5' BEND) MAY BE MADE BY BENDING THE PIPE INSTEAD OF THE USE OF A FITTING. MINIMUM BENDING RADIUS FOR HDPE PIPE IS (50) FEET.
 - ALL ABANDONED VALVES SHALL HAVE THE VALVE STACK REMOVED AND APPROPRIATE SURFACE RESTORATION MADE.
 - ALL TEES ARE MxFLG UNLESS OTHERWISE NOTED ON THE PLANS.
 - CONTRACTOR SHALL COORDINATE WITH COD WATER UTILITIES DEPARTMENT PRIOR TO ACQUIRING OR INSTALLING INSERTION VALVES. IF THE CITY CAN ISOLATE THE WATER LINE WITH EXISTING VALVES CLOSURES THE ISOLATION VALVES WILL NOT BE USED.

ENTERED BY	M.S.	PROJECT #	630511523
DESIGNED BY	M.S.	DATE	REVISION
CHECKED BY	J.W.		
PROJ. ENGR.	J.W.		
PATH	S:\WATER ENGINEERING\ENGR\DESIGN\PROJECTS\FM1515\DESIGN\FM 1515 UTILITIES RELOCATING.DWG		



FM 1515 UTILITY RELOCATIONS

8" WATERLINE CROSSING -WL6
STA 0+00 TO STA 2+52.65

DATE
NOV. 2024
SHEET No.
28 of 37

SCALE
HOR 1"= 40'
VER 1"= 4'

METER VAULT INSTALLATION NOTES:
1. PIPE, METER SIZE AND VAULT SHALL BE APPROVED BY THE WATER UTILITIES DEPARTMENT DURING REVIEW PROCESS.
2. PREFABRICATED OR POURED IN PLACE VAULTS SHALL HAVE PRE CAST-CLASS H OR POURED-CLASS S CONCRETE, REINFORCED WITH MINIMUM #4 O.C.E.W.
3. METER VAULT MUST BE LOCATED BEHIND CURB AND OUT OF VEHICLE/PEDESTRIAN TRAFFIC, IN THE WATER UTILITY EASEMENT OR PUBLIC R.O.W. AREA MUST ACCOMMODATE A MINIMUM 30" BEYOND EACH SIDE OF THE VAULT. METER VAULT TO BE PLACED IN A PROTECTED GRASSY AREA.
4. MAINLINE AND BYPASS VALVES WILL BE RESILIENT SEAT TYPE WITH CORROSION RESISTANT FUSION BONDED EPOXY COATING INSIDE AND OUT, NON-RISING STEM. ALL VALVES IN THE VAULT WILL HAVE HANDWHEELS. CUSTOMER VALVES SHALL BE LOCATED OUTSIDE OF VAULT AND EASEMENTS. ALL VALVES SHALL BE RIGHT-HAND TURN CLOSE.
5. ALL METERS SHALL BE INSTALLED WITH A REGISTER THAT ALLOWS TOUCH PADS TO BE INSTALLED ON THE LID FOR READING PURPOSES. ALL METERS SHALL BE INSTALLED WITH STRAINERS ON THE INLET SIDE OF THE METER.
6. HATCH OPENING WILL BE 3" ALUMINUM DIAMOND PLATE COVER WITH EXTRUDED ALUMINUM FRAME. HATCH TO BE FURNISHED WITH TYPE 316 STAINLESS STEEL SNAP AND LOCK WITH BRASS HINGES.
7. ALL VAULTS OVER 4 FT. IN DEPTH SHALL HAVE A LADDER INSTALLED AND SECURED TO THE VAULT WALL AT HATCH ENTRY.
8. VAULT BEDDING SHALL BE GRADE 4 STANDARD CRUSHED AGGREGATE, 1 IN. SIEVE.
9. THE TOP OF METER VAULT SHALL BE SET AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT.
10. FOR WATER METER VAULT INSTALLATIONS WHERE THE METER IS NOT EQUIPPED WITH AN INTEGRAL TEST PORT, A SEPARATE SPOOL PIECE WILL BE PROVIDED BETWEEN THE METER AND THE DOWNSTREAM GATE VALVE. THE SPOOL PIECE WILL BE EQUIPPED WITH A TEST PORT AND THREADED BRASS PLUG SIZED PER THE MANUFACTURER'S REQUIREMENTS OR AS FOLLOWS.
11. WHERE NOT SPECIFICALLY NOTED, ALL FLANGED PIPE SHALL BE DUCTILE IRON PIPE WITH DUCTILE IRON FLANGES THREADED ON.
12. ALL METER LEADS FOR METERS 3" AND LARGER SHALL HAVE AN ISOLATION VALVE RESTRAINED TO THE MAINLINE AT THE TEE OR TAPPING SLEEVE.
13. FOR METERS WITH AN INTEGRAL TEST PORT, BRASS SAMPLING PIPE SIZE SHALL MATCH THE TEST PORT SIZE. IF THE TEST PORT IS ON THE SIDE OF THE METER, THE SAMPLING PIPE SHALL CONSIST OF (1) 4" LONG THREADED 90° BEND, (1) 6" LONG THREADED NIPPLE AND (1) BALL VALVE OF THE APPROPRIATE SIZE. IF THE TEST PORT IS ON THE TOP OF THE METER, THE SAMPLING PIPE SHALL CONSIST OF (1) 6" LONG THREADED NIPPLE AND (1) BALL VALVE OF THE APPROPRIATE SIZE.
14. FOR METERS WITHOUT AN INTEGRAL TEST PORT, THE SAMPLING PIPE SHALL EXTEND FROM THE TOP OF THE TEST PORT SPOOL PIECE WITH (1) 6" LONG NIPPLE AND (1) BALL VALVE OF THE APPROPRIATE SIZE.

METER SIZE	TEST PORT
3"	1 1/4"
4"	2"
5-6"	3"

PLAN VIEW

ELEVATION

VAULT DIMENSIONS

L	W	H
8'-0"	5'-6"	4'-0"

3" AND 4" METER VAULTS

W100

PLAN VIEW

ELEVATION

VAULT DIMENSION

L	W	H
11'-0"	7'-0"	4'-0"

6" METER VAULT

W101

PLAN VIEW

ELEVATION

VAULT DIMENSIONS

L	W	H
15'-0"	7'-0"	6'-0"

6" AND 8" FIRE SERVICE METER VAULTS

W103

PLAN VIEW

SECTION A-A

VAULT CONSTRUCTION

VERTICAL GATE VALVE

24" AND LARGER

W104

PLAN

PROFILE

VAULT CONSTRUCTION

HORIZONTAL GATE VALVE

24" AND LARGER

W106A

PLAN

PROFILE

VAULT CONSTRUCTION

VERTICAL GATE VALVE

24" AND LARGER

W105

PLAN

PROFILE

VAULT CONSTRUCTION

HORIZONTAL GATE VALVE

24" AND LARGER

W106B

ENTERED BY

DESIGNED BY

CHECKED BY

PROJ. ENGR.

PATH S:\water Engineering\Engr\Design\Standard Details\water details\Water Details Sheet 1-3.dwg

PROJECT #

DATE

REVISION

CITY OF DENTON

ENGINEERING SERVICES

STANDARD DETAILS

WATER DETAILS

DATE NOV. 2023

SHEET No. 29 of 37

SCALE

HOR 1"= N.T.S.

VER 1"= N/A

CERTIFICATION:

THIS CITY OF DENTON STANDARD

DETAIL SHEET IS AUTHORIZED FOR

USE IN THIS PROJECT BY THE

ENGINEER WHOSE SEAL APPEARS

HEREON, AND WHO CERTIFIES THE

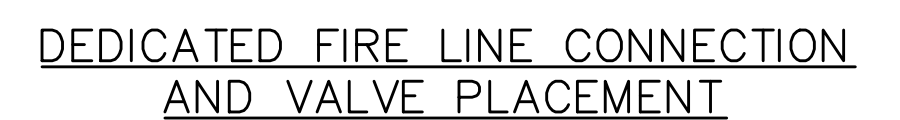
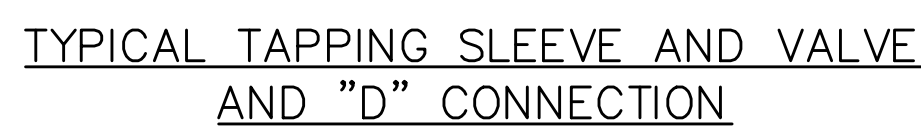
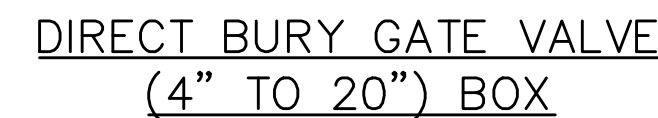
CONTENT OF THE DETAILS AND NOTES

HEREIN HAVE NOT BEEN ALTERED

AND ASSUMES RESPONSIBILITY FOR

APPROPRIATE USE OF THE

STANDARDS WITHIN THIS SHEET.

The logo for the City of Denton Engineering Services. It features a stylized blue star with a white outline. Inside the star, the words "CITY OF" are written in white, and "DENTON" is written in large, bold, blue letters. Below "DENTON", the words "ENGINEERING SERVICES" are written in a smaller, blue, sans-serif font. A red wavy line is positioned behind the star and the word "DENTON".

STANDARD DETAILS

WATER DETAILS

DATE
NOV. 2023

SHEET No.
30 of 37

SCALE

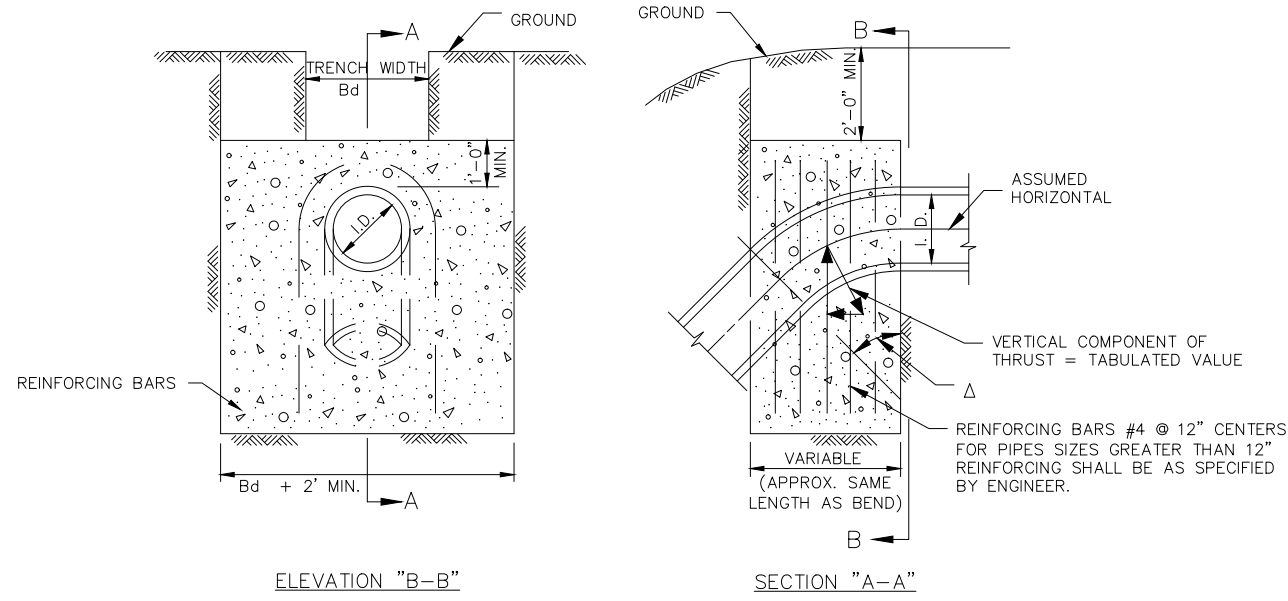
HOR 1"= N.T.S.

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CERTIFICATION:
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DETAIL SHEET IS AUTHORIZED FOR
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HEREON, AND WHO CERTIFIES THE
CONTENT OF THE DETAILS AND NOTES
HEREIN HAVE NOT BEEN ALTERED
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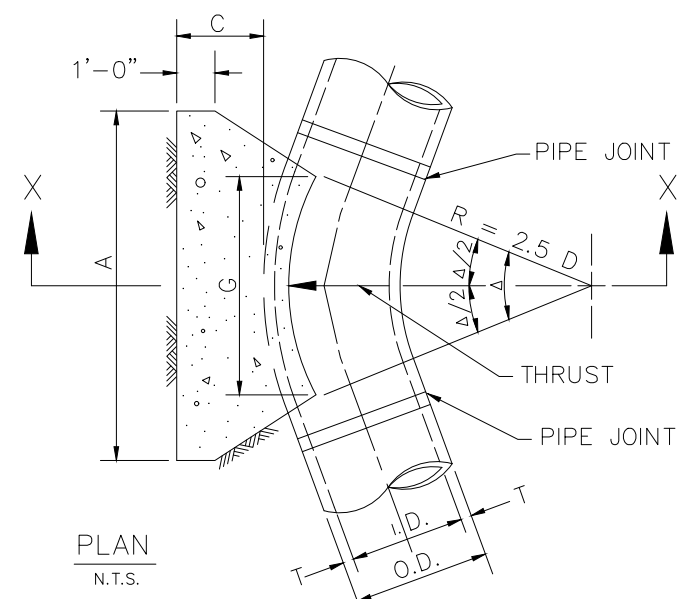
GENERAL NOTES FOR ALL THRUST BLOCKS:

1. RESTRAINED JOINTS SHALL BE REQUIRED FOR ALL WATER MAINS 16" AND LARGER. JOINT RESTRAINT SHALL BE DESIGNED TO ACCOMMODATE THE ENTIRE DESIGN LOAD AS INDICATED IN THE APPLICABLE PIPE MATERIAL SPECIFICATION. THRUST BLOCKING SHALL BE PROVIDED ON ALL FITTINGS AND DEAD-ENDS FOR PIPE 24" AND SMALLER.
2. CONCRETE FOR BLOCKING SHALL BE CLASS B.
3. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 PSI FOR DUCTILE IRON, P.V.C., AND 150 PSI FOR CONCRETE PIPE.
4. VOLUMES OF THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE (CLASS B) IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THE THRUST ON THE VERTICAL BEND.
5. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
6. THE SOIL BEARING PRESSURES ARE BASED ON 1,000 LBS./S.F. IN SOIL AND 2,000 LBS./S.F. IN ROCK.
7. POUR CONCRETE FOR BLOCK AGAINST UNDISTURBED EARTH.
8. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS AND AS DIRECTED BY THE CITY. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.
9. USE POLYETHYLENE WRAP OR EQUAL AS BOND BREAKER BETWEEN CONCRETE AND BEND, TEE, OR PLUG.
10. CONCRETE SHALL NOT EXTEND BEYOND JOINTS.



		11.25°		22.50°		30°		45°		67.50°		90°		Δ	
I.D. (IN.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	I.D. (IN.)
4.6,8	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5	4.6,8	1.0	
10,12	2.2	1.1	4.3	2.2	5.7	2.8	8.0	4.0	10.5	5.2	11.3	5.7	10,12	2.2	
16,18	5.0	2.5	9.7	4.9	12.7	6.4	18.0	9.0	23.5	11.8	25.5	12.7	16,18	5.0	
20	6.1	3.1	12.0	6.0	15.7	7.9	22.2	11.1	29.2	14.5	31.4	15.7	20	6.1	
24	8.2	4.4	17.3	8.7	22.6	11.3	32.0	16.0	41.8	20.9	45.2	22.6	24	8.2	

- NOTES:
1. EXTEND CONCRETE THRUST BLOCK HORIZONTALLY INTO UNDISTURBED SOIL 2' MIN. ON EACH SIDE.
 2. HORIZONTAL EXTENSION OF THRUST BLOCK MAY REQUIRE ADDITIONAL STEEL REINFORCEMENT. DETERMINATION TO BE MADE BY CITY ENGINEERING STAFF.



Δ = 11.25°										Δ = 22.50°											
I.D. (IN.)	G (T)	THRUST (TONS)	EARTH				ROCK				I.D. (IN.)	G (T)	THRUST (TONS)	EARTH				ROCK			
			A (F)	B (F)	VOL. (C.Y.)	A (F)	B (F)	VOL. (C.Y.)	A (F)	B (F)				VOL. (C.Y.)	A (F)	B (F)	VOL. (C.Y.)	A (F)	B (F)	VOL. (C.Y.)	
4.6,8	0.4	1.0	1.0	1.0	0.1	0.1	0.1	0.1	4.6,8	0.8	2.0	1.5	1.5	0.1	1.0	1.0	1.0	1.0	0.1		
10,12	0.6	2.2	1.5	1.5	0.1	1.0	1.5	0.1	10,12	1.1	4.4	2.0	2.5	0.3	1.5	1.5	1.5	1.5	0.1		
16,18	0.8	5.0	2.0	2.5	0.3	1.5	2.0	0.2	16,18	1.6	9.9	3.0	3.5	0.6	2.0	2.5	3.0	3.5	0.3		
20	0.9	6.2	2.0	3.5	0.4	1.5	3.0	0.3	20	1.8	12.3	3.5	3.5	0.7	2.0	3.0	3.0	3.5	0.4		
24	1.1	8.9	3.0	3.5	0.5	1.5	3.0	0.3	24	2.2	17.7	4.0	4.5	1.0	3.0	3.5	3.5	4.0	0.5		

Δ = 30°										Δ = 45°									
EARTH					ROCK					EARTH					ROCK				
I.D. (IN.)	G (FT)	THRUST (TONS)	A (FT)	B (FT)	VOL. (C.Y.)	I.D. (IN.)	G (FT)	THRUST (TONS)	A (FT)	B (FT)	VOL. (C.Y.)	I.D. (IN.)	G (FT)	THRUST (TONS)	A (FT)	B (FT)	VOL. (C.Y.)		
4.6,8	1.0	2.6	2.0	1.5	0.2	1.0	1.5	0.1	4.6,8	1.5	3.9	2.0	2.0	0.2	1.5	3.9	2.0	0.2	
10,12	1.5	5.9	2.5	2.5	0.3	2.0	1.5	0.2	10,12	2.2	8.7	3.5	2.5	0.5	2.0	2.5	0.3		
16,18	2.2	13.2	3.5	4.0	0.8	2.5	3.0	0.4	16,18	3.2	19.5	4.5	4.5	1.2	3.0	3.5	0.6		
20	2.4	16.3	4.5	4.0	1.0	3.0	3.0	0.5	20	3.6	24.1	5.5	4.5	1.5	3.5	3.5	0.7		
24	2.9	23.4	6.0	4.0	1.4	3.5	3.5	0.7	24	4.5	34.6	8.0	4.5	2.3	4.0	4.0	1.1		

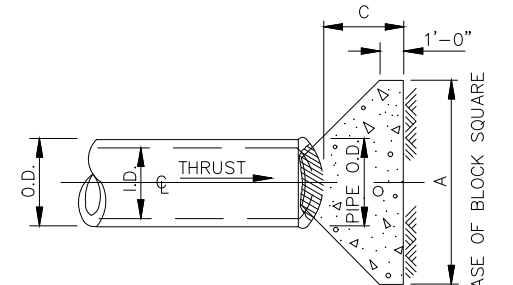
Δ	67.50°	90°	11.25°	22.50°	30°	45°	67.50°	90°	11.25°	22.50°	30°	45°	67.50°	90°
I.D. (IN.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	I.D. (IN.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	I.D. (IN.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)
4.6,8	2.1	5.6	3.0	2.0	1.5	0.2	4.6,8	2.7	7.1	5.0	1.5	0.4	2.0	0.2
10,12	3.1	12.6	5.5	2.5	0.8	3.5	2.0	0.4	10,12	4.0	16.0	6.5	2.5	1.0
16,18	4.7	28.3	7.5	4.0	1.9	5.5	3.0	0.9	16,18	6.0	36.0	9.0	4.0	2.4
20	5.2	34.9	9.0	4.0	2.3	5.5	3.5	1.2	20	6.6	44.4	10.0	4.5	3.1
24	6.2	50.3	11.5	4.5	3.5	6.0	4.0	1.6	24	7.9	64.0	14.5	4.5	5.0

THRUST BLOCK
GENERAL NOTES

VERTICAL THRUST BLOCK
AT PIPE BEND

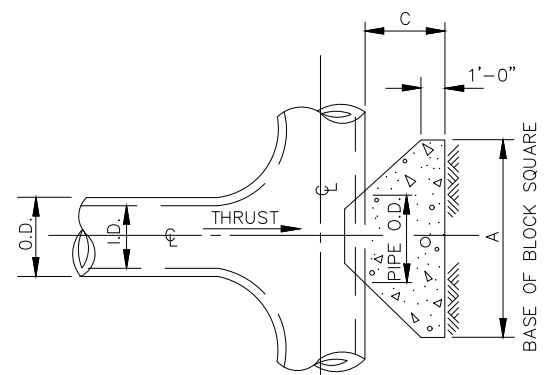
HORIZONTAL THRUST BLOCK
AT PIPE BEND

TABLES OF DIMENSIONS AND QUANTITIES



- NOTES:
1. SAME REQUIREMENTS APPLY TO ALL FIRE HYDRANT ELBOWS.

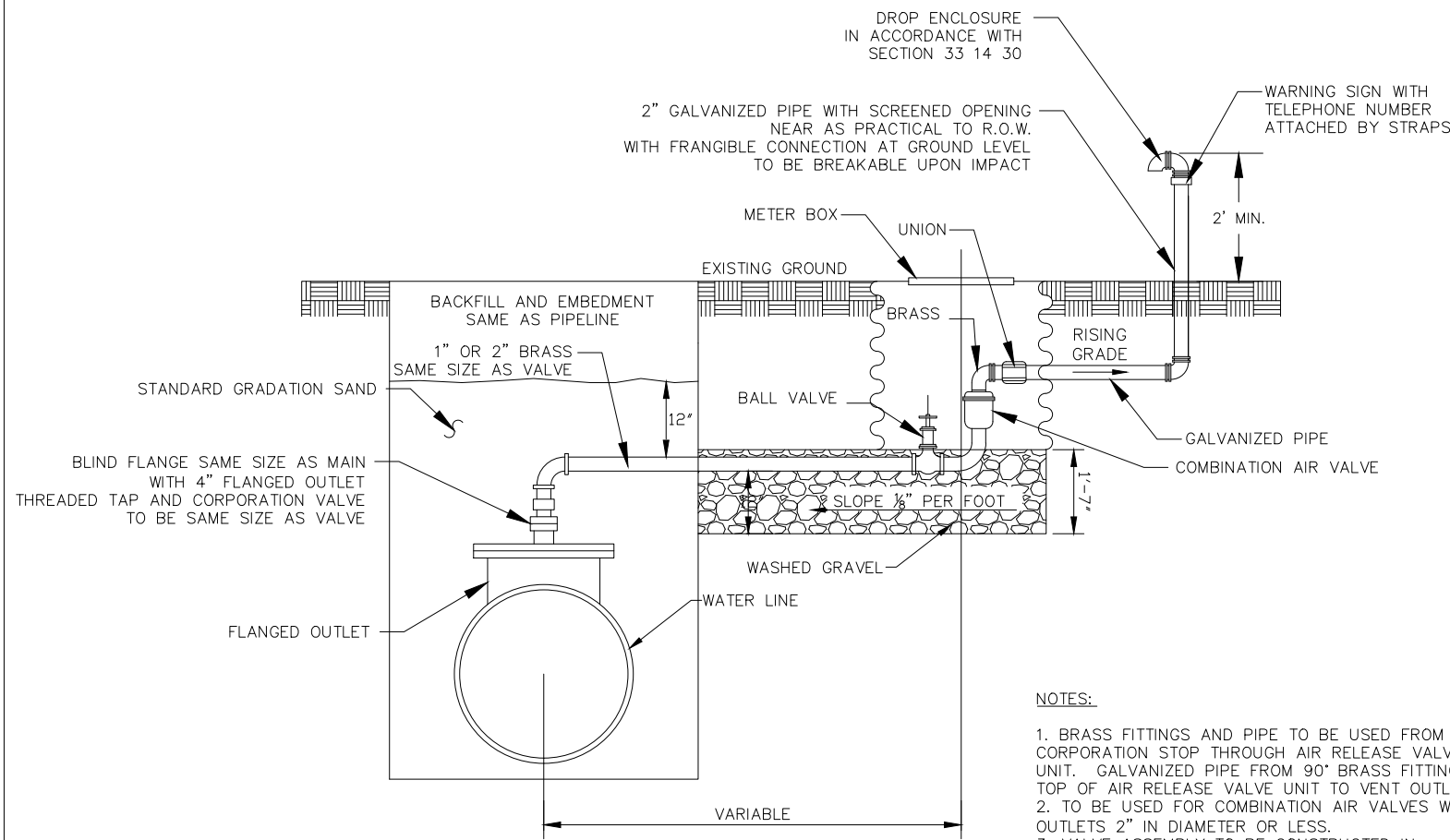
PLAN OF PLUG THRUST BLOCK



PLAN OF TEE THRUST BLOCK

EARTH					ROCK	
I.D. (IN.)	THRUST (TONS)	C (FT.)	A (FT.)	VOL. (C.Y.)	A (FT.)	VOL. (C.Y.)
4,6,8	5.1	1.5	2.5	0.3	2.0	0.2
10,12	11.3	1.5	3.5	0.6	2.5	0.3
16,18	25.5	2.0	5.5	1.6	4.0	0.9
20	31.5	2.0	6.0	1.9	4.0	0.9
24	45.2	2.5	7.0	3.1	5.0	1.7

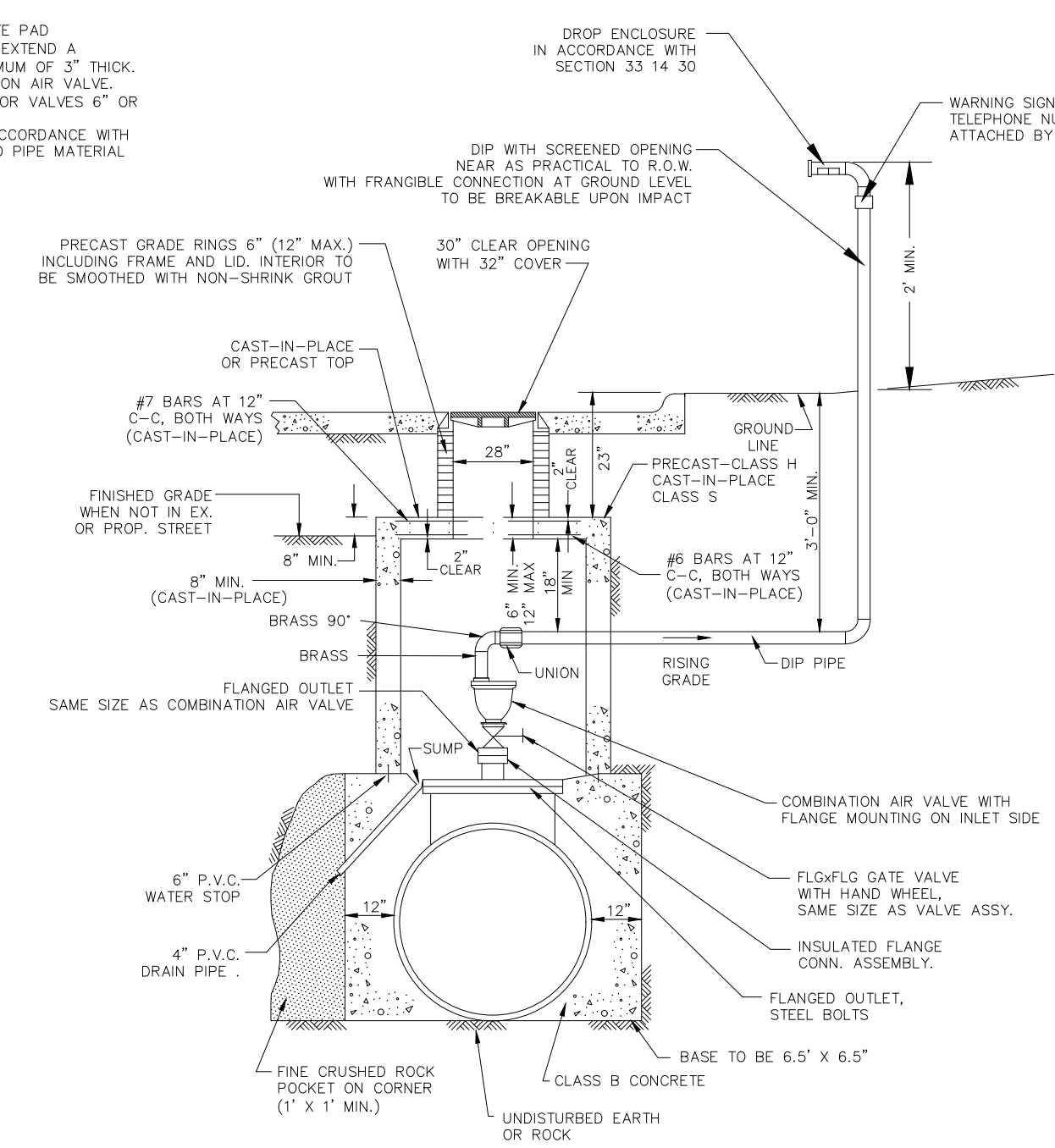
HORIZONTAL THRUST BLOCK
AT TEES AND PLUGS



