

DIV. NO.	PROJECT NO.		HIGHWAY NO.
6	C 203-5-39		US 69
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	TYLER	WOOD	1
CONTROL	SECTION	JOB	
0203	05	039	

DESIGN SPEED:
 US 69 = 60 MPH
 FM 779 = 40 MPH
 RAMPS = 50 MPH

ADT:
 6,900 (2019)
 9,400 (2039)

FUNCTIONAL CLASS:
 RURAL PRINCIPAL ARTERIAL (US 69)

INDEX OF SHEETS

- TITLE SHEET
- SUPPLEMENTAL INDEX OF SHEETS

FINAL PLANS

DATE CONTRACT LETTING: _____
 DATE CONTRACT BEGAN WORK: _____
 DATE WORK COMPLETED & ACCEPTED: _____
 CONTRACTOR: _____
 USED _____ OF _____ ALLOTTED DAYS
 FINAL CONTRACT COST: \$ _____

FINAL AS BUILT PLANS

THE CONSTRUCTION WAS PERFORMED UNDER MY SUPERVISION IN ACCORDANCE WITH THE PLANS AND CONTRACT

DATE _____ AREA ENGINEER _____

STATE OF TEXAS
 DEPARTMENT OF TRANSPORTATION
 PLANS OF PROPOSED
 STATE HIGHWAY IMPROVEMENT

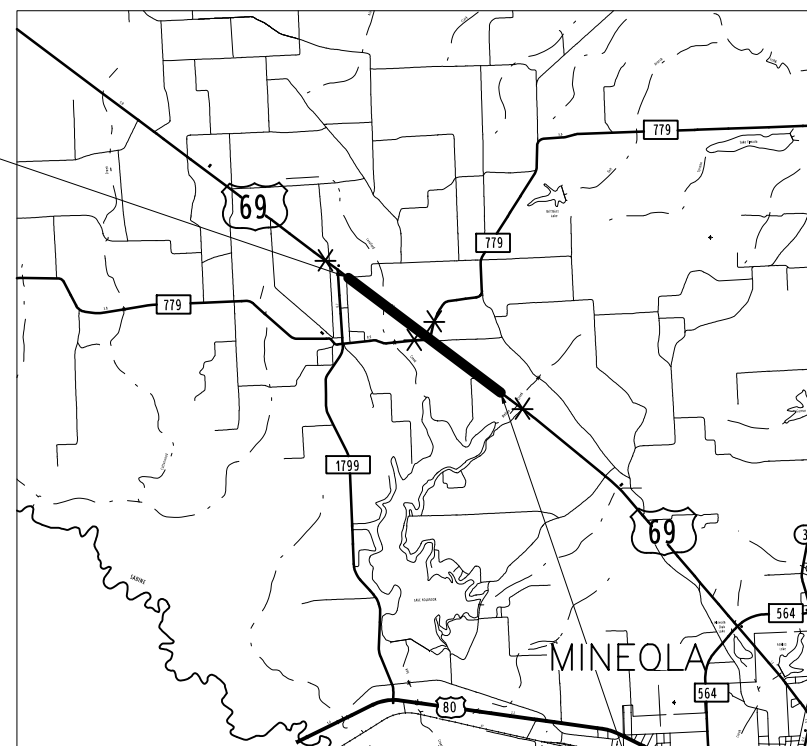
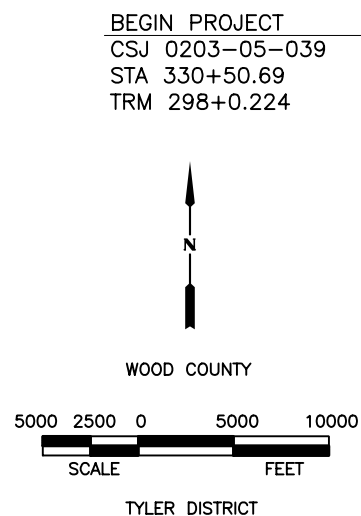
PROJECT NO. C-203-5-39
 CSJ: 0203-05-039

US 69 @ FM 779
 WOOD COUNTY

LIMITS: FROM .96 MI NORTH OF FM 779
 TO 1.03 MI SOUTH OF FM 779

TOTAL LENGTH OF ROADWAY - US 69 = 10045.88 FT. = 1.903 MI.
 TOTAL LENGTH OF BRIDGE = 520.00 FT. = 0.098 MI.
 TOTAL LENGTH OF PROJECT = 10565.88 FT. = 2.001 MI.

TYPE: FOR THE CONSTRUCTION OF A GRADE-SEPARATED INTERCHANGE
 CONSISTING OF: GRADING, BASE, ASPHALT PAVEMENT, DRAINAGE,
 STRUCTURES AND OVERRPASS, SW3P, SIGNING,
 AND PAVEMENT MARKINGS, AND MBGF



NO EQUATIONS
 NO EXCEPTIONS
 NO RAILROADS

END PROJECT
 CSJ 0203-05-039
 STA 436+16.57
 TRM 300+0.261

* SIGN IN ACCORDANCE WITH THE STANDARD BC SHEETS AND PART 6 OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

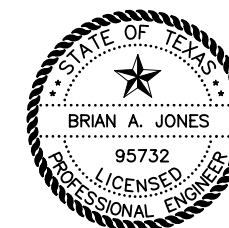
SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014, AND THE CONTRACT PROVISIONS LISTED AND DATED AS FOLLOWS SHALL GOVERN ON THIS PROJECT: SPECIAL LABOR PROVISIONS FOR STATE PROJECTS (SP 000-008)



FIRM REGISTRATION No. F-1741

PREPARED BY 12/8/2023

Brian A. Jones
 CONSULTANT DESIGN ENGINEER
 OR PROJECT MANAGER



TEXAS DEPARTMENT OF TRANSPORTATION

APPROVED FOR LETTING: 1/8/2024

[Signature], P. E.
 DISTRICT ENGINEER

SUBMITTED FOR LETTING: 1/4/2024

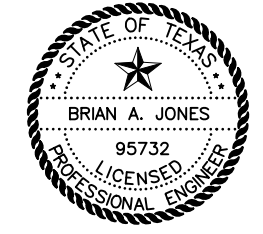
Rolando Mendez, P. E.
 DISTRICT DESIGN ENGINEER

SUPPLEMENTAL INDEX OF SHEETS

SHEET NO	DESCRIPTION
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15 - 16	TRAFFIC CONTROL SUMMARY
17	CRASH CUSHION SUMMARY
18	REMOVAL SUMMARY
19 - 23	ROADWAY SUMMARY
23A	DRIVEWAY SUMMARY
24	RETAINING WALL SUMMARY
25	DRIVEWAY CULVERTS AND STORM DRAINS SUMMARY
26	CULVERT SUMMARY
27	BRIDGE SUMMARY
28	ILLUMINATION SUMMARY
29 - 30	EARTHWORK SUMMARY
31	EROSION CONTROL SUMMARY
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54	TCP PHASE 1 STEP 2 FM 779 LAYOUT
55	TCP PHASE 1 STEP 3 FM 779 LAYOUT
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68	TEMPORARY FLASHING BEACON US 69 AT FM 779
69	TCP PHASE 2 STEP 1 FM 779 LAYOUT
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71	OMITTED
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184	* HOTMIX LONGITUDINAL JOINT DETAILS
185	* CCCG-22
186 - 188	* TYPE T8OSS

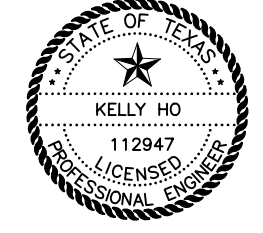
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SHEET NO	DESCRIPTION
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466 - 468	* EC(9)-16



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED BY (*) HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

Brian A. Jones, P.E. 12/8/2023
 BRIAN A. JONES DATE

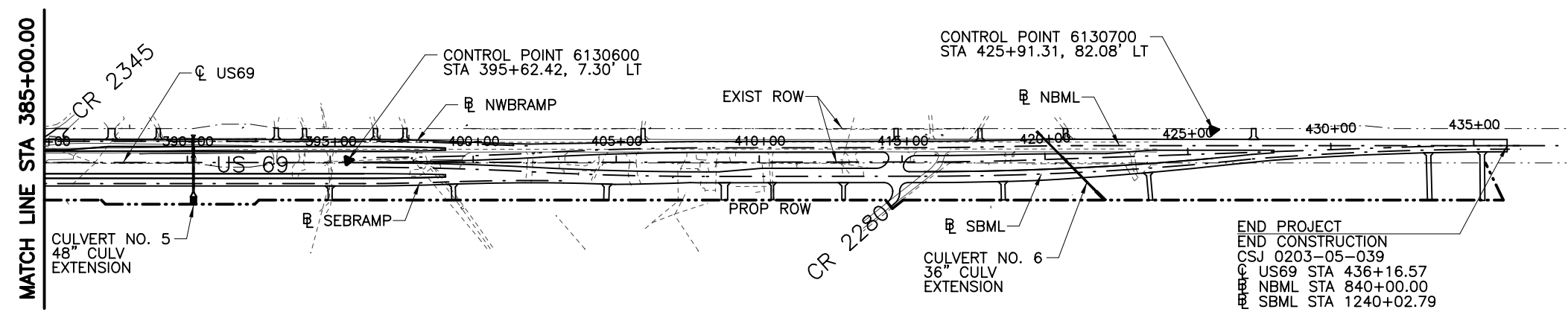
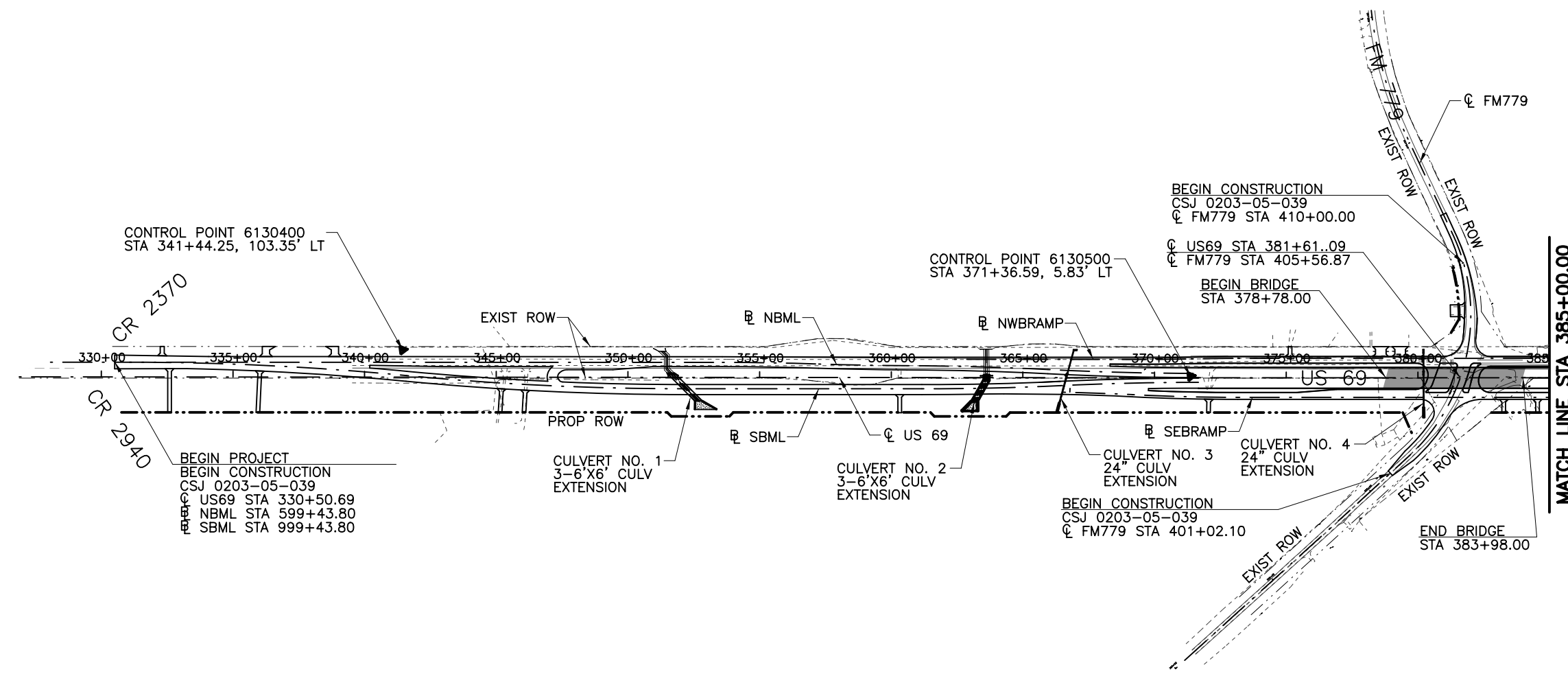
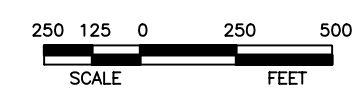
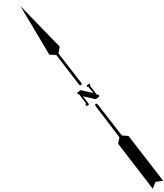




THE STANDARD SHEETS SPECIFICALLY IDENTIFIED BY (** *) HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

Kelly Ho, P.E. 12/8/2023
 KELLY HO DATE

NO.	REVISION	BY	DATE		
TEXAS REGISTERED ENGINEERING FIRM F-1741					
©2023 Texas Department of Transportation					
US 69 AT FM 779					
SUPPLEMENTAL INDEX OF SHEETS					
Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	BAJ	6	TEXAS		US 69
Drawn:	SW	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	BAJ	TYL	WOOD	0203	05
				JOB NO.	SHEET NO.
				039	2

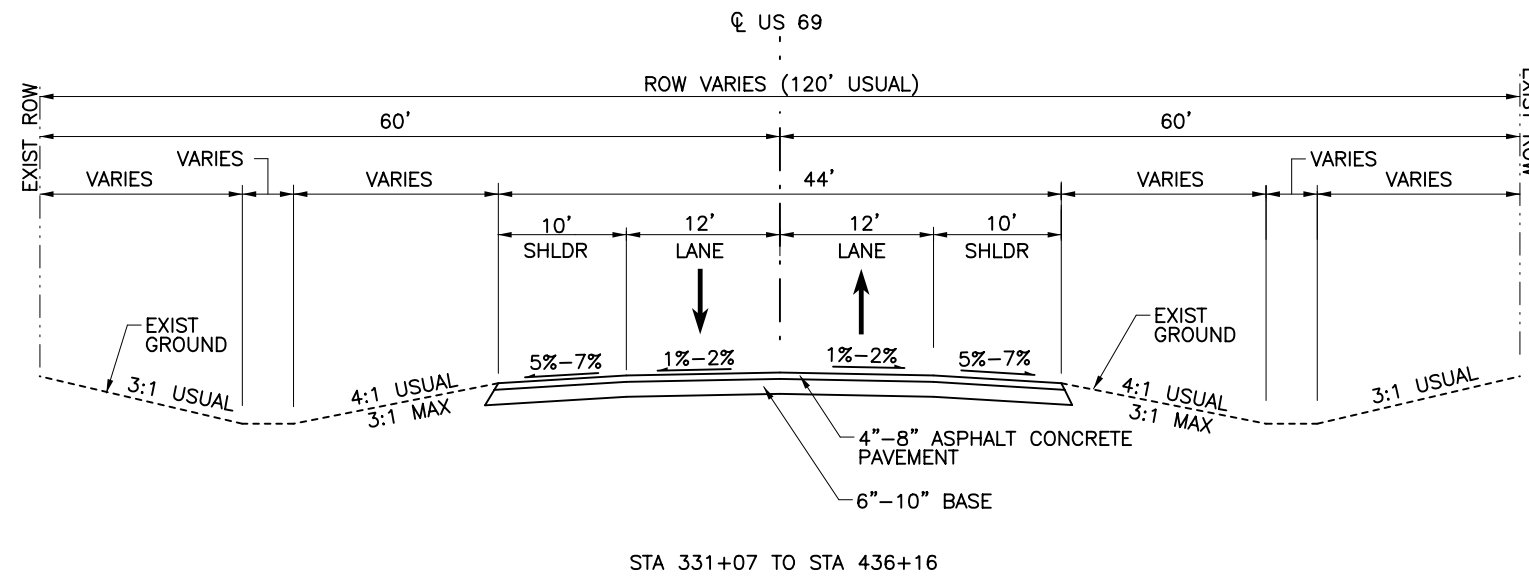
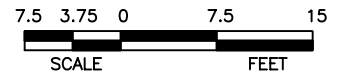
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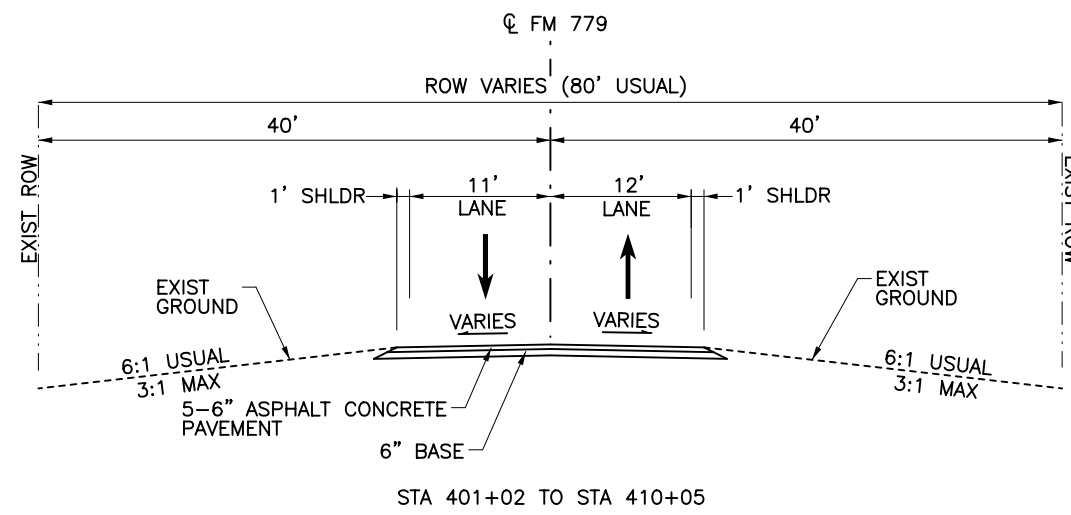
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 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 ©2023 Texas Department of Transportation US 69 AT FM 779			
PROJECT LAYOUT			
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Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	3

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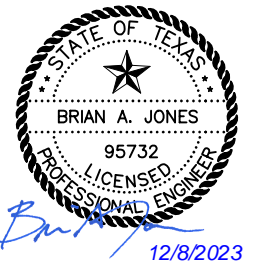
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EXISTING US 69 TYPICAL SECTION



EXISTING FM 779 TYPICAL SECTION



NO.	REVISION	BY	DATE

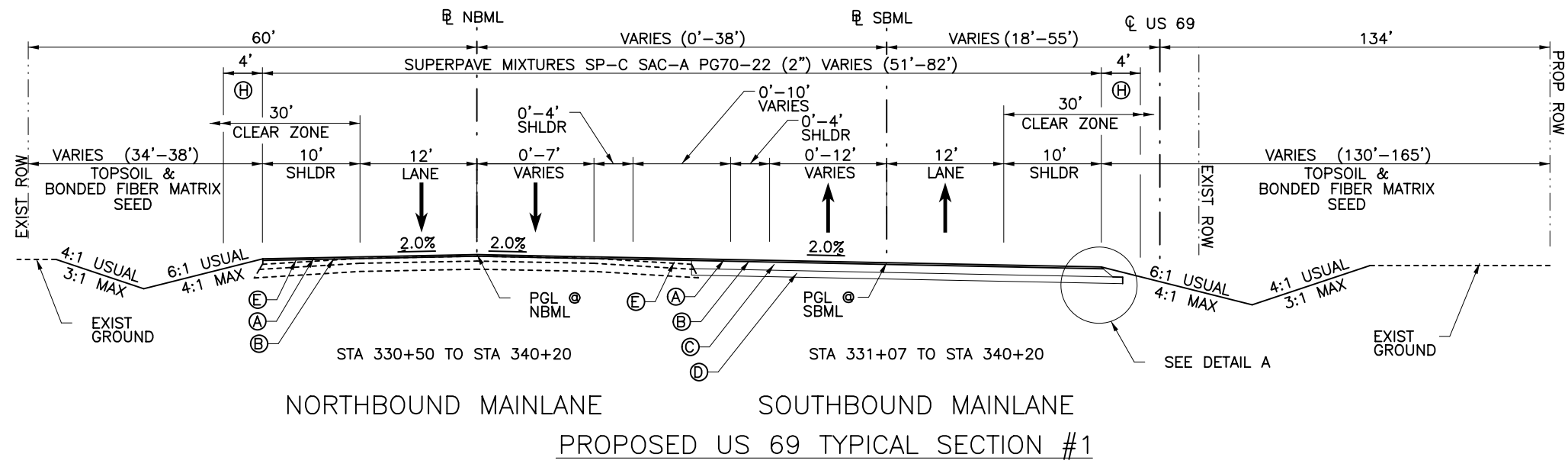
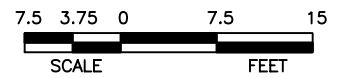
CP&Y
TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

EXISTING TYPICAL SECTION

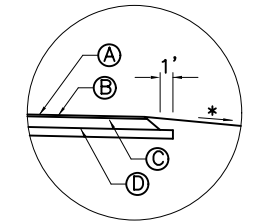
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Drawn:						JOB NO.	039	SHEET NO.	4

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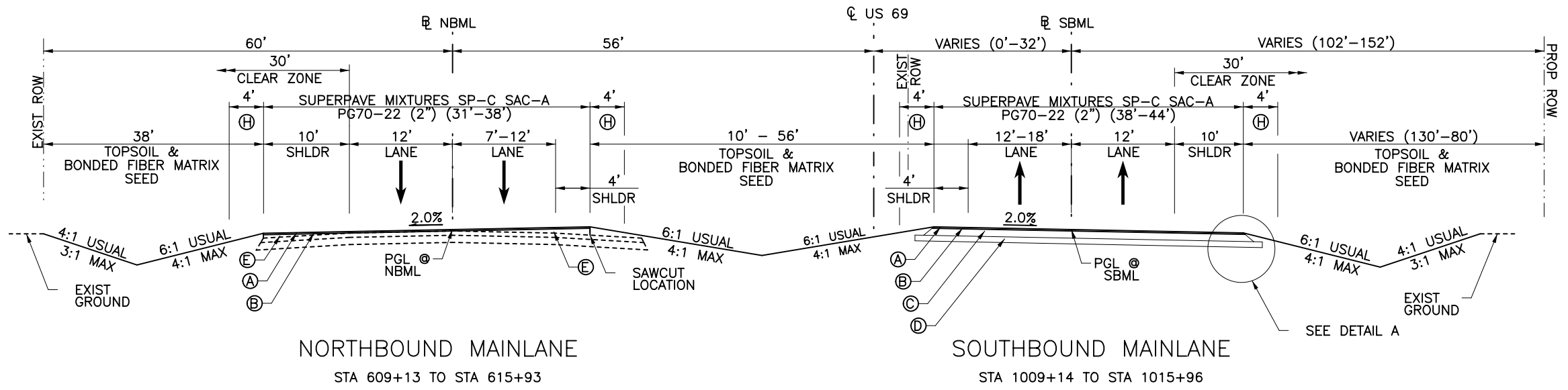
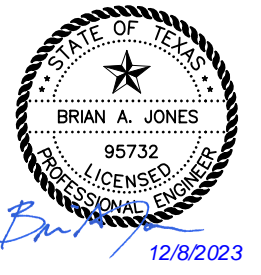
NORTHBOUND MAINLANE SOUTHBOUND MAINLANE
PROPOSED US 69 TYPICAL SECTION #1

- LEGEND**
- (A) SUPERPAVE MIXTURES SP-C SAC-A PG70-22 (2")
 - (B) OCST-ASPH (AC-20XP, AC-10-2TR, OR AC-20-5TR) & AGGR(TY-PD GR-4 OR TY-PL GR-4)
 - (C) SUPERPAVE MIXTURES SP-B PG64-22 (10") TO BE PLACED IN EQUAL LIFTS
 - (D) CEMENT TREAT (SUBGRADE) (8")
 - (E) SP MIXES SP-D PG64-22 (EXEMPT)
 - (F) CONCRETE CURB & GUTTER 6" (TY II)
 - (G) CONCRETE RIPRAP (4")
 - (H) EMULSION



DETAIL A

* SEE TYPICAL SECTION

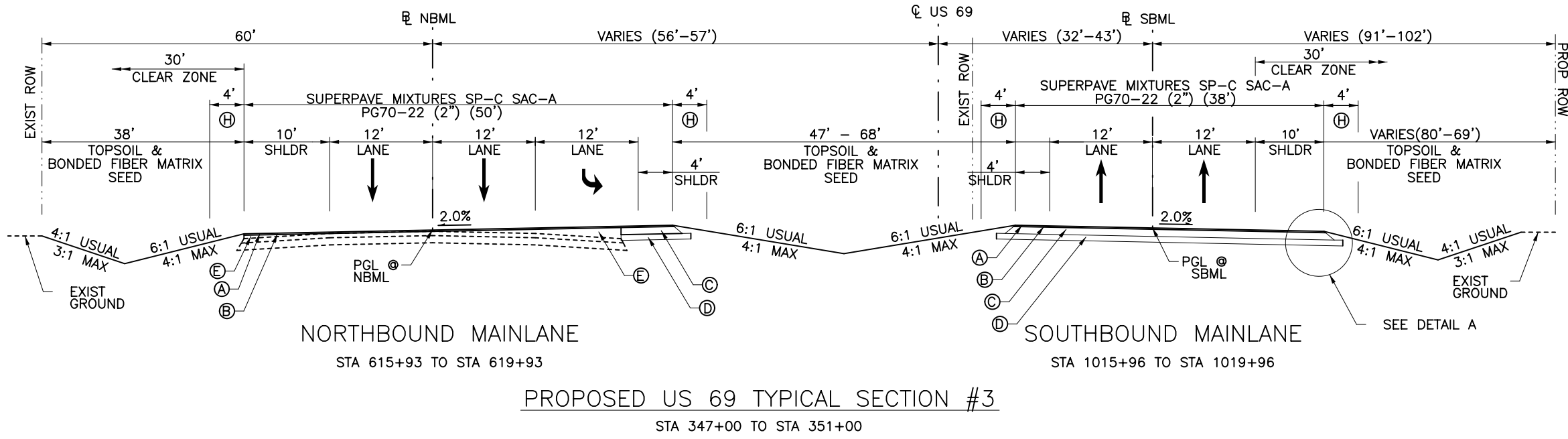


NORTHBOUND MAINLANE SOUTHBOUND MAINLANE
PROPOSED US 69 TYPICAL SECTION #2
STA 340+20 TO STA 347+00

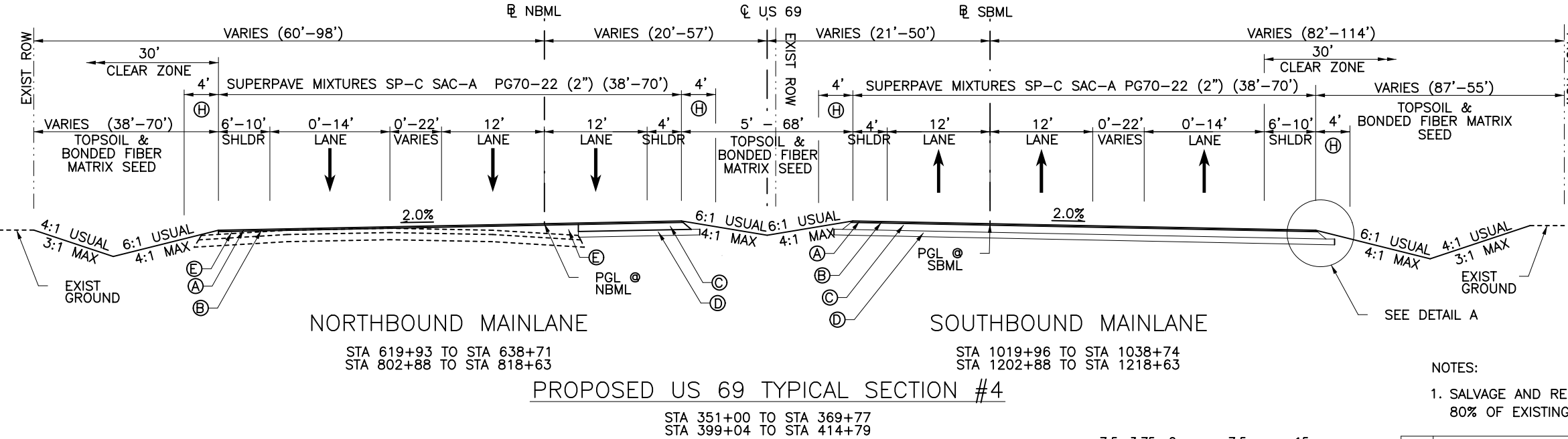
- NOTES:**
- SALVAGE AND REUSE APPROX 80% OF EXISTING TOPSOIL WITHIN ROW.

NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 US 69 AT FM 779			
PROPOSED TYPICAL SECTION			
Designed:	JKF	FED. RD. DIV. NO. 6	STATE TEXAS
Checked:	BAJ	COUNTY WOOD	CONTROL NO. 0203
Drawn:	SW	SECTION NO. 05	JOB NO. 039
Checked:	BAJ	TYL	SHEET NO. 5

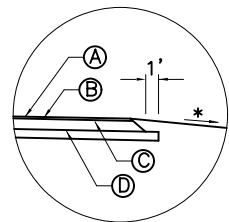
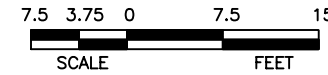
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PROPOSED US 69 TYPICAL SECTION #3
STA 347+00 TO STA 351+00



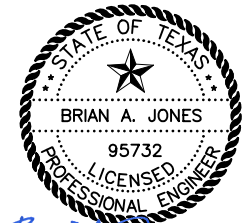
PROPOSED US 69 TYPICAL SECTION #4
STA 351+00 TO STA 369+77
STA 399+04 TO STA 414+79



DETAIL A
* SEE TYPICAL SECTION

LEGEND

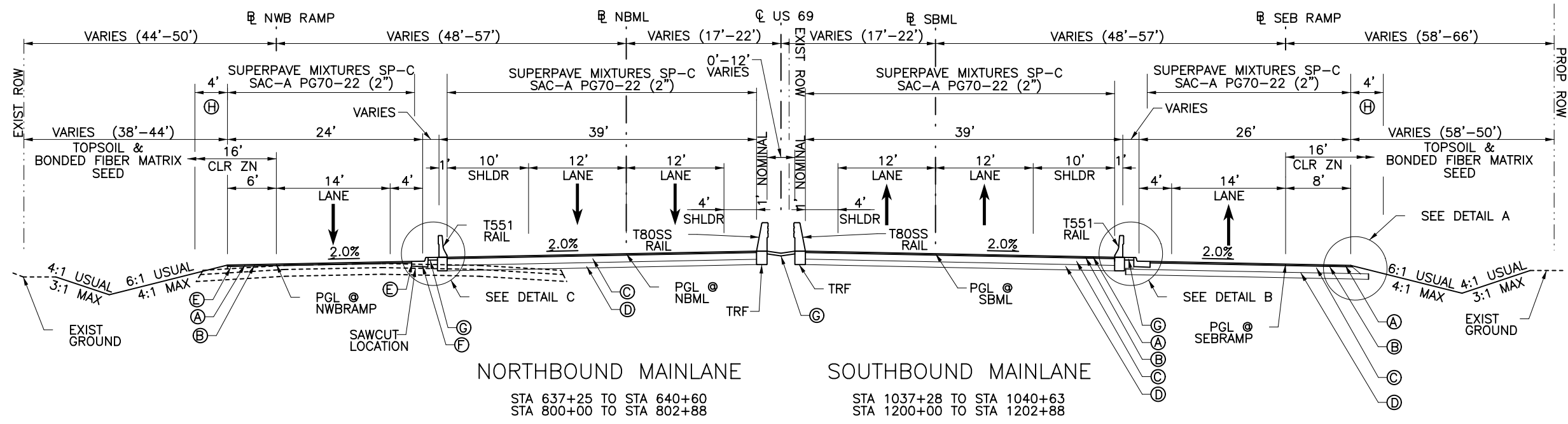
- (A) SUPERPAVE MIXTURES SP-C SAC-A PG70-22 (2")
- (B) OCST-ASPH (AC-20XP, AC-10-2TR, OR AC-20-5TR) & AGGR(TY-PD GR-4 OR TY-PL GR-4)
- (C) SUPERPAVE MIXTURES SP-B PG70-22 (10") TO BE PLACED IN EQUAL LIFTS
- (D) CEMENT TREAT (SUBGRADE) (8")
- (E) SP MIXES SP-D PG64-22 (EXEMPT)
- (F) CONCRETE CURB & GUTTER 6" (TY II)
- (G) CONCRETE RIPRAP 4"
- (H) EMULSION



NOTES:
1. SALVAGE AND REUSE APPROX 80% OF EXISTING TOPSOIL WITHIN ROW.

NO.	REVISION	BY	DATE
<p>TEXAS REGISTERED ENGINEERING FIRM F-1741</p> <p>©2023 Texas Department of Transportation</p> <p>US 69 AT FM 779</p> <p>PROPOSED TYPICAL SECTION</p>			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	SW	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	6

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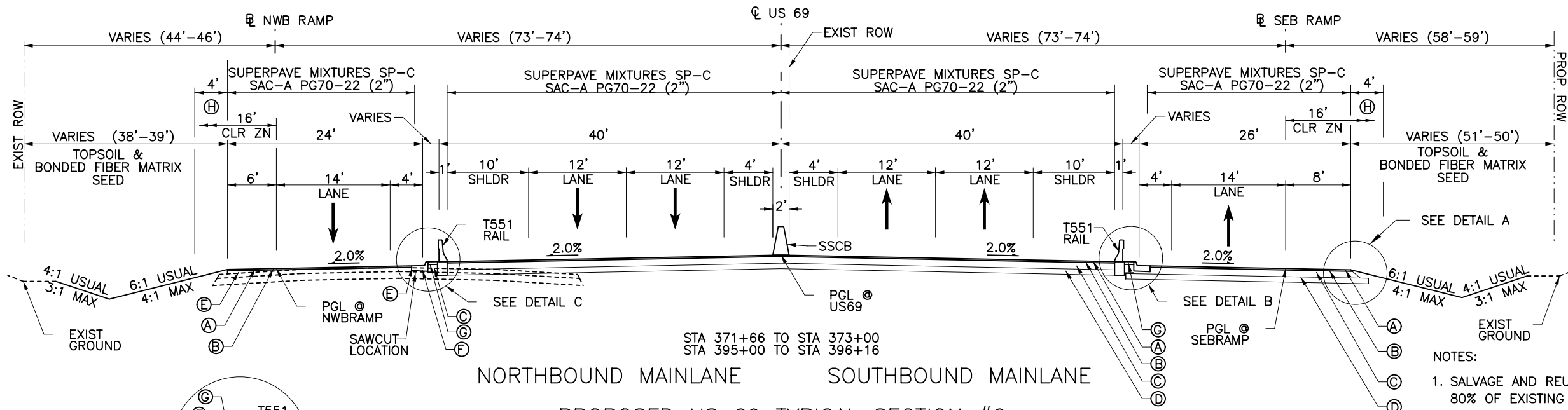


NORTHBOUND MAINLANE SOUTHBOUND MAINLANE

STA 637+25 TO STA 640+60
 STA 800+00 TO STA 802+88
 STA 1037+28 TO STA 1040+63
 STA 1200+00 TO STA 1202+88

PROPOSED US 69 TYPICAL SECTION #5

STA 368+31 TO STA 371+66
 STA 396+16 TO STA 399+04

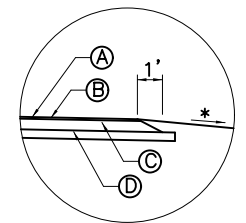
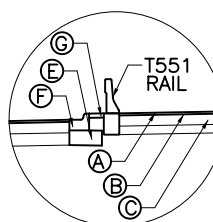
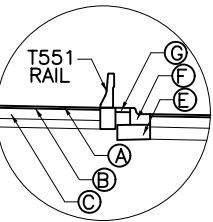


NORTHBOUND MAINLANE SOUTHBOUND MAINLANE

PROPOSED US 69 TYPICAL SECTION #6

STA 371+66 TO STA 373+00
 STA 395+00 TO STA 396+16

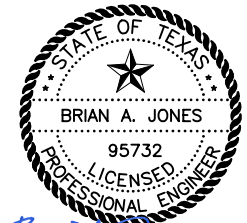
NOTES:
 1. SALVAGE AND REUSE APPROX 80% OF EXISTING TOPSOIL WITHIN ROW.



* SEE TYPICAL SECTION

LEGEND

- (A) SUPERPAVE MIXTURES SP-C SAC-A PG70-22 (2'')
- (B) OCST-ASPH (AC-20XP, AC-10-2TR, OR AC-20-5TR) & AGGR(TY-PD GR-4 OR TY-PL GR-4)
- (C) SUPERPAVE MIXTURES SP-B PG70-22 (10'') TO BE PLACED IN EQUAL LIFTS
- (D) CEMENT TREAT (SUBGRADE) (8'')
- (E) SP MIXES SP-D PG64-22 (EXEMPT)
- (F) CONCRETE CURB & GUTTER 6" (TY II)
- (G) CONCRETE RIPRAP 4"
- (H) EMULSION



Brian A. Jones
 12/8/2023

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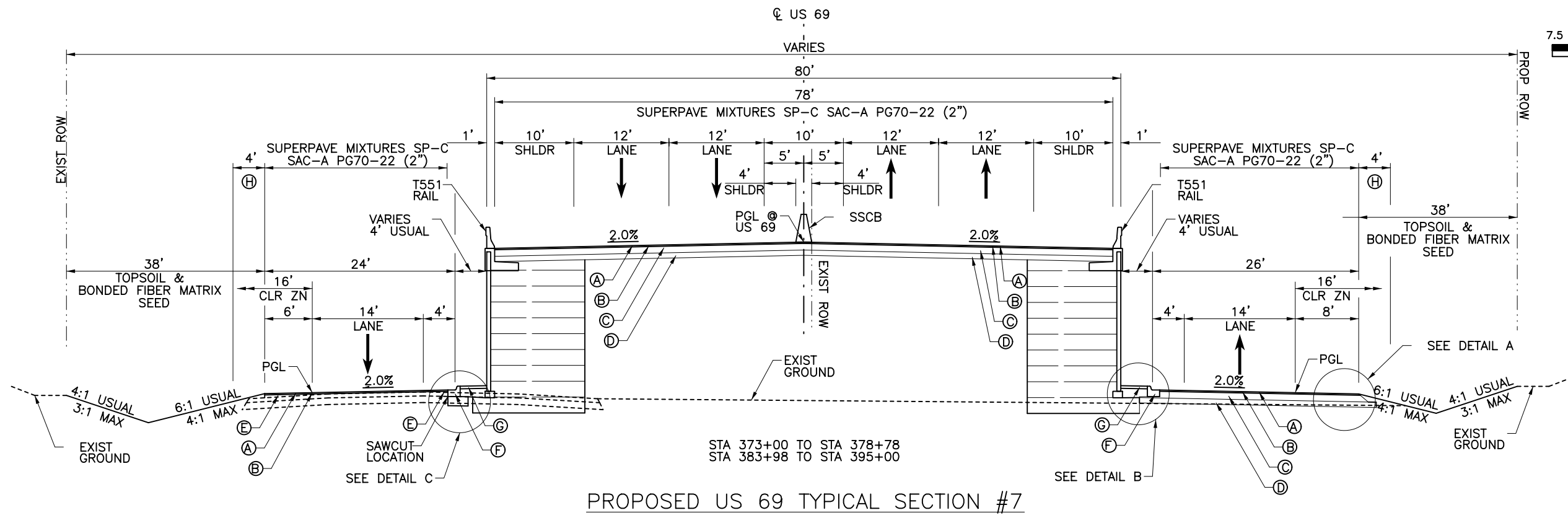
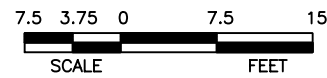
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 TEXAS REGISTERED ENGINEERING FIRM F-1741

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 US 69 AT FM 779

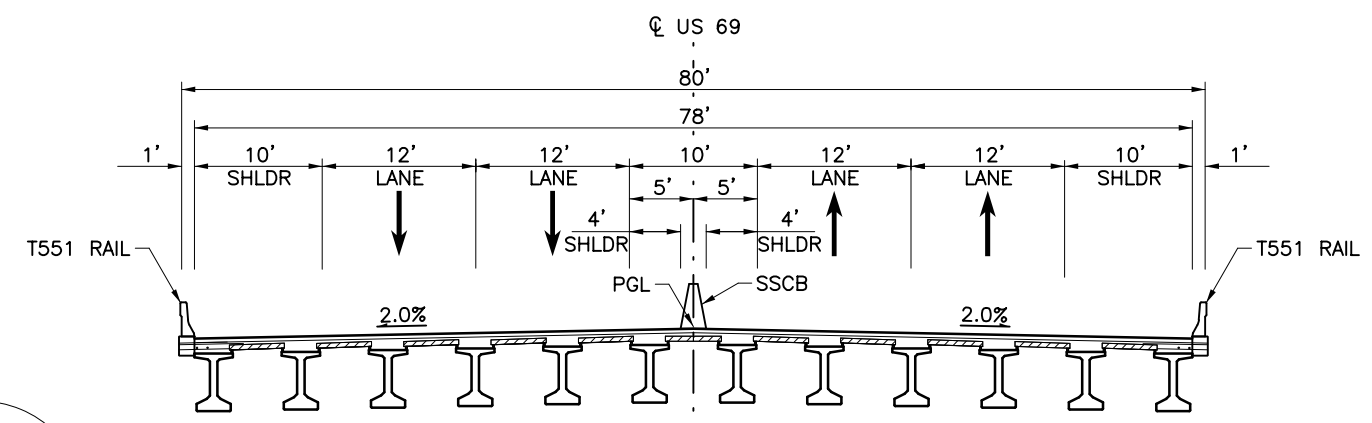
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Drawn: SW	JOB NO. 039	SHEET NO. 7		
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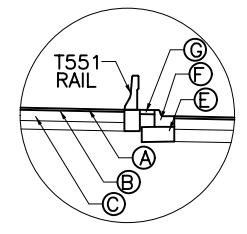


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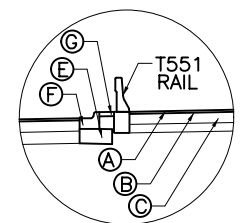


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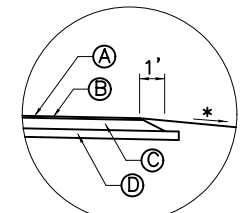
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DETAIL B



DETAIL C



DETAIL A

* SEE TYPICAL SECTION

LEGEND

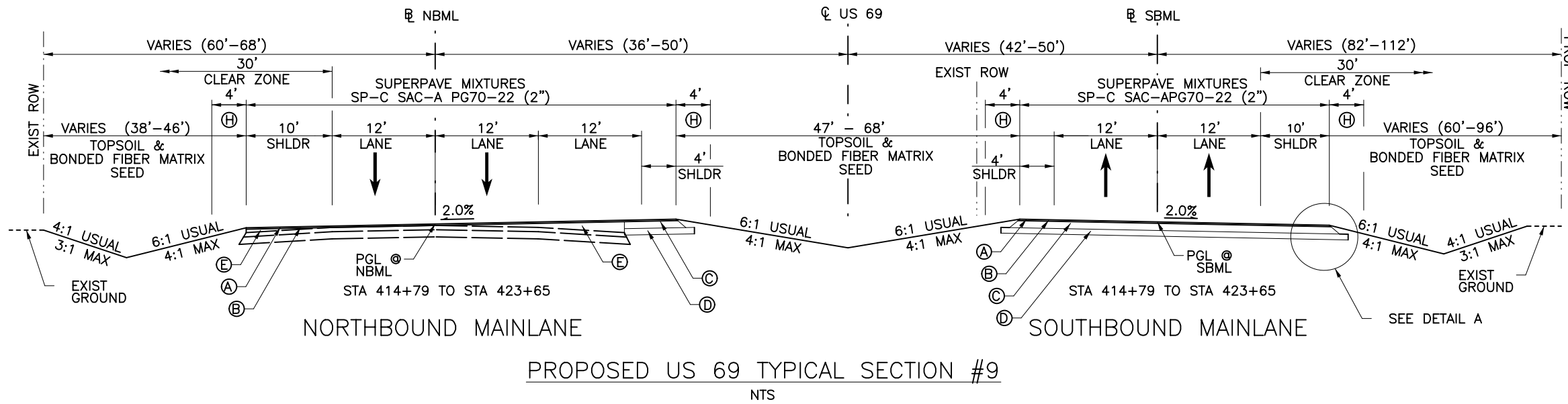
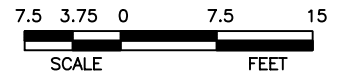
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NOTES:
1. SALVAGE AND REUSE APPROX 80% OF EXISTING TOPSOIL WITHIN ROW.

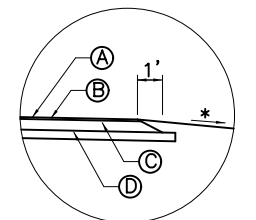
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 US 69 AT FM 779			
PROPOSED TYPICAL SECTION			
Designed:	JKF	FED. RD. DIV. NO. 6	STATE TEXAS
Checked:	BAJ	DIST. SW	COUNTY WOOD
Drawn:	SW	CONTROL NO. 0203	SECTION NO. 05
Checked:	BAJ	TYL	JOB NO. 039
			HIGHWAY NO. US 69
			SHEET NO. 8

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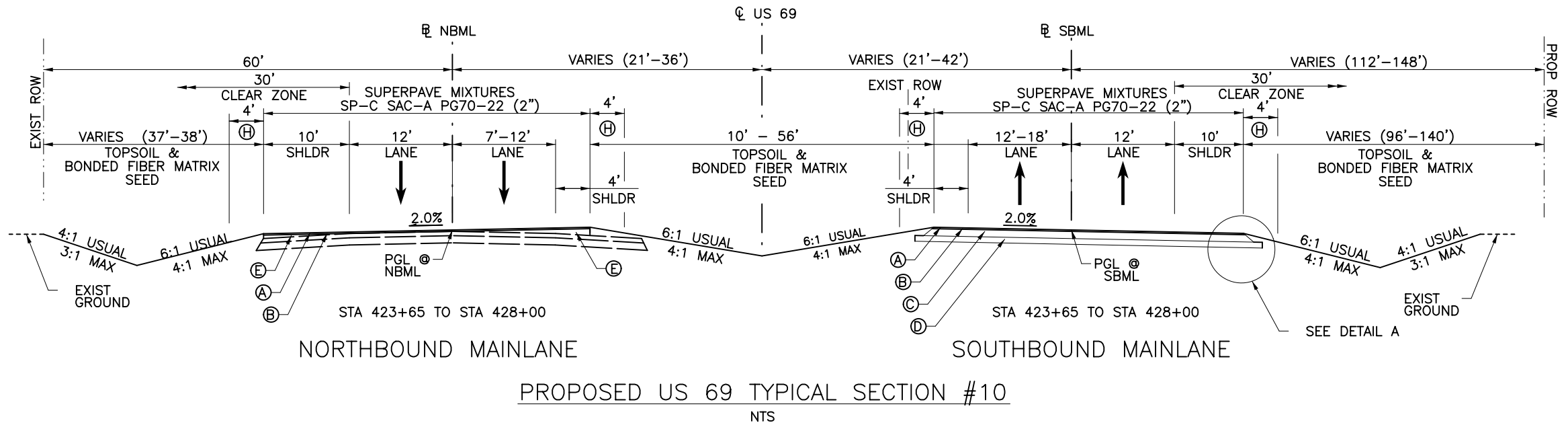
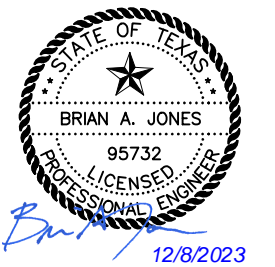
LEGEND

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DETAIL A

* SEE TYPICAL SECTION



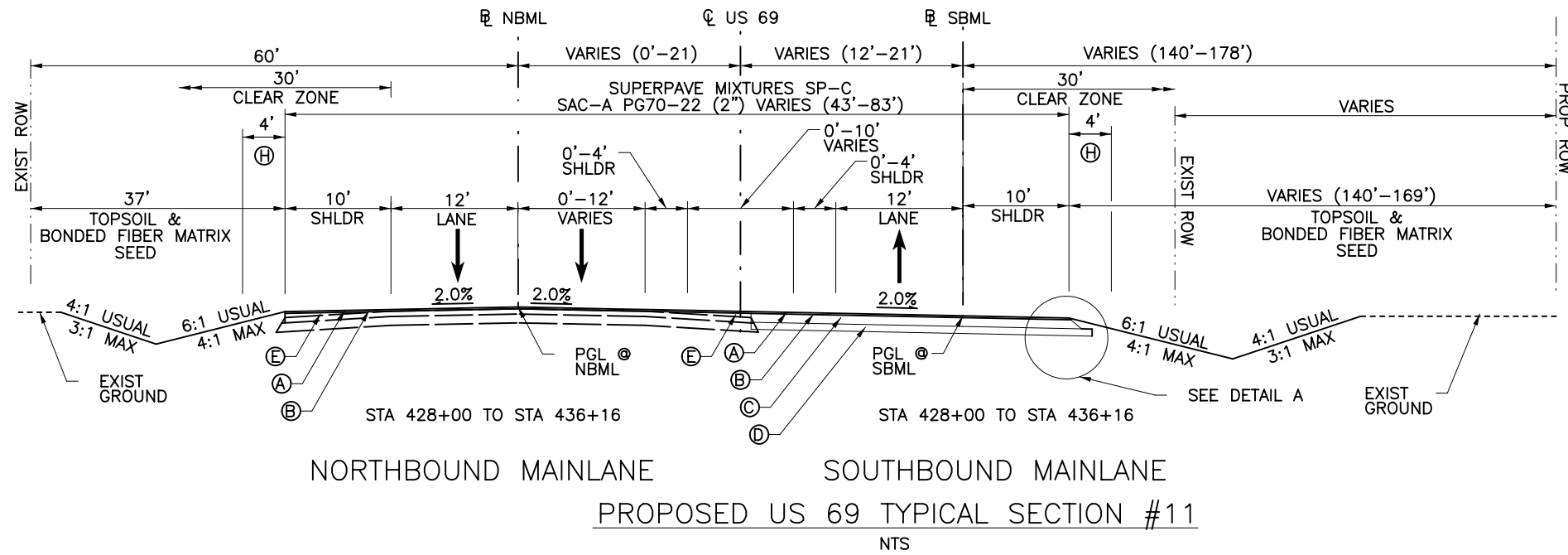
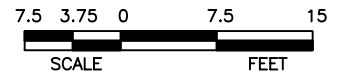
NOTES:

1. SALVAGE AND REUSE APPROX 80% OF EXISTING TOPSOIL WITHIN ROW.

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PROPOSED TYPICAL SECTION			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
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		JOB NO.	SHEET NO.
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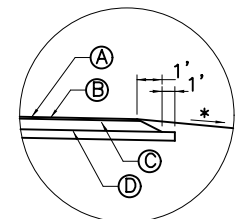
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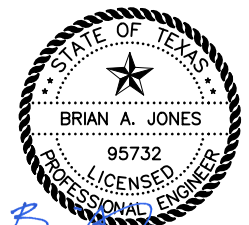
LEGEND

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DETAIL A

* SEE TYPICAL SECTION

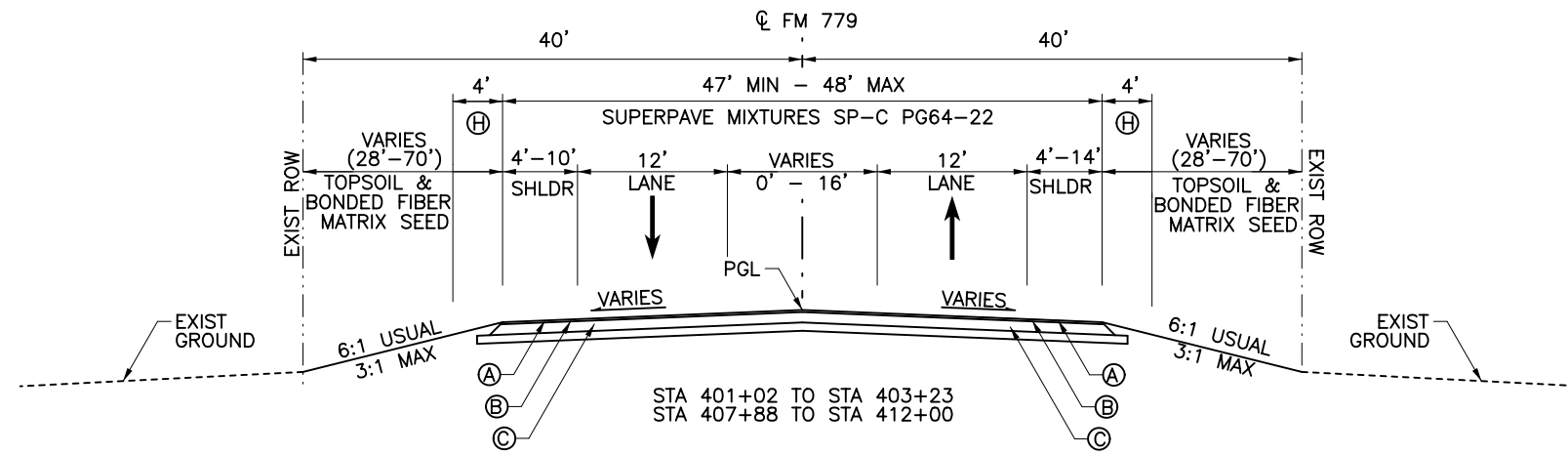
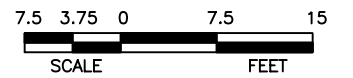


Brian A. Jones
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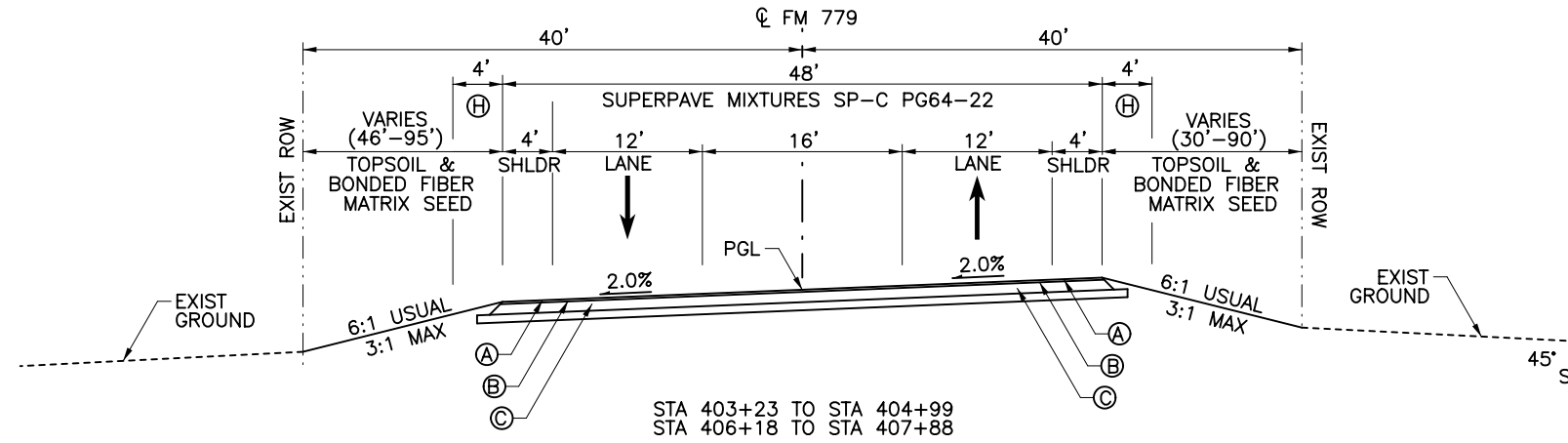
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<p>US 69 AT FM 779</p>			
<p>PROPOSED TYPICAL SECTION</p>			
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		CONTROL NO.	SECTION NO.
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		JOB NO.	SHEET NO.
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NOTES:

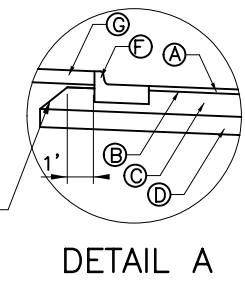
- SALVAGE AND REUSE APPROX 80% OF EXISTING TOPSOIL WITHIN ROW.



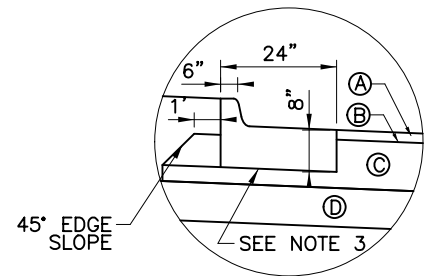
PROPOSED FM 779 TYPICAL SECTION #1



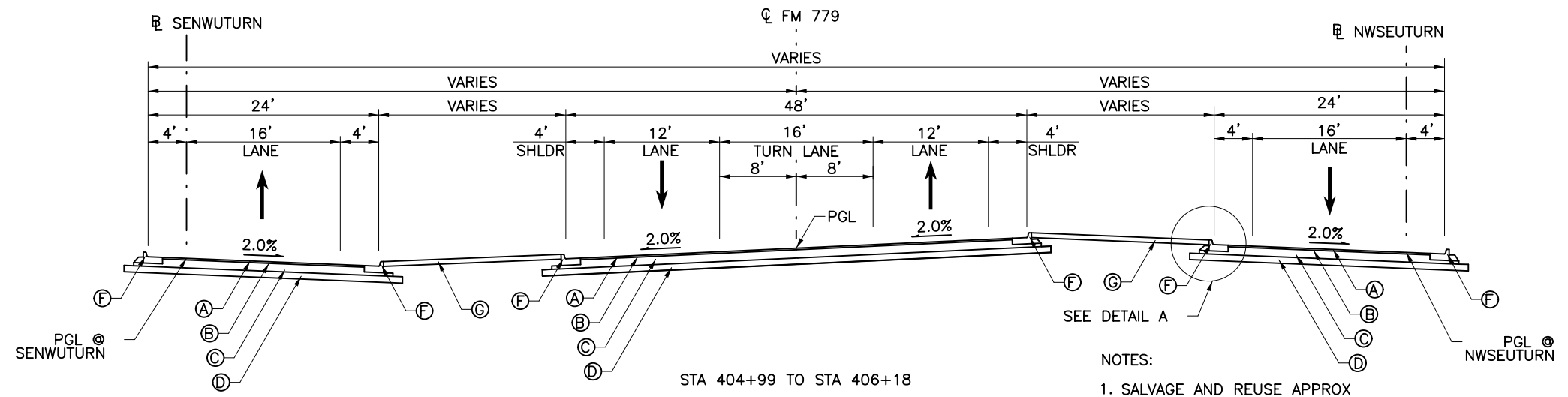
PROPOSED FM 779 TYPICAL SECTION #2



DETAIL A



TYPICAL CURB DETAIL

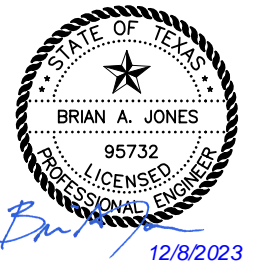


PROPOSED FM 779 TYPICAL SECTION #3

- NOTES:
1. SALVAGE AND REUSE APPROX 80% OF EXISTING TOPSOIL WITHIN ROW.
 2. BUILD UP GRADE OF FM 779 OVER EXISTING PAVEMENT USING LEVEL-UP (MAX 4" LIFTS) IN LIEU OF TREATED SUBGRADE.
 3. SEE CCCG STANDARD FOR DETAILS. BASE C&G UPON FIRST COURSE OF (C).

LEGEND

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US 69 AT FM 779			
PROPOSED TYPICAL SECTION			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	SW	DIST.	COUNTY
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County: Wood

Control: 0203-05-039

Highway: US 69

GENERAL NOTES:**GENERAL.**

Contractor questions on this project are to be addressed to the following individuals:

Lance Pomykal lance.pomykal@txdot.gov

Josh Fulton josh.fulton@txdot.gov

For Q&A on Proposals navigate to:

<https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors>

Use the dashboard to navigate to the project you are interested in by scrolling or filtering the dashboard using the controls on the left. Hover over the blue hyperlink for the project and click on the link in the window that pops up to view the Q&A.

All relevant project documentation including Contract Time Determinations and cross-sections will still be posted to the districts FTP website.

<https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting%20Responses/Tyler%20District/Construction%20Projects>

All stockpiles within TxDOT right of way, must not exceed 12 ft. in height and must have 3:1 slope unless otherwise directed. Place stockpiles in a manner that will be outside the horizontal clear zone, will not obstruct traffic or sight distance, and will not interfere with roadway drainage.

Perform work as necessary off the right of way on temporary construction easements for driveway construction. All work performed in these areas will be paid for under the pertinent bid items of the Contract.

Do not haul with loaded scrapers on the surfaced areas of any highway except as approved.

Remove all vegetation from pavement edges, intersections, and driveways prior to planing operations, seal coat, or ACP operations. This work will not be paid for directly, but will be subsidiary to the bid items of the Contract.

ATTN: Provide a 20-ft. length per 1-in. depth temporary taper at all transverse joints in the travel lane before opening to traffic. This work will not be paid for directly, but will be subsidiary to the bid items of the Contract.

County: Wood

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Highway: US 69

Provide all-weather surface for temporary ingress and egress to adjacent property, as directed. Materials, labor, equipment and incidentals necessary to provide temporary ingress and egress will not be paid for directly, but will be subsidiary to various bid items.

PROJECT MOWING

Mow the highway right of way in the project limits a maximum of 2 cycles per year, as directed.

Provide approved mowing equipment capable of mowing on slopes without unduly marring finished slope surfaces or damaging existing growth. The minimum cutting width should not be less than 5 ft. unless otherwise approved.

Mow all areas of existing vegetation and vegetation placed during the project, as directed. The mowing height should be 5 in. unless otherwise directed. Repair portions of sod or grass which are damaged during mowing operations in an acceptable manner.

Mow as close as possible to all fixed objects, exercising extreme care not to damage trees, plants, shrubs, signs, delineators or other appurtenances which are part of the facility. Hand trim around such objects, unless otherwise specified.

Use safety chains or other manufacturer's safety devices to prevent injury to people or damage to property caused by flying debris propelled out from under rotary mowers. Chains should be a minimum size of 5/16 in. and links spaced side by side around the front, sides and rear of mower. When mowing at the specified cutting height, the chains should be long enough to drag the ground. If at any time it is determined that mowing or trimming equipment is defective to the point that it may affect the quality of work or create unsafe conditions, then immediately repair or replace the equipment.

LITTER PICKUP

Remove litter from the right of way in the project limits a maximum of 3 cycles per year as directed. Litter pickup will not be measured or paid for directly, but will be subsidiary to pertinent Items.

Equipment used for litter pickup must be approved.

Collect and properly dispose of all litter deposited by construction operations or the traveling public from within the right of way as directed. This includes cans, bottles, paper, plastic items, metal scraps, lumber, etc. Do not dump or stockpile collected litter on Department property.

ITEM 4. SCOPE OF WORK

Upon completion of the work and before final acceptance, remove all foreign material, stains, and marks from concrete surfaces. Sandblast clean concrete surfaces as directed. Clean existing concrete structures that are marked or stained by the Contractor's operations. This work will not be paid for directly, but will be subsidiary to the bid items of the Contract.

During final clean up, remove all foreign material that has accumulated at bridge abutments and bent caps as approved. All work and equipment involved in the removal of this material is subsidiary to the bid items of the Contract.

Preserve the integrity of all right of way monuments within project limits. Right of way monuments damaged or destroyed during construction must be replaced by a registered professional land surveyor (RPLS), at the Contractor's expense.

ITEM 5. CONTROL OF THE WORK

If utility lines need adjustments during construction operations, modify operations and continue the work in a manner that will allow others to make the utility adjustments. Additional working time may be allowed for delays caused by these utility adjustments.

Place and maintain construction hubs near the right of way line in accordance with Article 5.9., "Construction Surveying" on both sides of the roadway until the final item of work is complete.

Establish proposed centerlines throughout the project from control points and alignment data as shown on the plans.

Maintain and re-establish the centerline stations throughout each project as required for each phase of work.

Utility locations shown on the plans are approximate. Contact utilities in accordance with Article 5.6., "Cooperating With Utilities."

Verify survey control for accuracy before beginning construction.

Notify the Engineer if there are conflicts with survey control accuracy.

Prior to beginning driveway and intersection work, submit a detailed construction sequence to be approved by the Engineer. Driveway and intersection completion includes existing surface removal, structure removal, removal of debris from the project site, installing the new RCP and SETs, backfilling, grading ditches to drain, and installing the permanent driveway or intersection surface (or all-weather drive surface as allowed).

"When a precast or cast-in-place concrete element is included in the plans, a precast concrete alternate may be submitted in accordance with "Standard Operating Procedure for Alternate Precast Proposal Submission" found online at <https://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/publications/bridge.html#design>. Acceptance or denial of an alternate is at the sole discretion of the Engineer. Impacts to the project schedule and any additional costs resulting from the use of alternates are the sole responsibility of the Contractor."

ITEM 7. LEGAL RELATIONS AND RESPONSIBILITIES

Do not initiate activities in a project specific location (PSL) associated with a U.S. Army Corps of Engineers (COE) permit area that has not been previously evaluated by the COE as part of the permit review of this project. Such activities include haul roads, equipment staging areas, borrow pits, and disposal sites. "Associated," defined here, means "materials are delivered to or from the PSL." The permit area includes all waters of the U.S. or associated wetlands affected by activities associated with this project. Special restrictions may be required for this work. The Contractor is responsible for all consultations with the COE regarding activities (including PSL) that have not been previously evaluated by the COE. Provide the Department with a copy of all consultations or approvals from the COE before initiating activities.

Proceed with activities in PSL that do not affect a COE permit area if Contractor determines that the PSL is non-jurisdictional or proper COE clearances have been obtained in jurisdictional areas or have been previously evaluated by the COE as part of the permit review of this project. The Contractor is responsible for documenting his determination that his activities do not affect a COE permit area. Maintain copies of determination for review by the Department or any regulatory agency.

Keep mailboxes in a position accessible to the carrier's vehicle along the travelway. When grading operations necessitate the moving of mailboxes, place mailboxes nearby at a location accessible to the carrier's vehicle. Return mailboxes to a position accessible to the carrier's vehicle along the travelway when grading operations are not in progress. The Contractor may mount mailboxes on a portable stand that keeps the mailbox in a level position approximately 42 in. above the pavement.

Furnish mounts for mailboxes in accordance with the Compliant Work Zone Traffic Control Device List for temporary mailboxes. When existing mailboxes are non-standard size, supply the new standard sized mailbox when temporarily relocated on drum and label the address as directed. This process will not be paid for directly, but will be subsidiary to the various bid items.

Coordinate with the local mail carrier where to place temporary mailboxes.

Concrete truck drivers and concrete pump operators are required to wash out only in designated areas specifically constructed for eliminating run-off. Dispose of materials in accordance with federal, state, and local requirements.

Placement of any fill material within the channel is not allowed. A temporary crossing must clear span from channel bank to channel bank.

Maintain positive drainage for permanent and temporary work for the duration of the project. The Contractor will be responsible for any items associated with the temporary or interim drainage and all related maintenance. This work will be subsidiary to various bid items.

The total disturbed area for this project is 33 acres. The disturbed area in this project and the Contractor Project Specific Locations (PSL's) within 1 mile of the project limits for the Contract will further establish the authorization requirements for storm water discharges. The Department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. Obtain any required authorization from the TCEQ for any Contractor PSL for construction support activities on or off the ROW. When the total area disturbed for all projects in the Contract and PSLs within 1 mile of the project limits exceed 5 acres, before disturbance, provide a copy of the Contractor NOI for PSLs on the ROW and within 1 mile of the project limits to the Engineer and to any local government that operates a Municipal Separate Storm Sewer System (MSSS).

In accordance with Article 7.9, provide and maintain adequate, neat and sanitary toilet accommodations within the project limits for employees, including State employees.

No significant traffic generator events identified.

ITEM 8. PROSECUTION AND PROGRESS

Prepare the progress schedule as a critical path method (CPM).

Nighttime work will be necessary for this project. Night work cannot be performed on Saturday or Sunday nights. Lane closures for various operations will only be allowed between the hours of 9 P.M. and 6 A.M. The Lane Closure Assessment Fee is \$2,000 per hour / per lane.

ITEM 9. MEASUREMENT & PAYMENT

In accordance with Article 9.1., "Measurement of Quantities," furnish the tare and maximum gross weights as well as the volume capacity of all vehicles, trucks, truck-tractors, trailers, semi-trailers, or combination of such vehicles used to deliver materials for this Contract. Also, furnish calculations supporting these weights and capacities. Provide all measurements required for pay a minimum of 2 days before the trucks are used.

ITEM 100. PREPARING RIGHT OF WAY

Perform work as necessary off the right of way on temporary or drainage easements and at those locations where improvements have been taken or partially taken by right of way acquisition. Review these locations with the Area Engineer. The cost of this work will be included in the unit price bid for this Item.

Burning will not be permitted. Trench burning will be permitted in approved areas in accordance with TCEQ and local regulations. Ensure the fire has been extinguished before leaving the site. Backfill trenches daily unless otherwise directed.

ITEM 104. REMOVING CONCRETE

Blasting will not be permitted on this project.

The stockpile site for salvageable material is located at 15986 SH 155 Tyler, TX 75703 (TxDOT Tyler area office).

ITEM 105. REMOVING TREATED & UNTREATED BASE & ASPHALT PAVEMENT

The stockpile site for salvageable material is located at 15986 SH 155 Tyler, TX 75703 (TxDOT Tyler area office).

ITEMS 110 & 132. EXCAVATION & EMBANKMENT

Excavation and embankment for driveways, intersections, mailbox turnouts and crossovers will not be paid for directly, but will be subsidiary to the various bid items unless otherwise shown on the plans.

In a cut section, if the soil encountered in the subgrade is unsuitable for reasons other than excess moisture, this material will be declared "waste" and the Contractor will be required to undercut for a minimum depth of 1 ft. and a maximum depth as determined and replaced with a material having a plasticity index of 6 to 18. This required undercutting will be paid for under Item 110, "Excavation."

When excavation is required to adjust stream flow lines at culvert ends, flatten the side slopes of channels and the backslopes of parallel ditches to the maximum extent possible within the existing right of way and channel easements.

Project Number:

Sheet 12C

County: Wood

Control: 0203-05-039

Highway: US 69

ITEM 132. EMBANKMENT

Furnish Type C embankment consisting of suitable earth material (rock, loam, clay, or other approved materials) that will form a stable embankment. The top 2 ft. of embankment material should have a plasticity index between 6 and 18.

Test borrow sources and furnish results to the Engineer for select embankment, the Engineer will then run confirmation testing.

ITEM 164. SEEDING FOR EROSION CONTROL

The rates, types of seed, asphalt, and locations for the broadcast seed items will be determined if temporary erosion control is needed.

Mow tall vegetation prior to placement of erosion control measures in order to provide optimal growing conditions. This work will not be paid for directly, but will be subsidiary to the bid items of the Contract.

The season and seed mixture for "Broadcast Seeding (Temporary Erosion Control) (Cool Season)" and "Broadcast Seeding (Temporary Erosion Control) (Warm Season)" is specified below:

- Cool Season - September 1 thru November 30
- Warm Season - May 15 thru August 31

Permanent Planting Mixture	
Species and Rates	
(lb. PLS/ac.)	
(Season: February 1 to May 15)	
Green Sprangletop	0.5
Bermudagrass	5.0
Weeping Lovegrass (Ermelo)	0.5
Sand Lovegrass	0.5

Project Number:

Sheet 12C

County: Wood

Control: 0203-05-039

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Lance-Leaf Coreopsis	1.0
(Season: September 1 to February 1)	
Bermuda (unhulled)	12
Crimson Clover	10

Temporary Seeding for Erosion Control	
Warm Season	
(Season: May 15 to August 31)	
Bermudagrass	10
Foxtail Millet	30
Cool Season	
(Season: September 1 to November 30)	
Tall Fescue	4.5
Oats	24
Wheat	34

Place topsoil before temporary seeding unless otherwise directed.

Do not use Bahiagrass.

Use additional temporary seeding if permanent seeding is placed outside the optimum growing season shown for this Item as directed.

Provide a Bonded Fiber Matrix that meets the current requirements of the Approved Products List for Item 169, "Soil Retention Blanket, Class 1, Type D, Spray Type Blanket," for both permanent and temporary seeding. Install according to manufacturer's recommendations based on a slope steeper than 3:1 with sandy soils. This Item will be paid for under Item 164.

ITEM 166. FERTILIZER

Place fertilizer at the rate of 1 lb. per 9 sq. yd. on areas prepared for seeding.

ITEM 168. VEGETATIVE WATERING

Apply water to all newly placed sod or seeded areas the same day of installation. Maintain the sod or seeded areas in a sufficiently watered condition. Do not allow sod or seeded areas to dry out so that water stress is evident.

ITEM 260. LIME TREATMENT (ROAD-MIXED)

Prior to ACP layer placement under the proposed concrete pavement, provide for approval in an acceptable electronic format, the in-place profile of the subgrade on 50 ft. station intervals along the roadway and at the lane lines.

ITEM 275. CEMENT TREATMENT (ROAD-MIXED)

Prior to ACP layer placement under the proposed concrete pavement, provide for approval in an acceptable electronic format, the in-place profile of the subgrade on 50 ft. station intervals along the roadway and at the lane lines.

ITEM 314. EMULSIFIED ASPHALT TREATMENT

Before application, dilute the emulsion with water up to a maximum dilution of 50% at a distribution rate of 0.30 gal. per sq. yd.

ITEM 316. SEAL COAT

Protect all existing bridges, curbs, and other exposed concrete surfaces from asphaltic materials by any acceptable method. Removal of excessive asphaltic materials deposited on these surfaces will be at the Contractor's expense.

Perform rolling as directed with equipment complying with Section 210.2.4.2, "Medium Pneumatic Tire." This work will not be paid for directly, but will be subsidiary to pertinent Items.

Do not apply asphalt later than 1 hour before sunset unless otherwise approved.

The Engineer will approve stockpile sites for materials. Locate stockpile site a minimum of 30 ft. from the roadway unless otherwise authorized. Place stockpiles in a manner that will not interfere with access from abutting property and will not obstruct traffic or sight distance. Avoid stockpiling at intersections. Notify the Engineer at least 5 working days prior to stockpiling material to secure approval of the site. The Engineer may approve stockpiling of materials closer than 30 ft. from the travelway if adequate barricades and devices are furnished and approved. Keep stockpile clear of debris and vegetative growth as approved.

Keep the material pushed into one pile at each stockpile location. Upon completion of each reference project, provide stockpile sites that are clear of debris and dressed in a manner as approved.

Clearly sign stockpile locations with Contractor's name & project name, as approved. This will not be paid for directly, but will be subsidiary to Item 316.

Provide aggregate for shoulders and mainlanes from the same source unless otherwise directed.

Place surface treatments between May 1 and August 31 unless otherwise directed.

The rates shown on the plans for asphalt and aggregate are for estimating purposes only. The rates may be varied as directed.

Furnish aggregate from the same source for each reference.

The Contractor's project superintendent, knowledgeable of TxDOT seal coat operations, and the Department's project manager must drive all roadways for this Contract and review the pavement conditions in order to set preliminary asphalt and aggregate rates. The rates may be adjusted as necessary during construction to allow for any changes in the materials, pavement, or weather conditions at the time of construction.

At the Contractor's request, usable surplus aggregate remaining in temporary stockpiles due to errors on the plans, changes in application rates, or changes in project locations will be paid for by delivered invoice price. Load and haul surplus aggregate to permanent stockpile sites as directed. Push aggregate into neat, clean stockpiles. Loading, hauling and stockpiling material will not be paid for directly. Usable aggregate left on the project more than thirty (30) days after project completion will become property of the Department. Remove all contaminated material from the project before final acceptance.

ITEM 400. EXCAVATION AND BACKFILL FOR STRUCTURES

Backfill the excavation to within 10 in. of the existing finished grade when cutting existing pavement for the installation of drainage structures. Restore the remaining 10 in. of pavement with an approved asphaltic concrete pavement or other approved material; place and compact in 3 approximately equal layers. Usual testing of this material is not required, but the Engineer will approve the material at the time of placement. This work will be paid for at the unit price bid for "Cutting and Restoring Pavement."

ITEM 401. FLOWABLE BACKFILL

Use an accelerator that produces a set time in 4 hours. Provide a rheofill or equivalent air entrainment to ensure flowability. Anchor pipes to ensure no movement or displacement by the flowable fill. Furnish paper type cylinder test molds.

ITEM 403. TEMPORARY SPECIAL SHORING

Use mats during placement and removal of temporary special shoring to avoid damage to the pavement structure.

Do not allow shoring to project more than 4-in above natural ground elevation unless otherwise approved.

ITEM 416. DRILLED SHAFT FOUNDATIONS

Collect all cuttings, spoils, and slurry resulting from drilled shaft operations and deposit material into a storage tank for disposal outside the limits of the project. Dispose of waste material in accordance with Section 416.3.7., "Additional Requirements for Slurry Displacement or Underwater Concrete Placement Methods."

Hand dressing of soil around the concrete foundations for luminaries will be required as directed. Place the level of soil at a 6:1 slope or flatter, where possible, and extend it from the top of the concrete foundation to the established grades. This work will not be paid for directly, but will be subsidiary to this Item.

ITEMS 420 & 427. CONCRETE SUBSTRUCTURES & SURFACE FINISHES FOR CONCRETE

Provide an ordinary surface finish to all exposed concrete surfaces.

Mass concrete for footings is a plans quantity measurement Item.

Do not use membrane curing for structural elements.

ITEM 422. CONCRETE SUPERSTRUCTURES

Once bridge beams/girders are in place, provide the Engineer in an acceptable electronic format, finished slab elevations, bottom of slab elevations with and without deflection, beam/girder field shot profiles, and the required calculated grading for the panels or PMD forms if used. Include elevations on each beam/girder across each span at 1/4, 1/2, and 3/4 points as well as at the beginning and ending of each span. Depending on conditions the Engineer may require each beam/girder edge to be included. Provide this information to the Engineer a minimum of 7 days prior to placing bridge slab concrete. Costs associated with this work will be subsidiary to pertinent Items.

ITEM 423. RETAINING WALLS

Use the approved Mechanically Stabilized Earth (MSE) wall systems listed at:
<http://www.txdot.gov/inside-txdot/division/bridge/approved-systems/mse-wall.html>

Furnish Type DS backfill. Iron ore material is not allowed. Electrochemical testing may be waived on material supplied from a source on the TXDOT QM program.

Before temporary or permanent retaining wall and associated work begins, but after the required working drawings have been approved, schedule and attend a pre-work meeting with the Engineer for discussion of the proposed work and requirements.

Utilize Pattern #1581 "Washington Dry Stack" formliner from Spec Formliners, Inc., 1038 E 4th St, Santa Ana, CA 92701 (714-429-9500) or approved equal for the MSE Retaining Walls.

Stain the MSE Retaining Wall to match Federal Standard 595B Color #33245, and submit written staining procedure to the Engineer for approval. Provide a 3 ft. x 3 ft. sample with stained concrete and approved formliner for approval prior to placement.

ITEM 432. RIPRAP

Locations and quantities may be varied as directed by the Engineer to accommodate field conditions.

ITEM 462. CONCRETE BOX CULVERTS AND DRAINS

Provide cast-in-place concrete box culverts.

Removal of existing wingwalls is subsidiary to Item 462.

If existing curb and wingwalls are left in place during cast-in-place culvert extensions, drill and grout 2 ft. long #6 bars halfway into the existing curb and wingwalls at 18-in. center to center spacing. This work will be subsidiary to Item 462.

ITEM 464. REINFORCED CONCRETE PIPE

Removal of portions of the existing structure, including headwalls, safety end treatments, and pipe, is subsidiary to Item 464.

See traffic control plans for driveway culverts and safety end treatments to be removed and reinstalled at temporary driveways with temporary grading.

ITEM 465. JUNCTION BOXES, MANHOLES, AND INLETS

Paint all iron manhole rings and covers with galvanized paint.

Payment for precast elements and inlet extensions are included in the payment for Inlet (Compl).

ITEM 467. SAFETY END TREATMENT

Reshape embankment side slopes and provide embankment as required. Add mulch sod to achieve a smooth uniform finish around the installation of the safety end treatments and culvert extensions as directed.

Removal of portions of the existing structure, including headwalls, safety end treatments, and pipe, is subsidiary to Item 467.

ITEM 496. REMOVING STRUCTURES

All materials removed under this Item are the property of the Contractor.

Removal for SETs is considered appurtenances when removing driveway pipe by the each.

ITEM 502. BARRICADES, SIGNS, AND TRAFFIC HANDLING

The traffic control plan for this Contract consists of: the installation and maintenance of warning signs and other traffic control devices shown on the plans; specification data, which may be included in the general notes; applicable provisions of the Texas Manual on Uniform Traffic Control Devices (TMUTCD); traffic control plan sheets included on the plans; standard BC sheets; Compliant Work Zone Traffic Control Device List, and Item 502 of the standard specifications.

Use ground-mounted sign mounts with two posts for all temporary work zone signs unless otherwise directed.

Inspect and correct deficiencies each day throughout the duration of the Contract. In accordance with Article 502.4., "Payment," no payment will be made for the month if the Contractor fails to provide or properly maintain signs and devices in compliance with Contract requirements. Temporary warning signs that are visible when conditions do not apply will be considered improper maintenance of signs.

Provide at least one employee on call nights and weekends (or any other time that work is not in progress) for maintenance of signs and traffic control devices. This employee must have an address and telephone number near the project, as approved. Notify the Engineer in writing of the name, address, and telephone number of this employee. The Engineer will furnish this information to local law enforcement officials.

In addition to providing a Contractor's Responsible Person and a phone number for emergency contact, have an employee available to respond on the project for emergencies and for taking corrective measures within 30 minutes.

Sign all roads intersecting the project in accordance with current BC standards.

Refer to the traffic control plan sheets for traffic handling through the work area. Contractor may vary the signing arrangement and spacing as necessary to fit field conditions; however, any proposed changes in the traffic control plan must be approved before implementation.

When the sequence of work is shown on the plans, the Contractor may submit an alternate proposal for approval. Submit in writing all proposed variations and revisions.

High-visibility safety apparel is required for workers in accordance with the General Notes on current BC standards.

Place and maintain signs, channelizing devices, and flaggers to direct and route traffic at any location and for any period of time as may be required or directed.

When operations require a lane closure, provide cones, vertical panels, drums, signs, flaggers, and flashing arrow panels as necessary to route traffic around the closed lane as shown on the plans and as directed. Lane closures will be limited to one specific lane as directed.

Lane closures for various operations during the daytime will be allowed between the hours of 9 A.M. to 30 minutes before sunset. The Lane Closure Assessment Fee is \$2,000 per hour / per lane.

Unless otherwise approved, construction operations will not be allowed on Good Friday, Easter weekend, the Friday before Memorial Day thru Memorial Day, July 4th, the Friday before Labor Day thru Labor Day, the Wednesday before Thanksgiving Day thru Sunday, Christmas Eve, Christmas Day, New Year's Eve, New Year's Day, or on any other high traffic days or holidays as determined by the Engineer.

Erect R4-1 (Do Not Pass) and R4-2 (Pass With Care) signs to mark existing no-passing zones as directed. (These signs will not be required if these zones will not be eliminated during construction.)

Maintain existing roadside signs within this project's limits during this Contract. In order to accommodate the grading or other operations, temporarily relocate these signs in accordance with the TMUTCD as directed. Use ground-mounted sign mounts with two posts for all relocated signs unless otherwise directed. This work will not be paid for directly, but will be subsidiary to Item 502.

Provide truck-mounted attenuators (TMA) as shown on the appropriate traffic control plan sheets. Provide a letter certifying that all TMA used on this project meet NCHRP 350 or AASHTO Manual for Assessing Safety Hardware (MASH) requirements.

Regulate all construction activities and equipment to minimize inconvenience to the traveling public. At points where it is necessary for trucks to stop, load, or unload, provide warning signs and flaggers to protect the traveling public.

The pavement must be entirely open to traffic each night. Remove or clearly barricade all material stockpiles, equipment left overnight, or any obstruction within 30 ft. of a travelway as approved.

The Contractor Force Account "Safety Contingency" is intended to be used for work zone enhancements that could not be foreseen in the project planning and design stage for the purpose of improving the effectiveness of the Traffic Control Plan. These enhancements will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

Provide flaggers at county roads, commercial driveways, and other intersecting roadways deemed necessary by the Engineer to maintain control of the work zone during one-lane two-way operations. Provide communication radios to each flagger in the work zone and the pilot vehicle operator.

For nighttime work (9 P.M. – 6 A.M.), submit written notification to the Engineer for approval of the type of lighting to be used during construction.

Provide Balloon Lighting for nighttime construction work. Follow manufacturer's operational guidelines. Work lights must be portable and include LED lighting to diffuse glare and reduce shadows and provide 360 degrees of light. Balloon lighting is subsidiary to Item 502.

Submit a drawing showing the proposed lighting, traffic control, and protection devices during night work. Do not direct the lighting into the eyes of motorists. Provide lighting that is adequate to satisfactorily perform the required work.

When a culvert extension, inlet construction, or safety end treatment, etc. is within 30 ft. of a travel lane, delineate these areas as shown on current BC standards. In addition, provide a 4-ft. high plastic construction fence at or around any structure or obstruction that would be a hazard to pedestrians unless otherwise approved. Erect fence using a minimum of 4-T-posts, one at each corner of the structure or obstruction.

Where there is excavation adjacent to the pavement edge, provide adequate warning signs, vertical panels, drums, and lights at the pavement edge as directed. Treat pavement drop-offs created by ACP operations in a similar manner in accordance with the details shown on the plans.

Furnish and install work zone/reduce speed ahead and work zone/speed limit signs in accordance with current BC standards at locations as established by the Engineer. Signs must be ground-mounted.

Provide work zone speed limit signs that meet sizing requirements in accordance with Table 2B-1 of the TMUTCD.

When excavation is required next to a travel lane carrying traffic and widening is not completed by the end of the day's operation, place sufficient backfill against the edge of the travel lane in order to provide a 3:1 slope, unless otherwise permitted on the plans. Provide backfill containing a durable crushed stone type of flexible base or other materials as approved. When work resumes on this excavated area, carefully remove and dispose of the backfill material. Materials and labor for this work will not be paid for directly, but will be subsidiary to the various bid items of the Contract.

Provide a pilot vehicle.

Prior to beginning work, the Contractor and Engineer must agree on the allowable length of lane closure.

Place Type 3 barricades and road closed signs as shown on current BC standards across the closed roadway or the new location at each road, street, closed bridge, and along the closed roadway or new location at 3/4-mi. intervals.

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The use of Law Enforcement Officers (LEOs) will be required for this project for nighttime work, and other operations as directed. Before the preconstruction meeting, coordinate with local agencies to be prepared for staffing needs.

Provide uniformed LEOs with marked vehicles during work zone activities. The officer in marked vehicle will be located as approved to monitor or direct traffic during the closure. The Engineer will approve the method used to direct traffic at signalized intersections. Additional officers and vehicles may be provided when directed. Complete the daily tracking form provided by the Department and submit invoices that agree with the tracking form for payment at the end of each month approved services were provided. Minimums, scheduling fees, etc. will not be paid; TxDOT will consider paying cancellation fees on a case-by-case basis.

All law enforcement personnel used in work zone traffic control must be trained for performing duties in work zones and are required to take "Safe and Effective Use of Law Enforcement Personnel in Work Zones" (Course #133119) which can be found online at the following site: www.nhi.fhwa.dot.gov.

All work required by these general notes, except as provided for by Item 502, will not be paid for directly, but will be subsidiary to Item 502 unless otherwise shown on the plans.

ITEM 504. FIELD OFFICE AND LABORATORY

Provide a facility at the asphalt concrete pavement plant for use by the Engineer as a laboratory. This is an existing requirement of Item 6, Article 5, "Plant Inspection and Testing," of the Standard Specifications. Provide a facility meeting the requirements of Item 504. At a minimum meet the requirements of 504.2.2.4, "Ty D Structure (Asphalt Mix Control Laboratory)" and 504.2.2.4.1, "Asphalt Content by Ignition Method." In addition, provide the following: At least one exterior door opening with a 48-in. minimum width. If steps are required to gain access to the facility's 48-in. door, provide a landing dock with minimum dimensions of 60 in. wide by 60 in. deep. The strong floor and landing of the facility should support the weight of all equipment and personnel providing a stable, essentially zero deflection during testing operations, acceptable to the Engineer. Provide a printer/fax/scan copier capable of printing 8.5" x 11" and 11" x 17" paper sizes and internet connectivity with a minimum of 100 mbps. This facility will be required of all projects with plant produced asphalt concrete pavement.

No direct payment will be made for Engineer field labs. All construction, maintenance, utilities, custodial services, security, and permits necessary to establish and maintain readiness of this facility is the responsibility of the Contractor. This building/facility is required by the standard specifications and is considered a standard part of any asphalt concrete pavement plant producing materials for Department projects.

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Furnish a Superpave Gyratory Compactor calibrated in accordance with Tex-241-F for molding production samples. The Superpave Gyratory Compactor will not be paid for directly, but will be subsidiary to the asphalt concrete pavement Items of work.

ITEM 506. TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS

Remove dirt, silt, rocks, debris, and other foreign matter that accumulates in all structures due to project erosion and Contractor's operations. Keep stream channels open at all times. This work will not be paid for directly, but will be subsidiary to this Item.

The total disturbed area for this project is 33 acres. The disturbed area in this project, all project locations in the Contract, and Contractor project specific locations (PSLs) within 1 mile of the project limits for the Contract, will further establish the authorization requirements for storm water discharges. The Department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. Obtain any required authorization from the TCEQ for any Contractor PSLs for the construction support activities on or off right of way. When the total area disturbed for all projects in the Contract and PSLs within 1 mile of the project limits exceeds 5 acres, before disturbance, provide a copy of the Contractor NOI for PSLs on the right of way to the Engineer (to the appropriate MS4 operator when on an off-State system route).

The Engineer will provide copies of documents to meet TxDOT's posting requirements. Laminate, post, and maintain these documents at the project limits and at major roadways intersecting the project as directed. Post required Contractor documents in the same manner and location. This work will be subsidiary to Item 506.

ITEM 512. PORTABLE CONCRETE TRAFFIC BARRIER

The Department will furnish 320 ft. of portable concrete traffic barrier. The stockpile site is located at the South Tyler Area Office, 15986 SH 155 S, Tyler, TX 75703. Notify the Area Engineer a minimum of 4 days prior to barrier collection.

Remove, transport, and stockpile barrier no longer required for the Contract at the South Tyler Area Office, 15986 SH 155 S, Tyler, TX 75703. Notify the Area Engineer a minimum of 4 days prior to barrier delivery.

Supply all dowel bars and mounting hardware necessary to connect the portable concrete traffic barrier. Upon completion of this Contract, all mounting hardware will become the property of the Department. When the PCTB is no longer necessary, remove and deliver the mounting hardware to a location as specified.

ITEM 514. PERMANENT CONCRETE TRAFFIC BARRIER

Provide Class C concrete for traffic barriers and footings.

All exposed surfaces of concrete traffic barriers must receive a blast cleaning followed by an epoxy paint coating or a rub finish as specified in Item 427, "Surface Finishes for Concrete."

ITEM 529. CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER

Provide steel reinforcement for all curb and curb and gutter unless otherwise directed.

ITEM 540. METAL BEAM GUARD FENCE

All work involved in placement of steel posts in soil cement riprap must be included in the price bid for Item 540.

Place seeding before installing guard fences.

Use steel posts on all metal beam guard.

ITEMS 540 & 542. METAL BEAM GUARD FENCE & REMOVING METAL BEAM GUARD FENCE

Prior to removal of existing MBGF and associated appurtenances, submit to the Engineer for approval a work plan, including a detailed timeline, outlining removal and reinstallation of safety features. It is the intent that the Contractor has the necessary materials and labor force available to reinstall the safety features prior to beginning the removal process.

Where existing MBGF is being removed and not replaced with new MBGF due to proposed roadside safety improvements, do not remove the existing MBGF prior to completion of the planned roadside safety improvements at that location unless otherwise approved in writing. Regardless of when the Contractor installs proposed MBGF, set the rail height to account for any subsequent surfacing work in order to be in accordance with standard MBGF upon completion of the Contract.

When replacing guard rail, ensure that all segments of guard rail removed are replaced the same work day before opening to traffic.

ITEM 542. REMOVING METAL BEAM GUARD FENCE

All metal beam guard fence is non-salvageable and will become the property of the Contractor.

ITEM 545. CRASH CUSHION ATTENUATORS

Provide crash cushion attenuators meeting TL-3 requirements.

ITEM 556. PIPE UNDERDRAINS

Change location and quantities to fit field conditions as directed.

Cover the pipe with a factory installed filter screen as approved.

ITEM 560. MAILBOX ASSEMBLIES

Use round posts, set in concrete, with 12 in. reflector tape for all mailbox installations.

Provide new metal mailboxes and place the existing mailboxes at the front door of the homeowner. Ensure the new mailbox is not smaller than the existing. The following mailbox quantities are for Contractor's information only: 0 small mailboxes, 11 medium mailboxes, and 0 large mailboxes.

Place 2-in. address location numbers on each mailbox in accordance with Placement of Emergency Location Number notes on MB-21(1). The color of the numbers must contrast the mailbox color as directed.

ITEM 585. RIDE QUALITY FOR PAVEMENT SURFACES

Use Surface Test Type B pay adjustment schedule 1 to evaluate ride quality of the travel lanes in accordance with Item 585, "Ride Quality for Pavement Surfaces."

ITEM 610. ROADWAY ILLUMINATION ASSEMBLIES

Junction boxes, connectors, flexible conduit and fused disconnects for underpass luminaires will not be paid for directly, but will be subsidiary to the various bid items. Existing four luminaires must remain at FM 779 intersection with uninterrupted service until new installation is complete. Maintenance and upkeep will be incidental to various bid items.

It is encouraged for the Contractor to install the illumination along the roadway as soon as possible for construction safety purposes.

For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holder as shown on the Texas Department of Transportation (TxDOT) Material Producer List. Category is "Roadway Illumination and Electrical Supplies." Fuse holder is shown on list under Items 610 & 620. Provide 10 amp time delay fuses.

The Roadway Illumination Pole (RIP-19) standard details were developed for installations in locations where the 3-second gust basic maximum wind speed is 110 mph, and where the elevation of the base of the pole is less than (i.e. not more than) 25 ft. above the elevation of surrounding terrain, in accordance with the current edition of the "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals." For poles to be installed in regions where the maximum basic wind speed exceeds 110 mph or to be mounted more than 25 ft. above the surrounding terrain, the Contractor must provide poles meeting the following requirements:

- A. **Submittals.** Following the electronic shop drawing submittal process (see ftp://ftp.dot.state.tx.us/pub/txdot-info/library/pubs/bus/bridge/e_submit_guide.pdf), the Contractor must submit to the Engineer, for approval, fabrication drawings and calculations for the poles. The drawings and calculations must be sealed by a Texas registered or licensed professional engineer (P.E.).
- B. **Luminaire Structural Support Requirements.** Lighting poles, arms, and anchor bolt assemblies must have a 25 year design life to safely resist dead loads, ice loads and the required basic wind speeds at the location of installation in accordance with the current edition of the AASHTO Design Specifications. For transformer base poles, the fabricator must include transformer base and connecting hardware in calculations and shop drawing submittals. All transformer bases should have been structurally tested to resist the theoretical plastic moment capacity of the pole. Certification of the plastic moment load test and FHWA breakaway requirement test of the model of base being furnished should be submitted with the shop drawings. Shop drawings must show breakaway base model number, and manufacturer's name and logo. Manufacturer's shop drawings must include the ASTM designations for all materials to be used.

Fabricate steel roadway illumination poles in accordance with TxDOT standards RIP-2019 (Roadway Illumination Poles -2019). Poles fabricated according to RIP-2019 require no shop drawings.

Alternate designs to RIP-2019 or the use of aluminum to fabricate poles will require the submission of shop drawings electronically.

For instructions on submitting shop drawings electronically go to ftp://ftp.dot.state.tx.us/pub/txdot-info/library/pubs/bus/bridge/e_submit_guide.pdf

ITEM 618. CONDUIT

Conduit placed on the underside of the bridge slab overhang must be anchored with conduit straps at 5 ft. maximum intervals as shown on standard sheets ED(1) and (2)-14. Conduit hangers will not be allowed in this location.

Furnish couplings and connections that are made wrench tight. All conduit must be brought into a ground or junction box and elbowed unless otherwise shown on the plans.

Place conduit in an area not exceeding 2 ft. in any direction from a straight line between terminal points. The minimum depth of the conduit should be 2 ft. except when crossing a roadway where the depth should not be more than 3 ft. nor less than 1 ft. below the bottom of the base material when placed by the jacking or boring method.

Where conduit is to be placed under existing riprap, cut the existing riprap to neat lines as directed and replace to match original condition after conduit placement.

The Contractor may, at his option, substitute high-density polyethylene (HDPE) conduit meeting the specifications of Item 622 for all bores requiring PVC schedule 40 conduit and, when approved by the Engineer, may substitute HDPE for schedule 80 bored conduit. HDPE must be the same size as the PVC conduit shown on the plans. HDPE must be terminated with UL listed fittings. HDPE may be threaded and used with threaded PVC connectors or couplings. HDPE should be extended through the bore in one continuous piece and should be coupled to RMC elbows or to PVC conduit at the bore pits prior to entering ground boxes (if ground boxes are required by the plans). HDPE should not contain conductors during installation in this manner. No additional compensation will be paid to the Contractor when HDPE is substituted for this purpose.

Use materials from prequalified material producers list as shown on the Material Producer List found on the TxDOT web site. Category is "Roadway Illumination and Electrical Supplies."

ITEMS 618 & 624. CONDUIT & GROUND BOX

The location of the controller, conductors, conduits, junction boxes and ground boxes are diagrammatic only and may be shifted by the Engineer to accommodate field conditions.

ITEM 620. ELECTRICAL CONDUCTORS

For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holder as shown on the Material Producer List found on the TxDOT web site. Category is "Roadway Illumination and Electrical Supplies."

Fuse holder is shown on list under Items 610 & 620.

Provide 10 amp time delay fuses.

ITEM 624. GROUND BOXES

All ground boxes will be precast polymer concrete of the size and type specified on the plans.

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ITEM 636. SIGNS

Install signs in accordance with the Department of Transportation's "Sign Crew Field Book," latest edition, or as directed.

ITEM 644. SMALL ROADSIDE SIGN ASSEMBLIES

Sign types for which details are not shown on the plans must conform to "Standard Highway Sign Designs for Texas," latest edition.

Before construction begins, locate all Texas Reference Marker (TRM) signs and Adopt-a-Highway signs using survey control methods for accuracy. Provide the survey data to the Engineer. If either type of sign is relocated during construction activities, survey the sign location and notify the Engineer before placement of the permanent sign.

Stake all sign locations for approval prior to placement.

ITEM 658. DELINEATOR AND OBJECT MARKER ASSEMBLIES

Accept ownership of unsalvageable delineator and object marker assemblies and remove from the right of way.

ITEM 662. WORK ZONE PAVEMENT MARKINGS

For this project, Contractor may use paint and beads for work zone pavement markings (non-removable).

Dispose of all empty paint containers and unused paint in accordance with federal, state, and local requirements.

Do not use foil backed pavement markings as removable work zone pavement markings. Removable work zone pavement markings must be pliant polymer detour grade (removable) material or other markings that can be obliterated or removed to the satisfaction of the Engineer.

Use tape for short-term removable pavement markings on hot mix & PFC surfacing applications.

Tabs may be used before surface treatment application.

ITEM 666. RETROREFLECTORIZED PAVEMENT MARKINGS

Use the spray method for application of the thermoplastic compound for lane lines, barrier lines, edge lines and channelizing lines.

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In high traffic volume areas, do not begin work before 9 A.M. and do not continue work after 4 P.M. unless otherwise approved. In other areas, the Engineer will approve and direct the time of work.

Extrude hot to the pavement surface thermoplastic compound for arrows, stop lines, yield triangles, transverse lines, crosswalk lines, words and symbols.

For lengths greater than 300-ft, provide guide markings that will not leave a permanent mark on the roadway. Have the guide marking material and equipment used for placement approved prior to use. Provide adequate notification for approval of the guide markings prior to placement of the permanent pavement markings.

Provide a crew experienced in the work of installing pilot guideline markings and in the necessary traffic control. Supply all the equipment, personnel, traffic control, and materials necessary for the placement of pilot guideline markings as directed. All work will be in conformance with Part 6 of the TMUTCD.

The Engineer will establish beginning and ending points of no passing zones.

Correct deficiencies in the alignment of pavement markings at Contractor's expense, as directed. Use a strip seal with aggregate and asphalt types and rates as directed to eliminate the deficient pavement markings.

ITEM 672. RAISED PAVEMENT MARKERS

Provide dispensing equipment such that the bituminous material can be directly applied from the melting pot to the pavement surface without secondary handling. Dispensing material from the melting pot into a separate container and then to the pavement surface will not be permitted. Intermittent agitation of the bituminous material will be by a method approved by the Engineer to ensure even heat distribution and must be such that the adhesive is agitated at approved and consistent intervals.

ITEM 677. ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS

Unless otherwise directed, utilize Surface Treatment Method for removal on asphaltic surfaces. The Engineer will approve materials and rates prior to use.

Furnish a high-pressure water blasting system for removing paint, thermoplastic, epoxy and preformed tape material from the following surfaces without causing any grooves or trenching of the surface: asphalt, concrete, permeable friction course, grooved asphalt and grooved concrete.

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Use a high-pressure water blasting system that consists of a vacuum recovery system that must provide for a nearly dry surface eliminating the possibility of uncontained run-off blasting water or debris, or the need for any secondary clean-up vehicles or operations.

All components required for the complete operation of the water blasting system (ultra-high-pressure pump, vacuum system, clean water supply, vacuum recovery storage, primary truck-mounted and optional secondary tractor-mounted blasting components) must be mounted and transported on a single, fully self-contained and supporting single truck chassis, thereby eliminating the need for any additional water, vacuum or other transport vehicles.

ITEM 3077. SUPERPAVE MIXTURES

When using crushed gravel as a coarse aggregate for ACP, use 1% lime as an antistripping agent.

Provide coarse aggregate for the final surface course from the same source or blended sources unless otherwise directed.

Give the State inspector at the spreading and finishing machine one weight ticket for each load of material. When directed, weigh asphaltic concrete loads on public scales to ensure the proper weight of material.

For materials paid for by the ton, provide a summary spreadsheet in accordance with Article 520.2, "Equipment."

Provide Class A coarse aggregate for the surface as listed in the Department's *Bituminous Rated Source Quality Catalog* (BRSQC).

Use an electrical impedance (non-nuclear) measurement gauge to determine mat segregation and joint density for Part V and Part VIII of test procedure Tex-207-F. Do not use nuclear density gauges or thin lift gauges for segregation or joint density determinations. Data reporting for mat segregation and joint density must be performed on Department templates.

All RAP used on this project must be fractionated. If an existing mix design is submitted for use as Warm Mix Asphalt (WMA), then a new trial batch with passing Hamburg Wheel test results is required.

Apply a tack coat with a rate of 0.10 gal/sy of residual asphalt between each layer of ACP pavement unless otherwise directed.

On Table 1, under 3077.2.1.3, the Sand equivalent, % Min is voided and not replaced. The minimum percent for the sand equivalent must be 45 for the combined aggregate.

County: Wood

Control: 0203-05-039

Highway: US 69

Tack coat is not required if paving over a fresh seal coat.

ITEM 6001. PORTABLE CHANGEABLE MESSAGE SIGN

Provide a non-erodible, stable surface to place the Portable Changeable Message Sign (PCMS) units adjacent to the roadway as directed.

Four PCMS will be needed at a time during girder placement and other times as directed by the Engineer. Payment for this surface is incidental to Item 6001.

TCP(2-1b) and WZ(RS)-22 standards to be used with PCMS for all operations unless otherwise directed.

ITEM 6185. TRUCK MOUNTED ATTENUATOR (TMA)

Shadow vehicles with truck mounted attenuator (TMA) are required on the traffic control plan and TCP standards for this project. The Contractor will be responsible for determining if one or more of these traffic control operations will be ongoing at the same time to determine the total number of TMAs needed for the project. Additional truck mounted attenuators (TMAs) may be required as deemed necessary by the Engineer.

The TMA/TA used for installation/removal of traffic control for a work area will be subsidiary to the TMA/TA used to perform the work.



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0203-05-039

DISTRICT Tyler
HIGHWAY US 69

COUNTY Wood

CONTROL SECTION JOB				0203-05-039		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00059530			
COUNTY				Wood			
HIGHWAY				US 69			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	100-6002	PREPARING ROW	STA	118.000		118.000	
	104-6009	REMOVING CONC (RIPRAP)	SY	258.000		258.000	
	105-6011	REMOVING STAB BASE AND ASPH PAV (2"-6")	SY	607.000		607.000	
	105-6062	REMOVING STAB BASE AND ASPH PAV(4"-16")	SY	9,932.000		9,932.000	
	110-6001	EXCAVATION (ROADWAY)	CY	55,198.000		55,198.000	
	132-6006	EMBANKMENT (FINAL)(DENS CONT)(TY C)	CY	170,282.000		170,282.000	
	160-6003	FURNISHING AND PLACING TOPSOIL (4")	SY	156,253.000		156,253.000	
	164-6054	BOND FBR MTRX SEED (PERM)(RURAL)(SAND)	SY	180,274.000		180,274.000	
	164-6055	BONDED FBR MTRX SEED (TEMP)(WARM)	SY	90,137.000		90,137.000	
	164-6056	BONDED FBR MTRX SEED (TEMP)(COOL)	SY	90,137.000		90,137.000	
	168-6001	VEGETATIVE WATERING	MG	26.000		26.000	
	260-6004	LIME (QUICKLIME (DRY))	TON	1,379.000		1,379.000	
	260-6027	LIME TRT (EXST MATL)(8")	SY	76,615.000		76,615.000	
	275-6001	CEMENT	TON	1,379.000		1,379.000	
	275-6010	CEMENT TREAT (SUBGRADE) (8")	SY	76,615.000		76,615.000	
	314-6010	EMULS ASPH (EROSN CONT)(SS-1)	GAL	2,129.000		2,129.000	
	316-6406	ASPH (AC-20XP, AC-10-2TR, OR AC-20-5TR)	GAL	42,304.000		42,304.000	
	316-6408	AGGR(TY-PD GR-4 OR TY-PL GR-4)	CY	1,068.000		1,068.000	
	351-6001	FLEXIBLE PAVEMENT STRUCTURE REPAIR(5")	SY	500.000		500.000	
	354-6021	PLANE ASPH CONC PAV(0" TO 2")	SY	2,257.000		2,257.000	
	354-6023	PLANE ASPH CONC PAV(0" TO 4")	SY	5,388.000		5,388.000	
	400-6005	CEM STABIL BKFL	CY	165.000		165.000	
	400-6008	CUT & RESTORE ASPH PAVING	SY	720.000		720.000	
	401-6001	FLOWABLE BACKFILL	CY	1,237.000		1,237.000	
	402-6001	TRENCH EXCAVATION PROTECTION	LF	343.000		343.000	
	403-6001	TEMPORARY SPL SHORING	SF	1,737.000		1,737.000	
	416-6004	DRILL SHAFT (36 IN)	LF	1,536.000		1,536.000	
	416-6018	DRILL SHAFT (SIGN MTS) (24 IN)	LF	64.000		64.000	
	416-6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	144.000		144.000	
	420-6013	CL C CONC (ABUT)	CY	81.000		81.000	
	420-6029	CL C CONC (CAP)	CY	146.600		146.600	
	420-6037	CL C CONC (COLUMN)	CY	131.900		131.900	
	420-6066	CL C CONC (RAIL FOUNDATION)	CY	466.000		466.000	
	422-6001	REINF CONC SLAB	SF	41,600.000		41,600.000	
	422-6015	APPROACH SLAB	CY	190.600		190.600	
	423-6001	RETAINING WALL (MSE)	SF	57,976.000		57,976.000	
	425-6039	PRESTR CONC GIRDER (TX54)	LF	4,379.000		4,379.000	



DISTRICT	COUNTY	CCSJ	SHEET
Tyler	Wood	0203-05-039	13



CONTROLLING PROJECT ID 0203-05-039

DISTRICT Tyler
HIGHWAY US 69

COUNTY Wood

Estimate & Quantity Sheet

CONTROL SECTION JOB				0203-05-039		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00059530			
COUNTY				Wood			
HIGHWAY				US 69			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	432-6001	RIPRAP (CONC)(4 IN)	CY	1,449.000		1,449.000	
	432-6002	RIPRAP (CONC)(5 IN)	CY	47.000		47.000	
	432-6024	RIPRAP (STONE COMMON)(DRY)(12 IN)	CY	60.000		60.000	
	432-6045	RIPRAP (MOW STRIP)(4 IN)	CY	29.000		29.000	
	450-6014	RAIL (TY T551)	LF	10,506.000		10,506.000	
	450-6027	RAIL (TY T80SS)	LF	1,566.000		1,566.000	
	454-6018	SEALED EXPANSION JOINT (4 IN) (SEJ - M)	LF	246.000		246.000	
	462-6057	CONC BOX CULV (6 FT X 6 FT)(EXTEND)	LF	786.000		786.000	
	464-6003	RC PIPE (CL III)(18 IN)	LF	1,714.000		1,714.000	
	464-6005	RC PIPE (CL III)(24 IN)	LF	287.000		287.000	
	464-6008	RC PIPE (CL III)(36 IN)	LF	153.000		153.000	
	464-6025	RC PIPE (CL V)(18 IN)	LF	569.000		569.000	
	464-6029	RC PIPE (CL V)(48 IN)	LF	151.000		151.000	
	465-6005	JCTBOX(COMPL)(PJB)(3FTX3FT)	EA	8.000		8.000	
	465-6011	JCTBOX(COMPL)(PJB)(6FTX6FT)	EA	1.000		1.000	
	465-6070	INLET (COMPL)(PSL)(RC)(3FTX3FT)	EA	1.000		1.000	
	465-6126	INLET (COMPL)(PSL)(FG)(3FTX3FT-3FTX3FT)	EA	2.000		2.000	
	465-6128	INLET (COMPL)(PSL)(FG)(4FTX4FT-4FTX4FT)	EA	7.000		7.000	
	465-6146	INLET(COMPL)(PSL)(SFG)(3FTX3FT-3FTX3FT)	EA	1.000		1.000	
	465-6148	INLET(COMPL)(PSL)(SFG)(3FTX5FT-3FTX5FT)	EA	5.000		5.000	
	465-6179	INLET (COMPL)(TY MSE2)	EA	8.000		8.000	
	465-6256	INLET(COMPL)(CURB)(SPL)	EA	4.000		4.000	
	466-6011	HEADWALL (CH - FW - 0) (DIA= 48 IN)	EA	1.000		1.000	
	466-6169	WINGWALL (FW - S) (HW=8 FT)	EA	1.000		1.000	
	466-6170	WINGWALL (FW - S) (HW=9 FT)	EA	1.000		1.000	
	467-6358	SET (TY II) (18 IN) (RCP) (4: 1) (C)	EA	8.000		8.000	
	467-6362	SET (TY II) (18 IN) (RCP) (6: 1) (C)	EA	5.000		5.000	
	467-6363	SET (TY II) (18 IN) (RCP) (6: 1) (P)	EA	78.000		78.000	
	467-6390	SET (TY II) (24 IN) (RCP) (4: 1) (C)	EA	1.000		1.000	
	467-6394	SET (TY II) (24 IN) (RCP) (6: 1) (C)	EA	2.000		2.000	
	467-6450	SET (TY II) (36 IN) (RCP) (4: 1) (C)	EA	1.000		1.000	
	471-6007	GRATE AND FRAME (BRIDGE DRAIN)	EA	2.000		2.000	
	481-6013	PIPE (PVC) (SCH 40) (6 IN)	LF	126.000		126.000	
	496-6016	REMOV STR (PIPE)	EA	36.000		36.000	
	500-6001	MOBILIZATION	LS	1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	28.000		28.000	
	506-6002	ROCK FILTER DAMS (INSTALL) (TY 2)	LF	3,396.000		3,396.000	



DISTRICT	COUNTY	CCSJ	SHEET
Tyler	Wood	0203-05-039	13 A



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0203-05-039

DISTRICT Tyler
HIGHWAY US 69

COUNTY Wood

CONTROL SECTION JOB				0203-05-039		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00059530			
COUNTY				Wood			
HIGHWAY				US 69			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	506-6003	ROCK FILTER DAMS (INSTALL) (TY 3)	LF	120.000		120.000	
	506-6011	ROCK FILTER DAMS (REMOVE)	LF	3,516.000		3,516.000	
	506-6020	CONSTRUCTION EXITS (INSTALL) (TY 1)	SY	312.000		312.000	
	506-6024	CONSTRUCTION EXITS (REMOVE)	SY	312.000		312.000	
	506-6029	EARTHWORK (EROSN & SEDMT CONT, IN VEH)	CY	3,000.000		3,000.000	
	506-6030	BACKHOE WORK (EROSION & SEDMT CONT)	HR	150.000		150.000	
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	11,925.000		11,925.000	
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	11,925.000		11,925.000	
	506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	1,343.000		1,343.000	
	506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	1,343.000		1,343.000	
	506-6046	TRACKHOE WORK (EROSION & SEDMT CONT)	HR	50.000		50.000	
	508-6003	CONSTRUCTING DETOURS (TY 1)	SY	5,099.000		5,099.000	
	508-6004	CONSTRUCTING DETOURS (TY 2)	SY	4,474.000		4,474.000	
	512-6017	PORT CTB (DES SOURCE)(F-SHAPE)(TY 1)	LF	240.000		240.000	
	512-6021	PORT CTB (DES SOURCE)(LOW PROF)(TY 1)	LF	40.000		40.000	
	512-6022	PORT CTB (DES SOURCE)(LOW PROF)(TY 2)	LF	40.000		40.000	
	512-6029	PORT CTB (MOVE)(F-SHAPE)(TY 1)	LF	120.000		120.000	
	512-6041	PORT CTB (STKPL)(F-SHAPE)(TY 1)	LF	240.000		240.000	
	512-6045	PORT CTB (STKPL)(LOW PROF)(TY 1)	LF	40.000		40.000	
	512-6058	PORT CTB (REMOVE)(LOW PROF)(TY 2)	LF	40.000		40.000	
	514-6038	PERM CTB (SSCB)(TY 1)(MOD)	LF	2,450.000		2,450.000	
	529-6008	CONC CURB & GUTTER (TY II)	LF	6,126.000		6,126.000	
	530-6005	DRIVEWAYS (ACP)	SY	3,906.000		3,906.000	
	530-6017	DRIVEWAYS (CONC) (HES)	SY	687.000		687.000	
	540-6002	MTL W-BEAM GD FEN (STEEL POST)	LF	413.000		413.000	
	540-6006	MTL BEAM GD FEN TRANS (THRIE-BEAM)	EA	3.000		3.000	
	540-6016	DOWNSTREAM ANCHOR TERMINAL SECTION	EA	1.000		1.000	
	542-6001	REMOVE METAL BEAM GUARD FENCE	LF	830.000		830.000	
	544-6001	GUARDRAIL END TREATMENT (INSTALL)	EA	4.000		4.000	
	544-6003	GUARDRAIL END TREATMENT (REMOVE)	EA	4.000		4.000	
	545-6003	CRASH CUSH ATTEN (MOVE & RESET)	EA	2.000		2.000	
	545-6005	CRASH CUSH ATTEN (REMOVE)	EA	4.000		4.000	
	545-6013	CRASH CUSH ATTEN (INSTL)(R)(N)(TL3)	EA	5.000		5.000	
	560-6004	MAILBOX INSTALL-S (TWG-POST) TY 2	EA	10.000		10.000	
	560-6005	MAILBOX INSTALL-D (TWG-POST) TY 2	EA	1.000		1.000	
	610-6104	IN RD IL (U/P) (TY 1) (150W EQ) LED	EA	6.000		6.000	
	610-6106	IN RD IL (U/P) (TY 2) (150W EQ) LED	EA	2.000		2.000	



DISTRICT	COUNTY	CCSJ	SHEET
Tyler	Wood	0203-05-039	13 B



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0203-05-039

DISTRICT Tyler
HIGHWAY US 69

COUNTY Wood

CONTROL SECTION JOB				0203-05-039		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00059530			
COUNTY				Wood			
HIGHWAY				US 69			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	610-6214	IN RD IL (TY SA) 40T-8 (250W EQ) LED	EA	18.000		18.000	
	618-6046	CONDT (PVC) (SCH 80) (2")	LF	3,269.000		3,269.000	
	618-6047	CONDT (PVC) (SCH 80) (2") (BORE)	LF	842.000		842.000	
	618-6062	CONDT (RM) (3/4")	LF	320.000		320.000	
	620-6003	ELEC CONDR (NO.12) BARE	LF	360.000		360.000	
	620-6004	ELEC CONDR (NO.12) INSULATED	LF	720.000		720.000	
	620-6007	ELEC CONDR (NO.8) BARE	LF	4,278.000		4,278.000	
	620-6008	ELEC CONDR (NO.8) INSULATED	LF	8,966.000		8,966.000	
	624-6002	GROUND BOX TY A (122311)W/APRON	EA	12.000		12.000	
	628-6009	ELC SRV TY A 120/240 060(NS)SS(E)SP(O)	EA	3.000		3.000	
	636-6002	ALUMINUM SIGNS (TY G)	SF	575.000		575.000	
	644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	16.000		16.000	
	644-6004	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	24.000		24.000	
	644-6007	IN SM RD SN SUP&AM TY10BWG(1)SA(U)	EA	2.000		2.000	
	644-6030	IN SM RD SN SUP&AM TYS80(1)SA(T)	EA	10.000		10.000	
	644-6033	IN SM RD SN SUP&AM TYS80(1)SA(U)	EA	2.000		2.000	
	644-6064	IN BRIDGE MNT CLEARANCE SGN ASSM(TY N)	EA	4.000		4.000	
	644-6076	REMOVE SM RD SN SUP&AM	EA	36.000		36.000	
	647-6001	INSTALL LRSS (STRUCT STEEL)	LB	2,804.000		2,804.000	
	658-6013	INSTL DEL ASSM (D-SW)SZ (BRF)CTB	EA	50.000		50.000	
	658-6026	INSTL DEL ASSM (D-SY)SZ (BRF)CTB	EA	17.000		17.000	
	658-6027	INSTL DEL ASSM (D-SY)SZ (BRF)CTB (BI)	EA	25.000		25.000	
	658-6080	INSTL DEL ASSM (D-SW)SZ 1(WFLX)GND	EA	29.000		29.000	
	658-6092	INSTL DEL ASSM (D-DW)SZ 1(WFLX)GND	EA	9.000		9.000	
	658-6099	INSTL OM ASSM (OM-2Z)(WFLX)GND	EA	7.000		7.000	
	662-6008	WK ZN PAV MRK NON-REMOV (W)6"(SLD)	LF	59,508.000		59,508.000	
	662-6012	WK ZN PAV MRK NON-REMOV (W)8"(SLD)	LF	2,302.000		2,302.000	
	662-6016	WK ZN PAV MRK NON-REMOV (W)24"(SLD)	LF	399.000		399.000	
	662-6030	WK ZN PAV MRK NON-REMOV(W)18"(YLD TRI)	EA	11.000		11.000	
	662-6037	WK ZN PAV MRK NON-REMOV (Y)6"(SLD)	LF	62,737.000		62,737.000	
	662-6048	WK ZN PAV MRK REMOV (REFL) TY I-C	EA	58.000		58.000	
	662-6050	WK ZN PAV MRK REMOV (REFL) TY II-A-A	EA	825.000		825.000	
	662-6067	WK ZN PAV MRK REMOV (W)6"(SLD)	LF	5,409.000		5,409.000	
	662-6098	WK ZN PAV MRK REMOV (Y)6"(SLD)	LF	5,831.000		5,831.000	
	666-6018	REFL PAV MRK TY I (W)6"(DOT)(100MIL)	LF	778.000		778.000	
	666-6030	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF	152.000		152.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	5,467.000		5,467.000	



DISTRICT	COUNTY	CCSJ	SHEET
Tyler	Wood	0203-05-039	13 C



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0203-05-039

DISTRICT Tyler
HIGHWAY US 69



COUNTY Wood

CONTROL SECTION JOB				0203-05-039		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00059530			
COUNTY				Wood			
HIGHWAY				US 69			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	666-6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF	492.000		492.000	
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	137.000		137.000	
	666-6102	REF PAV MRK TY I(W)36"(YLD TRI)(100MIL)	EA	46.000		46.000	
	666-6225	PAVEMENT SEALER 6"	LF	2,616.000		2,616.000	
	666-6306	RE PM W/RET REQ TY I (W)6"(BRK)(100MIL)	LF	4,052.000		4,052.000	
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF	30,804.000		30,804.000	
	666-6318	RE PM W/RET REQ TY I (Y)6"(BRK)(100MIL)	LF	48.000		48.000	
	666-6321	RE PM W/RET REQ TY I (Y)6"(SLD)(100MIL)	LF	33,178.000		33,178.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	10.000		10.000	
	668-6080	PREFAB PAV MRK TY C (W) (UTURN ARROW)	EA	6.000		6.000	
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	10.000		10.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	278.000		278.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA	502.000		502.000	
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	11,355.000		11,355.000	
	677-6028	ELIM EXT PV MRK & MRKS (RUMBLE STRIP)	LF	33,695.000		33,695.000	
	678-6002	PAV SURF PREP FOR MRK (6")	LF	61,689.000		61,689.000	
	681-6001	TEMP TRAF SIGNALS	EA	1.000		1.000	
	3077-6001	SP MIXES SP-B PG64-22	TON	46,152.000		46,152.000	
	3077-6022	SP MIXES SP-C SAC-A PG70-22	TON	12,926.000		12,926.000	
	3077-6075	TACK COAT	GAL	11,751.000		11,751.000	
	3077-6084	SP MIXES SP-D PG64-22 (EXEMPT)	TON	13,386.000		13,386.000	
	5129-6001	INSTALL FTB	LF	300.000		300.000	
	5129-6002	REMOVE FTB	LF	300.000		300.000	
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY	40.000		40.000	
	6001-6002	PORTABLE CHANGEABLE MESSAGE SIGN	EA	4.000		4.000	
	6185-6002	TMA (STATIONARY)	DAY	20.000		20.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	10.000		10.000	
08		CONTRACTOR FORCE ACCOUNT LAW ENFORCEMENT (NON-PARTICIPATING)	LS	1.000		1.000	
		CONTRACTOR FORCE ACCOUNT SAFETY CONTINGENCY (NON-PARTICIPATING)	LS	1.000		1.000	
		CONTRACTOR FORCE ACCOUNT EROSION CONTROL MAINTENANCE (NON-PARTICIPATING)	LS	1.000		1.000	

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BASIS OF ESTIMATE						
ITEM	DESCRIPTION	RATE	AMOUNT	UNIT	TOTAL QUANTITY	PAY UNIT
*166	FERTILIZER	1 LBS/9SY	360548	SY	20.0	TON
**168	VEGETATIVE WATERING	24 GAL/SY	360548	SY	26	MG
# 260	LIME (QUICKLIME (DRY))(5%)	36 LB/SY	76615	SY	1379	TON
# 275	CEMENT (5%)	36 LB/SY	76615	SY	1379	TON
314	EMULS ASPH (EROSN CONT)(SS-1)	0.3 GAL/SY	14195	SY	2129	GAL
316	ASPH (AC-20XP, AC-10-2TR, OR AC-20-5TR)	0.36 GAL/SY	117511	SY	42304	GAL
316	AGGR (TY-PD GR-4 OR TY-PL GR 4)	1 CY/110 SY	117511	SY	1068	CY
500	MOBILIZATION			LS	1	LS
502	BARRICADES, SIGNS AND TRAFFIC HANDLING			MO	28	MO
3077	SUPERPAVE MIXTURES SP-B PG 64-22 (BASE) (10")	1265 LB/SY	72967	SY	46152	TON
3077	SUPERPAVE MIXTURES SP-C SAC-A PG 70-22 (SURFACE) (2")	220 LB/SY	117511	SY	12926	TON
3077	TACK COAT	0.1 GAL/SY	117511	SY	11751	GAL
3077	SP MIXES SP-D PG64-22 (EXEMPT)	3960 LB/CY	6760	CY	13386	TON

* FOR CONTRACTOR'S INFORMATION ONLY
 ** MULTIPLE APPLICATIONS. QUANTITY BASED ON 3 APPLICATIONS.
 # 5% BY WEIGHT BASED ON 120 LB/CF = 36 LB/SY. FOR INFORMATION AND ESTIMATING PURPOSES ONLY.




NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 ©2023 Texas Department of Transportation US 69 AT FM 779			
BASIS OF ESTIMATE			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	14
		HIGHWAY NO.	
		US 69	

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TRAFFIC CONTROL SUMMARY							
SHEET NO.	ITEM 512						
	PORT CTB (DES SOURCE) (F-S HAPE) (TY 1)	PORT CTB (DES SOURCE) (LOW PROF) (TY 1)	PORT CTB (DES SOURCE) (LOW PROF) (TY 2)	PORT CTB (MOVE) (F-S HAPE) (TY 1)	PORT CTB (STKPL) (F-SHAPE) (TY 1)	PORT CTB (STKPL) (LOW PROF) (TY 1)	PORT CTB (STKPL) (LOW PROF) (TY 2)
	LF	LF	LF	LF	LF	LF	LF
PHASE 1							
STEP 1							
STEP 2							
STEP 3							
PHASE 2							
STEP 1	240						
STEP 2							
PHASE 3		40	40	120	240	40	40
PROJECT TOTAL	240	40	40	120	240	40	40

NOTES:
 1. SEE TCP PLANS FOR DRIVEWAY CULVERTS AND SET'S THAT ARE TO BE REMOVED AND REINSTALLED AT TEMP DRIVEWAY WITH TEMP GRADING. THIS WORK IS SUBSIDIARY TO CONSTRUCTING DETOUR.
 2. 4 PCMS WILL BE NEEDED AT A TIME, DURING GIRDER PLACEMENT AND AS DIRECTED.

TRAFFIC CONTROL SUMMARY (CONT'D)												
SHEET NO.	ITEM 545			ITEM 662								
	CRASH CUSH ATTN (INSTL) (R) (N) (TL3)	CRASH CUSH ATTN (MOVE & RESET)	CRASH CUSH ATTN (REMOVE)	WK ZN PAV MRK NON-REMOV (W) 6" (SLD)	WK ZN PAV MRK NON-REMOV (W) 8" (SLD)	WK ZN PAV MRK NON-REMOV (W) 24" (SLD)	WK ZN PAV MRK NON-REMOV (W) 18" (YLD TRI)	WK ZN PAV MRK NON-REMOV (Y) 6" (SLD)	WK ZN PAV MRK REMOV (REFL) TY I-C	WK ZN PAV MRK REMOV (REFL) TY II-A-A	WK ZN PAV MRK REMOV (W) 6" (SLD)	WK ZN PAV MRK REMOV (Y) 6" (SLD)
	EA	EA	EA	LF	LF	LF	EA	LF	EA	EA	LF	LF
PHASE 1												
STEP 1				5815				5814		97	1295	1912
STEP 2				2888				2888		37		
STEP 3				2885				2826		36		
PHASE 2												
STEP 1	4			23660	674	138		25342	17	344	2160	2160
STEP 2				2810		22		2790				
PHASE 3		2	4	21450	1628	195	11	23077	41	311	1954	1759
PROJECT TOTAL	4	2	4	59508	2302	399	11	62737	58	825	5409	5831




NO.	REVISION	BY	DATE
 consor <small>F-12040</small>			
 CP&Y <small>TEXAS REGISTERED ENGINEERING FIRM F-1741</small>			
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TRAFFIC CONTROL SUMMARY			
Designed:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.
Checked:	6	TEXAS	US 69
Drawn:	DIST.	COUNTY	CONTROL NO. SECTION NO. JOB NO. SHEET NO.
Checked:	TYL	WOOD	0203 05 039 15

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TRAFFIC CONTROL SUMMARY (CONT'D)						
SHEET NO.	ITEM 677	ITEM 681	ITEM 6001		ITEM 6185	
	ELIM EXT PAV MRK & MRKS (4")	TEMP TRAF SIGNALS	PORTABLE CHANGEABLE MESSAGE SIGN	PORTABLE CHANGEABLE MESSAGE SIGN	TMA (STATIONARY)	TMA (MOBILE OPERATION)
	LF	EA	DAY	EA	DAY	DAY
PHASE 1				4		
STEP 1	11355					
STEP 2						
STEP 3						
PHASE 2						
STEP 1		1				
STEP 2						
PHASE 3			40			
PROJECT TOTAL	11355	1	40	4	20	10



DETOUR SUMMARY							
SHEET NO.	ITEM 508		ITEM 3076 *				ITEM 4122 *
	CONSTRUCTING DETOURS (TY 1)	CONSTRUCTING DETOURS (TY 2)	D-GR HMA TY-B PG64-22	D-GR HMA TY-B PG64-22 (LEVEL-UP)	D-GR HMA TY-C SAC-B PG70-22	TACK COAT	THERMOPLASTIC PIPE (SIZE) (HDPE)
	SY	SY	TON	TON	TON	GAL	LF
PHASE 1							
STEP 1	2327	1716	1024	566	256	233	100
STEP 2	732		322		81	73	
STEP 3	666		293		73	67	
PHASE 2							
STEP 1	771	2758	339	910	85	77	
STEP 2	603		265		66	60	
PHASE 3							
PROJECT TOTAL	5099	4474	2243	1476	561	510	100

* FOR CONTRACTOR'S INFORMATION ONLY. SUBSIDIARY TO ITEM 508 "CONSTRUCTING DETOURS".

NO.	REVISION	BY	DATE
  TEXAS REGISTERED ENGINEERING FIRM F-1741			
 © 2023			
US 69 AT FM 779			
TRAFFIC CONTROL SUMMARY			
Designed:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.
Checked:	6	TEXAS	US 69
Drawn:	DIST.	COUNTY	CONTROL NO. SECTION NO. JOB NO.
Checked:	TYL	WOOD	0203 05 039
			SHEET NO. 16

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REMOVAL SUMMARY													
SHEET NO.	STREET	LOCATION		ITEM 104	ITEM 105		ITEM 354		ITEM 496	ITEM 542	ITEM 544	ITEM 644	ITEM 677
				REMOVING CONC (RIPRAP)	REMOVING STAB BASE AND ASPH PAV (2"-6")	REMOVING STAB BASE AND ASPH PAV(4"-16")	PLANE ASPH CONC PAV (0" TO 2")	PLANE ASPH CONC PAV (0" TO 4")	REMOV STR (PIPE)	REMOVE METAL BEAM GUARD FENCE	GUARDRAIL END TREATMENT (REMOVE)	REMOVE SM RD SN SUP&AM	ELIM EXT PV MRK & MRKS (RUMBLE STRIP)
		FROM STA	TO STA	SY	SY	SY	SY	SY	EA	LF	EA	EA	EA
1 of 6	US 69	BEGIN PROJECT	348+00			369		842	7				5250
2 of 6	US 69	348+00	370+00			775		50	1			1	6600
3 of 6	US 69	370+00	392+00	258		5412		490	6	710	2	16	8645
4 of 6	US 69	392+00	414+00			2885		3553	14	120	2	7	6600
5 of 6	US 69	414+00	END PROJECT		607	491		453	7			8	6600
6 of 6	FM 779	BEGIN CONSTRUCTION	END CONSTRUCTION						1			4	
PROJECT TOTAL				258	607	9932	2257	5388	36	830	4	36	33695

NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 ©2023 Texas Department of Transportation US 69 AT FM 779			
REMOVAL SUMMARY			
Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	HIGHWAY NO. US 69
Checked: BAJ	DIST. TYL	COUNTY WOOD	SHEET NO. 18
Drawn: JKF	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Checked: BAJ			

ROADWAY SUMMARY

SHEET NO.	STREET	LOCATION		ITEM 100	ITEM 110	ITEM 132	ITEM 160	ITEM 260		ITEM 275		ITEM 314	ITEM 316		ITEM 3077			
				PREPARING ROW	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL)(DENS CONT)(TY C)	FURNISHING AND PLACING TOPSOIL (4")	LIME (QUICKLIME (DRY))	LIME TRT (EXST MATL)(8")	CEMENT	CEMENT TREAT (SUBGRADE) (8")	EMULS ASPH (EROSN CONT)(SS -1)	ASPH (AC-20XP, AC-10-2TR, OR AC-20-5TR)	AGGR(TY-PD GR-4 OR TY-PL GR-4)	SP MIXES SP-B PG64-22 (10")	SP MIXES SP-C SAC-A PG70-22 (2")	TACK COAT	SP MIXES SP-D PG64-22 (EXEMPT)
		FROM	TO	STA	CY	CY	SY	TON	SY	TON	SY	GAL	GAL	CY	SY	SY	SY	TON
1 OF 8	NB MAINLANE	BEGIN PROJECT	606+00	7.00	146	36	2778											
2 OF 8	NB MAINLANE	606+00	617+00	11.00	1608	707	6478											
3 OF 8	NB MAINLANE	617+00	628+00	11.00	1515	4321	10419											
4 OF 8	NB MAINLANE	628+00	639+00	11.00	1311	4654	5950											
5 OF 8	NB MAINLANE	639+00	808+00	11.00	322	1678	4600											
6 OF 8	NB MAINLANE	808+00	819+00	11.00	1029	523	8006											
7 OF 8	NB MAINLANE	819+00	830+00	11.00	1504	1316	6661											
8 OF 8	NB MAINLANE	830+00	END PROJECT	10.00	905	102	422											
1 OF 8	SB MAINLANE	BEGIN PROJECT	1006+00		584	145	2778											
2 OF 8	SB MAINLANE	1006+00	1017+00		6425	2823	6478											
3 OF 8	SB MAINLANE	1017+00	1028+00		6052	17285	10419											
4 OF 8	SB MAINLANE	1028+00	1039+00		5244	18619	0											
5 OF 8	SB MAINLANE	1039+00	1208+00		1291	6715	0											
6 OF 8	SB MAINLANE	1208+00	1219+00		4120	2092	0											
7 OF 8	SB MAINLANE	1219+00	1230+00		6014	5259	6661											
8 OF 8	SB MAINLANE	1230+00	END PROJECT		3612	411	422											
1 OF 3	US 69	BEGIN	381+00	9.00	5283	31835	3944											
2 OF 3	US 69	381+00	392+00	11.00	4510	63540	9289											
3 OF 3	US 69	392+00	END	4.00	3030	5135	62058											
1 OF 1	FM 779	BEGIN CONST.	END CONST.	11.00	693	3086	8889											
1 OF 4	NWB RAMP	BEGIN	110+00															
2 OF 4	NWB RAMP	110+00	121+00															
3 OF 4	NWB RAMP	121+00	131+00															
4 OF 4	NWB RAMP	131+00	END															
1 OF 4	SEB RAMP	BEGIN	210+00															
2 OF 4	SEB RAMP	210+00	221+00															
3 OF 4	SEB RAMP	221+00	232+00															
4 OF 4	SEB RAMP	232+00	END															
1 OF 1	SOUTHEAST U-TURN	BEGIN	END															
1 OF 1	NORTH WEST U-TURN	BEGIN	END															
PROJECT TOTAL				118.00	55198	170282	156253											

SEE TABULATION OF SURFACE AREAS

NOTES:

1. SEE EARTHWORK SUMMARY FOR BREAKDOWN OF EARTHWORK QUANTITIES.
2. SEE TABULATION OF SURFACE AREAS FOR BREAKDOWN OF PAVEMENT QUANTITIES.

NO.	REVISION	BY	DATE
<p style="text-align: center; font-size: small;">TEXAS REGISTERED ENGINEERING FIRM F-1741</p>			
<p style="text-align: center; font-size: small;">©2023 Texas Department of Transportation</p>			
<p style="margin: 0;">US 69 AT FM 779</p> <p style="margin: 0; font-weight: bold; font-size: large;">ROADWAY SUMMARY</p>			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
CONTROL NO.	0203	SECTION NO.	05
JOB NO.	039	SHEET NO.	19
HIGHWAY NO.			US 69

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ROADWAY SUMMARY (CONT'D)

SHEET NO.	STREET	LOCATION		ITEM 351	ITEM 420	ITEM 432	ITEM 450		ITEM 514	ITEM 529	ITEM 545
				FLEXIBLE PAVEMENT STRUCTURE REPAIR(5")	CL C CONC (RAIL FOUNDATION)	RIPRAP (CONC)(4 IN)	RAIL (TY T551)	RAIL (TY T80SS)	PERM CTB (SSCB)(TY 1)(MOD)	CONC CURB & GUTTER (TY II)	CRASH CUSH ATTN (INSTL)(R)(N) (TL3)
		FROM	TO	SY	CY	CY	LF	LF	LF	LF	EA
		STA	STA								
1 OF 8	NB MAINLANE	BEGIN PROJECT	606+00								
2 OF 8	NB MAINLANE	606+00	617+00								
3 OF 8	NB MAINLANE	617+00	628+00								
4 OF 8	NB MAINLANE	628+00	639+00		62	13	176	231			
5 OF 8	NB MAINLANE	639+00	808+00		152	18	448	552			
6 OF 8	NB MAINLANE	808+00	819+00								
7 OF 8	NB MAINLANE	819+00	830+00								
8 OF 8	NB MAINLANE	830+00	END PROJECT								
1 OF 8	SB MAINLANE	BEGIN PROJECT	1006+00								
2 OF 8	SB MAINLANE	1006+00	1017+00								
3 OF 8	SB MAINLANE	1017+00	1028+00								
4 OF 8	SB MAINLANE	1028+00	1039+00		42	14	30	231		1	
5 OF 8	SB MAINLANE	1039+00	1208+00		152	20	448	552			
6 OF 8	SB MAINLANE	1208+00	1219+00								
7 OF 8	SB MAINLANE	1219+00	1230+00								
8 OF 8	SB MAINLANE	1230+00	END PROJECT								
1 OF 3	US 69	BEGIN	381+00				1867		934		
2 OF 3	US 69	381+00	392+00				2200		1100		
3 OF 3	US 69	392+00	END		58		833		416		
1 OF 1	FM 779	BEGIN CONST.	END CONST.			502				1453	
1 OF 4	NWB RAMP	BEGIN	110+00			61				409	
2 OF 4	NWB RAMP	110+00	121+00			122				638	
3 OF 4	NWB RAMP	121+00	131+00			154				942	
4 OF 4	NWB RAMP	131+00	END			104				564	
1 OF 4	SEB RAMP	BEGIN	210+00			118				677	
2 OF 4	SEB RAMP	210+00	221+00			83				580	
3 OF 4	SEB RAMP	221+00	232+00			218				863	
4 OF 4	SEB RAMP	232+00	END			6					
1 OF 1	SOUTHEAST U-TURN	BEGIN	END								
1 OF 1	NORTH WEST U-TURN	BEGIN	END								
PROJECT TOTAL				500	466	1433	6002	1566	2450	6126	1

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NOTES:

1. SEE EARTHWORK SUMMARY FOR BREAKDOWN OF EARTHWORK QUANTITIES.
2. SEE TABULATION OF SURFACE AREAS FOR BREAKDOWN OF PAVEMENT QUANTITIES.


NO.	REVISION	BY	DATE
TEXAS REGISTERED ENGINEERING FIRM F-1741			
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US 69 AT FM 779			
<h3>ROADWAY SUMMARY</h3>			
Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	HIGHWAY NO. US 69
Checked: BAJ	DIST. TYL	COUNTY WOOD	SHEET NO. 20
Drawn: JKF	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Checked: BAJ			

TABULATION OF SURFACE AREAS


SHEET NO.	STREET	FROM	TO	LENGTH	ITEM 260	ITEM 275	ITEM 314		ITEM 316 [1]		ITEM 316 [1]		ITEM 3077 [1]		ITEM 3077 [1]		ITEM 3077 [1]		ITEM 3077 [1]	
					LIME TREAT (EXST MATL) (8")	CEMENT TREAT (SUBGRADE) (8")	EMULS ASPH (EROSN CONT) (SS-1)	ASPH (AC-20XP, AC-10-2TR, OR AC-20-5TR)	AGGR (TY-PD GR-4 OR TY-PL GR-4)	SUPERPAVE MIXTURES SP-B PG 64-22 BASE (10")	SUPERPAVE MIXTURES SP-C SAC-A PG 70-22 (SURFACE) (2")	TACK COAT	SP MIXES SP-D PG64-22 (EXEMPT)							
		STA	STA	FT	SY	SY	[2] WIDTH (FT)	AREA (SY)	[2] WIDTH (FT)	AREA (SY)	[2] WIDTH (FT)	AREA (SY)	[2] WIDTH (FT)	AREA (SY)	[2] WIDTH (FT)	AREA (SY)	[2] WIDTH (FT)	AREA (SY)	[2] WIDTH (FT)	AREA (SY)
1 OF 8	NW TRANS	BEGIN	606+00.00	600			8	260	44	2122	44	2122			44	2122	44	2122	44	3362
2 OF 8	NW TRANS	606+00.00	617+00.00	1100	172	172	8	835	36	4795	36	4795	8	216	36	4795	36	4795	44	5378
3 OF 8	NW TRANS	617+00.00	628+00.00	1100	261	261	8	980	52	5104	52	5104	9	191	52	5104	52	5104	44	5378
4 OF 8	NW TRANS	628+00.00	639+00.00	1100	2317	2317	8	875	46	6307	46	6307	25	2188	46	6307	46	6307	44	6734
5 OF 8	NW TRANS	639+00.00	808+00.00	960	3200	3200	8	520	46	4897	46	4897	25	3134	46	4897	46	4897	44	4976
6 OF 8	NW TRANS	808+00.00	819+00.00	1100	790	790	8	930	52	4934	52	4934	9	609	52	4934	52	4934	44	5495
7 OF 8	NW TRANS	819+00.00	830+00.00	1100	984	984	8	955	44	5710	44	5710	8	851	44	5710	44	5710	44	5684
8 OF 8	NW TRANS	830+00.00	END	1000			8	530	41	3688	41	3688			41	3688	41	3688	44	4888
1 OF 8	SE TRANS	BEGIN	1006+00.00	600	538	538	8	265	22	1617	22	1617	42	429	22	1617	22	1617		
2 OF 8	SE TRANS	1006+00.00	1017+00.00	1100	4782	4782	8	810	31	4614	31	4614	39	4423	31	4614	31	4614		
3 OF 8	SE TRANS	1017+00.00	1028+00.00	1100	5134	5134	8	980	45	4665	45	4665	45	4760	45	4665	45	4665		
4 OF 8	SE TRANS	1028+00.00	1039+00.00	1100	6027	6027	8	800	46	5647	46	5647	47	5722	46	5647	46	5647		
5 OF 8	SE TRANS	1039+00.00	1208+00.00		5399	5399	8	600	46	5201	46	5201	47	5236	46	5201	46	5201		
6 OF 8	SE TRANS	1208+00.00	1219+00.00	1100	6589	6589	8	965	45	6101	45	6101	45	6207	45	6101	45	6101		
7 OF 8	SE TRANS	1219+00.00	123+00.00	1100	4760	4760	8	955	36	4292	36	4292	40	4394	36	4292	36	4292		
8 OF 8	SE TRANS	1230+00.00	END	1000	1684	1684	8	500	39	2487	39	2487	42	1486	39	2487	39	2487		
1 OF 3	US 69	BEGIN	381+00.00	933	6168	6168		735	79	8170	79	8170	79	6168	79	8170	79	8170		
2 OF 3	US 69	381+00.00	392+00.00	1100	6951	6951		700	78	9707	78	9707	78	6951	78	9707	78	9707		
3 OF 3	US 69	392+00.00	END	416	3637	3637		300	79	3700	79	3700	79	3637	79	3700	79	3700		
1 OF 1	FM 779	BEGIN	END	1098	8409	8409	8	700	48	3175	48	3175	50	7979	48	3175	48	3175		
1 OF 4	NWB RAMP	BEGIN	110+00.00	1000					23	1116	23	1116			23	1116	23	1116	25	
2 OF 4	NWB RAMP	110+00.00	121+00.00	1100					23	3828	23	3828			23	3828	23	3828	25	
3 OF 4	NWB RAMP	121+00.00	131+00.00	1100					23	3148	23	3148			23	3148	23	3148		
4 OF 4	NWB RAMP	131+00.00	END	760					23	1540	23	1540			23	1540	23	1540	25	
1 OF 4	SEB RAMP	BEGIN	210+00.00	1000	2163	2163			25	2056	25	2056	26	2050	25	2056	25	2056		
2 OF 4	SEB RAMP	210+00.00	221+00.00	1100	2098	2098			25	4629	25	4629	26	2001	25	4629	25	4629		
3 OF 4	SEB RAMP	221+00.00	232+00.00	1100	3422	3422			25	3249	25	3249	26	3239	25	3249	25	3249		
4 OF 4	SEB RAMP	232+00.00	END	460	158	158			25	151	25	151	26	150	25	151	25	151		
1 OF 1	SOUTHEAST U-TURN	BEGIN	END	165	498	498			24	442	24	442	25	485	24	442	24	442		
1 OF 1	NORTH WEST U-TURN	BEGIN	END	165	474	474			24	419	24	419	25	461	24	419	24	419		
TOTALS					76615	76615		14195		117511		117511		72967		117511		117511		41895

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[1] QUANTITIES INCLUDED IN BASIS OF ESTIMATE
 [2] AVERAGE WIDTH IN THE AREA



TEXAS REGISTERED ENGINEERING FIRM F-1741



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US 69 AT FM 779

ROADWAY SUMMARY

Designed: JKJ	FED. RD. DIV. NO. 6	STATE TEXAS				HIGHWAY NO. US 69
Checked: BAJ			COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: JKJ						SHEET NO. 21
Checked: BAJ	TYL					

METAL BEAM GUARD FENCE SUMMARY



SHEET NO.	STREET	LOCATION		ITEM 432		ITEM 540		ITEM 544
				RIPRAP (MOW STRIP)(4 IN)	MTL W-BEAM GD FEN (STEEL POST)	MTL BEAM GD FEN TRANS (THRIE-BEAM)	DOWNSTREAM ANCHOR TERMINAL SECTION	GUARDRAIL END TREATMENT (INSTALL)
		FROM STA	TO STA	CY	LF	EA	EA	EA
1 OF 8	NB MAINLANE	BEGIN PROJECT	606+00					
2 OF 8	NB MAINLANE	606+00	617+00					
3 OF 8	NB MAINLANE	617+00	628+00					
4 OF 8	NB MAINLANE	628+00	639+00					
5 OF 8	NB MAINLANE	639+00	808+00	7	75	1		1
6 OF 8	NB MAINLANE	808+00	819+00					
7 OF 8	NB MAINLANE	819+00	830+00					
8 OF 8	NB MAINLANE	830+00	END PROJECT					
1 OF 8	SB MAINLANE	BEGIN PROJECT	1006+00					
2 OF 8	SB MAINLANE	1006+00	1017+00					
3 OF 8	SB MAINLANE	1017+00	1028+00					
4 OF 8	SB MAINLANE	1028+00	1039+00	7	75	1		1
5 OF 8	SB MAINLANE	1039+00	1208+00					
6 OF 8	SB MAINLANE	1208+00	1219+00					
7 OF 8	SB MAINLANE	1219+00	1230+00					
8 OF 8	SB MAINLANE	1230+00	END PROJECT					
1 OF 3	US 69	BEGIN	381+00					
2 OF 3	US 69	381+00	392+00	11				
3 OF 3	US 69	392+00	END	4	12.5	1		1
1 OF 1	FM 779	BEGIN CONST.	END CONST.					
1 OF 4	NWB RAMP	BEGIN	110+00					
2 OF 4	NWB RAMP	110+00	121+00					
3 OF 4	NWB RAMP	121+00	131+00		250		1	1
4 OF 4	NWB RAMP	131+00	END					
1 OF 4	SEB RAMP	BEGIN	210+00					
2 OF 4	SEB RAMP	210+00	221+00					
3 OF 4	SEB RAMP	221+00	232+00					
4 OF 4	SEB RAMP	232+00	END					
1 OF 1	SOUTHEAST U-TURN	BEGIN	END					
1 OF 1	NORTH WEST U-TURN	BEGIN	END					
PROJECT TOTAL				29	413	3	1	4

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NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 ©2023 Texas Department of Transportation US 69 AT FM 779			
ROADWAY SUMMARY			
Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	HIGHWAY NO. US 69
Checked: BAJ	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203
Drawn: JKF	SECTION NO. 05	JOB NO. 039	SHEET NO. 22
Checked: BAJ			

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MAILBOX SUMMARY					
SHEET NO.	STREET	LOCATION		ITEM 560	
				MAILBOX INSTALL-S (TWG-POST) TY 2	MAILBOX INSTALL-D (TWG-POST) TY 2
		FROM STA	TO STA	EA	EA
1 OF 8	NB MAINLANE	BEGIN PROJECT	606+00	1	
2 OF 8	NB MAINLANE	606+00	617+00		
3 OF 8	NB MAINLANE	617+00	628+00		
4 OF 8	NB MAINLANE	628+00	639+00		
5 OF 8	NB MAINLANE	639+00	808+00		
6 OF 8	NB MAINLANE	808+00	819+00	2	
7 OF 8	NB MAINLANE	819+00	830+00	2	
8 OF 8	NB MAINLANE	830+00	END PROJECT		
1 OF 8	SB MAINLANE	BEGIN PROJECT	1006+00		
2 OF 8	SB MAINLANE	1006+00	1017+00		
3 OF 8	SB MAINLANE	1017+00	1028+00		
4 OF 8	SB MAINLANE	1028+00	1039+00		
5 OF 8	SB MAINLANE	1039+00	1208+00		1
6 OF 8	SB MAINLANE	1208+00	1219+00	1	
7 OF 8	SB MAINLANE	1219+00	1230+00	1	
8 OF 8	SB MAINLANE	1230+00	END PROJECT		
1 OF 3	US 69	BEGIN	381+00		
2 OF 3	US 69	381+00	392+00		
3 OF 3	US 69	392+00	END		
1 OF 1	FM 779	BEGIN CONST.	END CONST.		
1 OF 4	NWB RAMP	BEGIN	110+00		
2 OF 4	NWB RAMP	110+00	121+00		
3 OF 4	NWB RAMP	121+00	131+00	2	
4 OF 4	NWB RAMP	131+00	END	1	
1 OF 4	SEB RAMP	BEGIN	210+00		
2 OF 4	SEB RAMP	210+00	221+00		
3 OF 4	SEB RAMP	221+00	232+00		
4 OF 4	SEB RAMP	232+00	END		
1 OF 1	SOUTHEAST U-TURN	BEGIN	END		
1 OF 1	NORTH WEST U-TURN	BEGIN	END		
PROJECT TOTAL				10	1

NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 ©2023 Texas Department of Transportation US 69 AT FM 779			
ROADWAY SUMMARY			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	23
		HIGHWAY NO.	
		US 69	



DRIVEWAY SUMMARY

DRIVEWAY NUMBER	STREET HORIZONTAL ALIGNMENT	STATION	ITEM 530		CULVERT ID*	CULVERT TYPE*	CULVERT LENGTH* (FT)
			DRIVEWAYS (CONC) (HES)	DRIVEWAYS (ACP)			
			SY	SY			
E01	NBML1	601+24.49		70	1E-01	18" RCP	35
E02	NBML1	605+18.34		146	1E-02	18" RCP	42
E03	NBML1	607+78.73		144	1E-03	18" RCP	42
E04	NWBRAMP60	112+74.74		70	3E-01	18" RCP	22
E05	NWBRAMP60	116+19.67	191		4E-03	18" RCP	60
E06	NWBRAMP60	116+93.14	191		4E-04	18" RCP	60
E07	NWBRAMP60	124+95.80	112		5E-02	18" RCP	31
E08	NWBRAMP60	126+58.75		70	5E-03	18" RCP	26
E09	NWBRAMP60	130+71.88		70	5E-07	18" RCP	26
E10	NWBRAMP60	131+70.50		70	5E-06	18" RCP	26
E11	NWBRAMP60	134+17.81		71	5E-05	18" RCP	26
E12	NWBRAMP60	135+21.19		73	5E-04	18" RCP	26
E13	NBML2	809+79.71		86	6E-01	18" RCP	26
E14	NBML2	818+63.19		82	6E-02	18" RCP	26
E15	NBML2	821+57.75		79	6E-03	18" RCP	26
E16	NBML2	824+55.50		71	6E-04	18" RCP	26
E17	NBML2	831+14.04		77	7E-01	18" RCP	26
E18	CLFM779	408+16.77	193		4E-01	18" RCP	64
W01	SBML1	1001+52.40		269	1W-03	18" RCP	26
W02	SBML1	1004+96.28		255	1W-04	18" RCP	26
W03	SBML1	1014+17.30		151	1W-01	18" RCP	26
W04	SBML1	1015+07.04		143	1W-02	18" RCP	26
W05	SBML1	1029+28.38		118	2W-01	18" RCP	26
W06	SEBRAMP60	205+52.47		90	3W-01	18" RCP	26
W07	SEBRAMP60	216+72.75		89	4W-02	18" RCP	26
W08	SEBRAMP60	218+01.07		89	4W-00	18" RCP	26
W09	SEBRAMP60	228+46.41		89	5W-05	18" RCP	26
W10	SBML2	1203+15.53		98	5W-04	18" RCP	26
W11	SBML2	1208+52.56		123	6W-01	18" RCP	26
W12	SBML2	1212+62.83		158	6W-02	18" RCP	32
W13	SBML2	1214+30.31		67	6W-03	18" RCP	26
W14	SBML2	1216+79.13		96	6W-04	18" RCP	26
W15	SBML2	1222+35.90		111	6W-06	18" RCP	26
W16	SBML2	1227+44.53		161	6W-07	18" RCP	26
W17	SBML2	1237+27.92		307	7W-01	18" RCP	26
W18	SBML2	1239+15.67		313	7W-02	18" RCP	26
PROJECT TOTAL			687	3906			

*FOR CONTRACTOR INFORMATION ONLY - SEE DRAINAGE PLAN AND DRAINAGE SUMMARY FOR PAY ITEMS.

NOTES:

- SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL INFORMATION.

NO.	REVISION			BY	DATE		
 TEXAS REGISTERED ENGINEERING FIRM F-1741							
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DRIVEWAY SUMMARY							
Designed:	BAJ	FED. RD. DIV. NO.	STATE				HIGHWAY NO.
Checked:	MDS	6	TEXAS				US 69
Drawn:	BAJ	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	MDS	TYL	WOOD	0203	05	039	23A

RETAINING WALL SUMMARY



SHEET NO.	RETAINING WALL	LOCATION		ITEM 423	ITEM 432	ITEM 450	*ITEM 556
		FROM STA	TO STA	RETAINING WALL (MSE)	RIPRAP (CONC)(4 IN)	RAIL (TY T551)	PIPE UNDERDRAINS (TY 6")
				SF	CY	LF	LF
1 OF 12	A	10+00.00	14+00.00	3744		400	380
2 OF 12	A	14+00.00	17+07.22	7159		307	426
3 OF 12	B	20++00.00	24+00.00	2830		400	383
4 OF 12	B	24+00.00	27+22.44	6503		323	366
5 OF 12	C	30+00.00	30+82.82	1827	4		
6 OF 12	D	40+00.00	40+82.82	1906	4		
7 OF 12	E	50+94.98	55+00.00	10692		399	405
8 OF 12	E	55+00.00	59+00.00	7472		400	373
9 OF 12	E	59+00.00	61+73.91	2170		278	245
10 OF 12	F	60+95.51	65+00.00	8601		397	405
11 OF 12	F	65+00.00	69+00.00	4351		400	387
12 OF 12	F	69+00.00	70+53.01	721		160	153
PROJECT TOTAL				57976	8	3464	3386

* FOR CONTRACTOR'S INFORMATION ONLY.

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NO.	REVISION						BY	DATE		
 TEXAS REGISTERED ENGINEERING FIRM F-1741										
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RETAINING WALL SUMMARY										
Designed:	JKF	FED. RD. DIV. NO.	STATE					HIGHWAY NO.		
Checked:	BAJ	6	TEXAS					US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.			
Checked:	BAJ	TYL	WOOD	0203	05	039	24			

DRIVEWAY CULVERTS & STORM DRAINS SUMMARY



DRAINAGE PLAN SHEET NO.	LOCATION		ITEM 400	ITEM 401	ITEM 402	ITEM 432	ITEM 464			ITEM 465	
			CUT & RESTORE ASPH PAVING	FLOWABLE BACKFILL	TRENCH EXCAVATION PROTECTION	RIPRAP (STONE COMMON) (DRY)(12 IN)	RC PIPE (CL III) (18 IN)	RC PIPE (CL III) (24 IN)	RC PIPE (CL V) (18 IN)	JCTBOX (COMPL)(PJB) (3FTX3FT)	INLET (COMPL) (PSL)(RC) (3FTX3FT)
	FROM	TO	SY	CY	LF	CY	LF	LF	LF	EA	EA
1 OF 10	BEGIN	337+00						129			
2 OF 10	337+00	348+00						143			
3 OF 10	348+00	359+00									
4 OF 10	359+00	370+00	81	78			26		103		
5 OF 10	370+00	381+00	104	172	15		255		111	2	1
6 OF 10	381+00	392+00	351	298	56	3	359	56	236	4	
7 OF 10	392+00	403+00	184	228	131		348		119	2	
8 OF 10	403+00	414+00					136				
9 OF 10	414+00	425+00					240				
10 OF 10	425+00	END					78				
PROJECT TOTAL			720	775	202	3	1714*	56	569	8	1

* QUANTITY INCLUDES DRIVEWAY CULVERTS SUMMARIZED IN DRIVEWAY SUMMARY SHEET

DRIVEWAY CULVERTS & STORM DRAINS SUMMARY (CONT'D)

DRAINAGE PLAN SHEET NO.	LOCATION		ITEM 465				ITEM 467				ITEM 481
			INLET (COMPL) (PSL)(FG) (3FTX3FT-3FTX3FT)	INLET(COMPL)(PS L)(SFG)(3FTX5FT -3FTX5FT)	INLET (COMPL) (TY MSE2)	INLET(COMPL) (CURB)(SPL)	SET (TY II) (18 IN)(RCP) (4: 1) (C)	SET (TY II) (18 IN)(RCP) (6: 1) (C)	SET (TY II) (18 IN)(RCP) (6: 1) (P)	SET (TY II) (24 IN) (RCP) (6: 1) (C)	PIPE (PVC) (SCH 40)(6 IN)
	FROM	TO	EA	EA	EA	EA	EA	EA	EA	EA	LF
1 OF 10	BEGIN	337+00								8	
2 OF 10	337+00	348+00								8	
3 OF 10	348+00	359+00									
4 OF 10	359+00	370+00		2			1	1	2		
5 OF 10	370+00	381+00	1		2	2	2		6		
6 OF 10	381+00	392+00			4	2	3	1	12	1	13
7 OF 10	392+00	403+00		3	2		2	3	12		
8 OF 10	403+00	414+00							10		
9 OF 10	414+00	425+00							14		
10 OF 10	425+00	END							6		
PROJECT TOTAL			1	5	8	4	8	5	78	1	13

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 TEXAS REGISTERED ENGINEERING FIRM F-1741			
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DRIVEWAY CULVERTS & STORM DRAINS SUMMARY			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	25

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CROSS CULVERTS SUMMARY															
LOCATION	CUL NO.	EXISTING CONDITION	PROPOSED WORK	ITEM 401	ITEM 402	ITEM 403	ITEM 432		ITEM 462	ITEM 464			ITEM 465		
				FLOWABLE BACKFILL	TRENCH EXCAVATION PROTECTION	TEMPORARY SPL SHORING	RIPRAP (STONE COMMON) (DRY)(12 IN)	RIPRAP (CONC)(5 IN)	CONC BOX CULV (6 FT X 6 FT) (EXTEND)	RC PIPE (CL III) (24 IN)	RC PIPE (CL III) (36 IN)	RC PIPE (CL V) (48 IN)	JCTBOX (COMPL)(PJB) (6FTX6FT)	INLET (COMPL) (PSL)(FG) (3FTX3FT-3FTX3FT)	INLET (COMPL) (PSL)(FG) (4FTX4FT-4FTX4FT)
STA				CY	LF	SF	CY	CY	LF	LF	LF	LF	EA	EA	EA
US 69 STA 351+69.99	1	EX 3-6'x6' x 90' MBC	EXTEND 144.22'/176' (SKEW) RT AND ADD FW-S AND RIPRAP	186		990		26	450						3
US 69 STA 363+62.05	2	EX 3-6'x6' x 100' MBC	EXTEND 101.14'/112' (SKEW) RT AND ADD FW-S AND RIPRAP	176	66	500		21	336						3
US 69 STA 366+64.66	3	EX 24" RCP x 91'	EXTEND 109' RT AND ADD SET AND RIPRAP	26			11			109				1	
US 69 STA 380+21.61	4	EX 24" RCP x 72'	EXTEND 122' RT AND ADD SET AND RIPRAP	15			12			122					
US 69 STA 390+21.49	5	EX 48" RCP x 62'	EXTEND 151' RT AND ADD CH-FW-0 AND RIPRAP	27	75	247	21					151	1		
US 69 STA 420+66.45	6	EX 36" RCP x 118'	EXTEND 153' RT AND ADD SET AND RIPRAP	32			13				153				1
FROM CULVERT DETAILS AND HYDRAULIC DATA		SEE CULVERT DETAILS AND HYDRAULIC DATA FOR ADDITIONAL INFORMATION													
PROJECT TOTAL				462	141	1737	57	47	786	231	153	151	1	1	7

CONCRETE COLLARS ARE SUBSIDIARY, SEE MISCELLANEOUS DRAINAGE DETAILS

CROSS CULVERTS SUMMARY										
LOCATION	CUL NO.	EXISTING CONDITION	PROPOSED WORK	ITEM 465	ITEM 466			ITEM 467		
				INLET(COMPL) (PSL)(SFG) (3FTX3FT-3FTX3FT)	HEADWALL (CH - FW - 0) (DIA= 48 IN)	WINGWALL (FW - S) (HW=8 FT)	WINGWALL (FW - S) (HW=9 FT)	SET (TY II) (24 IN) (RCP) (4: 1) (C)	SET (TY II) (24 IN) (RCP) (6: 1) (C)	SET (TY II) (36 IN)(RCP) (4: 1) (C)
STA				EA	EA	EA	EA	EA	EA	EA
US 69 STA 351+69.99	1	EX 3-6'x6' x 90' MBC	EXTEND 144.22'/176' (SKEW) RT AND ADD FW-S AND RIPRAP			1				
US 69 STA 363+62.05	2	EX 3-6'x6' x 100' MBC	EXTEND 101.14'/112' (SKEW) RT AND ADD FW-S AND RIPRAP				1			
US 69 STA 366+64.66	3	EX 24" RCP x 91'	EXTEND 109' RT AND ADD SET AND RIPRAP					1		
US 69 STA 380+21.61	4	EX 24" RCP x 72'	EXTEND 122' RT AND ADD SET AND RIPRAP	1					1	
US 69 STA 390+21.49	5	EX 48" RCP x 62'	EXTEND 151' RT AND ADD CH-FW-0 AND RIPRAP		1					
US 69 STA 420+66.45	6	EX 36" RCP x 118'	EXTEND 153' RT AND ADD SET AND RIPRAP							1
FROM CULVERT DETAILS AND HYDRAULIC DATA		SEE CULVERT DETAILS AND HYDRAULIC DATA FOR ADDITIONAL INFORMATION								
PROJECT TOTAL				1	1	1	1	1	1	1

NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
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CULVERT SUMMARY			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	26



BRIDGE SUMMARY

LOCATION	ITEM 400	ITEM 416	ITEM 420			ITEM 422		ITEM 425	ITEM 450	ITEM 454	ITEM 471	ITEM 481
	CEM STABIL BKFL	DRILL SHAFT (36 IN)	CL C CONC (ABUT)	CL C CONC (CAP)	CL C CONC (COLUMN)	REINF CONC SLAB	APPROACH SLAB	PRESTR CONC GIRDER (TX54)	RAIL (TY T551)	SEALED EXPANSION JOINT (4 IN) (SEJ - M)	GRATE AND FRAME (BRIDGE DRAIN)	PIPE (PVC) (SCH 40) (6 IN)
	CY	LF	CY	CY	CY	SF	CY	LF	LF	LF	EA	LF
CSJ 0203-05-039	165	1,536	81.0	146.6	131.9	41,600	190.6	4379.00	1040.0	246	2	113
CSJ 0203-05-039	165	1,536	81.0	146.6	131.9	41,600	190.6	4379.00	1040.0	246	2	113
PROJECT TOTAL	165	1,536	81.0	146.6	131.9	41,600	190.6	4379.00	1040.0	246	2	113

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NO.	REVISION						BY	DATE		
 TEXAS REGISTERED ENGINEERING FIRM F-1741										
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BRIDGE SUMMARY										
Designed:	KH	FED. RD. DIV. NO.	STATE					HIGHWAY NO.		
Checked:	TGA	6	TEXAS					US 69		
Drawn:	KH	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.			
Checked:	KH	TYL	WOOD	0203	05	039	27			

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ROADWAY ILLUMINATION SUMMARY

SHEET NO.	STREET	LOCATION	ITEM 416	ITEM 432	ITEM 610			ITEM 618			ITEM 620				ITEM 624	ITEM 628
			DRILL SHAFT (RDWY ILL POLE) (30 IN) LF	RIPRAP (CONC)(4 IN) CY	IN RD IL (U/P) (TY 1) (150W EQ) LED EA	IN RD IL (U/P) (TY 2) (150W EQ) LED EA	IN RD IL (TY SA) 40T-8 (250W EQ) LED EA	CONDT (PVC) (SCH 80) (2") LF	CONDT (PVC) (SCH 80) (2") (BORE) LF	CONDT (RM) (3/4") LF	ELEC CONDR (NO.12) BARE LF	ELEC CONDR (NO.12) INSULATED LF	ELEC CONDR (NO.8) BARE LF	ELEC CONDR (NO.8) INSULATED LF	GROUND BOX TY A (122311) W/APRON EA	ELC SRV TY A 120/240 060(NS)SS(E)SP(O) EA
1 of 2	US 69	355+00 TO 367+10	56	3			7	1274	237				1561	3122	3	1
2 of 2	US 69	401+67 TO 412+50	56	3			7	1669	197				1930	3860	3	1
1 of 2	FM 779		32	2	6	2	4	326	408	320	360	720	787	1984	6	1
PROJECT TOTAL			144	8	6	2	18	3269	842	320	360	720	4278	8966	12	3

NO.	REVISION	BY	DATE
 F-12040			
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
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ILLUMINATION SUMMARY			
Designed:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO. HIGHWAY NO.
Checked:	6	TEXAS	US 69
Drawn:	DIST.	COUNTY	CONTROL NO. SECTION NO. JOB NO. SHEET NO.
Checked:	TYL	WOOD	0203 05 039 28



SUMMARY OF EARTHWORK		
	110	132
LOCATION	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL)(DENS CONT)(TY C)
US 69		
STATION	CY	CY
331+00.00	0	0
331+50.00	34	27
332+00.00	34	25
332+50.00	42	13
333+00.00	47	6
333+50.00	43	11
334+00.00	45	13
334+50.00	52	14
335+00.00	58	16
335+50.00	62	20
336+00.00	88	11
336+50.00	109	8
337+00.00	116	17
337+50.00	130	19
338+00.00	138	19
338+50.00	135	20
339+00.00	119	23
339+50.00	99	27
340+00.00	86	36
340+50.00	90	48
341+00.00	99	61
341+50.00	102	74
342+00.00	121	80
342+50.00	174	78
343+00.00	281	71
343+50.00	448	56
344+00.00	640	33
344+50.00	846	21
345+00.00	1039	14
345+50.00	1203	10
346+00.00	1171	13
346+50.00	670	60
347+00.00	215	501
347+50.00	139	1016
348+00.00	88	1250
348+50.00	29	1409
349+00.00	6	1482
349+50.00	8	1560
350+00.00	17	1564
350+50.00	28	1454
351+00.00	41	1347
351+50.00	58	1227
352+00.00	79	1256
352+50.00	116	1275
353+00.00	134	1144
353+50.00	119	1156
354+00.00	88	1254
354+50.00	58	1323
355+00.00	44	1323

SUMMARY OF EARTHWORK		
	110	132
LOCATION	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL)(DENS CONT)(TY C)
US 69		
STATION	CY	CY
355+50.00	31	1221
356+00.00	23	921
356+50.00	90	434
357+00.00	395	107
357+50.00	897	39
358+00.00	1355	37
358+50.00	1772	35
359+00.00	2179	38
359+50.00	2351	49
360+00.00	1913	64
360+50.00	855	175
361+00.00	132	559
361+50.00	26	1018
362+00.00	16	1280
362+50.00	63	1346
363+00.00	161	1343
363+50.00	221	1560
364+00.00	147	1699
364+50.00	41	1716
365+00.00	11	1805
365+50.00	10	1627
366+00.00	20	1370
366+50.00	23	1382
367+00.00	18	1416
367+50.00	20	1261
368+00.00	26	1062
368+50.00	44	904
369+00.00	78	717
369+50.00	161	521
370+00.00	218	399
370+50.00	195	422
371+00.00	184	556
371+50.00	239	754
372+00.00	298	923
372+50.00	297	1019
373+00.00	279	1163
373+50.00	271	1316
374+00.00	274	1450
374+50.00	290	1601
375+00.00	311	1798
375+50.00	332	2037
376+00.00	358	2307
376+50.00	371	2606
377+00.00	369	2892
377+50.00	360	3126
378+00.00	373	3318
378+50.00	394	3471
379+00.00	336	1770
379+50.00	176	66
380+00.00	88	295
380+50.00	66	454

SUMMARY OF EARTHWORK		
	110	132
LOCATION	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL)(DENS CONT)(TY C)
US 69		
STATION	CY	CY
381+00.00	40	223
381+50.00	82	127
382+00.00	73	389
382+50.00	16	646
383+00.00	1	715
383+50.00	19	659
384+00.00	117	2550
384+50.00	201	4297
385+00.00	212	4065
385+50.00	225	3921
386+00.00	242	3838
386+50.00	271	3763
387+00.00	387	3665
387+50.00	527	3620
388+00.00	491	3578
388+50.00	364	3492
389+00.00	248	3337
389+50.00	171	3206
390+00.00	163	3443
390+50.00	156	3938
391+00.00	147	4093
391+50.00	175	3571
392+00.00	222	2627
392+50.00	271	1749
393+00.00	402	1164
393+50.00	561	826
394+00.00	583	555
394+50.00	511	365
395+00.00	347	227
395+50.00	197	124
396+00.00	158	125
396+50.00	129	150
397+00.00	102	212
397+50.00	85	314
398+00.00	75	398
398+50.00	72	402
399+00.00	68	380
399+50.00	77	431
400+00.00	91	500
400+50.00	76	486
401+00.00	53	459
401+50.00	36	479
402+00.00	27	477
402+50.00	23	502
403+00.00	26	515
403+50.00	28	488
404+00.00	27	468
404+50.00	31	372
405+00.00	41	247
405+50.00	46	201
406+00.00	37	220

NOTE:
 1. QUANTITIES OF TY C EMBANKMENT SHOWN INCLUDES VOLUME FOR RETAINING WALL REINFORCED ZONE AND FOUNDATION IMPROVEMENT PER STANDARD DRAWING RW(EM). SEE RETAINING WALL TYPICAL SECTIONS AND NOTES FOR MORE INFORMATION.

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NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 ©2023 Texas Department of Transportation US 69 AT FM 779			
EARTHWORK SUMMARY			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	29
		HIGHWAY NO.	US 69

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SUMMARY OF EARTHWORK		
	110	132
LOCATION	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL)(DENS CONT)(TY C)
US 69		
STATION	CY	CY
406+50.00	49	223
407+00.00	83	194
407+50.00	138	123
408+00.00	186	74
408+50.00	235	56
409+00.00	261	40
409+50.00	245	58
410+00.00	256	66
410+50.00	283	50
411+00.00	296	55
411+50.00	277	83
412+00.00	265	92
412+50.00	264	91
413+00.00	295	78
413+50.00	386	59
414+00.00	460	59
414+50.00	490	67
415+00.00	525	107
415+50.00	585	115
416+00.00	633	89
416+50.00	654	63
417+00.00	734	55
417+50.00	838	78
418+00.00	866	81
418+50.00	818	88
419+00.00	732	93
419+50.00	564	123
420+00.00	293	192
420+50.00	82	542
421+00.00	23	1112
421+50.00	66	1196
422+00.00	95	871
422+50.00	76	609
423+00.00	51	452
423+50.00	36	365
424+00.00	59	237
424+50.00	75	113
425+00.00	80	48
425+50.00	76	25
426+00.00	82	28
426+50.00	111	31
427+00.00	143	32
427+50.00	209	34
428+00.00	319	31
428+50.00	390	21
429+00.00	414	14
429+50.00	422	18
430+00.00	413	26
430+50.00	385	26
431+00.00	348	23
431+50.00	310	10

SUMMARY OF EARTHWORK		
	110	132
LOCATION	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL)(DENS CONT)(TY C)
US 69		
STATION	CY	CY
432+00.00	280	10
432+50.00	245	20
433+00.00	183	21
433+50.00	130	14
434+00.00	76	33
434+50.00	42	54
435+00.00	33	47
435+50.00	30	32
436+00.00	34	16
FM 779		
STATION	CY	CY
401+00.00	0	0
401+50.00	36	132
402+00.00	15	173
402+50.00	2	187
403+00.00	0	175
403+50.00	0	174
404+00.00	0	190
404+50.00	5	257
405+00.00	5	473
405+50.00	67	676
406+00.00	89	360
406+50.00	42	2
407+00.00	25	29
407+50.00	15	69
408+00.00	32	62
408+50.00	46	44
409+00.00	50	39
409+50.00	51	22
410+00.00	48	8
410+50.00	43	4
411+00.00	41	4
411+50.00	40	4
412+00.00	41	2
TOTALS	55198	170282

NOTE:
 1. QUANTITIES OF TY C EMBANKMENT SHOWN INCLUDES VOLUME FOR RETAINING WALL REINFORCED ZONE AND FOUNDATION IMPROVEMENT PER STANDARD DRAWING RW(EM). SEE RETAINING WALL TYPICAL SECTIONS AND NOTES FOR MORE INFORMATION.

NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 ©2023 Texas Department of Transportation US 69 AT FM 779			
EARTHWORK SUMMARY			
Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	HIGHWAY NO. US 69
Checked: BAJ	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203
Drawn: JKF	SECTION NO. 05	JOB NO. 039	SHEET NO. 30
Checked: BAJ			

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EROSION CONTROL SUMMARY

SHEET NO.	ITEM 164			*ITEM 166	ITEM 168	ITEM 506								
	BOND FBR MTRX SEED (PERM) (RURAL) (SAND) SY	BONDED FBR MTRX SEED (TEMP)(WARM) SY	BONDED FBR MTRX SEED (TEMP)(COOL) SY	FERTILIZER TON	VEGETATIVE WATERING MG	ROCK FILTER DAMS (INSTALL) (TY 2) LF	ROCK FILTER DAMS (INSTALL) (TY 3) LF	ROCK FILTER DAMS (REMOVE) LF	CONSTRUCTION EXITS (INSTALL) (TY 1) SY	CONSTRUCTION EXITS (REMOVE) SY	EARTHWORK (EROSN & SEDMT CONT. IN VEH) CY	BACKHOE WORK (EROSION & SEDMT CONT) HR	TEMP SEDMT CONT FENCE (INSTALL) LF	TEMP SEDMT CONT FENCE (REMOVE) LF
PHASE 1						2027	120	473	156		3000	150	7031	
PHASE 2						1369			156				4894	
PHASE 3	180274	90137	90137	20	26			3043		312				11925
PROJECT TOTAL	180274	90137	90137	20	26	3396	120	3516	312	312	3000	150	11925	11925

*FOR CONTRACTOR INFORMATION ONLY

EROSION CONTROL SUMMARY CONT.



SHEET NO.	ITEM 506			ITEM 5129	
	BIODEG EROSN CONT LOGS (INSTL) (12") LF	BIODEG EROSN CONT LOGS (REMOVE) LF	TRACKHOE WORK (EROSION & SEDMT CONT) HR	INSTALL FTB LF	REMOVE FTB LF
PHASE 1	952		50	300	300
PHASE 2	391				
PHASE 3		1343			
PROJECT TOTAL	1343	1343	50	300	300

NO.	REVISION	BY	DATE
consor <small>F-12040</small>			
CP&Y <small>TEXAS REGISTERED ENGINEERING FIRM F-1741</small>			
<small>© 2023</small> Texas Department of Transportation <small>US 69 AT FM 779</small>			
EROSION CONTROL SUMMARY			
Designed:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.
Checked:	6	TEXAS	US 69
Drawn:	DIST.	COUNTY	CONTROL NO. SECTION NO. JOB NO.
Checked:	TYL	WOOD	0203 05 039
			SHEET NO. 31

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DELINEATOR SUMMARY								
SHEET NO.	STREET	LOCATION	ITEM 658					
			INSTL DEL ASSM (D-SW)SZ (BRF)CTB	INSTL DEL ASSM (D-SY)SZ (BRF)CTB	INSTL DEL ASSM (D-SY)SZ (BRF)CTB (Bi)	INSTL DEL ASSM (D-SW)SZ 1 (WFLX)GND	INSTL DEL ASSM (D-DW)SZ 1 (WFLX)GND	INSTL OM ASSM (OM-2Z) (WFLX)GND
			EA	EA	EA	EA	EA	EA
1 of 11	US 69	BEGIN PROJECT TO 337+00						
2 of 11	US 69	337+00 TO 348+00						
3 of 11	US 69	348+00 TO 359+00				4		2
4 of 11	US 69	359+00 TO 370+00		7		17		
5 of 11	US 69	370+00 TO 381+00	21	1	10			2
6 of 11	US 69	381+00 TO 392+00	22		11			1
7 of 11	US 69	392+00 TO 403+00	7	9	4	8	1	
8 of 11	US 69	403+00 TO 414+00					8	
9 of 11	US 69	414+00 TO 425+00						2
10 of 11	US 69	425+00 TO END PROJECT						
11 of 11	FM 779	BEGIN CONSTRUCTION TO END CONSTRUCTION						
PROJECT TOTAL			50	17	25	29	9	7



SMALL SIGN TABULATION								
SHEET NO.	STREET	LOCATION	ITEM 644					
			IN SM RD SN SUP&AM TY10BWG(1) SA(P)	IN SM RD SN SUP&AM TY10BWG(1) SA(T)	IN SM RD SN SUP&AM TY10BWG(1) SA(U)	IN SM RD SN SUP&AM TYS80(1) SA(T)	IN SM RD SN SUP&AM TYS80(1) SA(U)	IN BRIDGE MNT CLEARANCE SGN ASSM (TY N)
			EA	EA	EA	EA	EA	EA
1 of 11	US 69	BEGIN PROJECT TO 337+00	1			2		
2 of 11	US 69	337+00 TO 348+00		2				
3 of 11	US 69	348+00 TO 359+00	1	3				
4 of 11	US 69	359+00 TO 370+00					1	
5 of 11	US 69	370+00 TO 381+00	2	5		2		
6 of 11	US 69	381+00 TO 392+00	3	5		2		
7 of 11	US 69	392+00 TO 403+00	2				1	
8 of 11	US 69	403+00 TO 414+00	1					
9 of 11	US 69	414+00 TO 425+00	4	4		3		
10 of 11	US 69	425+00 TO END PROJECT		1		1		
11 of 11	FM 779	BEGIN CONSTRUCTION TO END CONSTRUCTION	2	4	2			4
PROJECT TOTAL			16	24	2	10	2	4

NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 ©2023 Texas Department of Transportation US 69 AT FM 779			
SIGNING & PAVEMENT MARKING SUMMARY			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	32

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PERMANENT PAVEMENT MARKINGS SUMMARY															
SHEET NO.	STREET	STATION		ITEM 666											
				REFL PAV MRK TY I (W)6"(DOT) (100MIL)	REFL PAV MRK TY I (W)8"(SLD) (100MIL)	REFL PAV MRK TY I (W)8"(DOT) (100MIL)	REFL PAV MRK TY I (W)12"(SLD) (100MIL)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	REF PAV MRK TY I (W)36" (YLD TRI) (100MIL)	PAVEMENT SEALER 6"	RE PM W/RET REQ TY I (W)6"(BRK) (100MIL)	RE PM W/RET REQ TY I (W)6"(SLD) (100MIL)	RE PM W/RET REQ TY I (Y)6"(BRK) (100MIL)	RE PM W/RET REQ TY I (Y)6"(SLD) (100MIL)	
				FROM STA	TO STA	LF	LF	LF	LF	LF	EA	LF	LF	LF	LF
1 of 11	US 69	BEGIN PROJECT	337+00									10	1300	2664	
2 of 11	US 69	337+00	348+00	127	66				11			338	2200	2349	
3 of 11	US 69	348+00	359+00	230	143	38						445	2200	2200	
4 of 11	US 69	359+00	370+00	130	1826		255					550	2393	2393	
5 of 11	US 69	370+00	381+00		306	38			16	1137		563	5187	4906	
6 of 11	US 69	381+00	392+00		307	38		75	14	1479		566	5218	5056	
7 of 11	US 69	392+00	403+00	26	1380		237					550	3608	3608	
8 of 11	US 69	403+00	414+00	175	406	38						550	2200	2200	
9 of 11	US 69	414+00	425+00	90	1033			62				330	2200	2324	
10 of 11	US 69	425+00	END PROJECT									150	2232	2232	
11 of 11	FM 779	BEGIN CONSTRUCTION	END CONSTRUCTION						5				2066	48	3246
PROJECT TOTAL				778	5467	152	492	137	46	2616		4052	30804	48	33178

PERMANENT PAVEMENT MARKINGS SUMMARY									
SHEET NO.	STREET	STATION		ITEM 668			ITEM 672		ITEM 678
				PREFAB PAV MRK TY C (W) (ARROW)	PREFAB PAV MRK TY C (W) (UTURN ARROW)	PREFAB PAV MRK TY C (W) (WORD)	REFL PAV MRKR TY II-A-A	REFL PAV MRKR TY II-C-R	PAV SURF PREP FOR MRK (6")
				FROM STA	TO STA	EA	EA	EA	EA
1 of 11	US 69	BEGIN PROJECT	337+00				88	1	2610
2 of 11	US 69	337+00	348+00	1	1			17	2602
3 of 11	US 69	348+00	359+00	1	1	2		30	4950
4 of 11	US 69	359+00	370+00					120	5336
5 of 11	US 69	370+00	381+00		2	2		57	9505
6 of 11	US 69	381+00	392+00		2	2		43	9494
7 of 11	US 69	392+00	403+00					112	7766
8 of 11	US 69	403+00	414+00	1		2		48	4950
9 of 11	US 69	414+00	425+00	5		2	12	66	4819
10 of 11	US 69	425+00	END PROJECT				13	8	4614
11 of 11	FM 779	BEGIN CONSTRUCTION	END CONSTRUCTION	2			165		5043
PROJECT TOTAL				10	6	10	278	502	61689

NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 ©2023 Texas Department of Transportation US 69 AT FM 779			
SIGNING & PAVEMENT MARKING SUMMARY			
Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	HIGHWAY NO. US 69
Checked: BAJ	DIST. TYL	COUNTY WOOD	SHEET NO. 33
Drawn: JKF	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Checked: BAJ			



LARGE SIGN TABULATION

SHEET NO.	STREET	LOCATION	ITEM 416	ITEM 636	ITEM 647
			DRILL SHAFT (SIGN MTS) (24 IN)	ALUMINUM SIGNS (TY G)	INSTALL LRSS (STRUCT STEEL)
			LF	SF	LB
1 of 11	US 69	BEGIN PROJECT TO 337+00	16	138	677
2 of 11	US 69	337+00 TO 348+00			
3 of 11	US 69	348+00 TO 359+00			
4 of 11	US 69	359+00 TO 370+00	16	150	840
5 of 11	US 69	370+00 TO 381+00			
6 of 11	US 69	381+00 TO 392+00			
7 of 11	US 69	392+00 TO 403+00	16	150	678
8 of 11	US 69	403+00 TO 414+00			
9 of 11	US 69	414+00 TO 425+00			
10 of 11	US 69	425+00 TO END PROJECT	16	138	610
11 of 11	FM 779	BEGIN CONSTRUCTION TO END CONSTRUCTION			
PROJECT TOTAL			64	575	2804

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NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 ©2023 Texas Department of Transportation US 69 AT FM 779			
SIGNING & PAVEMENT MARKING SUMMARY			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	33A
		HIGHWAY NO.	
		US 69	

SUMMARY OF SMALL SIGNS

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

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)	
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION		
										PREFABRICATED		1EXT or 2EXT = # of Ext
1 OF 11	2	W6-1 W16-9P	DIVIDED HIGHWAY AHEAD	48 X 48 36 X 24	X	X	S80	1	SA	T		
	3	D20-5T	CO RD 2940 ← CO RD 2370 →	24 X 42	X		10BWG	1	SA	P		
	4	D2-2	Alba 7 Greenville 46	90 X 30	X		S80	1	SA	T		
2 OF 11	5	R2-1	SPEED LIMIT 60	36 X 48	X		10BWG	1	SA	T		
	6	R1-2	YIELD	48 X 48 X 48	X		10BWG	1	SA	T		
3 OF 11	7	M3-1 M1-4	NORTH US 69	24 X 12 24 X 24	X	X	10BWG	1	SA	P		
	8	W9-2TR	LANE ENDS MERGE RIGHT	48 X 48	X		10BWG	1	SA	T		
	9	W9-1L	LEFT LANE ENDS	48 X 48	X		10BWG	1	SA	T		
	10	W9-1L	LEFT LANE ENDS	48 X 48	X		10BWG	1	SA	T		
4 OF 11	12	E5-1	EXIT ↗	72 X 60	X		S80	1	SA	U		
	13	W4-1R	MERGING LANE ON RIGHT	48 X 48	X		10BWG	1	SA	T		
5 OF 11	14	R5-1	DO NOT ENTER	36 X 36	X		10BWG	1	SA	P		
	15	R5-1	DO NOT ENTER	36 X 36	X		10BWG	1	SA	P		
	16	W3-1	STOP AHEAD	48 X 48	X		10BWG	1	SA	T		
	17	D1-2 R5-1a	← Quitman Golden → WRONG WAY } B-B	78 X 30 42 X 30	X X		S80	1	SA	T		
	18	R6-1R	ONE WAY →	54 X 18	X		10BWG	1	SA	T		
	19	R6-1R	ONE WAY →	54 X 18	X		10BWG	1	SA	T		
	20	R1-2	YIELD	48 X 48 X 48	X		10BWG	1	SA	T		
	21	R1-2	YIELD	48 X 48 X 48	X		10BWG	1	SA	T		
	22	R1-1 W4-4P R5-1	STOP CROSS TRAFFIC DOES NOT STOP } B-B DO NOT ENTER	48 X 48 48 X 24 36 X 36	X X X		S80	1	SA	P	BM	
6 OF 11	23	R6-1L R5-1	← ONE WAY } 90° DO NOT ENTER	54 X 18 36 X 36	X X		10BWG	1	SA	T		
	24	M1-6F M6-4	TEXAS FARM ROAD 779 ↔	24 X 24 21 X 15	X X		10BWG	1	SA	P		
	25	M1-6F M6-4	TEXAS FARM ROAD 779 ↔	24 X 24 21 X 15	X X		10BWG	1	SA	P		
DATE: FILE:	26	R1-2	YIELD	48 X 48 X 48	X		10BWG	1	SA	T		

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.
<http://www.txdot.gov/>

- NOTE:**
- Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
 - For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS) Standard Sheet.
 - For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

Texas Department of Transportation
Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE: sum16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
4-16	DIST	COUNTY	SHEET NO.	
8-16	TYL	WOOD	34	

SUMMARY OF SMALL SIGNS

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PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION	
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U"	
6 OF 11	27	R6-1L R5-1	← ONE WAY } 90° DO NOT ENTER	54 X 18 36 X 36	X	X	10BWG	1	SA	T	
	28	R1-1 W4-4P R5-1	STOP CROSS TRAFFIC DOES NOT STOP } B-B DO NOT ENTER	48 X 48 48 X 24 30 X 30	X	X	S80	1	SA	P	BM
	29	R6-1R	ONE WAY →	54 X 18	X		10BWG	1	SA	T	
	30	R5-1a D1-2	WRONG WAY } B-B ← Golden Quitman →	42 X 30 78 X 30	X	X	S80	1	SA	T	
	31	W3-1	STOP AHEAD	48 X 48	X		10BWG	1	SA	T	
	32	D20-1TR	CO RD 2345 →	24 X 24	X		10BWG	1	SA	P	
7 OF 11	33	R5-1	DO NOT ENTER	36 X 36	X		10BWG	1	SA	P	
	34	R5-1	DO NOT ENTER	36 X 36	X		10BWG	1	SA	P	
	35	W4-1R	MERGING LANE ON RIGHT	48 X 48	X		10BWG	1	SA	T	
	36	E5-1	EXIT ↗	72 X 60	X		S80	1	SA	U	
8 OF 11	38	D20-1TR	CO RD 2280 →	24 X 24	X		10BWG	1	SA	P	
9 OF 11	39	R5-1	DO NOT ENTER	36 X 36	X		10BWG	1	SA	P	
	40	R6-1L R1-1	← ONE WAY } B-B STOP	54 X 18 48 X 48	X	X	S80	1	SA	T	
	41	R6-1R R1-1	ONE WAY → } B-B STOP	54 X 18 48 X 48	X	X	S80	1	SA	T	
	42	R5-1	DO NOT ENTER	36 X 36	X		10BWG	1	SA	P	
	43	R6-1L R1-1	← ONE WAY } B-B STOP	54 X 18 48 X 48	X	X	S80	1	SA	T	
	44	W9-1R	RIGHT LANE ENDS	48 X 48	X		10BWG	1	SA	T	
	45	W9-1R	RIGHT LANE ENDS	48 X 48	X		10BWG	1	SA	T	
	46	W9-2TL	LANE ENDS MERGE LEFT	48 X 48	X		10BWG	1	SA	T	
	47	D20-1TL	← CO RD 2280	24 X 24	X		10BWG	1	SA	P	
	48	R2-1	SPEED LIMIT 60	36 X 48	X		10BWG	1	SA	T	
	49	M3-1 M1-4 D10-7aT	SOUTH US 69 300	24 X 12 24 X 24 3 X 10	X X X		10BWG	1	SA	P	
10 OF 11	50	D2-2	Mineola 7 Tyler 31	72 X 30	X		10BWG	1	SA	T	
	51	W6-1 W16-9P	DIVIDED HIGHWAY AHEAD	48 X 48 36 X 24	X X		S80	1	SA	T	

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.
<http://www.txdot.gov/>

- NOTE:**
- Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
 - For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS) Standard Sheet.
 - For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).



SUMMARY OF SMALL SIGNS

SOSS

FILE: sum16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
4-16	DIST	COUNTY	SHEET NO.	
8-16	TYL	WOOD	35	

DATE:
FILE:

SUMMARY OF SMALL SIGNS

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DATE: FILE:

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)	
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION		
										PREFABRICATED		1EXT or 2EXT = # of Ext
11 OF 11	53	W12-2	CLEARANCE X'-X"	48 X 48	X		10BWG	1	SA	T		
	54	W12-2a	XX FT X IN	84 X 24	X				BRIDGE MOUNT		N	
	55	M3-3 M1-4 M6-1	SOUTH US 69 ←	24 X 12 24 X 24 21 X 15	X X X		10BWG	1	SA	P		
	56	W12-2a	XX FT X IN	84 X 24	X				BRIDGE MOUNT		N	
	57	R6-1R	ONE WAY →	54 X 18	X		10BWG	1	SA	T		
	58	M3-1 M1-4 M5-1L M3-3 M1-4 M6-1	NORTH US 69 ← SOUTH US 69 →	24 X 12 24 X 24 21 X 15 24 X 12 24 X 24 21 X 15	X X X X X X		10BWG	1	SA	U		
	59	M3-3 M1-4 M5-1L M3-1 M1-4 M6-1	SOUTH US 69 ← NORTH US 69 →	24 X 12 24 X 24 21 X 15 24 X 12 24 X 24 21 X 15	X X X X X X		10BWG	1	SA	U		
	60	W12-2a	XX FT X IN	84 X 24	X				BRIDGE MOUNT		N	
	61	R6-1R	ONE WAY →	54 X 18	X		10BWG	1	SA	T		
	62	M3-1 M1-4 M6-1	NORTH US 69 ←	24 X 12 24 X 24 21 X 15	X X X		10BWG	1	SA	P		
	63	W12-2a	XX FT X IN	84 X 24	X				BRIDGE MOUNT		N	
	64	W12-2	CLEARANCE X'-X"	48 X 48	X		10BWG	1	SA	T		

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.
<http://www.txdot.gov/>

- NOTE:**
- Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
 - For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS) Standard Sheet.
 - For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

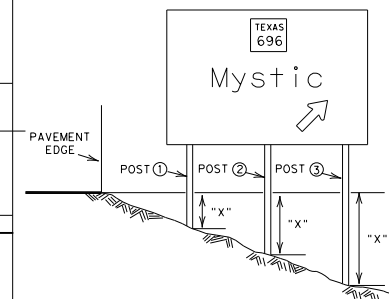
SOSS

FILE: sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
4-16	DIST	COUNTY	SHEET NO.	
8-16	TYL	WOOD	36	

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SUMMARY OF LARGE SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN BACK-GROUND COLOR	SIGN TEXT	SIGN DIMENSIONS	PLAQUES, & OTHER ATTACHMENTS		BACKGROUND SUBSTRATE (SQ FT)		TYPE OF MOUNT	"X" DIMENSION			GALVANIZED STRUCTURAL STEEL			DRILLED SHAFT				
					DIRECT APPLY	* ALUMINUM (TYPE A)	GROUND MOUNT (TYPE G)	OVERHEAD (TYPE O)		post ①	post ②	post ③	SIZE	post ①	post ②	post ③	TOTAL WEIGHT LBS.	NON-REINF 12"φ	LINEAR FEET REINFORCED 24"φ 30"φ 36"φ	
1	1	GRN	FM 779	4'6" X 3'0"	13.5															
			QUITMAN																	
			GOLDEN EXIT 1/2 MILE	11'6" X 12'0"		138.00		3 2 1	4.89	6.78		W6 X 12	23.89	25.78		676.64		16.00		
4	11	GRN	FM 779	4'6" X 3'0"	13.5															
			QUITMAN																	
			GOLDEN EXIT 1/2 MILE	11'6" X 13'0"		149.50		3 2 1	5.32	8.28		W6 X 15	25.32	28.28		839.60		16.00		
7	37	GRN	FM 779	4'6" X 3'0"	13.5															
			GOLDEN																	
			QUITMAN	11'6" X 13'0"		149.50		3 2 1	0.34	2.46		W6 X 15	20.34	22.46		677.60		16.00		
10	52	GRN	FM 779	4'6" X 3'0"	13.5															
			GOLDEN																	
			QUITMAN	11'6" X 12'0"		138.00		3 2 1	1.28	4.85		W6 X 12	20.28	23.85		610.16		16.00		
PAGE TOTALS							575.00			PAGE TOTALS			2804.00		64.00					



● The "x" dimension is the elevation difference at the post between the ground and the edge of pavement or top of curb.

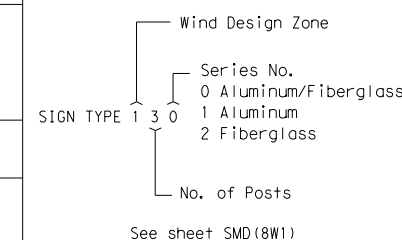
Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.

The post lengths listed here are approximations. The corrected post lengths will be furnished by the Contractor after the stud posts are placed.

Tower heights shall be verified with the Engineer before fabrication.

* This column is for aluminum Type A and not direct apply. Direct apply is subsidiary to the sign.

SIGN TYPE



SUMMARY OF LARGE SIGNS SOLS

© TxDOT May 1987			
DN. - TxDOT	REVISIONS		
CR. - TxDOT	11-93	1-04	
DN. - TxDOT	8-95	9-08	
CR. - TxDOT	5-01		
CONT	SECT	JOB	HIGHWAY
0203	05	039	US 69
DIST	COUNTY		SHEET NO.
TYL	WOOD		37

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GENERAL NOTES

1. ADVANCED WARNING SIGNS SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF THE PROJECT. CONTRACTOR SHALL ADJUST LOCATION OF SIGNS IN ACCORDANCE WITH APPLICABLE BARRICADES AND CONSTRUCTION (BC) STANDARDS AND THE LATEST TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
2. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE TMUTCD AND TRAFFIC CONTROL PLAN (TCP) STANDARDS. 42" CONES ARE ACCEPTABLE REPLACEMENT AS LONG AS CONSISTENT DEVICES ARE USED.
3. THE CONTRACTOR IS REQUIRED TO MAINTAIN ACCESS TO PRIVATE PROPERTIES AT ALL TIMES.
4. EXISTING 4 LUMINAIRES AT FM 779 INTERSECTION SHALL REMAIN FUNCTIONAL WITH UNINTERRUPTED SERVICE UNTIL NEW INSTALLATION IS COMPLETE. MAINTENANCE AND UPKEEP WILL BE INCIDENTAL TO VARIOUS BID ITEMS.
5. EXISTING SIGNS THAT CONFLICT WITH THE PROPOSED CONSTRUCTION SEQUENCING OR TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED, AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.
6. DURING NONWORKING HOURS, AND WHEN A LANE CLOSURE IS NOT IN PLACE EDGE DROP OFFS GREATER THAN 2" WILL NOT BE ALLOWED. SHOULDER UP WITH LIKE OR OTHERWISE APPROVED MATERIALS, INCLUDE A BENCH WIDTH WIDE ENOUGH TO FACILITAE THE LEVEL PLACEMENT OF A 42" TWO-PIECE CONE. THE CONTRACTOR SHALL PLACE A 3:1 SLOPE BETWEEN THE CONSTRUCTION ZONE AND TRAVELED PAVEMENT AT THE END OF EACH DAY IF DROP-OFF EXCEEDS 2 INCHES. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.
7. THE INSTALLATION, DAILY MAINTENANCE, AND FINAL PATCHING OF TEMPORARY BLOCK-OUTS FOR TEMPORARY DRAINAGE AT ALL AFFECTED ITEMS, INCLUDING BUT NOT LIMITED TO, CURB AND GUTTER PANS AT INLETS, MBOG MOW STRIPS AND OTHER AREAS IDENTIFIED BY THE ENGINEER WILL BE REQUIRED. COST FOR THIS WORK IS SUBSIDIARY TO VARIOUS BID ITEMS.
8. CONTRACTOR SHALL ENSURE ADEQUATE DRAINAGE THROUGHOUT THE CONSTRUCTION ZONE.
9. ALL LEADING EDGES OF CONCRETE BARRIER SHALL BE PROTECTED WHILE IN THE CLEAR ZONE. WHEN CONNECTING BARRIERS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A UNIFORM FACE AND ENSURE THAT NO EDGES SHALL PROTRUDE INTO ONCOMING TRAFFIC.
10. ALL TEMPORARY DRIVEWAYS ARE TO BE CONSTRUCTED AND MAINTAINED WITH AN ALL WEATHER MATERIAL. THICKNESS AND MATERIAL OF ALL WEATHER MATERIAL IS TO BE APPROVED BY THE ENGINEER. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.
11. TEMPORARY PAVEMENT IS TO BE CONSTRUCTED USING 2" HMA C TY C SURFACE AND 8" TY B BASE UNLESS OTHERWISE SHOWN ON THE PLAN. BASE SHALL BE PLACED IN EQUAL LIFTS.
12. TCP (2-1b) ACCOMPANIED BY PCM'S AND WZ RS WILL BE REQUIRED FOR ALL OPERATION UNLESS OTHERWISE DIRECTED.
13. CONSTRUCT ILLUMINATION ALONG ROADWAY EARLY AS LONG AS IT IS SAFE TO DO SO.

PHASE 1 – STEP 1

TRAFFIC OPERATIONS

1. PLACE ADVANCE WARNING SIGNS THROUGHOUT PROJECT.
2. INSTALL STORM WATER POLLUTION PREVENTION DEVICES NEEDED FOR THIS PHASE.
3. PLACE TRAFFIC CONTROL DEVICES, BARRICADES, AND WORK ZONE STRIPING, AS SHOWN IN THIS PHASE.
4. MAINTAIN TRAFFIC ALONG US 69 AND FM 779 IN EXISTING CONDITION.
5. INSTALL SHIFTING TAPERS AT EACH END, AS SHOWN WHEN NEEDED.
6. MAINTAIN ACCESS FOR ALL DRIVEWAYS ON WEST SIDE OF US 69.

WORK ZONE CONSTRUCTION

1. CONSTRUCT CROSS CULVERT EXTENSIONS ALONG US 69 AND FM 779.
2. CONSTRUCT STAGE I INLETS WITH TEMPORARY LIDS, WHERE APPLICABLE.
3. REMOVE EXISTING DRIVEWAY CULVERTS AND RELAY AT WEST SIDE OF US 69 TEMPORARY DRIVEWAYS, WHERE APPLICABLE.
4. CONSTRUCT US 69 SB MAINLANE, CROSSOVERS, SB MAINLANE RAMPS, DRIVEWAYS, TEMPORARY PAVEMENT, AND WEST SIDE OF US 69 TEMPORARY DRIVEWAYS WITH RECLAIMED ASPHALT PAVEMENT (RAP) OR OTHER ALL WEATHER MATERIAL AS APPROVED BY THE ENGINEER, AS SHOWN ON TCP PLANS. CONSTRUCT TY D LEVEL UP ON SHOULDERS AND PROPOSED PAVEMENT THROUGH SEAL COAT, OMITTING FINAL SURFACE HOT MIX ASPHALT PAVEMENT.
5. CONSTRUCT FM 779 TEMPORARY PAVEMENT, AS SHOWN ON TCP PLANS

PHASE 1 – STEP 2

TRAFFIC OPERATIONS

1. PLACE TRAFFIC CONTROL DEVICES, BARRICADES, AND WORK ZONE STRIPING, AS SHOWN IN THIS STEP.
2. MAINTAIN TRAFFIC ALONG US 69 IN EXISTING CONDITION.
3. MAINTAIN ACCESS FOR ALL DRIVEWAYS ON WEST SIDE OF US 69.
4. SHIFT FM 779 TRAFFIC TO TEMPORARY PAVEMENT AS SHOWN ON TCP PLANS

WORK ZONE CONSTRUCTION

1. CONSTRUCT PROPOSED PAVEMENT ON FM 779 SOUTH WEST QUADARANT AND PART OF THE U-TURN AS SHOWN ON THE TCP PLAN.
2. CONSTRUCT TEMP PAVEMENT ALONG FM 779 AS SHOWN ON TCP PLANS

PHASE 1 – STEP 3

TRAFFIC OPERATIONS

1. PLACE TRAFFIC CONTROL DEVICES, BARRICADES, AND WORK ZONE STRIPING, AS SHOWN IN THIS STEP.
2. MAINTAIN TRAFFIC ALONG US 69 IN EXISTING CONDITION.
3. SHIFT FM TRAFFIC TO PROPOSED AND TEMP PAVEMENT CONSTRUCTED ON PREVIOUS STEP
4. MAINTAIN ACCESS FOR ALL DRIVEWAYS ON WEST SIDE OF US 69.

WORK ZONE CONSTRUCTION

1. CONSTRUCT PROPOSED PAVEMENT ON FM 779 SOUTH EAST QUADARANT.
2. CONSTRUCT TEMP PAVEMENT AS SHOWN ON TCP PLANS

PHASE 2 – STEP 1

TRAFFIC OPERATIONS

1. INSTALL STORM WATER POLLUTION PREVENTION DEVICES NEEDED FOR THIS PHASE.
2. PLACE TRAFFIC CONTROL DEVICES, BARRICADES, AND WORK ZONE STRIPING, AS SHOWN IN THIS PHASE.
3. SHIFT FM 779 TRAFFIC TO EASTBOUND TEMPORARY AND PROPOSED PAVEMENT .
4. INSTALL TEMPORARY GROUND-MOUNTED STOP SIGNS ALONG FM 779 AT INTERSECTION WITH US 69 SB MAINLANE. INSTALL TEMPORARY FLASHING BEACON AS SHOWN ON PLANS.
5. SHIFT US 69 TRAFFIC ONTO SB MAINLANE ONCE ALL SAFETY DEVICES ARE IN PLACE AND TO THE SATISFACTION OF THE ENGINEER. REMOVE AND STORE EXISTING STOP SIGNS ALONG FM 779 AT INTERSECTION WITH US 69 NB MAINLANE.
6. MAINTAIN ACCESS FOR ALL DRIVEWAYS ON EAST SIDE OF US 69.

WORK ZONE CONSTRUCTION

1. REMOVE WEST SIDE OF US 69 TEMPORARY DRIVEWAYS.
2. CONSTRUCT STAGE I INLETS WITH TEMPORARY LIDS, WHERE APPLICABLE.
3. REMOVE EXISTING DRIVEWAY CULVERTS AND RELAY AT EAST SIDE OF US 69 TEMPORARY DRIVEWAYS, WHERE APPLICABLE.
4. CONSTRUCT US 69 NB MAINLANE, CROSSOVERS, NB MAINLANE RAMPS, DRIVEWAYS, TEMPORARY PAVEMENT, AND EAST SIDE OF US 69 TEMPORARY DRIVEWAYS WITH RAP, OR OTHER WEATHER MATERIAL TO BE APPROVED BY THE ENGINEER, AS SHOWN ON TCP PLANS. CONSTRUCT PROPOSED PAVEMENT THROUGH SEAL COAT, OMITTING FINAL HOT MIX ASPHALT PAVEMENT.
5. CONSTRUCT FM 779 PROPOSED PAVMENT ON NORTH WEST QUADRANT AND REMAINDER OF WEST U-TURN.
6. CONSTRUCT TEMPORARY PAVMENT ALONG WEST SIDE OF CONSTRUCTED PROPOSED PAVEMENT.

