

MINUTES OF MEETING OF BOARD OF DIRECTORS  
APRIL 28, 2020

THE STATE OF TEXAS §  
COUNTY OF HARRIS §  
HARRIS COUNTY MUNICIPAL UTILITY DISTRICT NO. 132 §

The Board of Directors (the "Board") of Harris County Municipal Utility District No. 132 (the "District") convened for its special session on April 28, 2020 at 3:00 p.m. via teleconference in compliance with guidelines promulgated by the Texas Attorney General for use during the COVID-19 statewide disaster in connection with the temporary suspension of certain provisions of the Open Meetings Laws approved by the Office of the Governor of Texas. The President conducted a roll call and determined the following persons were present:

Tim Stine, President  
Don House, Vice President  
Jerrel Holder, Secretary  
Michael Whitaker, Assistant Secretary  
Gregg Mielke, Assistant Secretary

All members of the Board were present. Also attending all or parts of the meeting were Mr. Nick Bailey of BGE, Inc. ("BGE"), engineers for the District; Mr. Bob Thomas of ROW Management; and Ms. Kathleen Ellison, Mr. Seth Isgur and Ms. Jane Maher of Norton Rose Fulbright US LLP ("NRF"), attorneys for the District.

Pursuant to Section 551.054, Texas Gov't Code, as modified by the temporary suspension of certain provisions thereof, notice of the meeting was posted on the District's website within the time limits prescribed by law. A certificate of such posting is attached hereto as *Exhibit A*. The agenda packet was posted on the website as items became available in compliance with the guidelines issued by the Texas Attorney General.

**Call to Order.** The President called the meeting to order. He noted that the meeting was being held by teleconference in accordance with federal, state and county directives to slow the spread of COVID-19 by avoiding meetings that bring people together. He said the notice of the meeting included a toll-free dial-in number for members of the public to call so they can hear the meeting and address the Board. He noted that the meeting was being recorded and a recording would be available upon public request. The President then set out guidelines for the conduct of the meeting. He asked each speaker to identify themselves before speaking. He then proceeded with the meeting business:

1. **Consider FM 1960 Widening issues, including:**
  - (a) **authorization of condemnation actions to acquire waterline and sanitary sewer line easements to relocate the District's facilities due to the widening of FM 1960 (Atascocita 1692 LLC, IHOP Properties LLC, Stella Bea LLC, Louetta Leasing LP, and OB Texas Properties).** The President recognized Ms. Ellison, who stated that the final offer letters were being sent to Atascocita 1692 LLC, IHOP Properties LLC, Stella Bea LLC, Louetta Leasing LP, and OB Texas Properties. She recommended that the Board authorize the commencement of condemnation proceedings against these owners in order to be able to meet the TxDOT deadline to secure easements. Mr. Thomas

reported that he spoke with the attorney for Louetta Leasing LP and that Louetta Leasing LP seems to be close to settling. He noted that Atascocita 1692 LLC and Stella Bea LLC will likely settle, while IHOP Properties LLC and OB Texas Properties will likely require condemnation actions. Ms. Ellison reminded the Board that Mr. Isgur is an attorney at NRF who works on condemnations and the Board had earlier engaged him to represent the District on condemnation matters. Mr. Isgur asked the Board if it wanted any information on the condemnation process. Discussion ensued. Upon motion by Director House, seconded by Director Mielke, after full discussion and the question being put to the Board, the Board voted unanimously to authorize Mr. Isgur to commence condemnation actions against the listed landowners to acquire waterline and sanitary sewer line easements to relocate the District's facilities due to the widening of FM 1960.

**(b) authorize execution of Advance Funding Agreement with TxDOT.** The President recognized Ms. Ellison, who presented to and reviewed with the Board the draft Advance Funding Agreement ("AFA") and Standard Utility Agreement ("SUA") with TxDOT, copies of which are attached hereto as *Exhibit B* and *C*. She noted that the SUA was previously approved by the Board, and that she just received the final draft of the AFA from TxDOT. Discussion ensued about the District's responsibility under the AFA and the method for paying TxDOT. Upon motion by Director House, seconded by Director Whitaker, after full discussion and the question being put to the Board, the Board voted unanimously to approve the AFA, authorize its execution, and authorize payment of the District's share of the FM 1960 construction costs to TxDOT pursuant to the AFA.

**(c) acquisition of easements.** There was no further discussion.

**2. Other operational issues.** Director Whitaker stated that Mr. Jenkins will provide a summary of the repairs at the intersection at The Overlook at the next meeting.

**3. Approval of disbursements.** There was no further discussion. The President noted that the Directors can cancel their reservations to the Association of Water Board Directors conference by May 15, 2020.

THERE BEING NO FURTHER BUSINESS TO COME BEFORE THE BOARD, the meeting was adjourned.

\* \* \*

The above and foregoing minutes were passed and approved by the Board of Directors on May 21, 2020.

  
\_\_\_\_\_  
President, Board of Directors

ATTEST:

  
\_\_\_\_\_  
Secretary, Board of Directors



## HARRIS COUNTY MUNICIPAL UTILITY DISTRICT NO. 132

### **NOTICE**

In light of the Office of the Governor's statewide disaster declaration related to the spread of the COVID-19 virus, and the temporary suspension by the Texas Attorney General of certain provisions of the Texas Open Meetings Act to allow telephonic or videoconference meetings without requiring a physical meeting location open to the public, take notice that the Board of Directors of Harris County Municipal Utility District No. 132 will meet in special session, via teleconference at 3:00 p.m. on Tuesday, April 28, 2020. Directors, consultants, and the general public may participate in the meeting by dialing the following telephone number toll free: **1-866-203-7023; and using conference code 713-651-3612**. Meeting documents can be found at <https://www.hcmud132.com/>. At such meeting, the Board will consider and act on the following matters:

1. Consider FM 1960 Widening issues, including
  - (a) authorization of condemnation actions to acquire waterline and sanitary sewer line easements to relocate the District's facilities due to the widening of FM 1960 (Atascocita 1692 LLC, IHOP Properties LLC, Stella Bea LLC, Louetta Leasing LP, and OB Texas Properties);
  - (b) authorize execution of Advance Funding Agreement with TxDOT;
  - (c) acquisition of easements;
2. Other operational issues;
3. Approval of disbursements.



  
Norton Rose Fulbright US LLP  
Attorneys for District

If, during the course of the meeting covered by this Notice, the Board should determine that a closed or executive session of the Board should be held or is required in relation to any agenda item included in this Notice, then such closed or executive meeting or session, as authorized by the Texas Open Meetings Act, will be held by the Board at the date, hour, and place given in this Notice concerning any and all subjects for any and all purposes permitted by Sections 551.071-551.084 of the Texas Government Code and the Texas Open Meetings Act, including, but not limited to, Section 551.071 - for the purpose of a private consultation with the Board's attorney on any or all subjects or matters authorized by law.

CERTIFICATE OF POSTING NOTICE  
OF MEETING OF BOARD OF DIRECTORS

THE STATE OF TEXAS           §  
  §  
COUNTY OF HARRIS         §

I hereby certify as follows:

1.       At 5:57 p.m. on April 23, 2020, I forwarded notice of the meeting of the Board of Directors of Harris County Municipal Utility District No. 132 (the "District"), a true copy of which is attached hereto, to the District's web provider for posting on <https://www.hcmud132.com/> [the District's website].

2.       I forwarded or caused others to forward the agenda packet to be used in connection with the meeting to the District's web provider for posting on <https://www.hcmud132.com/> [the District's website] either with the agenda or as soon thereafter as practicable.

EXECUTED this April 23, 2020.



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## **Maher, Jane**

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**From:** Maher, Jane  
**Sent:** Thursday, April 23, 2020 5:57 PM  
**To:** 'support@texasnetwork.com'  
**Subject:** HCMUD No. 132 Special Agenda Posting  
**Attachments:** April 28, 2020 Special Agenda.pdf; 132 COP.PDF

Hi Russ,

Please post the attached agenda to 132's website and return the COP to me at your earliest convenience.

Thanks,

**Jane Maher** | Paralegal  
Norton Rose Fulbright US LLP  
1301 McKinney, Suite 5100, Houston, Texas 77010-3095, United States  
Tel +1 713 651 5589 | Fax +1 713 651 5246  
jane.maher@nortonrosefulbright.com

**NORTON ROSE FULBRIGHT**

*Law around the world*  
[nortonrosefulbright.com](http://nortonrosefulbright.com)

CSJ # \_\_\_\_\_  
District # \_\_\_\_\_  
Code Chart 64 # \_\_\_\_\_  
Project: \_\_\_\_\_

STATE OF TEXAS       §  
COUNTY OF TRAVIS   §

**ADVANCE FUNDING AGREEMENT FOR VOLUNTARY UTILITY RELOCATION  
CONTRIBUTIONS ON STATE HIGHWAY IMPROVEMENT PROJECTS**

**THIS AGREEMENT** is made by and between the State of Texas, acting through the Texas Department of Transportation (“State”) and \_\_\_\_\_ (“Utility”),

**WITNESSETH**

**WHEREAS**, Transportation Code, Chapters 201, 221, and 361, authorize the State to lay out, construct, maintain, and operate a system of streets, roads and highways that comprise the State Highway System; and,

**WHEREAS**, Transportation Code, Chapter 203, Subchapter E, Transportation Code §203.092 authorizes the State to regulate the placement of public utility facilities along a state highway; and,

**WHEREAS**, Texas Transportation Commission Minute Order Number \_\_\_\_\_ authorizes the State to undertake and complete a highway improvement generally described as:  
\_\_\_\_\_ (“Project”); and,

**WHEREAS**, Utility possesses facilities that are affected by the above mentioned highway improvement and Utility, and the State agrees that it is more economical or efficient for such relocation to be effected by including said contract in the State’s highway construction contract;

**NOW THEREFORE**, in consideration of the premises and of the mutual covenants and agreements of the parties hereto, to be by them kept and performed as hereafter set forth, the State and Utility do agree as follows:

**AGREEMENT**

**1. Time Period Covered**

This agreement becomes effective when signed by the last party whose signing makes the agreement fully executed, and the State and Utility will consider it to be in full force and effect until the Project described in this agreement has been completed and accepted by all parties or unless terminated, as provided.

**2. Project Funding and Work Responsibilities**

**A.** The State will authorize the performance of only those Project items of work which are eligible for relocation reimbursements or for which Utility has requested and has agreed to pay for as described in Attachment A - Payment Provision and Work Responsibilities, which is attached to and made a part of this contract. In addition to identifying those items of work to be paid for by payments to the State, Attachment A - Payment Provision and Work Responsibilities, also specifies those Project items of work that are the

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responsibility of Utility and will be carried out and completed by Utility, at no cost to the State. The Utility shall be responsible for costs that are shown on Attachment B, Estimated Utility Costs, which is attached to and made a part of this agreement.

- B.** If the Utility will perform any work under this contract for which reimbursement will be provided by or through the State, the Utility must complete training before a letter of authority is issued. Training is complete when at least one individual who is working actively and directly on the Project successfully completes and receives a certificate for the course entitled *Local Government Project Procedures and Qualification for the Texas Department of Transportation*. The Utility shall provide the certificate of qualification to the State. The individual who receives the training certificate may be an employee of the Utility or an employee of a firm that has been contracted by the Utility to perform oversight of the Project. The State in its discretion may deny reimbursement if the Utility has not designated a qualified individual to oversee the Project.
- C.** Payment under this contract beyond the end of the current fiscal biennium is subject to availability of appropriated funds. If funds are not appropriated, this contract shall be terminated immediately with no liability to either party.

### **3. Termination**

- A.** This agreement may be terminated in the following manner:
  - 1. By mutual written agreement and consent of both parties;
  - 2. By either party upon the failure of the other party to fulfill the obligations set forth in this agreement; or
  - 3. By the State if it determines that the performance of the Project or utility work is not in the best interest of the State.
- B.** If the agreement is terminated in accordance with the above provisions, Utility will be responsible for the payment of Project costs incurred by the State on behalf of Utility up to the time of termination.

### **4. Right of Access**

If Utility is the owner of any part of the Project site, Utility shall permit the State or its authorized representative access to the site to perform any activities required to execute the work.

### **5. Adjustments Outside the Project Site**

Utility will provide for all necessary right of way and utility adjustments needed for performance of the work on sites not owned or to be acquired by the State.

### **6. Responsibilities of the Parties and Indemnity**

Utility acknowledges that it is not an agent, servant, employee of the State, nor is it engaged in a joint enterprise, and it is responsible for its own acts and deeds and for those of its agents or employees during the performance of the work on the Project. To the extent permitted by law, Utility agrees to indemnify and hold harmless the State, its agents and employees, from all suits, actions, or claims and from all liability and damages for any and all injuries or damages sustained by any person or property in consequence with the performance of design, construction, maintenance, or operation of the Utility facility. Such



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indemnity includes but is not limited to any claims or amounts arising or recovered under the “Worker’s Compensation Law”, the Texas Tort Claims Act, Chapter 101, Texas Civil Practice and Remedies Code; or any other applicable laws or regulations, all as time to time may be amended.

**7. Sole Agreement**

In the event the terms of the agreement are in conflict with the provisions of any other existing agreements between Utility and the State, the latest agreement shall take precedence over the other agreements in matters related to the Project.

**8. Successors and Assigns**

The State and Utility each binds itself, its successors, executors, assigns, and administrators to the other party to this agreement and to the successors, executors, assigns, and administrators of such other party in respect to all covenants of this agreement.

**9. Amendments**

By mutual written consent of the parties, the scope of work and payment provisions of this agreement may be amended prior to its expiration.

**10. Inspection and Conduct of Work**

Unless otherwise specifically stated in Attachment A - Payment Provision and Work Responsibilities, to this contract, the State will supervise and inspect all work performed hereunder and provide such engineering inspection and testing services as may be required to ensure that the Project is accomplished in accordance with the approved plans and specifications. All correspondence and instructions to the contractor performing the work will be the sole responsibility of the State. Unless otherwise specifically stated in Attachment A to this contract, all work will be performed in accordance with the Utility Accommodation Rules as set forth in 43 Texas Administrative Code §21.31 et. seq. adopted by the State and incorporated in this agreement by reference, or special specifications approved by the State.

**11. Maintenance**

Upon completion of the Project, Utility will assume responsibility for the maintenance of the completed Utility facility unless otherwise specified in Attachment A to this agreement.

**12. Notices**

All notices to either party by the other required under this agreement shall be delivered personally or sent by certified or U.S. mail, postage prepaid, addressed to such party at the following addresses:

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Utility:	State:
_____	Director of Contract Services
_____	Texas Department of Transportation
_____	125 E. 11 <sup>th</sup> Street
_____	Austin, Texas 78701

All notices shall be deemed given on the date so delivered or so deposited in the mail, unless otherwise provided in this agreement. Either party may change the above address by sending written notice of the change to the other party. Either party may request in writing that such notices shall be delivered personally or by certified U.S. mail and such request shall be honored and carried out by the other party.

**13. State Auditor**

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.

**14. Signatory Warranty**

Each signatory warrants that the signatory has necessary authority to execute this agreement on behalf of the entity represented.

**15. Access to Information**

The Utility is required to make any information created or exchanged with the state pursuant to this contract, and not otherwise excepted from disclosure under the Texas Public Information Act, available in a format that is accessible by the public at no additional charge to the state.

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Each party is signing this agreement on the date stated under that party's signature.

**THE UTILITY**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Typed or Printed Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

**THE STATE OF TEXAS**

\_\_\_\_\_  
District Engineer

\_\_\_\_\_  
Date

SAMPLE

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District # \_\_\_\_\_  
Code Chart 64 # \_\_\_\_\_  
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## **ATTACHMENT A**

### **PAYMENT PROVISION AND WORK RESPONSIBILITIES**

#### **1. Description of the Work Items**

The parties agree that the existing waterline shall be relocated and adjustments shall be made along \_\_\_\_\_. The waterline facilities shall be owned, operated, and maintained by Utility from and after completion and final acceptance by the State and Utility. The estimated total construction cost for the relocated and adjusted facilities is \$ \_\_\_\_\_. The parties agree that it is their intent to complete the relocation improvements within this estimate of cost.

#### **2. Actual Cost Agreement**

Utility will be responsible for paying all costs associated with the planning, specification, and estimate (PS&E) development, and construction of the proposed utility work to the extent such is not reimbursed pursuant to state law. All the costs associated with construction of the waterline items for the Project shall be provided as defined under the Standard Utility Agreement, Utility Joint Use Agreement, and/or the Agreement to Contribute Funds executed between the State and Utility.

#### **3. Schedule of Payments**

- A.** At least forty-five (45) days prior to the date set for receipt of the construction bids, the Utility shall remit its remaining financial share for the State's estimated construction oversight and construction costs. Utility must advance to the State one hundred percent (100%) of its share of the estimated Project utility construction costs. The amount to be advanced for the utility improvements is estimated to be \$ \_\_\_\_\_. (See Attachment B – Estimated Utility Costs)
- B.** In the event the State determines that additional funding is required by the Utility at any time during the Project, the State will notify the Utility in writing. The Utility is responsible for one hundred percent (100%) of the authorized project cost and any overruns. The Utility will make payment to the State within thirty (30) days from receipt of the State's written notification.
- C.** Whenever funds are paid by the Utility to the State under this agreement, the Utility will remit a warrant made payable to the "Texas Department of Transportation." The warrant will be deposited by the State and managed by the State. Until the final Project accounting, funds may only be applied by the State to the Project.
- D.** Upon completion of the Project, the State will perform an audit of the Project costs. Any funds due by the Utility, the State, or the Federal Government will be promptly paid by the owing party.

#### **4. Work Responsibilities**

- A.** The **Utility** shall provide the following services under this contract:
  - i. Secure all necessary permitting as may be required for the installation of the water line.
  - ii. Arrange and coordinate with the contractor, through the State, materials and equipment testing, rejection of all work not conforming to minimum requirements of the construction contract documents, maintenance of the proposed waterline during construction, and the relocation of waterline and connection of services to customers.
  - iii. Advise the State of work that Utility determines should be corrected or rejected.
  - iv. Arrange, observe, and inspect all acceptance testing and notify the State of the results of these activities.

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Project: \_\_\_\_\_

- v. Provide inspection services for the construction, notify the State of defects and deficiencies in the work, and observe actions of the contractor to correct such defects and deficiencies.
- vi. Assume all responsibility for the maintenance of the existing waterline during and upon completion of the construction contract.
- vii. Ensure all Texas Commission on Environmental Quality and all other regulatory rules, regulations and laws are strictly adhered to.
- viii. Prepare and submit both a certificate of substantial completion and a list of observed items requiring completion or correction for the relocations and adjustments to the Project Engineer for concurrence.
- ix. Coordinate all construction activities performed by Utility's staff for the relocations and adjustments through the Project Engineer.

**B. The State shall provide the following services under this contract:**

- i. Responsible for engaging the services of a Texas Registered Professional Engineer to prepare drawings and technical specifications for waterline relocations and adjustments along \_\_\_\_\_.
- ii. Combine the waterline relocation and adjustment plans with the plans being prepared for the Project.
- iii. Review and approve the final construction plans prior to any construction-related activities. In order to ensure federal and/or state funding eligibility, projects must be authorized by the State prior to advertising for construction.
- iv. Advertise for construction bids, issue bid proposals, receive and tabulate the bids, and award and administer the contract for construction of the Project.
- v. Negotiate and administer all field changes and change orders required for the Project. All change orders increasing construction costs for Utility's Project shall be submitted to Utility for review and approval together with an evaluation. Utility agrees to review and either approve or disapprove all change orders within five (5) business days after receipt of such order unless Utility Board's approval is necessary in which case Utility shall bring the item to Utility Board as soon as reasonably possible.
- vi. Provide overall project management to supervise the day-to-day activities of the construction and monitor the activities of the contractor to promote the timely and efficient completion of the Project in accordance with the approved Plans and Specifications and construction schedule.
- vii. Conduct field observations and coordinate with Utility's inspectors and the contractor to cure defects and deficiencies in the construction prior to final acceptance.
- viii. Make timely payment to the contractor for work performed in connection with the Project.
- ix. Ensure access and permit Utility's inspectors and other authorized representatives to inspect the waterline construction at all times.
- x. Conduct and coordinate final inspection of the Project in the presence of Utility's Engineer and Inspector, transmit final list of items to be completed or repaired and observe contractor correction of same.
- xi. Maintain job file.

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**ATTACHMENT B  
 ESTIMATED UTILITY COSTS**

Based on various calculations, following are those amounts due and payable for Utility's costs associated with this project.

Total Estimated Costs  
 \$ \_\_\_\_\_

Less Betterment Amount Due from Utility  
 \$ \_\_\_\_\_

**Amount of total utility relocation Costs**  
 \$ \_\_\_\_\_

Estimated Amount Eligible for Reimbursement  
 (Calculated eligibility Ratio – \_\_\_\_\_ %)  
 \$ \_\_\_\_\_

Amount of Utility Adjustment Due from Utility  
 \$ \_\_\_\_\_

**Estimated amount to be included in Construction Agreement**

A. Betterment \$ \_\_\_\_\_

B. Utility Adjustment \$ \_\_\_\_\_

**GRAND TOTAL** \$ \_\_\_\_\_

**Betterment Ratio Calculation**

Estimated Betterment Costs

- 1. ...
- 2. ...

Betterment Calculation:

<b>Total Costs of Betterment (Estimated)</b>	-	\$ _____
<b>Total Costs of Project (Estimated)</b>	-	\$ _____

***Betterment Percentage for final cost determination: \_\_\_\_\_% of final cost of relocation  
 Determination of Betterment – Comparison of estimated cost to replace “as is”  
 versus estimated costs associated with the betterment.***

Item A:  
 Item B:

## STANDARD UTILITY AGREEMENT

U-Number: **U15957**

District: Houston  
Federal Project No.: N/A  
ROW CSJ: 1685-03-101  
Highway Project Letting Date: July 2020

County: Harris  
Highway: FM 1960  
From: East of Twigsworth Ln  
To: West of San Jacinto River Bridge

This Agreement by and between the State of Texas, acting by and through the Texas Transportation Commission, ("**State**"), and HCMUD 132, ("**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;

**WHEREAS**, the proposed highway improvements will necessitate the adjustment, removal, and/or relocation of certain facilities of the **Utility** as indicated in the following statement of work: MUD 132 water and wastewater pipeline relocations on FM 1960 E that conflict with the roadway expansion from approximately Atasca Oaks Blvd. to Atascocita Shores Drive (STA 2805+41 to STA 2926+33). The pipe diameters of the proposed PVC MUD 132 water line range from 6"-16" and span a length of 5,619 feet. The pipe diameter of the proposed ductile iron MUD 132 wastewater line is 18" and spans a length of 1,704 feet. The easement acquisition is targeted to be completed in November 2020 with construction work starting in December 2020 and ending 8-12 months thereafter. Contractor will coordinate with the Department's third party contractor to field locate and remove the existing asbestos cement pipeline as specified in the proposed TxDOT Asbestos Abatement Support and Coordination special provision.; 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. §§ 4231, 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.

\_\_\_\_\_  
Initial      Date  
TxDOT

\_\_\_\_\_  
Initial      Date  
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, the **State** agrees to pay the **Utility** an agreed lump sum of \$5,110,295 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:

1. Standard Utility Agreement – ROW-U-35;
2. Plans, Specifications, and Estimated Costs (Attachment "A");
3. Accounting Method (Attachment "B");
4. Schedule of Work (Attachment "C");
5. Statement Covering Contract Work – ROW-U-48 (Attachment "D");
6. Utility Joint Use Acknowledgment – ROW-U-JUAA and/or Utility Installation Request – Form 1082 (Attachment "E");
7. Eligibility Ratio (Attachment "F");
8. Betterment Calculation and Estimate (Attachment "G"); and
9. Proof of Property Interest – ROW-U-1A, ROW-U-1B, or ROW-U-1C (Attachment "H").

\_\_\_\_\_  
Initial      Date  
TxDOT

\_\_\_\_\_  
Initial      Date  
Utility



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.

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

**UTILITY**

**EXECUTION RECOMMENDED:**

Utility: Harris County MUD No. 132  
*Name of Utility*

\_\_\_\_\_  
*Director of TP&D (or designee), Houston District*

By: \_\_\_\_\_  
*Authorized Signature*

Tim Stine  
*Print or Type Name*

Title: Board President

Date: \_\_\_\_\_

<p><b>THE STATE OF TEXAS</b></p> <p>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.</p> <p>By: _____ <i>District Engineer (or designee)</i></p> <p>Date: _____</p>
--

Initial \_\_\_\_\_ Date \_\_\_\_\_  
TxDOT

Initial \_\_\_\_\_ Date \_\_\_\_\_  
Utility

# Attachment "A"

## Plans, Specifications, and Estimated Costs

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

\_\_\_\_\_  
Initial      Date  
TxDOT

\_\_\_\_\_  
Initial      Date  
Utility



**ENGINEER'S OPINION OF TXDOT REIMBURSEMENT  
FM 1960, CSJ 1685-03-098  
MUD 132 - Option B, Summary**

**ELIGIBILITY RATIO**

**88.79%**

**DATE:**

**4/21/2020**

	Cost	HCMUD 132 Portion	TxDOT Portion
Construction	\$3,973,441	\$445,570	\$3,527,872
Easements	\$1,028,183	\$115,297	\$912,886
Engineering	\$754,100	\$84,562	\$669,538
<b>TOTAL</b>	<b>\$5,755,724</b>	<b>\$645,430</b>	<b>\$5,110,295</b>



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
**FM 1960, CSJ 1685-03-098**  
**MUD 132**

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST	
1		104	6001	REMOVING CONC (PAV)	SY	\$20.00	622	\$12,440.00	
2		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	125	\$2,500.00	
3		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	1354	\$4,062.00	
4		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	\$27.00	11	\$297.00	
5		162	6002	BLOCK SODDING	SY	\$6.00	3542	\$21,252.00	
6		166	6001	FERTILIZER	AC	\$700.00	0.79	\$553.00	
7		168	6001	VEGETATIVE WATERING	MG	\$16.00	94.80	\$1,516.80	
8		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	1222.00	\$2,932.80	
9		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	622	\$40,430.00	
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	6403	\$17,928.40	
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	6403	\$4,482.10	
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	620	\$2,480.00	
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	620	\$620.00	
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	1354	\$8,124.00	
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	125	\$8,125.00	
16		531	6002	CONC SIDEWALKS (5")	SY	\$54.00	11	\$594.00	
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	455	\$250,250.00	
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	455	\$341,250.00	
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	6	\$30,000.00	
20		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	1677	\$6,037.20	
21		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	1677	\$4,024.80	
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	1704	\$51,120.00	
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT)	LF	\$364.00	1222	\$444,808.00	
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	455	\$109,200.00	
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	3	\$36,000.00	
26		7017		BYPASS SYSTEM	LS		1	\$0.00	
27		7017		DUCTILE IRON FITTINGS	TON		3	\$0.00	
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	372	\$44,640.00	
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	4702	\$620,664.00	
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	252	\$63,000.00	
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	543	\$298,650.00	
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	499	\$249,500.00	
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	543	\$407,250.00	
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	4	\$7,200.00	
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	2	\$4,000.00	
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	17	\$40,800.00	
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	4	\$11,200.00	
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	15	\$72,000.00	
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	3	\$18,000.00	
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	26	\$10,400.00	
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	27	\$9,450.00	
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	2	\$4,000.00	
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	14	\$6,300.00	
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	4	\$6,000.00	
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	5.0	\$9,000.00	
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	7	\$16,800.00	
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	4	\$7,200.00	
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	2	\$9,600.00	
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	10	\$60,000.00	
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	252	\$151,200.00	
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	5637	\$169,110.00	
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	4501	\$10,802.40	
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	1	\$50,000.00	
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	499	\$99,800.00	
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	143	\$7,722.00	
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	721	\$90,125.00	
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	3	\$18,000.00	
58		7049		GROUT ABANDONED LINES	CY		6	\$0.00	
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		9	\$0.00	
60		7049		12" GATE VALVE AND BOX	EA		2	\$0.00	
61		7049		8" GATE VALVE AND BOX	EA		3	\$0.00	
62		7049		DUCTILE IRON FITTINGS	TON		6.4	\$0.00	
<b>Total</b>								<b>6.4</b>	<b>\$3,973,441</b>



ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST  
FM 1960, CSJ 1685-03-098  
MUD 132 - Option B, Summary

DATE: 4/17/2020

Conflict #	Total Cost	Eligibility Ratio	HCMUD 132 Portion	TxDOT Portion
1	\$1,274,548	98.59%	\$17,971	\$1,256,577
2	\$336,520	100.00%	\$0	\$336,520
3a	\$138,872	100.00%	\$0	\$138,872
3b	\$144,294	100.00%	\$0	\$144,294
4	\$137,840	100.00%	\$0	\$137,840
5	\$160,961	100.00%	\$0	\$160,961
6	\$118,058	100.00%	\$0	\$118,058
7	\$128,201	0.00%	\$128,201	\$0
8	\$118,392	0.00%	\$118,392	\$0
9	\$124,137	0.00%	\$124,137	\$0
10	\$446,039	98.76%	\$5,531	\$440,509
11	\$348,120	100.00%	\$0	\$348,120
14	\$497,459	89.68%	\$51,338	\$446,121
<b>TOTAL</b>	<b>\$3,973,441</b>	<b>88.79%</b>	<b>\$445,570</b>	<b>\$3,527,872</b>



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
**FM 1960, CSJ 1685-03-098**  
**MUD 132 - Option B, Conflict 1**

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	622	\$12,440.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	56	\$1,120.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	1354	\$4,062.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	\$27.00	11	\$297.00
05		162	6002	BLOCK SODDING	SY	\$6.00	2280	\$13,680.00
06		166	6001	FERTILIZER	AC	\$700.00	0.50	\$350.00
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	60.00	\$960.00
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	622	\$40,430.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	3290	\$9,212.00
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	3290	\$2,303.00
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	340	\$1,360.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	340	\$340.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	1354	\$8,124.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	56	\$3,640.00
16		531	6002	CONC SIDEWALKS (5")	SY	\$54.00	11	\$594.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	0	\$0.00
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	0	\$0.00
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	0	\$0.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	0	\$0.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	0	\$0.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	0	\$0.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$364.00	0	\$0.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	0	\$0.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	0	\$0.00
26		7017		BYPASS SYSTEM	LS		0	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		0	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	0	\$0.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	3680	\$485,760.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	0	\$0.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	265	\$145,750.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	0	\$0.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	265	\$198,750.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	1	\$1,800.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	2	\$4,000.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	13	\$31,200.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	4	\$11,200.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	12	\$57,600.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	2	\$12,000.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	16	\$6,400.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	20	\$7,000.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	2	\$4,000.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	12	\$5,400.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	0	\$0.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	0	\$0.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	2	\$4,800.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	0	\$0.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	0	\$0.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	2	\$12,000.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	0	\$0.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	3710	\$111,300.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	3415	\$8,196.00
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	1	\$50,000.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	0	\$0.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	120	\$6,480.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	0	\$0.00
57		7049	XXXX	IN BLOW-OFF VALVE	EA	\$6,000.00	2	\$12,000.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		6	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		0	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		0	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		2.4	\$0.00
							<b>Total</b>	<b>\$1,274,548</b>
							Eligibility Ratio	98.59%
							<b>Anticipated MUD Portion</b>	<b>\$17,971</b>
							Anticipated TxDOT Portion	\$1,256,577



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
 FM 1960, CSJ 1685-03-098  
 MUD 132 - Option B, Conflict 2

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	0	\$0.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	365	\$2,190.00
06		166	6001	FERTILIZER	AC	\$700.00	0	\$70.00
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	12	\$192.00
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	1000	\$2,800.00
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	1000	\$700.00
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	55	\$220.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	55	\$55.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	0	\$0.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	0	\$0.00
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	0	\$0.00
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	0	\$0.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	0	\$0.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	0	\$0.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	0	\$0.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$300.00	0	\$0.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	0	\$0.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	0	\$0.00
26		7017		BYPASS SYSTEM	LS		0	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		0	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	0	\$0.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	688	\$90,816.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	0	\$0.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	135	\$74,250.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	0	\$0.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	135	\$101,250.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	1	\$1,800.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	2	\$4,800.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	1	\$4,800.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	1	\$6,000.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	1	\$400.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	3	\$1,050.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	1	\$450.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	0	\$0.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	0	\$0.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	2	\$4,800.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	0	\$0.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	0	\$0.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	2	\$12,000.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	0	\$0.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	676	\$20,280.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	553	\$1,327.20
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	0	\$0.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	5	\$270.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	0	\$0.00
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	1	\$6,000.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		1	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		0	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		0	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		1.1	\$0.00
							Total	\$336,520
							Eligibility Ratio	100.00%
							Anticipated MUD Portion	\$0
							Anticipated TxDOT Portion	\$336,520



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
**FM 1960, CSJ 1685-03-098**  
**MUD 132 - Option B, Conflict 3a**

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	0	\$0.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	45	\$270.00
06		166	6001	FERTILIZER	AC	\$700.00	0	\$7.00
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	1	\$19.20
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	206	\$576.80
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	206	\$144.20
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	15	\$60.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	15	\$15.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	0	\$0.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	0	\$0.00
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	0	\$0.00
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	0	\$0.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	0	\$0.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	0	\$0.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	0	\$0.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$300.00	0	\$0.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	0	\$0.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	0	\$0.00
26		7017		BYPASS SYSTEM	LS		0	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		0	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	0	\$0.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	170	\$22,440.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	0	\$0.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	70	\$38,500.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	0	\$0.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	70	\$52,500.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	0	\$0.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	0	\$0.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	0	\$0.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	0	\$0.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	1	\$400.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	0	\$0.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	0	\$0.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	0	\$0.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	1	\$1,800.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	2	\$4,800.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	0	\$0.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	0	\$0.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	2	\$12,000.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	0	\$0.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	170	\$5,100.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	100	\$240.00
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	0	\$0.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	0	\$0.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	0	\$0.00
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	0	\$0.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		1	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		0	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		0	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		0.79	\$0.00

Total	\$138,872
Eligibility Ratio	100.00%
Anticipated MUD Portion	\$0
Anticipated TxDOT Portion	\$138,872





**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
**FM 1960, CSJ 1685-03-098**  
**MUD 132 - Option B, Conflict 3b**

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	0	\$0.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	25	\$150.00
06		166	6001	FERTILIZER	AC	\$700.00	0	\$3.50
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	1	\$9.60
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	382	\$1,069.60
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	382	\$267.40
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	15	\$60.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	15	\$15.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	0	\$0.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	0	\$0.00
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	0	\$0.00
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	0	\$0.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	0	\$0.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	0	\$0.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$300.00	0	\$0.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$300.00	0	\$0.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	0	\$0.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	0	\$0.00
26		7017		BYPASS SYSTEM	LS		0	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		0	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	0	\$0.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	164	\$21,648.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	0	\$0.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	73	\$40,150.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	0	\$0.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	73	\$54,750.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	1	\$1,800.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	1	\$2,400.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	1	\$4,800.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	0	\$0.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	1	\$400.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	2	\$700.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	0	\$0.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	0	\$0.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	1	\$1,800.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	1	\$2,400.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	0	\$0.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	0	\$0.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	1	\$6,000.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	0	\$0.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	156	\$4,680.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	91	\$218.40
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	0	\$0.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	18	\$972.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	0	\$0.00
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	0	\$0.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		1	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		0	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		0	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		1	\$0.00

Total	\$144,294
Eligibility Ratio	100.00%
Anticipated MUD Portion	\$0
Anticipated TxDOT Portion	\$144,294



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
**FM 1960, CSJ 1685-03-098**  
**MUD 132 - Option B, Conflict 4**

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	0	\$0.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	42	\$252.00
06		166	6001	FERTILIZER	AC	\$700.00	0	\$7.70
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	1	\$19.20
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	96	\$268.80
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	96	\$67.20
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	30	\$120.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	30	\$30.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	0	\$0.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	0	\$0.00
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	0	\$0.00
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	0	\$0.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	0	\$0.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	0	\$0.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	0	\$0.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$300.00	0	\$0.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	0	\$0.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	0	\$0.00
26		7017		BYPASS SYSTEM	LS		0	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		0	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	168	\$20,160.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	0	\$0.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	120	\$30,000.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	0	\$0.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	0	\$0.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	0	\$0.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	0	\$0.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	0	\$0.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	0	\$0.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	0	\$0.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	1	\$400.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	0	\$0.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	0	\$0.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	0	\$0.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	2	\$3,600.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	0	\$0.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	0	\$0.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	1	\$4,800.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	1	\$6,000.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	120	\$72,000.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	0	\$0.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	48	\$115.20
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	6 IN BLOW-OFF VALVE	LF	\$200.00	0	\$0.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	0	\$0.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	0	\$0.00
57		7049	XXXX	6" BLOW-OFF VALVE	EA	\$6,000.00	0	\$0.00
58		7049		GROUT ABANDONED LINES	CY		6	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		0	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		1	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		0	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		0	\$0.00
<b>Total</b>								<b>\$137,840</b>
<b>Eligibility Ratio</b>								<b>100.00%</b>
<b>Anticipated MUD Portion</b>								<b>\$0</b>
<b>Anticipated TxDOT Portion</b>								<b>\$137,840</b>



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
**FM 1960, CSJ 1685-03-098**  
**MUD 132 - Option B, Conflict 5**

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	0	\$0.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	25	\$150.00
06		166	6001	FERTILIZER	AC	\$700.00	0	\$3.50
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	1	\$9.60
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	72	\$172.80
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	150	\$420.00
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	150	\$105.00
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	30	\$120.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	30	\$30.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	0	\$0.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	0	\$0.00
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	0	\$0.00
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	0	\$0.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	0	\$0.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	0	\$0.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	0	\$0.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$300.00	0	\$0.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	0	\$0.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	0	\$0.00
26		7017		BYPASS SYSTEM	LS		0	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		0	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	204	\$24,480.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	0	\$0.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	132	\$33,000.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	0	\$0.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	0	\$0.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	0	\$0.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	1	\$1,800.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	1	\$2,400.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	1	\$4,800.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	0	\$0.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	1	\$400.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	2	\$700.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	1	\$450.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	0	\$0.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	1	\$1,800.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	0	\$0.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	0	\$0.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	1	\$4,800.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	0	\$0.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	132	\$79,200.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	204	\$6,120.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	0	\$0.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	0	\$0.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	0	\$0.00
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	0	\$0.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		0	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		1	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		0	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		0	\$0.00
							Total	\$160,961
							Eligibility Ratio	100.00%
							Anticipated MUD Portion	\$0
							Anticipated TxDOT Portion	\$160,961



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
 FM 1960, CSJ 1685-03-098  
 MUD 132 - Option B, Conflict 6

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	0	\$0.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	0	\$0.00
06		166	6001	FERTILIZER	AC	\$700.00	0.000	\$0.00
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	0.00	\$0.00
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	0	\$0.00
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	0	\$0.00
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	0	\$0.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	0	\$0.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	0	\$0.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	0	\$0.00
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	0	\$0.00
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	0	\$0.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	0	\$0.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	0	\$0.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	0	\$0.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$300.00	0	\$0.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	0	\$0.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	0	\$0.00
26		7017		BYPASS SYSTEM	LS			\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		0	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	0	\$0.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	0	\$0.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	0	\$0.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	0	\$0.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	125	\$62,500.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	0	\$0.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	0	\$0.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	0	\$0.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	0	\$0.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	0	\$0.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	2	\$800.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	0	\$0.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	0	\$0.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	1	\$1,500.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	0	\$0.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	0	\$0.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	1	\$1,800.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	0	\$0.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	0	\$0.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	0	\$0.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	170	\$5,100.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	45	\$108.00
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	125	\$25,000.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	0	\$0.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	170	\$21,250.00
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	0	\$0.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		0	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		0	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		0	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		0.2	\$0.00
							Total	\$118,058
							Eligibility Ratio	100.00%
							Anticipated MUD Portion	\$0
							Anticipated TxDOT Portion	\$118,058



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
**FM 1960, CSJ 1685-03-098**  
**MUD 132 - Option B, Conflict 7**

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	0	\$0.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	0	\$0.00
06		166	6001	FERTILIZER	AC	\$700.00	0	\$0.00
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	0	\$0.00
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	0	\$0.00
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	0	\$0.00
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	0	\$0.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	0	\$0.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	0	\$0.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	0	\$0.00
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	0	\$0.00
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	0	\$0.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	0	\$0.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	0	\$0.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	0	\$0.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$300.00	0	\$0.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	0	\$0.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	0	\$0.00
26		7017		BYPASS SYSTEM	LS		0	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		0	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	0	\$0.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	0	\$0.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	0	\$0.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	0	\$0.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	127	\$63,500.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	0	\$0.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	0	\$0.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2"TO 2")	EA	\$2,400.00	0	\$0.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2"TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	0	\$0.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	0	\$0.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	1	\$400.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	0	\$0.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	0	\$0.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	1	\$1,500.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	0	\$0.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	0	\$0.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	1	\$1,800.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	0	\$0.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	1	\$6,000.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	0	\$0.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	190	\$5,700.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	63	\$151.20
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	127	\$25,400.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	0	\$0.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	190	\$23,750.00
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	0	\$0.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		0	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		0	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		1	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		0	\$0.00

Total	\$128,201
Eligibility Ratio	0.00%
<b>Anticipated MUD Portion</b>	<b>\$128,201</b>
Anticipated TxDOT Portion	\$0



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
**FM 1960, CSJ 1685-03-098**  
**MUD 132 - Option B, Conflict 8**

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	0	\$0.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	0	\$0.00
06		166	6001	FERTILIZER	AC	\$700.00	0.000	\$0.00
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	0.00	\$0.00
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	0	\$0.00
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	0	\$0.00
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	0	\$0.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	0	\$0.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	0	\$0.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00		
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00		
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	0	\$0.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	0	\$0.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	0	\$0.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	0	\$0.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$300.00	0	\$0.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	0	\$0.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	0	\$0.00
26		7017		BYPASS SYSTEM	LS		0	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		0	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	0	\$0.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	0	\$0.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	0	\$0.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	0	\$0.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	117	\$58,500.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	0	\$0.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	0	\$0.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	0	\$0.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	0	\$0.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	0	\$0.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	1	\$400.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	0	\$0.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	0	\$0.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	1	\$1,500.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	0	\$0.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	0	\$0.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	1	\$1,800.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	0	\$0.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	1	\$6,000.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	0	\$0.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	172	\$5,160.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	55	\$132.00
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	117	\$23,400.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	0	\$0.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	172	\$21,500.00
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	0	\$0.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		0	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		0	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		1	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		0.2	\$0.00
<b>Total</b>								<b>\$118,392</b>
Eligibility Ratio								0.00%
<b>Anticipated MUD Portion</b>								<b>\$118,392</b>
Anticipated TxDOT Portion								\$0



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
 FM 1960, CSJ 1685-03-098  
 MUD 132 - Option B, Conflict 9

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	0	\$0.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	0	\$0.00
06		166	6001	FERTILIZER	AC	\$700.00	0.000	\$0.00
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	0.00	\$0.00
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	0	\$0.00
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	0	\$0.00
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	0	\$0.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	0	\$0.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	0	\$0.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00		
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00		
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	0	\$0.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	0	\$0.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	0	\$0.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	0	\$0.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$300.00	0	\$0.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	0	\$0.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	0	\$0.00
26		7017		BYPASS SYSTEM	LS		0	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		0	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	0	\$0.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	0	\$0.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	0	\$0.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	0	\$0.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	130	\$65,000.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	0	\$0.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	0	\$0.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	0	\$0.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	0	\$0.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	0	\$0.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	1	\$400.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	0	\$0.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	0	\$0.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	1	\$1,500.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	0	\$0.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	0	\$0.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	1	\$1,800.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	0	\$0.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	0	\$0.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	0	\$0.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	189	\$5,670.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	59	\$141.60
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	130	\$26,000.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	0	\$0.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	189	\$23,625.00
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	0	\$0.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		0	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		0	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		1	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		0.2	\$0.00
							Total	\$124,137
							Eligibility Ratio	0.00%
							Anticipated MUD Portion	\$124,137
							Anticipated TxDOT Portion	\$0



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
 FM 1960, CSJ 1685-03-098  
 MUD 132 - Option B, Conflict 10

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	69	\$1,380.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	340	\$2,040.00
06		166	6001	FERTILIZER	AC	\$700.00	0.070	\$49.00
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	8.40	\$134.40
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	500	\$1,200.00
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	466	\$1,304.80
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	466	\$326.20
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	0	\$0.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	0	\$0.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	69	\$4,485.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	135	\$74,250.00
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	135	\$101,250.00
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	2	\$10,000.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	635	\$1,524.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	635	\$2,286.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	647	\$19,410.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$364.00	500	\$182,000.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	135	\$32,400.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	1	\$12,000.00
26		7017		BYPASS SYSTEM	LS		1	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		1.16	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	0	\$0.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	0	\$0.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	0	\$0.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	0	\$0.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	0	\$0.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	0	\$0.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	0	\$0.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	0	\$0.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	0	\$0.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	0	\$0.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	0	\$0.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	0	\$0.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	0	\$0.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	0	\$0.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	0	\$0.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	0	\$0.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	0	\$0.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	0	\$0.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	0	\$0.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	0	\$0.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	0	\$0.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	0	\$0.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	0	\$0.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	0	\$0.00
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	0	\$0.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		0	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		0	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		0	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		0.0	\$0.00
							Total	\$446,039
							Eligibility Ratio	98.76%
							Anticipated MUD Portion	\$5,531
							Anticipated TxDOT Portion	\$440,509





**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
 FM 1960, CSJ 1685-03-098  
 MUD 132 - Option B, Conflict 11

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	0	\$0.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	400	\$2,400.00
06		166	6001	FERTILIZER	AC	\$700.00	0.080	\$56.00
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	9.60	\$153.60
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	602	\$1,444.80
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	593	\$1,660.40
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	593	\$415.10
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	90	\$360.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	90	\$90.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	0	\$0.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	50	\$27,500.00
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	50	\$37,500.00
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	2	\$10,000.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	652	\$1,564.80
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	652	\$2,347.20
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	650	\$19,500.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$364.00	602	\$219,128.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	50	\$12,000.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	1	\$12,000.00
26		7017		BYPASS SYSTEM	LS		0	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		0.6	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	0	\$0.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	0	\$0.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	0	\$0.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	0	\$0.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	0	\$0.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	0	\$0.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	0	\$0.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	0	\$0.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	0	\$0.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	0	\$0.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	0	\$0.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	0	\$0.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	0	\$0.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	0	\$0.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	0	\$0.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	0	\$0.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	0	\$0.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	0	\$0.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	0	\$0.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	0	\$0.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	0	\$0.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	0	\$0.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	0	\$0.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	0	\$0.00
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	0	\$0.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		0	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		0	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		0	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		0.0	\$0.00

Total	\$348,120
Eligibility Ratio	100.00%
Anticipated MUD Portion	\$0
Anticipated TxDOT Portion	\$348,120



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
**FM 1960, CSJ 1685-03-098**  
**MUD 132 - Option B, Conflict 14**

DATE: 4/17/2020

ITEM NUMBER	BUY AMERICA	ITEM	CODE	DESCRIPTION	UNIT	UNIT COST	TOTAL QTY	COST
01		104	6001	REMOVING CONC (PAV)	SY	\$20.00	0	\$0.00
02		104	6017	REMOVING CONC (DRIVEWAYS)	SY	\$20.00	0	\$0.00
03		104	6029	REMOVING CURB OR CURB & GUTTER	LF	\$3.00	0	\$0.00
04		104	6036	REMOVING CONC (SIDEWALK OR RAMP)	SF	\$27.00	0	\$0.00
05		162	6002	BLOCK SODDING	SY	\$6.00	20	\$120.00
06		166	6001	FERTILIZER	AC	\$700.00	0.010	\$7.00
07		168	6001	VEGETATIVE WATERING	MG	\$16.00	1.20	\$19.20
08		360	6004	CONC PVMT (CONT REINF-CRCP) (10")	SY	\$65.00	0	\$0.00
09		402	6001	TRENCH EXCAVATION PROTECTION	LF	\$2.40	120	\$288.00
10		506	6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	\$2.80	220	\$616.00
11		506	6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	\$0.70	220	\$154.00
12		506	6041	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	\$4.00	45	\$180.00
13		506	6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	\$1.00	45	\$45.00
14		529	6005	CONC CURB (MONO) (TY II)	LF	\$6.00	0	\$0.00
15		530	6025	DRIVEWAY (CONC) (FAST TRACK)	SY	\$65.00	0	\$0.00
16		531	6002	CONC SIDEWALKS (5")	SF	\$54.00	0	\$0.00
17	*	7017	6046	CASING (STEEL) (SANITARY SEWER) (30 IN)	LF	\$550.00	270	\$148,500.00
18		7017	6071	JCK BOR OR TUN CSNG(STL)(SAN SWR)(30IN)	LF	\$750.00	270	\$202,500.00
19		7017	6091	FM CONNECTION (FORCE MAIN)	EA	\$5,000.00	2	\$10,000.00
20		7017	6110	POST CONSTRUCTION TELEVISION INSPECTION	LF	\$2.40	390	\$936.00
21		7017	6140	PRE-CONSTRUCTION TELEVISION INSPECTION	LF	\$3.60	390	\$1,404.00
22		7017	XXXX	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	LF	\$30.00	407	\$12,210.00
23	*	7017	XXXX	SAN SEWER (18 IN)(DI)(RESTRAINED JT	LF	\$364.00	120	\$43,680.00
24	*	7017	XXXX	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	LF	\$240.00	270	\$64,800.00
25		7017	XXXX	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	EA	\$12,000.00	1	\$12,000.00
26		7017		BYPASS SYSTEM	LS		0	\$0.00
27		7017		DUCTILE IRON FITTINGS	TON		1.1	\$0.00
28		7049	6017	WATER MAIN PIPE (PVC)(12IN)(DR18)(C900)	LF	\$120.00	0	\$0.00
29		7049	6018	WTR (PIPE WTR MAIN)PVC C905 DR18 (16")	LF	\$132.00	0	\$0.00
30	*	7049	6046	CASING STEEL (20IN)	LF	\$250.00	0	\$0.00
31	*	7049	6049	CASING STEEL (30IN)	LF	\$550.00	0	\$0.00
32		7049	6068	JCK TUN BOR OR AUG CSG (STL) (16IN)	LF	\$500.00	0	\$0.00
33		7049	6072	JCK TUN BOR OR AUG CSG (STL) (30IN)	LF	\$750.00	0	\$0.00
34		7049	6074	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	EA	\$1,800.00	0	\$0.00
35		7049	6075	SERVICE LINE (LONG SIDE) (5/8" TO 1")	EA	\$2,000.00	0	\$0.00
36		7049	6076	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	EA	\$2,400.00	0	\$0.00
37		7049	6077	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	EA	\$2,800.00	0	\$0.00
38	*	7049	6104	FIRE HYDRANT ASSEMBLY	EA	\$4,800.00	0	\$0.00
39		7049	6107	3" AIR RELEASE VALVE	EA	\$6,000.00	0	\$0.00
40		7049	6115	REMOVING WATER VALVE AND BOX	EA	\$400.00	0	\$0.00
41		7049	6116	REMOVING AND RELOCATING METER AND BOX	EA	\$350.00	0	\$0.00
42		7049	6117	REMOVING AND RELOCATING WTR METER AND VAULT	EA	\$2,000.00	0	\$0.00
43		7049	6119	REMOVING AND SALVAGING FIRE HYDRANT	EA	\$450.00	0	\$0.00
44		7049	6127	CUT AND PLUG WATER MAIN (8IN)	EA	\$1,500.00	0	\$0.00
45		7049	6129	CUT AND PLUG WATER MAIN (12IN)	EA	\$1,800.00	0	\$0.00
46		7049	6131	CUT AND PLUG WATER MAIN (16IN)	EA	\$2,400.00	0	\$0.00
47		7049	6140	WET CONNECTION (8IN)	EA	\$1,800.00	0	\$0.00
48		7049	6142	WET CONNECTION (12IN)	EA	\$4,800.00	0	\$0.00
49		7049	6144	WET CONNECTION (16IN)	EA	\$6,000.00	0	\$0.00
50		7049	6160	JCK TUN BOR OR AUG CSG (STL) (20IN)	LF	\$600.00	0	\$0.00
51		7049	6174	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)	LF	\$30.00	0	\$0.00
52		7049	6176	TRENCH EXCAVATION PROTECTION	LF	\$2.40	0	\$0.00
53		7049	6179	ASBESTOS ABATEMENT SUPT & COORDINATION	LS	\$50,000.00	0	\$0.00
54	*	7049	6185	CASING STEEL (16 IN)	LF	\$200.00	0	\$0.00
55		7049	6200	WTR MAIN PIPE(PVC)(6 IN)(DR 18) (C900)	LF	\$54.00	0	\$0.00
56		7049	6201	WTR MAIN PIPE(PVC)(8 IN)(DR 18) (C900)	LF	\$125.00	0	\$0.00
57		7049	XXXX	6 IN BLOW-OFF VALVE	EA	\$6,000.00	0	\$0.00
58		7049		GROUT ABANDONED LINES	CY		0	\$0.00
59		7049		GATE VALVE & BOX (COMPLETE)(16")	EA		0	\$0.00
60		7049		12" GATE VALVE AND BOX	EA		0	\$0.00
61		7049		8" GATE VALVE AND BOX	EA		0	\$0.00
62		7049		DUCTILE IRON FITTINGS	TON		0	\$0.00
							Total	\$497,459
							Eligibility Ratio	89.68%
							Anticipated MUD Portion	\$51,338
							Anticipated TxDOT Portion	\$446,121

**HCMUD 132 Relocation - Easement Costs**

<u>Easement ID</u>	<u>Tract</u>	<u>PIDN</u>	<u>Legal Description</u>	<u>Owner/Address/Primary Contact/Phone #</u>	<u>Type (W/S)</u>	<u>Acre</u>	<u>Sq. Ft.</u>	<u>Easement Acquired (Y/N)</u>	<u>Date Acquired</u>	<u>Est. Date to Acquire</u>	<u>Actual / Estimated \$</u>
W.L.E. "A"	TX-HA-132-004 TX-HA-132-005	1276930010006 1276930010005	RES F & E BLK 1 ATASCOCITA COMMONS R/P	ATASCOCITA 1692 LLC C/O KIMCO REALTY - ATTN PROPERTY TAX 500 N BROADWAY STE 201 JERICHO NY 11753	W	<u>0.2020</u>	<u>8800</u>	N		5/10/2020	<u>\$105600</u>
W.L.E. "B"	TX-HA-132-006	1276930010007	RES G BLK 1 ATASCOCITA COMMONS R/P	TARGET CORPORATION 1000 NICOLLET MALL MINNEAPOLIS MN 55403-2542 Evan Byers	W	<u>0.0464</u>	<u>2018</u>	Y	3/16/2020		<u>\$10090</u>
W.L.E. "C"	TX-HA-132-007	1276930010004	RES D BLK 1 ATASCOCITA COMMONS R/P	HINDS INVESTORS II LTD 1800 AUGUSTA DR STE 370 HOUSTON TX 77057-3185	W	<u>0.0969</u>	<u>4222</u>	N		4/26/2020	<u>\$63330</u>
W.L.E. "D"	TX-HA-132-008 TX-HA-132-009	1276930010003 1276930010008	RES C & H BLK 1 ATASCOCITA COMMONS R/P	ATASCOCITA 1692 LLC C/O KIMCO REALTY - ATTN PROPERTY TAX 500 N BROADWAY STE 201 JERICHO NY 11753	W	<u>0.1168</u>	<u>5088</u>	N		5/10/2020	<u>\$61056</u>
W.L.E. "E"	TX-HA-132-010 TX-HA-132-013	1276930010002 1276930010001	RES A, B & H BLK 1 ATASCOCITA COMMONS R/P	ATASCOCITA 1692 LLC C/O KIMCO REALTY - ATTN PROPERTY TAX 500 N BROADWAY STE 201 JERICHO NY 11753	W	<u>0.3266</u>	<u>14228</u>	N		5/10/2020	<u>\$171456</u>
W.L.E. "F"	TX-HA-132-015	1306490010001	RES A BLK 1 EUGENE	STEPHEN G ROOT, TRUSTEE OF THE ROOT TRUST 4405 MANCHESTER AVE., STE 206 ENCINITAS CA 92024	W	<u>0.1077</u>	<u>4690</u>	Y	3/12/2020		<u>\$46900</u>
W.L.E. "G"	TX-HA-132-016	1306490010002	RES B BLK 1 EUGENE	EWTMC III LLC 510 BERING DR. STE 530 HOUSTON TX 77057	W	<u>0.0899</u>	<u>3917</u>	N		4/17/2020	<u>\$60000</u>
W.L.E. "H"	TX-HA-132-019	0402280000564	TR 1H-6B ABST 26 D HARRIS	IHOP PROPERTY LLC 450 N BRAND BLVD GLENDALE CA 91203-2347	W	<u>0.1104</u>	<u>4809</u>	N		5/30/2020	<u>\$48090</u>
W.L.E. "I"	TX-HA-132-020	0402280000573	TR 1H-6B1 ABST 26 D HARRIS	MNM PARTNERS LP LEGAL REAL ESTATE DEPT % CARROLS CORP 14800 LANDMARK BLVD STE 500 DALLAS TX 75254-7013	W	<u>0.1245</u>	<u>5422</u>	Y	4/13/2020		<u>\$80000</u>
W.L.E. "J"	TX-HA-132-021	1231330010001	RES A BLK 1 CHILIS ATASCOCITA	FCPT HOLDINGS LLC 591 REDWOOD HWY STE 1150 MILL VALLEY CA 94941-6007	W	<u>0.1048</u>	<u>4563</u>	N		4/23/2020	<u>\$54756</u>
W.L.E. "K"	TX-HA-132-022 TX-HA-132-023 TX-HA-132-024	1178720010002 1178720010003 1178720010004	RES A, B & C BLK 1 R/P & EXTENSION ATASCOCITA TOWN CENTER SEC 4	WF LAKE HOUSTON LLC 11440 SAN VICENTE BLVD STE 200 LOS ANGELES CA 90049-6217	W	<u>0.1285</u>	<u>5595</u>	Y	2/25/2020		<u>\$75000</u>
W.L.E. "L"	TX-HA-132-025	1185000010001	RES A BLK 1 ATASCOCITA TOWN CENTER SEC 5	STELLA BEA, LLC 13636 BRETON RIDGE UNIT A-H HOUSTON TX 77070-6077	W	<u>0.0013</u>	<u>56</u>	N		5/15/2020	<u>\$840</u>
W.L.E. "P" S.S.E. "M" & "Q"	TX-HA-132-027	1176200010008	RES A4 BLK 1 ATASCOCITA TOWN CENTER SEC 3	NMP KINGWOOD GLEN LLC 3284 NORTHSIDE PKWY NW STE 515 ATLANTA GA 30327-2286	W/S	<u>0.0763</u>	<u>3325</u>	N		6/15/2020	<u>\$49875</u>
S.S.E. "Z"	TX-HA-132-028	1163770010001	RES A BLK 1 ATASCOCITA OFFICE PARK SEC 1	VISTA 7702 FM 1960 LTD 1117 ELDRIDGE PKWY HOUSTON TX 77077-1648	S	<u>0.0131</u>	<u>572</u>	Y	2/3/2020		<u>\$8580</u>
S.S.E. "N" W.L.E. "O"	TX-HA-132-029	1176200010001	RES A BLK 1 ATASCOCITA TOWN CENTER SEC 3	LOUETTA LEASING LP 13615 KLUGE RD STE 100 CYPRESS TX 77429-2338	W/S	<u>0.0619</u>	<u>2695</u>	N		5/30/2020	<u>\$40425</u>

<b>Easement ID</b>	<b>Tract</b>	<b>PIDN</b>	<b>Legal Description</b>	<b>Owner/Address/Primary Contact/Phone #</b>	<b>Type (W/S)</b>	<b>Acre</b>	<b>Sq. Ft.</b>	<b>Easement Acquired (Y/N)</b>	<b>Date Acquired</b>	<b>Est. Date to Acquire</b>	<b>Actual / Estimated \$</b>
W.L.E. "T" S.S.E. "U"	TX-HA-132-031	040228000102	TR 1E ABST 26 D HARRIS	METRO CHURCH/LAKE HOUSTON BAPTIST CHR PO BOX 784 HUMBLE TX 77347-0784	W/S	<u>0.0535</u>	<u>2331</u>	Y	2/18/2020		<u>\$23310</u>
S.S.E. "V"	TX-HA-132-032	1374830010001	RES A BLK 1 LAKE HOUSTON SUBSTATION	CENTERPOINT ENERGY HOUSTON 1111 LOUISIANA ST HOUSTON TX 77002-5230	S		<u>13.332</u> <u>Rods</u>	Y	4/3/2020		<u>\$22000</u>
S.S.E. "W"	TX-HA-132-033	1076070000010	RES A1 BLK 1 PINEHURST OF ATASCOCITA SEC 3	ATASCOCITA LUTHERAN CHURCH 7927 FM 1960 RD E HUMBLE TX 77346-2203	S	<u>0.1061</u>	<u>4622</u>	Y	3/3/2020		<u>\$90000</u>
W.L.E. "X"	TX-HA-132-034	1161890000001	RES A PINEHURST SHOPPING CENTER	WGC HOLDINGS DEER PARK LLC 6300 WESTPARK DR STE 504 HOUSTON TX 77057-7219	W	<u>0.0090</u>	<u>391</u>	N		5/30/2020	<u>\$5865</u>
W.L.E. "Y"	TX-HA-132-037	1064880000005	RES D4 BLK 8 ATASCOCITA SHORES SEC 3	OB TEXAS PROPERTIES, LLC 610 W. MAIN STREET, SUITE 101 LEAGUE CITY TX 77573-3886	W	<u>0.0168</u>	<u>734</u>	N		5/30/2020	<u>\$11010</u>

\$1,028,183



TOWN  
CENTER BLVD

ATASCOCITA  
1692, LLC

**0.2020 ACRE**  
W.L.E. "A"  
ATASCOCITA 1692, LLC

ATASCOCITA  
1692, LLC

TARGET CORPORATION

**0.0464 ACRE**  
W.L.E. "B"  
TARGET CORPORATION

**0.0969 ACRE**  
W.L.E. "C"  
HINDS INVESTORS II, LTD.

F.M. 1960  
(WIDTH VARIES)

ATASCOCITA  
1692, LLC

**0.1168 ACRE**  
W.L.E. "D"  
ATASCOCITA 1692, LLC

ATASCOCITA  
1692, LLC

MATCHLINE SHEET 2 OF 8



**BGE, Inc.**  
10777 Westheimer, Suite 400, Houston, TX 77042  
Tel: 281-558-8700 • www.bgeinc.com  
TBPLS Licensed Surveying Firm No. 10106500

SCALE: 1"=100'

SHEET 1

OF 8

Copyright 2019

MATCHLINE SHEET 1 OF 8

ATASCOCITA  
1692, LLC

ATASCOCITA  
1692, LLC

0.3266 ACRE  
W.L.E. "E"  
ATASCOCITA 1692, LLC

ATASCOCITA  
1692, LLC

ATASCOCITA  
1692, LLC

0.1077 ACRE  
W.L.E. "F"  
STEPHEN G. ROOT, TRUSTEE  
OF THE ROOT TRUST

0.0899 ACRE  
W.L.E. "G"  
EWTMC III LLC

MATCHLINE SHEET 3 OF 8

F.M. 1960  
(WIDTH VARIES)



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TBPLS Licensed Surveying Firm No. 10106500

SCALE: 1"=100'

SHEET 2

OF 8

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MATCHLINE SHEET 2 OF 8

MATCHLINE SHEET 4 OF 8

0.1104 ACRE  
W.L.E. "H"  
IHOP PROPERTY LLC

0.1245 ACRE  
W.L.E. "I"  
MNM PARTNERS, L.P.

0.1048 ACRE  
W.L.E. "J"  
FCPT HOLDINGS, LLC

WF LAKE HOUSTON LLC

0.1285 ACRE  
W.L.E. "K"  
WF LAKE HOUSTON LLC

F.M. 1960  
(WIDTH VARIES)



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SCALE: 1"=100'

SHEET 3  
OF 8

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MATCHLINE SHEET 3 OF 8

WF LAKE HOUSTON LLC

0.0013 ACRE  
W.L.E. "L"  
CNL NET LEASE  
FUNDING 2001, LP.

0.1285 ACRE  
W.L.E. "K"  
WF LAKE HOUSTON LLC

F.M. 1960  
(WIDTH VARIES)

W. LAKE HOUSTON PKWY

MATCHLINE SHEET 5 OF 8

0.0131 ACRE  
S.S.E. "Z"  
VISTA 7702  
FM 1960, LTD.

FARMINGHAM RD



**BGE, Inc.**  
10777 Westheimer, Suite 400, Houston, TX 77042  
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TBPLS Licensed Surveying Firm No. 10106500

SCALE: 1"=100'

SHEET 4

OF 8

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MATCHLINE SHEET 4 OF 8

MATCHLINE SHEET 6 OF 8

0.0116 ACRE  
S.S.E. "M"  
NMP KINGWOOD GLEN, LLC

NMP KINGWOOD GLEN, LLC

0.0073 ACRE  
W.L.E "O"  
LOUETTA LEASING, L.P.

LOUETTA LEASING, L.P.

0.0325 ACRE  
W.L.E "P"  
NMP KINGWOOD GLEN, LLC

HARRIS COUNTY FLOOD CONTROL DISTRICT

0.0608 ACRE  
W.L.E "R"  
HARRIS COUNTY FLOOD CONTROL DISTRICT

0.0325 ACRE  
W.L.E "T"  
LAKE HOUSTON BAPTIST CHURCH

LAKE HOUSTON BAPTIST CHURCH

F.M. 1960  
(WIDTH VARIES)

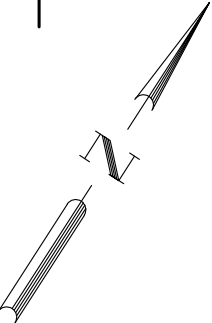
0.0545 ACRE  
S.S.E. "N"  
LOUETTA LEASING, L.P.

0.0322 ACRE  
S.S.E. "Q"  
NMP KINGWOOD GLEN, LLC

0.0619 ACRE  
S.S.E. "S"  
HARRIS COUNTY FLOOD CONTROL DISTRICT

0.0211 ACRE  
S.S.E. "U"  
LAKE HOUSTON BAPTIST CHURCH

DINERO DR



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SCALE: 1"=100'

SHEET 5

OF 8

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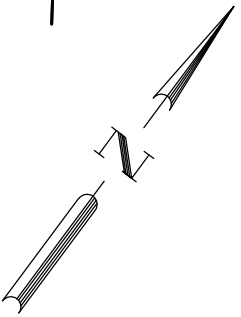
MATCHLINE SHEET 5 OF 8

MATCHLINE SHEET 7 OF 8

13.322 RODS  
(219.81 FEET)  
S.S.E. "V"  
CENTERPOINT ENERGY  
HOUSTON ELECTRIC, LLC

0.1061 ACRE  
S.S.E. "W"  
ATASCOCITA LUTHERAN CHURCH

F.M. 1960  
(WIDTH VARIES)



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SHEET 6  
OF 8

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MATCHLINE SHEET 6 OF 8

MATCHLINE SHEET 8 OF 8

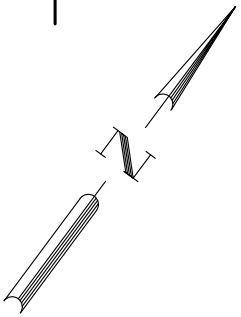
PINEHURST TRAIL DR.

FAIRWAY ISLAND DR.

0.0090 ACRE  
W.L.E. "X"  
WGC HOLDINGS DEER  
PARK, LLC

0.1061 ACRE  
S.S.E. "W"  
ATASCOCITA LUTHERAN  
CHURCH

F.M. 1960  
(WIDTH VARIES)



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SHEET 7

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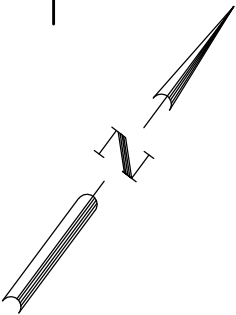
MATCHLINE SHEET 7 OF 8

MATCHLINE SHEET X OF X

0.0168 ACRE  
W.L.E. "Y"  
OB TEXAS PROPERTIES, LLC

ATASCOCITA SHORES DR

F.M. 1960  
(WIDTH VARIES)



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SHEET 8

OF 8

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Title	Design	Project Management	Easement Acquisition	Construction Coordination	Total Hours	Rate	Total
Senior Project Manager	100	40	40	60	240	\$ 220.00	\$ 52,800.00
Project Manager	300	100	60	180	640	\$ 180.00	\$ 115,200.00
Engineer	400	100	60	100	660	\$ 120.00	\$ 79,200.00
CAD Technician	950	20	20	20	1010	\$ 90.00	\$ 90,900.00
RPLS	0	0	120	0	120	\$ 155.00	\$ 18,600.00
Survey Technician	0	0	200	0	200	\$ 120.00	\$ 24,000.00
Survey Crew	0	0	120	0	120	\$ 160.00	\$ 19,200.00
Easement Acquisition Consultant	0	0	1000	0	1000	\$ 180.00	\$ 180,000.00
Appraiser	0	0	110	0	110	\$ 220.00	\$ 24,200.00
Attorney	0	40	100	40	180	\$ 400.00	\$ 72,000.00
Project Representative	0	0	0	300	300	\$ 140.00	\$ 42,000.00
MUD Operator	0	0	0	300	300	\$ 120.00	\$ 36,000.00

Total           \$ 754,100.00

DRAWING DATE: 4/20/2020 FILENAME: SHEET 45A\_FM1960E\_Utility Quantities.1.dgn

LOCATION	# 104 6001	# 104 6017	# 104 6029	# 104 6036	# 162 6002	# 166 6001	# 168 6001	# 360 6004	# 506 6038	# 506 6039	# 506 6041	# 506 6043	# 529 6005	# 530 6025	# 531 6002	7049 6017	7049 6018	7049 6046	7049 6049	7049 6068	7049 6072
	REMOVING CONC (PAV)	REMOVING CONC (DRIVEWAYS)	REMOVING CURB OR GUTTER	REMOVING CONC (SIDEWALK OR RAMP)	BLOCK SODDING	FERTILIZER	VEGETATIVE WATERING	CONC PVMT (CONT REINF-CRCP) (10")	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	BIODEG EROSN CONT LOGS (INSTL) (8")	BIODEG EROSN CONT LOGS (REMOVE)	CONC CURB (MONO) (TY 11)	DRIVEWAY (CONC) (FAST TRACK)	CONC SIDEWALKS (5")	WATER MAIN PIPE (PVC) (12IN) (DR18) (C900)	WTR (PIPE WTR MAIN) PVC C905 DR18 (16")	CASING STEEL (20IN)	CASING STEEL (30IN)	JCK TUN BOR OR AUG CSG (STL) (16IN)	JCK TUN BOR OR AUG CSG (STL) (30IN)
	SY	SY	LF	SY	SY	AC	MG	SY	LF	LF	LF	LF	LF	SY	SY	LF	LF	LF	LF	LF	LF
CSJ 1685-03-098																					
A	622	56	1354	11	2280	0.5	60.00	622	3290	3290	340	340	1354	56	11		3680		265		265
B					42	0.01	1.20		96	96	30	30				168		120			
C					25	0.005	0.60		150	150	30	30				204		132			
D																				125	
E					365	0.1	12.00		1000	1000	55	55					688		135		135
F					45	0.01	1.20		206	206	15	15					170		70		70
G																				127	
H																				117	
J																				130	
K					25	0.005	0.60		382	382	15	15					164		73		73
<b>PROJECT TOTALS</b>	<b>622</b>	<b>56</b>	<b>1354</b>	<b>11</b>	<b>2782</b>	<b>0.63</b>	<b>75.6</b>	<b>622</b>	<b>5124</b>	<b>5124</b>	<b>485</b>	<b>485</b>	<b>1354</b>	<b>56</b>	<b>11</b>	<b>372</b>	<b>4702</b>	<b>252</b>	<b>543</b>	<b>499</b>	<b>543</b>

LOCATION	7049 6074	7049 6075	7049 6076	7049 6077	7049 6104	7049 6107	7049 6115	7049 6116	7049 6117	7049 6119	7049 6127	7049 6129	7049 6131	7049 6140	7049 6142	7049 6144	7049 6160	7049 6174
	SERVICE LINE (SHORT SIDE) (5/8" TO 1")	SERVICE LINE (LONG SIDE) (5/8" TO 1")	SERVICE LINE (SHORT SIDE) (1-1/2" TO 2")	SERVICE LINE (LONG SIDE) (1-1/2" TO 2")	FIRE HYDRANT ASSEMBLY	3" AIR RELEASE VALVE	REMOVING WATER VALVE AND BOX	REMOVING AND RELOCATING METER AND BOX	REMOVING AND RELOCATING WTR METER AND VAULT	REMOVING AND SALVAGING FIRE HYDRANT	CUT AND PLUG WATER MAIN (8IN)	CUT AND PLUG WATER MAIN (12IN)	CUT AND PLUG WATER MAIN (16IN)	WET CONNECTION (8IN)	WET CONNECTION (12IN)	WET CONNECTION (16IN)	JCK TUN BOR OR AUG CSG (STL) (20IN)	ABAN/REM/DIS EXIST LINE (ALL TY/SIZ)
	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	LF
CSJ 1685-03-098																		
A	1	2	13	4	12	2	16	20	2	12			2			2		3710
B							1					2				1		120
C	1		1		1		1	2		1		1			1			132
D							2				1			1				170
E	1		2		1	1	1	3		1			2					676
F							1					1	2					170
G							1				1			1				190
H							1				1			1				172
J							1				1			1				189
K	1		1		1		1	2				1	1					156
<b>PROJECT TOTALS</b>	<b>4</b>	<b>2</b>	<b>17</b>	<b>4</b>	<b>15</b>	<b>3</b>	<b>26</b>	<b>27</b>	<b>2</b>	<b>14</b>	<b>4</b>	<b>5</b>	<b>7</b>	<b>4</b>	<b>2</b>	<b>10</b>	<b>252</b>	<b>5637</b>

LOCATION	7049 6176	7049 6179	7049 6185	7049 6200	7049 6201	7049 XXXX	* 7049	* 7049	* 7049	* 7049	* 7049
	TRENCH EXCAVATION PROTECTION	ASBESTOS ABATEMENT SUPT & COORDINATION	CASING STEEL (16 IN)	WTR MAIN PIPE (PVC) (6 IN) (DR 18) (C900)	WTR MAIN PIPE (PVC) (8 IN) (DR 18) (C900)	6 IN BLOW-OFF VALVE	GROUT ABANDONED LINES	GATE VALVE & BOX (COMPLETE) (16")	12" GATE VALVE AND BOX	8" GATE VALVE AND BOX	DUCTILE IRON FITTINGS
	LF	LS	LF	LF	LF	EA	CY	EA	EA	EA	TON
CSJ 1685-03-098											
A	3415	1		120		2		6			2.41
B	48						6			1	0.27
C	72								1		0.21
D	45		125		170						0.22
E	553			5		1		1			1.09
F	100							1			0.79
G	63		127		190				1		0.34
H	55		117		172				1		0.24
J	59		130		189				1		0.22
K	91			18				1			0.58
<b>PROJECT TOTALS</b>	<b>4501</b>	<b>1</b>	<b>499</b>	<b>143</b>	<b>721</b>	<b>3</b>	<b>6</b>	<b>9</b>	<b>2</b>	<b>3</b>	<b>6.37</b>

NOTE:

WATER MAIN PIPE (PVC) INCLUDES ALL SUBSIDIARY ITEMS. SUBSIDIARY ITEMS TO INCLUDE BUT NOT LIMITED TO ALL OTHER NECESSARY APPURTENANCES FOR CARRIER PIPE; GROUT ABANDONED LINE, ALL GATE VALVES AND DUCTILE IRON FITTINGS.

\* FOR CONTRACTOR'S INFORMATION ONLY.

# QUANTITIES ARE WITHIN THE AREA OF PROPOSED EASEMENT AND PROPOSED ROW ONLY



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**FM 1960  
 SUMMARY OF  
 WATER MAIN  
 UTILITY QUANTITIES**

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	<b>0085</b>
CONTROL	SECTION	JOB	
1685	03	098	

DRAWING DATE: 4/20/2020 FILENAME: SHEET\_45B\_FM1960E\_Utility\_Quantities.2.dgn

LOCATION	# 104 6017	# 162 6002	# 166 6001	# 168 6001	# 0402 6001	# 506 6038	# 506 6039	# 506 6041	# 506 6043	# 530 6025	7017 6046	7017 6071
	REMOVING CONC (DRIVEWAYS)	BLOCK SODDING	FERTILIZER	VEGETATIVE WATERING	TRENCH EXCAVATION PROTECTION	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	BIODEG EROSN CONT LOGS (INSTL) (8")	BIODEG EROSN CONT LOGS (REMOVE)	DRIVEWAY (CONC) (FAST TRACK)	CASING (STEEL) (SANITARY SEWER) (30 IN)	JCK BOR OR TUN CSNG (STL) (SAN SWR) (30IN)
	SY	SY	AC	MG	LF	LF	LF	LF	LF	SY	LF	LF
CSJ 1685-03-098												
C		20	0.01	1.20	120	220	220	45	45		270	270
D	69	340	0.07	8.40	500	466	466			69	135	135
E		400	0.08	9.60	602	593	593	90	90		50	50
<b>PROJECT TOTALS</b>	<b>69</b>	<b>760</b>	<b>0.16</b>	<b>19.2</b>	<b>1222</b>	<b>1279</b>	<b>1279</b>	<b>135</b>	<b>135</b>	<b>69</b>	<b>455</b>	<b>455</b>

LOCATION	7017 6091	7017 6110	7017 6140	7017 XXXX	7017 XXXX	7017 XXXX	7017 XXXX	* 7017	* 7017
	FM CONNECTION (FORCE MAIN)	POST CONSTRUCTION TELEVISION INSPECTION	PRE-CONSTRUCTION TELEVISION INSPECTION	REMOVE EXIST SAN SWR PIPE (FRC MAIN) (18IN)	SAN SEWER (18 IN) (DI) (RESTRAINED JT)	SAN SWR CARRIER PIPE (FRC MAIN) (DI) (18 IN)	AIR RELEASE/VACUUM RELEASE VALVE (4 IN)	BYPASS SYSTEM	DUCTILE IRON FITTINGS
	EA	LF	LF	LF	LF	LF	EA	LS	TON
CSJ 1685-03-098									
C	2	390	390	407	120	270	1		1.14
D	2	635	635	647	500	135	1	1	1.16
E	2	652	652	650	602	50	1		0.58
<b>PROJECT TOTALS</b>	<b>6</b>	<b>1677</b>	<b>1677</b>	<b>1704</b>	<b>1222</b>	<b>455</b>	<b>3</b>	<b>1</b>	<b>2.88</b>

\* FOR CONTRACTOR'S INFORMATION ONLY  
# QUANTITIES ARE WITHIN THE AREA OF PROPOSED EASEMENT ONLY



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**FM 1960  
SUMMARY OF  
SANITARY SEWER  
UTILITY QUANTITIES**

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	<b>0086</b>
CONTROL	SECTION	JOB	
1685	03	098	

# GENERAL CONSTRUCTION NOTES

## GENERAL NOTES - OUTSIDE CITY LIMITS

- CONSTRUCT WASTEWATER COLLECTION SYSTEMS, WATER LINES AND STORM DRAINAGE IN ACCORDANCE WITH TXDOT 2014 ENGLISH SPECIAL PROVISION FOR HOUSTON - DISTRICT 12 (ALL).
- UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567/811 OR 800-344-8377 AND LONE STAR NOTIFICATION CENTER AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER AND STORM DRAINAGE LINES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH TXDOT 2014 ENGLISH SPECIAL PROVISION FOR HOUSTON - DISTRICT 12 (ALL).
- CONTRACTOR SHALL NOTIFY THE OFFICE OF THE CITY ENGINEER, HOUSTON PUBLIC WORKS IN WRITING PRIOR TO COMMENCING CONSTRUCTION.
- ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.
- CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.
- CONTRACTOR SHALL COORDINATE WITH ALL LAND OWNERS, MUNICIPAL UTILITY DISTRICTS (MUDs), UTILITY OWNERS, TXDOT, AND OTHER PRIVATE ENTITY IMPACTED BY THIS PROJECT TO OBTAIN THE NECESSARY CONSTRUCTION AND/OR OPERATING EASEMENTS PRIOR TO CONSTRUCTION.

## COMPACTION OF SITE FILL

- ALL AREAS TO BE FILLED ARE TO BE FREE OF VEGETATION, DEBRIS, PONDED WATER, LOOSE SOILS, MUD & MUCK. (STRIP 3" MIN.).
- THE PLACEMENT OF ANY FILL OR THE DISPOSAL OF ANY EXCESS MATERIAL ON ANY PORTION OF THIS PROJECT SHALL BE MADE IN EIGHT (8) INCH LOOSE LIFTS, UNIFORMLY SPREAD AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.

## STORM WATER QUALITY PRE-CONSTRUCTION

### INSPECTION REQUIREMENTS

- THE PROPERTY OWNER OR THE CONTRACTOR SHALL CONTACT THE HARRIS COUNTY STORM WATER QUALITY PERMITTING SECTION AT (713)956-3000 FOR A PRE-CONSTRUCTION INSPECTION PRIOR TO COMMENCING ANY CLEARING OR CONSTRUCTION ACTIVITIES ON THE SITE.
- IN AREAS WHERE THE PROJECT DESIGN INCORPORATES FILL ADJACENT TO NEIGHBORING LANDOWNERS, THE CONTRACTOR SHALL IMPLEMENT GRADING AND/OR PERIMETER RUNOFF CATCHMENT DEVICES (E.G.- PERIMETER DITCHES OR OTHER BEST MANAGEMENT PRACTICES) DURING CONSTRUCTION TO ENSURE THAT ADJACENT PARCELS BORDERING THE PROJECT SITE DO NOT EXPERIENCE INTERIM DRAINAGE FLOWS THAT EXCEED PRE-DEVELOPMENT CONDITIONS FOR STORM EVENTS UP TO AND INCLUDING THE CURRENT STORM DRAINAGE DESIGN CRITERIA AT THE TIME OF PERMIT OR CARRY SEDIMENT GENERATED AS PART OF CONSTRUCTION ACTIVITIES. WHERE APPLICABLE, THESE PRACTICES ARE IN ADDITION TO THE STANDARD STORM WATER POLLUTION PREVENTION DESIGN AND SHALL INCLUDE ADDITIONAL DITCHES REDIRECTING SITE DRAINAGE OR TEMPORARY PIPING. THIS NOTE IS NOT INTENDED TO ADDRESS ANY LIABILITY OR RESPONSIBILITY UNDER TEXAS WATER CODE 11.086

## HARRIS COUNTY ENGINEERING DEPARTMENT DEVELOPMENT PROJECT SECTION CONSTRUCTION NOTES:

- AN ALTERNATIVE TO CEMENT STABILIZED SAND MAY BE USED AS BACKFILL FOR PIPES FIFTY FOUR (54) INCH AND LARGER, FROM 1-FOOT ABOVE THE TOP OF THE PIPE TO THE BOTTOM OF THE SUBGRADE. CONTRACTOR MAY BACKFILL WITH SUITABLE MATERIAL, PROVIDED THE BACKFILL MATERIAL IS PLACED IN EIGHT (8) INCH LIFTS AND MECHANICALLY COMPACTED TO NINETY FIVE PERCENT (95%) STANDARD PROCTOR DENSITY. TESTS SHALL BE TAKEN AT ONE HUNDRED (100) FOOT INTERVALS ON EACH LIFT. BEDDING AND BACKFILL TO ONE (1) FOOT ABOVE THE TOP OF THE PIPE SHALL BE CEMENT-STABILIZED SAND.
- ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES OR INLETS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL NOTIFY HARRIS COUNTY PUBLIC INFRASTRUCTURE DEPARTMENT ARCHITECTURE AND ENGINEERING DIVISION - PERMIT OFFICE TWENTY-FOUR (24) HOURS IN ADVANCE OF COMMENCING UTILITY AND/OR PAVING CONSTRUCTION (713)-274-3823 AND WRITTEN NOTIFICATION FORTY-EIGHT (48) HOURS IN ADVANCE OF COMMENCING CONSTRUCTION AT 10555 NORTHWEST FREEWAY, SUITE 120, HOUSTON, TX 77092.
- GUIDELINES SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE OBSERVED.
- OWNER OR OWNER'S AGENT TO OBTAIN ALL PERMITS REQUIRED BY THE "REGULATIONS OF HARRIS COUNTY, TEXAS FOR FLOOD PLAIN MANAGEMENT" PRIOR TO STARTING CONSTRUCTION.
- OWNER OR OWNER'S AGENT TO OBTAIN ALL NOTIFICATIONS REQUIRED BY HARRIS COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN HARRIS COUNTY AND HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY.

## BUY AMERICA REQUIREMENTS

- MATERIALS MUST MEET THE "BUY AMERICA" REQUIREMENTS SET FORTH BY THE TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT).
- THE CONTRACTOR MAY CERTIFY ALL MATERIALS FOR THE ENTIRE PROJECT AT ONCE OR SUPPLIERS CAN CERTIFY EACH INDIVIDUAL STEP OR SEPARATE PRODUCTION PROCESS.
- EVERY CERTIFICATION SHOULD CLEARLY REFERENCE THE HEAT NUMBER. WHEN REVIEWING CERTIFICATIONS, COMPARE THE HEAT NUMBERS OR OTHER TRACING METHODS ON DELIVERED MATERIAL TO THE CERTIFICATION DOCUMENT TO ENSURE THAT THE INFORMATION IS THE SAME.
- A MILL CERTIFICATION SHOULD ALSO BE PRODUCED TO PROVE THAT THE RAW STEEL OR IRON WAS SMELTED AND FORMED IN THE UNITED STATES. THE CERTIFICATION CAN BE A SIGNED LETTER OR MERELY INCLUDED AS A SIGNED STATEMENT ON THE DELIVERY TICKETS.

## WATER LINES

- WATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH TXDOT 2014 ENGLISH SPECIAL PROVISION FOR HOUSTON - DISTRICT 12 (ALL) SP7049 FOR WATER MAINS.
- ALL 4" THROUGH 12" WATER LINE TO BE AWWA C-900 PVC DR-18 BLUE PRESSURE RATED WATER MAIN WITH 2" AND SMALLER WATER SERVICE LINE TO BE CONTINUOUS TYPE K COPPER TUBING PER COH STANDARD SPECIFICATION SECTION 02503. ALL 4" THRU 54" DI PIPE WATER LINES SHALL BE AWWA C151 WITH INSIDE LINING WITH AWWA C104 AND DOUBLE WRAPPED WITH 8-MIL POLYETHYLENE SHEETS.
- CONCRETE THRUST BLOCKS SHALL BE PROVIDED AS NECESSARY TO PREVENT PIPE MOVEMENT. USE RESTRAINED JOINTS WHERE PREVENTING MOVEMENT OF 16" OR GREATER PIPE IS NECESSARY DUE TO THRUST.
- ALL WATER LINES UNDER PROPOSED OR FUTURE PAVING AND TO A POINT OF ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE ENCASED IN BANK SAND TO 12" OVER PIPE AND BACKFILLED WITH CEMENT STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE.
- ALL WATER LINE AND SEWER LINE CROSSINGS SHALL BE CONSTRUCTED PER TXDOT 2014 ENGLISH SPECIAL PROVISION FOR HOUSTON - DISTRICT 12 (ALL) SP7049 FOR WATER MAINS, SP7017 FOR SANITARY SEWER, AND TCEQ REGULATIONS.
- ALL WATER VALVES SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C-500 AND SHALL BE OF THE RESILIENT SEAT TYPE.
- ALL WATER LINES TO BE DISINFECTED IN CONFORMANCE WITH AWWA C-651 AND THE TEXAS STATE DEPARTMENT OF HEALTH. AT LEAST ONE BACTERIOLOGICAL SAMPLE SHALL BE COLLECTED FOR EVERY 1,000 LINEAR FEET OF WATER LINE AND SHALL BE REPEATED IF CONTAMINATION PERSISTS.
- ALL BELOW GRADE VALVES SHALL BE GASKETED, HUB-END GATE VALVES WITH A CAST IRON BOX, EXCEPT WHERE FLANGES ARE CALLED OUT ON THE PLANS.
- 4" THRU 12" FIT TINGS SHALL BE CEMENT MORTAR LINED COMPACT DUCTILE IRON PRESSURE FITTINGS PER ANSI A21.53, OR PUSH ON FITTINGS PER ANSI A21.10 PRESSURE RATED AT 250 PSIG.
- HYDROSTATIC TESTING: ALL WATER PIPE SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH TXDOT 2014 ENGLISH SPECIAL PROVISION FOR HOUSTON - DISTRICT 12 (ALL) SP7049 FOR WATER MAINS. TESTS ARE TO BE PERFORMED ON THE ENTIRE FOOTAGE OF WATER PIPE LINE INCLUDED IN THE PROJECT.
- ALL WATER LINES TO HAVE 4' MINIMUM COVER TO FINISHED GRADE AND MINIMUM 12" CLEARANCE TO OTHER UTILITIES AT CROSSING UNLESS OTHERWISE NOTED ON PLANS. ALL WATER LINE INSTALLED OVER 8" DEEP SHALL UTILIZE RESTRAINED JOINT FITTINGS.
- CONTRACTOR SHALL KEEP WATER PIPE CLEAN AND CAPPED (OR OTHERWISE EFFECTIVELY COVERED) OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED PIPE LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.

### GRADING NOTES

- GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
- BEFORE STARTING CONSTRUCTION, CONTRACTOR SHALL VERIFY BENCHMARK ELEVATION AND NOTIFY ENGINEER IF ANY DISCREPANCY AND/OR CONFLICT IS FOUND.
- CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDING IN PAVED AREAS, AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.
- CONTRACTOR SHALL PROTECT ALL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES THAT ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.
- ALL EXISTING CONCRETE PAVING, SIDEWALK, AND CURB DEMOLITION SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. DISPOSAL SHALL BE AT AN APPROVED OFF-SITE, LAWFUL LOCATION, UNLESS DIRECTED OTHERWISE BY THE OWNER.
- ALL FIRE HYDRANT CONNECTIONS SHALL HAVE A 4.0 NATIONAL HOSE THREAD PITCH
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE APPROPRIATE NUMBER OF CREWS AND EQUIPMENT REQUIRED TO PERFORM CONNECTIONS TO THE EXISTING WATER MAINS. THE CONTRACTOR SHALL HAVE CREWS AVAILABLE 24 HOURS A DAY TO COMPLETE THE PROPOSED CONNECTIONS AND RESTORE SERVICE.
- SHUTDOWNS AFFECTING CUSTOMERS SHALL OCCUR AT TIMES ACCEPTABLE TO THE BUSINESSES. CONTRACTOR SHALL COORDINATE WITH MUD 132 TO SCHEDULE COORDINATION MEETINGS WITH EXISTING CUSTOMERS.

## UTILITY BACKFILL

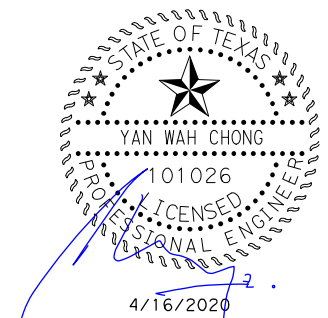
- BACKFILL FOR UTILITIES SHALL BE IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION 02317 AND PER CITY OF HOUSTON DETAILS INCLUDED IN THESE PLANS OR ANY OTHER APPLICABLE CITY OF HOUSTON DETAILS.
- BACKFILL COMPACTION TO BE AT A MINIMUM OF 90 PERCENT (OUTSIDE OF PAVEMENT) AND 95 PERCENT (UNDER OR WITHIN ONE (1) FOOT OF PAVEMENT) OF THE MAXIMUM DRY DENSITY AND AT A MOISTURE CONTENT RECOMMENDED FROM GEOTECHNICAL INVESTIGATION.
- THE TESTING OF MATERIALS USED FOR BEDDING AND BACKFILL OF STORM SEWERS AS WELL AS OTHER UTILITY LOCATED UNDERNEATH OR WITHIN ONE FOOT (1') OF SUBGRADE SHALL BE CONDUCTED TO ENSURE COMPLIANCE WITH "HARRIS COUNTY SPECIFICATION NO. 430" AND THE PROJECT SPECIFICATIONS.
- IN CONSTRUCTION APPLICATIONS WHERE UTILITIES UNDER THE PAVEMENT ON KNUCKLES AND/OR CUL-DE-SACS EXIST, A SPECIAL GEOTECHNICAL NOTE SHALL BE PLACED ON THE GEOTECHNICAL CERTIFICATION PAGE DETAILING THE METHOD OF STABILIZATION AND BACKFILL USED TO MEET HARRIS COUNTY SPECIFICATIONS FOR THESE APPLICATIONS.

