

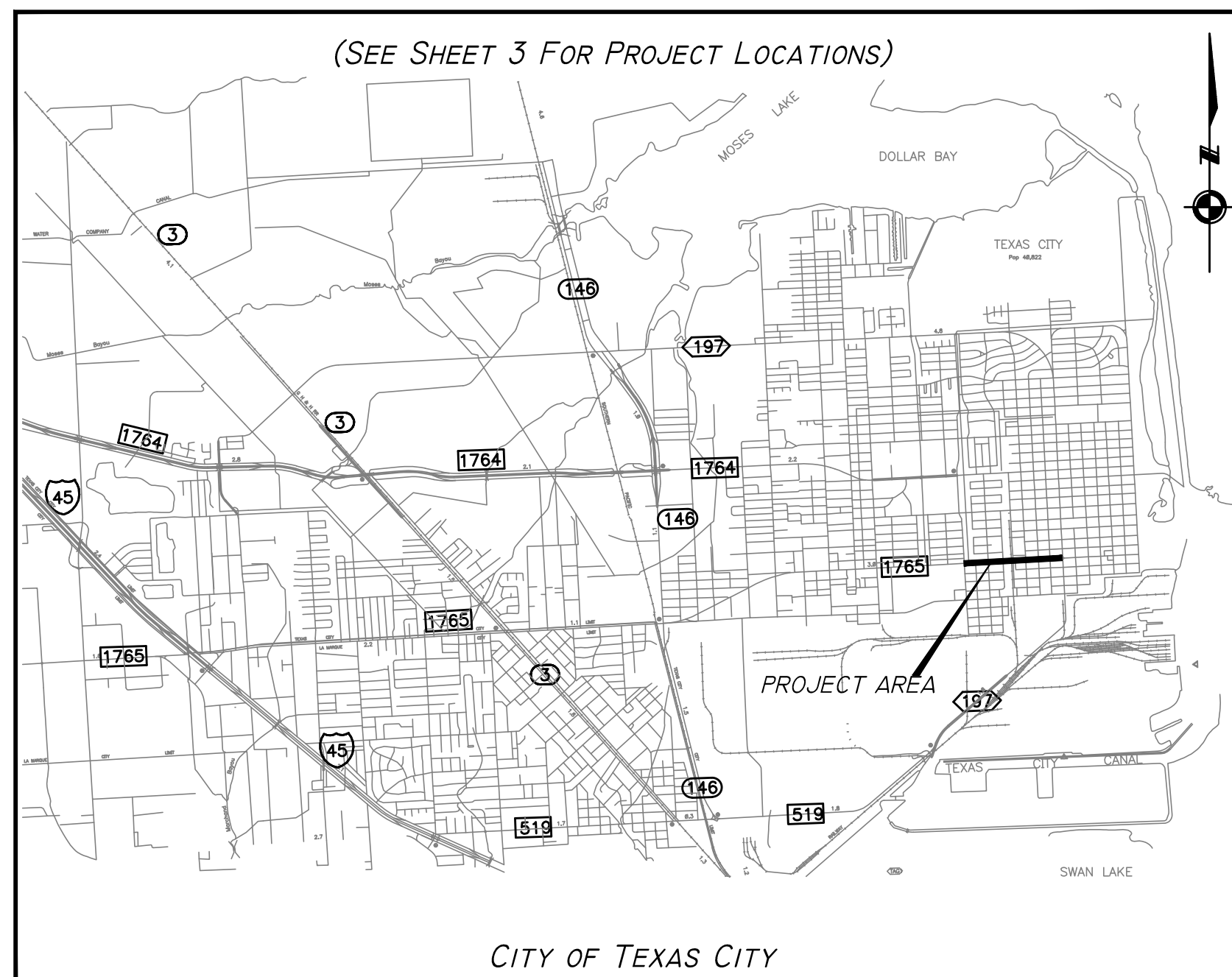
# Galveston County, Texas

## Texas Avenue Reconstruction

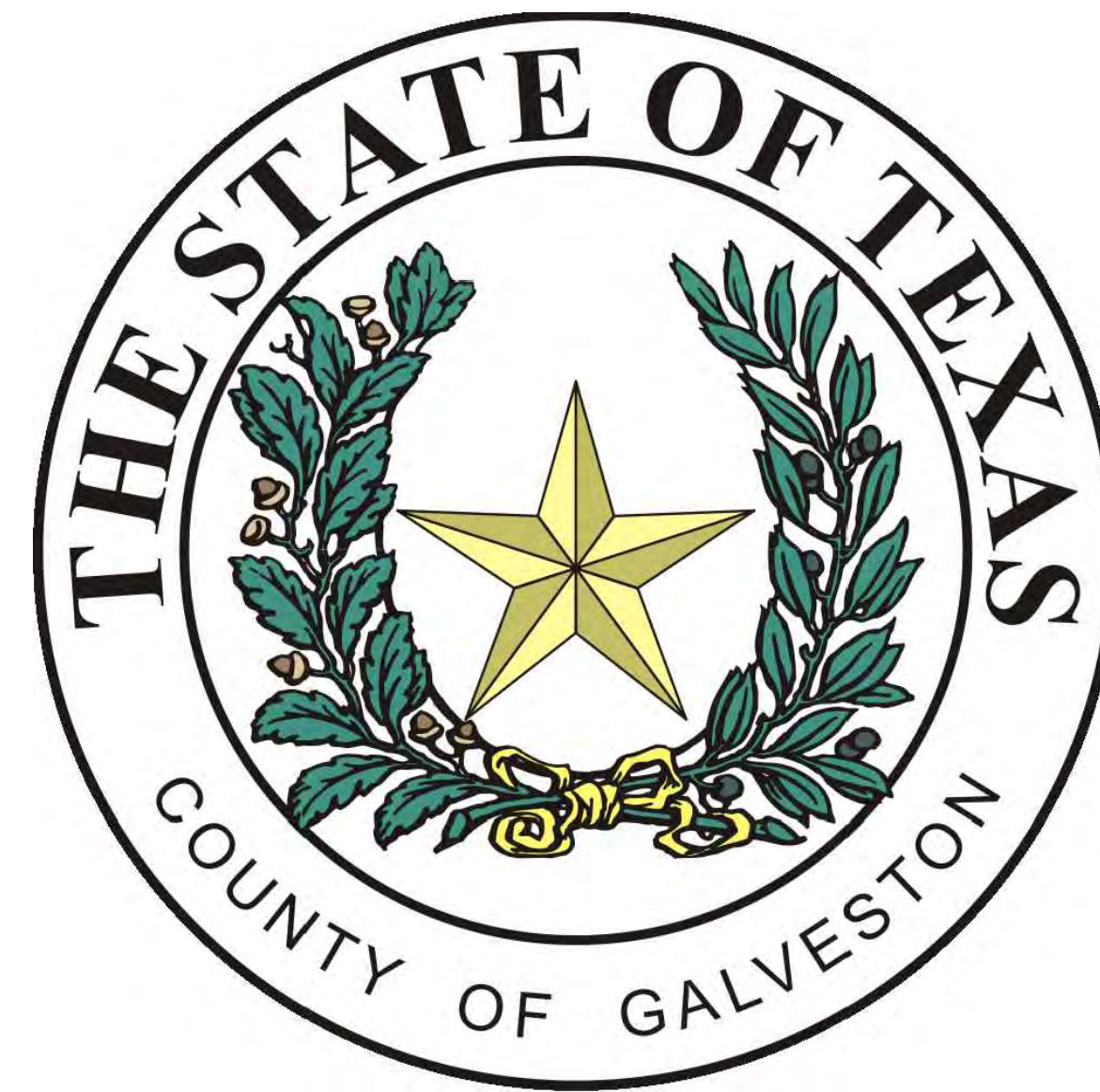
14th Street to Loop 197

October, 2019

DRAWINGS INDEX



LOCATION MAP  
Not to Scale



COUNTY JUDGE

Mark Henry

COMMISSIONERS

Darrell Appfel - Precinct 1  
Joe Giusti - Precinct 2

Stephen D. Holmes - Precinct 3  
Ken Clark - Precinct 4

COUNTY ENGINEER

Michael C. Shannon, P.E.

ASSISTANT COUNTY ENGINEER

Nancy Baher, P.E.

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11.	TEXAS AVENUE P&P (STA. 19+50 TO STA. 24+00)
12.	TEXAS AVENUE P&P (STA. 24+00 TO STA. 28+50)
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TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

NOTICE:  
For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground line can be marked. This verification does not fulfill your obligation to call 811.

VERIFICATION OF PRIVATE UTILITY LINES

Date \_\_\_\_\_

CenterPoint Energy/Natural Gas Facilities Verification ONLY.  
(This signature verifies that you have shown CNP Natural Gas lines correctly - not to be used for conflict verification.) (Gas service lines are not shown.)  
Signature valid for six months.

Date \_\_\_\_\_

Texas New Mexico Power Co.  
(Approved Only for Crossing Underground Ductlines, Unless Otherwise Noted.)  
Valid at Time of Review Only.

AT&T

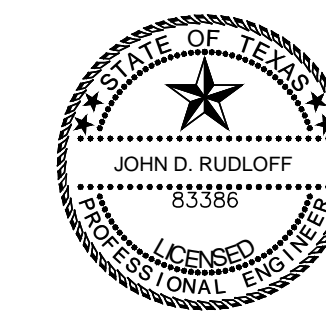
Date \_\_\_\_\_

Approval for AT&T Texas/SWBT underground conduit facilities only.  
Signature valid for one year.

**ARKK ENGINEERS**

7322 Southwest Freeway, Suite 1040 • Houston, Texas 77074  
(713) 400-2755 • Fax (713) 400-2754 • www.arkkengineers.com • TX PE Firm No. 13872

ARKK JOB NO. 18-015



SUBMITTED BY: John D. Rudloff DATE: 10/14/2019  
JOHN D. RUDLOFF, P.E.  
ARKK ENGINEERS, LLC

**General Notes:**

1. The Contractor shall verify locations of all underground utility lines prior to commencing construction.
2. It is the contractor's responsibility to verify the existence, size, depth, location and material of all existing utilities prior to construction which may conflict with the proposed construction. The Contractor is made aware of the conflicts with existing utilities including but not limited to water, sewer, storm, gas, cable, electric, petrochemical pipelines which may not be shown on the drawings. The Contractor is responsible for taking adequate precautions to maintain the integrity of the lines during construction at no additional cost to the project.
3. It is the Contractor's responsibility to verify and determine the depth, location, elevation, alignment and existence of all surface or underground utilities and structures in and around the vicinity of the work to be performed prior to commencing construction. The Contractor shall notify the Owner of any conflicts found prior to commencing construction. The Contractor shall allow adequate time to the Owner to determine a resolution to the conflict. The Contractor shall be aware there is a potential for delay due to conflicts and shall allow such time in his project cost and construction schedule. No additional payment shall be made for any downtime costs due to such conflicts length for additional time due to the conflicts will be considered if requested by the contractor on a case by case basis.
4. The Contractor shall contact all pertinent utility and pipeline companies 48 hours (minimum) prior to excavation in a project area. The Contractor shall contact Lonestar Notification Center at (713) 223-4567, DIG TESS Notification Center at 1-800-DIG (344)-TESS(8377) and TEXAS ONE CALL Notification Center at 1-800-245-4545 to provide utility locations. All utilities (including but not limited to pipelines, natural gas lines, fiber optic cable, buried electric, telephone, television, water, sanitary sewer, storm sewer, etc.) shall be identified prior to excavation.
5. The Contractor shall verify all dimensions and conditions in the field before commencing work. It shall be the Contractor's responsibility to report any and all discrepancies to the Owner in a timely manner.
6. The Contractor shall adequately protect existing structures, utilities, trees, shrubs, landscaping and other objects. All costs for repair and/or replacement of damage due to Contractor's operations shall be paid by Contractor at no additional cost to project.
7. Trees within the Street Right-of-Way shall not be removed or disturbed. Where tree roots must be cut, follow the repair methods described in the Specifications. All landscaping (trees, bushes, shrubs (all kinds) damaged or removed to facilitate construction shall be replaced with equal kind at no cost to the project, unless stated otherwise in the bid proposal. The Contractor shall utilize the services of a Professional Urban Forester to protect existing landscaping including but not limited to trees, shrubs and bushes during the construction operations at no additional cost to the project.
8. The Contractor shall maintain access to Residential and Commercial properties adjacent to work areas at all times at no separate pay.
9. The Contractor shall conduct his operations in a manner such that trucks and other vehicles do not create a dirt nuisance or safety hazard in any streets, public or private. Clean up of streets shall be done daily at no additional cost to the project.
10. Any area of grass which is disturbed or dug up during the construction shall be replaced with St. Augustine sod or grass which matches the grass removed at no additional cost to the project.
11. When construction occurs in the City Right-of-Ways, Alleys, and Easements care shall be taken to prevent construction damage to adjacent areas. Contractor shall remove and replace fence sections as necessary to accomplish the construction at no additional cost to the Project. In the event of damage to driveways, sidewalks, structures, plants, landscaping, etc. the Contractor will replace them with equal product, all at no additional cost to the Project.
12. Relocation of existing water and wastewater utilities shall be coordinated with the City of Texas City 72 hours prior to relocation. This includes operation of water line valves. Relocation shall be paid at the Contractor's expense unless stated otherwise in the bid proposal. Adjustment of individual water service water lines shall be incidental to the project.
13. The Contractor shall verify all pipe sizes and types prior to commencing construction at no cost to the project.
14. Valves and other utility structures in the construction area shall be adjusted to finished grade at no additional cost. Rim elevations for manholes shall be set flush with the finished grade for all manholes located in pavement. Rim elevations shall be 3 inches above natural ground for all manholes located in other areas, unless otherwise shown. For manholes outside of pavement, sloped fill shall be added for storm water drainage away from manhole rim. (No separate pay)
15. No excavations shall be left open overnight. All excavations which cannot be backfilled overnight shall be covered with steel sheeting when in paved areas; steel sheeting, wood planking or material which is approved by Engineer or pertinent entity (TxDOT, County, City) in other areas. The excavation area shall be protected with traffic barricades equipped with flashing yellow lights. The excavation areas must be completely cordoned off with plastic construction fencing material meeting the City's and pertinent entity's (TxDOT's or County's) requirements. The excavation area must be adequately protected and made safe.
16. Existing pavement, curb, sidewalk, driveway, and landscaped areas damaged during construction by the Contractor shall be replaced by the Contractor to original condition at the Contractors expense.
17. Where any street or any section of a street is closed, the Contractor shall furnish and maintain adequate barricades, warning and directing signs, red flags and lights and/or flagman at the end of each street and at all intersections along the street within the limits of the work area. All expenses incurred for the above work shall be paid by the Contractor. All warning signs and barricades shall conform to the Texas Manual of Uniform Traffic Control Devices-Latest Edition.
18. The Contractor shall not use Residents water.
19. Maintain clearances as required between the proposed storm sewer and all gas lines, petroleum lines and all other utilities proposed or existing. All clearances shall be obtained in writing from the appropriate company or utility. A copy of all documentation shall be provided to the Engineer by the Contractor.
20. On all pavements to be removed, including driveways and sidewalks, the pavement shall be sawcut prior to removal. No separate pay.
21. The Contractor shall employ off-duty Police Officers or Certified Flagman to maintain traffic flow as described in the specifications.
22. In the event a Gas Line, Petrochemical product line or pipe line is exposed during excavation and is in need of relocation, the appropriate company shall be contacted by the Contractor to have the status of the line verified. Contractor is responsible for contacting and coordinating with the line owner to relocate the lines. The Owner is not responsible for any claims or delays resulting from such relocation.
23. Texas Law Article 1436c, prohibits all activities in which persons or equipment may come within six feet of energized overhead power lines, and Federal Regulations, Title 29, Part 1910. 180 (l) and Part 1926. 550 (a) (15) require a minimum clearance of ten feet from these facilities. The above laws carry both criminal and civil liabilities, with Contractors and owners being legally responsible for the safety of workers under these laws. If the Contractor must work near overhead power lines, call Texas New Mexico Power Company at (409) 945-2386 for the lines to be de-energized and/or moved at the Contractors expense.
24. The Contractor shall be aware that utilities and petrochemical pipelines exist or may exist in the construction area which:
  - a. Have not been field verified (NFV)
  - b. Have not been located on the drawings
  - c. May not be shown accurately on the drawings
  - d. May exist in the construction area and not shown on the drawings

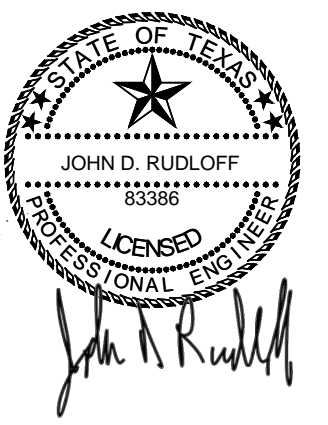
It is the Contractors responsibility to verify the location, size and depth of all existing utilities and petrochemical pipelines prior to excavation at no additional cost to the project. Contractor shall include costs in his bid for work associated with locating unknown lines and dealing with issues associated with lines that fall in the above noted category.
25. Removal and replacement of street signs, traffic signs and mail boxes shall be considered incidental to the cost of the project except where specifically included as a Bid Item.
26. The Contractor shall coordinate with the Owner as necessary, and when required, regarding "Special Events" that may be affected by construction. These events may require consideration by the Contractor (construction schedule or sequence, cleanup, street and sidewalk cleaning, removal and disposal of debris, etc.). The Contractor shall perform this work at no additional cost to the project.
27. Contractor shall verify alignment of sidewalk, in the field, with the Engineer prior to construction of new sidewalk.
28. Prior to building and construction the contractor shall contact Texas New Mexico Power Co. for approved method of bracing the existing power poles in the construction area. It is the contractors responsibility to protect existing power poles in accordance with Texas New Mexico Power Co. requirements.
29. There shall be no separate pay for items covered in these notes unless specifically established in the bid proposal.
30. **VERIFICATION OF STRUCTURE LIMITS:**  
Contractor shall verify the limits of all structures which may impact the proposed improvements prior to construction. This shall include, but us not limited to the horizontal and vertical limits of above ground and below ground structures, supports, foundations, piers, pilings, etc.
31. **PROTECTION OF UTILITIES, PIPELINES, STRUCTURES:**  
It is anticipated that a special shoring system, and or sheet piling or special protection system will be necessary at various locations within the project to help protect existing pipelines, structures, and existing utilities. The Contractor shall contact and coordinate with the pertinent companies and identify such locations based on his anticipated method of construction and shall include all such supporting and protection efforts (shoring and/or sheet piling or other techniques) as incidental to the cost of the project. Contractor shall fully evaluate the location of the proposed storm sewer in relation to the existing utilities and pipelines in determining the need for such special systems for protection and safety. Such special bracing, supporting and protection efforts shall be to the satisfaction of the pipeline Company, at no additional cost to the project.

32. The contractor on behalf of the owner, shall Obtain all construction permits (City of Texas City, TXDOT) prior To the commencement of work at no additional cost to the project.
33. The work area shall be barricaded and properly illuminated during darkness and periods of inactivity, when in an area of direct public access.
34. The contractor shall be responsible for the storage of material and equipment in a safe and workman like manner to prevent injuries, during and after working hours until project completion.
35. The Contractor is made aware that the presence of cement stabilized sand and/or concrete encasement around existing utilities may be encountered during construction. The Contractor shall utilize appropriate equipment when crossing such utilities. No additional payment shall be made for increased efforts resulting from the presence of such encasement.

**Drainage & Paving Notes:**

1. Drainage is of utmost importance to this Project. The Contractor is responsible for the verification of key design elevations. The Contractor shall also take care to obtain all grades designated on the Drawings. He shall perform all transitions to existing pavements and driveways so that positive drainage is maintained and ponding is prevented. Transitions shall be performed so that a smooth driving surface is maintained. Contractor shall transition driveways so that vehicles will not "bottom out".
2. Relocate all existing utilities as necessary for Storm Sewer and Pavement installation. Location and elevations of existing utilities shown on Drawings are approximate and shall be determined by the Contractor prior to construction. Relocation of existing utilities shall be at the Contractor's expense unless stated otherwise in the bid proposal.
3. Where new curb is installed, Contractor shall backfill and regrade behind curb (with select fill at no separate pay) as necessary to maintain positive drainage from non-paved areas over top of curb.
4. No fliers shall be placed in mail boxes. A \$500.00 fine may be levied by the U.S. Postal Service for each box.
5. Repair or replace drains that pass through existing or proposed curbs. Maintain yard/ROW drainage to new pavement at all times.
6. Limits of sidewalk and driveway replacements shown on the plans are approximate. Limits for replacements for adjustment in grade shall be submitted by the contractor and approved by the Engineer prior to construction.
7. It is the Contractor's responsibility to determine the length of curbs ramps required to comply with federal ADA requirements.
8. The Contractor shall adhere to all ADA requirements including maximum allowable sidewalk cross slope and running slope.
9. Contractor shall cover open excavations with anchored steel plates during non-working hours.
10. Contractor shall comply with OSHA regulations and State of Texas Law concerning excavation, trenching and shoring.
11. Contractor to make necessary precautions to protect root systems of shrubs, plants and trees along the area of excavation.
12. The Contractor shall maintain drainage during construction. The Contractor shall install any temporary storm sewer culverts necessary to maintain drainage at no additional cost to the project. The Contractor shall regrade and restore ditches disturbed by the construction at no cost to the project.

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



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(713) 400-2755 • www.arkkengineers.com • TX PE Firm No. 13872

**Galveston County, Texas**

**Texas Avenue Reconstruction**

**General Notes I**

Job No.: 18-015	Scale:	SHEET
Date: September, 2019	HORZ: N/A	<b>2</b>
Dwn By: D. Fattig	VERT: N/A	
Chkd By: J Rudloff		OF 52

**Traffic Control and Pavement Marking:**

1. Contractor shall provide and install all traffic control devices as per the latest revision of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).
2. All temporary traffic control devices markings, striping and signage required for this project shall be included in the traffic control and regulation costs. Any changes or modifications to traffic control that is necessary due to field conditions and to maintain traffic flow shall be performed at no additional cost to the project.
3. The Contractor shall maintain access to residential and commercial properties adjacent to and in the work areas at all times. Where necessary, Contractor shall construct temporary driveways for access at no cost to project.
4. Contractor shall open all closed roads during non-working hours. The Contractor is responsible for traffic safety and shall adequately and safely cover and/or backfill trench or other excavations prior to opening roads to traffic.
5. Contractor shall notify the City of Texas City, ambulance, police, fire, and other emergency service agencies in writing at least 72 hours prior to closure of any street, intersection, or lane of traffic. Contractor shall make necessary provisions to allow access to Emergency vehicles at all times.
6. Installation and maintenance of signing is sole responsibility of Contractor. This includes repair and/or replacement due to acts of vandalism or accidents.
7. Remove existing stop signs, street name signs, and warning signs that are in conflict with traffic control plans and replace with drum-mounted signs. Replace existing signs upon completion of work (no separate pay).
8. The construction traffic control signs, devices and barricades on these drawings constitute minimum requirements and not intended to cover special circumstances or other conditions that may arise due to field conditions. The Contractor shall place and maintain sufficient additional signs, barricades, and warning devices to warn the public and provide for the safe movement of traffic and the construction zone safety. Where project requirements are not fully satisfied by the standards shown hereon, the "Texas Manual on Uniform Traffic Control Devices" shall govern.
9. Heavy Trucks and construction equipment must stay on main roads approved by City and cannot enter side streets for ingress or egress to construction site.
10. Contractor is here by put on notice that other construction contracts may be ongoing that can affect the traffic control plans. It shall be the Contractor's responsibility to coordinate the construction effort with other contractors to provide for the safe movement of traffic and the construction zone safety. Any changes to traffic control deemed necessary due to field conditions shall be performed at no additional cost to project.
11. Contractor is made aware of presence of several business along the project alignment. Contractor is responsible for contacting and coordinate with all business and maintaining access at all times. Contractor may have to adjust traffic control plan as necessary to facilitate his work. Any adjustment to the traffic control including provision of traffic control devices is his responsibly and shall be performed at no additional cost to the project.

**Pipeline Company Notes:**

1. The Contractor shall verify locations of all underground pipelines prior to construction.
2. It is the contractor's responsibility to determine the depth, location and existence of all pipelines which may conflict with the proposed construction. This determination shall be performed in concert with the appropriate pipeline company in a manner that meets their approval.
3. There is the possibility of encountering unknown active and inactive unidentified pipelines. The Contractor is responsible for notifying and coordinating with all the pipeline companies prior to construction. In the event the Contractor encounters an unidentified pipeline crossing that conflicts with the proposed construction, the Contractor shall employ the following sequence:
  - A. Notify the City and the Engineer.
  - B. The Contractor shall make a concerted effort to identify the Owner of the pipeline and coordinate with the Owner of the pipeline on the relocation efforts. The City is not responsible for any claims and downtime resulting from the delays in the relocation efforts.
  - C. In the event the Contractor fails to identify the Owner of the pipeline crossing, the Contractor shall document (telephone calls, coordination, meeting on site, etc.) his efforts expended to identify the Owner of the pipeline and submit a copy to the City. The City will only assist in identifying the Owner of the unknown pipeline company after confirming that the Contractor has made a diligent effort in locating the Owner of the unknown pipeline company. During such time, the Contractor shall either reschedule his Construction activities. Neither the City nor the Engineer are not responsible for any claims and down time resulting from the delays encountered from the unidentified pipeline.
4. The Contractor shall notify pipeline companies prior to excavation or prior to crossing over or under the pipeline company's lines. Clearance between the proposed utility and the existing pipeline shall meet the pipeline company requirements and approval. A copy of all documentation shall be provided to the Engineer by the Contractor.
5. The Contractor shall be aware that pipeline companies may require locating their pipelines by utilized traditional excavation methods or by utilized non destructive equipment (Vacuum Locating Devices or other pertinent equipment) during construction. The methodology utilized for locating the pipeline shall be approved by the pipeline company prior to performance of work. The Contractor shall coordinate with the pipeline company and utilize suitable methods and equipment approved by the pipeline company to perform the work at no additional cost to the project.
6. Contractor shall be aware that protection of pipelines on this project may require special bracing, supporting and protection efforts. Such efforts may include special support systems or structures to meet pipeline Company's satisfaction. Contractor shall fully coordinate such supports and protection efforts with pipeline Company's prior to construction. Such special bracing, supporting and protection efforts shall be to the satisfaction of the pipeline Company, at no additional cost to the project.
7. No equipment, debris, materials or supplies of any kind will be placed, parked or stored in, on or over the pipeline easements.
8. Any crossing of the easements by vehicles and heavy equipment shall be limited and restricted to locations that have been covered by two layers of wooden mats extending the entire width of the easement or as directed by the pipeline company. (No separate pay)

**NOTE:**  
The Contractor is made aware that any produced discharges, such as groundwater, chlorinated flush water, and wastewater from the work performed in TxDOT R.O.W. will need to be discharged into the City's storm system or wastewater collection system as approved by the City. The Contractor will not be allowed to discharge any produced discharges into TxDOT R.O.W. without obtaining a signed agreement from TxDOT. The Contractor will obtain all required permits from TxDOT at no additional cost to the project.

**CENTERPOINT ELECTRICAL LINES**

**WARNING: OVERHEAD ELECTRICAL LINES**  
Overhead lines may exist on the property. The location of overhead lines has not been shown on these drawing as the lines are clearly visible, but you should locate them prior to beginning any construction. Texas law, Section 752, Health & Safety Code forbids activities that occur in close proximity to high voltage lines, specifically:

- Any activity where person or thing may come within six(6) feet of live overhead high voltage lines: and
- Operating a crane, derrick, power shovel, drilling rig, pile driver, hoisting equipment, or similar apparatus within 10 feet of live overhead high voltage lines.

Parties responsible for the work, including contractors, are legally responsible for the safety of construction workers under this law. This law carries both criminal and civil liability. To arrange for lines to be turned off or removed call CenterPoint Energy at (713) 207-2222.

**ACTIVITIES ON OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY**  
No approval to use, cross or occupy CenterPoint fee or easement property is given. If you need to use CenterPoint property, please contact our Surveying & Right of Way Division at (713) 207-6248 or (713) 207-5769.

**CENTERPOINT ENERGY GAS FACILITIES**

**CAUTION: UNDERGROUND GAS FACILITIES**  
Locations of CenterPoint Energy main lines (to include CenterPoint Energy, Intrastate Pipeline, LLC where applicable) are shown in an approximate location only. Service lines are usually not shown. Our signature on these plans only indicates that our facilities are shown in approximate locations. It does not imply that a conflict analysis has been made. The contractor shall contact the Utility Coordinating Committee at 1-800-545-6005 or 811 a minimum of 48 hours prior to construction to have main and service lines field located.

- When CenterPoint Energy pipe line markings are not visible, call (713) 945-8036 or (713) 945-8037 (7:00 a.m. to 4:30 p.m.) for status of line location request before excavation begins.
- When excavating within eighteen inches (18") of the indicated location of CenterPoint Energy facilities, all excavation must be accomplished using non-mechanized excavation procedures.
- When CenterPoint Energy facilities are exposed, sufficient support must be provided to the facilities to prevent excessive stress on the piping.
- For emergencies regarding gas lines call (713) 659-3552 or (713) 207-4200.

The Contractor is fully responsible for any damages caused by his failure to exactly locate and preserve these underground facilities.

**TEXAS NEW MEXICO POWER**

**WARNING: OVERHEAD ELECTRICAL FACILITIES**  
Overhead lines may exist on the property. We have not attempted to mark those lines since they are clearly visible, but contractor shall locate them prior to beginning any construction. Texas law, Section 752, Health & Safety Code, forbids all activities in which persons or things may come within six (6) feet of live overhead high voltage lines. Contractors and owners are legally responsible for safety of construction workers under This law. This law carries both criminal and civil liability. To arrange for lines to be turned off or moved, call TEXAS NEW MEXICO POWER at (409)-945-2386.

**AT&T TEXAS SWBT FACILITIES**

The locations of AT&T Texas/SWBT facilities are shown in an approximate way only. The Contractor shall determine the exact location before commencing work. He agrees to be fully responsible for any and all damages which might be occasioned by this failure to exactly locate and preserve these underground utilities.

The Contractor shall call 1-800-344-8377 a minimum of 48 hours prior to construction to have underground lines field located.

When excavating within eighteen inches (18") of the indicated location of AT&T Texas/SWBT facilities, all excavations must be accomplished using non-mechanized excavation procedures. When boring the Contractor shall expose the AT&T Texas/SWBT facilities.

When AT&T Texas/SWBT facilities are exposed, the Contractor will provide support to prevent damage to the conduit ducts or cables. When excavating near telephone poles the Contractor shall brace the pole for support.

The presence or absence of AT&T Texas/SWBT underground conduit facilities or buried cable facilities shown on these plans does not mean that there are no direct buried cables or other cables in conduit in the area.

Please contact the AT&T Texas Damage Prevention Manager Mr. Roosevelt Lee Jr. at 713-567-4552 or e-mail him at r17259@att.com, if there are questions about boring or excavating near our AT&T Texas/SWBT facilities.

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19

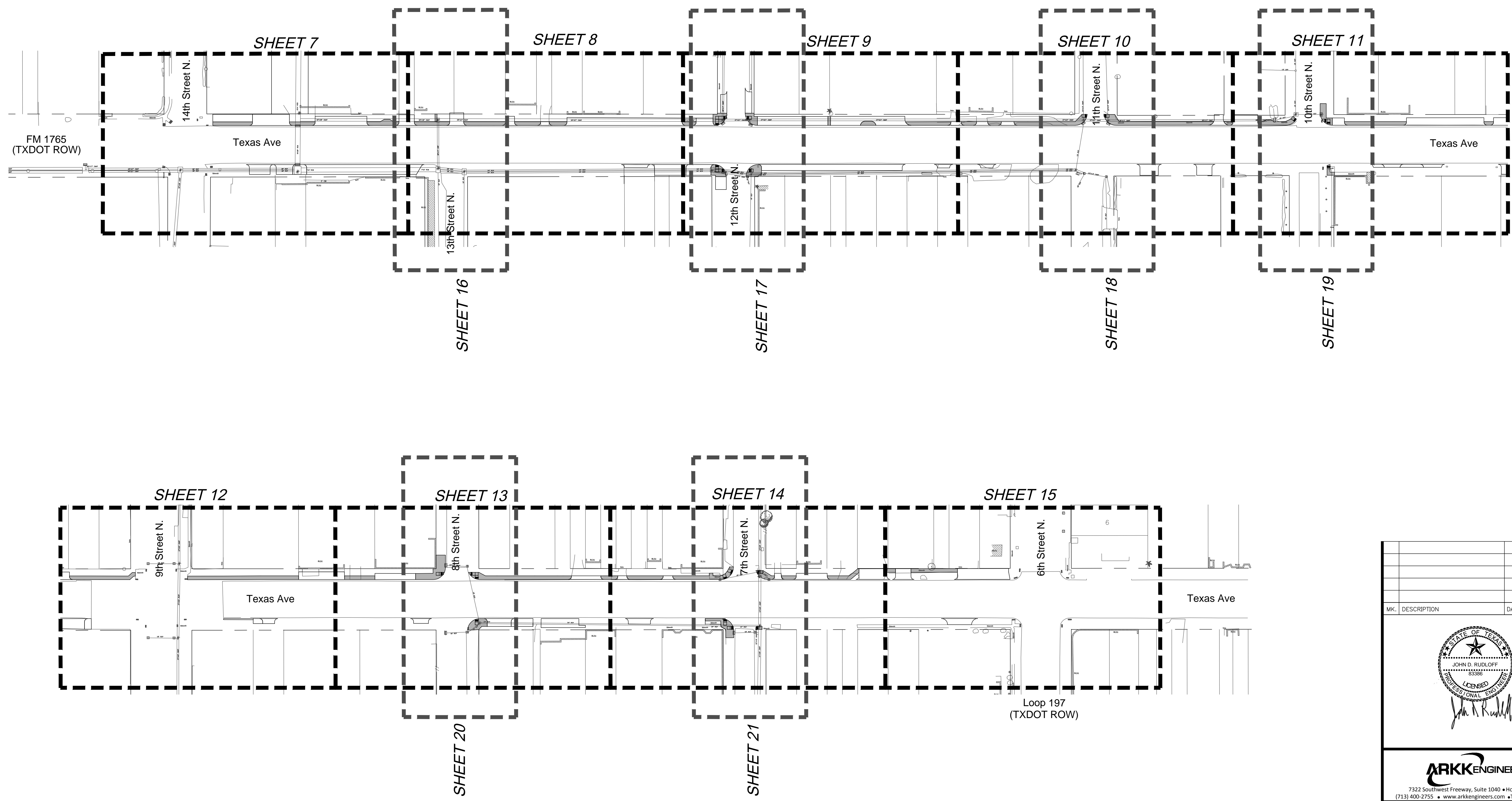
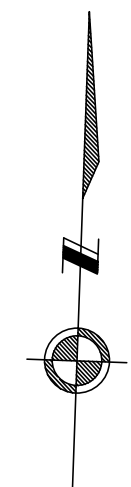


Galveston County, Texas

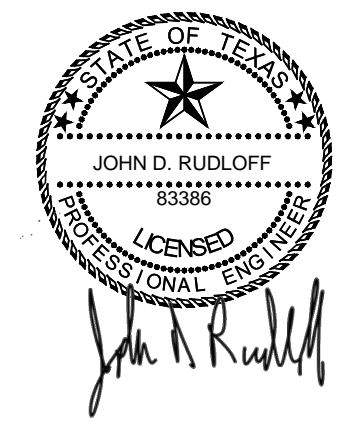
Texas Avenue Reconstruction

**General Notes II**

Job No.: 18-015	Scale:	SHEET
Date: September, 2019	HORIZ: None	3
Dwn By: D. Fattig	VERT:	
Chkd By: J Rudloff		OF 52



MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19

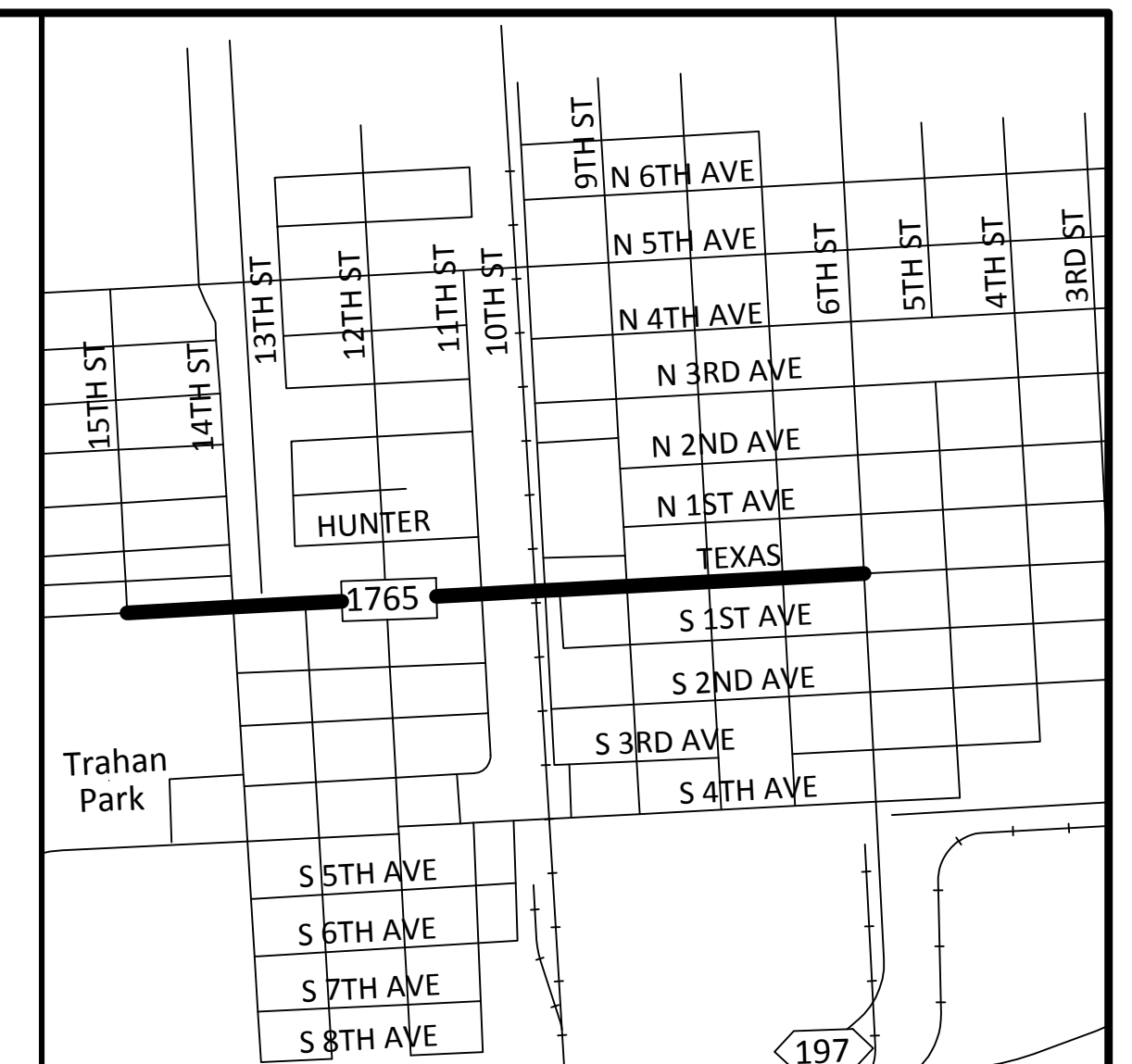
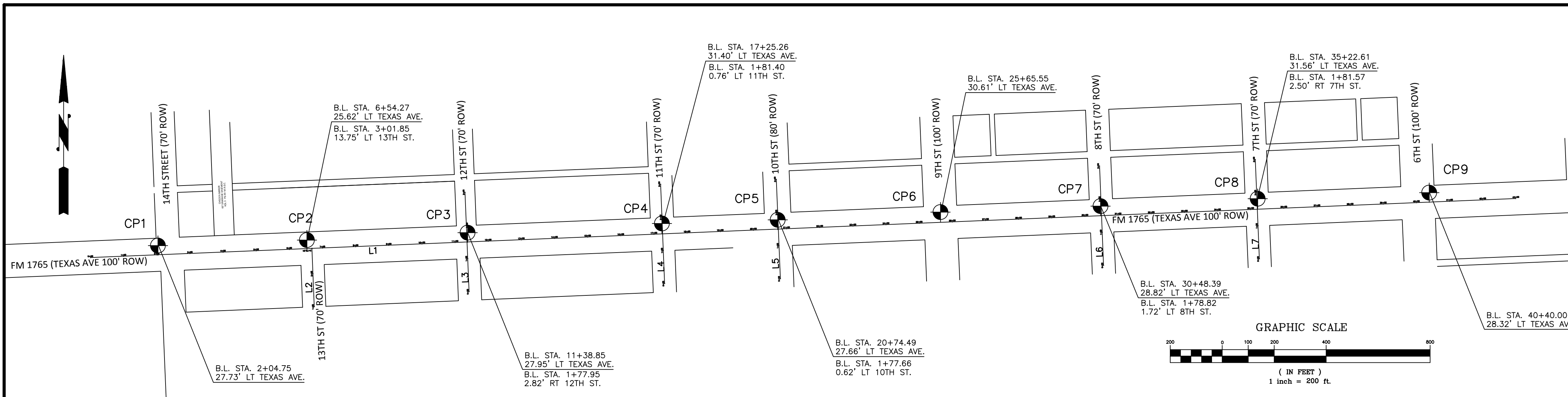
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Galveston County, Texas

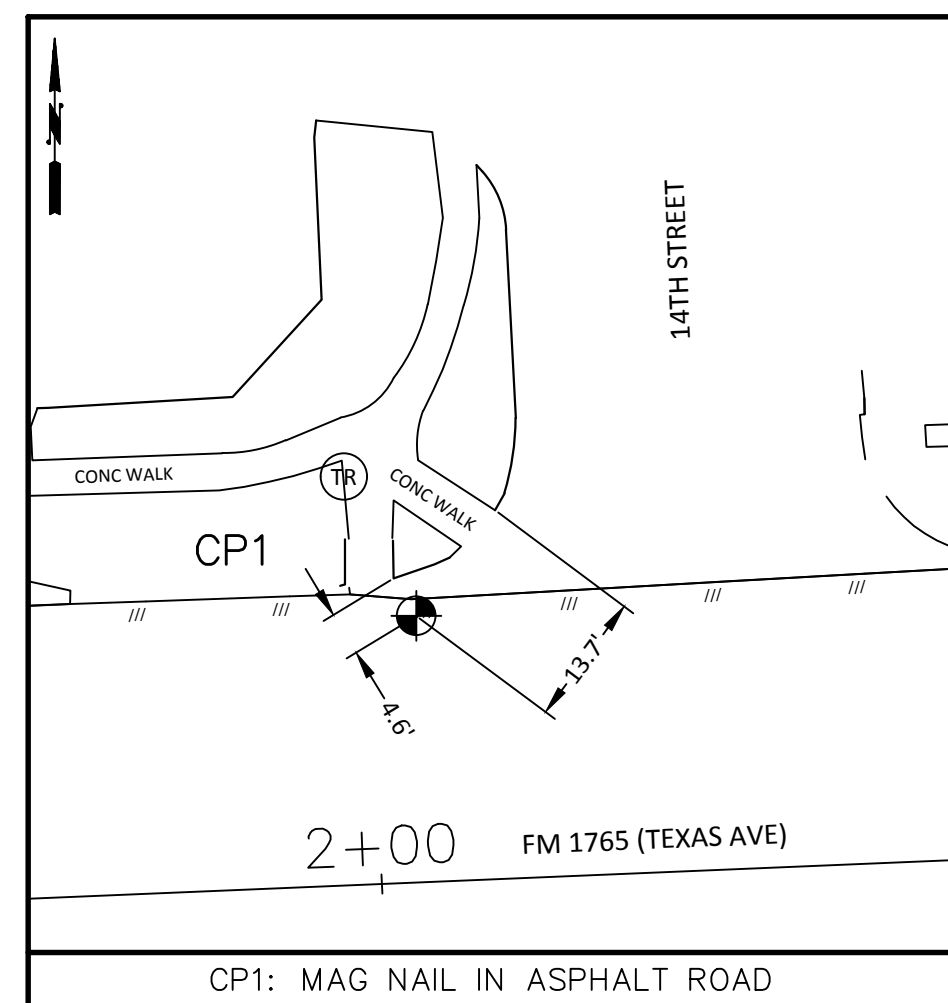
Texas Avenue Reconstruction

Overall Layout Plan

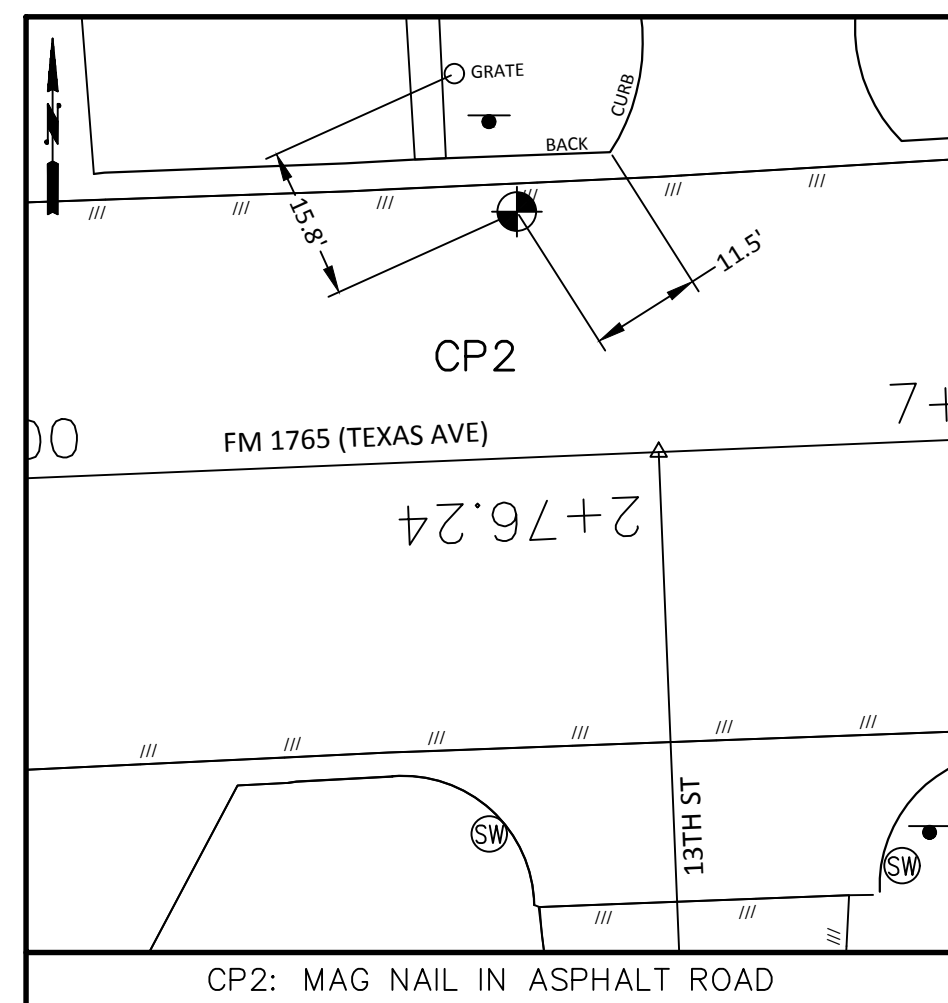
Job No.: 18-015	Scale: HORZ: 1" = 80'	SHEET
Date: September, 2019	VERT:	4
Dwn By: D. Fattig		OF 52
Chkd By: J. Rudloff		



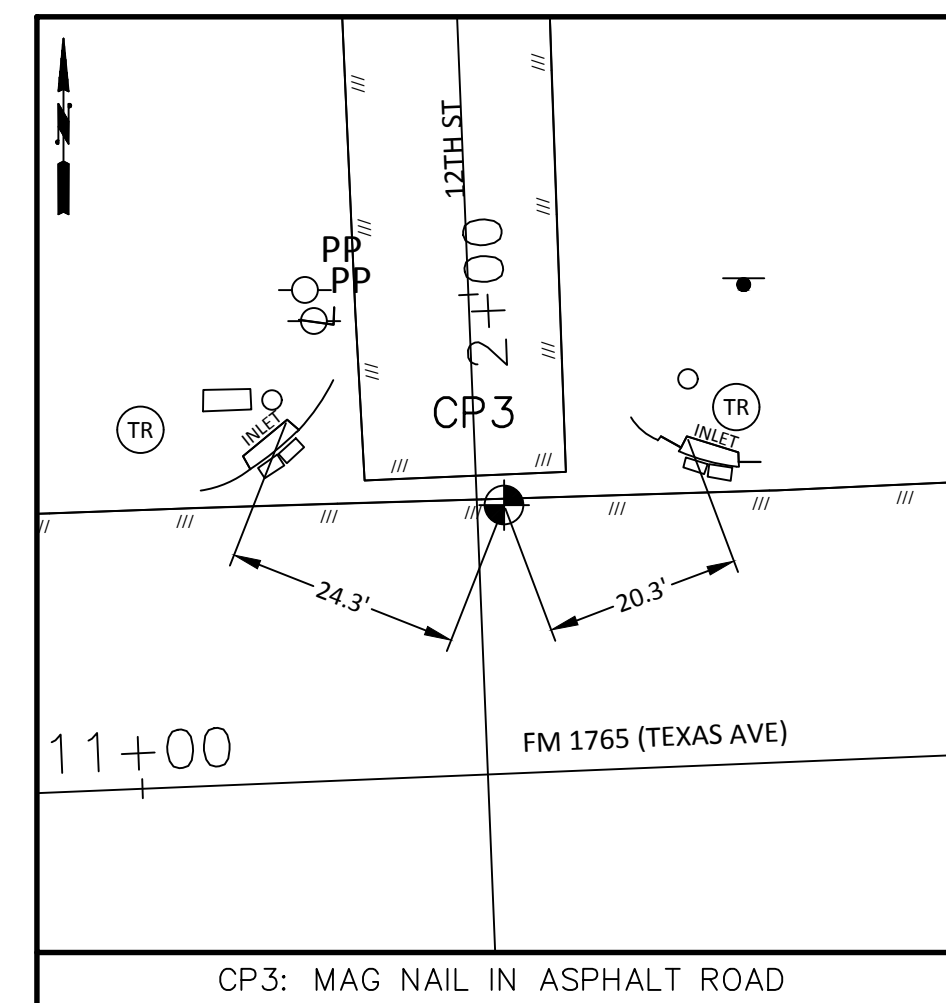
VICINITY MAP N.T.S.



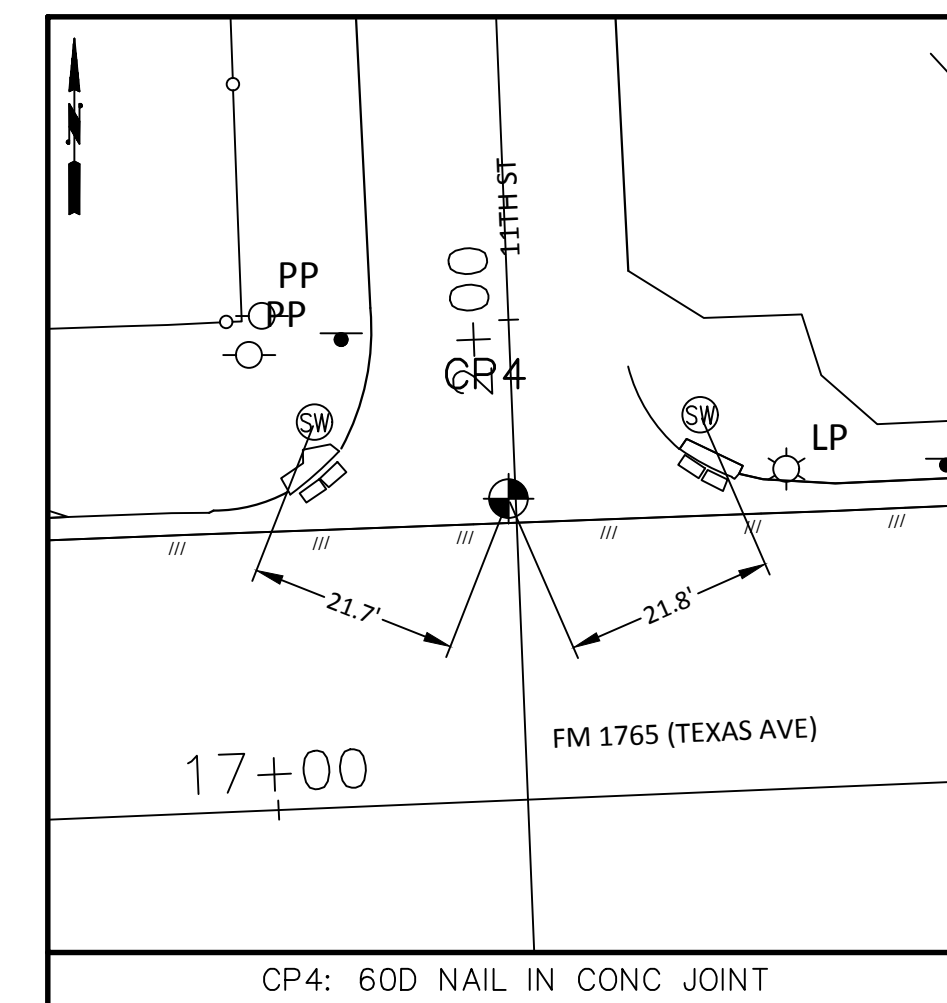
CP1: MAG NAIL IN ASPHALT ROAD



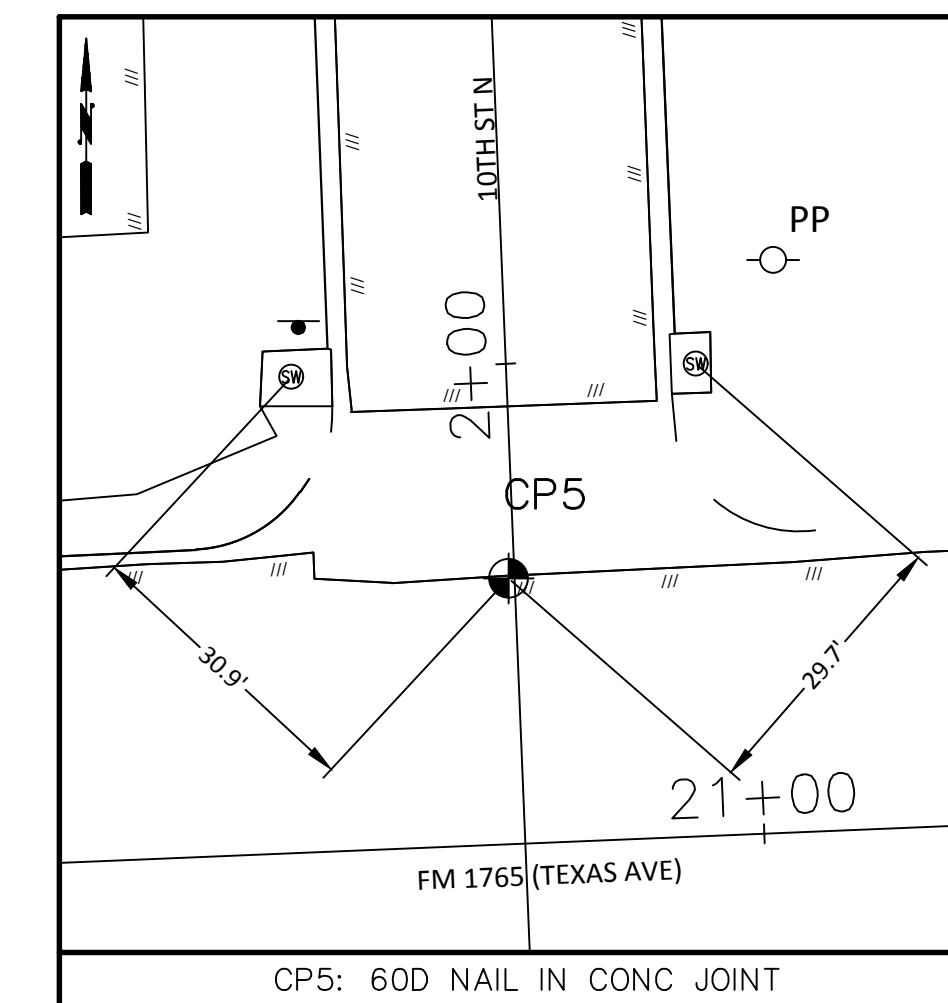
CP2: MAG NAIL IN ASPHALT ROAD



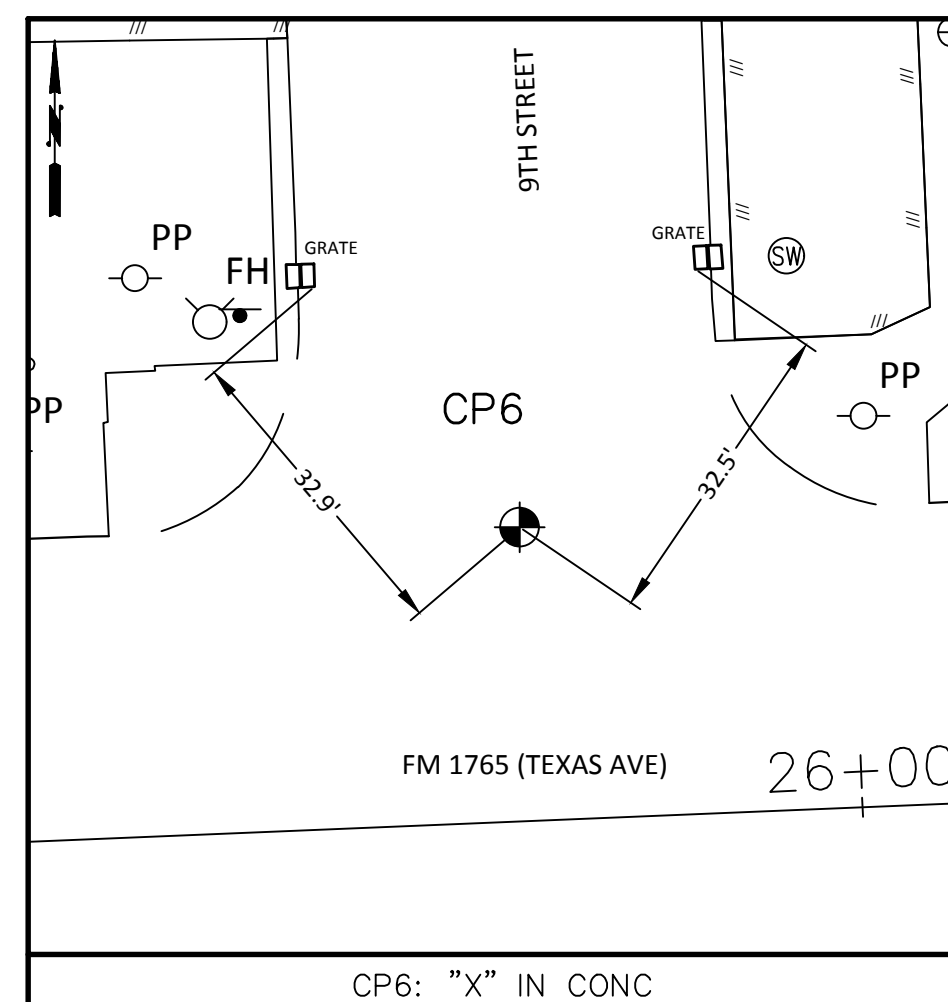
CP3: MAG NAIL IN ASPHALT ROAD



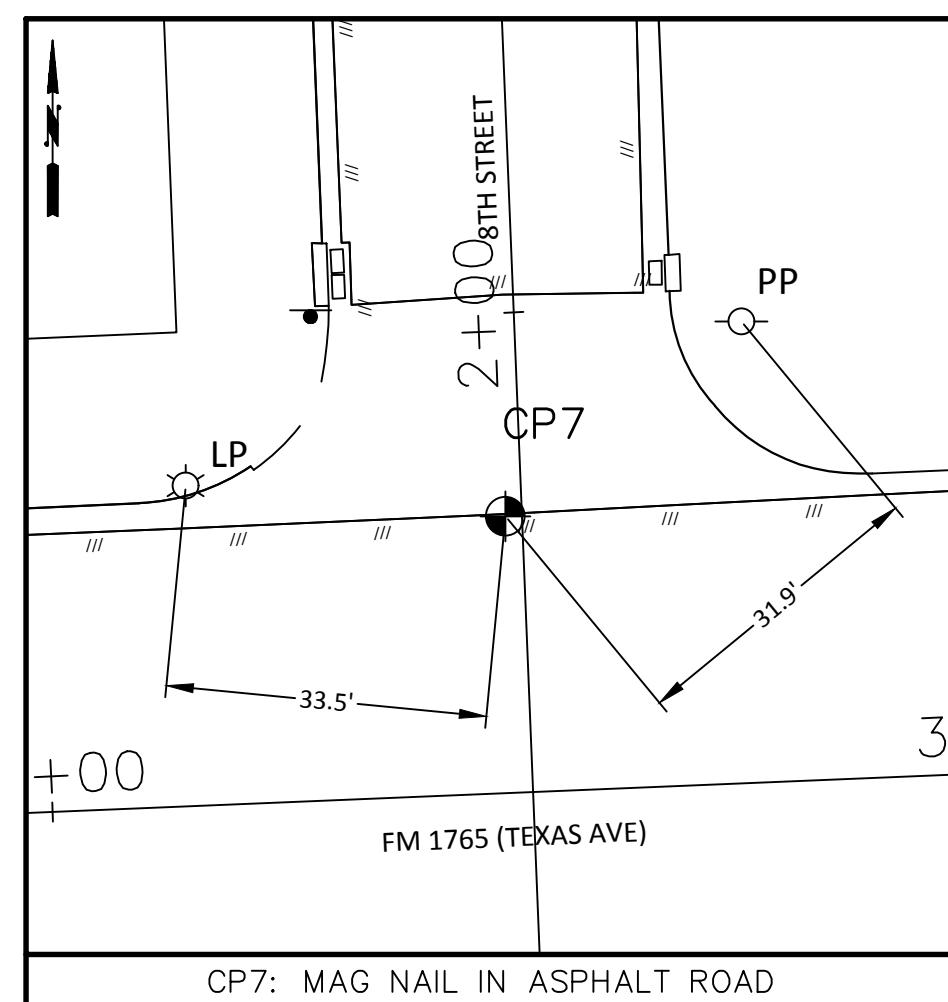
CP4: 60D NAIL IN CONC JOINT



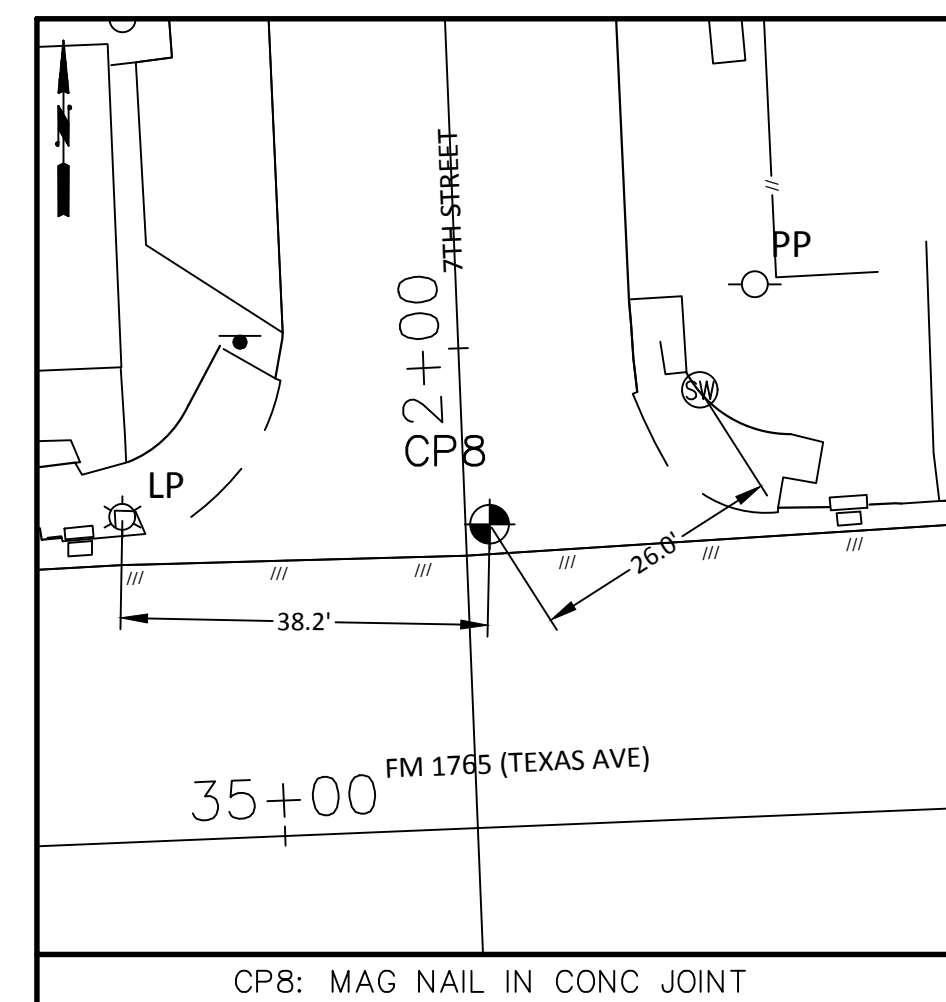
CP5: 60D NAIL IN CONC JOINT



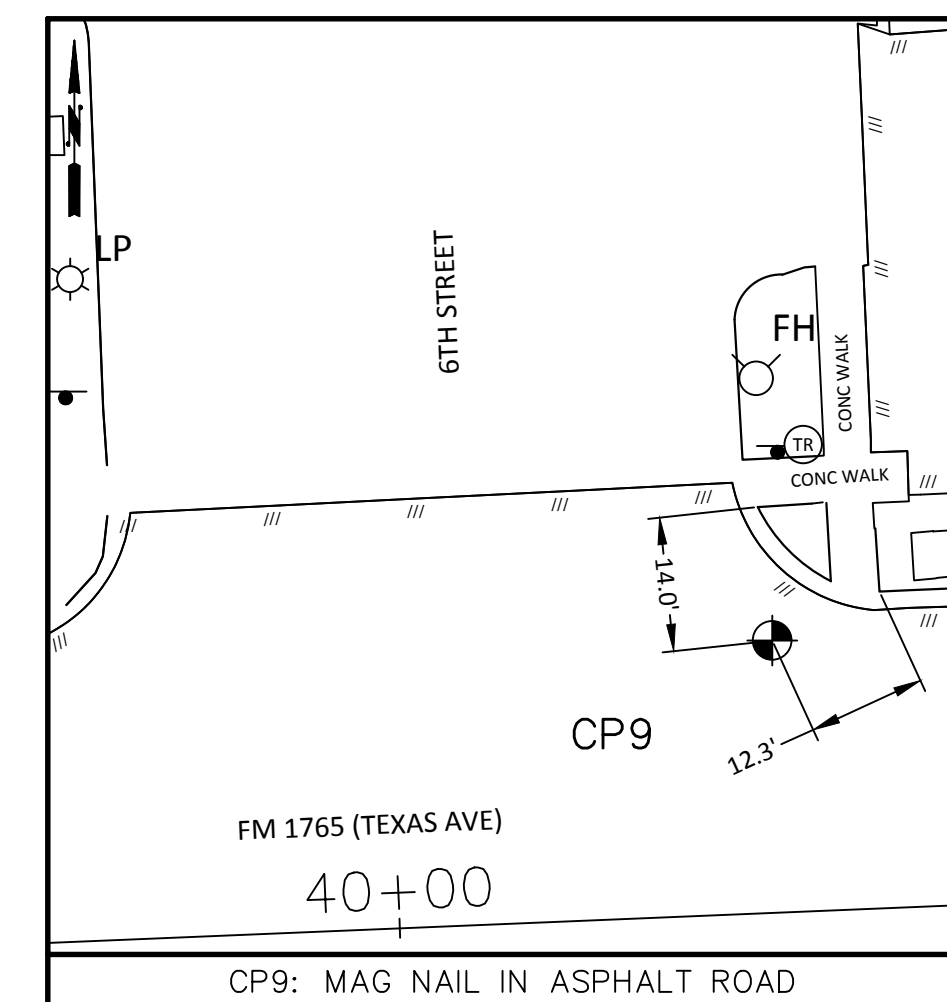
CP6: "X" IN CONC



CP7: MAG NAIL IN ASPHALT ROAD



CP8: MAG NAIL IN CONC JOINT



CP9: MAG NAIL IN ASPHALT ROAD

BENCHMARK  
 DATUM: NAVD88 GEOID 12B  
 PRIMARY: NGS CONTROL POINT PID AJ6399 - HGCS058  
 RESET ELEV.= 7.82

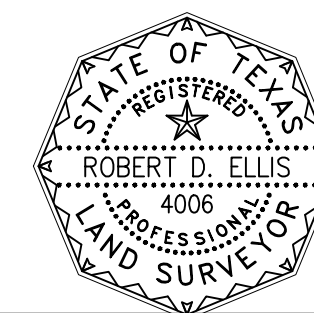
CP#	NORTHING	EASTING	ELEVATION IN FEET	DESCRIPTION
CP1	13709898.50	3269261.52	6.93	MAG NAIL
CP2	13709915.02	3269710.75	6.69	MAG NAIL
CP3	13709937.43	3270194.81	6.11	MAG NAIL
CP4	13709965.18	3270780.57	6.31	60D NAIL
CP5	13709975.92	3271129.65	8.06	60D NAIL
CP6	13709999.22	3271620.17	8.19	"X" IN CONC
CP7	13710017.44	3272102.67	6.84	MAG NAIL
CP8	13710039.84	3272576.37	6.09	MAG NAIL
CP9	13710058.04	3273093.45	6.91	MAG NAIL

DESIGN BASELINE DATA PROVIDED BY ARKK ENGINEERS

LINE	LENGTH	BEARING
L1	4300.00	N87°37'29"E
L2	176.21	N2°19'40"W
L3	300.00	N2°19'40"W
L4	300.00	N2°19'40"W
L5	300.00	N2°19'40"W
L6	300.00	N2°19'40"W
L7	300.00	N2°19'40"W

I, the undersigned, a Registered Professional Land Surveyor of the State of Texas, do hereby certify that this survey was made on the ground and is true and correct to the best of my knowledge and belief.

Robert D. Ellis  
 Registered Professional  
 Land Surveyor No. 4006



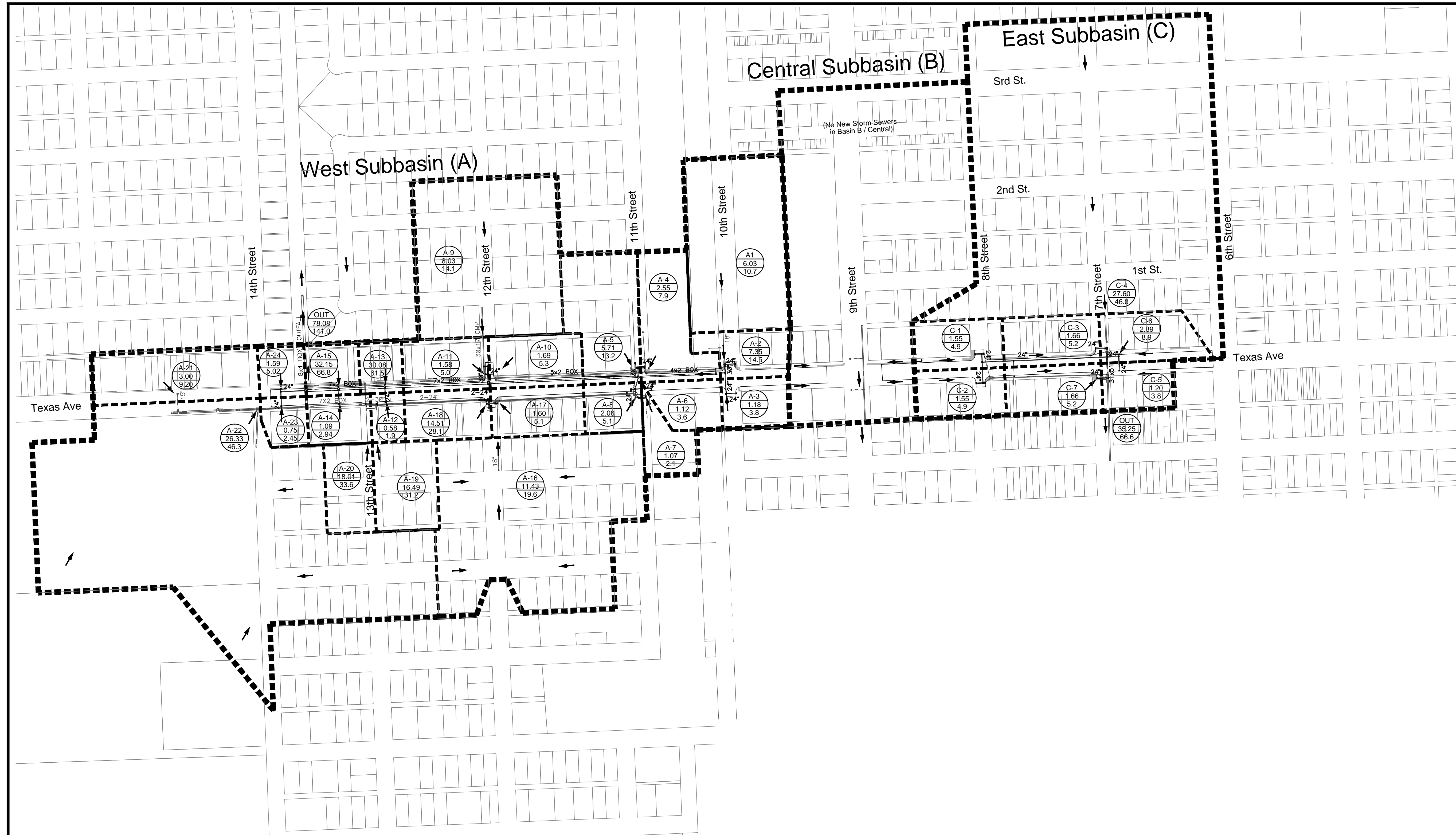
**ELLIS SURVEYING SERVICES**  
 2805 25th Ave. North  
 Texas City, Texas 77590  
 Tel. : 409-938-8700

SCALE: 1" = 20'  
 PHONE: (409)-938-8700

JOB NUMBER  
 2675

DATE: 2-27-2018  
 SHEET 5 OF 52

**CONTROL SHEET**  
**F.M. 1765 (TEXAS AVENUE)**  
**FROM 6TH STREET TO 14TH STREET**  
**CITY OF TEXAS CITY**  
**GALVESTON COUNTY, TEXAS**



- LEGEND**
- Drainage Basin Label  
Cumulative Area (acres)  
Total 2-year Flow (cfs)
  - Drainage Basin Boundary
  - Drainage Sub-area Boundary
  - Prop. Storm Sewer
  - Exist. Storm Sewer
  - Flow Path

MK.	DESCRIPTION	DATE	DWN.	CHK.

9-13-19

John D. Rudloff

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 7322 Southwest Freeway, Suite 1040 • Houston, Texas 77074  
 (713) 400-2755 • www.arkkengineers.com • TX PE Firm No. 13872

Galveston County, Texas

Texas Avenue Reconstruction

Drainage Area Map

Job No.: 18-015	Scale: HORZ: 1"=200'	<b>SHEET</b>  <b>6</b> <b>OF 52</b>
Date: September, 2019	VERT:	
Dwn By: D. Fattig		
Chkd By: J. Rudloff		

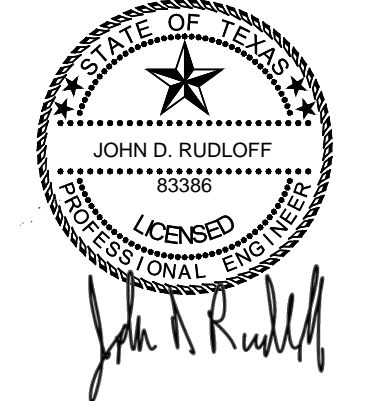
## Two Year Storm Analysis

### TEXAS AVENUE - GALVESTON COUNTY - 2 YEAR STORM

Basin	Sub-basin	Area (Ac.)	C	C x A	Sum C x A	Sum Areas	Tc (min)	I (in/hr)	Total Runoff, cfs	Pipe Type	Existing Pipe?	Pipe Dia (ft)	No. of Barrels	Span	Rise	Flow Area	P	R	Length	Pipe Slope	Velocity Full	n	Downstream Hydraulic Grade Line, ft	Upstream Hydraulic Grade Line Elevation, ft	Upstream Top of Curb Elevation, ft
A	1	6.03	0.45	2.71	2.71	6.03	28.7	3.95	10.71	round	(Exist)	1.50	n/a	n/a	1.77	4.71	0.38	n/a	n/a	n/a	6.06	0.013	6.76	(exist)	out of prj
A	2	1.32	0.75	0.99	3.70	7.35	29.2	3.91	14.47	round		2.50	n/a	n/a	4.91	7.85	0.63	35	1.000%	2.95	0.013	6.72	6.76	8.13	
A	3	1.18	0.75	0.89	0.89	1.18	25.3	4.27	3.78	round		2.00	n/a	n/a	3.14	6.28	0.50	80	0.300%	1.20	0.013	6.72	6.74	7.74	
A	2+3	0.00	0.75	0.00	4.59	8.53	29.6	3.88	17.78	box		n/a	4.00	2.00	8.00	12.00	0.67	341	0.130%	2.22	0.013	6.50	6.72	8.13	
A	4	2.55	0.75	1.91	1.91	2.55	26.8	4.12	7.88	round		2.00	n/a	n/a	3.14	6.28	0.50	24	0.400%	2.51	0.013	6.54	6.57	6.42	
A	5	3.16	0.45	1.42	3.33	5.71	28.6	3.96	13.20	RCAP		n/a	36"	23"	4.50	7.85	0.57	34	0.100%	2.93	0.013	6.50	6.54	6.42	
A	6	1.12	0.75	0.84	0.84	1.12	25.2	4.28	3.59	round		2.00	n/a	n/a	3.14	6.28	0.50	63	0.200%	1.14	0.013	6.56	6.58	6.73	
A	7	1.07	0.45	0.48	0.48	1.07	25.1	4.28	2.06	round		2.00	n/a	n/a	3.14	6.28	0.50	28	0.700%	0.66	0.013	6.58	6.59	6.95	
A	8	0.99	0.75	0.74	1.22	2.06	26.4	4.16	5.09	round		2.00	n/a	n/a	3.14	6.28	0.50	41	0.150%	1.62	0.013	6.56	6.58	6.95	
A	6+8	0.00	0.75	0.00	2.06	3.18	27.3	4.08	8.41	round		2.00	n/a	n/a	3.14	6.28	0.50	49	0.160%	2.68	0.013	6.50	6.56	7.03	
A	8+5+3	0.00	0.75	0.00	9.99	17.42	31.5	3.72	37.19	box		n/a	5.00	2.00	10.00	14.00	0.71	585	0.050%	3.72	0.013	5.53	6.50	6.42	
A	9	8.03	0.45	3.61	3.61	8.03	29.4	3.89	14.05	box		n/a	4.00	2.00	8.00	12.00	0.67	51	0.100%	1.76	0.013	5.56	5.58	6.25	
A	10	1.69	0.75	1.27	1.27	1.69	26.0	4.20	5.32	round		2.00	n/a	n/a	3.14	6.28	0.50	21	0.500%	1.69	0.013	5.56	5.58	6.14	
A	11	1.58	0.75	1.19	1.19	1.58	25.8	4.21	4.99	round		2.00	n/a	n/a	3.14	6.28	0.50	9	1.110%	1.59	0.013	5.56	5.57	6.14	
A	10+11+9	0.00	0.75	0.00	6.07	11.30	30.3	3.82	23.15	box		n/a	4.00	2.00	8.00	12.00	0.67	34	0.100%	2.89	0.013	5.53	5.56	6.14	
A	11+8	0.00	0.75	0.00	16.05	28.72	33.1	3.61	58.01	box		n/a	7.00	2.00	14.00	18.00	0.78	404	0.050%	4.14	0.013	4.78	5.53	6.14	
A	12	0.58	0.75	0.44	0.44	0.58	24.1	4.39	1.91	round		2.00	n/a	n/a	3.14	6.28	0.50	57	0.700%	0.61	0.013	4.78	4.79	7.17	
A	13	0.78	0.75	0.59	17.07	30.08	33.2	3.60	61.52	box		n/a	7.00	2.00	14.00	18.00	0.78	181	0.050%	4.39	0.013	4.41	4.78	7.17	
A	14	1.09	0.75	0.82	0.82	1.09	25.2	4.28	3.50	round		2.00	n/a	n/a	3.14	6.28	0.50	57	0.300%	1.11	0.013	4.41	4.42	6.84	
A	15	0.98	0.75	0.74	18.63	32.15	33.4	3.59	66.84	box		n/a	7.00	2.00	14.00	18.00	0.78	127	0.050%	4.77	0.013	4.10	4.41	6.84	
A	16	11.43	0.45	5.14	5.14	11.43	30.4	3.81	19.62	round		2.00	2	n/a	n/a	6.28	6.28	1.00	21	0.100%	3.12	0.013	5.96	5.98	6.00
A	17	1.60	0.75	1.20	1.20	1.60	25.9	4.21	5.05	round		2.00	n/a	n/a	3.14	6.28	0.50	24	0.400%	1.61	0.013	5.96	5.98	6.14	
A	18A	1.48	0.75	1.11	7.45	14.51	31.0	3.76	28.05	round		2.00	2	n/a	n/a	6.28	6.28	1.00	54	0.100%	4.47	0.013	5.88	5.96	6.14
A	18B	0.00	0.75	0.00	7.45	14.51	31.0	3.76	28.05	round	(Exist)	2.00	2	n/a	n/a	6.28	12.56	0.50	398	0.075%	4.47	0.013	4.35	5.88	6.30
A	19	1.98	0.45	0.89	8.34	16.49	31.4	3.74	31.17	round	(Exist)	2.50	2	n/a	n/a	9.81	15.70	0.63	43	0.010%	3.18	0.013	4.29	4.35	7.23
A	20	1.52	0.45	0.68	9.03	18.01	31.6	3.72	33.55	box	(Exist)	n/a		7.00	2.00	14.00	18.00	0.78	230	0.170%	2.40	0.013	4.15	4.29	7.70
A	21a	3.00	0.75	2.25	2.25	3.00	27.1	4.09	9.20	round	(Exist)	1.25		n/a	n/a	1.23	3.93	0.31	70	0.100%	7.50	0.013	4.79	6.21	out of prj
A	21b	0.00	0.75	0.00	2.25	3.00	27.1	4.09	9.20	CMAF	(Exist)	n/a	2	42"	29"	13.00	9.42	1.38	310	0.060%	0.71	0.024	4.76	4.79	out of prj
A	22	23.33	0.45	10.50	12.75	26.33	32.8	3.63	46.31	round	(Exist)	2.50	2	n/a	n/a	9.81	15.70	0.63	192	0.060%	4.72	0.013	4.15	4.76	7.10
A	22+20	0.00	0.75	0.00	21.78	44.34	34.5	3.52	76.59	BOX	(Exist)	n/a		8.00	3.00	24.00	22.00	1.09	67	0.300%	3.19	0.013	4.10	4.15	7.28
A	23	0.75	0.75	0.56	0.56	0.75	24.5	4.35	2.45	round		2.00	n/a	n/a	3.14	6.28	0.50	57	0.200%	0.78	0.013	4.15	4.16	6.98	
A	24	0.84	0.75	0.63	1.19	1.59	25.9	4.21	5.02	round		2.00	n/a	n/a	3.14	6.28	0.50	99	0.170%	1.60	0.013	4.10	4.15	6.98	
A	24+22+15	0.00	0.75	0.00	41.60	78.08	36.5	3.39	140.95	BOX	(Exist)	n/a		8.00	4.00	32.00	24.00	1.33	n/a	0.300%	4.40	0.013	(Pipe Soffit)	4.10	7.28

Basin	Sub-basin	Area (Ac.)	C	cXa	Sum CXA	Sum Areas	Tc (min)	I (in/hr)	Total Runoff, cfs	Pipe Type	Existing Pipe?	Pipe Dia (ft)	No. of Barrels	Span	Rise	Flow Area	P	R	Length	Pipe Slope	Velocity Full	n	Downstream Hydraulic Grade Line, ft	Upstream Hydraulic Grade Line Elevation, ft	Upstream Top of Curb Elevation, ft
C	1	1.55	0.75	1.16	1.16	1.55	25.8	4.22	4.90	round		2.00	n/a	n/a	3.14	6.28	0.50	33	0.100%	1.56	0.013	6.32	6.33	6.89	
C	2	1.55	0.75	1.16	1.16	1.55	25.8	4.22	4.90	round		2.00	n/a	n/a	3.14	6.28	0.50	82	0.100%	1.56	0.013	6.32	6.35	6.89	
C	1+2	0.00	0.00	0.00	2.33	3.10	27.2	4.08	9.49	round		2.00	n/a	n/a	3.14	6.28	0.50	487	0.100%	3.02	0.013	5.46	6.32	6.97	
C	3	1.66	0.75	1.25	1.25	1.66	25.9	4.20	5.23	round		2.00	n/a	n/a	3.14	6.28	0.50	43	3.140%	1.67	0.013	5.55	5.57	6.26	
C	4	25.94	0.45	11.67	12.92	27.60	32.9	3.62	46.80	RCAP		n/a		51"	31"	8.90	10.99	0.81	33	0.090%	5.26	0.013	5.46	5.55	6.26
C	5	1.20	0.75	0.90	0.90	1.20	25.3	4.26	3.84	RCAP		n/a		29"	18"	2.90	6.28	0.462	56	0.200%	1.32	0.013	5.55	5.57	5.78
C	6	1.69	0.75	1.27	2.17	2.89	27.1	4.10	8.88	RCAP		n/a		29"	18"	2.90	6.28	0.462	46	0.090%	3.06	0.013	5.46	5.55	5.78
C	6+4+2	0.00	0.00	0.00	17.41	33.59	33.6	3.58	62.31	RCAP		n/a		51"	31"	8.90	10.99	0.81	82	0.110%	7.00	0.013	5.05	5.46	6.41
C	7	1.66	0.75	1.25	1.25	1.66	25.9	4.20	5.23	round		2.00	n/a	n/a	3.14	6.28	0.50	42	3.210%	1.67	0.013	5.05	5.07	6.14	
C	7+6	0.00	0.00	0.00	18.66	35.25	33.7	3.57	66.57	CMAF	(Exist)	n/a		49"	33"	8.90	10.99	0.81	336	0.208%	7.48	0.024	(Pipe Soffit)	5.05	6.14

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



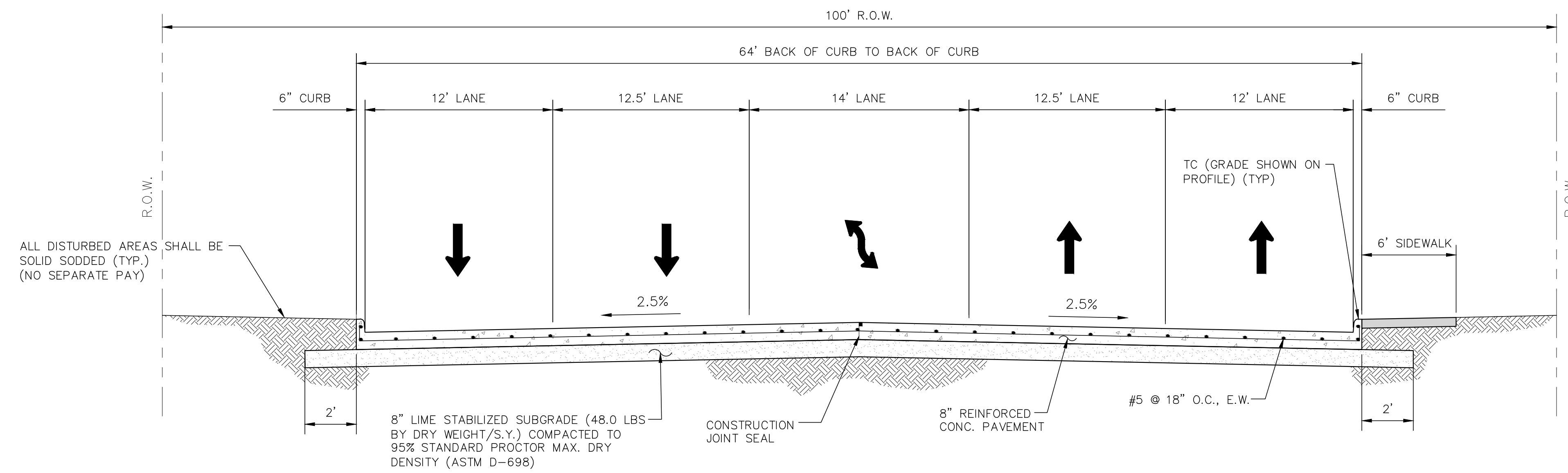
Galveston County, Texas  
Texas Avenue Reconstruction

Drainage Calculations

Job No.: 18-015  
Date: September, 2019  
Dwn By: D. Fattig  
Chkd By: J. Rudloff

Scale: HORIZ: n/a  
VERT:

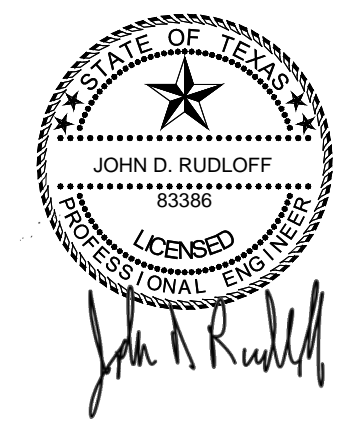
SHEET 6a  
OF 52



**PROPOSED TYPICAL PAVEMENT SECTION**

Scale: 1"=5'

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



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(713) 400-2755 • www.arkkengineers.com • TX PE Firm No. 13872

Galveston County, Texas

Texas Avenue Reconstruction

Typical Section

Job No.: 18-015	Scale: 1"=5'	SHEET
Date: September, 2019	HORIZ:	
Dwn By: D. Fattig	VERT:	6b
Chkd By: J. Rudloff		

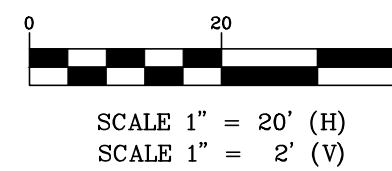
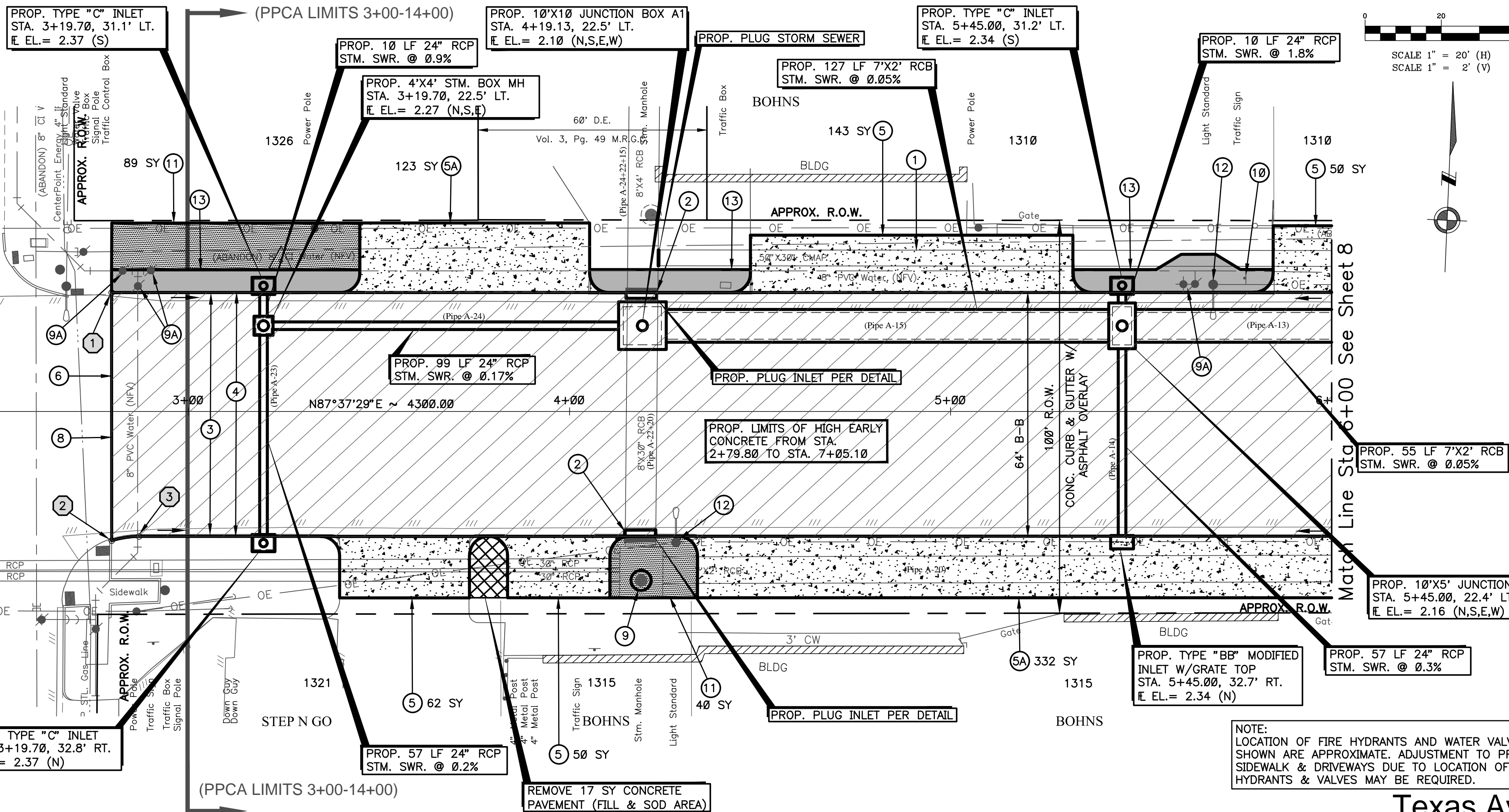
OF 52



PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 1	13709898.50	3269261.52	6.93	MAG NAIL

14th St. S.  
(70' ROW)  
(Asphalt Pavement)

TEXACO GAS STATION  
1402



**BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)

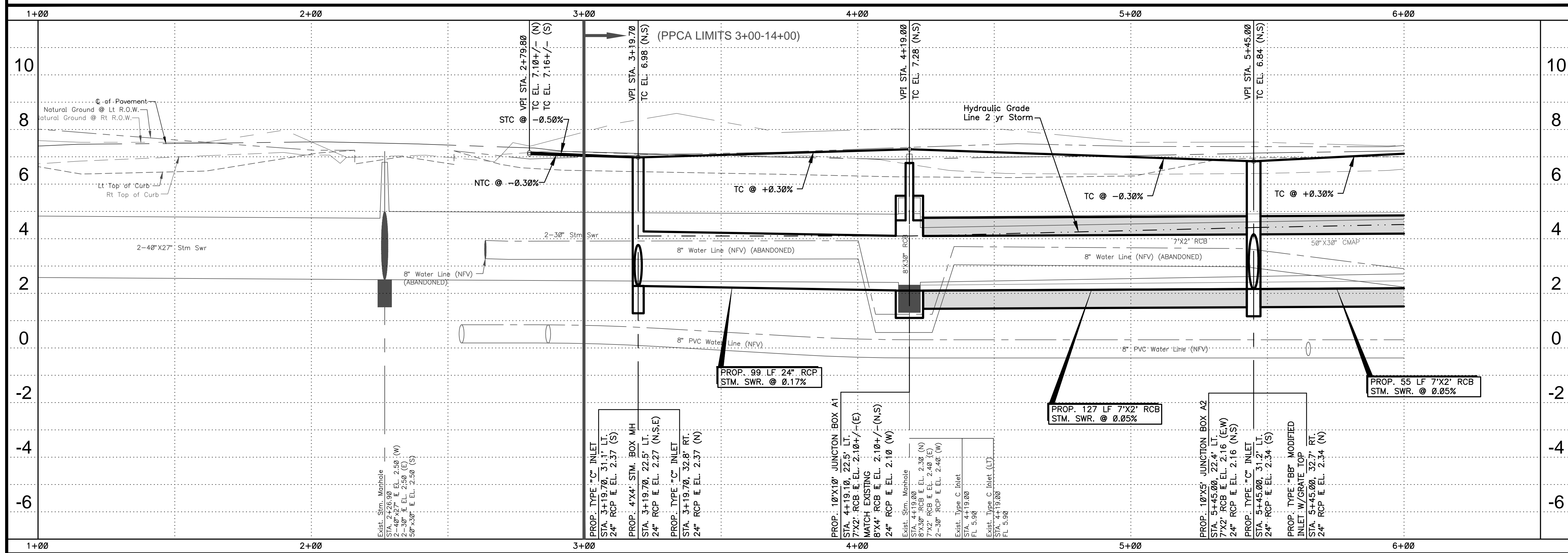
- PAVING & DRAINAGE LEGEND:**
- REMOVE EXIST. STM. SWR./CULVERT
  - REMOVE EXIST. INLET/MANHOLE
  - REMOVE AND DISPOSE OF EXISTING ASPH./CONC. PAVEMENT AND BASE COURSE.
  - PROP. 8" THICK CONCRETE PAVEMENT AND 8" SUBGRADE (SUBGRADE TO EXTEND 2' OUTSIDE CURB)
  - PROP. REMOVE AND REPLACE WITH 6" CONCRETE DRIVEWAY
  - PROP. REMOVE AND REPLACE WITH 8" CONCRETE DRIVEWAY
  - PROP. CONCRETE PAVING HEADER AT EXIST. CONCRETE ROAD
  - PROP. CONCRETE PAVING HEADER AT ASPHALT ROAD
  - PROP. SAW CUT. (NO SEPARATE PAY)
  - ADJUST MANHOLES COVERS TO GRADE
  - ADJUST FIRE HYDRANT & VALVE BOXES TO GRADE
  - REMOVE/RELOCATE EXISTING SIGN (NO SEPARATE PAY)
  - PROP. 4" THICK CONCRETE PAVEMENT
  - PROTECT & BRACE LIGHT/POWER POLES AS NECESSARY (NO SEPARATE PAY)
  - PROP. 6' - 4" THICK CONCRETE SIDEWALK
  - PROP. CURB RAMP PER ADA REQUIREMENTS
  - REMOVE TRAFFIC SIGNAL BOX

- PROP. CONCRETE DRIVEWAY
- PROP. 4" CONCRETE SIDEWALK
- PROP. 4" CONCRETE PAVEMENT
- PROP. ASPHALT PAVEMENT
- PROP. REMOVE PAVEMENT
- PROP. LIMITS OF HIGH EARLY CONCRETE

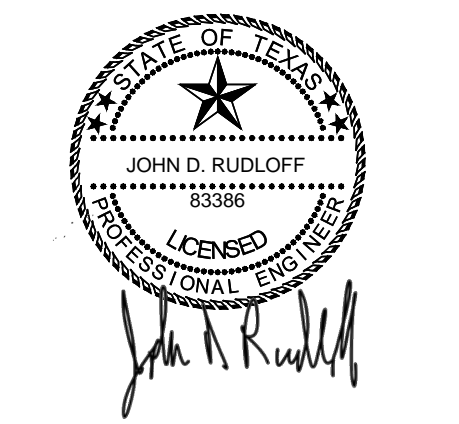
NOTE:  
LOCATION OF FIRE HYDRANTS AND WATER VALVES SHOWN ARE APPROXIMATE. ADJUSTMENT TO PROPOSED SIDEWALK & DRIVEWAYS DUE TO LOCATION OF FIRE HYDRANTS & VALVES MAY BE REQUIRED.