PHASE 2 – STEP 2

TRAFFIC OPERATIONS

1. PLACE TRAFFIC CONTROL DEVICES, BARRICADES, AND WORK ZONE STRIPING, AS SHOWN IN THIS STEP.
2. MAINTAIN TRAFFIC ALONG US 69 ON SB MAINLANE.
3. SHIFT FM 799 TRAFFIC TO CONSTRUCTED WESTBOUND AND TEMP PAVEMENT AS SHOWN ON TCP PLANS.
3. MAINTAIN ACCESS FOR ALL DRIVEWAYS ON EAST SIDE OF US 69.




WORK ZONE CONSTRUCTION

1. CONSTRUCT PROPOSED PAVEMENT ON FM 779 NORTH EAST QUADARANT AND REMINDER OF THE FM 779 INTERSECTION.



S. Elsaigh

12/22/2023

NO.				REVISION				BY				DATE			
  TEXAS REGISTERED ENGINEERING FIRM F-1741															
 © 2023															
US 69 AT FM 779 TCP NARRATIVE															
Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.				HIGHWAY NO.					
Checked:	ODH									US 69					
Drawn:	HJZ	DIST.	WOOD	COUNTY	0203	SECTION NO.	05	JOB NO.	039	SHEET NO.					
Checked:	KML	TYL									38				

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PHASE 3

TRAFFIC OPERATIONS

1. INSTALL STORM WATER POLLUTION PREVENTION DEVICES NEEDED FOR THIS PHASE.
2. PLACE TRAFFIC CONTROL DEVICES, BARRICADES, AND WORK ZONE STRIPING, AS SHOWN IN THIS PHASE.
3. MAINTAIN TRAFFIC ALONG FM 779.
4. INSTALL TEMPORARY GROUND-MOUNTED STOP SIGNS ALONG FM 779 AT INTERSECTIONS WITH US 69 MAINLANES.
5. SHIFT US 69 TRAFFIC ONTO CONSTRUCTED MAINLANES AND RAMPS, WITH SINGLE LANE, ONE-WAY OPERATION, ONCE ALL SAFETY DEVICES ARE IN PLACE AND TO THE SATISFACTION OF THE ENGINEER.
6. UTILIZE DAILY LANE CLOSURES ON FM 779 TO CONSTRUCT BRIDGE, AS SHOWN IN THIS PHASE. BEAM PLACEMENT OVER 779 IS TO ONLY OCCUR AT NIGHT. CONTRACTOR IS TO FOLLOW 779 DETOUR LAYOUT FOR FM779 NIGHTLY CLOSURE.
7. MAINTAIN ACCESS FOR ALL DRIVEWAYS ON US 69.

WORK ZONE CONSTRUCTION

1. INSTALL SEAL COAT ON US 69 SB MAINLANE AND RAMPS PRIOR TO INSTALLATION OF WORK ZONE STRIPING.
2. REMOVE EAST SIDE OF US 69 TEMPORARY DRIVEWAYS.
3. CONSTRUCT STAGE II INLETS, WHERE APPLICABLE.
4. CONSTRUCT US 69 MAINLANE RAMPS, APPROACHES, RETAINING WALLS, BRIDGE, CONCRETE TRAFFIC BARRIER (CTB), AND RIPRAP, AS SHOWN ON TCP PLANS. CONSTRUCT PROPOSED PAVEMENT THROUGH SEAL COAT, OMITTING FINAL HOT MIX ASPHALT PAVEMENT.
5. CONSTRUCT AND INSTALL ALL ILLUMINATION ITEMS SHOWN IN PLANS.

FINAL

TRAFFIC OPERATIONS

1. MAINTAIN TRAFFIC ALONG US 69 IN FINAL CONDITION.
2. REMOVE TEMPORARY GROUND-MOUNTED STOP SIGNS ALONG FM 779 AT INTERSECTION WITH US 69.
3. SHIFT FM 779 TRAFFIC TO FINAL CONDITION ONCE ALL SAFETY DEVICES ARE IN PLACE AND TO THE SATISFACTION OF THE ENGINEER.
4. MAINTAIN ACCESS FOR ALL DRIVEWAYS ON US 69 AND FM 779.

WORK ZONE CONSTRUCTION

1. INSTALL FINAL HOT MIX ASPHALT PAVEMENT ALONG US 69 AND FM 779 THROUGHOUT PROJECT, PER ALL APPLICABLE TxDOT BC, TCP, AND WZ STANDARDS, PRIOR TO INSTALLATION OF FINAL STRIPING.
2. PLACE PERMANENT SIGNS AND PAVEMENT MARKINGS, AS SHOWN IN SIGNING & PAVEMENT MARKING PLANS.
3. SHIFT ALL TRAFFIC TO FINAL CONFIGURATION.
4. PLACE PERMANENT SEEDING AND PERFORM FINAL CLEAN-UP.



S. Elsaigh

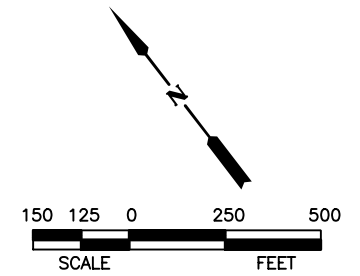
12/22/2023

NO.	REVISION	BY	DATE



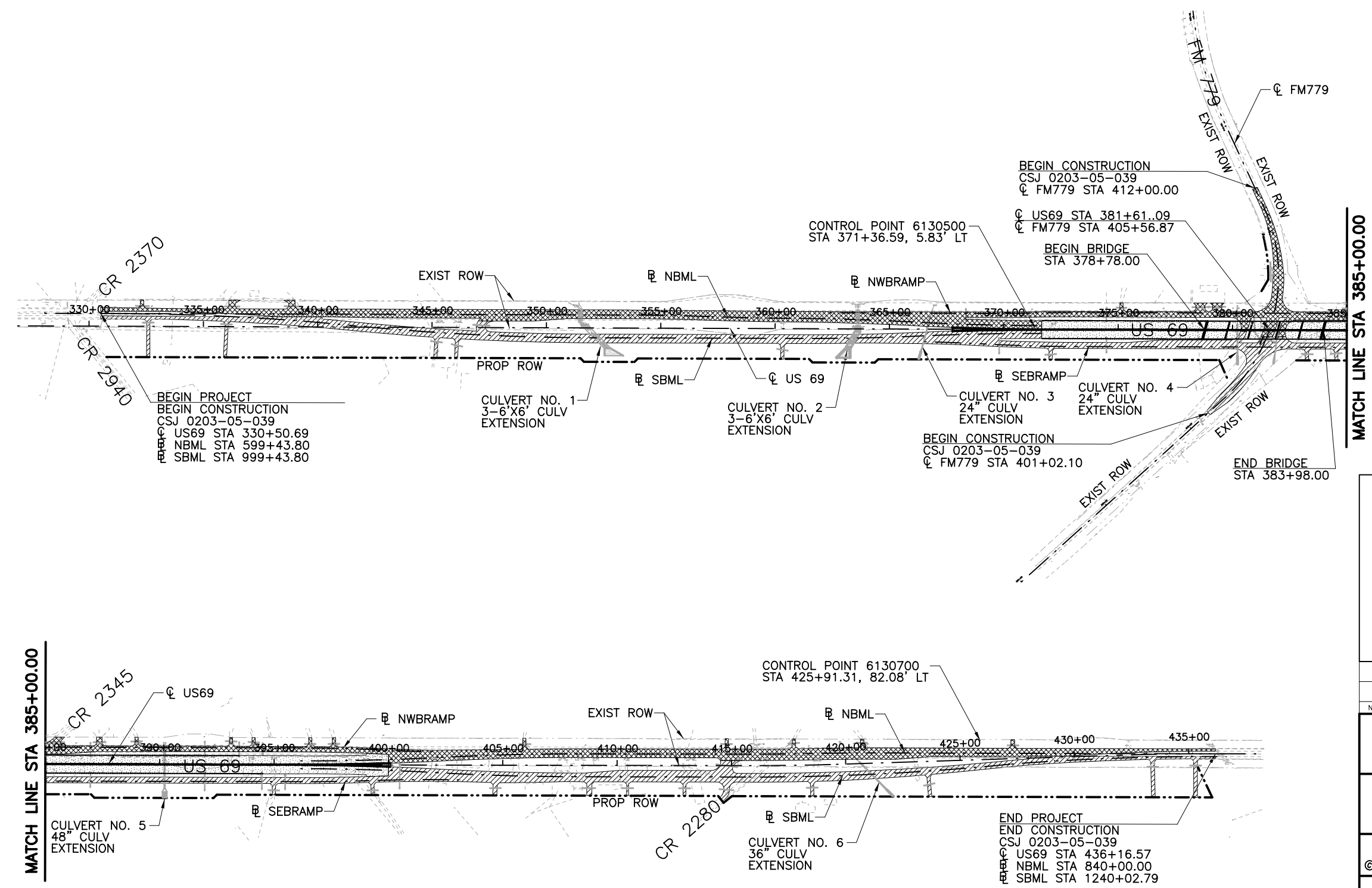
US 69 AT FM 779
TCP NARRATIVE

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Checked:	ODH	DIST.	HUZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	KML	TYL	JOB NO.	039	SHEET NO.	39			



LEGEND

- PHASE 1
- PHASE 2
- PHASE 3



MATCH LINE STA 385+00.00

MATCH LINE STA 385+00.00



S. Elsaigh

12/12/2023

NO.	REVISION	BY	DATE



**US 69 AT FM 779
TCP OVERALL LAYOUT**

BEGIN PROJECT TO END PROJECT

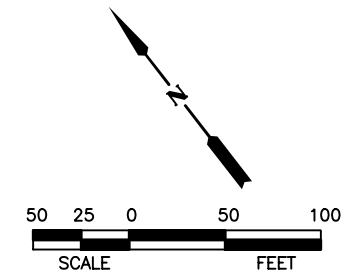
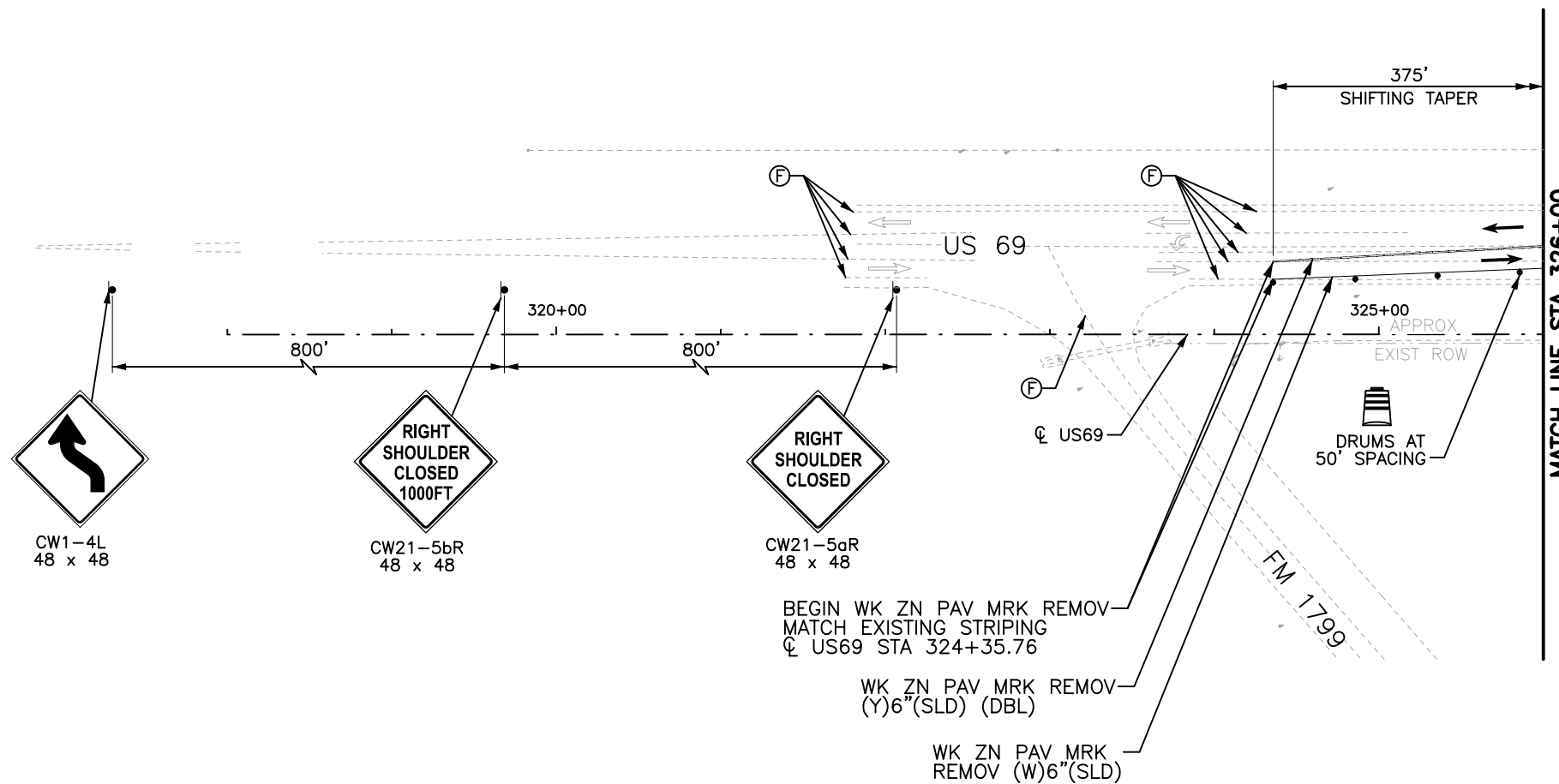
Designed:	KML	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
Checked:	ODH	6	TEXAS		US 69		
Drawn:	HJZ	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	KML	TYL	WOOD	0203	05	039	40

12/12/2023 3:03:42 AM hitan pw:/

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 cpypdf_ANSIB.pltcfgr
 pw:/

12/12/2023 03:53 AM hitran

pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR --- PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- ⇄ EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BEGIN WK ZN PAV MRK REMOV
 MATCH EXISTING STRIPING
 ☉ US69 STA 324+35.76

WK ZN PAV MRK REMOV
 (Y)6"(SLD) (DBL)

WK ZN PAV MRK
 REMOV (W)6"(SLD)



S. Elsaigh
 12/12/2023

NO.	REVISION	BY	DATE



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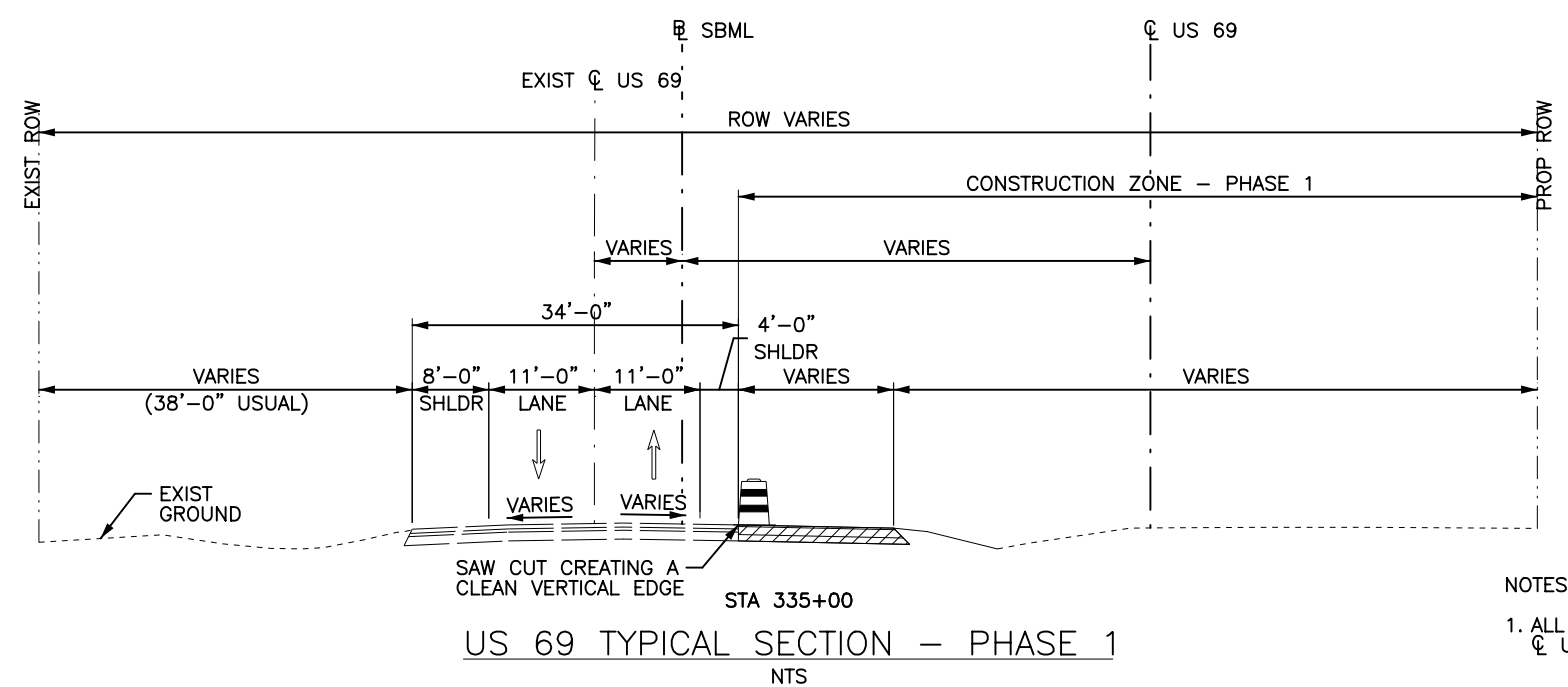
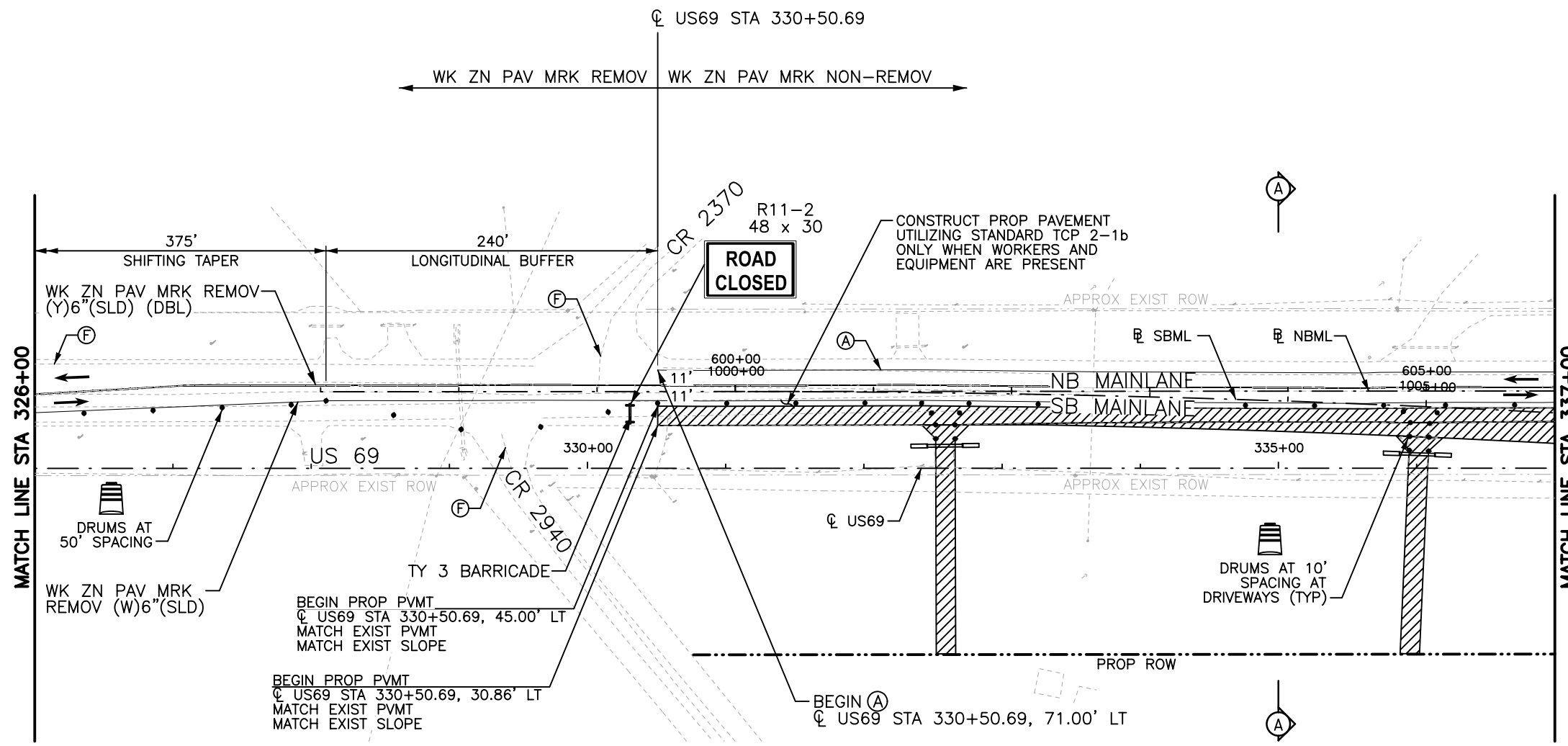
US 69 AT FM 779
 TCP PHASE 1 STEP 1
 US 69

BEGIN PROJECT TO STA 326+00

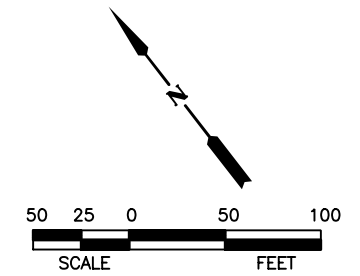
NOTES:
 1. ALL STATIONS AND OFFSETS ARE FROM
 ☉ US 69 UNLESS NOTED OTHERWISE.

Designated:	KML	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
Checked:	ODH	6	TEXAS		US 69		
Drawn:	HJZ	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	KML	TYL	WOOD	0203	05	039	41

12/12/2023 3:04:06 AM hitran
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 cpypdf_ANSIB.pltcfgr
 pw:/



NOTES:
 1. ALL STATIONS AND OFFSETS ARE FROM
 CL US 69 UNLESS NOTED OTHERWISE.



- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
 - (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
 - (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
 - (F) EXISTING STRIPING / STRIPING PREV PLANS
 - (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS ⇄ TY 3 BARRICADE
 - ATTENUATOR --- PCTB
 - DIRECTION OF TRAFFIC ▸ SIGN POST
 - EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

STATE OF TEXAS
 SAMI H. EL SAIGH
 114262
 LICENSED PROFESSIONAL ENGINEER
S. El Saigh
 12/12/2023

NO.	REVISION	BY	DATE

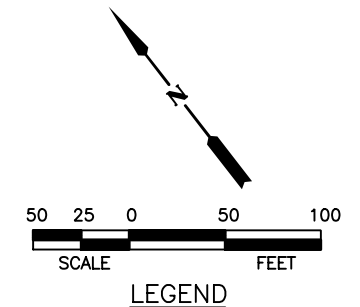
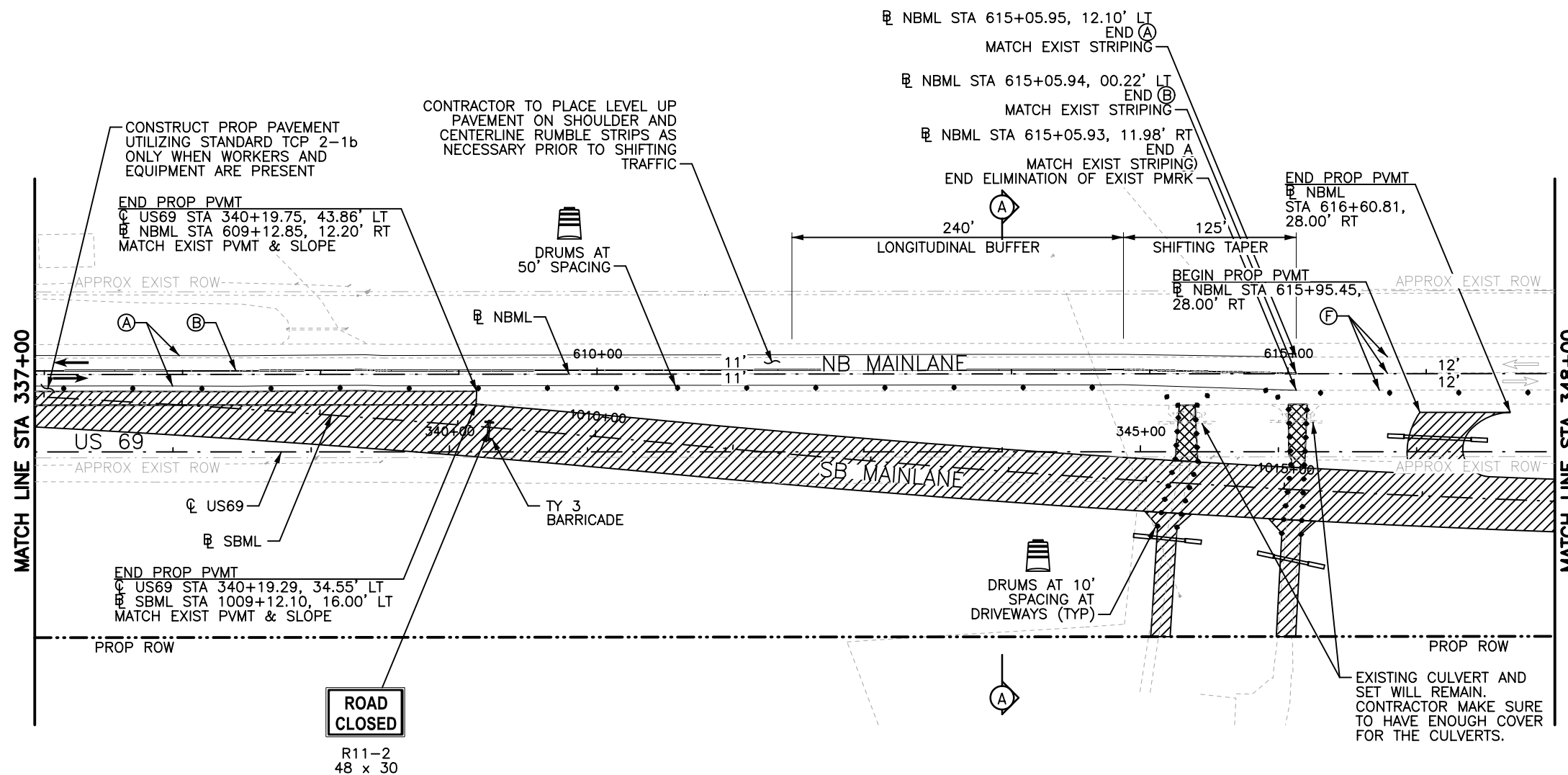


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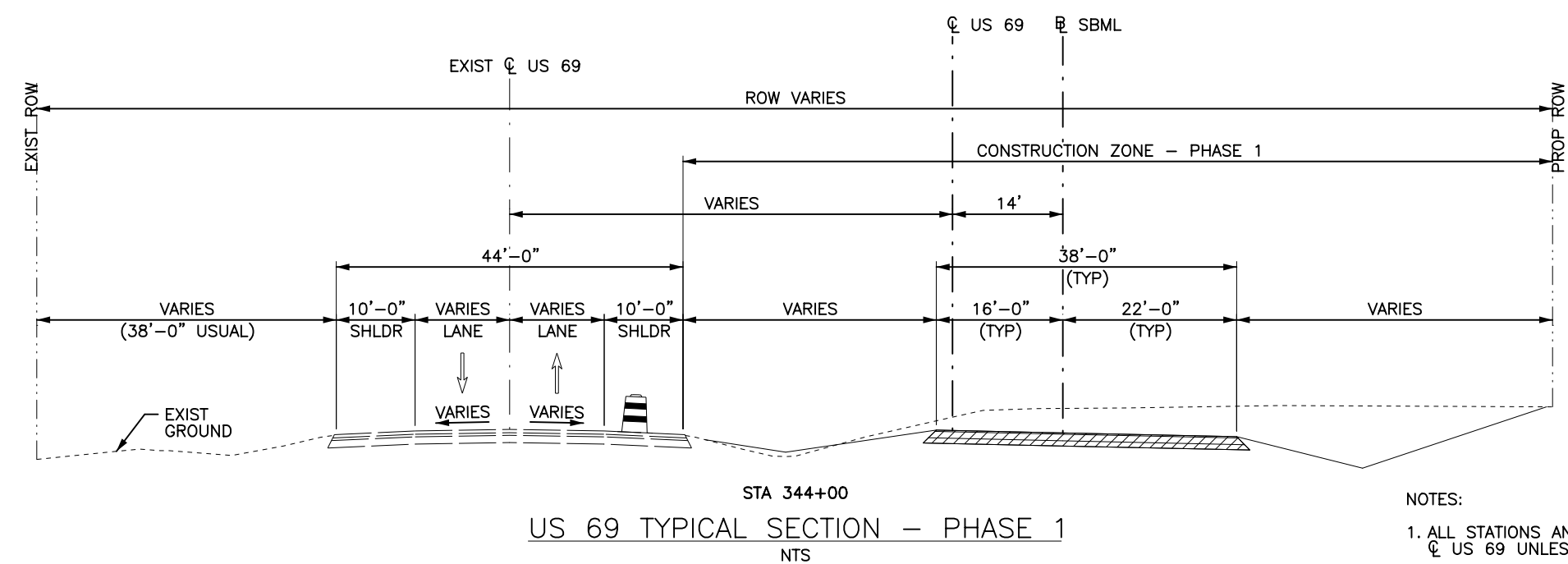
US 69 AT FM 779
 TCP PHASE 1 STEP 1
 US 69

STA 326+00 TO STA 337+00

Designed:	KML	FED. RD. DIV. NO.:	6	STATE:	TEXAS	FEDERAL AID PROJECT NO.:		HIGHWAY NO.:	US 69
Checked:	ODH	DIST.:	HJZ	COUNTY:	WOOD	CONTROL NO.:	0203	SECTION NO.:	05
Drawn:	HJZ	JOB NO.:	039	SHEET NO.:	42				
Checked:	KML	TYL							



- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
 - (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
 - (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
 - (F) EXISTING STRIPING / STRIPING PREV PLANS
 - (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS
 - TY 3 BARRICADE
 - ATTENUATOR
 - PCTB
 - DIRECTION OF TRAFFIC
 - SIGN POST
 - EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM C US 69 UNLESS NOTED OTHERWISE.



S. El Saigh 12/12/2023

NO.	REVISION	BY	DATE
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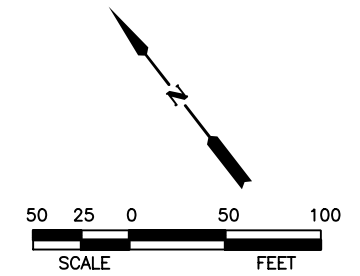
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US 69 AT FM 779
TCP PHASE 1 STEP 1
US 69

STA 337+00 TO STA 348+00

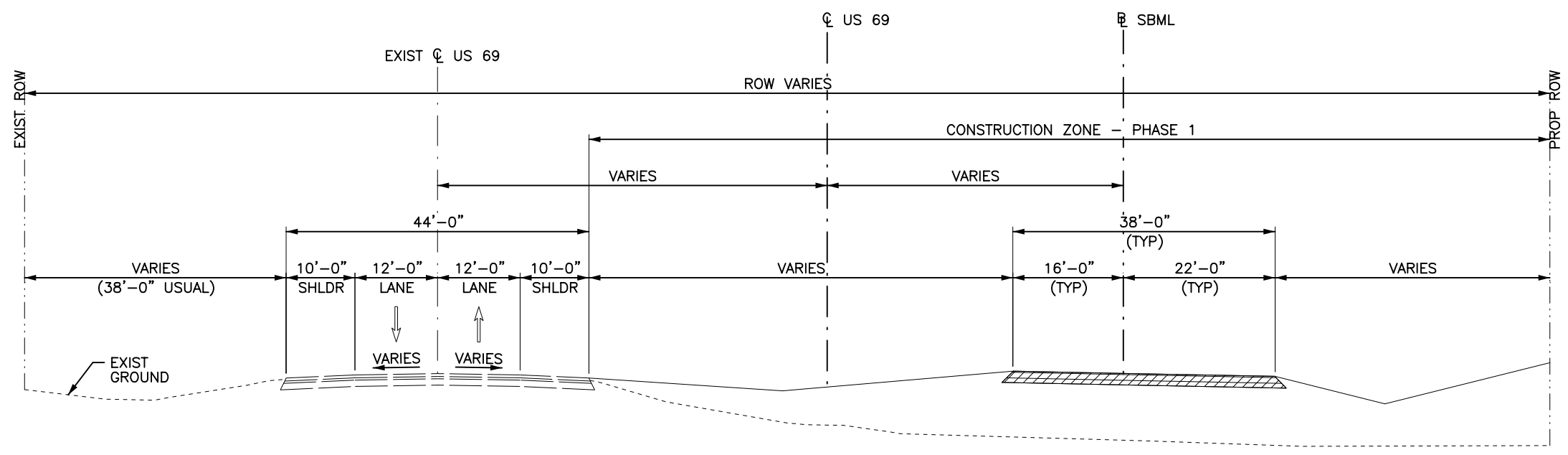
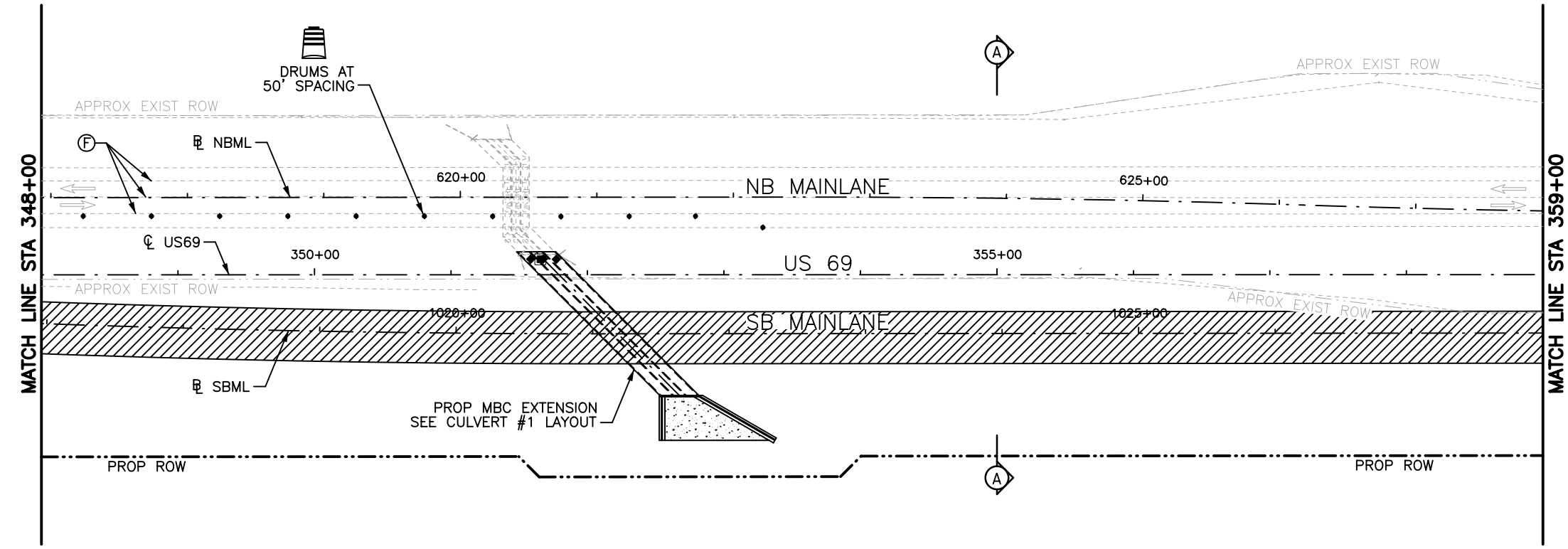
Designed: KML	FED. RD. DIV. NO. 6	STATE TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO. US 69
Checked: ODH	DIST. HJZ	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: KML	TYL				SHEET NO. 43

12/12/2023 04:19 AM hitran pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR ----- PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- ↔ EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



US 69 TYPICAL SECTION - PHASE 1
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
CL US 69 UNLESS NOTED OTHERWISE.



S. Elsaigh
12/12/2023

NO.	REVISION	BY	DATE



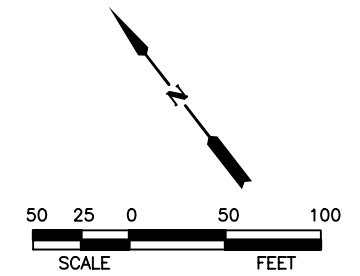
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US 69 AT FM 779
TCP PHASE 1 STEP 1
US 69

STA 348+00 TO STA 359+00

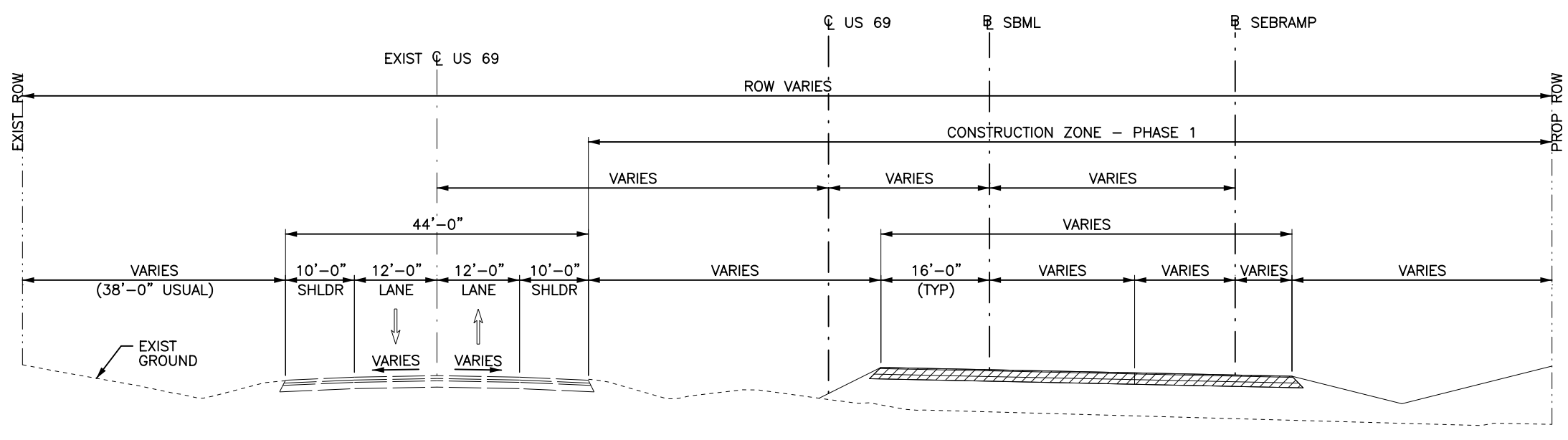
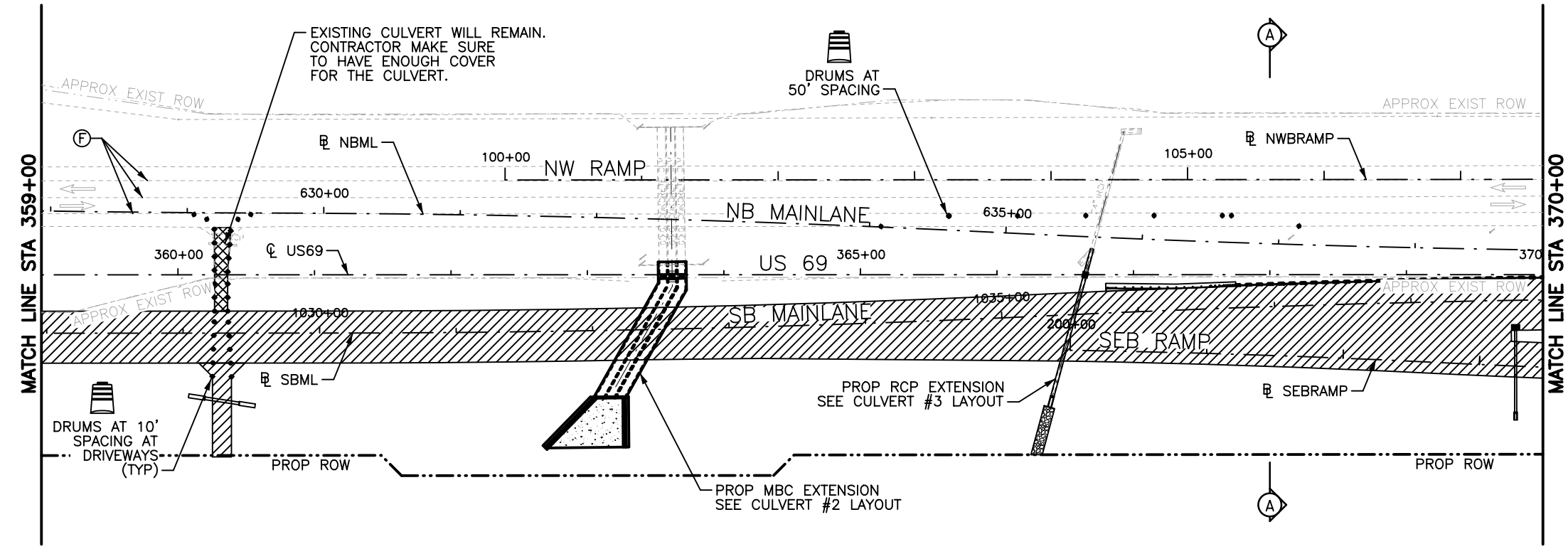
Designated:	KML	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
Checked:	ODH	6	TEXAS		US 69		
Drawn:	HJZ	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	KML	TYL	WOOD	0203	05	039	44

12/12/2023 04:31 AM hitran
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LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR ----- PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- ⇄ EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



STA 368+00
US 69 TYPICAL SECTION - PHASE 1
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
 ☉ US 69 UNLESS NOTED OTHERWISE.



S. Elsaigh
12/12/2023

NO.	REVISION	BY	DATE



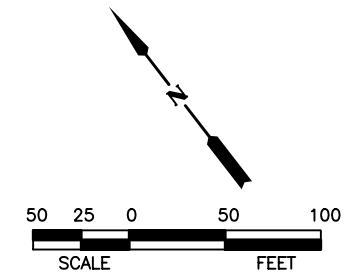
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US 69 AT FM 779
TCP PHASE 1 STEP 1
US 69

STA 359+00 TO STA 370+00

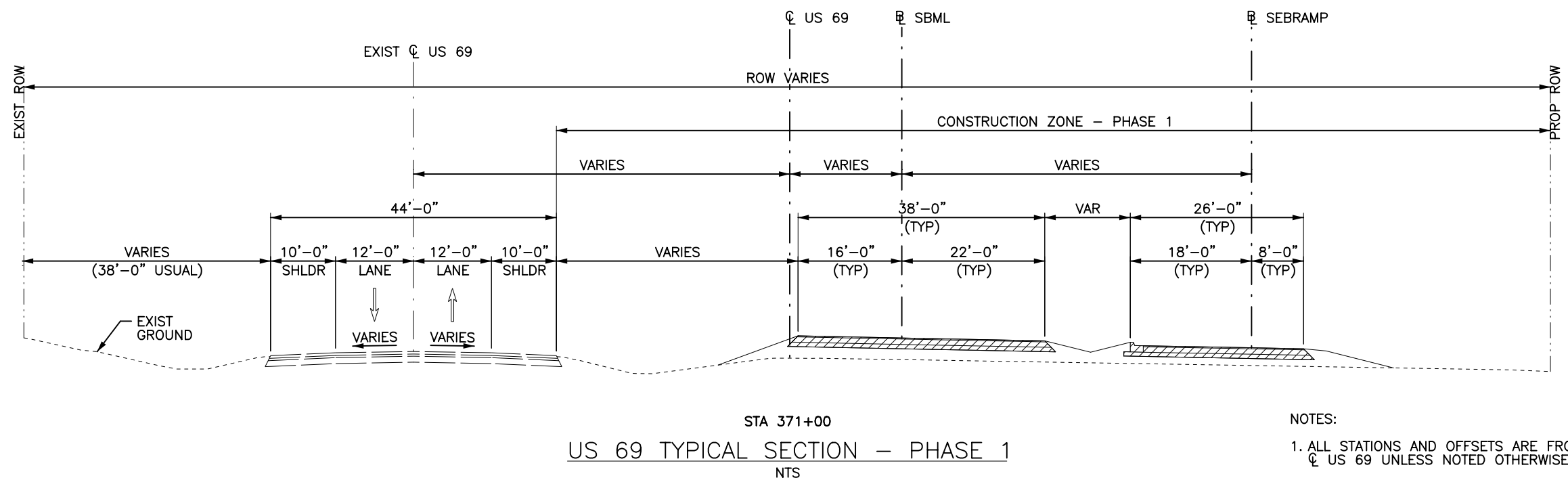
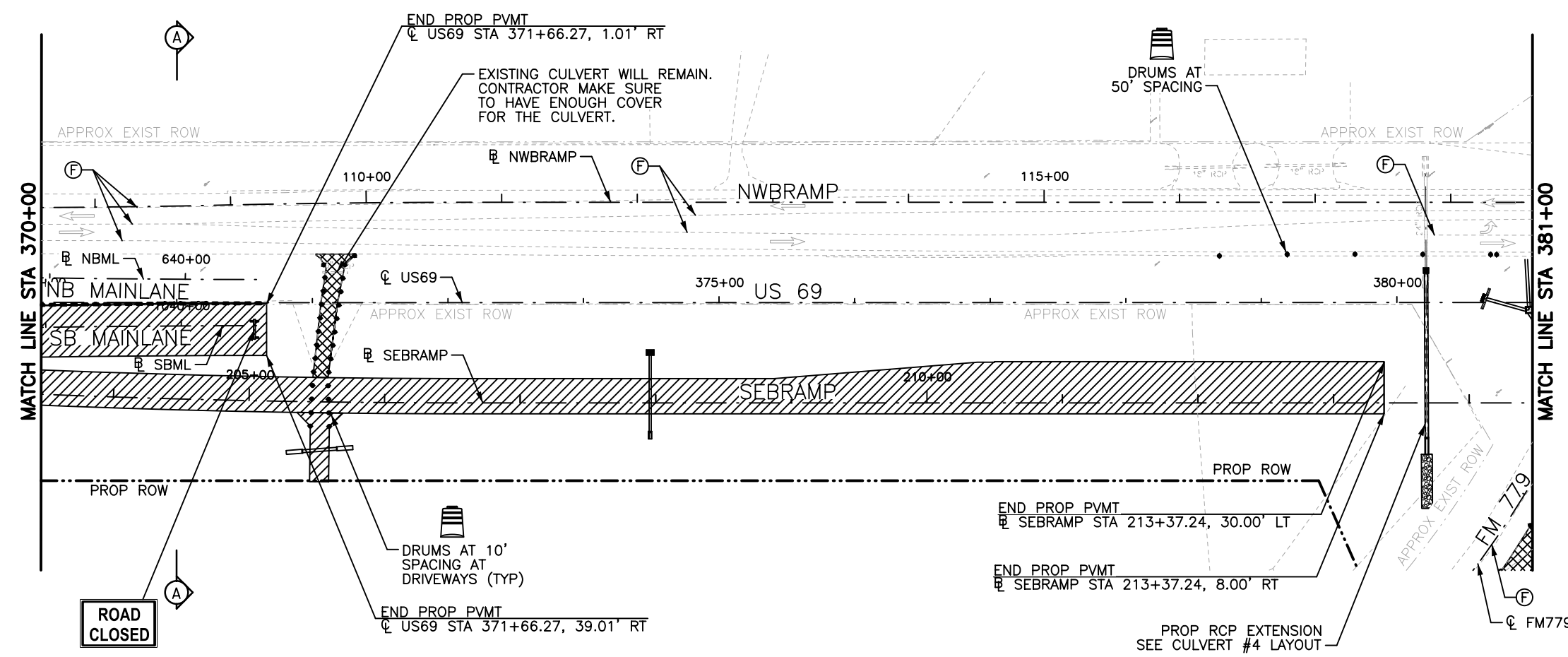
Designed: KML	FED. RD. DIV. NO.: 6	STATE: TEXAS	FEDERAL AID PROJECT NO.:	HIGHWAY NO.: US 69
Checked: ODH	DIST.:	COUNTY:	CONTROL NO.: 0203	SECTION NO.: 05
Drawn: HJZ	TITLE: TYL	WOOD	JOB NO.: 039	SHEET NO.: 45

12/12/2023 3:04:42 AM hitran pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR --- PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- ⇄ EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



STA 371+00
US 69 TYPICAL SECTION - PHASE 1
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
 ☉ US 69 UNLESS NOTED OTHERWISE.



S. Elsaigh
12/12/2023

NO.	REVISION	BY	DATE



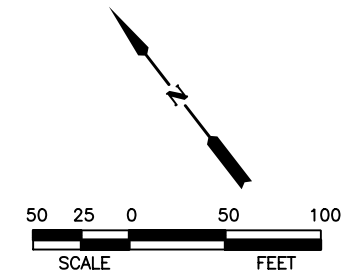
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US 69 AT FM 779
TCP PHASE 1 STEP 1
US 69

STA 370+00 TO STA 381+00

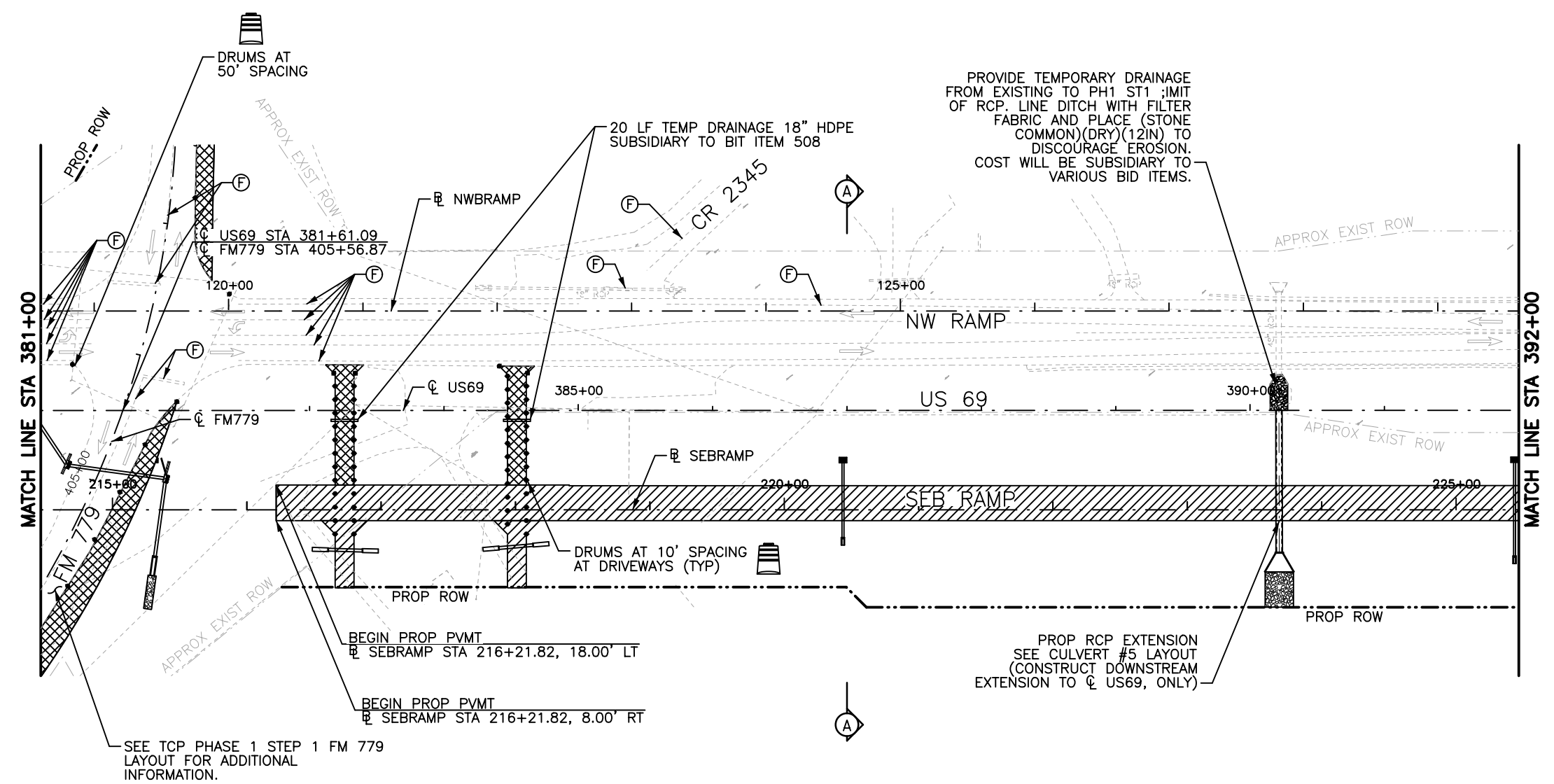
Designed: KML	FED. RD. DIV. NO.: 6	STATE: TEXAS	FEDERAL AID PROJECT NO.:		HIGHWAY NO.: US 69
Checked: ODH	DIST.:	COUNTY:	CONTROL NO.: 0203	SECTION NO.: 05	JOB NO.: 039
Drawn: HJZ	TYL	WOOD	0203	05	039
Checked: KML	TYL	WOOD	0203	05	039

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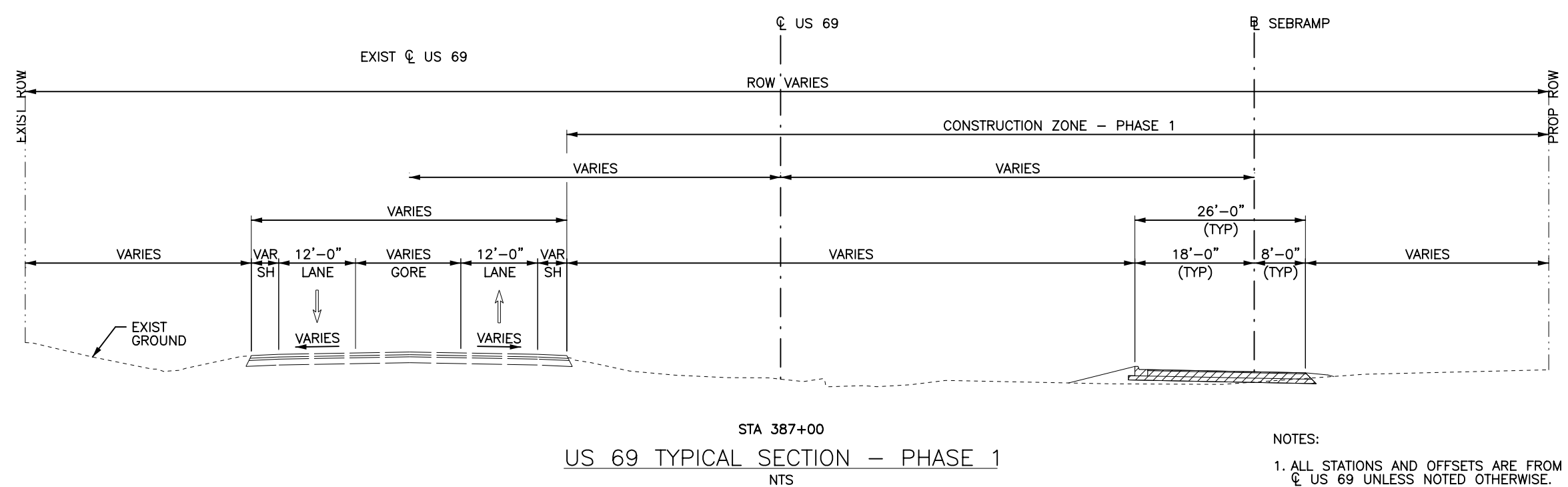
LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS TY 3 BARRICADE
- ATTENUATOR PCTB
- DIRECTION OF TRAFFIC SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



SEE TCP PHASE 1 STEP 1 FM 779 LAYOUT FOR ADDITIONAL INFORMATION.

PROP RCP EXTENSION SEE CULVERT #5 LAYOUT (CONSTRUCT DOWNSTREAM EXTENSION TO CL US69, ONLY)



US 69 TYPICAL SECTION - PHASE 1
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM CL US 69 UNLESS NOTED OTHERWISE.



S. Elsaigh
12/12/2023

NO.	REVISION	BY	DATE



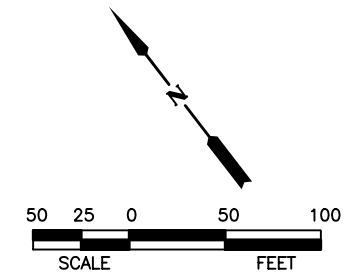
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US 69 AT FM 779
TCP PHASE 1 STEP 1
US 69

STA 381+00 TO STA 392+00

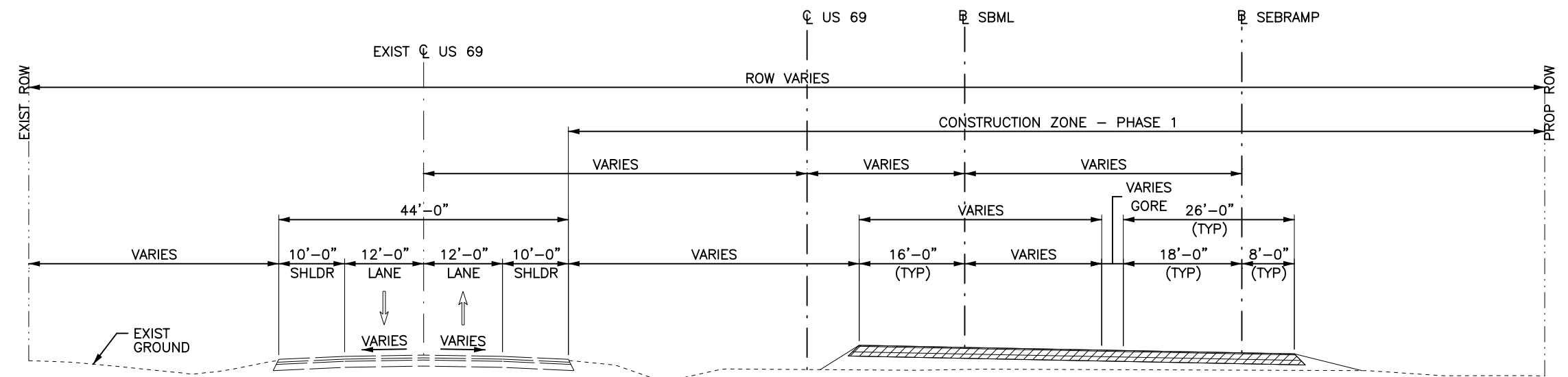
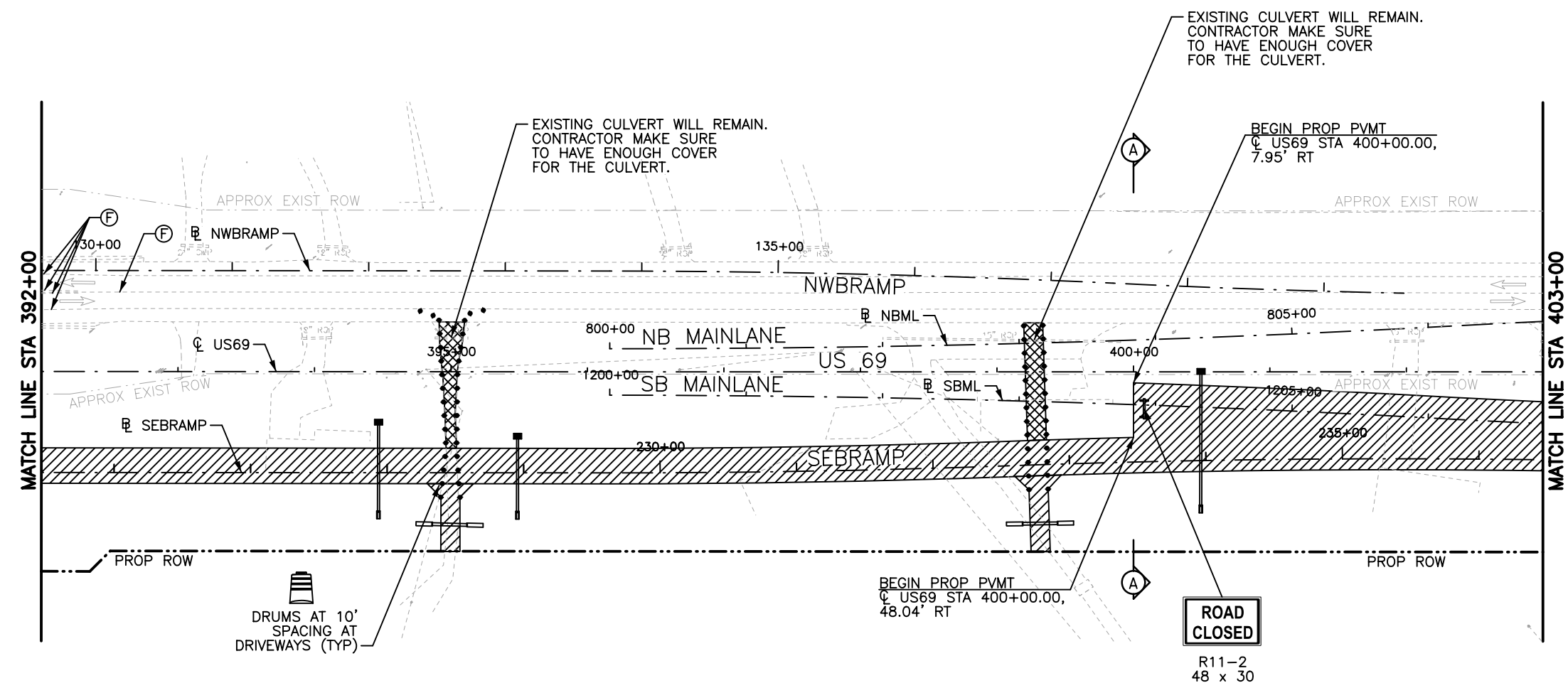
Designated	KML	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
Checked:	ODH	6	TEXAS		US 69		
Drawn:	HJZ	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	KML	TYL	WOOD	0203	05	039	47

12/12/2023 05:06 AM hitran pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS TY 3 BARRICADE
- ATTENUATOR PCTB
- DIRECTION OF TRAFFIC SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM ϕ US 69 UNLESS NOTED OTHERWISE.

STA 400+00
US 69 TYPICAL SECTION - PHASE 1
NTS



S. Elsaigh
12/12/2023

NO.	REVISION	BY	DATE



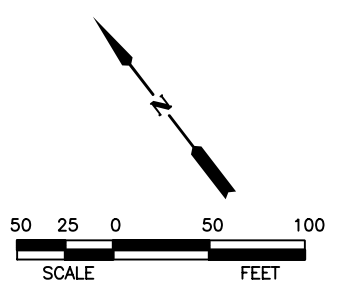
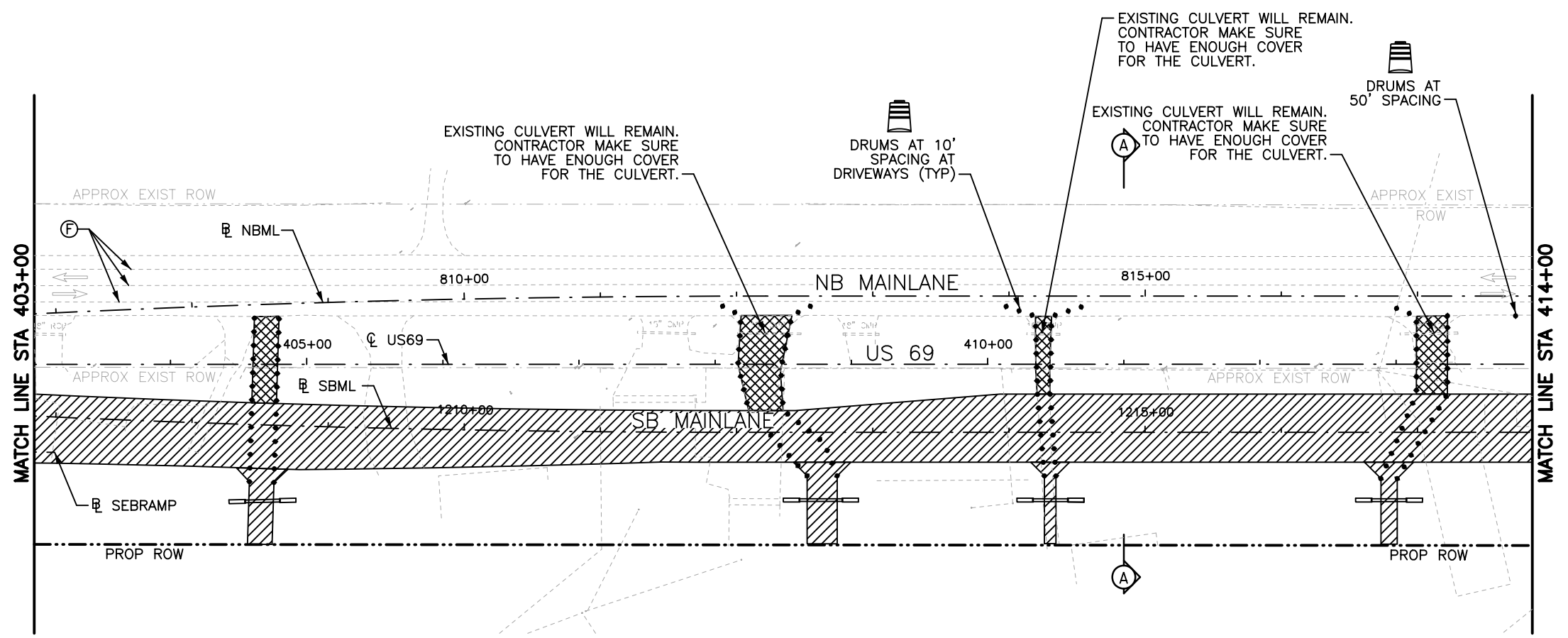
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US 69 AT FM 779
TCP PHASE 1 STEP 1
US 69

STA 392+00 TO STA 403+00

Designed: KML	FED. RD. DIV. NO.: 6	STATE: TEXAS	FEDERAL AID PROJECT NO.:		HIGHWAY NO.: US 69
Checked: ODH	DIST.:	COUNTY:	CONTROL NO.: 0203	SECTION NO.: 05	JOB NO.: 039
Drawn: HJZ	TYL	WOOD	0203	05	039
Checked: KML	TYL	WOOD	0203	05	039

12/12/2023 05:19 AM hitran pw:/



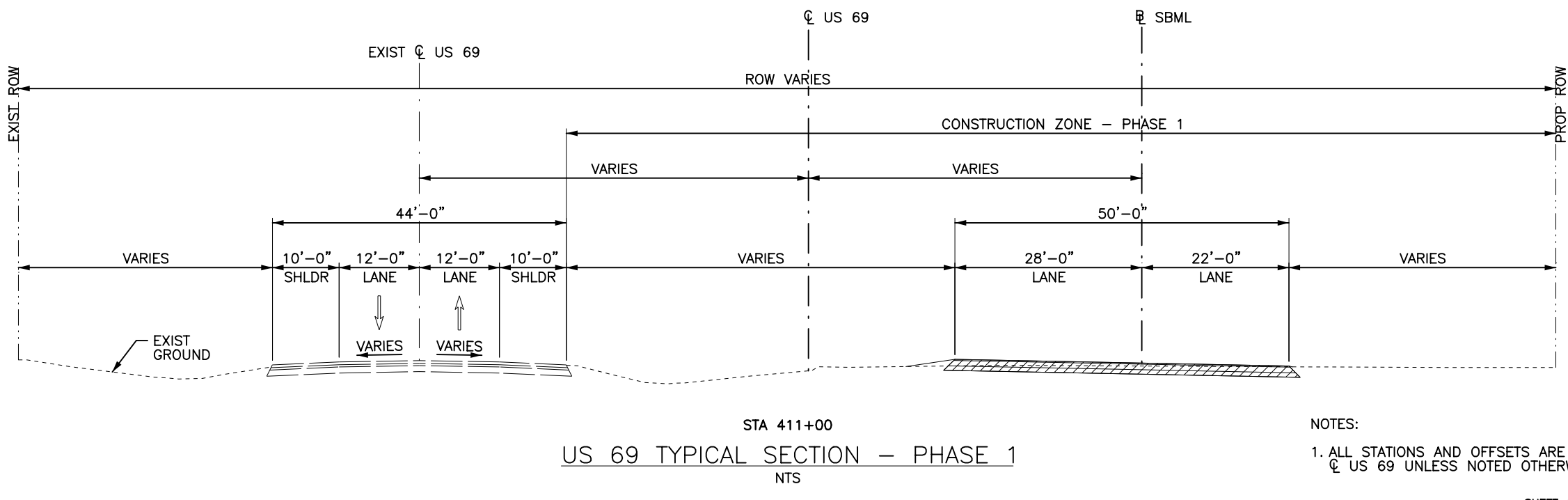
LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- EXISTING STRIPING / STRIPING PREV PLANS
- WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- WK ZN PAV MRK NON-REMOV (W)ARROW
- WK ZN PAV MRK NON-REMOV (W)WORD
- WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS TY 3 BARRICADE
- ATTENUATOR PCTB
- DIRECTION OF TRAFFIC SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



S. Elsaigh

12/12/2023



NOTES:

1. ALL STATIONS AND OFFSETS ARE FROM \varnothing US 69 UNLESS NOTED OTHERWISE.

NO.	REVISION	BY	DATE
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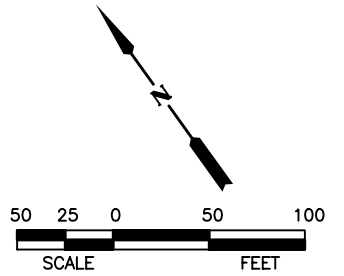
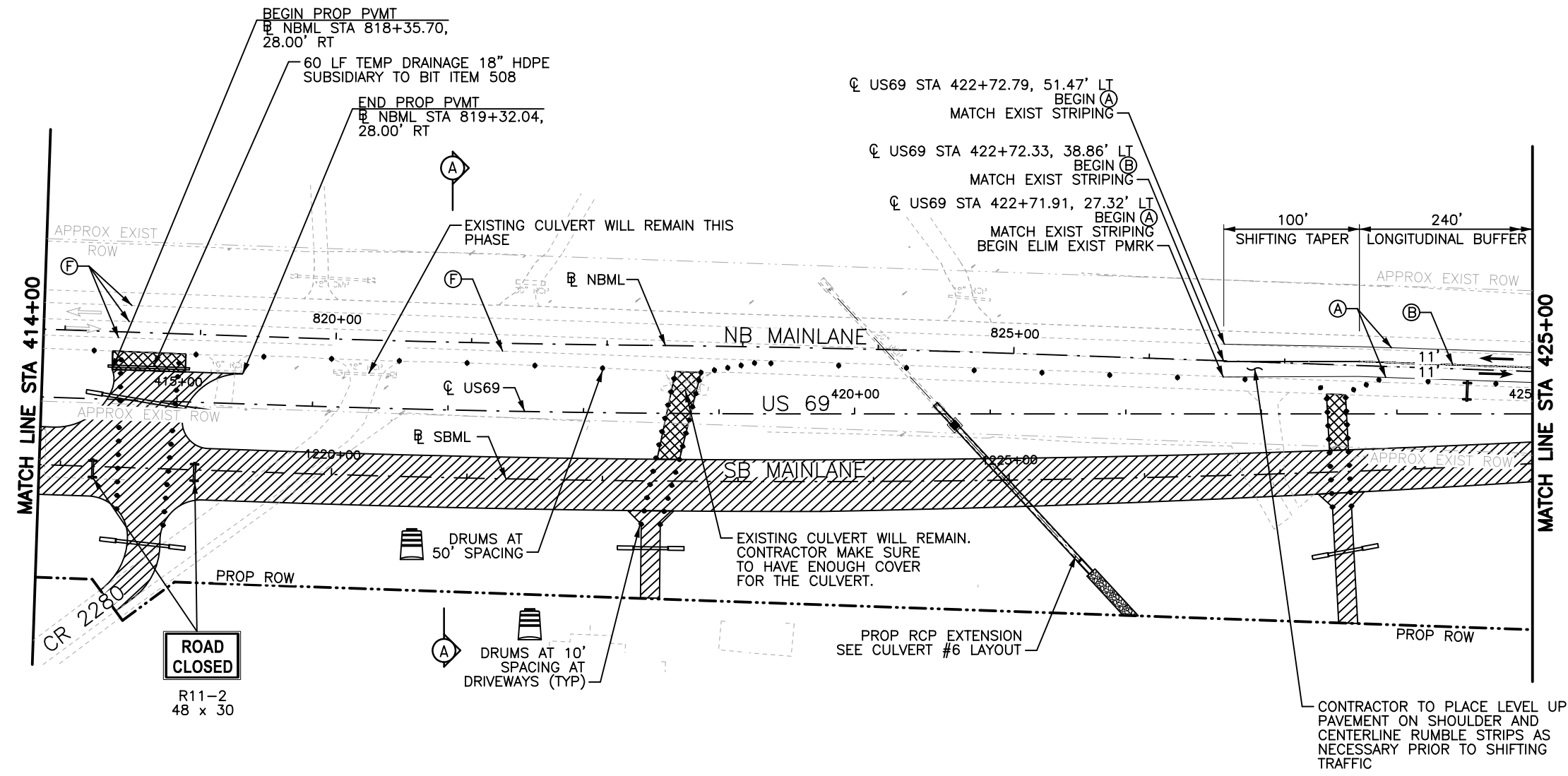
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US 69 AT FM 779
TCP PHASE 1 STEP 1
US 69

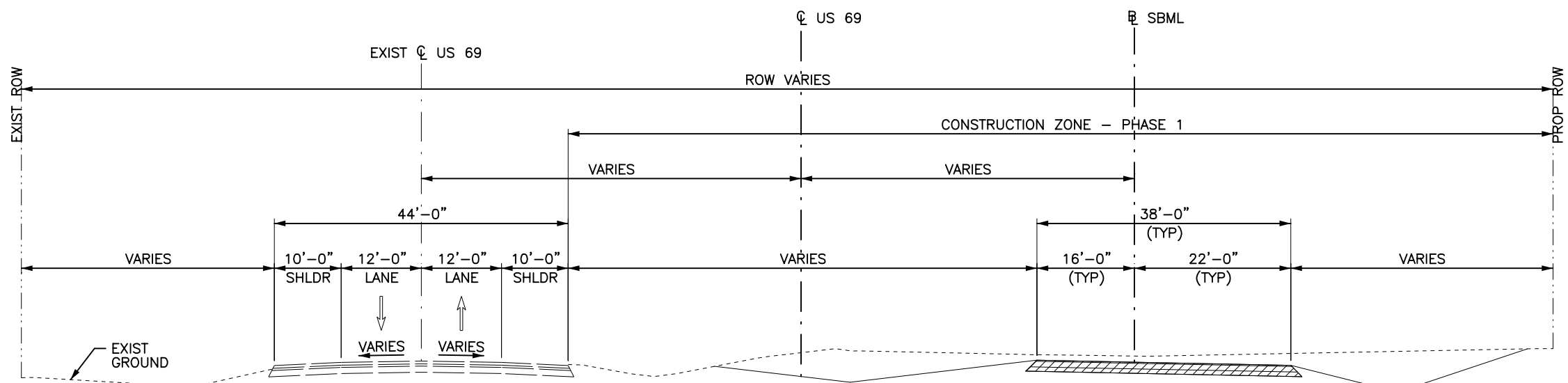
STA 403+00 TO STA 414+00

Designed: KML	FED. RD. DIV. NO. 6	STATE TEXAS	FEDERAL AID PROJECT NO.	HIGHWAY NO. US 69
Checked: ODH	DIST. HUZ	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: KML	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Checked: KML	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
				JOB NO. 039
				SHEET NO. 49

12/12/2023 05:30 AM hitran pw:/



- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
 - (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
 - (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
 - (F) EXISTING STRIPING / STRIPING PREV PLANS
 - (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS
 - TY 3 BARRICADE
 - ATTENUATOR
 - PCTB
 - DIRECTION OF TRAFFIC
 - SIGN POST
 - EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



NOTES:
 1. ALL STATIONS AND OFFSETS ARE FROM
 C US 69 UNLESS NOTED OTHERWISE.

STA 417+00
 US 69 TYPICAL SECTION - PHASE 1
 NTS



S. Elsaigh
 12/12/2023

NO.	REVISION	BY	DATE
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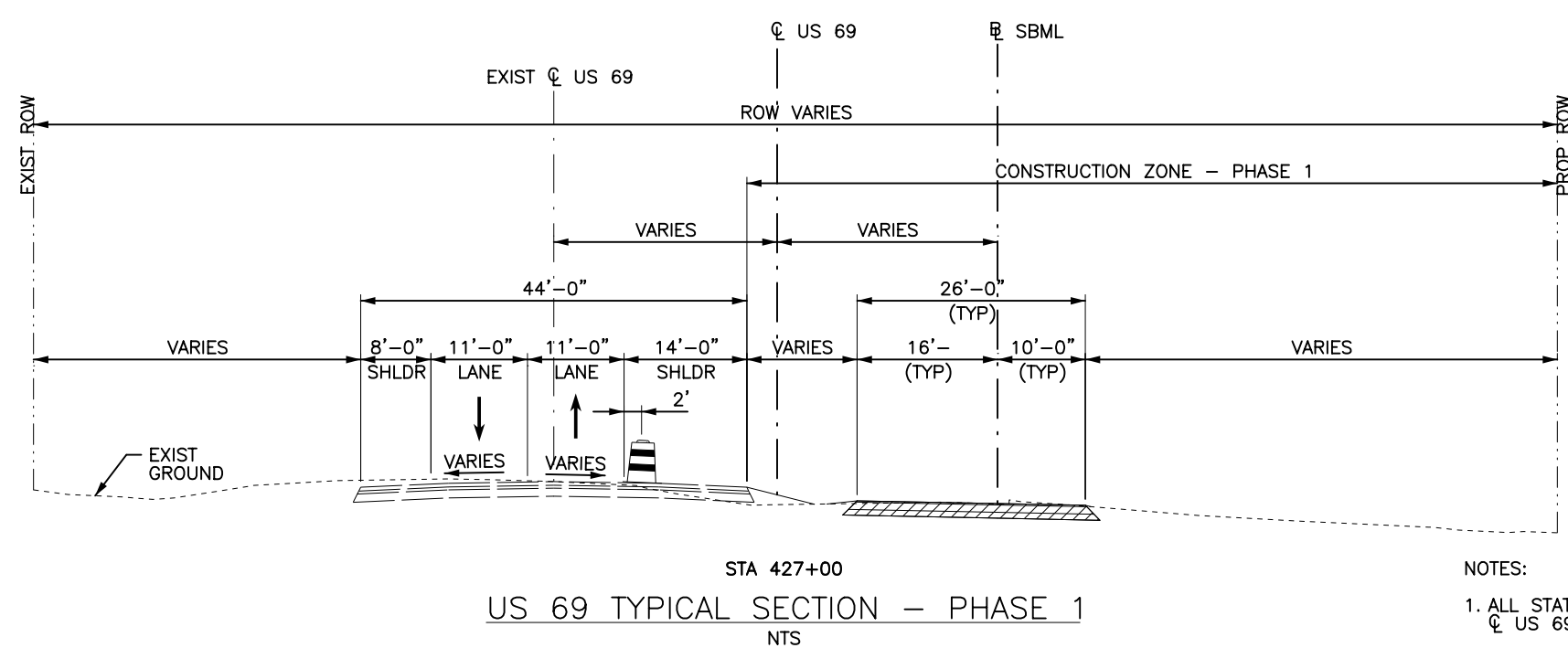
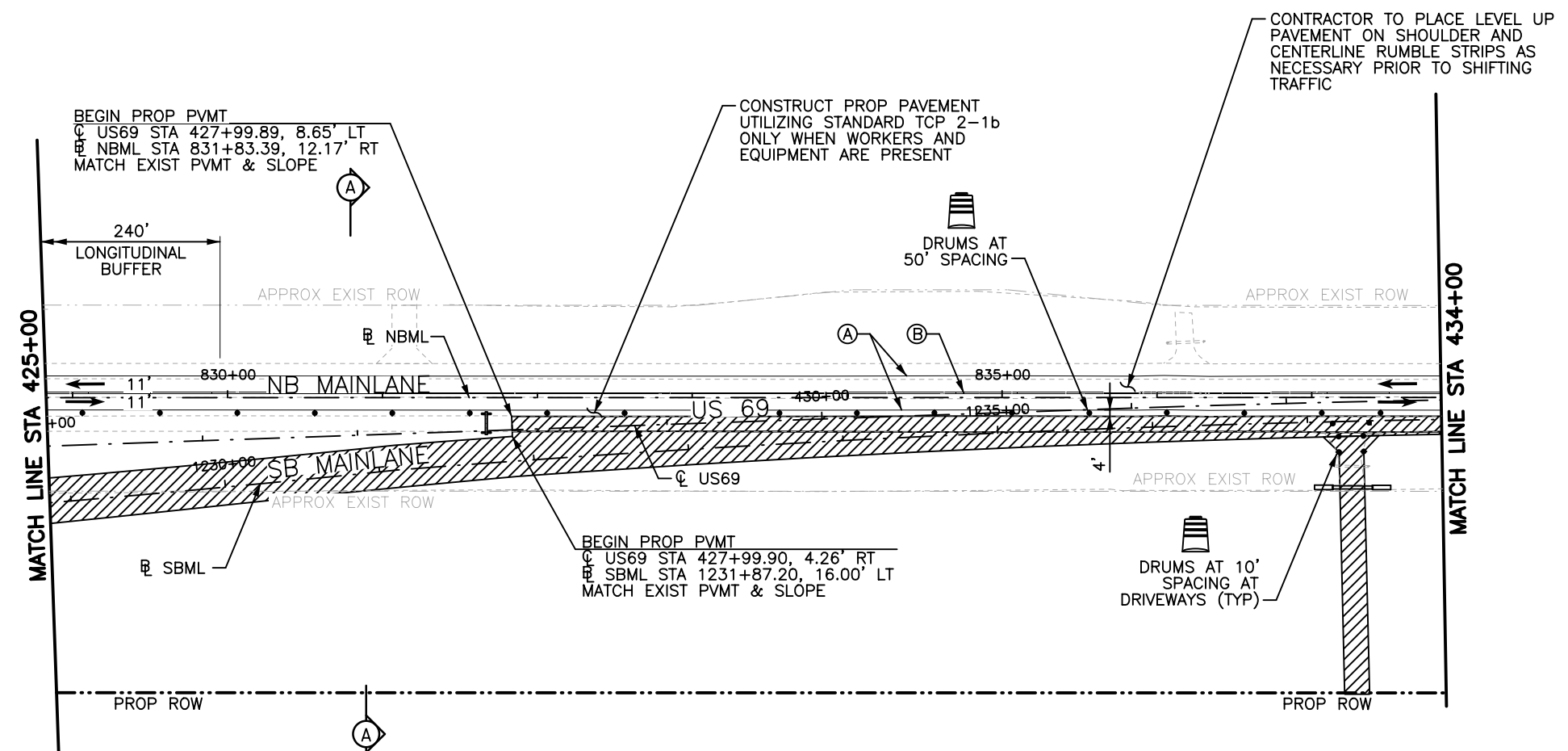
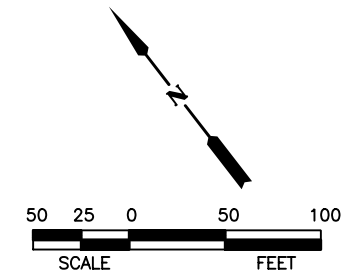
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US 69 AT FM 779
 TCP PHASE 1 STEP 1
 US 69

STA 414+00 TO STA 425+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	HJZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:								JOB NO.	039
Checked:	KML	TYL						SHEET NO.	50

12/12/2023 3:05:41 AM hitran pw:/



NOTES:
 1. ALL STATIONS AND OFFSETS ARE FROM
 CL US 69 UNLESS NOTED OTHERWISE.

- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
 - WK ZN PAV MRK NON-REMOV (W)24"(SLD)
 - WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
 - PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
 - EXISTING STRIPING / STRIPING PREV PLANS
 - WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
 - WK ZN PAV MRK NON-REMOV (W)ARROW
 - WK ZN PAV MRK NON-REMOV (W)WORD
 - WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS
 - TY 3 BARRICADE
 - ATTENUATOR
 - PCTB
 - DIRECTION OF TRAFFIC
 - SIGN POST
 - EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



S. Elsaigh
 12/12/2023

NO.	REVISION	BY	DATE
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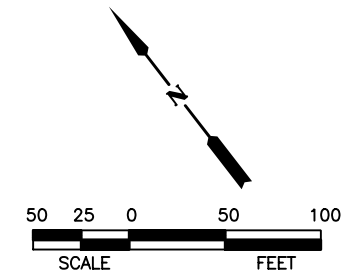
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US 69 AT FM 779
 TCP PHASE 1 STEP 1
 US 69

STA 425+00 TO STA 434+00

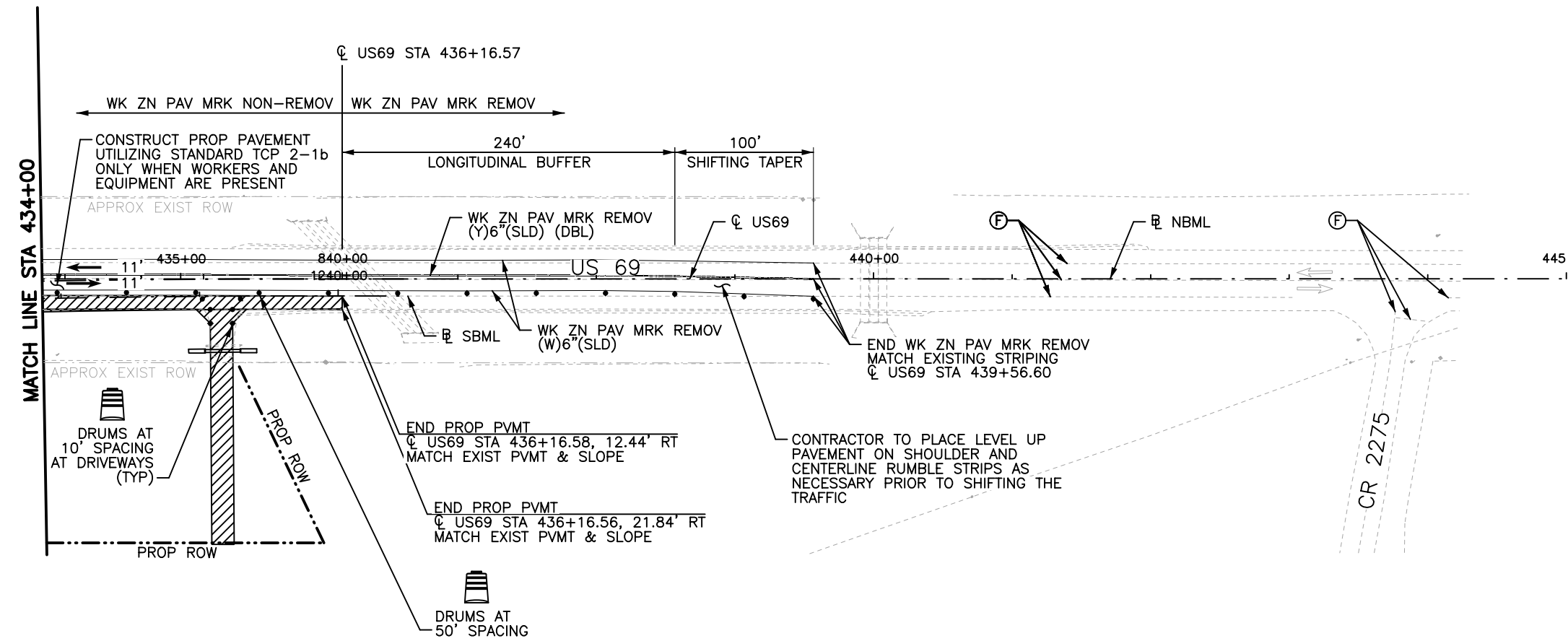
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Checked:	ODH	DIST.	HJZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	JOB NO.	039	SHEET NO.	51				

12/12/2023 05:52 AM hitran
 cpybw_ANSIB.tbl
 cpypdf_ANSIB.pltcfgr
 pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR - - - - - PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- ⇄ EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
CL US 69 UNLESS NOTED OTHERWISE.



S. Elsaigh
12/12/2023

NO.	REVISION	BY	DATE
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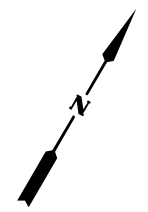
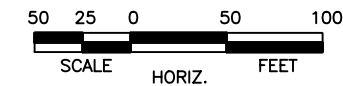
US 69 AT FM 779
TCP PHASE 1 STEP 1
US 69

STA 434+00 TO END PROJECT

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH								
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL						JOB NO.	039
								SHEET NO.	52

cpybw_ANSIB.tbl
 cpypdf_ANSIB.pltcfgr
 pw:/

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 12/12/2023 3:06:04 AM
 pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR ----- PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- ⇨ EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



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NO.	REVISION	BY	DATE



US 69 AT FM 779
**TCP PHASE 1 STEP 1
FM 779 LAYOUT**

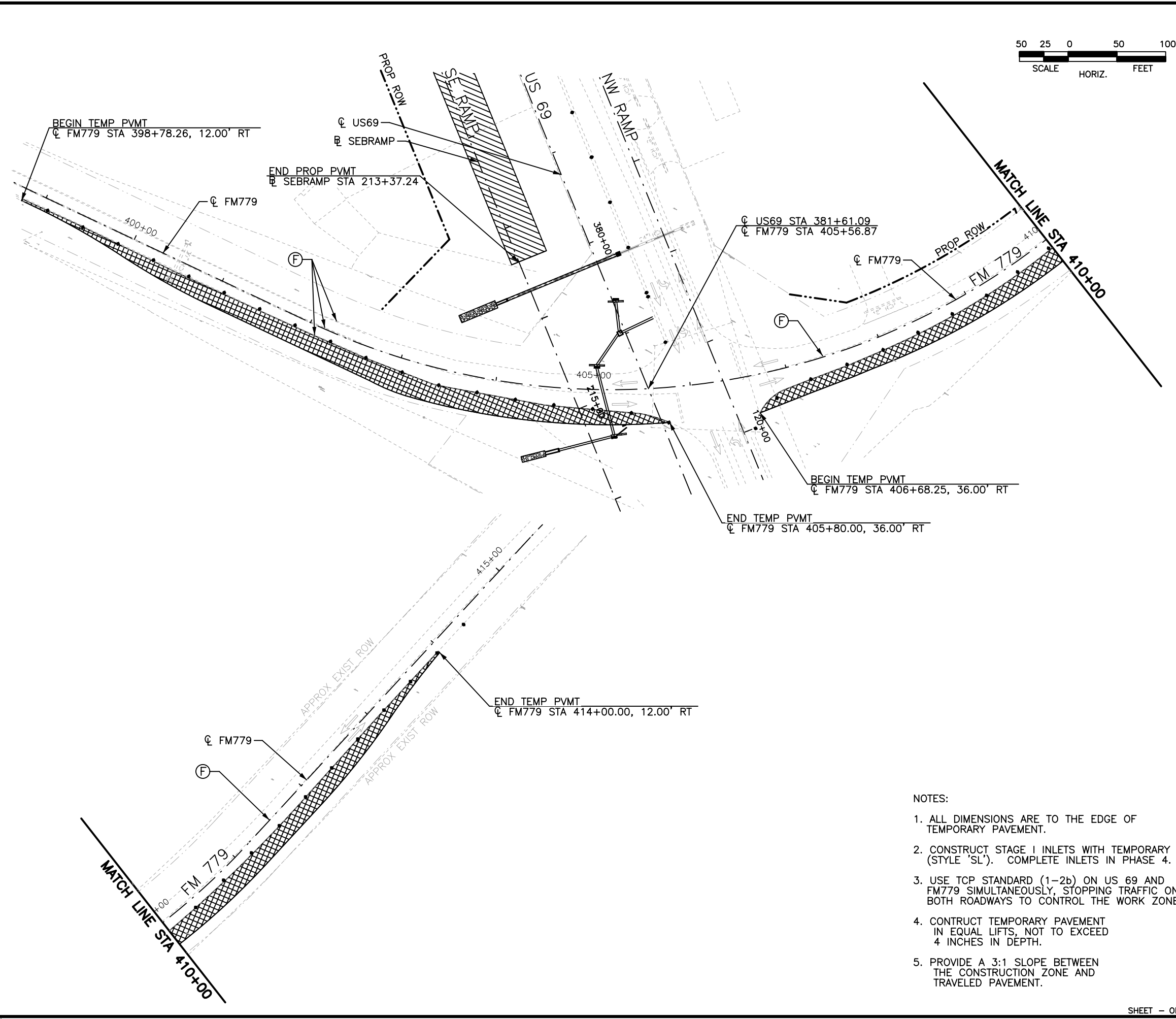
BEGIN PROJECT TO END PROJECT

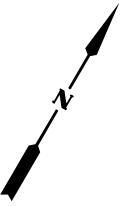
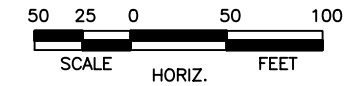
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Checked:	6	TEXAS				US 69
Drawn:	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	TYL	WOOD	0203	05	039	53

NOTES:

1. ALL DIMENSIONS ARE TO THE EDGE OF TEMPORARY PAVEMENT.
2. CONSTRUCT STAGE I INLETS WITH TEMPORARY LID (STYLE 'SL'). COMPLETE INLETS IN PHASE 4.
3. USE TCP STANDARD (1-2b) ON US 69 AND FM779 SIMULTANEOUSLY, STOPPING TRAFFIC ON BOTH ROADWAYS TO CONTROL THE WORK ZONE.
4. CONSTRUCT TEMPORARY PAVEMENT IN EQUAL LIFTS, NOT TO EXCEED 4 INCHES IN DEPTH.
5. PROVIDE A 3:1 SLOPE BETWEEN THE CONSTRUCTION ZONE AND TRAVELED PAVEMENT.

12/12/2023 06:14 AM hitran pw:/





LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR ----- PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



12/12/2023

NO.	REVISION	BY	DATE
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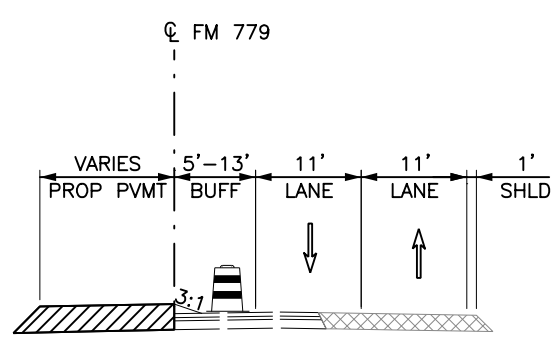
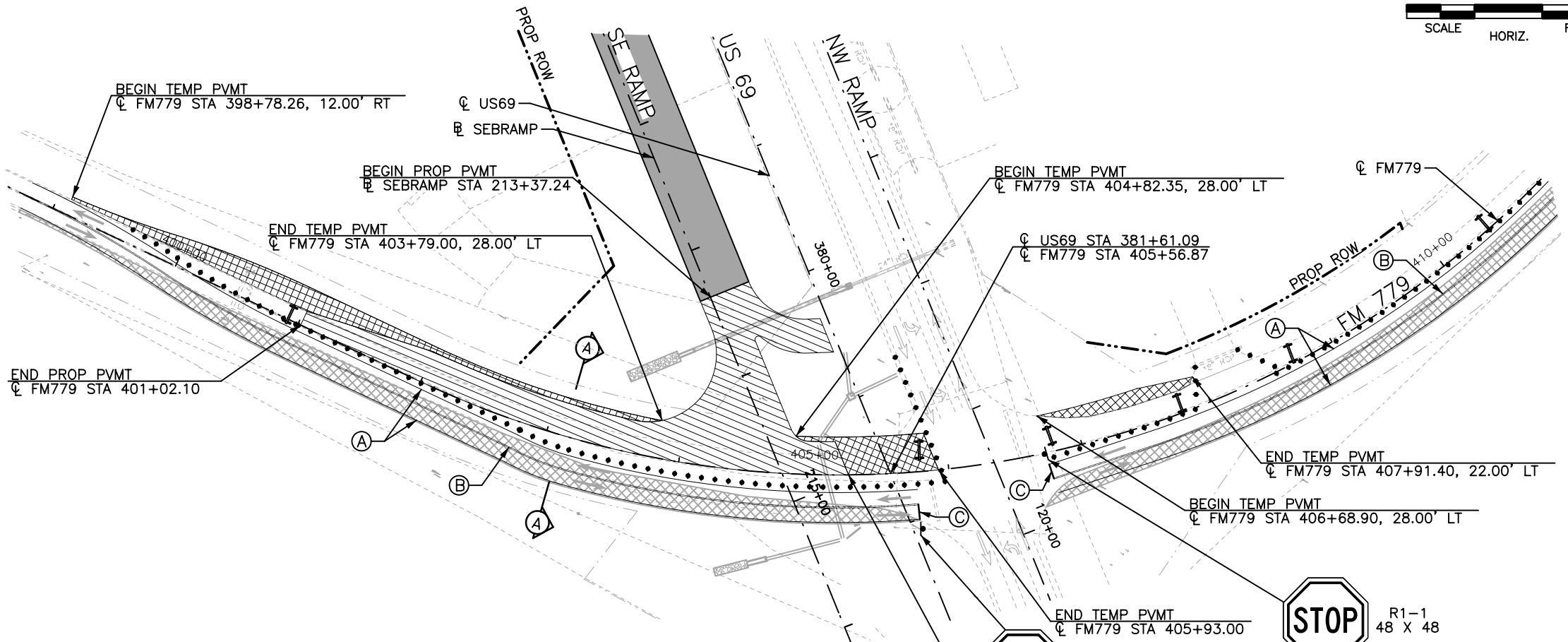


US 69 AT FM 779
**TCP PHASE 1 STEP 2
FM 779 LAYOUT**

BEGIN PROJECT TO END PROJECT

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH								
Drawn:	HJZ	DIST.	WOOD	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL						JOB NO.	039
								SHEET NO.	54

SHEET 1 OF 1



SECTION A-A
NTS

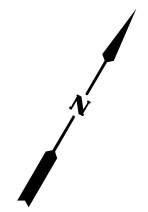
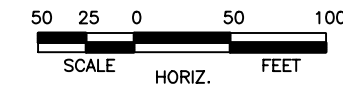
NOTES:

1. ALL DIMENSIONS ARE TO THE EDGE OF TEMPORARY PAVEMENT.
2. CONSTRUCT STAGE I INLETS WITH TEMPORARY LID (STYLE 'SL'). COMPLETE INLETS IN PHASE 3.
3. USE TCP STANDARD (1-2b) ON US 69 AND FM779 SIMULTANEOUSLY, STOPPING TRAFFIC ON BOTH ROADWAYS TO CONTROL THE WORK ZONE.
4. CONSTRUCT TEMPORARY PAVEMENT IN EQUAL LIFTS, NOT TO EXCEED 4 INCHES IN DEPTH.
5. PROVIDE A 3:1 SLOPE BETWEEN THE CONSTRUCTION ZONE AND TRAVELED PAVEMENT.

cpybw_ANSIB.tbl
 cpypdf_ANSIB.pltcfgr
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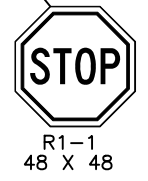
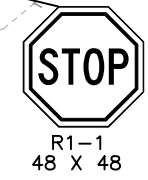
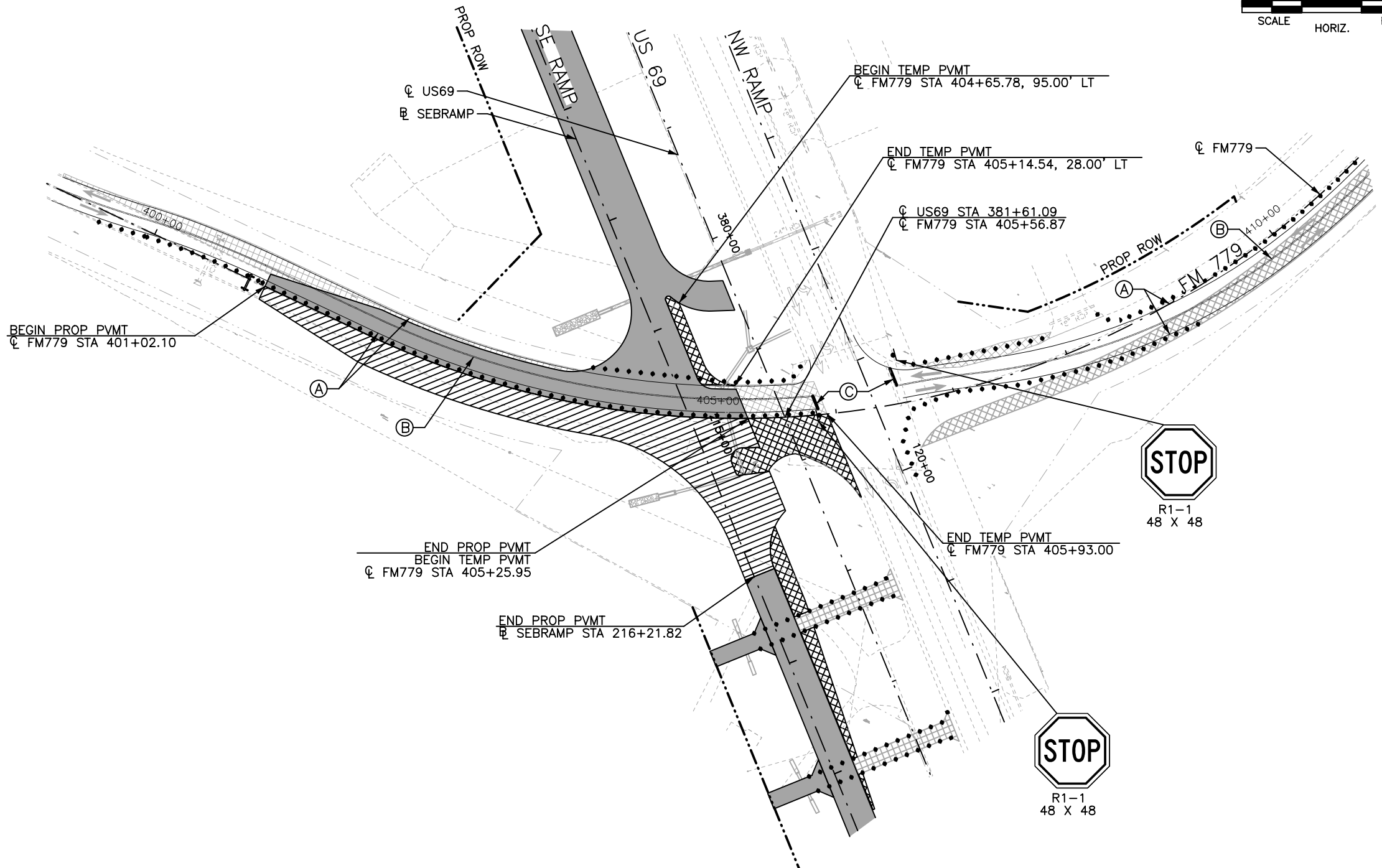
12/12/2023 3:06:26 AM hitran

pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS
- TY 3 BARRICADE
- ATTENUATOR
- PCTB
- DIRECTION OF TRAFFIC
- SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



NOTES:

1. ALL DIMENSIONS ARE TO THE EDGE OF TEMPORARY PAVEMENT.
2. CONSTRUCT STAGE I INLETS WITH TEMPORARY LID (STYLE 'SL'). COMPLETE INLETS IN PHASE 3.
3. USE TCP STANDARD (1-2b) ON US 69 AND FM779 SIMULTANEOUSLY, STOPPING TRAFFIC ON BOTH ROADWAYS TO CONTROL THE WORK ZONE.
4. CONSTRUCT TEMPORARY PAVEMENT IN EQUAL LIFTS, NOT TO EXCEED 4 INCHES IN DEPTH.



S. Elsaigh
12/12/2023

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US 69 AT FM 779
**TCP PHASE 1 STEP 3
FM 779 LAYOUT**

BEGIN PROJECT TO END PROJECT

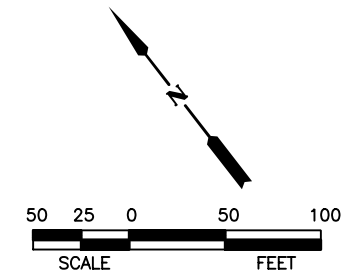
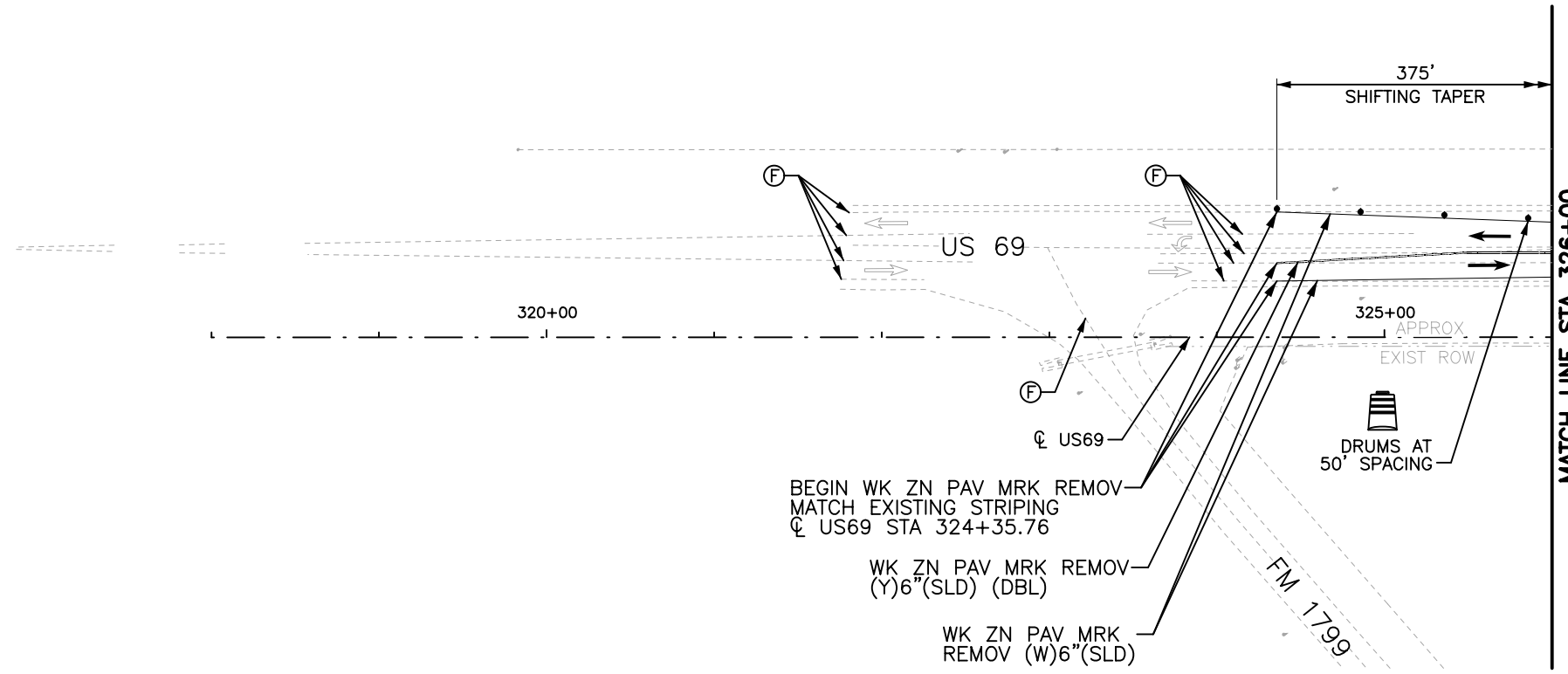
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Checked:	ODH								
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL						JOB NO.	039
								SHEET NO.	55

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 pw:/

12/12/2023 3:06:40 AM hitran

cpybw_ANSIB.tbl
 cpypdf_ANSIB.pltcfgr
 pw:/

12/12/2023 3:06:52 AM hitran



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR - - - - - PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- ⇨ EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BEGIN WK ZN PAV MRK REMOV
 MATCH EXISTING STRIPING
 ☉ US69 STA 324+35.76

WK ZN PAV MRK REMOV
 (Y)6"(SLD) (DBL)

WK ZN PAV MRK
 REMOV (W)6"(SLD)

NOTES:
 1. ALL STATIONS AND OFFSETS ARE FROM
 ☉ US 69 UNLESS NOTED OTHERWISE.



S. Elsaigh
 12/12/2023

NO.	REVISION	BY	DATE

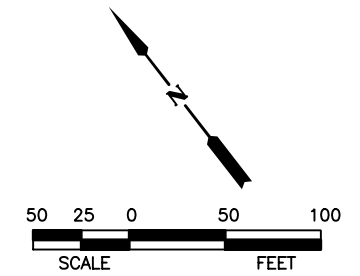
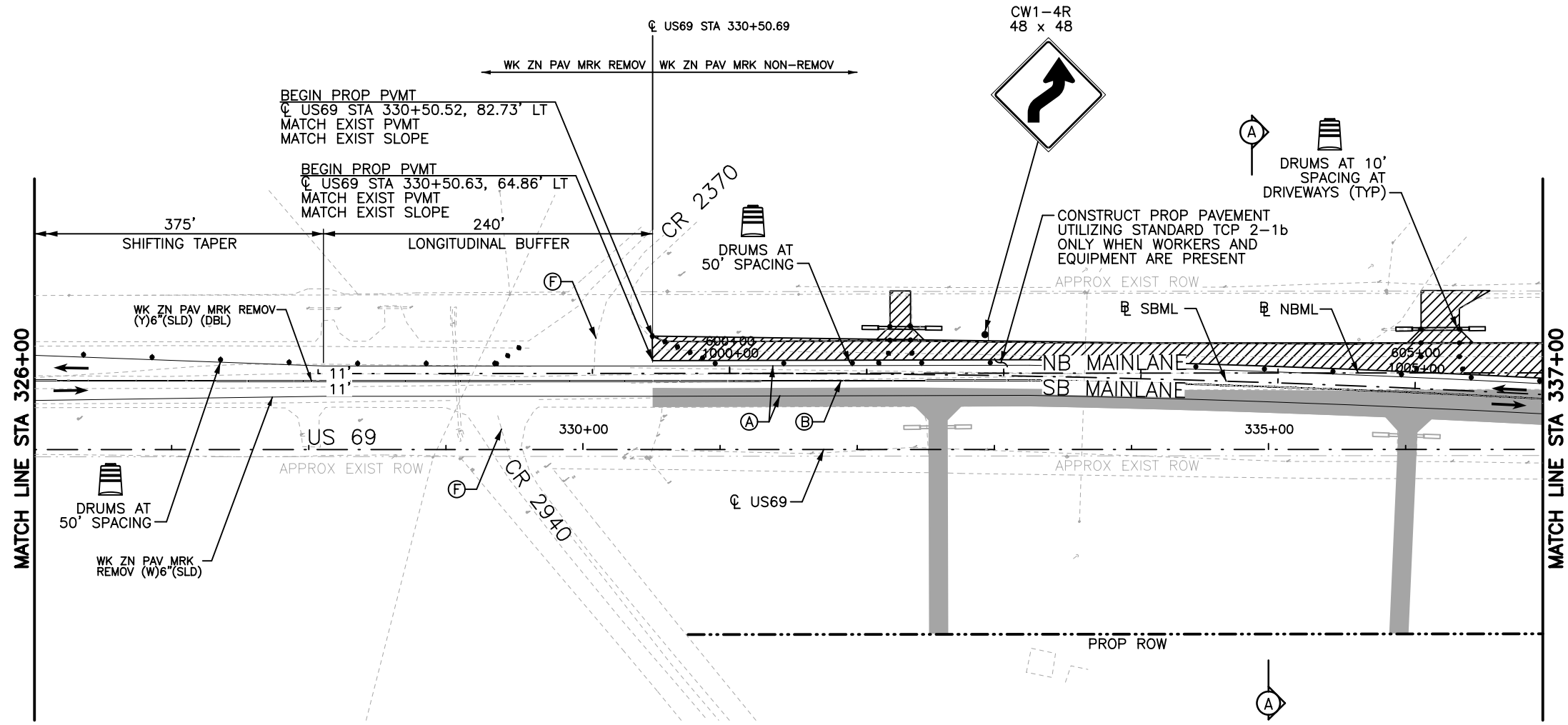


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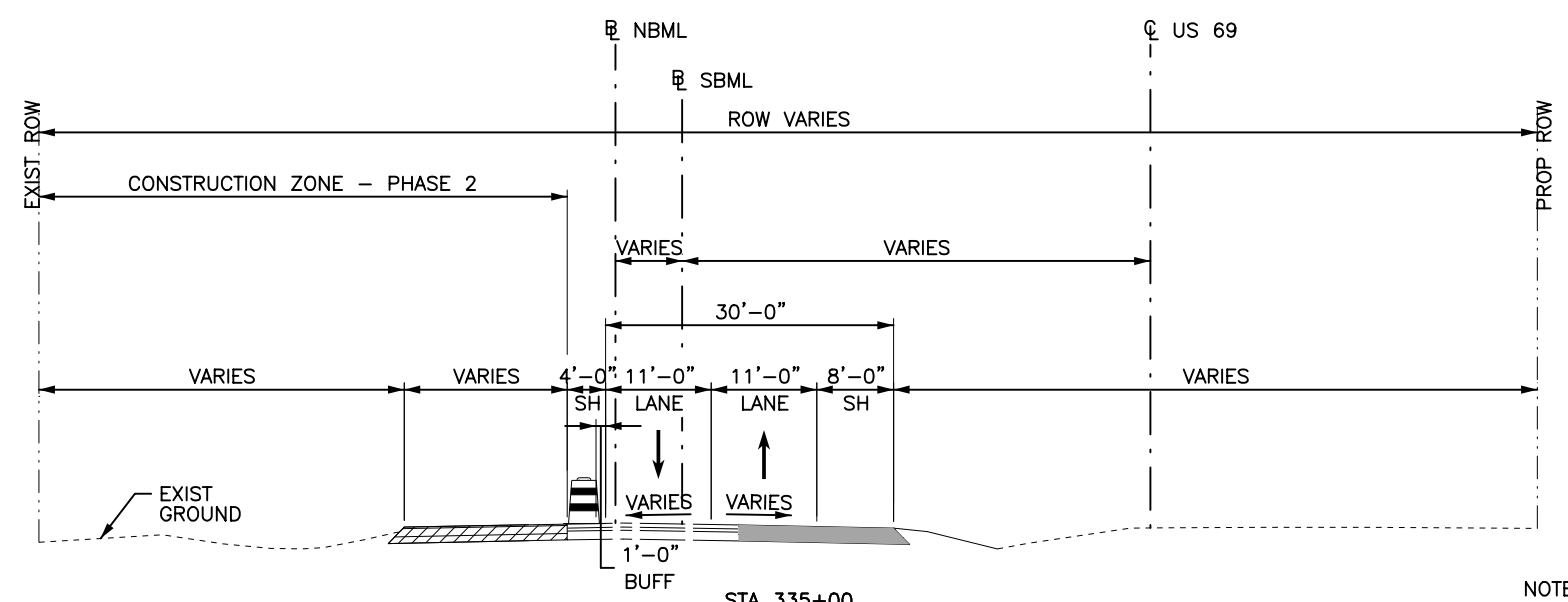
US 69 AT FM 779
 TCP PHASE 2 STEP 1
 US 69

BEGIN PROJECT TO STA 326+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH								
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL						JOB NO.	039
								SHEET NO.	56



- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
 - (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
 - (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
 - (F) EXISTING STRIPING / STRIPING PREV PLANS
 - (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS ⇄ TY 3 BARRICADE
 - ATTENUATOR ----- PCTB
 - DIRECTION OF TRAFFIC ▸ SIGN POST
 - ⇄ EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



US 69 TYPICAL SECTION - PHASE 2
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM ϕ US 69 UNLESS NOTED OTHERWISE.



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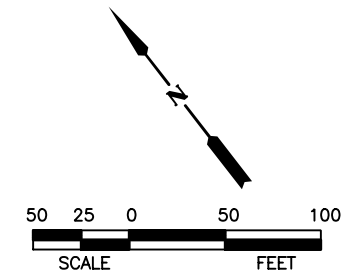
US 69 AT FM 779
TCP PHASE 2 STEP 1
US 69

STA 326+00 TO STA 337+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	HUZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:								JOB NO.	039
Checked:	KML	TYL						SHEET NO.	57

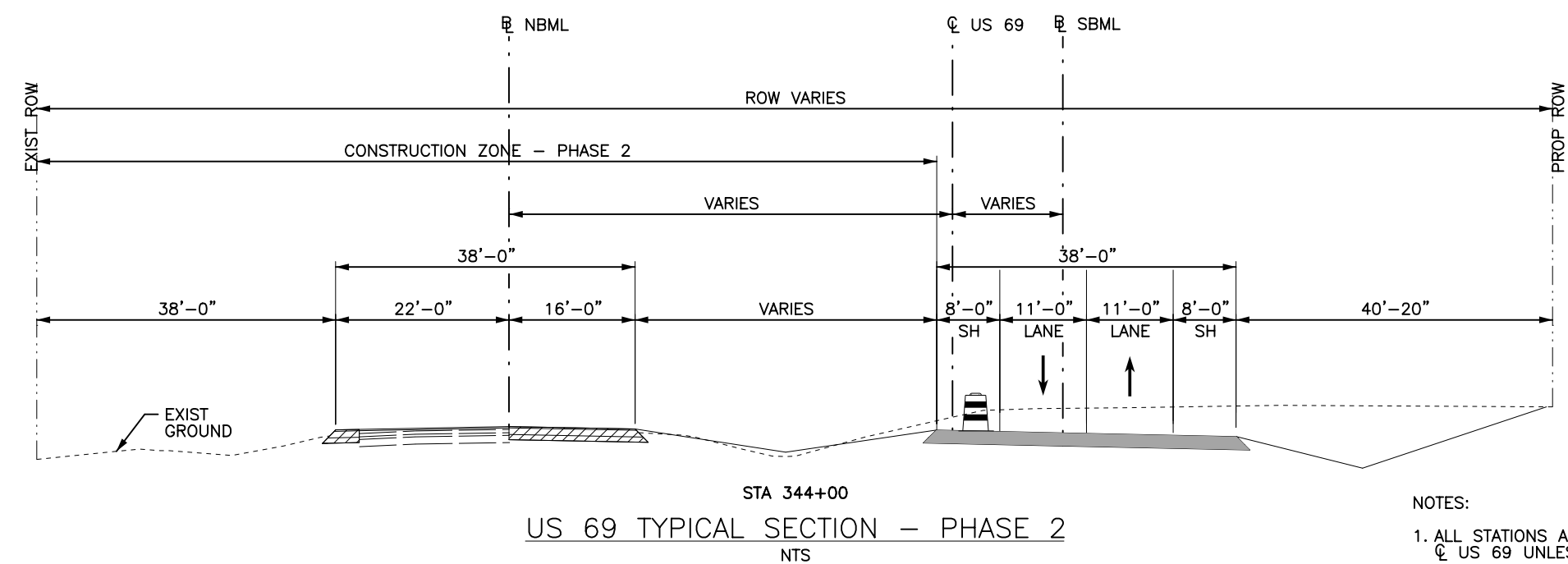
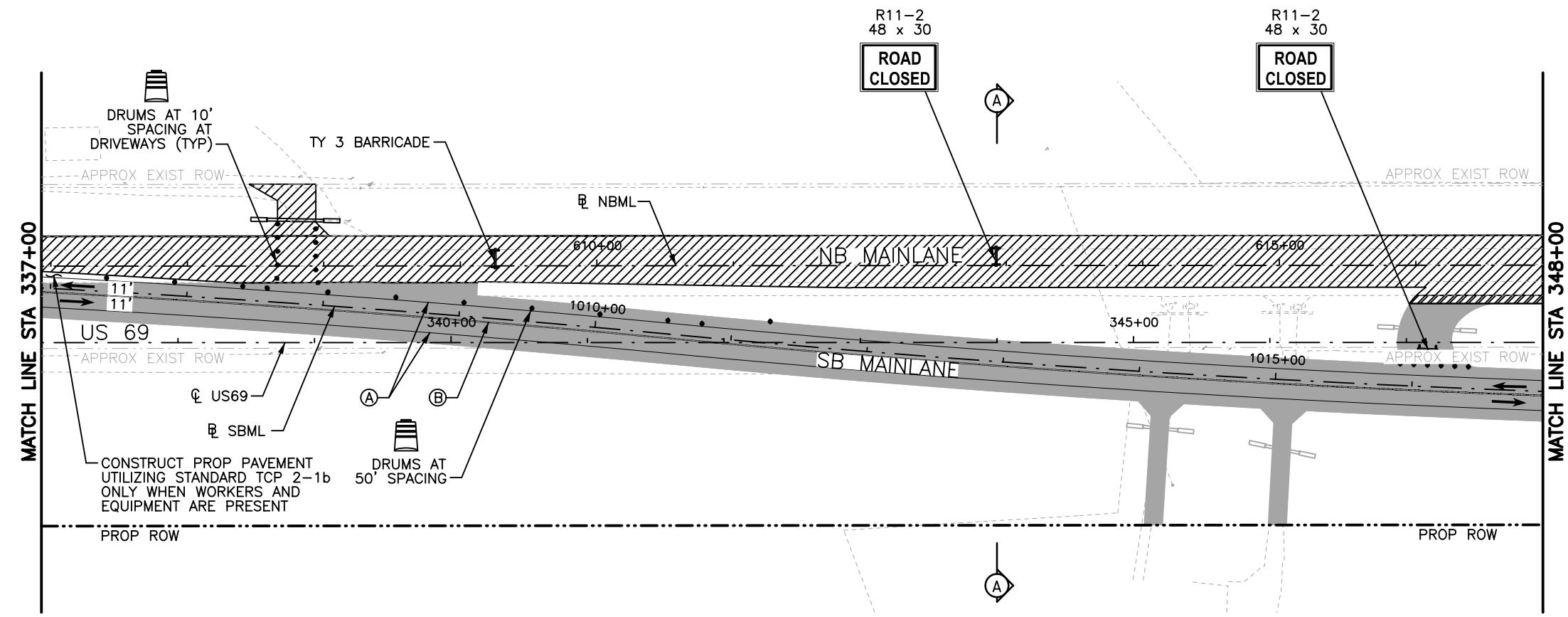
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LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS TY 3 BARRICADE
- ATTENUATOR PCTB
- DIRECTION OF TRAFFIC SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



US 69 TYPICAL SECTION - PHASE 2
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
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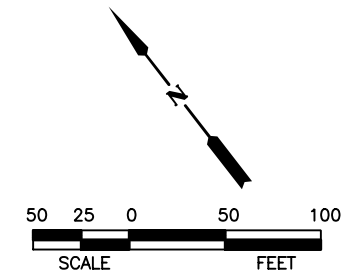
US 69 AT FM 779
TCP PHASE 2 STEP 1
US 69

STA 337+00 TO STA 348+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	HUZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HUZ	JOB NO.	039	SHEET NO.	58				
Checked:	KML	TYL							

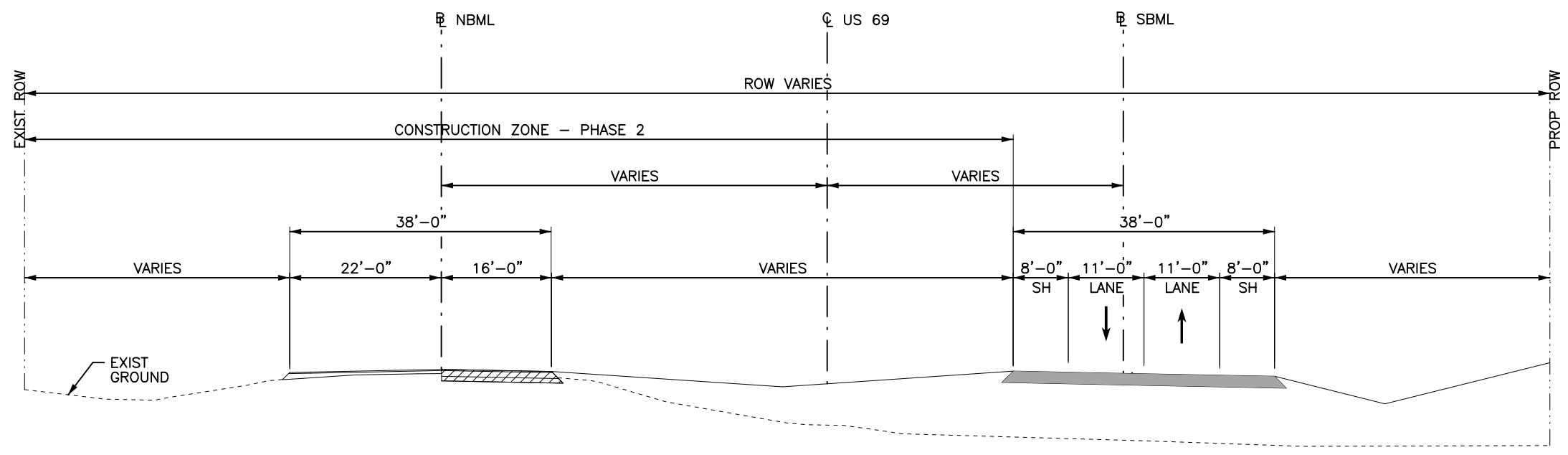
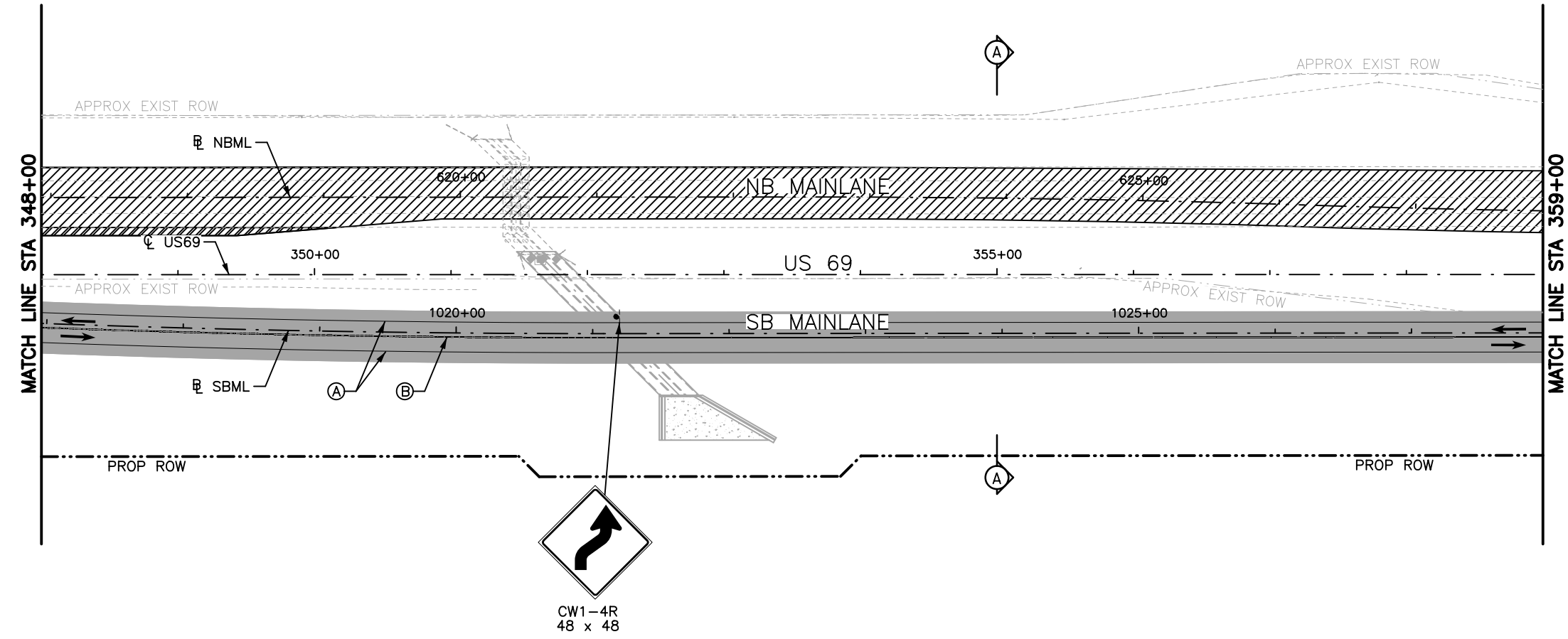
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LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR ⇄ PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- ⇄ EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



STA 355+00
US 69 TYPICAL SECTION - PHASE 2
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
 ☉ US 69 UNLESS NOTED OTHERWISE.



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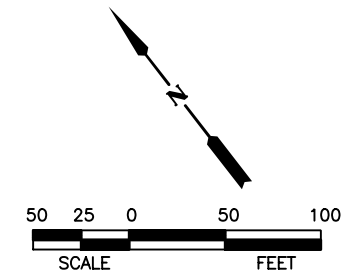
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US 69 AT FM 779
TCP PHASE 2 STEP 1
US 69

STA 348+00 TO STA 359+00

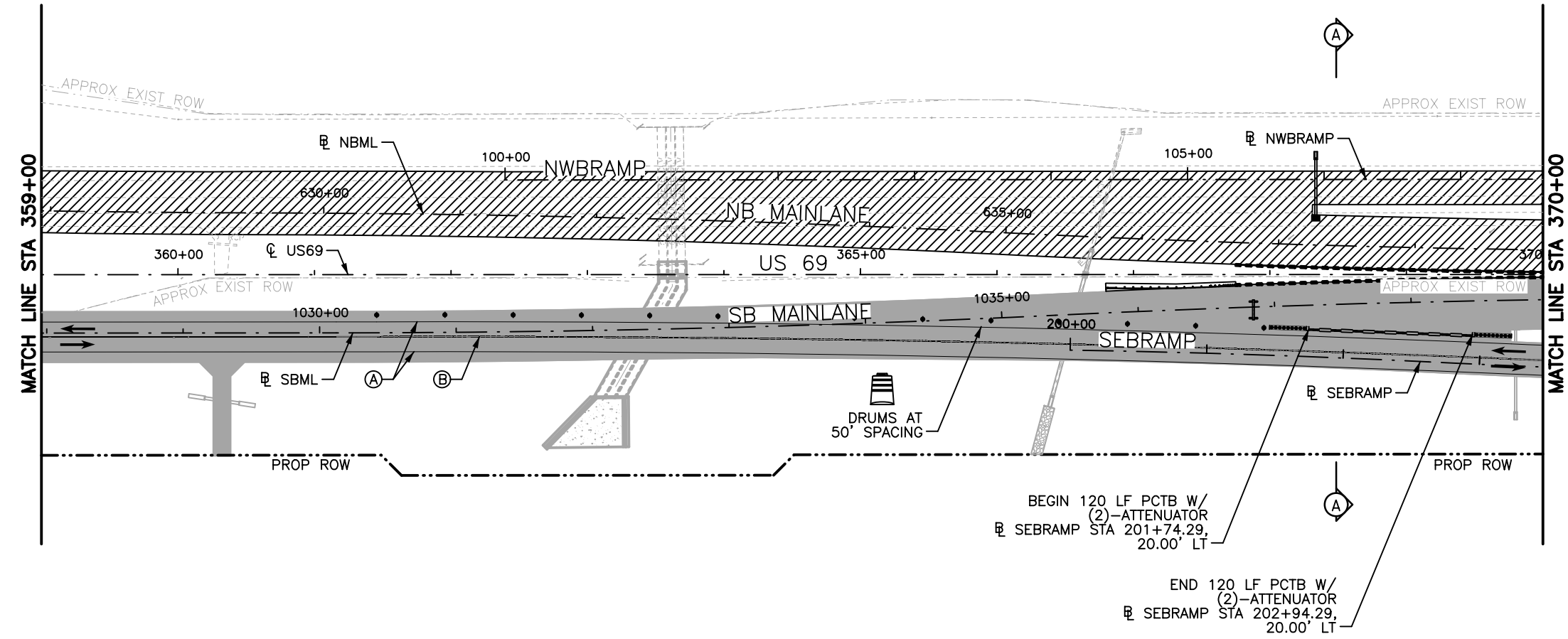
Designed: KML	FED. RD. DIV. NO.: 6	STATE: TEXAS	FEDERAL AID PROJECT NO.:			HIGHWAY NO.: US 69
Checked: ODH	DIST.:	COUNTY:	CONTROL NO.: 0203	SECTION NO.: 05	JOB NO.: 039	SHEET NO.: 59
Drawn: HJZ	TITLE: TYL	COUNTY: WOOD	CONTROL NO.: 0203	SECTION NO.: 05	JOB NO.: 039	SHEET NO.: 59

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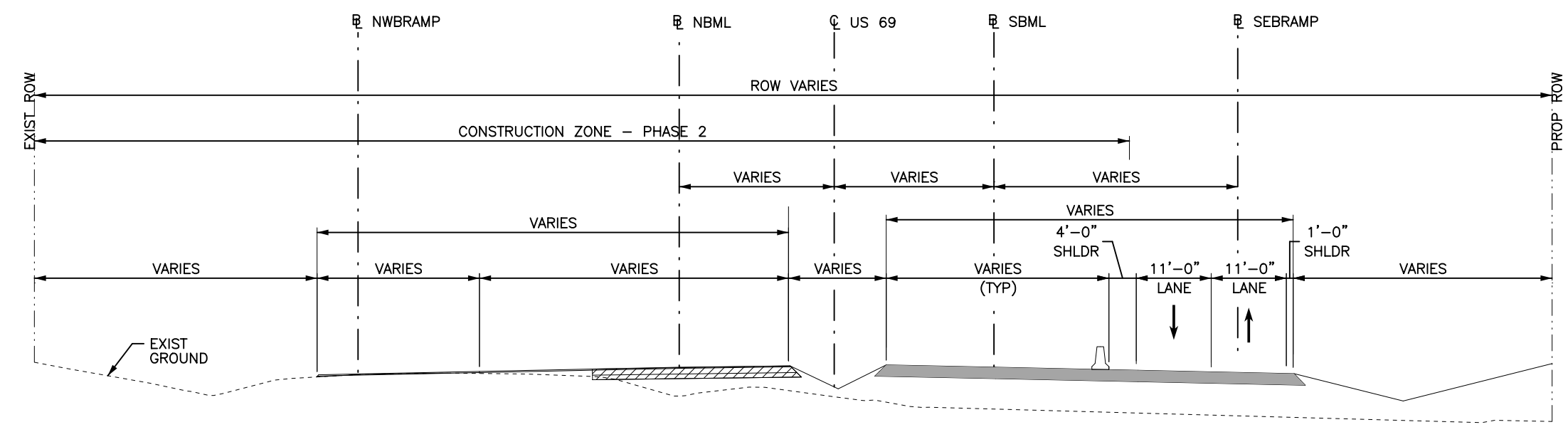
LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS TY 3 BARRICADE
- ATTENUATOR PCTB
- DIRECTION OF TRAFFIC SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



BEGIN 120 LF PCTB W/
(2)-ATTENUATOR
@ SEBRAMP STA 201+74.29,
20.00' LT

END 120 LF PCTB W/
(2)-ATTENUATOR
@ SEBRAMP STA 202+94.29,
20.00' LT



STA 368+00
US 69 TYPICAL SECTION - PHASE 2
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
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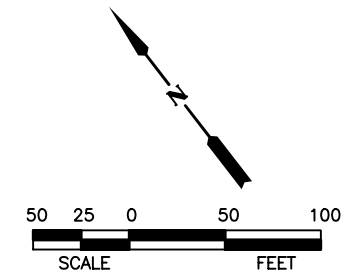
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US 69 AT FM 779
TCP PHASE 2 STEP 1
US 69

STA 359+00 TO STA 370+00

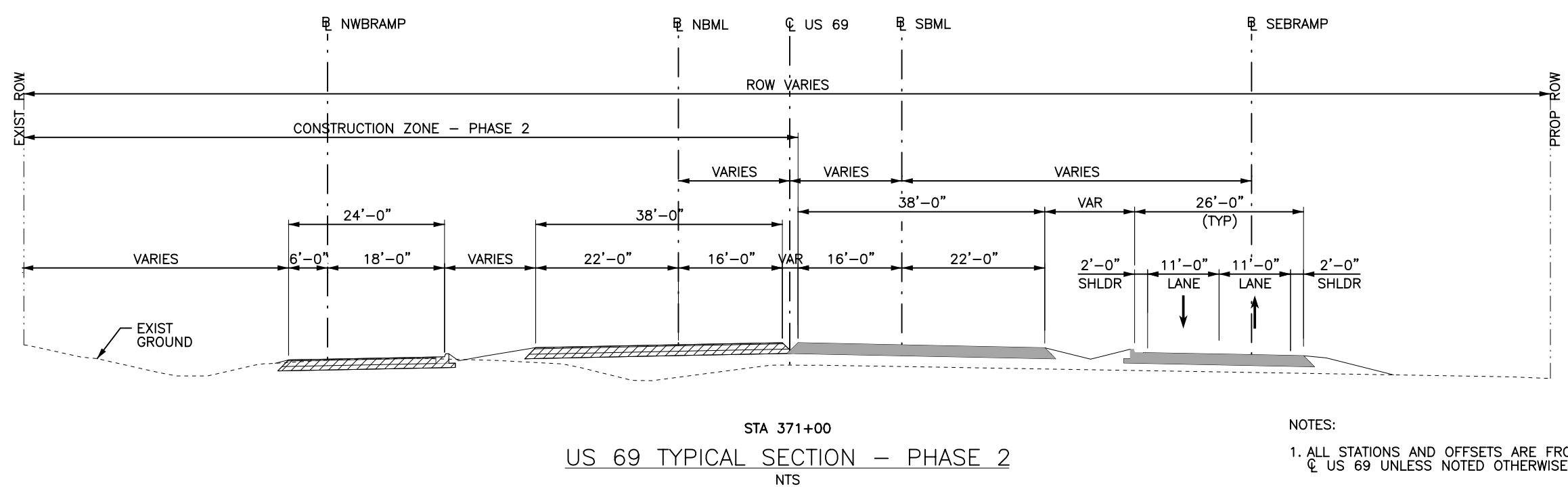
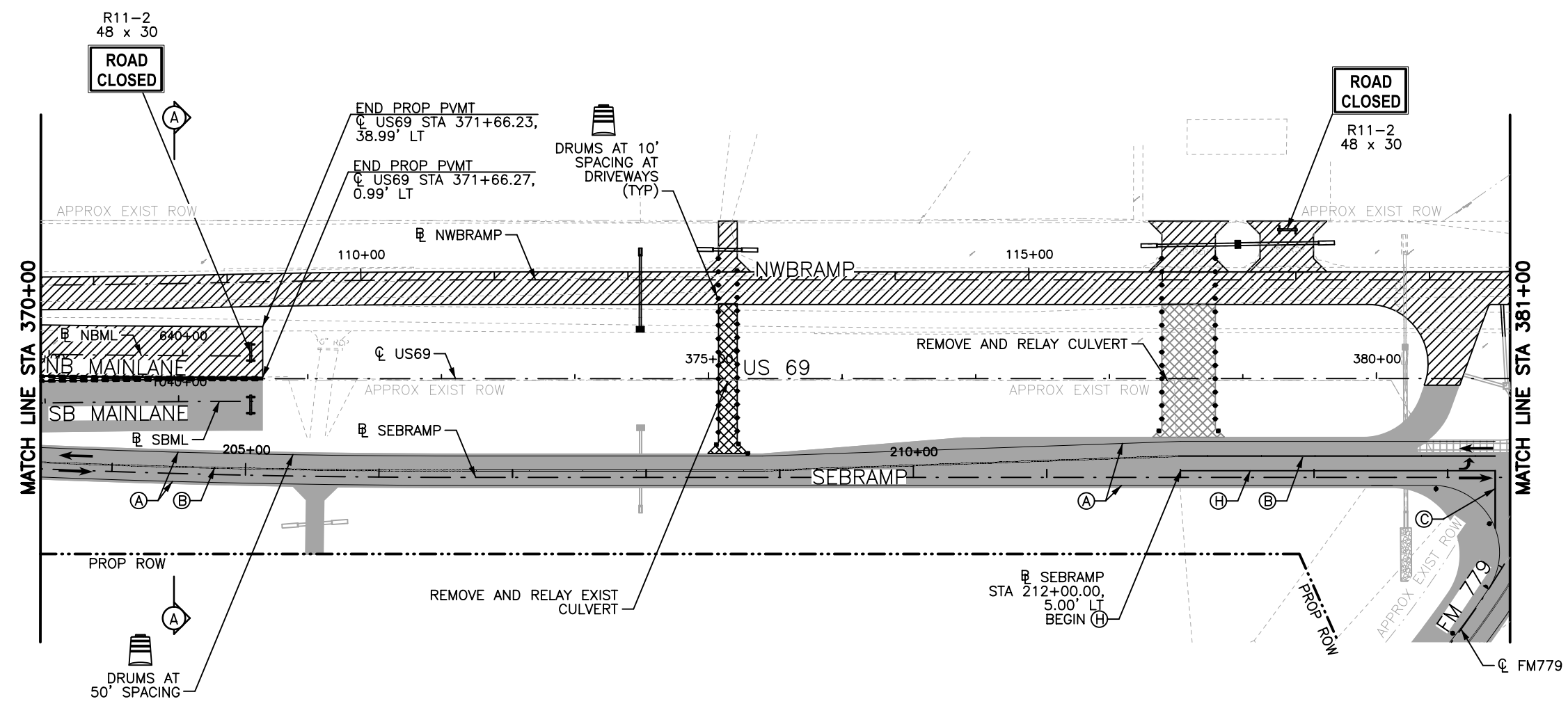
Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	JOB NO.							
Checked:	KML	TYL							60

12/12/2023 07:41 AM hitran pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS TY 3 BARRICADE
- ATTENUATOR PCTB
- DIRECTION OF TRAFFIC SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



STA 371+00
 US 69 TYPICAL SECTION - PHASE 2
 NTS

NOTES:
 1. ALL STATIONS AND OFFSETS ARE FROM
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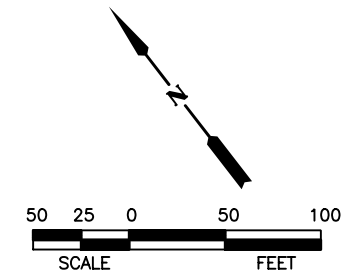
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US 69 AT FM 779
 TCP PHASE 2 STEP 1
 US 69

STA 370+00 TO STA 381+00

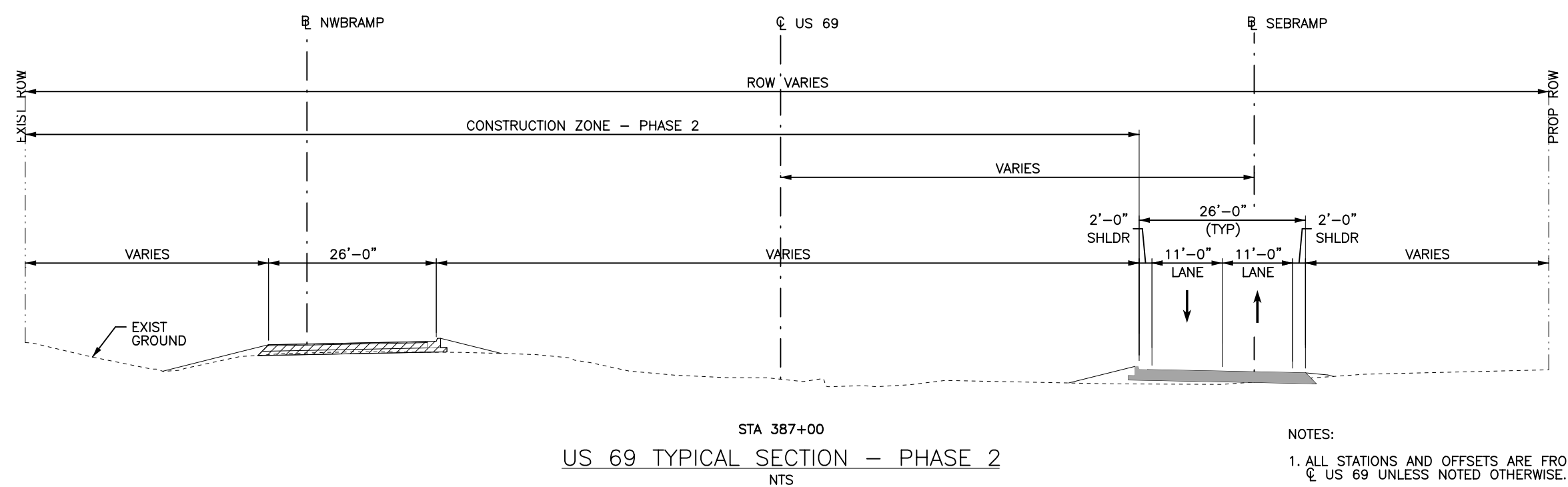
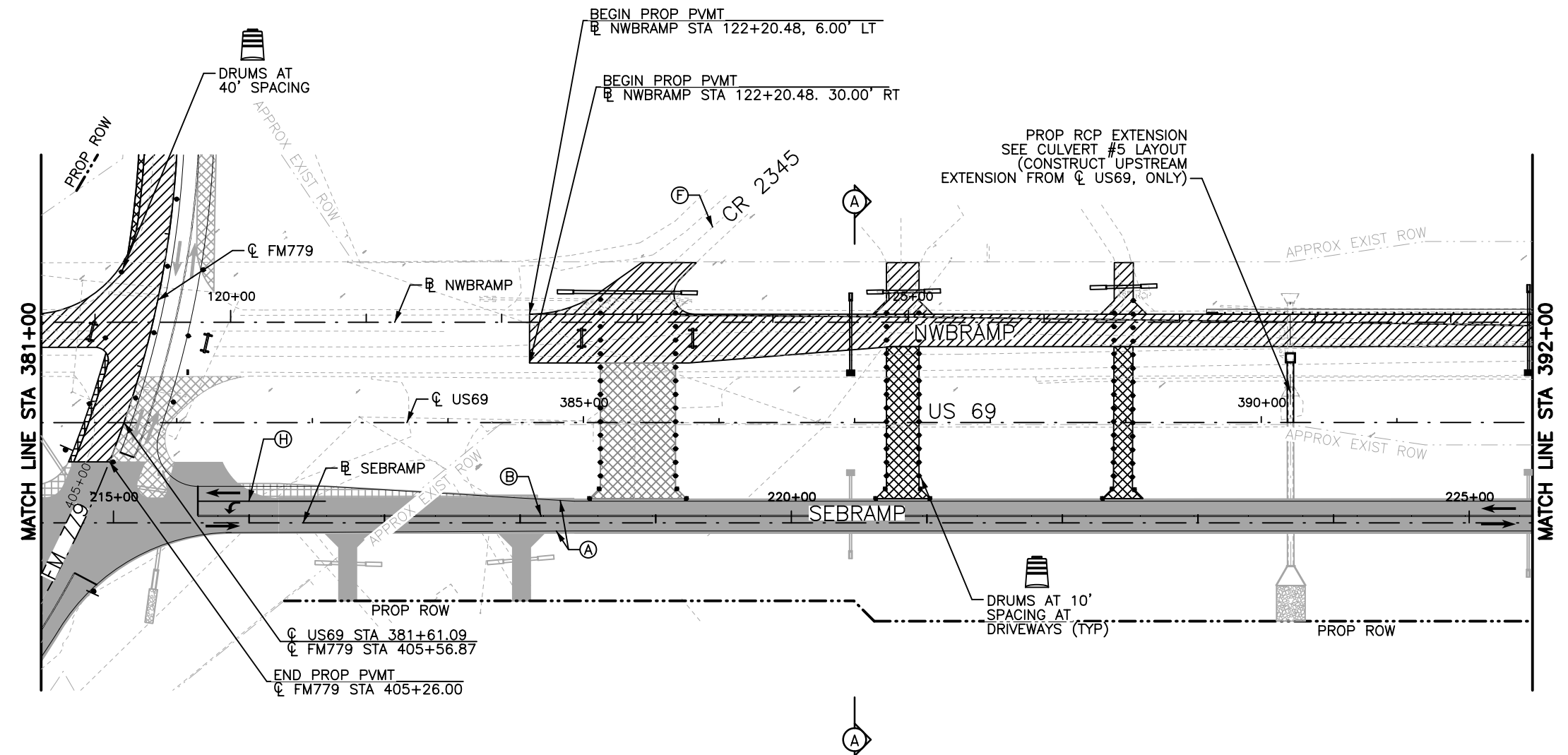
Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	HJZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	JOB NO.	039	SHEET NO.	61				
Checked:	KML	TYL							

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LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR ----- PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



US 69 TYPICAL SECTION - PHASE 2
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
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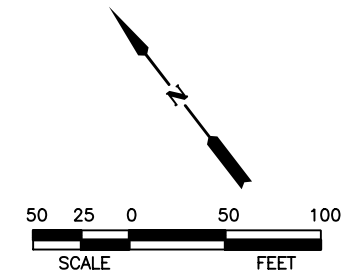
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US 69 AT FM 779
TCP PHASE 2 STEP 1
US 69

STA 381+00 TO STA 392+00

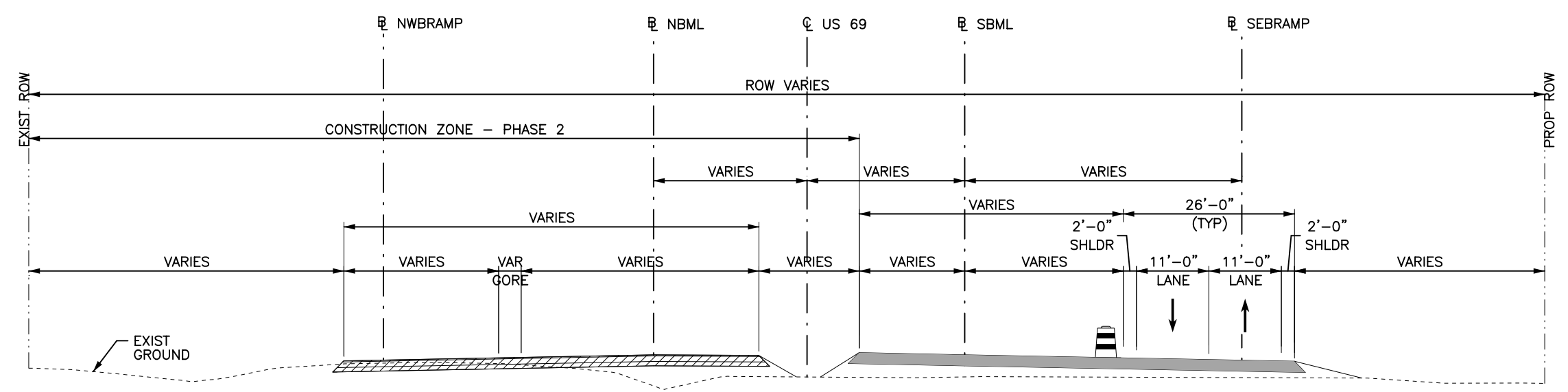
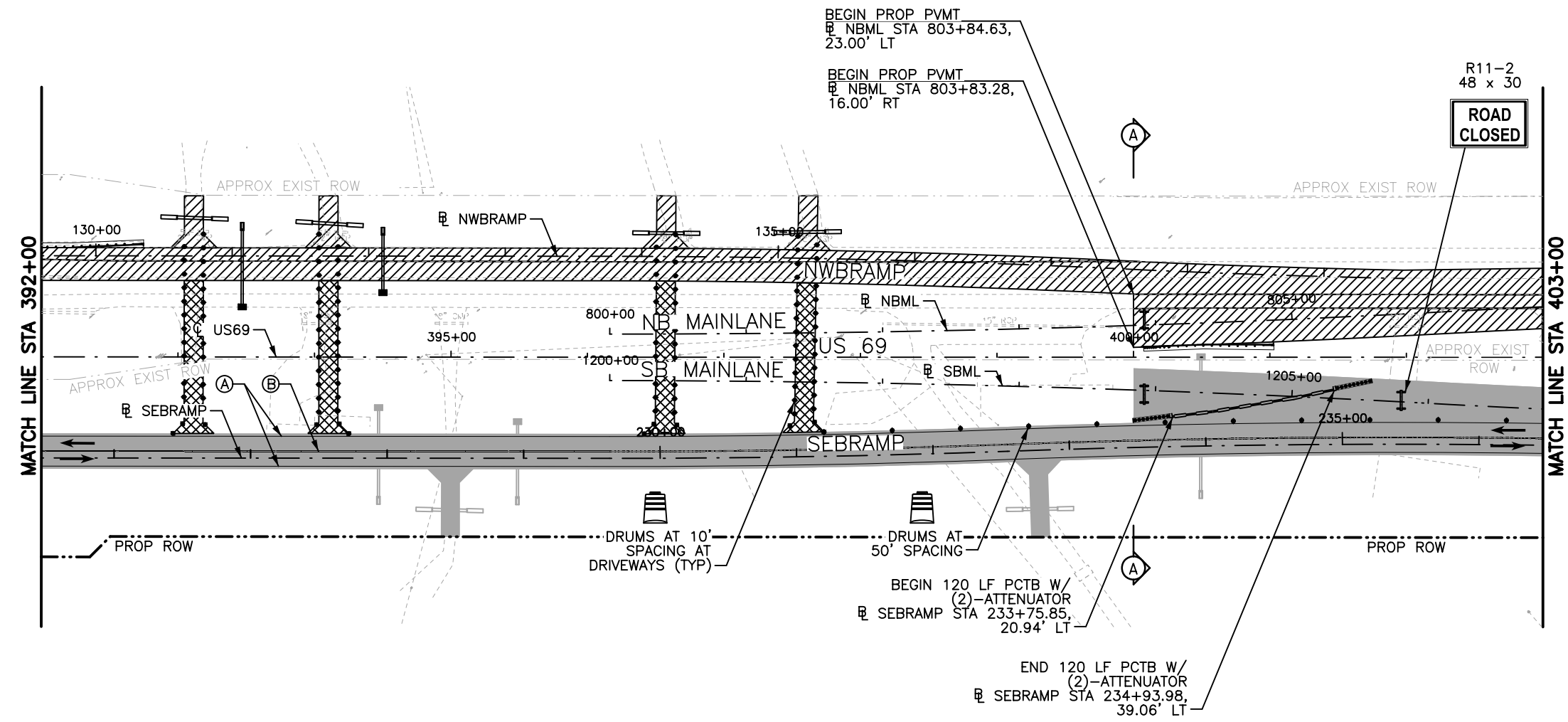
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Checked:	ODH	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	DIST.	TYL	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
									62

12/12/2023 08:04 AM hitran pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS TY 3 BARRICADE
- ATTENUATOR PCTB
- DIRECTION OF TRAFFIC SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



STA 400+00
US 69 TYPICAL SECTION - PHASE 2
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
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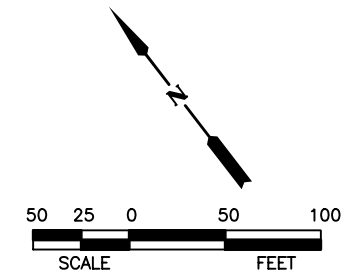
US 69 AT FM 779
TCP PHASE 2 STEP 1
US 69

STA 392+00 TO STA 403+00

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Checked:	ODH	DIST.	HUZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:								JOB NO.	039
Checked:	KML	TYL						SHEET NO.	63

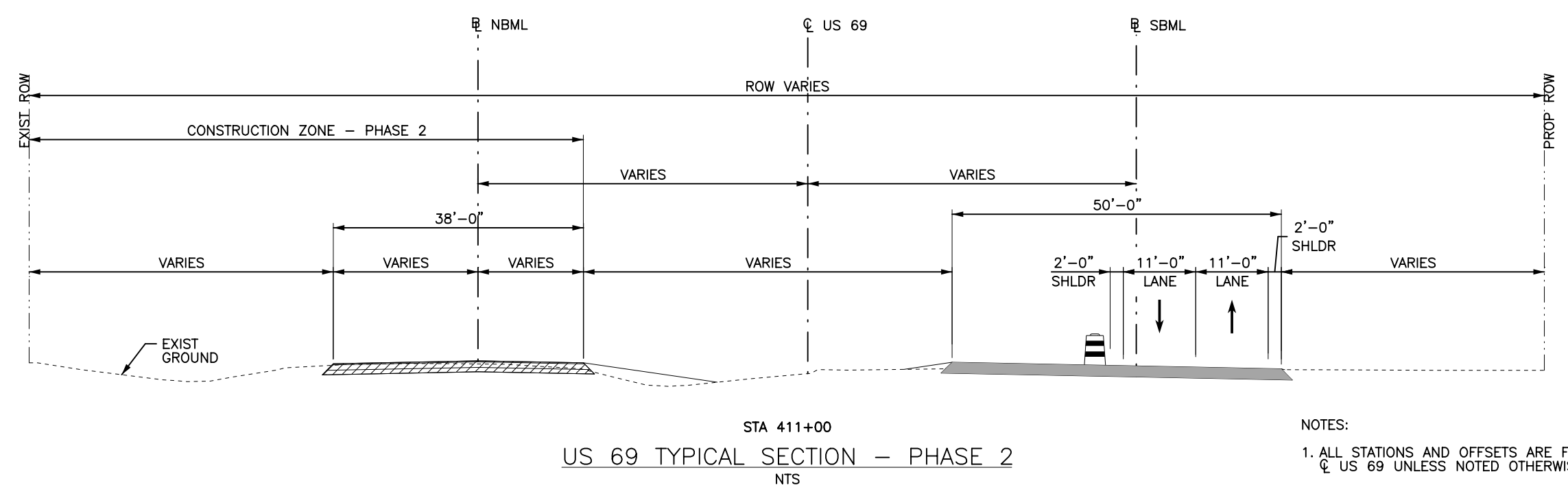
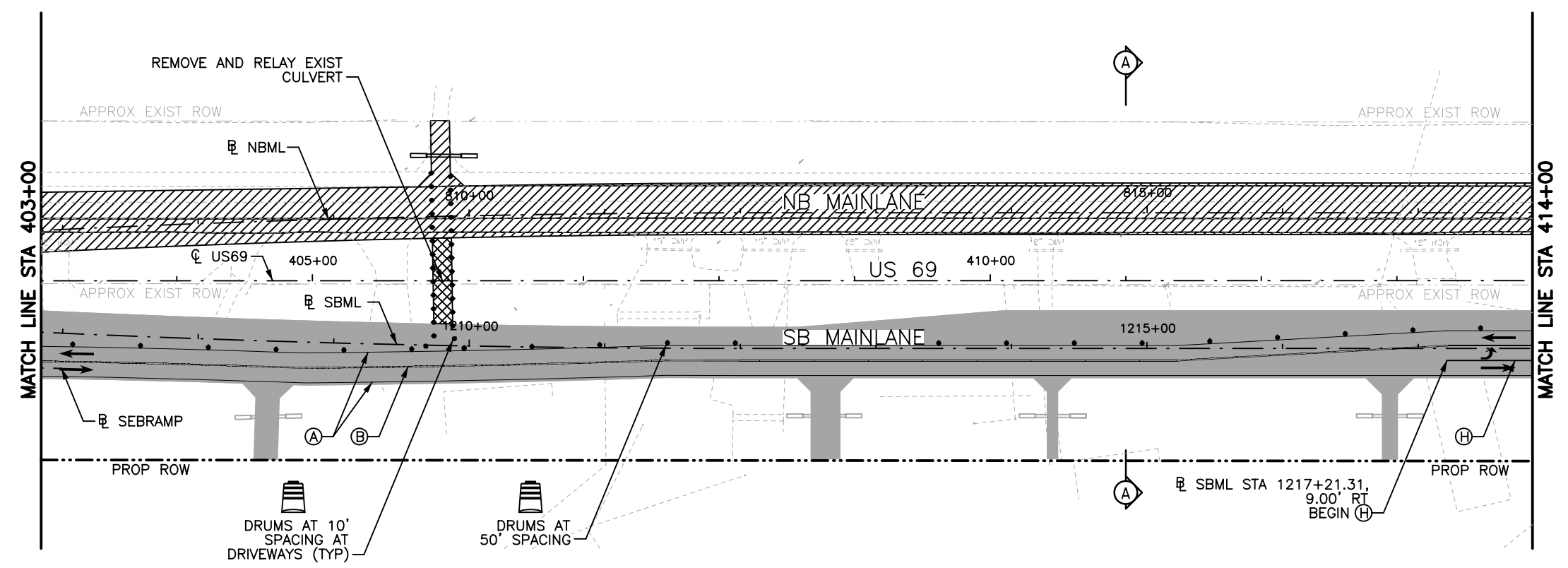
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LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR ----- PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- ↔ EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



US 69 TYPICAL SECTION - PHASE 2
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
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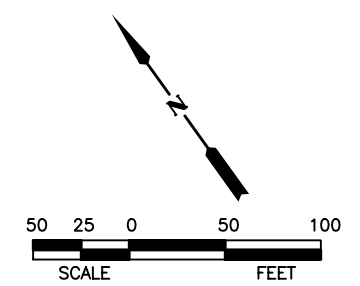
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US 69 AT FM 779
TCP PHASE 2 STEP 1
US 69

STA 403+00 TO STA 414+00

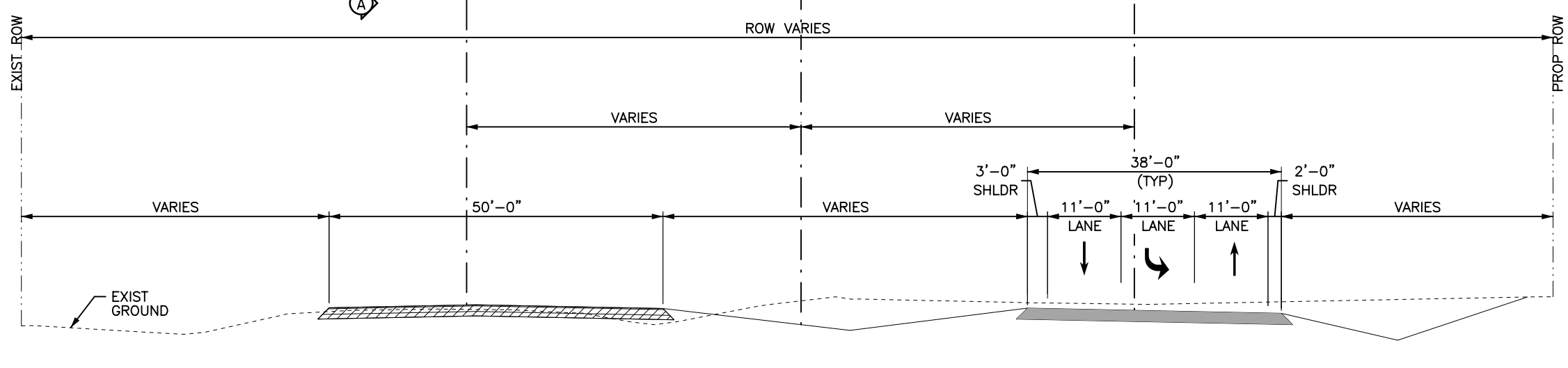
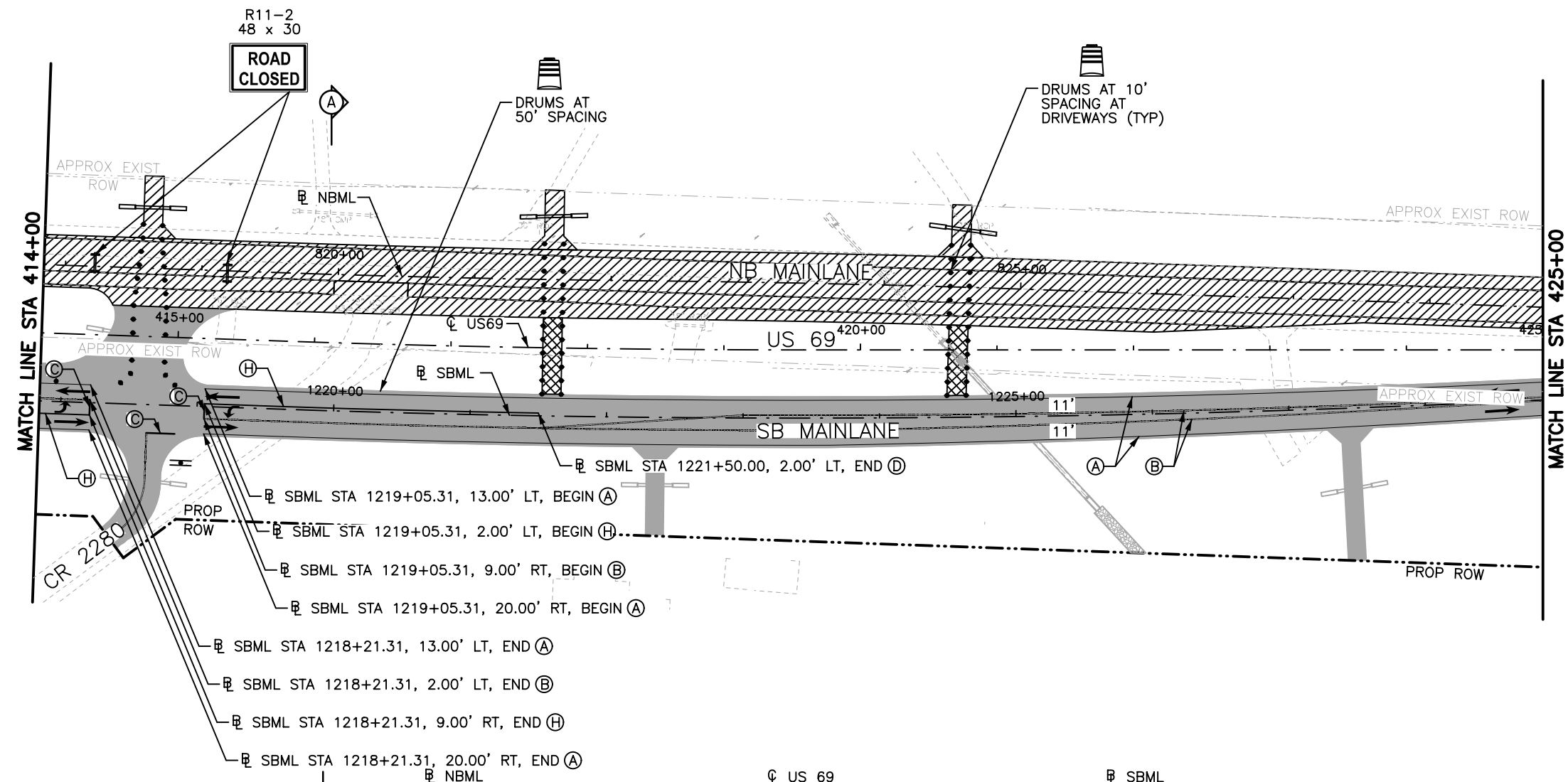
Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH								
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL						JOB NO.	039
								SHEET NO.	64

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LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS TY 3 BARRICADE
- ATTENUATOR PCTB
- DIRECTION OF TRAFFIC SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



STA 417+00
US 69 TYPICAL SECTION - PHASE 2
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM \bar{C} US 69 UNLESS NOTED OTHERWISE.



S. Elsaigh 12/12/2023

NO.	REVISION	BY	DATE



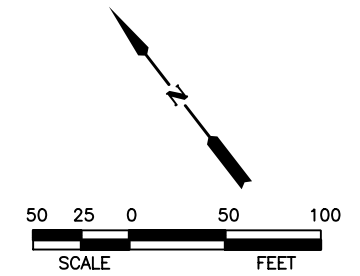
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US 69 AT FM 779
TCP PHASE 2 STEP 1
US 69

STA 414+00 TO STA 425+00

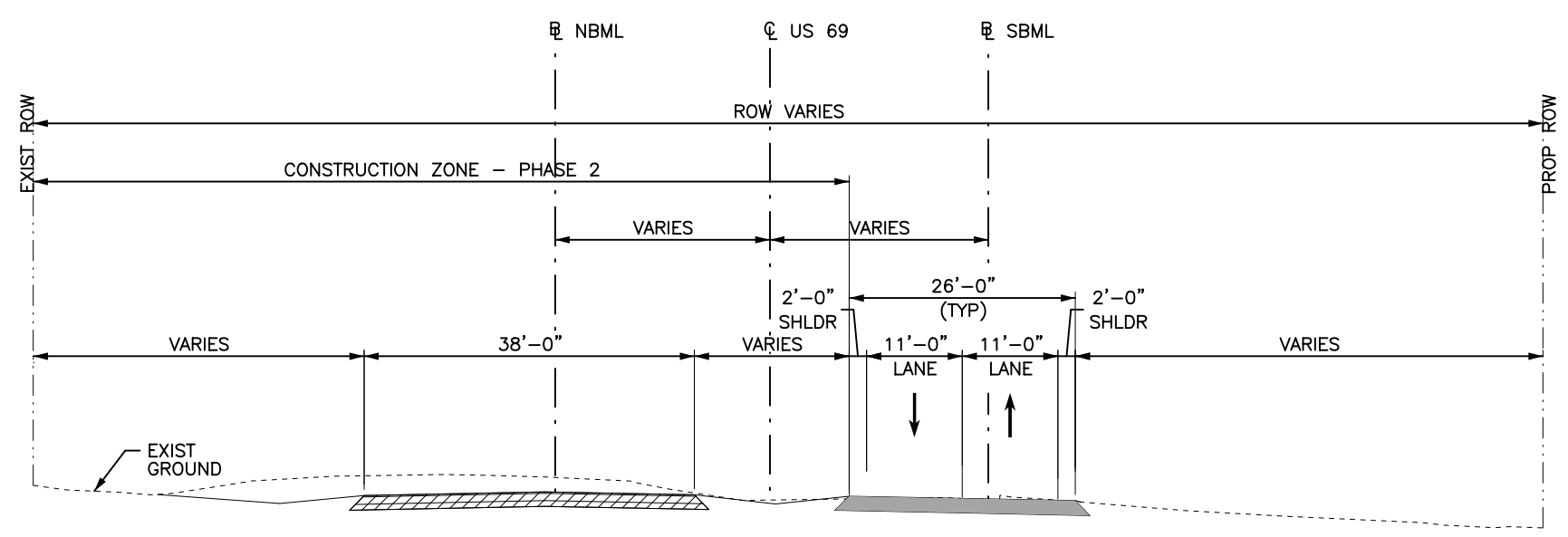
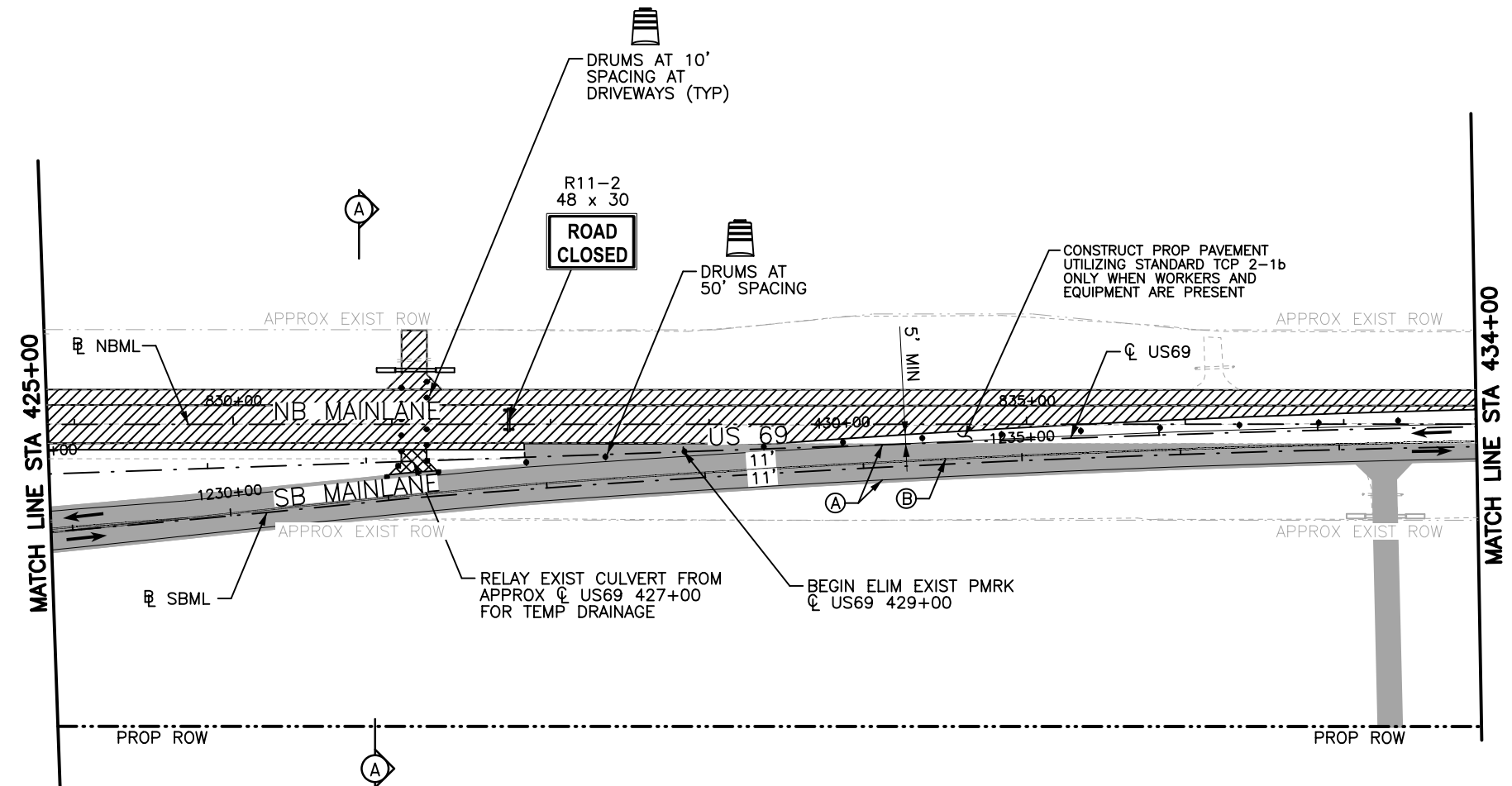
Designed: KML	FED. RD. DIV. NO. 6	STATE TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO. US 69
Checked: ODH	DIST. HJZ	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: HJZ	Checked: KML	TYL	SHEET NO. 65		

12/12/2023 08:38 AM hitran pw:/



LEGEND

- [Hatched pattern] PROPOSED CONSTRUCTION THIS STEP
- [Solid grey] PROPOSED CONSTRUCTION PREVIOUS STEPS
- [Cross-hatched] TEMPORARY PAVEMENT THIS STEP
- [Grid pattern] TEMPORARY PAVEMENT PREVIOUS STEPS
- [Vertical lines] BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- [Dotted line] PLASTIC DRUMS
- [Double arrow] TY 3 BARRICADE
- [Wavy line] ATTENUATOR
- [Dashed line] PCTB
- [Arrow] DIRECTION OF TRAFFIC
- [Sign post] SIGN POST
- [Arrow with sign] EXISTING DIRECTION OF TRAFFIC
- [Sign M] PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



US 69 TYPICAL SECTION - PHASE 2
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
CL US 69 UNLESS NOTED OTHERWISE.



S. Elsaigh
12/12/2023

NO.	REVISION	BY	DATE



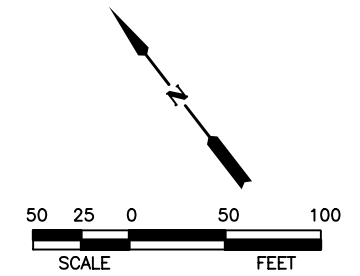
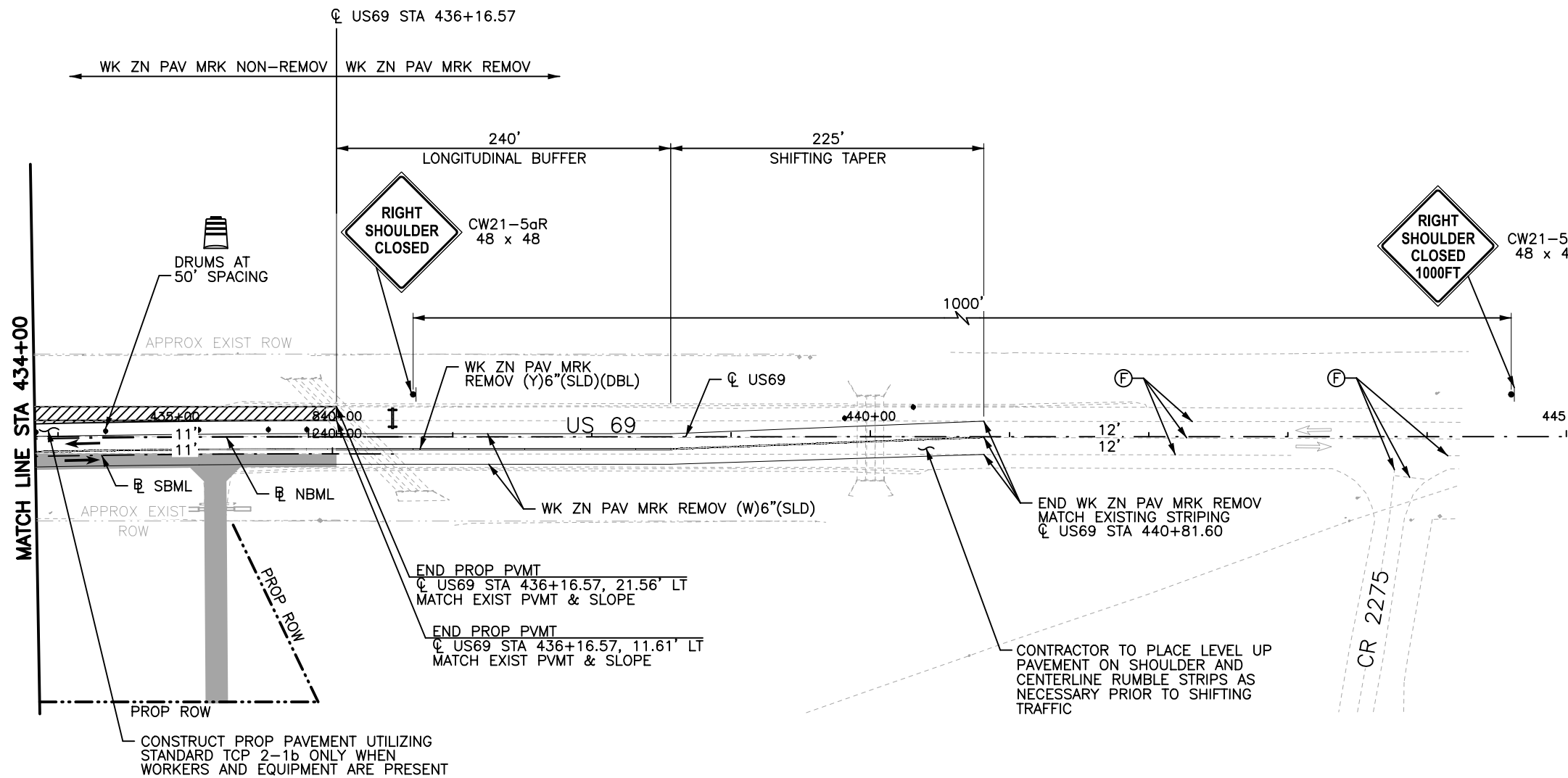
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US 69 AT FM 779
TCP PHASE 2 STEP 1
US 69

STA 425+00 TO STA 434+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	HUZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HUZ	DIST.	HUZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL							

12/12/2023 08:50 AM hitran pw:/



- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
 - (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
 - (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
 - (F) EXISTING STRIPING / STRIPING PREV PLANS
 - (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS ⇄ TY 3 BARRICADE
 - ATTENUATOR - - - - - PCTB
 - DIRECTION OF TRAFFIC ▸ SIGN POST
 - ↔ EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



S. Elsaigh 12/12/2023

NO.	REVISION	BY	DATE
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US 69 AT FM 779
TCP PHASE 2 STEP 1
US 69

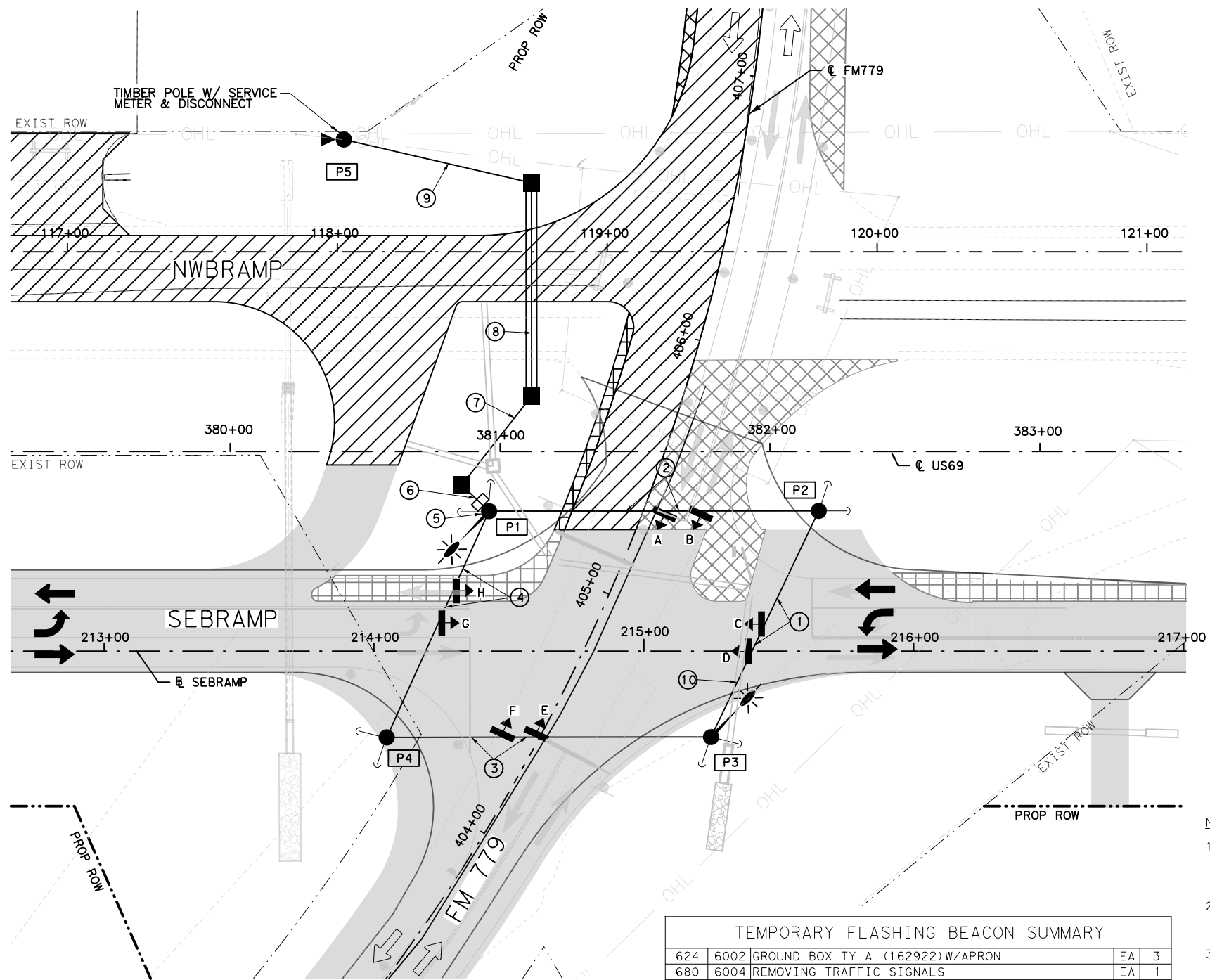
STA 434+00 TO END PROJECT

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	WOOD	COUNTY	TYL	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	JOB NO.	039	SHEET NO.	67				

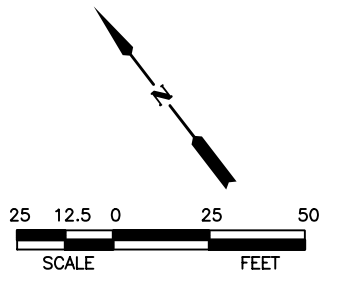
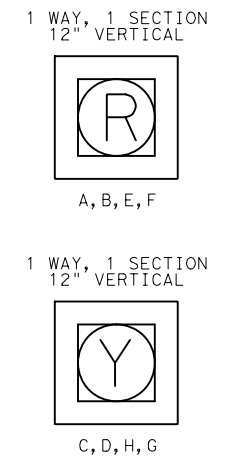
NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
☉ US 69 UNLESS NOTED OTHERWISE.

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TEMPORARY TRAFFIC SIGNAL HEADS

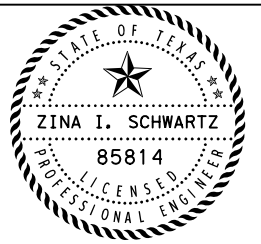


LEGEND

- TEMP TIMBER POLE W/ GUY WIRES & SPAN WIRE
- TEMP FLASHING BEACON
- TEMP CONDUIT
- TEMP CONDUIT (BORE)
- TEMP GROUND BOX
- TEMP SERVICE METER & DISCONNECT
- TEMP LUMINAIRE
- TEMP POLE MOUNTED CONTROLLER
- PLASTIC DRUMS
- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- PROPOSED DIRECTION OF TRAFFIC
- EXISTING DIRECTION OF TRAFFIC

NOTES:

- THE LOCATION OF ALL UNDERGROUND AND ABOVE GROUND INSTALLATIONS ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITY LOCATIONS PRIOR TO ANY CONSTRUCTION.
 - LOCATIONS OF POLES, SIGNAL HEADS, CONTROLLER, SERVICE, ETC. ARE APPROXIMATE. FINAL LOCATION TO BE DETERMINED BY FIELD ENGINEER.
 - INSTALL A TEMPORARY TIMBER POLE FOR THE SERVICE METER.
- PHASE 1:**
- EXISTING FLASHING BEACONS TO REMAIN IN PLACE FOR THIS PHASE OF CONSTRUCTION.
- PHASE 2:**
- DISCONNECT OPERATION OF EXISTING FLASHING BEACONS PRIOR TO PHASE 2. REMOVE ALL EXISTING FLASHING BEACONS. INSTALL TEMPORARY FLASHING BEACONS AND A TEMPORARY POLE MOUNTED TRAFFIC CONTROLLER BEFORE PHASE 2 CONSTRUCTION BEGINS, AS SHOWN ON THE LAYOUT.
 - BEGIN OPERATION OF TEMPORARY FLASHING BEACONS.
- PHASE 3:**
- REFER TO TRAFFIC CONTROL PLAN.



12/12/2023

NO.	REVISION	BY	DATE



US 69 AT FM 779
TEMPORARY FLASHING BEACON
 US 69 AT FM 779

Designed: KML	FED. RD. DIV. NO. 6	STATE TEXAS	FEDERAL AID PROJECT NO.	HIGHWAY NO. US 69
Checked: ODH	DIST. HUZ	COUNTY TYL	CONTROL NO. 0203	SECTION NO. 05
Drawn: HUZ	JOB NO. 039	SHEET NO. 68		

SIGNAL POLE CHART

POLE #	DESCRIPTION	STA	OFFSET
P1	PROPOSED TEMP. 40' WOOD POLE	214+43	52' LT
P2	PROPOSED TEMP. 40' WOOD POLE	215+65	52' LT
P3	PROPOSED TEMP. 40' WOOD POLE	215+25	32' RT
P4	PROPOSED TEMP. 40' WOOD POLE	214+05	32' RT
P5	PROPOSED TIMBER POLE W/ SERVICE METER & DISCONNECT	213+89	185' LT

NOTE: POLE STA AND OFFSET ARE BASED OFF @ SEBRAMP

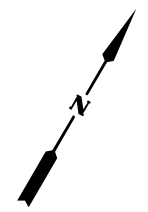
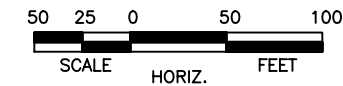
TEMPORARY ELECTRICAL SCHEDULE

ITEM	DESCRIPTION	RUN NUMBER												
		1	2	3	4	5	6	7	8	9	10			
POWER	1/C- #4 XHHW						2	2	2	2				
GROUND	1/C- #4 BARE						1	1	1	1				
	1/C- #6 BARE													
LUMINAIRE	4/C- #12 TRAY CABLE	1	1			2	2	2	2	2	1			
VEHICLE SIGNALS	7/C- #12 AWG	1	2	1	2	4								
CONDUIT	2" PVC (SCHD. 80)						2	1		1				
	2" PVC (SCHD. 80) BORE													
	2" RMC						2							

TEMPORARY FLASHING BEACON SUMMARY

624	6002	GROUND BOX TY A (162922)W/APRON	EA	3
680	6004	REMOVING TRAFFIC SIGNALS	EA	1
0681	6001	TEMP TRAF SIGNALS	EA	1
		o ELEC CONDUCTOR (NO.4) (BARE)	LF	200
		o ELEC CONDR (NO.4) INSULATED	LF	400
		o CONDT (PVC) (SCH 80) (2")	LF	240
		o CONDT (PVC) (SCH 80) (2") (BORE)	LF	160
		o CONDT (RM) (2")	LF	80
		o TRAY CABLE (4 CONDR) (12 AWG)	LF	650
		o TRF SIG CBL (TY A) (12 AWG) (7 CONDR)	LF	500
		o WIRE 5/16" GALV GUY (HIGH STRENGTH)	LF	470
		o WIRE 3/16" GALV GUY (HIGH STRENGTH)	LF	430
		o TRAF SIG POLE, 40 FT WOOD	EA	4
		o ROD, 5/8"X8' COPPER GROUND	EA	4
		o VEH SIG SEC (12")LED(YEL)	EA	4
		o VEH SIG SEC (12")LED(RED)	EA	4
		o BACK PLATE (12") (3 SEC)	EA	8
		o GUARD, GUY WIRE	EA	8
		o SCREW ANCHORS, 8'-10"	EA	8
		o LUMINAIRE ARM	EA	2
		o LED LUMINAIRE (250 W EQ)	EA	2
		o POLE MOUNTED TRAFFIC SIGNAL CABINET (FLASHER)	EA	1
0628	6198	ELC SRV TY D 120/240 070(NS)SS(T)TP(O)	EA	1

o INCIDENTAL ITEMS, FOR CONTRACTOR'S INFORMATION ONLY



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS
- TY 3 BARRICADE
- ATTENUATOR
- PCTB
- DIRECTION OF TRAFFIC
- SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



S. Elsaigh

12/13/2023

NO.	REVISION	BY	DATE



US 69 AT FM 779
TCP PHASE 2 STEP 1
FM 779 LAYOUT

BEGIN PROJECT TO END PROJECT

Designated:	KML	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
Checked:	ODH	6	TEXAS		US 69		
Drawn:	HJZ	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	KML	TYL	WOOD	0203	05	039	69

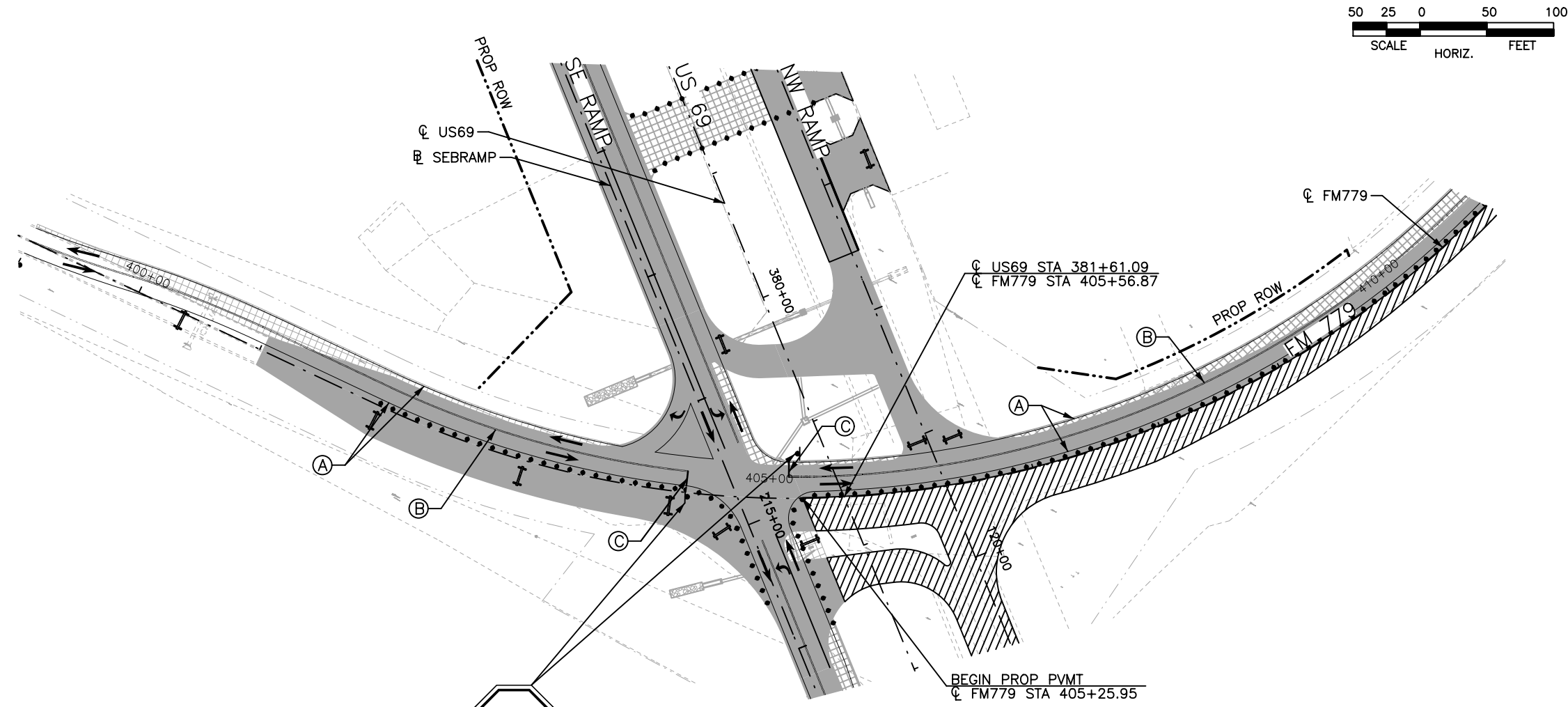
NOTES:

1. ALL DIMENSIONS ARE TO THE EDGE OF TEMPORARY PAVEMENT.
2. CONSTRUCT STAGE I INLETS WITH TEMPORARY LID (STYLE 'SL'). COMPLETE INLETS IN PHASE 3.
3. USE TCP STANDARD (1-2b) ON US 69 AND FM779 SIMULTANEOUSLY, STOPPING TRAFFIC ON BOTH ROADWAYS TO CONTROL THE WORK ZONE.



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- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
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 - (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS TY 3 BARRICADE
 - ATTENUATOR PCTB
 - DIRECTION OF TRAFFIC SIGN POST
 - EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



NOTES:

1. ALL DIMENSIONS ARE TO THE EDGE OF TEMPORARY PAVEMENT.
2. CONSTRUCT STAGE I INLETS WITH TEMPORARY LID (STYLE 'SL'). COMPLETE INLETS IN PHASE 3.
3. USE TCP STANDARD (1-2b) ON US 69 AND FM779 SIMULTANEOUSLY, STOPPING TRAFFIC ON BOTH ROADWAYS TO CONTROL THE WORK ZONE.



S. Elsaigh
 12/12/2023

NO.	REVISION	BY	DATE



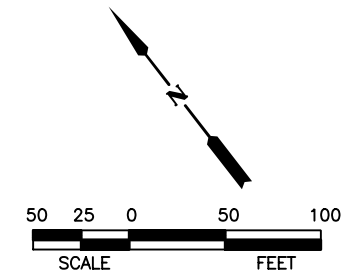
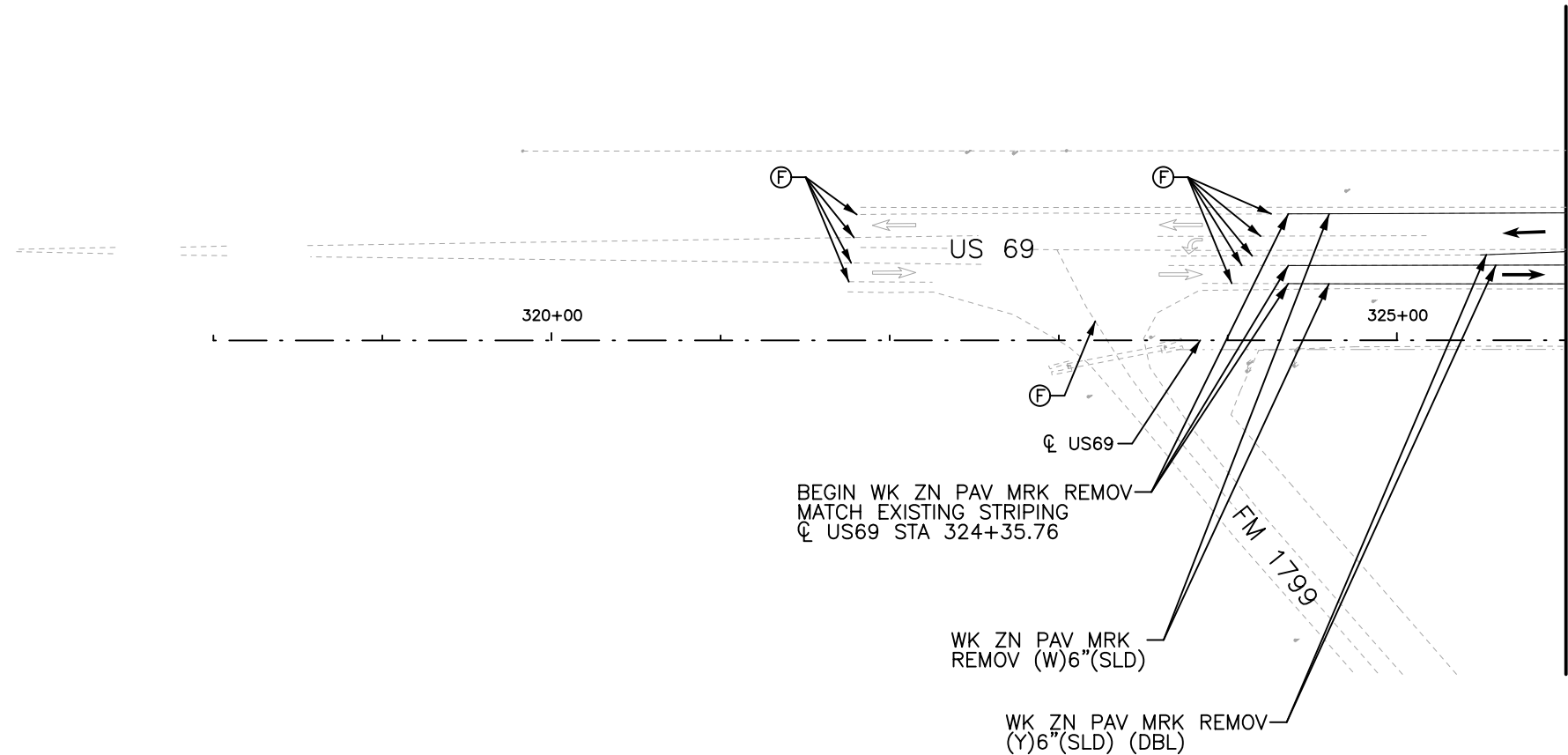
US 69 AT FM 779
TCP PHASE 2 STEP 2
FM 779 LAYOUT

BEGIN PROJECT TO END PROJECT

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH								
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL						JOB NO.	039
								SHEET NO.	70

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LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS
- TY 3 BARRICADE
- ATTENUATOR
- PCTB
- DIRECTION OF TRAFFIC
- SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



S. Elsaigh

12/12/2023

NO.	REVISION	BY	DATE



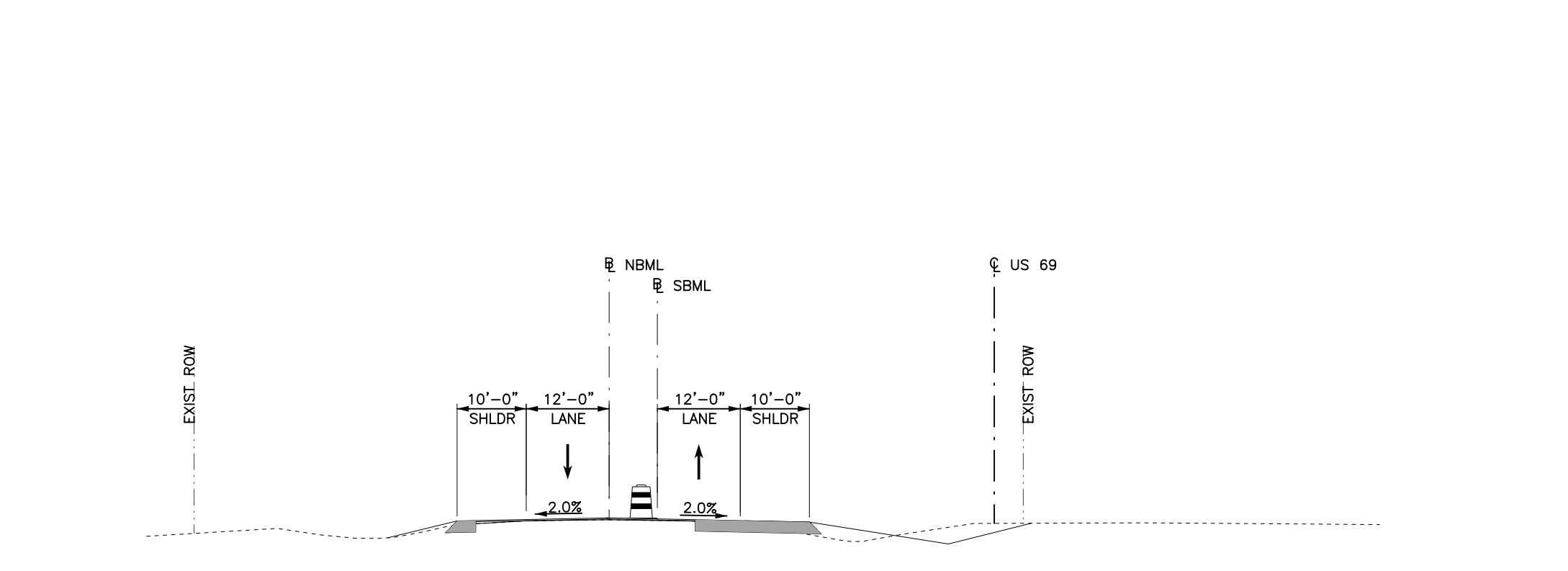
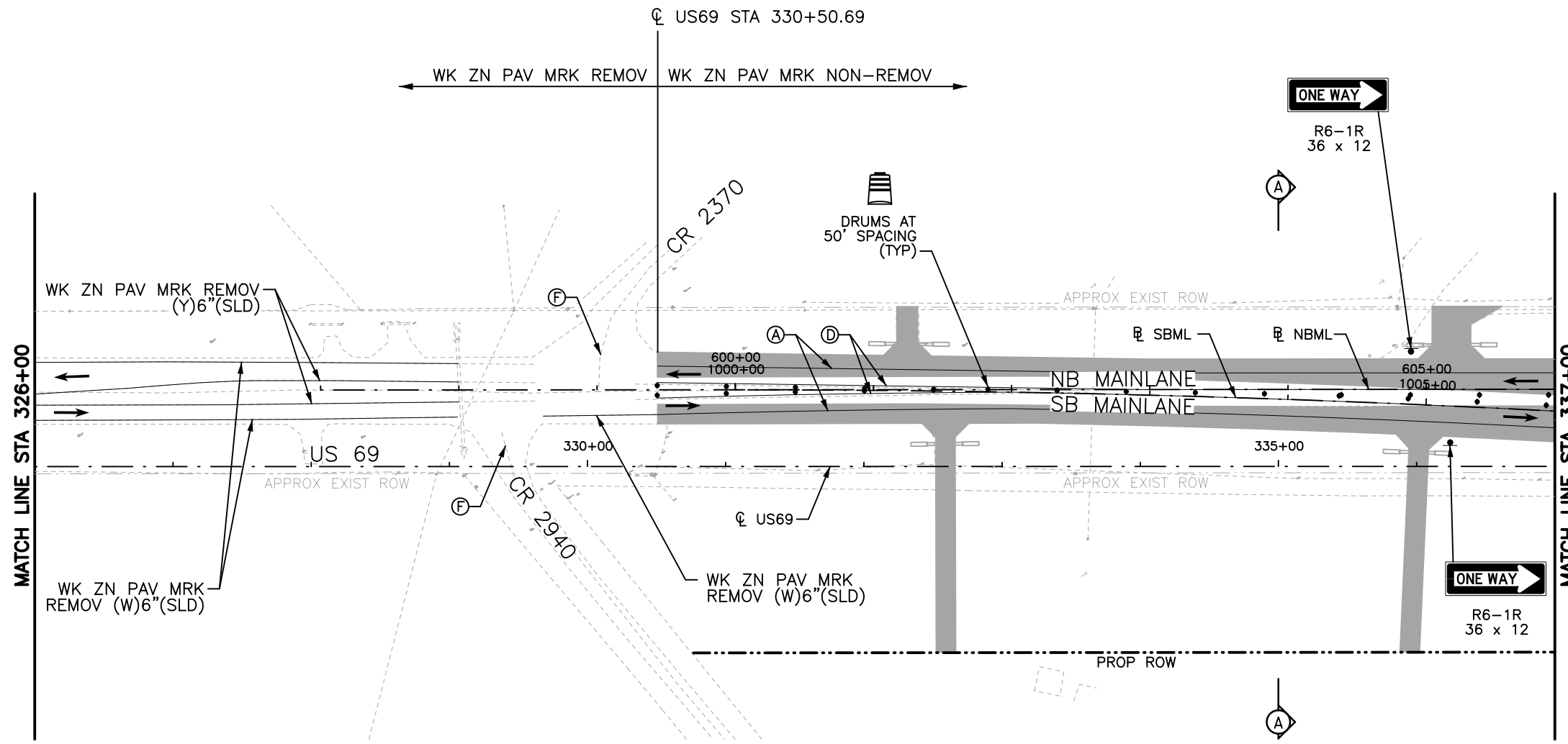
US 69 AT FM 779
 TCP PHASE 3
 US 69

BEGIN PROJECT TO STA 326+00

NOTES:

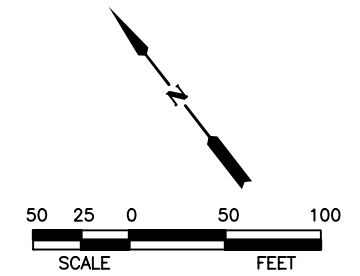
1. ALL STATIONS AND OFFSETS ARE FROM ☉ US 69 UNLESS NOTED OTHERWISE.