## SANITARY SEWERS

- ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TXDOT 2014 ENGLISH SPECIAL PROVISION FOR HOUSTON - DISTRICT 12 (ALL) SP7017 FOR SANITARY SEWERS AND BE SUBJECT TO A STANDARD EXFILTRATION TEST. TESTS ARE TO BE PERFORMED ON THE TOTAL FOOTAGE OF SEWER LINE INCLUDED IN THE PROJECT. REQUIREMENTS OF TEXAS ADMINISTRATIVE CODE, TITLE 30 CHAPTER 317, "DESIGN CRITERIA FOR SEWERAGE SYSTEMS" SHALL GOVERN WHERE CONFLICTS EXIST EXCEPT WHERE CITY REQUIREMENTS ARE MORE STRINGENT.
  - ALL MANHOLES ARE TO BE PER TXDOT 2014 ENGLISH SPECIAL PROVISION FOR HOUSTON - DISTRICT 12 (ALL) SP7017 FOR SANITARY SEWERS UNLESS OTHERWISE NOTED.
  - SANITARY SEWER MANHOLES WILL HAVE BEDDING AND BACKFILL PER TXDOT 2014 ENGLISH SPECIAL PROVISION FOR HOUSTON - DISTRICT 12 (ALL) SP7017 FOR SANITARY SEWERS UNLESS OTHERWISE NOTED.
  - THE SANITARY SEWER PVC PIPE SHALL BE ASTM D 3034 TYPE PSM SDR 26 GRAVITY SEWER PIPE, ASTM D2241 SDR 26 PRESSURE RATED SEWER PIPE OR AWWA C-900 DR-18 GREEN PVC PRESSURE RATED SEWER PIPE BASED ON CONSTRUCTION CONDITION REQUIREMENT AND CONFORMING TO ASTM D1784 AND TXDOT 2014 ENGLISH SPECIAL PROVISION FOR HOUSTON - DISTRICT 12 (ALL) SP7017 FOR SANITARY SEWERS.
  - WHEN SS PRESSURE RATED PVC PIPE IS USED ON WATERLINE (WL) CROSSING UNDER CONDITION 1 OF COH IDM TABLE 7.3, THE SAME TYPE OF D2241 SDR 26 PVC PIPE OR C-900 GREEN DR-18 PVC GREEN PRESSURED TO BE UTILIZING IN-BETWEEN TWO SS MH'S. OR TO UTILIZE A DI TRANSITION ADAPTER FOR THE CONNECTING OF ASTM D-3034 PVC GRAVITY PIPE TO DI-OD AWWA C-900 PVC PIPE CENTERED AT WL WHEN CONNECTING TWO DIFFERENT TYPES OF PVC PIPES FOR SEWER CONSTRUCTION.
  - AWWA C-900 DR-18 PVC PIPE USES EITHER AWWA C900 DR-18 PVC FITTINGS OR DIP FITTINGS.
  - ALL SANITARY SEWER LINES UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL HAVE BEDDING PER TXDOT 2014 ENGLISH SPECIAL PROVISION FOR HOUSTON - DISTRICT 12 (ALL) SP7017 FOR SANITARY SEWERS.
  - ALL SANITARY SEWERS CROSSING WATER LINES WITH A CLEARANCE BETWEEN 12 INCHES AND 9 FEET SHALL HAVE A MINIMUM OF ONE (1) JOINT OF 150 PSI DUCTILE IRON OR (GREEN) C900 PVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER PROVIDE MINIMUM 2 FOOT SEPARATION.
  - CONTRACTOR SHALL PROVIDE A MINIMUM HORIZONTAL CLEARANCE OF 9' FEET BETWEEN WATER LINES AND SANITARY SEWER MANHOLES AND LINES EXCEPT WHERE SHOWN IN PLANS.
  - SANITARY SEWER MANHOLE RIMS OUTSIDE OF PROPOSED PAVING WILL BE SET 3" - 6" ABOVE THE SURROUNDING LEVEL FINISHED GRADE AFTER PAVING WITH SLOPED BACKFILL ADDED FOR STORM WATER TO DRAIN AWAY FROM MANHOLE RIM.
  - IN WET STABLE TRENCH AREAS USE BEDDING PER TXDOT 2014 ENGLISH SPECIAL PROVISION FOR HOUSTON - DISTRICT 12 (ALL) SP7017 FOR SANITARY SEWERS.
  - DEFLECTION TEST: DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID SEWER PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5% IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE TEST SHALL BE PERFORMED AS PER 30 TAC 317.2 LATEST AMENDMENT AND WITHOUT MECHANICAL PULLING DEVICES. NO BALL-TYPE MANDREL IS ALLOWED.
  - INFILTRATION, EXFILTRATION OR LOW-PRESSURE AIR TEST: EITHER OF THE FOLLOWING TESTS SHALL BE PERFORMED AS PER TAC, TITLE 30 317.2 WITHIN THE SPECIFIED TOLERANCES ON ALL GRAVITY SEWERS.
    - INFILTRATION OR EXFILTRATION TEST: TOTAL LEAKAGE AS DETERMINED BY A HYDROSTATIC HEAD TEST SHALL NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO (2) FEET.
    - LOW-PRESSURE AIR TEST: PERFORM TEST ACCORDING TO UNI-B-6-90 OR OTHER APPROPRIATE PROCEDURES. FOR SECTIONS OF PIPE LESS THAN 36" (INCH) AVERAGE INSIDE DIAMETER, THE MINIMUM ALLOWABLE TIME FOR PRESSURE DROP FROM 3.5 P.S.I.G. TO 2.5 P.S.I.G. SHALL BE AS FOLLOWS:
 

6" 340 SECONDS OR 0.855(L) FOR TEST LENGTHS GREATER THAN 398'
8" 454 SECONDS OR 1.520(L) FOR TEST LENGTHS GREATER THAN 298'
10" 567 SECONDS OR 2.374(L) FOR TEST LENGTHS GREATER THAN 239'
15" 850 SECONDS OR 5.342(L) FOR TEST LENGTHS GREATER THAN 159'
18" 1020 SECONDS OR 7.693(L) FOR TEST LENGTHS GREATER THAN 133'

 WHERE L = LENGTH OF LINE OF SAME PIPE SIZE IN FEET.
- "SAN. S. E." INDICATES "SANITARY SEWER EASEMENT"
- FOR SANITARY MANHOLE (MH) RIMS SET INSIDE OF OR @ CURB & GUTTER PAVEMENT AND/OR BELOW T.C., MH RIMS WILL BE SET FLUSHED WITH AN ABUTTING PAVED SURFACE. THE (VALVE, NEENAH OR EQUAL) HEAVY DUTY BOLTED SOLID MH COVER SHALL BE PROPERLY (AND SECURELY) ATTACHED AND SEALED TO ITS COMPATIBLE GASKETED FRAME BY USING BOTH A NEOPRENE GASKET AND (AT LEAST) 4 COUNTER-SUNK HEX-HEAD COARSE THREADED 1/2"-13 UNC STAINLESS STEEL BOLTS. THE HEAVY DUTY FRAME MH COVER SHALL BE SOLID (NO AIR HOLES). SAID FRAME SHALL BE BOTH EMBEDDED INTO THE MH'S TOP ALSO SECURELY ANCHORED TO THE UNDERLYING MH STRUCTURE WITH EITHER SECURELY ATTACHED EMBEDDED ANCHOR BOLTS OR THE CONCRETE MH'S EXPOSED REBARS WELDED TO THE FRAME OR OTHER EQUALLY SECURED METHODS TO PREVENT MH COVER/FRAME BLOW-OFFS/EJECTIONS.
- CONNECTION OF 18-INCH FORCE MAIN. TEMPORARY SHUTDOWN OF THE EXISTING LIFT STATION AND FORCE MAIN WILL BE ALLOWED FOR A MAXIMUM OF 4 HOURS, FROM 12 TO 4 AM, TUESDAY, WEDNESDAY AND THURSDAY ONLY, AND EXCEPTING CITY OF HOUSTON OBSERVED HOLIDAYS.
- IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH THE MUD 132 ENGINEER (NICK BAILEY OFFICE: 832-592-2725, MOBILE: 832-444-5923) AND MUD OPERATOR (ALLEN JENKINS OFFICE: 281-209-2100, MOBILE: 281-850-1870) FOR ANY TIE-INS AND SHUTDOWNS OF THE FORCE MAIN AND LIFT STATION. FOR CONNECTION BETWEEN THE NEW AND EXISTING FORCE MAIN, THE CONTRACTOR SHALL PROVIDE AS A REQUIRED SUBMITTAL, A SHUTDOWN AND CONNECTION PLAN FOR APPROVAL BY ENGINEER AND MUD 132 PRIOR TO BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO PROVIDE 72 HOURS NOTICE PRIOR TO ANY APPROVED SHUTDOWN. THE ENGINEER AND MUD OPERATOR MAY CANCEL ANY SHUTDOWN AT ANY TIME FOR OPERATIONAL CONCERNS OR THREAT OF INCLEMENT WEATHER.
- IF ANY CONNECTION IS PROPOSED TO BE LONGER THAN THE 4 HOUR TEMPORARY SHUTDOWN WINDOW, THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PUMPING EQUIPMENT, PIPING AND ALL OTHER NECESSARY APPURTENANCES FOR A FLOW OF 829 GPM. CONTRACTOR MAY EMPLOY BOTH PUMP AND HAUL, ONSITE TEMPORARY TANKAGE, AND BYPASS PUMPING SYSTEMS. THIS IS TO BE A SUPPLEMENT TO THE TEMPORARY SHUTDOWN ONLY, AND NOT A PRIMARY MEANS OF SHUTDOWN OPERATION. ALL MATERIALS, EQUIPMENT, ETC., MUST BE IN GOOD CONDITION, AND SHALL NOT HAVE VISIBLE DAMAGE SUCH AS CRACKS, HOLES, FOREIGN MATERIAL, BLISTERS, ETC.



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**FM 1960  
HCMUD 132  
GENERAL NOTES**

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1168
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_Gen Notes.1.dgn

DRAWING DATE: 4/16/2020



# LEGEND FOR FM 1960 EAST ATASCOCITA, TEXAS

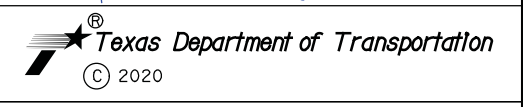
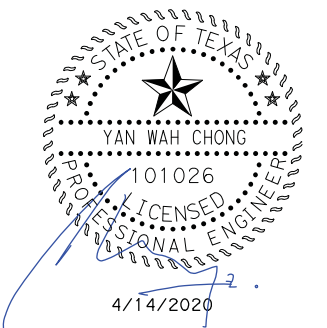
LEGEND

ABBREVIATIONS

UTILITY	SYMBOL	SUE QUALITY LEVEL	DESCRIPTION	NUMBER	COLOR	LINE WEIGHT	LINE STYLE
<b>COMMUNICATION</b>							
ATT TELEPHONE	ATT	B	UNDERGROUND	1000	6	1	ATT-COMM-QLB
	ATT	C	UNDERGROUND	1001	6	1	ATT-COMM-QLC
	ATT	D	UNDERGROUND	1002	6	1	ATT-COMM-QLD
COMCAST	COMC	B	UNDERGROUND	1003	6	1	COMC-COMM-QLB
	COMC	C	OVERHEAD	1004	6	1	COMC-OH COMM-QLC
	COMC	C	UNDERGROUND	1005	6	1	COMC-COMM-QLC
	COMC	D	UNDERGROUND	1006	6	1	COMC-COMM-QLD
CTLCL-CENTURYLINK	CTL	B	UNDERGROUND	1007	6	1	CTL-COMM-QLB
	CTL	C	OVERHEAD	1008	6	1	CTL-OH COMM-QLC
	CTL	C	UNDERGROUND	1009	6	1	CTL-COMM-QLC
	CTL	D	UNDERGROUND	1010	6	1	CTL-COMM-QLD
FIBERNET DIRECT	FND	D	UNDERGROUND	1011	6	1	FND-COMM-QLD
HARRIS COUNTY COMMUNICATIONS	HC	B	UNDERGROUND	1012	6	1	HC-COMM-QLB
PHONOSCOPE	PHON	C	OVERHEAD	1013	6	1	PHON-OH COMM-QLC
	PHON	D	UNDERGROUND	1014	6	1	PHON-COMM-QLD
UNKNOWN COMMUNICATION	UNK	B	UNDERGROUND	1015	6	1	UNK-COMM-QLB
<b>ELECTRIC</b>							
CENTERPOINT ENERGY	CNP	B	UNDERGROUND	1020	3	1	CNP-ELEC-QLB
	CNP	C	OVERHEAD	1021	3	1	CNP-OH ELEC-QLC
	CNP	D	UNDERGROUND	1022	3	1	CNP-ELEC-QLD
<b>TRAFFIC SYSTEMS</b>							
TRAFFIC SIGNALS	TS	B	UNDERGROUND	1025	3	1	TS-ELEC-QLB
	TS	C	UNDERGROUND	1026	3	1	TS-ELEC-QLC
	TS	C	OVERHEAD	1027	3	1	TS-OH-ELEC-QLC
<b>GAS PIPELINE</b>							
CENTERPOINT ENERGY	CNP	D	1-1/4"	1030	4	1	1-1/4"-CNP-GAS-QLD
	CNP	B	2"	1031	4	1	2"-CNP-GAS-QLB
	CNP	D	2"	1030	4	1	2"-CNP-GAS-QLD
	CNP	B	4"	1031	4	1	4"-CNP-GAS-QLB
	CNP	D	4"	1030	4	1	4"-CNP-GAS-QLD
	CNP	B	6"	1031	4	1	6"-CNP-GAS-QLB
	CNP	D	6"	1030	4	1	6"-CNP-GAS-QLD
	CNP	B	8"	1031	4	1	8"-CNP-GAS-QLB
	CNP	D	8"	1030	4	1	8"-CNP-GAS-QLD
SUNOCO/ENERGY TRANSFER	SUNO	B	8"	1032	4	1	8"-SUNO-GAS-QLB
	SUNO	D	8"	1033	4	1	8"-SUNO-GAS-QLD
UNKNOWN GAS LINE	UNK	B	SIZE NOT KNOWN	1034	4	1	UNK-GAS-QLB
<b>WATER</b>							
HCMUD46	MUD46	B	SIZE NOT KNOWN	1040	1	1	MUD46-WTR-QLB
	MUD46	D	SIZE NOT KNOWN	1041	1	1	MUD46-WTR-QLD
HCMUD132	MUD132	C	8"	1042	1	1	8"-MUD132-WTR-QLC
	MUD132	C	12"	1042	1	1	12"-MUD132-WTR-QLC
	MUD132	C	16"	1042	1	1	16"-MUD132-WTR-QLC
	MUD132	C	24"	1042	1	1	24"-MUD132-WTR-QLC
	MUD132	D	SIZE NOT KNOWN	1043	1	1	MUD132-WTR-QLD
	MUD132	D	12"	1043	1	1	12"-MUD132-WTR-QLD
HCMUD152	MUD152	D	24"	1044	1	1	24"-MUD152-WTR-QLD
HCMUD153	MUD153	C	8"	1045	1	1	8"-MUD153-WTR-QLC
	MUD153	D	8"	1046	1	1	8"-MUD153-WTR-QLD
<b>WASTEWATER</b>							
HCMUD46	MUD46	D	SIZE NOT KNOWN	1050	2	1	MUD46-WW-QLD
HCMUD109	MUD109	C	SIZE NOT KNOWN	1051	2	1	MUD109-WW-QLC
	MUD109	D	10"	1052	2	1	10"-MUD109-WW-QLD
	MUD109	D	12"	1052	2	1	12"-MUD109-WW-QLD
HCMUD132	MUD132	C	8"	1053	2	1	8"-MUD132-WW-QLC
	MUD132	C	10"	1053	2	1	10"-MUD132-WW-QLC
	MUD132	C	12"	1053	2	1	12"-MUD132-WW-QLC
	MUD132	C	15"	1053	2	1	15"-MUD132-WW-QLC
	MUD132	C	18"	1053	2	1	18"-MUD132-WW-QLC
	MUD132	C	30"	1053	2	1	30"-MUD132-WW-QLC
	MUD132	D	12"	1054	2	1	12"-MUD132-WW-QLD
	MUD132	D	18"	1054	2	1	18"-MUD132-WW-QLD
HCMUD152	MUD152	D	24"	1054	2	1	24"-MUD152-WW-QLD
	MUD152	C	30"	1055	2	1	30"-MUD152-WW-QLC
	MUD152	C	36"	1055	2	1	36"-MUD152-WW-QLC
	MUD152	C	48"	1055	2	1	48"-MUD152-WW-QLC
<b>STORM SEWER</b>							
HCMUD109	MUD109	D	SIZE NOT KNOWN	1060	2	1	MUD109-SS-QLD
HCMUD132	MUD132	C	24"	1061	2	1	24"-MUD132-SS-QLC
	MUD132	C	30"	1061	2	1	30"-MUD132-SS-QLC
HCMUD152	MUD152	C	24"	1062	2	1	24"-MUD152-SS-QLC
	MUD152	C	30"	1062	2	1	30"-MUD152-SS-QLC
	MUD152	C	36"	1062	2	1	36"-MUD152-SS-QLC
HCMUD153	MUD153	C	24"	1063	2	1	24"-MUD153-SS-QLC
	MUD153	C	30"	1063	2	1	30"-MUD153-SS-QLC
<b>MISCELLANEOUS</b>							
PROPOSED UTILITY EASEMENT							---OT---OT---
PROPOSED ROW							-----
EXIST ROW							-----
EXIST UTILITY EASEMENT							-----
ML- CURB							=====
EOT							=====
CONSTRUCTION CLASS							=====
EXISTING EDGE OF PAVEMENT							=====
PROPOSED TRENCHED CTMS							-----
PROPOSED CONDUITS							-----
FM 1960 CENTERLINE							-----
SIDE ROAD CENTERLINE							-----

- MONITORING WELL
- MANHOLE (TELEPHONE)
- STM. MH STORM MANHOLE
- MH MANHOLE (GENERIC)
- CABLE MARKER (GENERIC)
- OE OVERHEAD ELECTRIC POWER LINE
- PIPELINE MARKER
- POWER POLE
- GI GRATE INLET
- GUY ANCHOR
- TELEPHONE PEDESTAL
- BOLLARD
- SPLE SERVICE POLE ELECTRIC
- FIRE HYDRANT
- WATER VALVE
- IRRIGATION CONTROL VALVE
- ELECTRIC RISER
- WATER METER
- GAS METER NATURAL GAS
- LIGHT POLE SMALL
- PULL BOX
- ELECTRICAL PEDESTAL
- CO CLEANOUT
- MAILBOX
- SIGN AND POLE (SINGLE)
- GAS VALVE NATURAL
- POST
- CABLE TV PEDESTAL
- TP TELEPHONE POLE
- TRAFFIC SIGNAL LIGHT POLE
- TRAFFIC SIGNAL CONTROL BOX
- VENT (GAS)
- AIR CONDITIONER
- COLUMN
- LUMINARE STANDARD
- ELECTRIC METER
- TANK COVER (GAS)
- SPRINKLER HEAD
- FLAG POLE
- COLUMN (SQUARE)
- SEPTIC TANK / COVER
- GATE MOTOR
- TREES
- PMT PARKING METER
- GAS PUMP GASOLINE
- PETRO DRILL CORE TEST HOLE
- STRUCTURE POLE
- SANITARY SEWER MANHOLE
- UTILITY AIR VENT
- ELECTRIC JUNCTION BOX
- WATER WELL PUMP
- GENERIC JUNCTION BOX
- ELECTRIC MANHOLE
- OVERHEAD TELEPHONE LINE
- CCTV CAMERA
- CCTV RADAR
- ITS GROUND BOX
- TRAFFIC SIGNAL HEAD
- RADAR DETECTOR ADVANCE (RDA)
- RADAR DETECTOR PRESENCE (RDP)
- PEDESTRIAN SIGNAL HEAD W/ PUSHBUTTON AND SIGN
- VIDEO DETECTION (VIVDS)
- ITS CONDUIT BORE

- CTMS- COMPUTERIZED TRANSPORTATION MANAGEMENT SYSTEM
- ESMT- EASEMENT
- ROW- RIGHT OF WAY
- PROP- PROPOSED
- AC- ASBESTOS CEMENT



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## FM 1960 HCMUD 132 LEGEND

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	<b>1169</b>
CONTROL	SECTION	JOB	
1685	03	098	

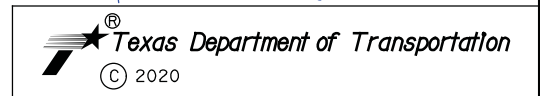
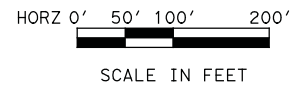
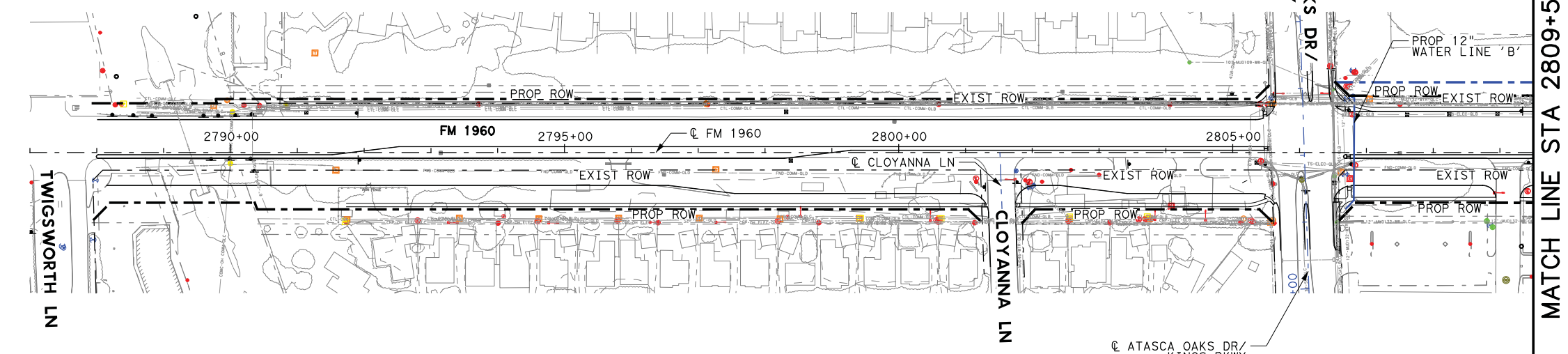
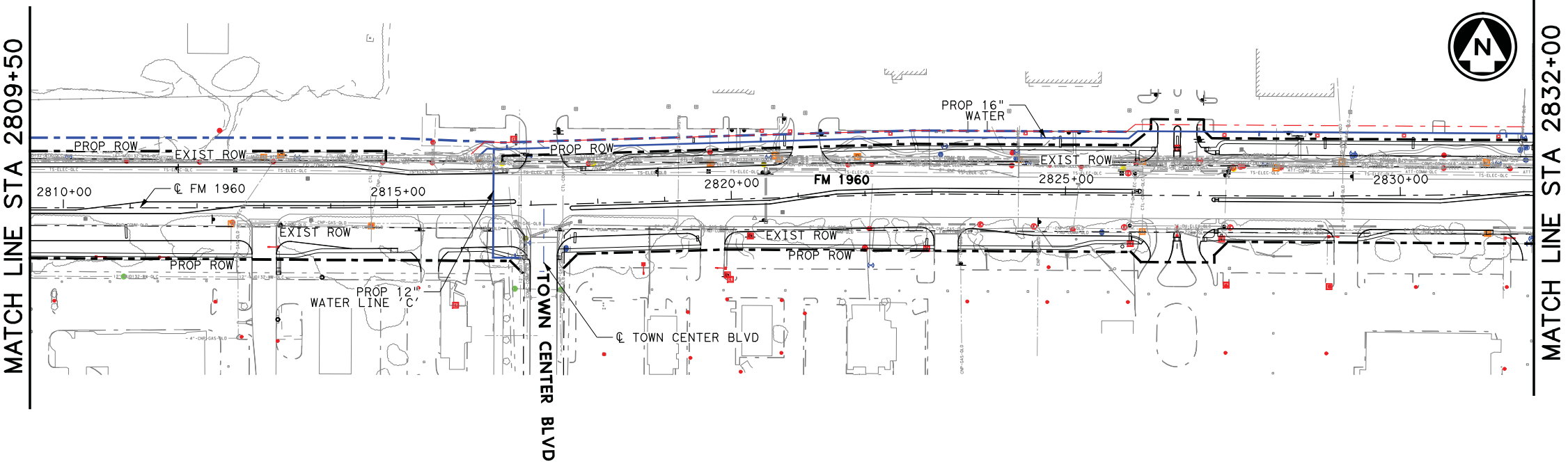
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DRAWING DATE: 4/14/2020

1. ALL SUE LEVEL B UTILITIES WERE OBTAINED BY GEOPHYSICAL METHODS.
2. ALL SUE LEVEL C UTILITIES WERE DRAWN FROM TOPOGRAPHIC SURVEY.
3. ALL SUE LEVEL D UTILITIES WERE DRAWN FROM UTILITY RECORDS.
4. THE UTILITY POLE INVENTORY LISTS THE UTILITIES FROM HIGHEST TO LOWEST.

FILENAME: FM1960E\_Project Layout\_1.dgn

DRAWING DATE: 4/14/2020



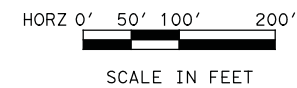
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**FM 1960  
 HCMUD 132  
 PROJECT LAYOUT  
 (BEGIN TO 2832+00)**

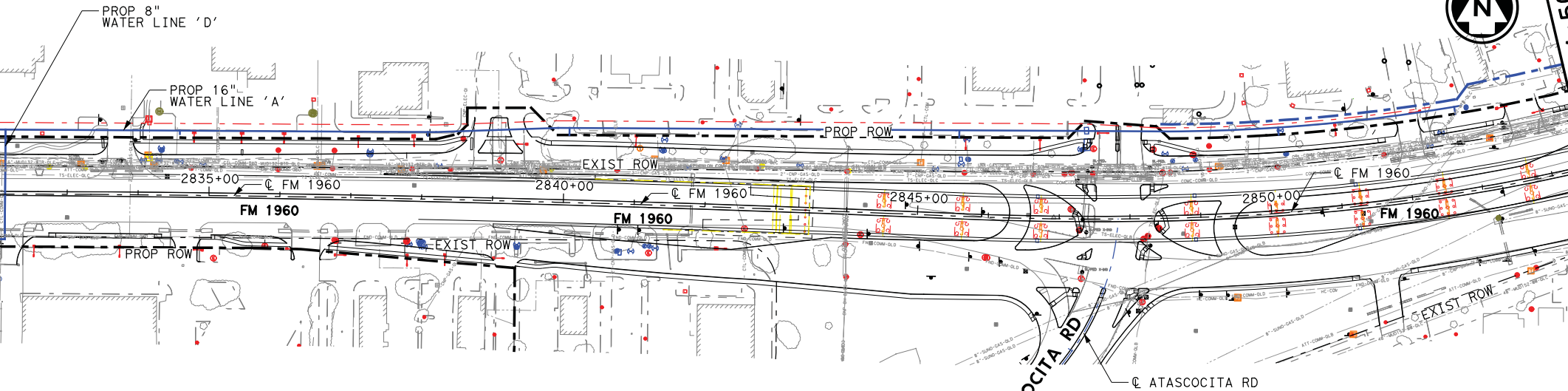
SHEET 1 OF 4

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1170
CONTROL	SECTION	JOB	
1685	03	098	



MATCH LINE STA 2832+00

MATCH LINE STA 2854+50



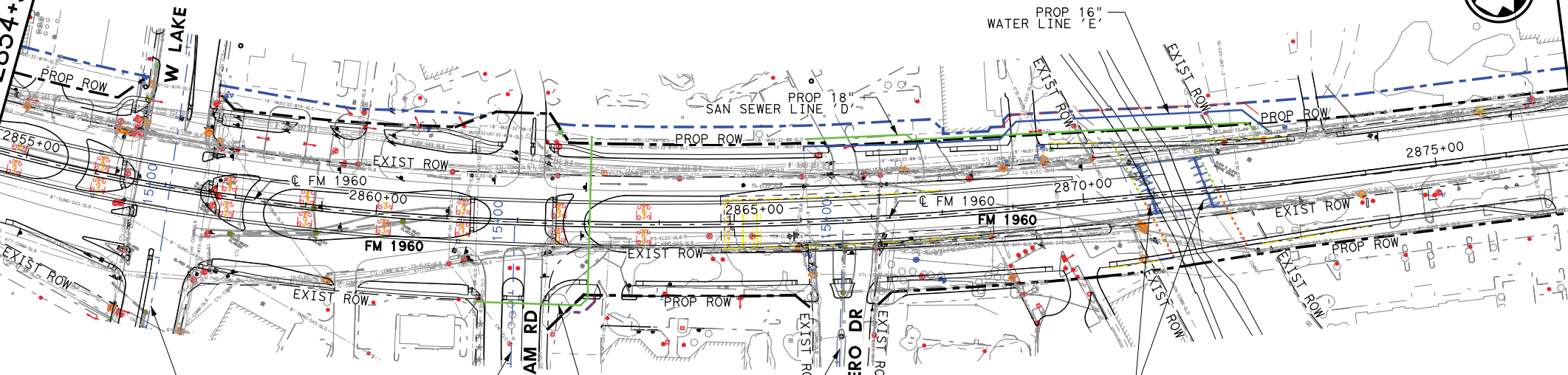
ATASCOCITA RD

FILENAME: FM1960E\_Project Layout\_2.dgn

DRAWING DATE: 4/14/2020

MATCH LINE STA 2854+50

MATCH LINE STA 2877+00



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**FM 1960  
HCMUD 132  
PROJECT LAYOUT  
(2832+00 TO 2877+00)**

SHEET 2 OF 4

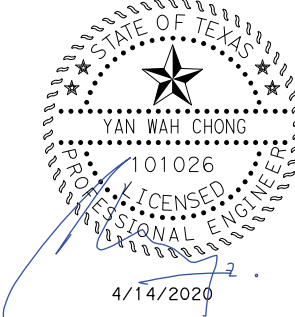
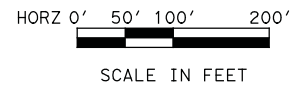
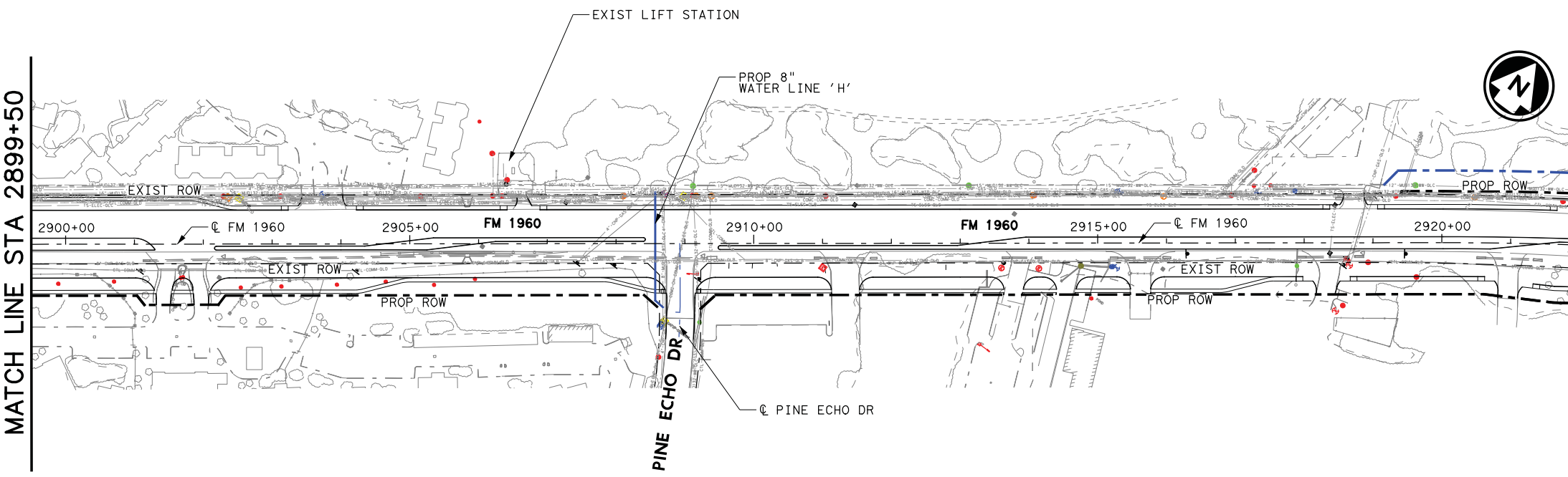
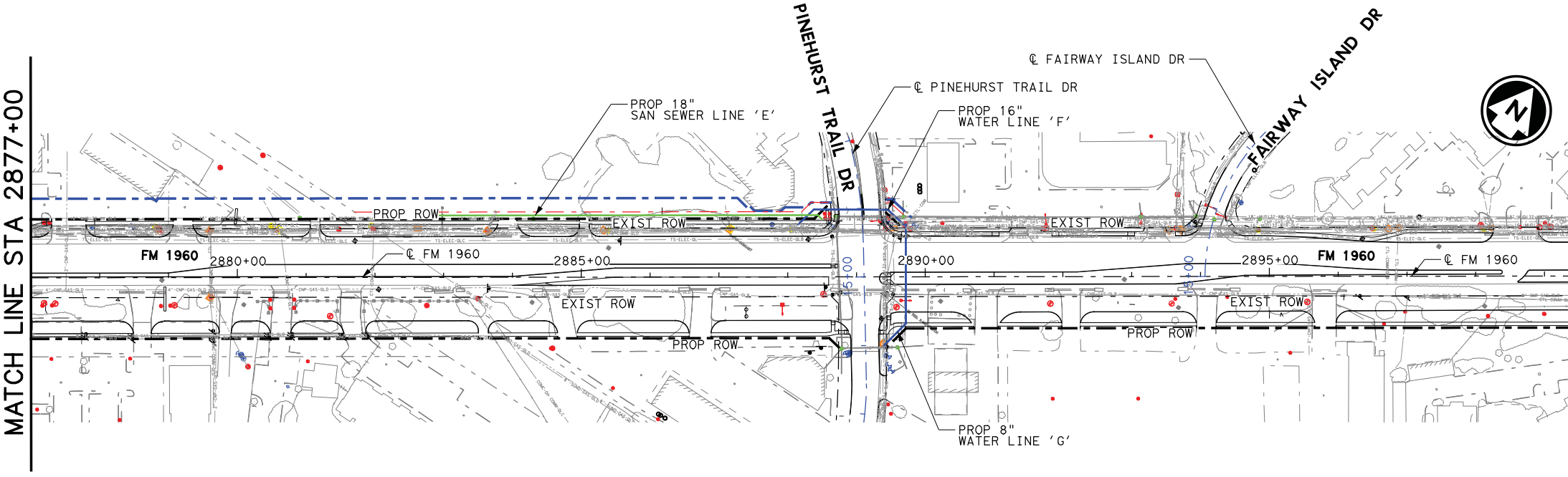
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1171
CONTROL	SECTION	JOB	
1685	03	098	

MATCH LINE STA 2877+00

MATCH LINE STA 2899+50

MATCH LINE STA 2899+50

MATCH LINE STA 2922+00



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**FM 1960  
HCMUD 132  
PROJECT LAYOUT  
(2877+00 TO 2922+00)**

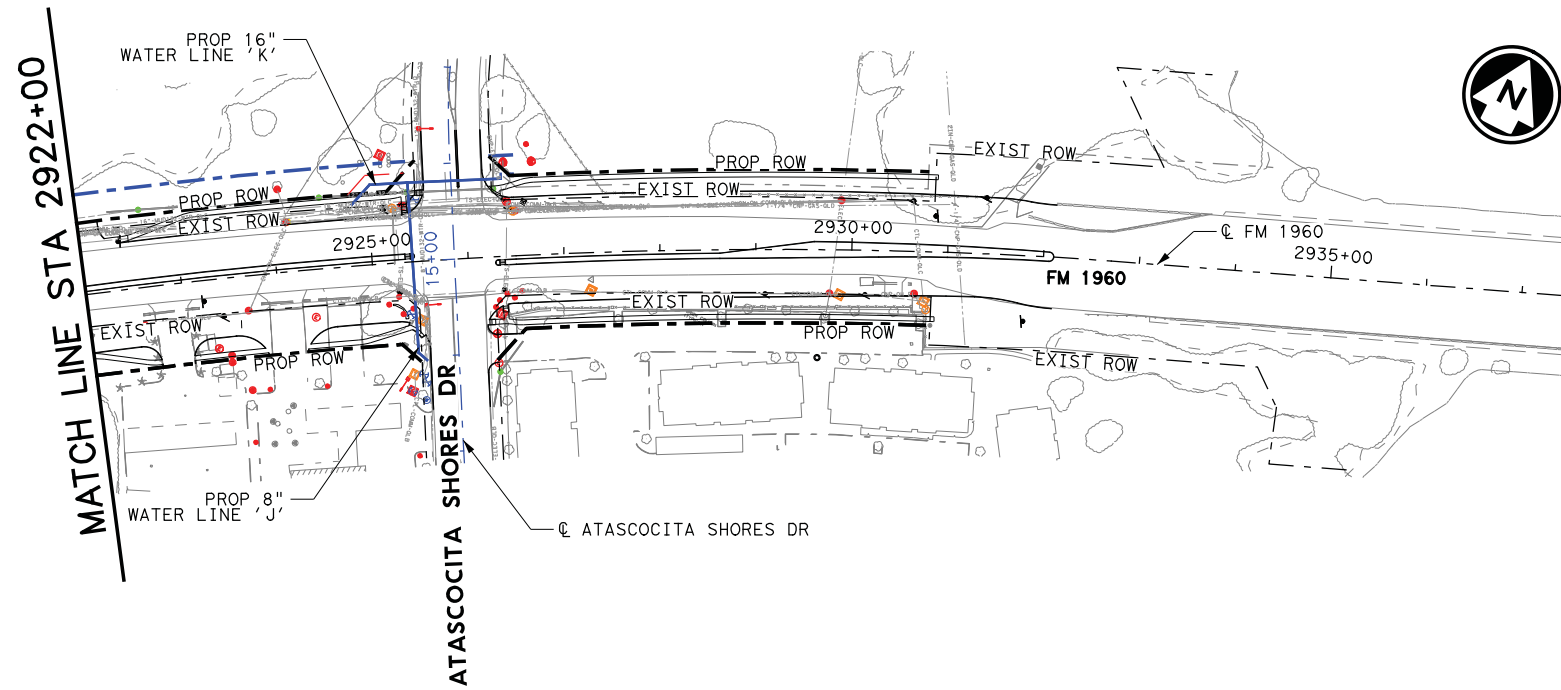
SHEET 3 OF 4

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1172
CONTROL	SECTION	JOB	
1685	03	098	

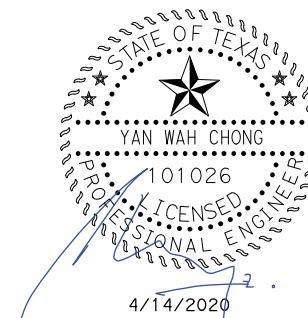
DRAWING DATE: 4/14/2020 FILENAME: FM1960E\_Project Layout\_3.dgn

FILENAME: FM1960E\_Project Layout\_4.dgn

DRAWING DATE: 4/14/2020



HORZ 0' 50' 100' 200'  
 SCALE IN FEET



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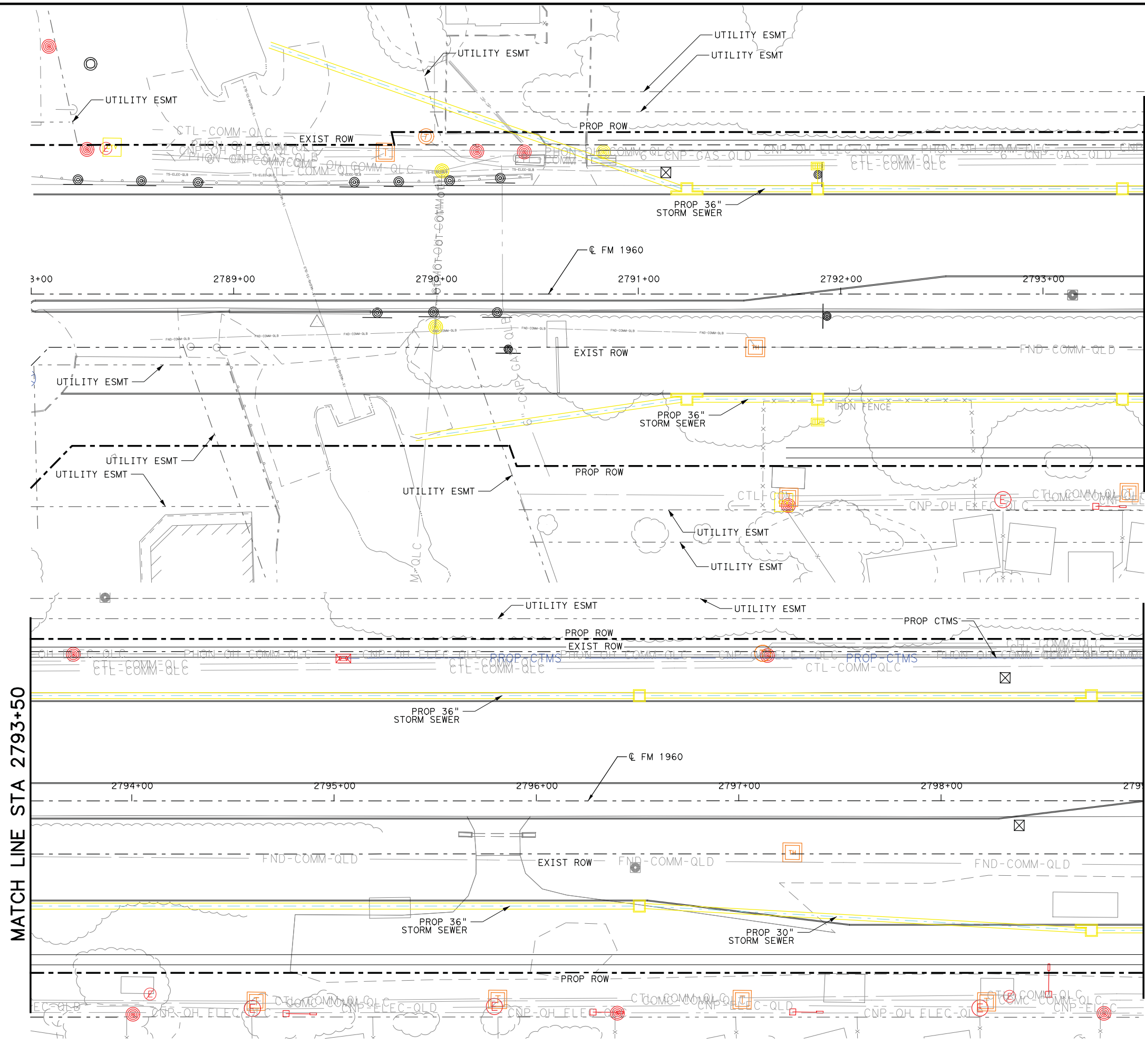
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**FM 1960  
 HCMUD 132  
 PROJECT LAYOUT  
 (2922+00 TO END)**

SHEET 4 OF 4



FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1173
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E-Abandonment-Layout-1.dgn  
DRAWING DATE: 4/14/2020





HORZ 0' 10' 25' 50'  
VERT 0' 5' 10'  
SCALE IN FEET

- NOTES:**
- CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
  - CONTRACTOR SHALL VERIFY ALL SERVICES HAVE BEEN SWITCHED OVER TO THE NEW UTILITIES PRIOR TO ABANDONING OR REMOVING ANY LINES.
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  - CONTRACTOR TO PERFORM POTHOLES EVERY 500 LF TO VERIFY EXISTING PIPE MATERIAL.
  - CONTRACTOR TO COORDINATE VERIFICATION WITH TXDOT 3RD PARTY CONTRACTOR ON ALL EXPOSED WATERLINES.
  - IF ASBESTOS CEMENT (AC) PIPE IS ENCOUNTERED, CONTRACTOR TO COORDINATE WITH TXDOT 3RD PARTY CONTRACTOR ON ASBESTOS ABATEMENT AND REMOVAL. UNKNOWN MATERIAL PIPES COULD BE AC PIPES.

 TO BE REMOVED  
 TO BE ABANDONED



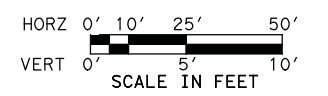
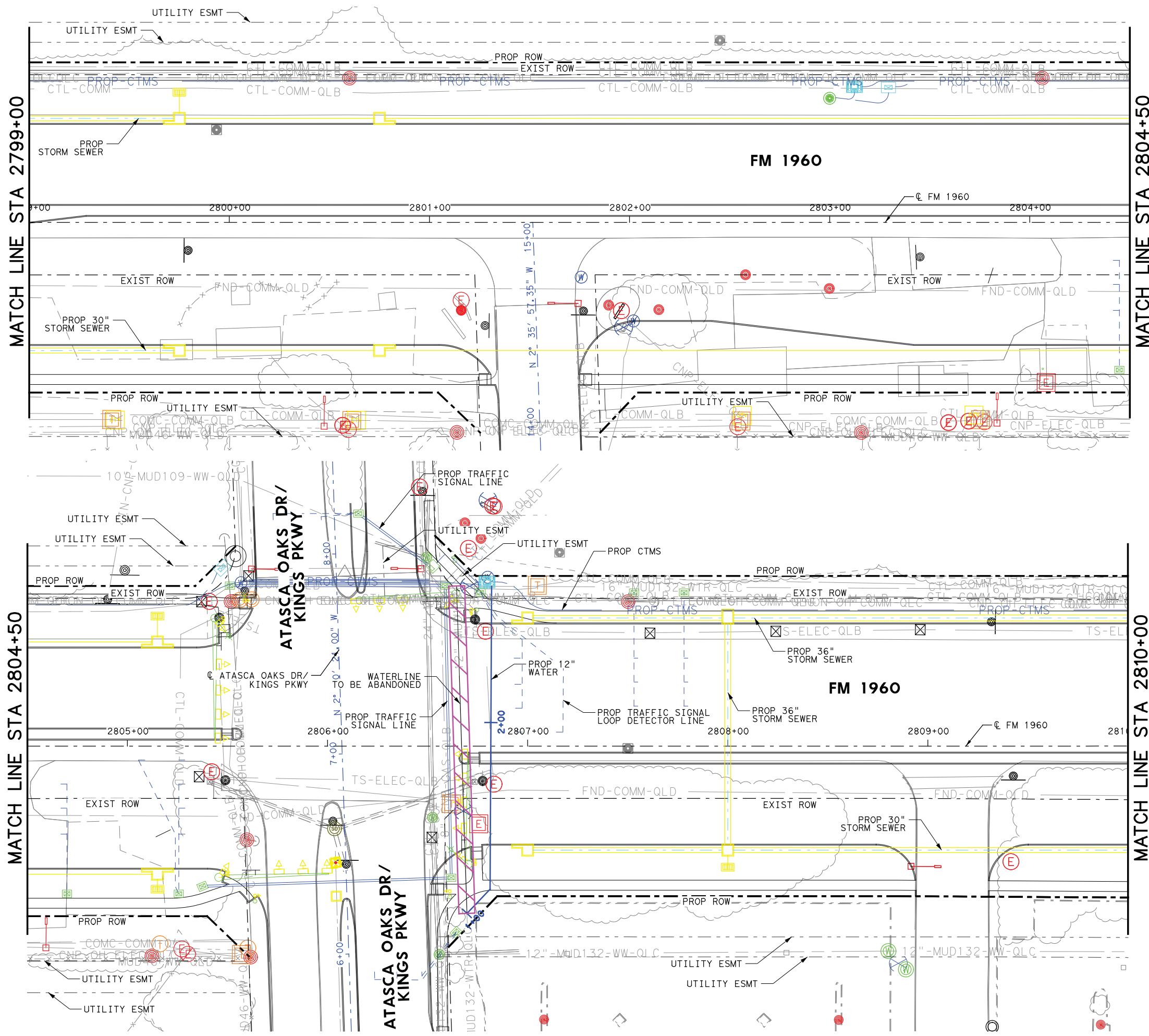
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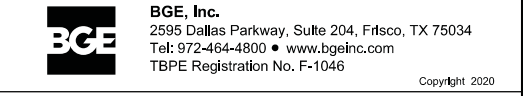
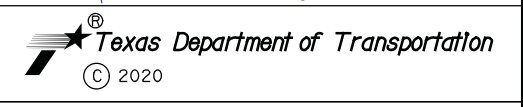
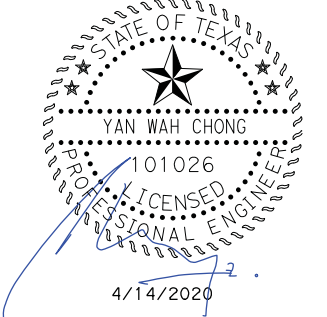
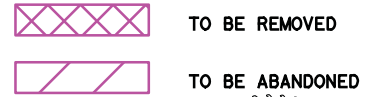
<b>FM 1960</b>			
<b>REMOVAL AND ABANDONMENT LAYOUTS</b>			
<b>(BEGIN TO 2799+00)</b>			
SHEET 1 OF 20			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1174
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E-Abandonment Layout-2.dgn

DRAWING DATE: 4/14/2020



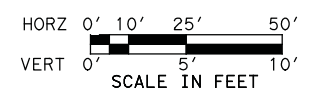
- NOTES:**
1. CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
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  4. ALL PIPE ABANDONMENT AND REMOVAL OF PIPES EXCEPT FOR AC PIPES TO BE UNDER CONTRACT
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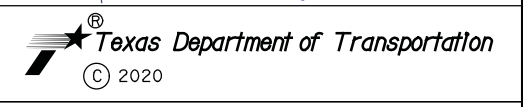
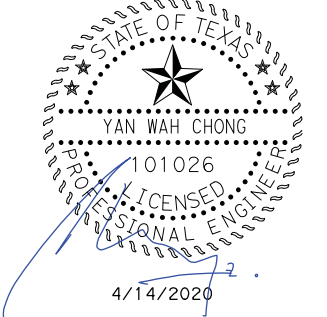
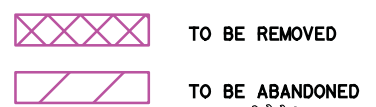
**FM 1960  
REMOVAL AND  
ABANDONMENT LAYOUTS  
(2799+00 TO 2810+00)**

SHEET 2 OF 20

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1175
CONTROL	SECTION	JOB	
1685	03	098	



- NOTES:**
1. CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
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**FM 1960  
 REMOVAL AND  
 ABANDONMENT LAYOUTS  
 (2810+00 TO 2821+00)**

SHEET 3 OF 20

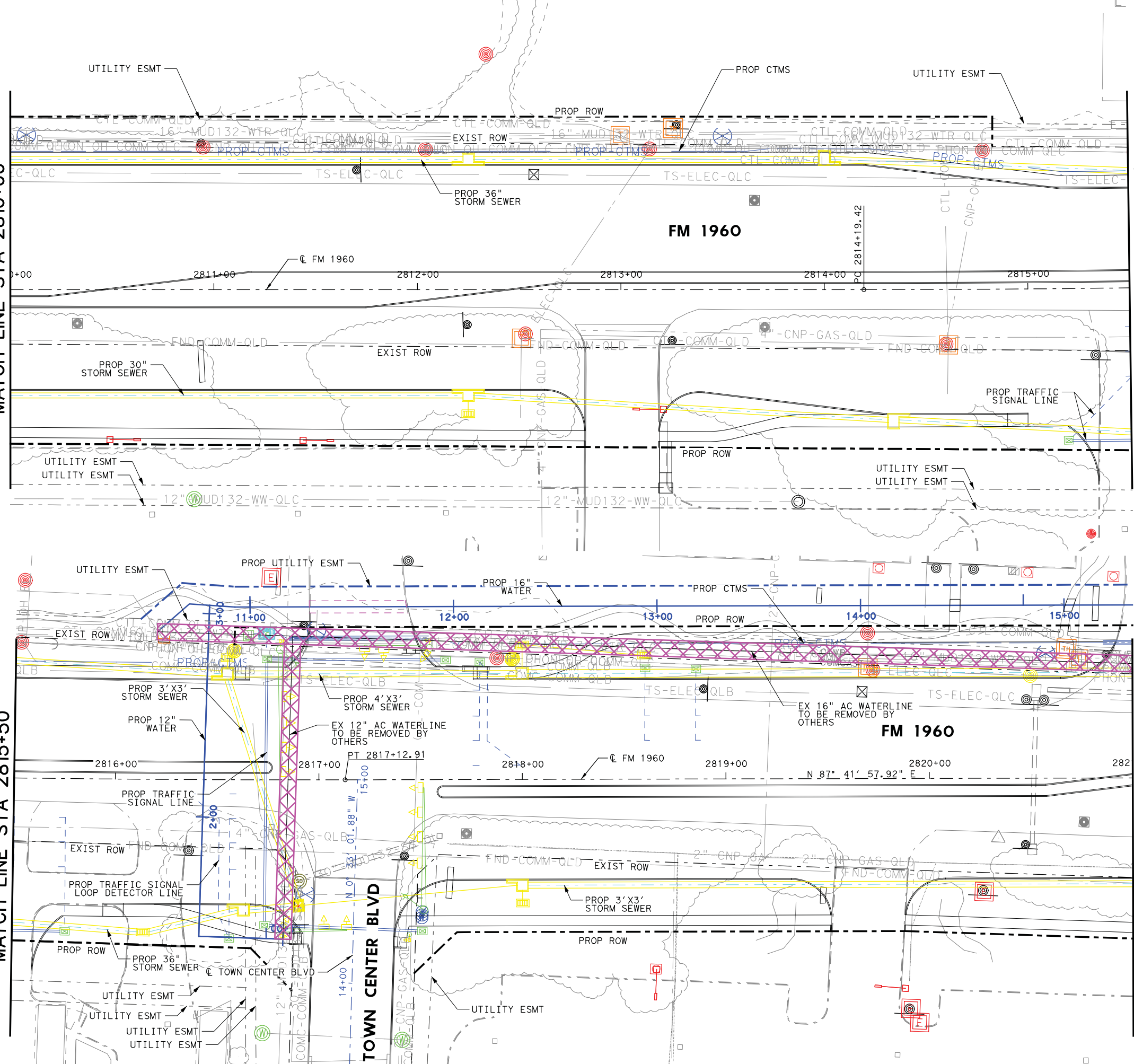
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1176
CONTROL	SECTION	JOB	
1685	03	098	

MATCH LINE STA 2810+00

MATCH LINE STA 2815+50

MATCH LINE STA 2815+50

MATCH LINE STA 2821+00

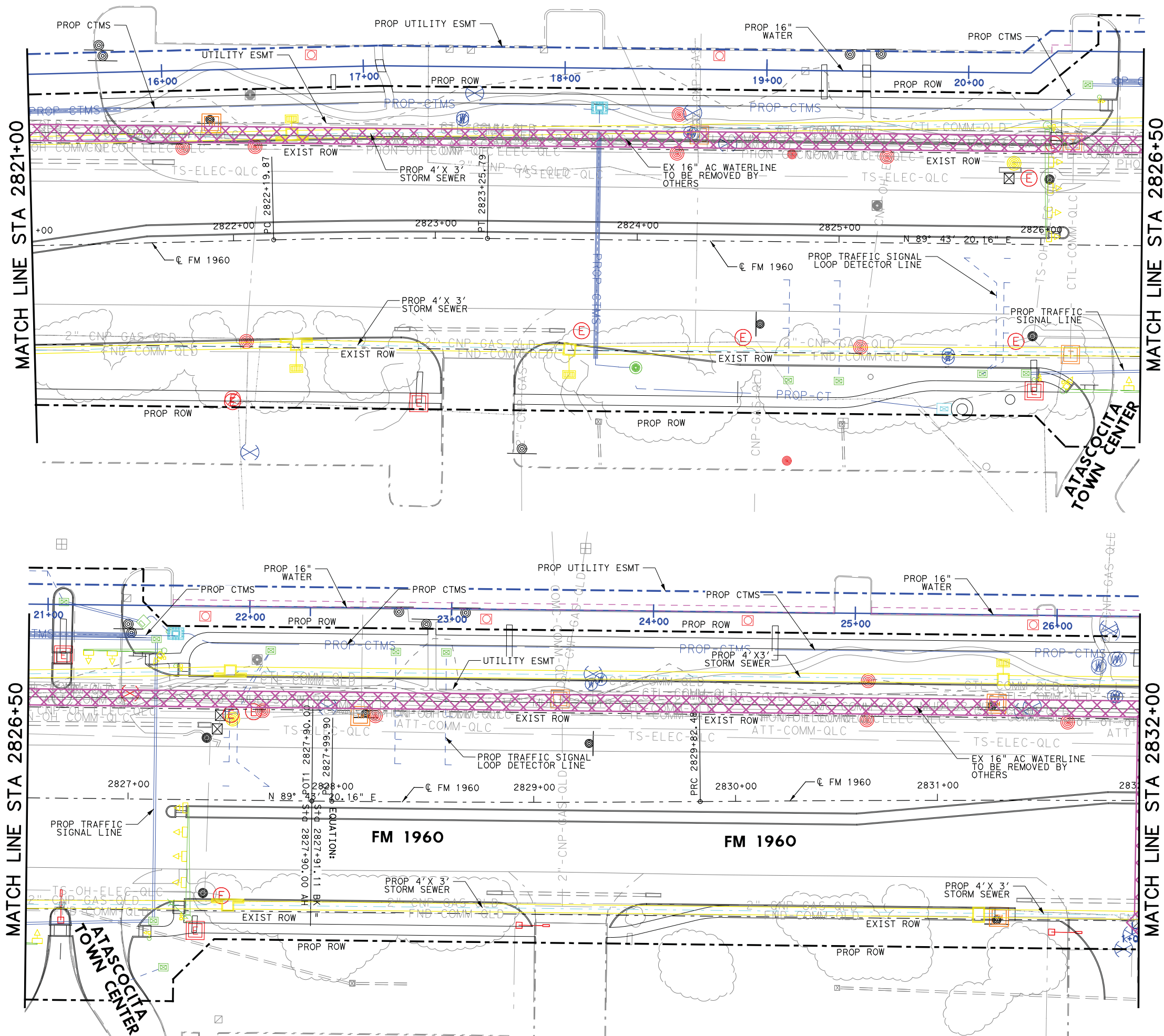


FILENAME: FM1960E-Abandonment Layout\_3.dgn

DRAWING DATE: 4/14/2020



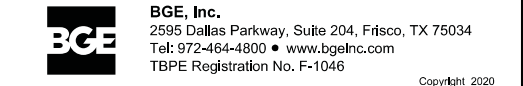
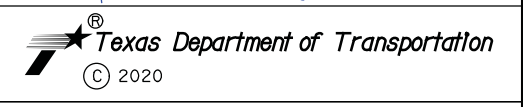
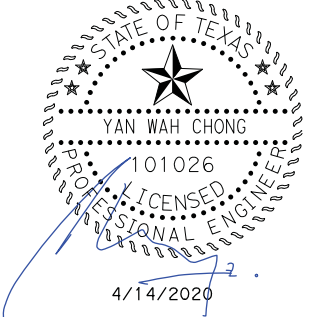
FILENAME: FM1960E-Abandonment-Layout-4.dgn  
DRAWING DATE: 4/14/2020



HORZ 0' 10' 25' 50'  
VERT 0' 5' 10'  
SCALE IN FEET

- NOTES:**
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TO BE REMOVED  
 TO BE ABANDONED

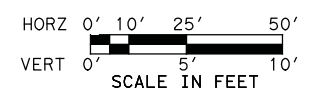
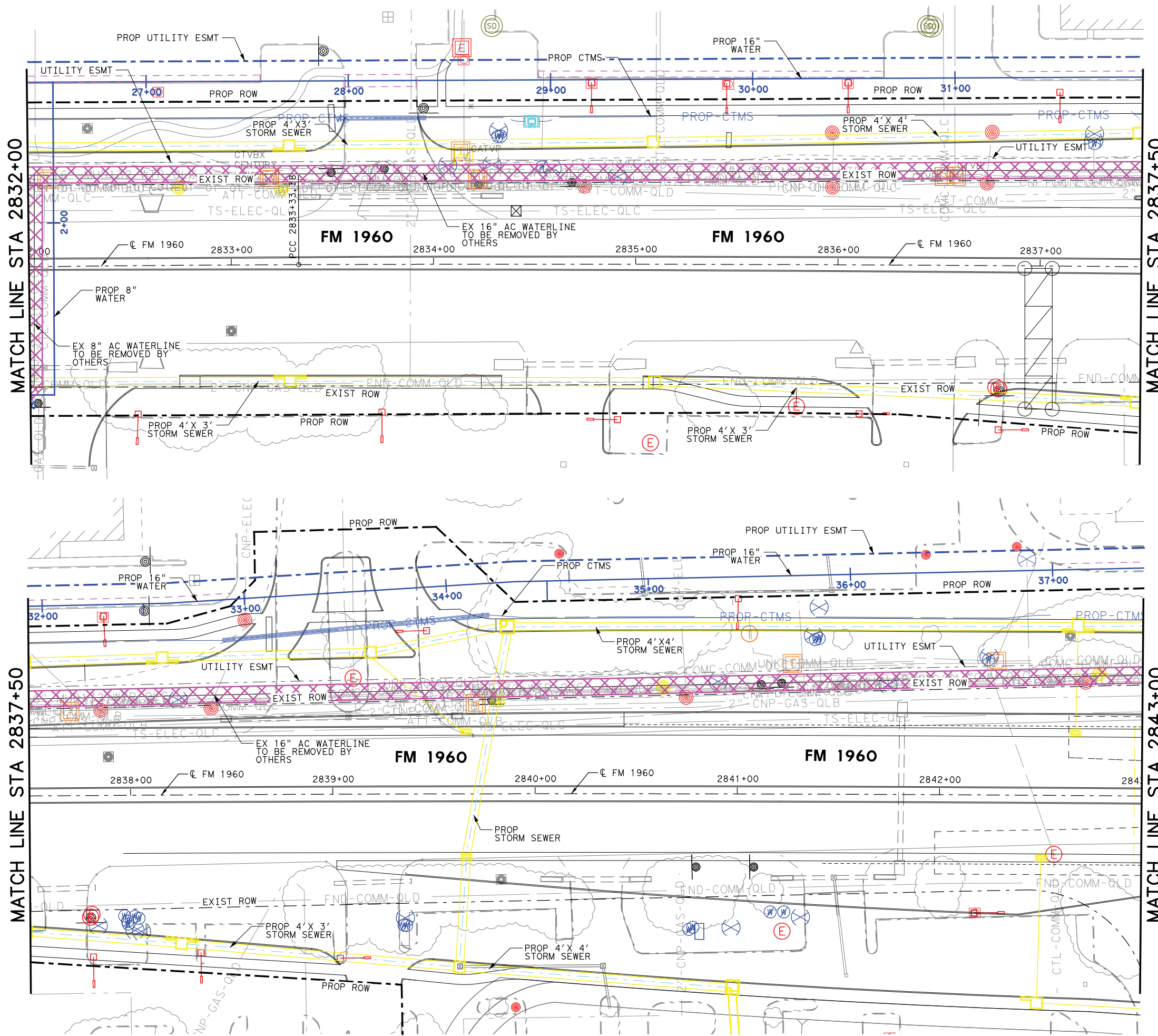


**FM 1960  
REMOVAL AND  
ABANDONMENT LAYOUTS  
(2821+00 TO 2832+00)**

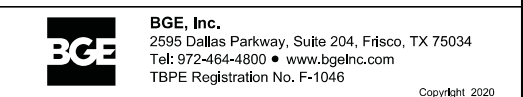
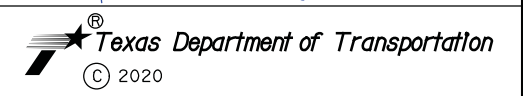
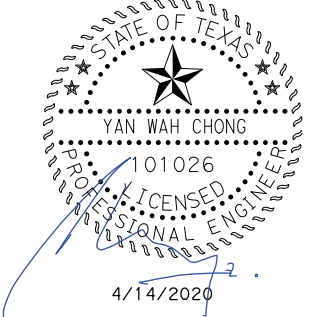
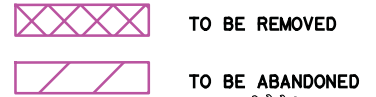
SHEET 4 OF 20

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1177
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E-Abandonment-Layout-5.dgn  
DRAWING DATE: 4/14/2020



- NOTES:**
1. CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
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<b>FM 1960</b>			
<b>REMOVAL AND ABANDONMENT LAYOUTS (2832+00 TO 2843+00)</b>			
SHEET 5 OF 20			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1178
CONTROL	SECTION	JOB	
1685	03	098	

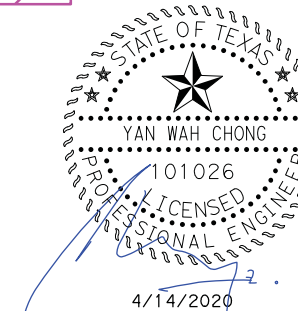


HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

**NOTES:**

1. CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
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 TO BE REMOVED  
 TO BE ABANDONED



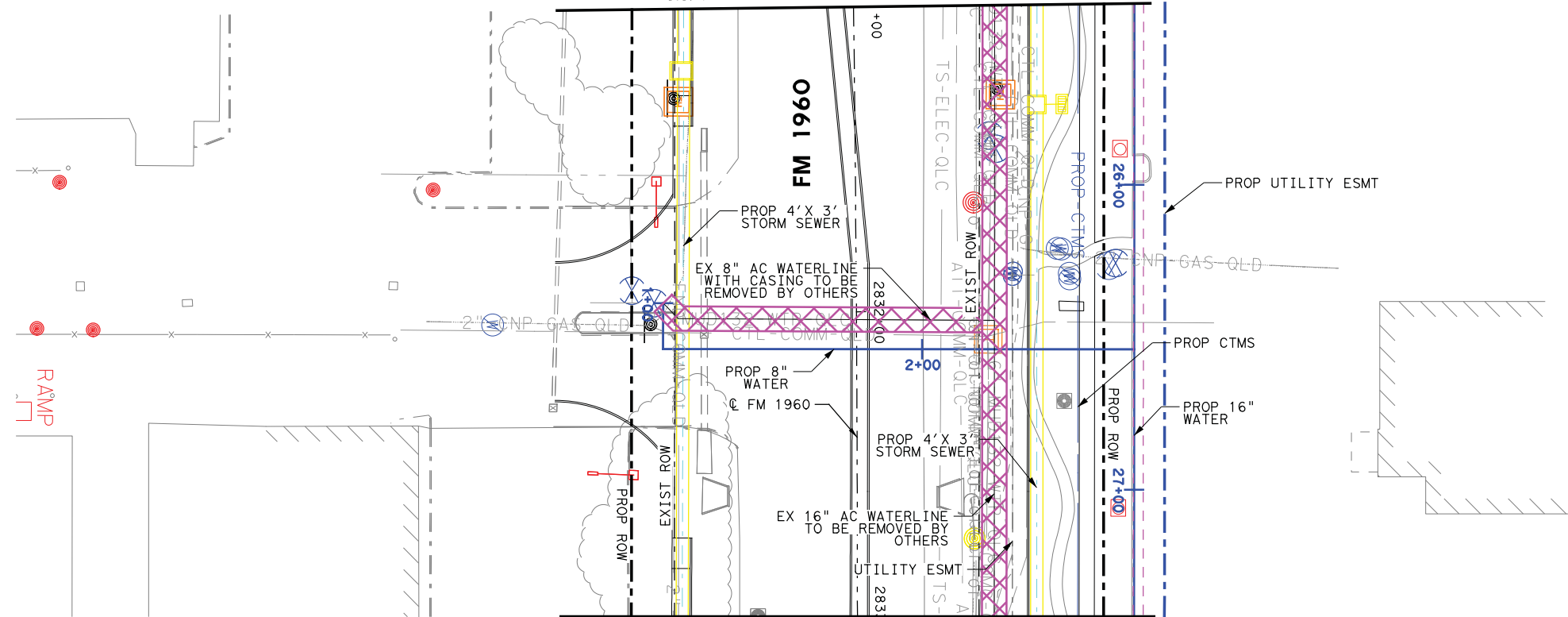
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**FM 1960  
 REMOVAL AND  
 ABANDONMENT LAYOUTS  
 (2831+00 TO 2833+00)**

SHEET 6 OF 20

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1179
CONTROL	SECTION	JOB	
1685	03	098	

MATCH LINE STA 2831+00



MATCH LINE STA 2833+00

FILENAME: FM1960E-Abandonment Layout\_6.dgn

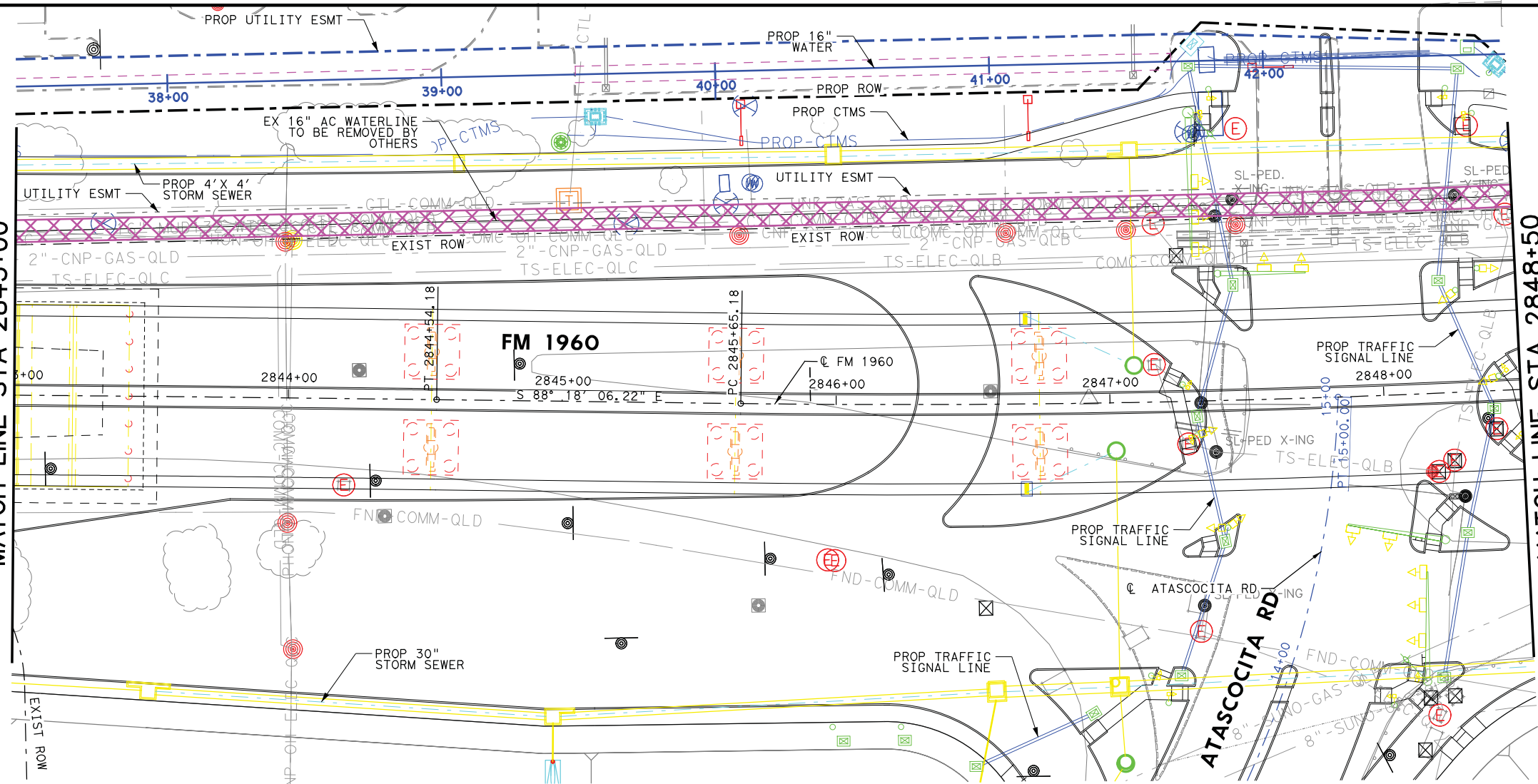
DRAWING DATE: 4/14/2020

FILENAME: FM1960E\_Abandonment\_Layout\_7.dgn

DRAWING DATE: 4/14/2020

MATCH LINE STA 2843+00

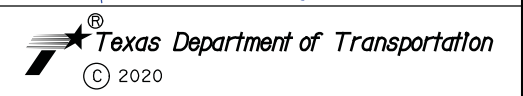
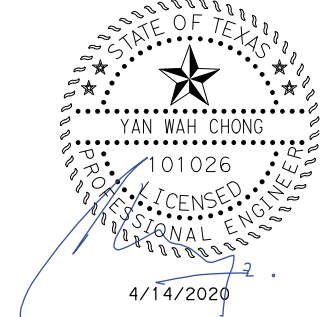
MATCH LINE STA 2848+50



HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

- NOTES:**
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TO BE REMOVED  
 TO BE ABANDONED



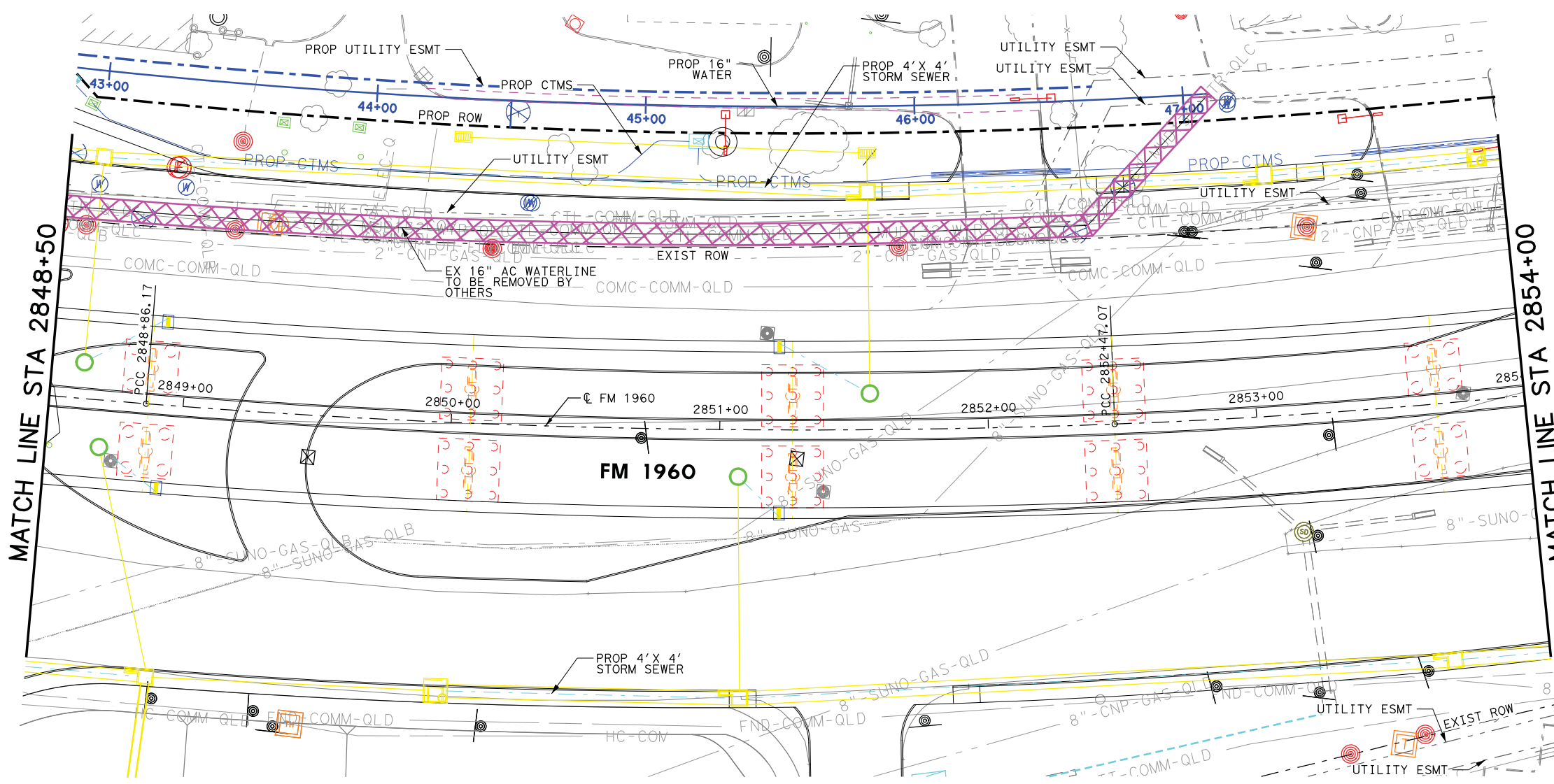
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**FM 1960  
 REMOVAL AND  
 ABANDONMENT LAYOUTS  
 (2843+00 TO 2848+50)**

SHEET 7 OF 20

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1180
CONTROL	SECTION	JOB	
1685	03	098	

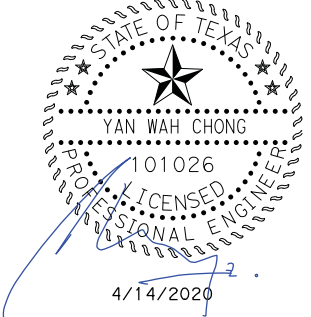
FILENAME: FM1960E-Abandonment\_Layout\_8.dgn  
 DRAWING DATE: 4/14/2020



HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

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- TO BE REMOVED
- TO BE ABANDONED



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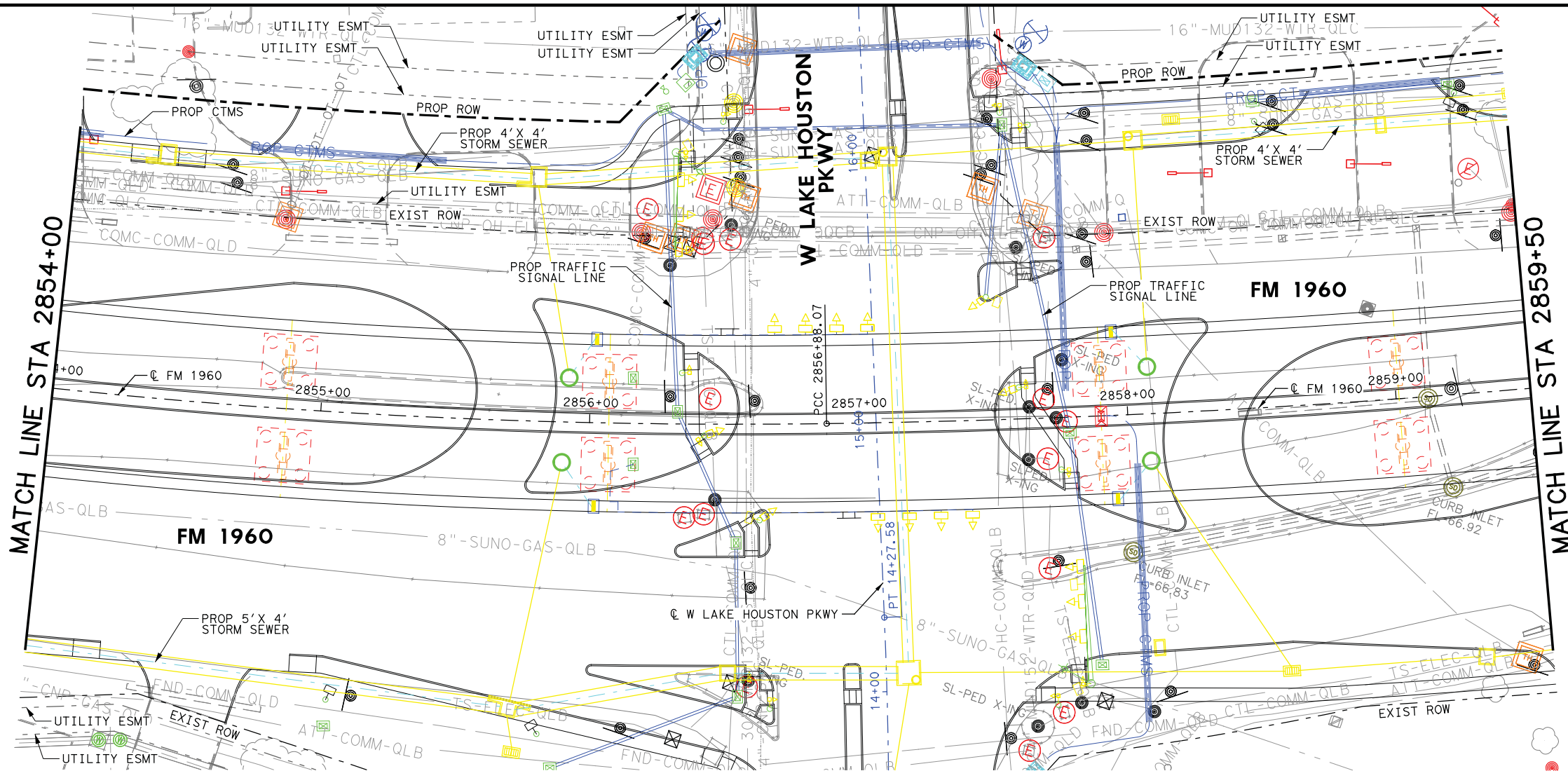
**FM 1960  
 REMOVAL AND  
 ABANDONMENT LAYOUTS  
 (2848+50 TO 2854+00)**

SHEET 8 OF 20

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	FM 1960
STATE	DISTRICT	COUNTY
TEXAS	HOU	HARRIS
CONTROL	SECTION	JOB
1685	03	098
		<b>1181</b>


FILENAME: FM1960E\_Abandonment\_Layout\_9.dgn

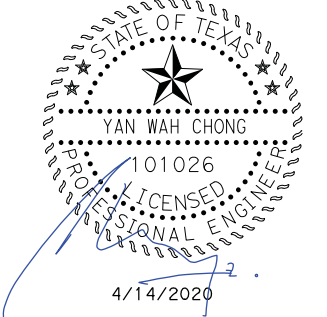
DRAWING DATE: 4/14/2020





HORZ 0' 10' 25' 50'  
SCALE IN FEET

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 TO BE REMOVED  
 TO BE ABANDONED



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<b>FM 1960</b>			
<b>REMOVAL AND ABANDONMENT LAYOUTS</b>			
<b>(2854+00 TO 2859+50)</b>			
SHEET 9 OF 20			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1182
CONTROL	SECTION	JOB	
1685	03	098	

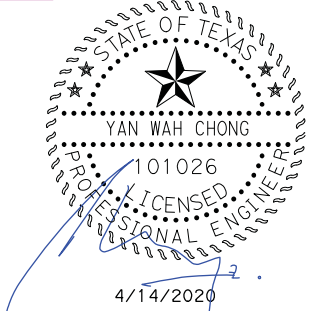


HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

**NOTES:**

1. CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
2. CONTRACTOR SHALL VERIFY ALL SERVICES HAVE BEEN SWITCHED OVER TO THE NEW UTILITIES PRIOR TO ABANDONING OR REMOVING ANY LINES.
3. CONTRACTOR SHALL COORDINATE WITH TXDOT 3RD PARTY CONTRACTOR ON ASBESTOS ABATEMENT AND REMOVAL. UNKNOWN MATERIAL PIPES COULD BE ASBESTOS CEMENT PIPES.
4. ALL PIPE ABANDONMENT AND REMOVAL OF PIPES EXCEPT FOR AC PIPES TO BE UNDER CONTRACT
5. CONTRACTOR TO PERFORM POTHOLES EVERY 500 LF TO VERIFY EXISTING PIPE MATERIAL.
6. CONTRACTOR TO COORDINATE VERIFICATION WITH TXDOT 3RD PARTY CONTRACTOR ON ALL EXPOSED WATERLINES.
7. IF ASBESTOS CEMENT (AC) PIPE IS ENCOUNTERED, CONTRACTOR TO COORDINATE WITH TXDOT 3RD PARTY CONTRACTOR ON ASBESTOS ABATEMENT AND REMOVAL. UNKNOWN MATERIAL PIPES COULD BE AC PIPES.

-  TO BE REMOVED
-  TO BE ABANDONED

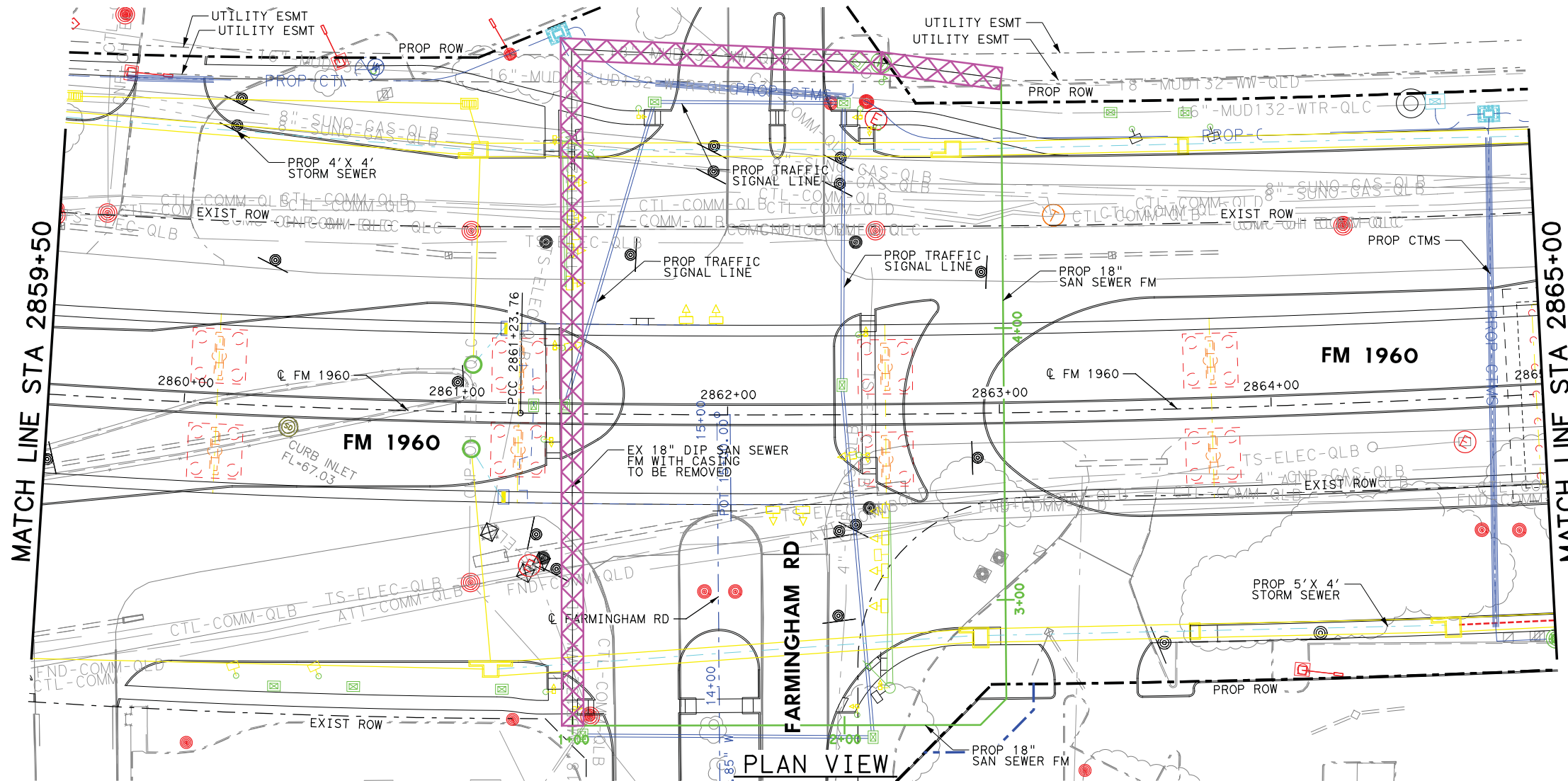


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**FM 1960  
 REMOVAL AND  
 ABANDONMENT LAYOUTS  
 (2859+50 TO 2865+00)**

SHEET 10 OF 20

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1183
CONTROL	SECTION	JOB	
1685	03	098	



PLAN VIEW

MATCH LINE STA 2859+50

MATCH LINE STA 2865+00

FILENAME: FM1960E\_Abandonment Layout\_10.dgn

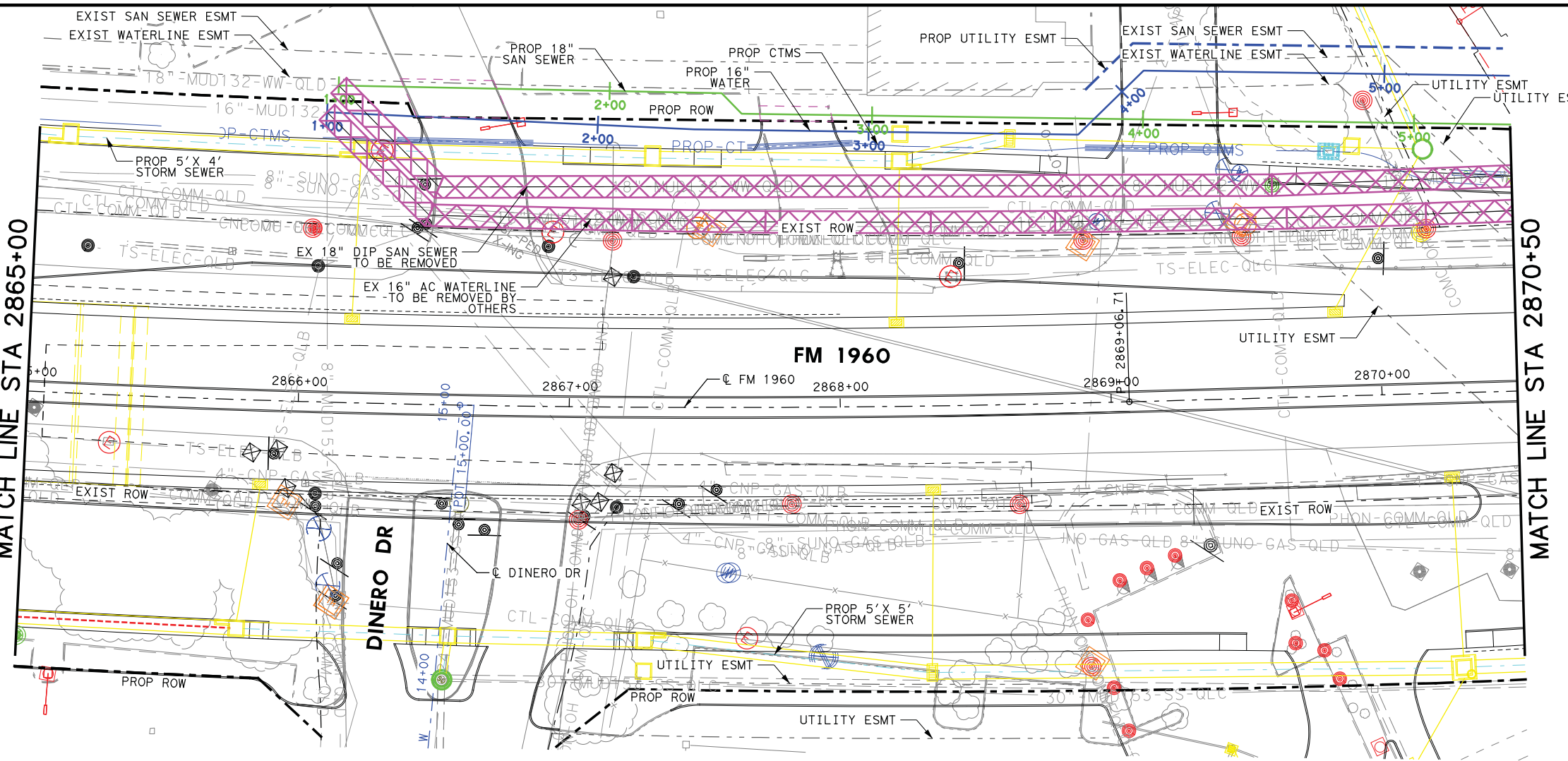
DRAWING DATE: 4/14/2020

FILENAME: FM1960E-Abandonment Layout\_11.dgn

DRAWING DATE: 4/14/2020

MATCH LINE STA 2865+00

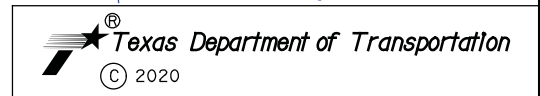
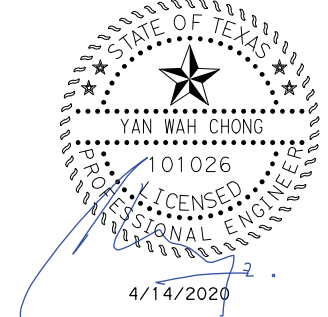
MATCH LINE STA 2870+50



HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

NOTES:

1. CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
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6. CONTRACTOR TO COORDINATE VERIFICATION WITH TXDOT 3RD PARTY CONTRACTOR ON ALL EXPOSED WATERLINES.
7. IF ASBESTOS CEMENT (AC) PIPE IS ENCOUNTERED, CONTRACTOR TO COORDINATE WITH TXDOT 3RD PARTY CONTRACTOR ON ASBESTOS ABATEMENT AND REMOVAL. UNKNOWN MATERIAL PIPES COULD BE AC PIPES.