Texas Ave.

#	STATION	OFFSET
1	PT 2+79.80	31.20' LT.
2	PT 2+79.80	33.90' RT.
3	PT 2+87.00	32.80' RT.



MK.	DESCRIPTION	DATE	DWN.	CHK.



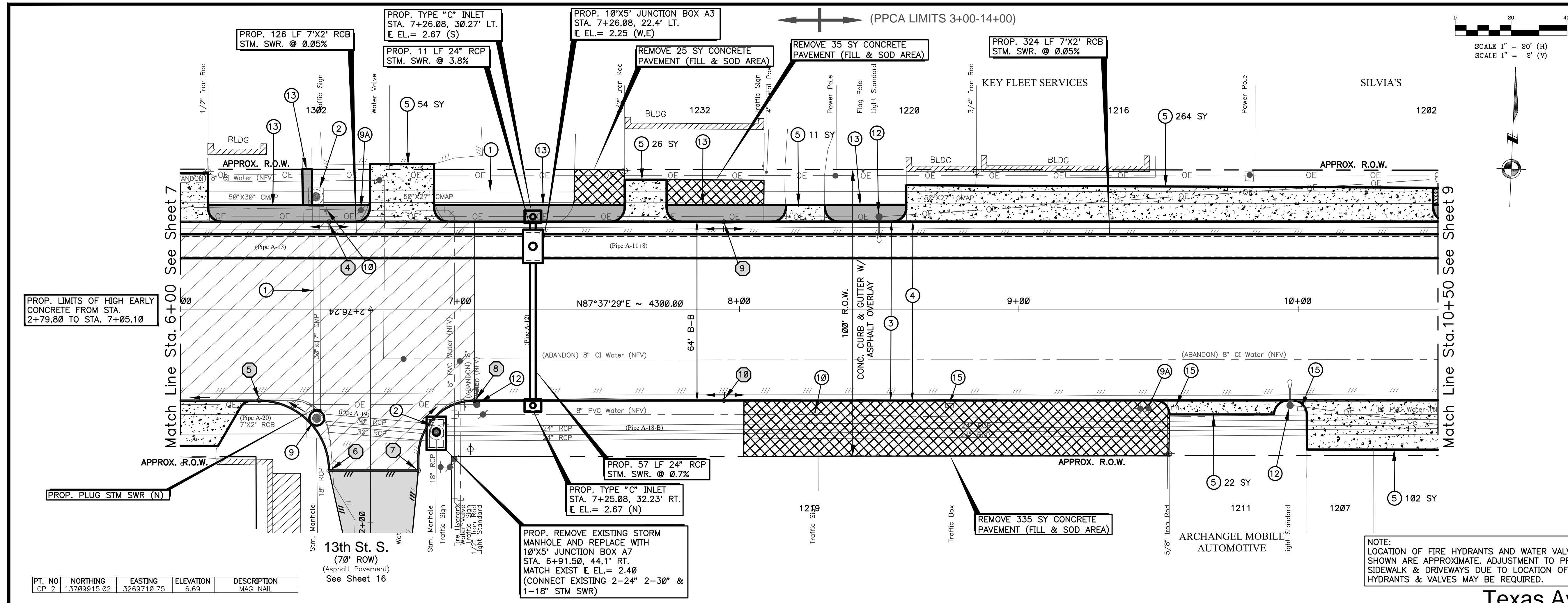
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(713) 400-2755 • www.arkkengineers.com • TX PE Firm No. 13872

Galveston County, Texas

Texas Avenue Reconstruction

Texas Ave.  
Sta. 1+00 to Sta. 6+00

Job No.: 18-015	Scale: HORZ: 1" = 20' VERT: 1" = 2'	SHEET <b>7</b>
Date: September, 2019		OF 52
Dwn By: D. Fattig		
Chkd By: J. Rudloff		



**BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)

**PAVING & DRAINAGE LEGEND:**

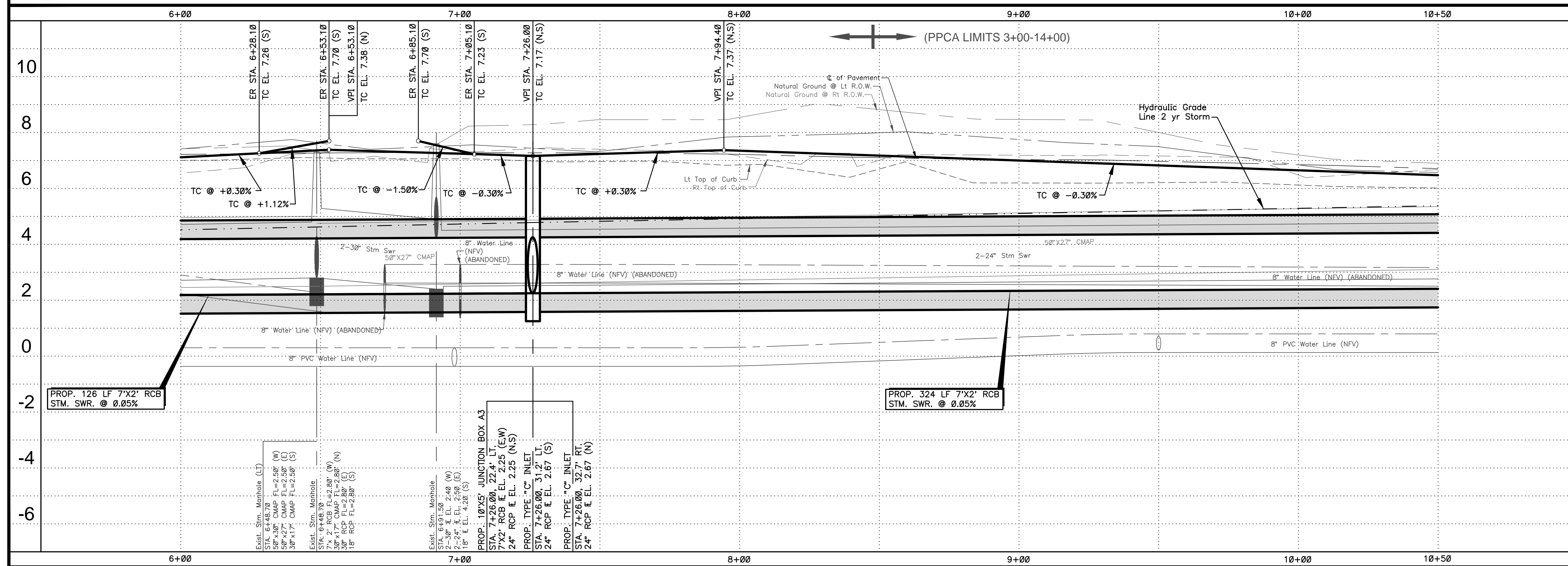
- REMOVE EXIST. STM. SWR./CULVERT
- REMOVE EXIST. INLET/MANHOLE
- REMOVE AND DISPOSE OF EXISTING ASPH./CONC. PAVEMENT AND BASE COURSE.
- PROP. 8" THICK CONCRETE PAVEMENT AND 8" SUBGRADE (SUBGRADE TO EXTEND 2' OUTSIDE CURB)
- PROP. REMOVE AND REPLACE WITH 6" CONCRETE DRIVEWAY
- PROP. REMOVE AND REPLACE WITH 8" CONCRETE DRIVEWAY
- PROP. CONCRETE PAVING HEADER AT EXIST. CONCRETE ROAD
- PROP. CONCRETE PAVING HEADER AT ASPHALT ROAD
- PROP. SAW CUT. (NO SEPARATE PAY)
- ADJUST MANHOLES COVERS TO GRADE
- ADJUST FIRE HYDRANT & VALVE BOXES TO GRADE
- REMOVE/RELOCATE EXISTING SIGN (NO SEPARATE PAY)
- PROP. 4" THICK CONCRETE PAVEMENT
- PROTECT & BRACE LIGHT/POWER POLES AS NECESSARY (NO SEPARATE PAY)
- PROP. 6" - 4" THICK CONCRETE SIDEWALK
- PROP. CURB RAMP PER ADA REQUIREMENTS
- REMOVE TRAFFIC SIGNAL BOX

**LEGEND:**

- PROP. CONCRETE DRIVEWAY
- PROP. 4" CONCRETE SIDEWALK
- PROP. 4" CONCRETE PAVEMENT
- PROP. ASPHALT PAVEMENT
- PROP. REMOVE PAVEMENT
- PROP. LIMITS OF HIGH EARLY CONCRETE

#	STATION	OFFSET
4	PT 6+53.10	31.20' LT.
5	PT 6+28.10	32.70' RT.
6	PT 6+53.10	57.70' RT.
7	PT 6+85.10	57.70' RT.
8	PT 7+05.10	32.70' RT.
9	PT 7+94.40	31.20' LT.
10	PT 7+94.40	32.70' RT.

**NOTE:** LOCATION OF FIRE HYDRANTS AND WATER VALVES SHOWN ARE APPROXIMATE. ADJUSTMENT TO PROPOSED SIDEWALK & DRIVEWAYS DUE TO LOCATION OF FIRE HYDRANTS & VALVES MAY BE REQUIRED.



MK.	DESCRIPTION	DATE	DWN.	CHK.

9-13-19

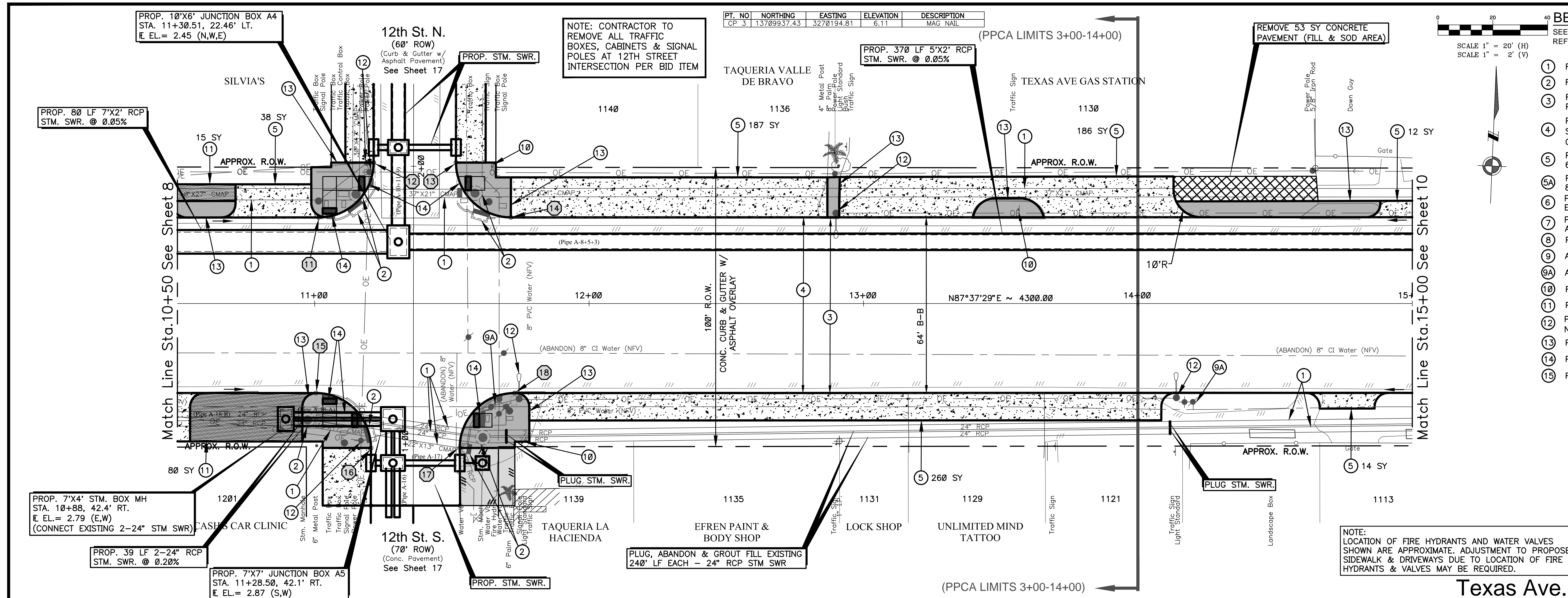
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7322 Southwest Freeway, Suite 1040 • Houston, Texas 77074  
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Galveston County, Texas

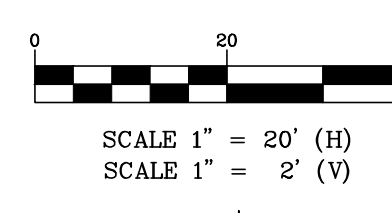
Texas Avenue Reconstruction

Texas Ave.  
Sta. 6+00 to Sta. 10+50

Job No.: 18-015	Scale:	SHEET <b>8</b> OF 52
Date: September, 2019	HORIZ: 1" = 20'	
Dwn By: D. Fattig	VERT: 1" = 2'	
Chk'd By: J. Rudloff		



PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 3	1370937.43	3270194.81	6.11	MAG NAIL



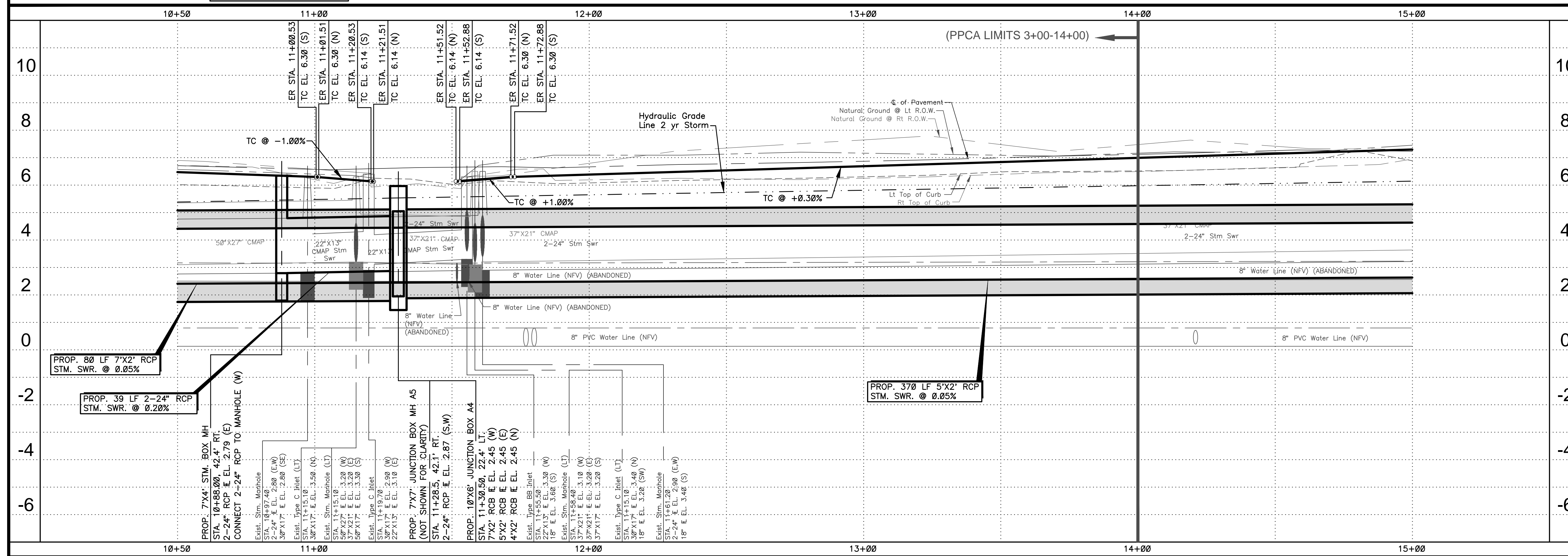
**BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)

- PAVING & DRAINAGE LEGEND:**
- 1 REMOVE EXIST. STM. SWR./CULVERT
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  - 3 REMOVE AND DISPOSE OF EXISTING ASPH./CONC. PAVEMENT AND BASE COURSE.
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  - 5 PROP. REMOVE AND REPLACE WITH 6" CONCRETE DRIVEWAY
  - 5A PROP. REMOVE AND REPLACE WITH 8" CONCRETE DRIVEWAY
  - 6 PROP. CONCRETE PAVING HEADER AT EXIST. CONCRETE ROAD
  - 7 PROP. CONCRETE PAVING HEADER AT ASPHALT ROAD
  - 8 PROP. SAW CUT. (NO SEPARATE PAY)
  - 9 ADJUST MANHOLES COVERS TO GRADE
  - 9A ADJUST FIRE HYDRANT & VALVE BOXES TO GRADE
  - 10 REMOVE/RELOCATE EXISTING SIGN (NO SEPARATE PAY)
  - 11 PROP. 4" THICK CONCRETE PAVEMENT
  - 12 PROTECT & BRACE LIGHT/POWER POLES AS NECESSARY (NO SEPARATE PAY)
  - 13 PROP. 6" - 4" THICK CONCRETE SIDEWALK
  - 14 PROP. CURB RAMP PER ADA REQUIREMENTS
  - 15 REMOVE TRAFFIC SIGNAL BOX

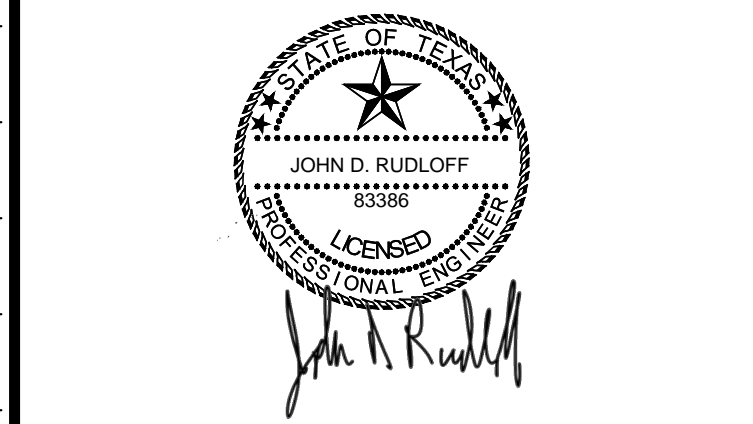
- PROP. CONCRETE DRIVEWAY
- PROP. 4" CONCRETE SIDEWALK
- PROP. 4" CONCRETE PAVEMENT
- PROP. ASPHALT PAVEMENT
- PROP. REMOVE PAVEMENT
- PROP. LIMITS OF HIGH EARLY CONCRETE

#	STATION	OFFSET
11	PT 11+01.50	31.30' LT.
12	PT 11+21.50	51.30' LT.
13	PT 11+51.50	51.30' LT.
14	PT 11+71.50	31.30' LT.
15	PT 11+00.50	32.60' RT.
16	PT 11+20.50	52.60' RT.
17	PT 11+52.90	52.60' RT.
18	PT 11+72.90	32.60' RT.

NOTE: LOCATION OF FIRE HYDRANTS AND WATER VALVES SHOWN ARE APPROXIMATE. ADJUSTMENT TO PROPOSED SIDEWALK & DRIVEWAYS DUE TO LOCATION OF FIRE HYDRANTS & VALVES MAY BE REQUIRED.



MK.	DESCRIPTION	DATE	DWN.	CHK.



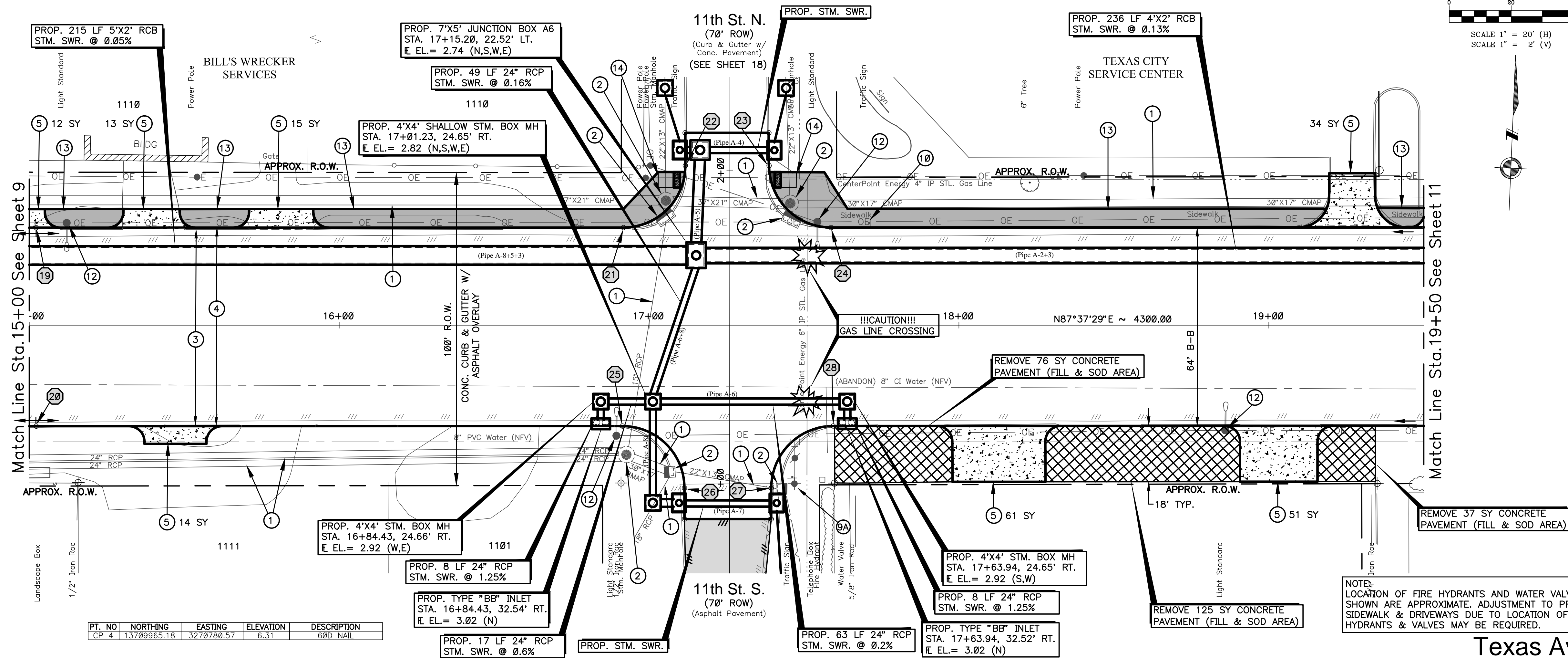
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Galveston County, Texas  
Texas Avenue Reconstruction  
Texas Ave.  
Sta. 10+50 to Sta. 15+00

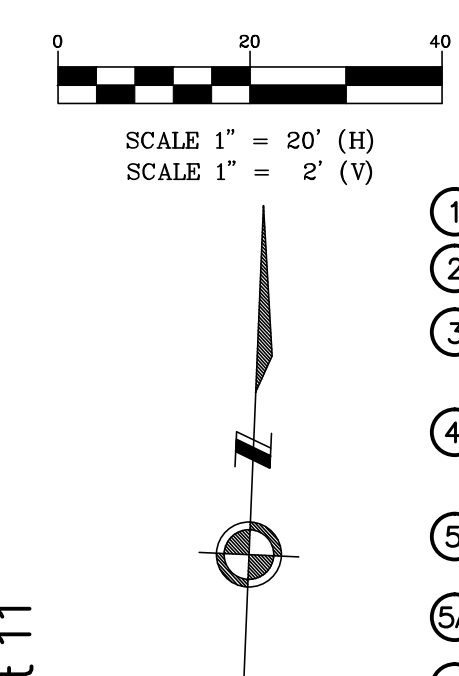
Job No.: 18-015  
Date: September, 2019  
Dwn By: D. Fattig  
Chk By: J. Rudloff

Scale:  
HORZ: 1" = 20'  
VERT: 1" = 2'

SHEET  
**9**  
OF 52



PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 4	13709965.18	3270780.57	6.31	600' NAIL



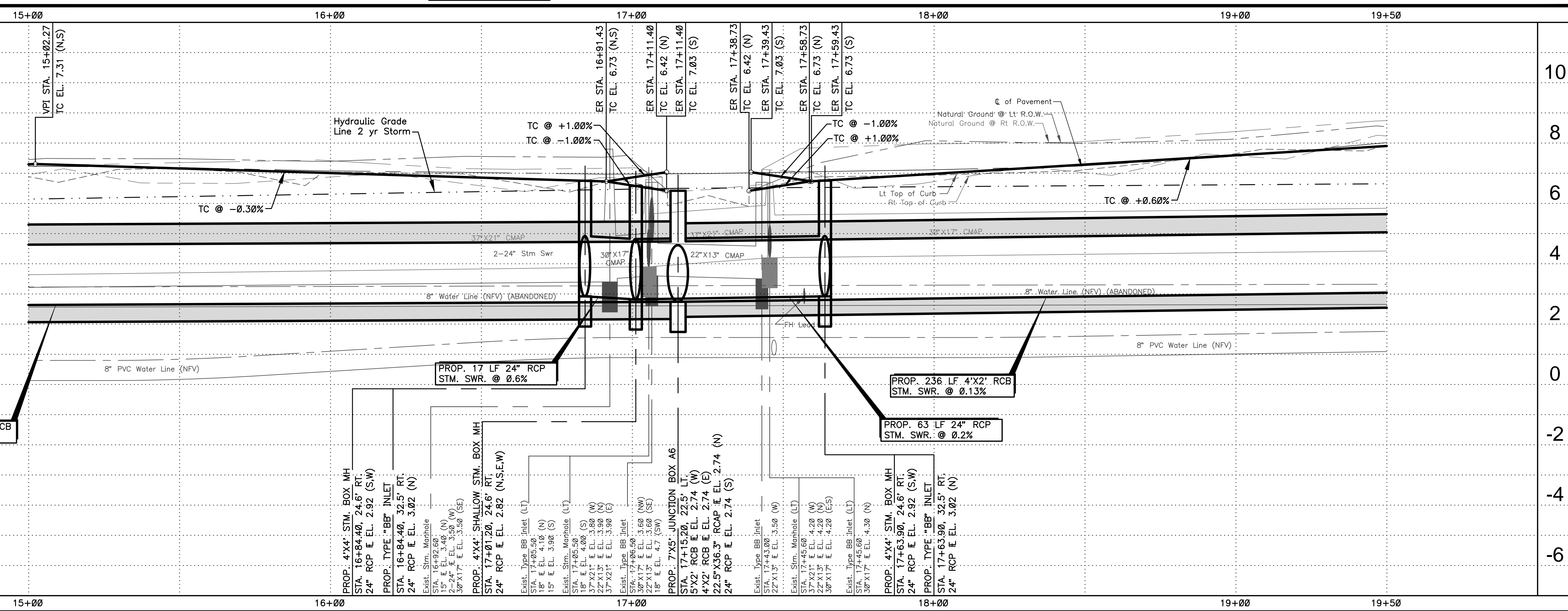
**BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)

- PAVING & DRAINAGE LEGEND:**
- 1 REMOVE EXIST. STM. SWR./CULVERT
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  - 13 PROP. 6" - 4" THICK CONCRETE SIDEWALK
  - 14 PROP. CURB RAMP PER ADA REQUIREMENTS
  - 15 REMOVE TRAFFIC SIGNAL BOX

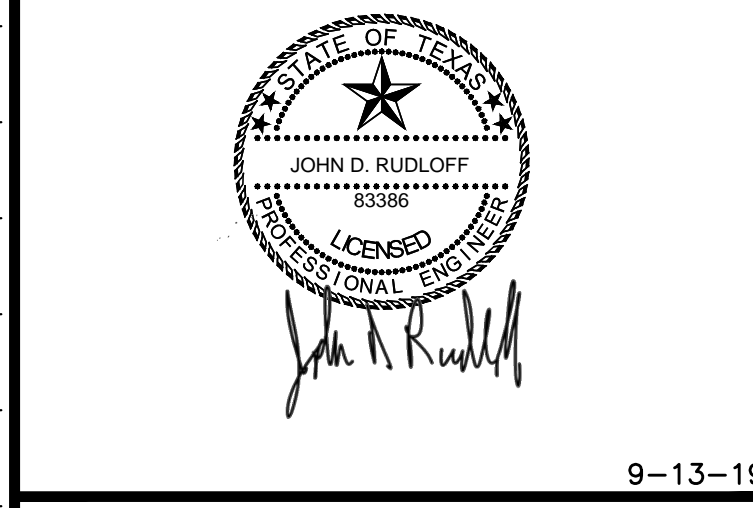
- PROP. CONCRETE DRIVEWAY
- PROP. 4" CONCRETE SIDEWALK
- PROP. 4" CONCRETE PAVEMENT
- PROP. ASPHALT PAVEMENT
- PROP. REMOVE PAVEMENT
- PROP. LIMITS OF HIGH EARLY CONCRETE

#	STATION	OFFSET
19	PT 15+02.20	31.48' LT.
20	PT 15+02.20	32.50' RT.
21	PT 16+91.70	31.50' LT.
22	PT 17+11.70	51.50' LT.
23	PT 17+38.70	51.50' LT.
24	PT 17+58.70	31.50' LT.
25	PT 16+91.40	32.50' RT.
26	PT 17+11.40	52.50' RT.
27	PT 17+39.40	52.50' RT.
28	PT 17+59.40	32.50' RT.

NOTES:  
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MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19

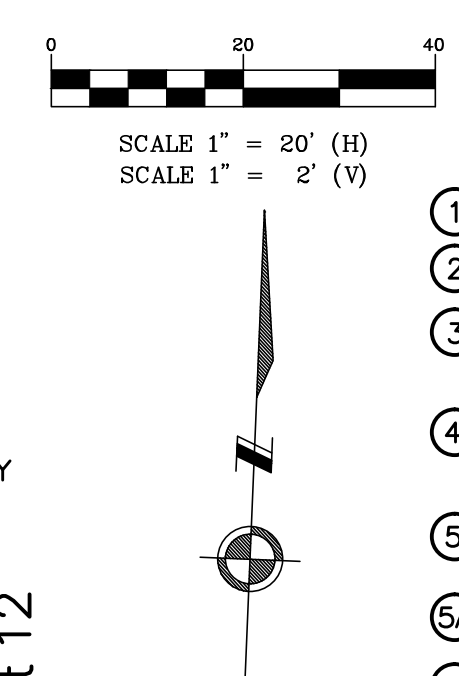
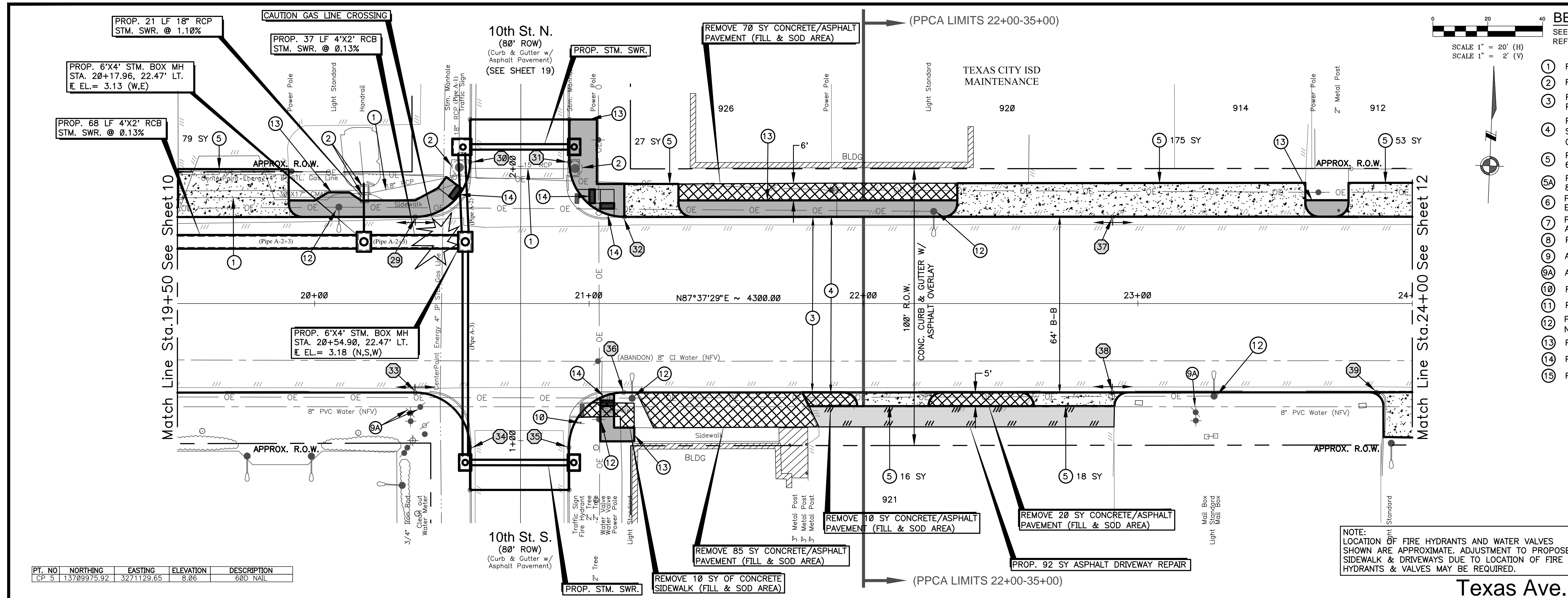
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Galveston County, Texas

Texas Avenue Reconstruction

Texas Ave.  
Sta. 15+00 to Sta. 19+50

Job No.: 18-015	Scale: HORIZ: 1" = 20' VERT: 1" = 2'	SHEET <b>10</b>
Date: September, 2019		OF 52
Dwn By: D. Fattig		
Chkd By: J. Rudloff		



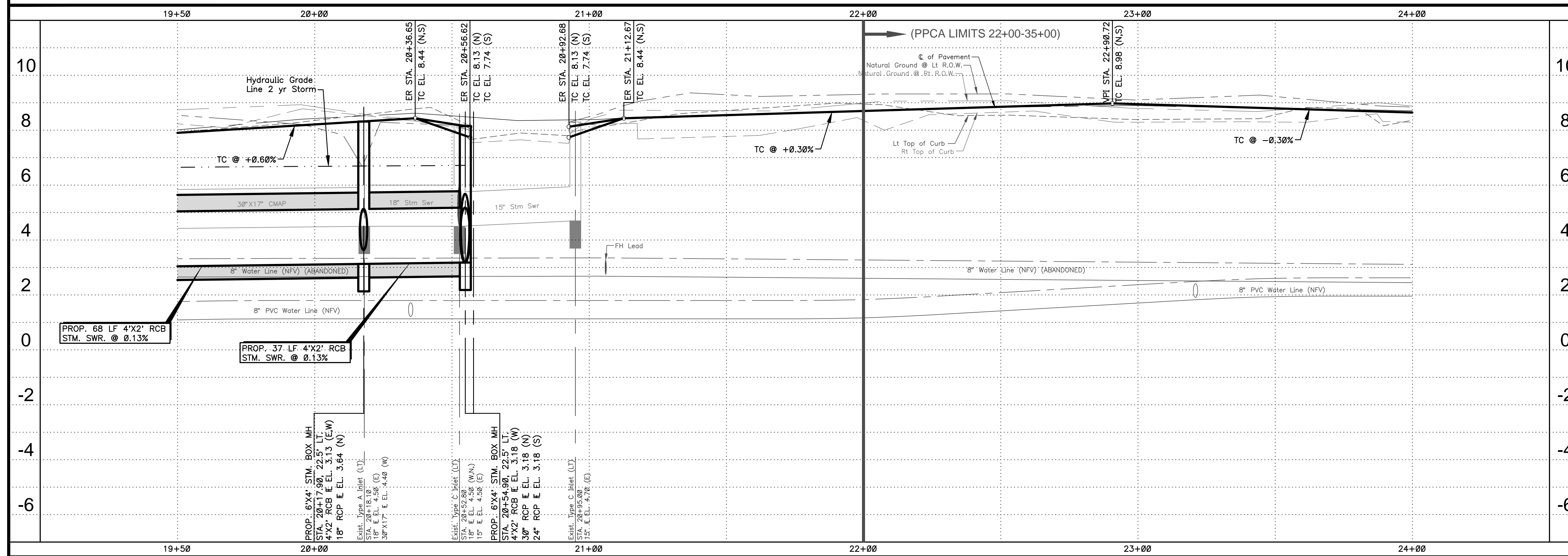
- BENCHMARK:**  
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- PROP. 4" CONCRETE PAVEMENT
- PROP. ASPHALT PAVEMENT
- PROP. REMOVE PAVEMENT
- PROP. LIMITS OF HIGH EARLY CONCRETE

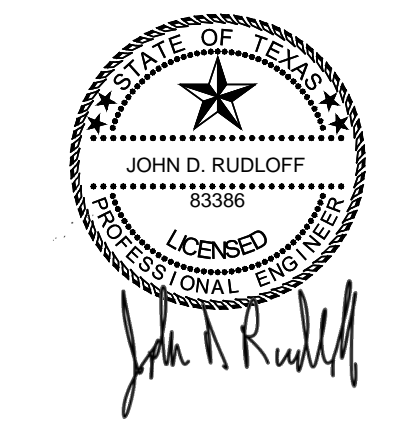
#	STATION	OFFSET
29	PT 20+36.60	31.50' LT.
30	PT 20+56.60	51.50' LT.
31	PT 20+92.80	51.50' LT.
32	PT 21+12.80	31.50' LT.
33	PT 20+36.60	32.40' RT.
34	PT 20+56.60	52.40' RT.
35	PT 20+92.60	52.40' RT.
36	PT 21+12.60	32.40' RT.
37	PT 22+90.70	31.50' LT.
38	PT 22+90.70	32.40' RT.
39	PT 23+86.90	32.40' RT.

NOTE:  
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PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 5	13709975.92	3271129.65	8.06	600 NAIL



MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19

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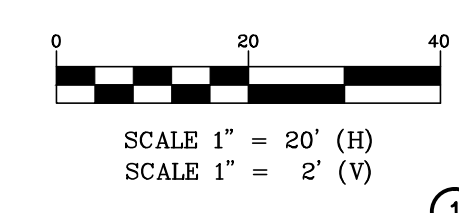
Galveston County, Texas

Texas Avenue Reconstruction

Texas Ave.  
Sta. 19+50 to Sta. 24+00

Job No.: 18-015	Scale: HORIZ: 1" = 20'	SHEET <b>11</b> OF 52
Date: September, 2019	VERT: 1" = 2'	
Dwn By: D. Fattig		
Chkd By: J. Rudloff		

(PPCA LIMITS 22+00-35+00)



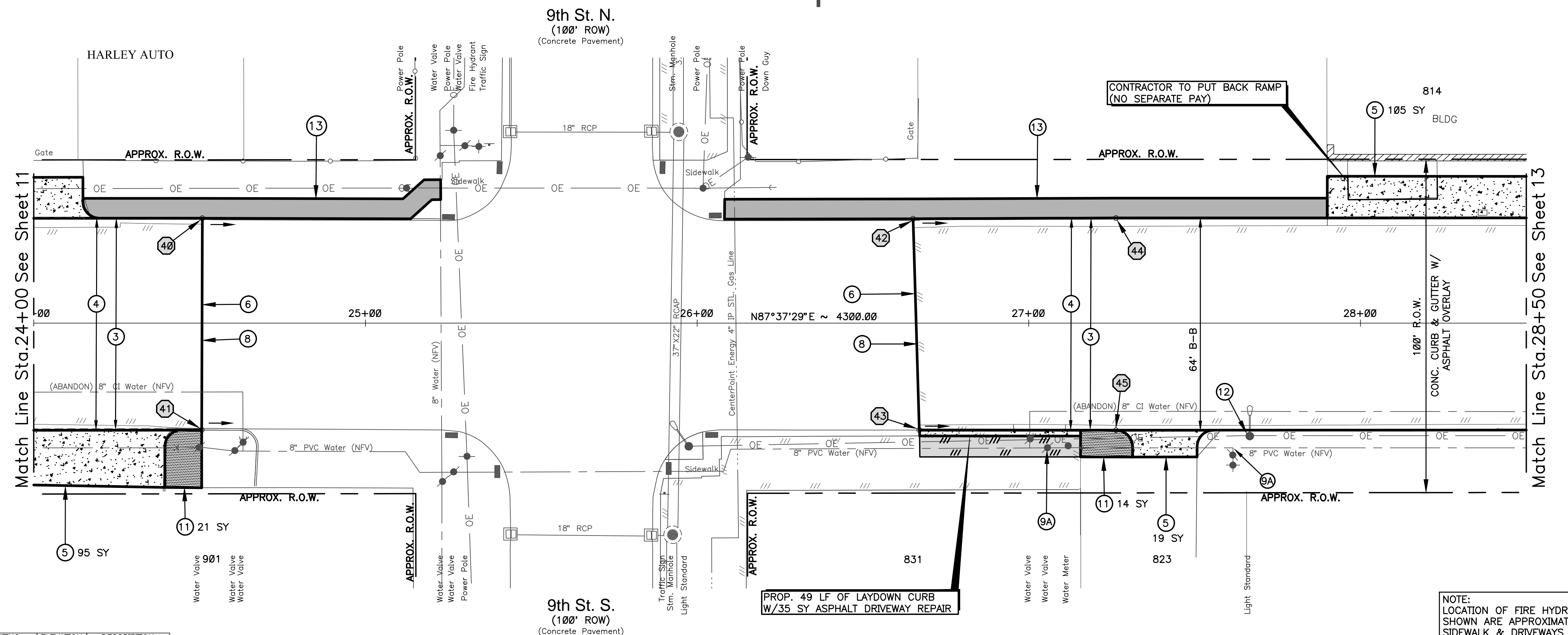
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- PROP. CONCRETE DRIVEWAY
- PROP. 4" CONCRETE SIDEWALK
- PROP. 4" CONCRETE PAVEMENT
- PROP. ASPHALT PAVEMENT
- PROP. REMOVE PAVEMENT
- PROP. LIMITS OF HIGH EARLY CONCRETE

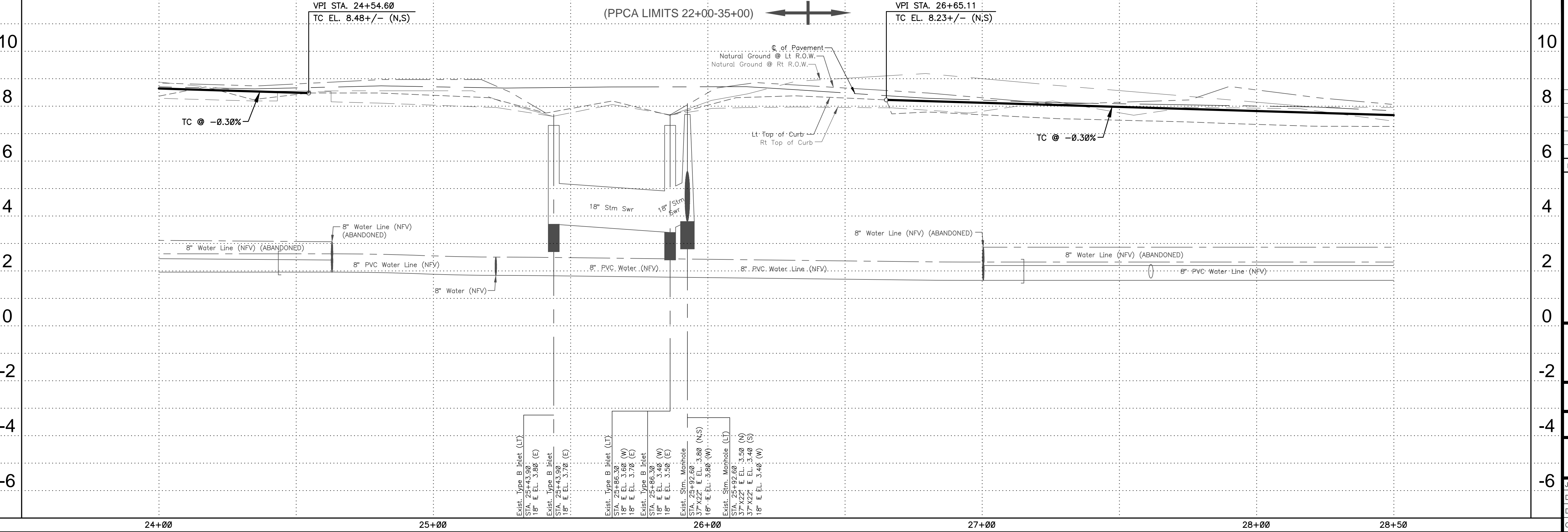
#	STATION	OFFSET
40	PT 24+50.80	31.60' LT.
41	PT 24+50.60	32.20' RT.
42	PT 26+65.10	31.40' LT.
43	PT 26+67.00	32.20' RT.
44	PT 27+26.20	31.60' LT.
45	PT 27+26.20	32.30' RT.

NOTE: LOCATION OF FIRE HYDRANTS AND WATER VALVES SHOWN ARE APPROXIMATE. ADJUSTMENT TO PROPOSED SIDEWALK & DRIVEWAYS DUE TO LOCATION OF FIRE HYDRANTS & VALVES MAY BE REQUIRED.



PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 6	13709999.22	3271620.17	8.19	*X* IN CONC.

24+00 25+00 26+00 27+00 28+00 28+50



MK.	DESCRIPTION	DATE	DWN.	CHK.

John D. Rudloff  
9-13-19

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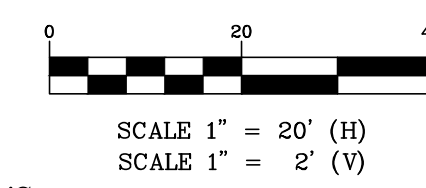
Galveston County, Texas

Texas Avenue Reconstruction

Texas Ave.  
Sta. 24+00 to Sta. 28+50

Job No.: 18-015	Scale: HORIZ: 1" = 20'	SHEET <b>12</b> OF 52
Date: September, 2019	VERT: 1" = 2'	
Dwn By: D. Fattig		
Chkd By: J. Rudloff		

PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 7	13710017.44	3272102.67	6.84	MAG NAIL

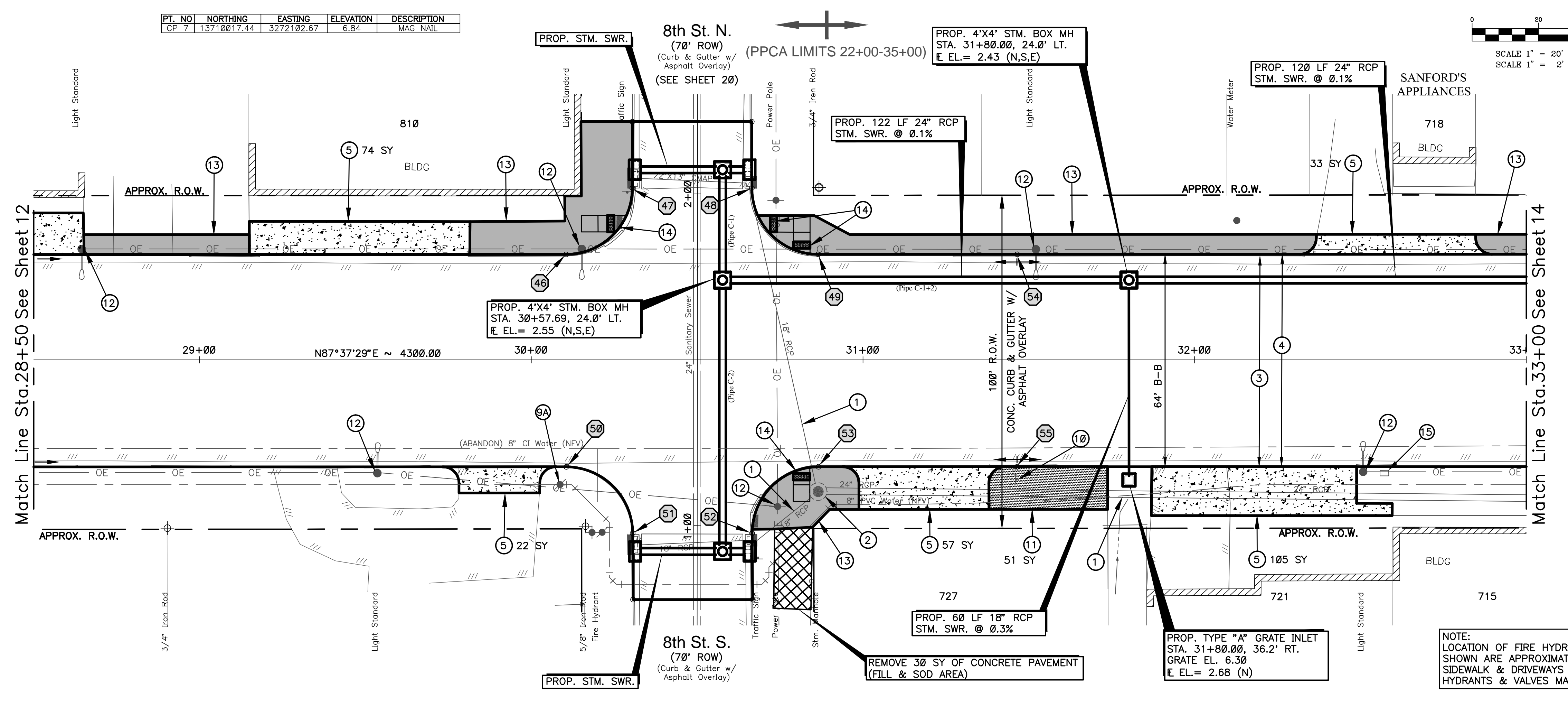


**BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)

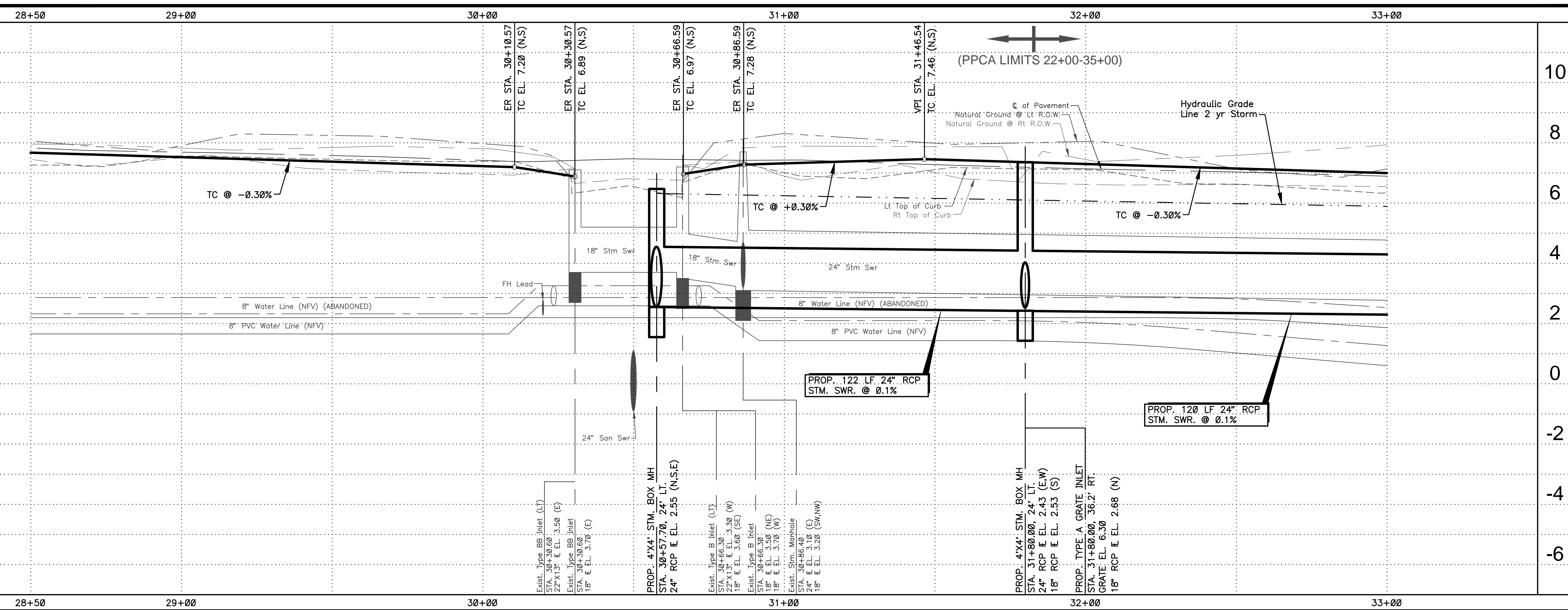
- PAVING & DRAINAGE LEGEND:**
- 1 REMOVE EXIST. STM. SWR./CULVERT
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  - 3 REMOVE AND DISPOSE OF EXISTING ASPH./CONC. PAVEMENT AND BASE COURSE.
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  - 15 REMOVE TRAFFIC SIGNAL BOX

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- PROP. 4" CONCRETE SIDEWALK
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- PROP. ASPHALT PAVEMENT
- PROP. REMOVE PAVEMENT
- PROP. LIMITS OF HIGH EARLY CONCRETE

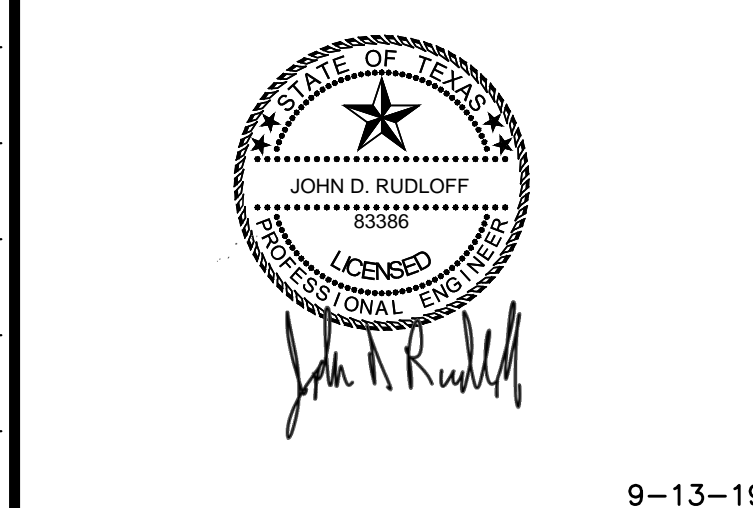
#	STATION	OFFSET
46	PT 30+10.50	31.70' LT.
47	PT 30+30.50	51.70' LT.
48	PT 30+66.50	51.70' LT.
49	PT 30+86.50	31.70' LT.
50	PT 30+10.50	32.20' RT.
51	PT 30+30.50	52.20' RT.
52	PT 30+66.60	53.20' RT.
53	PT 30+86.60	32.20' RT.
54	PT 31+46.50	31.70' LT.
55	PT 31+46.50	32.20' RT.



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MK.	DESCRIPTION	DATE	DWN.	CHK.

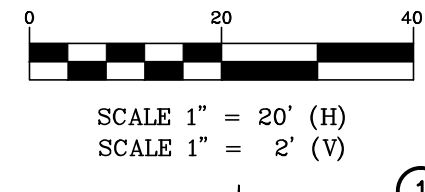
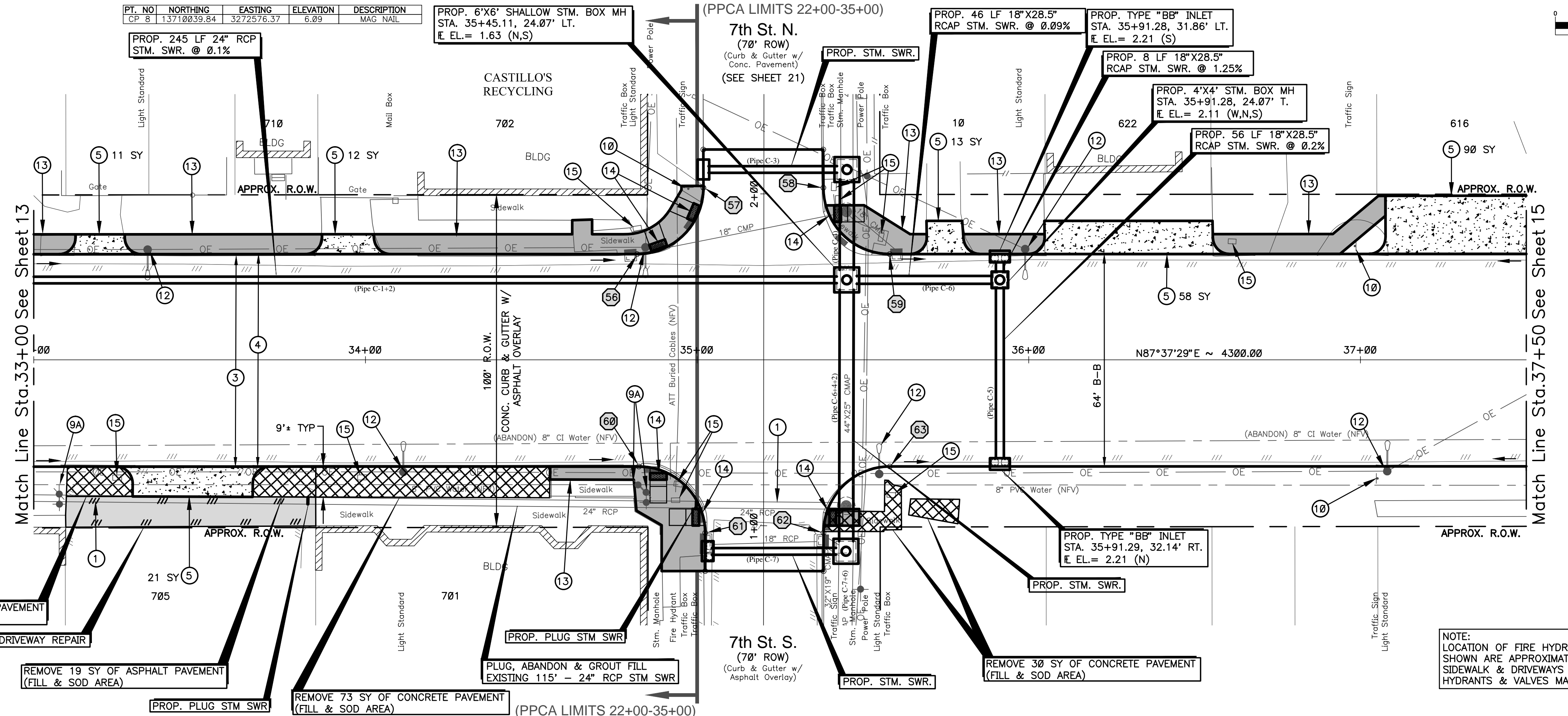


9-13-19  
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Galveston County, Texas  
Texas Avenue Reconstruction  
Texas Ave.  
Sta. 28+50 to Sta. 33+00  
Job No.: 18-015  
Date: September, 2019  
Dwn By: D. Fattig  
Chkd By: J. Rudloff  
Scale: HORIZ: 1" = 20'  
VERT: 1" = 2'  
SHEET  
**13**  
OF 52

PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 8	13710239.84	3272576.37	6.09	MAG NAIL

PROP. 6'X6' SHALLOW STM. BOX MH  
STA. 35+45.11, 24.07' LT.  
E. EL. = 1.63 (N,S)



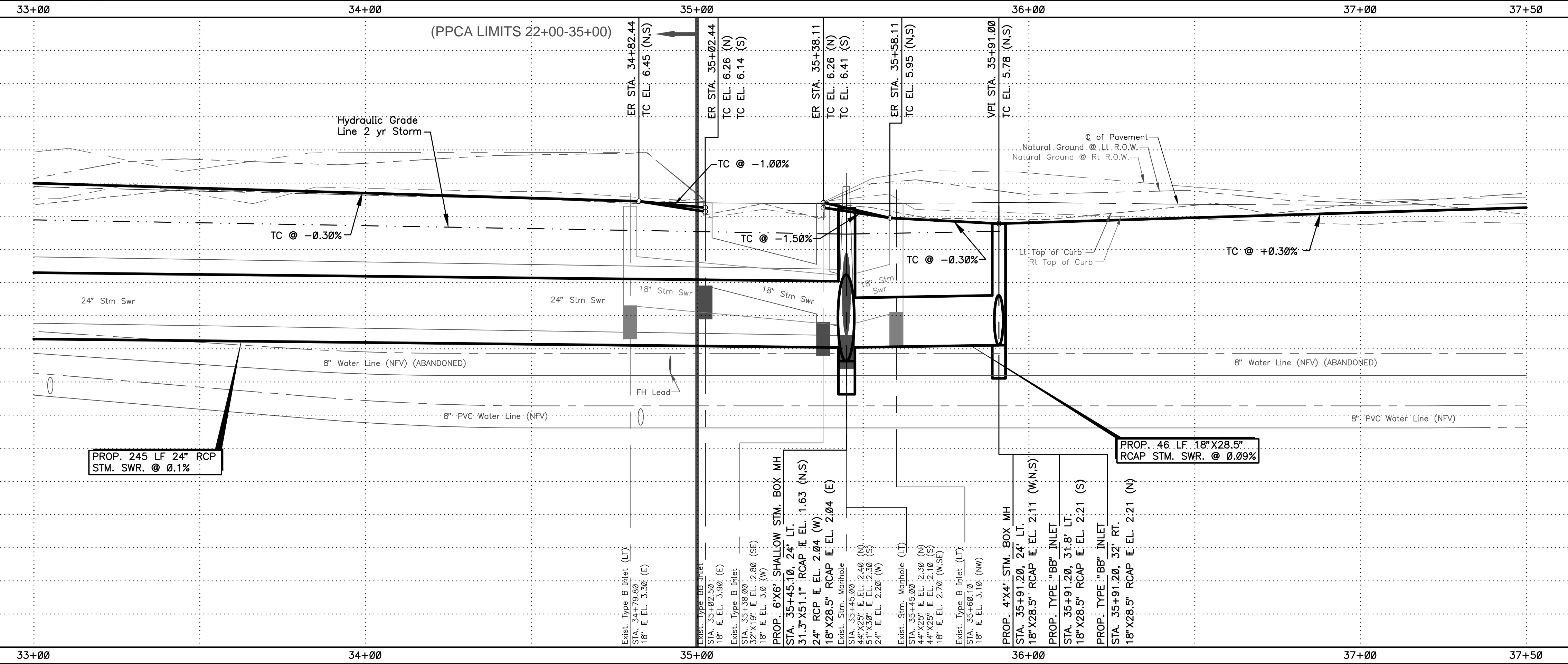
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- PAVING & DRAINAGE LEGEND:**
- 1 REMOVE EXIST. STM. SWR./CULVERT
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  - 6 PROP. CONCRETE PAVING HEADER AT EXIST. CONCRETE ROAD
  - 7 PROP. CONCRETE PAVING HEADER AT ASPHALT ROAD
  - 8 PROP. SAW CUT. (NO SEPARATE PAY)
  - 9 ADJUST MANHOLES COVERS TO GRADE
  - 9A ADJUST FIRE HYDRANT & VALVE BOXES TO GRADE
  - 10 REMOVE/RELOCATE EXISTING SIGN (NO SEPARATE PAY)
  - 11 PROP. 4" THICK CONCRETE PAVEMENT
  - 12 PROTECT & BRACE LIGHT/POWER POLES AS NECESSARY (NO SEPARATE PAY)
  - 13 PROP. 6" - 4" THICK CONCRETE SIDEWALK
  - 14 PROP. CURB RAMP PER ADA REQUIREMENTS
  - 15 REMOVE TRAFFIC SIGNAL BOX

- PROP. CONCRETE DRIVEWAY
- PROP. 4" CONCRETE SIDEWALK
- PROP. 4" CONCRETE PAVEMENT
- PROP. ASPHALT PAVEMENT
- PROP. REMOVE PAVEMENT
- PROP. LIMITS OF HIGH EARLY CONCRETE

#	STATION	OFFSET
56	PT 34+81.90	31.80' LT.
57	PT 35+01.90	51.80' LT.
58	PT 35+38.00	51.80' LT.
59	PT 35+58.00	31.80' LT.
60	PT 34+82.40	32.10' RT.
61	PT 35+02.40	52.10' RT.
62	PT 35+38.10	52.10' RT.
63	PT 35+58.10	32.10' RT.

NOTE:  
LOCATION OF FIRE HYDRANTS AND WATER VALVES SHOWN ARE APPROXIMATE. ADJUSTMENT TO PROPOSED SIDEWALK & DRIVEWAYS DUE TO LOCATION OF FIRE HYDRANTS & VALVES MAY BE REQUIRED.



MK.	DESCRIPTION	DATE	DWN.	CHK.

9-13-19

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Galveston County, Texas

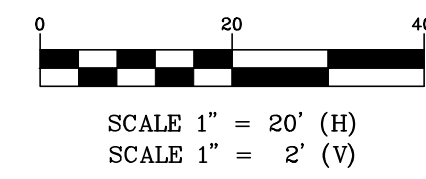
Texas Avenue Reconstruction

Texas Ave.  
Sta. 33+00 to Sta. 37+50

Job No.: 18-015	Scale: HORZ: 1" = 20' VERT: 1" = 2'	SHEET <b>14</b>
Date: September, 2019		OF 52
Dwn By: D. Fattig		
Chkd By: J. Rudloff		

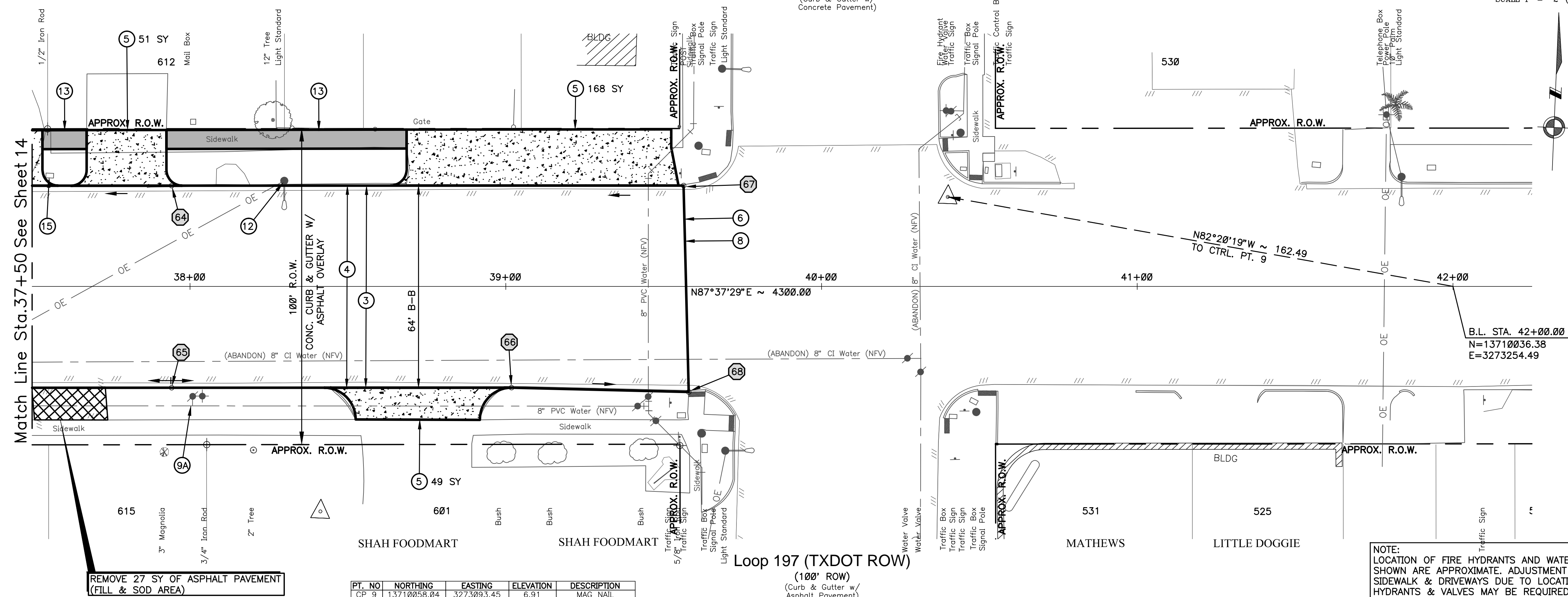


6th St. N. - Loop 197  
(100' ROW)  
(Curb & Gutter w/  
Concrete Pavement)



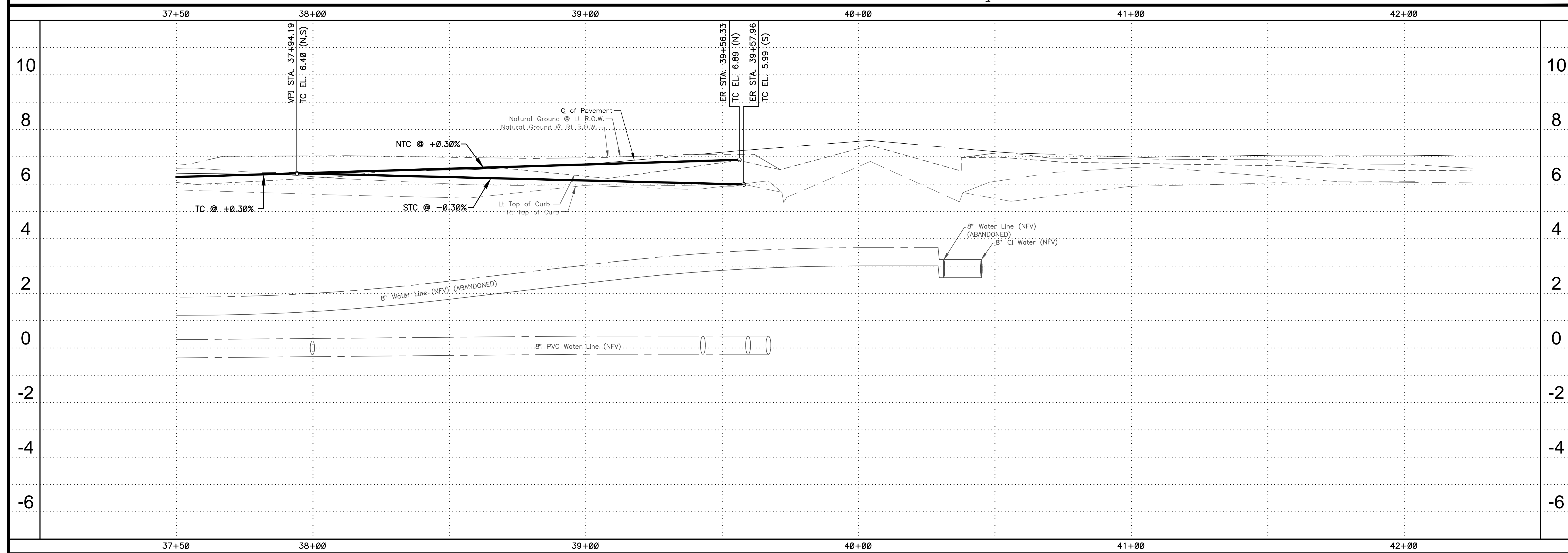
**BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)

- PAVING & DRAINAGE LEGEND:**
- 1 REMOVE EXIST. STM. SWR./CULVERT
  - 2 REMOVE EXIST. INLET/MANHOLE
  - 3 REMOVE AND DISPOSE OF EXISTING ASPH./CONC. PAVEMENT AND BASE COURSE.
  - 4 PROP. 8" THICK CONCRETE PAVEMENT AND 8" SUBGRADE (SUBGRADE TO EXTEND 2' OUTSIDE CURB)
  - 5 PROP. REMOVE AND REPLACE WITH 6" CONCRETE DRIVEWAY
  - 5A PROP. REMOVE AND REPLACE WITH 8" CONCRETE DRIVEWAY
  - 6 PROP. CONCRETE PAVING HEADER AT EXIST. CONCRETE ROAD
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  - 14 PROP. CURB RAMP PER ADA REQUIREMENTS
  - 15 REMOVE TRAFFIC SIGNAL BOX



- PROP. CONCRETE DRIVEWAY
- PROP. 4" CONCRETE SIDEWALK
- PROP. 4" CONCRETE PAVEMENT
- PROP. ASPHALT PAVEMENT
- PROP. REMOVE PAVEMENT
- PROP. LIMITS OF HIGH EARLY CONCRETE

#	STATION	OFFSET
64	PT 37+94.20	31.80' LT.
65	PT 37+94.20	32.00' RT.
66	PT 39+01.80	32.00' RT.
67	PT 39+56.30	31.90' LT.
68	PT 39+57.90	33.40' RT.



MK.	DESCRIPTION	DATE	DWN.	CHK.

9-13-19

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Galveston County, Texas

Texas Avenue Reconstruction

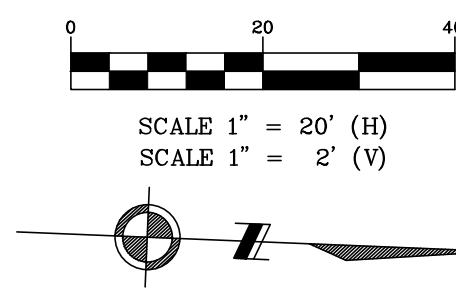
Texas Ave.  
Sta. 37+50 to End

Job No.: 18-015 | Date: September, 2019 | Dwn By: D. Fattig | Chkd By: J. Rudloff

Scale: HORIZ: 1" = 20' | VERT: 1" = 2'

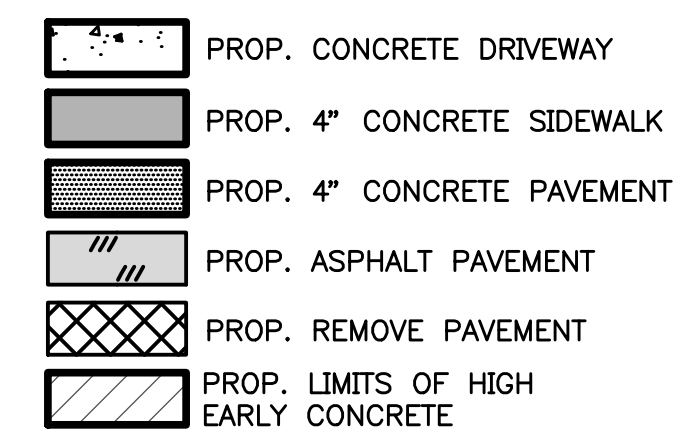
SHEET **15** OF 52

(PPCS LIMITS 3+00-14+00)



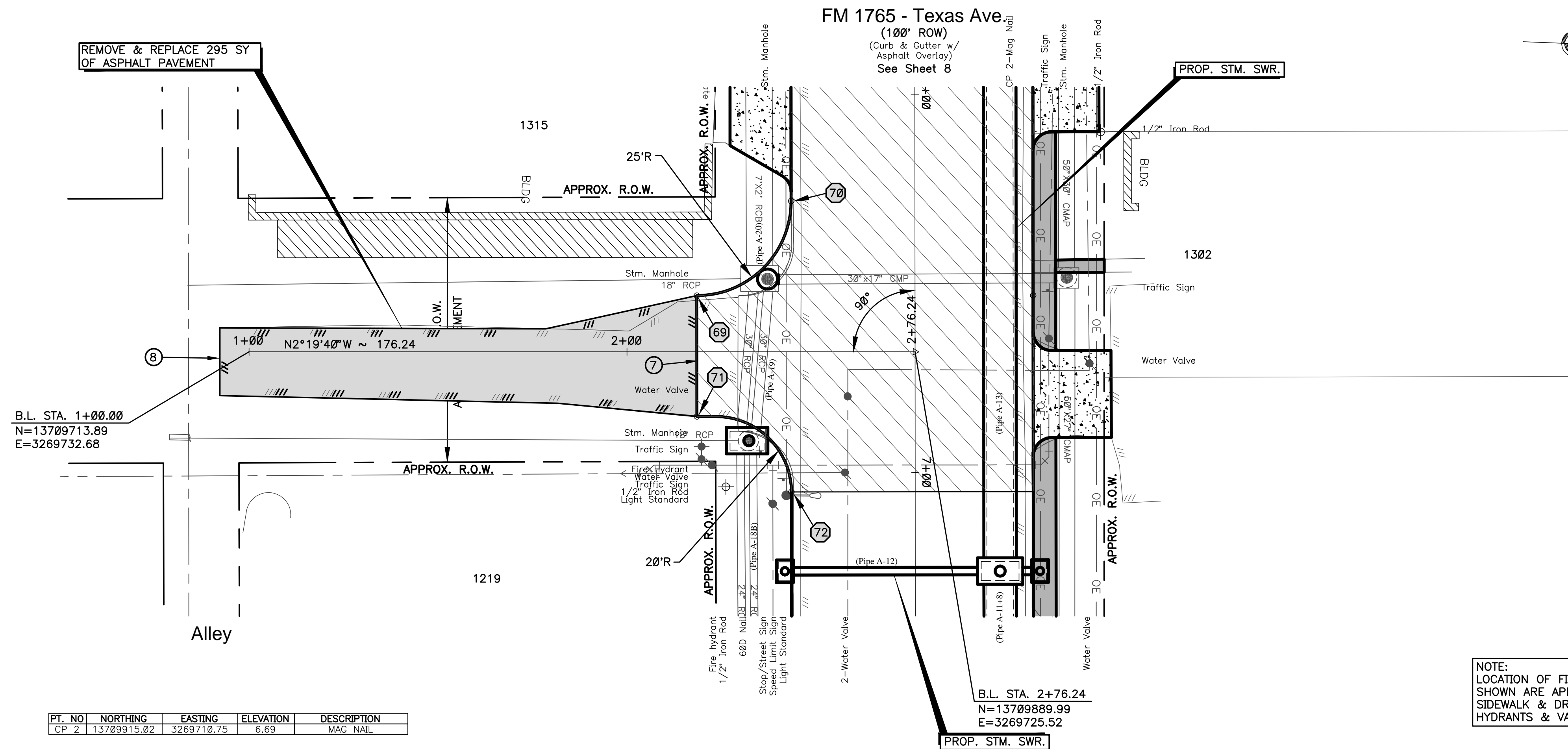
**BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)

- PAVING & DRAINAGE LEGEND:**
- 1 REMOVE EXIST. STM. SWR./CULVERT
  - 2 REMOVE EXIST. INLET/MANHOLE
  - 3 REMOVE AND DISPOSE OF EXISTING ASPH./CONC. PAVEMENT AND BASE COURSE.
  - 4 PROP. 8" THICK CONCRETE PAVEMENT AND 8" SUBGRADE (SUBGRADE TO EXTEND 2' OUTSIDE CURB)
  - 5 PROP. REMOVE AND REPLACE WITH 6" CONCRETE DRIVEWAY
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  - 9A ADJUST FIRE HYDRANT & VALVE BOXES TO GRADE
  - 10 REMOVE/RELOCATE EXISTING SIGN (NO SEPARATE PAY)
  - 11 PROP. 4" THICK CONCRETE PAVEMENT
  - 12 PROTECT & BRACE LIGHT/POWER POLES AS NECESSARY (NO SEPARATE PAY)
  - 13 PROP. 6" - 4" THICK CONCRETE SIDEWALK
  - 14 PROP. CURB RAMP PER ADA REQUIREMENTS
  - 15 REMOVE TRAFFIC SIGNAL BOX

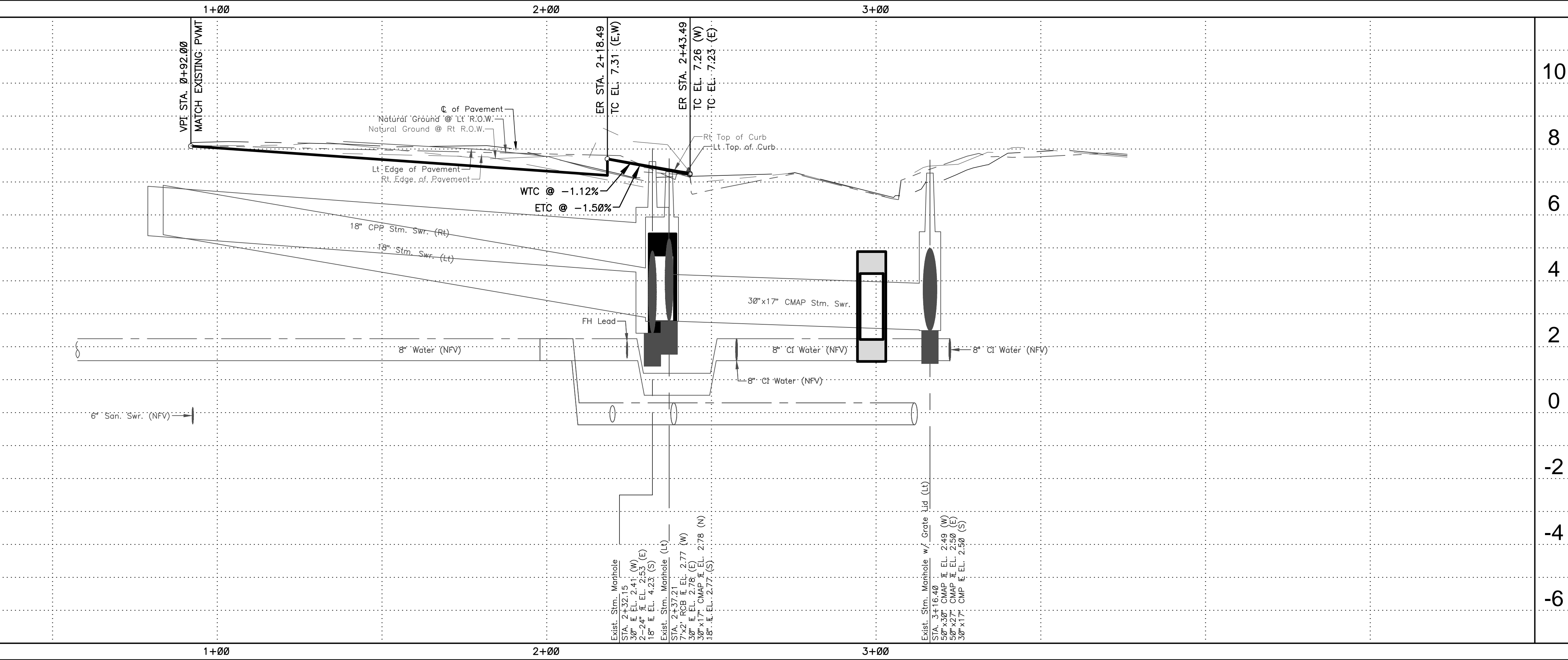


#	STATION	OFFSET
69	PT 2+18.50	14.80' LT.
70	PT 2+43.50	39.80' LT.
71	PT 2+18.50	17.10' RT.
72	PT 2+43.50	37.10' RT.

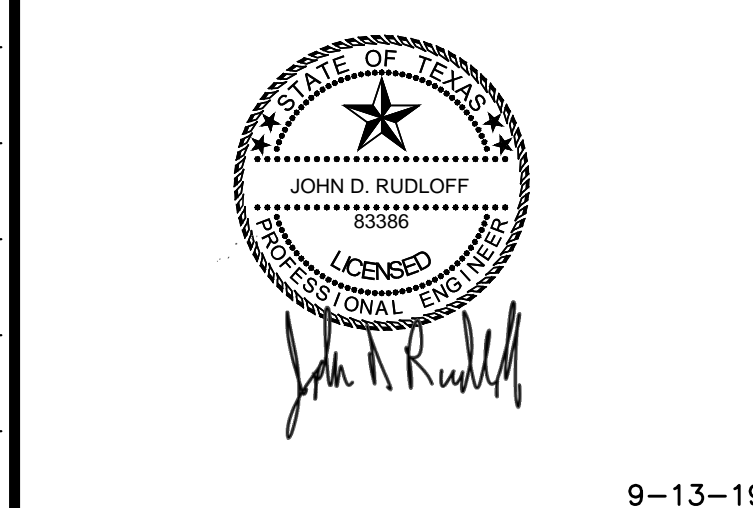
NOTE:  
LOCATION OF FIRE HYDRANTS AND WATER VALVES SHOWN ARE APPROXIMATE. ADJUSTMENT TO PROPOSED SIDEWALK & DRIVEWAYS DUE TO LOCATION OF FIRE HYDRANTS & VALVES MAY BE REQUIRED.



PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 2	13709915.02	3269710.75	6.69	MAG NAIL



MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19  
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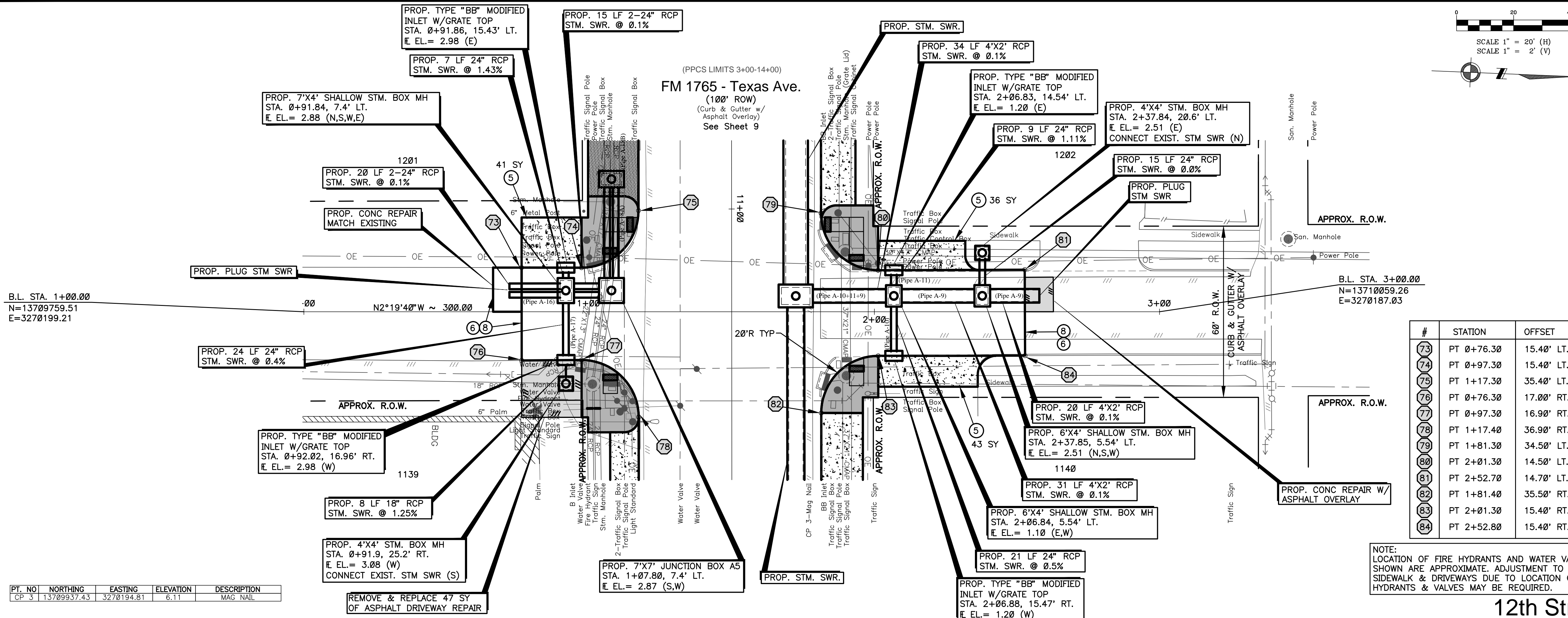
Galveston County, Texas

Texas Avenue Reconstruction

13th Street S.  
Sta. 1+00 to End

Job No.: 18-015	Scale:	SHEET
Date: September, 2019	HORIZ: 1" = 20' VERT: 1" = 2'	
Dwn By: D. Fattig		16
Chkd By: J. Rudloff		

OF 52



**BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)

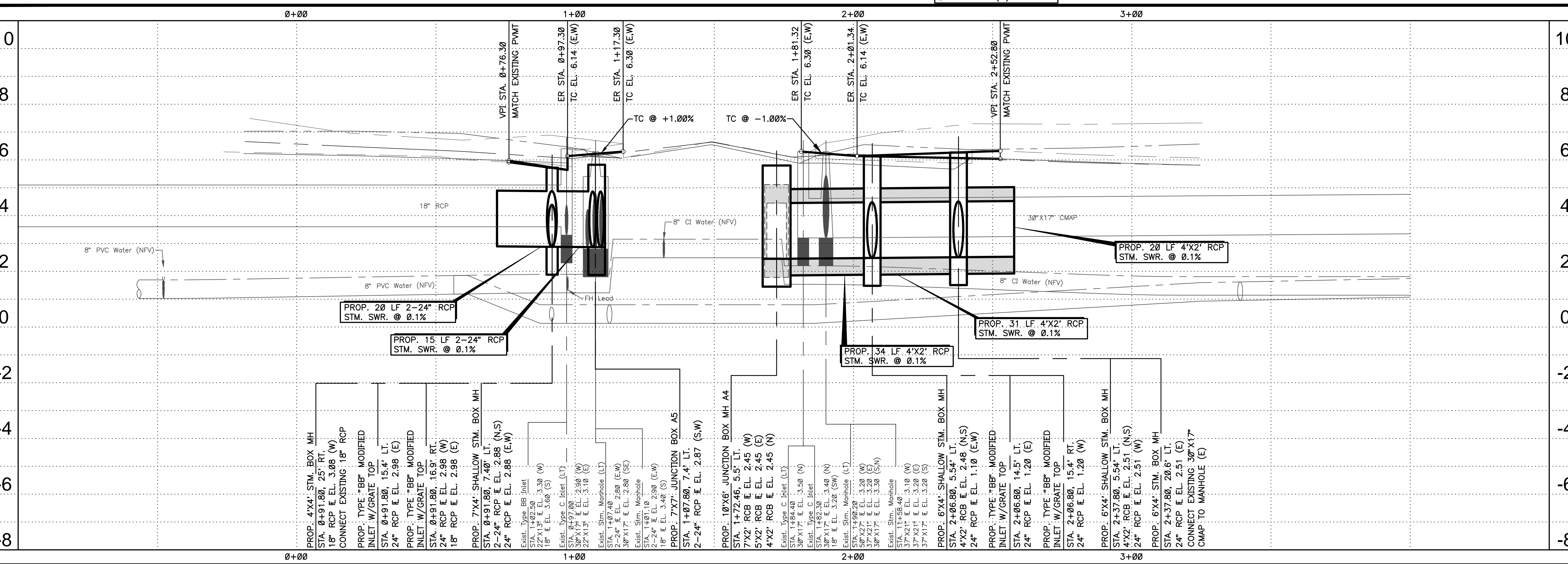
**PAVING & DRAINAGE LEGEND:**

- REMOVE EXIST. STM. SWR./CULVERT
- REMOVE EXIST. INLET/MANHOLE
- REMOVE AND DISPOSE OF EXISTING ASPH./CONC. PAVEMENT AND BASE COURSE.
- PROP. 8" THICK CONCRETE PAVEMENT AND 8" SUBGRADE (SUBGRADE TO EXTEND 2' OUTSIDE CURB)
- PROP. REMOVE AND REPLACE WITH 6" CONCRETE DRIVEWAY
- PROP. REMOVE AND REPLACE WITH 8" CONCRETE DRIVEWAY
- PROP. CONCRETE PAVING HEADER AT EXIST. CONCRETE ROAD
- PROP. CONCRETE PAVING HEADER AT ASPHALT ROAD
- PROP. SAW CUT. (NO SEPARATE PAY)
- ADJUST MANHOLES COVERS TO GRADE
- ADJUST FIRE HYDRANT & VALVE BOXES TO GRADE
- REMOVE/RELOCATE EXISTING SIGN (NO SEPARATE PAY)
- PROP. 4" THICK CONCRETE PAVEMENT
- PROTECT & BRACE LIGHT/POWER POLES AS NECESSARY (NO SEPARATE PAY)
- PROP. 6" - 4" THICK CONCRETE SIDEWALK
- PROP. CURB RAMP PER ADA REQUIREMENTS
- REMOVE TRAFFIC SIGNAL BOX

#	STATION	OFFSET
73	PT 0+76.30	15.40' LT.
74	PT 0+97.30	15.40' LT.
75	PT 1+17.30	35.40' LT.
76	PT 0+76.30	17.00' RT.
77	PT 0+97.30	16.90' RT.
78	PT 1+17.40	36.90' RT.
79	PT 1+81.30	34.50' LT.
80	PT 2+01.30	14.50' LT.
81	PT 2+52.70	14.70' LT.
82	PT 1+81.40	35.50' RT.
83	PT 2+01.30	15.40' RT.
84	PT 2+52.80	15.40' RT.

**NOTE:**  
LOCATION OF FIRE HYDRANTS AND WATER VALVES SHOWN ARE APPROXIMATE. ADJUSTMENT TO PROPOSED SIDEWALK & DRIVEWAYS DUE TO LOCATION OF FIRE HYDRANTS & VALVES MAY BE REQUIRED.

PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 3	13709759.51	3270199.21	6.11	MAG NAIL



MK.	DESCRIPTION	DATE	DWN.	CHK.