Designated:	KML	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
Checked:	ODH	6	TEXAS		US 69		
Drawn:	HJZ	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	KML	TYL	WOOD	0203	05	039	72



US 69 TYPICAL SECTION - PHASE 3
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
CL US 69 UNLESS NOTED OTHERWISE.



- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6\"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6\"(SLD)(DBL) W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24\"(SLD)
 - (D) WK ZN PAV MRK NON-REMOV (Y)6\"(SLD)
 - (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
 - (F) EXISTING STRIPING / STRIPING PREV PLANS
 - (G) WK ZN PAV MRK NON-REMOV (W)6\"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8\"(SLD) W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18\"(YLD TRI)
 - PLASTIC DRUMS TY 3 BARRICADE
 - ATTENUATOR PCTB
 - DIRECTION OF TRAFFIC SIGN POST
 - EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



S. Elsaigh
12/12/2023

NO.	REVISION	BY	DATE



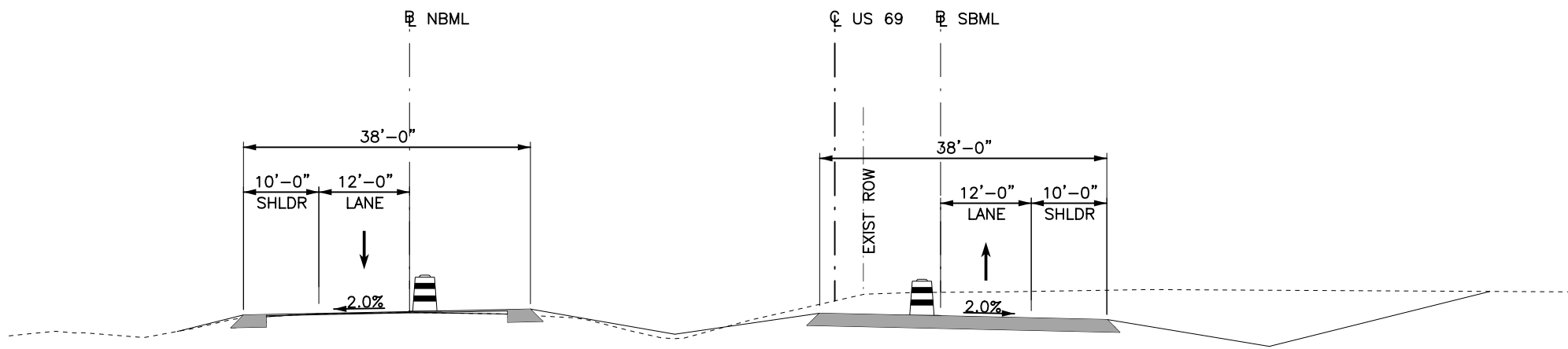
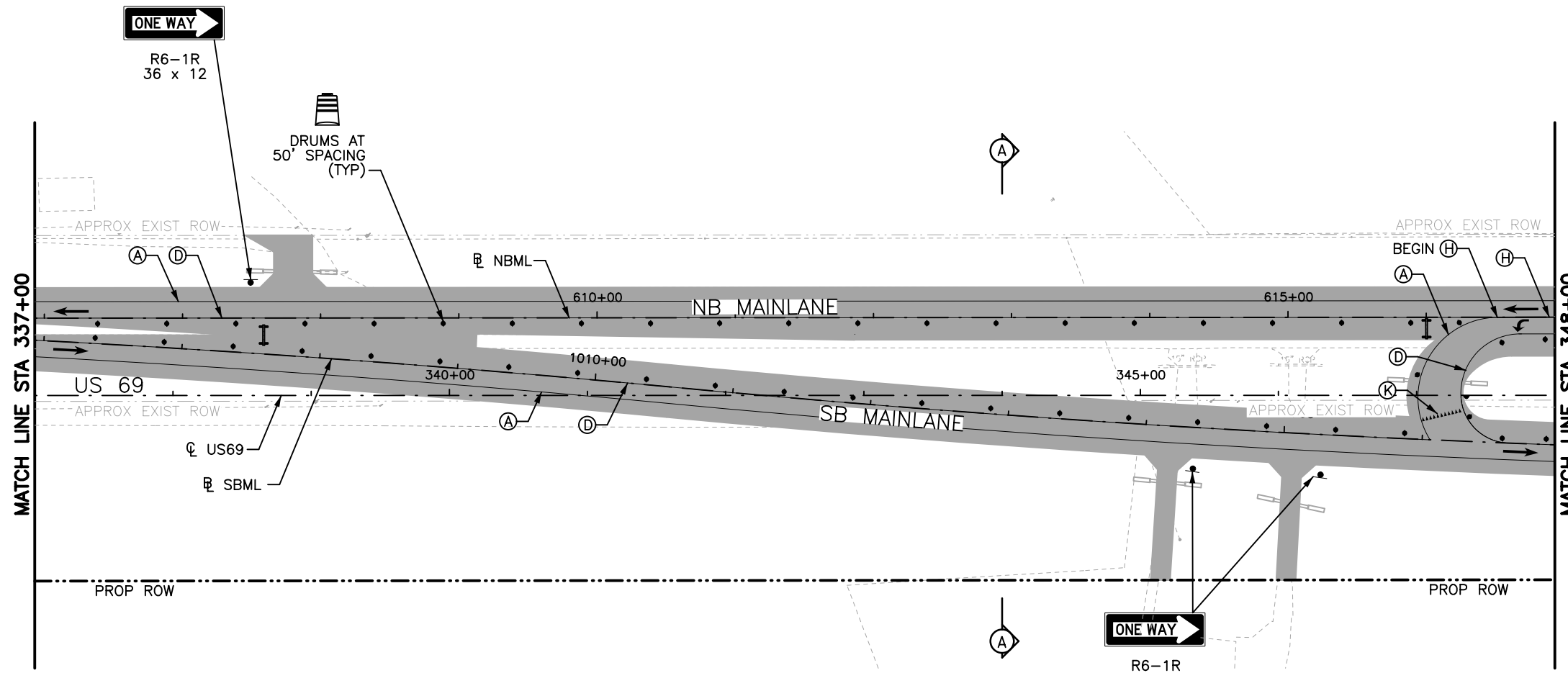
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US 69 AT FM 779
TCP PHASE 3
US 69

STA 326+00 TO STA 337+00

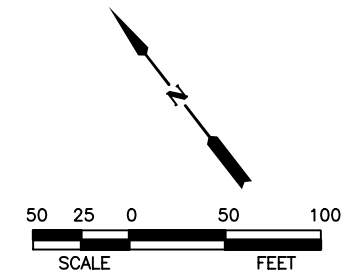
Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
								JOB NO.	039
								SHEET NO.	73

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STA 344+00
US 69 TYPICAL SECTION - PHASE 3
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
☉ US 69 UNLESS NOTED OTHERWISE.



- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
 - (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
 - (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
 - (F) EXISTING STRIPING / STRIPING PREV PLANS
 - (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS ⇄ TY 3 BARRICADE
 - ATTENUATOR ----- PCTB
 - DIRECTION OF TRAFFIC ▸ SIGN POST
 - EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



S. Elsaigh
12/12/2023

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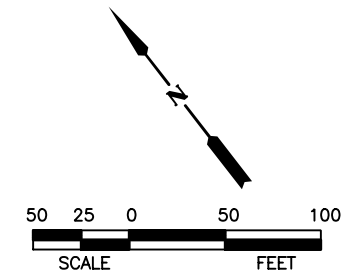
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US 69 AT FM 779
TCP PHASE 3
US 69

STA 337+00 TO STA 348+00

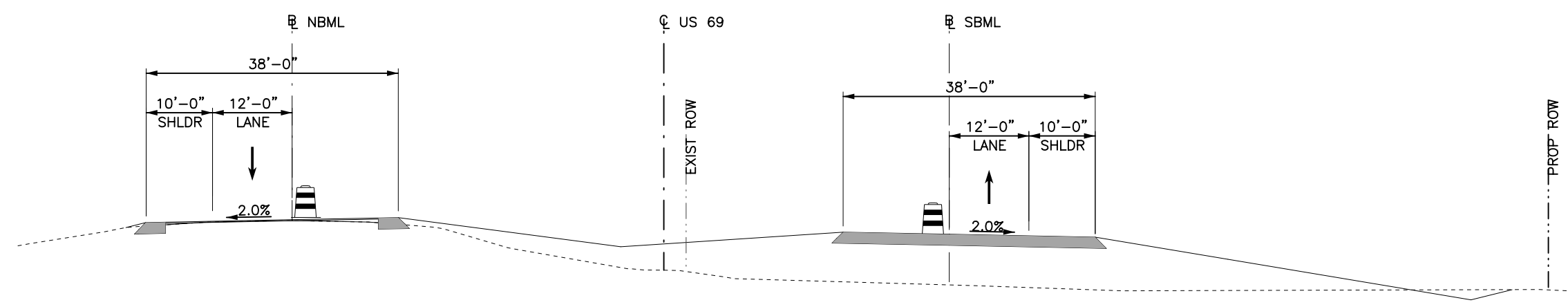
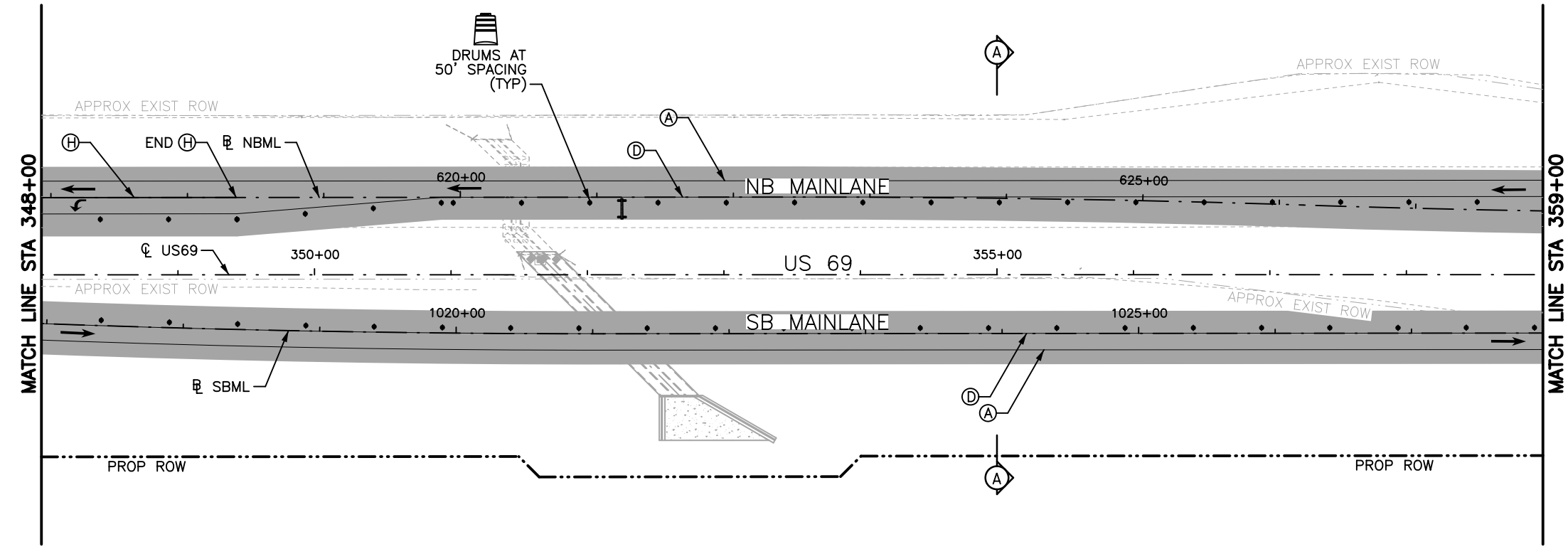
Designed:	KML	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
Checked:	ODH	6	TEXAS		US 69		
Drawn:	HJZ	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	KML	TYL	WOOD	0203	05	039	74

12/12/2023 3:26:44 AM hitran pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- EXISTING STRIPING / STRIPING PREV PLANS
- WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- WK ZN PAV MRK NON-REMOV (W)ARROW
- WK ZN PAV MRK NON-REMOV (W)WORD
- WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS
- TY 3 BARRICADE
- ATTENUATOR
- PCTB
- DIRECTION OF TRAFFIC
- SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



US 69 TYPICAL SECTION - PHASE 3
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
CL US 69 UNLESS NOTED OTHERWISE.



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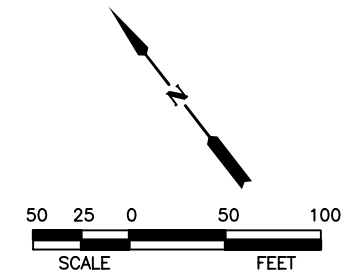
US 69 AT FM 779
TCP PHASE 3
US 69

STA 348+00 TO STA 359+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	HUZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HUZ					JOB NO.	039		
Checked:	KML	TYL							75

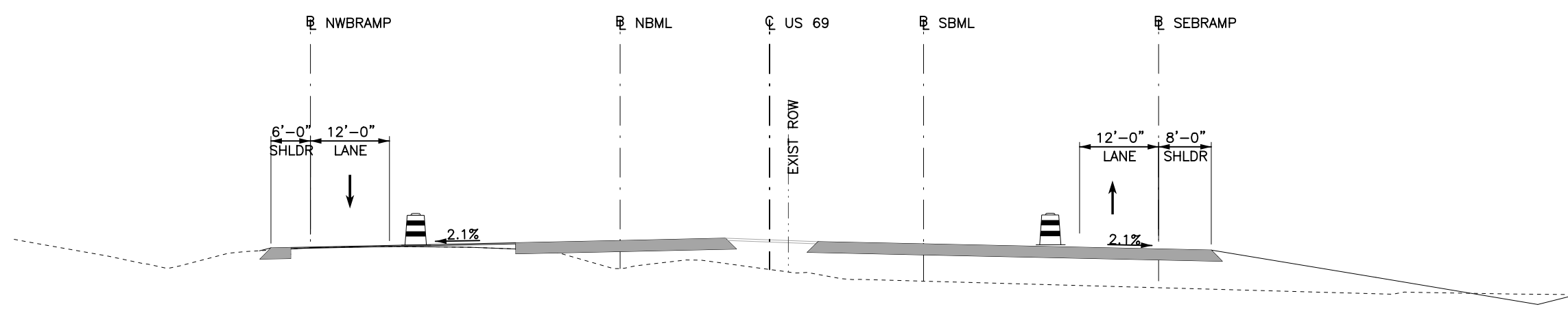
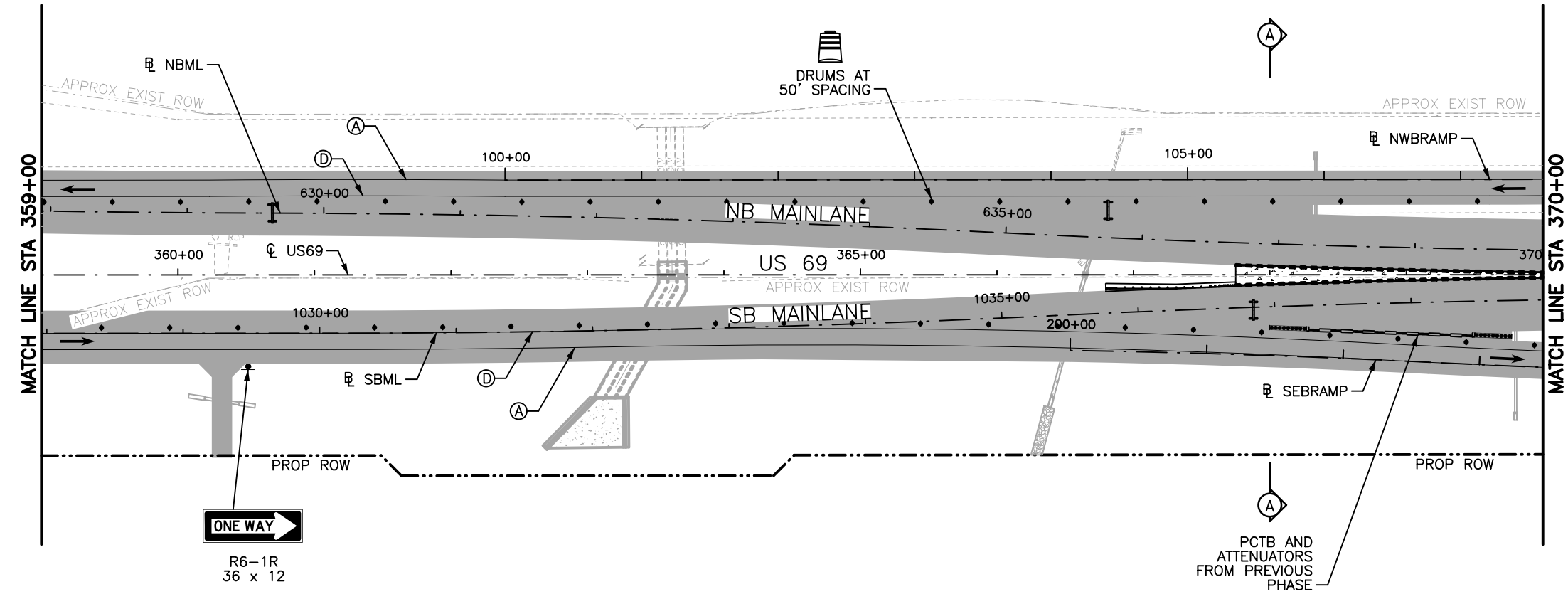
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 cpypdf_ANSIB.pltcfgr
 pw:/

12/12/2023 3:26:58 AM hitran



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS
- TY 3 BARRICADE
- ATTENUATOR
- PCTB
- DIRECTION OF TRAFFIC
- SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



US 69 TYPICAL SECTION - PHASE 3
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
CL US 69 UNLESS NOTED OTHERWISE.



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12/12/2023

NO.	REVISION	BY	DATE
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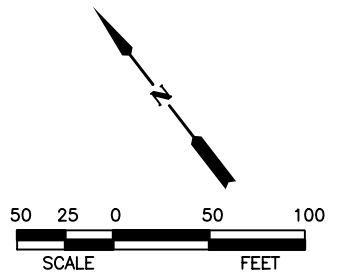
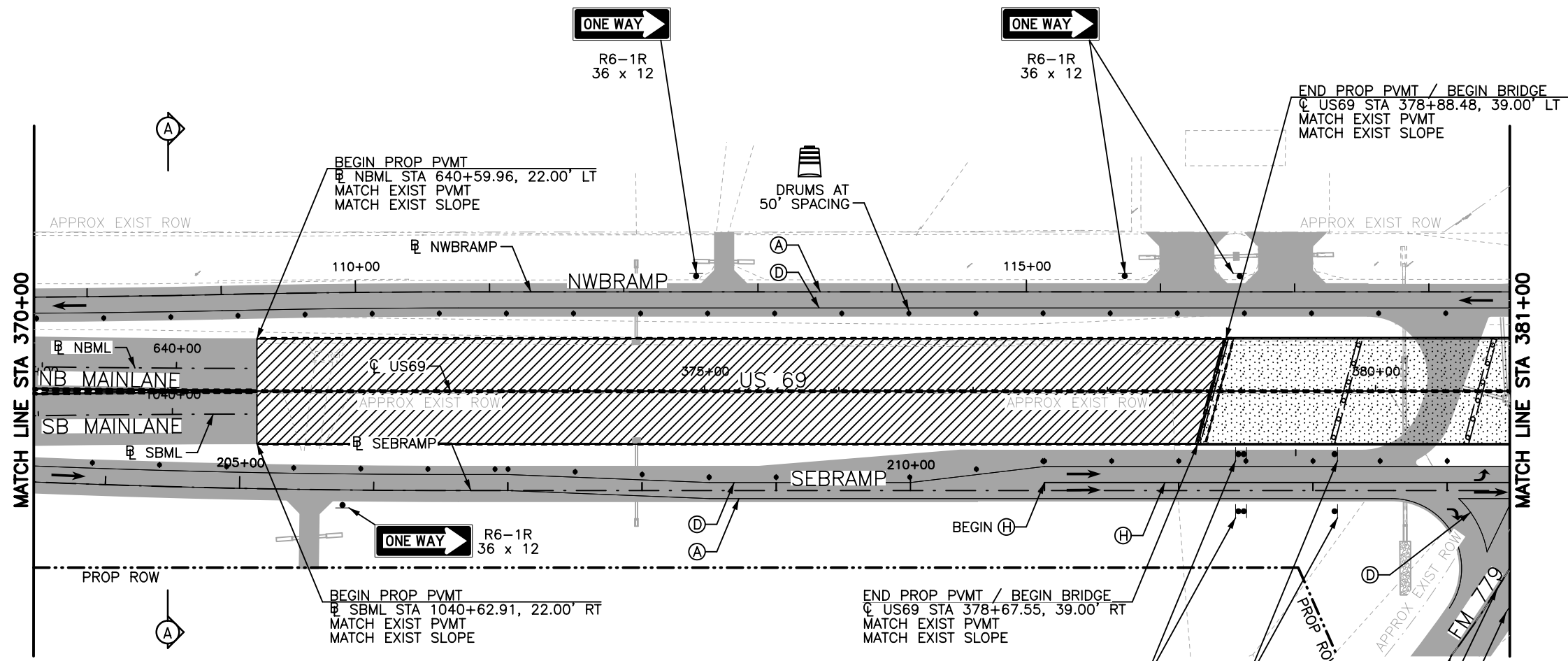
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US 69 AT FM 779
TCP PHASE 3
US 69

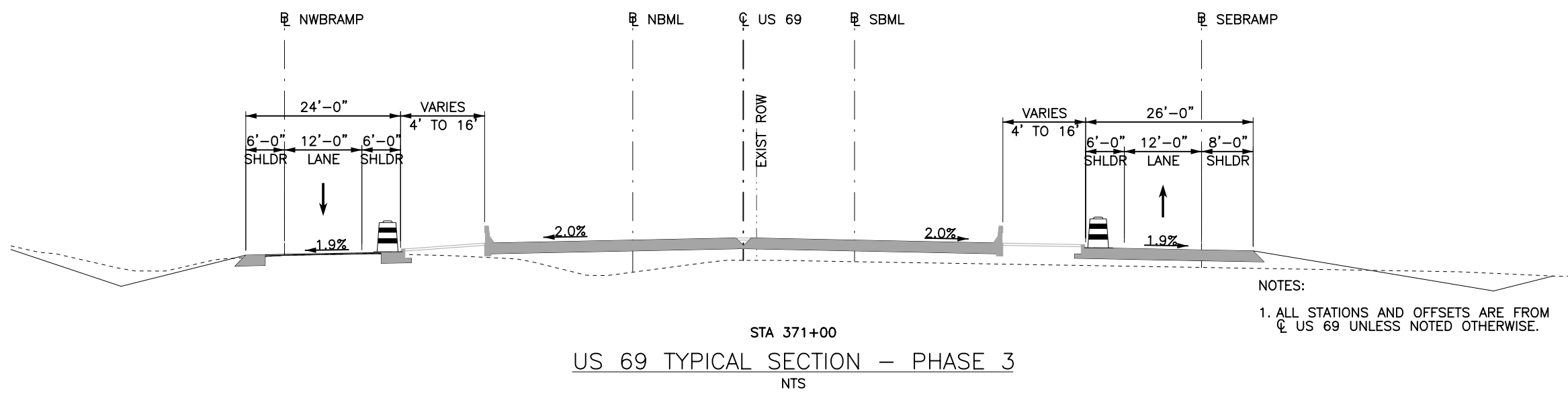
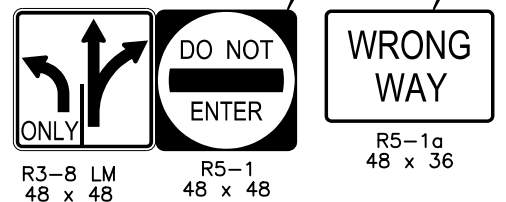
STA 359+00 TO STA 370+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	WOOD	COUNTY	TYL	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	JOB NO.	039	SHEET NO.	76				

cpybw_ANSIB.tbl
 cpypdf_ANSIB.pltcfgr
 pw:/



- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
 - (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
 - (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
 - (F) EXISTING STRIPING / STRIPING PREV PLANS
 - (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS ⇄ TY 3 BARRICADE
 - ATTENUATOR --- PCTB
 - DIRECTION OF TRAFFIC ▸ SIGN POST
 - ↔ EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



NOTES:
 1. ALL STATIONS AND OFFSETS ARE FROM C US 69 UNLESS NOTED OTHERWISE.



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US 69 AT FM 779
 TCP PHASE 3
 US 69

STA 370+00 TO STA 381+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69			
Checked:	ODH	DIST.	WOOD	COUNTY	CONTROL NO.	0203	SECTION NO.	05	JOB NO.	039	SHEET NO.	77
Drawn:	HJZ											
Checked:	KML	TYL										

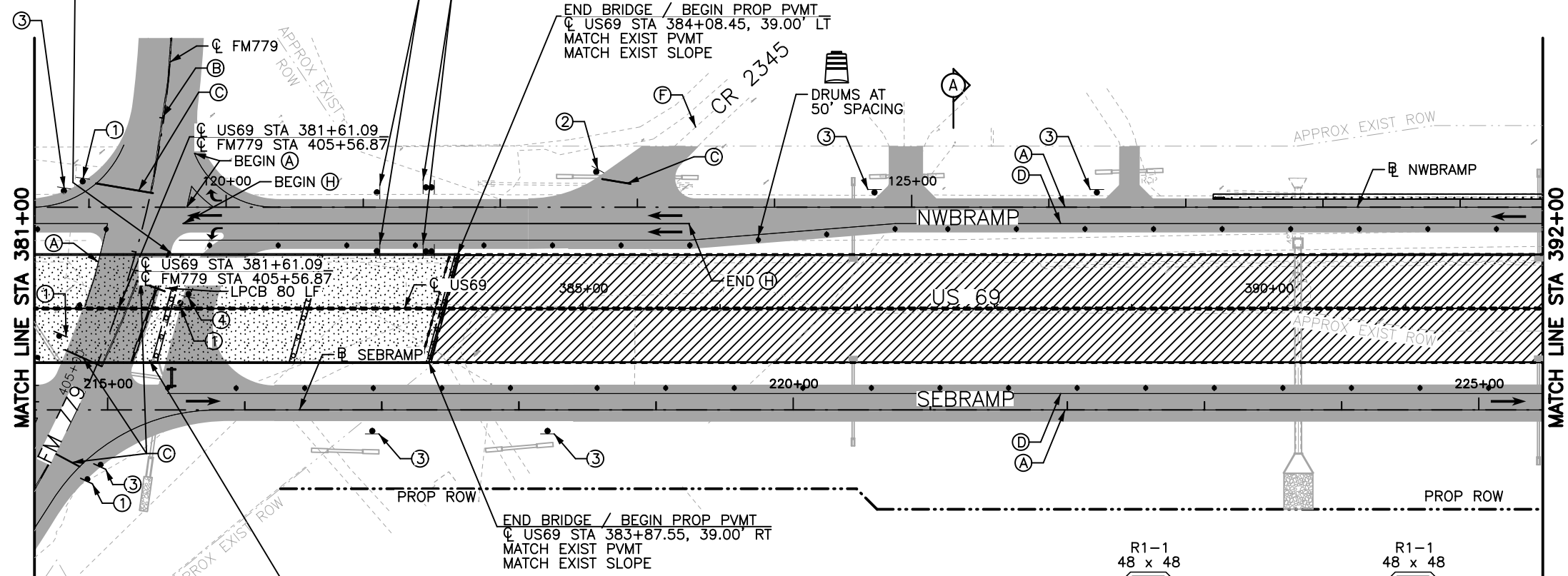
12/12/2023 3:27:23 AM hitran
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 cpypdf_ANSIB.pltcfgrw:/

BEGIN LPCB
 C FM 779
 STA 406+06.23
 25.52' RT
 40 LF TY 1
 40 LF TY 2

R5-1a
 48 x 36
WRONG WAY

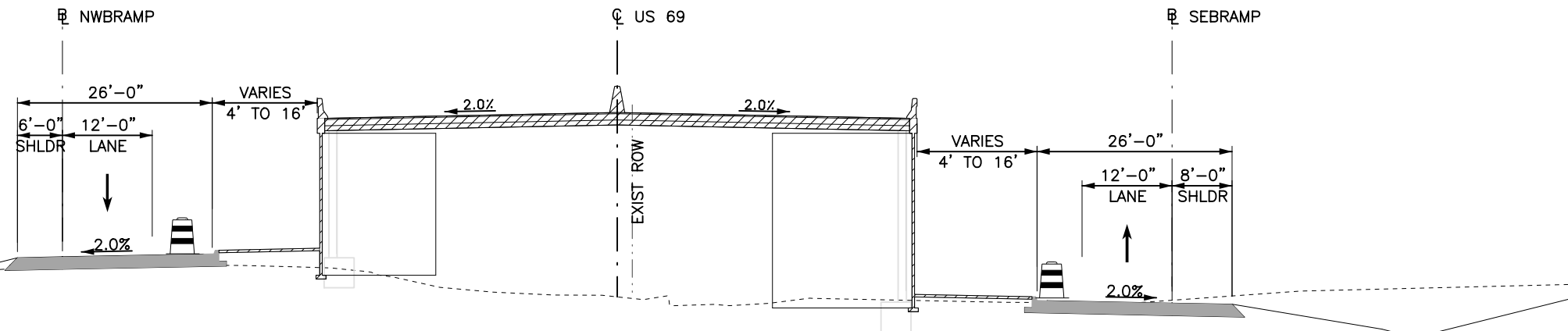
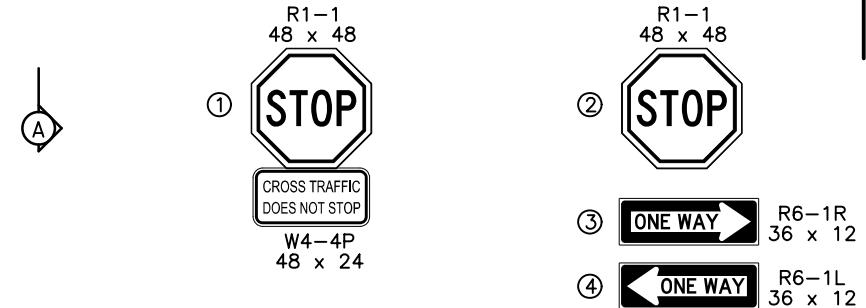
R3-8 LM
 48 x 48
 ONLY

R5-1
 48 x 48
DO NOT ENTER



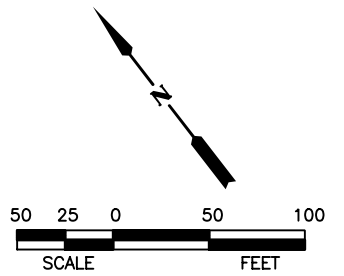
BEGIN LPCB
 C FM 779 STA 405+29.83, 33.31' RT
 40 LF TY 1
 40 LF TY 2

END BRIDGE / BEGIN PROP PVMT
 C US69 STA 383+87.55, 39.00' RT
 MATCH EXIST PVMT
 MATCH EXIST SLOPE



STA 387+00
 US 69 TYPICAL SECTION - PHASE 3
 NTS

NOTES:
 1. ALL STATIONS AND OFFSETS ARE FROM
 C US 69 UNLESS NOTED OTHERWISE.



- LEGEND**
- [Hatched] PROPOSED CONSTRUCTION THIS STEP
 - [Solid Grey] PROPOSED CONSTRUCTION PREVIOUS STEPS
 - [Cross-hatched] TEMPORARY PAVEMENT THIS STEP
 - [Dotted] TEMPORARY PAVEMENT PREVIOUS STEPS
 - [Diagonal Lines] BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL)
W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
 - (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
 - (E) PERMANENT STRIPING
(SEE SIGNING AND STRIPING PLANS)
 - (F) EXISTING STRIPING / STRIPING PREV PLANS
 - (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD)
W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS ⇄ TY 3 BARRICADE
 - ATTENUATOR --- PCTB
 - DIRECTION OF TRAFFIC ▸ SIGN POST
 - EXISTING DIRECTION OF TRAFFIC
 - [M] PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



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NO.	REVISION	BY	DATE
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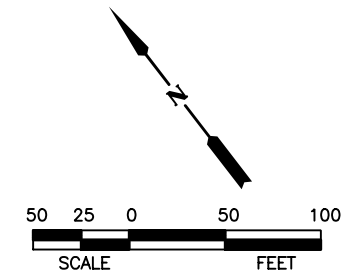
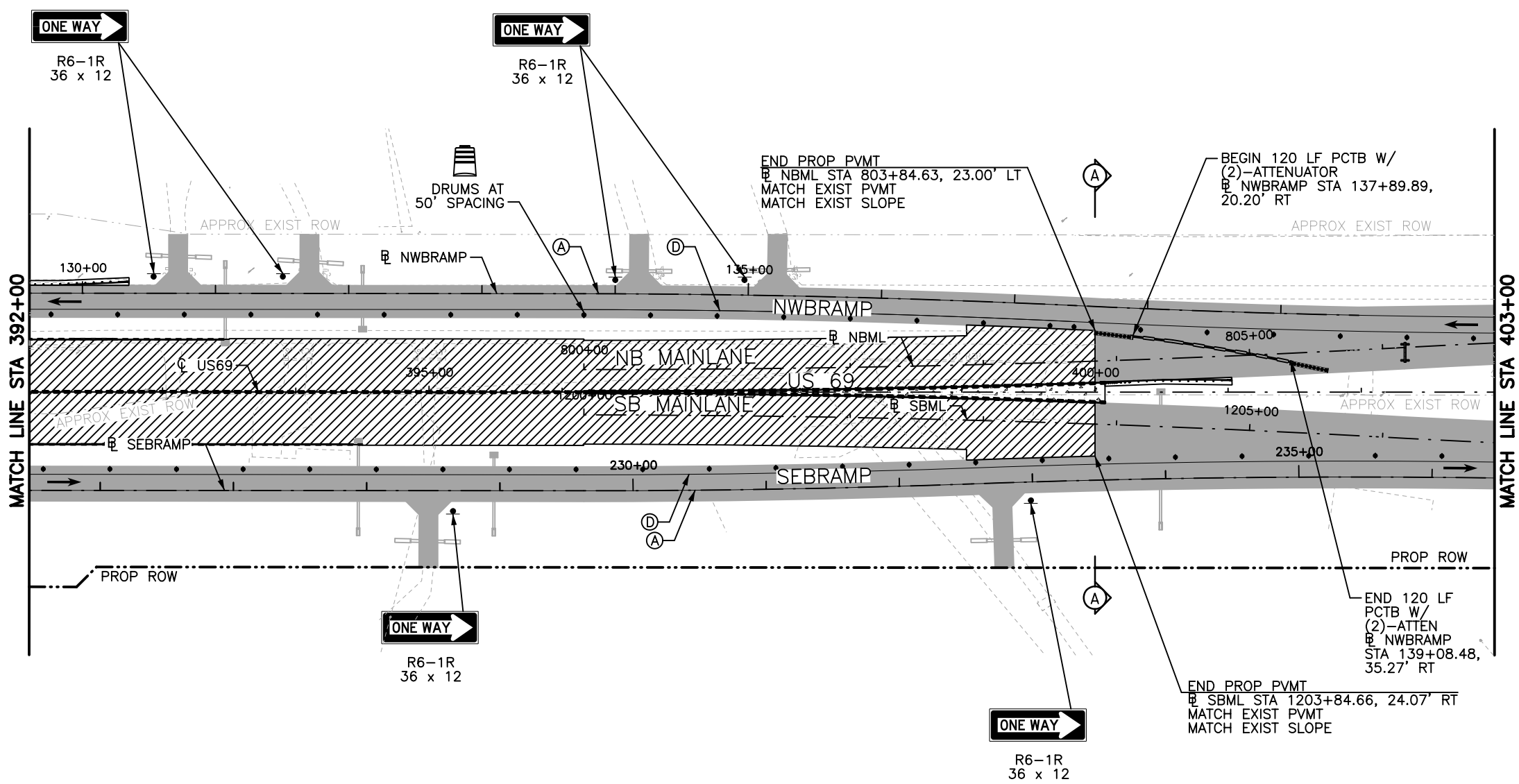


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US 69 AT FM 779
 TCP PHASE 3
 US 69

STA 381+00 TO STA 392+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	HJZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	TITLE	TYL	JOB NO.	039	SHEET NO.	78		



- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
 - (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
 - (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
 - (F) EXISTING STRIPING / STRIPING PREV PLANS
 - (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS ⇄ TY 3 BARRICADE
 - ATTENUATOR ----- PCTB
 - DIRECTION OF TRAFFIC ▸ SIGN POST
 - ⇄ EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



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NO.	REVISION	BY	DATE
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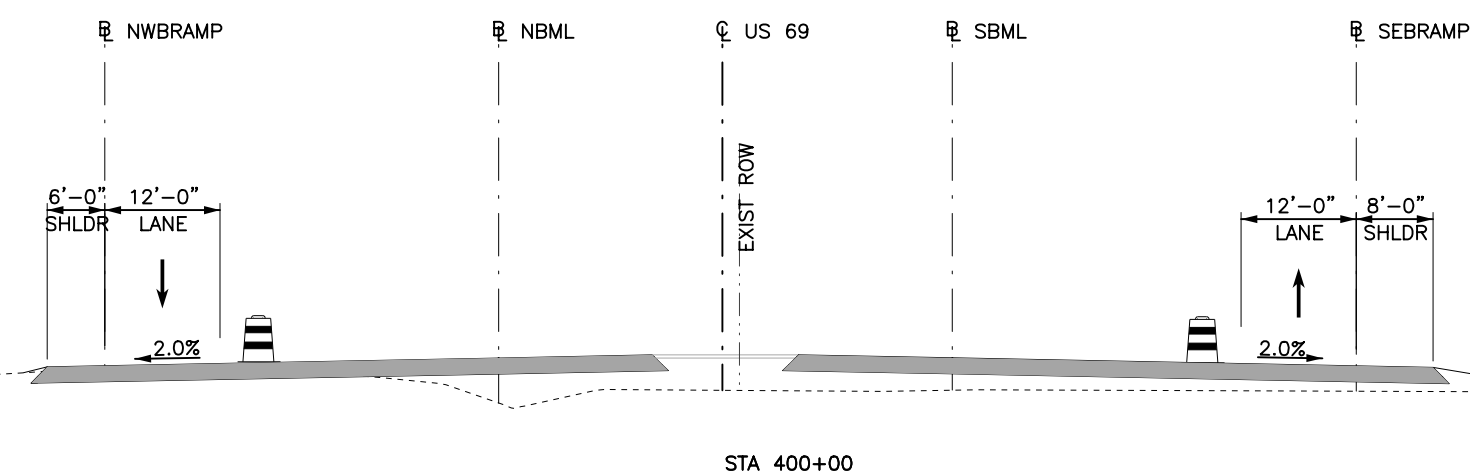


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US 69 AT FM 779
TCP PHASE 3
US 69

STA 392+00 TO STA 403+00

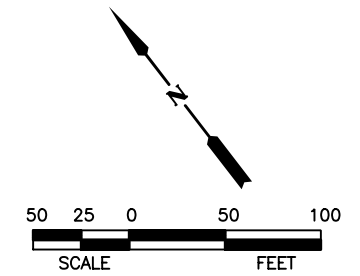
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Checked:	ODH	DIST.	HJZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:								JOB NO.	039
Checked:	KML	TYL						SHEET NO.	79



US 69 TYPICAL SECTION - PHASE 3
NTS

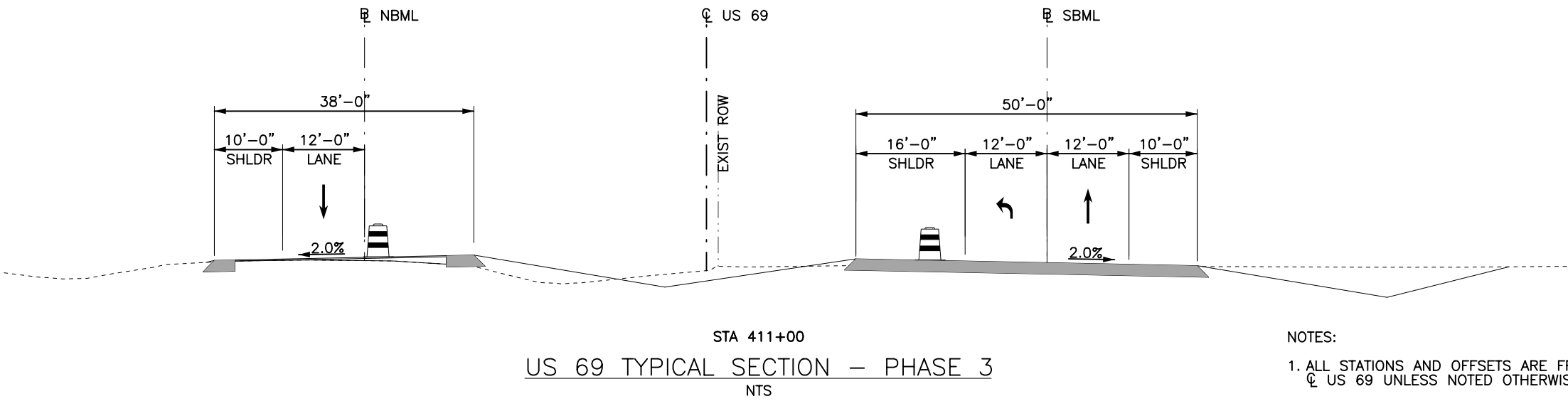
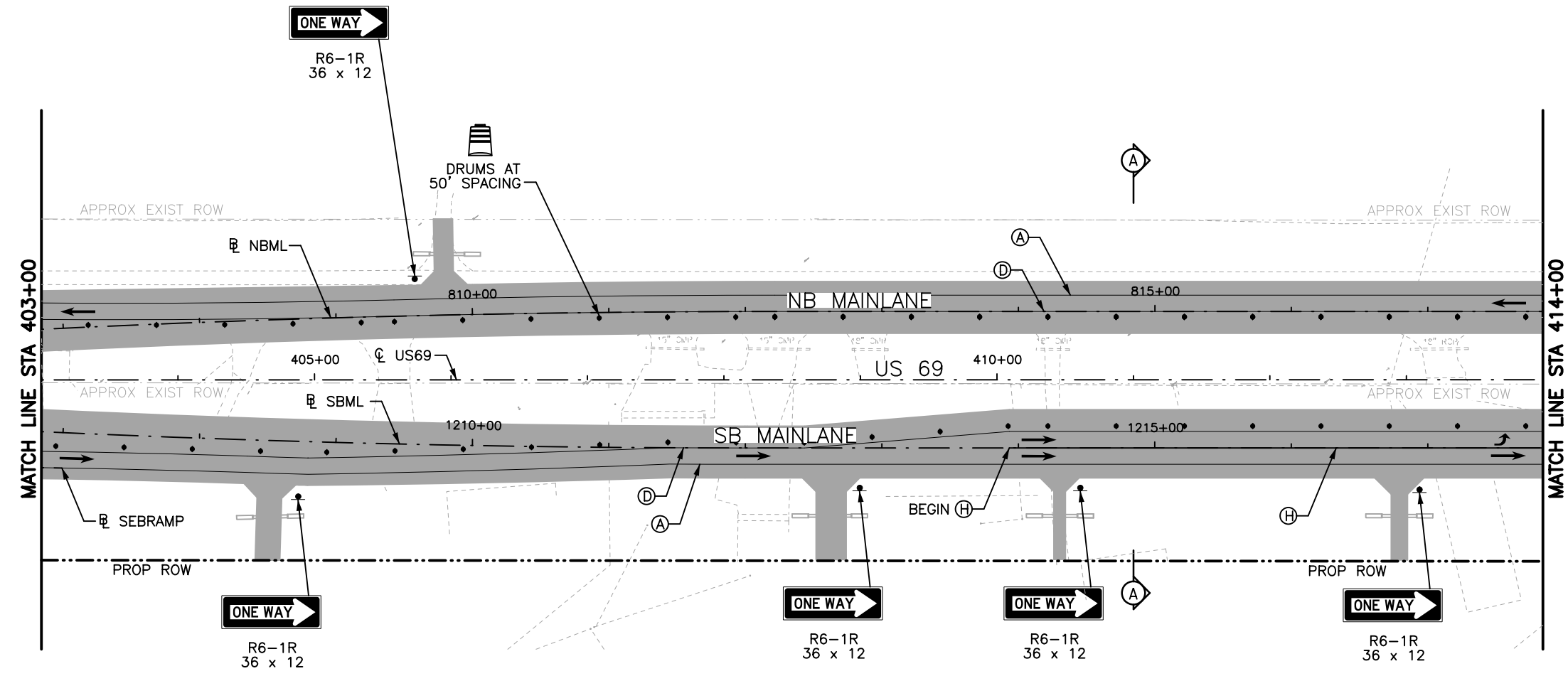
NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
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cpybw_ANSIB.tbl
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 pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS
- TY 3 BARRICADE
- ATTENUATOR
- PCTB
- DIRECTION OF TRAFFIC
- SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



US 69 TYPICAL SECTION - PHASE 3
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
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US 69 AT FM 779
TCP PHASE 3
US 69

STA 403+00 TO STA 414+00

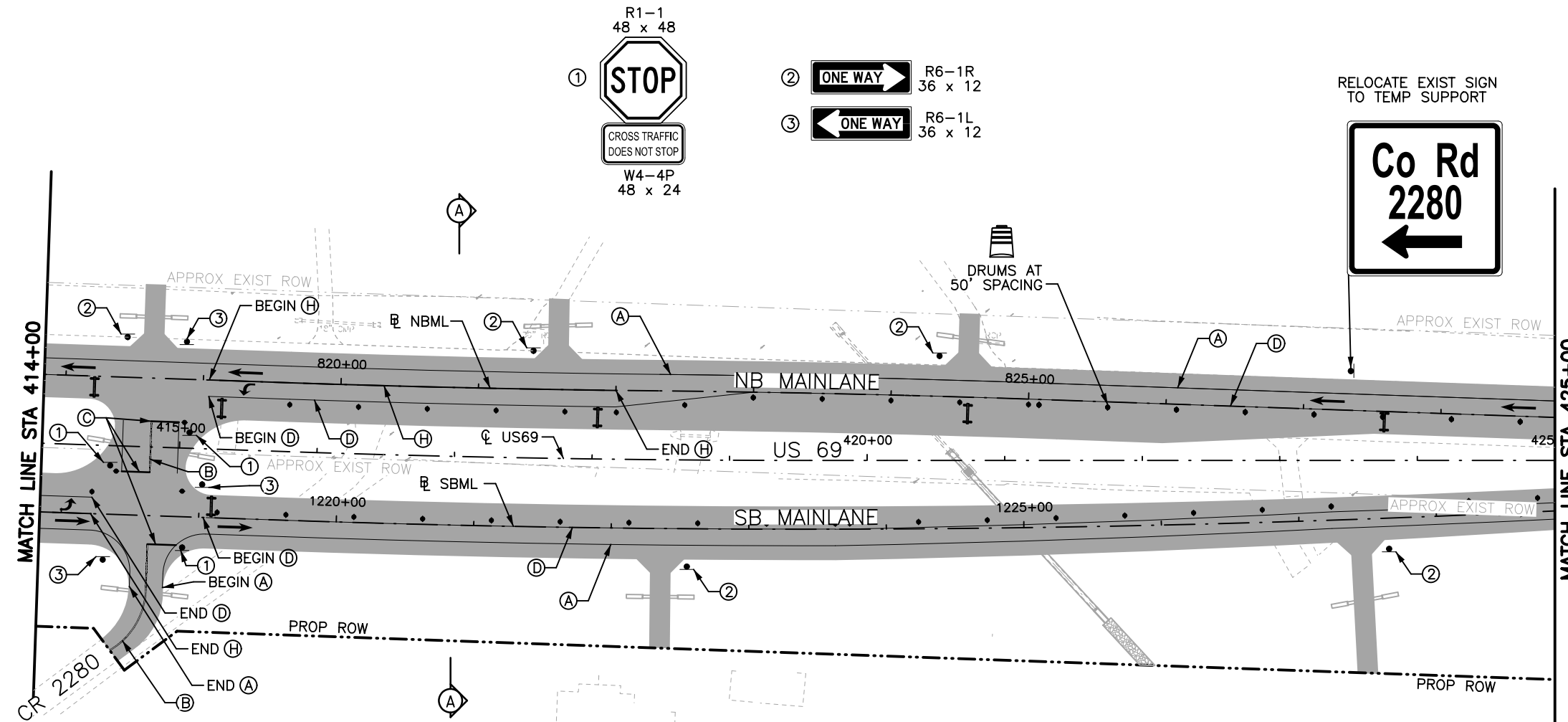
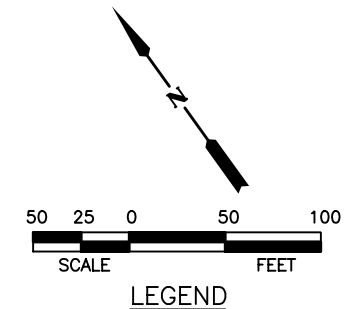
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Checked:	ODH	DIST.	HJZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:								JOB NO.	039
Checked:	KML	TYL						SHEET NO.	80

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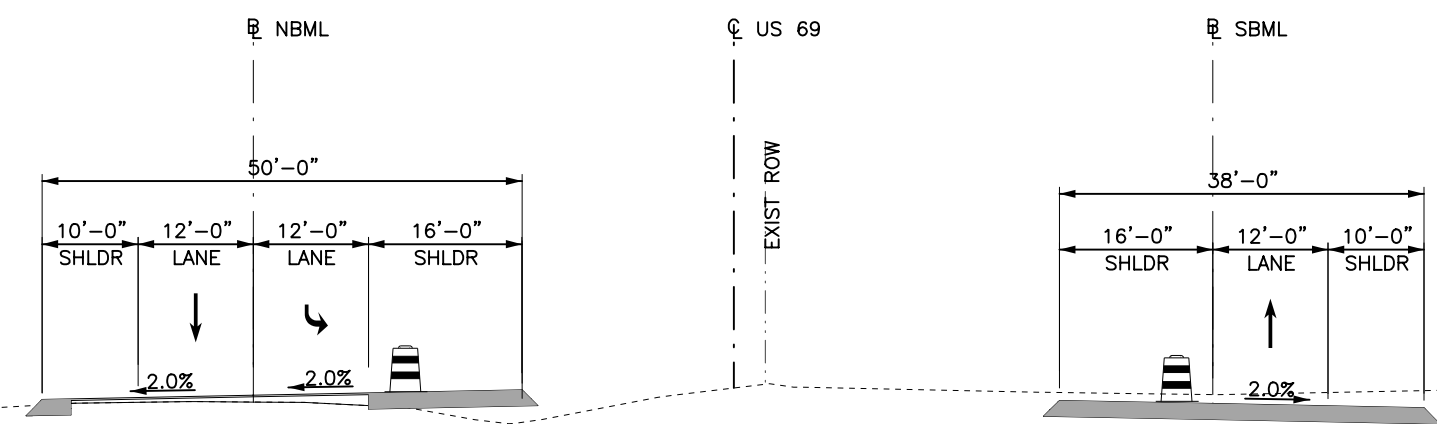
hitran
 12/12/2023 3:28:04 AM
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RELOCATE EXIST SIGN TO TEMP SUPPORT



- LEGEND**
- PROPOSED CONSTRUCTION THIS STEP
 - PROPOSED CONSTRUCTION PREVIOUS STEPS
 - TEMPORARY PAVEMENT THIS STEP
 - TEMPORARY PAVEMENT PREVIOUS STEPS
 - BRIDGE CONSTRUCTION THIS STEP
 - (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
 - (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
 - (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
 - (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
 - (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
 - (F) EXISTING STRIPING / STRIPING PREV PLANS
 - (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
 - (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
 - (I) WK ZN PAV MRK NON-REMOV (W)ARROW
 - (J) WK ZN PAV MRK NON-REMOV (W)WORD
 - (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
 - PLASTIC DRUMS TY 3 BARRICADE
 - ATTENUATOR PCTB
 - DIRECTION OF TRAFFIC SIGN POST
 - EXISTING DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



STA 417+00
US 69 TYPICAL SECTION - PHASE 3
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM ϕ US 69 UNLESS NOTED OTHERWISE.



S. Elsaigh 12/12/2023

NO.	REVISION	BY	DATE
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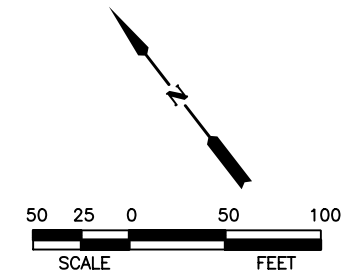
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US 69 AT FM 779
TCP PHASE 3
US 69

STA 414+00 TO STA 425+00

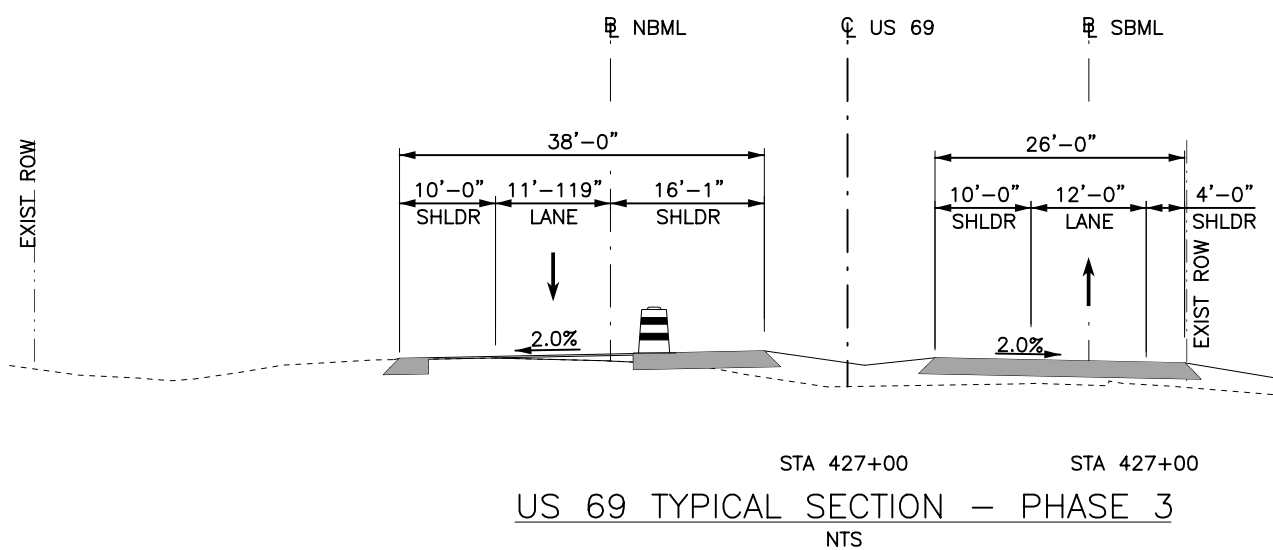
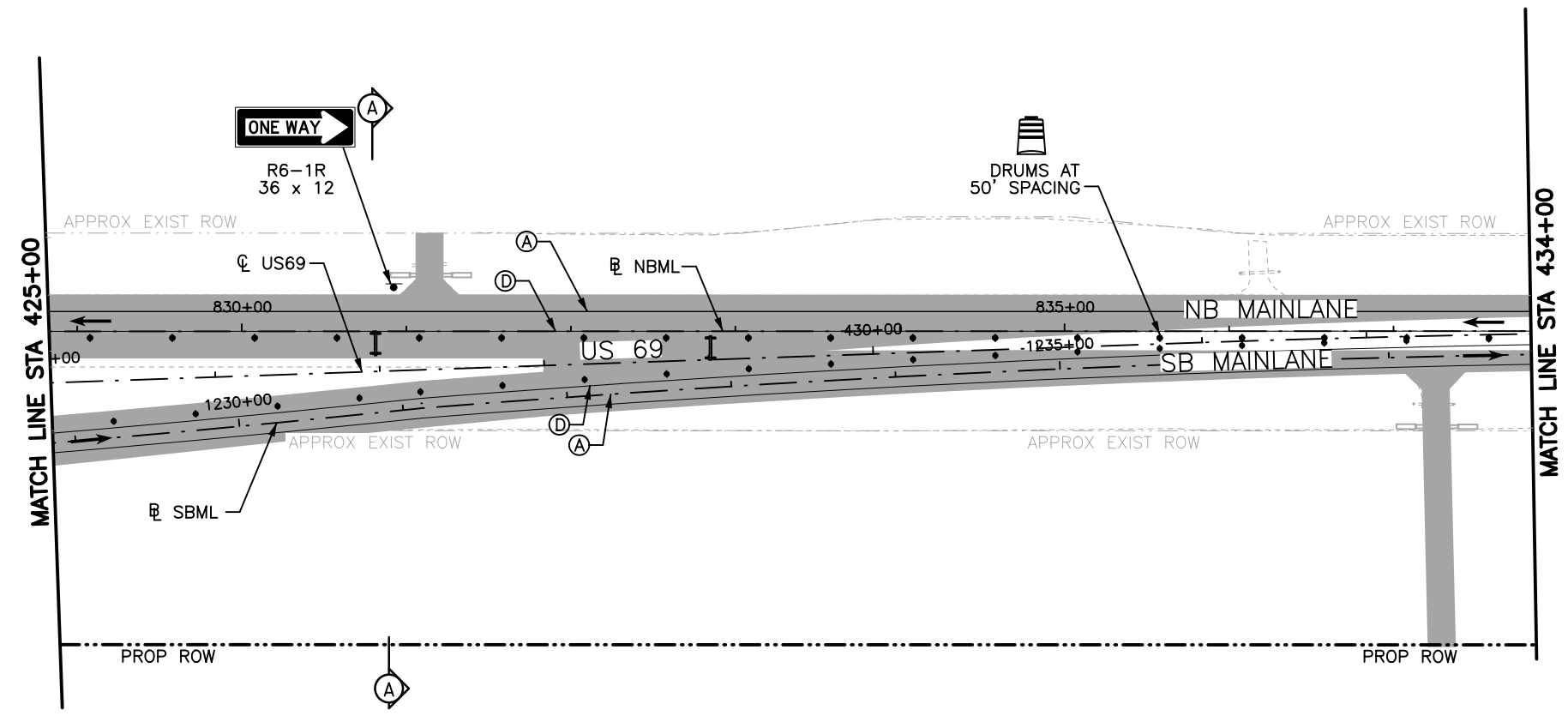
Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ					JOB NO.	039	SHEET NO.	81
Checked:	KML	TYL							

12/12/2023 3:28:22 AM hitran pw:/



LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR - - - - - PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- ↔ EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



US 69 TYPICAL SECTION - PHASE 3
NTS

NOTES:
1. ALL STATIONS AND OFFSETS ARE FROM
 ☉ US 69 UNLESS NOTED OTHERWISE.



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US 69 AT FM 779
TCP PHASE 3
US 69

STA 425+00 TO STA 434+00

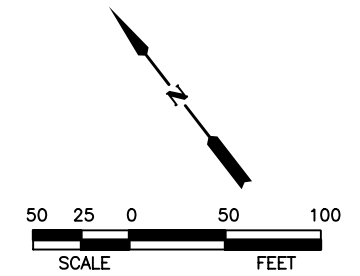
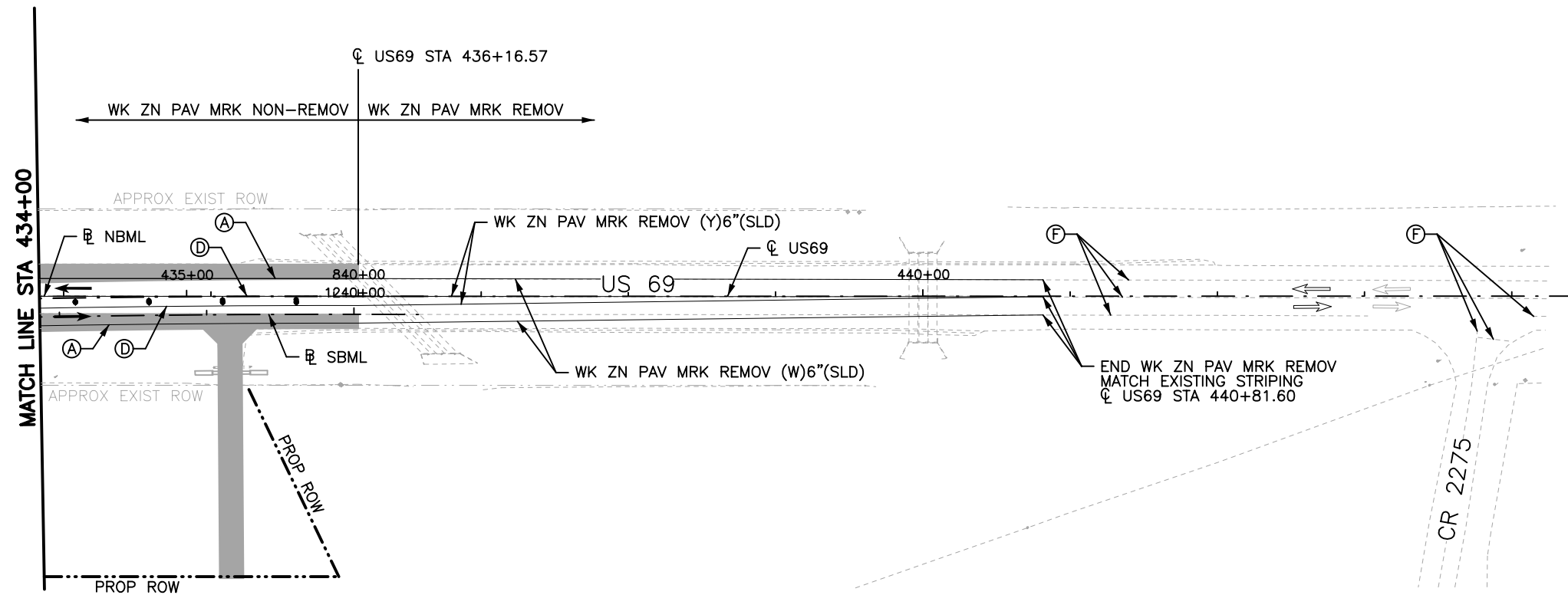
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Drawn:						JOB NO.	039	SHEET NO.	82
Checked:	KML	TYL							

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LEGEND

- PROPOSED CONSTRUCTION THIS STEP
- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS ⇄ TY 3 BARRICADE
- ATTENUATOR ⇄ PCTB
- DIRECTION OF TRAFFIC ▸ SIGN POST
- ⇄ EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



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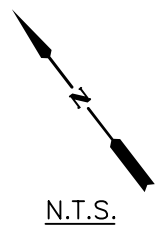
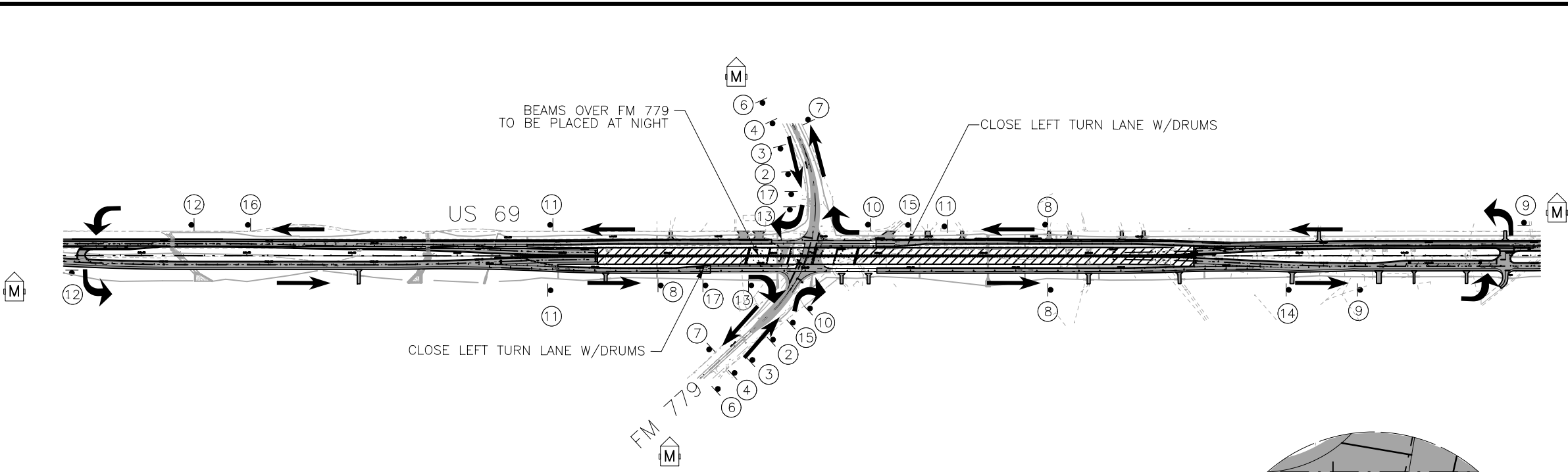
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US 69 AT FM 779
 TCP PHASE 3
 US 69
 STA 434+00 TO END PROJECT

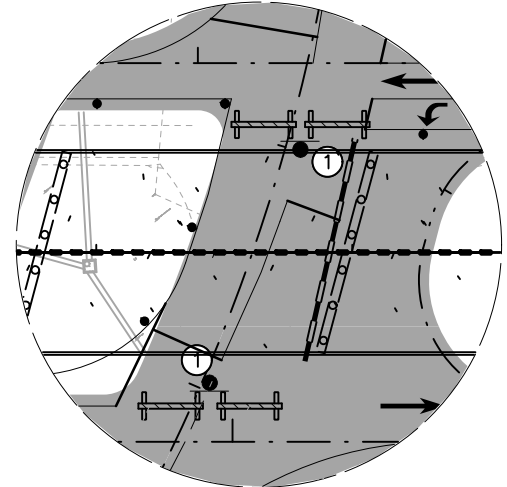
NOTES:
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 CL US 69 UNLESS NOTED OTHERWISE.

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LEGEND

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- PROPOSED CONSTRUCTION PREVIOUS STEPS
- TEMPORARY PAVEMENT THIS STEP
- TEMPORARY PAVEMENT PREVIOUS STEPS
- BRIDGE CONSTRUCTION THIS STEP
- (A) WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- (B) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)(DBL) W/ TY II A-A @ 40' SPA
- (C) WK ZN PAV MRK NON-REMOV (W)24"(SLD)
- (D) WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
- (E) PERMANENT STRIPING (SEE SIGNING AND STRIPING PLANS)
- (F) EXISTING STRIPING / STRIPING PREV PLANS
- (G) WK ZN PAV MRK NON-REMOV (W)6"(BRK)
- (H) WK ZN PAV MRK NON-REMOV (W)8"(SLD) W/ TY I-C @ 20' SPA
- (I) WK ZN PAV MRK NON-REMOV (W)ARROW
- (J) WK ZN PAV MRK NON-REMOV (W)WORD
- (K) WK ZN PAV MRK NON-REMOV (W)18"(YLD TRI)
- PLASTIC DRUMS
- TY 3 BARRICADE
- ATTENUATOR
- PCTB
- DIRECTION OF TRAFFIC
- SIGN POST
- EXISTING DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)



US 69 & FM 779 INTERSECTION
SCALE: N.T.S.

NOTES:

1. DETOUR LAYOUT SHOWN IS TO ONLY BE USED FOR NIGHT WORK DURING THE HOURS OF 9 PM & 6 AM, UNLESS OTHERWISE DIRECTED FOR BEAM PLACEMENT OVER FM 779 DURING PHASE 3.
2. CONTRACTOR IS TO PLACE PCMS AT EACH END OF FM 779, AND AT EACH END OF US 69 14 DAYS PRIOR AND DURING CLOSURES.
3. NIGHT WORK IS NOT ALLOWED ON SATURDAY OR SUNDAY NIGHTS.



S. Elsaigh
12/12/2023

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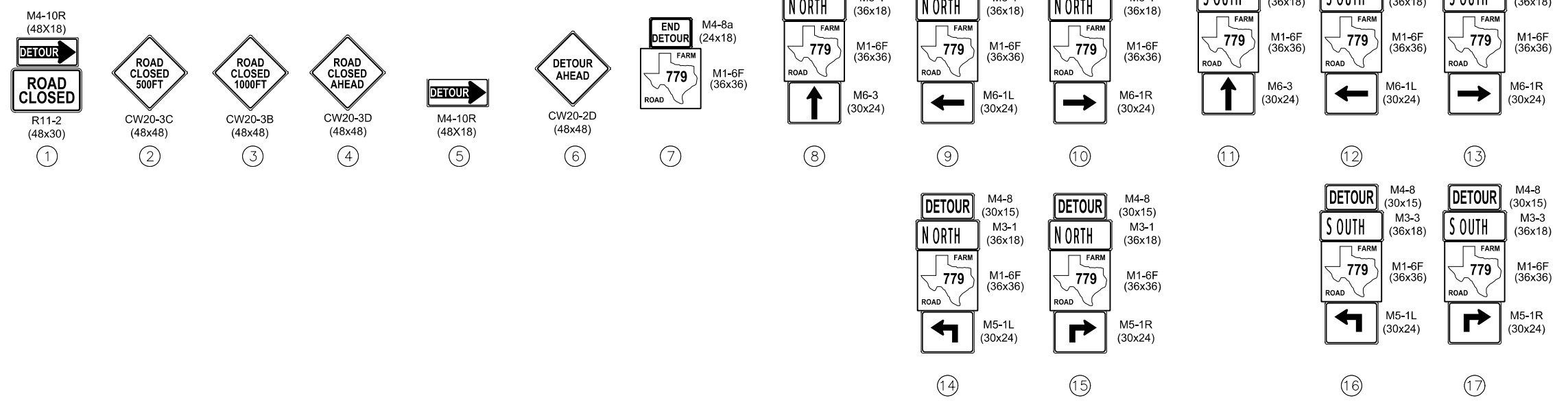


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US 69 AT FM 779
TCP PHASE 3
DETOUR LAYOUT

BEGIN PROJECT TO END PROJECT

Designed: KML	FED. RD. DIV. NO.: 6	STATE: TEXAS	FEDERAL AID PROJECT NO.:	HIGHWAY NO.: US 69
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Drawn: MR	JOB NO.: 039	SHEET NO.: 84		



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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

- The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
- The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
- The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
- Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
- When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
- The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
- The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
- Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.
- Traffic control devices should be in place only while work is actually in progress or a definite need exists.
- The Engineer has the final decision on the location of all traffic control devices.
- Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

- Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.
- Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

- Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
- Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS) "
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS



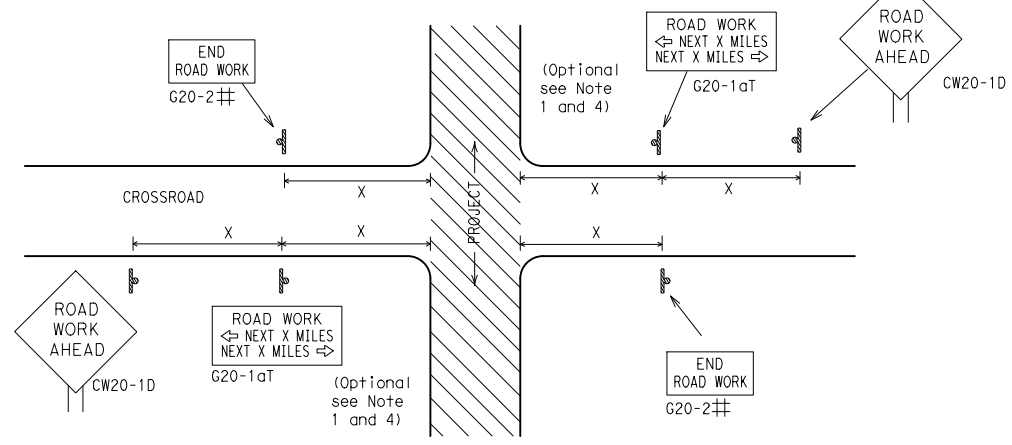
**BARRICADE AND CONSTRUCTION
 GENERAL NOTES
 AND REQUIREMENTS**

BC (1) -21

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© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0203	05	039	US 69				
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9-07	8-14	TYL	WOOD		94				
5-10	5-21								

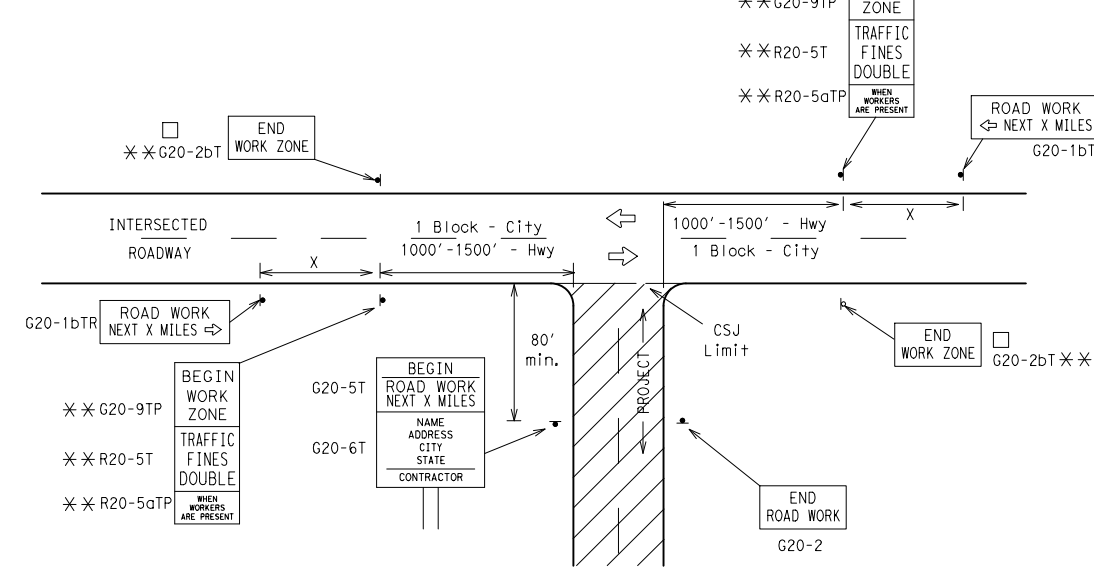
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TYPICAL LOCATION OF CROSSROAD SIGNS



- ## May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)
- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
 - The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
 - Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
 - The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
 - Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
 - When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

- The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
- If construction closes the road at a T-intersection, the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR) signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING^{1,5,6}

Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/Freeway	Posted Speed MPH	Sign Spacing "X" (Feet (Apprx.))
CW20 ⁴	48" x 48"	48" x 48"	30	120
CW21			35	160
CW22			40	240
CW23			45	320
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"	50	400
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"	60	600 ²
			65	700 ²
			70	800 ²
			80	1000 ²
*			*	* ³

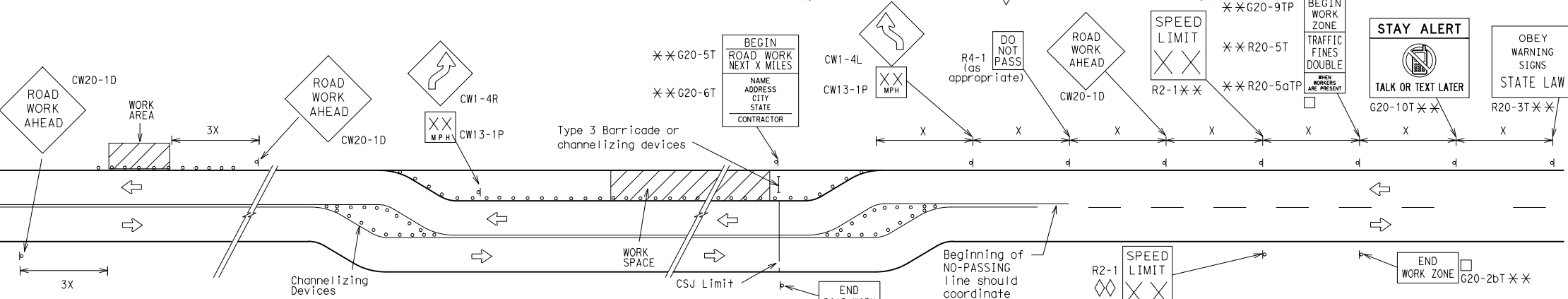
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

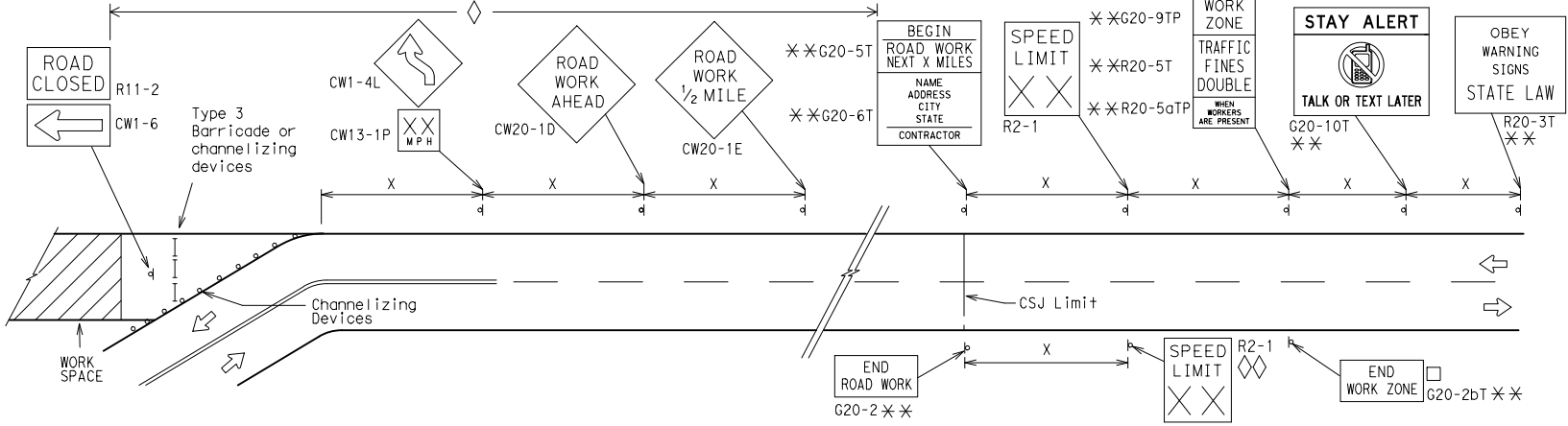
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
- Only diamond shaped warning sign sizes are indicated.
- See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

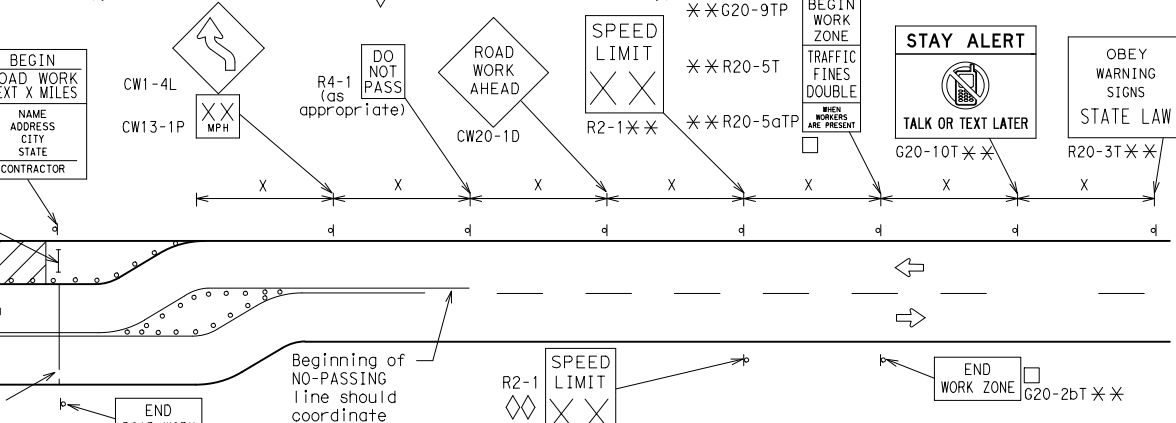


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



LEGEND	
— —	Type 3 Barricade
○ ○ ○	Channelizing Devices
—■—	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

NOTES

- The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.
- The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
- CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.
- Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.
- Contractor will install a regulatory speed limit sign at the end of the work zone.

Texas Department of Transportation
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

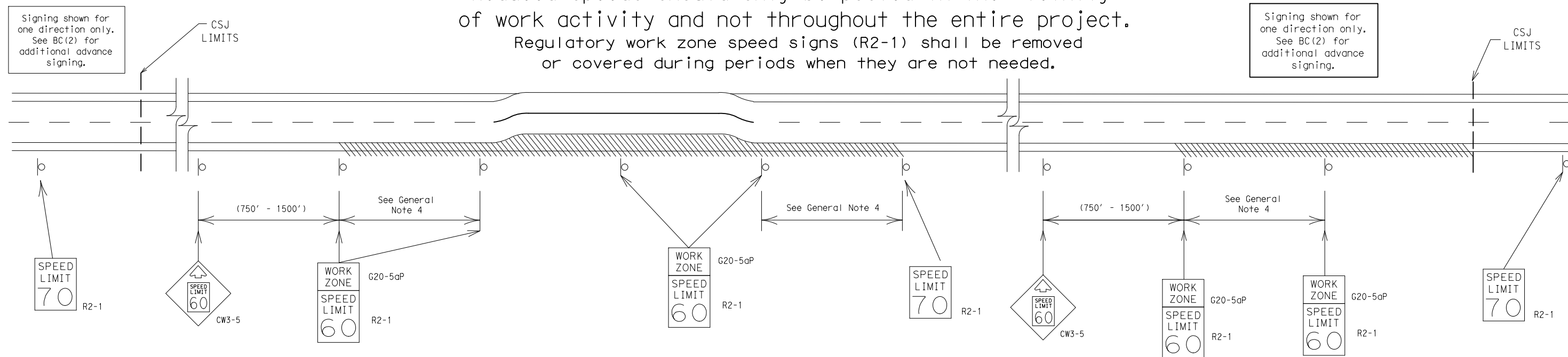
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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
	0203	05	039	US 69
REVISIONS	DIST	COUNTY		SHEET NO.
9-07 8-14		WOOD		95
7-13 5-21	TYL			

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project. Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

- a) rough road or damaged pavement surface
- b) substantial alteration of roadway geometrics (diversions)
- c) construction detours
- d) grade
- e) width
- f) other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered. (See Removing or Covering on BC(4)).

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:

40 mph and greater	0.2 to 2 miles
35 mph and less	0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the "ADVANCE SPEED LIMIT" (CW3-5) sign, "WORK ZONE" (G20-5aP) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
 - A. Law enforcement.
 - B. Flagger stationed next to sign.
 - C. Portable changeable message sign (PCMS).
 - D. Low-power (drone) radar transmitter.
 - E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

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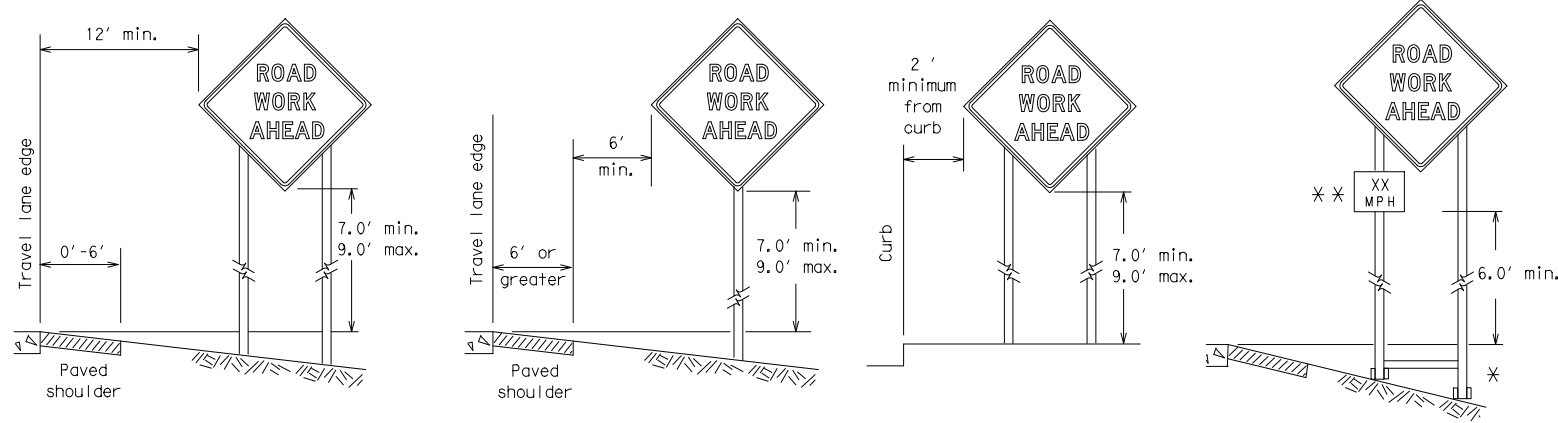
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SHEET 3 OF 12

Texas Department of Transportation		Traffic Safety Division Standard	
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© TxDOT	November 2002	CON: 0203	SECT: 05
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9-07 8-14	DIST: COUNTY	WOOD	96
7-13 5-21	TYL:	WOOD	96

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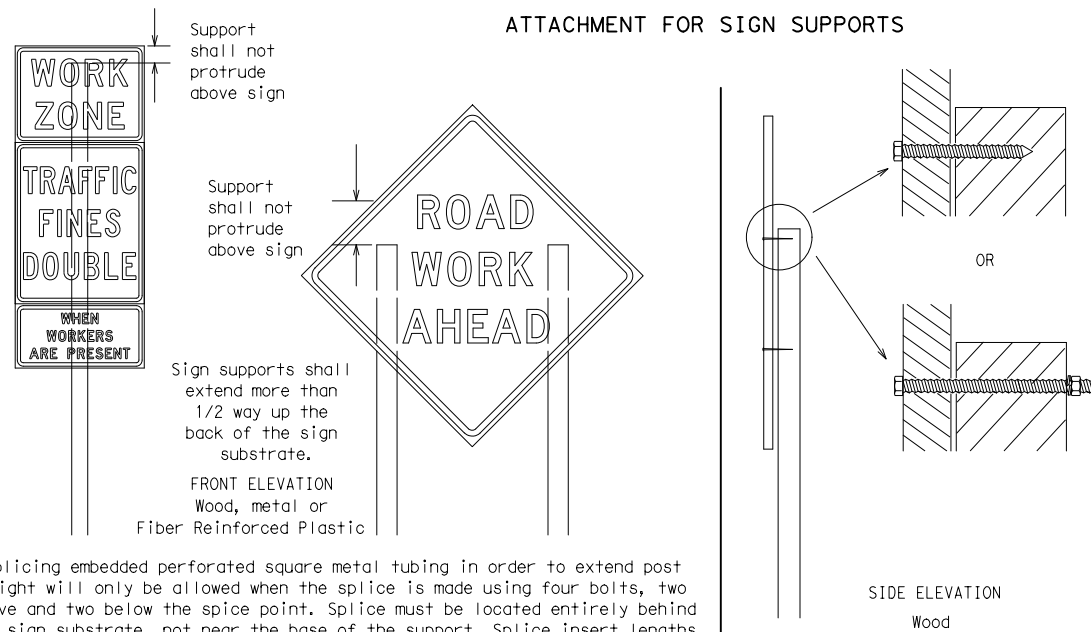
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



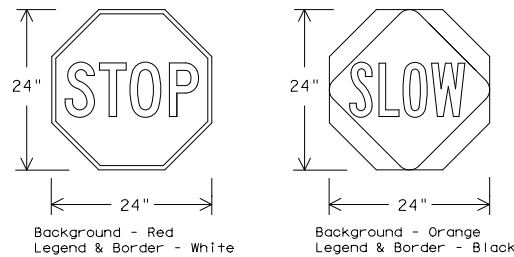
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the splice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
2. STOP/SLOW paddles shall be retroreflective when used at night.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRs standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
 - a. Long-term stationary - work that occupies a location more than 3 days.
 - b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
 - c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
 - d. Short, duration - work that occupies a location up to 1 hour.
 - e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used, the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

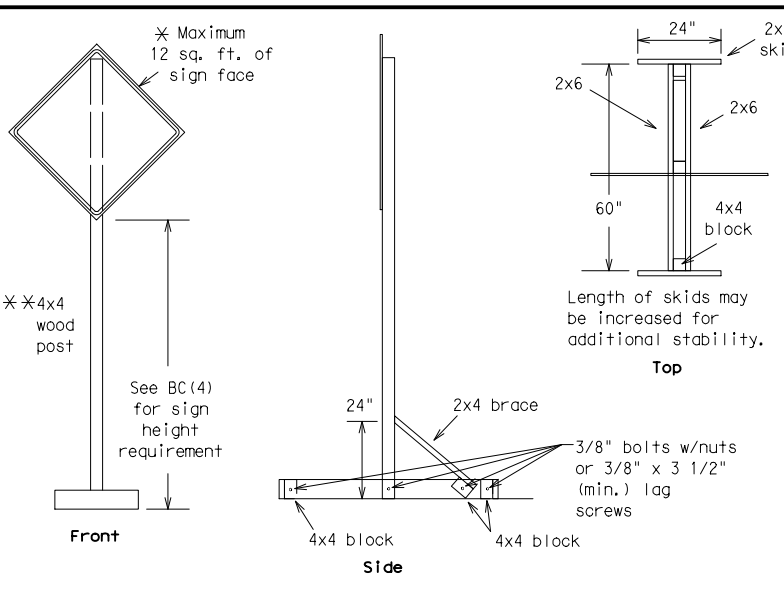
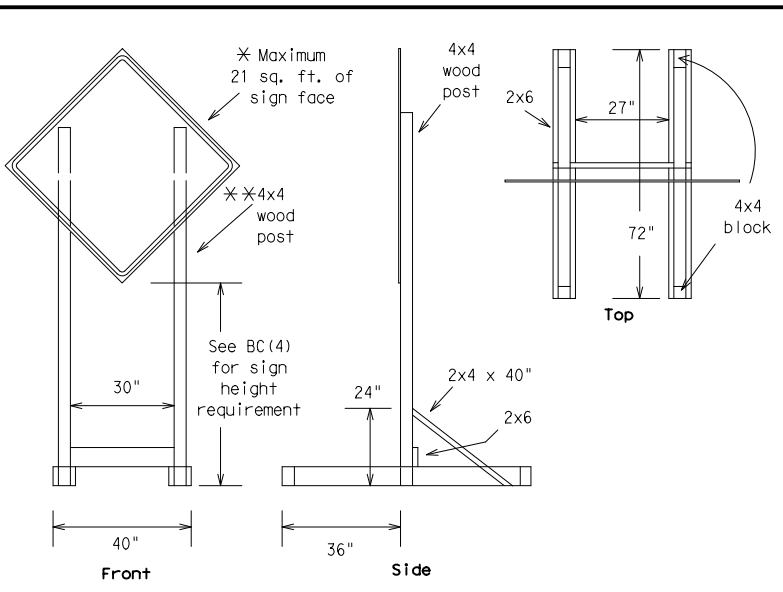
Texas Department of Transportation
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION
TEMPORARY SIGN NOTES

BC(4)-21

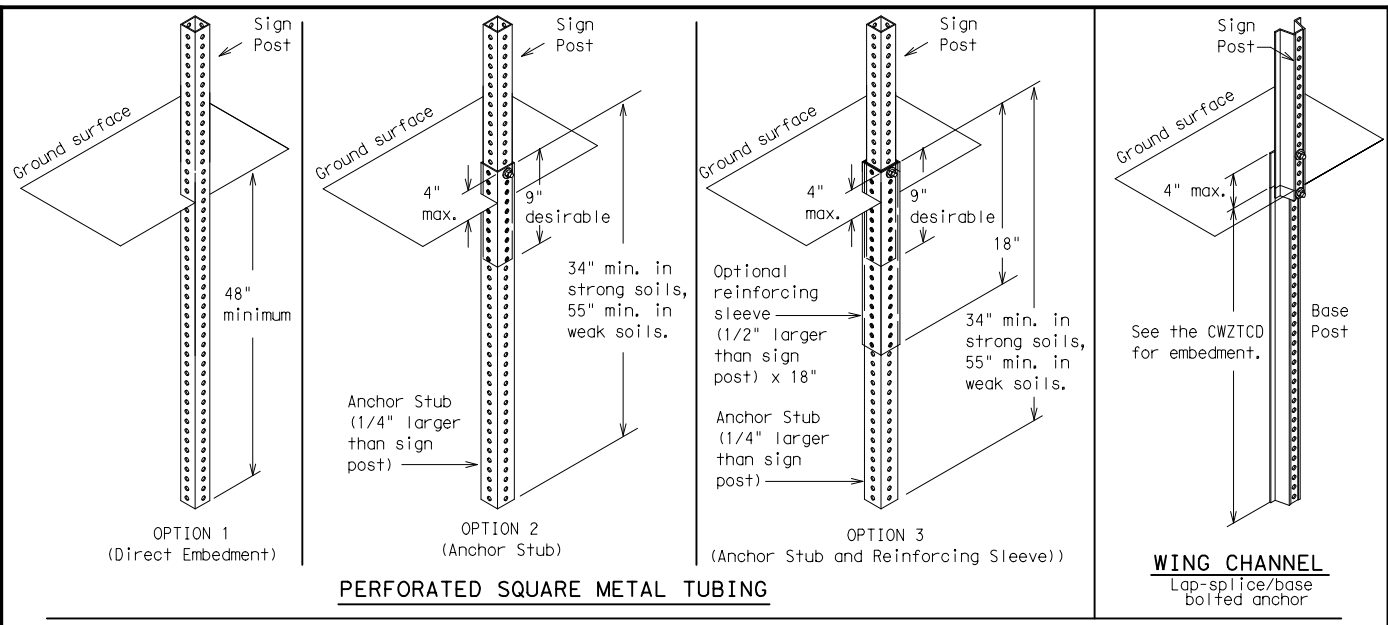
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©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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9-07	8-14	DIST	COUNTY	SHEET NO.
7-13	5-21	TYL	WOOD	97

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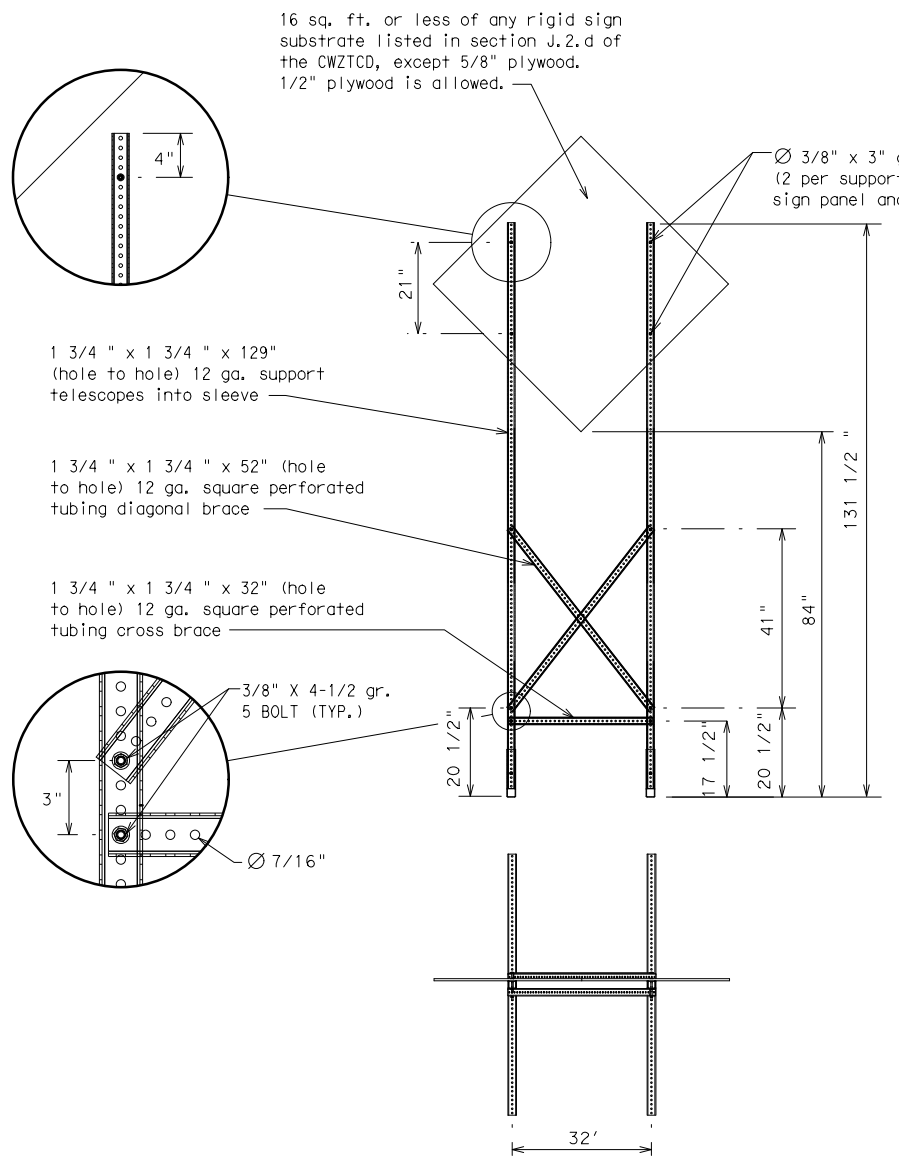
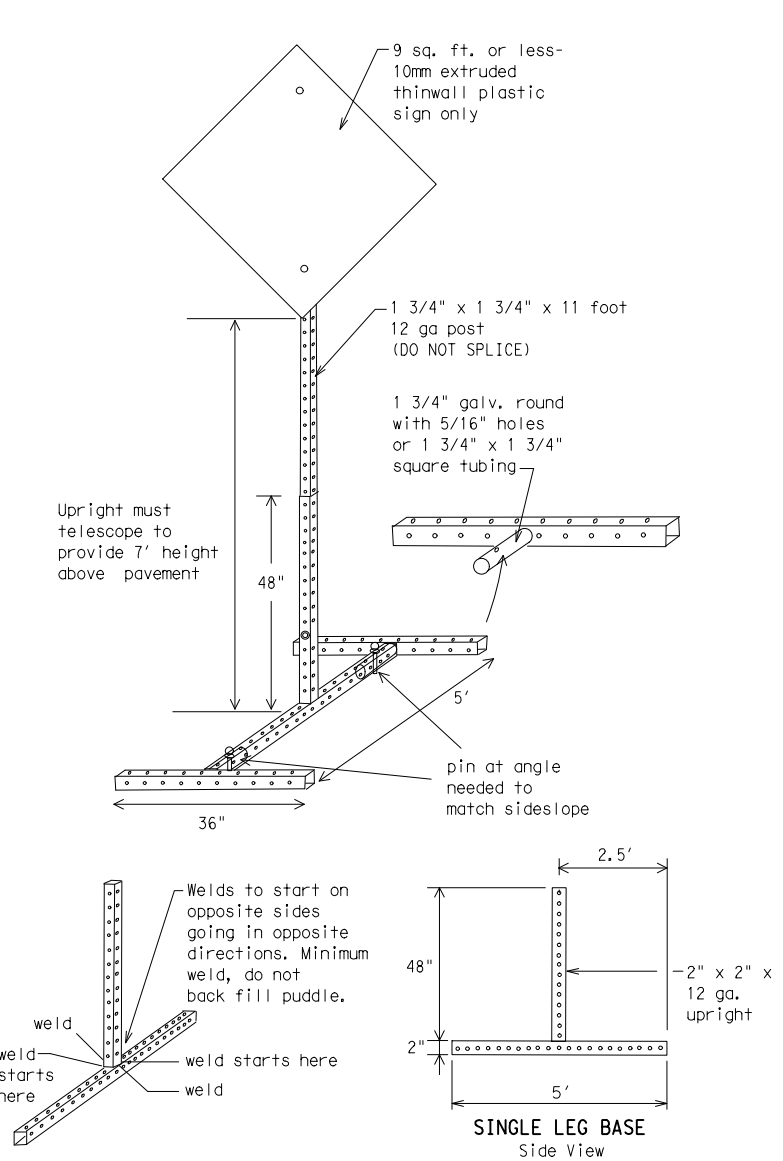
SKID MOUNTED WOOD SIGN SUPPORTS

* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS



GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTC and the manufacturer's installation procedure for each type sign support.
 The maximum sign square footage shall adhere to the manufacturer's recommendation.
 Two post installations can be used for larger signs.



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTC LIST. SEE BC(1) FOR WEBSITE LOCATION.

- ### GENERAL NOTES
- Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
 - No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTC List.
 - When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.
- * See BC(4) for definition of "Work Duration."
 ** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.
 See the CWZTC for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12



BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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9-07	8-14	DIST	COUNTY	SHEET NO.					
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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

- The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
- Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
- Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
- Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
- Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
- When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
- The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
- The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
- Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
- Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
- Do not use the word "Danger" in message.
- Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
- Do not display messages that scroll horizontally or vertically across the face of the sign.
- The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
- PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
- Each line of text should be centered on the message board rather than left or right justified.
- If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION	WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD	Major	MAJ
Alternate	ALT	Miles	MI
Avenue	AVE	Miles Per Hour	MPH
Best Route	BEST RTE	Minor	MNR
Boulevard	BLVD	Monday	MON
Bridge	BRDG	Normal	NORM
Cannot	CANT	North	N
Center	CTR	Northbound	(route) N
Construction Ahead	CONST AHD	Parking	PKING
CROSSING	XING	Road	RD
Detour Route	DETOUR RTE	Right Lane	RT LN
Do Not	DONT	Saturday	SAT
East	E	Service Road	SERV RD
Eastbound	(route) E	Shoulder	SHLDR
Emergency	EMER	Slippery	SLIP
Emergency Vehicle	EMER VEH	South	S
Entrance, Enter	ENT	Southbound	(route) S
Express Lane	EXP LN	Speed	SPD
Expressway	EXPWY	Street	ST
XXXX Feet	XXXX FT	Sunday	SUN
Fog Ahead	FOG AHD	Telephone	PHONE
Freeway	FRWY, FWY	Temporary	TEMP
Freeway Blocked	FWY BLKD	Thursday	THURS
Friday	FRI	To Downtown	TO DWNTN
Hazardous Driving	HAZ DRIVING	Traffic	TRAF
Hazardous Material	HAZMAT	Travelers	TRVLR
High-Occupancy Vehicle	HOV	Tuesday	TUES
Highway	Hwy	Time Minutes	TIME MIN
Hour(s)	HR, HRS	Upper Level	UPR LEVEL
Information	INFO	Vehicles (s)	VEH, VEHS
It Is	ITS	Warning	WARN
Junction	JCT	Wednesday	WED
Left	LFT	Weight Limit	WT LIMIT
Left Lane	LFT LN	West	W
Lane Closed	LN CLOSED	Westbound	(route) W
Lower Level	LWR LEVEL	Wet Pavement	WET PVMT
Maintenance	MAINT	Will Not	WONT

Roadway designation # IH-number, US-number, SH-number, FM-number

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List		Other Condition List	
FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED	ROADWORK XXX FT	ROAD REPAIRS XXXX FT
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT	FLAGGER XXXX FT	LANE NARROWS XXXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT	RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
RIGHT X LANES CLOSED	RIGHT X LANES OPEN	MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
CENTER LANE CLOSED	DAYTIME LANE CLOSURES	LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XXXX FT
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE	ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
EXIT CLOSED	RIGHT LN TO BE CLOSED	BUMP XXXX FT	US XXX EXIT X MILES
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XXXX FT	LANES SHIFT *
XXXXXXXX BLVD CLOSED			

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List		Location List	Warning List	** Advance Notice List
MERGE RIGHT	FORM X LINES RIGHT	AT FM XXXX	SPEED LIMIT XX MPH	TUE-FRI XX AM-X PM
DETOUR NEXT X EXITS	USE XXXXX RD EXIT	BEFORE RAILROAD CROSSING	MAXIMUM SPEED XX MPH	APR XX-XX X PM-X AM
USE EXIT XXX	USE EXIT I-XX NORTH	NEXT X MILES	MINIMUM SPEED XX MPH	BEGINS MONDAY
STAY ON US XXX SOUTH	USE I-XX E TO I-XX N	PAST US XXX EXIT	ADVISORY SPEED XX MPH	BEGINS MAY XX
TRUCKS USE US XXX N	WATCH FOR TRUCKS	XXXXXXXX TO XXXXXXX	RIGHT LANE EXIT	MAY X-X XX PM - XX AM
WATCH FOR TRUCKS	EXPECT DELAYS	US XXX TO FM XXXX	USE CAUTION	NEXT FRI-SUN
EXPECT DELAYS	PREPARE TO STOP		DRIVE SAFELY	XX AM TO XX PM
REDUCE SPEED XXX FT	END SHOULDER USE		DRIVE WITH CARE	NEXT TUE AUG XX
USE OTHER ROUTES	WATCH FOR WORKERS			TONIGHT XX PM-XX AM
STAY IN LANE *				

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

- Only 1 or 2 phases are to be used on a PCMS.
- The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
- A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
- A Location Phase is necessary only if a distance or location is not included in the first phase selected.
- If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
- For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

WORDING ALTERNATIVES

- The words RIGHT, LEFT and ALL can be interchanged as appropriate.
- Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
- EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
- Highway names and numbers replaced as appropriate.
- ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
- AHEAD may be used instead of distances if necessary.
- FT and MI, MILE and MILES interchanged as appropriate.
- AT, BEFORE and PAST interchanged as needed.
- Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

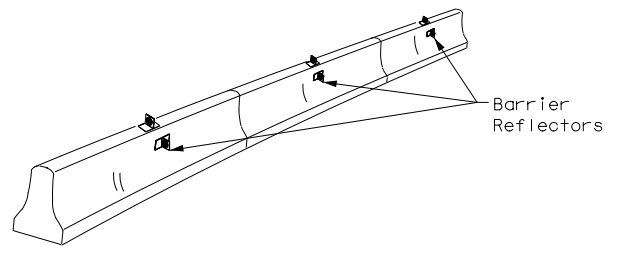
- When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
- When symbol signs, such as the "Flagger Symbol" (CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
- When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
- A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)			
BC (6) - 21			
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9-07 8-14	DIST	COUNTY	SHEET NO.
7-13 5-21	TYL	WOOD	99

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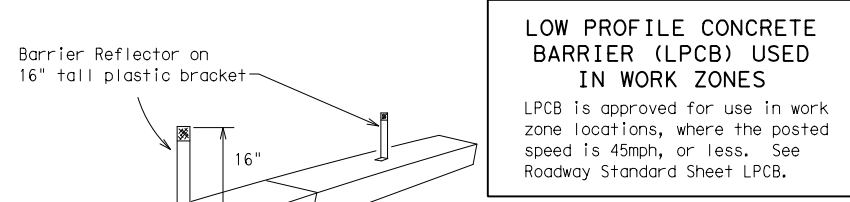
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



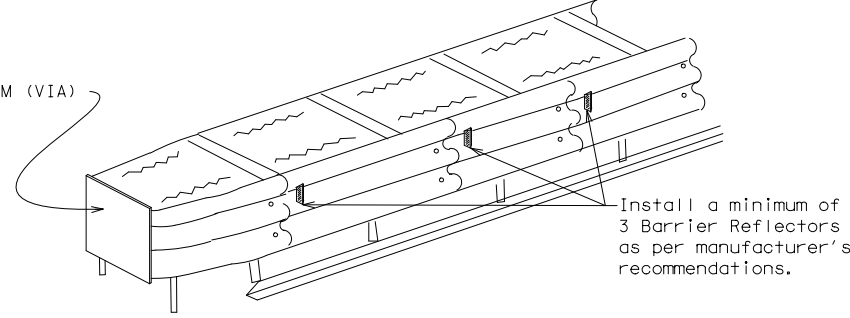
CONCRETE TRAFFIC BARRIER (CTB)

- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
- Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
- When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
- Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
- Maximum spacing of Barrier Reflectors is forty (40) feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
- Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
- Single slope barriers shall be delineated as shown on the above detail.



Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the appropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

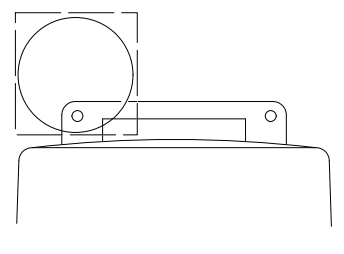
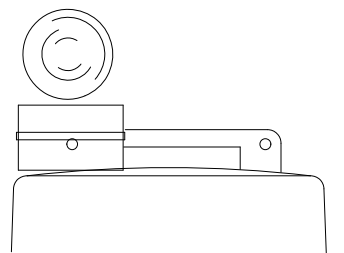
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B_{FL} or C_{FL} Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
- Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
- Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

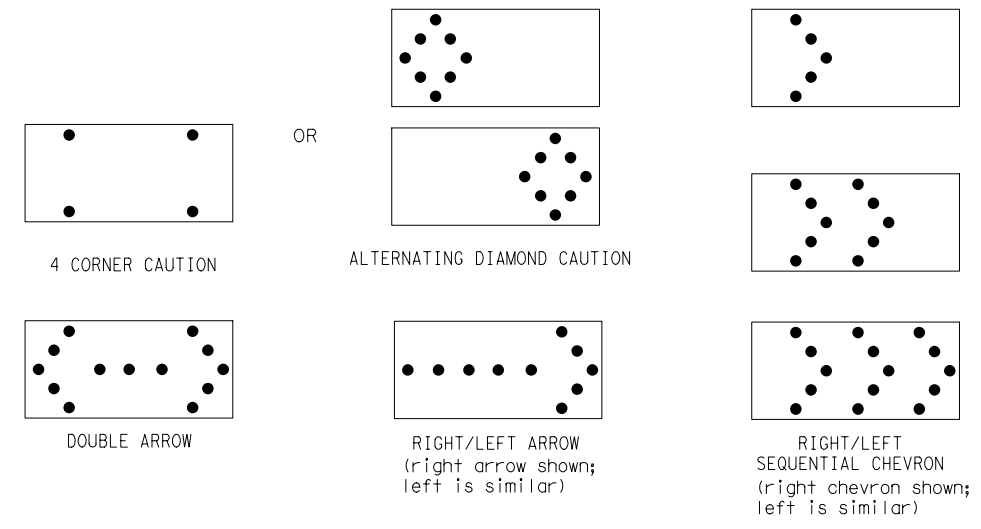
WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
- The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
- Round reflectors shall be fully reflectorized, including the area where attached to the drum.
- Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
- The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
- When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
- The warning reflector should be mounted on the side of the handle nearest approaching traffic.
- The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.



Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

- The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
- Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
- The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
- The Flashing Arrow Board should be able to display the following symbols:



- The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
- The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
- A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
- Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.



BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC (7) - 21

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GENERAL NOTES

- For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
- For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
- For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
- Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
- The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

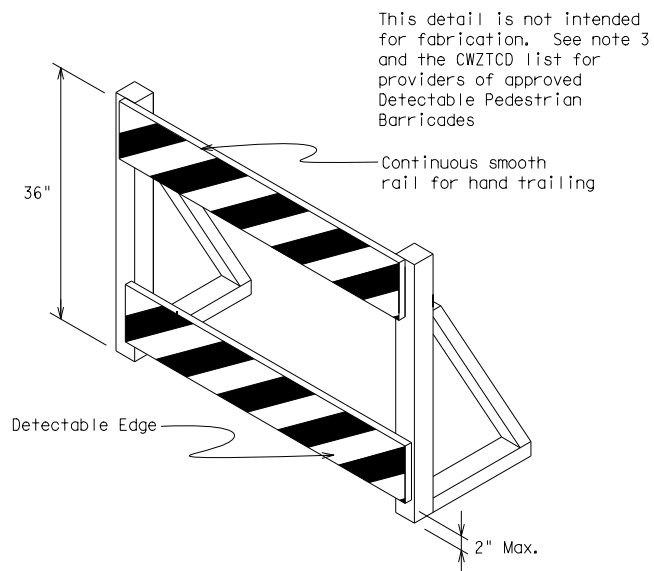
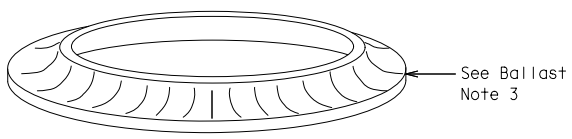
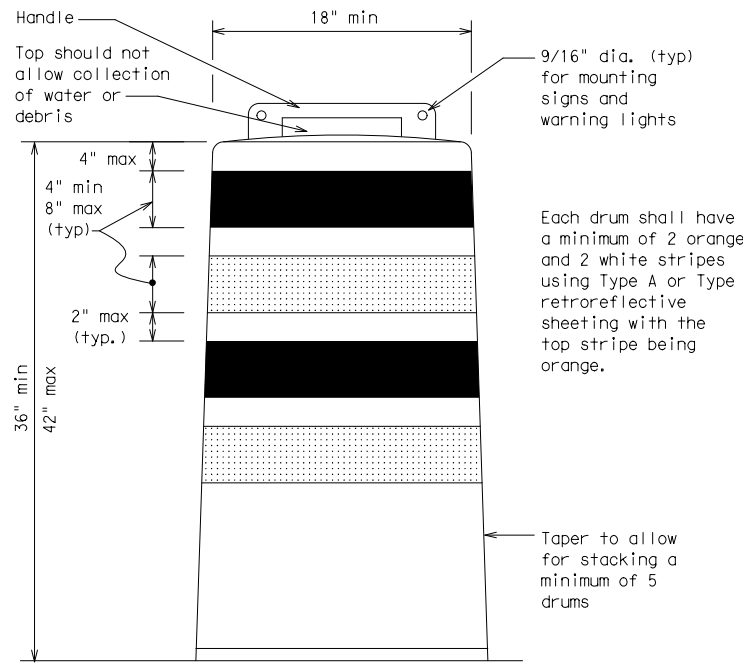
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
- Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
- Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
- The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
- The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectORIZED space between any two adjacent stripes shall not exceed 2 inches in width.
- Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
- Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
- Drum body shall have a maximum unballasted weight of 11 lbs.
- Drum and base shall be marked with manufacturer's name and model number.

RETROREFLECTIVE SHEETING

- The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
- The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

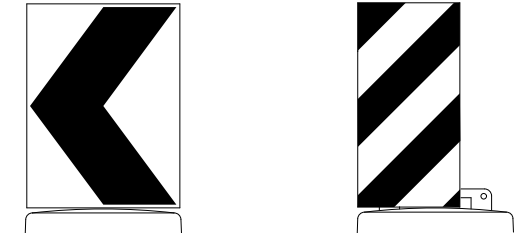
BALLAST

- Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
- Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
- Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
- The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
- When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
- Ballast shall not be placed on top of drums.
- Adhesives may be used to secure base of drums to pavement.



DETECTABLE PEDESTRIAN BARRICADES

- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
- Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
- Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
- Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



18" x 24" Sign (Maximum Sign Dimension)
 Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer

12" x 24" Vertical Panel
 mount with diagonals sloping down towards travel way

Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
- Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
- Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
- Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
- R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

SHEET 8 OF 12



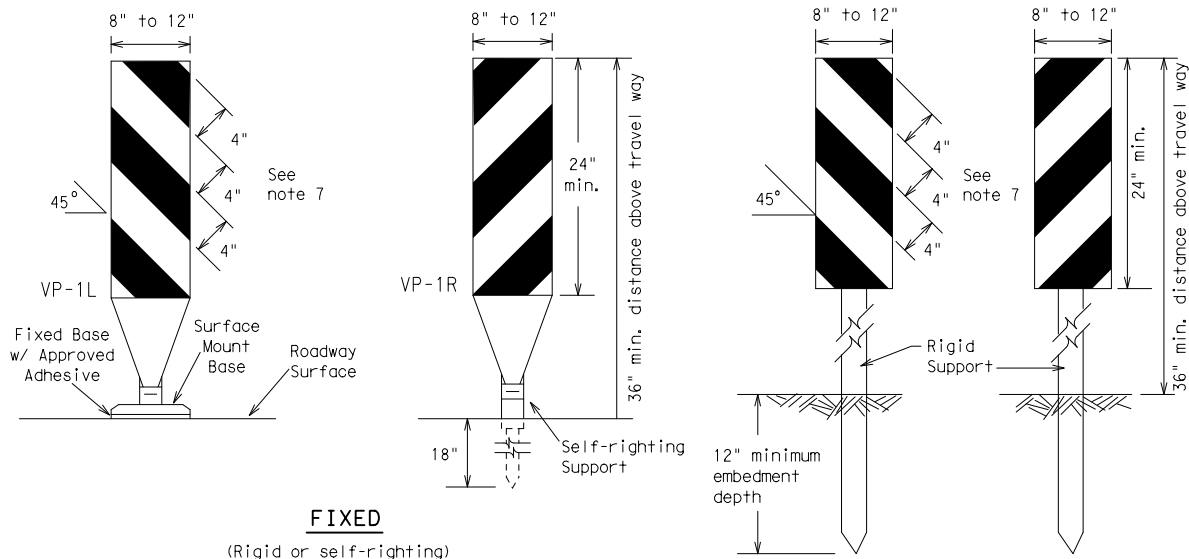
BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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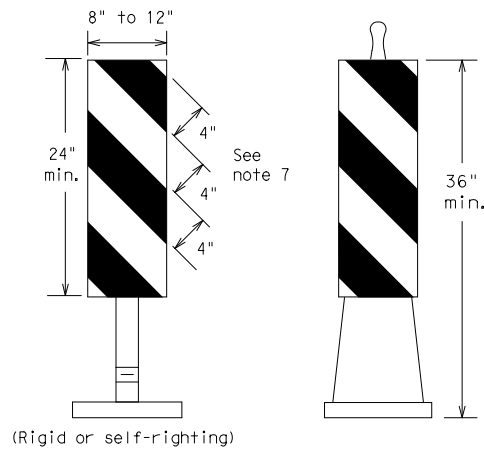
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FIXED
(Rigid or self-righting)

DRIVEABLE

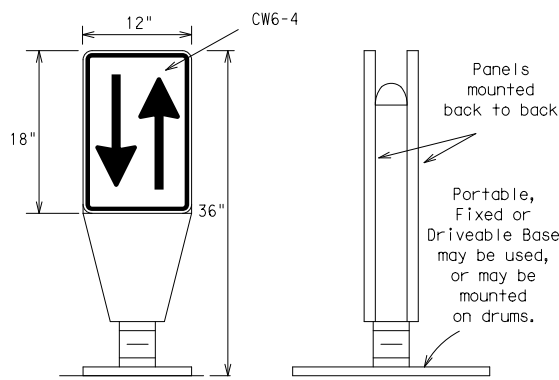


(Rigid or self-righting)

PORTABLE

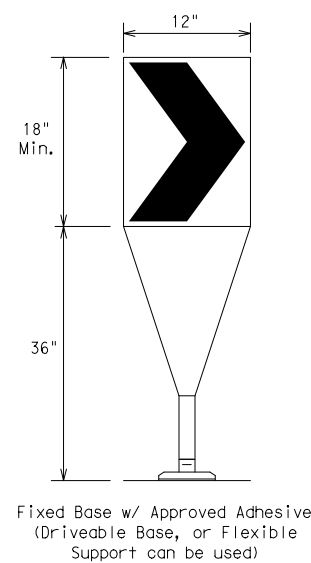
VERTICAL PANELS (VPs)

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
- VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
- VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
- Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.



OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

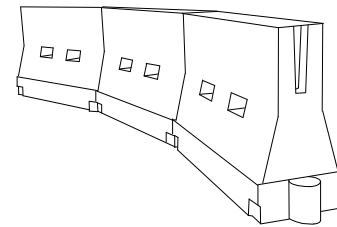
- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
- The OTLD may be used in combination with 42" cones or VPs.
- Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
- The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.



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

CHEVRONS

- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- 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.
- 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.
- To be effective, the chevron should be visible for at least 500 feet.
- Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
- For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.



LONGITUDINAL CHANNELIZING DEVICES (LCD)

- LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

- Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
- Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
- Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

GENERAL NOTES

- Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
- Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
- The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

Posted Speed	Formula	Minimum Desirable Taper Lengths * X			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	L = WS ² / 60	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80	800'	880'	960'	80'	160'	

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (9) - 21

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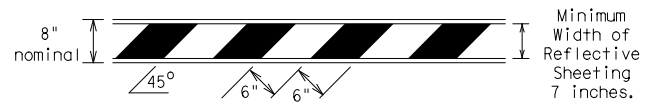
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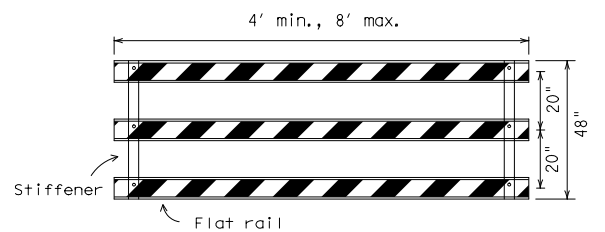
TYPE 3 BARRICADES

- Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
- Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
- Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road, striping should slope downward in both directions toward the center of roadway.
- Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
- Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
- Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
- Warning lights shall NOT be installed on barricades.
- Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
- Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.

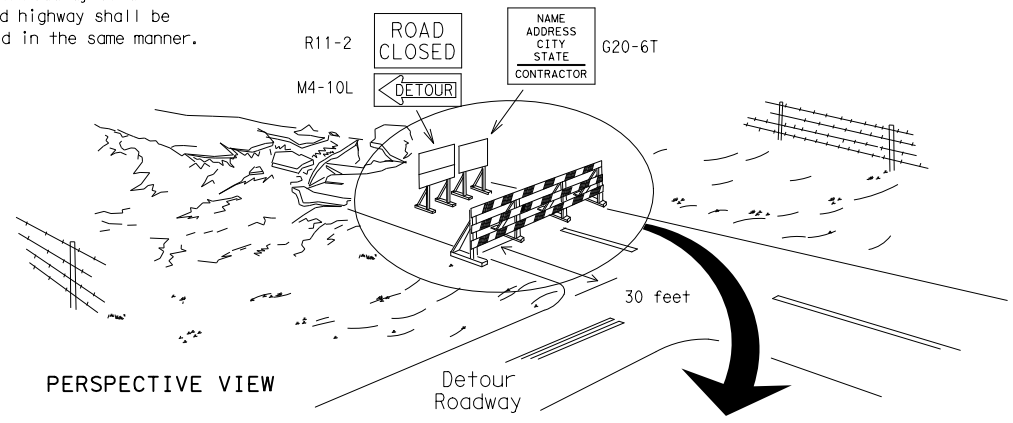


TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



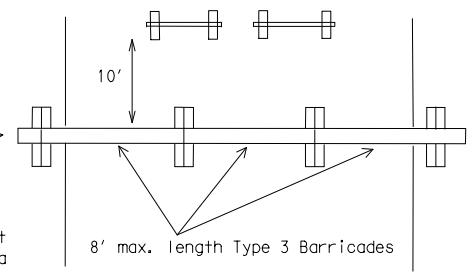
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

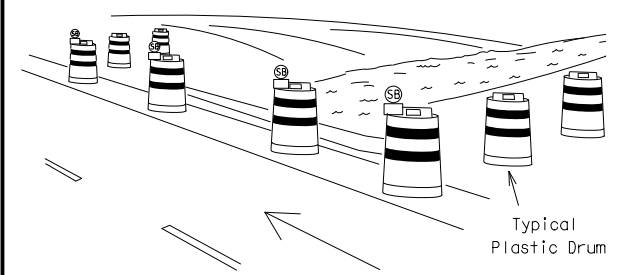
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



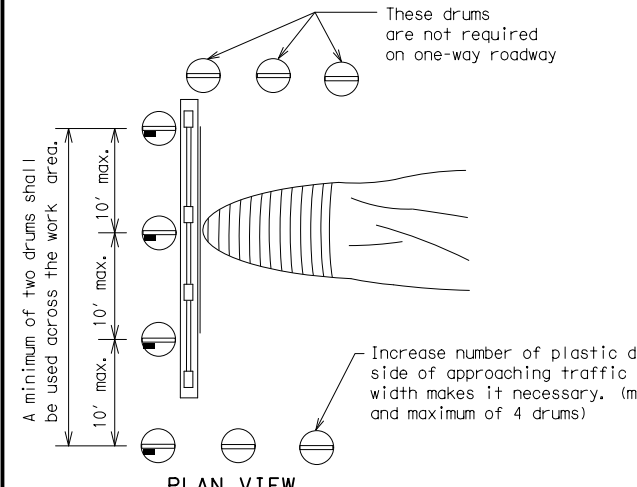
PLAN VIEW

- Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
- Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

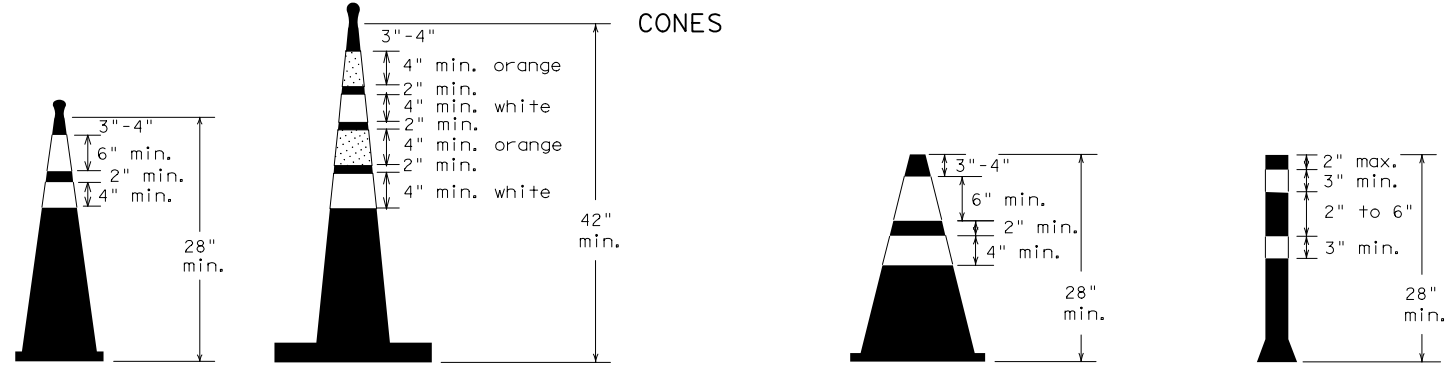


PLAN VIEW

- Where positive redirection capability is provided, drums may be omitted.
- Plastic construction fencing may be used with drums for safety as required in the plans.
- Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
- When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
- Drums must extend the length of the culvert widening.

LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
	Steady burn warning light or yellow warning reflector

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



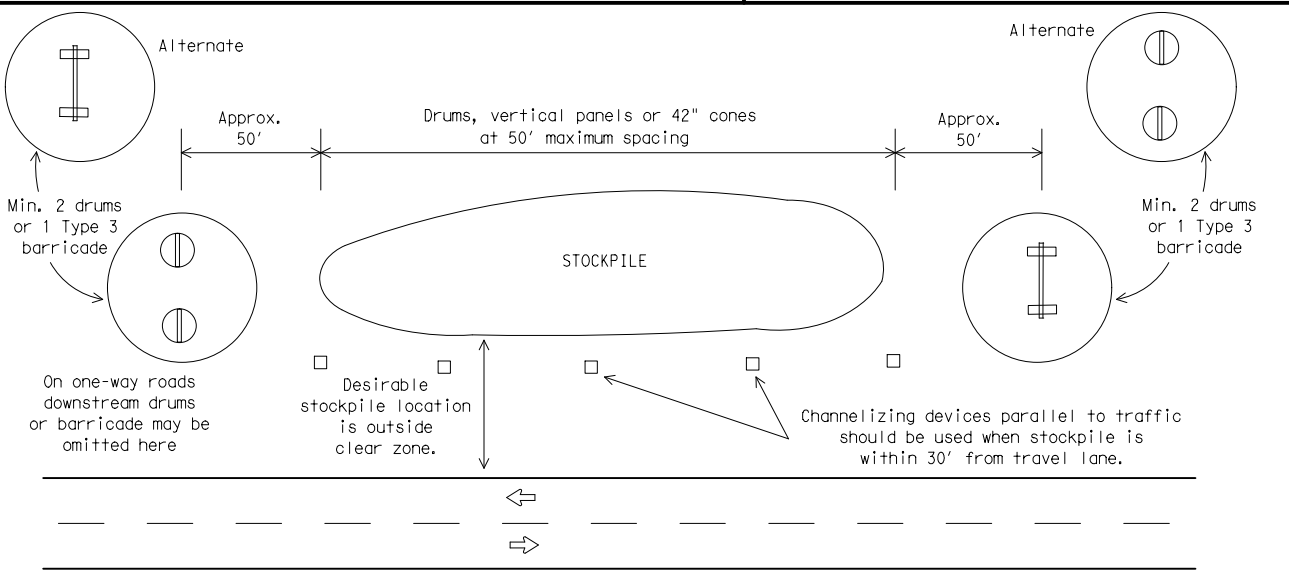
Two-Piece cones

One-Piece cones

Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.
 42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

- Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
- One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
- Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
- Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
- 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
- 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
- Cones or tubular markers used on each project should be of the same size and shape.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (10) - 21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	TYL	WOOD	103	

WORK ZONE PAVEMENT MARKINGS

GENERAL

- The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
- Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Additional supplemental pavement marking details may be found in the plans or specifications.
- Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
- When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
- When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
- All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

- Raised pavement markers are to be placed according to the patterns on BC(12).
- All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

- Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
- Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

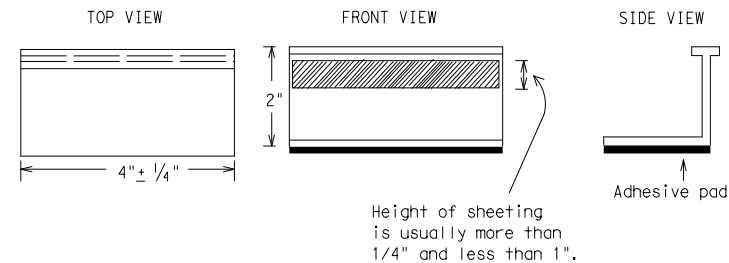
MAINTAINING WORK ZONE PAVEMENT MARKINGS

- The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
- Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
- The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
- Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

- Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
- The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
- Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
- The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
- Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
- Blast cleaning may be used but will not be required unless specifically shown in the plans.
- Over-painting of the markings SHALL NOT BE permitted.
- Removal of raised pavement markers shall be as directed by the Engineer.
- Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
- Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective Roadway Marker Tabs



**STAPLES OR NAILS SHALL NOT BE USED TO SECURE
TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER
TABS TO THE PAVEMENT SURFACE**

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
 - Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
 - Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

- Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
- All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
- Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
 YELLOW - (two amber reflective surfaces with yellow body).
 WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

SHEET 11 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

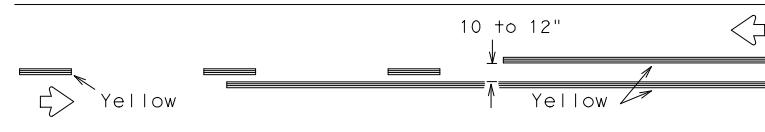
BC(11)-21

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© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS		0203	05	039
2-98	9-07	5-21		
1-02	7-13			
11-02	8-14			
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	104	

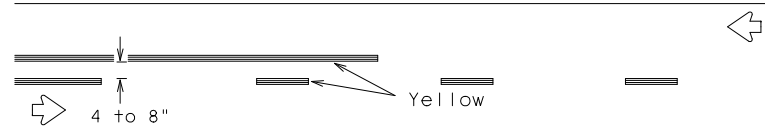
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PAVEMENT MARKING PATTERNS

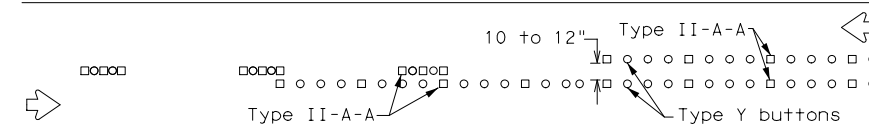


REFLECTORIZED PAVEMENT MARKINGS - PATTERN A

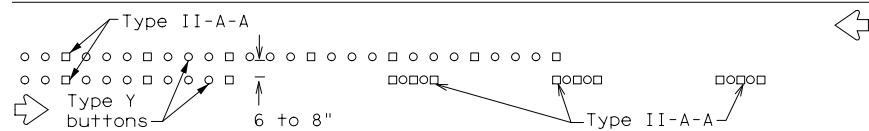


REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectorized pavement markings.

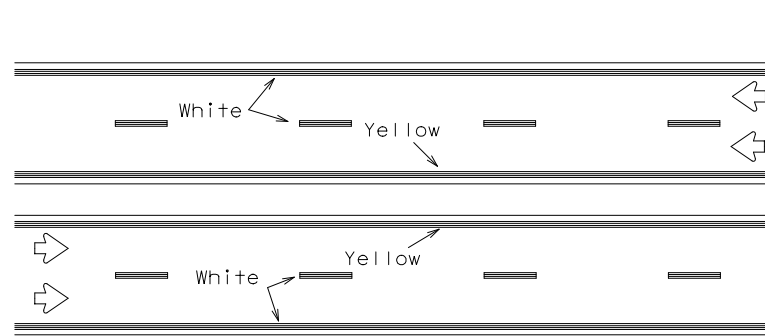


RAISED PAVEMENT MARKERS - PATTERN A



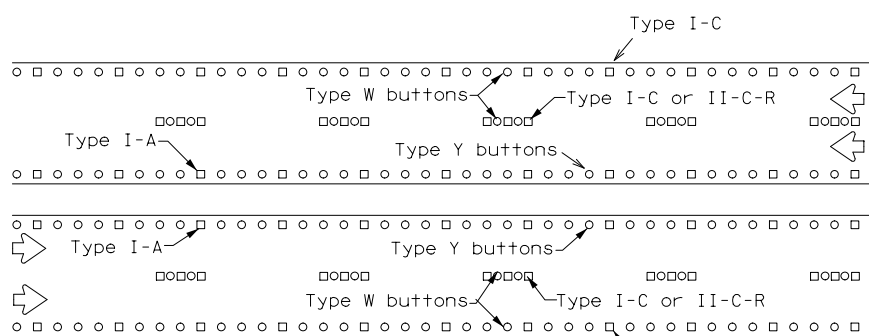
RAISED PAVEMENT MARKERS - PATTERN B

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



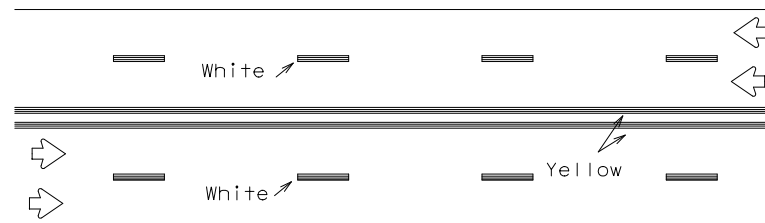
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



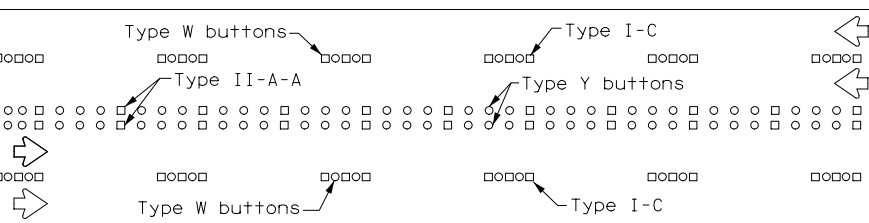
RAISED PAVEMENT MARKERS

EDGE & LANE LINES FOR DIVIDED HIGHWAY



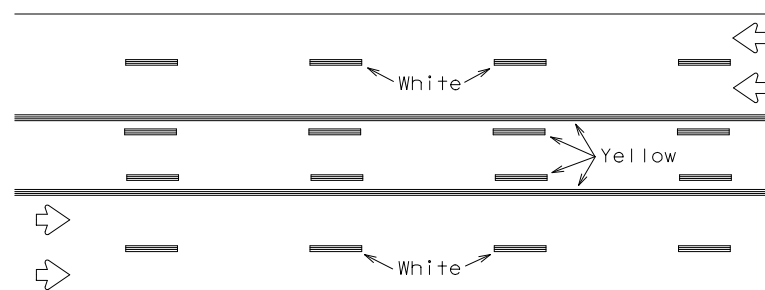
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



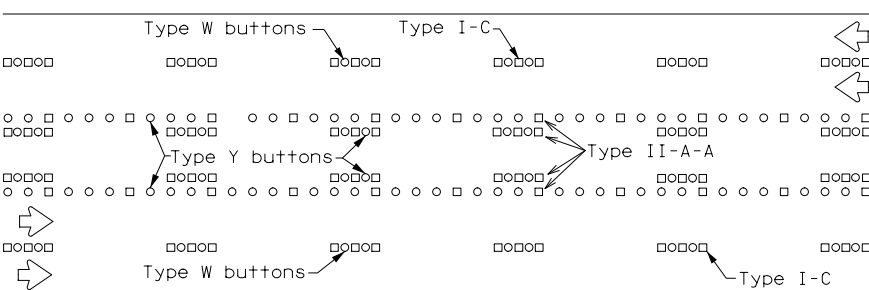
RAISED PAVEMENT MARKERS

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

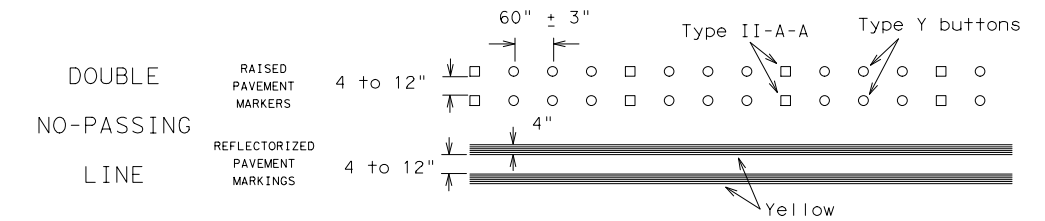
Prefabricated markings may be substituted for reflectorized pavement markings.



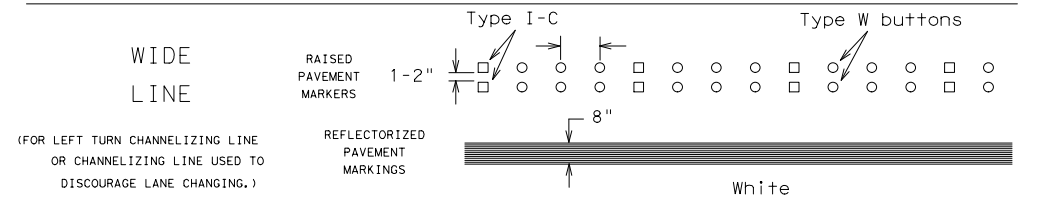
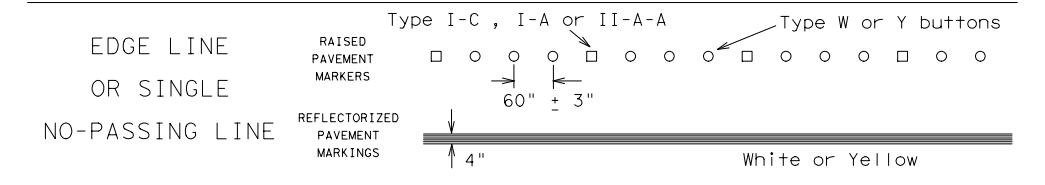
RAISED PAVEMENT MARKERS

TWO-WAY LEFT TURN LANE

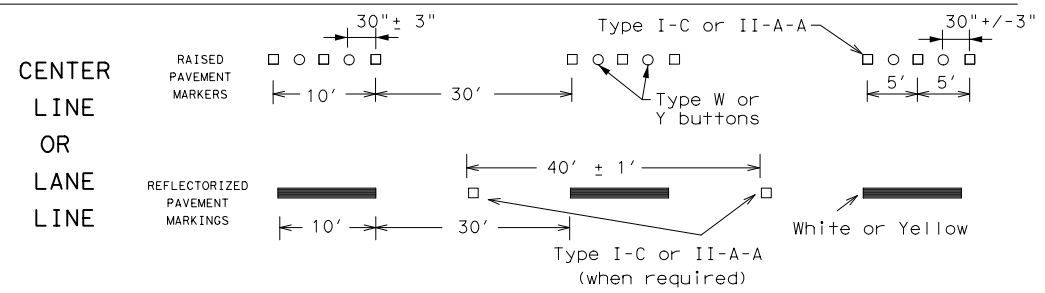
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



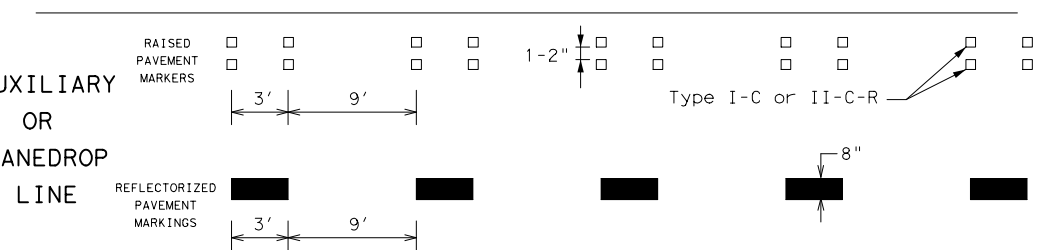
SOLID LINES



BROKEN LINES

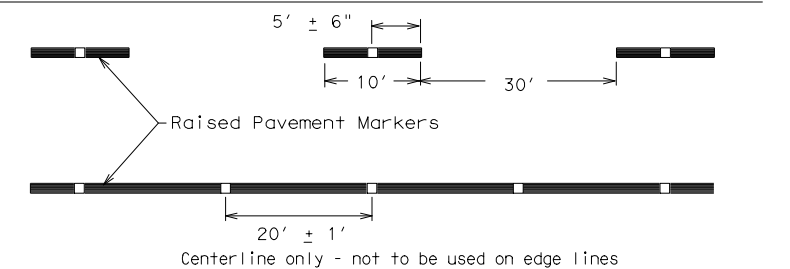


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



SHEET 12 OF 12



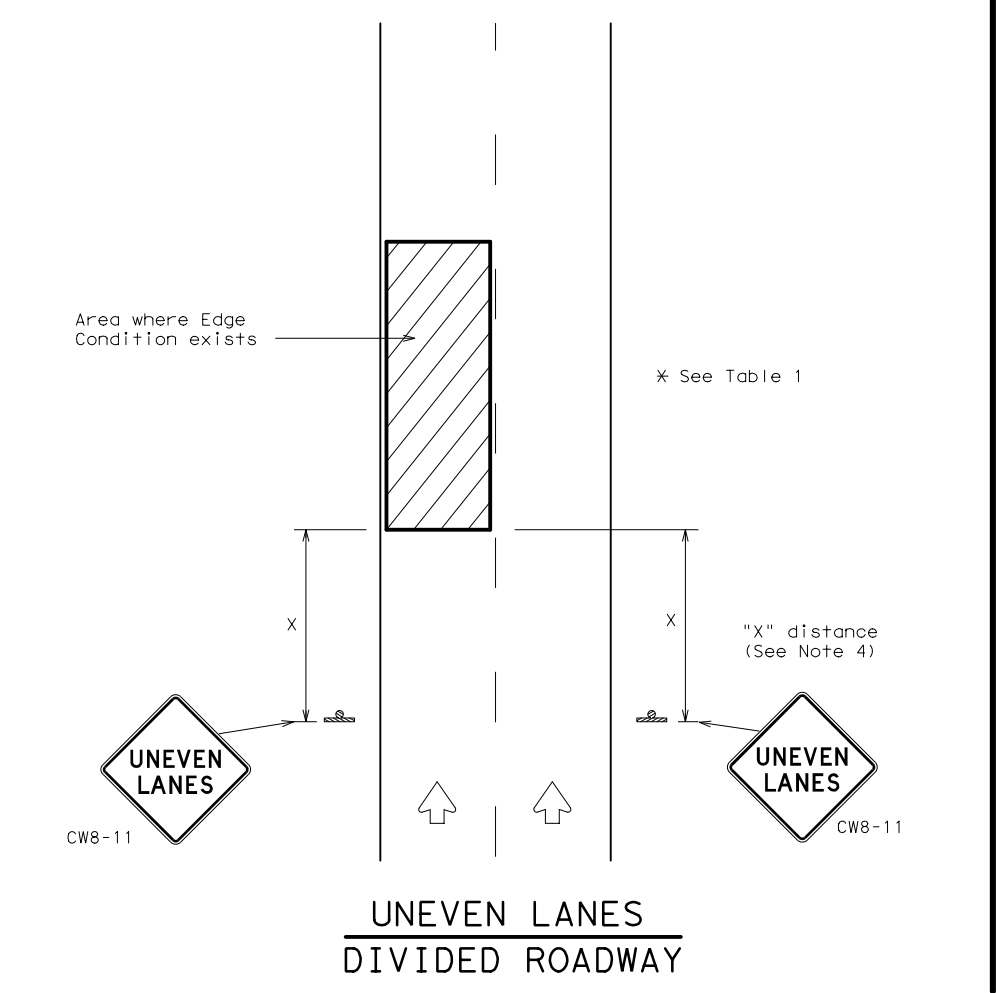
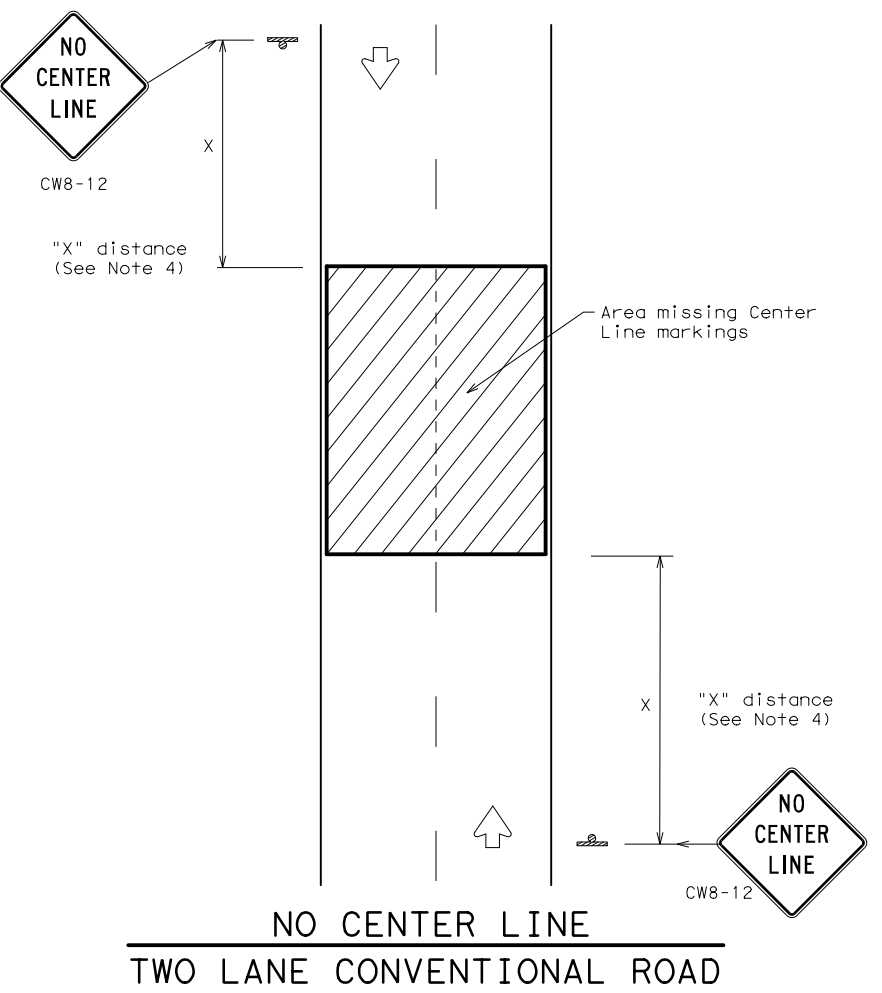
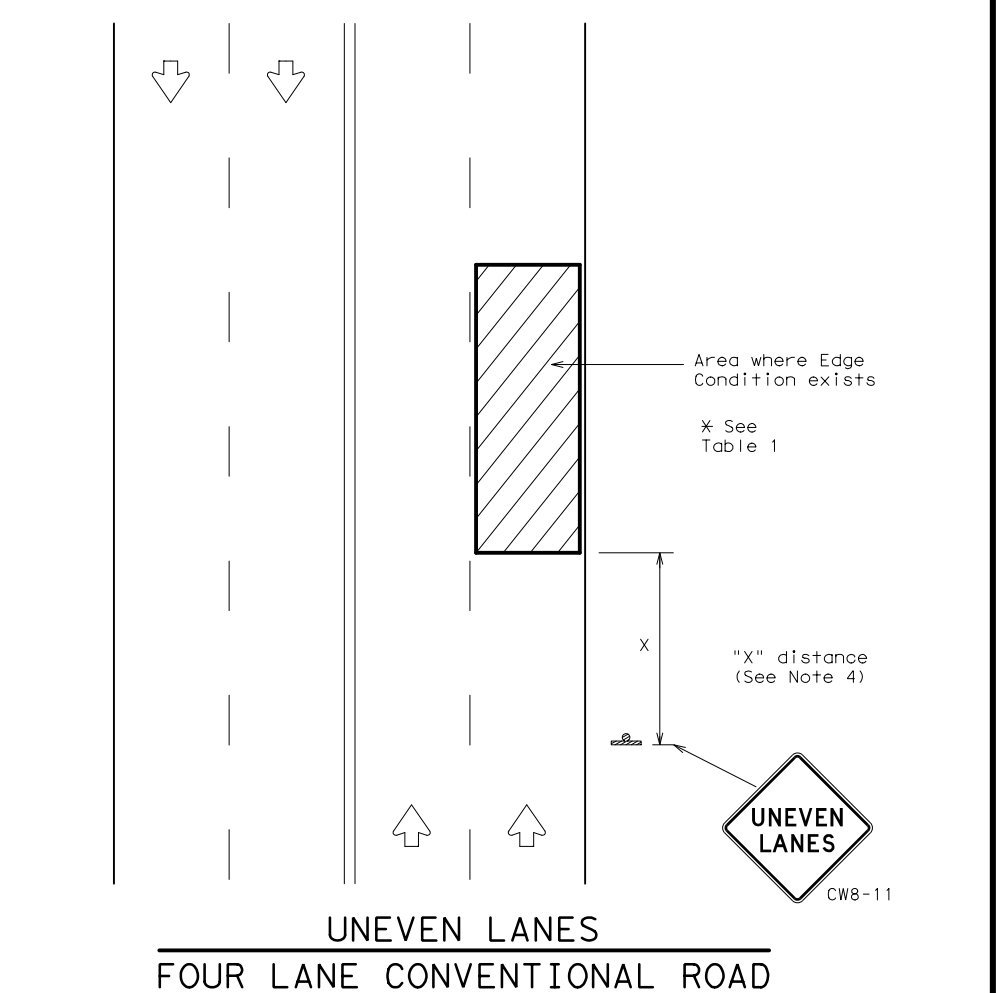
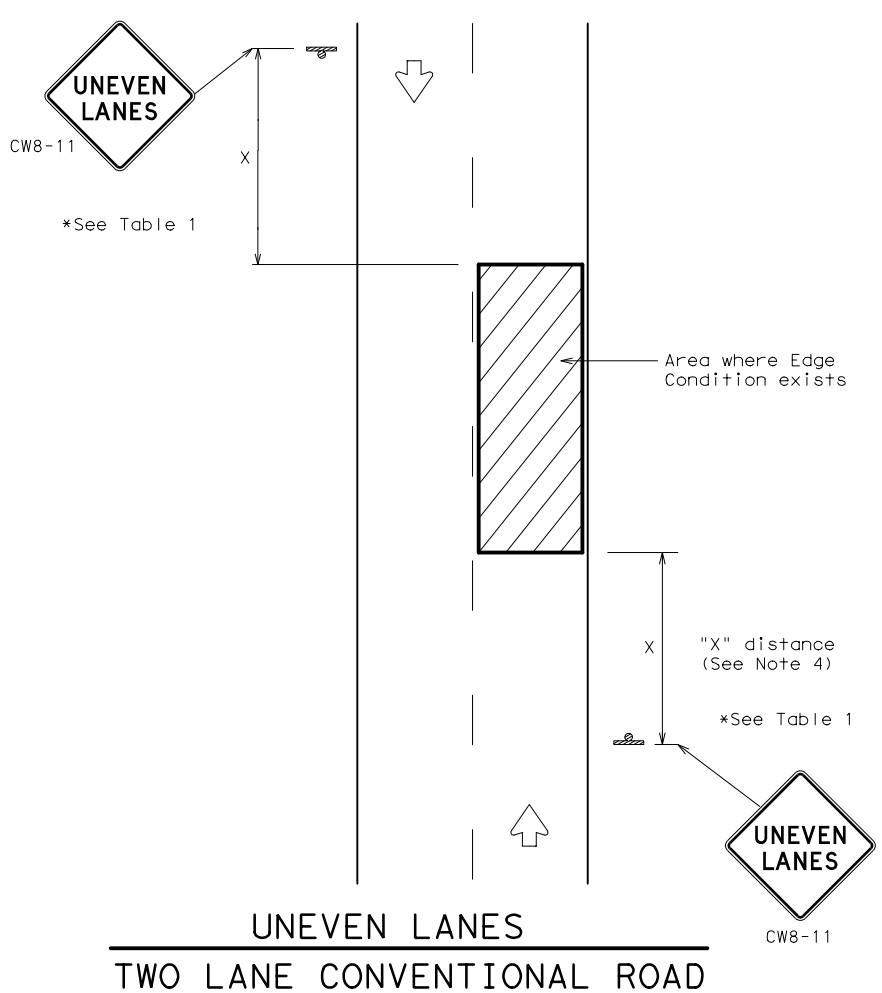
BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

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REVISIONS	0203	05	039	US 69
1-97 9-07 5-21				
2-98 7-13				
11-02 8-14	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	105	

Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

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DEPARTMENTAL MATERIAL SPECIFICATIONS	
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY (REMOVABLE) PREFABRICATED PAVEMENT MARKINGS	DMS-8241
SIGN FACE MATERIALS	DMS-8300

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B _{FL} OR TYPE C _{FL} SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

GENERAL NOTES

- If spalling or holes occur, ROUGH ROAD (CW8-8) signs should be placed in advance of the condition and be repeated every two miles where the condition persists.
- UNEVEN LANES (CW8-11) signs shall be installed in advance of the condition and repeated every mile. Signs installed along the uneven lane condition may be supplemented with the NEXT XX MILES (CW7-3aP) plaque or Advisory Speed (CW13-1P) plaque.
- NO CENTER LINE (CW8-12) signs and temporary pavement markings as per the WZ(STPM) standard shall be installed if yellow centerlines separating two way traffic are obscured or obliterated. Repeat NO CENTER LINE signs every two miles where the center line markings are not in place. The signs and markings shall remain in place until permanent pavement markings are installed.
- Signs shall be spaced at the distances recommended as per BC standards.
- Additional signs may be required as directed by the Engineer. Signs shall remain in place until final surface is applied. Signs shall be considered subsidiary to Item 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING."
- Signs shall be fabricated and mounted on supports as shown on the BC standards and/or listed on the "Compliant Work Zone Traffic Control Devices" list.
- Short term markings shall not be used to simulate edge lines.
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition.

Edge Condition	Edge Height (D)	* Warning Devices
①	Less than or equal to: 1/4" (maximum-planing) 1/2" (typical-overlay)	Sign: CW8-11
②	Less than or equal to 3"	Sign: CW8-11
③	Distance "D" may be a maximum of 3" if uneven lanes with edge condition 2 or 3 are open to traffic after work operations cease. Uneven lanes should not be open to traffic when "D" is greater than 3".	

TRAFFIC CONTROL DURING PLANING, OVERLAY AND LEVELING OPERATIONS ARE SHOWN ELSEWHERE IN THE PLANS.

MINIMUM WARNING SIGN SIZE	
Conventional roads	36" x 36"
Freeways/expressways, divided roadways	48" x 48"

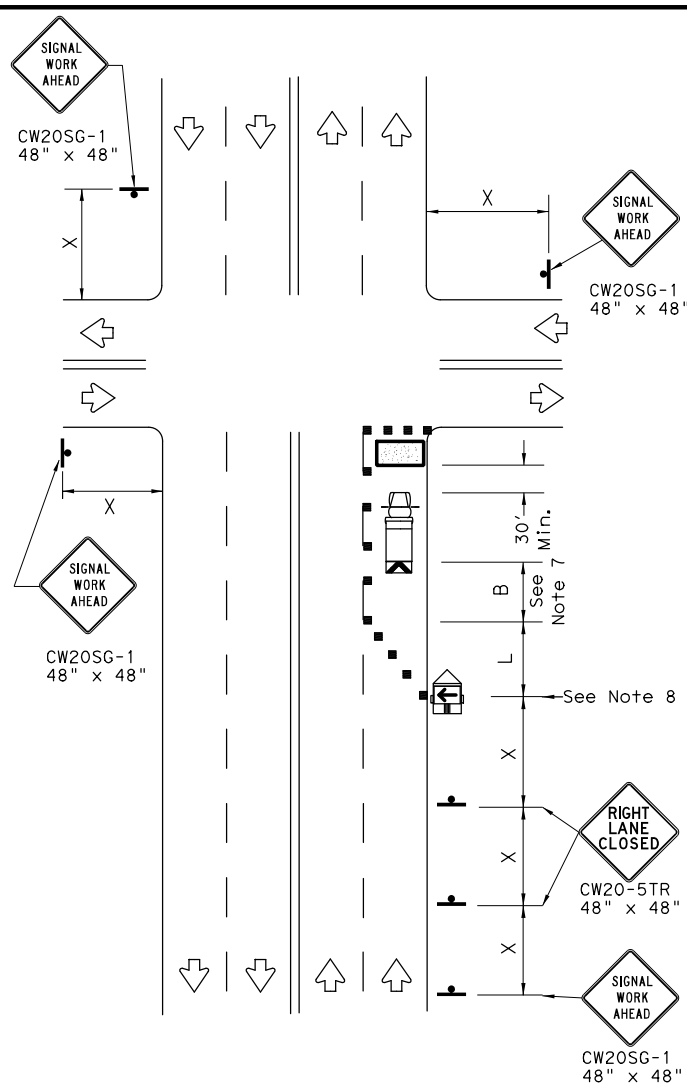


SIGNING FOR UNEVEN LANES

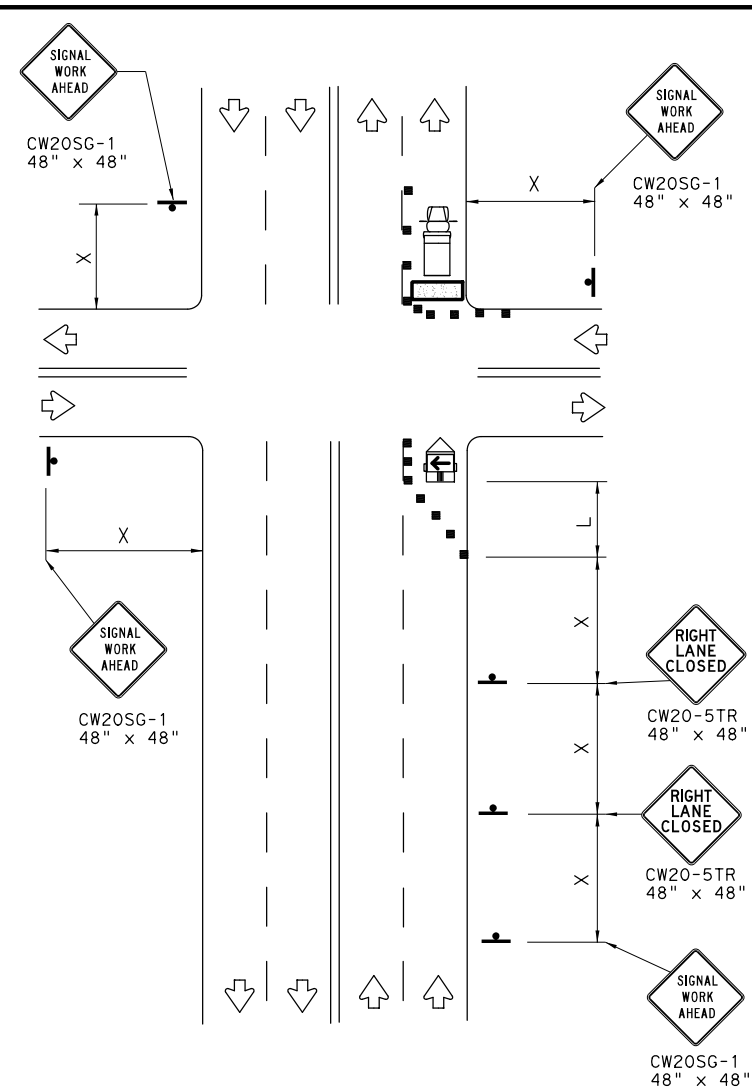
WZ (UL) - 13

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1-97 3-03	TYL	WOOD	106	

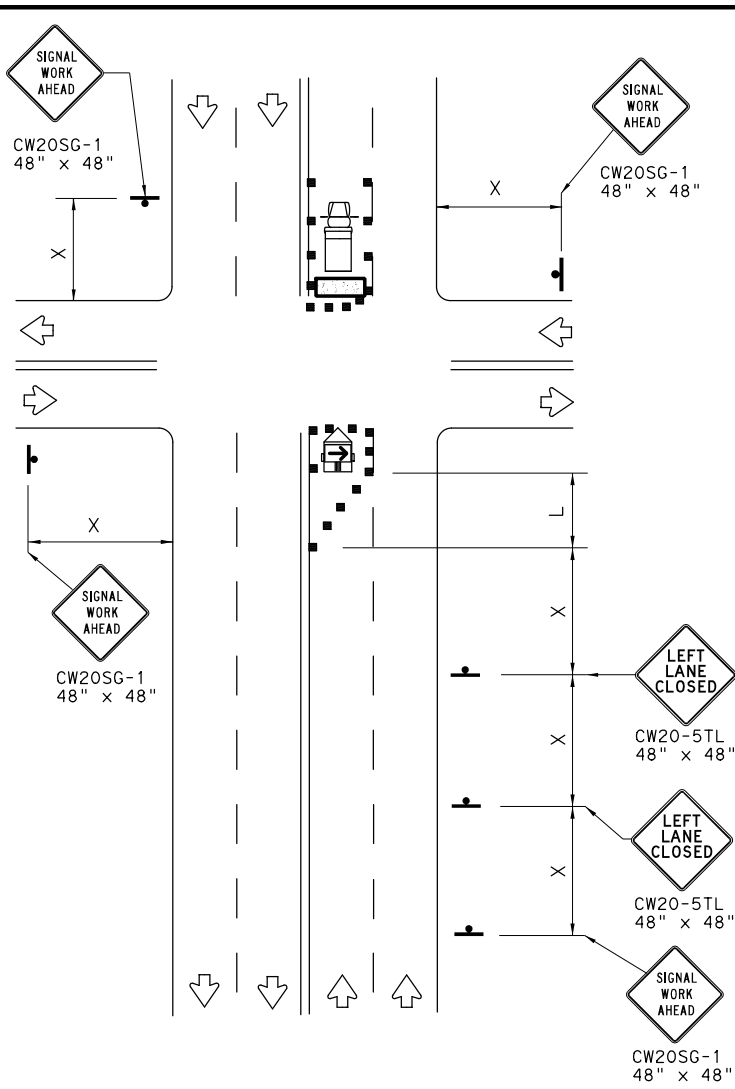
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NEAR SIDE LANE CLOSURE
SHORT DURATION OR SHORT TERM STATIONARY



FAR SIDE RIGHT LANE CLOSURE
SHORT DURATION OR SHORT TERM STATIONARY



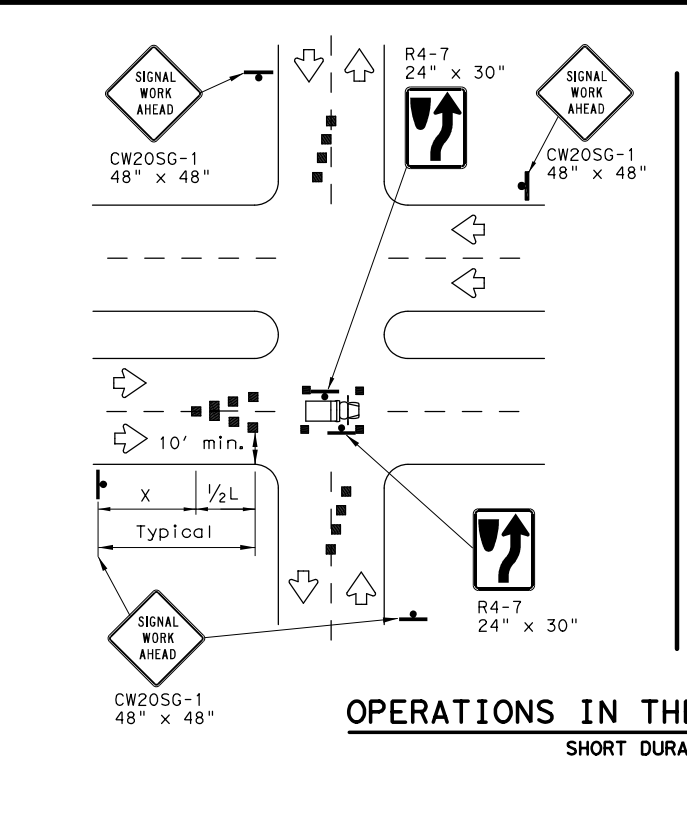
FAR SIDE LEFT LANE CLOSURE
SHORT DURATION OR SHORT TERM STATIONARY

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

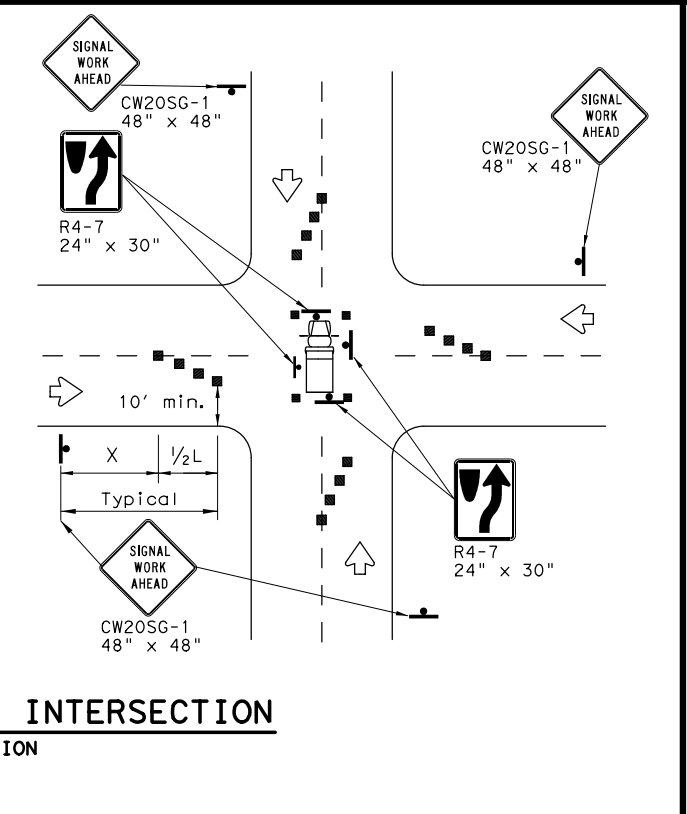
Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'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

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

WORKERS IN BUCKET TRUCKS SHALL NOT WORK ABOVE OPEN LANES OF TRAFFIC.



OPERATIONS IN THE INTERSECTION
SHORT DURATION



GENERAL NOTES

- The minimum size channelizing device is the 28" cone. 42" Two-piece cones, drums, vertical panels or barricades will be required when the device must be left unattended at night.
- Obstructions or hazards at the work area shall be clearly marked and delineated at all times.
- Flaggers and Flagger Symbol (CW20-7) signs may be required according to field conditions.
- Vehicles parked in roadway shall be equipped with at least two high intensity rotating, flashing, oscillating or strobe type lights.
- High level warning devices (flag trees) may be used at corners of the vehicle.
- When work operations are performed on existing signals, the signals may be placed in flashing red mode when approved by the engineer. If existing signals do not have power, All-Way Stop (R1-1 and R1-3P) signs may be implemented when approved by the engineer.
- For Short-Term Stationary work the buffer space "B" from the above table should be used if field conditions permit. For Short Duration (less than 1 hour) any buffer space provided will enhance the safety of the setup.
- The arrow board at this location may be omitted for Short Duration work if the work vehicle has an arrow board in operation. As an option, the arrow board may be placed at the end of the taper in the closed lane if space is not available at the beginning of the taper.
- Signs and devices for the NEAR SIDE LANE CLOSURE may be altered for a left lane closure by using a LEFT LANE CLOSED (CW20-5TL) and adding channelizing devices on the centerline to protect the work space from opposing traffic.

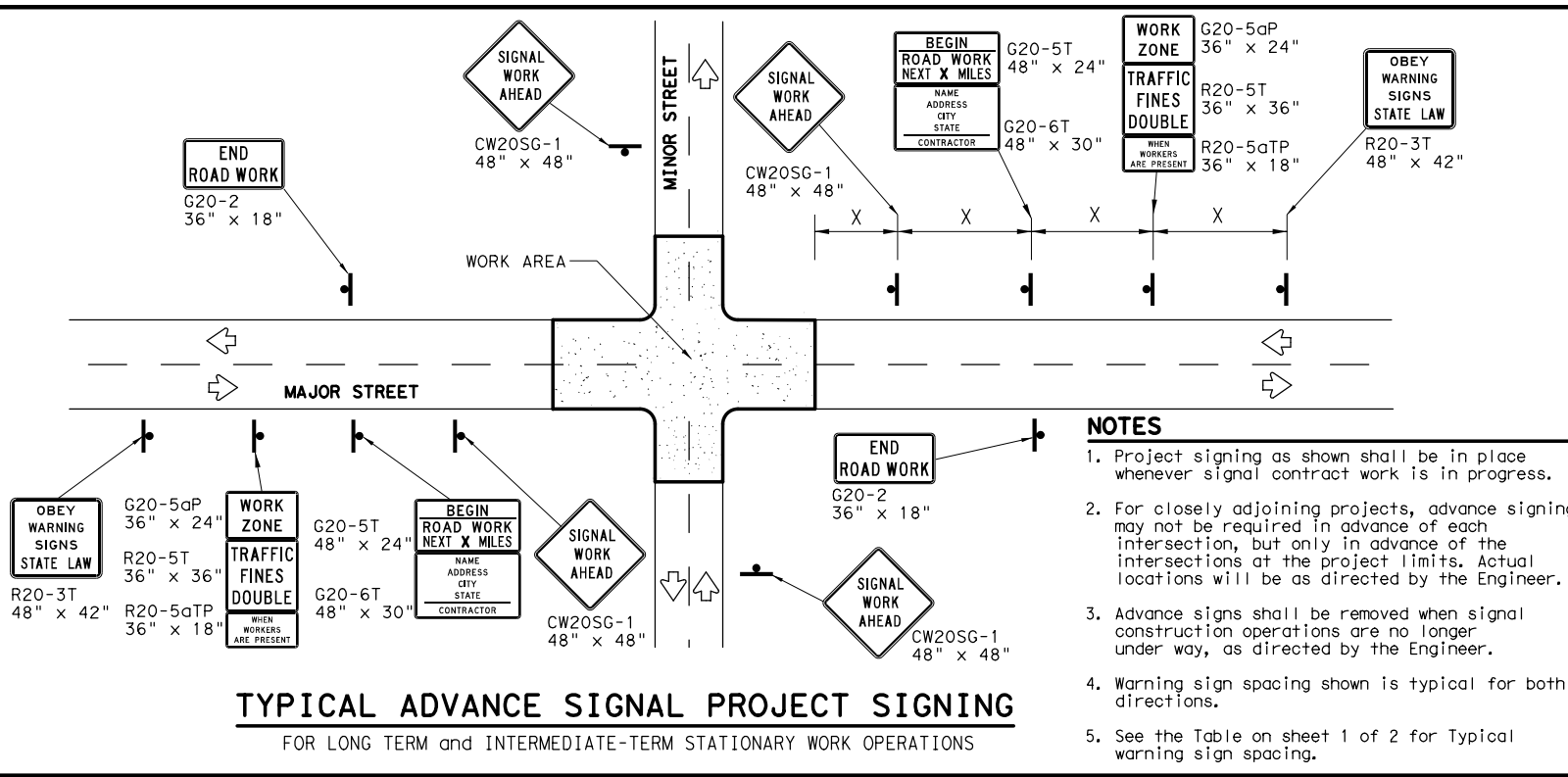


TRAFFIC SIGNAL WORK TYPICAL DETAILS

WZ (BTS-1) - 13

FILE: wzbt-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
2-98 10-99 7-13	DIST	COUNTY	SHEET NO.	
4-98 3-03	TYL	WOOD	107	

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TYPICAL ADVANCE SIGNAL PROJECT SIGNING
FOR LONG TERM and INTERMEDIATE-TERM STATIONARY WORK OPERATIONS

- NOTES**
1. Project signing as shown shall be in place whenever signal contract work is in progress.
 2. For closely adjoining projects, advance signing may not be required in advance of each intersection, but only in advance of the intersections at the project limits. Actual locations will be as directed by the Engineer.
 3. Advance signs shall be removed when signal construction operations are no longer under way, as directed by the Engineer.
 4. Warning sign spacing shown is typical for both directions.
 5. See the Table on sheet 1 of 2 for Typical warning sign spacing.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Signs shall be installed and maintained in a straight and plumb condition.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. Nails shall NOT be used to attach signs to any support.
5. All signs shall be installed in accordance with the plans or as directed by the Engineer.
6. The Contractor shall furnish the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD).
7. The Contractor shall furnish sign supports and substrates listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD), installed as per the manufacturer's recommendations.
8. Temporary signs that have damaged or cracked substrates and/or damaged or marred reflective sheeting shall be replaced as directed by the Engineer.
9. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1".
10. Damaged wood posts shall be replaced. Splicing wood posts will not be allowed.

DURATION OF WORK

1. Work zone durations are defined in Part 6, Section 6G.02 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

SIGN MOUNTING HEIGHT

1. Sign height of Long-term/Intermediate-term warning signs shall be as shown on Figure 6F-1 of the TMUTCD.
2. Sign height of Short-term/Short Duration warning signs shall be as shown on Figure 6F-2 of the TMUTCD.
3. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered, unless otherwise approved by the Engineer.
2. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night without damaging the sign sheeting. Burlap, or heavy materials such as plywood or aluminum shall not be used to cover signs.
3. Duct tape or other adhesive material shall NOT be affixed to a sign face.
4. Signs and anchor stubs shall be removed and holes back filled upon completion of the work.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the requirements of the DMS and color usage table shown on this sheet.

SIGN SUPPORT WEIGHTS

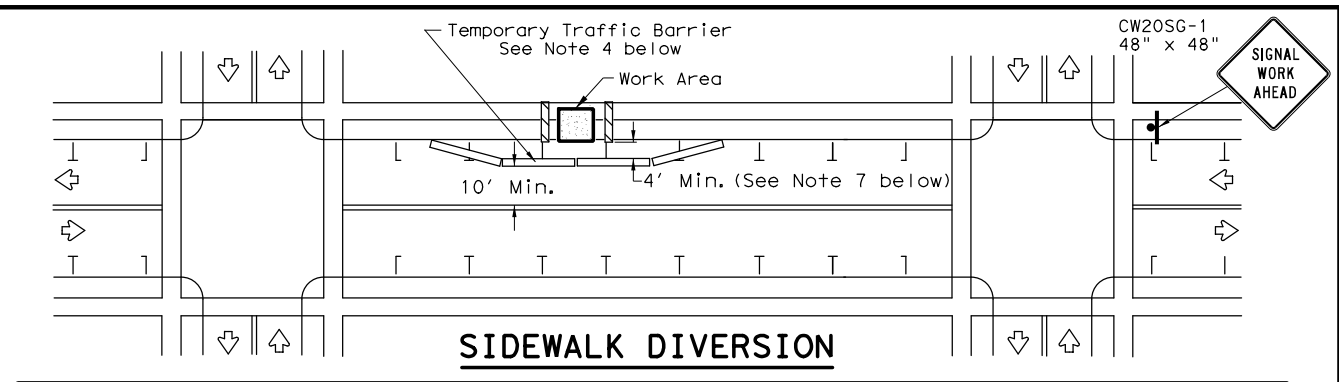
1. Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber, such as tire inner tubes, shall not be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

LEGEND	
	Sign
	Channelizing Devices
	Type 3 Barricade

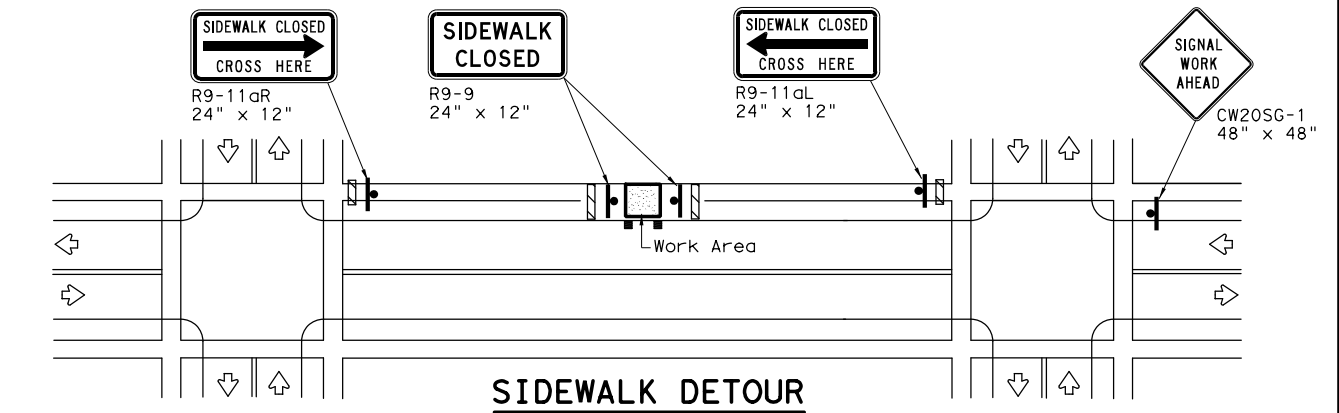
DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B _{FL} OR TYPE C _{FL} SHEETING
WHITE	BACKGROUND	TYPE A SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

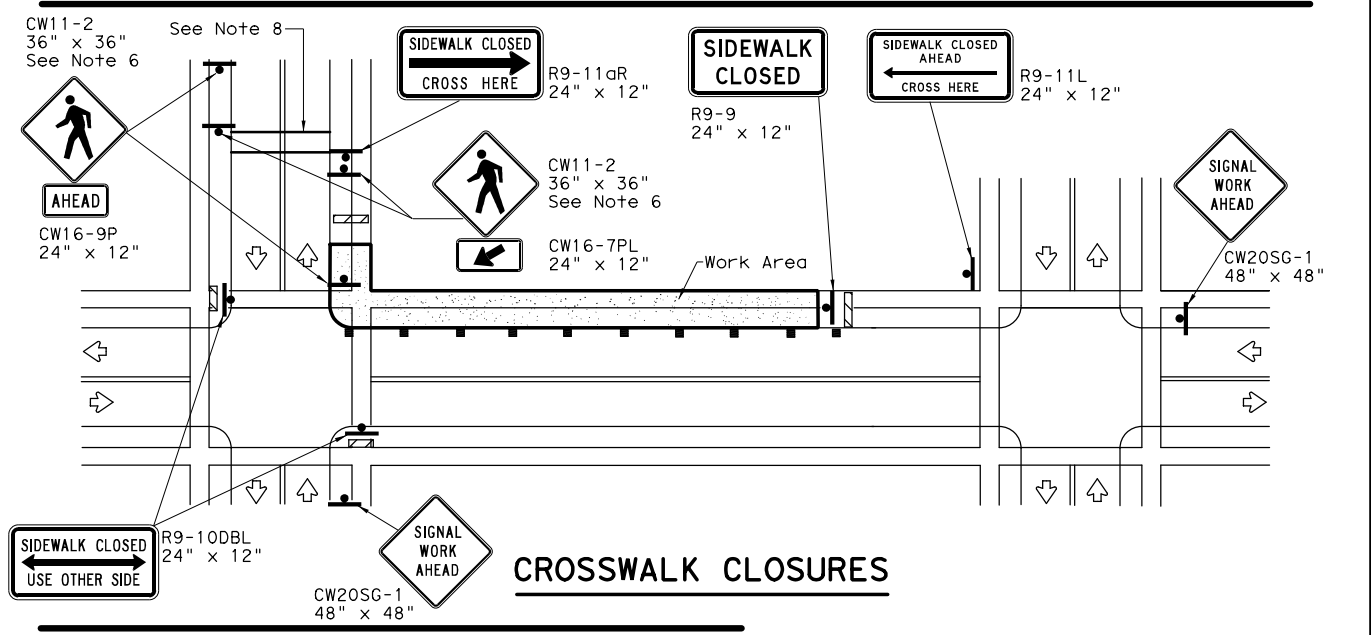
Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:
http://www.txdot.gov/txdot_library/publications/construction.htm



SIDEWALK DIVERSION



SIDEWALK DETOUR



CROSSWALK CLOSURES

PEDESTRIAN CONTROL

1. Holes, trenches or other hazards shall be adequately protected by covering, delineating or surrounding the hazard with orange plastic pedestrian fencing or longitudinal channelizing devices, or as directed by the Engineer.
2. "CROSSWALK CLOSURES" as detailed above will require the Engineer's approval prior to installation.
3. R9 series signs shown may be placed on supports detailed on the BC standards or CWZTCD list, or when fabricated from approved lightweight plastic substrates, they may be mounted on top of a plastic drum at or near the location shown.
4. For speeds less than 45 mph longitudinal channelizing devices may be used instead of traffic barriers when approved by the Engineer. Attenuation of blunt ends and installation of water filled devices shall be as per BC(9) and manufacturer's recommendations.
5. Location of devices are for general guidance. Actual device spacing and location must be field adjusted to meet actual conditions.
6. Where pedestrians with visual disabilities normally use the closed sidewalk Detectable Pedestrian Barricades should be used instead of the Type 3 Barricades shown.
7. The width of existing sidewalk should be maintained if practical.
8. Pavement markings for mid-block crosswalks shall be paid for under the appropriate bid items.
9. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

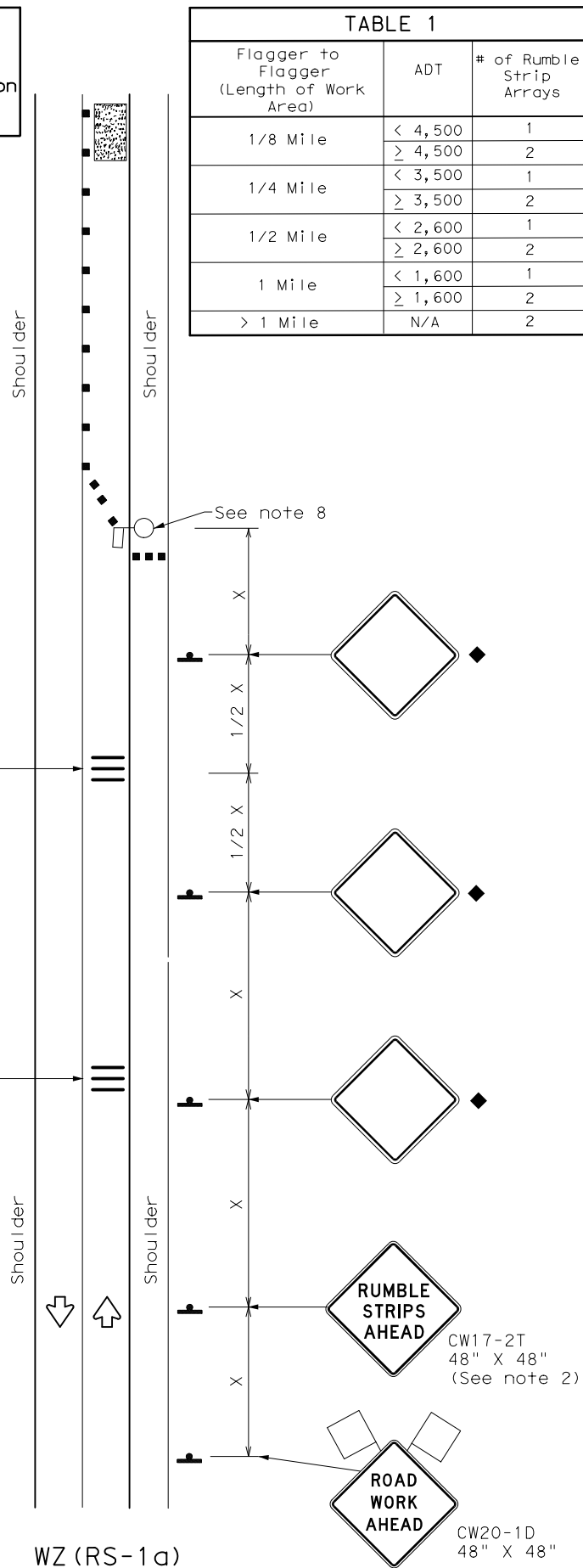
SHEET 2 OF 2

		Traffic Operations Division Standard	
<h2>TRAFFIC SIGNAL WORK BARRICADES AND SIGNS</h2>			
<h3>WZ (BTS-2) - 13</h3>			
FILE:	wzbt5-13.dgn	DN:	TxDOT
© TxDOT	April 1992	CK:	TxDOT
REVISIONS	0203	DW:	TxDOT
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		SECT:	US 69
2-98	10-99	JOB:	
4-98	3-03	DIST:	WOOD
		COUNTY:	
		SHEET NO.:	108

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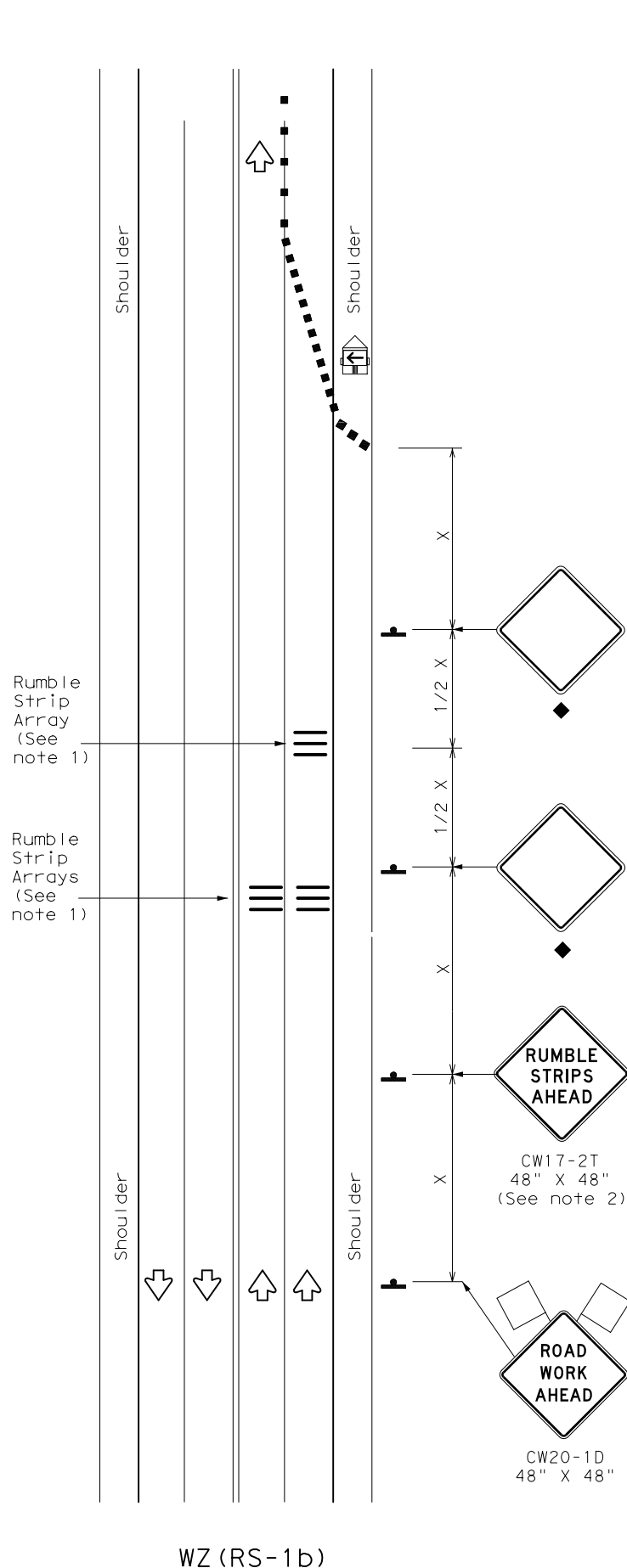
Warning sign and rumble strip sequence in opposite direction is same as below.

TABLE 1		
Flagger to Flagger (Length of Work Area)	ADT	# of Rumble Strip Arrays
1/8 Mile	< 4,500	1
	≥ 4,500	2
1/4 Mile	< 3,500	1
	≥ 3,500	2
1/2 Mile	< 2,600	1
	≥ 2,600	2
1 Mile	< 1,600	1
	≥ 1,600	2
> 1 Mile	N/A	2



WZ (RS-1a)

RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION



WZ (RS-1b)

RUMBLE STRIPS FOR LANE CLOSURE ON CONVENTIONAL ROADWAY

GENERAL NOTES

- Each Rumble Strip Array should consist of three rumble strips spaced center to center at the spacing shown in Table 2, placed transverse across the lane at locations shown.
- The CW17-2T "RUMBLE STRIPS AHEAD" sign should be located after the CW20-1D "ROAD WORK AHEAD" sign and spaced as shown. If traffic is observed to be queuing, or is expected to queue beyond the Rumble Strips, the CW17-2T sign and the first Rumble Strip Array may be located upstream of the CW20-1D sign as necessary to provide needed warning.
- Temporary Rumble Strips will be considered subsidiary to Item 502, and shall be a product listed on the Compliant Work Zone Traffic Control Devices.
- Remove Temporary Rumble Strips before removing the advanced warning signs.
- Temporary Rumble Strips should not be used on horizontal curves, loose gravel, soft or bleeding asphalt, heavily rutted pavements or unpaved surfaces.
- Temporary Rumble Strips shall be installed and maintained as per manufacturer's recommendations.
- This standard sheet shall be used in conjunction with other appropriate TCP standard, TMUTCD typical application or project specific detail for the project.
- The one-lane two-way application may utilize a flagger, an Automated Flagger Assistance Device (AFAD) or a Portable Traffic Signal (PTS).
- Replace defective Temporary Rumble Strips as directed by the Engineer.
- Temporary Rumble Strips may be used on freeways or expressways based on engineering judgment and written direction from the Engineer.

TABLE 2	
Speed	Approximate distance between strips in an array
≤ 40 MPH	10'
> 40 MPH & ≤ 55 MPH	15'
= 60 MPH	20'
≥ 65 MPH	* 35'+

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

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

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

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

- ◆ Signs are for illustrative purposes only. Signs required may vary depending on the TCP, TMUTCD Typical Application, or project specific details for the project.
- * For posted speeds in excess of 65 MPH, it is recommended that spacing is increased as speed limits increase. Increasing space between rumble strips will improve effectiveness.

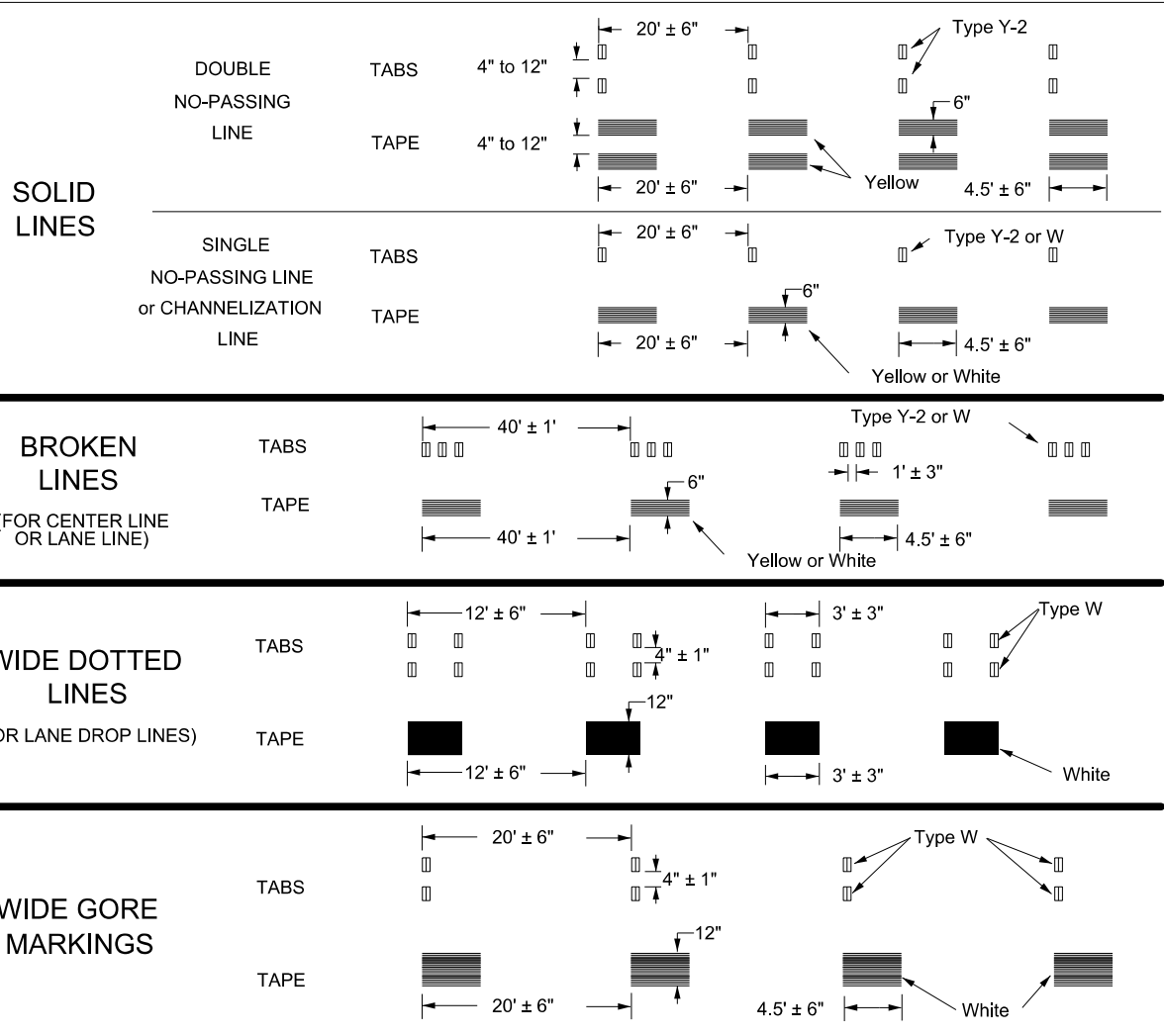
TEMPORARY RUMBLE STRIPS

WZ (RS) -22

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© TxDOT November 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
2-14 1-22	DIST	COUNTY	SHEET NO.	
4-16	TYL	WOOD	109	

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WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS



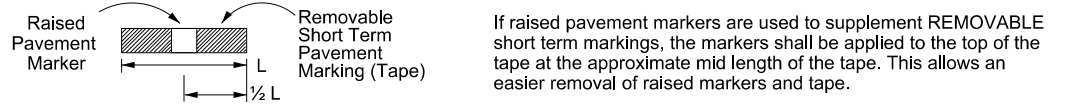
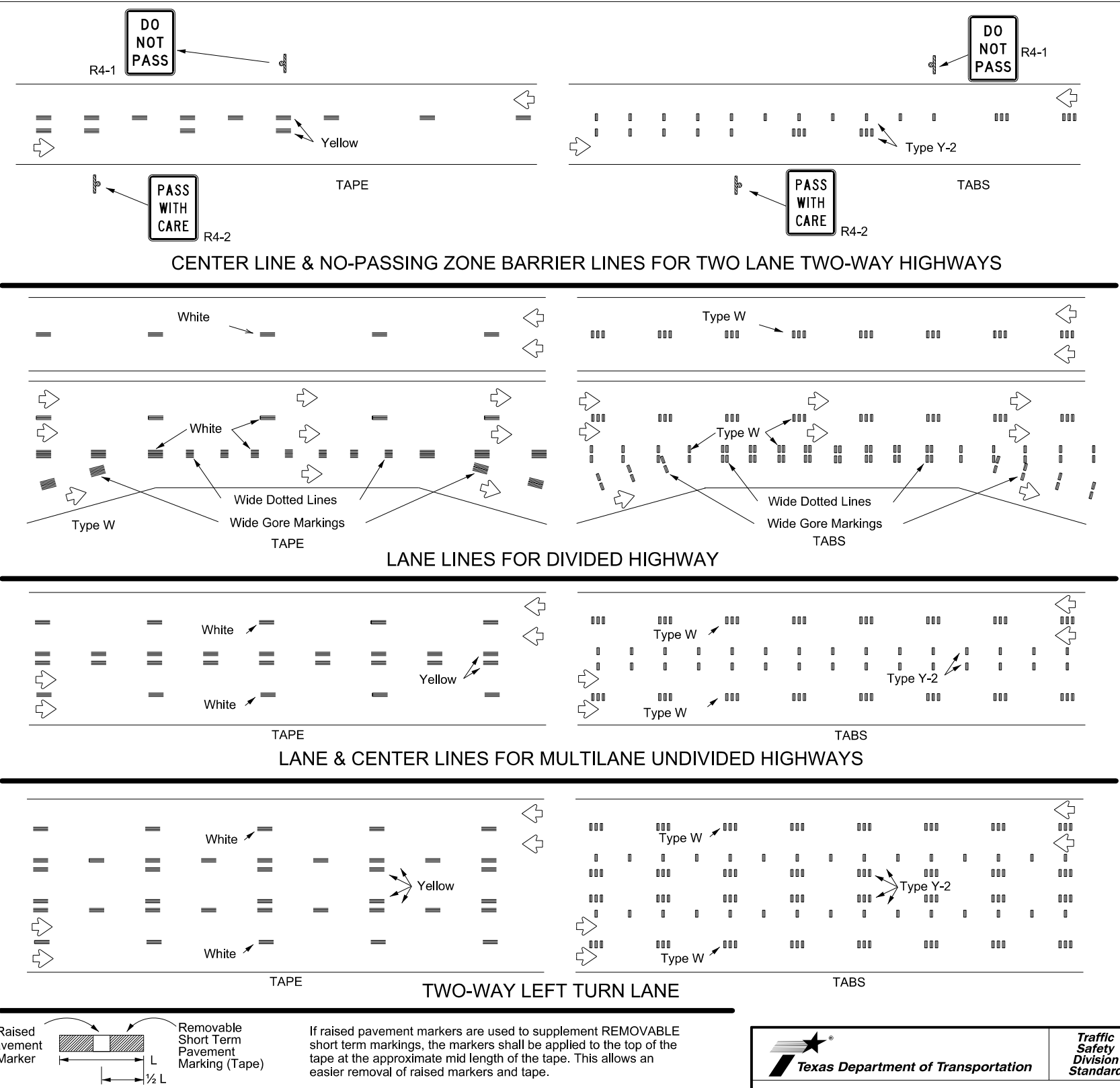
NOTES:

- Short term pavement markings may be prefabricated markings (stick down tape) or temporary flexible reflective roadway marker tabs unless otherwise specified elsewhere in plans.
- Short term pavement markings shall NOT be used to simulate edge lines.
- Dimensions indicated on this sheet are typical and approximate. Variations in size and height may occur between markers or devices made by manufacturers, by as much as 1/4 inch, unless otherwise noted.
- Temporary flexible-reflective roadway marker tabs will require normal maintenance replacement when used on roadways with an ADT per lane of up to 7500 vehicles with no more than 10% truck mix. When roadways exceed these values, additional maintenance replacement of devices should be planned.
- No segment of roadway open to traffic shall remain without permanent pavement markings for a period greater than 14 calendar days. The Contractor will be responsible for maintaining short term pavement markings until permanent pavement markings are in place. When the Contractor is responsible for placement of permanent pavement markings, no segment of roadway shall remain without permanent pavement markings for a period greater than 14 calendar days unless weather conditions prohibit placement. Permanent pavement markings shall be placed as soon as weather permits.
- For two lane, two-way roadways, DO NOT PASS signs shall be erected to mark the beginning of sections where passing is prohibited and PASS WITH CARE signs shall be erected to mark the beginning of sections where passing is permitted. Signs shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and may be used to indicate the limits of no-passing zones for up to 14 calendar days. Permanent pavement markings should then be placed.
- For low volume two lane, two-way roadways of 4000 ADT or less, no-passing lines may be omitted when approved by the Engineer. DO NOT PASS and PASS WITH CARE signs shall be erected (see note 6).
- For exit gores where a lane is being dropped place wide gore markings or retroreflective channelizing devices to guide motorist through the exit. If channelizing devices are to be used it should be noted elsewhere in the plans. One piece cones are not allowed for this purpose.

TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS (TABS)

- Temporary flexible-reflective roadway marker tabs detailed on this sheet will be designated Type Y-2 (two amber reflective surfaces with yellow body); Type Y (one amber reflective surface with yellow body); and Type W (one white or silver reflective surface with white body). Additional details may be found on BC(11).
- Tabs shall meet requirements of Departmental Material Specification DMS-8242.
- When dry, tabs shall be visible for a minimum distance of 200 feet during normal daylight hours and when illuminated by automobile low-beam head light at night, unless sight distance is restricted by roadway geometrics.
- No two consecutive tabs nor four tabs per 1000 feet of line shall be missing or fail to meet the visual performance requirements of Note 3.

WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS



PREFABRICATED PAVEMENT MARKINGS

- Temporary Removable Prefabricated Pavement Markings shall meet the requirements of DMS-8241.
- Non-removable Prefabricated Pavement Markings shall meet the requirements of either DMS-8240 "Permanent Prefabricated Pavement Markings" or DMS-8243 "Temporary Construction-Grade Prefabricated Pavement Markings."

RAISED PAVEMENT MARKERS

- All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and DMS-4200.

DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS) & MATERIAL PRODUCER LISTS (MPL)

- DMSs referenced above can be found along with embedded links to their respective MPLs at the following website:

http://www.txdot.gov/business/contractors_consultants/material_specifications/default.htm



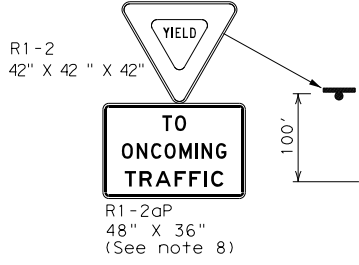
WORK ZONE SHORT TERM PAVEMENT MARKINGS

WZ(STPM)-23

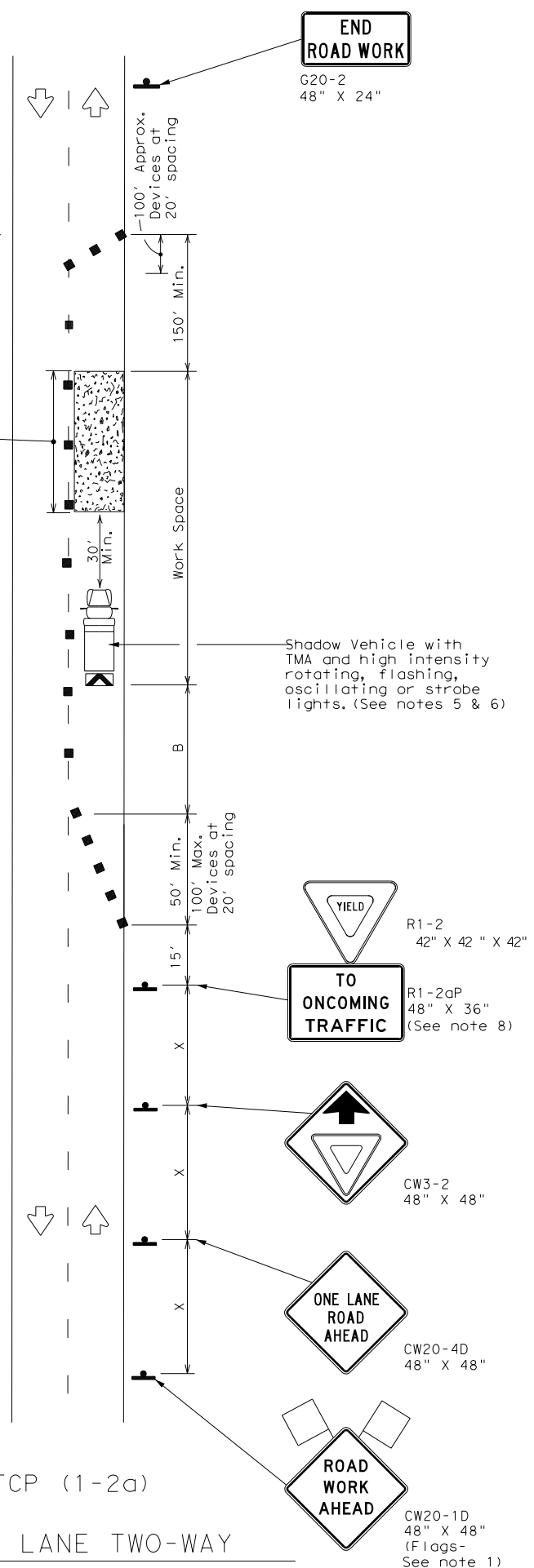
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1-97	2-23	TYL	WOOD	109A	
3-03					

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Warning Sign Sequence in Opposite Direction Same as Below

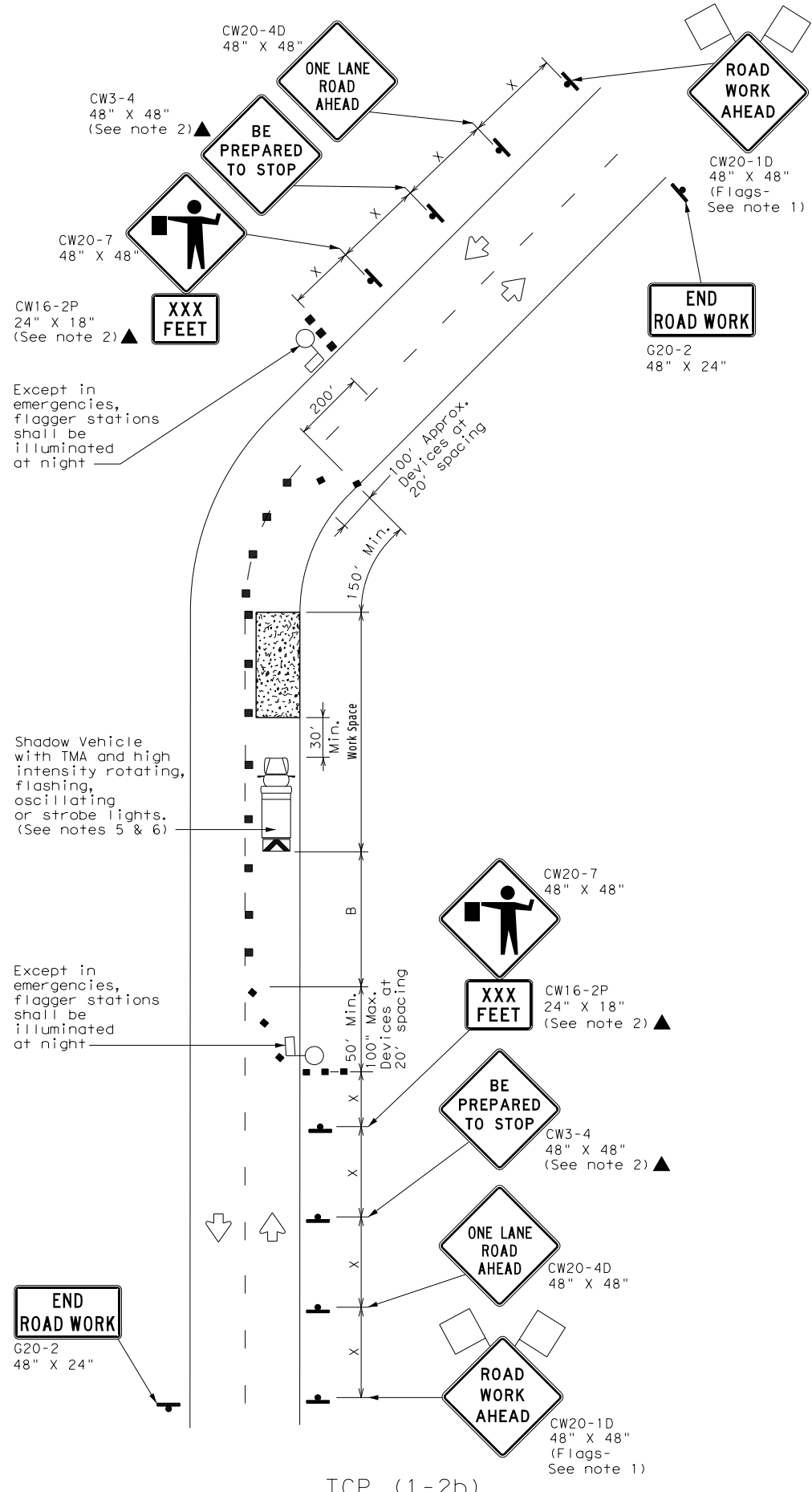


Channelizing devices separate work space from traveled way



TCP (1-2a)
 ONE LANE TWO-WAY
 CONTROL WITH YIELD SIGNS
 (Less than 2000 ADT - See note 7)

END ROAD WORK
 G20-2
 48" X 24"



TCP (1-2b)
 ONE LANE TWO-WAY
 CONTROL WITH FLAGGERS

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

Posted Speed * X	Formula $L = \frac{WS^2}{60}$	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS ² / 60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45		450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

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

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

GENERAL NOTES

- Flags attached to signs where shown are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
 - Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- TCP (1-2a)
- R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
 - R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.
- TCP (1-2b)
- Flaggers should use two-way radios or other methods of communication to control traffic.
 - Length of work space should be based on the ability of flaggers to communicate.
 - If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
 - Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
 - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

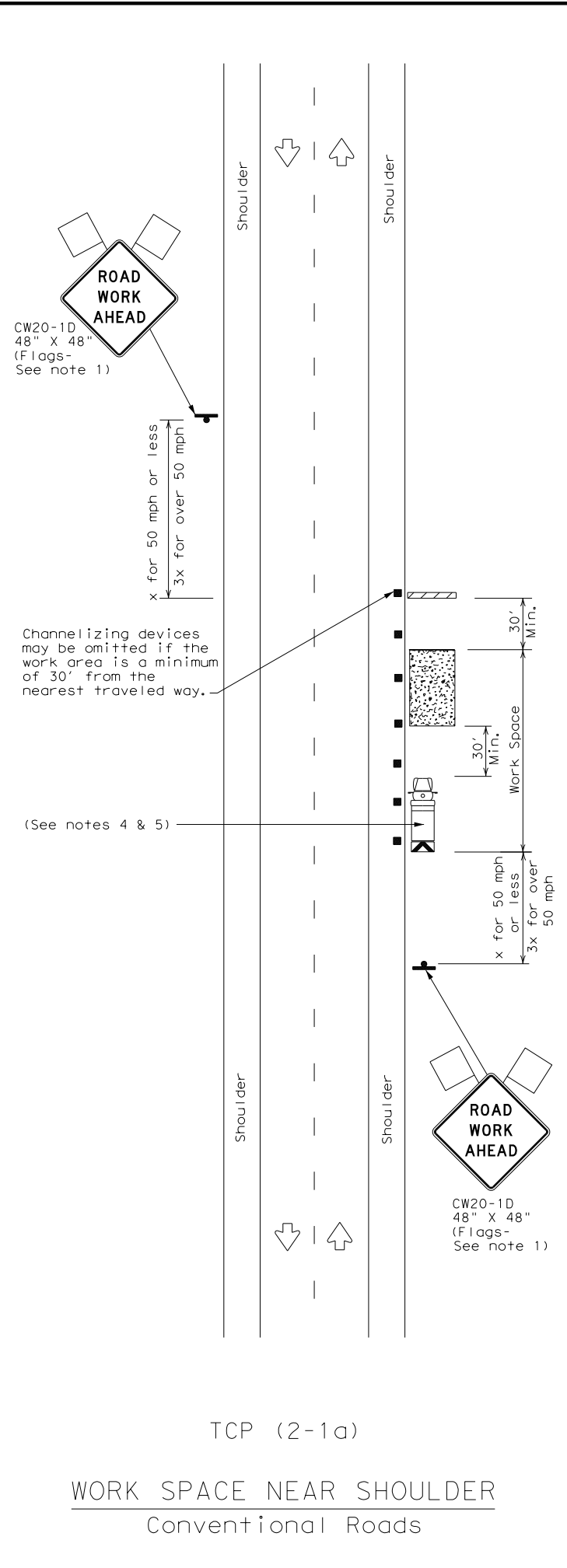


TRAFFIC CONTROL PLAN
 ONE-LANE TWO-WAY
 TRAFFIC CONTROL

TCP (1-2) - 18

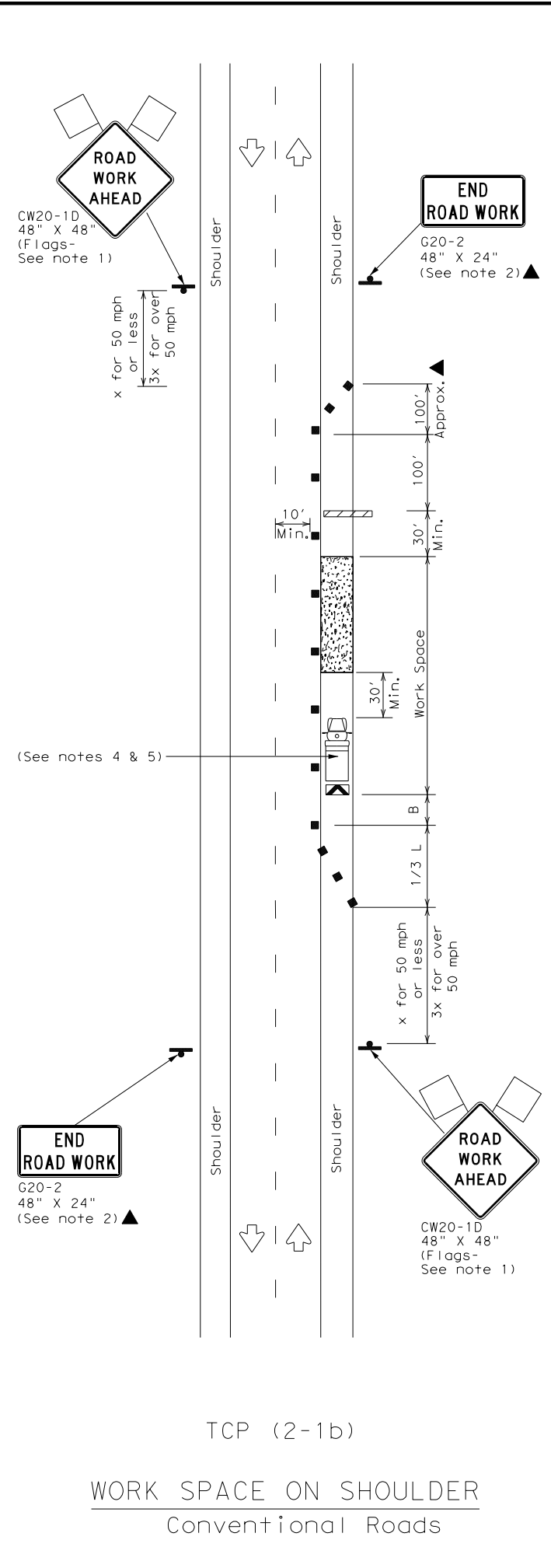
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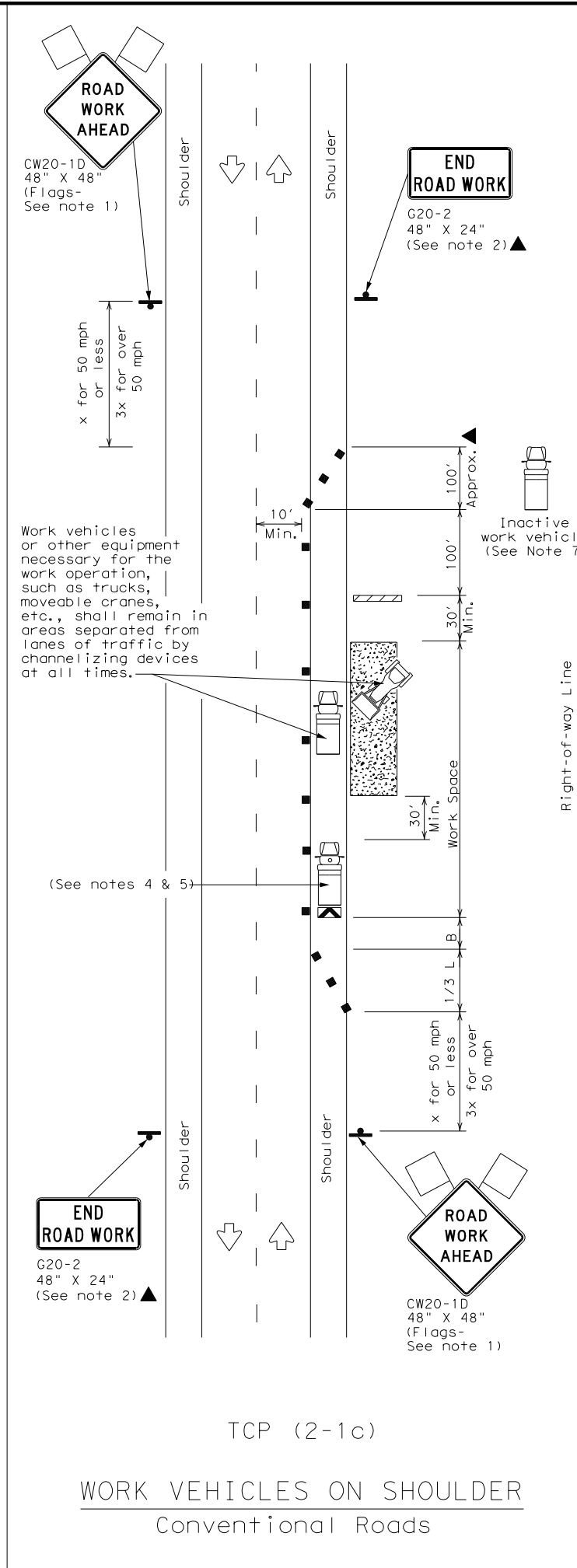
TCP (2-1a)

WORK SPACE NEAR SHOULDER
 Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER
 Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER
 Conventional Roads

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

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

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

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

- GENERAL NOTES
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
 - Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
 - Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
 - See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
 - Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
 - CW21-5 "SHOULDER WORK" signs may be used in place of CW21-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation
 Traffic Operations Division Standard

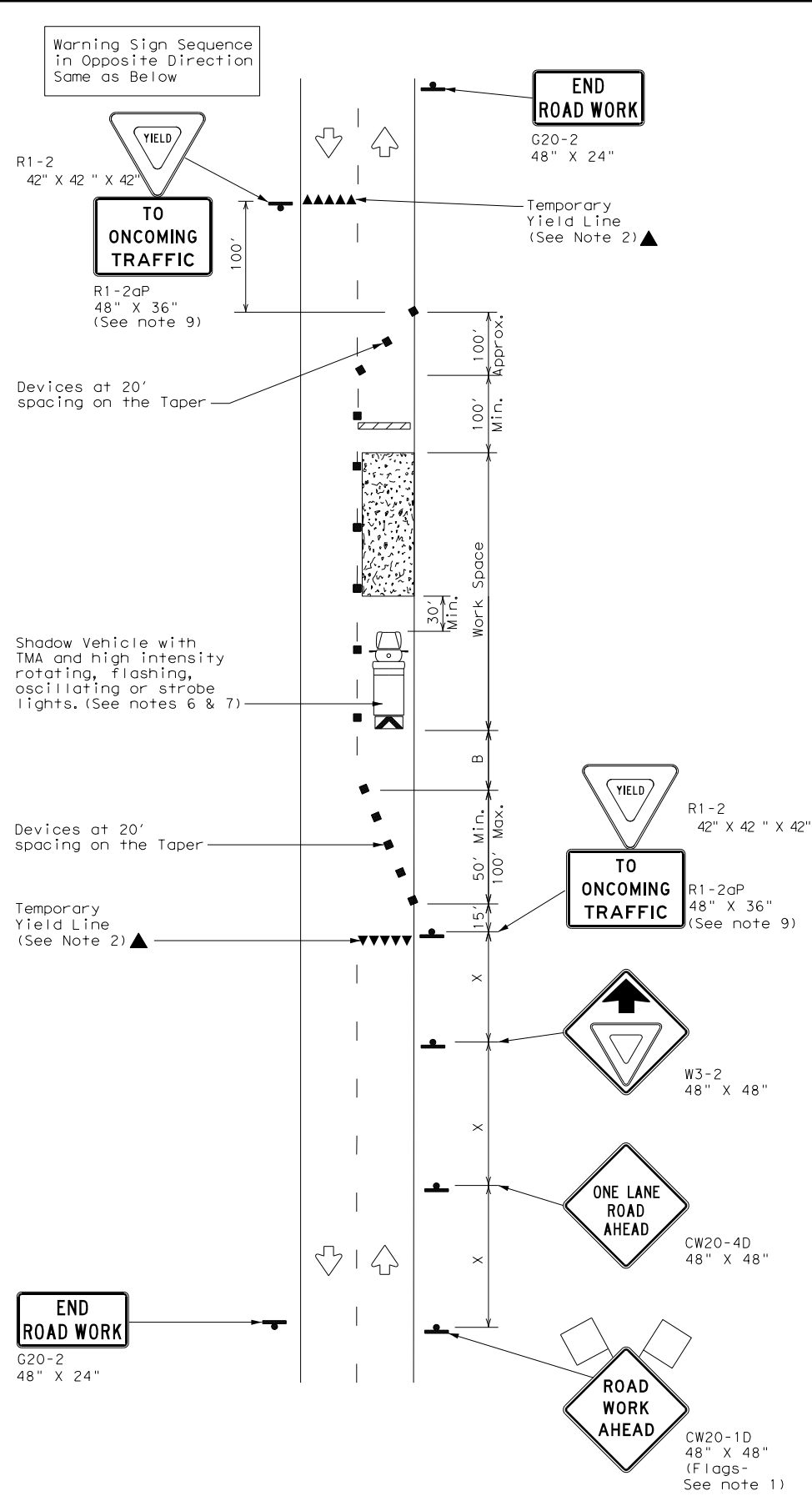
**TRAFFIC CONTROL PLAN
 CONVENTIONAL ROAD
 SHOULDER WORK**

TCP (2-1) - 18

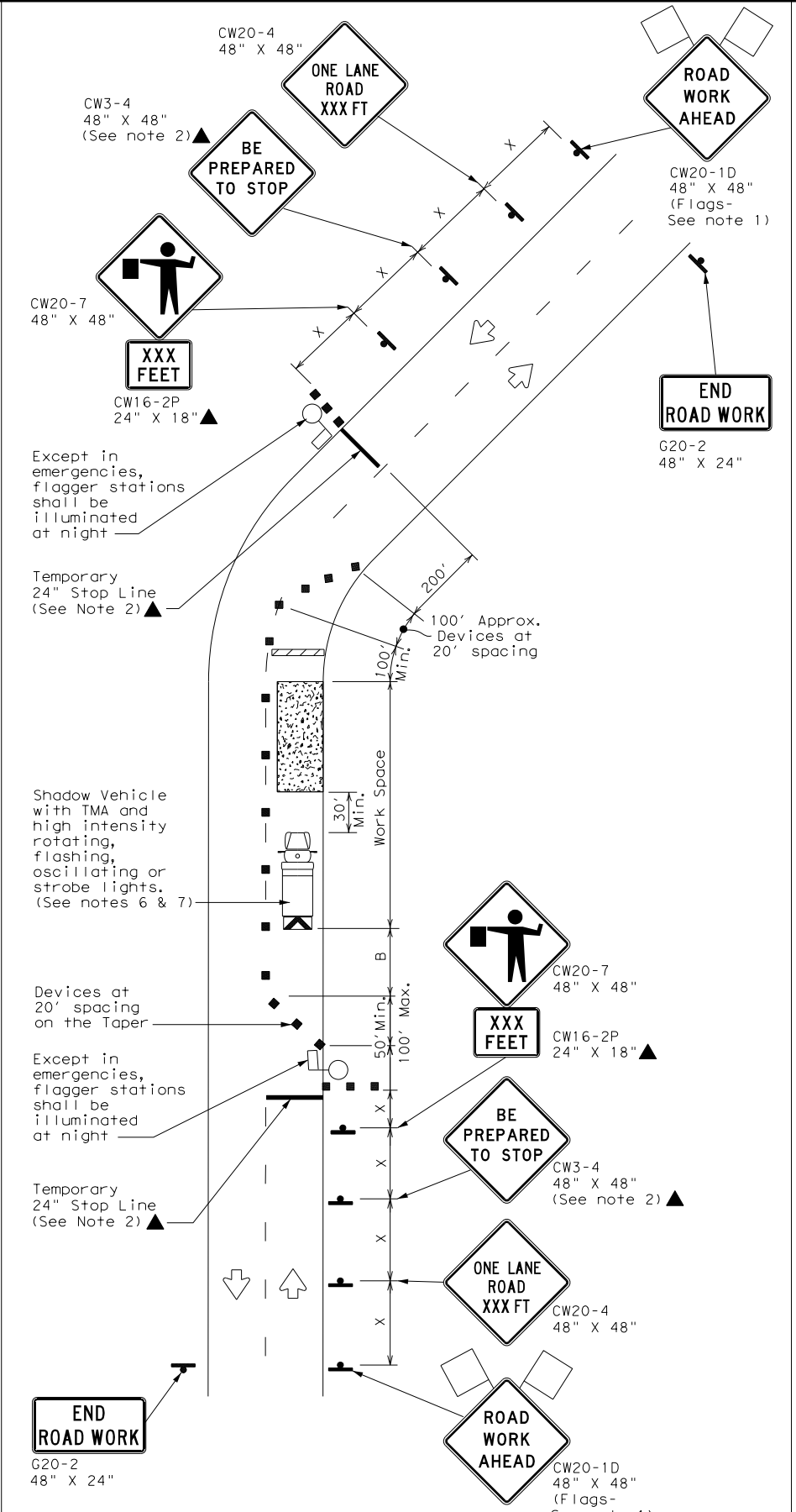
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© TxDOT December 1985	CON:	SECT:	JOB:	HIGHWAY:
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2-94 4-98	DIST:		COUNTY:	SHEET NO.
8-95 2-12	TYL		WOOD	112
1-97 2-18				

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TCP (2-2a)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See Note 9)



TCP (2-2b)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

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

Posted Speed * X	Formula L = WS ² /60	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS ² /60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L = WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	575'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

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

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

GENERAL NOTES

- 1. Flags attached to signs where shown, are REQUIRED.
 - 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - 3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
 - 4. Flaggers should use two-way radios or other methods of communication to control traffic.
 - 5. Length of work space should be based on the ability of flaggers to communicate.
 - 6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - 7. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-2a)
- 8. The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
 - 9. The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.
- TCP (2-2b)
- 10. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
 - 11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
 - 12. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

Texas Department of Transportation
Traffic Operations Division Standard

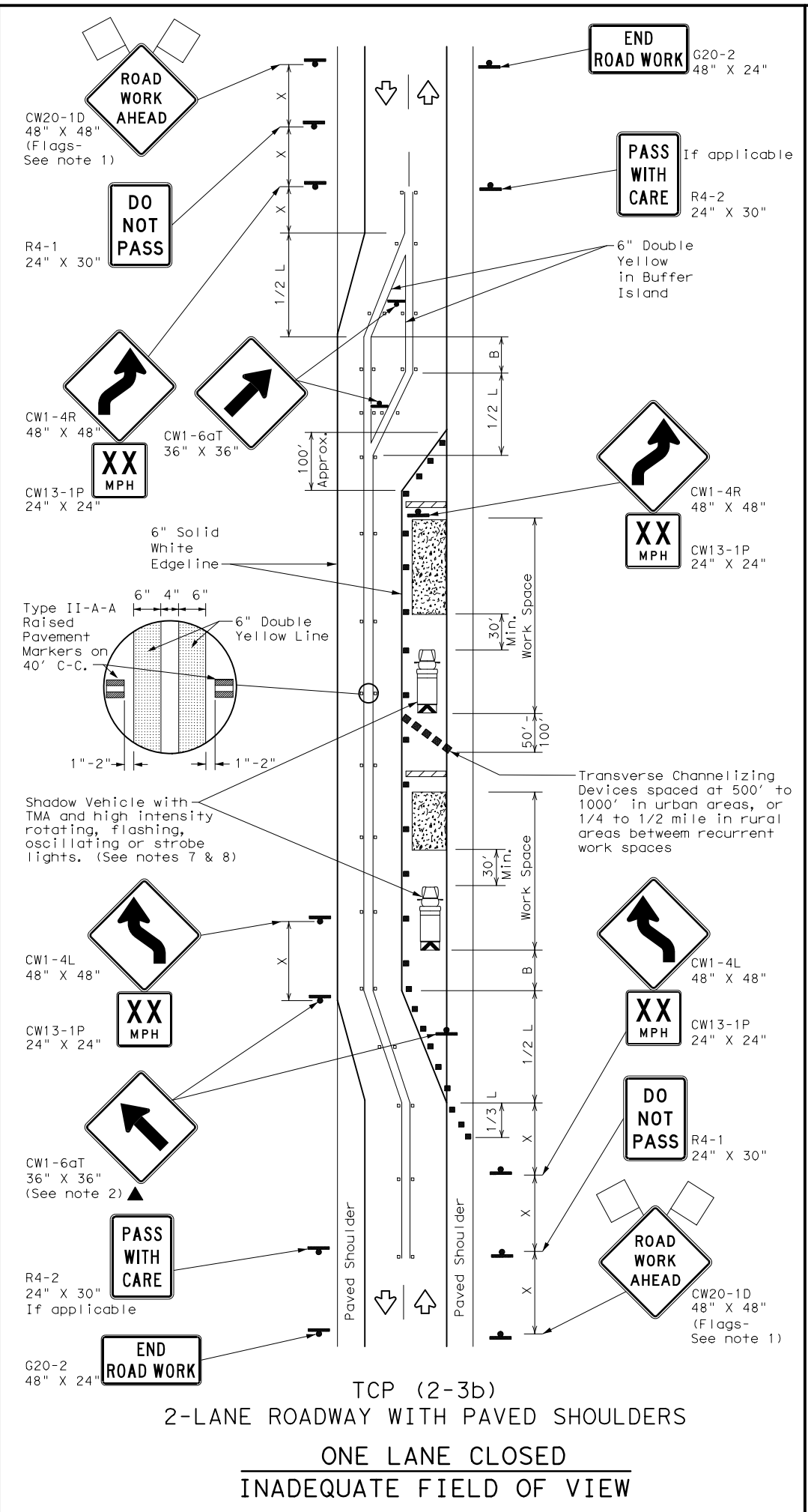
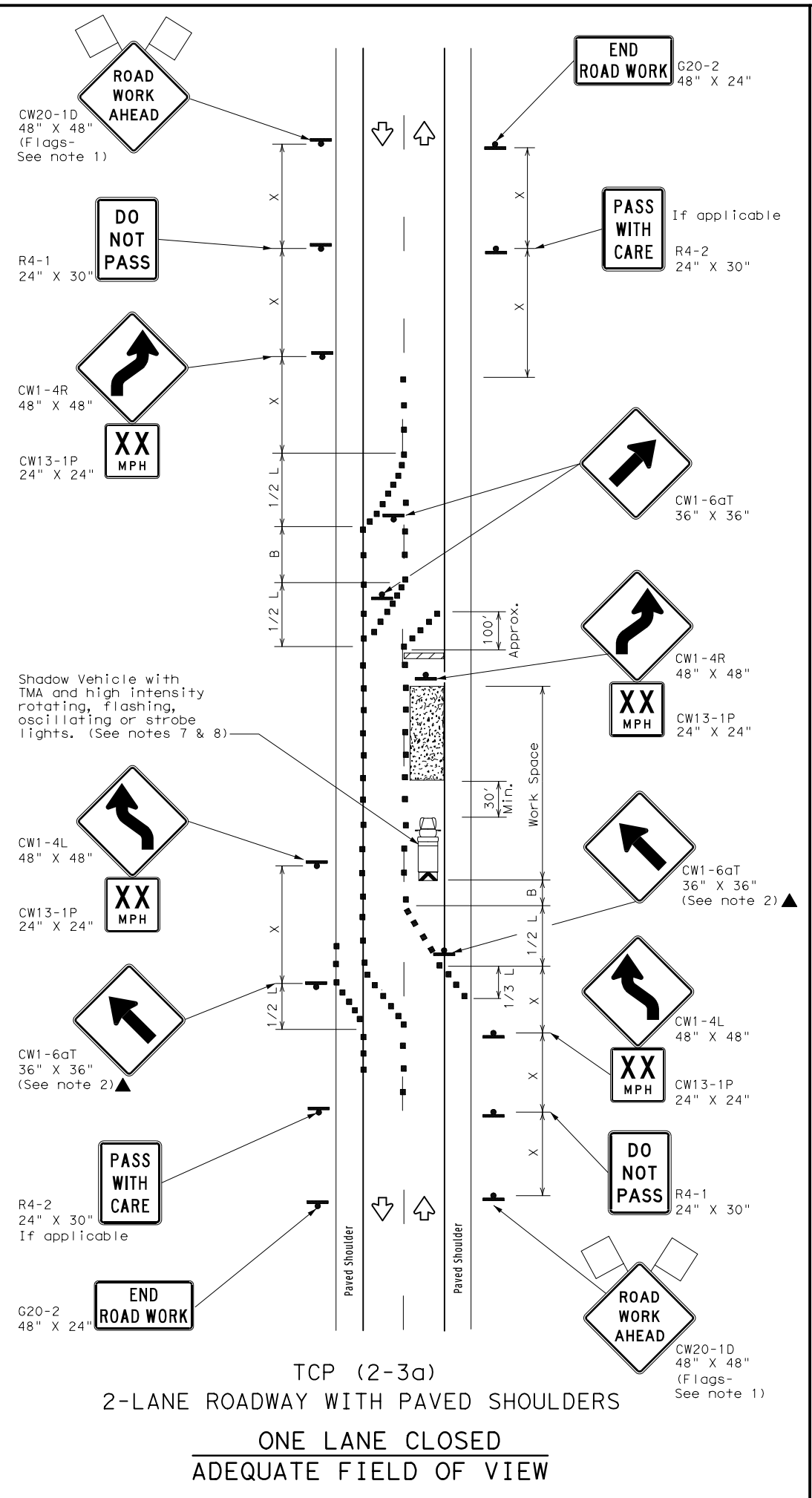
TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

TCP (2-2) - 18

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© TxDOT	December 1985	CON:	SECT:	JOB:	HIGHWAY:
REVISIONS		0203	05	039	US 69
8-95	3-03				
1-97	2-12				
4-98	2-18				
		DIST:	COUNTY:		SHEET NO.
		TYL	WOOD		113

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LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Raised Pavement Markers Ty II-AA
	Sign		Traffic Flow
	Flag		Flagger

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

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

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
			✓	✓
				TCP (2-3b) ONLY

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - When work space will be in place less than three days existing pavement markings may remain in place. Channelizing devices shall be used to separate traffic.
 - Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Flagger should be positioned at end of traffic queue.
 - The R4-1 "DO NOT PASS," R4-2 "PASS WITH CARE" and construction regulatory speed zone signs may be installed within CW20-1D "ROAD WORK AHEAD" signs. Proper spacing of signs shall be maintained.
 - Conflicting pavement marking shall be removed for long term projects.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-3a)**
- Conflicting pavement markings shall be removed for long-term projects. For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter device spacing is intended for the area of the conflicting markings, not the entire work zone.

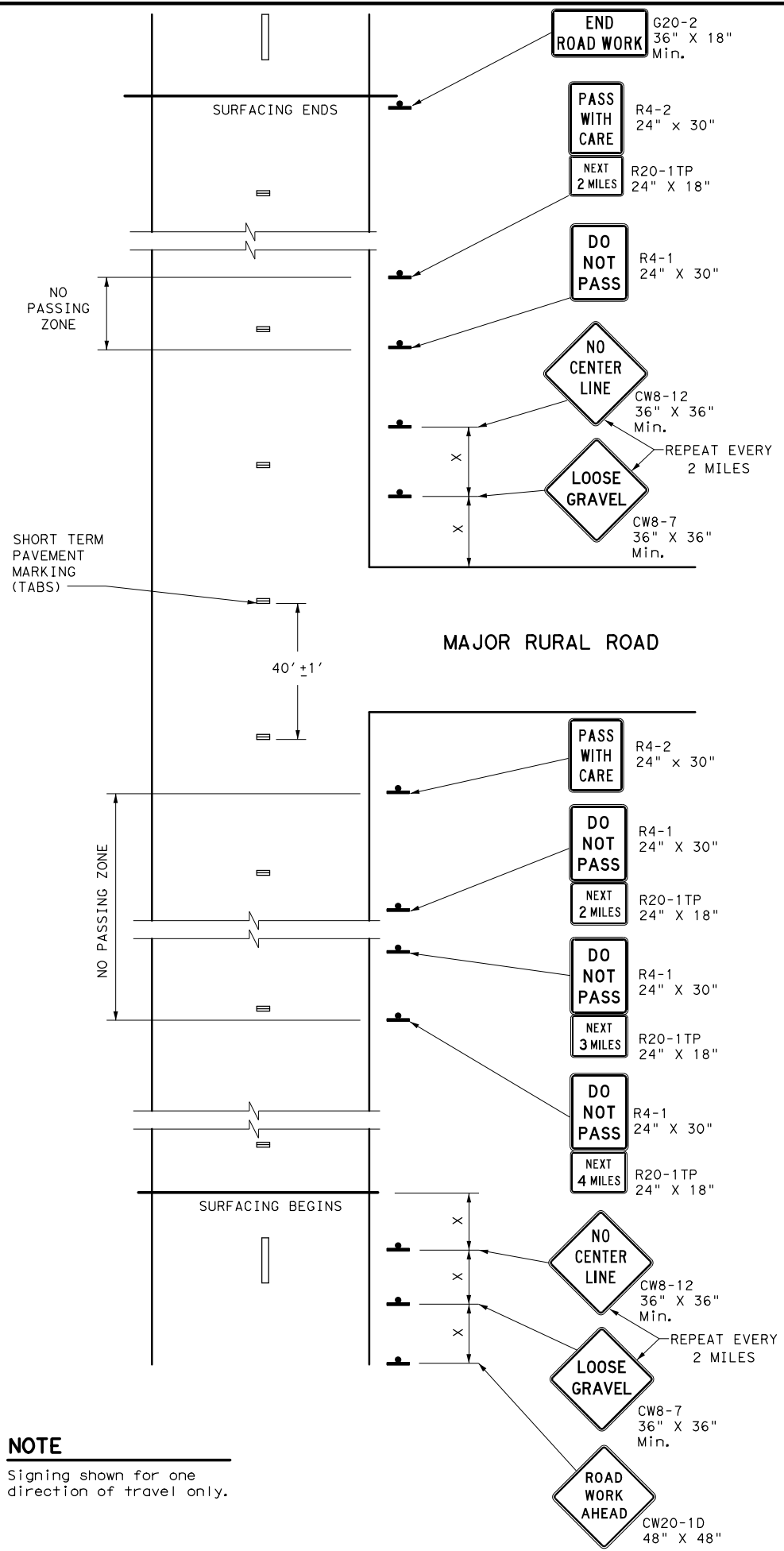


**TRAFFIC CONTROL PLAN
 TRAFFIC SHIFTS ON
 TWO-LANE ROADS**

TCP (2-3) -23

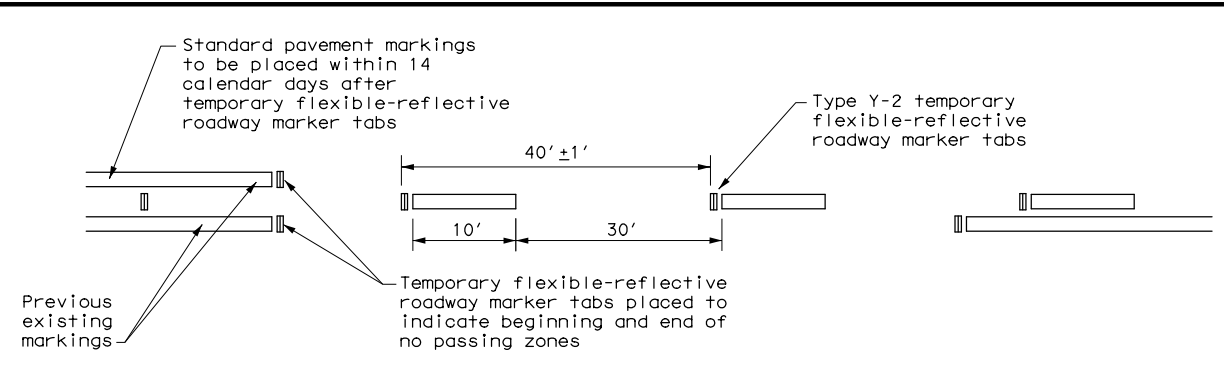
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8-95	3-03	4-23			
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NOTE
 Signing shown for one direction of travel only.

NO PASSING ZONES ON TWO-LANE TWO-WAY ROADS



TABS ON CENTERLINES OF TWO-LANE TWO-WAY ROADS
 For seal coat, micro-surface or similar operations

"DO NOT PASS" SIGN (R4-1) and NO-PASSING ZONES

- A. Prior to the beginning of construction, all currently striped no-passing zones shall be signed with the DO NOT PASS (R4-1) signs and PASS WITH CARE (R4-2) signs placed at the beginning and end of each zone for each direction of travel except as otherwise provided herein. Signs marking these individual no-passing zones need not be covered prior to construction if the signs supplement the existing pavement markings.
- B. At the discretion of the Engineer, in areas of numerous no-passing zones, several zones may be combined as a single zone. If passing is to be prohibited over one or more lengthy sections, a DO NOT PASS sign and a NEXT XX MILES (R20-1TP) plaque may be used at the beginning of such zones. The DO NOT PASS sign and the NEXT XX MILES plaque should be repeated every mile to the end of the no-passing zone. In areas where there is considerable distance between no-passing zones, the end of the no-passing zone may be signed with a PASS WITH CARE sign and a NEXT XX MILES plaque.
- C. Depending on traffic volumes and length of sections, it may be desirable to prohibit passing throughout the project to prevent damage to windshield and lights. The DO NOT PASS sign and NEXT XX MILES plaque should be used and repeated as often as necessary for this purpose. Where several existing zones are to be combined into one individual no-passing zone, the sign at the beginning of the zone should be covered until the surfacing operation has passed this location so as not to have the DO NOT PASS sign conflict with the existing pavement markings. Also, unless one days operation completes the entire length of such combined zones, appropriate DO NOT PASS and PASS WITH CARE signs should be placed at the beginning and end of the no-passing zones where the surfacing operation has stopped for the day.
- D. R4-1 and R4-2 are to remain in place until standard pavement markings are installed.

"NO CENTER LINE" SIGN (CW8-12)

- A. Center line markings are yellow pavement markings that delineate the separation of travel lanes that have opposite directions of travel on a roadway. Divided highways do not typically have center line markings.
- B. At the time construction activity obliterates the existing center line markings (low volume roads may not have an existing centerline), a NO CENTER LINE (CW8-12) sign should be erected at the beginning of the work area, at approximately 2 mile intervals within the work area, beyond major intersections and other locations deemed necessary by the Engineer.
- C. The NO CENTER LINE signs are to remain in place until standard pavement markings are installed.

"LOOSE GRAVEL" SIGN (CW8-7)

- A. When construction begins, a LOOSE GRAVEL (CW8-7) sign should be erected at each end of the work area and repeated at intervals of approximately 2 miles in rural areas and closer in urban areas.
- B. The LOOSE GRAVEL signs are to remain in place until the condition no longer exists.

PAVEMENT MARKINGS

- A. Temporary markings for surfacing projects shall be Temporary Flexible-reflective Roadway Marker Tabs unless otherwise approved by the Engineer. Tabs are to be installed to provide true alignment for striping crews or as directed by the Engineer. Tabs will be placed at the spacing indicated. Tabs should be applied to the pavement no more than two (2) days before the surfacing is applied. After the surfacing is rolled and swept, the cover over the reflective strip shall be removed.
- B. Tabs shall not be used to simulate edge lines.
- C. Tab placement for overlay/inlay operations shall be as shown on the WZ(STPM) standard sheet.

COORDINATION OF SIGN LOCATIONS

- A. The location of warning signs at the beginning and end of a work area are to be coordinated with other signing typically shown on the Barricade and Construction Standards for project limits to ensure adequate sign spacing.
- B. Where possible the ROAD WORK AHEAD (CW20-1D), LOOSE GRAVEL (CW8-7), and NO CENTER LINE (CW8-12) signs should be placed in the sequence shown following the OBEY WARNING SIGNS STATE LAW (R20-3T) and the TRAFFIC FINES DOUBLE (R20-5T) sign, and one "X" sign spacing prior to the CONTRACTOR (G20-6T) sign typically located at or near the limits of surfacing. LOOSE GRAVEL and NO CENTER LINE signs will then be repeated as described above.

Posted Speed *	Minimum Sign Spacing "X" Distance
30	120'
35	160'
40	240'
45	320'
50	400'
55	500'
60	600'
65	700'
70	800'
75	900'

* Conventional Roads Only

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

GENERAL NOTES

1. The traffic control devices detailed on this sheet will be furnished and erected as directed by the Engineer on sections of roadway where tabs must be placed prior to the surfacing operation which will cover or obliterate the existing pavement markings.
2. The devices shown on this sheet are to be used to supplement those required by the BC Standards or others required elsewhere in the plans.
3. Signs shall be erected as detailed on the BC Standards or the Compliant Work Zone Traffic Control Devices List (CWZTCD) on supports approved for Long-Term / Intermediate-Term Work Zone Sign Supports.
4. When surfacing operations take place on divided highways, freeways or expressways, the size of diamond shaped construction warning signs shall be 48" x 48".
5. Signs on divided highways, freeways and expressways will be placed on both right and left sides of the roadway based on roadway conditions as directed by the Engineer.



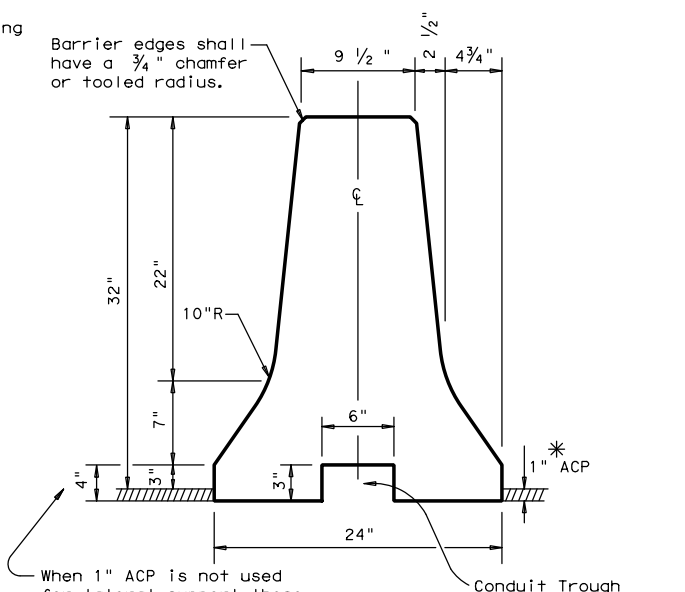
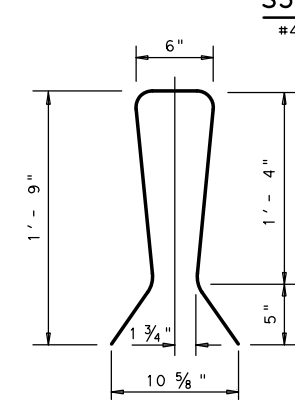
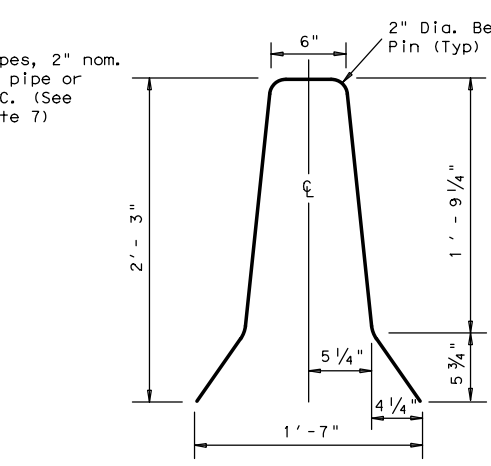
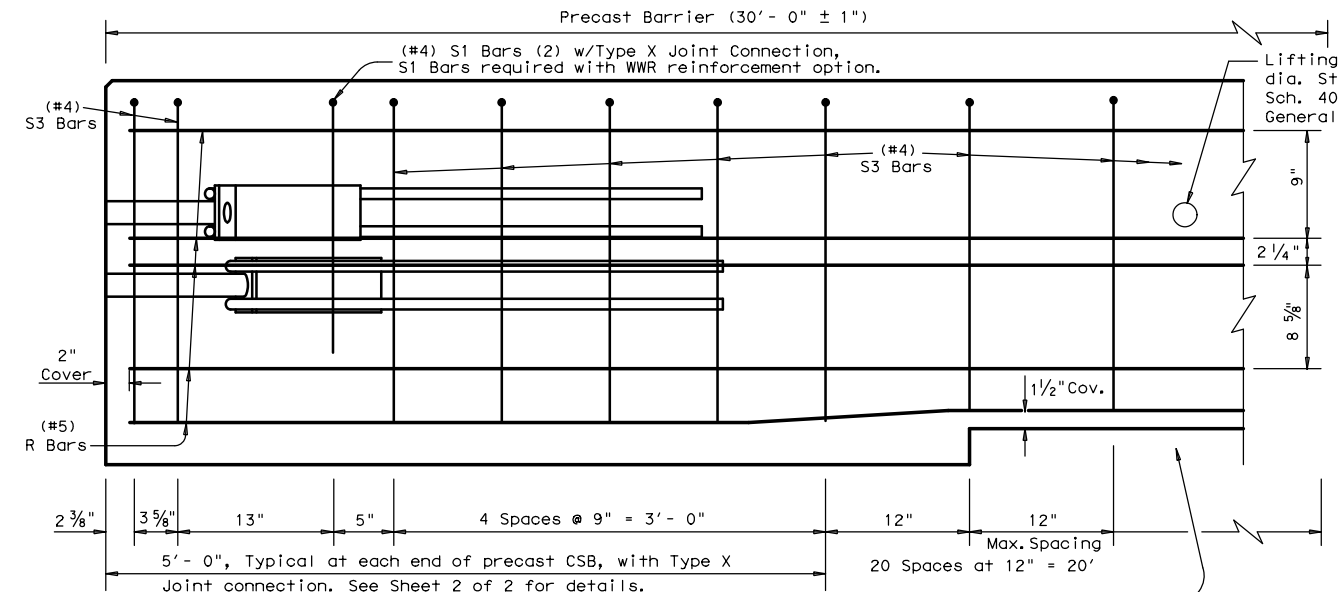
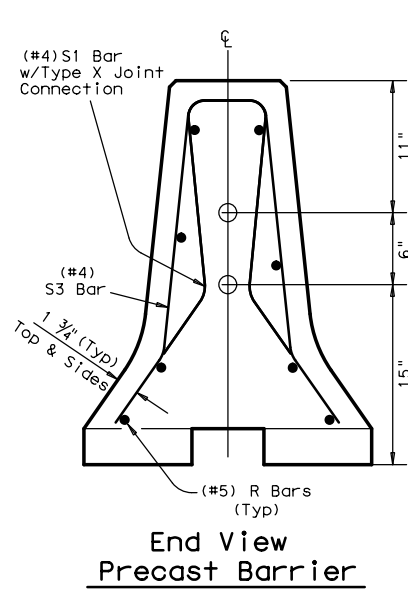
TRAFFIC CONTROL DETAILS FOR SURFACING OPERATIONS

TCP (7-1) - 13

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© TxDOT	March 1991	CONT	SECT	JOB	HIGHWAY				
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1-97	7-13	TYL	WOOD	117					

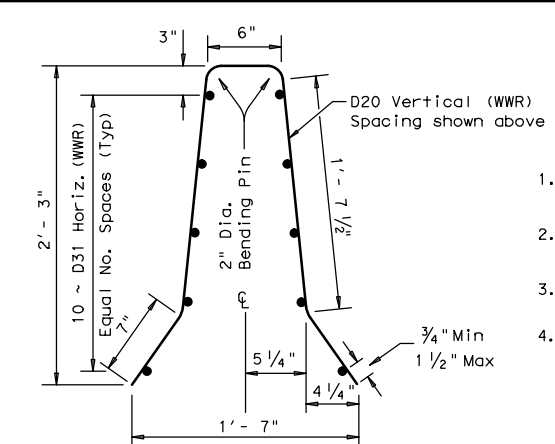
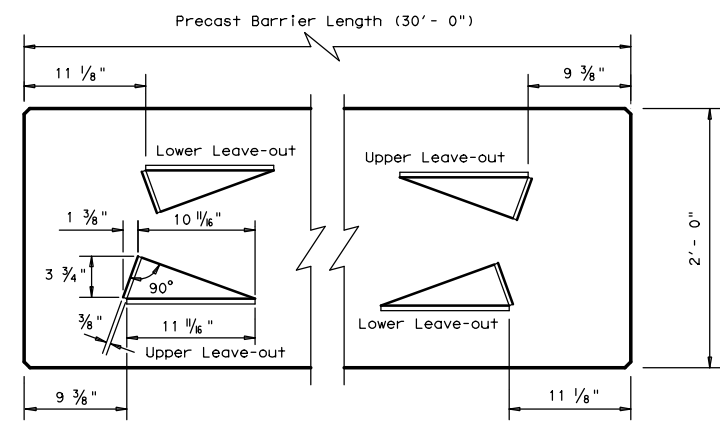
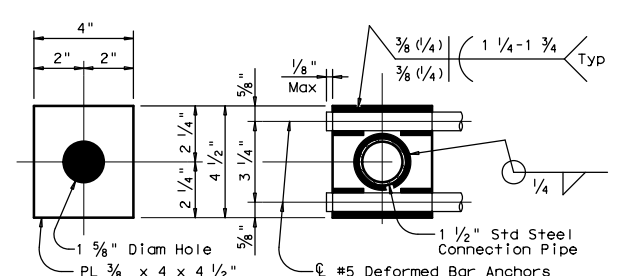
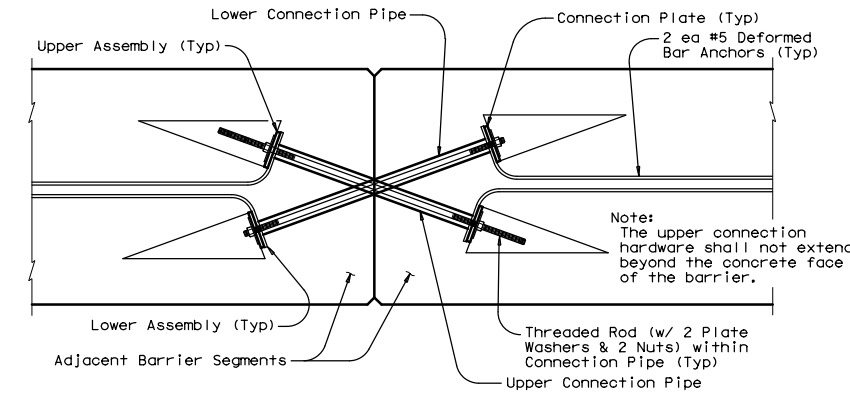
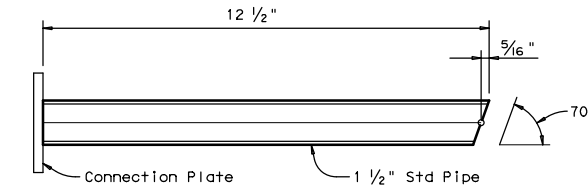
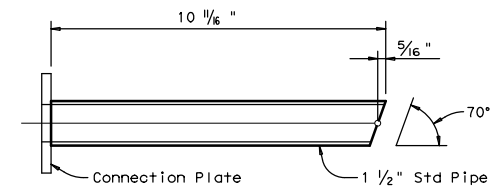
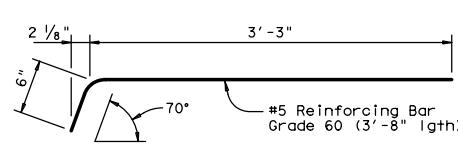
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GENERAL NOTES

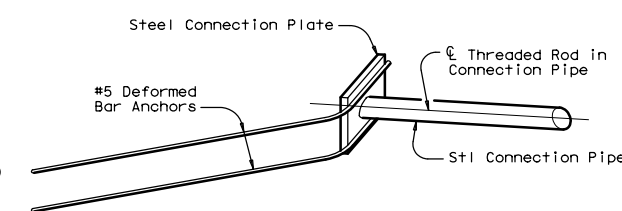
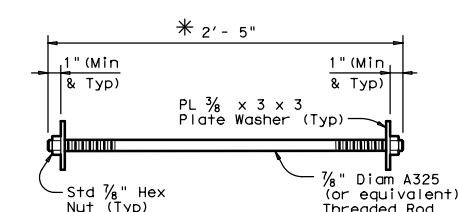
- Concrete shall be Class H with a minimum compressive strength of 3,600 psi.
- Where used, rebar reinforcement shall be Grade 60 and conform to ASTM A615.
- Precast barrier length shall be 30 ft. unless otherwise specified on the plans.
- All precast barrier edges shall have a 3/4" chamfer or toolled radius.
- All concrete, reinforcement, joint connection systems, grout etc. as shown, are considered as part of the barrier payment.
- All steel assemblies for joint shall be galvanized after fabrication in accordance with Item 445, "Galvanizing."
- Regardless of the method of handling, barrier lifting points shall be approx. 7.5 feet from the ends of the barrier. Lifting devices and attachments to barrier sections shall be approved by the Engineer.
- Surface finishing and grouting (where required) shall be two parts sand and one part cement with enough water to make the mixture plastic. Grouting shall be done in a manner that will assure a smooth surface. Surface finishing shall be considered subsidiary to the various bid items involved.
- Conduit trough when required shall be shown elsewhere on the plans, or as directed by the Engineer.



Welded Wire Reinforcement (WWR) Option for Bars R and S3

(WWR) General Notes

- Deformed Welded Wire Reinforcement (WWR) shall conform to ASTM A497.
- Welded wire cage may be cut or bent to accommodate the Type X joint connection and drainage slots, as directed by the Engineer.
- All reinforcement shall comply with Item 440, "Reinforcing Steel."
- Combinations of reinforcing steel and WWR will be permitted, as directed by the Engineer. The dimension from the end of the barrier section to the first wire shall not exceed 3".



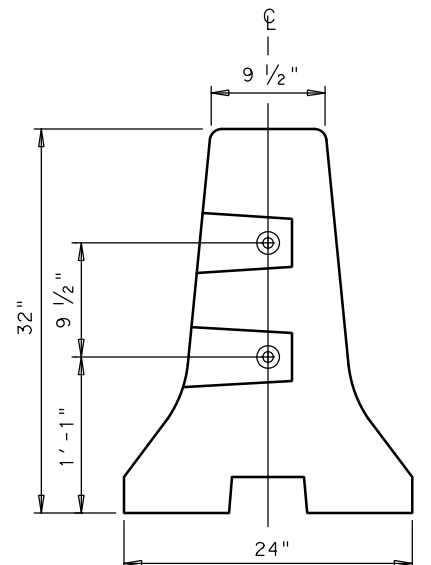
Weight of one Precast 30 ft. (CSB) segment = Approx. 6.5 Tons or 440 lbs per ft.

SHEET 1 OF 2

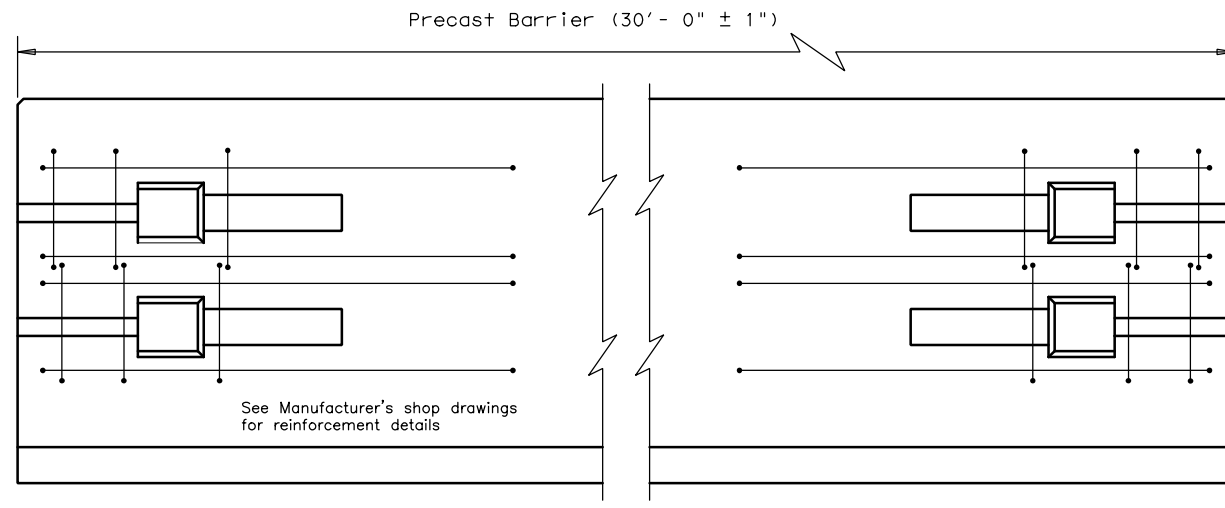
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PRECAST BARRIER (TYPE 1)			
CSB(1)-10			
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© TxDOT December 2010	CONT	SECT	JOB
REVISIONS	0203	05	039
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	TYL	WOOD	118

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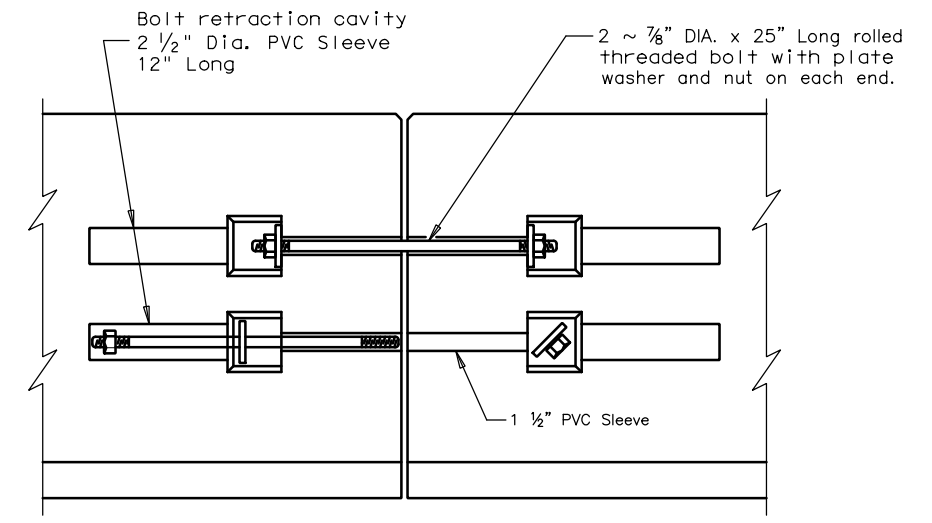
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END VIEW (CSB) QUICK-BOLT
 QUICK-BOLT POCKET LOCATIONS

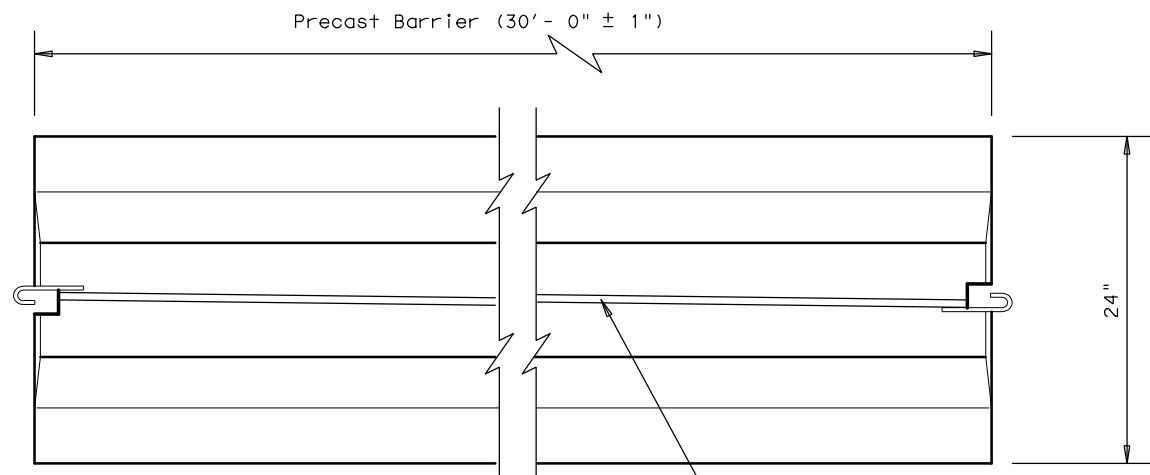


ELEVATION (CSB) QUICK-BOLT
 See Manufacturer's shop drawing for additional details

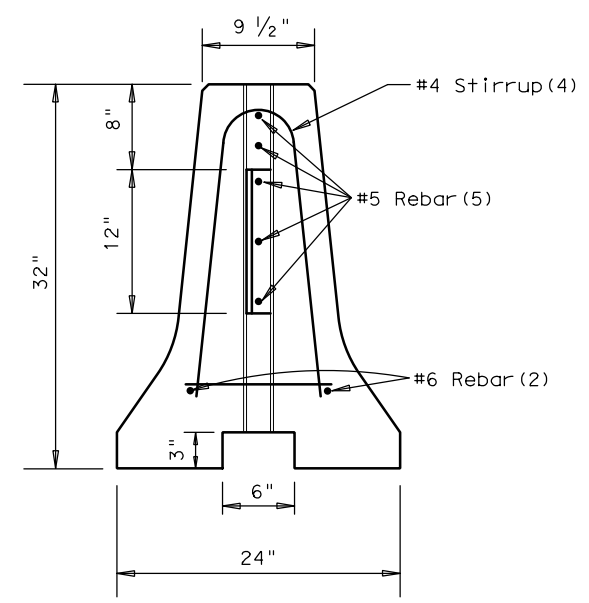


ELEVATION VIEW SHOWING JOINT CONNECTION
"QUICK-BOLT"

Joint Connection (Type Q)

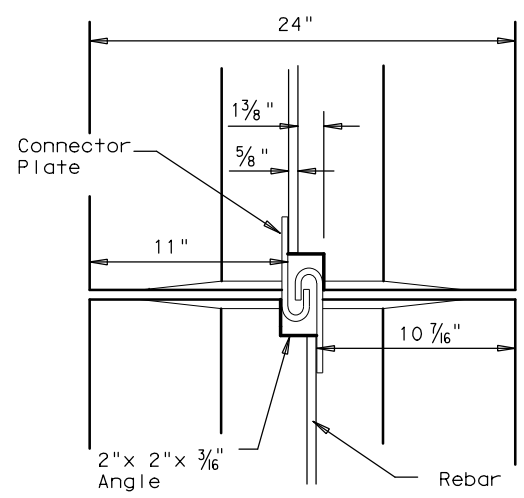


TOP VIEW
PRECAST (CSB) WITH J-J HOOKS
 See Manufacturer's shop drawing for additional details



END VIEW
J-J HOOK CONNECTION

Joint Connection (Type J)



VIEW FROM ABOVE
J-J HOOK CONNECTION

Proprietary Joint Connections (CSB)

Two proprietary joint connections are acceptable as alternates to the (Type X) connection shown, here on. These joint connections types are:

J-J Hooks by Easi-Set Industries, (800)547-4045
 Quick-Bolt by Bexar Concrete, (210)497-3773

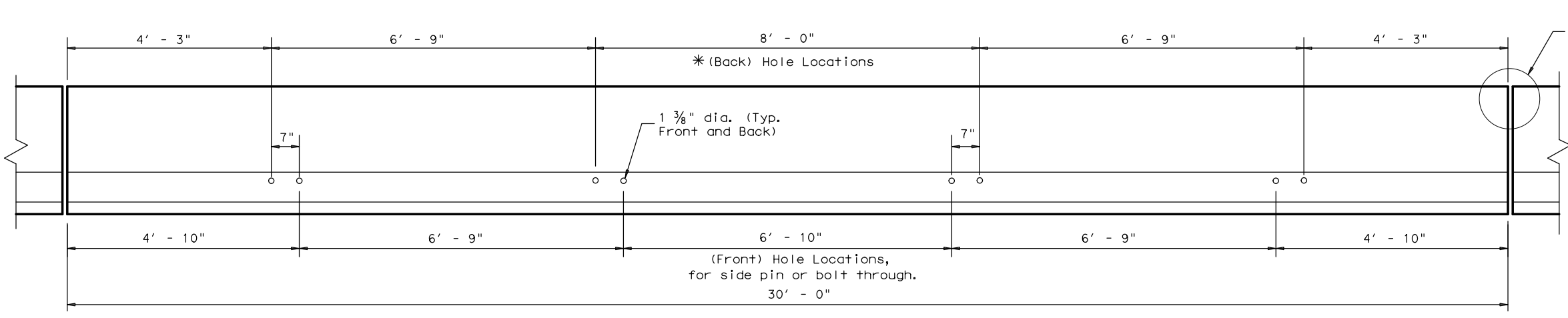
If one of these connection systems are exclusively specified in the plans, prior approval for sole source use must be obtained. Details of the connection components and barrier reinforcement for these systems, will be shown on the manufacturer's shop drawing(s) furnished to the Engineer.

SHEET 2 OF 2

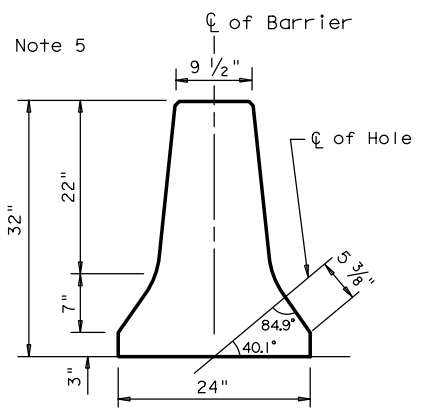
		Design Division Standard	
CONCRETE SAFETY BARRIER (F-SHAPE) PRECAST BARRIER (TYPE 1) CSB(1)-10			
FILE: csb110.dgn	DN: TxDOT	CK: AM	DW: BD
© TxDOT December 2010	CONT SECT	JOB	HIGHWAY
REVISIONS	0203 05	039	US 69
	DIST	COUNTY	SHEET NO.
	TYL	WOOD	119

DATE: 12/11/2023
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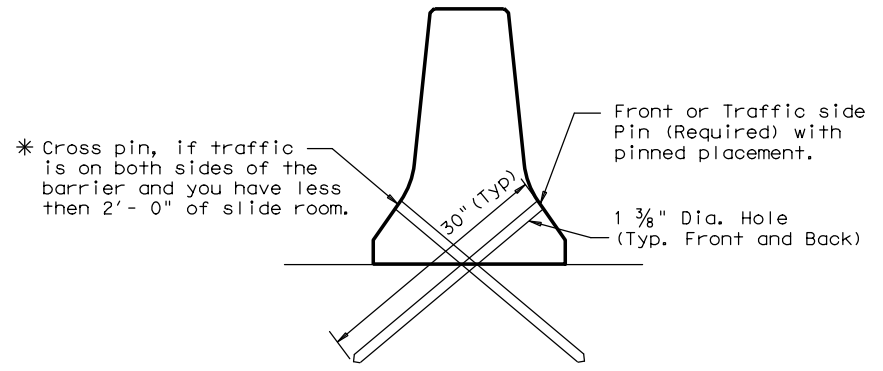
DETAIL 1



HOLE LOCATION DETAIL

GENERAL NOTES

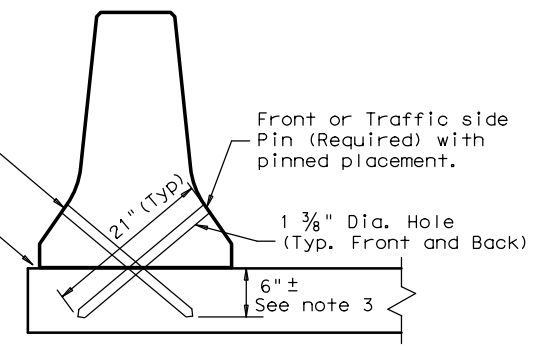
1. These details provide a method of laterally restraining precast concrete barrier to limit deflections under normally expected passenger vehicle impacts. These details are intended for use in work zones, primarily on bridge decks, or pavement where temporary barrier must be placed less than 2 ft. from the longitudinal edge of the deck or dropoff and parallel to the direction of travel. Other applications of these details are acceptable as directed by the Engineer.
2. Each precast concrete barrier section shall have a minimum of four or total of eight 1 3/8" ID, holes formed or cored through the barrier. The center lines of the holes are shown in the hole location detail. If rebar is encountered, the entry point may be shifted 2" plus or minus longitudinally along the barrier. The eight holes are spaced along the length of the barrier as shown in Detail 1.
3. The drilling of the travel surface is accomplished by placing the pre-drilled barrier section on the travel surface in the desired position. Then the hole is drilled with the bit passing through the hole in the barrier. The bit is to be inserted into the hole in the barrier so that the travel surface is drilled to a point which is slightly more than the pin length.
4. Note that steel washers have been welded to the top of the steel pins, to aid in the removal of the pins, when the barrier is removed.
5. See CSB(1) standard sheets for reinforcement requirements and joint connection types.
6. The forming or coring of holes in the barrier, drilling of holes in bridge deck or pavement, fabrication and materials for the 1 1/4" pins, installation of pins, and any repair to the barrier shall be considered as subsidiary to the barrier bid items.
7. The barrier and travel surface will be repaired as directed by the Engineer in accordance with Item 429, "Concrete Structure Repair."
8. Provide galvanized bolts, nuts, and plate washers. All steel pins shall be galvanized after fabrication in accordance with Item 445, "Galvanizing."
9. Weight of barrier is approx. 440 lbs per foot.



DETAIL 2

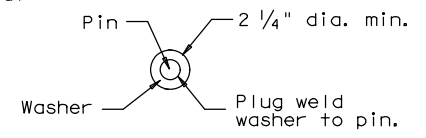
Placement on (ACP)
 Asphalt Concrete Pavement
 or Treated Base Material
 (30" Pin required)

* Cross pin, if traffic is on both sides of the barrier and you have less than 2'-0" of slide room.
 Cross pin recommended but not required if less than 2'-0" on Bridge Decks. (See General note 1)



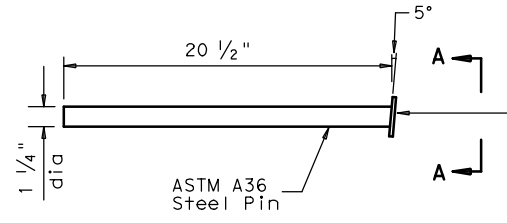
DETAIL 3

Bridge Deck or CRCP
 (21" pin required)

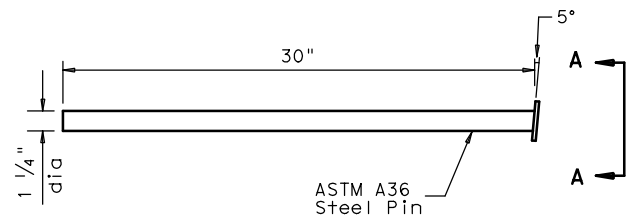


VIEW A-A

CORE DRILLING EXISTING BARRIER
 Core drilling existing concrete barrier is permitted. Holes shall be drilled with coring or masonry drilling type equipment. Percussion (star) drilling shall not be used. A special drill bit (to cut through existing reinforcing) will likely be required. Spalls in the concrete exceeding 1/2" shall be patched.



(21") PIN DETAIL
 See Detail 3

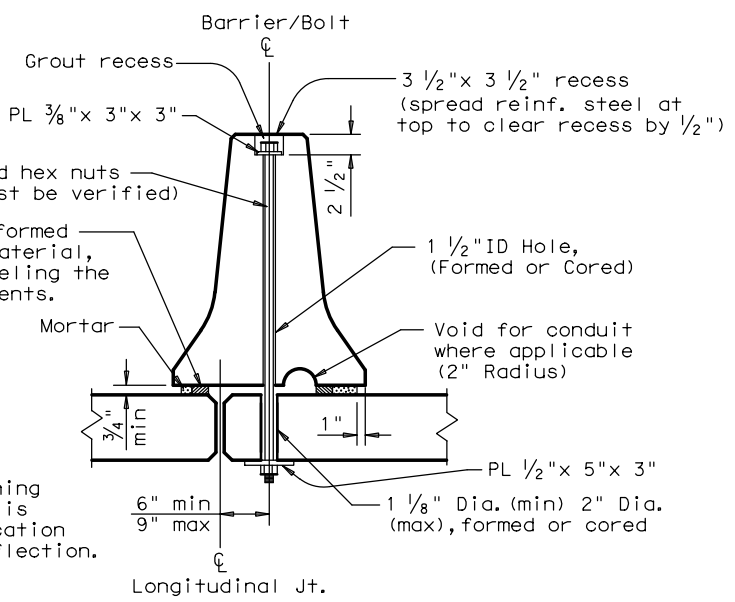


(30") PIN DETAIL
 See Detail 2

Note:
 The "Bolt Through" method of pinning precast barrier on a bridge deck, is primarily used in a permanent location that requires limited barrier deflection.

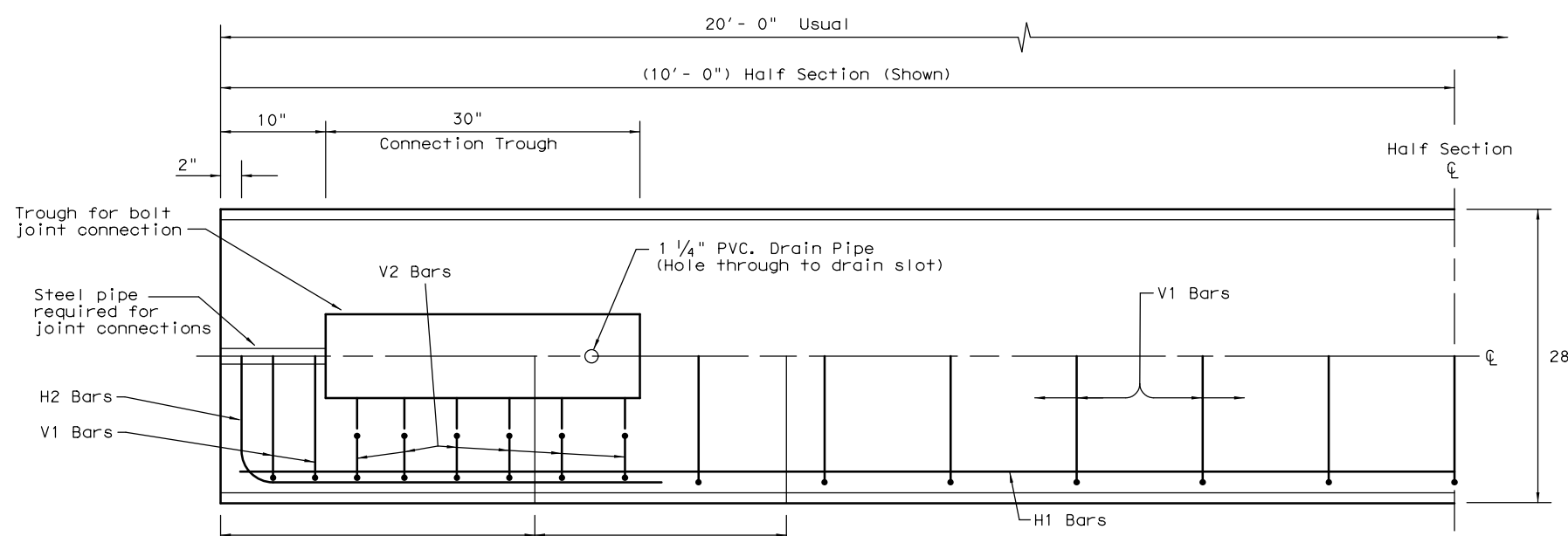
PRECAST CSB (BOLT THROUGH) PLACEMENT OVER LONGITUDINAL EXPANSION JOINT

For bolt through locations, use the (Front) hole locations shown on Detail 1.

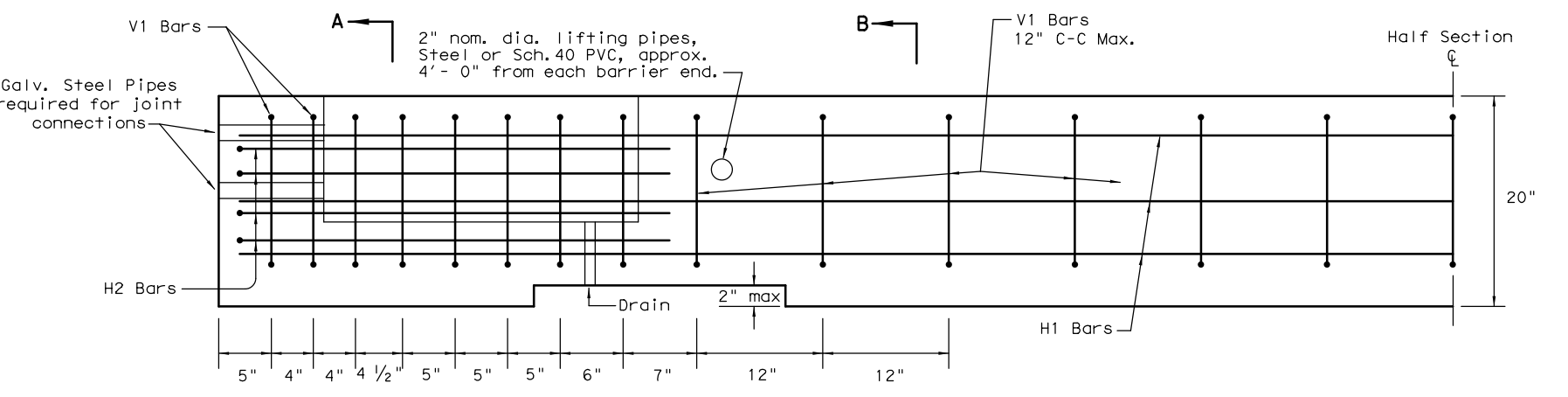


		Design Division Standard	
CONCRETE SAFETY BARRIER (F-SHAPE) PRECAST BARRIER (TYPE 1) PINNED PLACEMENT CSB(7)-10			
FILE: csb710.dgn	DN: TxDOT	CK: AM	DW: BD
© TxDOT December 2010	CONT: 0203	SECT: 05	JOB: 039
REVISIONS			HIGHWAY: US 69
	DIST: TYL	COUNTY: WOOD	SHEET NO.: 120

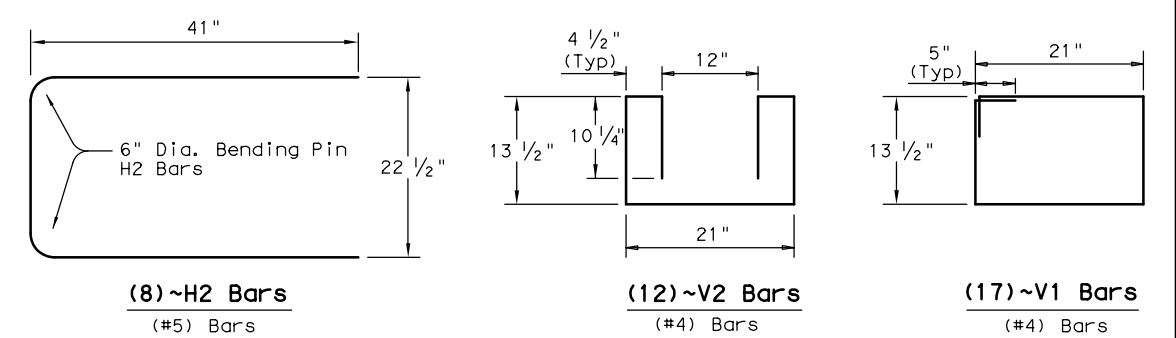
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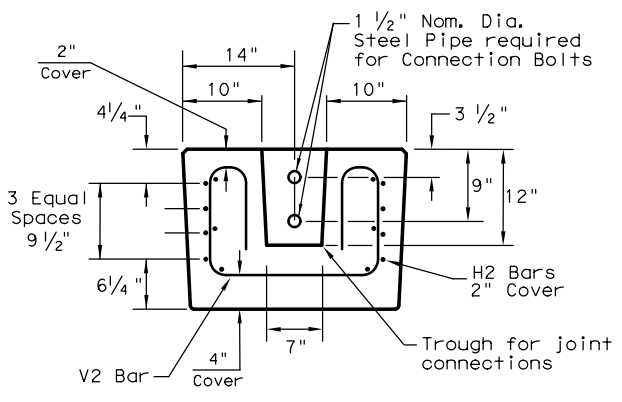
PLAN
(TYPE 1) BARRIER SEGMENT
 (SYMMETRICAL ABOUT CENTER LINES)
 NOTE: CONCRETE ON BOTTOM HALF OF PLAN VIEW IS REMOVED IN ORDER TO SHOW DETAILS



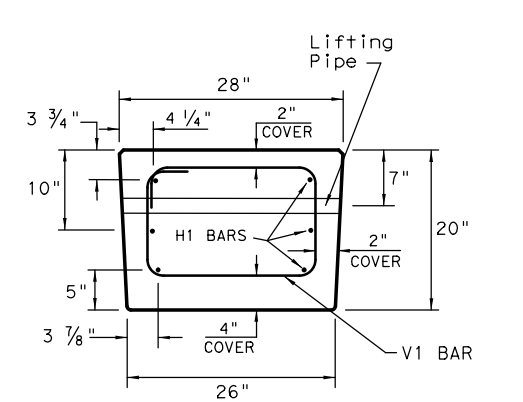
ELEVATION
(TYPE 1) BARRIER SEGMENT
 (SYMMETRICAL ABOUT CENTER LINES)



REINFORCING STEEL DETAILS
 TYPE 1 - BARRIER SEGMENT
 Note: Use 2" Dia. Bending Pin, unless otherwise shown



SECTION A-A

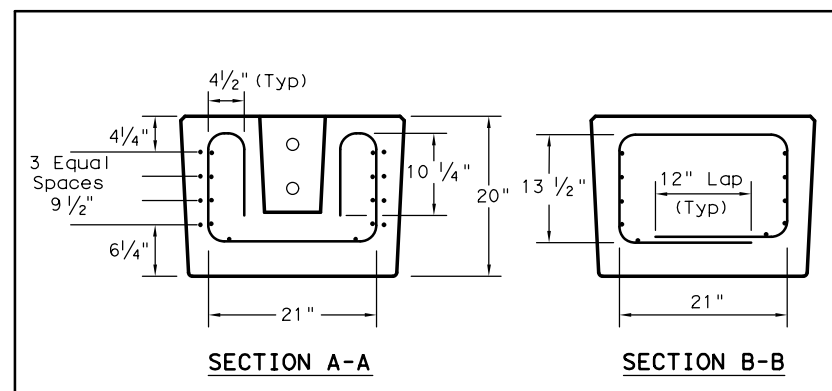


SECTION B-B

- GENERAL NOTES**
1. Low Profile Concrete Barrier (LPCB), is approved for use in temporary work zone locations, where the posted speed is 45 mph, or less.
 2. Concrete shall be Class H for precast barrier with a minimum compressive strength of 3,600 psi.
 3. Where used, rebar reinforcement shall be Grade 60 and conform to ASTM A615.
 4. Precast LPCB barrier length shall be 20 ft.
 5. All barrier edges shall have 3/4" chamfer or a tooled radius.
 6. Joint connection hardware shall be in accordance with Item 449, "Anchor Bolts." and is considered subsidiary.
 7. Steel pipe required for joint connection bolts shall be galvanized in accordance with Item 445, "Galvanizing."
 8. Welded wire reinforcement (WWR) may be used in lieu of conventional reinforcement for Type 1 barrier, and shall meet the requirements shown.

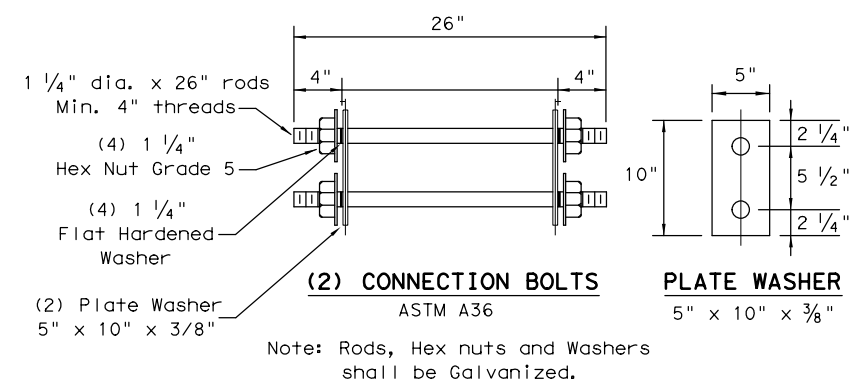
FOR CONTRACTORS INFORMATION ONLY

(TYPE 1) APPROX. QUANTITIES 20 FT. SECTION		
CONCRETE	CY	2.6
REINFORCING STEEL	LBS	330
TOTAL BARRIER WT.	LBS	11000



SECTION A-A
SECTION B-B
WELDED WIRE REINFORCEMENT (WWR) - OPTIONAL REINFORCING

- (WWR) GENERAL NOTES**
1. Deformed Welded Wire Reinforcement shall conform to ASTM A497.
 2. Welded wire cage may be cut or bent, if necessary, but must be approved by the Engineer.
 3. Combinations of reinforcing steel and WWR are permitted, as directed by the Engineer. The dimensions from the end of the barrier section to the first wire shall not exceed 3".
- REQUIRED (WWR) WIRE DESIGN**
- 8 ~ (D31) Horizontal Wires (Equally spaced)
 - 10 ~ (D20) Horizontal Wires (Equally spaced)
 - 29 ~ (D20) Vertical Wires (Spaced as shown in Elevation View)



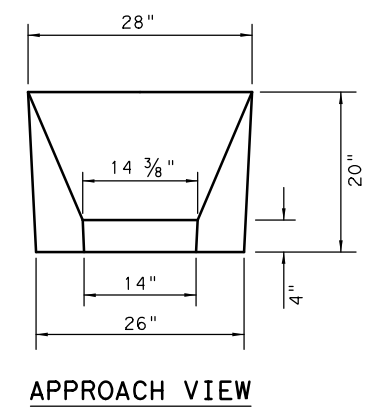
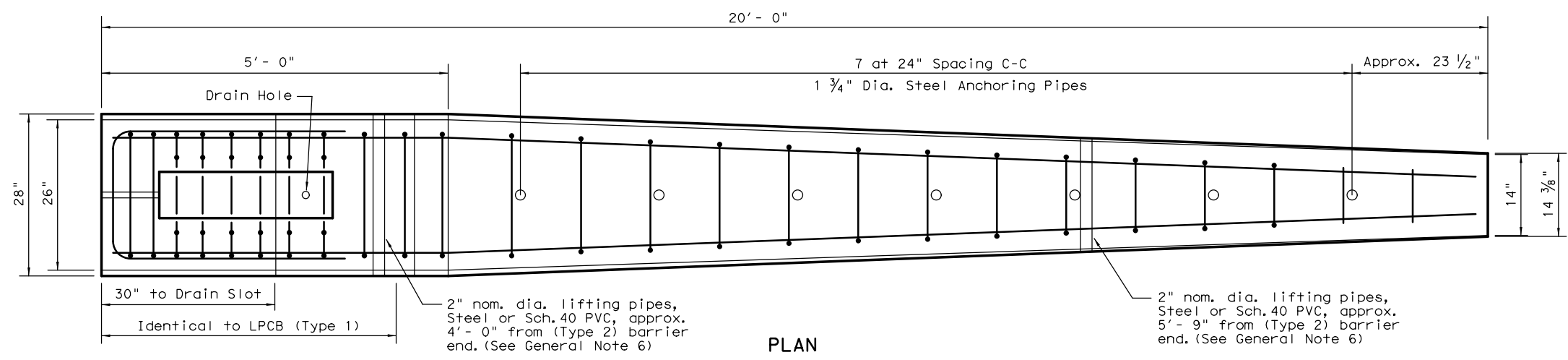
Design Division Standard

LOW PROFILE CONCRETE BARRIER PRECAST BARRIER (TYPE 1) LPCB-13

FILE: lpcb13.dgn	DN: TXDOT	CK: AM	DW: VP	CK:
© TXDOT December 2010	CONT SECT	JOB	HIGHWAY	
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	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	121	

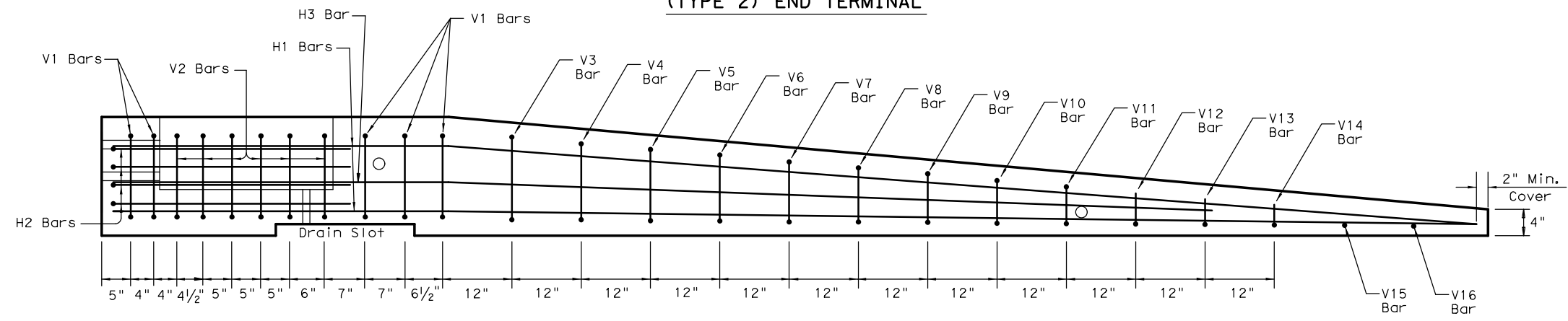
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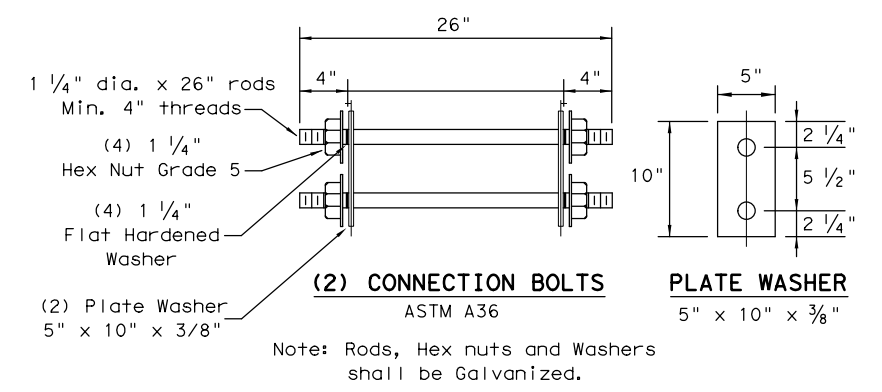
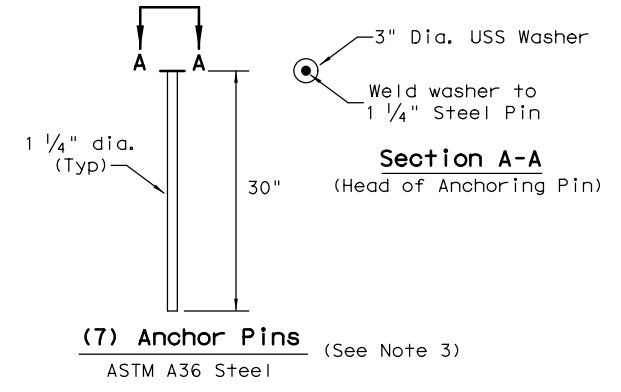
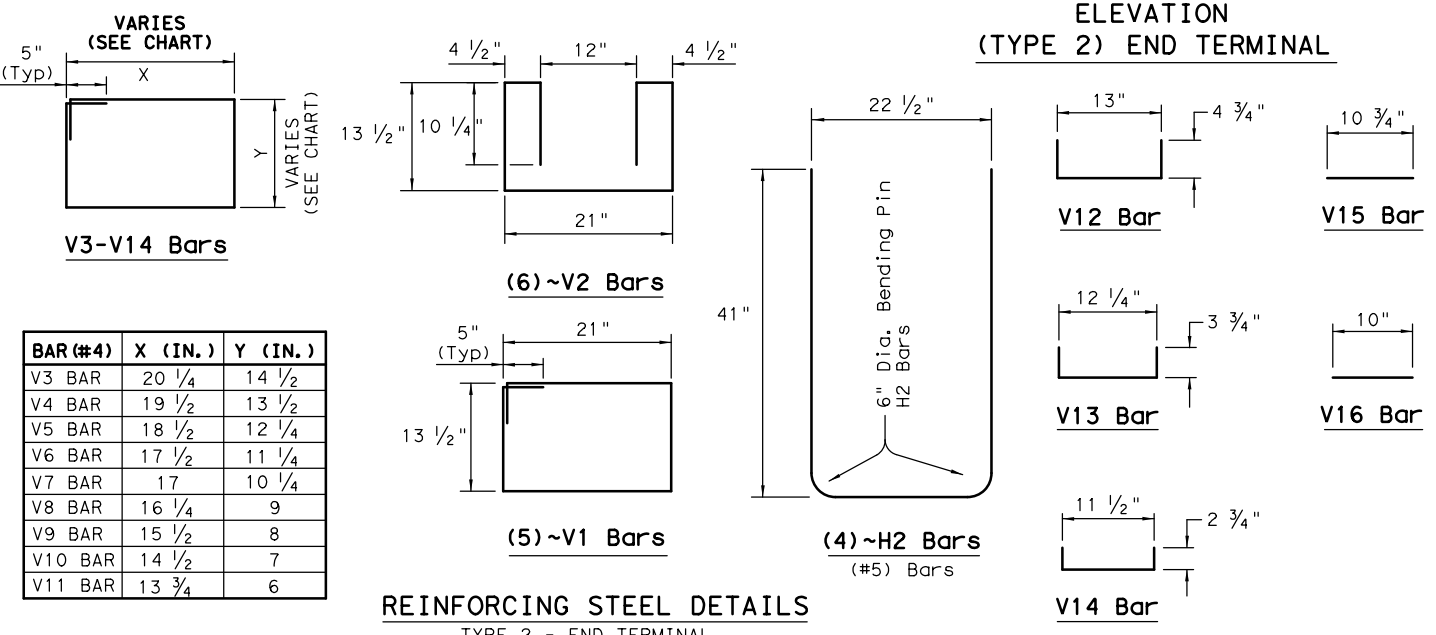


TYPE 2 - NOTES

1. Welded wire reinforcement (WWR) is "not" an option for Type 2 Barrier.
2. Type 2 Barrier shall be used as an end treatment for the Type 1 barrier segments, when applicable.
3. The end treatment can be used without the anchor pins in locations that can accommodate approximately 4 ft. of lateral displacement of the end treatment. The use of non-pinned end treatment does not affect the performance or the deflection of the Low-Profile barrier system.
4. The anchor pins are all the same length and are to be driven flush with the top of the (Type 2) barrier surface.
5. The bends in the H3 and H1 bars are slight, no formal bend is necessary.
6. The Type 2 barrier segment must be lifted from the rear first, to prevent cracking of sloped section.
7. See LPCB sheet 1 for additional information.



Note:
 Anchoring pipes not shown in Elevation View



FOR CONTRACTORS INFORMATION ONLY

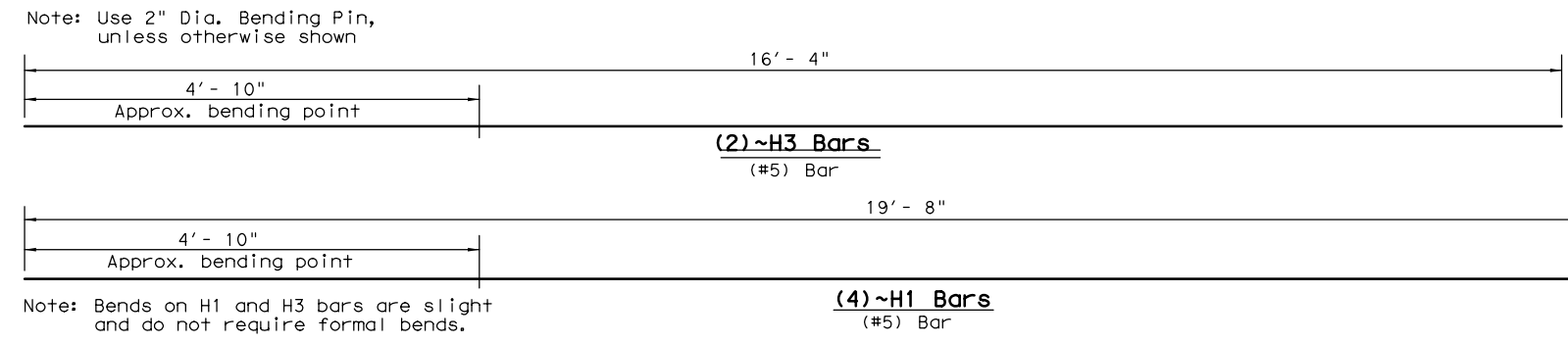
(TYPE 2)		APPROX. QUANTITIES 20 FT. SECTION	
CONCRETE	CY	1.65	
REINFORCING STEEL	LBS	240	
TOTAL BARRIER WT.	LBS	7000	

SHEET 2 OF 2

Design Division Standard

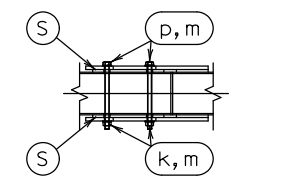
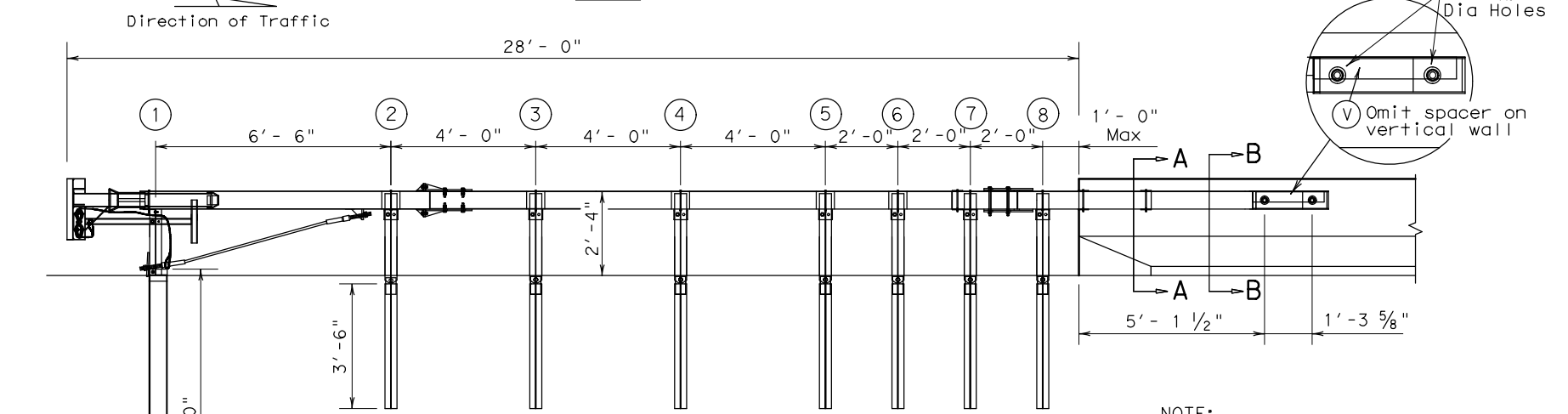
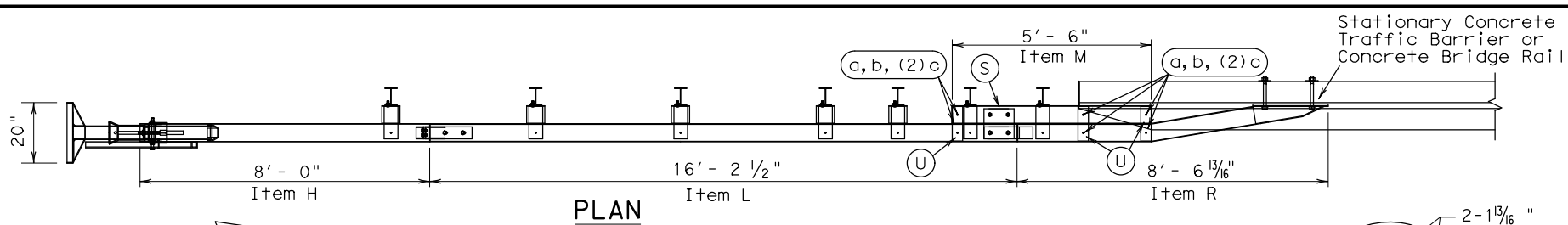
LOW PROFILE CONCRETE BARRIER PRECAST BARRIER (TYPE 2) LPCB-13

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© TxDOT December 2010	CONT	SECT	JOB	HIGHWAY
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DIST	COUNTY	SHEET NO.		
TYL	WOOD	122		

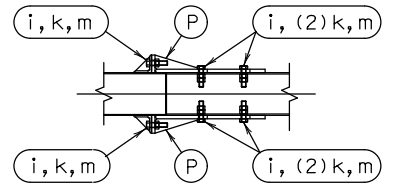


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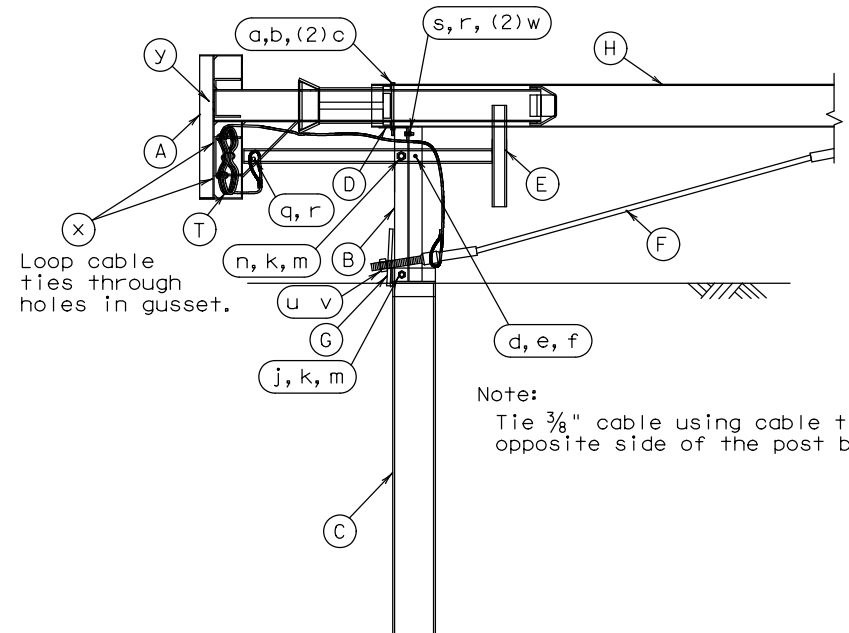


SPLICE PLATE DETAIL

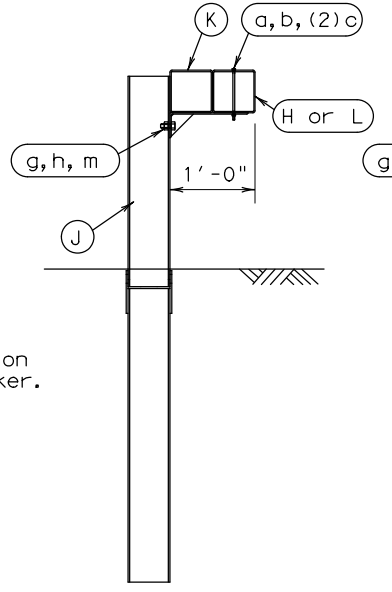


END SPLICE PLATE DETAIL

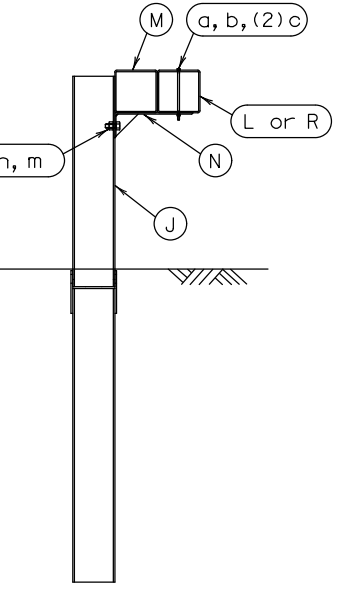
NOTE: Concrete bridge rails may require a modified end at the terminal connection. (Contact the Bridge Division for details.)



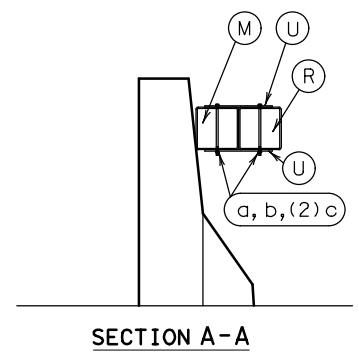
POSTS 1 IMPACT HEAD DETAIL



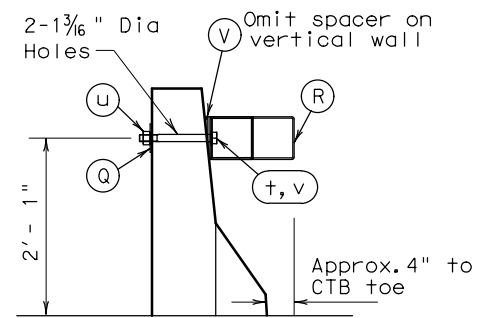
POSTS 2 THRU 6



POSTS 7 & 8



SECTION A-A



SECTION B-B

GENERAL NOTES

- For specific information regarding installation and technical guidance of the system, contact: Road Systems, Inc., at (330)346-0721. 3616 Old Howard County Airport. Big Springs, TX 79720
- Due to the Single-Sided design, the BEAT-SSCC is not appropriate for use at locations where backside hits towards the rigid concrete barrier are possible, e.g. in gore areas, or in narrow median locations where backside opposite direction hits are likely.
- All bolts, nuts, cable assemblies, cable anchors, bearing plate, tubing, post, impact heads, and other steel components shall be galvanized, unless otherwise noted.
- The breakaway cable assembly must be taut. A locking device, (vice grips or channel lock pliers) should be used to prevent the cable from twisting when tightening the nuts.
- When site conditions permit, posts may be driven. The lower section of post #1 should not be driven with the upper post section attached. If posts are placed in a drilled hole, the backfill material must be satisfactorily compacted to prevent settlement.
- If rock excavation is encountered, see manufacturer's installation booklet for installation recommendations.
- Post shall not be set full depth in concrete.
- The appropriate connection of the SSCC to the stationary rigid structure is a critical component to insure proper performance of the system. The length of the 1" bolts used to attach the system to the rigid structure will vary with the wall thickness and will need to be determined in the field.
- The approach area in front of the SSCC and the area within the system itself shall be free of fixed obstacles greater than 4 inches in height and have a fill slope or a cut slope of 1V:10H or flatter.
- Unless otherwise shown in the plans, SSCC rail placed in the vicinity of curbs shall be blocked out so that the face of curb is located directly below the face of rail. The steel posts shall be installed at the proper ground elevation above the gutter pan or roadway surface. Curbs located along or in front of the SSCC system shall not be greater than 4 inches in height.
- An object marker shall be installed on the front of the impact head as detailed on D & OM(VIA).

ITEM	QTY	DESCRIPTION
A	1	Box-Beam Impact Head
B	1	Upper End Post (A1) W6 x 9 x 1'-9 1/2" LG.
C	1	Lower End Post (A4) W6 x 15 x 8'-0" LG.
D	1	Support Bracket (B1) L4 x 2 x 4" LG.
E	1	Post Breaker (A2) Welded TS2 x 2 x 1/4"
F	1	Cable Anchor Assembly
G	1	Cable Anchor Bearing Plate
H	1	End Tube Rail (A5) x 8'-0" LG.
J	7	Steel Breakaway Post W6 x 9 x 6'-0" LG.
K	5	Support Bracket w/ Blockout (A9) TS6 x 6 w/ Bent PL.
L	1	Second Rail (A11) x 16'-2 1/2" LG.
M	1	Transition Blockout (A6) x 5'-6" LG.
N	2	Trans. Support Bracket (A10) 3/8" Bent PL. w/ Gusset
P	2	End Section Splice Plate (A3) - Detail Below
Q	2	1" Square Washer (B10) PL 4 x 4 x 1/4"
R	1	Anchor Rail (A13) x 8'-6 13/16" LG.
S	2	Splice Plate (A12) PL 10 x 10 x 3/8" Detail Below
T	1	3/8" GALV. Cable x 20'-0" (A14)
U	6	Tie Plate (C10) PL 1 1/2" x 3 1/2" x 3/8"
V	1	Spacer (D10) (OMIT ON VERTICAL WALL)
HARDWARE		
a	14	3/8" x 7 1/2" Hex Bolt (A449)
b	14	3/8" Hex Nut
c	28	3/8" Washer
d	1	1/4" x 3" Hex Bolt (A449)
e	1	1/4" Hex Nut
f	1	1/4" Washer
g	7	3/8" x 1 1/2" Bolt (A307)
h	7	3/8" Recess Nut
i	8	3/8" x 2" Hex Bolt (A325 or A449)
j	1	3/8" x 8" Hex Bolt (A325 or A449)
k	18	3/8" Hex Nut
m	25	3/8" Washer
n	1	3/8" x 3" Hex Bolt (A325 or A449)
p	4	5/8" x 9" Hex Bolt (A325 or A449)
q	1	1/2" x 5" Hex Bolt (A325 or A449)
r	2	1/2" Hex Nut
s	1	1/2" x 2" Hex Bolt (A307, A325 or A449)
t	2	1" x 10" Hex Bolt (A325 or A449) (Length Varies w/Wall Sect)
u	4	1" Hex Nut (2H Heavy Hex Nut)
v	4	1" Washer Structural Washer
w	2	1/2" Washer
x	2	Cable Tie
y	1	Object Marker

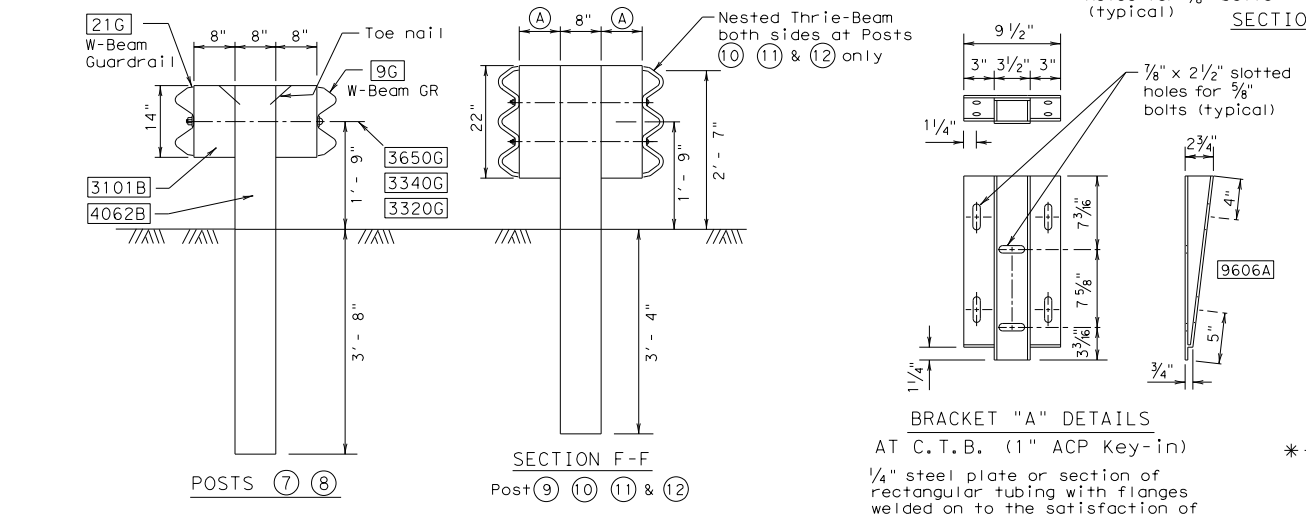
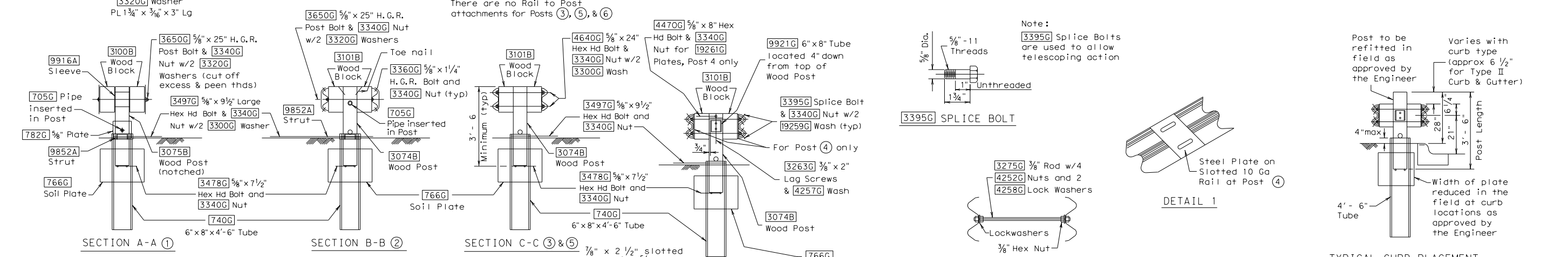
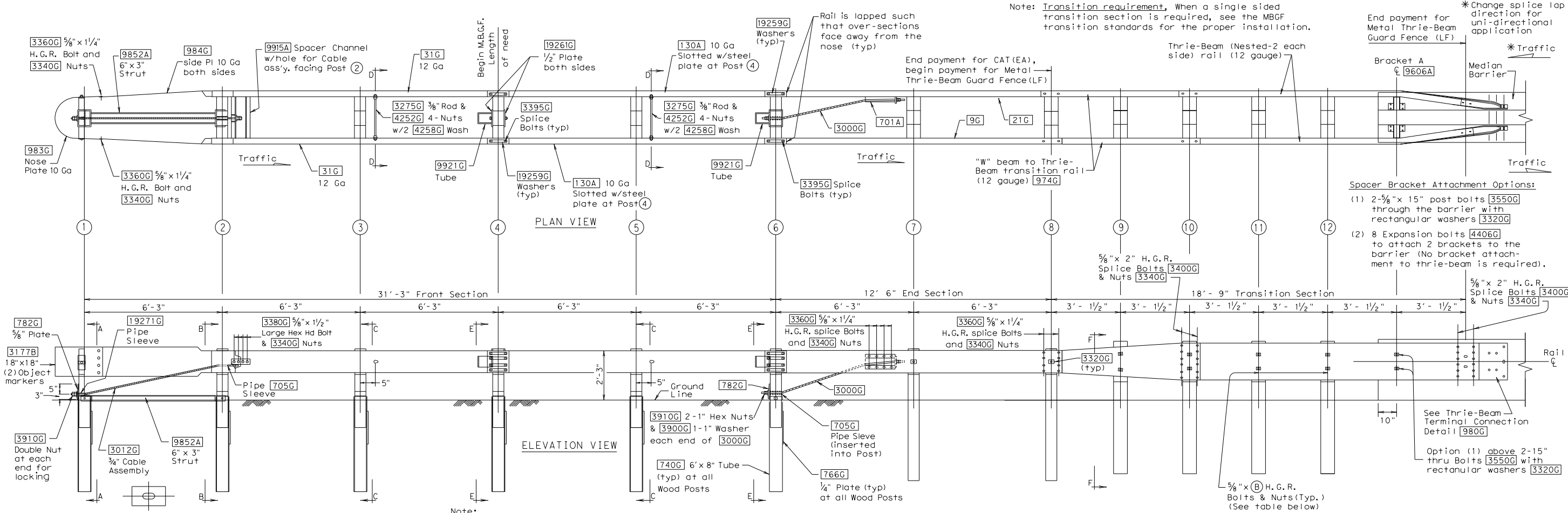
Design Division Standard

ROAD SYSTEMS INC
 CRASH CUSHION
 (BEAT)
 SSCC-16

FILE: ssc16.dgn	DN: TxDOT	CK: KM	DW: BD	CK: VP
©TxDOT April 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
REVISED 03, 2016 (VP)	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	124	

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Post	(A) Block Width	Product Code	(B) Post Bolt Length	Product Code
9	6 1/2"	3409B	24"	3640G
10	5 1/2"	3408B	22"	3620G
11	4 1/2"	3407B	20"	3600G
12	3 1/2"	3406B	18"	3580G

SHEET 1 OF 2

Design Division Standard

TRINITY HIGHWAY ENERGY ABSORPTION CRASH CUSHION (CONCRETE BARRIER) CATCB(1) - 17

FILE: catcb17.dgn		DN: TxDOT	CK: KM	DW: BD	CK: VP
© TxDOT: 1997		CONT	SECT	JOB	HIGHWAY
REVISIONS		0203	05	039	US 69
REVISED 03, 2016 VP		DIST	COUNTY		SHEET NO.
REVISED 03, 2017 KM		TYL	WOOD		124A

SACRIFICIAL

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DATE: 1/19/2024 4:33:19 PM
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CATCB FRONT SECTION (POSTS 1 THRU 6)		
BILL OF MATERIAL		
Mfr Code #	QTY	DESCRIPTION
983G	1	Nose Plate (10 Ga)
984G	2	Side Plate (10 Ga)
31G	2	"W" Beam 12 Ga x 13'-6 1/2"
130A	2	"W" Beam 10 Ga x 13'-6 1/2"
9852A	1	Channel Strut x 6'-6"
740G	6	Steel Foundation Tube
766G	6	Soil Plate 18" x 24"
3075B	1	Wood Post 5 1/2" x 7 1/2" (Notched) (Post 1)
3074B	5	Wood Post 5 1/2" x 7 1/2" (Post 2-6)
3100B	2	Wood Block 5 1/2" x 7 1/2" (Post 1)
3101B	10	Wood Block 5 1/2" x 7 1/2" (Post 2-6)
9916A	1	Sleeve (Post 1)
9915A	1	Spacer Channel (Post 2)
9921G	2	Steel Tube (Posts 4 & 6)
19271G	1	Pipe Sleeve (Post 1)
705G	1	Pipe Sleeve (Post 2)
19261G	2	Post Plate (Post 4)
782G	1	Bearing Plate (Post 1)
3012G	1	Cable Assembly (Posts 1 to 2)
3275G	2	3/8" Restraint Rod (Post 3 & 5)
19259G	32	Plate Washer (Posts 4 & 6)
HARDWARE		
3263G	4	3/8" x 2" Lg Lag Screw
4252G	8	3/8" Hex Nut
4258G	4	3/8" Lock Washer
4257G	4	3/8" Flat Washer
3320G	4	Rectangular Washer
3395G	32	5/8" x 1 1/4" H.H. Splice Bolt
3650G	2	5/8" x 25" Lg H.G.R. Bolt
4640G	8	5/8" x 24" Lg H.H. Bolt
3478G	13	5/8" x 7 1/2" Lg H.H. Bolt
3380G	8	5/8" x 1 1/2" Lg H.H. Bolt
3360G	16	5/8" x 1 1/4" Lg H.G.R. Bolt
3340G	85	5/8" H.G.R. Nut
3300G	8	5/8" Flat Washer
3497G	6	5/8" x 9 1/2" Lg H.H. Bolt
3910G	4	1" Hex Nut
3900G	2	1" Flat Washer

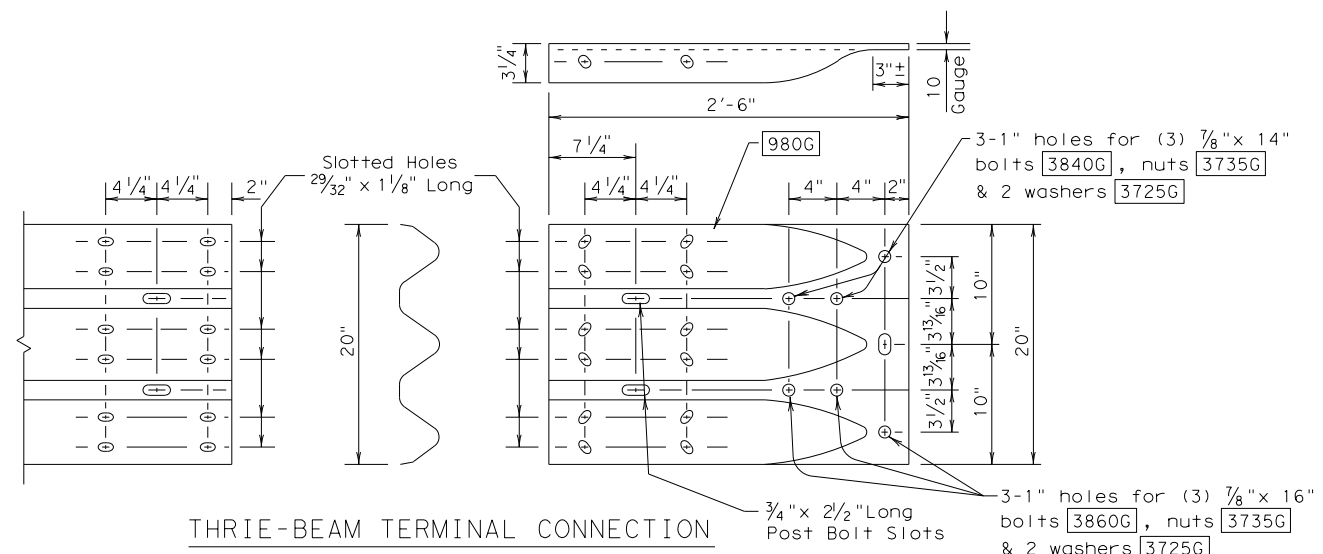
CATCB GUARDRAIL TERMINAL END SECTION (POSTS 7 & 8)		
BILL OF MATERIAL		
Mfr Code #	QTY	DESCRIPTION
4064B	2	Wood Post 5 1/2" x 7 1/2" x 6'
3101B	4	Wood Block 5 1/2" x 7 1/2"
21G	1	"W" Beam Guard Rail (12 Ga)
9G	1	"W" Beam Guard Rail (12 Ga)
701A	1	Bracket
782G	1	Bearing Plate
705G	1	Pipe Sleeve
3000G	1	Cable Assembly
3320G	2	Rectangular Washer
HARDWARE		
3360G	24	5/8" x 1 1/4" H.G.R. Splice Bolt
3400G	4	5/8" x 25" H.G.R. Post Bolt
3380G	8	5/8" x 1 1/2" Hex Hd Bolt
3340G	28	5/8" H.G.R. Nut
3300G	8	5/8" Washer
3910G	4	1" Hex Nut
3900G	2	1" Washer

CATCB TRANSITION SECTION (POST 9 THRU END SHOE)		
BILL OF MATERIAL		
Mfr Code #	QTY	DESCRIPTION
211G	4	Thrie beam 12'-6" (12 Ga)
974G	2	Trans panel 6'-3" (12 Ga)
980G	2	Special Thrie beam end shoe
3078B	3	Wood Post 6" x 8" x 6', (Posts 11 & 12)
3320G	20	Rectangular Washer
3340G	62	5/8" H.G.R. Nut
3400G	52	5/8" x 2" Splice Bolt
3406B	2	22 1/2" Block 6" x 3 1/2" (Post 12)
3407B	2	22 1/2" Block 6" x 4 1/2" (Post 11)
3408B	2	22 1/2" Block 6" x 5 1/2" (Post 10)
3409B	2	22 1/2" Block 6" x 6 1/2" (Post 9)
3412B	1	Wood Post 6" x 8" x 6', (Posts 9)
3560G	2	5/8" x 16" Bolt
4406G	8	5/8" x 3 3/4" Expansion Bolts w/Nuts
3580G	2	5/8" x 18" Post Bolt (Post 12)
3600G	2	5/8" x 20" Post Bolt (Post 11)
3620G	2	5/8" x 22" Post Bolt (Post 10)
3640G	2	5/8" x 24" Post Bolt (Post 9)
3725G	12	7/8" Washer (End Shoe Bolts)
3735G	6	7/8" Hex Nuts (End Shoe Bolts)
3840G	3	7/8" x 14" Hex Bolt (End Shoe)
3860G	3	7/8" x 16" Hex Bolt (End Shoe)
9606A	2	Spacer Bracket
Delineation		
3177B	2	Object Marker 18" x 18" (Cut to fit)
Optional Hardware for Single Slope Barrier-42"		
3640G	2	5/8" x 24" Bolt
4896G	6	7/8" x 24" Hex Bolt (End Shoe)

* Expansion or through bolts may be used with optional bracket installation.

GENERAL NOTES

- For specific information regarding installation and technical guidance of the system, contact: Trinity Highway at 1(888)323-6374, 70 W. Madison St. Suite 2350, Chicago, IL 60602
- Crown will be widened to accommodate the CAT system. The crown should extend at least 3 feet beyond the inside face of rail. The ground line at posts should be an extension of the roadway surface crown.
- All bolts, nuts, washers, cable assemblies, cable anchors, post tubes, backup plates, and soil plates shall be galvanized.
- The exposed end segment of an "End Section" should be evaluated as a potential obstacle in the determination of the need of MBGF for the opposing direction of traffic.
- For placement at curb sections, the height from gutter pan to post bolt will be 21", and the front section shall be flared (See Detail 2).
- The wood blockouts shall be "toe nailed" to the rectangular wood posts to prevent them from turning when the wood shrinks.
- Either 6"- 8" or 5 1/2" x 7 1/2" wood blocks may be used at posts 1 thru 8 as supplied by the manufacturer.
- If a "single sided" transition section is required for the attachment to a rigid concrete rail, see the MBGF transition standards for the proper installation.
- Object markers shall be installed on the front of the terminal as detailed on the D&M(VIA).



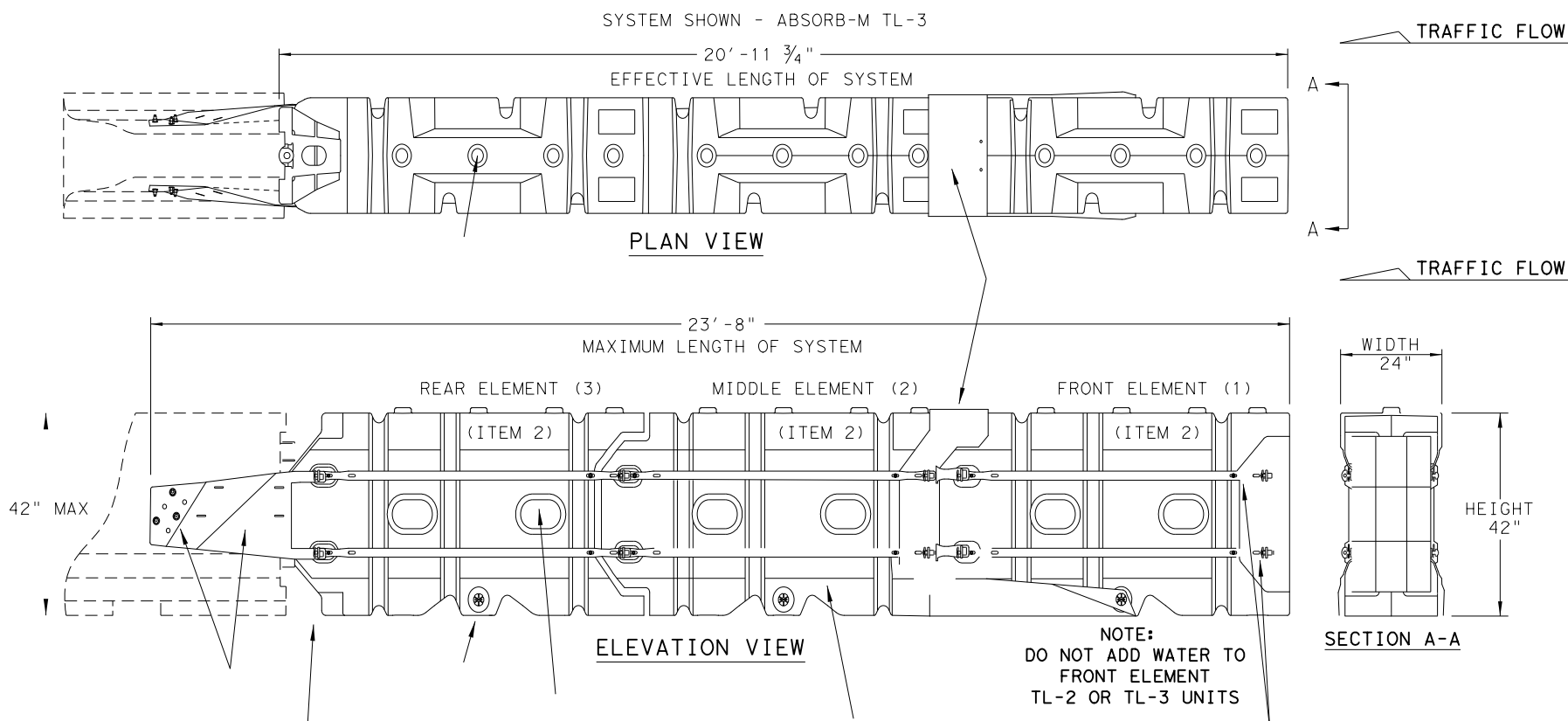
THRIE-BEAM TERMINAL CONNECTION

				Design Division Standard	
TRINITY HIGHWAY ENERGY ABSORPTION CRASH CUSHION (CONCRETE BARRIER) CATCB(1)-17					
FILE: catcb17.dgn	DN: TxDOT	CK: KM	DW: BD	CK: VP	
© TxDOT: 1997	CONT: 0203	SECT: 05	JOB: 039	HIGHWAY: US 69	
REVISED 03, 2016 VP	REVISIONS				
REVISED 03, 2017 KM	DIST: TYL	COUNTY: WOOD	SHEET NO.: 124B		

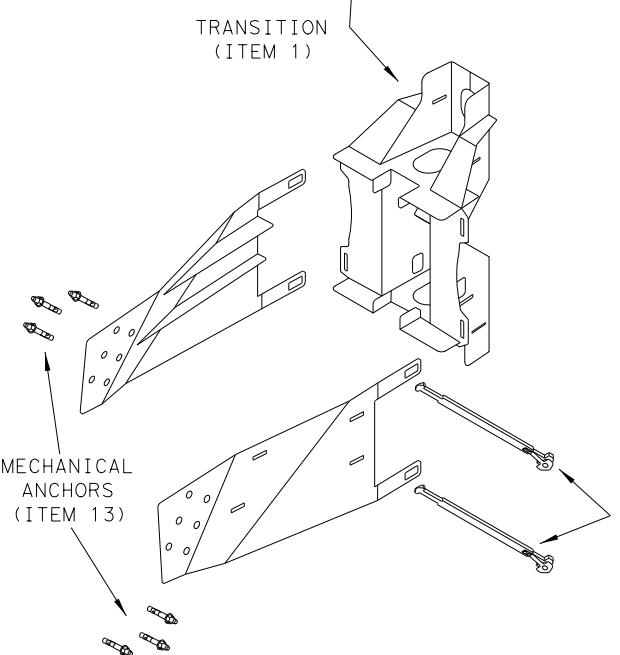
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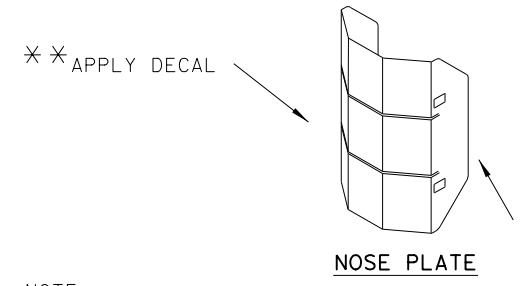
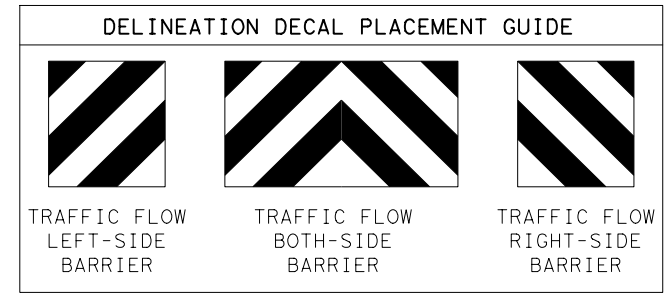
- GENERAL NOTES**
- FOR SPECIFIC INFORMATION REGARDING THE INSTALLATION AND TECHNICAL GUIDANCE, CONTACT: LINDSAY TRANSPORTATION SOLUTIONS (LTS) - BARRIER SYSTEMS, INC. AT (707) 374-6800. 180 RIVER ROAD, RIO VISTA, CA 94571
 - THE ABSORB-M SYSTEM IS ONLY APPROVED FOR USE IN (TEMPORARY WORK ZONE) LOCATIONS.
 - THE ABSORB-M IS A WATER FILLED NON-REDIRECTIVE, GATING CRASH CUSHION THAT DOES NOT NEED TO BE ATTACHED TO A FOUNDATION AND CAN BE INSTALLED ON TOP OF CONCRETE, ASPHALT, OR ANY SURFACE CAPABLE OF BEARING THE WEIGHT OF THE SYSTEM.
 - MAXIMUM PERMISSIBLE CROSS-SLOPE IS 8%.
 - THE INSTALLATION AREA SHOULD BE FREE FROM CURBS, ELEVATED OBJECTS, OR DEPRESSIONS.
 - THE ABSORB-M SHOULD BE LOCATED APPROXIMATELY PARALLEL WITH THE BARRIER.
 - THE USE OF THE ABSORB-M IS RESTRICTED TO A BARRIER HEIGHT OF UP TO 42 INCHES.
 - DO NOT ADD WATER TO FRONT ELEMENT (TL-2 OR TL-3 UNIT).



TEST LEVEL	NUMBER OF ELEMENTS	EFFECTIVE LENGTH	MAXIMUM LENGTH
TL-2	2	14' - 7 3/4"	17' - 4"
TL-3	3	20' - 11 3/4"	23' - 8"

BILL OF MATERIALS (BOM) ABSORB-M TL-3 & TL-2 SYSTEMS			QTY	QTY
ITEM #	PART NUMBER	PART DESCRIPTION	TL-2 SYSTEM	TL-3 SYSTEM
1	BSI-1809036-00	TRANSITION-(GALV)	1	1
2	BSI-1808002-00	PRE-ASSEMBLED ABSORBING (ELEMENTS)	2	3
3	BSI-4004598	FILL CAPS	8	12
4	BSI-4004599	DRAIN PLUGS	2	3
5	BSI-1809053-00	TENSION STRAP-(GALV)	8	12
6	BSI-2001998	C-SCR FH 3/8-16 X 1 1/2 GR5 PLT	8	12
7	BSI-2001999	C-SCR FH 3/8-16 X 1 GR5 PLT	8	12
8	BSI-1809035-00	MIDNOSE-(GALV)	1	1
9	BSI-1808014-00	NOSE PLATE	1	1
10	BSI-1809037-00	TRANSITION STRAP (LEFT-HAND)-(GALV)	1	1
11	BSI-1809038-00	TRANSITION STRAP (RIGHT-HAND)-(GALV)	1	1
12	BSI-1808005-00	PIN ASSEMBLY	8	10
13	BSI-2002001	ANC MECH 5/8-11X5 (GALV)	6	6
14	ABSORB-M	INSTALLATION AND INSTRUCTIONS MANUAL	1	1

* COMPONENTS PRE-ASSEMBLED WITH ELEMENT ASSEMBLY



NOTE: APPLY A HIGH REFLECTIVE DECAL TO THE NOSE PLATE. DELINEATION DECAL ORIENTATION IS SHOWN ON THE CONSTRUCTION PLAN SET AND SHALL BE IN ACCORDANCE WITH THE TEXAS MUTCD FOR (TRAFFIC CONTROL DEVICES). DECALS ARE AVAILABLE FOR TRAFFIC FLOW ON THE LEFT-SIDE, BOTH -SIDES AND RIGHT-SIDE.

NOTE: (PROVIDED BY OTHERS) ENGINEER OR CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER FOR THE CORRECT DECAL PER TRAFFIC FLOW, LEFT, RIGHT OR BOTH-SIDES.

NOTE: THIS STANDARD IS A BASIC REPRESENTATION OF THE ABSORB-M, IT IS NOT INTENDED TO REPLACE THE INSTALLATION INSTRUCTIONS MANUAL.

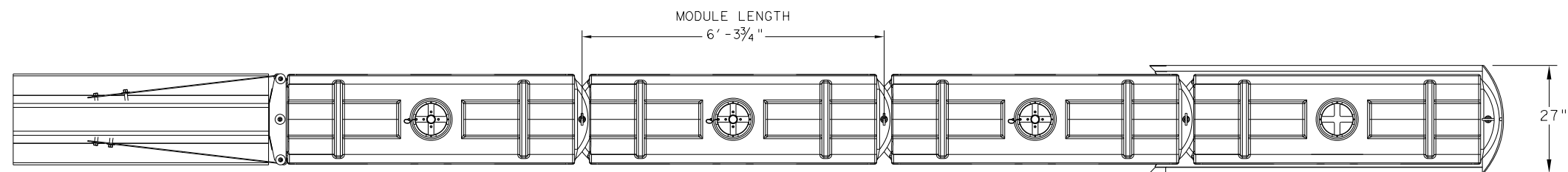
SACRIFICIAL

Texas Department of Transportation

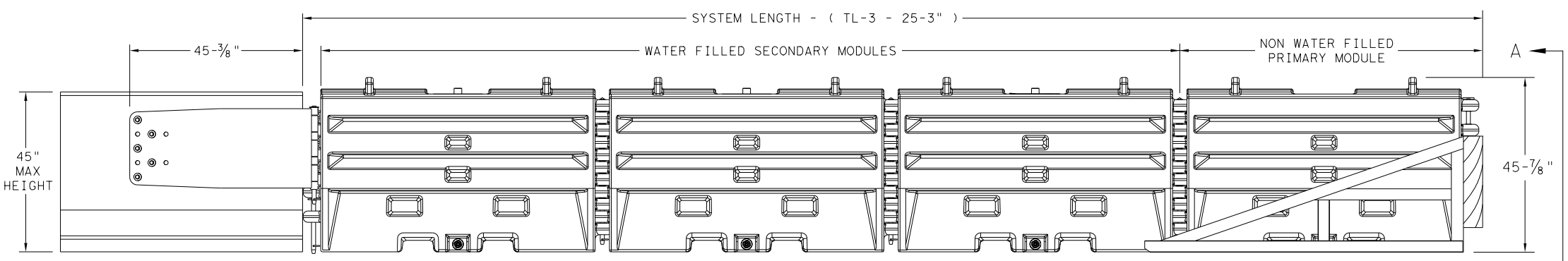
LINDSAY TRANSPORTATION SOLUTIONS
CRASH CUSHION
(MASH TL-3 & TL-2)
TEMPORARY - WORK ZONE
ABSORB (M) - 19

FILE: absorbm19	DN: TxDOT	CK: KM	DW: VP	CK:
© TXDOT: JULY 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	125	

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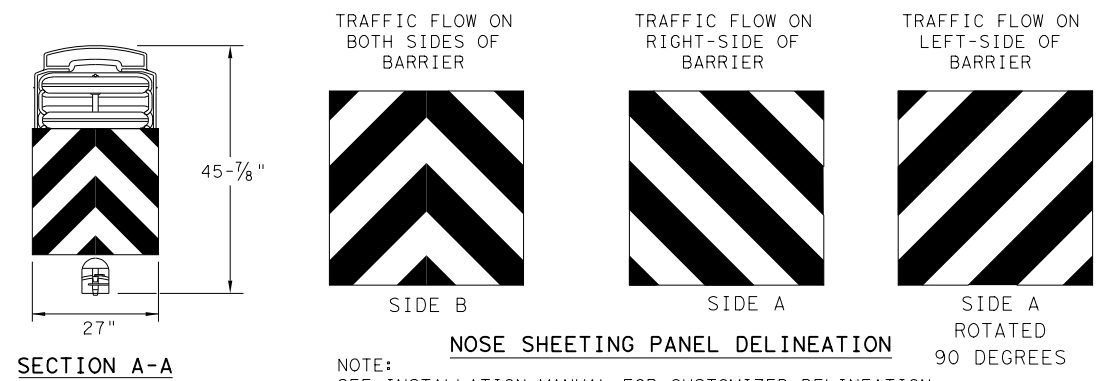
PLAN VIEW



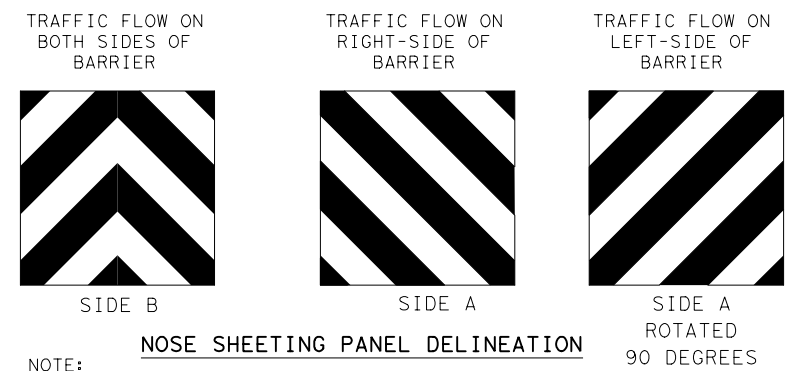
ELEVATION VIEW

GENERAL NOTES

1. REFER TO THE INSTALLATION MANUAL FOR SPECIFIC SYSTEM ASSEMBLY AND MODULE ORIENTATION. FOR ADDITIONAL INFORMATION, CONTACT TRAFFIX, INC. AT (949) 361-5663.
2. THE SLED SYSTEM IS A MASH APPROVED TEST LEVEL 3 (TL-3) CRASH CUSHION APPROVED FOR USE IN TEMPORARY WORK ZONES. THE SLED SYSTEM IS A NON-REDIRECTIVE, GATING CRASH CUSHION THAT DOES NOT NEED TO BE ATTACHED TO THE GROUND AND CAN BE INSTALLED ON CONCRETE, ASPHALT, GRAVEL OR COMPACTED SOIL.
3. MAXIMUM PERMISSIBLE CROSS SLOPE IS 8° (DEGREES) (14%).
4. THE INSTALLATION AREA SHOULD BE FREE FROM CURBS, ELEVATED OBJECTS, OR DEPRESSIONS.
5. THE SLED SYSTEM CAN BE ATTACHED TO:
 - CONCRETE BARRIER, TEMPORARY OR PERMANENT, 45" MAXIMUM HEIGHT
 - STEEL BARRIER
 - PLASTIC BARRIER
 - CONCRETE BRIDGE ABUTMENTS
 - W-BEAM GUARD RAIL
 - THRIE BEAM GUARD RAIL



SECTION A-A

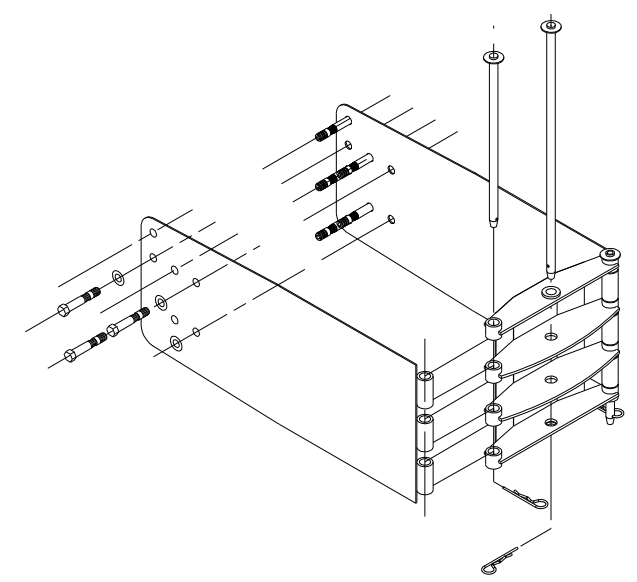


NOSE SHEETING PANEL DELINEATION

NOTE: SEE INSTALLATION MANUAL FOR CUSTOMIZED DELINEATION NOSE SHEETING FOR DECAL PLACEMENT.

TEST LEVEL	NUMBER OF SECONDARY MODULES	SYSTEM LENGTH
TL-3	3	25' 3"

BILL OF MATERIAL		
PART NUMBER	DESCRIPTION	QTY: TL-3
45131	TRANSITION FRAME, GALVANIZED	1
45150	TRANSITION PANEL, GALVANIZED	2
45147-CP	TRANSITION SHORT DROP PIN W/ KEEPER PIN, GALVANIZED	2
45148-CP	TRANSITION LONG DROP PIN W/ KEEPER PIN, GALVANIZED	1
45050	ANCHOR BOLTS	9
12060	WASHER, 3/4" ID X 2" OD	9
45044-Y	SLED YELLOW WATER FILLED MODULE	3
45044-YH	SLED YELLOW "NO FILL" MODULE	1
45044-S	CIS (CONTAINMENT IMPACT SLED), GALVANIZED	1
45043-CP	T-PIN W/ KEEPER PIN	4
18009-B-I	FILL CAP W/ "DRIVE BY" FLOAT INDICATOR	3
45033-RC-B	DRAIN PLUG	3
45032-DPT	DRAIN PLUG REMOVAL TOOL	1



SLED TRANSITION COMPONENTS FOR ATTACHMENT TO CMB

NOTE: SEE MANUFACTURER'S INSTALLATION MANUAL FOR FURTHER DETAILS.

TRANSITION OPTIONS
SLED TRANSITION TO CONCRETE TRAFFIC BARRIER (TEMPORARY OR PERMANENT)
SLED TRANSITION TO STEEL TRAFFIC BARRIER (CONTACT MFG FOR PROPER TRANSITION)
SLED TRANSITION TO PLASTIC TRAFFIC BARRIER (CONTACT MFG FOR PROPER TRANSITION)
SLED TRANSITION TO W-BEAM OR THRIE BEAM GUARD RAIL (CONTACT MFG FOR PROPER TRANSITION)
SLED TRANSITION TO CONCRETE BRIDGE ABUTMENT

NOTE: THIS STANDARD IS A BASIC REPRESENTATION OF THE SLED, IT IS NOT INTENDED TO REPLACE THE INSTALLATION INSTRUCTIONS MANUAL.

SACRIFICIAL

Design Division Standard

SLED
CRASH CUSHION
TL-3 MASH COMPLIANT
(TEMPORARY, WORK ZONE)
SLED-19

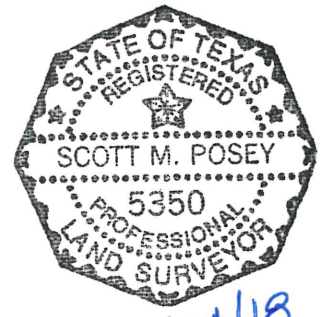
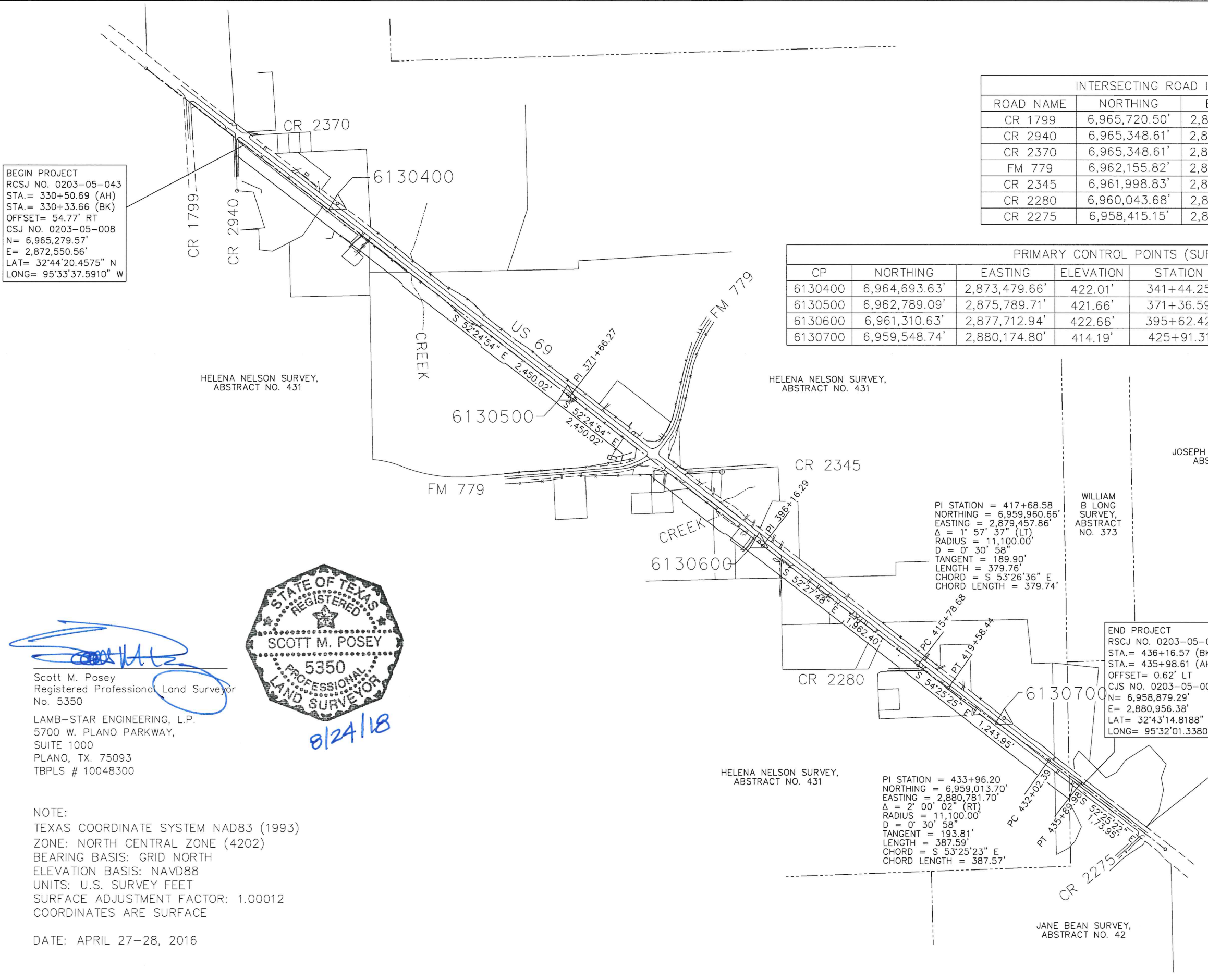
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© TxDOT: DECEMBER 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	126	



INTERSECTING ROAD INFORMATION			
ROAD NAME	NORTHING	EASTING	STATION
CR 1799	6,965,720.50'	2,871,978.78'	323+28.64
CR 2940	6,965,348.61'	2,872,466.74'	329+44.84
CR 2370	6,965,348.61'	2,872,549.82'	330+07.94
FM 779	6,962,155.82'	2,876,602.88'	381+67.24
CR 2345	6,961,998.83'	2,876,952.53'	385+40.07
CR 2280	6,960,043.68'	2,879,350.01'	416+32.48
CR 2275	6,958,415.15'	2,881,559.57'	443+77.67

BEGIN PROJECT
 RCSJ NO. 0203-05-043
 STA. = 330+50.69 (AH)
 STA. = 330+33.66 (BK)
 OFFSET = 54.77' RT
 CSJ NO. 0203-05-008
 N = 6,965,279.57'
 E = 2,872,550.56'
 LAT = 32°44'20.4575" N
 LONG = 95°33'37.5910" W

PRIMARY CONTROL POINTS (SURFACE)						
CP	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
6130400	6,964,693.63'	2,873,479.66'	422.01'	341+44.25	103.35' LT	TYPE II SET W/ALUMINUM CAP
6130500	6,962,789.09'	2,875,789.71'	421.66'	371+36.59	5.83' LT	TYPE II SET W/ALUMINUM CAP
6130600	6,961,310.63'	2,877,712.94'	422.66'	395+62.42	7.30' LT	TYPE II SET W/ALUMINUM CAP
6130700	6,959,548.74'	2,880,174.80'	414.19'	425+91.31	82.08' LT	TYPE II SET W/ALUMINUM CAP



Scott M. Posey
 Registered Professional Land Surveyor
 No. 5350
 LAMB-STAR ENGINEERING, L.P.
 5700 W. PLANO PARKWAY,
 SUITE 1000
 PLANO, TX. 75093
 TBPLS # 10048300

NOTE:
 TEXAS COORDINATE SYSTEM NAD83 (1993)
 ZONE: NORTH CENTRAL ZONE (4202)
 BEARING BASIS: GRID NORTH
 ELEVATION BASIS: NAVD88
 UNITS: U.S. SURVEY FEET
 SURFACE ADJUSTMENT FACTOR: 1.00012
 COORDINATES ARE SURFACE

DATE: APRIL 27-28, 2016

PI STATION = 417+68.58
 NORTHING = 6,959,960.66'
 EASTING = 2,879,457.86'
 $\Delta = 1^\circ 57' 37''$ (LT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 189.90'
 LENGTH = 379.76'
 CHORD = S 53°26'36" E
 CHORD LENGTH = 379.74'

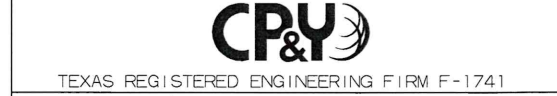
PI STATION = 433+96.20
 NORTHING = 6,959,013.70'
 EASTING = 2,880,781.70'
 $\Delta = 2^\circ 00' 02''$ (RT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 193.81'
 LENGTH = 387.59'
 CHORD = S 53°25'23" E
 CHORD LENGTH = 387.57'

END PROJECT
 RCSJ NO. 0203-05-043
 STA. = 436+16.57 (BK)
 STA. = 435+98.61 (AH)
 OFFSET = 0.62' LT
 CJS NO. 0203-05-008
 N = 6,958,879.29'
 E = 2,880,956.38'
 LAT = 32°43'14.8188" N
 LONG = 95°32'01.3380" W

NO.	REVISION	BY	DATE

CONTROL POINT LEGEND
 DENOTES PRIMARY CONTROL POINT (5/8" IRON ROD SET IN CONCRETE WITH A 3 1/4" ALUMINUM CAP STAMPED "TXDOT CONTROL MARK") UNLESS OTHERWISE NOTED

LAMB-STAR ENGINEERING, L.P.
 5700 W. PLANO PARKWAY, SUITE 1000
 PLANO, TX 75093
 P 214-440-3600
 F 214-440-3601
 TBPLS # 10048300



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 US 69 AT FM 779

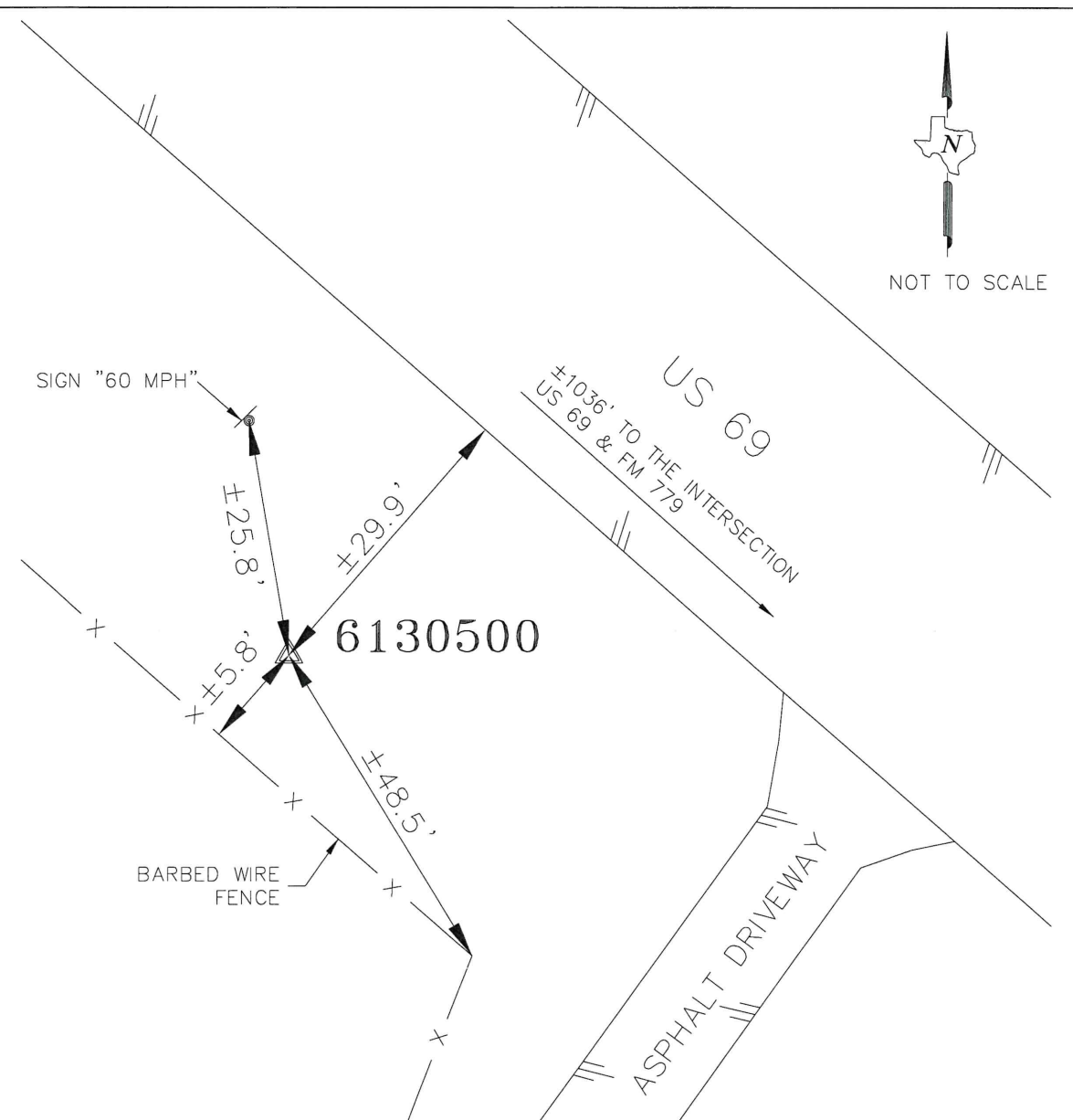
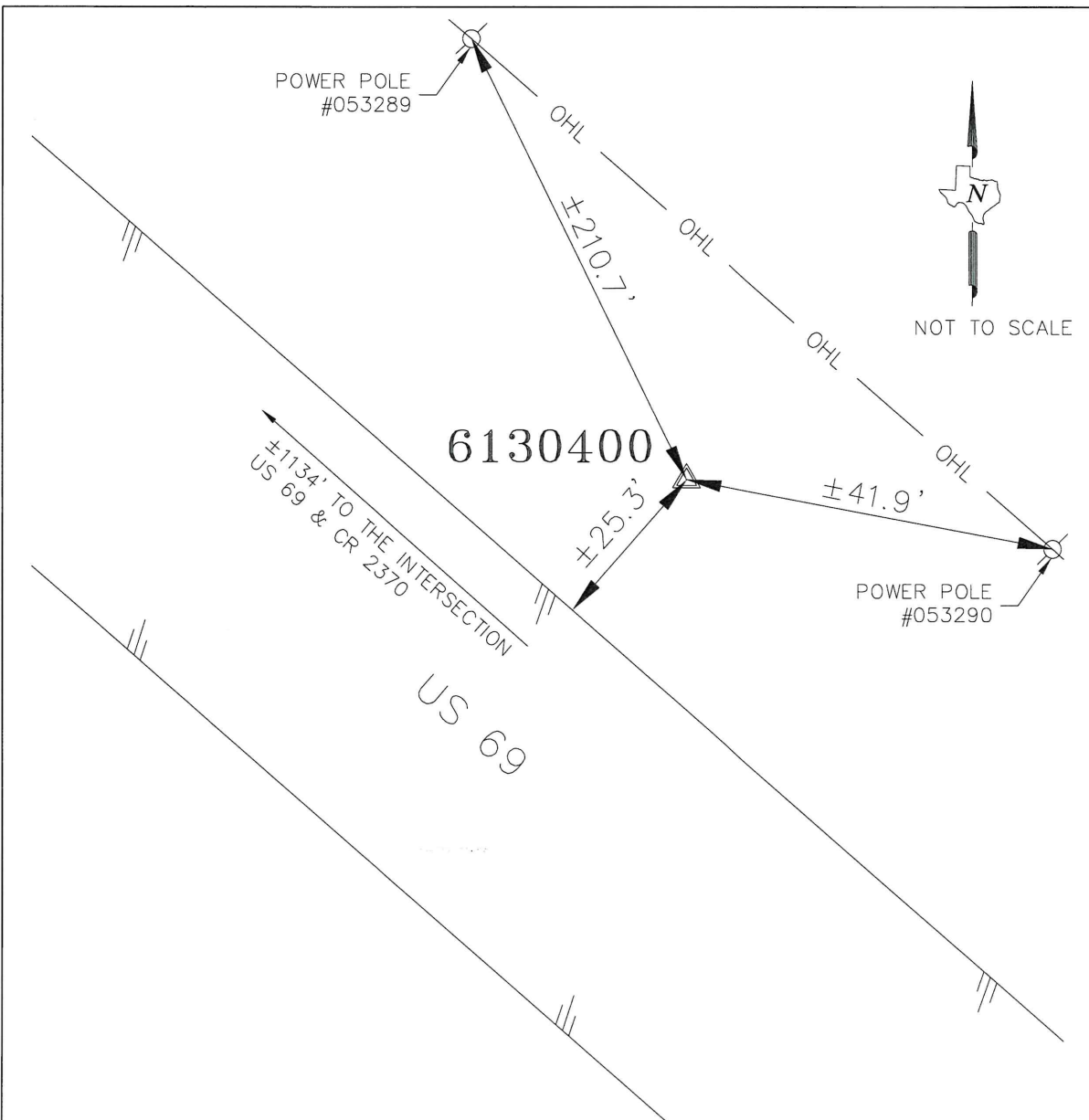
CONTROL INDEX MAP

Designed:	N/A	FED. RD. DIV. NO.:	6	STATE:	TEXAS	FEDERAL AID PROJECT NO.:		HIGHWAY NO.:	US 69
Checked:	N/A	DIST.:	10 <td>COUNTY:</td> <td>WOOD <td>CONTROL NO.:</td> <td>0203</td> <td>SECTION NO.:</td> <td>05</td> </td>	COUNTY:	WOOD <td>CONTROL NO.:</td> <td>0203</td> <td>SECTION NO.:</td> <td>05</td>	CONTROL NO.:	0203	SECTION NO.:	05
Drawn:	RBH	JOB NO.:	039	SHEET NO.:	127				
Checked:	SMP								



US 69 AT FM 779
 SURVEY CONTROL INDEX

1/22/2024 2:14:34 PM



THE CONTROL POINTS SHOWN HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION.



8/24/18

Scott M. Posey

Scott M. Posey
Registered Professional Land Surveyor
No. 5350

LAMB-STAR ENGINEERING, L.P.
5700 W. PLANO PARKWAY,
SUITE 1000
PLANO, TX. 75093
TBPLS # 10048300

NO.	REVISION	BY	DATE

LAMB-STAR ENGINEERING, L.P.
5700 W. PLANO PARKWAY, SUITE 1000
PLANO, TX 75093
P 214-440-3600
F 214-440-3601
TBPLS # 10048300

CP&Y
TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

SURVEY CONTROL DATA

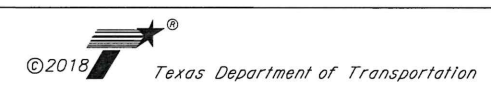
Designed:	N/A	FED. RD. DIV. NO.:	6	STATE:	TEXAS	FEDERAL AID PROJECT NO.:		HIGHWAY NO.:	US 69
Checked:	N/A	COUNTY:	WOOD	CONTROL NO.:	0203	SECTION NO.:	05	JOB NO.:	039
Drawn:	RBH								
Checked:	SMP								128

CONTROL POINT No. 6130400
APPROXIMATE LOCATION:
A 5/8" IRON ROD SET IN CONCRETE WITH A 3 1/4" ALUMINUM CAP STAMPED "TXDOT CONTROL MARK", ±1134' SOUTHEAST OF THE INTERSECTION OF US 69 AND CR 2370, ±25.3' NORTHEAST OF THE NORTHEAST EDGE OF ASPHALT OF US 69, ±41.9' WEST OF A POWER POLE #053290, AND ±210.7' SOUTHEAST OF A POWER POLE #053289.

TEXAS COORDINATE SYSTEM NAD83 (1993)
ZONE: NORTH CENTRAL ZONE (4202)
BEARING BASIS: GRID NORTH
ELEVATION BASIS: NAVD88
UNITS: U.S. SURVEY FEET
SURFACE ADJUSTMENT FACTOR: 1.00012
DATE SET: APRIL 27, 2016
MONUMENT: 3 1/4" ALUMINUM CAP STAMP "TXDOT CONTROL MARK"
STATE PLANE SURFACE COORDINATES
NORTHING: 6,964,693.63'
EASTING: 2,873,479.66'
ELEVATION: 422.01'

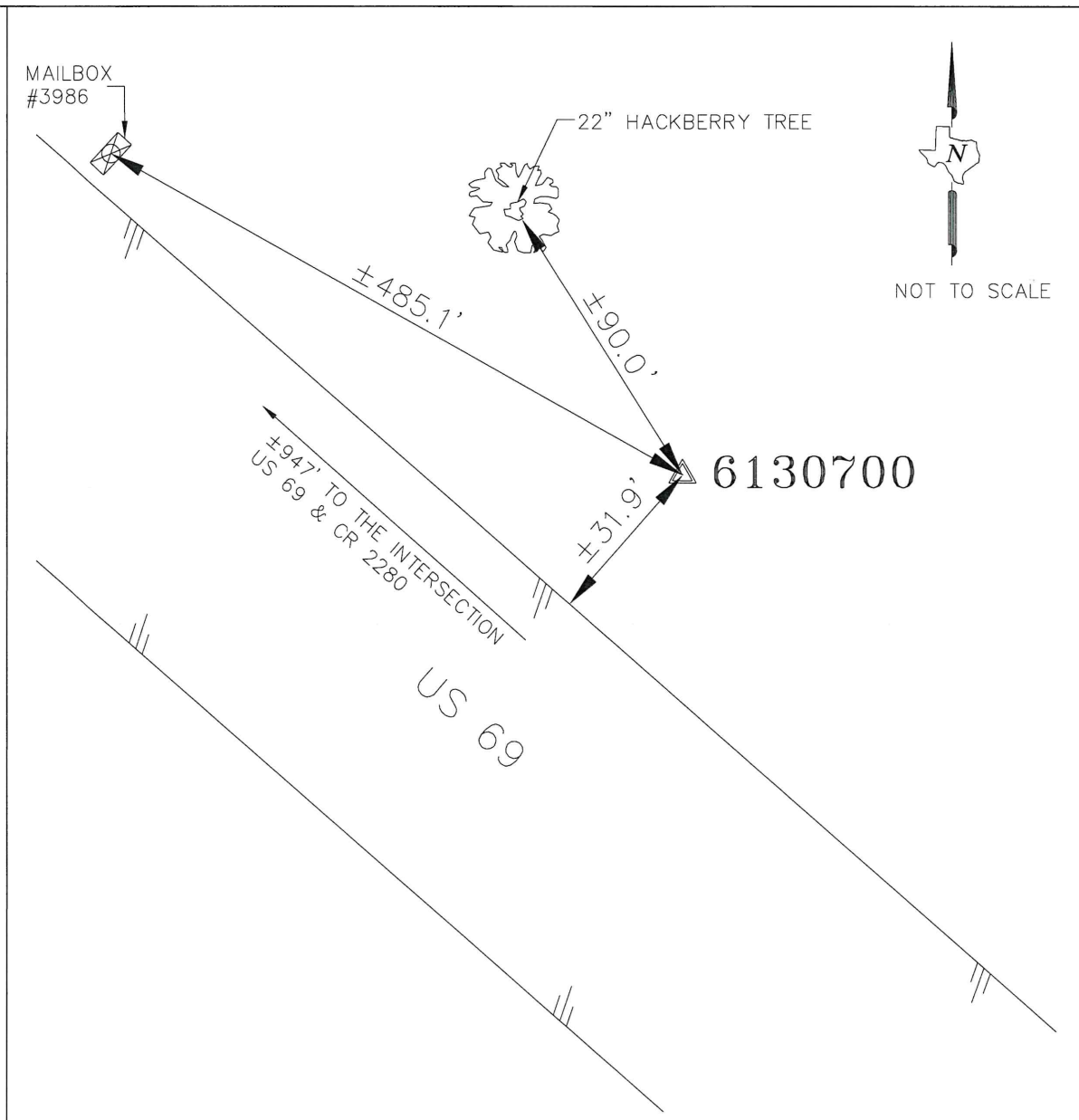
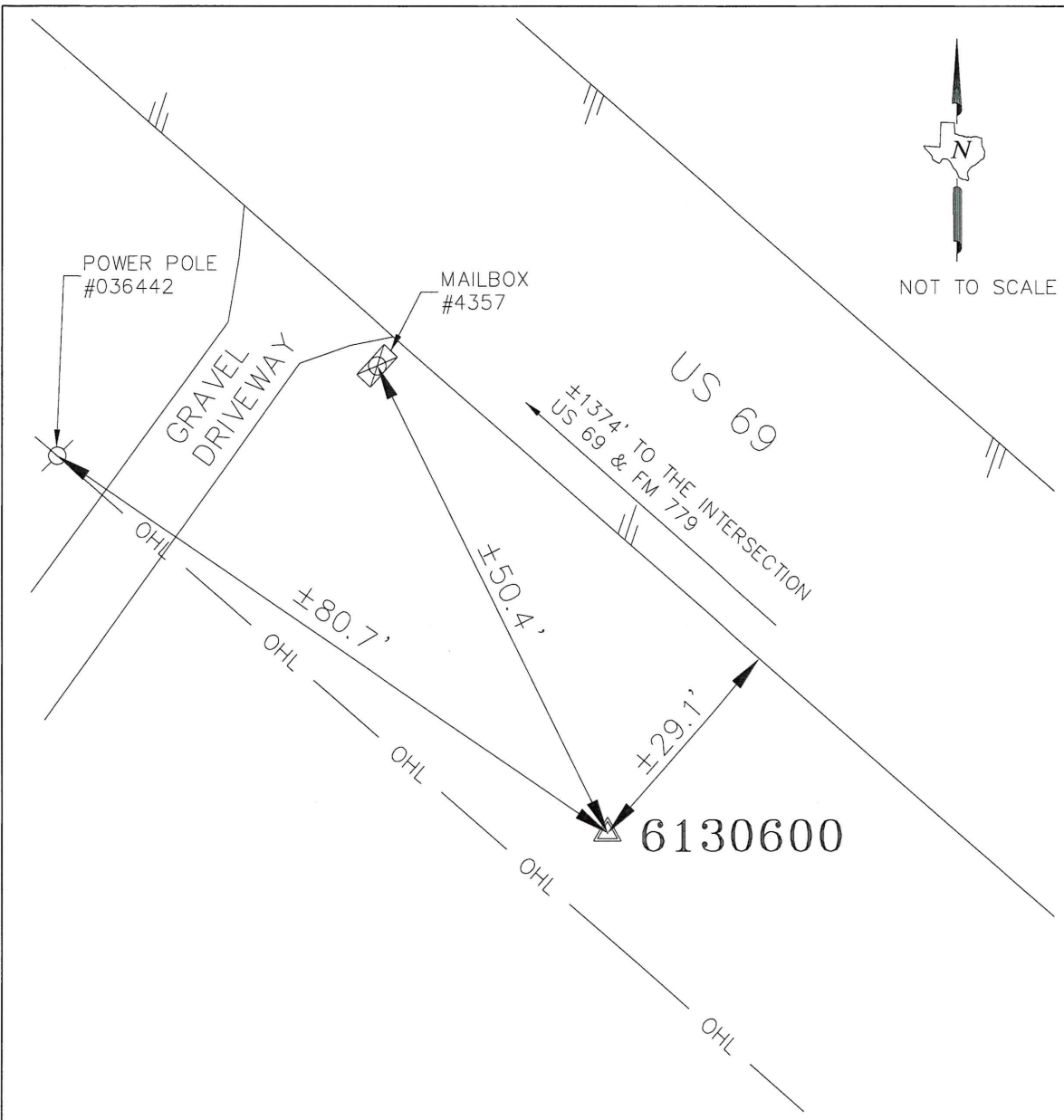
CONTROL POINT No. 6130500
APPROXIMATE LOCATION:
A 5/8" IRON ROD SET IN CONCRETE WITH A 3 1/4" ALUMINUM CAP STAMPED "TXDOT CONTROL MARK", ±1036' NORTHWEST OF THE INTERSECTION OF US 69 AND FM 779, ±29.9' SOUTHWEST OF THE SOUTHWEST EDGE OF ASPHALT OF US 69, ±5.8' NORTHEAST OF A BARBED WIRE FENCE, ±48.5' NORTHWEST OF A FENCE CORNER, AND ±25.8' SOUTHEAST OF A SIGN "60 MPH".

TEXAS COORDINATE SYSTEM NAD83 (1993)
ZONE: NORTH CENTRAL ZONE (4202)
BEARING BASIS: GRID NORTH
ELEVATION BASIS: NAVD88
UNITS: U.S. SURVEY FEET
SURFACE ADJUSTMENT FACTOR: 1.00012
DATE SET: APRIL 27, 2016
MONUMENT: 3 1/4" ALUMINUM CAP STAMP "TXDOT CONTROL MARK"
STATE PLANE SURFACE COORDINATES
NORTHING: 6,962,789.09'
EASTING: 2,875,789.71'
ELEVATION: 421.66'

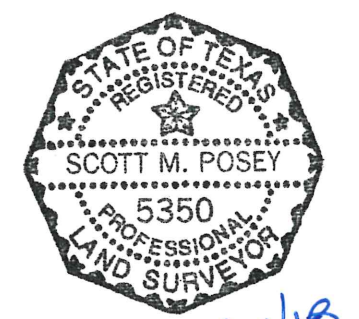


US 69 AT FM 779
SURVEY CONTROL DATA SHEET

1/22/2024 2:15:06 PM



THE CONTROL POINTS SHOWN HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION.



8/24/18

Scott M. Posey
Registered Professional Land Surveyor
No. 5350

LAMB-STAR ENGINEERING, L.P.
5700 W. PLANO PARKWAY,
SUITE 1000
PLANO, TX. 75093
TBPLS # 10048300

NO.	REVISION	BY	DATE

LAMB-STAR ENGINEERING, L.P.
5700 W. PLANO PARKWAY, SUITE 1000
PLANO, TX 75093
P 214-440-3600
F 214-440-3601
TBPLS # 10048300

CP&Y
TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

SURVEY CONTROL DATA

Designed: N/A	FED. RD. DIV. NO.: 6	STATE: TEXAS	FEDERAL AID PROJECT NO.:	HIGHWAY NO.: US 69
Checked: N/A	DIST.: 10	COUNTY: WOOD	CONTROL NO.: 0203	SECTION NO.: 05
Drawn: RBH	JOB NO.: 039	SHEET NO.: 129		

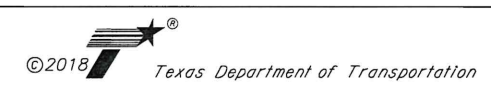
CONTROL POINT No. 6130600
APPROXIMATE LOCATION:
A 5/8" IRON ROD SET IN CONCRETE WITH A 3 1/4" ALUMINUM CAP STAMPED "TXDOT CONTROL MARK", $\pm 1374'$ SOUTHEAST OF THE INTERSECTION OF US 69 AND FM 779, $\pm 29.1'$ SOUTHWEST OF THE SOUTHWEST EDGE OF ASPHALT OF US 69, $\pm 50.4'$ SOUTHEAST OF A MAILBOX #4357, AND $\pm 80.7'$ SOUTHEAST OF A POWER POLE #036440.

TEXAS COORDINATE SYSTEM NAD83 (1993)
ZONE: NORTH CENTRAL ZONE (4202)
BEARING BASIS: GRID NORTH
ELEVATION BASIS: NAVD88
UNITS: U.S. SURVEY FEET
SURFACE ADJUSTMENT FACTOR: 1.00012
DATE SET: APRIL 27, 2016
MONUMENT: 3 1/4" ALUMINUM CAP STAMP "TXDOT CONTROL MARK"
STATE PLANE SURFACE COORDINATES
NORTHING: 6,961,310.63'
EASTING: 2,877,712.94'
ELEVATION: 422.66'

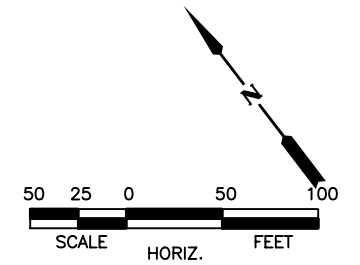
CONTROL POINT No. 6130700
APPROXIMATE LOCATION:
A 5/8" IRON ROD SET IN CONCRETE WITH A 3 1/4" ALUMINUM CAP STAMPED "TXDOT CONTROL MARK", $\pm 947'$ SOUTHEAST OF THE INTERSECTION OF US 69 AND CR 2280, $\pm 31.9'$ NORTHEAST OF THE NORTHEAST EDGE OF ASPHALT OF US 69, $\pm 90.0'$ SOUTHEAST OF A 22" HACKBERRY TREE, AND $\pm 485.1'$ SOUTHEAST OF A MAILBOX #3986.

TEXAS COORDINATE SYSTEM NAD83 (1993)
ZONE: NORTH CENTRAL ZONE (4202)
BEARING BASIS: GRID NORTH
ELEVATION BASIS: NAVD88
UNITS: U.S. SURVEY FEET
SURFACE ADJUSTMENT FACTOR: 1.00012
DATE SET: APRIL 27, 2016
MONUMENT: 3 1/4" ALUMINUM CAP STAMP "TXDOT CONTROL MARK"
STATE PLANE SURFACE COORDINATES
NORTHING: 6,959,548.74'
EASTING: 2,880,174.80'
ELEVATION: 414.19'






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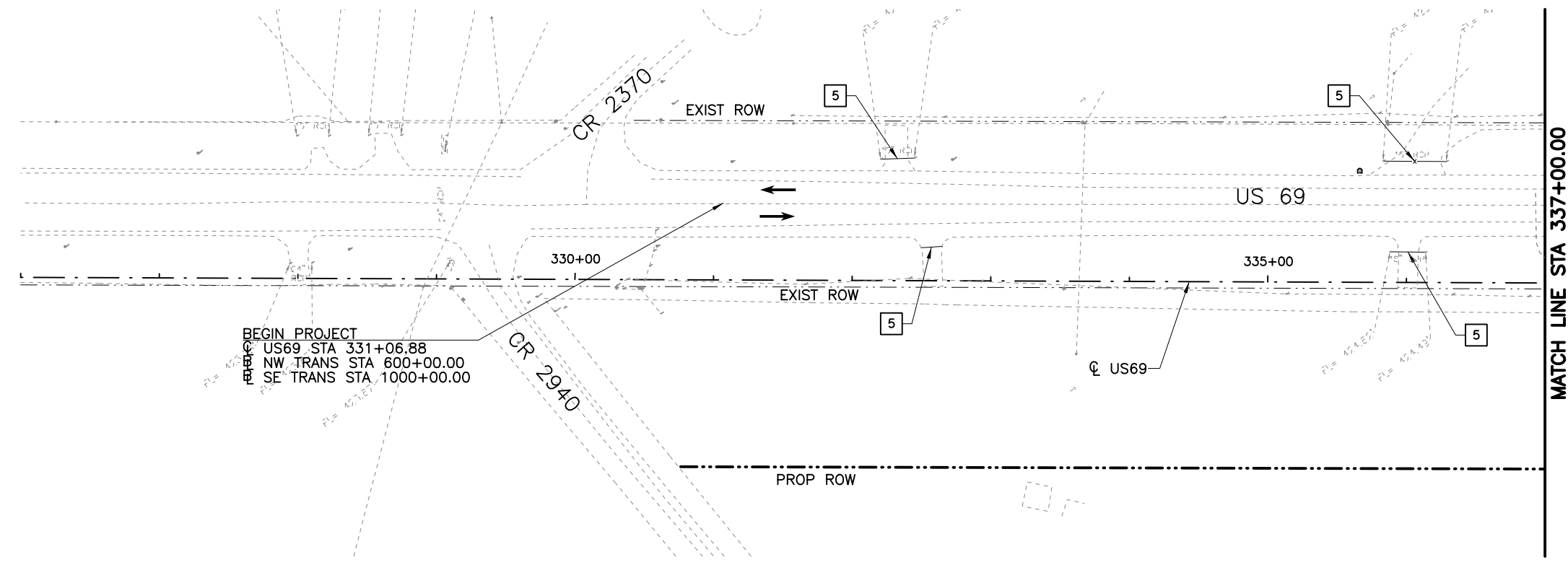


US 69 AT FM 779
SURVEY CONTROL DATA SHEET



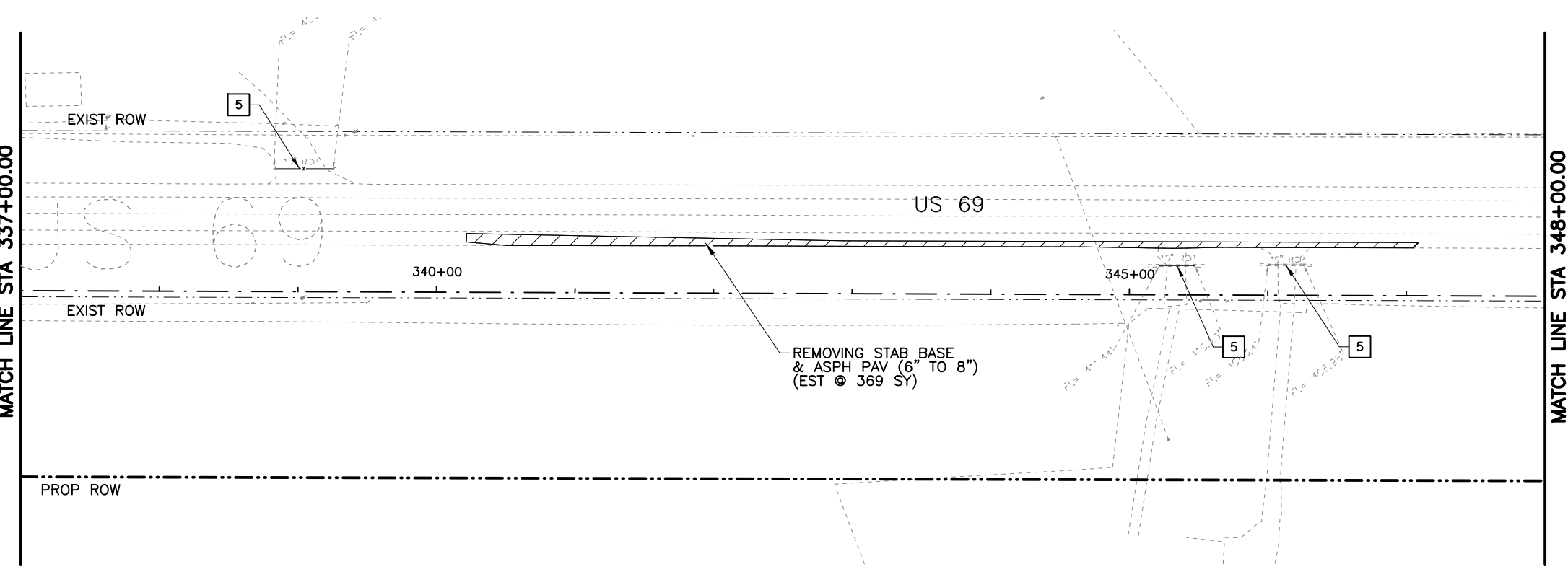
LEGEND

-  REMOVE STAB. BASE & ASPH PAV (6" TO 8")
-  REMOVE SM RD SN SUP&AM
-  REMOVE STR (PIPE)
-  PIPE TO BE REMOVED
-  GUARDRAIL TO BE REMOVED



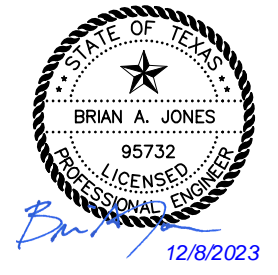
BEGIN PROJECT
 US69 STA 331+06.88
 NW TRANS STA 600+00.00
 SE TRANS STA 1000+00.00

MATCH LINE STA 337+00.00



REMOVING STAB. BASE
 & ASPH PAV (6" TO 8")
 (EST @ 369 SY)

MATCH LINE STA 348+00.00



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



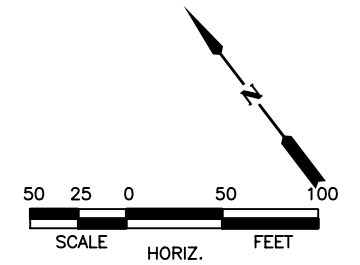
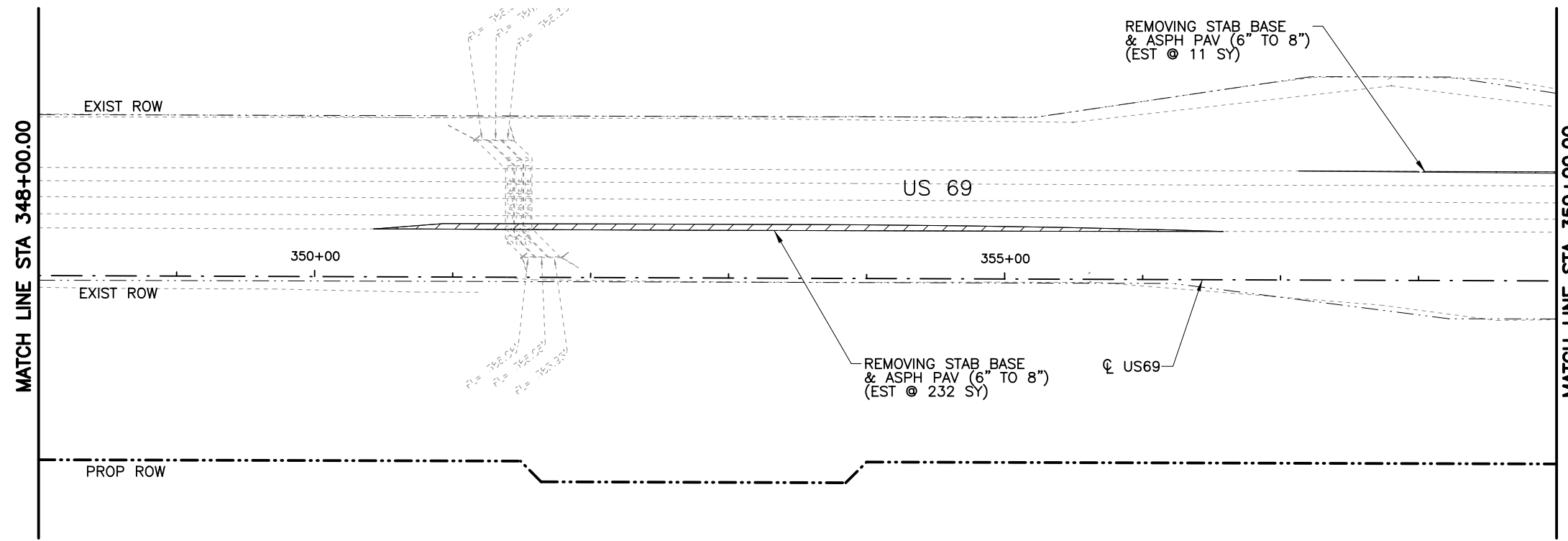
US 69 AT FM 779






**REMOVAL PLAN
 US 69**

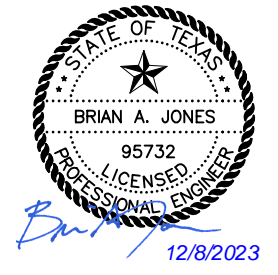
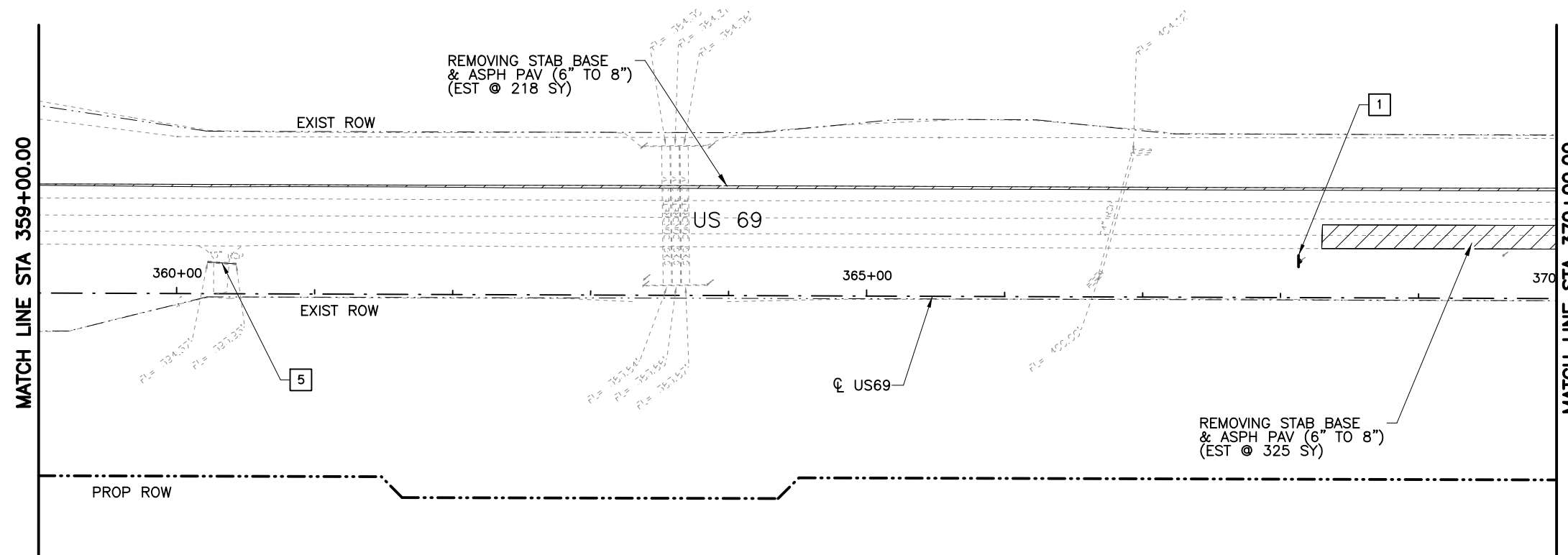
BEGIN PROJECT TO STA 348+00

Designed:	JKF	FED. RD. DIV. NO.	6	STATE	TEXAS	PROJECT NO.		HIGHWAY NO.	US 69
Checked:	BAJ	DIST.	WOOD	COUNTY		CONTROL NO.	0203	SECTION NO.	05
Drawn:	JKF	JOB NO.	039	SHEET NO.	130				
Checked:	BAJ	TYL							

12/8/2023 2:38:11 PM MonsaM
 cpybw_ANSIB.tbl
 cpypdf_ANSIB.pltcfgr
 pw:/



- LEGEND**
-  REMOVE STAB BASE & ASPH PAV (6" TO 8")
 -  REMOVE SM RD SN SUP&AM
 -  REMOVE STR (PIPE)
 -  PIPE TO BE REMOVED
 -  GUARDRAIL TO BE REMOVED



NO.	REVISION	BY	DATE

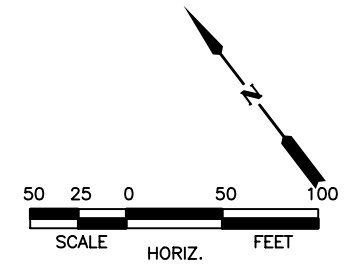
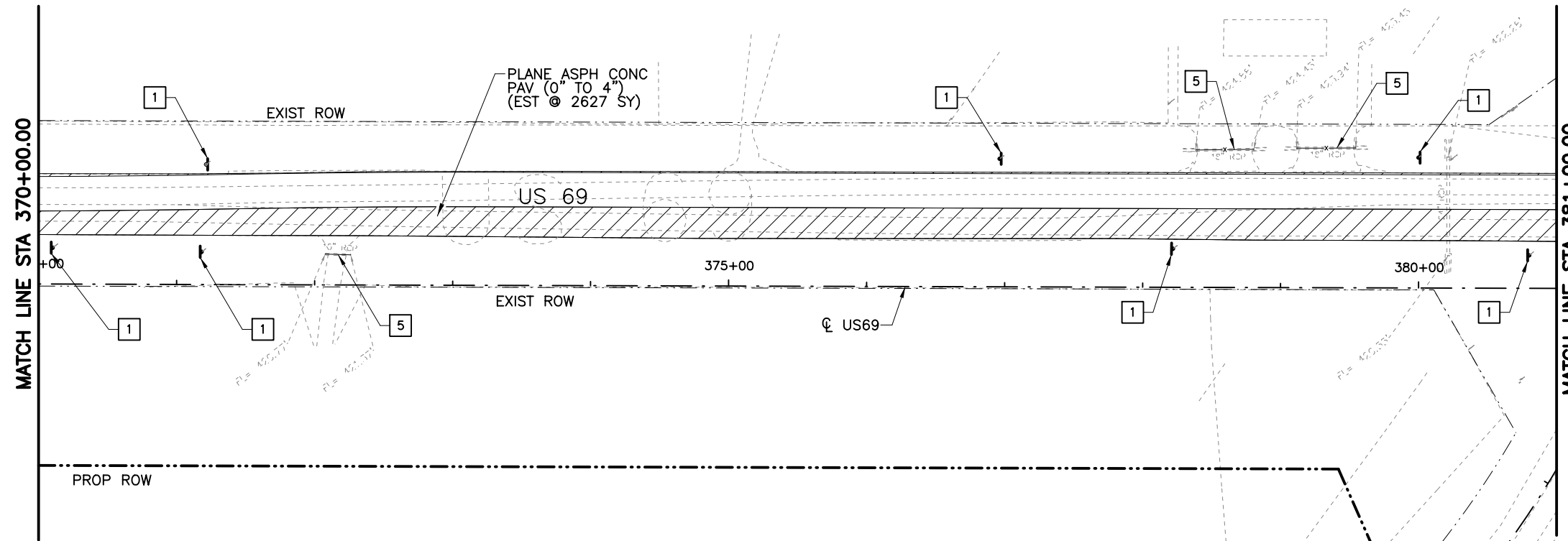







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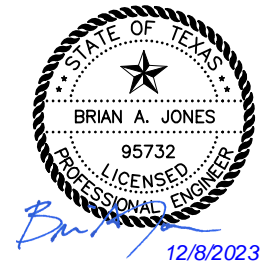
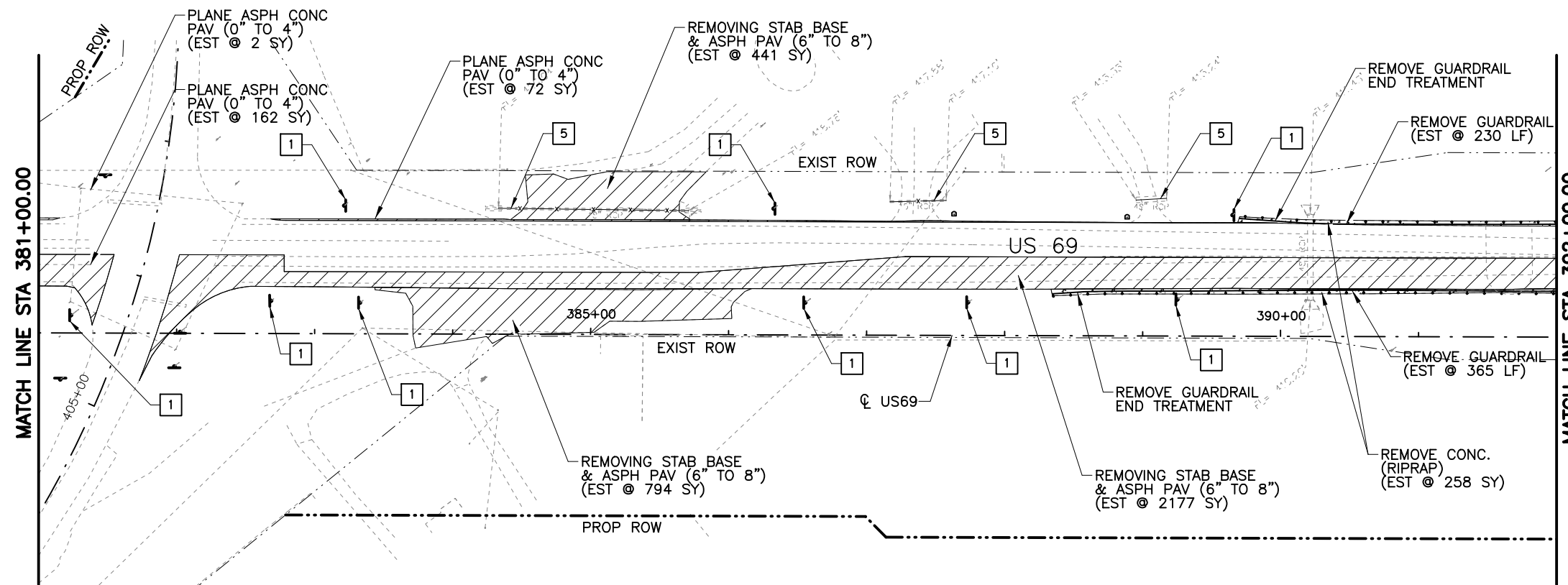
US 69 AT FM 779
REMOVAL PLAN
US 69
STA 348+00 TO STA 370+00

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	131

12/8/2023 2:38:18 PM MonsaM
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 pw:/



- LEGEND**
-  REMOVE STAB. BASE & ASPH PAV (6" TO 8")
 -  REMOVE SM RD SN SUP&AM
 -  REMOVE STR (PIPE)
 -  PIPE TO BE REMOVED
 -  GUARDRAIL TO BE REMOVED



NO.	REVISION	BY	DATE



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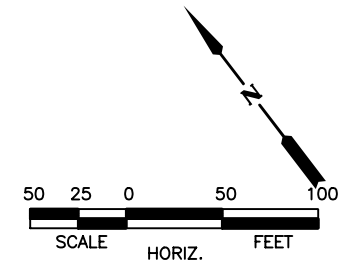
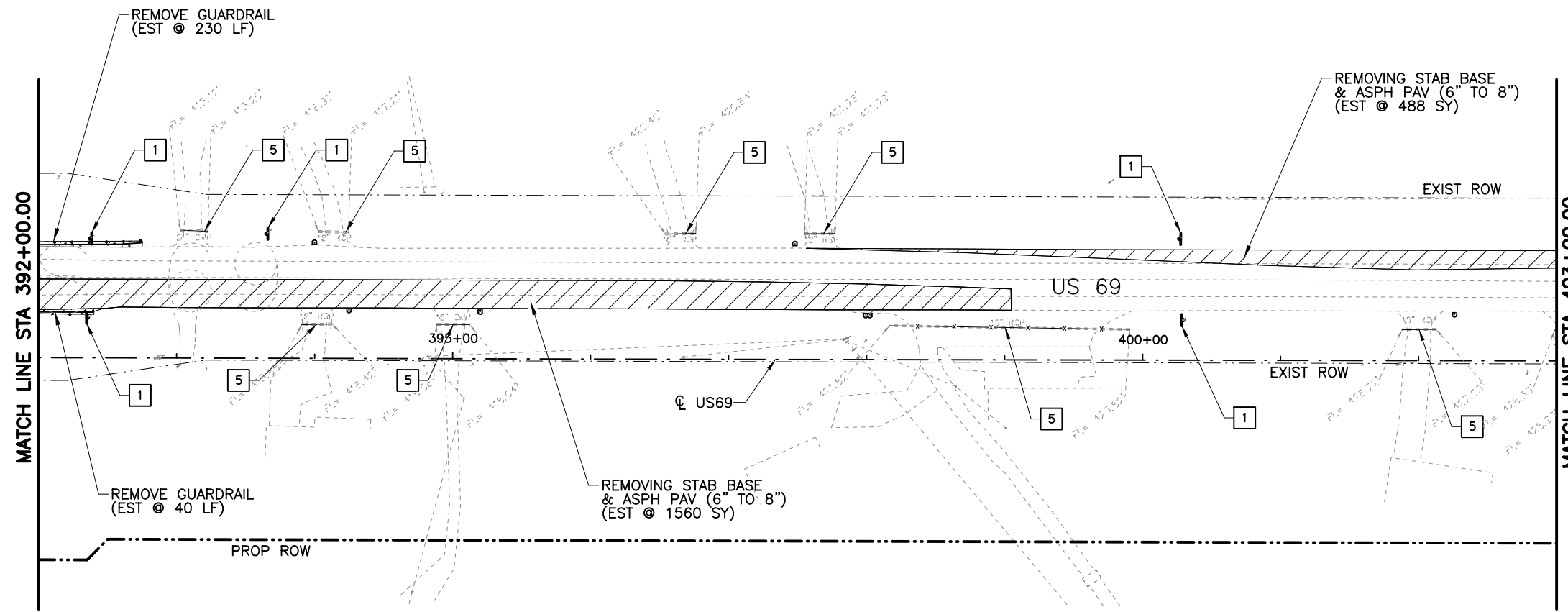
US 69 AT FM 779

**REMOVAL PLAN
US 69**

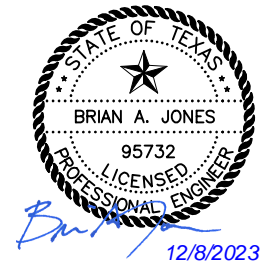
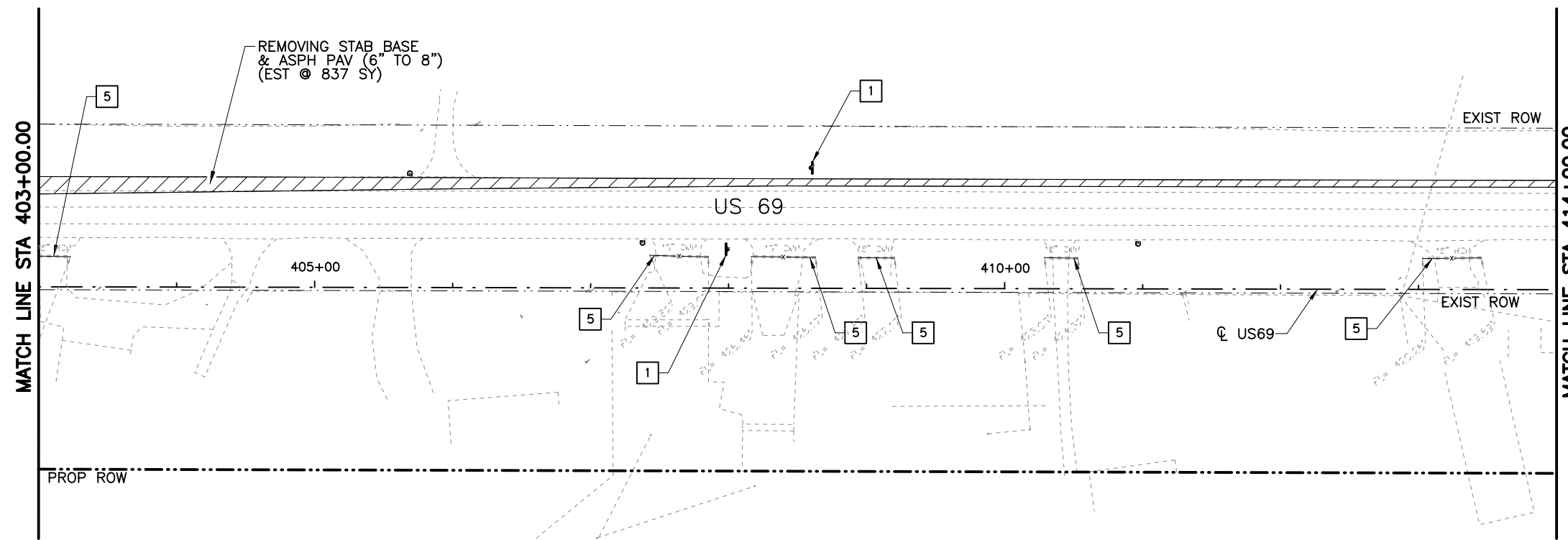
STA 370+00 TO STA 392+00

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	132

12/8/2023 2:38:27 PM MonsalM
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- LEGEND**
- REMOVE STAB. BASE & ASPH PAV (6" TO 8")
 - REMOVE SM RD SN SUP&AM
 - REMOVE STR (PIPE)
 - PIPE TO BE REMOVED
 - GUARDRAIL TO BE REMOVED



NO.	REVISION	BY	DATE



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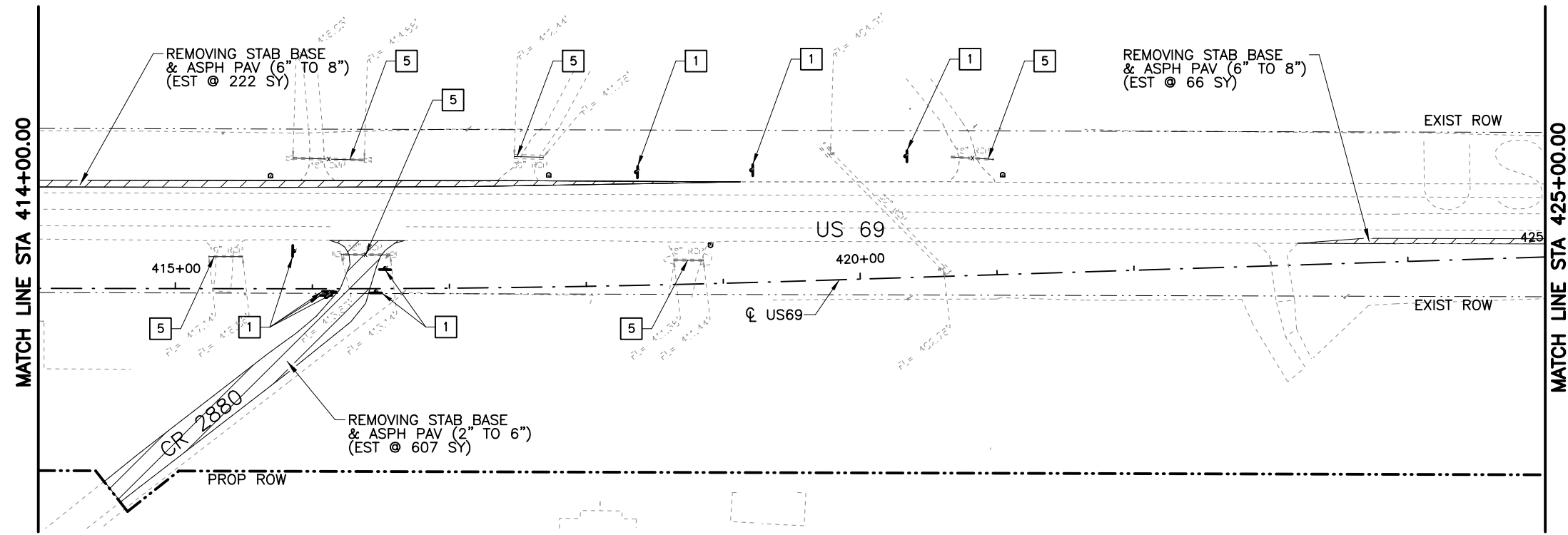
US 69 AT FM 779

**REMOVAL PLAN
US 69**

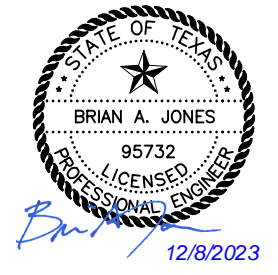
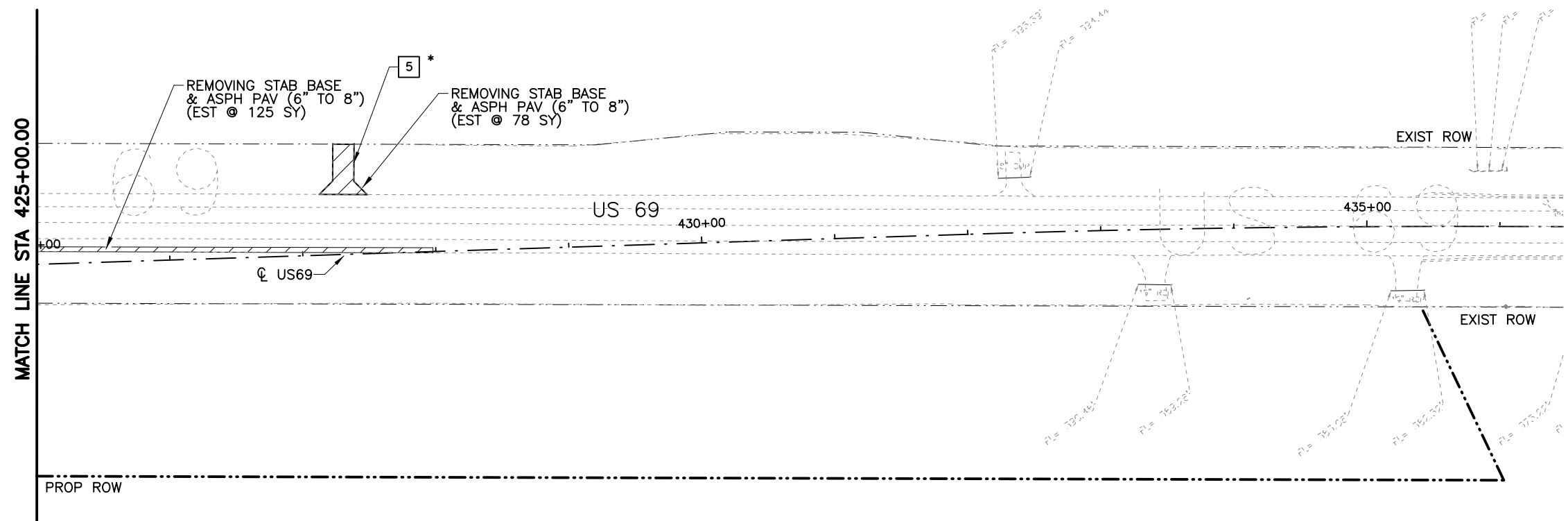
STA 392+00 TO STA 414+00

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	133

12/8/2023 2:38:37 PM MonsaM
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- LEGEND**
- REMOVE STAB. BASE & ASPH PAV (6" TO 8")
 - REMOVE SM RD SN SUP&AM
 - REMOVE STR (PIPE)
 - PIPE TO BE REMOVED
 - GUARDRAIL TO BE REMOVED



NO.	REVISION	BY	DATE



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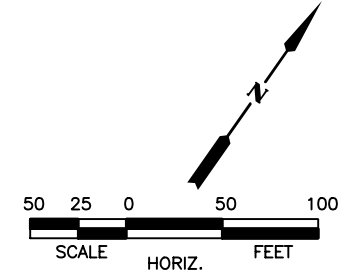
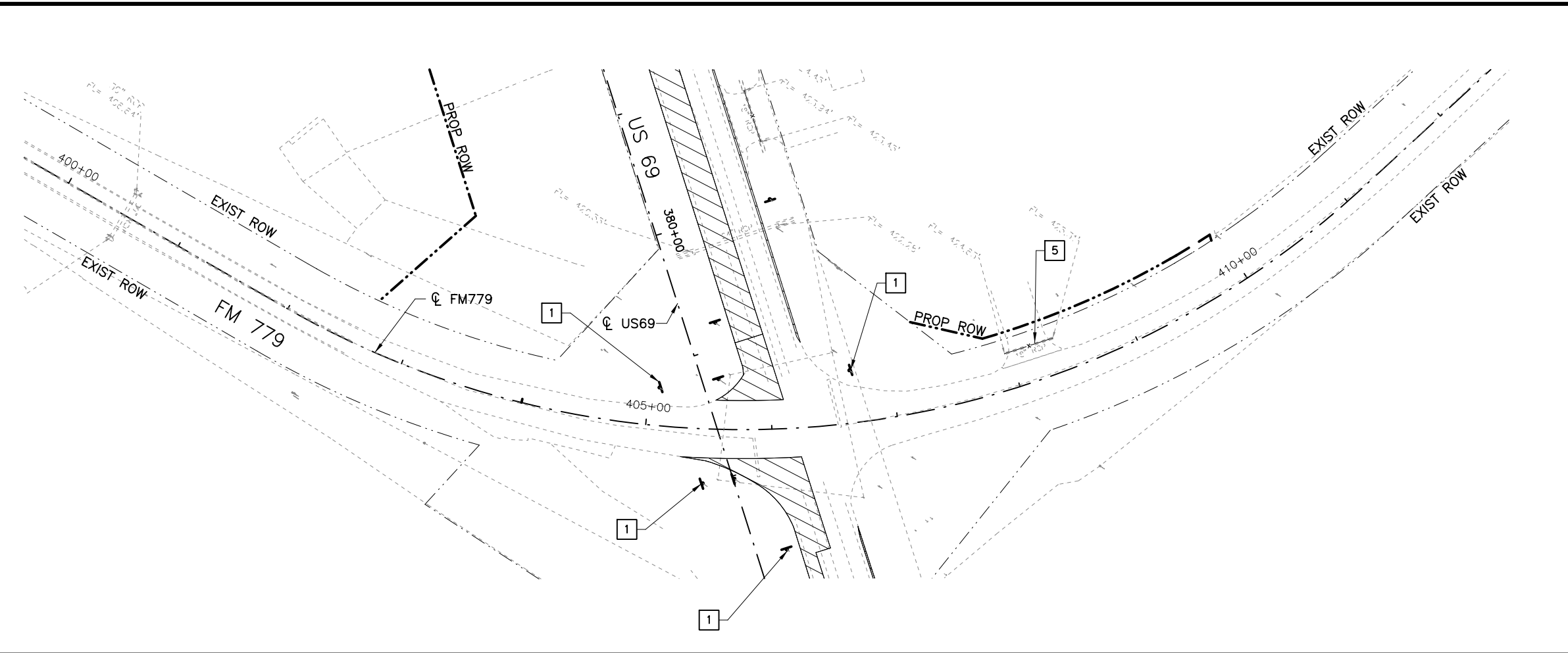
US 69 AT FM 779
REMOVAL PLAN
US 69
 STA 414+00 TO END PROJECT

* WHEN REMOVING, CONTRACTOR TO RETURN EXISTING PIPE AND SET'S TO THE PROPERTY OWNER.






Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	134

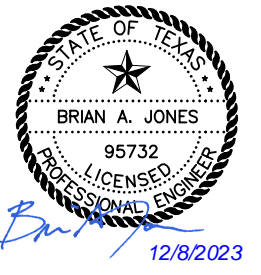
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12/8/2023 2:38:54 PM MonsaM
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 cpypdf_ANSIB.pltcfgr
 pw:/



LEGEND

-  REMOVE STAB. BASE & ASPH PAV (6" TO 8")
-  REMOVE SM RD SN SUP&AM
-  REMOVE STR (PIPE)
-  PIPE TO BE REMOVED
-  GUARDRAIL TO BE REMOVED



NO.	REVISION	BY	DATE



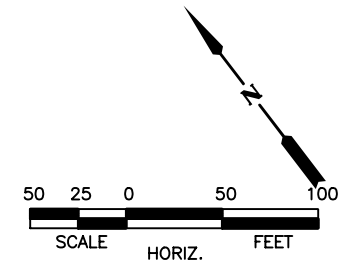
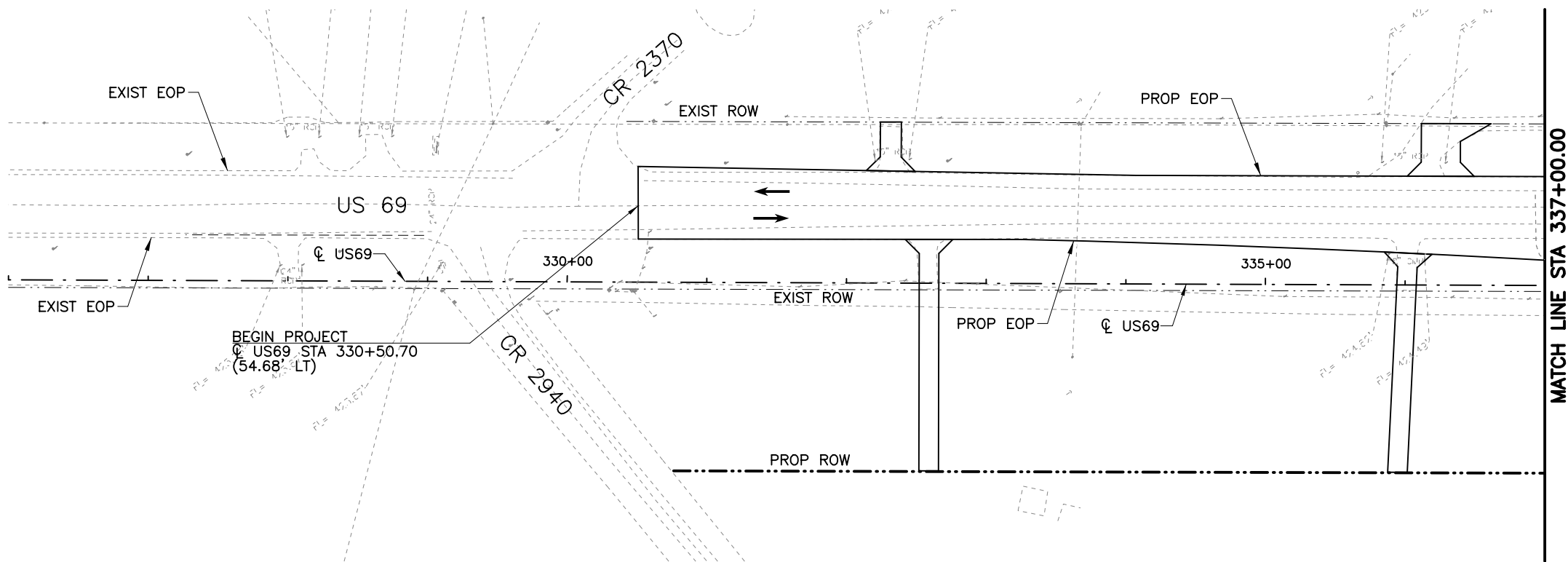
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US 69 AT FM 779

**REMOVAL PLAN
 FM 779**

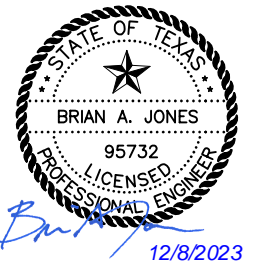
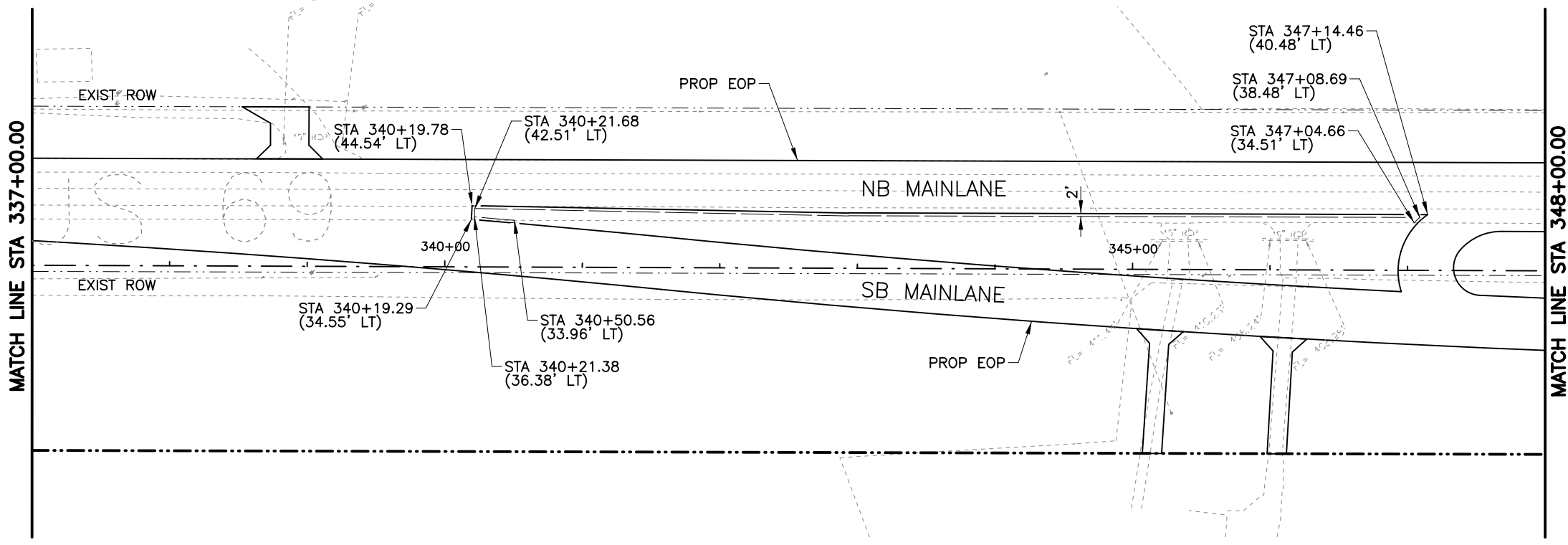
BEGIN CONST. TO END CONST.

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	135



LEGEND

— SAWCUT



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

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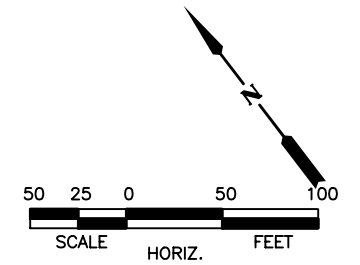
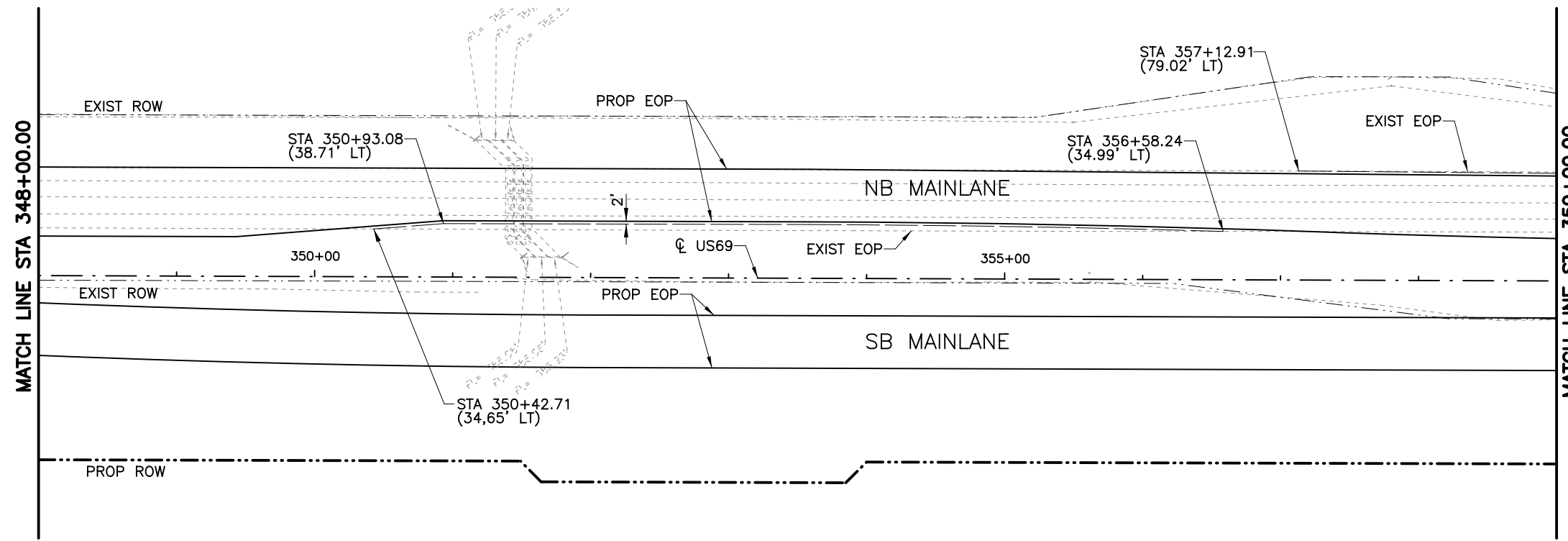
US 69 AT FM 779

**SAWCUT LAYOUT
US 69**

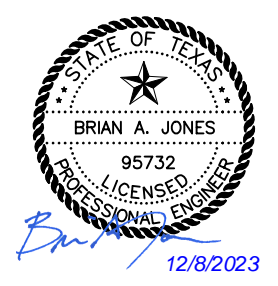
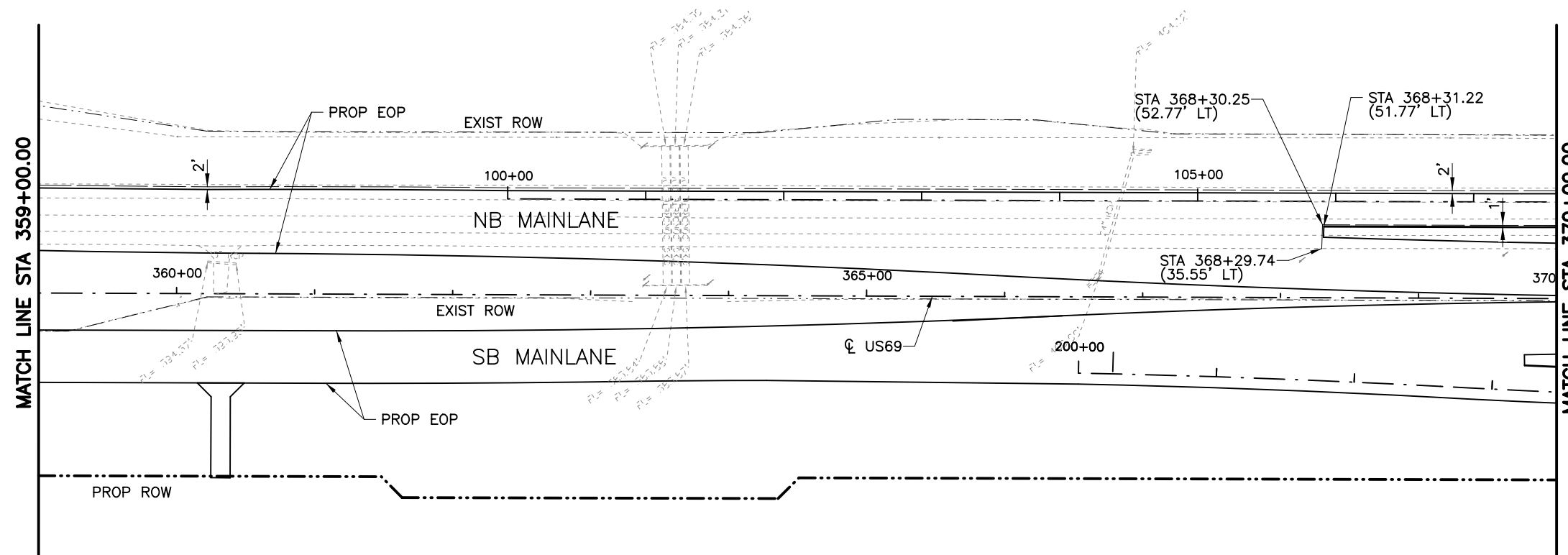
BEGIN PROJECT TO STA 348+00

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	136

12/8/2023 2:39:03 PM MonsalM
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LEGEND
 ——— SAWCUT



NO.	REVISION	BY	DATE



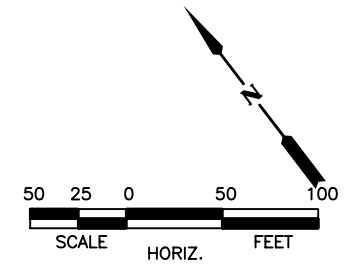
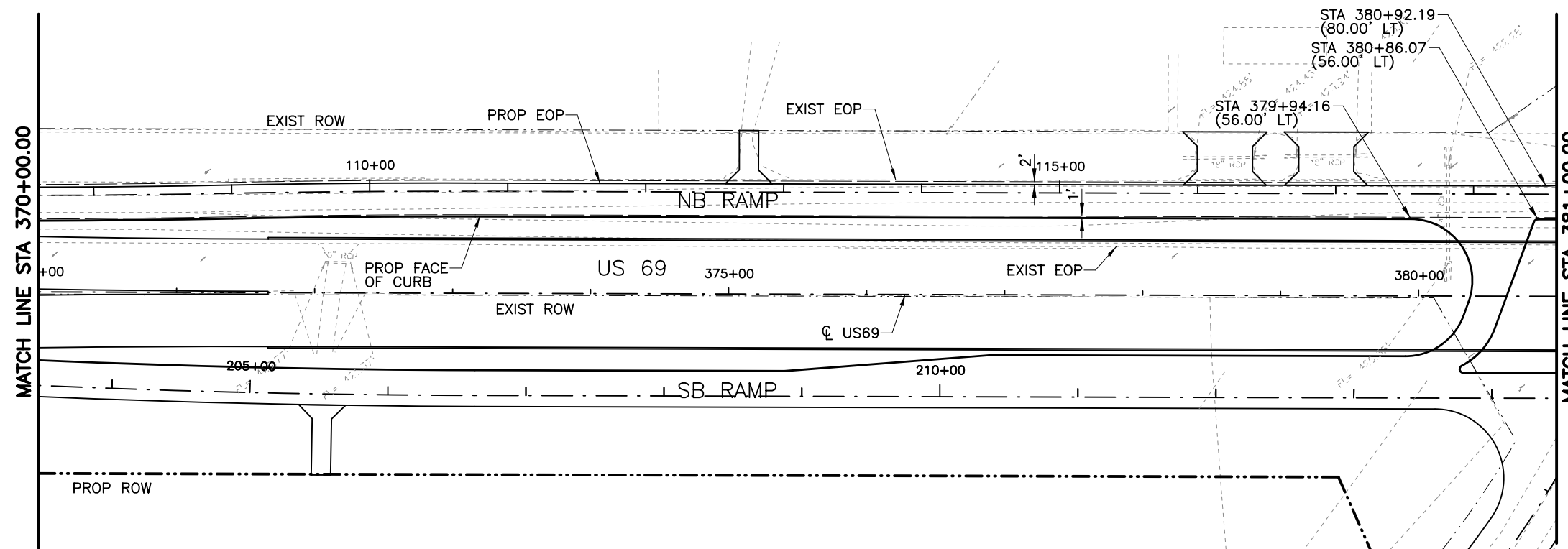
©2023 Texas Department of Transportation
 US 69 AT FM 779

**SAWCUT LAYOUT
 US 69**

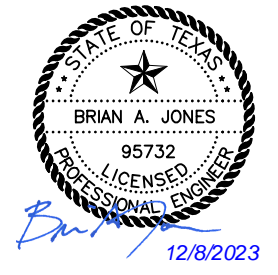
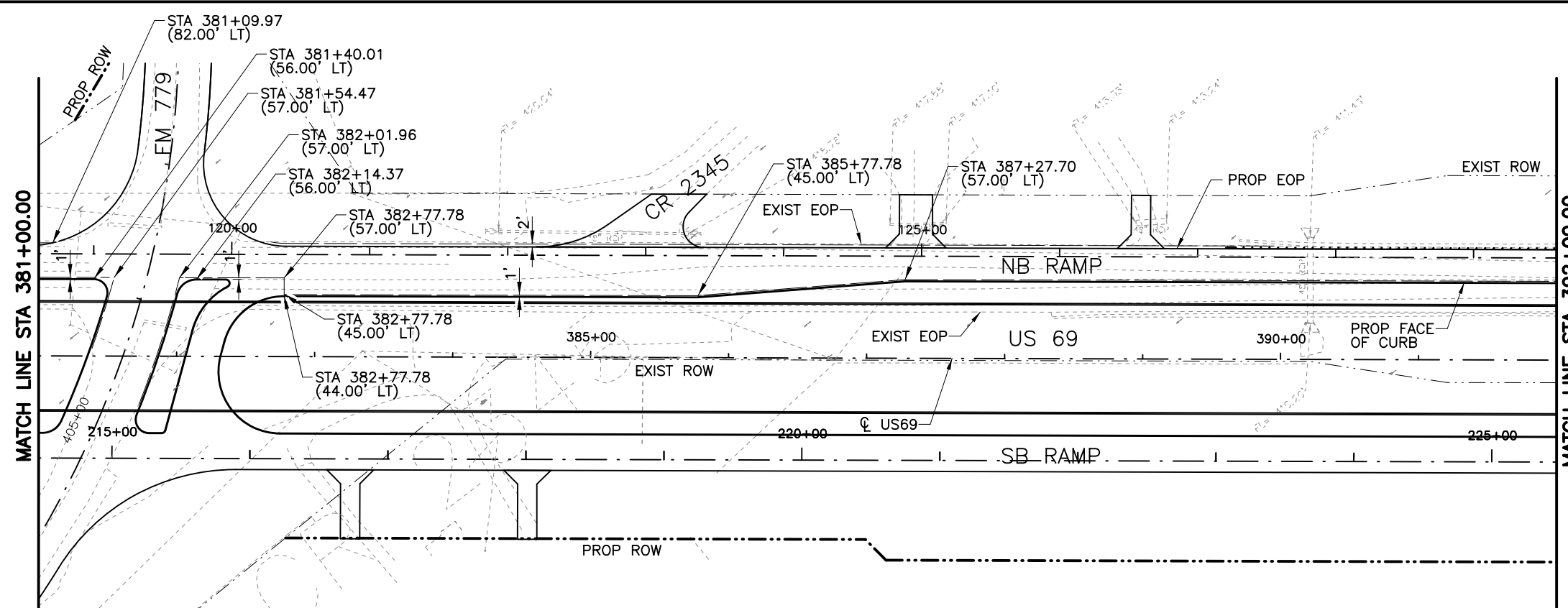
STA 348+00 TO STA 370+00

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	137

12/8/2023 2:39:11 PM MonsaM
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 pw:/



LEGEND
 ——— SAWCUT



NO.	REVISION	BY	DATE



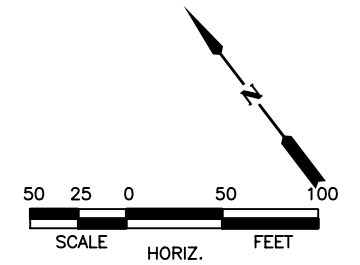
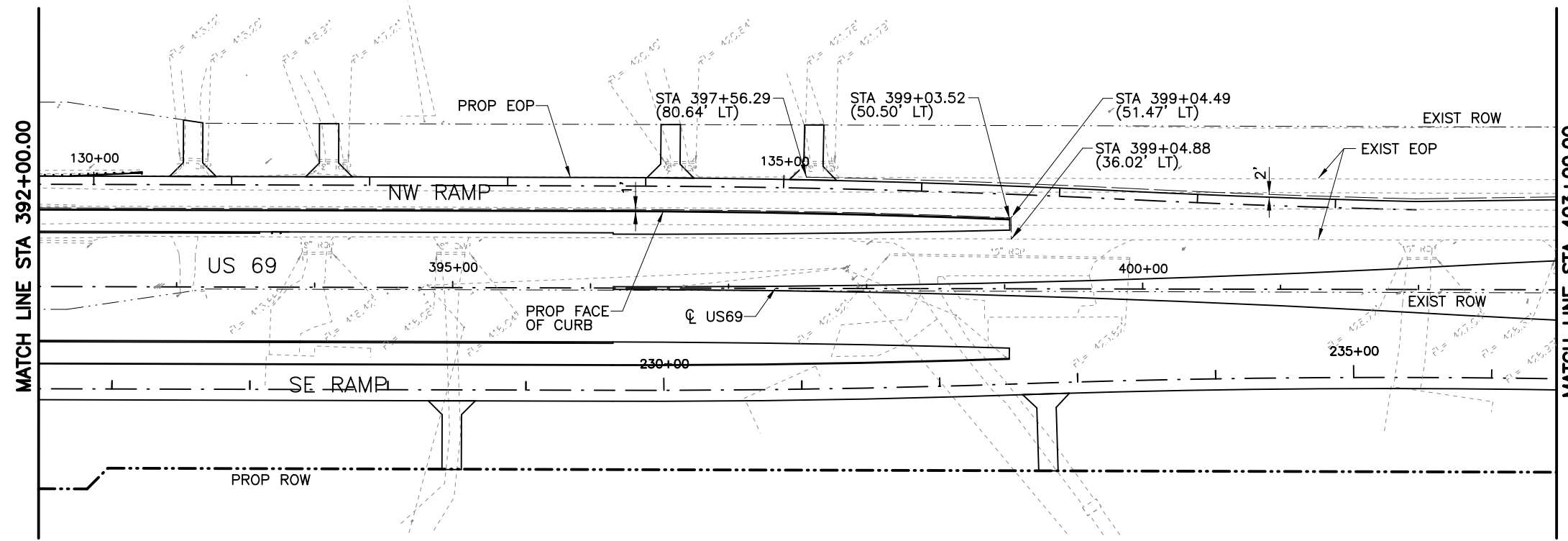
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 US 69 AT FM 779

**SAWCUT LAYOUT
 US 69**

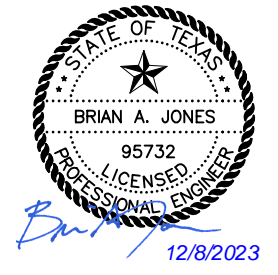
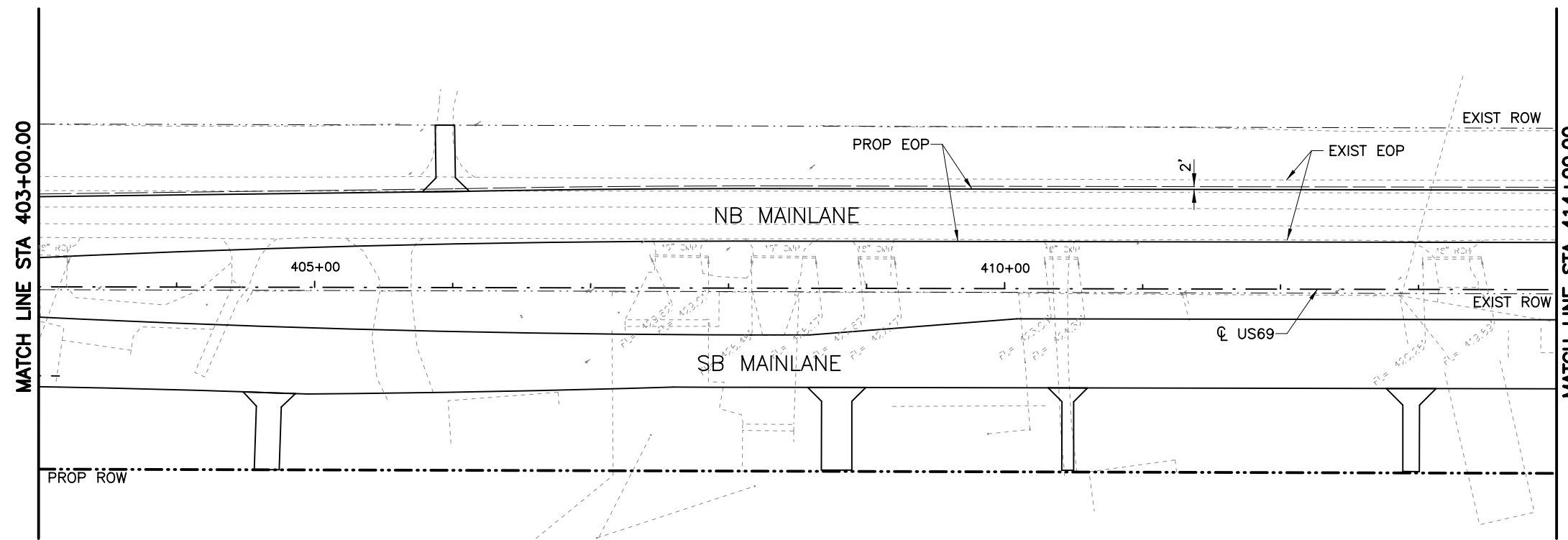
STA 370+00 TO STA 392+00

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	138

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 ——— SAWCUT



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



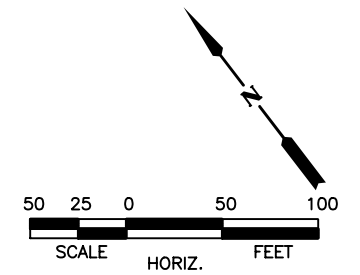
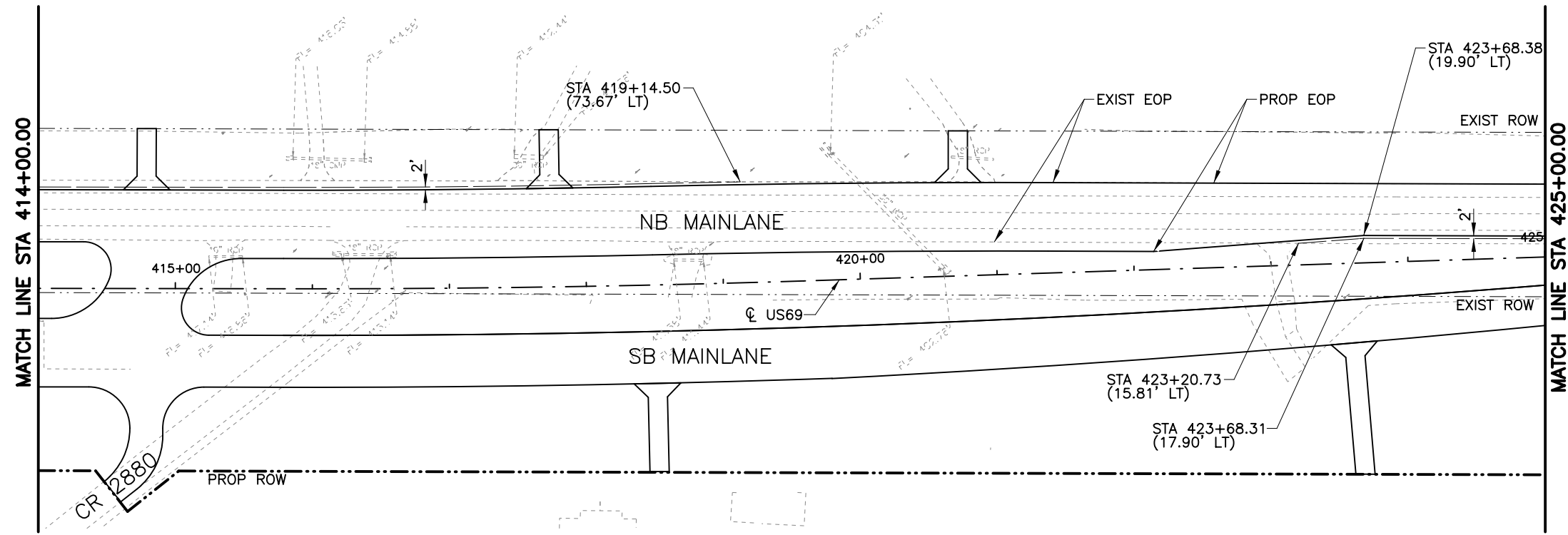
US 69 AT FM 779

SAWCUT LAYOUT
 US 69

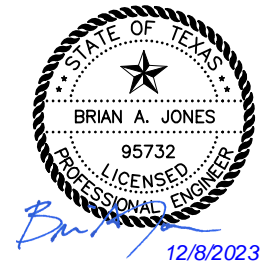
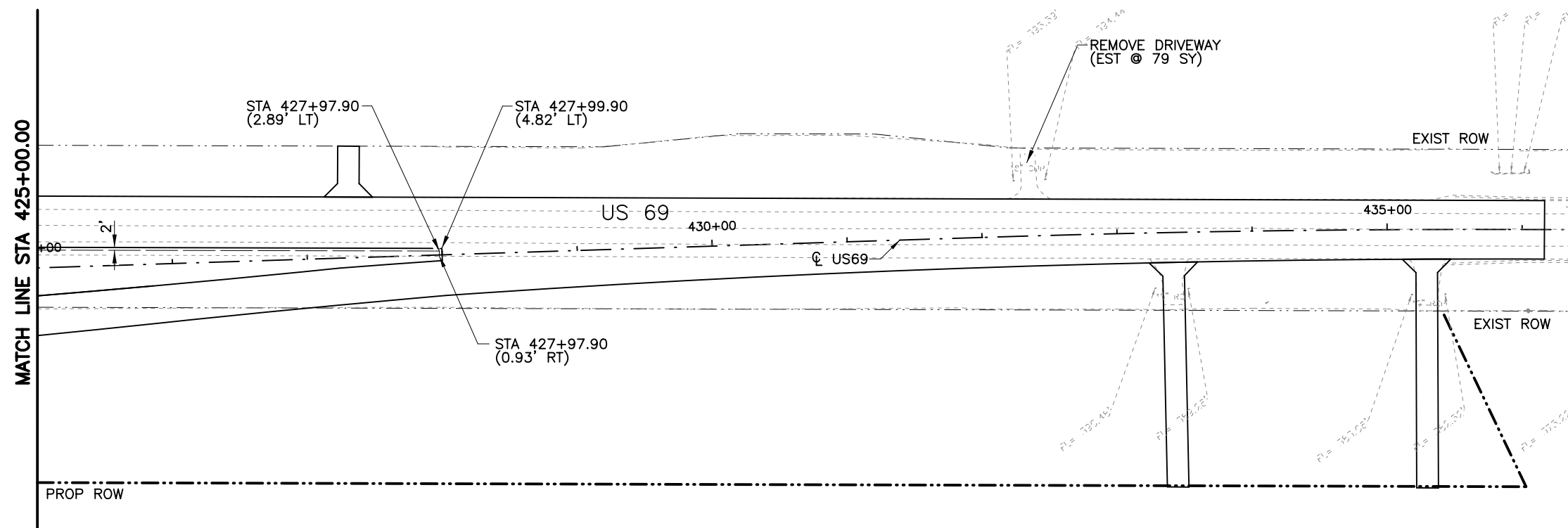
STA 392+00 TO STA 414+00

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	139

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LEGEND
 ——— SAWCUT



NO.	REVISION	BY	DATE

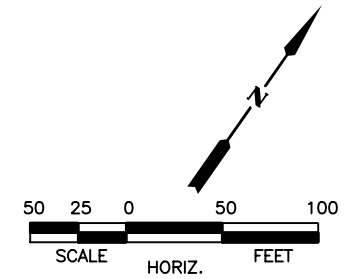
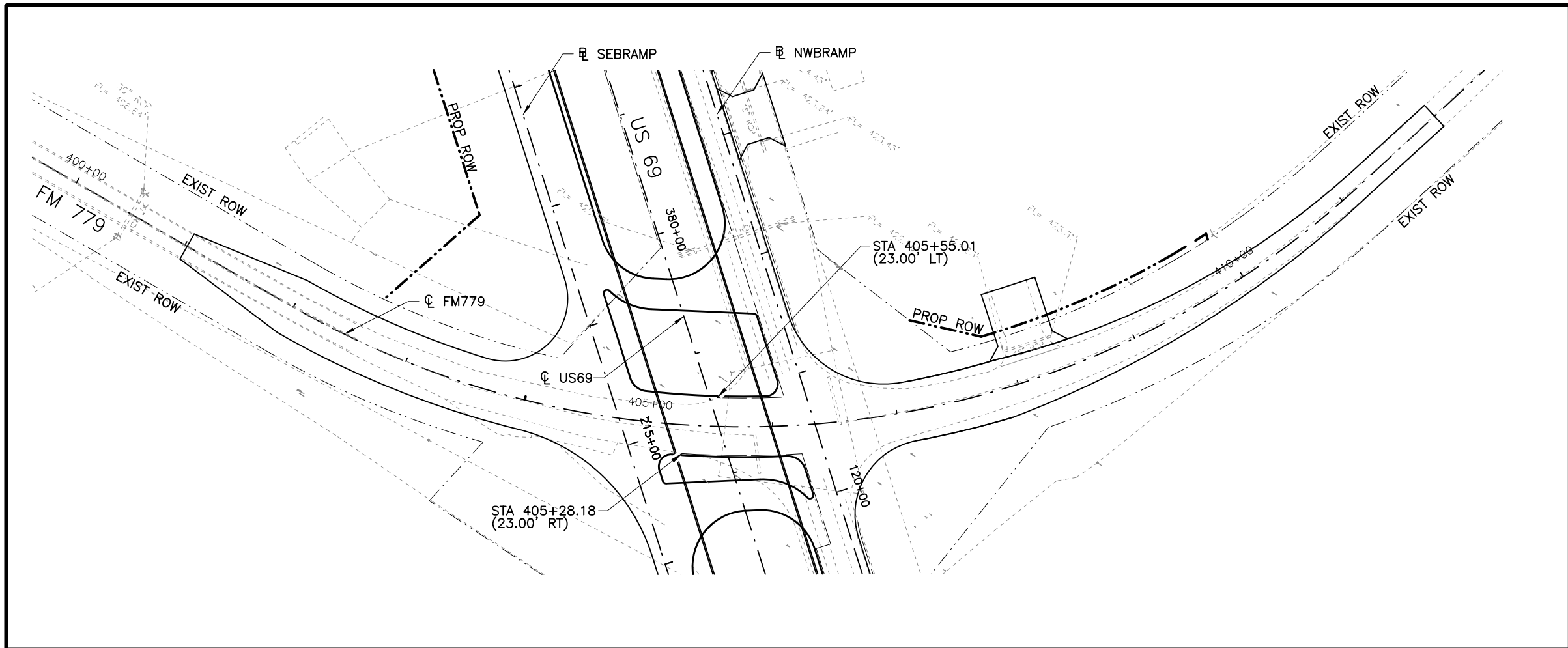


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US 69 AT FM 779
SAWCUT LAYOUT
US 69
 STA 414+00 TO END PROJECT

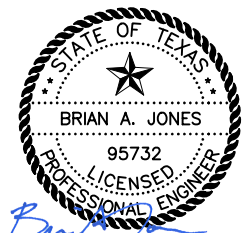
Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	140

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LEGEND

—— SAWCUT



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

**SAWCUT LAYOUT
FM 779**

BEGIN CONST. TO END CONST.

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	141

CENTERLINE US 69 ALIGNMENT
(☉ US69)

Chain US6960 contains:
US60328 US60329 US60330 CUR US6960-1 CUR US6960-2 US60331

Beginning chain US6960 description

Point US60328 N 6,965,432.6605 E 2,872,352.0438 Sta 328+00.00
Course from US60328 to US60329 S 52° 21' 45.61" E Dist 4,366.2715
Point US60329 N 6,962,766.3477 E 2,875,809.6590 Sta 371+66.27
Course from US60329 to US60330 S 52° 24' 53.59" E Dist 2,450.0160
Point US60330 N 6,961,271.9866 E 2,877,751.1697 Sta 396+16.29
Course from US60330 to PC US6960-1 S 52° 27' 47.77" E Dist 1,962.3965

Curve Data

Curve US6960-1
P.I. Station 417+68.58 N 6,959,960.6579 E 2,879,457.8600
Delta = 1° 57' 36.86" (LT)
Degree = 0° 30' 58.24"
Tangent = 189.8987
Length = 379.7603
Radius = 11,100.0000
External = 1.6243
Long Chord = 379.7418
Mid. Ord. = 1.6240
P.C. Station 415+78.68 N 6,960,076.3575 E 2,879,307.2773
P.T. Station 419+58.44 N 6,959,850.1769 E 2,879,612.3121
C.C. N 6,968,878.2457 E 2,886,070.1734
Back = S 52° 27' 47.77" E
Ahead = S 54° 25' 24.63" E
Chord Bear = S 53° 26' 36.20" E

Course from PT US6960-1 to PC US6960-2 S 54° 25' 24.63" E Dist 1,243.9458

Curve Data

Curve US6960-2
P.I. Station 433+96.20 N 6,959,013.7034 E 2,880,781.6993
Delta = 2° 00' 02.35" (RT)
Degree = 0° 30' 58.24"
Tangent = 193.8144
Length = 387.5895
Radius = 11,100.0000
External = 1.6919
Long Chord = 387.5698
Mid. Ord. = 1.6917
P.C. Station 432+02.39 N 6,959,126.4625 E 2,880,624.0624
P.T. Station 435+89.98 N 6,958,895.5097 E 2,880,935.3037
C.C. N 6,950,098.3937 E 2,874,166.2011
Back = S 54° 25' 24.63" E
Ahead = S 52° 25' 22.28" E
Chord Bear = S 53° 25' 23.46" E

Course from PT US6960-2 to US60331 S 52° 25' 22.28" E Dist 73.9452

Point US60331 N 6,958,850.4157 E 2,880,993.9077 Sta 436+63.92

Ending chain US6960 description

NB MAINLANE ALIGNMENT
(☒ NBML)

Chain NBML1 contains:
NBML597 CUR NBML1-1 CUR NBML1-2 CUR NBML1-3 CUR NBML1-4

Beginning chain NBML1 description

Point NBML597 N 6,965,472.2632 E 2,872,391.2897 Sta 597+00.00
Course from NBML597 to PC NBML1-1 S 52° 23' 50.78" E Dist 2,551.1762

Curve Data

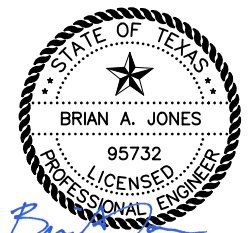
Curve NBML1-1
P.I. Station 624+34.33 N 6,963,803.8260 E 2,874,557.5994
Delta = 1° 53' 26.39" (RT)
Degree = 0° 30' 58.24"
Tangent = 183.1573
Length = 366.2814
Radius = 11,100.0000
External = 1.5110
Long Chord = 366.2648
Mid. Ord. = 1.5108
P.C. Station 622+51.18 N 6,963,915.5851 E 2,874,412.4907
P.T. Station 626+17.46 N 6,963,687.3403 E 2,874,698.9418
C.C. N 6,955,121.4727 E 2,867,639.4864
Back = S 52° 23' 50.78" E
Ahead = S 50° 30' 24.39" E
Chord Bear = S 51° 27' 07.59" E


Curve Data

Curve NBML1-2
P.I. Station 627+85.20 N 6,963,580.6584 E 2,874,828.3886
Delta = 1° 43' 53.64" (LT)
Degree = 0° 30' 58.24"
Tangent = 167.7423
Length = 335.4591
Radius = 11,100.0000
External = 1.2674
Long Chord = 335.4464
Mid. Ord. = 1.2672
P.C. Station 626+17.46 N 6,963,687.3403 E 2,874,698.9418
P.T. Station 629+52.92 N 6,963,477.9367 E 2,874,960.9998
C.C. N 6,972,253.2080 E 2,881,758.3973
Back = S 50° 30' 24.39" E
Ahead = S 52° 14' 18.03" E
Chord Bear = S 51° 22' 21.21" E

Curve Data

Curve NBML1-3
P.I. Station 632+21.17 N 6,963,313.6639 E 2,875,173.0719
Delta = 2° 46' 07.67" (RT)
Degree = 0° 30' 58.24"
Tangent = 268.2538
Length = 536.4033
Radius = 11,100.0000
External = 3.2410
Long Chord = 536.3511
Mid. Ord. = 3.2400
P.C. Station 629+52.92 N 6,963,477.9367 E 2,874,960.9998
P.T. Station 634+89.32 N 6,963,139.3385 E 2,875,376.9611
C.C. N 6,954,702.6653 E 2,868,163.6023
Back = S 52° 14' 18.03" E
Ahead = S 49° 28' 10.36" E
Chord Bear = S 50° 51' 14.20" E



NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741 ©2023 Texas Department of Transportation US 69 AT FM 779 HORIZONTAL ALIGNMENT DATA			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	142

NB MAINLANE ALIGNMENT
(☒ NBML) (CONTINUED)

Curve Data

Curve NBML1-4
 P.I. Station 637+74.70 N 6,962,953.8833 E 2,875,593.8676
 Delta = 2° 56' 43.79" (LT)
 Degree = 0° 30' 58.24"
 Tangent = 285.3806
 Length = 570.6355
 Radius = 11,100.0000
 External = 3.6680
 Long Chord = 570.5727
 Mid. Ord. = 3.6667
 P.C. Station 634+89.32 N 6,963,139.3385 E 2,875,376.9611
 P.T. Station 640+59.96 N 6,962,779.8191 E 2,875,820.0175
 C.C. = N 6,971,576.0117 E 2,882,590.3199
 Back = S 49° 28' 10.36" E
 Ahead = S 52° 24' 54.15" E
 Chord Bear = S 50° 56' 32.25" E

Ending chain NBML1 description

Chain NBML2 contains:

CUR NBML2-1 CUR NBML2-2 CUR NBML2-3 CUR NBML2-4 NBML801

Beginning chain NBML2 description

Curve Data

Curve NBML2-1
 P.I. Station 803+07.81 N 6,961,097.7165 E 2,878,005.4587
 Delta = 3° 10' 36.61" (LT)
 Degree = 0° 30' 58.24"
 Tangent = 307.8054
 Length = 615.4531
 Radius = 11,100.0000
 External = 4.2669
 Long Chord = 615.3743
 Mid. Ord. = 4.2653
 P.C. Station 800+00.00 N 6,961,285.4585 E 2,877,761.5384
 P.T. Station 806+15.45 N 6,960,923.7806 E 2,878,259.4085
 C.C. = N 6,970,081.6511 E 2,884,531.8408
 Back = S 52° 24' 54.15" E
 Ahead = S 55° 35' 30.75" E
 Chord Bear = S 54° 00' 12.45" E

Curve Data

Curve NBML2-2
 P.I. Station 809+18.58 N 6,960,752.4865 E 2,878,509.5011
 Delta = 3° 07' 42.99" (RT)
 Degree = 0° 30' 58.24"
 Tangent = 303.1303
 Length = 606.1099
 Radius = 11,099.9982
 External = 4.1383
 Long Chord = 606.0346
 Mid. Ord. = 4.1368
 P.C. Station 806+15.45 N 6,960,923.7806 E 2,878,259.4085
 P.T. Station 812+21.56 N 6,960,567.7984 E 2,878,749.8721
 C.C. = N 6,951,765.9115 E 2,871,986.9772
 Back = S 55° 35' 30.75" E
 Ahead = S 52° 27' 47.77" E
 Chord Bear = S 54° 01' 39.26" E

Course from PT NBML2-2 to PC NBML2-3 S 52° 27' 47.77" E Dist 741.7619

NB MAINLANE ALIGNMENT
(☒ NBML) (CONTINUED)

Curve Data

Curve NBML2-3
 P.I. Station 820+97.63 N 6,960,034.0401 E 2,879,444.5568
 Delta = 1° 23' 11.00" (LT)
 Degree = 0° 30' 58.24"
 Tangent = 134.3002
 Length = 268.5873
 Radius = 11,100.0000
 External = 0.8124
 Long Chord = 268.5807
 Mid. Ord. = 0.8124
 P.C. Station 819+63.32 N 6,960,115.8652 E 2,879,338.0618
 P.T. Station 822+31.91 N 6,959,954.8156 E 2,879,553.0005
 C.C. = N 6,968,917.7535 E 2,886,100.9578
 Back = S 52° 27' 47.77" E
 Ahead = S 53° 50' 58.77" E
 Chord Bear = S 53° 09' 23.27" E

Curve Data

Curve NBML2-4
 P.I. Station 823+69.82 N 6,959,873.4656 E 2,879,664.3536
 Delta = 1° 25' 36.48" (RT)
 Degree = 0° 31' 02.45"
 Tangent = 137.9034
 Length = 275.7925
 Radius = 11,074.9436
 External = 0.8585
 Long Chord = 275.7854
 Mid. Ord. = 0.8585
 P.C. Station 822+31.91 N 6,959,954.8156 E 2,879,553.0005
 P.T. Station 825+07.70 N 6,959,789.3681 E 2,879,773.6465
 C.C. = N 6,951,012.1101 E 2,873,019.8240
 Back = S 53° 50' 58.77" E
 Ahead = S 52° 25' 22.28" E
 Chord Bear = S 53° 08' 10.52" E

Course from PT NBML2-4 to NBML801 S 52° 25' 22.28" E Dist 1,539.6976

Point NBML801 N 6,958,850.4157 E 2,880,993.9077 Sta 840+47.40

Ending chain NBML2 description

NW RAMP ALIGNMENT
(☒ NWRAMP)

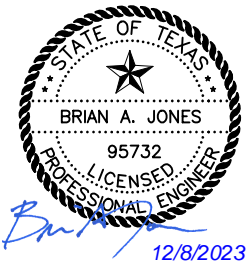
Chain NWRAMP60 contains:

NWBR60100 CUR NWRAMP60-1 CUR NWRAMP60-2 NWBR60101 NWBR60102 CUR NWRAMP60-3 -
CUR NWRAMP60-4

Beginning chain NWRAMP60 description

Point NWBR60100 N 6,963,387.1534 E 2,875,118.2761 Sta 100+00.00

Course from NWBR60100 to PC NWRAMP60-1 S 52° 23' 50.78" E Dist 721.1547



NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
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US 69 AT FM 779			
HORIZONTAL ALIGNMENT DATA			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	143

NW RAMP ALIGNMENT
(NWRAMP) (CONTINUED)

Curve Data

Curve NWBRAMP60-1

P.I. Station	108+10.62	N	6,962,892.5311	E	2,875,760.4968
Delta	=	1' 18" 09.19"	(LT)		
Degree	=	0° 43' 40.90"			
Tangent	=	89.4616			
Length	=	178.9154			
Radius	=	7,870.0000			
External	=	0.5085			
Long Chord	=	178.9116			
Mid. Ord.	=	0.5084			
P.C. Station	107+21.15	N	6,962,947.1188	E	2,875,689.6198
P.T. Station	109+00.07	N	6,962,839.5687	E	2,875,832.5964
C.C.		N	6,969,182.2238	E	2,880,491.7409
Back	= S	52° 23' 50.78"	E		
Ahead	= S	53° 41' 59.98"	E		
Chord Bear	= S	53° 02' 55.38"	E		

Curve Data

Curve NWBRAMP60-2

P.I. Station	109+88.32	N	6,962,787.3219	E	2,875,903.7218
Delta	=	1' 17" 05.83"	(RT)		
Degree	=	0° 43' 40.90"			
Tangent	=	88.2527			
Length	=	176.4980			
Radius	=	7,870.0108			
External	=	0.4948			
Long Chord	=	176.4943			
Mid. Ord.	=	0.4948			
P.C. Station	109+00.07	N	6,962,839.5687	E	2,875,832.5964
P.T. Station	110+76.57	N	6,962,733.4933	E	2,875,973.6576
C.C.		N	6,956,496.9049	E	2,871,173.4456
Back	= S	53° 41' 59.98"	E		
Ahead	= S	52° 24' 54.15"	E		
Chord Bear	= S	53° 03' 27.06"	E		

Course from PT NWBRAMP60-2 to NWBR60101 S 52° 24' 54.15" E Dist 775.9183

Point NWBR60101 N 6,962,260.2320 E 2,876,588.5339 Sta 118+52.49

Course from NWBR60101 to NWBR60102 S 52° 24' 54.15" E Dist 185.5844

Point NWBR60102 N 6,962,147.0372 E 2,876,735.6001 Sta 120+38.07

Course from NWBR60102 to PC NWBRAMP60-3 S 52° 24' 54.15" E Dist 1,338.5120

Curve Data

Curve NWBRAMP60-3

P.I. Station	135+61.04	N	6,961,218.1221	E	2,877,942.4762
Delta	=	2' 41" 07.07"	(RT)		
Degree	=	0° 43' 40.90"			
Tangent	=	184.4565			
Length	=	368.8455			
Radius	=	7,870.0000			
External	=	2.1613			
Long Chord	=	368.8117			
Mid. Ord.	=	2.1607			
P.C. Station	133+76.58	N	6,961,330.6290	E	2,877,796.3037
P.T. Station	137+45.43	N	6,961,098.8905	E	2,878,083.2173
C.C.		N	6,955,094.0491	E	2,872,996.0983
Back	= S	52° 24' 54.15"	E		
Ahead	= S	49° 43' 47.08"	E		
Chord Bear	= S	51° 04' 20.61"	E		

NW RAMP ALIGNMENT
(NWRAMP) (CONTINUED)

Curve Data

Curve NWBRAMP60-4

P.I. Station	138+52.03	N	6,961,029.9845	E	2,878,164.5541
Delta	=	1' 33" 07.46"	(LT)		
Degree	=	0° 43' 40.90"			
Tangent	=	106.6008			
Length	=	213.1885			
Radius	=	7,870.0000			
External	=	0.7219			
Long Chord	=	213.1820			
Mid. Ord.	=	0.7219			
P.C. Station	137+45.43	N	6,961,098.8905	E	2,878,083.2173
P.T. Station	139+58.62	N	6,960,963.3067	E	2,878,247.7274
C.C.		N	6,967,103.7320	E	2,883,170.3363
Back	= S	49° 43' 47.08"	E		
Ahead	= S	51° 16' 54.53"	E		
Chord Bear	= S	50° 30' 20.81"	E		

Ending chain NWBRAMP60 description

SB MAINLANE ALIGNMENT
(SBML)

Chain SBML1 contains:
CUR SBML1-1 CUR SBML1-2 CUR SBML1-3 CUR SBML1-4

Beginning chain SBML1 description

Curve Data

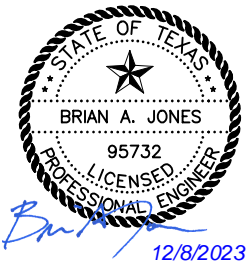
Curve SBML1-1

P.I. Station	1005+27.38	N	6,964,967.4087	E	2,873,046.7853
Delta	=	5° 26' 25.15"	(RT)		
Degree	=	0° 30' 58.24"			
Tangent	=	527.3769			
Length	=	1,053.9613			
Radius	=	11,100.0000			
External	=	12.5212			
Long Chord	=	1,053.5654			
Mid. Ord.	=	12.5070			
P.C. Station	1000+00.00	N	6,965,289.2038	E	2,872,628.9644
P.T. Station	1010+53.96	N	6,964,607.4500	E	2,873,432.2151
C.C.		N	6,956,495.0914	E	2,865,855.9602
Back	= S	52° 23' 50.78"	E		
Ahead	= S	46° 57' 25.64"	E		
Chord Bear	= S	49° 40' 38.21"	E		

Curve Data

Curve SBML1-2

P.I. Station	1015+81.27	N	6,964,247.5386	E	2,873,817.5942
Delta	=	5° 26' 25.15"	(LT)		
Degree	=	0° 30' 58.49"			
Tangent	=	527.3075			
Length	=	1,053.8225			
Radius	=	11,098.5389			
External	=	12.5195			
Long Chord	=	1,053.4267			
Mid. Ord.	=	12.5054			
P.C. Station	1010+53.96	N	6,964,607.4500	E	2,873,432.2151
P.T. Station	1021+07.78	N	6,963,925.7858	E	2,874,235.3601
C.C.		N	6,972,718.7406	E	2,881,007.4728
Back	= S	46° 57' 25.64"	E		
Ahead	= S	52° 23' 50.78"	E		
Chord Bear	= S	49° 40' 38.21"	E		



NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
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US 69 AT FM 779			
HORIZONTAL ALIGNMENT DATA			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	144

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SB MAINLANE ALIGNMENT
(SBML) (CONTINUED)

Course from PT SBML1-2 to PC SBML1-3 S 52' 23' 50.78" E Dist 904.4242

Curve Data				

Curve SBML1-3				
P.I. Station	1032+75.79	N	6,963,213.0936	E 2,875,160.7243
Delta =	2' 43' 13.99"	(LT)		
Degree =	0' 30' 58.24"			
Tangent =	263.5780			
Length =	527.0570			
Radius =	11,100.0000			
External =	3.1290			
Long Chord =	527.0075			
Mid. Ord. =	3.1281			
P.C. Station	1030+12.21	N	6,963,373.9238	E 2,874,951.9013
P.T. Station	1035+39.27	N	6,963,062.3564	E 2,875,376.9457
C.C.		N	6,972,168.0362	E 2,881,724.9056
Back = S	52' 23' 50.78"	E		
Ahead = S	55' 07' 04.78"	E		
Chord Bear = S	53' 45' 27.78"	E		

Curve Data				

Curve SBML1-4				
P.I. Station	1038+01.14	N	6,962,912.5948	E 2,875,591.7676
Delta =	2' 42' 10.63"	(RT)		
Degree =	0' 30' 58.24"			
Tangent =	261.8720			
Length =	523.6470			
Radius =	11,099.9966			
External =	3.0886			
Long Chord =	523.5984			
Mid. Ord. =	3.0878			
P.C. Station	1035+39.27	N	6,963,062.3564	E 2,875,376.9457
P.T. Station	1040+62.91	N	6,962,752.8693	E 2,875,799.2880
C.C.		N	6,953,956.6793	E 2,869,028.9877
Back = S	55' 07' 04.78"	E		
Ahead = S	52' 24' 54.15"	E		
Chord Bear = S	53' 45' 59.46"	E		

Ending chain SBML1 description

Chain SBML2 contains:
CUR SBML2-1 CUR SBML2-2 CUR SBML2-3 CUR SBML2-4 SBML1201

Beginning chain SBML2 description

Curve Data				

Curve SBML2-1				
P.I. Station	1202+97.68	N	6,961,076.9471	E 2,877,976.6995
Delta =	3' 04' 20.67"	(RT)		
Degree =	0' 30' 58.24"			
Tangent =	297.6826			
Length =	595.2226			
Radius =	11,100.0000			
External =	3.9909			
Long Chord =	595.1513			
Mid. Ord. =	3.9895			
P.C. Station	1200+00.00	N	6,961,258.5148	E 2,877,740.8010
P.T. Station	1205+95.22	N	6,960,882.9967	E 2,878,202.5273
C.C.		N	6,952,462.3222	E 2,870,970.4986
Back = S	52' 24' 54.15"	E		
Ahead = S	49' 20' 33.47"	E		
Chord Bear = S	50' 52' 43.81"	E		

SB MAINLANE ALIGNMENT
(SBML) (CONTINUED)

Curve Data				

Curve SBML2-2				
P.I. Station	1208+97.58	N	6,960,686.0004	E 2,878,431.9017
Delta =	3' 07' 14.29"	(LT)		
Degree =	0' 30' 58.24"			
Tangent =	302.3577			
Length =	604.5658			
Radius =	11,100.0016			
External =	4.1173			
Long Chord =	604.4911			
Mid. Ord. =	4.1157			
P.C. Station	1205+95.22	N	6,960,882.9967	E 2,878,202.5273
P.T. Station	1211+99.79	N	6,960,501.7830	E 2,878,671.6601
C.C.		N	6,969,303.6725	E 2,885,434.5571
Back = S	49' 20' 33.47"	E		
Ahead = S	52' 27' 47.77"	E		
Chord Bear = S	50' 54' 10.62"	E		

Course from PT SBML2-2 to PC SBML2-3 S 52' 27' 47.77" E Dist 763.4872

Curve Data				

Curve SBML2-3				
P.I. Station	1225+37.82	N	6,959,686.5580	E 2,879,732.6729
Delta =	5' 55' 33.96"	(LT)		
Degree =	0' 30' 58.24"			
Tangent =	574.5486			
Length =	1,148.0726			
Radius =	11,100.0000			
External =	14.8597			
Long Chord =	1,147.5609			
Mid. Ord. =	14.8398			
P.C. Station	1219+63.28	N	6,960,036.6132	E 2,879,277.0771
P.T. Station	1231+11.35	N	6,959,385.4119	E 2,880,221.9755
C.C.		N	6,968,838.5015	E 2,886,039.9732
Back = S	52' 27' 47.77"	E		
Ahead = S	58' 23' 21.73"	E		
Chord Bear = S	55' 25' 34.75"	E		

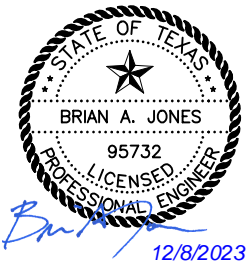
Curve Data				

Curve SBML2-4				
P.I. Station	1235+57.38	N	6,959,142.0719	E 2,880,595.7845
Delta =	4' 36' 07.91"	(RT)		
Degree =	0' 30' 58.24"			
Tangent =	446.0353			
Length =	891.5909			
Radius =	11,100.0000			
External =	8.9580			
Long Chord =	891.3512			
Mid. Ord. =	8.9508			
P.C. Station	1231+11.35	N	6,959,385.4119	E 2,880,221.9755
P.T. Station	1240+02.94	N	6,958,869.5232	E 2,880,948.8633
C.C.		N	6,950,082.8299	E 2,874,166.2370
Back = S	56' 56' 12.92"	E		
Ahead = S	52' 20' 05.00"	E		
Chord Bear = S	54' 38' 08.96"	E		

Course from PT SBML2-4 to SBML1201 S 52' 20' 05.01" E Dist 47.3324

Point SBML1201 N 6,958,840.6009 E 2,880,986.3314 Sta 1240+50.27

Ending chain SBML2 description



NO.	REVISION	BY	DATE

CP&Y
TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

HORIZONTAL ALIGNMENT DATA

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ				
Drawn: JKF	DIST. WOOD	COUNTY	CONTROL NO. 0203	SECTION NO. 05
Checked: BAJ	TYL		JOB NO. 039	SHEET NO. 145

SE RAMP ALIGNMENT
(SE RAMP)

Chain SEBRAMP60 contains:

CUR SEBRAMP60-1 CUR SEBRAMP60-2 SEBR60201 SEBR60202 CUR SEBRAMP60-3 CUR SEBRAMP60-4

Beginning chain SEBRAMP60 description

Curve Data					

Curve SEBRAMP60-1					
P.I. Station	201+31.35	N	6,962,953.6430	E	2,875,472.6239
Delta	= 1° 54' 44.44"	(RT)			
Degree	= 0° 43' 40.90"				
Tangent	= 131.3494				
Length	= 262.6745				
Radius	= 7,870.0000				
External	= 1.0960				
Long Chord	= 262.6623				
Mid. Ord.	= 1.0959				
P.C. Station	200+00.00	N	6,963,035.5662	E	2,875,369.9533
P.T. Station	202+62.67	N	6,962,868.3392	E	2,875,572.5036
C.C.		N	6,956,883.8985	E	2,870,461.4010
Back	= S 51° 24' 46.28"	E			
Ahead	= S 49° 30' 01.85"	E			
Chord Bear	= S 50° 27' 24.06"	E			

Curve Data					

Curve SEBRAMP60-2					
P.I. Station	204+62.88	N	6,962,738.3151	E	2,875,724.7450
Delta	= 2° 54' 52.30"	(LT)			
Degree	= 0° 43' 40.90"				
Tangent	= 200.2092				
Length	= 400.3321				
Radius	= 7,870.0000				
External	= 2.5462				
Long Chord	= 400.2889				
Mid. Ord.	= 2.5454				
P.C. Station	202+62.67	N	6,962,868.3392	E	2,875,572.5036
P.T. Station	206+63.01	N	6,962,616.2001	E	2,875,883.4008
C.C.		N	6,968,852.7799	E	2,880,683.6062
Back	= S 49° 30' 01.85"	E			
Ahead	= S 52° 24' 54.15"	E			
Chord Bear	= S 50° 57' 28.00"	E			

Course from PT SEBRAMP60-2 to SEBR60201 S 52° 24' 54.15" E Dist 697.2177

Point SEBR60201 N 6,962,190.9411 E 2,876,435.9108 Sta 213+60.22

Course from SEBR60201 to SEBR60202 S 52° 24' 54.15" E Dist 230.5185

Point SEBR60202 N 6,962,050.3393 E 2,876,618.5851 Sta 215+90.74

Course from SEBR60202 to PC SEBRAMP60-3 S 52° 24' 54.15" E Dist 1,372.2642

SE RAMP ALIGNMENT
(SE RAMP) (CONTINUED)

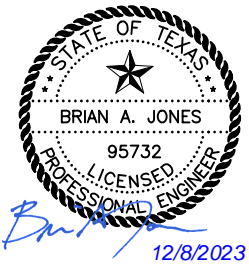
Curve Data					

Curve SEBRAMP60-3					
P.I. Station	231+08.76	N	6,961,124.4455	E	2,877,821.5359
Delta	= 2° 07' 19.10"	(LT)			
Degree	= 0° 43' 40.90"				
Tangent	= 145.7510				
Length	= 291.4686				
Radius	= 7,870.0000				
External	= 1.3495				
Long Chord	= 291.4520				
Mid. Ord.	= 1.3493				
P.C. Station	229+63.01	N	6,961,213.3444	E	2,877,706.0356
P.T. Station	232+54.48	N	6,961,039.8841	E	2,877,940.2487
C.C.		N	6,967,449.9242	E	2,882,506.2410
Back	= S 52° 24' 54.15"	E			
Ahead	= S 54° 32' 13.25"	E			
Chord Bear	= S 53° 28' 33.70"	E			

Curve Data					

Curve SEBRAMP60-4					
P.I. Station	234+58.25	N	6,960,921.6575	E	2,878,106.2229
Delta	= 2° 57' 59.18"	(RT)			
Degree	= 0° 43' 40.90"				
Tangent	= 203.7768				
Length	= 407.4625				
Radius	= 7,870.0000				
External	= 2.6377				
Long Chord	= 407.4170				
Mid. Ord.	= 2.6369				
P.C. Station	232+54.48	N	6,961,039.8841	E	2,877,940.2487
P.T. Station	236+61.94	N	6,960,795.0000	E	2,878,265.8564
C.C.		N	6,954,629.8440	E	2,873,374.2564
Back	= S 54° 32' 13.25"	E			
Ahead	= S 51° 34' 14.06"	E			
Chord Bear	= S 53° 03' 13.66"	E			

Ending chain SEBRAMP60 description



NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
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US 69 AT FM 779			
HORIZONTAL ALIGNMENT DATA			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	146

CENTERLINE FM 779 ALIGNMENT
(☉ FM779)

Beginning chain CLFM779 description

Point FM400 N 6,962,025.8059 E 2,876,065.1589 Sta 400+00.00

Course from FM400 to PC CLFM779-1 N 84° 58' 12.71" E Dist 199.0229

Curve Data

Curve CLFM779-1

P.I. Station 407+34.66 N 6,962,090.2165 E 2,876,796.9900
 Delta = 72° 54' 52.97" (LT)
 Degree = 7° 54' 10.32"
 Tangent = 535.6372
 Length = 922.6363
 Radius = 725.0000
 External = 176.4057
 Long Chord = 861.6253
 Mid. Ord. = 141.8830
 P.C. Station 401+99.02 N 6,962,043.2551 E 2,876,263.4154
 P.T. Station 411+21.66 N 6,962,614.0406 E 2,876,908.8625
 C.C. N 6,962,765.4632 E 2,876,199.8518
 Back = N 84° 58' 12.71" E
 Ahead = N 12° 03' 19.74" E
 Chord Bear = N 48° 30' 46.23" E

Course from PT CLFM779-1 to FM401 N 12° 23' 40.54" E Dist 427.8959

Point FM401 N 6,963,031.9633 E 2,877,000.7075 Sta 415+49.56

Ending chain CLFM779 description

SOUTHEAST U-TURN ALIGNMENT
(☒ SENWUTURN)

Chain SENWUTURN contains:

SENW100 CUR SENWUTURN-1 CUR SENWUTURN-2 SENW101

Beginning chain SENWUTURN description

Point SENW100 N 6,962,256.0632 E 2,876,393.9294 Sta 100+00.00

Course from SENW100 to PC SENWUTURN-1 S 52° 24' 54.15" E Dist 50.0000

Curve Data

Curve SENWUTURN-1

P.I. Station 100+84.31 N 6,962,204.6404 E 2,876,460.7395
 Delta = 69° 59' 49.45" (LT)
 Degree = 116° 55' 48.58"
 Tangent = 34.3083
 Length = 59.8623
 Radius = 49.0000
 External = 10.8169
 Long Chord = 56.2084
 Mid. Ord. = 8.8608
 P.C. Station 100+50.00 N 6,962,225.5663 E 2,876,433.5519
 P.T. Station 101+09.86 N 6,962,223.0299 E 2,876,489.7031
 C.C. N 6,962,264.3964 E 2,876,463.4388
 Back = S 52° 24' 54.15" E
 Ahead = N 57° 35' 16.40" E
 Chord Bear = S 87° 24' 48.87" E

Course from PT SENWUTURN-1 to PC SENWUTURN-2 N 57° 35' 16.40" E Dist 10.6420

Curve Data

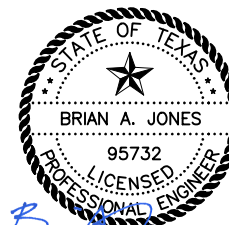
Curve SENWUTURN-2

P.I. Station 101+90.49 N 6,962,266.2453 E 2,876,557.7679
 Delta = 110° 00' 10.55" (LT)
 Degree = 116° 55' 48.58"
 Tangent = 69.9831
 Length = 94.0758
 Radius = 49.0000
 External = 36.4320
 Long Chord = 80.2783
 Mid. Ord. = 20.8958
 P.C. Station 101+20.50 N 6,962,228.7340 E 2,876,498.6872
 P.T. Station 102+14.58 N 6,962,308.9306 E 2,876,502.3099
 C.C. N 6,962,270.1005 E 2,876,472.4230
 Back = N 57° 35' 16.40" E
 Ahead = N 52° 24' 54.15" W
 Chord Bear = N 2° 35' 11.13" E

Course from PT SENWUTURN-2 to SENW101 N 52° 24' 54.15" W Dist 50.0000

Point SENW101 N 6,962,339.4274 E 2,876,462.6874 Sta 102+64.58

Ending chain SENWUTURN description



12/8/2023

NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
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HORIZONTAL ALIGNMENT DATA			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	147

NORTHWEST U-TURN ALIGNMENT (@ NWSEUTURN)

Chain NWSEUTURN contains:
NWSE100 CUR NWSEUTURN-1 CUR NWSEUTURN-2 NWSE101

Beginning chain NWSEUTURN description

Point NWSE100 N 6,962,095.9345 E 2,876,759.3670 Sta 100+00.00

Course from NWSE100 to PC NWSEUTURN-1 N 52° 24' 54.15" W Dist 50.0000

Curve Data

Curve NWSEUTURN-1
 P.I. Station 100+87.60 N 6,962,149.3649 E 2,876,689.9485
 Delta = 75° 00' 04.33" (LT)
 Degree = 116° 55' 48.58"
 Tangent = 37.5998
 Length = 64.1419
 Radius = 49.0000
 External = 12.7636
 Long Chord = 59.6594
 Mid. Ord. = 10.1260
 P.C. Station 100+50.00 N 6,962,126.4314 E 2,876,719.7445
 P.T. Station 101+14.14 N 6,962,126.5192 E 2,876,660.0851
 C.C. N 6,962,087.6013 E 2,876,689.8576
 Back = N 52° 24' 54.15" W
 Ahead = S 52° 35' 01.52" W
 Chord Bear = N 89° 54' 56.31" W

Course from PT NWSEUTURN-1 to PC NWSEUTURN-2 S 52° 35' 01.52" W Dist 10.3527

Curve Data

Curve NWSEUTURN-2
 P.I. Station 101+88.35 N 6,962,081.4295 E 2,876,601.1449
 Delta = 104° 59' 55.67" (LT)
 Degree = 116° 55' 48.58"
 Tangent = 63.8567
 Length = 89.7962
 Radius = 49.0000
 External = 31.4902
 Long Chord = 77.7480
 Mid. Ord. = 19.1703
 P.C. Station 101+24.49 N 6,962,120.2289 E 2,876,651.8626
 P.T. Station 102+14.29 N 6,962,042.4810 E 2,876,651.7481
 C.C. N 6,962,081.3110 E 2,876,681.6350
 Back = S 52° 35' 01.52" W
 Ahead = S 52° 24' 54.15" E
 Chord Bear = S 0° 05' 03.69" W

Course from PT NWSEUTURN-2 to NWSE101 S 52° 24' 54.15" E Dist 50.0000

Point NWSE101 N 6,962,011.9841 E 2,876,691.3706 Sta 102+64.29

Ending chain NWSEUTURN description

RETAINING WALL A ALIGNMENT (@ RETA)

Chain RETA contains:
1000003 1000004

Beginning chain RETA description

Point 1000003 N 6,962,735.4354 E 2,875,785.8695 Sta 10+00.00

Course from 1000003 to 1000004 S 52° 24' 54.15" E Dist 851.8216

Point 1000004 N 6,962,215.8777 E 2,876,460.8953 Sta 18+51.82

Ending chain RETA description

RETAINING WALL B ALIGNMENT (@ RETB)

Chain RETB contains:
2000002 2000003

Beginning chain RETB description

Point 2000002 N 6,962,797.2464 E 2,875,833.4446 Sta 20+00.00

Course from 2000002 to 2000003 S 52° 24' 54.15" E Dist 854.1631

Point 2000003 N 6,962,276.2606 E 2,876,510.3259 Sta 28+54.16

Ending chain RETB description

RETAINING WALL C ALIGNMENT (@ RETC)

Chain RETANI NGC contains:
30003 30004

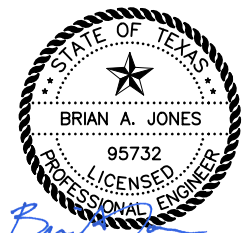
Beginning chain RETANI NGC description

Point 30003 N 6,962,304.5441 E 2,876,345.6971 Sta 30+00.00

Course from 30003 to 30004 N 52° 35' 01.52" E Dist 84.7148

Point 30004 N 6,962,356.0169 E 2,876,412.9812 Sta 30+84.71

Ending chain RETANI NGC description



NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
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US 69 AT FM 779			
HORIZONTAL ALIGNMENT DATA			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	148

RETAINING WALL D ALIGNMENT

(RETD)

Chain RETAI NI NGD contains:
40000 40001

Beginning chain RETAI NI NGD description

Point 40000 N 6,961,993.6911 E 2,876,749.5673 Sta 40+00.00

Course from 40000 to 40001 N 52° 35' 01.52" E Dist 80.7511

Point 40001 N 6,962,042.7555 E 2,876,813.7032 Sta 40+80.75

Ending chain RETAI NI NGD description

RETAINING WALL E ALIGNMENT

(RETE)

Chain RETE contains:
5000000 5000001

Beginning chain RETE description

Point 5000000 N 6,962,052.4168 E 2,876,673.2689 Sta 50+00.00

Course from 5000000 to 5000001 S 52° 24' 54.15" E Dist 1,330.1960

Point 5000001 N 6,961,241.0809 E 2,877,727.3824 Sta 63+30.20

Ending chain RETE description

RETAINING WALL F ALIGNMENT

(RETF)

Chain RETF contains:
6000000 6000001

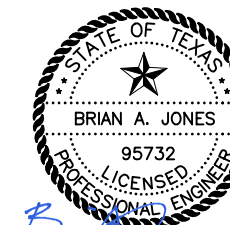
Beginning chain RETF description

Point 6000000 N 6,962,101.4813 E 2,876,737.4049 Sta 60+00.00

Course from 6000000 to 6000001 S 52° 24' 54.15" E Dist 1,309.2970

Point 6000001 N 6,961,302.8924 E 2,877,774.9570 Sta 73+09.30

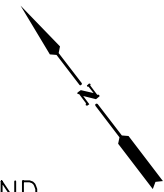
Ending chain RETF description



Brian A. Jones
12/8/2023

cpybw_ANSIB.tbl
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 12/8/2023 2:40:55 PM MonsalM

NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
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US 69 AT FM 779			
HORIZONTAL ALIGNMENT DATA			
Designed:	JKF	FED. RD. DIV. NO.	STATE
Checked:	BAJ	6	TEXAS
Drawn:	JKF	DIST.	COUNTY
Checked:	BAJ	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	149
		PROJECT NO.	HIGHWAY NO.
			US 69

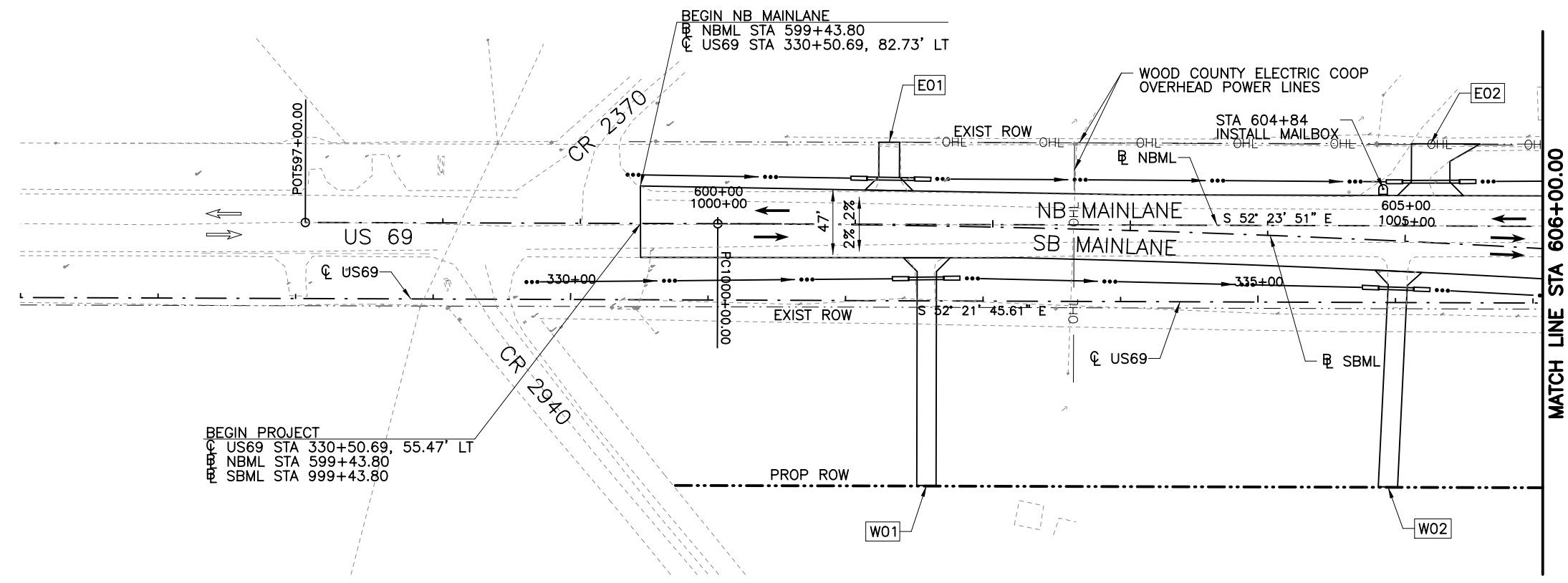
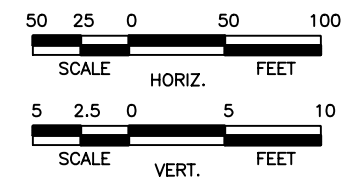


LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Stippled Box] RIPRAP (CONC)
- PROPOSED ROW
- - - EXISTING ROW
- W — WATER LINE
- O/H ELEC — OVERHEAD ELECTRIC
- TELE — UNDERGROUND TELEPHONE

NOTES:

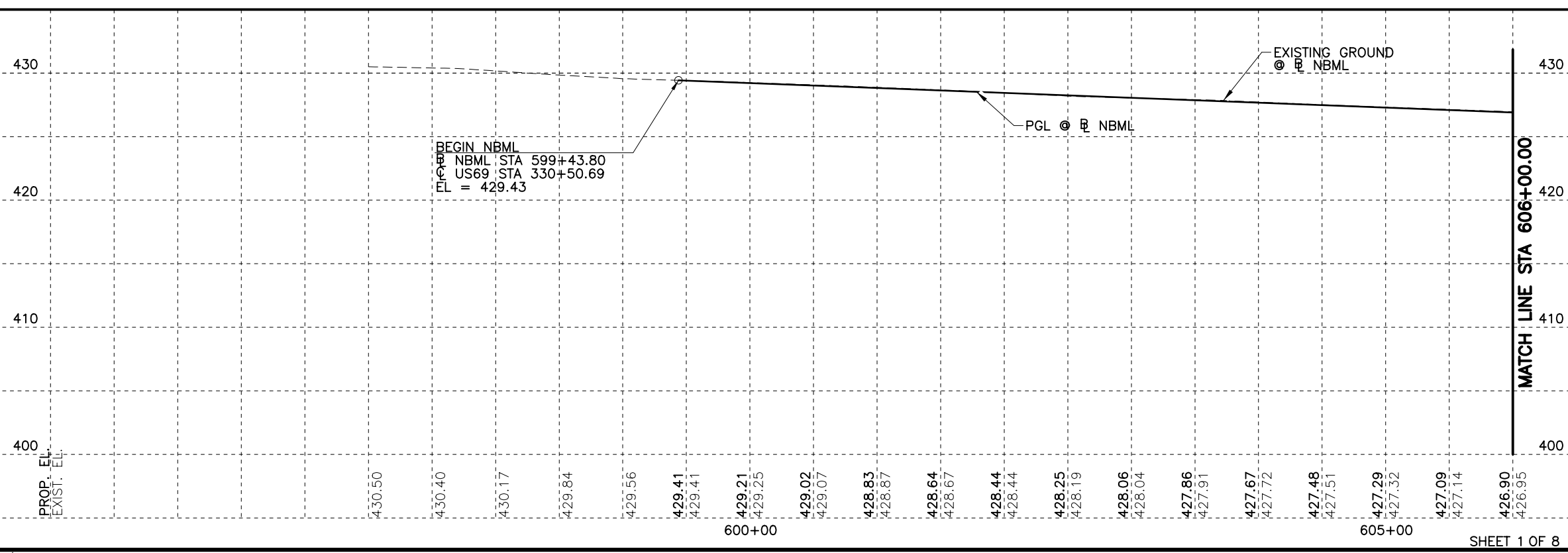
1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



BEGIN PROJECT
 US69 STA 330+50.69, 55.47' LT
 NBML STA 599+43.80
 SBML STA 999+43.80

BEGIN NB MAINLANE
 NBML STA 599+43.80
 US69 STA 330+50.69, 82.73' LT

MATCH LINE STA 606+00.00

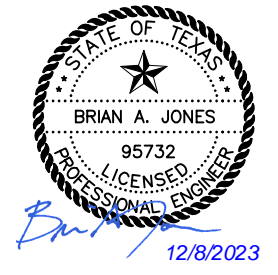


BEGIN NBML
 NBML STA 599+43.80
 US69 STA 330+50.69
 EL = 429.43

EXISTING GROUND
 @ NBML

PGL @ NBML

MATCH LINE STA 606+00.00



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

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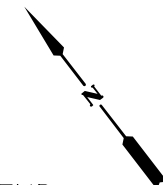
US 69 AT FM 779

**ROADWAY PLAN AND PROFILE
 NB MAINLANE**

BEGIN PROJECT TO STA 606+00

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. SW	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: BAJ	TYL	JOB NO. 039	SHEET NO. 150	

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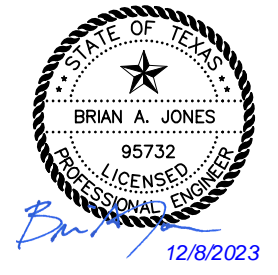
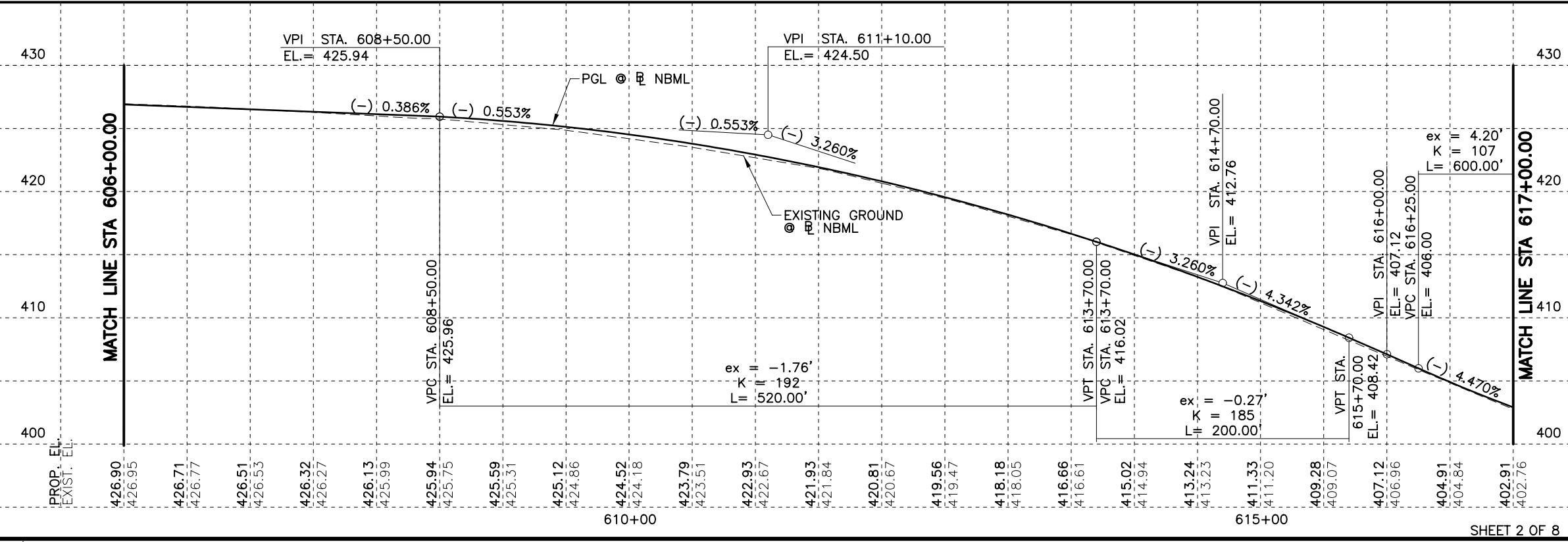
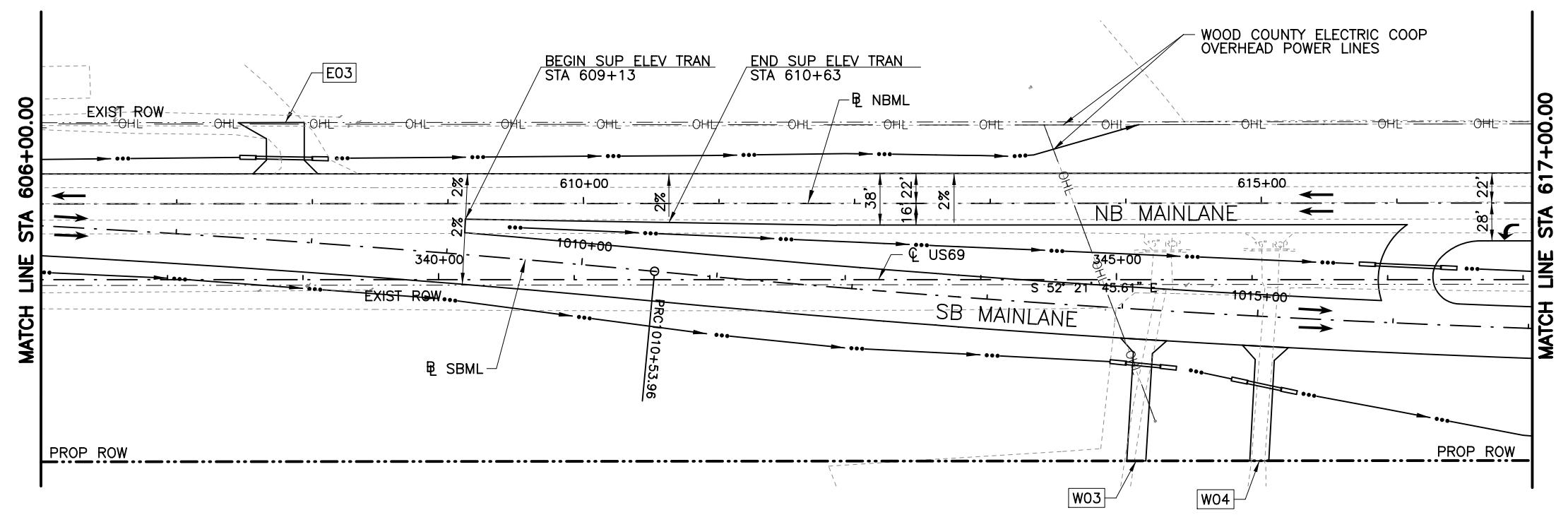
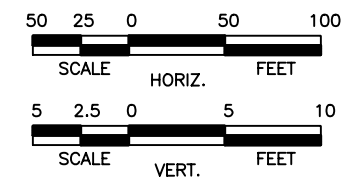


LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- EXISTING LANE
- FLOW DIRECTION
- RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- WATER LINE
- OVERHEAD ELECTRIC
- UNDERGROUND TELEPHONE

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



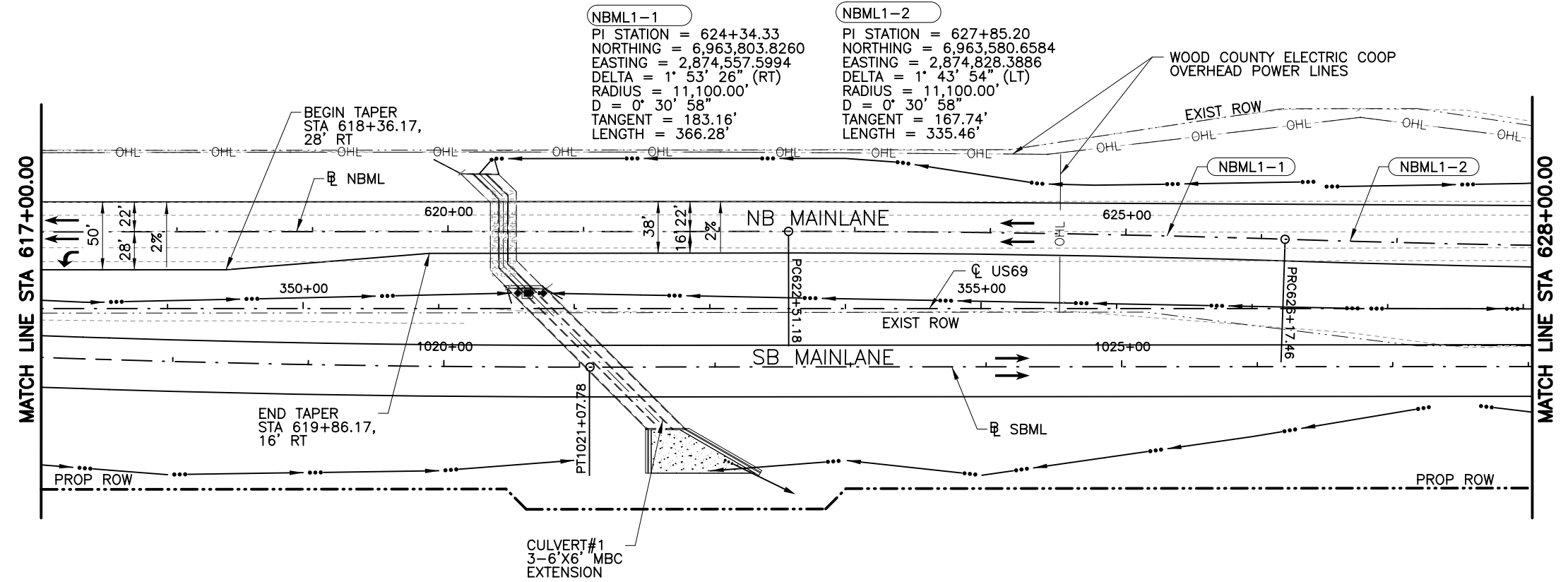
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US 69 AT FM 779

**ROADWAY PLAN AND PROFILE
NB MAINLANE**

STA 606+00 TO STA 617+00

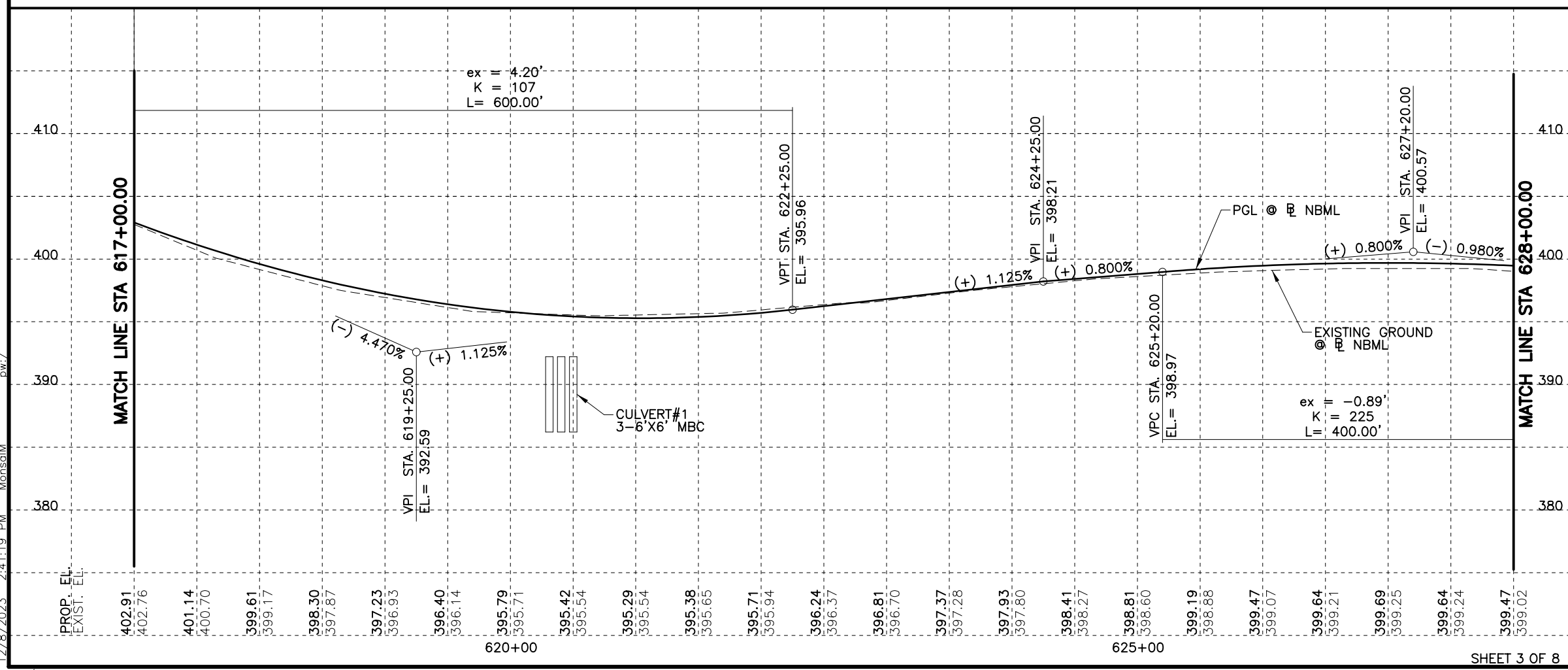
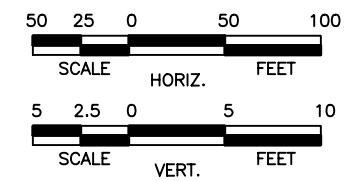
Designed: JKF	FED. RD. DIST. NO.: 6	STATE: TEXAS	PROJECT NO.:	HIGHWAY NO.: US 69
Checked: BAJ	DIST.:	COUNTY: WOOD	CONTROL NO.: 0203	SECTION NO.: 05
Drawn: SW	JOB NO.: 039	SHEET NO.: 151		

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- LEGEND**
- XXX DRIVEWAY ID
 - PROPOSED LANE
 - ⇨ EXISTING LANE
 - FLOW DIRECTION
 - ▨ RIPRAP (CONC)
 - PROPOSED ROW
 - - - EXISTING ROW
 - W — WATER LINE
 - O/H ELEC — OVERHEAD ELECTRIC
 - TELE — UNDERGROUND TELEPHONE

- NOTES:**
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



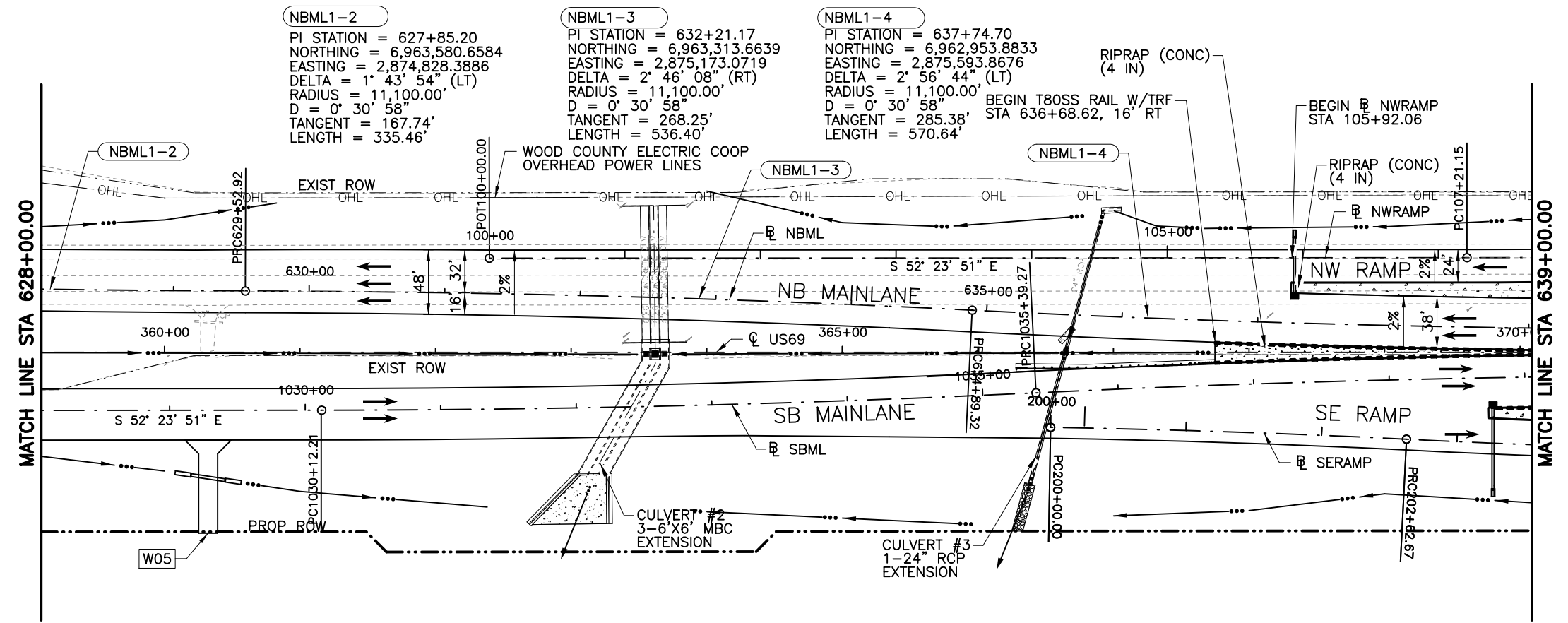
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 US 69 AT FM 779

**ROADWAY PLAN AND PROFILE
 NB MAINLANE**

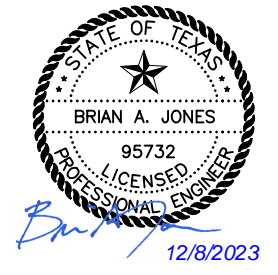
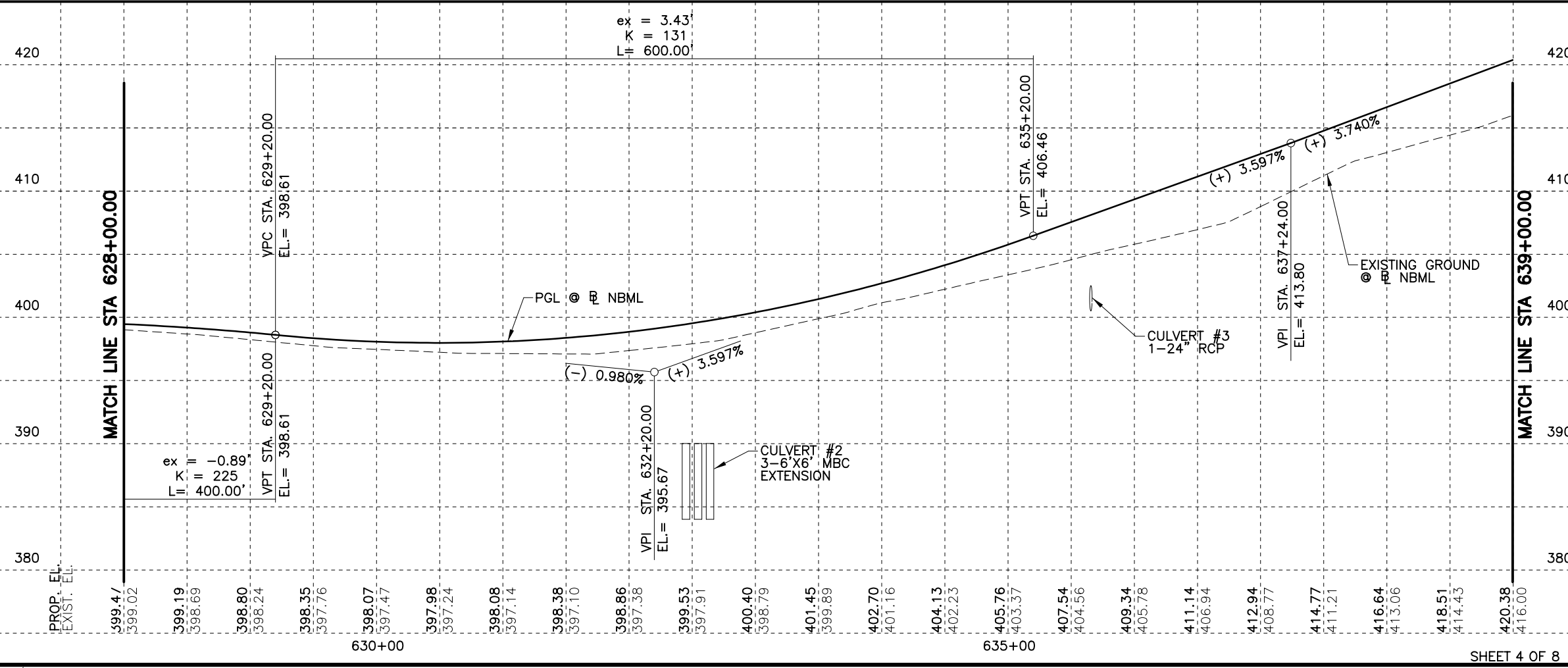
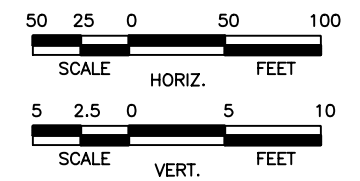
STA 617+00 TO STA 628+00

Designed:	JKF	FED. RD. DIST. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	SW	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	152

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- LEGEND**
- XXX DRIVEWAY ID
 - PROPOSED LANE
 - ⇨ EXISTING LANE
 - FLOW DIRECTION
 - [Pattern] RIPRAP (CONC)
 - PROPOSED ROW
 - - - EXISTING ROW
 - W WATER LINE
 - O/H ELEC OVERHEAD ELECTRIC
 - TELE UNDERGROUND TELEPHONE
- NOTES:**
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE

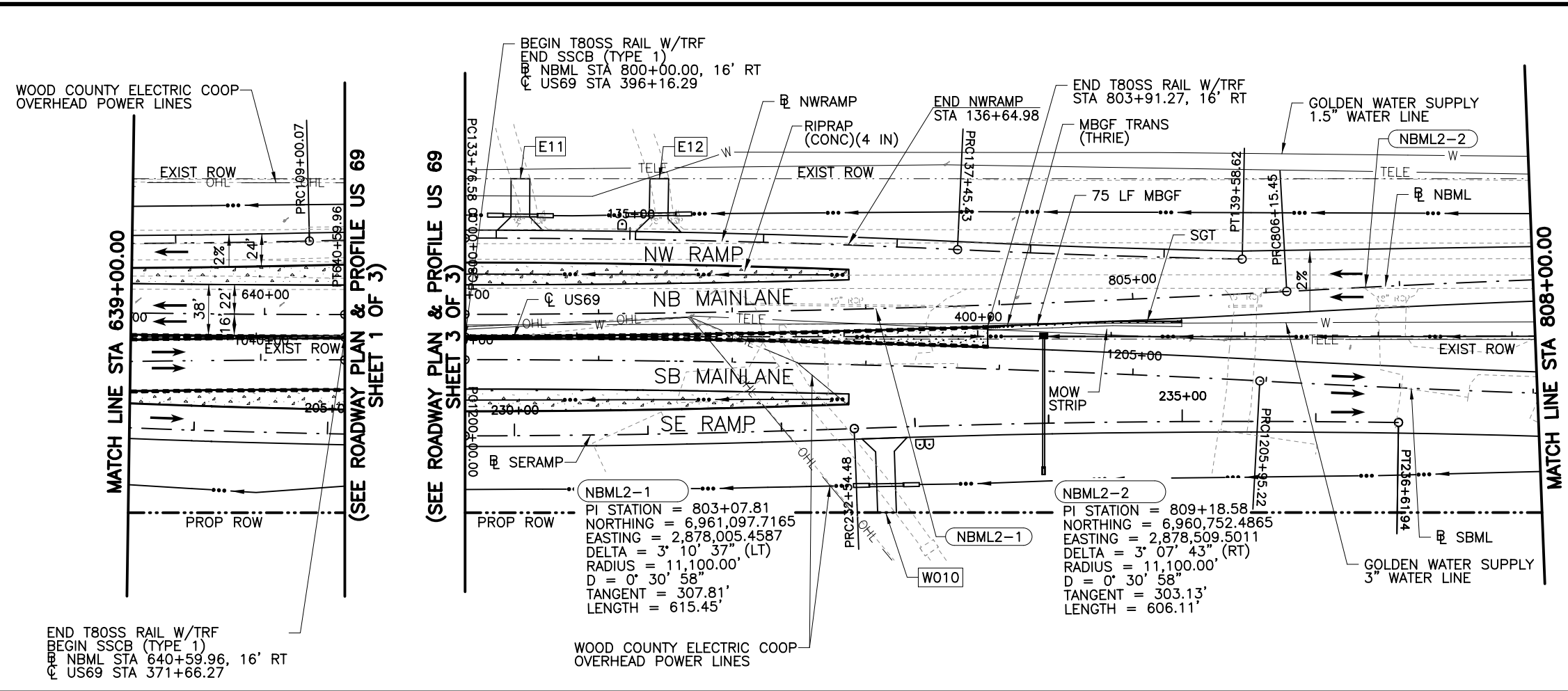


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 US 69 AT FM 779

**ROADWAY PLAN AND PROFILE
 NB MAINLANE**

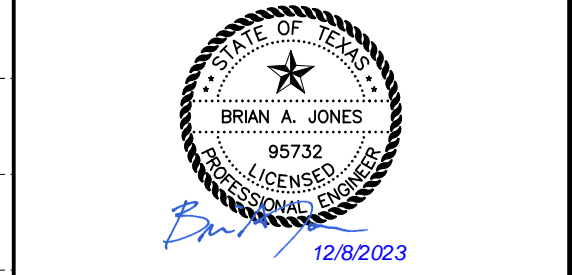
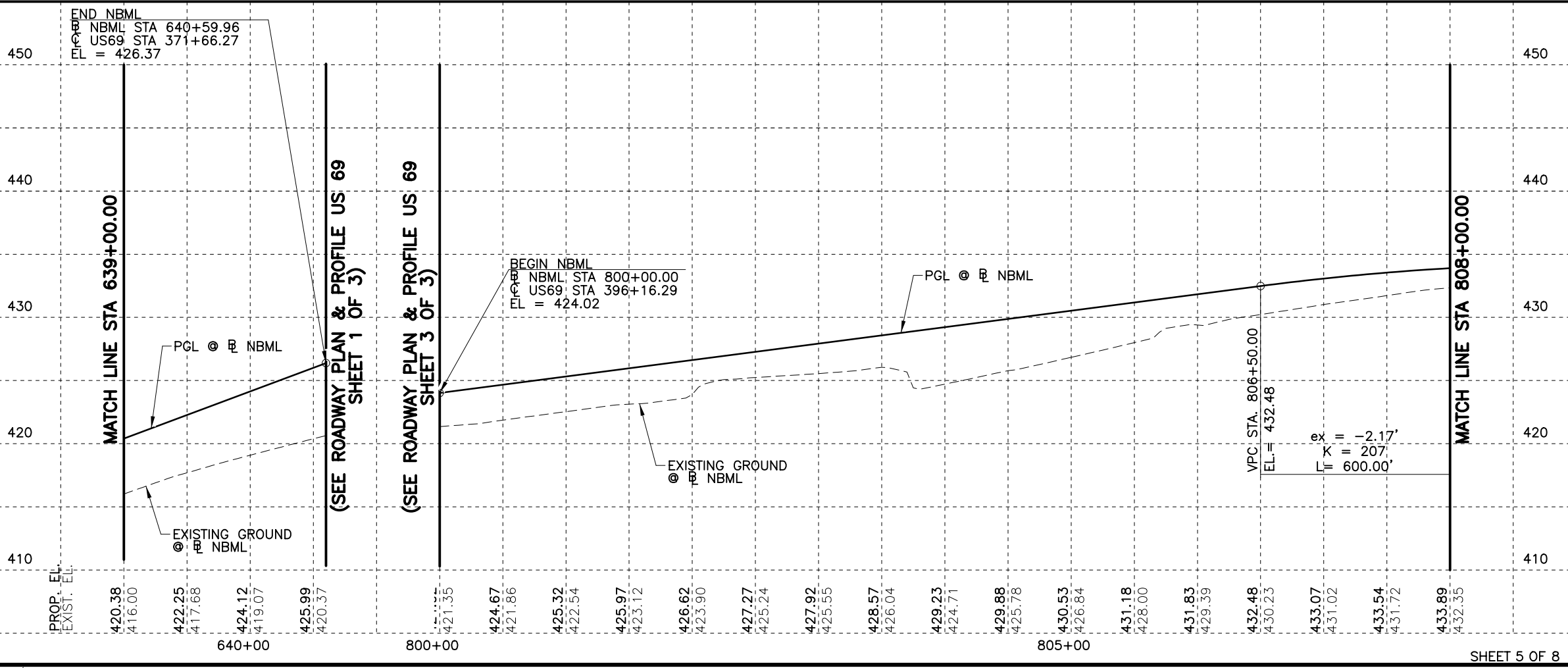
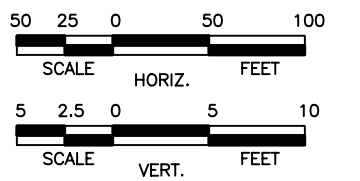
STA 628+00 TO STA 639+00

Designed: JKF	FED. RD. DIST. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. SW	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: SW	JOB NO. 039	SHEET NO. 153		



- ### LEGEND
- XXX DRIVEWAY ID
 - PROPOSED LANE
 - ⇨ EXISTING LANE
 - FLOW DIRECTION
 - [Pattern] RIPRAP (CONC)
 - PROPOSED ROW
 - EXISTING ROW
 - W WATER LINE
 - O/H ELEC OVERHEAD ELECTRIC
 - TELE UNDERGROUND TELEPHONE

- NOTES:
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



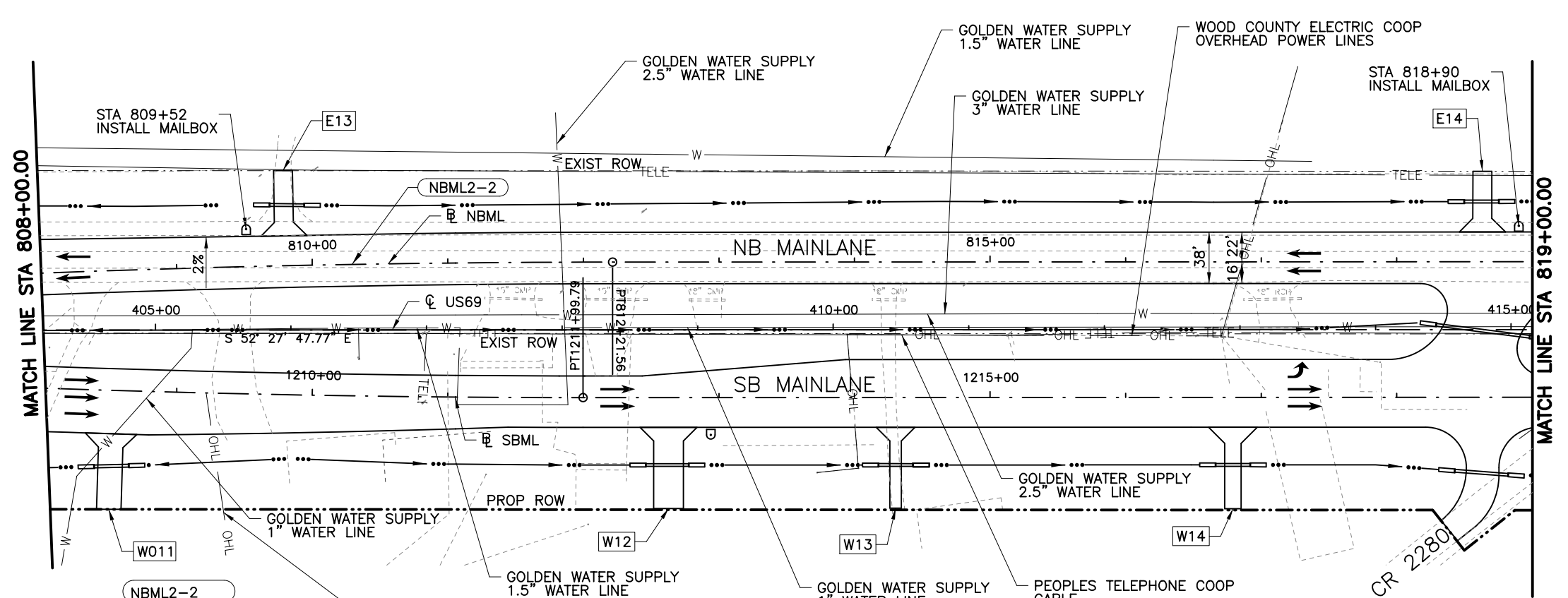
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US 69 AT FM 779
ROADWAY PLAN AND PROFILE
NB MAINLANE
STA 639+00 TO STA 640+59.96
STA 800+00 TO STA 808+00

DESIGNED:	CHKD:	DATE:	STATE:	PROJECT NO.	HIGHWAY NO.
BAJ	BAJ	6	TEXAS		US 69

DRAWN:	DIST.	COUNTY:	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
SW	TYL	WOOD	0203	05	039	154

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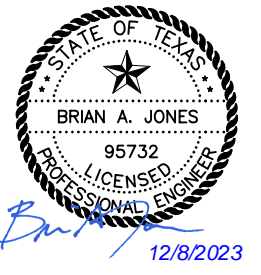
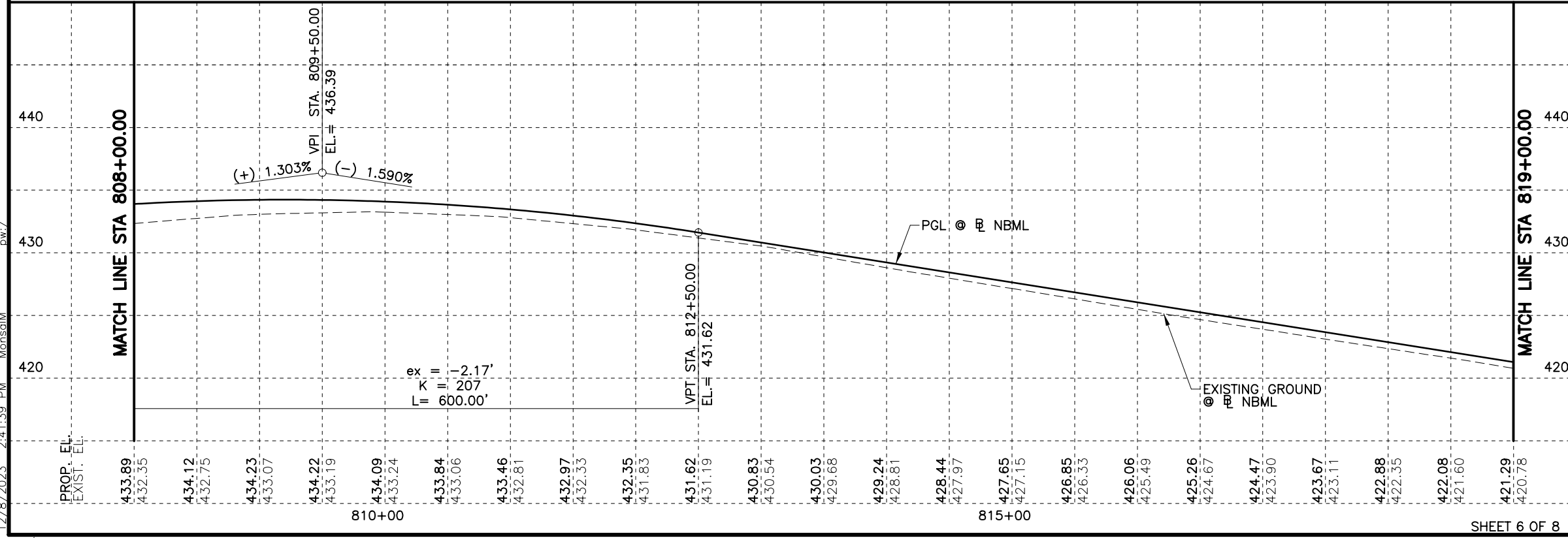
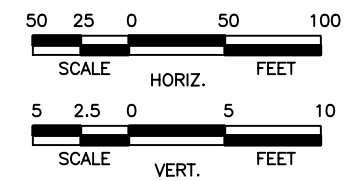
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 PI STATION = 809+18.58
 NORTHING = 6,960,752.4865
 EASTING = 2,878,509.5011
 DELTA = 3° 07' 43" (RT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 303.13'
 LENGTH = 606.11'

LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Pattern] RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- W — WATER LINE
- O/H ELEC — OVERHEAD ELECTRIC
- TELE — UNDERGROUND TELEPHONE

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



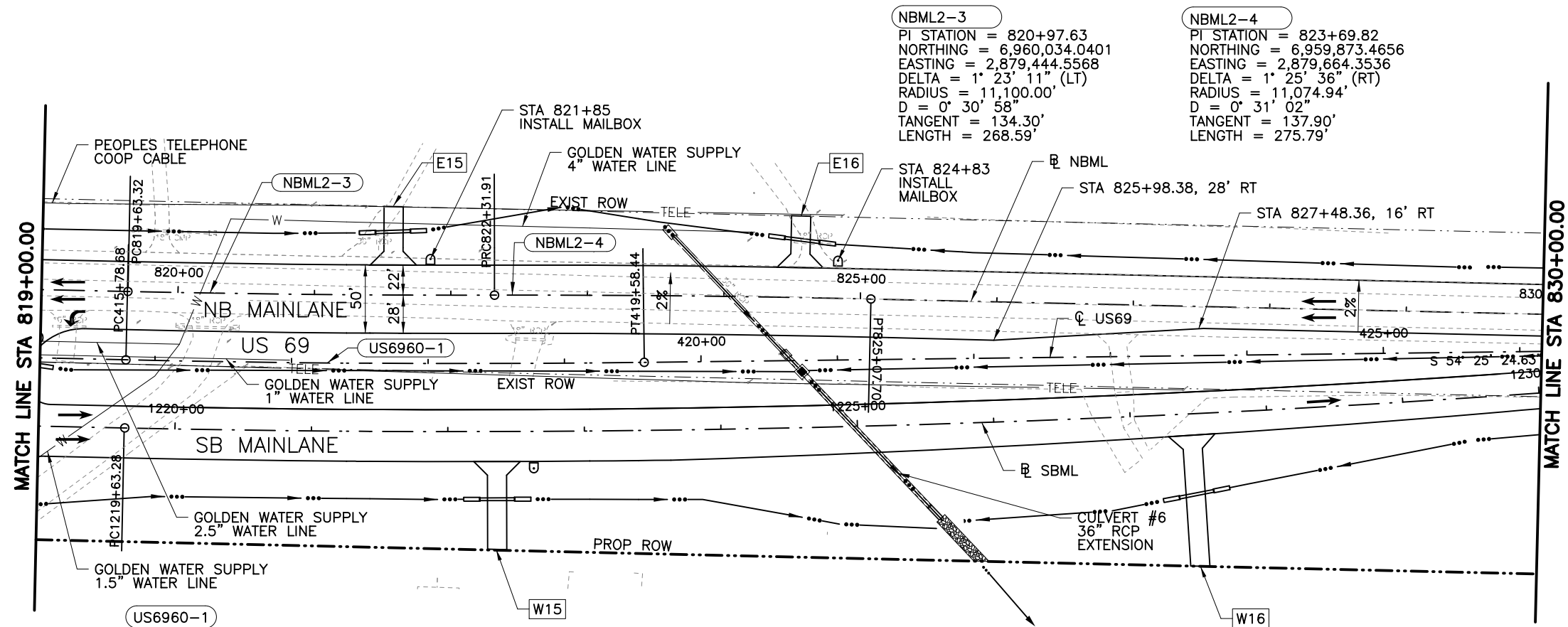
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 US 69 AT FM 779

ROADWAY PLAN AND PROFILE
 NB MAINLANE

STA 808+00 TO STA 819+00

Designed: JKF	FED. RD. DIST. NO.: 6	STATE: TEXAS	PROJECT NO.:	HIGHWAY NO.: US 69
Checked: BAJ	DIST.:	COUNTY: WOOD	CONTROL NO.: 0203	SECTION NO.: 05
Drawn: SW	JOB NO.: 039	SHEET NO.: 155		
Checked: BAJ	TYL			

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US6960-1
 PI STATION = 417+68.58
 NORTHING = 6,959,960.6579
 EASTING = 2,879,457.8600
 DELTA = 1° 57' 37" (LT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 189.90'
 LENGTH = 379.76'

NBML2-3
 PI STATION = 820+97.63
 NORTHING = 6,960,034.0401
 EASTING = 2,879,444.5568
 DELTA = 1° 23' 11" (LT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 134.30'
 LENGTH = 268.59'

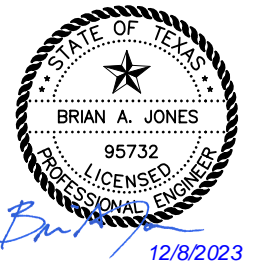
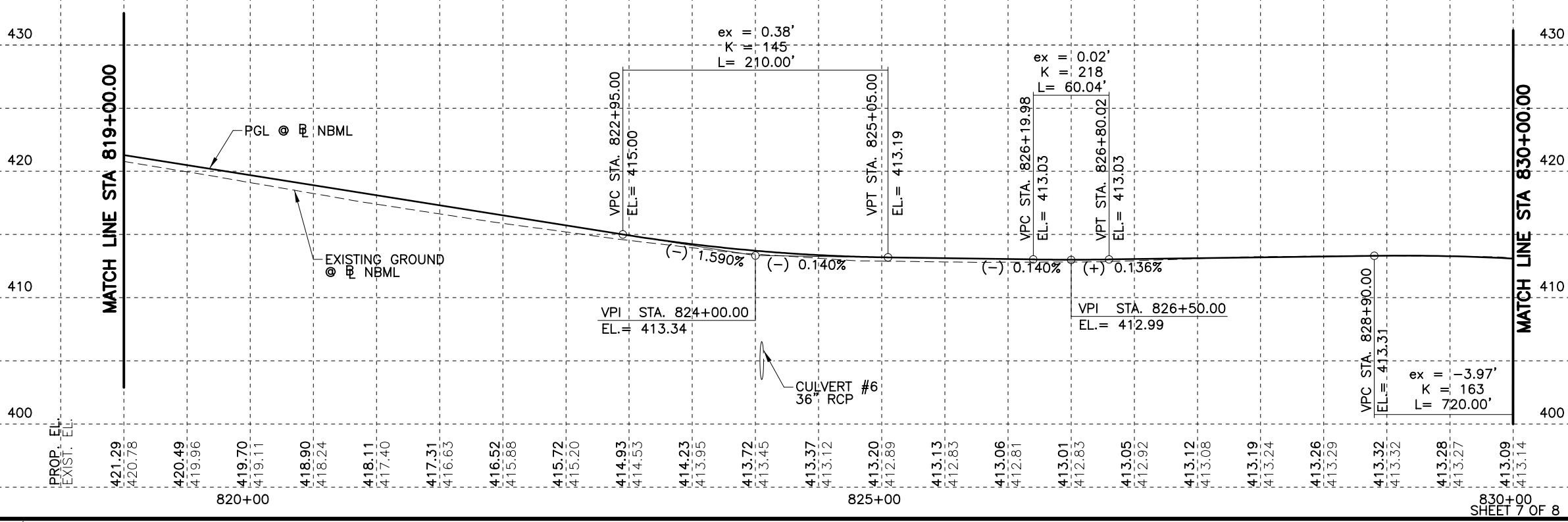
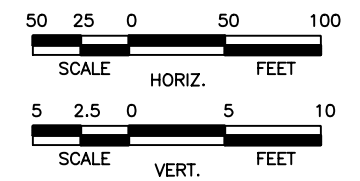
NBML2-4
 PI STATION = 823+69.82
 NORTHING = 6,959,873.4656
 EASTING = 2,879,664.3536
 DELTA = 1° 25' 36" (RT)
 RADIUS = 11,074.94'
 D = 0° 31' 02"
 TANGENT = 137.90'
 LENGTH = 275.79'

LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Pattern] RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- W WATER LINE
- O/H ELEC OVERHEAD ELECTRIC
- TELE UNDERGROUND TELEPHONE

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

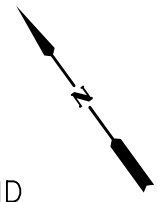
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US 69 AT FM 779
ROADWAY PLAN AND PROFILE
NB MAINLANE

STA 819+00 TO STA 830+00

Designed: JKF	FED. RD. DIST. NO.: 6	STATE: TEXAS	PROJECT NO.:	HIGHWAY NO.: US 69
Checked: BAJ	DIST.:	COUNTY: WOOD	CONTROL NO.: 0203	SECTION NO.: 05
Drawn: SW	DIST.:	COUNTY: WOOD	CONTROL NO.: 0203	SECTION NO.: 05
Checked: BAJ	TYL	COUNTY: WOOD	CONTROL NO.: 0203	SECTION NO.: 05

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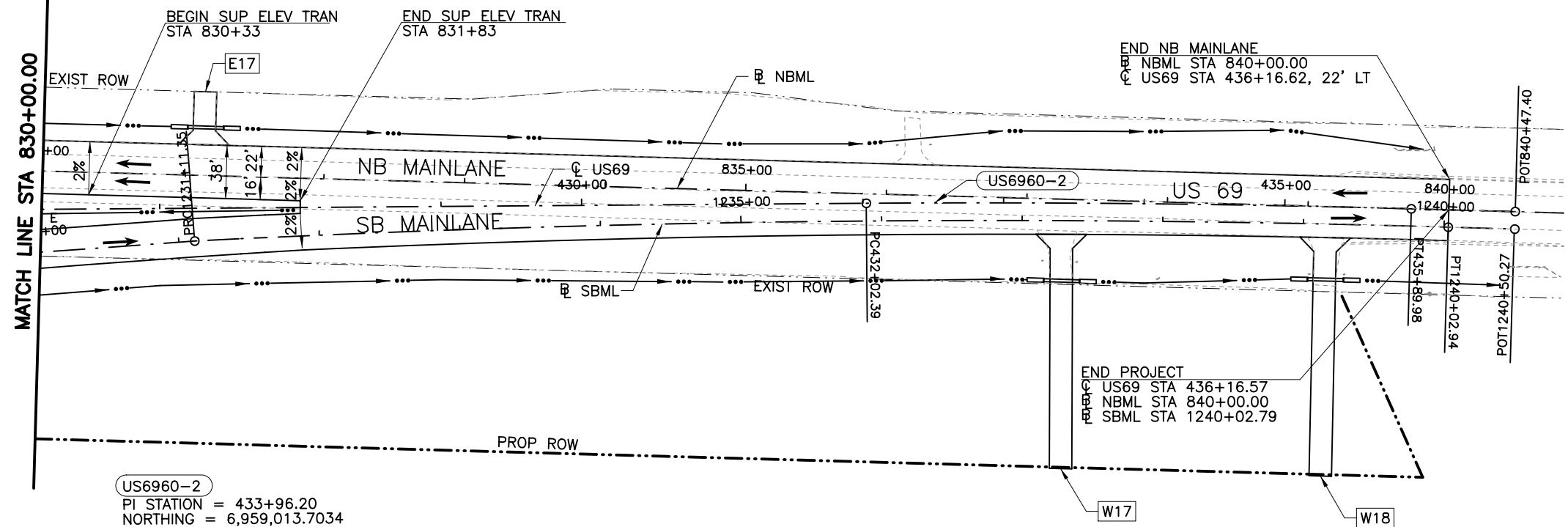
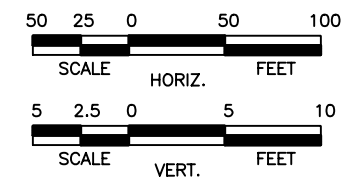


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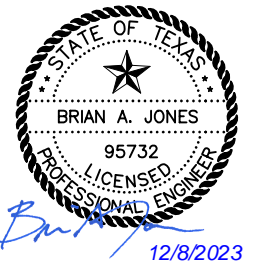
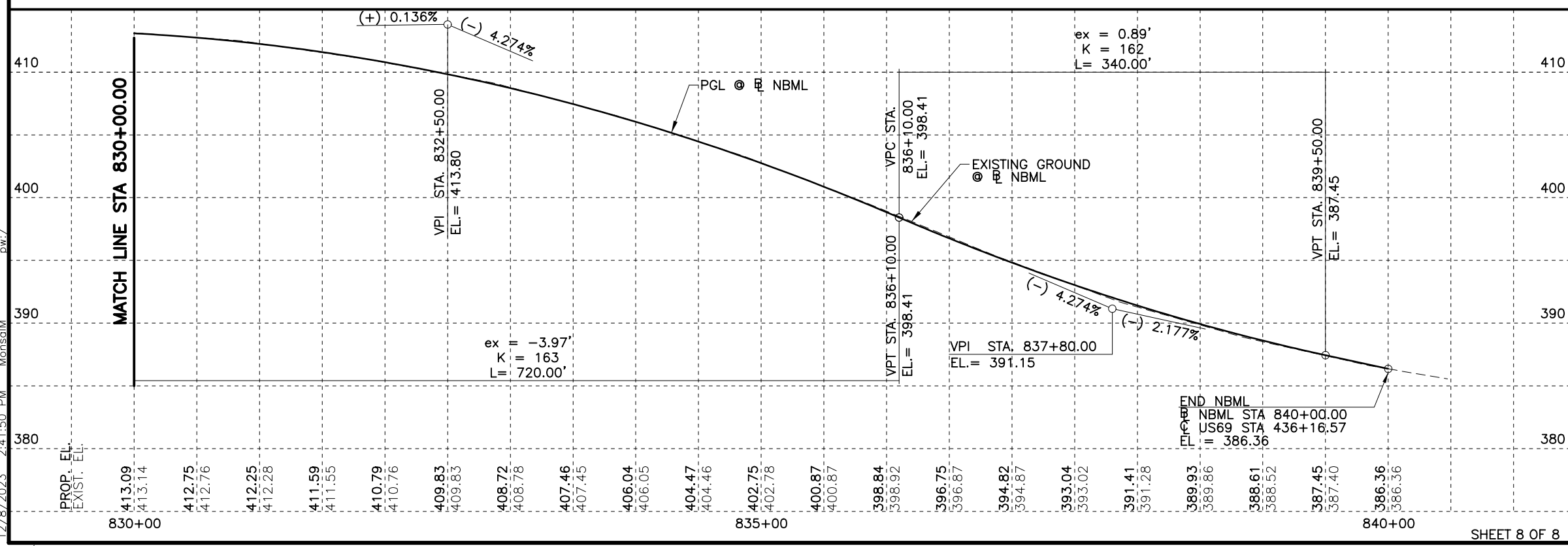
- XXX DRIVEWAY ID
- PROPOSED LANE
- EXISTING LANE
- FLOW DIRECTION
- RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- WATER LINE
- OVERHEAD ELECTRIC
- UNDERGROUND TELEPHONE

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



US6960-2
 PI STATION = 433+96.20
 NORTHING = 6,959,013.7034
 EASTING = 2,880,781.6993
 DELTA = 2° 00' 02" (RT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 193.81'
 LENGTH = 387.59'



NO.	REVISION	BY	DATE

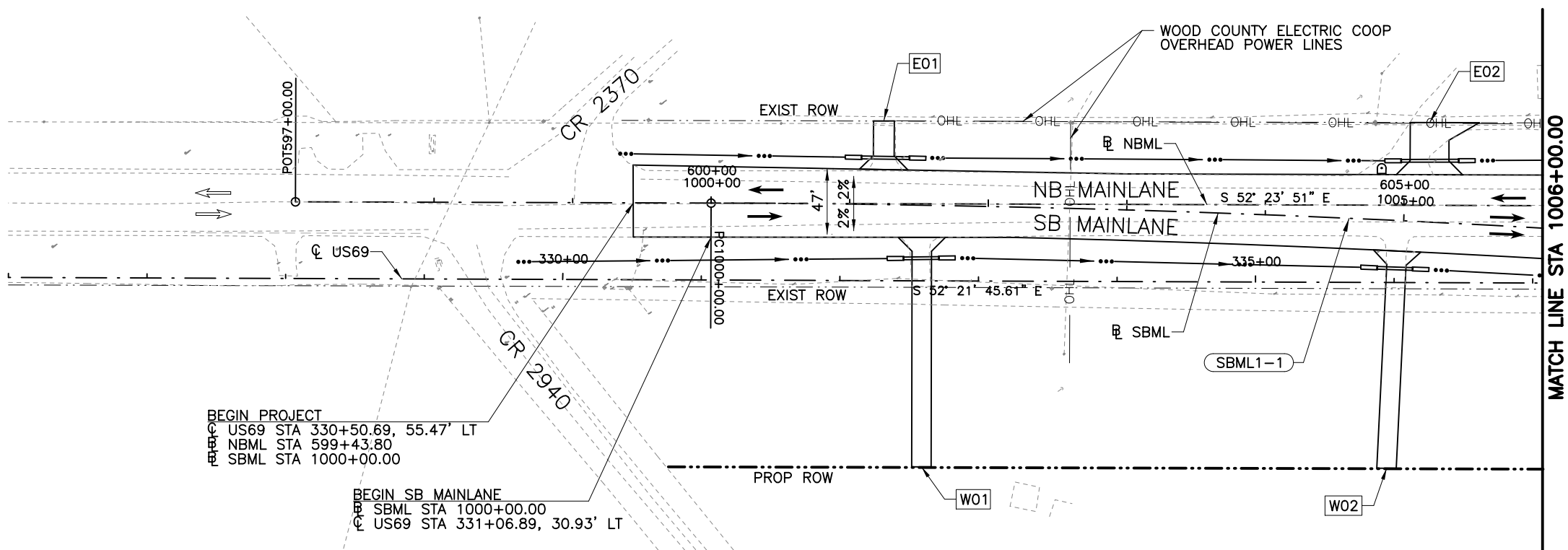


TEXAS REGISTERED ENGINEERING FIRM F-1741
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**ROADWAY PLAN AND PROFILE
 NB MAINLANE
 STA 830+00 TO END PROJECT**

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	SW	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	157

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BEGIN PROJECT
 US69 STA 330+50.69, 55.47' LT
 NBML STA 599+43.80
 SBML STA 1000+00.00

BEGIN SB MAINLANE
 SBML STA 1000+00.00
 US69 STA 331+06.89, 30.93' LT

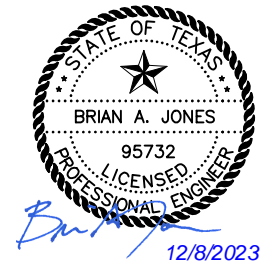
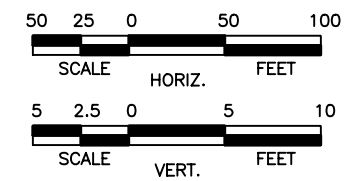
SBML1-1
 PI STATION = 1005+27.38
 NORTHING = 6,964,967.4087
 EASTING = 2,873,046.7853
 DELTA = 5° 26' 25" (RT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 527.38'
 LENGTH = 1,053.96'

LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Pattern] RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- W — WATER LINE
- O/H ELEC — OVERHEAD ELECTRIC
- TELE — UNDERGROUND TELEPHONE

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



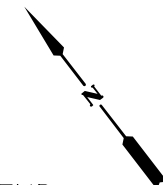
US 69 AT FM 779

ROADWAY PLAN AND PROFILE
 SB MAINLANE

BEGIN PROJECT TO STA 1006+00

Designed: JK/F	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. SW	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: SW	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Checked: BAJ	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05

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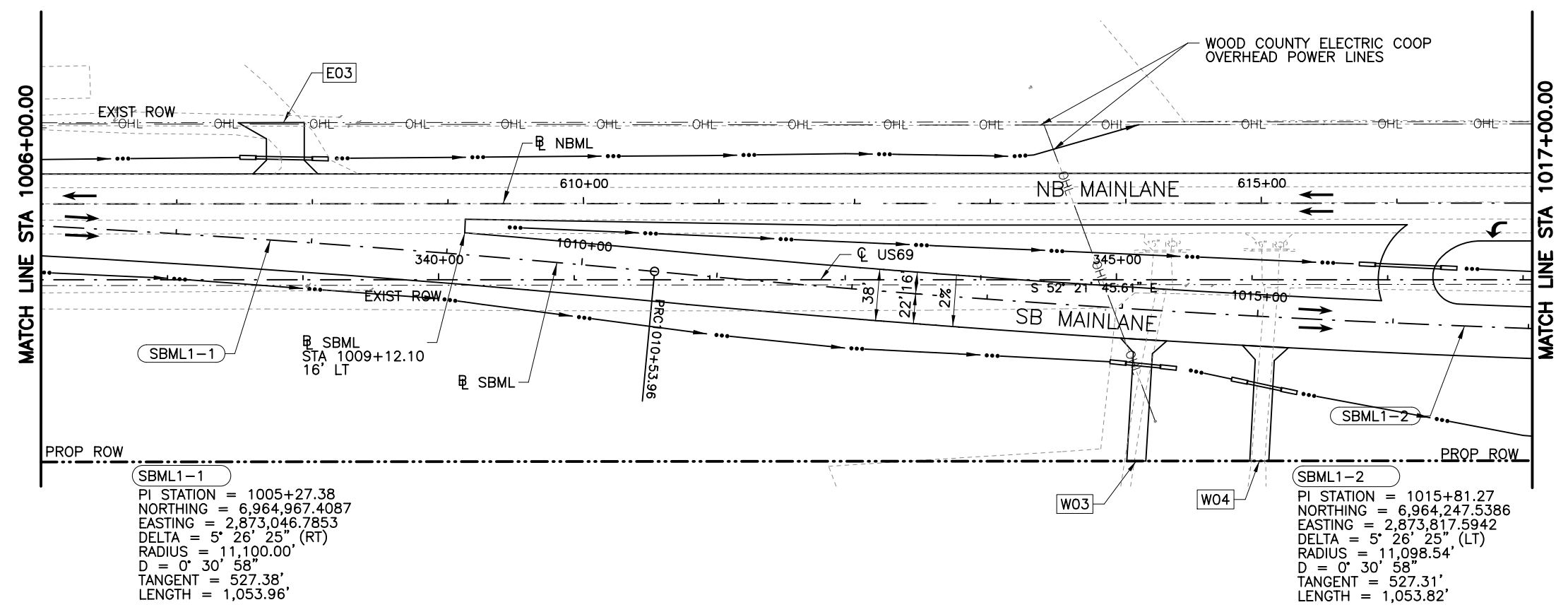
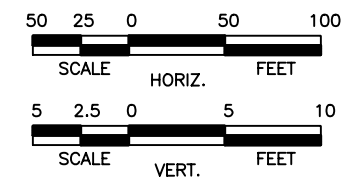


LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- EXISTING LANE
- FLOW DIRECTION
- RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- WATER LINE
- OVERHEAD ELECTRIC
- UNDERGROUND TELEPHONE

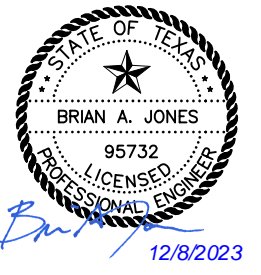
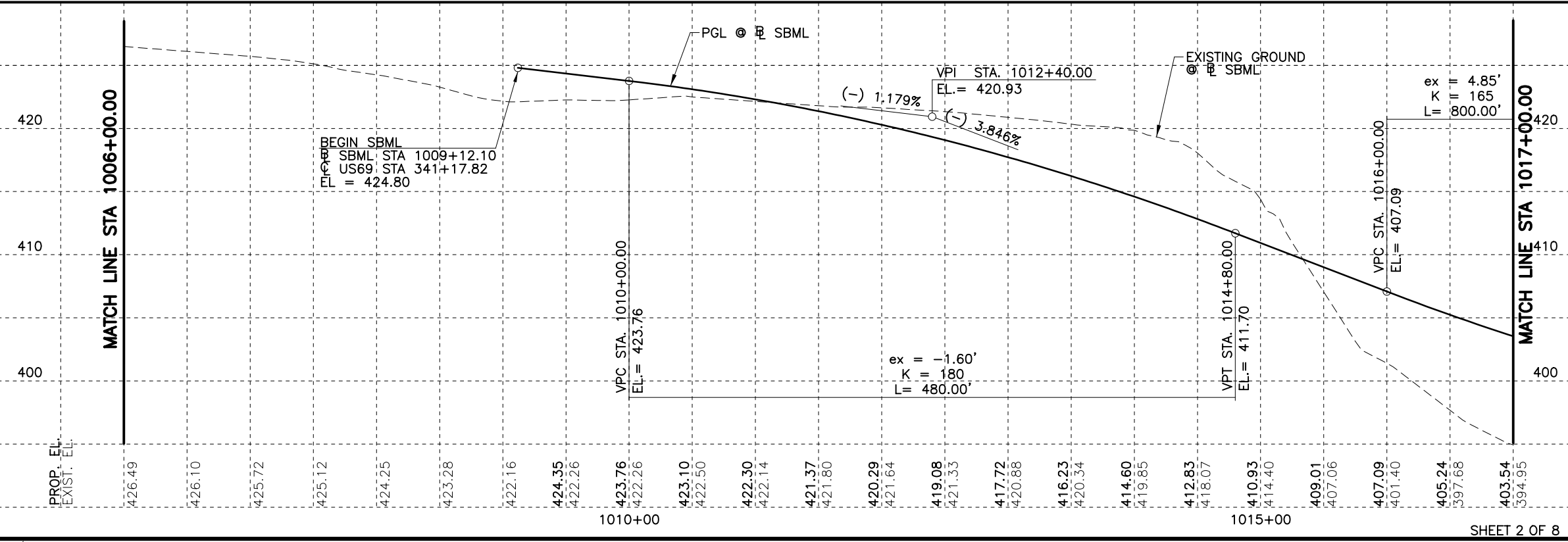
NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



SBML1-1
PI STATION = 1005+27.38
NORTHING = 6,964,967.4087
EASTING = 2,873,046.7853
DELTA = 5° 26' 25" (RT)
RADIUS = 11,100.00'
D = 0° 30' 58"
TANGENT = 527.38'
LENGTH = 1,053.96'

SBML1-2
PI STATION = 1015+81.27
NORTHING = 6,964,247.5386
EASTING = 2,873,817.5942
DELTA = 5° 26' 25" (LT)
RADIUS = 11,098.54'
D = 0° 30' 58"
TANGENT = 527.31'
LENGTH = 1,053.82'



NO.	REVISION	BY	DATE



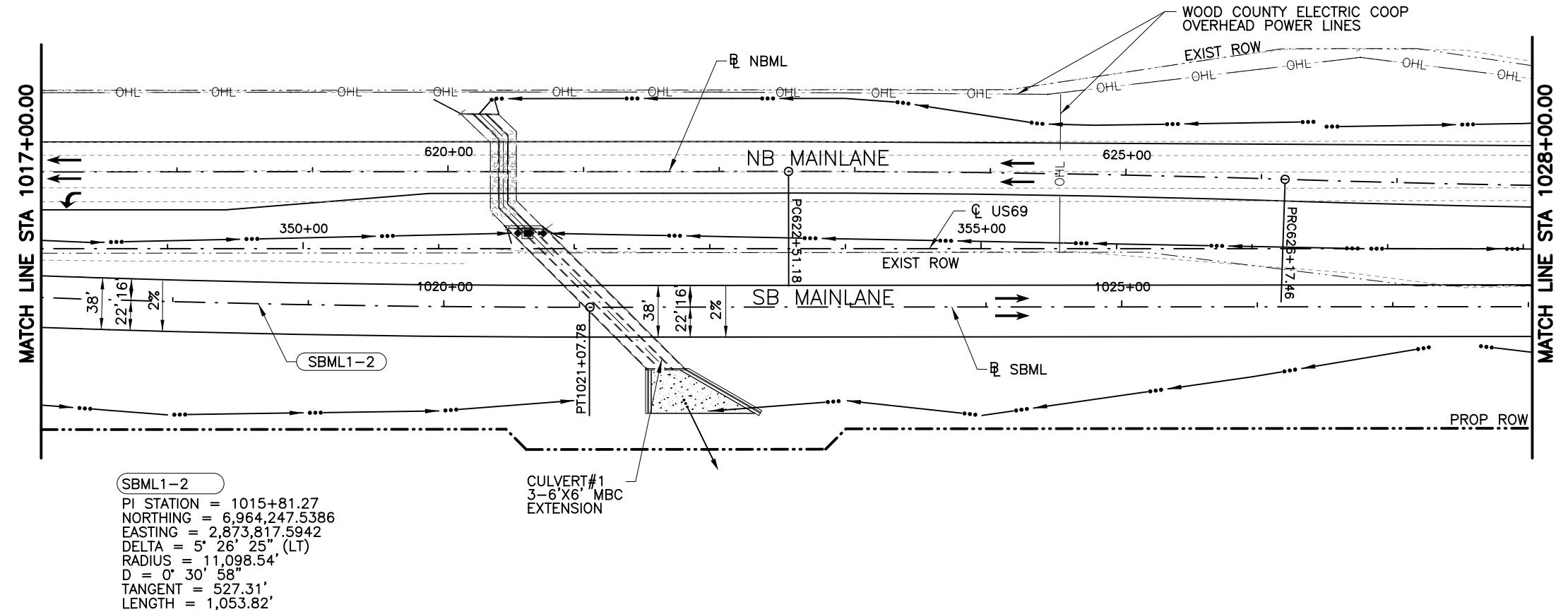
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US 69 AT FM 779

**ROADWAY PLAN AND PROFILE
SB MAINLANE
STA 1006+00 TO STA 1017+00**

Designed: JKF	FED. RD. DIST. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. SW	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: SW	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	JOB NO. 039
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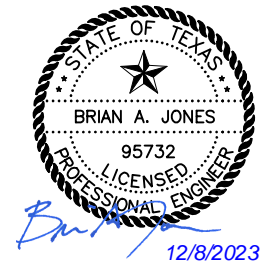
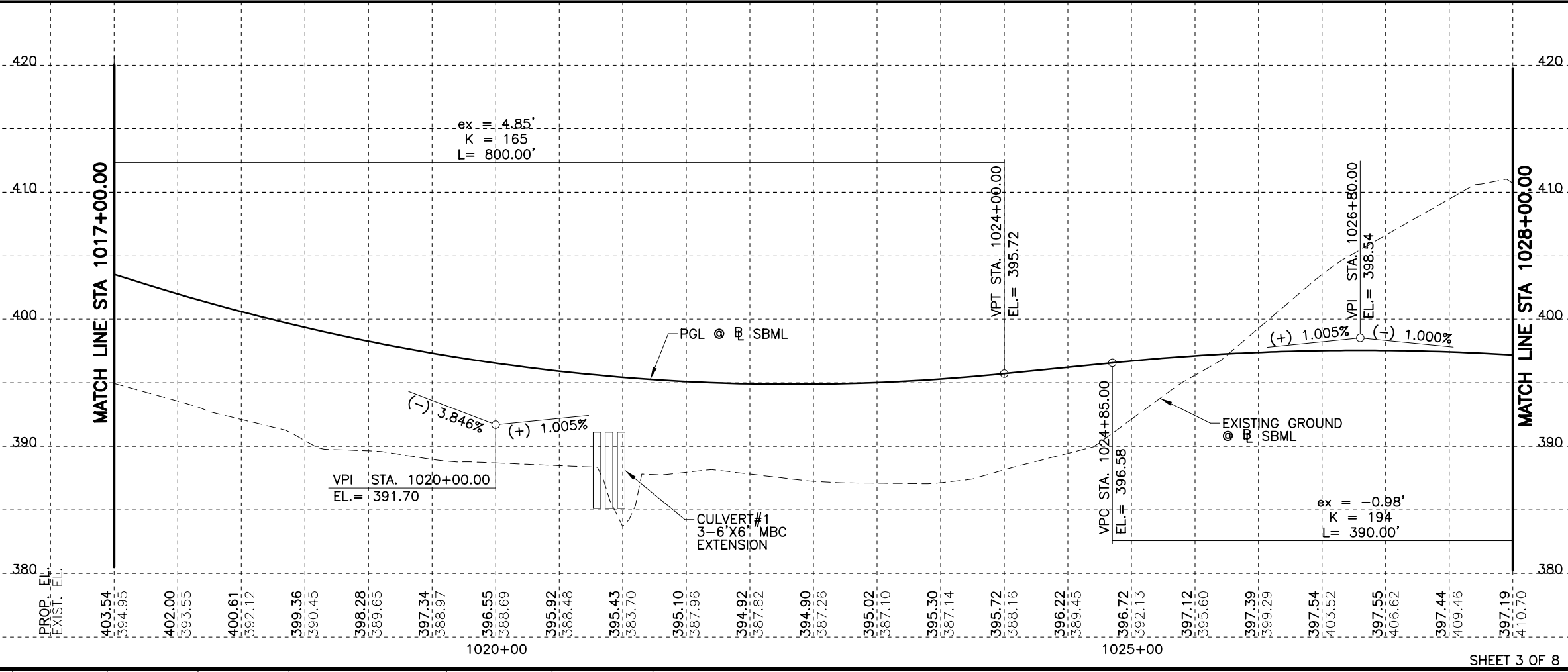
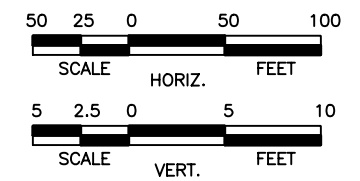
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- ### LEGEND
- XXX DRIVEWAY ID
 - PROPOSED LANE
 - ⇨ EXISTING LANE
 - ⇨ FLOW DIRECTION
 - ▨ RIPRAP (CONC)
 - PROPOSED ROW
 - EXISTING ROW
 - W — WATER LINE
 - O/H ELEC — OVERHEAD ELECTRIC
 - TELE — UNDERGROUND TELEPHONE

- ### NOTES:
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE

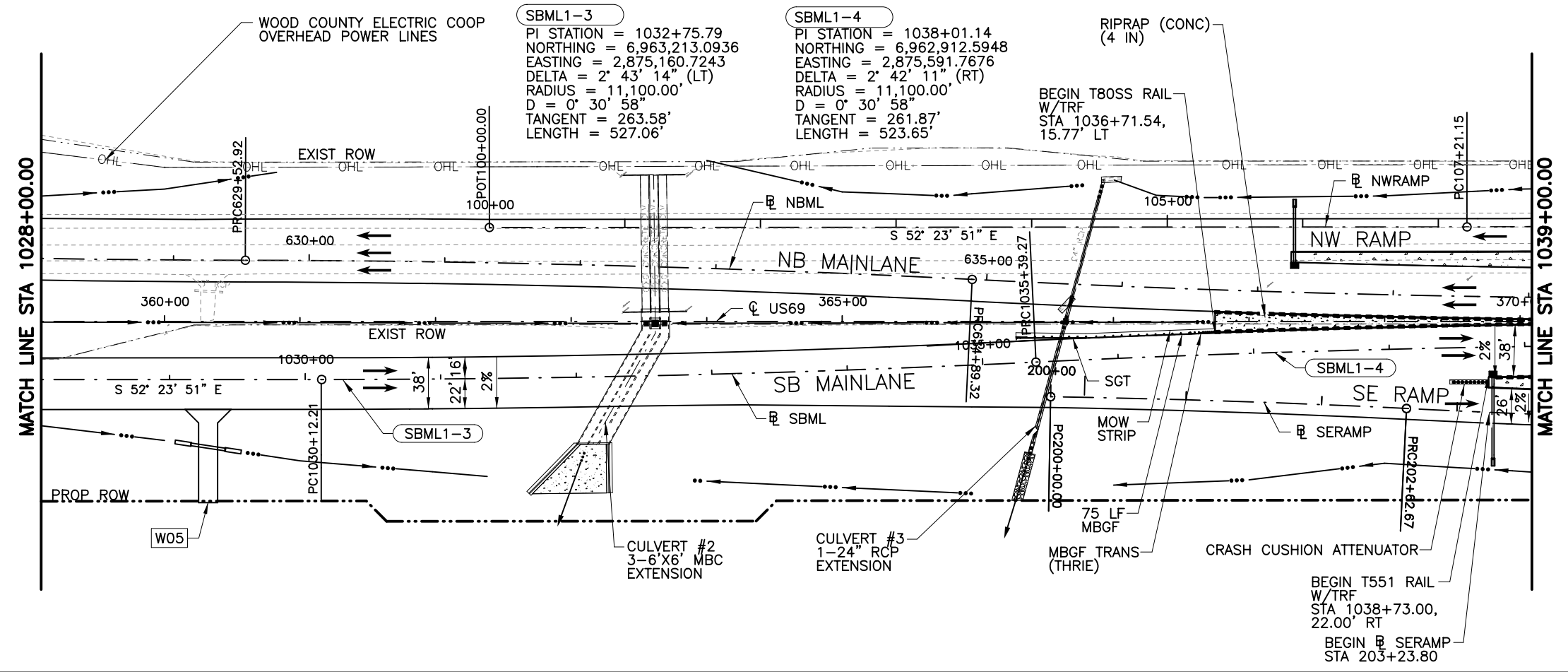


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 US 69 AT FM 779

ROADWAY PLAN AND PROFILE SB MAINLANE

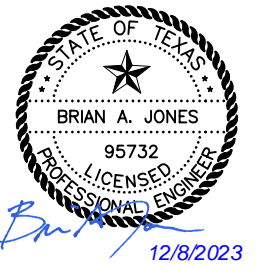
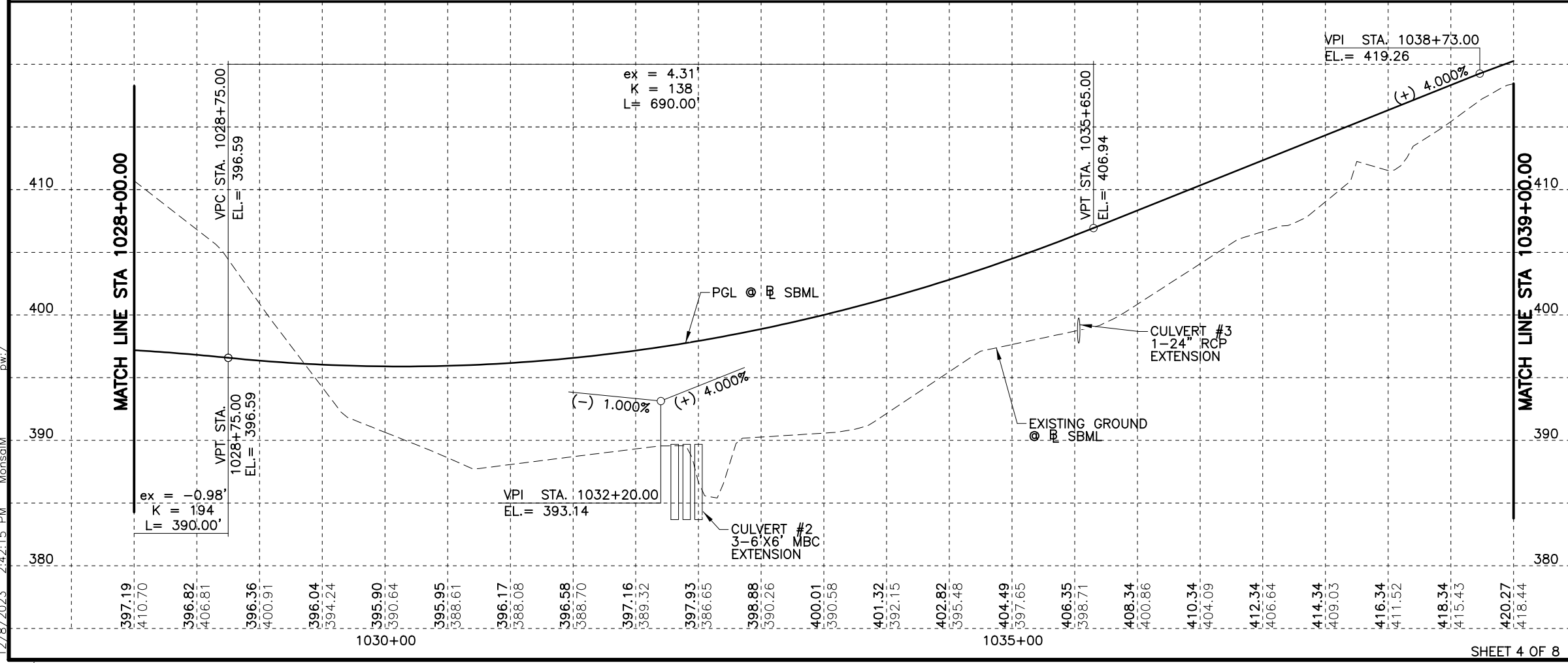
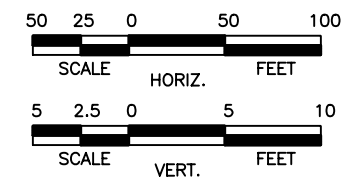
STA 1017+00 TO STA 1028+00

Designed: JKF	FED. RD. DIST. NO.: 6	STATE: TEXAS	PROJECT NO.:	HIGHWAY NO.: US 69
Checked: BAJ	DIST.:	COUNTY: WOOD	CONTROL NO.: 0203	SECTION NO.: 05
Drawn: SW	JOB NO.: 039	SHEET NO.: 160		
Checked: BAJ	TYL			



- LEGEND**
- XXX DRIVEWAY ID
 - PROPOSED LANE
 - ⇨ EXISTING LANE
 - FLOW DIRECTION
 - [Pattern] RIPRAP (CONC)
 - PROPOSED ROW
 - - - EXISTING ROW
 - W - WATER LINE
 - O/H ELEC - OVERHEAD ELECTRIC
 - TELE - UNDERGROUND TELEPHONE

- NOTES:**
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



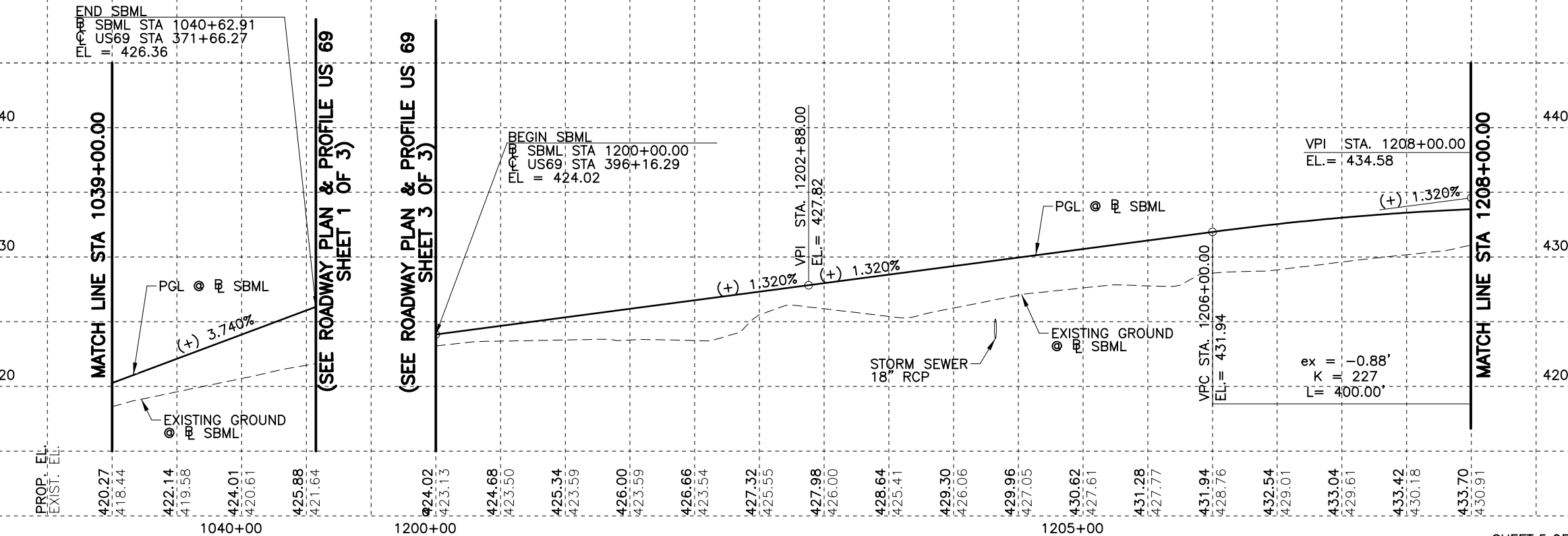
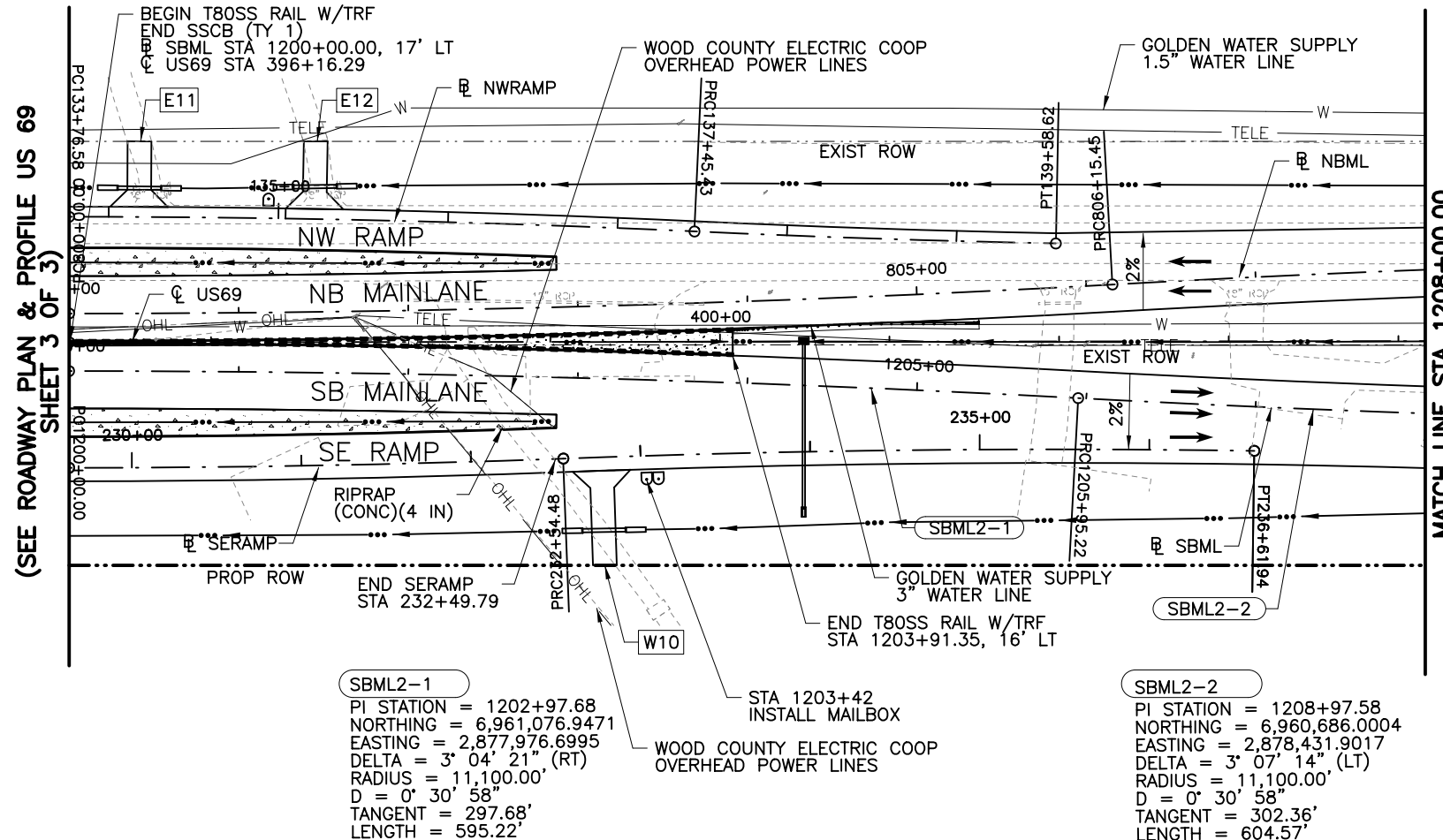
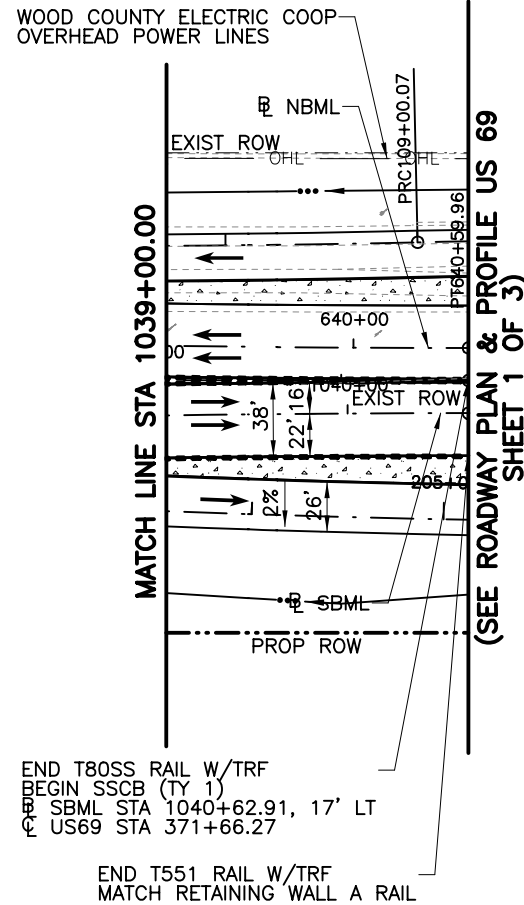
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**ROADWAY PLAN AND PROFILE
 SB MAINLANE**

STA 1028+00 TO STA 1039+00

Designed: JKJ	FED. RD. DIST. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. SW	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: SW	JOB NO. 039	SHEET NO. 161		
Checked: BAJ	TYL			

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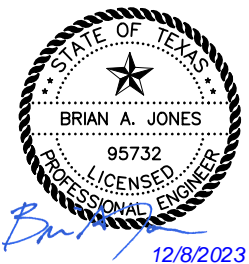
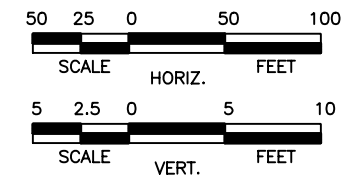


LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Pattern] RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- W WATER LINE
- O/H ELEC OVERHEAD ELECTRIC
- TELE UNDERGROUND TELEPHONE

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779
ROADWAY PLAN AND PROFILE
SB MAINLANE

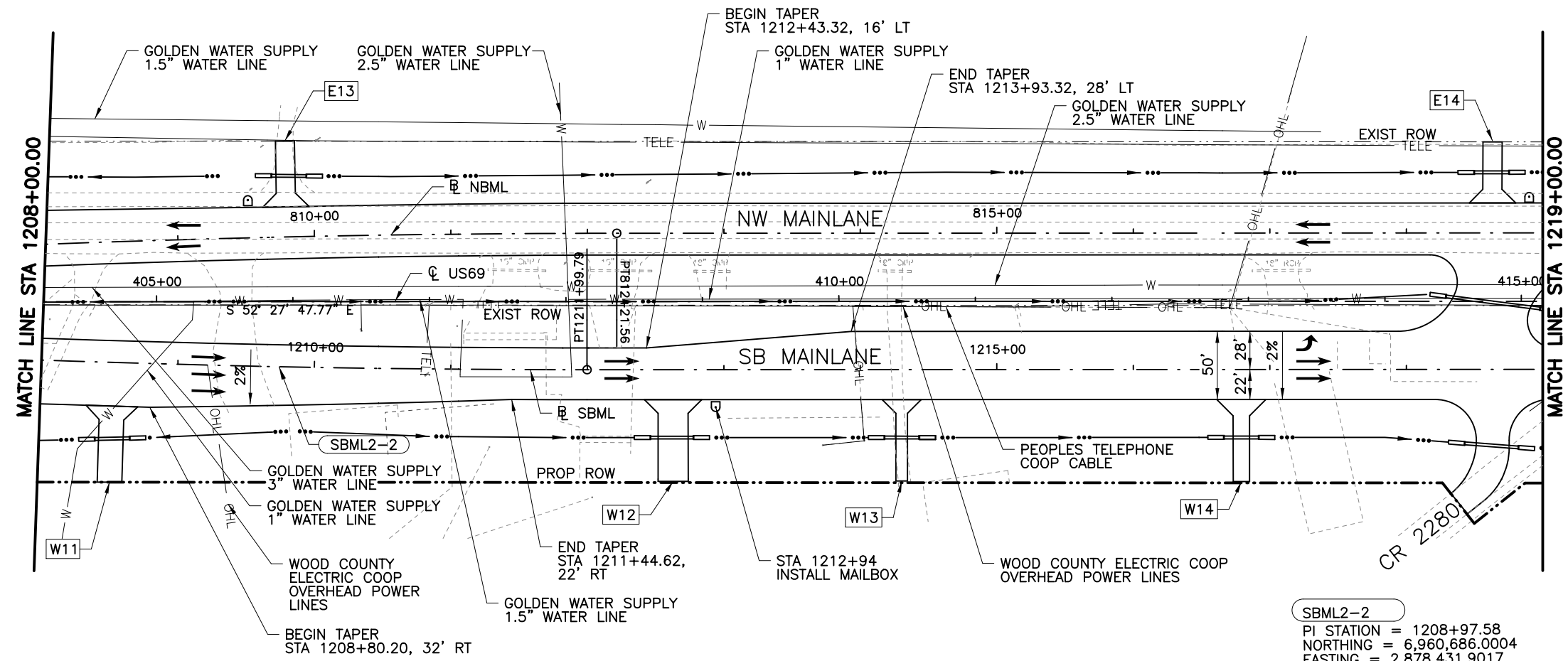
STA 1039+00 TO STA 1040+62.91
STA 1200+00 TO STA 1208+00

Designed:	JKF	FED. RD. DIST. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	SW	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	162

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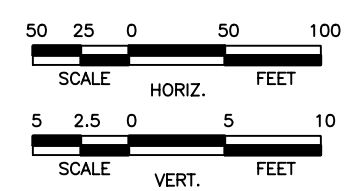
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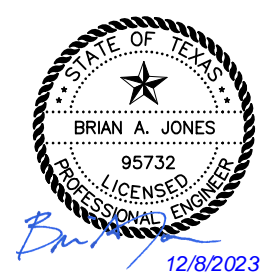
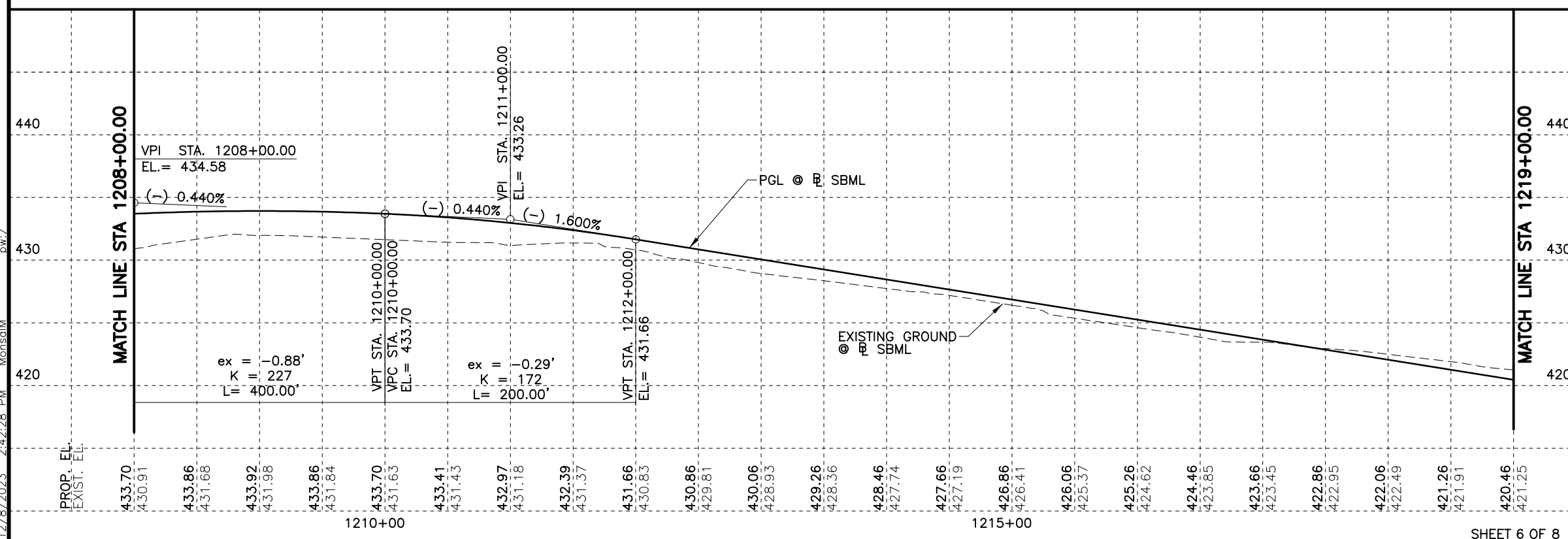


- ### LEGEND
- XXX DRIVEWAY ID
 - PROPOSED LANE
 - ⇨ EXISTING LANE
 - FLOW DIRECTION
 - [Pattern] RIPRAP (CONC)
 - PROPOSED ROW
 - EXISTING ROW
 - W WATER LINE
 - O/H ELEC OVERHEAD ELECTRIC
 - TELE UNDERGROUND TELEPHONE

- NOTES:
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



SBML2-2
 PI STATION = 1208+97.58
 NORTHING = 6,960,686.0004
 EASTING = 2,878,431.9017
 DELTA = 3° 07' 14" (LT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 302.36'
 LENGTH = 604.57'



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

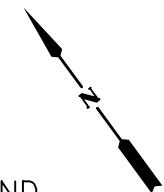


US 69 AT FM 779

**ROADWAY PLAN AND PROFILE
SB MAINLANE**

STA 1208+00 TO STA 1219+00

Designed: JKF	FED. RD. DIST. NO.: 6	STATE: TEXAS	PROJECT NO.:	HIGHWAY NO.:
Checked: BAJ				US 69
Drawn: SW	DIST.:	COUNTY:	CONTROL NO.:	SECTION NO.:
Checked: BAJ	TYL	WOOD	0203	05
			039	SHEET NO.:
				163

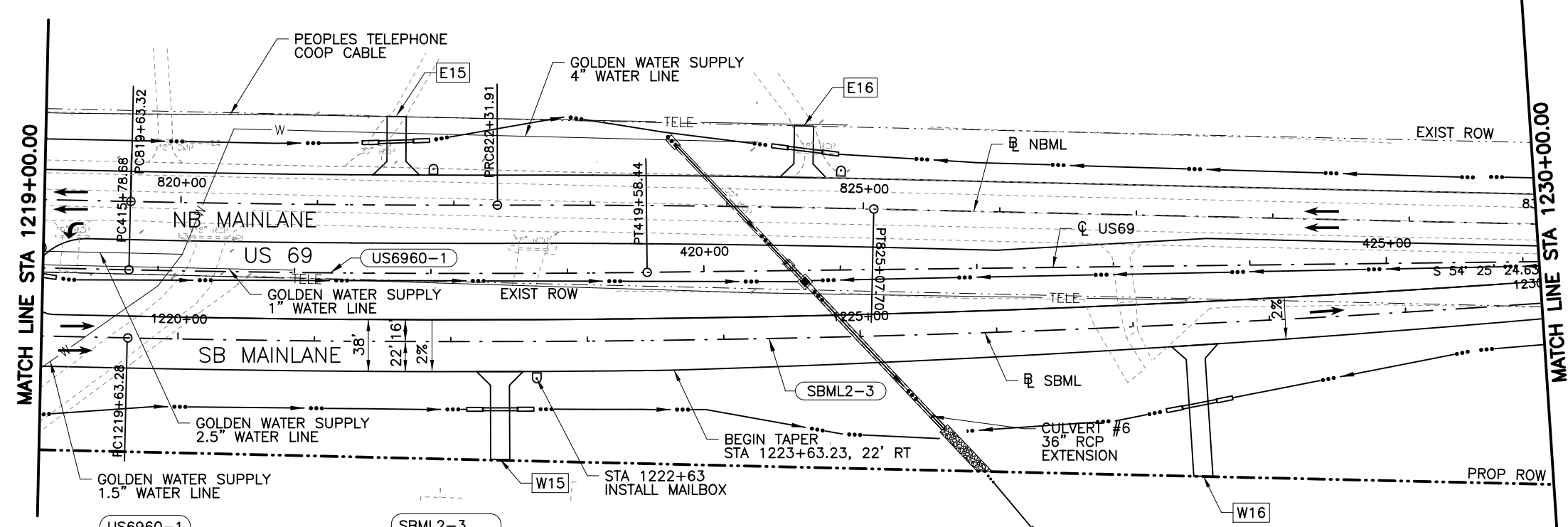
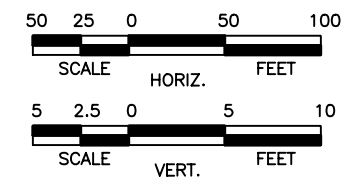


LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Stippled Box] RIPRAP (CONC)
- PROPOSED ROW
- - - EXISTING ROW
- W — WATER LINE
- O/H ELEC — OVERHEAD ELECTRIC
- TELE — UNDERGROUND TELEPHONE

NOTES:

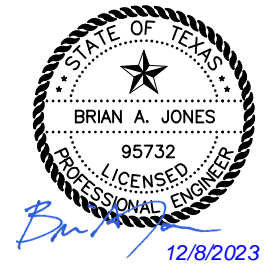
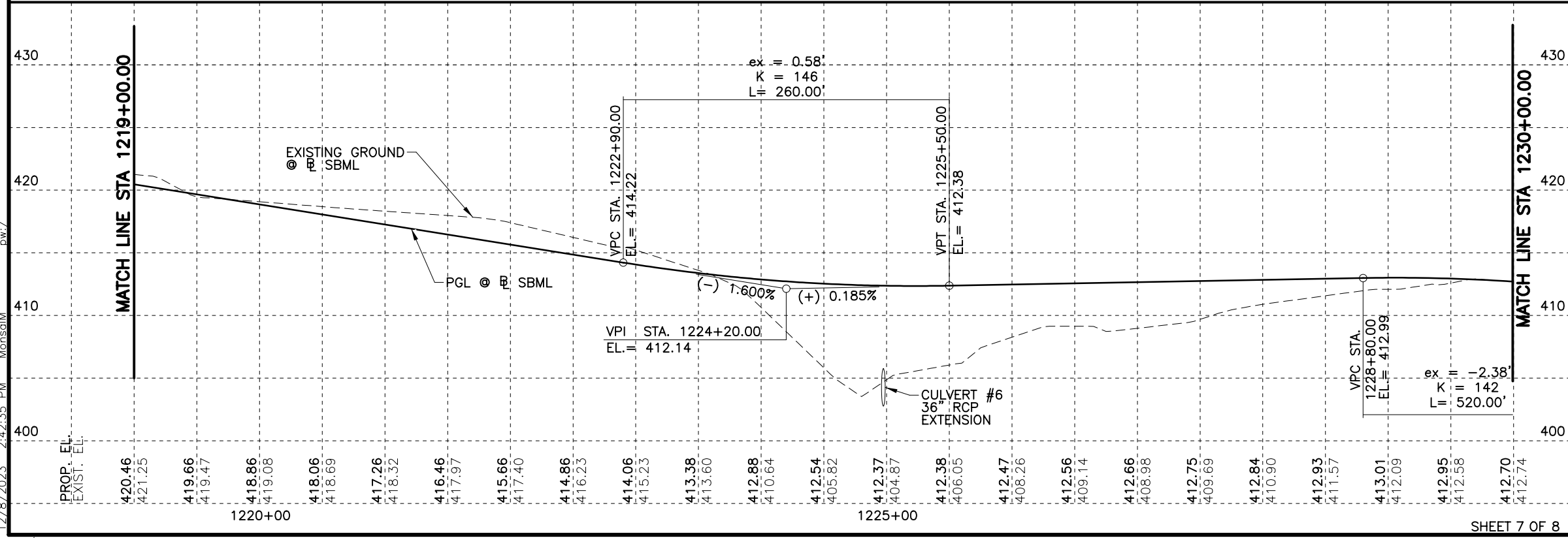
1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



US6960-1
 PI STATION = 417+68.58
 NORTHING = 6,959,960.6579
 EASTING = 2,879,457.8600
 DELTA = 1° 57' 37" (LT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 189.90'
 LENGTH = 379.76'

SBML2-3
 PI STATION = 1225+37.82
 NORTHING = 6,959,686.5580
 EASTING = 2,879,732.6729
 DELTA = 5° 55' 34" (LT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 574.55'
 LENGTH = 1,148.07'

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NO.	REVISION	BY	DATE

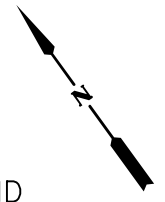


TEXAS REGISTERED ENGINEERING FIRM F-1741
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 US 69 AT FM 779

**ROADWAY PLAN AND PROFILE
 SB MAINLANE**

STA 1219+00 TO STA 1230+00

Designed: JKF	FED. RD. DIST. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. SW	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: SW	TYL	JOB NO. 039	SHEET NO. 164	

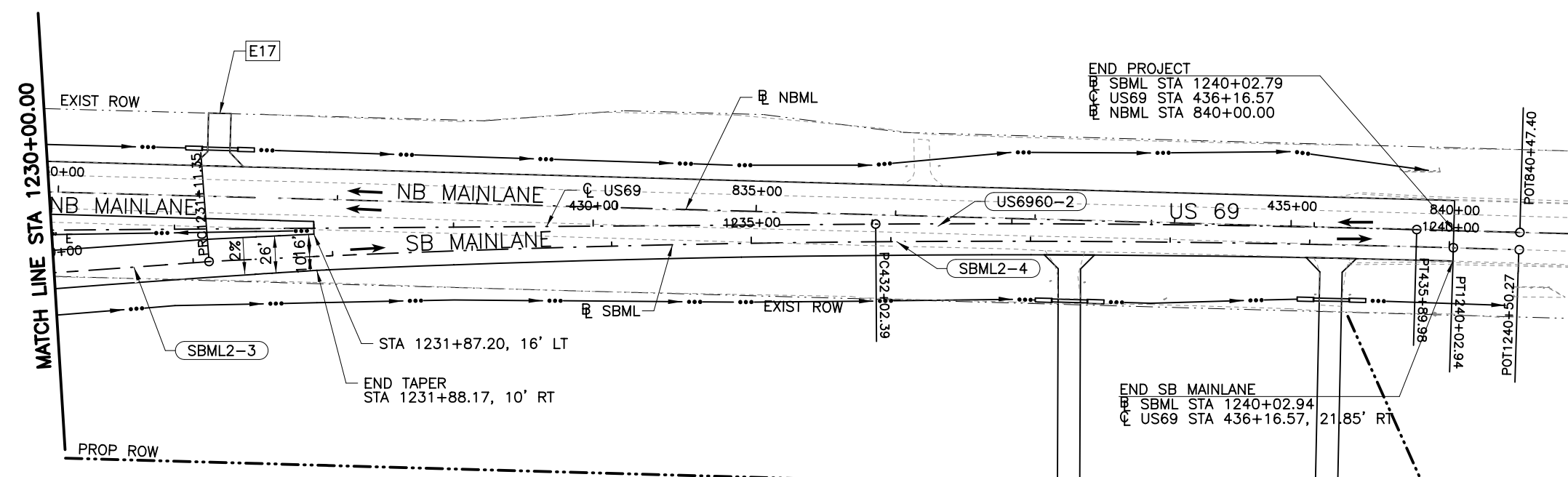
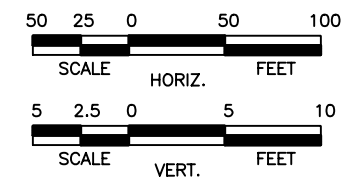


LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- EXISTING LANE
- FLOW DIRECTION
- RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- WATER LINE
- OVERHEAD ELECTRIC
- UNDERGROUND TELEPHONE

NOTES:

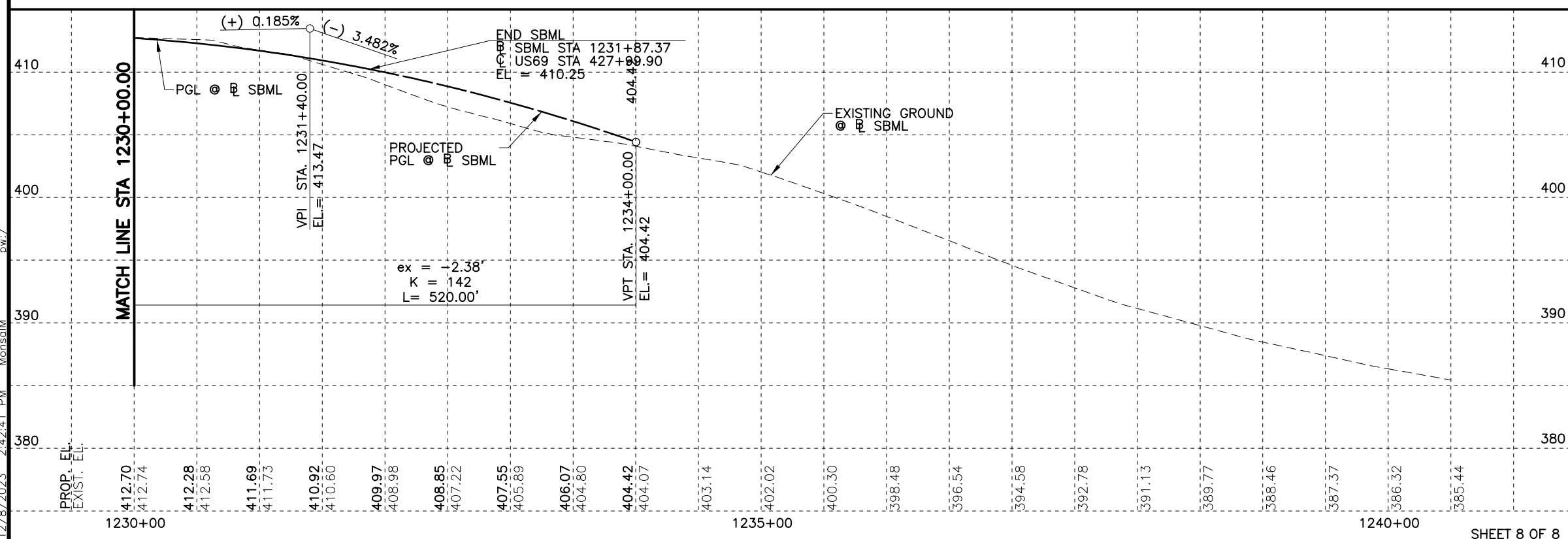
1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



US6960-2
 PI STATION = 433+96.20
 NORTHING = 6,959,013.7034
 EASTING = 2,880,781.6993
 DELTA = 2° 00' 02" (RT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 193.81'
 LENGTH = 387.59'

SBML2-3
 PI STATION = 1225+37.82
 NORTHING = 6,959,686.5580
 EASTING = 2,879,732.6729
 DELTA = 5° 55' 34" (LT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 574.55'
 LENGTH = 1,148.07'

SBML2-4
 PI STATION = 1234+57.38
 NORTHING = 6,959,142.0719
 EASTING = 2,880,595.7845
 DELTA = 4° 36' 08" (RT)
 RADIUS = 11,100.00'
 D = 0° 30' 58"
 TANGENT = 446.04'
 LENGTH = 891.59'



NO.	REVISION	BY	DATE



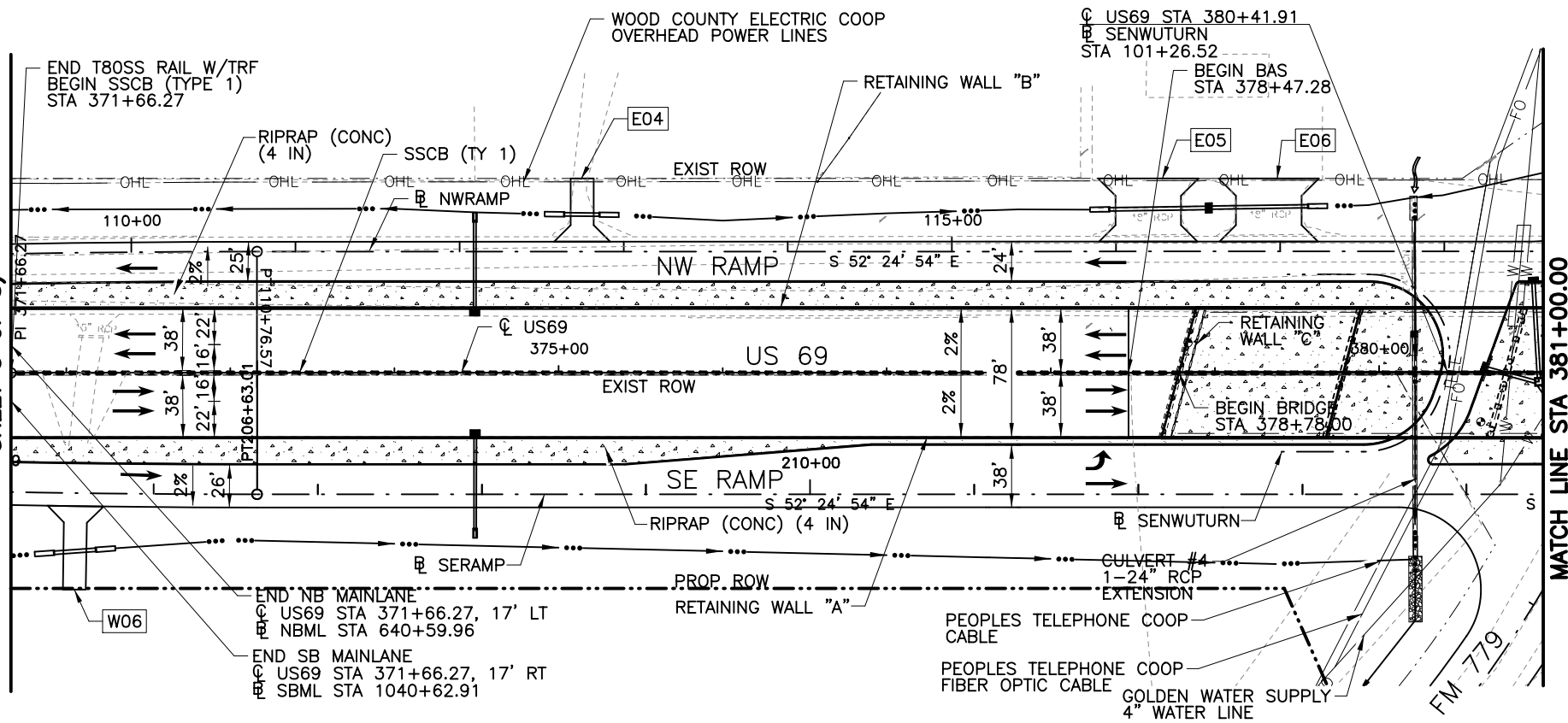
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 US 69 AT FM 779

**ROADWAY PLAN AND PROFILE
 SB MAINLANE
 STA 1230+00 TO END PROJECT**

Designed: JKF	FED. RD. DIST. NO.: 6	STATE: TEXAS	PROJECT NO.:	HIGHWAY NO.: US 69
Checked: BAJ	DIST.:	COUNTY: WOOD	CONTROL NO.: 0203	SECTION NO.: 05
Drawn: SW	DIST.:	COUNTY: WOOD	CONTROL NO.: 0203	SECTION NO.: 05
Checked: BAJ	TYL	WOOD	0203	05
				JOB NO.: 039
				SHEET NO.: 165

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(SEE ROADWAY PLAN & PROFILE NB MAINLANE SHEET 5 OF 8)
 (SEE ROADWAY PLAN & PROFILE SB MAINLANE SHEET 5 OF 8)

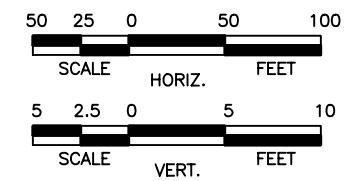


LEGEND

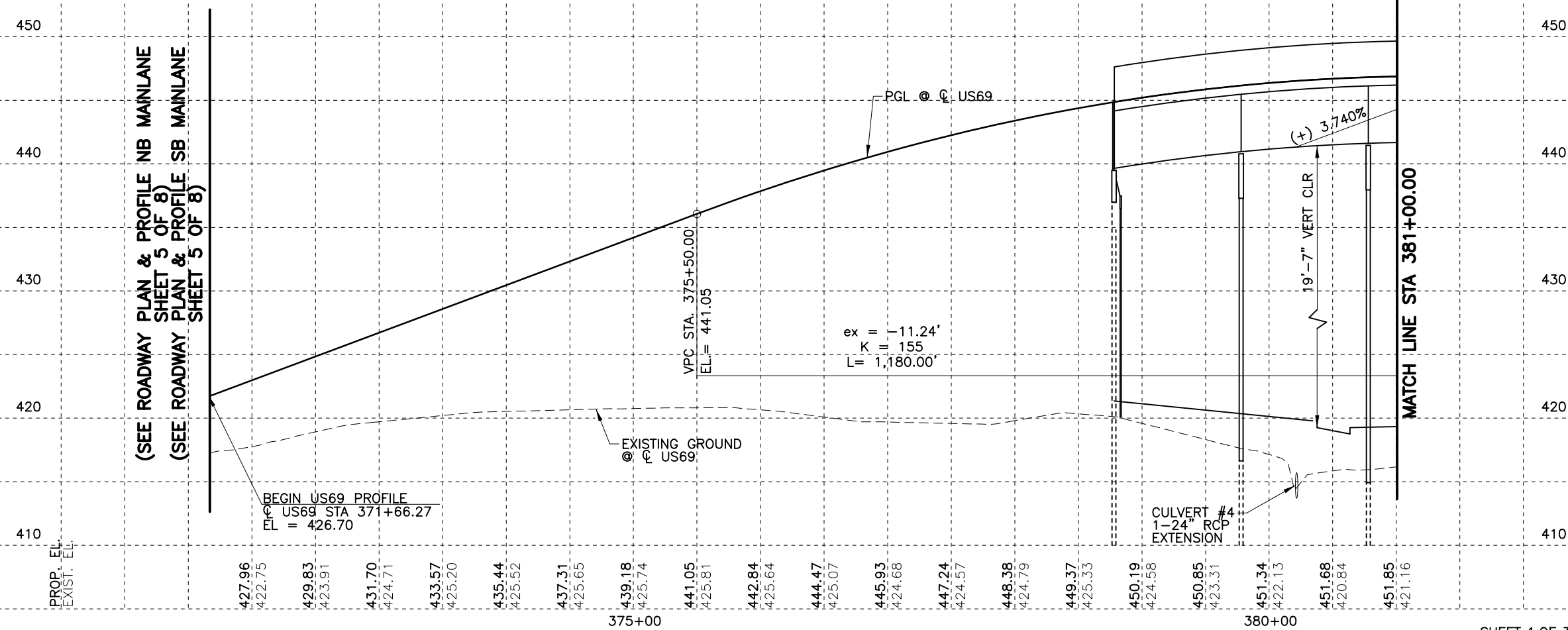
- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Pattern] RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- W — WATER LINE
- O/H ELEC — OVERHEAD ELECTRIC
- TELE — UNDERGROUND TELEPHONE

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



(SEE ROADWAY PLAN & PROFILE NB MAINLANE SHEET 5 OF 8)
 (SEE ROADWAY PLAN & PROFILE SB MAINLANE SHEET 5 OF 8)



NO.	REVISION	BY	DATE



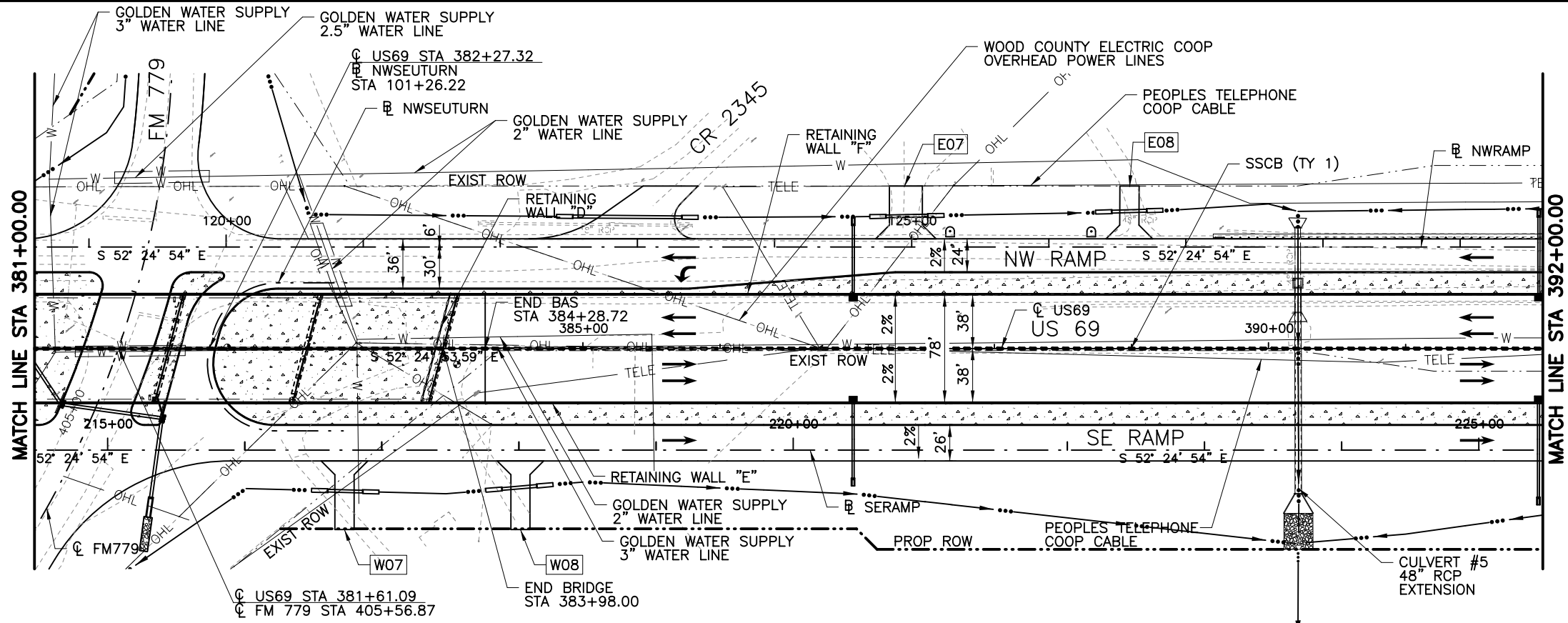
TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779
 ROADWAY PLAN AND PROFILE
 US 69
 STA 371+66.27 TO STA 381+00