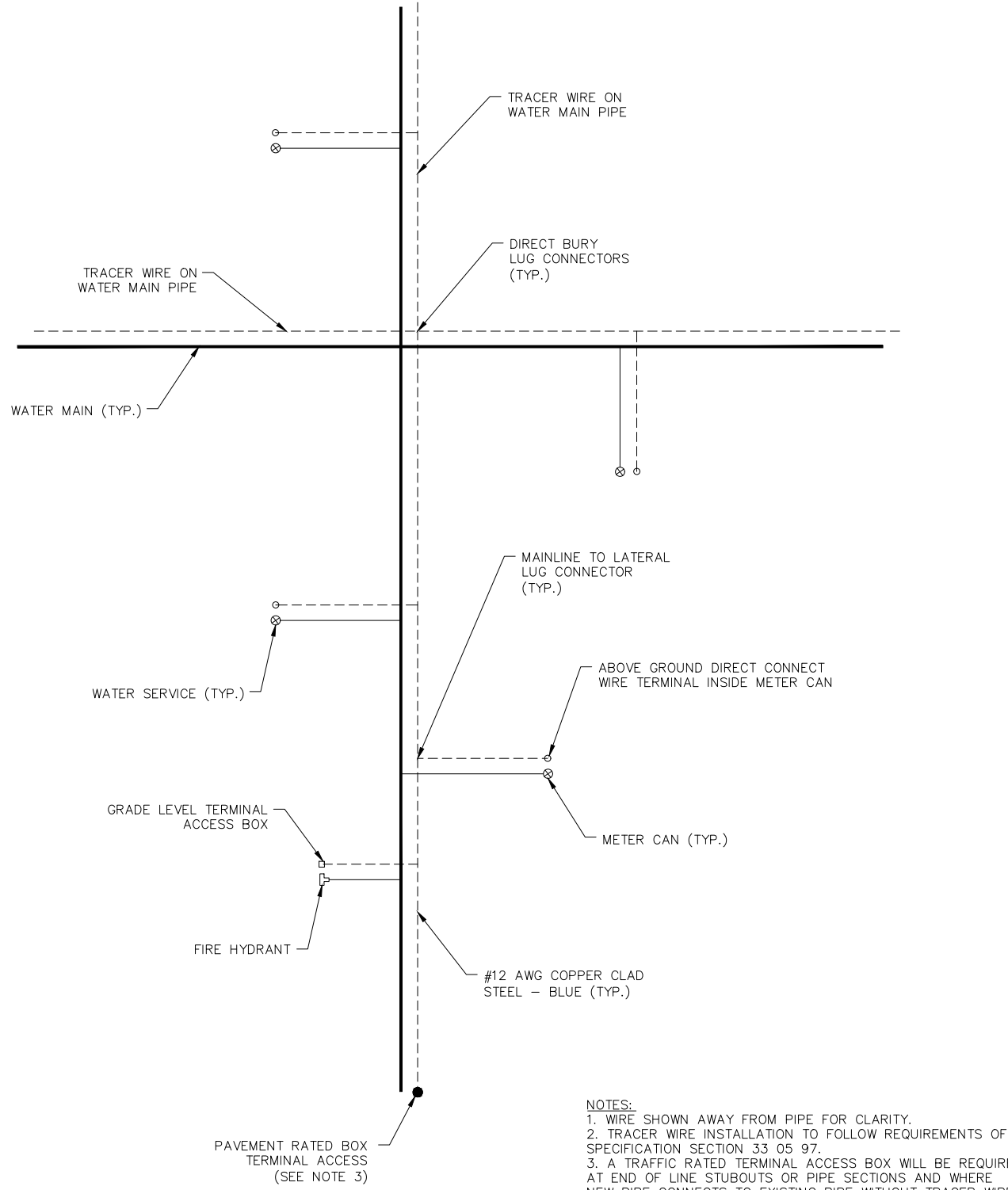
- NOTES:
1. BRASS FITTINGS AND PIPE TO BE USED FROM CORPORATION STOP THROUGH AIR RELEASE VALVE UNIT. GALVANIZED PIPE FROM 90° BRASS FITTING ON TOP OF AIR RELEASE VALVE UNIT TO VENT OUTLET.
 2. TO BE USED FOR COMBINATION AIR VALVES WITH OUTLETS 2" IN DIAMETER OR LESS.
 3. VALVE ASSEMBLY TO BE CONSTRUCTED IN ACCORDANCE WITH PROVISIONS OF THE CITY OF DENTON SPEC. SECTION 33 14 30.

COMBINATION AIR VALVE
ASSEMBLIES 1" AND 2"

- NOTES:
1. WHEN NOT IN PAVING OR WALK, A CLASS B CONCRETE PAD REINFORCED WITH #4 BARS AT 12" C-C EACH WAY SHALL EXTEND A MINIMUM OF 2' AROUND THE M.H. AND SHALL BE A MINIMUM OF 3" THICK.
 2. VENT PIPE SIZE TO EQUAL OUTLET SIZE OF COMBINATION AIR VALVE.
 3. MINIMUM M.H. DIA. TO BE 6" 7" DIA. M.H. REQUIRED FOR VALVES 6" OR GREATER.
 4. FLANGED CONNECTION TO WATER PIPE SHALL BE IN ACCORDANCE WITH CITY OF DENTON SPEC. SECTION 13 14 30 ACCORDING TO PIPE MATERIAL TYPE.



COMBINATION AIR VALVE
ASSEMBLIES 3" AND LARGER



- NOTES:
1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY.
 2. TRACER WIRE INSTALLATION TO FOLLOW REQUIREMENTS OF SPECIFICATION SECTION 33 05 97.
 3. A TRAFFIC RATED TERMINAL ACCESS BOX WILL BE REQUIRED AT END OF LINE STUBOUTS OR PIPE SECTIONS AND WHERE NEW PIPE CONNECTS TO EXISTING PIPE WITHOUT TRACER WIRE.

TRACER WIRE
TYPICAL WATER PLAN

ENTERED BY	PROJECT #	DATE	REVISION
DESIGNED BY			
CHECKED BY			
PROJ. ENGR.			
PATH	S:\Water Engineering\Engr\Design\Standard Details\water details\Water Details Sheet 1-3.dwg		



STANDARD DETAILS
WATER DETAILS

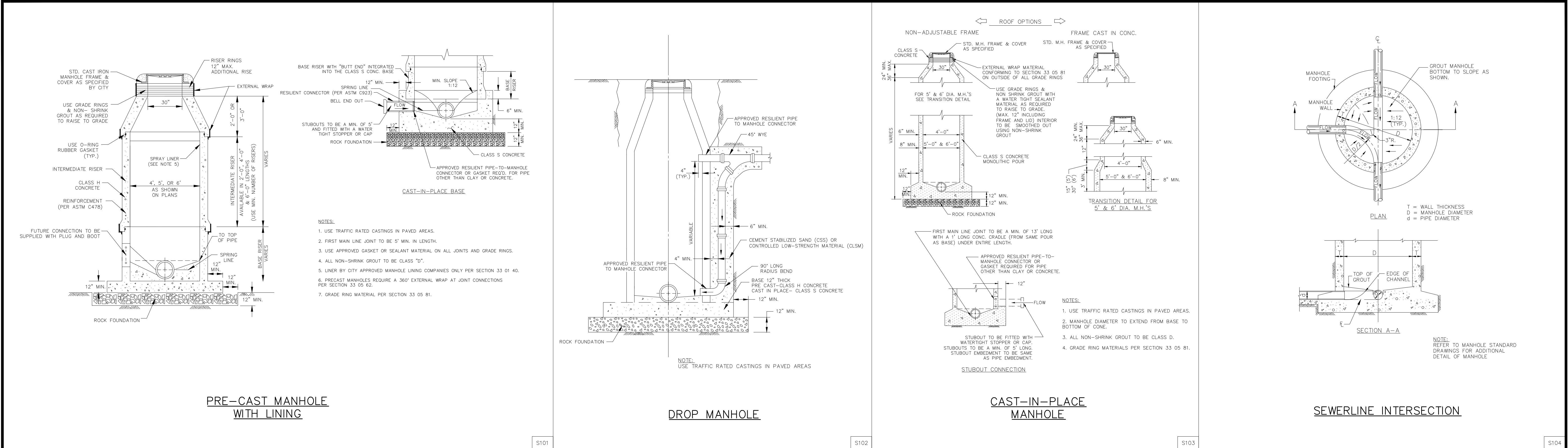
DATE
NOV. 2023

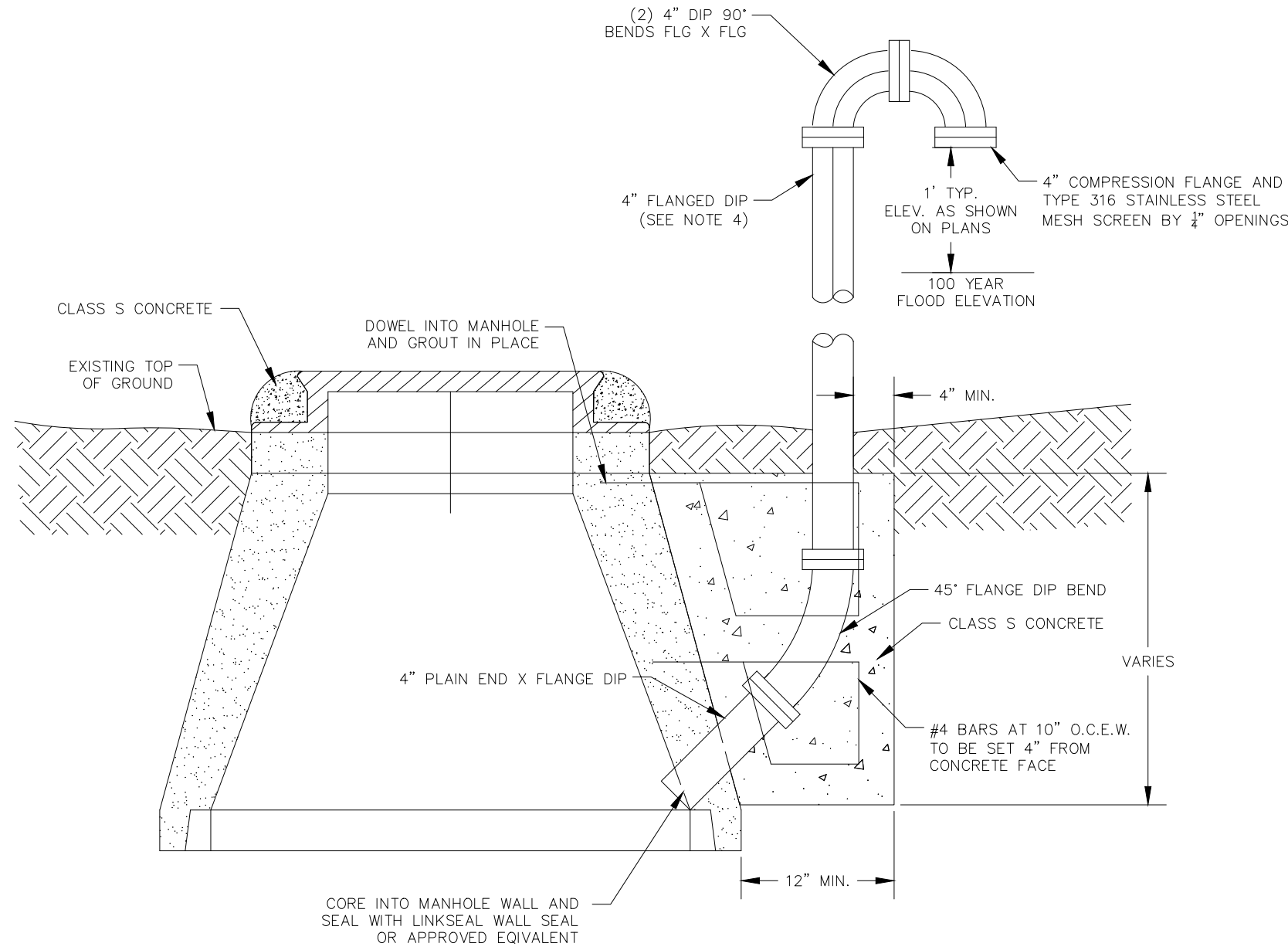
SHEET No.
31 of 37

SCALE

HOR 1"= N.T.S.
VER 1"= N/A

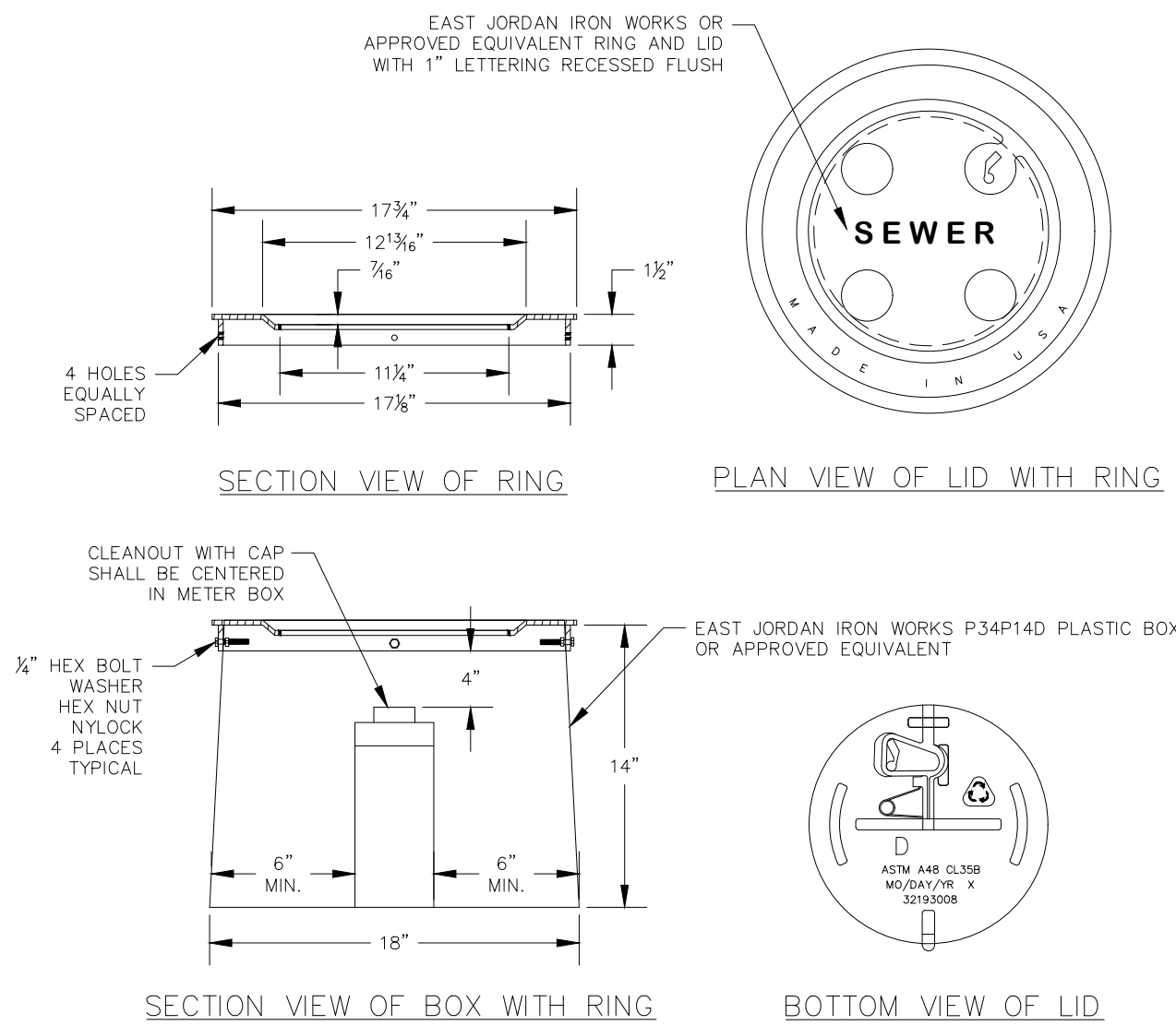
CERTIFICATION:
THIS CITY OF DENTON STANDARD
DETAIL SHEET IS AUTHORIZED FOR
USE IN THIS PROJECT BY THE
ENGINEER WHOSE SEAL APPEARS
HEREON, AND WHO CERTIFIES THE
CONTENT OF THE DETAILS AND NOTES
HEREIN HAVE NOT BEEN ALTERED
AND ASSUMES RESPONSIBILITY FOR
APPROPRIATE USE OF THE
STANDARDS WITHIN THIS SHEET.



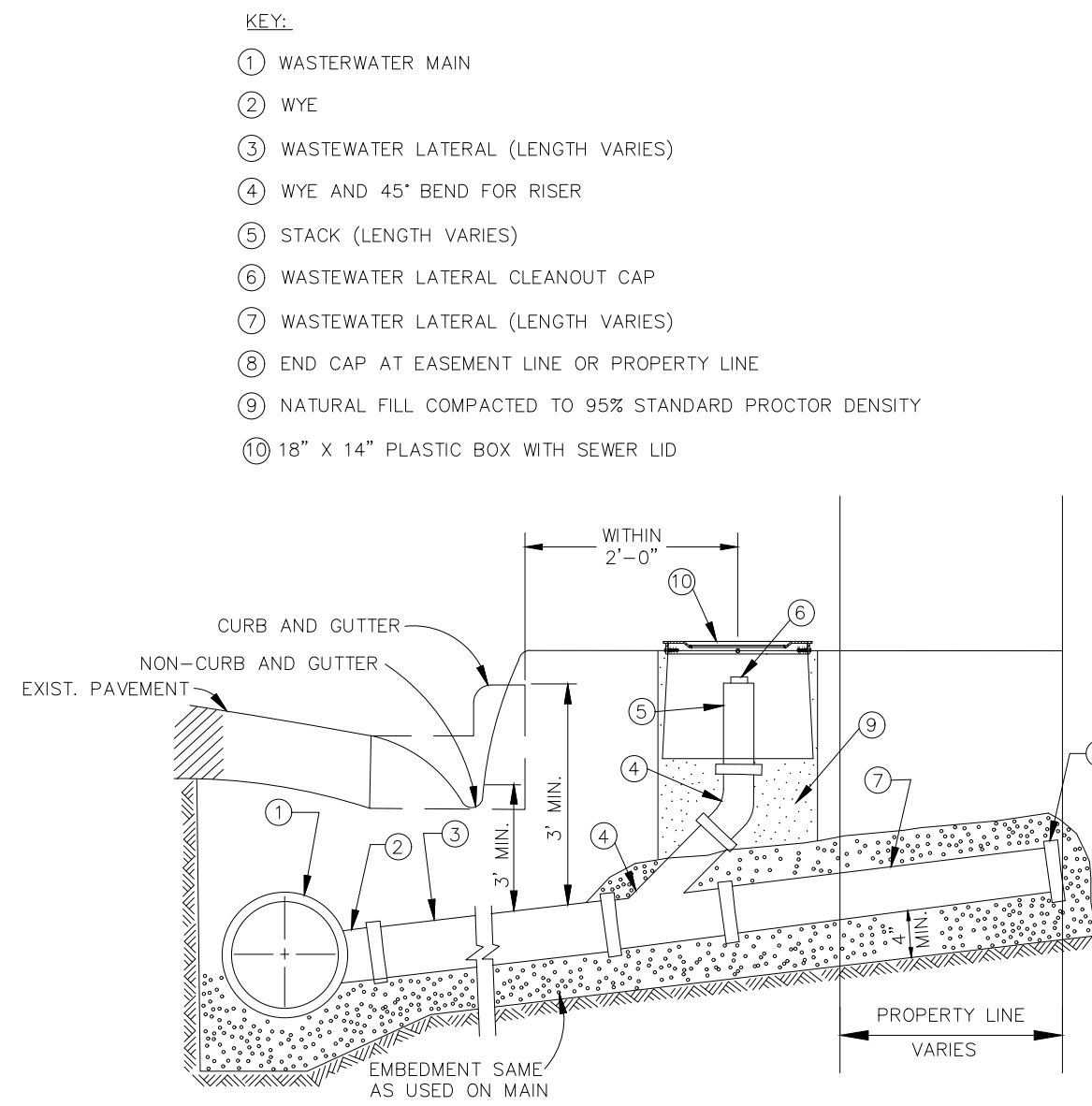


- NOTES:
1. DUCTILE IRON PIPE AND FITTINGS SHALL HAVE 40 MIL POLYETHYLENE INTERIOR COATING.
 2. ALL BOLTS AND NUTS TO BE TYPE 316 STAINLESS STEEL.
 3. FINISH COATING:
 - A. WIRE BRUSH TO REMOVE ALL DIRT AND CONC. AND TO ROUGH UP FINISH.
 - B. APPLY ONE PRIME COAT OF TNEC SERIES 37 CHEM PRIME (GRAY) TO 3 MILS DRY THICKNESS. GIVE SPECIAL ATTENTION TO CORNERS AND BOLTS.
 - C. APPLY ONE FINISH COAT OF TNEC SERIES 48-38 ALKYL ALUMINUM TO 2 MILS DRY THICKNESS.
 4. VENT PIPES TALLER THAN 6' TO BE 6" DUCTILE IRON PIPE AND FITTINGS.
 5. REFLECTIVE TAPE TO BE PLACED ON VENT 4.25 FEET ABOVE FINAL GRADE.