9-13-19

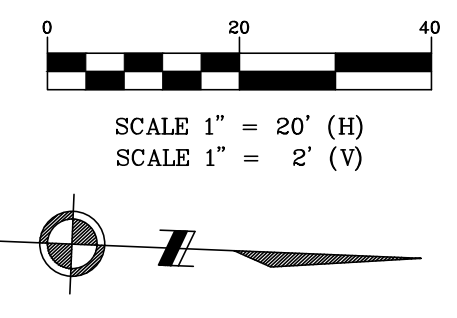
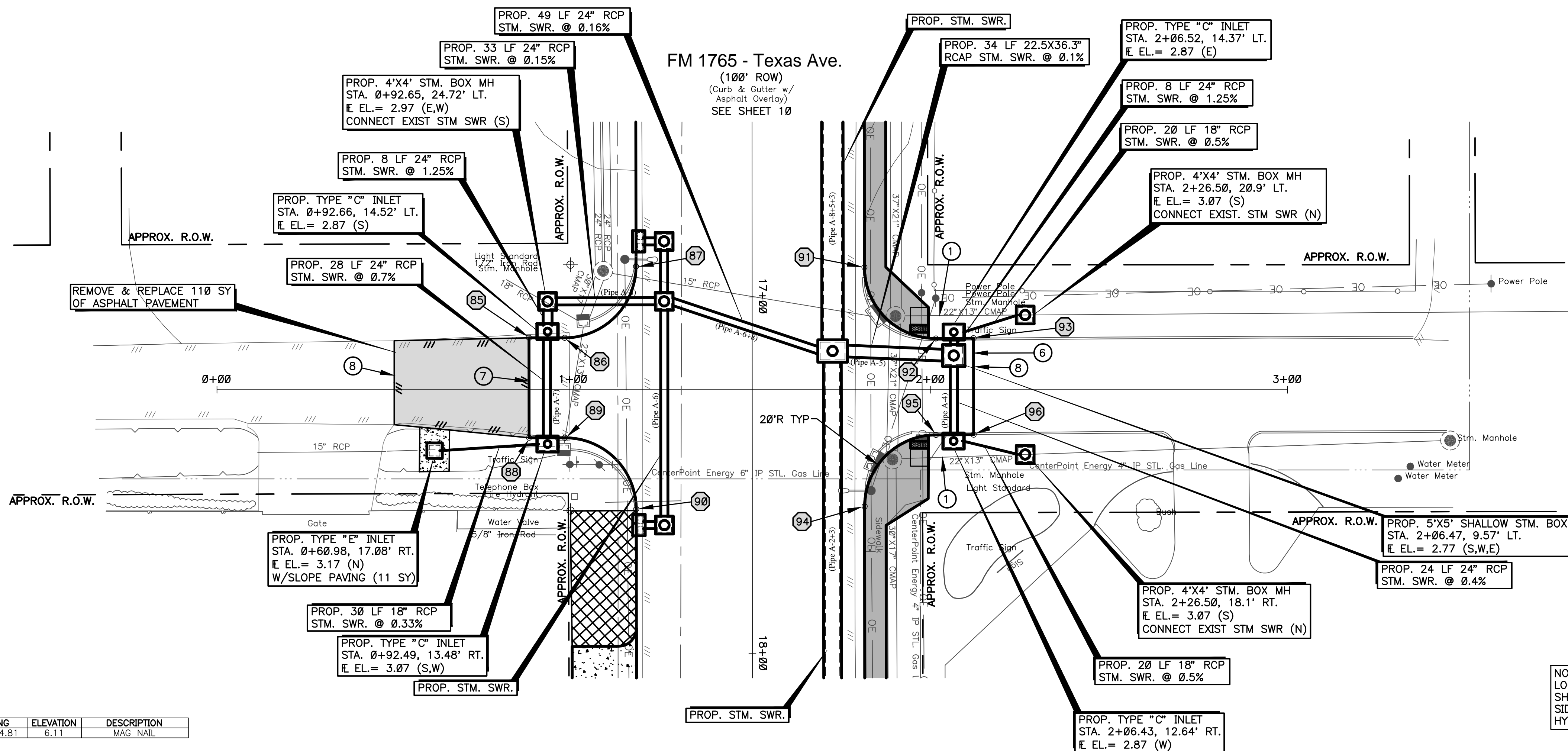
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Galveston County, Texas

Texas Avenue Reconstruction

12th Street  
Sta. 0+00 to End

Job No.: 18-015	Scale: HORIZ: 1" = 20'	SHEET <b>17</b> OF 52
Date: September, 2019	VERT: 1" = 2'	
Dwn By: D. Fattig		
Chk By: J. Rudloff		



**BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)

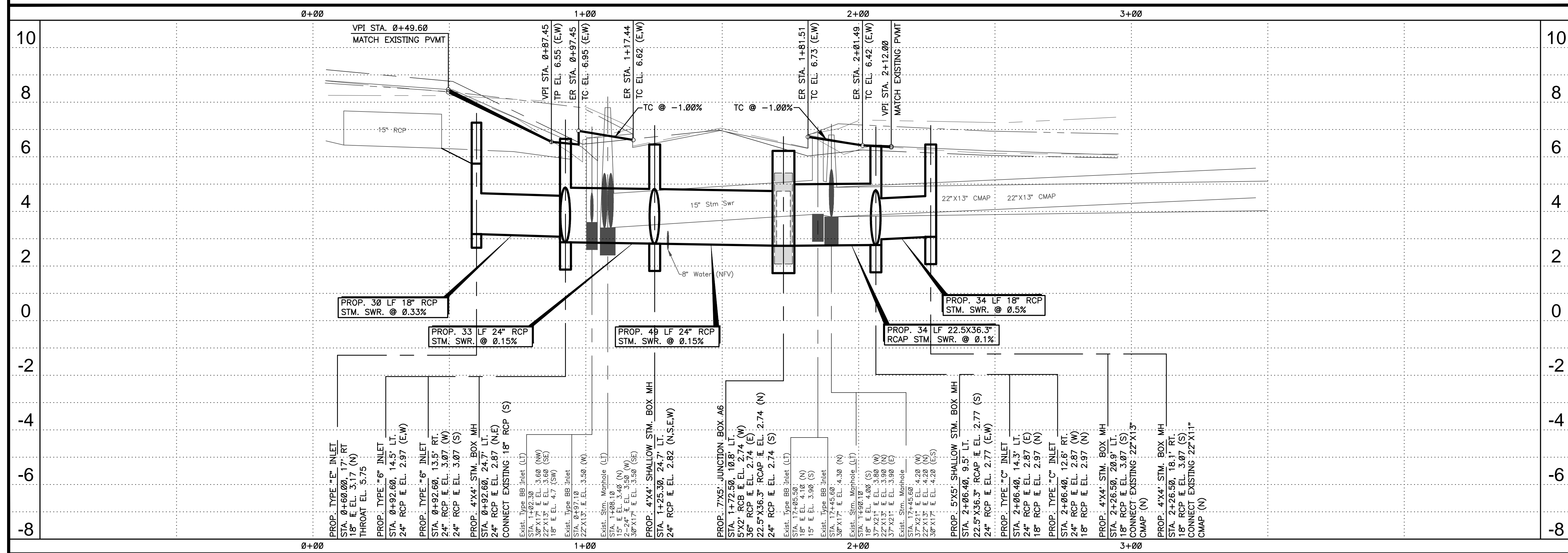
- PAVING & DRAINAGE LEGEND:**
- 1 REMOVE EXIST. STM. SWR./CULVERT
  - 2 REMOVE EXIST. INLET/MANHOLE
  - 3 REMOVE AND DISPOSE OF EXISTING ASPH./CONC. PAVEMENT AND BASE COURSE.
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  - 11 PROP. 4" THICK CONCRETE PAVEMENT
  - 12 PROTECT & BRACE LIGHT/POWER POLES AS NECESSARY (NO SEPARATE PAY)
  - 13 PROP. 6" - 4" THICK CONCRETE SIDEWALK
  - 14 PROP. CURB RAMP PER ADA REQUIREMENTS
  - 15 REMOVE TRAFFIC SIGNAL BOX

#	STATION	OFFSET
85	PT 0+87.40	14.50' LT.
86	PT 0+97.40	14.50' LT.
87	PT 1+17.40	34.50' LT.
88	PT 0+87.40	13.50' RT.
89	PT 0+97.50	13.50' RT.
90	PT 1+17.50	33.40' RT.
91	PT 1+81.40	34.30' LT.
92	PT 2+01.40	14.30' LT.
93	PT 2+12.00	14.40' LT.
94	PT 1+81.50	32.70' RT.
95	PT 2+01.50	12.70' RT.
96	PT 2+12.00	12.60' RT.

- PROP. CONCRETE DRIVEWAY
- PROP. 4" CONCRETE SIDEWALK
- PROP. 4" CONCRETE PAVEMENT
- PROP. ASPHALT PAVEMENT
- PROP. REMOVE PAVEMENT
- PROP. LIMITS OF HIGH EARLY CONCRETE

NOTE:  
LOCATION OF FIRE HYDRANTS AND WATER VALVES SHOWN ARE APPROXIMATE. ADJUSTMENT TO PROPOSED SIDEWALK & DRIVEWAYS DUE TO LOCATION OF FIRE HYDRANTS & VALVES MAY BE REQUIRED.

PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 3	13709937.43	3270194.81	6.11	MAG NAIL



MK.	DESCRIPTION	DATE	DWN.	CHK.

9-13-19

*John D. Rudloff*

**ARKK ENGINEERS**

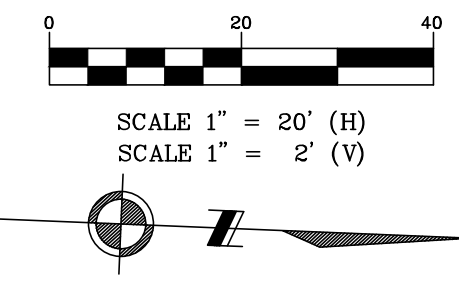
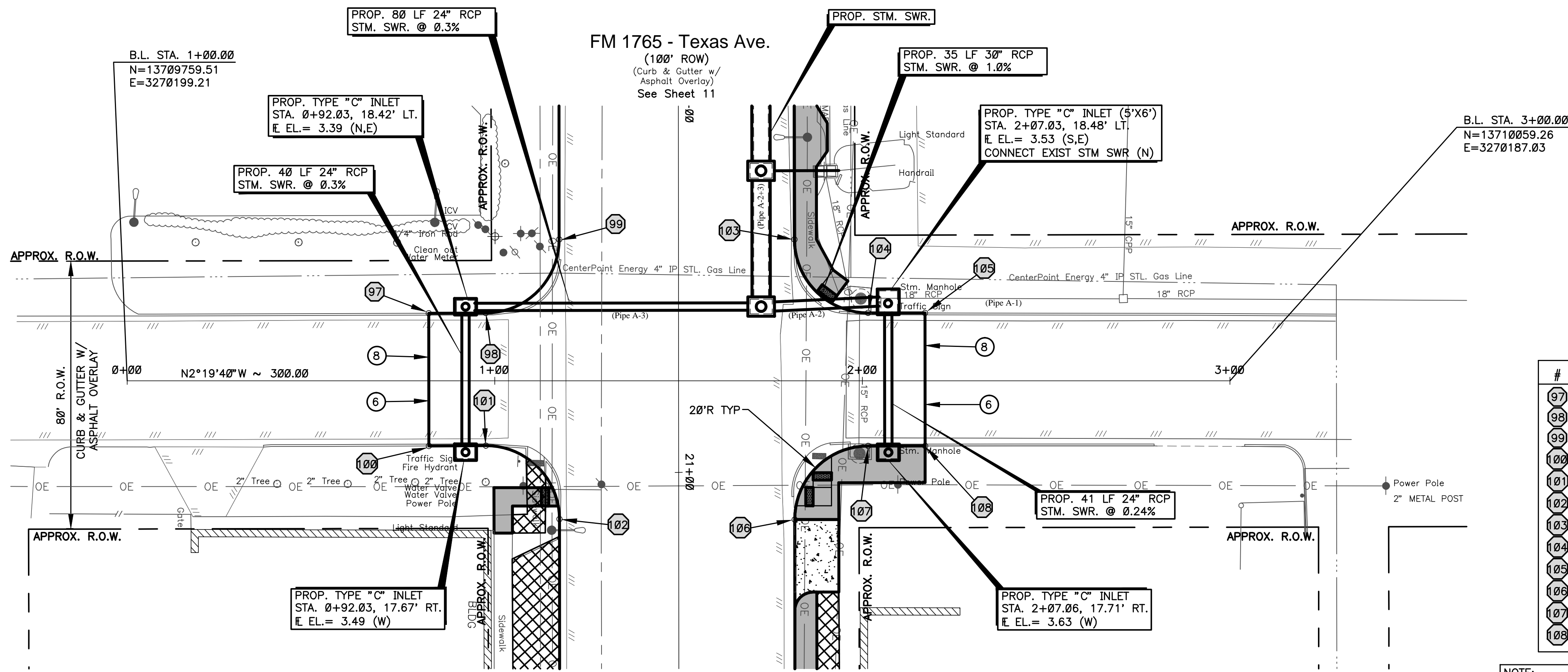
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Galveston County, Texas

Texas Avenue Reconstruction

11th Street  
Sta. 0+00 to End

Job No.: 18-015	Scale: HORIZ: 1" = 20'	<b>18</b>
Date: September, 2019	VERT: 1" = 2'	
Dwn By: D. Fattig		OF 52
Chkd By: J. Rudloff		

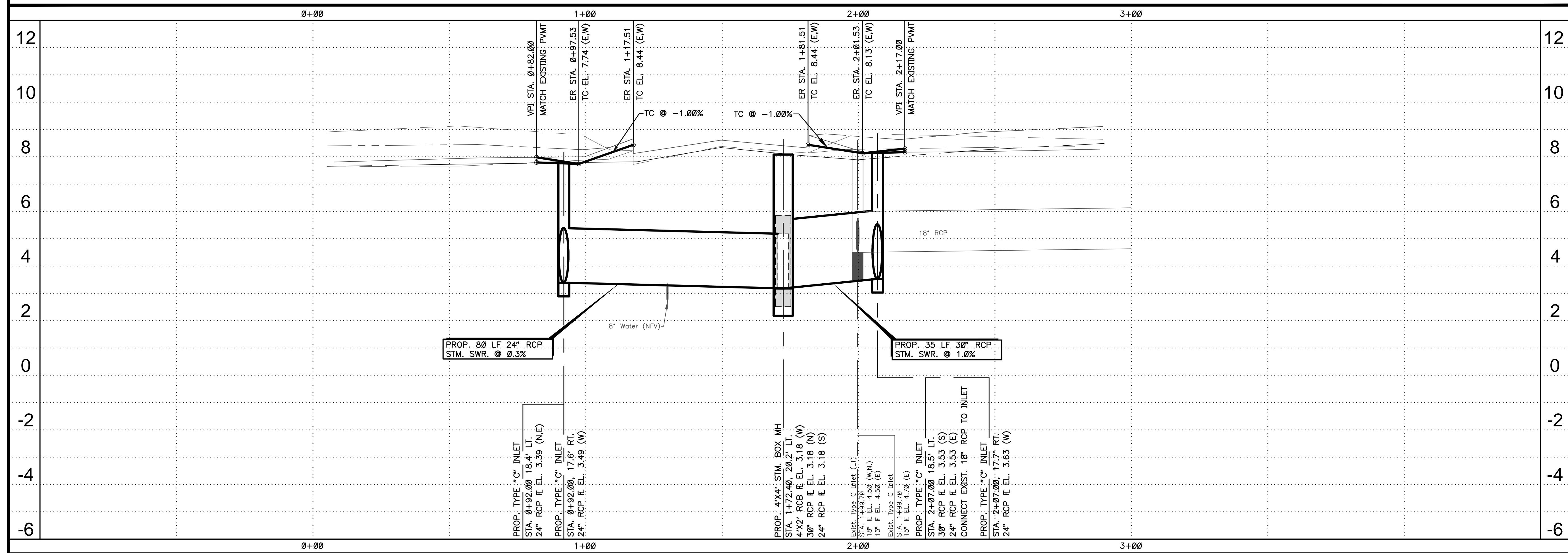


- BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)
- PAVING & DRAINAGE LEGEND:**
- 1 REMOVE EXIST. STM. SWR./CULVERT
  - 2 REMOVE EXIST. INLET/MANHOLE
  - 3 REMOVE AND DISPOSE OF EXISTING ASPH./CONC. PAVEMENT AND BASE COURSE.
  - 4 PROP. 8" THICK CONCRETE PAVEMENT AND 8" SUBGRADE (SUBGRADE TO EXTEND 2' OUTSIDE CURB)
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  - 6 PROP. CONCRETE PAVING HEADER AT EXIST. CONCRETE ROAD
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  - 11 PROP. 4" THICK CONCRETE PAVEMENT
  - 12 PROTECT & BRACE LIGHT/POWER POLES AS NECESSARY (NO SEPARATE PAY)
  - 13 PROP. 6" - 4" THICK CONCRETE SIDEWALK
  - 14 PROP. CURB RAMP PER ADA REQUIREMENTS
  - 15 REMOVE TRAFFIC SIGNAL BOX

#	STATION	OFFSET
97	PT 0+82.00	18.40' LT.
98	PT 0+97.50	18.40' LT.
99	PT 1+17.50	38.40' LT.
100	PT 0+82.00	17.70' RT.
101	PT 0+97.50	17.60' RT.
102	PT 1+17.50	37.60' RT.
103	PT 1+81.50	38.50' LT.
104	PT 2+01.50	18.50' LT.
105	PT 2+17.00	18.40' LT.
106	PT 1+81.60	37.70' RT.
107	PT 2+01.50	17.70' RT.
108	PT 2+17.00	17.70' RT.

NOTE:  
LOCATION OF FIRE HYDRANTS AND WATER VALVES SHOWN ARE APPROXIMATE. ADJUSTMENT TO PROPOSED SIDEWALK & DRIVEWAYS DUE TO LOCATION OF FIRE HYDRANTS & VALVES MAY BE REQUIRED.

PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 3	13709937.43	3270194.81	6.11	MAG NAIL



MK.	DESCRIPTION	DATE	DWN.	CHK.

9-13-19

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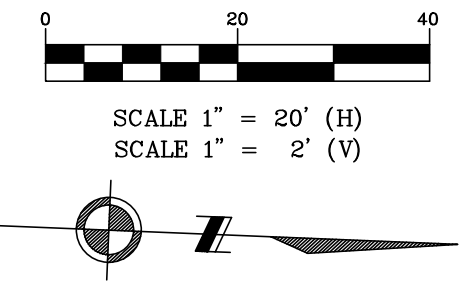
Galveston County, Texas

Texas Avenue Reconstruction

10th Street  
Sta. 0+00 to End

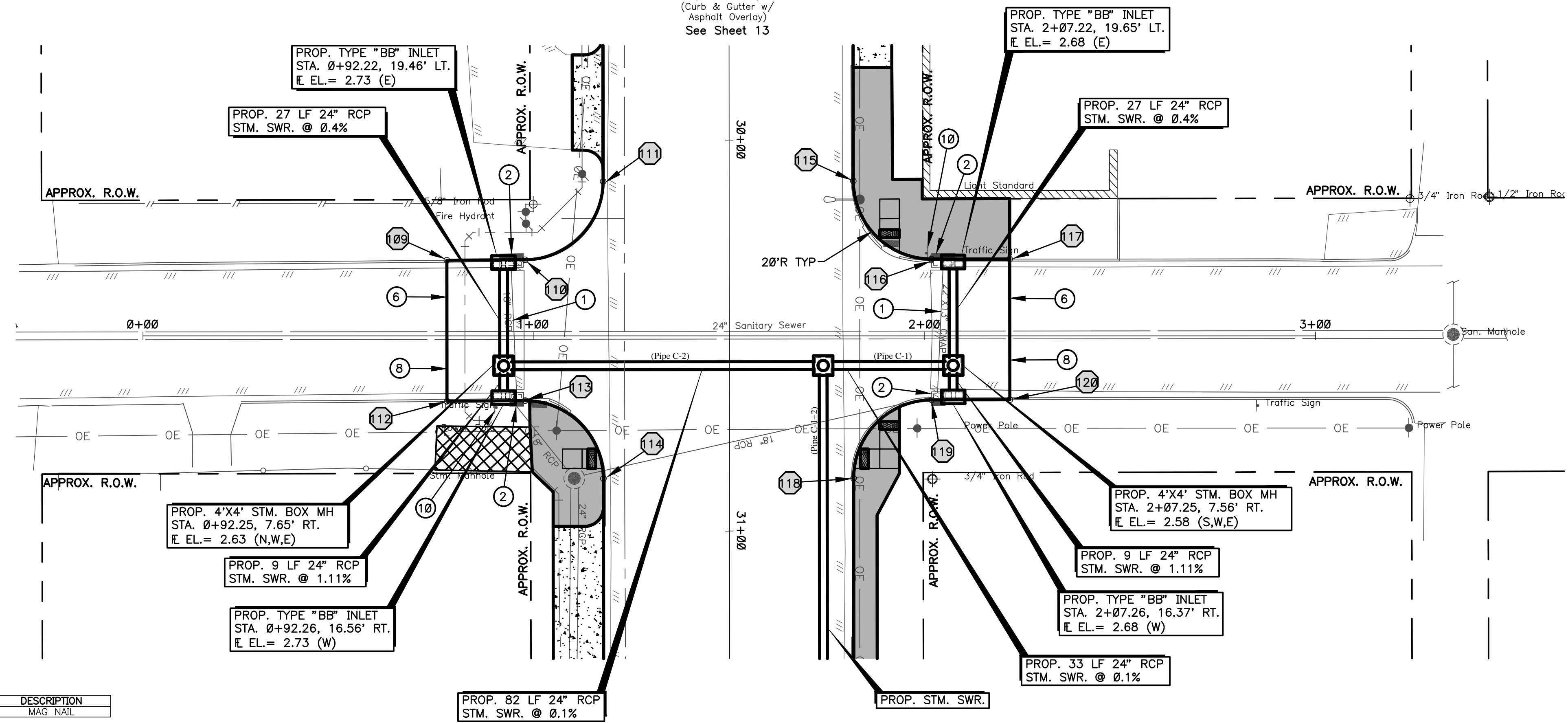
Job No.: 18-015	Scale: HORIZ: 1" = 20'	SHEET <b>19</b> OF 52
Date: September, 2019	VERT: 1" = 2'	
Dwn By: D. Fattig		
Chkd By: J. Rudloff		

FM 1765 - Texas Ave.  
(100' ROW)  
(Curb & Gutter w/  
Asphalt Overlay)  
See Sheet 13



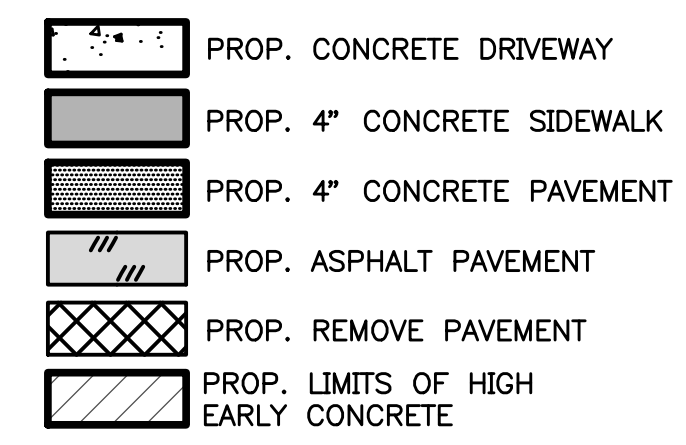
**BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)

- PAVING & DRAINAGE LEGEND:**
- 1 REMOVE EXIST. STM. SWR./CULVERT
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  - 13 PROP. 6" - 4" THICK CONCRETE SIDEWALK
  - 14 PROP. CURB RAMP PER ADA REQUIREMENTS
  - 15 REMOVE TRAFFIC SIGNAL BOX

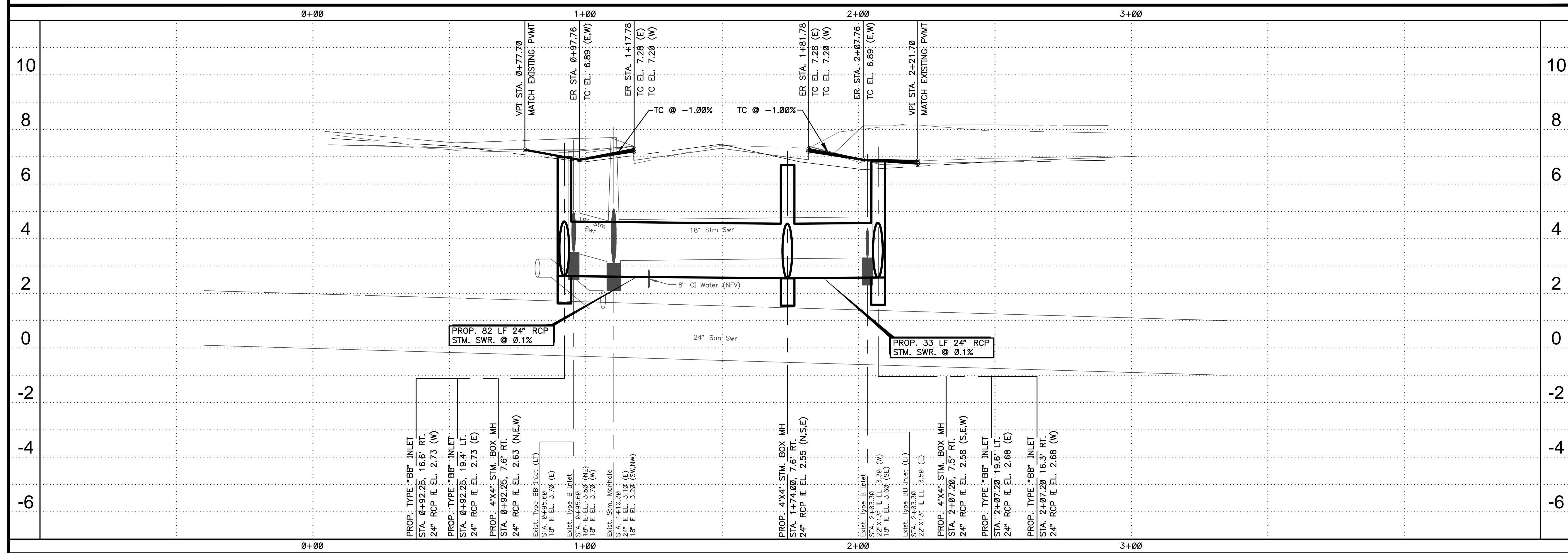


#	STATION	OFFSET
109	PT 0+77.70	19.30' LT.
110	PT 0+97.70	19.50' LT.
111	PT 1+17.70	39.50' LT.
112	PT 0+77.70	16.70' RT.
113	PT 0+97.70	16.50' RT.
114	PT 1+17.80	36.50' RT.
115	PT 1+81.70	39.60' LT.
116	PT 2+01.70	19.60' LT.
117	PT 2+21.70	19.60' LT.
118	PT 1+81.80	36.40' RT.
119	PT 2+01.70	16.40' RT.
120	PT 2+21.70	16.30' RT.

NOTE:  
LOCATION OF FIRE HYDRANTS AND WATER VALVES SHOWN ARE APPROXIMATE. ADJUSTMENT TO PROPOSED SIDEWALK & DRIVEWAYS DUE TO LOCATION OF FIRE HYDRANTS & VALVES MAY BE REQUIRED.



PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 3	13709937.43	3270194.81	6.11	MAG NAIL



MK.	DESCRIPTION	DATE	DWN.	CHK.

9-13-19

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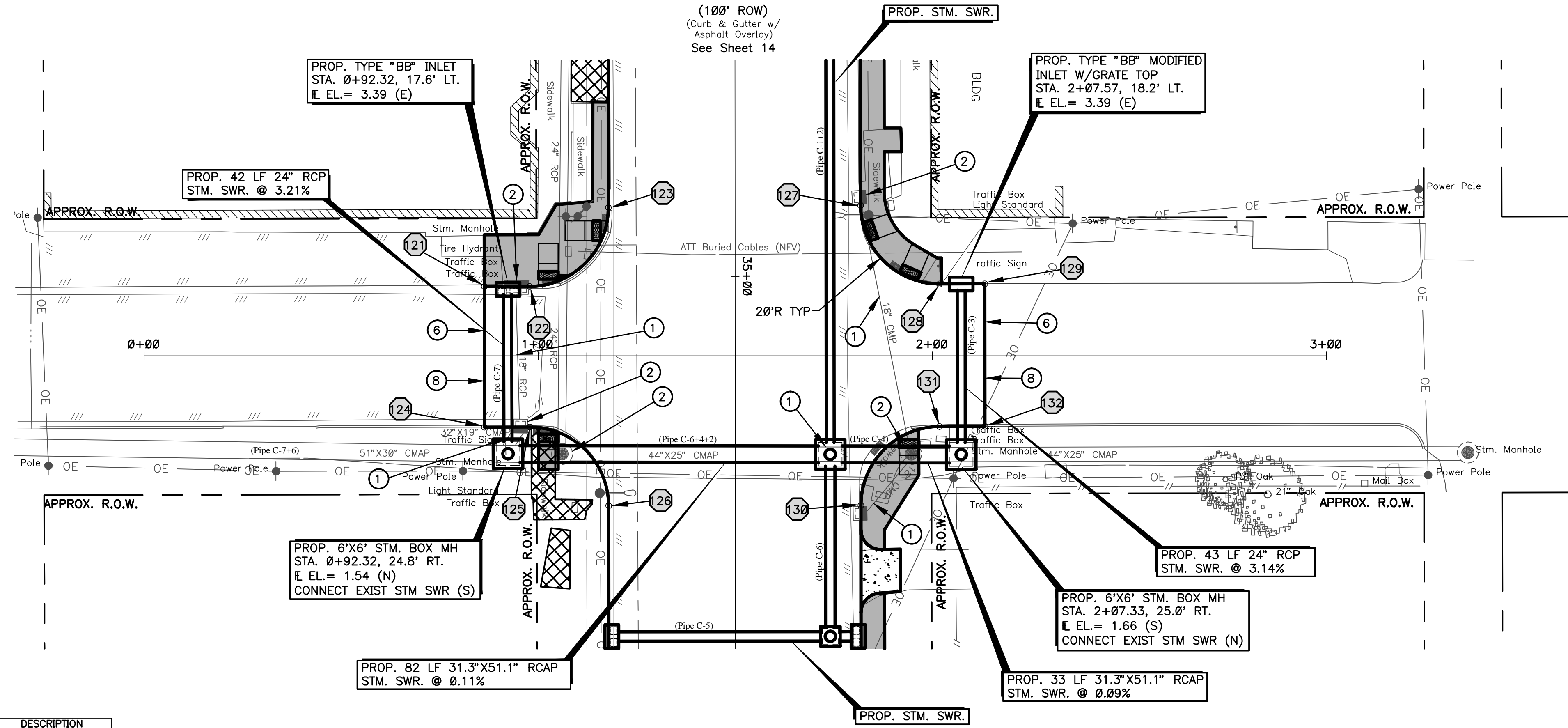
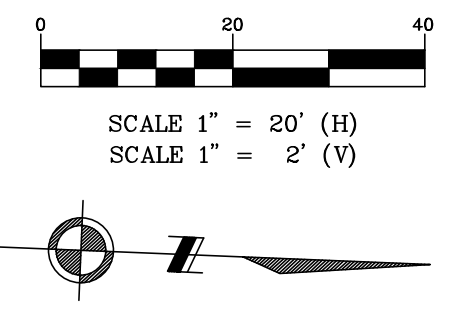
Galveston County, Texas

Texas Avenue Reconstruction

8th Street  
Sta. 0+00 to End

Job No.: 18-015	Scale: HORIZ: 1" = 20'	SHEET <b>20</b> OF 52
Date: September, 2019	VERT: 1" = 2'	
Dwn By: D. Fattig		
Chkd By: J. Rudloff		

FM 1765 - Texas Ave.  
(100' ROW)  
(Curb & Gutter w/  
Asphalt Overlay)  
See Sheet 14

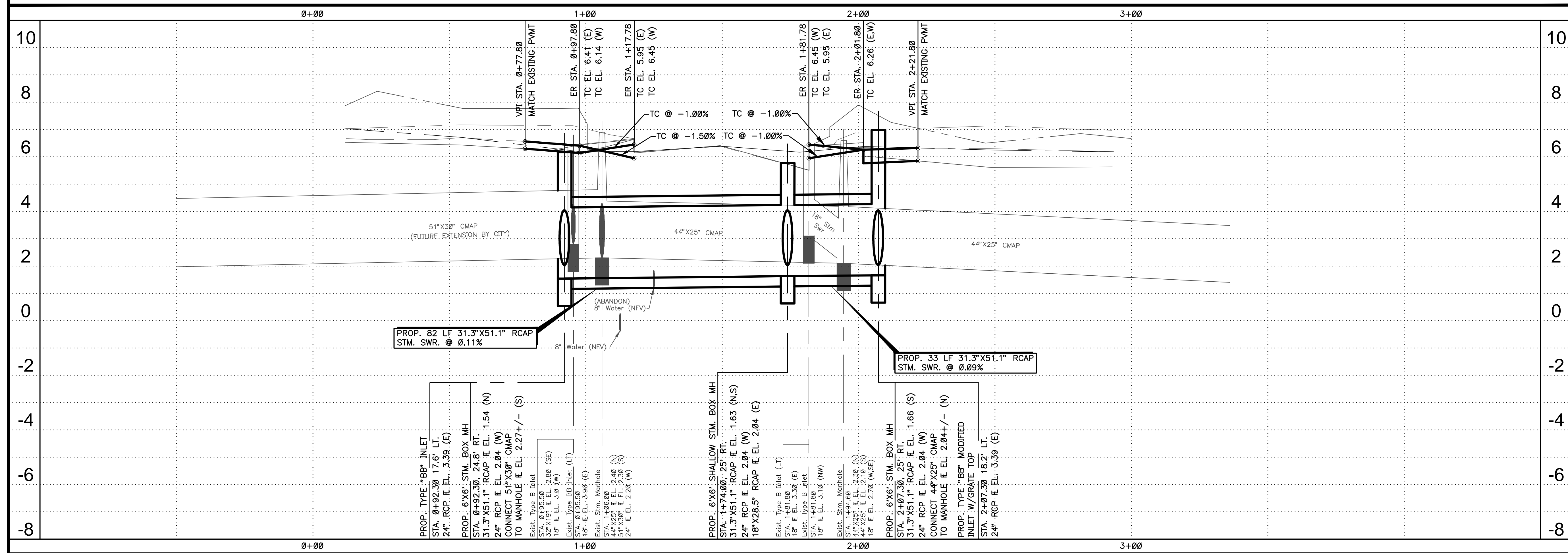


#	STATION	OFFSET
121	PT 0+86.30	17.60' LT.
122	PT 0+97.80	17.60' LT.
123	PT 1+17.80	37.60' LT.
124	PT 0+86.30	18.10' RT.
125	PT 0+97.80	18.00' RT.
126	PT 1+17.80	38.00' RT.
127	PT 1+81.80	38.20' LT.
128	PT 2+01.80	18.20' LT.
129	PT 2+13.30	18.20' LT.
130	PT 1+81.80	37.90' RT.
131	PT 2+01.80	17.90' RT.
132	PT 2+13.30	17.90' RT.

- BENCHMARK:**  
SEE SURVEY/BASELINE CONTROL MAPS FOR BENCHMARK REFERENCES/ BASELINE DATA. (SHEET 5)
- PAVING & DRAINAGE LEGEND:**
- REMOVE EXIST. STM. SWR./CULVERT
  - REMOVE EXIST. INLET/MANHOLE
  - REMOVE AND DISPOSE OF EXISTING ASPH./CONC. PAVEMENT AND BASE COURSE.
  - PROP. 8" THICK CONCRETE PAVEMENT AND 8" SUBGRADE (SUBGRADE TO EXTEND 2' OUTSIDE CURB)
  - PROP. REMOVE AND REPLACE WITH 6" CONCRETE DRIVEWAY
  - PROP. REMOVE AND REPLACE WITH 8" CONCRETE DRIVEWAY
  - PROP. CONCRETE PAVING HEADER AT EXIST. CONCRETE ROAD
  - PROP. CONCRETE PAVING HEADER AT ASPHALT ROAD
  - PROP. SAW CUT. (NO SEPARATE PAY)
  - ADJUST MANHOLES COVERS TO GRADE
  - ADJUST FIRE HYDRANT & VALVE BOXES TO GRADE
  - REMOVE/RELOCATE EXISTING SIGN (NO SEPARATE PAY)
  - PROP. 4" THICK CONCRETE PAVEMENT
  - PROTECT & BRACE LIGHT/POWER POLES AS NECESSARY (NO SEPARATE PAY)
  - PROP. 6" - 4" THICK CONCRETE SIDEWALK
  - PROP. CURB RAMP PER ADA REQUIREMENTS
  - REMOVE TRAFFIC SIGNAL BOX
- PROP. CONCRETE DRIVEWAY
  - PROP. 4" CONCRETE SIDEWALK
  - PROP. 4" CONCRETE PAVEMENT
  - PROP. ASPHALT PAVEMENT
  - PROP. REMOVE PAVEMENT
  - PROP. LIMITS OF HIGH EARLY CONCRETE

NOTE:  
LOCATION OF FIRE HYDRANTS AND WATER VALVES SHOWN ARE APPROXIMATE. ADJUSTMENT TO PROPOSED SIDEWALK & DRIVEWAYS DUE TO LOCATION OF FIRE HYDRANTS & VALVES MAY BE REQUIRED.

PT. NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 3	13709937.43	3270194.81	6.11	MAG NAIL



MK.	DESCRIPTION	DATE	DWN.	CHK.

9-13-19

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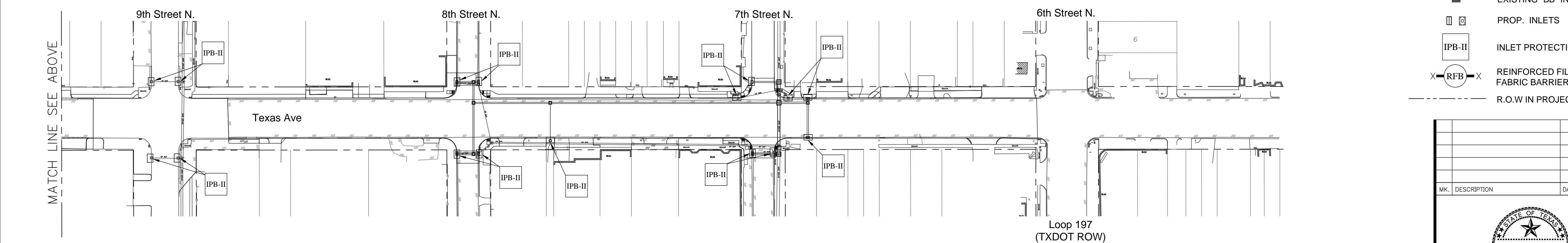
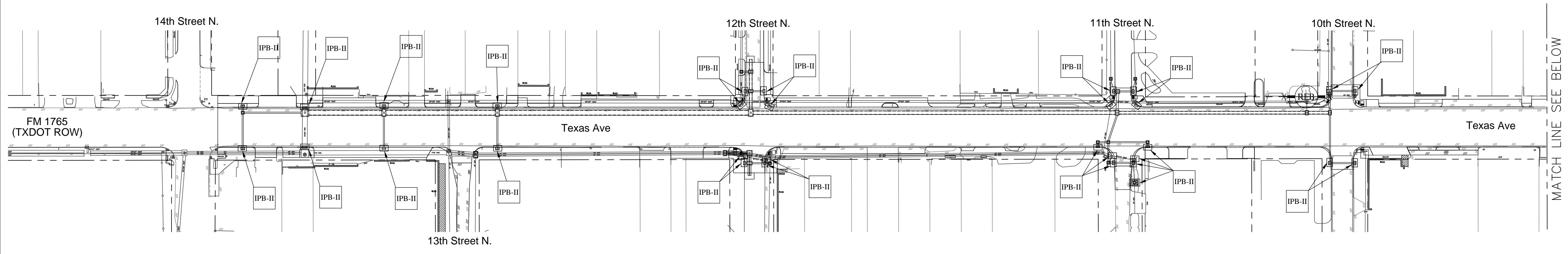
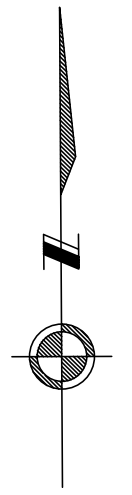
Galveston County, Texas

Texas Avenue Reconstruction

7th Street  
Sta. 0+00 to End

Job No.: 18-015	Scale:	SHEET
Date: September, 2019	HORZ: 1" = 20' VERT: 1" = 2'	
Dwn By: D. Fattig		21
Chkd By: J. Rudloff		

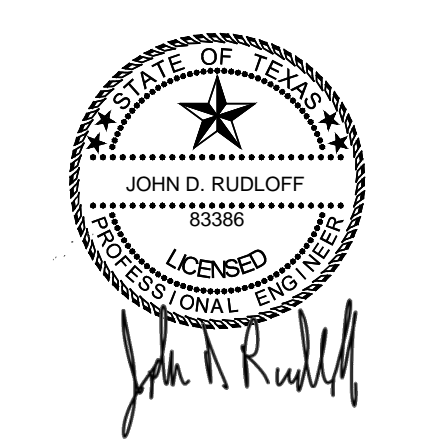
OF 52



**LEGEND**

- EXISTING STORM SEWER
- EXISTING MANHOLE
- EXISTING "A" INLET
- EXISTING "BB" INLET
- PROP. INLETS
- IPB-II INLET PROTECTION BARRIER
- ⊗ RFB ⊗ REINFORCED FILTER FABRIC BARRIER
- - - R.O.W IN PROJECT AREA

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19

**EROSION & SEDIMENTATION CONTROL NOTES:**

1. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS AT LOCATION SHOWN ON PLANS.
2. CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEM THROUGHOUT THE DURATION OF THE CONTRACT. (NO SEPARATE PAY).
3. CONTRACTOR SHALL PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS, AND OTHER POTENTIALLY TOXIC MATERIALS.
4. CONTRACTOR SHALL LOCATE FUEL/MATERIAL STORAGE AREAS AWAY FROM STORM WATER CONVEYANCE SYSTEMS. CONTRACTOR SHALL USE BERMS AROUND FUEL STORAGE AREAS. (NO SEPARATE PAY).
5. CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT AREA AND THE ACTION TAKEN TO REMEDY THE PROBLEM.
6. CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF HIS FUELS, MATERIALS, AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER. (NO SEPARATE PAY). NO DISPOSAL SHALL BE PERMITTED ON PROJECT SITE.
7. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.
8. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATELY MAINTAINED SANITARY FACILITIES.
9. AT COMPLETION OF THE CONTRACT, OWNER AND/OR OWNER'S REPRESENTATIVE WITH THE CONTRACTOR SHALL EXAMINE EROSION AND SEDIMENTATION CONTROL SYSTEM BEFORE RELIEVING CONTRACTOR OF HIS MAINTENANCE RESPONSIBILITIES.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR STREET CLEANING, ON A DAILY BASIS, OF ALL MUD AND DIRT DEPOSITED ON THE EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY.
11. INLETS AND MANHOLES THAT ARE NOT COMPLETE AND/OR ARE SUBJECT TO CONVEYING STORM WATER FLOWS ARE TO BE PROTECTED TO PREVENT SEDIMENT FROM ENTERING THE PROPOSED OR EXISTING STORM SEWER SYSTEM.
12. IF PAVING CONTRACTOR REMOVES OR PUNCTURES TIMBER GRATE TO ESTABLISH DRAINAGE, INLET MUST BE SURROUNDED BY INLET FILTER FABRIC AS SHOWN IN DETAILS.
13. FILTER FABRIC TO BE CLEANED OR REPLACED WHEN IT CEASES TO FUNCTION PROPERLY OR AS DIRECTED BY THE ENGINEER.
14. LOCATION OF CONSTRUCTION ACCESS IS APPROXIMATE. EXACT LOCATION SHALL BE BASED ON THE ACTUAL SEQUENCING OF WORK AND LOCATIONS FOR EGRESS OF THE SITE BY THE CONTRACTOR.



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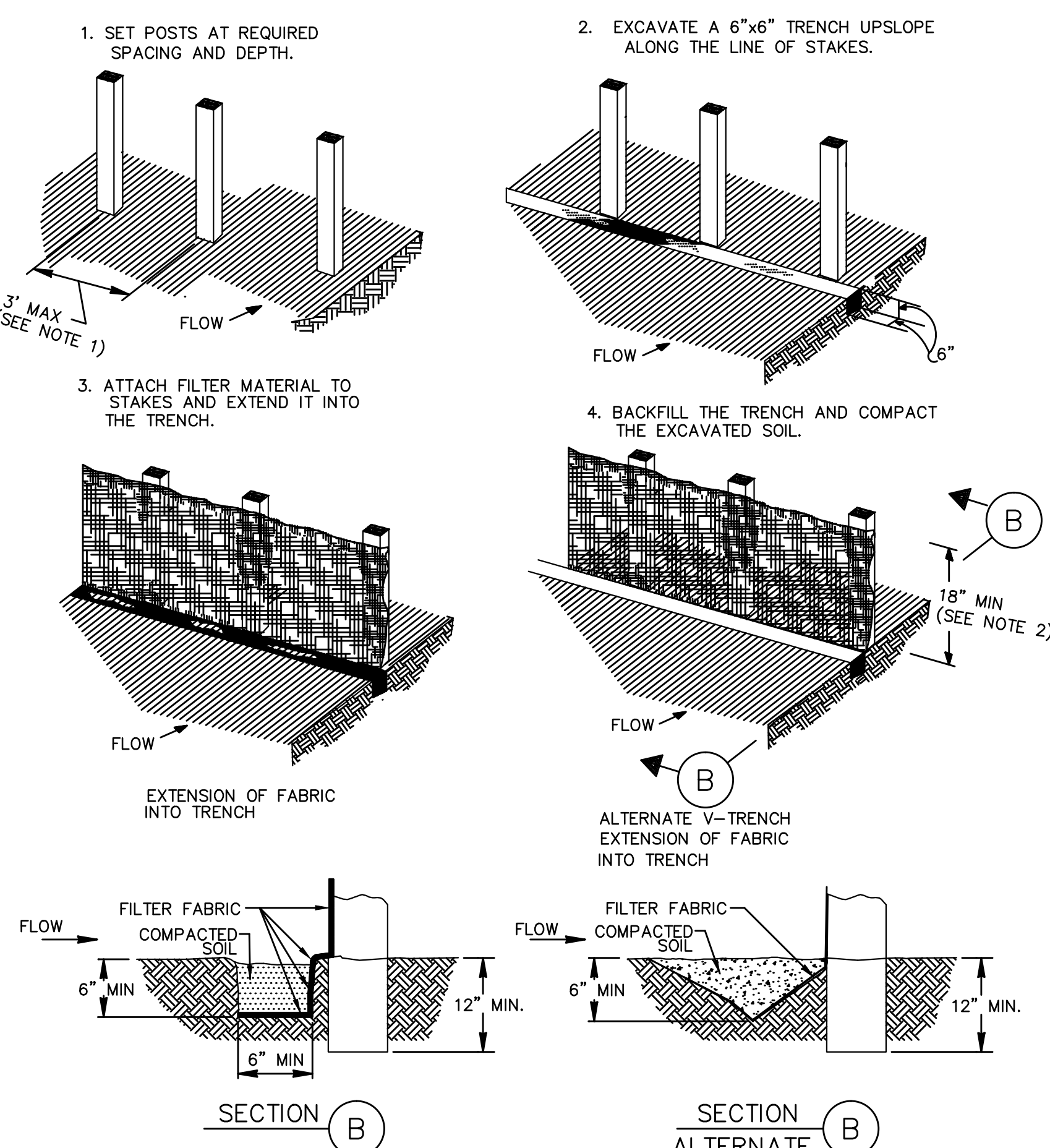
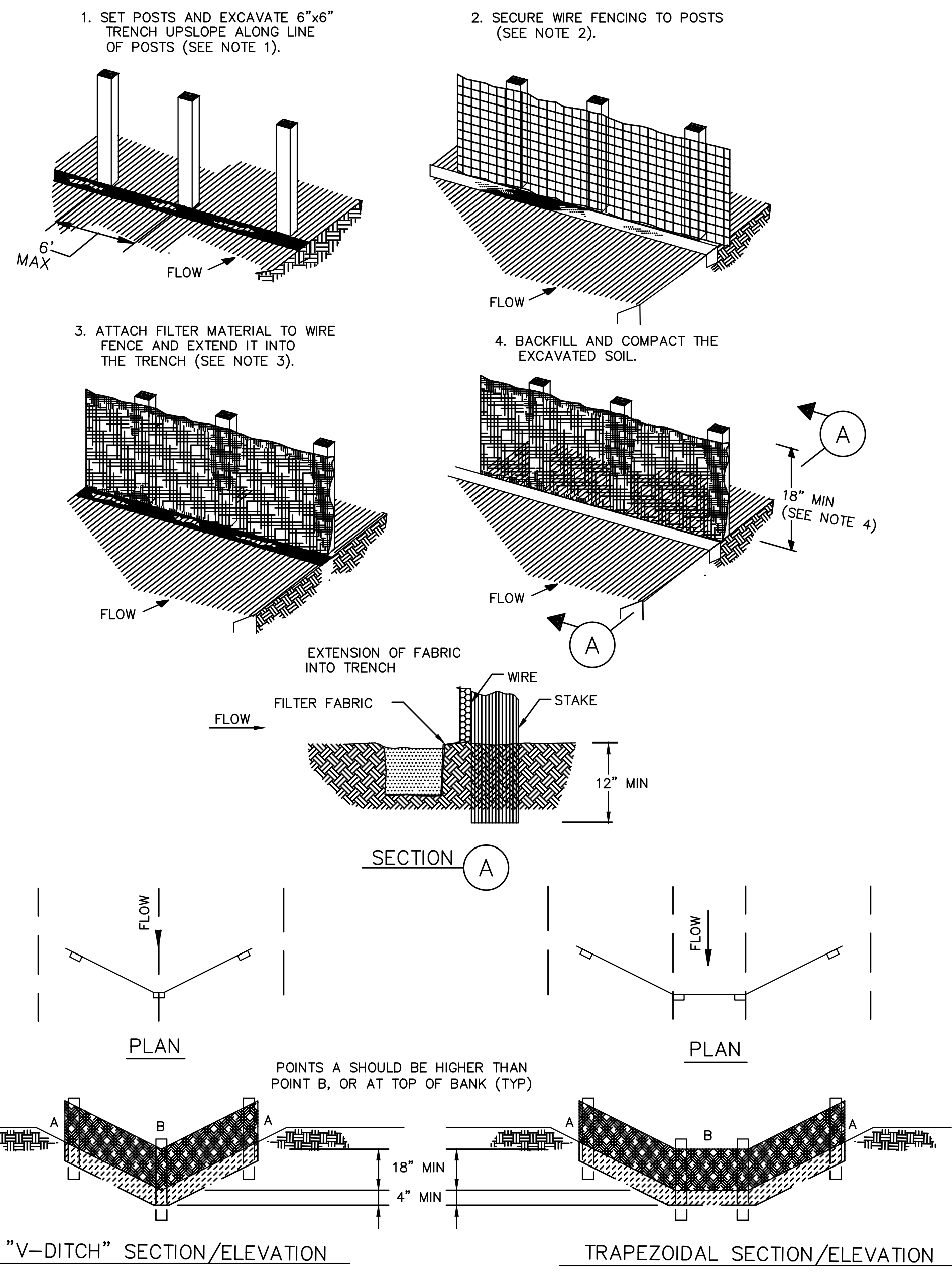
Galveston County, Texas

Texas Avenue Reconstruction

Stormwater Pollution Prevention Plan

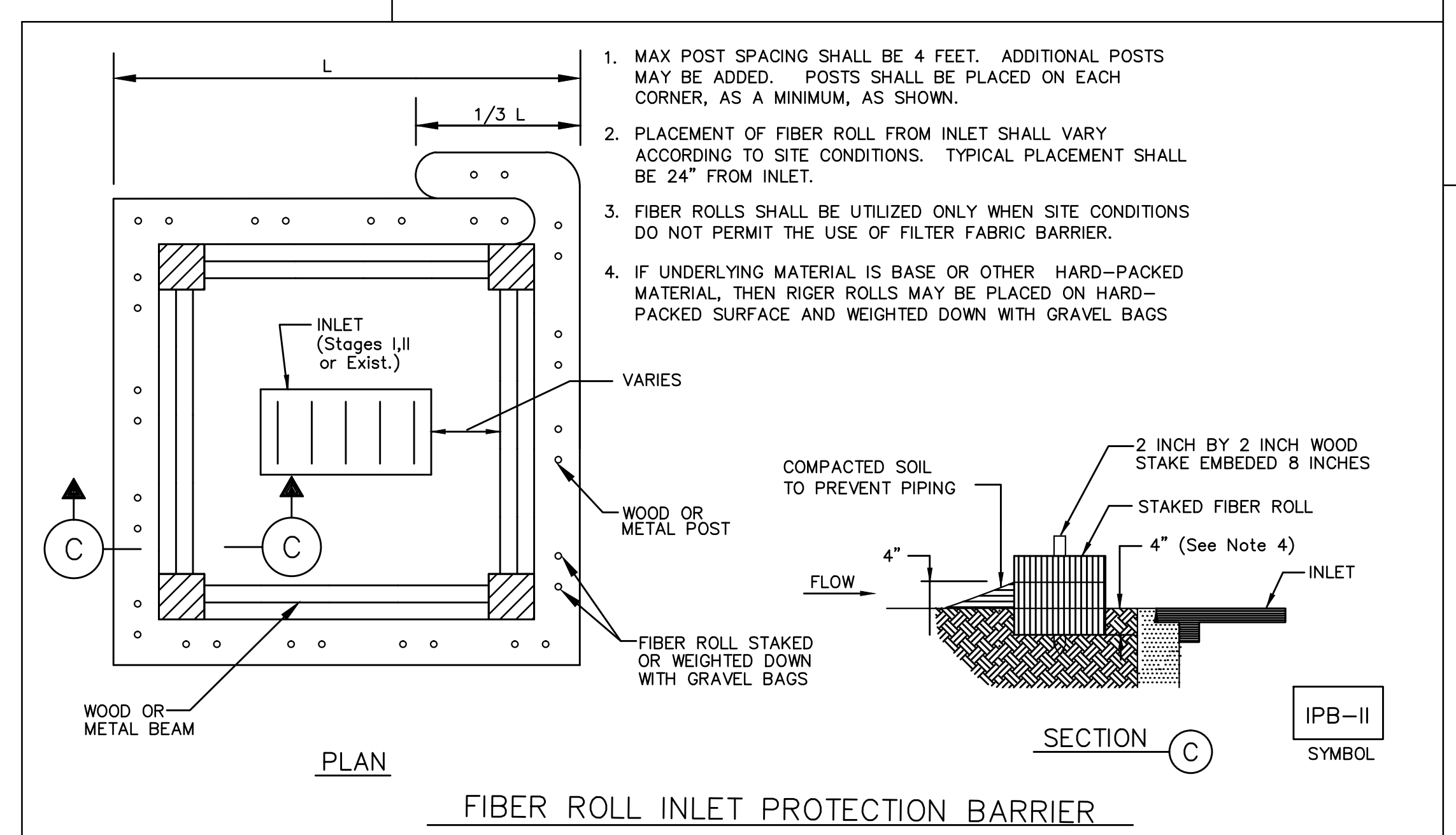
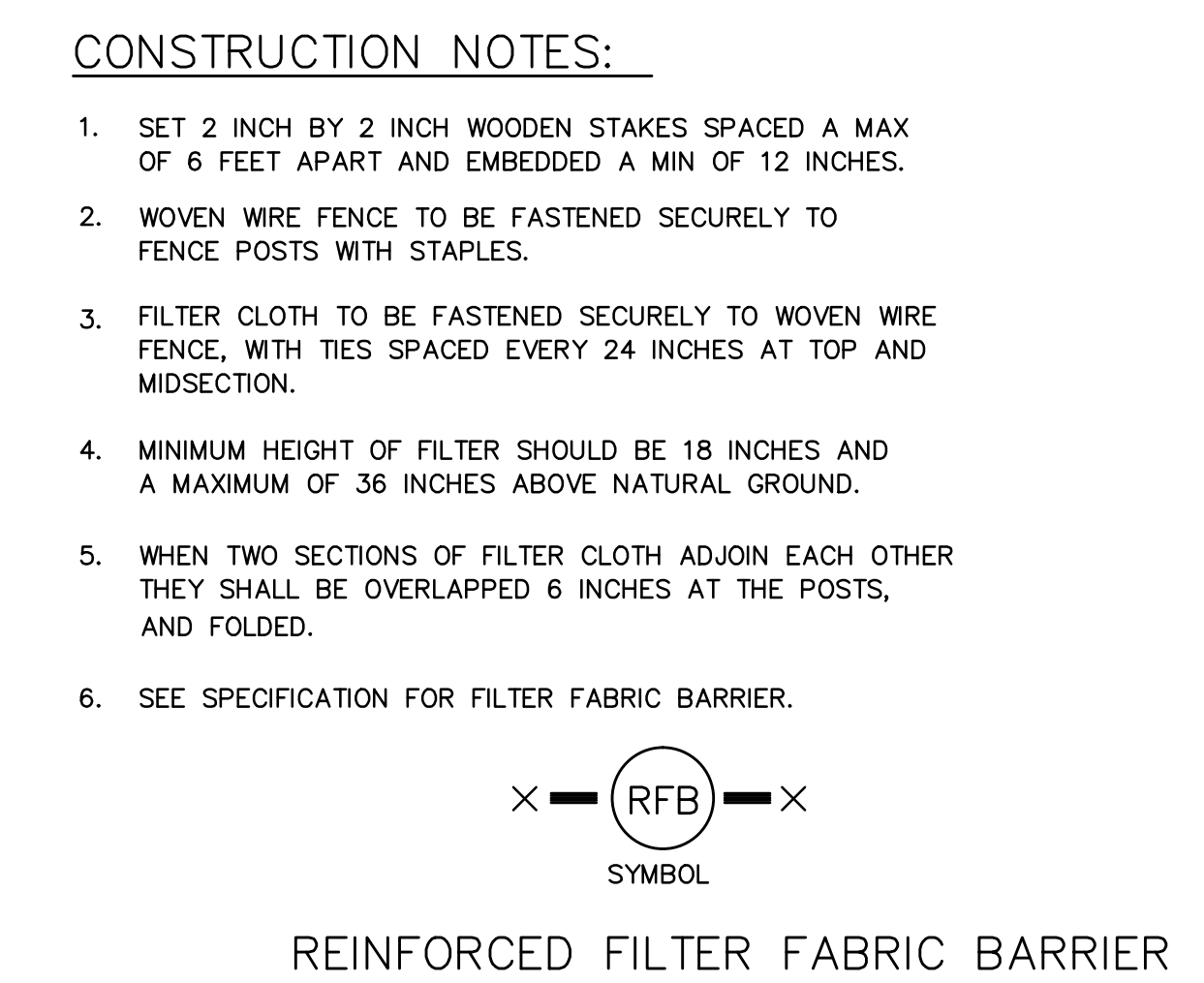
Job No.: 18-015	Scale: HORZ: 1" = 80'	SHEET <b>22</b> OF 52
Date: September, 2019	VERT:	
Dwn By: D. Fattig		
Chkd By: J. Rudloff		



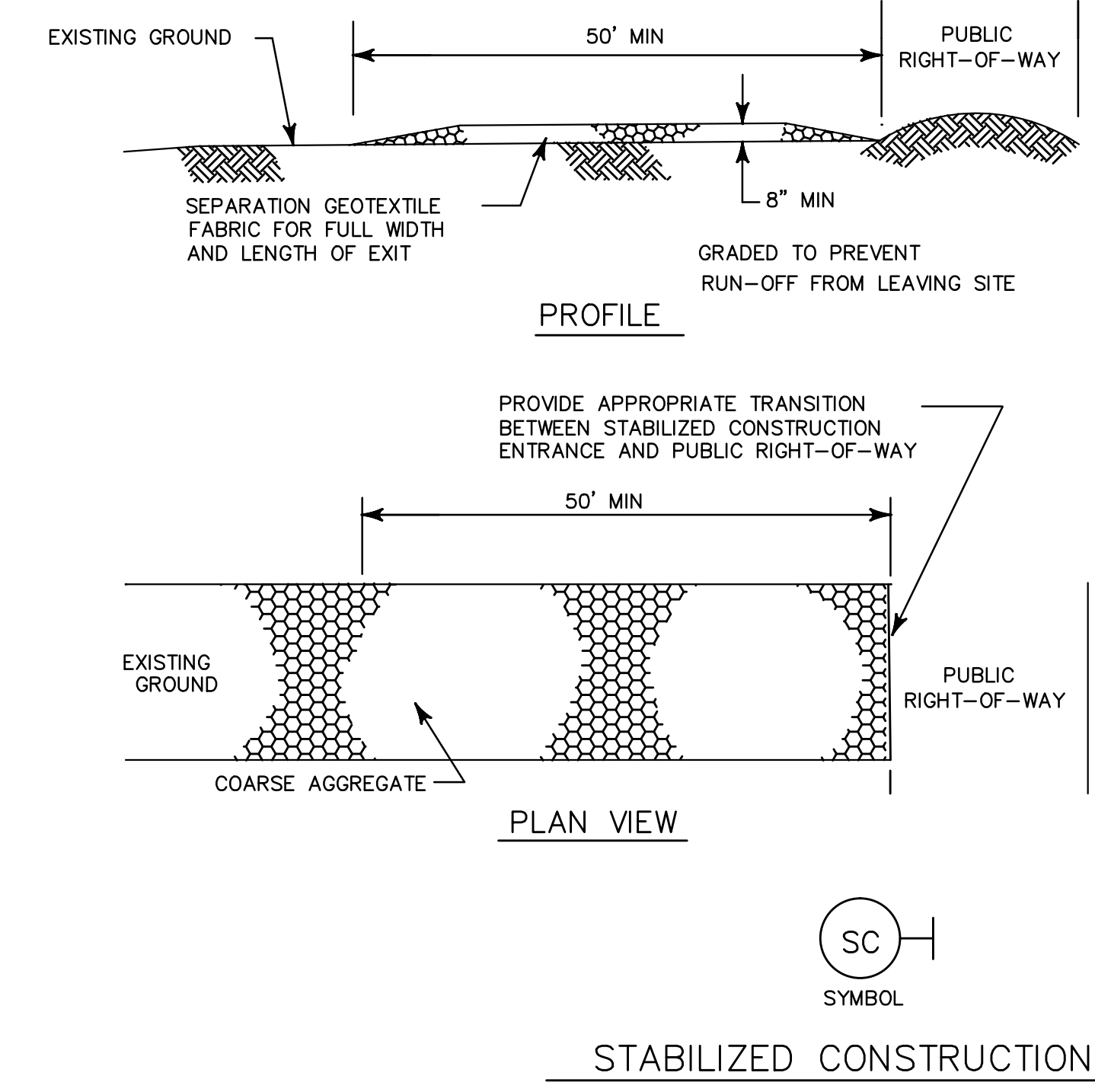


- CONSTRUCTION NOTES:**
- 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 12 INCHES. IF PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 6 FEET MAX.
  - ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC FENCE SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
  - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
  - SEE SPECIFICATION FOR FILTER FABRIC FENCE.

**FILTER FABRIC FENCE**



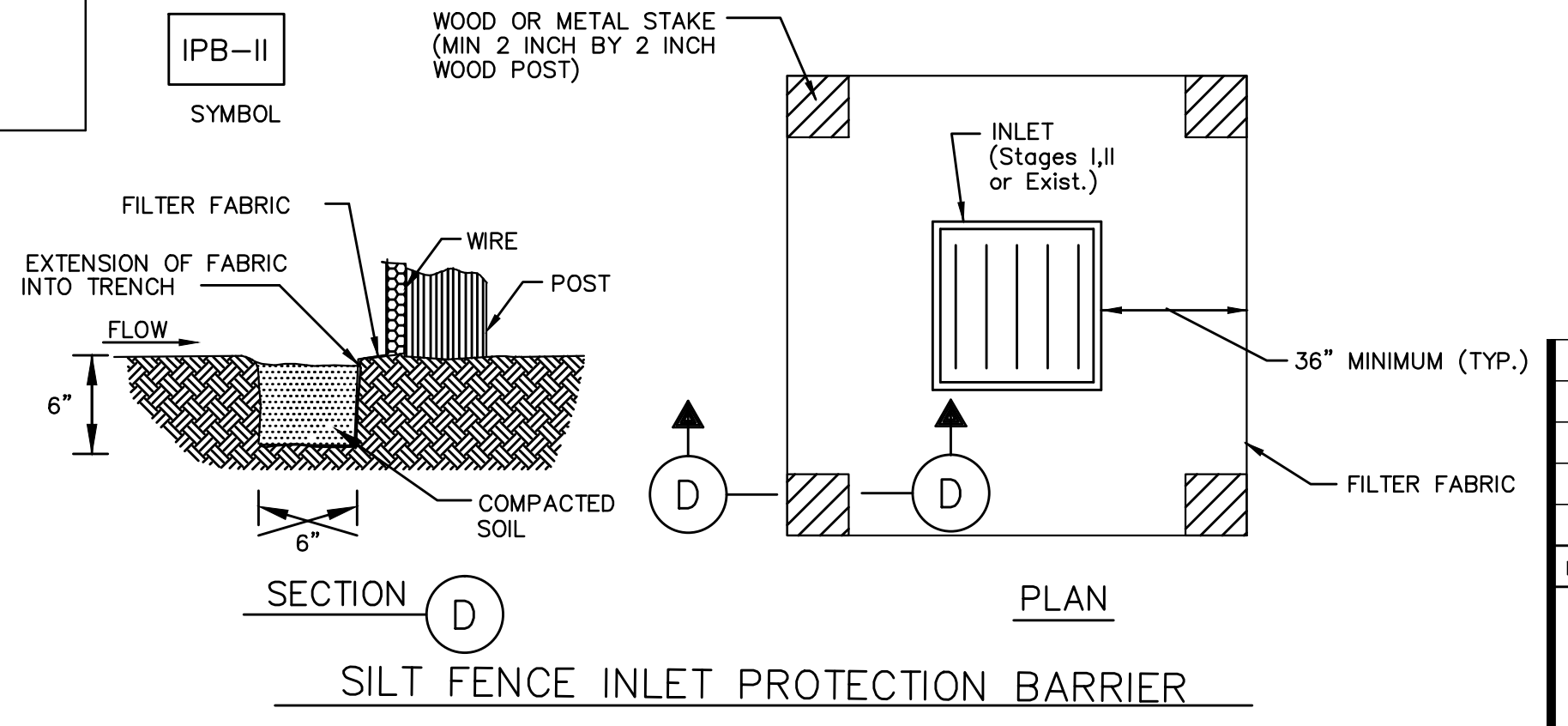
**FIBER ROLL INLET PROTECTION BARRIER**



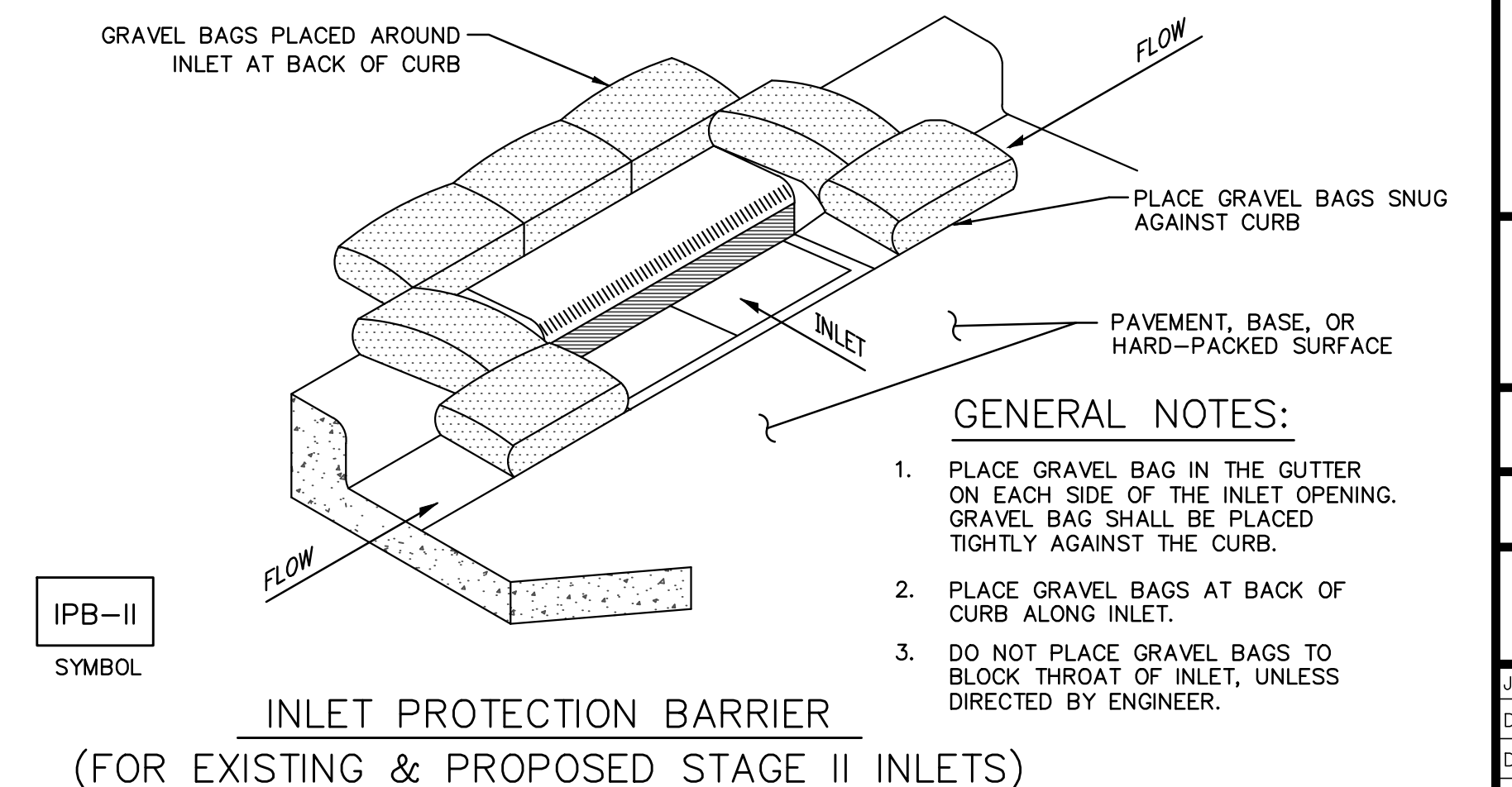
**STABILIZED CONSTRUCTION EXIT**

- CONSTRUCTION NOTES:**
- LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
  - THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
  - WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
  - STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
  - STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMMODATE A TRUCK WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE TRUCK WASHING AREA.
  - SEE SPECIFICATION FOR STABILIZED CONSTRUCTION EXIT.
  - STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.

- CONSTRUCTION NOTE:**
- MAX. POST SPACING SHALL BE 4 FEET. ADDITIONAL POSTS MAY BE ADDED. POSTS SHALL BE PLACED ON EACH CORNER, AS A MINIMUM, AS SHOWN.
  - PLACEMENT OF FILTER FABRIC BARRIER FROM INLET SHALL VARY ACCORDING TO SITE CONDITIONS. TYPICAL PLACEMENT SHALL BE 36" MINIMUM FROM INLET EDGE.



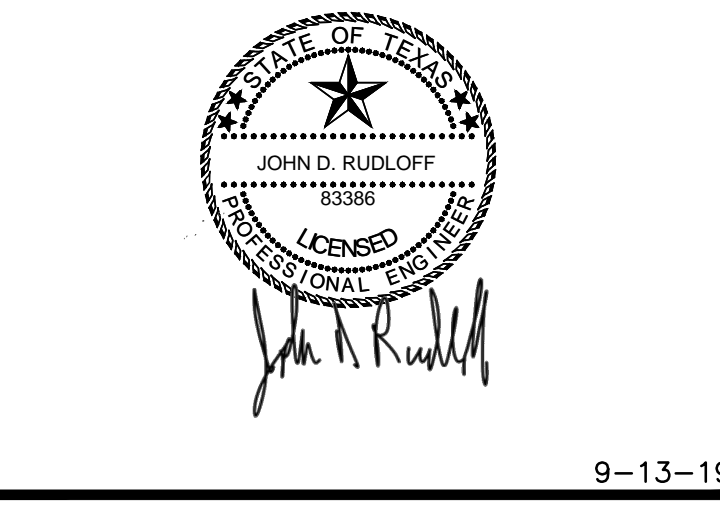
**SILTY FENCE INLET PROTECTION BARRIER**



**INLET PROTECTION BARRIER (FOR EXISTING & PROPOSED STAGE II INLETS)**

- GENERAL NOTES:**
- PLACE GRAVEL BAG IN THE GUTTER ON EACH SIDE OF THE INLET OPENING. GRAVEL BAG SHALL BE PLACED TIGHTLY AGAINST THE CURB.
  - PLACE GRAVEL BAGS AT BACK OF CURB ALONG INLET.
  - DO NOT PLACE GRAVEL BAGS TO BLOCK THROAT OF INLET, UNLESS DIRECTED BY ENGINEER.

MK.	DESCRIPTION	DATE	DWN.	CHK.



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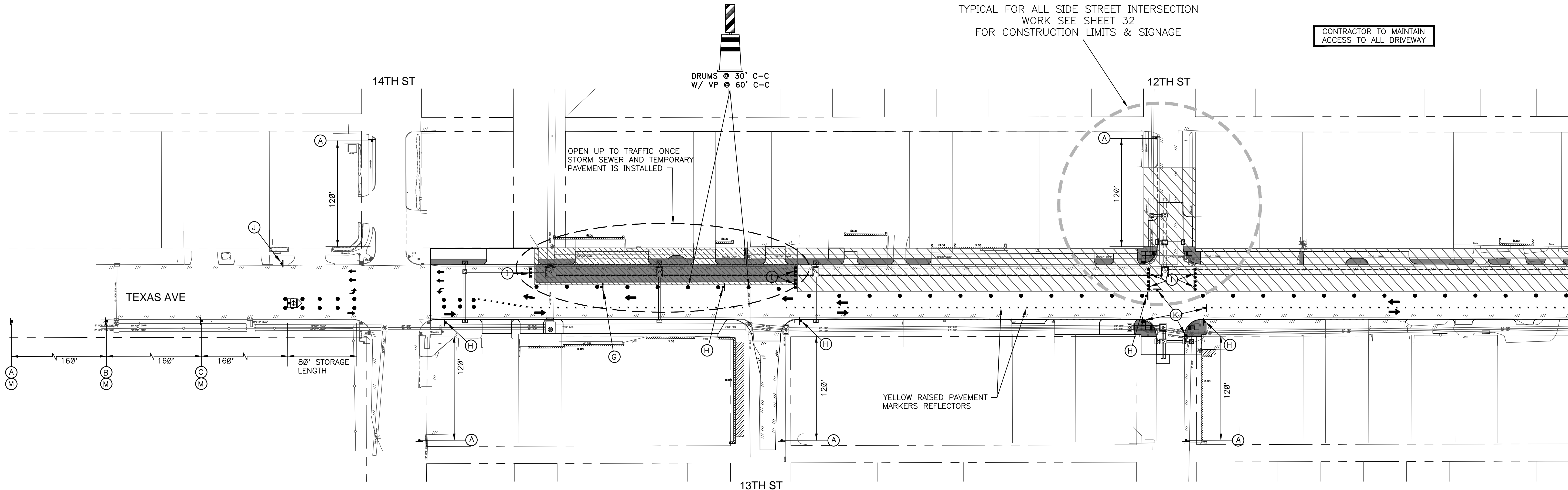
Texas Avenue Reconstruction

SWPPP Details

Job No.: 18-015	Scale: N/A	SHEET
Date: September, 2019	HORZ: N/A	23
Dwn By: D. Fattig	VERT: N/A	OF 52
Chkd By: J Rudloff		

TYPICAL FOR ALL SIDE STREET INTERSECTION  
WORK SEE SHEET 32  
FOR CONSTRUCTION LIMITS & SIGNAGE

CONTRACTOR TO MAINTAIN  
ACCESS TO ALL DRIVEWAY



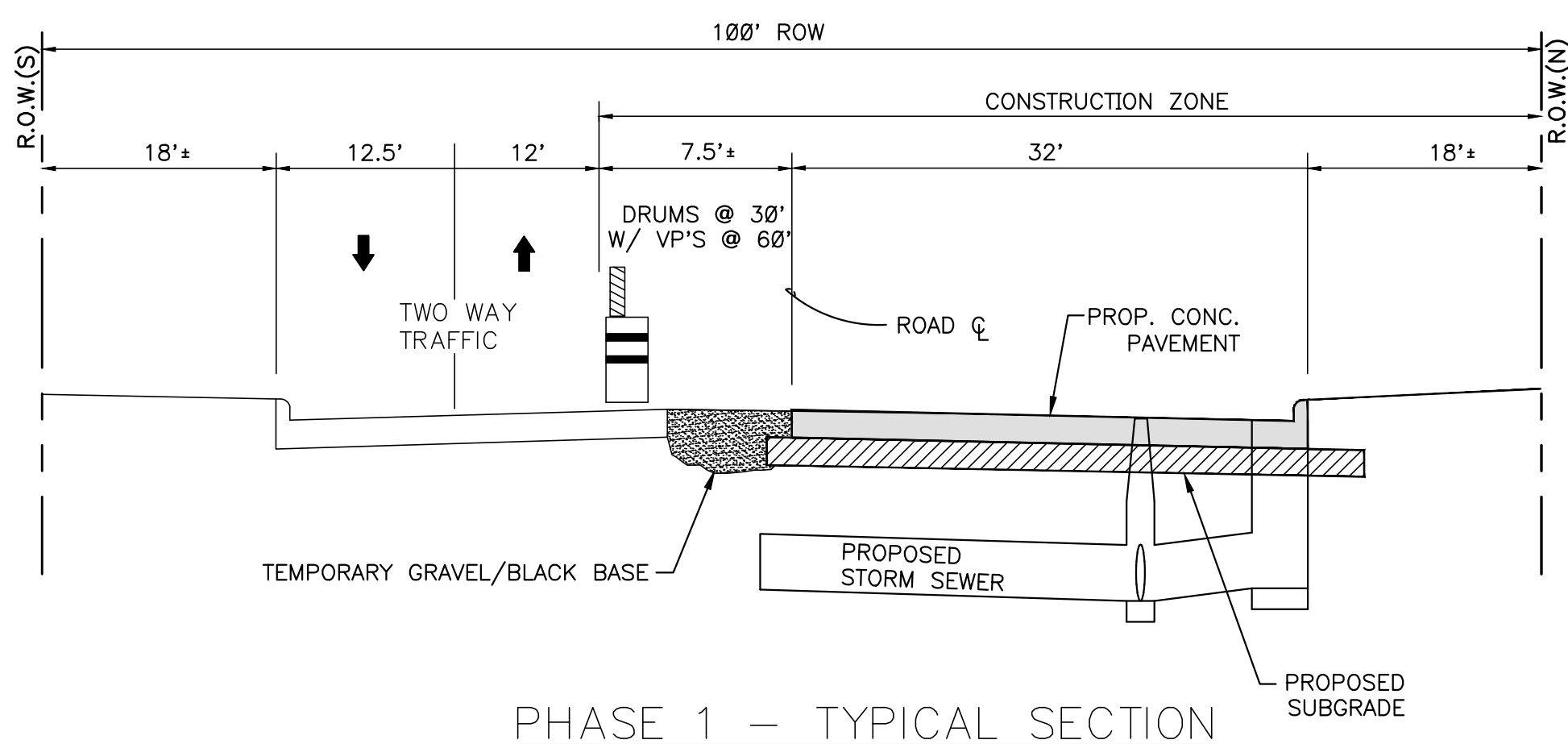
MATCH LINE STA. 16+00 SEE SHEET 25

**LEGEND**

- PHASE 1 PVMT CONSTRUCTION
- PHASE 1A STORM SEWER CONSTRUCTION ONLY (TEMPORARY BLACK BASE REPAIR)
- PHASE 2 PVMT CONSTRUCTION
- PHASE 3 PVMT CONSTRUCTION
- PHASE 4 PVMT CONSTRUCTION
- TEMPORARY BLACK BASE REPAIR
- COMPLETED CONCRETE PAVEMENT
- TRAFFIC FLOW
- DRUMS
- TRAFFIC SIGNS
- RAISED PAVEMENT MARKERS REFLECTORS
- TRAILER MOUNTED FLASHING ARROW BOARD

**PHASE 1/1A PAVEMENT NOTES:**

1. CLOSE WESTBOUND LANES FROM 6th STREET TO 13th STREET PLACE TRAFFIC CONTROL SIGNAGE, DETOUR SIGNS, DEVICES AND DRUMS.
2. ONCE INSTALLATION OF STORM SEWER AND TEMPORARY PAVEMENT IN PHASE 1A AREA IS COMPLETE. CONTRACTOR IS TO OPEN UP THIS AREA (PHASE 1A) TO TRAFFIC FLOW WESTBOUND.
3. PLACE TWO-WAY TRAFFIC ON EASTBOUND LANES TO PROVIDE TEMPORARY LOCAL ACCESS.
4. INSTALL STORM SEWER ALONG THE ROADWAY AS INDICATED ON PLANS.
5. BACKFILL STORM SEWER IMMEDIATELY TO MAINTAIN ACCESS TO DRIVEWAYS AND SIDE STREETS. (NO SEPARATE PAY)
6. FOLLOW UP WITH PAVING ON WESTBOUND LANES FROM 13th STREET TO 6th STREET.
7. CONTINUE TO MAINTAIN ACCESS TO DRIVEWAYS. (NO SEPARATE PAY)
8. NO TWO CONSECUTIVE INTERSECTION CAN BE CLOSE AT THE SAME TIME.



**TEXAS AVE SPEED LIMIT**  
WEST OF 14th STREET - 35 MPH  
EAST OF 14th STREET - 30 MPH

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

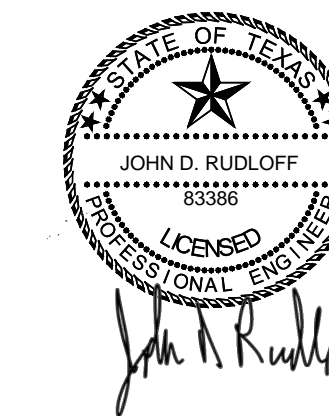
\* Conventional Roads Only  
\*\* Taper lengths have been rounded off.  
L=Length of Taper(F) W=Width of Offset(S) S=Posted Speed(MPH)

SEE SHEET 32 FOR TYPICAL  
DETOUR LAYOUT FOR  
CONSTRUCTION OF SIDE STREETS

**GENERAL NOTES:**

1. CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC CONTROL DEVICES AS PER THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TXMUTCD).
2. THE TRAFFIC CONTROL PLAN AND DETAILS INCLUDED IN THE PLAN DRAWINGS ARE PROVIDED AS A GUIDE TO THE CONTRACTOR AND ARE THE MINIMUM REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR PREPARATION AND SUBMITTAL OF A REVISED TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL IF IMPLEMENTED DIFFERENTLY FROM WHAT IS SHOWN ON THE PLAN DRAWINGS.
3. THIS IS A GENERAL LAYOUT. IT IS NOT THE INTENT OF HAVING THE ENTIRE HALF OF ROADWAY REMOVE FROM END TO END AT ONE TIME. THE WORK SHALL BE LIMITED TO TWO BLOCKS AT A TIME.
4. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO ALL BUSINESS DURING CONSTRUCTION. THIS MAY REQUIRE LEAVING SEGMENTS OF EXISTING PAVEMENT AVAILABLE FOR ACCESS WHILE ADJACENT PAVEMENT IS POURED AND CURED.
5. ANY ADJUSTMENTS TO THE TRAFFIC CONTROL PLAN, INCLUDING PROVISION OF ADDITIONAL TRAFFIC CONTROL DEVICES AND SIGNAGE, AS NEEDED TO FACILITATE SMOOTH FLOW OF TRAFFIC AND TO ACCOMMODATE FIELD CONDITIONS SHALL BE CONSIDERED INCIDENTAL TO THE TRAFFIC CONTROL AND REGULATION BID ITEM.
6. CONTRACTOR SHALL MAINTAIN ALL WEATHER ACCESS TO RESIDENTIAL AND COMMERCIAL PROPERTIES ADJACENT TO AND IN THE WORK AREAS AT ALL TIMES.
7. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSTAL SERVICE AND TRASH PICKUP SERVICE TO RESIDENTS DURING THE DURATION OF CONSTRUCTION OPERATIONS.

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



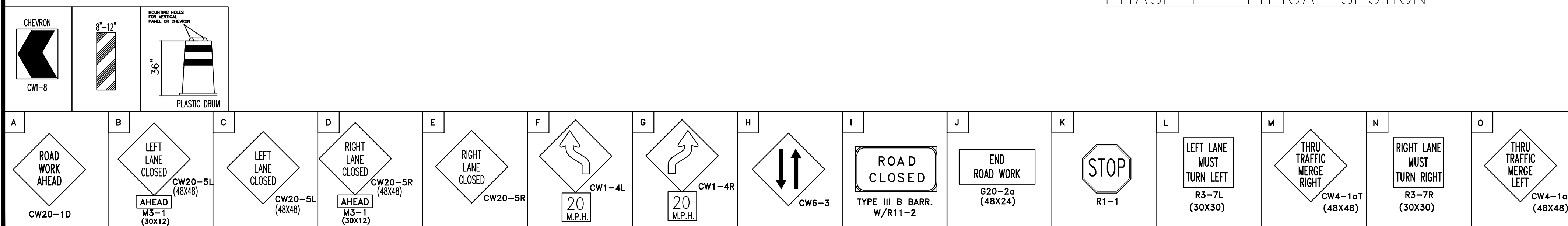
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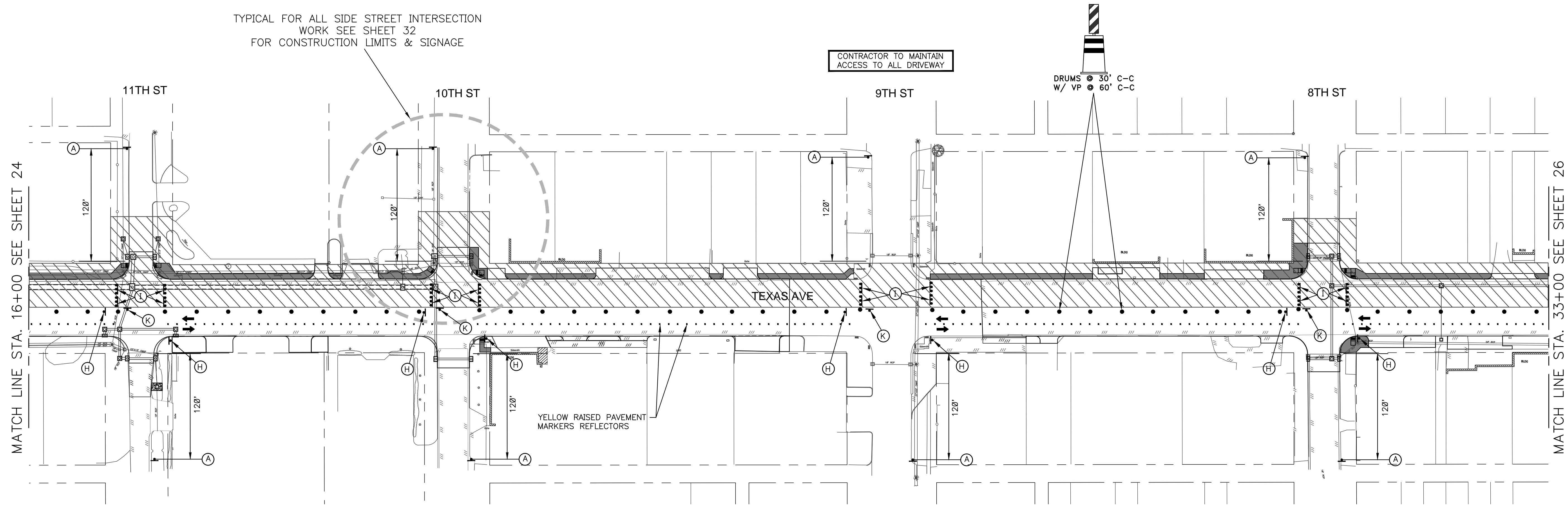
Phase 1 Traffic Layout - 1 of 3

Job No.: 18-015	Scale: 1"=40'	SHEET
Date: September, 2019	HORZ: 1"=40'	24
Dwn By: D. Fattig	VERT:	
Chk By: J Rudloff		OF 52



TYPICAL FOR ALL SIDE STREET INTERSECTION WORK SEE SHEET 32 FOR CONSTRUCTION LIMITS & SIGNAGE

CONTRACTOR TO MAINTAIN ACCESS TO ALL DRIVEWAY



MATCH LINE STA. 16+00 SEE SHEET 24

MATCH LINE STA. 33+00 SEE SHEET 26

LEGEND

- PHASE 1 PVMT CONSTRUCTION
- PHASE 1A STORM SEWER CONSTRUCTION ONLY (TEMPORARY BLACK BASE REPAIR)
- PHASE 2 PVMT CONSTRUCTION
- PHASE 3 PVMT CONSTRUCTION
- PHASE 4 PVMT CONSTRUCTION
- TEMPORARY BLACK BASE REPAIR
- COMPLETED CONCRETE PAVEMENT
- TRAFFIC FLOW
- DRUMS
- TRAFFIC SIGNS
- RAISED PAVEMENT MARKERS REFLECTORS
- TRAILER MOUNTED FLASHING ARROW BOARD

PHASE 1 PAVEMENT NOTES:

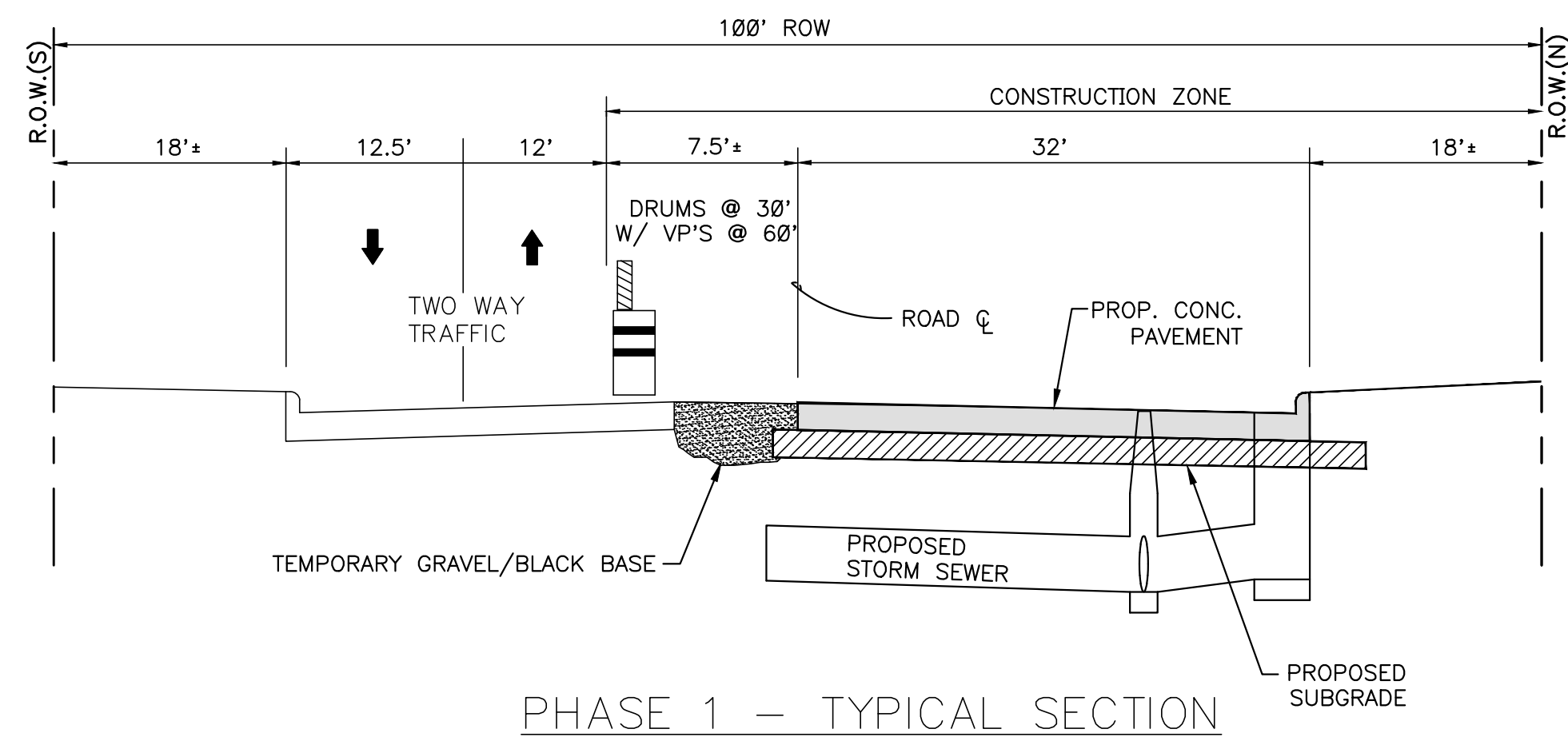
- CLOSE WESTBOUND LANES FROM 6th STREET TO 13th STREET PLACE TRAFFIC CONTROL SIGNAGE, DETOUR SIGNS, DEVICES AND DRUMS.
- PLACE TWO-WAY TRAFFIC ON EASTBOUND LANES TO PROVIDE TEMPORARY LOCAL ACCESS.
- INSTALL STORM SEWER ALONG THE ROADWAY AS INDICATED ON PLANS.
- BACKFILL STORM SEWER IMMEDIATELY TO MAINTAIN ACCESS TO DRIVEWAYS AND SIDE STREETS. (NO SEPARATE PAY)
- FOLLOW UP WITH PAVING ON WESTBOUND LANES FROM 13th STREET TO 6th STREET.
- CONTINUE TO MAINTAIN ACCESS TO DRIVEWAYS. (NO SEPARATE PAY)
- NO TWO CONSECUTIVE INTERSECTION CAN BE CLOSE AT THE SAME TIME.

TEXAS AVE SPEED LIMIT  
WEST OF 14th STREET - 35 MPH  
EAST OF 14th STREET - 30 MPH

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

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

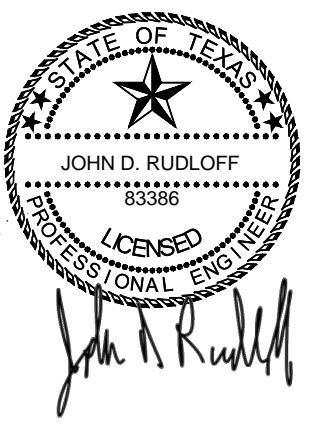
SEE SHEET 32 FOR TYPICAL DETOUR LAYOUT FOR CONSTRUCTION OF SIDE STREETS



GENERAL NOTES:

- CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC CONTROL DEVICES AS PER THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TXMUTCD).
- THE TRAFFIC CONTROL PLAN AND DETAILS INCLUDED IN THE PLAN DRAWINGS ARE PROVIDED AS A GUIDE TO THE CONTRACTOR AND ARE THE MINIMUM REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR PREPARATION AND SUBMITTAL OF A REVISED TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL IF IMPLEMENTED DIFFERENTLY FROM WHAT IS SHOWN ON THE PLAN DRAWINGS.
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- ANY ADJUSTMENTS TO THE TRAFFIC CONTROL PLAN, INCLUDING PROVISION OF ADDITIONAL TRAFFIC CONTROL DEVICES AND SIGNAGE AS NEEDED TO FACILITATE SMOOTH FLOW OF TRAFFIC AND TO ACCOMMODATE FIELD CONDITIONS SHALL BE CONSIDERED INCIDENTAL TO THE TRAFFIC CONTROL AND REGULATION BID ITEM.
- CONTRACTOR SHALL MAINTAIN ALL WEATHER ACCESS TO RESIDENTIAL AND COMMERCIAL PROPERTIES ADJACENT TO AND IN THE WORK AREAS AT ALL TIMES.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSTAL SERVICE AND TRASH PICKUP SERVICE TO RESIDENTS DURING THE DURATION OF CONSTRUCTION OPERATIONS.