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<b>FM 1960</b>			
<b>REMOVAL AND ABANDONMENT LAYOUTS</b>			
<b>(2865+00 TO 2870+50)</b>			
SHEET 11 OF 20			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.	
6	(SEE TITLE SHEET)	FM 1960	
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1184
CONTROL	SECTION	JOB	
1685	03	098	

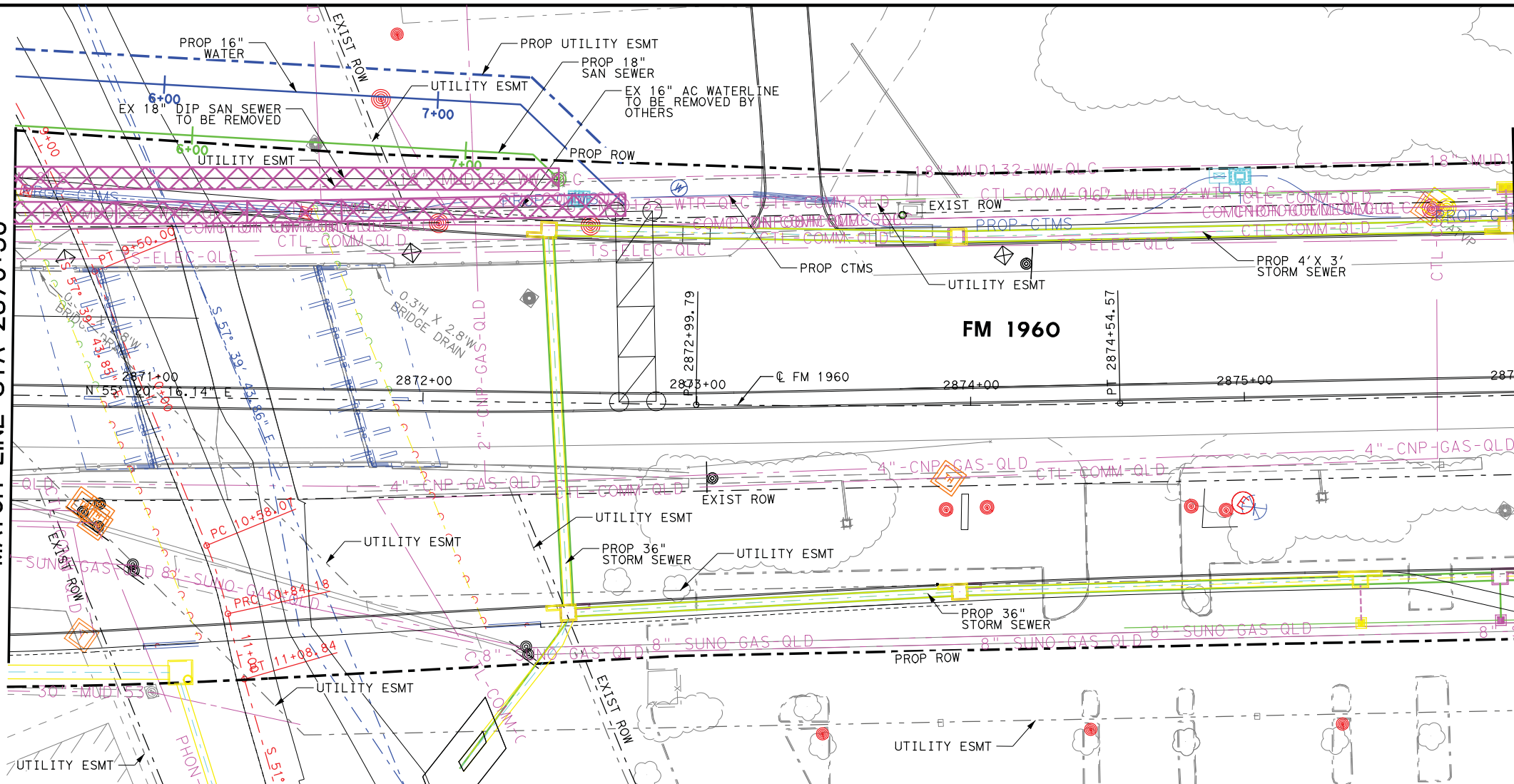


FILENAME: FM1960E-Abandonment-Layout-12.dgn

DRAWING DATE: 4/14/2020

MATCH LINE STA 2870+50

MATCH LINE STA 2876+00

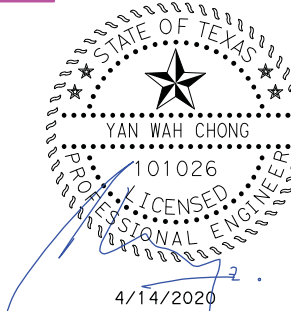


HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

NOTES:

1. CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
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-  TO BE REMOVED
-  TO BE ABANDONED



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**FM 1960  
 REMOVAL AND  
 ABANDONMENT LAYOUTS  
 (2870+50 TO 2876+00)**

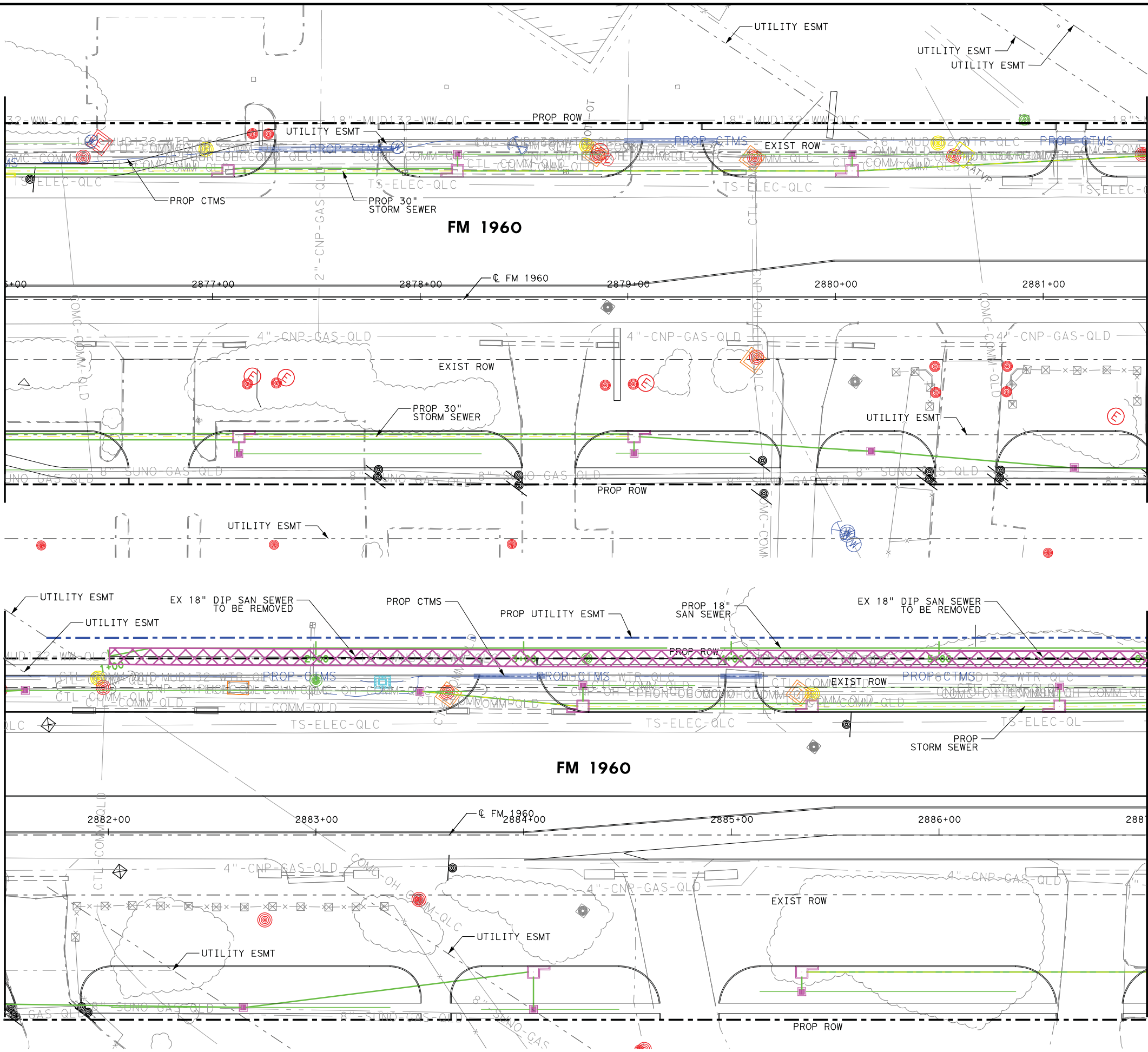
SHEET 12 OF 20

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1185
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E-Abandonment\_Layout\_13.dgn  
DRAWING DATE: 4/14/2020

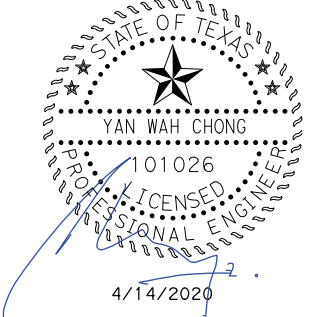
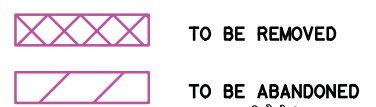
MATCH LINE STA 2876+00

MATCH LINE STA 2881+50



HORZ 0' 10' 25' 50'  
VERT 0' 5' 10'  
SCALE IN FEET

- NOTES:**
- CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
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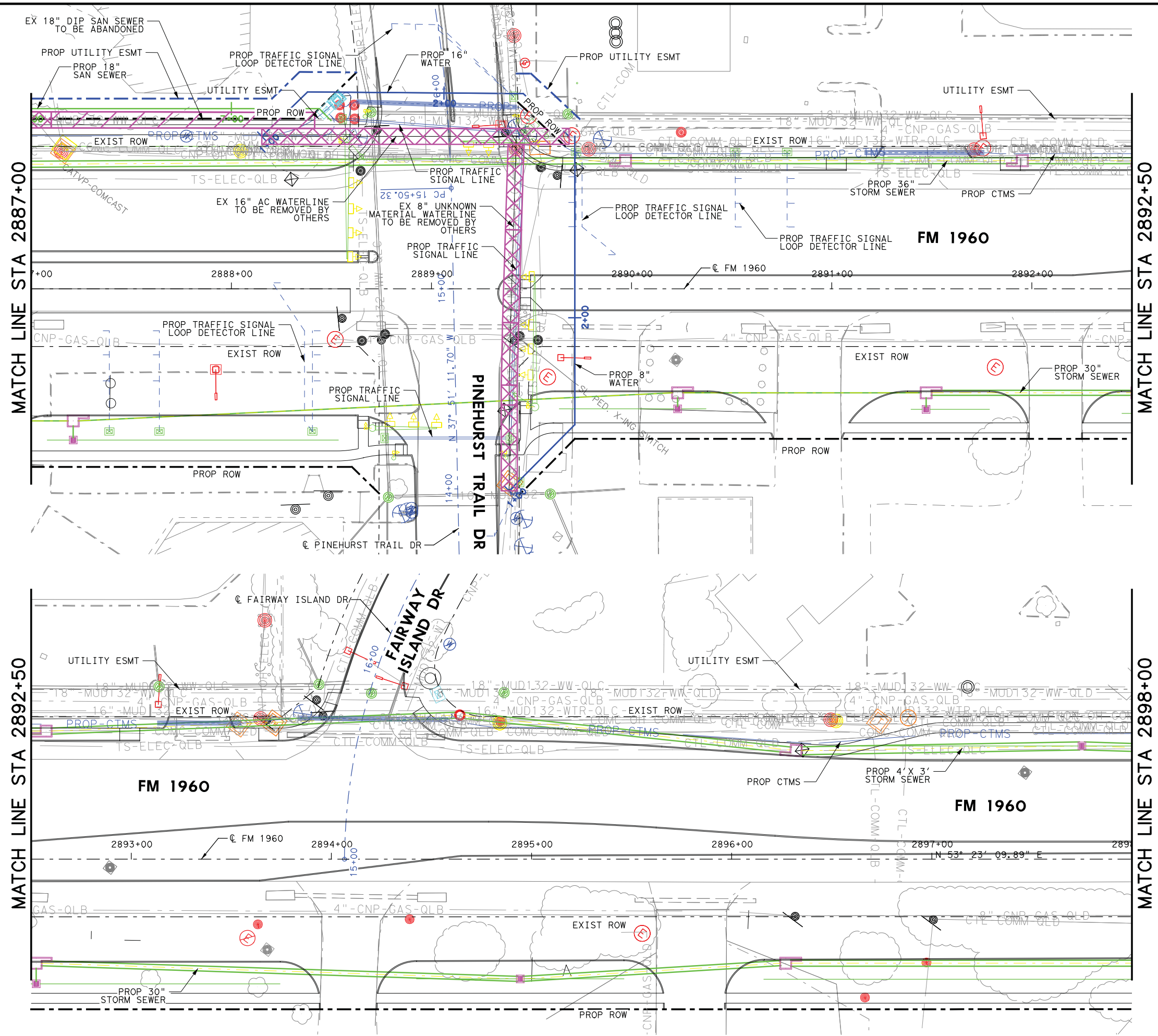
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**FM 1960  
REMOVAL AND  
ABANDONMENT LAYOUTS  
(2876+00 TO 2887+00)**

SHEET 13 OF 20



FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	FM 1960
STATE	DISTRICT	COUNTY
TEXAS	HOU	HARRIS
CONTROL	SECTION	JOB
1685	03	098
		<b>1186</b>

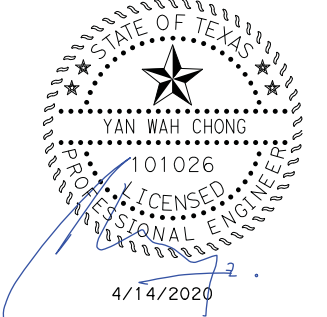
FILENAME: FM1960E-Abandonment\_Layout\_14.dgn  
DRAWING DATE: 4/14/2020





HORZ 0' 10' 25' 50'  
VERT 0' 5' 10'  
SCALE IN FEET

- NOTES:**
- CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
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 TO BE REMOVED  
 TO BE ABANDONED



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**FM 1960  
REMOVAL AND  
ABANDONMENT LAYOUTS  
(2887+00 TO 2898+00)**

SHEET 14 OF 20

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1187
CONTROL	SECTION	JOB	
1685	03	098	

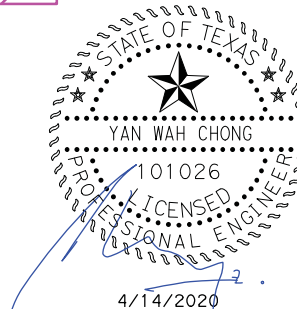


HORZ 0' 10' 25' 50'  
SCALE IN FEET


**NOTES:**

1. CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
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-  TO BE REMOVED
-  TO BE ABANDONED



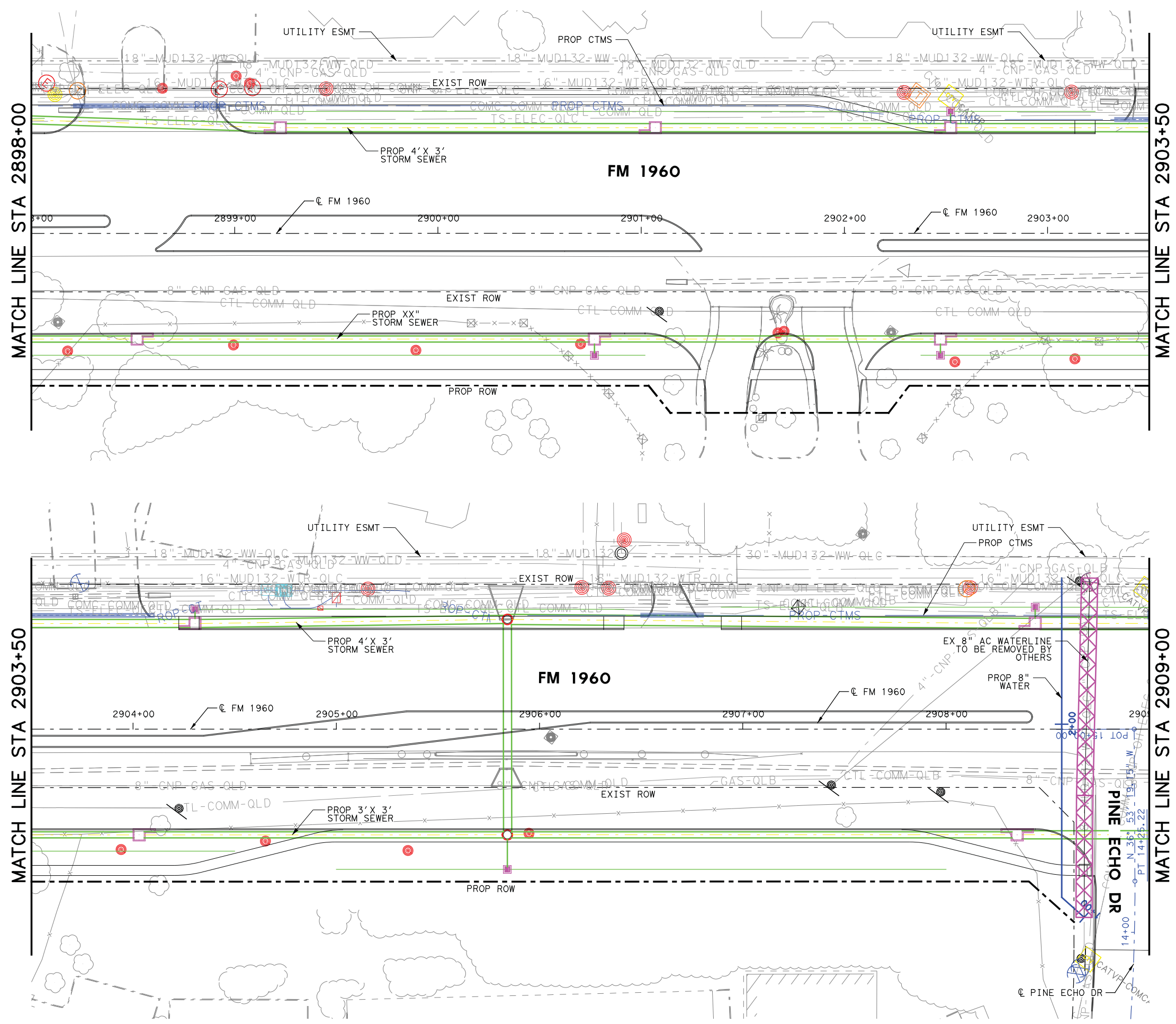
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**FM 1960  
REMOVAL AND  
ABANDONMENT LAYOUTS  
(2898+00 TO 2909+00)**

SHEET 15 OF 20

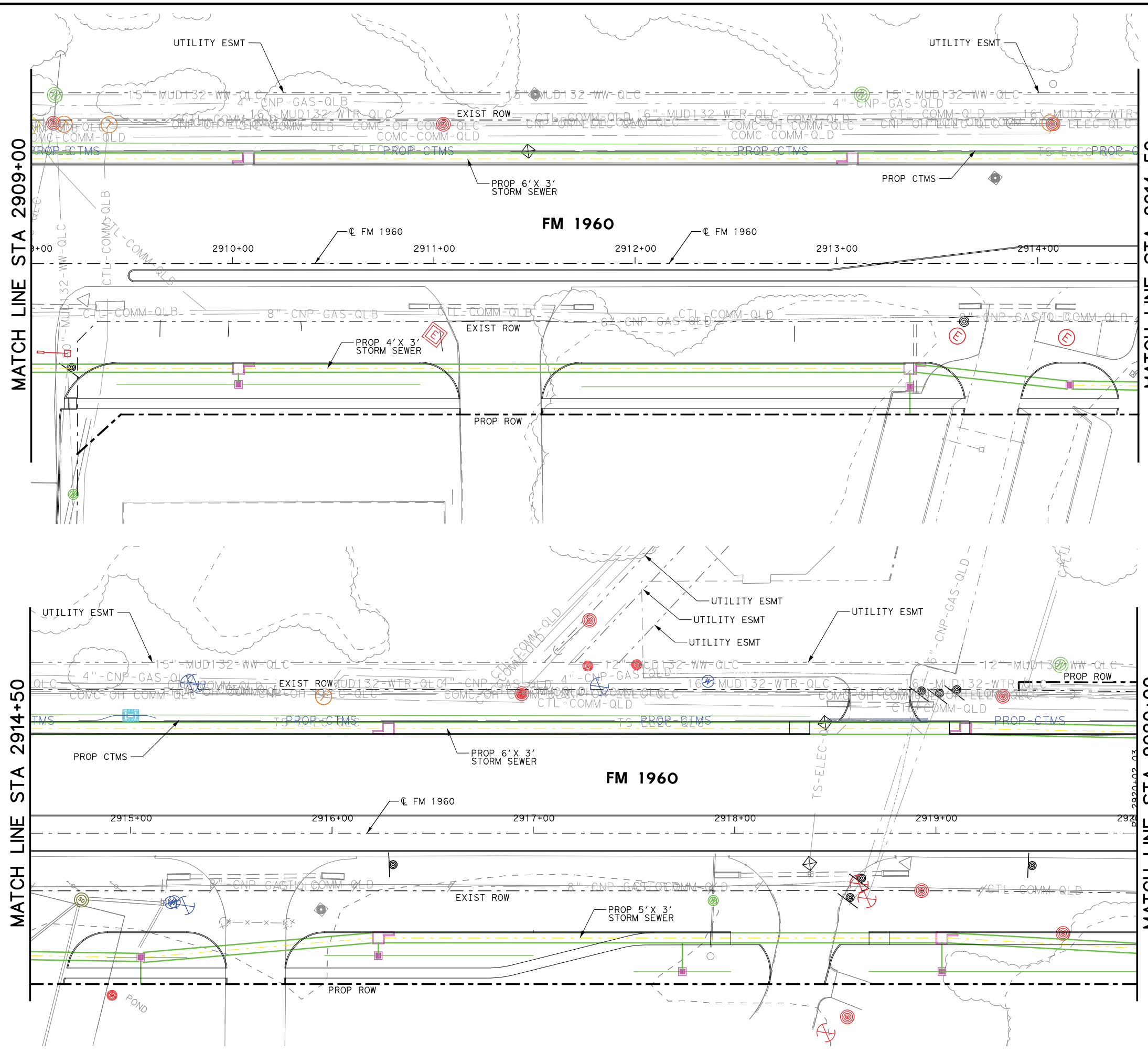
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1188
CONTROL	SECTION	JOB	
1685	03	098	



FILENAME: FM1960E-Abandonment Layout\_15.dgn

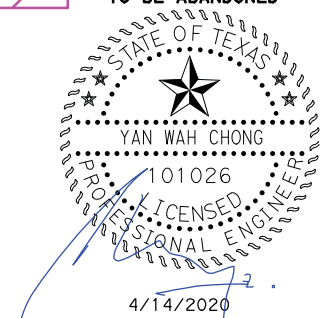
DRAWING DATE: 4/14/2020

FILENAME: FM1960E-Abandonment-Layout\_16.dgn  
DRAWING DATE: 4/14/2020



HORZ 0' 10' 25' 50'  
SCALE IN FEET

- NOTES:**
1. CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
  2. CONTRACTOR SHALL VERIFY ALL SERVICES HAVE BEEN SWITCHED OVER TO THE NEW UTILITIES PRIOR TO ABANDONING OR REMOVING ANY LINES.
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**FM 1960  
REMOVAL AND  
ABANDONMENT LAYOUTS  
(2909+00 TO 2920+00)**

SHEET 16 OF 20



FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1189
CONTROL	SECTION	JOB	
1685	03	098	

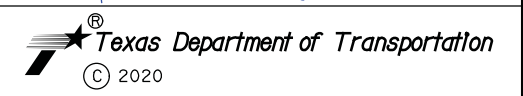
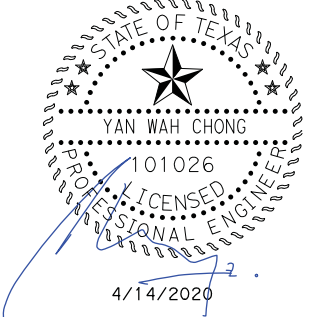


HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

**NOTES:**

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-  TO BE REMOVED
-  TO BE ABANDONED



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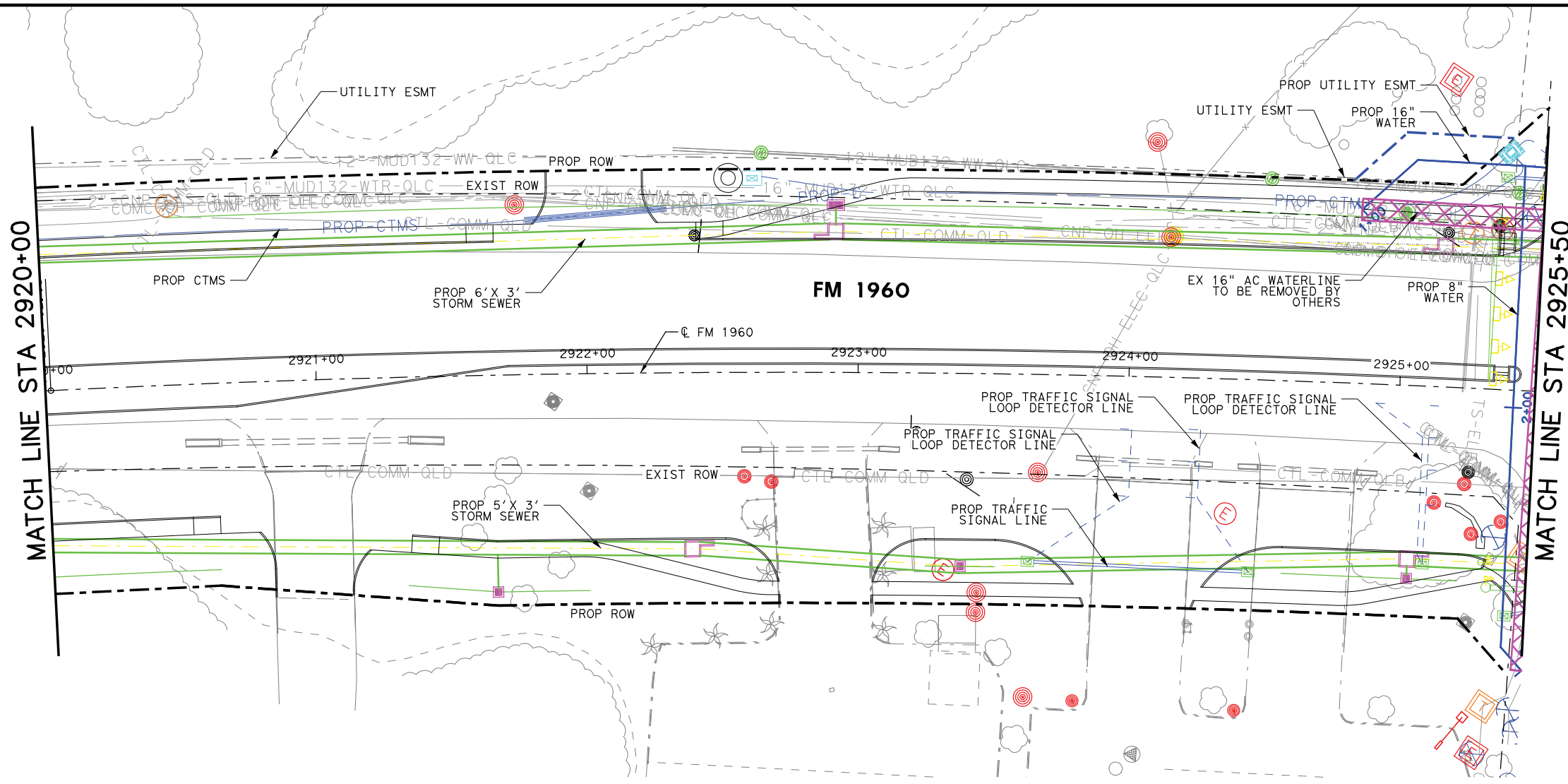
**FM 1960  
 REMOVAL AND  
 ABANDONMENT LAYOUTS  
 (2920+00 TO 2925+50)**

SHEET 17 OF 20

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1190
CONTROL	SECTION	JOB	
1685	03	098	

MATCH LINE STA 2920+00

MATCH LINE STA 2925+50



DRAWING DATE: 4/14/2020 FILENAME: FM1960E-Abandonment Layout-17.dgn

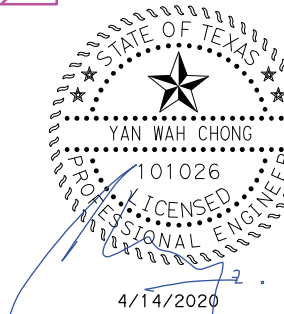


HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

**NOTES:**

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-  TO BE REMOVED
-  TO BE ABANDONED

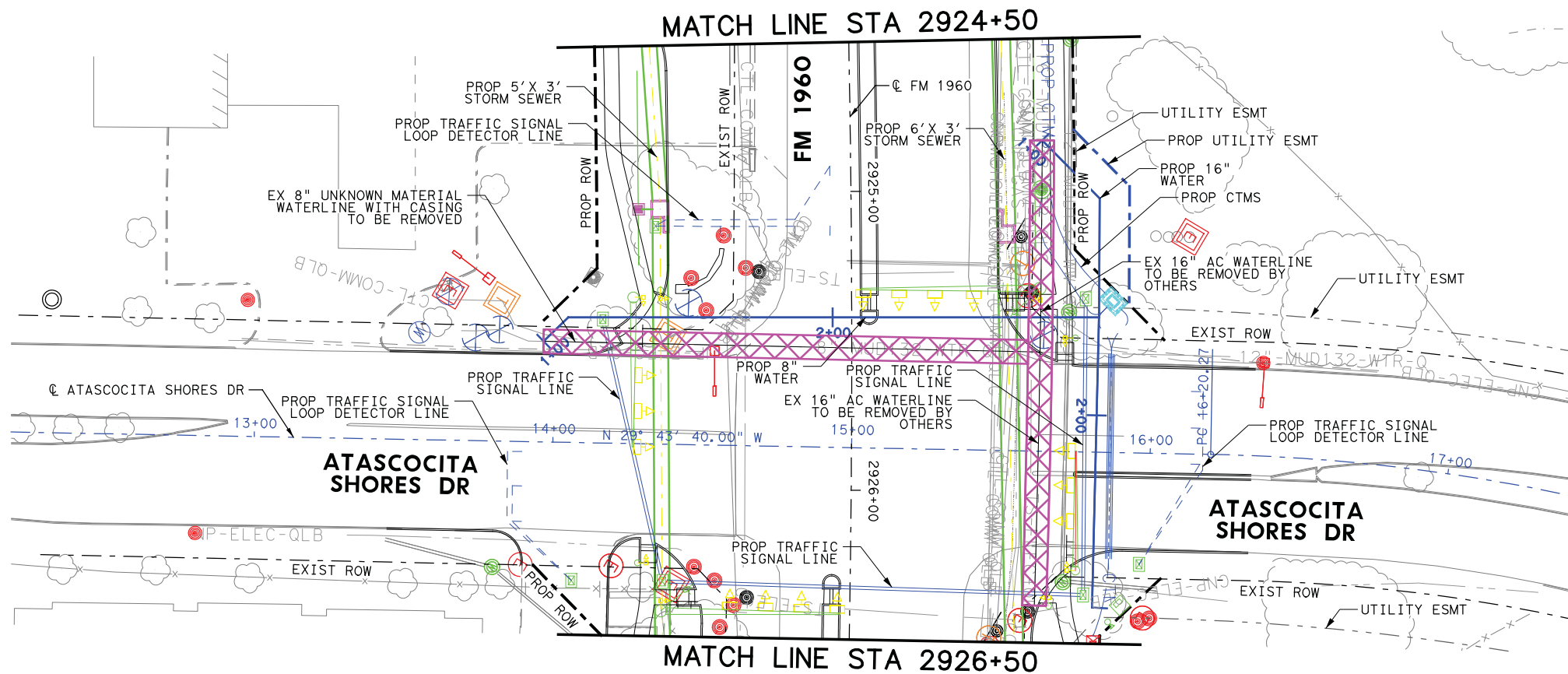


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**FM 1960  
 REMOVAL AND  
 ABANDONMENT LAYOUTS  
 (2924+50 TO 2926+50)**

SHEET 18 OF 20

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1191
CONTROL	SECTION	JOB	
1685	03	098	

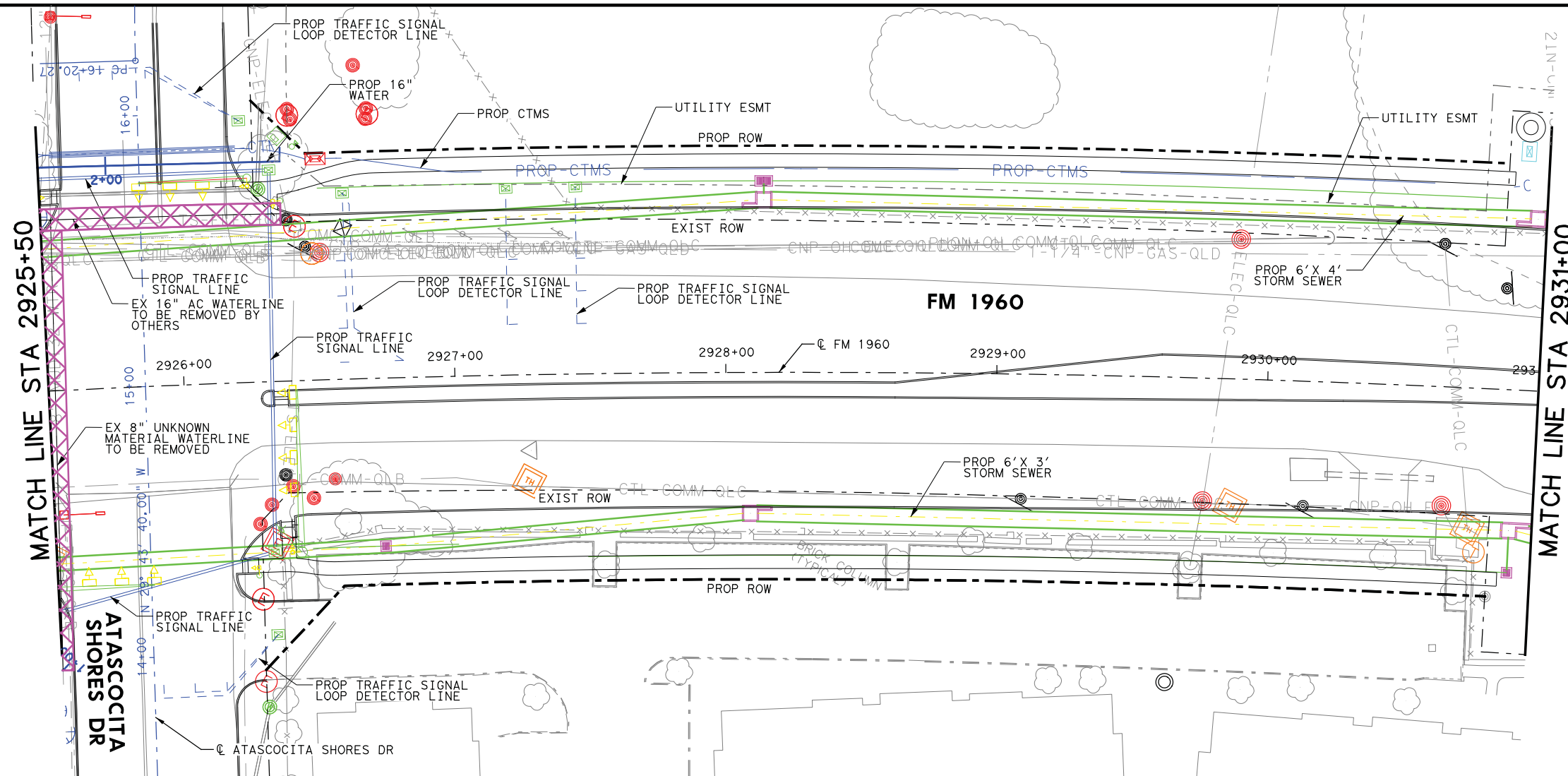


FILENAME: FM1960E-Abandonment Layout\_18.dgn

DRAWING DATE: 4/14/2020

FILENAME: FM1960E-Abandonment-Layout-19.dgn

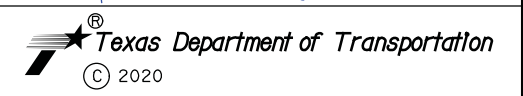
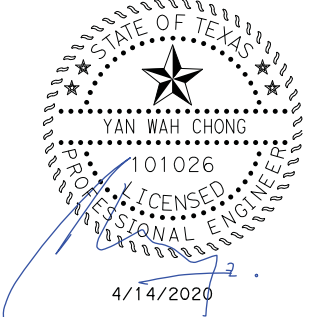
DRAWING DATE: 4/14/2020



HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

- NOTES:**
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 TO BE REMOVED  
 TO BE ABANDONED



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**FM 1960  
 REMOVAL AND  
 ABANDONMENT LAYOUTS  
 (2925+50 TO 2931+00)**

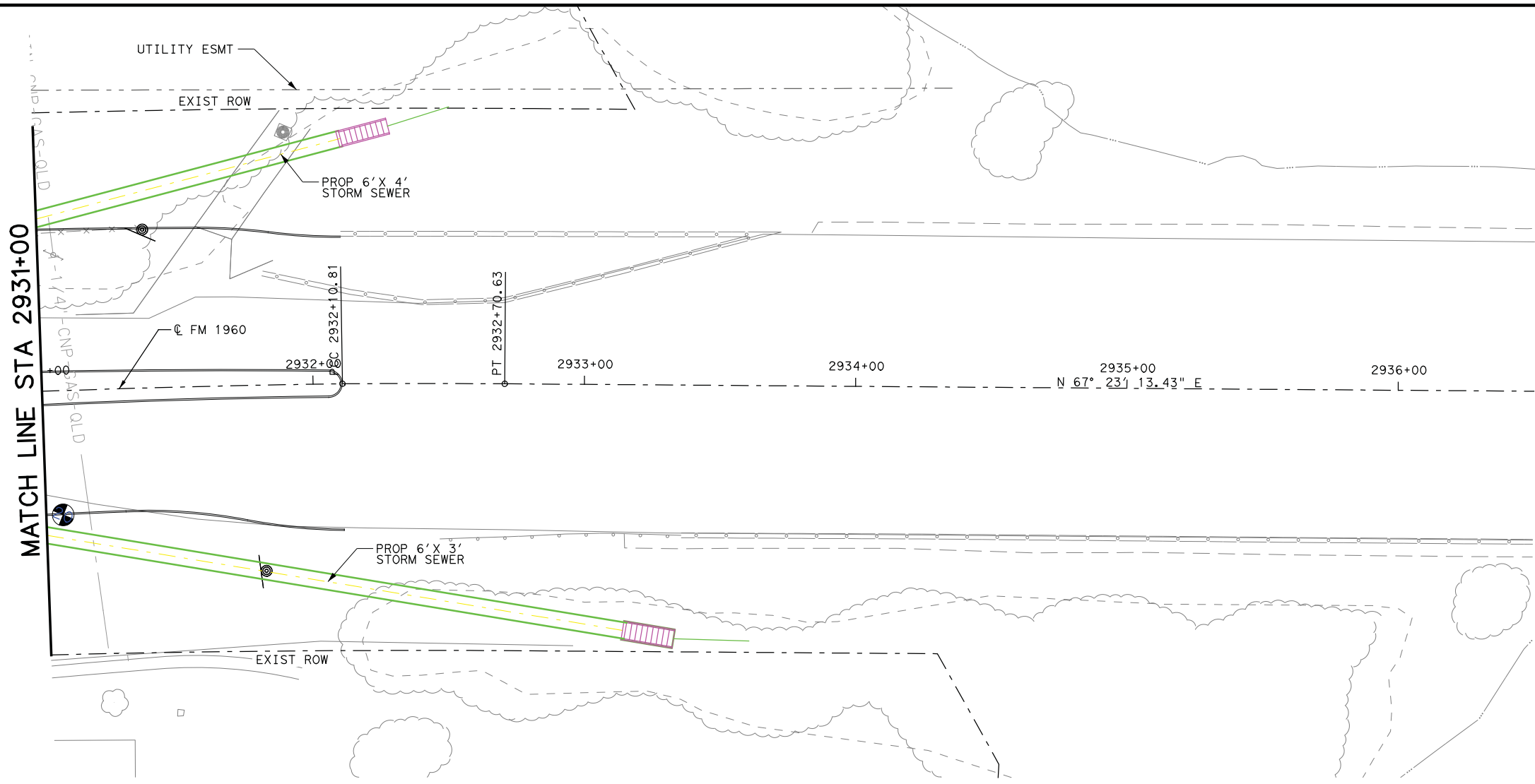
SHEET 19 OF 20			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1192
CONTROL	SECTION	JOB	
1685	03	098	



FILENAME: FM1960E-Abandonment-Layout-20.dgn



DRAWING DATE: 4/14/2020

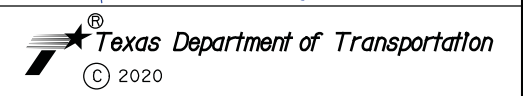
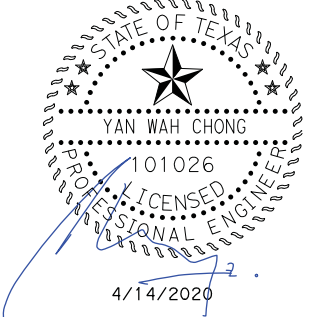
MATCH LINE STA 2931+00



HORZ 0' 10' 25' 50'  
SCALE IN FEET

- NOTES:**
- CONTRACTOR SHALL COORDINATE WITH HC MUD 132 PRIOR TO CUTTING, REMOVING, OR ABANDONING ANY EXISTING UTILITY LINES.
  - CONTRACTOR SHALL VERIFY ALL SERVICES HAVE BEEN SWITCHED OVER TO THE NEW UTILITIES PRIOR TO ABANDONING OR REMOVING ANY LINES.
  - CONTRACTOR SHALL COORDINATE WITH TXDOT 3RD PARTY CONTRACTOR ON ASBESTOS ABATEMENT AND REMOVAL. UNKNOWN MATERIAL PIPES COULD BE ASBESTOS CEMENT PIPES.
  - ALL PIPE ABANDONMENT AND REMOVAL OF PIPES EXCEPT FOR AC PIPES TO BE UNDER CONTRACT
  - CONTRACTOR TO PERFORM POTHOLES EVERY 500 LF TO VERIFY EXISTING PIPE MATERIAL.
  - CONTRACTOR TO COORDINATE VERIFICATION WITH TXDOT 3RD PARTY CONTRACTOR ON ALL EXPOSED WATERLINES.
  - IF ASBESTOS CEMENT (AC) PIPE IS ENCOUNTERED, CONTRACTOR TO COORDINATE WITH TXDOT 3RD PARTY CONTRACTOR ON ASBESTOS ABATEMENT AND REMOVAL. UNKNOWN MATERIAL PIPES COULD BE AC PIPES.

 TO BE REMOVED  
 TO BE ABANDONED

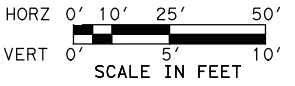
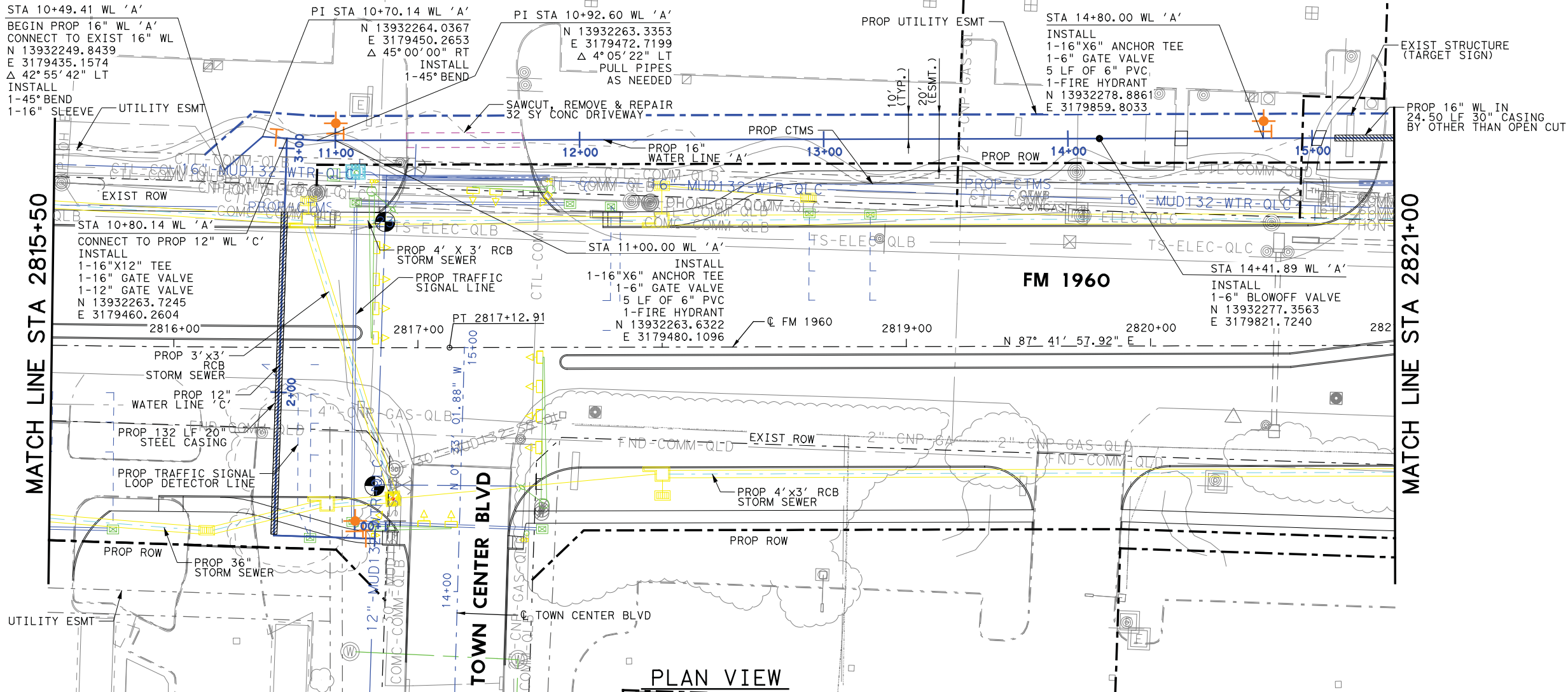


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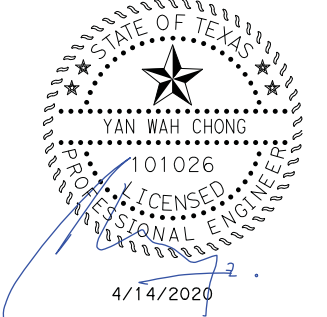
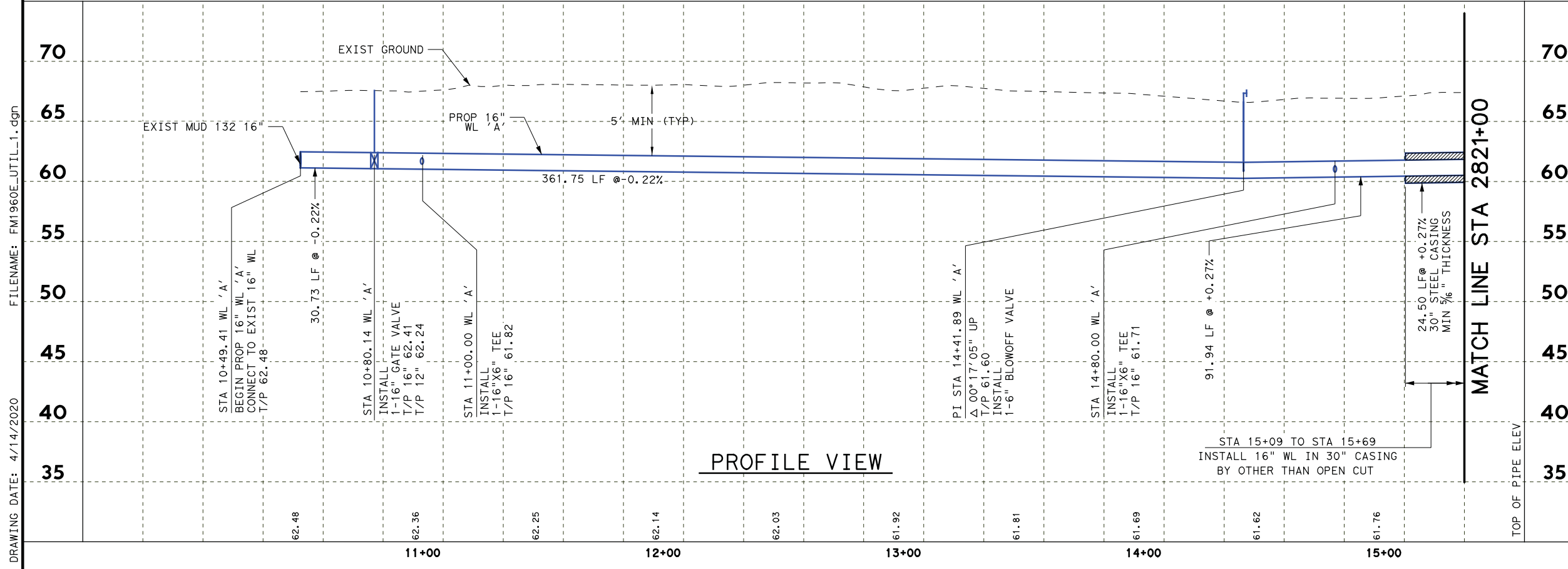
**FM 1960  
REMOVAL AND  
ABANDONMENT LAYOUTS  
(2931+00 TO END PROJECT)**

SHEET 20 OF 20

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1193
CONTROL	SECTION	JOB	
1685	03	098	



- NOTES:
- CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
  - ALL WATER LINES SHALL BE PVC CLASS 150, DR-18, AWWA C-900 UNLESS OTHERWISE INDICATED.
  - CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO PERFORMING THE WORK. EXIST UTILITY ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE AND HAVE NOT BEEN FIELD VERIFIED.
  - ACCESS TO BUSINESSES SHALL BE MAINTAINED AT ALL TIMES. IF A BUSINESS HAS MULTIPLE DRIVEWAYS, ONE MUST REMAIN OPEN AT ALL TIMES. IF A BUSINESS ONLY HAS ONE DRIVEWAY, THE PROPOSED UTILITY SHALL BE INSTALLED BY TRENCHLESS METHODS.
  - CONTRACTOR SHALL LOCATE EXIST SERVICES. CONTRACTOR TO COORDINATE WITH MUD 132 TO REMOVE AND RELOCATE WATER METER/VAULT AND MAKE CONNECTIONS. REFER TO WATERLINE DETAILS FOR TYPICAL METER SETTINGS.



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FM 1960  
WATER LINE 'A'  
(2815+50 TO 2821+00)

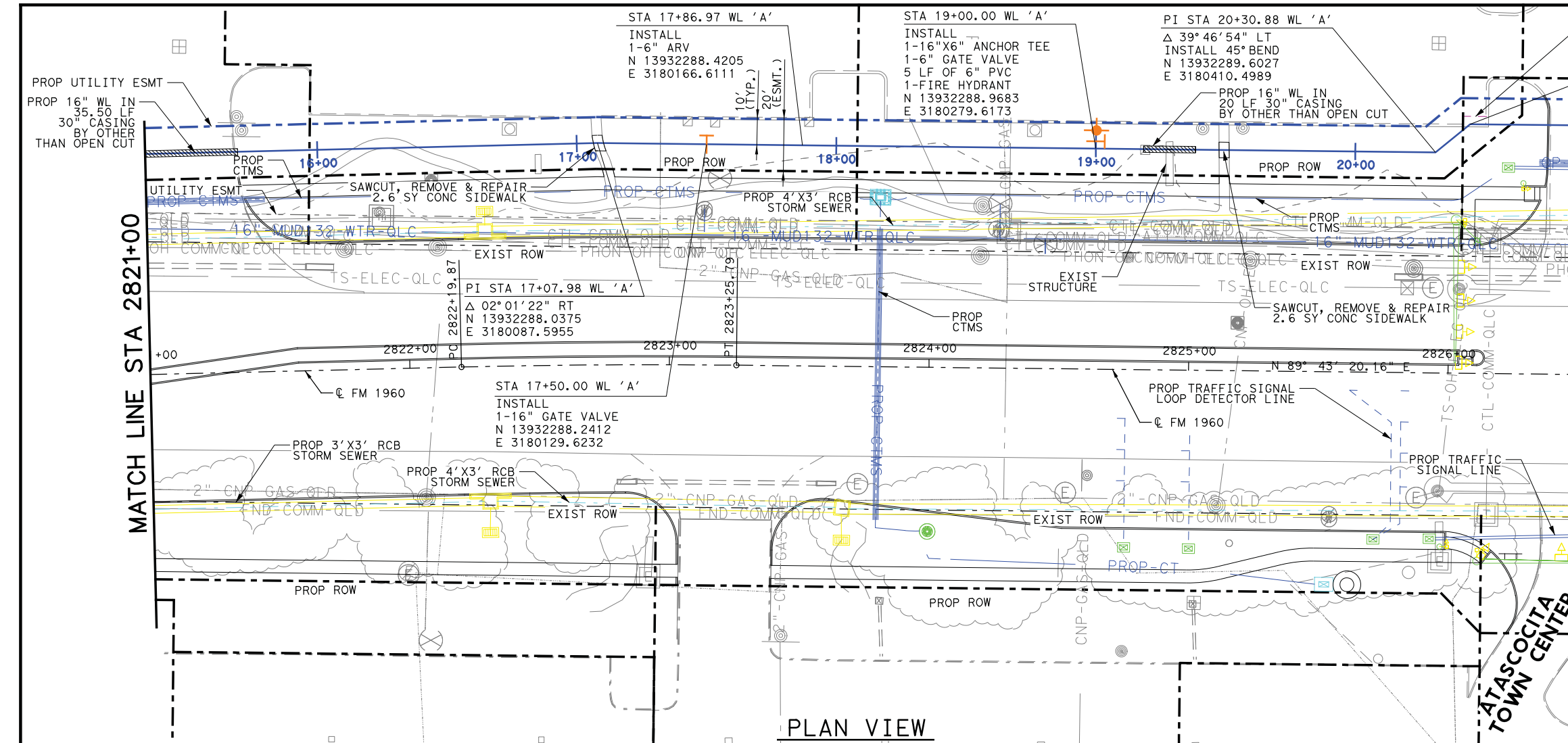
SHEET 1 OF 7


FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	FM 1960
STATE	DISTRICT	COUNTY
TEXAS	HOU	HARRIS
CONTROL	SECTION	JOB
1685	03	098

1194

FILENAME: FM1960E\_UTIL-1.dgn

DRAWING DATE: 4/14/2020

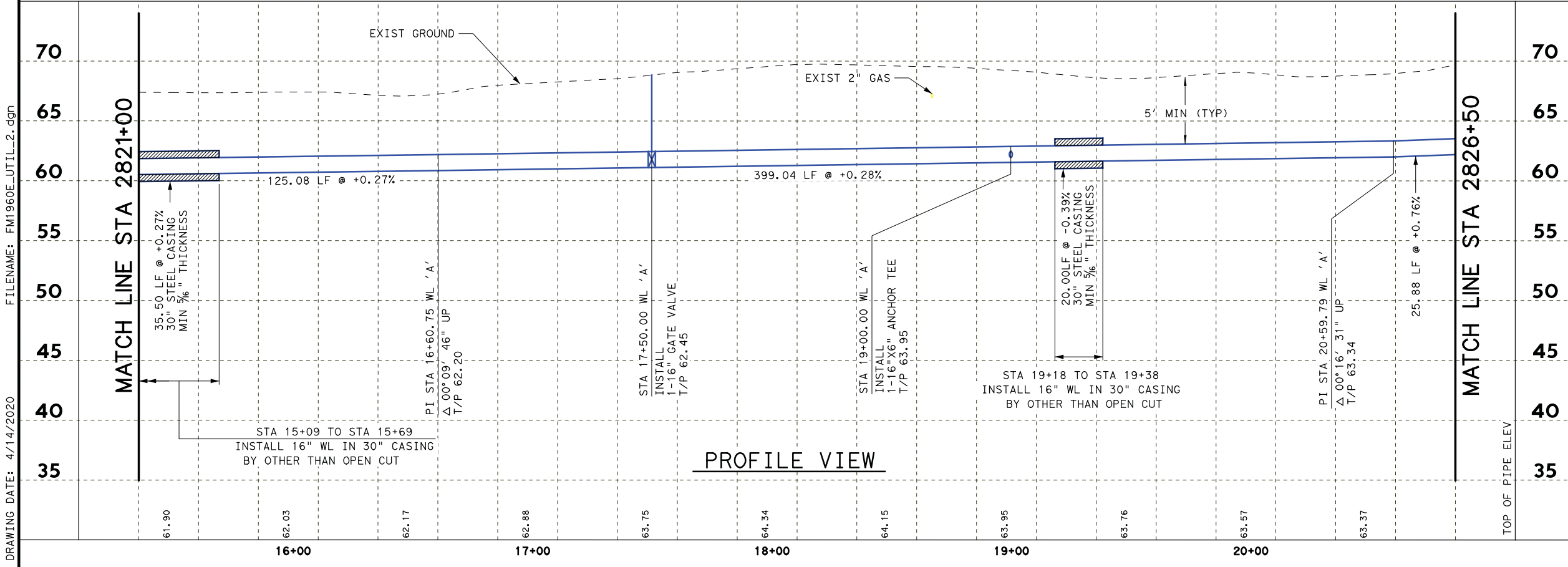






HORZ 0' 10' 25' 50'  
VERT 0' 5' 10'  
SCALE IN FEET

**NOTES:**


- CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
- REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
- ALL WATER LINES SHALL BE PVC CLASS 150, DR-18, AWWA C-900 UNLESS OTHERWISE INDICATED.
- CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO PERFORMING THE WORK. EXIST UTILITY ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE AND HAVE NOT BEEN FIELD VERIFIED.
- ACCESS TO BUSINESSES SHALL BE MAINTAINED AT ALL TIMES. IF A BUSINESS HAS MULTIPLE DRIVEWAYS, ONE MUST REMAIN OPEN AT ALL TIMES. IF A BUSINESS ONLY HAS ONE DRIVEWAY, THE PROPOSED UTILITY SHALL BE INSTALLED BY TRENCHLESS METHODS.
- CONTRACTOR SHALL LOCATE EXIST SERVICES. CONTRACTOR TO COORDINATE WITH MUD 132 TO REMOVE AND RELOCATE WATER METER/VAULT AND MAKE CONNECTIONS. REFER TO WATERLINE DETAILS FOR TYPICAL METER SETTINGS.







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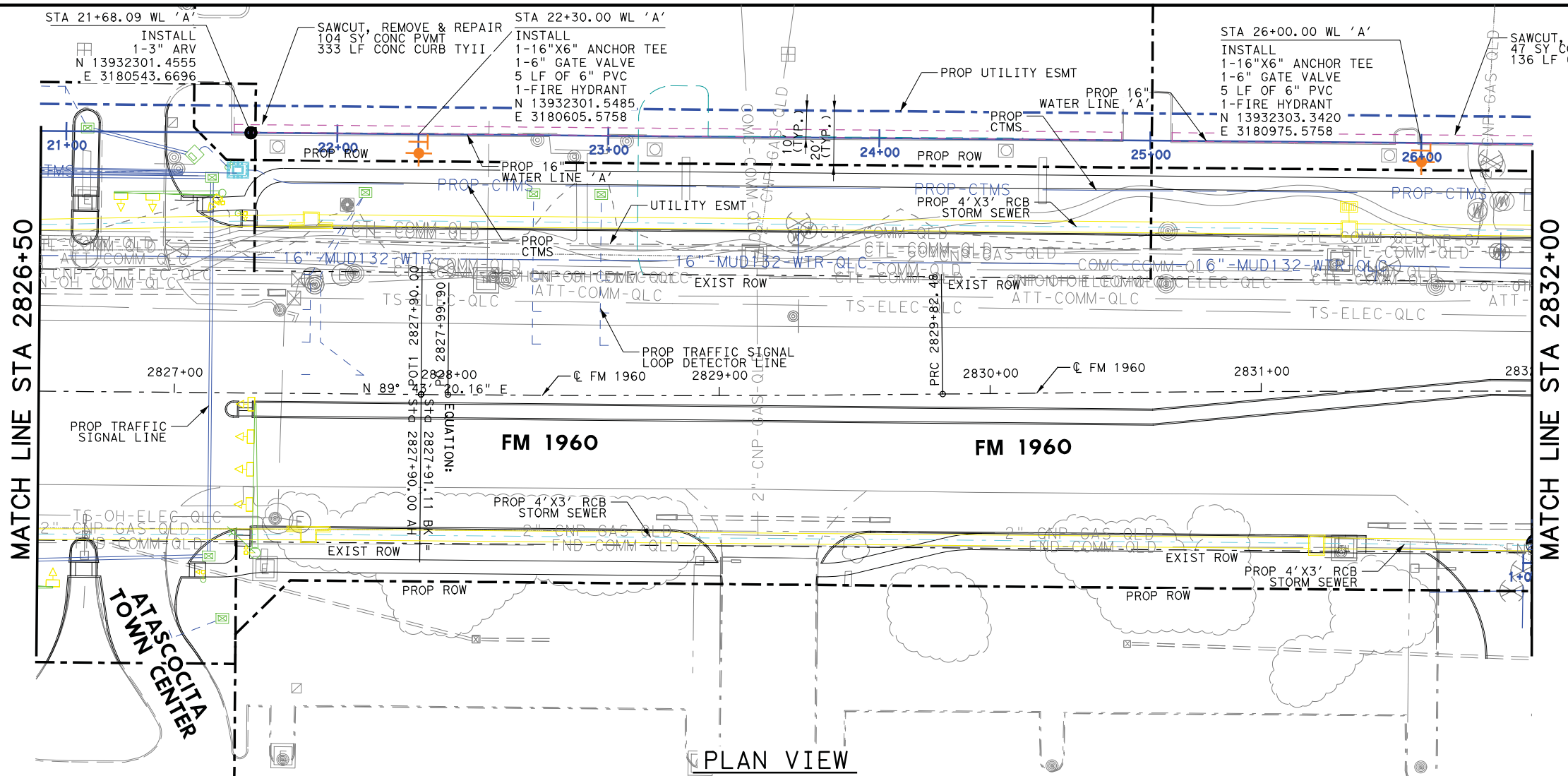
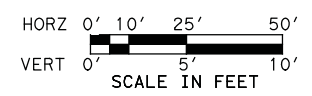


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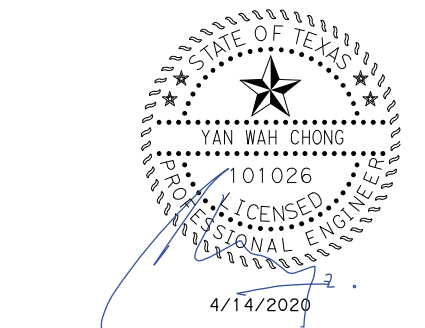
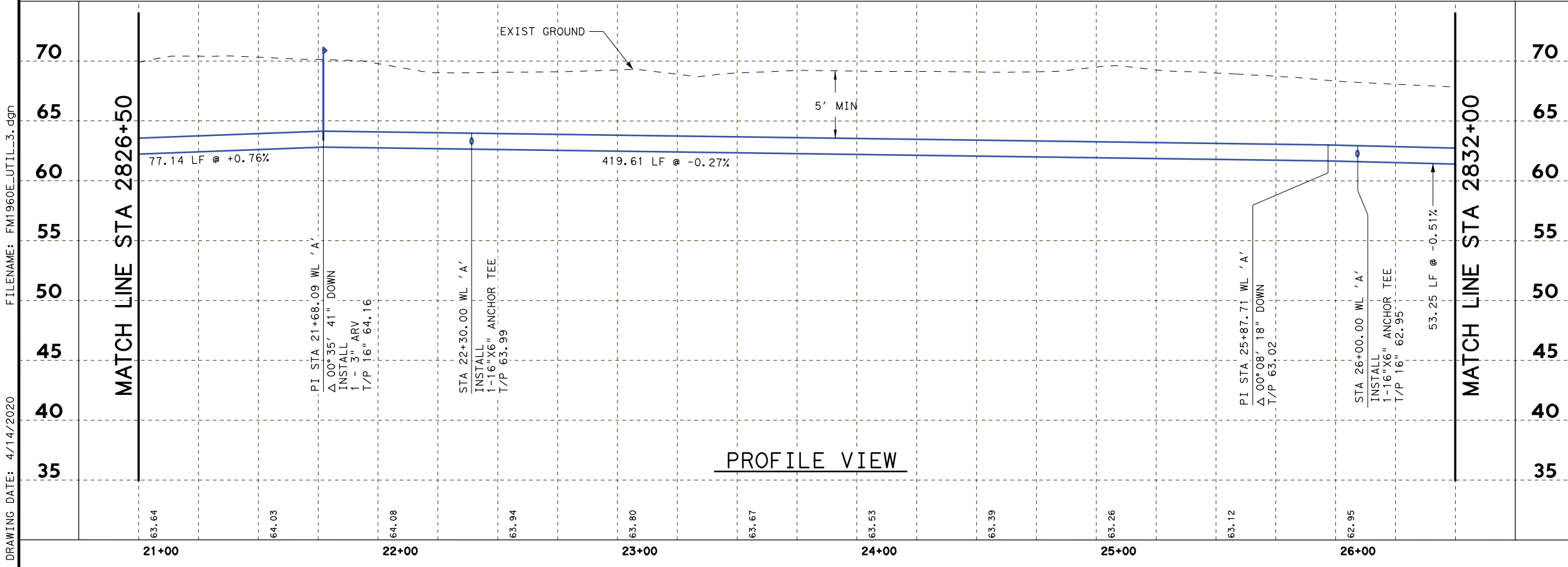
**FM 1960**  
**WATER LINE 'A'**  
**(2821+00 TO 2826+50)**

SHEET 2 OF 7		
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	FM 1960
STATE	DISTRICT	COUNTY
TEXAS	HOU	HARRIS
CONTROL	SECTION	JOB
1685	03	098
		<b>1195</b>

FILENAME: FM1960E\_UTIL-2.dgn  
 DRAWING DATE: 4/14/2020



- NOTES:**
- CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
  - ALL WATER LINES SHALL BE PVC CLASS 150, DR-18, AWWA C-900 UNLESS OTHERWISE INDICATED.
  - CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO PERFORMING THE WORK. EXIST UTILITY ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE AND HAVE NOT BEEN FIELD VERIFIED.
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  - CONTRACTOR SHALL LOCATE EXIST SERVICES. CONTRACTOR TO COORDINATE WITH MUD 132 TO REMOVE AND RELOCATE WATER METER/VAULT AND MAKE CONNECTIONS. REFER TO WATERLINE DETAILS FOR TYPICAL METER SETTINGS.



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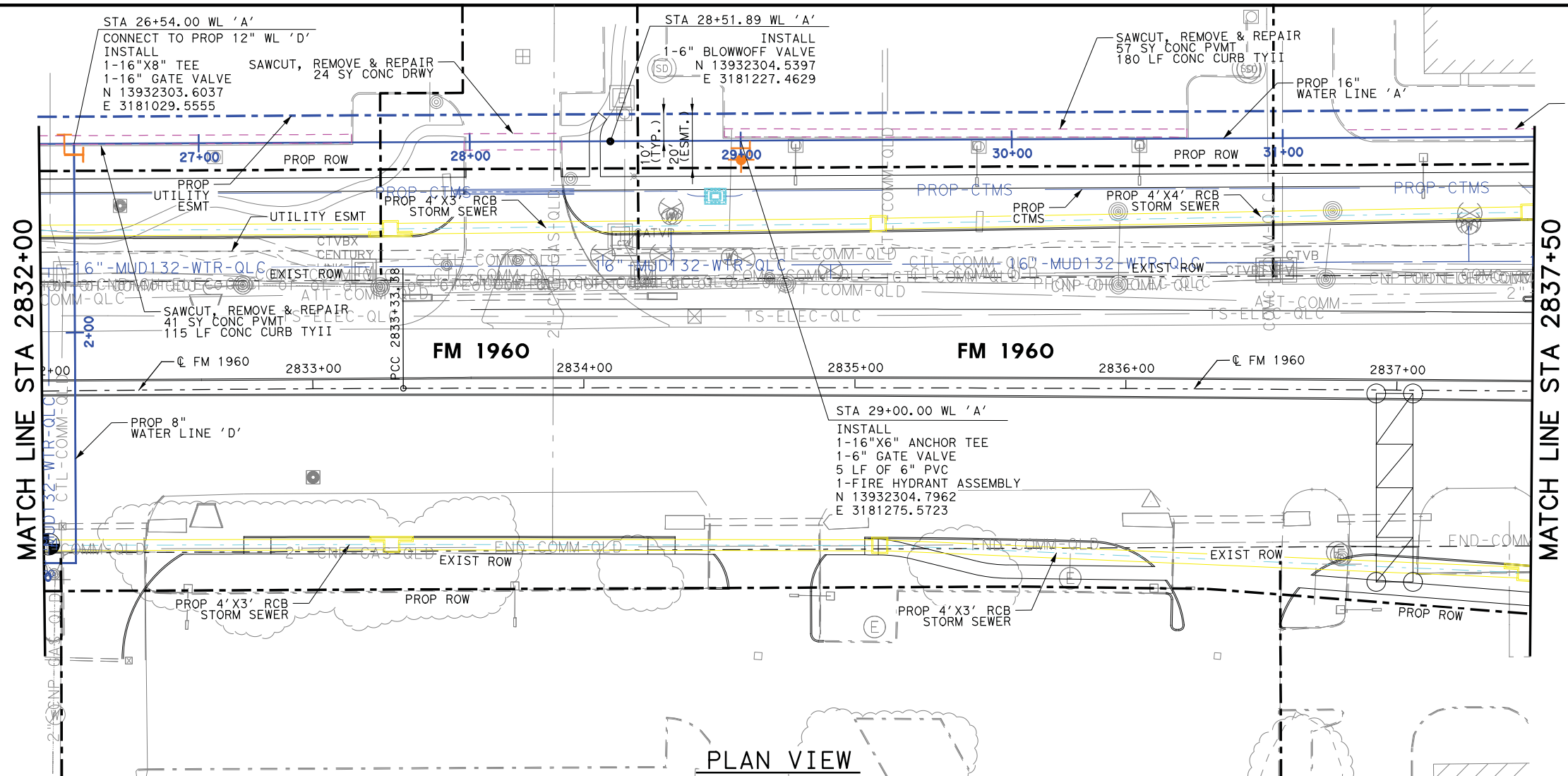
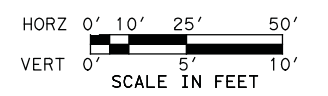
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**FM 1960  
WATER LINE 'A'  
(2826+50 TO 2832+00)**

SHEET 3 OF 7

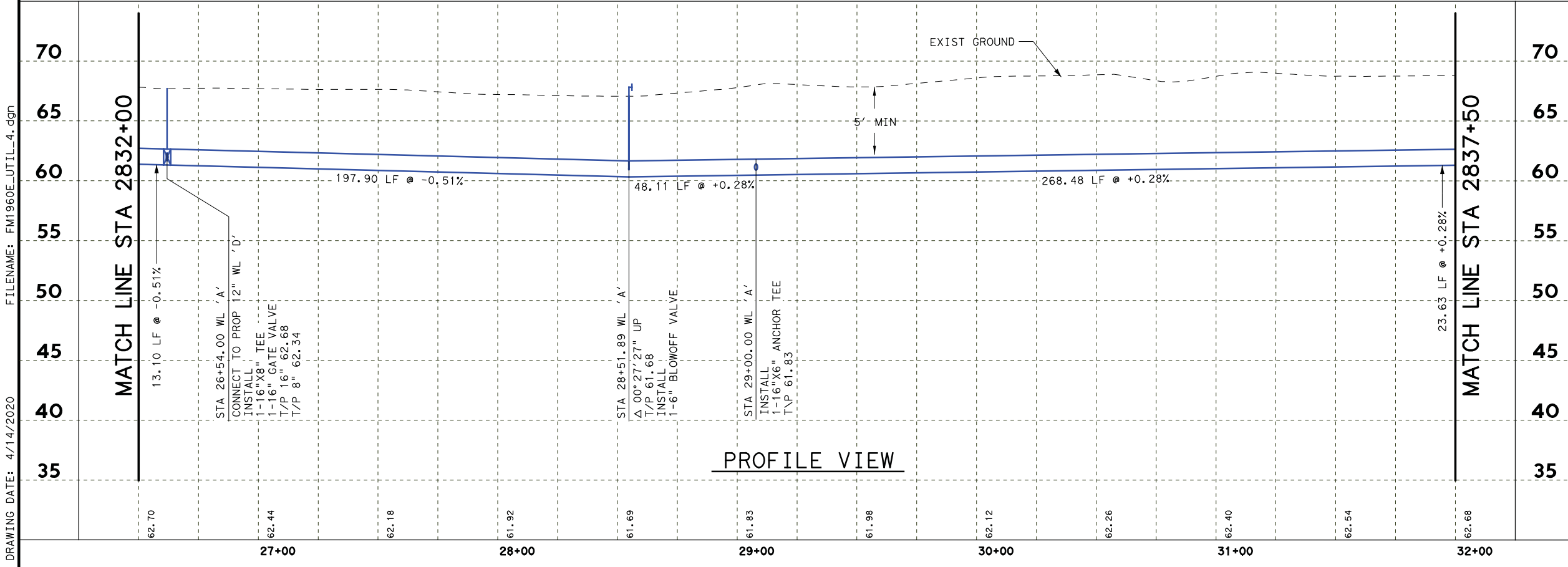
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1196
CONTROL	SECTION	JOB	
1685	03	098	

DRAWING DATE: 4/14/2020 FILENAME: FM1960E\_UTIL\_3.dgn

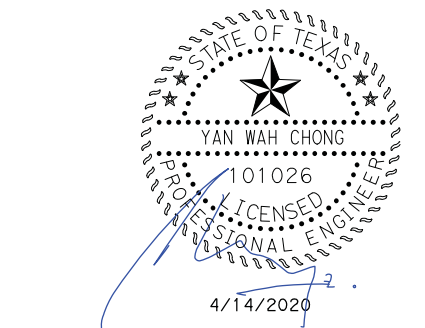


- NOTES:**
1. CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
  2. REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
  3. ALL WATER LINES SHALL BE PVC CLASS 150, DR-18, AWWA C-900 UNLESS OTHERWISE INDICATED.
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  6. CONTRACTOR SHALL LOCATE EXIST SERVICES. CONTRACTOR TO COORDINATE WITH MUD 132 TO REMOVE AND RELOCATE WATER METER/VAULT AND MAKE CONNECTIONS. REFER TO WATERLINE DETAILS FOR TYPICAL METER SETTINGS.

PLAN VIEW



PROFILE VIEW



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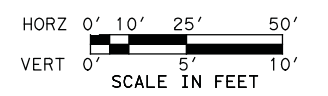
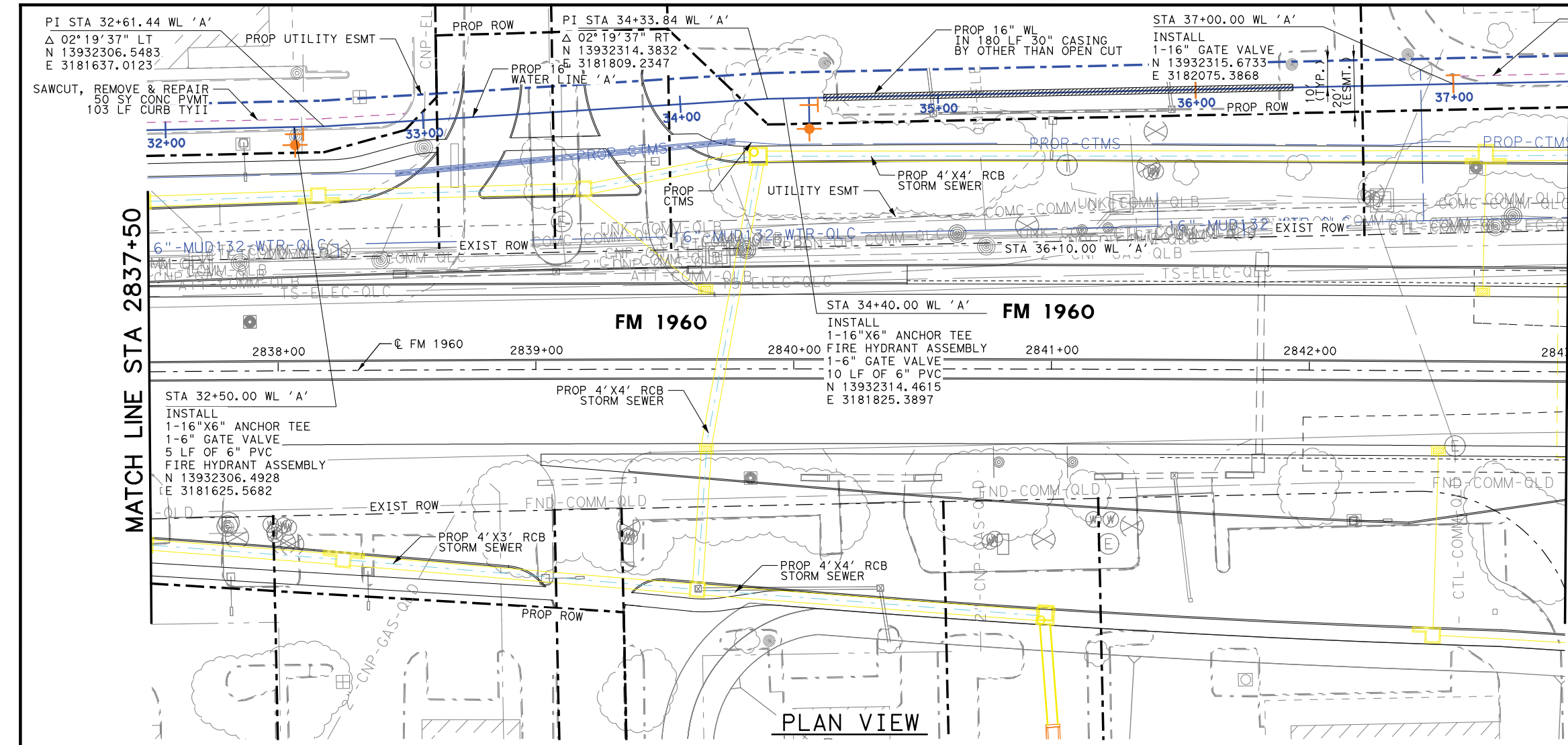
**FM 1960  
WATER LINE 'A'  
(2832+00 TO 2837+50)**

SHEET 4 OF 7

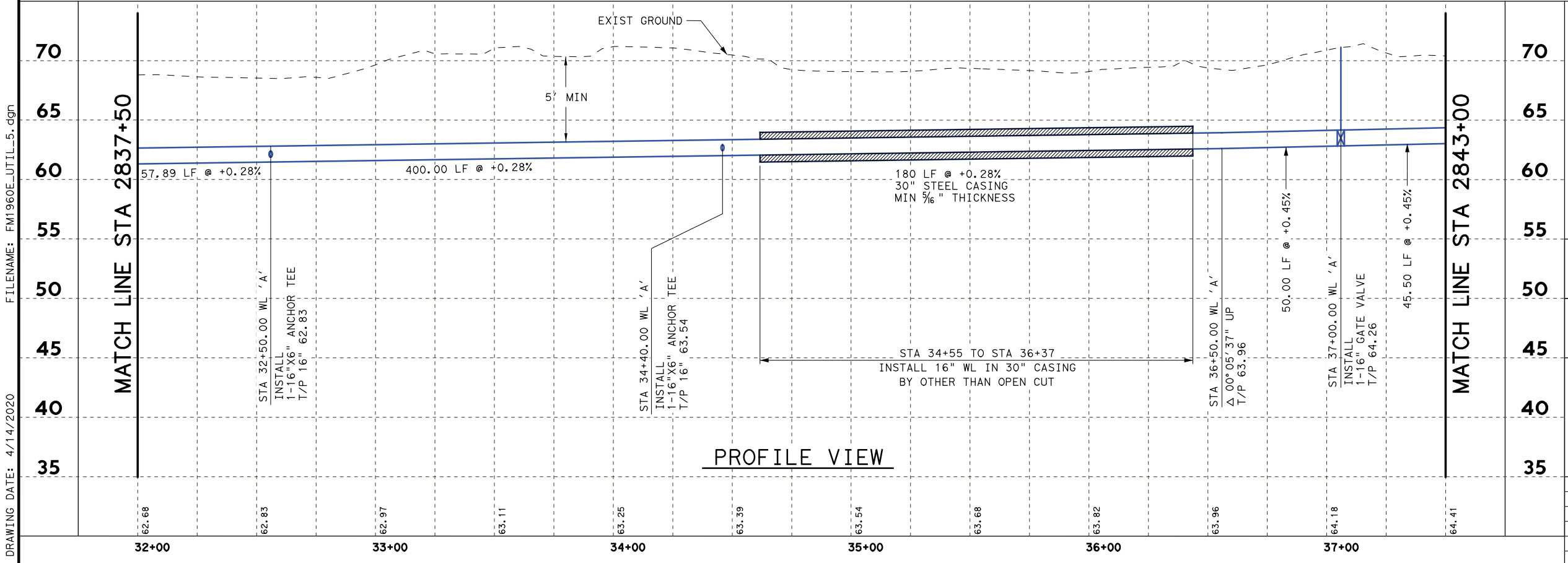
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1197
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_UTIL\_4.dgn

DRAWING DATE: 4/14/2020



- NOTES:**
- CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
  - ALL WATER LINES SHALL BE PVC CLASS 150, DR-18, AWWA C-900 UNLESS OTHERWISE INDICATED.
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4/14/2020

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**FM 1960  
WATER LINE 'A'  
(2837+50 TO 2843+00)**

SHEET 5 OF 7		
FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. (SEE TITLE SHEET)	HIGHWAY NO. FM 1960
STATE TEXAS	DISTRICT HOU	COUNTY HARRIS
CONTROL 1685	SECTION 03	JOB 098
		<b>1198</b>

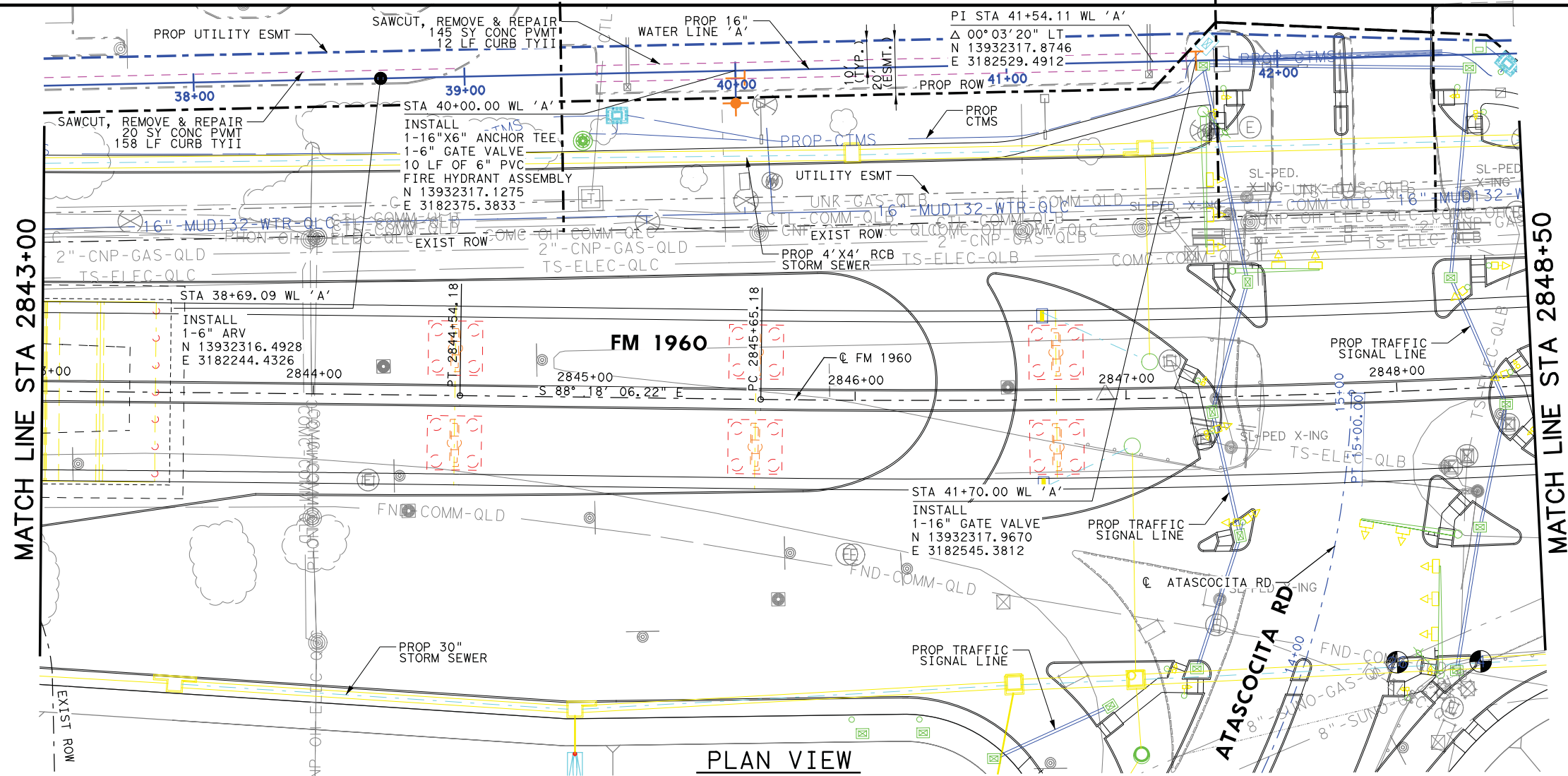
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 DRAWING DATE: 4/14/2020



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 VERT 0' 5' 10'  
 SCALE IN FEET

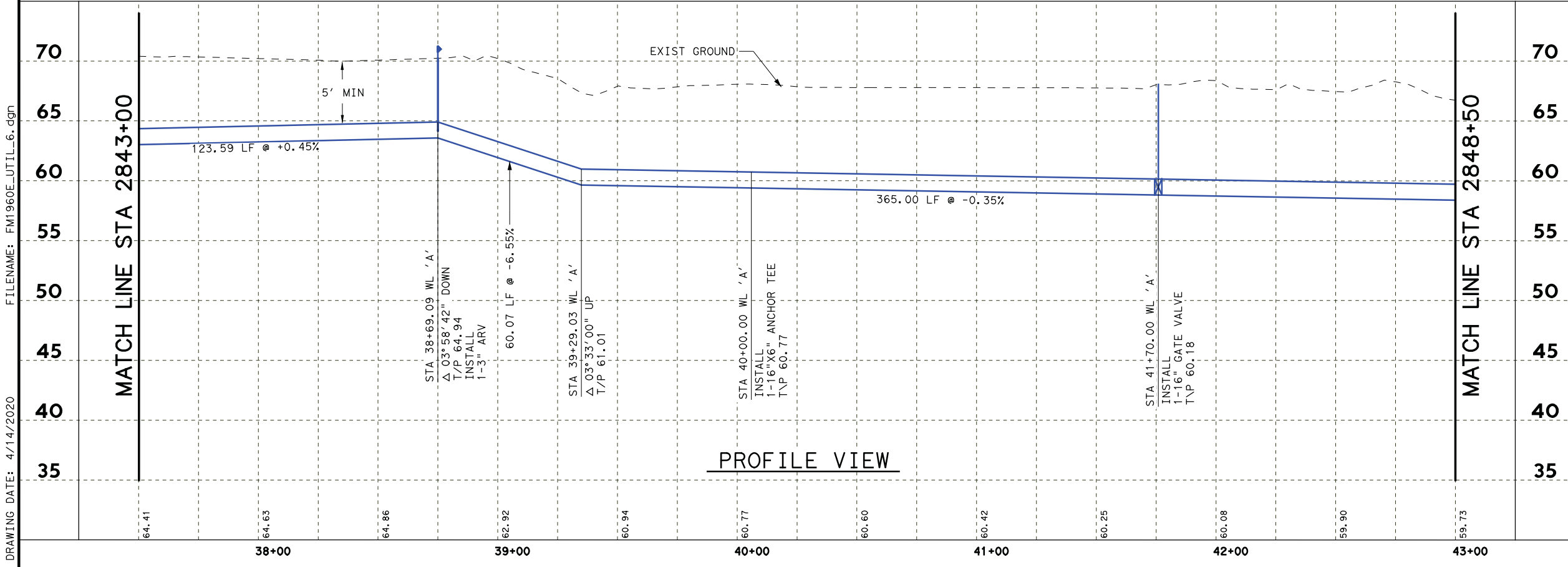
MATCH LINE STA 2843+00

MATCH LINE STA 2848+50

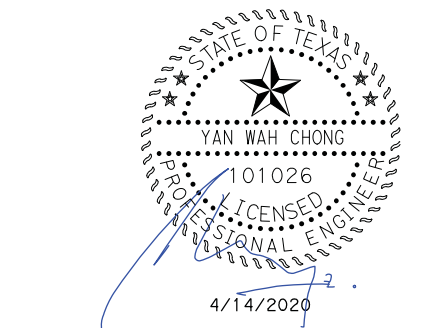


PLAN VIEW

- NOTES:
1. CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
  2. REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
  3. ALL WATER LINES SHALL BE PVC CLASS 150, DR-18, AWWA C-900 UNLESS OTHERWISE INDICATED.
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  6. CONTRACTOR SHALL LOCATE EXIST SERVICES. CONTRACTOR TO COORDINATE WITH MUD 132 TO REMOVE AND RELOCATE WATER METER/Vault AND MAKE CONNECTIONS. REFER TO WATERLINE DETAILS FOR TYPICAL METER SETTINGS.