VENT MANHOLE

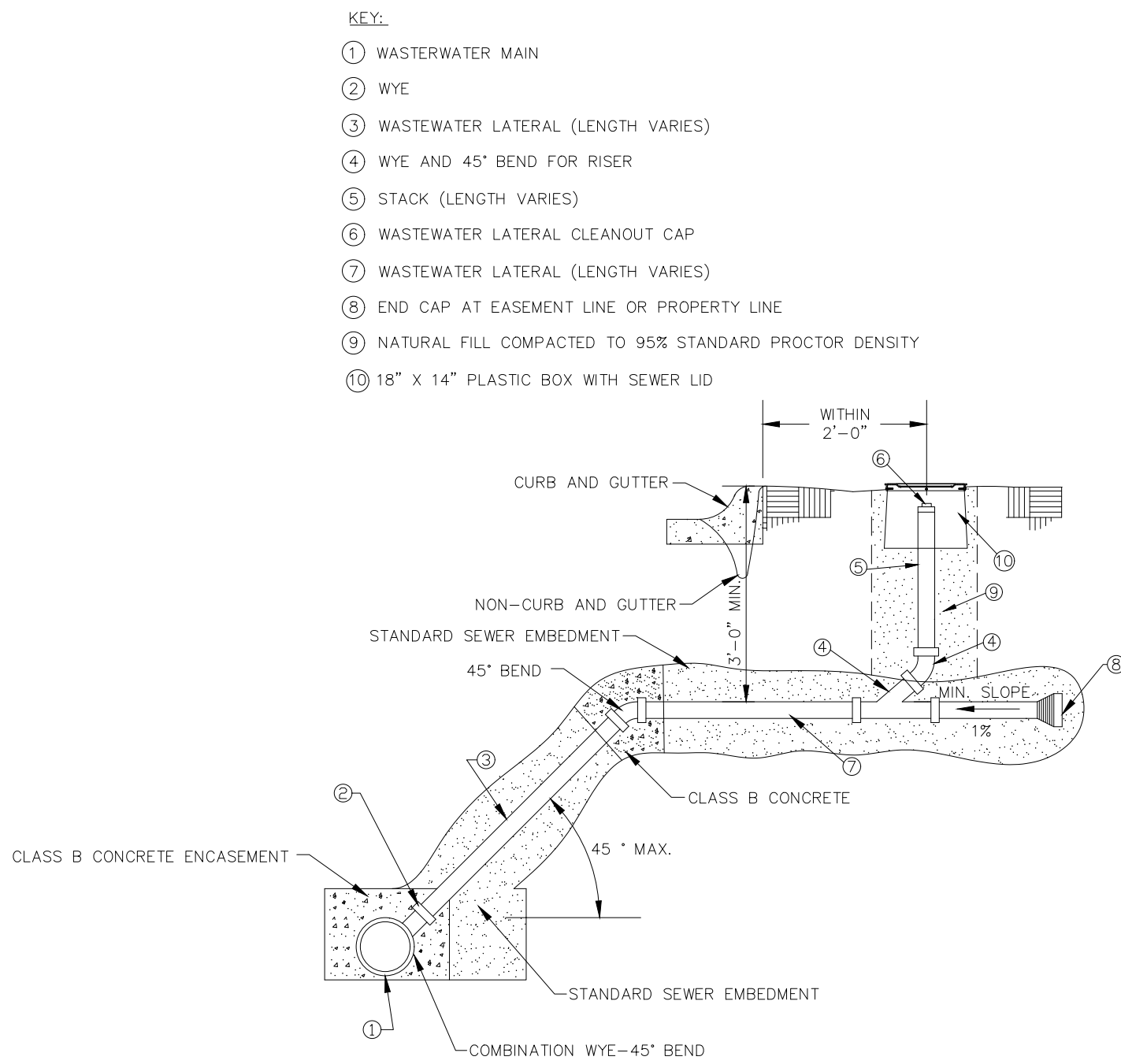


18" X 14" PLASTIC BOX
WITH SEWER LID



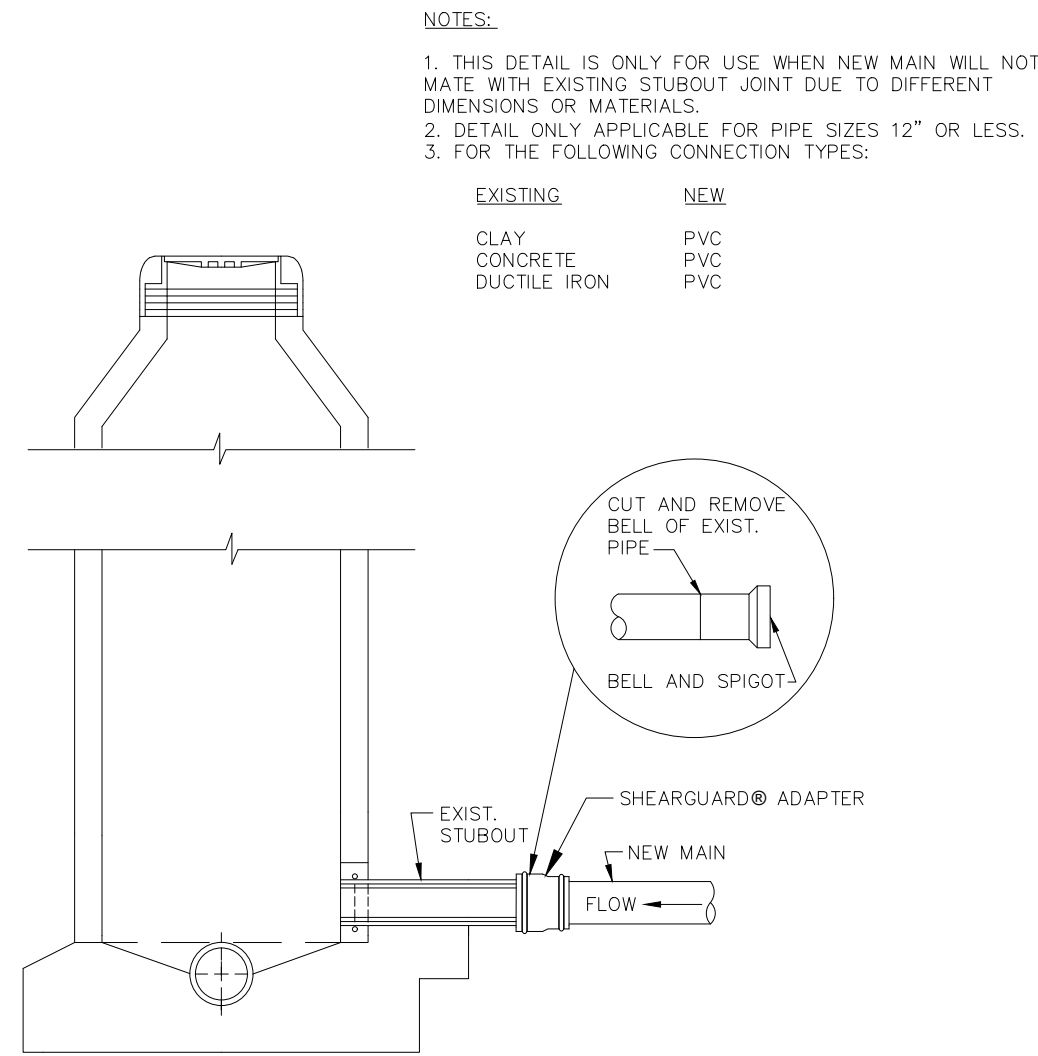
- NOTES:
1. SERVICE TO BE INSTALLED IN ACCORDANCE WITH CITY OF DENTON SPEC. SECTION 33.31.16.
 2. SIZE OF SERVICE LINE PIPING AND FITTINGS PER PLANS OR CITY OF DENTON WATER & WASTEWATER CRITERIA MANUAL.
 3. SLOPE OF LATERAL TO BE 2% MINIMUM UNLESS INSTRUCTED OTHERWISE BY CITY.
 4. VERTICAL BENDS (22.5° MAX.) MAY BE USED TO CLEAR UNDERGROUND CONFLICTS.
 5. THE MAINLINE LATERAL CONNECTION TO AN EXISTING PRIVATE BUILDING LATERAL SHALL BE AS CLOSE TO THE PROPERTY LINE AS POSSIBLE.
 6. INSTALL STOPPER OR CAP AT PROPERTY OR EASEMENT LINE IF BUILDING LATERAL DOES NOT EXIST.
 7. THE CLEANOUT MAY NOT BE PLACED IN VEHICLE TRAFFIC AREAS, OR SIDEWALK WITHOUT APPROVAL BY THE WASTEWATER DEPARTMENT.
 8. FOR PAVED AREAS, A CAST IRON STACK AND CLEANOUT SHALL BE USED IN PLACE OF PVC PIPE, FITTINGS AND PLASTIC BOX. THE CAST IRON STACK AND CLEANOUT SHALL EXTEND THROUGH THE ENTIRE DEPTH OF THE PAVEMENT AND CONFORM TO ASTM A48 CLASS 35B STANDARDS.
 9. THE CLEANOUT SHALL BE CENTERED IN PLASTIC BOX.
 10. CENTER OF CLEANOUT TO BE LOCATED NO FURTHER THAN 2'-0" BEHIND BACK OF CURB. FOR UNCURRED STREETS, CLEANOUT TO BE LOCATED OUTSIDE OF THE DRAINAGE DITCH.
 11. PLUMBERS NOT ALLOWED TO CONNECT TO STACK, ONLY TO THE BOTTOM OF WYE.
 12. AN "S" SHALL BE ETCHED INTO THE CURB WHERE THE SERVICE LINE CROSSES THE CURB & GUTTER AND PAINTED GREEN.

SANITARY SEWER SERVICE
WITH SINGLE CLEANOUT



- NOTES:
1. SERVICE TO BE INSTALLED IN ACCORDANCE WITH CITY OF DENTON SPEC. SECTION 33.31.16.
 2. SIZE OF SERVICE LINE PIPING AND FITTINGS PER PLANS OR CITY OF DENTON WATER & WASTEWATER CRITERIA MANUAL.
 3. SLOPE OF LATERAL TO BE 2% MINIMUM UNLESS INSTRUCTED OTHERWISE BY CITY.
 4. VERTICAL BENDS (22.5° MAX.) MAY BE USED TO CLEAR UNDERGROUND CONFLICTS.
 5. THE MAINLINE LATERAL CONNECTION TO AN EXISTING PRIVATE BUILDING LATERAL SHALL BE AS CLOSE TO THE PROPERTY LINE AS POSSIBLE.
 6. INSTALL STOPPER OR CAP AT PROPERTY OR EASEMENT LINE IF BUILDING LATERAL DOES NOT EXIST.
 7. THE CLEANOUT MAY NOT BE PLACED IN VEHICLE TRAFFIC AREAS, OR SIDEWALK WITHOUT APPROVAL BY THE WASTEWATER DEPARTMENT.
 8. FOR PAVED AREAS, A CAST IRON STACK AND CLEANOUT SHALL BE USED IN PLACE OF PVC PIPE, FITTINGS AND PLASTIC BOX. THE CAST IRON STACK AND CLEANOUT SHALL EXTEND THROUGH THE ENTIRE DEPTH OF THE PAVEMENT AND CONFORM TO ASTM A48 CLASS 35B STANDARDS.
 9. CONNECTION FITTING TO MAIN TO BE ENCASED IN CLASS B CONCRETE.
 10. THE CLEANOUT SHALL BE CENTERED IN PLASTIC BOX.
 11. CENTER OF CLEANOUT TO BE LOCATED NO FURTHER THAN 2'-0" BEHIND BACK OF CURB. FOR UNCURRED STREETS, CLEANOUT TO BE LOCATED OUTSIDE OF THE DRAINAGE DITCH.
 12. PLUMBERS NOT ALLOWED TO CONNECT TO STACK, ONLY TO THE BOTTOM OF WYE.
 13. AN "S" SHALL BE ETCHED INTO THE CURB WHERE THE SERVICE LINE CROSSES THE CURB & GUTTER AND PAINTED GREEN.

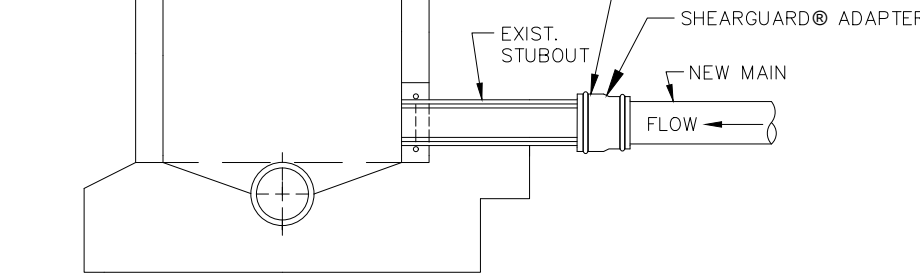
SANITARY SEWER SERVICE
WITH SINGLE CLEANOUT 12' DEEP OR GREATER



- NOTES:
1. THIS DETAIL IS ONLY FOR USE WHEN NEW MAIN WILL NOT MATE WITH EXISTING STUBOUT JOINT DUE TO DIFFERENT DIMENSIONS OR MATERIALS.
 2. DETAIL ONLY APPLICABLE FOR PIPE SIZES 12" OR LESS.
 3. FOR THE FOLLOWING CONNECTION TYPES:

EXISTING	NEW
CLAY	PVC
CONCRETE	PVC
DUCTILE IRON	PVC

CUT AND REMOVE
BELL OF EXIST.
PIPE
BELL AND SPIGOT



SANITARY SEWER MAIN TIE-IN WITH
STUBOUT OF DISSIMILAR SIZE OR TYPE

ENTERED BY	PROJECT #
DESIGNED BY	DATE
CHECKED BY	REVISION
PROJ. ENGR.	
PATH	S:\Water Engineering\Engr\Design\Standard Details\wastewater details\Wastewater Detail Sheet 1-3.dwg



STANDARD DETAILS
WASTEWATER DETAILS

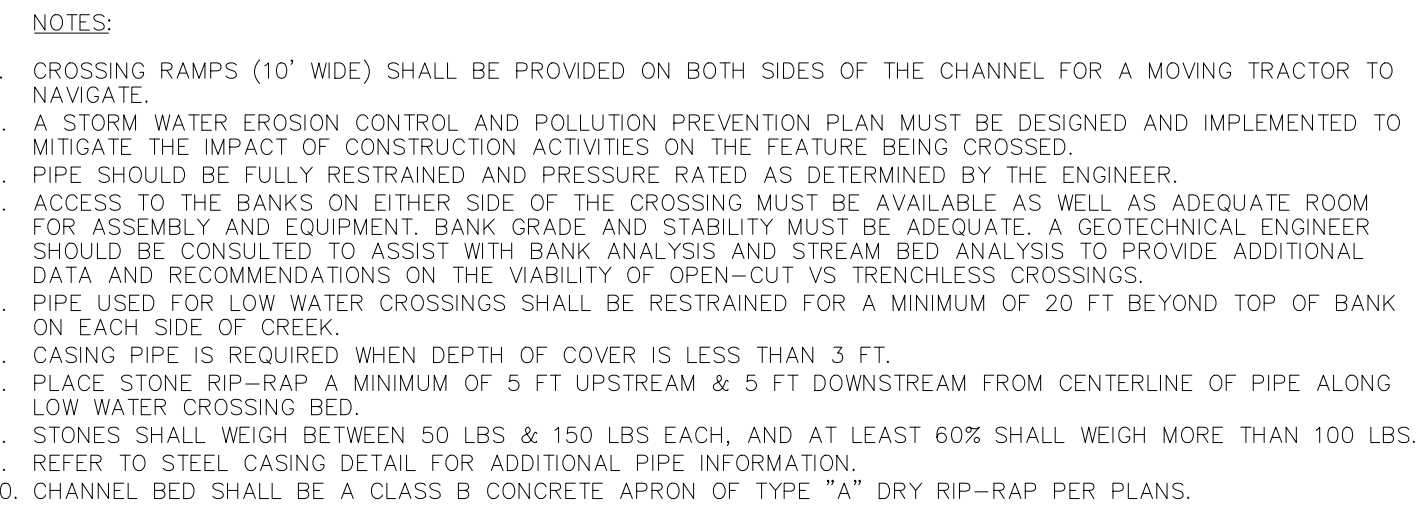
DATE
NOV. 2023

SHEET No.
33 of 37

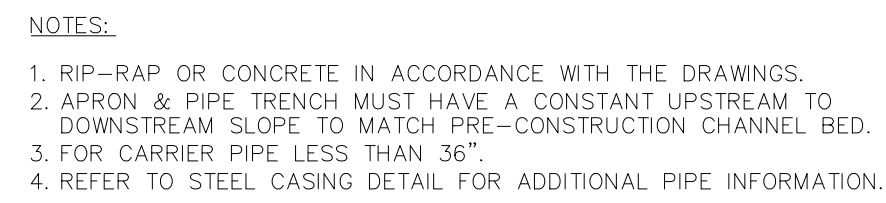
SCALE

HOR 1"= N.T.S.
VER 1"= N/A

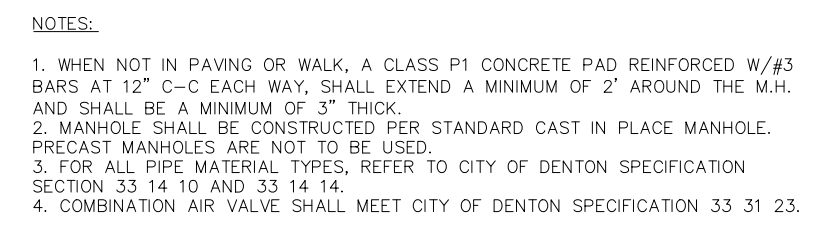
CERTIFICATION:
THIS CITY OF DENTON STANDARD
DETAIL SHEET IS AUTHORIZED FOR
USE IN THIS PROJECT BY THE
ENGINEER WHOSE SEAL APPEARS
HEREON, AND WHO CERTIFIES THE
CONTENT OF THE DETAILS AND NOTES
HEREIN HAVE NOT BEEN ALTERED
AND ASSUMES RESPONSIBILITY FOR
APPROPRIATE USE OF THE
STANDARDS WITHIN THIS SHEET.



S701



S702

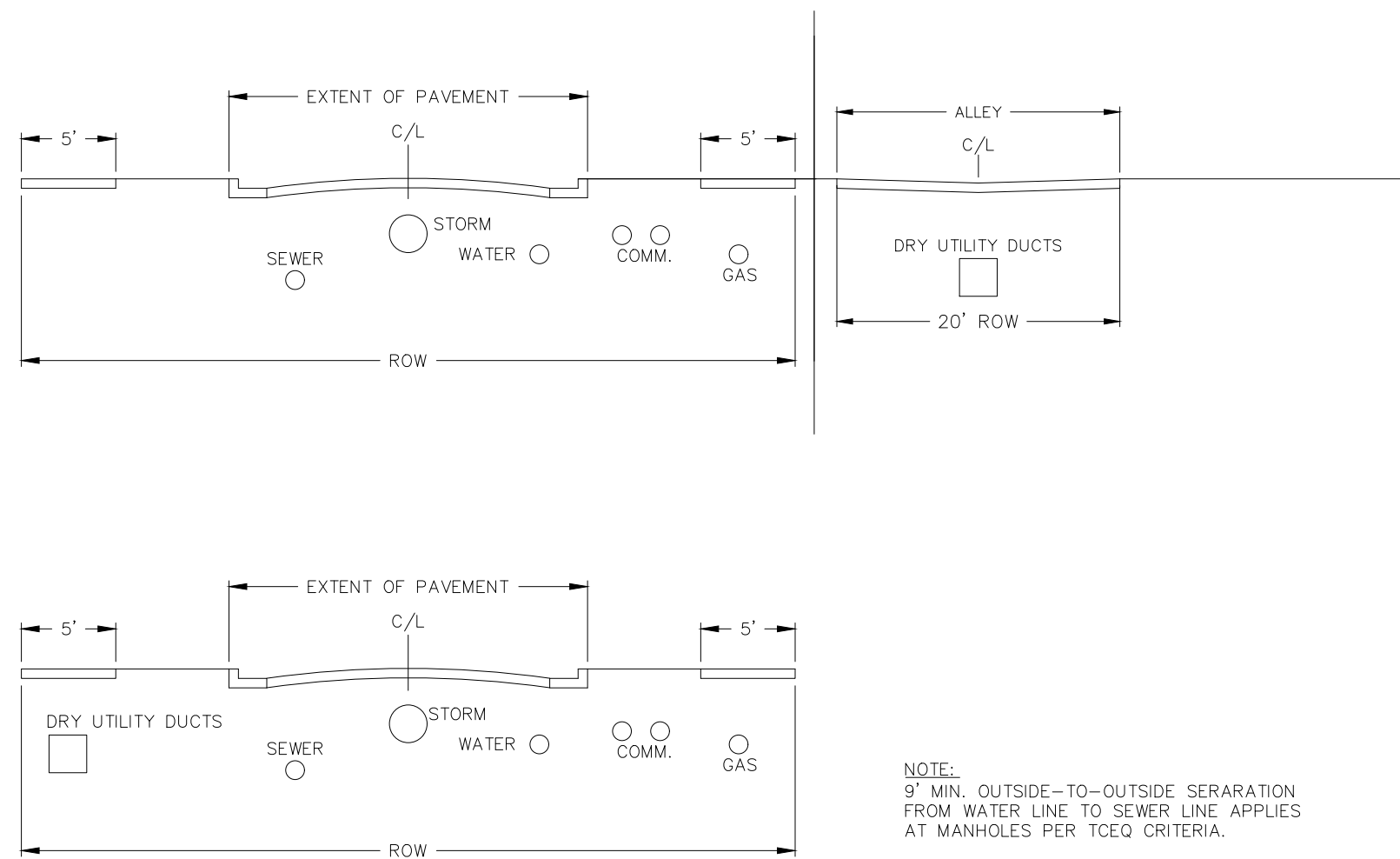


S803

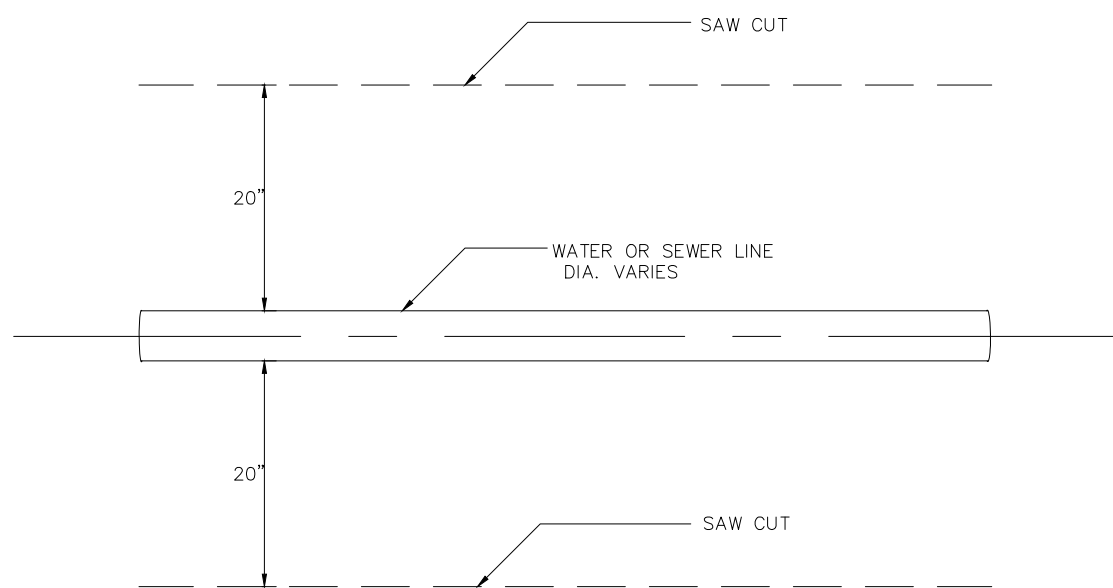


CITY OF
DENTON
ENGINEERING SERVICES

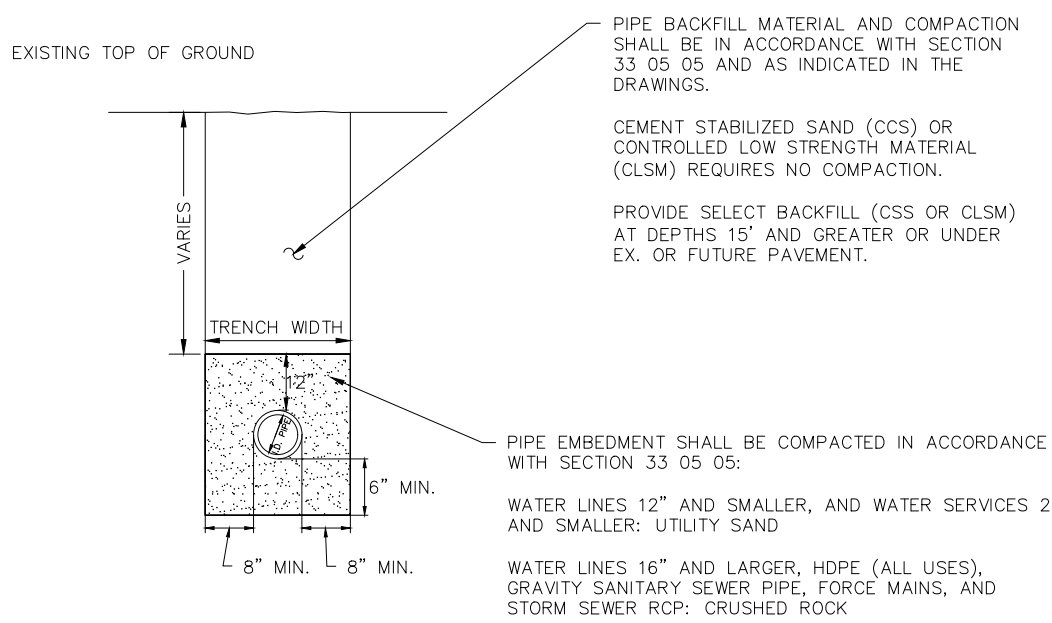
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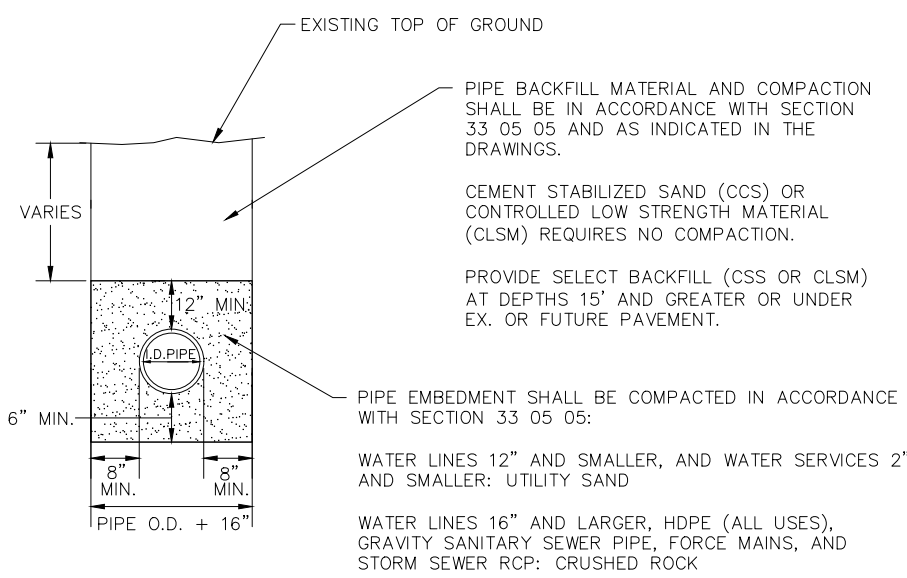
TYPICAL UTILITY PLACEMENTS



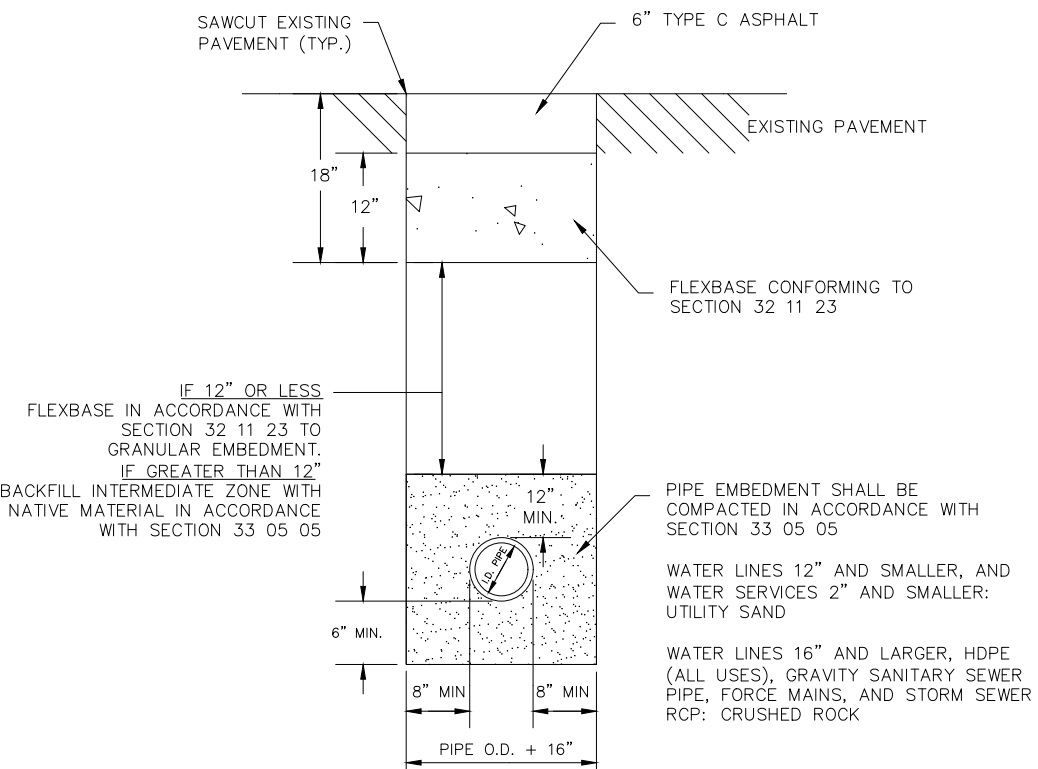
TYPICAL SAW-CUT



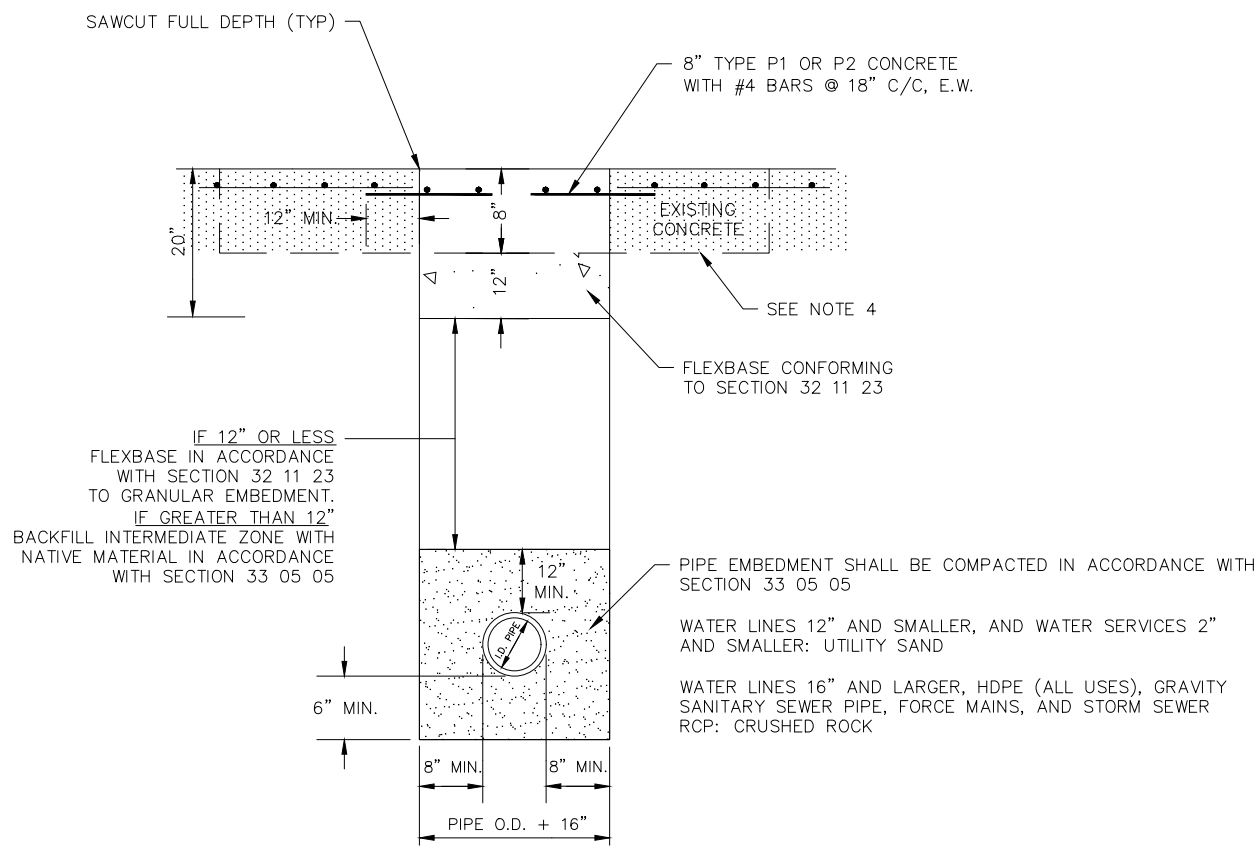
PROPOSED PAVEMENT TRENCH



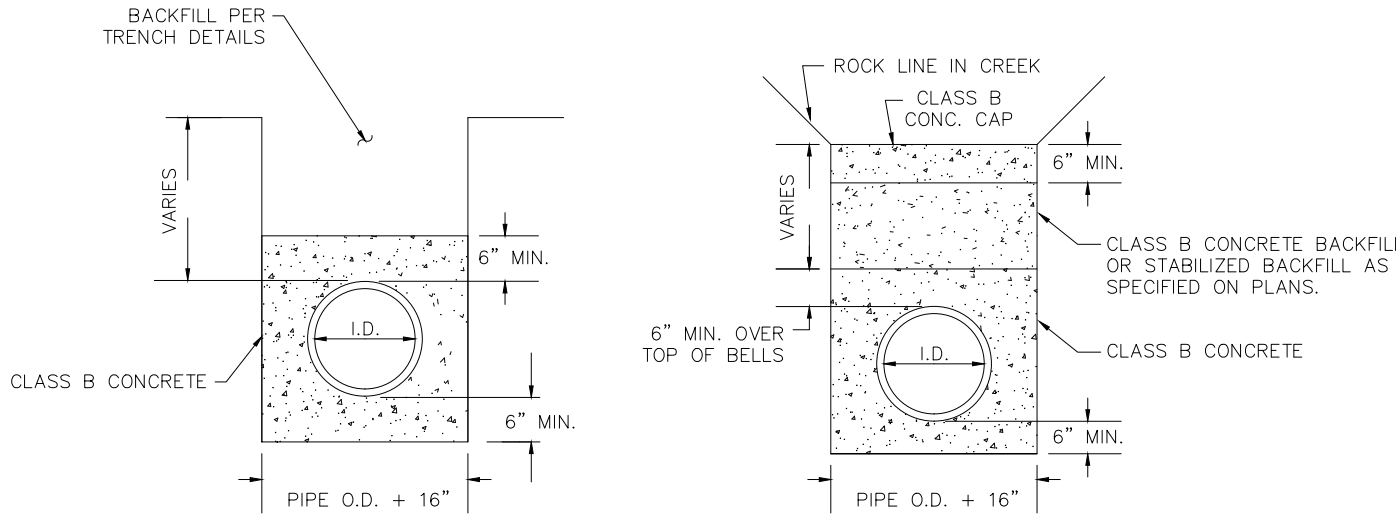
UNPAVED TRENCH



EXISTING PAVEMENT TRENCH AND REPAIR
ASPHALT



EXISTING PAVEMENT TRENCH AND REPAIR
CONCRETE



CONCRETE ENCASEMENT FOR UTILITY LINES

ENTERED BY	PROJECT #	
DESIGNED BY	DATE	REVISION
CHECKED BY		
PROJ. ENGR.		
PATH S:\Water Engineering\Engr\Design\Standard Details\water-wastewater shared drawings\Water-Wastewater Sht1-2.dwg		