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19

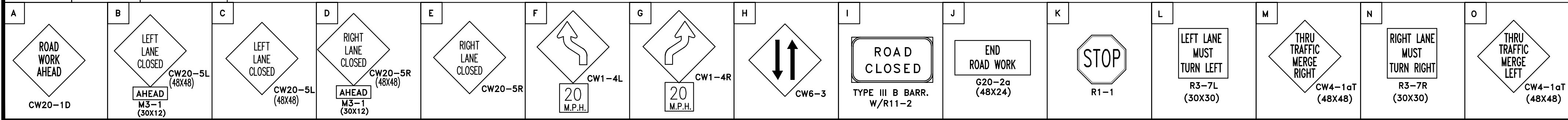
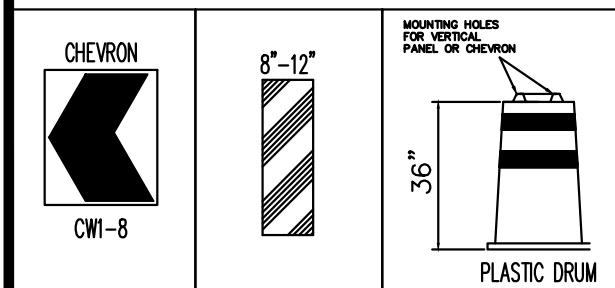
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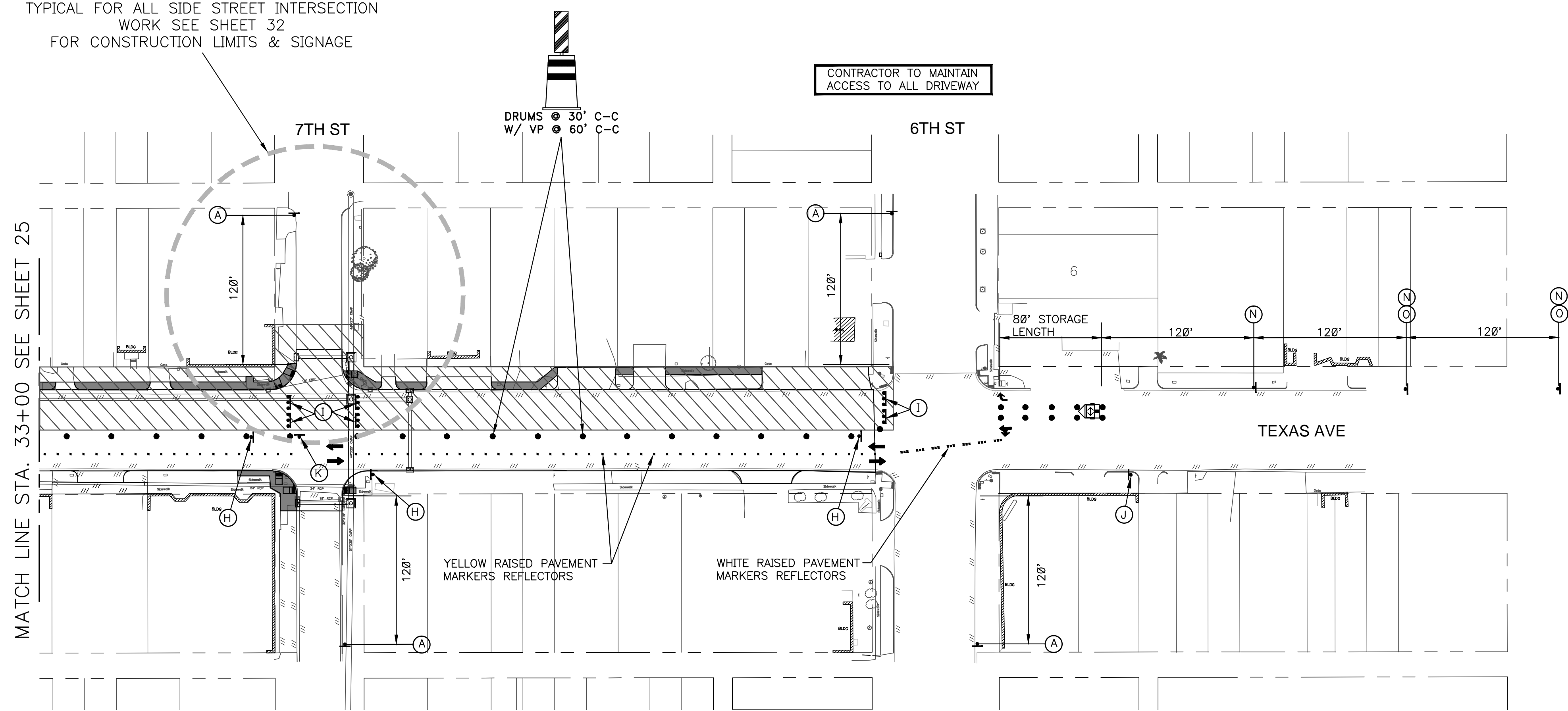
Texas Avenue Reconstruction

Phase 1 Traffic Layout - 2 of 3

Job No.: 18-015	Scale: 1"=40'	SHEET
Date: September, 2019	HORZ: 1"=40'	25
Dwn By: D. Fattig	VERT:	
Chk By: J Rudloff		OF 52



TYPICAL FOR ALL SIDE STREET INTERSECTION  
WORK SEE SHEET 32  
FOR CONSTRUCTION LIMITS & SIGNAGE

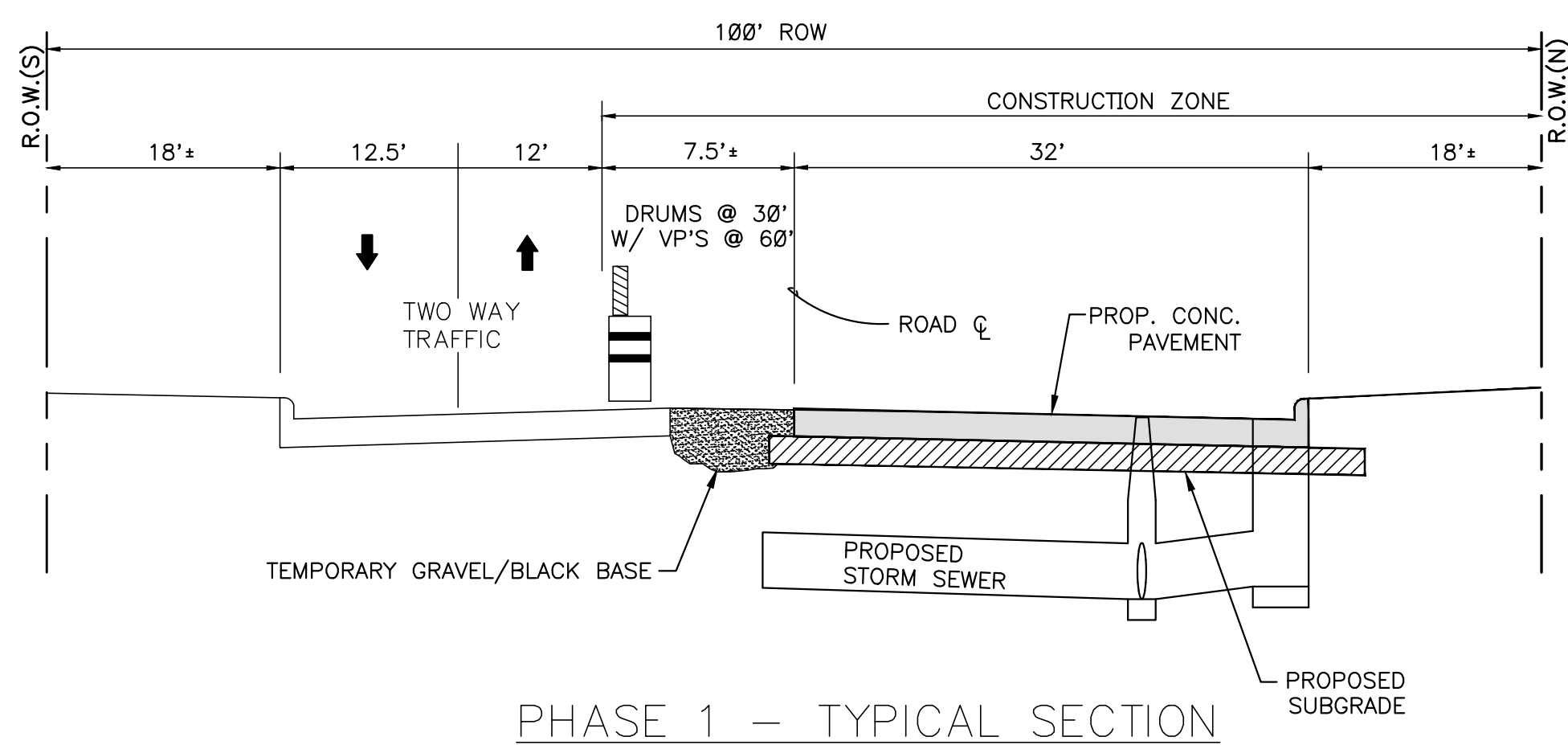


**LEGEND**

- PHASE 1 PVMT CONSTRUCTION
- PHASE 1A STORM SEWER CONSTRUCTION ONLY (TEMPORARY BLACK BASE REPAIR)
- PHASE 2 PVMT CONSTRUCTION
- PHASE 3 PVMT CONSTRUCTION
- PHASE 4 PVMT CONSTRUCTION
- TEMPORARY BLACK BASE REPAIR
- COMPLETED CONCRETE PAVEMENT
- TRAFFIC FLOW
- DRUMS
- TRAFFIC SIGNS
- RAISED PAVEMENT MARKERS REFLECTORS
- TRAILER MOUNTED FLASHING ARROW BOARD

**PHASE 1 PAVEMENT NOTES:**

- CLOSE WESTBOUND LANES FROM 6th STREET TO 13th STREET PLACE TRAFFIC CONTROL SIGNAGE, DETOUR SIGNS, DEVICES AND DRUMS.
- PLACE TWO-WAY TRAFFIC ON EASTBOUND LANES TO PROVIDE TEMPORARY LOCAL ACCESS.
- INSTALL STORM SEWER ALONG THE ROADWAY AS INDICATED ON PLANS.
- BACKFILL STORM SEWER IMMEDIATELY TO MAINTAIN ACCESS TO DRIVEWAYS AND SIDE STREETS. (NO SEPARATE PAY)
- FOLLOW UP WITH PAVING ON WESTBOUND LANES FROM 13th STREET TO 6th STREET.
- CONTINUE TO MAINTAIN ACCESS TO DRIVEWAYS. (NO SEPARATE PAY)
- NO TWO CONSECUTIVE INTERSECTION CAN BE CLOSE AT THE SAME TIME.



TEXAS AVE SPEED LIMIT  
WEST OF 14th STREET - 35 MPH  
EAST OF 14th STREET - 30 MPH

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

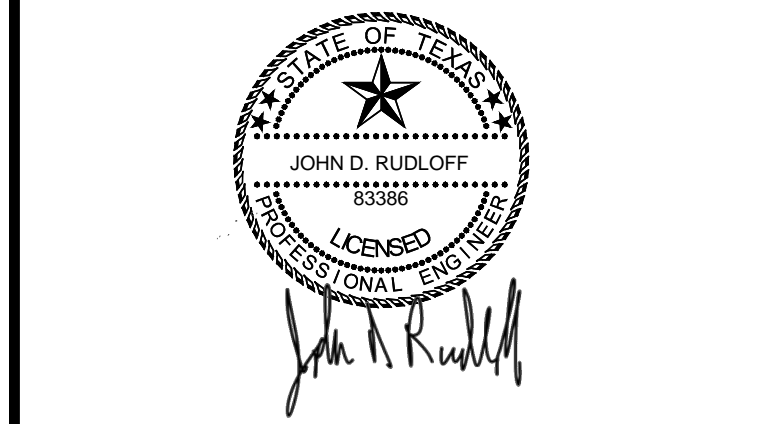
\* Conventional Roads Only  
\*\* Taper lengths have been rounded off.  
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

SEE SHEET 32 FOR TYPICAL  
DETOUR LAYOUT FOR  
CONSTRUCTION OF SIDE STREETS

MK.	DESCRIPTION	DATE	DWN.	CHK.

**GENERAL NOTES:**

- CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC CONTROL DEVICES AS PER THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TXMUTCD).
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9-13-19



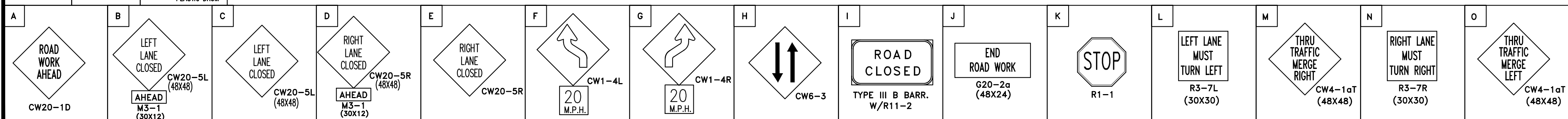
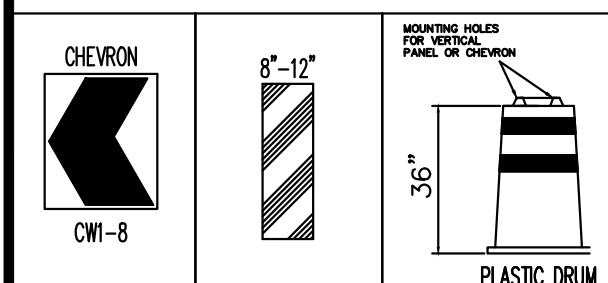
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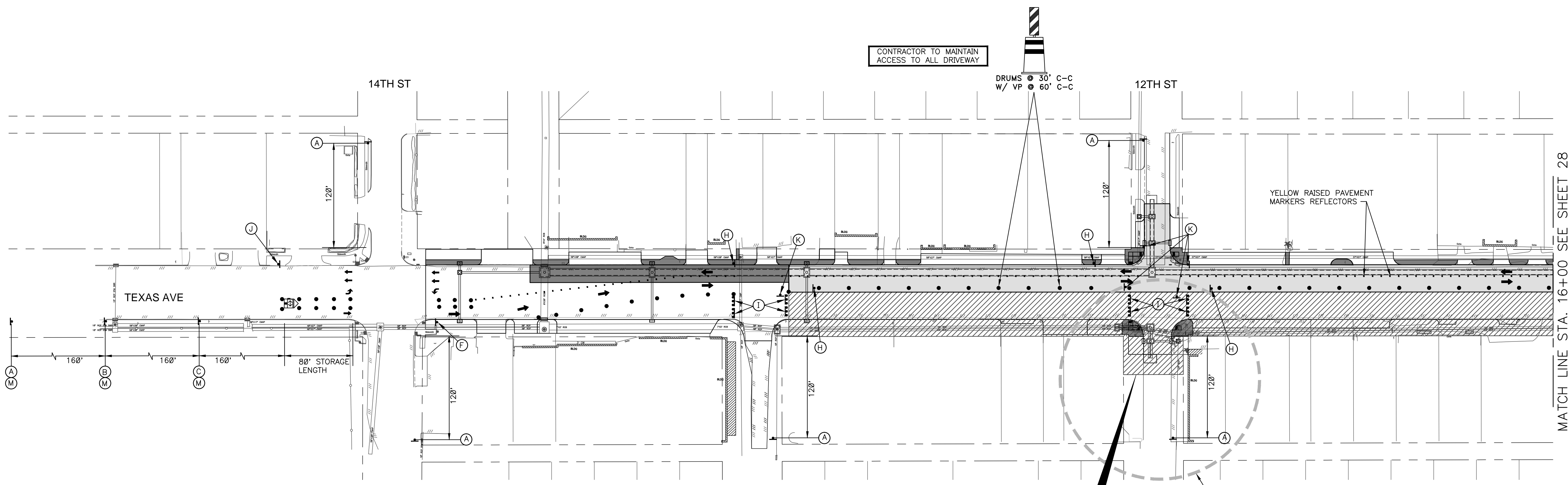
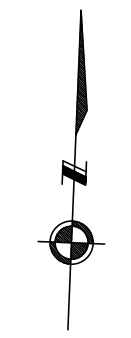
Galveston County, Texas

Texas Avenue Reconstruction

Phase 1 Traffic Layout - 3 of 3

Job No.: 18-015	Scale: 1"=40'	SHEET
Date: September, 2019	HORIZ: 1"=40'	26
Dwn By: D. Fattig	VERT:	
Chk By: J Rudloff		OF 52





MATCH LINE STA. 16+00 SEE SHEET 28

CONTRACTOR TO MAINTAIN ACCESS TO ALL DRIVEWAY

DRUMS @ 30' W/ VP @ 60' C-C

YELLOW RAISED PAVEMENT MARKERS REFLECTORS

11TH STREET PAVING & DRAINAGE MUST BE COMPLETE BEFORE 12TH STREET STORM SEWER (SOUTH SIDE) CAN BE BUILT

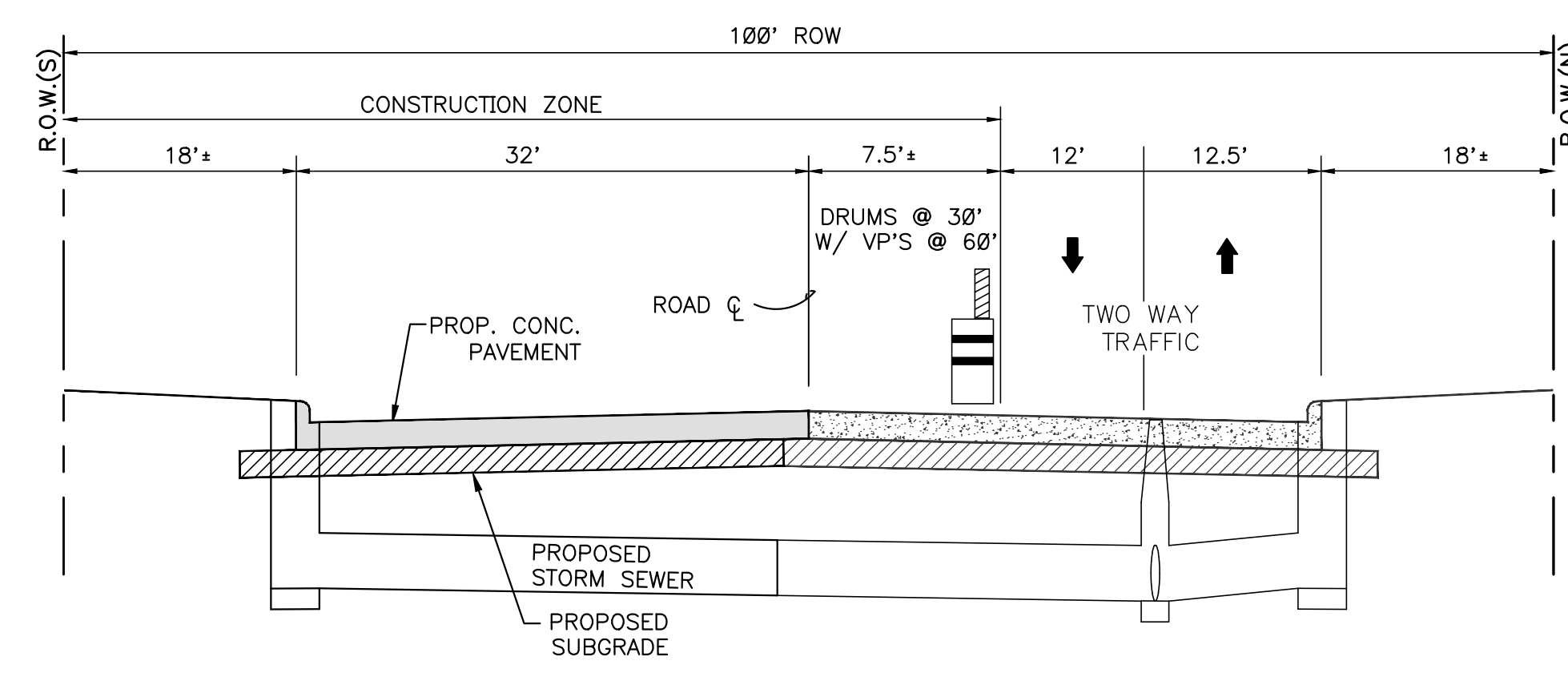
TYPICAL FOR ALL SIDE STREET INTERSECTION WORK SEE SHEET 32 FOR CONSTRUCTION LIMITS & SIGNAGE

LEGEND

- PHASE 1 PVMT CONSTRUCTION
- PHASE 1A STORM SEWER CONSTRUCTION ONLY (TEMPORARY BLACK BASE REPAIR)
- PHASE 2 PVMT CONSTRUCTION
- PHASE 3 PVMT CONSTRUCTION
- PHASE 4 PVMT CONSTRUCTION
- TEMPORARY BLACK BASE REPAIR
- COMPLETED CONCRETE PAVEMENT
- TRAFFIC FLOW
- DRUMS
- TRAFFIC SIGNS
- RAISED PAVEMENT MARKERS REFLECTORS
- TRAILER MOUNTED FLASHING ARROW BOARD

PHASE 2 PAVEMENT NOTES:

1. CLOSE EASTBOUND LANES FROM 6th STREET TO 13th STREET AND PLACE TRAFFIC CONTROL SIGNAGE, DETOUR SIGNS, DEVICES AND DRUMS.
2. PLACE TWO-WAY TRAFFIC ALONG WESTBOUND LANES TO PROVIDE TEMPORARY LOCAL ACCESS.
3. INSTALL STORM SEWER LATERALS AND INLETS ALONG THE SIDE OF THE ROADWAY AS INDICATED ON PLANS.
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5. FOLLOW UP WITH PAVING ON EASTBOUND LANES FROM 13th STREET TO 6th STREET
6. CONTINUE TO MAINTAIN ACCESS TO DRIVEWAYS. (NO SEPARATE PAY)
7. NO TWO CONSECUTIVE INTERSECTION CAN BE CLOSE AT THE SAME TIME.



PHASE 2 - TYPICAL SECTION

TEXAS AVE SPEED LIMIT WEST OF 14th STREET - 35 MPH EAST OF 14th STREET - 30 MPH

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

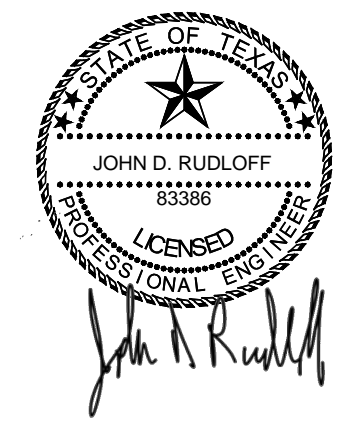
\* Conventional Roads Only  
\*\* Taper lengths have been rounded off.  
† Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

GENERAL NOTES:

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6. CONTRACTOR SHALL MAINTAIN ALL WEATHER ACCESS TO RESIDENTIAL AND COMMERCIAL PROPERTIES ADJACENT TO AND IN THE WORK AREAS AT ALL TIMES.
7. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSTAL SERVICE AND TRASH PICKUP SERVICE TO RESIDENTS DURING THE DURATION OF CONSTRUCTION OPERATIONS.

SEE SHEET 32 FOR TYPICAL DETOUR LAYOUT FOR CONSTRUCTION OF SIDE STREETS

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



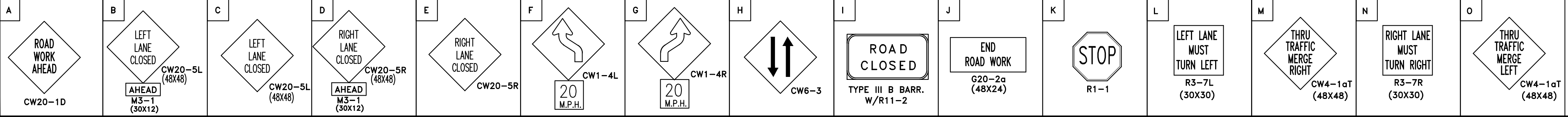
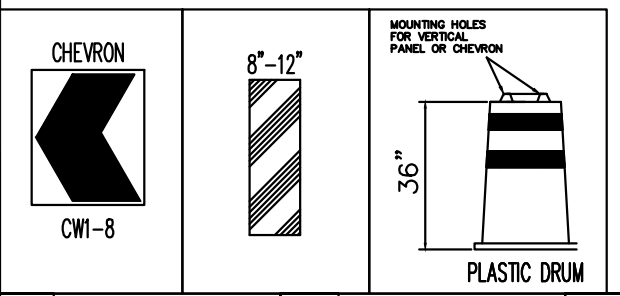
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Galveston County, Texas

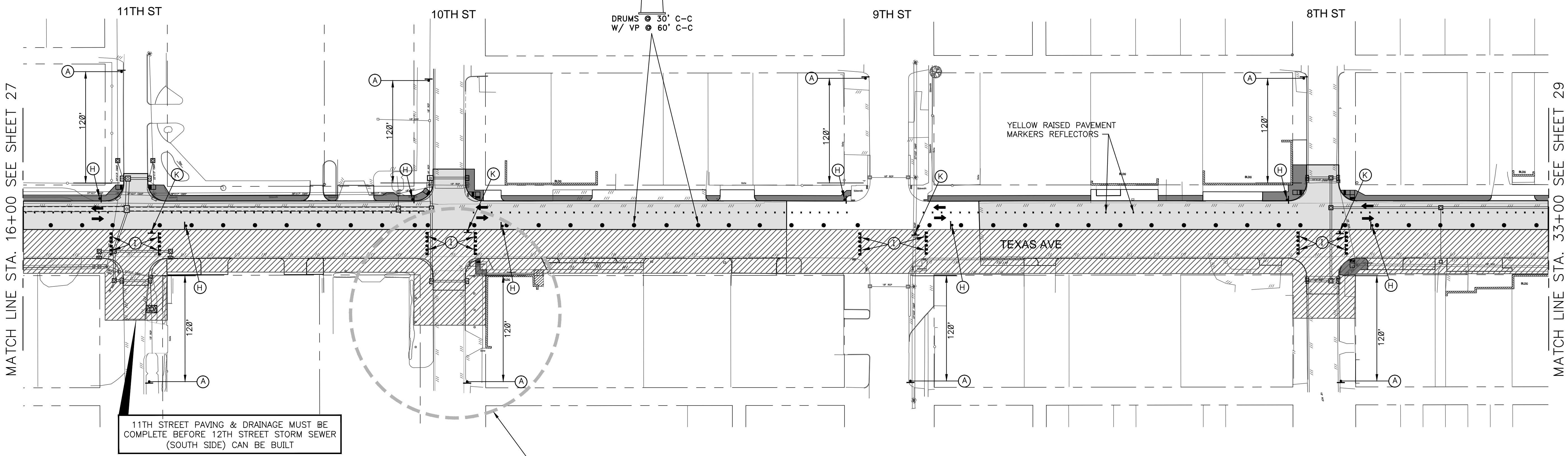
Texas Avenue Reconstruction

Phase 2 Traffic Layout - 1 of 3

Job No.: 18-015	Scale: HORZ: 1"=40'	SHEET
Date: September, 2019	VERT: 1"=40'	27
Dwn By: D. Fattig	Chkd By: J. Rudloff	OF 52



CONTRACTOR TO MAINTAIN ACCESS TO ALL DRIVEWAY



11TH STREET PAVING & DRAINAGE MUST BE COMPLETE BEFORE 12TH STREET STORM SEWER (SOUTH SIDE) CAN BE BUILT

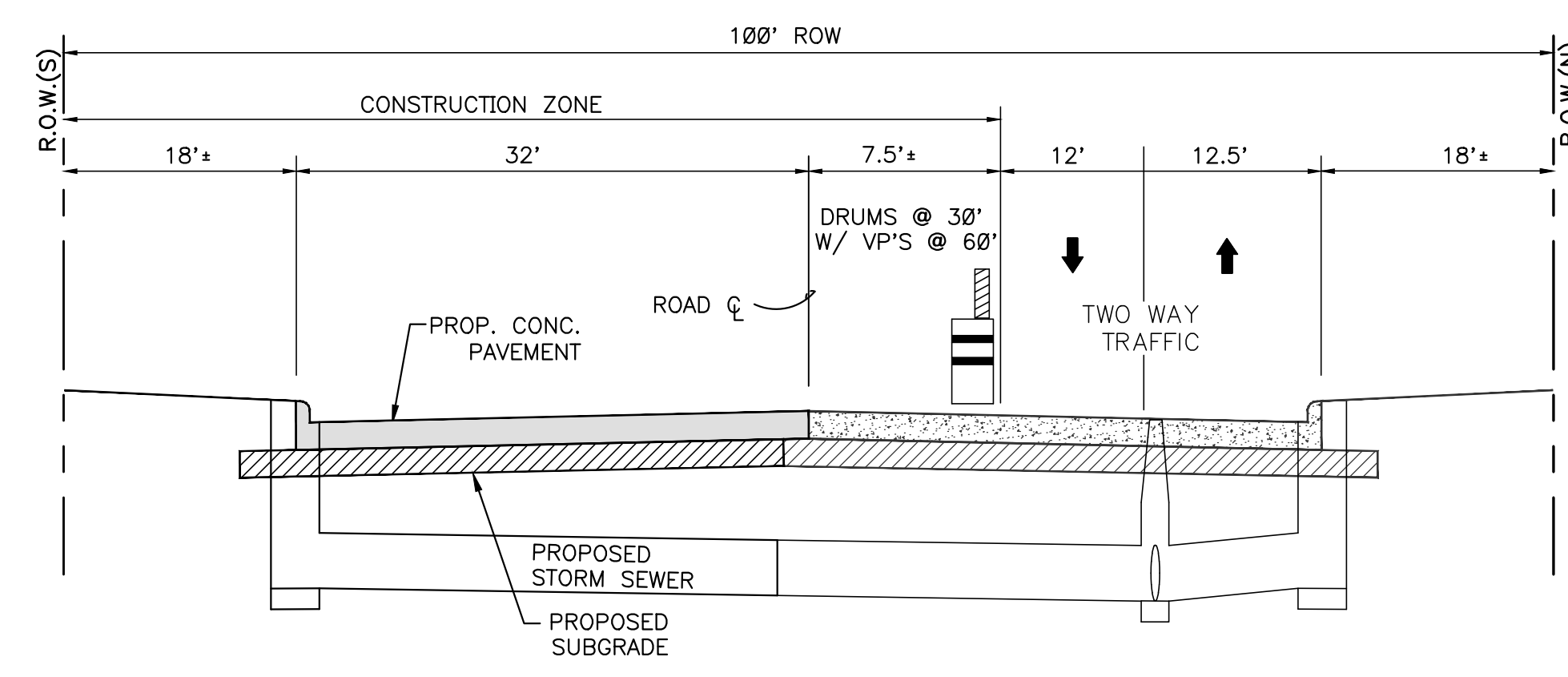
TYPICAL FOR ALL SIDE STREET INTERSECTION WORK SEE SHEET 32 FOR CONSTRUCTION LIMITS & SIGNAGE

LEGEND

- PHASE 1 PVMT CONSTRUCTION
- PHASE 1A STORM SEWER CONSTRUCTION ONLY (TEMPORARY BLACK BASE REPAIR)
- PHASE 2 PVMT CONSTRUCTION
- PHASE 3 PVMT CONSTRUCTION
- PHASE 4 PVMT CONSTRUCTION
- TEMPORARY BLACK BASE REPAIR
- COMPLETED CONCRETE PAVEMENT
- TRAFFIC FLOW
- DRUMS
- TRAFFIC SIGNS
- RAISED PAVEMENT MARKERS REFLECTORS
- TRAILER MOUNTED FLASHING ARROW BOARD

PHASE 2 PAVEMENT NOTES:

1. CLOSE EASTBOUND LANES FROM 6th STREET TO 13th STREET AND PLACE TRAFFIC CONTROL SIGNAGE, DETOUR SIGNS, DEVICES AND DRUMS.
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PHASE 2 - TYPICAL SECTION

TEXAS AVE SPEED LIMIT  
WEST OF 14th STREET - 35 MPH  
EAST OF 14th STREET - 30 MPH

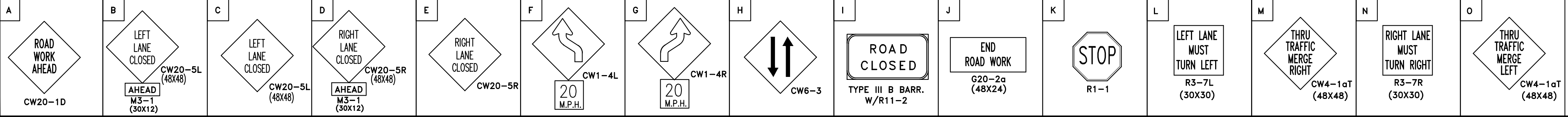
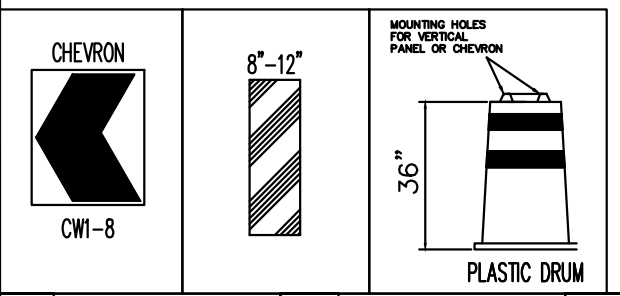
Posted Speed	Formula	Minimum Desirable Taper Lengths			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing Distance	Suggested Longitudinal Buffer Space
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'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

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

SEE SHEET 32 FOR TYPICAL DETOUR LAYOUT FOR CONSTRUCTION OF SIDE STREETS

GENERAL NOTES:

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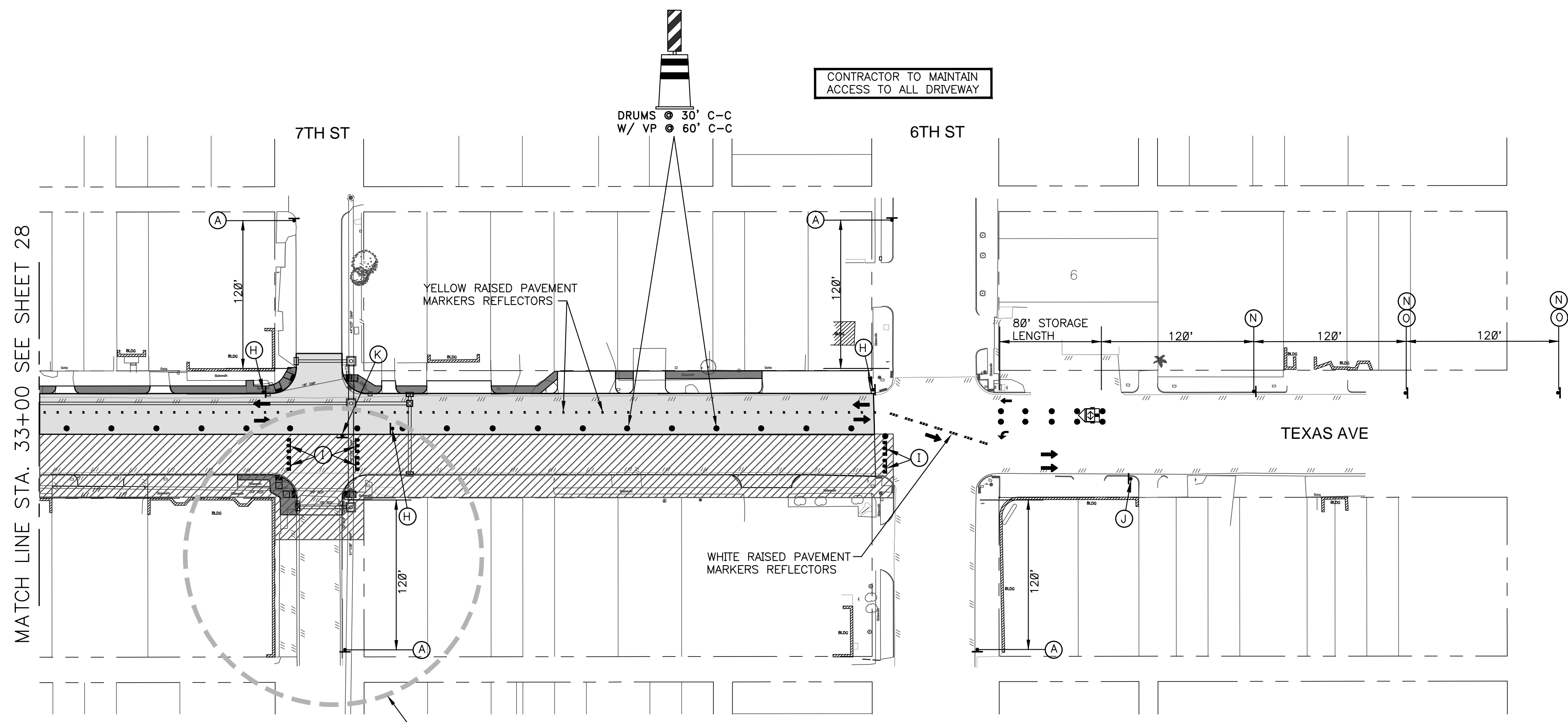
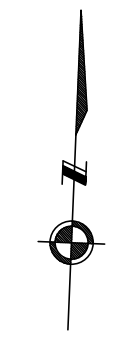


MK.	DESCRIPTION	DATE	DWN.	CHK.

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Texas Avenue Reconstruction

Phase 2 Traffic Layout - 2 of 3  
Job No.: 18-015  
Date: September, 2019  
Dwn By: D. Fattig  
Chk By: J Rudloff  
Scale: HORIZ: 1"=40'  
VERT: 1"=40'  
SHEET 28 OF 52



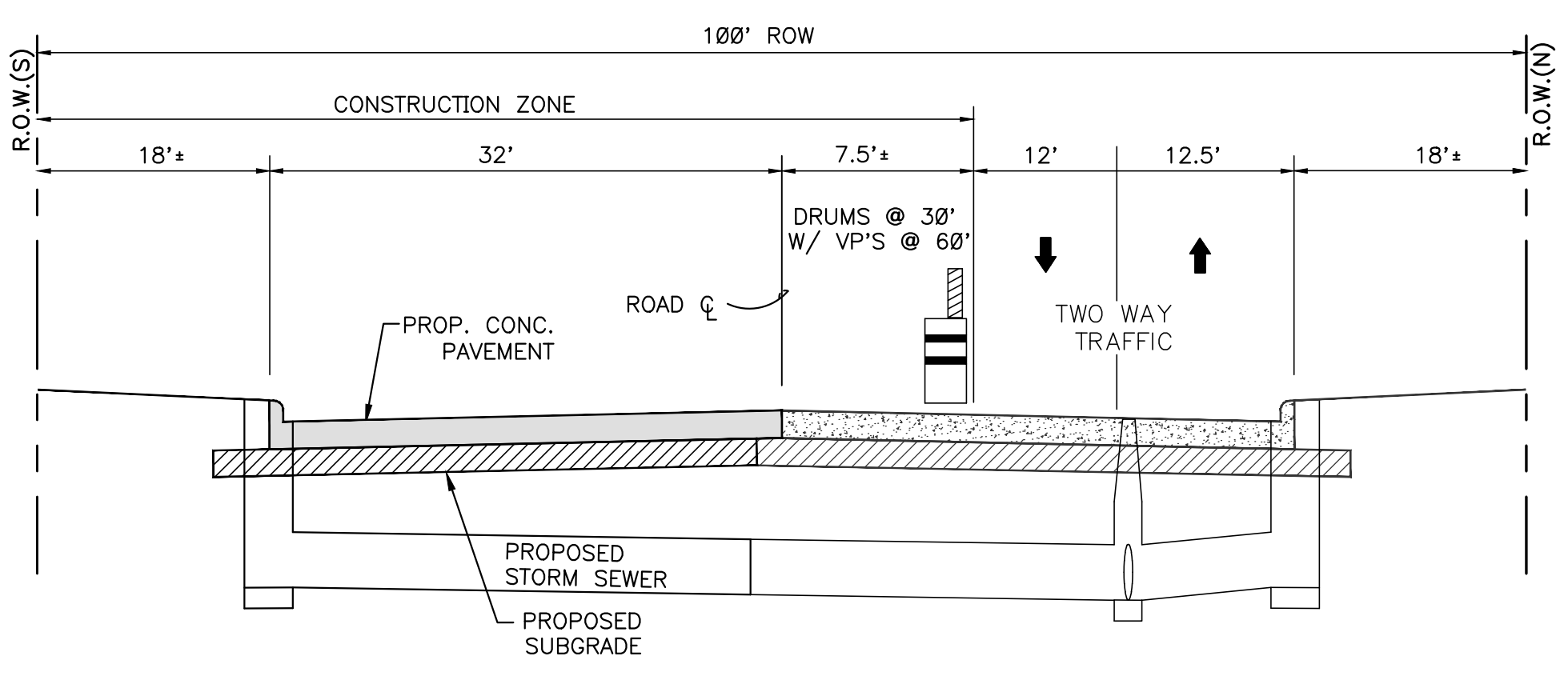
**LEGEND**

- PHASE 1 PVMT CONSTRUCTION
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- DRUMS
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- NO TWO CONSECUTIVE INTERSECTION CAN BE CLOSE AT THE SAME TIME.

TYPICAL FOR ALL SIDE STREET INTERSECTION  
WORK SEE SHEET 32  
FOR CONSTRUCTION LIMITS & SIGNAGE



**TEXAS AVE SPEED LIMIT**  
WEST OF 14th STREET - 35 MPH  
EAST OF 14th STREET - 30 MPH

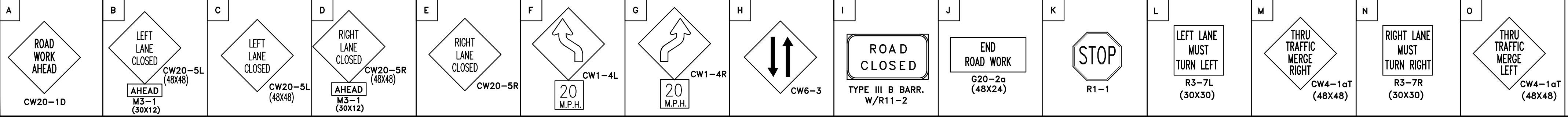
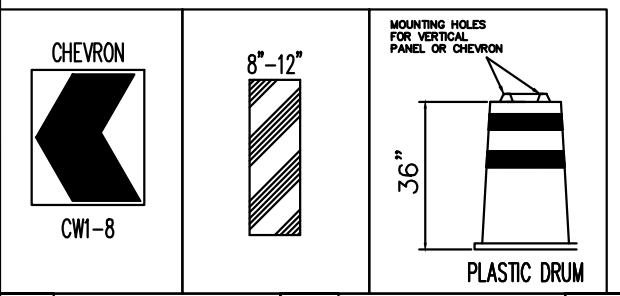
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70	W/S	700'	770'	840'	70'	140'	800'	475'
75	W/S	750'	825'	900'	75'	150'	900'	540'

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\*\* Taper lengths have been rounded off.  
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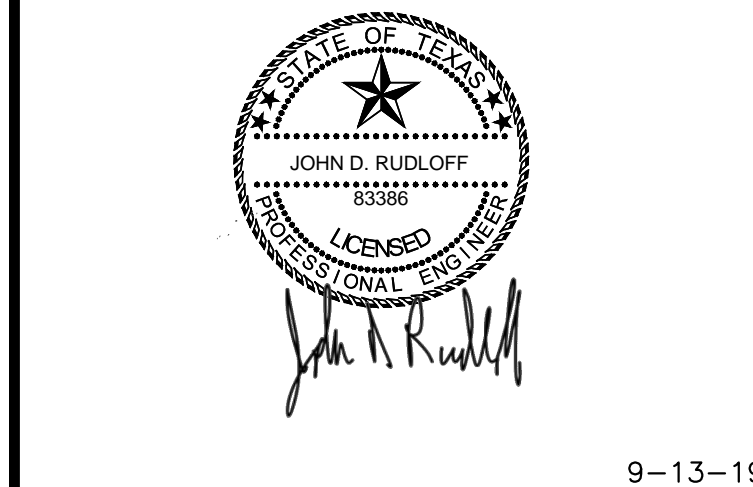
SEE SHEET 32 FOR TYPICAL  
DETOUR LAYOUT FOR  
CONSTRUCTION OF SIDE STREETS

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MK.	DESCRIPTION	DATE	DWN.	CHK.

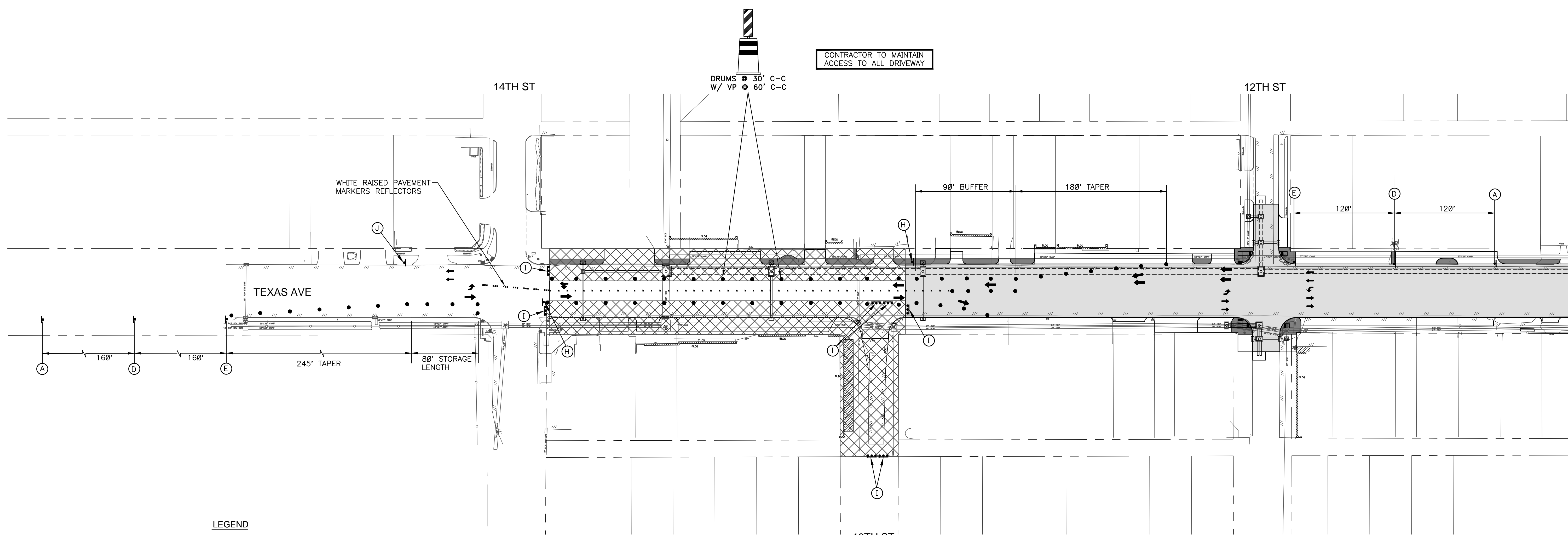


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(713) 400-2755 • www.arkkengineers.com • TX PE Firm No. 13872

**Galveston County, Texas**  
Texas Avenue Reconstruction

**Phase 2 Traffic Layout - 3 of 3**

Job No.: 18-015	Scale: 1"=40'	SHEET <b>29</b> OF 52
Date: September, 2019	HORIZ: 1"=40'	
Dwn By: D. Fattig	VERT:	
Chk By: J Rudloff		

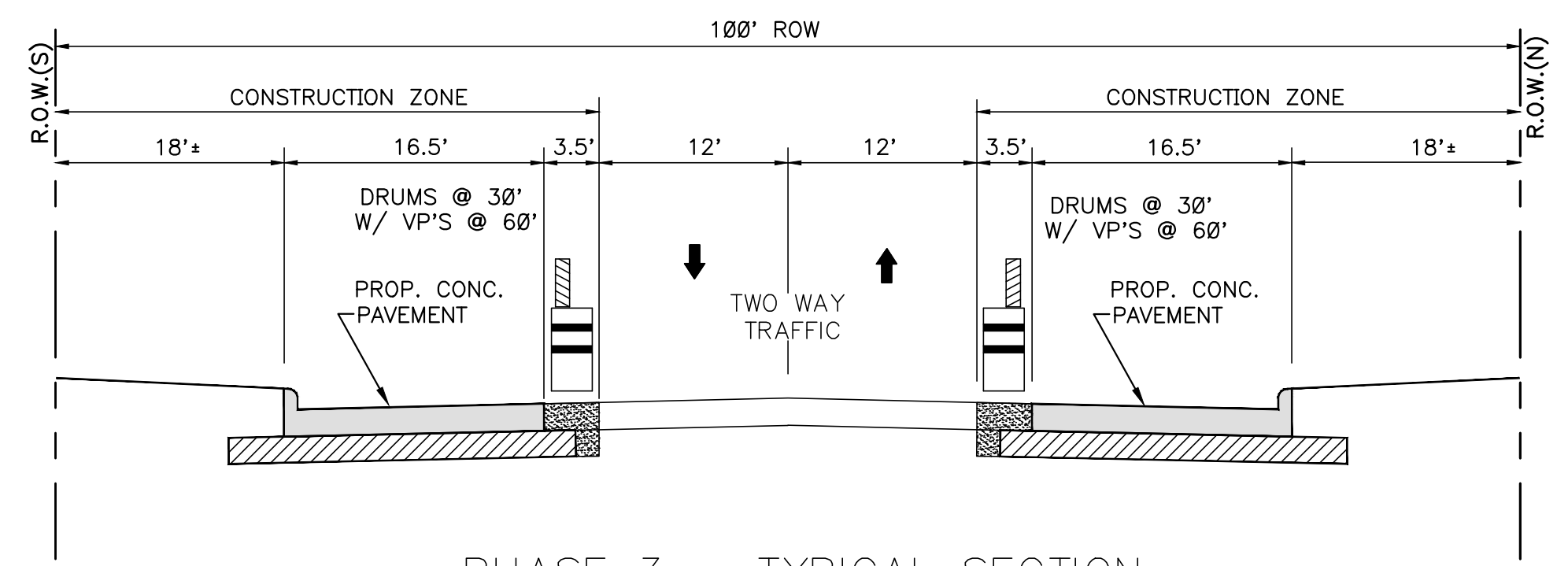


**LEGEND**

- PHASE 1 PVMT CONSTRUCTION
- PHASE 1A STORM SEWER CONSTRUCTION ONLY (TEMPORARY BLACK BASE REPAIR)
- PHASE 2 PVMT CONSTRUCTION
- PHASE 3 PVMT CONSTRUCTION
- PHASE 4 PVMT CONSTRUCTION
- TEMPORARY BLACK BASE REPAIR
- COMPLETED CONCRETE PAVEMENT
- TRAFFIC FLOW
- DRUMS
- TRAFFIC SIGNS
- RAISED PAVEMENT MARKERS REFLECTORS
- TRAILER MOUNTED FLASHING ARROW BOARD

**PHASE 3 PAVEMENT NOTES:**

- CLOSE EASTBOUND LANES FROM 14th STREET TO 13th STREET AND PLACE TRAFFIC CONTROL SIGNAGE, DETOUR SIGNS, DEVICES AND DRUMS.
- PLACE TWO-WAY TRAFFIC AND PROVIDE TEMPORARY LOCAL ACCESS.
- FOLLOW UP WITH PAVING ON LANES FROM 14th STREET TO 13th STREET
- CONTINUE TO MAINTAIN ACCESS TO DRIVEWAYS. (NO SEPARATE PAY)



PHASE 3 - TYPICAL SECTION

TEXAS AVE SPEED LIMIT  
WEST OF 14th STREET - 35 MPH  
EAST OF 14th STREET - 30 MPH

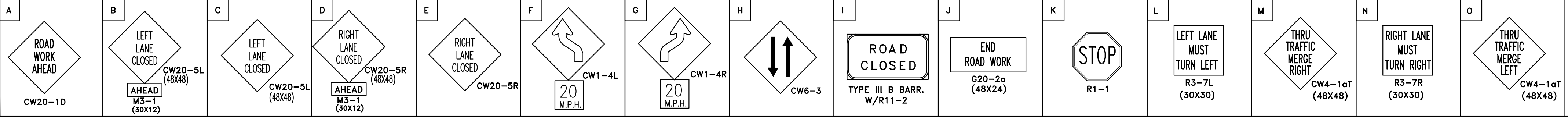
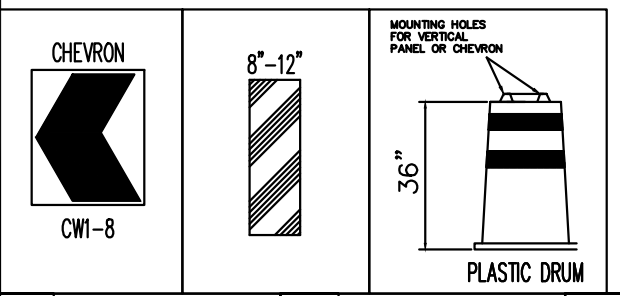
Posted Speed *	Formula	Minimum Desirable Taper Lengths			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing * Distance	Suggested Longitudinal Buffer Space Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L=WS	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'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

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

SEE SHEET 32 FOR TYPICAL DETOUR LAYOUT FOR CONSTRUCTION OF SIDE STREETS

**GENERAL NOTES:**

- CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC CONTROL DEVICES AS PER THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TXMUTCD).
- THE TRAFFIC CONTROL PLAN AND DETAILS INCLUDED IN THE PLAN DRAWINGS ARE PROVIDED AS A GUIDE TO THE CONTRACTOR AND ARE THE MINIMUM REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR PREPARATION AND SUBMITTAL OF A REVISED TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL IF IMPLEMENTED DIFFERENTLY FROM WHAT IS SHOWN ON THE PLAN DRAWINGS.
- THIS IS A GENERAL LAYOUT. IT IS NOT THE INTENT OF HAVING THE ENTIRE HALF OF ROADWAY REMOVE FROM END TO END AT ONE TIME. THE WORK SHALL BE LIMITED TO TWO BLOCKS AT A TIME.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO ALL BUSINESS DURING CONSTRUCTION. THIS MAY REQUIRE LEAVING SEGMENTS OF EXISTING PAVEMENT AVAILABLE FOR ACCESS WHILE ADJACENT PAVEMENT IS POURED AND CURED.
- ANY ADJUSTMENTS TO THE TRAFFIC CONTROL PLAN, INCLUDING PROVISION OF ADDITIONAL TRAFFIC CONTROL DEVICES AND SIGNAGE, AS NEEDED TO FACILITATE SMOOTH FLOW OF TRAFFIC AND TO ACCOMMODATE FIELD CONDITIONS SHALL BE CONSIDERED INCIDENTAL TO THE TRAFFIC CONTROL AND REGULATION BID ITEM.
- CONTRACTOR SHALL MAINTAIN ALL WEATHER ACCESS TO RESIDENTIAL AND COMMERCIAL PROPERTIES ADJACENT TO AND IN THE WORK AREAS AT ALL TIMES.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSTAL SERVICE AND TRASH PICKUP SERVICE TO RESIDENTS DURING THE DURATION OF CONSTRUCTION OPERATIONS.



MK. DESCRIPTION DATE DWN. CHK.

STATE OF TEXAS  
JOHN D. RUDLOFF  
LICENSED PROFESSIONAL ENGINEER  
83386

9-13-19

**ARKK ENGINEERS**  
7322 Southwest Freeway, Suite 1040 • Houston, Texas 77074  
(713) 400-2755 • www.arkkengineers.com • TX PE Firm No. 13872

Galveston County, Texas

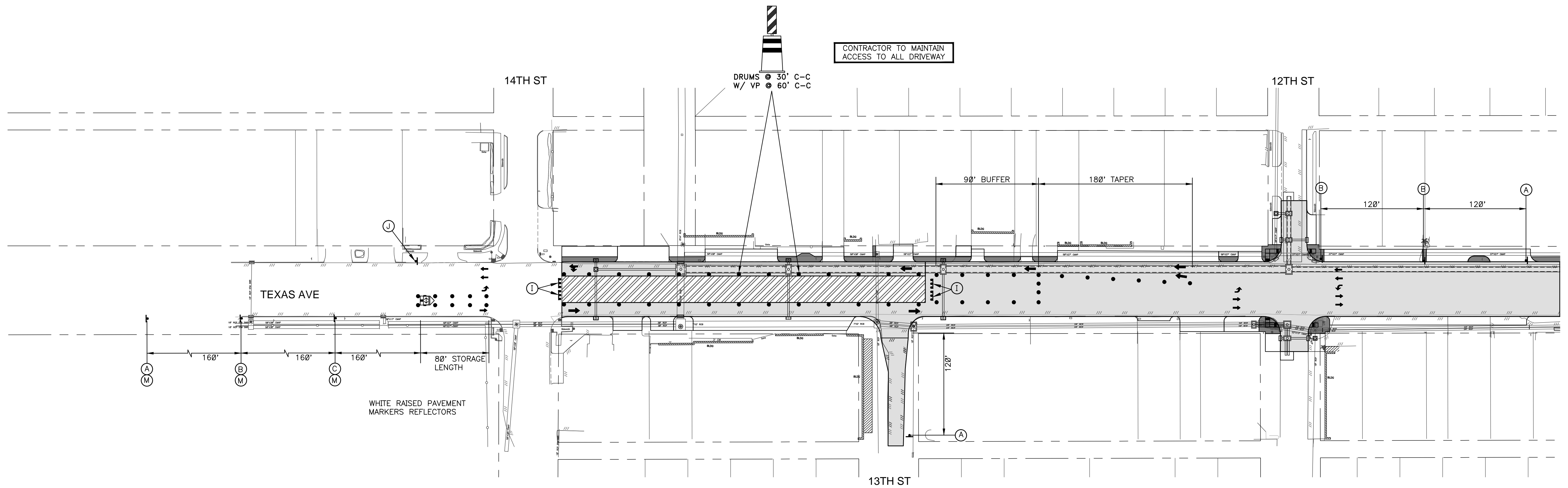
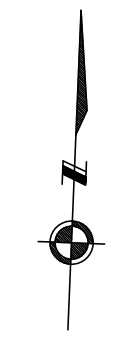
Texas Avenue Reconstruction

Phase 3 Traffic Layout

Job No.: 18-015 Scale: 1"=40'  
Date: September, 2019 HORZ: 1"=40'  
Dwn By: D. Fattig VERT:  
Chk By: J Rudloff

SHEET 30 OF 52



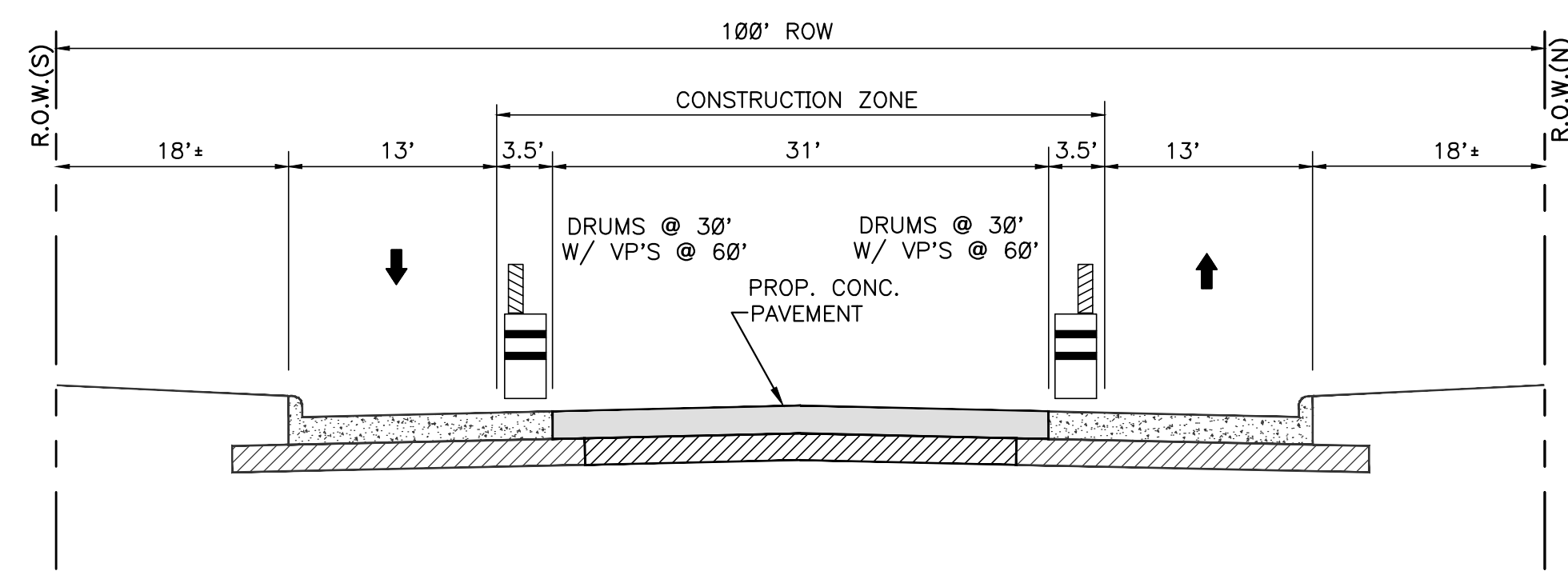


LEGEND

- PHASE 1 PVTM CONSTRUCTION
- PHASE 1A STORM SEWER CONSTRUCTION ONLY (TEMPORARY BLACK BASE REPAIR)
- PHASE 2 PVTM CONSTRUCTION
- PHASE 3 PVTM CONSTRUCTION
- PHASE 4 PVTM CONSTRUCTION
- TEMPORARY BLACK BASE REPAIR
- COMPLETED CONCRETE PAVEMENT
- TRAFFIC FLOW
- DRUMS
- TRAFFIC SIGNS
- RAISED PAVEMENT MARKERS REFLECTORS
- TRAILER MOUNTED FLASHING ARROW BOARD

PHASE 4 PAVEMENT NOTES:

- CLOSE WESTBOUND LANES FROM 14th STREET TO 13th STREET PLACE TRAFFIC CONTROL SIGNAGE, DETOUR SIGNS, DEVICES AND DRUMS.
- PLACE TWO-WAY TRAFFIC AND PROVIDE TEMPORARY LOCAL ACCESS.
- FOLLOW UP WITH PAVING ON LANES FROM 14th STREET TO 13th STREET.
- CONTINUE TO MAINTAIN ACCESS TO DRIVEWAYS. (NO SEPARATE PAY)



PHASE 4 - TYPICAL SECTION

TEXAS AVE SPEED LIMIT  
WEST OF 14th STREET - 35 MPH  
EAST OF 14th STREET - 30 MPH

Posted Speed *	Formula	Minimum Desirable Taper Lengths **		Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "y"
		10' Offset	11' Offset	On a Taper	On a Tangent		
30	L=WS <sup>2</sup> 50	150'	165'	180'	30'	60'	120'
35		205'	225'	245'	35'	70'	160'
40		265'	295'	320'	40'	80'	240'
45		450'	495'	540'	45'	90'	320'
50		500'	550'	600'	50'	100'	400'
55		550'	605'	660'	55'	110'	500'
60		600'	660'	720'	60'	120'	600'
65	650'	715'	780'	65'	130'	700'	
70	700'	770'	840'	70'	140'	800'	
75	750'	825'	900'	75'	150'	900'	

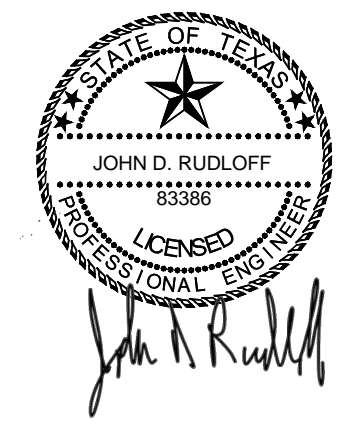
\* Conventional Roads Only  
\*\* Taper lengths have been rounded off.  
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

SEE SHEET 32 FOR TYPICAL DETOUR LAYOUT FOR CONSTRUCTION OF SIDE STREETS

GENERAL NOTES:

- CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC CONTROL DEVICES AS PER THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TXMUTCD).
- THE TRAFFIC CONTROL PLAN AND DETAILS INCLUDED IN THE PLAN DRAWINGS ARE PROVIDED AS A GUIDE TO THE CONTRACTOR AND ARE THE MINIMUM REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR PREPARATION AND SUBMITTAL OF A REVISED TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL IF IMPLEMENTED DIFFERENTLY FROM WHAT IS SHOWN ON THE PLAN DRAWINGS.
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- ANY ADJUSTMENTS TO THE TRAFFIC CONTROL PLAN, INCLUDING PROVISION OF ADDITIONAL TRAFFIC CONTROL DEVICES AND SIGNAGE, AS NEEDED TO FACILITATE SMOOTH FLOW OF TRAFFIC AND TO ACCOMMODATE FIELD CONDITIONS SHALL BE CONSIDERED INCIDENTAL TO THE TRAFFIC CONTROL AND REGULATION BID ITEM.
- CONTRACTOR SHALL MAINTAIN ALL WEATHER ACCESS TO RESIDENTIAL AND COMMERCIAL PROPERTIES ADJACENT TO AND IN THE WORK AREAS AT ALL TIMES.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSTAL SERVICE AND TRASH PICKUP SERVICE TO RESIDENTS DURING THE DURATION OF CONSTRUCTION OPERATIONS.

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



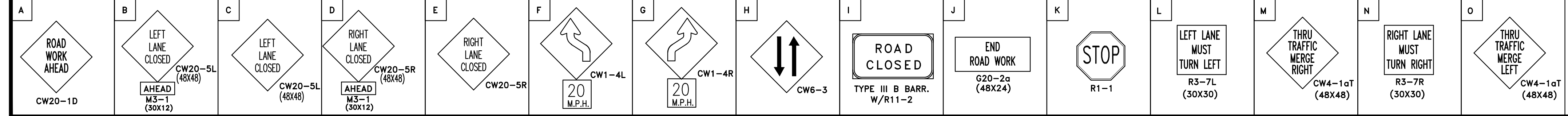
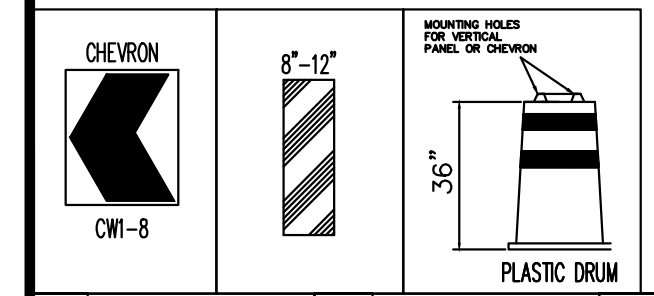
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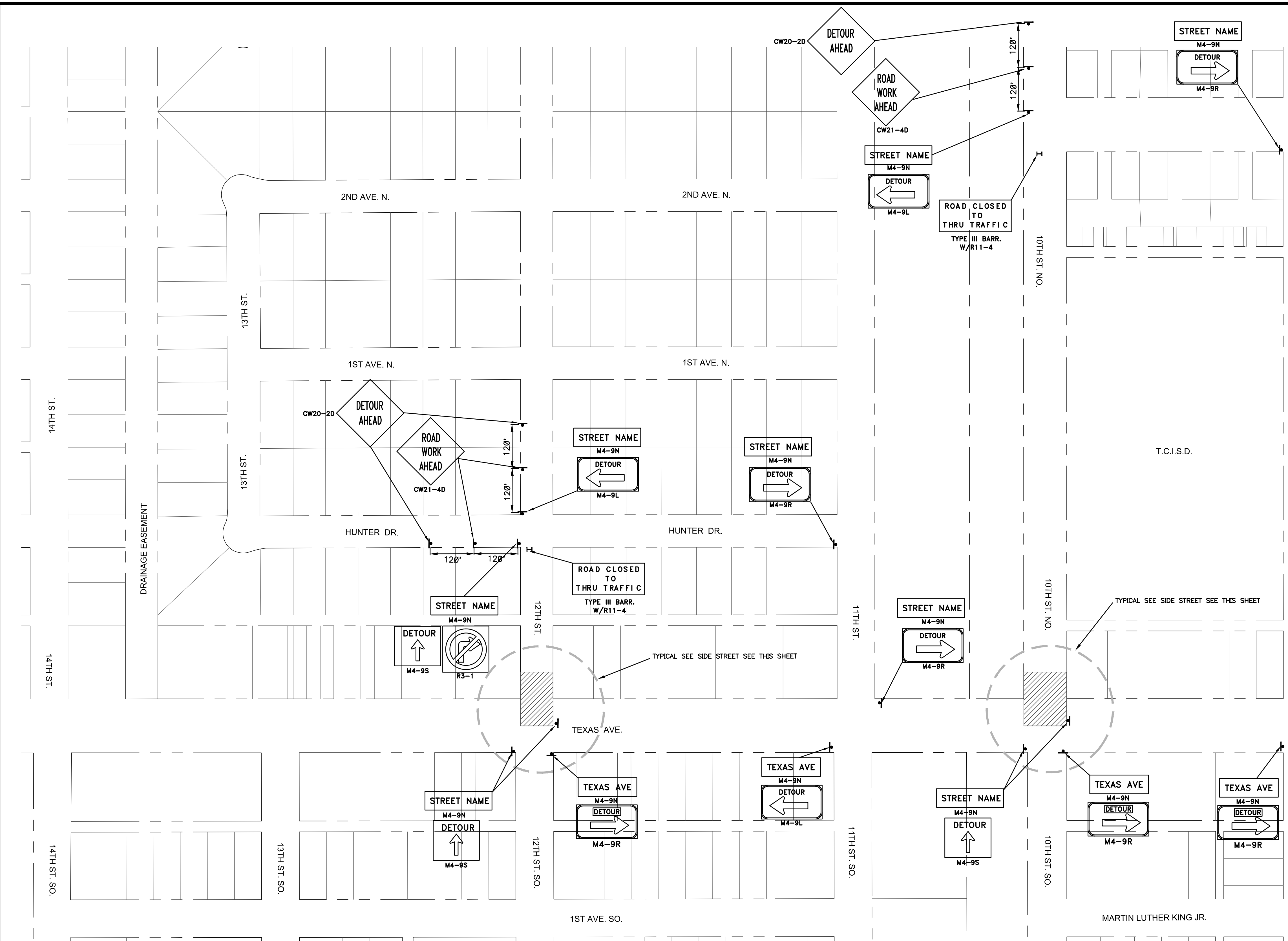
Galveston County, Texas

Texas Avenue Reconstruction

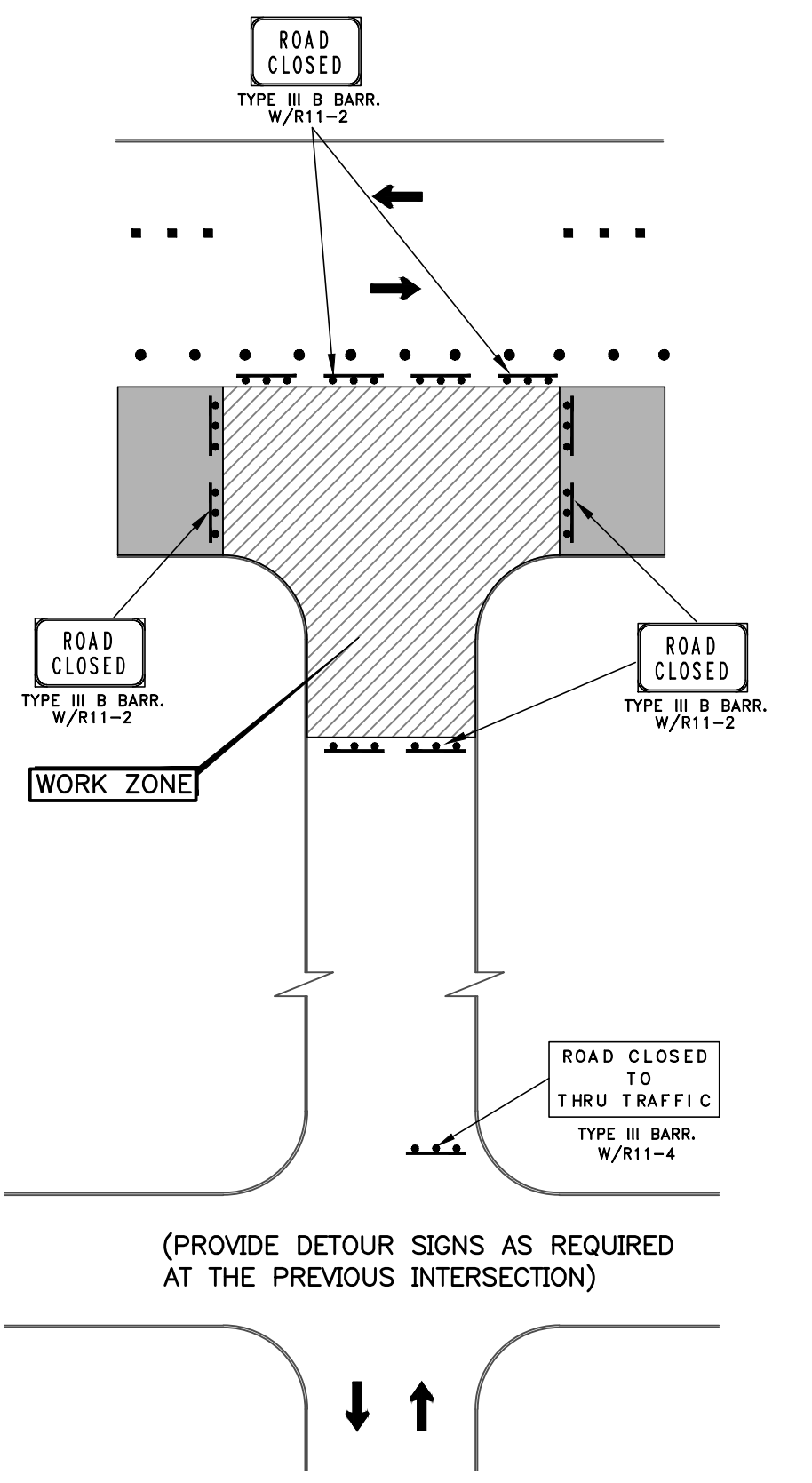
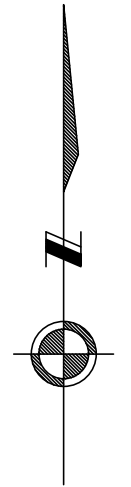
Phase 4 Traffic Layout

Job No.: 18-015	Scale: 1"=40'	SHEET
Date: September, 2019	HORZ: 1"=40'	31
Dwn By: D. Fattig	VERT:	
Chk By: J Rudloff		OF 52





9TH ST. NO.  
10TH ST. NO.  
11TH ST. NO.  
10TH ST. SO.  
11TH ST. SO.



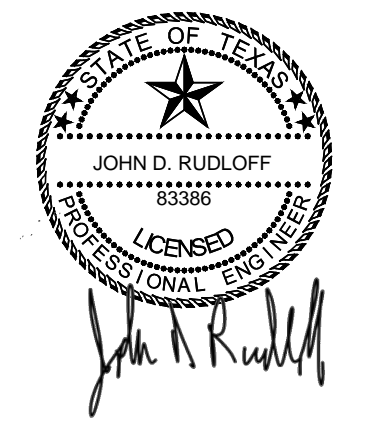
(PROVIDE DETOUR SIGNS AS REQUIRED AT THE PREVIOUS INTERSECTION)

**SIDE STREET DETAIL**

**LEGEND:**

- NEW PAVEMENT COMPLETED
- PROP. PAVEMENT

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



Galveston County, Texas

Texas Avenue Reconstruction

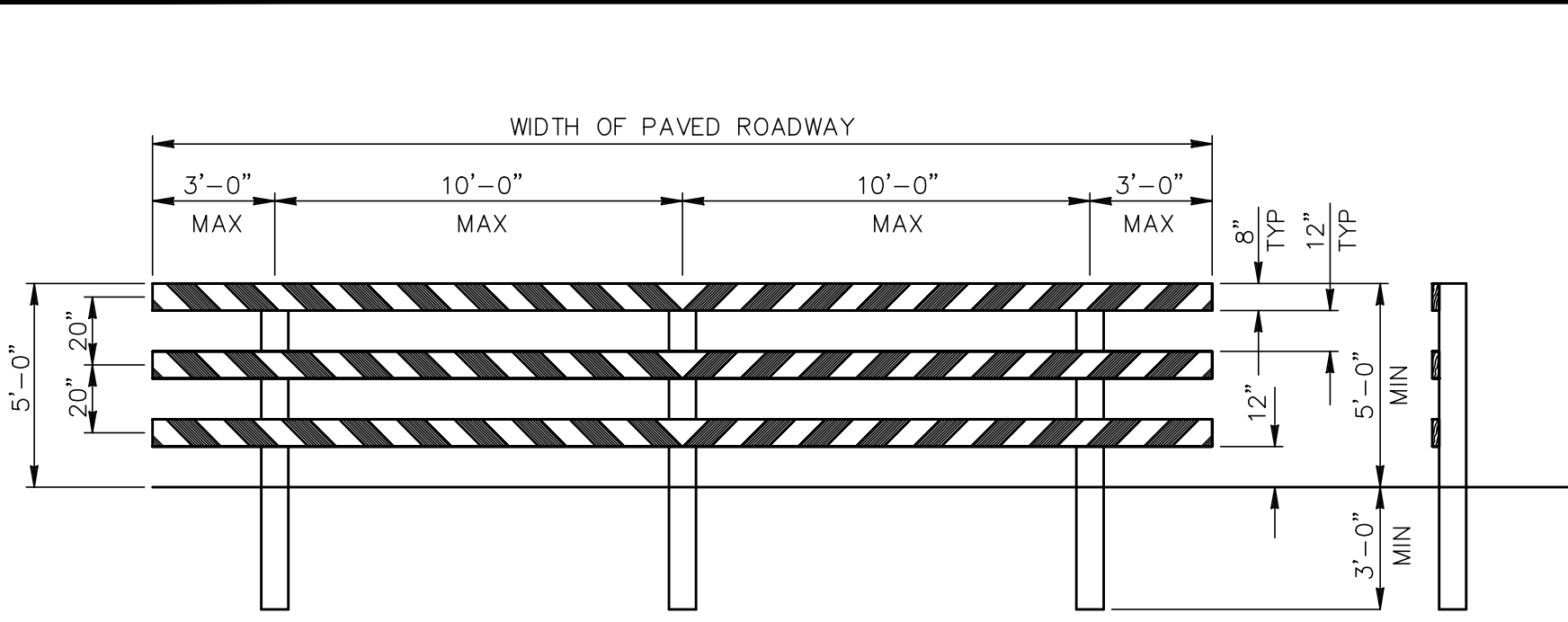
TYPICAL CONSTRUCTION PHASE LAYOUT FOR SIDE STREET DETAILS

Job No.: 18-015	Scale: HORZ: NTS VERT: NA	SHEET
Date: September, 2019		32
Dwn By: D. Fattig		OF 52
Chkd By: J. Rudloff		

**TYPICAL SIDE STREET PAVEMENT NOTES:**

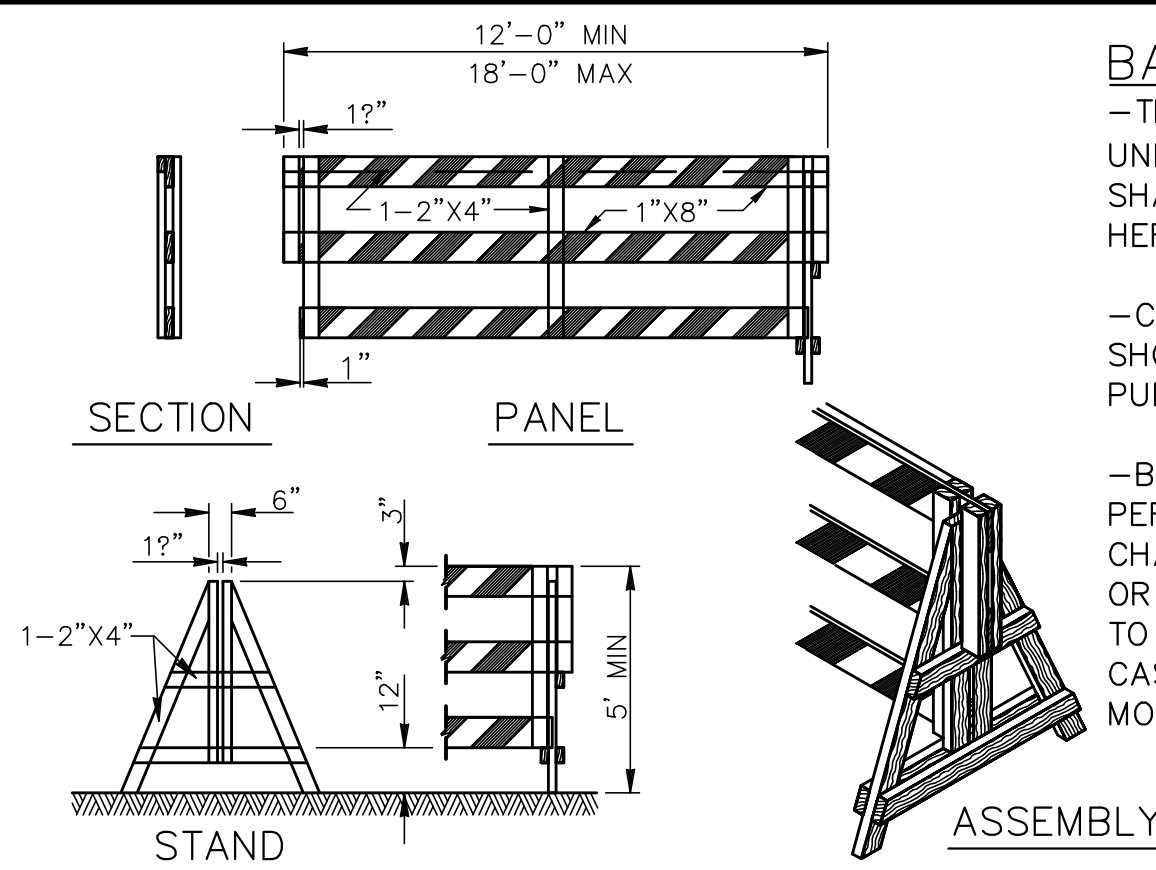
1. THIS IS A TYPICAL GENERAL LAYOUT FOR ALL INTERSECTION WORK (NORTH OR SOUTH SIDE). ADDITIONAL SIGNAGE & DETOUR SIGNS WILL BE REQUIRED FOR TO DETOUR TRAFFIC. CONTRACTOR TO PLACE ALL APPROPRIATE SIGNAGE TO DETOUR TRAFFIC AROUND CLOSED INTERSECTION.
2. CLOSE INTERSECTION AND PLACE TRAFFIC CONTROL SIGNAGE, DEVICES AND DRUMS AND APPROPRIATE DETOUR SIGNAGE AS REQUIRED.
3. NO TWO CONSECUTIVE INTERSECTION CAN BE CLOSE AT THE SAME TIME.
4. FOLLOW UP WITH PAVING.
5. CONTINUE TO MAINTAIN ACCESS TO DRIVEWAYS. (NO SEPARATE PAY)
6. CONTRACTOR TO REMOVE ALL SIGNAGE & DETOUR SIGNS UPON COMPLETION OF CONSTRUCTION AT INTERSECTING. THEN MOVE AND SET UP SIGNAGE AND DETOUR SIGNS FOR THE NEXT INTERSECTION.

SEE SHEET 24-31 FOR CONSTRUCTION PHASE LAYOUTS & SIGNAGE



TYPE III BARRICADE FOR END OF ROAD

FOR TYPE III BARRICADE FOR END OF ROAD, THE THREE (3) RAILS SHALL BE REFLECTIVE RED AND REFLECTIVE WHITE STRIPES ON SIDE FACING TRAFFIC



DEMOUNTABLE TYPE III BARRICADE

**BARRICADE NOTES**

-THE MOST RECENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND ITS REVISIONS, SHALL GOVERN THE CONSTRUCTION AND USE OF ALL ITEMS HEREIN DESCRIBED.

-CHANNELIZATION DEVICES OTHER THAN BARRICADES SHOULD NORMALLY BE USED FOR CHANNELIZATION PURPOSES.

-BARRICADES SHOULD NORMALLY BE PLACED PERPENDICULAR TO THE TRAFFIC FLOW. OTHER CHANNELIZING DEVICES, SUCH AS DRUMS, VERTICAL PANELS OR PORTABLE BARRIERS, SHOULD BE USED WHERE NEEDED TO SEPARATE TRAFFIC FROM THE WORK AREA. IN ALL CASES, THE BARRICADES SHOULD BE SO LOCATED AS TO MOST ADVANTAGEOUSLY WARN AND DIRECT TRAFFIC.

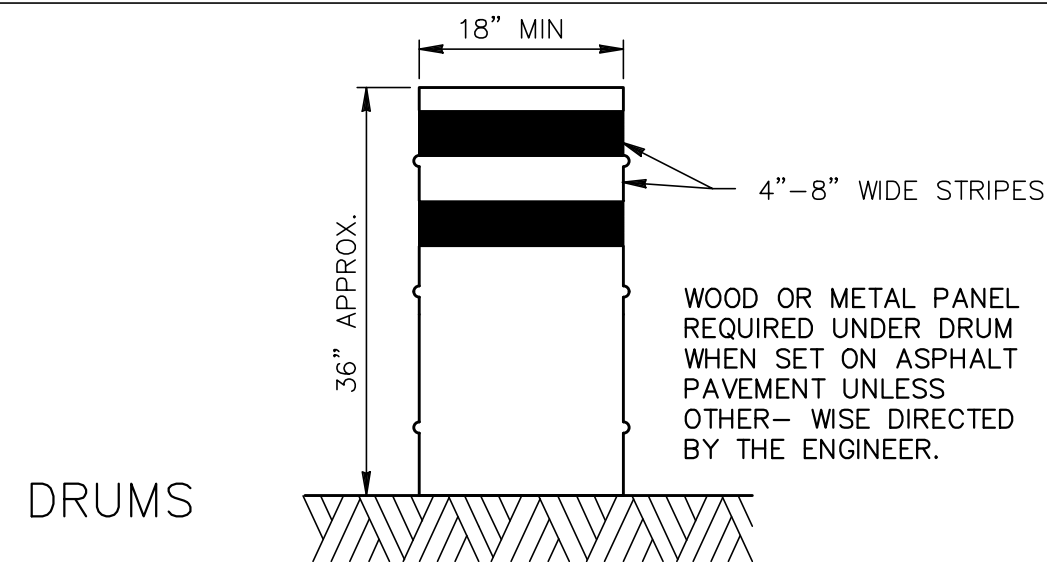
-BARRICADES MAY BE DESIGNED AND CONSTRUCTED FROM WOOD OR ANY OTHER SUITABLE MATERIAL IN A MANNER APPROVED BY THE DEPARTMENT OF TRAFFIC AND TRANSPORTATION. THE CONSTRUCTION DETAILS SHOWN HEREON ARE TYPICAL AND ARE SUGGESTED DETAILS FOR WOOD SUPPORT SYSTEMS FOR BARRICADES. THE DETAILS OF RAIL WIDTH AND STRIPING, NUMBER AND SPACING OF RAILS, MINIMUM LENGTH AND HEIGHT (ABOVE PAVEMENT) OF RAILS MUST BE ADHERED TO WHEN ALTERNATE DESIGNS ARE USED.

-BARRICADES ARE TO BE CONSTRUCTED OF CLEAN SOUND MATERIAL. ALL SURFACES ABOVE GROUND, WHICH ARE NOT STRIPED, SHALL BE WHITE EXCEPT THE UNPAINTED GALVANIZED METAL OR ALUMINUM COMPONENTS MAY BE USED. COMPONENTS MADE OF LUMBER SHALL BE PAINTED WITH A MINIMUM OF TWO COATS OF AN APPROVED BRAND OF WHITE PAINT TO SECURE THOROUGH COVERAGE AND A UNIFORM WHITE COLOR.

-THE REFLECTORIZED WHITE AND REFLECTORIZED ORANGE (REFLECTORIZED RED) STRIPES FOR BARRICADES, DRUMS AND VERTICAL PANELS SHALL BE CONSTRUCTED OF "HIGH INTENSITY" SHEETING AND SHALL BE MAINTAINED TO MEET THE APPEARANCE, COLOR AND REFLECTIVITY REQUIREMENTS SET BY DOT.

-THE CONTRACTOR SHALL MAINTAIN EACH BARRICADE IN A CLEAN AND GOOD CONDITION.

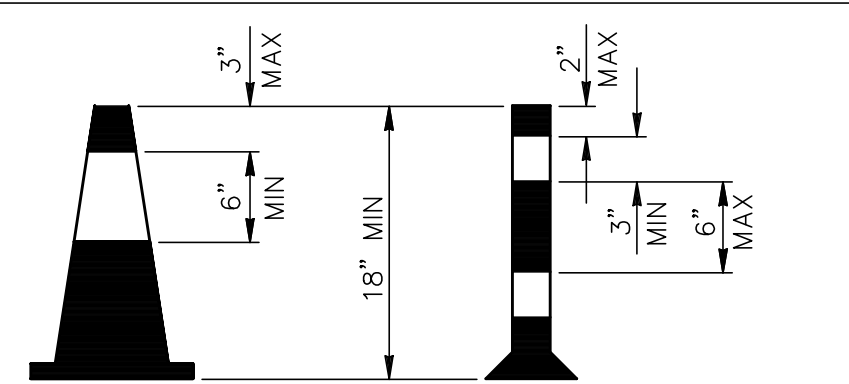
-BARRICADES SHALL BE REMOVED UPON COMPLETION OF THE WORK AND/OR THE ELIMINATION OF THE HAZARD ON ANY SECTION.



DRUMS

-DRUMS, SET ON END, AND USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE APPROX 36" IN HEIGHT AND A MIN OF 18" IN DIAMETER. THE CONTRACTOR, AT HIS OPTION, MAY USE DRUMS MADE FROM STEEL BARRELS OR BLACK POLYETHYLENE PLASTIC DRUM LINERS WEIGHING APPROX EIGHT POUNDS EACH. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, CIRCUMFERENTIAL, REFLECTORIZED ORANGE AND REFLECTORIZED WHITE STRIPES, 4 TO 8 INCHES WIDE. THE FIRST REFLECTORIZED STRIPE SHOULD START WITHIN TWO (2) INCHES OF THE TOP OF THE DRUM. THERE SHALL BE AT LEAST TWO ORANGE AND TWO WHITE STRIPES ON EACH DRUM. IF THERE ARE NON-REFLECTORIZED SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, THEY SHALL BE NO MORE THAN 2 INCHES WIDE. METAL DRUMS SHALL BE PAINTED BLACK OR ORANGE BEFORE REFLECTORIZED STRIPES ARE ADDED. ALL DRUMS ON PROJECT WILL BE THE SAME COLOR. WHEN DRUMS ARE PLACED IN THE ROADWAY, APPROPRIATE WARNING SIGNS SHOULD BE USED. DURING HOURS OF DARKNESS, A FLASHING WARNING LIGHT SHOULD BE PLACED ON DRUMS USED SINGLY AS A WARNING DEVICE. STEADY BURN ELECTRIC LIGHTS OR DELINEATORS SHOULD BE PLACED ON DRUMS USED IN SERIES FOR TRAFFIC CHANNELIZATION. DRUMS SHALL BE WEIGHTED WITH SAND TO THE EXTENT INDICATED IN THE PLANS.

-CWI-8 CHEVRON SIGNS, CWI-6A ARROW SIGNS OR VP-1 VERTICAL PANELS MOUNTED ABOVE DRUMS MAY BE USED AS SUPPLEMENTS TO DRUM DELINEATION.

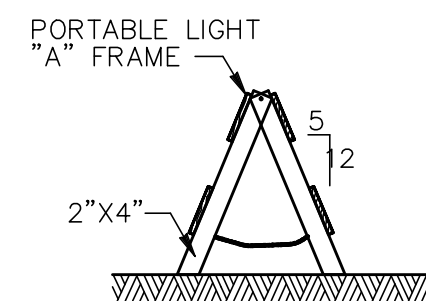


CONES

-TRAFFIC CONES AND TUBULAR MARKERS SHALL BE A MIN OF 18" INCHES IN HEIGHT WITH A BROADENED BASE AND MAY BE MADE OF VARIOUS MATERIALS TO WITHSTAND IMPACT WITHOUT DAMAGE TO THEMSELVES OR TO VEHICLES. LARGER SIZES SHOULD BE USED ON FREEWAYS AND OTHER ROADWAYS WHERE SPEED ARE RELATIVELY HIGH OR WHERE EVER MORE CONSPICUOUS GUIDANCE IS NEEDED. ORANGE SHALL BE THE PREDOMINANT COLOR ON CONES AND TUBULAR MARKERS. THEY SHOULD BE KEPT CLEAN AND BRIGHT FOR MAX TARGET VALUE. FOR NIGHTTIME USE THEY SHALL BE REFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAX VISIBILITY. REFLECTORIZED MATERIAL SHALL HAVE A SMOOTH, SEALED OUTER SURFACE WHICH WILL DISPLAY THE SAME APPROX COLOR DAY AND NIGHT.

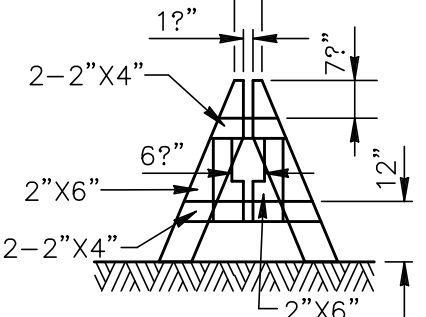
-REFLECTORIZATION OF TUBULAR MARKERS SHALL BE A MIN OF TWO THREE-INCH BANDS PLACED A MAX OF 2" FROM THE TOP WITH A MAX OF 6" BETWEEN THE BANDS. REFLECTORIZATION OF CONES SHALL BE PROVIDED BY A MIN 6" BAND PLACED A MAX OF 3" FROM THE TOP.

-CONES OR TUBULAR MARKERS ARE GENERALLY ONLY SUITABLE FOR TEMPORARY USAGE (UP TO 8 HOURS) WITH OTHER CHANNELIZATION DEVICES SUCH AS VERTICAL PANELS OR BARRICADES PREFERRED FOR LONGER TERM USAGE. CARE SHOULD BE TAKEN TO INSURE THAT THEY REMAIN IN THEIR PROPER LOCATION AND IN AN UPRIGHT POSITION.

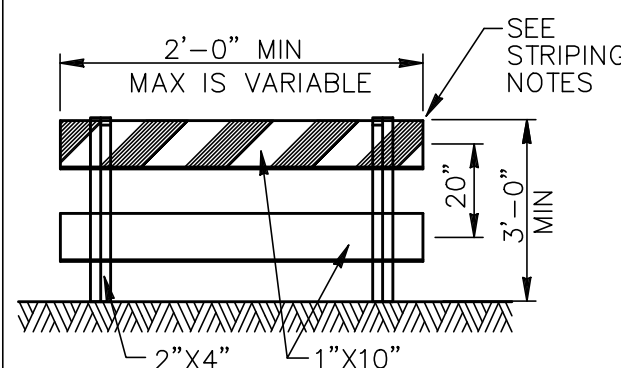


"A" FRAME

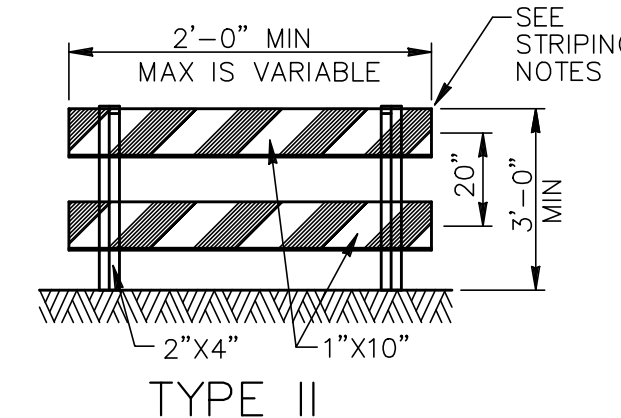
DEMOUNTABLE



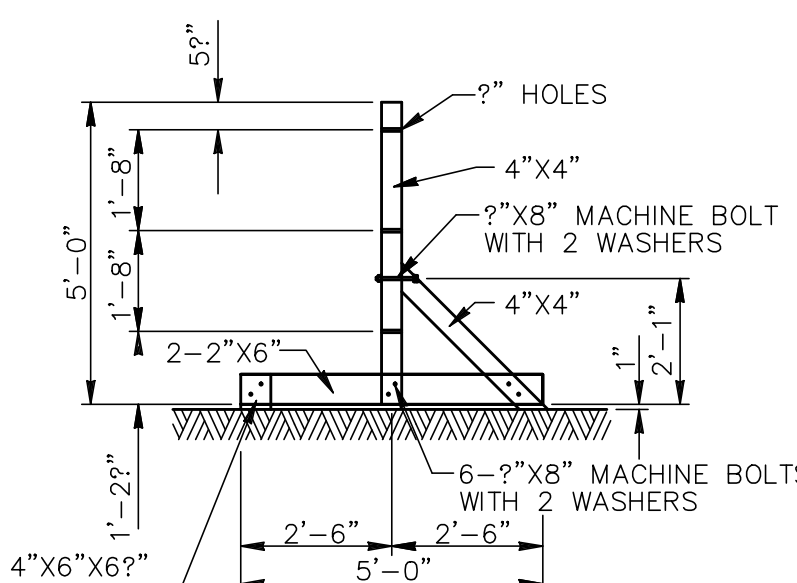
PANEL FOR TYPE III BARRICADE



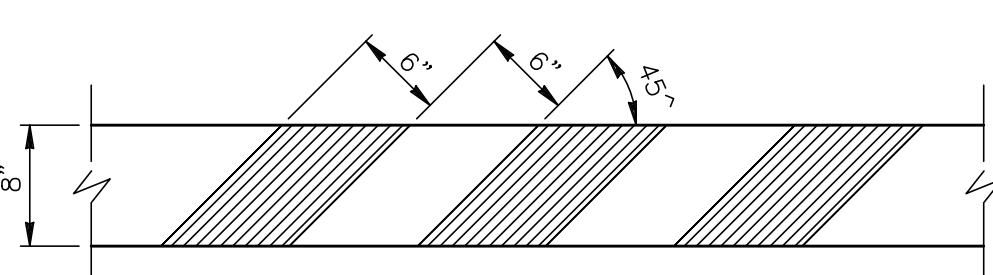
TYPE I



TYPE II



STAND FOR TYPE III BARRICADE

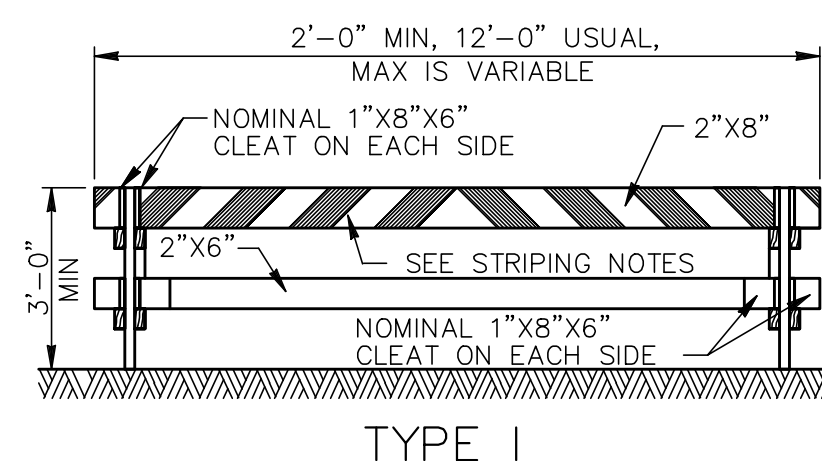


STRIPING FOR BARRICADE

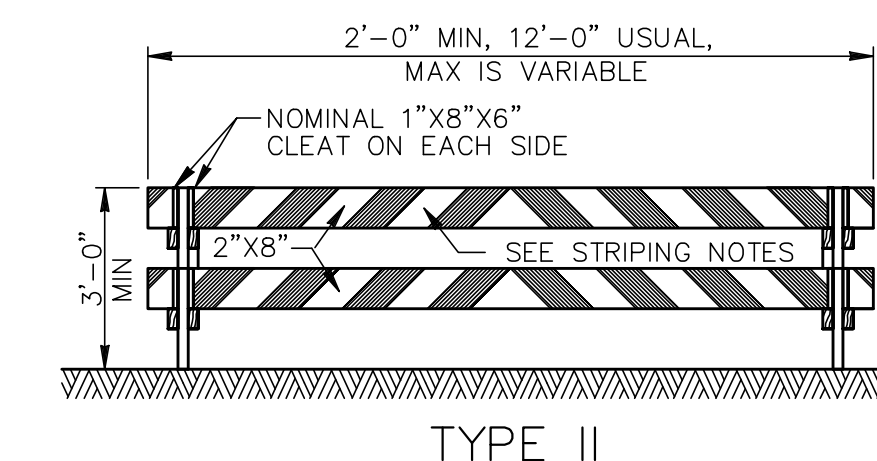
FOR ALL TYPES OF BARRICADES WITH RAILS LESS THAN 3'-0" LONG, STRIPES 4" WIDE SHALL BE USED. IDENTIFICATION MARKINGS MAY BE SHOWN ONLY ON BACK SIDE OF BARRICADE RAILS.

-STRIPING SHOULD COVER THE FULL WIDTH OF THE RAIL. STRIPING OF RAILS, PANELS, ETC, SHOULD SLOPE DOWNWARD AT AN ANGLE OF 45 DEGREES IN DIRECTIONS TRAFFIC IS TO PASS.

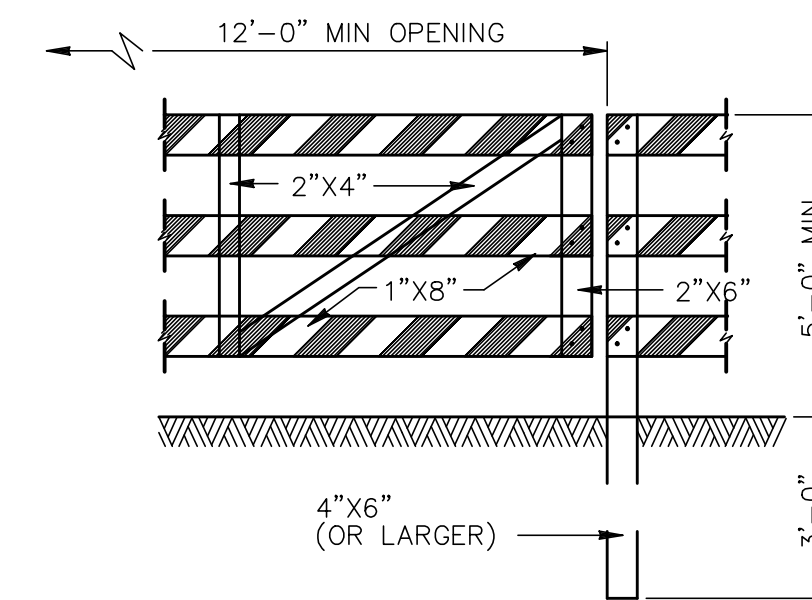
-WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, IT IS DESIRABLE THAT THE STRIPES SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING. WHEN BOTH RIGHT AND LEFT TURNS ARE PROVIDED FOR, THE CHEVRON STRIPING SHOULD SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE.