PROFILE VIEW



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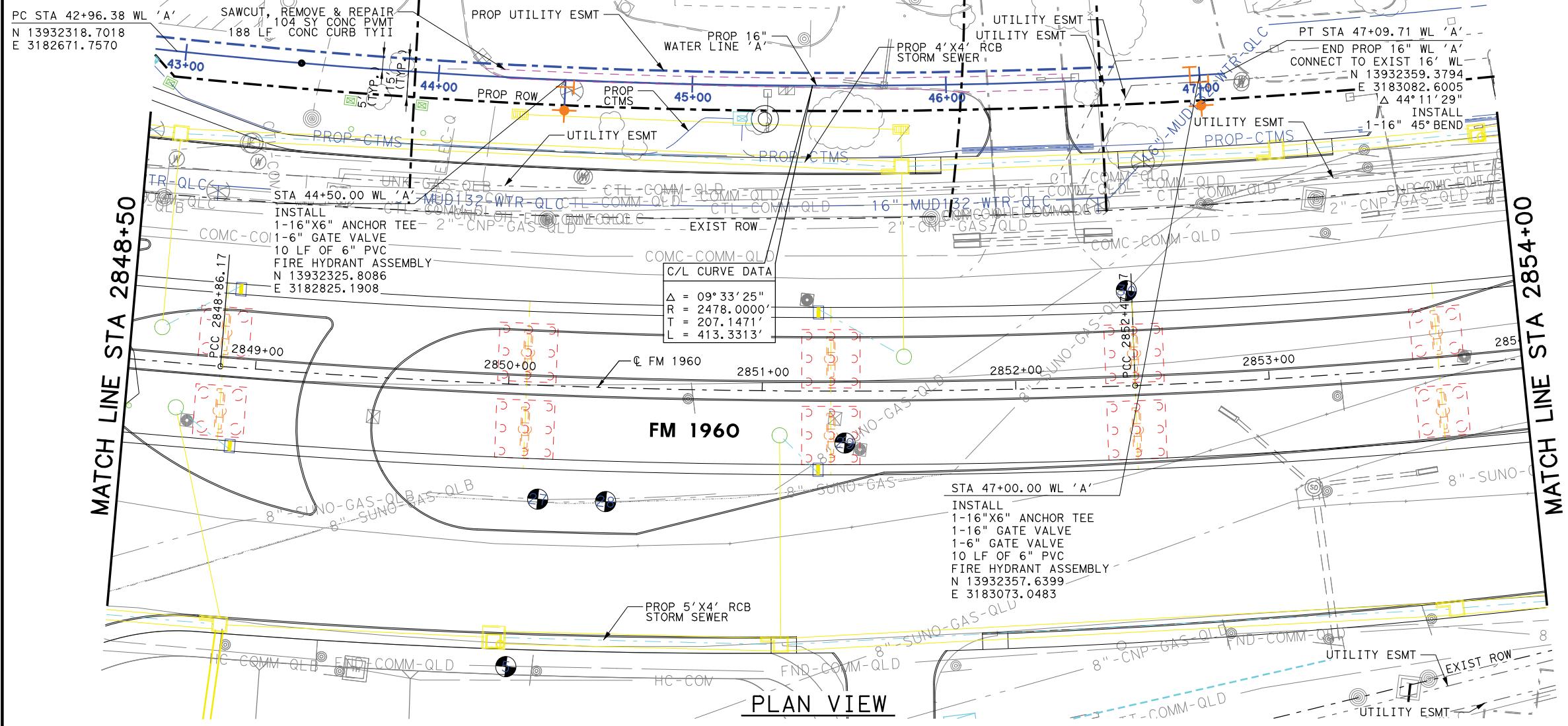
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**FM 1960  
 WATER LINE 'A'  
 (2843+00 TO 2848+50)**

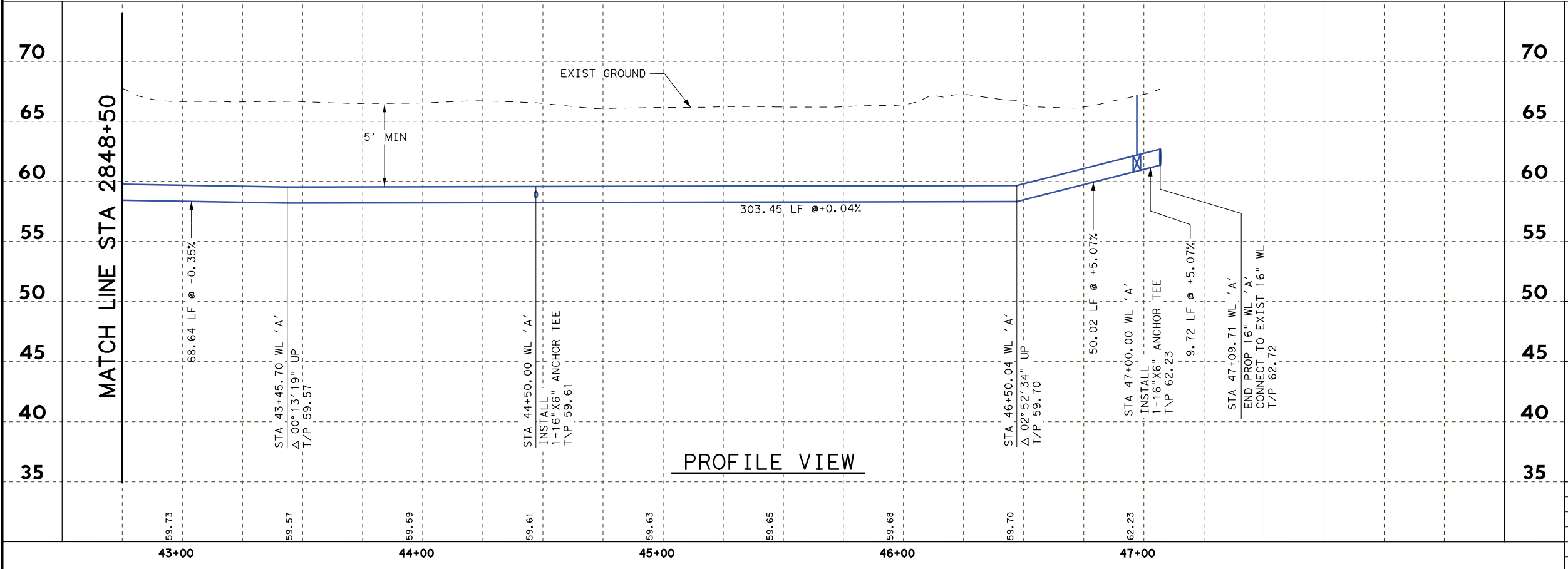
SHEET 6 OF 7

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1199
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_UTIL\_6.dgn  
 DRAWING DATE: 4/14/2020



- NOTES:**
1. CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
  2. REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
  3. ALL WATER LINES SHALL BE PVC CLASS 150, DR-18, AWWA C-900 UNLESS OTHERWISE INDICATED.
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  6. CONTRACTOR SHALL LOCATE EXIST SERVICES. CONTRACTOR TO COORDINATE WITH MUD 132 TO REMOVE AND RELOCATE WATER METER/VAULT AND MAKE CONNECTIONS. REFER TO WATERLINE DETAILS FOR TYPICAL METER SETTINGS.



YAN WAH CHONG  
101026  
PROFESSIONAL ENGINEER  
4/14/2020

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**FM 1960  
WATER LINE 'A'  
(2848+50 TO 2854+00)**

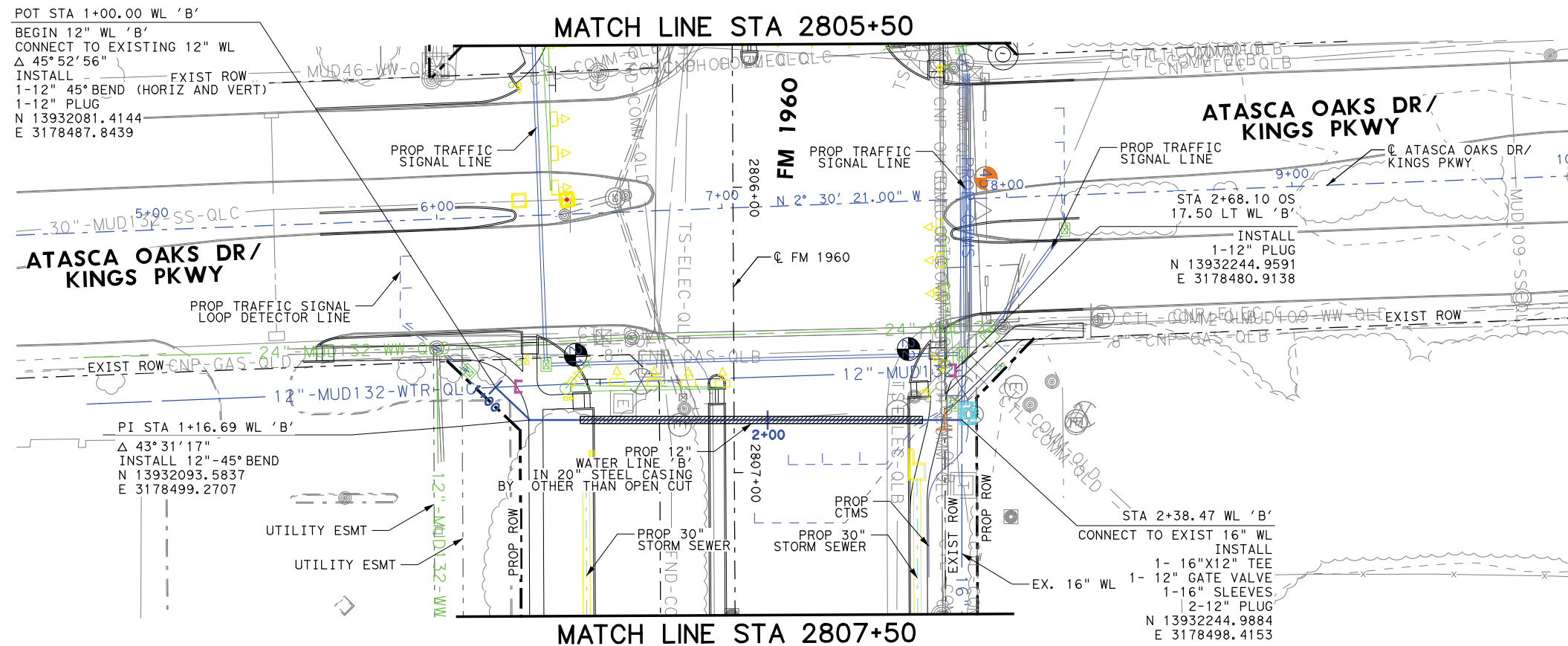
SHEET 7 OF 7		
FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. (SEE TITLE SHEET)	HIGHWAY NO. FM 1960
STATE TEXAS	DISTRICT HOU	COUNTY HARRIS
CONTROL 1685	SECTION 03	JOB 098
		SHEET NO. <b>1200</b>

DRAWING DATE: 4/14/2020 FILENAME: FM1960E\_UTIL-7.dgn



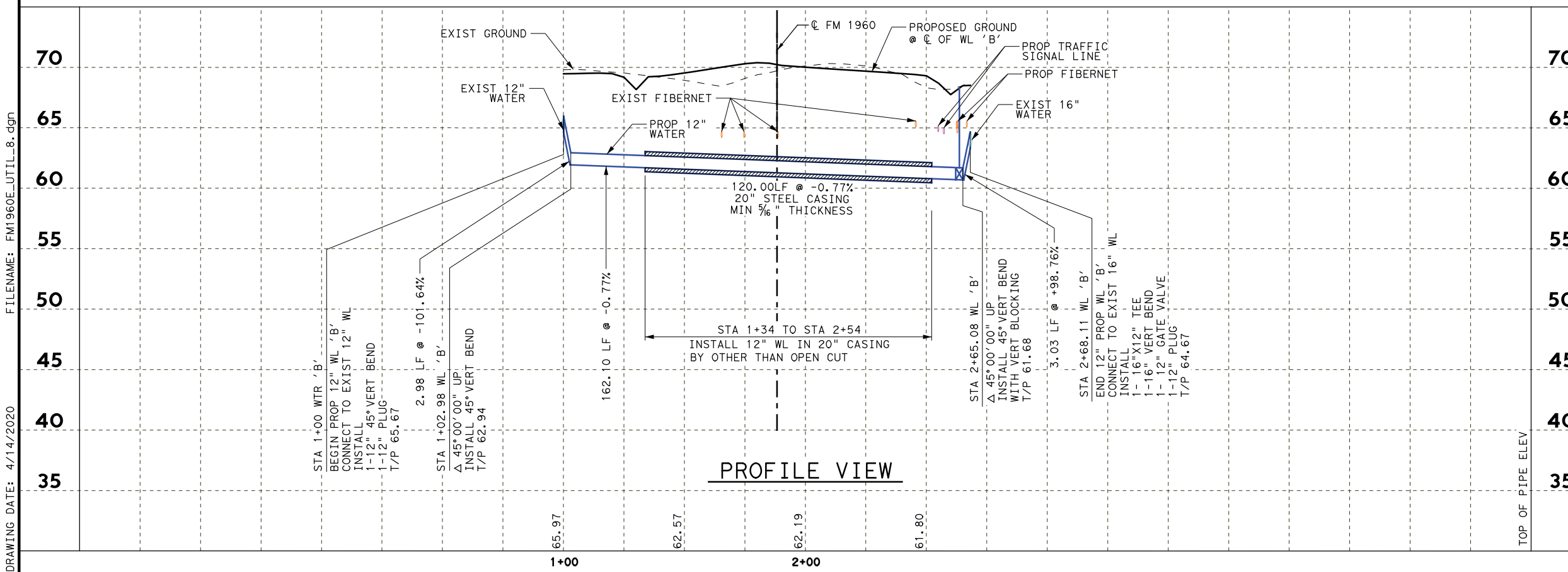


HORIZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

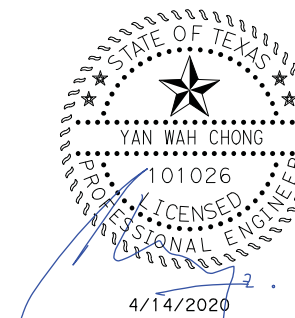


- NOTES:**
1. CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
  2. REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
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**PLAN VIEW**



**PROFILE VIEW**



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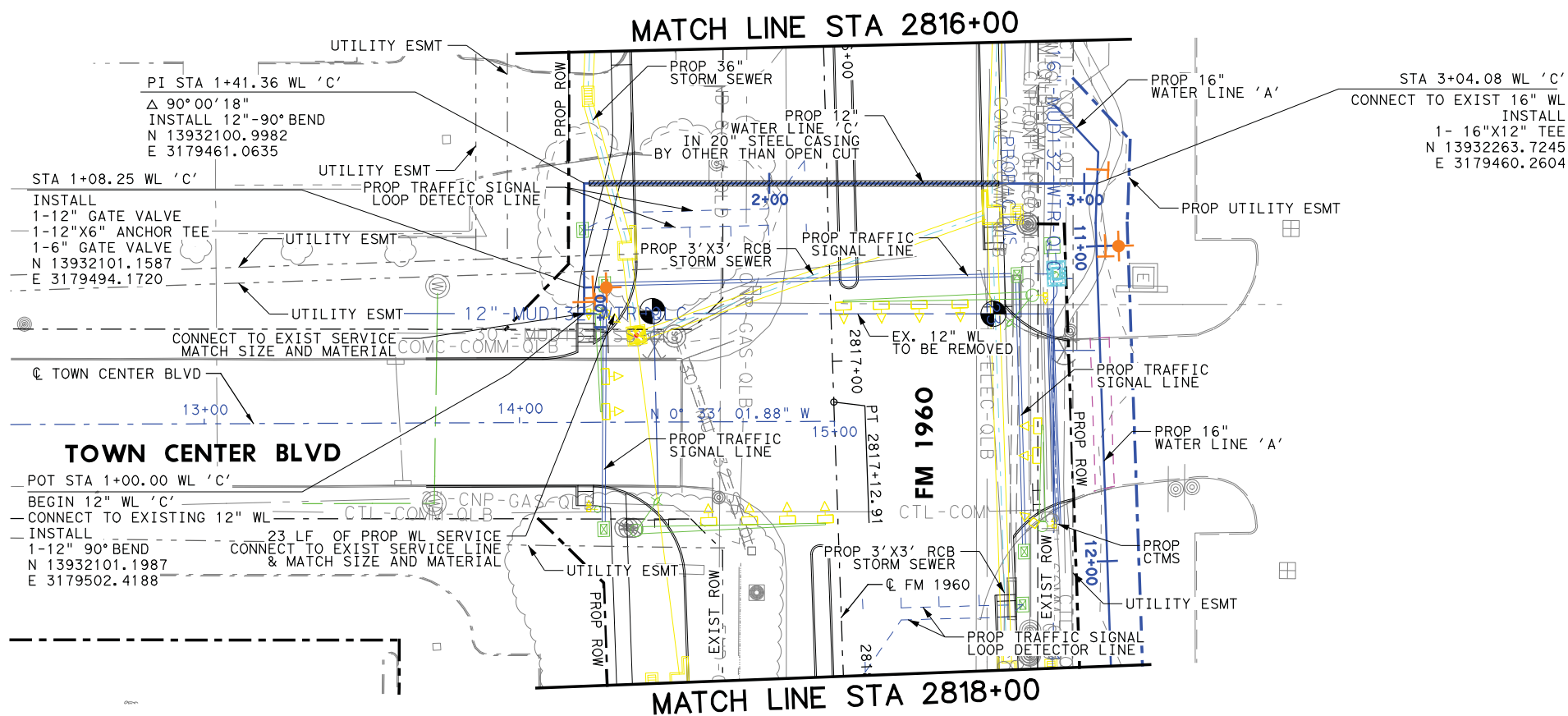
**FM 1960  
 WATER LINE 'B'  
 (2805+50 TO 2807+50)**

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1201
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_UTIL-8.dgn  
 DRAWING DATE: 4/14/2020

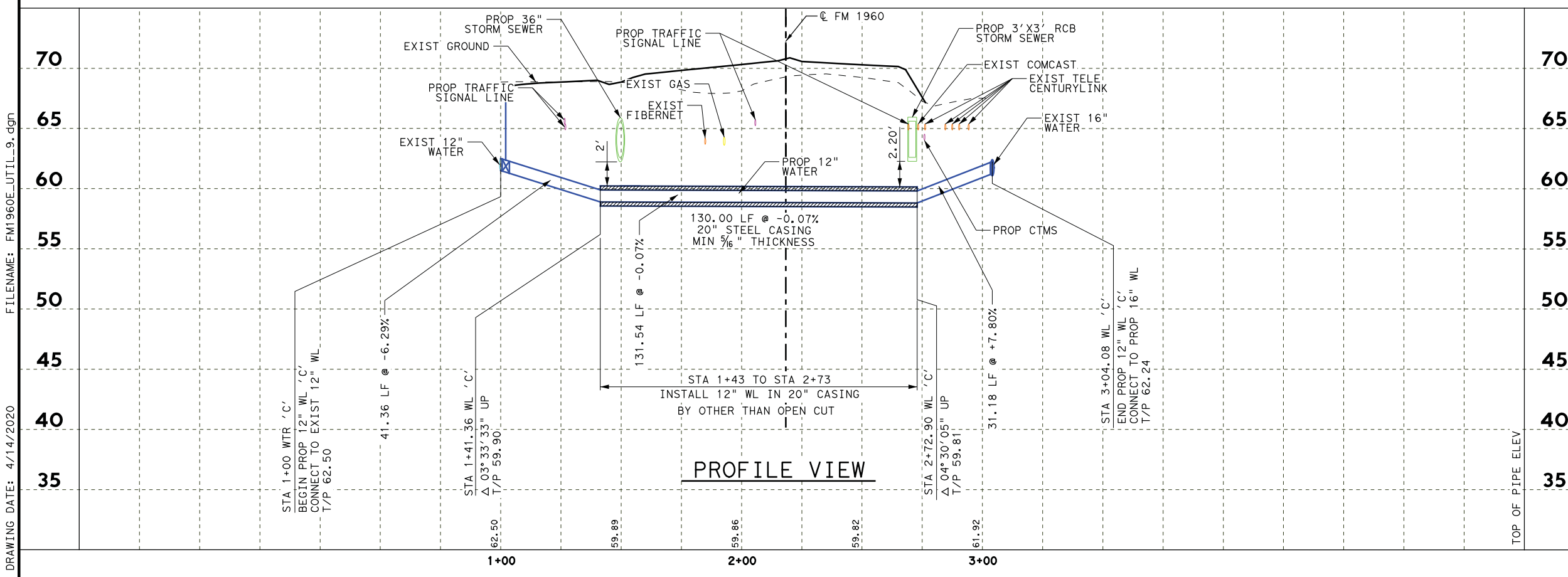


HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

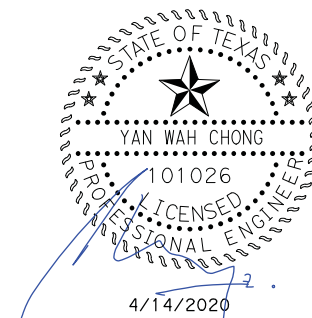


- NOTES:**
- CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
  - REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
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**PLAN VIEW**



**PROFILE VIEW**



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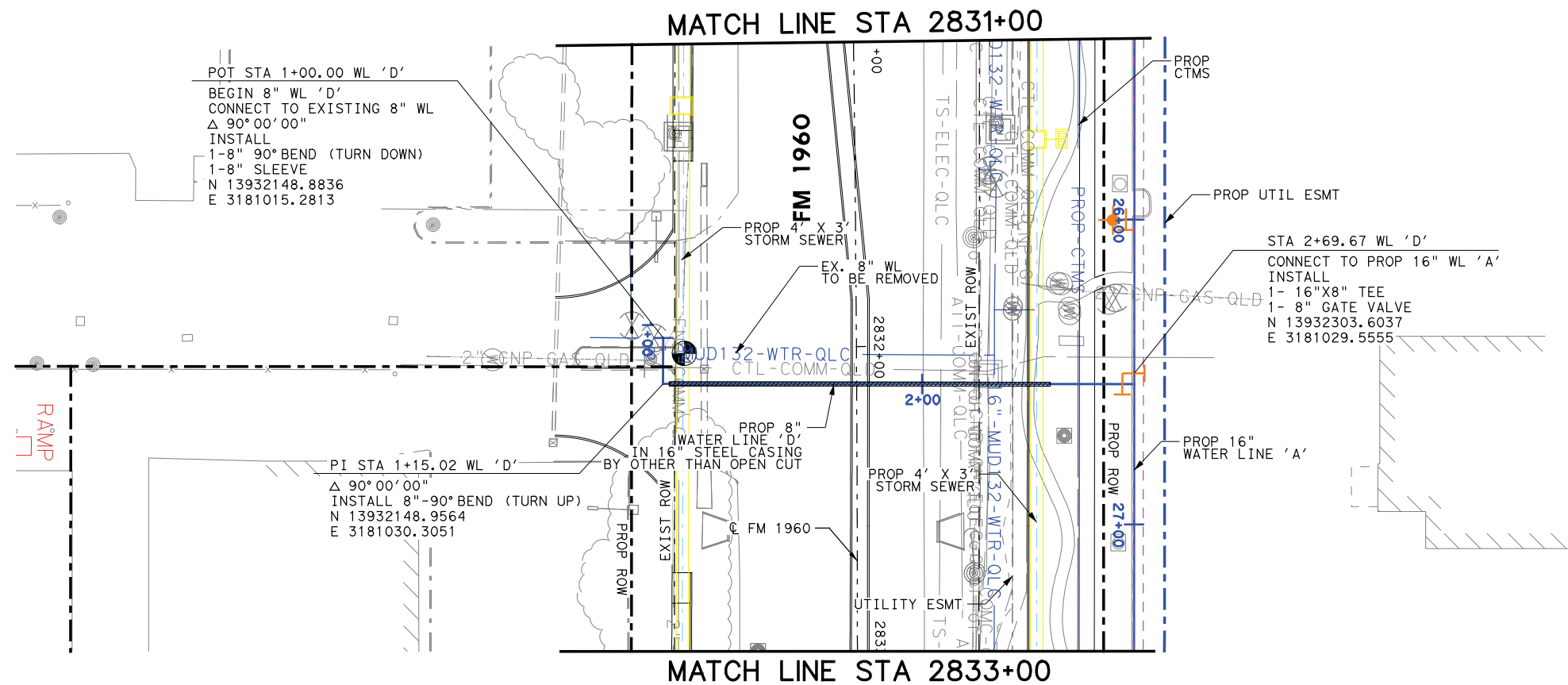
**FM 1960  
 WATER LINE 'C'  
 (2816+00 TO 2818+00)**

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	1202
1685	03	098	

FILENAME: FM1960E\_UTIL\_9.dgn  
 DRAWING DATE: 4/14/2020

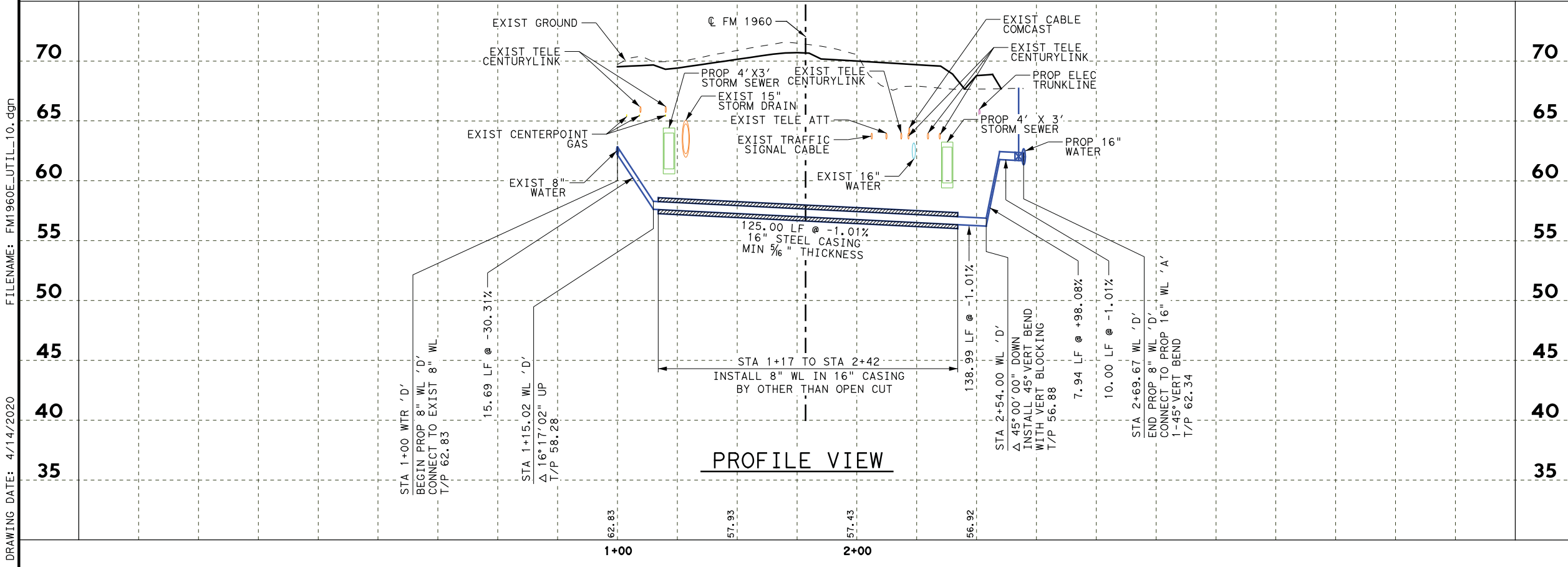


HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

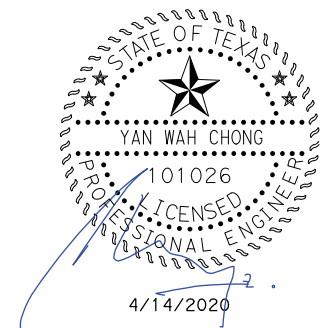


- NOTES:**
1. CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
  2. REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
  3. ALL WATER LINES SHALL BE PVC CLASS 150, DR-18, AWWA C-900 UNLESS OTHERWISE INDICATED.
  4. CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO PERFORMING THE WORK. EXIST UTILITY ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE AND HAVE NOT BEEN FIELD VERIFIED.
  5. ACCESS TO BUSINESSES SHALL BE MAINTAINED AT ALL TIMES. IF A BUSINESS HAS MULTIPLE DRIVEWAYS, ONE MUST REMAIN OPEN AT ALL TIMES. IF A BUSINESS ONLY HAS ONE DRIVEWAY, THE PROPOSED UTILITY SHALL BE INSTALLED BY TRENCHLESS METHODS.
  6. CONTRACTOR SHALL LOCATE EXIST SERVICES. CONTRACTOR TO COORDINATE WITH MUD 132 TO REMOVE AND RELOCATE WATER METER/VAULT AND MAKE CONNECTIONS. REFER TO WATERLINE DETAILS FOR TYPICAL METER SETTINGS.

**PLAN VIEW**



**PROFILE VIEW**



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**FM 1960  
 WATER LINE 'D'  
 (2831+00 TO 2833+00)**

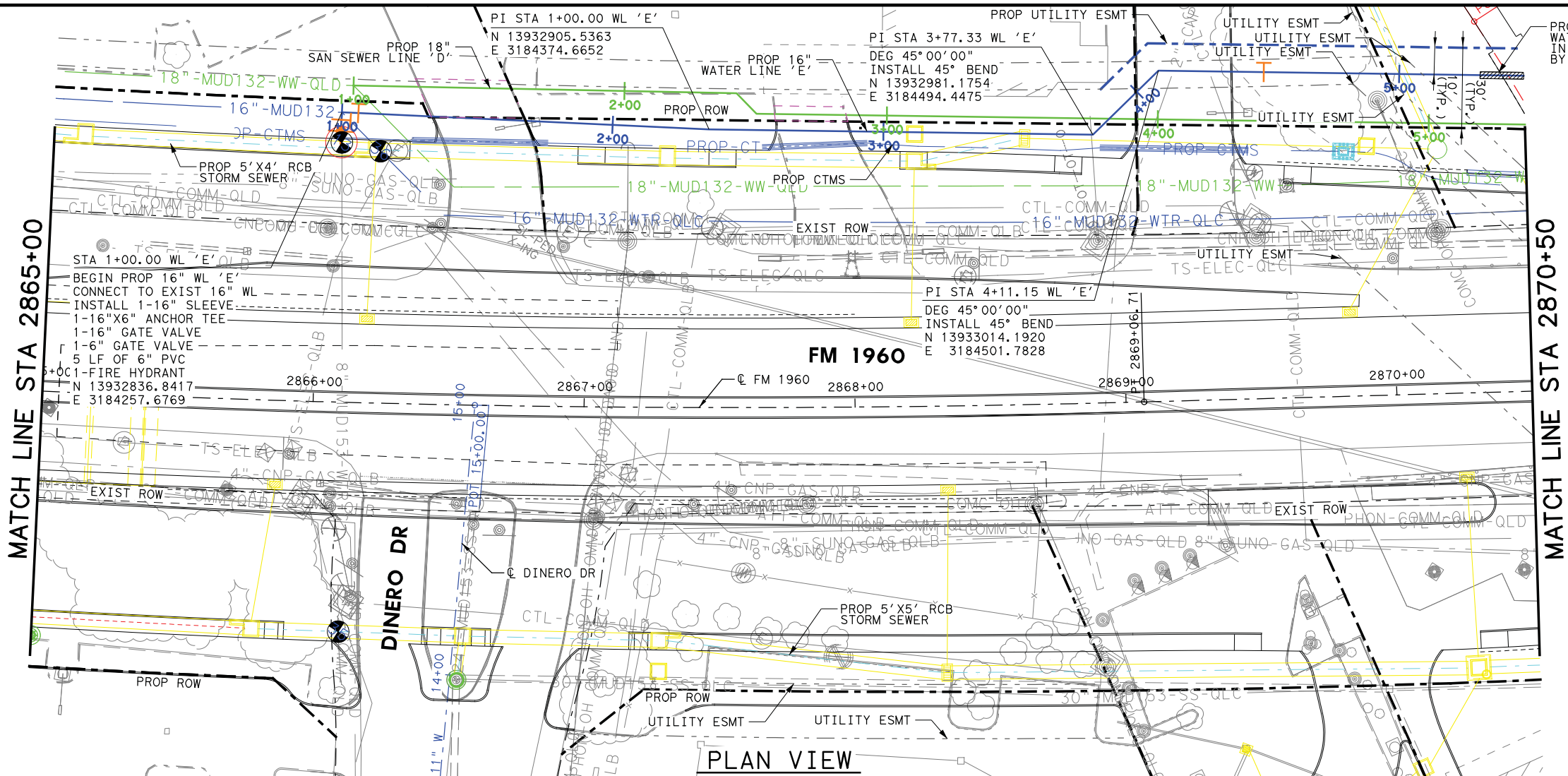
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1203
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_UTIL\_10.dgn  
 DRAWING DATE: 4/14/2020

FILENAME: FM1960E\_UTIL\_11.dgn  
DRAWING DATE: 4/14/2020

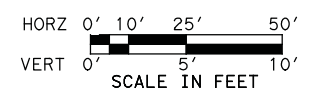
MATCH LINE STA 2865+00

MATCH LINE STA 2870+50

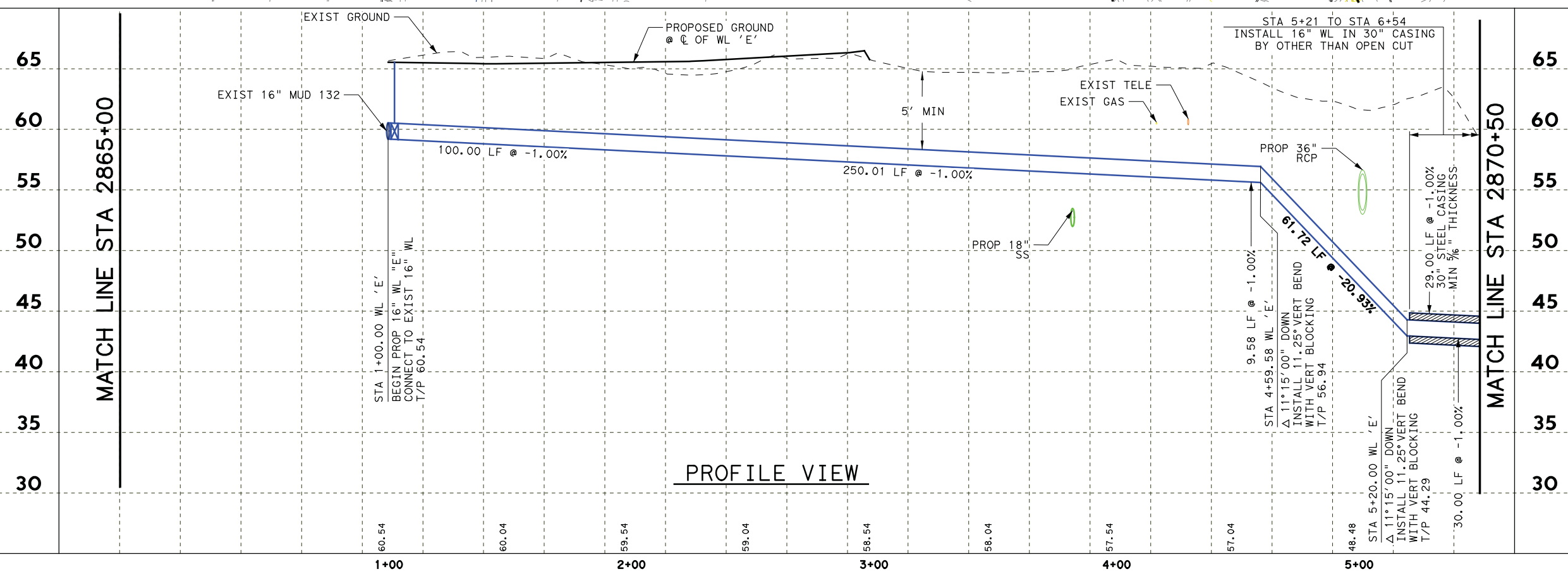


FM 1960

PLAN VIEW



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- CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
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PROFILE VIEW



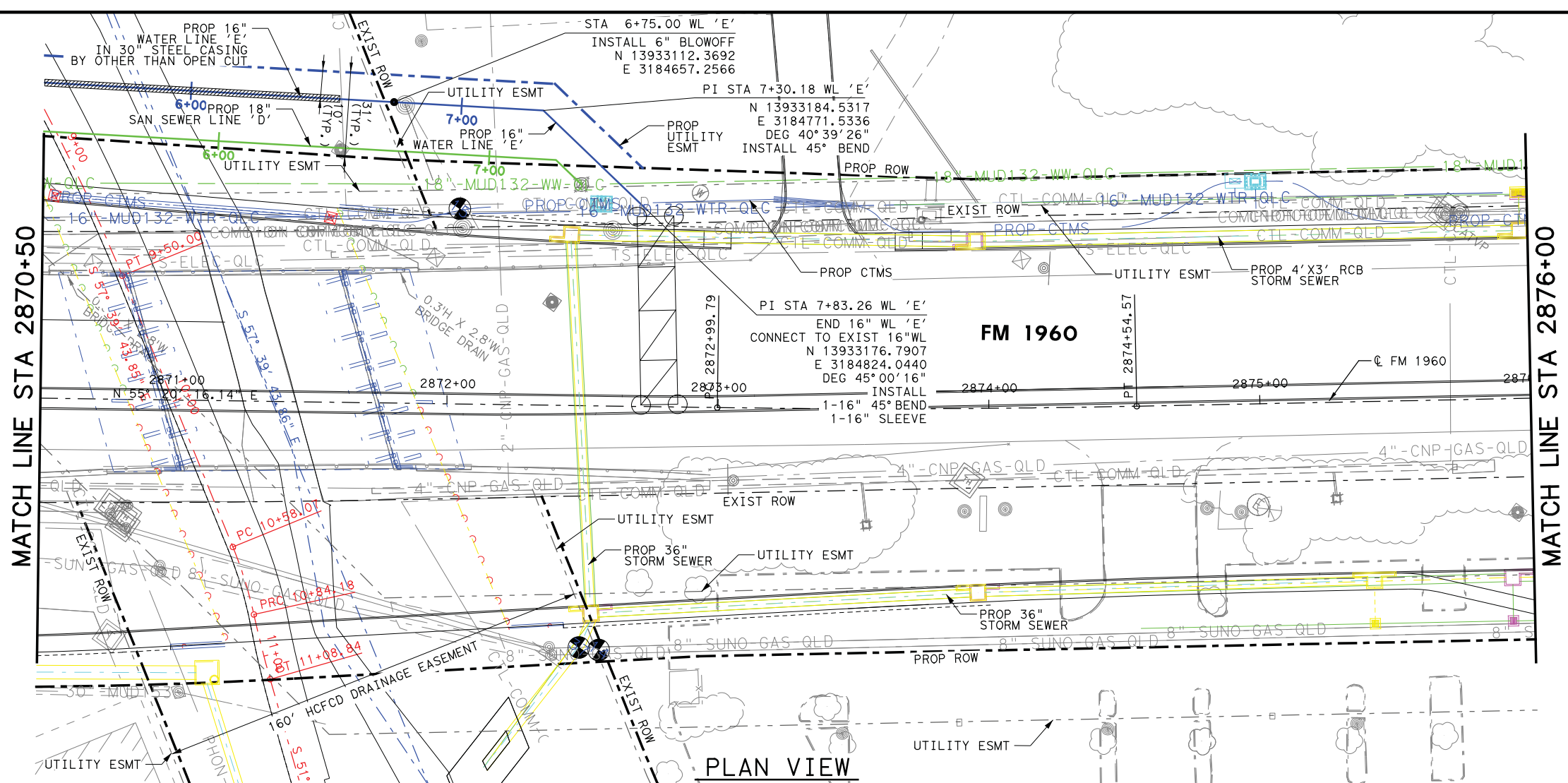
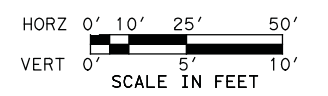
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**FM 1960  
WATER LINE 'E'  
(2865+00 TO 2870+50)**

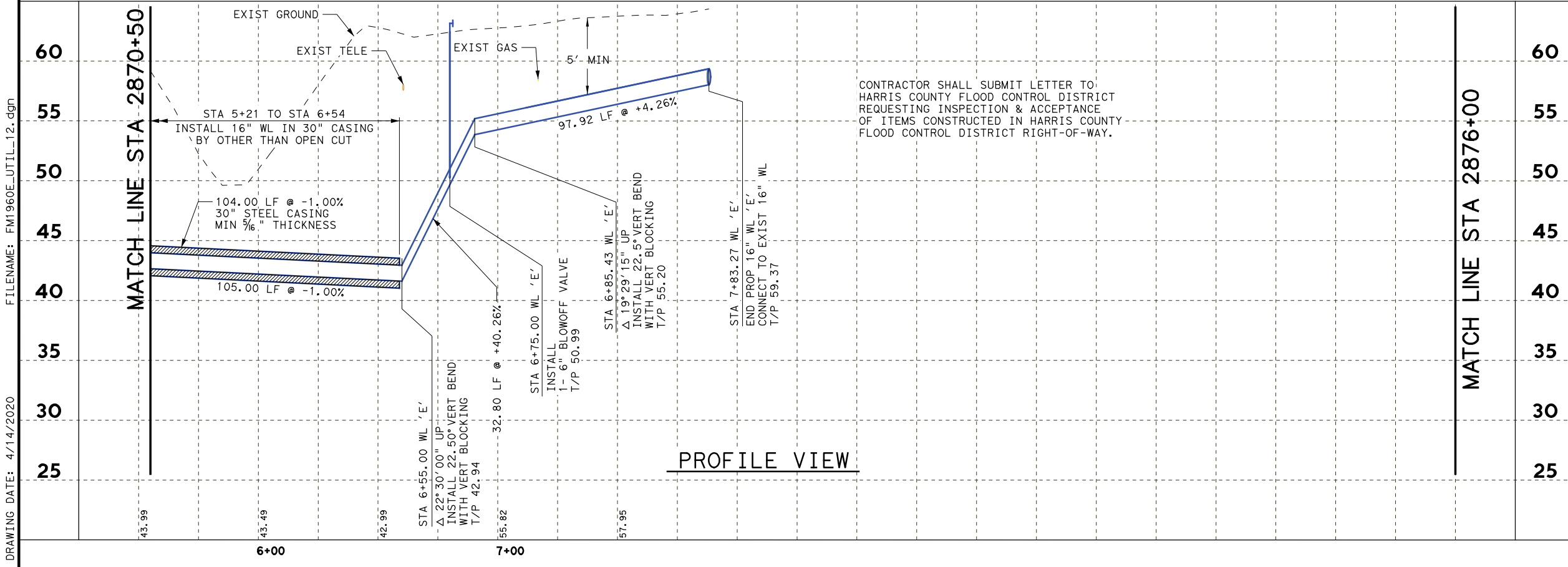
SHEET 1 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1204
CONTROL	SECTION	JOB	
1685	03	098	



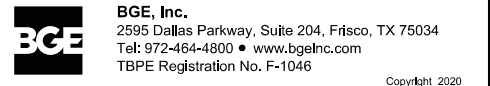
- NOTES:**
1. CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
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PLAN VIEW



PROFILE VIEW

CONTRACTOR SHALL SUBMIT LETTER TO HARRIS COUNTY FLOOD CONTROL DISTRICT REQUESTING INSPECTION & ACCEPTANCE OF ITEMS CONSTRUCTED IN HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY.



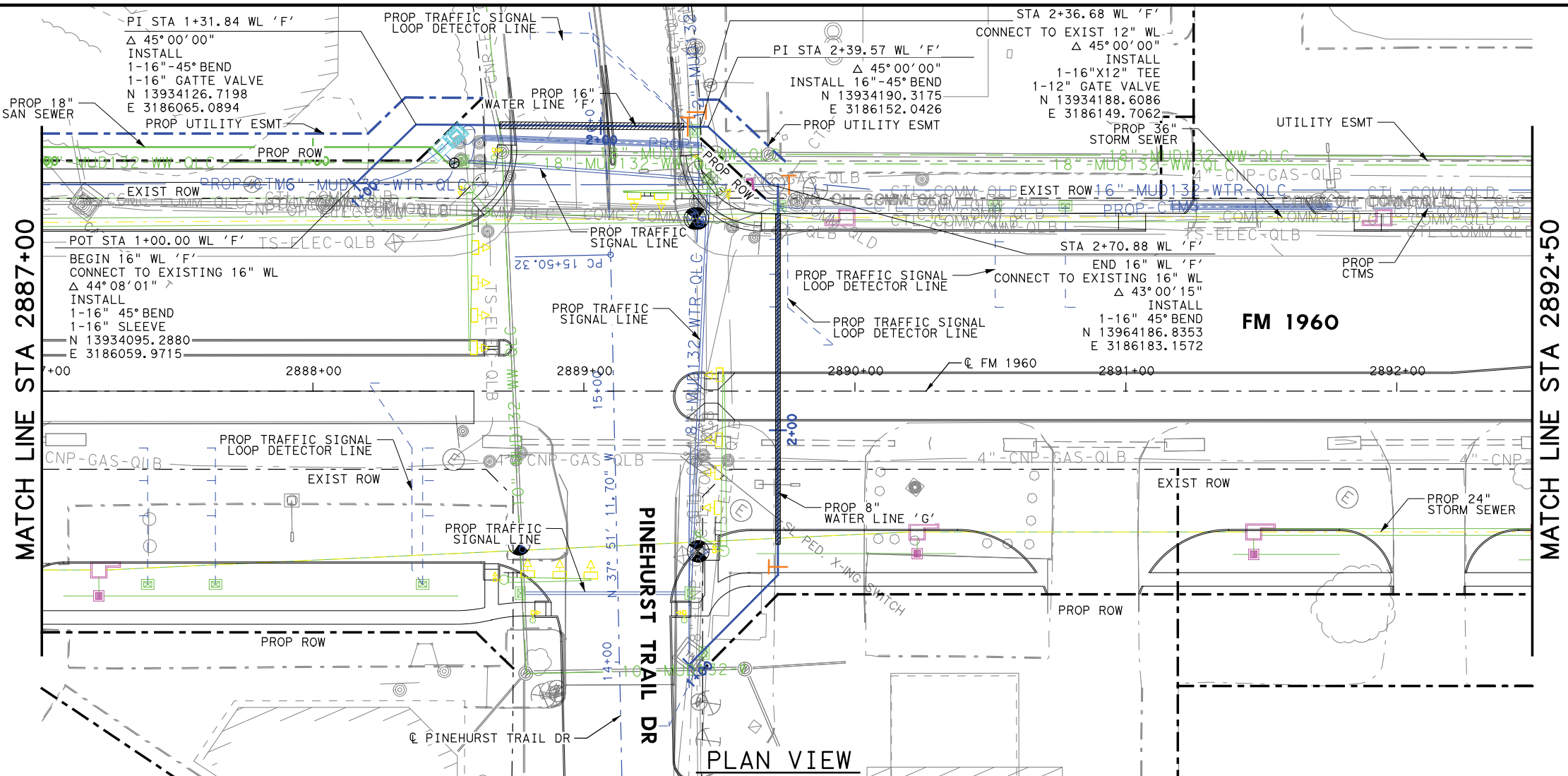
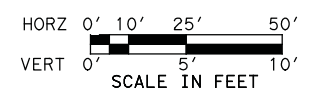
**FM 1960  
WATER LINE 'E'  
(2870+50 TO 2876+00)**

SHEET 2 OF 2

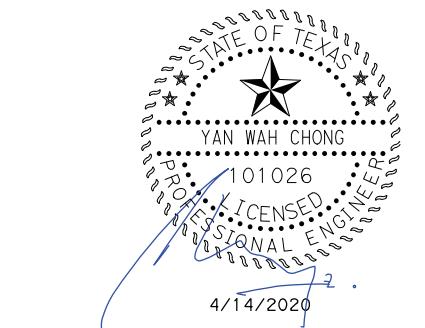
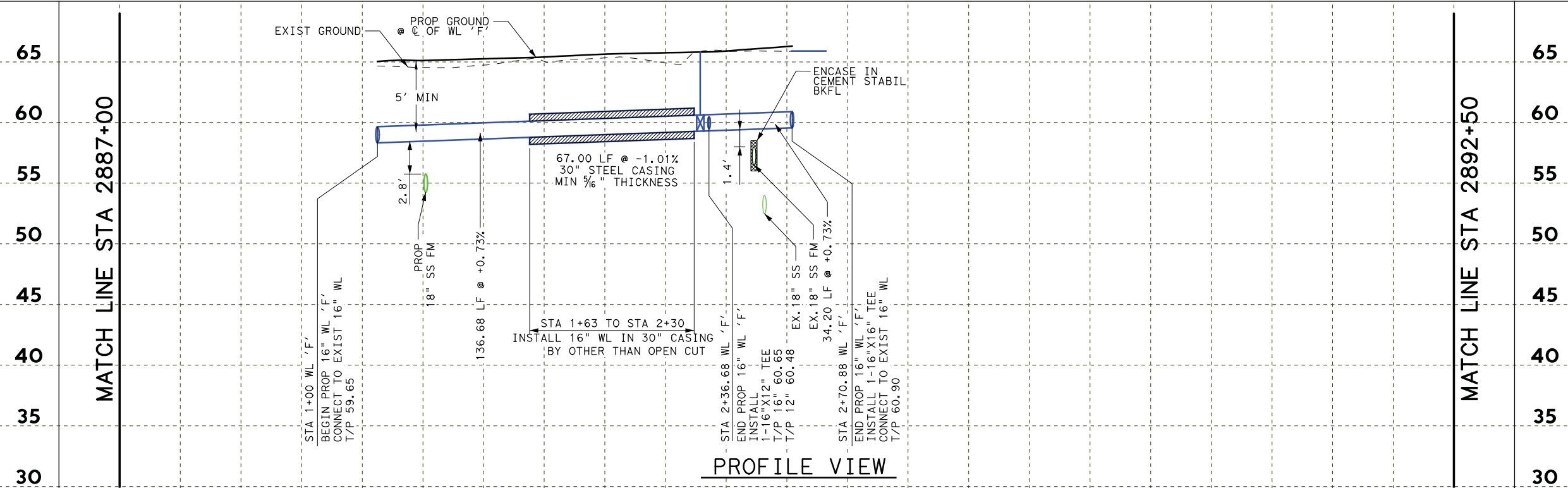
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	1205
1685	03	098	

FILENAME: FM1960E\_UTIL\_12.dgn

DRAWING DATE: 4/14/2020



- NOTES:**
1. CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
  2. REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
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**FM 1960  
WATER LINE 'F'  
(2887+00 TO 2892+50)**

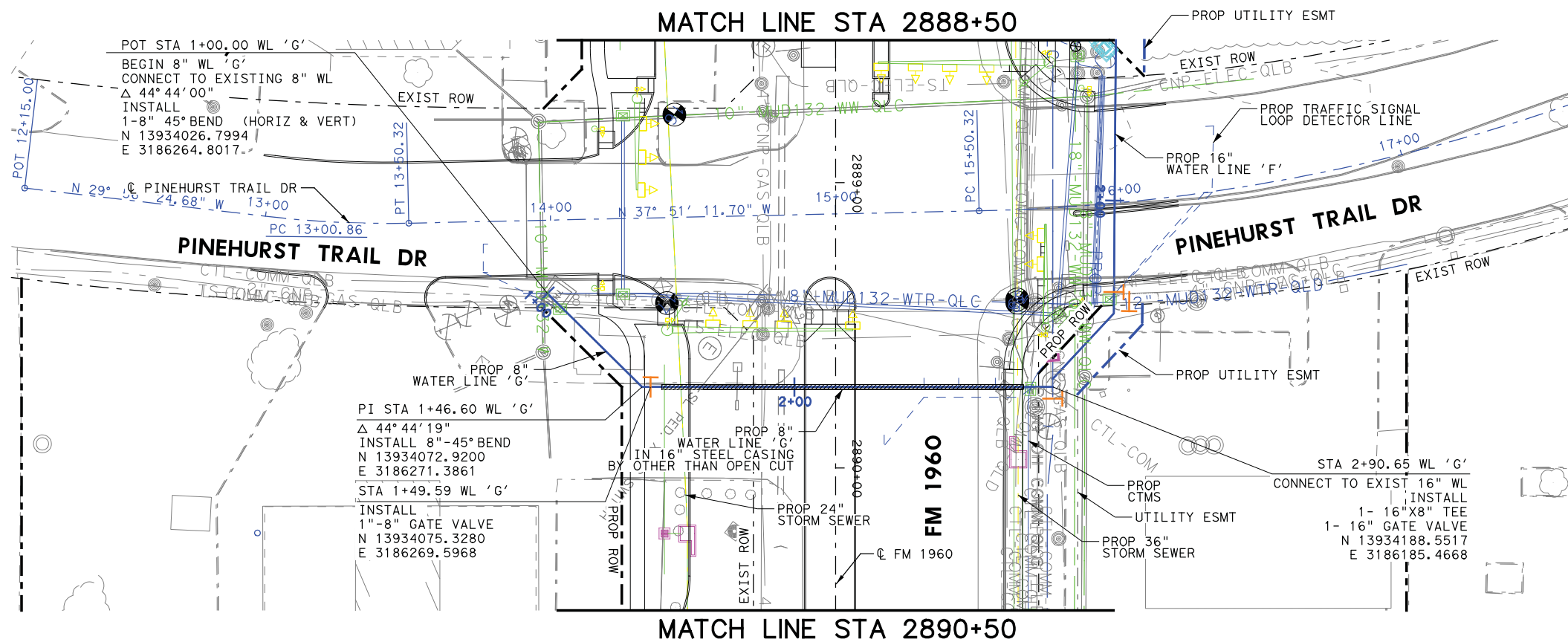
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1206
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_UTIL\_13.dgn

DRAWING DATE: 4/14/2020

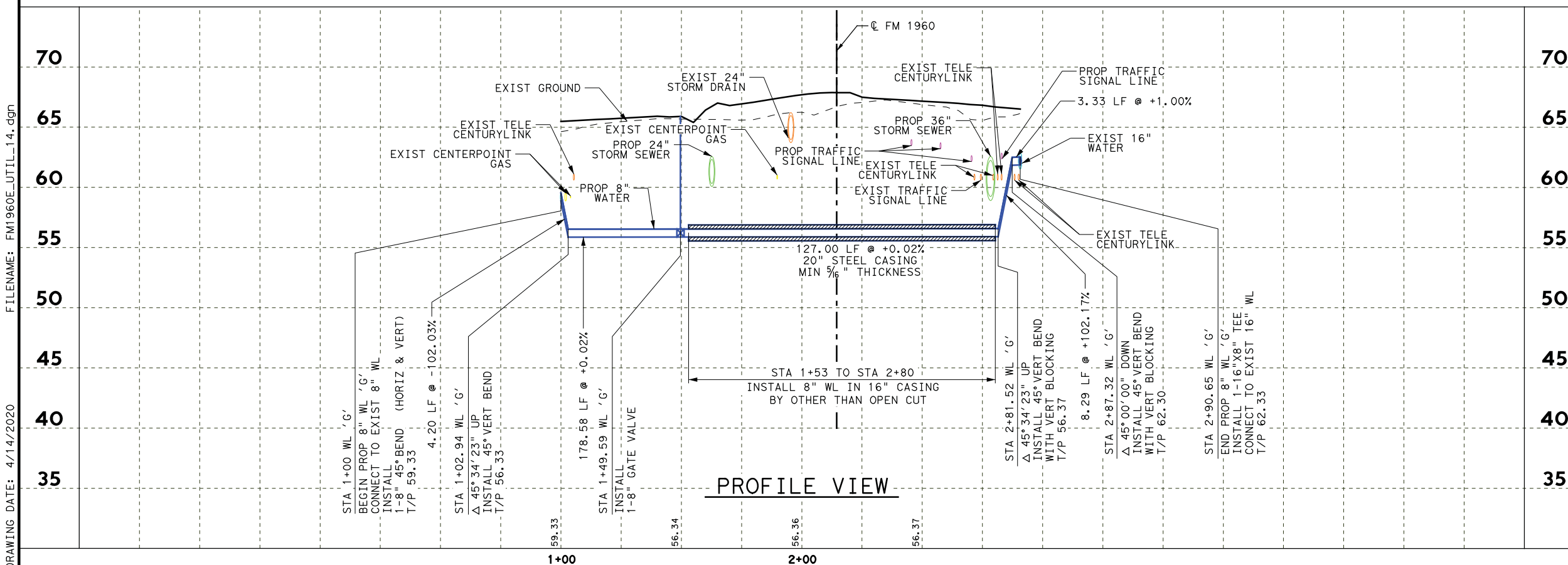


HORIZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

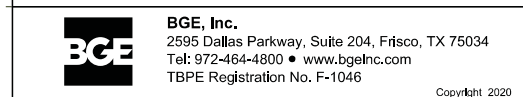


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**PLAN VIEW**



**PROFILE VIEW**



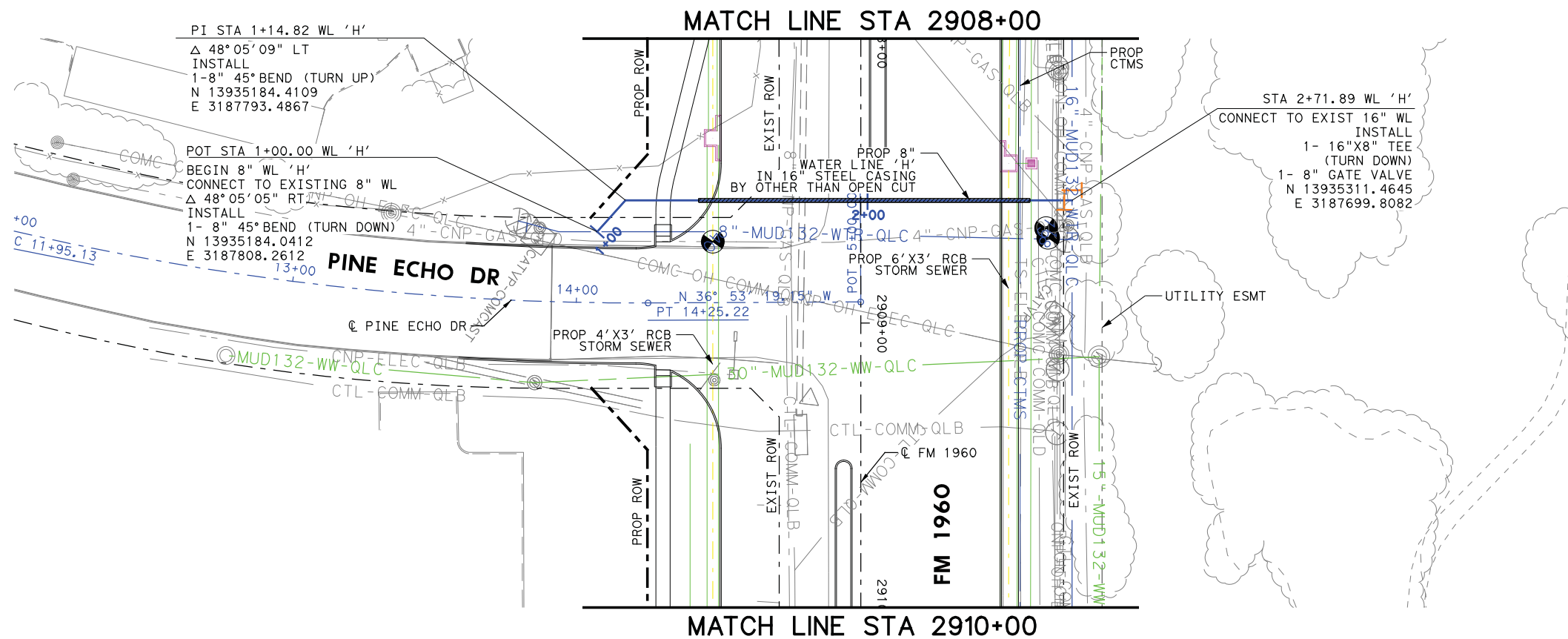
**FM 1960  
 WATER LINE 'G'  
 (2888+50 TO 2890+50)**

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1207
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_UTIL\_14.dgn  
 DRAWING DATE: 4/14/2020

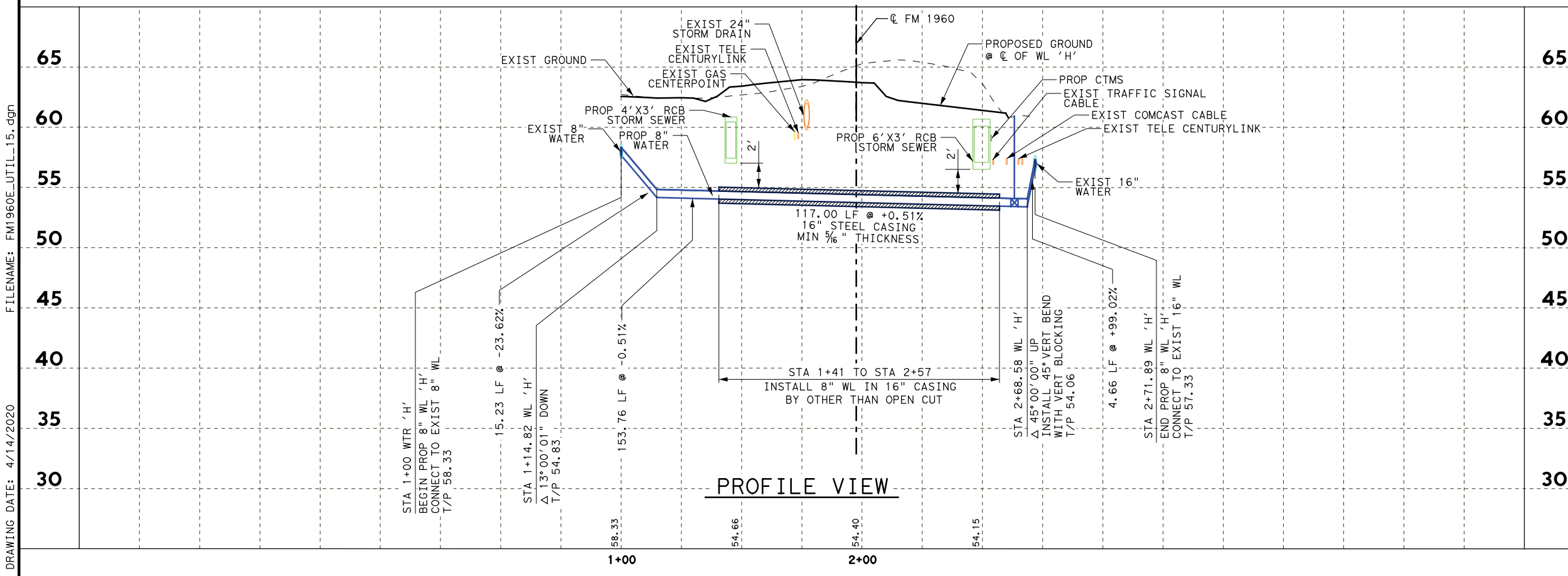


HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET



- NOTES:**
1. CONTRACTOR SHALL REMOVE & SALVAGE EXIST FIRE HYDRANT AND RETURN TO HARRIS COUNTY MUD132.
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**PLAN VIEW**



**PROFILE VIEW**



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**FM 1960  
 WATER LINE 'H'  
 (2908+00 TO 2910+00)**

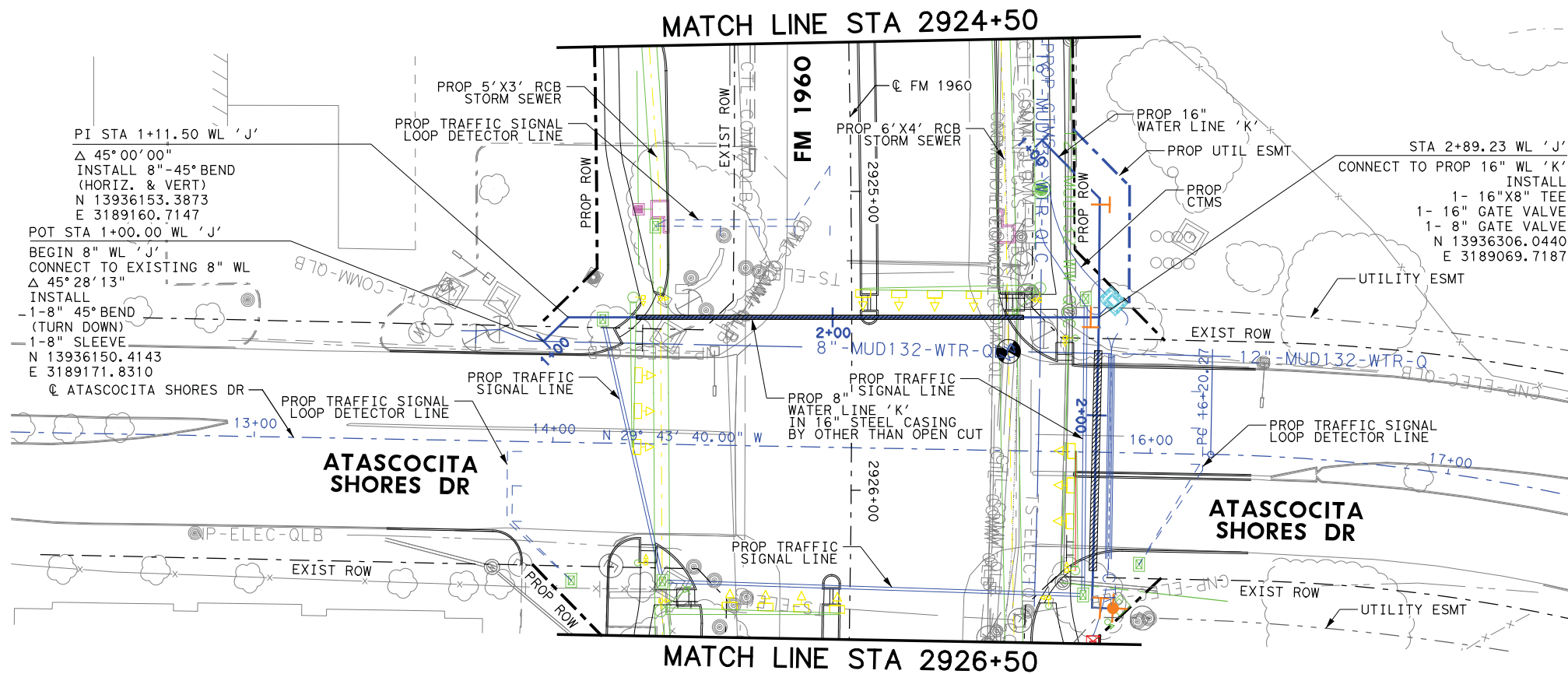
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1208
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_UTIL\_15.dgn  
 DRAWING DATE: 4/14/2020



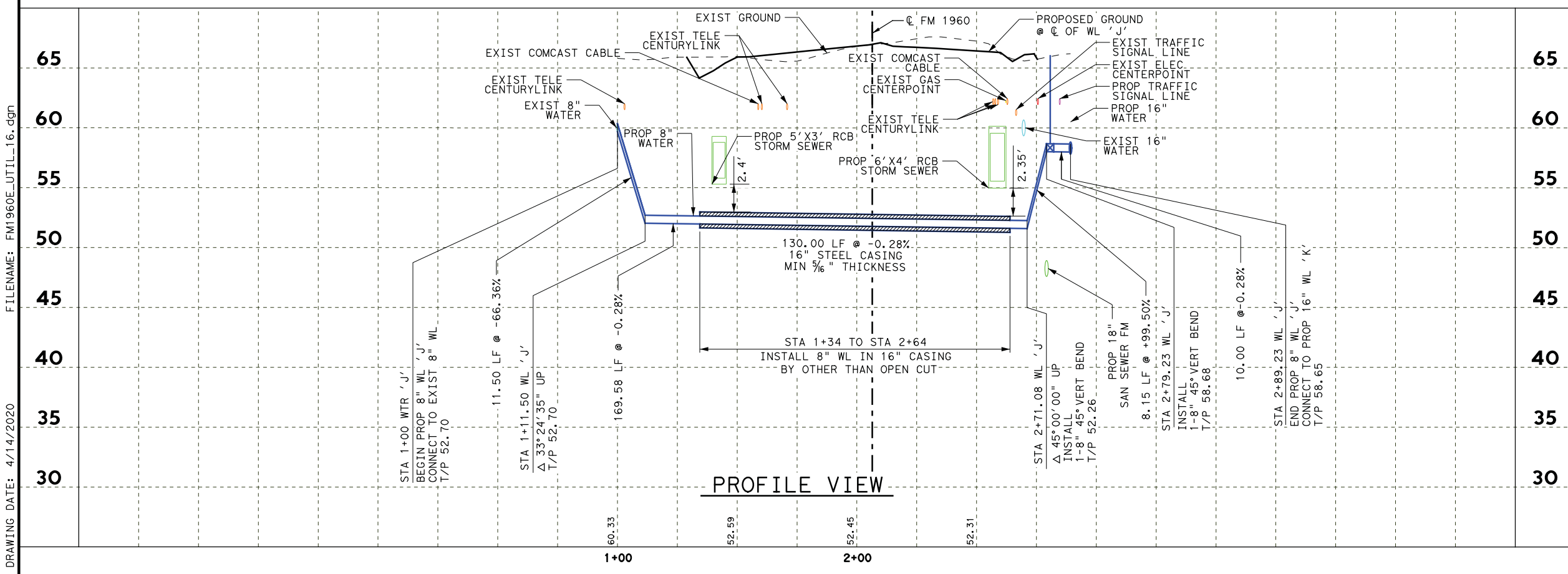


HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

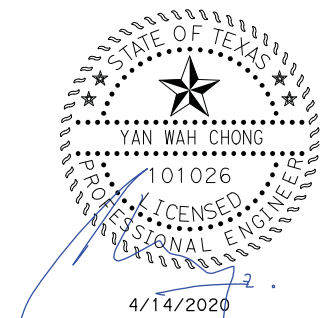


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**PLAN VIEW**



**PROFILE VIEW**



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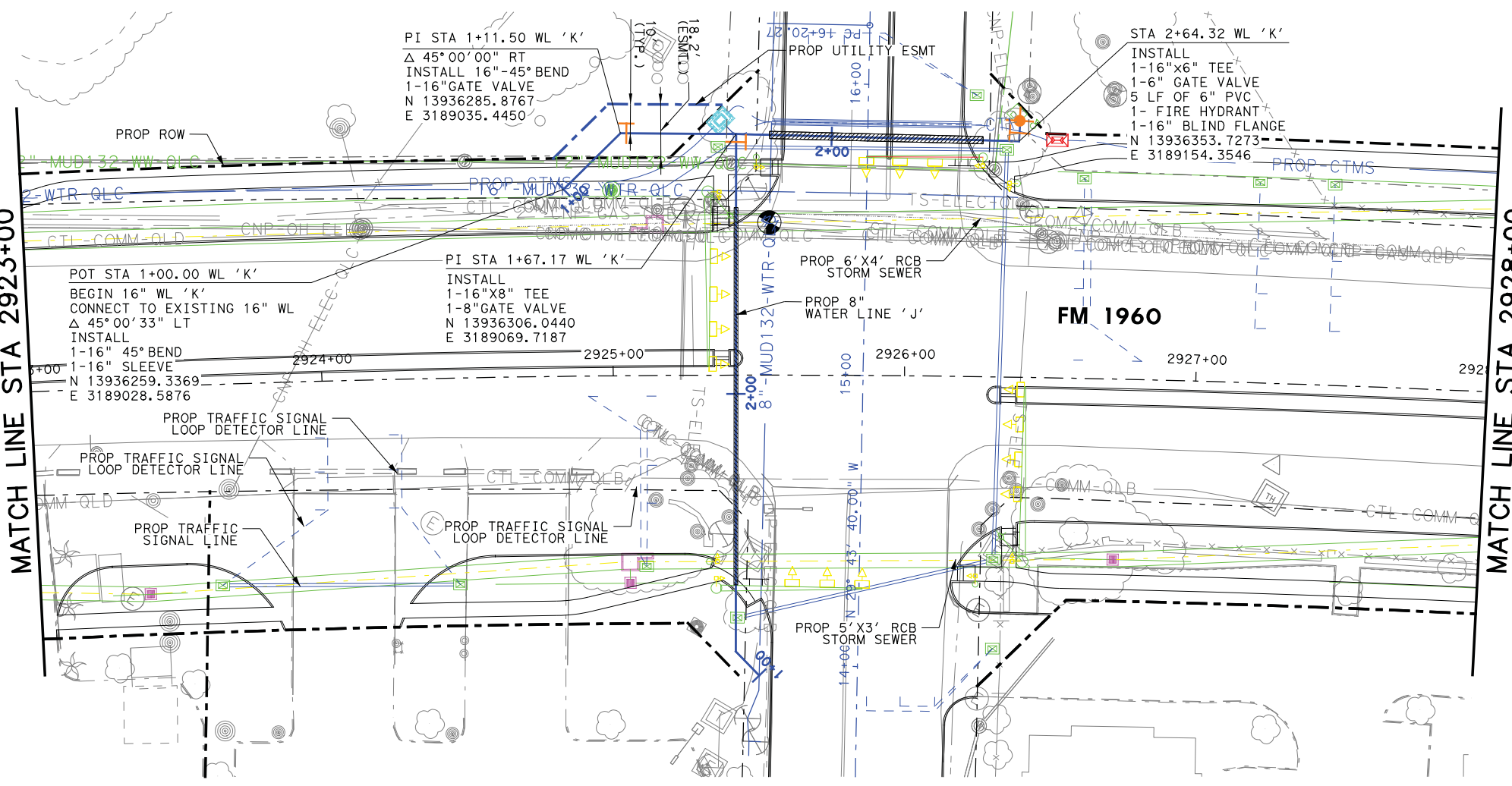
**FM 1960  
 WATER LINE 'J'  
 (2924+50 TO 2926+50)**

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	1209
1685	03	098	

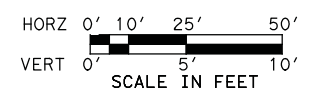
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 DRAWING DATE: 4/14/2020

MATCH LINE STA 2923+00

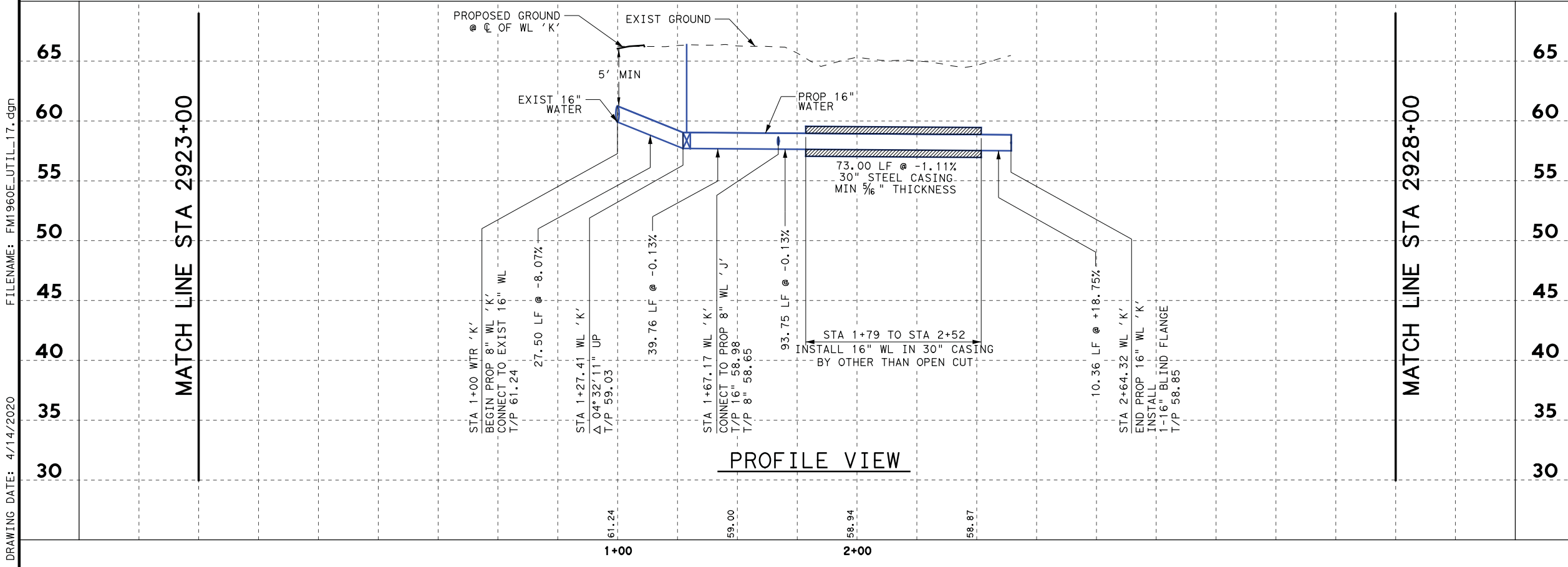
MATCH LINE STA 2928+00



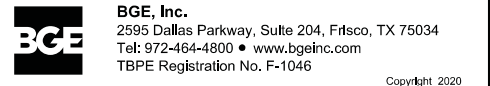
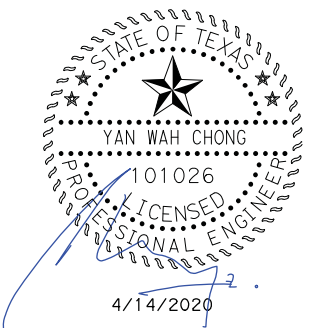
PLAN VIEW



- NOTES:
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  2. REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
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PROFILE VIEW



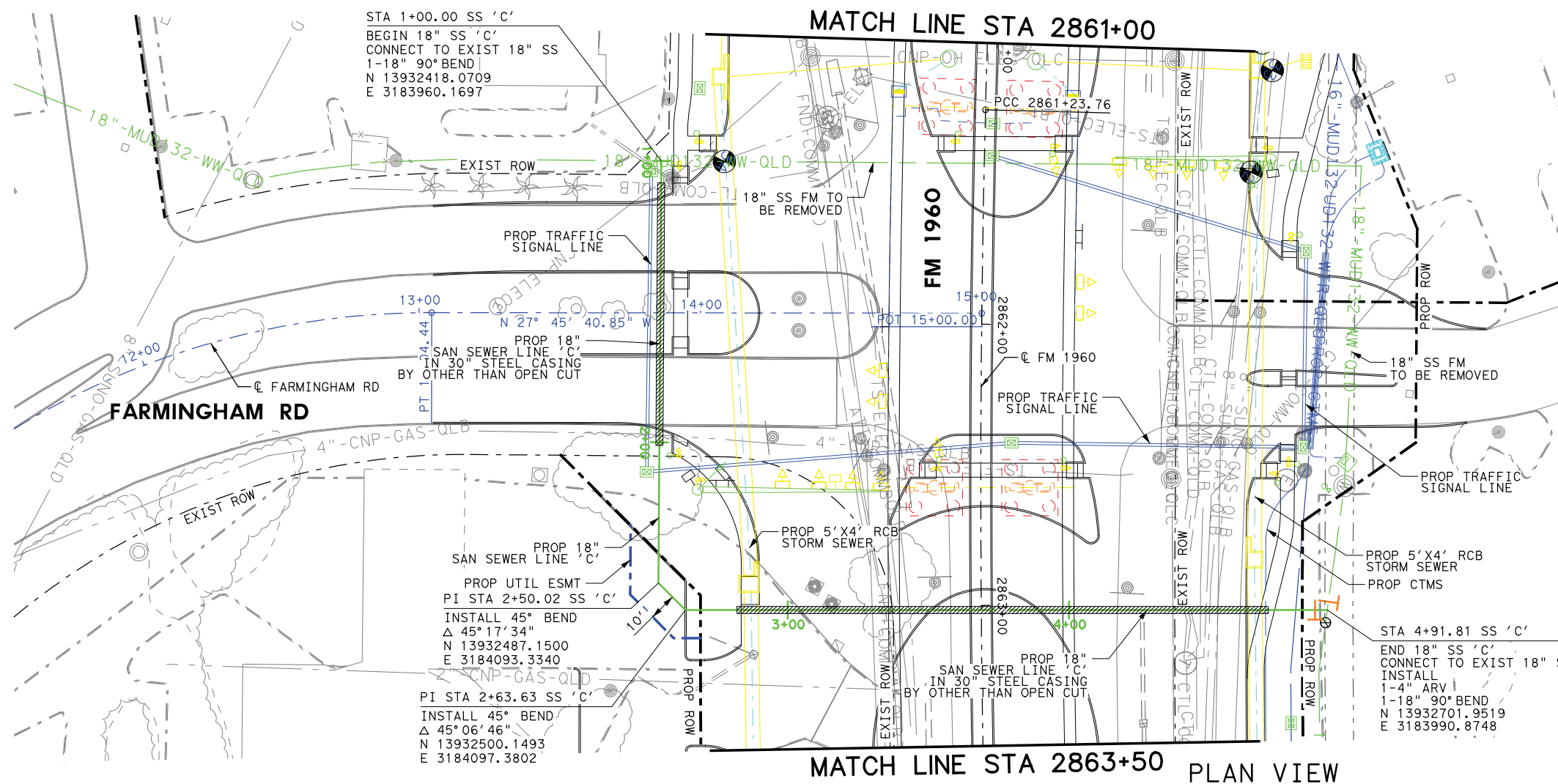
**FM 1960  
WATER LINE 'K'  
(2923+00 TO 2928+00)**

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1210
CONTROL	SECTION	JOB	
1685	03	098	

DRAWING DATE: 4/14/2020 FILENAME: FM1960E\_UTIL\_17.dgn

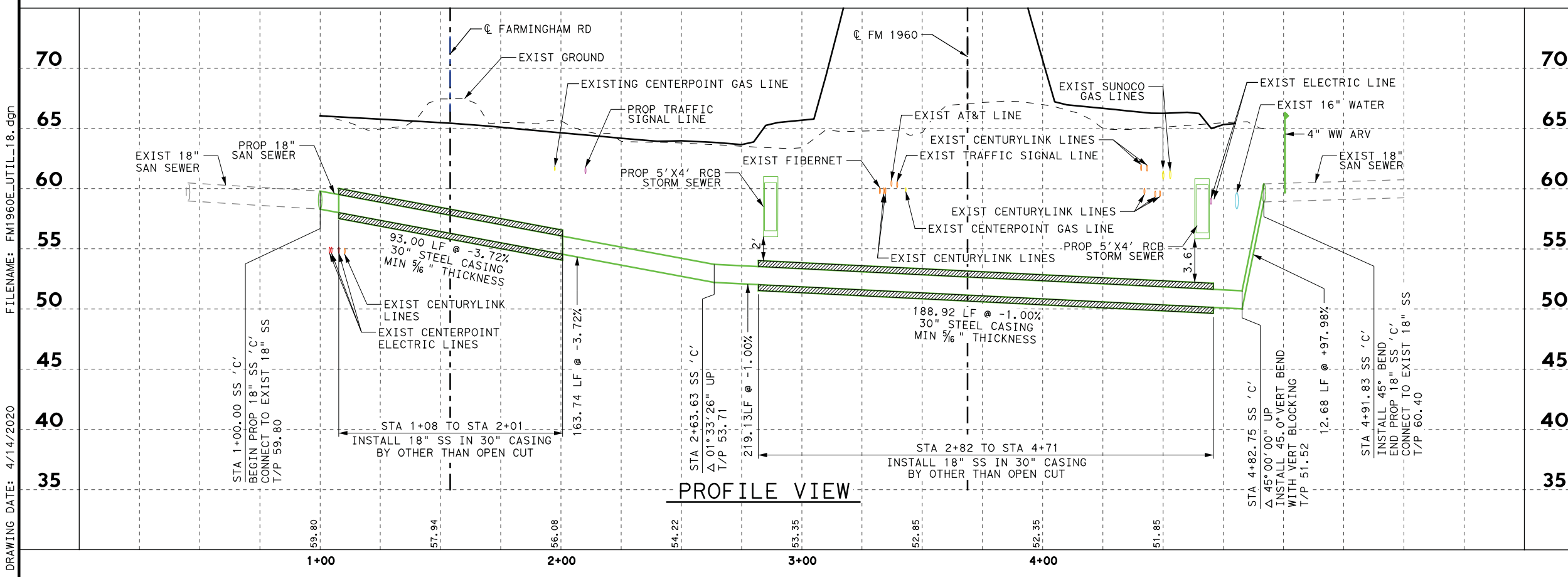


HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

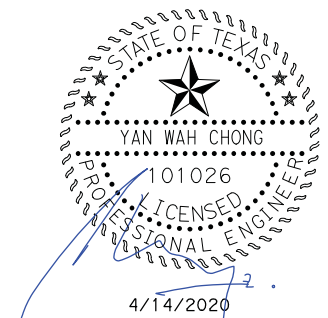


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  2. REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
  3. ALL SEWER LINES SHALL BE DUCTILE IRON THAT MEETS THE REQUIREMENTS OF ANSI A21.51 (AWWA C151) CLASS 53 UNLESS OTHERWISE INDICATED.
  4. ACCESS TO BUSINESSES SHALL BE MAINTAINED AT ALL TIMES. IF A BUSINESS HAS MULTIPLE DRIVEWAYS, ONE MUST REMAIN OPEN AT ALL TIMES. IF A BUSINESS ONLY HAS ONE DRIVEWAY, THE PROPOSED UTILITY SHALL BE INSTALLED BY TRENCHLESS METHODS.

MATCH LINE STA 2863+50 PLAN VIEW



PROFILE VIEW



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**FM 1960  
 SANITARY SEWER LINE 'C'  
 (2861+00 TO 2863+50)**

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	1211
1685	03	098	

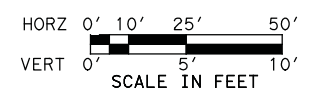
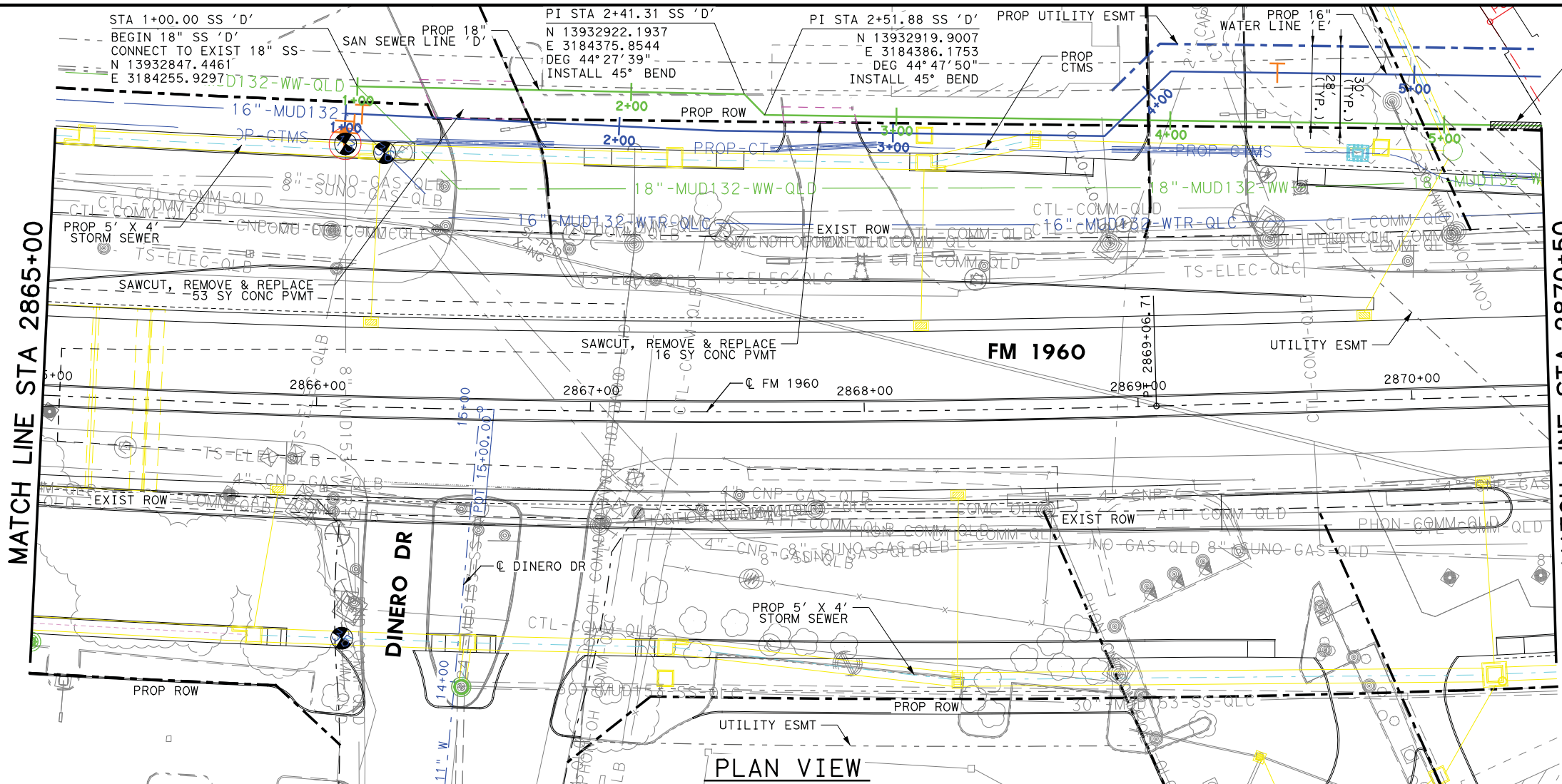
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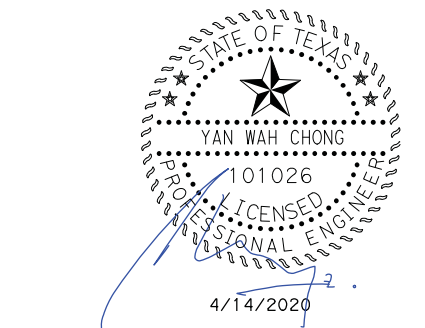
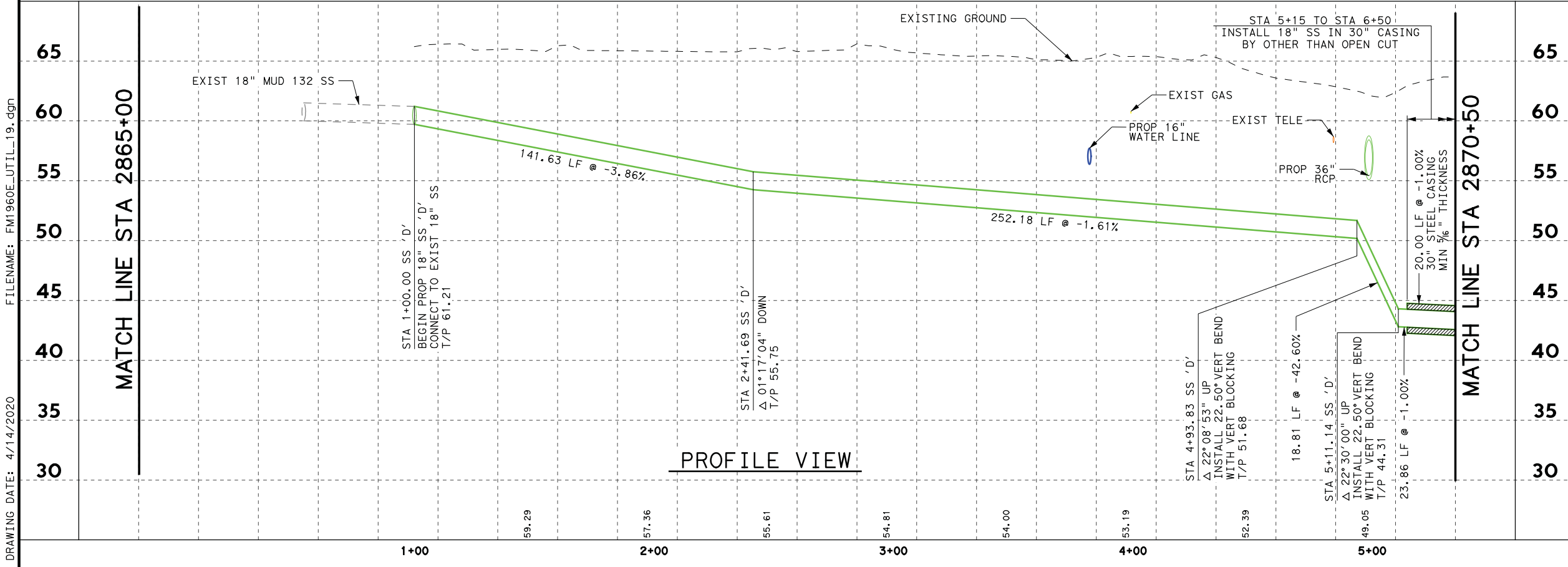
DRAWING DATE: 4/14/2020

MATCH LINE STA 2865+00

MATCH LINE STA 2870+50



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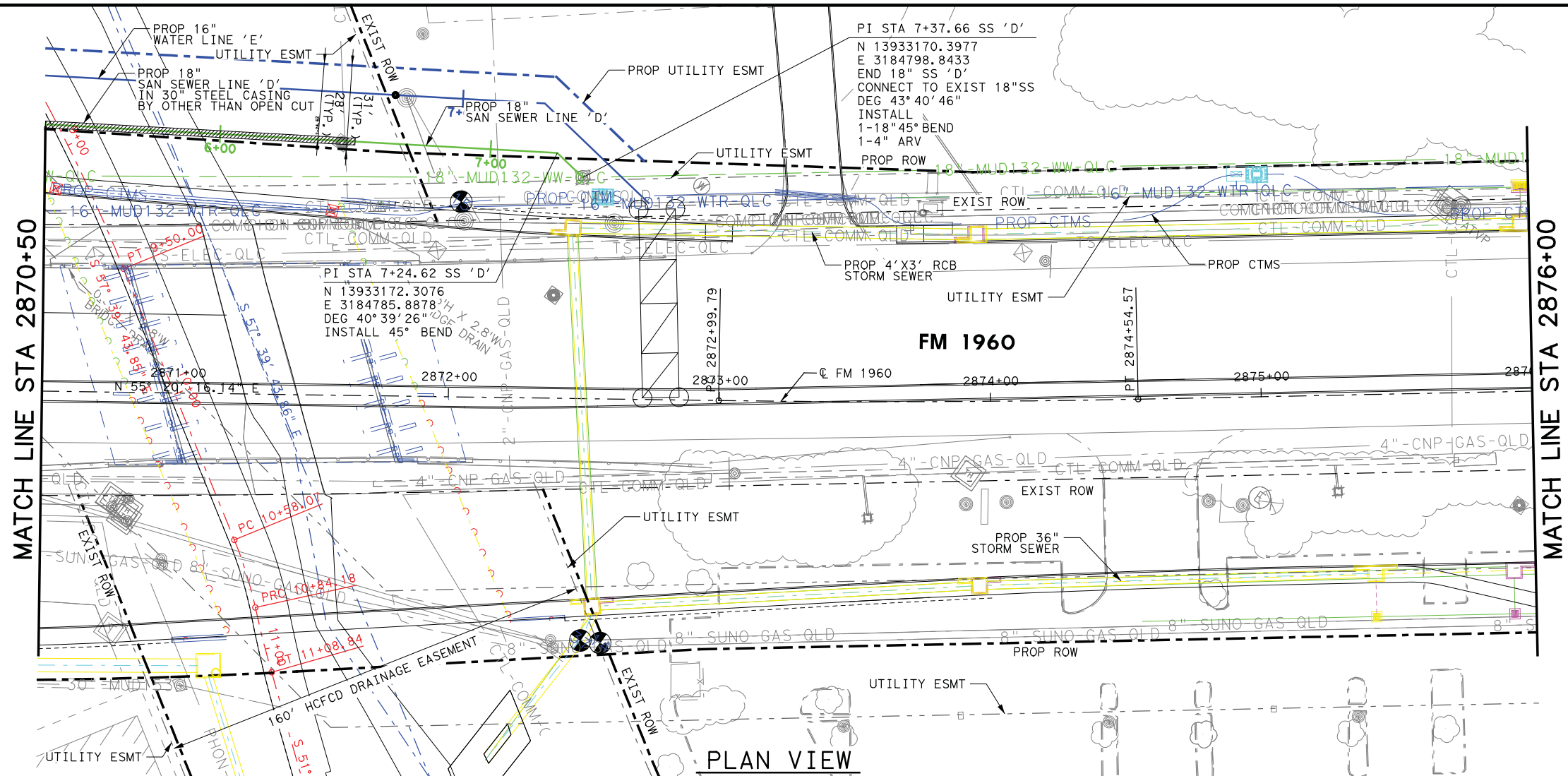
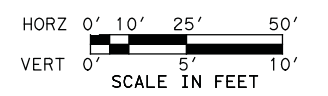
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**FM 1960  
SANITARY SEWER LINE 'D'  
(2865+00 TO 2870+50)**

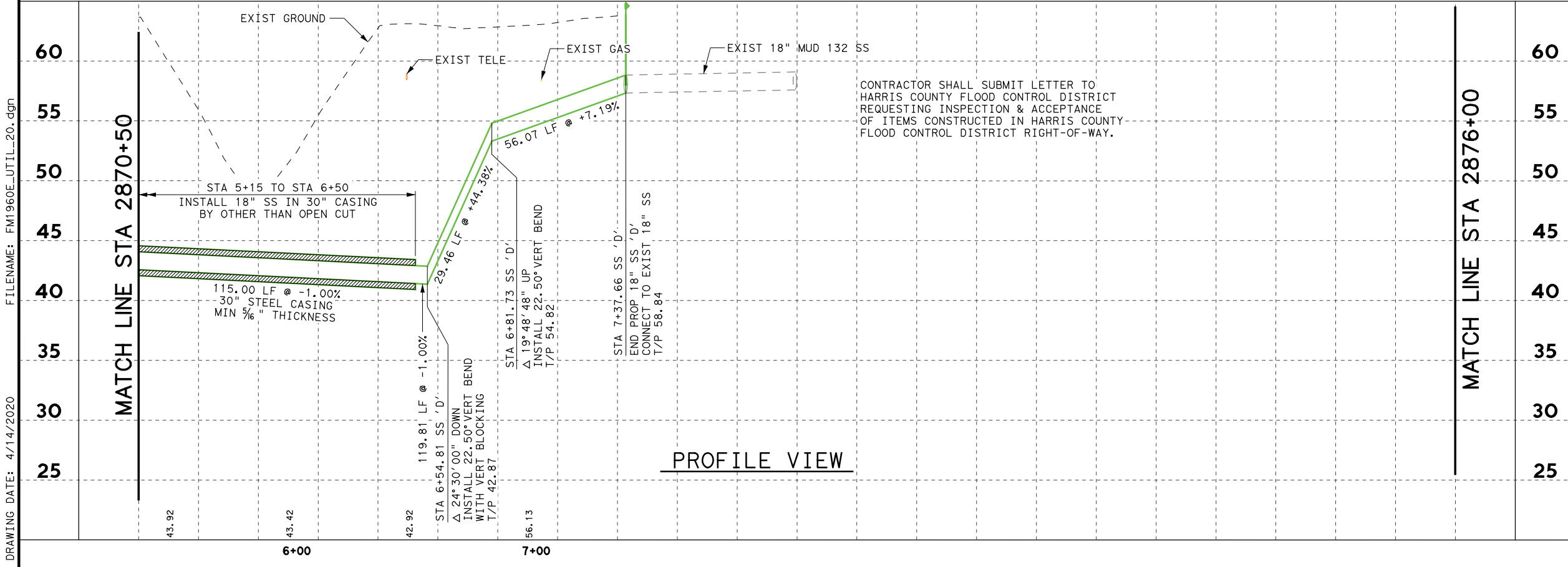
SHEET 1 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	1212
1685	03	098	



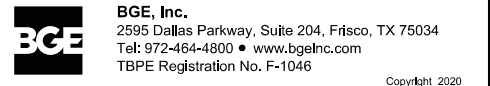
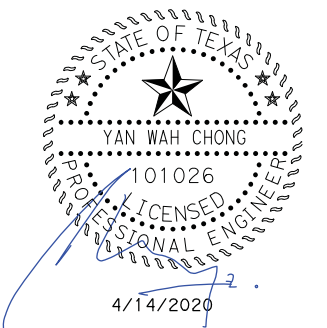
- NOTES:**
1. CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO PERFORMING THE WORK. EXIST UTILITY ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE AND HAVE NOT BEEN FIELD VERIFIED.
  2. REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
  3. ALL SEWER LINES SHALL BE DUCTILE IRON THAT MEETS THE REQUIREMENTS OF ANSI A21.51 (AWWA C151) CLASS 53 UNLESS OTHERWISE INDICATED.
  4. ACCESS TO BUSINESSES SHALL BE MAINTAINED AT ALL TIMES. IF A BUSINESS HAS MULTIPLE DRIVEWAYS, ONE MUST REMAIN OPEN AT ALL TIMES. IF A BUSINESS ONLY HAS ONE DRIVEWAY, THE PROPOSED UTILITY SHALL BE INSTALLED BY TRENCHLESS METHODS.