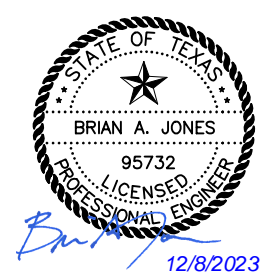
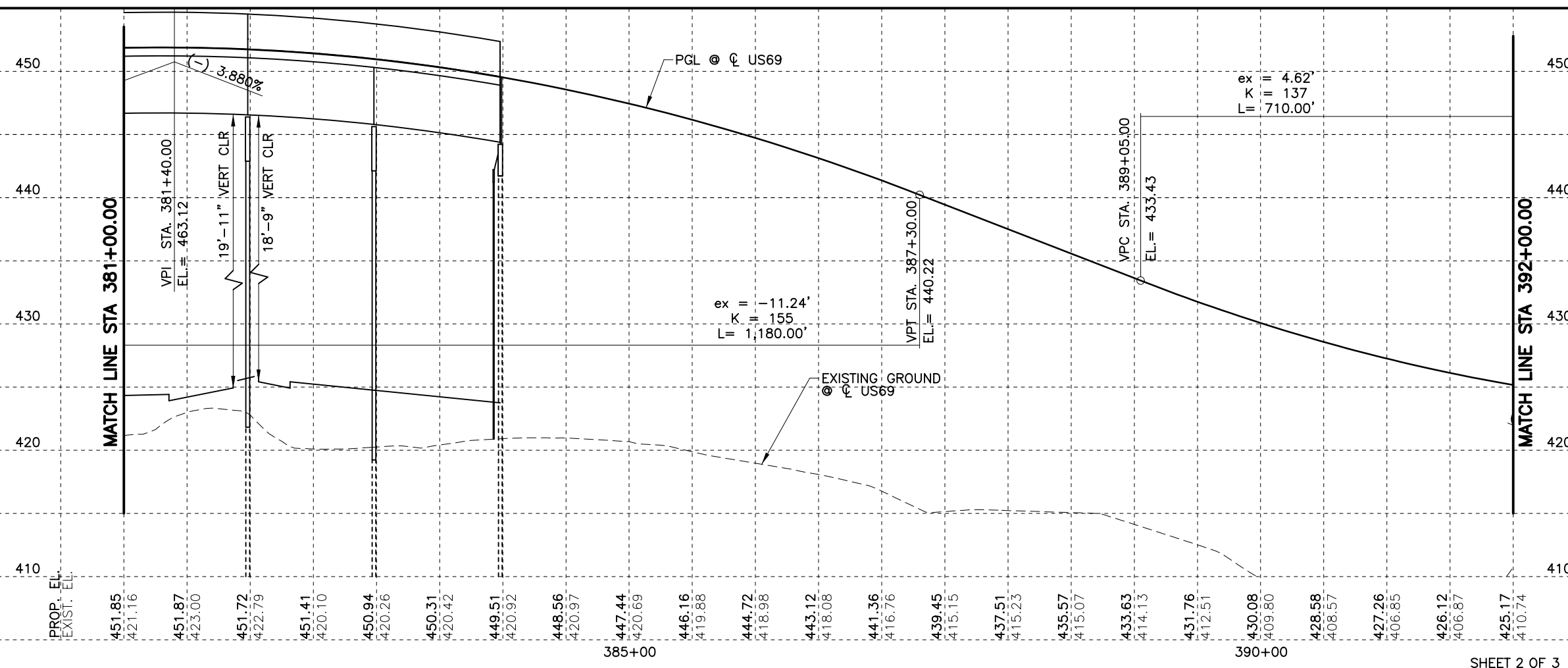
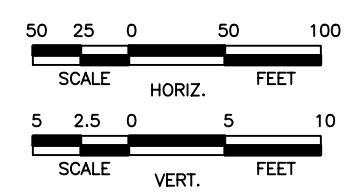
Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	SW	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	166

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- LEGEND**
- XXX DRIVEWAY ID
 - PROPOSED LANE
 - ⇨ EXISTING LANE
 - FLOW DIRECTION
 - [Pattern] RIPRAP (CONC)
 - PROPOSED ROW
 - - - EXISTING ROW
 - W - WATER LINE
 - O/H ELEC - OVERHEAD ELECTRIC
 - TELE - UNDERGROUND TELEPHONE

- NOTES:**
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



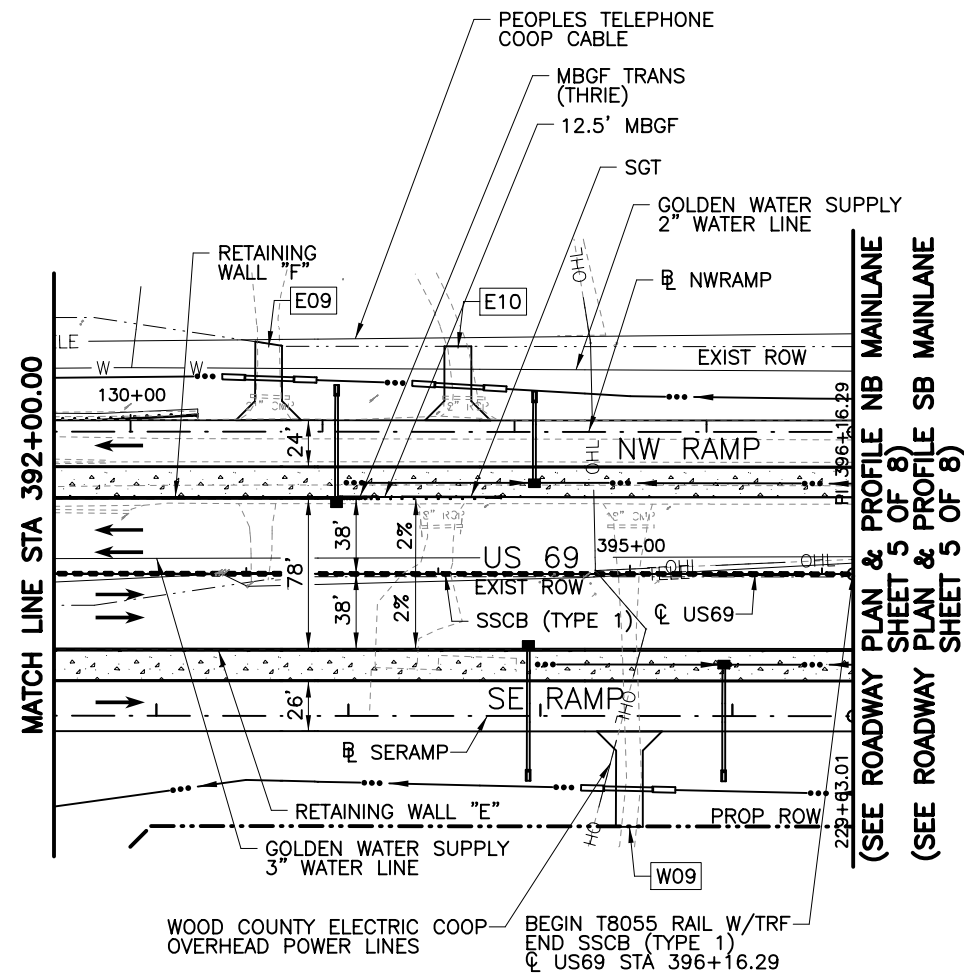
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US 69 AT FM 779

**ROADWAY PLAN AND PROFILE
US 69**

STA 381+00 TO STA 392+00

Designed: JKF	FED. RD. DIST. NO.: 6	STATE: TEXAS	PROJECT NO.:	HIGHWAY NO.: US 69
Checked: BAJ	DIST.:	COUNTY: WOOD	CONTROL NO.: 0203	SECTION NO.: 05
Drawn: SW	JOB NO.: 039	SHEET NO.: 167		

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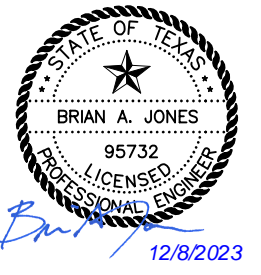
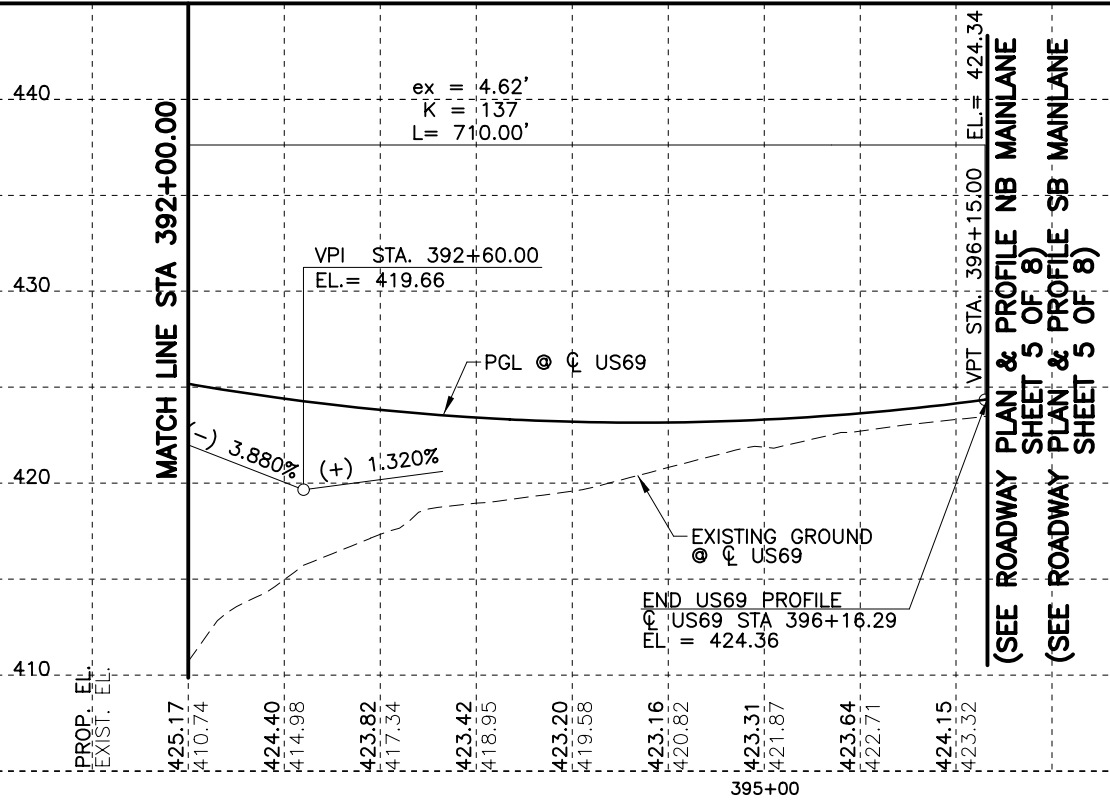
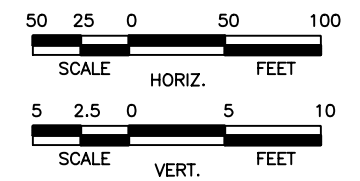


LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- EXISTING LANE
- FLOW DIRECTION
- RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- WATER LINE
- OVERHEAD ELECTRIC
- UNDERGROUND TELEPHONE

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



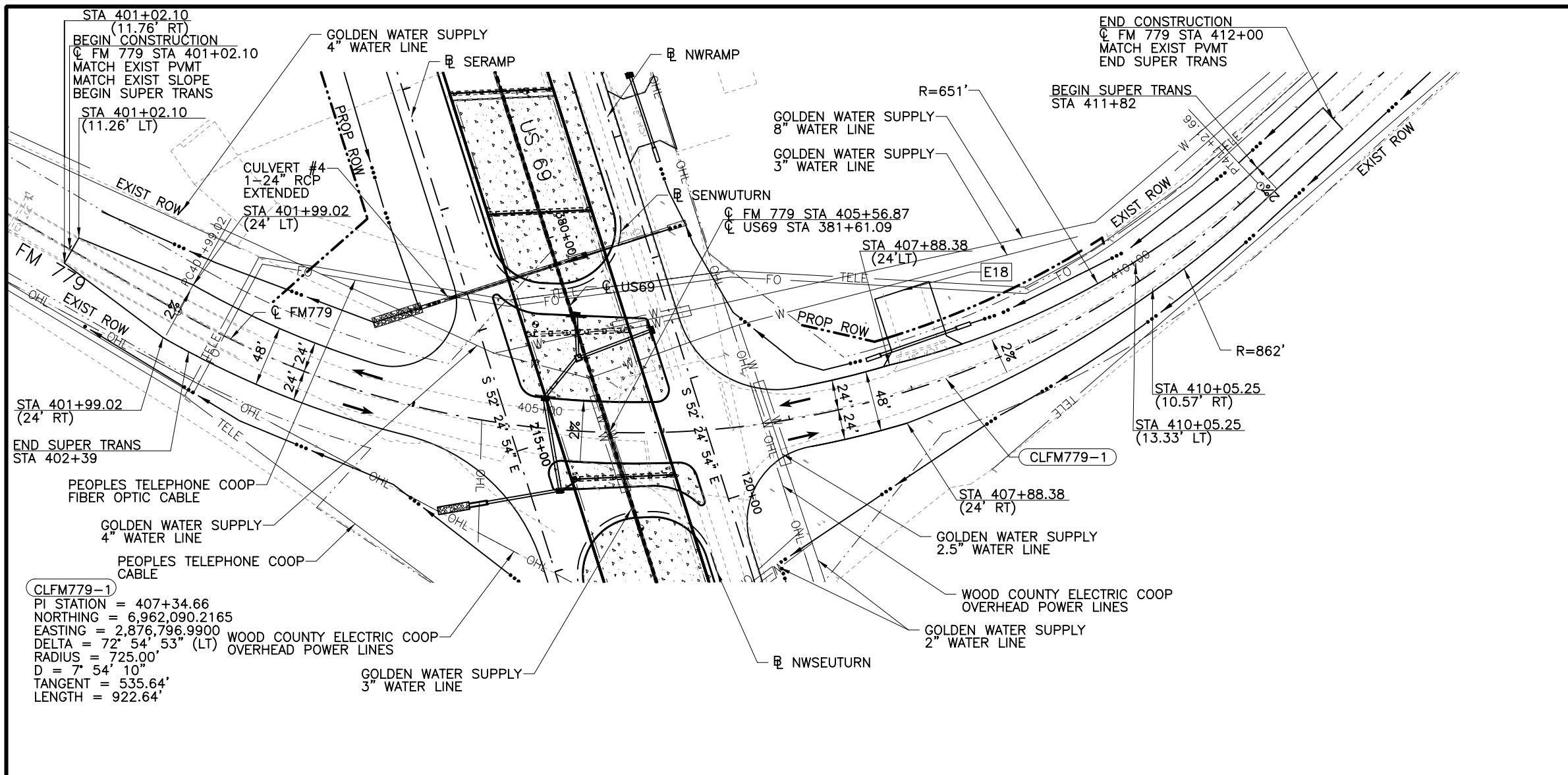
NO.	REVISION	BY	DATE



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**ROADWAY PLAN AND PROFILE
US 69
STA 392+00 TO STA 396+16.29**

Designed:	JKF	FED. RD. DIV. NO.	6	STATE	TEXAS	PROJECT NO.		HIGHWAY NO.	US 69
Checked:	BAJ	DIST.	SW	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	SW	JOB NO.	039	SHEET NO.	168				

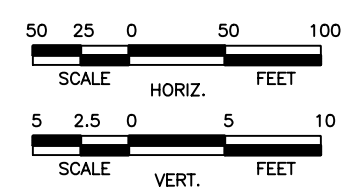


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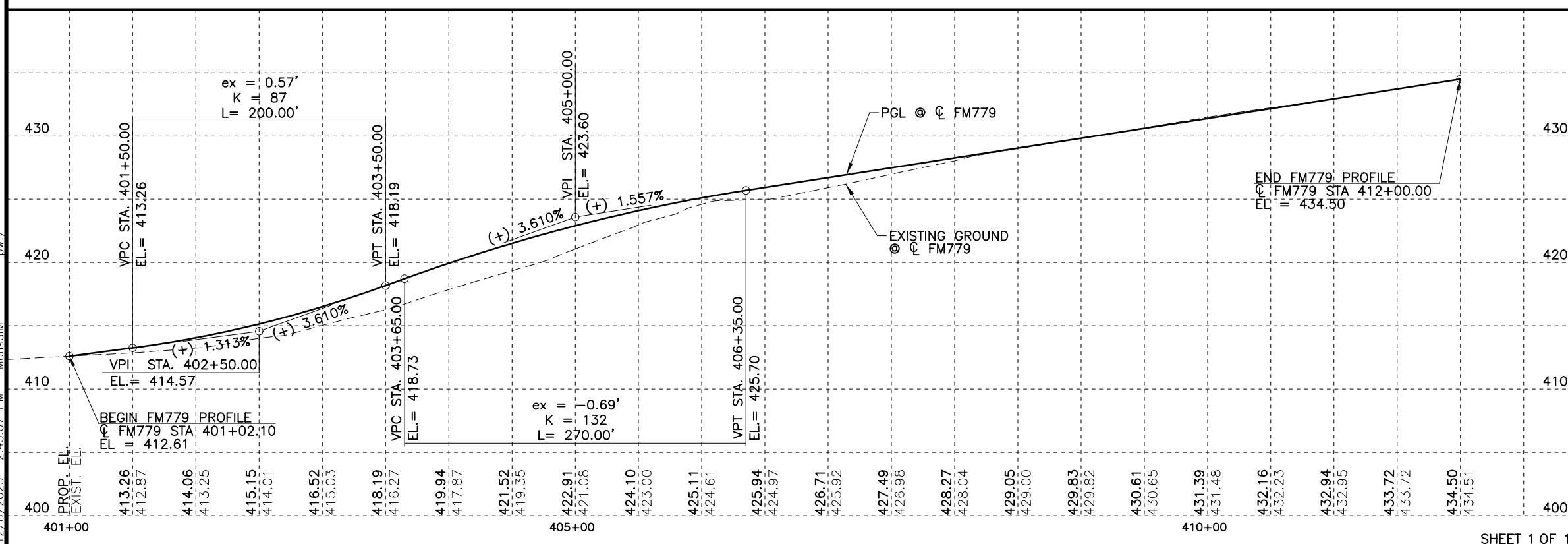
- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Stippled Box] RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- W — WATER LINE
- O/H ELEC — OVERHEAD ELECTRIC
- TELE — UNDERGROUND TELEPHONE

NOTES:

- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
- SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



CLFM779-1
 PI STATION = 407+34.66
 NORTHING = 6,962,090.2165
 EASTING = 2,876,796.9900
 DELTA = 72° 54' 53" (LT)
 RADIUS = 725.00'
 D = 7° 54' 10"
 TANGENT = 535.64'
 LENGTH = 922.64'



NO.	REVISION	BY	DATE



US 69 AT FM 779

**ROADWAY PLAN AND PROFILE
FM 779**

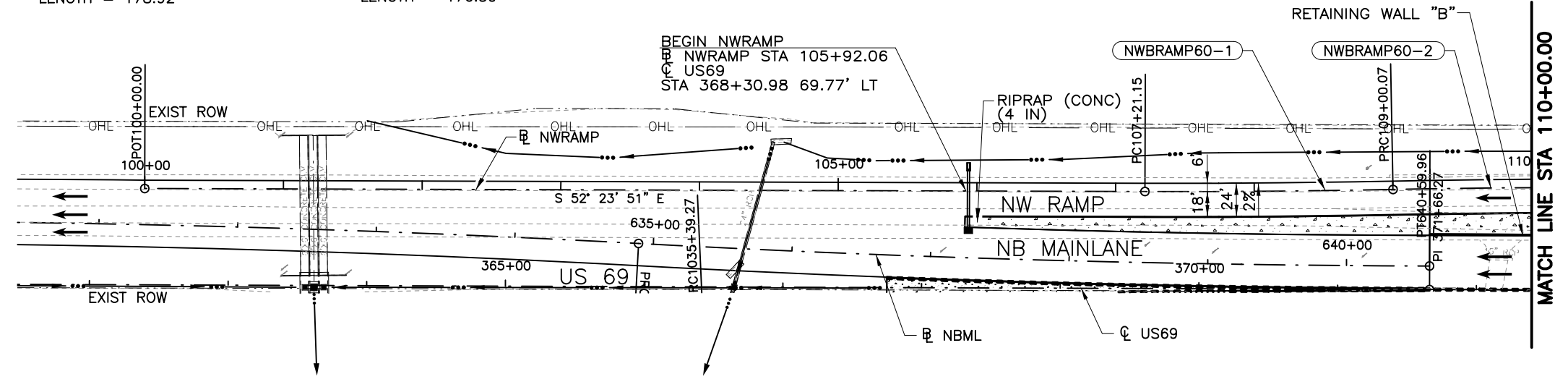
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Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ				
Drawn: SW	DIST.	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Checked: BAJ	TYL			JOB NO. 039
				SHEET NO. 169

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NWBRAMP60-1
 PI STATION = 108+10.62
 NORTHING = 6,962,892.5311
 EASTING = 2,875,760.4968
 DELTA = 1° 18' 09" (LT)
 RADIUS = 7,870.00'
 D = 0° 43' 41"
 TANGENT = 89.46'
 LENGTH = 178.92'

NWBRAMP60-2
 PI STATION = 109+88.32
 NORTHING = 6,962,787.3219
 EASTING = 2,875,903.7218
 DELTA = 1° 17' 06" (RT)
 RADIUS = 7,870.01'
 D = 0° 43' 41"
 TANGENT = 88.25'
 LENGTH = 176.50'

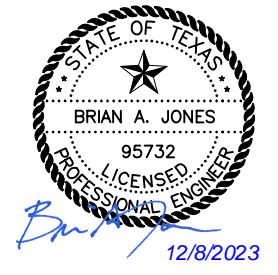
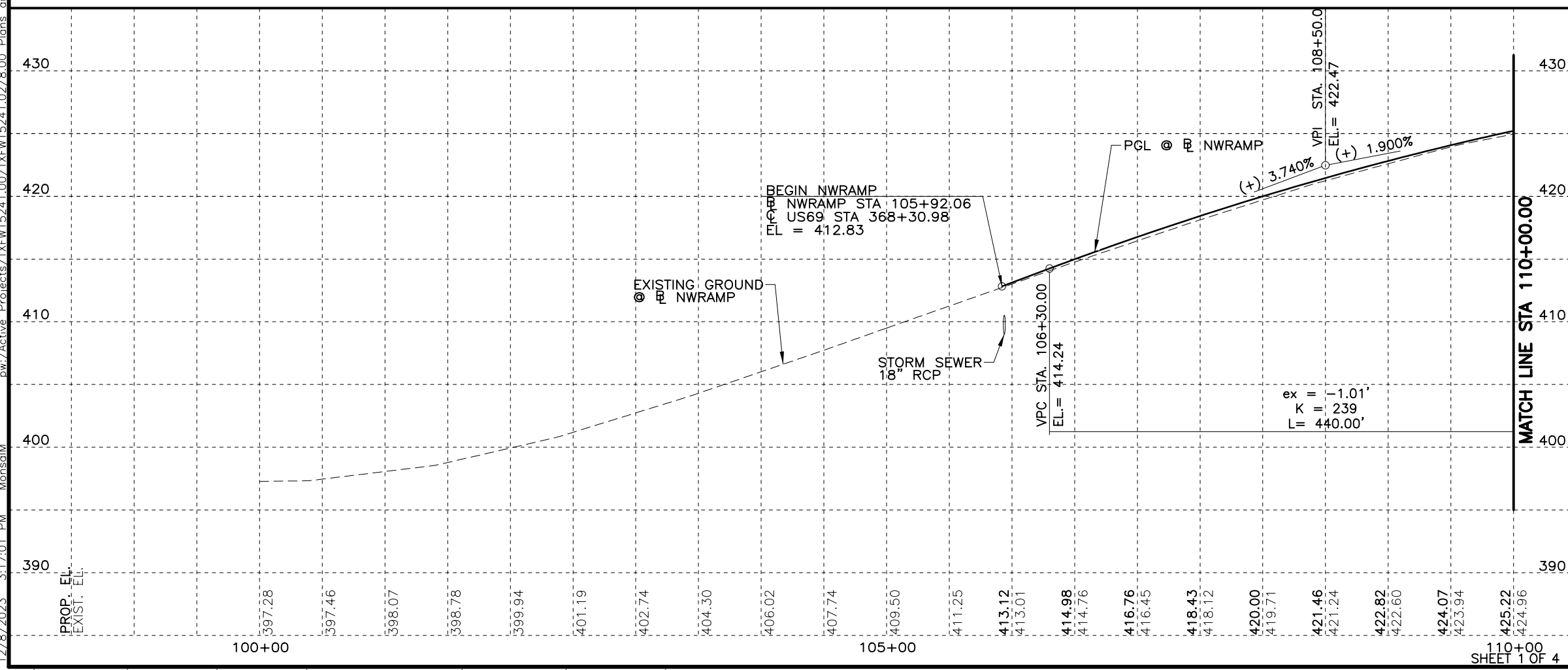
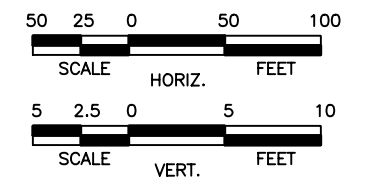


LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Pattern] RIPRAP (CONC)
- PROPOSED ROW
- - - EXISTING ROW
- W- WATER LINE
- O/H ELEC- OVERHEAD ELECTRIC
- TELE- UNDERGROUND TELEPHONE

NOTES:

- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
- SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE

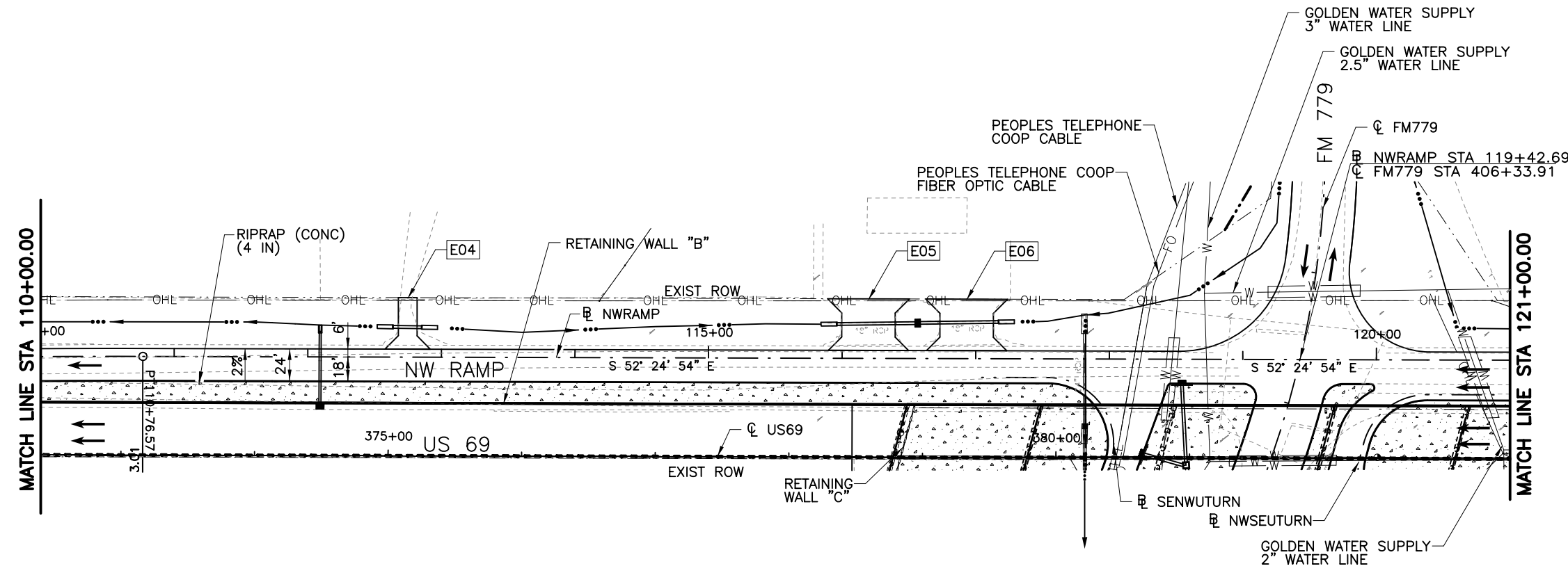


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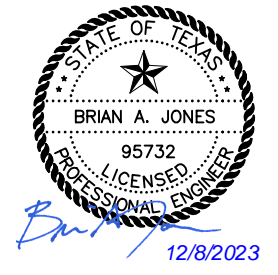
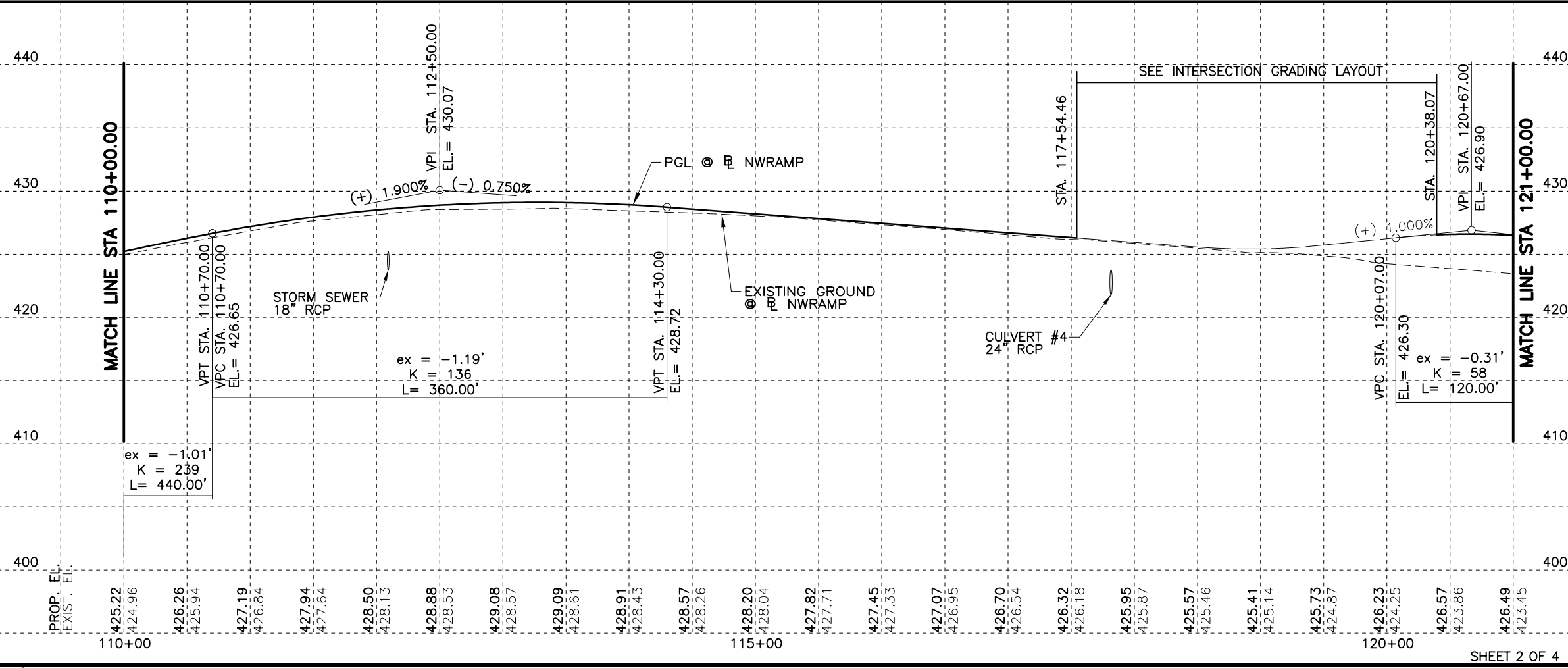
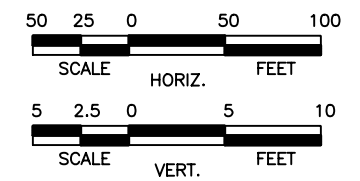
ROADWAY PLAN AND PROFILE
NW RAMP
BEGIN RAMP TO STA 110+00

Designed: JKF	FED. RD. DIST. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. SW	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: SW	JOB NO. 039	SHEET NO. 170		
Checked: BAJ	TYL			

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- LEGEND**
- XXX DRIVEWAY ID
 - PROPOSED LANE
 - ⇨ EXISTING LANE
 - FLOW DIRECTION
 - [Pattern] RIPRAP (CONC)
 - PROPOSED ROW
 - EXISTING ROW
 - W — WATER LINE
 - O/H ELEC — OVERHEAD ELECTRIC
 - TELE — UNDERGROUND TELEPHONE
- NOTES:**
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



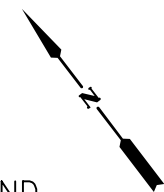
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**ROADWAY PLAN AND PROFILE
NW RAMP**

STA 110+00 TO STA 121+00

Designed:	JKF	FED. RD. DIST. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	SW	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	171

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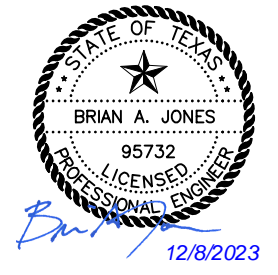
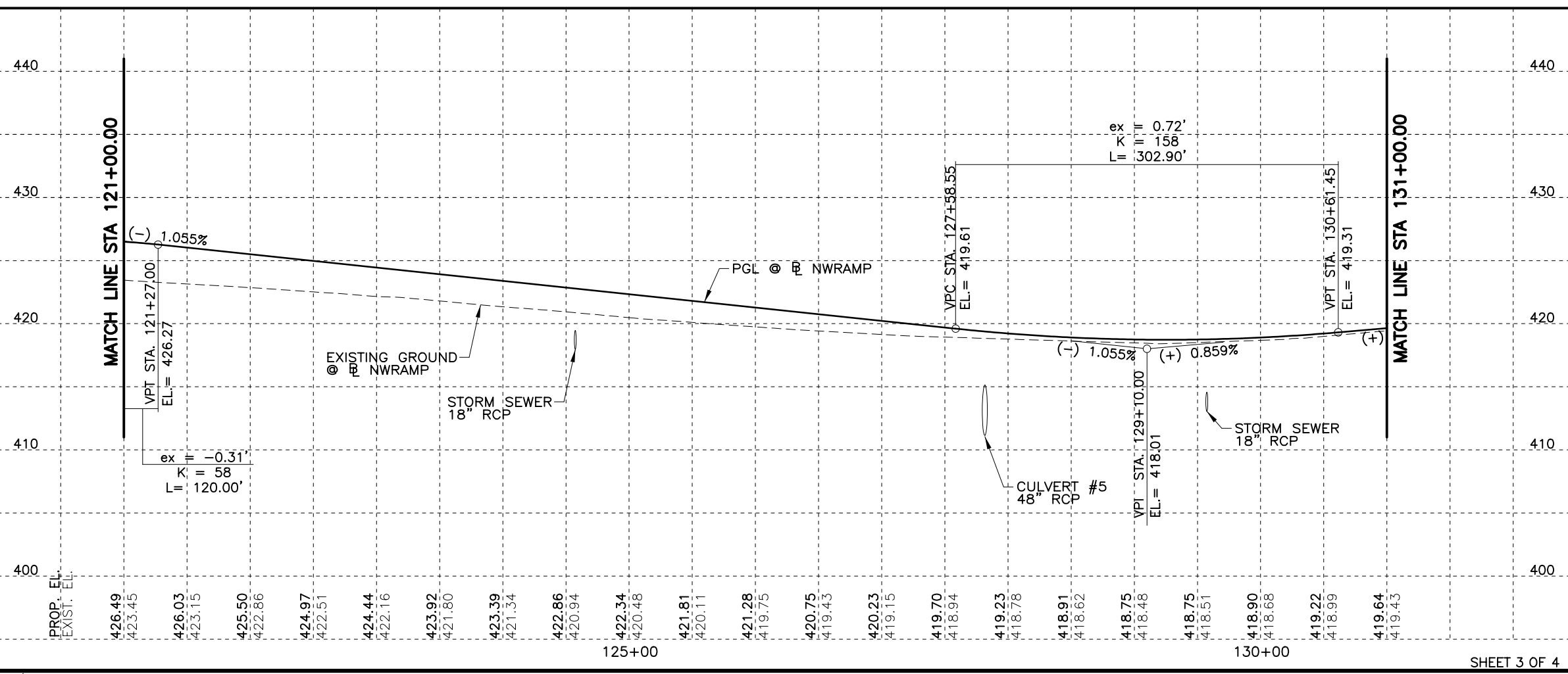
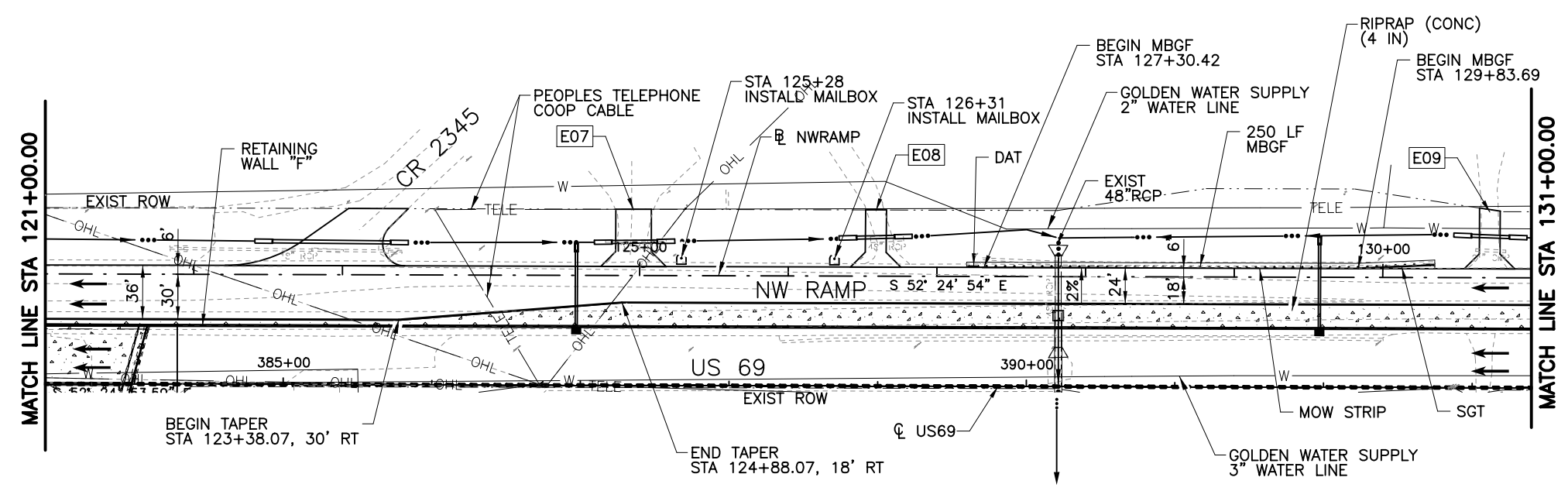
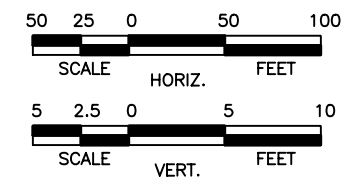


LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- EXISTING LANE
- FLOW DIRECTION
- RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- WATER LINE
- OVERHEAD ELECTRIC
- UNDERGROUND TELEPHONE

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



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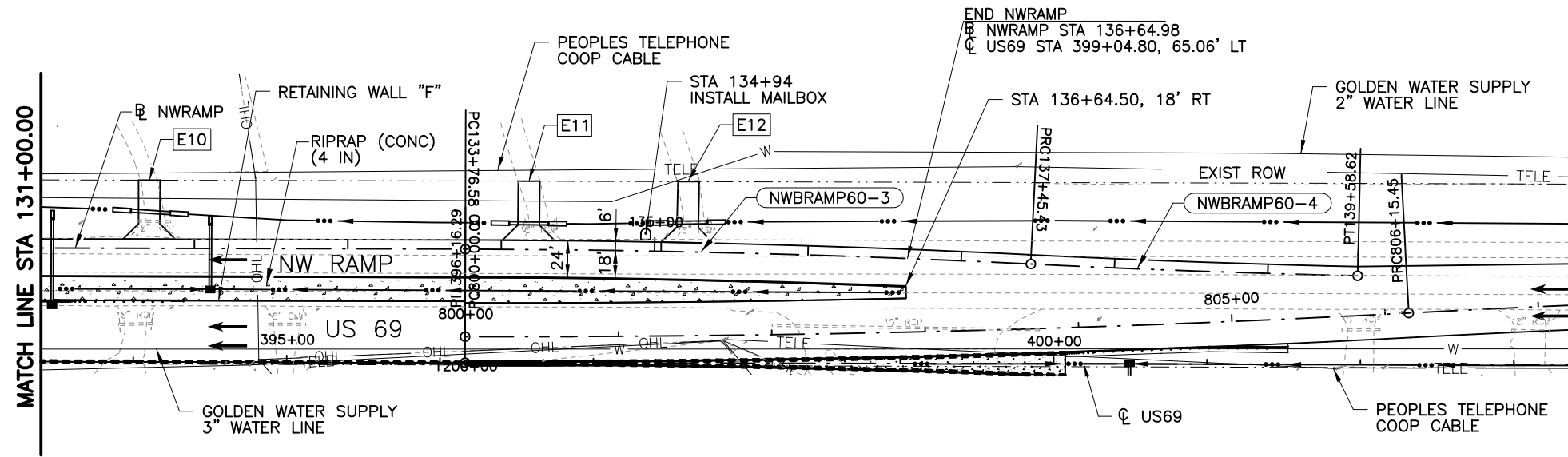
US 69 AT FM 779
ROADWAY PLAN AND PROFILE
NW RAMP
 STA 121+00 TO STA 131+00

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. SW	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: SW	TYL	JOB NO. 039	SHEET NO. 172	

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NWBRAMP60-3
 PI STATION = 135+61.04
 NORTHING = 6,961,218.1221
 EASTING = 2,877,942.4762
 DELTA = 2° 41' 07" (RT)
 RADIUS = 7,870.00'
 D = 0° 43' 41"
 TANGENT = 184.46'
 LENGTH = 368.85'

NWBRAMP60-4
 PI STATION = 138+52.03
 NORTHING = 6,961,029.9845
 EASTING = 2,878,164.5541
 DELTA = 1° 33' 07" (LT)
 RADIUS = 7,870.00'
 D = 0° 43' 41"
 TANGENT = 106.60'
 LENGTH = 213.19'

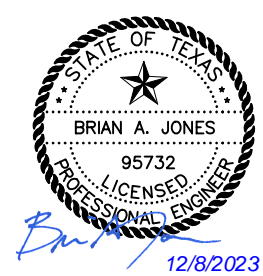
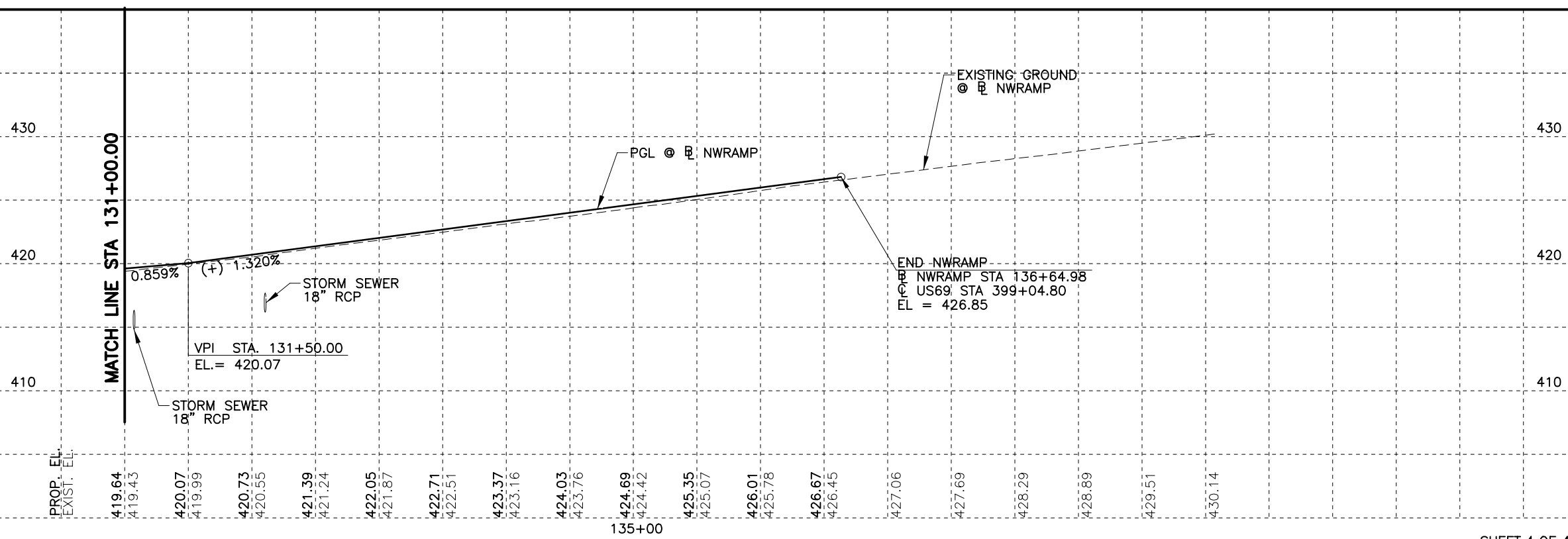
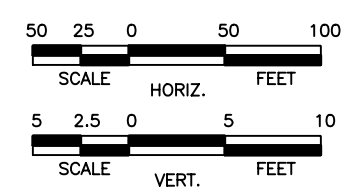


LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Pattern] RIPRAP (CONC)
- PROPOSED ROW
- - - EXISTING ROW
- W — WATER LINE
- O/H ELEC — OVERHEAD ELECTRIC
- TELE — UNDERGROUND TELEPHONE

NOTES:

- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
- SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



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CP&Y
 TEXAS REGISTERED ENGINEERING FIRM F-1741

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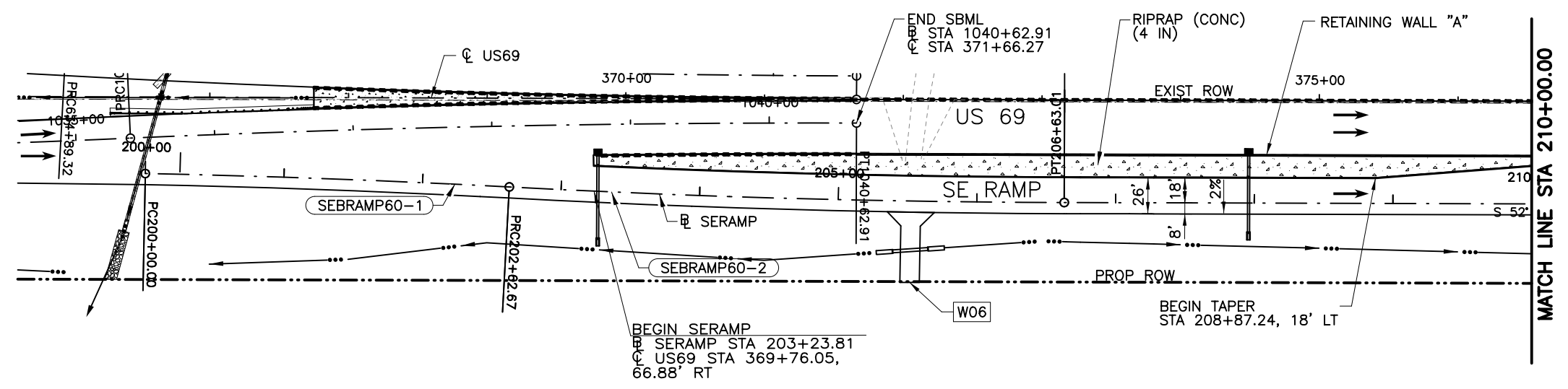
**ROADWAY PLAN AND PROFILE
 NW RAMP
 STA 131+00 TO END RAMP**

Designed:	JKF	FED. RD. DIV. NO.	6	STATE	TEXAS	PROJECT NO.		HIGHWAY NO.	US 69
Checked:	BAJ	DIST.	SW	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	SW	JOB NO.	039	SHEET NO.	173				
Checked:	BAJ	TYL							

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SEBRAMP60-1
 PI STATION = 201+31.35
 NORTHING = 6,962,953.6430
 EASTING = 2,875,472.6239
 DELTA = 1° 54' 44" (RT)
 RADIUS = 7,870.00'
 D = 0° 43' 41"
 TANGENT = 131.35'
 LENGTH = 262.67'

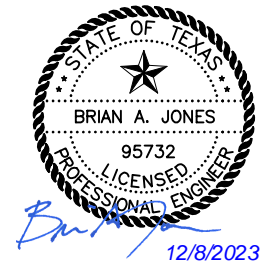
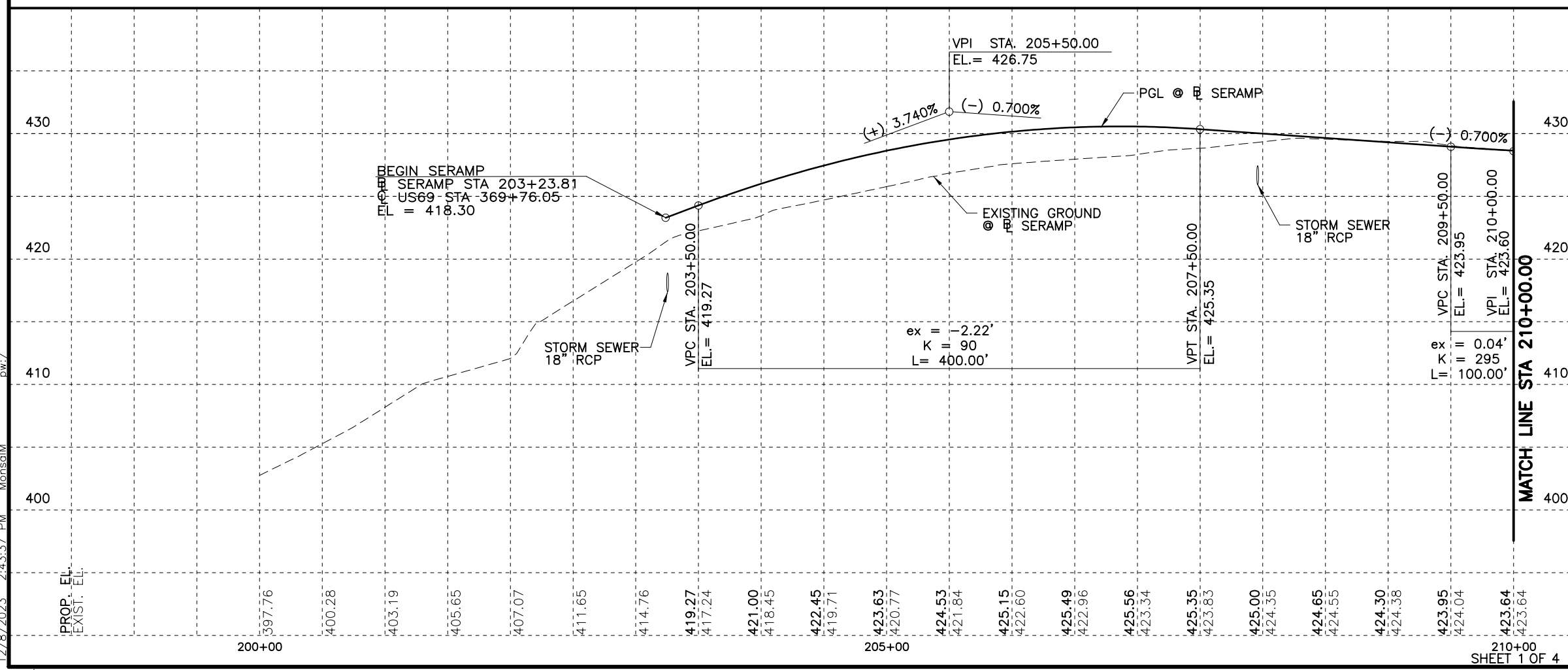
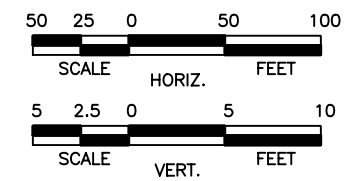
SEBRAMP60-2
 PI STATION = 204+62.88
 NORTHING = 6,962,738.3151
 EASTING = 2,875,724.7450
 DELTA = 2° 54' 52" (LT)
 RADIUS = 7,870.00'
 D = 0° 43' 41"
 TANGENT = 200.21'
 LENGTH = 400.33'



LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Pattern] RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- W WATER LINE
- O/H ELEC OVERHEAD ELECTRIC
- TELE UNDERGROUND TELEPHONE

- NOTES:
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



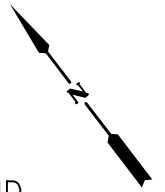
US 69 AT FM 779

ROADWAY PLAN AND PROFILE
 SE RAMP

BEGIN RAMP TO STA 210+00

Designed: JKJF	FED. RD. DIST. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ				SHEET NO. 174
Drawn: SW	DIST.	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Checked: BAJ	TYL			JOB NO. 039

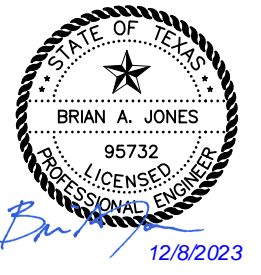
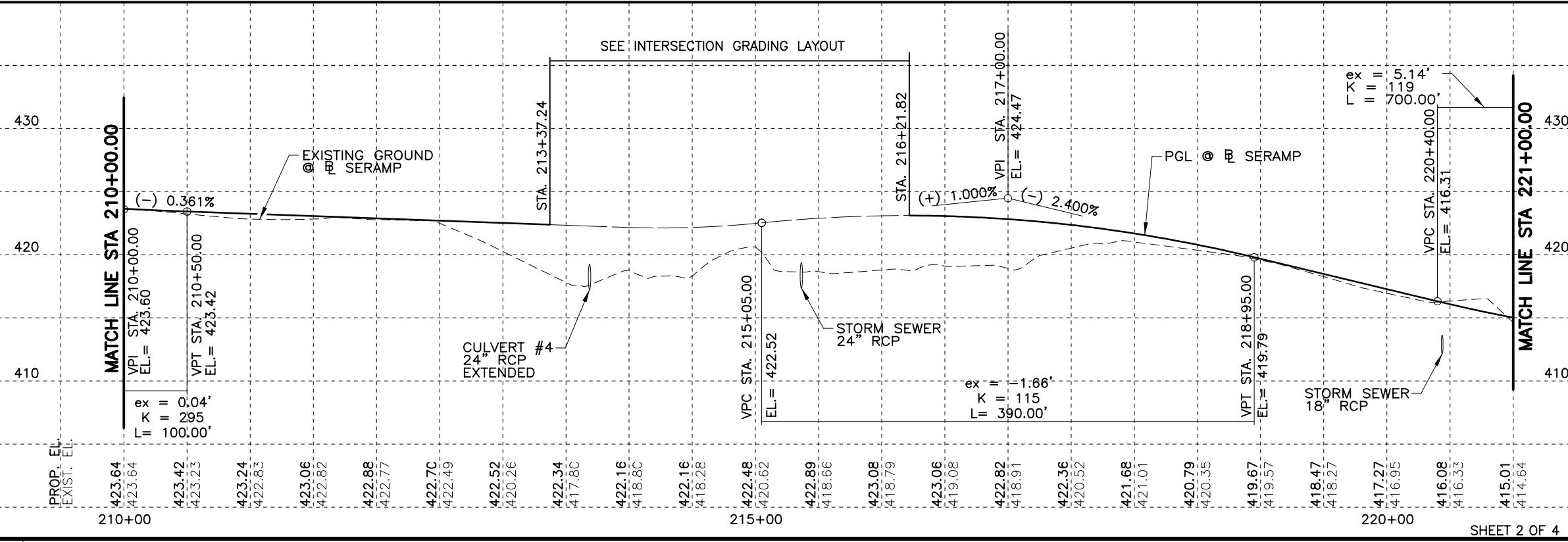
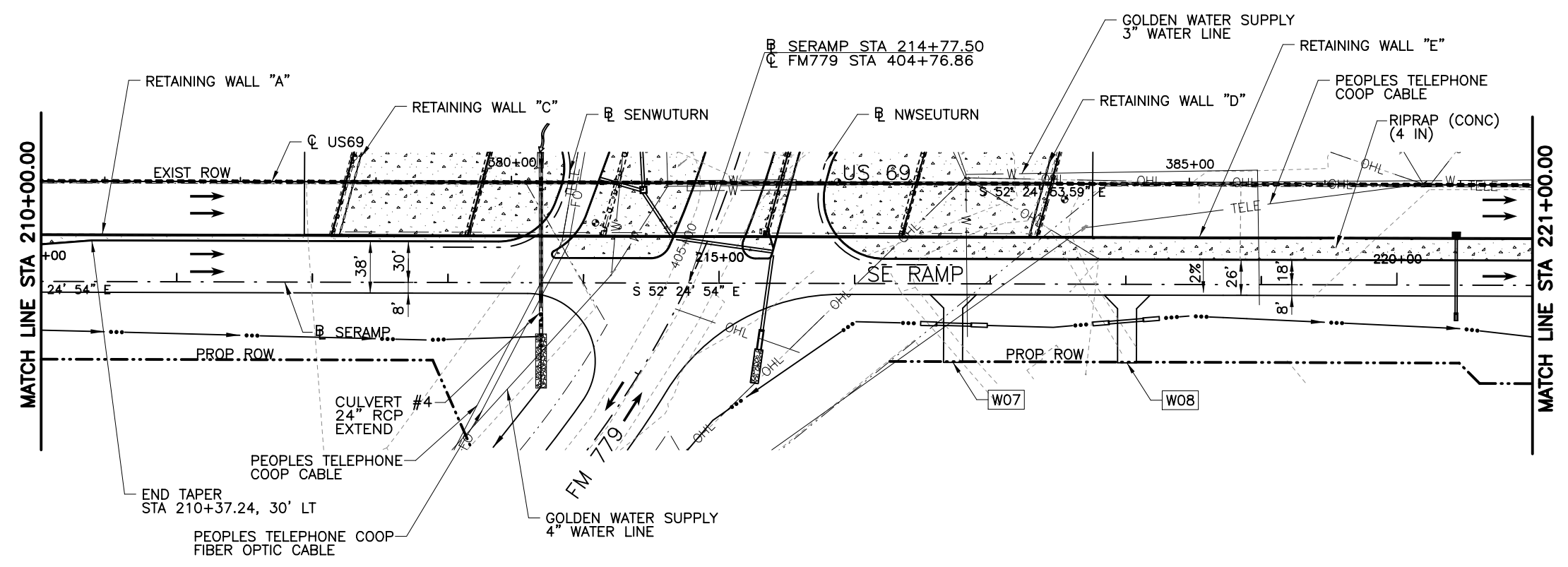
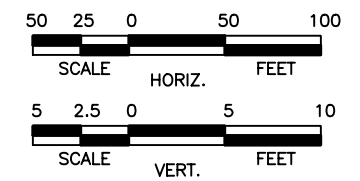
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LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Stippled Box] RIPRAP (CONC)
- PROPOSED ROW
- - - EXISTING ROW
- W — WATER LINE
- O/H ELEC — OVERHEAD ELECTRIC
- TELE — UNDERGROUND TELEPHONE

- NOTES:**
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



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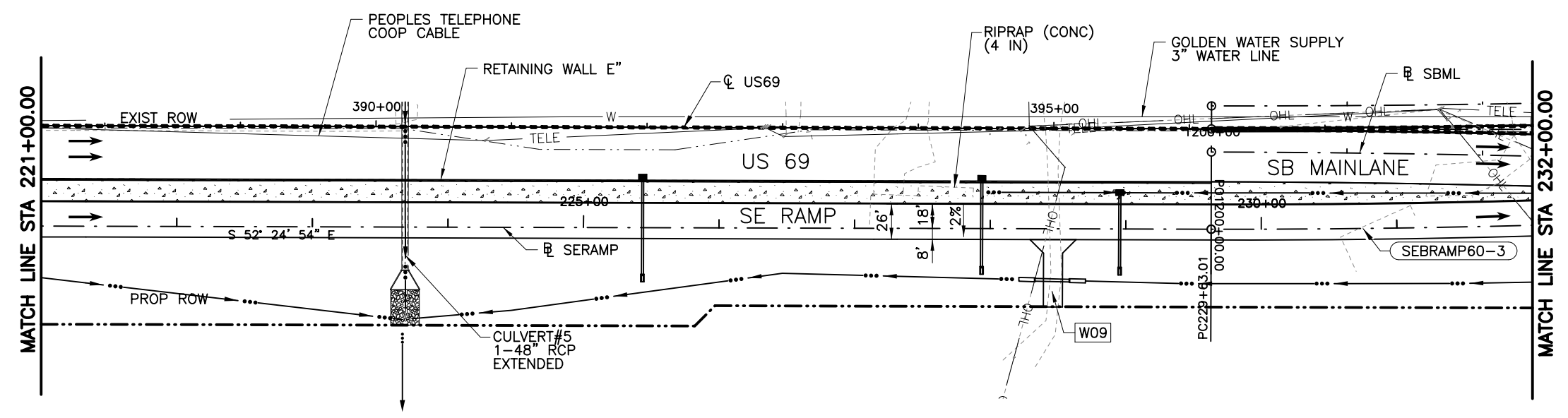
**ROADWAY PLAN AND PROFILE
 SE RAMP**

STA 210+00 TO STA 221+00

Designed: JKF	FED. RD. DIST. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ				
Drawn: SW	DIST.	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Checked: BAJ	TYL			JOB NO. 039
				SHEET NO. 175

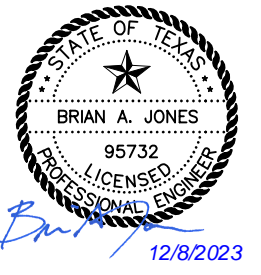
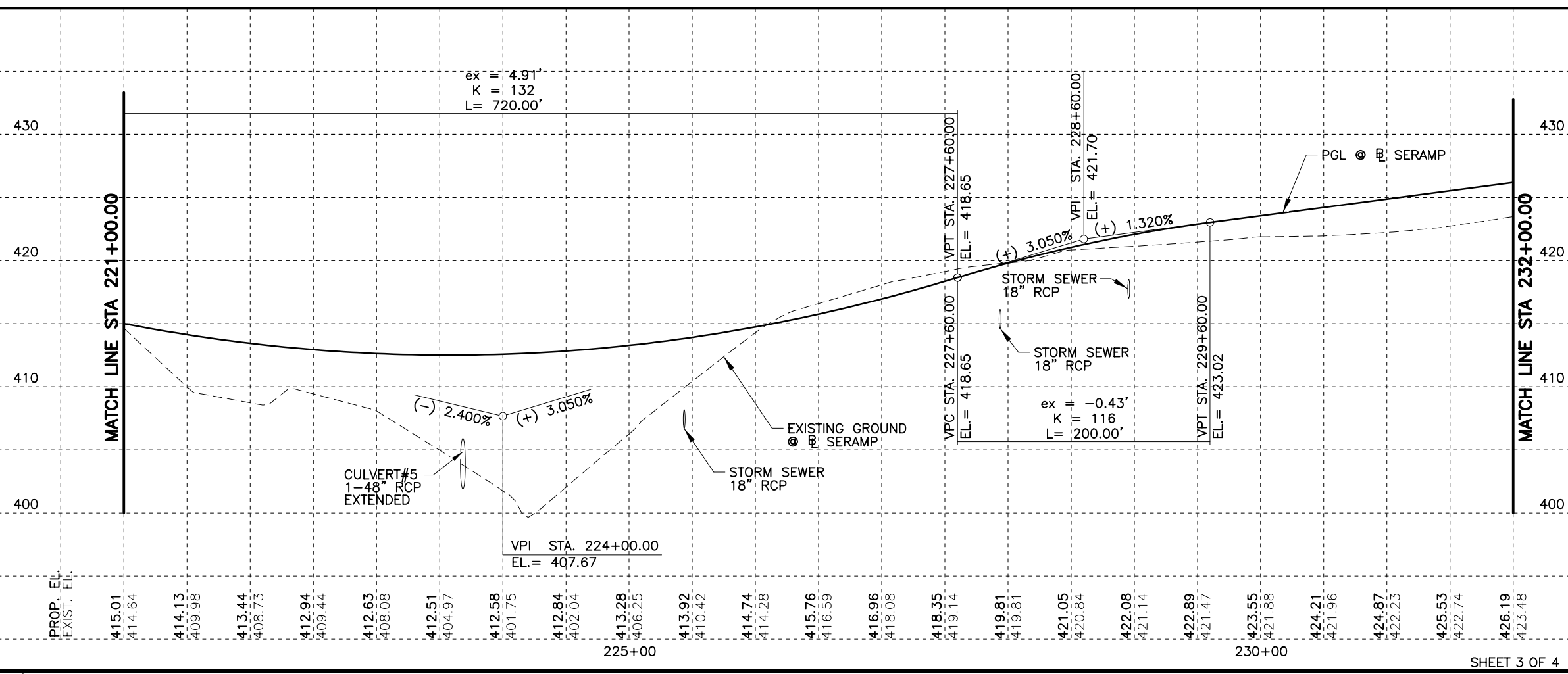
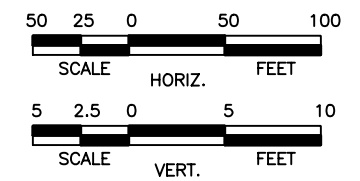
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SEBRAMP60-3
 PI STATION = 231+08.76
 NORTHING = 6,961,124.4455
 EASTING = 2,877,821.5359
 DELTA = 2° 07' 19" (LT)
 RADIUS = 7,870.00'
 D = 0° 43' 41"
 TANGENT = 145.75'
 LENGTH = 291.47'



- LEGEND**
- XXX DRIVEWAY ID
 - PROPOSED LANE
 - ⇨ EXISTING LANE
 - FLOW DIRECTION
 - [Stippled Box] RIPRAP (CONC)
 - PROPOSED ROW
 - - - EXISTING ROW
 - W — WATER LINE
 - O/H ELEC — OVERHEAD ELECTRIC
 - TELE — UNDERGROUND TELEPHONE

- NOTES:**
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE

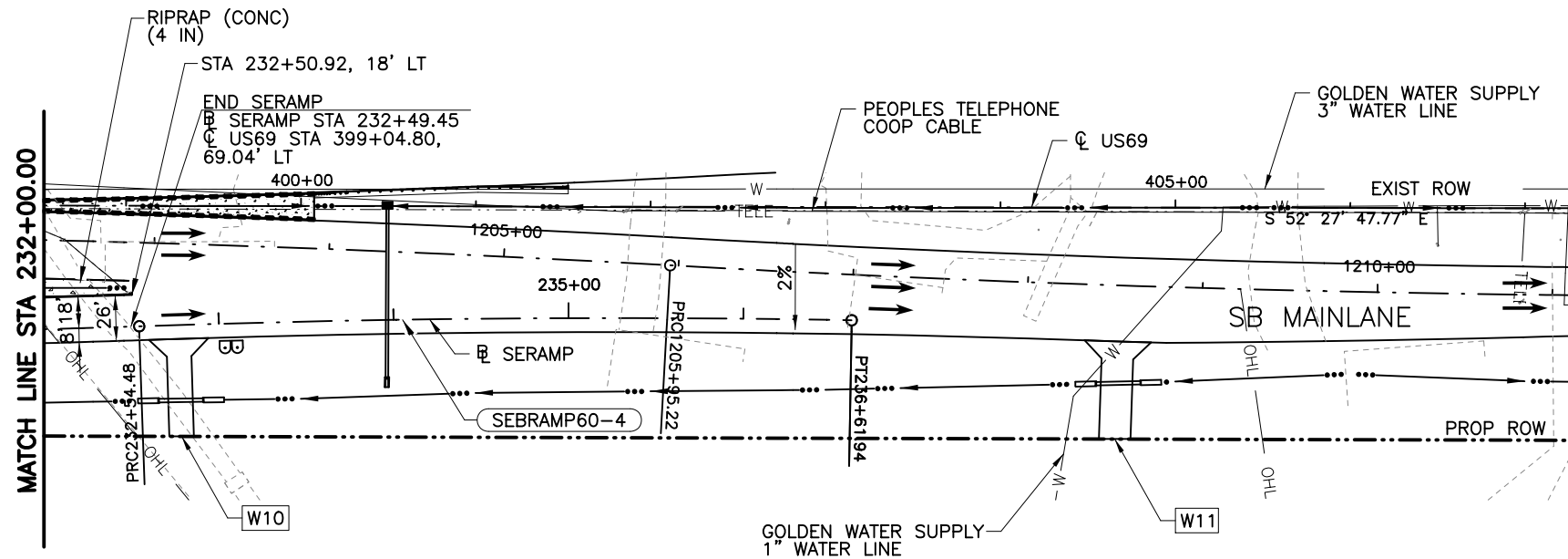


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**ROADWAY PLAN AND PROFILE
 SE RAMP**

STA 221+00 TO STA 232+00

Designed: JKF	FED. RD. DIST. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. SW	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: SW	JOB NO. 039	SHEET NO. 176		



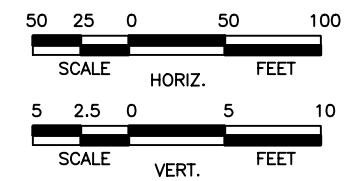
SEBRAMP60-4
 PI STATION = 234+58.25
 NORTHING = 6,960,921.6575
 EASTING = 2,878,106.2229
 DELTA = 2° 57' 59" (RT)
 RADIUS = 7,870.00'
 D = 0° 43' 41"
 TANGENT = 203.78'
 LENGTH = 407.46'

LEGEND

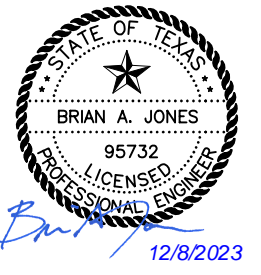
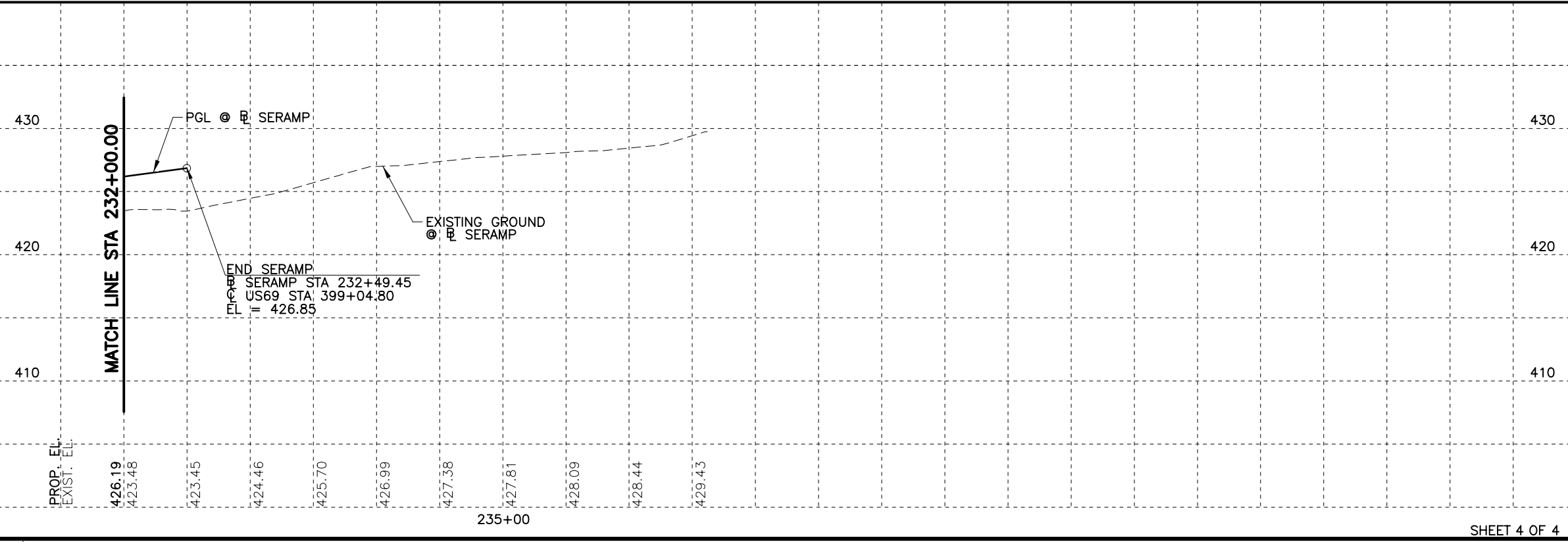
- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- [Pattern] RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- W — WATER LINE
- O/H ELEC — OVERHEAD ELECTRIC
- TELE — UNDERGROUND TELEPHONE

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



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NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

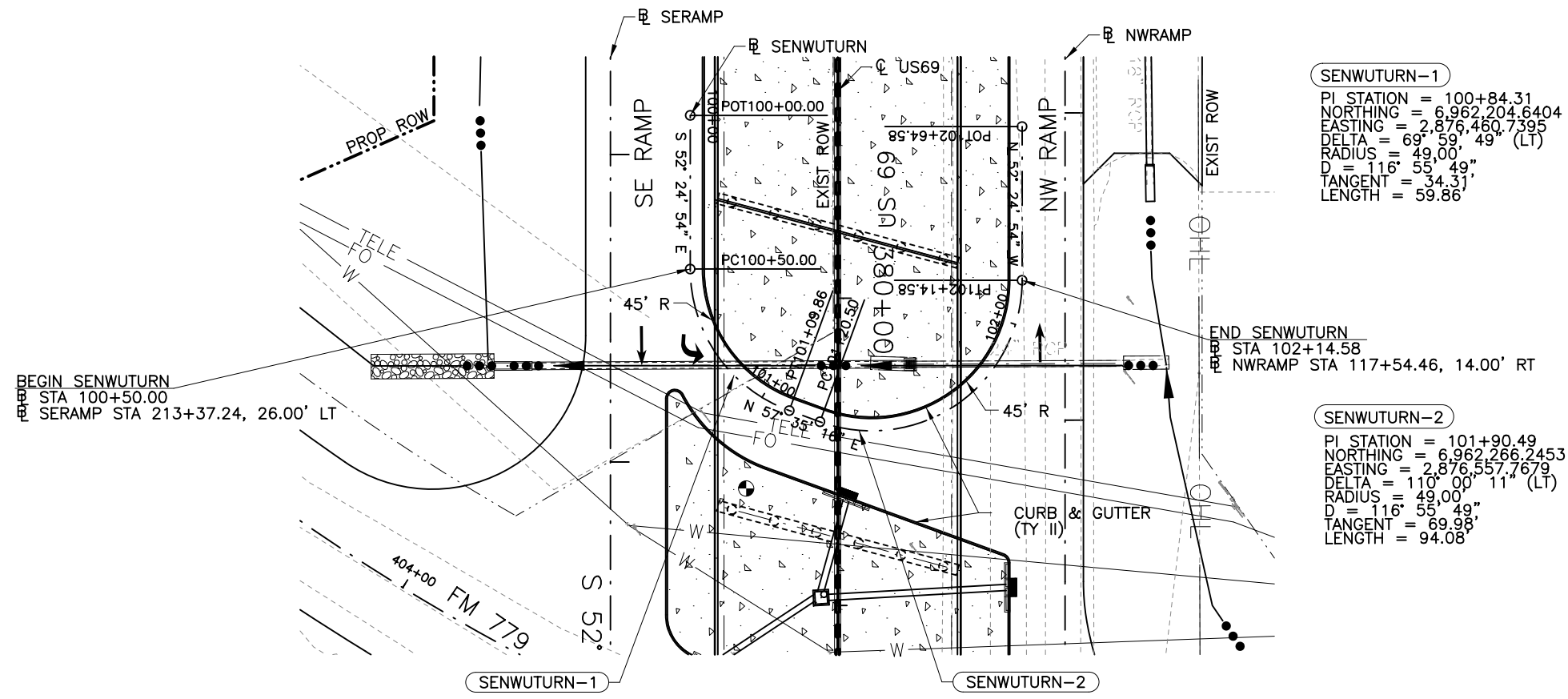


US 69 AT FM 779

ROADWAY PLAN AND PROFILE
SE RAMP

STA 232+00 TO END RAMP

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	BAJ	6	TEXAS		US 69
Drawn:	SW	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	BAJ	TYL	WOOD	0203	05
				JOB NO.	SHEET NO.
				039	177

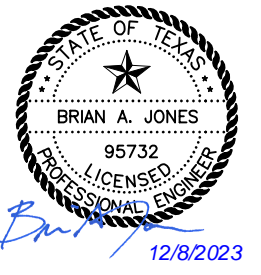
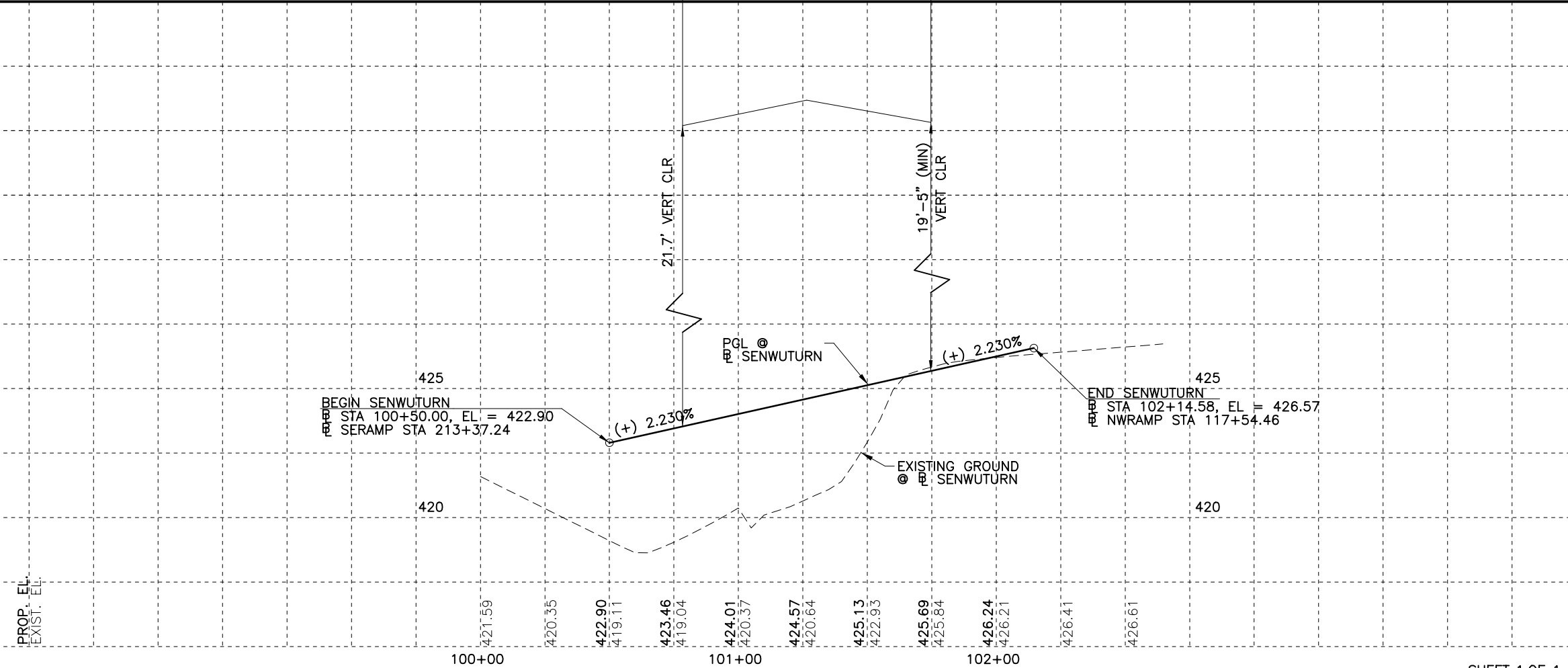
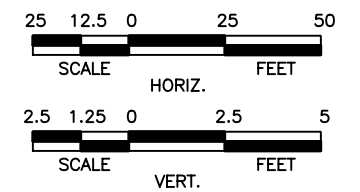


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 PI STATION = 100+84.31
 NORTHING = 6,962,204.6404
 EASTING = 2,876,460.7395
 DELTA = 69° 59' 49" (LT)
 RADIUS = 49.00'
 D = 116° 55' 49"
 TANGENT = 34.31'
 LENGTH = 59.86'

SENWUTURN-2
 PI STATION = 101+90.49
 NORTHING = 6,962,266.2453
 EASTING = 2,876,557.7679
 DELTA = 110° 00' 11" (LT)
 RADIUS = 49.00'
 D = 116° 55' 49"
 TANGENT = 69.98'
 LENGTH = 94.08'

- LEGEND**
- XXX DRIVEWAY ID
 - PROPOSED LANE
 - ⇨ EXISTING LANE
 - FLOW DIRECTION
 - [Pattern] RIPRAP (CONC)
 - PROPOSED ROW
 - - - EXISTING ROW
 - W- WATER LINE
 - O/H ELEC- OVERHEAD ELECTRIC
 - TELE- UNDERGROUND TELEPHONE

- NOTES:**
- DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
 - SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779
ROADWAY PLAN AND PROFILE
 SOUTHEAST U-TURN

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	178

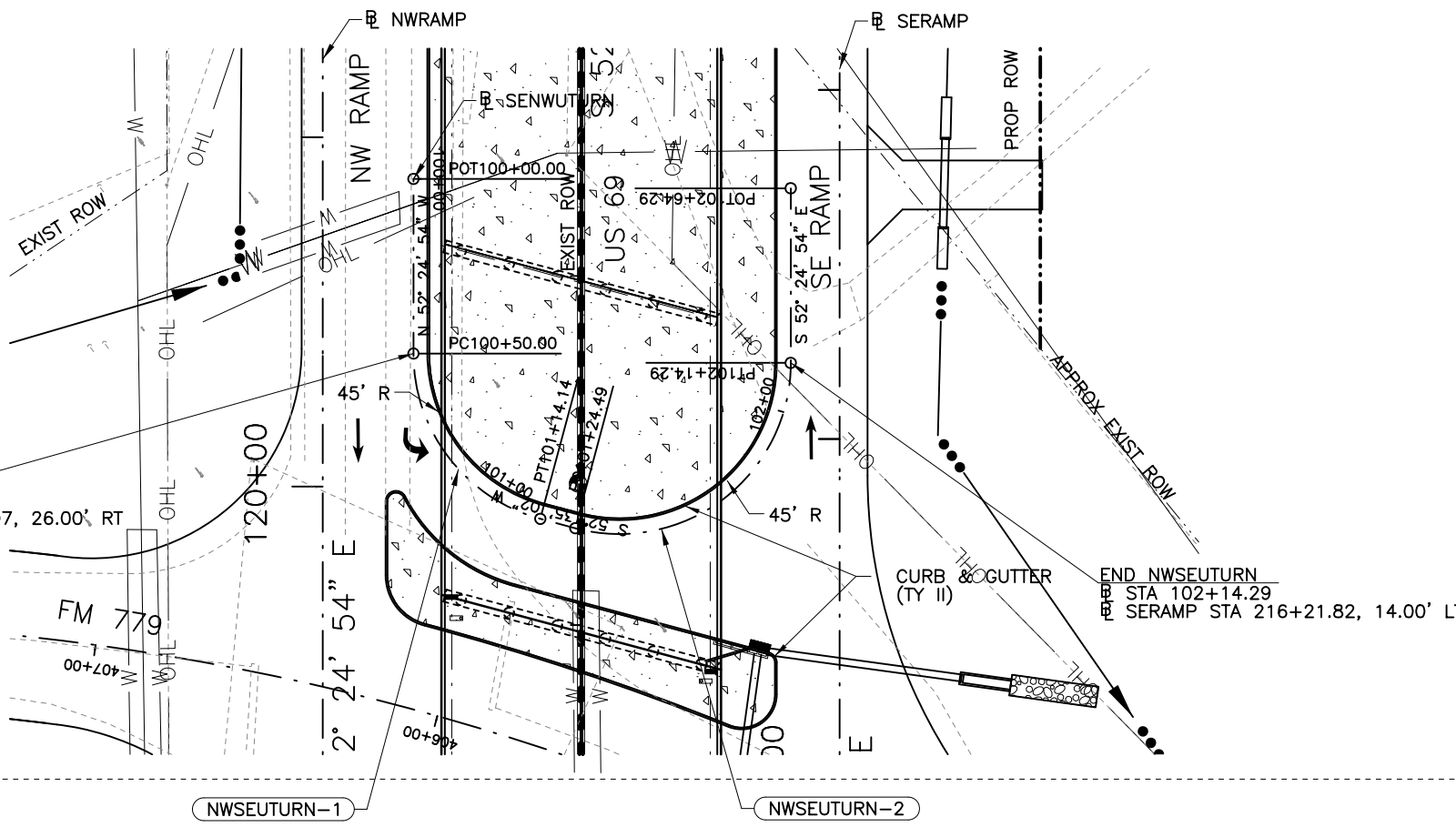
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NWSEUTURN-1
 PI STATION = 100+87.60
 NORTHING = 6,962,149.3649
 EASTING = 2,876,689.9485
 DELTA = 75° 00' 04" (LT)
 RADIUS = 49.00'
 D = 116° 55' 49"
 TANGENT = 37.60'
 LENGTH = 64.14'

NWSEUTURN-2
 PI STATION = 101+88.35
 NORTHING = 6,962,081.4295
 EASTING = 2,876,601.1449
 DELTA = 104° 59' 56" (LT)
 RADIUS = 49.00'
 D = 116° 55' 49"
 TANGENT = 63.86'
 LENGTH = 89.80'

BEGIN NWSEUTURN
 STA 100+50.00
 NWRAMP STA 120+38.07, 26.00' RT

END NWSEUTURN
 STA 102+14.29
 SERAMP STA 216+21.82, 14.00' LT

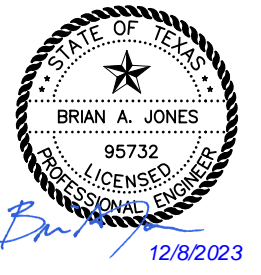
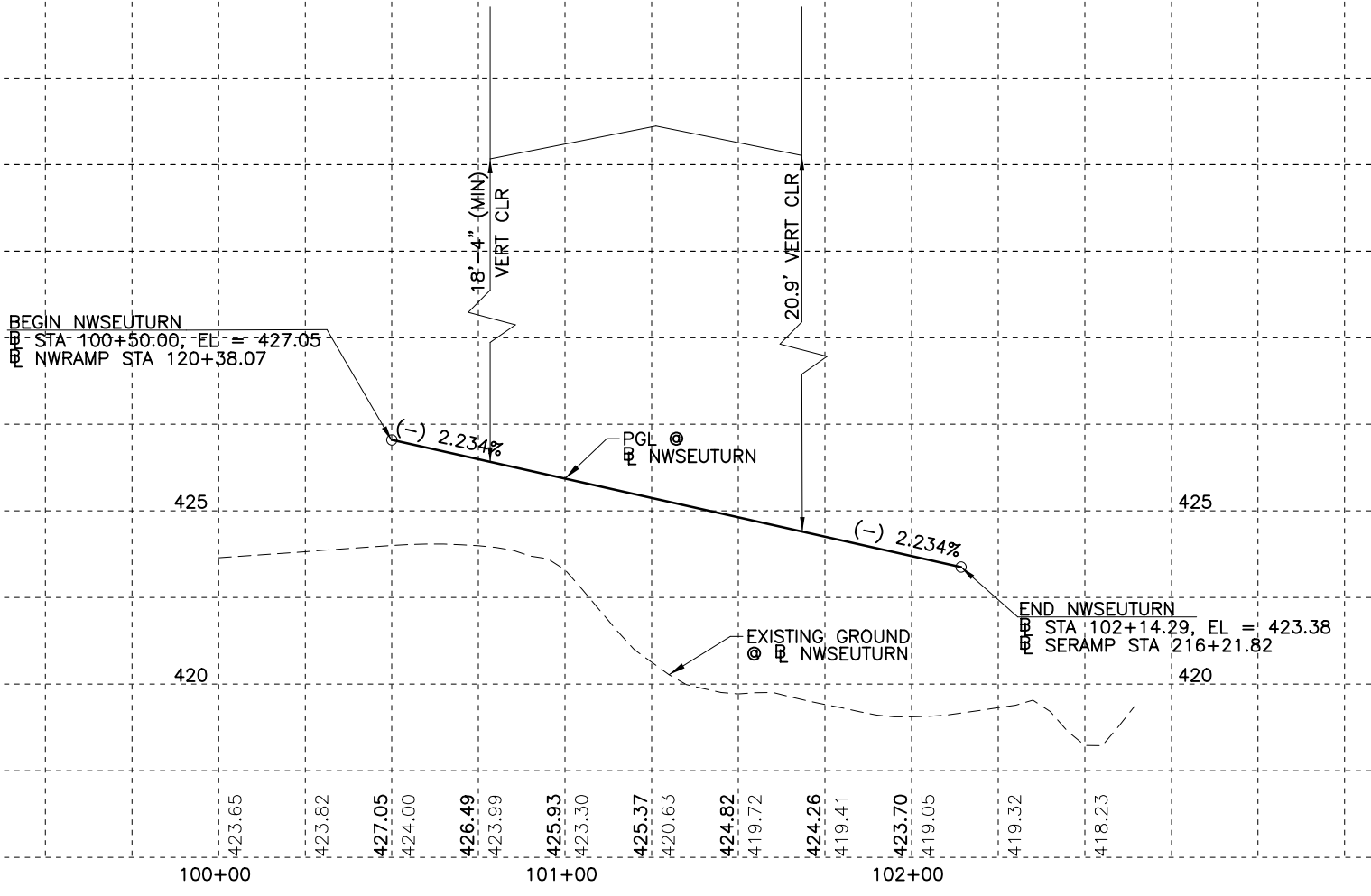
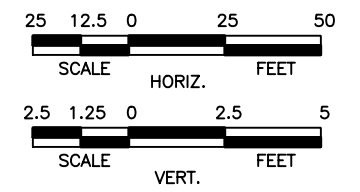


LEGEND

- XXX DRIVEWAY ID
- PROPOSED LANE
- ⇨ EXISTING LANE
- FLOW DIRECTION
- ▨ RIPRAP (CONC)
- PROPOSED ROW
- EXISTING ROW
- W — WATER LINE
- O/H ELEC — OVERHEAD ELECTRIC
- TELE — UNDERGROUND TELEPHONE

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB/RAIL WHERE APPLICABLE.
2. SEE DRIVEWAY DETAILS SHEET FOR ADDITIONAL DRIVEWAY INFORMATION.



NO.	REVISION	BY	DATE



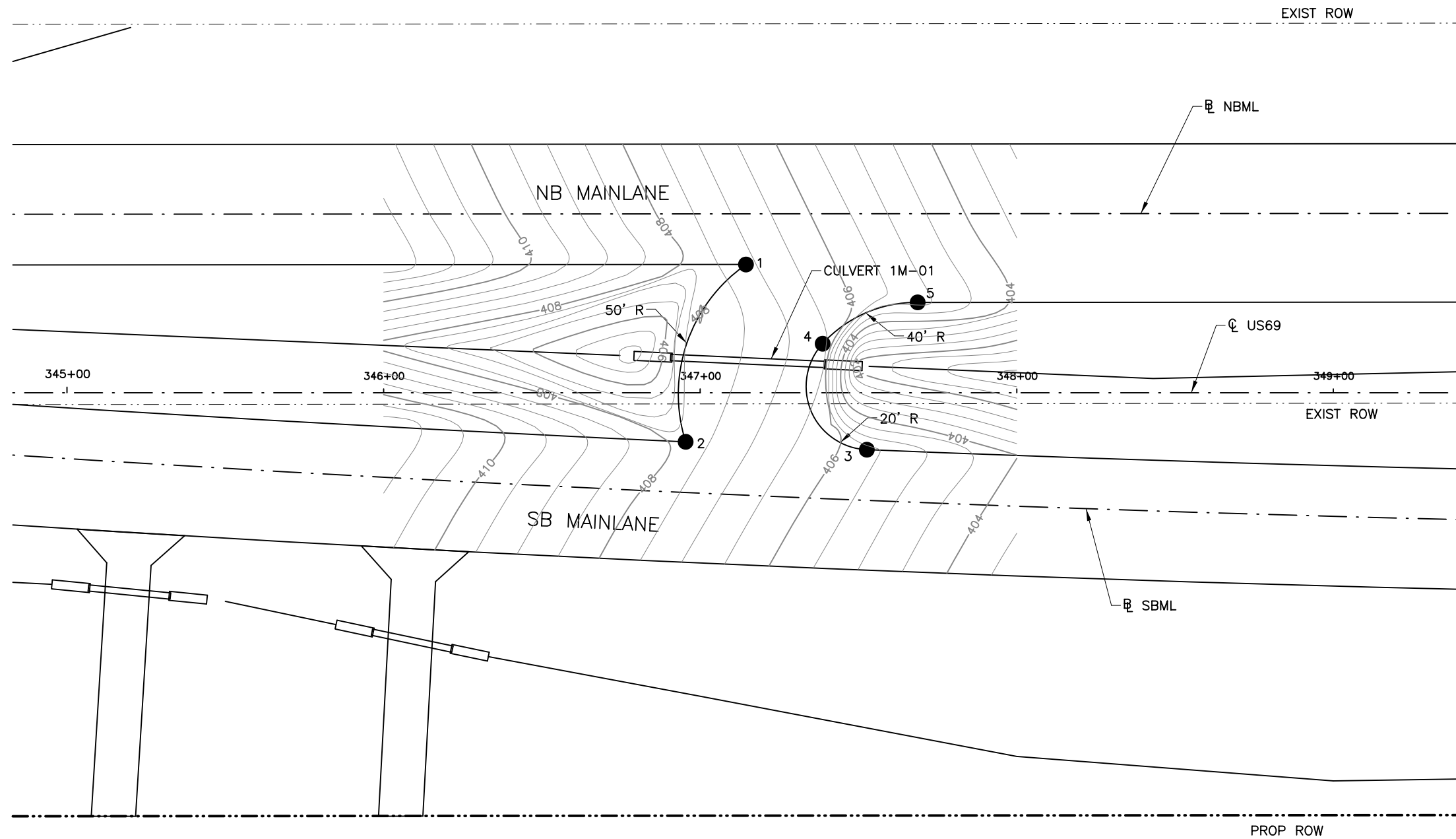
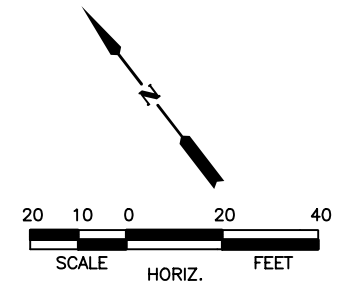
TEXAS REGISTERED ENGINEERING FIRM F-1741

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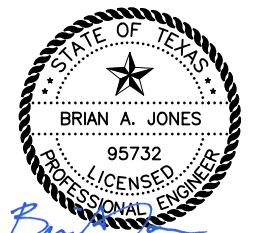
US 69 AT FM 779
ROADWAY PLAN AND PROFILE
 NORTHWEST U-TURN

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	179

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POINT NUMBER	LOCATION	STATION	OFFSET (FT)	ELEVATION
1	NWTRANS	616+07.56	16.00 (RT)	407.13
2	SETRANS	1015+90.71	16.00 (LT)	407.78
3	SETRANS	1016+48.07	16.00 (LT)	405.64
4	NWTRANS	616+31.75	41.03 (RT)	406.65
5	NWTRANS	616+61.79	28.00 (RT)	405.17



Brian A. Jones
12/8/2023

NO.	REVISION	BY	DATE



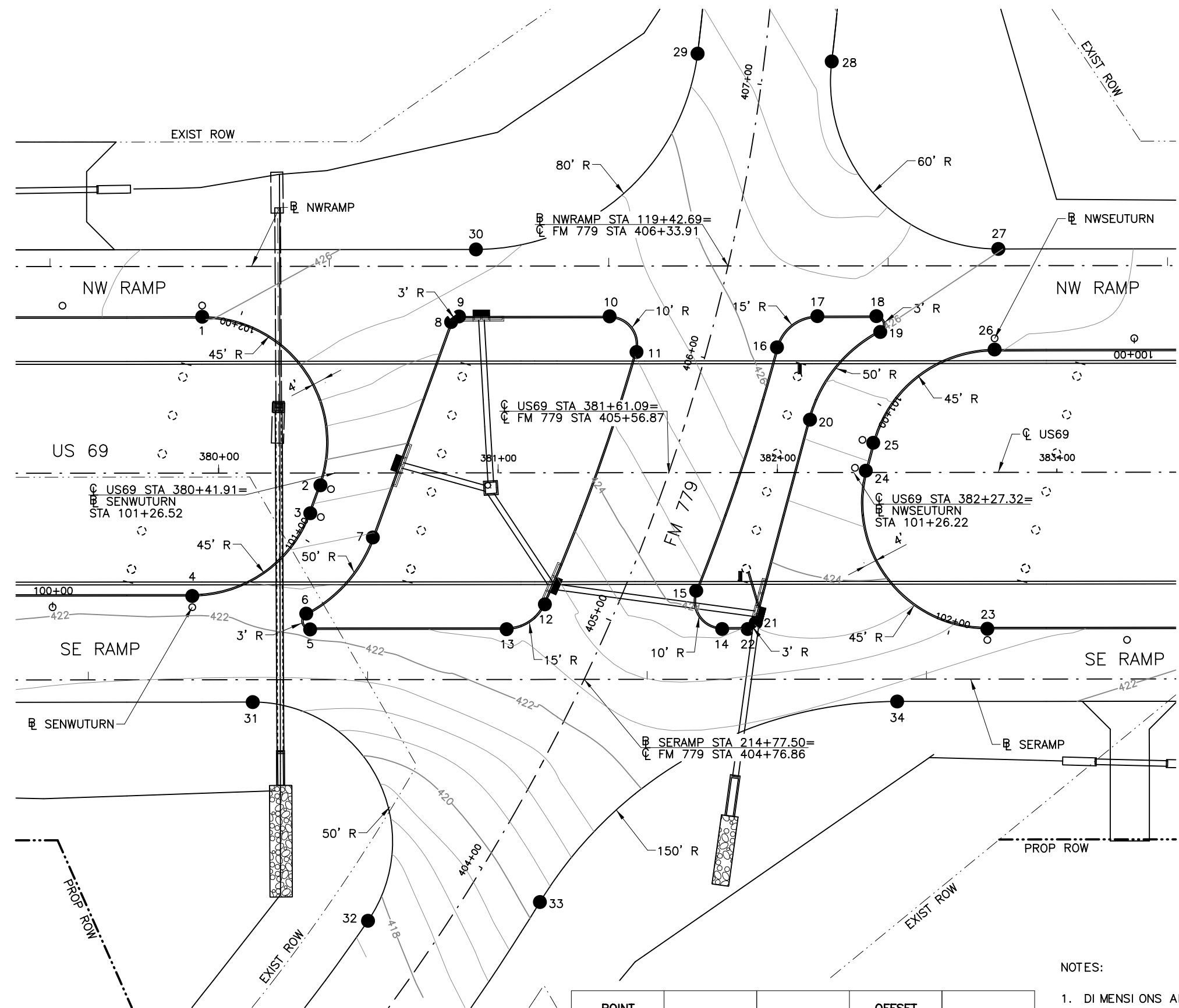
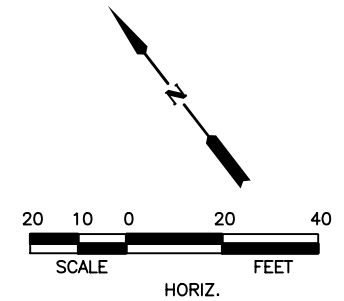
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US 69 AT FM 779
INTERSECTION LAYOUT
CROSSOVER

STA 347+00

Designed:	JKF	FED. RD. DIV. NO.	6	STATE	TEXAS	PROJECT NO.		HIGHWAY NO.	US 69
Checked:	BAJ	DIST.	TYL	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	JN	JOB NO.	039	SHEET NO.	180				

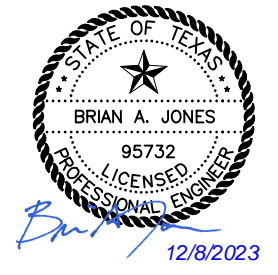
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POINT NUMBER	LOCATION	STATION	OFFSET (FT)	ELEVATION
1	SENWUTURN	102+14.58	4.00 (LT)	426.04
2	SENWUTURN	101+20.50	4.00 (LT)	423.70
3	SENWUTURN	101+09.86	4.00 (LT)	423.39
4	SENWUTURN	100+50.00	4.00 (LT)	422.16
5	SENWUTURN	100+81.21	21.90 (RT)	422.09
6	SENWUTURN	100+82.89	16.56 (RT)	422.19
7	SENWUTURN	101+09.48	20.00 (RT)	422.95
8	SENWUTURN	101+59.66	49.94 (RT)	425.35
9	SENWUTURN	101+59.92	53.34 (RT)	425.35
10	FM779	406+05.37	36.70 (LT)	425.01
11	FM779	405+95.25	24.00 (LT)	425.04
12	FM779	404+95.77	24.00 (LT)	422.69
13	FM779	404+81.41	32.78 (LT)	422.64
14	FM779	405+12.48	37.79 (RT)	423.58
15	FM779	405+21.30	24.00 (RT)	424.37
16	FM779	406+10.23	24.00 (RT)	426.24
17	FM779	406+24.05	35.28 (RT)	426.27
18	NWSEUTURN	100+81.28	21.97 (RT)	426.08
19	NWSEUTURN	100+82.96	16.64 (RT)	425.99
20	NWSEUTURN	101+12.61	20.03 (RT)	425.17
21	NWSEUTURN	101+60.66	44.28 (RT)	423.51
22	NWSEUTURN	101+60.99	47.88 (RT)	423.47
23	NWSEUTURN	102+14.29	4.00 (LT)	422.72
24	NWSEUTURN	101+24.49	4.00 (LT)	424.92
25	NWSEUTURN	101+14.14	4.00 (LT)	425.15
26	NWSEUTURN	100+50.00	4.00 (LT)	425.53
27	FM779	406+58.40	93.39 (RT)	426.02

POINT NUMBER	LOCATION	STATION	OFFSET (FT)	ELEVATION
28	FM779	407+11.21	24.00 (RT)	427.74
29	FM779	407+08.14	24.00 (LT)	426.74
30	FM779	406+17.41	89.07 (LT)	425.64
31	FM779	404+09.18	101.00 (LT)	421.46
32	FM779	403+61.30	24.00 (LT)	417.77
33	FM779	404+00.43	24.00 (RT)	420.25
34	FM779	405+12.55	105.61 (RT)	422.40

NOTES:
 1. DIMENSIONS AND KEY POINTS REFERENCE FACE OF CURB WHERE APPLICABLE.



NO.	REVISION	BY	DATE



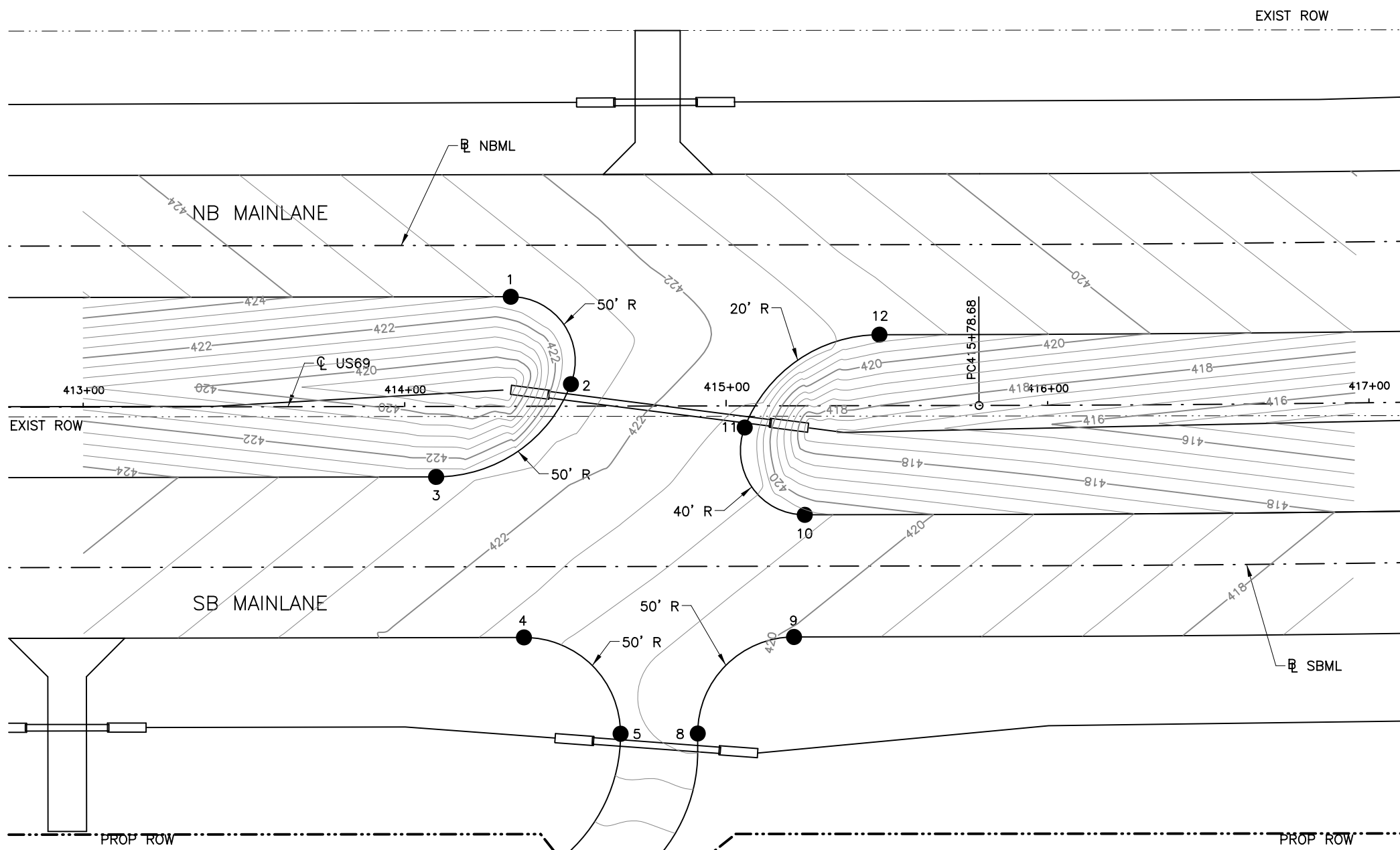
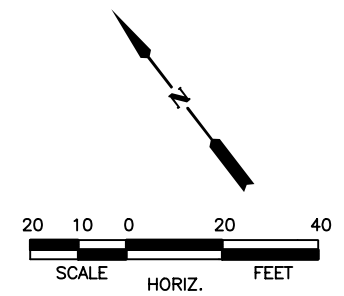
TEXAS REGISTERED ENGINEERING FIRM F-1741
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US 69 AT FM 779
 INTERSECTION LAYOUT
 FM 779

STA 381+61.09

DESIGNED	CHKD	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.	
JKF	BAJ	6	TEXAS		US 69	
DRAWN	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
JN	TYL	WOOD	0203	05	039	181

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**SUMMARY OF POINT DATA
CR 2280**

POINT NUMBER	LOCATION	STATION	OFFSET (FT)	ELEVATION
1	NWTRANS	818+17.37	16.00 (RT)	422.92
2	NWTRANS	818+36.03	43.20 (RT)	422.81
3	SETRANS	1217+94.07	28.00 (LT)	422.87
4	SETRANS	1218+21.31	22.00 (RT)	421.28
5	SETRANS	1218+51.31	52.06 (RT)	420.60
6	SETRANS	1218+32.68	90.96 (RT)	422.00
7	SETRANS	1218+44.71	105.89 (RT)	422.00
8	SETRANS	1218+75.31	51.98 (RT)	420.22
9	SETRANS	1219+05.31	22.00 (RT)	419.94
10	SETRANS	1219+08.74	16.00 (LT)	420.64
11	SETRANS	1218+90.09	43.20 (LT)	421.34
12	NWTRANS	819+32.04	28.00 (RT)	421.34

NO.	REVISION	BY	DATE

TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779
**INTERSECTION LAYOUT
CR 2280**

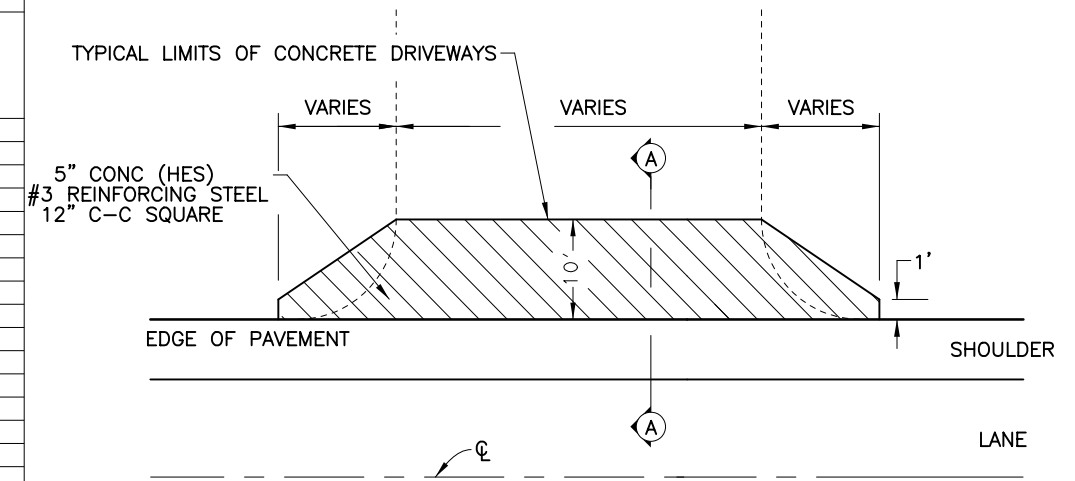
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Designed: JKJ	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: JN	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Checked: BAJ	TYL	WOOD	0203	05 039
				SHEET NO. 182

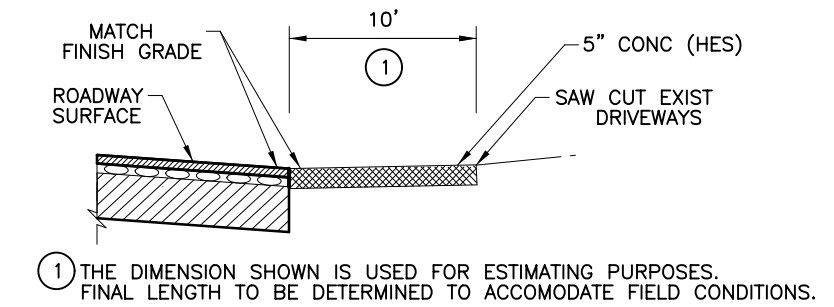
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DRIVEWAY TABLE

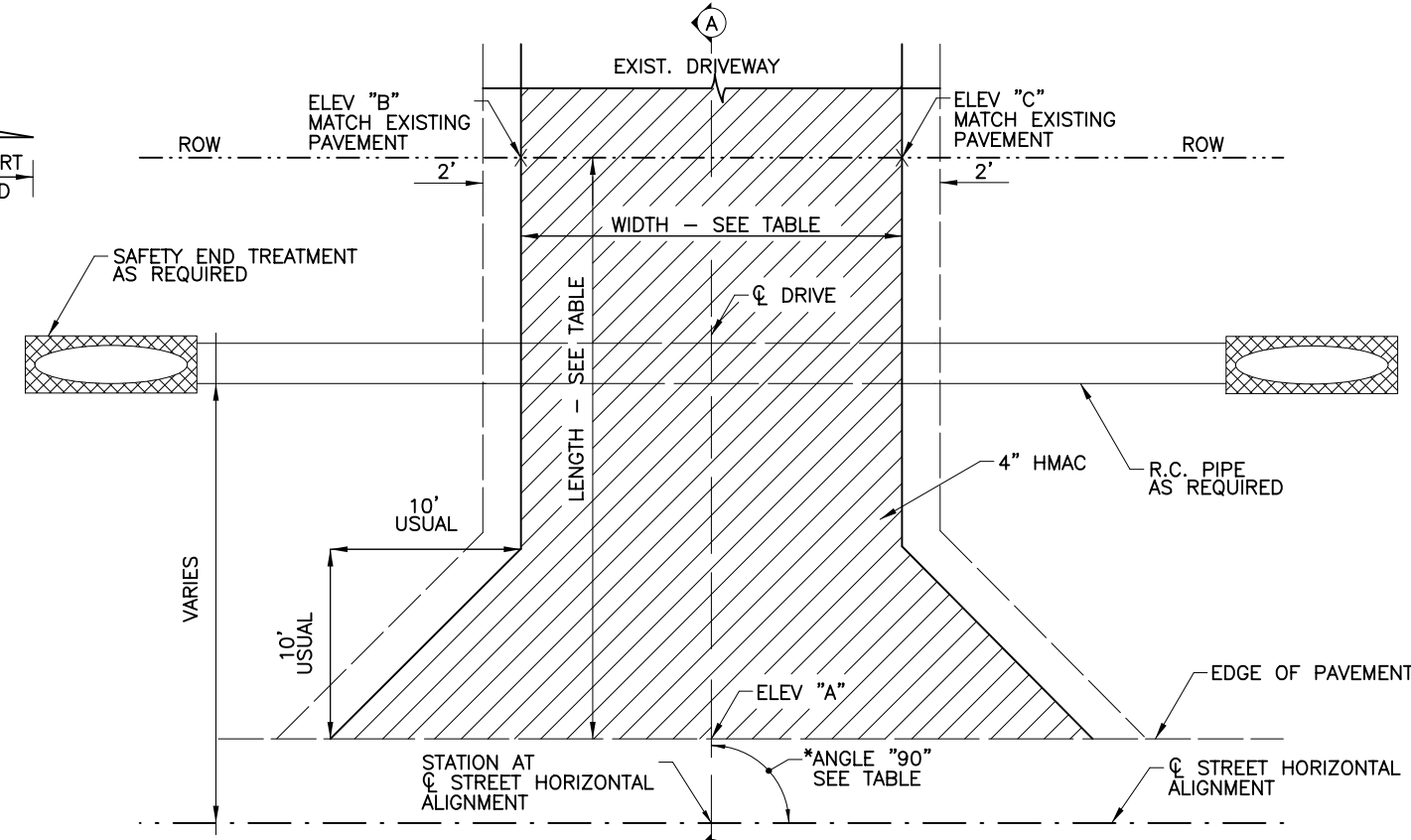
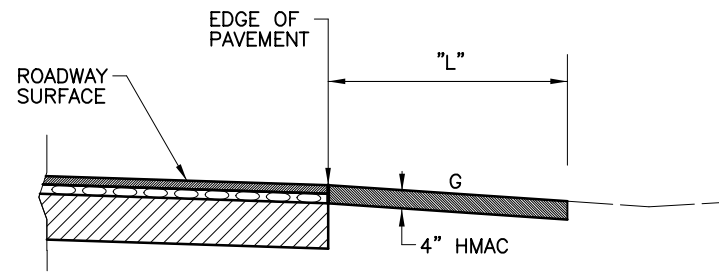
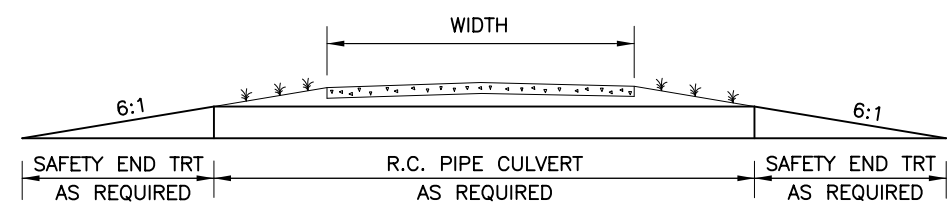
DRIVEWAY NUMBER	STREET HORIZONTAL ALIGNMENT	TYPE	STATION	ANGLE CL	ELEV "A"	ELEV "B"	ELEV "C"	WIDTH (FT)	L (FT)	G (%)	AREA (SY)
E01	NBML1	ASPHALT	601+24.49	90°00'00"	428.24	428.64	428.48	15	38.12	-0.84%	70.33
E02	NBML1	ASPHALT	605+18.34	90°00'00"	426.78	427.94	427.93	28	38.05	-3.04%	145.76
E03	NBML1	ASPHALT	607+78.73	90°00'00"	425.67	426.32	426.35	28	38.01	-1.75%	143.54
E04	NWBRAMP60	ASPHALT	112+74.74	90°00'00"	428.97	428.40	428.47	14	38.00	1.41%	70.22
E05	NWBRAMP60	CONCRETE	116+19.67	90°00'00"	427.14	426.76	427.05	40	38.00	0.62%	191.11
E06	NWBRAMP60	CONCRETE	116+93.14	90°00'00"	426.58	426.86	426.39	40	38.00	-0.12%	191.11
E07	NWBRAMP60	CONCRETE	124+95.80	90°00'00"	421.53	422.47	422.05	24	38.00	-1.92%	112.44
E08	NWBRAMP60	ASPHALT	126+58.75	90°00'00"	419.44	418.62	418.84	14	38.00	1.87%	70.22
E09	NWBRAMP60	ASPHALT	130+71.88	90°00'00"	419.51	418.66	419.11	14	38.10	1.64%	70.39
E10	NWBRAMP60	ASPHALT	131+70.50	90°00'00"	420.39	421.49	421.42	14	38.20	-2.79%	70.49
E11	NWBRAMP60	ASPHALT	134+17.81	90°00'00"	423.49	426.41	426.56	14	38.48	-7.78%	70.93
E12	NWBRAMP60	ASPHALT	135+21.19	90°00'00"	424.85	426.78	426.74	14	39.78	-4.80%	72.96
E13	NBML2	ASPHALT	809+79.71	90°00'00"	433.77	434.53	434.33	14	48.41	-1.36%	86.38
E14	NBML2	ASPHALT	818+63.19	90°00'00"	421.43	421.70	421.40	14	45.65	-0.26%	82.16
E15	NBML2	ASPHALT	821+57.75	90°00'00"	416.75	413.16	412.52	14	43.48	8.99%	78.74
E16	NBML2	ASPHALT	824+55.50	90°00'00"	412.90	412.39	412.33	14	38.21	1.41%	70.53
E17	NBML2	ASPHALT	831+14.04	90°00'00"	411.65	414.58	414.49	16	38.00	-7.59%	76.60
E18	CLFM779	CONCRETE	408+16.77	90°00'00"	428.78	427.44	428.14	30	54.46	1.82%	192.60
W01	SBML1	ASPHALT	1001+52.40	90°00'00"	428.21	425.39	425.60	14	165.62	1.62%	268.74
W02	SBML1	ASPHALT	1004+96.28	90°00'00"	426.83	427.06	427.16	14	157.02	-0.17%	255.36
W03	SBML1	ASPHALT	1014+17.30	90°00'00"	413.55	420.59	419.45	14	89.78	-7.21%	150.77
W04	SBML1	ASPHALT	1015+07.04	90°00'00"	410.24	413.22	412.65	14	84.52	-3.19%	142.58
W05	SBML1	ASPHALT	1029+28.38	90°00'00"	395.72	399.14	397.16	14	68.69	-3.54%	117.96
W06	SEBRAMP60	ASPHALT	205+52.47	90°00'00"	424.39	420.60	420.82	14	50.80	7.24%	90.10
W07	SEBRAMP60	ASPHALT	216+72.75	90°00'00"	425.25	419.06	419.67	14	50.00	11.77%	88.89
W08	SEBRAMP60	ASPHALT	218+01.07	90°00'00"	424.30	421.49	421.50	14	50.00	5.61%	88.89
W09	SEBRAMP60	ASPHALT	228+46.41	90°00'00"	420.72	419.48	419.48	14	49.76	2.49%	88.52
W10	SBML2	ASPHALT	1203+15.53	86°24'31"	427.10	422.99	423.62	14	55.69	6.81%	97.71
W11	SBML2	ASPHALT	1208+52.56	90°00'00"	433.23	429.27	429.43	18	55.74	6.96%	122.58
W12	SBML2	ASPHALT	1212+62.83	90°00'00"	430.22	429.21	428.91	22	59.89	1.94%	157.52
W13	SBML2	ASPHALT	1214+30.31	90°00'00"	427.54	427.32	427.21	8	59.70	0.46%	67.48
W14	SBML2	ASPHALT	1216+79.13	90°00'00"	423.55	423.78	423.65	12	60.09	-0.27%	96.12
W15	SBML2	ASPHALT	1222+35.90	90°00'00"	414.65	417.75	417.38	14	64.37	-4.53%	111.23
W16	SBML2	ASPHALT	1227+44.53	90°00'00"	412.12	404.24	404.36	14	96.20	8.13%	160.74
W17	SBML2	ASPHALT	1237+27.92	90°00'00"	393.24	393.25	392.00	16	166.49	0.38%	307.09
W18	SBML2	ASPHALT	1239+15.67	90°00'00"	387.95	383.72	383.14	16	169.54	2.66%	312.52



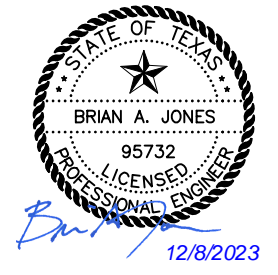
TYPICAL CONCRETE DRIVEWAY DETAIL
NTS



① THE DIMENSION SHOWN IS USED FOR ESTIMATING PURPOSES. FINAL LENGTH TO BE DETERMINED TO ACCOMMODATE FIELD CONDITIONS.

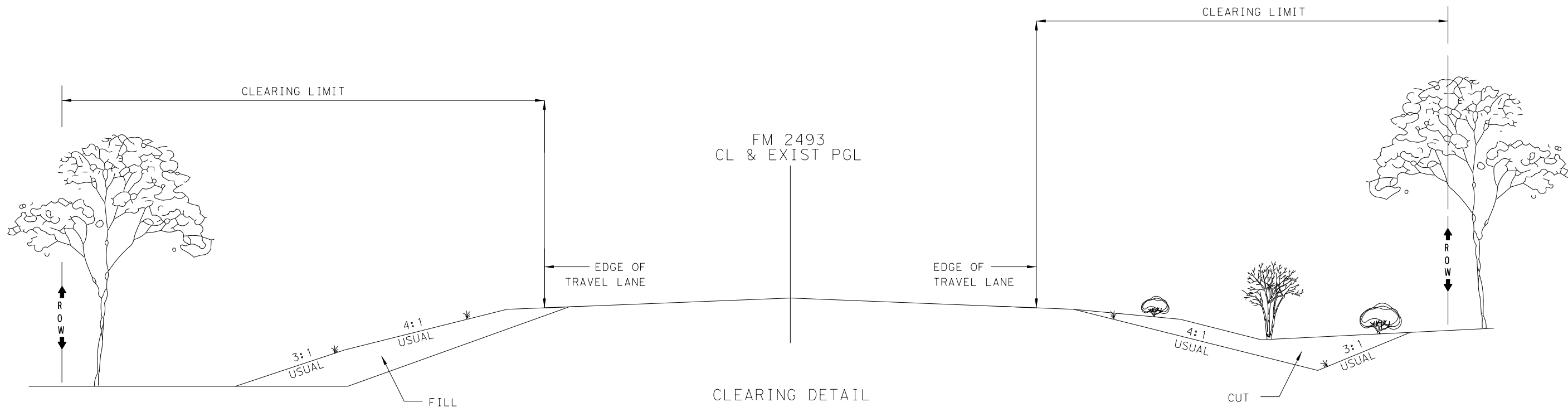


* ANGLE SHALL BE MEASURED FROM LOCAL TANGENT IF CENTERLINE IS ON CURVE.



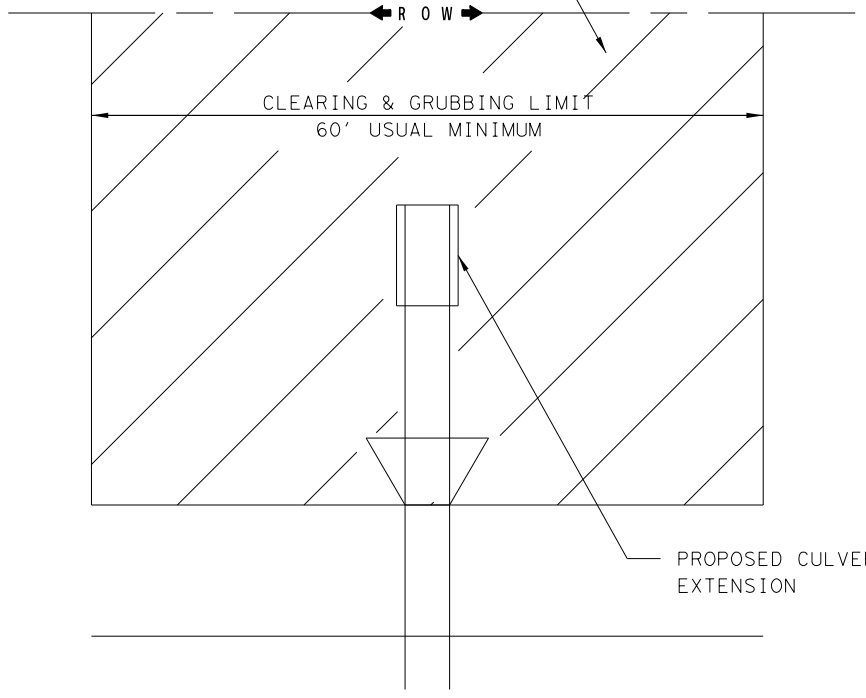
NO.	REVISION	BY	DATE
TEXAS REGISTERED ENGINEERING FIRM F-1741			
©2023 Texas Department of Transportation US 69 AT FM 779			
DRIVEWAY DETAILS			
Designed: JKJ	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.
Checked: BAJ			US 69
Drawn: JKJ	DIST. WOOD	COUNTY WOOD	CONTROL NO. 0203
Checked: BAJ	TYL		SECTION NO. 05
			JOB NO. 039
			SHEET NO. 183

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CLEARING DETAIL

LIMITS OF CLEARING AND GRUBBING FOR CULVERT EXTENSIONS (PAID UNDER ITEM 100)



FM 2493

CLEARING AND GRUBBING DETAIL

NOT TO SCALE

PREPARING ROW DETAILS

NOTES:

- 1) PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR PREPARING RIGHT OF WAY BY THE STATION. STATION LIMITS WILL BE SHOWN ELSEWHERE IN THE PLANS. ALL TRIMMING APPLIES TO BOTH SIDES OF THE ROADWAY.
- 2) ALL TREE LIMBS EXTENDING INTO THE ROW SHALL BE REMOVED, UNLESS OTHERWISE SHOWN ON PLANS. VIRTICLE CLEARING LIMITS ARE FROM NATURAL GROUND THROUGH TOP OF TREE OR AS DIRECTED.
- 3) CLEARING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE TO ITEM 100, "PREPARING RIGHT OF WAY", EXCEPT THOSE SHOWN BY THESE DETAILS.
- 4) WHERE STEEP SLOPES MAKE GRINDING OPERATIONS IMPRACTICAL, AND THE ENGINEER APPROVES IN WRITING, THE CONTRACTOR MAY CUT STUMPS OFF EVEN WITH THE GROUND.



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

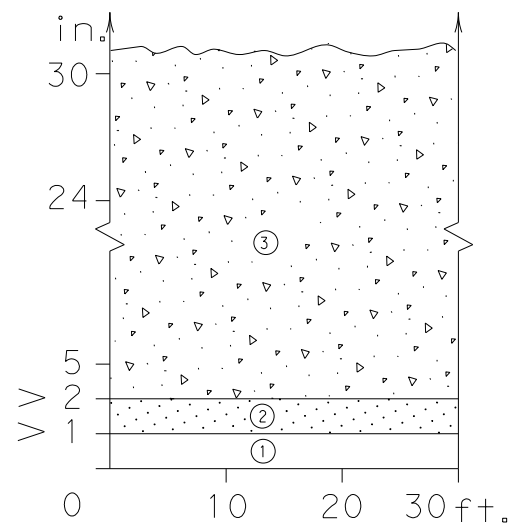
PREP ROW DETAIL

Designed:	FED. RD. DIV. NO.	STATE	HIGHWAY NO.		
Checked:	6	TEXAS	US 69		
Drawn:	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
Checked:	TYL	WOOD	0203	05	039
					SHEET NO.
					183A

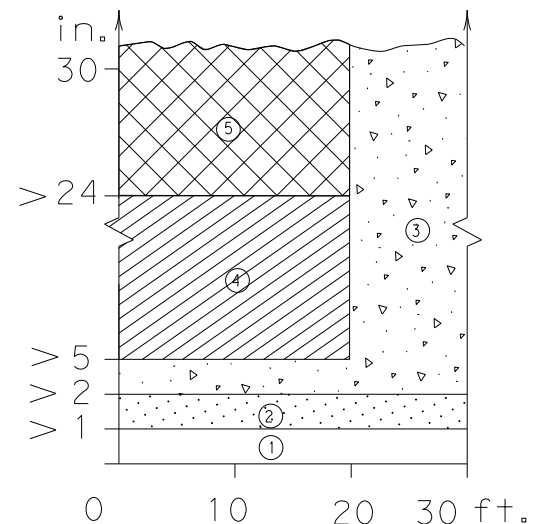
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DEFINITION OF TREATMENT ZONES
FOR VARIOUS EDGE CONDITIONS

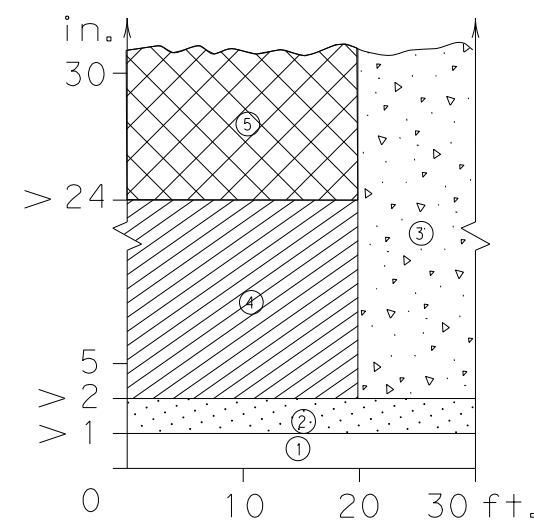
Edge Height (D) in Inches versus Lateral Clearance (Y) in Feet



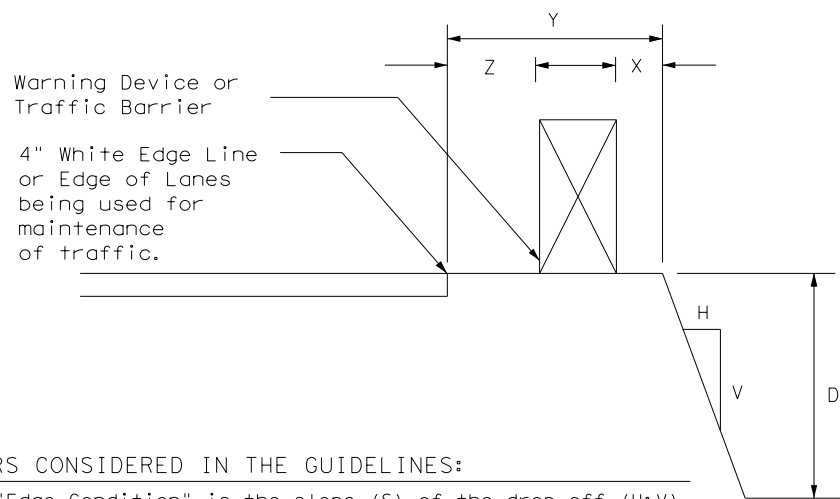
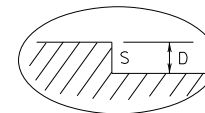
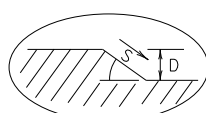
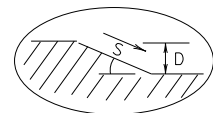
Edge Condition I
S = (3:1) (or flatter)



Edge Condition II
S = ((2.99):1) to (1:1)



Edge Condition III
S is steeper than (1:1)

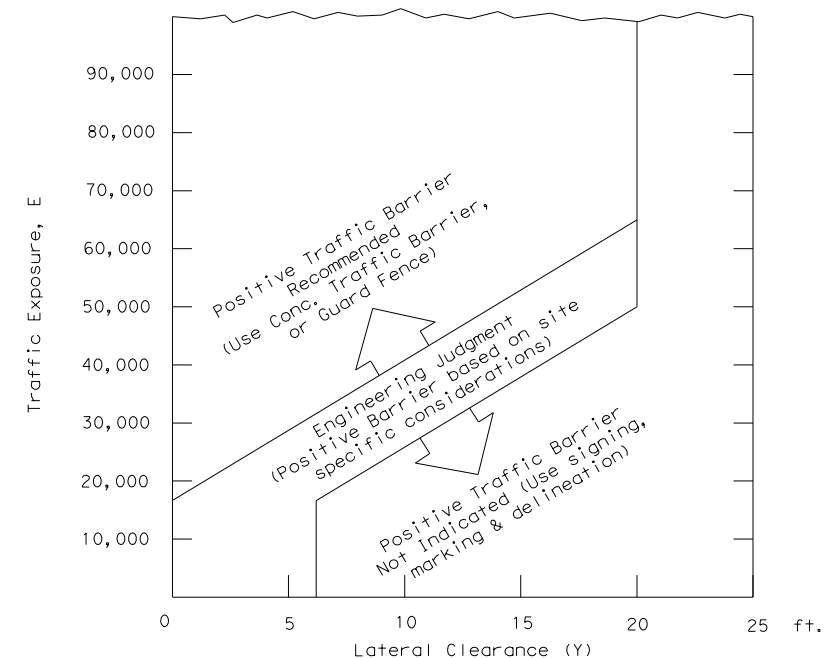


Zone	Treatment Types Guidelines:
①	No treatment
②	CW 8-11 "Uneven Lanes" signs.
③	CW 8-9a Shoulder Drop-Off" or CW 8-11 signs plus vertical panels.
④	CW8-9a or CW 8-11, signs plus drums. Where restricted space precludes the use of drums, use vertical panels. An edge slope to that of the profered Edge Condition I.
⑤	Check indications (Figure-1) for possitive barrier. Where positive barrier is not indicated, the treatment shown above for Zone-4 may be used after consideration of other applicable factors.

Edge Condition Notes:

- Edge Condition I: Most vehicles are able to traverse an edge condition with a slope rate of (3 to 1) or flatter. The slope must be constructed with a compacted material capable of supporting vehicles.
- Edge Condition II: Most vehicles are able to traverse an edge condition with a slope between (2.99 to 1) and (1 to 1) so long as "D" does not exceed 5 inches. Under-carriage drag on most automobiles will occur when "D" exceeds 6 inches. As "D" exceeds 24 inches, the possibility for rollover is greater in most vehicles.
- Edge Condition III: When slopes are greater than (1 to 1) and where "D" is greater than 2 inches, a more difficult control factor may exist for some vehicles, if not properly treated. For example, where "D" is greater than 2 inches and up to 24 inches different types of vehicles may experience different steering control at different edge heights. Automobiles might experience more steering control differential when "D" is greater than 2 inches and up to 5 inches. Trucks, particularly those with high loads, have more steering control differential when "D" is greater than 5 inches and up to 24 inches. When "D" exceeds 24 inches, the possibility of rollover is greater for most vehicles.
- Milling or overlay operations that result in Edge Condition III should not be in place without appropriate warning treatments, and these conditions should not be left in place for extended periods of time.

FIGURE-1: CONDITIONS INDICATING USE OF POSITIVE BARRIER FOR ZONE 5 ([hatched box])



- $E = ADT \times T$
Where ADT is that portion of the average daily traffic volume traveling within 20 feet (generally two adjacent lanes) of the edge dropoff condition; and, T is the duration time in years of the dropoff condition.
- Figure-1 provides a practical approach to the use of positive barriers for the protection of vehicles from pavement drop-offs. Other factors, such as the presence of heavy machinery, construction workers, or the mix and volume of traffic may make the use of positive barriers appropriate, even when the edge condition alone may not justify the use of a barrier.
- An approved end treatment should be provided for any positive barrier end located within the clear zone.

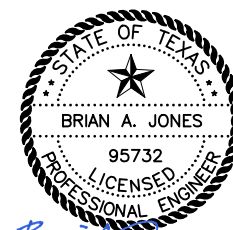
These guidelines apply to temporary traffic control areas or work zones where continuous pavement edges or drop-offs exists parallel and adjacent to a lane used by traffic. The edge conditions may be present between shoulders and travel lanes, between adjacent or opposing travel lanes, or at intermediate points across the width of the paved surface. Due to the variability in construction operations, tolerances in the variables may be allowed by the engineer. These guidelines do not apply to short term operations. These guidelines do not constitute a rigid standard or policy; rather, they are guidance to be used in conjunction with engineering judgement. These guidelines may be updated on the Design Division's on-line manuals.

FACTORS CONSIDERED IN THE GUIDELINES:

- The "Edge Condition" is the slope (S) of the drop-off (H:V). The "Edge Height" is the depth of the drop-off "D".
- Distance "X" is to be the maximum practical under job conditions. Two feet minimum for high speed conditions. Distance "Y" is the lateral clearance from edge of travel lane to edge of dropoff. Distance "Z" does not have a minimum.
- In addition to the factors considered in the guidelines, each construction zone drop-off situation should be analyzed individually, taking into account other variables, such as: traffic mix, posted speed in the construction zone, horizontal curvature, and the practicality of the treatment options.
- The conditions for indicating the use of positive or protective barriers are given by Zone-5 and Figure-1. Traffic barriers are primarily applicable for high speed conditions. Urban areas with speeds of 30 mph or less may have a lesser need for signing, delineation, and barriers. Right-angled edges, however, with "D" greater than 2 inches and located within a lateral offset of 6 feet, may indicate a higher level of treatment.
- If the distance "Y" must be less than 3 feet, the use of a positive barrier may not be feasible. In such a case, consider either: 1) narrowing the lanes to a desired 11 to 12 feet or 10 foot minimum (see CW20-8 sign), or 2) provide an edge slope such as Edge Condition I.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of units or for the accuracy of the information contained herein. The user of this standard shall be responsible for obtaining the most current version of this standard from the Texas Department of Transportation. DATE: 12/8/2023 2:47:38 PM FILE: pw:\stv-sw-pw-bent\ey.com\stv-sw-pw\ANSIB\Documents\Active Projects\TXM15214 - striping\12-07-23\12-07-23\ROADWAY\edgecon-21.cpybw_ANSIB.tbl cpybw_ANSIB.pltcf

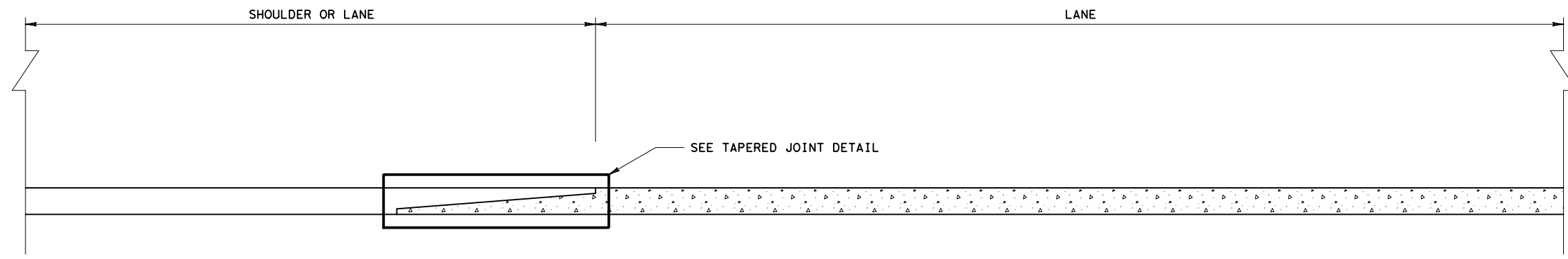
Engineer's Seal



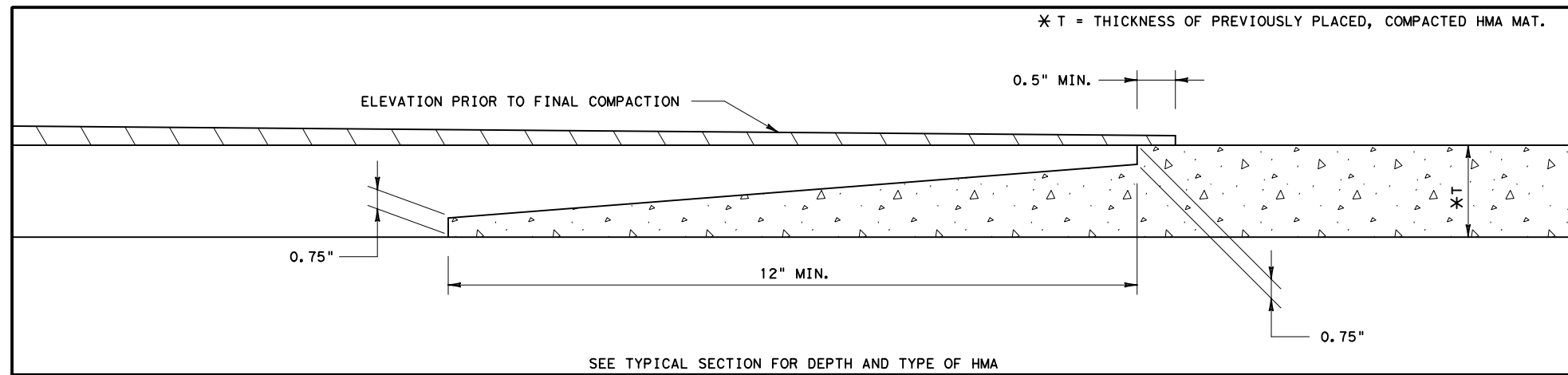
TREATMENT FOR VARIOUS
EDGE CONDITIONS

FILE:	edgecon.dgn	DN:		CK:		DW:		CK:	
© TxDOT	August 2000	CON:	0203	SECT:	05	JOB:	039	US:	69
03-01	08-01	REVISIONS		DIST:		COUNTY:		SHEET NO.	
	9-21	TYL				WOOD		183B	

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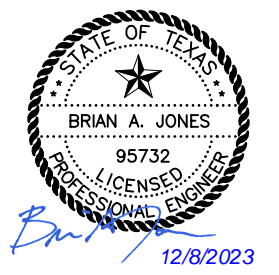


CROSS-SECTIONAL VIEW OF LONGITUDINAL JOINT



TAPERED JOINT DETAIL

- NOTES:**
- EXTEND THE TAPERED PORTION OF THE MAT BEYOND THE NORMAL LANE WIDTH.
 - CONSTRUCT THE TAPERED PORTION OF THE MAT USING AN APPROVED STRIKE-OFF DEVICE THAT WILL PROVIDE A UNIFORM SLOPE AND WILL NOT RESTRICT THE MAIN SCREED.
 - APPLY TACK COAT TO THE IN-PLACE TAPER BEFORE THE ADJACENT MAT IS PLACED.
 - FINAL DENSITY REQUIREMENTS FOR THE ENTIRE PAVEMENT, INCLUDING THE TAPER AREA, WILL NOT CHANGE.
 - COMPACTION OF THE INITIAL TAPER SECTION WILL BE REQUIRED TO BE AS NEAR TO FINAL DENSITY AS POSSIBLE.
 - USE A SMALL STATIC ROLLER (APPROXIMATELY 400 LBS) LOCATED IMMEDIATELY BEHIND THE PAVER FOR PRE-COMPACTION OF THE NOTCHED WEDGE JOINT.

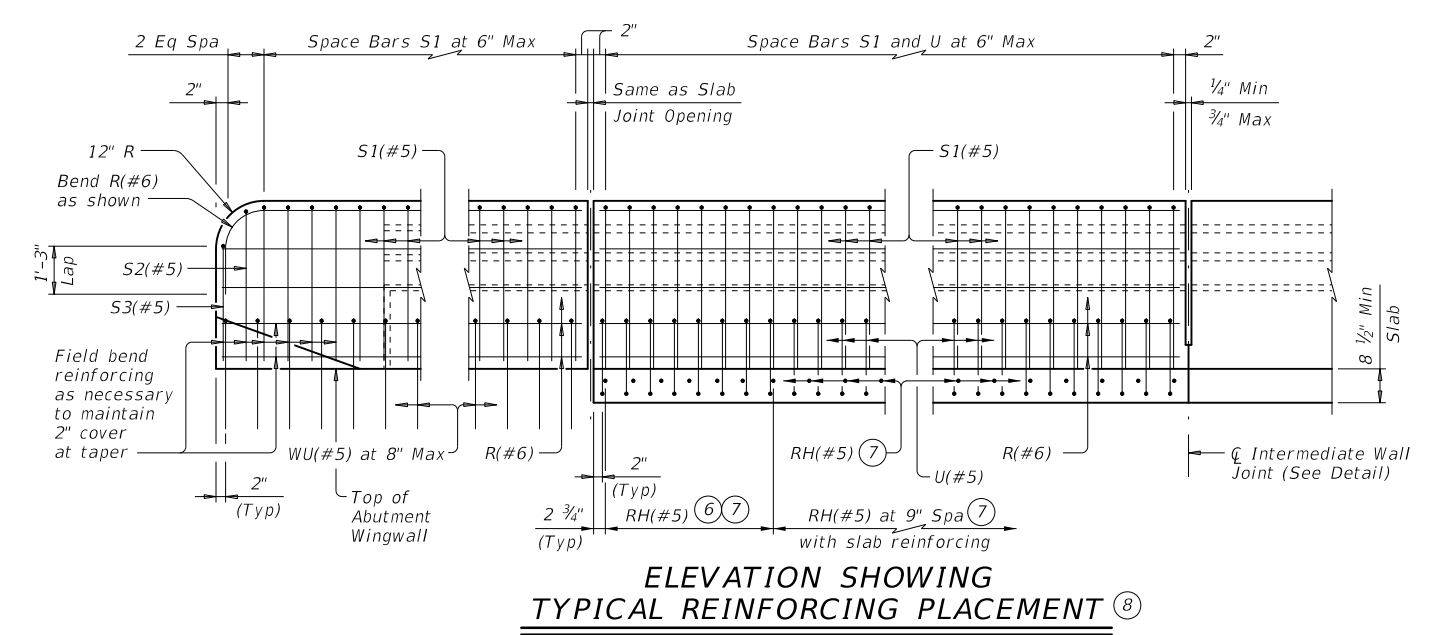
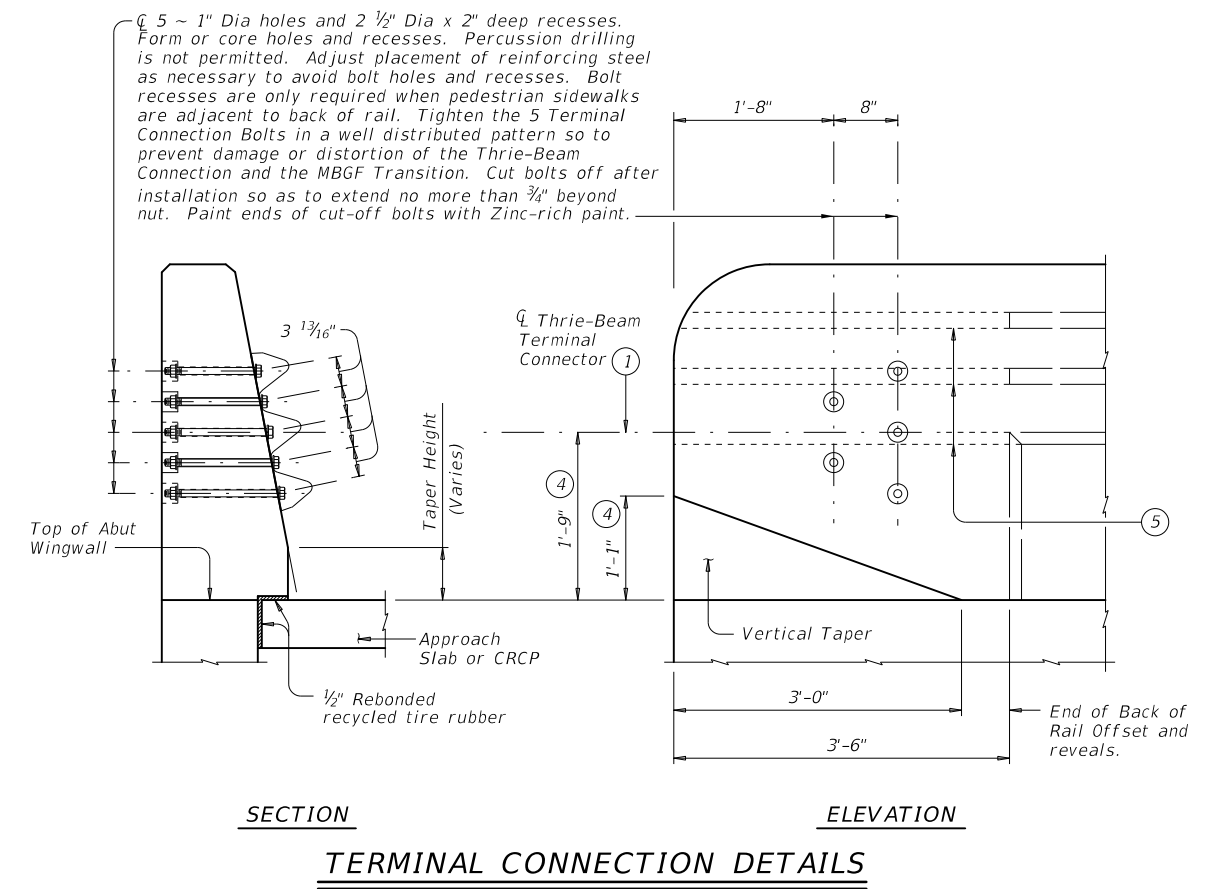
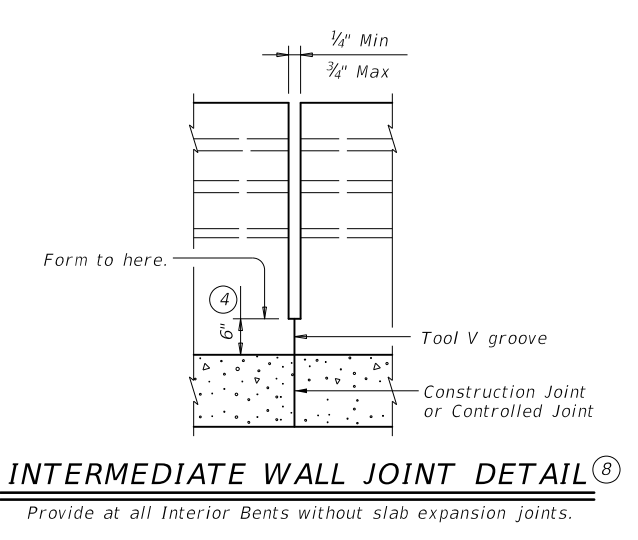
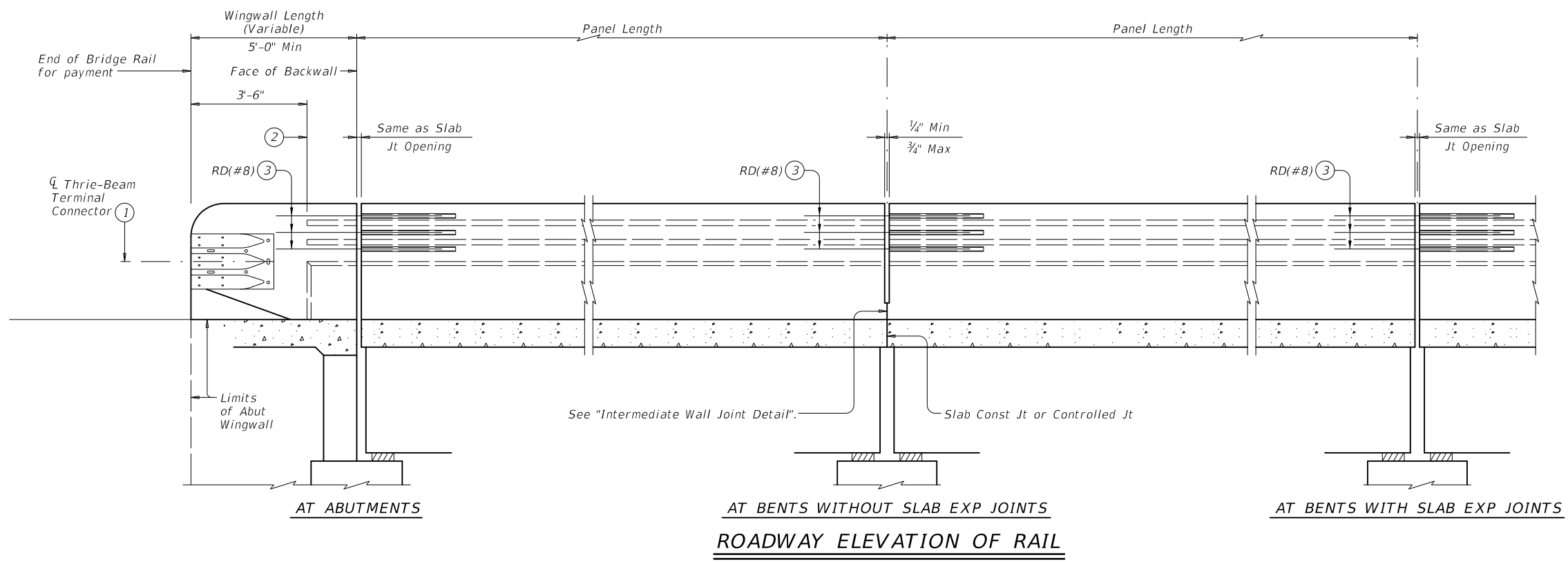


HOTMIX LONGITUDINAL JOINT DETAILS

37P02.DGN /			
FED. RD. DIST. NO.	STATE PROJECT NO.	SHEET NO.	
6		184	
STATE	STATE DISTRICT	COUNTY	
TEXAS	TYLER	WOOD	
CONT.	SECT.	JOB	HIGHWAY NO.
0203	05	039	US 69

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- ① Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard Fence". Attach Metal Beam Guard Fence Transitions to the bridge rail and extend along the embankment unless otherwise shown in the plans.
- ② End back of rail offset and reveals. See "Terminal Connection Details".
- ③ Located at rail joints. For placement and assembly of RD(#8) bar, see "Sections Thru Rail On Abutment Wingwall", "Sections Thru Rail On Bridge Slab" and "Bar RD(#8) Assembly Detail".
- ④ Increase 2" for structures with overlay.
- ⑤ Back of rail offset and reveals may, with Engineer's approval, be continued to end of the railing.
- ⑥ RH(#5) at 7" Spacing = 3'-6" with thickened slab end reinforcing.
- ⑦ Bars RH(#5) are part of rail reinforcing and are included in unit price bid for railing. Bars RH(#5) are in addition to slab overhang reinforcement shown elsewhere. Extend bars RH(#5) 2'-0" Min past \bar{C} of beam/girder. Space and bundle with adjacent slab bars G(#4) and bars A(#4). Match slab bar cover. (Typ)
- ⑧ RD(#6) bars located at rail joints are not shown for clarity.

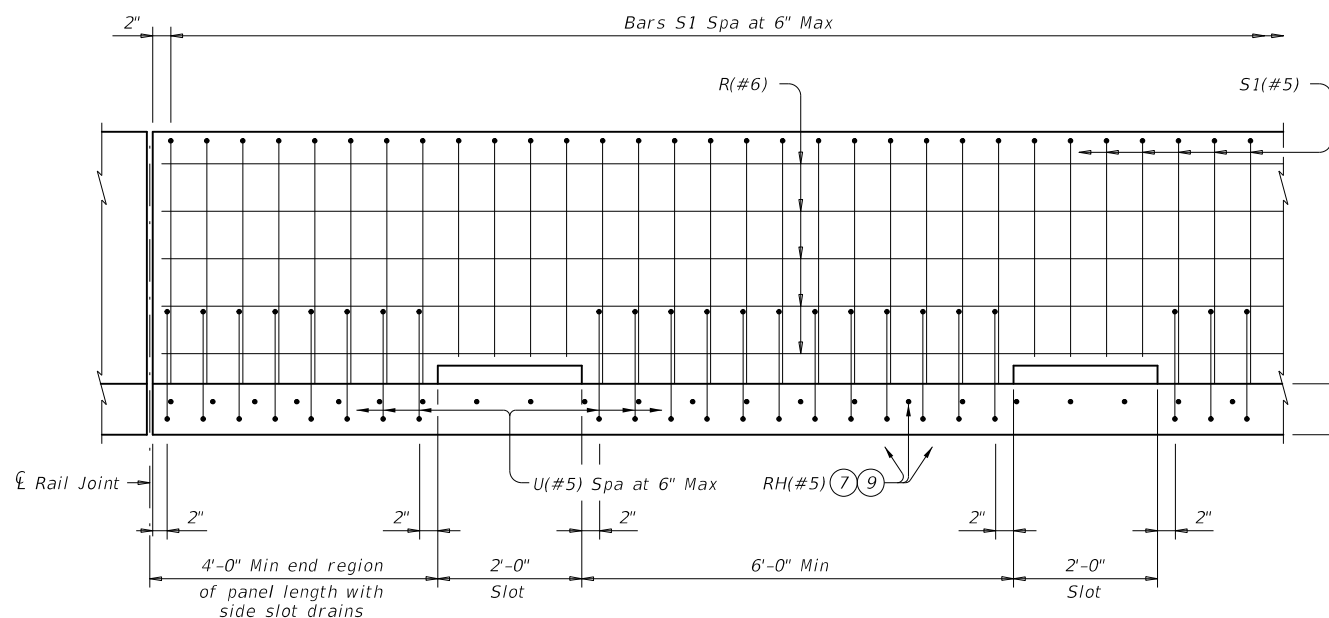
SHEET 1 OF 3

		Bridge Division Standard	
TRAFFIC RAIL			
TYPE T80SS			
FILE: RL-T80SS-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR
©TxDOT September 2019	CONTRACT NO. 0203	SECTION 05	JOB NO. 039
REVISIONS	DIST. TYL	COUNTY. WOOD	SHEET NO. 186

pw:/

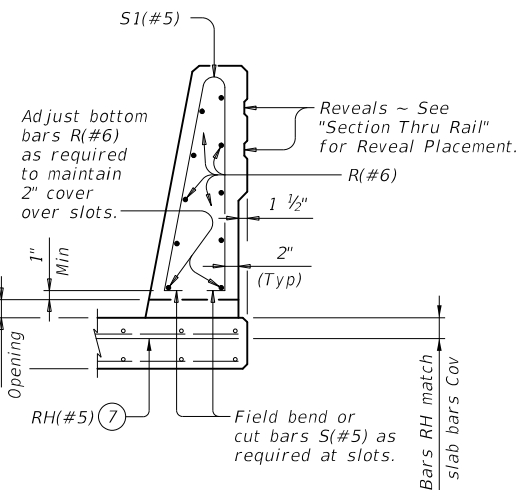
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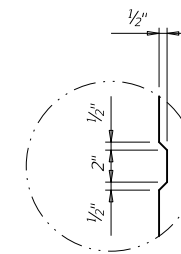


OPTIONAL SIDE SLOT DRAIN DETAIL (8)

Note: Side Slot Drains may be used where shown elsewhere on the plans or as directed by the Engineer. Do not place drains over railroad tracks, lower roadways, or sidewalks. When this rail is used as a separator between a roadway surface and a sidewalk surface, side drain slots will not be permitted.

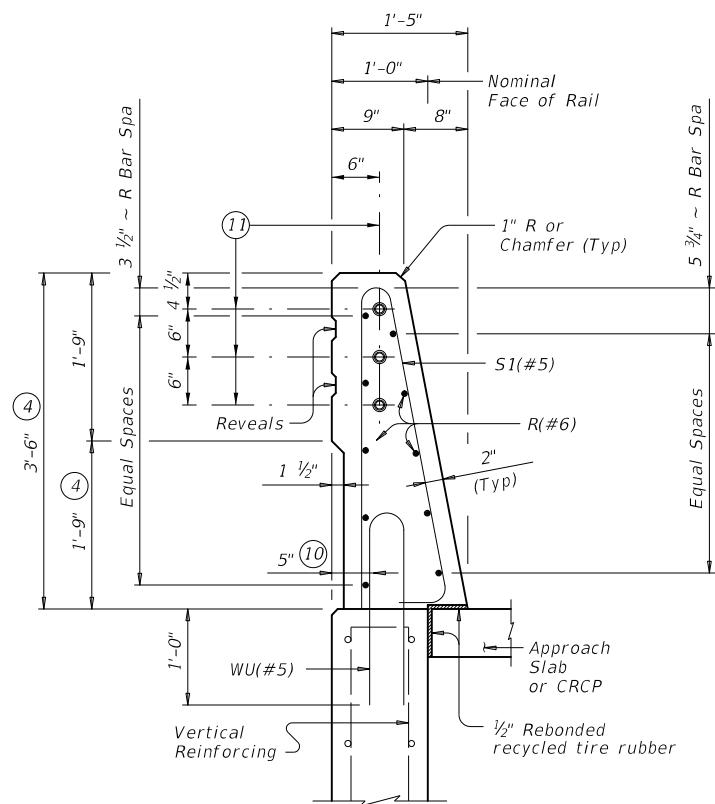


SECTION THRU OPTIONAL SIDE SLOT DRAIN

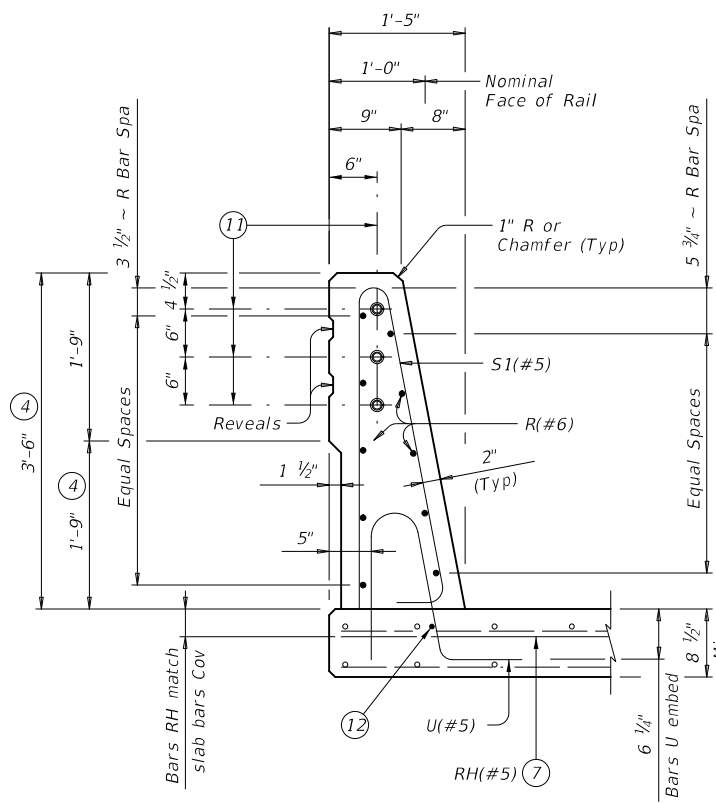


TYPICAL REVEAL DETAIL

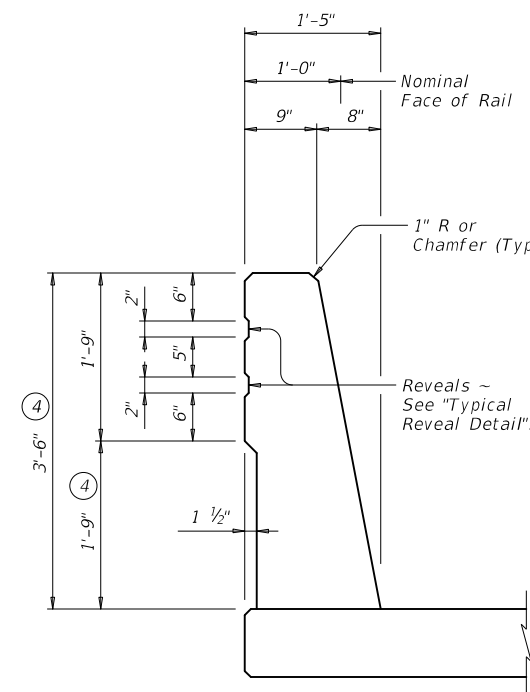
- (4) Increase 2" for structures with overlay.
- (7) Bars RH(#5) are part of rail reinforcing and are included in unit price bid for railing. Bars RH(#5) are in addition to slab overhang reinforcement shown elsewhere. Extend bars RH(#5) 2'-0" Min past C of beam/girder. Space and bundle with adjacent slab bars G(#4) and bars A(#4). Match slab bar cover. (Typ)
- (8) RD(#6) bars located at rail joints are not shown for clarity.
- (9) See "Elevation Showing Typical Reinforcing Placement" for spacing RH(#5) bars.
- (10) 5 1/4" when vertical reinforcing has closer clear cover over horizontal reinforcing in abutment wingwalls on traffic side of wall.
- (11) C 3 Bars RD(#8) placed as shown at each joint. Center RD(#8) bar at joint locations with 1 1/4" PVC pipe Sch 80 sleeve on one side of joint. See "Bar RD(#8) Assembly Detail".
- (12) Top longitudinal slab bar may be adjusted laterally 3" plus or minus to tie reinforcing.
- (13) Mounting this rail to retaining walls requires additional details not covered by this standard.



ON ABUTMENT WINGWALLS (13)



**ON BRIDGE SLAB
SECTIONS THRU RAIL (13)**



**REVEAL PLACEMENT
(Showing location of Reveals)**

SHEET 2 OF 3



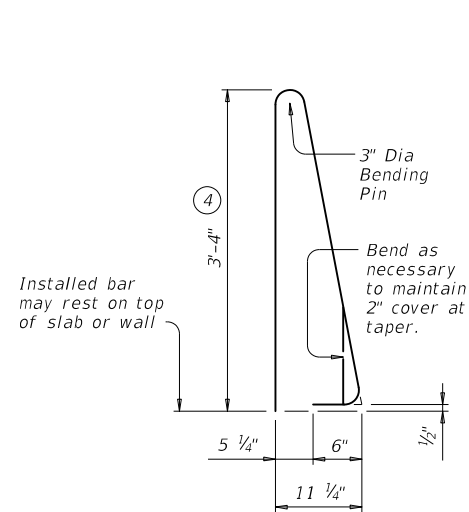
TRAFFIC RAIL

TYPE T80SS

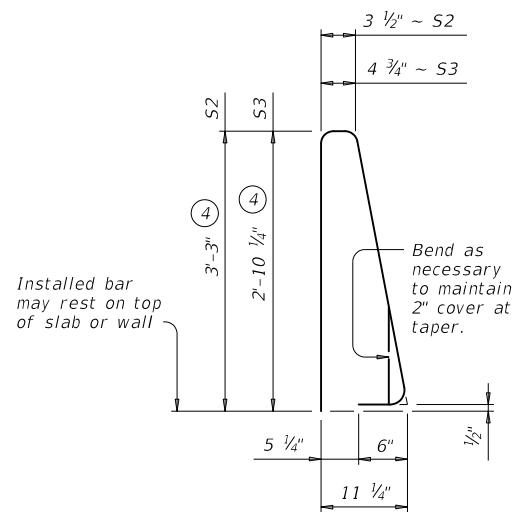
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©TxDOT September 2019	CONTRACT	SECTION	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	187	

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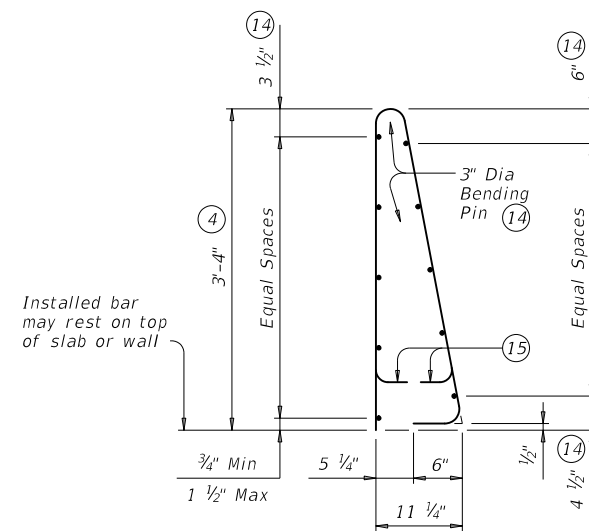
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BARS S1 (#5)

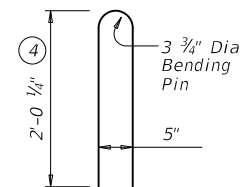


BARS S2-3 (#5)

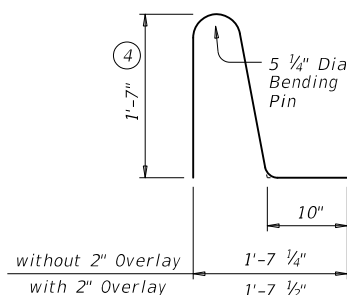


OPTIONAL WELDED WIRE REINFORCEMENT (WWR)

DESCRIPTION	LONGITUDINAL WIRES	VERTICAL WIRES
Minimum (Cumulative Total) Wire Area	3.770 Sq In.	0.530 Sq In. per Ft
Minimum	No. of Wires	Spacing
Maximum	10	4"
Maximum Wire Size Differential	14	8"
	The smaller wire must have an area of 40% or more of the larger wire.	



BARS WU (#5)



BARS U (#5)

- ④ Increase 2" for structures with overlay.
- ⑭ No longitudinal wires may be within bend area.
- ⑮ Bend or cut as required to clear drain slots.
- ⑯ Tape ends of 1 1/4" PVC Sch 80 to prevent concrete or mortar from seeping in.

CONSTRUCTION NOTES:

This railing may be constructed by the slipform process when approved by the Engineer, with equipment approved by the Engineer. Provide sensor control for both line and grade. Tack welding to provide bracing for slipform operations is acceptable. Welding may be performed at a minimum spacing of 3 ft between the cage and the anchorage. It is permissible to weld to bars U, WU and S at any location on the cage. If increased bracing is needed, provide additional anchorage devices and weld in the upper two thirds of the cage. Paint welded areas on epoxy coated and/or galvanized reinforcing with an organic zinc rich paint in accordance with Item 445 "Galvanizing".

If rail is slipformed, apply an heavy epoxy bead 1" behind toe of traffic side of rail to concrete deck just prior to slip forming. Provide a 3/8" width x 1/4" tall heavy epoxy bead with Type III, Class C or a Type V epoxy.

The back of railing must be vertical unless otherwise shown on the plans or approved by the Engineer.

MATERIAL NOTES:

Galvanize RD(#8) bar as shown. Provide Class "C" concrete. Provide Class "C" (HPC) if required elsewhere.

Provide Grade 60 reinforcing steel. Epoxy coat or galvanize all reinforcing steel if slab bars are epoxy coated or galvanized. Do not epoxy coat RD(#8) bars.

Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for Bars U and WU unless noted otherwise. Deformed WWR (ASTM A1064) may be substituted for Bars R and S, as shown. Combinations of reinforcing steel and WWR or configurations of WWR other than shown are permitted if conditions in the table are satisfied. Provide the same laps as required for reinforcing bars.

Provide bar laps, where required, as follows:
 Uncoated or galvanized ~ #6 = 2'-5"
 Epoxy coated ~ #6 = 3'-7"

GENERAL NOTES:

This rail has been evaluated and accepted to be of equal strength to railings with like geometry, which have been crash tested to meet MASH TL-5 criteria. This rail can be used for speeds of 50 mph and greater when a TL-3 rated guard fence transition is used. When a TL-2 rated guard fence transition is used, this rail can only be used for speeds of 45 mph and less.

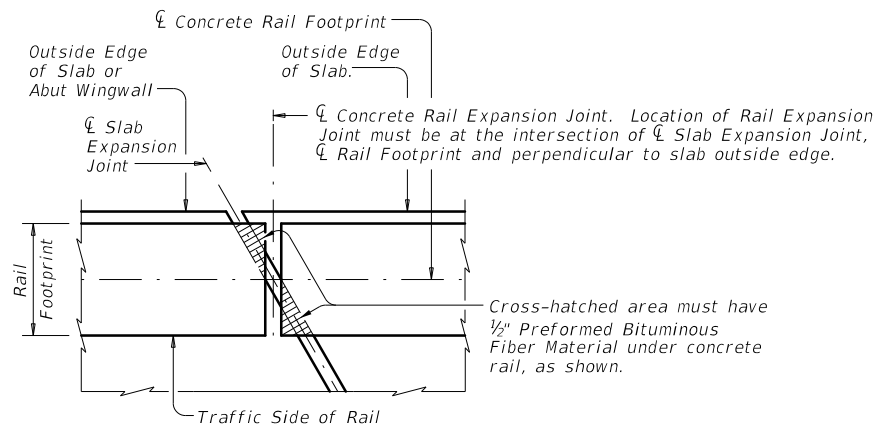
Do not use this railing on bridges with expansion joints providing more than 5' movement.

Rail anchorage details shown on this standard may require modification for select structure types.

See appropriate details elsewhere in plans for these modifications. Shop drawings are not required for this rail.

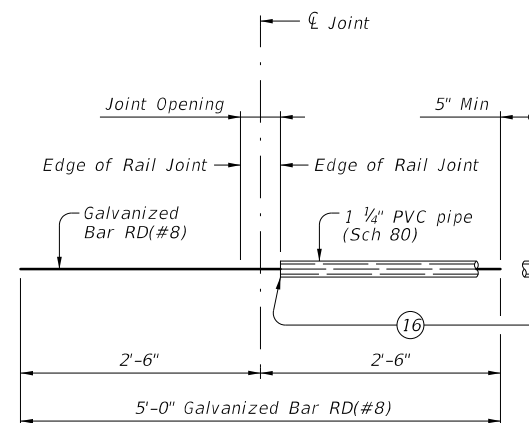
Average weight of railing is 533 plf.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.



PLAN OF RAIL AT EXPANSION JOINTS

Example showing Slab Expansion Joints without breakbacks.



BAR RD(#8) ASSEMBLY DETAIL

SHEET 3 OF 3



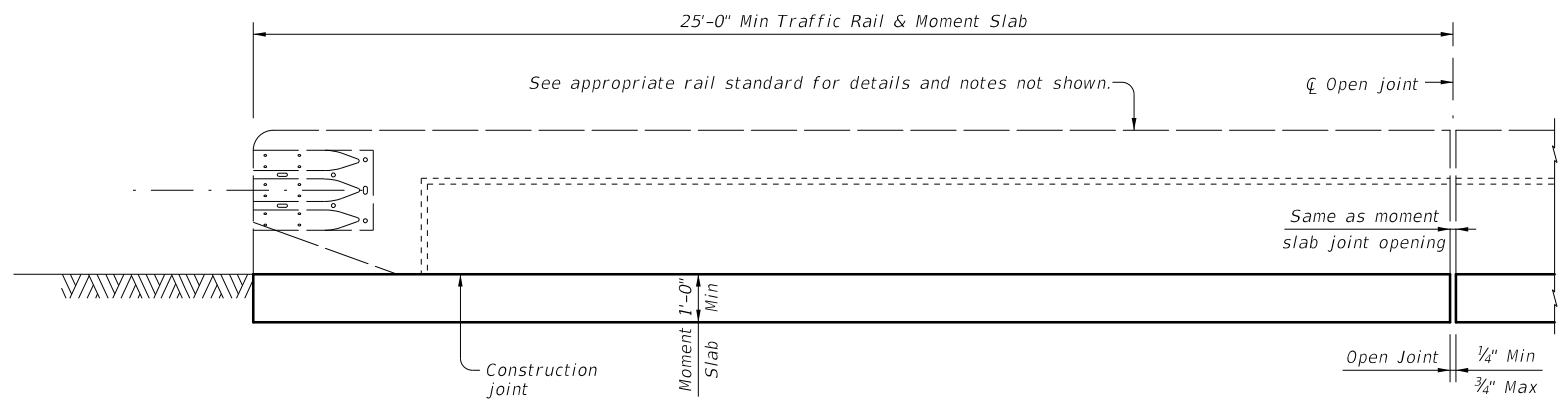
TRAFFIC RAIL

TYPE T80SS

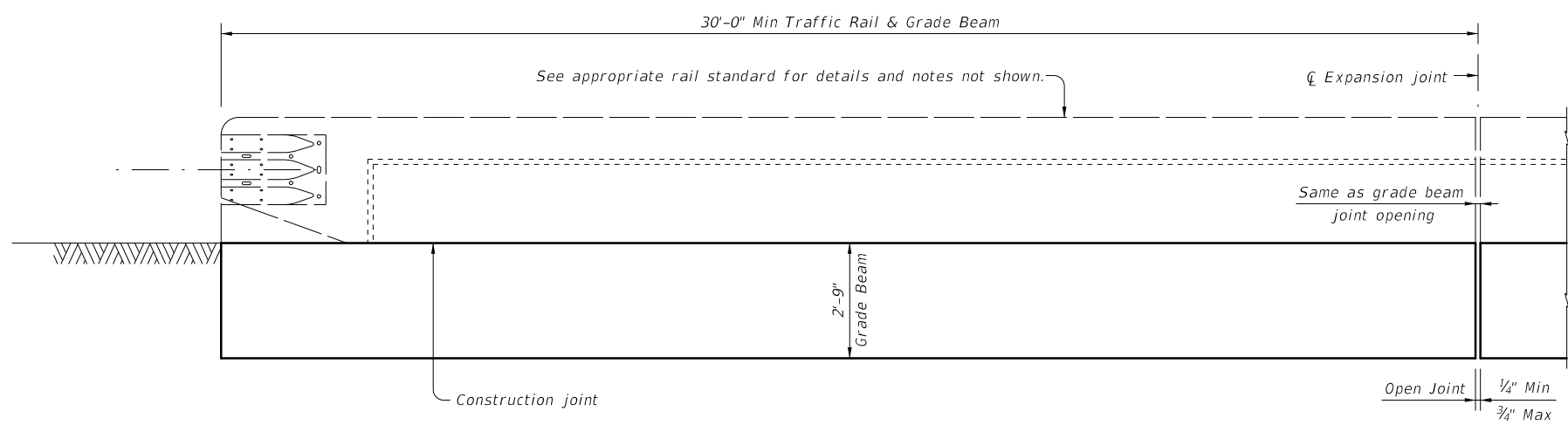
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©TxDOT September 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	188	

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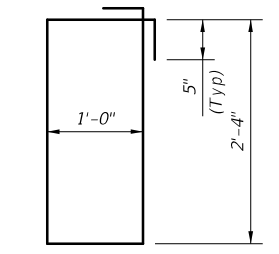


ROADWAY ELEVATION OF TRAFFIC RAIL ON MOMENT SLAB (TRF-MS)
 (Showing SSTR rail other rails are similar. Reinforcing not shown for clarity.)

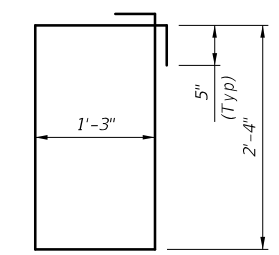


ROADWAY ELEVATION OF TRAFFIC RAIL ON GRADE BEAM (TRF-GB)
 (Showing SSTR rail other rails are similar. Reinforcing not shown for clarity.)

- ① See applicable bridge rail standard.
- ② MA(#5) space longitudinally along moment slab at 12" Max. (Spaced 2 1/2" longitudinally from outside edge of moment slab).
- ③ Approximate moment slab concrete = 0.19 CY/LF and reinforcement = 22.4 LB/LF.
- ④ S1(#4) or S2(#4) spaced longitudinally along grade beam at 8" Max. (Spaced 2 1/2" longitudinally from outside edge of grade beam).
- ⑤ Use bar S1(#4) with 1'-4" grade beam width and bridge rail types: All rails except for T224, C412, T66, C66, T80HT and T80SS. Approximate grade beam concrete = 0.14 CY/LF and reinforcement = 13.8 LB/LF.
 Use bar S2(#4) with 1'-7" grade beam width and bridge rail types: T66 and C66. Approximate grade beam concrete = 0.16 CY/LF and reinforcement = 14.2 LB/LF.
- ⑥ 1'-6" for bridge rail types: All rails except for T224, C412, T66, C66, T80HT and T80SS.
 1'-9" bridge rail types: T66 and C66.
- ⑦ Modify reinforcing on standard bridge rail anchorage if necessary by extending rail anchorage 12" Min, vertically into traffic rail



BARS S1(#4)



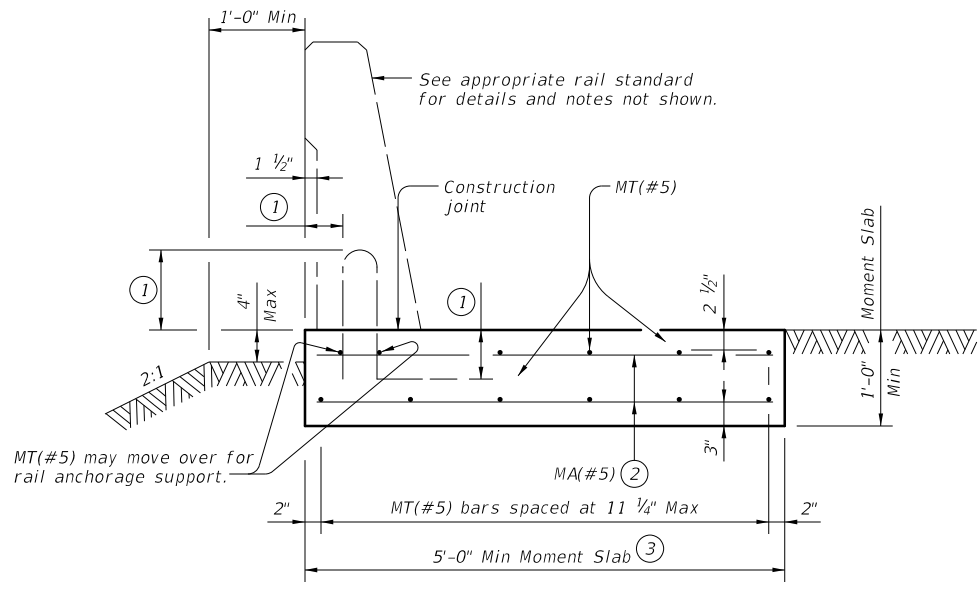
BARS S2(#4)

CONSTRUCTION NOTES:
 Align moment slab (TRF-MS) or grade beam (TRF-GB) open joints with rail open joints maintaining no less than minimum rail length. Provide moment slab (TRF-MS) or grade beam (TRF-GB) with open joints at no greater than 100' spacing unless otherwise shown on the plans or approved by the Engineer.

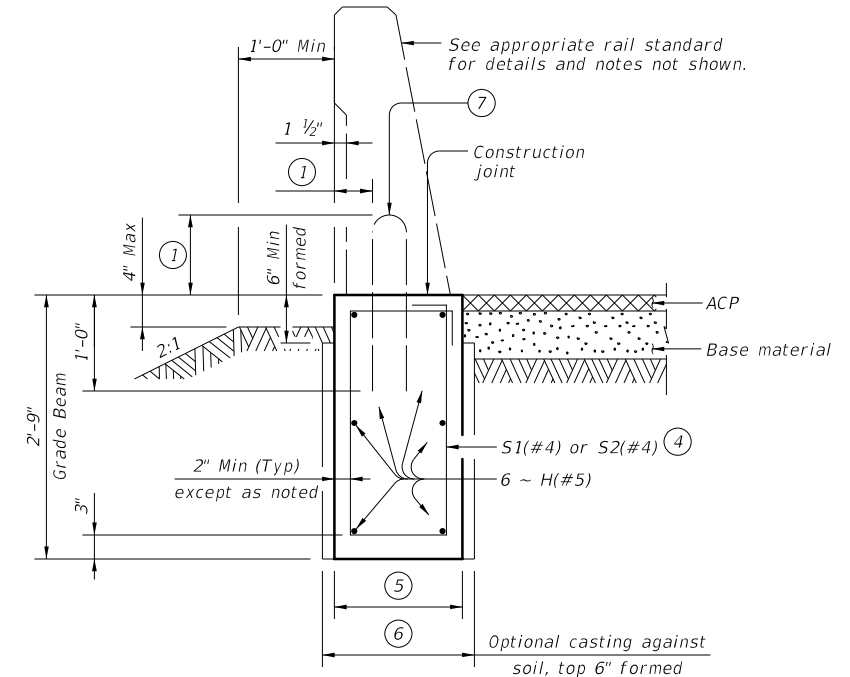
MATERIAL NOTES:
 Provide Class "C" concrete. Provide Class "C" (HPC) if required elsewhere.
 Provide Grade 60 reinforcing steel.
 Epoxy coat or galvanize all reinforcing steel if required elsewhere.
 Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for bars S1(#4), S2(#4) and H(#5) unless noted otherwise. Provide the same laps as required for reinforcing bars.
 Provide bar laps, where required, as follows:
 Uncoated or galvanized ~ #5 = 2'-4"
 Epoxy coated ~ #5 = 3'-6"

GENERAL NOTES:
 Use of these details will result in a moment slab (TRF-MS) or grade beam (TRF-GB) foundation that is acceptable for traffic rails which are MASH TL-2, TL-3, or TL-4 compliant.
 See elsewhere in the plans for selected options between moment slab (TRF-MS) and/or grade beam (TRF-GB).
 The foundation design resistance is based on the current AASHTO bridge railing requirements with the assumption of fair to good soil support conditions. Poor soil conditions will require suitably deeper and/or wider foundations.
 See appropriate rail standard for details and notes not shown. This detail is intended for use as a guide to unusual railing anchorage situations but may be included in the plans, modified as necessary to apply to specific installations required on the project.
 Payment for moment slab (TRF-MS) and/or grade beam (TRF-GB) will be by Class "C" concrete or Class "C" (HPC) concrete for rail foundations.
 The associated bridge railing will be paid for by the linear foot which includes the concrete and reinforcement.
 Excavation will be subsidiary to other items.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.



SECTION OF TRAFFIC RAIL ON MOMENT SLAB (TRF-MS)
 (Showing SSTR rail other rails are similar.)

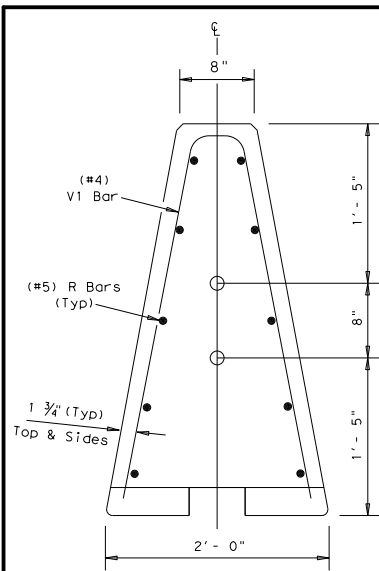


SECTION OF TRAFFIC RAIL ON GRADE BEAM (TRF-GB)
 (Showing SSTR rail other rails are similar.)

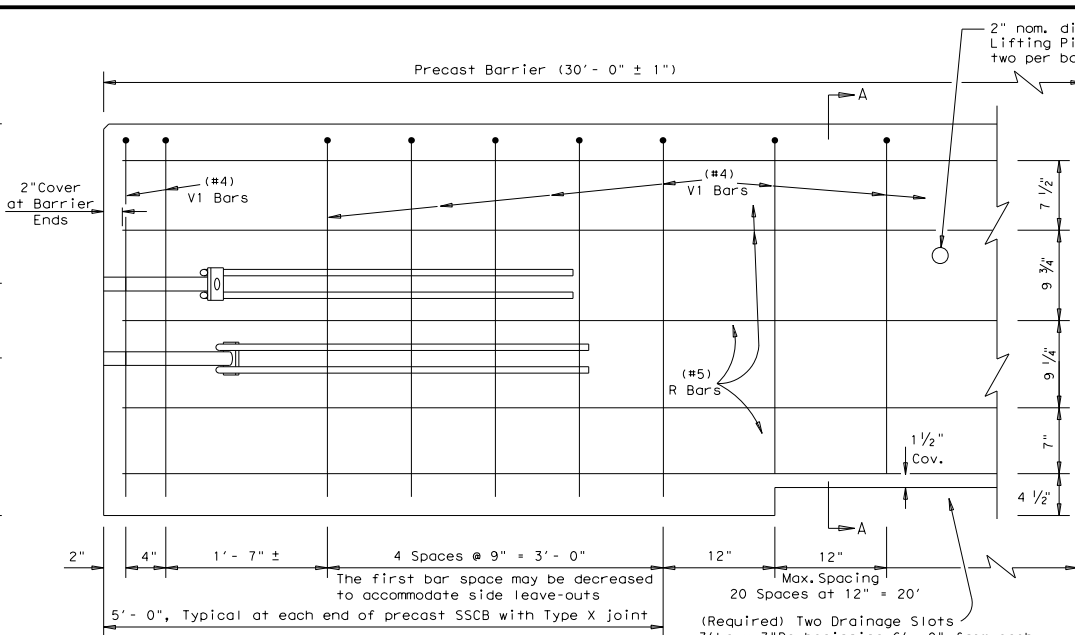
		Bridge Division Standard	
TRAFFIC RAIL FOUNDATIONS FOR MASH TL-2, TL-3 & TL-4 BRIDGE RAILS			
TRF			
FILE: RL-TRF-20.dgn	DN: TxDOT	CK: TAR	DW: JTR
©TxDOT September 2019	CONV: 0203	SECT: 05	JOB: 039
07-20: Added moment slab with rail foundation lengths.	DIST: TYL	COUNTY: WOOD	SHEET NO: 189

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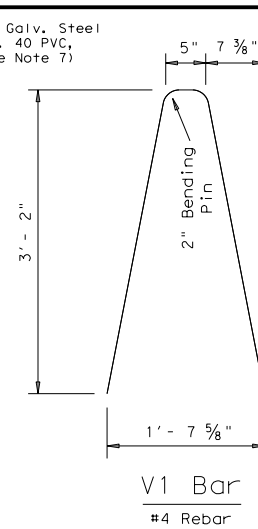
DATE:
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End View
Precast Barrier
Pipe locations for Joint
Type X connection

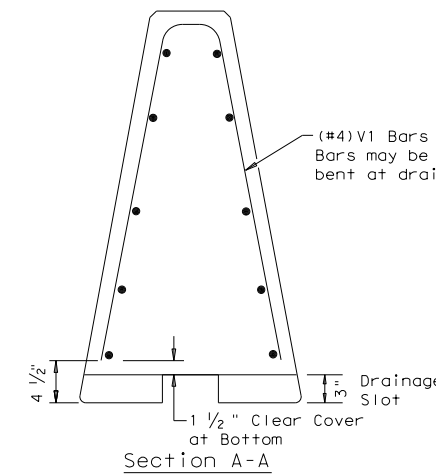


Reinforcement for Precast (SSCB)
Single Slope Concrete Barrier (Type 1)
Showing reinforcement for Joint Connection (Type X)



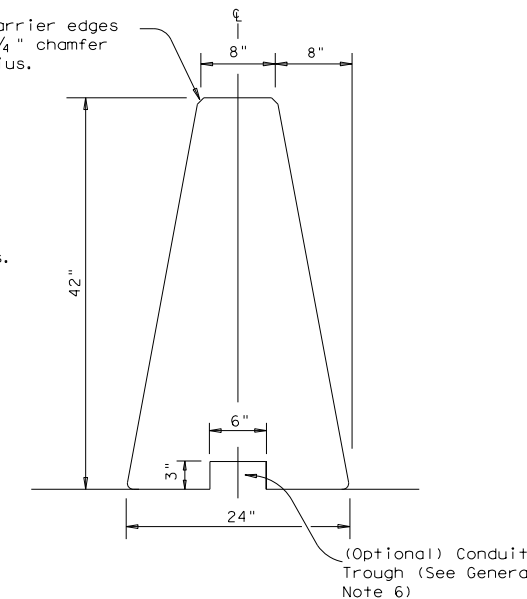
V1 Bar
#4 Rebar

Note:
V1 Bars above the drainage
slots may be bent to accommodate
1 1/2" clear cover as directed
by the Engineer.



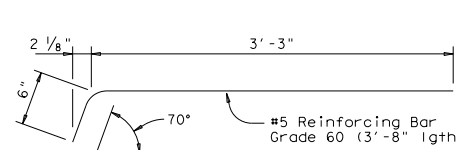
Section A-A
Steel Placement at
(Required) Drainage Slots

All precast barrier edges
shall have a 3/4" chamfer
or tooled radius.



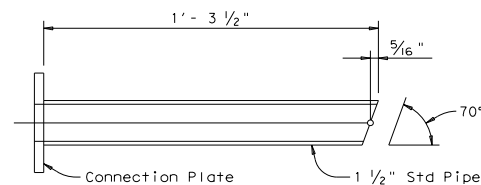
Single Slope Concrete Traffic Barrier

Precast SSCB barrier may be connected to cast-in-place
SSBC. The joint connection "Types" may be used in the
cast-in-place barrier, to match the precast barrier
connection.



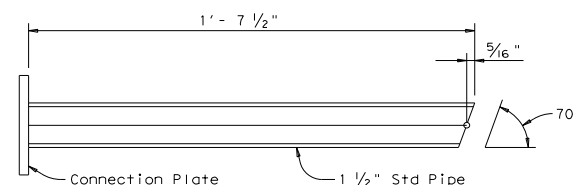
DEFORMED BAR ANCHOR DETAILS

Two (2) Bars required per assembly.
Eight (8) required per Joint.



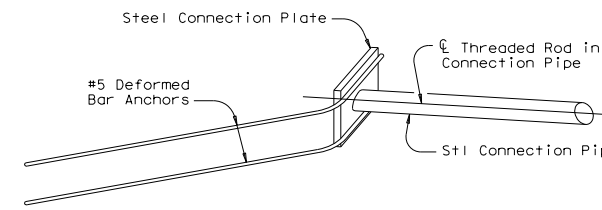
UPPER CONNECTION PIPE DETAILS

One (1) Steel Pipe required per Upper Assembly.
Two (2) required per Joint.



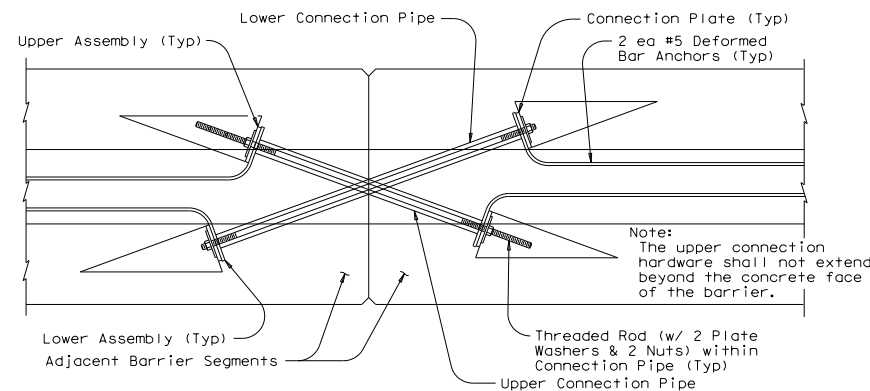
LOWER CONNECTION PIPE DETAILS

One (1) Steel Pipe required per Lower Assembly.
Two (2) required per Joint.



ISOMETRIC OF
TYPICAL WELDED ASSEMBLY

Four (4) #2 Upper & 2 Lower
Assemblies required per Joint.



TYPE X JOINT INSTALLATION DETAIL

Barrier reinforcing and Type X Joint Leave-Out
dimensions not shown for clarity.

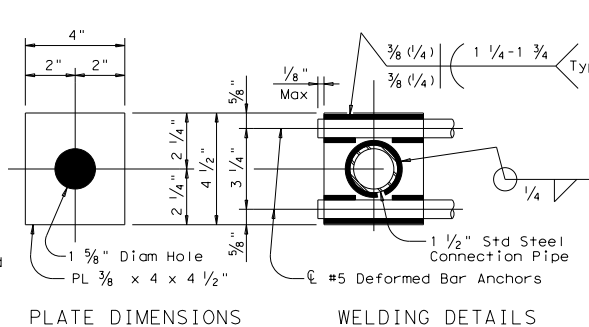
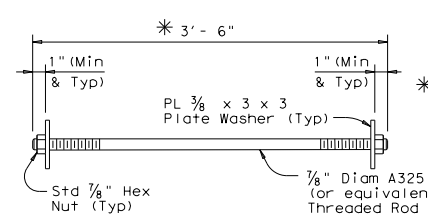


PLATE DIMENSIONS

WELDING DETAILS

CONNECTION PLATE DETAILS

One (1) Plate required per assembly.
Four (4) required per Joint. All steel
fittings for joint Type X shall be galvanized
after fabrication in accordance with Item 445.

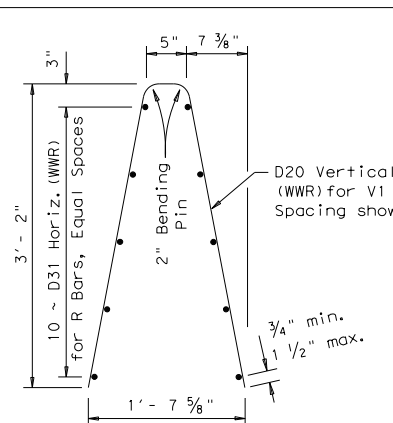


CONNECTION BOLT OR
THREADED ROD DETAIL

Two (2) Threaded Rods (Or Equivalent
Hex Hd. Bolts)
(w/ Two (2) PL 3/8 x 3 x 3
Plate Washers & Two (2) Std Hex Nuts)
required per Joint.

* The connection hardware shall not extend
beyond the concrete face of the barrier.
Hex head bolts may be provided. The proper
length of all hardware should be verified.

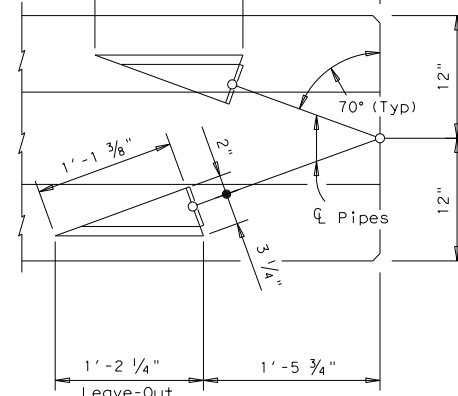
Weight of one precast 30 ft.
(SSCB) segment = Approx. 10.5 Tons
or 717 lbs per ft.



Welded Wire Reinforcement
(WWR) Option for Bars R and V1

(WWR) General Notes

1. Deformed Welded Wire Reinforcement (WWR) shall conform to ASTM A497.
2. Welded wire cage may be cut or bent to accommodate the Type X joint connection and drainage slots, as directed by the Engineer.
3. All reinforcement shall comply with Item 440, "Reinforcing Steel."
4. Combinations of reinforcing steel and WWR will be permitted, as directed by the Engineer. The dimension from the end of the barrier section to the first wire shall not exceed 3".



BARRIER PLAN AT JOINT

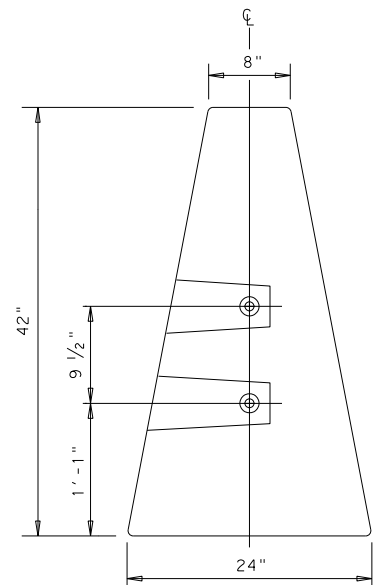
General Notes

1. Concrete shall be Class H with a minimum compressive strength of 3,600 psi.
2. Where used, rebar reinforcement shall be Grade 60 and conform to ASTM A615.
3. Precast barrier length shall be 30 ft. unless otherwise specified on the plans.
4. All precast barrier edges shall have a 3/4" chamfer or a tooled radius.
5. All concrete, reinforcement, joint connection systems, grout etc. as shown, are considered as part of the barrier payment.
6. Conduit trough when required shall be shown elsewhere on the plans, or as directed by the Engineer.
7. Regardless of the method of handling, barrier lifting points shall be approx. 7.5 feet from the ends of the barrier. Lifting devices and attachments to barrier sections shall be approved by the Engineer.
8. Surface finishing and grouting (where required) shall be two parts sand one part cement with enough water to make the mixture plastic. Grouting shall be done in a manner that will assure a smooth surface. Surface finishing shall be considered subsidiary to the various bid items.
9. All steel assemblies shall be galvanized after fabrication in accordance with Item 445, "Galvanizing."

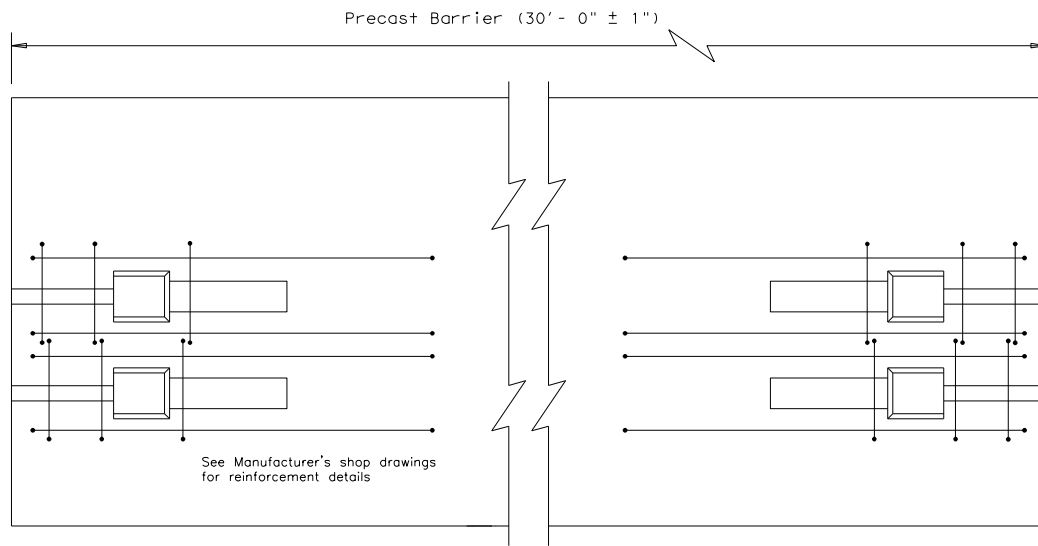
SHEET 1 OF 2

		Design Division Standard	
<h1>SINGLE SLOPE CONCRETE BARRIER</h1> <h2>PRECAST BARRIER (TYPE 1)</h2> <h3>SSCB (2) - 10</h3>			
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REVISIONS			HIGHWAY: US 69
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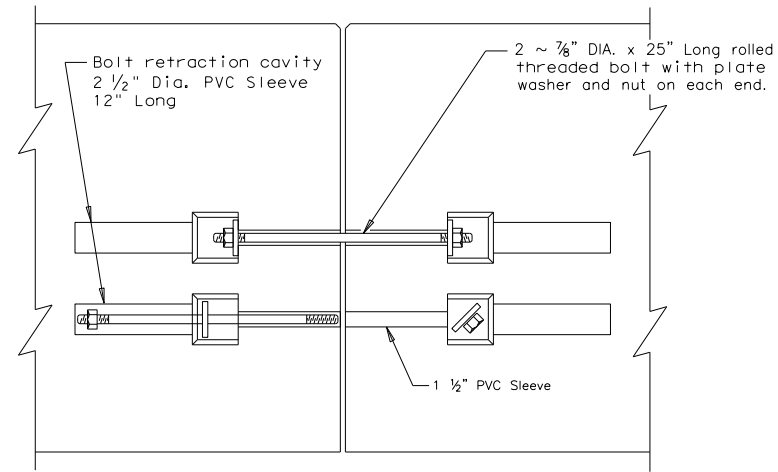
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END VIEW
"QUICK-BOLT" POCKET LOCATIONS

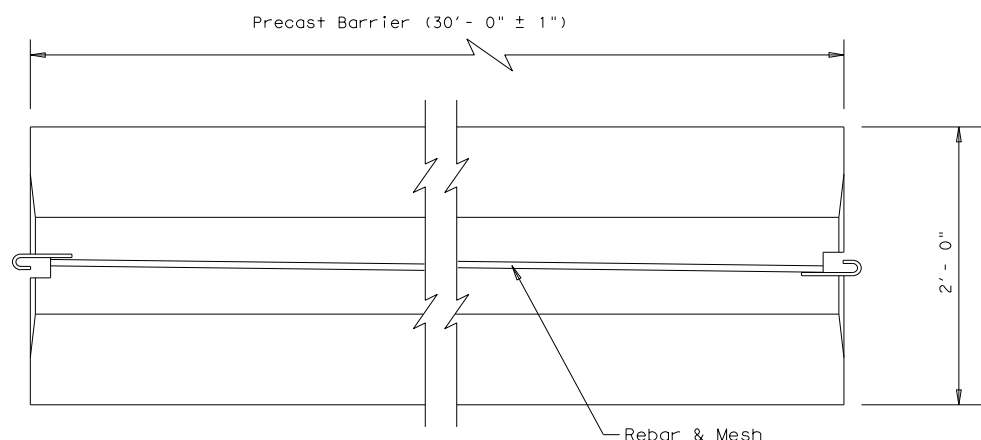


ELEVATION VIEW
"QUICK-BOLT" (SSCB)
See Manufacturer's shop drawing for additional details

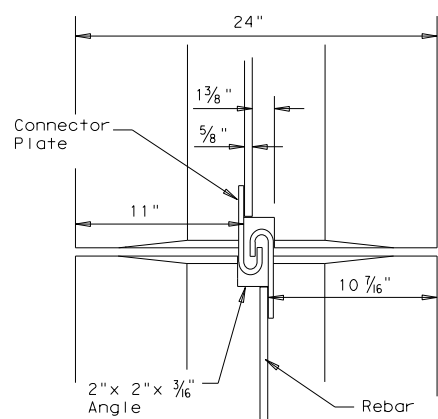


ELEVATION VIEW SHOWING JOINT CONNECTION
"QUICK-BOLT"

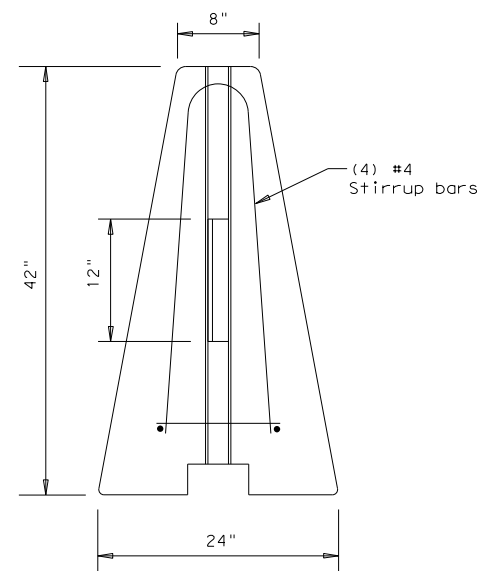
Joint Connection (Type Q)



TOP VIEW
PRECAST (SSCB) WITH J-J HOOKS
See Manufacturer's shop drawing for additional details



VIEW FROM ABOVE
J-J HOOK CONNECTION



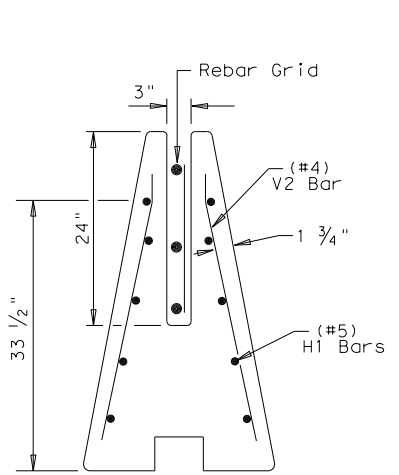
END VIEW

Proprietary Joint Connections (SSCB)

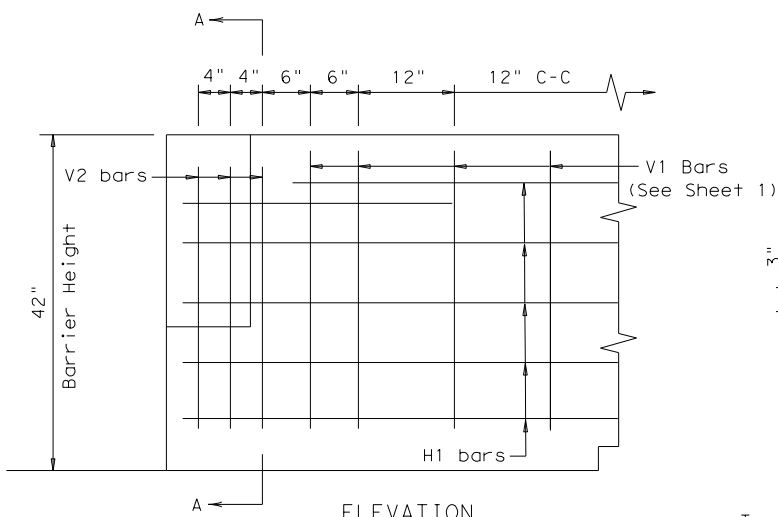
Two proprietary joint connections are acceptable as alternates to the (Type X) connection shown, here on. These joint connections types are:

J-J Hooks by Easi-Set Industries, (800)547-4045
Quick-Bolt by Bexar Concrete, (210)497-3773

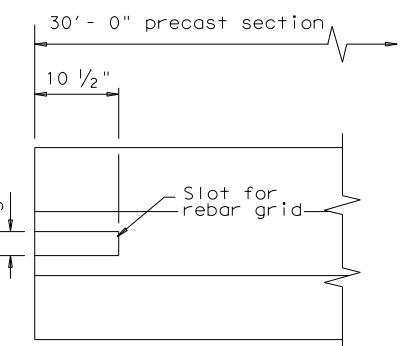
If one of these connection systems are exclusively specified in the plans, prior approval for sole source use must be obtained. Details of the connection components and barrier reinforcement for these systems, will be shown on the manufacturer's shop drawing(s) furnished to the Engineer.