TYPE I



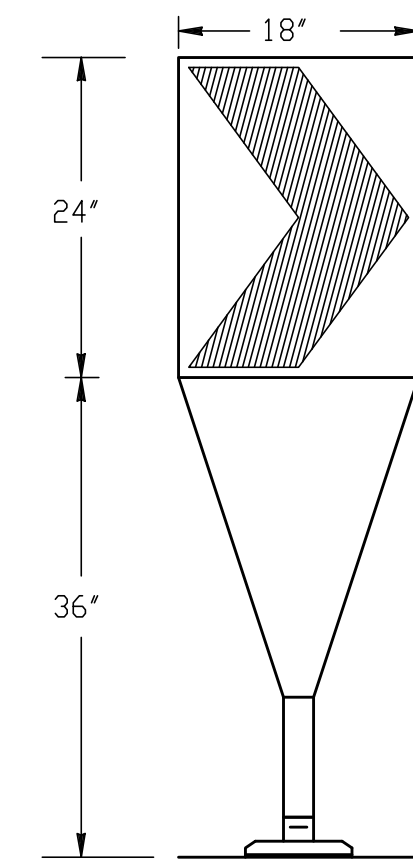
TYPE II



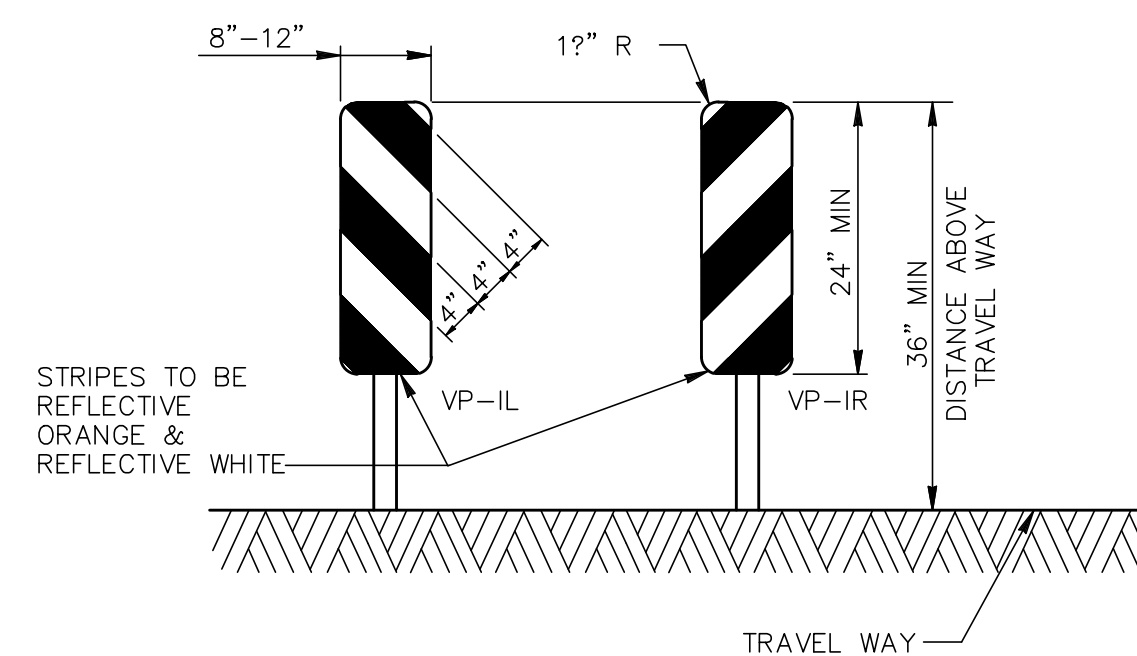
GATE FOR TYPE III BARRICADE

**CHEVRONS**

1. THE CHEVRON SHALL BE A VERTICAL RECTANGLE WITH A MINIMUM SIZE OF 12 BY 18 INCHES.
2. CHEVRONS ARE INTENDED TO GIVE NOTICE OF A SHARP CHANGE OF ALIGNMENT WITH THE DIRECTION OF TRAVEL AND PROVIDE ADDITIONAL EMPHASIS AND GUIDANCE FOR VEHICLE OPERATORS WITH REGARD TO CHANGES IN HORIZONTAL ALIGNMENT OF THE ROADWAY.
3. CHEVRONS, WHEN USED, SHALL BE ERECTED ON THE OUTSIDE OF A SHARP CURVE OR TURN, OR ON THE FAR SIDE OF AN INTERSECTION. THEY SHALL BE IN LINE WITH AND AT RIGHT ANGLES TO APPROACHING TRAFFIC. SPACING SHOULD BE SUCH THAT THE MOTORIST ALWAYS HAS THREE IN VIEW, UNTIL THE CHANGE IN ALIGNMENT ELIMINATES ITS NEED.
4. TO BE EFFECTIVE, THE CHEVRON SHOULD BE VISIBLE FOR AT LEAST 500 FEET.
5. CHEVRONS SHALL BE ORANGE WITH A BLACK NON-REFLECTIVE LEGEND. SHEETING FOR THE CHEVRON SHALL BE RETROREFLECTIVE TYPE E (FLUORESCENT PRISMATIC) CONFORMING TO DEPARTMENTAL MATERIAL SPECIFICATION DMS-8300, UNLESS NOTED OTHERWISE. THE LEGEND SHALL BE BLACK VINYL NON-REFLECTIVE DECAL SHEETING MEETING THE REQUIREMENTS OF DMS-8320.

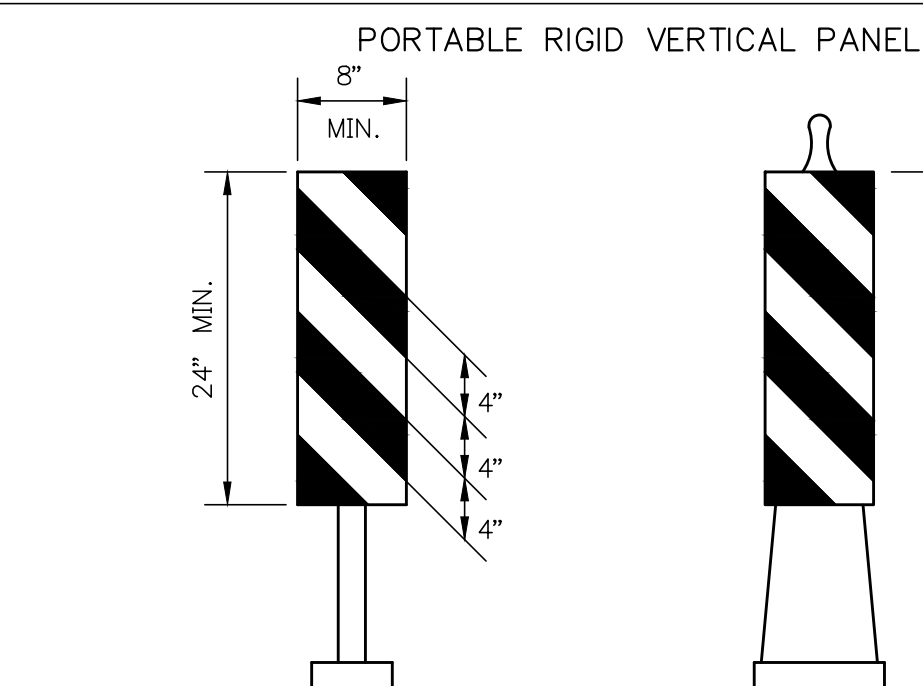


Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)



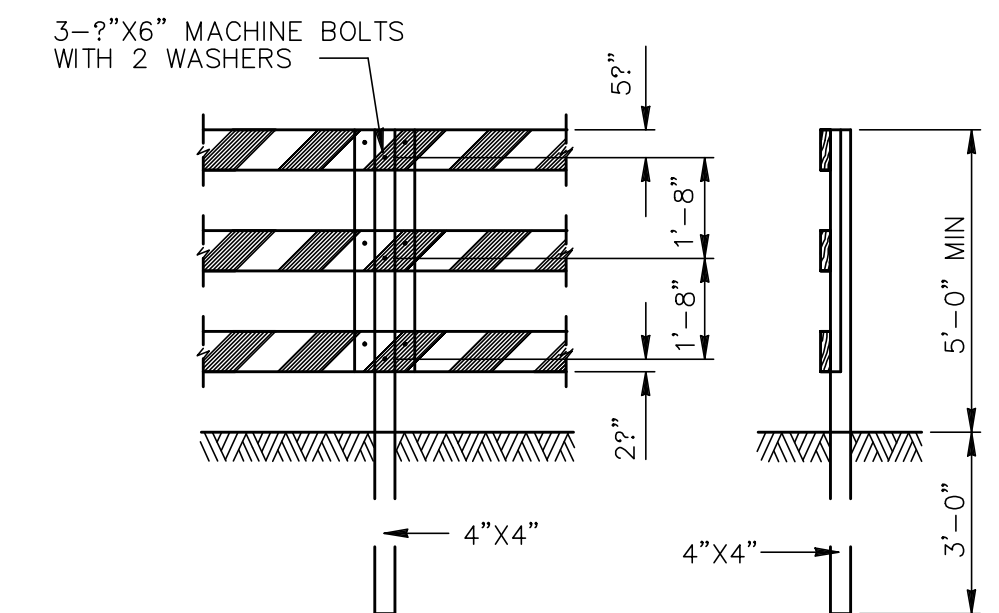
VERTICAL PANELS (VP)

VERTICAL PANELS ARE NORMALLY USED AS CHANNELIZING DEVICES TO INDICATE TANGENT OR NEARLY TANGENT ROADWAY ALIGNMENT WHERE GOOD TARGET VALUE OF A DEVICE IS NEEDED IN DAYTIME AS WELL AS THE NIGHTTIME. IN ADDITION, VERTICAL PANELS SHOULD BE USED AT THE EDGE OF SHOULDER DROP-OFFS AND OTHER SUCH AREAS AS LANE TRANSITIONS WHERE POSITIVE DAY AND NIGHT DELINEATION MAY BE REQUIRED. VERTICAL PANELS SHOULD BE MOUNTED BACK TO BACK IF USED AT THE EDGE OF CUTS ADJACENT TO TWO-WAY TWO LANE ROADWAYS. STRIPES SHOULD ALWAYS SLOPE DOWNWARD TOWARD THE TRAVELED WAY.



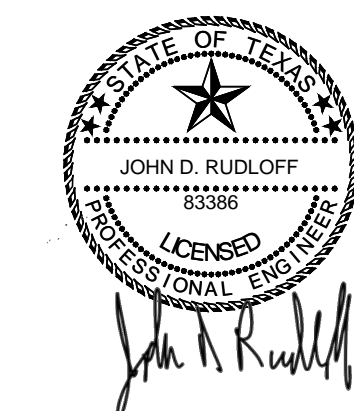
See Compliant Products List for alternate designs.

1. CHANNELIZING DEVICES ON SELF-RIGHTING SUPPORTS MAY BE A VERTICAL PANEL, OPPOSING LANE DIVIDER OR CHEVRON.
2. CHANNELIZING DEVICES ON SELF-RIGHTING SUPPORTS SHALL BE USED AT LOCATIONS DETAILED ELSEWHERE IN THE PLANS. THESE DEVICES SHALL CONFORM TO THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
3. THE CONTRACTOR SHALL MAINTAIN DEVICES IN A CLEAN CONDITION AND REPLACED DAMAGED, NON-REFLECTIVE, FADED, OR BROKEN DEVICES AND BASES AS NECESSARY.
4. PORTABLE BASES SHALL BE FABRICATED FROM VIRGIN AND/OR RECYCLED RUBBER. APPROXIMATE WEIGHT OF PORTABLE BASES SHALL BE 35 LBS.



POST FOR TYPE III BARRICADE

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



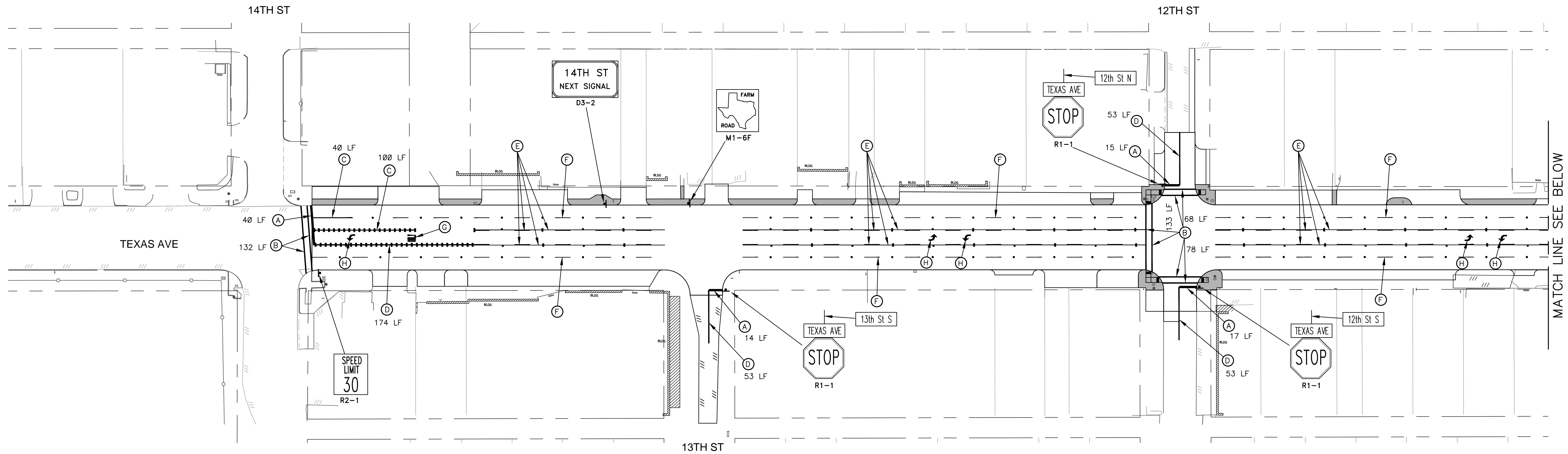
7322 Southwest Freeway, Suite 1040 • Houston, Texas 77074  
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Galveston County, Texas

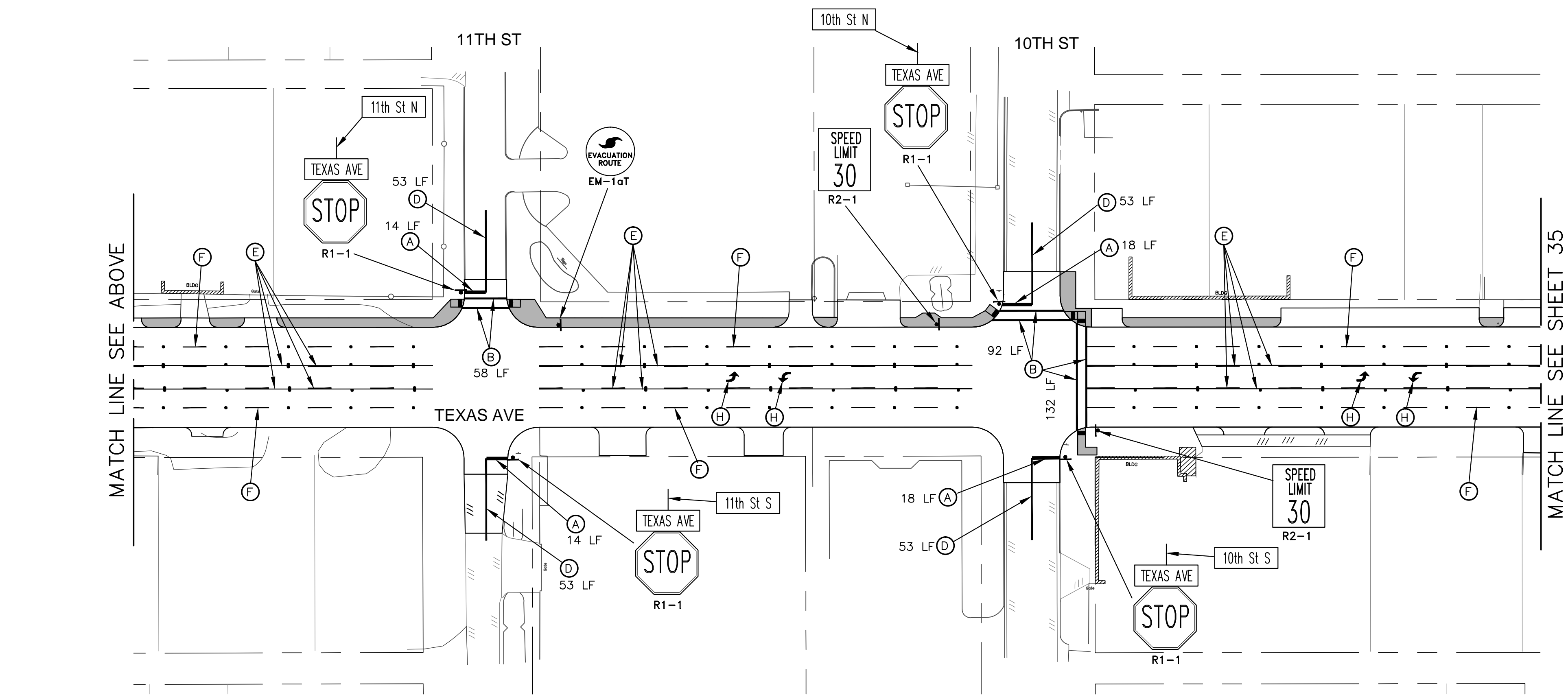
Texas Avenue Reconstruction

Traffic Control Details

Job No.: 18-015	Scale: N/A	SHEET
Date: September, 2019	HORZ: N/A	33
Dwn By: D. Fattig	VERT: N/A	
Chk By: J Rudloff		OF 52



MATCH LINE SEE BELOW

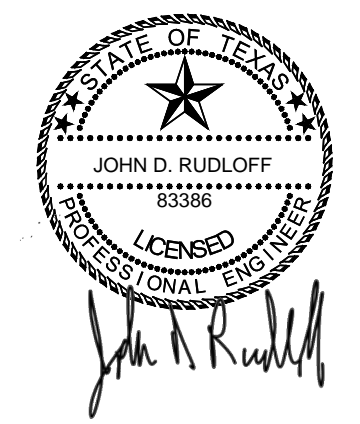


MATCH LINE SEE ABOVE

MATCH LINE SEE SHEET 35

- NOTES:**
- ALL STRIPING & MARKERS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION.
  - EXISTING STRIPING & MARKERS NOT SHOWN TO BE REPLACED THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT NO ADDITIONAL COST TO THE PROJECT.
  - REMOVAL OF EXISTING STRIPING AND MARKERS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19

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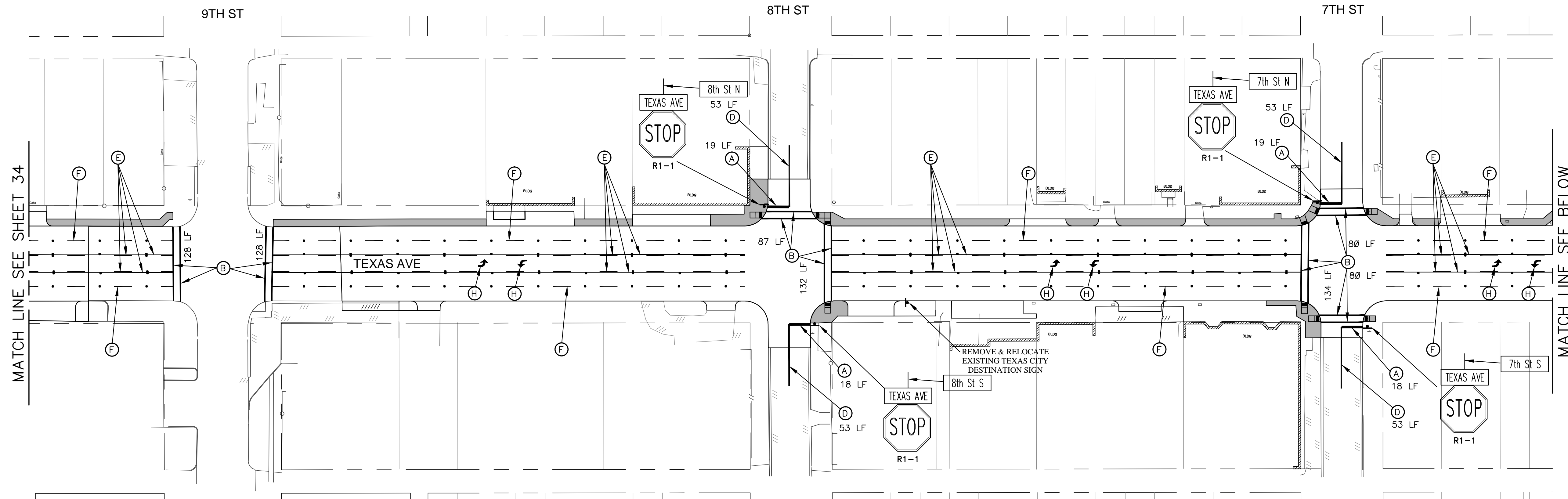
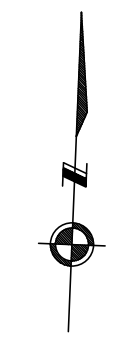
Galveston County, Texas

Texas Avenue Reconstruction

Striping Layout - I

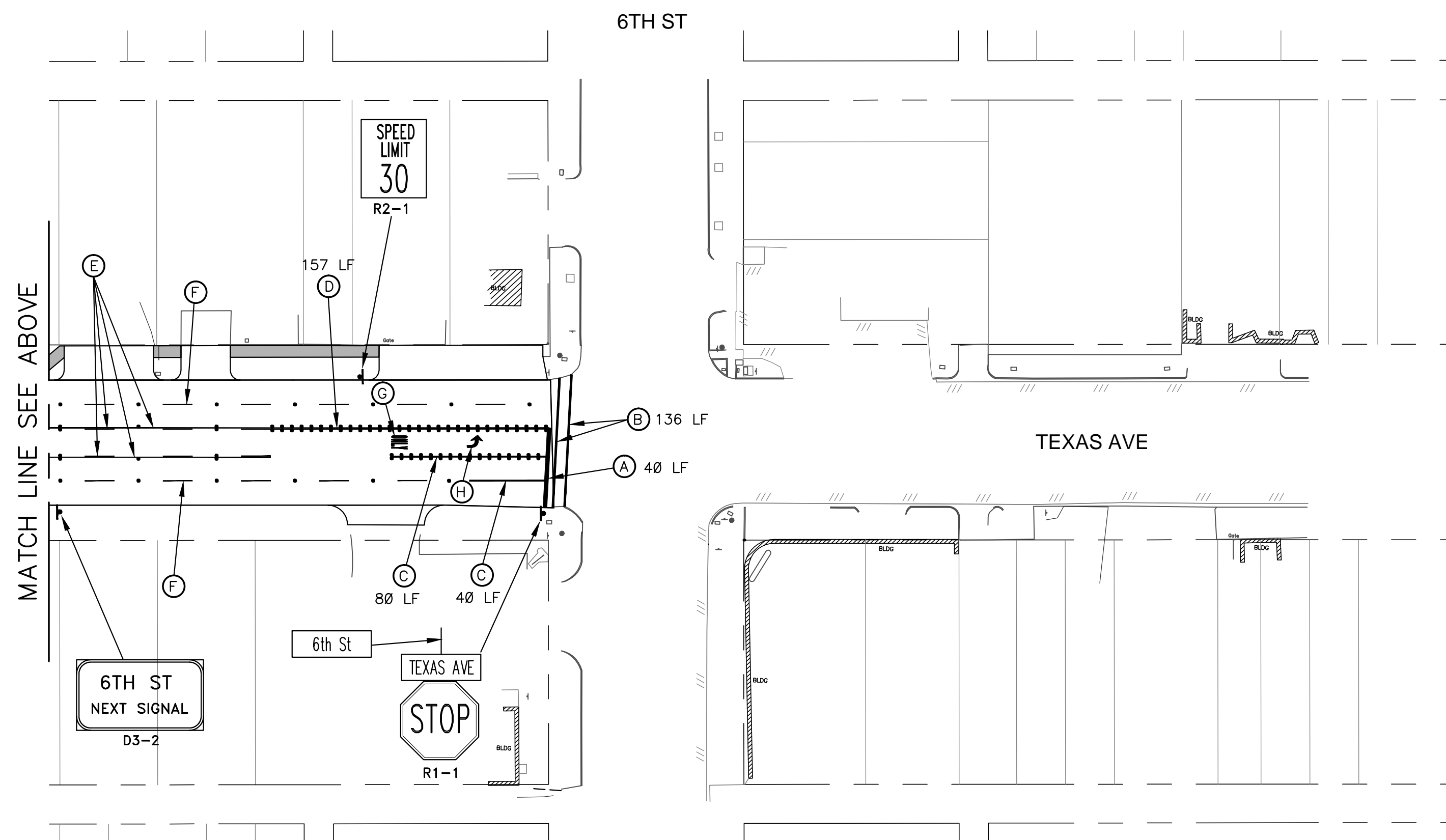
- LEGEND:**
- (A) REFLECTIVE MARKING 24" SOLID (WHITE)
  - (B) REFLECTIVE MARKING 12" SOLID (WHITE)
  - (C) REFLECTIVE MARKING 8" SOLID (WHITE)
  - (D) REFLECTIVE MARKING 4" SOLID DOUBLE (YELLOW) (LENGTH SHOWN IS THE TOTAL SINGLE)
  - (E) REFLECTIVE MARKING 4" BROKEN/SOLID (YELLOW)
  - (F) REFLECTIVE MARKING 4" BROKEN/SOLID (WHITE)
  - (G) REFLECTIVE MARKING (WORD "ONLY") (WHITE)
  - (H) REFLECTIVE MARKING (ARROW) (WHITE)
  - (R1) REMOVE & REPLACE SIGN (NO SEPARATE PAY)
  - (N) REMOVE OLD SIGN & REPLACE WITH NEW SIGN
  - RPM (RAISED PAVEMENT MARKERS/BUTTONS)

Job No.: 18-015	Scale: HORZ: 1"=50'	SHEET <b>34</b> OF 52
Date: September, 2019	VERT: 1"=50'	
Dwn By: D. Fattig	Chkd By: J. Rudloff	



MATCH LINE SEE SHEET 34

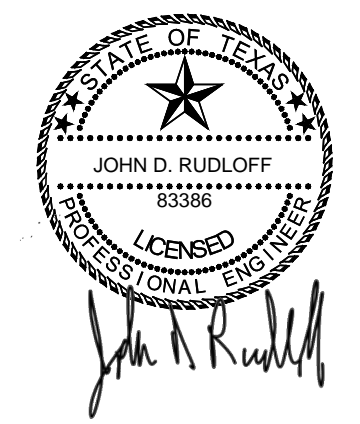
MATCH LINE SEE BELOW



MATCH LINE SEE ABOVE

- NOTES:**
- ALL STRIPING & MARKERS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION.
  - EXISTING STRIPING & MARKERS NOT SHOWN TO BE REPLACED THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT NO ADDITIONAL COST TO THE PROJECT.
  - REMOVAL OF EXISTING STRIPING AND MARKERS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

MK.	DESCRIPTION	DATE	DWN.	CHK.



- LEGEND:**
- (A) REFLECTIVE MARKING 24" SOLID (WHITE)
  - (B) REFLECTIVE MARKING 12" SOLID (WHITE)
  - (C) REFLECTIVE MARKING 8" SOLID (WHITE)
  - (D) REFLECTIVE MARKING 4" SOLID DOUBLE (YELLOW) (LENGTH SHOWN IS THE TOTAL SINGLE)
  - (E) REFLECTIVE MARKING 4" BROKEN/SOLID (YELLOW)
  - (F) REFLECTIVE MARKING 4" BROKEN/SOLID (WHITE)
  - (G) REFLECTIVE MARKING (WORD "ONLY") (WHITE)
  - (H) REFLECTIVE MARKING (ARROW) (WHITE)
  - (R1) REMOVE & REPLACE SIGN (NO SEPARATE PAY)
  - (N) REMOVE OLD SIGN & REPLACE WITH NEW SIGN
  - RPM (RAISED PAVEMENT MARKERS/BUTTONS)

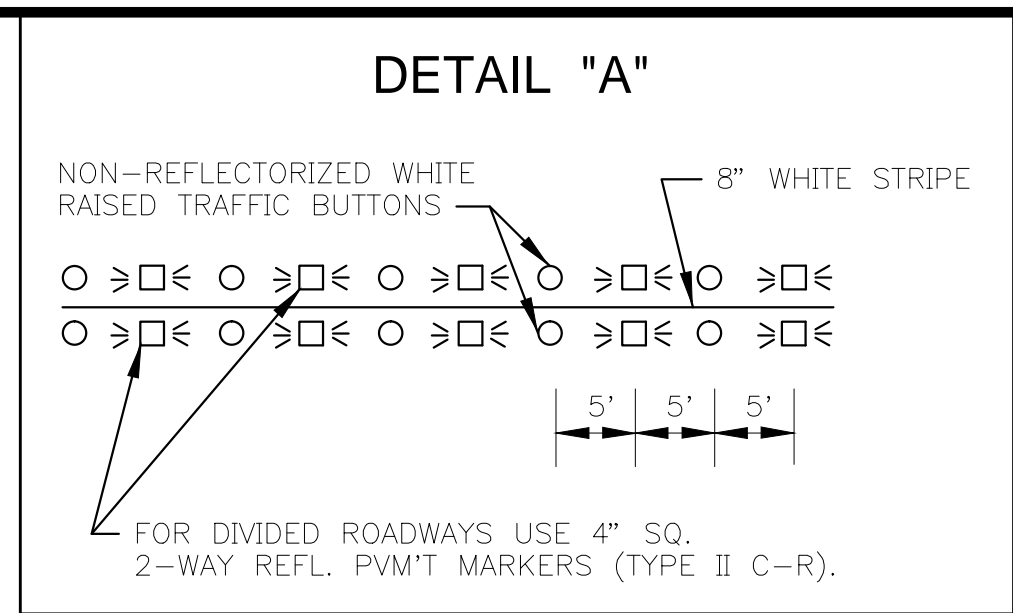
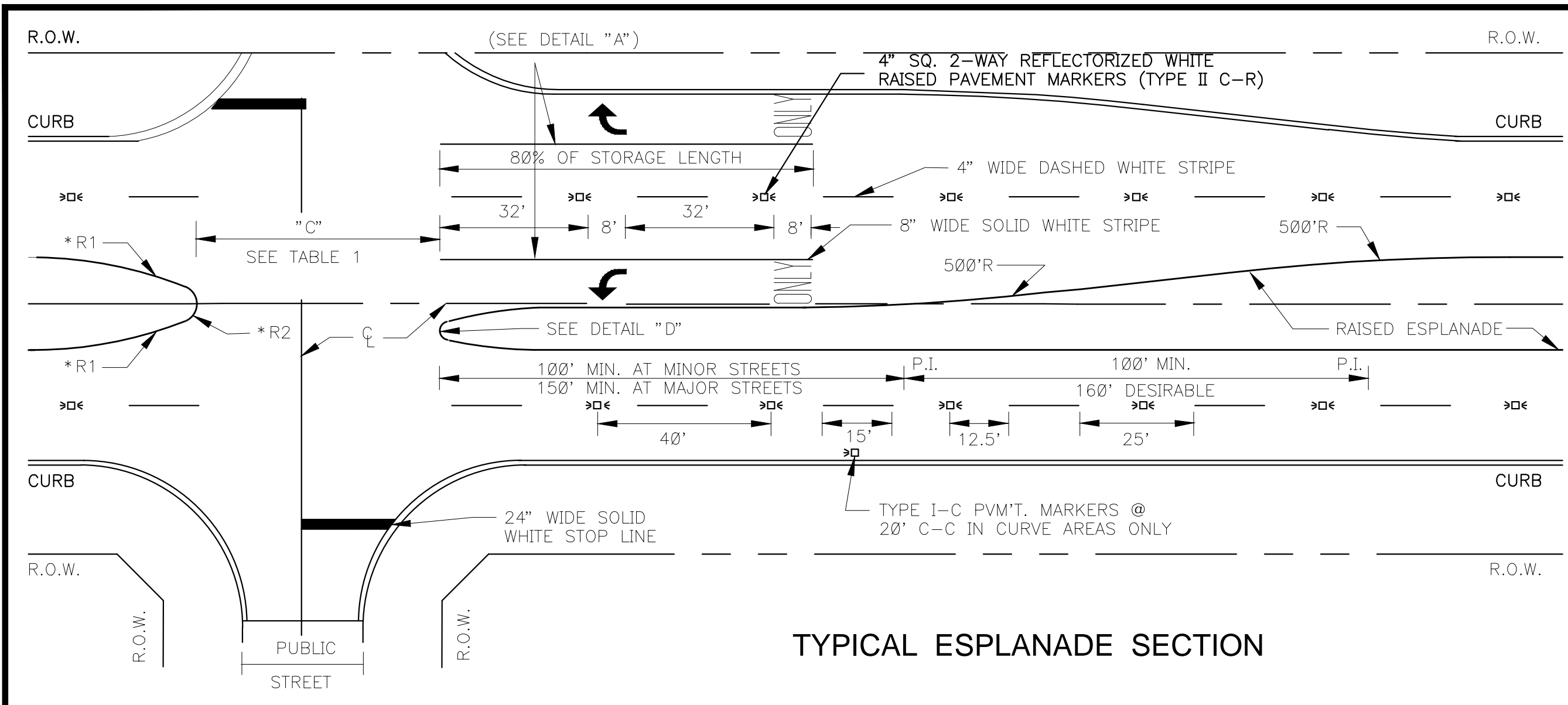
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Galveston County, Texas  
 Texas Avenue Reconstruction  
 Striping Layout - II

Job No.: 18-015  
 Date: September, 2019  
 Dwn By: D. Fattig  
 Chkd By: J. Rudloff

Scale:  
 HORZ: 1"=50'  
 VERT:  

SHEET  
**35**  
 OF 52



**TABLE 1**

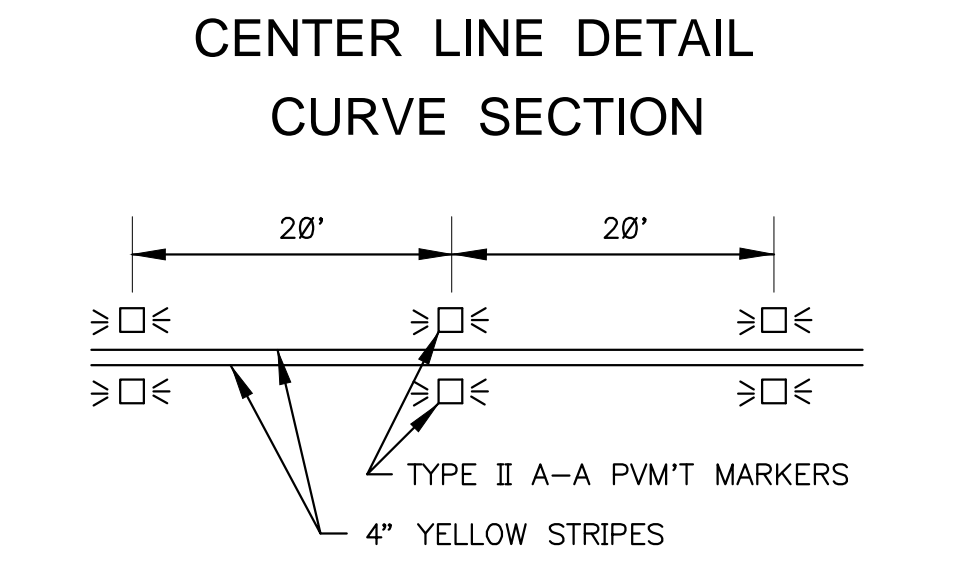
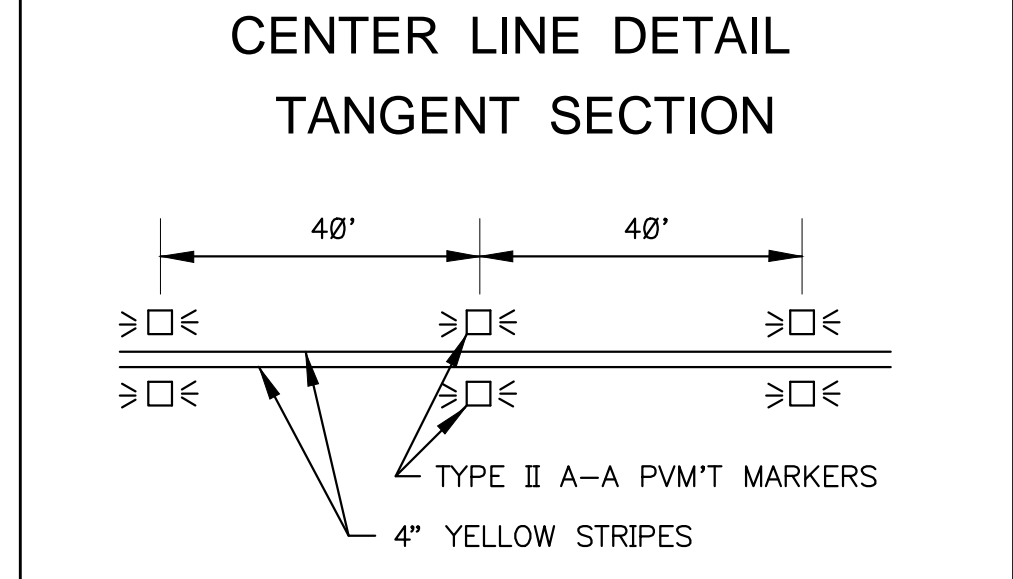
TYPICAL LENGTH OF ESPLANADE OPENING "C" FOR PUBLIC STREET

ESPLANADE INTERRUPTION	(1) NO LTB	(1) 1 LTB	(1) 2LTB
UNDIVIDED STREET < 40'	45'	52(2)	60'
44'	50'	56(2)	60'
DIVIDED STREET	D+10'	D+10'	D+10'

**RADIUS DIMENSIONS**

ESPLANADE	*R1	*R2
<8'	N/A	W/2
8'-38'	90'	W/5
>38'	N/A	15'

NOTES:  
 (1) LEFT TURN BAY  
 (2) DISTANCE FROM CENTERLINE OF OPENING TO ESPLANADE NOSE WITH LEFT TURN LANE MUST BE 30'

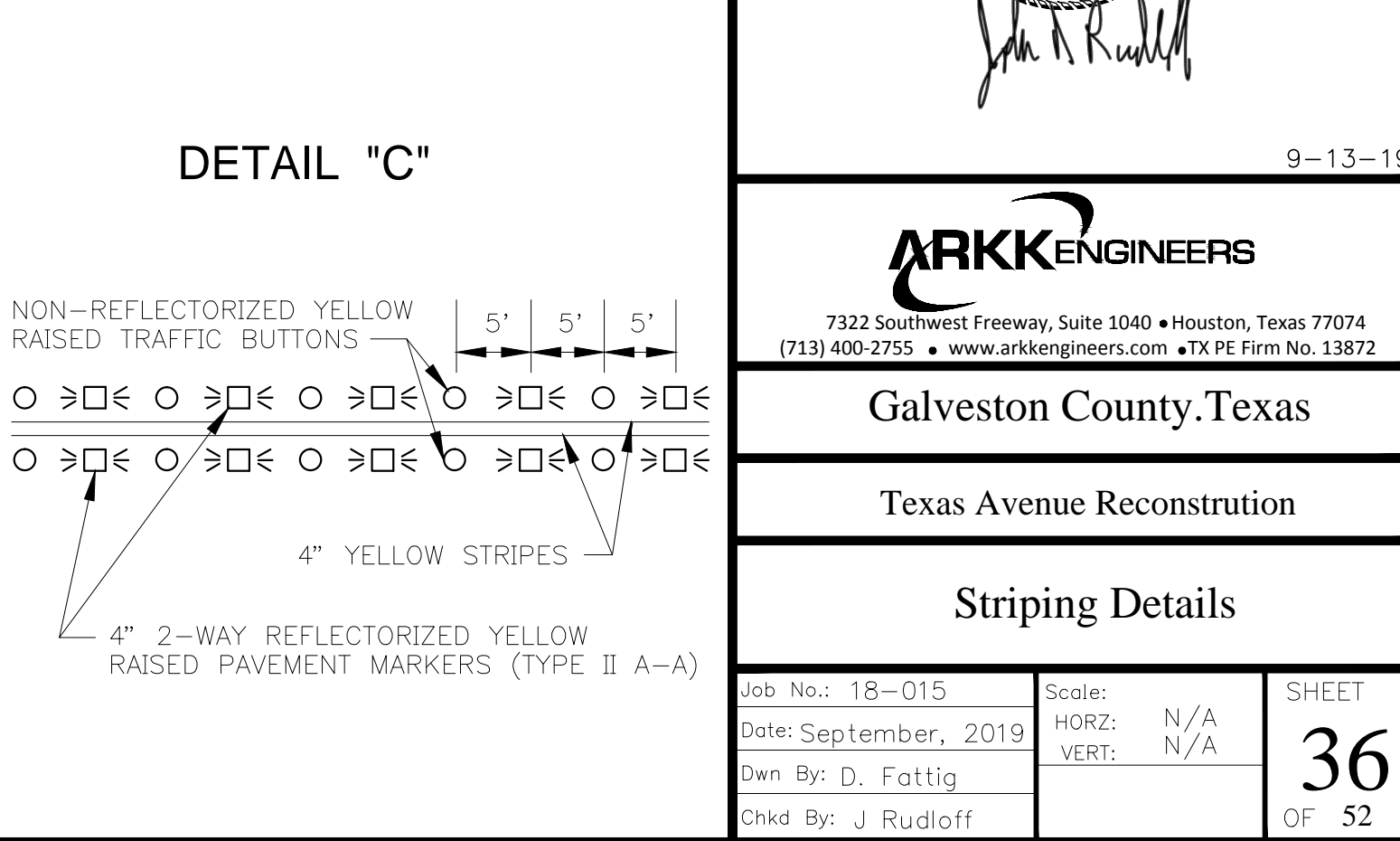
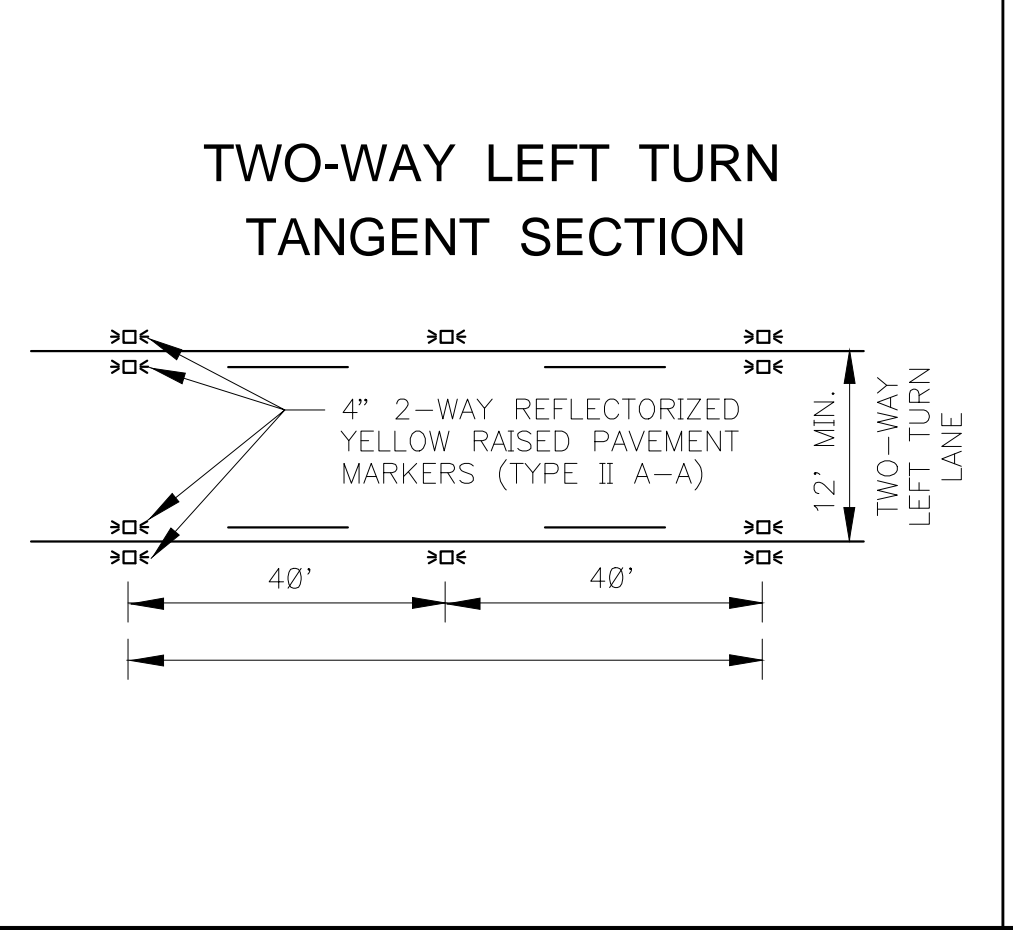
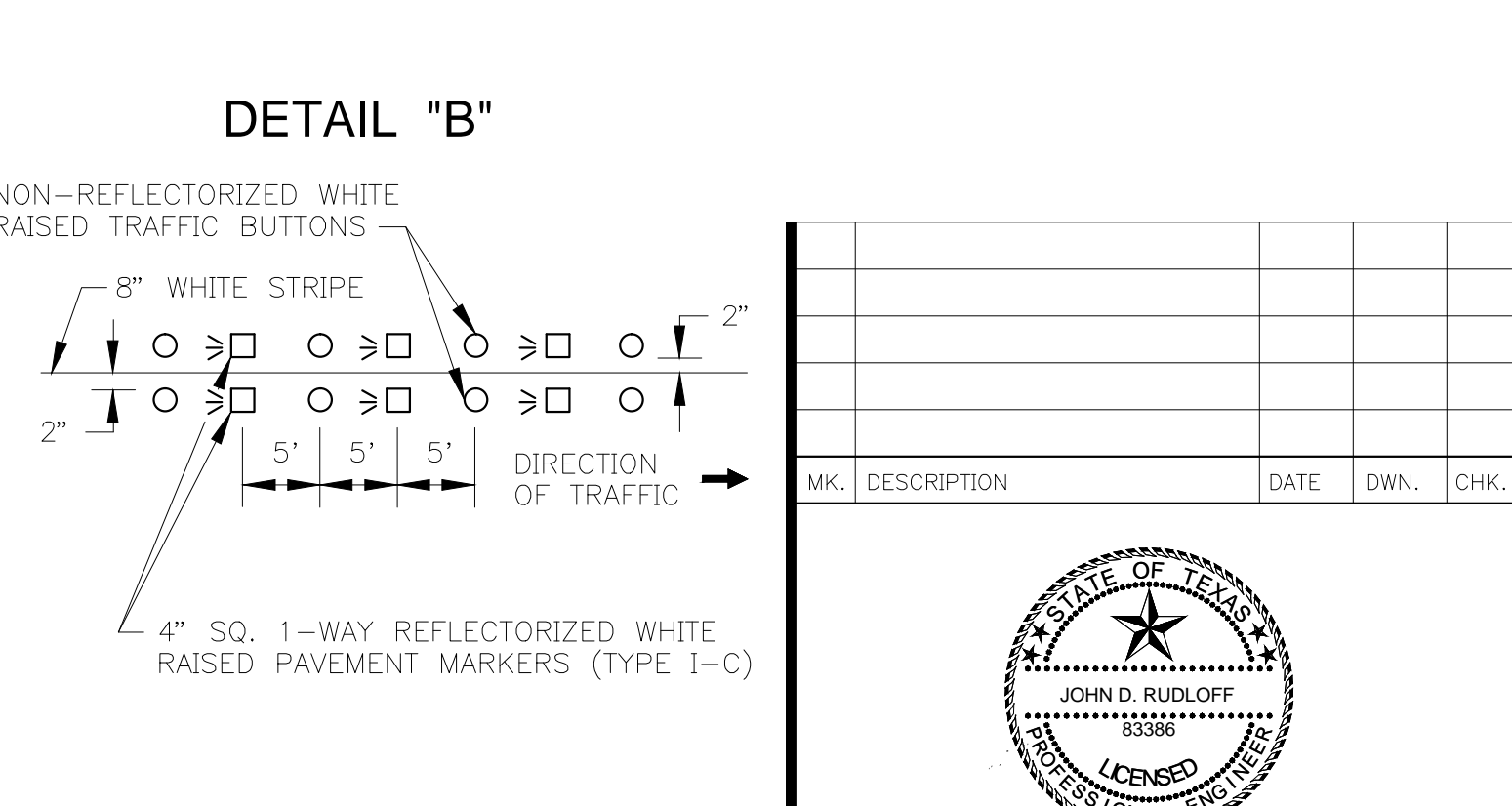
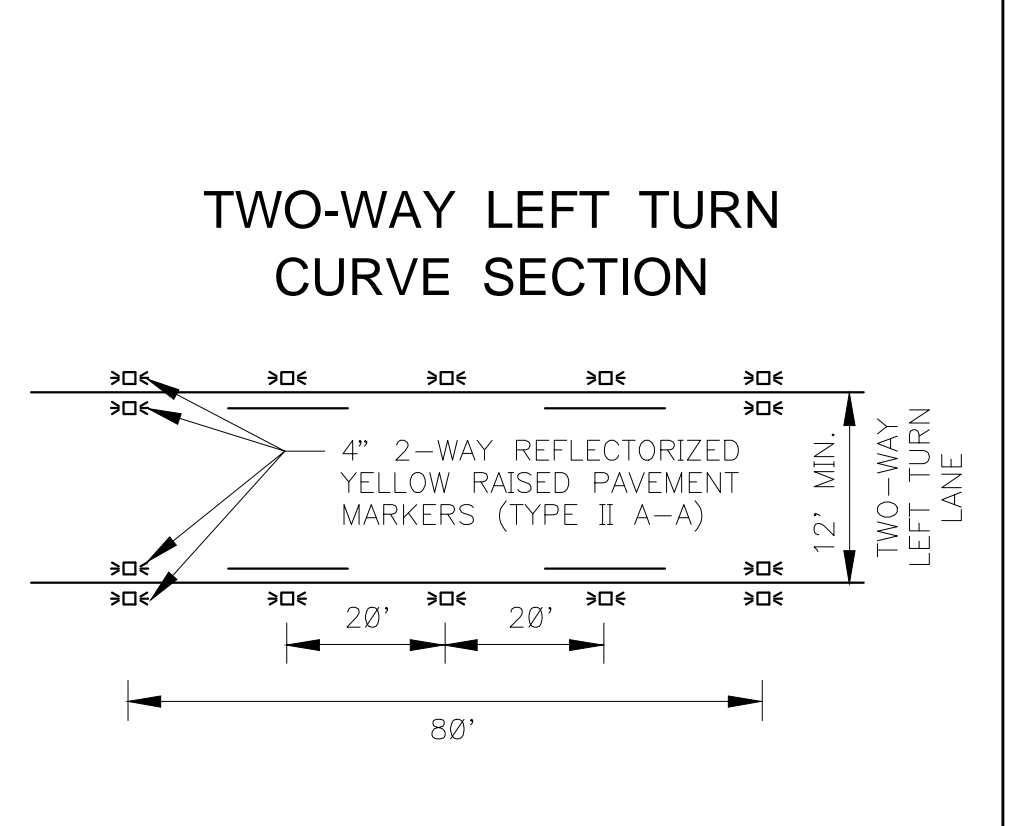
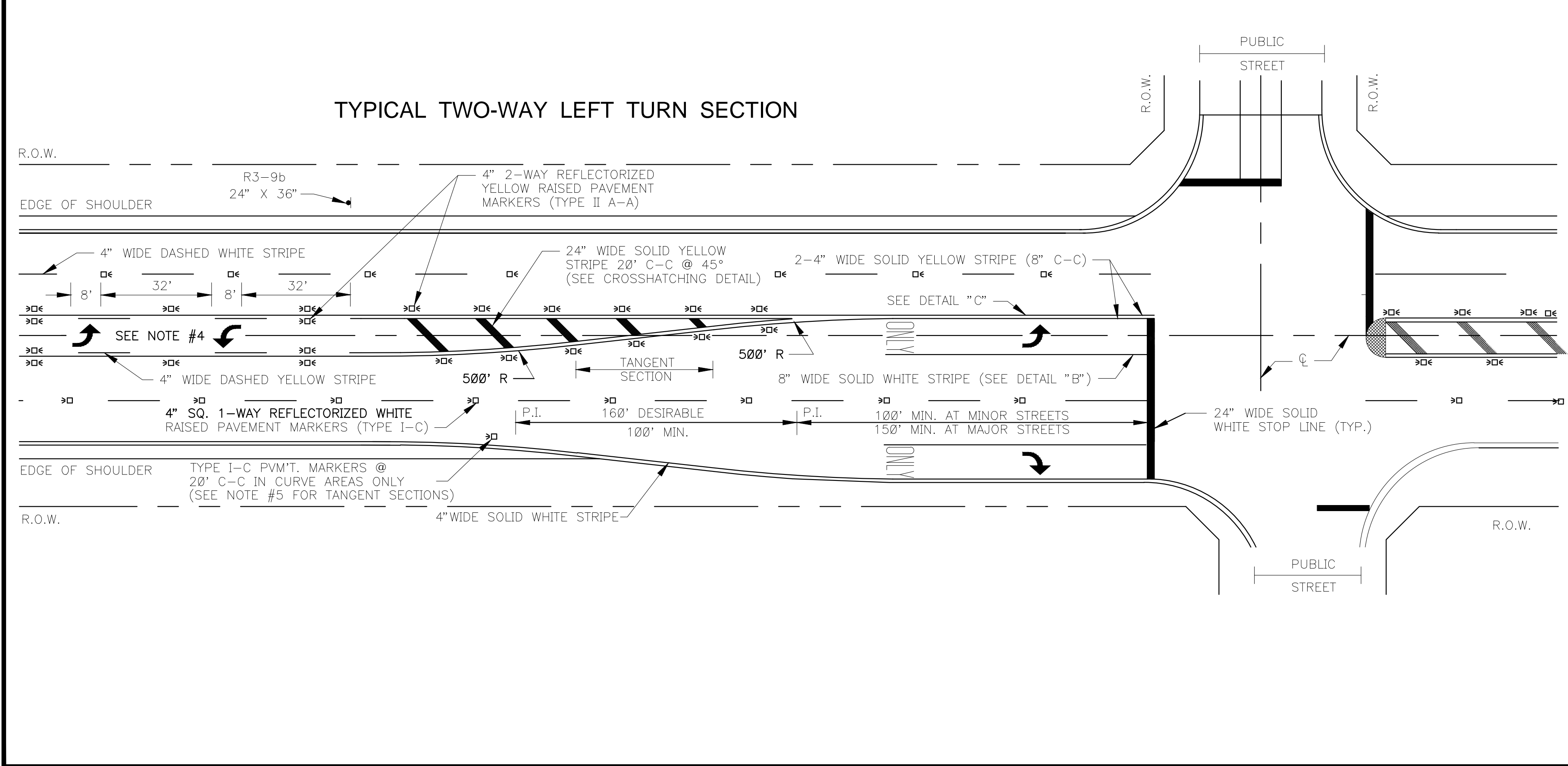
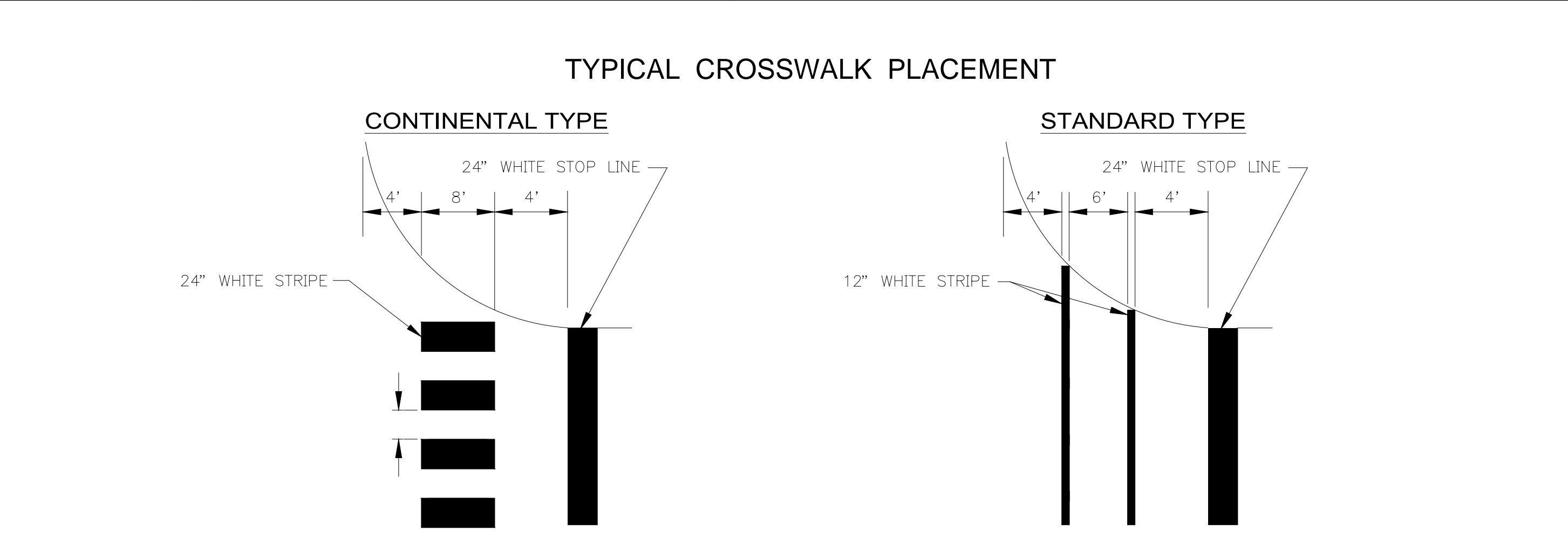
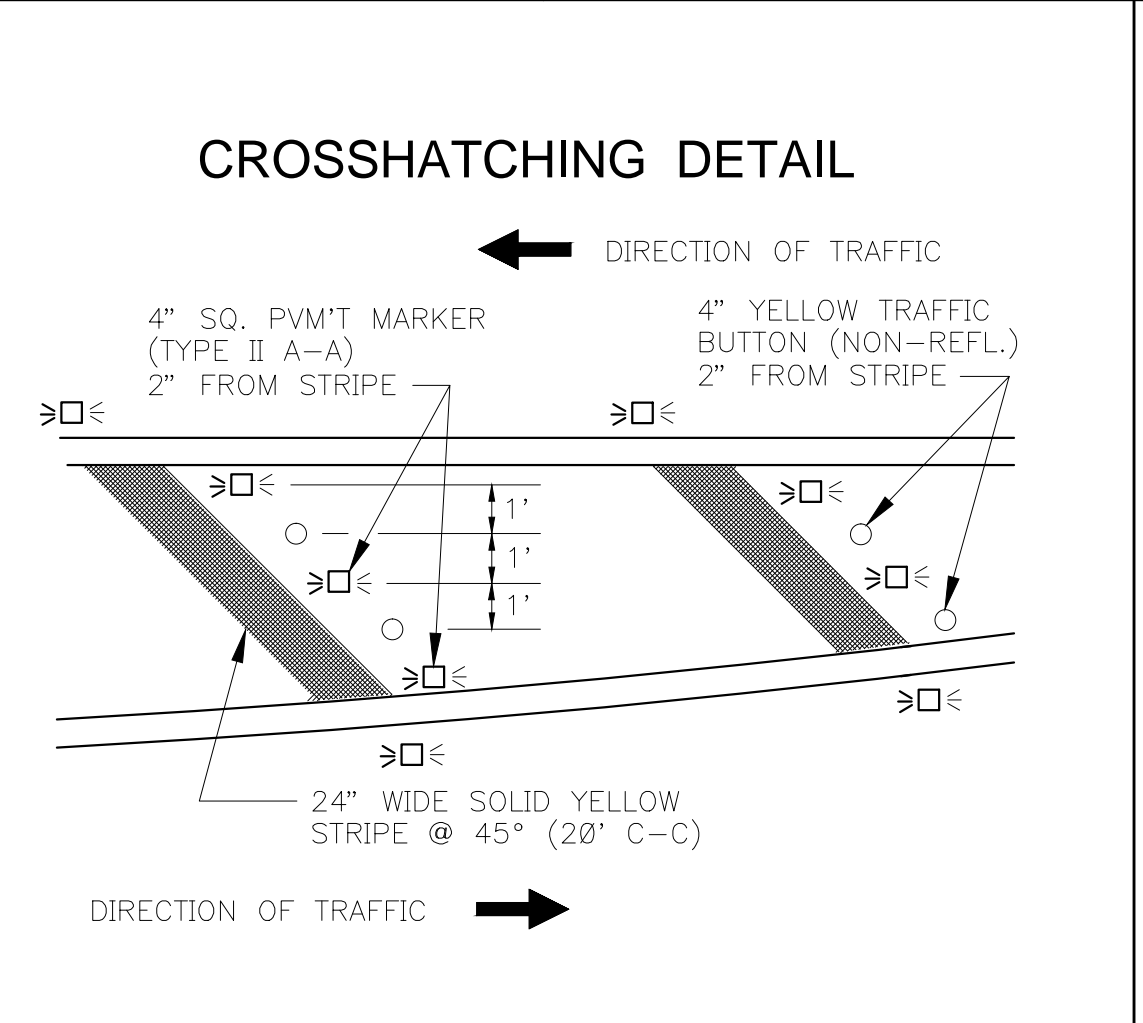
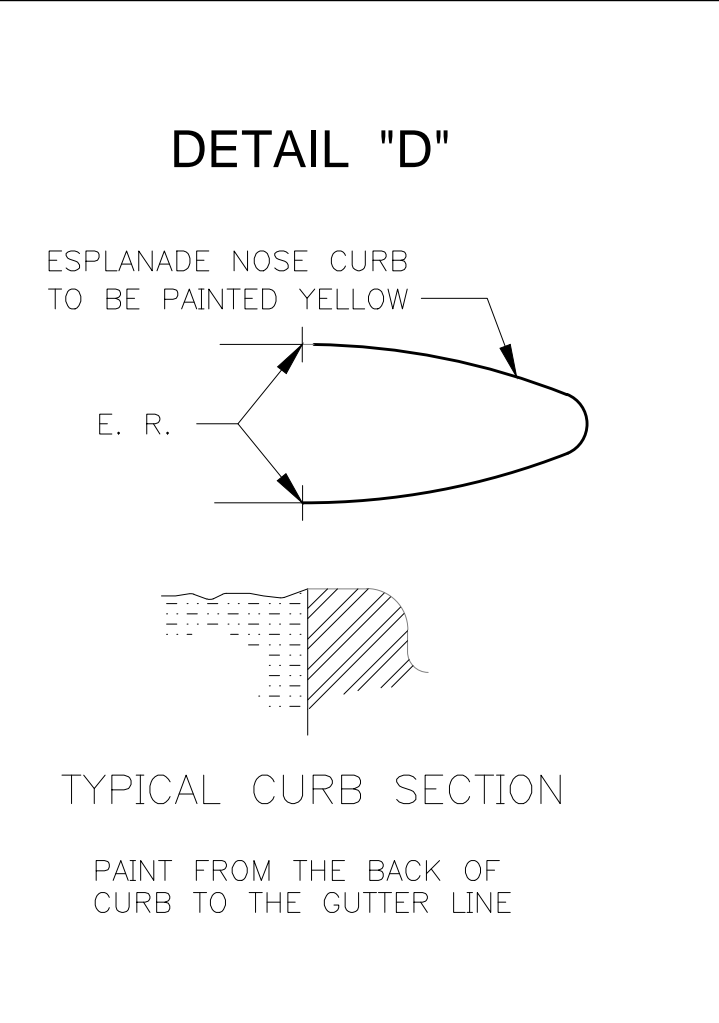


**PAVEMENT MARKER LEGEND**

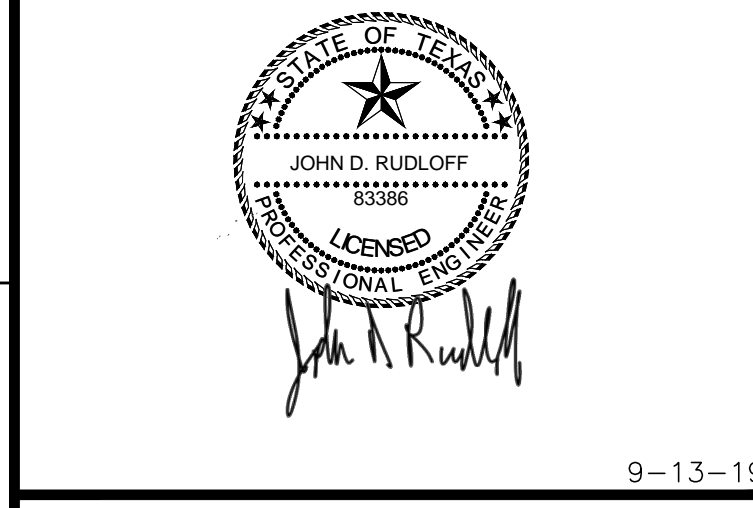
SYMBOL	DESCRIPTION
▷◻◁	TWO SIDED REFLECTORIZED RAISED PAVEMENT MARKER
◻◁	ONEE SIDED REFLECTORIZED PAVEMENT MARKER
○	NON-REFLECTIVE 4" DIA. RAISED TRAFFIC BUTTON

**NOTES:**

- ALL STRIPING & MARKERS SHALL CONFORM WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.
- ALL TRAFFIC BUTTONS AND MARKERS SHALL BE INSTALLED ADJACENT TO STRIPES (APPROX. 2").
- LEFT TURN STORAGE BAYS SHALL BE A MIN. OF 100' AT MINOR STREETS AND A MIN. OF 150' AT MAJOR STREETS.
- REPEAT ARROWS AT APPROX. 1000' INTERVALS WITHIN TWO-WAY LEFT TURN SECTION.
- WITHIN A TANGENT SECTION THE TYPE I-C PAVEMENT MARKERS CAN BE PLACED AT 40' C-C ON ROADWAYS WITHOUT CURB AND GUTTERS.

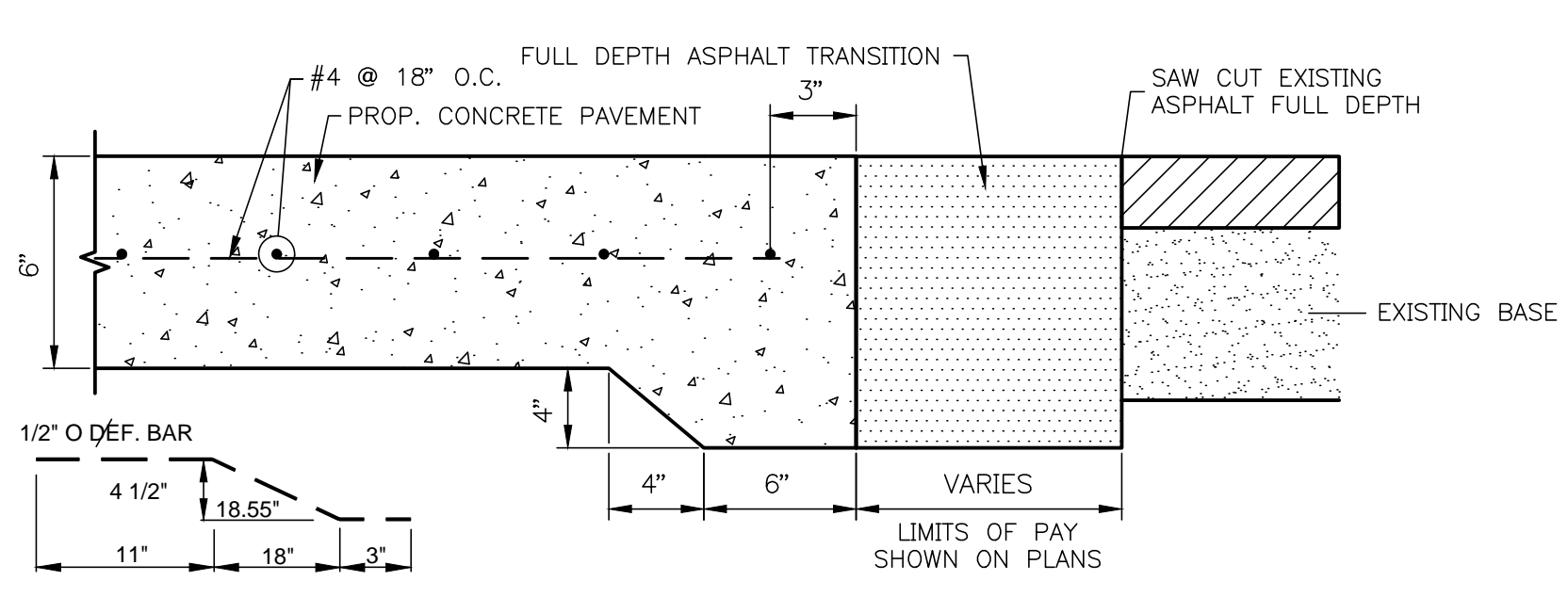


MK.	DESCRIPTION	DATE	DWN.	CHK.



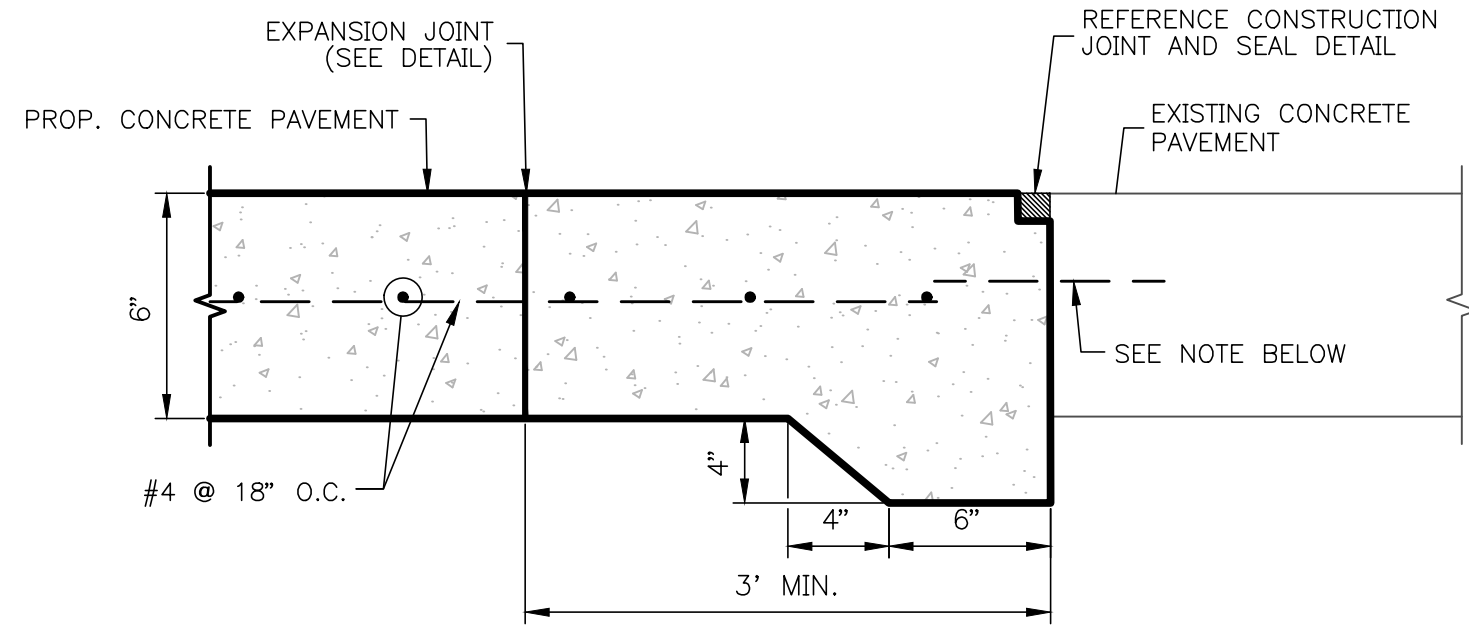
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Galveston County, Texas  
 Texas Avenue Reconstruction  
 Striping Details  
 Job No.: 18-015 Scale: N/A SHEET  
 Date: September, 2019 HORZ: N/A 36  
 Dwn By: D. Fattig VERT: N/A OF 52  
 Chkd By: J. Rudloff



**CONCRETE PAVING HEADER AT ASPHALT PAVING**

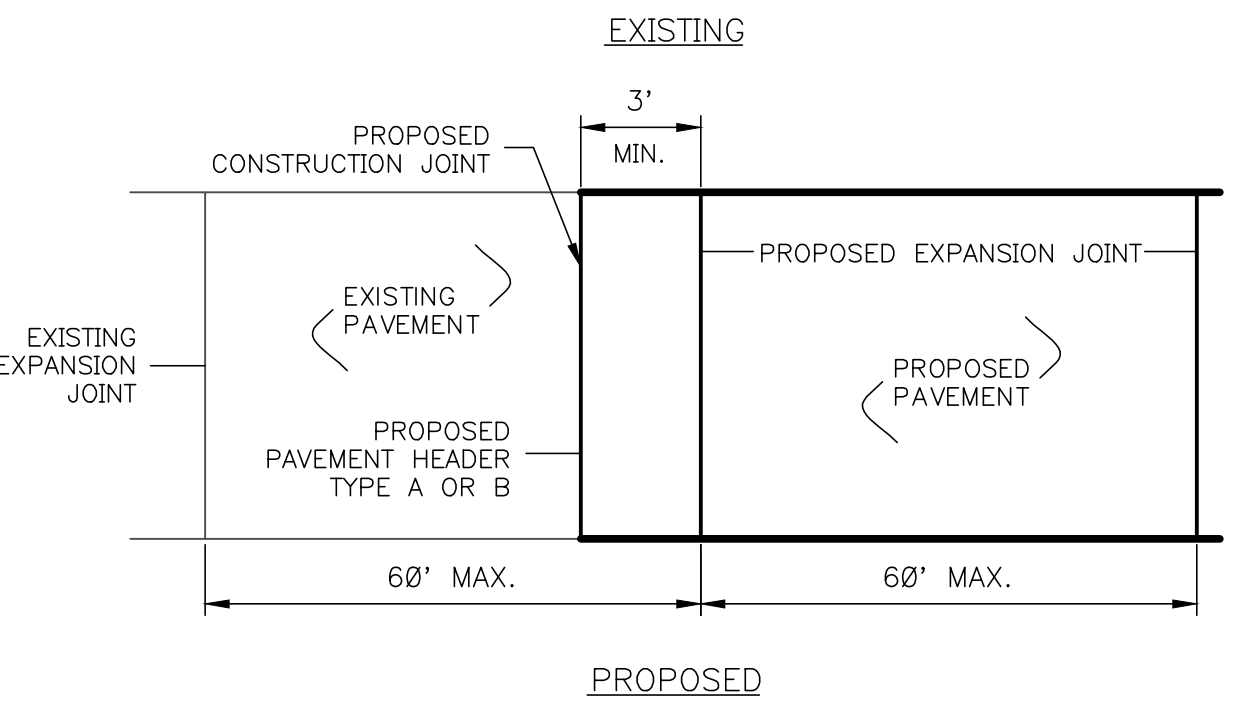
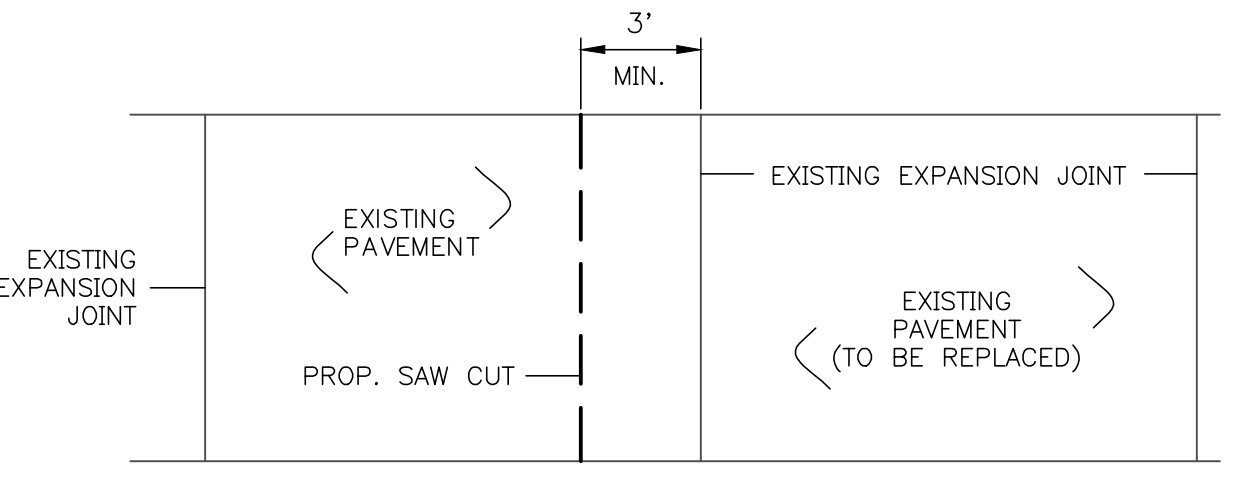
NOT TO SCALE



**CONCRETE PAVING HEADER AT EXISTING CONCRETE PAVING**

NOT TO SCALE

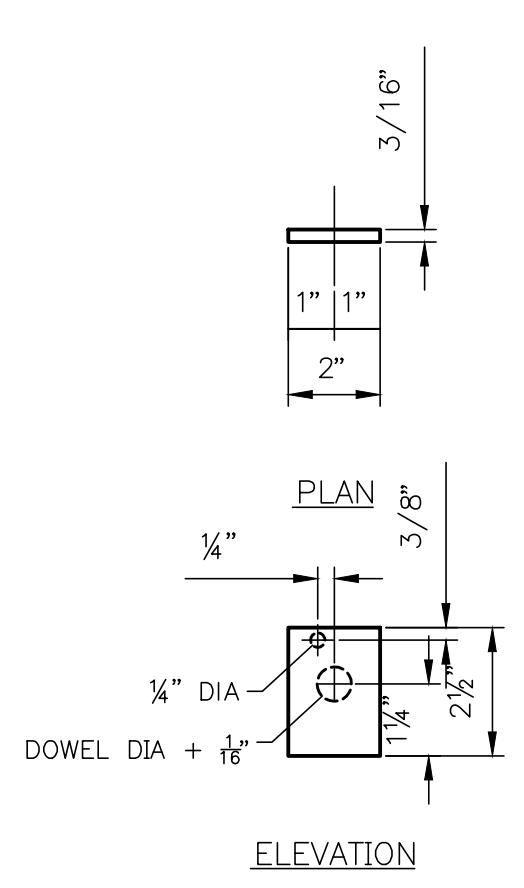
NOTES:  
PROVIDE 3/4" DIAMETER SMOOTH STEEL BAR, 20" LONG ON 12" CENTERS. DRILL AND EPOXY DOWEL INTO EXISTING PAVEMENT WITH "PO ROC" OR EQUAL.



**PAVEMENT JOINT LOCATION DETAIL WHERE PROPOSED PAVEMENT MEETS EXISTING**

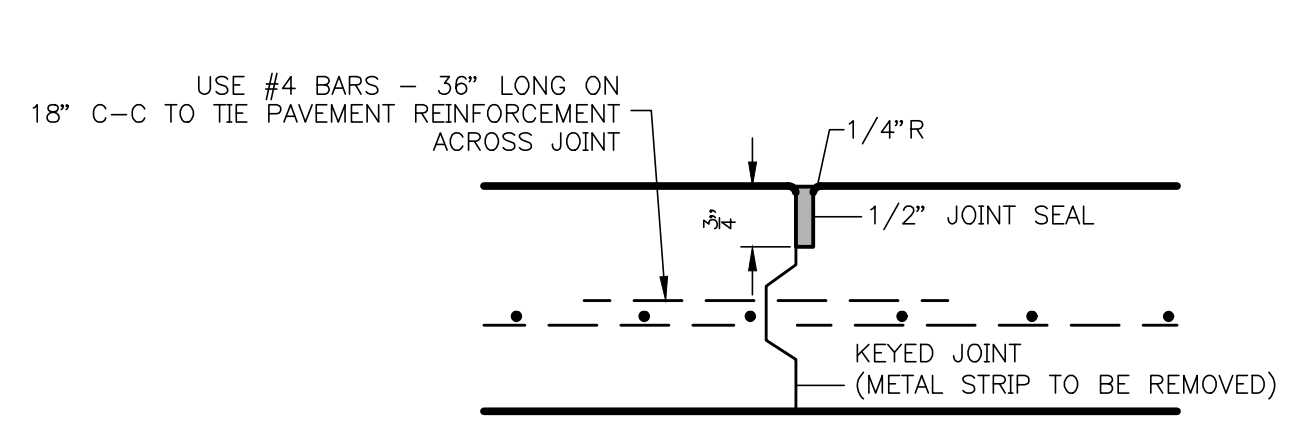
NOT TO SCALE

- GENERAL NOTES:**
- ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. DESIGNATION A-615, GRADE 60.
  - THE LOCATION OF EXPANSION JOINTS MAY BE REQUIRED TO SUIT THE PROPOSED METHODS OF THE CONTRACTOR. THE MAXIMUM WIDTH BETWEEN TRANSVERSE EXPANSION JOINTS SHALL NOT EXCEED 60'-0".
  - CONTROL JOINTS DEEP SHALL BE SAW CUT A DEPTH OF ONE QUARTER OF PAVEMENT THICKNESS PLUS 1/2 INCH AND FILLED WITH JOINT SEALANT @ 20' MAXIMUM SPACING BETWEEN CONTROL JOINTS.



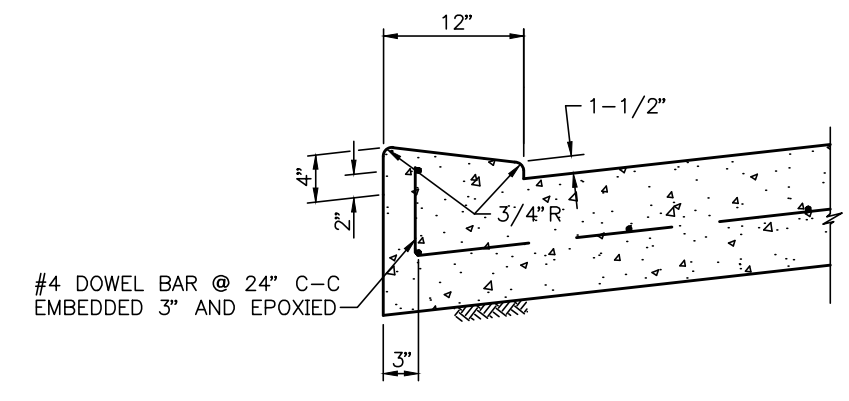
**JOINT PLATE DETAIL**

NOT TO SCALE



**CONSTRUCTION JOINT AND SEAL DETAIL**

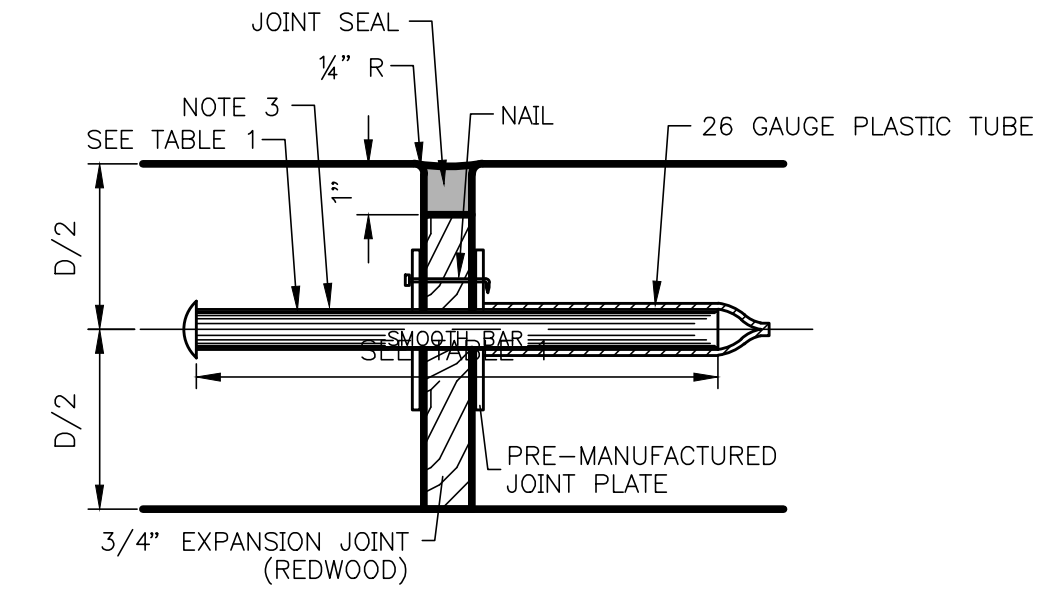
NOT TO SCALE



**4"x12" LAYDOWN CURB**

NOT TO SCALE

- NOTES:**
- STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS. UNITS TO BE SPACED ON 12" CENTERS.
  - EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 60 FEET.
  - CENTER DOWEL HORIZONTALLY ON JOINT.
  - CENTER DOWEL VERTICALLY IN CONCRETE BASE. EXTEND THICKENED CONCRETE AS NEEDED TO MAINTAIN 3" MIN. COVER.



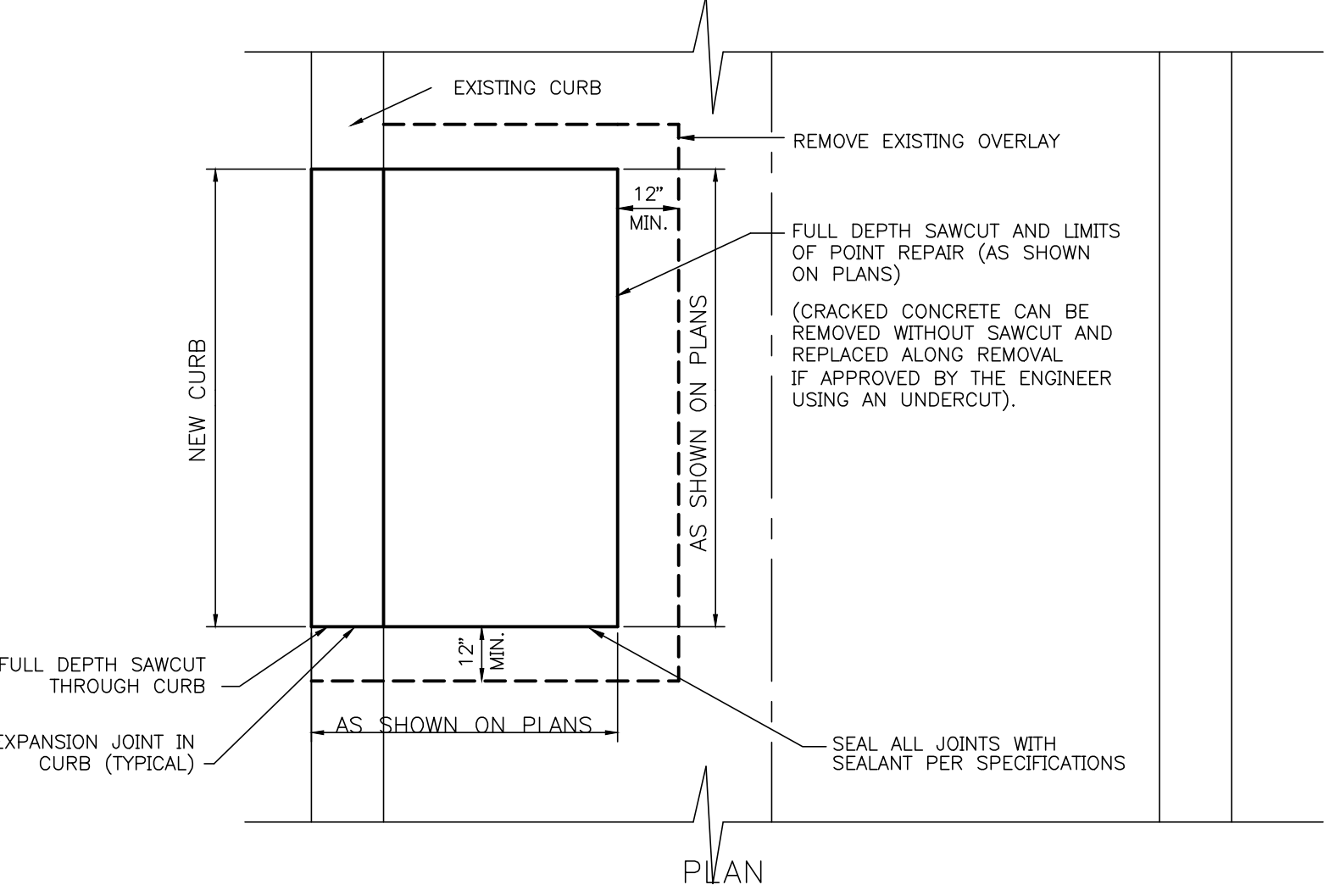
**SECTION DOWEL TYPE EXPANSION JOINT**

TABLE 1

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS		
	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
6	3/4"	18	12
7	1"	18	12
8	1 1/4"	18	12

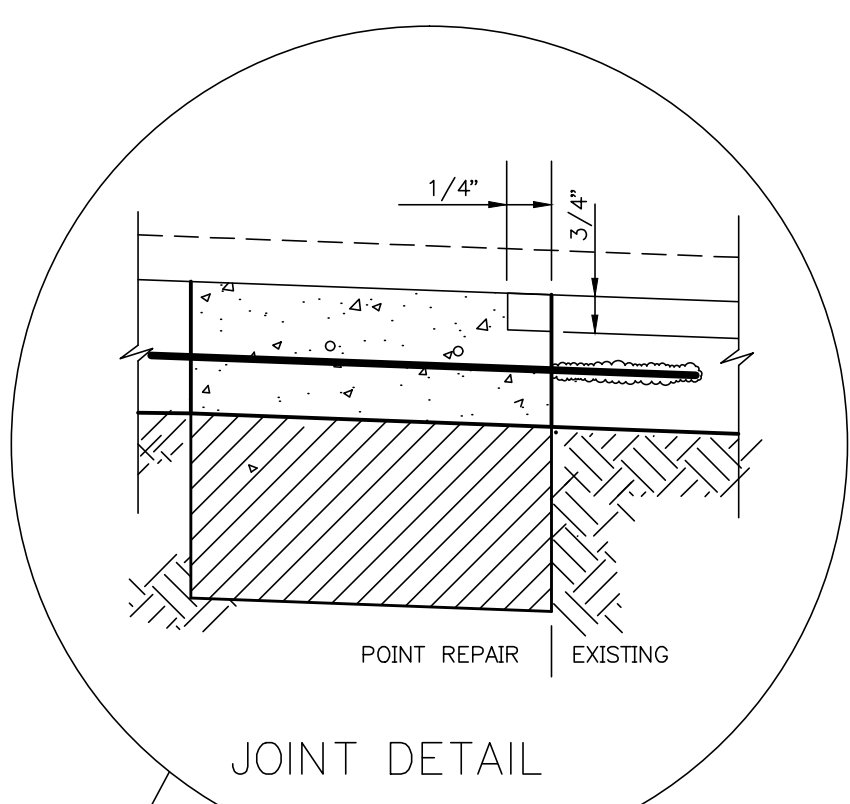
**EXPANSION AND CONSTRUCTION JOINT DETAILS**

NOT TO SCALE

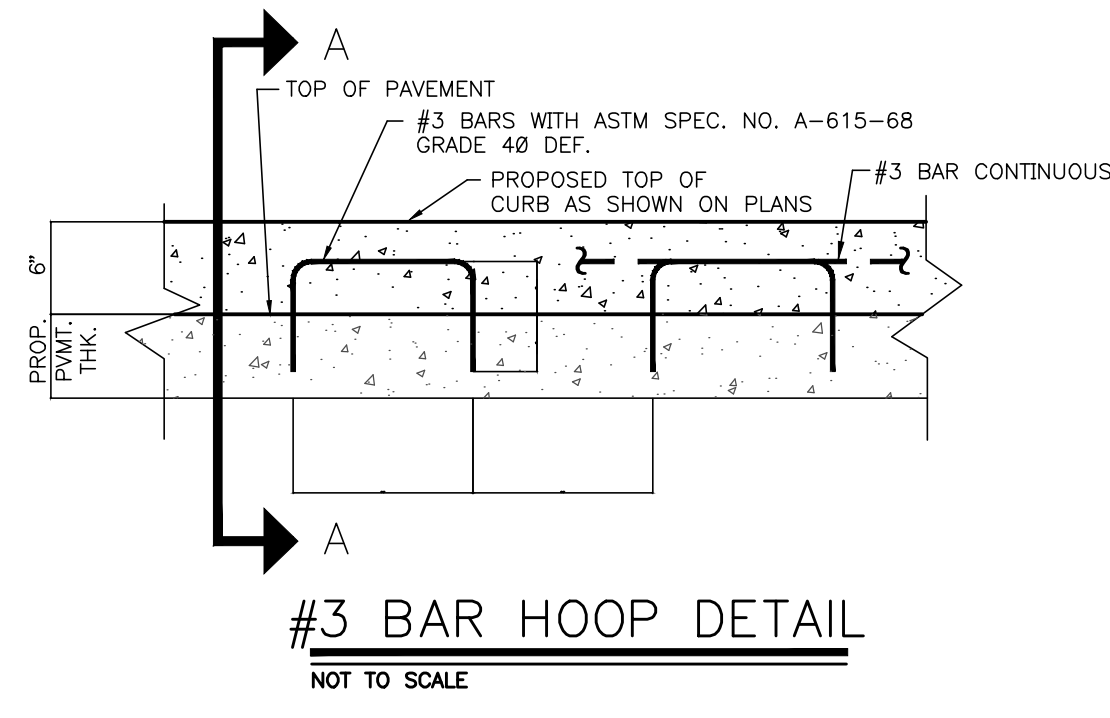


**TYPICAL POINT REPAIR DETAIL FOR CONCRETE STREETS ON CEMENT STABILIZED SAND SUBGRADE**

NOT TO SCALE

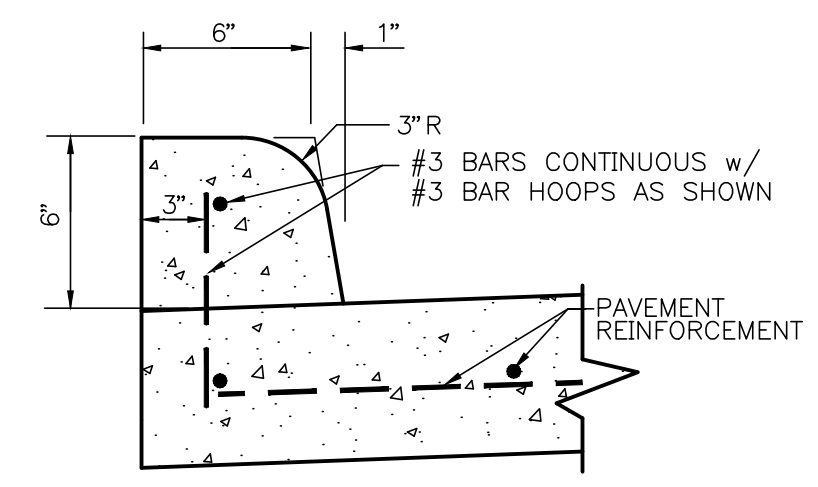


**JOINT DETAIL**



**#3 BAR HOOP DETAIL**

NOT TO SCALE

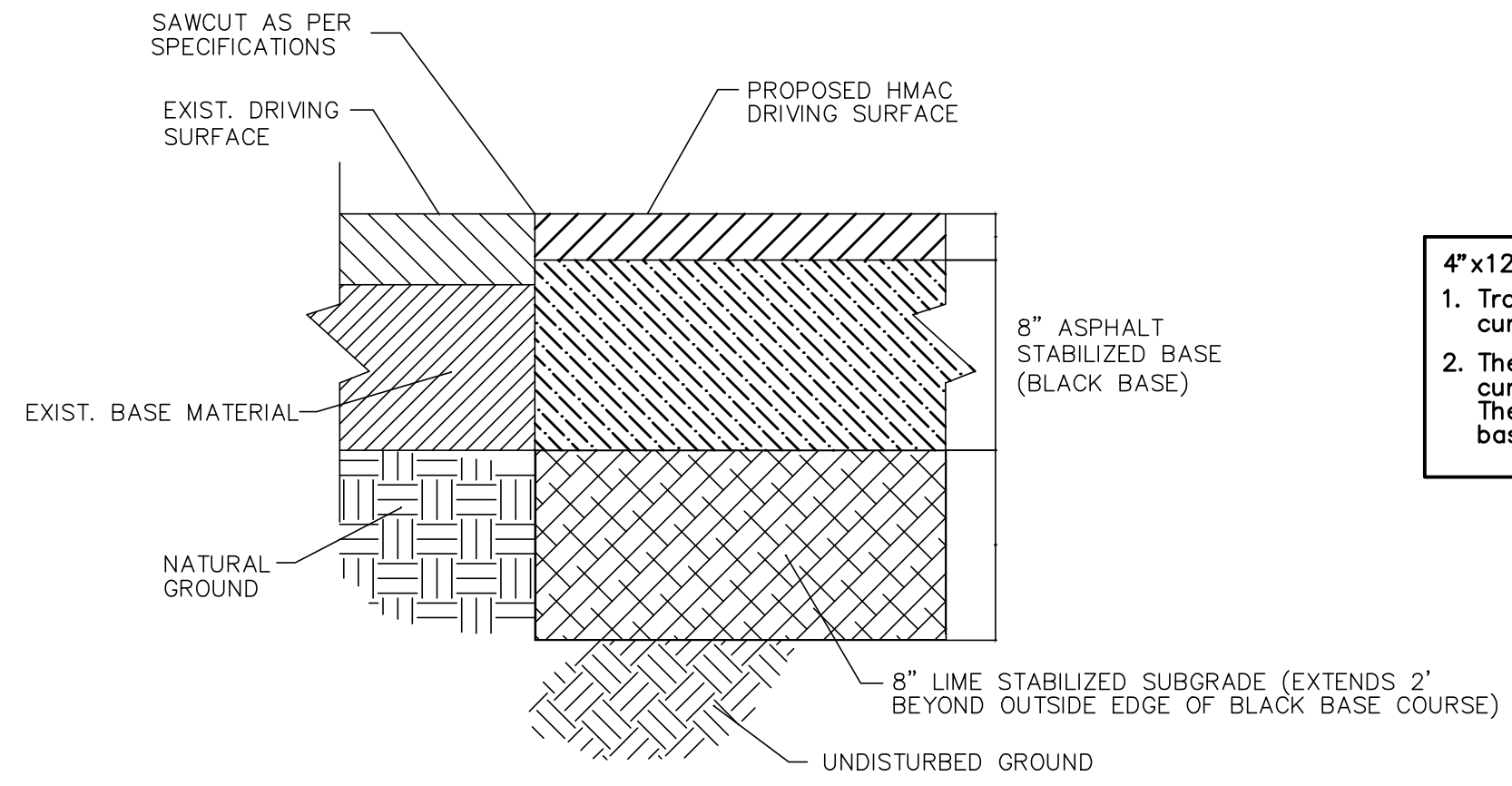


**SECTION A-A**

NOT TO SCALE

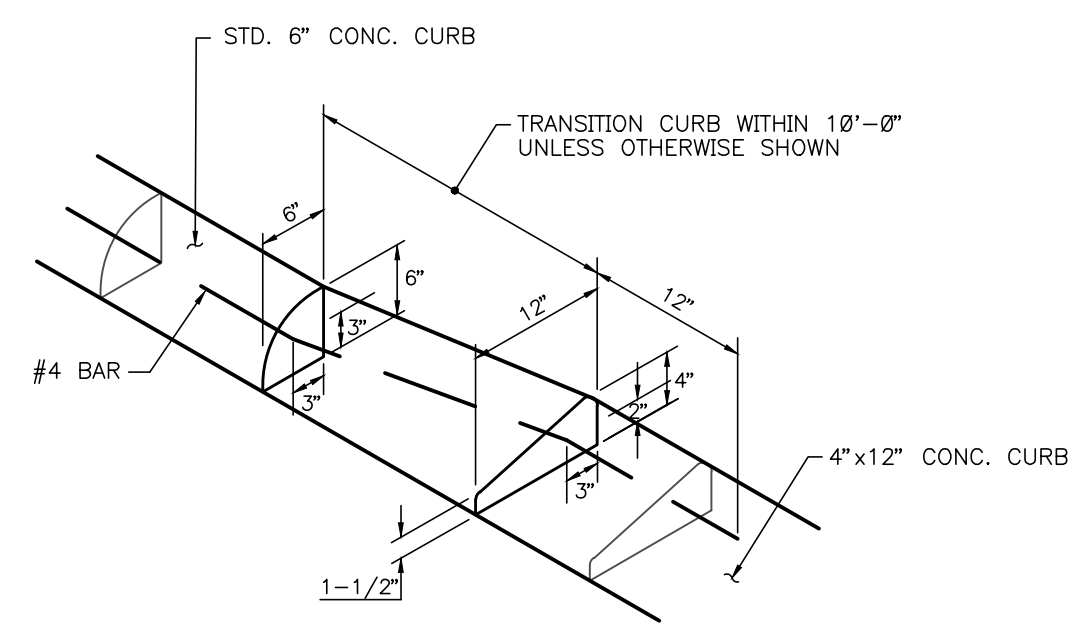
**CONCRETE CURB NEW CONSTRUCTION**

NOT TO SCALE



**FULL DEPTH ASPHALT TRANSITION DETAIL**

NOT TO SCALE



**TYPICAL CURB TRANSITION**

NOT TO SCALE

- 4"x12" LAYDOWN TRANSITION CURB NOTES:**
- Transitions from 6-inch concrete curb to 4-inch x 12-inch concrete curb to be accomplished within 10 feet, unless otherwise shown.
  - The gutter elevation is calculated from the proposed top of curb line elevation shown in profile minus 6-inch concrete curb. The gutter elevation for laydown will also be calculated based on 6-inch concrete curb.