PLAN VIEW



PROFILE VIEW

CONTRACTOR SHALL SUBMIT LETTER TO HARRIS COUNTY FLOOD CONTROL DISTRICT REQUESTING INSPECTION & ACCEPTANCE OF ITEMS CONSTRUCTED IN HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY.



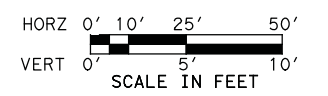
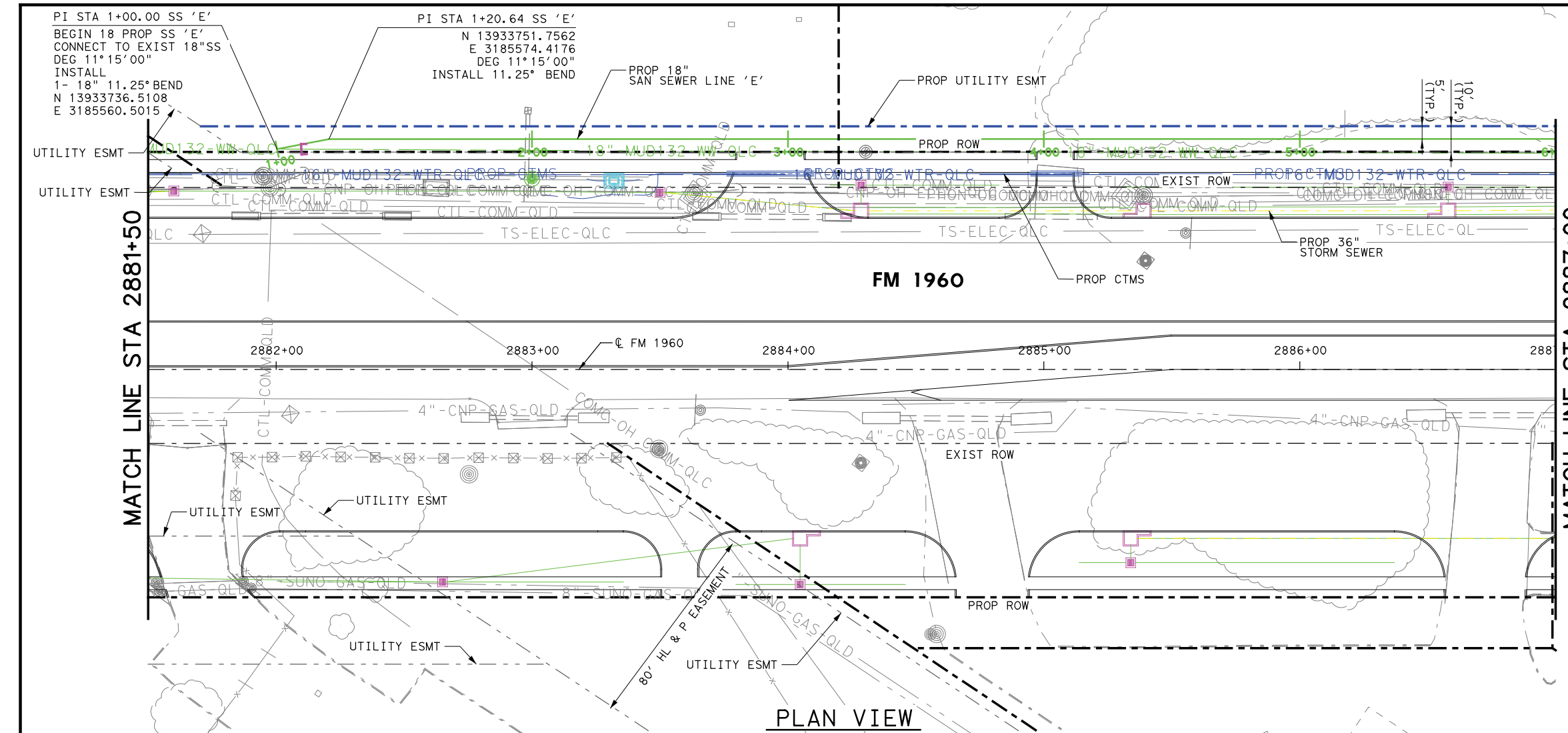
**FM 1960  
SANITARY SEWER LINE 'D'  
(2870+50 TO 2876+00)**

SHEET 2 OF 2

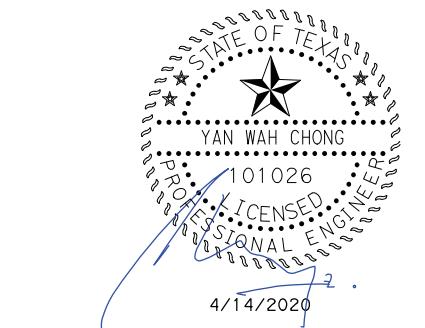
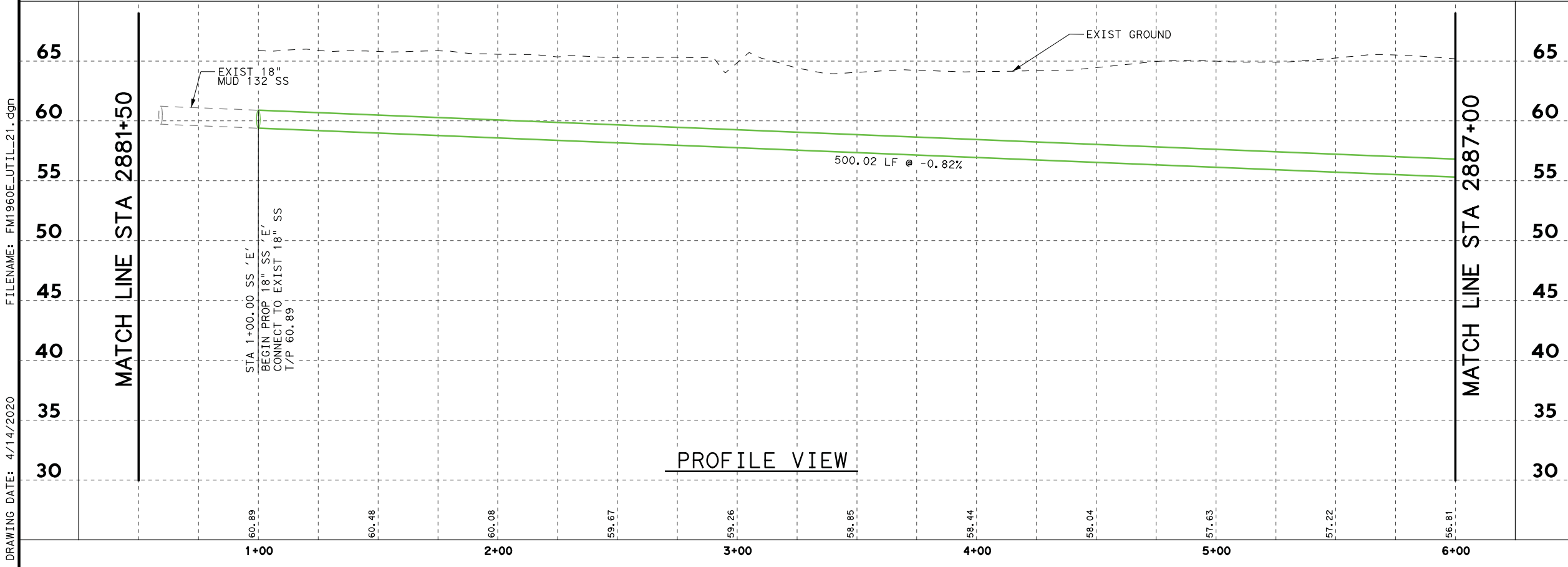
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	
1685	03	098	1213

FILENAME: FM1960E\_UTIL\_20.dgn

DRAWING DATE: 4/14/2020



- NOTES:**
1. CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO PERFORMING THE WORK. EXIST UTILITY ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE AND HAVE NOT BEEN FIELD VERIFIED.
  2. REFER TO HORIZONTAL AND VERTICAL CONTROL SHEETS FOR PROJECT CONTROLS.
  3. ALL SEWER LINES SHALL BE DUCTILE IRON THAT MEETS THE REQUIREMENTS OF ANSI A21.51 (AWWA C151) CLASS 53 UNLESS OTHERWISE INDICATED.
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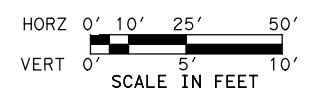
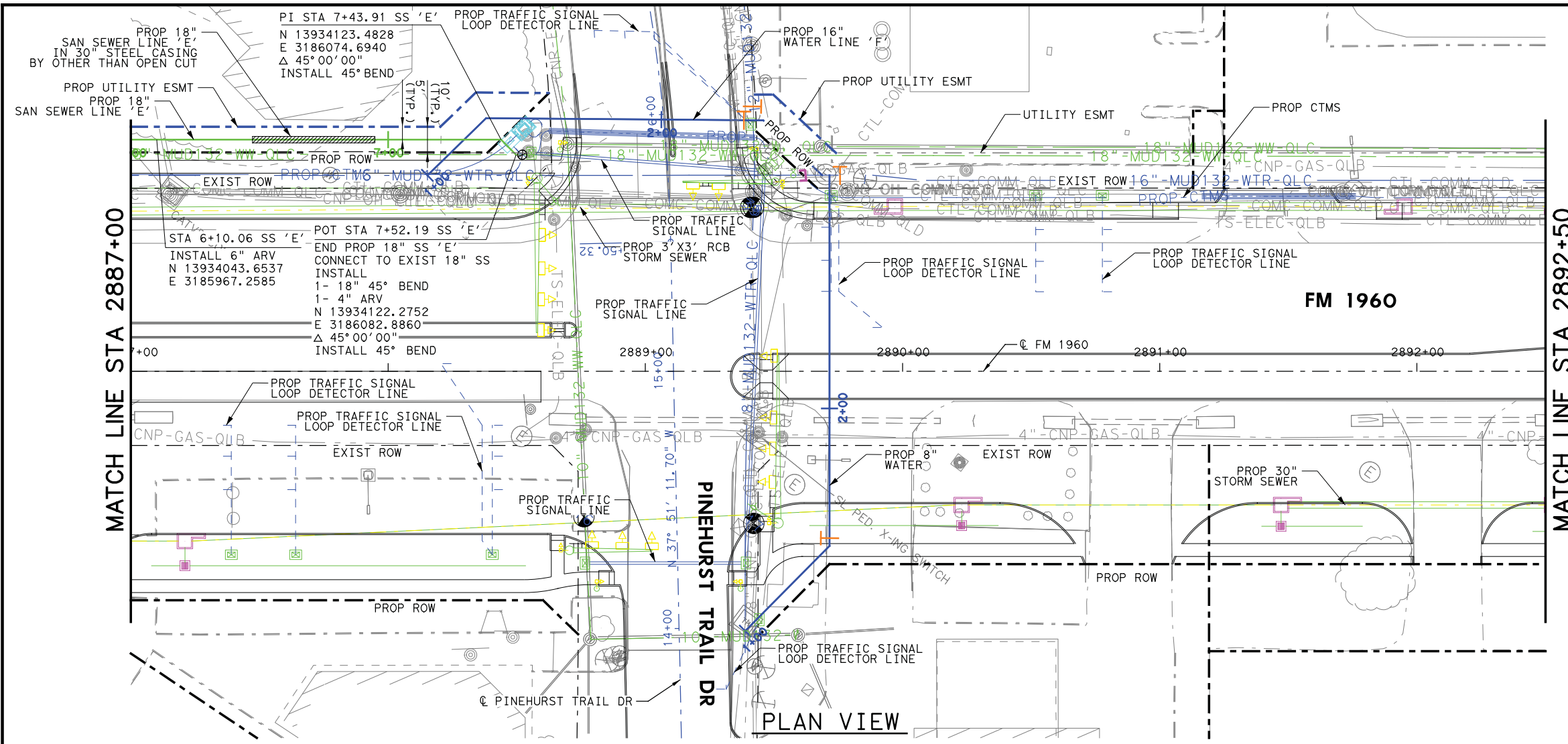
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**FM 1960  
SANITARY SEWER LINE 'E'  
(2881+50 TO 2887+00)**

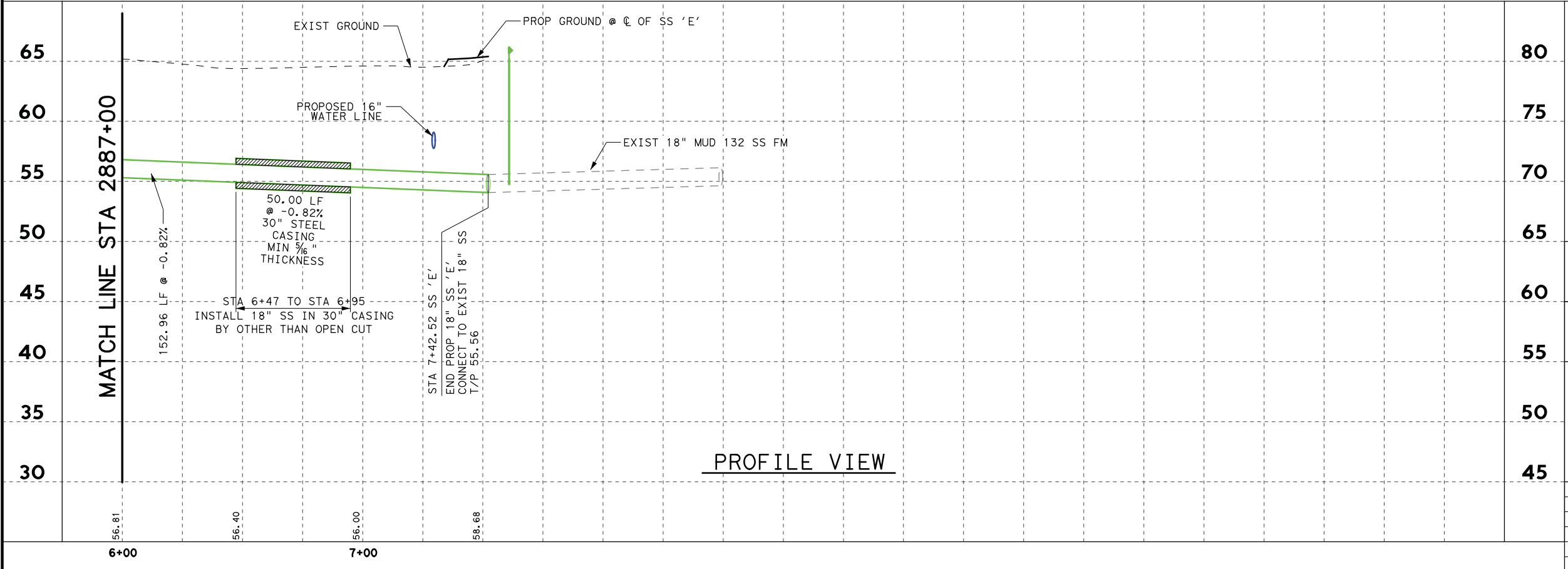
SHEET 1 OF 2

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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1214
CONTROL	SECTION	JOB	
1685	03	098	

DRAWING DATE: 4/14/2020 FILENAME: FM1960E\_UTIL\_21.dgn



- NOTES:**
1. CONTRACTOR SHALL FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO PERFORMING THE WORK. EXIST UTILITY ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE AND HAVE NOT BEEN FIELD VERIFIED.
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4/14/2020

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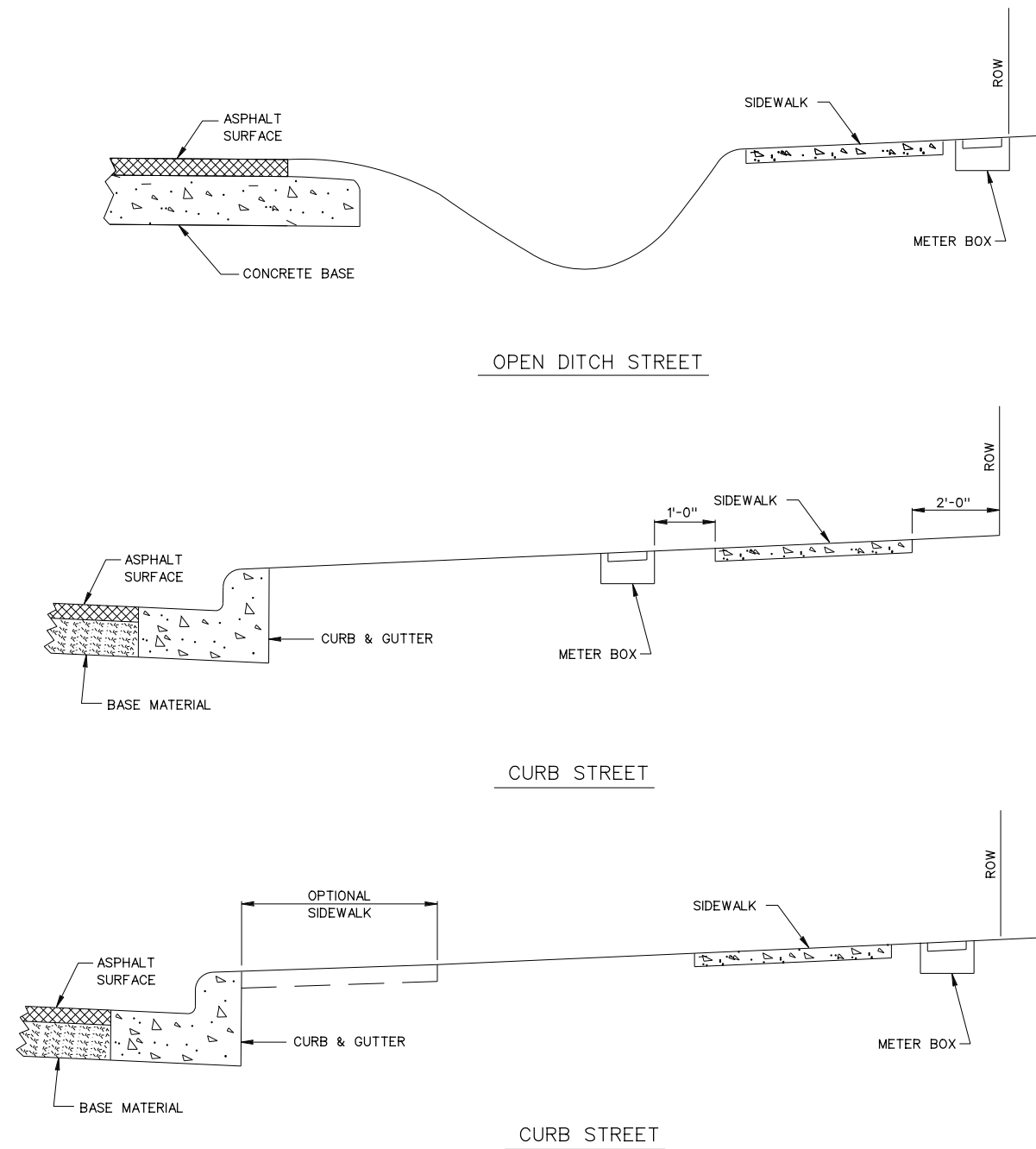
**FM 1960**  
**SANITARY SEWER LINE 'E'**  
**(2887+00 TO 2892+50)**

SHEET 2 OF 2		
FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. (SEE TITLE SHEET)	HIGHWAY NO. FM 1960
STATE TEXAS	DISTRICT HOU	COUNTY HARRIS
CONTROL 1685	SECTION 03	JOB 098
		<b>1215</b>

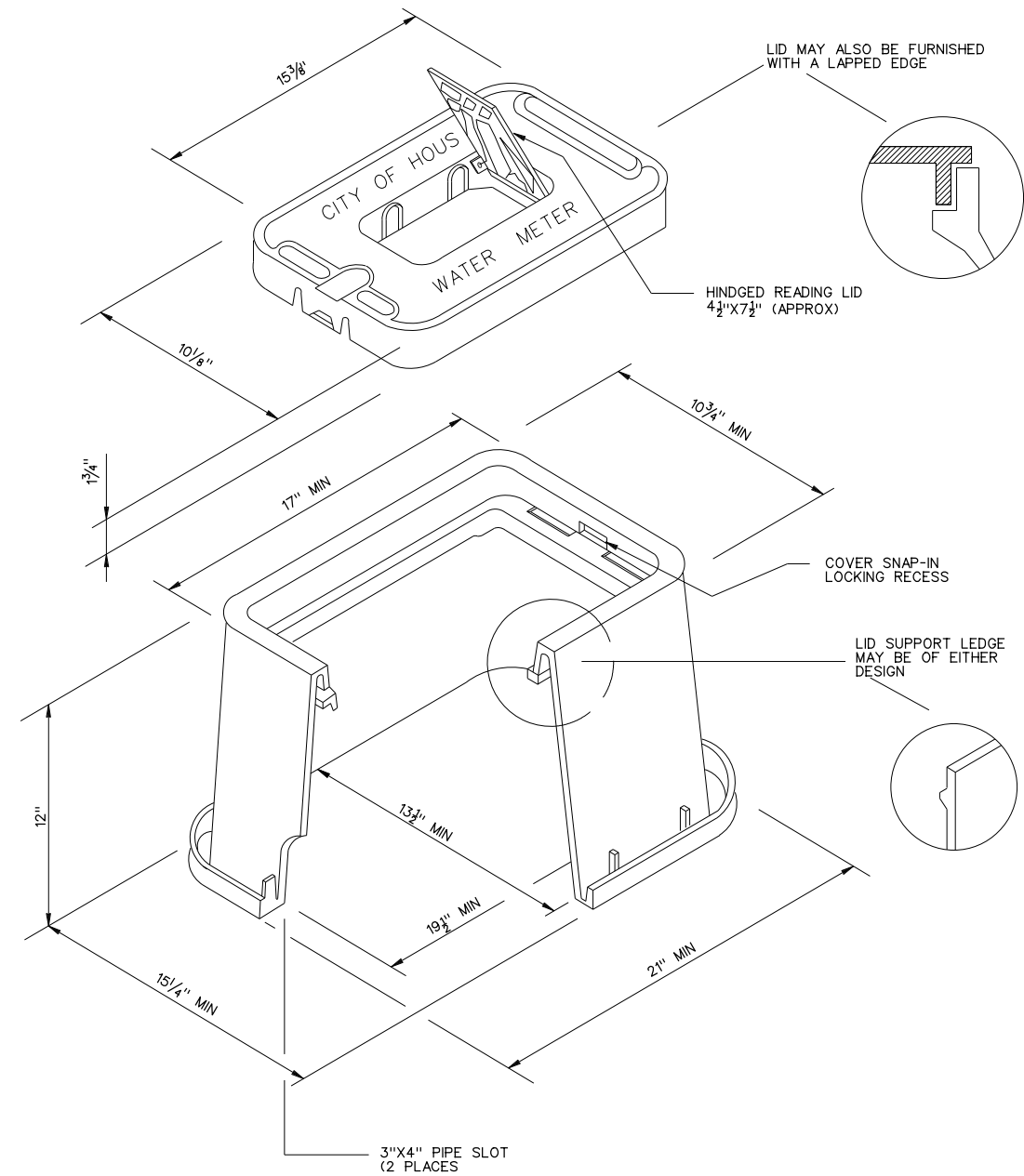
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 DRAWING DATE: 4/14/2020

FILENAME: FM1960E\_Details\_01.dgn

DRAWING DATE: 4/14/2020



LOCATION OF WATER METER BOX FOR 2" DIAMETER AND LESS



STANDARD PLASTIC METER BOX FOR 5/8" AND 1" METERS

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**FM 1960**  
**WATER DETAILS**

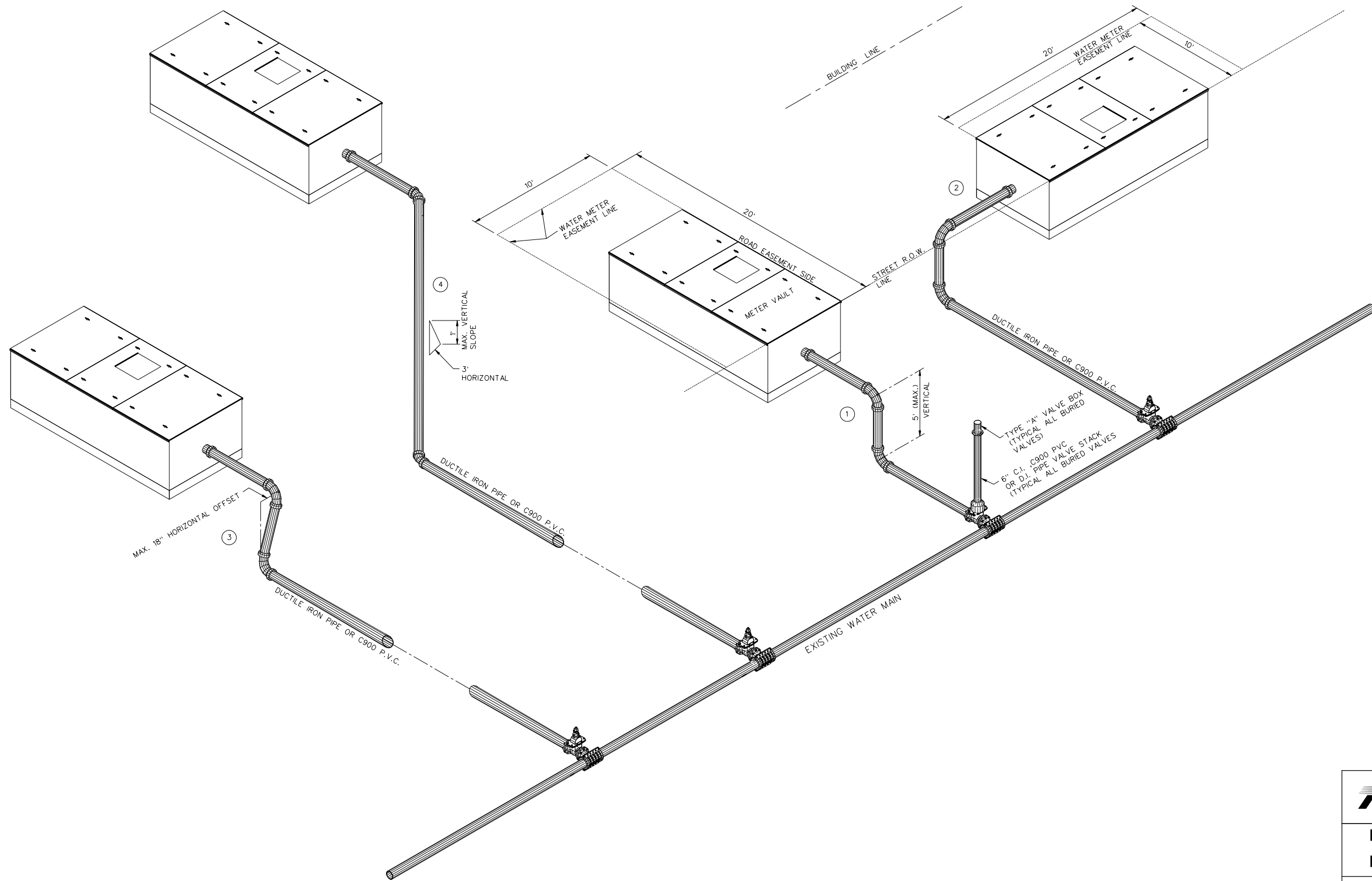
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FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1216
CONTROL	SECTION	JOB	
1685	03	098	



FILENAME: FM1960E\_Details\_02.dgn

DRAWING DATE: 4/14/2020



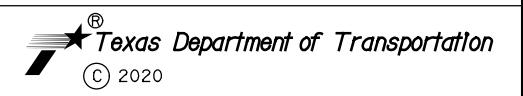
**NOTE:**  
 1. IF WATER METER EASEMENT IS NOT ADJACENT TO A STREET R.O.W. (I.E. NEXT TO A WATER LINE EASEMENT), THE WATER METER MUST BE LOCATED IN THE MIDDLE OF THE 10' X 20' WATER METER EASEMENT.

- PVC RESTRAINED JOINTS**
1. JCM "SUR-GRIP", JCM 610 FITTING RESTRAINER, JCM 620 BELL-JOINT RESTRAINER
  2. EBBA IRON, INC. SERIES 500 OR SERIES 1500
  3. APPROVED EQUAL

- DUCTILE IRON PIPE RESTRAINED JOINTS**
1. SUPER-LOCK BY CLOW CORPORATION
  2. T R FLEX OR FIELD-LOK BY U.S. PIPE & FOUNDRY COMPANY
  3. APPROVED EQUAL

TYPICAL SERVICE LINE AND RISER PIPING TO METER VAULTS (NOT TO SCALE)

- USE RESTRAINED JOINTS FOR ALL CONNECTIONS
- ① VERTICAL LEG USING TWO 90° BENDS
  - ② ROTATED VERTICAL LEG USING TWO 90° BENDS
  - ③ VERTICAL RISE USING OFFSET BEND
  - ④ INCLINED LEG USING TWO 45° BENDS

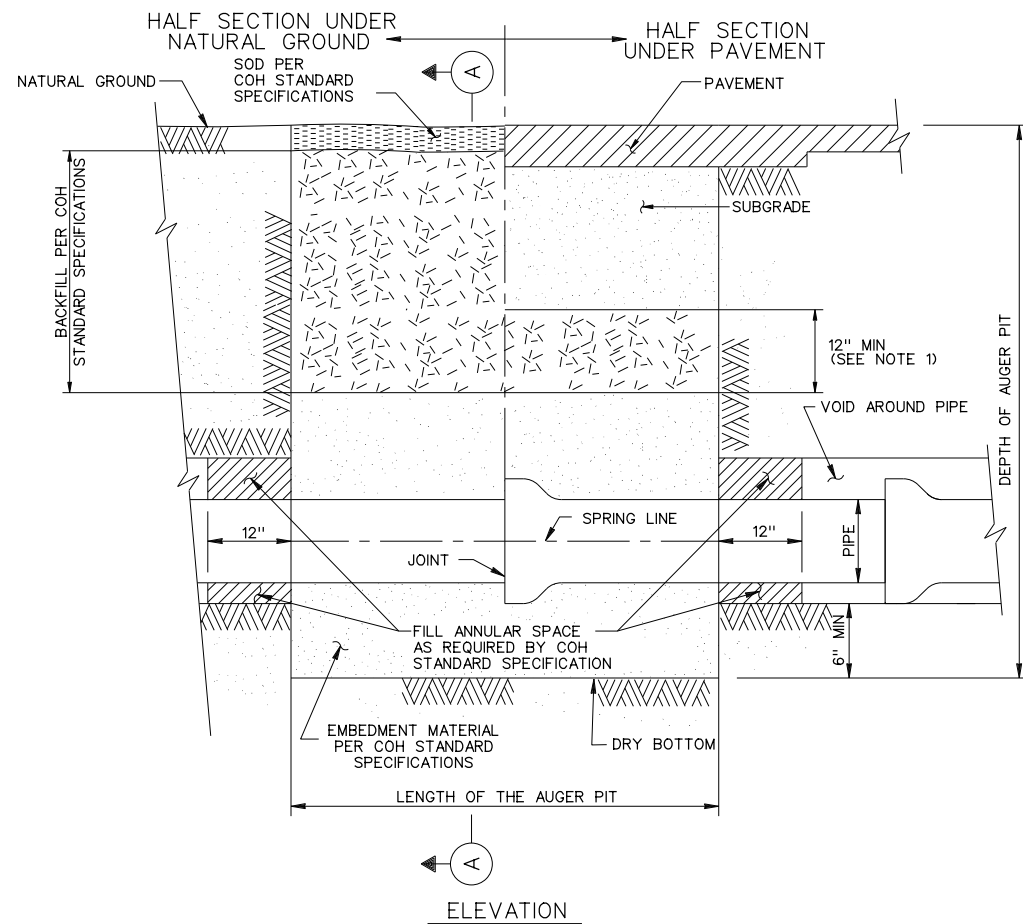


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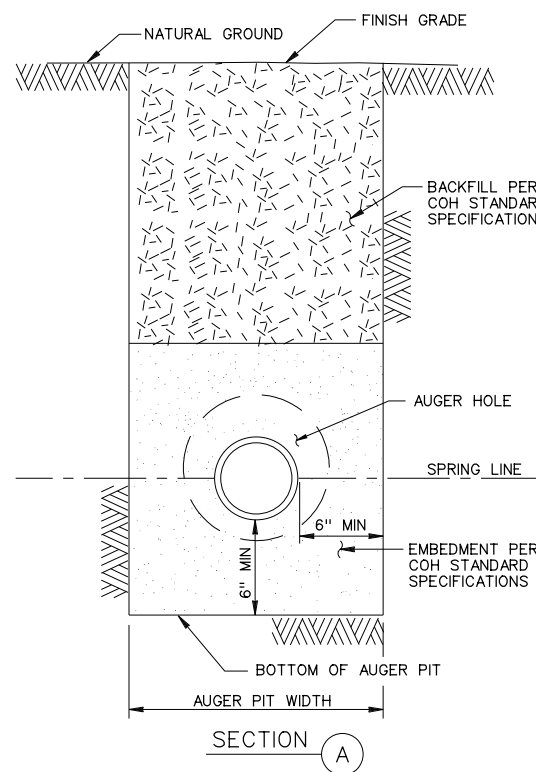
<b>FM 1960</b>			
<b>WATER DETAILS</b>			
SHEET 2 OF 6			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1217
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_Details\_03.dgn

DRAWING DATE: 4/14/2020



ELEVATION

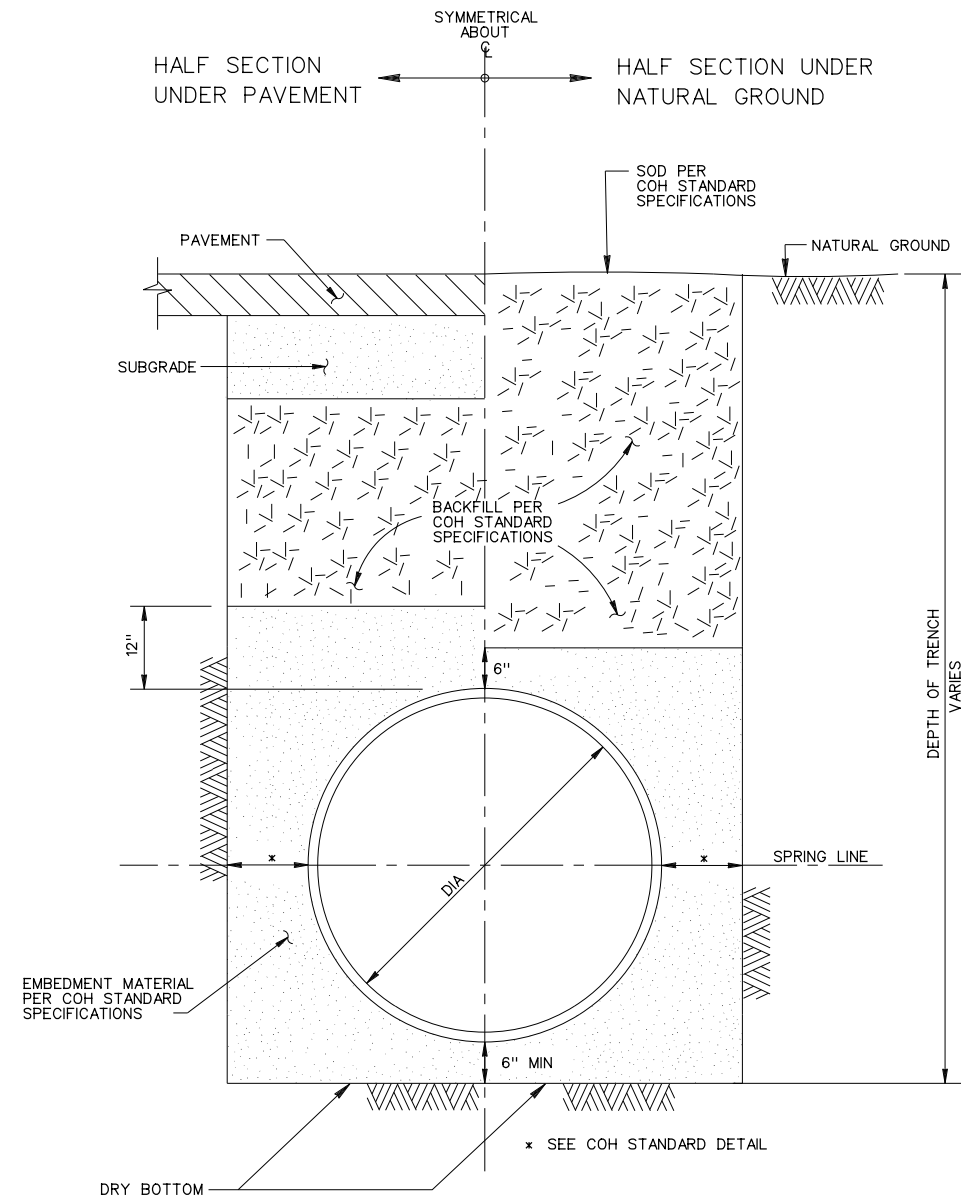


SECTION A

WATER DISTRIBUTION MAIN  
BEDDING AND BACKFILL  
AUGER PIT AND AUGER HOLE

NOTE:

1. SELECT BACKFILL FOR RIGID PAVEMENT;  
FLEXIBLE BASE MATERIAL FOR ASPHALT  
PAVEMENT.



WATER DISTRIBUTION MAIN  
BEDDING AND BACKFILL FOR  
OPEN CUT TRENCHES

FM 1960  
WATER DETAILS

SHEET 3 OF 6

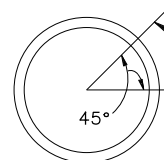
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
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CONTROL	SECTION	JOB	
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DRAWING DATE: 4/14/2020

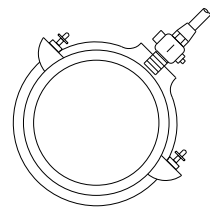
PIPE TAPPING SCHEDULE				
WATER MAIN TYPE AND DIAMETER	SERVICE SIZE			
	3/4"	1"	1 1/2"	2"
4" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
4" ASBESTOS (EXISTING) CEMENT	WBSS	WBSS	DSS, WBSS	DSS, WBSS
4" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" ASBESTOS (EXISTING) CEMENT	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" ASBESTOS (EXISTING) CEMENT	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
16" AND UP CAST IRON OR DUCTILE IRON	DWBSS	DWBSS	DWBSS	DWBSS
16" AND UP ASBESTOS (EXISTING) CEMENT	DWBSS	DWBSS	DWBSS	DWBSS
16" AND UP PVC (AWWA C900)	DWBSS	DWBSS	DWBSS	DWBSS

DSS - DUAL STRAP SADDLES  
 WBSS - WIDE BAND STRAP SADDLES  
 DWBSS - DUAL WIDE BAND STRAP SADDLES



SERVICE TAPS TO BE MADE IN THIS ZONE EXCEPT FOR PVC FASTTAP

BLOW-OFF & CHLORINATION TAPS ARE MADE IN VERTICAL POSITION

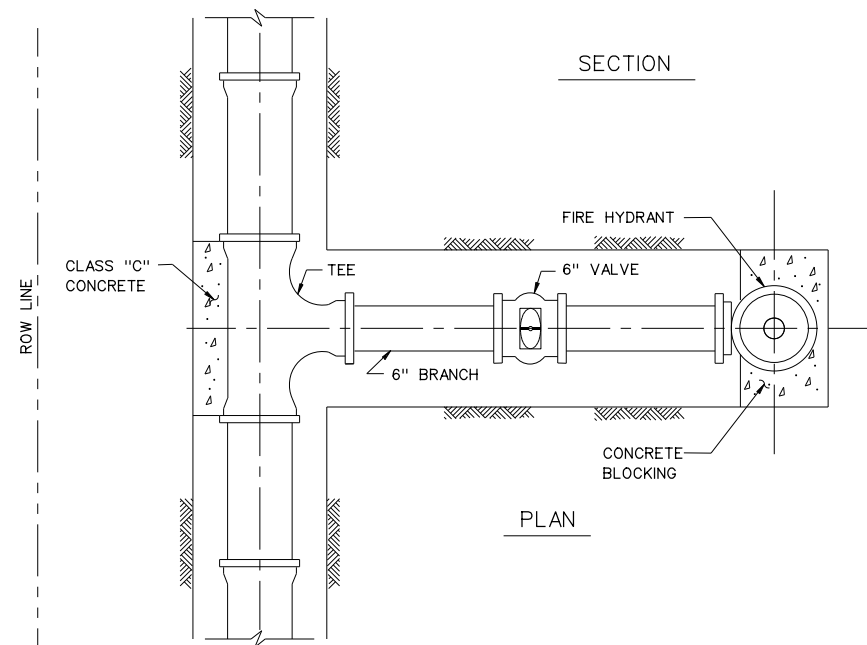
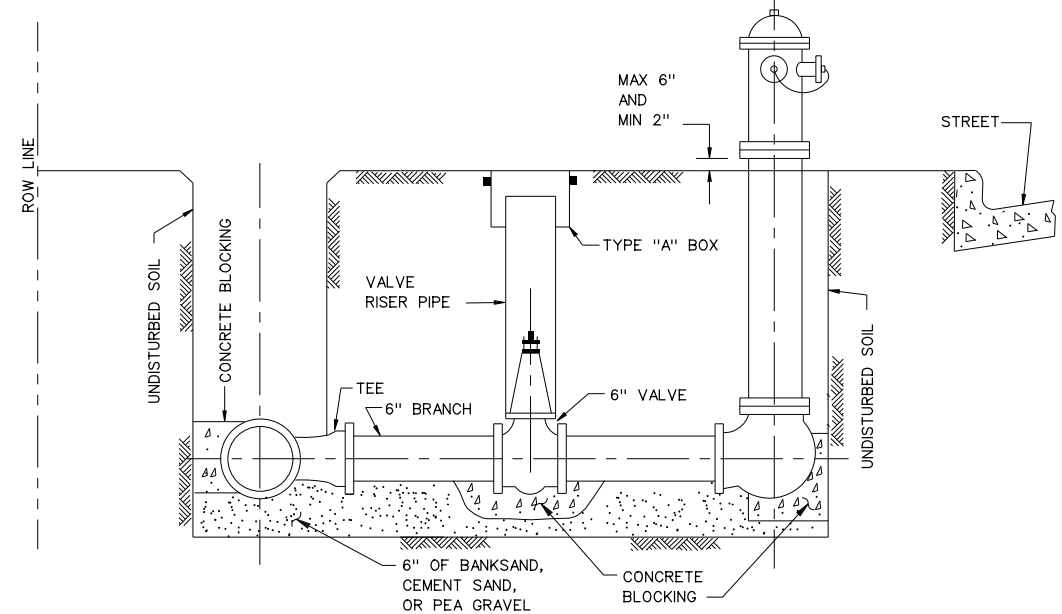


WIDE BAND SINGLE SADDLE OR DUAL SADDLES

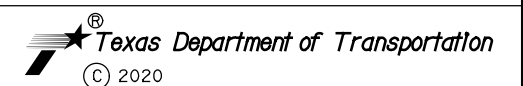
SERVICE TAPS

NOTES:

1. LOCATE FIRE HYDRANTS AT PC<sub>s</sub> OF THE INTERSECTION CURB RADIUS, 3 FEET BEHIND CURB OR PROJECTED FUTURE CURB.
2. ON OPEN-DITCH ROADWAYS, SET THE FIRE HYDRANTS WITHIN 3 FEET OF RIGHTS-OF-WAY LINES.
3. THE FIRE HYDRANT STEAMER NOZZLE SHALL FACE THE STREET.
3. THE FIRE HYDRANT TO HAVE 4.0 NATIONAL STANDARD THREADS.



STANDARD FIRE HYDRANT DETAIL



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**FM 1960**  
**WATER DETAILS**

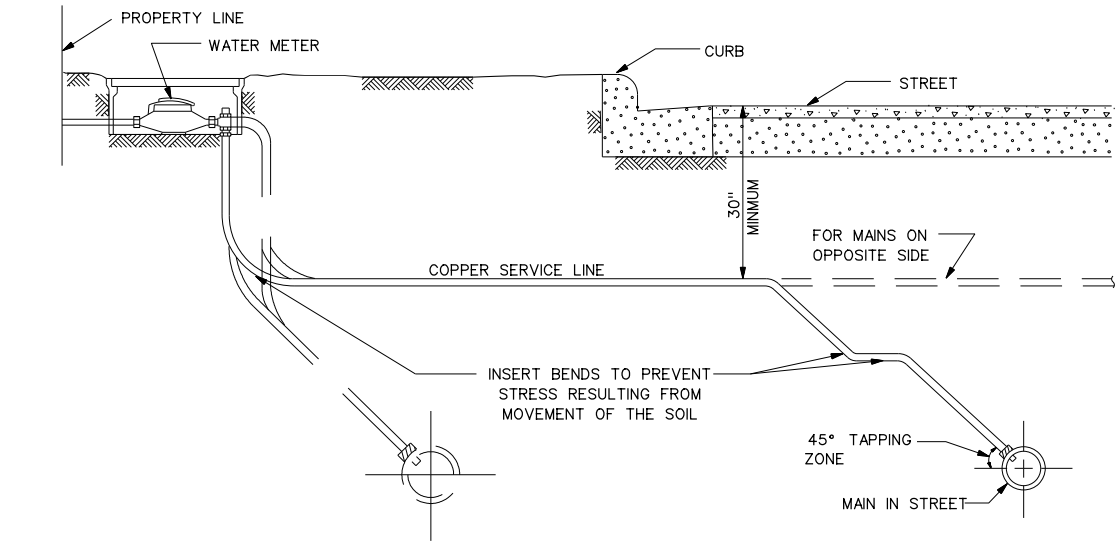
SHEET 4 OF 6			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1219
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_Details\_05.dgn

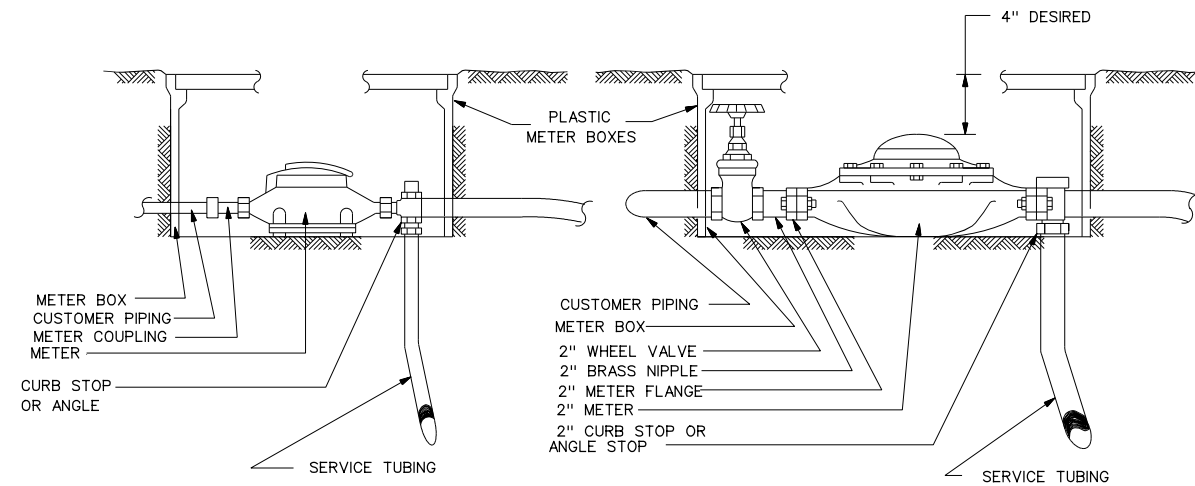
DRAWING DATE: 4/14/2020

**NOTE:**

1 1/2" METER SET IS SAME AS 2" EXCEPT WHEEL VALVE IS NOT REQUIRED.



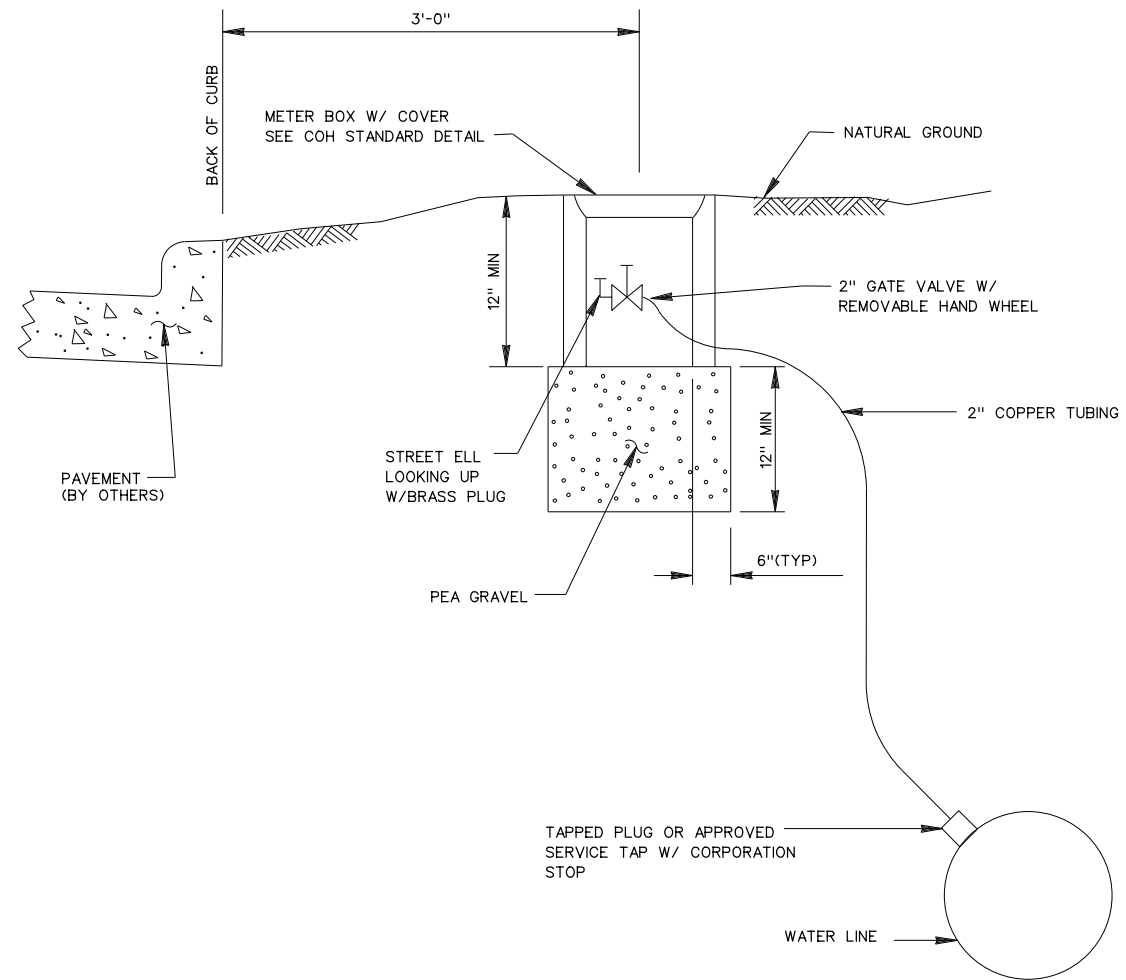
TYPICAL SECTION SERVICE LINE



5/8", 3/4" AND 1" METER SET

2" METER SET

TYPICAL METER SETTINGS



PERMANENT BLOW-OFF-DETAIL

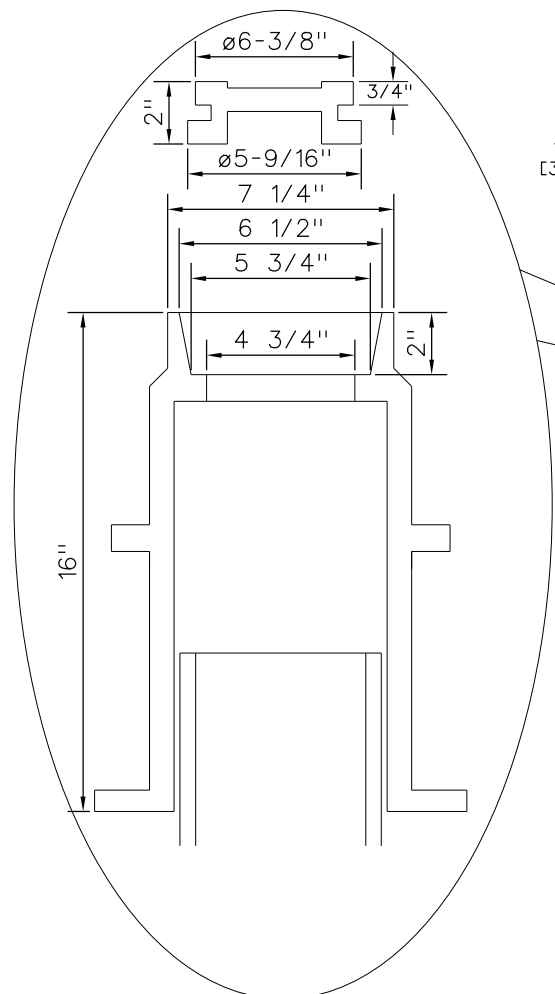
**FM 1960**  
**WATER DETAILS**

SHEET 5 OF 6

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1220
CONTROL	SECTION	JOB	
1685	03	098	

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DRAWING DATE: 4/14/2020

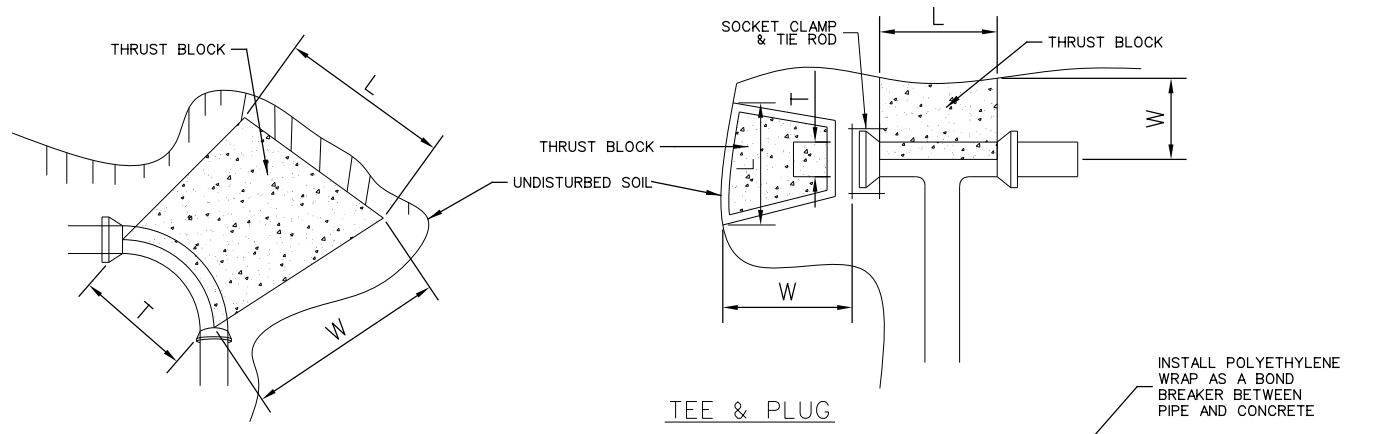
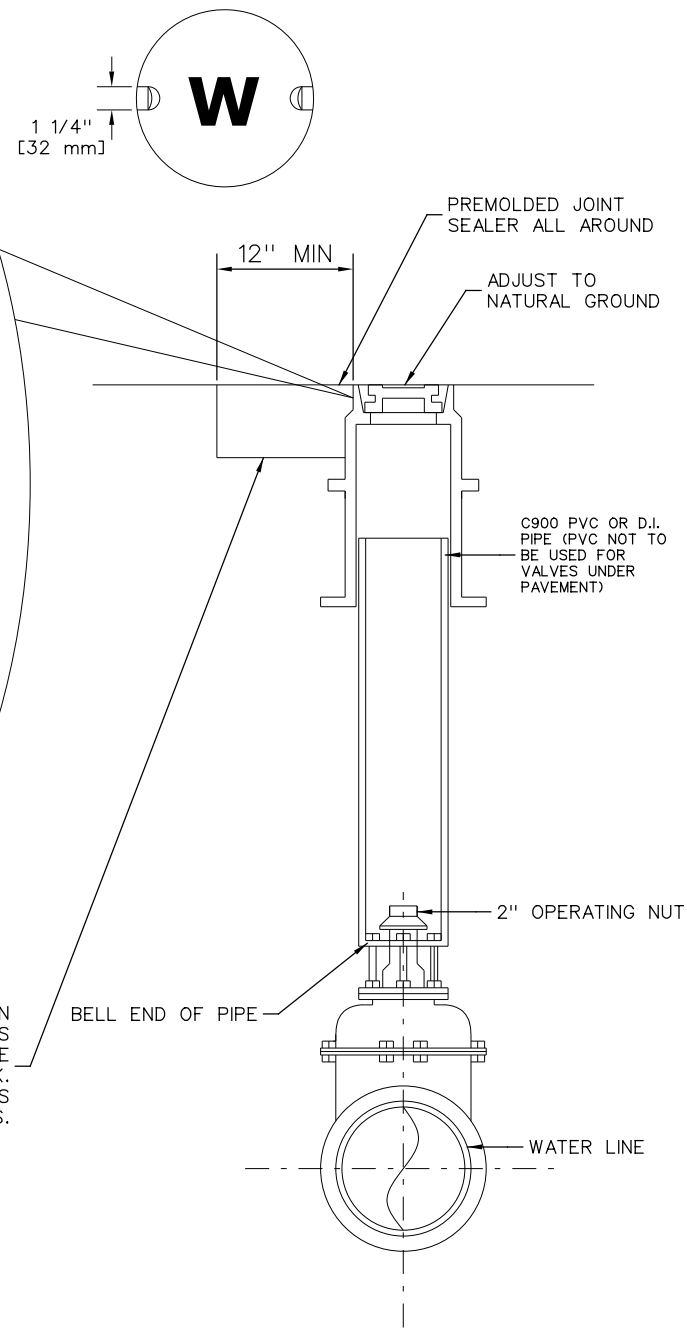


WHEN VALVES ARE LOCATED IN ROADS, DRIVEWAYS OR SIDEWALKS CONCRETE DISC AROUND TOP OF VALVE BOXES 30 SQUARE INCH, 8-INCH THICK. REINFORCE WITH #3 REINF. BARS @ 8' C-C BOTH WAYS, TWO LAYERS.

NOTES:

- APPROXIMATE WEIGHTS  
FRAME - 46 LBS  
COVER - 10 LBS
- MATERIAL - GRAY IRON ASTM A48 CL35B

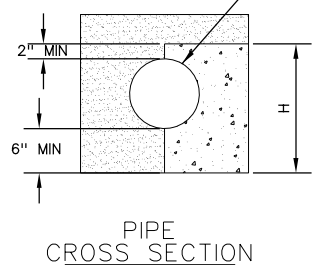
VALV BOX DETAIL



90° BEND  
(45° BENDS SIMILAR)

PIPE SIZE	90° BEND				45° BEND				TEE/PLUG			
	W	H	L	T	W	H	L	T	W	H	L	T
4"	6	12	14	10	6	8	11	8	6	10	12	12
6"	8	14	26	12	8	14	14	12	8	14	19	19
8"	10	16	40	16	10	18	20	16	10	18	26	26
10"	12	24	42	18	12	22	25	18	12	24	30	30
12"	14	36	40	30	14	26	30	22	14	26	40	40

TEE & PLUG



CORRECTION FACTORS		
SOIL TYPE	SOIL BEARING STRENGTH S <sub>u</sub> (lb/ft <sup>2</sup> )	MULTIPLY "L" AND "H" BY
SOFT CLAY	1000	1.73
SILT	1500	1.41
SANDY SILT	3000	1.00
SAND	4000	0.87
SANDY CLAY	6000	0.71
HARD CLAY	9000	0.58

NOTES:

- DEPTH "W" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE.
- BLOCKING MUST BE PLACED AGAINST UNDISTURBED EARTH. WHERE THIS IS NOT POSSIBLE THE FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL MUST BE COMPACTED TO AT LEAST 90% STANDARD PROCTOR DENSITY.
- PROVIDE CONCRETE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 03315 - CONCRETE FOR UTILITY CONSTRUCTION.
- BLOCKING DIMENSIONS SHOWN ARE BASED ON 3000 PSI SOIL BEARING STRENGTH AND 125 PSI INTERNAL WATER PRESSURE. FOR OTHER SOIL CONDITIONS, MULTIPLY DIMENSIONS "L" AND "H" BY THE APPROPRIATE CORRECTION FACTOR.

THRUST BLOCK DETAIL FOR WATER LINES (4-INCH TO 12 INCH)

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**FM 1960**

**WATER DETAILS**

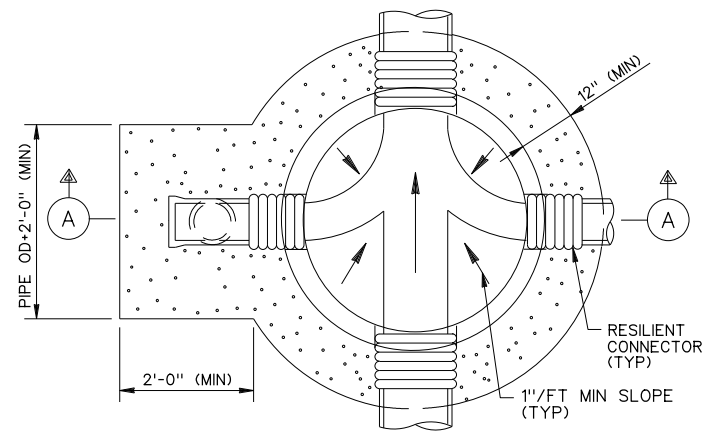
SHEET 6 OF 6

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	FM 1960
STATE	DISTRICT	COUNTY
TEXAS	HOU	HARRIS
CONTROL	SECTION	JOB
1685	03	098

**1221**

FILENAME: FM1960E\_Details\_20.dgn

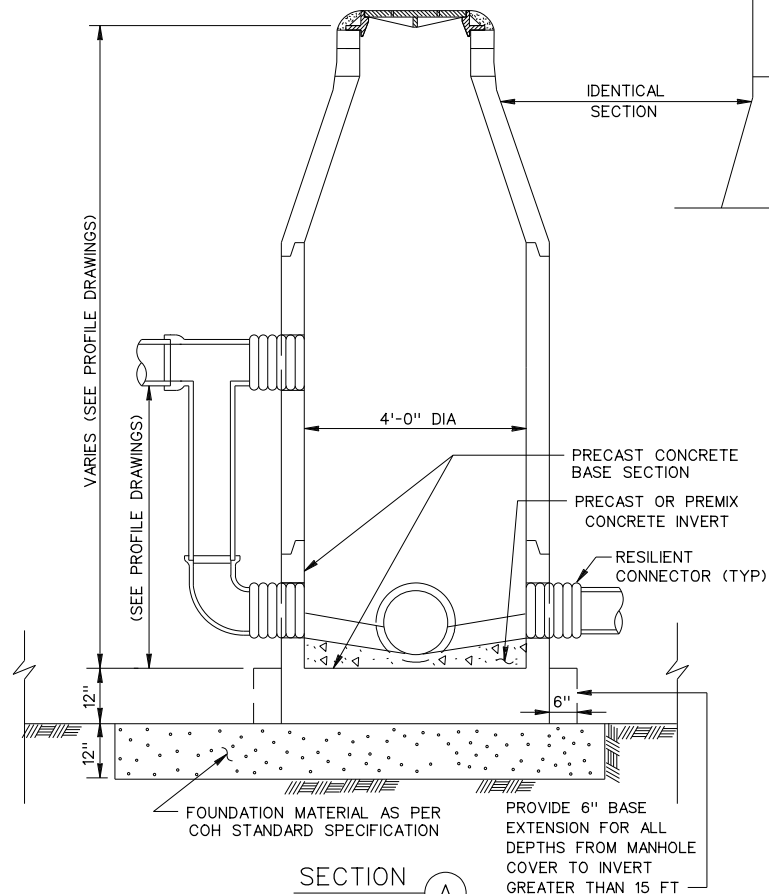
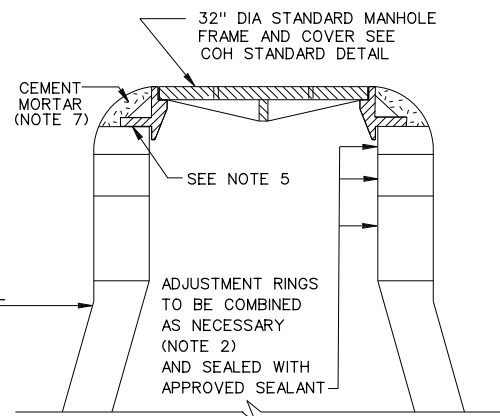
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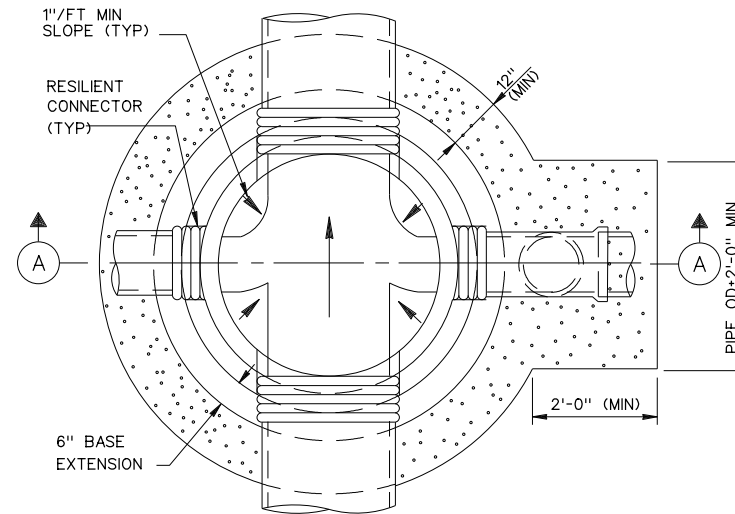
FOUNDATION PLAN

NOTES:

1. DEPTH OF MANHOLE DETERMINES SECTIONS REQUIRED.
2. PRECAST CONCRETE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6".
3. MANHOLE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DETERMINED TO MEET LOADING CONDITIONS. MIN THICKNESS 5".
4. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
5. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
6. ECCENTRIC PRECAST CONCRETE MANHOLE MAY BE USED.
7. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
8. MIN REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE # 5 @ 8 EW.
9. PROVIDE BACKFILL TO MATCH ADJACENT PIPE TRENCH BACKFILL PER COH STANDARD SPECIFICATION.



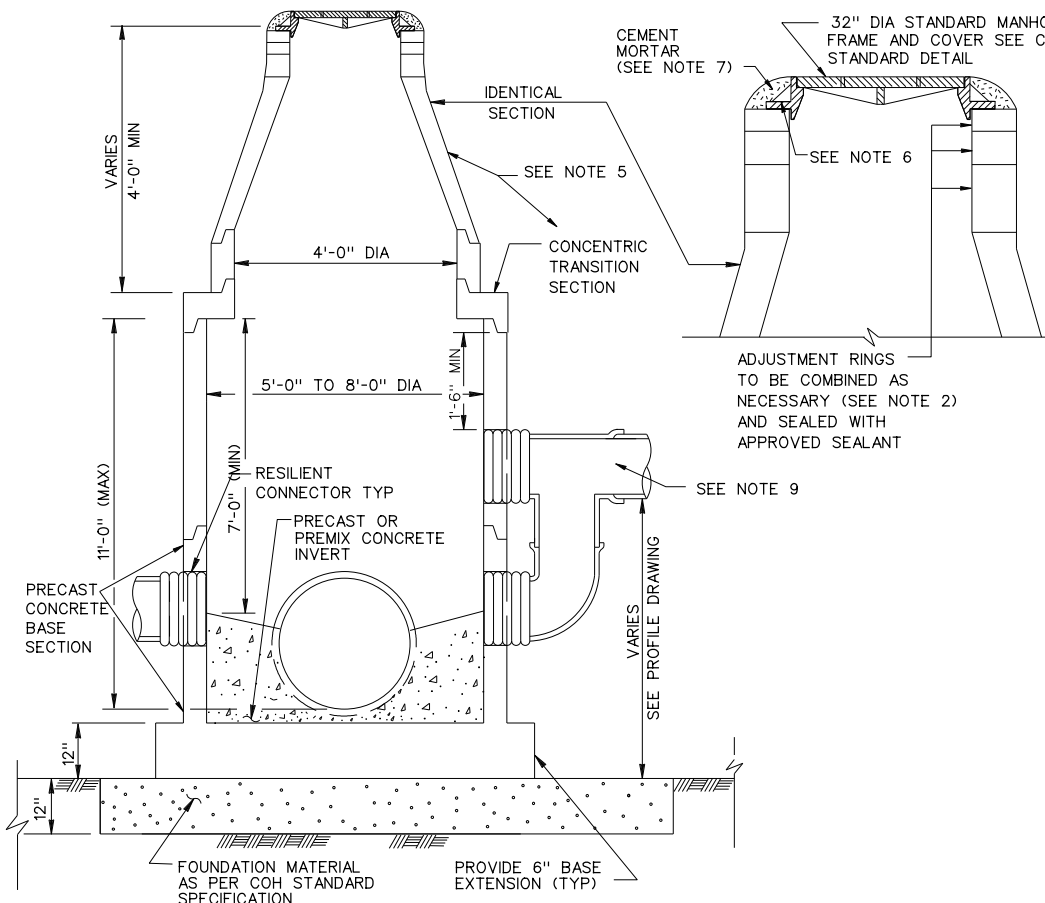
SANITARY SEWER  
4'-0" DIAMETER PRECAST  
CONCRETE MANHOLE



FOUNDATION PLAN

NOTES:

1. DEPTH OF MANHOLE DETERMINES SECTIONS REQUIRED.
2. PRECAST CONCRETE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6".
3. MANHOLE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DETERMINED TO MEET LOADING CONDITIONS. MIN THICKNESS 5".
4. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
5. ALTERNATE ECCENTRIC CONE AND/OR TRANSITION SECTION MAY BE USED.
6. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
7. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
8. MIN REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE # 5 @ 8 EW.
9. WHERE DIMENSIONAL RESTRICTIONS DICTATE, THE MANHOLE BASE HEIGHT SHALL BE ADJUSTED TO HAVE THE UPPER INLET PIPE OF THE DROP ENTER INTO THE 4'-0" DIAMETER RISER SECTION.
10. PROVIDE BACKFILL TO MATCH ADJACENT PIPE TRENCH BACKFILL PER COH STANDARD SPECIFICATION.



SECTION A

SANITARY SEWER  
5'-0" TO 8'-0" DIAMETER  
PRECAST CONCRETE MANHOLE

4/14/2020



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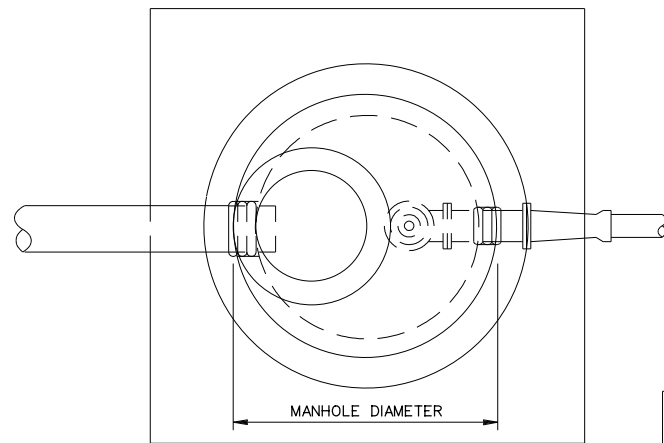
SANITARY SEWER DETAILS

SHEET 1 OF 12

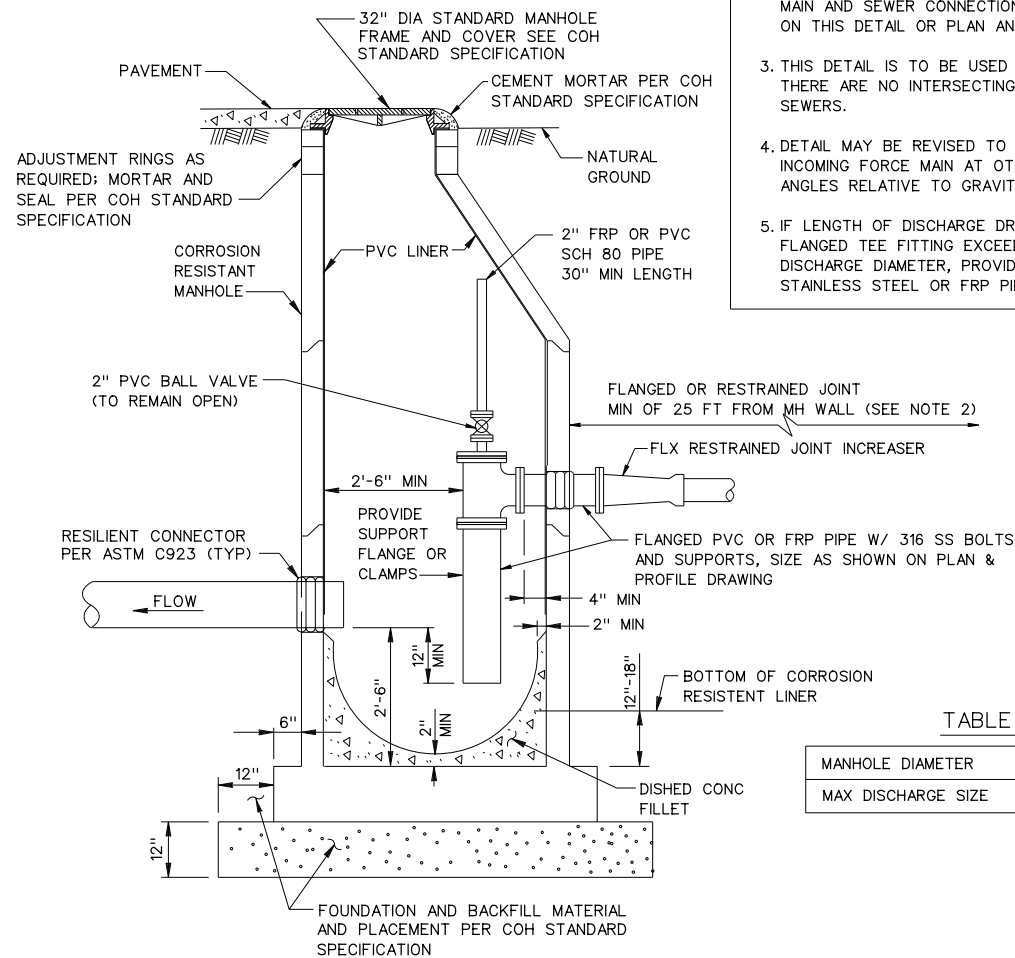
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
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CONTROL	SECTION	JOB
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		<b>1222</b>

FILENAME: FM1960E\_Detail.s21.dgn

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PLAN VIEW



ELEVATION VIEW

SANITARY SEWER  
CORROSION RESISTANT MANHOLE  
FOR FORCE MAIN DISCHARGE

NOTES:

1. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
2. IF FORCE MAIN HAS BENDS WITHIN 25 FT OF MANHOLE, EXTEND RESTRAINED JOINTS TO 25 FT MINIMUM UPSTREAM OF BEND.
3. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREA.
4. MINIMUM REINFORCING IN BASE SHALL BE 5 @ 8 E W.
5. PRECAST RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6".

NOTES TO SPECIFIER:

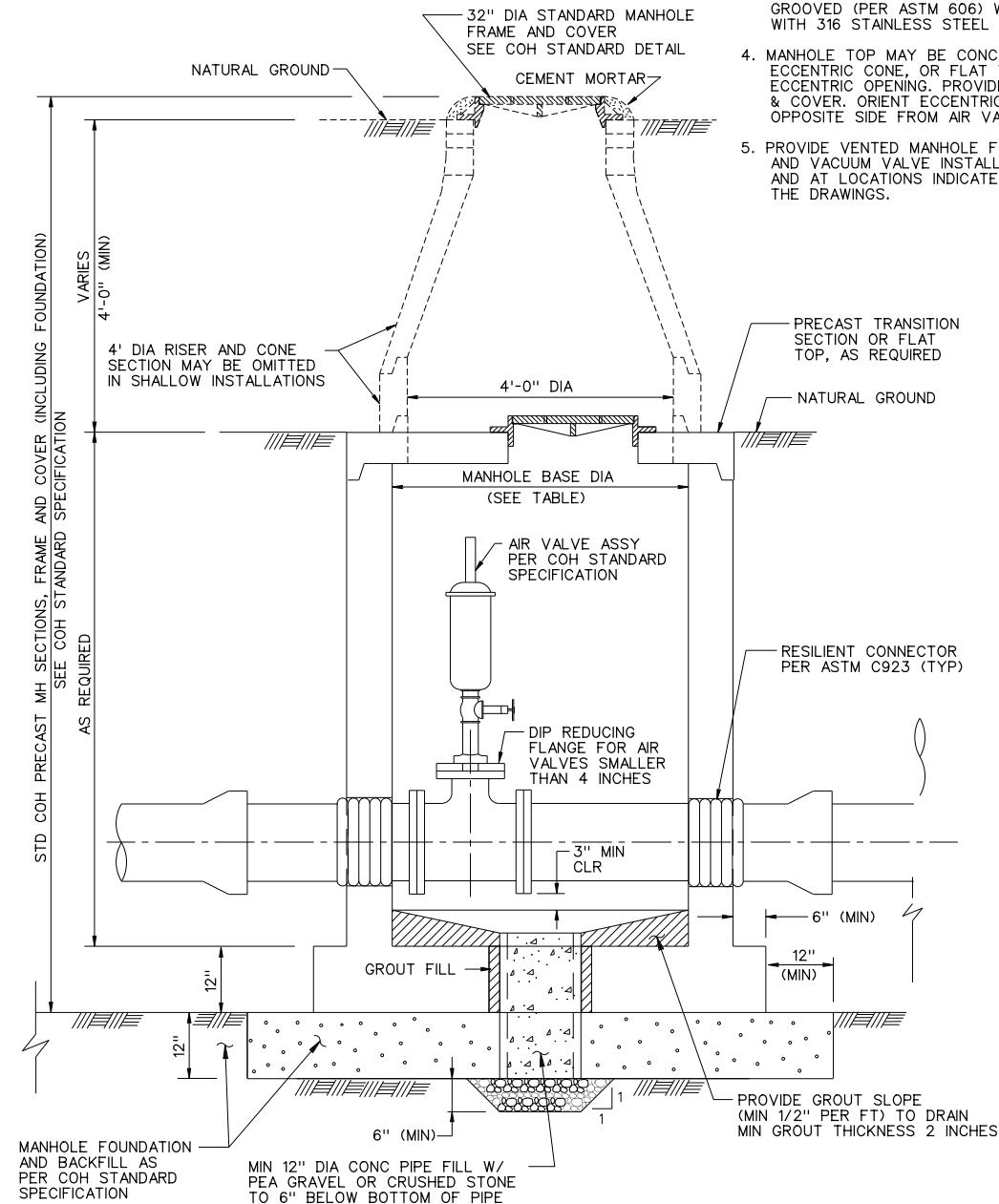
1. INDICATE SIZE OF FORCE MAIN, INCREASER AND DISCHARGE EITHER ON THIS DETAIL OR ON PLAN AND PROFILE.
2. PROVIDE INVERT ELEVATIONS OR FORCE MAIN AND SEWER CONNECTIONS TO MH, ON THIS DETAIL OR PLAN AND PROFILE.
3. THIS DETAIL IS TO BE USED ONLY WHEN THERE ARE NO INTERSECTING GRAVITY SEWERS.
4. DETAIL MAY BE REVISED TO ORIENT INCOMING FORCE MAIN AT OTHER ANGLES RELATIVE TO GRAVITY SEWER.
5. IF LENGTH OF DISCHARGE DROP BELOW FLANGED TEE FITTING EXCEEDS 7 TIMES DISCHARGE DIAMETER, PROVIDE STAINLESS STEEL OR FRP PIPE SUPPORT.

TABLE 02082-07

MANHOLE DIAMETER	4'-0"	5'-0"	6'-0"
MAX DISCHARGE SIZE	6"	14"	24"

NOTES TO SPECIFIER:

1. CHECK THAT FORCE MAIN BURIAL DEPTH AT AIR VALVE MANHOLE WILL PROVIDE 1'-0" CLEAR SPACE OVER VALVE INSIDE MANHOLE.
2. SHOW STA LOCATION OR MANHOLE, TOP ELEV, AND VALVE SIZE ON PLAN & PROFILE SHEET.
3. INCLUDE ALSO VENTED MH DETAIL FOR AIR & VACUUM VALVE INSTALLATIONS.



SECTION

SANITARY SEWER  
AIR RELEASE OR AIR/VACUUM  
RELEASE VALVE MANHOLE

NOTES:

1. AIR VALVE MAY BE AIR RELEASE OR AIR AND VACUUM RELEASE VALVE AS NOTED ON PLAN AND PROFILE SHEET.
2. SEE COH STANDARD SPECIFICATION FOR AIR VALVE ASSEMBLY REQUIREMENTS.
3. PROVIDE LINED DUCTILE IRON PIPE, THICK. CLASS 53, FOR FORCE MAIN WITHIN 12" OF OUTSIDE FACE OF MANHOLE. JOINTS WITHIN MANHOLE MAY BE FLANGED (AS SHOWN) OR GROOVED (PER ASTM 606) WITHIN MANHOLE, WITH 316 STAINLESS STEEL BOLTS.
4. MANHOLE TOP MAY BE CONCENTRIC CONE, ECCENTRIC CONE, OR FLAT TOP WITH ECCENTRIC OPENING. PROVIDE 32" FRAME & COVER. ORIENT ECCENTRIC OPENING OPPOSITE SIDE FROM AIR VALVE.
5. PROVIDE VENTED MANHOLE FOR AIR AND VACUUM VALVE INSTALLATIONS AND AT LOCATIONS INDICATED ON THE DRAWINGS.

TABLE

MANHOLE BASE DIAMETER (FT)	MAX FORCE MAIN DIAMETER
5	8
6	16
8	36

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NOTES ON USE OF STANDARD DETAIL

TABLE "A"

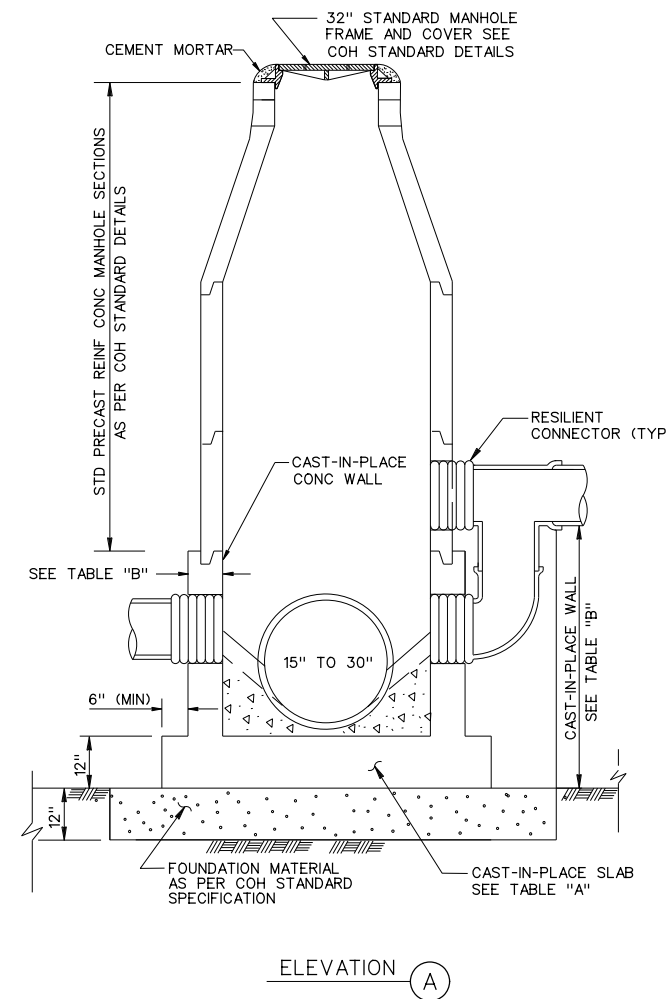
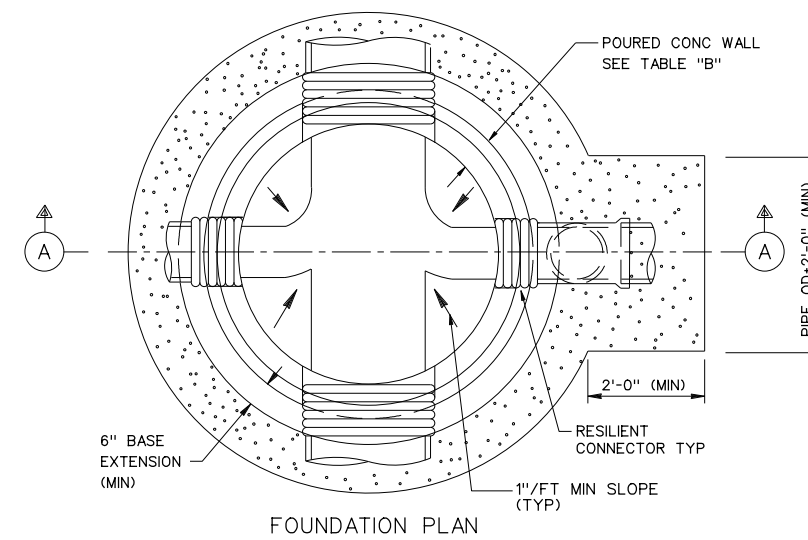
BASE SLAB REINFORCING AND THICKNESS			
MH BASE DIA FT	DEPTH TO INV (FT)	BASE THICKNESS	REINFORCING (E, W, T & B)
8	≤ 20	1'-0"	• 6 @ 10"
	≤ 25	1'-2"	• 6 @ 8"
	≤ 30	1'-4"	• 6 @ 7"
	≤ 40	1'-6"	• 6 @ 6"
	≤ 50	1'-8"	• 6 @ 6"
6	≤ 15	1'-0"	• 5 @ 8"
	≤ 20	1'-0"	• 5 @ 8"
	≤ 25	1'-2"	• 5 @ 7"
	≤ 30	1'-2"	• 5 @ 6"
	≤ 40	1'-2"	• 6 @ 8"
5	≤ 15	1'-0"	• 5 @ 8"
	≤ 20	1'-0"	• 5 @ 7"
	≤ 25	1'-0"	• 5 @ 6"
	≤ 30	1'-0"	• 6 @ 10"
	≤ 40	1'-2"	• 6 @ 10"
4	≤ 20	1'-0"	• 5 @ 8"
	≤ 25	1'-0"	• 5 @ 8"
	≤ 30	1'-0"	• 5 @ 7"
	≤ 30	1'-0"	• 5 @ 7"
	≤ 40	1'-0"	• 6 @ 10"

NOTE TO SPECIFIER:

1. TABLES "A" AND "B" WILL BE USED TO DESIGN THE CAST-IN-PLACE BASE AND WALL FOR VARIOUS MANHOLE DIAMETER AND DEPTH.

TABLE "B"

WALL REINFORCING AND THICKNESS					
MH BASE DIA FT	DEPTH TO PIPE TO INV (FT)	MAXIMUM CAST-IN-PLACE WALL HEIGHT	WALL THICKNESS	REINFORCING AT EACH FACE	
				VERTICAL	HORIZONTAL
8	≤ 20	6'-0"	0'-10"	• 6 @ 12"	• 6 @ 12"
	≤ 25	6'-6"	0'-10"	• 6 @ 10"	
	≤ 30	7'-0"	0'-10"	• 6 @ 8"	
	≤ 40	8'-0"	1'-0"	• 6 @ 8"	
	≤ 50	9'-0"	1'-2"	• 6 @ 6"	
6	≤ 15	5'-0"	0'-8"	• 5 @ 12"	• 5 @ 12"
	≤ 20	5'-6"	0'-8"	• 5 @ 8"	
	≤ 25	6'-0"	0'-9"	• 5 @ 8"	
	≤ 30	6'-0"	0'-9"	• 5 @ 6"	
	≤ 40	7'-0"	0'-10"	• 5 @ 8"	
5	≤ 15	5'-0"	0'-8"	• 5 @ 8"	• 4 @ 12"
	≤ 20	5'-4"	0'-8"	• 5 @ 7"	
	≤ 25	5'-8"	0'-10"	• 5 @ 6"	
	≤ 30	6'-0"	0'-10"	• 6 @ 10"	
	≤ 40	6'-4"	0'-10"	• 6 @ 10"	
4	≤ 15	5'-0"	0'-8"	• 5 @ 8"	• 4 @ 12"
	≤ 20	4'-6"	0'-8"	• 5 @ 12"	
	≤ 25	5'-0"	0'-8"	• 5 @ 10"	
	≤ 30	5'-6"	0'-10"	• 6 @ 12"	
	≤ 40	6'-0"	0'-10"	• 6 @ 12"	



NOTES:

1. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
2. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
3. PROVIDE BACKFILL TO MATCH ADJACENT PIPE TRENCH BACKFILL PER COH STANDARD SPECIFICATION.
4. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.