STANDARD DETAILS

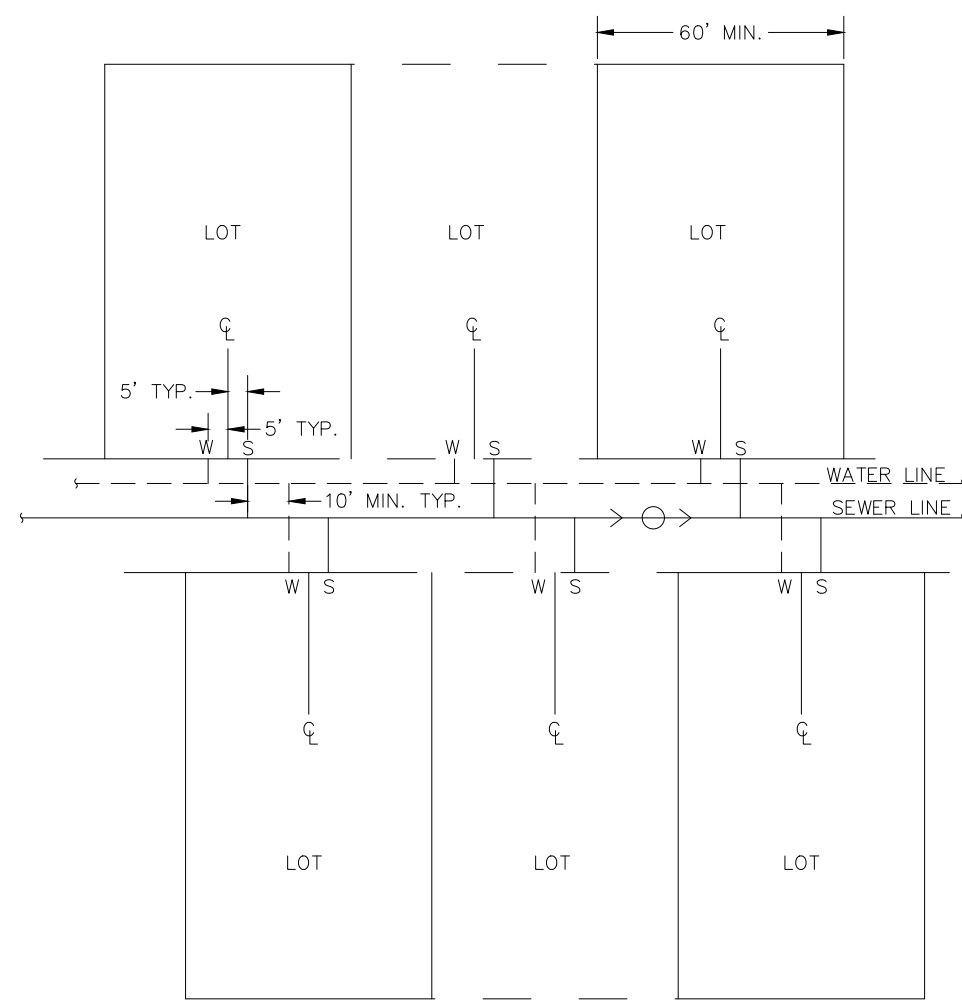
WATER/WASTEWATER SHARED DETAILS

DATE
DEC. 2023

SHEET No.
35 of 37

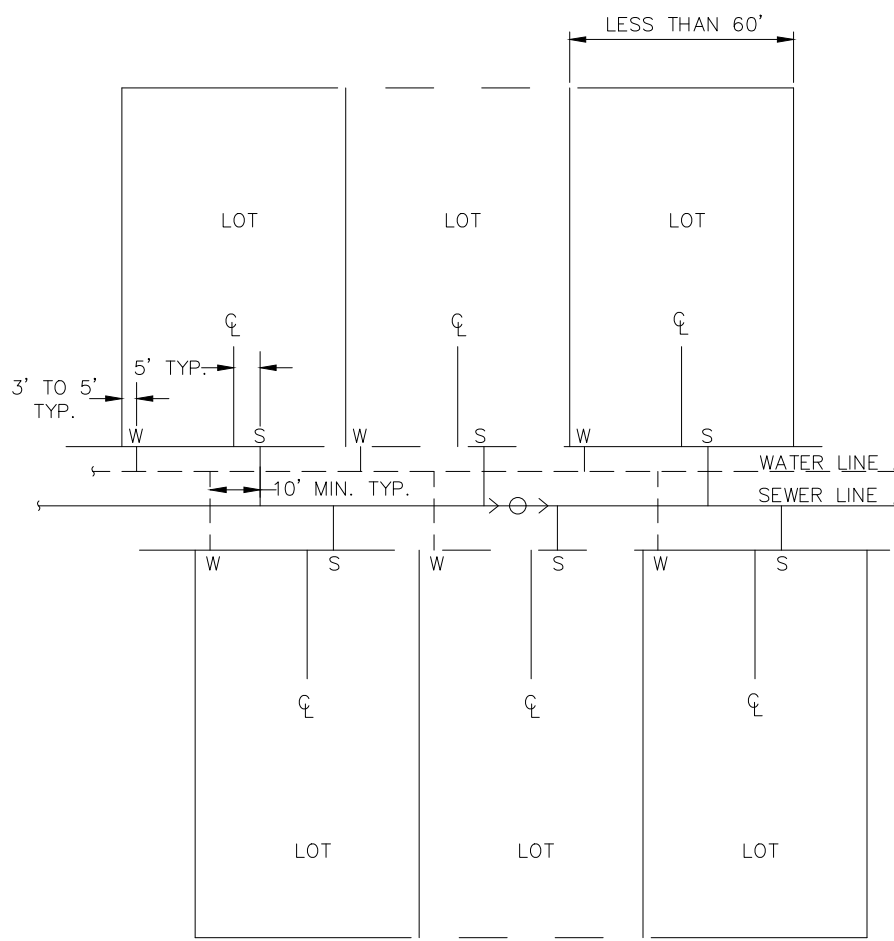
SCALE
HOR 1"= N.T.S.
VER 1"= N/A

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OF THE STANDARDS WITHIN THIS SHEET.



- NOTES:
- 1. WATER METERS PLACED IN UNPAVED PUBLIC R.O.W. OR UTILITY EASEMENT.
 - 2. IF WIDTH OF LOT IS LESS THAN 60' WIDE, USE DETAIL U206B.

TYPICAL SERVICE LINE LAYOUT

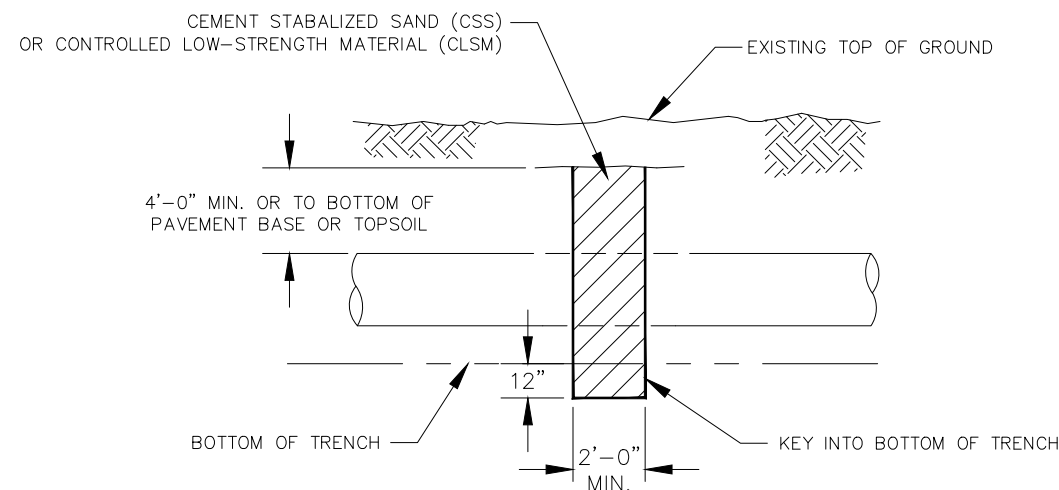


- NOTES:
- 1. WATER METERS PLACED IN UNPAVED PUBLIC R.O.W. OR UTILITY EASEMENT.
 - 2. IF WIDTH OF LOT IS 60' OR GREATER, USE DETAIL U206A.

ALTERNATE SERVICE LINE LAYOUT
*(FOR LOTS LESS THAN 60' WIDE)

U206A

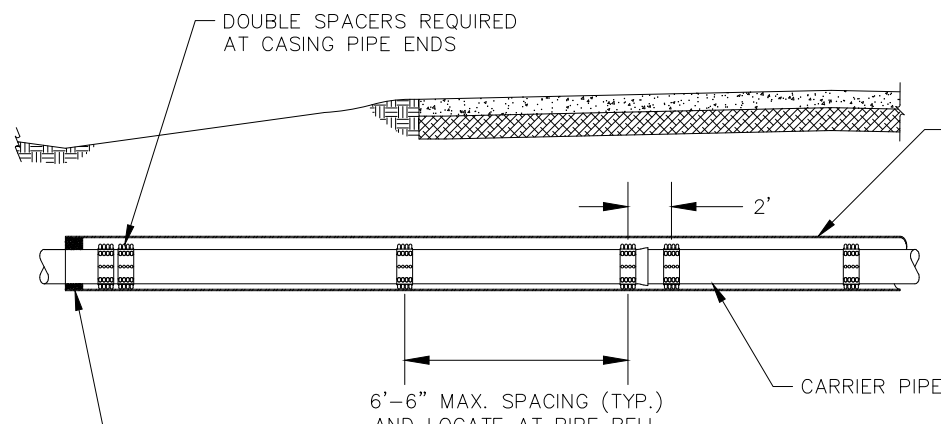
U206B



- NOTES:
- 1. TRENCH DAM SHALL SPAN THE FULL WIDTH OF THE TRENCH.
 - 2. CLSM PER SECTION 03 34 13.
 - 3. SEE PLAN AND PROFILE SHEETS FOR LOCATION OF TRENCH DAMS.

TRENCH DAM

U207

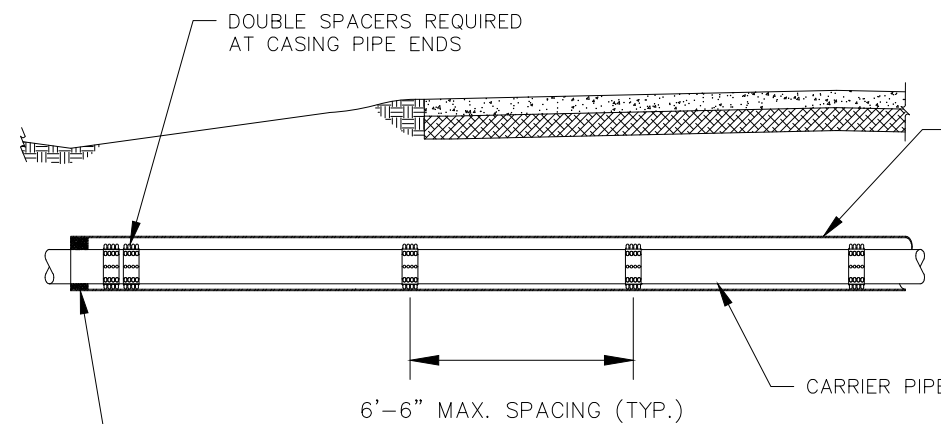


- INSTALL END SEAL ON CASING PIPE:
- FOR WATER LINES AND FORCE MAINS LESS THAN 24" - SECTION 2.2.A.6.a.1 OF 33 05 15
 - FOR WATER LINES AND FORCE MAINS 24" AND LARGER - SECTION 2.2.A.6.a.2 OF 33 05 15
 - FOR GRAVITY SANITARY SEWER - SECTION 2.2.A.6.a.3 OF 33 05 15

- NOTES:
- 1. BORE AND CASING SHALL BE INSTALLED AS SHOWN IN PROFILE VIEW OF PLANS WHERE APPLICABLE. THIS DETAIL ILLUSTRATES THE GENERAL LOCATION OF CASING SPACERS FOR SUPPORTING CARRIER PIPE AND GROUTING ENDS OF CASING PIPE.
 - 2. FOR PRESSURIZED PIPE, ALL INTERIOR JOINTS SHALL BE RESTRAINED PER SECTION 33 05 15. NO RESTRAINT IS REQUIRED FOR NON-PRESSURIZED PIPE.
 - 3. CASING SPACERS SHALL CONFORM TO REQUIREMENTS OF SECTION 33 05 15.
 - 4. CARRIER PIPE INSTALLATION PER SECTION 33 05 15.
 - 5. ANNULAR GROUTING, IF REQUIRED, SHALL BE ACCORDING TO SECTION 33 05 15.

INSTALLATION IN STEEL CASING OR LINER PLATE
FOR PVC AND DIP

U208A



- INSTALL END SEAL ON CASING PIPE:
- FOR WATER LINES AND FORCE MAINS LESS THAN 24" - SECTION 2.2.A.6.a.1 OF 33 05 15
 - FOR WATER LINES AND FORCE MAINS 24" AND LARGER - SECTION 2.2.A.6.a.2 OF 33 05 15

- NOTES:
- 1. BORE AND CASING SHALL BE INSTALLED AS SHOWN IN PROFILE VIEW OF PLANS WHERE APPLICABLE. THIS DETAIL ILLUSTRATES THE GENERAL LOCATION OF CASING SPACERS FOR SUPPORTING CARRIER PIPE AND GROUTING ENDS OF CASING PIPE.
 - 2. CASING SPACERS SHALL CONFORM TO REQUIREMENTS OF SECTION 33 05 15.
 - 3. CARRIER PIPE INSTALLATION PER SECTION 33 05 15.
 - 4. NO ANNULAR GROUT UNLESS CALLED FOR ON PLAN VIEW.

INSTALLATION IN STEEL CASING OR LINER PLATE
FOR HDPE

U208C

ENTERED BY	PROJECT #	
DESIGNED BY	DATE	REVISION
CHECKED BY		
PROJ. ENGR.		
PATH s:\Water Engineering\Engr\Design\Standard Details\water-wastewater shared drawings\Water-Wastewater Sht1-2.dwg		