MK.	DESCRIPTION	DATE	DWN.	CHK.

STATE OF TEXAS  
 JOHN D. RUDLOFF  
 83386  
 LICENSED PROFESSIONAL ENGINEER  
 9-13-19

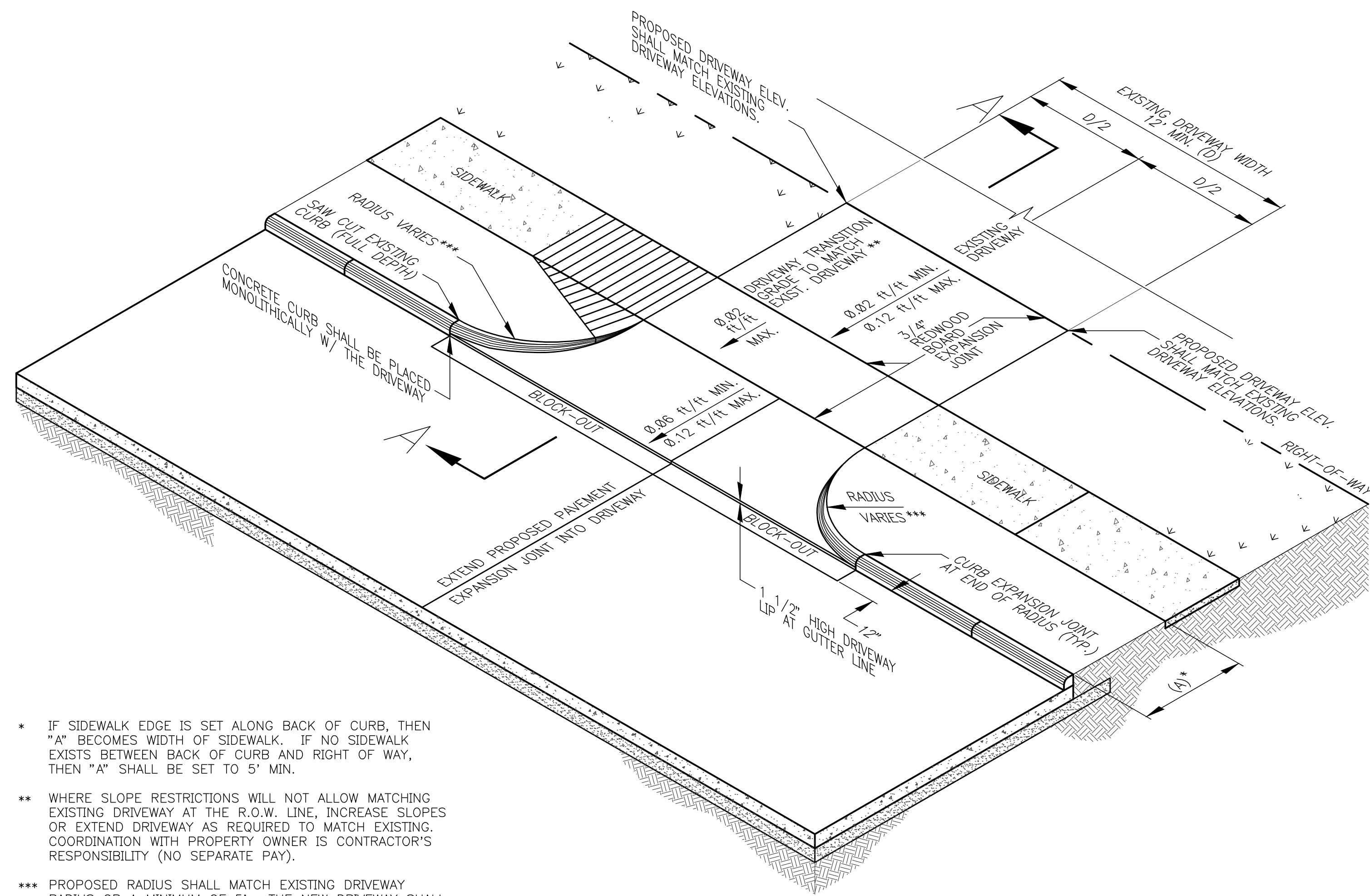
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**Galveston County, Texas**

**Texas Avenue Reconstruction**

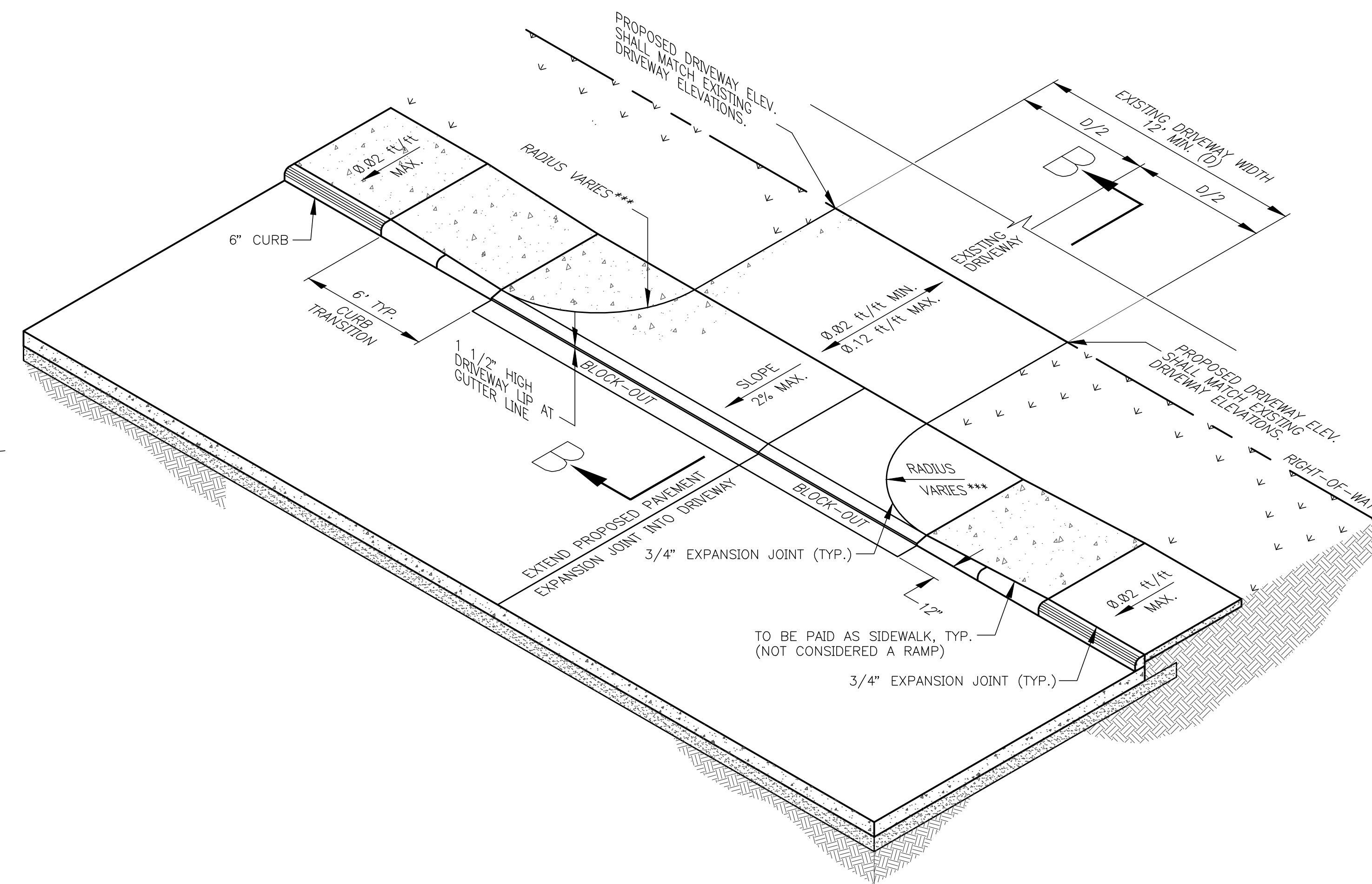
**Pavement Details I**

Job No.: 18-015	Scale: HORZ: N/A	SHEET <b>37</b> OF 52
Date: September, 2019	VERT: N/A	
Dwn By: D. Fattig		
Chkd By: J. Rudloff		

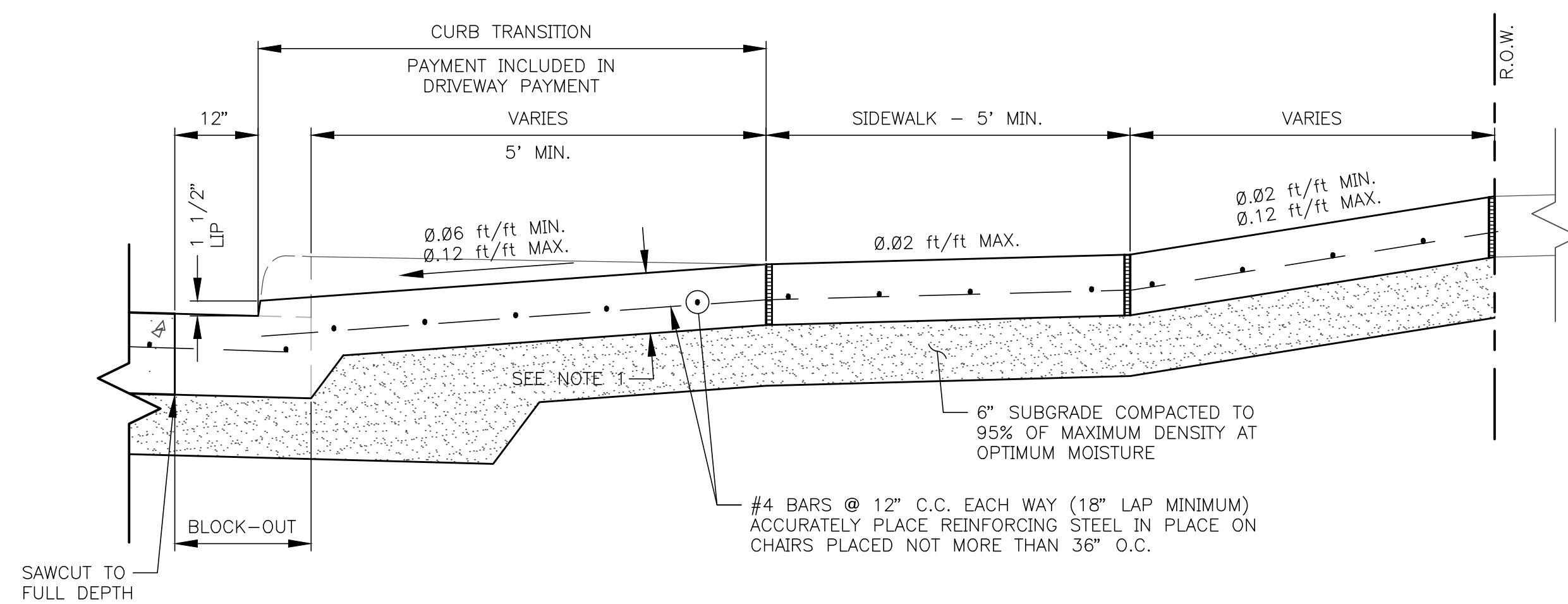


- \* IF SIDEWALK EDGE IS SET ALONG BACK OF CURB, THEN "A" BECOMES WIDTH OF SIDEWALK. IF NO SIDEWALK EXISTS BETWEEN BACK OF CURB AND RIGHT OF WAY, THEN "A" SHALL BE SET TO 5' MIN.
- \*\* WHERE SLOPE RESTRICTIONS WILL NOT ALLOW MATCHING EXISTING DRIVEWAY AT THE R.O.W. LINE, INCREASE SLOPES OR EXTEND DRIVEWAY AS REQUIRED TO MATCH EXISTING. COORDINATION WITH PROPERTY OWNER IS CONTRACTOR'S RESPONSIBILITY (NO SEPARATE PAY).
- \*\*\* PROPOSED RADIUS SHALL MATCH EXISTING DRIVEWAY RADIUS OR A MINIMUM OF 5'. THE NEW DRIVEWAY SHALL BE EQUAL TO OR GREATER THAN THE SIZE OF THE EXISTING DRIVEWAY (MIN. 12' WIDTH).

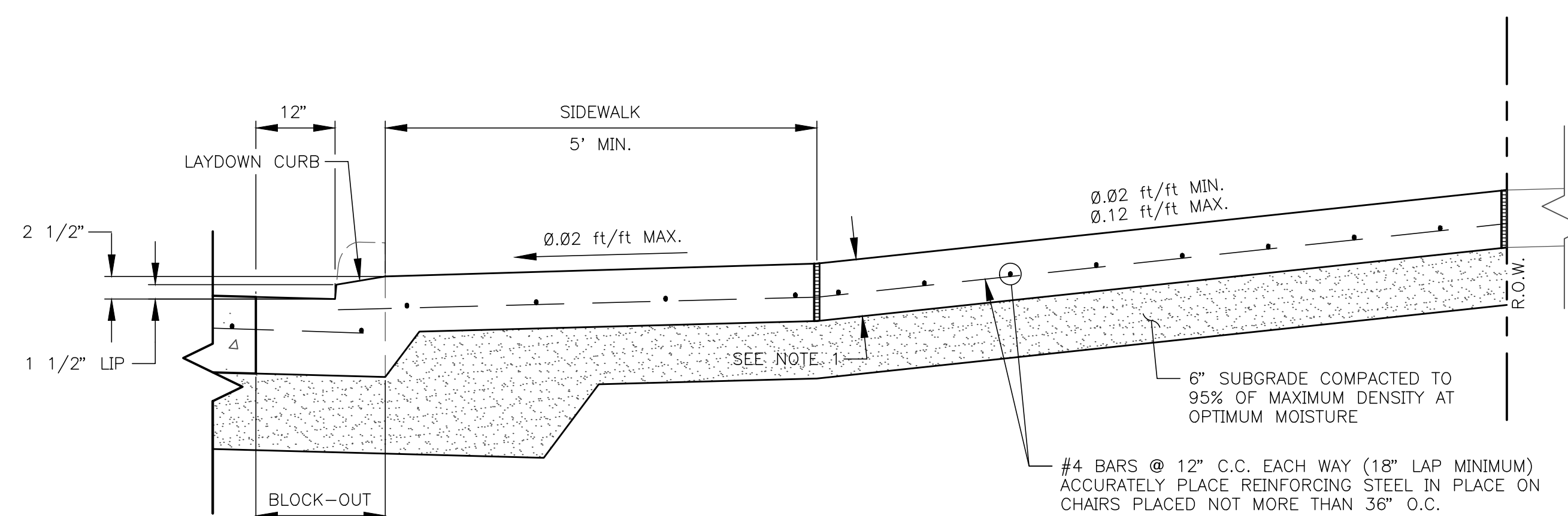
**DRIVEWAY DETAIL**  
NOT TO SCALE



**DRIVEWAY DETAIL W/  
SIDEWALK ADJACENT TO CURB**  
NOT TO SCALE

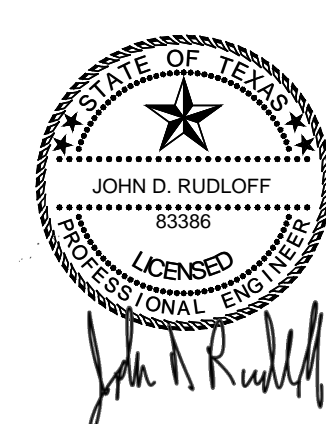


**SECTION A-A**




**SECTION B-B**

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



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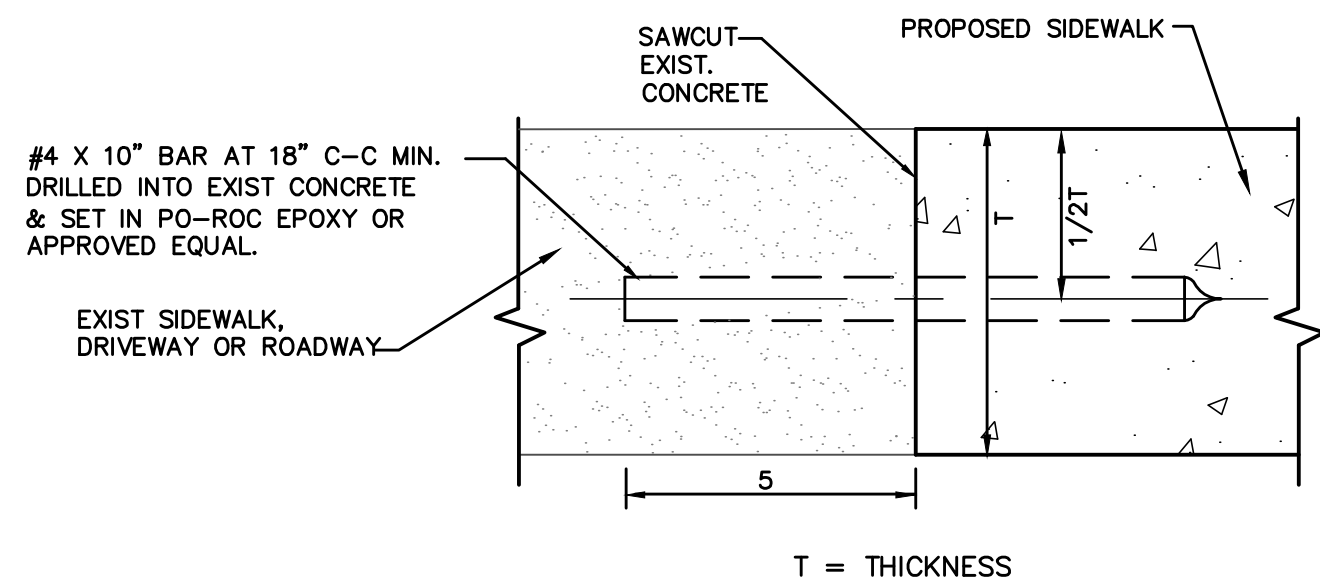
**Galveston County, Texas**

Texas Avenue Reconstruction

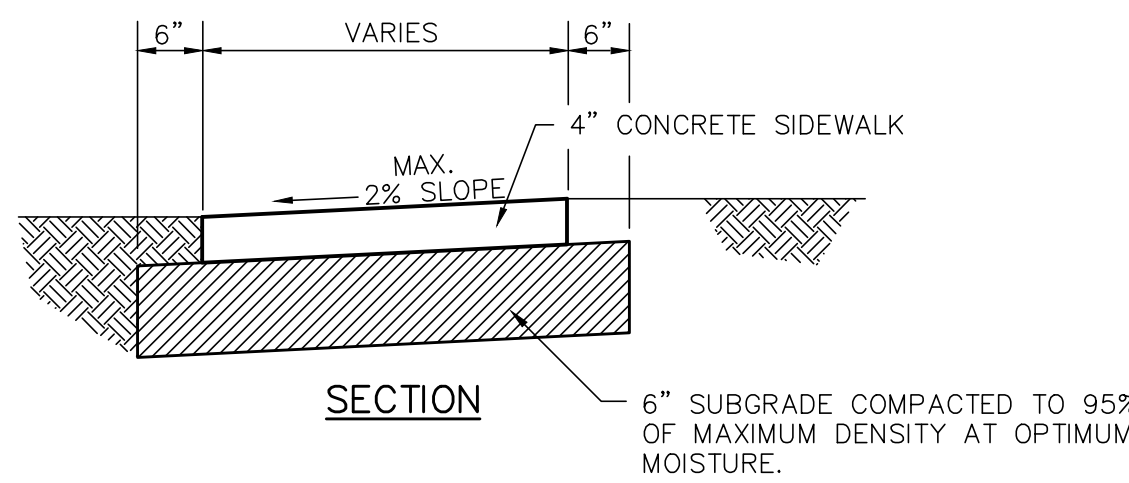
**Paving Details II**

Job No.: 18-015	Scale: N/A	SHEET
Date: September, 2019	HORZ: N/A	<b>38</b>
Dwn By: D. Fattig	VERT: N/A	OF 52
Chkd By: J. Rudloff		





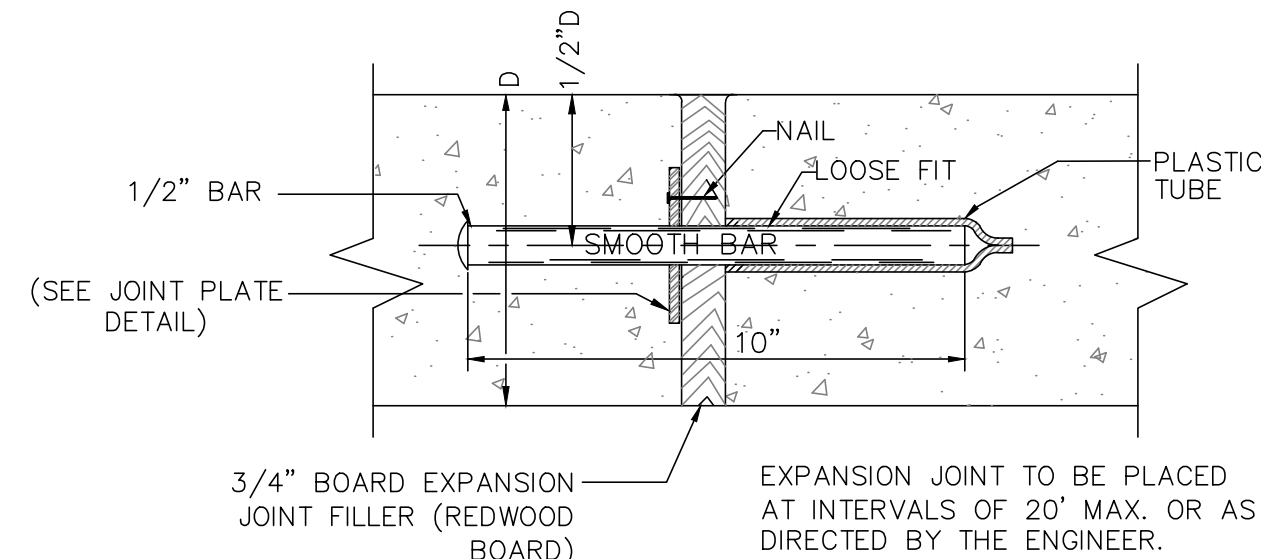
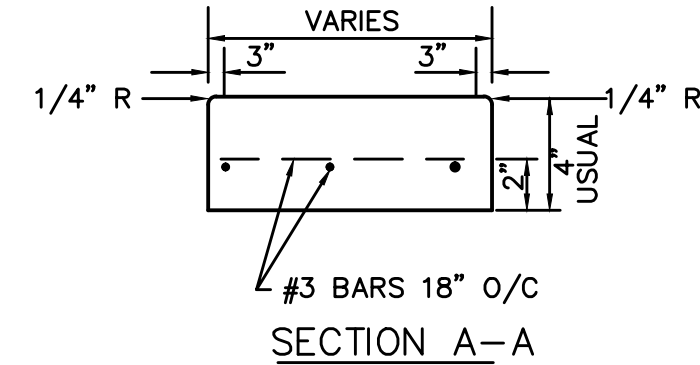
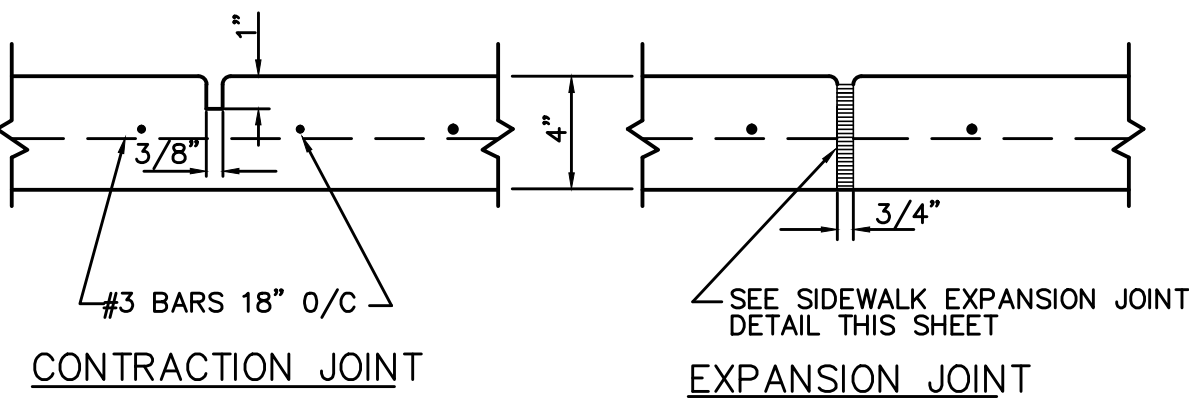
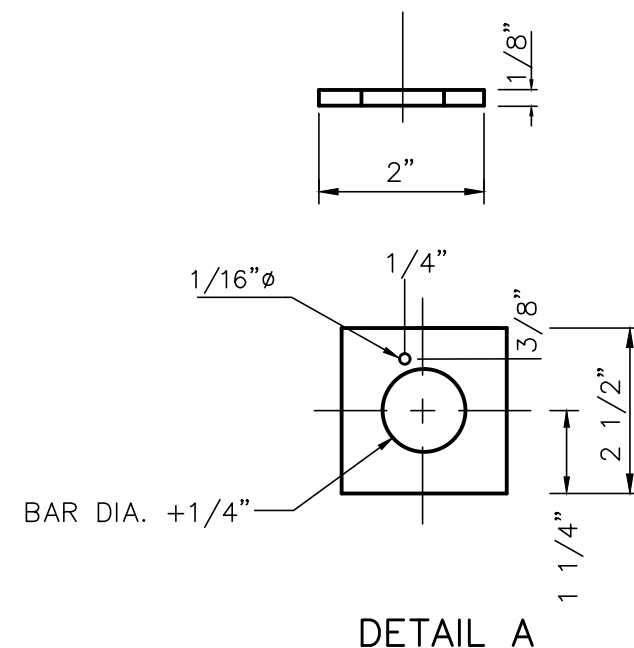
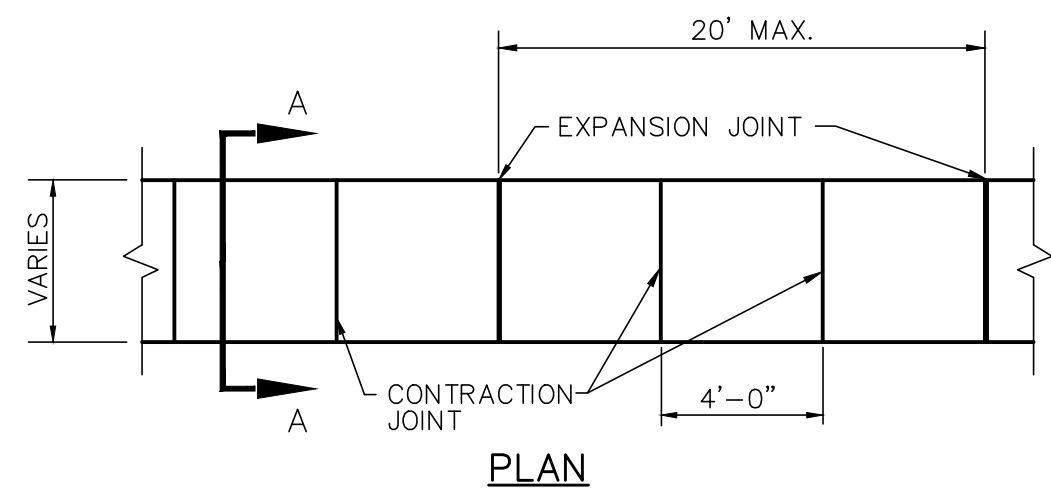
**PROPOSED SIDEWALK AT EXISTING CONCRETE DETAIL**  
NOT TO SCALE



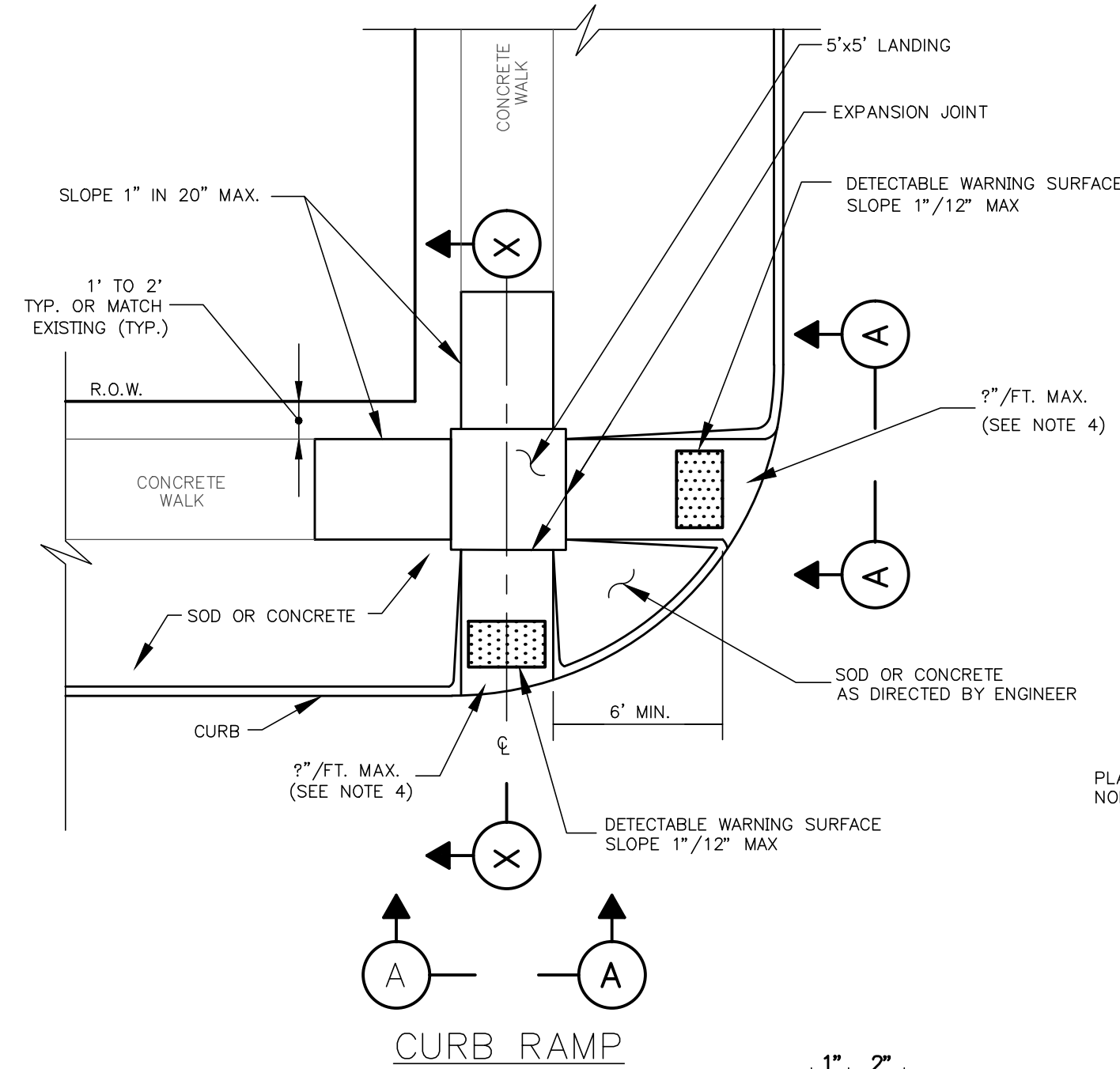
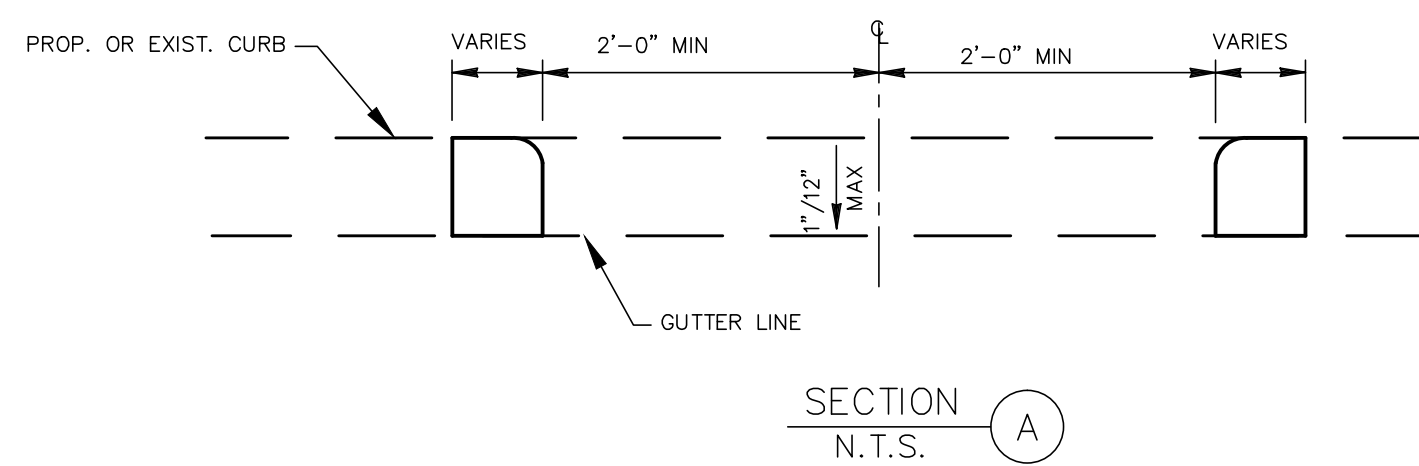
**NOTES:**

1. ALL EDGES SHALL BE ROUNDED WITH 1/4" RADIUS.
2. CONTRACTION JOINTS SHALL BE SPACED AT 4'-0" INTERVALS.
3. CONTRACTION JOINTS SHALL BE 1" DEEP AND EDGED WITH 1/4" RADIUS.
4. EXPANSION JOINTS SHALL BE SPACED AT 20 FT. INTERVALS. (MAXIMUM)
5. WHERE NEW SIDEWALK IS PLACED AGAINST EXISTING SIDEWALK, SAWCUT EXISTING SIDEWALK TO AN EVEN STRAIGHT LINE PRIOR TO INSTALLATION OF THE NEW SIDEWALK.

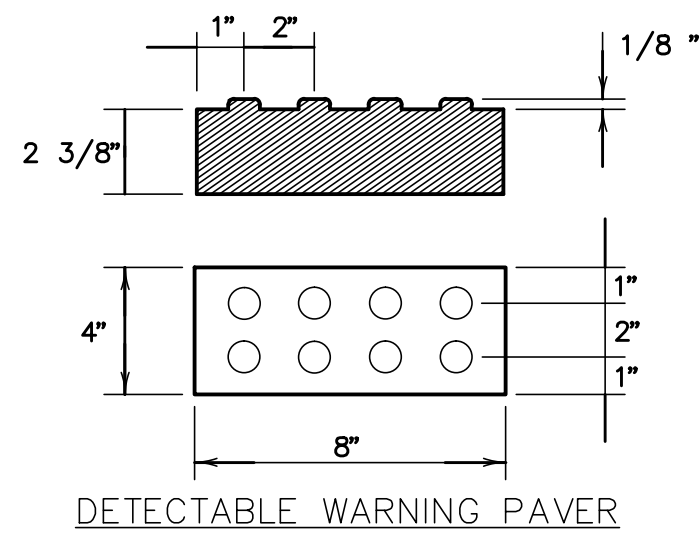
**CONCRETE SIDEWALK DETAILS**  
NOT TO SCALE



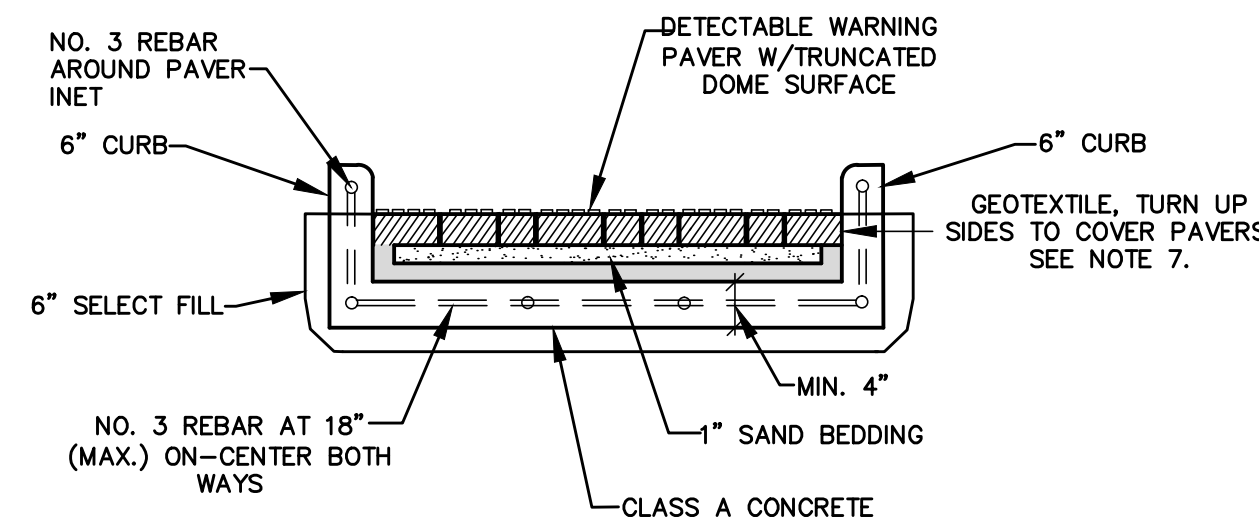
**SIDEWALK EXPANSION JOINT DETAIL**  
NOT TO SCALE



**CURB RAMP**



**DETECTABLE WARNING PAVER**



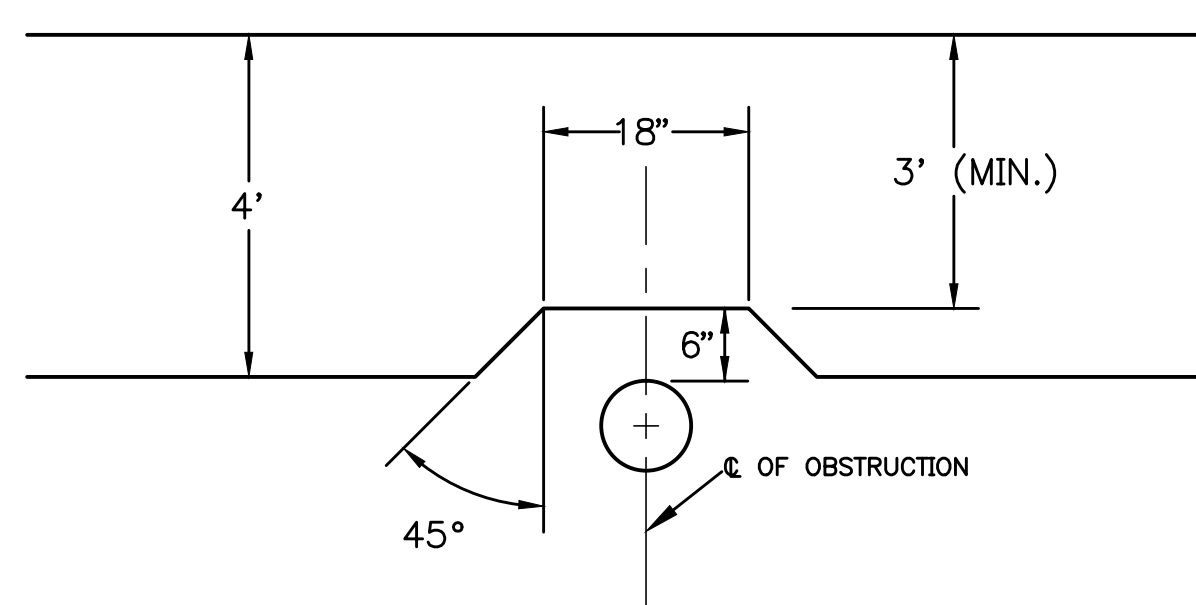
**SECTION A-A**

**GENERAL NOTES (PAVERS):**  
FURNISH DETECTABLE WARNING PAVER UNITS MEETING ALL REQUIREMENTS OF ASTM C-936, C-33. LAY IN A TWO BY TWO UNIT BASKET WEAVE PATTERN OR AS DIRECTED.  
LAY FULL-SIZE UNITS FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 25 PERCENT OF A FULL UNIT. CUT DETECTABLE WARNING PAVER UNITS USING A POWER MASONRY SAW AND SHALL BE CUT FULL DEPTH.

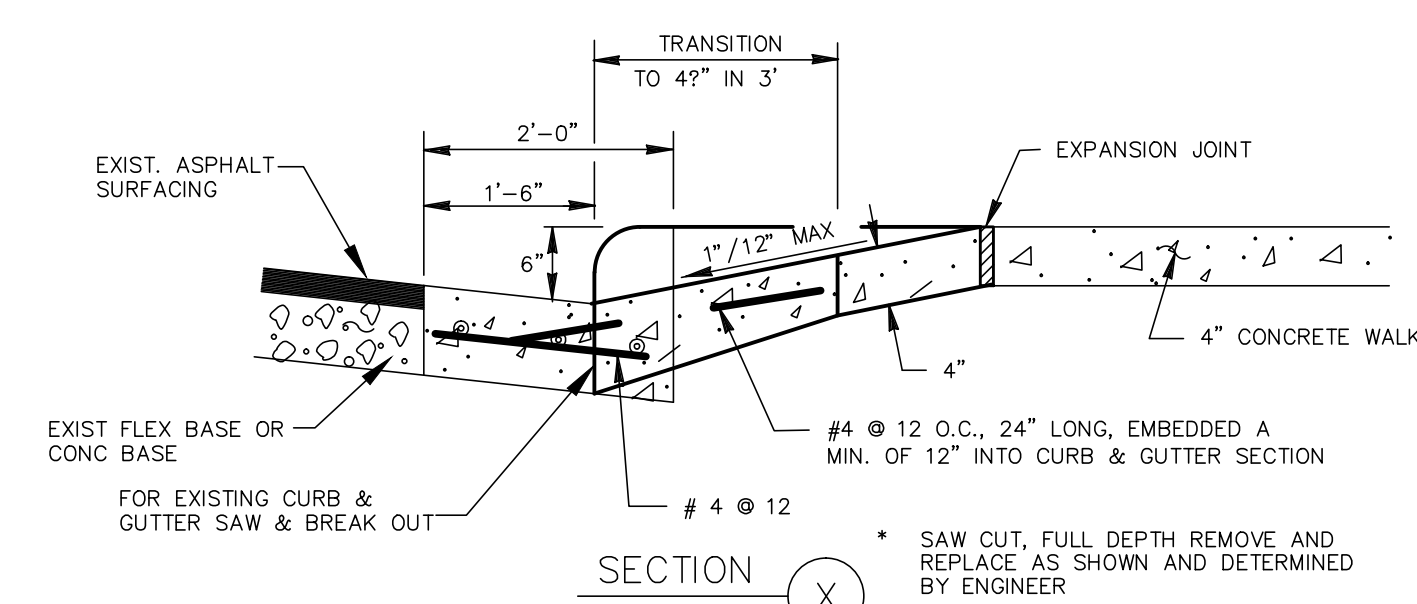
**DETECTABLE WARNING PAVER**  
NOT TO SCALE

**WHEEL CHAIR RAMP NOTES:**

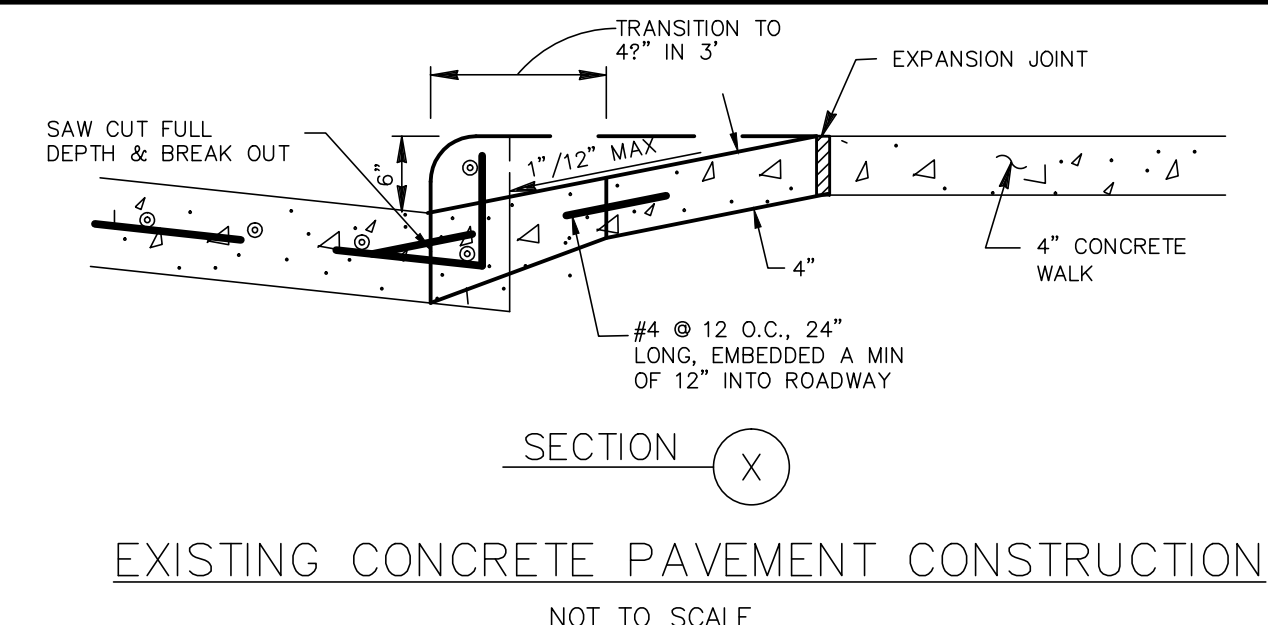
1. THE LOCATION OF A WHEELCHAIR RAMP MAY BE SHIFTED FROM THE PROPOSED LOCATION OF THE PLANS, BECAUSE OF UNFORESEEN EXISTING CONDITIONS AT THE TIME OF CONSTRUCTION. A CHANGE IN LOCATION WILL BE AS DIRECTED BY THE CITY OR ENGINEER.
2. ALL REINFORCING STEEL SHALL BE NEW BILLET STEEL AND MEET THE REQUIREMENTS OF ASTM DESIGNATION A-615. GRADE 60 DEFORMED BARS, FOR CONCRETE REINFORCEMENT.
3. MINIMUM CLEAR WIDTH OF WHEELCHAIR RAMP IS 3'-0".
4. IN AREAS WHERE CURB RAMP CONNECTS TO ROADWAY GUTTER WITHIN LIMITS OF A CURB ARC, A FLATTENED AREA (1/4" MAX.) SHALL BE PROVIDED SUCH THAT THE APPROACH TO RAMP IS 90° TO THE RAMP TRAVEL DIRECTION. FLATTENED AREA SHALL BE SLOPED TOWARD GUTTER TO PROVIDE POSITIVE DRAINAGE.
5. CONTRACTOR SHALL ENSURE CONNECTION OF PROPOSED SIDEWALK TO EXISTING SIDEWALK IS EVEN. ANY CHANGE IN ELEVATION IN EXCESS OF 1/4" WILL REQUIRE REMOVAL AND REPLACEMENT OF PROPOSED SIDEWALK.
6. IN THE EVENT FIELD CONDITIONS PREVENT THE SIDEWALK TRANSITIONS FROM BEING CONSTRUCTED @ A 1:20 SLOPE OR LESS, CONTRACTOR SHALL INSTALL ADDITIONAL WHEELCHAIR RAMP. CONTRACTOR SHALL COORDINATE THE ADDITIONAL WHEELCHAIR RAMP LENGTH IN THE FIELD WITH THE OWNER'S REPRESENTATIVE.
7. ADDITIONAL INFORMATION ON WHEELCHAIR RAMP LOCATION, DESIGN VISIBILITY AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) PREPARED AND ADMINISTERED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).



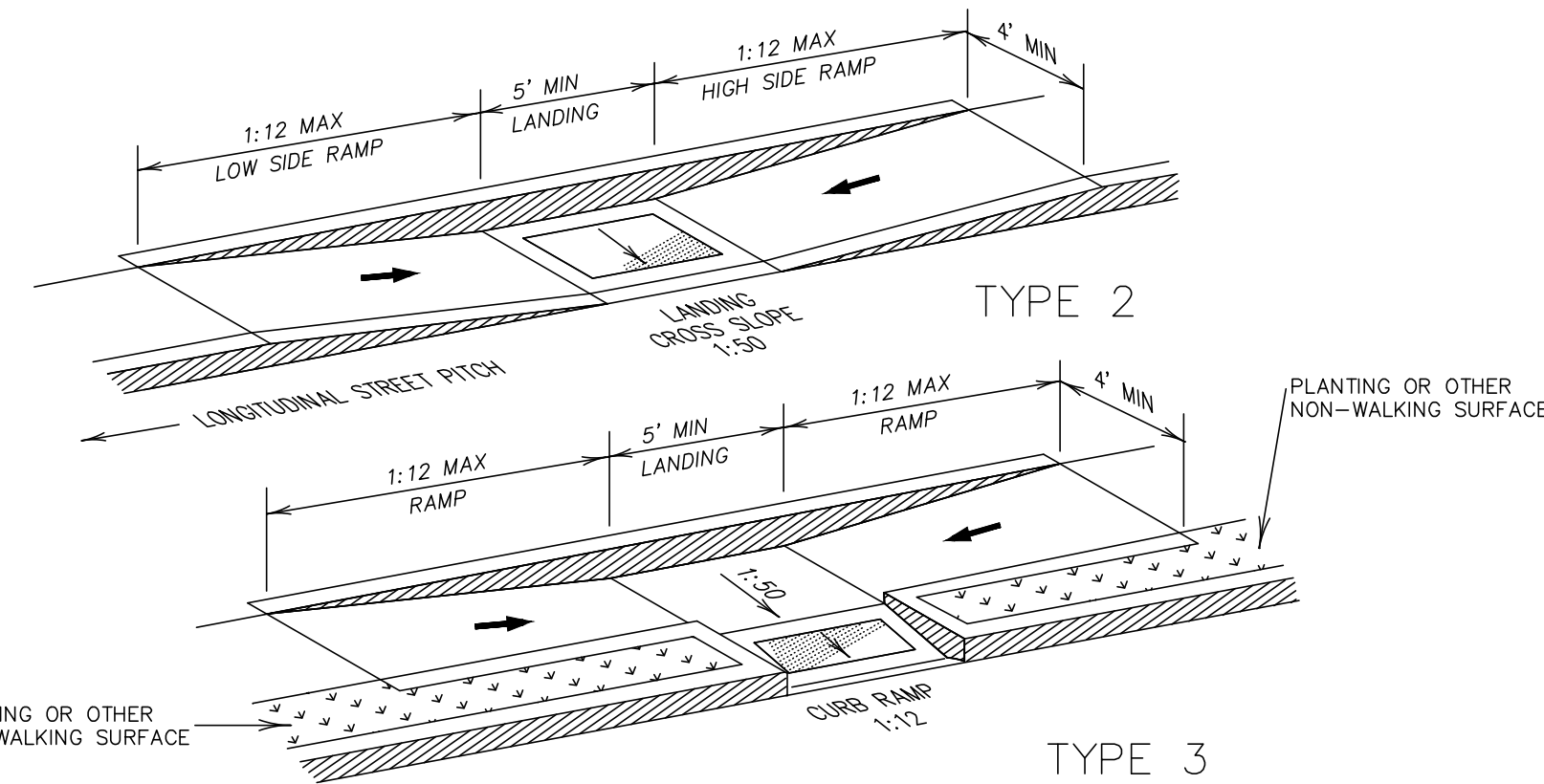
**SIDEWALK AROUND OBSTRUCTION**  
NOT TO SCALE



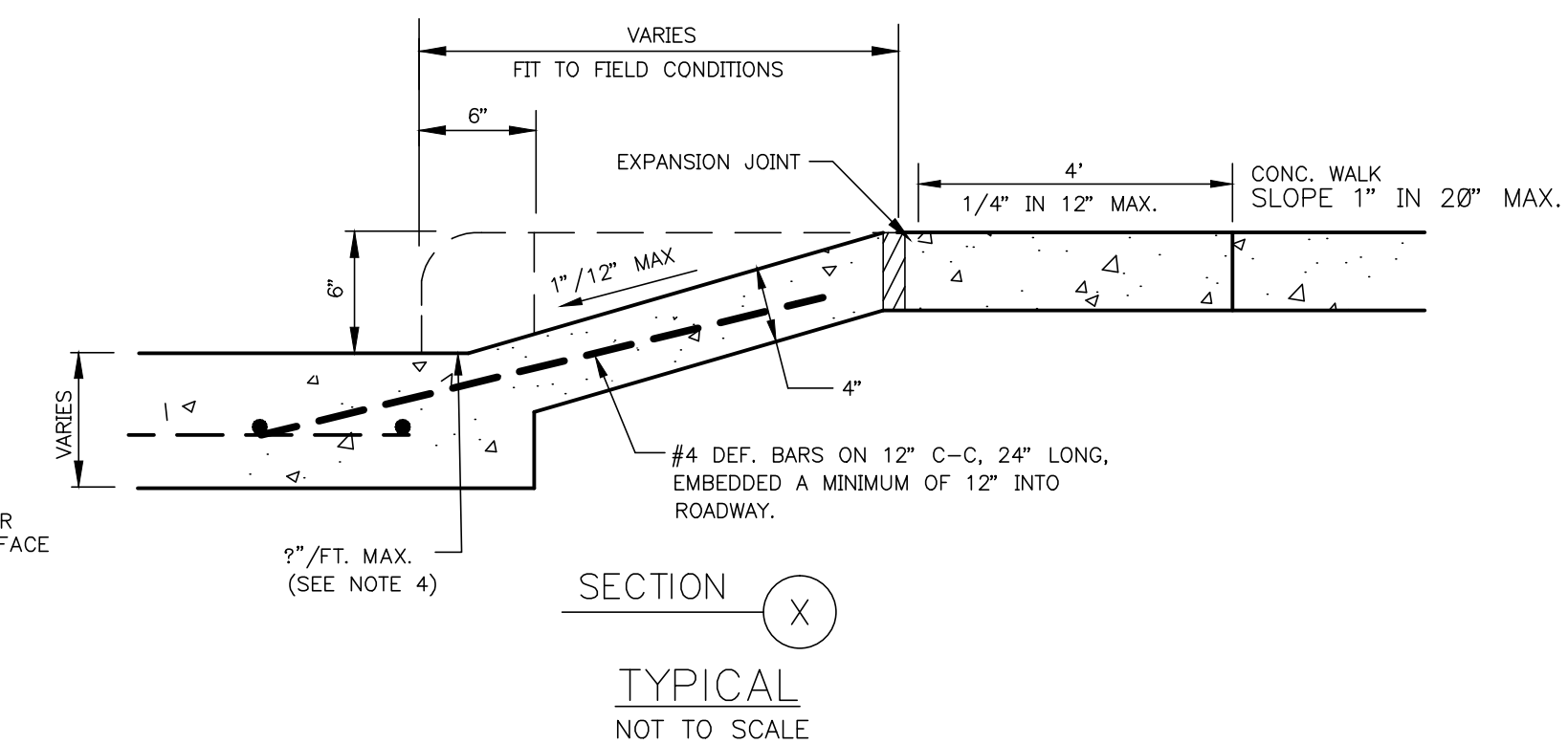
**EXISTING CURB & GUTTER CONSTRUCTION**  
NOT TO SCALE



**EXISTING CONCRETE PAVEMENT CONSTRUCTION**  
NOT TO SCALE



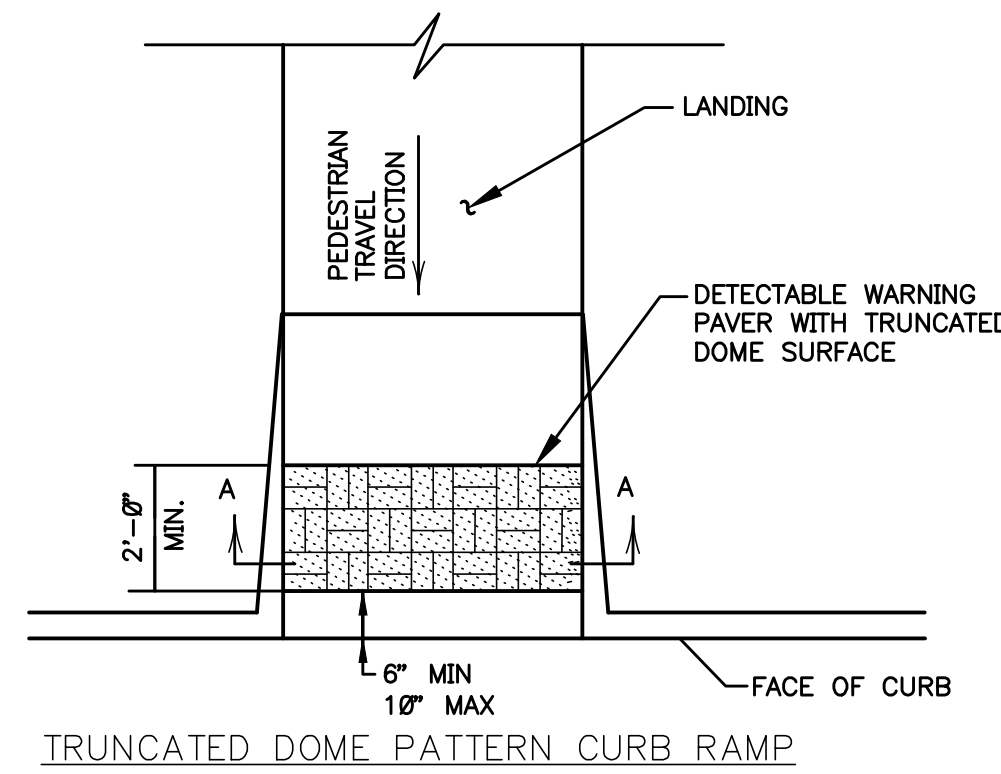
**PARALLEL CURB RAMPS**



**SECTION X**  
**TYPICAL**  
NOT TO SCALE

**NOTES FOR DETECTABLE WARNINGS:**

1. CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 4.29 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES. THE CONTRACTOR SHALL COORDINATE WITH THE CITY TO OBTAIN APPROVAL OF THE COLOR PRIOR TO INSTALLING THE TRUNCATED DOME.
2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
4. SHADED AREAS ON THE CURB RAMP DETAILS INDICATE THE APPROXIMATE LOCATION FOR THE DETECTABLE WARNING SURFACE FOR THE CURB RAMP.
5. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL AND EXTEND THE FULL WIDTH OF THE RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
6. DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS A MINIMUM 6" AND A MAXIMUM 10" FROM THE EXTENSION OF THE FACE OF CURB. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
7. GEOTEXTILE SHALL BE INSTALLED AND CUT FLUSH WITH TOP OF PAVEMENT. ANY RAGGED EDGE EXPOSED AFTER PAVERS ARE IN PLACE, SHALL BE REMOVED BY HEAT.



**TRUNCATED DOME PATTERN CURB RAMP**

MK.	DESCRIPTION	DATE	DWN.	CHK.

STATE OF TEXAS  
JOHN D. RUDLOFF  
LICENSED PROFESSIONAL ENGINEER  
83386  
John D. Rudloff

9-13-19

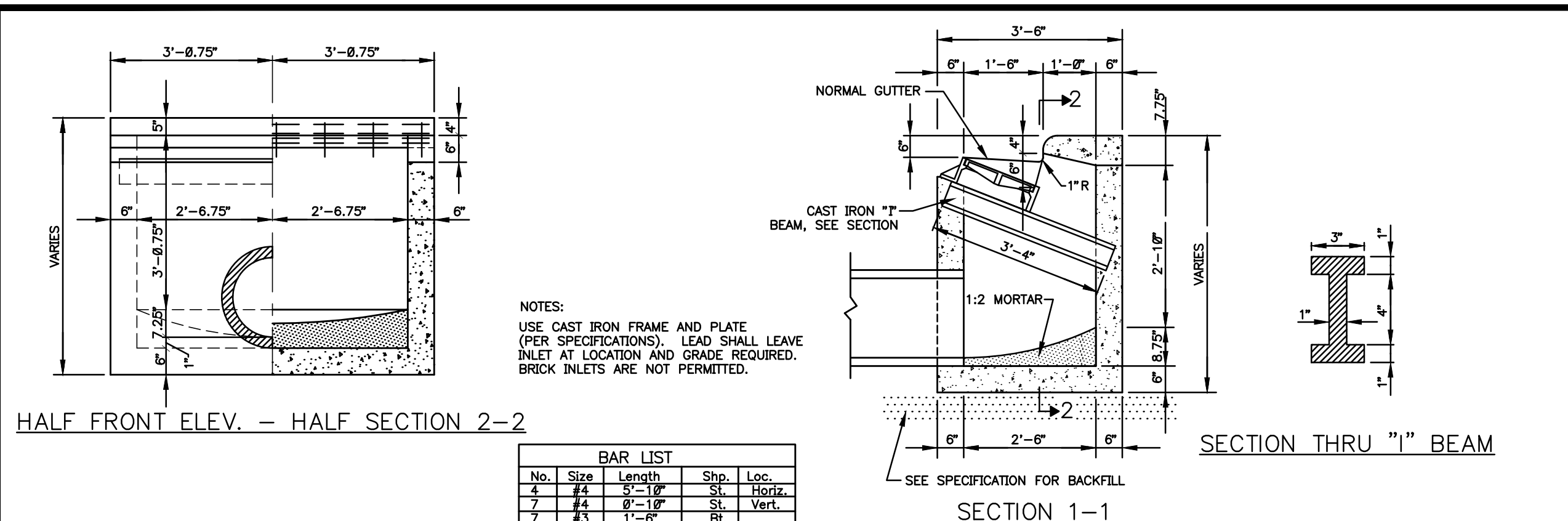
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Galveston County, Texas

Texas Avenue Reconstruction

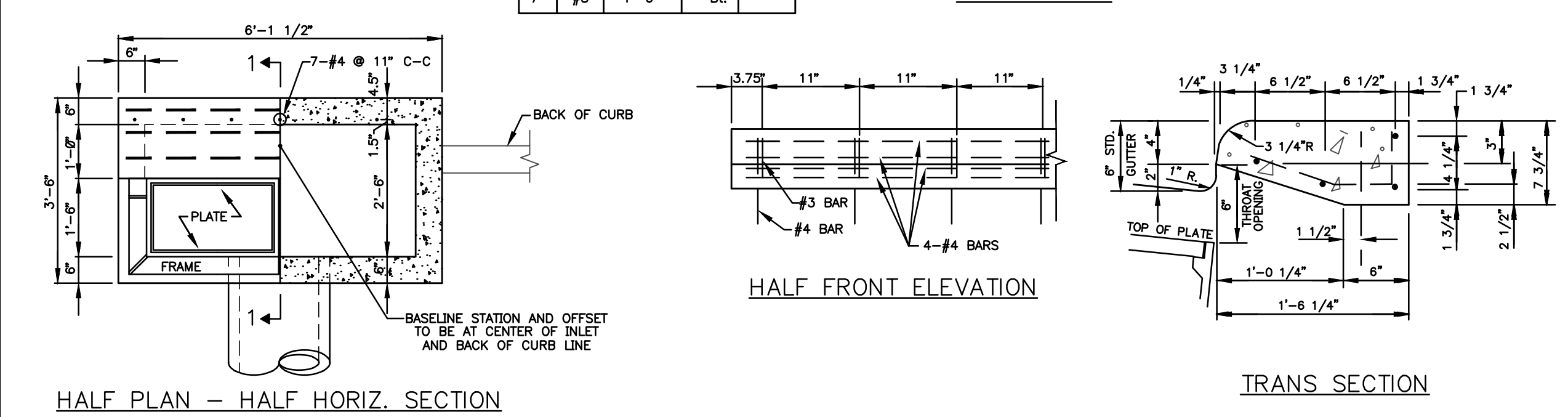
Paving Construction Details III

Job No.: 18-015	Scale: N/A	SHEET
Date: September, 2019	HORZ: VERT:	39
Dwn By: D. Fattig		OF 52
Chk By: J. Rudloff		

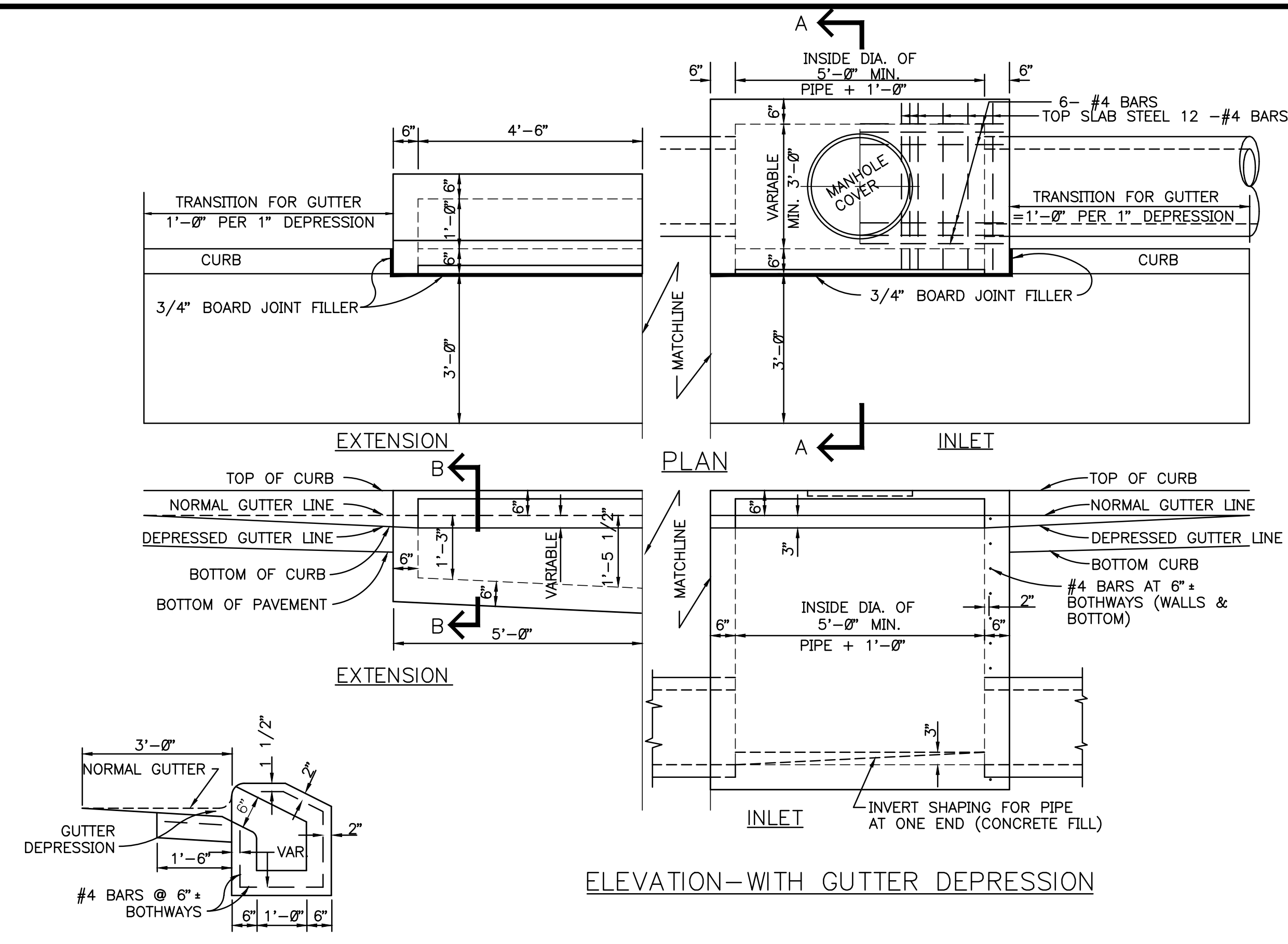
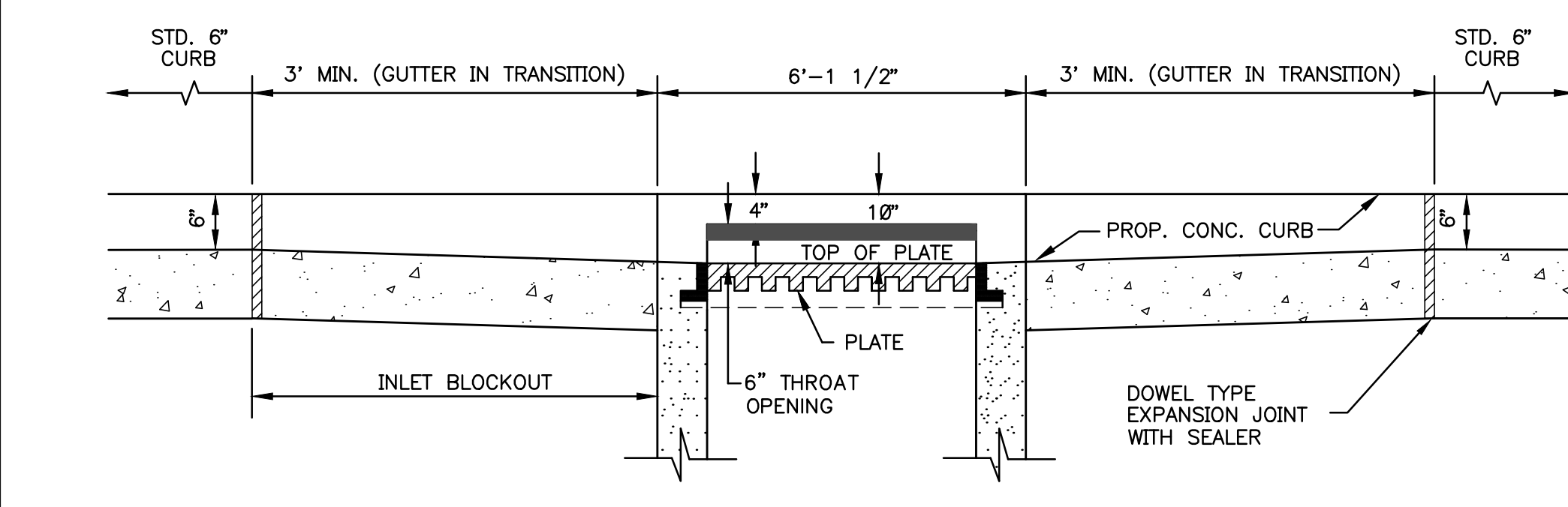
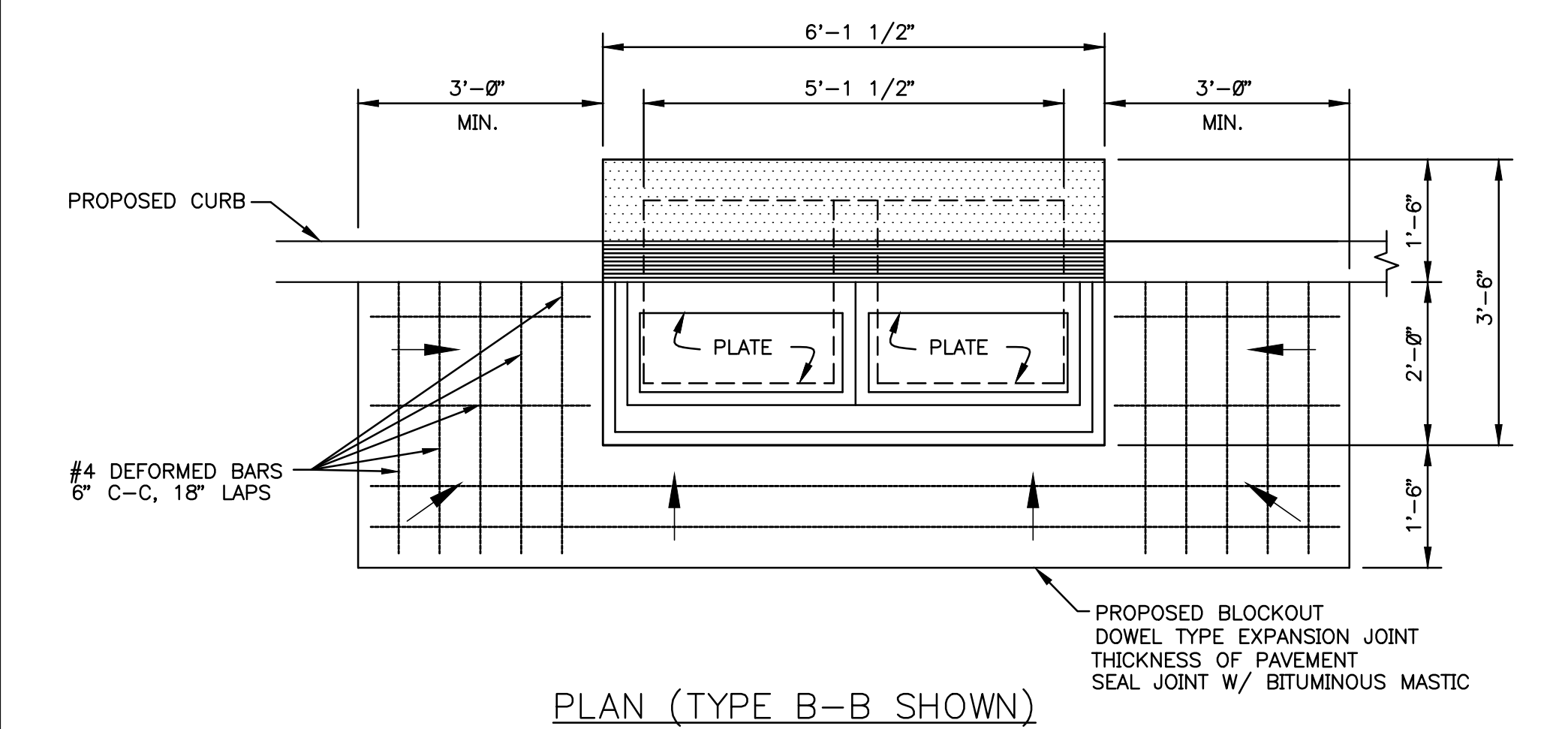


NOTES:  
USE CAST IRON FRAME AND PLATE (PER SPECIFICATIONS). LEAD SHALL LEAVE INLET AT LOCATION AND GRADE REQUIRED. BRICK INLETS ARE NOT PERMITTED.

BAR LIST			
No.	Size	Length	Shp. Loc.
4	#4	8'-10"	St. Horiz.
7	#4	9'-10"	St. Vert.
7	#3	1'-6"	BT.



**TYPE B-B' INLET**  
NOT TO SCALE



**GENERAL NOTES:**

All concrete shall be Class A. All exposed corners shall be chamfered 3/4". Pipes shall enter inlets as shown elsewhere on plans. Slope top of inlets as directed to match graded section.

All materials used in casting manhole covers and ladder rung shall conform to A.S.T.M. Specifications. Payment of curb inlets and extensions thereto as shown on the plans will be made at the unit prices bid for the "Inlets" and "Inlet Extensions".

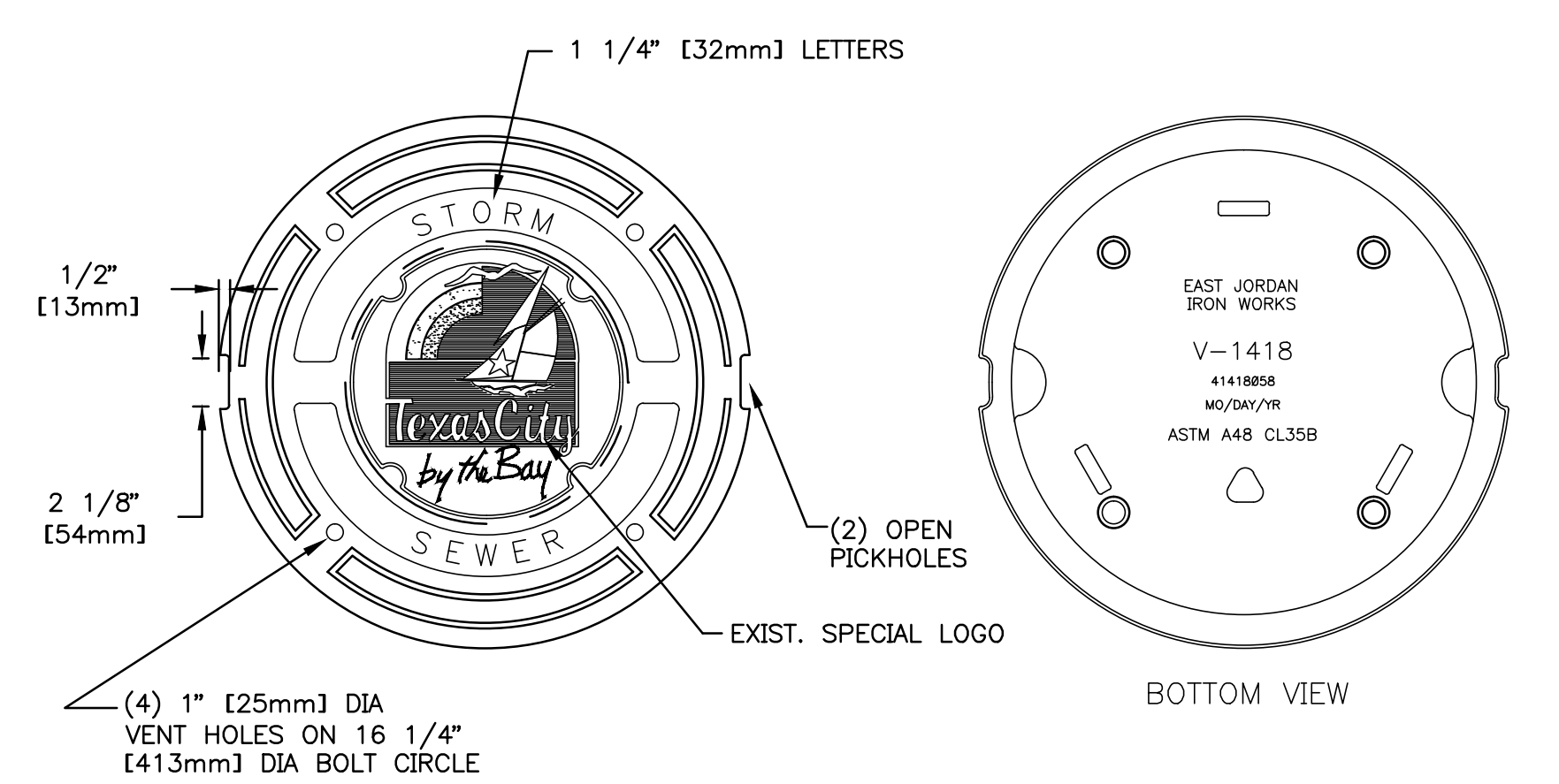
A permissible construction joint may be placed in the inlet wall with the approval of the Engineer. Where shown elsewhere on plans a 6"x24" opening shall be placed in the backwall of the inlet as directed by the Engineer.

Manhole ring and cover shall be 23" unless otherwise specified in the plans. Precasting of Stage I Construction will be permitted with the approval of the Engineer. Connection of pipes to precast units shall be mortared as directed by the Engineer.

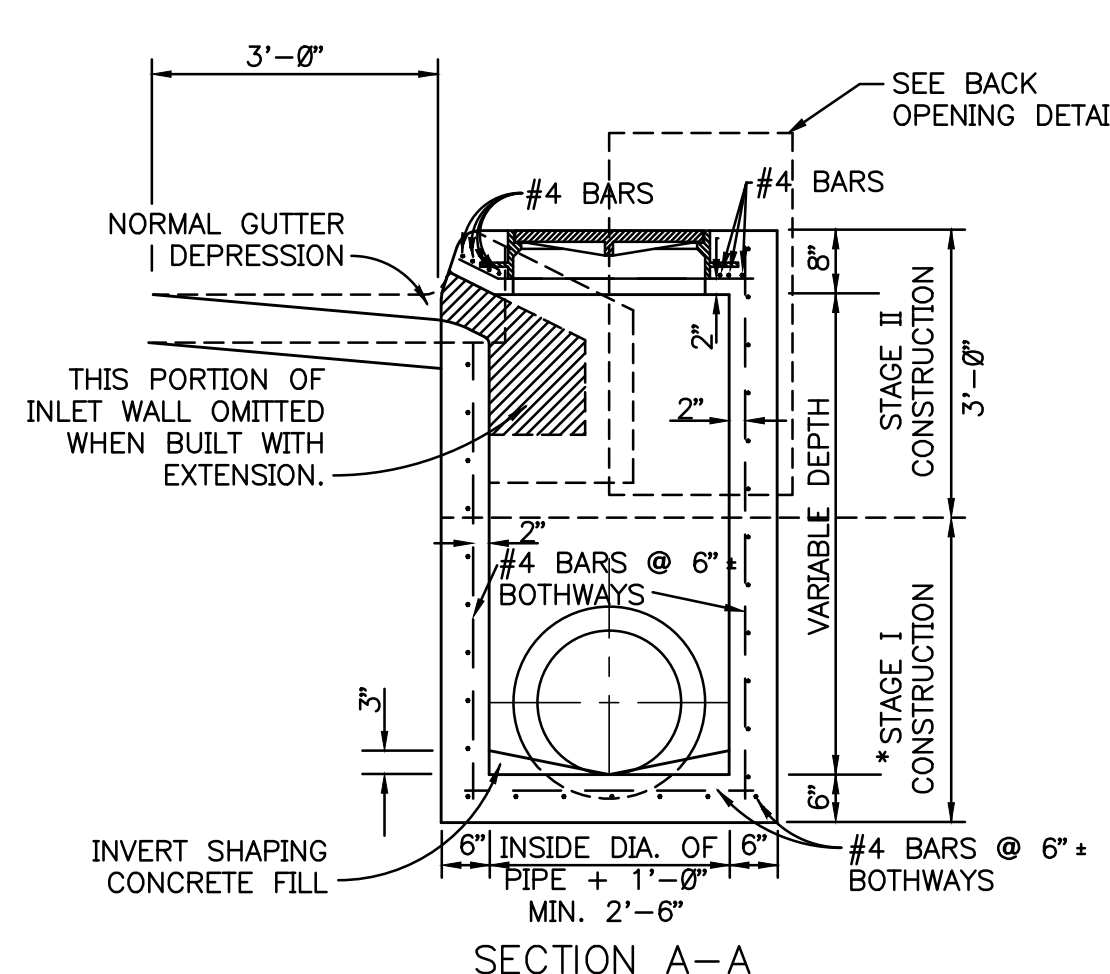
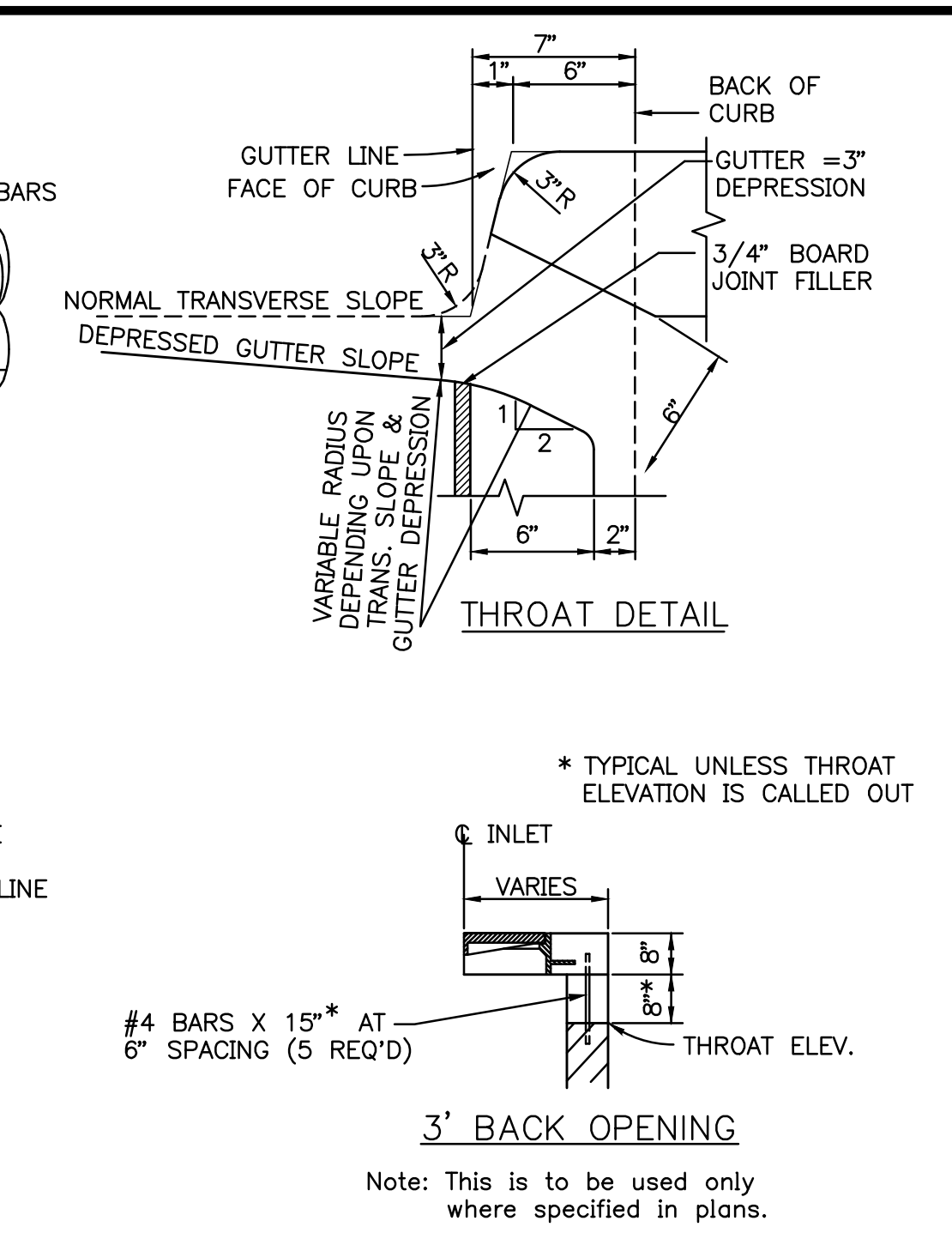
\* But not less than six inches over highest pipe.

Control points for horizontal layout of "c" inlets, all types, is the lateral center of the inlet, without regard for extensions, at the back of curb line.

**TYPE "C" INLET DETAILS**  
NOT TO SCALE



**TYPE "C"/"C-1"/"C-2"/"C-2A" INLET MANHOLE COVER DETAIL**  
NOT TO SCALE



MK.	DESCRIPTION	DATE	DWN.	CHK.