SANITARY SEWER  
PRECAST CONCRETE MANHOLE  
WITH CAST-IN-PLACE BASE



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SHEET 3 OF 12

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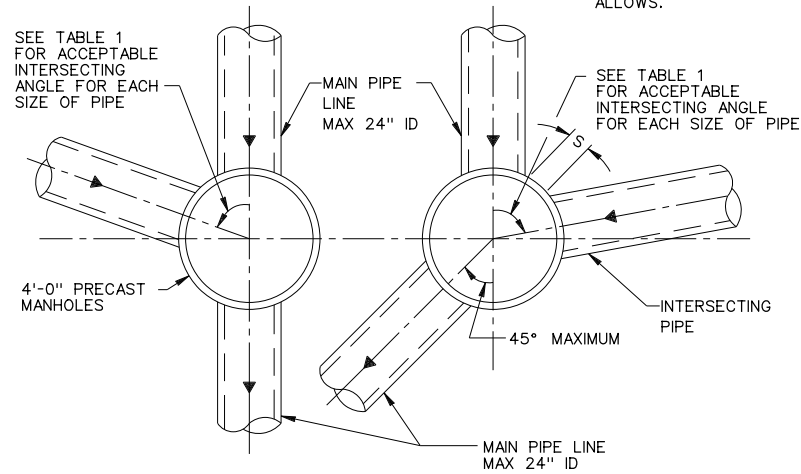
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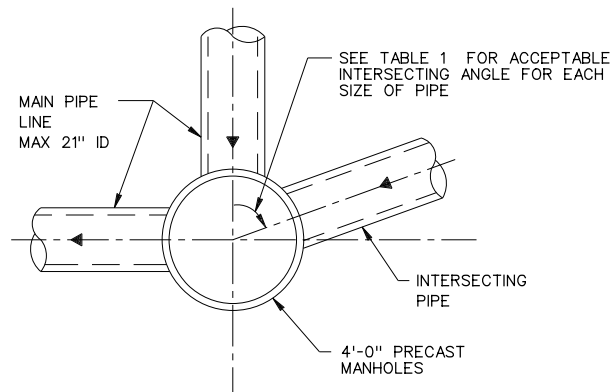
NOTES ON USE OF STANDARD DETAIL 02082-02

NOTES TO SPECIFIER:

1. "L" INDICATES THAT A SPECIAL DESIGN OR THE NEXT LARGER MANHOLE SIZE SHALL BE USED.
2. TABLE 1 IS BASED ON A MIN SEPARATION DISTANCE "S" OF 15.5" OR INTERSECTION PIPE OD/2, WHICHEVER IS GREATER, BETWEEN MAIN AND INTERSECTING PIPES ALONG THE MANHOLE INSIDE WALL ARC.
3. PIPE WALL THICKNESS USED IN TABLE 1 ARE BASED ON RCP. THE DESIGN ENGINEER MAY CALCULATE TO SEE IF THINNER WALL PIPES CAN MEET THE SEPARATION CRITERIA FOR ANGLES SMALLER THAN THE TABLE ALLOWS.



MAX 24" ID MAIN PIPE ALLOWED FOR STRAIGHT THROUGH TO 45° DEFLECTION



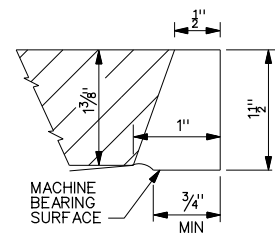
MAX 21" ID MAIN PIPE ALLOWED FOR 45° TO 90° DEFLECTION

TABLE 1  
MIN ANGLE AND INTERSECTING PIPE SIZES  
FOR A 4'-0" DIA MANHOLE

INTERSECTING PIPE SIZE (INCHES)	MIN INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE SIZES IN INCHES							
	6"	8"	10"	12"	15"	18"	21"	24"
6	55	58	60	65	70	75	80	85
8		60	63	68	73	77	82	87
10			66	71	75	80	85	90
12				76	80	85	90	-
15					85	90	-	-
18						-	-	-
21							-	-
24								-

NOT APPLICABLE UNLESS HYDRAULICS DICTATE (INTERSECTING PIPE > MAIN PIPE)

SANITARY SEWER  
4'-0" DIAMETER PRECAST  
CONCRETE MANHOLE NOTES



SECTION OF COVER THRU RECESS

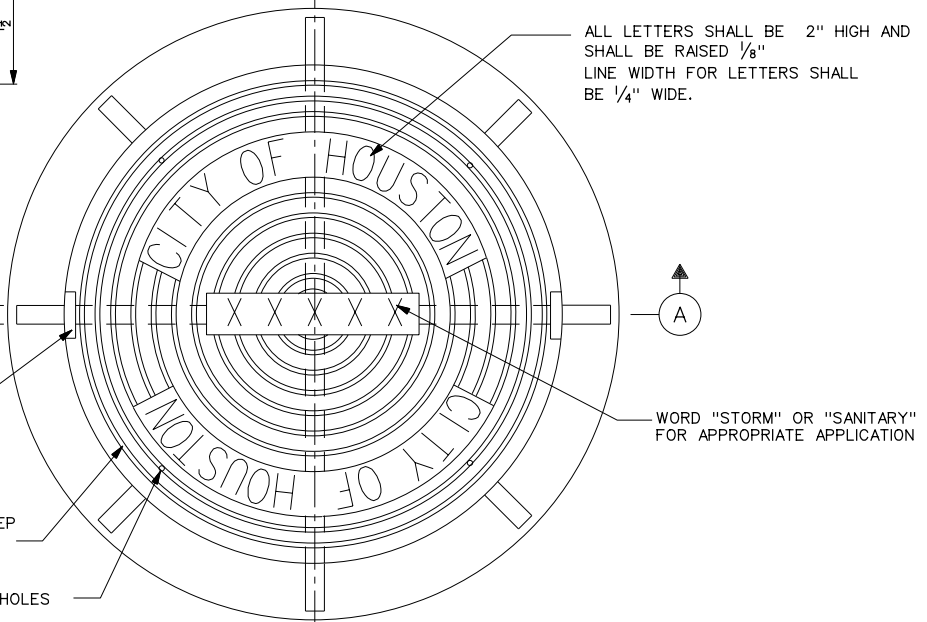
1/2" x 2 1/2" RECESS (SEE SECTION OF COVER THRU RECESS)

GROOVES 3/16" DIA X 3/8" DEEP APPROX 3/4" TO 1" SPACES

3/4" DIA HOLES (TYP)

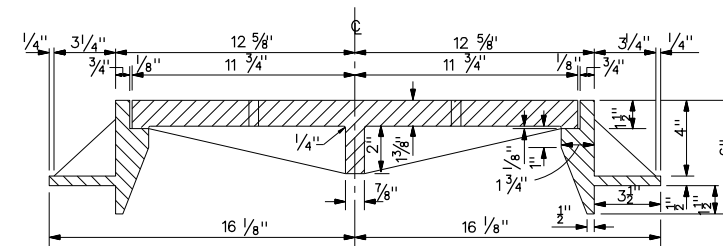
NOTE:  
23 1/2" MANHOLE COVER CAN BE USED ONLY FOR REPLACEMENT OF EXISTING MANHOLE COVER.

ALL LETTERS SHALL BE 2" HIGH AND SHALL BE RAISED 1/8" LINE WIDTH FOR LETTERS SHALL BE 1/4" WIDE.



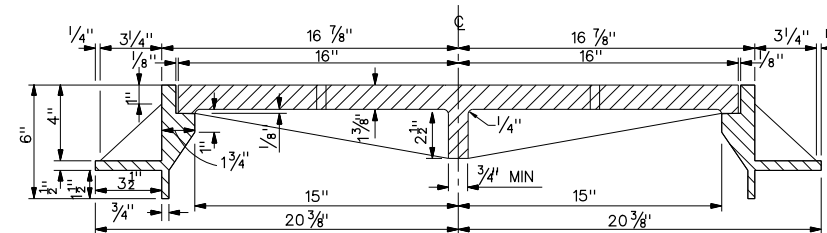
PLAN

23 1/2" AND 32" MANHOLE COVER WITH FRAME



SECTION A

23 1/2" MANHOLE COVER WITH FRAME



SECTION A

32" MANHOLE COVER WITH FRAME

MANHOLE  
FRAME AND COVER

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SHEET 4 OF 12

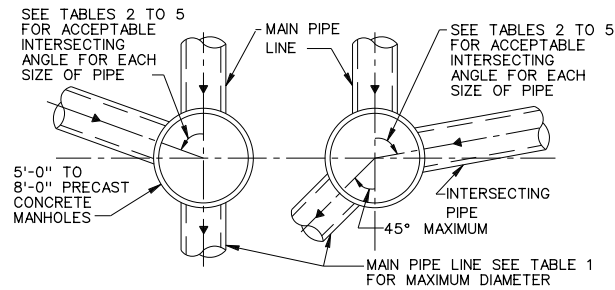
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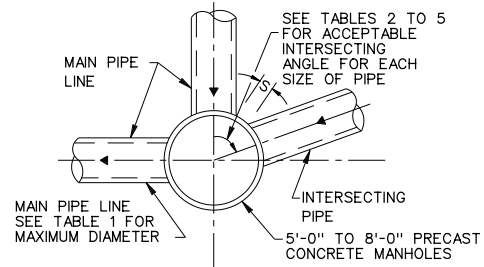
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NOTES ON USE OF STANDARD DETAIL 02082-03



FOR MAIN PIPES FROM STRAIGHT THROUGH TO 45° DEFLECTION



FOR MAIN PIPE WITH 45° TO 90° DEFLECTION

TABLE 1  
MAXIMUM MAIN PIPE DIAMETER (I D) IN INCHES

MANHOLE DIAMETER (FT)	STRAIGHT THROUGH TO 45° DEFLECTION	WITH 90° DEFLECTION	TABLE TO BE USED
5	36	27	2
6	42	33	3
7	48	36	4
8	60	42	5

TABLE 2  
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 5'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES										
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"
8	49	50	54	58	61	66	69	73	77	82	86
10		53	57	61	64	68	71	76	79	84	88
12			61	65	68	72	75	80	83	88	-
15				68	71	75	79	83	87	-	-
18					75	79	82	87	90	-	-
21						83	86	90	-	-	-
24							90	-	-	-	-
27								-	-	-	-
30								-	-	-	-
33								-	-	-	-
36								-	-	-	-

\* NOT APPLICABLE (INTERSECTING PIPE GREATER THAN MAIN PIPE)

TABLE 3  
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 6'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES											
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"
8	40	42	45	49	51	54	57	61	63	67	70	78
10		44	47	50	53	56	59	62	65	69	72	79
12			50	54	56	60	62	66	68	72	75	83
15				57	59	62	65	69	71	75	78	85
18					62	65	68	71	74	78	81	88
21						68	71	74	77	81	84	-
24							74	77	80	84	87	-
27								83	85	89	-	-
30									-	-	-	-
33										-	-	-
36											-	-
42												-

TABLE 4  
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 7'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES												
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"	48"
8	35	36	39	42	44	47	49	52	54	57	59	65	71
10		38	40	43	45	48	50	53	55	59	61	67	73
12			43	46	48	51	53	56	58	61	64	70	76
15				48	50	53	55	58	61	64	66	72	78
18					58	56	58	61	63	66	69	74	81
21						58	60	63	66	69	71	77	83
24							63	66	68	71	74	79	86
27								70	72	76	78	84	90
30									78	81	83	89	-
33										86	88	-	-
36											-	-	-
42												-	-
48													-

TABLE 5  
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 8'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES														
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"	48"	54"	60"
8	30	32	34	36	38	41	43	45	47	50	52	56	61	67	74
10		33	35	38	40	42	44	46	48	51	53	58	63	68	77
12			38	40	42	44	46	49	51	53	55	60	65	71	79
15				42	44	47	48	51	53	56	58	62	67	73	81
18					46	49	51	53	55	58	66	64	70	75	83
21						51	53	55	57	60	62	67	72	77	85
24							55	57	59	62	64	69	74	79	89
27								61	63	66	68	73	78	83	-
30									67	70	72	77	82	87	-
33										74	76	81	86	-	-
36											81	86	-	-	-
42												-	-	-	-
48													-	-	-
54														-	-
60															-

SANITARY SEWER  
5'-0" TO 8'-0" DIAMETER  
PRECAST CONCRETE MANHOLE NOTES

NOTES TO SPECIFIER:

1. " " INDICATES THAT A SPECIAL DESIGN OR THE NEXT LARGER MANHOLE SIZE SHALL BE USED.
2. TABLES 2 TO 5 ARE BASED ON A MIN SEPARATION DISTANCE "S" OF 15.5" OR INTERSECTION PIPE OD/2, WHICHEVER IS GREATER, BETWEEN MAIN AND INTERSECTING PIPES ALONG THE MANHOLE INSIDE WALL ARC.
3. PIPE WALL THICKNESS USED IN TABLES 2 TO 5 ARE BASED ON RCP. THE DESIGN ENGINEER MAY CALCULATE TO SEE IF THINNER WALL PIPES CAN MEET THE SEPARATION CRITERIA FOR ANGLES SMALLER THAN THE TABLES ALLOW.
4. LIMITATIONS TO BASE HEIGHT ARE BASED ON RESISTING BUOYANT UPLIFT FORCES BASED ON WATER AT GROUND SURFACE AND A SAFETY FACTOR OF 1.20.
5. A SPECIAL DESIGN IS REQUIRED IF MANHOLE ID IS GREATER THAN 8 FT.

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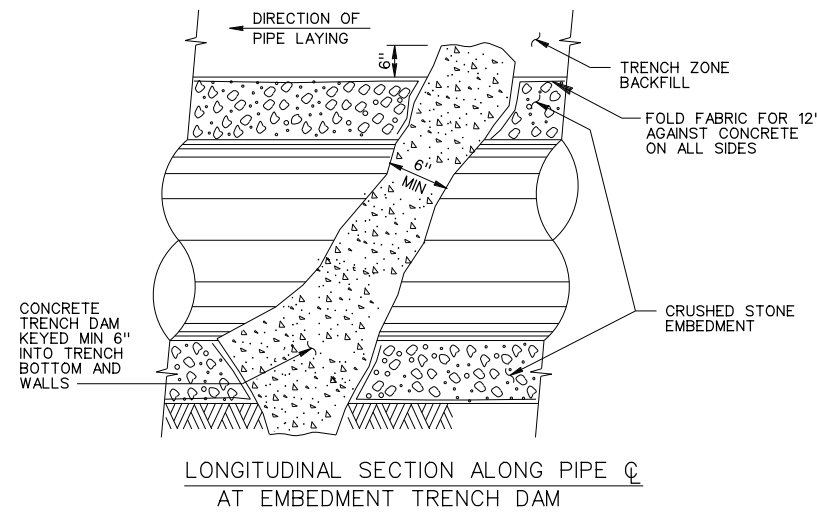
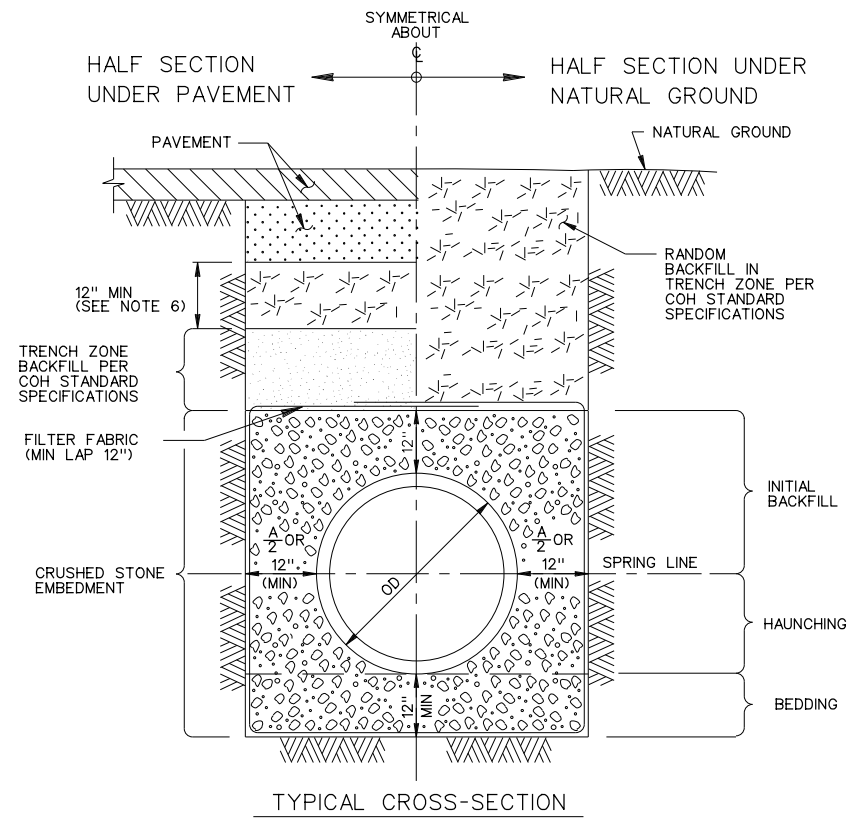
SHEET 5 OF 12

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SANITARY SEWER EMBEDMENT AND TRENCH ZONE BACKFILL FOR DRY OR WET STABLE TRENCH

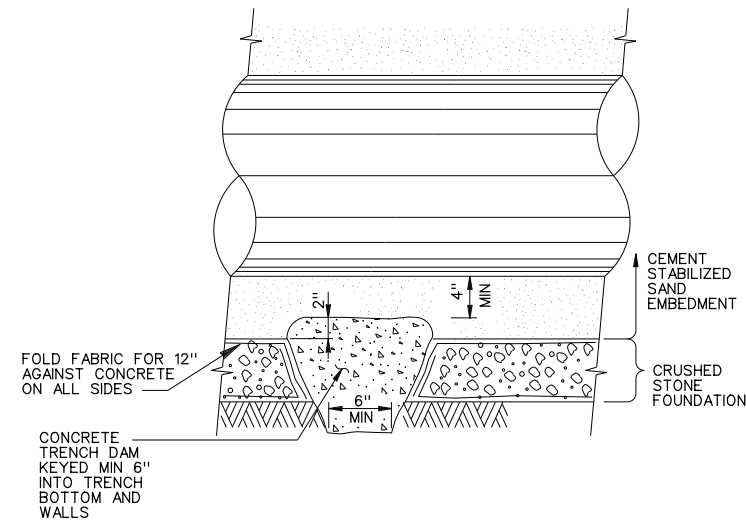
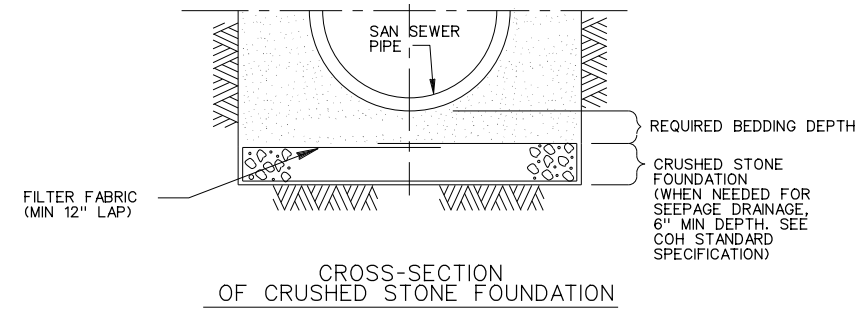
NOTES:

1. MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:  

NOMINAL PIPE SIZE	"A"
18" TO 30"	24"
OVER 30"	36"
2. MAX TRENCH WIDTH SHALL BE NOT GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
3. TRENCH DAM MAY BE FORMED OR UNFORMED. ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
4. TRENCH DAM SHALL BE PLACED AT LEAST 5 FT AWAY FROM ANY PIPELINE STRUCTURE. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.
5. PLACE TRENCH DAMS IN CLASS I EMBEDMENTS AT THE MIDPOINT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.
6. SELECT BACKFILL FOR RIGID PAVEMENT; FLEXIBLE BASE MATERIAL FOR ASPHALT PAVEMENT.

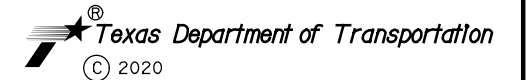
NOTES:

1. ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
2. THIS DETAIL SHALL BE USED WITH CEMENT STABILIZED SAND EMBEDMENT, OR OTHER CLASS II EMBEDMENT, IN WET STABLE TRENCH CONDITIONS.
3. PLACE TRENCH DAMS IN CLASS I EMBEDMENTS AT THE MIDPOINT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.



LONGITUDINAL SECTION ALONG PIPE CENTERLINE AT FOUNDATION TRENCH DAM

SANITARY SEWER CRUSHED STONE FOUNDATION FOR WET STABLE TRENCH



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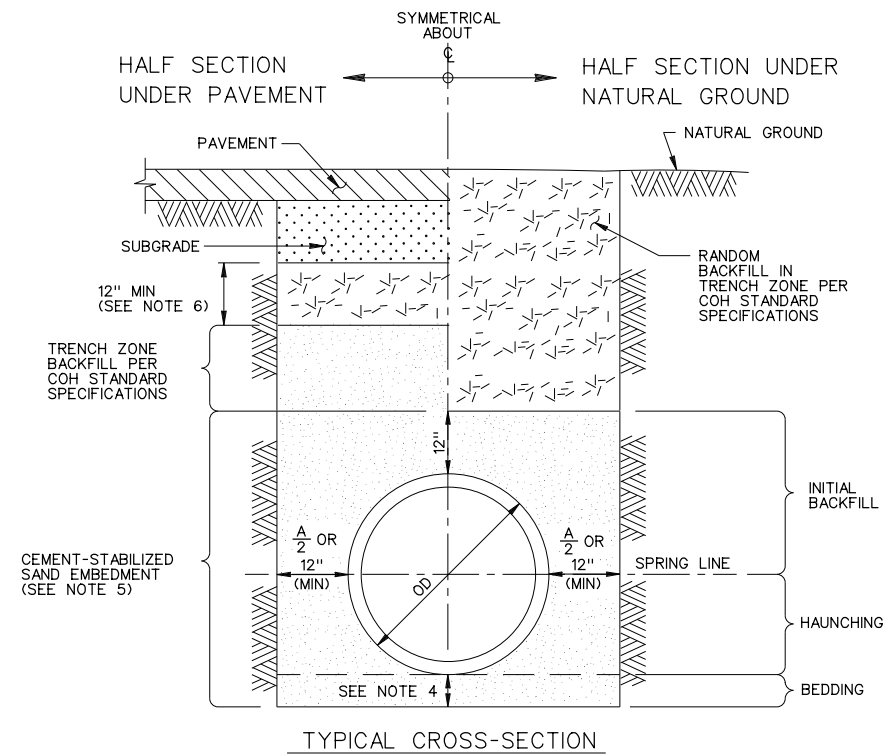
SHEET 6 OF 12

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6	(SEE TITLE SHEET)	FM 1960
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FILENAME: FM1960E\_Details\_26.dgn

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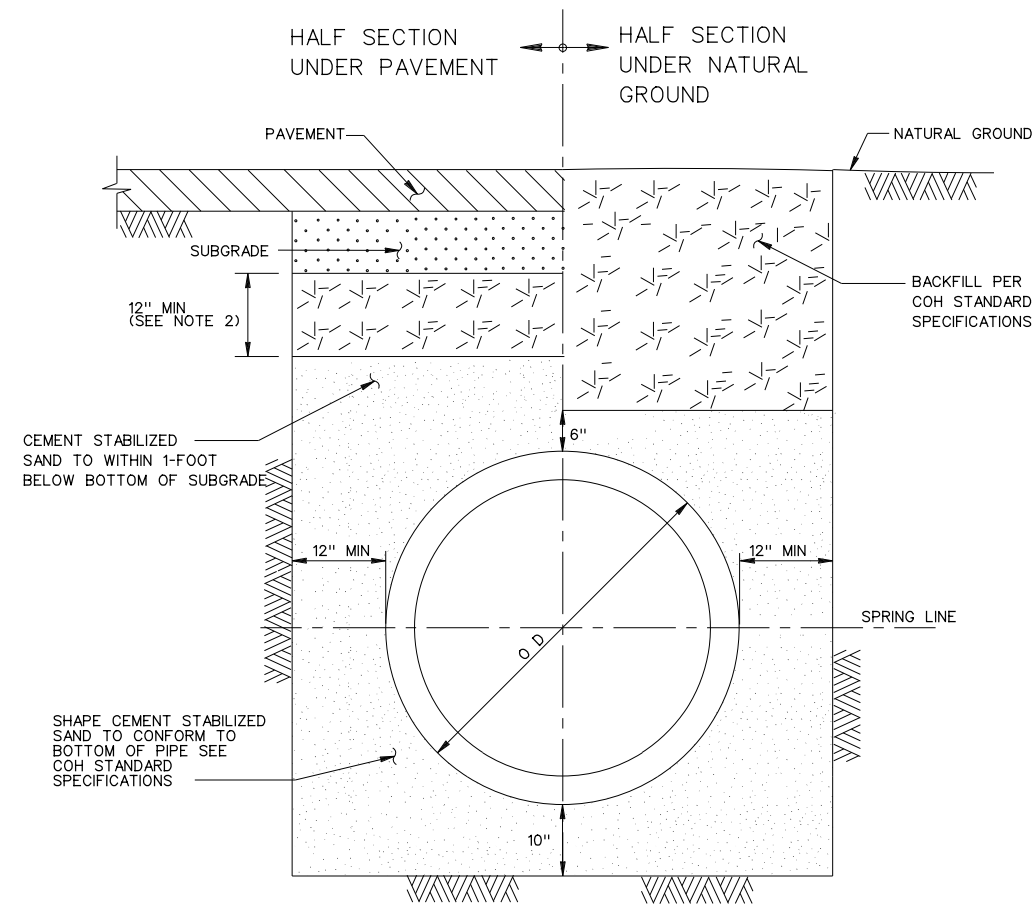
TYPICAL CROSS-SECTION

SANITARY SEWER  
BEDDING AND BACKFILL  
FOR DRY STABLE TRENCH

NOTES:

1. THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONDITIONS PER COH STANDARD. SEE COH STANDARD SPECIFICATION FOR REQUIREMENTS IN OTHER CONDITIONS.
2. MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:  

NOMINAL PIPE SIZE	"A"
18" TO 30"	24"
OVER 30"	36"
3. MAX TRENCH WIDTH SHALL BE NOT GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
4. MIN BEDDING DEPTH SHALL BE THE GREATER OF 1/8 OD OR 6 INCHES.
5. ALTERNATIVE EMBEDMENT BACKFILL MATERIALS FOR FORCE MAINS MAY BE ALLOWED. SEE COH STANDARD SPECIFICATIONS.
6. SELECT BACKFILL FOR RIGID PAVEMENT; FLEXIBLE BASE MATERIAL FOR ASPHALT PAVEMENT.



STORM SEWER  
BEDDING AND BACKFILL FOR 24" TO  
36" DIAMETER RCP WHERE  
SATISFACTORY SOIL CONDITIONS EXIST

NOTES:

1. THE METHOD OF INSTALLING CONCRETE PIPE STORM SEWERS SHOWN HEREON TO BE USED ONLY WHERE SOIL CONDITIONS ARE SATISFACTORY.  
FOR ALL OTHER SOIL CONDITIONS USE RCP INSTALLED PER COH STANDARD DETAIL MRC CONSTRUCTION PER CITY APPROVED SPECIAL DESIGN AS SHOWN ON DRAWINGS.
2. SELECT BACKFILL FOR RIGID PAVEMENT; FLEXIBLE BASE MATERIAL FOR ASPHALT PAVEMENT.

4/14/2020



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FM 1960

SANITARY SEWER DETAILS

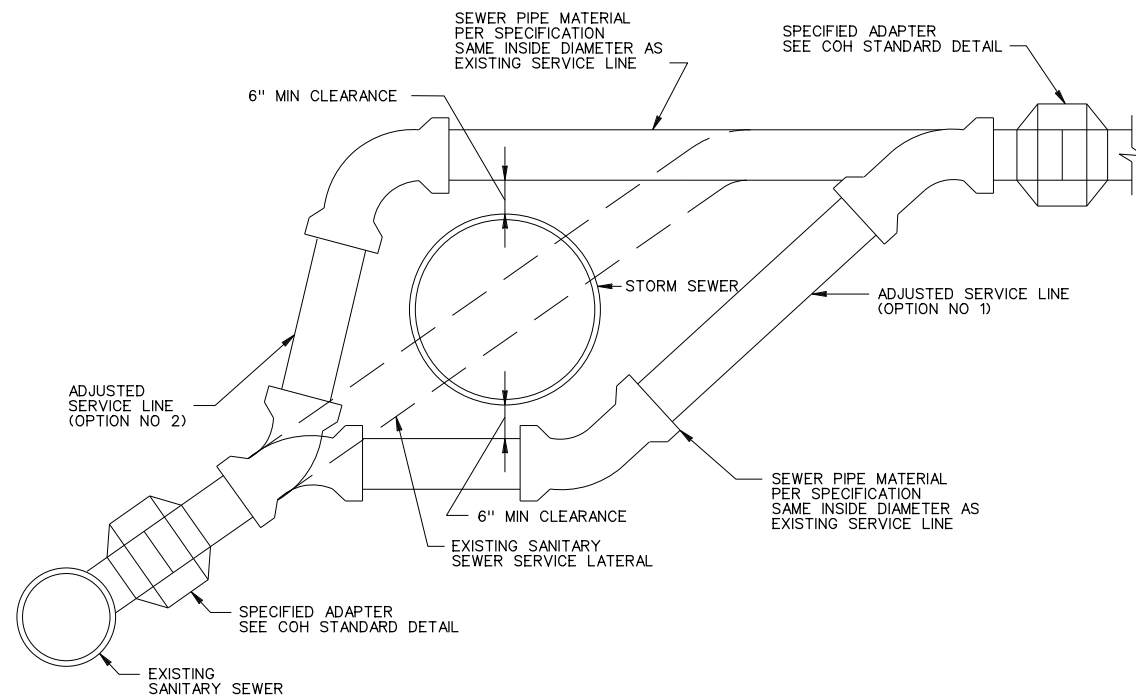
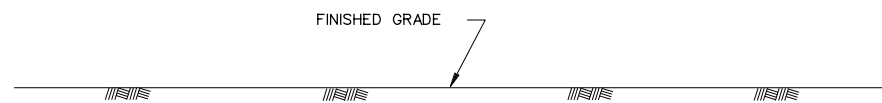
SHEET 7 OF 12

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	FM 1960
STATE	DISTRICT	COUNTY
TEXAS	HOU	HARRIS
CONTROL	SECTION	JOB
1685	03	098

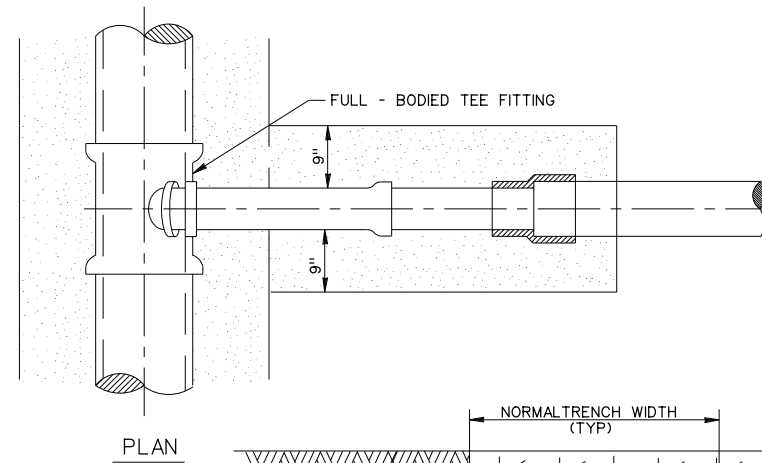
1228

FILENAME: FM1960E\_Details\_27.dgn

DRAWING DATE: 4/14/2020

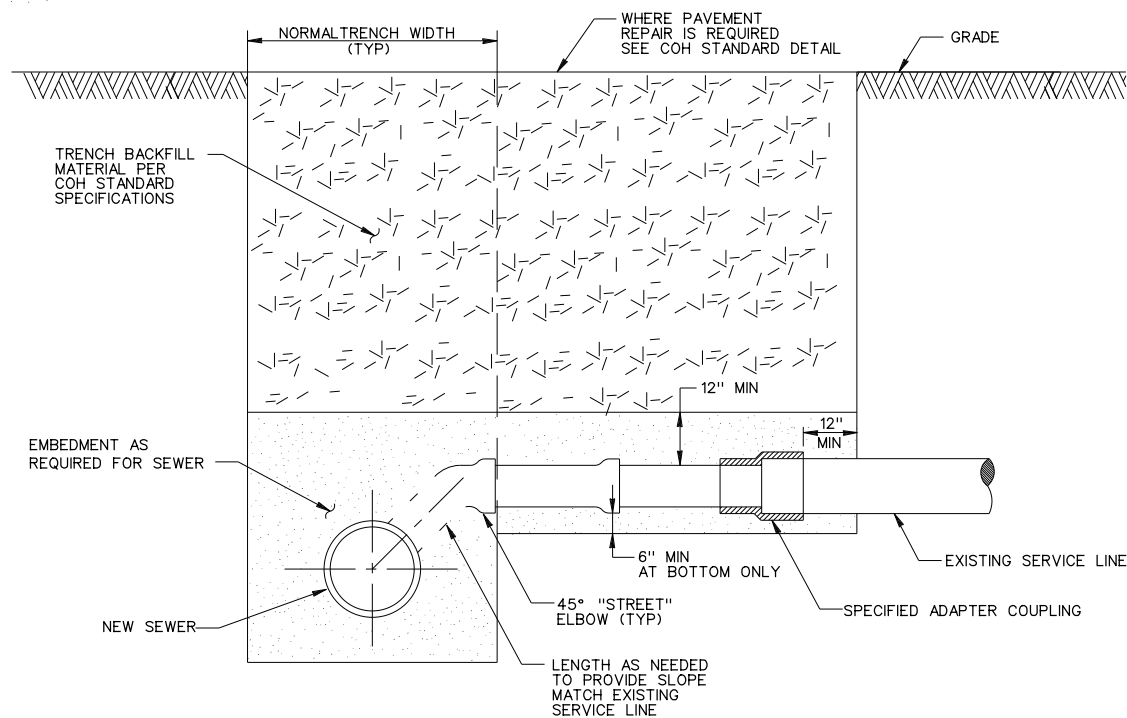


SANITARY SEWER SERVICE LINE RECONNECTION FOR STORM SEWER CONFLICTS



NOTE:

1. REPLACE EXISTING SERVICE LINE TO EXTENT SHOWN ON PLAN AND PROFILE DRAWINGS, OR AS SPECIFIED.



CROSS-SECTION OF SEWER AT SERVICE CONNECTION

SANITARY SEWER SERVICE RECONNECTION ON NEW OR REPLACEMENT SEWER



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SANITARY SEWER DETAILS

SHEET 8 OF 12

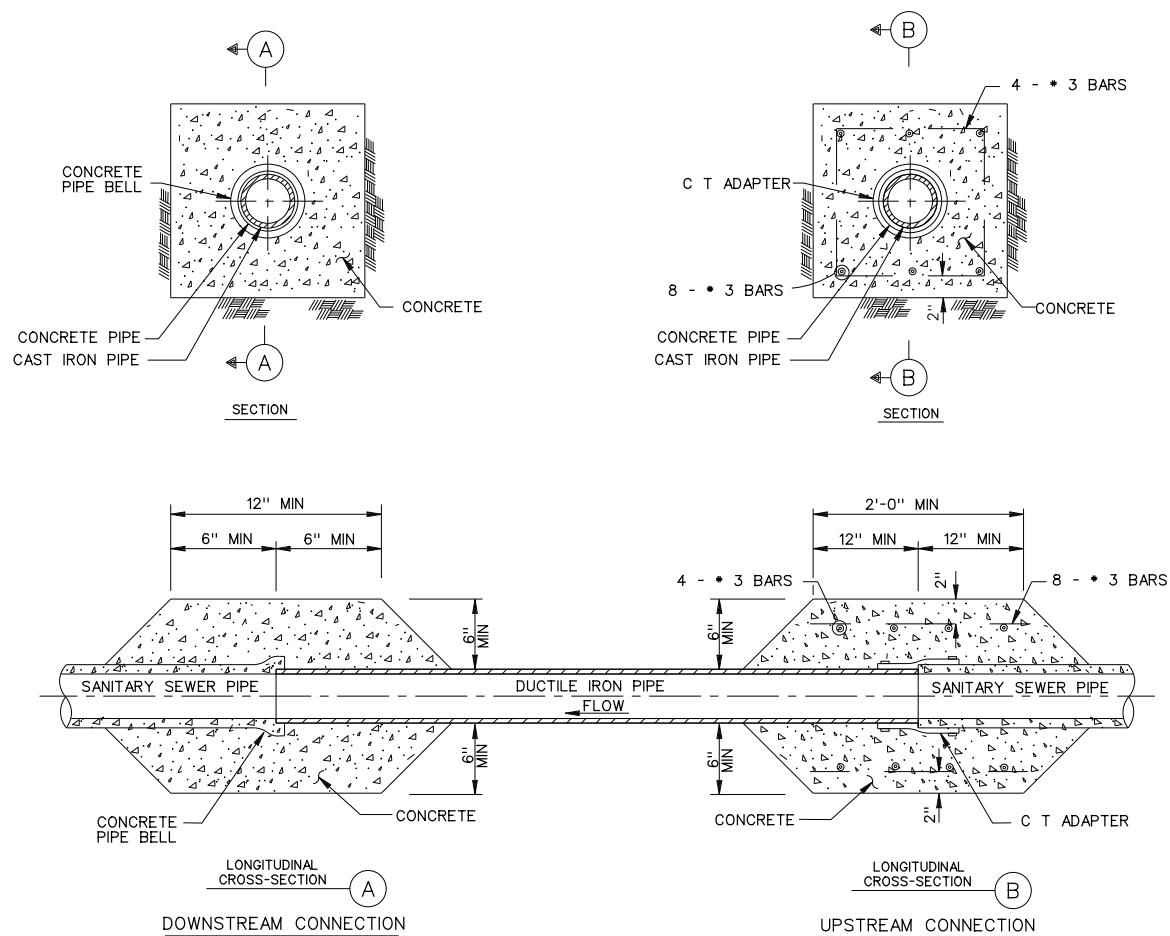
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1229
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_Details\_28.dgn

DRAWING DATE: 4/14/2020

**NOTE:**

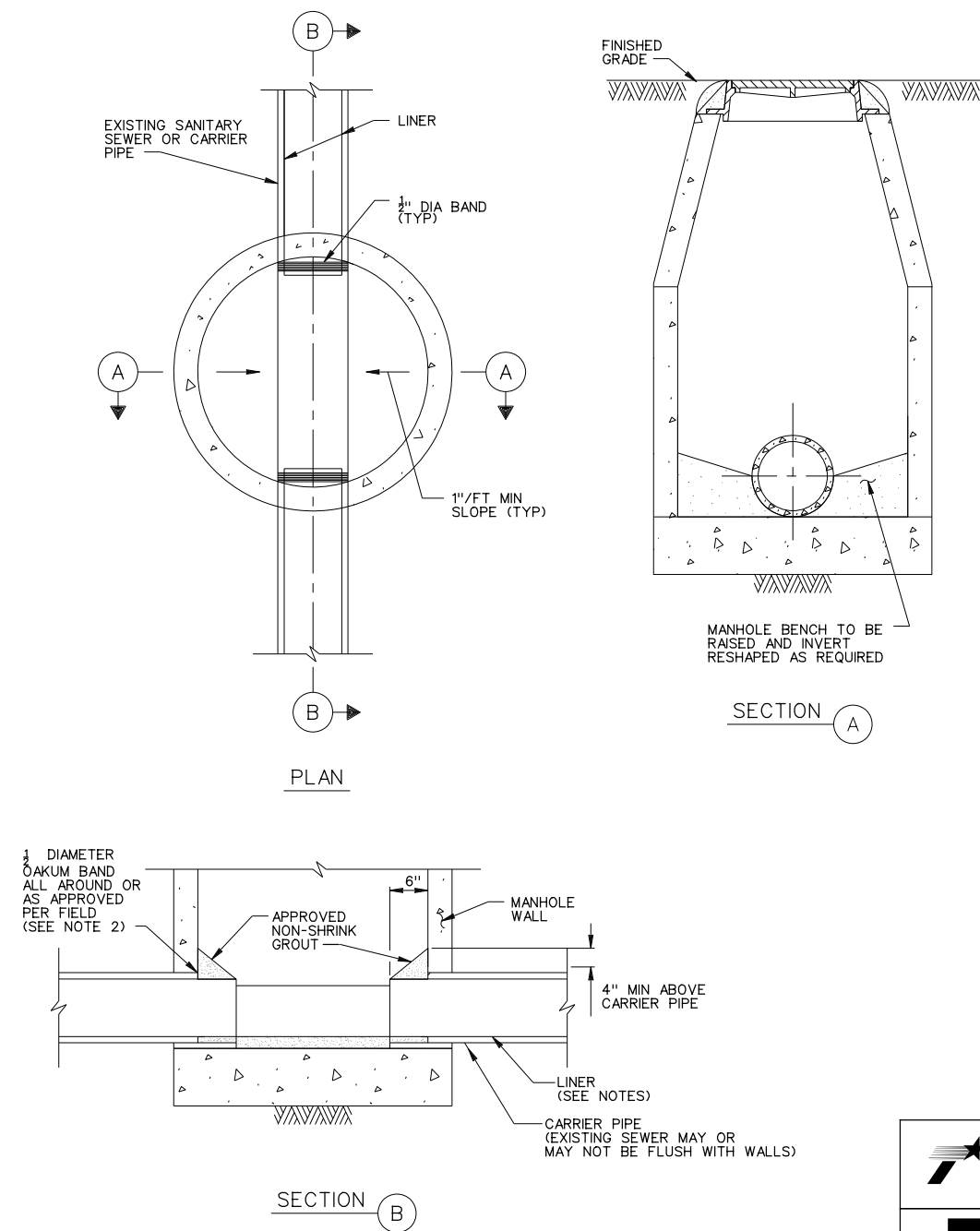
1. THE CONTRACTOR SHALL CENTER A MINIMUM OF 18 FOOT JOINT OF DUCTILE IRON PIPE OR C900 PVC PIPE ACROSS THE CENTER OF THE PROPOSED STORM SEWER.



SANITARY SEWER  
DUCTILE IRON PIPE  
STORM SEWER CROSSING

**NOTES:**

1. ALL LINER SHALL TIGHTLY FIT INSIDE THE EXISTING PIPE. ANNULAR SPACE, IF ANY, SHALL BE FILLED WITH NON-SHRINK GROUT, MINIMUM 12-INCH OR ONE-HALF PIPE DIAMETER.



SANITARY SEWER  
SEALING OF CURED-IN-PLACE  
LINER AT MANHOLE

Texas Department of Transportation  
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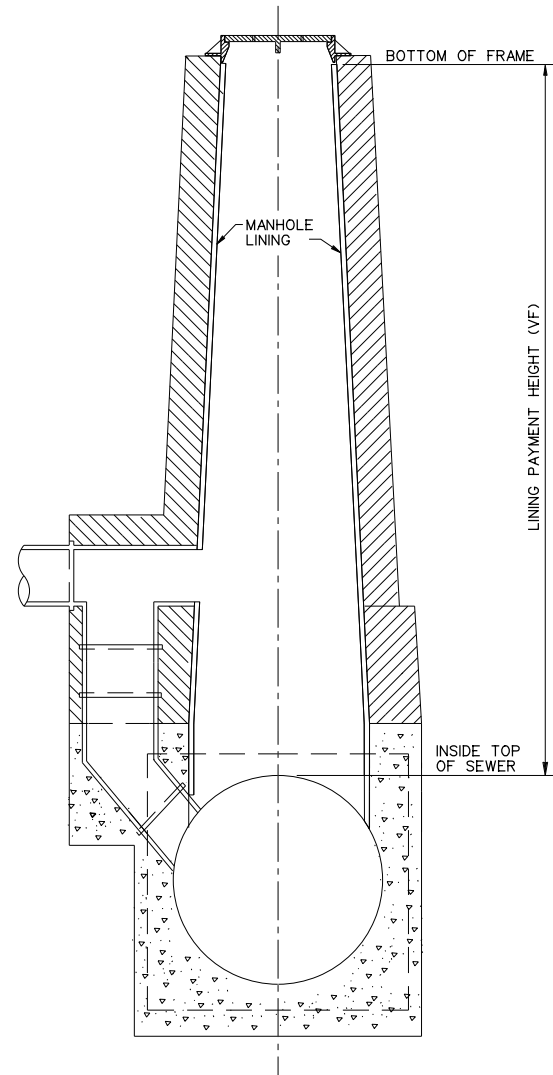
**FM 1960**  
**SANITARY SEWER DETAILS**

SHEET 9 OF 12

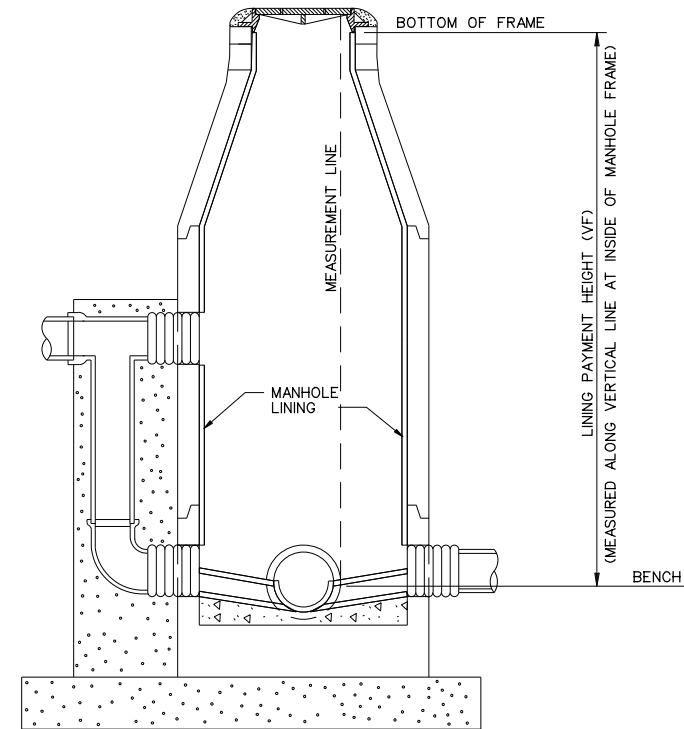
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6	(SEE TITLE SHEET)	FM 1960	
STATE	DISTRICT	COUNTY	
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	
1685	03	098	
			<b>1230</b>

FILENAME: FM1960E\_Detail1.s.dgn

DRAWING DATE: 4/14/2020



TYPICAL MONOLITHIC SEWER MANHOLE



TYPICAL PIPE SEWER MANHOLE

THIS IS NOT A STANDARD DETAIL.  
IT IS TO BE USED ONLY AS A GUIDE  
FOR MEASUREMENT PURPOSES

SANITARY SEWER  
MANHOLE LINING  
PAYMENT LIMITS



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**SANITARY SEWER DETAILS**

SHEET 10 OF 12

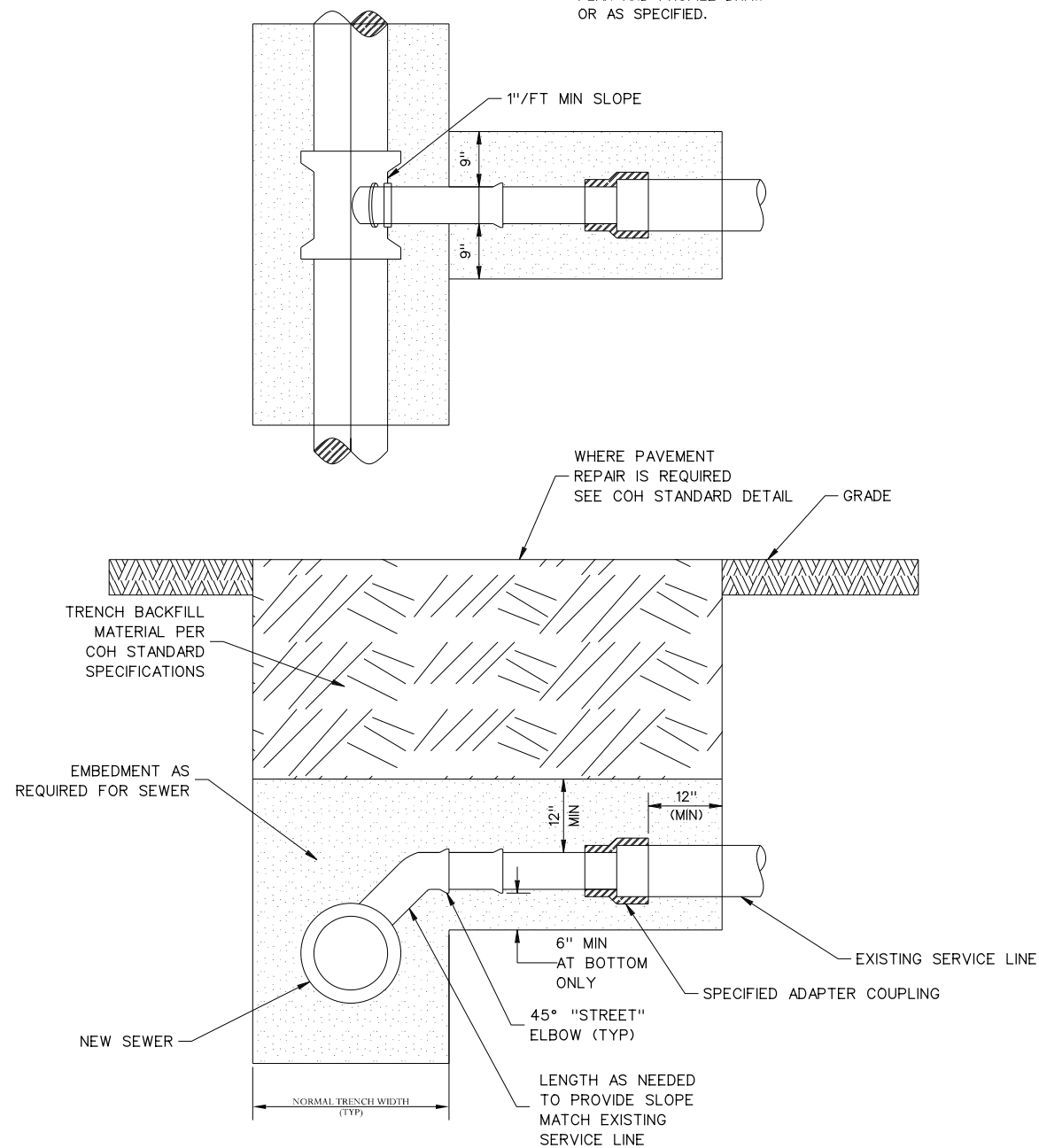
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1231
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_Details\_30.dgn

DRAWING DATE: 4/14/2020

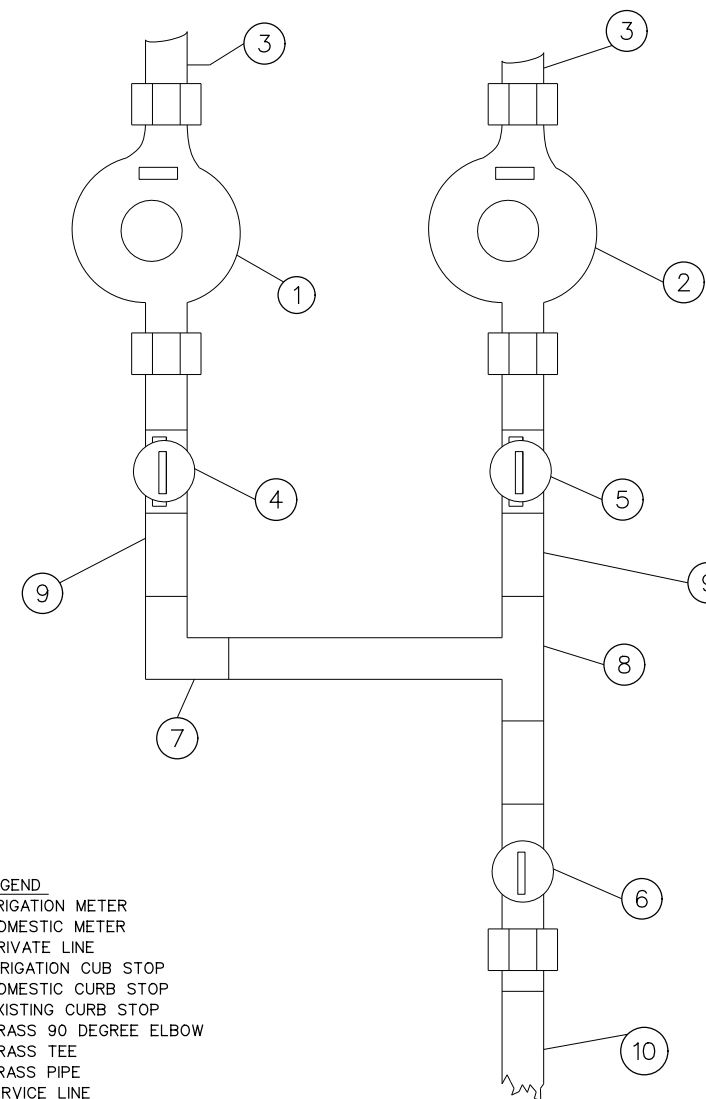
NOTES:

1. REPLACE EXISTING SERVICE LINE TO EXTENT SHOWN PLAN AND PROFILE DRAW OR AS SPECIFIED.



CROSS-SECTION OF SEWER AT SERVICE CONNECTION

SANITARY SEWER SERVICE RECONNECTION ON NEW OR REPLACEMENT SEWER



- LEGEND
1. IRRIGATION METER
  2. DOMESTIC METER
  3. PRIVATE LINE
  4. IRRIGATION CURB STOP
  5. DOMESTIC CURB STOP
  6. EXISTING CURB STOP
  7. BRASS 90 DEGREE ELBOW
  8. BRASS TEE
  9. BRASS PIPE
  10. SERVICE LINE

SCHEMATIC IRRIGATION TEE OFF DOMESTIC 3/4" THRU 2"

4/14/2020



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SANITARY SEWER DETAILS

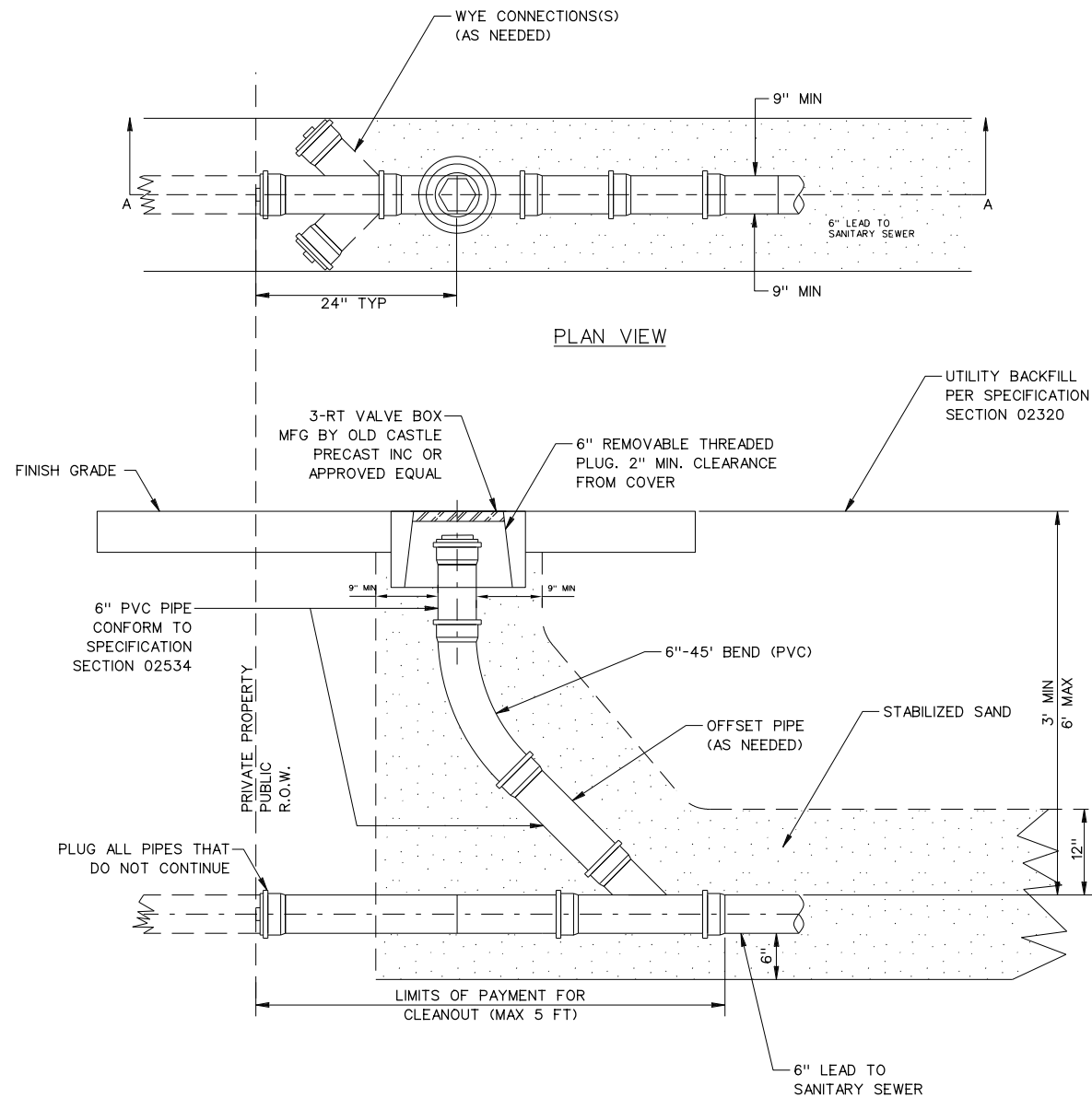
SHEET 11 OF 12

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.	
6	(SEE TITLE SHEET)	FM 1960	
STATE	DISTRICT	COUNTY	
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	
1685	03	098	
			1232



FILENAME: FM1960E\_Detail1.s31.dgn

DRAWING DATE: 4/14/2020



STANDARD CLEANOUT  
DETAIL ON SERVICE LEAD

NOTES:

1. USE CEMENT STABILIZED SAND BEDDING 6" BELOW PIPE AND 12" ABOVE PIPE.
2. MAINTAIN MINIMUM CLEARANCE OF 12" FROM DRIVEWAY.
3. CLEANOUT COVER SHALL BE EMBOSSED WITH "SS CO COH".
4. DO NOT LOCATE WITHIN SIDEWALK PAVING, EXCEPT WHEN REQUIRED.



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**SANITARY SEWER DETAILS**

SHEET 12 OF 12

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	1233
CONTROL	SECTION	JOB	
1685	03	098	

# 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**

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: December 2020

The utility work for this project has been incorporated into the TxDOT contract and plan set. The schedule of work and estimated completion date for utility adjustments and/or relocation will be determined by the contractor's schedule of work. The easement acquisition is targeted to be completed in November 2020 with construction work starting in December 2020.

Estimated Duration (days): 240 - 365

Estimated Completion Date: September 2021 - December 2021

\_\_\_\_\_  
Initial      Date  
TxDOT

\_\_\_\_\_  
Initial      Date  
Utility

# Attachment "D" Statement Covering Contract Work

(ROW-U-48)  
(ROW-U-48-1, if applicable)

\_\_\_\_\_  
Initial      Date  
TxDOT

\_\_\_\_\_  
Initial      Date  
Utility



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

U-Number: U15957

ROW CSJ Number: 1685-03-101 District: Houston
County: Harris Highway No.: FM 1960
Federal Project No.: N/A

I, Tim Stine, a duly authorized and qualified representative of Harris County MUD No. 132, 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 indicate 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.
2.
3.
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 FM 1960 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

Board President

Title

**Statement Covering Utility Construction Contract Work – In the State’s  
Highway Construction Contract  
(As Referenced in Form ROW-U-48, Option E)**

**Work Responsibilities**

- A. The Utility shall provide the following services under this contract:**
- i. Responsible for engaging the services of a Texas Registered Professional Engineer to prepare drawings and technical specifications for relocations and adjustments along FM 1960.
  - ii. Provide the plans and specifications to the State to include in the current planning specifications and estimate package being prepared by representatives of the Texas Department of Transportation’s Houston Area Office.
  - iii. Secure all necessary permitting as may be required for the installation of the HCMUD 132 line.
  - iv. Arrange and coordinate with the contractor, through the State, materials and equipment testing, rejection of all work not conforming to minimum requirements of the construction contract documents, maintenance of the proposed water/wastewater pipeline during construction, and the relocation of HCMUD 132 and connection of services to customers.
  - v. Advise the State of work that Utility determines should be corrected or rejected.
  - vi. Arrange, observe, and inspect all acceptance testing and notify the State of the results of these activities.
  - vii. Provide inspection services for the construction, notify the State of defects and deficiencies in the work, and observe actions of the contractor to correct such defects and deficiencies.
  - viii. Assume all responsibility for the maintenance of the existing HCMUD 132 during and upon completion of the construction contract.
  - ix. Ensure all Texas Commission on Environmental Quality and all other regulatory rules, regulations and laws are strictly adhered to.
  - x. Prepare and submit both a certificate of substantial completion and a list of observed items requiring completion or correction for the relocations and adjustments to the Project Engineer for concurrence.
  - xi. Coordinate all construction activities performed by Utility’s staff for the relocations and adjustments through the Project Engineer.

**B. The State shall provide the following services under this contract:**

- i. Combine the HCMUD 132 relocation and adjustment plans with the plans being prepared for the Project.
- ii. Review and approve the final construction plans prior to any construction-related activities. In order to ensure federal and/or state funding eligibility, projects must be authorized by the State prior to advertising for construction.
- iii. Advertise for construction bids, issue bid proposals, receive and tabulate the bids, and award and administer the contract for construction of the Project.
- iv. Negotiate and administer all field changes and change orders required for the Project. All change orders increasing construction costs for Utility's Project shall be submitted to Utility for review and approval together with an evaluation. Utility agrees to review and either approve or disapprove all change orders within five (5) business days after receipt of such order unless Utility Board's approval is necessary in which case Utility shall bring the item to Utility Board as soon as reasonably possible.
- v. Provide overall project management to supervise the day-to-day activities of the construction and monitor the activities of the contractor to promote the timely and efficient completion of the Project in accordance with the approved Plans and Specifications and construction schedule.
- vi. Conduct field observations and coordinate with Utility's inspectors and the contractor to cure defects and deficiencies in the construction prior to final acceptance.
- vii. Make timely payment to the contractor for work performed in connection with the Project.
- viii. Ensure access and permit Utility's inspectors and other authorized representatives to inspect the waterline construction at all times.
- ix. Conduct and coordinate final inspection of the Project in the presence of Utility's Engineer and Inspector, transmit final list of items to be completed or repaired and observe contractor correction of same.
- x. Maintain job file.

# Attachment “E”

## Utility Joint Use Acknowledgment – (ROW-U-JUAA) and/or Utility Installation Request – (Form 1082)

- Utility Joint Use Acknowledgment (ROW–U–JUAA)
  
- Utility Installation Review/Permit Number:

\_\_\_\_\_  
Initial      Date  
TxDOT

\_\_\_\_\_  
Initial      Date  
Utility





UTILITY JOINT USE ACKNOWLEDGEMENT
REIMBURSABLE UTILITY ADJUSTMENT

U-Number: U15957

ROW CSJ: 1685-03-101 County: Harris
District: Houston Highway: FM 1960
Federal Project No.: N/A From: East of Twigsworth Lane
Projected Highway Letting Date: 07/31/20 To: West of San Jacinto River Bridge

WHEREAS, the State of Texas, ("State"), acting by and through the Texas Department of Transportation ("TxDOT"), proposes to make certain highway improvements on that section of the above-indicated highway; and

WHEREAS, the Harris County MUD No. 132 ("Utility"), proposes to adjust or relocate certain of its facilities, if applicable, and retain title to any property rights it may have on, along or across, and within or over such limits of the highway right of way as indicated by the location map attached hereto.

NOW, THEREFORE, in consideration of the covenants and acknowledgements herein contained, the parties mutually agree as follows:

It is agreed that joint usage for both highway and utility purposes will be made of the area within the highway right of way limits as such area is defined and to the extent indicated on the aforementioned plans or sketches. Nothing in this Acknowledgement shall serve to modify or extinguish any compensable property interest vested in the Utility within the above described area. If the facilities shown in the aforementioned plans need to be altered or modified or new facilities constructed to either accommodate the proposed highway improvements or as part of Utility's future proposed changes to its own facilities, Utility agrees to notify TxDOT at least 30 days prior thereto, and to furnish necessary plans showing location and type of construction, unless an emergency situation occurs and immediate action is required. If an emergency situation occurs and immediate action is required, Utility agrees to notify TxDOT promptly. If such alteration, modification or new construction is in conflict with the current highway or planned future highway improvements, or could endanger the traveling public using said highway, TxDOT shall have the right, after receipt of such notice, to prescribe such regulations as necessary for the protection of the highway facility and the traveling public using said highway. Such regulations shall not extend, however, to requiring the placement of intended overhead lines underground or the routing of any lines outside of the area of joint usage above described.

If Utility's facilities are located along a controlled access highway, Utility agrees that ingress and egress for servicing its facilities will be limited to frontage roads where provided, nearby or adjacent public roads and streets, or trails along or near the highway right of way lines which only connect to an intersecting road. Entry may be made to the outer portion of the highway right of way from any one or all access points. Where supports, manholes or other appurtenances of the Utility's facilities are located in medians or interchange areas, access from the through-traffic roadways or ramps will be allowed by permit issued by the State to the Utility setting forth the conditions for policing and other controls to protect highway users. In an emergency situation, if the means of access or service operations as herein provided will not permit emergency repairs as required for the safety and welfare of the public, the Utility shall have a temporary right of access to and from the through-traffic roadways and ramps as necessary to accomplish the required repairs, provided TxDOT is notified immediately when such repairs are initiated and adequate provision is made by Utility for the convenience and safety of highway traffic. Except as expressly provided herein, the Utility's rights of access to the through-traffic roadways and/or ramps shall be subject to the same rules and regulations as apply to the general public.

Initial Date Initial Date
TxDOT Utility



If **Utility's** facilities are located along a non-controlled access highway, the **Utility's** rights of ingress and egress to the through-traffic roadways and/or ramps are subject to the same rules and regulations as apply to the general public.

**Participation in actual costs incurred by the Utility** for any future adjustment, removal or relocation of utility facilities required by highway construction shall be in accordance with applicable laws of the State of Texas.

**Utility** will, by written notice, advise **TxDOT** of the beginning and completion dates of the adjustment, removal, or relocation, and, thereafter, agrees to perform such work diligently, and to conclude said adjustment, removal, or relocation by the stated completion date. The completion date shall be extended for delays caused by events outside **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 **Utility's** ability to proceed with the relocation, or any other event in which **Utility** has exercised all due care in the prevention thereof so that the causes or other events are beyond the control and without the fault or negligence of **Utility**.

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

The **Utility** and the **State**, by execution of this Acknowledgement, do not waive or relinquish any right that they may have under the law.

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

**IN WITNESS WHEREOF**, the parties hereto have affixed their signatures.

**UTILITY**

Utility: Harris County MUD No. 132  
*Name of Utility*

By: \_\_\_\_\_  
*Authorized Signature*

Tim Stine  
*Print or Type Name*

Title: Board President

Date: \_\_\_\_\_

**EXECUTION RECOMMENDED:**

\_\_\_\_\_  
Director of TP&D: Houston 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

Date: \_\_\_\_\_

# Attachment "F" Eligibility Ratio

Eligibility Ratio established: 88.79 %

- Non-interstate Highway (Calculation attached)
- Interstate Highway

\_\_\_\_\_  
Initial      Date  
TxDOT

\_\_\_\_\_  
Initial      Date  
Utility

MUD 132 Option B

Conflict	Sheet #	Reimbursable Length (ft)	Non-Reimbursable Length (ft)	Total Length	Eligible %
1	6B	442	38		
	7B	552	0		
	8B	551	0		
	9B	551	0		
	10B	551	0		
	11B	546	0		
	12B	433	14		
		3626	52	3678	98.59

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2	15B	453	0		
	16B	223	0		
		676	0	676	100.00

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3a	19B	153	0		
		153	0	153	100.00

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3b	25B	67	0		
	26B	89	0		
		156	0	156	100.00

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4	4B	164	0		
		164	0	164	100.00

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5	6B	149	0		
		149	0	149	100.00

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6	9B	109	0		
		109	0	109	100.00

Conflict	Sheet #	Reimbursable Length (ft)	Non-Reimbursable Length (ft)	Total Length	Eligible %
7	19B	0	178		
		0	178	178	0.00

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8	22B	0	167		
		0	167	167	0.00

Conflict	Sheet #	Reimbursable Length (ft)	Non-Reimbursable Length (ft)	Total Length	Eligible %
9	26B	0	189		
		0	189	189	0.00

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10	15B	440	8		
	16B	199	0		
		639	8	647	98.76

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	19B	150	0		
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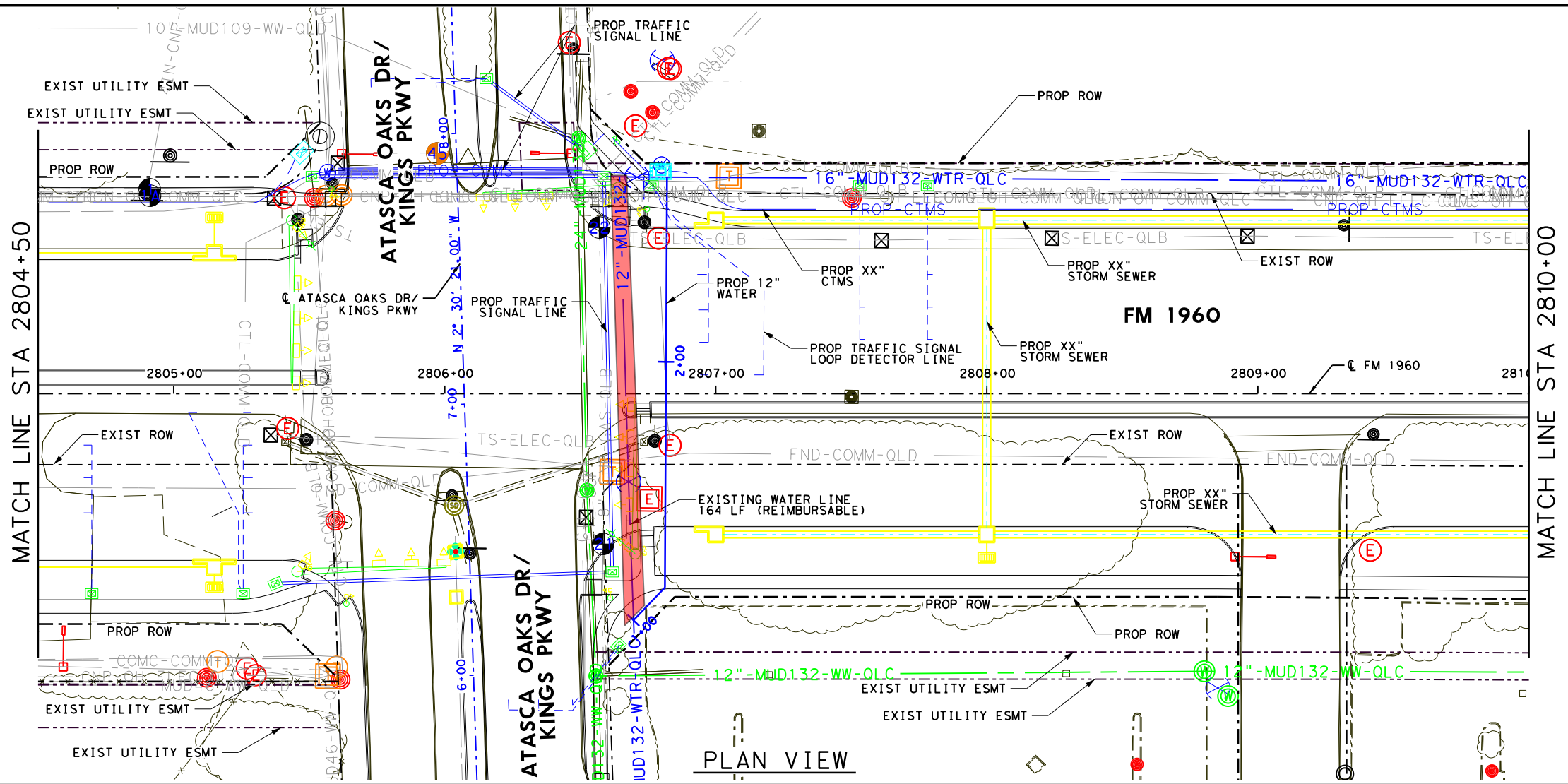
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		365	42	407	89.68



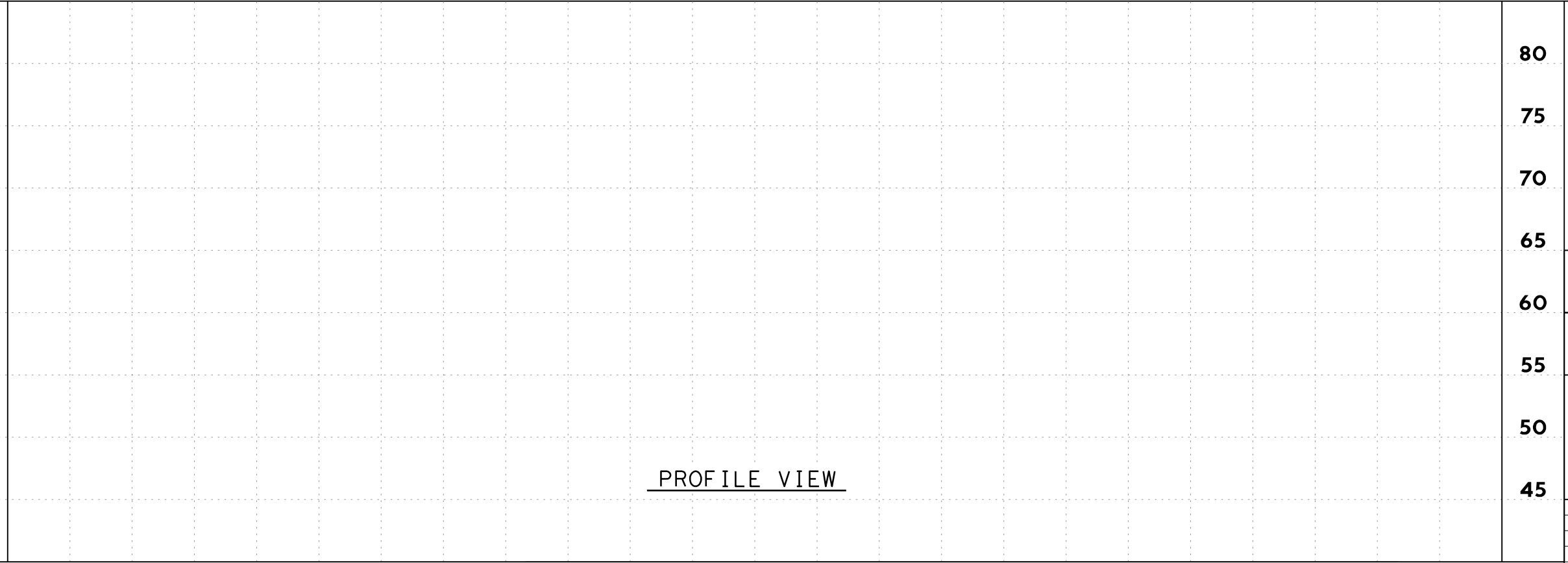
HORZ 0' 10' 25' 50'  
 VERT 0' 5' 10'  
 SCALE IN FEET

NOTES:  
 1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

WATER LINE (CONFLICT 4)  
 164 REIMBURSABLE FEET  
 0 NON-REIMBURSABLE FEET  
 # PROP EASEMENT PARCEL NUMBER

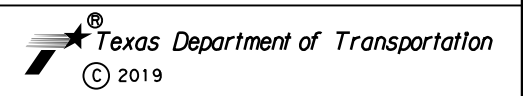


PLAN VIEW



PROFILE VIEW

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.  
 RESPONSIBLE ENGINEER:  
 BGE, INC.  
 YANWAH CHONG  
 TEXAS REGISTRATION NO. 101026  
 2/26/2020



**BGE, Inc.**  
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**FM 1960 EAST**  
 TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER  
**2804+50 TO 2810+00**  
**MUD 132 OPTION B**  
 HC MUD 132

SHEET 1 OF 19			
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	
1685	03	098	<b>4B</b>

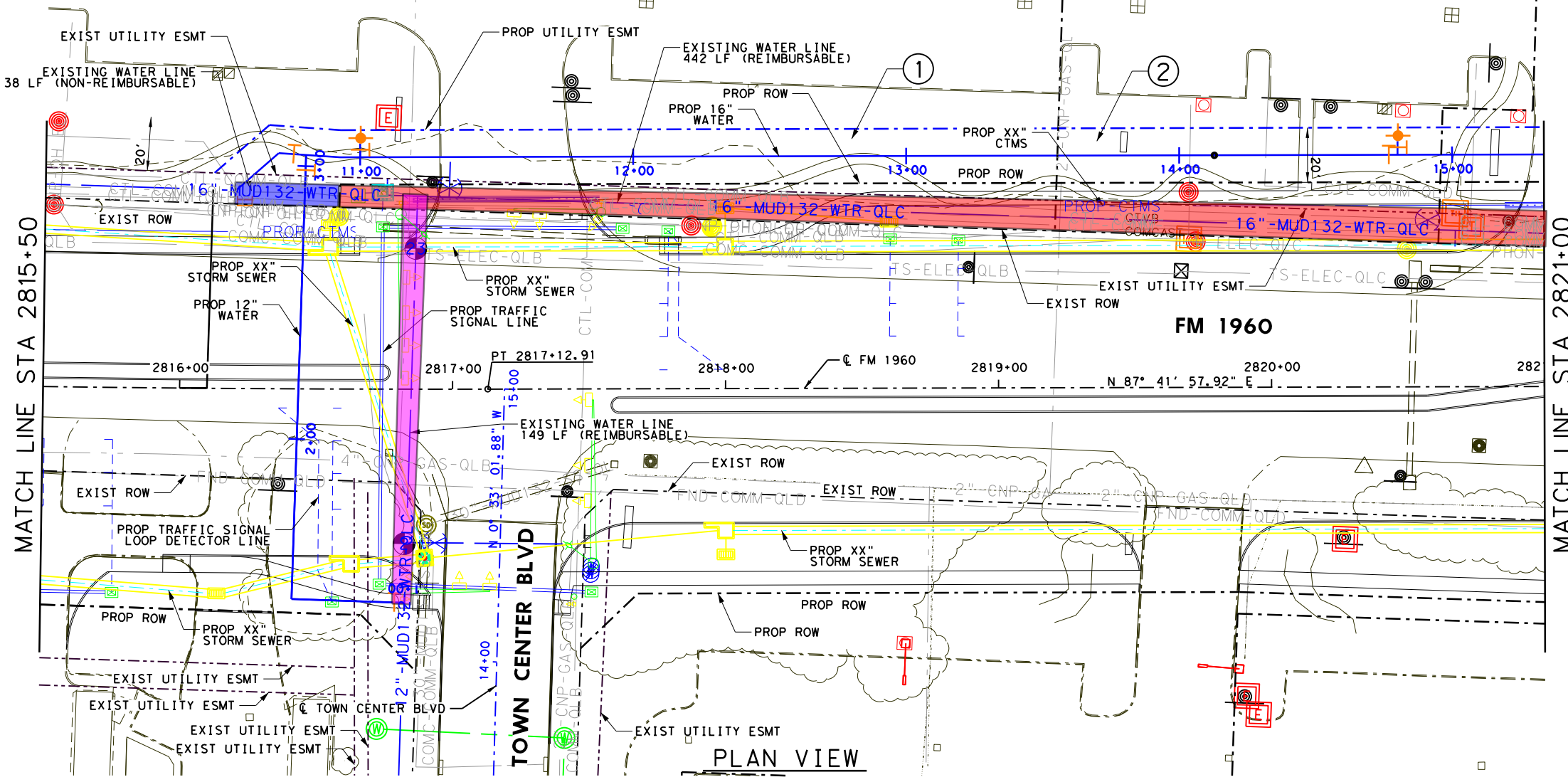
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 DRAWING DATE: 2/26/2020



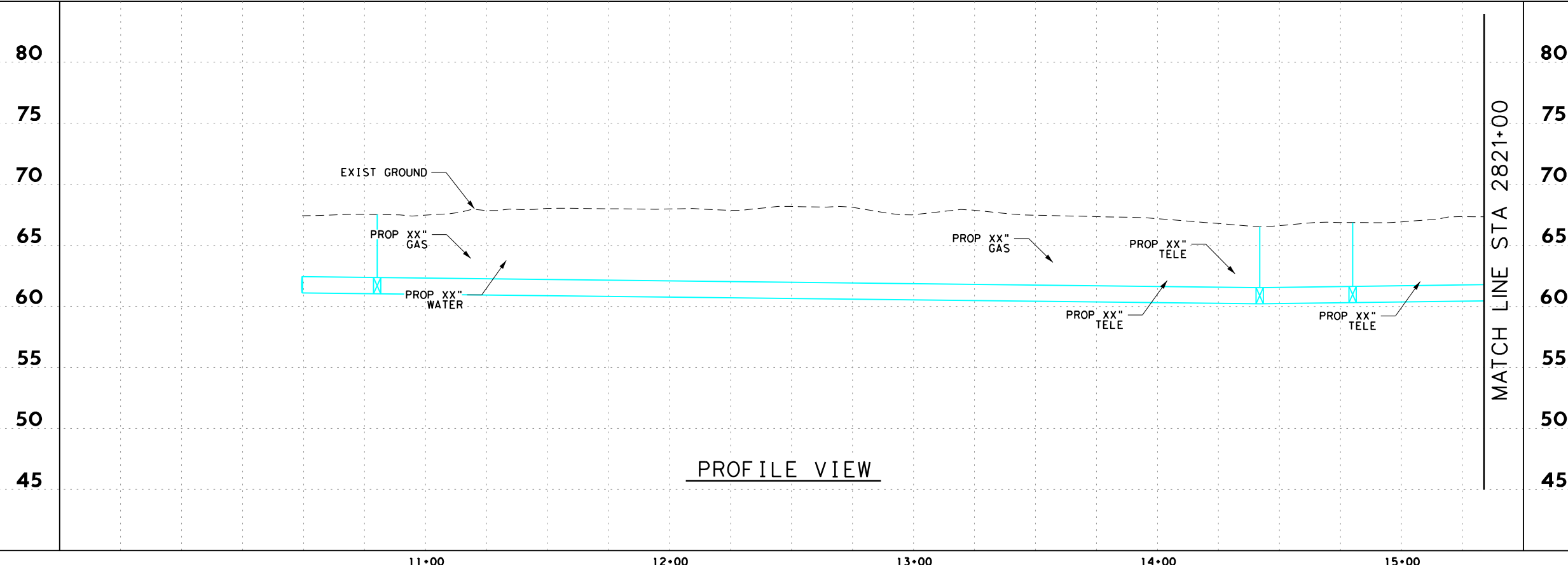
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 VERT 0' 5' 10'  
 SCALE IN FEET

NOTES:  
 1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

- PARALLEL WATER LINE (CONFLICT 1)
- 442 REIMBURSABLE FEET
- 38 NON-REIMBURSABLE FEET
- CROSSING WATER LINE (CONFLICT 5)
- 149 REIMBURSABLE FEET
- 0 NON-REIMBURSABLE FEET
- # PROP EASEMENT PARCEL NUMBER



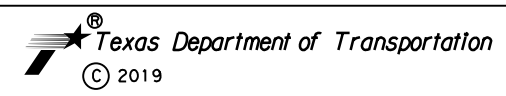
PLAN VIEW



PROFILE VIEW

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RESPONSIBLE ENGINEER:  
 BGE, INC.  
 YANWAH CHONG  
 TEXAS REGISTRATION NO. 101026  
 2/26/2020



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**FM 1960 EAST**  
 TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2815+50 TO 2821+00**  
**MUD 132 OPTION B**  
 HC MUD 132

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	
1685	03	098	<b>6B</b>

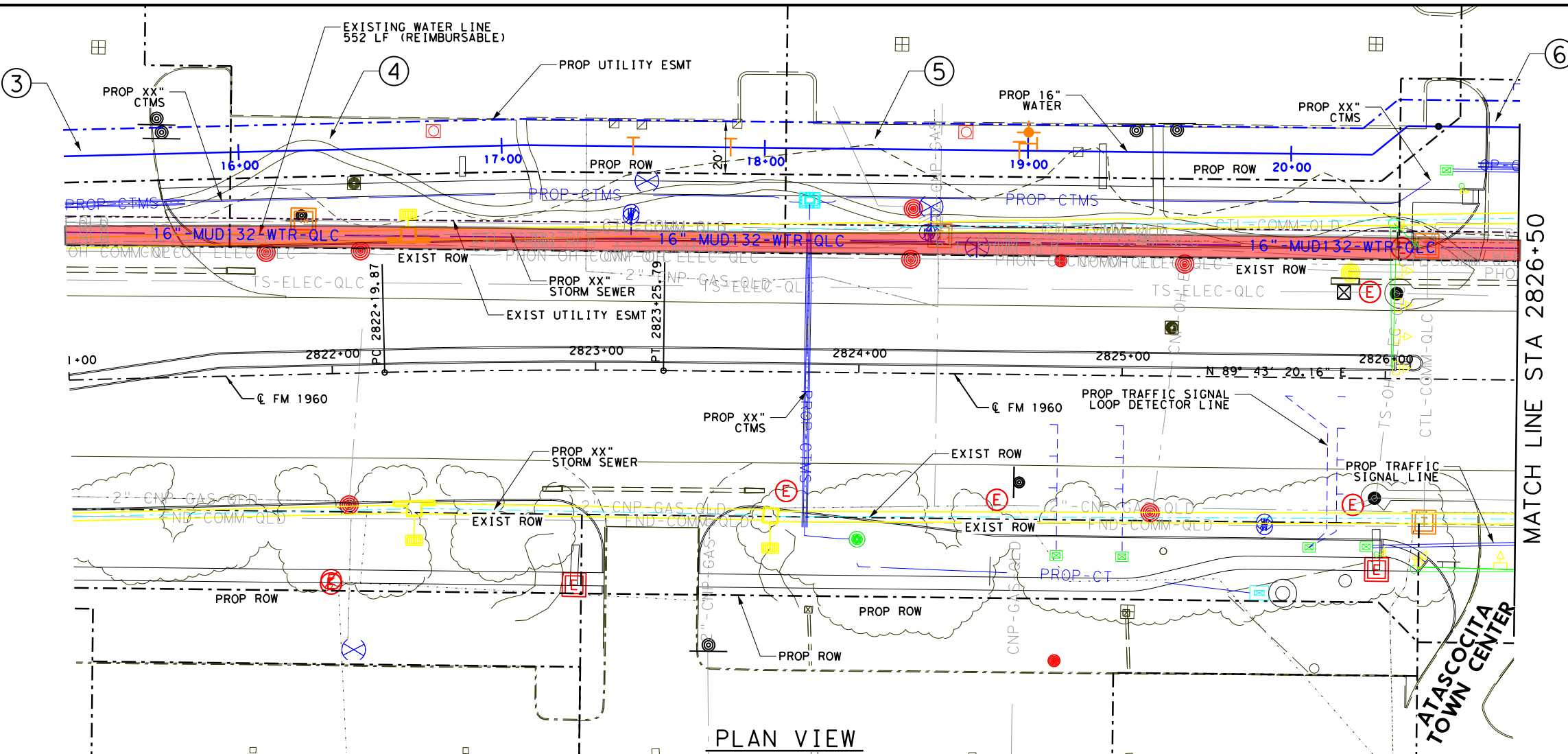
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 DRAWING DATE: 2/26/2020



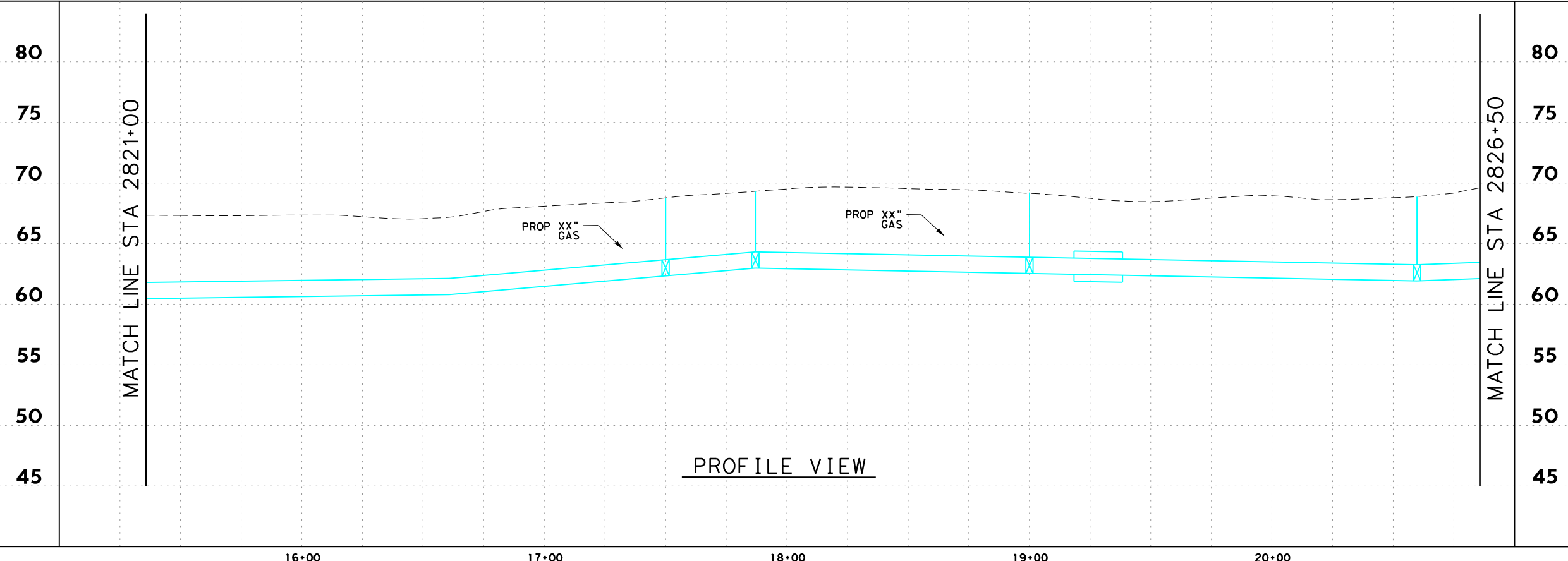
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 VERT 0' 5' 10'  
 SCALE IN FEET

NOTES:  
 1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

- WATER LINE (CONFLICT 1)
- 552 REIMBURSABLE FEET
  - 0 NON-REIMBURSABLE FEET
  - # PROP EASEMENT PARCEL NUMBER



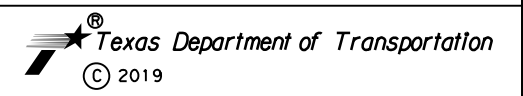
PLAN VIEW



PROFILE VIEW

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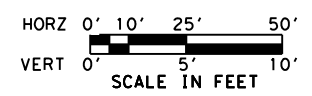
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**FM 1960 EAST**  
 TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2821+00 TO 2826+50**  
**MUD 132 OPTION B**  
 HC MUD 132