STANDARD DETAILS

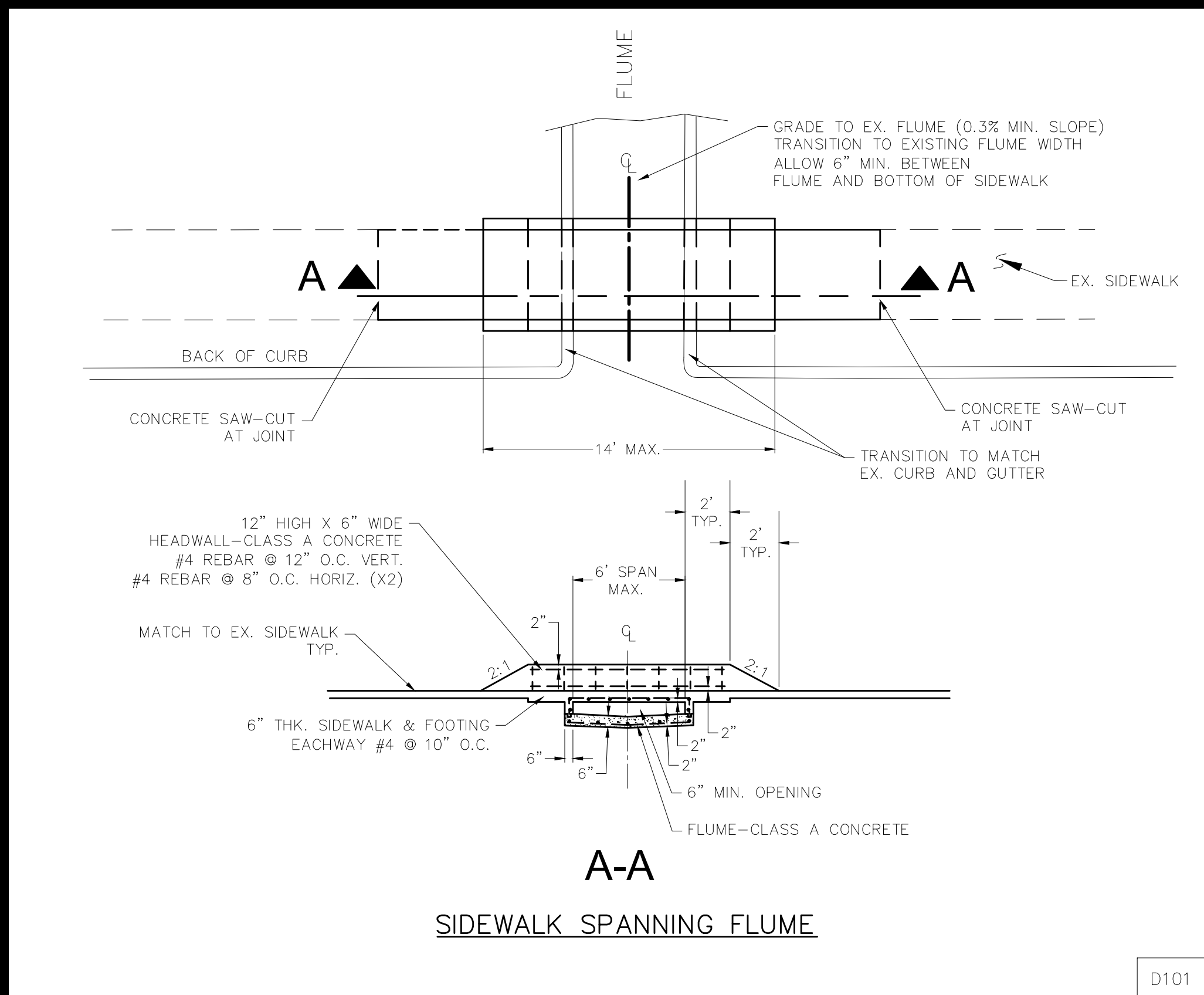
WATER/WASTEWATER SHARED DETAILS

DATE
JAN. 2023

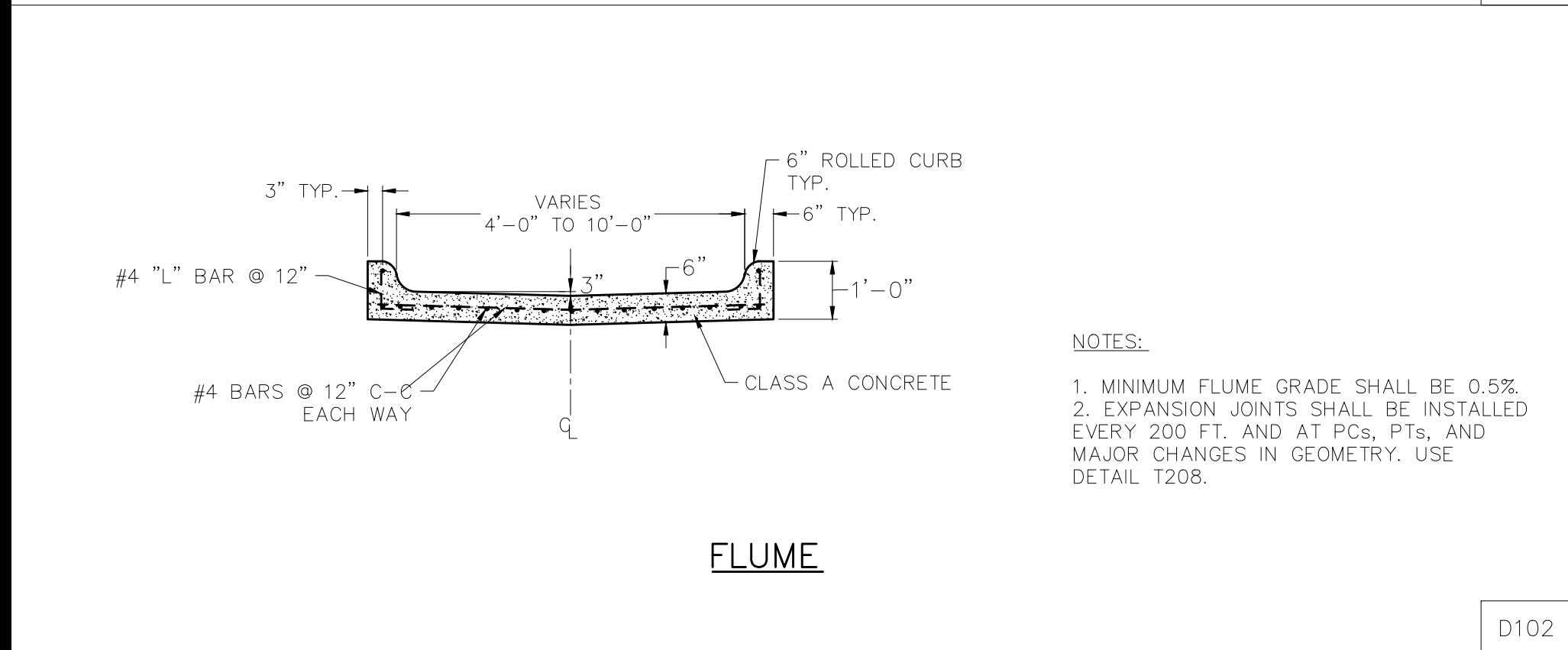
SHEET No.
36 of 37

SCALE
HOR 1"= N.T.S.
VER 1"= N/A

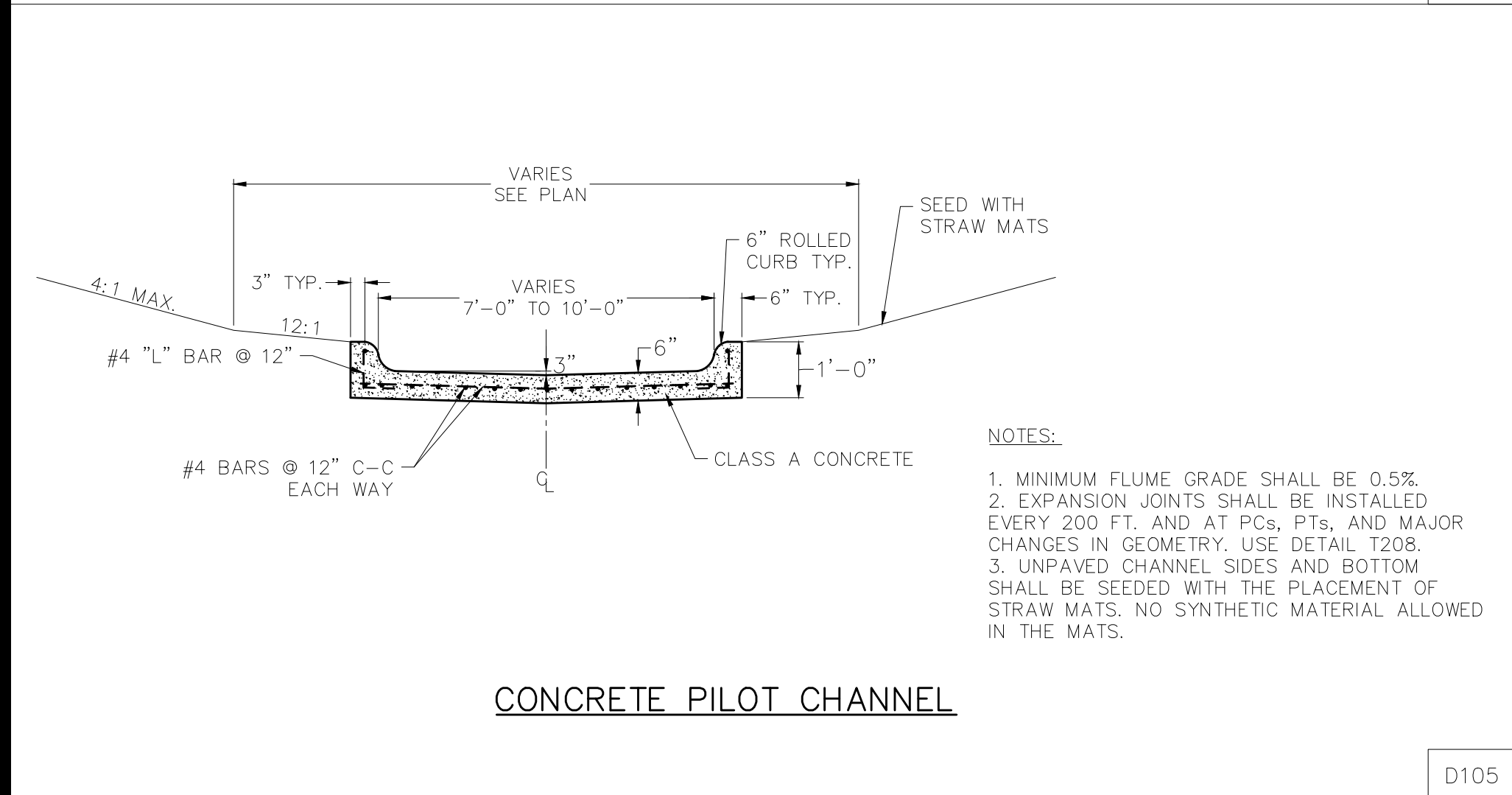
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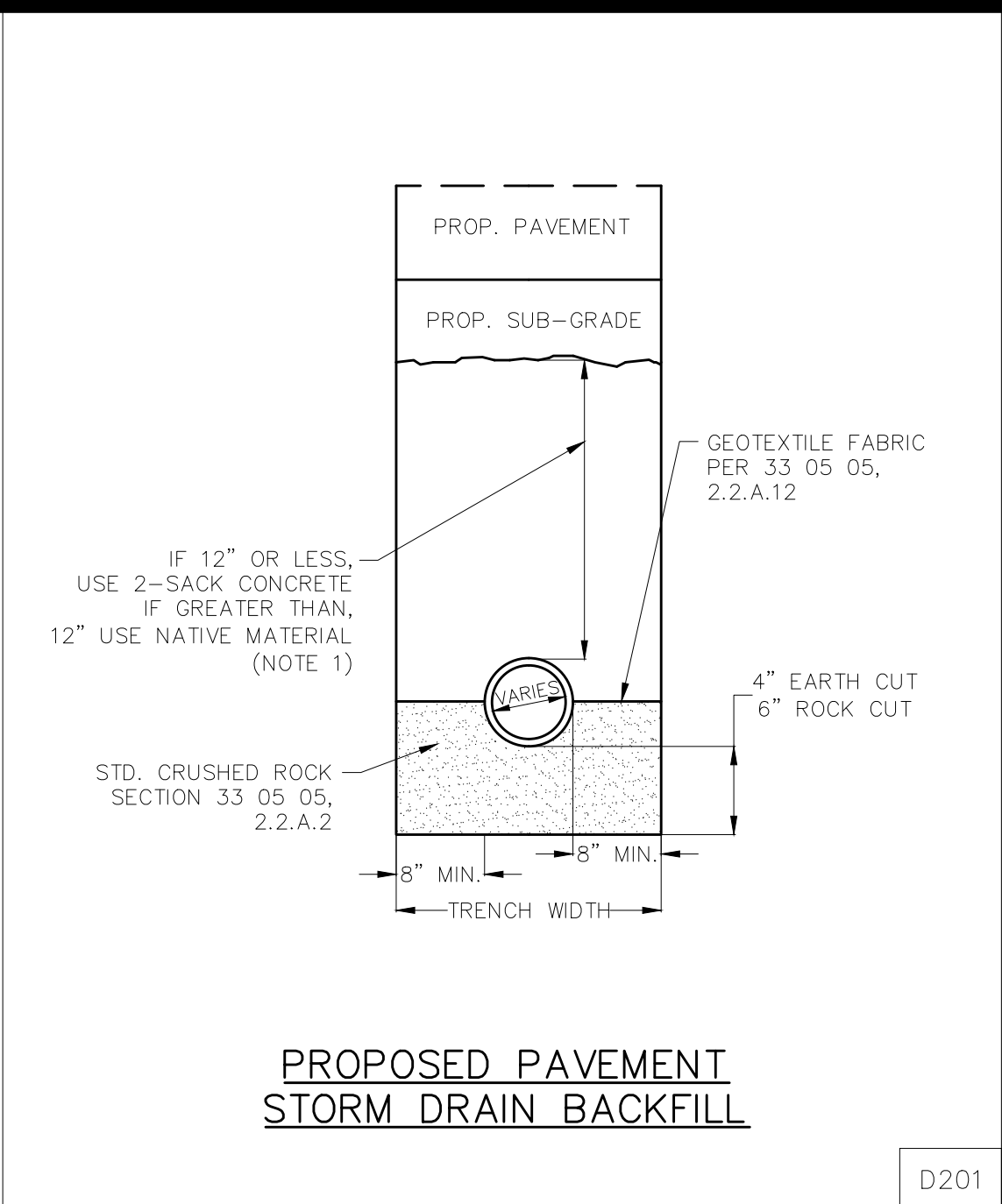
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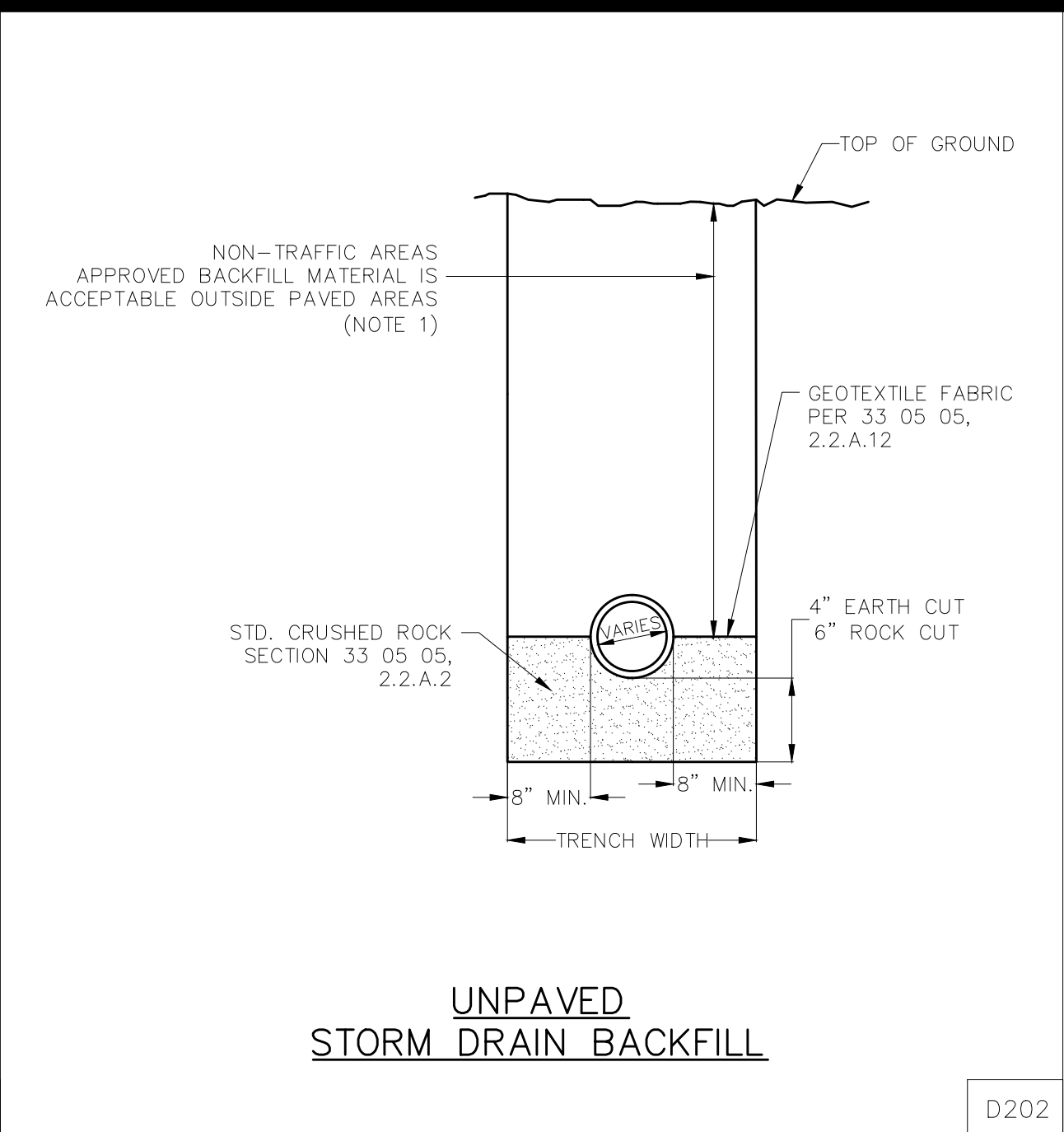
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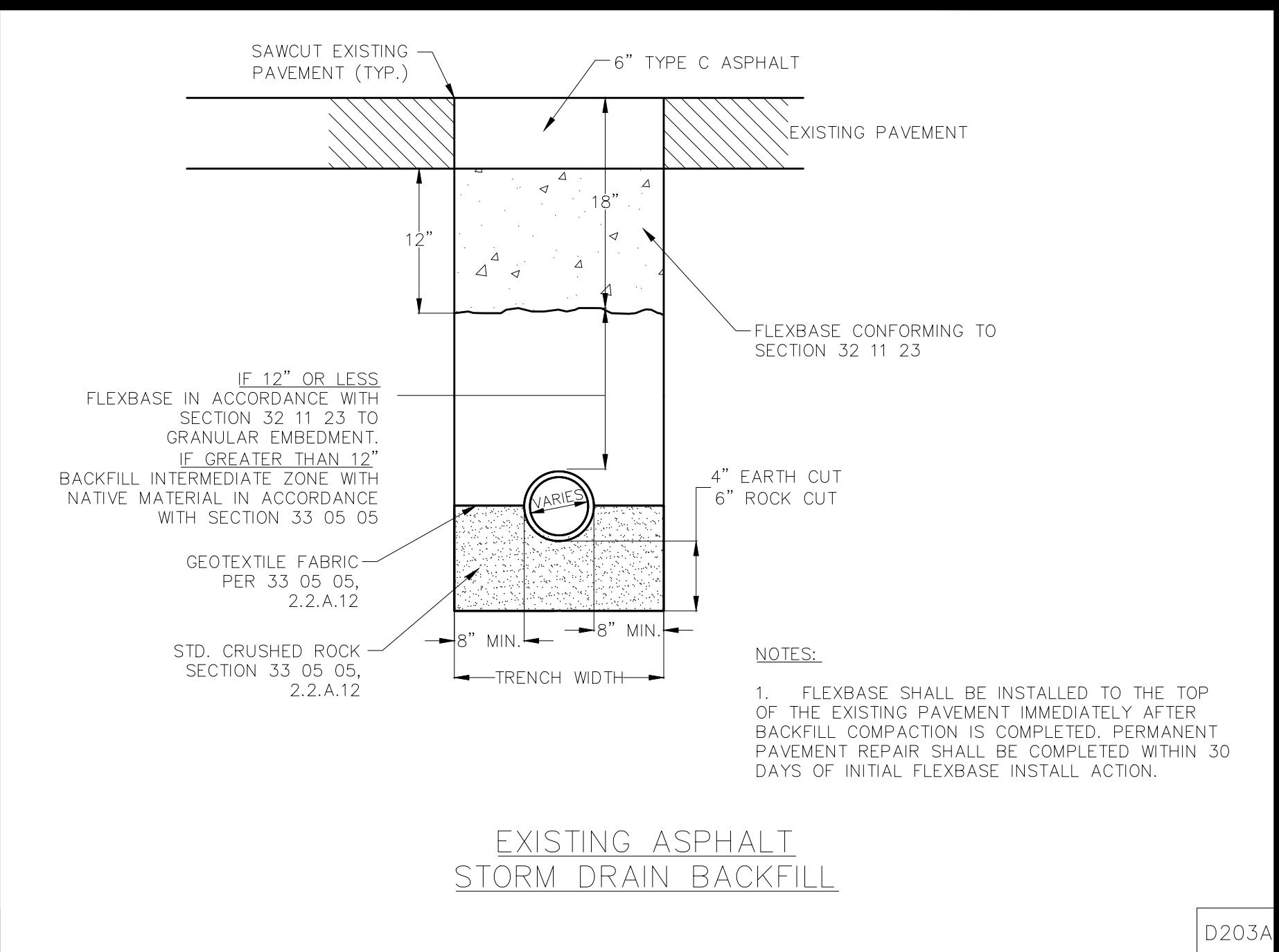
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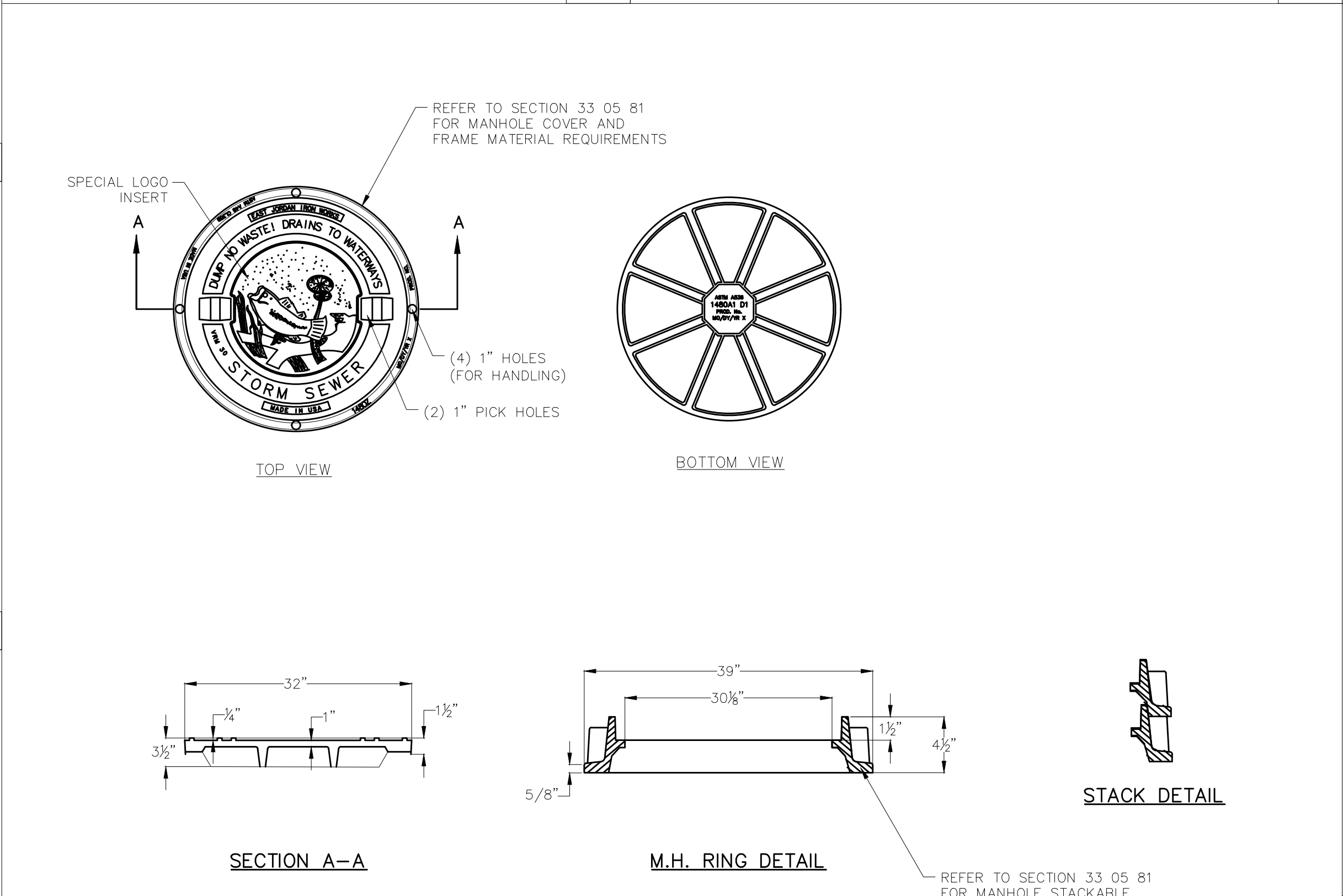
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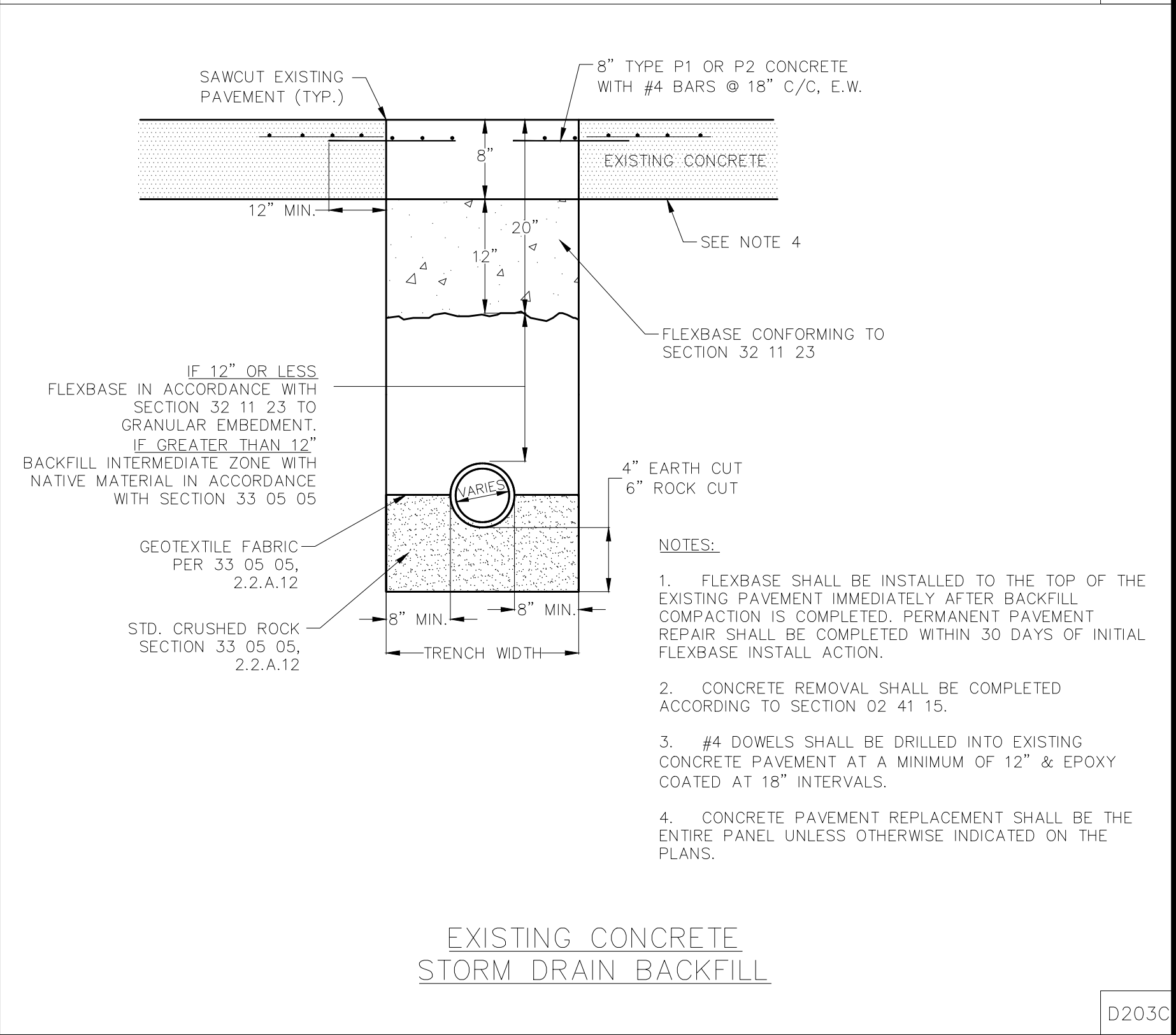
D202



D203A



D106



D203C

ENTERED BY	PROJECT #	
DESIGNED BY	DATE	REVISION
CHECKED BY		
PROJ. ENGR.		
PATH	S:\Water Engineering\Engr\Design\Standard Details\Storm Sewer details\SHEET1.dwg	



STANDARD DETAILS

STORM DRAINAGE DETAILS

DATE DEC. 2023	SCALE HOR 1"= N.T.S. VER 1"= N.T.S.	CERTIFICATION: THIS CITY OF DENTON STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS HEREON, AND WHO CERTIFIES THE CONTENT OF THE DETAILS AND NOTES HEREIN HAVE NOT BEEN ALTERED AND ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THE STANDARDS WITHIN THIS SHEET.
SHEET No. 37 of 37		

Utility Adjustment for TxDOT Project

City of Denton
FM 1515 - Utility Relocations

RCSJ:	1951-01-012
Utility ID#:	U00023607
UNUMBER:	N/A

TxDOT STANDARD
SUA ESTIMATE

Comparative Estimate

☒ESTIMATE INCLUDING BETTERMENT

☐ACTUAL COST

☐SUPPLEMENTAL ESTIMATE

The cost estimate items must be sufficiently detailed to provide TxDOT with a reasonable basis for analysis. Items should include appropriate units and unit price for each (See Utility Manual, Chapter 7). Applies to All "EA" or "LS" items.

Percent of Difference

926%

Materials to be purchased by TxDOT - JOINT BID				
Line Item / Item Description	Unit	Quantity	\$/Unit	Total
* Sample Steel item to show (*) indication				\$ -
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$ -
SUBTOTAL				\$ -
Internally Supplied Materials - documented with Certified Ledger at Payment				
Line Item / Item Description	Unit	Quantity	\$/Unit	Total
Tapping Sleeve & Valve Connection (12")				\$ -
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$ -
OVERHEAD (%)	Enter % if applicable		0.00%	\$ -
SUBTOTAL				\$ -
Externally Acquired Materials - documented with Invoices and/or Checks				
Line Item / Item Description	Unit	Quantity	\$/Unit	Total
Steel Casing by Open Cut (12")				\$ -
Steel Casing by Bore (12")				\$ -
Steel Casing by Open Cut (18")				\$ -
Steel Casing by Bore (18")				\$ -
Steel Casing by Open Cut (20")				\$ -
Steel Casing by Bore (20")				\$ -
* Steel Casing by Open Cut (24")	LF	136	\$550.00	\$ 74,800.00
* Steel Casing by Bore (24")	LF	108	\$820.00	\$ 88,560.00
HDPE Water Main in Casing (8")				\$ -
HDPE Water Main in Casing (12")				\$ -
HDPE Water Main in Casing (16")				\$ -
Sanitary Sewer Gravity Main in Casing (12")				\$ -
Sanitary Sewer Gravity Main in Casing (15")	LF	244	\$120.00	\$ 29,280.00
* Concrete Manhole (5' ID) (0'-6' Deep)	EA	3	\$19,000.00	\$ 57,000.00
* Extra Concrete Manhole Depth	VF	15	\$800.00	\$ 12,000.00
External Drop for Manhole				\$ -
Double Detector Check Valve Vault				\$ -
Fiberglass Manhole (5' ID)				\$ -
Extra Fiberglass Manhole Depth				\$ -
PVC Water Main (8")				\$ -
PVC Water Main (12")				\$ -
HDPE Water Main (8")				\$ -
HDPE Water Main (12")				\$ -
HDPE Water Main (16")				\$ -
Gate Valve (8")				\$ -
Gate Valve (12")				\$ -
Gate Valve (16")				\$ -
Fire Hydrant Assembly				\$ -
Sanitary Sewer Gravity Main (12")				\$ -
Sanitary Sewer Gravity Main (15")	LF	176	\$310.00	\$ 54,560.00
Insertion Valve (8")				\$ -
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$ -
SUBTOTAL				\$ 316,200.00
MATERIALS SUBTOTAL			\$	316,200.00
* Indicated items are being tracked for BUY AMERICA COMPLIANCE and will be documented using Form 1818 and all supporting documentation prior to installation.				
X Indicated items are IRON or STEEL, but will not be tracked for BUY AMERICA COMPLIANCE due to falling under the DE MINIMUS of \$2,500, or .1% of the project total cost, whichever is greater.				Sum of De Minimus Items \$0.00
TxDOT contractor labor - JOINT BID				
Line Item / Item Description	Unit	Quantity	\$/Unit	Total
Sample Item				\$ -
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$ -
SUBTOTAL				\$ -
Internal Labor Costs - documented with Certified Ledger at payment.				
Line Item / Item Description	Unit	Quantity	\$/Unit	Total
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$ -
OVERHEAD (%)	Enter % if applicable		0.00%	\$ -
SUBTOTAL				\$ -
External Labor Costs - documented with Invoices and / or checks				
Line Item / Item Description	Unit	Quantity	\$/Unit	Total
SWPPP				\$ -
Project Signs				\$ -
Mobilization				\$ -
Remove Utility Manhole	EA	3	\$2,500.00	\$ 7,500.00
Remove Fire Hydrant, Lead Line & Valve				\$ -
Remove Water Valve				\$ -
Site Clearing				\$ -
SWPPP Device Installation				\$ -
SWPPP Device Removal				\$ -
Asphalt Pavement Repair for Utility Trench				\$ -

Unit	Quantity	\$/Unit	Total	Difference
			\$ -	\$ -
			\$ -	\$ -
SUBTOTAL			\$ -	\$ -
Unit	Quantity	\$/Unit	Total	Difference
EA	1	\$18,000.00	\$ 18,000.00	\$ 18,000.00
			\$ -	\$ -
		0.00%	\$ -	\$ -
SUBTOTAL			\$ 18,000.00	\$ 18,000.00
Unit	Quantity	\$/Unit	Total	Difference
LF	24	\$400.00	\$ 9,600.00	\$ 9,600.00
LF	390	\$655.00	\$ 255,450.00	\$ 255,450.00
LF	173	\$420.00	\$ 72,660.00	\$ 72,660.00
LF	83	\$760.00	\$ 63,080.00	\$ 63,080.00
LF	73	\$450.00	\$ 32,850.00	\$ 32,850.00
LF	178	\$800.00	\$ 142,400.00	\$ 142,400.00
LF	283	\$550.00	\$ 155,650.00	\$ 80,850.00
LF	252	\$820.00	\$ 206,640.00	\$ 118,080.00
LF	414	\$100.00	\$ 41,400.00	\$ 41,400.00
LF	256	\$110.00	\$ 28,160.00	\$ 28,160.00
LF	291	\$150.00	\$ 43,650.00	\$ 43,650.00
LF	251	\$110.00	\$ 27,610.00	\$ 27,610.00
LF	244	\$120.00	\$ 29,280.00	\$ -
EA	4	\$19,000.00	\$ 76,000.00	\$ 19,000.00
VF	23	\$800.00	\$ 18,400.00	\$ 6,400.00
EA	1	\$14,000.00	\$ 14,000.00	\$ 14,000.00
EA	1	\$60,000.00	\$ 60,000.00	\$ 60,000.00
EA	2	\$40,000.00	\$ 80,000.00	\$ 80,000.00
VF	34	\$900.00	\$ 30,600.00	\$ 30,600.00
LF	45	\$250.00	\$ 11,250.00	\$ 11,250.00
LF	55	\$300.00	\$ 16,500.00	\$ 16,500.00
LF	115	\$260.00	\$ 29,900.00	\$ 29,900.00
LF	83	\$310.00	\$ 25,730.00	\$ 25,730.00
LF	6825	\$260.00	\$ 1,774,500.00	\$ 1,774,500.00
EA	3	\$8,000.00	\$ 24,000.00	\$ 24,000.00
EA	3	\$10,000.00	\$ 30,000.00	\$ 30,000.00
EA	12	\$21,000.00	\$ 252,000.00	\$ 252,000.00
EA	8	\$16,000.00	\$ 128,000.00	\$ 128,000.00
LF	101	\$300.00	\$ 30,300.00	\$ 30,300.00
LF	176	\$310.00	\$ 54,560.00	\$ -
EA	2	\$1,500.00	\$ 3,000.00	\$ 3,000.00
			\$ -	\$ -
SUBTOTAL			\$ 3,767,170.00	\$ 3,450,970.00
MATERIALS SUBTOTAL			\$ 3,785,170.00	\$ 3,468,970.00
			\$0.00	
Unit	Quantity	\$/Unit	Total	Difference
			\$ -	\$ -
			\$ -	\$ -
SUBTOTAL			\$0.00	\$ -
Unit	Quantity	\$/Unit	Total	Difference
			\$ -	\$ -
			\$ -	\$ -
		0.00%	\$ -	\$ -
SUBTOTAL			\$ -	\$ -
Unit	Quantity	\$/Unit	Total	Difference
LS	1	\$3,000.00	\$ 3,000.00	\$ 3,000.00
EA	2	\$1,000.00	\$ 2,000.00	\$ 2,000.00
LS	1	\$400,000.00	\$ 400,000.00	\$ 400,000.00
EA	4	\$2,500.00	\$ 10,000.00	\$ 2,500.00
EA	10	\$2,200.00	\$ 22,000.00	\$ 22,000.00
EA	10	\$1,500.00	\$ 15,000.00	\$ 15,000.00
LS	1	\$40,000.00	\$ 40,000.00	\$ 40,000.00
LS	1	\$35,000.00	\$ 35,000.00	\$ 35,000.00
LS	1	\$3,000.00	\$ 3,000.00	\$ 3,000.00
SY	28	\$150.00	\$ 4,200.00	\$ 4,200.00