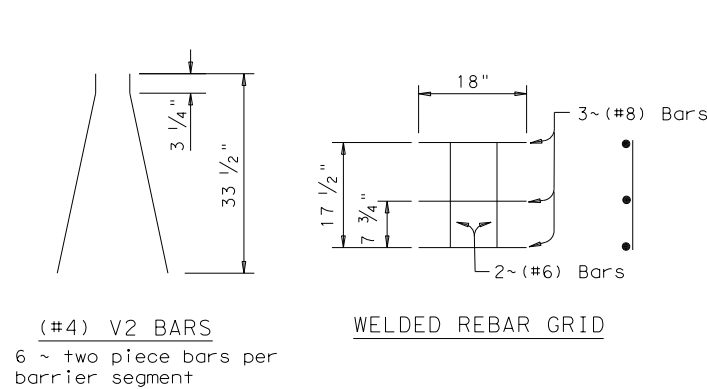
SECTION A-A
Showing (Type R)
Rebar Grid



ELEVATION
V1 Bars (See Sheet 1)



TOP VIEW
JOINT CONNECTION
Typical at both ends of barrier segment



WELDED REBAR GRID

Joint Connection (Type R)

SHEET 2 OF 2

Design Division Standard

SINGLE SLOPE CONCRETE BARRIER

PRECAST BARRIER (TYPE 1)

SSCB (2) - 10

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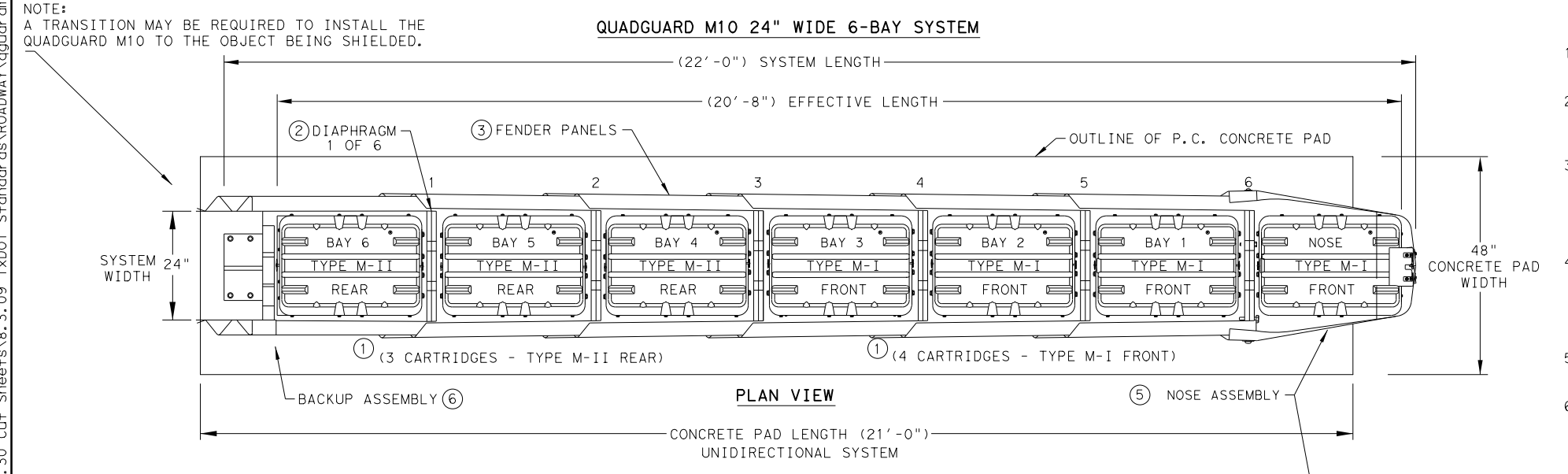
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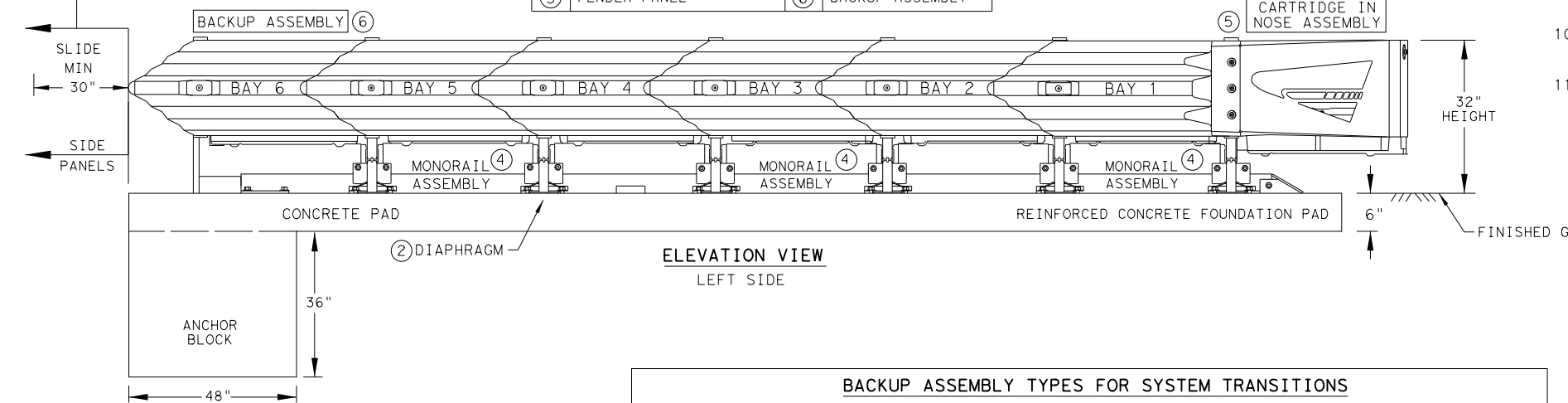
GENERAL NOTES

1. FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: TRINITY HIGHWAY - ENERGY ABSORPTION INC. AT 1 (888) 323-6374.
2. SEE THE RECENT QUADGUARD M10 PRODUCT DESCRIPTION ASSEMBLY MANUAL FOR IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS AND THE DRAWING PACKAGE FOR THE NARROW 24" SYSTEM BEFORE INSTALLING THE QUADGUARD M10 SYSTEM AT ANY GIVEN LOCATION.
3. FOR BI-DIRECTIONAL TRAFFIC: THE PLACEMENT OF THE QUADGUARD M10 IS RESTRICTED. AS BI-DIRECTIONAL TRAFFIC APPROACHES THE REAR OF THE QUADGUARD M10 THE CRASH CUSHION MUST BE PLACED SUCH THAT THE TRAFFIC SIDE OF CRASH CUSHION IS AT LEAST AS FAR FROM ADJACENT TRAVEL LANE LINE AS THE TRAFFIC SIDE OF BARRIER/OBJECT BEING SHIELDED.
4. SYSTEM TRANSITION: APPROPRIATE TRANSITION PANELS OR SIDE PANELS WILL BE REQUIRED FOR PROPER IMPACT PERFORMANCE. THE CORRECT PANEL(S) TO USE WILL DEPEND ON THE DIRECTION OF TRAFFIC FLOW AND WHAT TYPE OF BARRIER OR ROAD FEATURE THE QUADGUARD M10 SYSTEM IS SHIELDING. SEE THE QUADGUARD M10 PRODUCT DESCRIPTION & ASSEMBLY MANUAL FOR FURTHER DETAILS.
5. COMPONENTS FOR THE QUADGUARD M10 BACKUP AND REINFORCING DETAILS ARE SHOWN ON THE QUADGUARD M10 PRODUCT DESCRIPTION & ASSEMBLY MANUAL.
6. CONCRETE PAD SHALL BE 6" MIN. REINFORCED 28MPa @4,000 PSIF (P.C.) OR 8" MIN. NON-REINFORCED 28MPa @4,000 PSIF CONCRETE ROADWAY MEASURING AT LEAST 12'-0" WIDE BY 50'-0" LONG. ANCHOR BLOCK IS NOT REQUIRED WHEN USING 8" CONCRETE PAD INSTALLED AGAINST AN IMMOVABLE STRUCTURE, E.G. CONCRETE WALL.
7. IF THE CROSS-SLOPE VARIES MORE THAN 2% OVER THE LENGTH OF THE SYSTEM, THE CONCRETE PAD WILL REQUIRE LEVELING. MAXIMUM PERMISSIBLE CROSS-SLOPE IS 8%.
8. THE INSTALLATION AREA SHOULD BE FREE OF CURBS, ELEVATED OBJECTS, OR DEPRESSIONS.
9. THE QUADGUARD M10 SYSTEM SHOULD BE INSTALLED APPROXIMATELY PARALLEL WITH THE BARRIER.
10. FOR THE TENSION STRUT BACKUP THE DISTANCE BETWEEN THE BACK OF BACKUP AND THE BARRIER WALL SHOULD NOT EXCEED 7" IN ANY CASE.
11. TXDOT HAS ONLY APPROVED THE 24" WIDE QUADGUARD M10 SYSTEM. THE QUADGUARD M10 PRODUCT DESCRIPTION AND ASSEMBLY MANUAL INCLUDES SYSTEM WIDTH OF 24". ONLY THE 24" SYSTEM IS ALLOWED TO BE INSTALLED ON TEXAS ROADWAYS.



KEY	KEY
① QUADGUARD CARTRIDGE	④ MONORAILS
② DIAPHRAGM	⑤ NOSE ASSEMBLY
③ FENDER PANEL	⑥ BACKUP ASSEMBLY

NOTE: PROVISION SHALL BE MADE FOR REAR FENDER SIDE PANELS TO SLIDE REARWARD UPON IMPACT, 30" MIN.



NOTES:
 CONTACT THE MANUFACTURER WITH SITE SPECIFIC DATA (SSD) FOR CONCRETE PAD AND ANCHOR BLOCK INSTALLATION REQUIREMENTS.

A MANUFACTURER'S DRAWING PACKAGE UNIQUE AND SPECIFIC FOR THE QUADGUARD M10 (N) INSTALLATION AND DETAILED INFORMATION REGARDING THE TYPE OF BACKUP ASSEMBLY FOR THE REQUIRED TRANSITION WILL BE PROVIDED TO THE ENGINEER AND INSTALLER.

6" REINFORCED CONCRETE PAD REQUIRES THE INSTALLATION OF AN ANCHOR BLOCK AS SHOWN ON THE MANUFACTURER'S DRAWING PACKAGE.

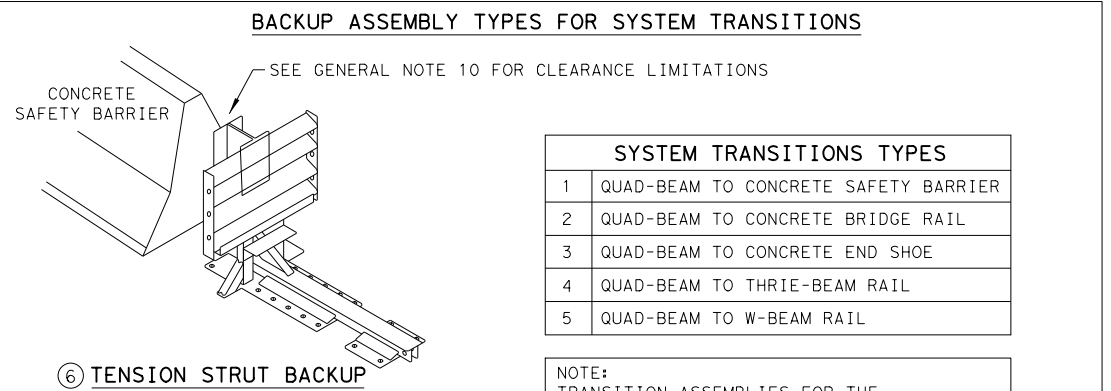
8" NON-REINFORCED CONCRETE PAD MAY NOT REQUIRE AN ANCHOR BLOCK, IF THE PAD IS INSTALLED AGAINST AN IMMOVABLE CONCRETE BACKUP.

CONCRETE PAD AND ANCHOR BLOCK COMBINATIONS SHALL BE CONFIRMED WITH THE MANUFACTURER BASED UPON SITE SPECIFIC DATA (SSD).

NOTE:
 THE QUADGUARD M10 24" WIDE 6-BAY - NARROW SYSTEM HAS BEEN TESTED TO MASH TEST LEVEL 3.

TL-3 MODEL #	QM10024	CARTRIDGE TYPES IN BAYS		
BAYS	6	TYPE-MII	TYPE-MI	TYPE-MI
DIAPHRAGMS	6	3	3	1
WIDTH	24"	REAR	FRONT	NOSE

TL-2 MODEL #	QM7024	CARTRIDGE TYPES IN BAYS		
BAYS	3	TYPE-MII	TYPE-MI	TYPE-MI
DIAPHRAGMS	3	1	2	1
WIDTH	24"	REAR	FRONT	NOSE



SYSTEM TRANSITIONS TYPES	
1	QUAD-BEAM TO CONCRETE SAFETY BARRIER
2	QUAD-BEAM TO CONCRETE BRIDGE RAIL
3	QUAD-BEAM TO CONCRETE END SHOE
4	QUAD-BEAM TO THRIE-BEAM RAIL
5	QUAD-BEAM TO W-BEAM RAIL

NOTE:
 TRANSITION ASSEMBLIES FOR THE QUADGUARD M10 TO THRIE-BEAM OR W-BEAM FENCE REQUIRES I-BEAM POSTS:
 ALL POSTS W6X8.5/9 I-BEAMS (78" LONG).

NOTES:
 CONTACT THE MANUFACTURER WITH SITE SPECIFIC DATA (SSD) FOR THE CORRECT BACKUP ASSEMBLY AND TRANSITION PANELS OR SIDE PANELS USED FOR STANDARD AND BI-DIRECTIONAL INSTALLATIONS: AT DIVIDED-HIGHWAY MEDIANS OR UNDIVIDED ROADWAYS WHERE THE SYSTEM IS EXPOSED TO IMPACTS FROM ONE OR TWO DIFFERENT DIRECTIONS OF TRAFFIC FLOW.

NOTE:
 THIS STANDARD IS A BASIC REPRESENTATION OF THE QUADGUARD M10 SYSTEM AND IS NOT INTENDED TO REPLACE THE PRODUCT DESCRIPTION ASSEMBLY MANUAL.

FOUNDATION & ANCHORING REQUIREMENTS	
FOUNDATION TYPES: A, B, C, & D	
FOUNDATION TYPE:A	REINFORCED CONCRETE PAD OR ROADWAY
FOUNDATION:	6" MINIMUM DEPTH (P.C.C.)
ANCHORAGE:	7" STUDS EMBEDDED 5 1/2" - APPROVED ADHESIVE
FOUNDATION TYPE:B	ASPHALT OVER P.C.C.
FOUNDATION:	3" MIN. (A.C.) OVER 3" MIN. (P.C.C.)
ANCHORAGE:	18" THREADED ROD EMBEDDED 16 1/2" - APPROVED ADHESIVE
FOUNDATION TYPE:C	ASPHALT OVER SUBBASE
FOUNDATION:	6" MIN. (A.C.) OVER 6" MIN. (C.S.)
ANCHORAGE:	18" THREADED ROD EMBEDDED 16 1/2" - APPROVED ADHESIVE
FOUNDATION TYPE:D	ASPHALT ONLY
FOUNDATION:	8" MIN. (A.C.)
ANCHORAGE:	18" THREADED ROD EMBEDDED 16 1/2" - APPROVED ADHESIVE

KEY:
 ASPHALT CONCRETE (A.C.)
 COMPACTED SUBBASE (C.S.)
 PORTLAND CEMENT CONCRETE (P.C.C.)

NOTE: SEE TRINITY'S PRODUCT DESCRIPTION ASSEMBLY MANUAL FOR THE APPROVED ADHESIVE.

IF THE UNIT IS ANCHORED TO ASPHALTIC CONCRETE, IT SHOULD BE RELOCATED TO FRESH, UNDISTURBED ASPHALT AND RE-ANCHORED AFTER EACH IMPACT TO ENSURE ADEQUATE FUTURE PERFORMANCE.

TENSION STRUT BACKUP MAY BE USED IN CONSTRUCTION ZONES ON ASPHALT CONCRETE (A.C.) FOR TEMPORARY USE ONLY.

Design Division Standard

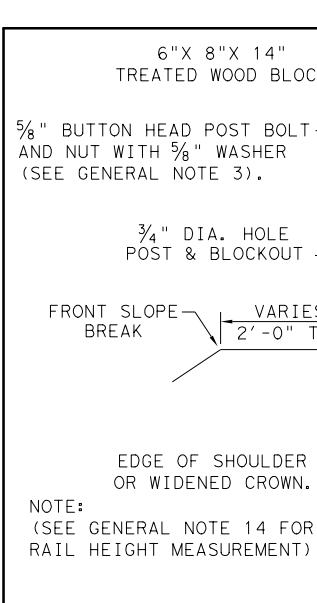
**TRINITY HIGHWAY
 ENERGY ABSORPTION
 QUADGUARD M10
 (MASH TL-3 & TL-2 NARROW-24" ONLY)
 QUADGUARD (M10) (N) - 20**

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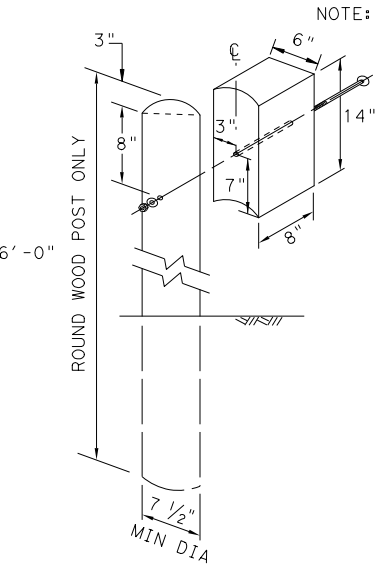
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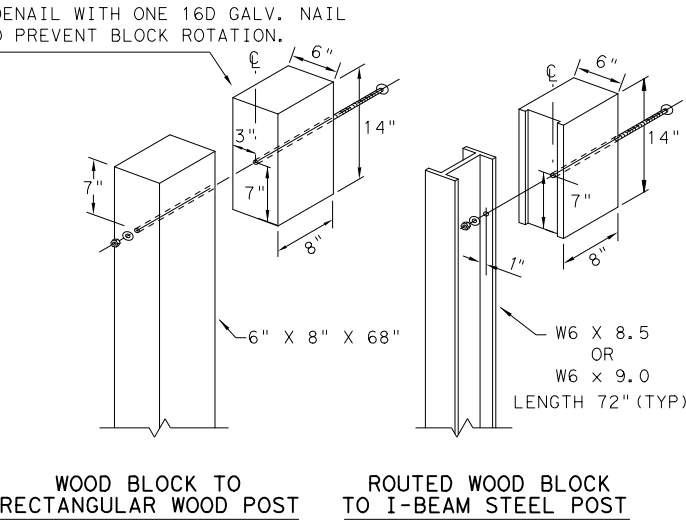
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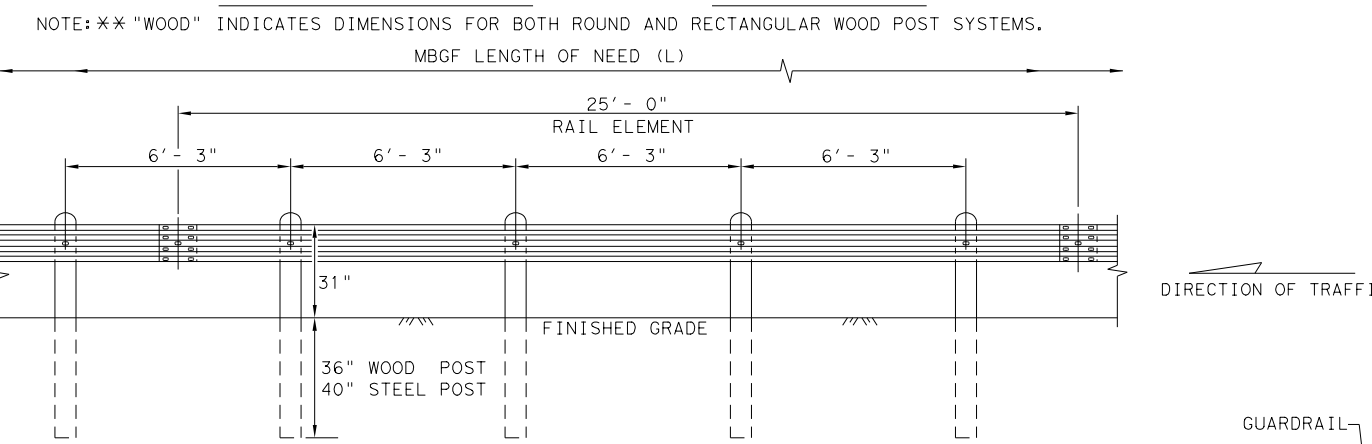
TYPICAL POST PLACEMENT



WOOD BLOCK TO ROUND WOOD POST

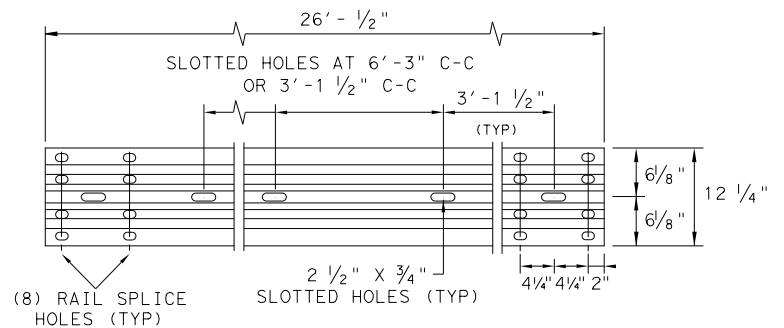


WOOD BLOCK TO RECTANGULAR WOOD POST ROUTED WOOD BLOCK TO I-BEAM STEEL POST



ELEVATION MID-SPAN RAIL SPLICE

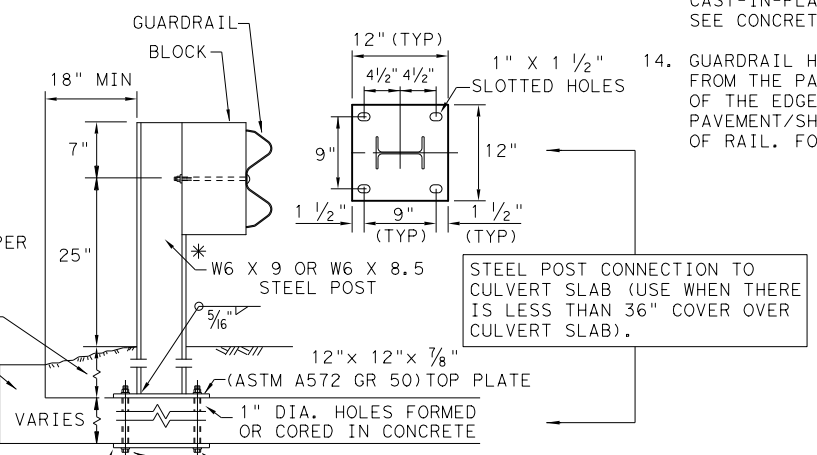
NOTE: **"WOOD" INDICATES DIMENSIONS FOR BOTH ROUND AND RECTANGULAR WOOD POST SYSTEMS.
 SHOWING A 25' - 0" SECTION OF W-BEAM RAIL. (SEE GENERAL NOTE 2)



ELEVATION 25' - 0" (NOM.) W-BEAM SECTION

NOTES: SEE GENERAL NOTE 2 FOR ALLOWABLE RAIL TYPES. SEE RAIL SPLICE DETAIL FOR REQUIRED HARDWARE.

* POST(S) MAY REQUIRE FIELD MODIFICATION TO ENSURE PROPER GUARDRAIL HEIGHT.

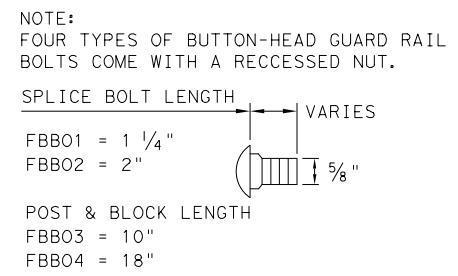


LOW FILL CULVERT POST

NOTE: TRANSITIONS TO BRIDGE RAILS OR TRAFFIC BARRIERS. SEE GF(31)TL3 TR STANDARD FOR HIGH-SPEED TL-3 TRANSITIONS. SEE GF(31)TL2 TR STANDARD FOR LOW-SPEED TL-2 TRANSITIONS.

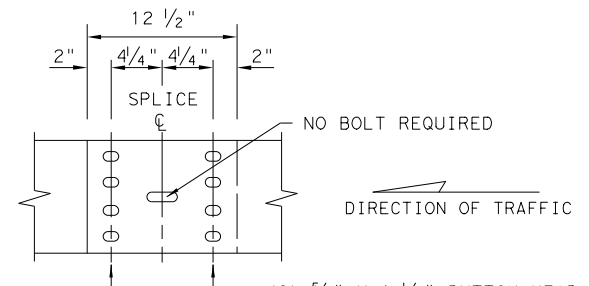
- NOTE: TWO INSTALLATION OPTIONS.
- 1. **BOLT-THROUGH OPTION:** REQUIRES A 6" MIN. SLAB THICKNESS. 7/8" DIA (ASTM A449) HEAVY HEX BOLTS WITH TWO HARDENED WASHER EACH AND HEAVY HEX NUTS. NOTE: BOLT LENGTH = SLAB PLUS 2 1/4" MIN.
 - 2. **EPOXY ANCHOR OPTION:** THIS OPTION MAY ONLY BE USED IF THE CULVERT SLAB IS 9" MIN. THICK. THREADED ANCHOR RODS MUST BE 7/8" DIA. ASTM A449 OR A193 GRADE B7 WITH HEAVY HEX NUT, AND ONE HARDENED WASHER EACH. EMBED ANCHOR RODS 6" WITH HILTI HIT RE 500 EPOXY ADHESIVE. OTHER TYPE III CLASS C EPOXY ADHESIVES MEETING THE REQUIREMENTS OF DMS-6100, "EPOXIES AND ADHESIVES", MAY BE USED IF IT CAN BE DEMONSTRATED THAT THEY MEET OR EXCEED THE STRENGTH OF HILTI HIT RE 500 WITH THE SAME EMBEDMENT DEPTH AND THREADED ROD DIA. FOLLOW THE MANUFACTURER'S REQUIREMENTS FOR INSTALLING EPOXIED THREADED RODS. EXTEND RODS 1/4" MIN. BEYOND NUT.

NOTE: CULVERTS OF 25 FT. OR LESS, SEE GF(31)LS STANDARD FOR "LONG SPAN" OPTION.



BUTTON HEAD BOLT

NOTE: SEE GENERAL NOTE 3 FOR SPLICE & POST BOLT DETAILS.



MID-SPAN RAIL SPLICE DETAIL

NOTE: GF(31), MID-SPAN RAIL SPLICES ARE REQUIRED WITH 6'-3" POST SPACINGS.

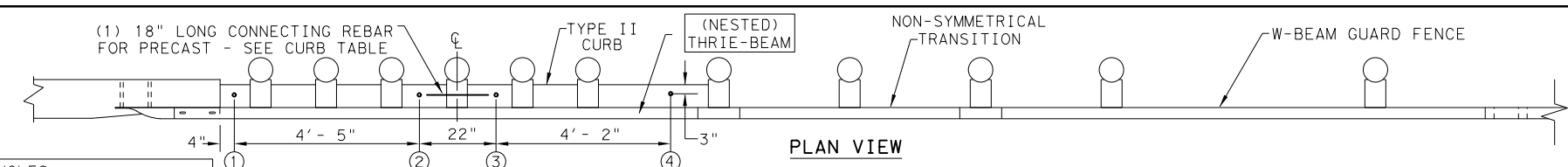
GENERAL NOTES

- THE TYPE OF POST (ROUND WOOD POST, RECTANGULAR WOOD POST, OR STEEL POST) WILL BE AS SHOWN IN THE PLANS. THE EXACT POSITION OF MBGF SHALL BE SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. STEEL POSTS TO BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING."
- RAIL ELEMENTS SHALL MEET THE REQUIREMENTS OF ITEM 540, "METAL BEAM GUARD FENCE" EXCEPT AS MODIFIED IN THE PLANS. THE CONTRACTOR MAY FURNISH RAIL ELEMENTS OF 25'-0", OR 12'-6" (NOM.) LENGTHS. RAIL ELEMENTS MAY HAVE SLOTTED HOLES AT 3'-1 1/2" C-C OR 6'-3" C-C. A SPECIAL LENGTH OF RAIL MAY BE MANUFACTURED TO ACCOMMODATE THE DOWNSTREAM ANCHOR TERMINAL (DAT) AND THE TRANSITION SECTIONS OF GUARDRAIL.
- BUTTON HEAD "POST BOLTS & NUTS" SHALL MEET THE REQUIREMENTS OF (ASTM A307), AND SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND 5/8" WASHER (FWC16d) AND NOT MORE THAN 1" BEYOND IT. TRIM REMAINING BOLT LENGTH TO MEET REQUIRED LENGTH.
- FITTINGS (BOLTS, NUTS, AND WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING." FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
- CROWN SHALL BE WIDENED TO ACCOMMODATE THE METAL BEAM GUARD FENCE.
- THE LATERAL APPROACH TO THE GUARD FENCE, SHALL HAVE A MAXIMUM SLOPE OF 1V:10H.
- IF SHOWN ELSEWHERE IN THE PLANS OR AS DIRECTED BY THE ENGINEER, THE GUARD FENCE MAY BE FLARED AT A RATE OF 25:1 OR FLATTER.
- UNLESS OTHERWISE SHOWN IN THE PLANS, GUARD FENCE PLACED IN THE VICINITY OF CURBS SHALL BE POSITIONED SO THAT THE FACE OF CURB IS LOCATED DIRECTLY BELOW OR BEHIND THE FACE OF THE RAIL. RAIL PLACED OVER CURBS SHALL BE INSTALLED SO THAT THE POST BOLT IS LOCATED APPROXIMATELY 25 INCHES ABOVE THE GUTTER PAN OR EDGE OF SHOULDER.
- APPLICATIONS IN SOLID ROCK ARE ONLY ALLOWED WITH STEEL POSTS. IF SOLID ROCK IS ENCOUNTERED WITHIN 0 TO 18" OF THE FINISHED GRADE, DRILL A 24" DIA. HOLE, 24" INTO THE ROCK. IF SOLID ROCK IS ENCOUNTERED BELOW 18", DRILL A 12" DIA. HOLE, 12" INTO THE ROCK OR TO THE STANDARD EMBEDMENT DEPTH, WHICHEVER MAYBE LESS. ANY EXCESS POST LENGTH, AFTER MEETING THESE DEPTHS, MAY BE FIELD CUT TO ENSURE PROPER GUARDRAIL MOUNTING HEIGHT. BACKFILL WITH COARSE AGGREGATE MATERIAL.
- POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.
- SPECIAL FABRICATION WILL BE REQUIRED AT INSTALLATION LOCATIONS HAVING A CURVATURE OF LESS THAN 150 FT. RADIUS.
- UNLESS OTHERWISE SHOWN IN THE PLANS, A COMPOSITE MATERIAL BLOCK THAT MEETS THE REQUIREMENTS OF DMS-7210, "COMPOSITE MATERIAL POSTS AND BLOCKS FOR METAL BEAM GUARD FENCE" MAY BE SUBSTITUTED FOR BLOCKS OF SIMILAR DIMENSIONS. THE CONSTRUCTION DIVISION, TxDOT MAINTAINS A MATERIAL PRODUCER LIST (MPL) FOR PRODUCERS OF MATERIALS CONFORMING TO DMS-7210 ONLY PRODUCERS ON THE MPL MAY FURNISH COMPOSITE MATERIAL BLOCKS.
- FOR THE LOW FILL CULVERT OPTION, POSTS LOCATED PARTIALLY OR WHOLLY BETWEEN PRECAST BOX CULVERT UNITS, THE USE OF A CAST-IN-PLACE CONCRETE CLOSURE BETWEEN BOXES IS REQUIRED. THE LENGTH OF THE CAST-IN-PLACE CONCRETE CLOSURE SHALL ACCOMMODATE THE PLACEMENT OF THE LOW FILL CULVERT OPTION. SEE CONCRETE CLOSURE DETAILS ON BRIDGE STANDARD SCP-MD.
- GUARDRAIL HEIGHT MEASUREMENT: WHEN THE GUARDRAIL IS LOCATED ABOVE PAVEMENT, MEASURE THE HEIGHT FROM THE PAVEMENT TO THE TOP OF THE W-BEAM RAIL. WHEN THE GUARDRAIL IS LOCATED UP TO 2 FT. OFF OF THE EDGE OF PAVEMENT OR FOR A PAVEMENT OVERLAY, USE A 10-FOOT STRAIGHTEDGE TO EXTEND THE PAVEMENT/SHOULDER SLOPE TO THE BACK OF RAIL, MEASURE FROM THE BOTTOM OF STRAIGHTEDGE TO THE TOP OF RAIL. FOR GUARDRAIL LOCATED DOWN A 10:1 SLOPE, MEASURE FROM THE NOMINAL TERRAIN.

			Design Division Standard	
<h2>METAL BEAM GUARD FENCE</h2> <h3>TL-3 MASH COMPLIANT</h3> <h1>GF(31)-19</h1>				
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	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	194	

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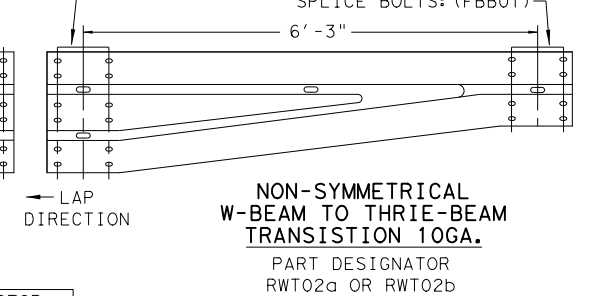
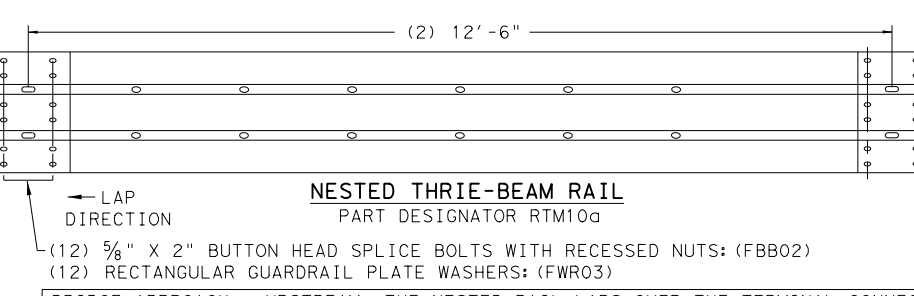
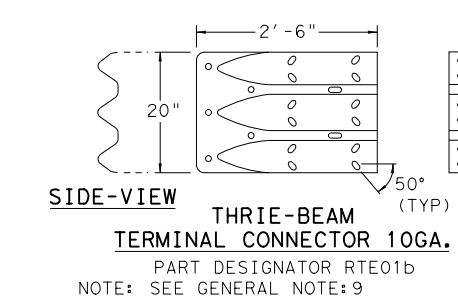
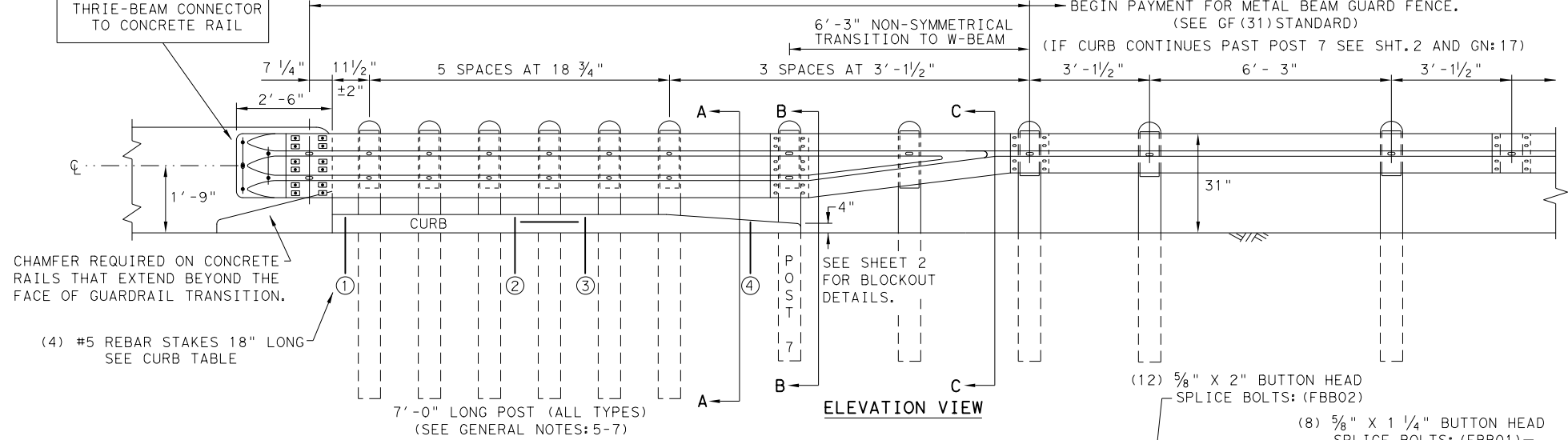
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- (5) 1" DIA. HOLES.
- (5) 7/8" DIA. HEAVY HEX HEAD BOLTS (FACING TRAFFIC SIDE) (ASTM F3125 GR A325 OR A449).
- (10) 1 3/4" O.D. WASHER UNDER EACH HEX BOLT HEAD AND NUT.
- (5) 7/8" DIA. HEAVY HEX NUTS (ASTM A194 OR A563).

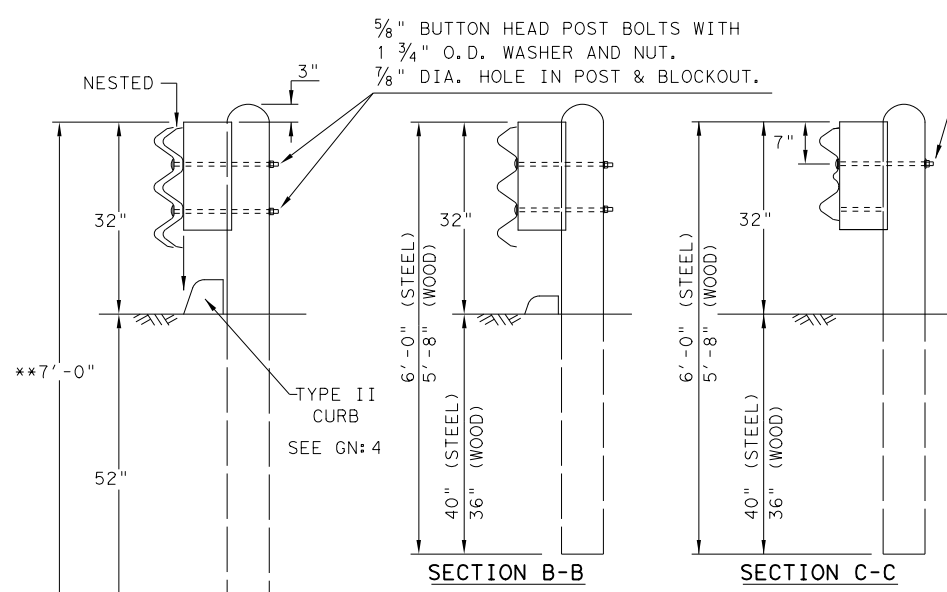
NOTE: HEAVY HEX BOLT LENGTH WILL VARY DEPENDING ON WIDTH CONCRETE RAIL, LEAVE 1" OF BOLT LENGTH PAST THE 7/8" HEX NUT. TRIM AS REQUIRED.

NOTE: CURB IS A REQUIRED COMPONENT FOR THE TRANSITION TO FUNCTION PROPERLY. SEE GENERAL NOTES: 2-4 AND 16-17.



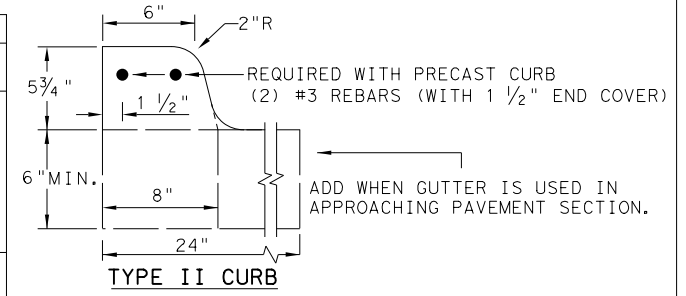
BRIDGE APPROACH - UPSTREAM: THE NESTED RAIL LAPS OVER THE TERMINAL CONNECTOR. PLATE WASHERS ARE INSTALLED UNDER THE SPLICE NUTS AGAINST INSIDE OF CONNECTOR.

BRIDGE EXIT - DOWNSTREAM: THE TERMINAL CONNECTOR LAPS OVER THE NESTED RAIL. PLATE WASHERS ARE INSTALLED UNDER THE BOLT HEAD AGAINST OUTSIDE OF CONNECTOR.



THRIE-BEAM TERMINAL - CURB TABLE	
PRECAST CURB FULL LENGTH EQUALS 12'-2" THE PRECAST CURB MAY BE FORMED INTO TWO SECTIONS.	
CURB (1) LENGTH 5'-8"	CURB (2) LENGTH 6'-6"
TAPER CURB (2) TO A HEIGHT OF 4" AT POST 7	
CONNECTING PRECAST CURB SECTIONS (1) & (2):	
FORM OR CORE 1" DIA. HOLE 9" LONG INTO EACH CURB END. USE (1) #5 GR.60 REBAR 18" LONG TO CONNECT BOTH CURBS.	
SECURING PRECAST OR CAST-IN-PLACE TO FINISHED GRADE *:	
FORM OR CORE (4) 1" DIA. HOLES, SEE PLAN AND ELEVATION VIEWS FOR HOLE LOCATIONS. DRIVE (4) #5 GR.60 REBAR STAKES 18" LONG INTO THE GROUND AND 1/2" BELOW TOP OF CURB.	
FILL HOLES WITH APPROVED GROUT MIXTURE.	

* NOTES: NOT NEEDED FOR CAST-IN-PLACE. SEE TYPE II CURB DETAIL FOR REBAR AND COVER REQUIREMENTS. PERCUSSION DRILLING IS NOT PERMITTED WITH: TYPE II CURB, BRIDGE RAIL OR CONCRETE TRAFFIC RAIL.



NOTE: OPTIONS FOR TYPE II CURB:
 1. PRECAST
 2. CAST-IN-PLACE

GENERAL NOTES

1. CONTACT THE DESIGN DIVISION FOR DRAINAGE CUT OUT OPTIONS NEEDED WITHIN THE CURB SECTION OF THE THRIE-BEAM TRANSITION. (512) 416-2678
2. CONCRETE CURB MAY BE CAST-IN-PLACE OR PRECAST AS SHOWN ON THIS SHEET. WHEN USED IN CONJUNCTION WITH THE THRIE-BEAM TRANSITIONS, CURB SHALL BE TYPE II (5-3/4" HEIGHT); SEE CURRENT CCG STANDARD SHEET FOR FURTHER DETAILS. IF OTHER CURB HEIGHTS ARE SHOWN IN THE PLANS IN CONJUNCTION WITH THE TRANSITION, THE CURB HEIGHT MAY BE FROM 4" TO 8" WITH A RELATIVELY VERTICAL FACE. CONCRETE CURB SHALL BE CONTINUOUS TO THE SEVENTH POST UNLESS OTHERWISE SHOWN IN THE PLANS. SEE GENERAL NOTE: 17 FOR CIRCUMSTANCES WHERE CURB CONTINUES PAST POST 7.
3. CONCRETE CURB TYPE II SUBSIDIARY TO "METAL BEAM GUARD FENCE TRANSITION". IF NO ADDITIONAL CURB IS INDICATED BEYOND THE TRANSITION, THEN ANY CURB HEIGHT GREATER THAN 4" WILL BE TAPERED DOWN BEGINNING AT THE LAST 7 FT. POST TO A MAXIMUM HEIGHT OF 4" AT POST 7. IF SHOWN ELSEWHERE IN THE PLANS, ADDITIONAL CURB UNDERNEATH GUARDRAIL WILL BE PAID FOR BY THE LINEAR FOOT.
4. UNLESS OTHERWISE SHOWN IN THE PLANS, TRANSITIONS SHALL BE PLACED WITH THE BLOCKOUT FACE IN FRONT OF OR DIRECTLY ABOVE THE CURB FACE. SEE SECTION A-A.
5. FOR ROUND WOOD POST SYSTEMS, ALL ROUND WOOD POSTS SHALL BE 7 1/2" DIA. MINIMUM THROUGHOUT THE THRIE-BEAM TRANSITION.
6. THE TYPE OF POST (ROUND WOOD POST, RECTANGULAR WOOD POST OR STEEL POST) WILL BE AS SHOWN IN THE PLANS. REFER TO GF(31) STANDARD SHEET.
7. THE POST LENGTH SHALL BE MARKED ON ALL 7'-0" LONG POSTS BY THE MANUFACTURER. THE MARK SHALL BE LOCATED WITHIN THE TOP 1 FT. REGION OF THE POST, AT LEAST 5/8" IN HEIGHT, AND VISIBLE AFTER INSTALLATION. WOODEN POSTS SHALL BE MARKED WITH A BRAND, AND STEEL POSTS WITH A STENCIL BEFORE GALVANIZING.
8. POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.
9. RAIL ELEMENTS SHALL MEET THE REQUIREMENTS OF ITEM 540, "METAL BEAM GUARD FENCE" EXCEPT AS MODIFIED ON THE PLANS. THE THRIE-BEAM TERMINAL CONNECTOR AND THE THRIE-BEAM TRANSITION TO W-BEAM SHALL BE OF THE SAME MATERIAL, BUT SHALL NOT BE LESS THAN 10 GAUGE. CONTRACTOR SHALL VERIFY THAT THE LOCATIONS OF BOLT HOLES MATCH THOSE IN THE THRIE-BEAM TERMINAL CONNECTOR PRIOR TO ORDERING MATERIALS.
10. BUTTON HEAD "POST BOLTS & NUTS" SHALL MEET THE REQUIREMENTS OF (ASTM A307), AND SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND 5/8" WASHER (FWC16a) AND NOT MORE THAN 1" BEYOND IT. TRIM REMAINING BOLT LENGTH TO MEET REQUIRED LENGTH.
11. FITTINGS (BOLTS, NUTS, AND WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
12. CROWN SHALL BE WIDENED TO ACCOMMODATE TRANSITIONS.
13. WHERE SOLID ROCK IS ENCOUNTERED, CONTACT THE DESIGN DIVISION FOR ADDITIONAL GUIDANCE. (512) 416-2678
14. UNLESS OTHERWISE SHOWN IN THE PLANS, A COMPOSITE MATERIAL BLOCK THAT MEETS THE REQUIREMENTS OF DMS-7210, "COMPOSITE MATERIAL POSTS AND BLOCKS FOR METAL BEAM GUARD FENCE" MAY BE SUBSTITUTED FOR BLOCKS OF SIMILAR DIMENSIONS. TxDOT'S MATERIALS AND TESTS DIVISION MAINTAINS A MATERIAL PRODUCER LIST (MPL) FOR PRODUCERS OF MATERIALS CONFORMING TO DMS-7210. ONLY PRODUCERS ON THE MPL CAN FURNISH COMPOSITE MATERIAL BLOCKS.
15. REFER TO GF(31) STANDARD SHEET & BRIDGE RAILING DETAILS FOR ADDITIONAL DETAILS.
16. THE INSTALLATION OF THE TYPE II CURB IS CRITICAL FOR THE PERFORMANCE OF THE THRIE-BEAM TRANSITION SYSTEM. THE CURB PREVENTS (VEHICLE WHEEL SNAGGING) AT THE CONCRETE RAIL AND IS REQUIRED TO MEET MASH CRASH TEST CRITERIA.
17. IF CURB EXTENDS BEYOND POST 7, 25' OF NESTED W-BEAM GUARDRAIL SHALL BE INSTALLED BEYOND THE PAY LIMITS OF THRIE-BEAM TRANSITION SECTION, (SEE SHT.2). PAYMENT FOR THIS 25' SECTION WILL BE BY LINEAR FOOT, PAY ITEM "0540 6XXX MTL W-BEAM GD FEN (NESTED) (TIM POST)" OR "540 6XXX MTL W-BEAM GD FEN (NESTED) (STEEL POST)" AS APPLICABLE FOR POST TYPE. SEE SHT.2 FOR ADDITIONAL INFORMATION.

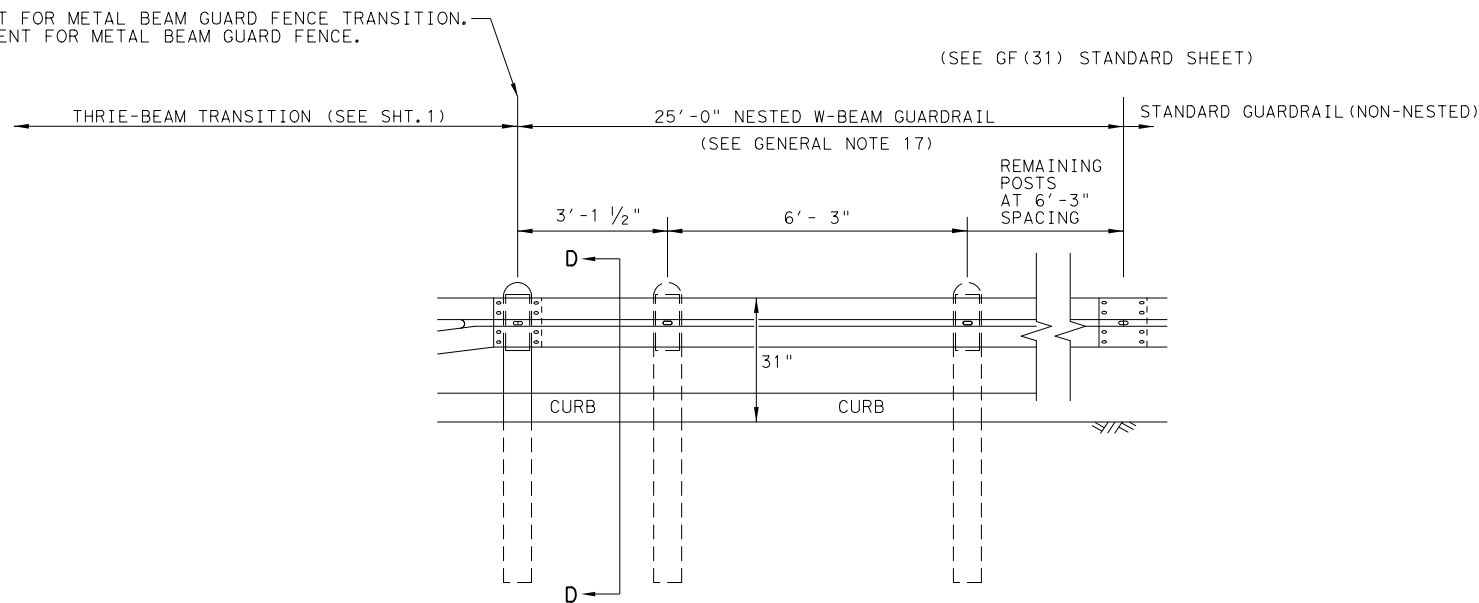
HIGH-SPEED TRANSITION
 SHEET 1 OF 2

		Design Division Standard		
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FILE: gf31tr+1320.dgn	DN: TxDOT	CK: KM	DW: VP	CK: CGL/AG
© TxDOT: NOVEMBER 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	196	

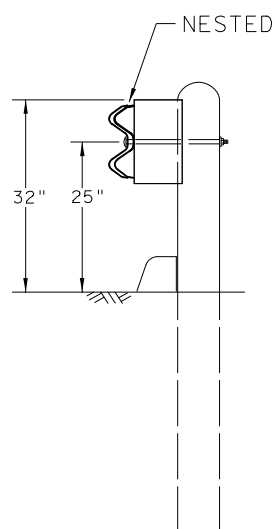
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REQUIRED ALTERNATIVE FOR CONTINUOUS CURB EXTENDING PAST POST 7 (SEE SHT. 1 GENERAL NOTE 17)

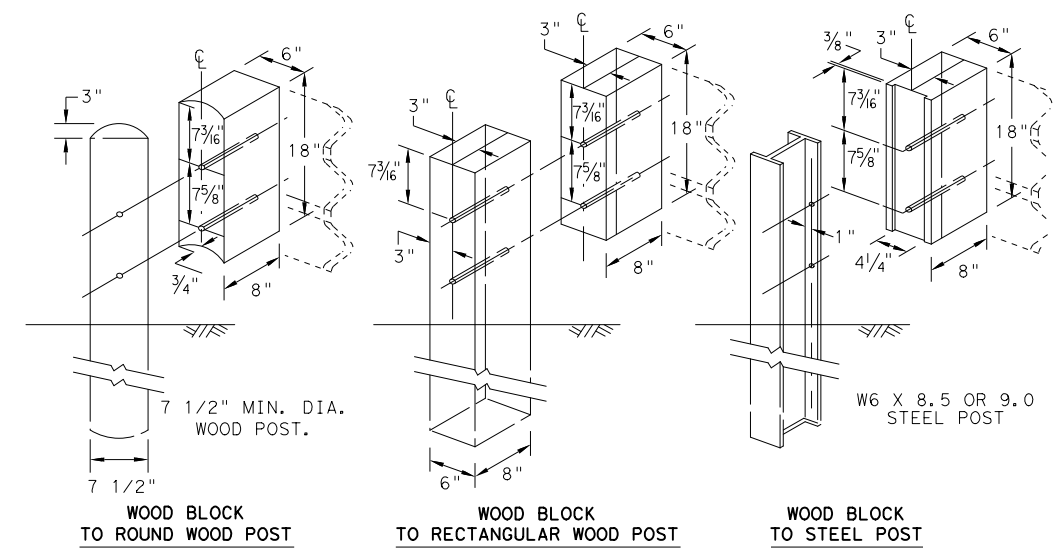
END PAYMENT FOR METAL BEAM GUARD FENCE TRANSITION.
 BEGIN PAYMENT FOR METAL BEAM GUARD FENCE.



ELEVATION VIEW



SECTION D-D



THRIE BEAM TRANSITION BLOCKOUT DETAILS

HIGH-SPEED TRANSITION

SHEET 2 OF 2

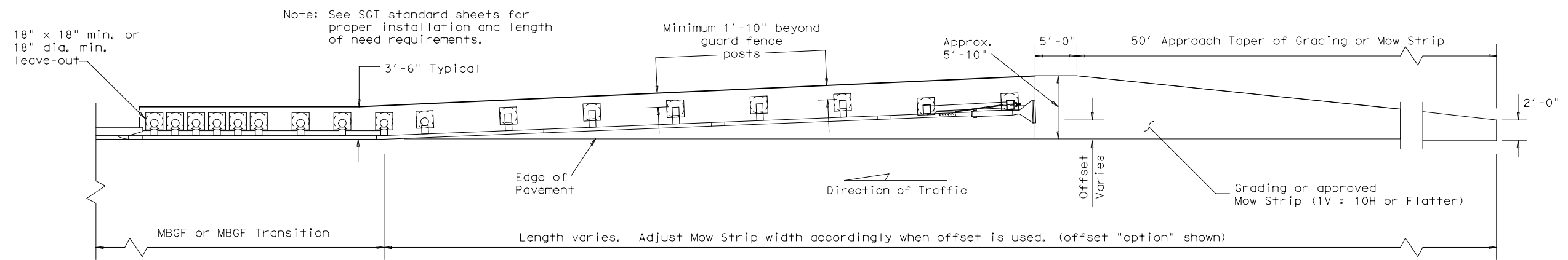
Design Division Standard

METAL BEAM GUARD FENCE
 THRIE-BEAM TRANSITION
 TL-3 MASH COMPLIANT
 GF (31) TR TL3-20

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©TXDOT: NOVEMBER 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	196A	

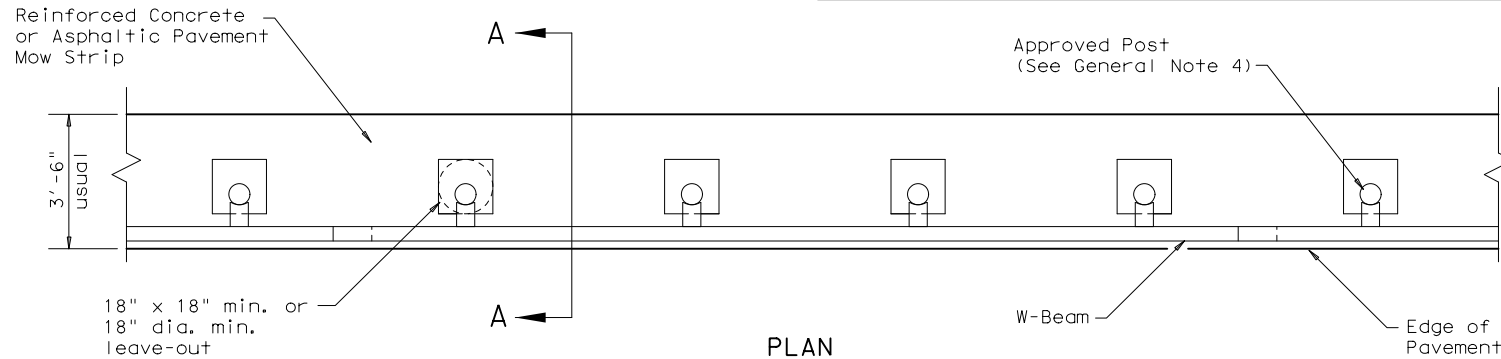
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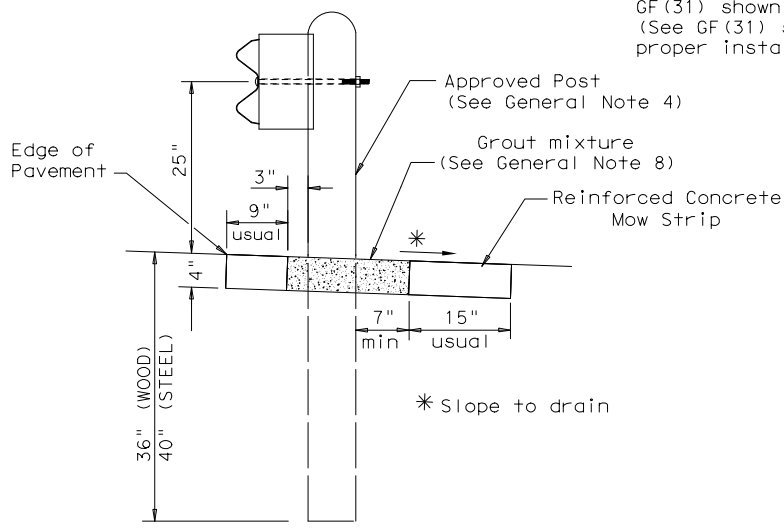
GRADING AND MOW STRIP AT GUARDRAIL END TREATMENTS

Note: Site Condition(s)
 Site conditions may exist where grading is required for the proper installation of metal guard fence and end treatments.
 Approach grading or mow strip may be decreased or eliminated, as directed by the Engineer.



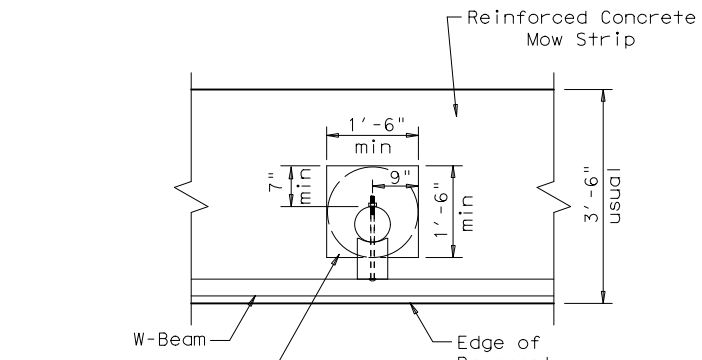
PLAN

GF(31) shown with Mow Strip
 (See GF(31) standard sheet for proper installation)



SECTION A-A

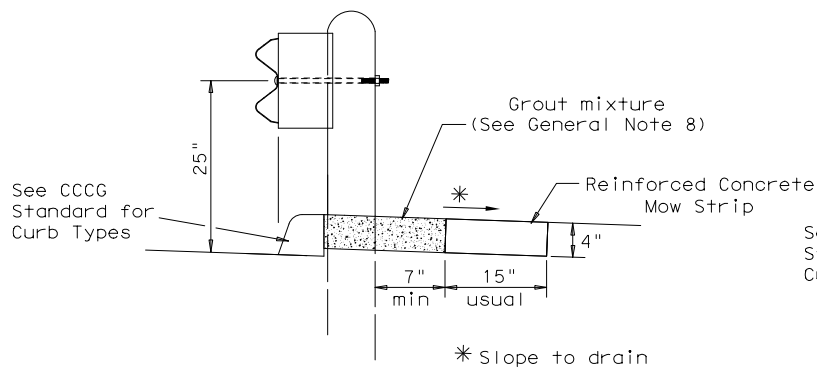
Typical



MOW STRIP DETAIL

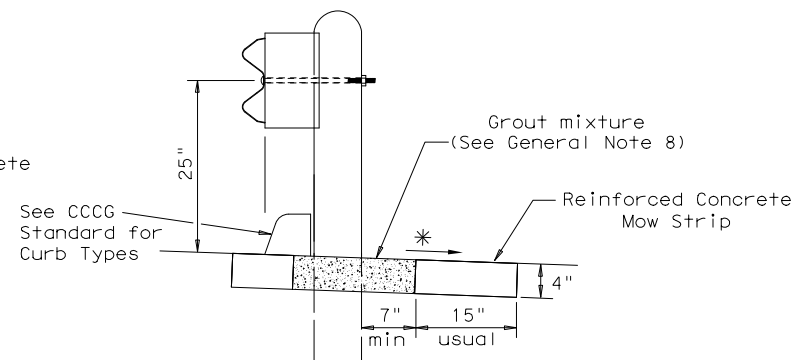
Reinforced Concrete Mow Strip with 18" x 18" Square or 18" Dia. minimum leave-out.

- GENERAL NOTES**
1. This mow strip design is for use with metal beam guard fence, guard fence transitions, and guard fence end treatments. See applicable GF(31) MBGF or GF(31) Transition Standard sheet for additional information.
 2. Mow strips shall be reinforced concrete with (wire mesh or synthetic fiber), as shown on the plans and will be paid for under the pertinent bid item. Reinforced concrete shall be placed in accordance with Item 432, "Riprap." The use of the synthetic fiber in lieu of steel reinforcing is acceptable, provided the fiber producer is on the Department Material Producer List (MPL), maintained by TxDOT, Construction Division.
 3. The leave-out behind the post shall be a minimum of 7".
 4. Only steel (W6 x 8.5 or W6 x 9.0), or 7 1/2" Dia. round wood posts are acceptable for use in the mow strip. See GF(31) Standard for additional details.
 5. Other curb placement options may be used. Curbs are not considered part of the mow strip and will be paid for under other pertinent bid item.
 6. Thickness of the mow strip will be 4".
 7. The limits of payment for reinforced concrete will include leave-outs for the posts.
 8. The leave-outs shall be filled with a Grout mixture consisting of: 2719 pounds sand, 188 pounds Type 1 or II cement, and 550 pounds of water per cubic yard, with a 28-day compressive strength of approximately 230 psi or less. Provide grout with a consistency that will flow into and completely fill all voids. Due to auger size, larger leave-out dimensions are acceptable from both an impact performance and maintenance repair standpoint (Suggested Maximum leave-out of 20"). Payment for furnishing and placing the grout mixture will be subsidiary to the pay item of riprap mow strip.



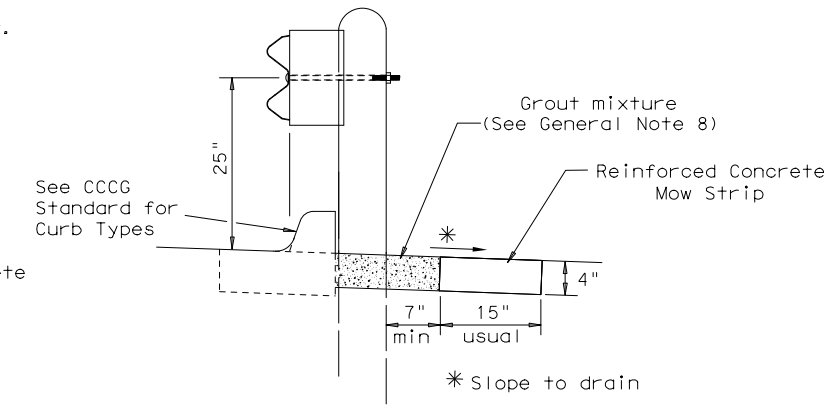
CURB OPTION (1)

This option will increase the post embedment throughout the system.



CURB OPTION (2)

Curb shown on top of mow strip



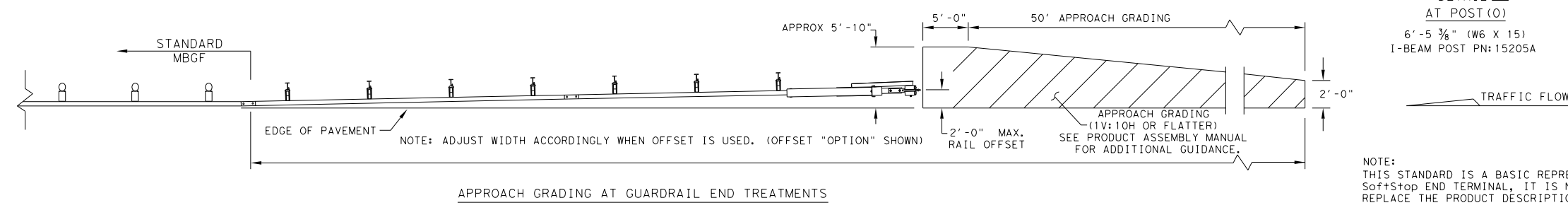
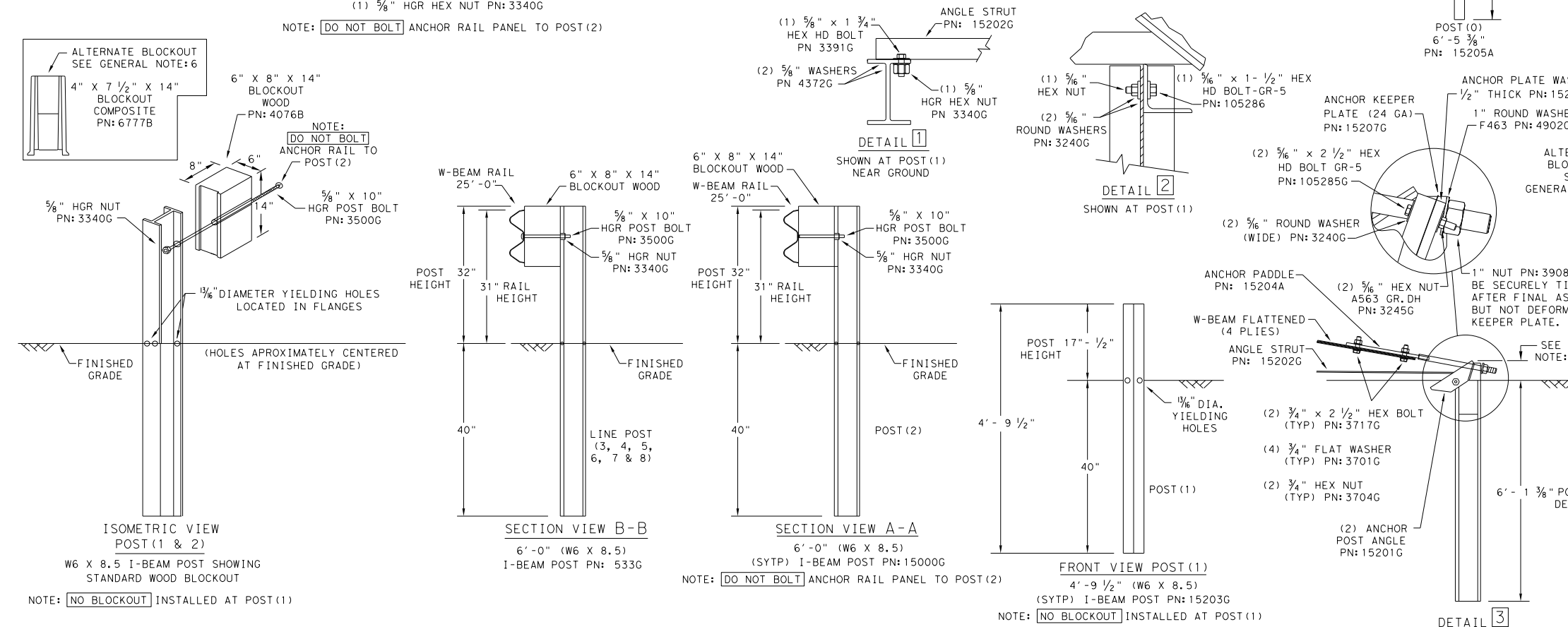
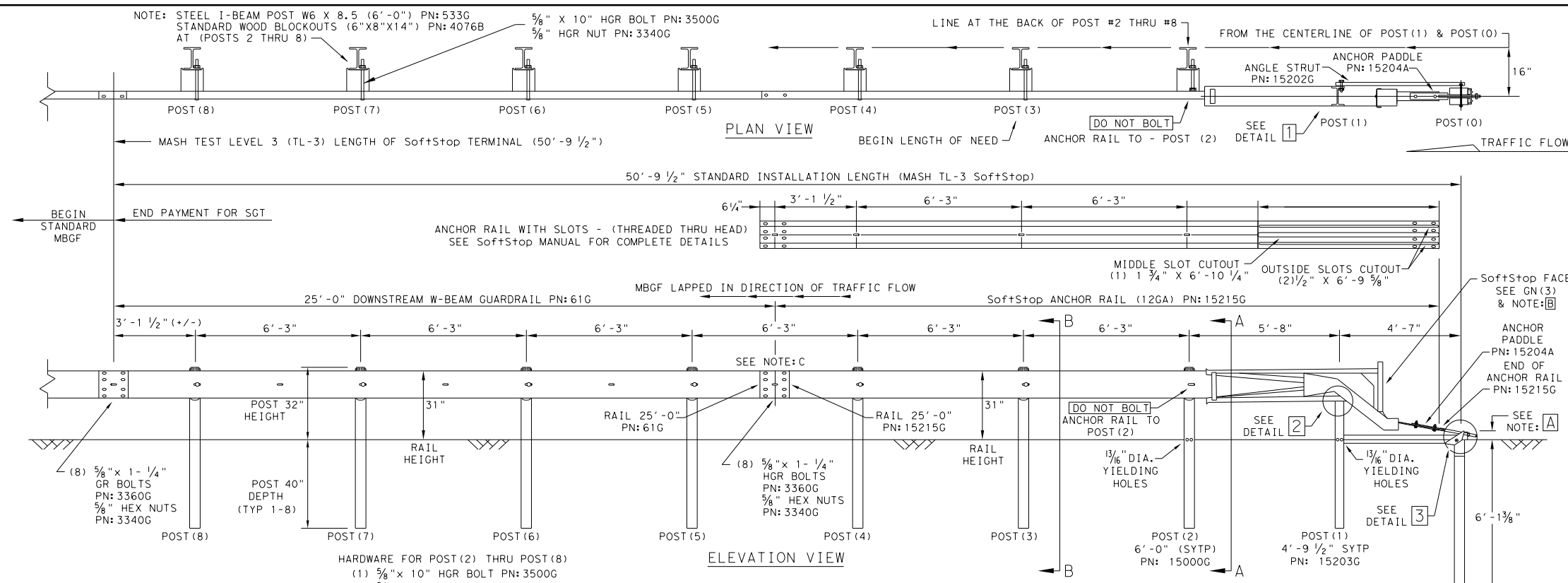
CURB OPTION (3)



METAL BEAM GUARD FENCE (MOW STRIP) TL-3 MASH COMPLIANT GF (31) MS-19

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© TXDOT: NOVEMBER 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	197	

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- GENERAL NOTES**
- FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: TRINITY HIGHWAY AT 1(888)323-6374, 2525 N. STEMMONS FREEWAY, DALLAS, TX 75207
 - FOR INSTALLATION, REPAIR AND MAINTENANCE REFER TO THE; SoftStop END TERMINAL, PRODUCT DESCRIPTION ASSEMBLY MANUAL. PN:620237B
 - APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER" ON THE FRONT FACE OF THE DEVICE PER MANUFACTURER'S RECOMMENDATIONS. OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
 - FOR POST (LEAVE-OUT) INSTALLATION AND GUIDANCE SEE TxDOT'S LATEST ROADWAY MOW STRIP STANDARD.
 - HARDWARE (BOLTS, NUTS, & WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
 - A COMPOSITE MATERIAL BLOCKOUT THAT MEETS THE REQUIREMENTS OF DMS-7210, MAY BE SUBSTITUTED FOR BLOCKOUTS OF SIMILAR DIMENSIONS. SEE CONSTRUCTION DIVISION MATERIAL PRODUCER LIST (MPL) FOR CERTIFIED PRODUCERS.
 - IF SOLID ROCK IS ENCOUNTERED SEE THE MANUFACTURER'S INSTALLATION MANUAL AND REFER TO THE LATEST ROADWAY MBGF STANDARD FOR INSTALLATION GUIDANCE.
 - POSTS SHALL NOT BE SET IN CONCRETE.
 - IT IS ACCEPTABLE TO INSTALL THE SoftStop IMPACT HEAD PARALLEL TO THE GRADE LINE OR WITH AN UPWARD TILT.
 - DO NOT ATTACH THE SoftStop SYSTEM DIRECTLY TO A RIGID BARRIER.
 - UNDER NO CIRCUMSTANCES SHALL THE GUARDRAIL WITHIN THE SoftStop SYSTEM BE CURVED.
 - A FLARE RATE OF UP TO 25:1 MAY BE USED TO PREVENT THE TERMINAL HEAD FROM ENCRoaching ON THE SHOULDER. THE FLARE MAY BE DECREASED OR ELIMINATED FOR SPECIFIC INSTALLATIONS, IF DIRECTED BY THE ENGINEER.

NOTE: A THE INSTALLATION HEIGHT OF FULLY ASSEMBLED ANCHOR POST WILL VARY FROM 3-3/4" MIN. TO 4" MAX. ABOVE FINISHED GRADE.

NOTE: B PART PN:5852B RIGHT-SIDE (HIGH INTENSITY REFLECTIVE SHEETING) PART PN:5851B LEFT-SIDE (HIGH INTENSITY REFLECTIVE SHEETING)

NOTE: C W-BEAM SPLICE LOCATED BETWEEN LINE POST (4) AND LINE POST (5) GUARDRAIL PANEL 25'-0" PN:61G ANCHOR RAIL 25'-0" PN:15215G LAP GUARDRAIL IN DIRECTION OF TRAFFIC FLOW.

PART	QTY	MAIN SYSTEM COMPONENTS
620237B	1	PRODUCT DESCRIPTION ASSEMBLY MANUAL (LATEST REV.)
15208A	1	SoftStop HEAD (SEE MANUAL FOR RIGHT-LEFT APPROACH)
15215G	1	SoftStop ANCHOR RAIL (12GA) WITH CUTOUT SLOTS
61G	1	SoftStop DOWNSTREAM W-BEAM RAIL (12GA) (25'-0")
15205A	1	POST #0 - ANCHOR POST (6'-5 3/8")
15203G	1	POST #1 - (SYTP) (4'-9 1/2")
15000G	1	POST #2 - (SYTP) (6'-0")
533G	6	POST #3 THRU #8 - I-BEAM (W6 X 8.5) (6'-0")
4076B	7	BLOCKOUT - WOOD (ROUTED) (6" X 8" X 14")
6777B	7	BLOCKOUT - COMPOSITE (4" X 7 1/2" X 14")
15204A	1	ANCHOR PADDLE
15207G	1	ANCHOR KEEPER PLATE (24 GA)
15206G	1	ANCHOR PLATE WASHER (1/2" THICK)
15201G	2	ANCHOR POST ANGLE (10" LONG)
15202G	1	ANGLE STRUT
HARDWARE		
4902G	1	1" ROUND WASHER F436
3908G	1	1" HEAVY HEX NUT A563 GR.DH
3717G	2	3/4" X 2 1/2" HEX BOLT A325
3701G	4	3/4" ROUND WASHER F436
3704G	2	3/4" HEAVY HEX NUT A563 GR.DH
3360G	16	5/8" X 1 1/4" W-BEAM RAIL SPLICE BOLTS HGR
3340G	25	5/8" W-BEAM RAIL SPLICE NUTS HGR
3500G	7	5/8" X 10" HGR POST BOLT A307
3391G	1	5/8" X 1 3/4" HEX HD BOLT A325
4489G	1	5/8" X 9" HEX HD BOLT A325
4372G	4	5/8" WASHER F436
105285G	2	5/8" X 2 1/2" HEX HD BOLT GR-5
105286G	1	5/8" X 1 1/2" HEX HD BOLT GR-5
3240G	6	5/8" ROUND WASHER (WIDE)
3245G	3	5/8" HEX NUT A563 GR.DH
5852B	1	HIGH INTENSITY REFLECTIVE SHEETING - SEE NOTE: B



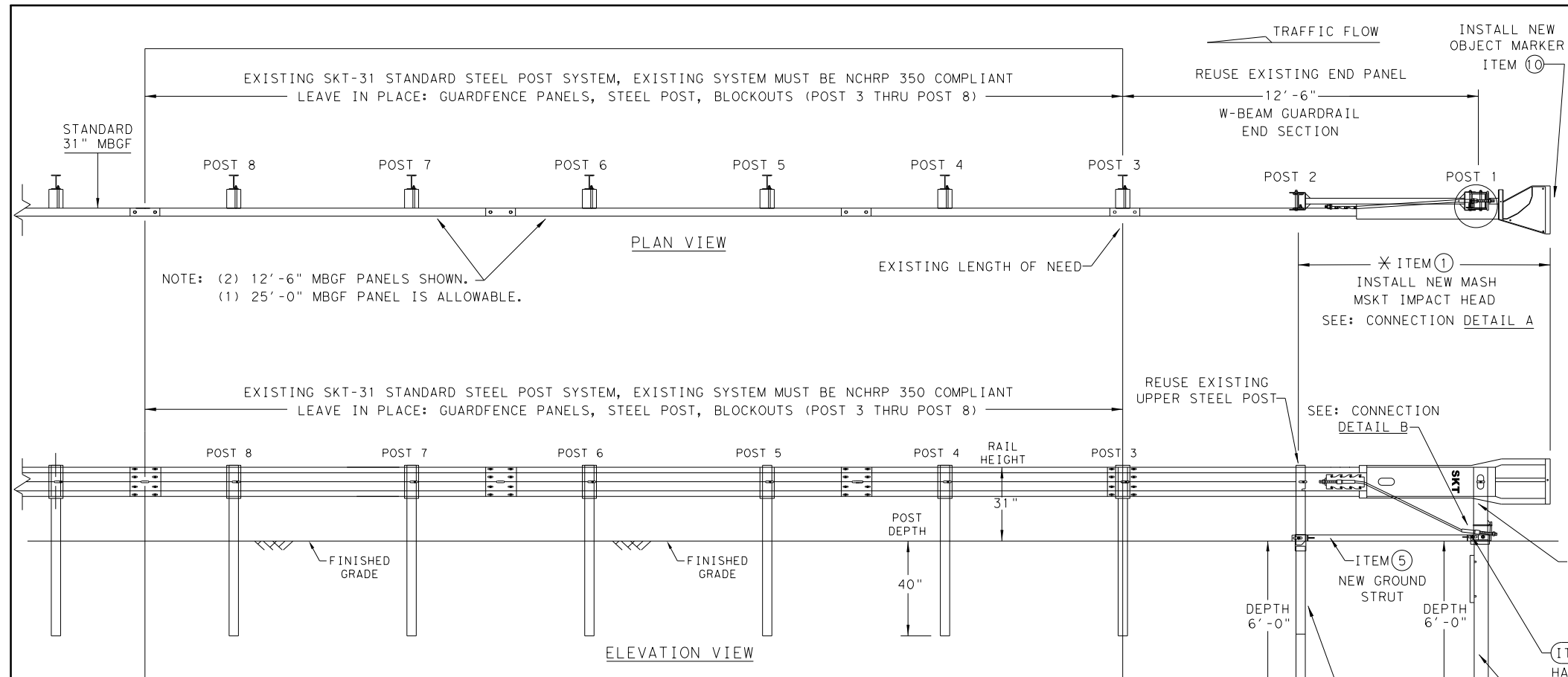
**TRINITY HIGHWAY
SOFTSTOP END TERMINAL
MASH - TL-3
SGT (10S) 31-16**

FILE: sgt10s3116	DN: TxDOT	CK: KM	DW: VP	CK: MB/VP
©TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	198	

NOTE: THIS STANDARD IS A BASIC REPRESENTATION OF THE SoftStop END TERMINAL, IT IS NOT INTENDED TO REPLACE THE PRODUCT DESCRIPTION ASSEMBLY MANUAL.

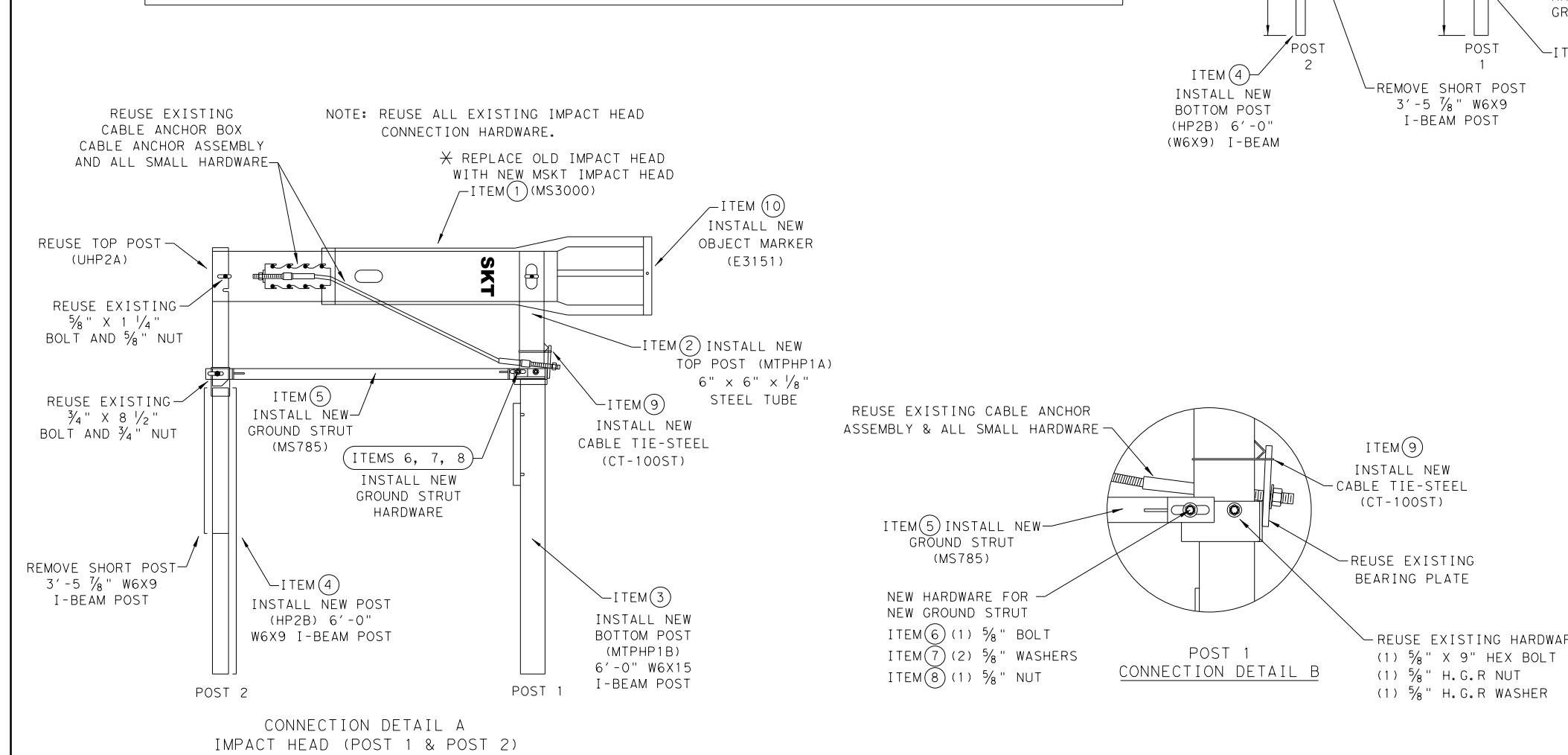
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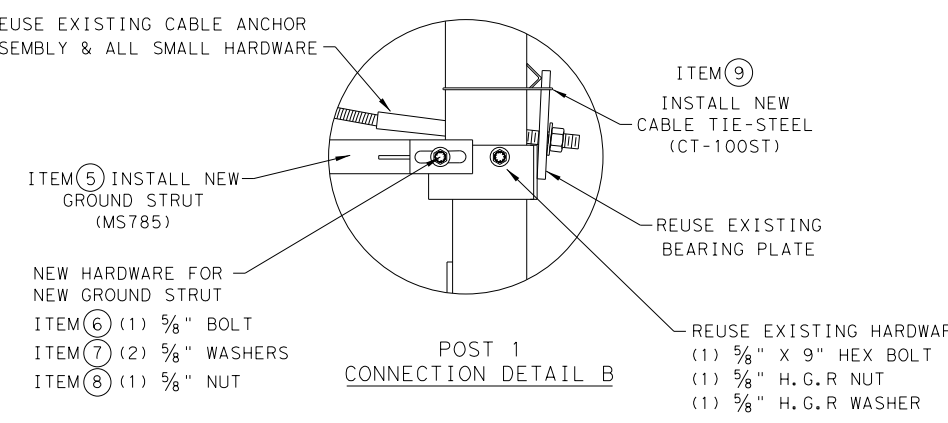
GENERAL NOTES

- FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: ROAD SYSTEMS, INC. (432)263-2435. 3616 OLD HOWARD COUNTY AIRPORT, BIG SPRING, TX 79720
- FOR INSTALLATION, REPAIR AND MAINTENANCE REFER TO; MSKT END TERMINAL, PRODUCT DESCRIPTION ASSEMBLY MANUAL (PUBLICATION-062717).
- APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER" ON THE FRONT FACE OF THE DEVICE PER MANUFACTURER'S RECOMMENDATIONS. OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
- FOR POST (LEAVE-OUT) INSTALLATION AND GUIDANCE SEE TXDOT'S LATEST ROADWAY MOW STRIP STANDARD.
- HARDWARE (BOLTS, NUTS, & WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
- IF SOLID ROCK IS ENCOUNTERED IN THE AREA OF (POST 1) AND / OR (POST 2) CONTACT THE MANUFACTURER, AND REFER TO THE LATEST ROADWAY MBGF STANDARD FOR INSTALLATION GUIDANCE.
- POSTS SHALL NOT BE SET IN CONCRETE.
- THE EXISTING SKT 31" STANDARD STEEL POST SYSTEM MUST BE THOROUGHLY INSPECTED, AND DETERMINED TO BE INTACT, AND FREE OF ANY DAMAGE OR DEFECTS BEFORE RETROFITTING. THIS INSPECTION INCLUDES COMPLETING THE MSKT RETROFIT INSPECTION CHECKLIST FOR THE EXISTING SKT 31" STEEL POST NCHRP 350 SYSTEM. ALL EXISTING, AND REUSABLE PARTS MUST BE FREE OF ANY DAMAGE FOR A MASH COMPLIANT RETROFIT.
- UNDER NO CIRCUMSTANCES SHALL THE GUARDRAIL WITHIN THE MSKT SYSTEM BE CURVED.
- A FLARE RATE OF UP TO 25:1 MAY BE USED TO PREVENT THE TERMINAL HEAD FROM ENCRoACHING ON THE SHOULDER. THE FLARE MAY BE DECREASED OR ELIMINATED FOR SPECIFIC INSTALLATIONS, IF DIRECTED BY THE ENGINEER.
- SPECIAL DRIVING CAP TO BE USED WHEN DRIVING (LOWER POSTS 1 & 2) TO PREVENT DAMAGE TO THE WELDED PLATES.



ITEMS	QTY	MAIN SYSTEM COMPONENTS	PART NUMBERS
*	1	MSKT IMPACT HEAD	MS3000
	1	POST 1 - TOP (6" X 6" X 1/8" TUBE)	MTPHP1A
	1	POST 1 - BOTTOM (6' W6X15)	MTPHP1B
	1	POST 2 - ASSEMBLY BOTTOM (6' W6X9)	HP2B
	1	GROUND STRUT	MS785
	1	5/8" X 9" HEX BOLT (GRD A449)	B580904A
	2	5/8" WASHERS	W050
	1	5/8" H.G.R NUT	N050
	1	CABLE TIE-STEEL	CT-100ST
*	1	OBJECT MARKER 18" X 18"	E3151

COMPONENTS REQUIRED TO RETROFIT: EXISTING 31" STEEL POST (NCHRP 350) SKT GUARDRAIL TERMINAL WITH THE NEW 31" (MASH COMPLIANT MSKT IMPACT HEAD).
 * IF THE EXISTING NCHRP 350 (31" STEEL POST SKT) ALREADY HAS THE MSKT IMPACT HEAD THERE IS NO NEED TO REPLACE THE IMPACT HEAD OR OBJECT MARKER AS LONG AS IT IS NOT DAMAGED.



NOTE: THIS STANDARD IS A BASIC REPRESENTATION OF THE EXISTING; SKT END TERMINAL RETROFITTED TO THE MSKT MASH COMPLIANT TERMINAL, IT IS NOT INTENDED TO REPLACE THE PRODUCT DESCRIPTION ASSEMBLY MANUAL.

Design Division Standard

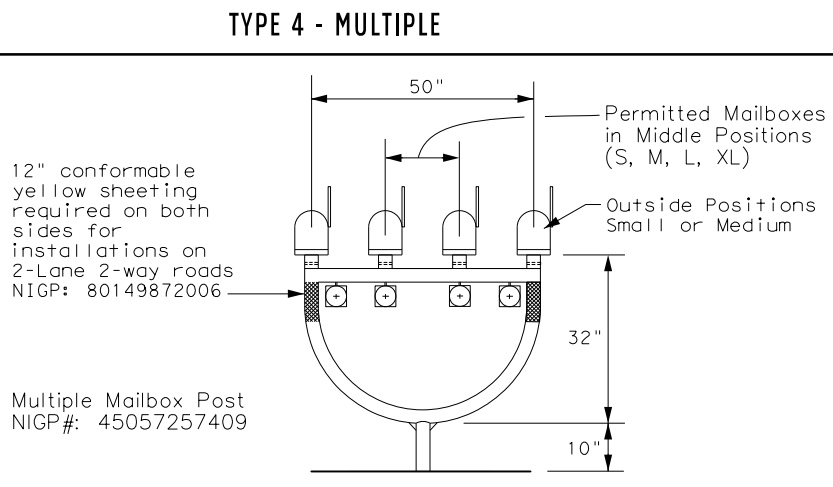
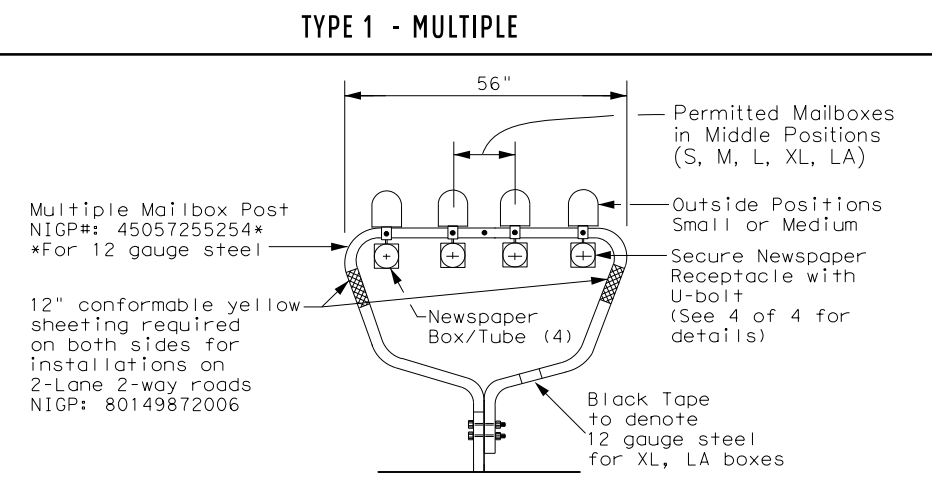
RETROFIT STANDARD SKT 31" STEEL POST SYSTEM TO MASH MSKT SGT (13S) 31-18

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© TXDOT: APRIL 2018	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	198A	

DATE: FILE:

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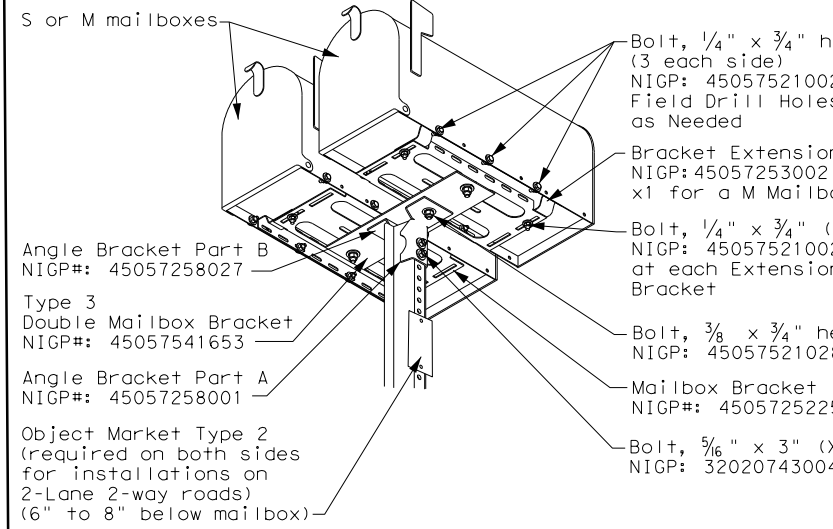
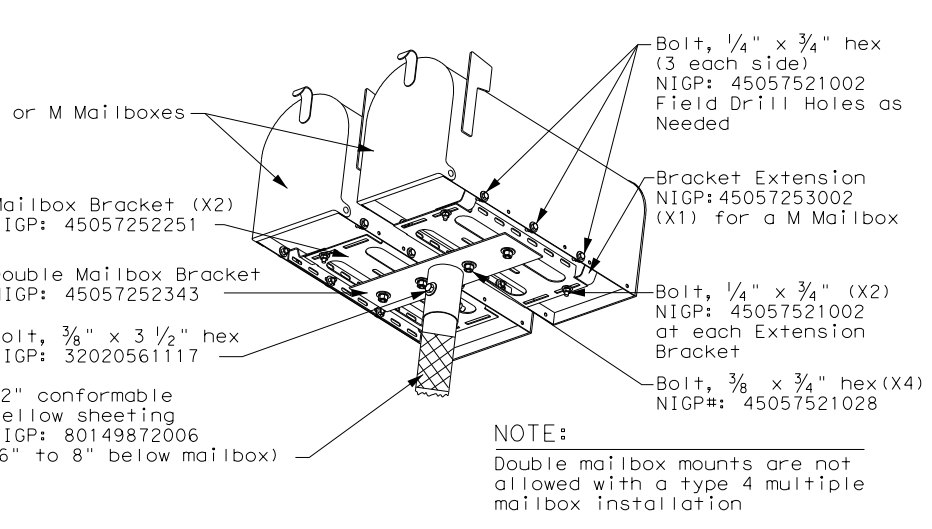
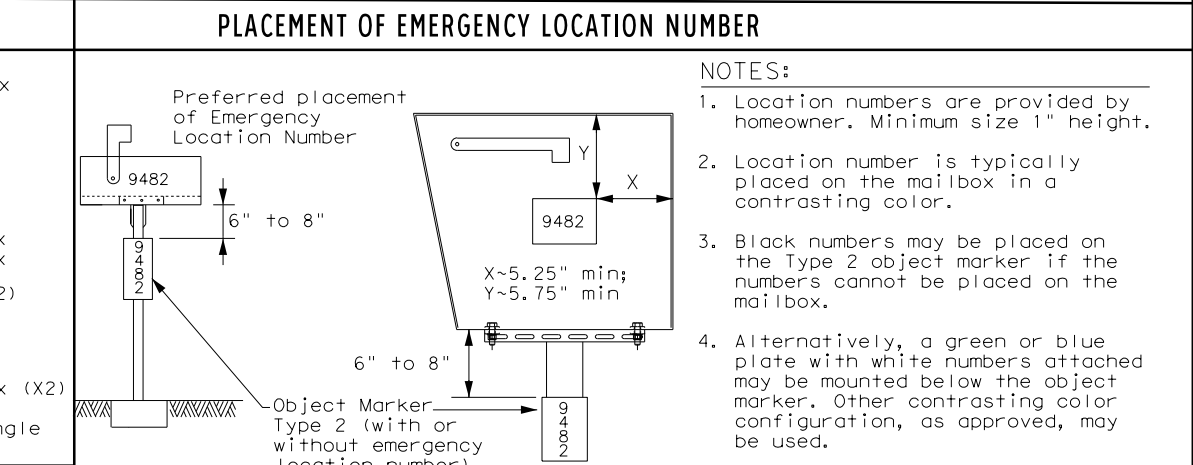
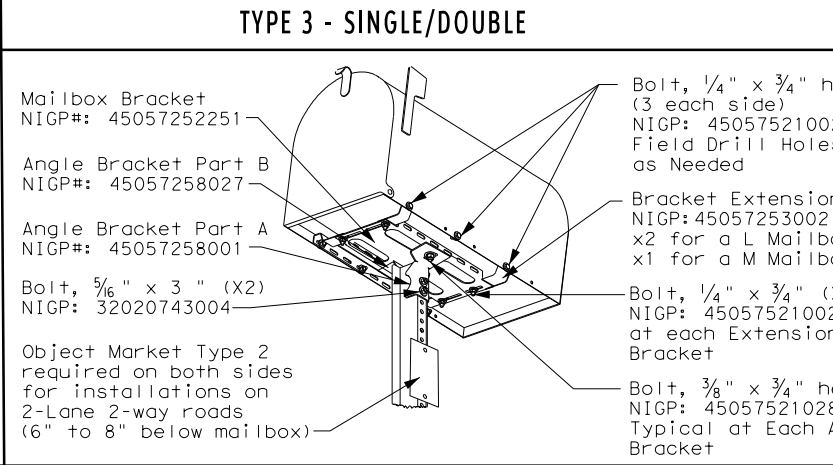
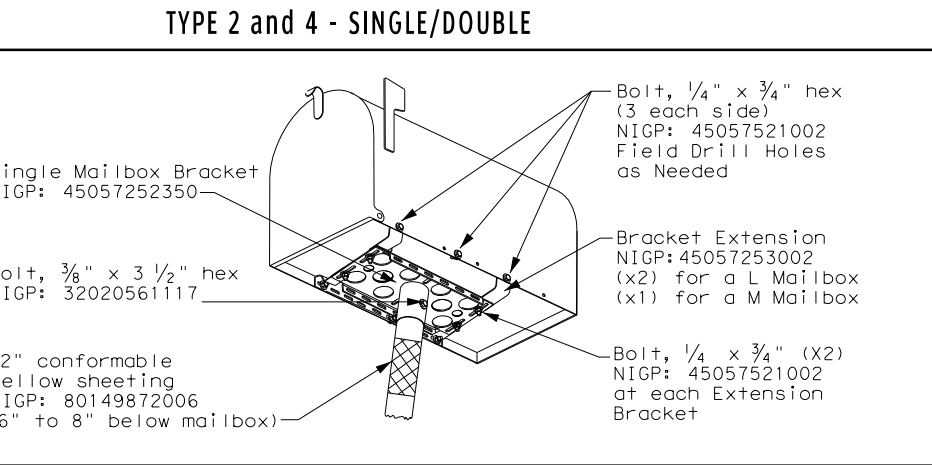
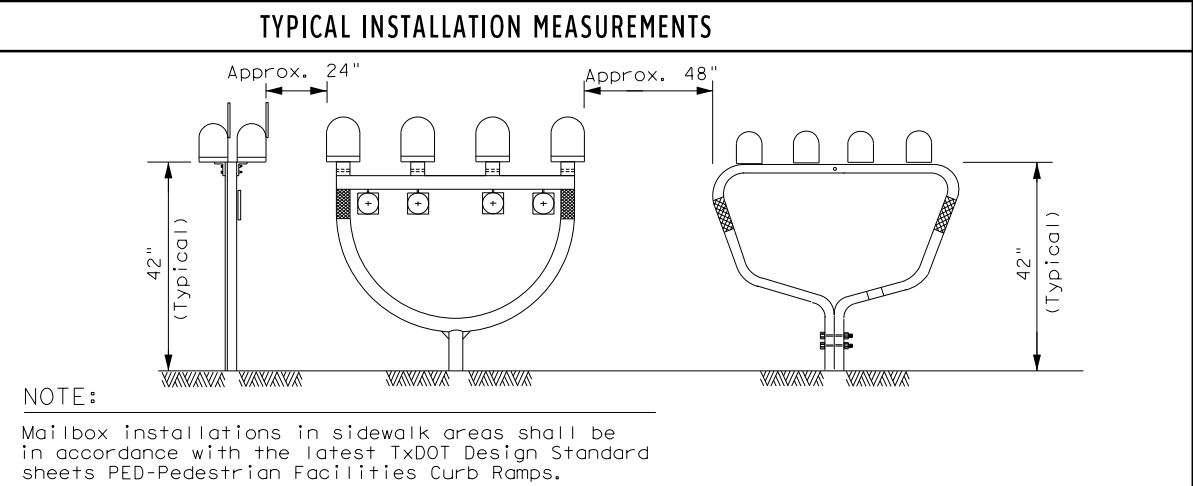
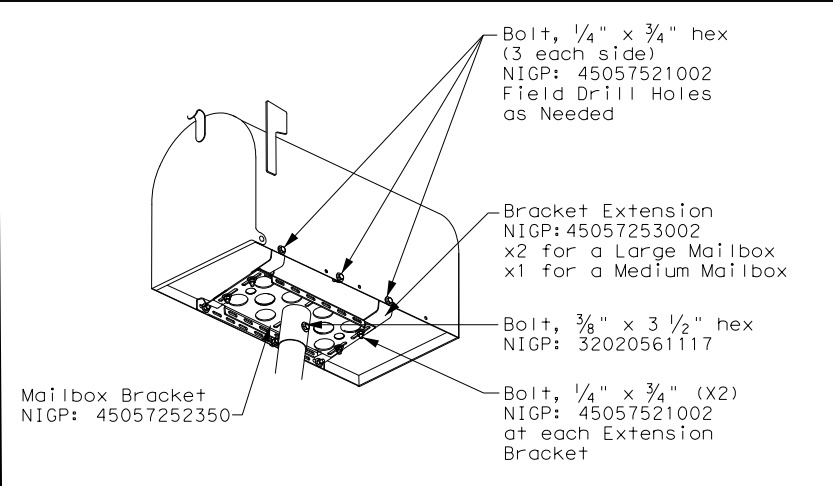
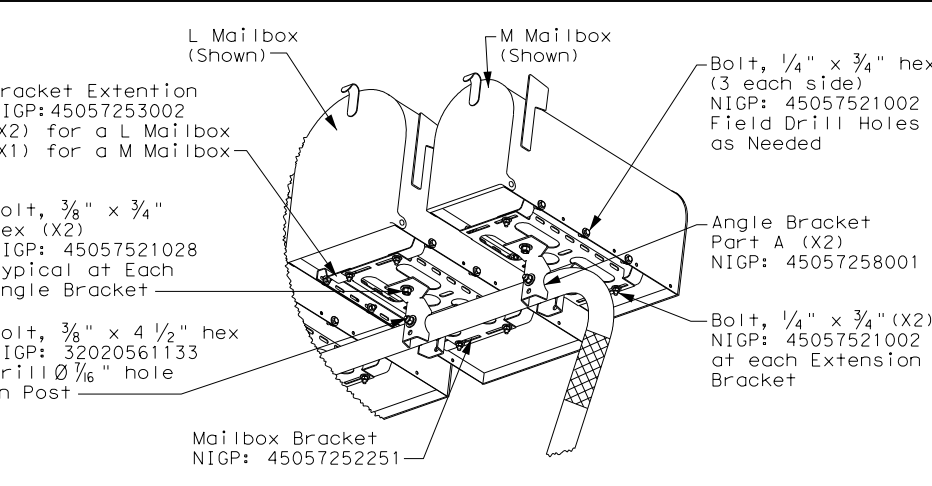
MAILBOX SIZES

MAILBOX SIZE	TYPICAL DIMENSIONS			MAX **
	LENGTH	WIDTH	HEIGHT	WEIGHT
SMALL	19 1/2"	6"	7"	6 LBS
MEDIUM	22 1/2" *	8" *	11 1/2" *	8 LBS
LARGE	23 1/2"	11 1/2"	13 1/2"	11 LBS
EXTRA LARGE	18"	14"	12"	13 LBS
LOCKABLE	18"	11 1/2"	15"	23 LBS

GENERAL NOTES:

- Dimensions shown (length, width, and height) are typical, not maximums. However, anytime a medium size mailbox is mounted on a single/double mount or on the outside position on a multi mount, the dimensions shown are maximums.
- Mailboxes shall be made of light weight sheet metal or light weight plastic. Heavy steel, cast iron or decorative mailboxes shall not be used on the state highway system.

* See Note 1.
 ** Excluding Molded Plastic on 4 X 4 Post



TYPE 5

Mail Storage Compartment

42"

12" conformable yellow sheeting NIGP: 80149872006

Typical Molded Plastic Mailbox

TEXAS DEPARTMENT OF TRANSPORTATION
 Maintenance Division Standard

MAILBOX MOUNTING AND ASSEMBLY

MB(1)-21

FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
2/2005	11/2009	4/2015	DIST	COUNTY
6/2005	1/2011		TYL	WOOD
11/2006	7/2014			SHEET NO. 199

pw:/

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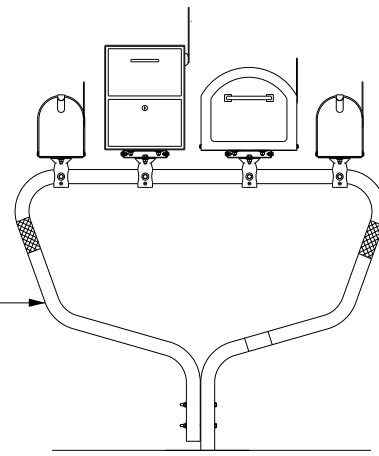
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 cpvpdf_ansiib.pltcf
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TYPE 1 - MULTI LOCKABLE AND XL MAILBOX

Multiple Mailbox Post
 NIGP#: 45057255254
 For 12 gauge steel



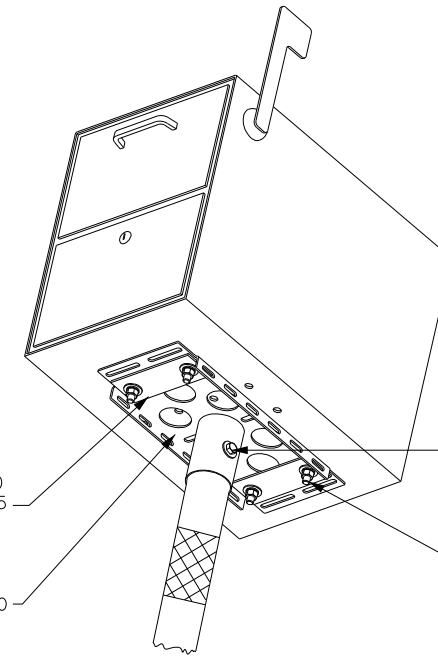
TYPE 2/4 - SINGLE LOCKABLE MAILBOX

Plate Washer (X2)
 NIGP: 45057250255

Single Mailbox Bracket
 NIGP: 45057252350

Bolt, $\frac{3}{8}$ " x $3\frac{1}{2}$ " hex (X2)
 NIGP: 32020561117

Bolt, $\frac{5}{16}$ " x $1\frac{1}{4}$ " hex (X4)
 NIGP: 32020681246



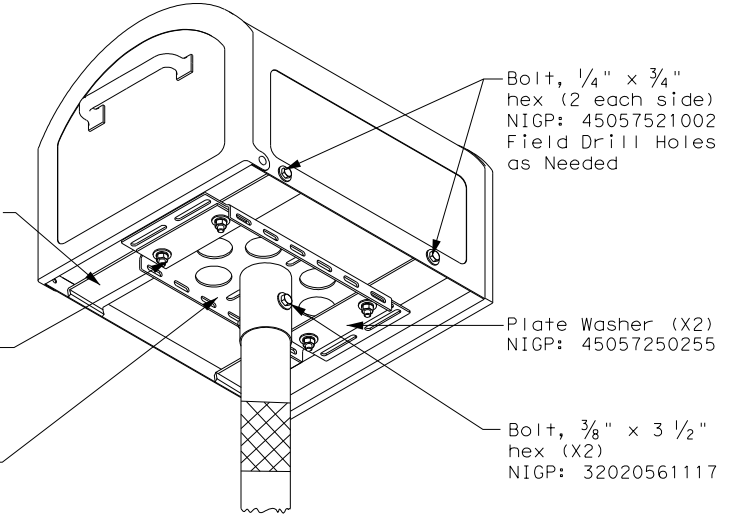
TYPE 2/4 - SINGLE XL MAILBOX

L-bracket (X4)
 NIGP#: 45057250263

Bolt, $\frac{3}{8}$ " x $3\frac{1}{2}$ " hex (X2)
 NIGP: 32020561117

Bolt, $\frac{5}{16}$ " x $1\frac{1}{2}$ " hex (X4)
 NIGP: 32020560507

Single Mailbox Bracket
 NIGP: 45057252350



NOTE:
 Follow same configuration when mounting an XL mailbox on a Type 4 multi post.

TYPE 1 MULTI - LOCKABLE ARCHITECTURAL (LA)

Bolt, $\frac{3}{8}$ " x $\frac{3}{4}$ " hex (X6)
 NIGP: 45057521028
 Typical at Each Angle Bracket and plate washer

Mailbox Bracket
 NIGP: 45057252251
 (Inverted)

Bolt, $\frac{3}{8}$ " x $4\frac{1}{2}$ " hex
 NIGP: 32020561133
 Drill $\frac{1}{16}$ " hole in Post

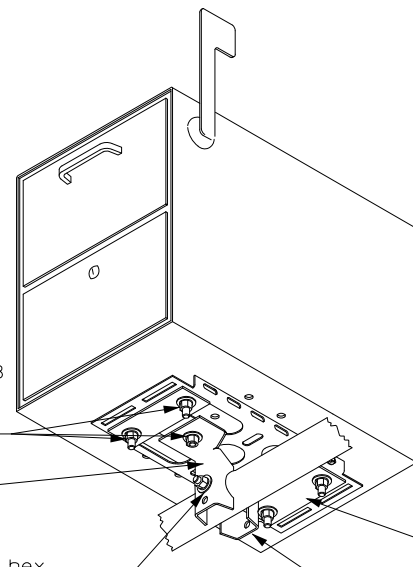


Plate Washer (X2)
 NIGP: 45057250255

Angle Bracket Part A (X2)
 NIGP: 45057258001

TYPE 1 MULTI - XL MAILBOX

L-bracket (X4)
 NIGP# 45057250263

Bolt, $\frac{3}{8}$ " x $\frac{3}{4}$ " hex (X6)
 NIGP: 45057521028
 Typical at Each Angle Bracket and plate washer

Angle Bracket Part A (X2)
 NIGP: 45057258001

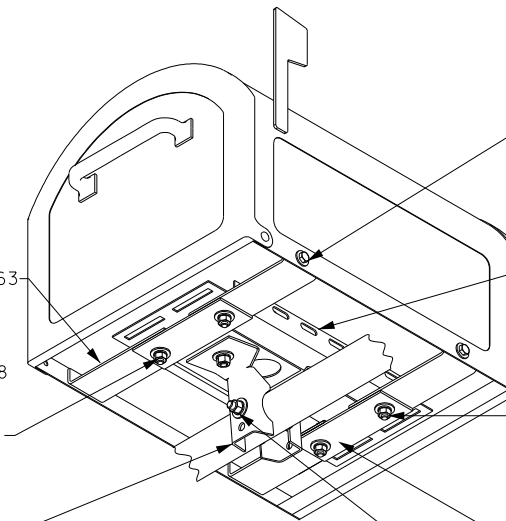
Bolt, $\frac{1}{4}$ " x $\frac{3}{4}$ " hex (2 each side)
 NIGP: 45057521002
 Field Drill Holes as Needed

Mailbox Bracket
 NIGP#: 45057252251
 (Inverted)

Bolt, $\frac{5}{16}$ " x $2\frac{1}{2}$ " hex (X4)
 NIGP: 32020220938
 Use existing hole in mailbox

Plate Washer (X2)
 NIGP#: 45057250255

Bolt, $\frac{3}{8}$ " x $4\frac{1}{2}$ " hex
 NIGP: 32020561133
 Drill $\frac{1}{16}$ " hole in Post



TYPE 3 - XL MAILBOX MOUNTING

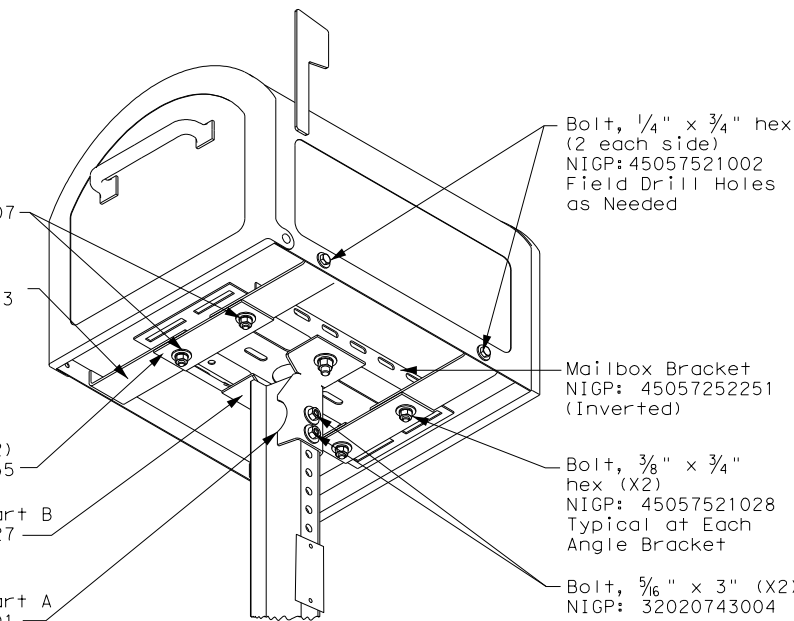
Bolt, $\frac{5}{16}$ " x $1\frac{1}{2}$ " hex (X4)
 NIGP: 32020560507

L-bracket (x4)
 NIGP: 45057250263

Plate Washer (X2)
 NIGP: 45057250255

Angle Bracket Part B
 NIGP: 45057258027

Angle Bracket Part A
 NIGP: 45057258001



Bolt, $\frac{1}{4}$ " x $\frac{3}{4}$ " hex (2 each side)
 NIGP: 45057521002
 Field Drill Holes as Needed

Mailbox Bracket
 NIGP: 45057252251
 (Inverted)

Bolt, $\frac{3}{8}$ " x $\frac{3}{4}$ " hex (X2)
 NIGP: 45057521028
 Typical at Each Angle Bracket

Bolt, $\frac{5}{16}$ " x 3" (X2)
 NIGP: 32020743004

SHEET 2 OF 4

Texas Department of Transportation Maintenance Division Standard

XL AND LOCKABLE ARCHITECTURAL MAILBOX ASSEMBLY MB(2)-21

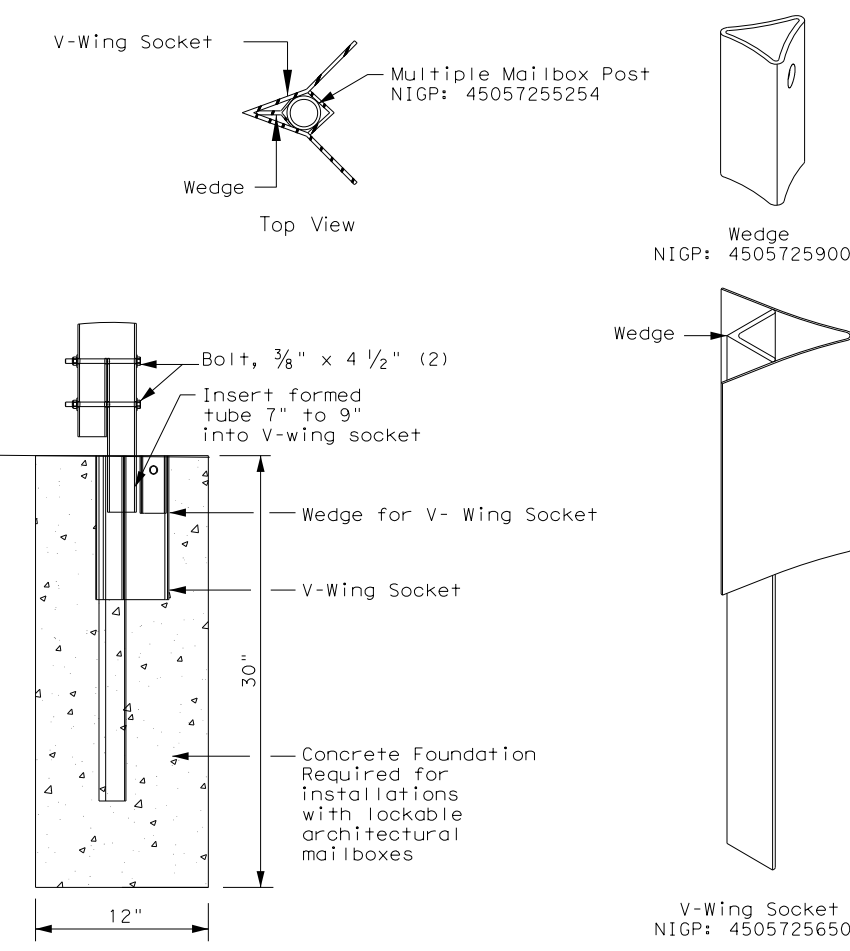
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© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
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2/2005	6/2005	11/2009	1/2011	4/2015
	DIST	COUNTY	SHEET NO.	
11/2006	TYL	WOOD	200	

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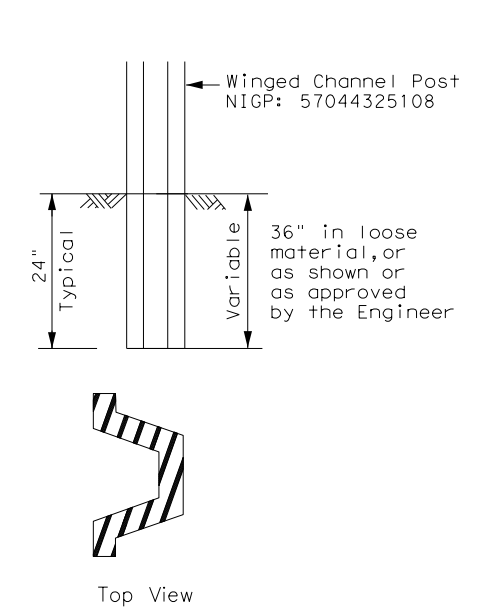
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TYPE 1 - SUPPORT/FOUNDATION

Thin Wall Tube w/ V-LOC Anchorage

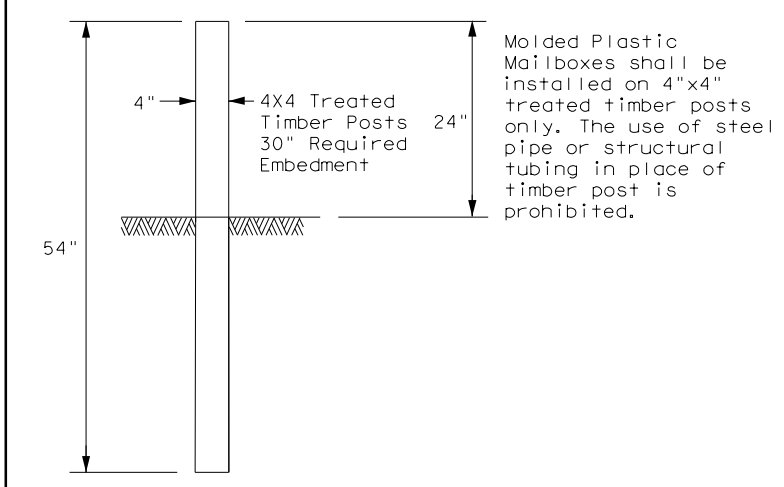


TYPE 3 - SUPPORT/FOUNDATION

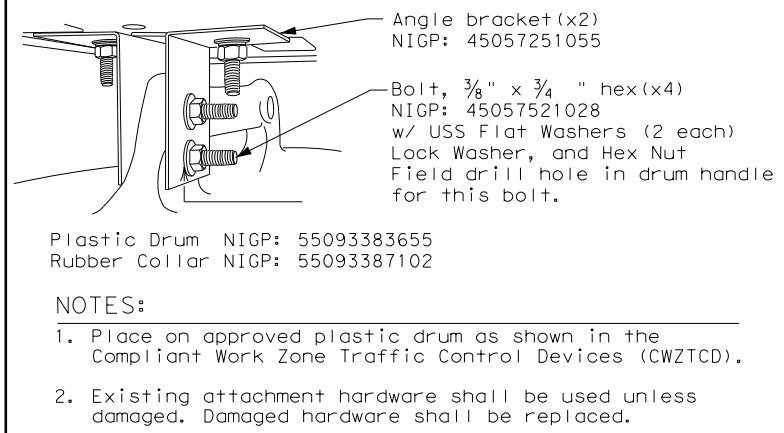


- NOTES:
1. Attach Object Marker (OM) facing direction of traffic.
 2. OM will also be required on opposite side if installed on a 2-Lane, 2-Way roadway.

TYPE 5 - SUPPORT/FOUNDATION

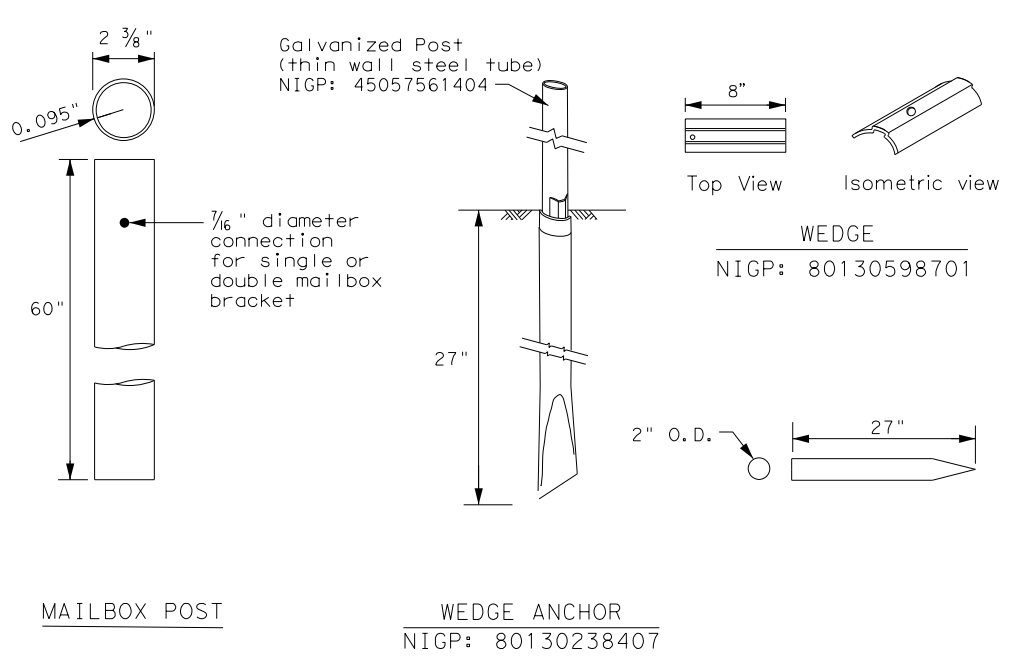


TYPE 6 - TEMPORARY MAILBOX SUPPORT



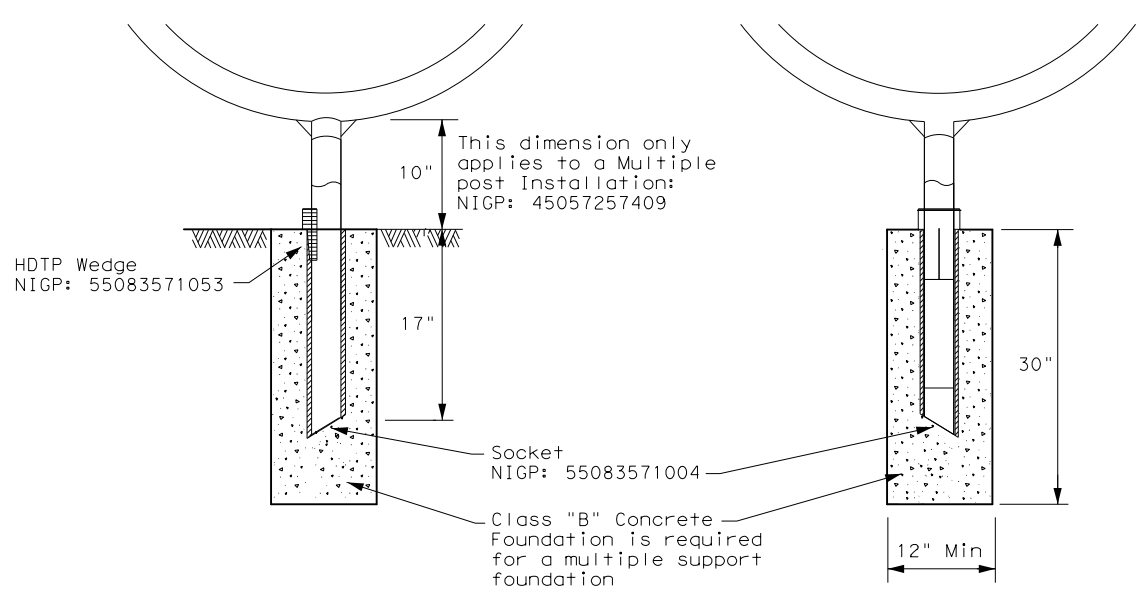
TYPE 2 - SUPPORT/FOUNDATION

Thin Wall Steel Tube w/Wedge Anchor System



TYPE 4 - SUPPORT/FOUNDATION

Whitecoated steel post NIGP: 45057561107
 Multiple post NIGP: 45057257409
 Recycled Rubber post (RR) NIGP: 45057561057



- GENERAL NOTES:
1. Erect post plumb or vertical.
 2. When galvanized part is required galvanize in accordance with Item 445.
 3. Use a concrete footing as shown or when directed. Concrete footing will be required when soils do not hold the support/foundations in a stable condition, only on Type 1, Type 2, and Type 4

SHEET 3 OF 4



MAILBOX SUPPORT AND FOUNDATION

MB (3) -21

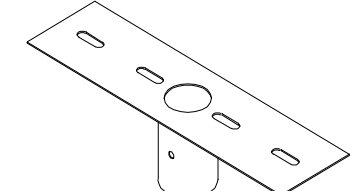
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© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
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11/2006	TYL	WOOD		201

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 Maintenance Division Standard
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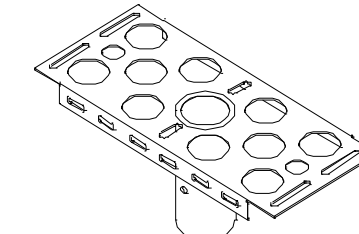
TYPE	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6
Configuration	Multiple	Single or Double	Single or Double	Single	Double	Multiple
Mailbox Size NIGP #	Outside Position: S or M Inside Position: S, M, L, XL, or LA	Single: S, M, L, XL, or LA Double: SS, SM, MM	Single: S, M, L, or XL Double: SS, SM, MM	S, M, L, XL, or LA	SS, SM, or MM	Outside Position: S or M Inside Position: S, M, L, or XL
Mailbox Post NIGP #	45057255254 (Galvanized Multiple)	45057561404 (Thin Walled Gavanize)	57044325108 (Wing Channel Post)	45057561107 (Thin walled white powder coated) 45057561057 (Recycled Rubber Post: S or M only)	45057561107 (Thin Walled White Powder Coated)	45057257409 (White Powder Coated Multiple)
Post and Mailbox Hardware NIGP #	45057259009 (Wedge) 45057256500 (V-Wing Socket) 45057253002 (Bracket Extension) 45057252251 (Mailbox Bracket) 45057258001 (Part A Angle Bracket x2) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	80130598701 (Wedge) 80130238407 (Wedge Anchor) 45057253002 (Bracket Extension) 45057252343 (Double MB Bracket) 45057252350 (S. Mailbox Bracket) 45057252251 (Mailbox Bracket) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	45057541653 (Type 3 Double Mailbox Bracket) 45057252251 (Mailbox Bracket) 45057253002 (Bracket Extension) 45057258001 (Part A Angle Bracket) 45057258027 (Part B Angle Bracket) 45057250255 (Plate Washer for XL x2) 45057250263 (L-Bracket for XL x4)	55083571053 (Wedge) 55083571004 (Socket) 45057252350 (Single Mailbox Bracket) 45057253002 (Bracket Extension) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	55083571053 (Wedge) 55083571004 (Socket) 45057253002 (Bracket Extension) 45057252343 (Double Mount Bracket) 45057252251 (Mailbox Bracket x2)	55083571053 (Wedge) 55083571004 (Socket) 45057253002 (Bracket Extension) 45057252350 (Single Mount Bracket) 45057250255 (Plate Washer for XL x2) 45057250263 (L-Bracket for XL x4)
Foundation Used	Class B Concrete (Required for LA Mailboxes)	Class B Concrete (Required for LA Mailboxes)	None	Class B Concrete (not used with recycled rubber post, required for LA Mailboxes)	Class B Concrete (not required)	Class B Concrete None



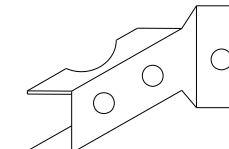
NIGP: 45057250263
L-Bracket x4 for XL sized mailboxes



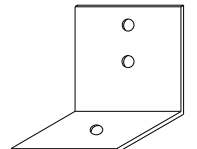
NIGP: 45057252343
Double Mailbox Bracket For Type 2 and Type 4 double mount



NIGP: 45057252350
Single Mailbox Bracket For Type 2 single and for Type 4 single and multi mount



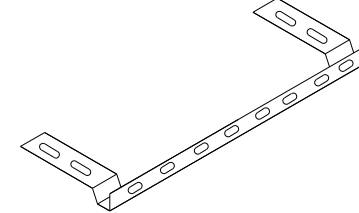
NIGP: 45057258001
Part "A" Angle Bracket For Type 1 multi (2 per mailbox) and Type 3 single and double



NIGP: 45057251055
Type 6 Angle Bracket (2 per mailbox)



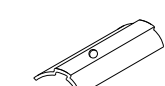
NIGP: 45057252251
Mailbox Bracket For Type 1 multi and any double mount (use 2)




NIGP: 45057253002
Bracket Extension Use 1 for a medium Mailbox Use 2 for a Large Mailbox



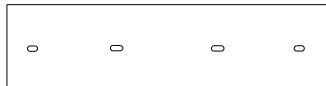
NIGP: 45057258027
Part "B" Angle Bracket For Type 3 single and double



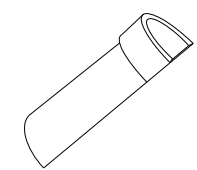
NIGP: 80130598701
Wedge for Type 2



NIGP: 45057250255
Plate Washer for Architecural and XL Mailboxes




NIGP: 45057541653
Type 3 double mailbox bracket



NIGP: 55083571053
Type 4 Mailbox Wedge



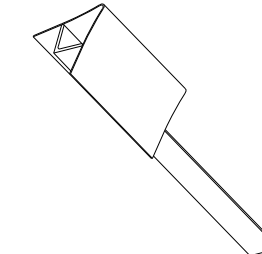
NIGP: 55083571004
Type 4 Mailbox Socket



NIGP: 80130238407
Type 2 Wedge Anchor



NIGP: 45057259009
Wedge for Type 1 V-wing Socket



NIGP: 45057256500
V-wing Socket for Type 1 Foundation

NIGP #	OBJECT MARKERS AND CONFORMABLE SHEETING
55008311759	Type 2 OM 4"x4" (3 Needed) for Type 3 Wing Channel Post
55008312906	Type 2 OM 6"x12" (1 needed) for Type 3 Wing Channel Post
80149872006	12" Conformable Reflective Yellow Sheeting for Flexible Posts

- NOTES:**
- Type 2 object marker in accordance with Traffic Engineering Standard Delineators & Object Markers.
 - A light weight receptacle for newspaper delivery can be attached to mailbox posts if the receptacle does not touch the mailbox, present a hazard to traffic or delivery of the mail, extend beyond the front of the mailbox, or display advertising, except the publication title.

BID CODES FOR CONTRACTS

MB-(X) ASSM TY (XXX) (X)

Type of Mailbox _____

S = Single
D = Double
M = Multiple
MP = Molded Plastic


Type of Post _____

WC = Winged Channel Post
RR = Recycled Rubber
TWW = Thin Walled White Tubing
TWG = Thin Walled Galvanized Tubing
TIM = Timber

Type of Foundation _____

Ty 1 = V-Loc
Ty 2 = Wedge Anchor Steel System
Ty 3 = Winged Channel post
Ty 4 = Wedge Anchor Plastic System
Ty 5 = 4 X 4 Post

SHEET 4 OF 4



Maintenance Division Standard

NIGP PARTS LIST AND COMPATIBILITY

MB(4)-21

FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
2/2005	REVISIONS	0203	05	039
6/2005	11/2009	4/2015	DIST	COUNTY
11/2006	1/2011	7/2014	TYL	SHEET NO.
			WOOD	202



DRILLING LOG

1 of 2

County Wood Hole BR-01 District Tyler
 Highway US 69 Structure Bridge Date 01/20/2017 to 01/23/2017
 CSJ 0203-05-039 Station 384+08.07 Grnd. Elev. 420.98 ft
 Offset 11.59 ft RT GW Elev. 403.98 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
420.3			ASPHALT (2.5 IN.) BASE (5.5 IN.) CLAY, Fat with Sand to Sandy Fat, very stiff, moist, gray and brown; Silt layer below 6', light gray and reddish yellow (CH)	4.3	30.1	17	50	32	134	SSS @ 0.4', N=7 PTS @ 2', PP=1.5, #200=80.4% SSS @ 2', N=24 PTS @ 4', PP=1.5, #200=52.8% PTS @ 6', PP=N/A SSS @ 6.5', N=22
411.10		39 (6) 19 (6)								
409.7		34 (6) 50 (4)	SILT, with Sand, dense (ML)							SSS @ 11.3', N=43
402.7		15 (6) 40 (6)	SILT, with Sand, compact, moist to wet, light gray and reddish yellow (ML)							SSS @ 16.5', N=53, #200=72.2%
402.0		50 (2) 50 (0.25)	SAND, Silty, very dense, moist, fine grained, moderately cemented, elevated ferric ion content (SM)							SSS @ 20.6', N=50/5.5, dark red
398.0		50 (4.5) 50 (2)	CLAY, Lean with Sand, hard, moist, black, laminated with Sand seams (CL)							SSS @ 25.8', N=20, 37, 50/4
387.0		50 (3.5) 50 (1.5)								SSS @ 30.7', N=26, 40, 50/4.5
377.0		50 (2.25) 50 (1.75)	CLAY, Lean with Sand, very hard, moist, dark brown to 36.9', gray and dark gray below 40.5' (CL)			37	17			SSS @ 35.5', N=19, 30, 50/5.25 #200=82.2%
377.0		50 (2.5) 50 (2)								SSS @ 40.5', N=29, 50/4.25
377.0		50 (1.5) 50 (0.25)	SILT, with Sand, very dense, moist, gray, laminated with Sand seams (ML)							SSS @ 45.3', N=50/4.5
377.0		50 (1) 50 (0.5)								SSS @ 50.1', N=50/2.25
377.0		50 (0.5) 50 (0.25)								SSS @ 55.1', N=50/2
377.0		50 (1.5) 50 (1.25)								

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA to 30', then Mud Rotary; N. 6961999.74, E. 2876786.65; Companion boring drilled

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: Joshua Hubbard Organization: Corsair Consulting LLC

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DRILLING LOG

2 of 2

County Wood Hole BR-01 District Tyler
 Highway US 69 Structure Bridge Date 01/20/2017 to 01/23/2017
 CSJ 0203-05-039 Station 384+08.07 Grnd. Elev. 420.98 ft
 Offset 11.59 ft RT GW Elev. 403.98 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
358.0			SILT, with Sand, very dense, moist, gray, laminated with Sand seams (ML)							SSS @ 60.4', N=50/5.25
65.0		50 (1.5) 50 (0.5)	CLAY, Lean with Sand, very hard, moist, dark brown and gray, laminated with Sand seams (CL)							SSS @ 65.3', N=34, 44, 50/3.75
353.0		50 (1) 50 (1)	CLAY, Fat, very hard, moist, dark brown and brown, laminated with Silt seams (CH)					51	30	SSS @ 70.3', N=32, 50/5.5 #200=99.1%
70.0		50 (1.5) 50 (0.5)								SSS @ 75.4', N=33, 50/5.5
75.0		50 (1.5) 50 (0.5)								SSS @ 80.4', N=40, 50/5.75
80.0		50 (1.5) 50 (1.5)								Boring terminated at 81.4'
339.6										
85.0										
90.0										
95.0										
100.0										
105.0										
110.0										
115.0										
120.0										

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA to 30', then Mud Rotary; N. 6961999.74, E. 2876786.65; Companion boring drilled

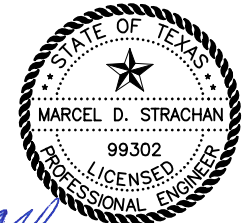
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Driller: Strata Core Services Logger: Joshua Hubbard Organization: Corsair Consulting LLC

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NOTES:

- BORING LOGS SOURCE: CORSAIR CONSULTING LLC
 GEOTECHNICAL ENGINEERING REPORT,
 DATED AUGUST 1, 2018.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

BORING LOG

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.			HIGHWAY NO. US 69
Checked: BAJ	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039	SHEET NO. 203



DRILLING LOG

1 of 2

County Wood Hole BR-02 District Tyler
 Highway US 69 Structure Bridge Date 01/19/2017 to 01/20/2017
 CSJ 0203-05-039 Station 382+40.61 Grnd. Elev. 420.12 ft
 Offset 0.90 ft LT GW Elev. 408.12 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
418.6			FILL, GRAVEL (GP, 4 IN.) and CLAY							SSS @ 0', N=7, (CL, 12 IN.) SSS @ 2', N=21
416.1	5	36 (6) 39 (6)	CLAY, Fat with Sand, moist, gray and red (CH)							
			SILT, Sandy, compact, moist, gray and reddish yellow, little Clay (ML)							PTS @ 7', PP=N/A
411.1	10	47 (6) 50 (4.5)	SAND, Silty, dense, moist to wet, gray and reddish yellow, fine grained, little Clay below 16.1' (SM)							SSS @ 11.4', N=48, -#200=40.2%
										SSS @ 16.1', N=26, 35, 50/4.75
401.1	20	35 (6) 40 (6)	CLAY, Lean, very stiff, moist, gray and dark gray, few Sand seams (CL)							SSS @ 21.4', N=31
396.1	25	50 (3.5) 50 (1.5)	CLAY, Sandy Lean, very hard, moist, dark brown and black (CL)							SSS @ 25.9', N=23, 40, 50/5
										SSS @ 30.7', N=25, 44, 50/3.75 -#200=50.5%
386.1	35	50 (2) 50 (1)	CLAY, Lean with Sand, very hard, moist, dark brown and black, laminated with Sand seams (CL)							SSS @ 35.4', N=35, 50/4
										SSS @ 40.4', N=40, 50/3.75
376.1	45	50 (0.5) 50 (0.5)	SILT, with Sand, very dense, moist, dark gray, laminated with Sand seams (ML)							SSS @ 45.1', N=50/3.25
371.1	50	50 (2) 50 (1)	SILT, with Sand, very dense, moist, dark gray, laminated with Sand seams (ML)							SSS @ 50.3', N=50/4.75
										SSS @ 55.4', N=50/3

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA to 30', then Mud Rotary; N. 6962111.78, E. 2876661.56

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: Joshua Hubbard Organization: Corsair Consulting LLC

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DRILLING LOG

2 of 2

County Wood Hole BR-02 District Tyler
 Highway US 69 Structure Bridge Date 01/19/2017 to 01/20/2017
 CSJ 0203-05-039 Station 382+40.61 Grnd. Elev. 420.12 ft
 Offset 0.90 ft LT GW Elev. 408.12 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
356.1	65	50 (1) 50 (0.5)	CLAY, Lean with Sand, very hard, moist, gray and brown, laminated with Sand seams (CL)							SSS @ 60.4', N=38, 42, 50/4.5
			CLAY, Fat, very hard, moist, dark brown and brown, laminated with Silt seams, dark gray below 80', 2.5 in. Lignite seam at 81.5' (CH)							SSS @ 65.3', N=35, 50/5.5
70		50 (1.25) 50 (0.25)								SSS @ 70.3', N=37, 50/5.5
75		50 (1.5) 50 (0.5)								SSS @ 75.3', N=33, 49, 50/4
80		50 (2) 50 (2)								SSS @ 80.5', N=24, 42, 50/2.5 Boring terminated at 81.7'

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA to 30', then Mud Rotary; N. 6962111.78, E. 2876661.56

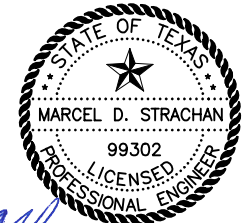
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Driller: Strata Core Services Logger: Joshua Hubbard Organization: Corsair Consulting LLC

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NOTES:

- BORING LOGS SOURCE: CORSAIR CONSULTING LLC
 GEOTECHNICAL ENGINEERING REPORT,
 DATED AUGUST 1, 2018.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

BORING LOG

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.			HIGHWAY NO. US 69
Checked: BAJ	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039	SHEET NO. 204

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DRILLING LOG

1 of 2

County Wood Hole BR-03 District Tyler
 Highway US 69 Structure Bridge Date 01/27/2017
 CSJ 0203-05-039 Station 380+62.00 Grnd. Elev. 420.27 ft
 Offset 29.58 ft RT GW Elev. 404.27 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
418.3			SAND, Silty, moist, light brown, fine grained, few Gravel (SM)			29	79	57	121	SSS @ 0', N=14 PTS @ 2', PP=1.5, #200=81.7% SSS @ 2', N=7 PTS @ 4', PP=4.0
414.3		42 (6) 32 (6)	CLAY, Fat, very stiff, moist, brown and reddish brown, trace iron ore (CH)							SSS @ 6.5', N=29
		32 (6) 21 (6)	SILT, Sandy, compact, moist, light gray and reddish brown to 10', thereafter light gray and light brown, little Clay, trace iron ore to 8' (ML)							SSS @ 11.5', N=23
406.3		22 (6) 15 (6)	SILT, Sandy, slightly compact, wet, light gray and light brown, little Clay (ML)							SSS @ 16.5', N=39
401.3		45 (6) 50 (4)	CLAY, Lean with Sand, hard, moist, dark gray, laminated with Sand seams (CL)							SSS @ 21.3', N=28
396.3		50 (4) 50 (2.5)	CLAY, Sandy Lean, hard, moist, dark brown, laminated with Sand seams (CL)				37	19		SSS @ 26', N=17, 32, 50/5.5 #200=62.1%
		50 (4) 50 (2)								SSS @ 30.8', N=85
386.3		50 (2) 50 (1)	CLAY, Lean with Sand, very hard, moist, dark brown, laminated with Sand seams (CL)							
		50 (3) 50 (1)								SSS @ 40.5', N=28, 50/1
376.3		50 (3) 50 (3)	CLAY, Lean with Sand, hard, moist, dark brown, laminated with Sand seams (CL)							
371.3		50 (0.5) 50 (0.25)	CLAY, Lean with Sand, very hard, moist, dark brown, laminated with Sand seams (CL)							SSS @ 50.1', N=50/2.5
366.3		50 (2) 50 (1)	CLAY, Lean with Sand, very hard, moist, dark brown, laminated with Sand seams (CL)							
		50 (2) 50 (0.5)								

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA to 35', then Mud Rotary; N. 6962196.57, E. 2876501.44; Companion boring drilled

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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DRILLING LOG

2 of 2

County Wood Hole BR-03 District Tyler
 Highway US 69 Structure Bridge Date 01/27/2017
 CSJ 0203-05-039 Station 380+62.00 Grnd. Elev. 420.27 ft
 Offset 29.58 ft RT GW Elev. 404.27 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
		50 (2) 50 (1)	CLAY, Lean with Sand, very hard, moist, dark brown, laminated with Sand seams (CL)							SSS @ 60.3', N=24, 34, 50/5.75
351.3		50 (2) 50 (2.5)	CLAY, Fat, very hard, moist, dark brown and brown, laminated with Silt seams, Lignite below 80.6' (CH)							SSS @ 70.6', N=28, 42, 50/5
		50 (2) 50 (1)								
		50 (3.5) 50 (2)								SSS @ 80.6', N=50/4 Boring terminated at 80.9'

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA to 35', then Mud Rotary; N. 6962196.57, E. 2876501.44; Companion boring drilled

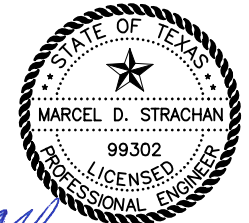
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Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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NOTES:

- BORING LOGS SOURCE: CORSAIR CONSULTING LLC
 GEOTECHNICAL ENGINEERING REPORT,
 DATED AUGUST 1, 2018.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

BORING LOG

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.			HIGHWAY NO. US 69
Checked: BAJ	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039	SHEET NO. 205

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DRILLING LOG

1 of 2

County Wood Hole BR-04 District Tyler
 Highway US 69 Structure Bridge Date 01/26/2017 to 01/27/2017
 CSJ 0203-05-039 Station 378+82.81 Grnd. Elev. 423.65 ft
 Offset 18.61 ft LT GW Elev. 407.65 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
422.4			SAND, Silty, moist, brown (SM)	2.6	21.1	17	30	18	131	SSS @ 0', N=4, fine grained PTS @ 2', PP=1.0, #200=61.4% SSS @ 2', N=10
		12 (6) 13 (6)	CLAY, Sandy Lean, stiff, moist, brown to 2', thereafter gray and red (CL)	4.3	24.7	16	36	18	135	PTS @ 4', PP=1.0, #200=58.8%
	5									SSS @ 6.5', N=14
414.7		23 (6) 20 (6)	SILT, Sandy, compact, moist, light gray and light brown (ML)							SSS @ 11.5', N=23
409.7	10									SSS @ 16', N=37
	15	50 (4.5) 50 (2.5)	SILT, Sandy, dense, wet, light reddish brown and light gray (ML)							SSS @ 21.2', N=33
404.7	20	45 (6) 50 (5)	CLAY, Sandy Lean, hard, moist, light brown and light gray (CL)							SSS @ 26.5', N=77
399.7	25	24 (6) 32 (6)	CLAY, Sandy Lean, very stiff, moist, dark brown (CL)							SSS @ 30.7', N=21, 39, 50/5
394.7	30	50 (3.5) 50 (1)	CLAY, Sandy Lean, very hard, moist, dark brown (CL)							SSS @ 40.6', N=28, 50/5.5
	35	50 (2) 50 (1.5)								SSS @ 50.5', N=22, 35, 50/5 #200=71.8%
384.7	40	50 (3) 50 (0)	CLAY, Lean with Sand, very hard, moist, dark brown and gray, laminated with Sand seams (CL)			34	17			
	45	50 (2) 50 (1)								
	50	50 (2.5) 50 (1)								
	55	50 (2) 50 (1.5)								
	60	50 (2) 50 (1)								

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA to 35', then Mud Rotary; N. 6962344.05, E. 2876388.83; Companion boring drilled

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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DRILLING LOG

2 of 2

County Wood Hole BR-04 District Tyler
 Highway US 69 Structure Bridge Date 01/26/2017 to 01/27/2017
 CSJ 0203-05-039 Station 378+82.81 Grnd. Elev. 423.65 ft
 Offset 18.61 ft LT GW Elev. 407.65 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
		50 (1) 50 (1)	CLAY, Lean with Sand, very hard, moist, dark brown and gray, laminated with Sand seams (CL)							SSS @ 60.4', N=40, 50/5.5
354.7	65									
	70	50 (2) 50 (1)	CLAY, Fat, very hard, moist, dark brown and brown, laminated with Silt seams (CH)					54	31	SSS @ 70.4', N=31, 47, 50/4 #200=97.2%
	75	50 (1.5) 50 (0.5)								
	80	50 (2) 50 (1)								SSS @ 80.6', N=30, 47, 50/4.5 Boring terminated at 82'
341.7	85									
	90									
	95									
	100									
	105									
	110									
	115									
	120									

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA to 35', then Mud Rotary; N. 6962344.05, E. 2876388.83; Companion boring drilled

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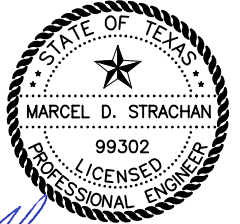
Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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NOTES:

- BORING LOGS SOURCE: CORSAIR CONSULTING LLC GEOTECHNICAL ENGINEERING REPORT, DATED AUGUST 1, 2018.




Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



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US 69 AT FM 779

BORING LOG

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	206



DRILLING LOG

1 of 1

County Wood Hole RW-01 District Tyler
 Highway US 69 Structure Retaining Wall Date 01/24/2017
 CSJ 0203-05-039 Station 395+93.00 Grnd. Elev. 419.76 ft
 Offset 25.08 ft LT GW Elev. 408.76 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test				Properties			Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)		
415.3		50 (4) 50 (3)	CLAY, Sandy Lean, moist, light gray and reddish brown; top 12 in. FILL, SAND, Silty, brown, fine grained, few Gravel (CL)			29	12			SSS @ 0', N=7 SSS @ 2', N=21, #200=56.7%	
415.3	5		SILT, Sandy, dense, moist, light brown and light gray (ML)							SSS @ 6', N=78	
410.8	10	50 (3.5) 50 (1)	SILT, Sandy, very dense, wet, light brown and light gray (ML)							SSS @ 10.8', N=25, 35, 50/3.5	
405.8	15	25 (6) 50 (5.5)	CLAY, Lean with Sand, very stiff, moist, brown and light gray, laminated with Sand seams (CL)							SSS @ 16.2', N=18, 33, 50/5.5	
400.8	20	29 (6) 50 (5.5)	CLAY, Lean with Sand, hard, moist, dark brown and brown, laminated with Sand seams (CL)			46	25			SSS @ 21.5', N=41, #200=76.0%	
395.8	25	50 (0) 50 (0)	SAND, Silty, very dense, strongly cemented (SM)							SSS @ 25.2', N=20/0	
392.8			SILT, Sandy, dense, moist, dark gray (ML)								
389	30	50 (5) 50 (2)	SILT, Sandy, very dense, moist, dark gray (ML)							SSS @ 30.8', N=29, 40, 50/5	
389	35	50 (3.5) 50 (0.5)								SSS @ 35.5', N=77	
382.8	40									Boring terminated at 37'	

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6961306.06, E. 2877748.01

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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DRILLING LOG

1 of 1

County Wood Hole RW-02 District Tyler
 Highway US 69 Structure Retaining Wall Date 01/24/2017
 CSJ 0203-05-039 Station 393+65.09 Grnd. Elev. 419.58 ft
 Offset 43.05 ft LT GW Elev. 410.58 ft

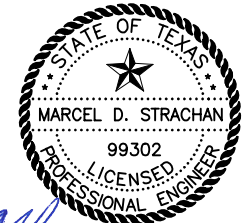
Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test				Properties			Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)		
418.2			ASPHALT (8 IN.), SAND BASE (9 IN.)							SSS @ 1', N=13	
414.6	5	16 (6) 16 (6)	CLAY, Sandy Lean, moist, red and gray, Silty Sand from 1.4' to 1.7' (CL)							SSS @ 3', N=21	
414.6	5		SILT, Sandy, slightly compact to compact, moist to wet, gray and reddish brown (ML)							SSS @ 6.3', N=18, #200=55.9%	
410	10	29 (6) 34 (6)								SSS @ 11.4', N=21	
405.6	15	7 (6) 17 (6)	CLAY, Sandy Lean, stiff, moist, light brown and yellowish brown (CL)							SSS @ 16.5', N=21	
400.6	20	50 (4) 50 (2)	SILT, Sandy, dense, wet, light gray and brown, little Clay (ML)							SSS @ 21', N=58	
395.6	25	50 (3) 50 (1.5)	SILT, Sandy, very dense, wet, light gray and brown (ML)							SSS @ 25.8', N=26, 47, 50/4.5	
390.6	30	50 (2) 50 (0.5)	SILT, Sandy, very dense, moist, dark brown (ML)							SSS @ 30.4', N=17, 32, 50/5.5	
385.6	35	31 (6) 50 (3)	SILT, Sandy, dense, moist, dark brown (ML)							SSS @ 36.1', N=60	
382	40									Boring terminated at 37.6'	

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6961459.32, E. 2877578.37

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

BORING LOG

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.			HIGHWAY NO. US 69
Checked: BAJ			DIST. COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: JKF						SHEET NO. 207
Checked: BAJ			DIST. COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039

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NOTES:

- BORING LOGS SOURCE: CORSAIR CONSULTING LLC GEOTECHNICAL ENGINEERING REPORT, DATED AUGUST 1, 2018.



DRILLING LOG

1 of 1

WinCore Version 3.3
 County Wood
 Highway US 69
 CSJ 0203-05-039

Hole RW-03
 Structure Retaining Wall
 Station 391+95.83
 Offset 45.70 ft LT

District Tyler
 Date 01/24/2017
 Grnd. Elev. 418.36 ft
 GW Elev. 408.36 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
417.0			ASPHALT (8 IN.), SAND BASE (7 IN.) SAND, Silty, compact, moist, light brown and gray, fine grained, 6 in. Clay seam at 2' (SM)							SSS @ 1', N=19 SSS @ 3', N=21, -#200=46.5%
411.3		26 (6) 7 (6)	CLAY, Lean, soft, moist, brown, few ferrous nodules below 11.5' (CL)							SSS @ 6.1', N=22
404.4		6 (6) 8 (6)				48	31			SSS @ 11.5', N=16, -#200=87.7%
399.4		17 (6) 50 (5)	SILT, Sandy, compact, wet, gray and brown, little Clay (ML)							SSS @ 16.4', N=36
394.4		46 (6) 50 (4.5)	SAND, Silty, dense, wet, light brown, fine grained (SM)							SSS @ 21.4', N=68
389.4		50 (3.5) 50 (1.5)	SAND, Silty, very dense, moist, light brown and light gray, fine grained (SM)							SSS @ 25.7', N=20, 38, 50/5
381.9		50 (4.5) 50 (3.5)	SILT, Sandy, dense, moist, light gray and gray, little Clay (ML)							SSS @ 30.9', N=39, 35, 50/3.5
		50 (5.5) 50 (2.5)								SSS @ 36', N=50/5.5 Boring terminated at 36.5'

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6961564.66, E. 2877445.86

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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DRILLING LOG

1 of 1

WinCore Version 3.3
 County Wood
 Highway US 69
 CSJ 0203-05-039

Hole RW-04
 Structure Retaining Wall
 Station 390+03.43
 Offset 44.61 ft LT

District Tyler
 Date 01/24/2017
 Grnd. Elev. 418.85 ft
 GW Elev. 409.85 ft

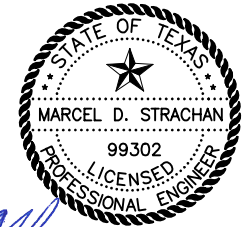
Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
417.7			ASPHALT (8 IN.), SAND BASE (6 IN.) CLAY, Sandy Fat, soft, moist, reddish brown and light gray, laminated with Sand seams, Silty Sand from 1.2' to 1.6' (CH)							SSS @ 1', N=31 SSS @ 3', N=11, -#200=69.4%
412.4		7 (6) 8 (6)	SAND, Clayey, loose, moist, light brown, fine grained, few Gravel to 8.5' (SC)					73	52	SSS @ 7', N=17, -#200=46.5%
404.9		9 (6) 11 (6)						39	23	SSS @ 11.5', N=15, -#200=42.0%
399.9		27 (6) 29 (6)	SILT, Sandy, compact, wet, light brown (ML)							SSS @ 16.5', N=41
394.9		44 (6) 49 (6)	SILT, Sandy, dense, moist, light brown, elevated ferric ion content at 22.5' (ML)							SSS @ 21.4', N=35
389.9		25 (6) 32 (6)	CLAY, Lean with Sand, very stiff, moist, dark brown (CL)							SSS @ 26.5', N=48
381.7		50 (3) 50 (2.5)	CLAY, Sandy Lean, hard to very hard, moist, dark brown (CL)							SSS @ 30.9', N=24, 41, 50/5.5
		50 (3) 50 (1)								SSS @ 35.7', N=77 Boring terminated at 37.2'

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6961681.14, E. 2877292.72

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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Marcel D. Strachan
 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

BORING LOG

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.			HIGHWAY NO. US 69
Checked: BAJ						
Drawn: JKF	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039	SHEET NO. 208
Checked: BAJ						

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NOTES:

- BORING LOGS SOURCE: CORSAIR CONSULTING LLC
 GEOTECHNICAL ENGINEERING REPORT,
 DATED AUGUST 1, 2018.



DRILLING LOG

1 of 1

WinCore Version 3.3
 County Wood
 Highway US 69
 CSJ 0203-05-039
 Hole RW-05
 Structure Retaining Wall
 Station 387+31.61
 Offset 22.51 ft LT
 District Tyler
 Date 01/23/2017
 Grnd. Elev. 417.10 ft
 GW Elev. 410.60 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
414.1			SAND, Silty, moist, brown, fine grained, trace Gravel below 2' (SM)							SSS @ 0.5', N=11 SSS @ 2', N=16
5		13 (6) 17 (6)	SAND, Clayey, slightly compact, moist, light red and light gray, fine grained (SC)							
408.6						35	17			SSS @ 6.5', N=18, #200=44.4%
405.6		22 (6) 19 (6)	SILT, Sandy, compact, wet, light red and light gray, little Clay (ML)							SSS @ 8.5', N=11
400.9			SILT, Sandy, dense, moist, light red and gray (ML)							SSS @ 11.5', N=60
		50 (5) 50 (3.75)								SSS @ 16.2', N=42
			SILT, Sandy, compact, moist, dark brown and brown to 17.7', traces Gypsum crystals and Lignite to 17.7', light gray below 21.3' (ML)							SSS @ 21.3', N=43
		22 (6) 30 (6)								
393.1			CLAY, Sandy Lean, hard, moist, dark brown (CL)							SSS @ 26', N=29, 38, 50/5
		50 (3.75) 50 (3.75)								
										SSS @ 30.8', N=27, 50/5
		50 (3) 50 (2)								
386.3			CLAY, Sandy Lean, very hard, moist, dark brown (CL)							SSS @ 35.4', N=26, 50/5.5
		50 (2) 50 (1)								Boring terminated at 36.4'

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6961829.42, E. 2877063.84

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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DRILLING LOG

1 of 1

WinCore Version 3.3
 County Wood
 Highway US 69
 CSJ 0203-05-039
 Hole RW-06
 Structure Retaining Wall
 Station 385+37.11
 Offset 19.90 ft LT
 District Tyler
 Date 01/23/2017
 Grnd. Elev. 420.43 ft
 GW Elev. 405.43 ft

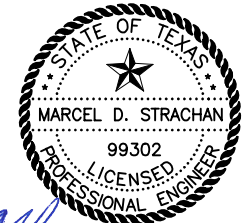
Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
418.4			CLAY, Sandy Fat, moist, light gray and yellowish red, few Gravel (CH)							SSS @ 0.8', N=6, #200=68.1% Asphalt from 0' to 0.3' Silty Sand from 0.3' to 1'
			SAND, Clayey, moist, light brown, yellowish red, fine grained, few Gravel (SC)	3.5	42.9	18	48	30	130	PTS @ 3', PP=2.5, #200=49.7% SSS @ 3', N=13
415.4		20 (6) 29 (6)								
411.4			SAND, Silty, compact, moist, light brown, reddish yellow and light gray, fine grained (SM)							SSS @ 7', N=19, #200=46.2%
410.4		40 (6) 40 (6)								
406.4			SILT, Sandy, dense, moist, light brown, reddish yellow and light gray, little Clay (ML)							SSS @ 11.5', N=40
400.9			SILT, Sandy, dense, wet, light brown, reddish yellow and light gray, little Clay (ML)							SSS @ 16', N=38
		50 (4.5) 50 (2)								
401.4			SAND, Clayey, compact, moist, dark brown and black, fine grained, elevated ferric iron content (SC)							SSS @ 21.5', N=66, #200=47.2%
		30 (6) 45 (6)					37	18		
396.4			CLAY, Sandy Lean, very hard, moist, dark brown and black, trace Lignite (CL)							SSS @ 25.7', N=27, 42, 50/4
		50 (3) 50 (1)								
391.4			SAND, Silty, very dense, moist, black, fine grained (SM)							SSS @ 30.6', N=43, 50/5
		50 (2.25) 50 (1)								
386.4			CLAY, Lean with Sand, very hard, moist, dark brown and light gray, laminated with Sand seams (CL)							SSS @ 35.7', N=31, 43, 50/3
		50 (3) 50 (1.5)								Boring terminated at 37'

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6961945.98, E. 2876908.12; Companion boring drilled

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: Joshua Hubbard Organization: Corsair Consulting LLC

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Marcel D. Strachan
 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

BORING LOG

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	209

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NOTES:

- BORING LOGS SOURCE: CORSAIR CONSULTING LLC GEOTECHNICAL ENGINEERING REPORT, DATED AUGUST 1, 2018.



DRILLING LOG

1 of 1

County Wood Hole RW-07 District Tyler
 Highway US 69 Structure Retaining Wall Date 01/26/2017
 CSJ 0203-05-039 Station 376+95.03 Grnd. Elev. 424.83 ft
 Offset 20.13 ft LT GW Elev. 398.83 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
5		16 (6) 20 (6)	CLAY, Sandy Lean, stiff, moist, brown and reddish brown to 4', thereafter gray and reddish brown (CL)	2.6	8.9	20	44	27	128	SSS @ 0', N=6 PTS @ 2', PP=1.25, #200=63.0% SSS @ 2', N=15 PTS @ 4', PP=2.5, #200=64.9%
415.8		50 (2) 50 (1)	SILT, Sandy, very dense, moist, reddish brown, moderately cemented, elevated ferric ion content (ML)							PTS @ 6', PP=4.0 SSS @ 6.5', N=25
410.8		50 (4.5) 50 (4)	SILT, Sandy, very dense, moist, light reddish brown and light gray, little Clay (ML)							SSS @ 10.8', N=50/4 SSS @ 16.2', N=76
400.8		39 (6) 50 (4.5)								SSS @ 21.2', N=71
395.8		50 (3.5) 50 (2.5)	CLAY, Lean with Sand, hard, moist, gray and light gray (CL)			44	28			SSS @ 25.9', N=28, #200=84.7%
387.7		50 (2.5) 50 (1.5)	CLAY, Sandy Lean, very hard, moist, dark brown (CL)							SSS @ 30.6', N=23, 40, 50/5 SSS @ 35.6', N=26, 38, 50/5.5 Boring terminated at 37.1'

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6962459.79, E. 2876240.95; Companion boring drilled

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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DRILLING LOG

1 of 1

County Wood Hole RW-08 District Tyler
 Highway US 69 Structure Retaining Wall Date 01/26/2017
 CSJ 0203-05-039 Station 374+79.43 Grnd. Elev. 425.11 ft
 Offset 19.26 ft LT GW Elev. 408.11 ft

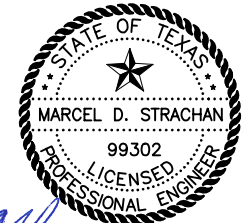
Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
420.1		16 (6) 17 (6)	CLAY, Fat with Sand, moist, brown and reddish brown to 1.5', trace Gravel to 1.5', gray and reddish brown below 2' (CH)							SSS @ 0', N=12, #200=72.9% SSS @ 2', N=19
416.1		45 (6) 46 (6)	CLAY, Lean with Sand, stiff, moist, gray and reddish brown (CL)							SSS @ 6.5', N=28, #200=71.3%
411.1		50 (5.5) 50 (1)	SILT, Sandy, dense, moist, light brown and light gray, little Clay (ML)							SSS @ 11.5', N=37
406.1		31 (6) 50 (5)	SILT, Sandy, dense, wet, reddish brown (ML)							SSS @ 15.9', N=50/5
401.1		28 (6) 33 (6)	CLAY, Lean with Sand, very stiff, moist, gray (CL)							SSS @ 21.4', N=48
396.1		50 (3) 50 (1.5)	CLAY, Sandy Lean, very hard, moist, dark brown (CL)			44	26			SSS @ 26.3', N=31, #200=77.2% SSS @ 30.8', N=23, 41, 50/5 SSS @ 35.5', N=19, 37, 50/5.5 Boring terminated at 37'

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6962590.60, E. 2876069.57

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

BORING LOG

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.			HIGHWAY NO. US 69
Checked: BAJ	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039	SHEET NO. 210

NOTES:

- BORING LOGS SOURCE: CORSAIR CONSULTING LLC GEOTECHNICAL ENGINEERING REPORT, DATED AUGUST 1, 2018.

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DRILLING LOG

1 of 1

WinCore Version 3.3
 County Wood
 Highway US 69
 CSJ 0203-05-039

Hole RW-09
 Structure Retaining Wall
 Station 372+64.57
 Offset 21.33 ft LT

District Tyler
 Date 01/25/2017 to 01/26/2017
 Grnd. Elev. 422.79 ft
 GW Elev. 406.79 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
418.8		50 (4) 50 (3)	CLAY, Sandy Fat, moist, light gray and reddish brown to 1.5', few Gravel, light gray below 2' (CH)				61	39		SSS @ 0', N=8 SSS @ 2', N=31, -#200=56.0%
413.8	5		SAND, Clayey, dense, moist, light brown and light gray, fine grained (SC)				31	15		SSS @ 6.1', N=55, -#200=41.6%
408.8	10	31 (6) 42 (6)	SILT, Sandy, compact, moist, light brown and light gray, little Clay (ML)							SSS @ 11.5', N=32
403.8	15	46 (6) 50 (4.5)	SILT, Sandy, dense, wet, light brown and light gray, little Clay (ML)							SSS @ 16.4', N=43
398.8	20	19 (6) 22 (6)	CLAY, Sandy Lean, very stiff, moist, dark brown and reddish brown, elevated ferric ion content to 23' (CL)							SSS @ 21.5', N=47
393.8	25	50 (4) 50 (2)	CLAY, Sandy Lean, hard, moist, dark brown (CL)							SSS @ 25.9', N=25, 39, 50/5
388.8	30	50 (2) 50 (1.5)	SAND, Clayey, very dense, moist, dark brown, fine grained (SC)							SSS @ 30.7', N=30, 50/4.5
386.3	35	50 (3) 50 (1.5)	SILT, Sandy, very dense, moist, dark brown and light gray (ML)							SSS @ 35.6', N=31, 50/5 Boring terminated at 36.5'

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6962723.30, E. 2875900.57

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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DRILLING LOG

1 of 1

WinCore Version 3.3
 County Wood
 Highway US 69
 CSJ 0203-05-039

Hole S-01
 Structure Signage
 Station 402+99.91
 Offset 87.03 ft LT

District Tyler
 Date 01/25/2017
 Grnd. Elev. 429.83 ft
 GW Elev. 411.83 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
428.3		8 (6) 12 (6)	TOPSOIL, dark brown (SM)							SSS @ 0', N=3
420.8	5		CLAY, Fat, stiff, moist, light red and light gray, trace Gravel (CH)							SSS @ 2', N=13 SSS @ 6.5', N=20
415.8	10	50 (3) 50 (2)	SAND, Silty, dense, moist, light gray and light brown, fine grained (SM)							SSS @ 10.8', N=58
410.8	15	50 (5.5) 50 (5.5)	SAND, Silty, dense, wet, light gray, fine grained (SM)							SSS @ 16.3', N=30
405.8	20	50 (3) 50 (0)	SAND, Silty, very dense, wet, light gray, fine grained (SM)							SSS @ 20.5', N=27, 46, 50/4
400.8	25	50 (1) 50 (0)	SAND, Silty, very dense, moist, light gray, fine grained (SM)							SSS @ 25.3', N=89
395.8	30	50 (4) 50 (1.5)	CLAY, Fat with Sand, hard, moist, dark gray and light gray, laminated with Sand seams (CH)							SSS @ 30.7', N=72
391.3	35	50 (5.5) 50 (1.5)	CLAY, Lean with Sand, hard, moist, dark brown and black, laminated with Sand seams (CL)							SSS @ 36', N=83 Boring terminated at 37.5'

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6960924.49, E. 2878346.27

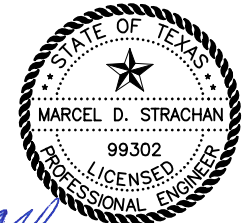
Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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NOTES:

- BORING LOGS SOURCE: CORSAIR CONSULTING LLC
 GEOTECHNICAL ENGINEERING REPORT,
 DATED AUGUST 1, 2018.



Marcel D. Strachan
 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

BORING LOG

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	211

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DRILLING LOG

1 of 1

WinCore Version 3.3
 County Wood
 Highway US 69
 CSJ 0203-05-039

Hole S-02
 Structure Signage
 Station 365+24.98
 Offset 37.22 ft LT

District Tyler
 Date 01/25/2017
 Grnd. Elev. 401.78 ft
 GW Elev. 367.78 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
400.7			ASPHALT (7 IN.), SAND BASE (6 IN.) CLAY, Sandy Lean, stiff, moist, brown and gray, trace ferrous nodules to 2.5' (CL)							SSS @ 1', N=15 SSS @ 3', N=18
5		13 (6) 13 (6)								SSS @ 6.4', N=23
392.8			SILT, Sandy, compact, moist, reddish brown and gray, little Clay (ML)							SSS @ 11.3', N=51
10		19 (6) 26 (6)								
387.8			SILT, Sandy, compact, moist, brown and light brown, little Clay (ML)							SSS @ 16.5', N=39
15		33 (6) 37 (6)								
382.8			CLAY, Sandy Lean, hard, moist, dark brown (CL)							SSS @ 21.2', N=59
20		50 (5.5) 50 (3.5)								
377.8			SAND, Silty, very dense, moist, dark brown and gray, fine grained (SM)							SSS @ 25.7', N=50/5
25		50 (3) 50 (1)								
372.8			SILT, Sandy, very dense, moist, dark brown and gray (ML)							SSS @ 30.5', N=25, 39, 50/5.5
30		50 (3) 50 (1)								
367.8			SAND, Silty, very dense, wet, dark brown and gray, fine grained (SM)							SSS @ 35.3', N=50/5.5 Boring terminated at 35.8'
35		50 (2) 50 (1)								
366										
40										

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6963187.44, E. 2875324.56

Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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DRILLING LOG

1 of 1

WinCore Version 3.3
 County Wood
 Highway US 69
 CSJ 0203-05-039

Hole S-03
 Structure Signage
 Station 362+04.19
 Offset 78.14 ft LT

District Tyler
 Date 01/25/2017
 Grnd. Elev. 396.34 ft
 GW Elev. 383.84 ft

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test		Properties				Additional Remarks
				Lateral Press. (psi)	Deviator Stress (psi)	MC	LL	PI	Wet Den. (pcf)	
395.3			ASPHALT (6 IN.), BASE (6 IN.) CLAY, Sandy Lean, moist, brownish red and brown (CL)							SSS @ 1', N=14 SSS @ 3', N=19
5		16 (6) 9 (6)								SSS @ 6.5', N=9
387.3			SAND, Silty, slightly compact, moist, reddish brown and light brown, fine grained, trace Gravel to 4.5', little Clay (SM)							
10		2 (6) 1 (6)								SSS @ 11.5', N=2
382.3			SAND, Silty, very loose, wet, gray, fine grained (SM)							
15		4 (6) 5 (6)								SSS @ 16.5', N=5
377.3			SAND, Clayey, very loose, moist, reddish brown and gray, fine to coarse grained (SC)							SSS @ 21.5', N=9
20		3 (6) 4 (6)								
372.3			CLAY, Lean with Sand, stiff, moist, dark gray (CL)							SSS @ 26.4', N=9
25		16 (6) 17 (6)								
367.3			SAND, Silty, very dense, moist, brown and gray, fine grained (SM)							SSS @ 30.5', N=39, 50/4
30		50 (3.5) 50 (1)								
362.3			CLAY, Fat with Sand, very hard, moist, light gray (CH)							SSS @ 35.5', N=18, 35, 50/5 Boring terminated at 36.9'
35		50 (2) 50 (2)								
359.4										
40										

Remarks: Drill Rig: CME 75 with TxDOT 170-pound Automatic Hammer; SSS: Split Spoon Sample; PTS: Push Tube Sample; PP: Pocket Penetrometer reading (tsf); Drilling method: HSA; N. 6963415.75, E. 2875095.51

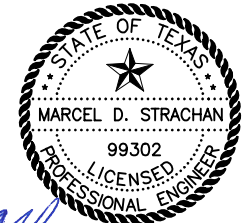
Any ground water elevation information provided on this boring log is representative of conditions existing on the day and for the specific location where this information was collected. The actual groundwater elevation may fluctuate due to time, climatic conditions, and/or construction activity.

Driller: Strata Core Services Logger: John Bush Organization: Corsair Consulting LLC

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NOTES:

- BORING LOGS SOURCE: CORSAIR CONSULTING LLC
 GEOTECHNICAL ENGINEERING REPORT,
 DATED AUGUST 1, 2018.



Marcel D. Strachan
 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

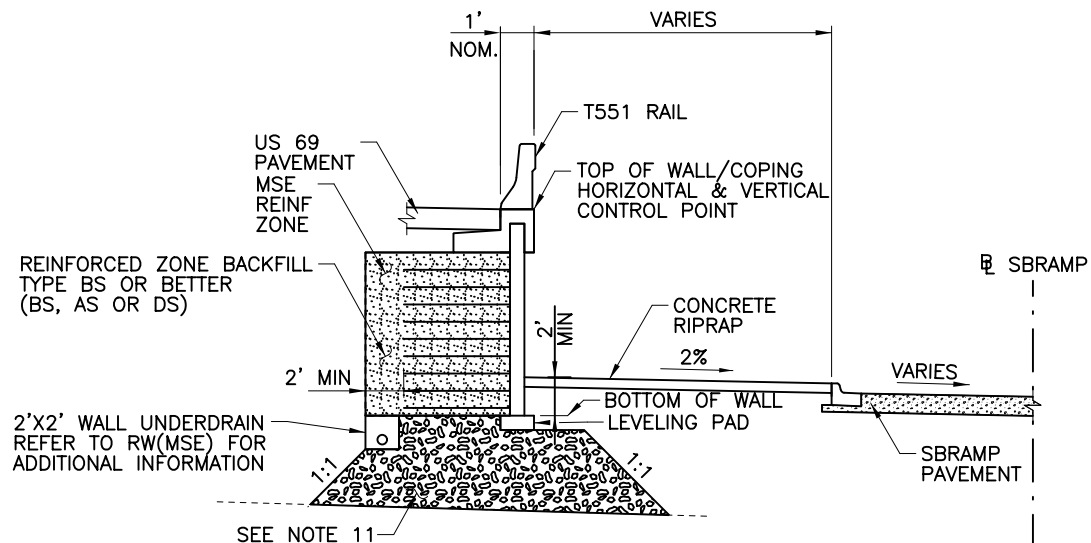
BORING LOG

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.			HIGHWAY NO. US 69
Checked: BAJ			DIST. COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: JKF						SHEET NO. 212
Checked: BAJ			DIST. COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039

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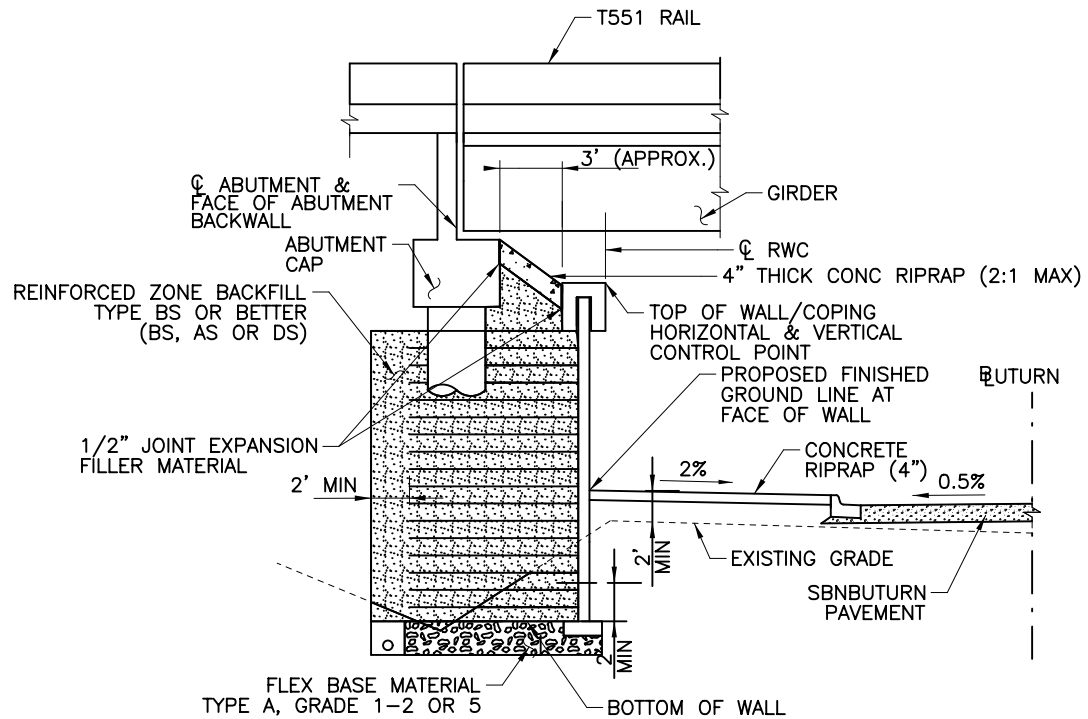
GENERAL NOTES

1. ALL STA. AND OFFSETS ARE FROM \bar{R} WALL UNLESS NOTED OTHERWISE.
2. SQUARE FOOT SURFACE AREA OF RETAINING WALL IS MEASURED FROM TOP OF RETAINING WALL TO BOTTOM OF WALL, UNLESS NOTED OTHERWISE. LEVELING PAD ADJUSTMENTS MADE TO ACCOMMODATE, RETAINING WALL FABRICATION WILL NOT BE MEASURED FOR PAYMENT.
3. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE DURING CONSTRUCTION AND POST CONSTRUCTION PERIOD.
4. DRAINAGE TRUNK AND LATERAL PIPES IN THE VICINITY OF THE WALL SHALL BE CONSTRUCTED PRIOR TO WALL CONSTRUCTION.
5. WALL MANUFACTURER SHALL ADJUST AND ACCOMMODATE ANY INLETS POSITIONED WITHIN THE REINFORCING ZONE OF AN MSE WALL. ADJUSTMENTS SHALL BE SHOWN IN THE SHOP DRAWINGS.
6. REFER TO THE CORE BORING SHEETS FOR BORING INFORMATION.
7. REFER TO THE ROADWAY AND DRAINAGE PLANS FOR ADDITIONAL INFORMATION FOR ROADWAY AND DRAINAGE ITEMS RESPECTIVELY.
8. REFER TO TxDOT STANDARDS RW(MSE), RW(MSE)DD & RW(EM) FOR ADDITIONAL INFORMATION.
9. UNDERDRAIN PIPE, FILTER MATERIAL, AND RELATED MATERIALS ARE SUBSIDIARY TO ITEM 0423.
10. LEVELING PAD (MIN. 12" X 6")
11. FOR WALL E, IN AREAS WHERE WALL FOOTING IS ABOVE EXISTING GRADE, CONSTRUCT FOUNDATION MATERIAL MEETING THE REQUIREMENTS OF ITEM 247, FLEXIBLE BASE, TYPE A, GRADE 1-2 OR 5, TO THE LIMITS SHOWN. THIS MATERIAL WILL BE QUANTIFIED AND PAID PER ITEM 132, EMBANKMENT, TYPE C. ALL OTHER AREAS SHALL INCLUDE MINIMUM 2' OF FOUNDATION REPLACEMENT.
12. 4" CONCRETE RIPRAP TO BE QUANTIFIED WITH RETAINING WALL QUANTITIES.