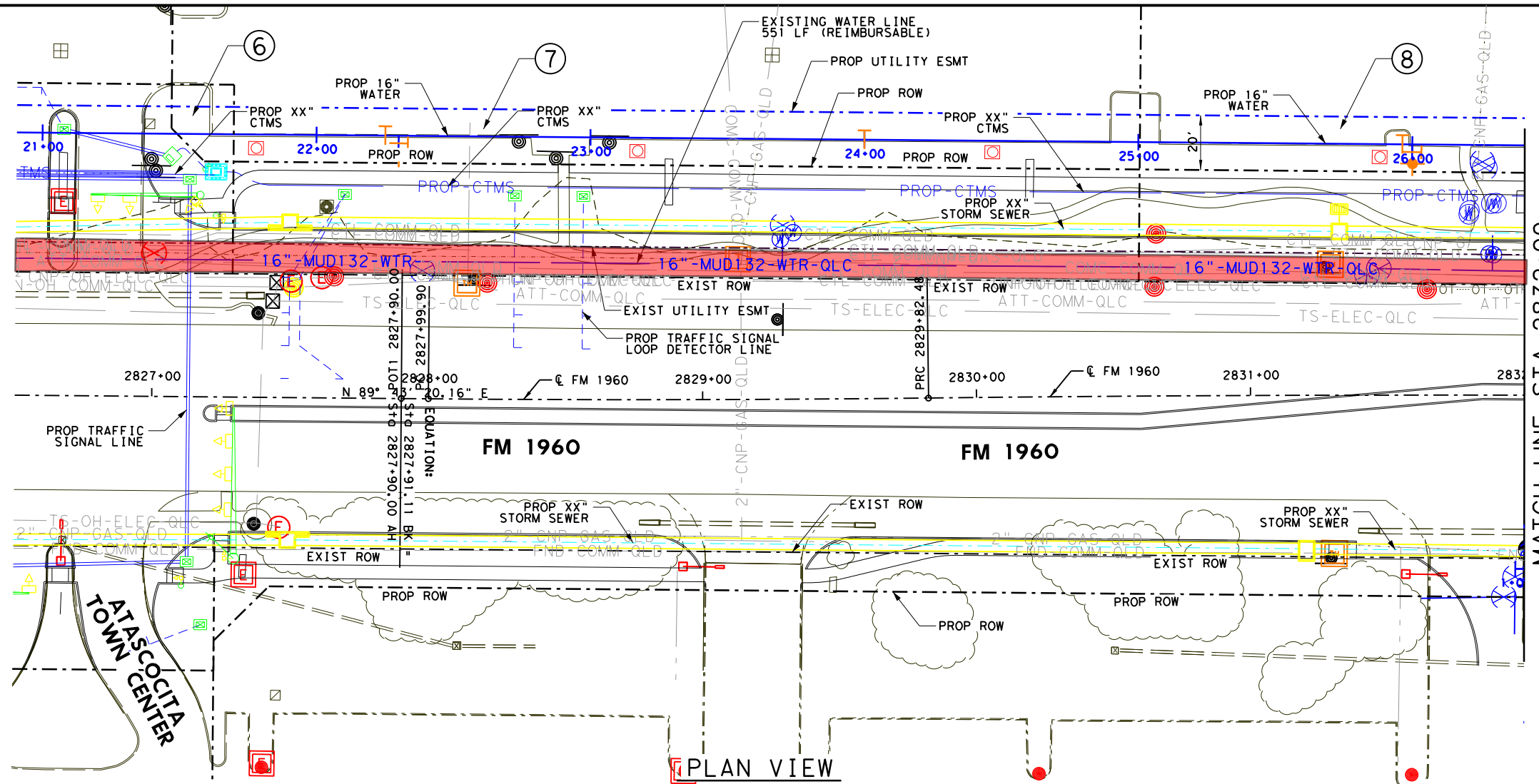
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	
1685	03	098	7B

FILENAME: FM1960E\_UTIL\_ESMT\_7B (SUA Sheets).dgn  
 DRAWING DATE: 2/26/2020



NOTES:  
1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

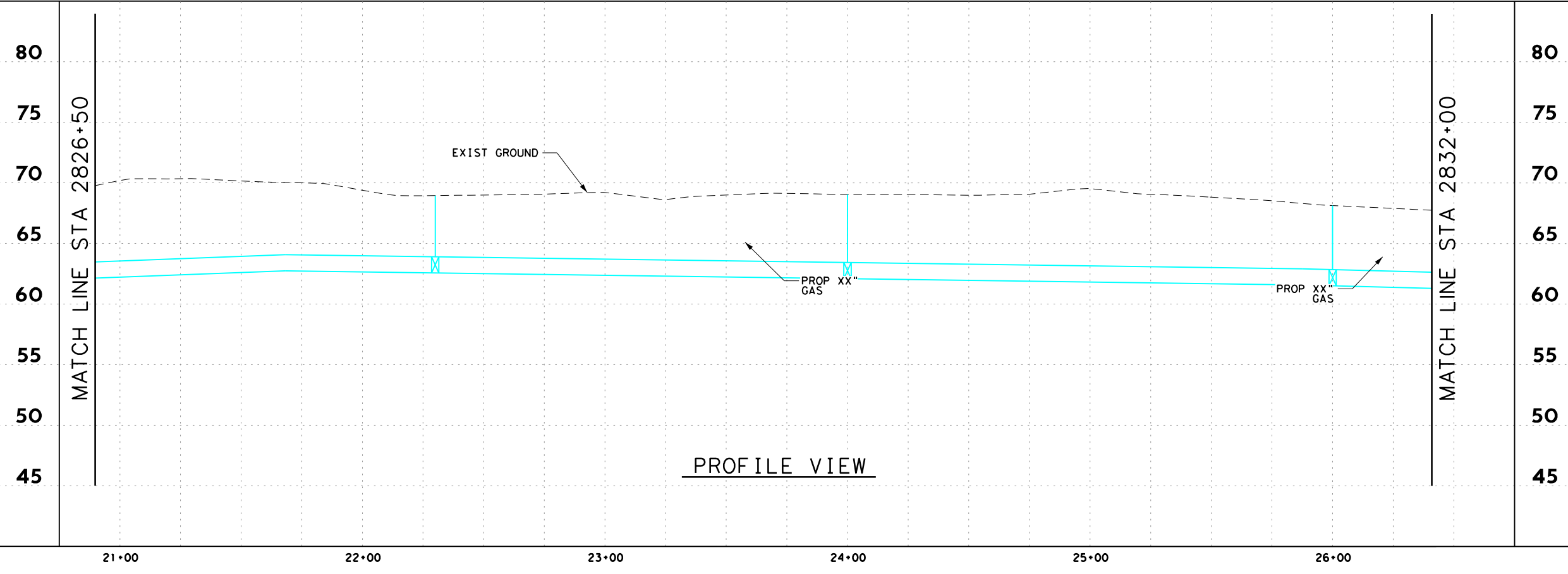
- WATER LINE (CONFLICT 1)
- 551 REIMBURSABLE FEET
- 0 NON-REIMBURSABLE FEET
- # PROP EASEMENT PARCEL NUMBER



MATCH LINE STA 2832+00

ATASCOCITA TOWN CENTER

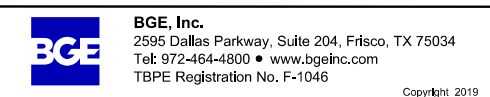
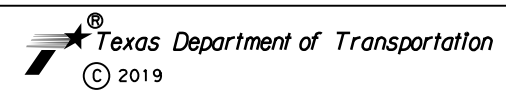
PLAN VIEW



PROFILE VIEW

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TEXAS REGISTRATION NO. 101026  
2/26/2020



**FM 1960 EAST**  
TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2826+50 TO 2832+00**  
**MUD 132 OPTION B**  
HC MUD 132

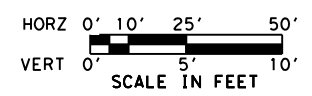
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	
1685	03	098	<b>8B</b>

DRAWING DATE: 2/26/2020 FILENAME: FM1960E\_UTIL\_ESMT\_8B (SUA Sheets).dgn

MATCH LINE STA 2826+50

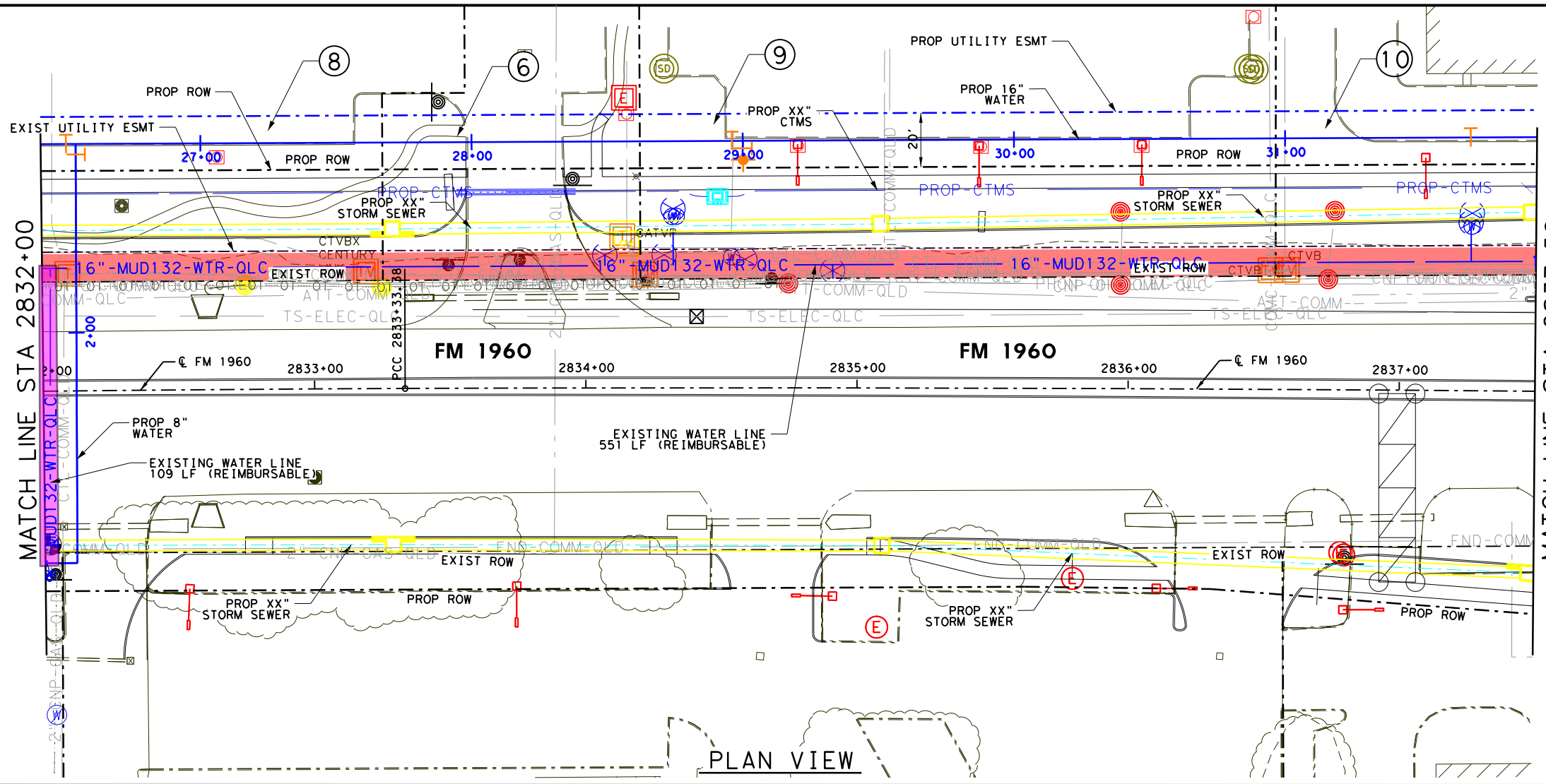
MATCH LINE STA 2832+00



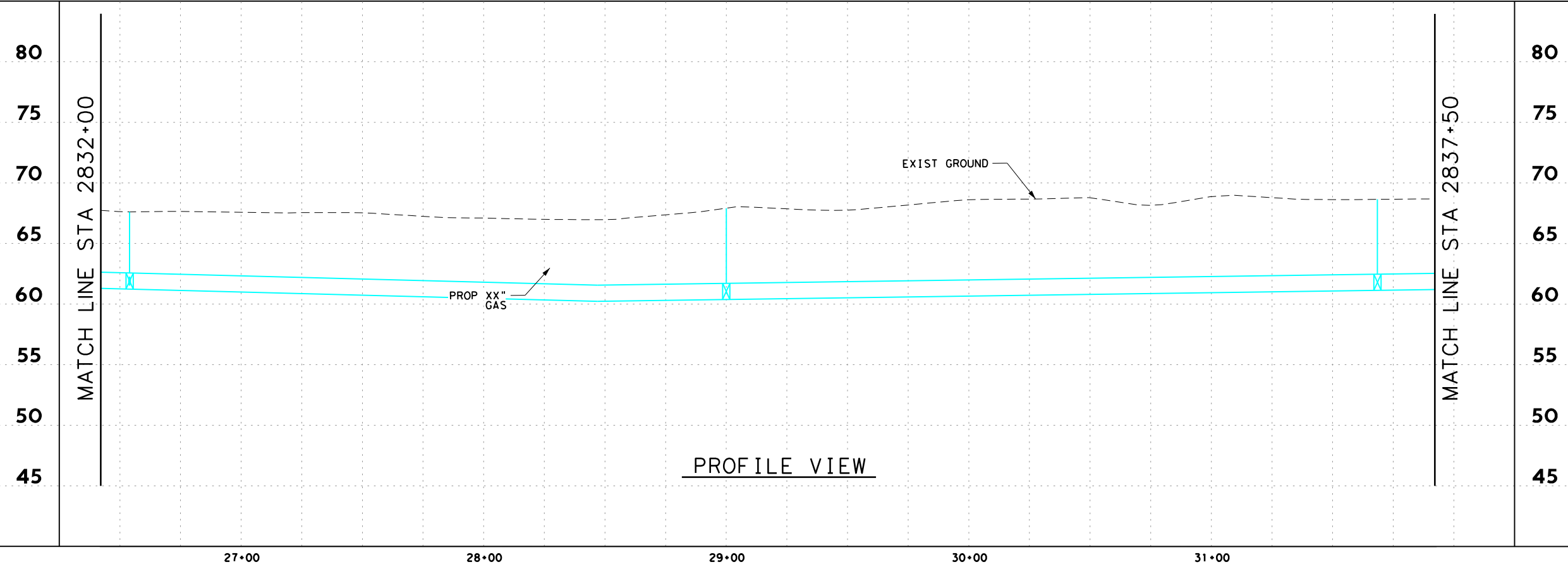


NOTES:  
1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

- PARALLEL WATER LINE (CONFLICT 1)
- 551 REIMBURSABLE FEET
- 0 NON-REIMBURSABLE FEET
- CROSSING WATER LINE (CONFLICT 6)
- 109 REIMBURSABLE FEET
- 0 NON-REIMBURSABLE FEET
- # PROP EASEMENT PARCEL NUMBER



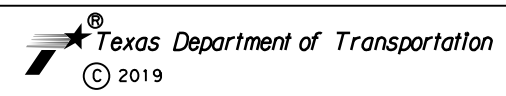
PLAN VIEW



PROFILE VIEW

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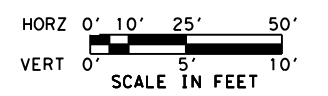
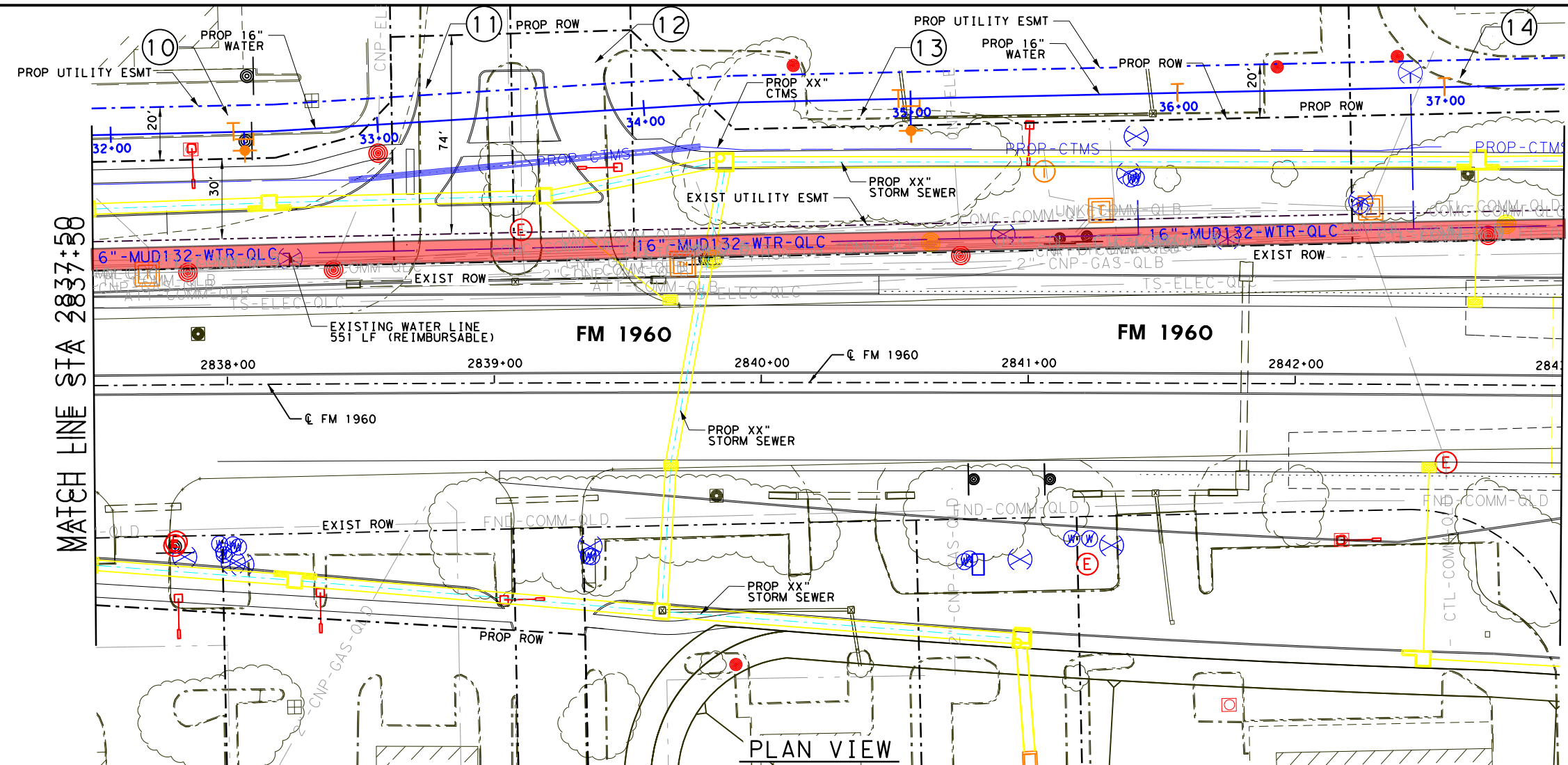
**FM 1960 EAST**  
TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2832+00 TO 2837+50**  
**MUD 132 OPTION B**  
HC MUD 132

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	98
CONTROL	SECTION	JOB	
1685	03	098	

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FILENAME: FM1960E\_UTIL\_ESMT\_10B (SUA Sheets).dgn  
DRAWING DATE: 2/26/2020



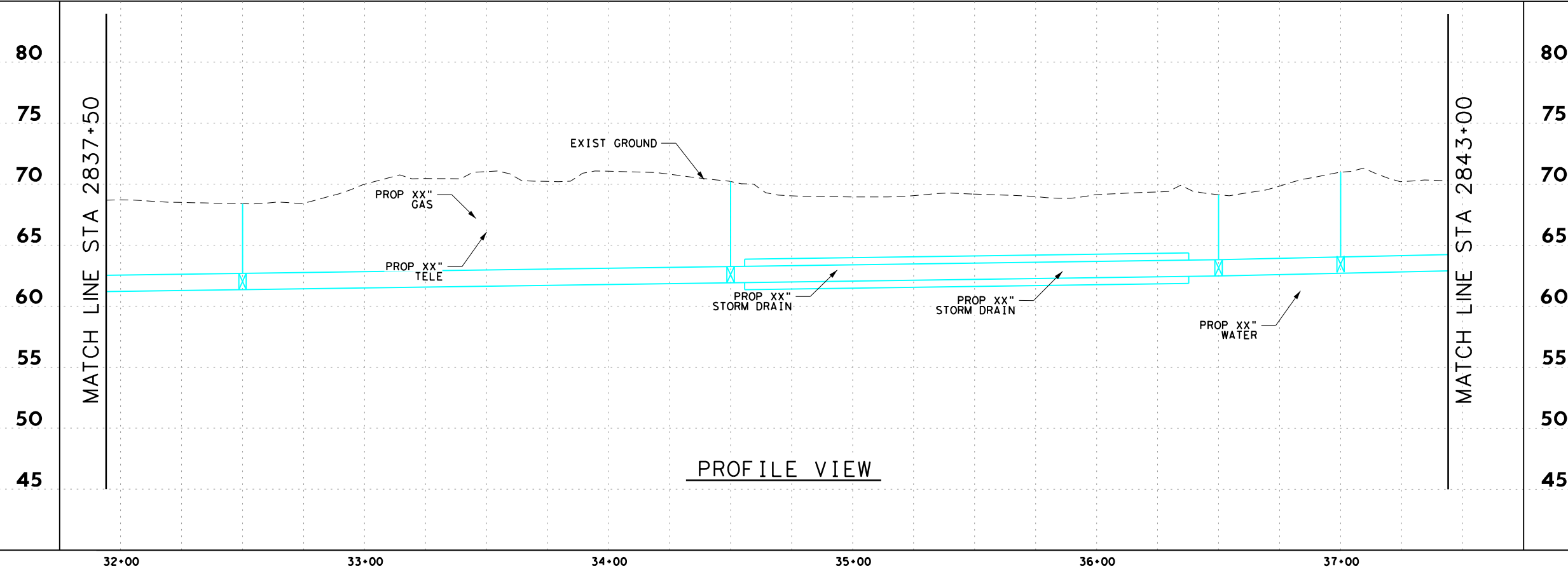
NOTES:  
1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

- WATER LINE (CONFLICT 1)
- 551 REIMBURSABLE FEET
  - 0 NON-REIMBURSABLE FEET
  - # PROP EASEMENT PARCEL NUMBER

MATCH LINE STA 2837+50

MATCH LINE STA 2843+00

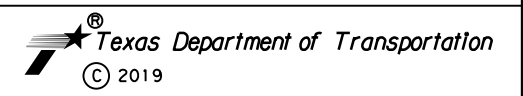
PLAN VIEW



PROFILE VIEW

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TEXAS REGISTRATION NO. 101026  
2/26/2020



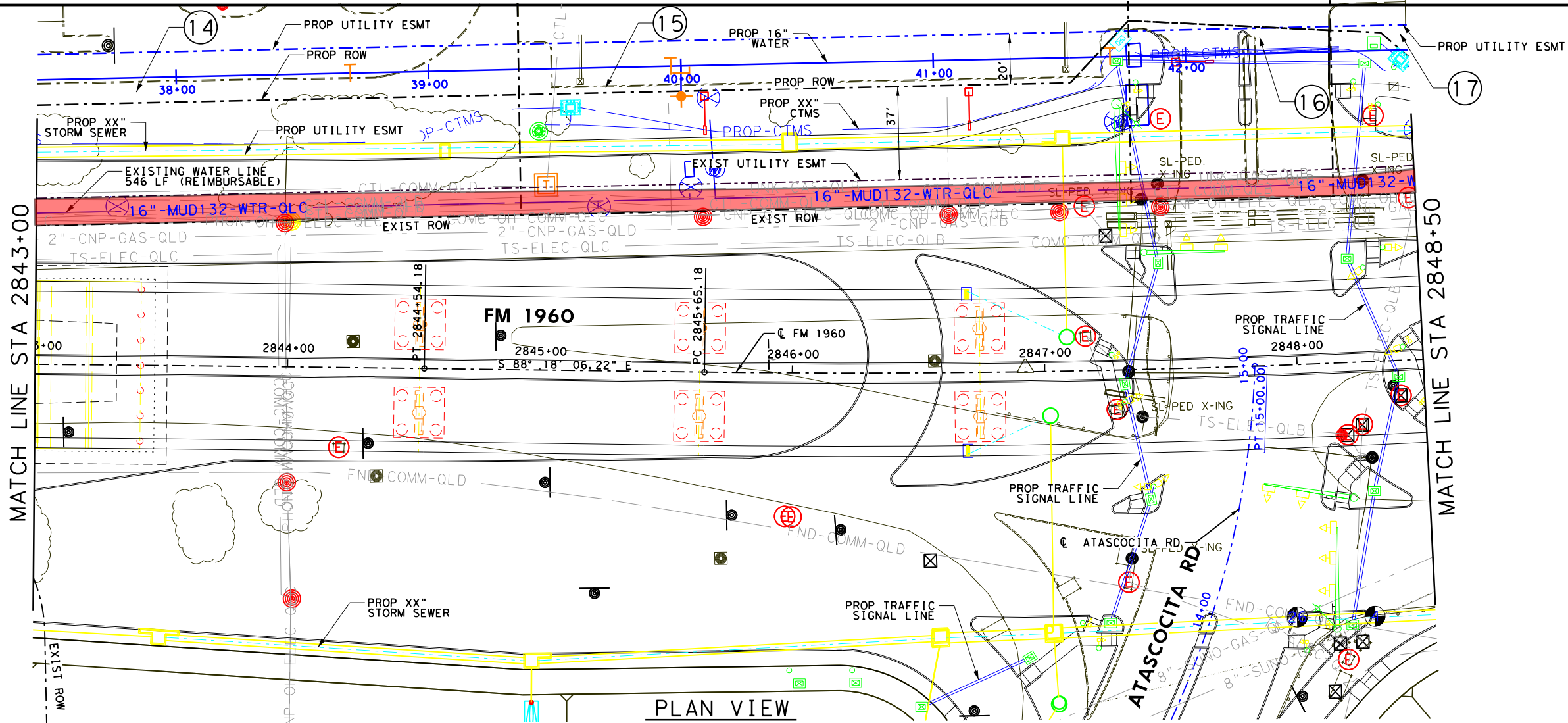
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**FM 1960 EAST**  
TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2837+50 TO 2843+00**  
**MUD 132 OPTION B**  
HC MUD 132

FED. RD. DIV. NO.		FEDERAL AID PROJECT NO.		HIGHWAY NO.
6		(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.	
TEXAS	HOU	HARRIS	10B	
CONTROL	SECTION	JOB		
1685	03	098		

FILENAME: FM1960E\_UTIL\_ESMT\_11B (SUA Sheets).dgn  
DRAWING DATE: 2/26/2020

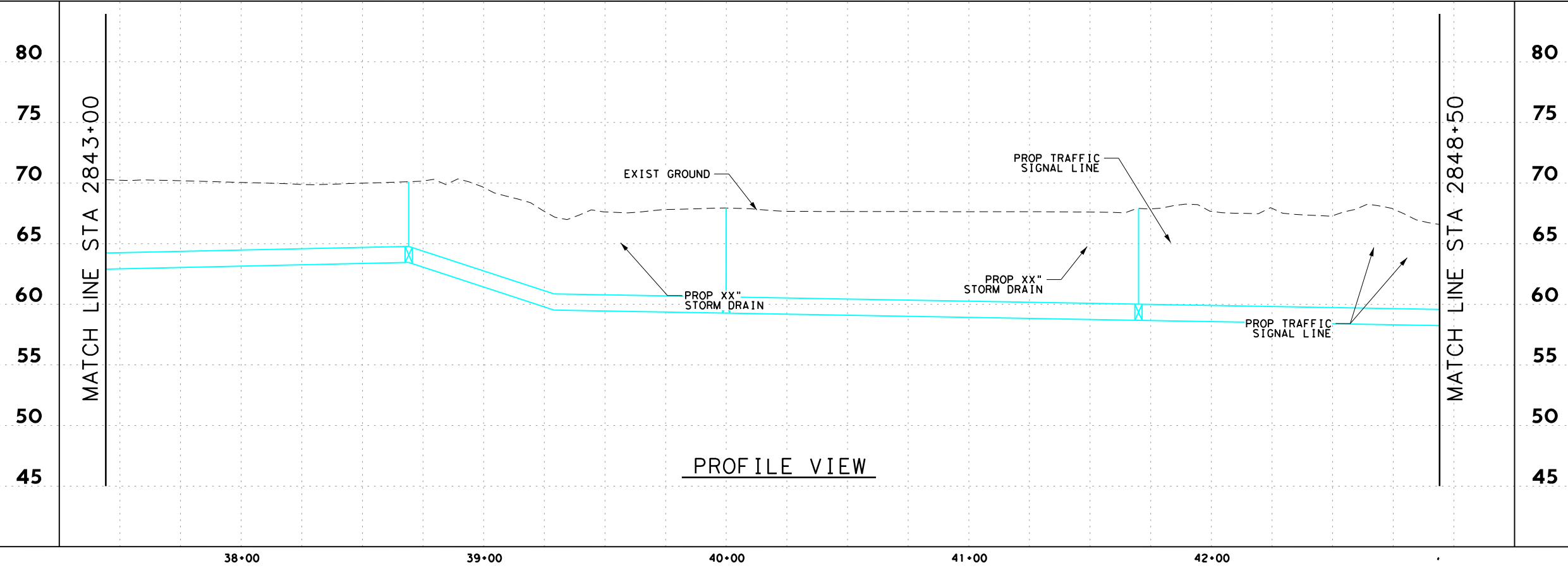


HORZ 0' 10' 25' 50'  
VERT 0' 5' 10'  
SCALE IN FEET

NOTES:  
1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

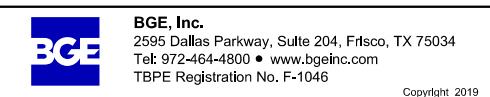
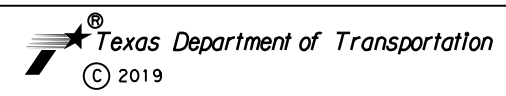
WATER LINE (CONFLICT 1)  
 546 REIMBURSABLE FEET  
 0 NON-REIMBURSABLE FEET  
# PROP EASEMENT PARCEL NUMBER

PLAN VIEW



PROFILE VIEW

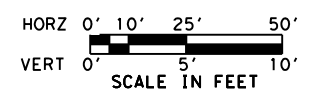
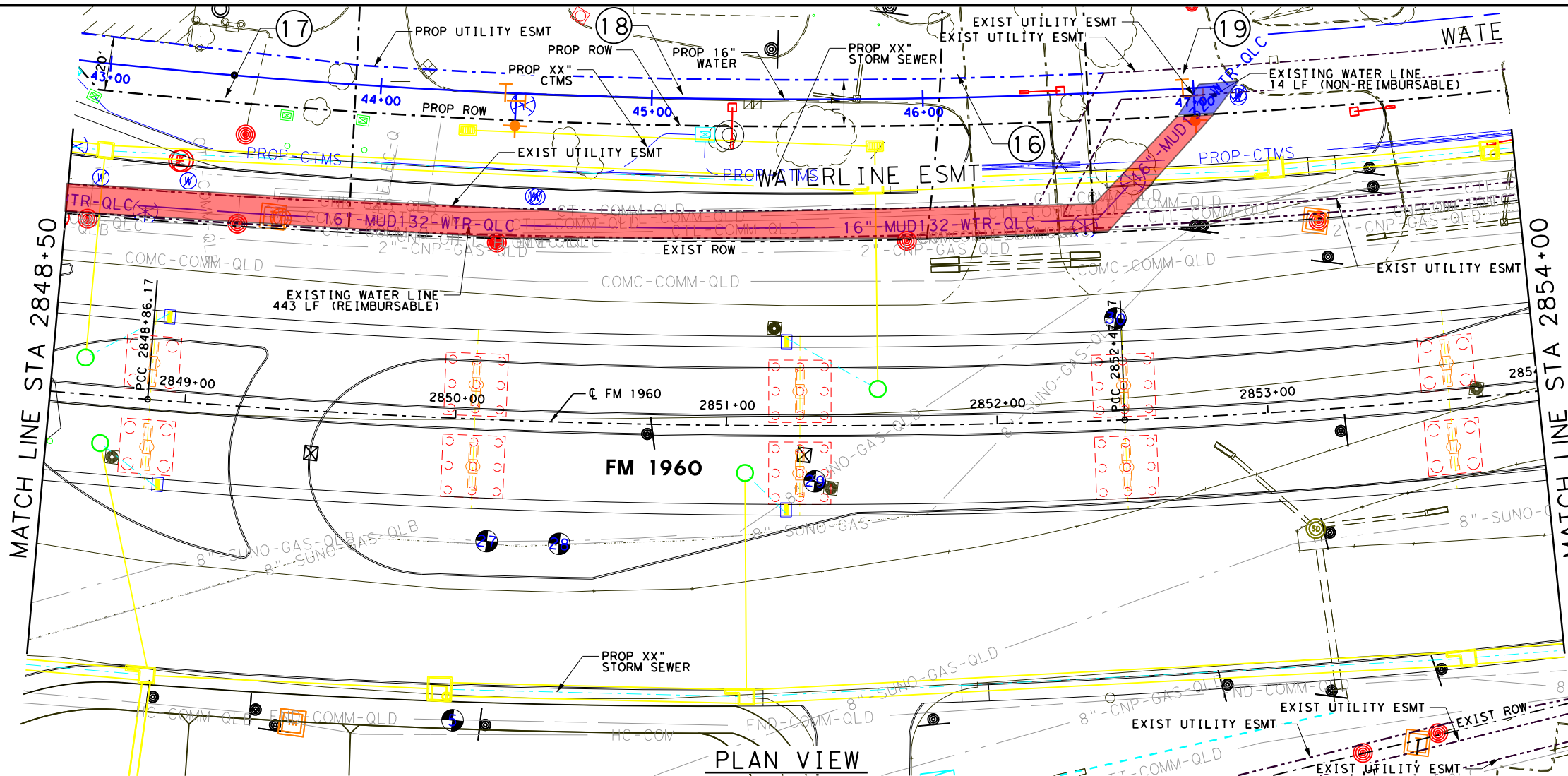
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 2/26/2020



**FM 1960 EAST**  
 TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER  
**2843+00 TO 2848+50**  
**MUD 132 OPTION B**  
 HC MUD 132

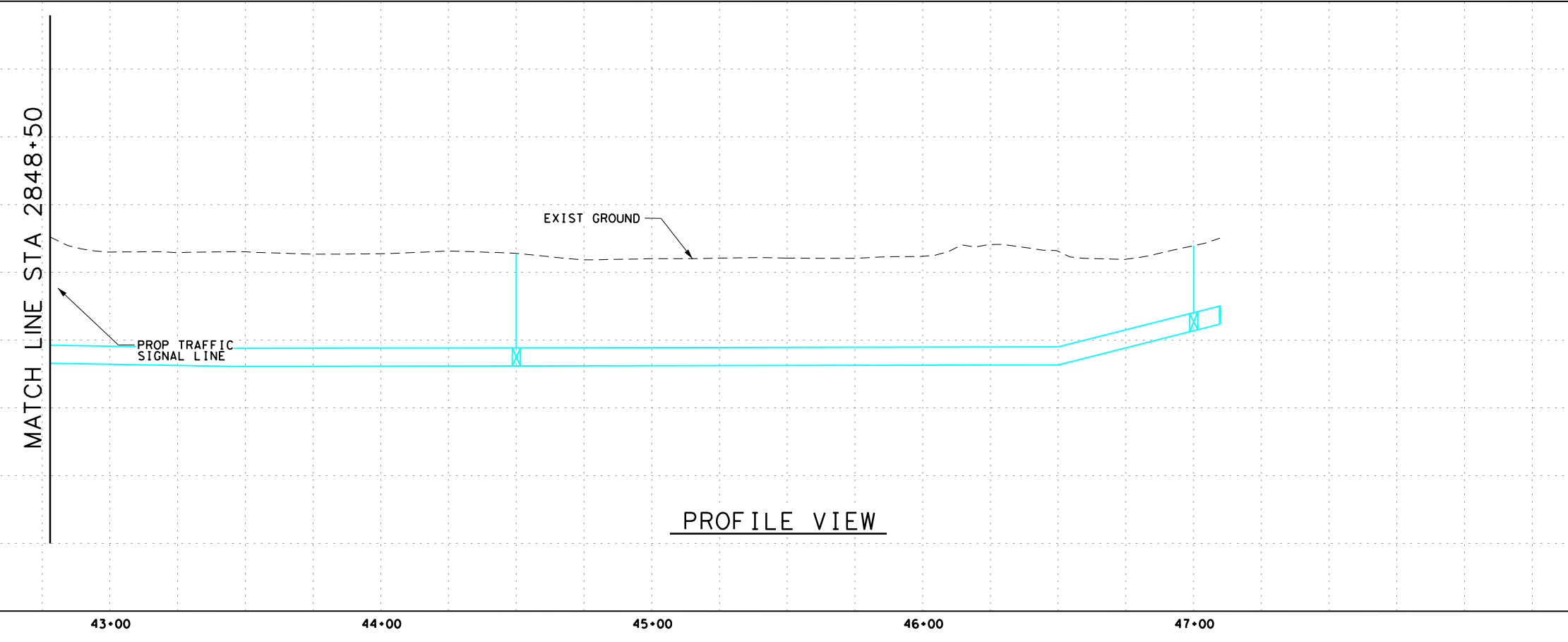
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6		(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.	
TEXAS	HOU	HARRIS		
CONTROL	SECTION	JOB		
1685	03	098	11B	

FILENAME: FM1960E\_UTIL\_ESMT\_12B (SUA Sheets).dgn  
DRAWING DATE: 2/26/2020



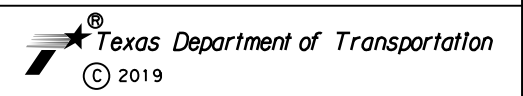
NOTES:  
1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

- WATER LINE (CONFLICT 1)  
433 REIMBURSABLE FEET
- 14 NON-REIMBURSABLE FEET
- # PROP EASEMENT PARCEL NUMBER



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2/26/2020



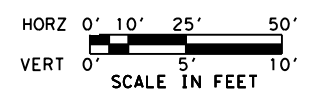
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**FM 1960 EAST**  
TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2848+50 TO 2854+00**  
**MUD 132 OPTION B**  
HC MUD 132

SHEET 9 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	12B
CONTROL	SECTION	JOB	
1685	03	098	

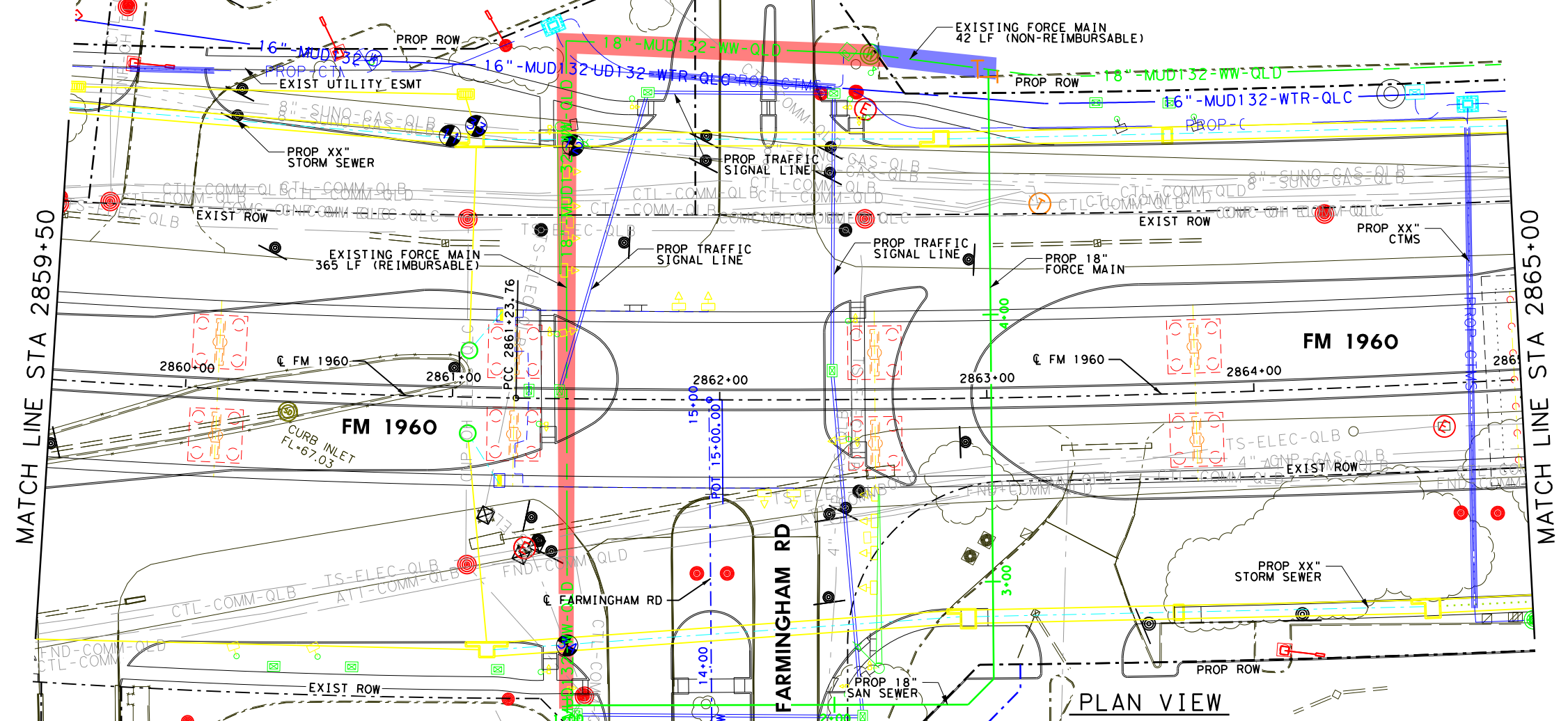


NOTES:  
1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

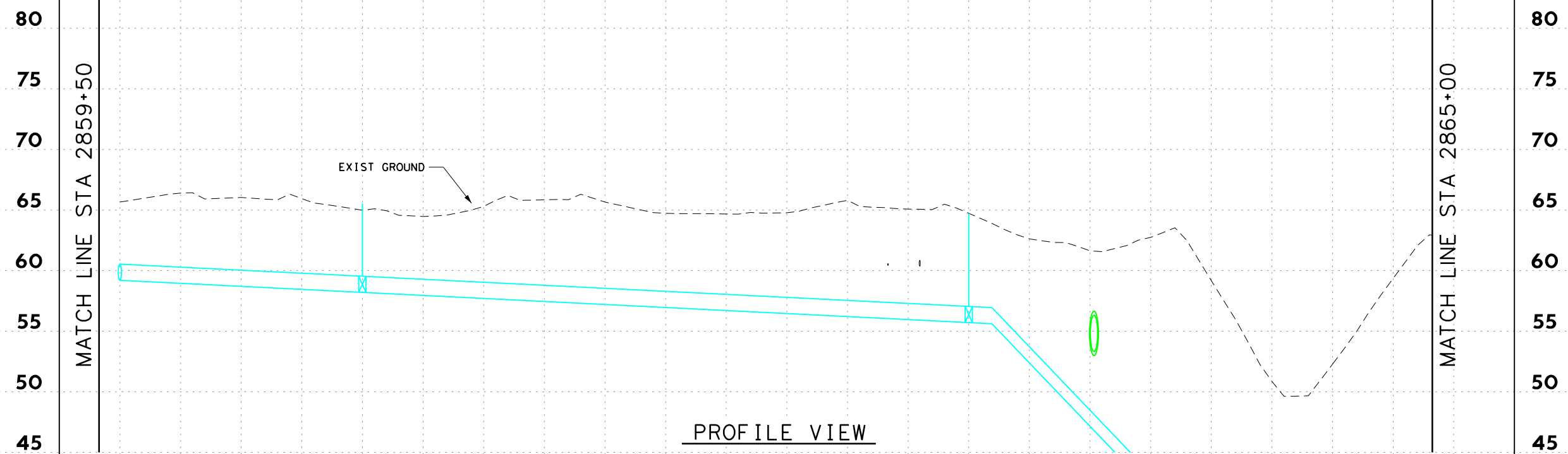
- WASTEWATER LINE (CONFLICT 14)
- 365 REIMBURSABLE FEET
  - 42 NON-REIMBURSABLE FEET
  - # PROP EASEMENT PARCEL NUMBER

MATCH LINE STA 2859+50

MATCH LINE STA 2865+00



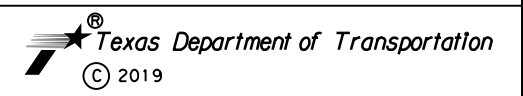
PLAN VIEW



PROFILE VIEW

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2/26/2020



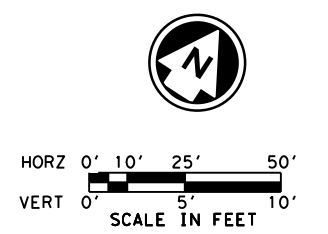
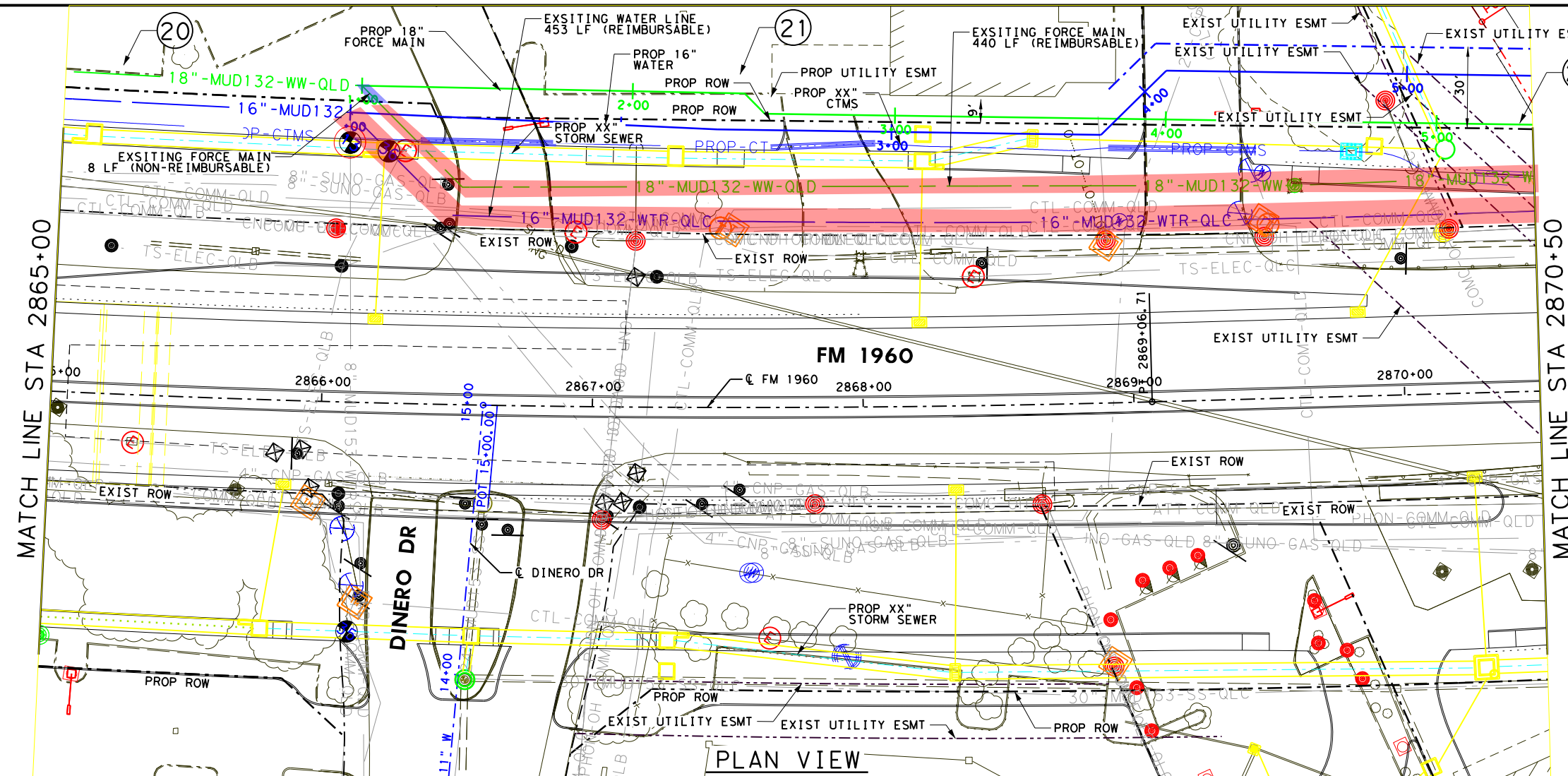
**FM 1960 EAST**  
TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2859+50 TO 2865+00**  
**MUD 132 OPTION B**  
HC MUD 132

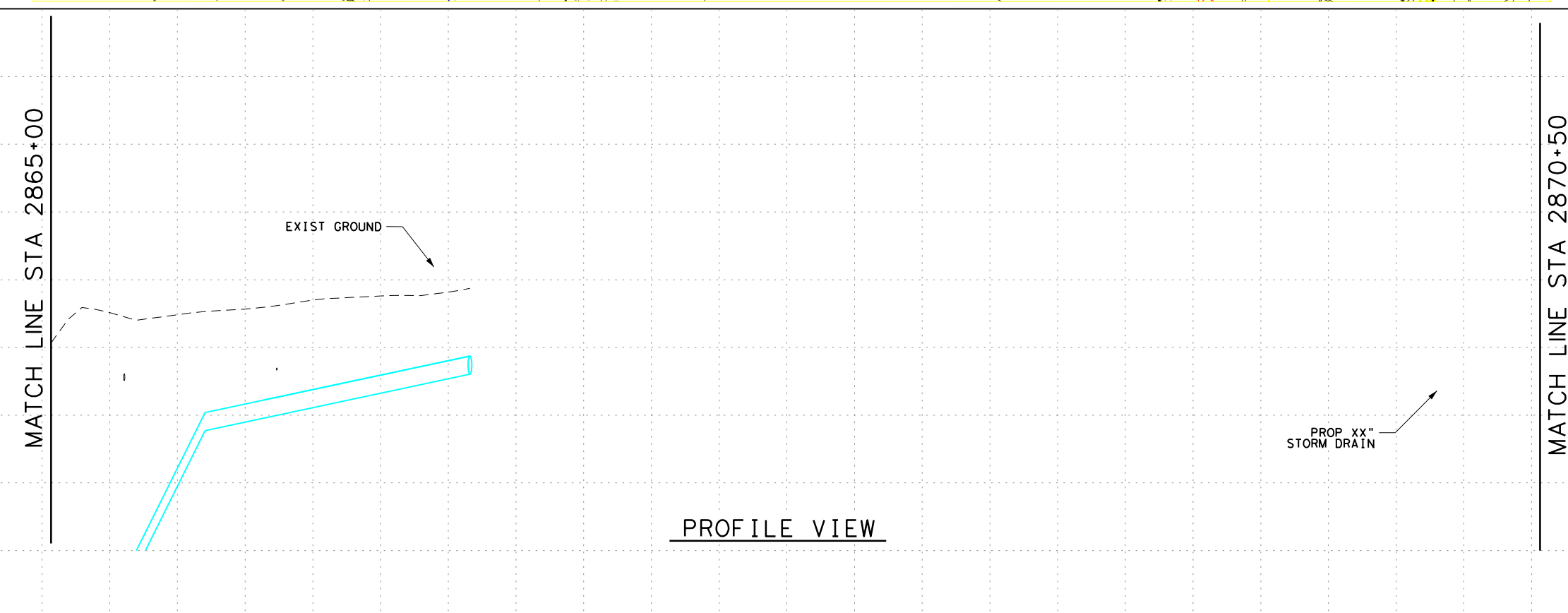
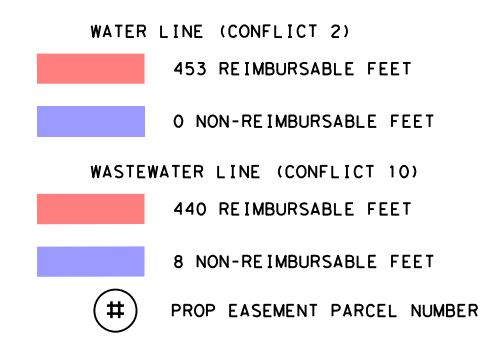
FED. RD. DIV. NO.		FEDERAL AID PROJECT NO.		HIGHWAY NO.
6		(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.	
TEXAS	HOU	HARRIS		
CONTROL	SECTION	JOB		
1685	03	098	14B	

FILENAME: FM1960E\_UTIL\_ESMT\_14B (SUA Sheets).dgn  
DRAWING DATE: 2/26/2020

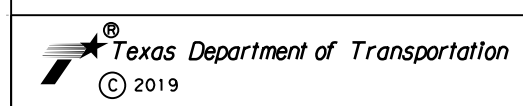
FILENAME: FM1960E\_UTIL\_ESMT\_15B (SUA Sheets).dgn  
DRAWING DATE: 2/26/2020



NOTES:  
1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION



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2/26/2020



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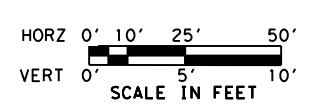
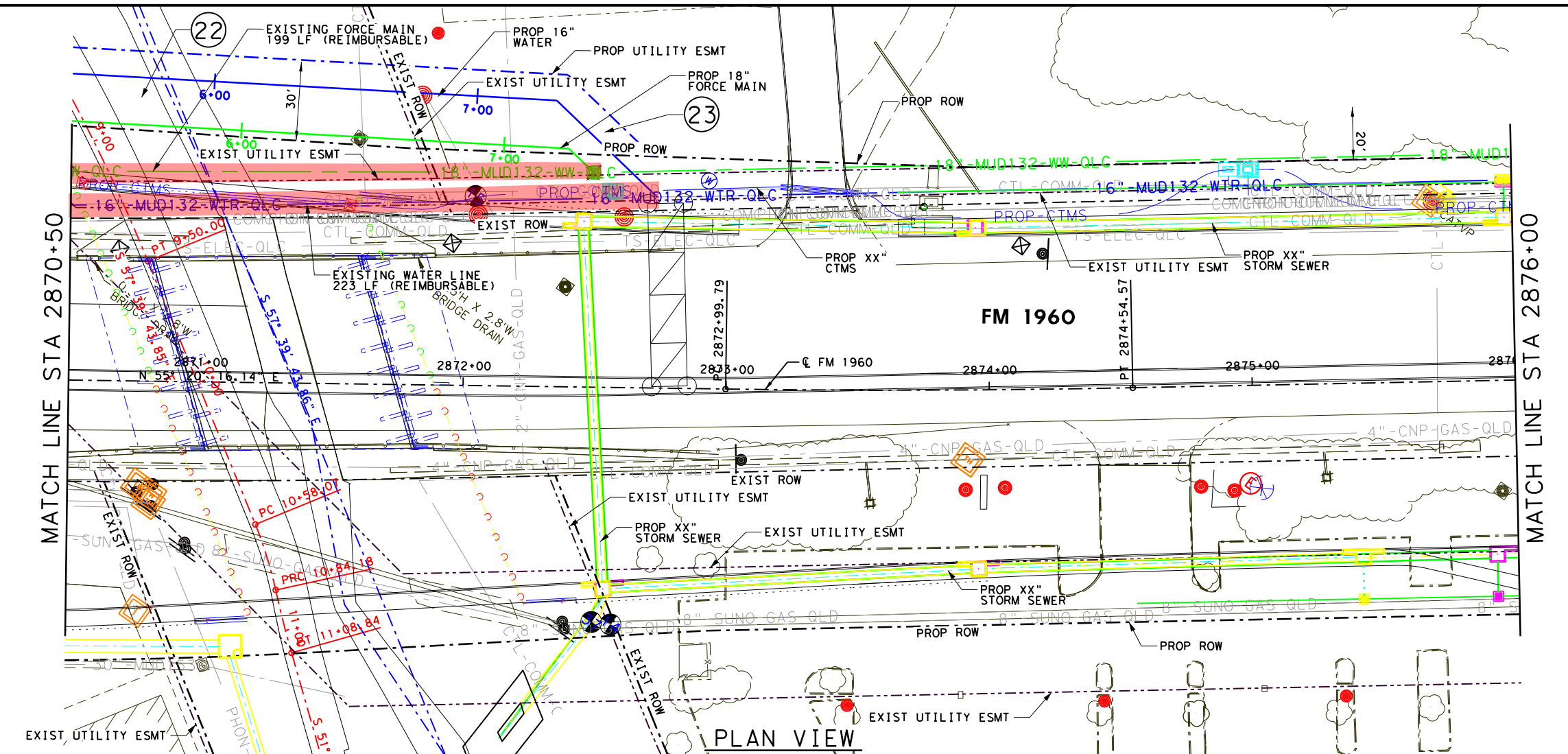
**FM 1960 EAST**  
TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2865+00 TO 2870+50**  
**MUD 132 OPTION B**  
HC MUD 132

SHEET 11 OF 19

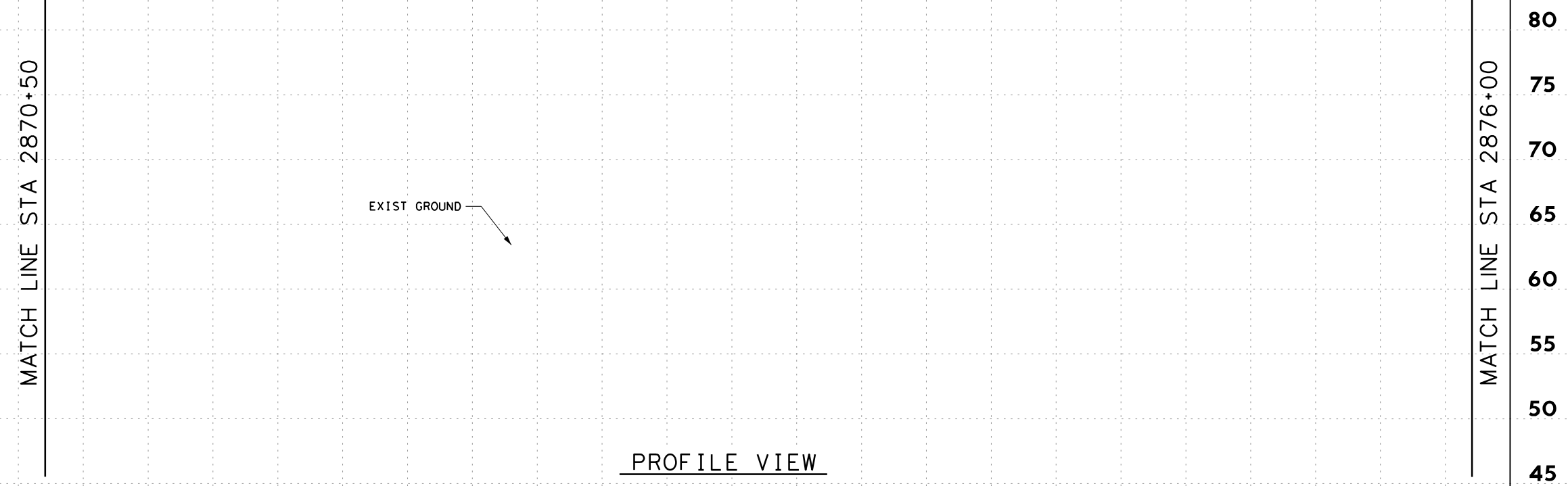
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6	(SEE TITLE SHEET)	FM 1960
STATE	DISTRICT	COUNTY
TEXAS	HOU	HARRIS
CONTROL	SECTION	JOB
1685	03	098
		SHEET NO.
		15B

FILENAME: FM1960E\_UTIL\_ESMT\_16B (SUA Sheets).dgn  
 DRAWING DATE: 2/26/2020



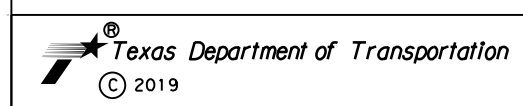
NOTES:  
 1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

- WATER LINE (CONFLICT 2)
  - 223 REIMBURSABLE FEET
  - 0 NON-REIMBURSABLE FEET
- WASTEWATER LINE (CONFLICT 10)
  - 199 REIMBURSABLE FEET
  - 0 NON-REIMBURSABLE FEET
- # PROP EASEMENT PARCEL NUMBER



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RESPONSIBLE ENGINEER:  
 BGE, INC.  
 YANWAH CHONG  
 TEXAS REGISTRATION NO. 101026  
 2/26/2020



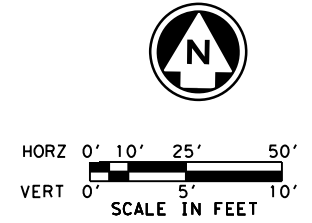
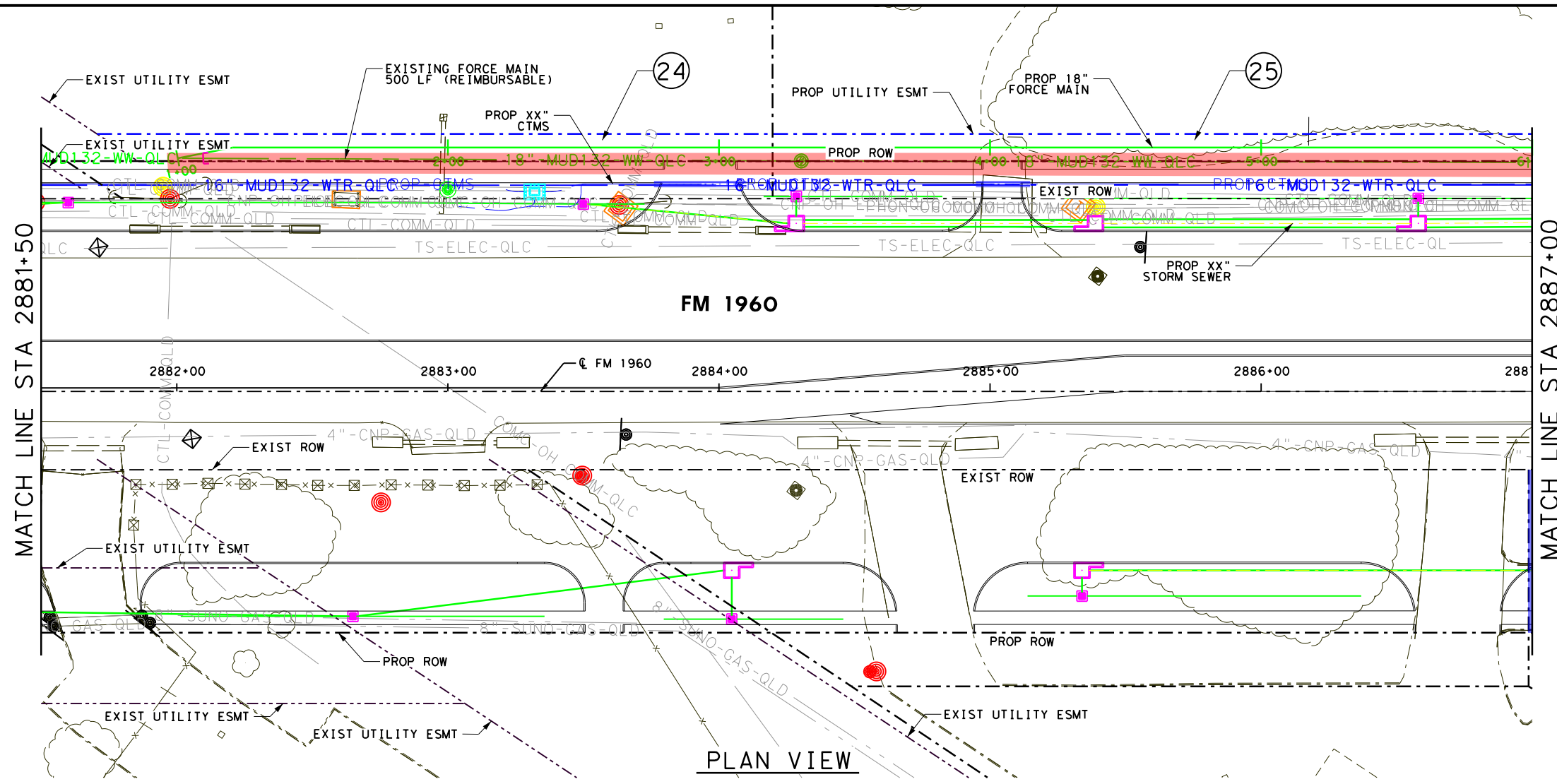
**BGE, Inc.**  
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**FM 1960 EAST**  
 TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2870+50 TO 2876+00**  
**MUD 132 OPTION B**  
 HC MUD 132

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	16B
CONTROL	SECTION	JOB	
1685	03	098	

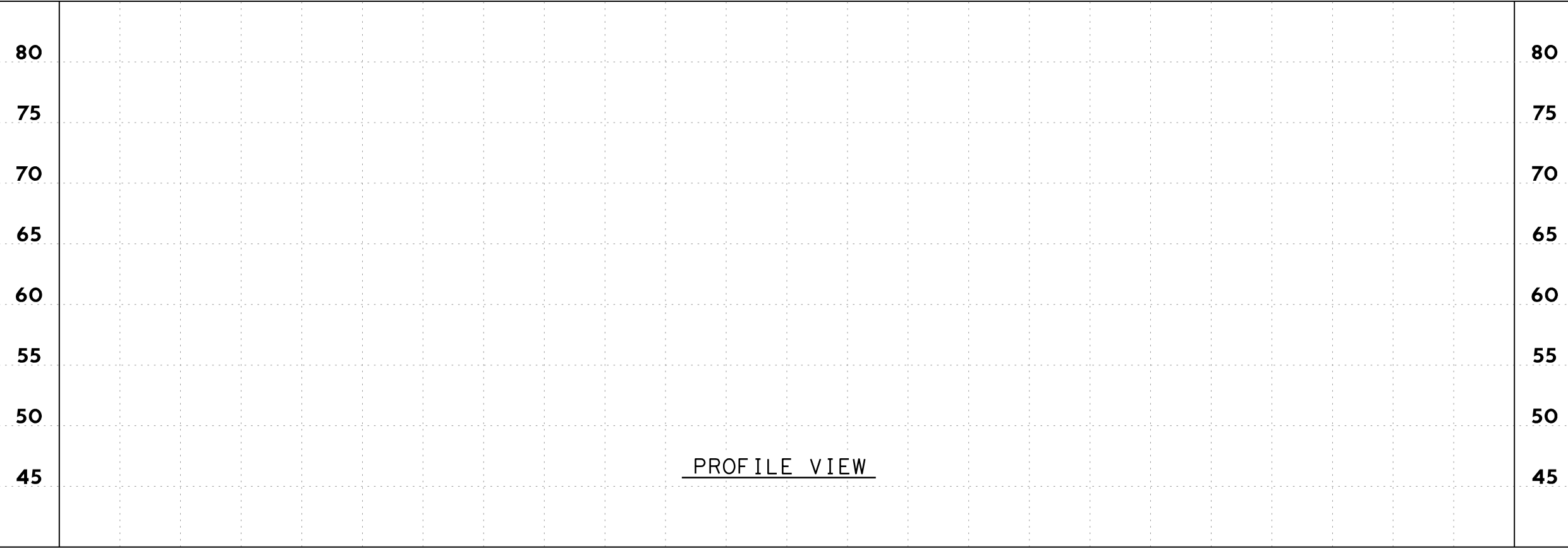
SHEET 12 OF 19



NOTES:  
 1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

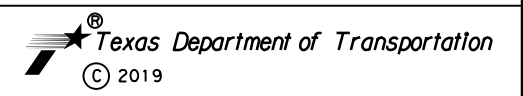
- WASTEWATER LINE (CONFLICT 11)
- 500 REIMBURSABLE FEET
- 0 NON-REIMBURSABLE FEET
- # PROP EASEMENT PARCEL NUMBER

DRAWING DATE: 2/26/2020 FILENAME: FM1960E\_UTIL\_ESMT\_18B (SUA Sheets).dgn



THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

RESPONSIBLE ENGINEER:  
 BGE, INC.  
 YANWAH CHONG  
 TEXAS REGISTRATION NO. 101026  
 2/26/2020



**BGE** BGE, Inc.  
 2595 Dallas Parkway, Suite 204, Frisco, TX 75034  
 Tel: 972-464-4800 • www.bgeinc.com  
 TBPE Registration No. F-1046  
Copyright 2019

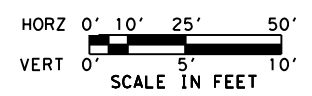
**FM 1960 EAST**  
 TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2881+50 TO 2887+00**  
**MUD 132 OPTION B**  
 HC MUD 132

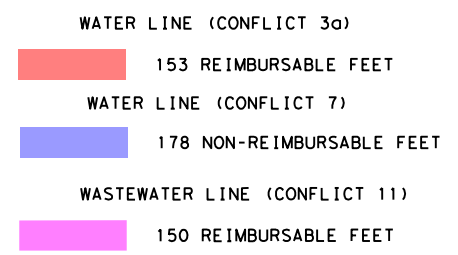
FED. RD. DIV. NO.		FEDERAL AID PROJECT NO.		HIGHWAY NO.
6		(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.	
TEXAS	HOU	HARRIS		
CONTROL	SECTION	JOB	18B	
1685	03	098		

SHEET 14 OF 19





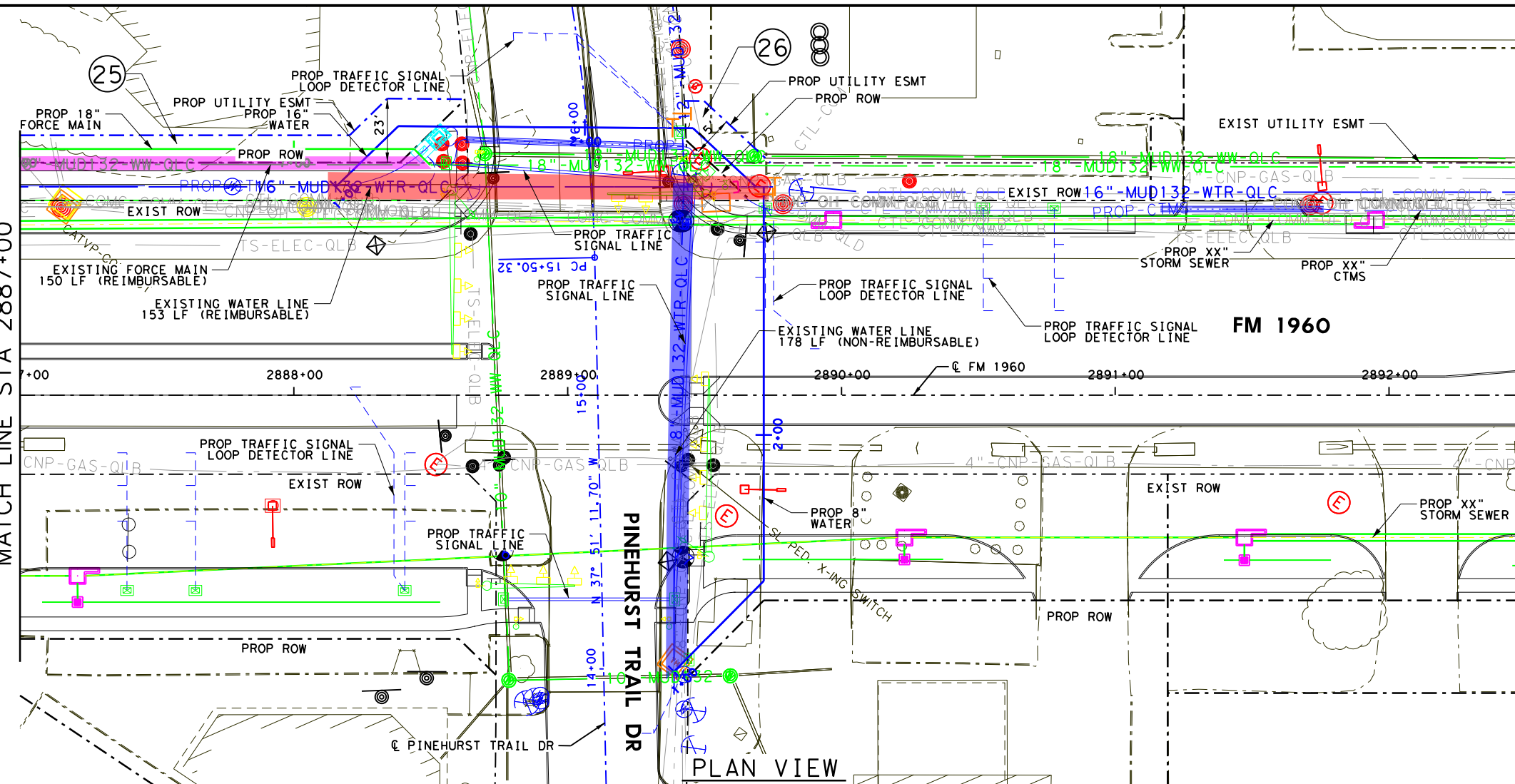
NOTES:  
1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION



# PROP EASEMENT PARCEL NUMBER

MATCH LINE STA 2887+00

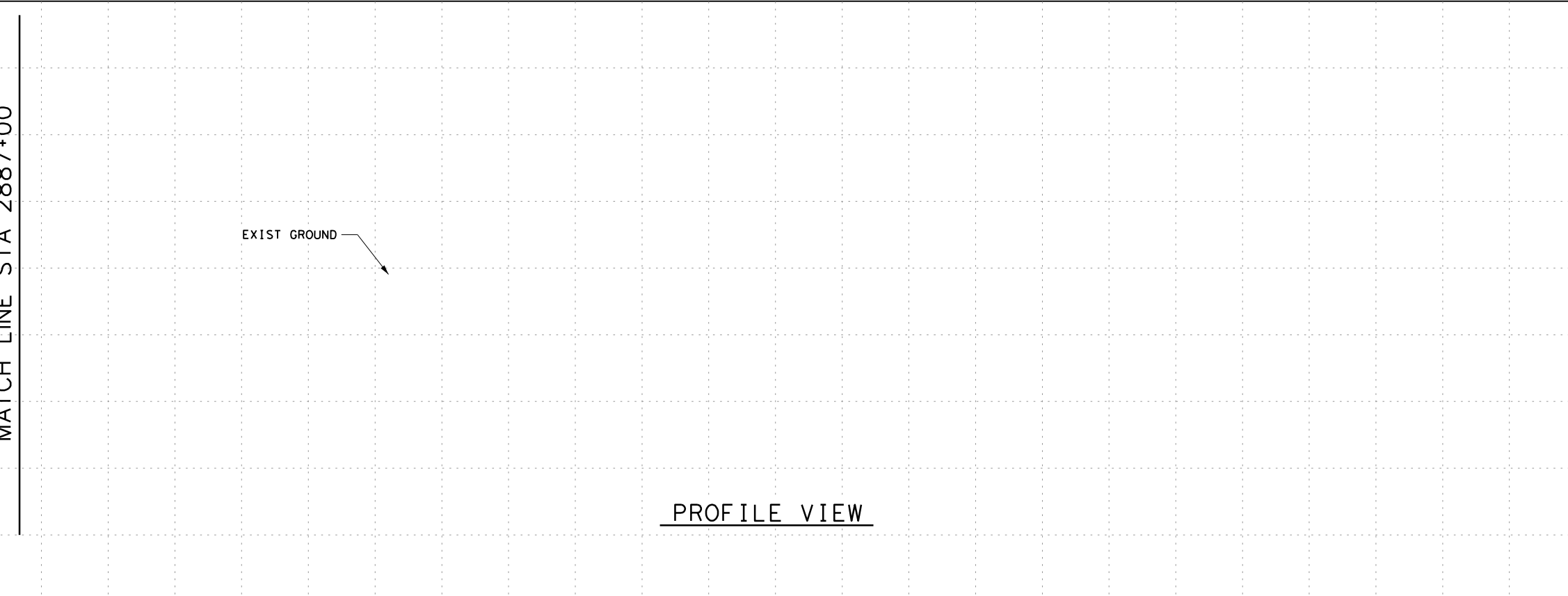
MATCH LINE STA 2892+50



PLAN VIEW

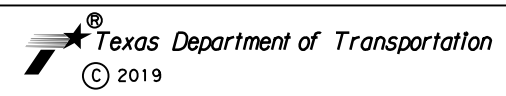
80  
75  
70  
65  
60  
55  
50  
45

MATCH LINE STA 2887+00



PROFILE VIEW

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.  
  
RESPONSIBLE ENGINEER:  
BGE, INC.  
YANWAH CHONG  
TEXAS REGISTRATION NO. 101026  
  
2/26/2020



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**FM 1960 EAST**  
TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2887+00 TO 2892+50**  
**MUD 132 OPTION B**  
HC MUD 132

SHEET 15 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	
1685	03	098	19B

FILENAME: FM1960E\_UTIL\_ESMT\_19B (SUA Sheets).dgn

DRAWING DATE: 2/26/2020



HORZ 0' 10' 25' 50'



SCALE IN FEET

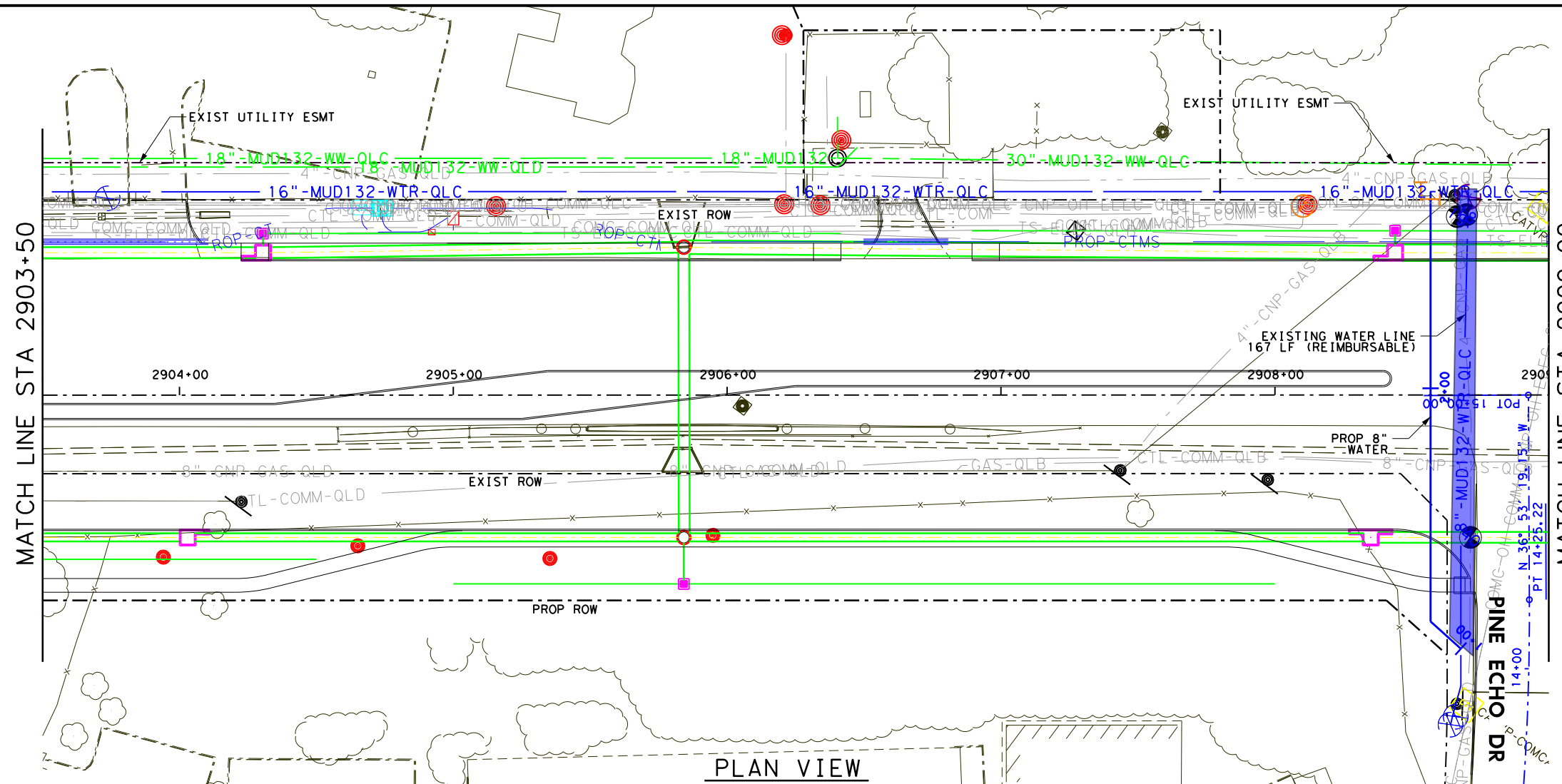
NOTES:  
1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

WATER LINE (CONFLICT 8)

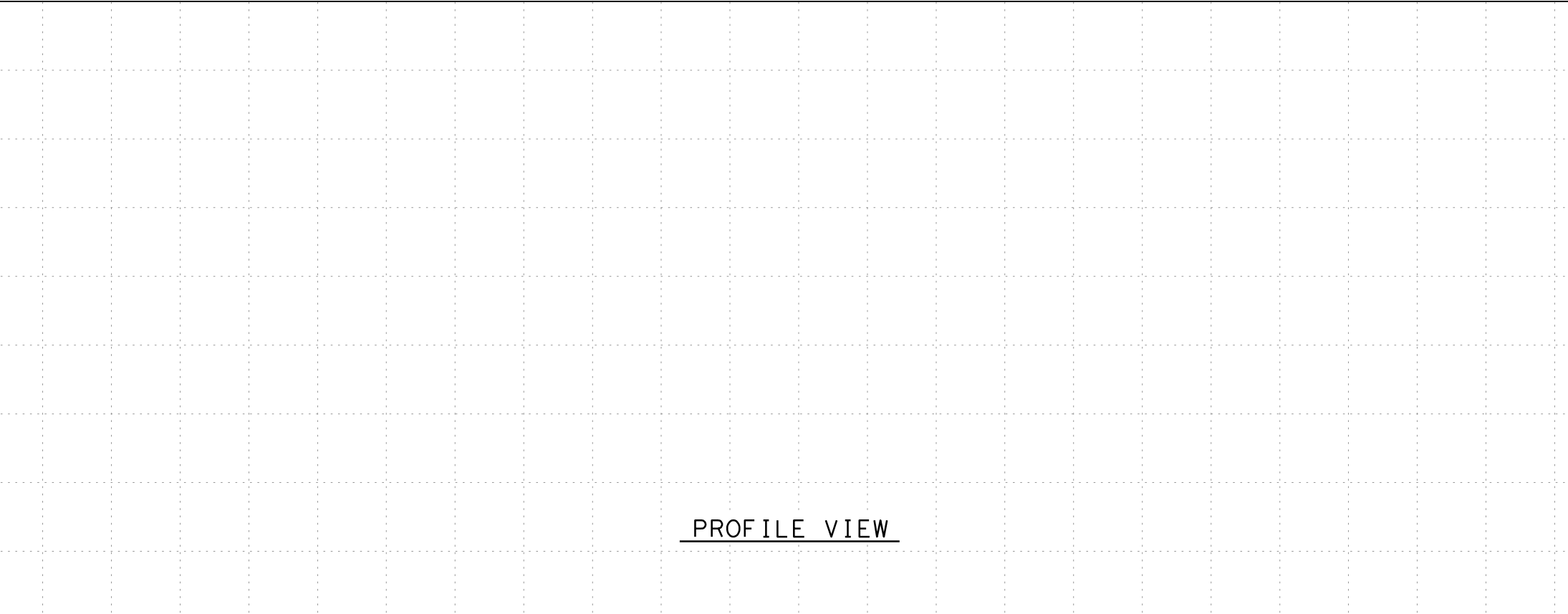
- 0 REIMBURSABLE FEET
- 167 NON-REIMBURSABLE FEET
- # PROP EASEMENT PARCEL NUMBER

MATCH LINE STA 2903+50

MATCH LINE STA 2909+00



PLAN VIEW

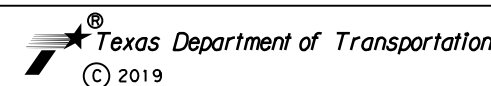


PROFILE VIEW

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

RESPONSIBLE ENGINEER:  
BGE, INC.  
YANWAH CHONG  
TEXAS REGISTRATION NO. 101026

2/26/2020



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TBPE Registration No. F-1046

FM 1960 EAST  
TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

2903+50 TO 2909+00

MUD 132 OPTION B

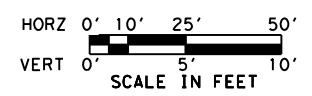
HC MUD 132

SHEET 16 OF 19

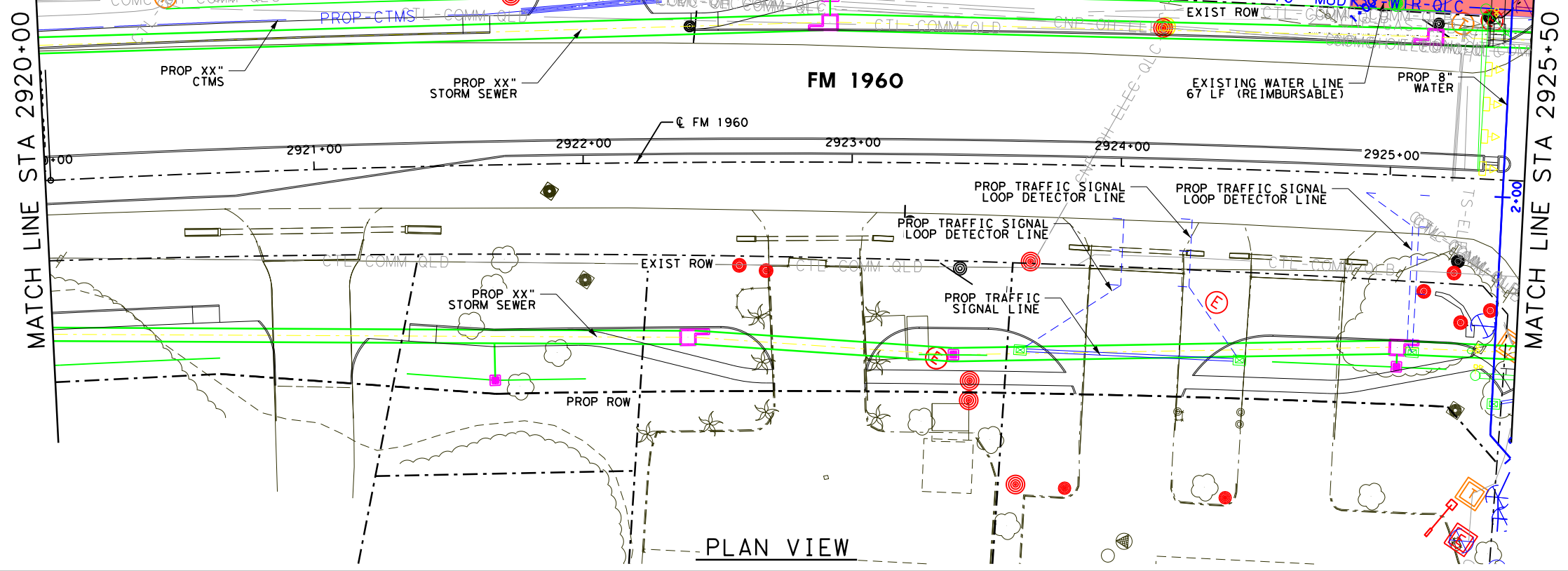
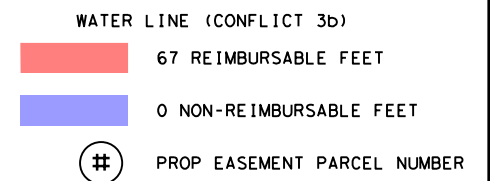
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	
CONTROL	SECTION	JOB	22B
1685	03	098	

FILENAME: FM1960E\_UTIL\_ESMT\_22B (SUA Sheets).dgn

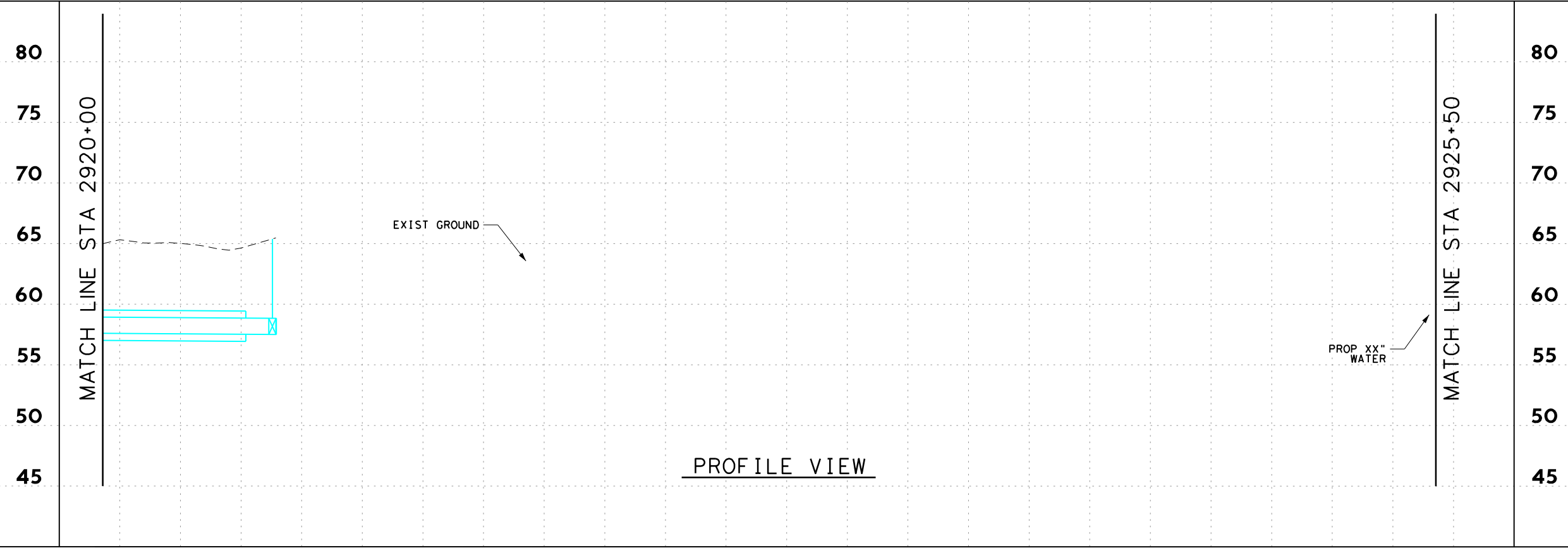
DRAWING DATE: 2/26/2020



NOTES:  
1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

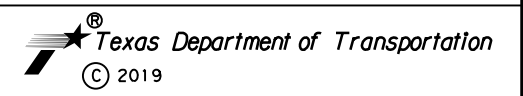


PLAN VIEW



PROFILE VIEW

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.  
  