Concrete Pavement Repair for Utility Trench				\$	-
Concrete Flume Repair				\$	-
Seeding Turf Grass				\$	-
Block Sod				\$	-
Excavation Protection	LF	312	\$1.00	\$	312.00
Locate Existing Utilities				\$	-
Water Service Connection (2")				\$	-
Connection to Existing Main (8")				\$	-
Connection to Existing Main (12")				\$	-
Connection to Existing Main (16")				\$	-
Traffic Control Devices				\$	-
Traffic Control Plan				\$	-
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$	-
				SUBTOTAL	\$ 7,812.00
LABOR SUBTOTAL				\$	7,812.00

Engineering Procured by TxDOT - 100% eligiblity required					
Line Item / Item Description	Unit	Quantity	\$/Unit	Total	
				\$	-
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$	-
				SUBTOTAL	\$ -

Internal Engineering - Costs Documented with Certified Ledger at payment.					
Line Item / Item Description	Unit	Quantity	\$/Unit	Total	
PM Time	HR	216	\$72.07	\$	15,567.12
Senior PM Time	HR	135	\$75.67	\$	10,215.45
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$	-
				SUBTOTAL	\$ 25,782.57
Internal Survey / Landman					
Engineer Time	HR	135	\$68.63	\$	9,265.05
Engineer Tech Time	HR	189	\$49.54	\$	9,363.06
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$	-
				SUBTOTAL	\$ 18,628.11
Internal Inspection					
Inspector Time	HR	324	\$40.95	\$	13,267.80
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$	-
				SUBTOTAL	\$ 13,267.80
Internal Administration					
Administration Staff Time	HR	108	\$56.46	\$	6,097.68
Real Estate Specialist	HR	300	\$52.49	\$	15,747.00
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$	-
				SUBTOTAL	\$ 21,844.68
Internal Engineering/ Survey/ Inspection/ Administration Overhead					
OVERHEAD (%)	Enter % if applicable	0.00%	\$	-	
				SUBTOTAL	\$ 79,523.16

External Engineering - Cost documented with INVOICES and / or CHECKS					
Line Item / Item Description	Unit	Quantity	\$/Unit	Total	
				\$	-
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$	-
				SUBTOTAL	\$ -
External Survey/ Landman					
3rd Party Attorney Fees	EA	1	\$50,000.00	\$	50,000.00
Select this row and Insert to add rows. Drag to fill formulas from top cell.				\$	-

SY	60	\$200.00	\$	12,000.00	\$ 12,000.00
SY	9	\$250.00	\$	2,250.00	\$ 2,250.00
SY	15907	\$3.00	\$	47,721.00	\$ 47,721.00
SY	1767	\$11.00	\$	19,437.00	\$ 19,437.00
LF	7953	\$1.00	\$	7,953.00	\$ 7,641.00
LS	1	\$60,000.00	\$	60,000.00	\$ 60,000.00
EA	2	\$7,000.00	\$	14,000.00	\$ 14,000.00
EA	6	\$23,000.00	\$	138,000.00	\$ 138,000.00
EA	2	\$24,000.00	\$	48,000.00	\$ 48,000.00
EA	2	\$28,000.00	\$	56,000.00	\$ 56,000.00
MO	9	\$2,500.00	\$	22,500.00	\$ 22,500.00
EA	3	\$1,000.00	\$	3,000.00	\$ 3,000.00

				\$	-	\$ -
				SUBTOTAL	\$ 965,061.00	\$ 957,249.00
					\$ 965,061.00	\$ 957,249.00

Unit	Quantity	\$/Unit	Total	Difference
			\$ -	\$ -
			\$ -	\$ -
SUBTOTAL			\$ -	\$ -

Unit	Quantity	\$/Unit	Total	Difference
HR	1080	\$72.07	\$ 77,835.60	\$ 62,268.48
HR	675	\$75.67	\$ 51,077.25	\$ 40,861.80
			\$ -	\$ -
SUBTOTAL			\$ 128,912.85	\$ 103,130.28
HR	675	\$68.63	\$ 46,325.25	\$ 37,060.20
HR	945	\$49.54	\$ 46,815.30	\$ 37,452.24
			\$ -	\$ -
SUBTOTAL			\$ 93,140.55	\$ 74,512.44
HR	1620	\$40.95	\$ 66,339.00	\$ 53,071.20
			\$ -	\$ -
SUBTOTAL			\$ 66,339.00	\$ 53,071.20
HR	540	\$56.46	\$ 30,488.40	\$ 24,390.72
HR	300	\$52.49	\$ 15,747.00	\$ -
			\$ -	\$ -
SUBTOTAL			\$ 46,235.40	\$ 24,390.72
		0.00%	\$ -	\$ -
			\$ 334,627.80	\$ 255,104.64

Unit	Quantity	\$/Unit	Total	Difference
			\$ -	\$ -
			\$ -	\$ -
SUBTOTAL			\$ -	\$ -
EA	1	\$50,000.00	\$ 50,000.00	\$ -
			\$ -	\$ -

				SUBTOTAL	\$	50,000.00
External Inspection						
Raba Kistner Inspection Services		EA	1	\$70,000.00	\$	70,000.00
Select this row and Insert to add rows. Drag to fill formulas from top cell.					\$	-
				SUBTOTAL	\$	70,000.00
Engineering / Administration / Inspection				SUBTOTAL	\$	199,523.16
Existing Easement Compensation - following Quit Claim / Eligibility Ratio not applied. Will						
Line Item / Item Description		Unit	Quantity	\$/Unit	Total	
				\$	-	
Select this row and Insert to add rows. Drag to fill formulas from top cell.					\$	-
				SUBTOTAL	\$	-
Replacement Easement Compensation - following Quit Claim / Eligibility Ratio is applied.						ROW
PM must concur with rate. Documentation of actual cost must be supplied at billing.						
Stevenson Property		EA	1	\$86.00	\$	86.00
UNT		EA	1	\$4,070.25	\$	4,070.25
Victor Technologies		EA	1	\$732.00	\$	732.00
				\$	-	
Select this row and Insert to add rows. Drag to fill formulas from top cell.					\$	-
				SUBTOTAL	\$	4,888.25
Easement Compensation				SUBTOTAL	\$	4,888.25

SUMMARY:				TOTAL PROJECT COST	\$ 528,423.41
Amount Payable in TxDOT Contract (Joint Bid)					\$ -
				Utility Cost	\$ 528,423.41
General & Administrative OH				0.00%	\$ -
Gross Reimbursable to the Utility					\$ 528,423.41
Amount Due to TxDOT Via an Advance Funding Agreement					\$ -
SALVAGE and/or Depreciation CREDIT					
BETTERMENT RATIO				Ratio Deduction	\$ -
Amount reimbursable after Betterment and Salvage Credit					\$ 528,423.41
ELIGIBILITY RATIO					
NET REIMBURSEMENT TO UTILITY					\$ 23,567.68

SUBTOTAL			\$ 50,000.00	\$ -
EA	1	\$280,000.00	\$ 280,000.00	\$ 210,000.00
			\$ -	\$ -
SUBTOTAL			\$ 280,000.00	\$ 210,000.00
			\$ 664,627.80	\$ 465,104.64
Unit	Quantity	\$/Unit	Total	Difference
			\$ -	\$ -
			\$ -	\$ -
SUBTOTAL			\$ -	\$ -
EA	1	\$86.00	\$ 86.00	\$ -
EA	1	\$4,070.25	\$ 4,070.25	\$ -
EA	1	\$732.00	\$ 732.00	\$ -
			\$ -	\$ -
			\$ -	\$ -
SUBTOTAL			\$ 4,888.25	\$ -
		\$	4,888.25	\$ -

		\$ 5,419,747.05	\$ 4,891,323.64
		\$ -	\$ -
		\$ 5,419,747.05	\$ 4,891,323.64
G&A	0.00%	\$ -	\$ -
		\$ 5,419,747.05	\$ 4,891,323.64
		\$ -	\$ -
			\$ -
BR	90.25%	\$ 4,891,321.71	\$ 4,891,321.71
		\$ 528,425.34	\$ 1.93
ER	4.46%		
		\$ 23,567.77	\$ 0.09
Percent of Difference=		926%	

Attachment “B” Accounting Method



Actual Cost Method of Accounting

The utility accumulates cost under a work order accounting procedure prescribed by the Federal or State regulatory body and proposes to request reimbursement for actual direct and related indirect costs.



Lump Sum Method of Accounting

The Utility proposed to request reimbursement based on an agreed lump sum amount supported by a detailed cost analysis.

Initial Date
TxDOT

Initial Date
Utility

Attachment “C” Schedule of Work

Estimated Start Date (mm/dd/yyyy): 10/15/2025, subject to physical work restrictions prior to the issuance of environmental clearance as required by the provisions of this agreement. (If construction will be joint bid and included in the highway contract, enter the project let date.)

Estimated Duration (number of days): 180

Estimated Completion Date (mm/dd/yyyy): 04/13/2026

Initial Date
TxDOT

Initial Date
Utility

Attachment “D” Statement Covering Contract Work

Construction Contract: Complete form ROW-U-48 and ROW-U-48-1 if applicable.

- ☐ Utility performing with their own forces (timesheets will be required at the time of billing).
- ☒ Utility will use outside forces to perform the adjustment, complete attached ROW-U-48 or ROW-U-48-1 (joint bid).

Engineering Contract:

- ☒ Utility performing with their own forces (timesheets will be required at the time of billing).
- ☐ Utility will use consultant contract (continuing contract rate sheets or fee schedule will be required).
- ☐ TxDOT will procure a utility engineering consultant.

Initial Date
TxDOT

Initial Date
Utility



STATEMENT COVERING UTILITY CONSTRUCTION CONTRACT WORK
(AS APPEARING IN ESTIMATE)

Form ROW-U-48
(Rev. 10/20)
Page 1 of 1

U-Number: N/A Utility ID: U00023607
ROW CSJ Number: 1951-01-012 District: Dallas
County: Denton Highway No.: FM 1515
Federal Project No.: F 2021(671)

I, Shawn Messick, a duly authorized and qualified representative of
City of Denton, hereinafter referred to as **Owner**, am fully cognizant of the
facts and make the following statements in respect to work which will or may be done on a contract basis as it appears in the
estimate to which this statement is attached.

It is more economical and/or expedient for **Owner** to contract this adjustment, or **Owner** is not adequately staffed or equipped
to perform the necessary work on this project with its own forces to the extent as indicated on the estimate.

Procedure to be Used in Contracting Work

- ☐ A. Solicitation for bids is to be accomplished through open advertising and contract is to be awarded to the lowest
qualified bidder who submits a proposal in conformity with the requirements and specifications for the work to be
performed. Associated bid tabulations will be provided to the **State**.
- ☒ B. Solicitation for bids is to be accomplished by circulating to a list of pre-qualified contractors or known qualified
contractors and such contract is to be awarded to the lowest qualified bidder who submits a proposal in conformity
with the requirements and specifications for the work to be performed. Associated bid tabulations will be provided to
the **State**. Such presently known contractors are listed below:
1. Oscar Renda
 2. SJ. Louis Construction of Texas, LLC
 3. Mountain Cascade
 - 4.
 - 5.
- ☐ C. The work is to be performed under an existing continuing contract under which certain work is regularly performed
for **Owner** and under which the lowest available costs are developed. The existing continuing contract will be made
available to the **State** for review at a location mutually acceptable to the **Owner** and the **State**. If only part of the
contract work is to be done under an existing contract, give detailed information by attachment hereto.
- ☐ D. The utility proposes to contract outside the foregoing requirements and therefore evidence in support of its proposal
is attached to the estimate in order to obtain the concurrence of the **State**, and the Federal Highway Administration
Division Engineer where applicable, prior to taking action thereon (approval of the agreement shall be considered as
approval of such proposal).
- ☐ E. The utility plans and specifications, with the consent of the **State**, will be included in the construction contract
awarded by the **State**. In the best interest of both the **State** and the **Owner**, the **Owner** requests the **State** to include
the plans and specifications for this work in the general contract for construction of Highway _____
in this area, so that the work can be coordinated with the other construction operations; and the construction
contract is to be awarded by the **State** to the lowest qualified bidder who submits a proposal in conformity with the
requirements and specifications for the work to be performed. If this option is chosen, attach form ROW-U-48-1, the
terms of which are incorporated herein by reference.

Signature _____

Date _____

Title _____

SECTION 00 42 43 - UNIT PRICE BID FORM



City of Denton - Capital Projects From: [Mountain Cascade of Texas, LLC.](#)

901-B Texas Street

5340 E US Hwy 67

Denton, TX 76209

Alvarado, TX 76009

Attn: Purchasing Dept.

Andrew L. McCulloch

817-783-3094

amcculloch@mountaincascade.com

PROJ.: **FM 1515 Utilities Relocation**

IFB: **7968-007**

ENG: **230011-1**

PMO:

BIDDERS APPLICATION - UNIT PRICE BID

Item No.	Spec. Section No.	Description	UOM	BID QTY	Unit Price	Extended Price
1	01 57 13	SWPPP	LS	1	\$ 3,000.00	\$ 3,000.00
2	01 58 13	Project Signs	EA	2	\$ 1,000.00	\$ 2,000.00
3	01 70 00	Mobilization	LS	1	\$ 400,000.00	\$ 400,000.00
4	02 41 14	Remove Utility Manhole	EA	4	\$ 2,500.00	\$ 10,000.00
5	02 41 14	Remove Fire Hydrant, Lead Line & Valve	EA	10	\$ 2,200.00	\$ 22,000.00
6	02 41 14	Remove Water Valve	EA	10	\$ 1,500.00	\$ 15,000.00
7	31 10 00	Site Clearing	LS	1	\$ 40,000.00	\$ 40,000.00
8	31 25 14	SWPPP Device Installation	LS	1	\$ 35,000.00	\$ 35,000.00
9	31 25 14	SWPPP Device Removal	LS	1	\$ 3,000.00	\$ 3,000.00
10	32 01 17	Asphalt Pavement Repair for Utility Trench	SY	28	\$ 150.00	\$ 4,200.00
11	32 01 29	Concrete Pavement Repair for Utility Trench	SY	60	\$ 200.00	\$ 12,000.00
12	32 01 29	Concrete Flume Repair	SY	9	\$ 250.00	\$ 2,250.00
13	32 93 00	Seeding Turf Grass	SY	15,907	\$ 3.00	\$ 47,721.00
14	32 93 00	Block Sod	SY	1,767	\$ 11.00	\$ 19,437.00
15	33 05 05	Excavation Protection	LF	7,953	\$ 1.00	\$ 7,953.00
16	33 05 07	Steel Casing by Open Cut (12")	LF	24	\$ 400.00	\$ 9,600.00
17	33 05 07	Steel Casing by Bore (12")	LF	390	\$ 655.00	\$ 255,450.00
18	33 05 07	Steel Casing by Open Cut (18")	LF	173	\$ 420.00	\$ 72,660.00
19	33 05 07	Steel Casing by Bore (18")	LF	83	\$ 760.00	\$ 63,080.00
20	33 05 07	Steel Casing by Open Cut (20")	LF	73	\$ 450.00	\$ 32,850.00
21	33 05 07	Steel Casing by Bore (20")	LF	178	\$ 800.00	\$ 142,400.00
22	33 05 07	Steel Casing by Open Cut (24")	LF	283	\$ 550.00	\$ 155,650.00
23	33 05 07	Steel Casing by Bore (24")	LF	252	\$ 820.00	\$ 206,640.00
24	33 05 15	HDPE Water Main in Casing (8")	LF	414	\$ 100.00	\$ 41,400.00
25	33 05 15	HDPE Water Main in Casing (12")	LF	256	\$ 110.00	\$ 28,160.00
26	33 05 15	HDPE Water Main in Casing (16")	LF	291	\$ 150.00	\$ 43,650.00
27	33 05 15	Sanitary Sewer Gravity Main in Casing (12")	LF	251	\$ 110.00	\$ 27,610.00
28	33 05 15	Sanitary Sewer Gravity Main in Casing (15")	LF	244	\$ 120.00	\$ 29,280.00
29	33 05 61; 33 05 62	Concrete Manhole (5' ID) (0'-6' Deep)	EA	4	\$ 19,000.00	\$ 76,000.00
30	33 05 61; 33 05 62	Extra Concrete Manhole Depth	VF	23	\$ 800.00	\$ 18,400.00
31	33 05 61; 33 05 62	External Drop for Manhole	EA	1	\$ 14,000.00	\$ 14,000.00
32	33 05 64	Double Detector Check Valve Vault	EA	1	\$ 60,000.00	\$ 60,000.00
33	33 05 76	Fiberglass Manhole (5' ID)	EA	2	\$ 40,000.00	\$ 80,000.00
34	33 05 76	Extra Fiberglass Manhole Depth	VF	34	\$ 900.00	\$ 30,600.00
35	33 05 98	Locate Existing Utilities	LS	1	\$ 60,000.00	\$ 60,000.00
36	33 14 11	PVC Water Main (8")	LF	45	\$ 250.00	\$ 11,250.00
37	33 14 11	PVC Water Main (12")	LF	55	\$ 300.00	\$ 16,500.00
38	33 14 14	HDPE Water Main (8")	LF	115	\$ 260.00	\$ 29,900.00
39	33 14 14	HDPE Water Main (12")	LF	83	\$ 310.00	\$ 25,730.00
40	33 14 14	HDPE Water Main (16")	LF	6,825	\$ 260.00	\$ 1,774,500.00
41	33 14 17	Water Service Connection (2")	EA	2	\$ 7,000.00	\$ 14,000.00
42	33 14 20	Gate Valve (8")	EA	3	\$ 8,000.00	\$ 24,000.00
43	33 14 20	Gate Valve (12")	EA	3	\$ 10,000.00	\$ 30,000.00
44	33 14 20	Gate Valve (16")	EA	12	\$ 21,000.00	\$ 252,000.00

Item No.	Spec. Section No.	Description	UOM	BID QTY	Unit Price	Extended Price
45	33 14 25	Connection to Existing Main (8")	EA	6	\$ 23,000.00	\$ 138,000.00
46	33 14 25	Connection to Existing Main (12")	EA	2	\$ 24,000.00	\$ 48,000.00
47	33 14 25	Connection to Existing Main (16")	EA	2	\$ 28,000.00	\$ 56,000.00
48	33 14 25	City Performed Tapping Sleeve and Valve Connection (12" x 12")	EA	1	\$ 18,000.00	\$ 18,000.00
49	33 14 40	Fire Hydrant Assembly	EA	8	\$ 16,000.00	\$ 128,000.00
50	33 31 14	Sanitary Sewer Gravity Main (12")	LF	101	\$ 300.00	\$ 30,300.00
51	33 31 14	Sanitary Sewer Gravity Main (15")	LF	176	\$ 310.00	\$ 54,560.00
52	TXDOT 7216	Insertion Valve (8")	EA	2	\$ 1,500.00	\$ 3,000.00
53	34 71 13	Traffic Control Devices	MO	9	\$ 2,500.00	\$ 22,500.00
54	34 71 13	Traffic Control Plan	EA	3	\$ 1,000.00	\$ 3,000.00

TOTAL PROJECT BID AMOUNT: \$ 4,750,231.00

FM 1515 Utilities Relocation

Mountain Cascade of Texas, LLC.

SECTION 00 42 43 - UNIT PRICE BID FORM



City of Denton - Capital Projects From: [Oscar Renda Contracting Inc.](#)

901-B Texas Street

1100 Kubota Dr.

Denton, TX 76209

Grapevine, TX 76051

Attn: Purchasing Dept.

Jon Dorma

817-293-4263

bidding@southlandholdings.com

PROJ.: **FM 1515 Utilities Relocation**

IFB: **7968-007**

ENG **230011-1**

PMO:

BIDDERS APPLICATION - UNIT PRICE BID

Item No.	Spec. Section No.	Description	UOM	BID QTY	Unit Price	Extended Price
1	01 57 13	SWPPP	LS	1	\$ 10,000.00	\$ 10,000.00
2	01 58 13	Project Signs	EA	2	\$ 5,000.00	\$ 10,000.00
3	01 70 00	Mobilization	LS	1	\$ 1,100,000.00	\$ 1,100,000.00
4	02 41 14	Remove Utility Manhole	EA	4	\$ 12,000.00	\$ 48,000.00
5	02 41 14	Remove Fire Hydrant, Lead Line & Valve	EA	10	\$ 10,000.00	\$ 100,000.00
6	02 41 14	Remove Water Valve	EA	10	\$ 3,000.00	\$ 30,000.00
7	31 10 00	Site Clearing	LS	1	\$ 100,000.00	\$ 100,000.00
8	31 25 14	SWPPP Device Installation	LS	1	\$ 200,000.00	\$ 200,000.00
9	31 25 14	SWPPP Device Removal	LS	1	\$ 20,000.00	\$ 20,000.00
10	32 01 17	Asphalt Pavement Repair for Utility Trench	SY	28	\$ 400.00	\$ 11,200.00
11	32 01 29	Concrete Pavement Repair for Utility Trench	SY	60	\$ 300.00	\$ 18,000.00
12	32 01 29	Concrete Flume Repair	SY	9	\$ 250.00	\$ 2,250.00
13	32 93 00	Seeding Turf Grass	SY	15,907	\$ 1.50	\$ 23,860.50
14	32 93 00	Block Sod	SY	1,767	\$ 10.00	\$ 17,670.00
15	33 05 05	Excavation Protection	LF	7,953	\$ 1.00	\$ 7,953.00
16	33 05 07	Steel Casing by Open Cut (12")	LF	24	\$ 470.00	\$ 11,280.00
17	33 05 07	Steel Casing by Bore (12")	LF	390	\$ 800.00	\$ 312,000.00
18	33 05 07	Steel Casing by Open Cut (18")	LF	173	\$ 700.00	\$ 121,100.00
19	33 05 07	Steel Casing by Bore (18")	LF	83	\$ 900.00	\$ 74,700.00
20	33 05 07	Steel Casing by Open Cut (20")	LF	73	\$ 800.00	\$ 58,400.00
21	33 05 07	Steel Casing by Bore (20")	LF	178	\$ 1,100.00	\$ 195,800.00
22	33 05 07	Steel Casing by Open Cut (24")	LF	283	\$ 800.00	\$ 226,400.00
23	33 05 07	Steel Casing by Bore (24")	LF	252	\$ 1,200.00	\$ 302,400.00
24	33 05 15	HDPE Water Main in Casing (8")	LF	414	\$ 700.00	\$ 289,800.00
25	33 05 15	HDPE Water Main in Casing (12")	LF	256	\$ 900.00	\$ 230,400.00
26	33 05 15	HDPE Water Main in Casing (16")	LF	291	\$ 1,000.00	\$ 291,000.00
27	33 05 15	Sanitary Sewer Gravity Main in Casing (12")	LF	251	\$ 600.00	\$ 150,600.00
28	33 05 15	Sanitary Sewer Gravity Main in Casing (15")	LF	244	\$ 700.00	\$ 170,800.00
29	33 05 61; 33 05 62	Concrete Manhole (5' ID) (0'-6' Deep)	EA	4	\$ 35,000.00	\$ 140,000.00
30	33 05 61; 33 05 62	Extra Concrete Manhole Depth	VF	23	\$ 1,000.00	\$ 23,000.00
31	33 05 61; 33 05 62	External Drop for Manhole	EA	1	\$ 5,000.00	\$ 5,000.00
32	33 05 64	Double Detector Check Valve Vault	EA	1	\$ 50,000.00	\$ 50,000.00
33	33 05 76	Fiberglass Manhole (5' ID)	EA	2	\$ 40,000.00	\$ 80,000.00
34	33 05 76	Extra Fiberglass Manhole Depth	VF	34	\$ 2,000.00	\$ 68,000.00
35	33 05 98	Locate Existing Utilities	LS	1	\$ 100,000.00	\$ 100,000.00
36	33 14 11	PVC Water Main (8")	LF	45	\$ 600.00	\$ 27,000.00
37	33 14 11	PVC Water Main (12")	LF	55	\$ 650.00	\$ 35,750.00
38	33 14 14	HDPE Water Main (8")	LF	115	\$ 700.00	\$ 80,500.00
39	33 14 14	HDPE Water Main (12")	LF	83	\$ 800.00	\$ 66,400.00
40	33 14 14	HDPE Water Main (16")	LF	6,825	\$ 1,000.00	\$ 6,825,000.00
41	33 14 17	Water Service Connection (2")	EA	2	\$ 8,000.00	\$ 16,000.00
42	33 14 20	Gate Valve (8")	EA	3	\$ 5,000.00	\$ 15,000.00
43	33 14 20	Gate Valve (12")	EA	3	\$ 8,000.00	\$ 24,000.00
44	33 14 20	Gate Valve (16")	EA	12	\$ 25,000.00	\$ 300,000.00

Item No.	Spec. Section No.	Description	UOM	BID QTY	Unit Price	Extended Price
45	33 14 25	Connection to Existing Main (8")	EA	6	\$ 7,500.00	\$ 45,000.00
46	33 14 25	Connection to Existing Main (12")	EA	2	\$ 12,000.00	\$ 24,000.00
47	33 14 25	Connection to Existing Main (16")	EA	2	\$ 24,000.00	\$ 48,000.00
48	33 14 25	City Performed Tapping Sleeve and Valve Connection (12" x 12")	EA	1	\$ 30,000.00	\$ 30,000.00
49	33 14 40	Fire Hydrant Assembly	EA	8	\$ 25,000.00	\$ 200,000.00
50	33 31 14	Sanitary Sewer Gravity Main (12")	LF	101	\$ 500.00	\$ 50,500.00
51	33 31 14	Sanitary Sewer Gravity Main (15")	LF	176	\$ 550.00	\$ 96,800.00
52	TXDOT 7216	Insertion Valve (8")	EA	2	\$ 25,000.00	\$ 50,000.00
53	34 71 13	Traffic Control Devices	MO	9	\$ 5,000.00	\$ 45,000.00
54	34 71 13	Traffic Control Plan	EA	3	\$ 5,000.00	\$ 15,000.00

TOTAL PROJECT BID AMOUNT: \$ 12,593,563.50

FM 1515 Utilities Relocation

Oscar Renda Contracting Inc.



August 12, 2025

TxDOT – Dallas District Utility and Survey Supervisor
4777 E. Highway 80
Mesquite, Texas 76021
214-320-6648

Dear TxDOT Dallas District Utilities:

This correspondence aims to elucidate the reasons behind the limited participation in the bidding process for the FM 1515 Utility Relocation (CSJ-011) (RCSJ-012) - Utility ID#: U00023607 project by the City of Denton.