STATE OF TEXAS  
JOHN D. RUDLOFF  
83386  
LICENSED PROFESSIONAL ENGINEER

9-13-19

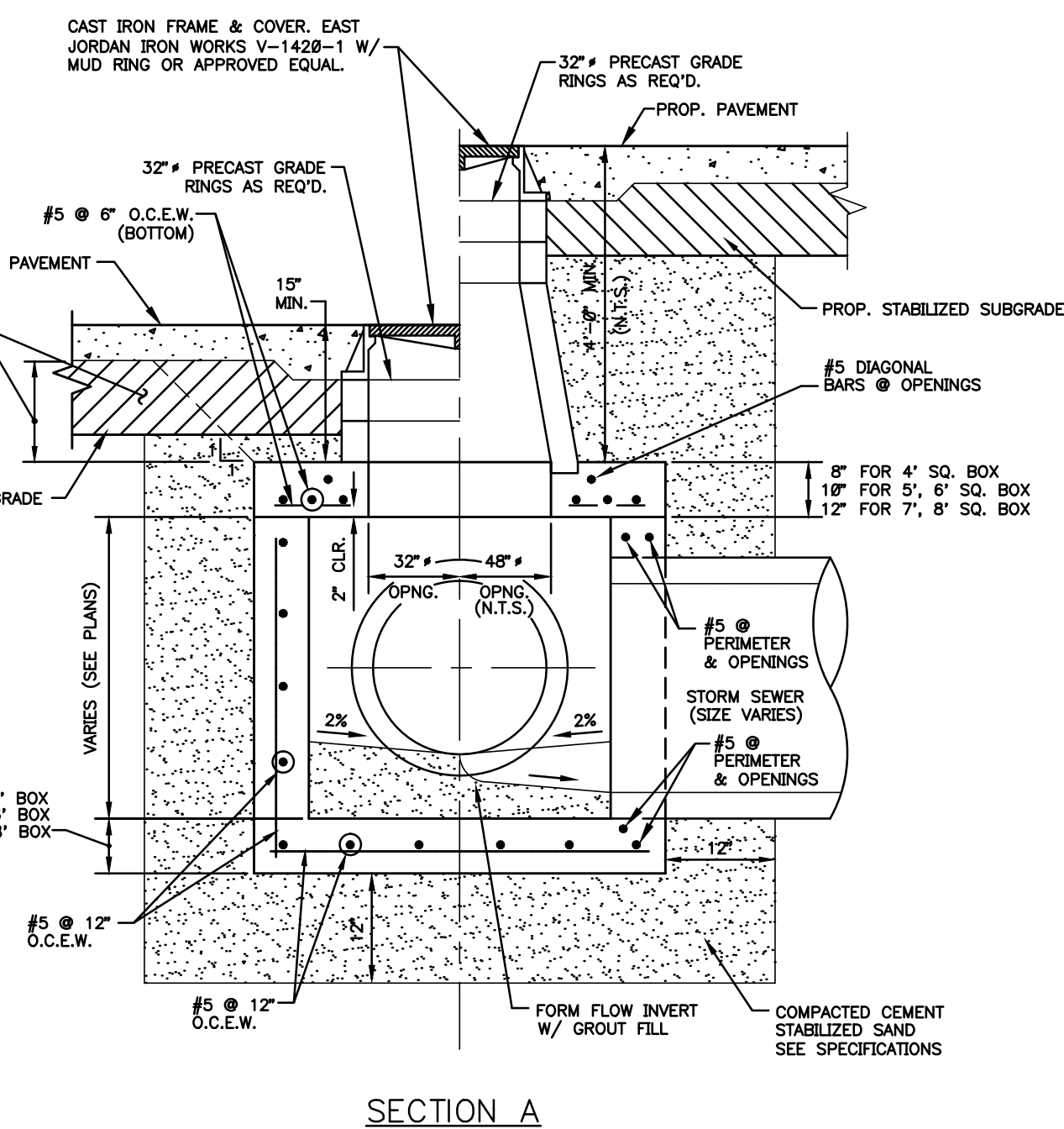
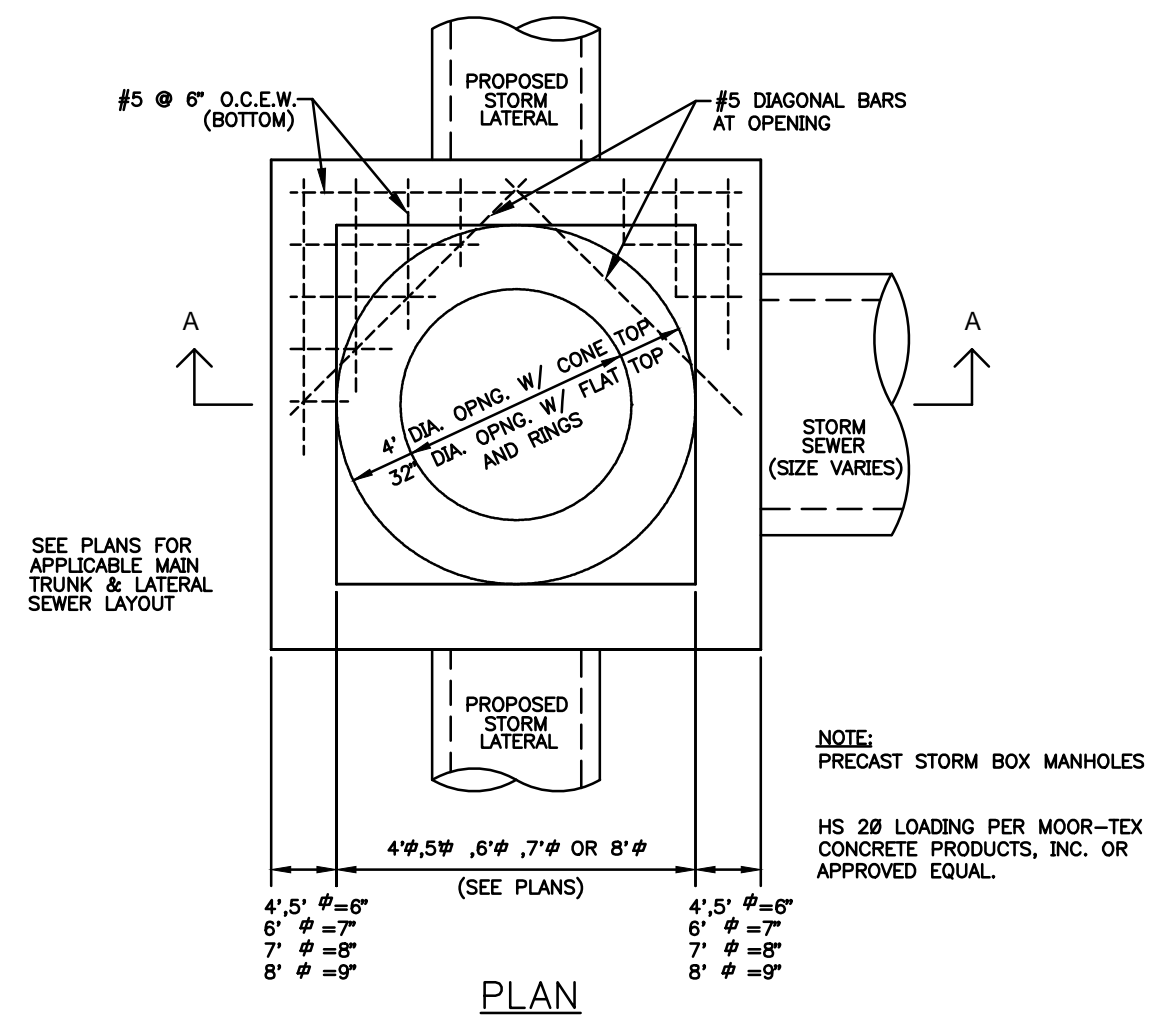
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Galveston County, Texas

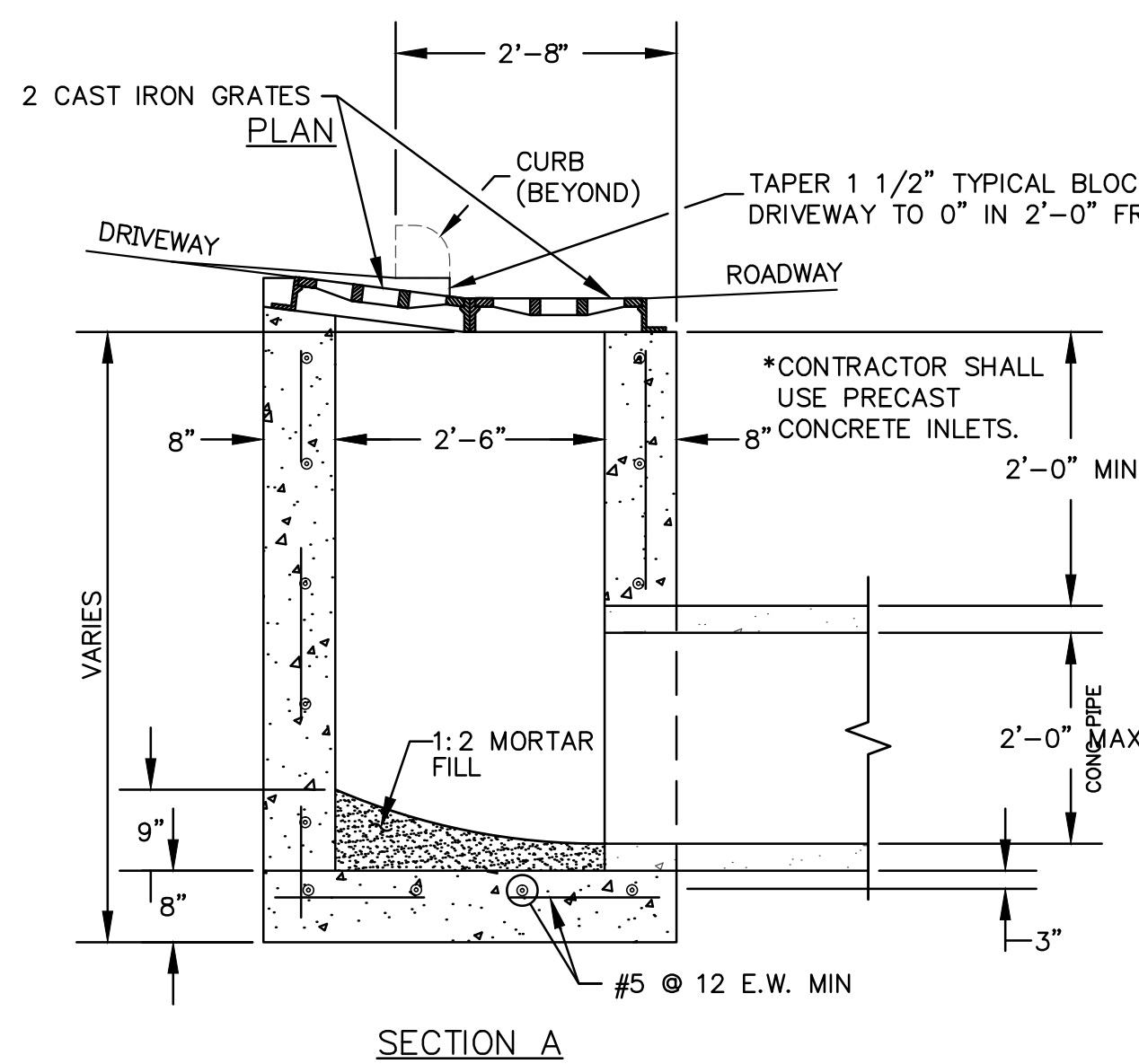
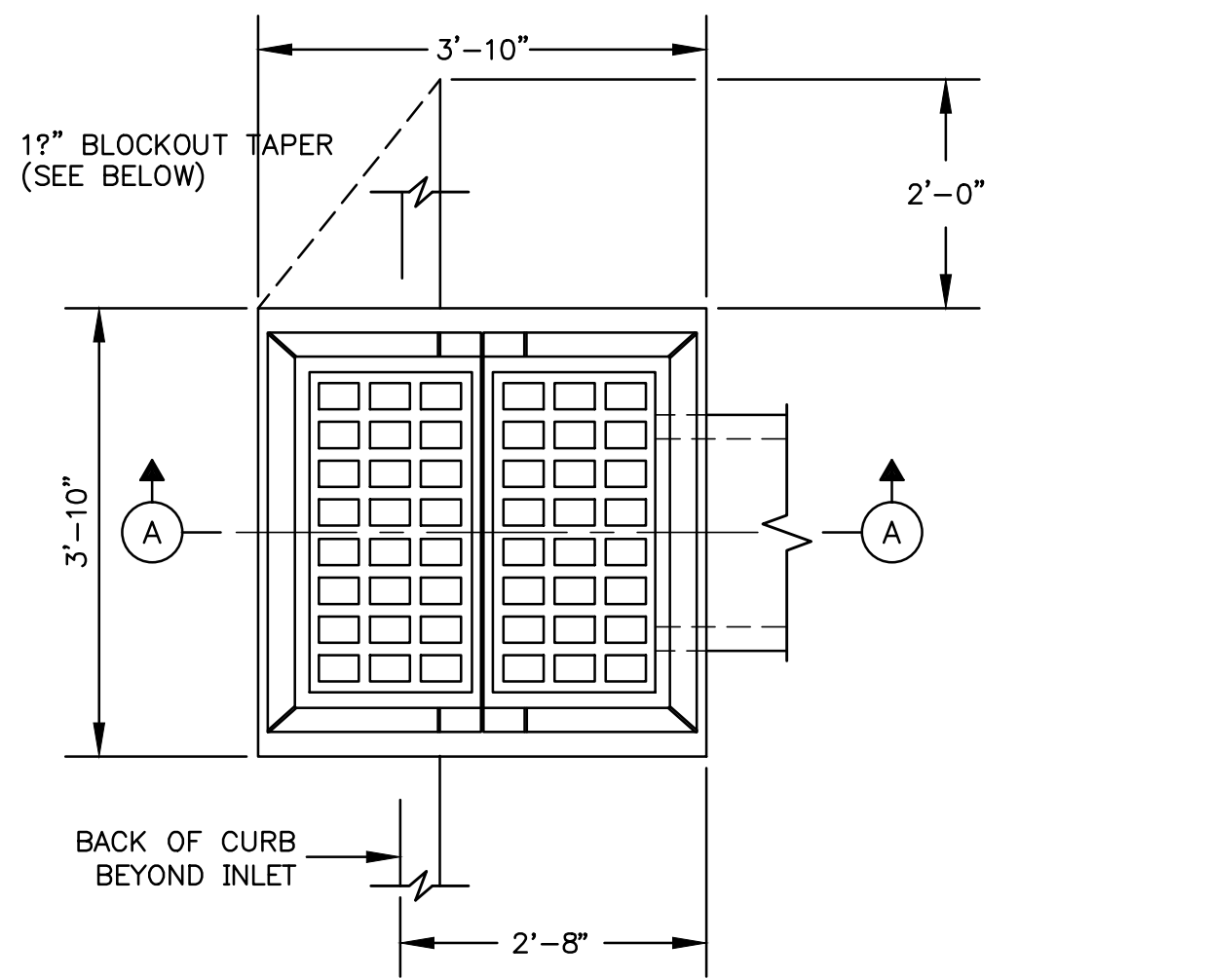
Texas Avenue Reconstruction

Drainage Details I

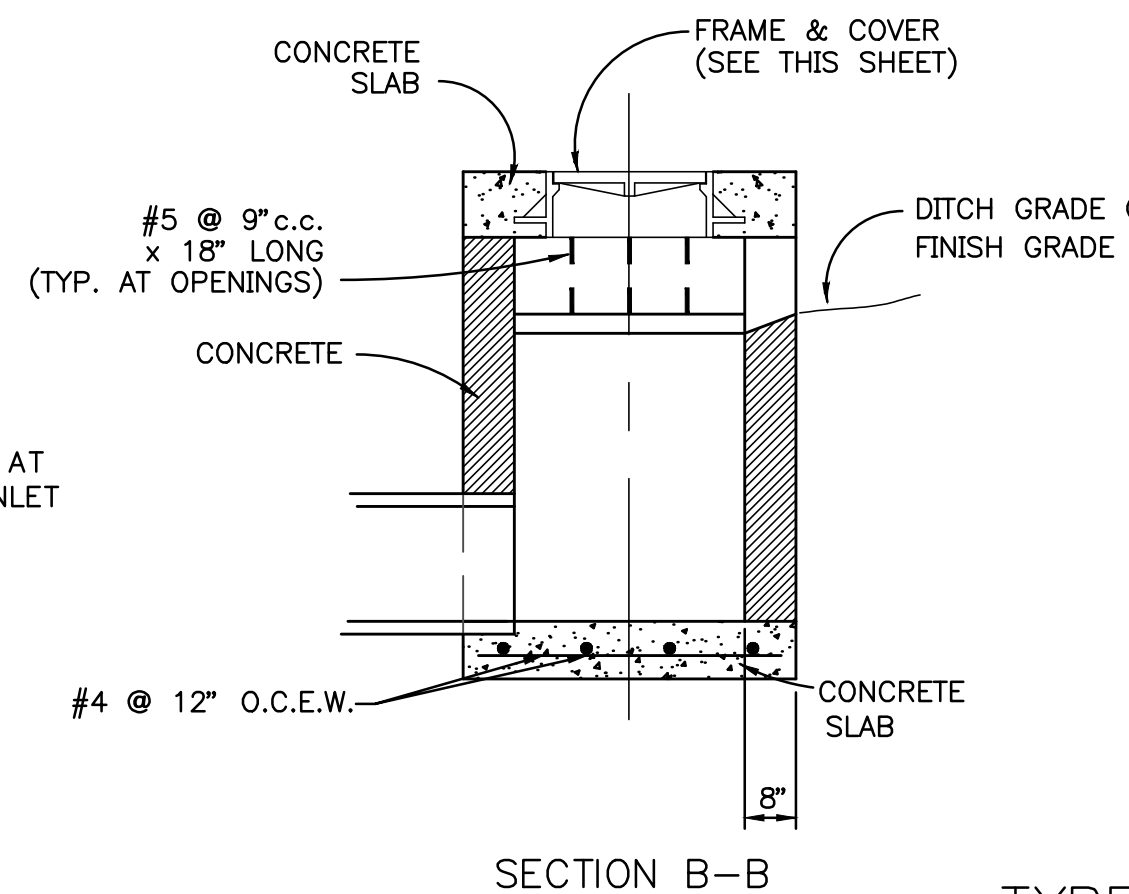
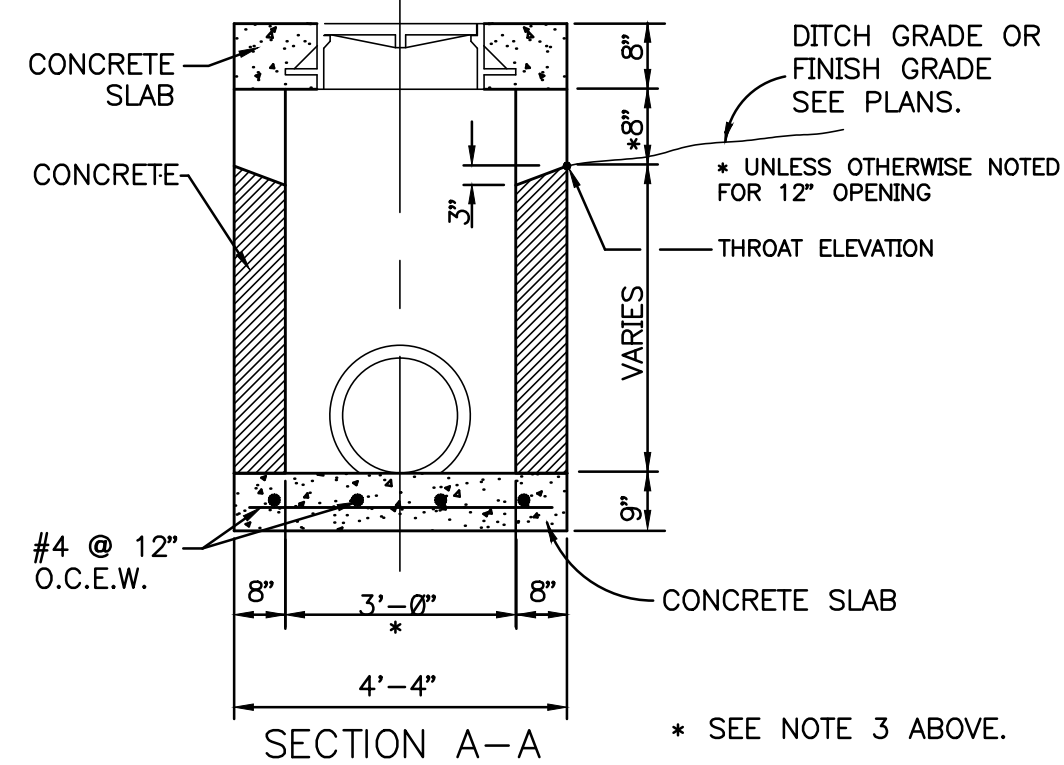
Job No.: 18-015	Scale: HORZ: VERT: N/A	SHEET 40 OF 52
Date: September, 2019		
Dwn By: D. Fattig		
Chk By: J Rudloff		



**PRECAST STORM SEWER BOX MANHOLE**  
NOT TO SCALE

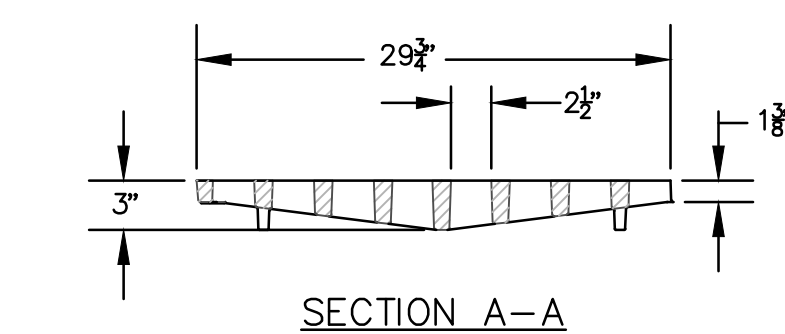
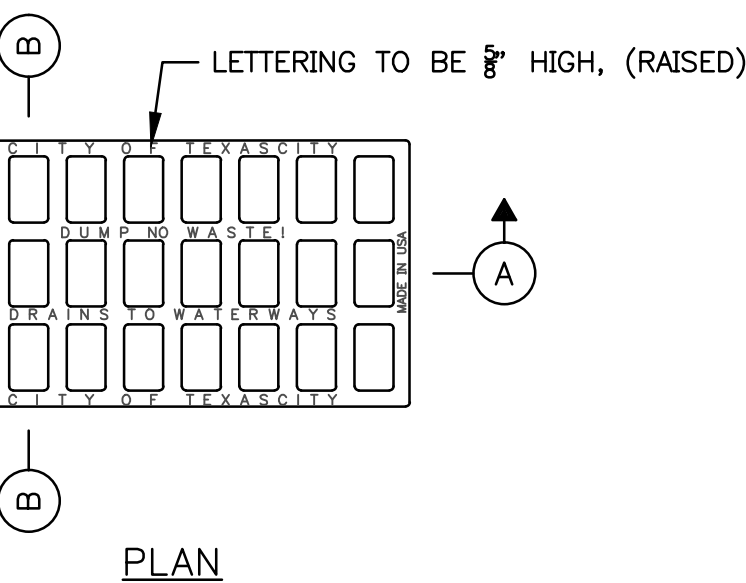
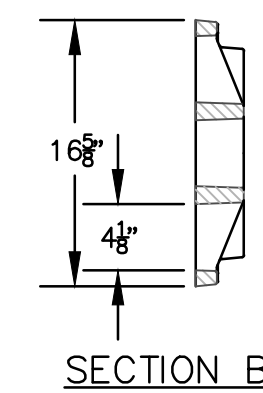


**ALTERNATE TYPE B-B INLET WITH GRATE TOP**  
NOT TO SCALE

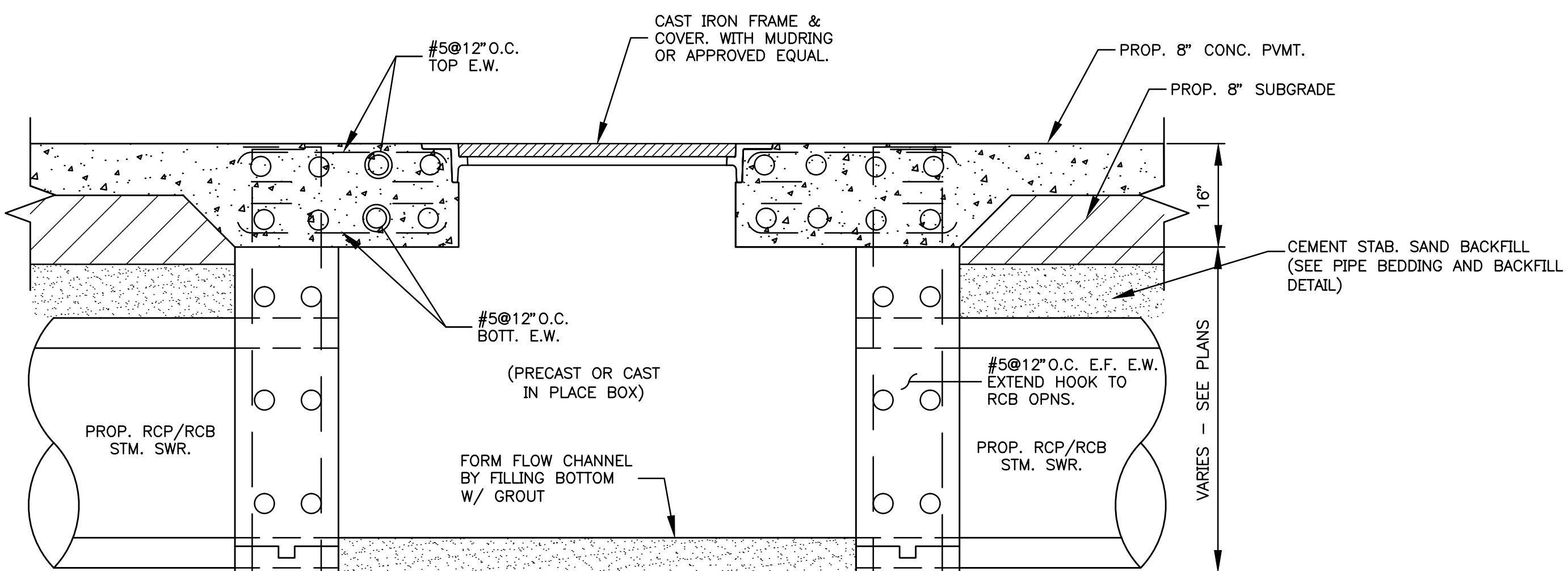


**TYPE "E" INLET**  
NOT TO SCALE

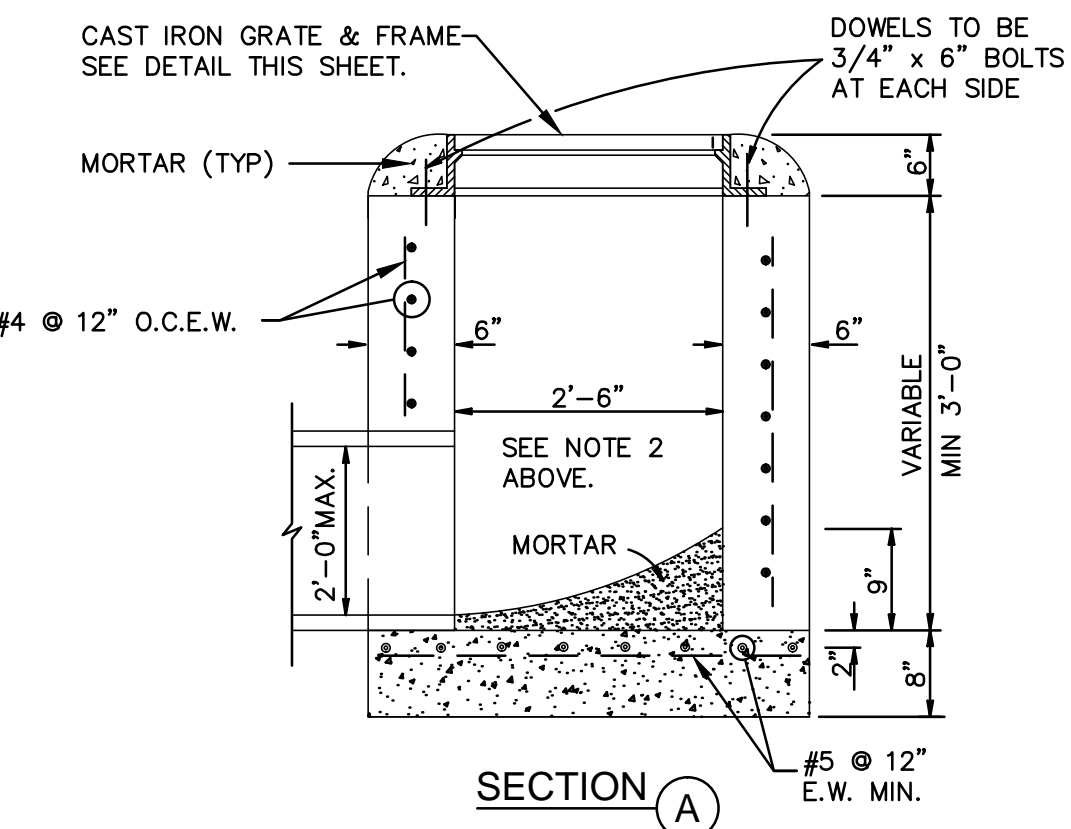
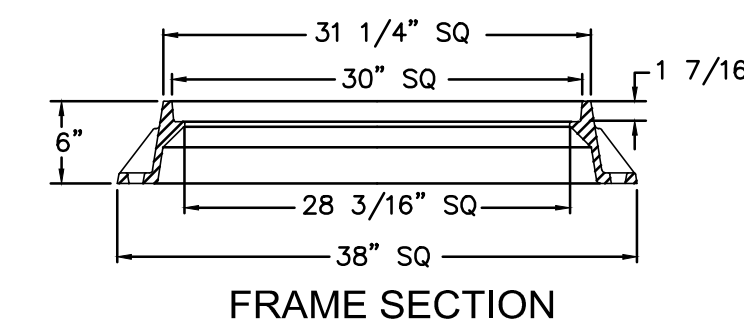
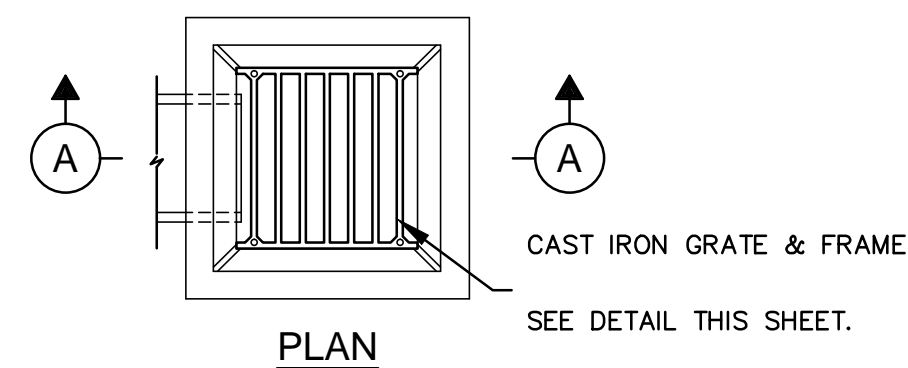
- NOTE:
- IF PRECAST INLETS ARE NOT USED, INSTALL #4 REINFORCING BARS AT 6" O.C.E.W. IN WALLS.
  - WHERE SIZE OF PIPES PASSING THROUGH INLET EXCEEDS 30", INCREASE INSIDE WIDTH TO DIAMETER OF PIPE PLUS 1'-0" (O.D. + 1'-0")
  - WHERE INLETS ARE LOCATED ON BOX CULVERTS OR OTHER FLAT TOP STRUCTURES, MOUNT THEM PER MANWAY DETAIL WITH APPROXIMATELY SIZED SQUARE OPENING.



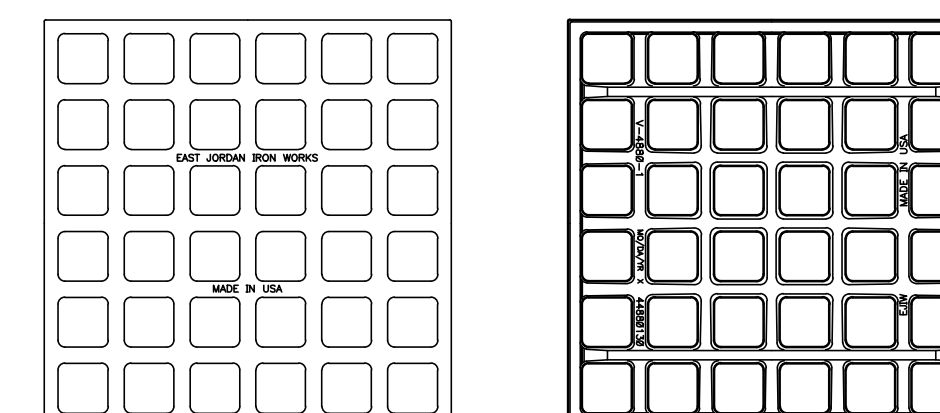
**GRATE FRAME & COVER DETAILS**  
NOT TO SCALE



**SHALLOW BOX MANHOLE CAST IN PLACE TOP DETAIL**  
NOT TO SCALE

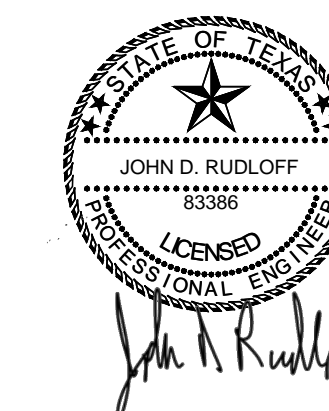


**TYPE "A" GRATE INLET DETAIL**



**GRATE SECTION**

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19

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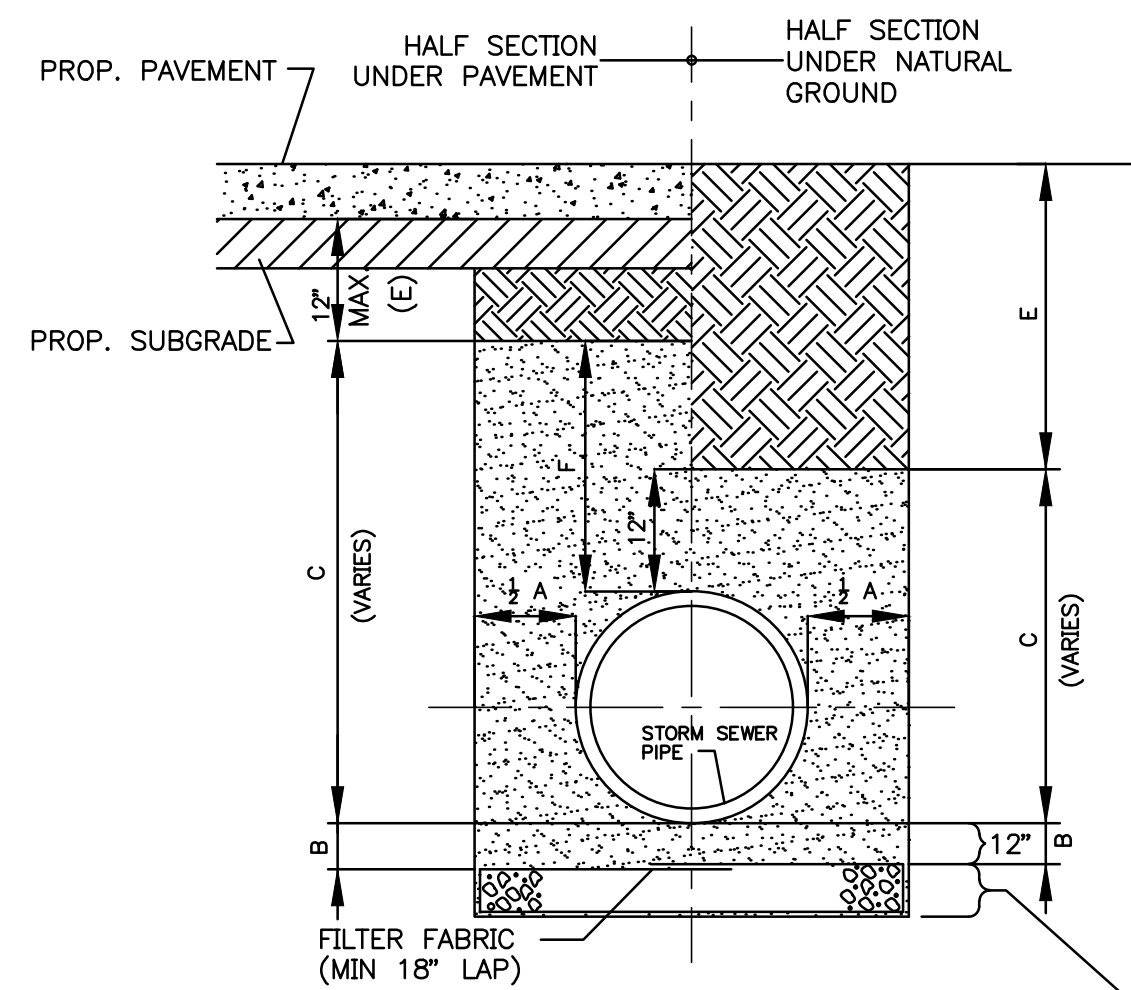
Texas Avenue Reconstruction

Drainage Details II

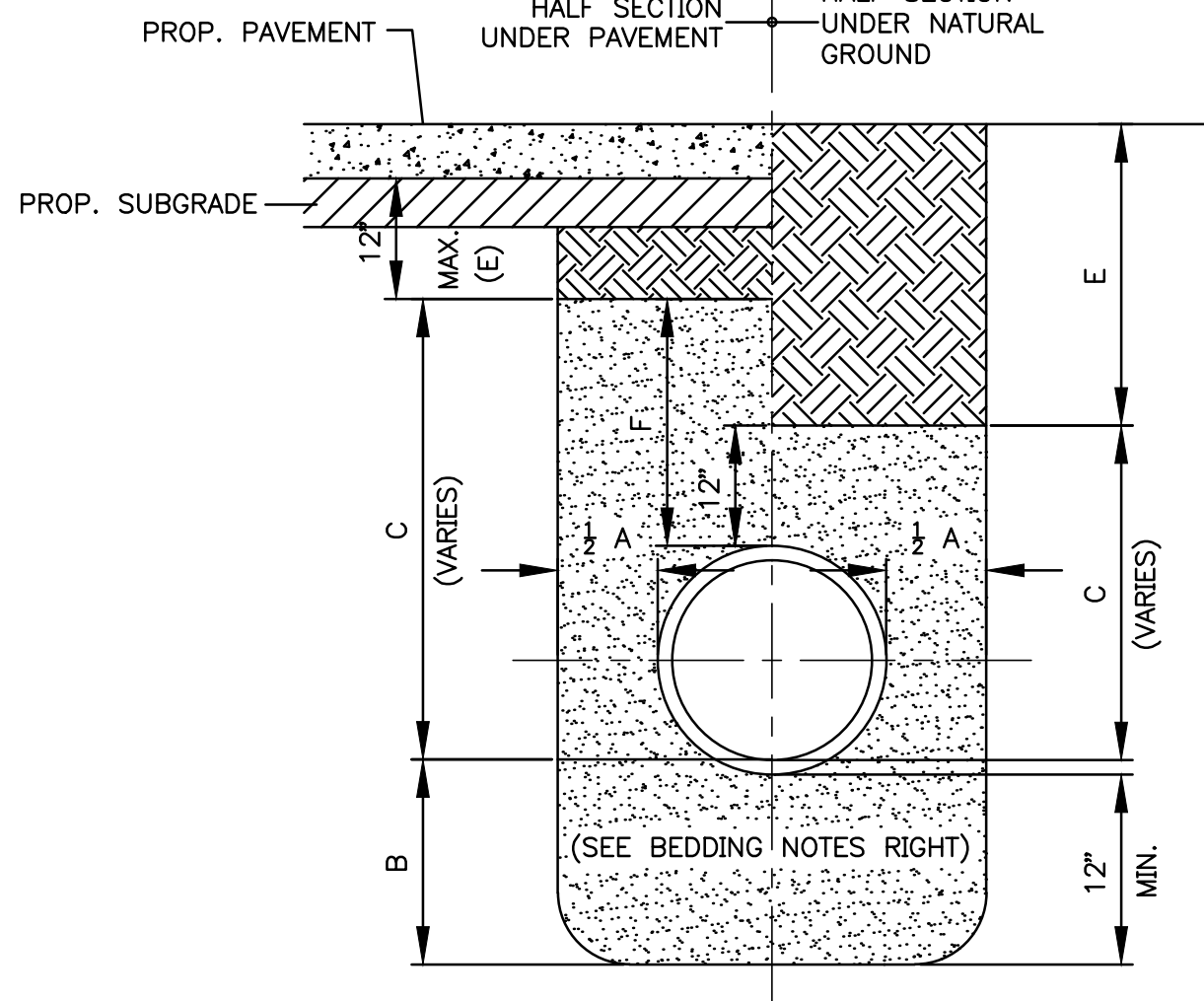
Job No.: 18-015  
Date: September, 2019  
Dwn By: D. Fattig  
Chkd By: J Rudloff

Scale:  
HORZ: N/A  
VERT: N/A

SHEET  
**41**  
OF 52



**WET CONDITION BEDDING**  
NOT TO SCALE



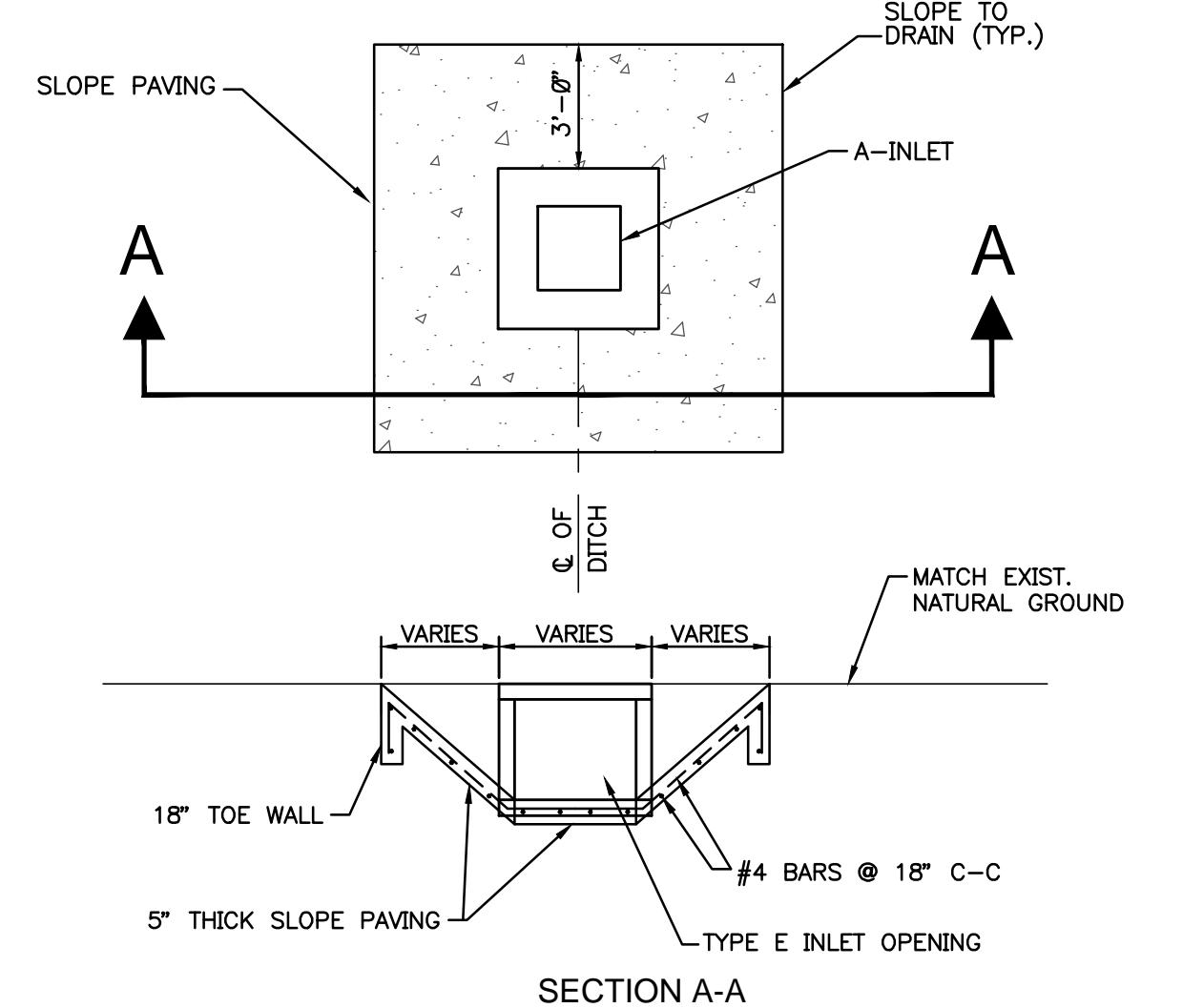
**BEDDING AND BACKFILL DETAIL FOR STORM SEWER PIPES**  
NOT TO SCALE

**BEDDING AND BACKFILL NOTES (APPLICABLE TO ALL DETAILS THIS SHEET):**

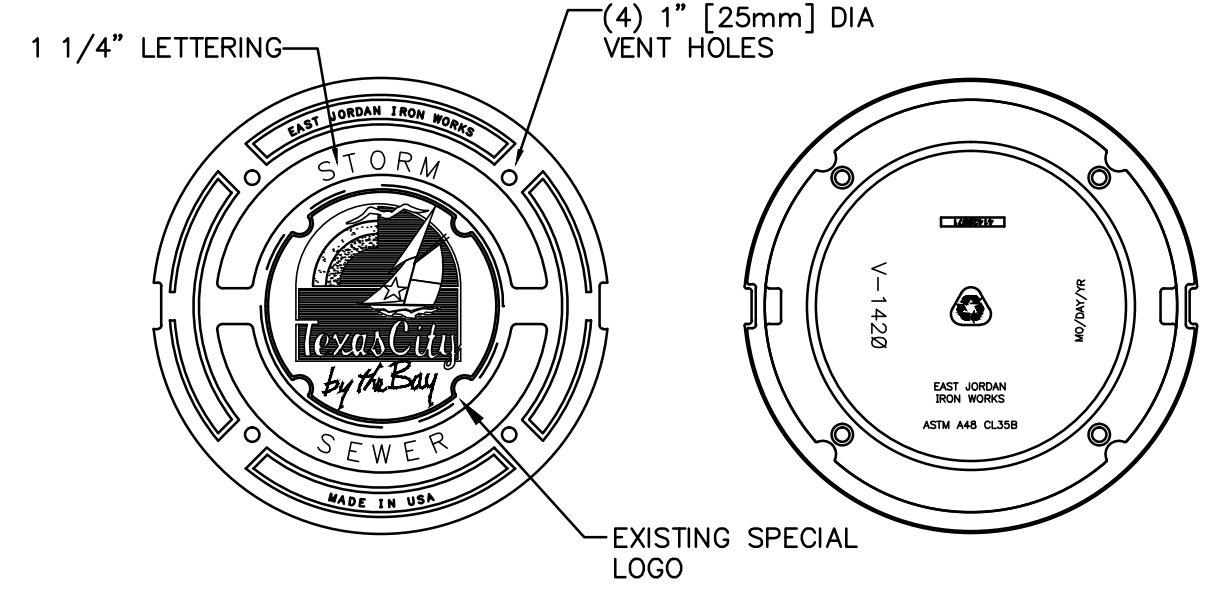
- A. MIN. TRENCH WIDTH SHALL BE PIPE O.D. PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:  

NOMINAL PIPE SIZE	"A"
<18"	18"
18" TO 30"	24"
>30"	36"

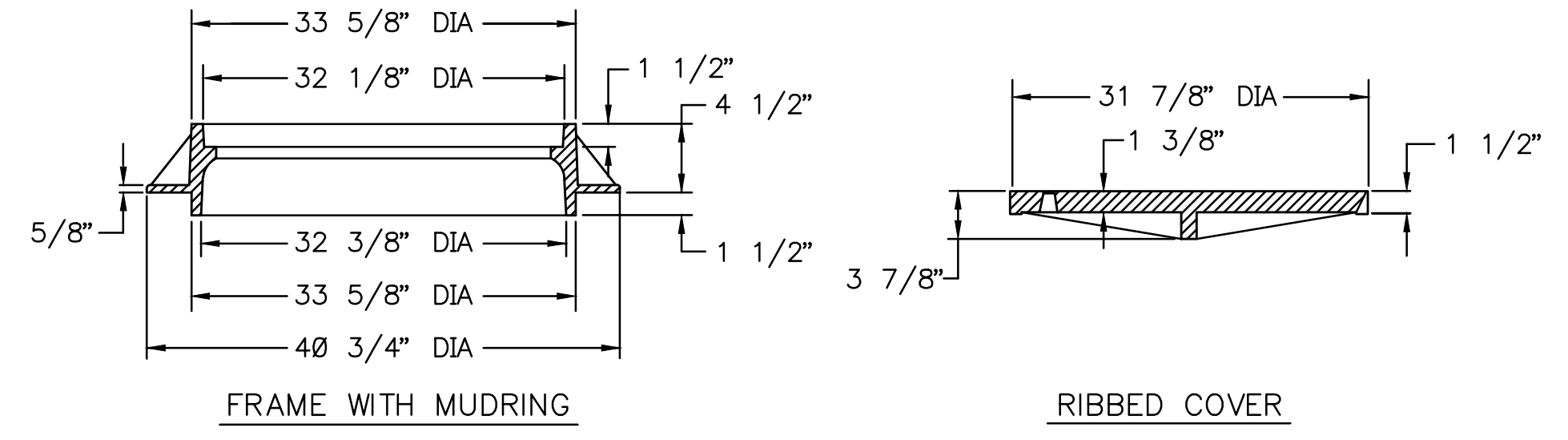
MAX TRENCH WIDTH SHALL NOT BE GREATER THAN MIN TRENCH WIDTH PLUS 24". UNLESS OTHERWISE NOTED.  
 IF OUTSIDE EDGE OF PIPE IS WITHIN 2' OF BACK OF CURB, BACKFILL SHALL BE PERFORMED AS UNDER PAVEMENT.
- B. CEMENT STABILIZED SAND (1.5 SACKS OF CEMENT PER CUBIC YARD, COMPACTED TO 95% OF MAX. STD. PROCTOR) PLACED BEFORE PIPE IS LAID UP TO FLOW LINE OF PIPE OR ABOVE—MINIMUM DEPTH = 12".
- C. CEMENT STABILIZED SAND (AS SPECIFIED ABOVE) PLACED AFTER PIPE IS LAID IN 8" LIFTS.
- D. COMPACTED BANK SAND BACKFILL, COMPACTED AS PER SPECIFICATIONS.
- E. SELECT EARTH BACKFILL WITH MAX LIQUID LIMIT OF 40, MIN. P.I. OF 7, MAX P.I. OF 20 CONTAINING NO ROCKS OR OTHER DEBRIS NOR CONTAINING ANY DIRT CLOUDS EXCEEDING 6" IN ANY DIMENSION. PLACED IN 6" LAYERS, MOISTENED IF NECESSARY AND THOROUGHLY COMPACTED TO 95% DENSITY AS DETERMINED BY ASTM D698, UNLESS OTHERWISE NOTED.



**SLOPE PAVING W/ WINGWALL AT E-INLET**  
NOT TO SCALE



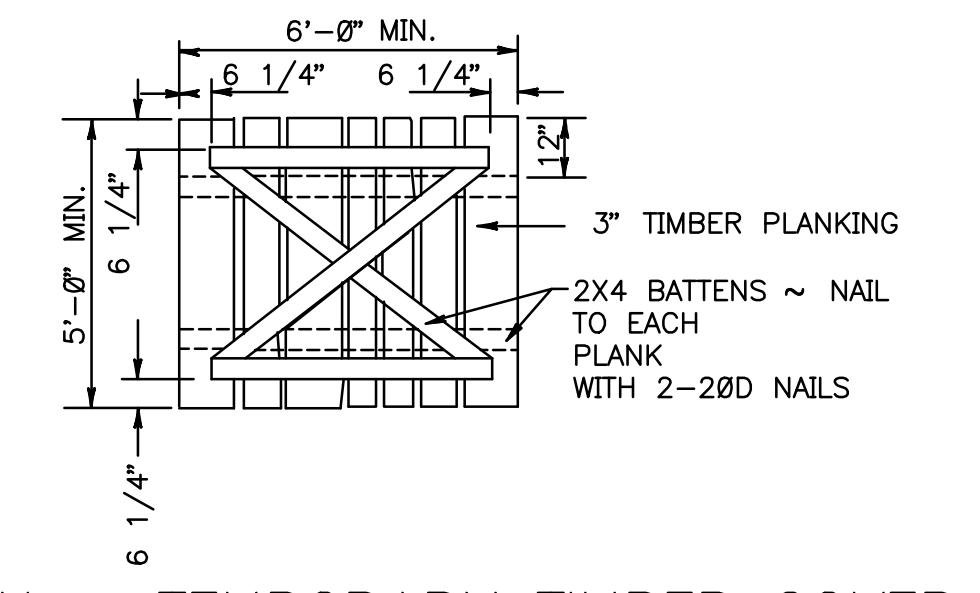
**BOTTOM VIEW OF COVER**



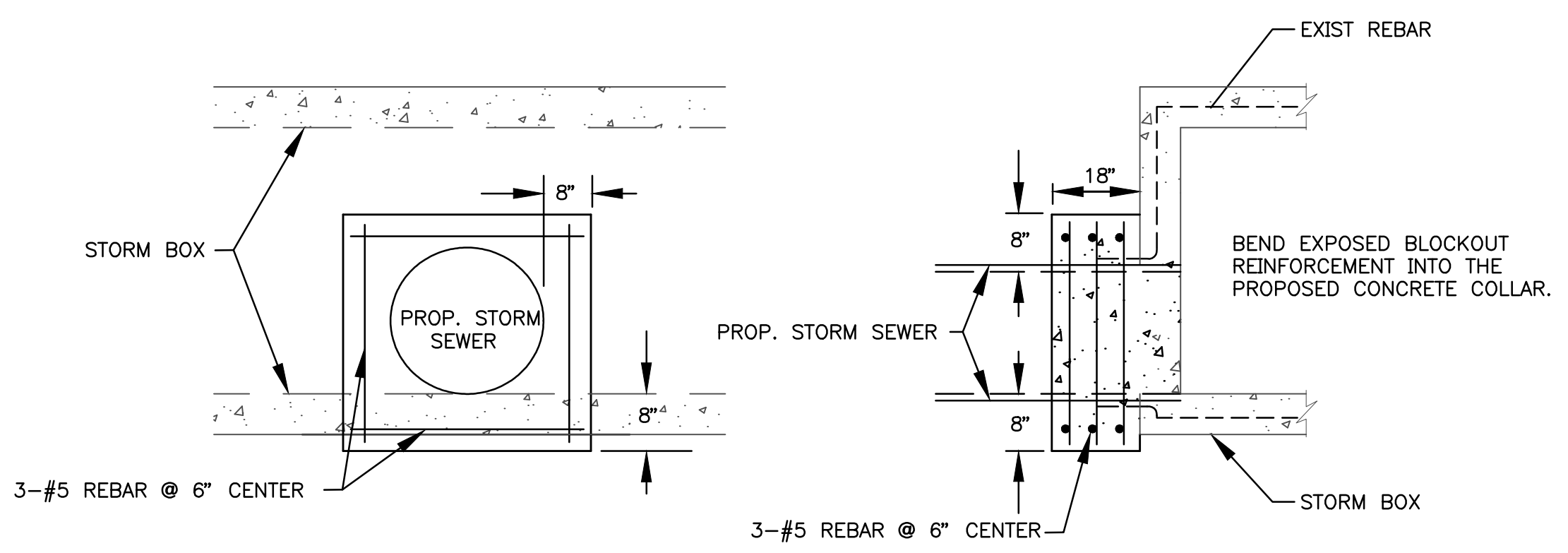
**STORM MANHOLE FRAME & COVER**  
NOT TO SCALE

**GENERAL NOTES:**

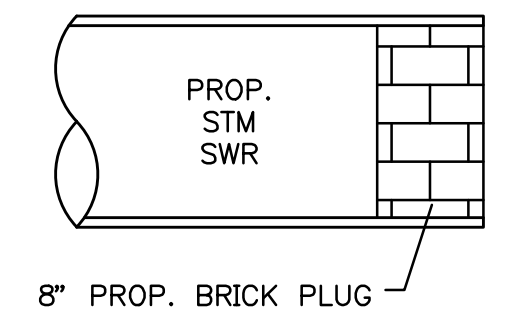
- 1. ALL CONCRETE SHALL BE CLASS A. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4". PIPES SHALL ENTER INLETS AS SHOWN ELSEWHERE ON PLANS. SLOPE TOP OF INLETS AS DIRECTED TO MATCH GRADED SECTION.
- 2. ALL MATERIALS USED IN CASTING MANHOLE COVERS AND LADDER RUNG SHALL CONFORM TO A.S.T.M. SPECIFICATIONS.
- 3. A PERMISSIBLE CONSTRUCTION JOINT MAY BE PLACED IN THE INLET WALL WITH THE APPROVAL OF THE ENGINEER.
- 4. MANHOLE RING AND COVER SHALL BE 32" UNLESS OTHERWISE SPECIFIED IN THE PLANS. CONNECTION OF PIPES TO PRECAST UNITS SHALL BE MORTARED AS DIRECTED BY THE ENGINEER.



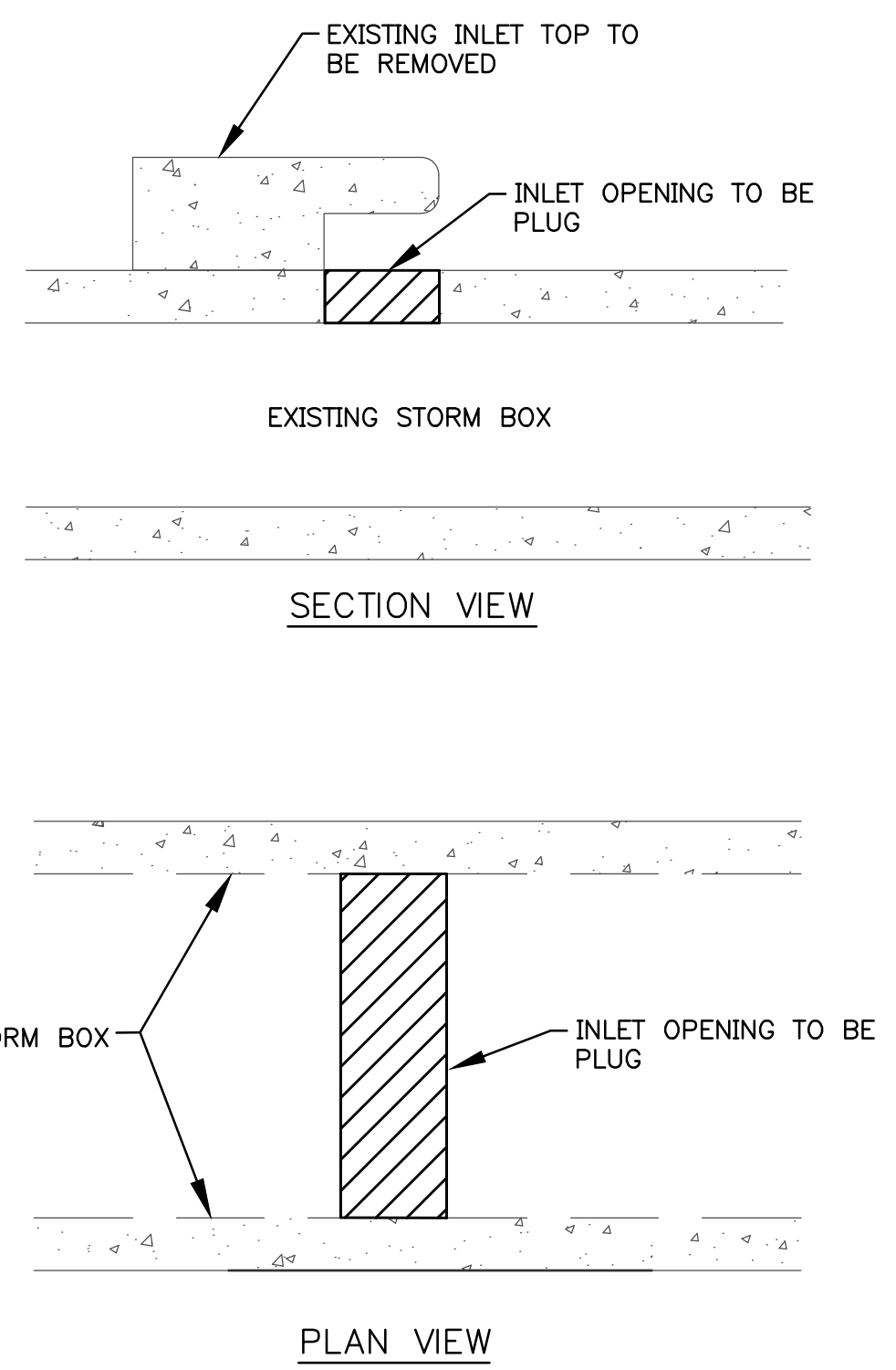
**PLAN ~ TEMPORARY TIMBER COVER**  
NOT TO SCALE



**PIPE TO BOX CONNECTION DETAIL**  
NOT TO SCALE

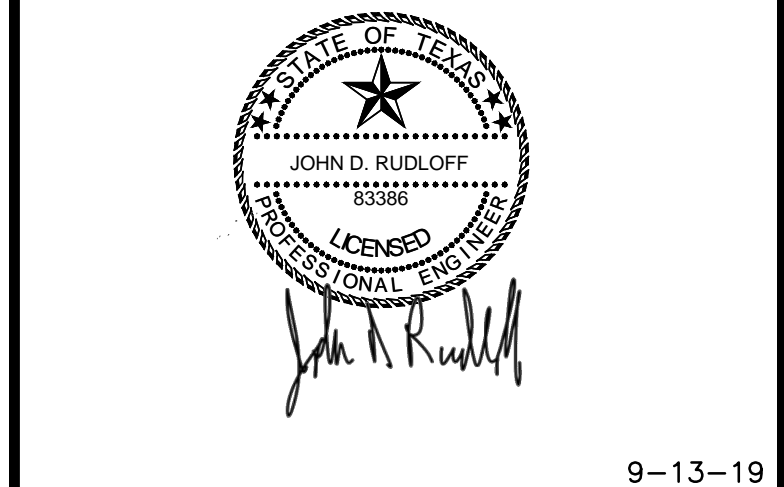


**PLUG PROPOSED STORM SEWER**  
NOT TO SCALE



**PLUG PROPOSED INLET OPENING**  
NOT TO SCALE

MK.	DESCRIPTION	DATE	DWN.	CHK.



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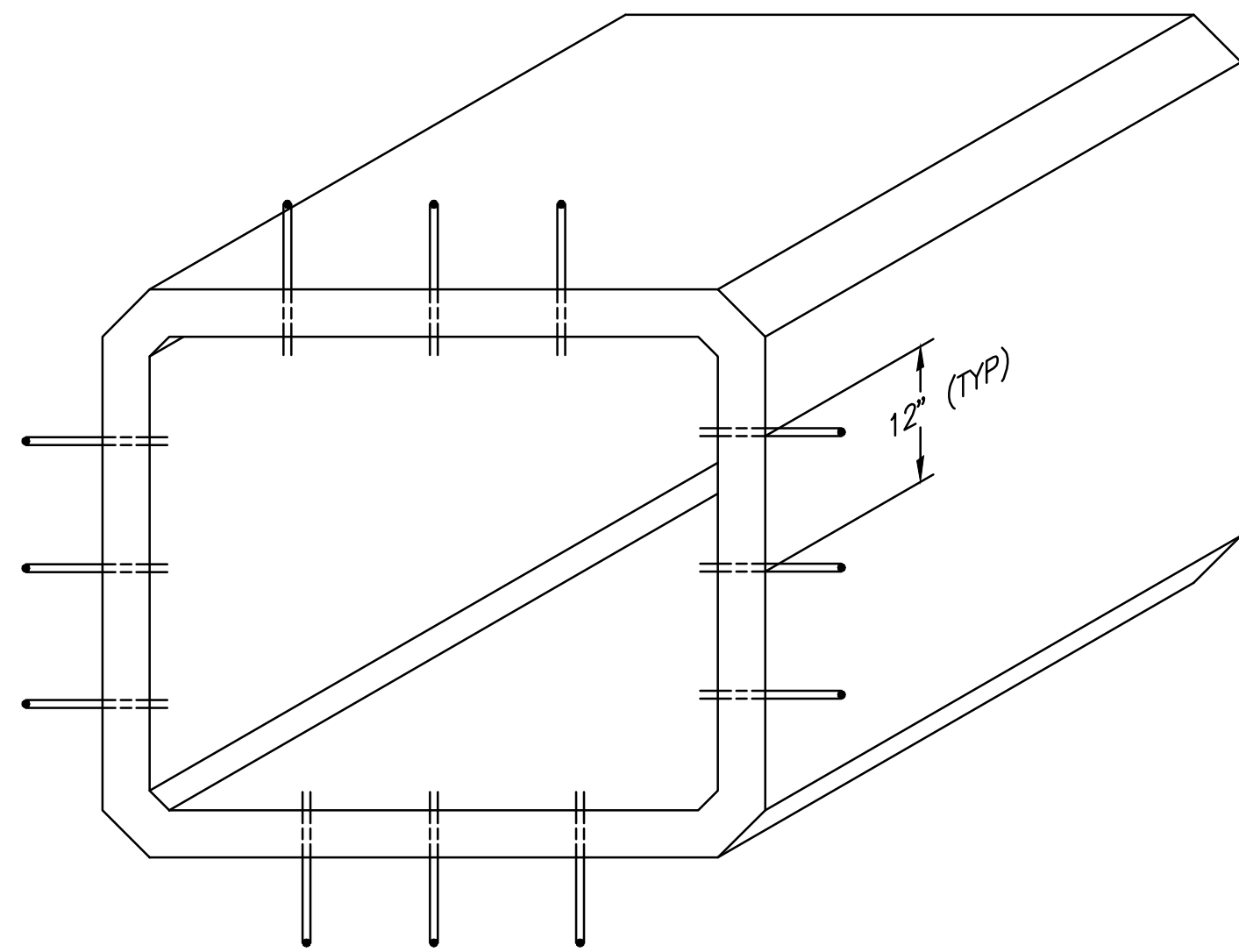
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Texas Avenue Reconstruction

Drainage Details III

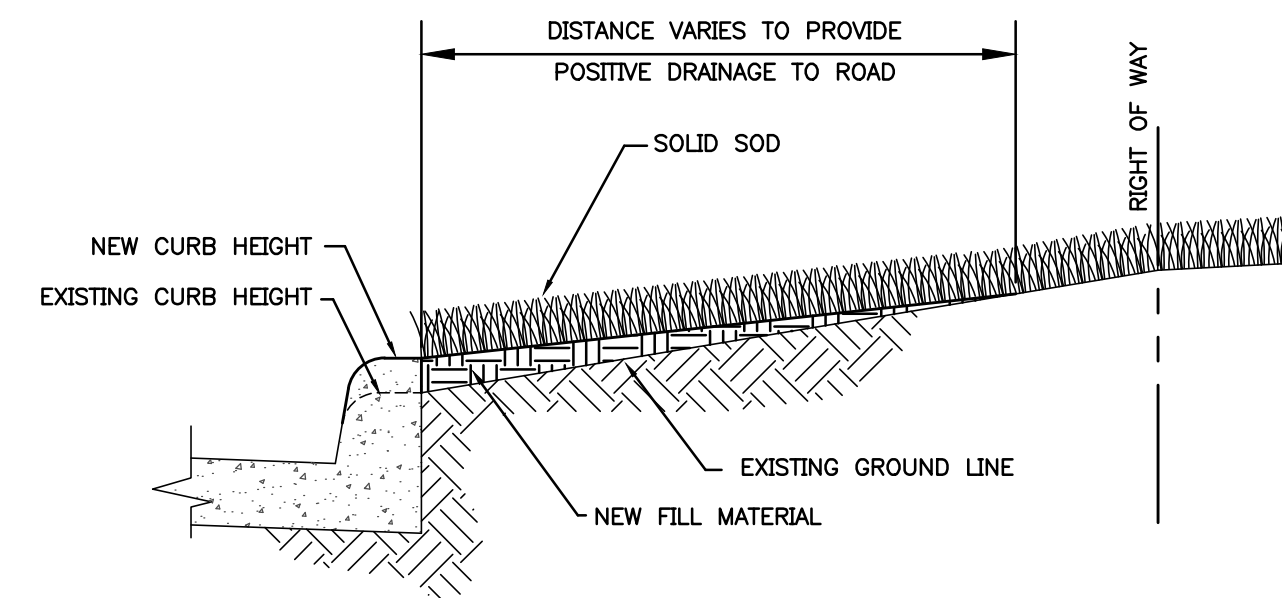
Job No.: 18-015	Scale: HORZ: N/A	SHEET
Date: September, 2019	VERT: N/A	42
Dwn By: D. Fattig		OF 52
Chkd By: J Rudloff		



**JOINT REPAIR SPACING**

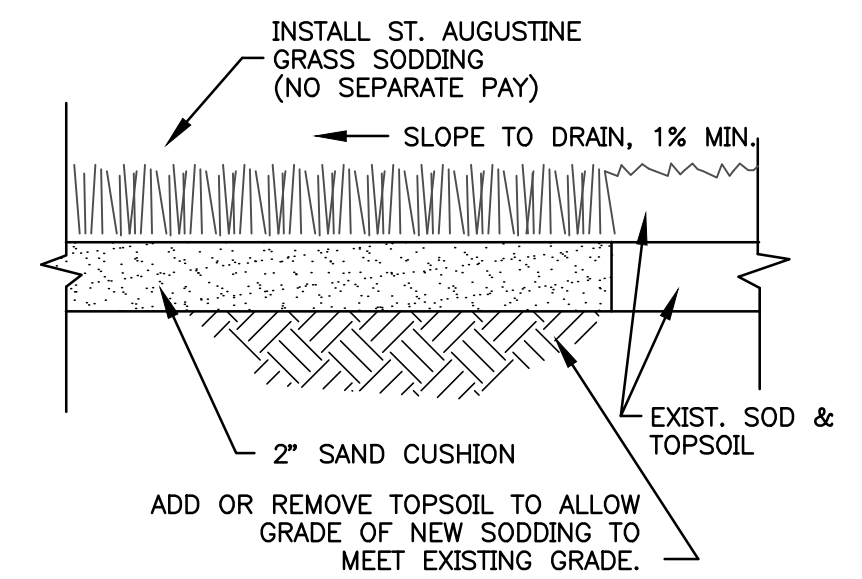
**HORIZONTAL NOTES:**

1. TRENCH CONDITIONS SHALL BE SUCH THAT PIPE JOINTING CAN BE ACCOMPLISHED WITHOUT GETTING MUD, SILT, GRAVEL OR OTHER FOREIGN MATERIALS INTO THE JOINT. GENERALLY THE TRENCH SHOULD BE DEWATERED AND HAVE A FIRM BOTTOM FREE OF MUCK.
2. PRIME JOINT AS PER MANUFACTURER'S RECOMMENDATIONS. REMOVE PROTECTIVE WRAPPER ON ONE SIDE OF PREFORMED RAM-NEK STRIP OR COIL AND PRESS FIRMLY TO DRY, CLEAN JOINT SURFACE. BEFORE LAYING THE PIPE IN THE TRENCH, ATTACH THE GASKETS END-TO-END TO THE LEADING EDGE OF THE TONGUE OR GROOVE OF EACH PIPE JOINT, FORMING A CONTINUOUS GASKET AROUND THE CIRCUMFERENCE. REMOVE PROTECTIVE WRAPPER BEFORE JOINING PIPE SECTIONS.
3. AFTER THE GASKET IS APPLIED, THE PIPE SHOULD BE HANDLED CAREFULLY TO AVOID DISPLACING OR SOILING OF GASKET. ANY GASKET SO DISTURBED SHOULD BE REPLACED.
4. THE PIPE SHOULD BE PROPERLY ALIGNED BEFORE JOINTS ARE FORCED HOME. FOR TONGUE AND GROOVE PIPE, THE PIPE SHOULD BE PARTIALLY SUPPORTED TO MAINTAIN CONCENTRICITY UNTIL THE GASKET IS PROPERLY COMPRESSED IN THE JOINT SPACE AND SUFFICIENT PRESSURE APPLIED TO MAKE SURE THAT THE JOINT IS PROPERLY MADE.
5. LIFT HOLE PLUG SHALL BE GROUTED IN PLACE PRIOR TO BACKFILLING.
6. BACKFILLING AND COMPACTION CAN BEGIN WHEN JOINTING & GROUTING ARE COMPLETED.
7. CONTRACTOR SHALL FOLLOW APPLICATION INSTRUCTIONS PROVIDED BY THE MANUFACTURER. THE GAP BETWEEN THE FACE OF THE TONGUE AND GROOVE SHALL NOT EXCEED 1" AFTER JOINTS ARE FORCED HOME. IF JOINT GAP EXCEEDS 1" THEN JOINT SHALL BE REPAIRED AS PER JOINT REPAIR DETAIL AND SPECIFICATION. THIS IS NOT CONSIDERED A 1" AVERAGE. JOINT REPAIR SHALL BE PERFORMED ON SECTIONS OF THE JOINT THAT EXCEED 1". IF MORE THAN HALF THE JOINT EXCEEDS 1", THEN THE WHOLE JOINT SHALL BE REPAIRED (NO SEPARATE PAY SHALL BE MADE FOR JOINT REPAIR).



**FILL BEHIND BACK OF CURB DETAIL**

NOT TO SCALE

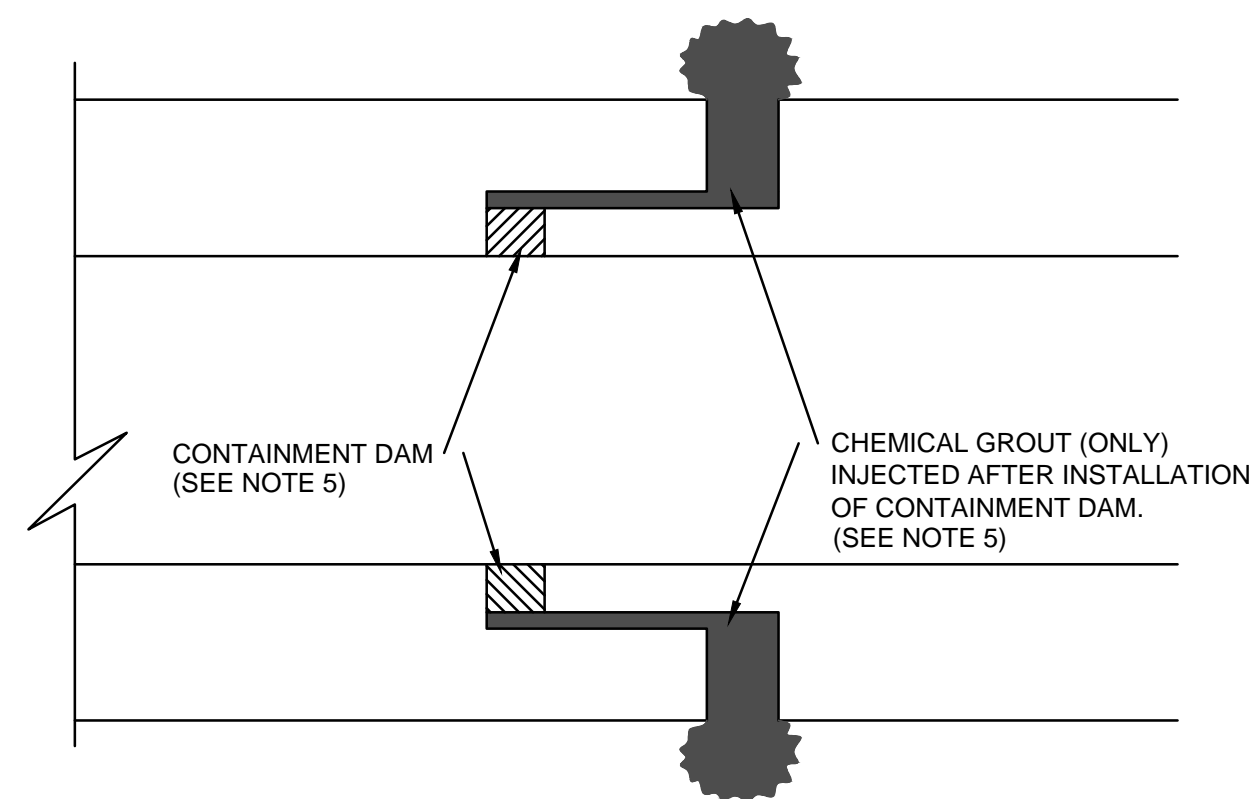


**NOTES:**

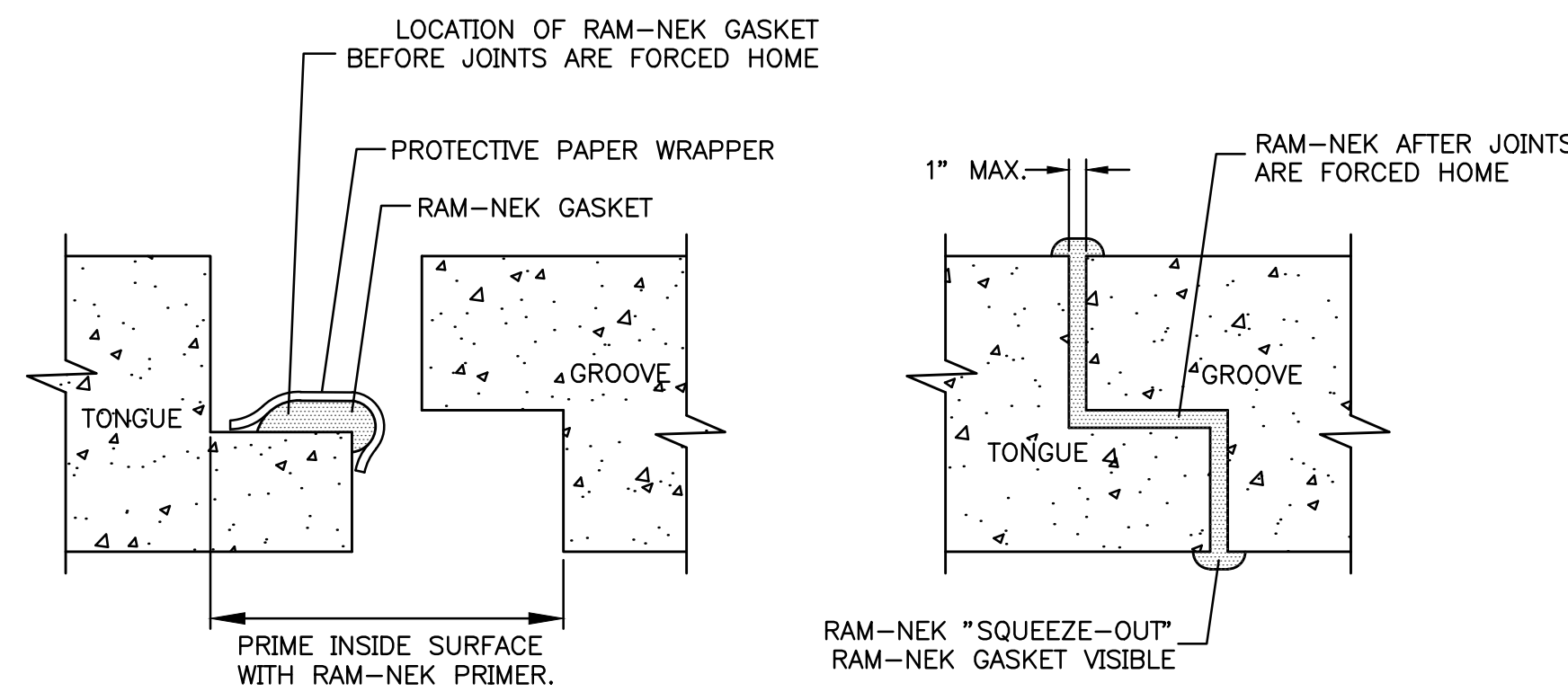
1. SODDING SHALL BE ON AREAS DISTURBED BY CONSTRUCTION.
4. IN THE EVENT EXISTING LANDSCAPING OTHER THAN GRASS IS WITHIN THESE AREAS, THE CONTRACTOR SHALL REBUILD OR REINSTALL THE LANDSCAPING OF THE AREA AFTER CONSTRUCTION IN AN EQUAL OR BETTER CONDITION.

**TYPICAL GRASS SODDING DETAILS**

NOT TO SCALE



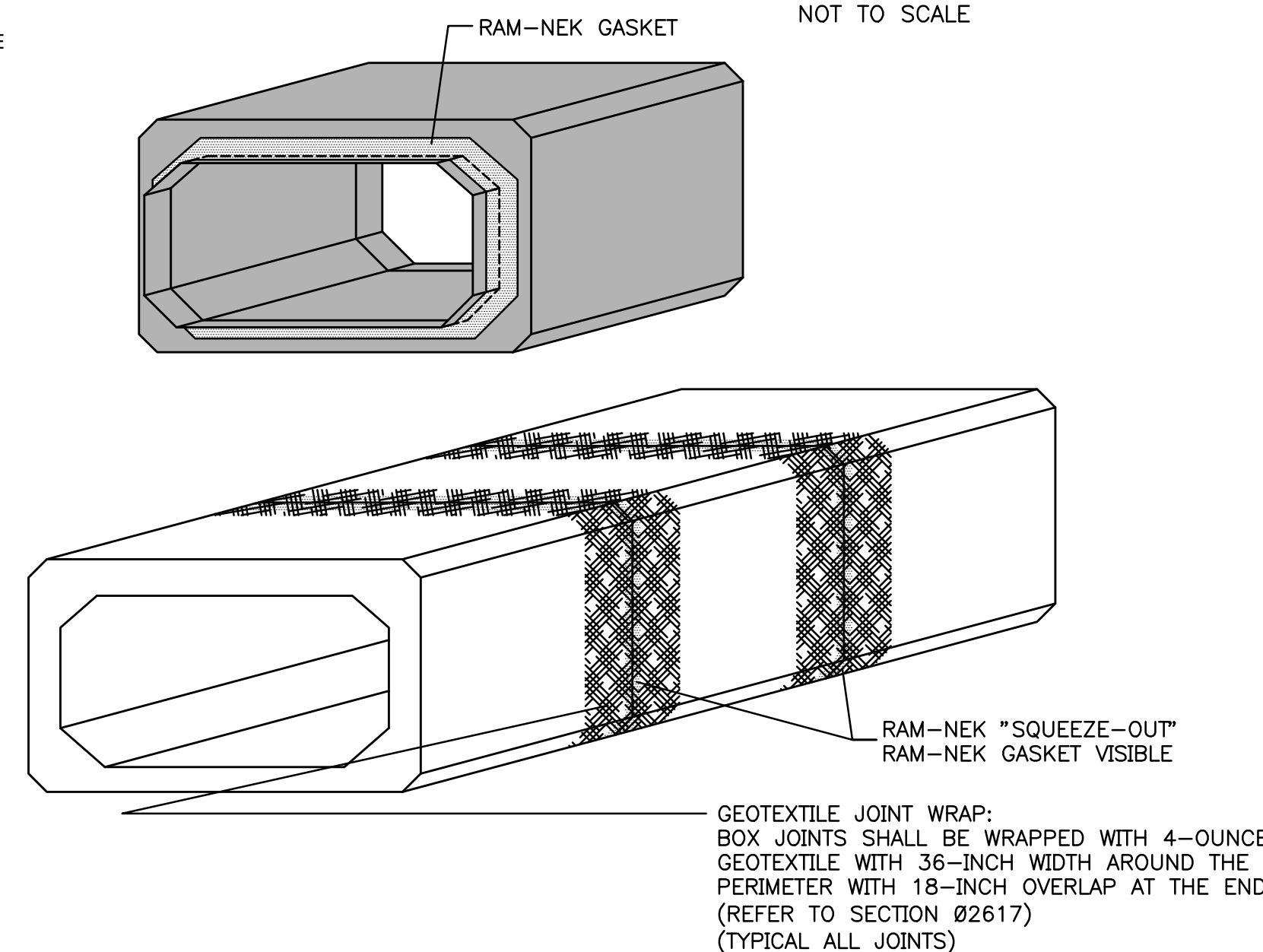
**JOINT REPAIR DETAIL**



**HORIZONTAL APPLICATION**

**RAM-NEK GASKET INSTALLATION DETAIL**

NOT TO SCALE



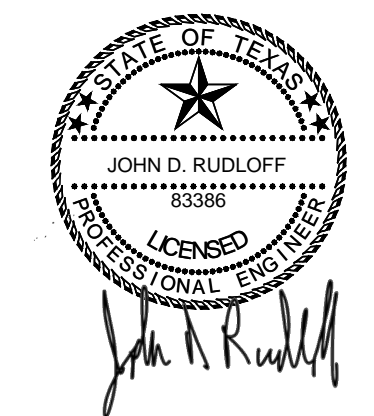
**RAM-NEK DETAIL**

NOT TO SCALE

**NOTES:**

1. JOINT REPAIR SHALL BE PERFORMED FROM THE INSIDE OF THE STORM SEWER SYSTEM AND SHALL BE PERFORMED IN STRICT ACCORDANCE TO ALL LOCAL, STATE, AND FEDERAL LAWS. THE CONTRACTOR SHALL PROVIDE A SAFETY PLAN THAT SHALL INCLUDE BUT NOT LIMITED TO, GAS DETECTOR, TRIPOD AND WRENCH, HARNESS, VENTILATION DEVICES, ETC.
2. CONTRACTOR SHALL REMOVE ALL EXISTING FILL AND DEBRIS FROM ALL AREAS AROUND THE JOINTS TO A WIDTH OF 12" FROM CENTERLINE OF JOINT. THE FILL AND DEBRIS CAN BE TEMPORARILY PLACED ADJACENT TO THE JOINT AND BE REPLACED IN THE SAME LOCATION AT THE SAME HEIGHT AFTER REPAIR OF JOINT. FILL WILL NOT BE ALLOWED TO REMAIN IN A PILE AFTER REPAIR OF THE JOINT.
3. COFFERDAMS, SANDBAGS, PUMPS AND OTHER MEANS OF DEWATERING SHALL BE USED TO MAINTAIN THE WATER AT A LOW LEVEL. IT IS NOT NECESSARY FOR THE JOINT TO BE DRY, BUT WATER LEVEL SHALL BE MAINTAINED AT AS LOW A LEVEL AS IS PRACTICAL. FLOW IN BOX CULVERTS MUST BE CONTROLLED TO AN EXTENT THAT JOINT BEGINNING REPAIRED IS NOT INUNDATED BY WATER.
4. ALL EXISTING BITUMINOUS JOINT SEALANT MATERIAL SHALL BE REMOVED FROM JOINTS PRIOR TO WORK. THE JOINTS SHALL BE CLEANED BY PRESSURIZED WATER BLASTERS TO REMOVE LOOSE DEBRIS.
5. THE JOINTS SHALL HAVE A "CONTAINMENT DAM" USED TO PROVIDE CONTAINMENT FOR THE GROUT THAT IS INJECTED BEHIND THE BOX CULVERT. THE "CONTAINMENT DAM" SHALL BE AN APPROVED CEMENTITIOUS GROUT OR SATURATED JUTE OAKUM WITH AN APPROVED CHEMICAL GROUT, AS INDICATED IN SPECIFICATIONS. CEMENTITIOUS GROUT MAY ONLY BE USED IN SECTIONS OF NON-SUBMERGED JOINTS ONLY. SATURATED JUTE OAKUM SHALL BE USED IN SUBMERGED AREAS AND MAY BE USED IN NON-SUBMERGED AREAS AS WELL. NON-SUBMERGED AREAS ARE DEFINED AS SECTIONS IN THE JOINT THAT ARE A MINIMUM OF ONE (1) FOOT ABOVE THE STANDING WATER LEVEL OF THE BOX CULVERT, AT EITHER PRE-CONSTRUCTION OR CONSTRUCTION PHASE, WHICHEVER IS HIGHER. ALL OTHER AREAS OF THE JOINT ARE CONSIDERED SUBMERGED.
6. AFTER THE INSTALLATION OF THE CONTAINMENT DAM, CHEMICAL GROUT SHALL BE PUMPED BEHIND CULVERT @ 12" SPACING STARTING AT THE MIDDLE OF THE BOTTOM JOINT UNTIL OUTCROPPING IS SEEN OR GROUT ACHIEVES A PRESSURE OF 125 PSI OR AS PER MANUFACTURERS SUGGESTED PRESSURE CRITERIA.
7. OUTCROPPED CHEMICAL GROUT MATERIAL SHALL BE REMOVED, FLUSHED TO JOINT, AND DISPOSED OF PROPERLY.
8. CLEANUP MUST BE DONE WITHOUT INORDINATE USE OF FLAMMABLE OR HAZARDOUS CHEMICALS.
9. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY IMPEDANCE TO FLOW, SUCH AS TEMPORARY COFFERDAMS, SANDBAGS, AND EQUIPMENT FROM THE BOX CULVERTS IN THE EVENT OF RAIN.

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



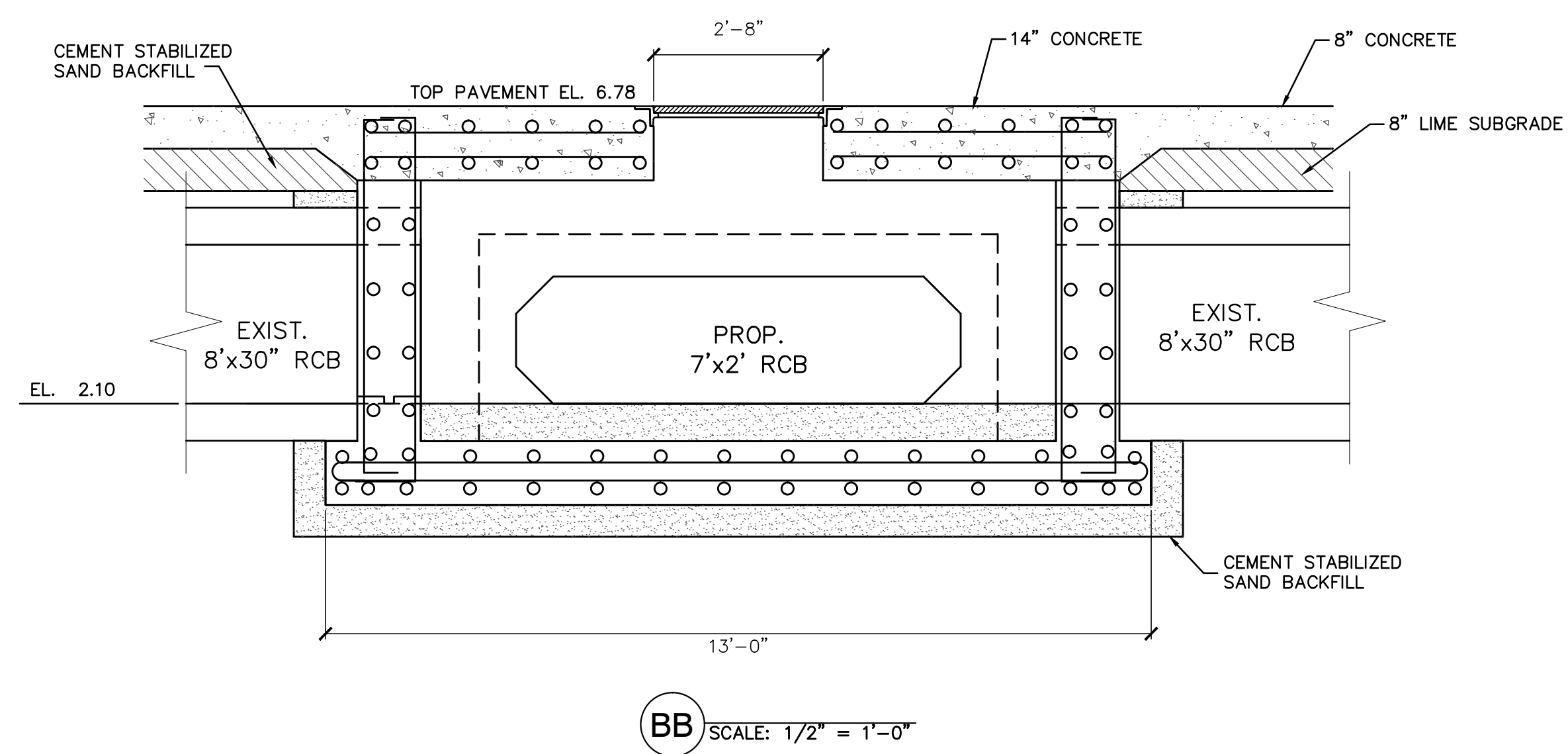
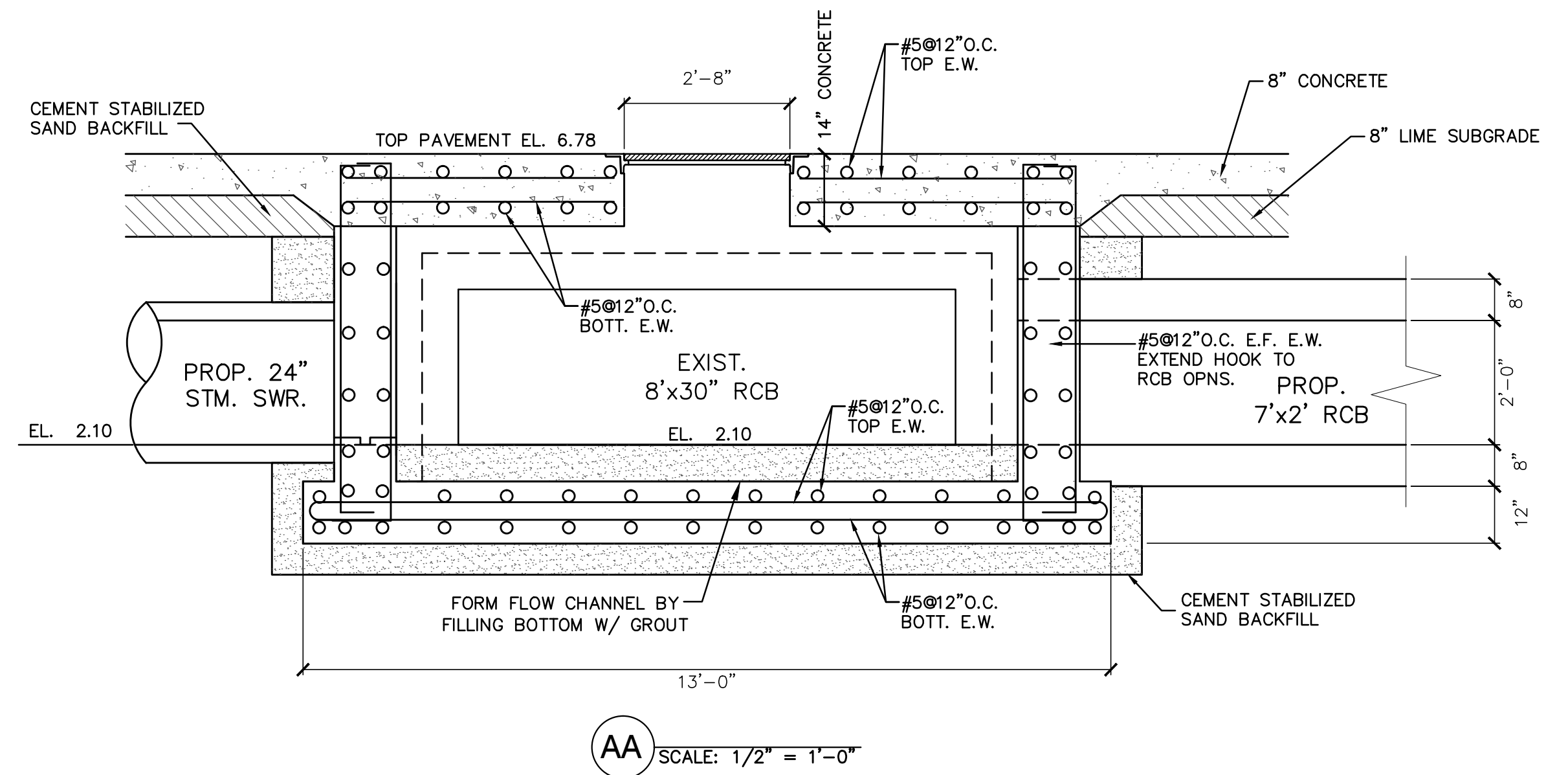
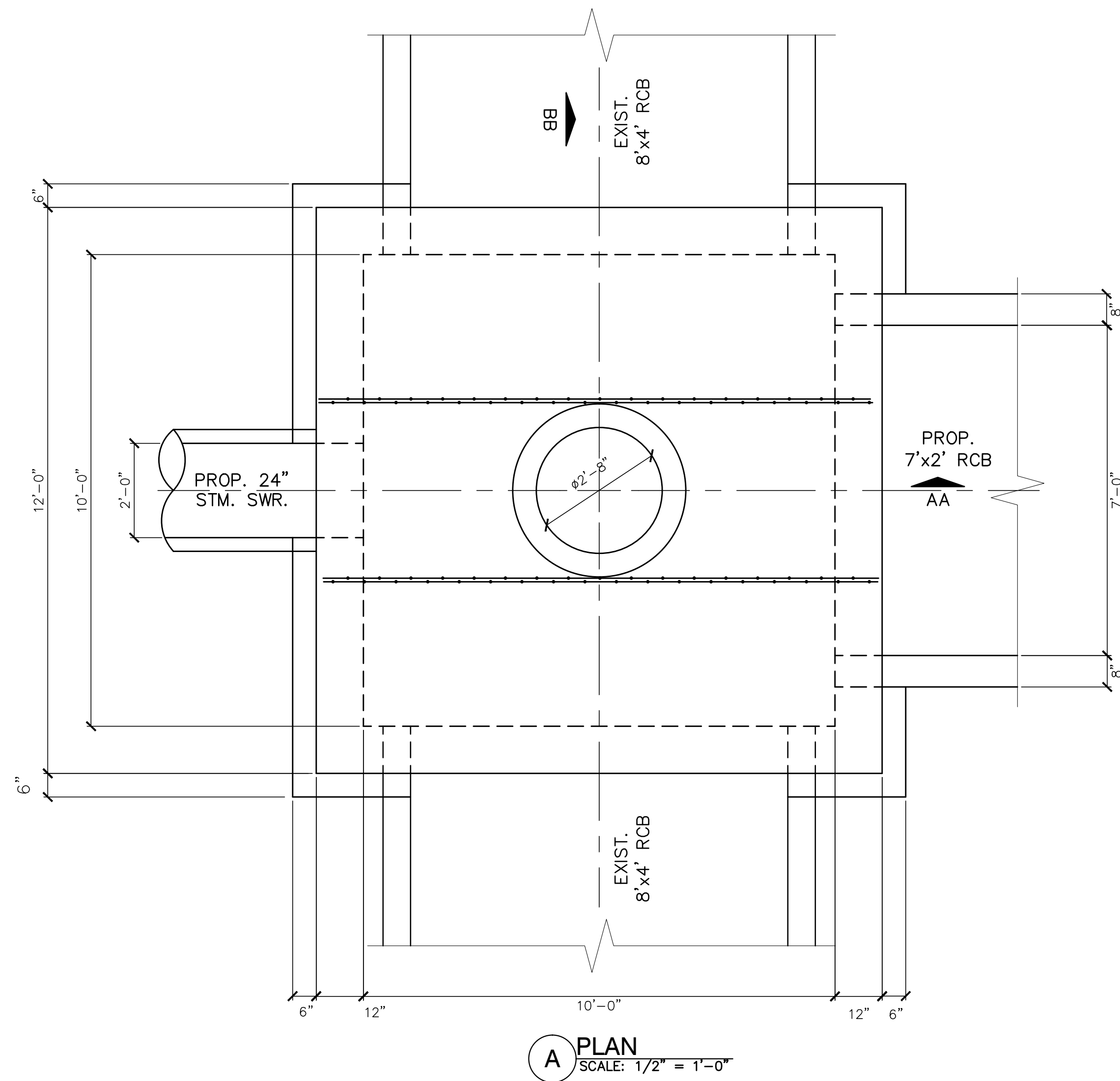
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Drainage Details IV

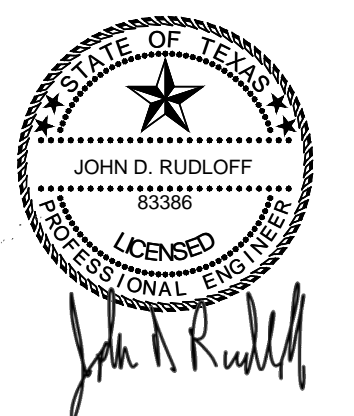
Job No.: 18-015	Scale:	SHEET
Date: September, 2019	HORZ:	43
Dwn By: D. Fattig	VERT: N/A	
Chkd By: J Rudloff		OF 52



**NOTES:**

1. REFER SHEET 50 FOR GENERAL NOTES.
2. REFER SHEET 51 FOR TYPICAL DETAILS.
3. PROVIDE ADDITIONAL REINFORCING IN WALLS OF THE JUNCTION BOX RECEIVING PIPES PER DETAIL 6/51.
4. PROVIDE ADDITIONAL REINFORCING AT TOP & BOTTOM BEAM/SLAB OF JUNCTION BOX ABOVE AND BELOW THE TOP AND BOTTOM SLAB OR PRECAST BOX PER DETAILS 8/51 & 9/51.
5. REFER DETAIL 13/51 FOR WALLS RECEIVING PRECAST BOX.