RESPONSIBLE ENGINEER:  
BGE, INC.  
YANWAH CHONG  
TEXAS REGISTRATION NO. 101026  
2/26/2020

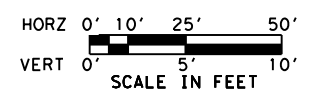


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Tel: 972-464-4800 • www.bgeinc.com  
TBPE Registration No. F-1046  
Copyright 2019

**FM 1960 EAST**  
TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER  
  
**2920+00 TO 2925+50**  
**MUD 132 OPTION B**  
HC MUD 132

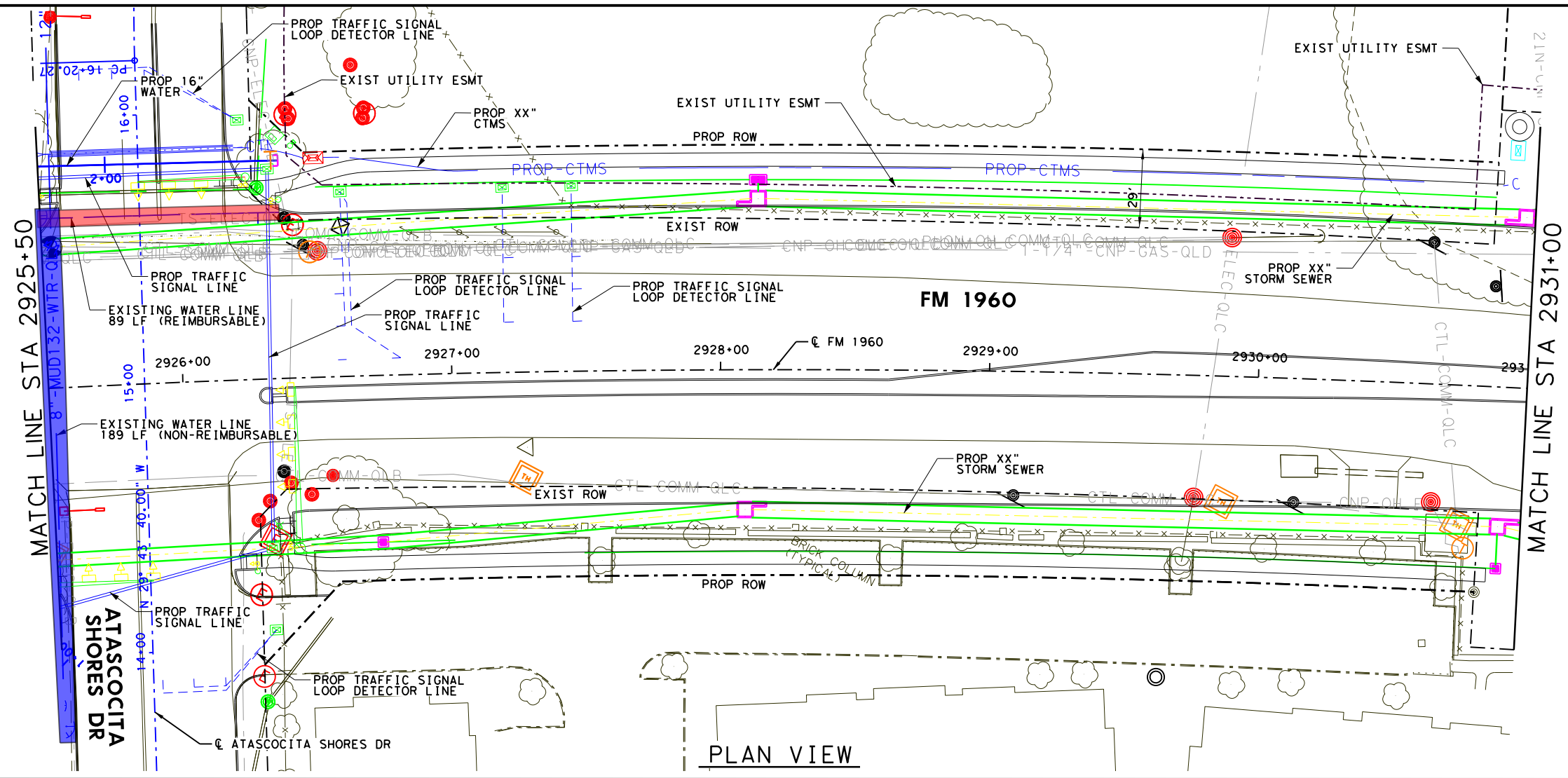
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6	(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	HOU	HARRIS	25B
CONTROL	SECTION	JOB	
1685	03	098	

FILENAME: FM1960E\_UTIL\_ESMT\_25B (SUA Sheets).dgn  
DRAWING DATE: 2/26/2020



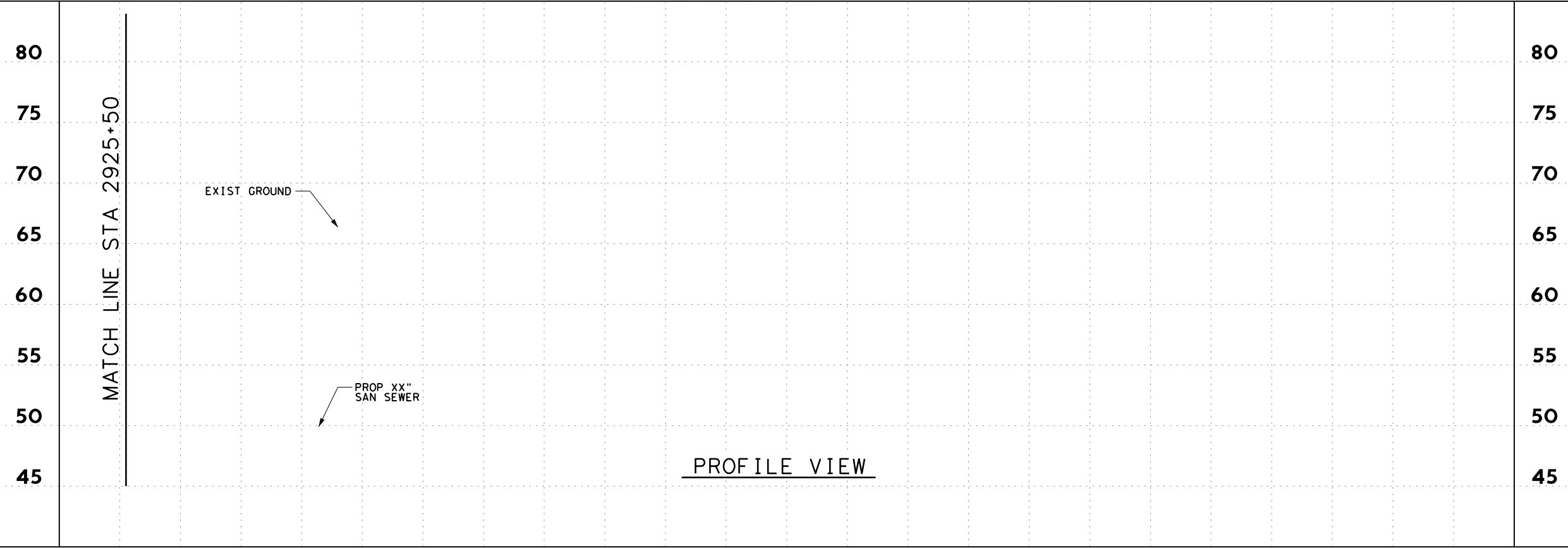
NOTES:  
1. SEE UTILITY LEGEND SHEET FOR ADDITIONAL UTILITY INFORMATION

- PARALLEL WATER LINE (CONFLICT 3b)
  - 89 REIMBURSABLE FEET
  - 0 NON-REIMBURSABLE FEET
- CROSSING WATER LINE (CONFLICT 3b)
  - 0 REIMBURSABLE FEET
  - 189 NON-REIMBURSABLE FEET
- # PROP EASEMENT PARCEL NUMBER



PLAN VIEW

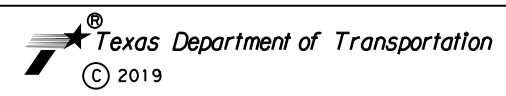
DRAWING DATE: 2/26/2020 FILENAME: FM1960E\_UTIL\_ESMT\_26B (SUA Sheets).dgn



PROFILE VIEW

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

RESPONSIBLE ENGINEER:  
BGE, INC.  
YANWAH CHONG  
TEXAS REGISTRATION NO. 101026  
2/26/2020



**BGE, Inc.**  
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**FM 1960 EAST**  
TWIGSWORTH LN TO WEST OF SAN JACINTO RIVER

**2925+50 TO 2931+00**

**MUD 132 OPTION B**  
HC MUD 132

FED. RD. DIV. NO.		FEDERAL AID PROJECT NO.		HIGHWAY NO.
6		(SEE TITLE SHEET)		FM 1960
STATE	DISTRICT	COUNTY	SHEET NO.	
TEXAS	HOU	HARRIS		
CONTROL	SECTION	JOB	26B	
1685	03	098		

SHEET 19 OF 19

## Attachment "G"

# Betterment Calculation and Estimate

- Elective Betterment Ratio established:            %  
(Calculation attached)
  
- Forced Betterment  
(Provide supporting documentation)
  
- Not Applicable

\_\_\_\_\_  
Initial                      Date  
TxDOT

\_\_\_\_\_  
Initial                      Date  
Utility

# 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-1A **and**

ROW-U-1B

**Or**

ROW-U-1C

The roadway improvement project is designated as an Interstate Highway project; therefore, no supporting documentation of compensable interest is required.

\_\_\_\_\_  
Initial      Date  
TxDOT

\_\_\_\_\_  
Initial      Date  
Utility

*4/15/74  
A.S.*

PUBLIC UTILITY EASEMENTS

175-36-0575

THE STATE OF TEXAS        I  
COUNTY OF HARRIS        I                      KNOWN ALL MEN BY THESE PRESENTS:

That, Johnson-Loggins, Inc., a Delaware corporation, hereinafter called Grantor, herein and hereby declares that it is the Owner of the hereinafter described tract of land and does hereby dedicate forever to the public that certain public utility easement described hereinafter, said tract being a part of Atascocita Shores, Section Three (3), according to the plat thereof recorded in Volume 212, Page 66 of the Map Records of Harris County, Texas, and is more particularly described as follows:

Field Notes for a 20 foot Utility Easement out of Atascocita Shores, Section 3, according to the plat thereof recorded in Volume 212, Page 66 of the Map Records of Harris County, Texas and being more particularly described as follows:

BEGINNING at a point for the Southwest corner of Reserve "D", Block 8, Atascocita Shores, Section 3, said point also being on the Northwest right-of-way line of F.M. 1960 East, 100 feet wide;

*2.50  
m.*

THENCE North 8° 43' 02" East, with a Northwest line of said Reserve "D", a distance of 27.11 feet to a point for corner;

THENCE North 56° 16' 00" East, parallel to and 20 feet Northwesterly from the Northwest right-of-way line of said F.M. 1960 East, a distance of 163.71 feet to a point of curve;

THENCE Northeasterly, continuing parallel to and 20 feet Northwesterly from said Northwest right-of-way line of F.M. 1960 East Road along a curve to the right whose radius is 5799.58 feet and central angle is 6° 39' 59" and whose long chord bears North 59° 35' 59" East, a distance, measured along the arc, of 674.78 feet to a point for corner on the Southwest right-of-way line of Atascocita Shores Drive, 80 feet wide;

THENCE South 26° 40' 18" East, with the southwest right-of-way line of Atascocita Shores Drive, a distance of 10 feet to an angle point;

THENCE South 18° 06' 19" West, a distance of 14.20 feet to an angle point on the said Northwest right-of-way line of F.M. 1960 East;

THENCE Southwesterly, with the said Northwest right-of-way line of F.M. 1960 East, along a curve to the left whose radius is 5779.58 feet and central angle is 6° 33' 57" and whose long chord bears South 59° 32' 58" West, a distance measured along the arc, of 662.31 feet to a point of tangent;

THENCE South 56° 16' 00" West, continuing with the said Northwest right-of-way line of said F.M. 1960 East, a distance of 182 feet to the PLACE OF BEGINNING of the herein described 20 foot Utility Easement.

The herein described easement is for public utility lines (including but without limitation to water, sanitary sewer lines, storm sewer lines, natural gas lines, electric lines and telephone lines) giving to the City of Houston, the County of Harris, and the Houston Lighting & Power Company, their successors and assigns, and/or any other public agency the right to enter upon said easement at any and all times for the purpose of constructing and/or maintaining structures and for laying, constructing, maintaining, operating, and removing of utility lines as aforesaid.

175-36-0576

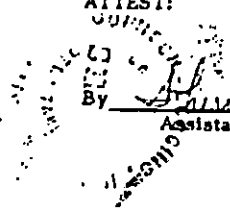
Grantee herein is hereby released and relieved from any and all liability for any damages occasioned by the reasonable exercise of the rights granted herein.

TO HAVE AND TO HOLD the above-described easements for said purposes, together with all the rights and appurtenances thereto in anywise belonging to Grantee herein, their successors and assigns forever.

Executed this 14th day of March, 1974, A.D.

ATTEST:

JOHNSON-LOGGINS, INC.



By David Noble  
Assistant Secretary

By Glen R. Loggins  
Vice President

16

CORPORATION ACKNOWLEDGMENT

THE STATE OF Texas  
COUNTY OF Harris

BEFORE ME, the undersigned authority, on this day personally appeared Glenn R. Loggins, known to me to be the person whose name is subscribed to the foregoing instrument, as Vice President of Johnson-Loggins, Inc., a corporation, and acknowledged to me that he executed the same for the purposes and consideration therein expressed, in the capacity stated, and as the act and deed of said corporation.

Given under my hand and seal of office this the 14th day of March, A.D. 1974.



Glenn R. Loggins  
Notary Public in and for Texas  
County, Harris

RETURN TO:  
Don Dean  
1600 First City East Building  
Houston, Texas 77002



175-36-0577

STATE OF TEXAS  
COUNTY OF HARRIS

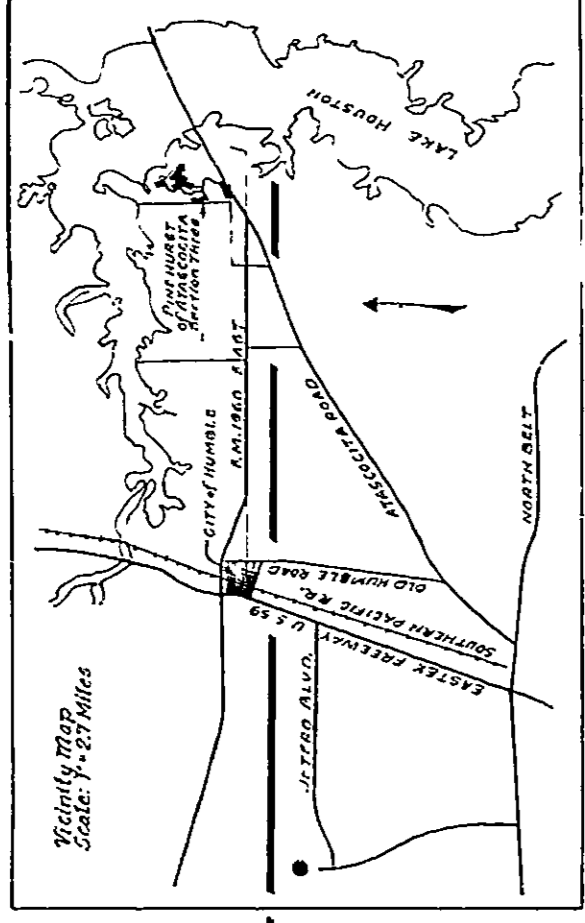
I hereby certify that this instrument was FILED in  
File Number 175-36-0577 on the 15th day of March 1974, at the time stamped  
hereon by me, and was duly RECORDED, in the Official  
Public Records of said County, Texas at

MAR 15 1974



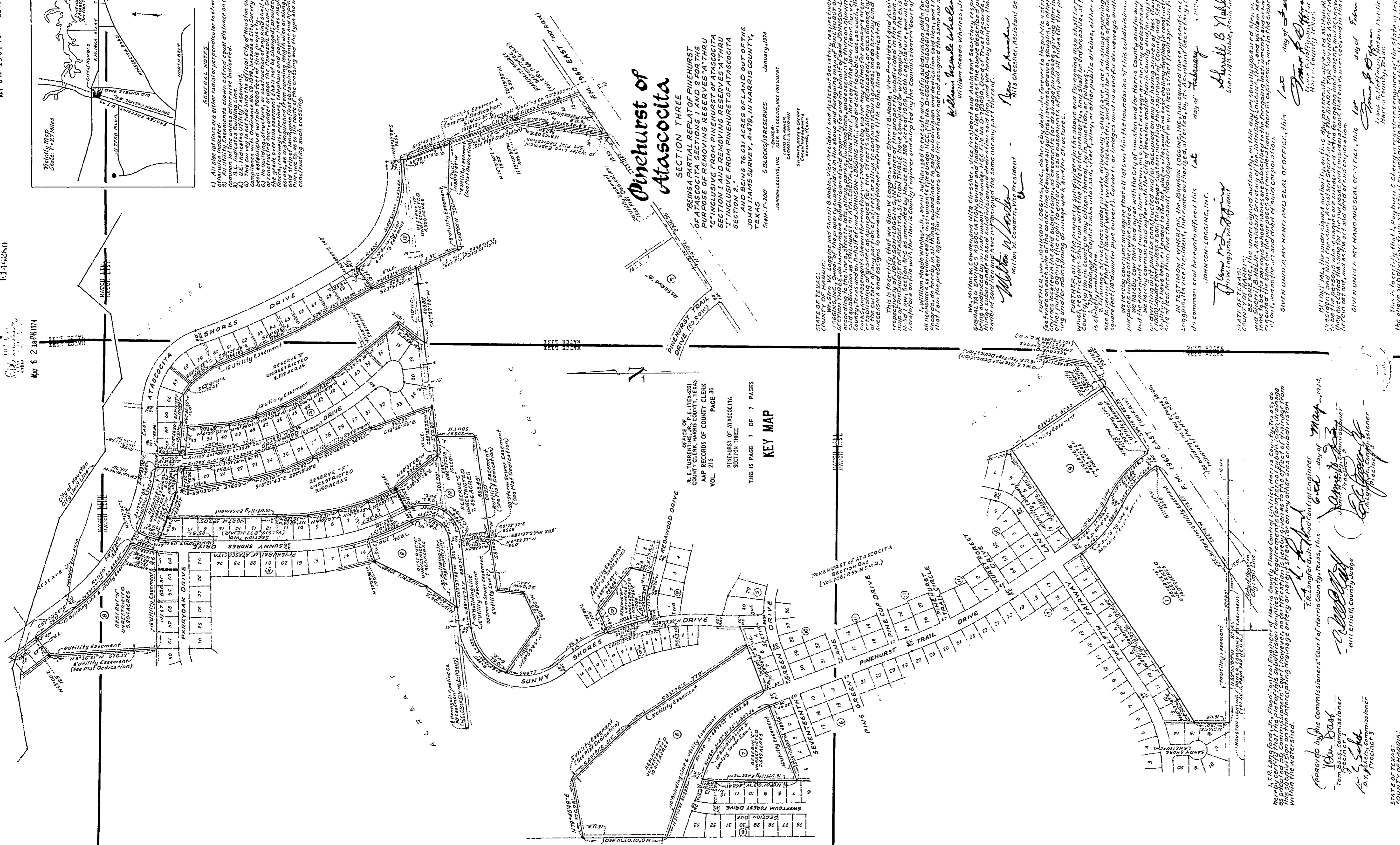
*Peter J. ...*  
COUNTY CLERK  
HARRIS COUNTY, TEXAS

FILED  
*Peter J. ...*  
COUNTY CLERK  
HARRIS COUNTY, TEXAS  
MAR 15 11 36 AM 1974



**GENERAL NOTES**

- 1) All lots of this site are either vested or proffered to street frontage units.
- 2) All utility easements shown extend equal distance on each side of a street.
- 3) All lots are shown with their lot numbers.
- 4) This survey is a replat of the official City of Houston survey system as established by the Houston Survey and is not a replat of the City of Houston.
- 5) It is noted that the street frontage of this project, as shown on this map, is ascertained from the official City of Houston survey system and does not include the street frontage of the lots shown on this map.
- 6) It is noted that the street frontage of this project, as shown on this map, is ascertained from the official City of Houston survey system and does not include the street frontage of the lots shown on this map.
- 7) It is noted that the street frontage of this project, as shown on this map, is ascertained from the official City of Houston survey system and does not include the street frontage of the lots shown on this map.



### Pinehurst of Atascocita

#### SECTION THREE

BEING A PARTIAL REPLAT OF PINEHURST OF ATASCOCITA SECTIONS 1 AND 2 FOR THE PURPOSE OF REMOVING RESERVES A THRU SECTION 1 AND REMOVING RESERVES A THRU SECTION 2 INCLUSIVE FROM PINEHURST OF ATASCOCITA AND BEING 76.831 ACRES OF LAND OUT OF THE JOHN JAMES SURVEY, A-475, IN HARRIS COUNTY, TEXAS

JAMES W. BROWN, JR. Surveyor  
 JOHN JAMES SURVEY, A-475, IN HARRIS COUNTY, TEXAS  
 JAMES W. BROWN, JR. Surveyor  
 JOHN JAMES SURVEY, A-475, IN HARRIS COUNTY, TEXAS

OFFICE OF R.E. TURKETT, JR., COUNTY CLERK, HARRIS COUNTY, TEXAS  
 MAP BOOKS OF COUNTY CLERK VOL. 218  
 SECTION THREE  
 THIS IS PAGE 1 OF 7 PAGES  
**KEY MAP**

**DATE OF TRIAL:** COUNTY OF HARRIS, TEXAS

**STATE OF TEXAS:** COUNTY OF HARRIS, TEXAS

**WITNESSES:** WILLIAM W. BROWN, JR., Surveyor, and JAMES W. BROWN, JR., Surveyor.

**WITNESSES:** William W. Brown, Jr., Surveyor, and James W. Brown, Jr., Surveyor.

**WITNESSES:** William W. Brown, Jr., Surveyor, and James W. Brown, Jr., Surveyor.

STATE OF TEXAS: HARRIS COUNTY, CLERK OF COURTS: R. E. TURKETT, JR., COUNTY CLERK, HARRIS COUNTY, TEXAS. VOL. 218, PAGE 1 OF 7 PAGES.

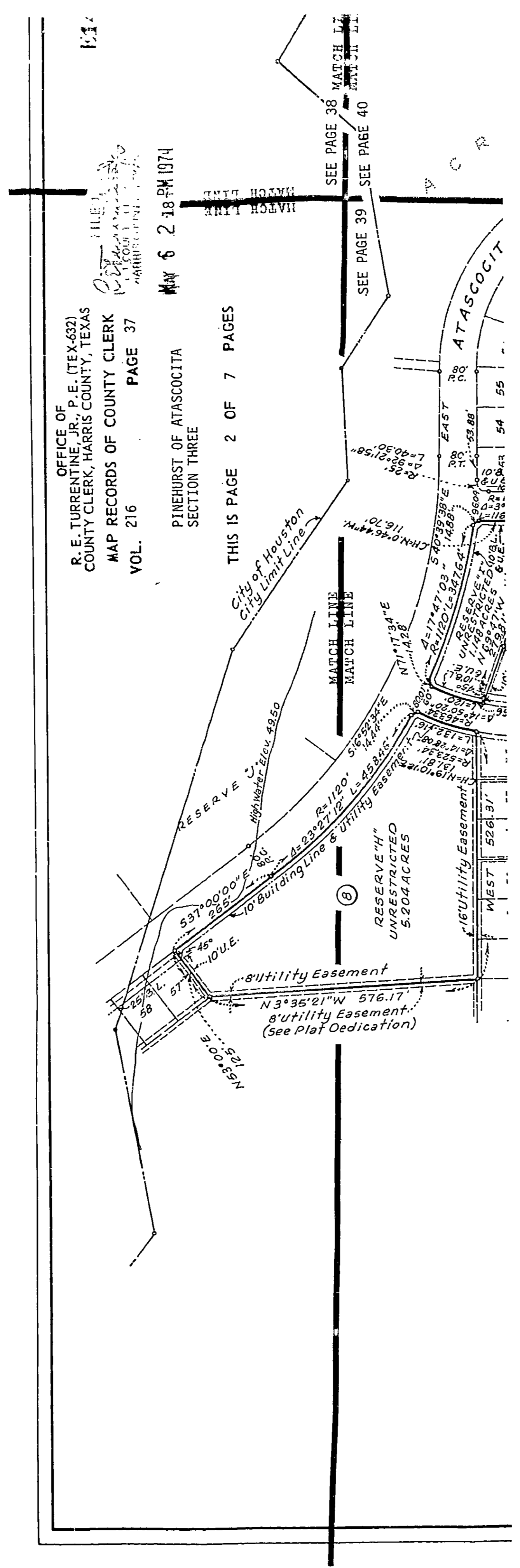
OFFICE OF  
R. E. TURRENTINE, JR., P.E. (TEX 432)  
COUNTY CLERK, HARRIS COUNTY, TEXAS  
MAP RECORDS OF COUNTY CLERK  
VOL. 216 PAGE 37

1:1

FILE #  
MAY 6 2 38 PM 1974

PINEHURST OF ATASCOCITA  
SECTION THREE

THIS IS PAGE 2 OF 7 PAGES



MAY-6-74 158171 - E146280 B PD 80.00

**E146280**  
OFFICE OF  
R. E. TURBENTON, JR., P. E. (TEX. 632)  
COUNTY CLERK, HARRIS COUNTY, TEXAS

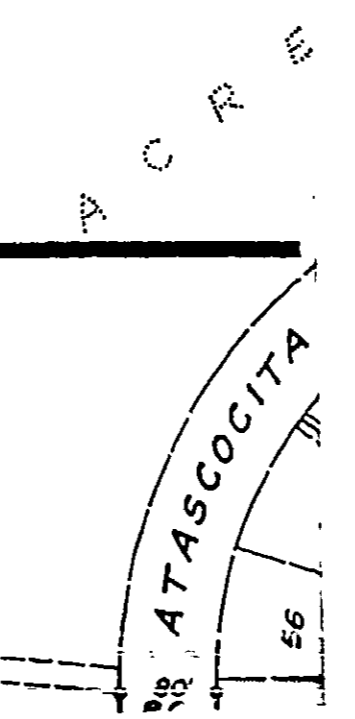
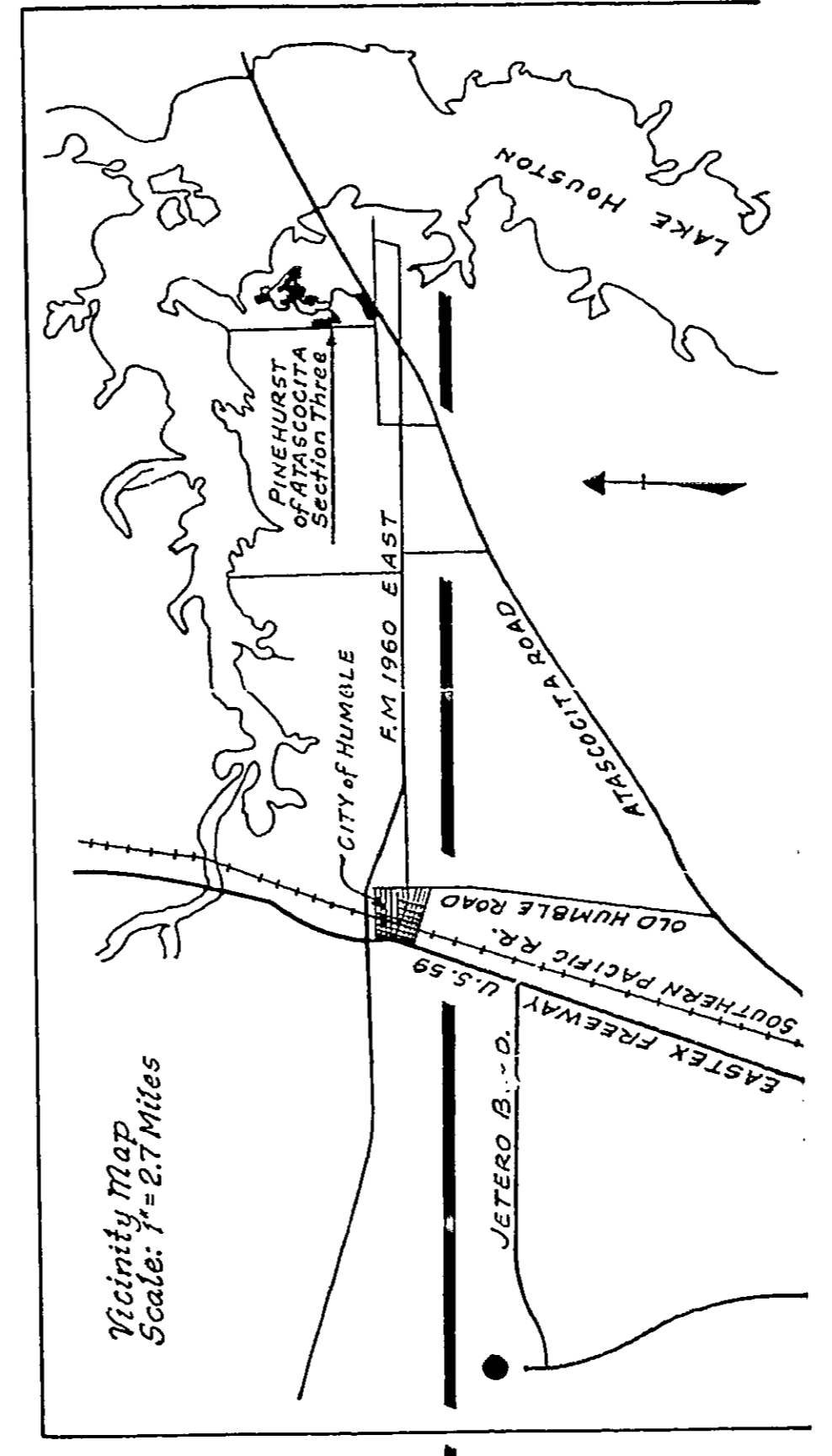
FILED  
MAY 6 2 18 PM 1974  
HARRIS COUNTY, TEXAS

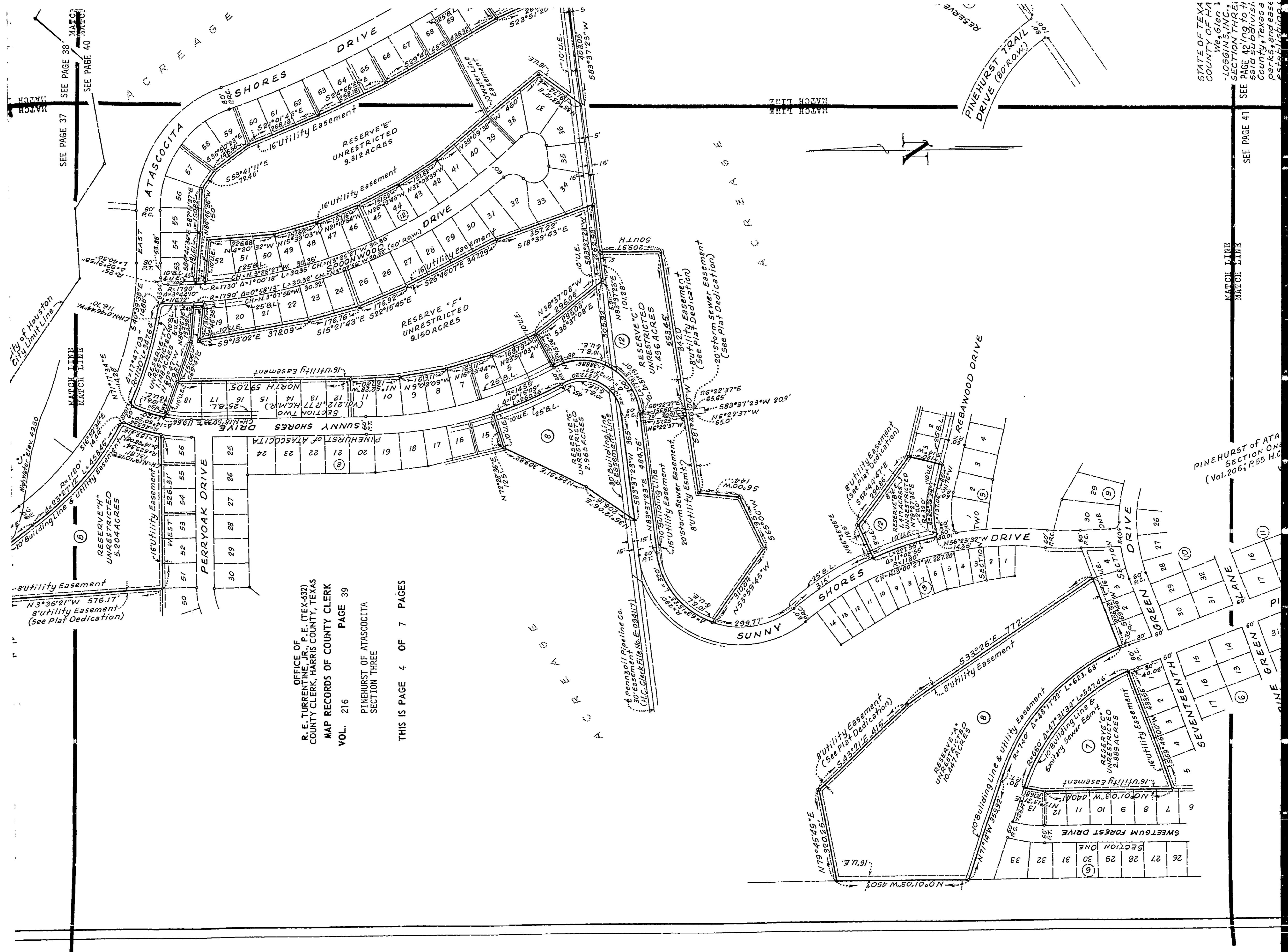
MAP RECORDS OF COUNTY CLERK  
VOL. 216  
PINEHURST OF ATASCOCITA  
SECTION THREE

PAGE 38

THIS IS PAGE 3 OF 7 PAGES

SEE PAGE 37  
SEE PAGE 39  
SEE PAGE 40





OFFICE OF  
 R. E. TURRENTINE, JR., P. E. (TEX-432)  
 COUNTY CLERK, HARRIS COUNTY, TEXAS  
 MAP RECORDS OF COUNTY CLERK  
 VOL. 216 PAGE 39

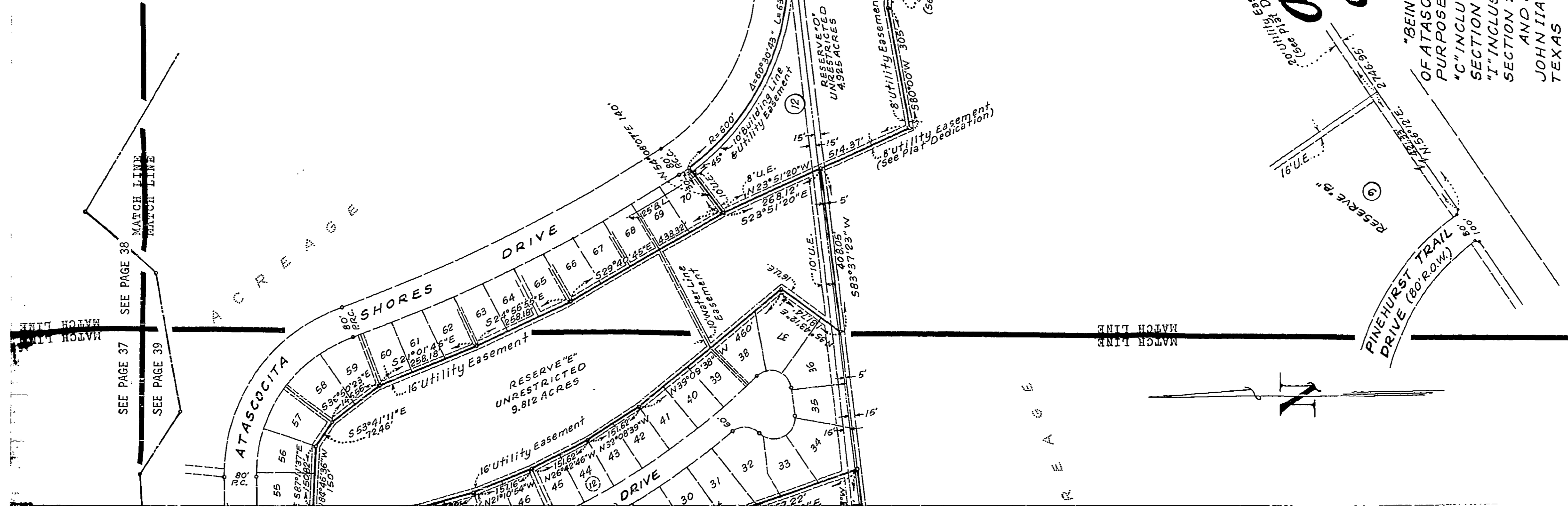
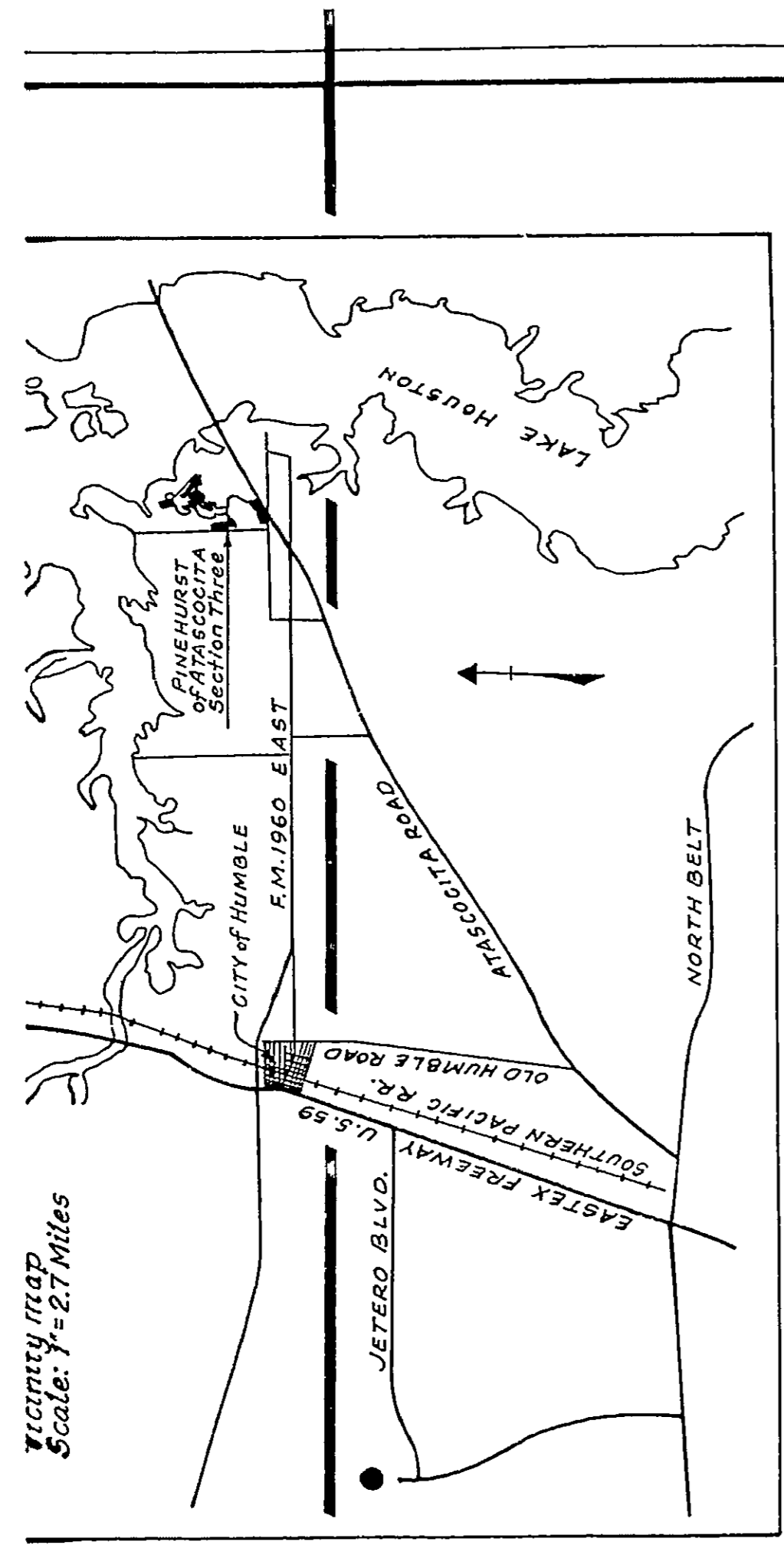
PINEHURST OF ATASCOCITA  
 SECTION THREE

THIS IS PAGE 4 OF 7 PAGES

STATE OF TEXA  
 COUNTY OF HA  
 We, the Clerk  
 -LOGGINS, INC.,  
 SECTION THREE,  
 SEE PAGE 42, to th  
 said subdivisi  
 County, Texas a  
 parks, and esse  
 establishments

MATCH LINE  
 MATCH LINE  
 SEE PAGE 41

PINEHURST OF ATASCOCITA  
 SECTION ONE  
 (Vol. 206, P. 55 H.C.)



- GENERAL NOTES**
- 1.) All side lot lines are either radial or perpendicular to street frontage unless otherwise indicated.
  - 2.) All Utility Easements shown extend equal distance on each side of a Common lot line unless otherwise indicated.
  - 3.) B.L. Indicates Building Line.
  - 4.) U.L. Indicates Utility Easement.
  - 5.) This survey is not filed in the official City of Houston survey system in compliance with Ordinance No. 6783 of 1956, as amended, City Survey Marker has not been established, within 600 feet of the easement.
  - 6.) No building structures or upon the PENNSOIL PIPELINE Co. easement and the easement shall not be changed; provided, however, that for gas, telephone, pipelines, telephone and power lines may be constructed across, as distinguished from running lengthwise or along, upon and over said strip of land upon first obtaining the consent and approval of PENNSOIL PIPELINE Co. as to the route of the crossing and the type and manner of constructing such crossing.

OFFICE OF  
R. E. TURRENTINE, JR., P. E. (TEX-632)  
COUNTY CLERK, HARRIS COUNTY, TEXAS  
MAP RECORDS OF COUNTY CLERK  
VOL. 216 PAGE 40  
PINEHURST OF ATASCOCITA  
SECTION THREE

# Pinehurst of Atascocita

SECTION THREE  
"BEING A PARTIAL REPLAT OF PINEHURST OF ATASCOCITA SECTIONS 1 AND 2 FOR THE PURPOSE OF REMOVING RESERVES "A" THRU "C" INCLUSIVE FROM PINEHURST OF ATASCOCITA SECTION 1 AND REMOVING RESERVES "A" THRU "I" INCLUSIVE FROM PINEHURST OF ATASCOCITA SECTION 2."  
AND BEING 76.631 ACRES OF LAND OUT OF THE JOHN ITAMS SURVEY, A-479, IN HARRIS COUNTY, TEXAS  
Scale: 1"=200' 5 BLOCKS/12 RESERVES January, 1974

OWNER —  
JOHNSON-LOGGINS, INC. GLEN W. LOGGINS, VICE PRESIDENT  
LAND PLANNER  
CARROLL B. BROWN  
SHAWNER, HICKS & CHERRY  
Consulting Engineers  
HOUSTON, TEXAS

STATE OF TEXAS:  
COUNTY OF HARRIS:  
We, Glen W. Loggins and Sherril B. Noble, Vice President and Assistant Secretary respectively of JOHNSON-LOGGINS, INC., Owner of the property subdivided in the above and foregoing map of PINEHURST OF ATASCOCITA, SECTION THREE, do hereby make subdivision of said property for and on behalf of said JOHNSON-LOGGINS, INC., according to the lines, streets, lots, alleys, parks, building lines, and easements thereon shown and designate the subdivision as PINEHURST OF ATASCOCITA, SECTION THREE, located in the John Itams Survey, A-479, Harris County, Texas and on behalf of said JOHNSON-LOGGINS, INC., and declare to public use such as streets, alleys, parks, and easements shown thereon to revert, and do hereby waive any claims for damages or benefits of any portion of the surface of any portion of the section, block, or tract shown and do hereby bind ourselves, our successors and assigns to warrant and forever defend the title to the land so dedicated.

This is to certify that we Glen W. Loggins, and Sherril B. Noble, Vice President and Assistant Secretary respectively of JOHNSON-LOGGINS, INC., owner of the property subdivided in the above and foregoing map of PINEHURST OF ATASCOCITA, SECTION THREE have complied or will comply with the existing Harris County Road Law, Section 31-C as amended by House Bill 389, Acts of 1959, 56th Legislature, and all other regulations hereof on file with the Harris County Engineer and adopted by the Commissioners' Court of Harris County.

William Meade Whelless, Jr., agent authorized to execute and ratify subdivisions plats for and on behalf of

MATCH LINE

SEE PAGE 41

THIS IS PAGE 5 OF 7 PAGES

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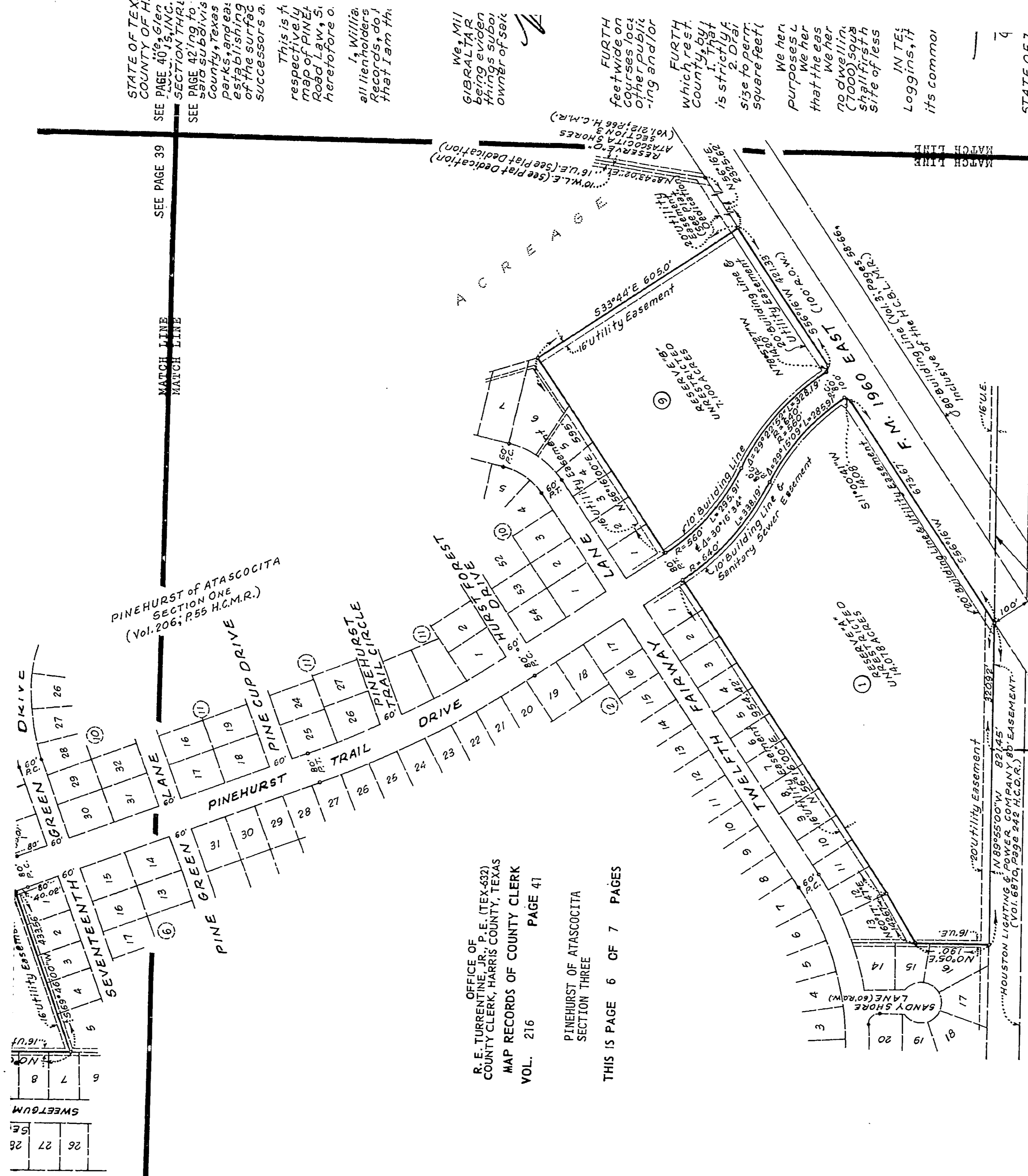
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PINEHURST OF ATASCOCITA  
SECTION ONE  
(Vol. 206; P.55 H.C.M.R.)

OFFICE OF  
R. E. TURRENTINE, JR., P. E. (TEX-532)  
COUNTY CLERK, HARRIS COUNTY, TEXAS  
MAP RECORDS OF COUNTY CLERK  
VOL. 216 PAGE 41

PINEHURST OF ATASCOCITA  
SECTION THREE  
THIS IS PAGE 6 OF 7 PAGES



I, T.R. Langford, Jr., Flood Control Engineer of Harris County Flood Control District, Harris County, Texas, do hereby certify that the plat of this subdivision complies with requirements for final subdivision drainage as prescribed by Commissioners' Court; however, no certification is hereby given as to the effect of drainage from this subdivision on the intercepting drainage artery or parent street, or on any other area or subdivision within the watershed.

APPROVED by the Commissioners' Court of Harris County, Texas, this 6th day of May, 1974.  
 Tom Bass, Commissioner Precinct 1  
 R. Y. Fike, Commissioner Precinct 5  
 Bill Elliott, County Judge  
 T.R. Langford, Jr., Flood Control Engineer  
 T.R. Langford, Jr., Clerk of Harris County, Texas, this 6th day of May, 1974.  
 R.E. Turrentine, Jr., Precinct 2  
 R.E. Turrentine, Jr., Precinct 4

STATE OF TEXAS:  
COUNTY OF HARRIS:  
I, R.E. Turrentine, Jr., Clerk of the County Court of Harris County, Texas, do hereby certify that the within instrument with its certificate of authentication was filed for registration in my office on May 6th, 1974 at 2:18 o'clock, P.M., and duly recorded on May 7th, 1974, at 2:00 o'clock, A.M., Volume 216, Page 36 of record of Maps of said County.

WITNESS my hand and seal of office, at Houston, the day and date last above written.

R.E. Turrentine, Jr., Clerk, County Court Harris County, Texas

THIS CERTIFICATE IS VALID ONLY AS THE INSTRUMENT ON WHICH THE ORIGINAL IS AFFIXED AND ONLY THEN TO THE EXTENT SUCH INSTRUMENT IS NOT ALTERED OR CHANGED AFTER RECORDING.



This plat and City Plan

complies with all laws and ordinances also include

STATE OF TEX.  
COUNTY OF H.  
SEE PAGE 40, given  
SECTION ONE, H.C.M.R.  
SEE PAGE 41, given  
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Scale: 1"=200' 5 BLOCKS/12 RESERVES January, 1974  
 JOHNSON-LOGGINS, INC. OWNERS  
 GLEN W. LOGGINS, VICE PRESIDENT  
 CAROL E. BROWN

SHANEY HICKS & CHERRY  
 Consulting Engineers  
 HOUSTON, TEXAS

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STATE OF TEXAS:  
 COUNTY OF HARRIS:  
 SEE PAGE 40 Glen W. Loggins and Sherri B. Noble, Vice President and Assistant Secretary respectively of JOHNSON-LOGGINS, INC.; Owner of the property subdivided in the above and foregoing map of PINEHURST OF ATASCOCITA, SECTION THREE, do hereby make subdivision of said property for and on behalf of said JOHNSON-LOGGINS, INC., according to the lines, streets, lots, alleys, parks, building lines, and easements thereon shown and designate said subdivision as PINEHURST OF ATASCOCITA, SECTION THREE, located in the John Iiams Survey, A-479, Harris County, Texas and on behalf of said JOHNSON-LOGGINS, INC.; and dedicate to public use, as such, the streets, alleys, parks, and easements shown thereon forever; and do hereby waive any claims for damages occasioned by the establishing of grades as approved for the streets and alleys dedicated, or occasioned by the alteration of the surface of any portion of streets or alleys to conform to such grades; and do hereby bind ourselves, our successors and assigns to warrant and forever defend the title to the land so dedicated.

This is to certify that We Glen W. Loggins and Sherri B. Noble, Vice President and Assistant Secretary respectively of JOHNSON-LOGGINS, INC., owner of the property subdivided in the above and foregoing map of PINEHURST OF ATASCOCITA, SECTION THREE, have completed or will comply with the existing Harris County Ordinance, Section 31-13, as amended by House Bill 388, Acts of 1959, 56th Legislature, and all other regulations herebefore on file with the Harris County Engineer and adopted by the Commissioners Court of Harris County.

I, William Meade Wheelock, Jr., agent authorized to execute and ratify subdivision plats for and on behalf of all lienholders as evidenced by instruments filed under H.C.C. File No. D-650480, D-650481 and D-650478. One of Trust Records, do hereby in all things subordinate to said subdivision and dedication said lien, and I hereby confirm that I am the present agent for the owners of said lien and have not assigned the same nor any part thereof.

We, Milton W. Cowden and Nita Chessher, Vice President and Assistant Secretary respectively of GURALEA REALTY SERVICES ASSOCIATION, owner and holder of a lien against the above described property, said lien being evidenced by an instrument filed under H.C.C. File No. D-795090, Deed of Trust Records, do hereby in all things subordinate to said subdivision and dedication said lien, and we hereby confirm that we are the present owner of said lien and have not assigned the same nor any part thereof.

Milton W. Cowden, Vice President  
 Nita Chessher, Assistant Secretary

William Meade Wheelock, Jr.  
 William Meade Wheelock, Jr.

FURTHER, We, JOHNSON-LOGGINS, INC., do hereby dedicate forever to the public a strip of land fifteen (15) feet wide on each side of the center line of any and all gutters, ravines, draws, sloughs, or other natural drainage courses located in the said subdivision, easements for drainage purposes, giving Harris County and/or any other public agency the right to enter upon said easements at any and all times for the purpose of constructing and for maintaining drainage work and/or structures.

FURTHER, all of the property subdivided in the above and foregoing map shall be restricted in its use, which restrictions shall run with the title to the property, and shall be enforceable, at the option of Harris County by Harris County or any other public agency, as follows:

1. The drainage of septic tanks into roads, streets, alleys, or other public ditches, either directly or indirectly, is strictly prohibited.  
 2. Drainage structures under private driveways shall have a net drainage opening area of sufficient size to permit the free flow of water without backwater, and shall be a minimum of one and three quarters (1-3/4) square feet (18" diameter pipe culvert). Culverts or bridges must be used for driveways and/or walks.

We hereby covenant and agree that all lots within the boundaries of this subdivision are for residential purposes unless otherwise noted.  
 We hereby covenant and agree with the City of Houston and for Harris County and/or any property owner that the easements and building lines shown on adjacent acreage are hereby dedicated as shown.  
 We hereby covenant and agree with the City of Houston and/or Harris County and/or any property owner that no dwelling unit shall be constructed and/or occupied on any lot having an area of less than seven thousand (7000) square feet unless a sanitary sewer system meeting the approval of County and State Health authorities shall first have been extended to the lot, plot or site; and in no case shall any dwelling be constructed upon a lot, plot or site of less area than five thousand (5000) square feet or with less street frontage than fifty (50) feet.

IN TESTIMONY WHEREOF, the JOHNSON-LOGGINS, INC., has caused these Presents to be signed by Glen W. Loggins, its Vice President, thereunto authorized, attested, by its Assistant Secretary, Sherri B. Noble, and its common seal hereunto affixed this 1st day of February, 1974.

JOHNSON-LOGGINS, INC.  
 Glen W. Loggins, Vice President  
 Sherri B. Noble, Assistant Secretary

STATE OF TEXAS:  
 COUNTY OF HARRIS:  
 BEFORE ME, the undersigned authority, on this day personally appeared Glen W. Loggins, Vice President, and Sherri B. Noble, Assistant Secretary of the JOHNSON-LOGGINS, INC., and William Meade Wheelock, Jr., known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes and considerations therein expressed, and in the capacity therein expressed herein, and as the act and deed of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 1st day of February, 1974.

BEFORE ME, the undersigned authority, on this day personally appeared Milton W. Cowden, Vice President and Nita Chessher, Assistant Secretary of GURALEA REALTY SERVICES ASSOCIATION, known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes and considerations therein expressed, and in the capacity therein and herein set out, and as the act and deed of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 1st day of February, 1974.

This is to certify that I, Rayburn C. Cherry, a registered engineer of the State of Texas, have plotted the above subdivision from an actual survey on the ground, and that all block corners, angle points, and points of curve are properly marked with 5/8 inch round steel re-inforcing rods 30 inches long, and that this plat correctly represents that survey made by me.

This is to certify that the City Planning Commission of the City of Houston, Texas, has approved this plat and subdivision of PINEHURST OF ATASCOCITA, SECTION THREE as shown hereon.

IN TESTIMONY WHEREOF, witness the official signature of the Chairman and Secretary of the City Planning Commission of the City of Houston, Texas, this 27th day of April, 1974.

G. J. Stewart, Chairman  
 Roscoe H. Jones, Secretary - Engineer  
 Richard R. Doss, County Engineer

I, Richard R. Doss, County Engineer of Harris County, do hereby certify that the plat of this subdivision complies with all of the existing rules and regulations of this office as adopted by the Harris County Commissioners, and further, that it complies or will comply with all of the laws included in the Harris County Road Law, also including Section 31-C as amended by House Bill 388, Acts of 1959, 56th Legislature.



F749627

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PUBLIC UTILITY EASEMENT

105-84-0729

THE STATE OF TEXAS  
COUNTY OF HARRIS

KNOW ALL MEN BY THESE PRESENTS:

That, JOHNSON-LOGGINS, INC., a Delaware corporation, herein-  
after called Grantor, herein and hereby declares that it is the Owner of the  
hereinafter described tract and does hereby dedicate forever to the public  
that certain ten-foot wide utility easement described in Exhibit "A" attached  
hereto and made a part hereof.

This easement is for public utility lines (including but without  
limitation to water, sanitary sewer line, storm sewer lines, natural gas lines,  
electric lines and telephone lines) giving to the City of Houston and the Houston  
Lighting & Power Company, their successors and assigns, and/or any other  
public agency the right to enter upon said easement at any and all times for  
the purpose of constructing and/or maintaining structures and for laying,  
constructing, maintaining, operating, and removing of utility lines as afore-  
said.

Grantee herein is hereby released and relieved from any and all  
liability for any damages occasioned by the reasonable exercise of the rights  
granted herein.

TO HAVE AND TO HOLD the above-described easements for said  
purposes, together with all the rights and appurtenances thereto in anywise  
belonging to Grantee herein, their successors and assigns forever.

EXECUTED this 31st day of AUGUST, 1978, A. D.

ATTEST:

Mary L. Molandes  
Mary L. Molandes, Secretary

JOHNSON-LOGGINS, INC.

By J. M. Tipps  
J. M. Tipps, Exec. Vice Pres.

RECORDS SECTION  
JOHNSON-LOGGINS, INC.  
1600 FIRST CITY EAST BLDG.  
HOUSTON, TEX. 77002  
ATTN: D. D. MOLANDES

THE STATE OF TEXAS     |  
COUNTY OF HARRIS     |

105-84-0730

BEFORE ME, the undersigned authority, on this day personally appeared J. M. TIPPS, known to me to be the person whose name is subscribed to the foregoing instrument, as <sup>Exec.</sup> Vice President of JOHNSON-LOGGINS, INC., a corporation, and acknowledged to me that he executed the same for the purposes and consideration therein expressed, in the capacity stated, and as the act and deed of said corporation.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 31<sup>st</sup> day of August, 1978, A. D.



Leigh Ann Murff  
Notary Public in and for Harris County,  
Texas.

LEIGH ANN MURFF  
Notary Public in Harris County, Texas  
My Commission Expires March 23, 1980  
Bonded by Alexander Lovett, Lawyers Surety Corp.

# EXHIBIT A

105-84-0731

OAKS OF ATASCOCITA, SECTION ONE  
10' SANITARY SEWER EASEMENT  
IN RESERVE "E"  
0.1112 ACRES

AUGUST 24, 1978  
JOB NO. JL-109-10A

DESCRIPTION OF A 10 FOOT SANITARY SEWER EASEMENT  
CONTAINING 0.1112 ACRES OF LAND  
OUT OF OAKS OF ATASCOCITA, SECTION ONE,  
IN THE WILLIAM VICKINS SURVEY, ABSTRACT 822,  
HARRIS COUNTY, TEXAS



BEING 0.1112 acres of land out of Oaks of Atascocita, Section One, Reserve "E", a subdivision recorded in Volume 223, Page 107 of the Harris County Map Records in the William Vickins Survey, Abstract 822, Harris County, Texas, said 0.1112 acres of land being more particularly described as follows:

COMMENCING at the point being the intersection of the projection of the east line of Timber Forest Drive (100 feet wide), as shown by the plat of said Oaks of Atascocita, Section One, with the north line of FM 1960 (100 feet wide), said commencing point being in the south line of the said Oaks of Atascocita, Section One;

THENCE N 01° 50' 10" W, with the projection of the east line of the said Timber Forest Drive, at 20.00 feet passing the most westerly southwest corner of the said Reserve "E" and the most westerly southwest corner of a called 30,000 square foot tract of land out of the said Reserve "E" and continuing with the east line of Timber Forest Drive and the west line of the said Reserve "E" and the said called 30,000 square foot tract for a total distance of 174.00 feet to a point for corner, said point being the northwest corner of the said called 30,000 square foot tract;

THENCE S 87° 43' 36" E, 10.03 feet with the north line of the said called 30,000 square foot tract to the POINT OF BEGINNING and southwest corner of the herein described tract, said point also being on the east line of a ten foot wide building line and water line easement as shown by the plat of the said Oaks of Atascocita, Section One;

THENCE N 01° 50' 10" W, 484.45 feet to the northwest corner of the herein described tract, said point being on the south line of lot 1 in block 10 in the said Oaks of Atascocita, Section One and being also on the centerline of a 16 foot wide utility easement;

THENCE S 88° 54' 26" E, 10.01 feet to the northeast corner of the herein described tract;

THENCE S 01° 50' 10" E, 484.65 feet to the southeast corner of the herein described tract, said point being in the north line of the said called 30,000 square foot tract;

THENCE N 87° 43' 36" W, 10.03 feet with the north line of the said called 30,000 square foot tract to the POINT OF BEGINNING and containing 0.1112 acres of land.

MERCER-BROWN ENGINEERS, INC.

*John L. Laggie*  
1600 First City East

105-84-0732

FILED

AUG 31 3 48 PM 1978

*R. C. ...*  
COUNTY CLERK  
HARRIS COUNTY, TEXAS

STATE OF TEXAS  
COUNTY OF HARRIS

I hereby certify that this instrument was FILED in  
File Number Sequence on the date and at the time stamped  
hereon by me; and was duly RECORDED, in the Official  
Public Records of Real Property of Harris County, Texas on

AUG 31 1978



*R. C. ...*  
COUNTY CLERK,  
HARRIS COUNTY, TEXAS



EXHIBIT V

105-84-0732

EASMT.  
Hb46984

DEDICATION OF SANITARY SEWER FORCE MAIN & WATERLINE  
EASEMENTS TO HARRIS COUNTY MUNICIPAL UTILITY DISTRICT NO.132

THE STATE OF TEXAS § KNOW ALL MEN BY THESE PRESENTS:  
COUNTY OF HARRIS §

25  
2

THAT the undersigned, GIBRALTAR SAVINGS ASSOCIATION, a savings and loan association chartered under the laws of the State of Texas, is the owner in fee of those certain tracts of land referred to herein as Tracts "C", "D", "E", and "F" being out of that certain 1080.572 acre tract of land in the David Harris Survey, Abstract 26, Harris County, Texas, and being more fully described by metes and bounds in Exhibit "A" attached hereto and incorporated herein for all purposes.

The undersigned for and in consideration of the sum of TEN AND NO/100 DOLLARS (\$10.00), cash in hand to Grantor, paid by the Harris County Municipal Utility District No. 132 (hereinafter called "MUD 132"), the receipt and sufficiency of which is hereby acknowledged, has GRANTED, SOLD and CONVEYED, and by these presents does GRANT, SELL and CONVEY unto the said MUD 132, its successors and assigns, perpetual easements and rights-of-way for construction, maintenance and operation of a Sanitary Sewer Force Main & Waterline on and across the property. *lee*

TO HAVE AND TO HOLD the above described easements and rights-of-way, together with all and singular the rights and appurtenances thereto, in anywise belonging, including all necessary rights of ingress, egress and regress, unto the said MUD 132, its successors and assigns forever; and

Grantor does hereby bind itself, its successors and assigns to warrant and forever defend all and singular the said premises unto the said MUD 132, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof.

This dedication is expressly made subject to the restrictions, covenants, conditions, limitations, easements and mineral reservations, if any, now in force and existing of record in the Office of


the County Clerk of Harris County, Texas, to which reference is here made for all purposes, and to those easements which, though not of record, are visible on the ground.

IN TESTIMONY WHEREOF, GIBRALTAR SAVINGS ASSOCIATION, as Grantor, has caused this instrument to be executed by its proper officers thereunto duly authorized by resolution of its Board of Directors and to be attested and its corporate seal hereunto affixed by its Assistant Secretary on this the 21st day of September, 1982.

ATTEST:

GIBRALTAR SAVINGS ASSOCIATION

187

 Roxie Key  
Secretary

BY: Charles R. Ackerman  
Charles R. Ackerman, Senior  
Vice President

THE STATE OF TEXAS §

COUNTY OF §

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared CHARLES R. ACKERMAN, Senior Vice President of GIBRALTAR SAVINGS ASSOCIATION, 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 purposes and considerations therein expressed, in the capacity therein stated and as the act and deed of said association.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 21st day of September, 1982.

 [SEAL]

Melissa Baker  
Notary Public in and for the  
State of T E X A S

MELISSA BAKER  
Notary Public in and for the State of Texas  
My Commission Expires 1-4-85

HOLD FOR  
Texas Western Title Co.

**EXHIBIT A**

TRACT C

May 12, 1982

Being a 10 foot sanitary sewer force main easement out of the David Harris Survey, A-26, Harris County, Texas, across the Houston Lighting & Power Company's 80 foot easement as described in deed recorded in Volume 6870, Page 242 of the Deed Records of Harris County, Texas, said 10 foot sanitary sewer force main easement also being out of that certain 1080.572 acre tract of land filed under Clerk's File No. E-046839, Film Code 172-22-2061 of the Official Public Records of Real Property of Harris County, Texas, and being more particularly described as follows:

BEGINNING at a point on the North line of said Houston Lighting & Power Company's 80 foot easement same being the South line of Reserve "A" in Block 1 of Pinehurst of Atascocita, Section 3, according to the plat thereof recorded in Volume 216, Page 36 of the Map Records of Harris County, Texas, said beginning point being located North 89° 55' West, 17.97 feet from the most Southerly Southeast corner of said Reserve "A";

THENCE South 56° 16' West, parallel to and 10 feet at right angles Northwest of the Northwest right-of-way line of F.M. 1960, 100 feet wide, a distance of 143.75 feet to a point for corner on the South right-of-way line of said Houston Lighting & Power Company's 80 foot easement;

THENCE North 89° 55' West, along the South right-of-way line of said Houston Lighting & Power Company's 80 foot easement, a distance of 17.97 feet to a point for corner;

THENCE North 56° 16' East, parallel to and 20 feet at right angles Northwest of the Northwest right-of-way line of F.M. 1960, a distance of 143.75 feet to a point for corner on the North right-of-way line of said Houston Lighting & Power Company's 80 foot easement, same being the South line of said Reserve "A";

Being a 10 foot sanitary sewer force main easement, cont'd....

THENCE South 89° 55' East, along the North right-of-way line of said Houston Lighting & Power Company's 80 foot easement, same being the South line of said Reserve "A", a distance of 17.97 feet to the PLACE OF BEGINNING and containing 1,437 square feet of land.

RAYBURN CHERRY ENGINEERS, INC.  
Consulting Engineers

Rayburn C. Cherry, P.E., R.P.S.



TRACT D

May 12, 1982

Being a 10 foot water line easement out of the David Harris Survey, A-26, Harris County, Texas, across the Houston Lighting & Power Company's 80 foot easement as described in deed recorded in Volume 6870, Page 242 of the Deed Records of Harris County, Texas, said 10 foot water line easement also being out of that certain 1080.572 acre tract of land filed under Clerk's File No. E-046839, Film Code 172-22-2061 of the Official Public Records of Real Property of Harris County, Texas, and being more particularly described as follows:

BEGINNING at the point of intersection of the North line of said Houston Lighting & Power Company's 80 foot easement with the Northwest right-of-way line of F.M. 1960, 100 feet wide, said point being the most Southerly Southeast corner of Reserve "A" in Block 1 of Pinehurst of Atascocita, Section 3, according to the plat thereof recorded in Volume 216, Page 36 of the Map Records of Harris County, Texas;

THENCE South  $56^{\circ} 16'$  West, along the Northwest right-of-way line of F.M. 1960, a distance of 143.75 feet to a point for corner on the South right-of-way line of said Houston Lighting & Power Company's 80 foot easement;

THENCE North  $89^{\circ} 55'$  West, along the South right-of-way line of said Houston Lighting & Power Company's 80 foot easement, a distance of 17.97 feet to a point for corner;

THENCE North  $56^{\circ} 16'$  East, parallel to and 10 feet at right angles Northwest of the Northwest right-of-way line of F.M. 1960, a distance of 143.75 feet to a point for corner on the North right-of-way line of said Houston Lighting & Power Company's 80 foot easement, same being the South line of said Reserve "A";

Being a 10 foot water line easement, cont'd...

THENCE South 89° 55' East, along the North right-of-way line of said Houston Lighting & Power Company's 80 foot easement, same being the South line of said Reserve "A", a distance of 17.97 feet to the PLACE OF BEGINNING and containing 1,437 square feet of land.

RAYBURN CHERRY ENGINEERS, INC.  
Consulting Engineers

Rayburn C. Cherry, P.E., R.P.S.

TRACT E

May 14, 1982

Being a 10 foot sanitary sewer force main easement out of the David Harris Survey, A-26, Harris County, Texas, and being out of that certain 1080.572 acre tract of land filed under Clerk's File No. E-046839, Film Code 172-22-2061 of the Official Public Records of Real Property of Harris County, Texas, said 10 foot sanitary sewer force main easement being more particularly described as follows:

BEGINNING at a point on the Southwest line of that certain 7.240 acre tract of land conveyed to Union Baptist Foundation by Johnson-Loggins, Inc., by deed recorded in Volume , Page of the Deed Records of Harris County, Texas, said point being located North 54° 24' 51" West, 10.69 feet from the most Southerly corner of said 7.240 acre tract;

THENCE South 56° 16' 00" West, parallel to and 10 feet at right angles Northwest of the Northwest right-of-way line of F.M. 1960, 100 feet wide, a distance of 6.57 feet to a point of curve;

THENCE in a Southwesterly direction, concentric with and 10 feet Northwesterly from the Northwesterly right-of-way line of F.M. 1960, with a curve to the right whose radius is 5669.58 feet and central angle is 5° 09' 45", a distance of 510.84 feet to an angle point;

THENCE North 77° 09' 51" West, a distance of 53.72 feet to an angle point;

THENCE South 63° 36' 50" West, a distance of 282.13 feet to an angle point;

Being a 10 foot sanitary sewer force main easement, cont'd....

THENCE South  $70^{\circ} 35' 07''$  West, a distance of 191.44 feet to a point for re-entrant corner;

THENCE South  $24^{\circ} 31'$  East, a distance of 64.61 feet to a point for corner on the Northwesterly right-of-way line of F.M. 1960;

THENCE South  $65^{\circ} 29'$  West, along the Northwesterly right-of-way line of F.M. 1960, a distance of 10.00 feet to a point for corner;

THENCE North  $24^{\circ} 31'$  West, a distance of 75.54 feet to a point for corner;

THENCE North  $70^{\circ} 35' 07''$  East, a distance of 201.76 feet to an angle point;

THENCE North  $63^{\circ} 36' 50''$  East, a distance of 285.08 feet to an angle point;

THENCE South  $77^{\circ} 09' 51''$  East, a distance of 53.51 feet to an angle point;

THENCE in a Southeasterly direction, concentric with and 20 feet Northwest of the Northwesterly right-of-way line of F.M. 1960, with a curve to the left whose radius is 5659.58 feet and central angle is  $5^{\circ} 07' 27''$ , a distance of 506.16 feet to a point of tangent;

THENCE North  $56^{\circ} 16'$  East, parallel to and 20 feet at right angles Northwest of the Northwest right-of-way line of F.M. 1960, a distance of 2.80 feet to a point for corner on the Southwest line of said 7.240 acre tract;

027-85-0491

Being a 10 foot sanitary sewer force main easement, cont'd....

THENCE South 54° 24' 51" East, a distance of 10.69 feet  
to the PLACE OF BEGINNING and containing 11,171 square feet  
of land.

RAYBURN CHERRY ENGINEERS, INC.  
Consulting Engineers

Rayburn C. Cherry, P.E., R.P.S.

TRACT F

May 14, 1982

Being a 10 foot water line easement out of the David Harris Survey, A-26, Harris County, Texas, and being out of that certain 1080.572 acre tract of land filed under Clerk's File No. E-046839, Film Code 172-22-2061 of the Official Public Records of Real Property of Harris County, Texas, said 10 foot water line easement being more particularly described as follows:

BEGINNING at a point on the Northwest right-of-way line of F.M. 1960, 100 feet wide, said point being the most Southerly corner of that certain 7.240 acre tract of land conveyed to Union Baptist Foundation by Johnson-Loggins, Inc., by deed recorded in Volume , Page of the Deed Records of Harris County, Texas;

THENCE South 56° 16' West, along the Northwest right-of-way line of F.M. 1960, a distance of 10.35 feet to a point of curve;

THENCE in a Southwesterly direction, continuing along the Northwesterly right-of-way line of F.M. 1960, with a curve to the right whose radius is 5679.58 feet and central angle is 5° 12' 02", a distance of 515.52 feet to an angle point;

THENCE North 77° 09' 51" West, a distance of 53.94 feet to an angle point;

THENCE South 63° 36' 50" West, a distance of 279.18 feet to an angle point;

THENCE South 70° 35' 07" West, a distance of 558.80 feet to a point for re-entrant corner;

Being a 10 foot water line easement, cont'd.....

THENCE South  $18^{\circ} 00'$  East, a distance of 64.58 feet to a point for corner on the Northwest right-of-way line of F.M. 1960;

THENCE in a Southwesterly direction, along the Northwesterly right-of-way line of F.M. 1960, with a curve to the right whose radius is 2814.79 feet and central angle is  $0^{\circ} 12' 13''$  and whose chord bears South  $72^{\circ} 55' 49''$  West, a distance, measured along the arc of said curve, of 10.00 feet to a point for corner on the proposed East right-of-way line of West Lake Houston Parkway;

THENCE North  $18^{\circ} 00'$  West, along the proposed East right-of-way line of West Lake Houston Parkway, a distance of 74.17 feet to a point for corner;

THENCE North  $70^{\circ} 35' 07''$  East, a distance of 567.95 feet to an angle point;

THENCE North  $63^{\circ} 36' 50''$  East, a distance of 282.13 feet to an angle point;

THENCE South  $77^{\circ} 09' 51''$  East, a distance of 53.72 feet to an angle point on a curve;

THENCE in a Northeasterly direction, concentric with and 10 feet Northwesterly of the Northwest right-of-way line of F.M. 1960, with a curve to the left whose radius is 5669.58 feet and central angle is  $5^{\circ} 09' 45''$ , a distance of 510.84 feet to a point of tangent;

THENCE North  $56^{\circ} 16'$  East, a distance of 6.57 feet to a point for corner on the Southwest line of said 7.240 acre tract;

027-05-0494

Being a 10 foot water line easement, cont'd.....

THENCE South 54° 24' 51" East, along the Southwest line of said 7.240 acre tract, a distance of 10.69 feet to the PLACE OF BEGINNING and containing 14,886 square feet of land.

RAYBURN CHERRY ENGINEERS, INC.  
Consulting Engineers

Rayburn C. Cherry, P.E., R.P.S.



RAYBURN CHERRY ENGINEERS, INC.

OCT 8 1995

NOT RECORDED IN THE PUBLIC RECORDS OF THE COUNTY OF TARRANT, TEXAS  
ON OCTOBER 8, 1995 AT 10:00 AM  
BY CLERK OF COURTS  
STATE OF TEXAS

055-02-0402



027-85-0495

STATE OF TEXAS }  
COUNTY OF HARRIS }

I hereby certify that this instrument was FILED by  
File Number Sequence on the date and at the time stamped  
hereon by me: and was duly RECORDED, in the Official  
Public Records of Real Property of Harris County, Texas on

OCT 6 1982



*Quita Lockman*  
County Clerk, Harris County, Texas

*Quita Lockman*  
COUNTY CLERK  
HARRIS COUNTY, TEXAS

OCT 6 12 43 PM 1982

FILED

051-82-0484

*Easmt*

WATER LINE EASEMENT 01/06/83 00242538 H766530 \$ 9.00

THE STATE OF TEXAS I  
COUNTY OF HARRIS I

KNOW ALL MEN BY THESE PRESENTS

9  
2

That, Lake Houston Baptist Church, hereinafter called Grantor, acting herein by and through its duly authorized officers for and in consideration of the sum of TWO THOUSAND DOLLARS (\$2,000) cash and other good and valuable consideration, does hereby GRANT, SELL and CONVEY unto HARRIS COUNTY MUNICIPAL UTILITY DISTRICT NO. 132, hereinafter known as Grantee, a perpetual 10 foot easement and right-of-way for construction, maintenance, and operation of a water line out of that certain tract of land containing 7.240 acres of land out of the David Harris Survey, Abstract No. 26, Harris County, Texas, being more particularly described in Exhibit "A" attached hereto and made a part hereof for all purposes.

*W*

This conveyance is made expressly subject to each and every, all and singular, valid and subsisting restrictions, exceptions, mineral and/or royalty reservations and covenants of whatsoever nature, of record, if any, and also the laws, regulations, ordinances and statutes of municipal or other governmental authorities, if any, applicable to and enforceable against the above-described premises.

TO HAVE AND TO HOLD the above-described easement for the said purposes, together with all the rights and appurtenances thereto in anywise belonging to Grantee herein, his successors and assigns, forever; and Grantor does hereby bind himself, his successors and assigns, to WARRANT AND FOREVER DEFEND all singular the said premises unto the said Grantee, its successors and assigns, against every person whomsoever claiming or to claim the same or any part thereof.

EXECUTED in multiple original copies each of which represent but one and the same instrument, this 30TH day of DECEMBER, 1982.

LAKE HOUSTON BAPTIST CHURCH

187

HOLD FOR  
Texas Western Title Co.

By: W. R. Hill  
Trustee  
W. R. HILL

~~BY~~  
~~XXXXXX~~

By: Robert H. Foster  
Trustee  
ROBERT H. FOSTER

THE STATE OF TEXAS I  
COUNTY OF HARRIS I

BEFORE ME, the undersigned authority, on this day personally appeared W. R. HILL, Trustee of Lake Houston Baptist Church, 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 purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 30TH day of DECEMBER, 1982.

*Rebecca Mangnuson*  
Notary Public in and for the State of Texas

My Commission Expires: \_\_\_\_\_

REBECCA MANGNUSON  
Notary Public in and for the State of Texas  
My Commission Expires 8-6-86



THE STATE OF TEXAS        I  
   \*  
COUNTY OF HARRIS        I

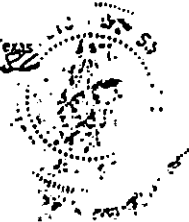
BEFORE ME, the undersigned authority, on this day personally appeared ROBERT H. FOSTER, Trustee of Lake Houston Baptist Church, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 30TH day of DECEMBER, 1982.

*Rebecca Mangnuson*  
Notary Public in and for the State of Texas

My Commission Expires: \_\_\_\_\_

REBECCA MANGNUSON  
Notary Public in and for the State of Texas  
My Commission Expires 8-6-86



THE STATE OF TEXAS        I  
   \*  
COUNTY OF HARRIS        I

BEFORE ME, the undersigned authority, on this day personally appeared \_\_\_\_\_, Trustee of Lake Houston Baptist Church, 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 purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this \_\_\_\_\_ day of \_\_\_\_\_, 1982.

\_\_\_\_\_  
Notary Public in and for the State of Texas

My Commission Expires: \_\_\_\_\_

May 12, 1982

Being a 10 foot water line easement out of the David Harris Survey, A-26, Harris County, Texas, and being out of that certain 7.240 acre tract of land conveyed to Union Baptist Foundation by Johnson-Loggins, Inc., by deed recorded in Volume , Page of the Deed Records of Harris County, Texas, said 10 foot water line easement being more particularly described as follows:

BEGINNING at the point of intersection of the Northwest right-of-way line of F.M. 1960, 100 feet wide, with the South right-of-way line of Houston Lighting & Power Company's 80 foot easement described in deed recorded in Volume 6870, Page 242 of the Deed Records of Harris County, Texas, said beginning point further being the East corner of said 7.240 acre tract;

THENCE South  $56^{\circ} 16'$  West, along the Northwest right-of-way line of F.M. 1960, same being the Southeast line of said 7.240 acre tract, a distance of 838.99 feet to a point for corner, said point being the most Southerly corner of said 7.240 acre tract;

THENCE North  $54^{\circ} 24' 51''$  West, along the Southwest line of said 7.240 acre tract, a distance of 10.69 feet to a point for corner;

THENCE North  $56^{\circ} 16'$  East, parallel to and 10 feet at right angles Northwest of the Northwest right-of-way line of F.M. 1960, same being the Southeast line of said 7.240 acre tract, a distance of 827.84 feet to a point for corner on the North line of said 7.240 acre tract;

EXHIBIT "A"

034-98-2061

Being a 10 foot water line easement, cont'd.....

THENCE South 89° 55' East, along the North line of said 7.240 acre tract, same being the South right-of-way line of said Houston Lighting & Power Company's 80 foot easement, a distance of 17.97 feet to the PLACE OF BEGINNING and containing 8,335 square feet of land.

RECORDER'S MEMORANDUM  
AT THE TIME OF RECORDATION, THIS INSTRUMENT WAS FOUND TO BE INADEQUATE FOR THE BEST PHOTOGRAPHIC REPRODUCTION BECAUSE OF ILLEGIBILITY, CARBON OR PHOTO COPY, DISCLOSED PAPER, ETC.

STATE OF TEXAS }  
COUNTY OF HARRIS }

I hereby certify that this instrument was FILED in File Number Sequence on the date and at the time stamped herein by me, and was duly RECORDED, in the Official Public Records of Real Property of Harris County Texas on

JAN - 6 1983



*Quita Robinson*  
COUNTY CLERK,  
HARRIS COUNTY, TEXAS

1983 JAN -6 AM 11:36

*Quita Robinson*  
COUNTY CLERK,  
HARRIS COUNTY, TEXAS

Easmt

H766531

034-98-2062

SANITARY SEWER FORCE MAIN EASEMENT

01/06/83 00242539 H766531 \$ 9.00

THE STATE OF TEXAS    Y  
                                  Y  
COUNTY OF HARRIS    Y

KNOW ALL MEN BY THESE PRESENTS

9  
2

That, Lake Houston Baptist Church, hereinafter called Grantor, acting herein by and through its duly authorized officers for and in consideration of the sum of TWO THOUSAND AND NO/100 DOLLARS (\$2,000) cash and other good and valuable consideration, does hereby GRANT, SELL and CONVEY unto HARRIS COUNTY MUNICIPAL UTILITY DISTRICT NO. 132, hereinafter known as Grantee, a perpetual 10 foot easement and right-of-way for construction, maintenance and operation of a sanitary sewer force main out of that certain tract of land containing 7.240 acres of land out of the David Harris Survey, Abstract No. 26, Harris County, Texas, being more particularly described in Exhibit "A" attached hereto and made a part hereof for all purposes.

lee

This conveyance is made expressly subject to each and every, all and singular, valid and subsisting restrictions, exceptions, mineral and/or royalty reservations and covenants of whatsoever nature, of record, if any, and also the laws, regulations, ordinances and statutes of municipal or other governmental authorities, if any, applicable to and enforceable against the above-described premises.

TO HAVE AND TO HOLD the above-described easement for the said purposes, together with all the rights and appurtenances thereto in anywise belonging to Grantee herein, its successors and assigns, forever; and Grantor does hereby bind itself, its successors and assigns, to WARRANT AND FOREVER DEFEND all singular the said premises unto the said Grantee, its successors and assigns, against every person whomsoever claiming or to claim the same or any part thereof.

EXECUTED in multiple original copies each of which represent but one and the same instrument, this 30th day of DECEMBER, 1982.

RECORDER'S MEMORANDUM  
ALL BLACKOUTS, ADDITIONS AND CHANGES  
WERE PRESENT AT THE TIME THE INSTRUMENT  
WAS FILED AND RECORDED.

LAKE HOUSTON BAPTIST CHURCH

100

HOLD FOR  
Texas Western Title Co.

By: W. R. Hill  
Trustee  
W. R. HILL

XXXX  
~~XXXXXXXXXX~~

By: Robert H. Foster  
Trustee  
ROBERT H. FOSTER

THE STATE OF TEXAS    §  
                                  §  
COUNTY OF HARRIS    §

BEFORE ME, the undersigned authority, on this day personally appeared W. R. Hill, Trustee of Lake Houston Baptist Church, 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 purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 30th day of DECEMBER, 1982.

*Rebecca Mangnuson*  
Notary Public in and for the State of Texas

REBECCA MANGNUSON  
Notary Public in and for the State of Texas  
My Commission Expires 8-6-86

My Commission Expires: \_\_\_\_\_

THE STATE OF TEXAS §  
COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared ROBERT H. FOSTER, Trustee of Lake Houston Baptist Church, 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 purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 30TH day of DECEMBER, 1982.

*Rebecca Mangnuson*  
Notary Public, in and for the State of Texas

REBECCA MANGNUSON  
Notary Public in and for the State of Texas  
My Commission Expires 8-6-86

My Commission Expires: \_\_\_\_\_

THE STATE OF TEXAS §  
COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared \_\_\_\_\_, Trustee of Lake Houston Baptist Church, 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 purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this \_\_\_\_ day of \_\_\_\_\_, 1982.

\_\_\_\_\_  
Notary Public, in and for the State of Texas

My Commission Expires: \_\_\_\_\_

May 12, 1982

Being a 10 foot sanitary sewer force main easement out of the David Harris Survey, A-26, Harris County, Texas, and being out of that certain 7.240 acre tract of land conveyed to Union Baptist Foundation by Johnson-Loggins, Inc., by deed recorded in Volume , Page of the Deed Records of Harris County, Texas, said 10 foot sanitary sewer force main easement being more particularly described as follows:

BEGINNING at a point on the North line of said 7.240 acre tract, same being the South right-of-way line of Houston Lighting & Power Company's 80 foot easement described in deed recorded in Volume 6870, Page 242 of the Deed Records of Harris County, Texas, said beginning point being located North 89° 55' West, 17.97 feet from the East corner of said 7.240 acre tract;

THENCE South 56° 16' West, parallel to and 10 feet at right angles Northwest of the Northwest right-of-way line of F.M. 1960, 100 feet wide, same being the Southeast line of said 7.240 acre tract, a distance of 827.84 feet to a point for corner on the Southwest line of said 7.240 acre tract;

THENCE North 54° 24' 51" West, along the Southwest line of said 7.240 acre tract, a distance of 10.69 feet to a point for corner;

THENCE North 56° 16' East, parallel to and 20 feet at right angles Northwest of the Northwest right-of-way line of F.M. 1960, same being the Southeast line of said 7.240 acre tract, a distance of 816.68 feet to a point for corner on the North line of said 7.240 acre tract;



Being a 10 foot sanitary sewer force main easement, cont'd.....

THENCE South 89° 55' East, along the North line of said 7.240 acre tract, same being the South right-of-way line of said Houston Lighting & Power Company's 80 foot easement, a distance of 17.97 feet to the PLACE OF BEGINNING and containing 8,223 square feet of land.

STATE OF TEXAS }  
COUNTY OF HARRIS }

I hereby certify that this instrument was FILED in File Number Sequence on the date and at the time stamped hereon by me; and was duly RECORDED, in the Official Public Records of Real Property of Harris County, Texas on

JAN - 6 1983



*Quita Rodcheauer*  
COUNTY CLERK,  
HARRIS COUNTY, TEXAS

FILED

1983 JAN -6 AM 11: 36

*Quita Rodcheauer*  
COUNTY CLERK,  
HARRIS COUNTY, TEXAS

EASEMENT

05/01/85 00059123 K000655 \$ 15.00

STATE OF TEXAS §  
COUNTY OF HARRIS §

232 & 233

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g

KNOW ALL MEN BY THESE PRESENTS, that Gibraltar Savings Association, a Texas savings association, with its principal offices in the City of Houston, Harris County, Texas, as Grantor, in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt in sufficiency of which are hereby acknowledged, has Granted, Bargained, Sold and Conveyed, and by these presents does Grant, Bargain, Sell, and Convey, unto the Harris County Municipal Utility District No. 132, located in the County of Harris, State of Texas, as Grantee, an easement for the purposes of constructing and maintaining a water main, said easement being described in Exhibit "A" attached hereto and made a part hereof for all purposes, together with the free right of ingress and egress over and across such property, insofar as such right of ingress and egress is necessary to the proper exercise of the rights granted herein. This easement is granted upon the following conditions:

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- (1) The water main shall be buried at a depth comparable with other water lines granted to Grantee in Harris County, Texas.
- (2) Grantor, its successors and assigns shall be allowed to use the land covered by this easement for any purposes which are not detrimental to the use by Grantee of the easement for its intended purpose, including, without limitation, the construction of roads, bridges and culverts across said easement and the placement of landscaping on said easement, provided that no permanent building shall be constructed on any part of said easement without the prior written consent

JHP#8:LT:5(4/29/85)

FILED  
MAY 1 2 53 PM '85  
Quita Reddeman  
COUNTY CLERK  
HARRIS COUNTY, TEXAS

FROM THE LAW OFFICES OF  
LAPIN, TOTZ & MAYER  
ATTORNEYS AT LAW  
THE LTM BUILDING  
1415 POST OAK PARK DRIVE  
HOUSTON, TEXAS 77027

of Grantee. If such improvements are placed by Grantor on or across said easement, they shall be removed at the sole cost and expense of Grantor if such is necessary for the maintenance and repair of the water main by Grantee.

- (3) Grantee shall promptly repair any leaks in the water main at Grantee's sole cost and expense, unless said leak is caused by an action of Grantor.
- (4) Grantee shall keep the surface of said easement mowed and maintained at Grantee's sole cost and expense.
- (5) Grantee shall make every reasonable effort to perform its repair and maintenance functions with respect to said easement so as not to affect any improvements placed thereon by Grantor, provided, however, Grantee shall not be required to incur any extra expense in doing so.
- (6) If the easement granted herein is not used for its intended purpose for a continuous period of six months the easement will be considered to have been abandoned by Grantee and shall terminate.
- (7) In the event of abandonment of the easement by Grantee, either voluntarily or as provided in Paragraph six above. The water main shall be removed and the surface of the easement shall be restored to the same condition as it was prior to the granting of this easement, all at Grantee's sole cost and expense.

TO HAVE AND TO HOLD the above described premises, together with all and singular the rights and appurtenances thereto in anywise belonging, subject to all easements and other matters of record to the extent that they affect the property hereby conveyed unto Grantee, its successors and assigns. And Grantor does hereby bind itself its successors and assigns to warrant and forever defend, all and singular, subject to all easements and other matters of record to the extent that they affect the property hereby conveyed, the said premises unto Grantee, its successors and assigns by through or under Grantor, but not otherwise.

-2-

FROM THE LAW OFFICES OF  
**LAPIN, TOTZ & MAYER**  
ATTORNEYS AT LAW  
THE LTM BUILDING  
1415 POST OAK PARK DRIVE  
HOUSTON, TEXAS 77027

Being a water main easement in the David Harris Survey, A-26, and being out of that certain 1080.572 acre tract described in deed recorded under Clerk's File No. E-046839, Film Code 172-22-2061 of the Official Public Records of Real Property of Harris County, Texas and being more particularly described by metes and bounds as follows:

**BEGINNING** at a point marked by a 5/8 inch iron rod that marks the intersection of the West line of said 1080.572 acre tract with the North right-of-way line of F.M. 1960 East, 100 feet wide;

**THENCE** North  $0^{\circ} 22' 07''$  East, along the West line of said 1080.572 acre tract a distance of 15 feet to a point for corner;

**THENCE** South  $87^{\circ} 43' 53''$  East, parallel to and 15 feet at right angles North of the North right-of-way line of F.M. 1960 East, a distance of 424.13 feet to an angle point;

**THENCE** South  $87^{\circ} 24' 51''$  East, continuing parallel to and 15 feet at right angles North of the North right-of-way line of F.M. 1960 East, a distance of 3743.78 feet to a point of curve;

**THENCE** in an Easterly direction concentric with and 15 feet North of the North right-of-way line of F.M. 1960 East with a curve to the left whose radius is 2799.79 feet and central angle is  $9^{\circ} 24' 03''$ , a distance of 459.37 feet to an angle point;

**THENCE** North  $33^{\circ} 25' 11''$  East, parallel to and 10 feet at right angles Northwest of the Northwest line of Mobil Pipeline Co. Easement, a distance of 72.57 feet to an angle point on a curve;

232

**THENCE** in a Northeasterly direction concentric with and 10 feet Northwest of the Northwest line of said Mobil Pipeline Co. Easement with a curve to the left whose radius is 2744.79 feet and central angle is  $7^{\circ} 03' 31''$  and whose chord bears North  $78^{\circ} 40' 38''$  East, a distance measured along the arc of said curve of 338.15 feet to a point for corner on the proposed Southwest right-of-way line of West Lake Houston Parkway;

233

**THENCE** South  $18^{\circ} 00' 00''$  East, along the proposed Southwest right-of-way line of West Lake Houston Parkway, a distance of 10.02 feet to a point for corner marked by a 5/8 inch iron rod on the Northwesterly right-of-way line of said Mobil Pipeline Co. Easement;

**THENCE** in a Southwesterly direction along the Northwesterly right-of-way line of Mobil Pipeline Co. Easement with a curve to the right whose radius is 2754.79 feet and central angle is  $6^{\circ} 58' 33''$  and whose chord bears South  $78^{\circ} 37' 27''$  West, a distance measured along the arc of said curve of 335.40 feet to an angle point;

**THENCE** South  $33^{\circ} 25' 11''$  West, along the Northwest right-of-way line of said Mobil Pipeline Co. Easement, a distance of 79.23 feet to an angle point on a curve marked by a 5/8 inch iron rod on the North right-of-way line of F.M. 1960 East;

**THENCE** in a Westerly direction along the North right-of-way line of F.M. 1960 East with a curve to the right whose radius is 2814.79 feet and central angle is  $9^{\circ} 24' 33''$  a distance of 462.24 feet to a point of tangent marked by a 5/8 inch iron rod;

THENCE North 87° 24' 51" West, continuing along the North right-of-way line of F.M. 1960 East, a distance of 3743.74 feet to an angle point marked by a 5/8 inch iron rod;

THENCE North 87° 43' 53" West, continuing along the North right-of-way line of F.M. 1960 East, a distance of 423.59 feet to the PLACE OF BEGINNING.

RAYBURN CHERRY ENGINEERS, INC.  
Consulting Engineers

*Rayburn C. Cherry*  
Rayburn C. Cherry, P.E., R.P.S.



STATE OF TEXAS }  
COUNTY OF HARRIS }

I hereby certify that this instrument was FILED in File Number Sequence on the date and at the time stamped hereon by me, and was duly RECORDED, in the Official Public Records of Real Property of Harris County, Texas on

MAY 1 1985



*Quita Lathrop*  
COUNTY CLERK,  
HARRIS COUNTY, TEXAS