The City of Denton initiated the solicitation for this project utilizing a Prequalified List of Utility Relocation Construction Services, consisting of three (3) contractors: Mountain Cascade of Texas, Oscar Renda Contracting, Inc., and S.J. Louis Construction of Texas, Ltd. However, bids were only received from Mountain Cascade of Texas and Oscar Renda Contracting, Inc., as submitted to the City of Denton's Procurement Office. It's noteworthy that the City lacks the authority to mandate participation from all parties, hence S.J. Louis Construction of Texas, Ltd. did not fulfill the bid requirements.

Should you find this letter and its accompanying enclosure insufficient in addressing this matter, please don't hesitate to contact us for further assistance.

Sincerely,

Shawn Messick
Construction Project Manager

Enclosure(s):
Bid Opportunity Detail

OUR CORE VALUES

Inclusion • Collaboration • Quality Service • Strategic Focus • Fiscal Responsibility



Bid Opportunity Detail

[Return to Listing](#) [Supplier Registration](#)

Bid Information

Type	Invitation for Bid
Status	Unsealed
Number	7968-007 Addendum 2 (FM 1515 Utilities Relocation)
Issue Date & Time	3/31/2025 03:16:34 PM (CT)
Close Date & Time	4/23/2025 01:00:00 PM (CT)
Question Cut Off Date	4/11/2025 02:00:00 PM (CT)
Duration	22 days 21 hours 43 minutes 25 seconds
Notes	

Contact Information

Name
Address

Phone
Fax
Email

IFB 7968-007 - FM1515 UTILITIES RELOCATION

The submittal process may take significant time.
The City highly recommends that respondents do not wait until minutes before the due date and time to submit proposal.

Submissions via email will not be accepted.

****Original Hard Copy Bid Bonds (w/raised seal) are required.****

A Pre-Bid Meeting and Project Site Walkthrough will be conducted on Monday, April 7, 2025, at 2:00PM CST

Pre-Bid Meeting & Project Walkthrough will be held for in-person attendance only, see physical location below:

Fastenal Distribution Center parking lot
3833 Airport Rd
Denton, TX 76207

A Public Opening will be conducted for this solicitation on Wednesday, April 23, 2025, at 1:30PM CST

To attend the Public Opening in-person, see physical location below:

Development Service Center
Training Room ONE
401 N. Elm Street
Denton, TX 76201

To attend the Public Opening virtually follow the link:

[Click here to join the meeting](#)

Meeting ID: 262 242 277 604

Passcode: bD2oc2jX

[Download Teams](#) | [Join on the web](#)

[Learn More](#) | [Meeting options](#)

In accordance with the provisions of Texas State Law, the City of Denton (the City) is requesting submissions to contract with an individual or business with considerable experience in providing goods or services of this solicitation. The responses and the cost solutions shall be submitted to the City of Denton in a sealed submission.

The awarded individual or business shall possess a proven track record of using innovative approaches to providing goods and services that represent the best value to their clients. The awarded individual or business shall have the ability to accomplish all aspects of the requested services. The selected individual or firm should be able to provide innovative methods to deal with municipal challenges and cost effective solutions.

Only firms prequalified under the Request for Qualifications (RFQ 7968 - Prequalification for Utility Relocation Construction Services) portion of this two-step process are allowed to submit bids in response to this Invitation for Bid (IFB). The firms who have been prequalified are as follows (listed alphabetically):

- Mountain Cascade of Texas
- Oscar Renda Contracting, Inc.
- S.J. Louis Construction of Texas, Ltd.

Bid Documents

Document name	Format
Bid Invitation	Acrobat / PDF
Public Question & Answer	Acrobat / PDF
1	2 items in 1 pages

Bid Attachments

File Name	Description	File Size
IFB 7968-007 FM 1515 Project Manual - SPECS.pdf (please login to view this document)	IFB 7968-007 FM 1515 Project Manual - SPECS	21.45 MB
IFB 7968-007 FM 1515 Project Manual - PLANS.pdf (please login to view this document)	IFB 7968-007 FM 1515 Project Manual - PLANS	24.14 MB
00 42 43 - Unit Price Bid Form.xlsx (please login to view this document)	00 42 43 - Unit Price Bid Form - IFB 7968-007	52 KB
7968-007 Safety Questionnaire.pdf	Safety Record Questionnaire Form	21 KB
ADDENDUM 1 - IFB 7968-007 Pre-Bid Meeting Agenda & Attendance.pdf	**ADDENDUM 1** IFB 7968-007 Pre-Bid Meeting Agenda & Attendance	91 KB
1	5 items in 1 pages	

Bid Questions

Question	SS 2 shows a 12" being installed but the call outs at the top of the page state 15". Is SS 2 to be 12" or 15"?
Answer	12" is being installed.
Submitted	4/10/2025 09:11:49 AM (CT)
Question	Will a geotech be provided?
Answer	No Geotech will be provided.
Submitted	4/8/2025 06:47:05 AM (CT)
Question	Will the trees be required to be replaced on Airport Road in front of Fastenal?
Answer	1. The trees will be removed by TxDOT; therefore, replacement isn't required. Trees along FM 1515 should only be removed if necessary for utility installation.
Submitted	4/4/2025 02:05:34 PM (CT)
Question	Can an item be added for the sidewalk along Airport Road? It looks like it starts at Fastenal and goes to Dakota Lane.
Answer	1. The current sidewalk shouldn't be any issue other than when possibly removing the old hydrants, valves, and such.
Submitted	4/4/2025 02:04:48 PM (CT)

Bid Event Participation Activity

Activity Date	Activity Name	Description
4/7/2025 02:00:00 PM (CT)	Pre-Bid Conference & Site Walkthrough	**Due to severe weather conditions, the Pre-Bid Meeting and Site Walkthrough will be moved to Monday, April 7th at 2:00 PM** A non-mandatory Pre-Bid Conference and Project Site Walkthrough will be available to interested contractors. Attendance at the Pre-Bid Conference is strongly encouraged prior to submission of a response. <u>Pre-Bid Meeting & Project Walkthrough will be held for in-person attendance only, see physical location below:</u> Fastenal Distribution Center parking lot 3833 Airport Rd Denton, TX 76207
1	1 items in 1 pages	

Plan Holders

Supplier Name	City	State	Contact Name	Email	Phone
mountain cascade of texas	Alvarado	TX	Cody Sears	codys@mountaincascade.com	(817) 783-3094
Oscar Renda Contracting, Inc.	Grapevine	TX	Janie Rodriguez	bidding@southlandholdings.com	(817) 293-4263
S.J. Louis Construction of Texas, Ltd	Mansfield	TX	Adam Lunsford	AdamL@sjlouis.com	(817) 477-0320
1	3 items in 1 pages				

Attachment “E” Utility Joint Use Agreement – (ROW-U-JUA) and/or RULIS Permit

- ☐ Utility Joint Use Agreement (ROW–U–JUA)
☐ Plans with joint use area highlighted are included.

- ☒ RULIS Permit Number: 00002/20240807/370940/444678/UP
The utility should obtain an approved permit before the start of construction inside of the highway right of way.

- ☐ Quitclaim will be submitted at the Final Billing

Initial Date
TxDOT

Initial Date
Utility

UTILITY PERMIT APPROVAL

TO:	Tankersley City of Denton - Cole
	401 N. Elm St. Denton, 76201

Date:	09-10-2025
Application/Permit No.:	00002/20240807/370940/444678/UP
District:	Dallas

Highway	Control Section	Maintenance Section	County
FM1515-K: From milepost 562+0.223 To milepost 562+1.072	1951-01		Denton
FM1515-K: From milepost 562+1.072 To milepost 562+1.078	1951-01		Denton
FM1515-K: From milepost 562+1.078 To milepost 562+1.541	1951-01		Denton
IH0035W-X: At milepost 84.648	0081-13		Denton
IH0035W-X: At milepost 84.648	0081-13		
FM1515-K: From milepost 562+1.663 To milepost 562+1.669	1951-01		Denton
FM1515-K: From milepost 562+1.67 To milepost 562+1.676	1951-01		Denton
FM1515-K: At milepost 562+1.67	1951-01		
FM1515-K: From milepost 562+1.271 To milepost 562+1.286	1951-01		Denton
FM1515-K: From milepost 562+0.771 To milepost 562+0.772	1951-01		Denton
FM1515-K: At milepost 562+0.772	1951-01		

Schedule Dates: from 09/09/2025 to 03/09/2026

TxDOT offers no objection to the location on the right-of-way of your proposed utility installation, as described by Notice of Proposed Utility Installation No. 00002/20240807/370940/444678/UP dated

03/06/2025 and accompanying documentation, except as noted below.

Special Provisions:

You are required to notify TxDOT 48 hours (2 business days) before you start construction to allow for proper inspection and coordination of workdays and traffic control plans. Use the RULIS website for the 48-hour notification. DO NOT start construction until you have coordinated the construction start date and inspection with TxDOT. You are also required to keep a copy of this Approval and any approved amendments at the job site.

When installing utility lines on controlled-access highways, access for serving this installation shall be limited to access via (a) frontage roads where provided, (b) nearby or adjacent public roads or streets, (c) trails along or near the highway right-of-way lines, connecting only to intersecting roads; from any one or all of which entry may be made to the outer portion of the highway right-of-way for routine service and maintenance operations. The Installation Owner's rights of access to the through-traffic roadways and ramps shall be subject to the same rules and regulations as that apply to the general public except, however, if an emergency occurs and usual means of access for routine service operations will not permit the immediate action required by the Utility Installation Owner in making emergency repairs as required for the safety and welfare of the public, the Utility Owners shall have a temporary right of access to and from the through-traffic roadways and ramps as necessary to accomplish the required emergency repairs, provided TxDOT is immediately notified by the Utility Installation Owner when such repairs are initiated and adequate provision is made by the Utility Installation Owner for the convenience and safety of highway traffic.

The installation shall not damage any part of the highway, and adequate provisions must be made to cause minimum inconveniences to traffic and adjacent property owners. If the Utility Installation Owner fails to comply with any or all the requirements as set forth herein, the State may take such action as it deems appropriate to compel compliance.

SME - Utility Coordinator Review

Review Answer: Require Additional Information

Response text: This permit was already approved through Denton UC. This is not a Ellis or Navarro permit.

SME - Utility Coordinator Review

Review Answer:Recommend Approval w/ Comments/Changes

Response text: Please make sure current prints are uploaded and construction dates are updated

SME - Utility Coordinator Review

Review Answer:Recommend Approval

Response text:

Reviewed and approved by the Area Office.

SME- District Design / Project Management Review

Review Answer:Recommend Approval

Response text: Hello. I have reviewed. I do not see any conflicts with TxDOT Project FM 1515 CSJ 1951-01-011.

SME - Utility Coordinator Review

Review Answer:Recommend Approval

Response text: Recommend Approval

SME ATTACHMENTS:

Included attachments:

[SME Answers Summary 3106994.pdf](#)

[SME Answers Summary 2931176.pdf](#)

[SME Answers Summary 2919349.pdf](#)

Attachment “F” Eligibility Ratio

Eligibility Ratio established: 4.46 %

- ☒ Non-interstate Highway (Calculations attached)
- ☐ Interstate Highway
- ☐ Toll Road
- ☐ SP2125 Approved Application (100%)
Minute Order #: _____
- ☐ Master Utility Agreement

ROW Utility Manual Chapter 8, Section 2

In developing the ratio, line length or number of poles is restricted to facilities located within the existing and proposed highway right of way. Facilities located outside the existing and proposed right of way limits will not be used in developing the ratio.

Please see example of eligibility ratio calculations below.

Plan Sheet or Page#	In Easement (Eligible) Existing # of Poles or LF	In Public ROW (Ineligible) Existing # of Poles or LF
1	0	0
2	84	2
3	91	385
4	238	96
Totals	412	503

Total Existing # of Poles or LF (Eligible)	412
Total Existing # of Poles or LF (Ineligible)	503
Total Existing # of Poles or LF	915
Total Existing # of Poles or LF (Eligible) divided by the Total Existing # of Poles or LF	45.03%

Initial _____ Date _____
TxDOT

Initial _____ Date _____
Utility

ELIGIBILITY RATIO CALCULATOR

Calculation for Overhead Installation by **Number of Eligible Poles**

Number of EXISTING poles in conflict that are both OUTSIDE of existing ROW, and INSIDE of Proposed ROW. (in easement)

Number of existing Poles in conflict that are inside of the existing ROW. (present by permit)

TOTAL number of Poles in Conflict

0

ELIGIBILITY IF CALCULATED BY POLES

0.00%

Calculation for Underground or Overhead by **Length of Existing Facility**

Length of existing facility in conflict that is both **outside of the existing ROW** and **inside of proposed ROW**. EASEMENT

371

Length of the existing facility in conflict **inside of the existing ROW**. PERMIT

7942

TOTAL length of the existing facility within proposed TxDOT ROW.

8313

ELIGIBILITY IF CALCULATED BY LENGTH

4.46%

ACCEPTED ELIGIBILITY RATIO

4.46%

ELIGIBILITY RATIO CALCULATOR

Linear Feet or Pole Count of Existing Facility

Public (permit)		Private (easement)
Page 1		
Page 2		
Page 3		
Page 4		
Page 5		
Page 6		
Page 7		
Page 8		
Page 9		
Page 10		
Page 11		
Page 12		
Page 13		
Page 14		
Page 15	1000	
Page 16	950	
Page 17	1000	
Page 18	1000	
Page 19	1000	
Page 20	1000	
Page 21	1024	
Page 22	93.82	371
Page 23	334.74	
Page 24	130.91	
Page 25	100.26	
Page 26	71.22	
Page 27	236.68	
Page 28		
Page 29		
Page 30		
Page 31		
Page 32		
Page 33		
Page 34		
Page 35		
Page 36		
Page 37		
SUM	7941.63	371
TOTAL EXISTING FACILITY		8313

ACCEPTED ELIGIBILITY RATIO 4.46%

Attachment “G” Betterment Calculation and Estimate

- ☒ Elective Betterment Ratio established: 90.25 %
☐ Calculation is attached and the justification is included below
☒ A betterment and an in-kind estimate are included
- ☐ Forced Betterment
☐ To comply with regulated industry standards, laws, and regulations. (Supporting documentation required)
☐ To comply with published current design practice followed by the utility in its own work. (Supporting documentation required)
☐ Due to proposed roadway design. (Provide explanation below)
- ☐ Not Applicable

A statement explaining Elective and/or Forced Betterment:

Initial Date
TxDOT

Initial Date
Utility

BETTERMENT RATIO CALCULATOR

Two estimates are required to calculate betterment. One with, and one without betterment.
Please attach both estimates.

The total estimated cost of the project INCLUDING BETTERMENT	\$5,419,747.05
The total estimated cost of the project NOT including BETTERMENT	\$528,423.41
THE AMOUNT OF BETTERMENT	\$4,891,323.64
The BETTERMENT RATIO IS:	90.25%

Attachment “H” Proof of Property Interest

☒ Supporting documentation of compensable property interest that establishes reimbursement eligibility as referenced in Texas Transportation Code §203.092.

☐ Property interest documented through applicable affidavits and required attachments.

☐ ROW-U-Affidavit

☒ The roadway improvement project is designated as an Interstate Highway project; therefore, no supporting documentation of compensable interest is required. Supporting documentation for existing easements is required for easement replacement.

☐ Toll Road (Supporting documentation of compensable property interest required if more than 50% eligibility ratio is applied)

☐ SP2125

☐ Master Utility Agreement

Initial Date
TxDOT

Initial Date
Utility

UNT

SCALE: 1" = 200'

J. NEWTON RAYZOR
VOL. 426 Pg. 295
10-8-56

BETTER TOOLS
VOL. 551 Pg. 655

* DRAINAGE CURVE DATA
 $\Delta = 19^{\circ}45'$
 $R = 1155.92'$
 $T = 201.22'$
 $L = 398.44'$

PLAT OF BETTER TOOLS PROPERTY
IN E. PUCHALSKI SURVEY, WEST. NO. 916
BETTER TOOLS INC.

"I hereby certify this plat is incorporated into that certain
dedication bearing even date herewith executed by the under-
signed to the City of Denton."

MAR. , 1968

2389

FILED FOR RECORD
AT 2:30 O'CLOCK PM

MAR 21 1968
Shela Parker
Clerk County Court, Denton Co., Texas

By _____ Deputy

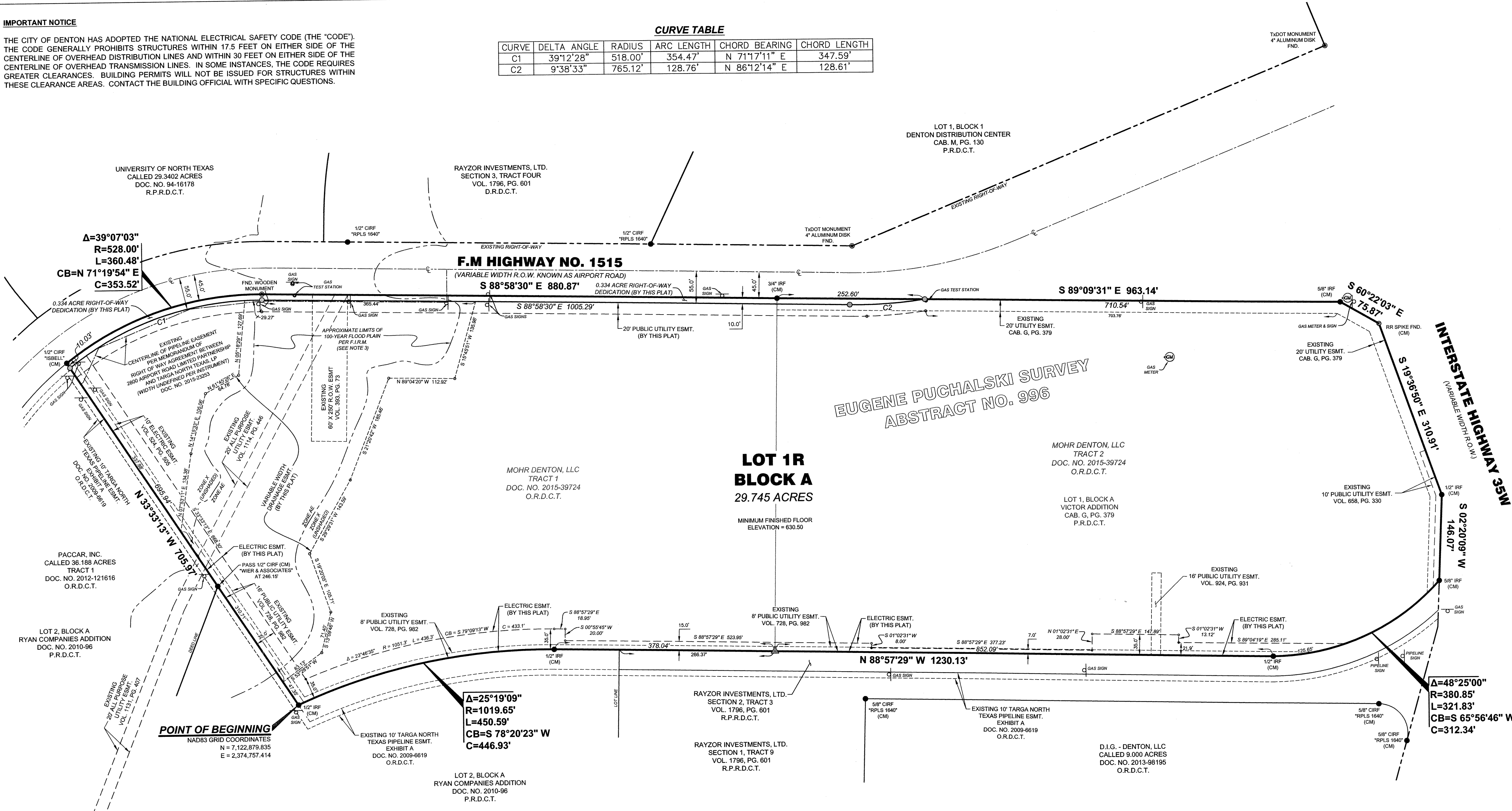
Vol. 5 Page 8

IMPORTANT NOTICE

THE CITY OF DENTON HAS ADOPTED THE NATIONAL ELECTRICAL SAFETY CODE (THE "CODE"). THE CODE GENERALLY PROHIBITS STRUCTURES WITHIN 17.5 FEET ON EITHER SIDE OF THE CENTERLINE OF OVERHEAD DISTRIBUTION LINES AND WITHIN 30 FEET ON EITHER SIDE OF THE CENTERLINE OF OVERHEAD TRANSMISSION LINES. IN SOME INSTANCES, THE CODE REQUIRES GREATER CLEARANCES. BUILDING PERMITS WILL NOT BE ISSUED FOR STRUCTURES WITHIN THESE CLEARANCE AREAS. CONTACT THE BUILDING OFFICIAL WITH SPECIFIC QUESTIONS.

CURVE TABLE

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	39°12'28"	518.00'	354.47'	N 71°17'11" E	347.59'
C2	9°38'33"	765.12'	128.76'	N 86°12'14" E	128.61'



LEGEND	
●	1/2 IRON ROD FOUND (UNLESS OTHERWISE NOTED)
○	5/8 IRON ROD WITH CAP STAMPED "TNP" SET
⊙	RAILROAD SPIKE FOUND
△	CALCULATED POINT
◊	EASEMENT CORNER (BY THIS PLAT)
+	SIGN
⊗	GAS METER
⊙	CONTROLLING MONUMENT
◊	CAPPED IRON ROD FOUND
P.U.E.	PUBLIC UTILITY EASEMENT
O.R.D.C.T.	OFFICIAL RECORDS, DENTON COUNTY, TEXAS
R.P.R.D.C.T.	REAL PROPERTY RECORDS, DENTON COUNTY, TX
P.R.D.C.T.	PLAT RECORDS, DENTON COUNTY, TEXAS
---	PLAT BOUNDARY
---	PROPERTY LINE
---	RIGHT-OF-WAY LINE
---	EASEMENT LINE

GENERAL NOTES:

- All property corners are marked with a 5/8 inch iron rod with cap stamped "TNP" set, unless otherwise noted.
- The minimum finished floor elevations shall be provided when a building permit application is submitted. The minimum finished floor elevations shall be based on the current FEMA data. The minimum finished floor elevations shall be stated as mean sea level rather than relative based on City of Denton datum or NAVD88 datum.
- This property lies within Zone "AE" and ZONE "X" (UNSHADED), as depicted by scaled map location and graphical plotting on FEMA Flood Insurance Rate Map, Community Panel No. 48121C0360G, Map Revision Date April 18, 2011. Zone "AE" is defined as areas within a special flood hazard area (SFHAs) subject to inundation by the 1% annual chance flood and base flood elevations determined. Zone X (unshaded) - Other Areas is defined as areas determined to be outside the 0.2% annual chance floodplain.
- Bearings of lines shown hereon are referenced to Grid North of the Texas Coordinate System of 1983 (North Central Zone; NAD83(2011) Epoch 2010) as derived locally from Western Data Systems Continuously Operating Reference Stations (CORS) via Real Time Kinematic (RTK) methods. The distances shown hereon represent surface values utilizing an Average Combination Factor of 1.000150630 to scale from grid to surface.
- This survey was prepared with benefit of that certain Title Commitment, GF No. 14000220409 with effective date of March 29, 2015, provided by Stewart Title Guaranty Company. For easements, rights-of-way and/or other matters of record that may affect this survey the Surveyor relied solely on said Title Commitment.
- Taps made to existing waterlines or relocation of fire hydrants shall be done by the City of Denton at the contractors expense. Contact Kelvin Pryor with the Water Department at 940-349-7181.
- Taps made to existing sewer lines shall be done by the City of Denton at the contractors expense. Contact Justin Divinye with the Wastewater Department at 940-349-8489.
- The purpose of this Replat is to combine Lot 1, Block A of Victor Addition with a 15.049 acre unplatted tract to create Lot 1R.

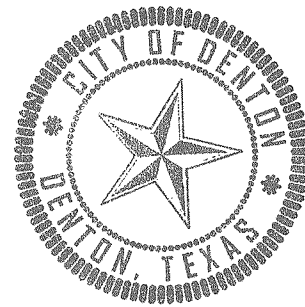
CERTIFICATE OF APPROVAL

APPROVED BY THE PLANNING AND ZONING COMMISSION OF THE CITY OF DENTON, TEXAS.

on this, the 8th day of July, 2015.

Todd B. Turner
Chairperson, Planning and Zoning Commission

Jan Richardson, Asst.
City Secretary



OWNER'S CERTIFICATE

STATE OF TEXAS §
COUNTY OF DENTON §

WHEREAS, MOHR DENTON, LLC is the owner of a 30.079 acre tract of land situated in the Eugene Puchalski Survey, Abstract No. 996, City of Denton, Denton County, Texas, and being known as all of Tracts 1 and 2 described in a Deed to Mohr Denton, LLC, as recorded in Document No. 2015-39724 of the Official Records of Denton County, Texas, and being more particularly described as follows:

BEGINNING at a 1/2 inch iron rod found for corner at the Southwest corner of the above cited Tract 1, said point also being an interior ell corner of Lot 2, Block A per the Conveyance Plat of Ryan Companies Addition, as recorded in Document No. 2010-96 of the Plat Records of Denton County, Texas;

THENCE North 33°33'13" West along the West line of said Tract 1 and the East line of said Lot 2, passing a 1/2 inch iron rod with cap stamped "Wier & Associates" found for the Northeast corner of a called 36.188 acre tract of land described as Tract 1 in a Deed to Paccar, Inc., as recorded in Document No. 2012-121616 of the Official Records of Denton County, Texas, at a distance of 246.15 feet, and continuing along the West line of said Tract 1, the East line of said Lot 2 and the East line of said Paccar tract, for a total distance of 705.97 feet to a 1/2 inch iron rod with cap stamped "Isbell" found for corner in the Southerly line of said F.M. Highway No. 1515 (a 90' wide right-of-way at this point);

THENCE in a Northeasterly direction, along the Southerly line of said F.M. Highway No. 1515, and along a non-tangent curve to the right having a central angle of 39°07'03", a radius of 528.00 feet, a chord bearing of North 71°19'54" East, a chord distance of 353.52 feet and an arc length of 360.48 feet to a wooden highway monument found for corner at the end of said curve;

THENCE South 88°58'30" East continuing along the South line of said F.M. Highway No. 1515, for a distance of 880.87 feet to 3/4 inch iron rod found for corner at the Northwest corner of Lot 1, Block A per the Final Plat of Victor Addition, as recorded in Cabinet G, Page 379 of the Plat Records of Denton County, Texas;

THENCE South 89°09'31" East continuing along the South line of said F.M. Highway No. 1515, for a distance of 963.14 feet to a 5/8 inch iron rod found for corner at the most Northerly Northeast corner of said Lot 1, said point also being in the Westerly line of Interstate Highway No. 35W (a variable width right-of-way);

THENCE South 60°22'03" East along the Westerly line of said Interstate Highway No. 35W, for a distance of 75.87 feet to a railroad spike found for corner at the most Easterly Northeast corner of said Lot 1;

THENCE South 19°36'50" East continuing along the Westerly line of said Interstate Highway No. 35W, for a distance of 310.91 feet to a 1/2 inch iron rod found for corner at an angle point in the East line of said Lot 1;

THENCE South 02°20'09" West continuing along the Westerly line of said Interstate Highway No. 35W, for a distance of 146.07 feet to a 5/8 inch iron rod found for corner at the most Easterly Southeast corner of said Lot 1, said point being the beginning of a non-tangent curve to the right;

THENCE in a Southwesterly direction, departing the Westerly line of said Interstate Highway No. 35W, along the South line of said Lot 1 and along said curve to the right having a central angle of 48°25'00", a radius of 380.85 feet, a chord bearing of South 65°56'46" West, a chord distance of 312.34 feet and an arc length of 321.83 feet to a 1/2 inch iron rod found for corner at the end of said curve;

THENCE North 88°57'29" West along the South line of said Lot 1, passing the Southwest corner of said Lot 1 and the Southeast corner of said Tract 1 at a distance of 852.09 feet, and continuing along the South line of said Tract 1, passing the Northeast corner of the above cited Lot 2 at a distance of 266.37 feet, and continuing along the South line of said Tract 1 and the North line of said Lot 2 for a total distance of 1230.13 feet to a 1/2 inch iron rod found for corner at the beginning of a non-tangent curve to the left;

THENCE in a Southwesterly direction, along the South line of said Tract 1 and the North line of said Lot 2, and along said curve to the left having a central angle of 25°19'09", a radius of 1019.65 feet, a chord bearing of South 78°20'23" West, a chord distance of 446.93 feet and an arc length of 450.59 feet to the **POINT OF BEGINNING**, and containing 30.079 acres of land, more or less.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS THAT, Mohr Denton, LLC, does hereby adopt this plat designating the herein described property as **LOT 1R, BLOCK A, VICTOR TECHNOLOGIES ADDITION**, an Addition to the City of Denton, Denton County, Texas, and does hereby dedicate to the public use forever all streets, alleys, parks, watercourses, drains, easements, and public places shown hereon, for the purpose and consideration therein expressed.