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



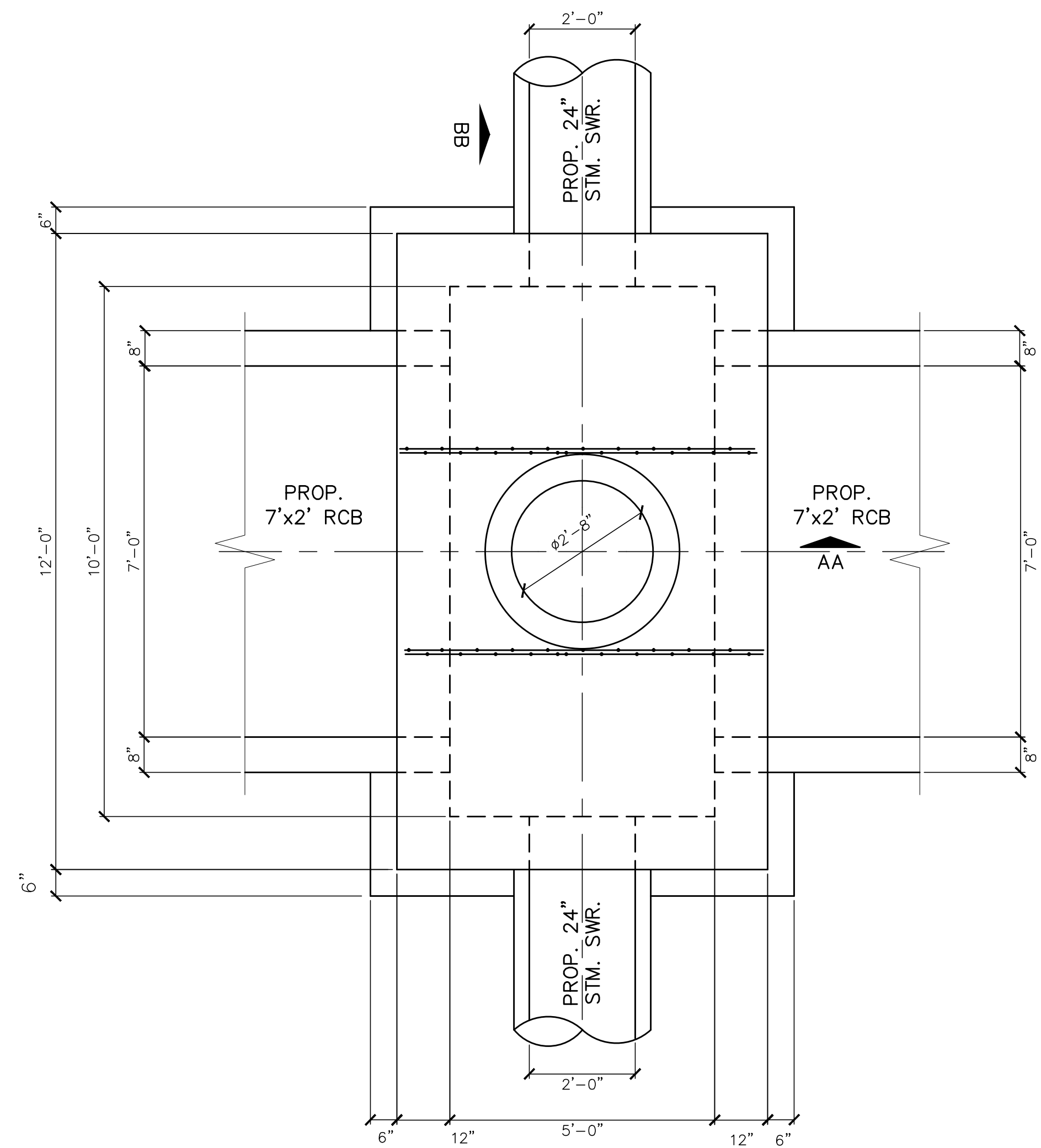
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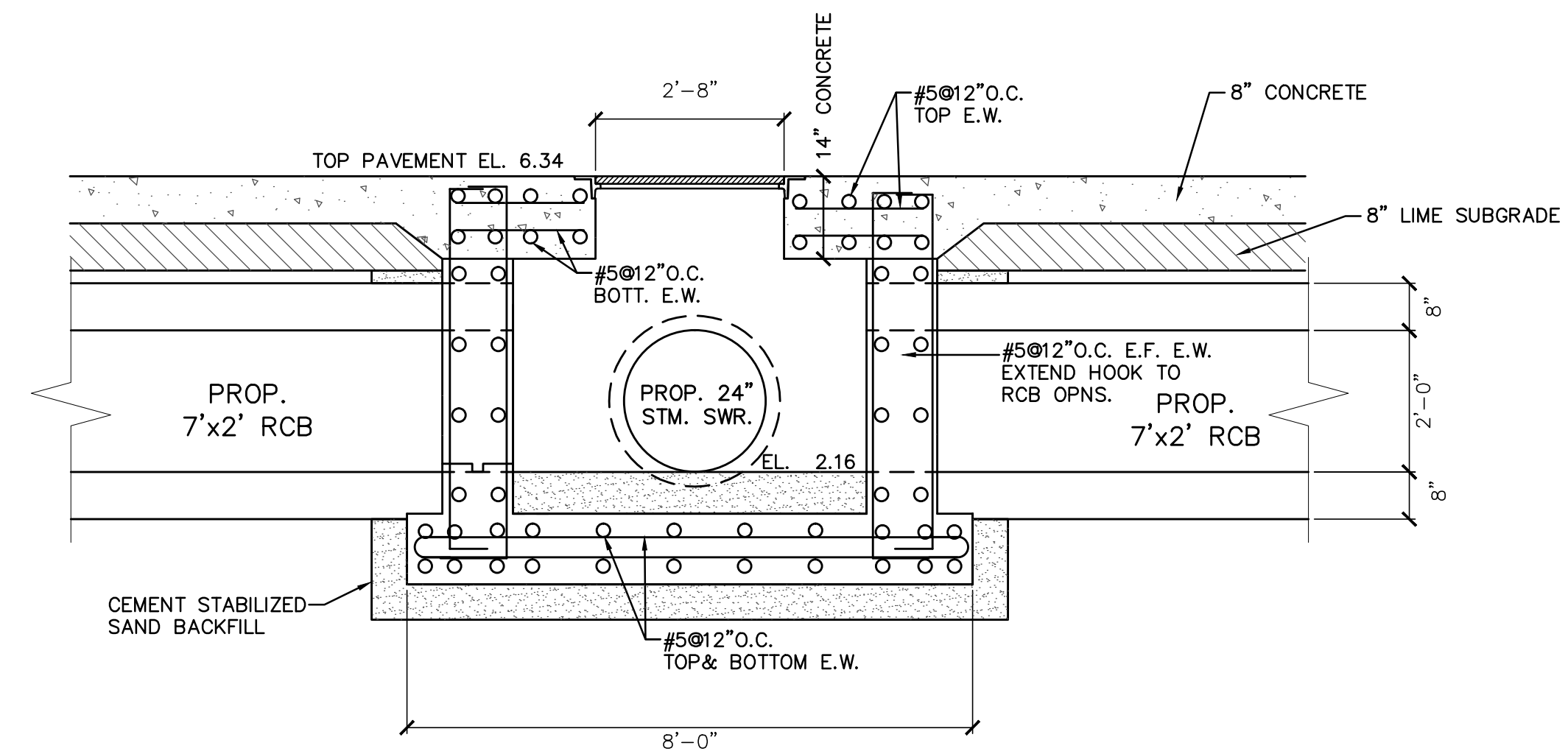
Texas Avenue Reconstruction

Junction Box A1 - Sta. 4+19.10

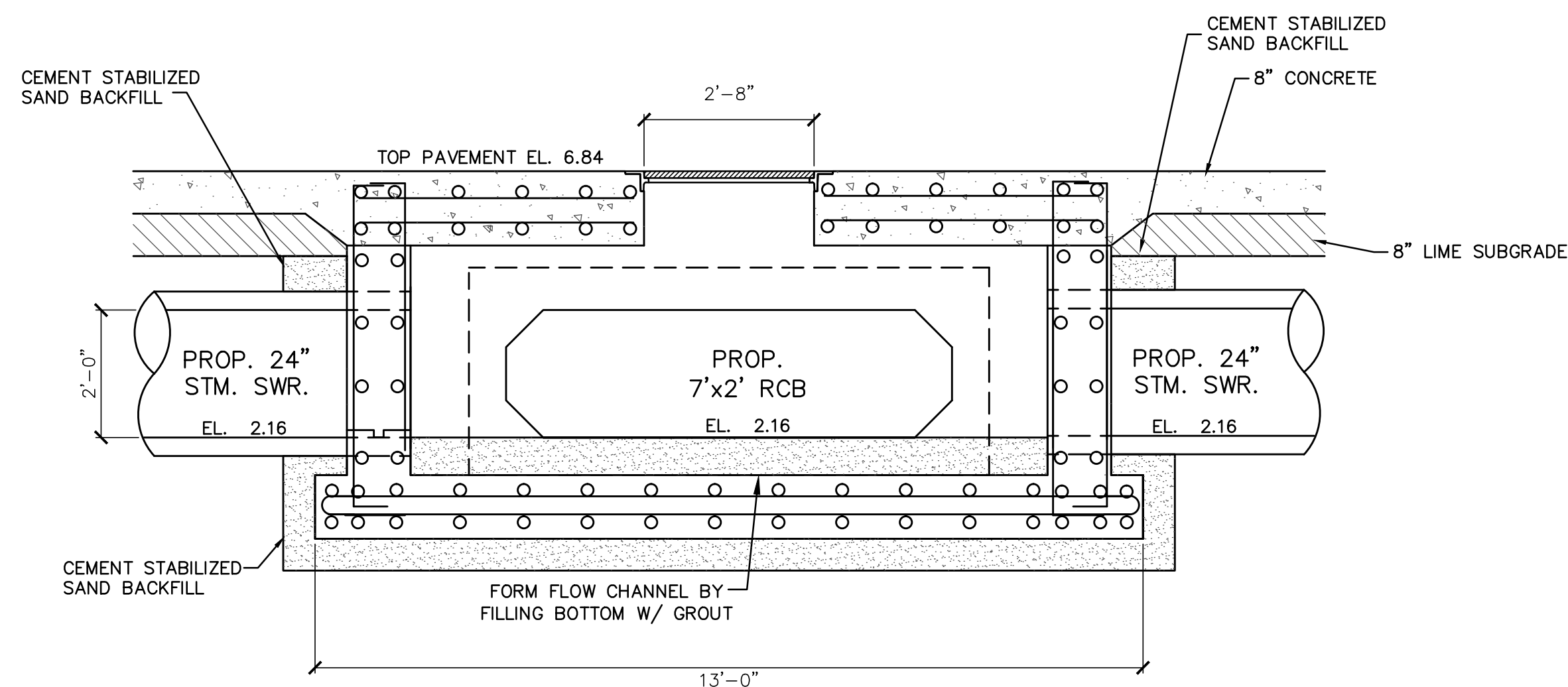
Job No.: 18-015	Scale: HORZ 1/2" = 1'-0"	SHEET <b>44</b> OF 52
Date: September, 2019	VERT:	
Dwn By: D. Fattig		
Chkd By: J Rudloff		



**A PLAN**  
SCALE: 1/2" = 1'-0"



**AA** SCALE: 1/2" = 1'-0"

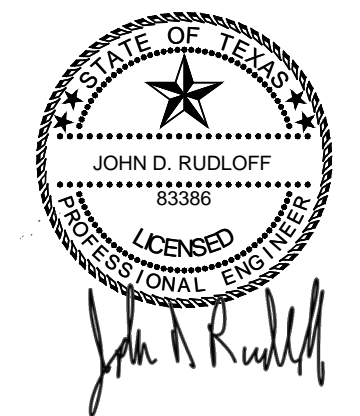


**BB** SCALE: 1/2" = 1'-0"

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MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



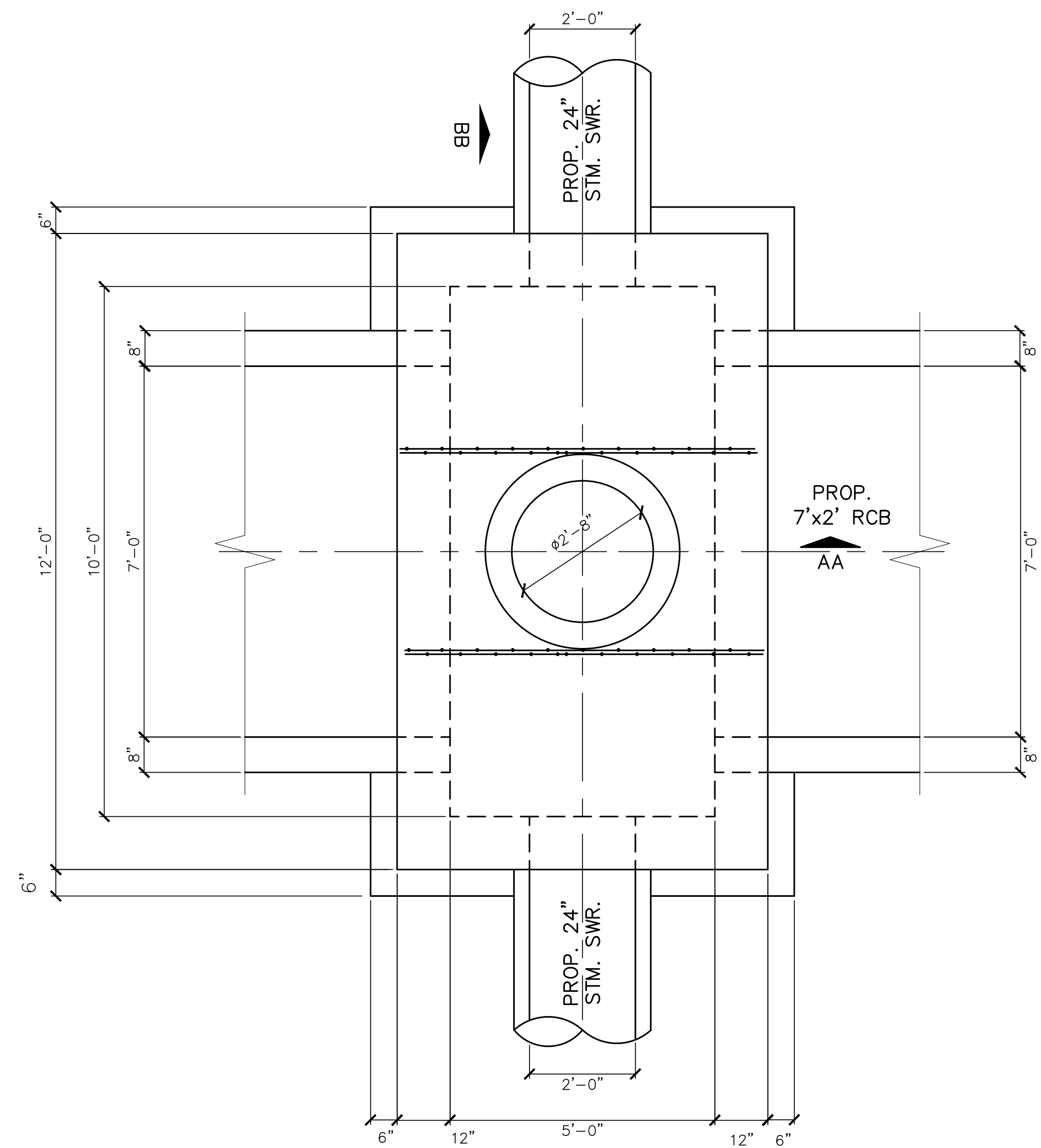
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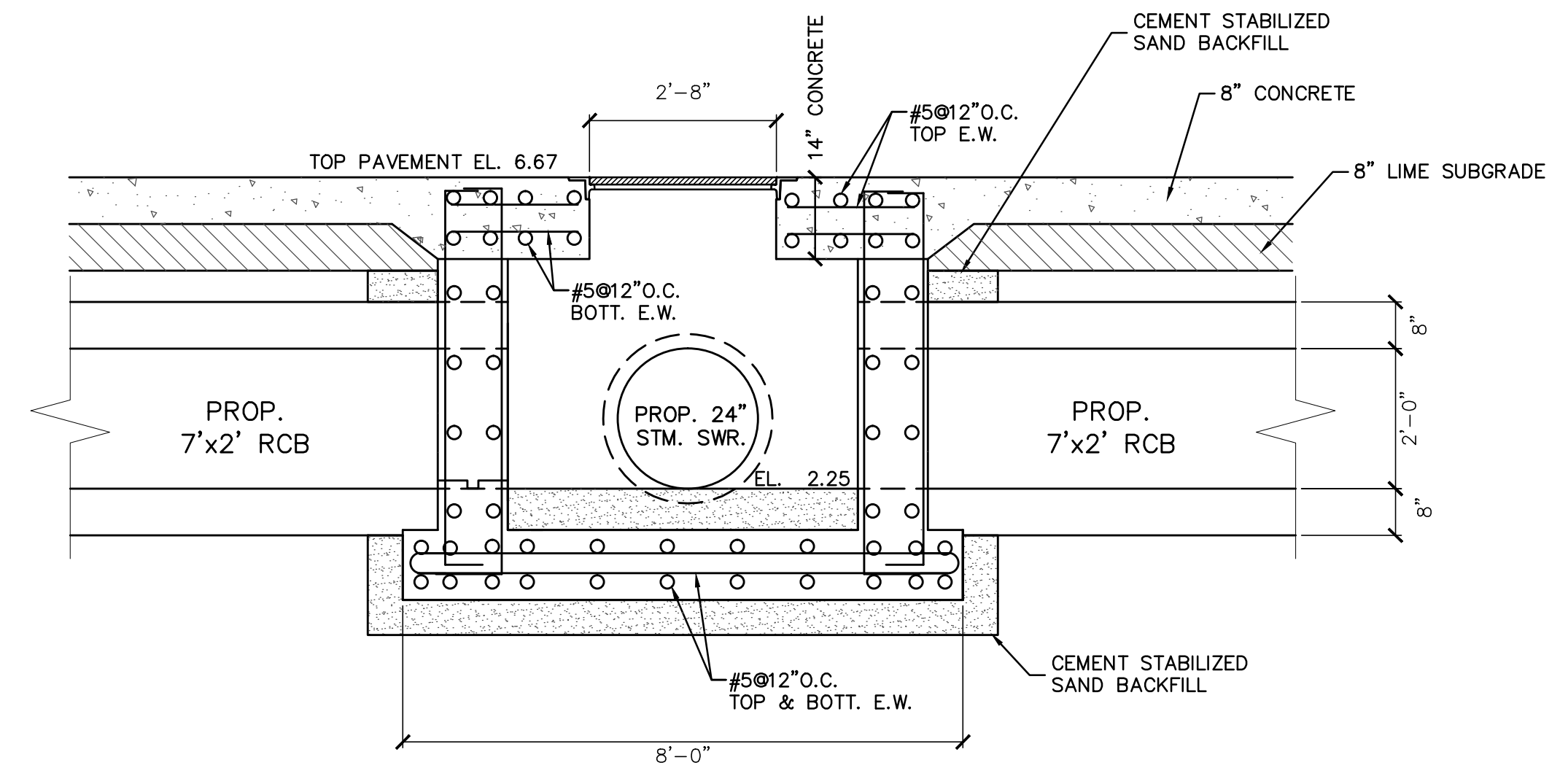
Texas Avenue Reconstruction

Junction Box A2 - Sta. 5+45.00

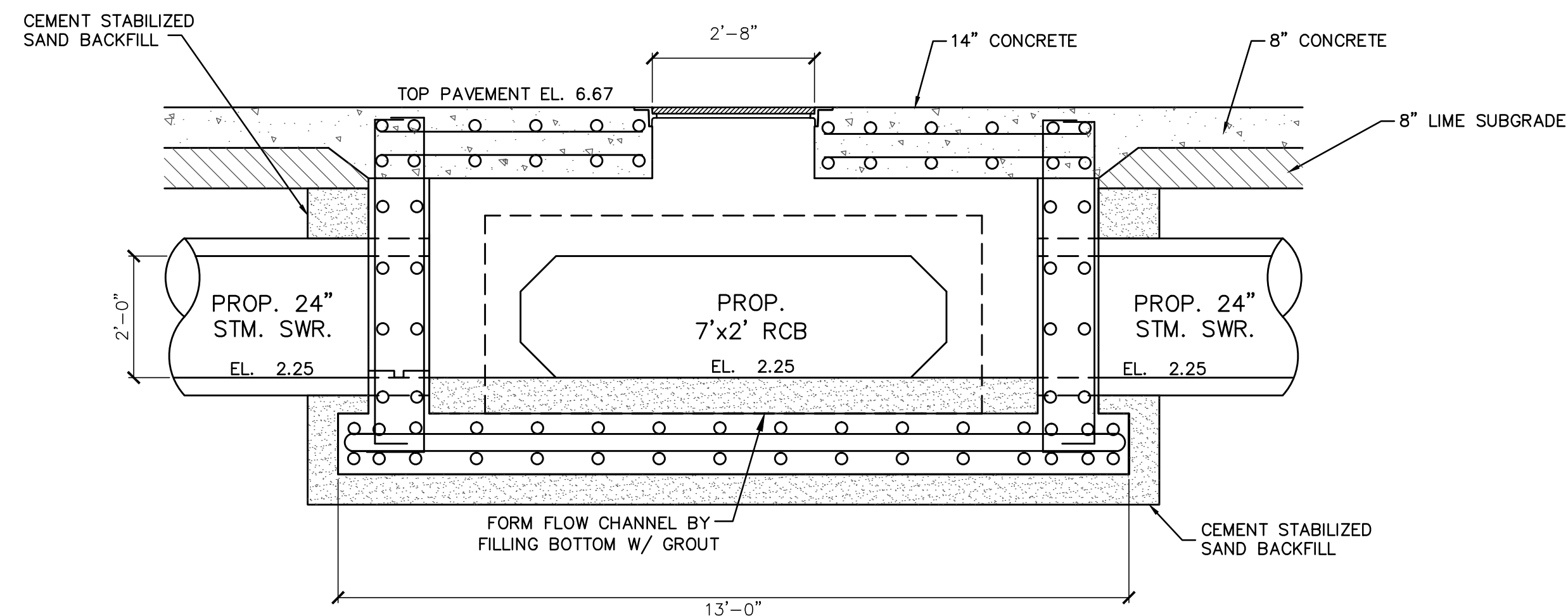
Job No.: 18-015	Scale: HORZ 1/2" = 1'-0"	SHEET
Date: September, 2019	VERT: 1/2" = 1'-0"	45
Dwn By: D. Fattig		OF 52
Chkd By: J Rudloff		



**A PLAN**  
SCALE: 1/2" = 1'-0"



**AA** SCALE: 1/2" = 1'-0"

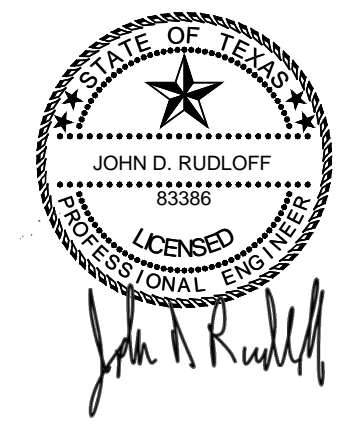


**BB** SCALE: 1/2" = 1'-0"

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5. REFER DETAIL 13/51 FOR WALLS RECEIVING PRECAST BOX.

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19

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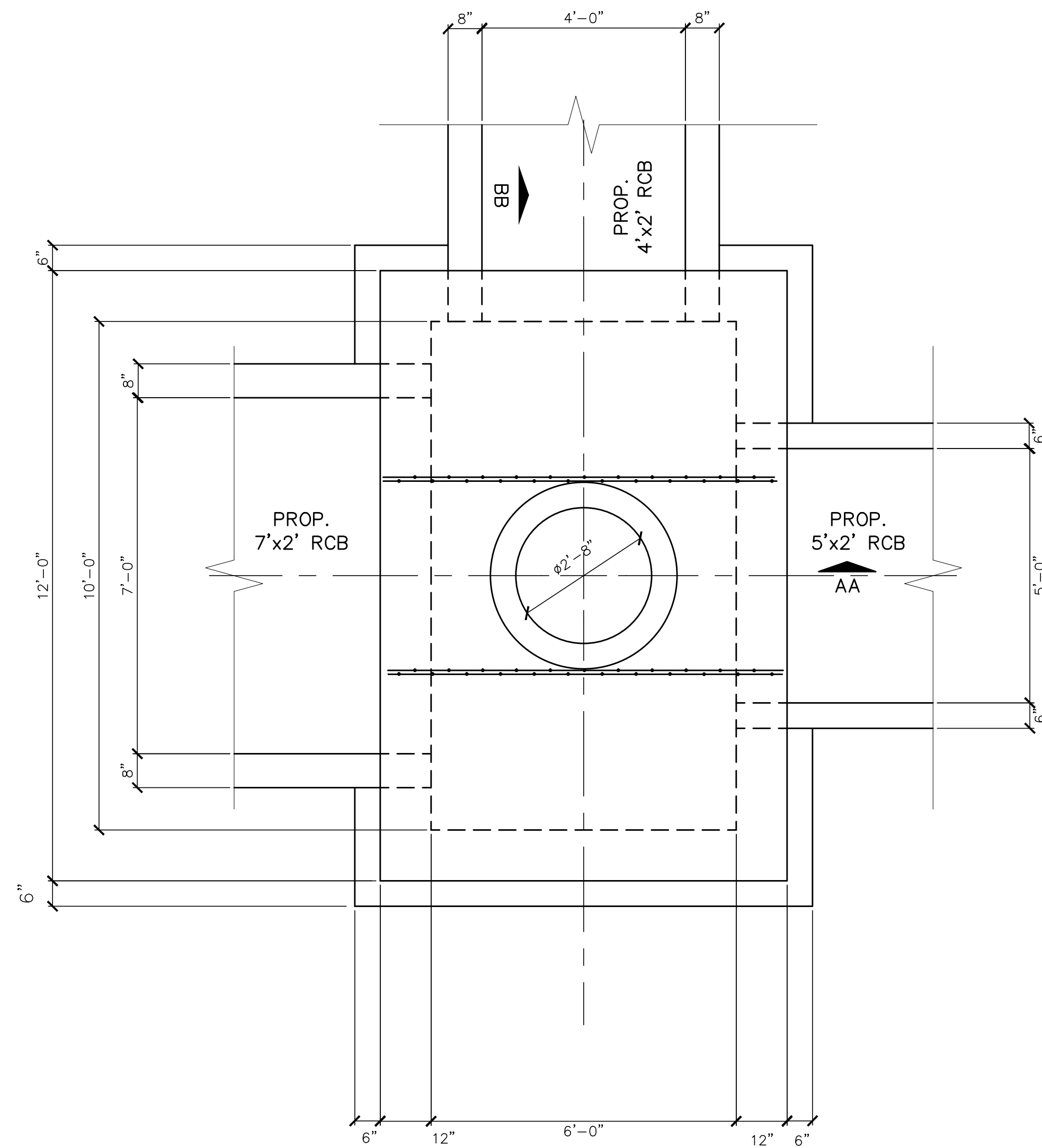
Galveston County, Texas

Texas Avenue Reconstruction

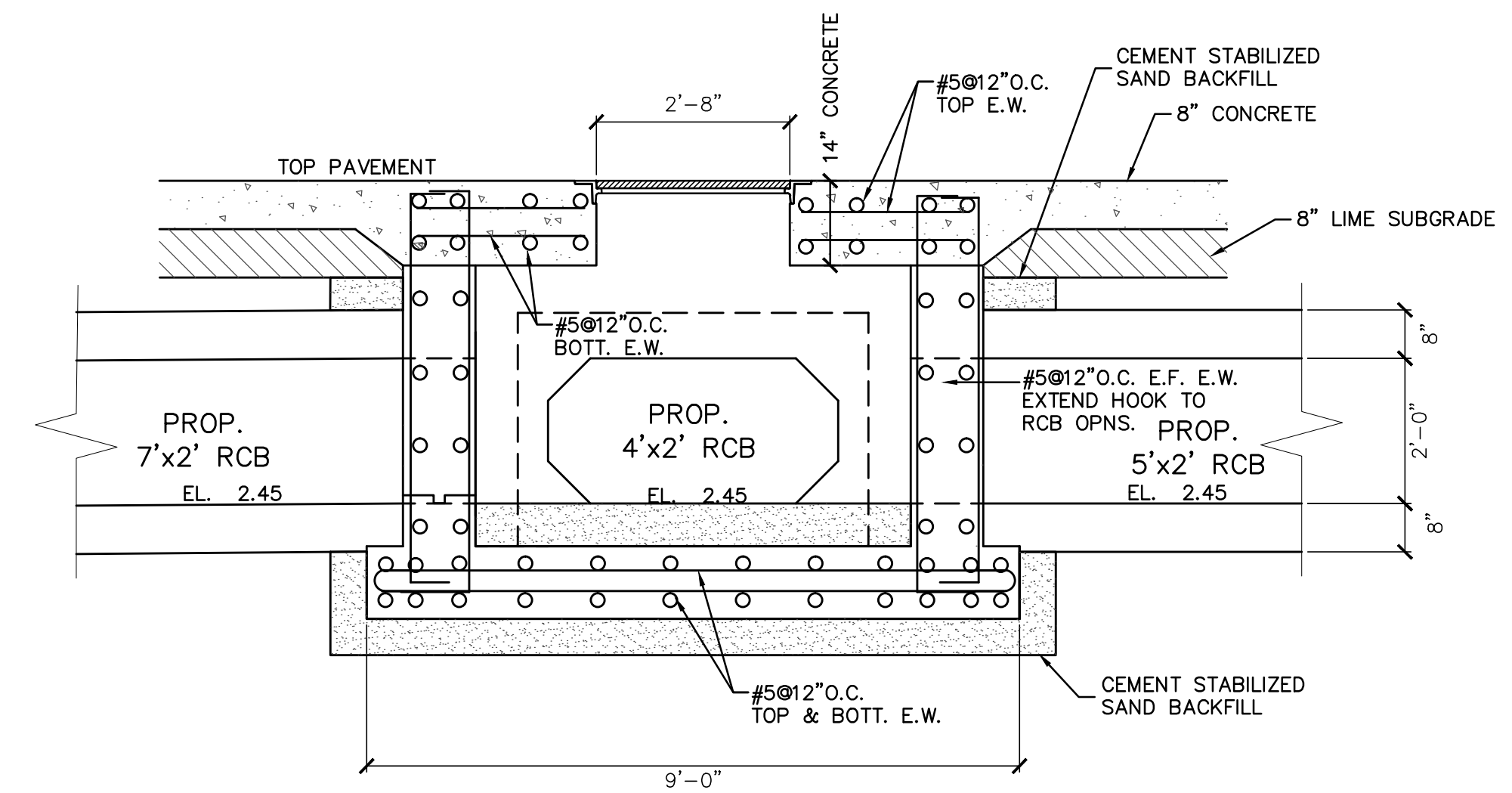
Junction Box #A3 - Sta. 7+26.00

Job No.: 18-015	Scale: HORZ 1/2" = 1'-0"	SHEET
Date: September, 2019	VERT: 1/2" = 1'-0"	46
Dwn By: D. Fattig		
Chkd By: J Rudloff		OF 52

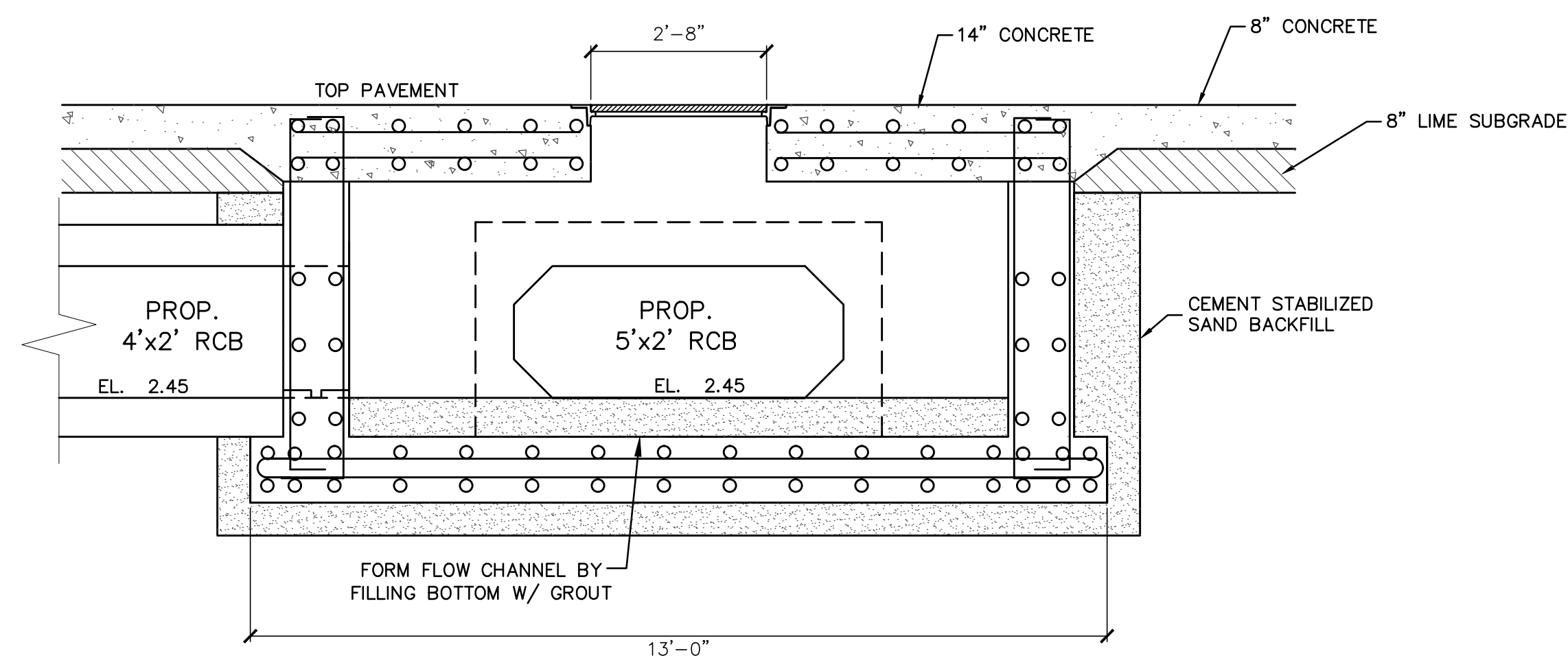




**A PLAN**  
SCALE: 1/2" = 1'-0"



**AA** SCALE: 1/2" = 1'-0"

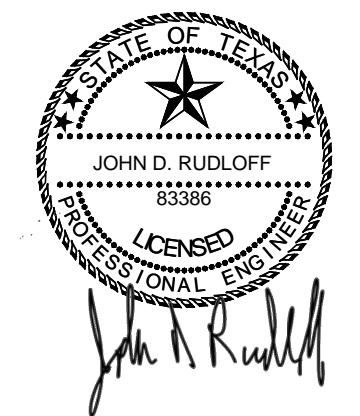


**BB** SCALE: 1/2" = 1'-0"

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5. REFER DETAIL 13/51 FOR WALLS RECEIVING PRECAST BOX.

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



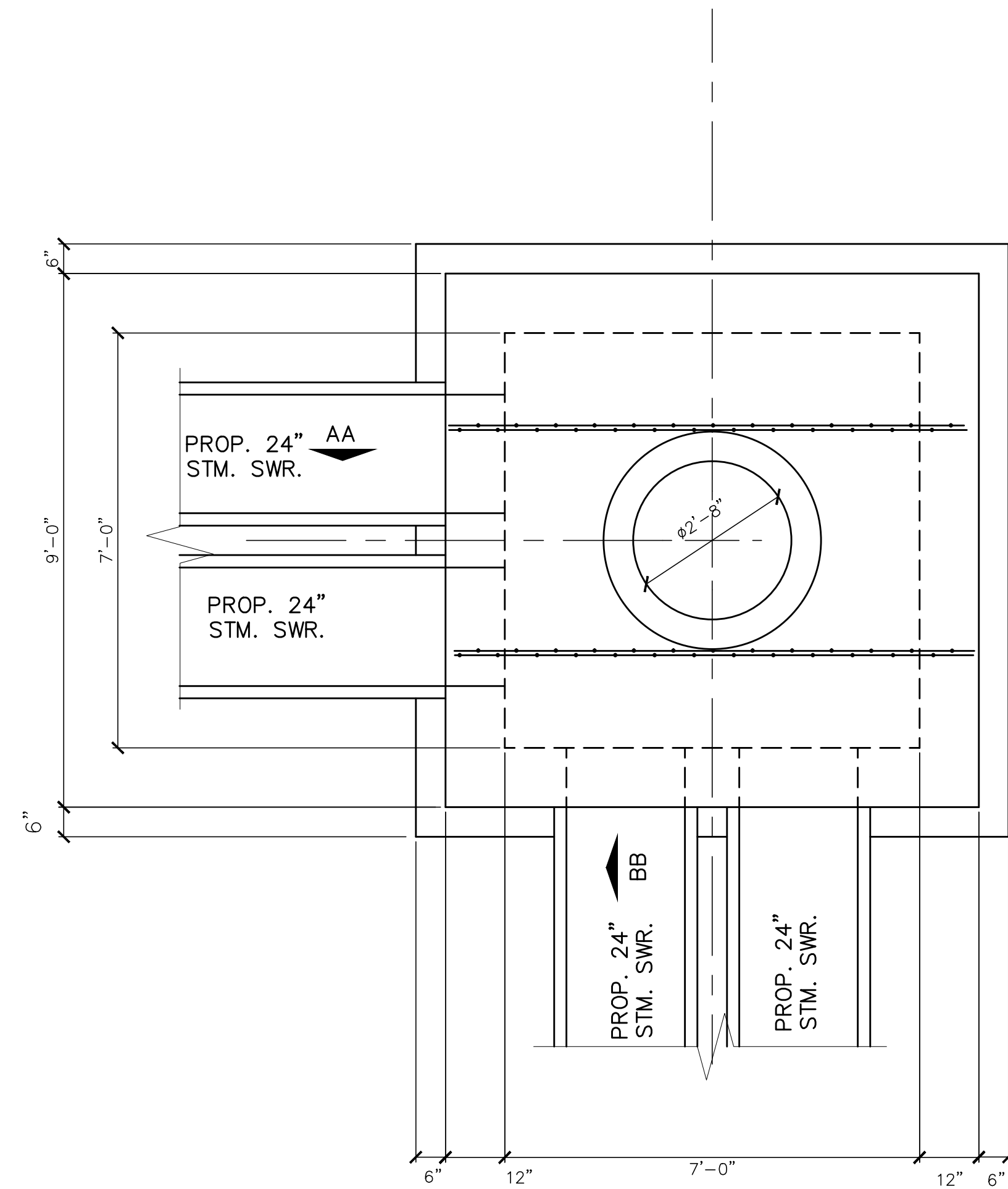
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Galveston County, Texas

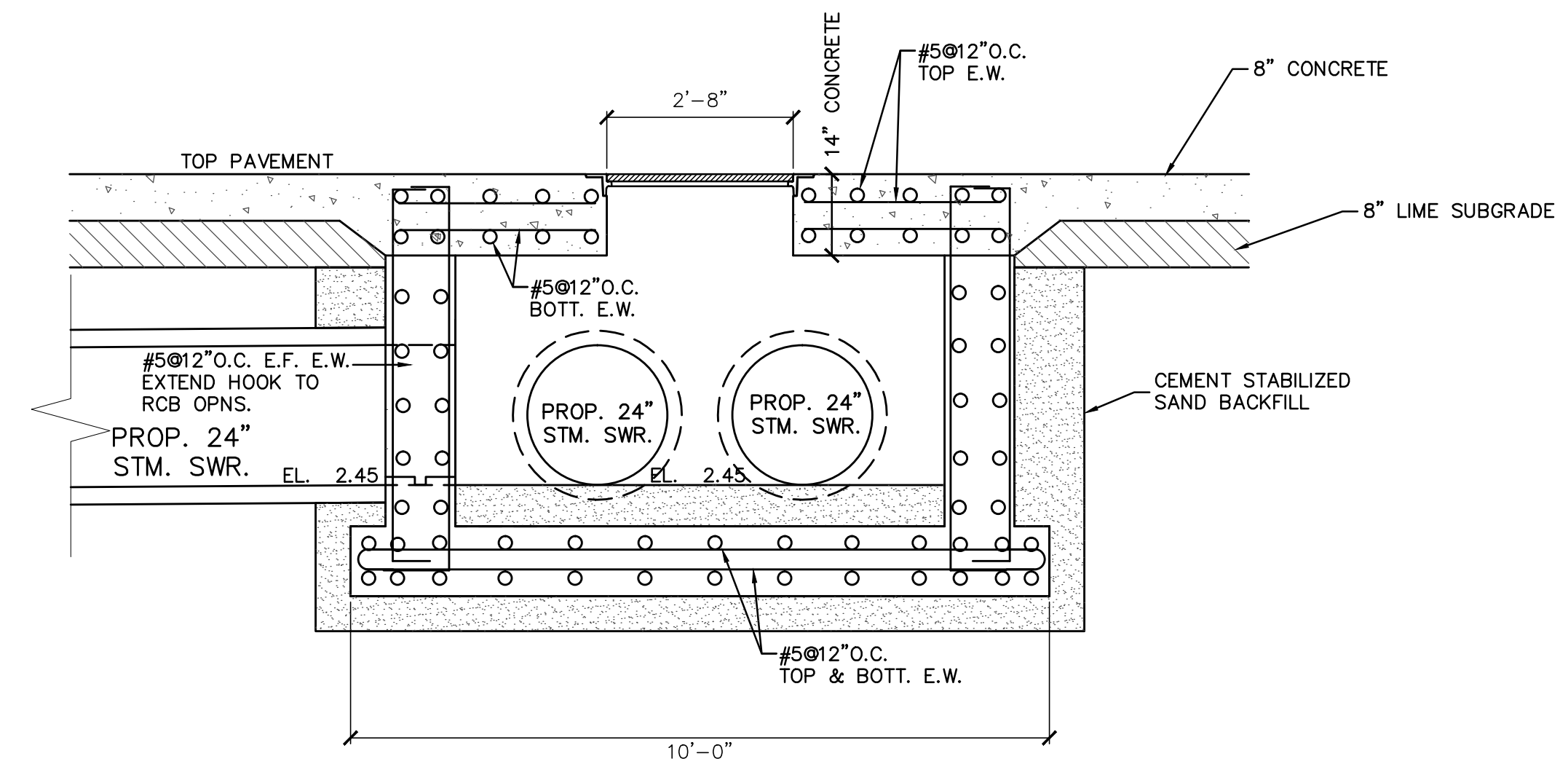
Texas Avenue Reconstruction

Junction Box A4 - Sta. 11+30.00

Job No.: 18-015	Scale: HORIZ 1/2" = 1'-0"	SHEET
Date: September, 2019	VERT: 1/2" = 1'-0"	47
Dwn By: D. Fattig		
Chkd By: J Rudloff		OF 52



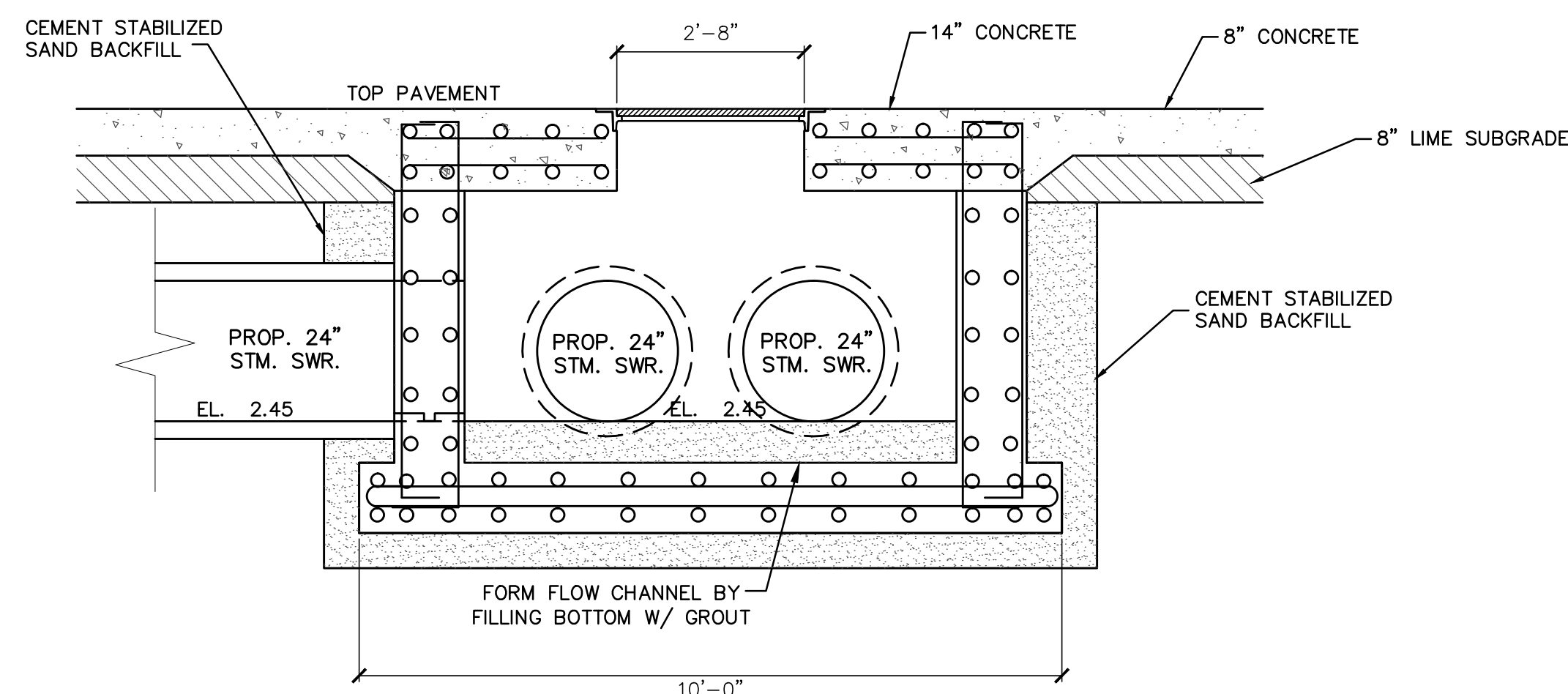
**A PLAN**  
SCALE: 1/2" = 1'-0"



**AA** SCALE: 1/2" = 1'-0"

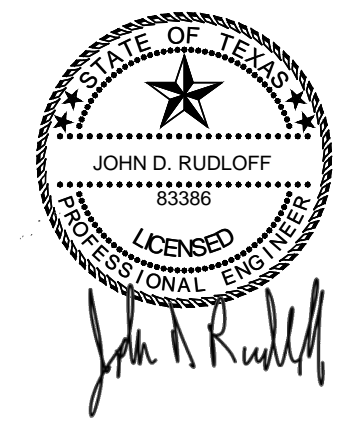
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**BB** SCALE: 1/2" = 1'-0"

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19

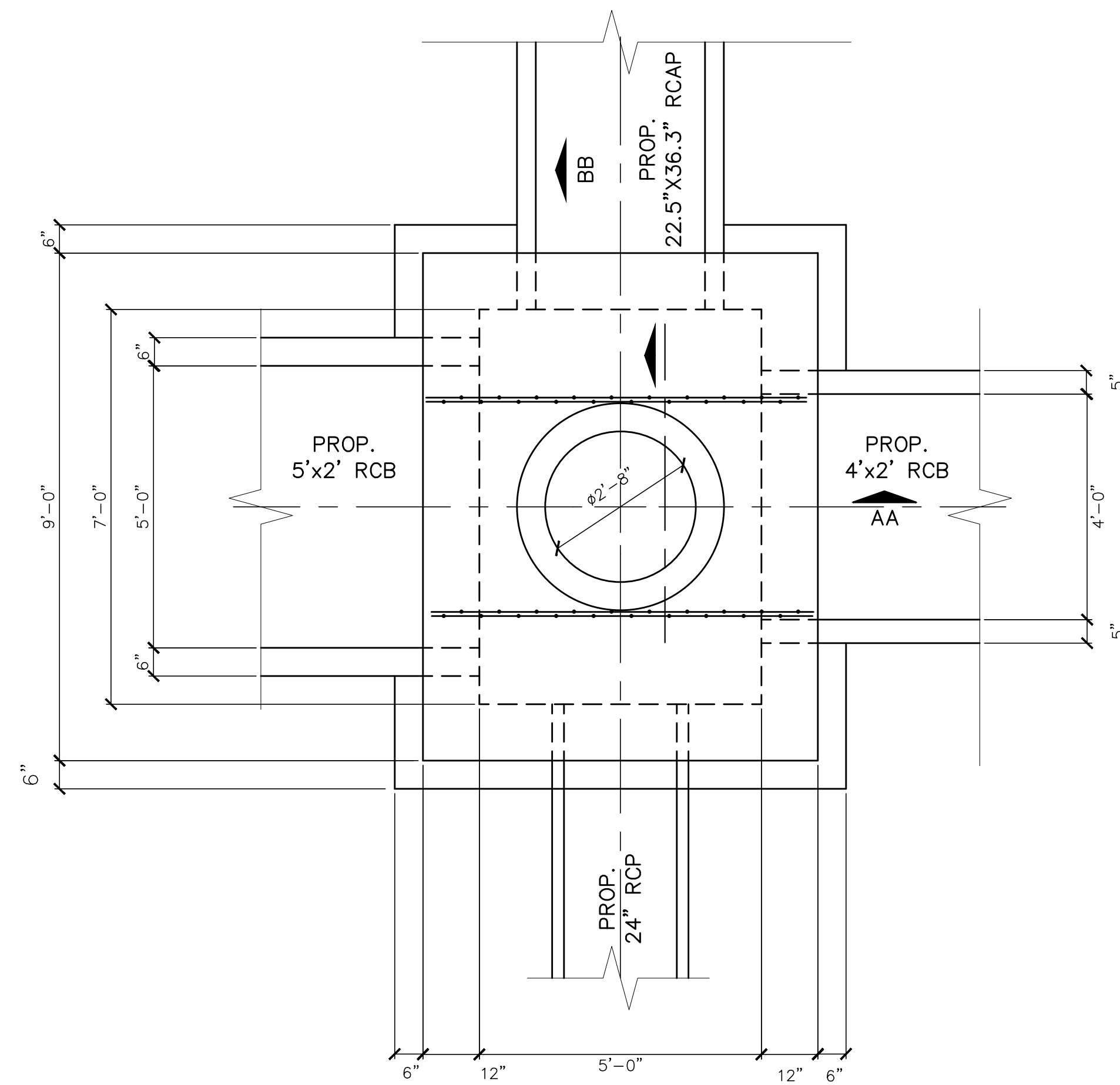
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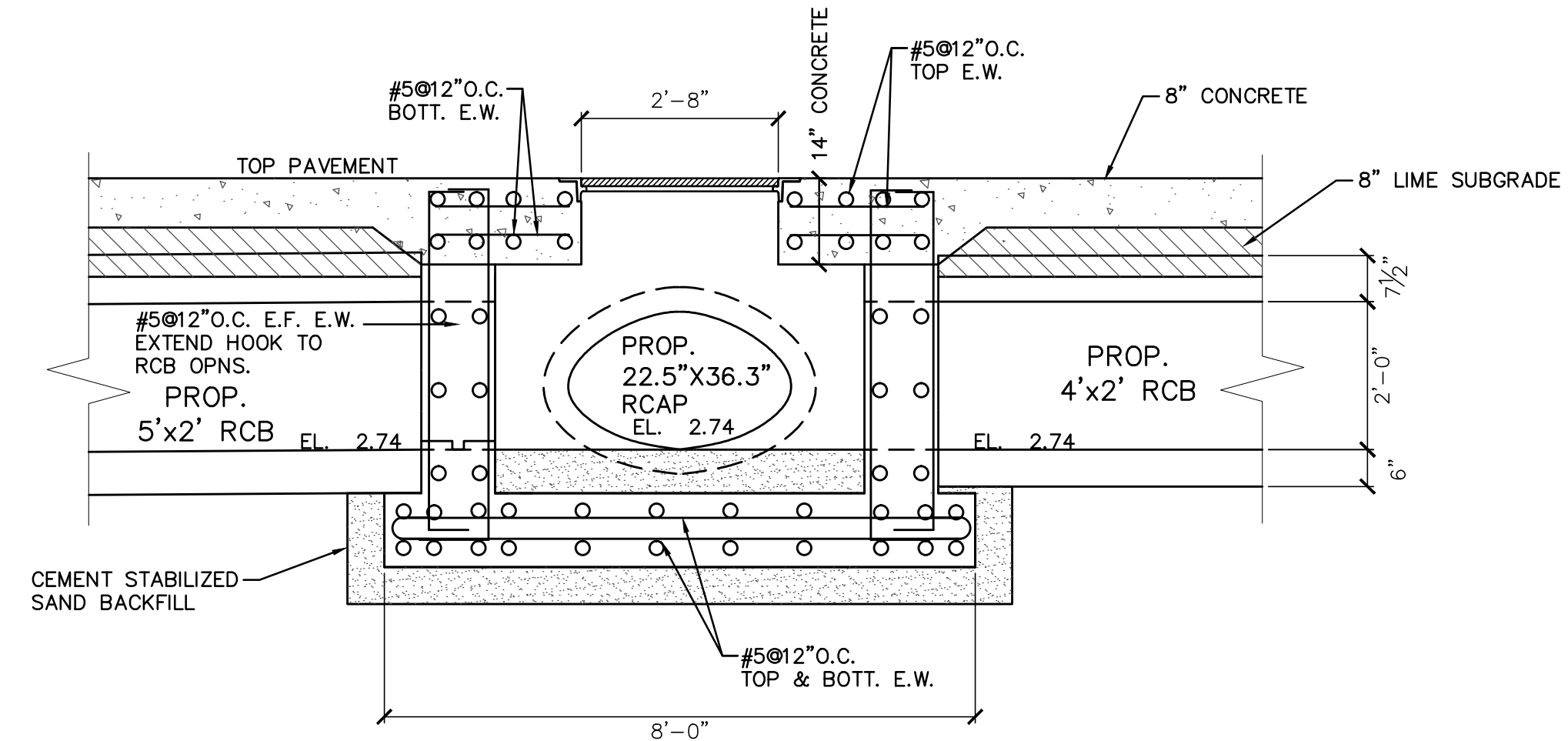
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Junction Box A5 - Sta. 11+28.50

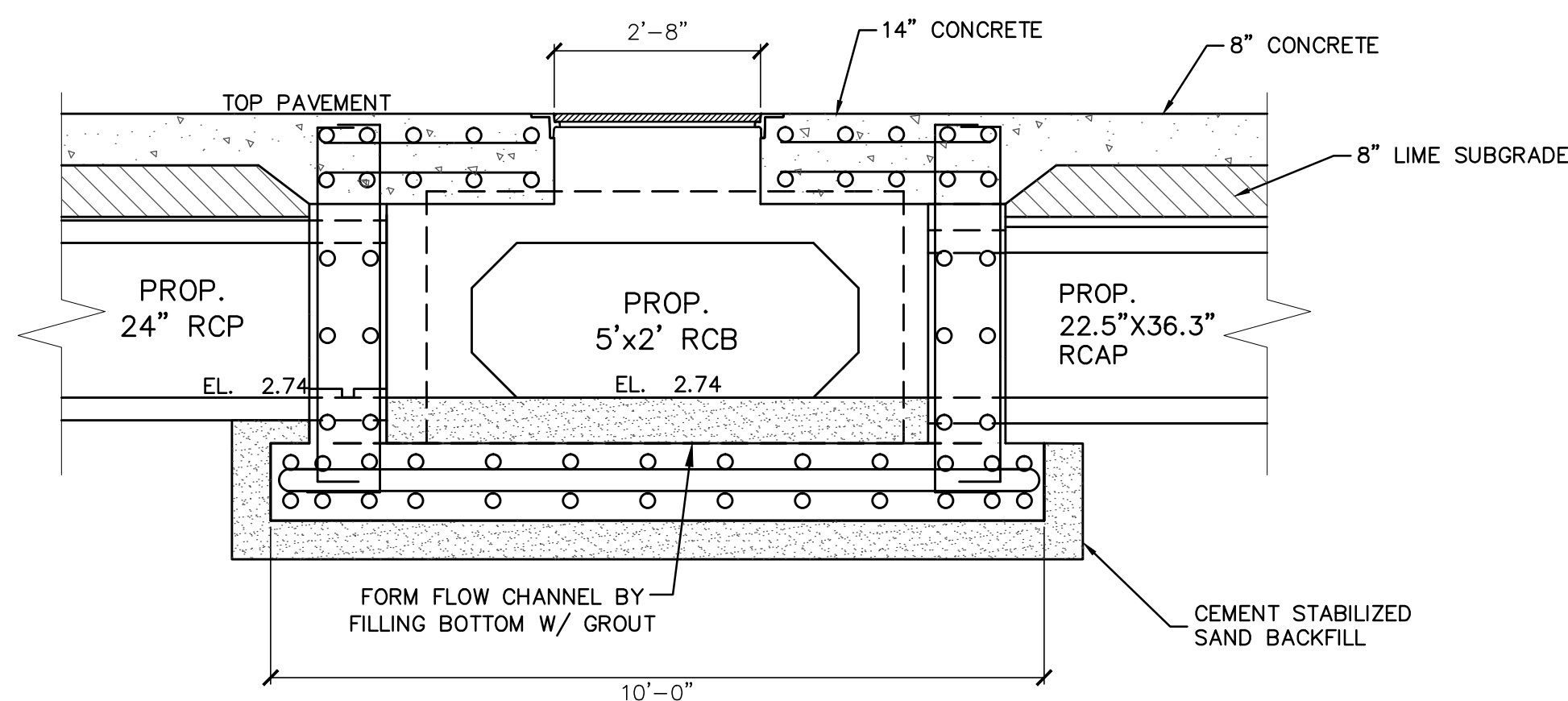
Job No.: 18-015	Scale: HORIZ 1/2" = 1'-0"	SHEET <b>48</b> OF 52
Date: September, 2019	VERT: 1/2" = 1'-0"	
Dwn By: D. Fattig		
Chkd By: J Rudloff		



**A** PLAN  
SCALE: 1/2" = 1'-0"



**AA** SCALE: 1/2" = 1'-0"

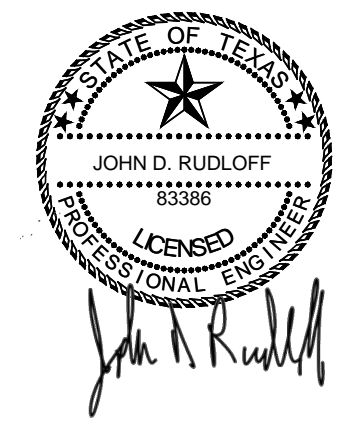


**BB** SCALE: 1/2" = 1'-0"

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MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19



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Junction Box A6 - Sta. 17+15.00

Job No.: 18-015	Scale: HORIZ 1/2" = 1'-0"	SHEET
Date: September, 2019	VERT: 1/2" = 1'-0"	49
Dwn By: D. Fattig		OF 52
Chkd By: J Rudloff		

## GENERAL NOTES FOR STRUCTURES

### CONCRETE

1. DESIGN SHALL CONFORM TO THE LATEST BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI-318) WITH SPECIAL REQUIREMENTS OF ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES (ACI-350)
2. ALL REINFORCING BARS SHALL CONFORM TO ASTM A-615, GRADE 60. ARRANGEMENT AND DETAILS OF REINFORCING STEEL, INCLUDING BAR SUPPORTS AND SPACERS, SHALL BE IN ACCORDANCE WITH THE LATEST ACI DETAILING MANUAL, UNLESS OTHERWISE NOTED.
3. ALL SLAB AND BEAM REINFORCEMENT SHALL HAVE A MINIMUM EXTENSION INTO THE SUPPORT IN ACCORDANCE WITH THE LATEST ACI CODE. IF SUCH EXTENSION IS NOT POSSIBLE, BARS SHALL TERMINATE IN STANDARD HOOKS.
4. HORIZONTAL WALL REINFORCEMENT AND TEMPERATURE REINFORCEMENT SHALL LAP A MINIMUM OF 1.7Ld AT SPLICES. WALL DOWELS AND WALL BAR EXTENSIONS AND ALL STRESS SPLICES SHALL LAP A MINIMUM OF 1.7 Ld, UNLESS OTHERWISE NOTED.
5. WALL OR COLUMNS SHALL HAVE DOWELS FROM FOUNDATIONS OR CONSTRUCTION BELOW OF SAME SIZE AND SPACING AS WALL OR COLUMN VERTICAL STEEL. SEE FOOTING SCHEDULE.
6. UNLESS OTHERWISE NOTED ON THE DRAWINGS, CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL NOT BE LESS THAN THE FOLLOWING:
  - STRUCTURAL MEMBERS, FOUNDATIONS, WALLS AND SUSPENDED SLABS 4000 PSI
  - SLABS ON GRADE 4000 PSI
  - LEAN CONCRETE CLASS B 1500 PSI
  - GROUT FILL 4000 PSI
  - 2 INCH AND THICKER - USE CONCRETE WITH MAX. 3/4" AGGREGATE.
  - GROUT FILL CLASS H 3000 PSI
7. UNLESS OTHERWISE SHOWN, THE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
  - **SLABS**

TOP AND BOTTOM OF FORMED SLABS	2"
TOP OF WALK AND DRIVEWAY SLABS	2"
SURFACES IN CONTACT WITH LIQUID	2"
BOTTOM OF SLABS ON FILL OR SOIL	3"
  - **FOOTINGS:**

TOP AND SIDES	2 1/2"
BOTTOM	3"
  - **WALLS:**

LESS THAN 12" THICK	1 1/2"
12" OR OVER IN THICKNESS WITH POURS LESS THAN 10 FEET HIGH	2"
12" OR OVER IN THICKNESS WITH POURS MORE THAN 10 FEET HIGH	2 1/2"
  - **BEAMS AND GIRDERS:**

COVER AT TOP, BOTTOM OR SIDES OF LONGITUDINAL REIN.	2"
---	----
  - **COLUMNS:**

COVER FOR VERTICAL BARS	2"
-------------------------	----
8. HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS SHOWN OR NOTED ON THE PLANS ARE RECOMMENDED. ANY DEVIATION FROM THOSE SHOWN SHALL HAVE APPROVAL OF THE ENGINEER.
9. ANY STOP IN FRAMED CONCRETE WORK MUST BE MADE IN THE CENTER OF THE SPAN AND INCORPORATE AN APPROVED KEYWAY. REINFORCEMENT SHALL EXTEND THROUGH THESE JOINTS IF REQUIRED FOR CONTINUITY.
10. USE TYPE 'C2' JOINT FOR ALL CONSTRUCTION JOINTS IN WALLS AND SLABS BELOW GRADE AND WALLS WHICH SEPARATE AREAS OF SOIL OR LIQUID FROM PERMANENTLY DRY AREAS SUCH AS TUNNELS, GALLERIES, BASEMENT ROOMS, ETC. USE TYPE 'C1' JOINT AT ALL OTHER CONSTRUCTION JOINTS, UNLESS OTHERWISE NOTED ON DRAWINGS. REFER NEXT SHEET FOR JOINT INFORMATION.
11. CONCRETE WALLS AND PARTITIONS SHALL BE POURED IN MAXIMUM LENGTHS OF 40 FEET BETWEEN VERTICAL CONSTRUCTION JOINTS.
12. ALL CONCRETE SLABS OVER 8" IN THICKNESS, REINFORCED WITH BARS, AND POURED AGAINST SOIL SHALL BE POURED IN A STRIP PATTERN OF 40 FEET OR LESS IN EACH DIRECTION.
13. ALL EXPOSED EDGES OF BEAMS, COLUMNS, SLABS AND WALLS SHALL BE CHAMFERED 3/4" UNLESS MASONRY OR OTHER MEMBERS ARE ERECTED FLUSH WITH THEM.
14. REFER TO ARCHITECTURAL, PROCESS, MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL SLEEVES, PIPES, CONDUITS AND MISCELLANEOUS ANCHORING DEVICES TO BE INCORPORATED IN THE CONSTRUCTION

### STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS. ALL STRUCTURAL STEEL SHALL BE ASTM A36.
2. ELEVATIONS OF STEEL BEAMS SHOWN ON FRAMING PLANS REFER TO TOP OF FLANGE, UNLESS OTHERWISE NOTED.
3. ALL BOLTED CONNECTIONS SHALL BE MADE WITH 3/4" DIAMETER ASTM A-325 BOLTS EXCEPT AS OTHERWISE SHOWN OR NOTED. ALL CONNECTIONS SHALL BE CAPABLE OF SUPPORTING ONE HALF THE MAXIMUM ALLOWABLE UNIFORM LOAD FOR INDICATED BEAM SIZE AND SPAN IN AISC MANUAL OF STEEL CONSTRUCTION, EXCEPT AS OTHERWISE NOTED.
4. FIELD CONNECTIONS SHALL BE BOLTED, EXCEPT AS OTHERWISE SHOWN OR NOTED.
5. ALL WELDING SHALL CONFORM TO THE LATEST SPECIFICATION OF THE AMERICAN WELDING SOCIETY. ALL WELDED CONNECTIONS SHALL BE MADE WITH AWS A5.1 OR A5.5 E70 XX ELECTRODE.
6. ANCHOR BOLTS AND MISC EMBEDDED STEEL-----ASTM A36.  
ANCHOR BOLTS WHICH ARE SUBMERGED, LOCATED ABOVE A LIQUID SURFACE, OR ARE IN A CORROSIVE ATMOSPHERE-----316 SS.
7. ALL EQUIPMENT ANCHOR BOLT DIMENSIONS AND LOCATIONS SHALL BE VERIFIED FROM CERTIFIED VENDOR DRAWINGS, PRIOR TO CONSTRUCTION.
8. ALL STEEL SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A 123. FIELD WELD AT CONNECTIONS SHALL BE PAINTED WITH GALVALUME PAINT.

### FOUNDATIONS

1. ALLOWABLE SOIL BEARING PRESSURE, EXCAVATION AND BACKFILL FOR FOUNDATIONS AND STRUCTURES SHALL BE AS RECOMMENDED IN THE GEOTECHNICAL REPORT.
2. ALL EXCAVATIONS SHALL BE CARRIED OUT IN THE DRY, AND PROVISIONS SHALL BE MADE TO PREVENT THE BOTTOM OF ALL EXCAVATIONS FROM FREEZING OR FLOODING AT ALL TIMES.
3. ALL FOUNDATIONS SHALL BE CONSTRUCTED IN EXCAVATIONS FREE OF STANDING WATER.
4. BACKFILL MATERIAL, PLACING AND COMPACTION OF BACKFILL SHALL BE IN ACCORDANCE WITH THE DRAWINGS, AND THE CONTRACT SPECIFICATIONS.
5. ALL EXCAVATIONS SHALL BE SUPPORTED BY SOIL RETENTION SYSTEM DURING CONSTRUCTION. BACKFILL SHALL BE PLACED AFTER TESTING THE STRUCTURE FOR WATER TIGHTNESS.

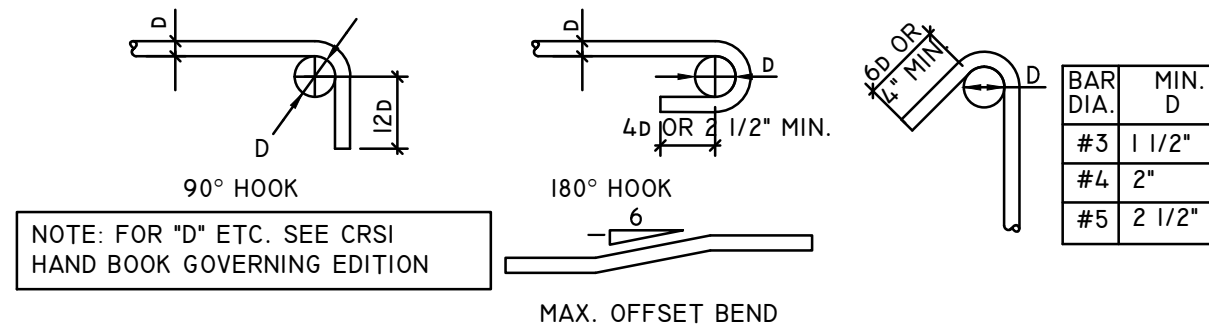
### ABBREVIATIONS

ADDL -----	ADDITIONAL	EF -----	EACH FACE	R -----	RADIUS
ALT -----	ALTERNATE	EW -----	EACH WAY	REINF -----	REINFORCEMENT
& -----	AND	EL -----	ELEVATION	REQD -----	REQUIRED
ARCH -----	ARCHITECTURAL	EXP -----	EXPANSION	SCHED -----	SCHEDULE
@ -----	AT	EXT -----	EXTERIOR	SECT -----	SECTION
BM -----	BEAM	FTG -----	FOOTING	SPECS -----	SPECIFICATIONS
BOT -----	BOTTOM	H.P. -----	HIGH POINT	SS -----	STAINLESS STEEL
B/ -----	BOTTOM OF	HORIZ -----	HORIZONTAL	STD -----	STANDARD
BLDG -----	BUILDING	I.F. -----	INSIDE FACE	STIRR -----	STIRRUP
CL -----	CENTER LINE	INT -----	INTERIOR	SYMM -----	SYMMETRICAL
C/C -----	CENTER TO CENTER	L.P. -----	LOW POINT	T -----	TOP
CLR -----	CLEAR(ANCE)	MH -----	MANHOLE	T/ -----	TOP OF
COL -----	COLUMN	MAX -----	MAXIMUM	TYP -----	TYPICAL
CONC -----	CONCRETE	MISC -----	MISCELLANEOUS	UNO -----	UNLESS NOTED OTHERWISE
CONST -----	CONSTRUCTION	MIN -----	MINIMUM	VAR -----	VARIES
CONT -----	CONTINUOUS	# -----	NUMBER	VERT -----	VERTICAL
DIA -----	DETAIL	OC -----	ON CENTER	WWF -----	WELDED WIRE FABRIC
Ø -----	DIAMETER	OPNG -----	OPENING	W/ -----	WITH
DWG -----	DRAWING	OA -----	OVERALL		
DWL -----	DOWEL	PVC -----	POLYVINYL CHLORIDE		

### TESTING AND INSPECTION NOTES:

1. ALL STRUCTURAL STEEL WORK SHALL BE INSPECTED BY A TESTING AND INSPECTION AGENCY HIRED BY THE OWNER.
2. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER AND INSPECTED BY THE TESTING AND INSPECTION AGENCY.
3. ALL BOLTS SHALL BE VISUALLY INSPECTED AND 20% (MINIMUM TWO BOLTS PER CONNECTION) SHALL BE TESTED FOR THEIR FULL PRESCRIBED PRETENSION.
4. ALL FULL PENETRATION WELD SHALL BE TESTED BY ULTRASONIC TEST.
5. CONCRETE STRENGTH TESTING SHALL BE PER REQUIREMENTS OF AMERICAN CONCRETE INSTITUTE.

																	
9-13-19																	
																	
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<b>Galveston County, Texas</b>																	
<b>Texas Avenue Reconstruction</b>																	
<b>Structural General Notes</b>																	
Job No.: 18-015			Scale: N/A			<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px;">SHEET</td> <td style="font-size: 24px; font-weight: bold;">50</td> </tr> <tr> <td style="width: 20px;">Date: September, 2019</td> <td style="font-size: 12px;">HORIZ: N/A VERT: N/A</td> </tr> <tr> <td style="width: 20px;">Dwn By: D. Fattig</td> <td></td> </tr> <tr> <td style="width: 20px;">Chkd By: J Rudloff</td> <td style="text-align: right;">OF 52</td> </tr> </table>				SHEET	50	Date: September, 2019	HORIZ: N/A VERT: N/A	Dwn By: D. Fattig		Chkd By: J Rudloff	OF 52
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Chkd By: J Rudloff			Scale: N/A														



PRINCIPAL REINFORCING  
 NOTES:  
 1. ALL BENDS SHALL BE MADE COLD.  
 2. #14 AND #18 BARS SHALL BE BEND-TESTED AND APPROVED PRIOR TO BENDING.

1 Bar Bending Details  
 SCALE: N.T.S.

MINIMUM TENSION EMBEDMENT LENGTHS 'LDH' FOR STANDARD HOOKS -GRADE 60 (FY-60,000PSI) REINFORCING BARS

BAR SIZE	NORMAL WEIGHT CONCRETE	
	F'c=3000 PSI	F'c=4000 PSI
#3	6	6
#4	8	7
#5	10	9
#6	12	10
#7	14	12
#8	16	14
#9	18	15
#10	20	17
#11	22	19

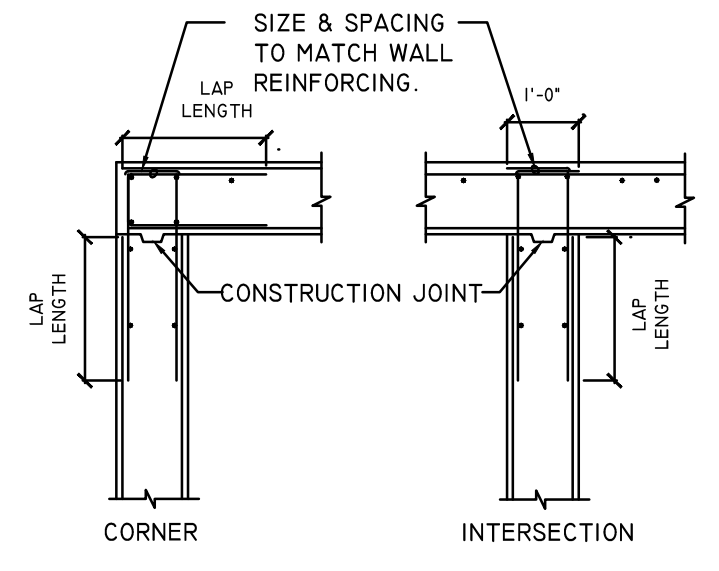
2 Reinforcing 'LDH' Lengths  
 SCALE: N.T.S.

SPLICE LENGTH NORMAL WEIGHT CONC. (REFER NOTES BELOW)

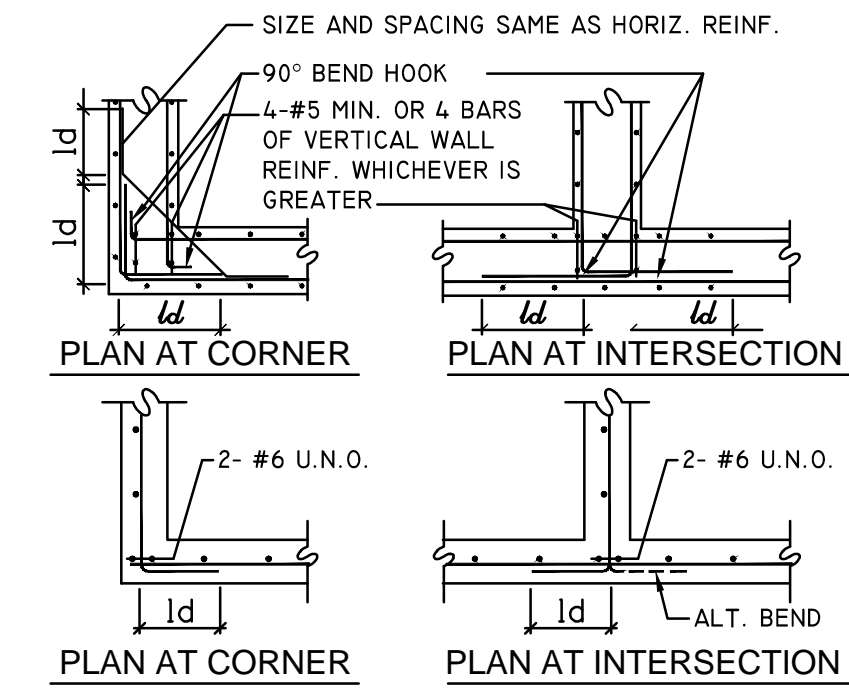
BAR SIZE	LAP CLASS	F'c=3000 PSI		F'c=4000 PSI	
		TOP	OTHER	TOP	OTHER
#3	A	22	17	19	15
	B	28	22	24	19
#4	A	29	22	25	19
	B	37	29	32	25
#5	A	36	28	31	24
	B	47	36	40	31
#6	A	43	33	37	29
	B	56	43	48	37
#7	A	63	48	54	42
	B	81	63	70	54
#8	A	72	55	62	48
	B	93	72	80	62
#9	A	81	62	70	54
	B	105	81	91	70
#10	A	91	70	79	61
	B	118	91	102	79
#11	A	101	78	87	67
	B	131	101	113	87

NOTES:  
 1. WHEN NOTED ON DRAWINGS CASE II FOR DEVELOPMENT LENGTH OR LAP LENGTH THE DEVELOPMENT LENGTH AND LAP LENGTH SHALL BE 1.5\* VALUES SHOWN ABOVE.  
 2. DEVELOPMENT LENGTH 'LD' OF A BARS IS EQUAL TO LENGTH OF CLASS A LAP LENGTH.

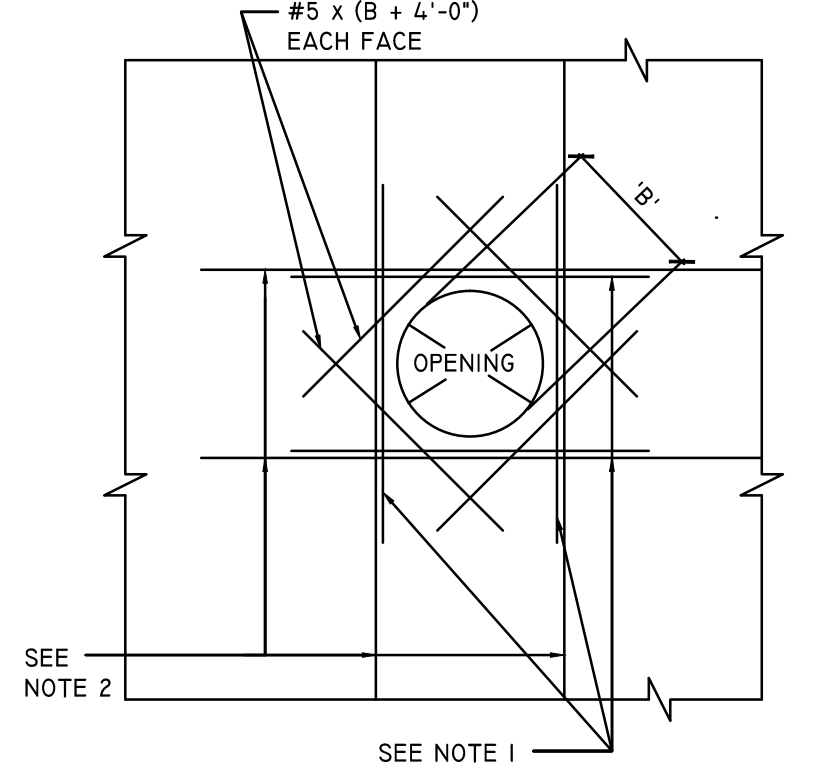
3 Reinforcing Lap Lengths- LD  
 SCALE: N.T.S.



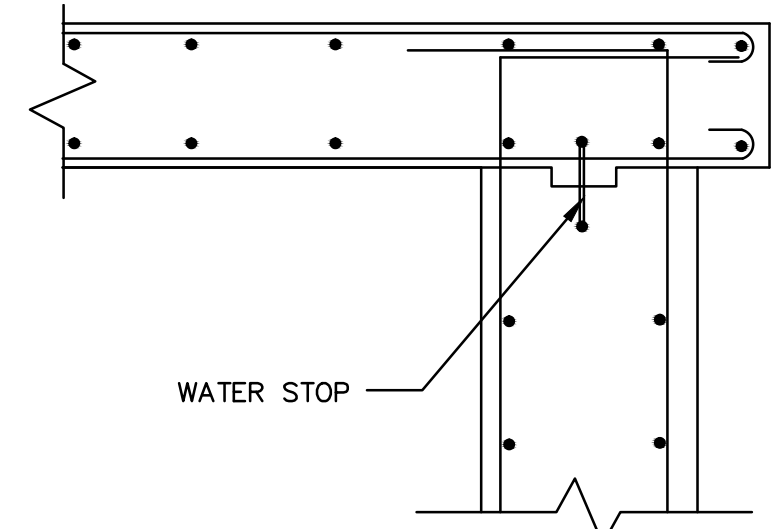
4 Typical Detail Wall Reinforcing  
 SCALE: N.T.S.



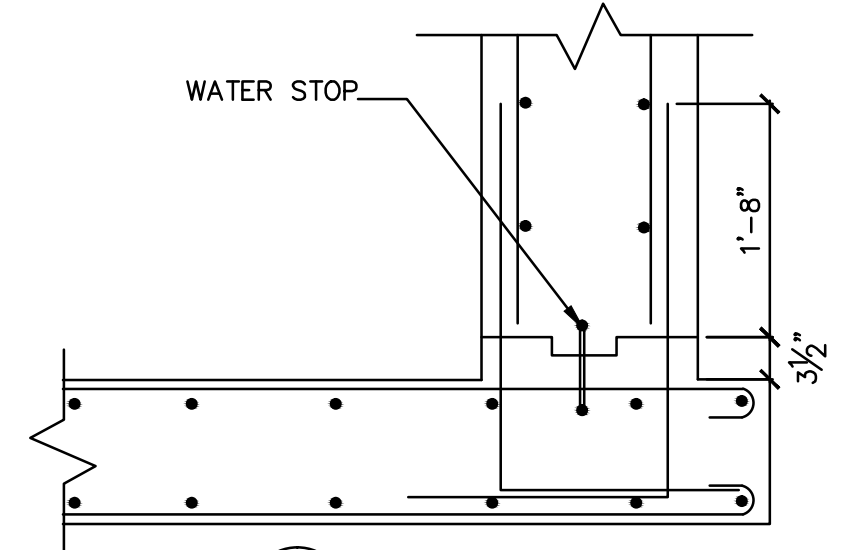
5 Typical Detail - Wall Or Beam Corner Bars  
 SCALE: N.T.S.



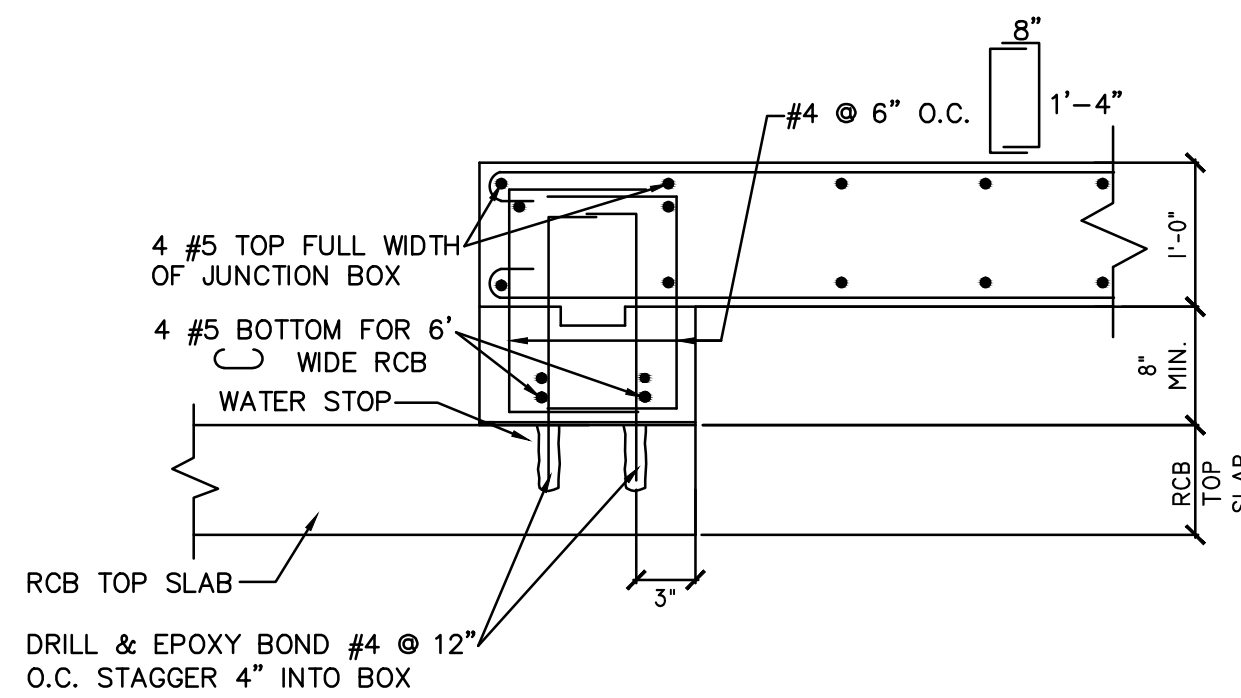
6 Additional Reinforcing At Opening (Slab & Wall)  
 Scale: N.T.S.  
 NOTES:  
 1. PROVIDE 2 #6 x (B+4') ADDITIONAL REINFORCING BARS AT TOP & BOTTOM & SIDES OF OPENING.  
 2. PROVIDE ADDITIONAL BARS EQUAL TO ONE HALF OF BARS INTERRUPTED PLUS ONE AT EACH SIDE OF OPENING IN SHORT SPAN DIRECTION OF WALL OR SLAB AT 3' O.C. THESE BARS SHALL BE SAME SIZE & LENGTH AS THOSE OF THE INTERRUPTED BARS.



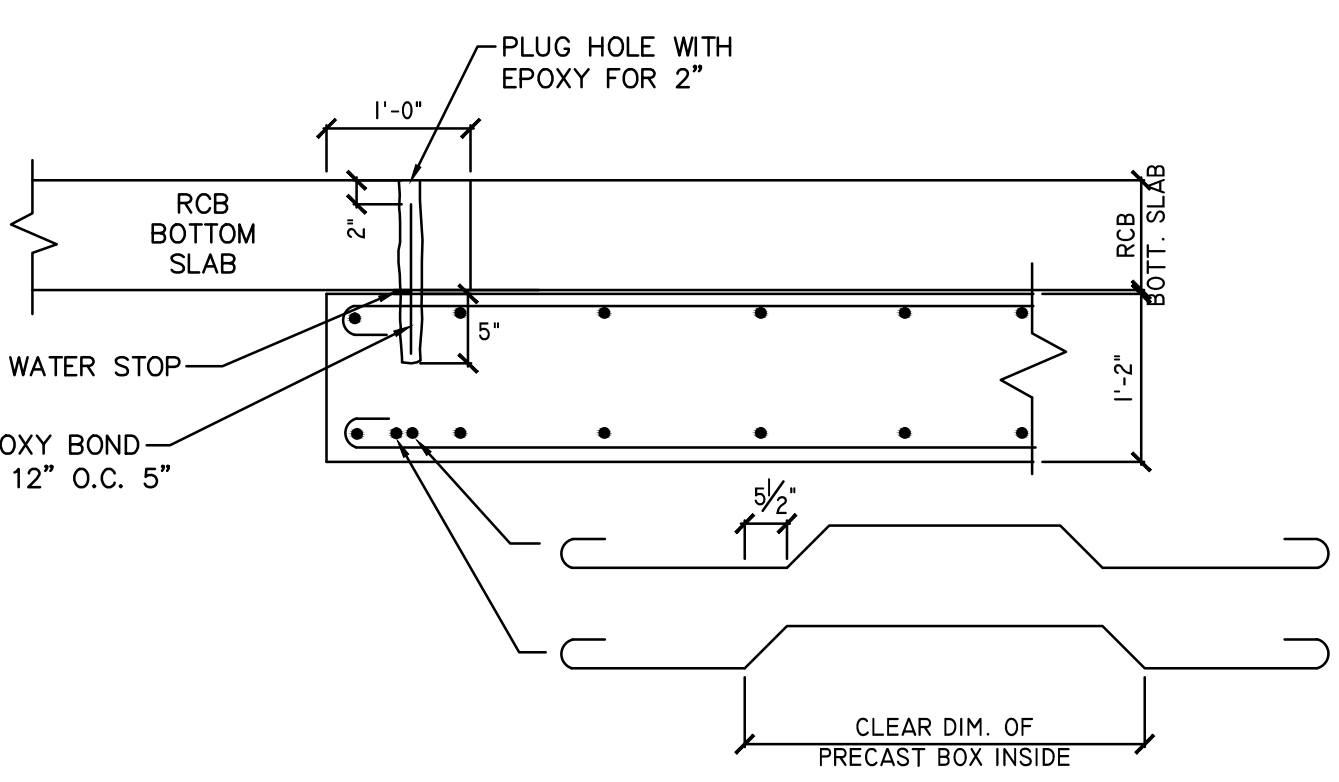
7 SCALE: 3/4"=1'-0"



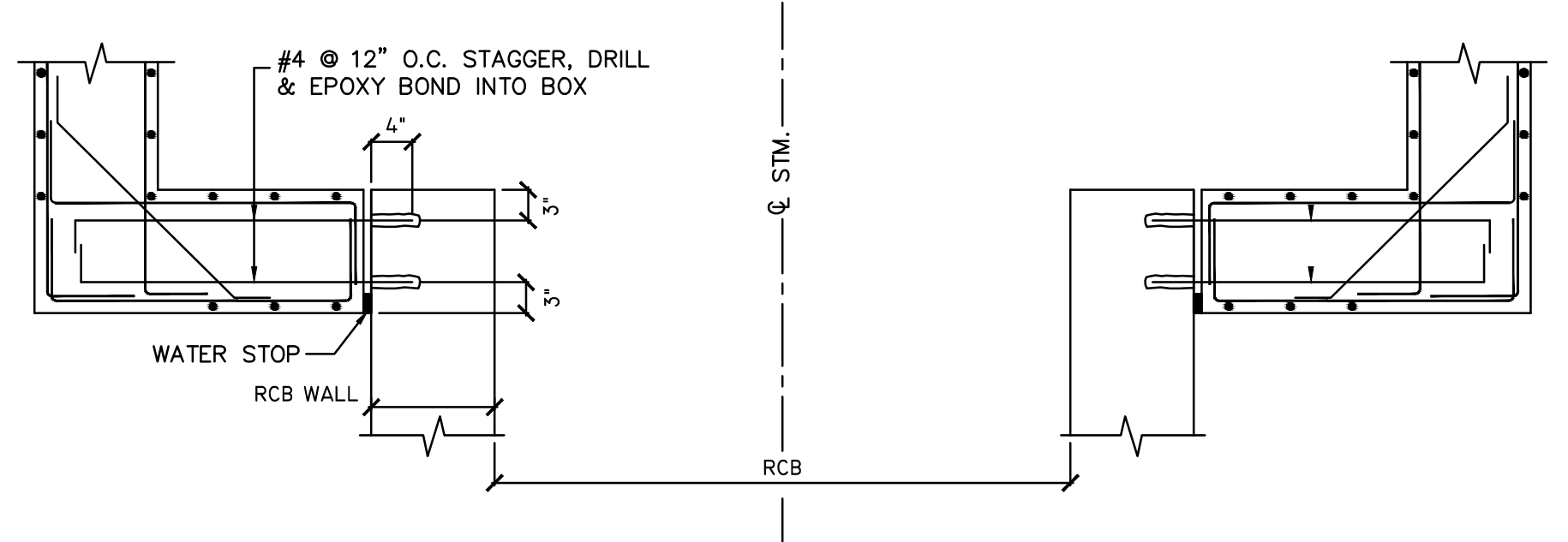
8 SCALE: 3/4"=1'-0"



9 SECTION - PRECAST BOX & JUNCTION BOX SLAB  
 SCALE: 3/4"=1'-0"

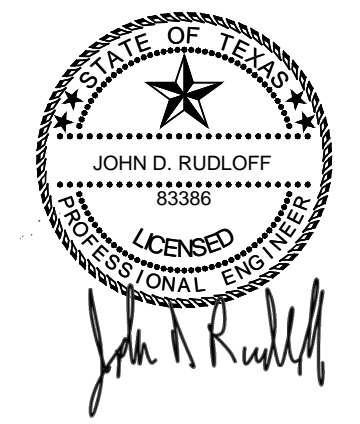


10 SECTION - PRECAST BOX & JUNCTION BOX WALL  
 SCALE: 3/4"=1'-0"



13 PLAN - PRECAST BOX & JUNCTION BOX WALL  
 SCALE: 3/4"=1'-0"

MK.	DESCRIPTION	DATE	DWN.	CHK.



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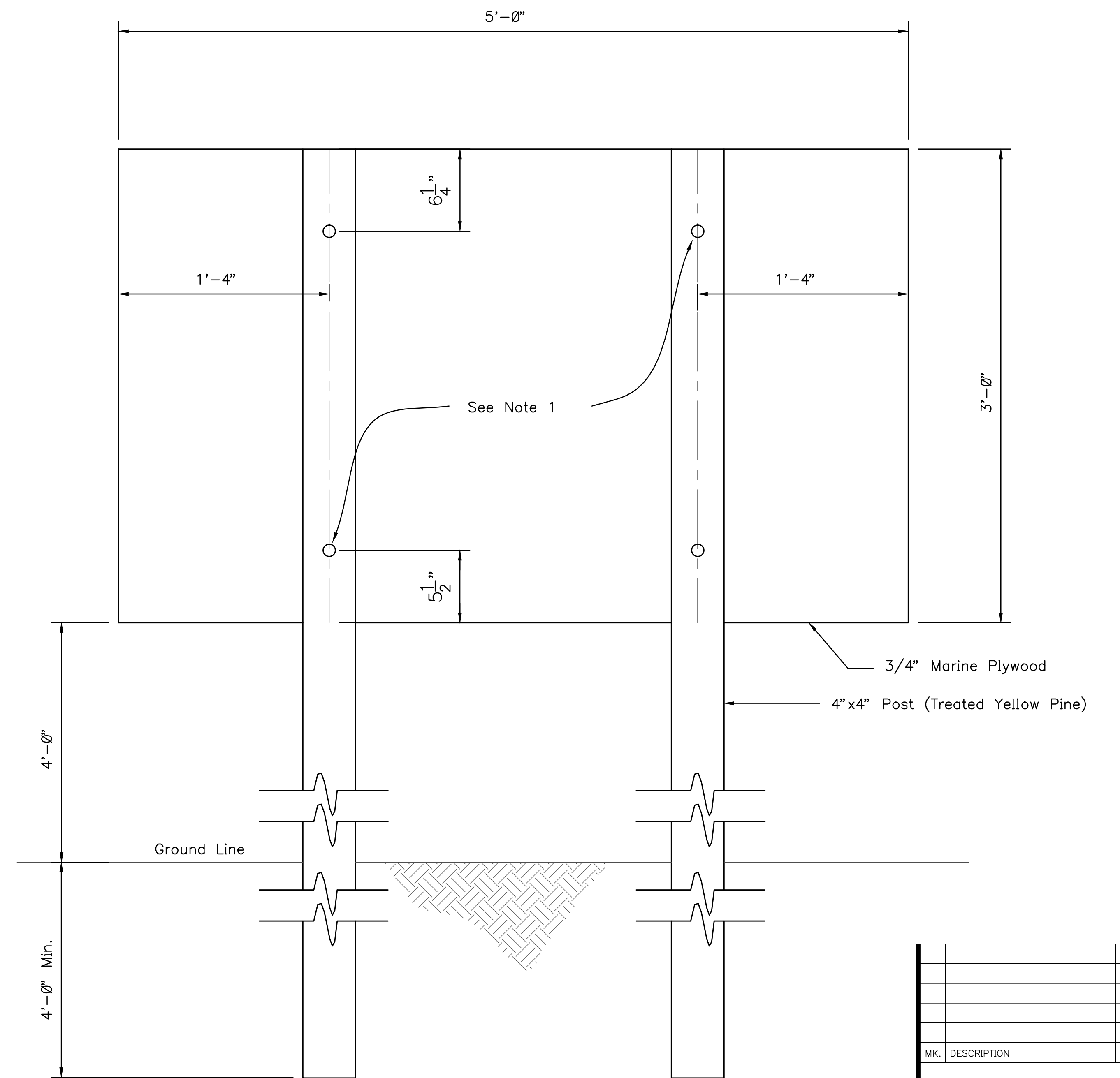
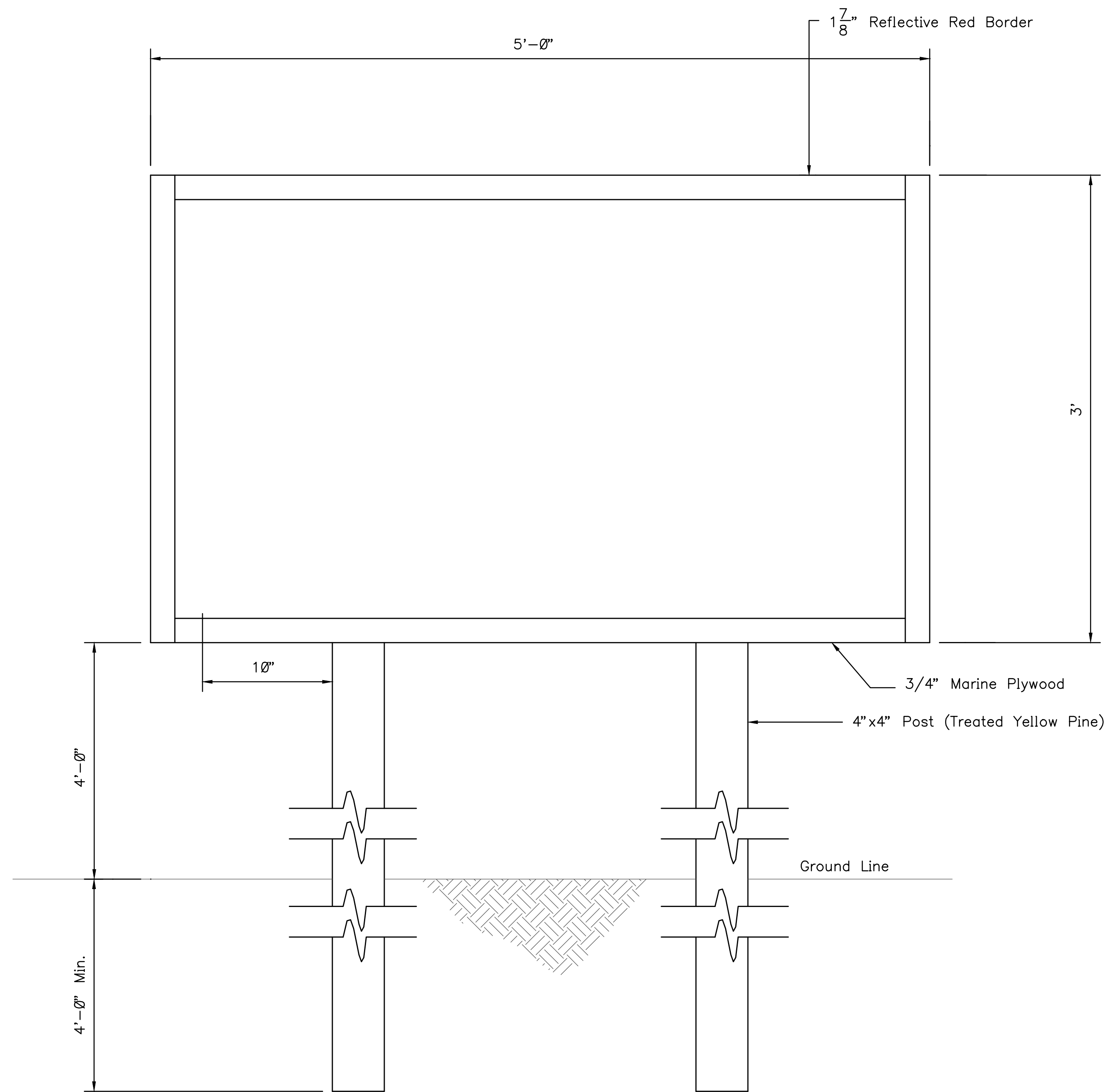
Texas Avenue Reconstruction

Structural  
 Typical Details

Job No.: 18-015  
 Date: September, 2019  
 Dwn By: D. Fattig  
 Chkd By: J Rudloff

Scale:  
 HORZ: N/A  
 VERT: N/A

SHEET  
**51**  
 OF 52

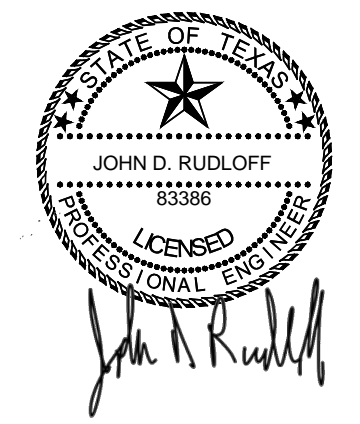


**Notes:**

1. 4" x 4" Post Fastened to Sign with 1/2" # x 5 1/2" Button Head Carriage Bolts, Nuts and Flat Washers.
2. Verify all information prior to ordering Project Sign.
3. Location(s) of the Project sign(s) will be determined at the pre-construction conference.

Project Sign Detail  
Not to Scale

MK.	DESCRIPTION	DATE	DWN.	CHK.



9-13-19

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Texas Avenue Reconstruction

**Project Sign Detail**

Job No.: 18-015	Scale: N/A	SHEET <b>52</b> OF 52
Date: September, 2019	HORZ: N/A	
Dwn By: D. Fattig	VERT: N/A	
Chkd By: J Rudloff		