MOHR DENTON, LLC

BY: *Cary Hoen*
Authorized Agent
Printed Name
Title

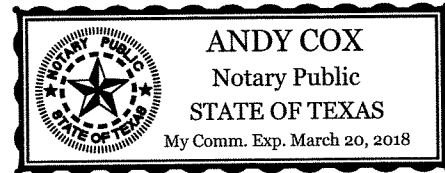
Date: 7-9, 2015.

STATE OF TEXAS §
COUNTY OF DENTON §

BEFORE ME, the undersigned, a Notary Public in and for said county and state, on this day personally appeared *CARY HOEN*, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purpose and consideration therein expressed and in the capacity therein stated.

WITNESS MY HAND AND SEAL OF OFFICE, this the 8th day of July, 2015.

Andy Cox
Notary Public



SURVEYOR'S CERTIFICATE

I, Todd B. Turner, a Registered Professional Land Surveyor in the State of Texas, do hereby certify that this plat was prepared from an actual survey of the land, the corner monuments shown hereon are properly marked on the ground and this plat correctly represents that survey made by me or under my direction and supervision, in accordance with the platting rules and regulations of the City of Denton, Texas.

Todd B. Turner
Todd B. Turner
R.P.L.S. No. 4859

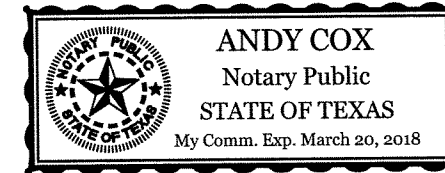


STATE OF TEXAS §
COUNTY OF DENTON §

BEFORE ME, the undersigned, a Notary Public in and for said county and state, on this day personally appeared Todd B. Turner, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purpose and consideration therein expressed and in the capacity therein stated.

WITNESS MY HAND AND SEAL OF OFFICE, this the 8th Day of July, 2015.

Andy Cox
Notary Public



REPLAT
LOT 1R, BLOCK A
VICTOR TECHNOLOGIES
ADDITION
BEING 30.079 ACRES OF LAND
SITUATED IN THE
E. PULCHALSKI SURVEY, ABSTRACT NO. 996
City of Denton, Denton County, Texas

SURVEYOR

TEAGUE NALL & PERKINS
1517 Centre Place Drive, Suite 320
Denton, Texas 76205
PH: 940-383-4177
FAX: 940-383-8026
T.B.P.L.S. Firm No. 10011601

OWNER/DEVELOPER

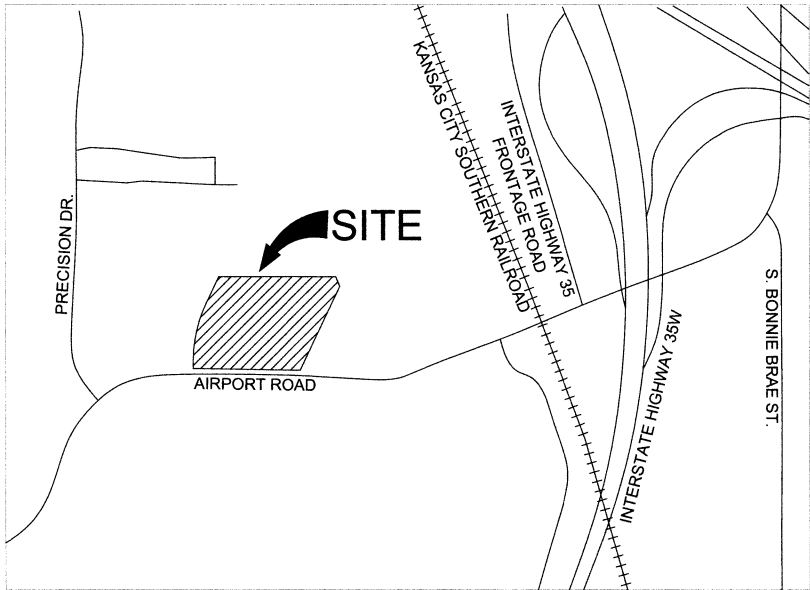
MOHR, DENTON, LLC
14643 Dallas Parkway, Suite 1000
Dallas, Texas 75254
PH: 972-239-0394
FAX: 972-239-3395

JULY 2015
SHEET 1 OF 1

CITY OF DENTON PROJECT NO. FR15-0009

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Filed for Record
in the Official Records of
Denton County
On: Aug 04, 2015 at 02:46P
In the
PLAT RECORDS
VICTOR TECHNOLOGIES ADDITION
Doc Number: 2015-
No of Pages: 1
Amount 50.00
Receipt Number - 1322209
Tiantha Duvel



VICINITY MAP
1" = 1000'

GENERAL NOTES:

- ALL CORNERS ARE MARKED WITH CAPPED 1/2" IRON RODS STAMPED "KAZ" UNLESS OTHERWISE NOTED.
- FLOOD STATEMENT: I HAVE REVIEWED THE F.E.M.A. FLOOD INSURANCE RATE MAP FOR THE CITY OF DENTON, COMMUNITY NUMBER 480194 EFFECTIVE DATE 04-18-2011 AND THAT MAP INDICATES AS SCALED, THAT A PORTION OF THIS PROPERTY IS WITHIN "NON-SHADED ZONE X" DEFINED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AND A PORTION IS WITHIN "SHADED ZONE AE" DEFINED AS "SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD (100-YEAR); WITH BASE FLOOD ELEVATIONS DETERMINED", A PORTION OF WHICH LIES IN THE "FLOODWAY" DEFINED AS "THE CHANNEL OF A STREAM PLUS ANY ADJACENT FLOODPLAIN AREAS THAT MUST BE KEPT FREE OF ENCROACHMENTS" AS SHOWN ON PANEL 360 G OF SAID MAP.
- THE PURPOSE OF THIS FINAL PLAT IS TO CREATE 1 LOT OF RECORD.
- BEARINGS SHOWN HEREON ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM OF 1983, NORTH CENTRAL ZONE (4202), AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT.
- THERE ARE NO PROTECTED TREES IN THE DEVELOPMENT IMPACT AREA. THERE ARE EXISTING TREES WITHIN THE FLOODPLAIN TO REMAIN UNDISTURBED.
- THE CITY OF DENTON HAS ADOPTED THE NATIONAL ELECTRICAL SAFETY CODE (THE "CODE"). THE CODE GENERALLY PROHIBITS STRUCTURES WITHIN 17.5 FEET ON EITHER SIDE OF THE CENTERLINE OF OVERHEAD DISTRIBUTION LINES AND WITHIN 37.5 FEET ON EITHER SIDE OF THE CENTERLINE OF OVERHEAD TRANSMISSION LINES. IN SOME INSTANCES THE CODE REQUIRES GREATER CLEARANCES. BUILDING PERMITS WILL NOT BE ISSUED FOR STRUCTURES WITHIN THESE CLEARANCE AREAS. CONTACT THE BUILDING OFFICIAL WITH SPECIFIC QUESTIONS.
- PRIVATE IMPROVEMENTS CANNOT ENCR OACH ONTO EXISTING PUBLIC OR PRIVATE EASEMENTS.
- STREAMS AND DRAINAGE WAYS MAY BE RETAINED AS A PART OF A NONRESIDENTIAL LOT, AND IT SHALL BE THE PROPERTY OWNER'S RESPONSIBILITY TO MAINTAIN THIS AREA AS SET FORTH BY EASEMENT, EXCEPT AS OTHERWISE PROVIDED. A MAINTENANCE EASEMENT SHALL BE GRANTED TO THE CITY AND SHALL GRANT THE RIGHT BUT NOT THE OBLIGATION TO MAINTAIN AND CONSTRUCT DRAINAGE FACILITIES IF THE STREAM OR DRAINAGE WAY IS NOT BEING PROPERLY MAINTAINED. THE MAINTENANCE ENTITIES BY LAWS AND COVENANTS FILED OF RECORD SHALL PROVIDE FOR ONGOING MAINTENANCE. THE EASEMENT SHALL AUTHORIZE A LIEN AGAINST INDIVIDUAL ABUTTING LOTS IN FAVOR OF THE CITY TO SECURE THE PAYMENT TO THE CITY FOR ANY EXPENSES INCURRED BY THE CITY IN THE EVENT OF DEFAULT OR TO SECURE PAYMENT FOR ANY EXPENSES INCURRED IF THE MAINTENANCE ENTITY IS NOT PROPERLY MAINTAINING THE STREAM OR DRAINAGE WAY.

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LINE	BEARING	DISTANCE
L1	N 00°54'49" E	48.02'
L2	S 22°03'33" E	55.07'
L3	S 89°02'08" E	119.56'
L4	S 75°00'27" E	103.05'
L5	S 89°01'43" E	89.11'
L6	N 00°59'03" E	58.84'
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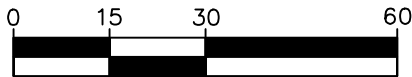
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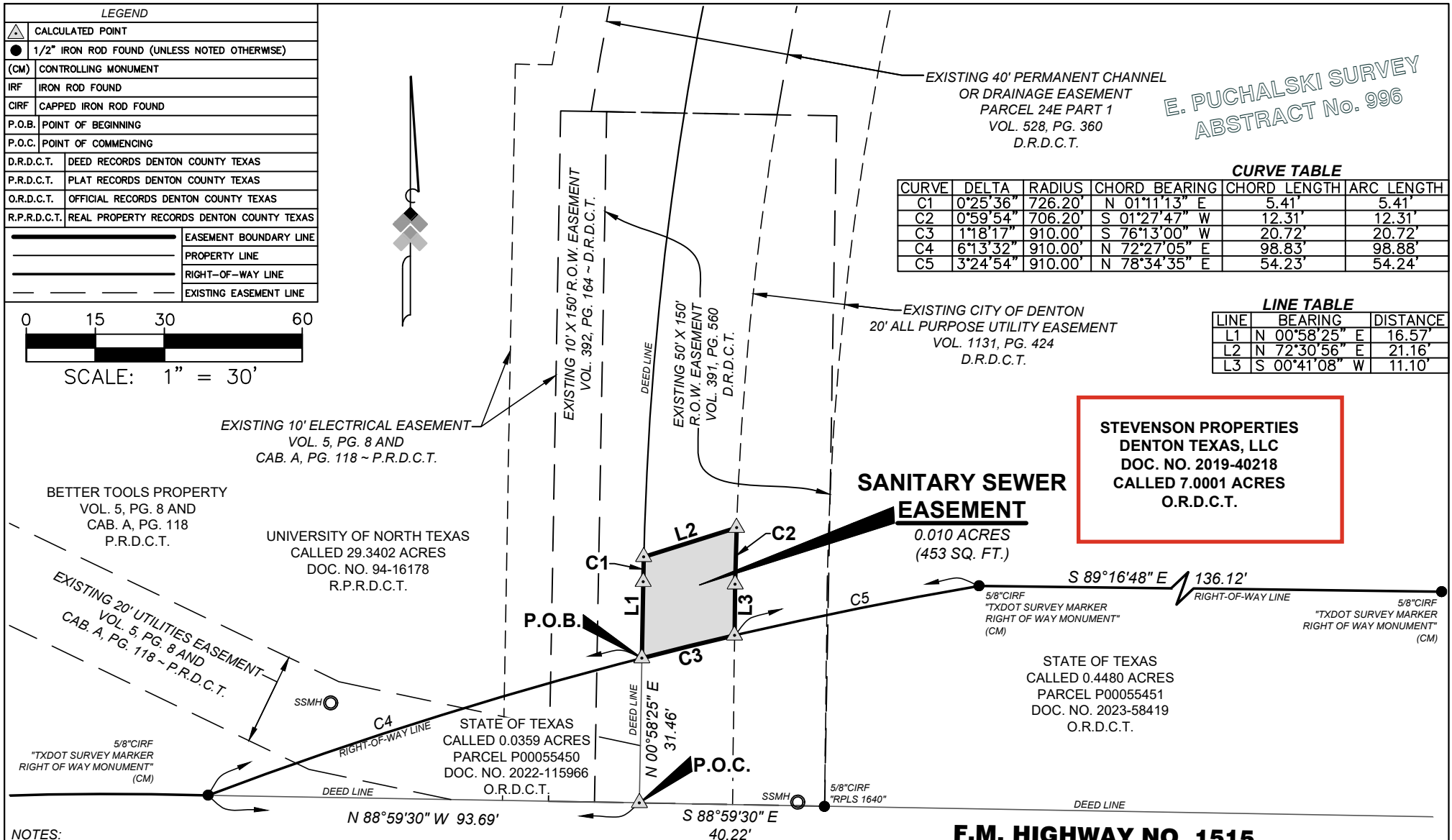
City of Denton Utility Easement Status Report														
Denton CAD No.	Parcel No.	Property Owner	Notes		LF of Easement				Anticipated Fee					Total Easement Total
					Acquisition	Width (ft)	Total (SF)		Price/SF	Easement % of Fee Value	Total Easement Value	Title Policy Fee		
					Permanent				Permanent					Perm & TP Totals
FM 1515 - Utility Relocation														
36715	1	UNT			77.65	16.57	1219.68		\$ 0.82	100%	\$ 1,488.00	0		\$ 4,070.25
766102, 1021573	2	Stevenson Properties			21.16	20.72	435.6		\$ 5.07	100%	\$ 86.00	0		\$ 86.00
668373	3	2800 Airport LLC			34.71	22.14	418		\$ 0.57	100%	\$ 732.00	0		\$ 732.00

Highlighted parcel is being acquired via Eminent Domain,
 3rd party attorney fees will be applied, and verified by
 paid invoices

LEGEND	
	CALCULATED POINT
	1/2" IRON ROD FOUND (UNLESS NOTED OTHERWISE)
(CM)	CONTROLLING MONUMENT
IRF	IRON ROD FOUND
CIRF	CAPPED IRON ROD FOUND
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCING
D.R.D.C.T.	DEED RECORDS DENTON COUNTY TEXAS
P.R.D.C.T.	PLAT RECORDS DENTON COUNTY TEXAS
O.R.D.C.T.	OFFICIAL RECORDS DENTON COUNTY TEXAS
R.P.R.D.C.T.	REAL PROPERTY RECORDS DENTON COUNTY TEXAS
	EASEMENT BOUNDARY LINE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	EXISTING EASEMENT LINE



SCALE: 1" = 30'



E. PUCHALSKI SURVEY
ABSTRACT No. 996

CURVE TABLE						
CURVE	DELTA	RADIUS	CHORD BEARING	CHORD LENGTH	ARC LENGTH	
C1	0°25'36"	726.20'	N 01°11'13" E	5.41'	5.41'	
C2	0°59'54"	706.20'	S 01°27'47" W	12.31'	12.31'	
C3	1°18'17"	910.00'	S 76°13'00" W	20.72'	20.72'	
C4	6°13'32"	910.00'	N 72°27'05" E	98.83'	98.88'	
C5	3°24'54"	910.00'	N 78°34'35" E	54.23'	54.24'	

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 00°58'25" E	16.57'
L2	N 72°30'56" E	21.16'
L3	S 00°41'08" W	11.10'

STEVENS PROPERTIES
DENTON TEXAS, LLC
DOC. NO. 2019-40218
CALLED 7.0001 ACRES
O.R.D.C.T.

NOTES:

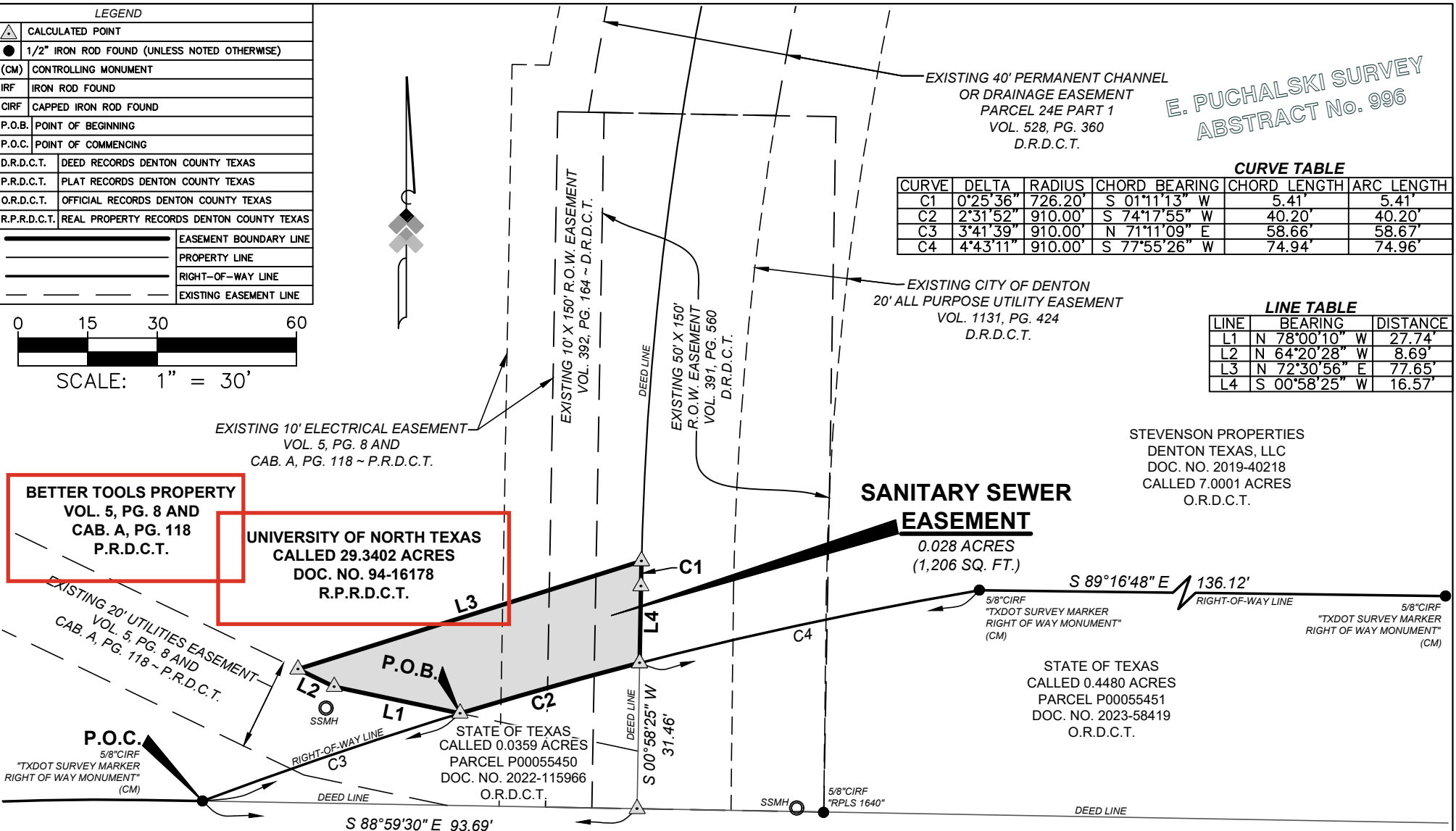
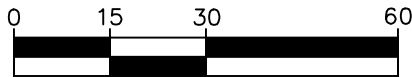
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- A Legal Description of even date herewith accompanies this Easement Exhibit. See Exhibit "A".

teague nall and perkins
3200 S. Interstate 35E, Suite 1129
Denton, Texas 76210
940.383.4177 / www.tnpinc.com
TBPELS FIRM 10011601

7-1-2024

EXHIBIT "B"
SANITARY SEWER EASEMENT
 BEING 0.010 ACRES (453 SQ. FT.) OF LAND SITUATED
 IN THE E. PUCHALSKI SURVEY, ABSTRACT NO. 996
 CITY OF DENTON, DENTON COUNTY, TEXAS
 DEN24235 PAGE 3 OF 3

LEGEND	
▲	CALCULATED POINT
●	1/2" IRON ROD FOUND (UNLESS NOTED OTHERWISE)
(CM)	CONTROLLING MONUMENT
IRF	IRON ROD FOUND
CIRF	CAPPED IRON ROD FOUND
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCING
D.R.D.C.T.	DEED RECORDS DENTON COUNTY TEXAS
P.R.D.C.T.	PLAT RECORDS DENTON COUNTY TEXAS
O.R.D.C.T.	OFFICIAL RECORDS DENTON COUNTY TEXAS
R.P.R.D.C.T.	REAL PROPERTY RECORDS DENTON COUNTY TEXAS
---	EASEMENT BOUNDARY LINE
---	PROPERTY LINE
---	RIGHT-OF-WAY LINE
---	EXISTING EASEMENT LINE



E. PUCHALSKI SURVEY
ABSTRACT No. 996

CURVE TABLE					
CURVE	DELTA	RADIUS	CHORD BEARING	CHORD LENGTH	ARC LENGTH
C1	0°25'36"	726.20'	S 01°11'13" W	5.41'	5.41'
C2	2°31'52"	910.00'	S 74°17'55" W	40.20'	40.20'
C3	3°41'39"	910.00'	N 71°11'09" E	58.66'	58.67'
C4	4°43'11"	910.00'	S 77°55'26" W	74.94'	74.96'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 78°00'10" W	27.74'
L2	N 64°20'28" W	8.69'
L3	N 72°30'56" E	77.65'
L4	S 00°58'25" W	16.57'

STEVENSON PROPERTIES
DENTON TEXAS, LLC
DOC. NO. 2019-40218
CALLED 7.0001 ACRES
O.R.D.C.T.

SANITARY SEWER EASEMENT

0.028 ACRES
(1,206 SQ. FT.)

S 89°16'48" E 136.12'

5/8"CIRF
"TXDOT SURVEY MARKER
RIGHT OF WAY MONUMENT"
(CM)

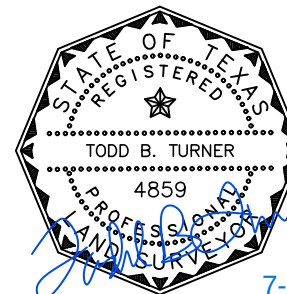
5/8"CIRF
"TXDOT SURVEY MARKER
RIGHT OF WAY MONUMENT"
(CM)

STATE OF TEXAS
CALLED 0.4480 ACRES
PARCEL P00055451
DOC. NO. 2023-58419
O.R.D.C.T.

NOTES:

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F.M. HIGHWAY NO. 1515
(VARIABLE WIDTH R.O.W. KNOWN AS AIRPORT ROAD)

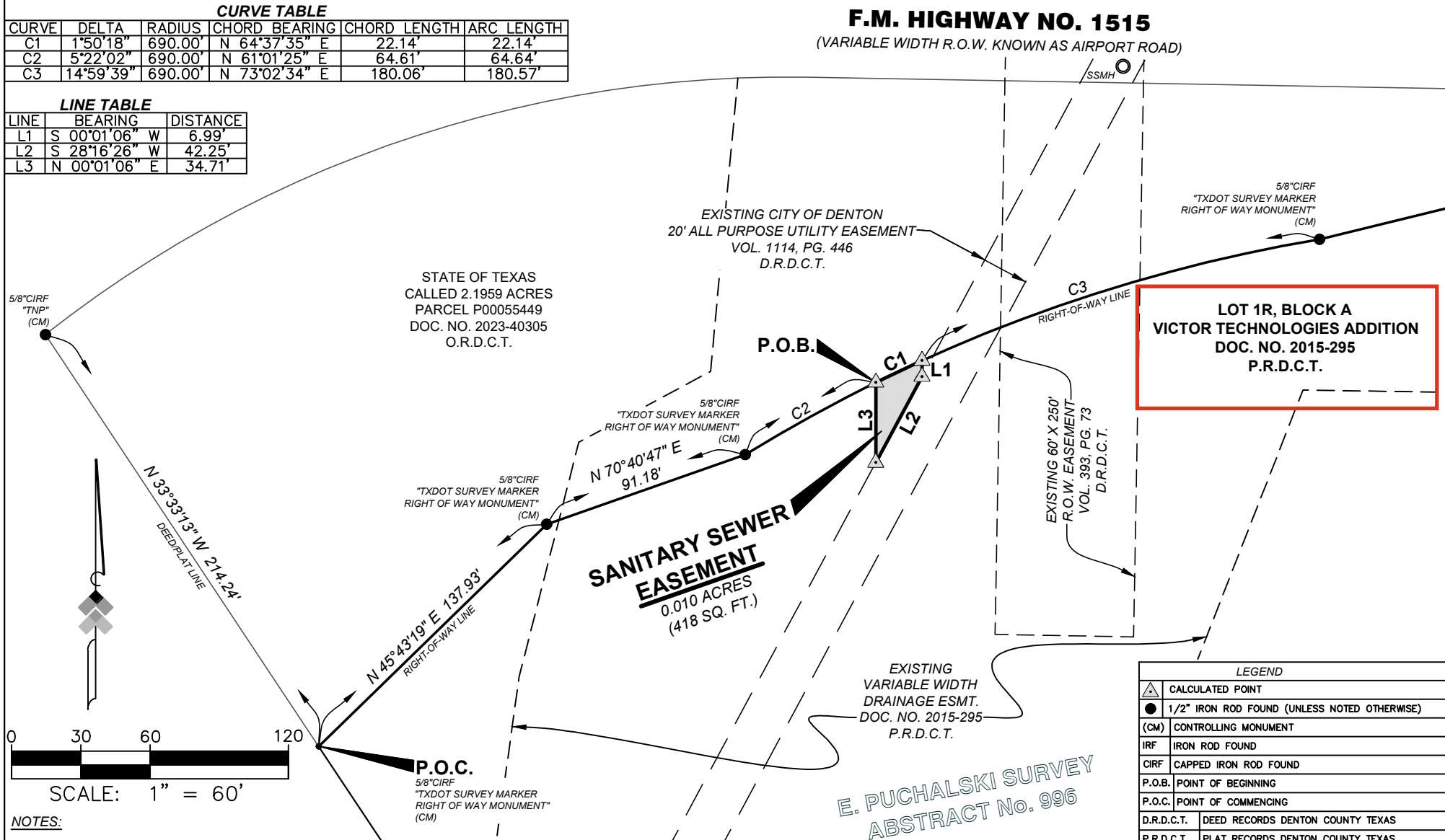
EXHIBIT "B"

SANITARY SEWER EASEMENT

BEING 0.028 ACRES (1206 SQ. FT.) OF LAND SITUATED
IN THE E. PUCHALSKI SURVEY, ABSTRACT NO. 996
CITY OF DENTON, DENTON COUNTY, TEXAS
DEN24235 PAGE 3 OF 3

CURVE TABLE					
CURVE	DELTA	RADIUS	CHORD BEARING	CHORD LENGTH	ARC LENGTH
C1	1°50'18"	690.00'	N 64°37'35" E	22.14'	22.14'
C2	5°22'02"	690.00'	N 61°01'25" E	64.61'	64.64'
C3	14°59'39"	690.00'	N 73°02'34" E	180.06'	180.57'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 00°01'06" W	6.99'
L2	S 28°16'26" W	42.25'
L3	N 00°01'06" E	34.71'



NOTES:

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