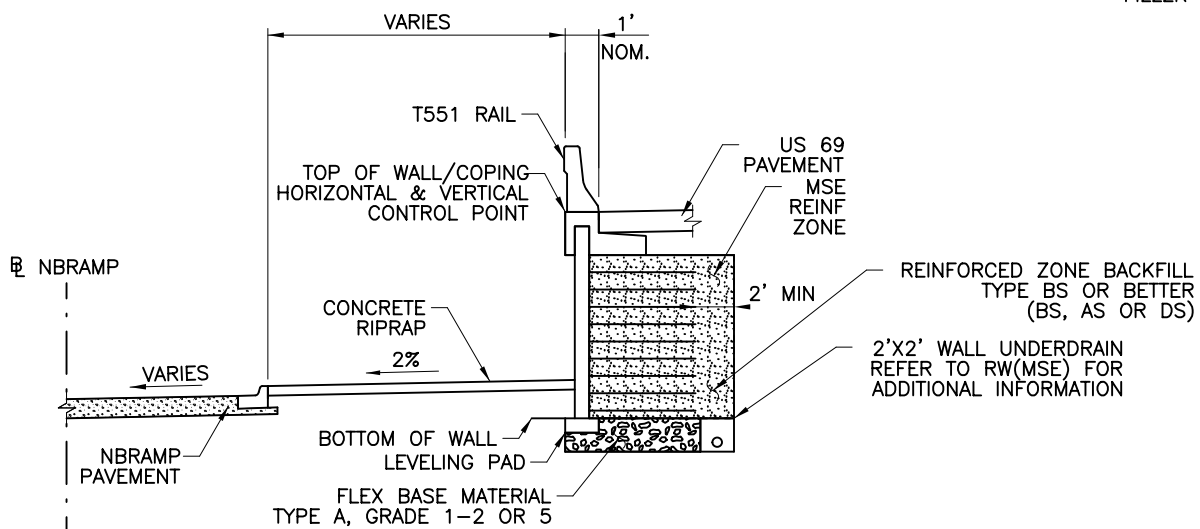
TYPICAL SECTION

NTS
APPLIES TO RETAINING WALL A&E



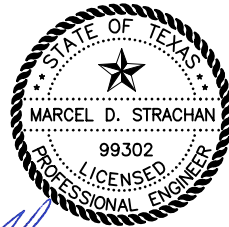
TYPICAL SECTION

NTS
APPLIES TO RETAINING WALL C&D



TYPICAL SECTION

NTS
APPLIES TO RETAINING WALL B&F



Marcel D. Strachan
12/11/2023

NO.	REVISION	BY	DATE

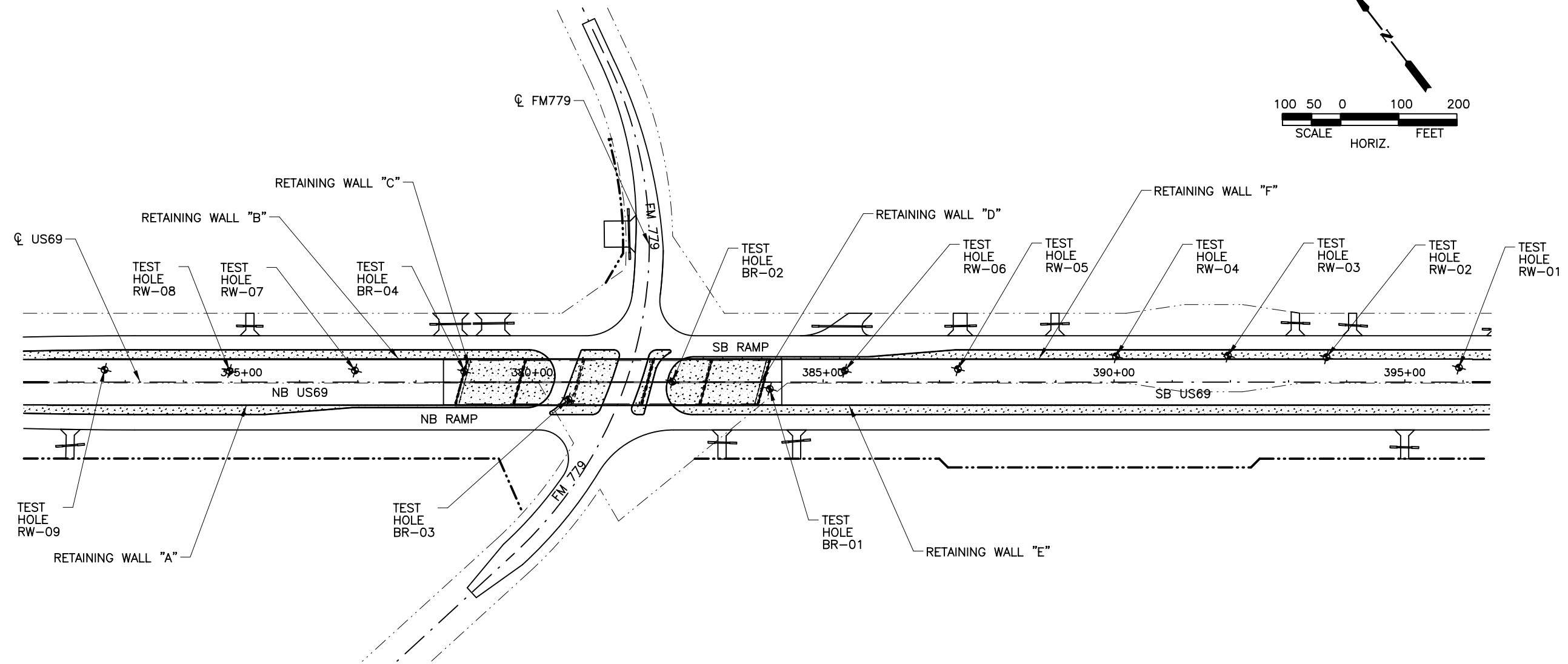
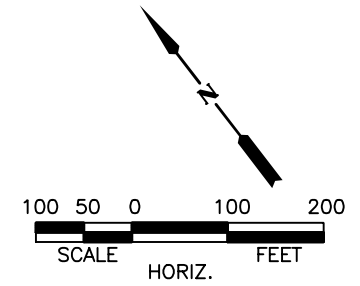
CP&Y
TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

**RETAINING WALL
TYPICAL SECTIONS AND GENERAL NOTES**

Designed:	MDS	FED. RD. DIV. NO.	6	STATE	TEXAS	HIGHWAY NO.	US 69
Checked:	BAJ	DIST.	TYL	COUNTY	WOOD	CONTROL NO.	0203
Drawn:	MDS	SECTION NO.	05	JOB NO.	039	SHEET NO.	213
Checked:	BAJ						

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TEST HOLE	STATION	OFFSET	ELEV.	NORTHING	EASTING
RW-01	395+93.00	25.08' (LT)	419.76	6961306.06	2877748.01
RW-02	393+65.09	43.05' (LT)	419.58	6961459.32	2877578.37
RW-03	391+95.83	45.70' (LT)	418.36	6961564.66	2877445.86
RW-04	390+03.43	44.61' (LT)	418.85	6961681.14	2877292.72
RW-05	387+31.61	22.51' (LT)	417.10	6961829.42	2877063.84
RW-06	385+37.11	19.90' (LT)	420.43	6961945.98	2876908.12
BR-01	384+08.07	11.59' (RT)	420.98	6961999.74	2876786.65
BR-02	382+40.61	0.90' (LT)	420.12	6962111.78	2876661.56
BR-03	380+62.00	29.58' (RT)	420.27	6962196.57	2876501.44
BR-04	378+82.81	18.61' (LT)	423.65	6962344.05	2876388.83
RW-07	376+95.03	20.13' (LT)	424.83	6962459.79	2876240.95
RW-08	374+79.43	19.26' (LT)	425.11	6962590.60	2876069.57
RW-09	372+64.57	21.33' (LT)	422.79	6962723.30	2875900.57



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

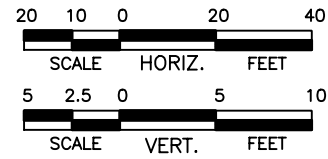
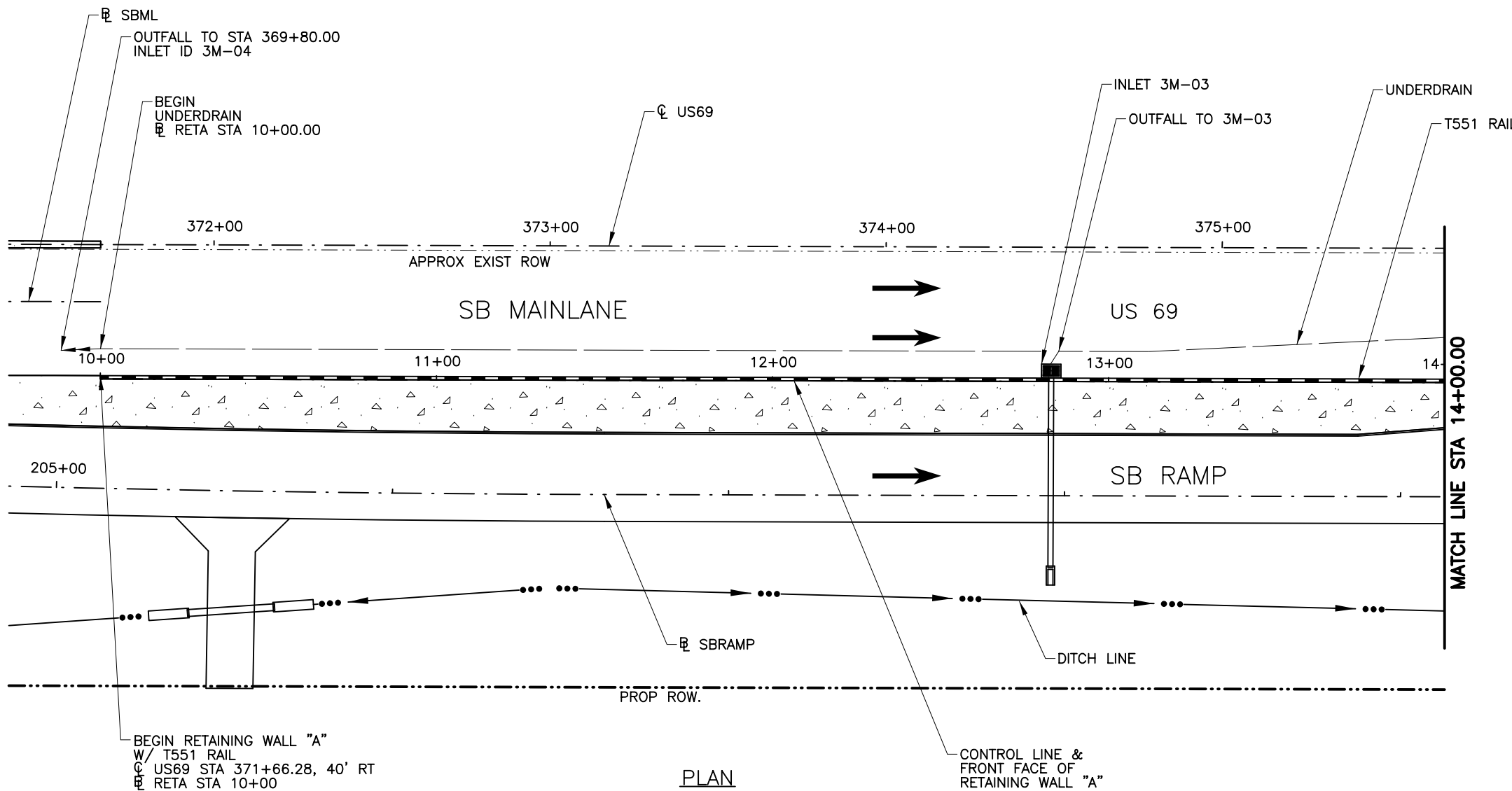
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US 69 AT FM 779

RETAINING WALLS LAYOUT PLAN

Designed:	JKF	FED. RD. DIV. NO.	6	STATE	TEXAS	PROJECT NO.		HIGHWAY NO.	US 69
Checked:	BAJ	DIST.	TYL	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	JKF	JOB NO.	039	SHEET NO.	214				

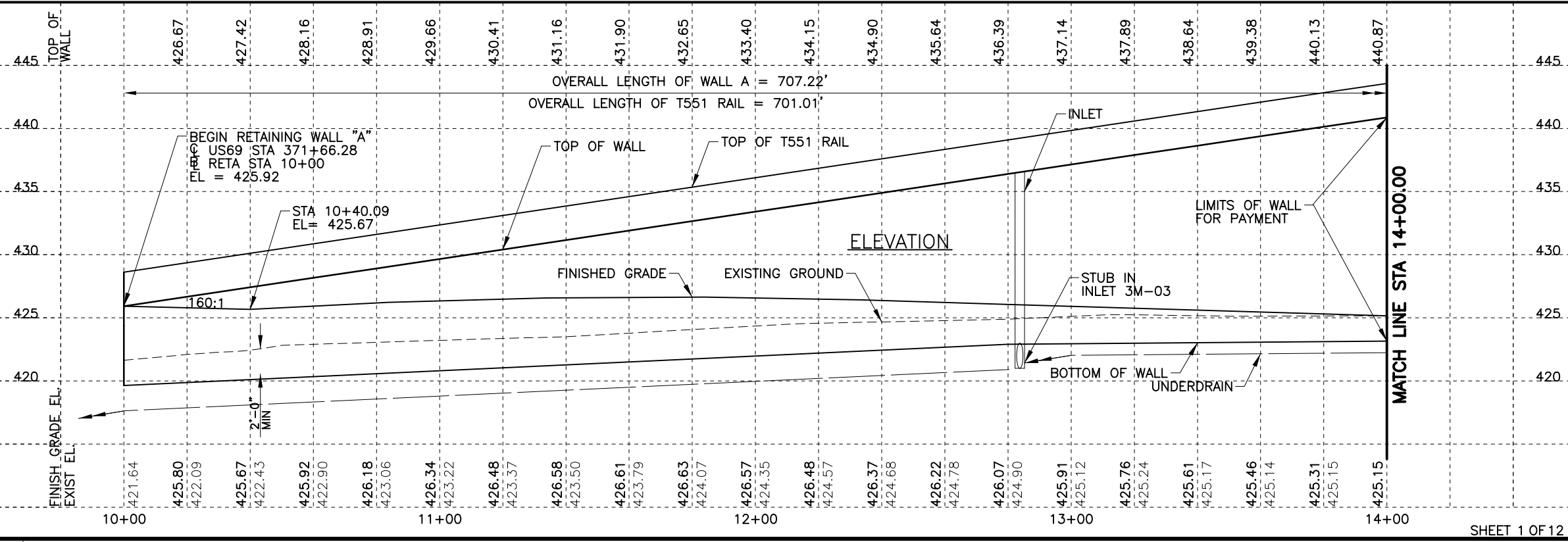
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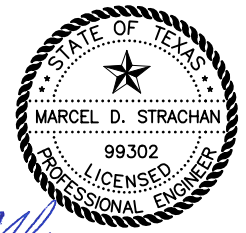
- NOTES:
1. ALL STA./OFF. ARE BASED OFF \square WALL A UNLESS NOTED OTHERWISE
 2. REFER TO THE RETAINING WALLS LAYOUT PLAN SHEETS FOR BORING INFORMATION
 3. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY
 4. T551 RAIL STA./OFF. ARE TO NOMINAL BACK OF RAIL (NOMINAL FRONT FACE OF WALL)

ESTIMATED QUANTITIES		
ITEM 423	RETAINING WALL "A" (MSE)	SF 11811
ITEM 450	RAIL (TY T551)	LF 702
ITEM 556	PIPE UNDERDRAINS (TY 6)(6")	LF 687.6

PLAN



ELEVATION



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE

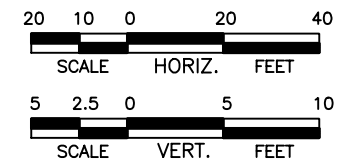
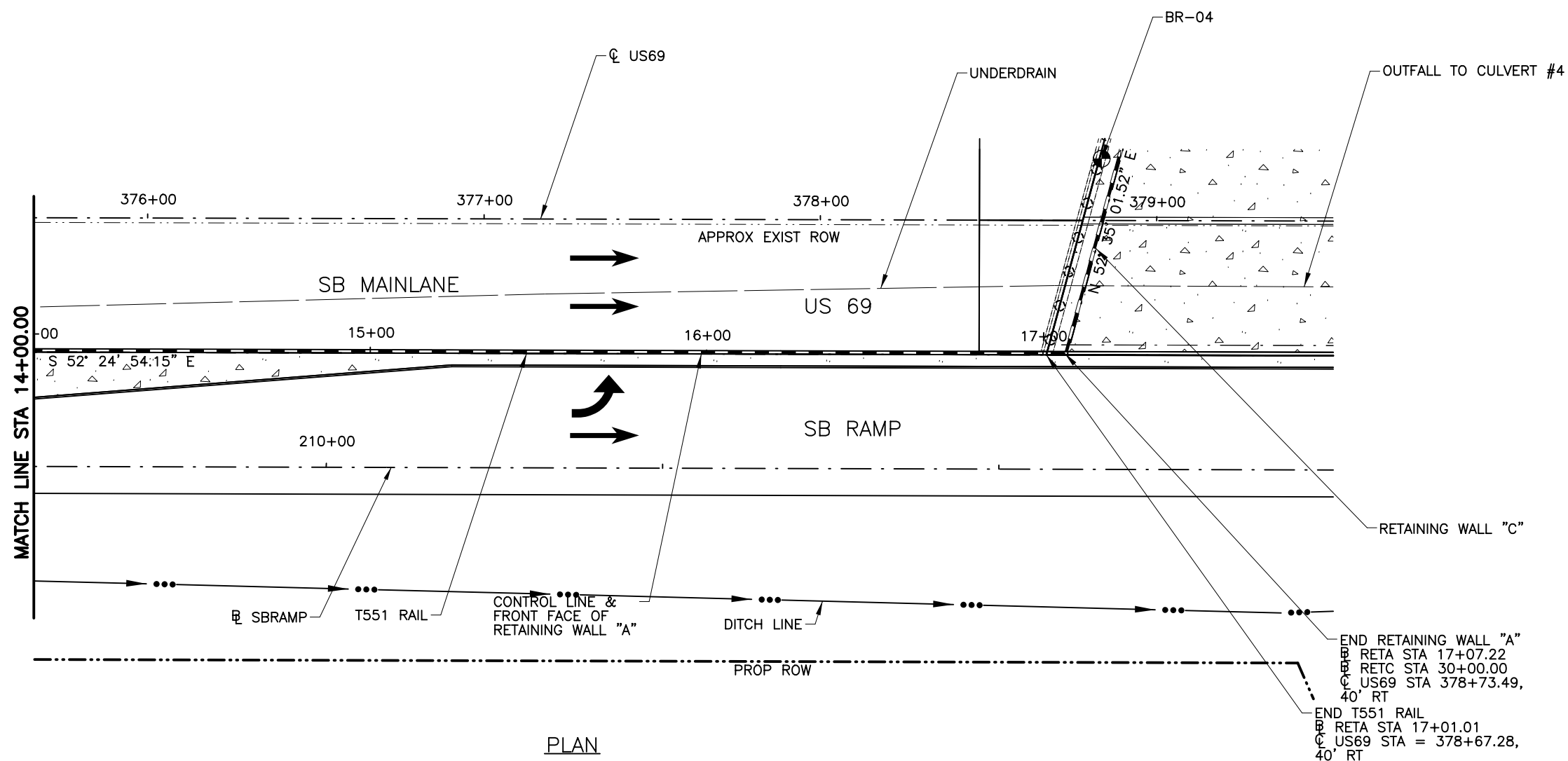


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US 69 AT FM 779

RETAINING WALL "A"

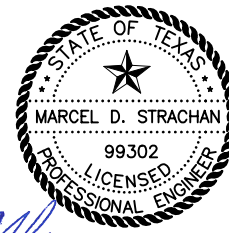
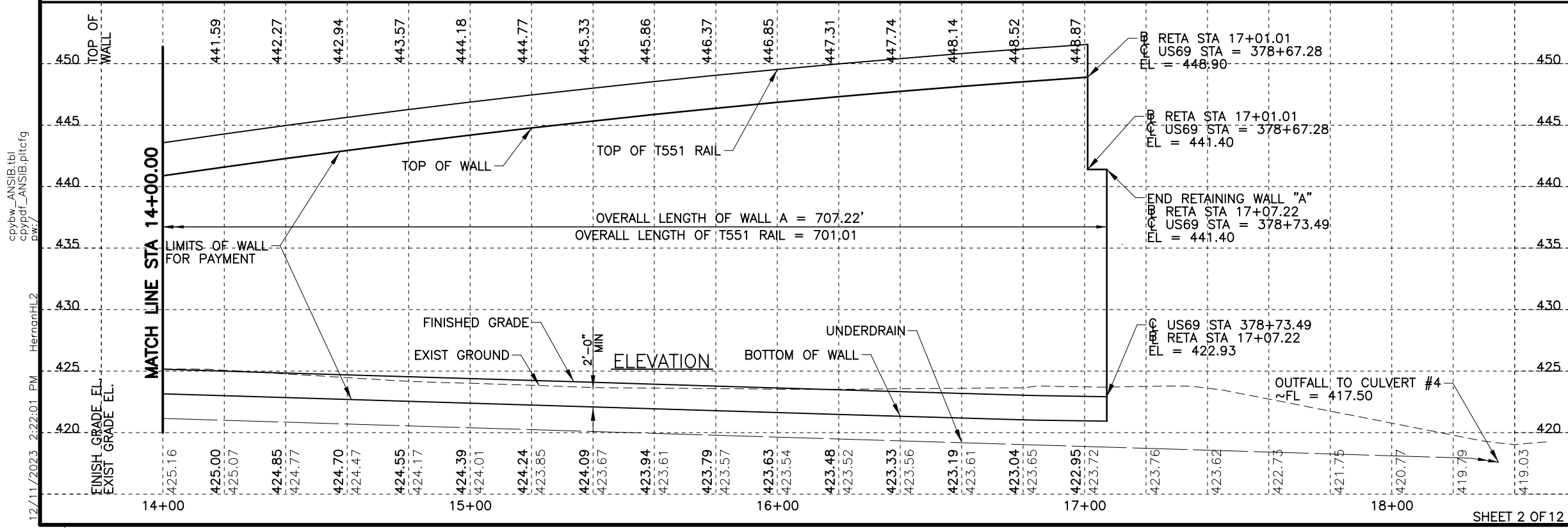
BEGIN TO STA 14+00

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	215



NOTES:

1. ALL STA./OFF. ARE BASED OFF \square WALL A UNLESS NOTED OTHERWISE
2. REFER TO THE RETAINING WALLS LAYOUT PLAN SHEETS FOR BORING INFORMATION
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS TO AVOID ANY CONFLICTS WITH RETAINING WALLS.
4. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY
5. T551 RAIL STA./OFF. ARE TO NOMINAL BACK OF RAIL (NOMINAL FRONT FACE OF WALL)
6. SEE DRAINAGE FOR ADDITIONAL OUTFALL INFORMATION



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE

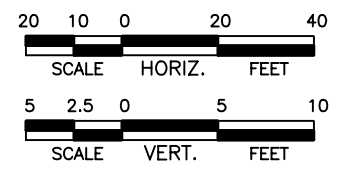
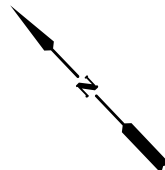


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US 69 AT FM 779

RETAINING WALL "A"
STA 14+00 TO END

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
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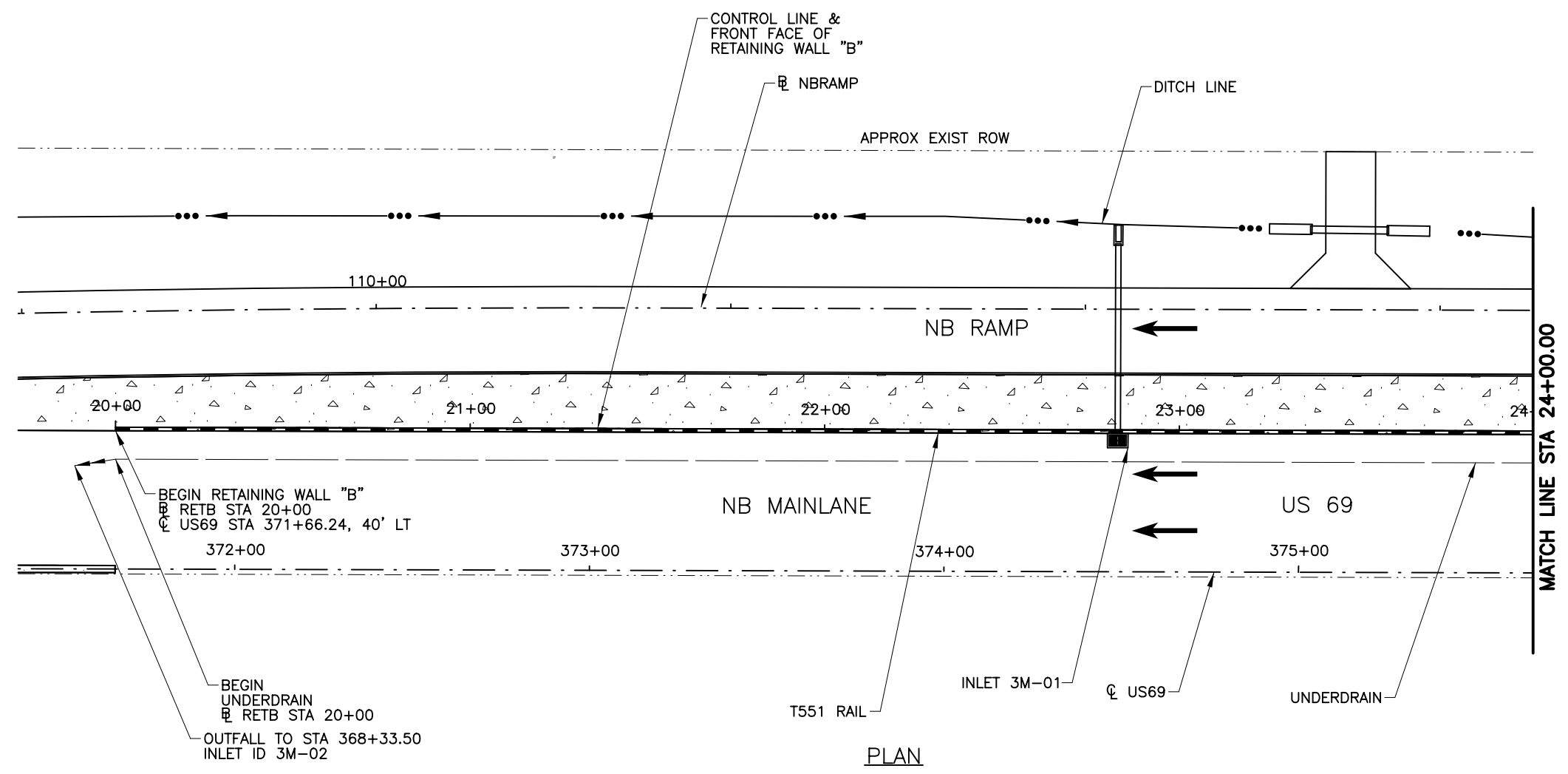
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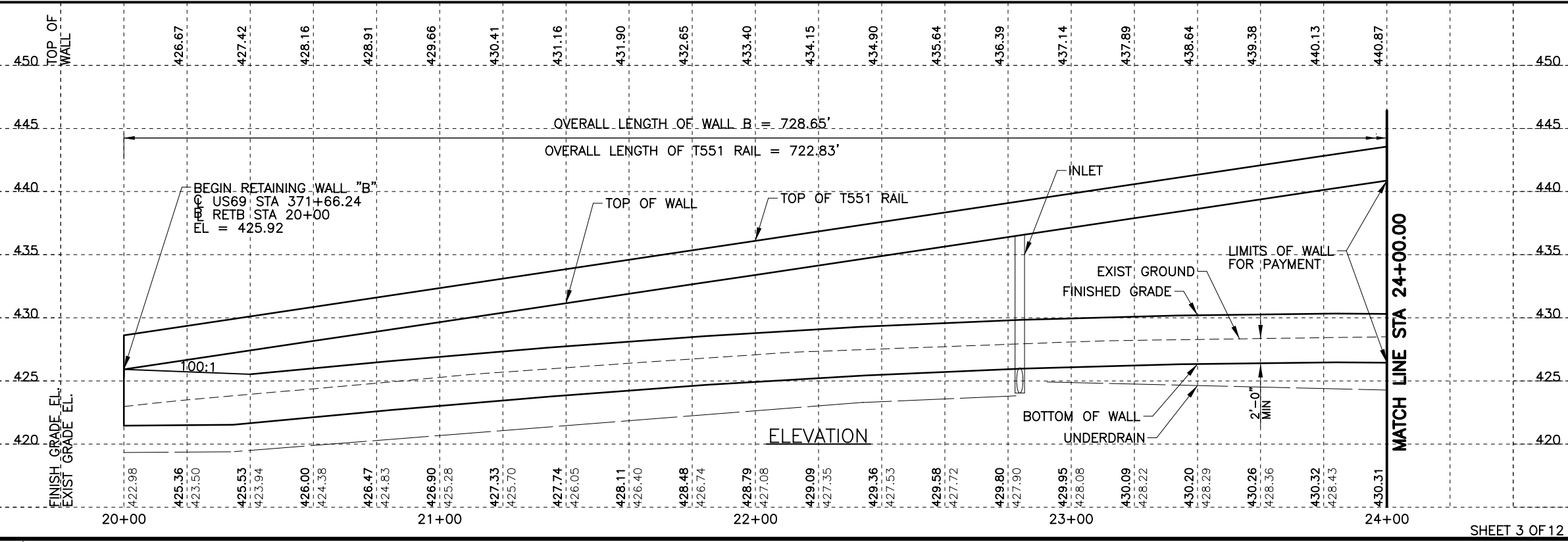
NOTES:

1. ALL STA./OFF. ARE BASED OFF \bar{C} WALL B UNLESS NOTED OTHERWISE
2. REFER TO THE RETAINING WALLS LAYOUT PLAN SHEETS FOR BORING INFORMATION
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS TO AVOID ANY CONFLICTS WITH RETAINING WALLS.
4. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY
5. T551 RAIL STA./OFF. ARE TO NOMINAL BACK OF RAIL (NOMINAL FRONT FACE OF WALL)

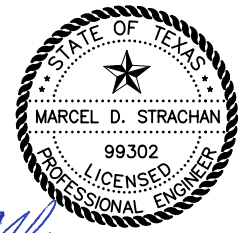
ESTIMATED QUANTITIES		
ITEM 423	RETAINING WALL "B" (MSE)	SF 10149
ITEM 450	RAIL (TY T551)	LF 722.9
ITEM 556	PIPE UNDERDRAINS (TY 6)(6")	LF 705.8



PLAN



ELEVATION



Marcel D. Strachan 12/11/2023

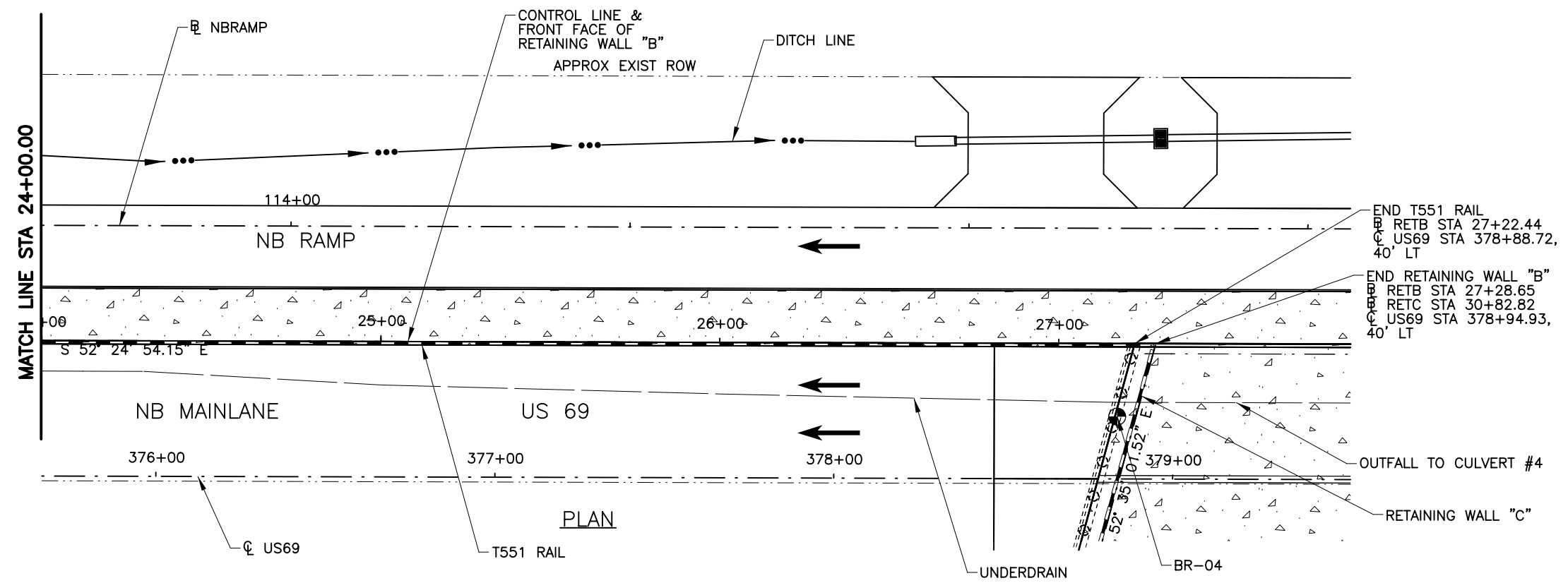
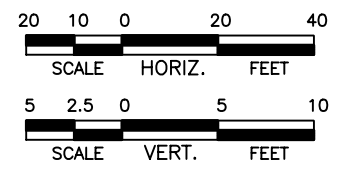
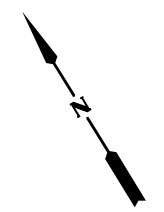
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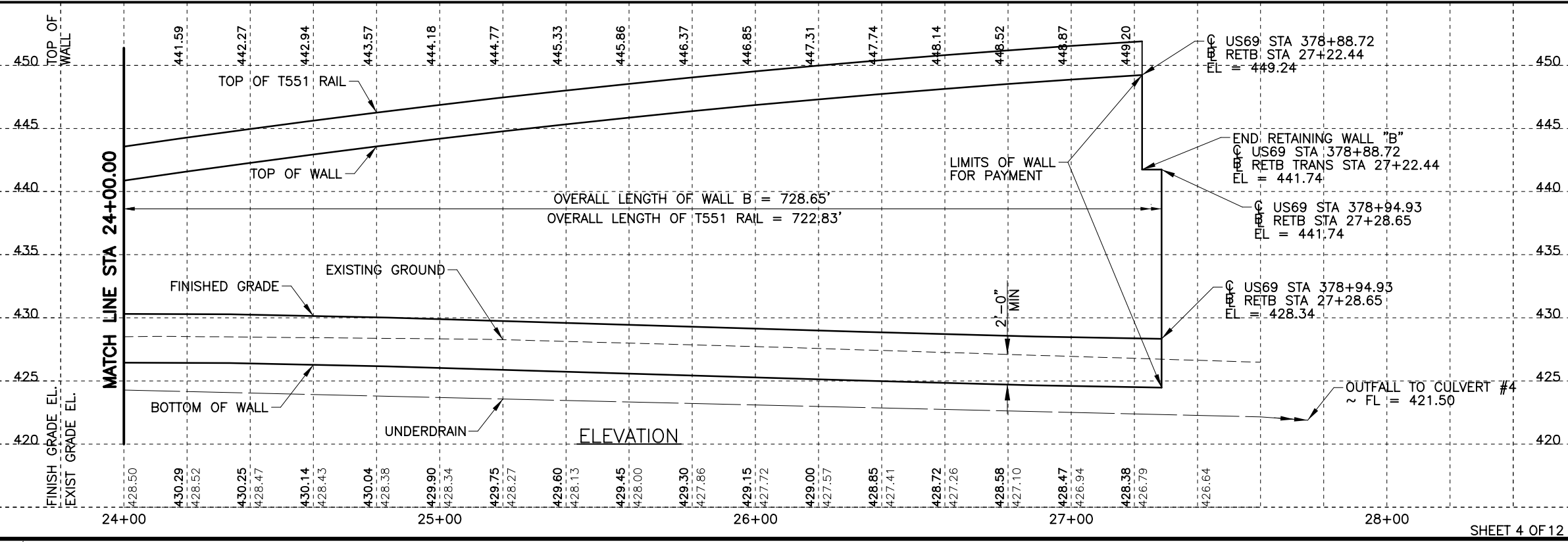
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US 69 AT FM 779

RETAINING WALL "B"
BEGIN TO STA 24+00

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: JKF	TYL	WOOD	0203	05
Checked: BAJ	TYL	WOOD	0203	05



- NOTES:
1. ALL STA./OFF. ARE BASED OFF \square WALL B UNLESS NOTED OTHERWISE
 2. REFER TO THE RETAINING WALLS LAYOUT PLAN SHEETS FOR BORING INFORMATION
 3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS TO AVOID ANY CONFLICTS WITH RETAINING WALLS.
 4. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY
 5. T551 RAIL STA./OFF. ARE TO NOMINAL BACK OF RAIL (NOMINAL FRONT FACE OF WALL)
 6. SEE DRAINAGE FOR ADDITIONAL OUTFALL INFORMATION



Marcel D. Strachan
12/11/2023

NO.	REVISION	BY	DATE



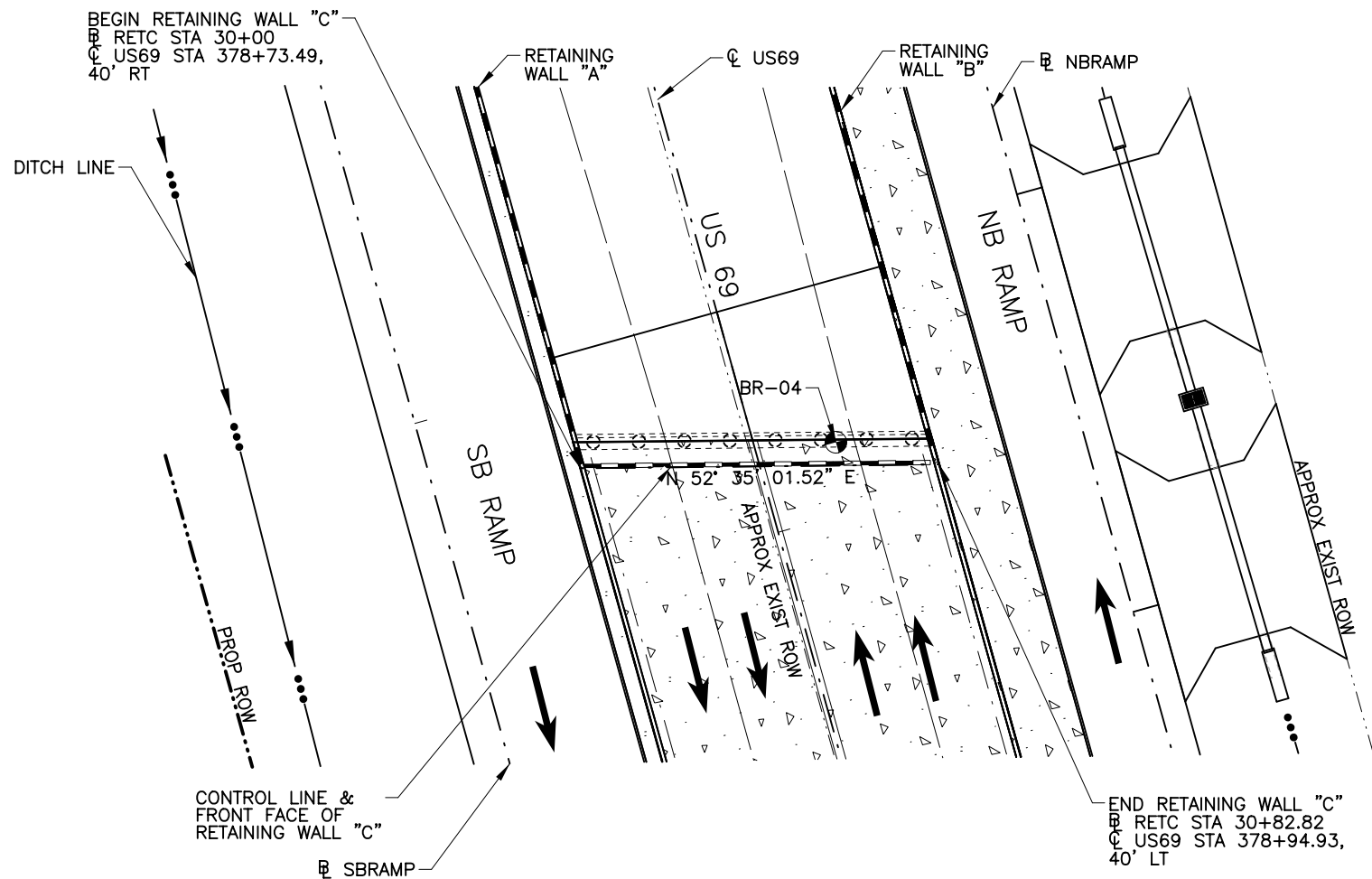
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US 69 AT FM 779

RETAINING WALL "B"

STA 24+00 TO END

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	218

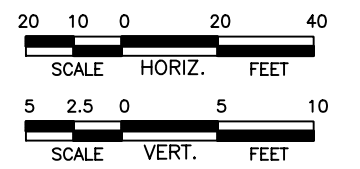
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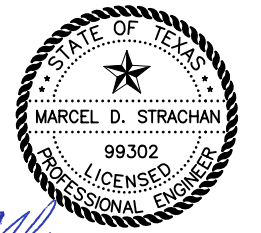
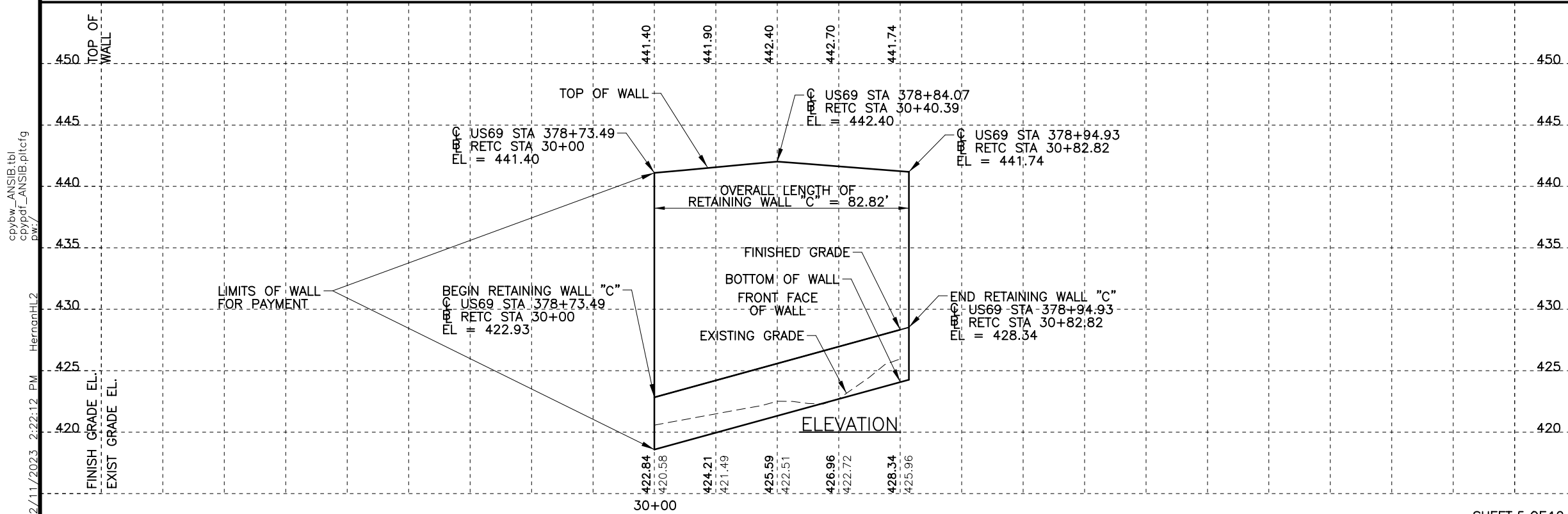
PLAN

NOTES:

1. ALL STA./OFF. ARE BASED OFF R WALL C UNLESS NOTED OTHERWISE
2. REFER TO THE RETAINING WALLS LAYOUT PLANS SHEETS FOR BORING INFORMATION
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS TO AVOID ANY CONFLICTS WITH RETAINING WALLS.
4. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY



ESTIMATED QUANTITIES			
ITEM 423	RETAINING WALL "C" (MSE)	SF	1847.5
ITEM 450	RAIL (TY T551)	LF	0
ITEM 556	PIPE UNDERDRAINS (TY 6)(6")	LF	0



Marcel D. Strachan 12/11/2023

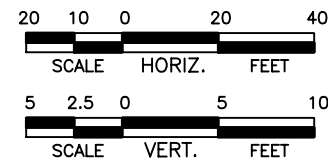
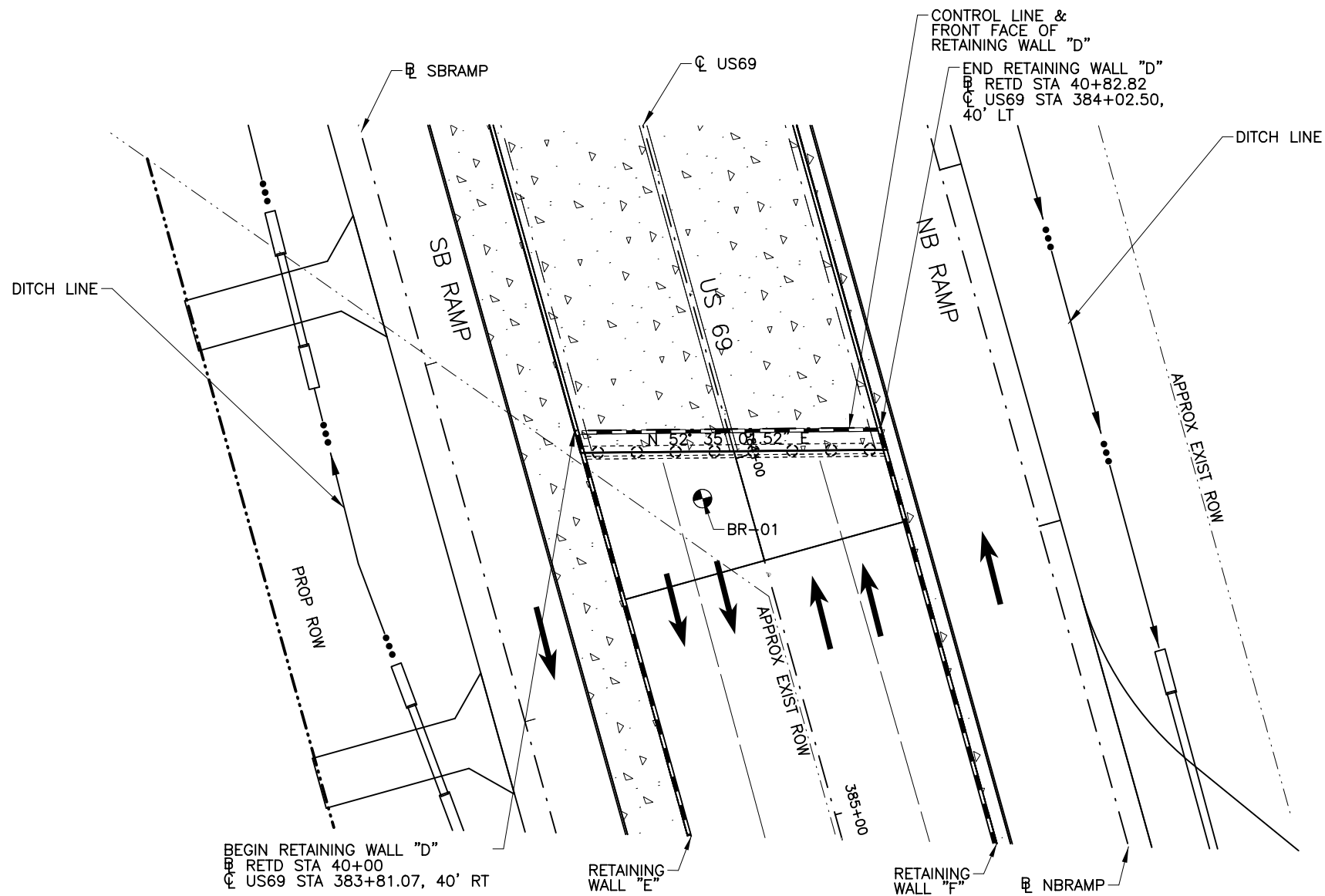
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RETAINING WALL "C"

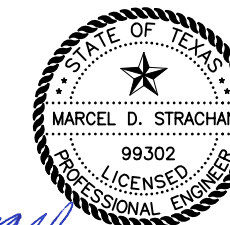
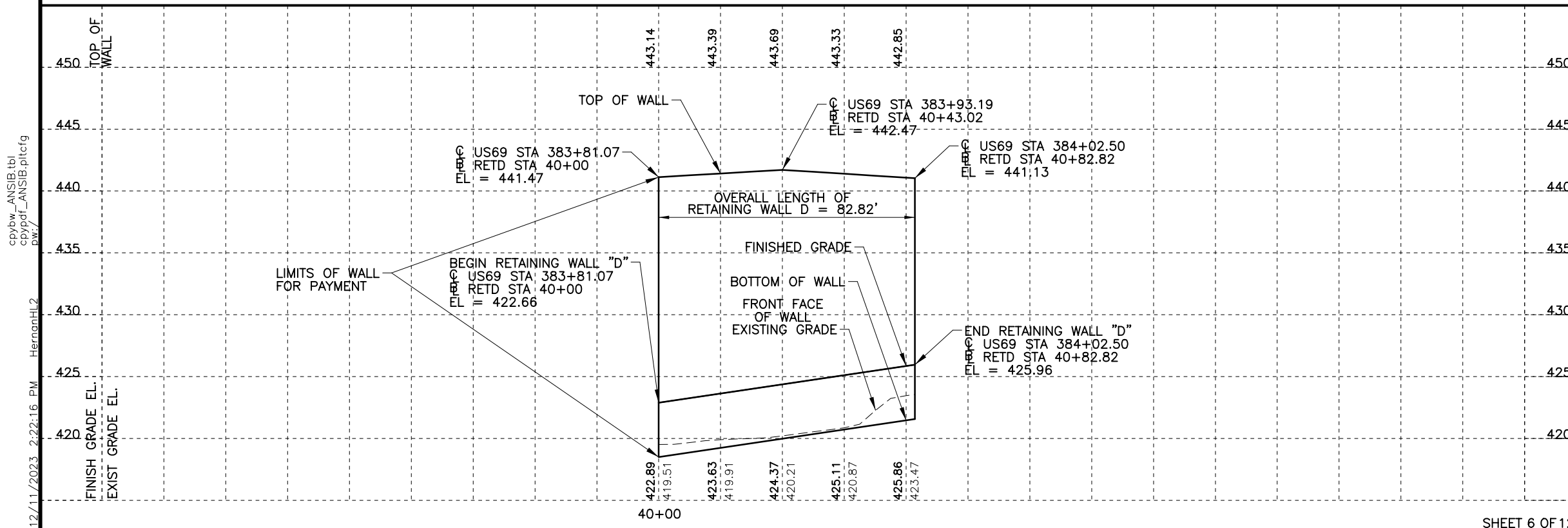
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Checked: BAJ	DIST. COUNTY	WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: JKF	JOB NO. 039	SHEET NO. 219		



NOTES:

1. ALL STA./OFF. ARE BASED OFF \square WALL D UNLESS NOTED OTHERWISE
2. REFER TO THE RETAINING WALLS LAYOUT PLANS SHEETS FOR BORING INFORMATION
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS TO AVOID ANY CONFLICTS WITH RETAINING WALLS.
4. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY

ESTIMATED QUANTITIES		
ITEM 423	RETAINING WALL "D" (MSE)	SF 1937
ITEM 450	RAIL (TY T551)	LF 0
ITEM 556	PIPE UNDERDRAINS (TY 6)(6")	LF 0



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



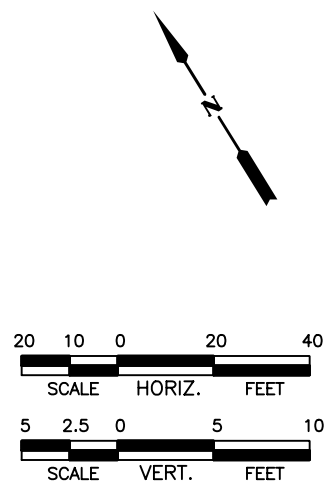
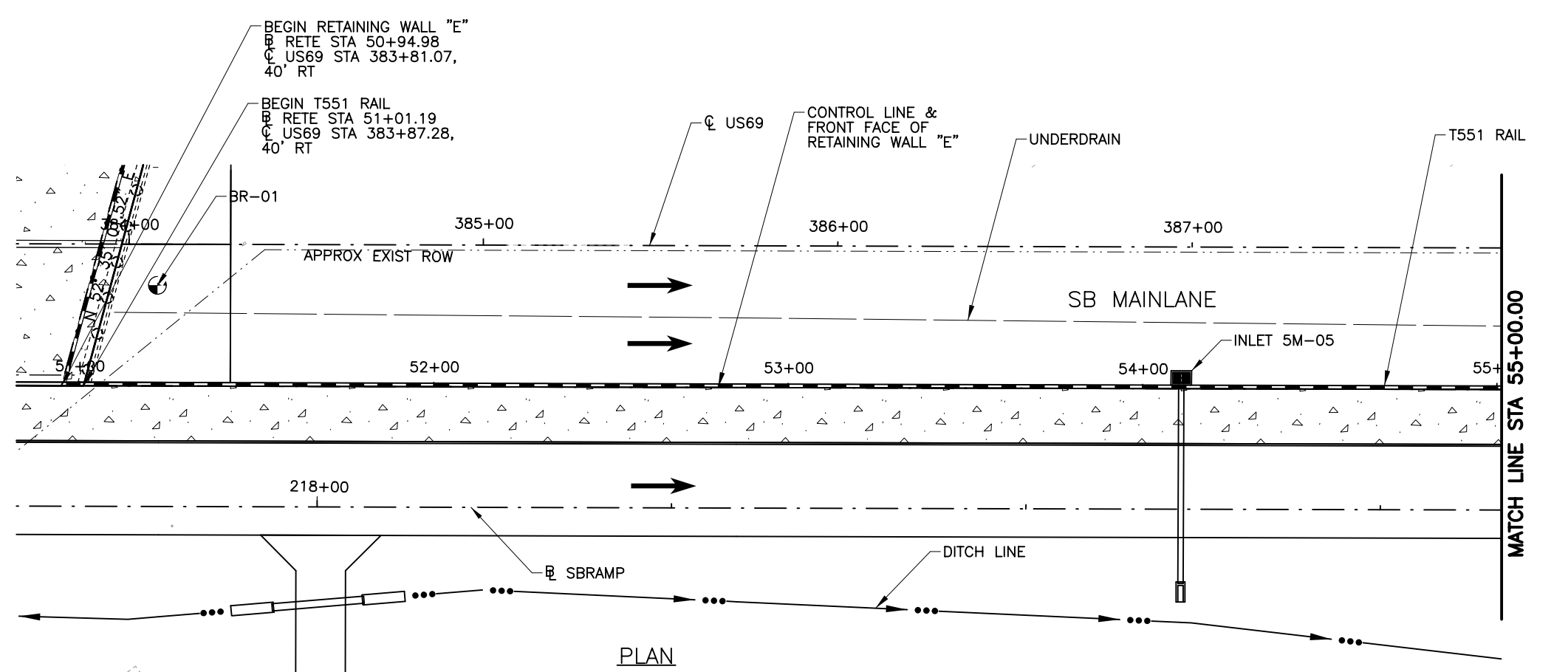
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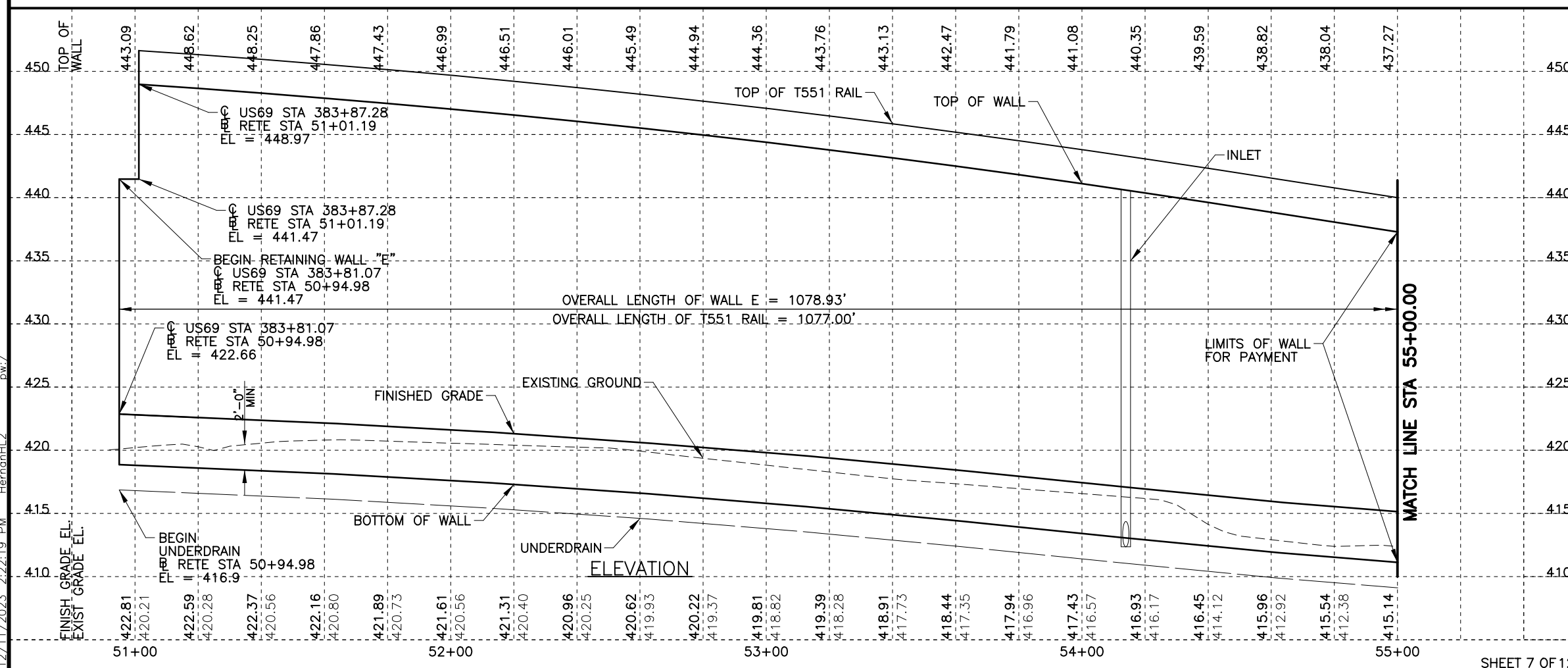
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Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	220



- NOTES:
1. ALL STA./OFF. ARE BASED OFF \square WALL "E" UNLESS NOTED OTHERWISE
 2. REFER TO THE RETAINING WALLS LAYOUT PLAN SHEETS FOR BORING INFORMATION PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS TO AVOID ANY CONFLICTS WITH RETAINING WALLS.
 3. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY
 4. T551 RAIL STA./OFF. ARE TO NOMINAL BACK OF RAIL (NOMINAL FRONT FACE OF WALL)

ESTIMATED QUANTITIES		
ITEM 423	RETAINING WALL "E" (MSE)	SF 22540
ITEM 450	RAIL (TY T551)	LF 1073.2
ITEM 556	PIPE UNDERDRAINS (TY 6)(6")	LF 1035



STATE OF TEXAS
 MARCEL D. STRACHAN
 99302
 LICENSED PROFESSIONAL ENGINEER
 12/11/2023

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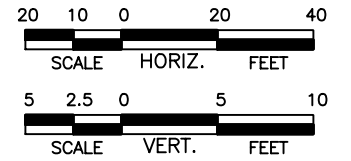
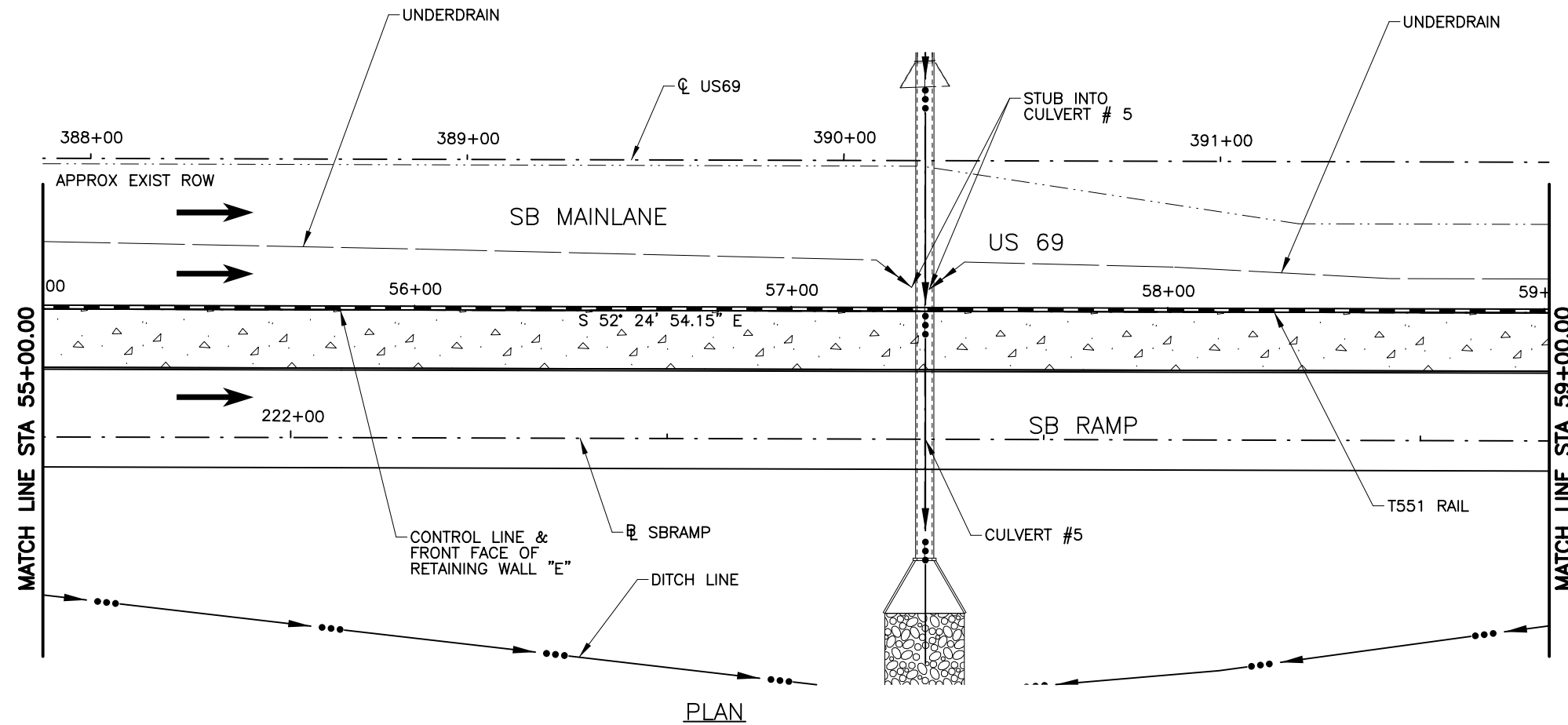
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 TEXAS REGISTERED ENGINEERING FIRM F-1741

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RETAINING WALL "E"
 BEGIN TO STA 55+00

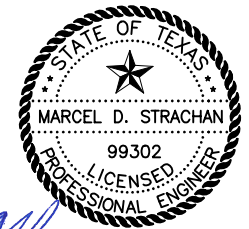
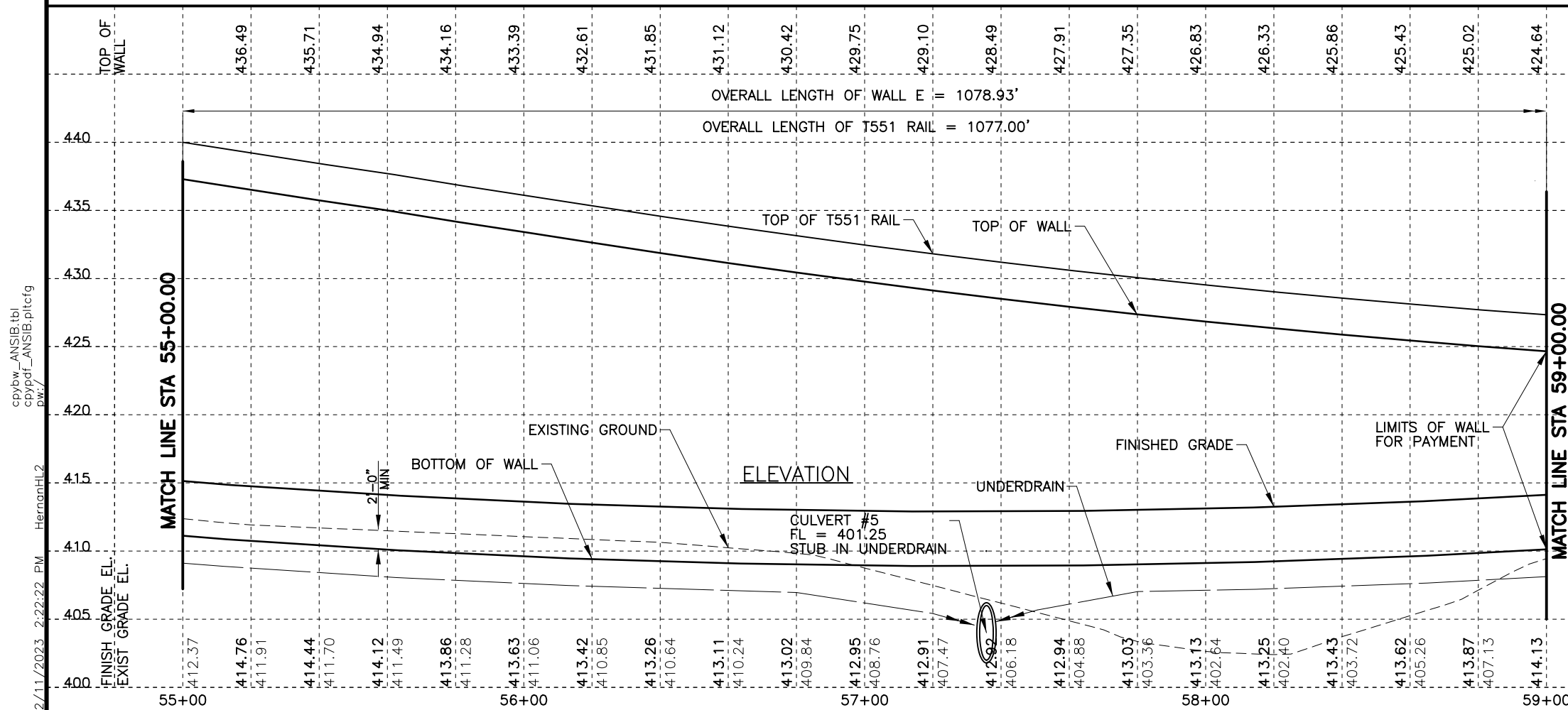
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				SHEET NO. 221

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NOTES:

1. ALL STA./OFF. ARE BASED OFF \square WALL E UNLESS NOTED OTHERWISE
2. REFER TO THE RETAINING WALLS LAYOUT PLAN SHEETS FOR BORING INFORMATION PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS TO AVOID ANY CONFLICTS WITH RETAINING WALLS.
3. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY
4. T551 RAIL STA./OFF. ARE TO NOMINAL BACK OF RAIL (NOMINAL FRONT FACE OF WALL)



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

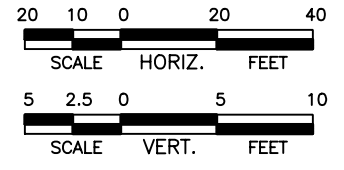
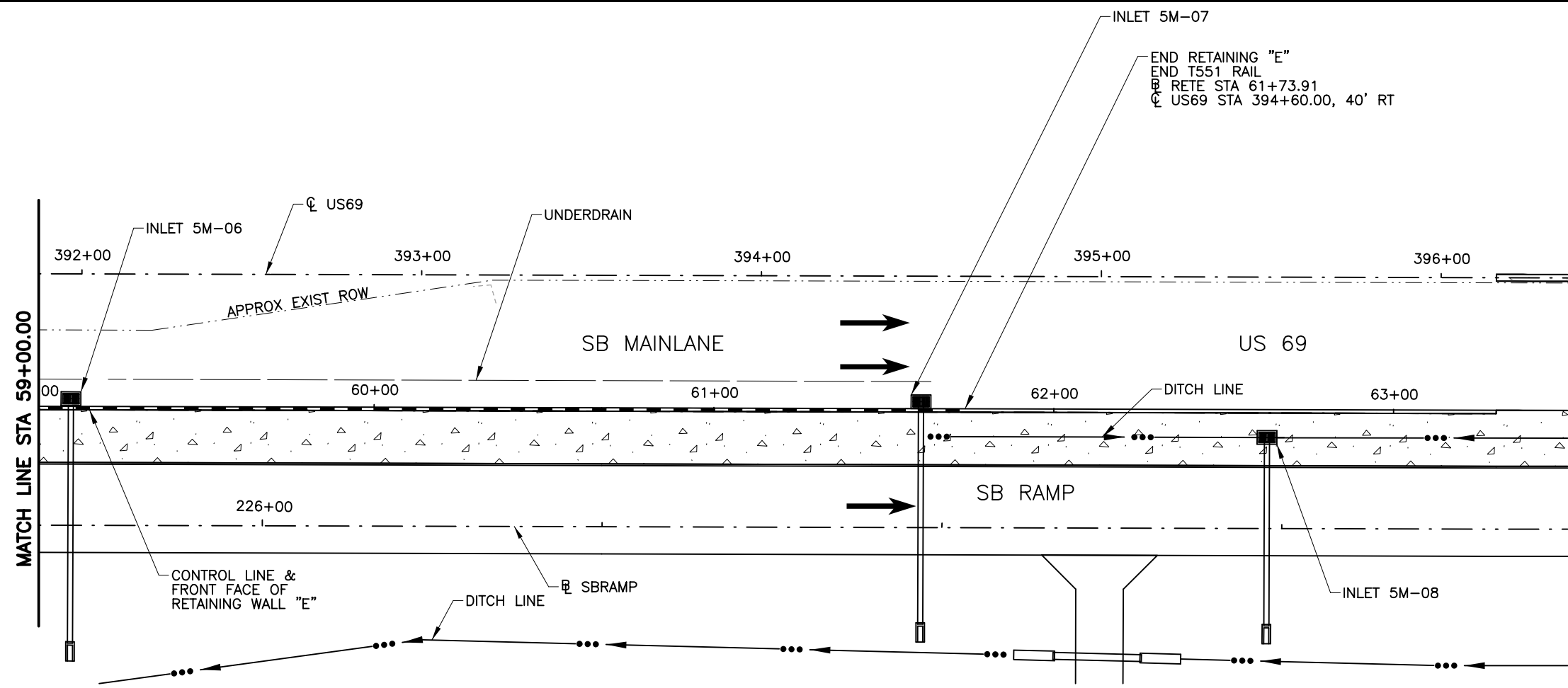
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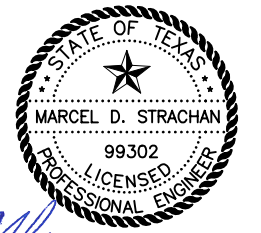
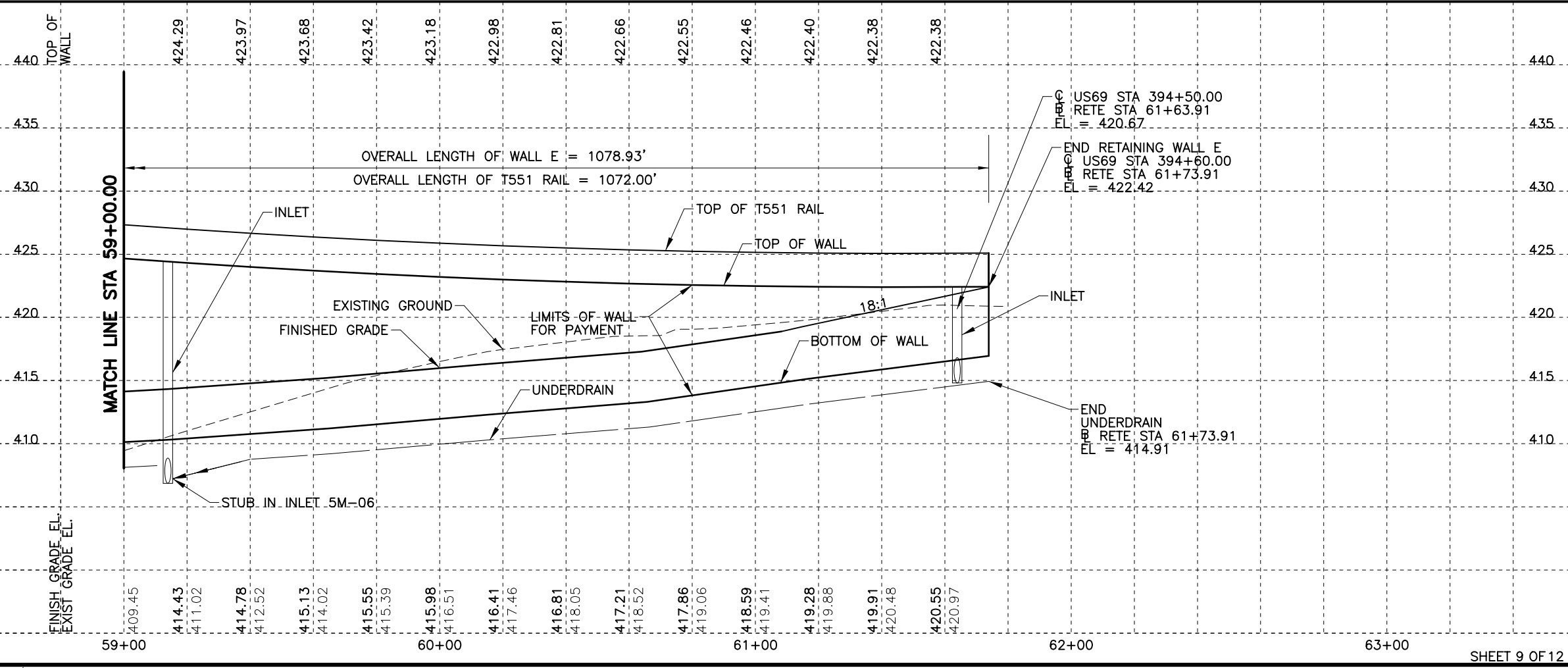
RETAINING WALL "E"

STA 55+00 TO STA 59+00

Designed:	JKF	FED. RD. DIST. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	222



- NOTES:
1. ALL STA./OFF. ARE BASED OFF \square WALL "E" UNLESS NOTED OTHERWISE
 2. REFER TO THE RETAINING WALLS LAYOUT PLAN SHEETS FOR BORING INFORMATION PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS TO AVOID ANY CONFLICTS WITH RETAINING WALLS.
 3. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY
 4. T551 RAIL STA./OFF. ARE TO NOMINAL BACK OF RAIL (NOMINAL FRONT FACE OF WALL)



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



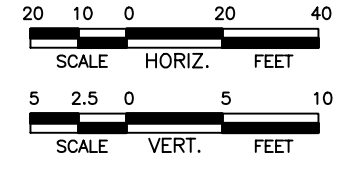
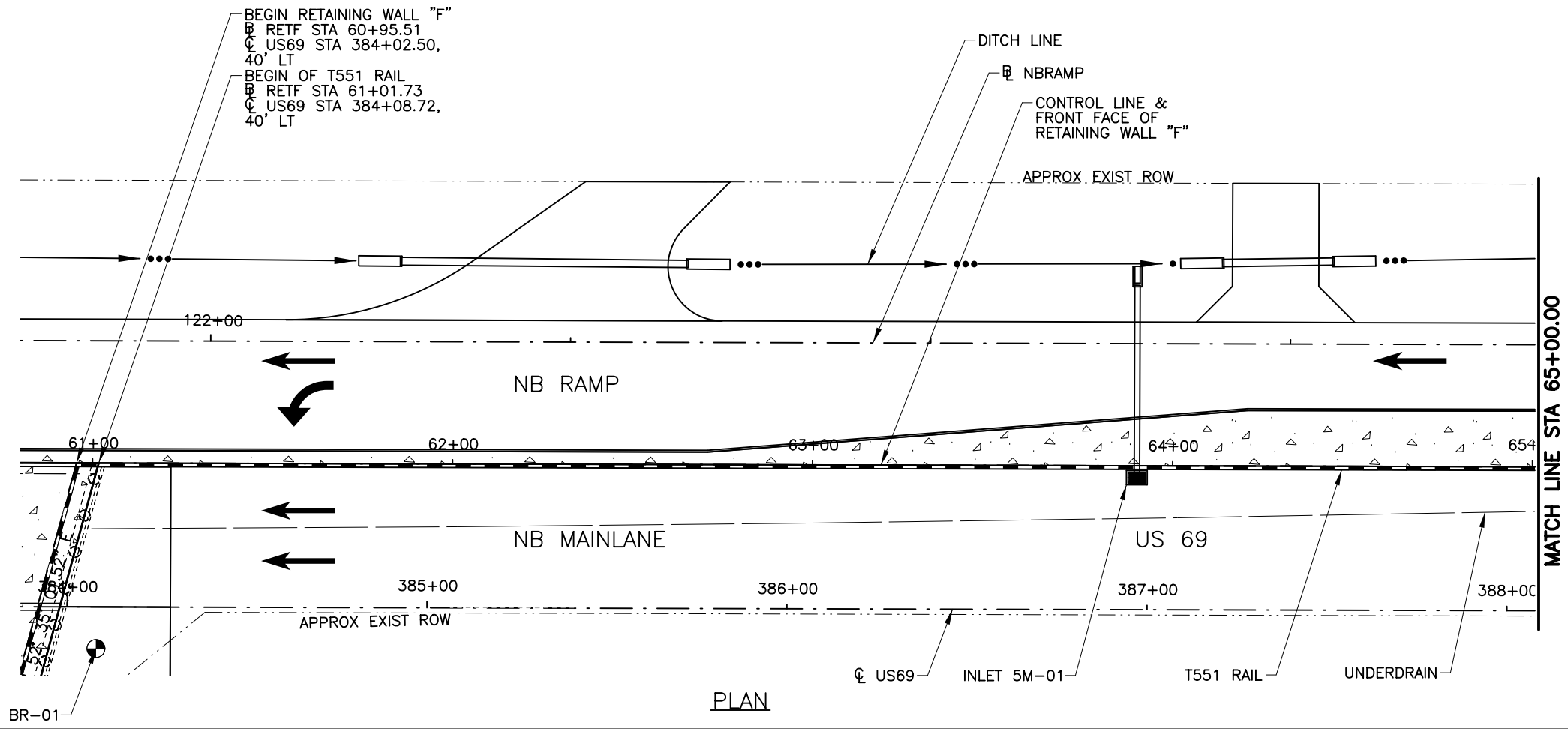
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RETAINING WALL "E"

STA 59+00 TO END

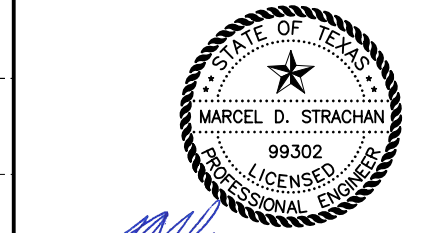
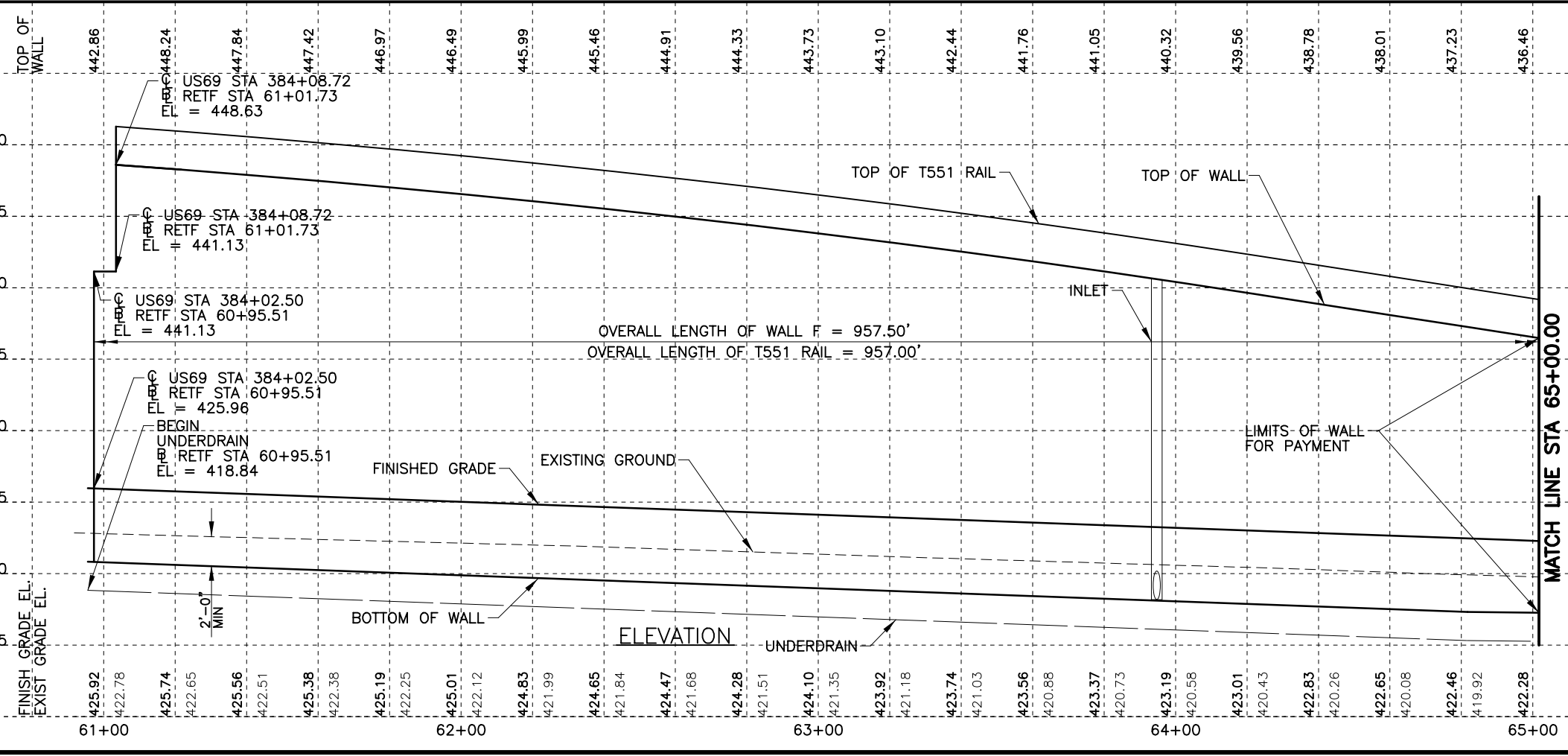
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Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	223

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- NOTES:
1. ALL STA./OFF. ARE BASED OFF \square WALL F UNLESS NOTED OTHERWISE
 2. REFER TO THE RETAINING WALLS LAYOUT PLAN SHEETS FOR BORING INFORMATION
 3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS TO AVOID ANY CONFLICTS WITH RETAINING WALLS.
 4. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY
 5. T551 RAIL STA./OFF. ARE TO NOMINAL BACK OF RAIL (NOMINAL FRONT FACE OF WALL)

ESTIMATED QUANTITIES		
ITEM 423	RETAINING WALL "F" (MSE)	SF 15931
ITEM 450	RAIL (TY T551)	LF 953.4
ITEM 556	PIPE UNDERDRAINS (TY 6)(6")	LF 957



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE

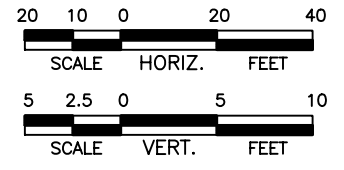
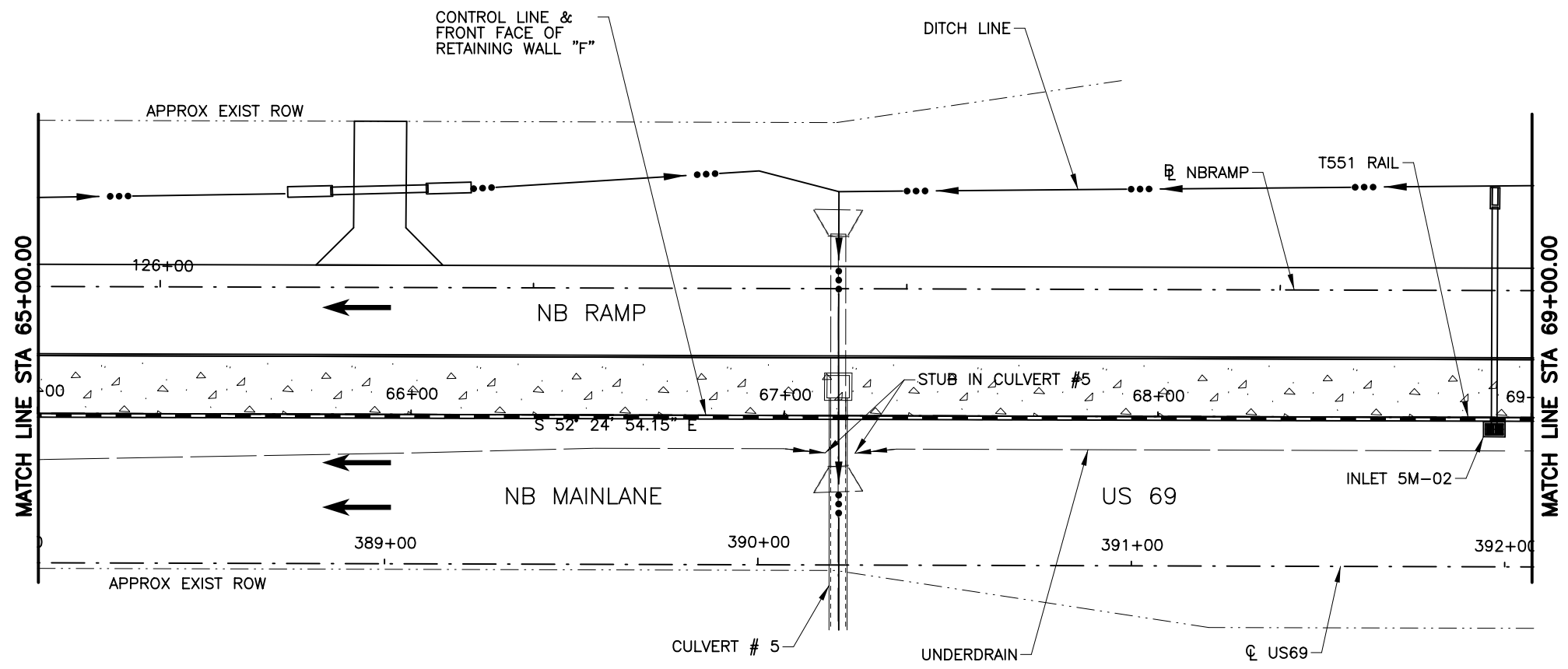


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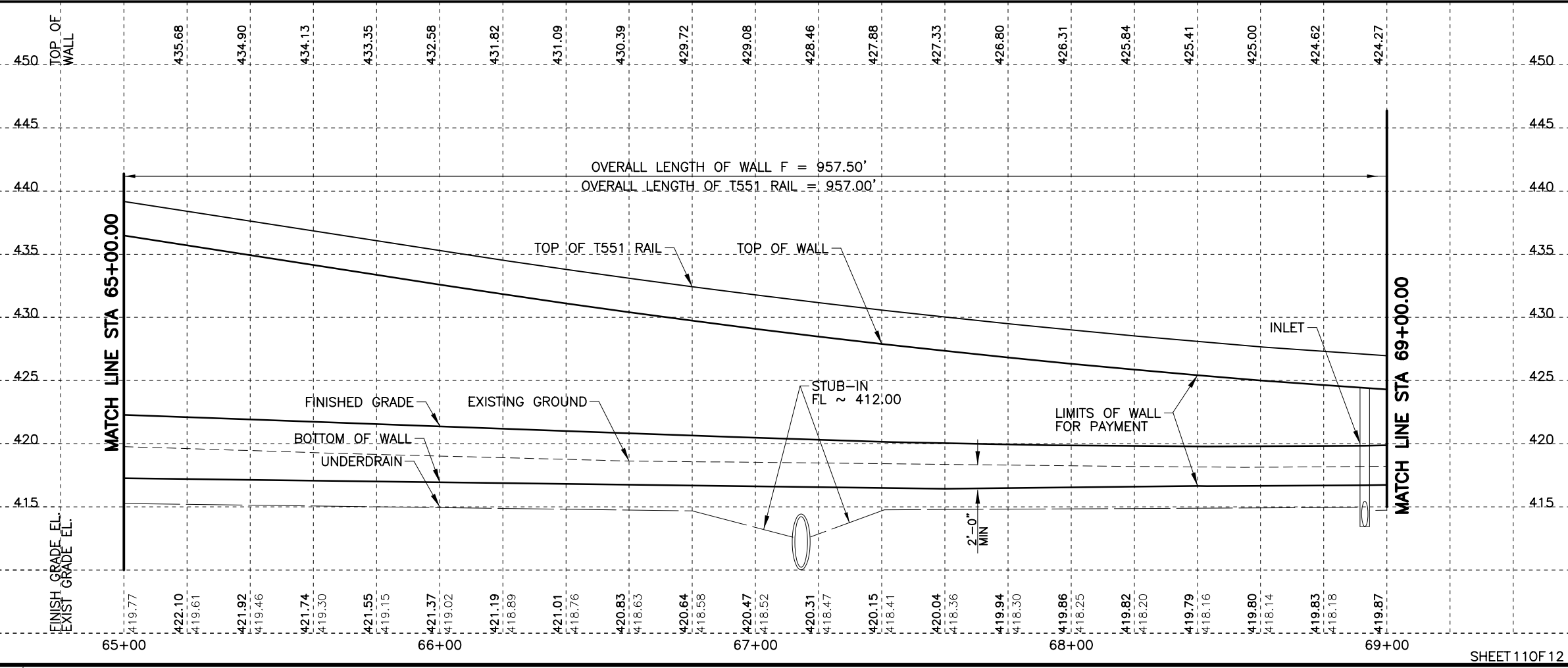
RETAINING WALL "F"
BEGIN TO STA 65+00

Designed:	JKF	FED. RD. DIV. NO.	6	STATE	TEXAS	PROJECT NO.		HIGHWAY NO.	US 69
Checked:	BAJ	DIST.	TYL	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	JKF	JOB NO.	039	SHEET NO.	224				

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- NOTES:
1. ALL STA./OFF. ARE BASED OFF \bar{C} WALL F UNLESS NOTED OTHERWISE
 2. REFER TO THE RETAINING WALLS LAYOUT PLAN SHEETS FOR BORING INFORMATION PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS TO AVOID ANY CONFLICTS WITH RETAINING WALLS.
 3. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY
 4. T551 RAIL STA./OFF. ARE TO NOMINAL BACK OF RAIL (NOMINAL FRONT FACE OF WALL)



Marcel D. Strachan 12/11/2023

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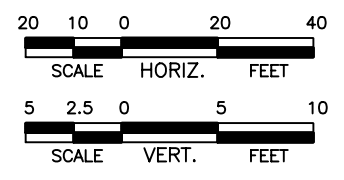
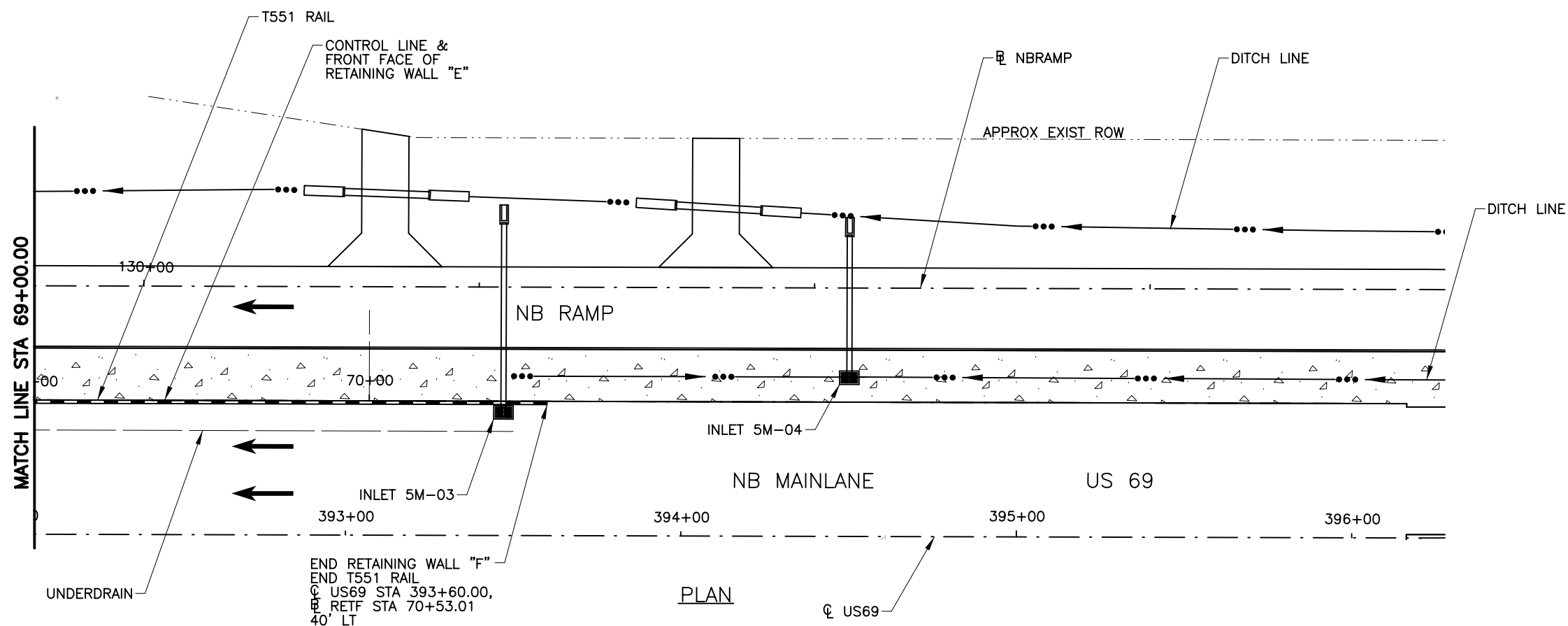
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RETAINING WALL "F"

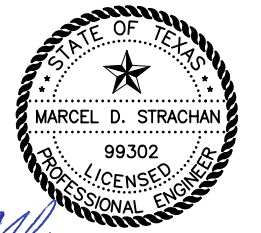
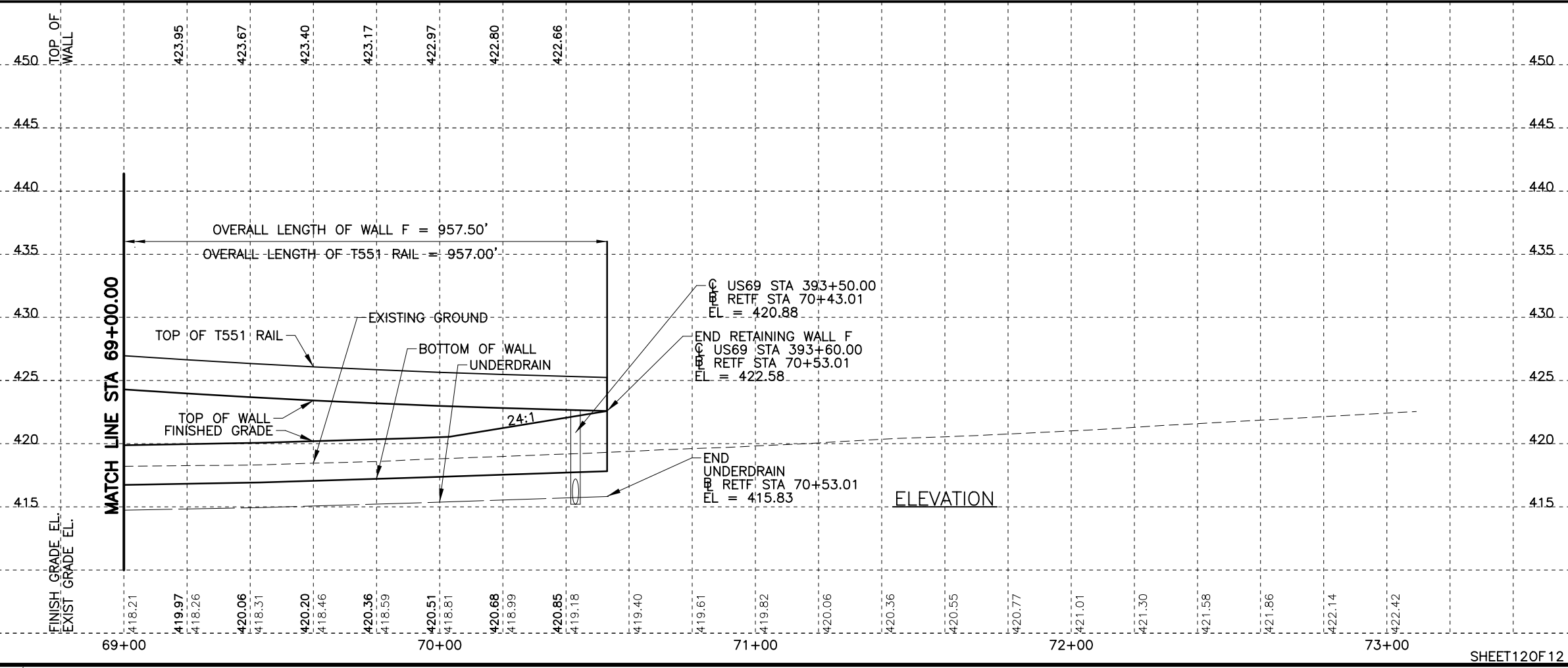
STA 65+00 TO STA 69+00

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
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Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	225

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- NOTES:
1. ALL STA./OFF. ARE BASED OFF CL WALL F UNLESS NOTED OTHERWISE
 2. REFER TO THE RETAINING WALLS LAYOUT PLAN SHEETS FOR BORING INFORMATION
 3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS TO AVOID ANY CONFLICTS WITH RETAINING WALLS.
 4. PIPE UNDERDRAIN QUANTITY SHOWN FOR CONTRACTOR'S INFORMATION ONLY
 5. T551 RAIL STA./OFF. ARE TO NOMINAL BACK OF RAIL (NOMINAL FRONT FACE OF WALL)



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

RETAINING WALL "F"

STA 69+00 TO END

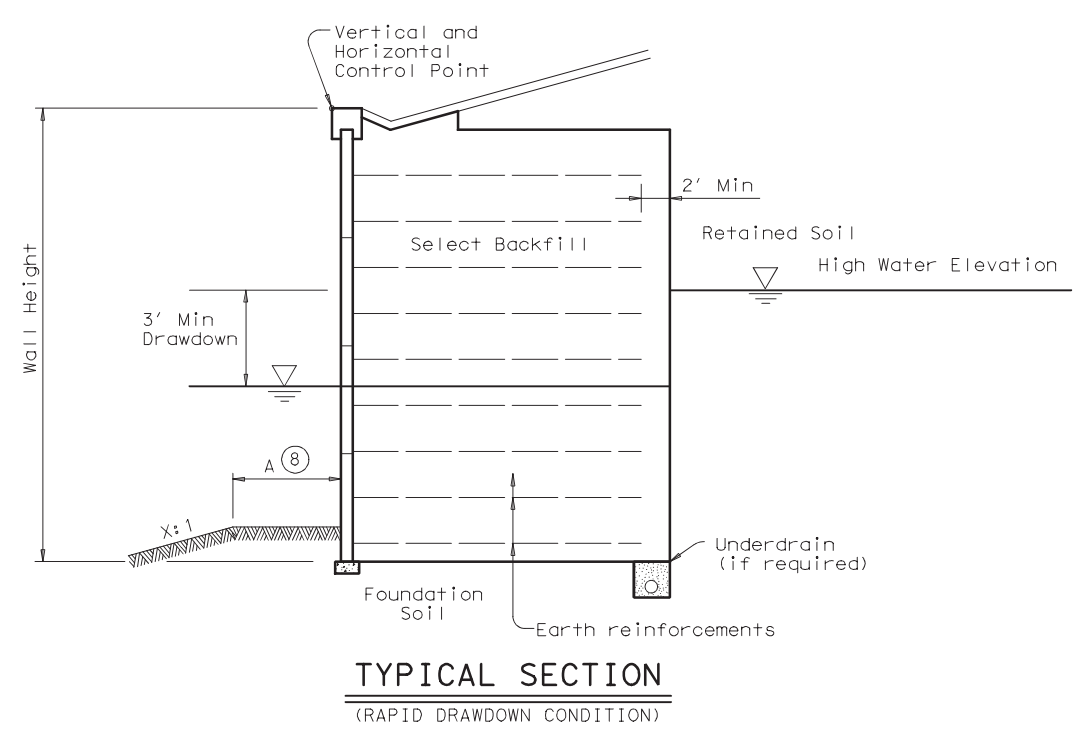
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WALL SUMMARY

MSE Retaining Wall	Begin Station ①	End Station ①	Retained Soil Friction Angle ②	Foundation Soil Friction Angle ②	Ground Improvement ③	Min Earth Reinforcement Length ④ (feet)	Min Wall Embedment ⑦ (feet)	Underdrain Required ⑤	Drawdown Analysis ⑥	Bench Width ⑧ (Min, feet)
Wall A	10+00	13+00	30°	26°	Not Required	0.80 H	2	Required	Not Required	4
Wall A	13+00	17+07.22	30°	26°	Not Required	0.75 H	2	Required	Not Required	4
Wall B	20+00	24+00	30°	26°	Not Required	0.80 H	2	Required	Not Required	4
Wall B	24+00	27+28.65	30°	26°	Not Required	0.75 H	2	Required	Not Required	4
Wall C	30+00	30+82.82	30°	26°	Not Required	0.95 H	2	Required	Not Required	4
Wall D	40+00	40+82.82	30°	26°	Not Required	0.95 H	2	Required	Not Required	4
Wall E	50+94.98	59+00	30°	26°	Not Required	0.75 H	2	Required	Not Required	4
Wall E	59+00	61+73.91	30°	26°	Not Required	0.80 H	2	Required	Not Required	4
Wall F	60+95.51	66+40	30°	26°	Not Required	0.75 H	2	Required	Not Required	4
Wall F	66+40	70+53.01	30°	26°	Not Required	0.80 H	2	Required	Not Required	4

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- ① Indicate limits for which the stated soil design requirements/assumptions are applicable.
- ② Retained and Foundation friction angle listed should be based on local experience or measured/correlated long term strength values.
- ③ Indicate if ground improvement is required or not required. If shown as required, refer to Ground Improvement Detail(s) for additional information.
- ④ Indicate on table minimum length and length ratio required. The minimum default length of earth reinforcements shall be either 8'-0" or 70% of the wall height, whichever is greater. Wall height and design wall height may differ depending on project geometry and loading conditions. Note: Wall height at bridge abutments is equal to the distance between the top of leveling pad and finished grade at the bridge abutment backwall.
- ⑤ Indicate if underdrain is required or not required.
- ⑥ Indicate if rapid drawdown analysis is required.
- ⑦ Guidance to wall designer of record for determination of minimum wall embedment: Unless noted elsewhere in the plans, the minimum embedment provided from the top of leveling pad to finish grade shall be 1' for level ground where there is no potential for erosion or future excavation or 2' for sloping ground (4.0H:1.0V or steeper) or where there is potential for removal of soil in front of the wall.
- ⑧ Horizontal Bench width at base of wall varies. Use the following criteria to establish base width.
 A = 2.0' Min for X > 4, or
 A = 4.0' Min for X ≤ 4.
 Applicable to both drawdown and dry condition.

Edmond Jha



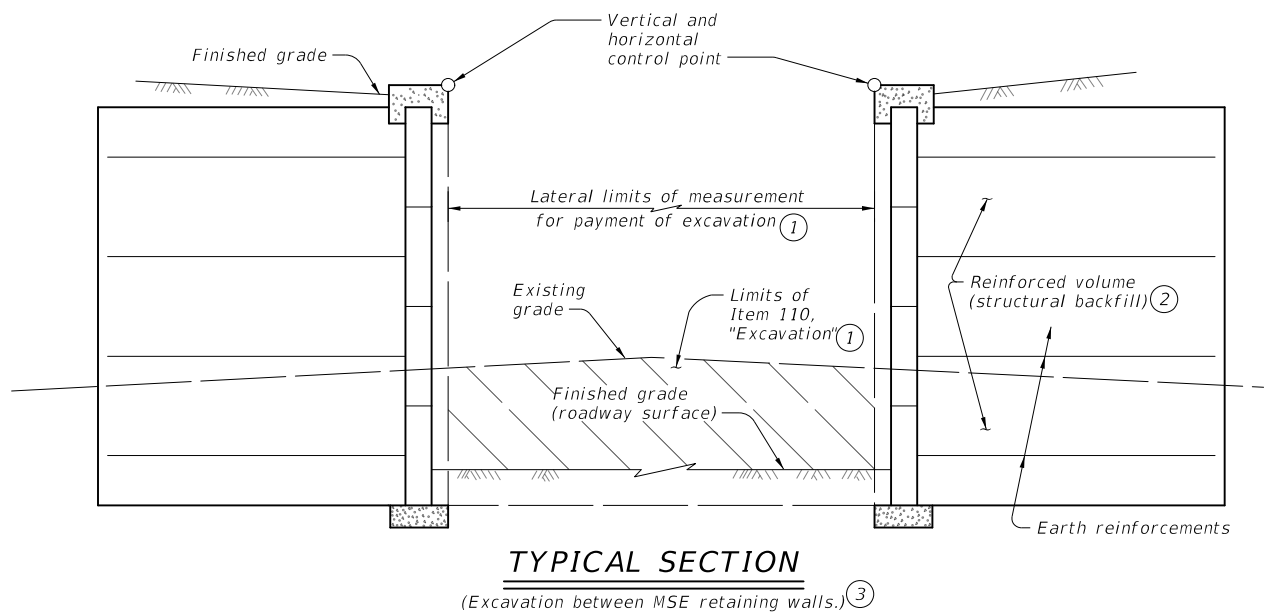
		Bridge Division Standard
<p>MECHANICALLY STABILIZED EARTH RETAINING WALL DESIGN DATA</p> <p>RW(MSE)DD</p>		
FILE: rws\tdel6.dgn	DN: TxDOT	CK: MJG
REV: 0203	SECT: 05	JOB: 039
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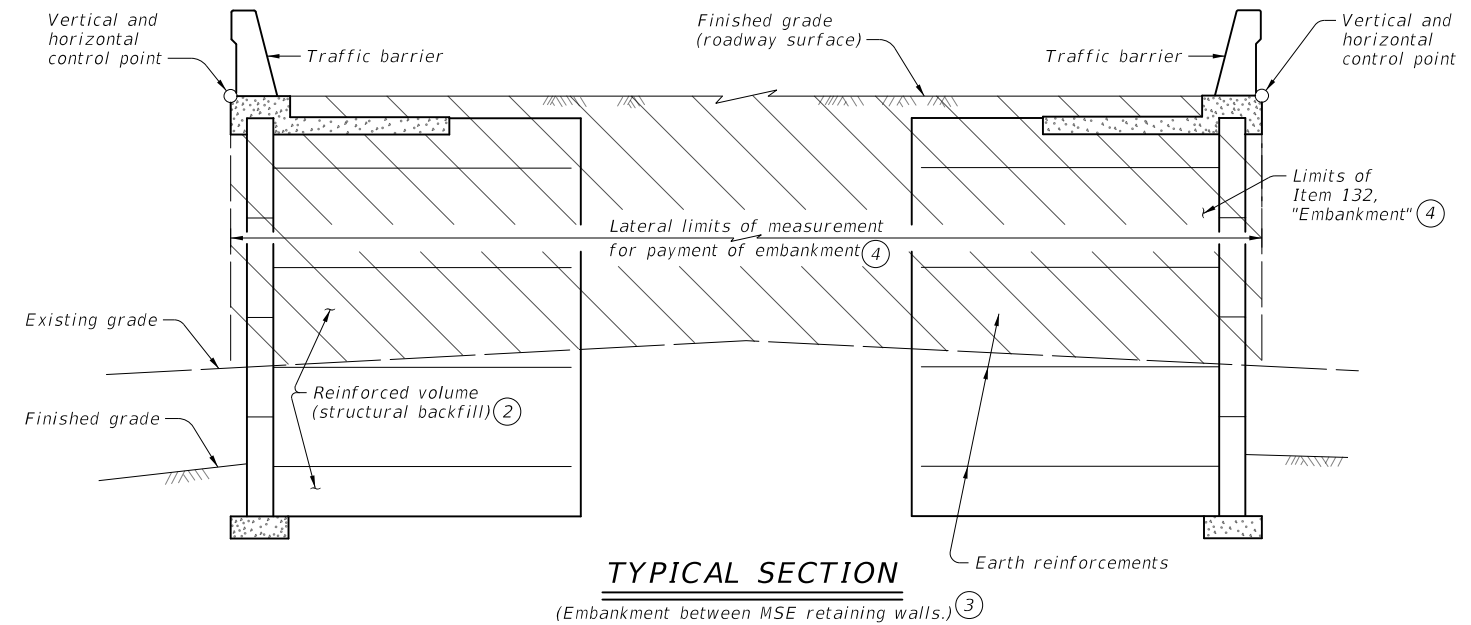
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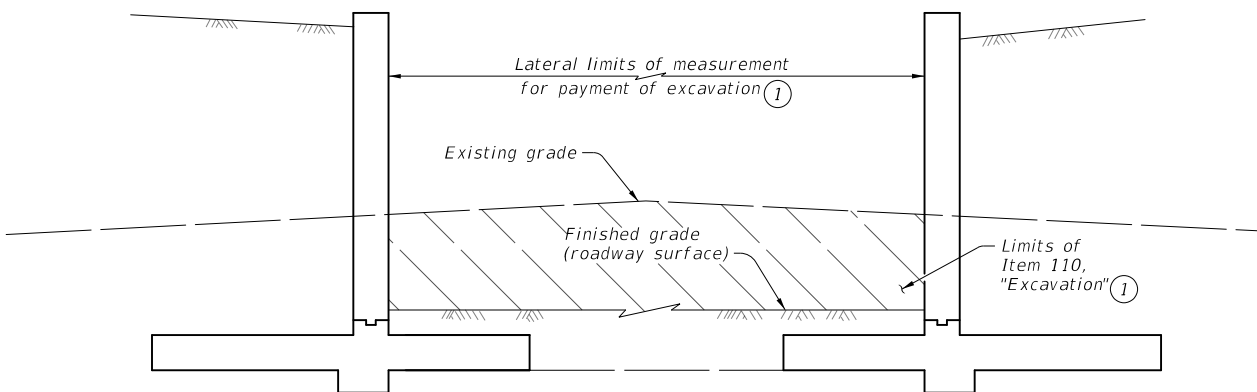
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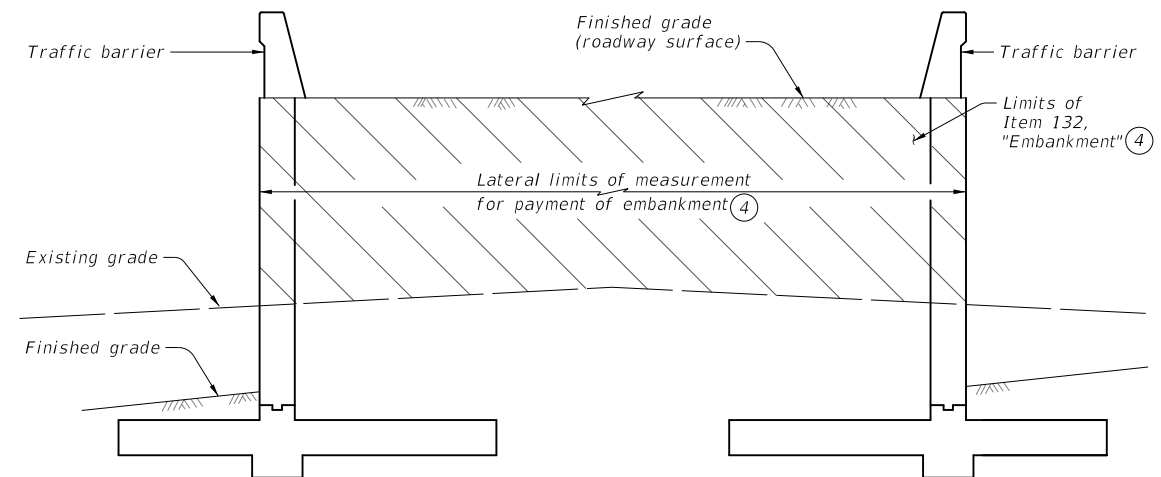
TYPICAL SECTION
 (Excavation between MSE retaining walls.)^③



TYPICAL SECTION
 (Embankment between MSE retaining walls.)^③

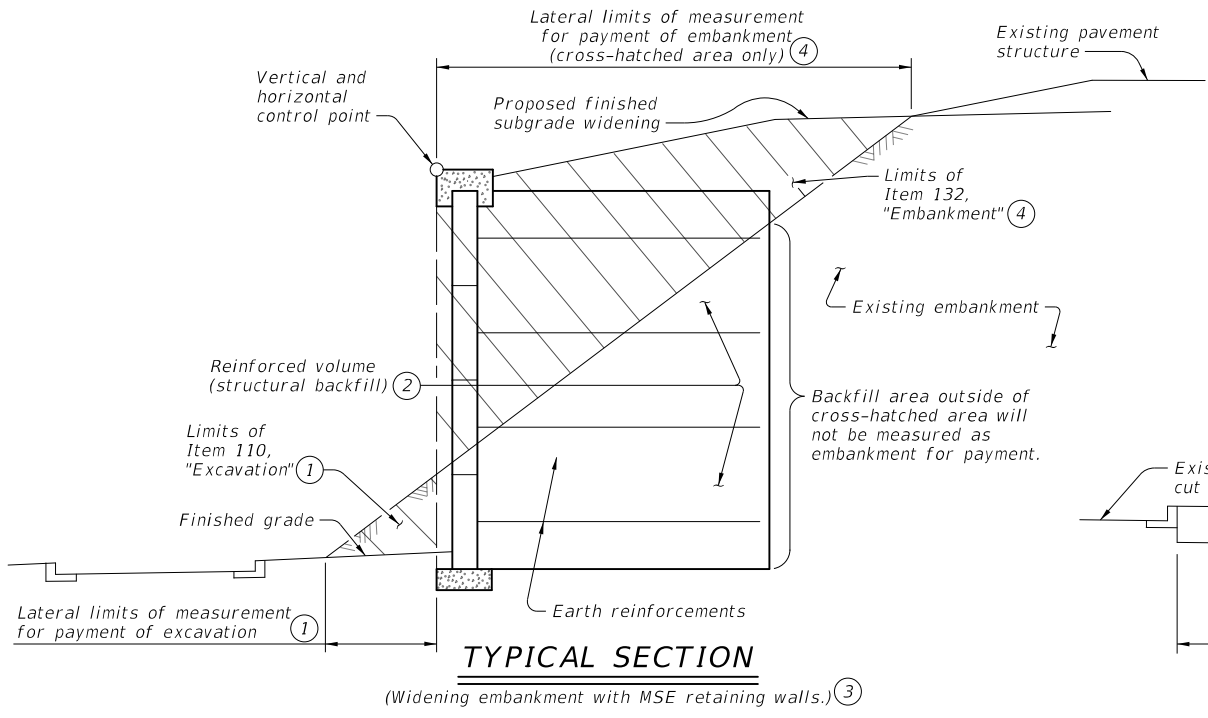


TYPICAL SECTION
 (Excavation between conventional retaining walls.)

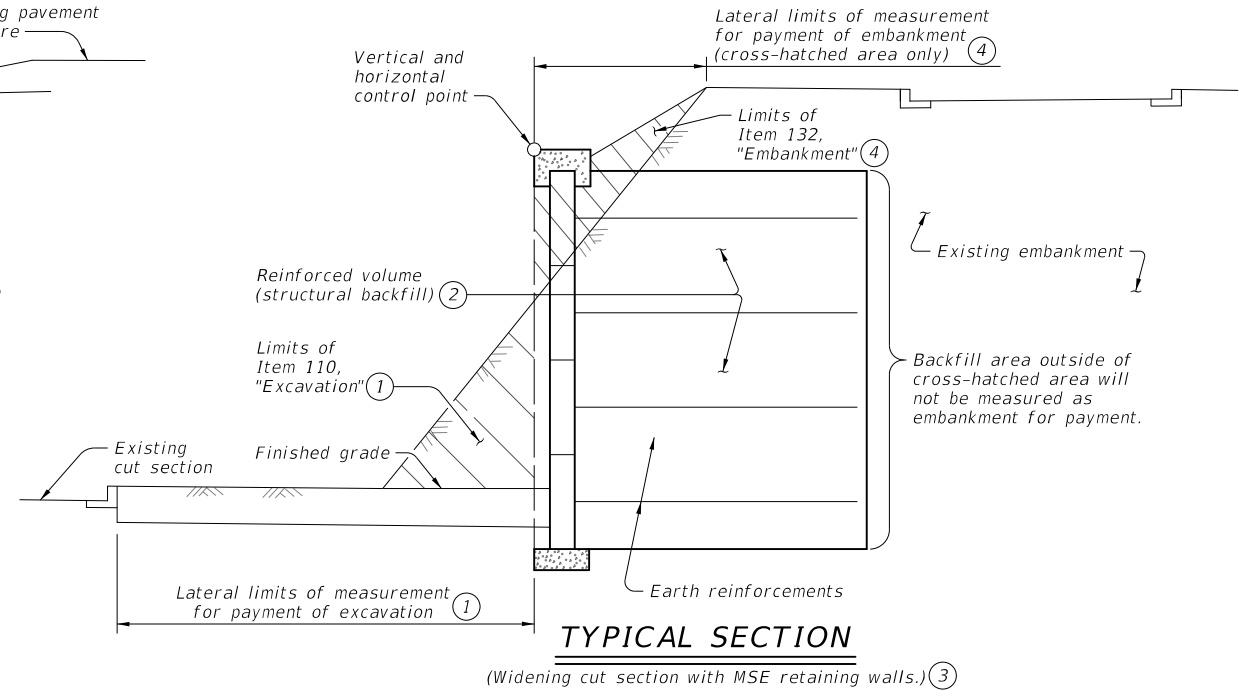


TYPICAL SECTION
 (Embankment between conventional retaining walls.)

- ① Only the excavation above the proposed subgrade elevation will be measured for payment.
- ② Meeting requirements for Item 423, "Retaining Walls."
- ③ Earthwork measurement with other retaining wall types will be made to the outside finished face in the same manner.
- ④ Only the embankment above the existing ground line will be measured for payment.



TYPICAL SECTION
 (Widening embankment with MSE retaining walls.)^③



TYPICAL SECTION
 (Widening cut section with MSE retaining walls.)^③

Texas Department of Transportation Bridge Division Standard

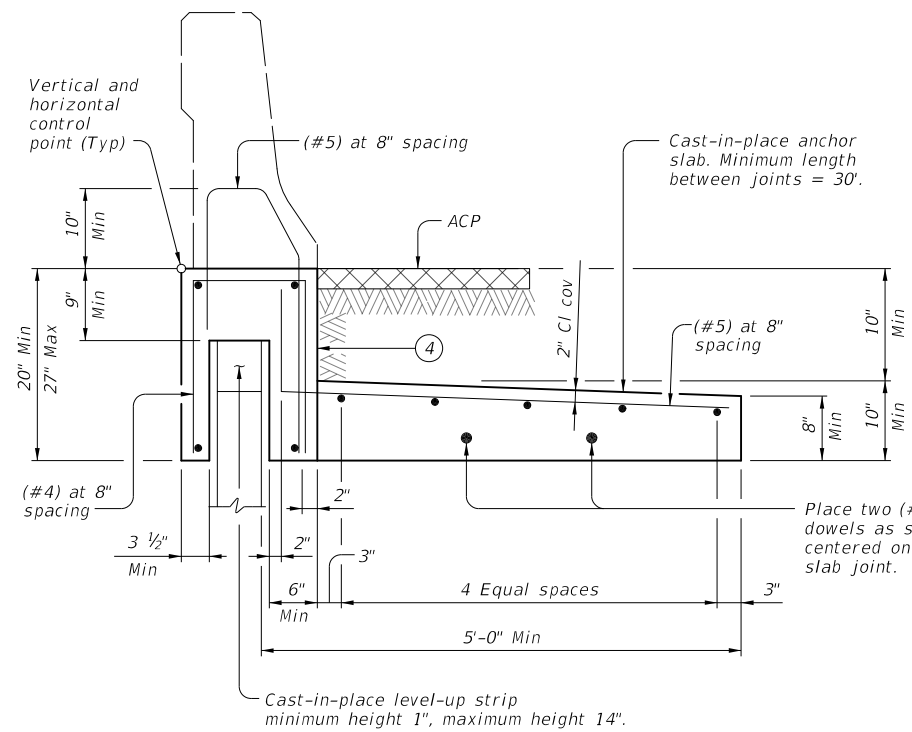
EARTHWORK MEASUREMENT AT RETAINING WALL

RW(EM)

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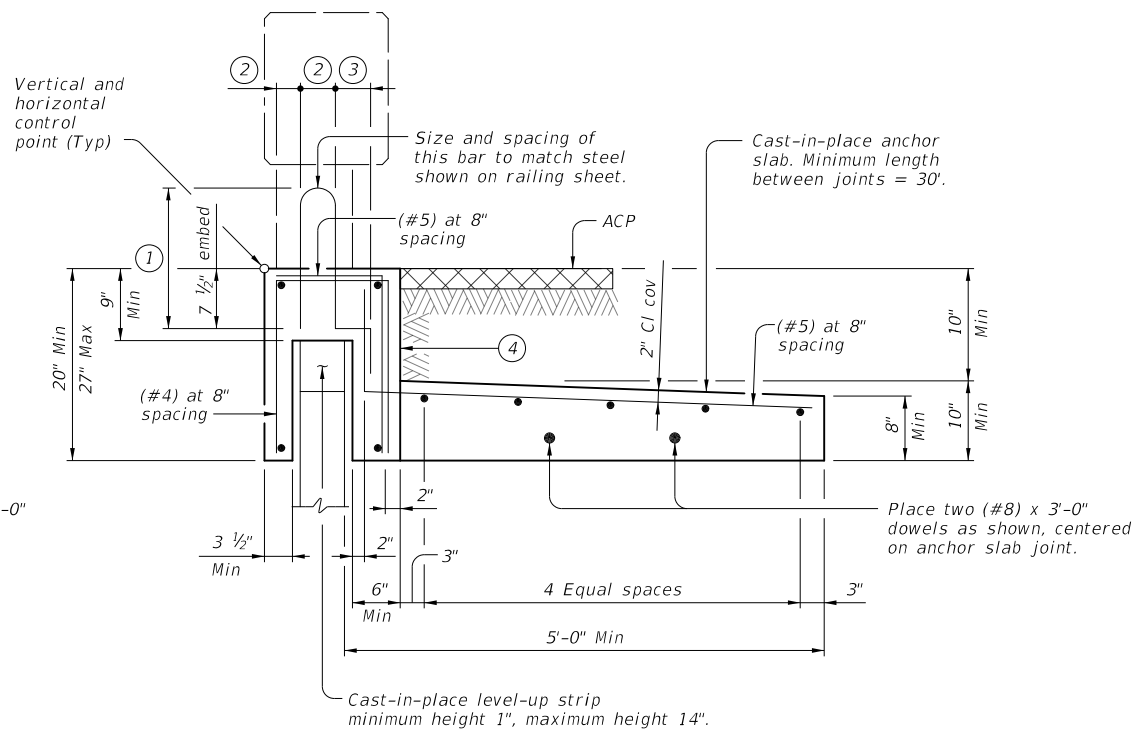
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 FILE: pw:\stv-sw-pw-bent\ey.com\stv-sw-pw-bent\Documents\Active Projects\TXFW15241.00\TXFW15241.02\8_00 Plans and Drawings\8.30 Cut Sheets\8.30.09 TxDOT Standards\WALL\RW-TRF-22.dgn



**"WIDE BASED"
ADJACENT TO ACP**

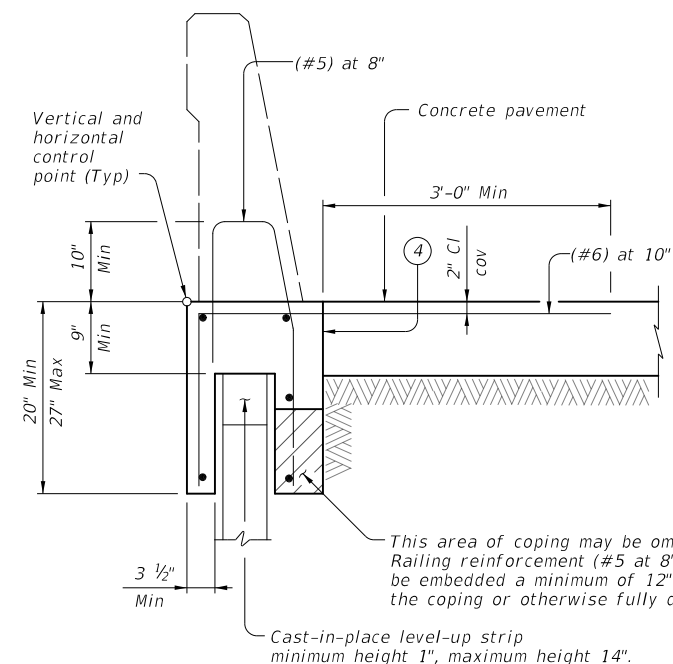
(Showing T551 Rail, other rails listed similar.)



**"NARROW BASED"
ADJACENT TO ACP**

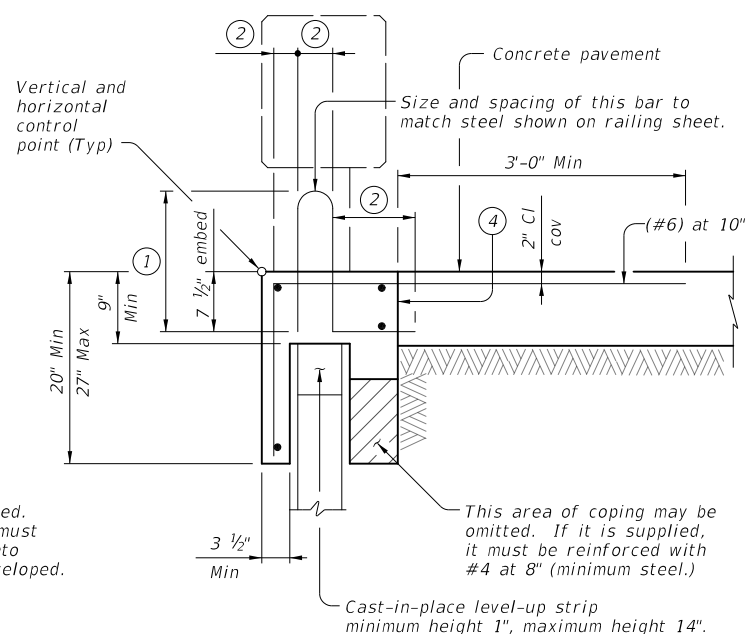
(Showing T223 Rail, other rails listed similar.)

- ① Reinforcement length equal to length shown on the appropriate rail standard plus 1 inch.
- ② Match dimension on the appropriate rail standard.
- ③ Match dimension on the appropriate rail standard. Bend end of rail anchorage reinforcing as shown as required to maintain clear cover.
- ④ See "Coping Joint Sealer Details."



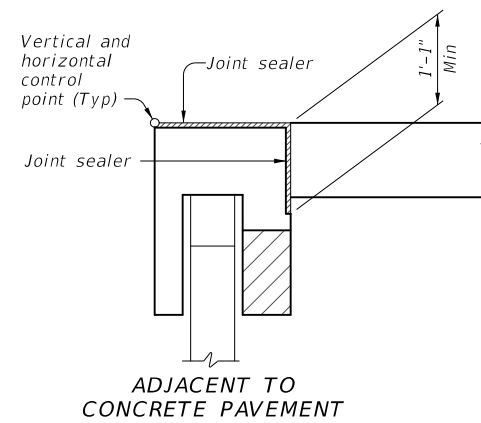
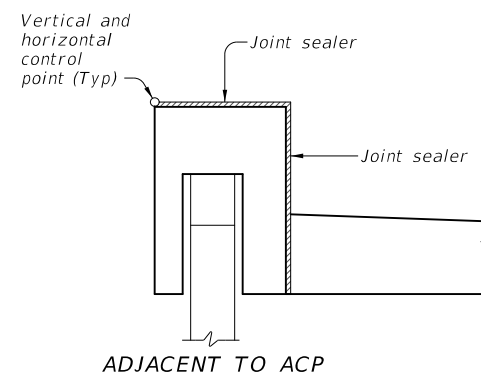
**"WIDE BASED"
ADJACENT TO CONCRETE PAVEMENT**

(Showing SSTR Rail, other rails listed similar.)



**"NARROW BASED"
ADJACENT TO CONCRETE PAVEMENT**

(Showing T223 Rail, other rails listed similar.)



**COPING
JOINT SEALER DETAILS**

(Reinforcing steel not shown for clarity.)

Rail Type	Detail	Precasting Rail with Coping Allowed
T1F/T1W/C1W/T2P/C2P	NARROW	NO
T221/C221/T222	NARROW	YES
T223/C223	NARROW	NO
T402/C402	NARROW	NO
T411/C411	NARROW	NO
T551/T552	WIDE	YES
T66	NARROW	NO
SSTR	WIDE	YES

CAST-IN-PLACE COPINGS:

Provide compressible material to isolate precast panel from cast-in-place coping to prevent cracking. Attach compressible material to both sides of precast panel prior to casting concrete for coping. When cast-in-place coping is anchored to reinforced concrete pavement, provide a smooth level-up strip on the top of the precast panels. The purpose of the level-up is to allow the pavement and coping to move longitudinally relative to the wall without causing damage. Align coping and railing joints with precast panel joints. Optional rail joints are allowed as approved by Engineer. Provide railing construction joints or expansion joints at 100-foot maximum spacing.

PRECAST COPINGS:

Provide a smooth level-up strip on top of the precast panels prior to installation of the coping. Shims may be used on top of level-up strips to facilitate alignment. Total shim thickness not to exceed 1 inch. Provide precast coping in 10-foot minimum lengths.

JOINTED CONCRETE PAVEMENT:

When coping is adjacent to and anchored into jointed concrete pavement, align the coping joints with the pavement joints.

JOINT SEALANT:

Seal joints between coping segments in accordance with Item 438, "Cleaning and Sealing Joints." Provide Class 4 joint seal. Place sealant flush with coping surface. The purpose of the joint sealing is to reduce surface drainage infiltration into the retaining wall backfill. Sealing coping joint is considered subsidiary to other items.

MATERIAL NOTES:

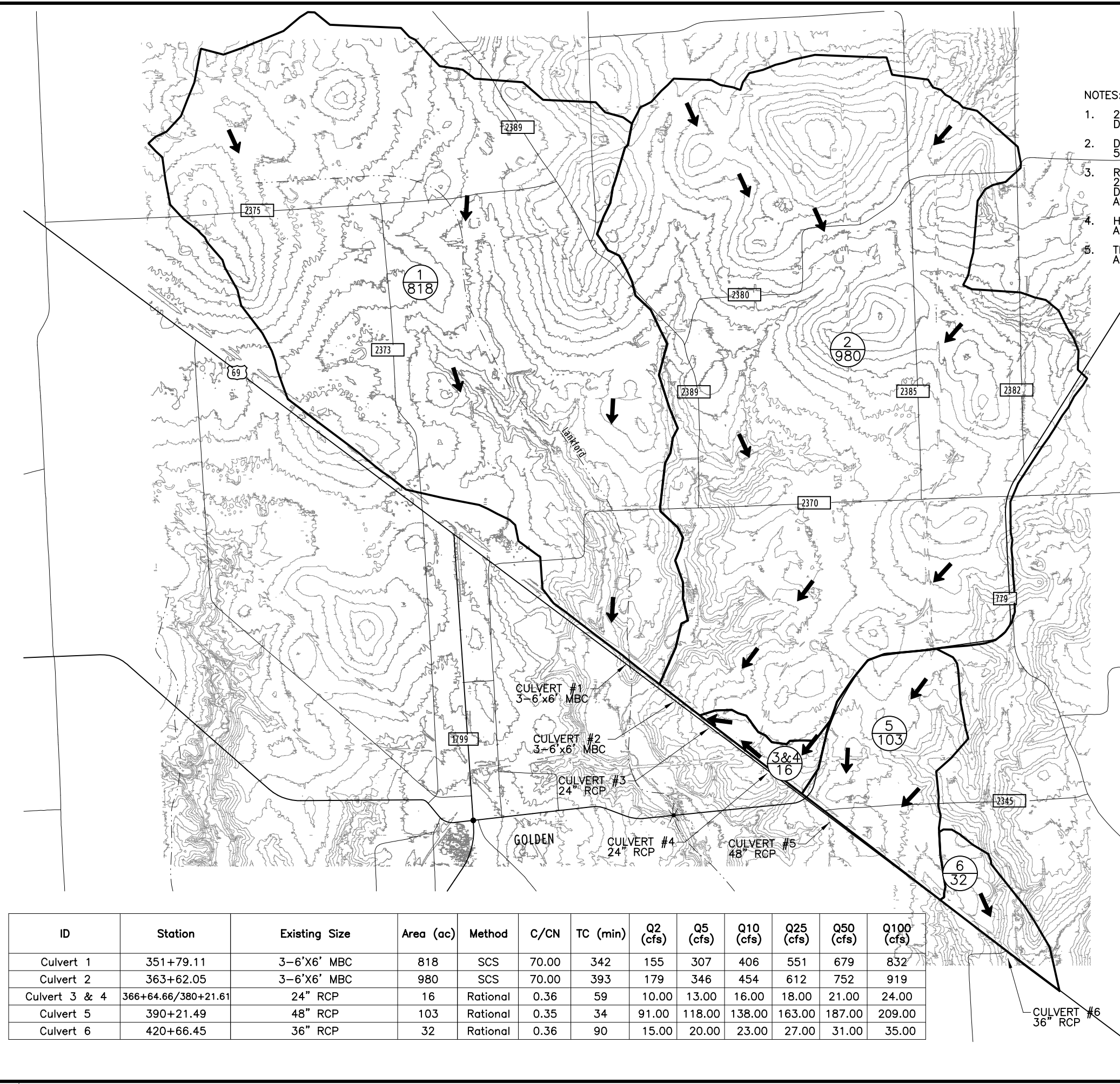
Provide Class C concrete (f'c=3,600 psi.)
 Provide Grade 60 reinforcing steel.
 Provide #4 longitudinal bars, unless otherwise shown.

GENERAL NOTES:

Details on this sheet are to be used in development of specific details for mounting traffic railing on mechanically stabilized earth (MSE) walls. The specific details proposed must have strengths equivalent to those shown on this sheet and must be submitted for approval. Areas of particular importance are the connection of the coping to the railing, the strength of the vertical coping leg connecting the railing to the anchor slab, and the connection of the coping to the anchor slab or concrete pavement. Submit shop drawings for the traffic railing foundations to the Engineer in accordance with Item 423, "Retaining Walls." The shop drawings must include bar bending details. Precasting of railing with the coping will be allowed as noted in the table on this sheet. The Contractor's attention is directed to the fact that various configurations of precast coping/railing combinations are covered by patent. The Contractor must provide for use of these systems in accordance with Article 7.5. Coping and anchor slabs are considered subsidiary to Item 423, "Retaining Walls." Payment for traffic railing is per the linear foot for the appropriate railing type.

Cover dimensions are clear dimensions, unless noted otherwise.

		Bridge Division Standard	
RETAINING WALL TRAFFIC RAILING FOUNDATIONS			
RW(TRF)			
FILE: RW-TRF-22.dgn	DN: TxDOT	CK: TxDOT	DW: JTR
©TxDOT June 2022	CONTRACT	SECTION	JOB
REVISIONS	0203	05	039
	DIST	COUNTY	SHEET NO.
	TYL	WOOD	231



- NOTES:
- 24-HR RAINFALL DEPTHS WERE OBTAINED FROM USGS ATLAS OF DEPTH-DURATION-FREQUENCY OF PRECIPITATION ANNUAL MAXIMA FOR TEXAS, 2004
 - DRAINAGE AREAS WERE DELINEATED BASED ON USGS 1 / 3 ARC 10-METER DEM 5-FT COUNTOUR WERE GENERATED AND USED IN DECIDING DRAINAGE DIVIDE.
 - RATIONAL METHOD WAS USED FOR CONTRIBUTING DRAINAGE AREAS SMALLER THAN 200 AC. NRCS RUNOFF CURVE NUMBER METHOD WAS USED FOR CONTRIBUTING DRAINAGE AREAS LARGER THAN 200 AC AND SMALLER THAN 5.50 SQUARE MILES AS INDICATED IN THE PEAK FLOWS SUMMARY TABLE.
 - HEC-HMS WAS USED TO CALCULATE THE PEAK RAINFALL RUNOFF FOR CULVERT 1 AND CULVERT 2.
 - THE PEAK FLOWS FROM DRAINAGE AREAS 3&4 WERE SPLIT IN HALF FOR CULVERT 3 AND CULVERT 4 ANALYSIS.

LEGEND:

- DRAINAGE BOUNDARY
- FLOW PATH
- DRAINAGE AREAS (ACRES)

24-HR Rainfall Totals (inches) : Wood County	
2-yr =	3.7
5-yr =	5.4
10-yr =	6.4
25-yr =	7.8
50-yr =	9.0
100-yr =	10.4

*USGS Atlas of Depth-Duration-Frequency of Precipitation Annual Maxima for Texas, 2004"

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ID	Station	Existing Size	Area (ac)	Method	C/CN	TC (min)	Q2 (cfs)	Q5 (cfs)	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)	Q100 (cfs)
Culvert 1	351+79.11	3-6'X6' MBC	818	SCS	70.00	342	155	307	406	551	679	832
Culvert 2	363+62.05	3-6'X6' MBC	980	SCS	70.00	393	179	346	454	612	752	919
Culvert 3 & 4	366+64.66/380+21.61	24" RCP	16	Rational	0.36	59	10.00	13.00	16.00	18.00	21.00	24.00
Culvert 5	390+21.49	48" RCP	103	Rational	0.35	34	91.00	118.00	138.00	163.00	187.00	209.00
Culvert 6	420+66.45	36" RCP	32	Rational	0.36	90	15.00	20.00	23.00	27.00	31.00	35.00

12/11/2023

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TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

EXTERIOR DRAINAGE AREA MAP

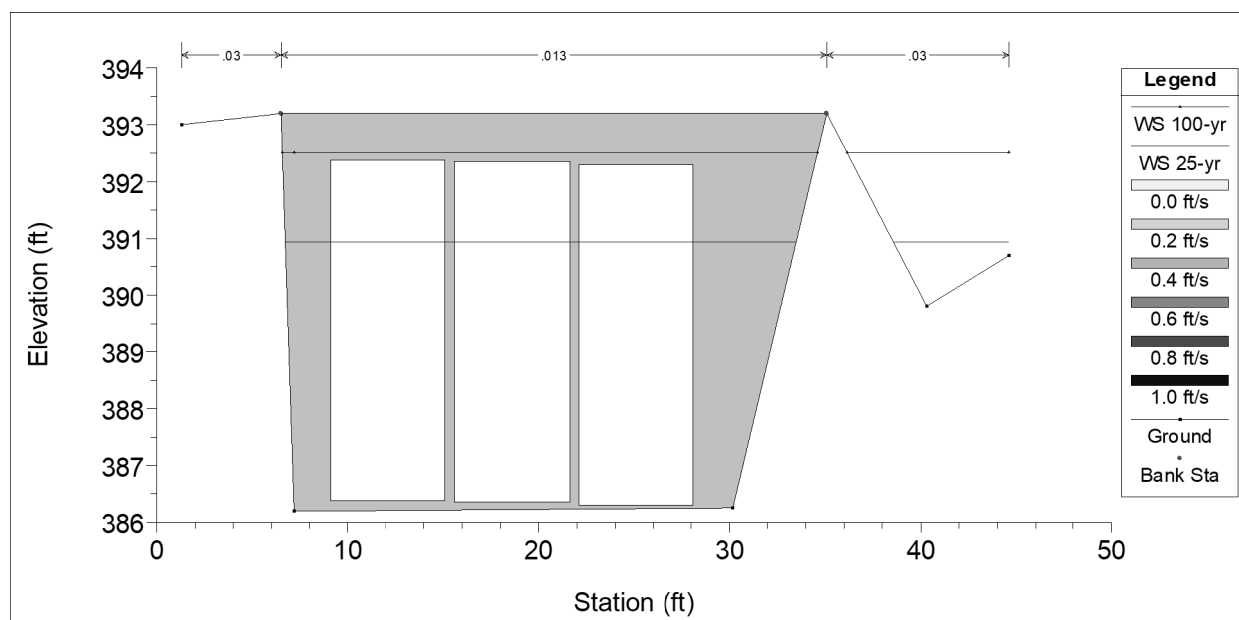
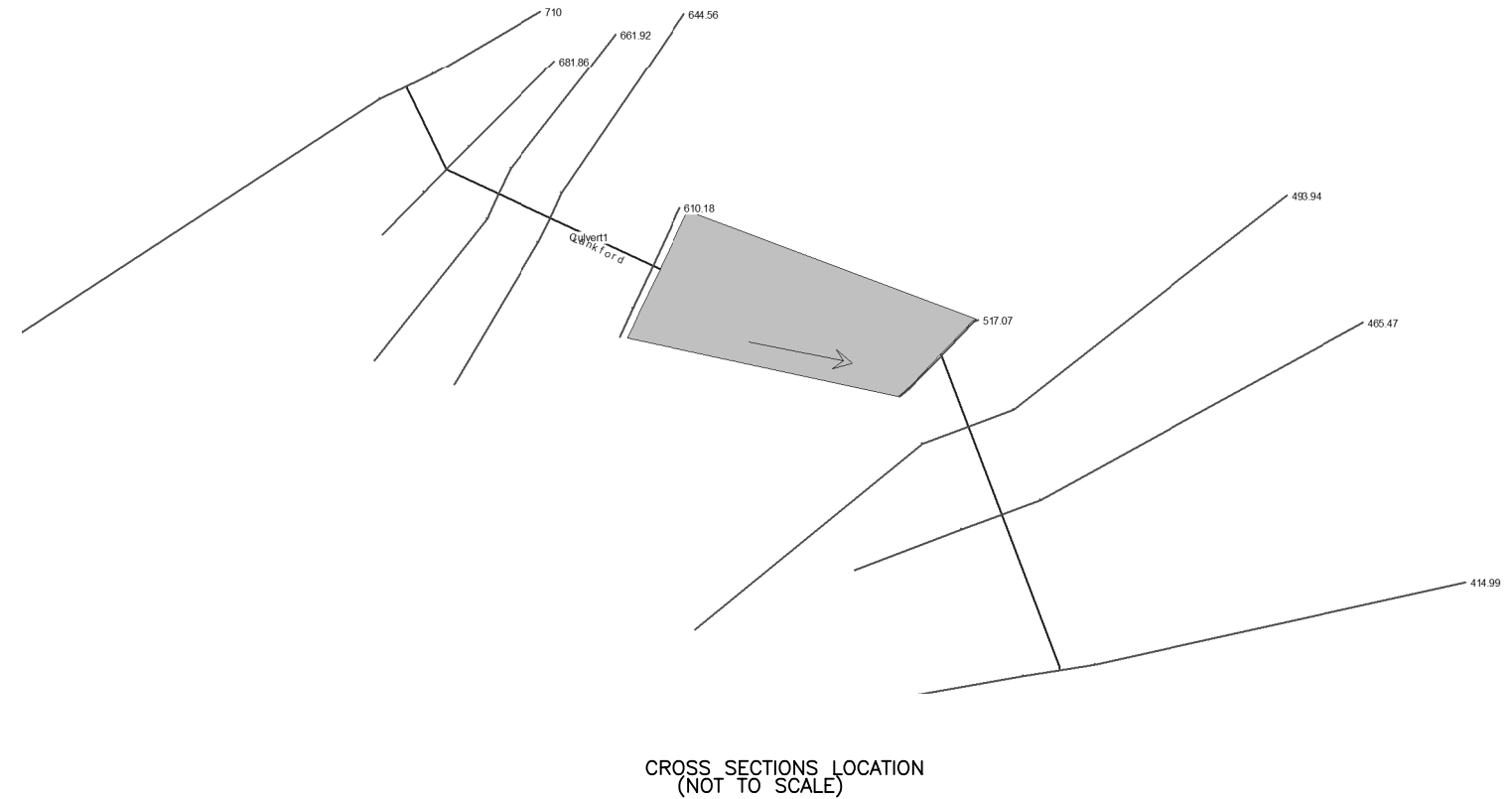
Designed: WRY	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: BAJ	DIST. COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: CM	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Checked: BAJ	TYL	WOOD	0203	05
				SHEET NO. 232

25-Yr Conditions		EXISTING		PROPOSED		
River Station	Q Total (cfs)	W.S. Elev (ft)	Vel Chnl (ft/s)	River Station	W.S. Elev (ft)	Vel Chnl (ft/s)
710	551	391.36	1.72	710	391.35	1.73
681.86	551	390.98	5.33	681.86	390.97	5.36
661.92	551	391.02	4.99	661.92	391.01	5.01
644.56	551	391.05	4.61	644.56	391.04	4.63
610.18	551	390.90	4.89	610.18	390.91	4.83
550	Group Culvert #1			550	Culvert Group#1	
517.07	551	389.14	6.15	382.07	389.42	4.96
493.94	551	388.3	8.82	354.11	389.12	6.35
465.47	551	388.11	8.51	271.97	388.56	8.29
414.99	551	388.35	6.99			

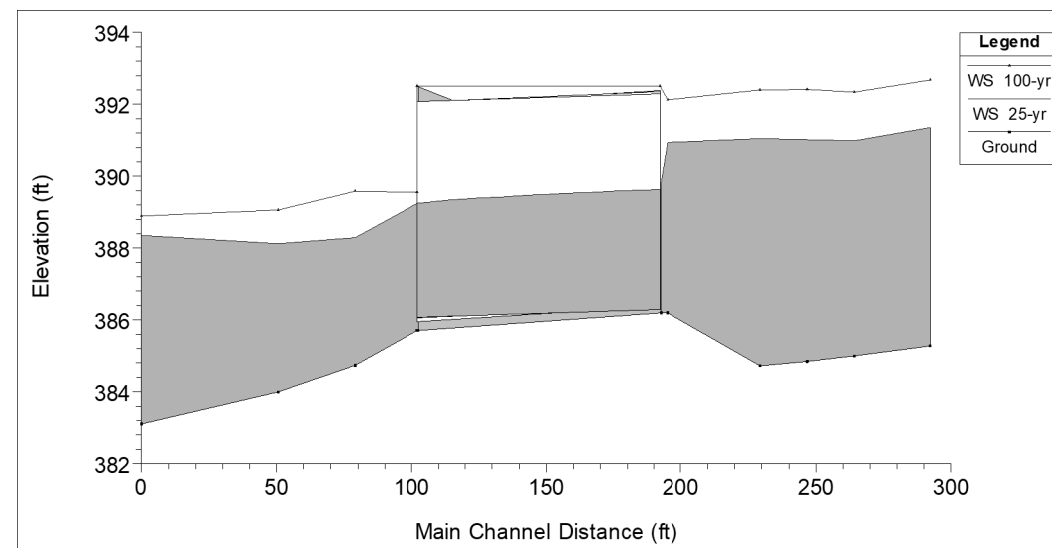
100-Yr Conditions		EXISTING		PROPOSED		
River Station	Q Total (cfs)	W.S. Elev (ft)	Vel Chnl (ft/s)	River Station	W.S. Elev (ft)	Vel Chnl (ft/s)
710	832	392.68	1.52	710	392.66	1.53
681.86	832	392.34	5.34	681.86	392.32	5.37
661.92	832	392.42	4.56	661.92	392.4	4.59
644.56	832	392.40	4.64	644.56	392.38	4.67
610.18	832	392.09	5.67	610.18	392.08	5.63
550	Group Culvert #1			550	Group Culvert #1	
517.07	832	389.51	8.3	382.07	390	6.7
493.94	832	389.58	7.79	354.11	389.64	8.16
465.47	832	389.06	8.08	271.97	389.32	9.19
414.99	832	388.87	7.78			

Notes:

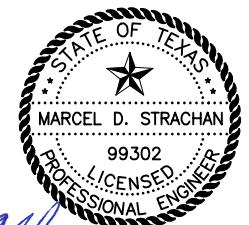
- HEC-RAS 4.1 WAS USED FOR THE HYDRAULIC ANALYSIS AND DESIGN OF THE CULVERT. NORMAL DEPTH COMPUTATION USED FOR THE DOWNSTREAM BOUNDARY CONDITIONS
- WOOD COUNTY FLOOD PLAN ADMINISTRATOR COORDINATION OCCURRED ON 5-17-2018.



CROSS SECTION AT ROAD WAY PROFILE



CHANNEL PROFILE



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



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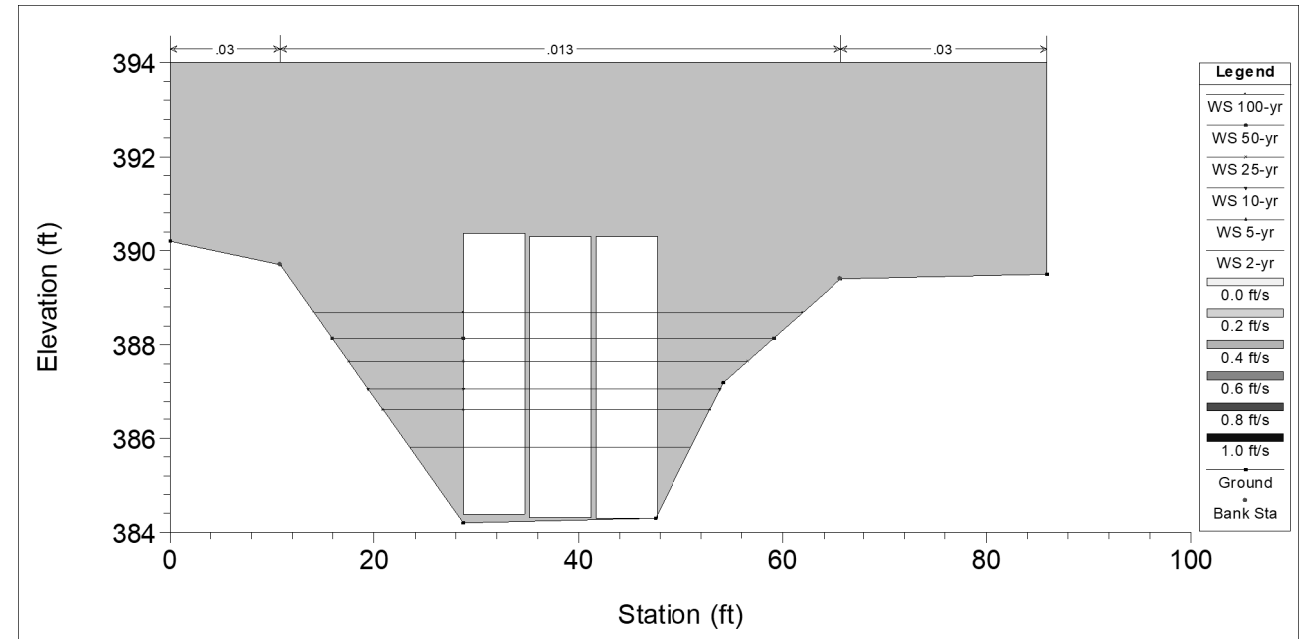
US 69 AT FM 779
HYDRAULIC DATA
US 69
CULVERT #1
STA 351+79.11

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	CM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	233

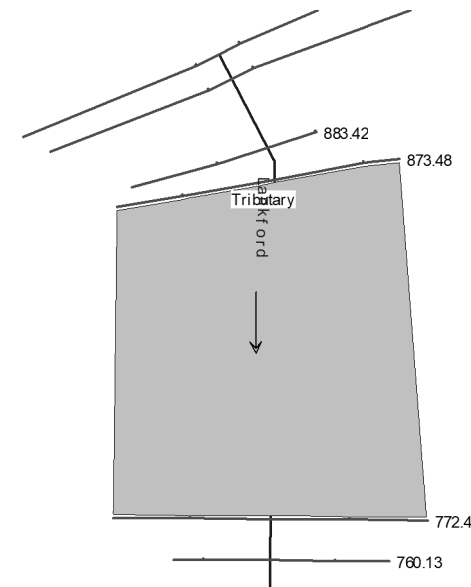
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25-Yr Conditions		EXISTING		PROPOSED		
River Station	Q Total (cfs)	W.S. Elev (ft)	Vel Chnl (ft/s)	River Station	W.S. Elev (ft)	Vel Chnl (ft/s)
915	612	389.53	7.7	915	389.53	7.7
906.63	612	389.54	7.55	906.63	389.54	7.54
883.42	612	389.88	4.25	883.42	389.88	4.25
873.48	612	389.97	2.91	873.48	389.97	2.91
872.48	Group Culvert #2			872.48	Culvert Group#2	
772.48	612	387.4	7.18	772.48	387.79	5.5
760.13	612	387.41	6.97	760.13	387.41	6.97
748.75	612	386.98	8.55	748.75	386.98	8.55

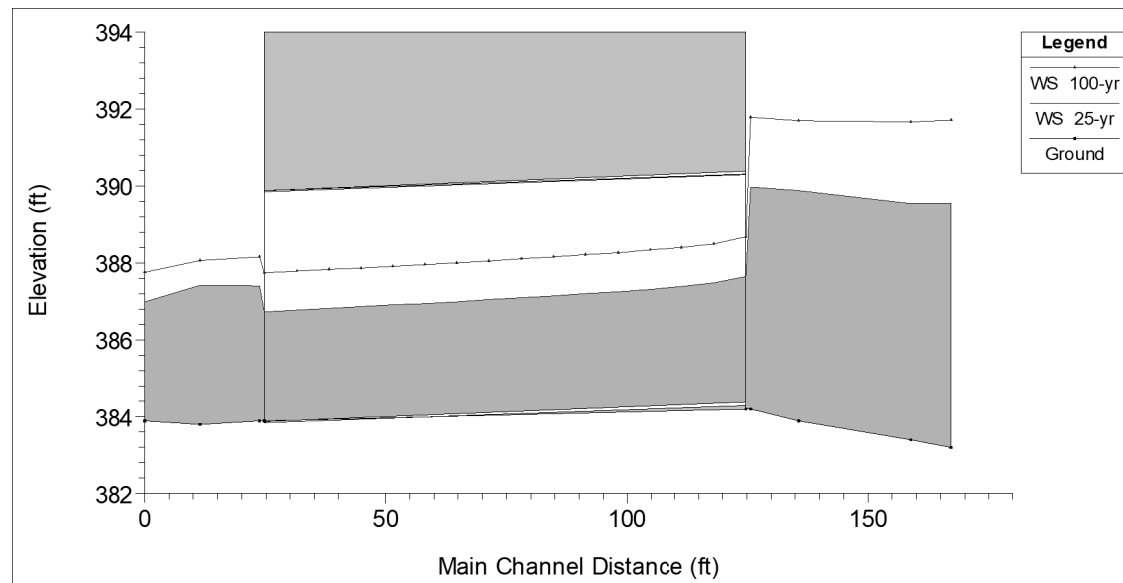
100-Yr Conditions		EXISTING		PROPOSED		
River Station	Q Total (cfs)	W.S. Elev (ft)	Vel Chnl (ft/s)	River Station	W.S. Elev (ft)	Vel Chnl (ft/s)
915	919	391.70	5.29	915	391.7	5.29
906.63	919	391.66	5.48	906.63	391.66	5.48
883.42	919	391.69	4.22	883.42	391.69	4.22
873.48	919	391.78	2.85	873.48	391.78	2.85
872.48	Group Culvert #2			872.48	Group Culvert #2	
772.48	919	388.15	8.22	772.48	388.71	6.29
760.13	919	388.06	8.44	760.13	388.06	8.44
748.75	919	387.76	9.39	748.75	387.76	9.39



CROSS SECTION AT ROAD WAY PROFILE



CROSS-SECTIONS LOCATION (NOT TO SCALE)



CHANNEL PROFILE

Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE

TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779
HYDRAULIC DATA
US 69
CULVERT #2
STA 363+62.05

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	GM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	234

Existing Conditions Culvert Summary Flows

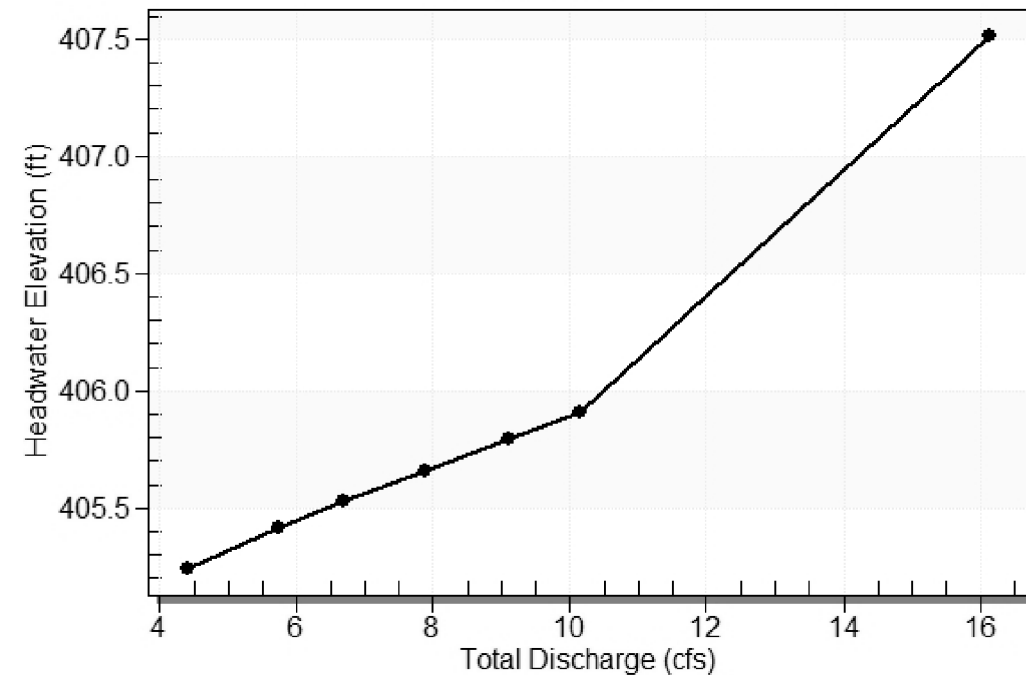
Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert 3 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
405.25	2-yr	4.41	4.41	0	1
405.42	5-yr	5.73	5.73	0	1
405.53	10-yr	6.70	6.70	0	1
405.66	25-yr	7.88	7.88	0	1
405.79	50-yr	9.10	9.10	0	1
405.91	100-yr	10.15	10.15	0	1
406.73	Overtopping	16.14	16.14	0	Overtopping

Existing Conditions Culvert Summary Table

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
2-yr	4.41	4.41	405.25	1.125	0.0*	1-S2n	0.38	0.74	0.38	0.23	10.19	1.28
5-yr	5.73	5.73	405.42	1.295	0.0*	1-S2n	0.44	0.84	0.44	0.25	10.99	1.37
10-yr	6.70	6.70	405.53	1.409	0.0*	1-S2n	0.47	0.92	0.51	0.26	10.33	1.42
25-yr	7.88	7.88	405.66	1.54	0.0*	1-S2n	0.51	1.00	0.51	0.28	12.05	1.48
50-yr	9.10	9.10	405.79	1.674	0.0*	1-S2n	0.55	1.08	0.55	0.29	12.54	1.53
100-yr	10.15	10.15	405.91	1.791	0.0*	1-S2n	0.58	1.13	0.63	0.30	11.65	1.58

Total Rating Curve

Crossing: Crossing #3



Site Data - Culvert 3

Site Data Option: Culvert Invert Data
 Inlet Station: 0.00 ft
 Inlet Elevation: 404.12 ft
 Outlet Station: 90.87 ft
 Outlet Elevation: 400.00 ft
 Number of Barrels: 1

Culvert Data Summary - Culvert 3

Barrel Shape: Circular
 Barrel Diameter: 2.00 ft
 Barrel Material: Concrete
 Embedment: 0.00 in
 Barrel Manning's n: 0.0120
 Culvert Type: Straight
 Inlet Configuration: Mitered to Conform to Slope
 Inlet Depression: None

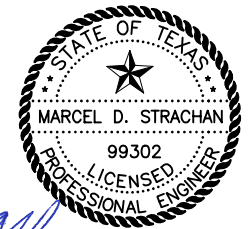
Roadway Data for Crossing: Crossing #3

Roadway Profile Shape: Irregular Roadway Shape (coordinates)
 Irregular Roadway Cross-Section:

Coord No.	Station (ft)	Elevation (ft)
0	0.00	407.20
1	10.80	407.40
2	23.50	407.56
3	35.65	407.29
4	45.88	406.73

 Roadway Surface: Paved
 Roadway Top Width: 45.88 ft

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Marcel D. Strachan 12/11/2023

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TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779
EXISTING CONDITIONS HYDRAULIC DATA
 US 69
CULVERT #3
 STA 366+64.66

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	GM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	235

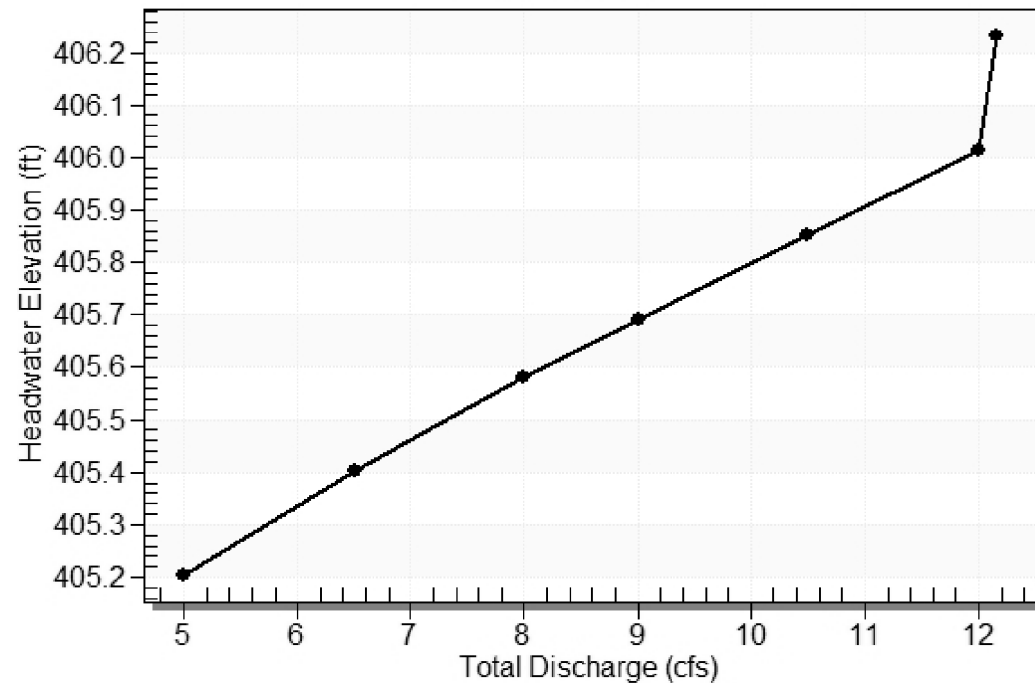
Proposed Conditions Culvert Summary

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert 3 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
405.21	2-yr	5.00	5.00	0	1
405.4	5-yr	6.50	6.50	0	1
405.58	10-yr	8.00	8.00	0	1
405.69	25-yr	9.00	9.00	0	1
405.85	50-yr	10.50	10.50	0	1
406.01	100-yr	12.00	12.00	0	1
406.03	Overtopping	12.16	12.16	0	Overtopping

Proposed Conditions Culvert Summary Table

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
2-yr	5.00	5.00	405.21	1.09	0.0*	1-S2n	0	0.74	0.59	0.59	6.57	2.49
5-yr	6.50	6.50	405.40	1.28	0.0*	1-S2n	0	0.74	0.67	0.65	7.06	2.66
10-yr	8.00	8.00	405.58	1.46	0.0*	1-S2n	0	0.74	0.75	0.70	7.48	2.80
25-yr	9.00	9.00	405.69	1.57	0.0*	1-S2n	0	0.74	0.80	0.73	7.72	2.89
50-yr	10.50	10.50	405.85	1.73	0.0*	1-S2n	0	0.74	0.87	0.77	8.00	3.00
100-yr	12.00	12.00	406.01	1.89	0.0*	1-S2n	0	0.74	0.94	0.81	8.33	3.10

Total Rating Curve
Crossing: Crossing #3



Site Data - Culvert 3

Site Data Option: Culvert Invert Data
 Inlet Station: 0.00 ft
 Inlet Elevation: 404.12 ft
 Upper Break Station: 109.98 ft
 Upper Break Elevation: 399.17 ft
 Lower Break Station: 112.98 ft
 Lower Break Elevation: 398.35 ft
 Outlet Station: 275.00 ft
 Outlet Elevation: 396.58 ft
 Number of Barrels: 1

Culvert Data Summary - Culvert 3

Barrel Shape: Circular
 Barrel Diameter: 2.00 ft
 Upper & Middle Section Material: Concrete
 Lower Section Material:
 Embedment: 0.00 in
 Upper & Middle Section Manning's n: 0.0120
 Lower Section Manning's n: 0.0120
 Culvert Type: Double Broken-back
 Inlet Configuration: Square Edge with Headwall
 Inlet Depression: None

Roadway Data for Crossing: Crossing #3

Roadway Profile Shape: Irregular Roadway Shape (coordinates)
 Irregular Roadway Cross-Section:

Coord No.	Station (ft)	Elevation (ft)
0	0.00	403.92
1	100.00	406.03
2	250.00	410.22

 Roadway Surface: Paved
 Roadway Top Width: 143.89 ft

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NO.	REVISION	BY	DATE

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US 69 AT FM 779
PROPOSED CONDITIONS HYDRAULIC DATA
 US 69
CULVERT #3
 STA 366+64.66

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	GM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	236

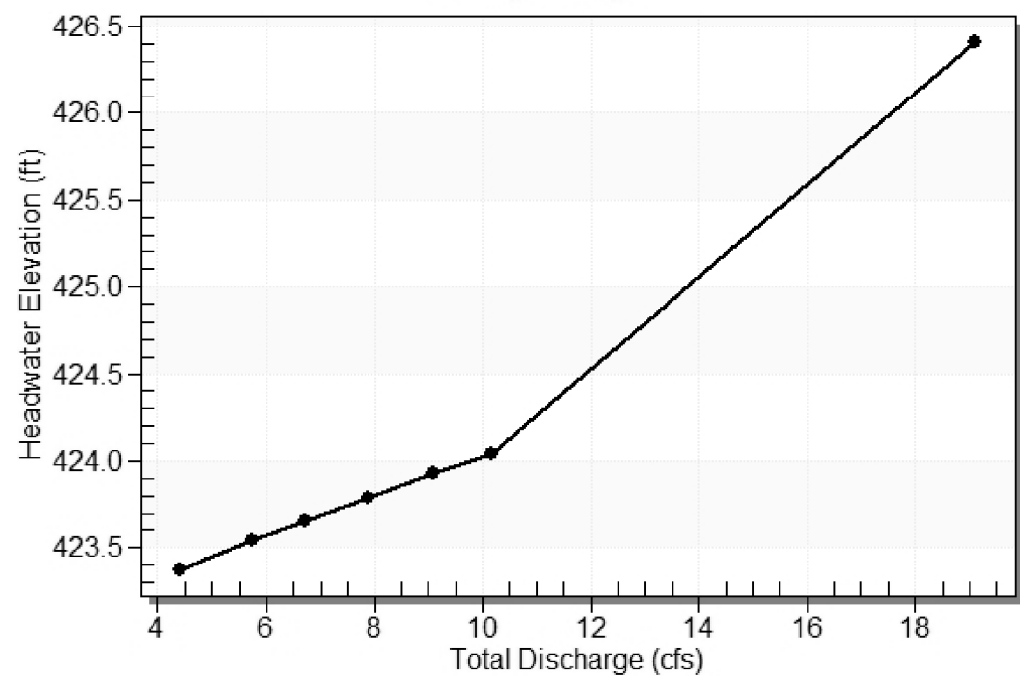
Existing Conditions Culvert Summary Flows

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert 4 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
423.38	2-yr	4.41	4.41	0	1
423.55	5-yr	5.73	5.73	0	1
423.66	10-yr	6.7	6.7	0	1
423.79	25-yr	7.88	7.88	0	1
423.92	50-yr	9.1	9.1	0	1
424.04	100-yr	10.15	10.15	0	1
425.4	Overtopping	19.09	19.09	0	Overtopping

Existing Conditions Summary Table

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
2-yr	4.41	4.41	423.38	1.096	0.0*	1-JS1t	0.447	0.735	1.49	1.49	1.711	6.526
5-yr	5.73	5.73	423.55	1.266	0.04	1-JS1t	0.51	0.844	1.643	1.643	2.027	6.967
10-yr	6.7	6.7	423.66	1.379	0.186	1-JS1t	0.552	0.918	1.743	1.743	2.26	7.245
25-yr	7.88	7.88	423.79	1.511	0.362	1-JS1t	0.6	0.999	1.852	1.852	2.555	7.545
50-yr	9.1	9.1	423.92	1.644	0.544	1-JS1t	0.647	1.075	1.955	1.955	2.894	7.822
100-yr	10.15	10.15	424.04	1.761	0.704	1-JS1f	0.686	1.134	2	2.036	3.231	8.038

Total Rating Curve
Crossing: Crossing #4



Site Data - Culvert 4

Site Data Option: Culvert Invert Data
 Inlet Station: 0.00 ft
 Inlet Elevation: 422.28 ft
 Outlet Station: 71.54 ft
 Outlet Elevation: 420.55 ft
 Number of Barrels: 1

Culvert Data Summary - Culvert 4

Barrel Shape: Circular
 Barrel Diameter: 2.00 ft
 Barrel Material: Concrete
 Embedment: 0.00 in
 Barrel Manning's n: 0.0120
 Culvert Type: Straight
 Inlet Configuration: Mitered to Conform to Slope
 Inlet Depression: None

Roadway Data for Crossing: Crossing #4

Roadway Profile Shape: Irregular Roadway Shape (coordinates)
 Irregular Roadway Cross-Section:

Coord No.	Station (ft)	Elevation (ft)
0	0.00	425.65
1	4.20	425.92
2	22.50	426.13
3	35.00	426.00
4	45.80	425.68
5	48.94	425.40

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US 69 AT FM 779
EXISTING CONDITIONS HYDRAULIC DATA
 US 69
CULVERT #4
 STA 380+21.61

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	GM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	237

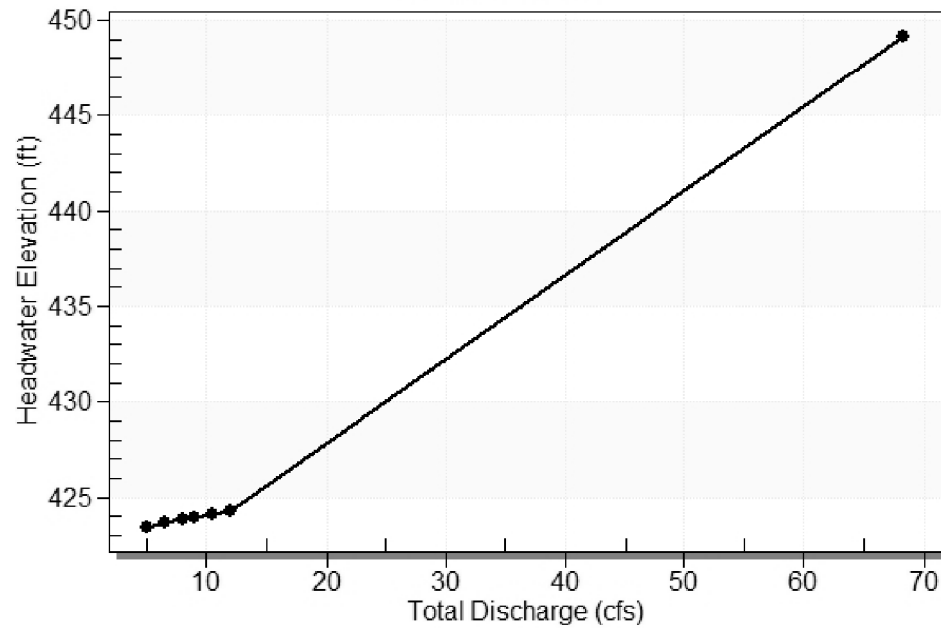
Proposed Conditions Culvert Summary Flows

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert 4 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
423.46	2-yr	5	5	0	1
423.64	5-yr	6.5	6.5	0	1
423.81	10-yr	8	8	0	1
423.92	25-yr	9	9	0	1
424.09	50-yr	10.5	10.5	0	1
424.27	100-yr	12	12	0	1
447.95	Overtopping	68.31	68.31	0	Overtopping

Proposed Conditions Summary Table

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
2-yr	5	5	423.46	1.18	0.0*	1-S2n	0	0.669	2.858	2.858	1.592	5.368
5-yr	6.5	6.5	423.64	1.362	0.0*	1-S2n	0	0.669	3.154	3.154	9.706	5.732
10-yr	8	8	423.81	1.529	0.0*	1-S2n	0	0.669	3.409	3.409	10.291	6.038
25-yr	9	9	423.92	1.639	0.0*	1-S2n	0	0.669	3.563	3.563	10.234	6.218
50-yr	10.5	10.5	424.09	1.807	0.0*	1-S2n	0	0.669	3.775	3.775	3.342	6.463
100-yr	12	12	424.27	1.987	0.0*	1-S2n	0	0.669	3.969	3.969	11.078	6.682

Total Rating Curve
Crossing: Crossing #4



Site Data - Culvert 4

Site Data Option: Culvert Invert Data
 Inlet Station: 0.00 ft
 Inlet Elevation: 422.28 ft
 Break Station: 72.00 ft
 Break Elevation: 420.03 ft
 Outlet Station: 198.00 ft
 Outlet Elevation: 416.71 ft
 Number of Barrels: 1

Culvert Data Summary - Culvert 4

Barrel Shape: Circular
 Barrel Diameter: 2.00 ft
 Upper Section Material: Concrete
 Lower Section Material:
 Embedment: 0.00 in
 Upper Section Manning's n: 0.0120
 Lower Section Manning's n: 0.0120
 Culvert Type: Single Broken-back
 Inlet Configuration: Mitered to Conform to Slope
 Inlet Depression: None

Roadway Data for Crossing: Crossing #4

Roadway Profile Shape: Irregular Roadway Shape (coordinates)
 Irregular Roadway Cross-Section:

Coord No.	Station (ft)	Elevation (ft)
0	0.00	446.72
1	100.00	447.95
2	200.00	448.79

 Roadway Surface: Paved
 Roadway Top Width: 162.98 ft

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US 69 AT FM 779
PROPOSED CONDITIONS HYDRAULIC DATA
 US 69
CULVERT #4
 STA 380+21.61

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	CM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	238

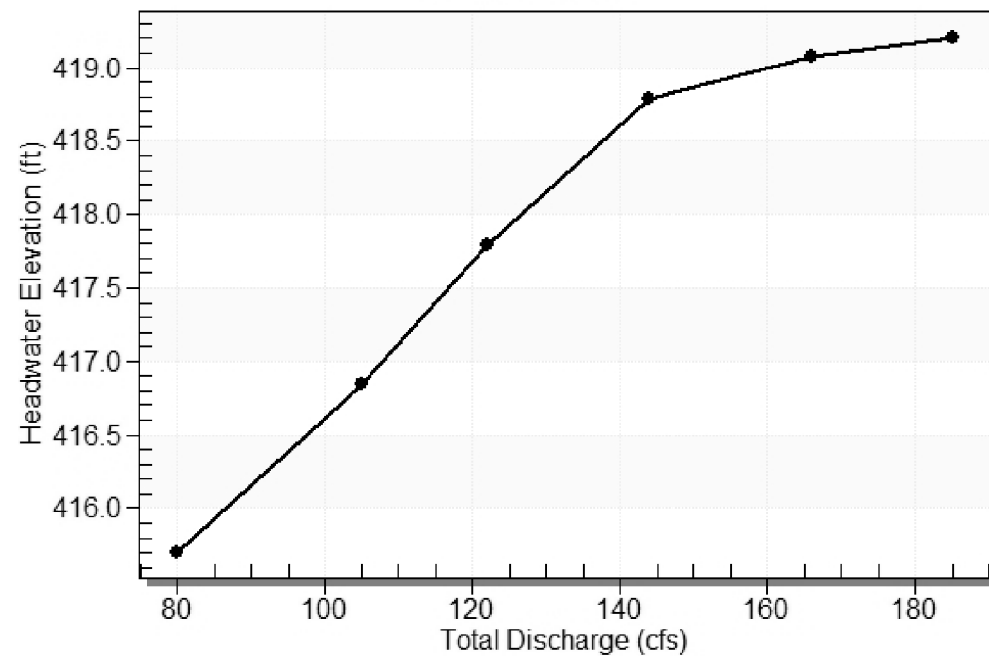
Existing summary Flows

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert 5 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
415.71	2-yr	80	80	0	1
416.84	5-yr	105	105	0	1
417.79	10-yr	122	122	0	1
418.79	25-yr	144	137.44	6.56	3
419.07	50-yr	166	141.49	24.4	7
419.21	100-yr	185	143.44	41.44	5
418.16	Overtopping	127.97	127.97	0	Overtopping

Existing Summary Table

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
2-yr	80	80	415.71	4.277	2.586	5-S2n	1.632	2.707	1.961	0.736	12.629	23.975
5-yr	105	105	416.84	5.415	4.229	5-S2n	1.905	3.098	2.313	0.867	13.512	26.284
10-yr	122	122	417.79	6.36	5.008	5-S2n	2.083	3.319	2.535	0.95	14.101	27.623
25-yr	144	137.44	418.79	7.357	5.786	5-S2n	2.243	3.486	2.725	1.053	14.648	29.153
50-yr	166	141.49	419.07	7.641	6	5-S2n	2.285	3.524	2.773	1.152	14.797	30.506
100-yr	185	143.44	419.21	7.781	6.106	5-S2n	2.305	3.541	2.796	1.233	14.864	31.562

Total Rating Curve
Crossing: Crossing #5



Site Data - Culvert 5

Site Data Option: Culvert Invert Data
 Inlet Station: 0.00 ft
 Inlet Elevation: 411.43 ft
 Outlet Station: 62.74 ft
 Outlet Elevation: 410.20 ft
 Number of Barrels: 1

Culvert Data Summary - Culvert 5

Barrel Shape: Circular
 Barrel Diameter: 4.00 ft
 Barrel Material: Concrete
 Embedment: 0.00 in
 Barrel Manning's n: 0.0120
 Culvert Type: Straight
 Inlet Configuration: Square Edge with Headwall
 Inlet Depression: None

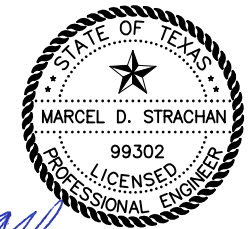
Roadway Data for Crossing: Crossing #5

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Irregular Roadway Cross-Section:

Coord No.	Station (ft)	Elevation (ft)
0	0.00	418.48
1	7.30	418.85
2	23.00	419.06
3	38.80	418.70
4	47.12	418.16

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Marcel D. Strachan 12/11/2023

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TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779
 EXISTING CONDITIONS HYDRAULIC DATA
 US 69
 CULVERT #5
 STA 390+21.49

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	GM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	239

Proposed Culvert Summary Flows

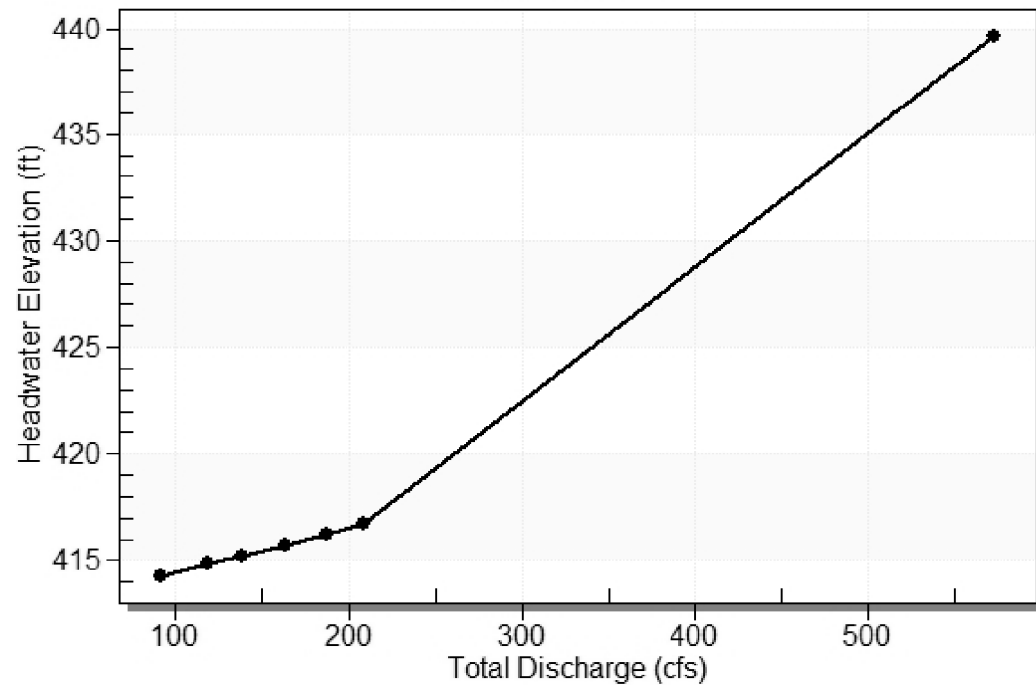
Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert 5 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
414.31	2-yr	91	91	0	1
414.83	5-yr	118	118	0	1
415.21	10-yr	138	138	0	1
415.7	25-yr	163	163	0	1
416.22	50-yr	187	187	0	1
416.75	100-yr	209	209	0	1
435.33	Overtopping	572.84	572.84	0	Overtopping

Proposed Culvert summary Table

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
2-yr	91	91	414.31	2.881	1.072	1-S2n	0	1.499	1.202	0.752	15.813	23.975
5-yr	118	118	414.83	3.401	1.301	1-S2n	0	1.499	1.378	0.893	17.209	26.284
10-yr	138	138	415.21	3.779	1.509	1-S2n	0	1.499	1.499	0.992	18.059	27.623
25-yr	163	163	415.7	4.274	1.815	5-S2n	0	1.499	1.643	1.11	18.966	29.153
50-yr	187	187	416.22	4.794	2.157	5-S2n	0	1.499	1.774	1.219	19.703	30.506
100-yr	209	209	416.75	5.325	2.511	5-S2n	0	1.499	1.891	1.315	20.303	31.562

Total Rating Curve

Crossing: Crossing #5



Site Data - Culvert 5

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 411.43 ft

Upper Break Station: 36.87 ft

Upper Break Elevation: 410.70 ft

Lower Break Station: 42.98 ft

Lower Break Elevation: 404.29 ft

Outlet Station: 196.00 ft

Outlet Elevation: 401.25 ft

Number of Barrels: 2

Culvert Data Summary - Culvert 5

Barrel Shape: Circular

Barrel Diameter: 4.00 ft

Upper & Middle Section Material: Concrete

Lower Section Material:

Embedment: 0.00 in

Upper & Middle Section Manning's n: 0.0120

Lower Section Manning's n: 0.0120

Culvert Type: Double Broken-back

Inlet Configuration: Square Edge with Headwall

Roadway Data for Crossing: Crossing #5

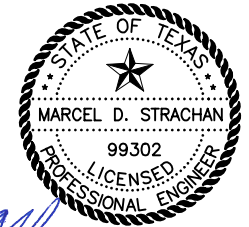
Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Irregular Roadway Cross-Section:

Coord No.	Station (ft)	Elevation (ft)
0	0.00	441.19
1	100.00	438.45
2	200.00	435.33

Roadway Surface: Paved

Roadway Top Width: 162.00 ft



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NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779
PROPOSED CONDITIONS HYDRAULIC DATA
 US 69
CULVERT #5
 STA 390+21.49

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	GM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	240

Existing Summary Culvert Flows

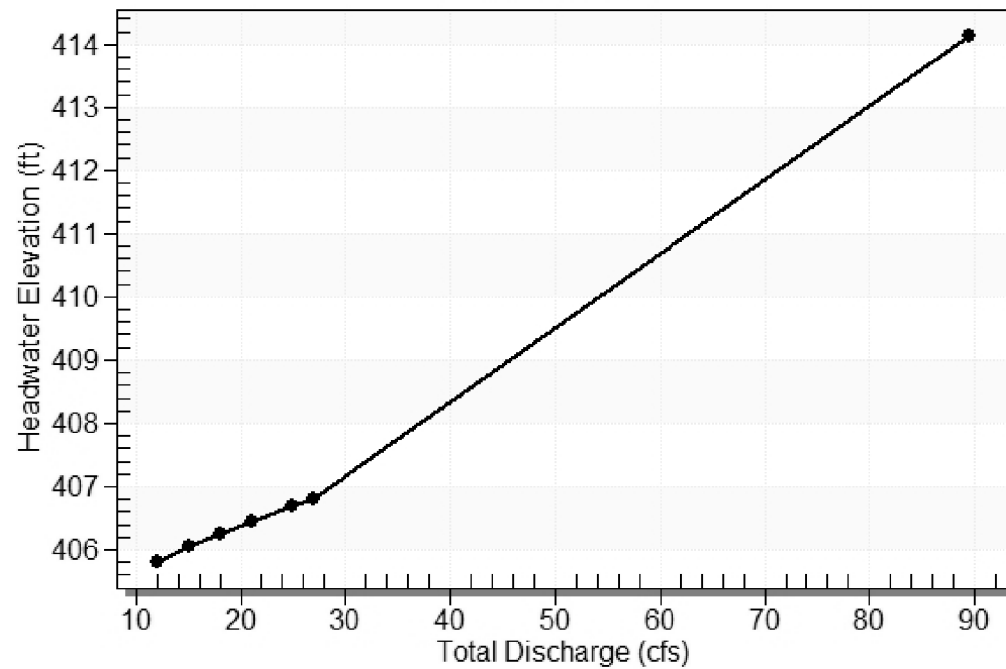
Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert 6 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
405.82	2-yr	12	12	0	1
406.05	5-yr	15	15	0	1
406.26	10-yr	18	18	0	1
406.46	25-yr	21	21	0	1
406.7	50-yr	25	25	0	1
406.82	100-yr	27	27	0	1
412.67	Overtopping	89.52	89.52	0	Overtopping

Existing Culvert Summary Table

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
2-yr	12	12	405.82	1.509	0.0*	1-S2n	0.75	1.095	0.78	1.253	7.929	5.375
5-yr	15	15	406.05	1.741	0.0*	1-S2n	0.841	1.231	0.878	1.363	8.399	5.669
10-yr	18	18	406.26	1.951	0.133	1-S2n	0.924	1.358	0.969	1.459	8.808	5.923
25-yr	21	21	406.46	2.146	0.299	1-S2n	1.002	1.472	1.062	1.544	9.053	6.149
50-yr	25	25	406.7	2.39	0.527	1-S2n	1.099	1.609	1.159	1.646	9.577	6.417
100-yr	27	27	406.82	2.507	0.645	1-S2n	1.146	1.677	1.219	1.692	9.678	6.54

Total Rating Curve

Crossing: Crossing #6



Site Data - Culvert 6

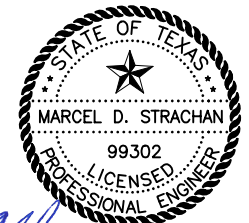
Site Data Option: Culvert Invert Data
 Inlet Station: 0.00 ft
 Inlet Elevation: 404.31 ft
 Outlet Station: 117.59 ft
 Outlet Elevation: 402.76 ft
 Number of Barrels: 1

Culvert Data Summary - Culvert 6
 Barrel Shape: Circular
 Barrel Diameter: 3.00 ft
 Barrel Material: Concrete
 Embedment: 0.00 in
 Barrel Manning's n: 0.0120
 Culvert Type: Straight
 Inlet Configuration: Square Edge with Headwall
 Inlet Depression: None

Roadway Data for Crossing: Crossing #6

Roadway Profile Shape: Irregular Roadway Shape (coordinates)
 Irregular Roadway Cross-Section:

Coord No.	Station (ft)	Elevation (ft)
0	0.00	412.80
1	14.00	413.22
2	31.00	413.43
3	47.80	413.25
4	61.57	412.67



Marcel D. Strachan
 12/11/2023

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TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779
 EXISTING CONDITIONS HYDRAULIC DATA
 US 69
 CULVERT #6
 STA 420+66.45

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	GM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	241

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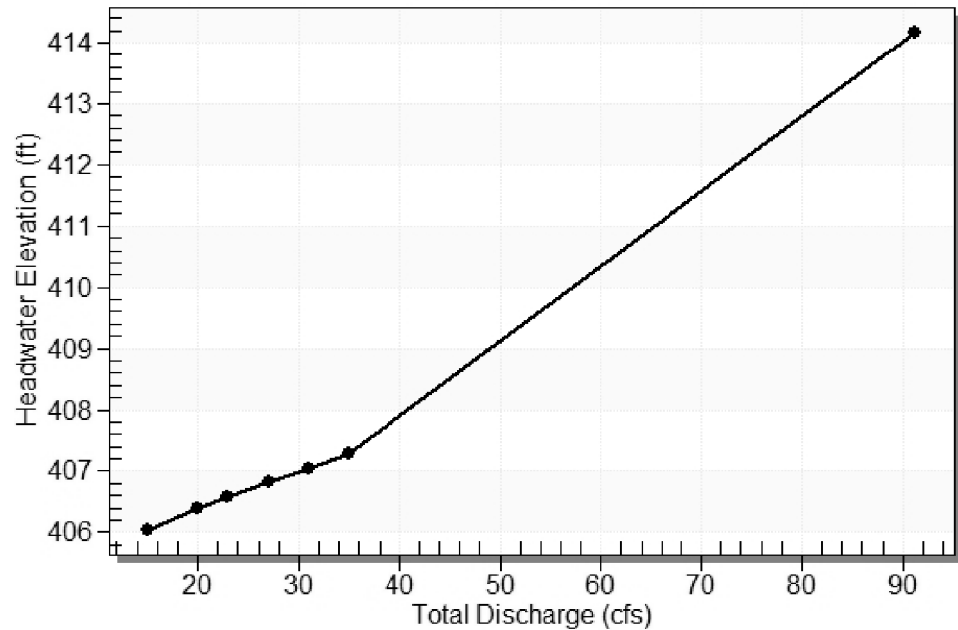
Proposed Summary Culvert Flows

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert 6 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
406.05	2-yr	15	15	0	1
406.39	5-yr	20	20	0	1
406.58	10-yr	23	23	0	1
406.82	25-yr	27	27	0	1
407.05	50-yr	31	31	0	1
407.28	100-yr	35	35	0	1
412.92	Overtopping	91.24	91.24	0	Overtopping

Proposed Culvert Summary Table

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
2-yr	15	15	406.05	1.741	0.0*	1-S2n	0	1.09	2.003	2.003	8.81	5.681
5-yr	20	20	406.39	2.083	0.0*	1-S2n	0	1.09	2.231	2.231	9.534	6.104
10-yr	23	23	406.58	2.27	0.0*	1-S2n	0	1.09	2.351	2.351	9.919	6.321
25-yr	27	27	406.82	2.508	0.0*	1-S2n	0	1.09	2.497	2.497	10.341	6.58
50-yr	31	31	407.05	2.74	0.012	1-S2n	0	1.09	2.63	2.63	10.734	6.811
100-yr	35	35	407.28	2.975	0.203	1-S2n	0	1.09	2.752	2.752	11.06	7.021

Total Rating Curve
Crossing: Crossing #6



Site Data - Culvert 6

Site Data Option: Culvert Invert Data
 Inlet Station: 0.00 ft
 Inlet Elevation: 404.31 ft
 Break Station: 133.62 ft
 Break Elevation: 402.54 ft
 Outlet Station: 275.00 ft
 Outlet Elevation: 400.73 ft
 Number of Barrels: 1

Culvert Data Summary - Culvert 6

Barrel Shape: Circular
 Barrel Diameter: 3.00 ft
 Upper Section Material: Concrete
 Lower Section Material:
 Embedment: 0.00 in
 Upper Section Manning's n: 0.0120
 Lower Section Manning's n: 0.0120
 Culvert Type: Single Broken-back
 Inlet Configuration: Square Edge with Headwall
 Inlet Depression: None

Roadway Data for Crossing: Crossing #6

Roadway Profile Shape: Irregular Roadway Shape (coordinates)
 Irregular Roadway Cross-Section:

Coord No.	Station (ft)	Elevation (ft)
0	0.00	414.62
1	100.00	413.51
2	200.00	412.92

 Roadway Surface: Paved
 Roadway Top Width: 187.96 ft

12/11/2023

NO.	REVISION	BY	DATE

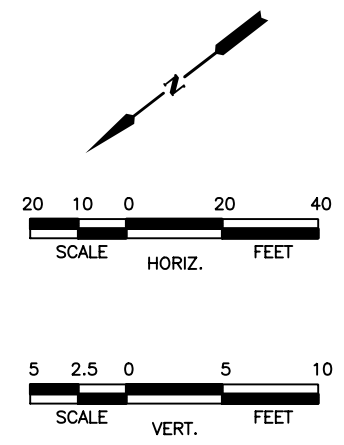
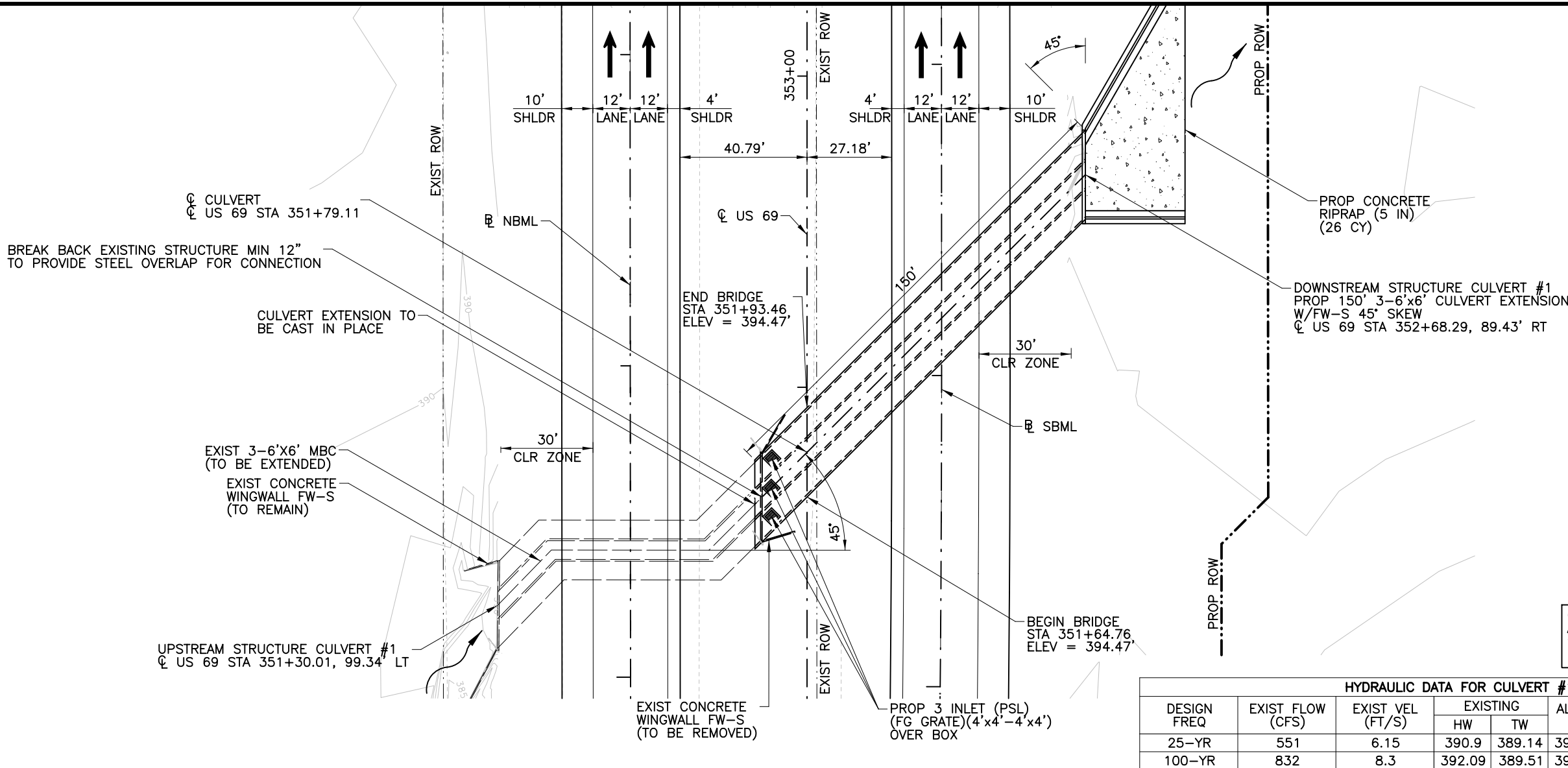
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US 69 AT FM 779
PROPOSED CONDITIONS HYDRAULIC DATA
 US 69
CULVERT #6
 STA 420+66.45

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	GM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	242

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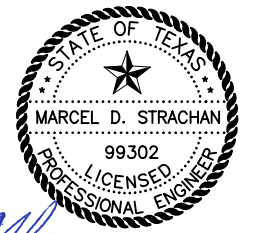
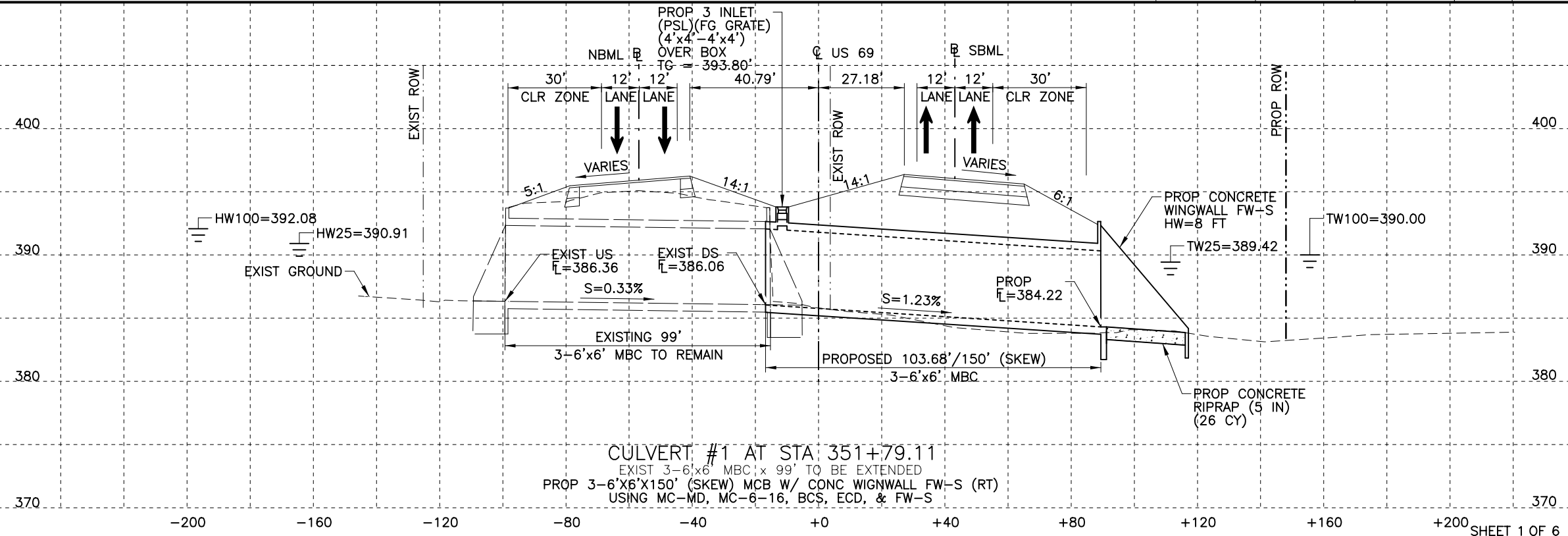


DESIGN SPEED: 60 MPH
 ADT: 6,900 VPD (2019) 9,400 VPD (2039)
 FUNCTIONAL CLASS: RURAL FREEWAY ARTERIAL
 LOADING CRITERIA: HL-93
 LOAD RATING: 1.82 INV / 2.37 OPR
 NBI No. 10-250-0-0203-05-043 (EXIST)
 NBI No. 10-250-0-0203-05-043 (PROP)
 X = 2,874,252.0569
 Y = 6,963,854.5524

CULVERT EXTENSION DESIGNED ACCORDING TO
 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,
 9TH EDITION (2020) AND TXDOT BRIDGE DESIGN
 MANUAL (JAN 2023)

HYDRAULIC DATA FOR CULVERT #1 STA STA 351+79.11

DESIGN FREQ	EXIST FLOW (CFS)	EXIST VEL (FT/S)	EXISTING		ALLOW HW	PROP FLOW (CFS)	PROP VEL (FT/S)	PROPOSED	
			HW	TW				HW	TW
25-YR	551	6.15	390.9	389.14	395.43	551	6.15	390.91	389.42
100-YR	832	8.3	392.09	389.51	395.43	832	6.7	392.08	390.00



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE

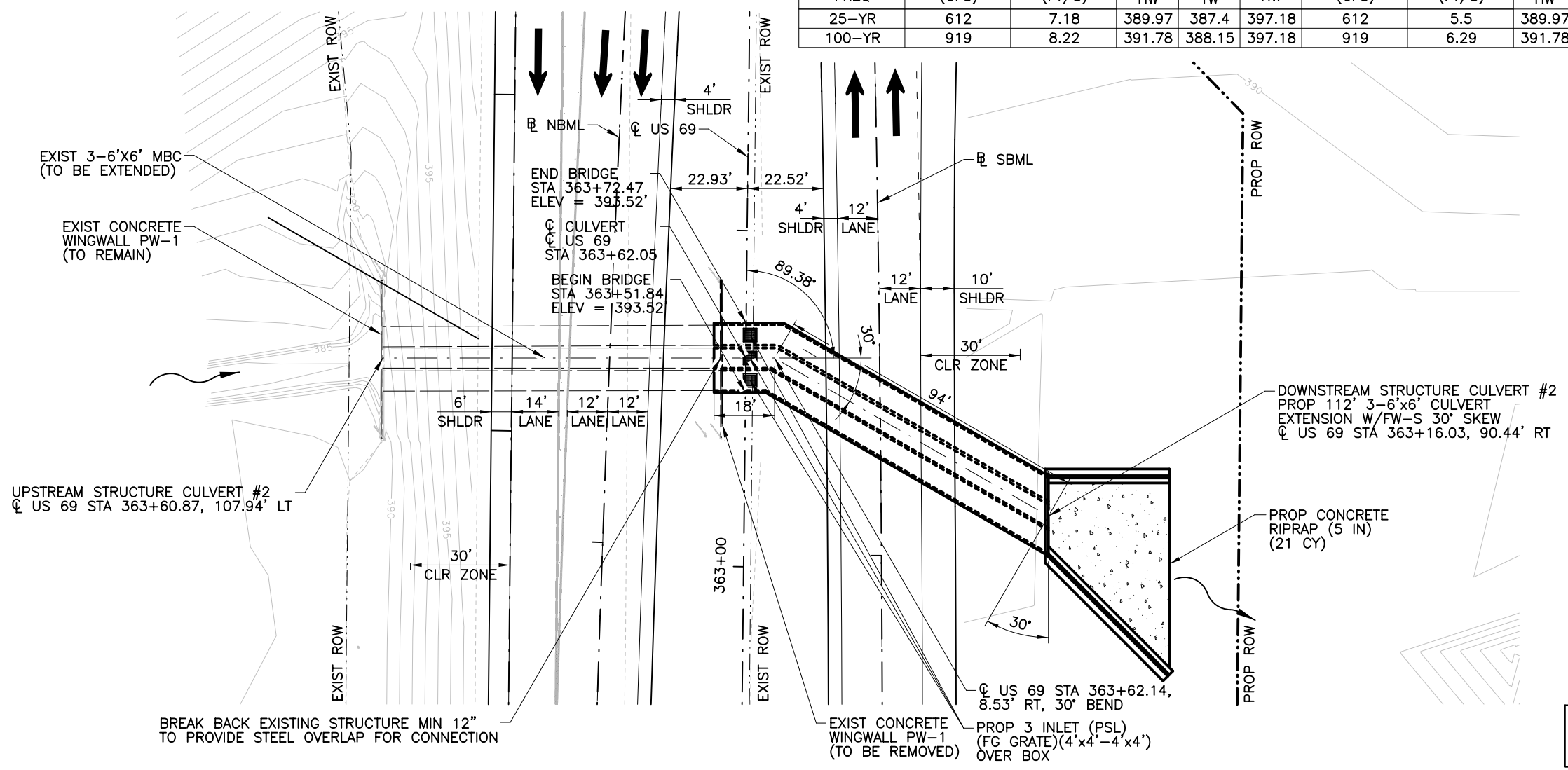
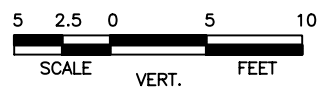
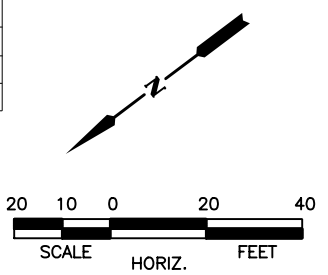


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US 69 AT FM 779
BRIDGE CLASS CULVERT
CULVERT #1 LAYOUT
 NBI #: 10-250-0-0203-05-043
 STA 351+79.11

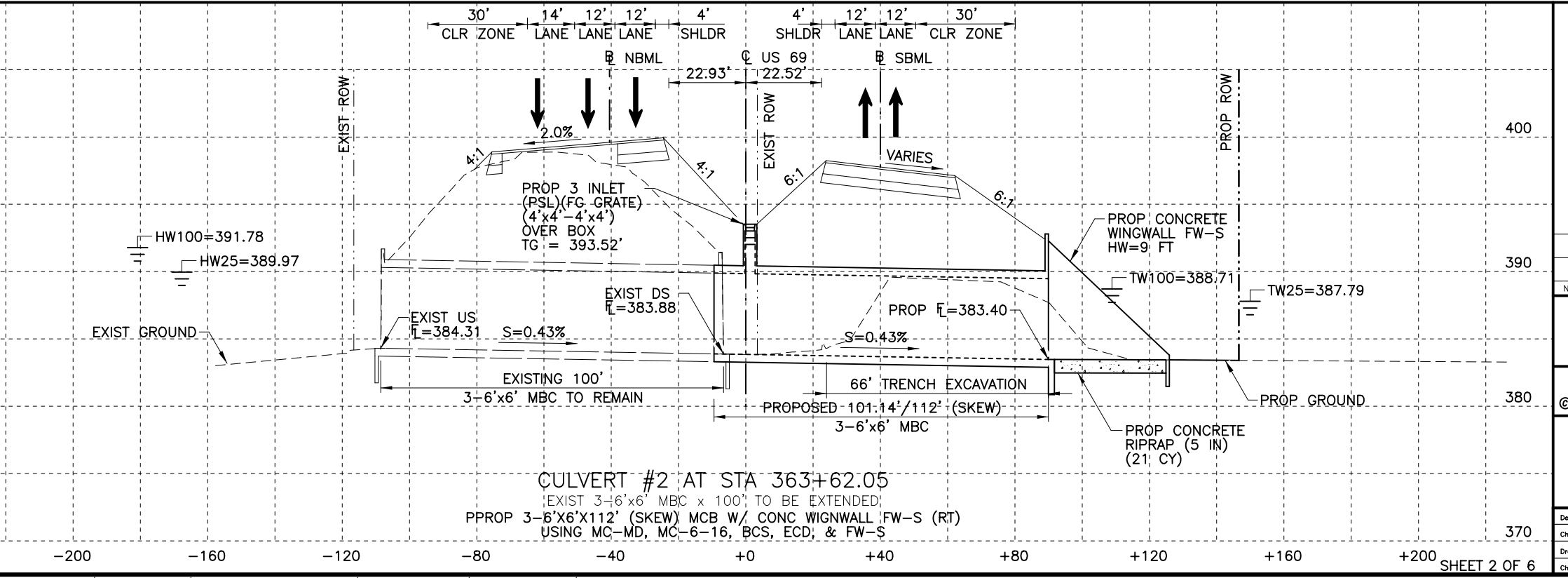
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Checked:	BAJ	6	TEXAS		US 69		
Drawn:	CM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	243

HYDRAULIC DATA FOR CULVERT #2 STA 363+62.05									
DESIGN FREQ	EXIST FLOW (CFS)	EXIST VEL (FT/S)	EXISTING		ALLOW HW	PROP FLOW (CFS)	PROP VEL (FT/S)	PROPOSED	
			HW	TW				HW	TW
25-YR	612	7.18	389.97	387.4	397.18	612	5.5	389.97	387.79
100-YR	919	8.22	391.78	388.15	397.18	919	6.29	391.78	388.71

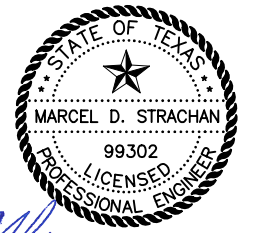


DESIGN SPEED: 60 MPH
 ADT: 6,900 VPD (2019) / 9,400 VPD (2039)
 FUNCTIONAL CLASS: RURAL FREEWAY ARTERIAL
 LOADING CRITERIA: HL-93
 LOAD RATING: 2.94 INV / 3.81 OPR
 NBI No. - (EXIST)
 NBI No. 10-250-0-0203-05-XXX (PROP)
 X = 2,875,172.8005
 Y = 6,963,257.4561

CULVERT EXTENSION DESIGNED ACCORDING TO
 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,
 9TH EDITION (2020) AND TXDOT BRIDGE DESIGN
 MANUAL (JAN 2023)



CULVERT #2 AT STA 363+62.05
 EXIST 3-6'x6' MBC x 100' TO BE EXTENDED;
 PPROP 3-6'x6'x112' (SKEW) MCB W/ CONC WIGNWALL FW-S (RT)
 USING MC-MD, MC-6-16, BCS, ECD, & FW-S



Marcel D. Strachan
 12/11/2023

NO.	REVISION	BY	DATE



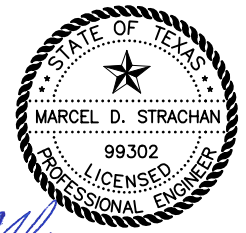
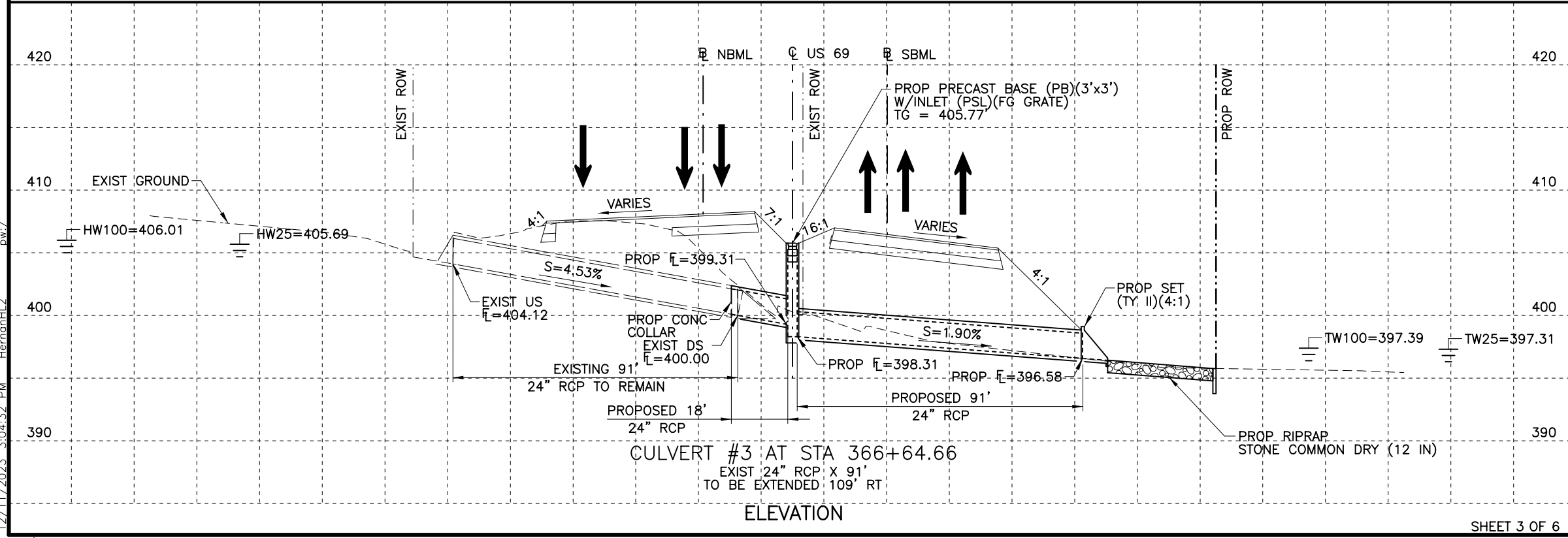
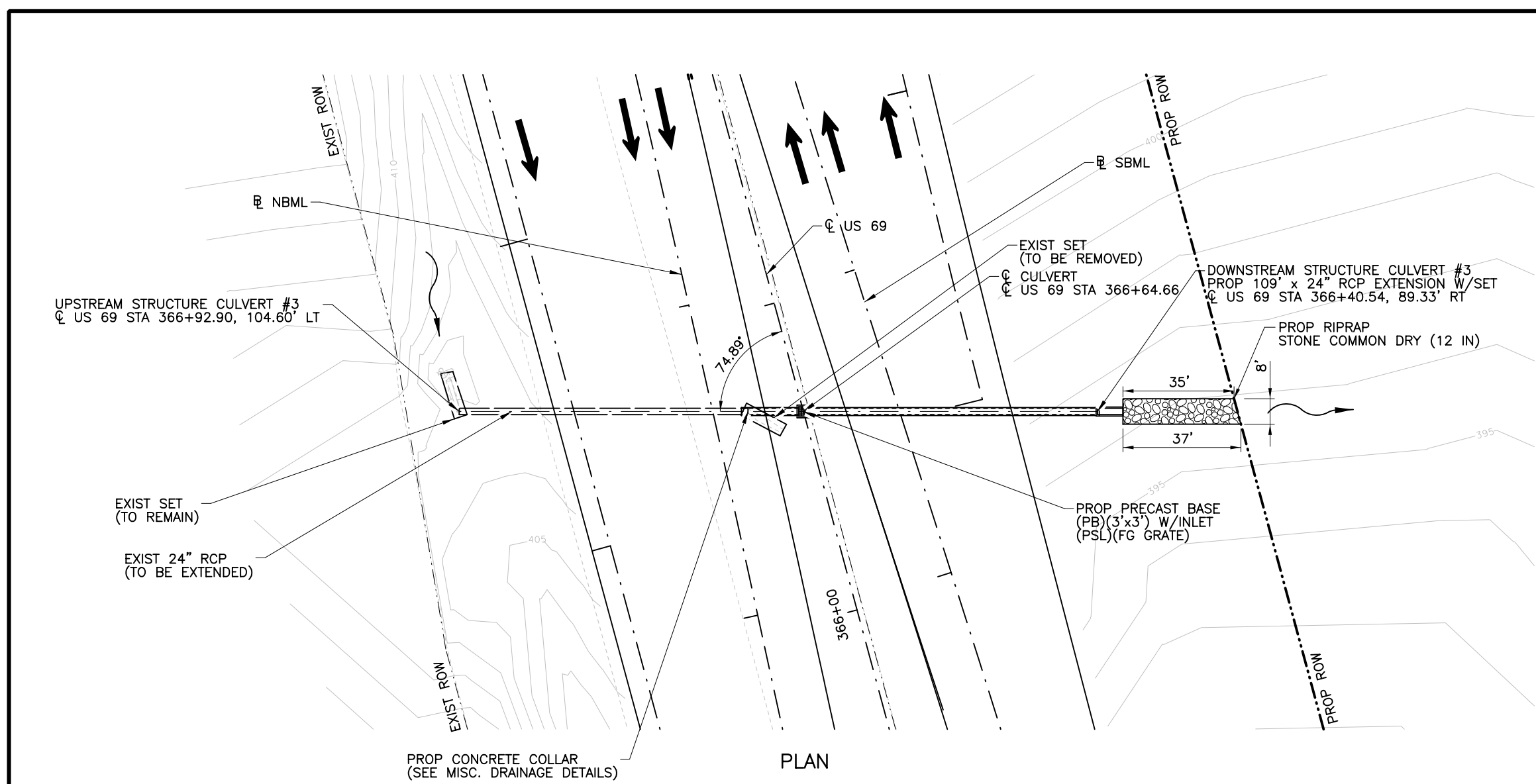
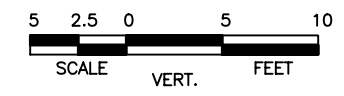
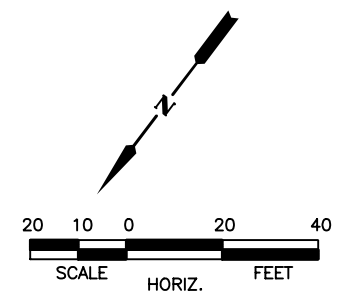
TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779
BRIDGE CLASS CULVERT
CULVERT #2 LAYOUT
 NBI #: 10-250-0-0203-05-XXX
 STA 363+62.05

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	CM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	244

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Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

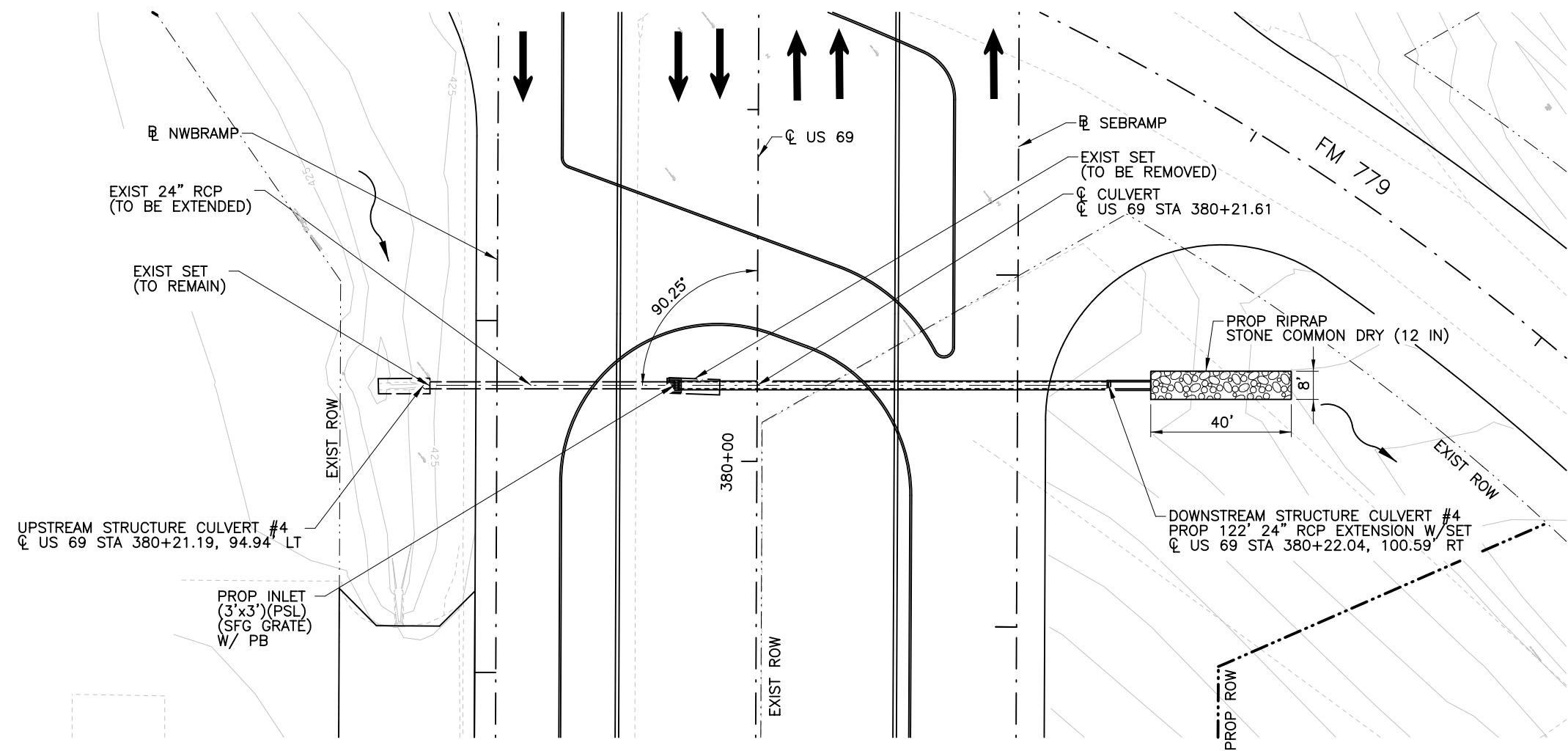
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US 69 AT FM 779
 CULVERT #3 LAYOUT
 US 69

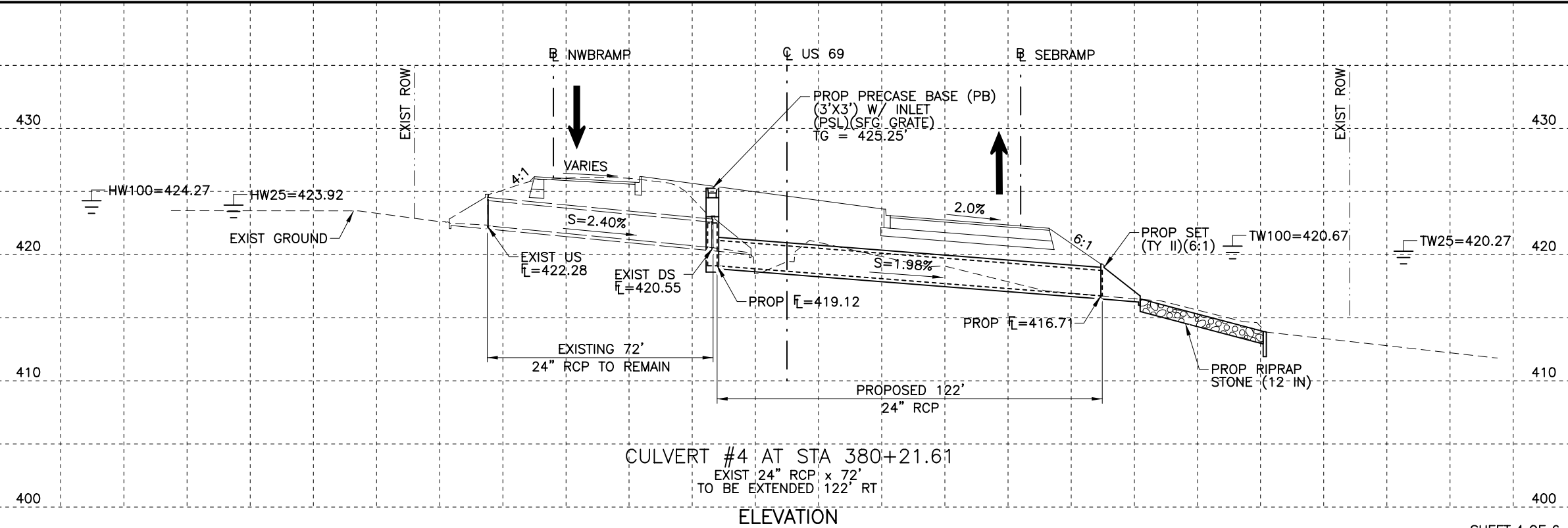
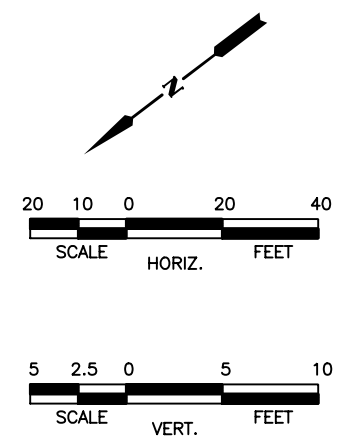
STA 366+64.66

DESIGNED	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
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Drawn:	GM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
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PLAN



ELEVATION



Marcel D. Strachan
12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

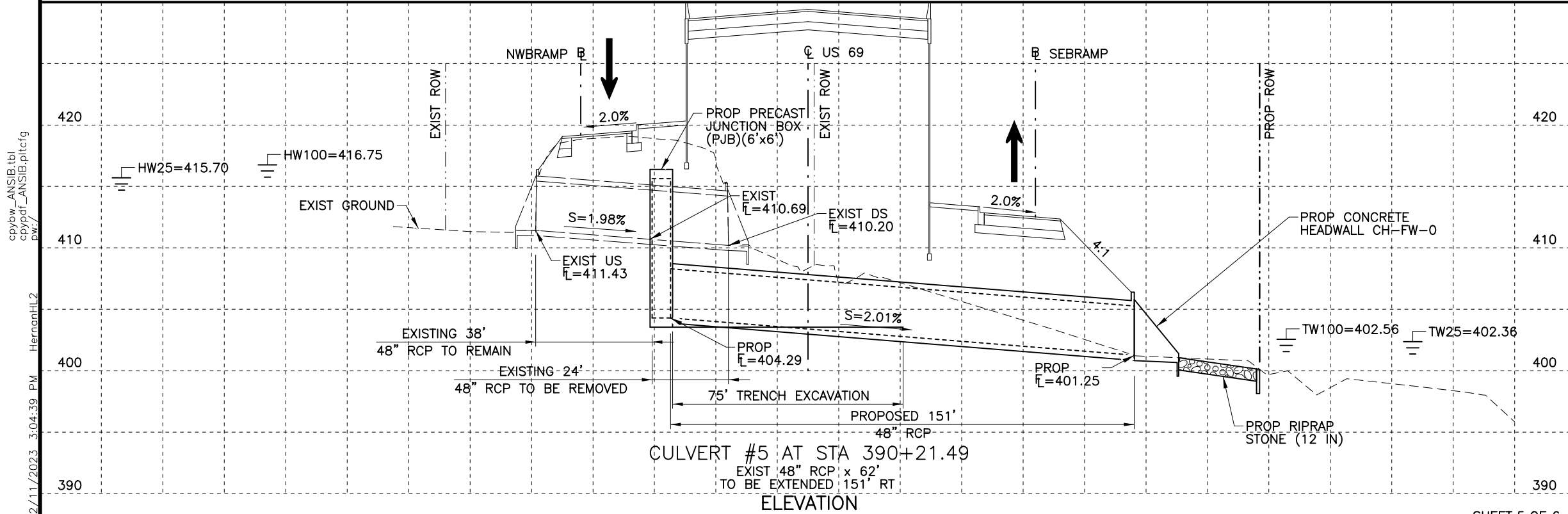
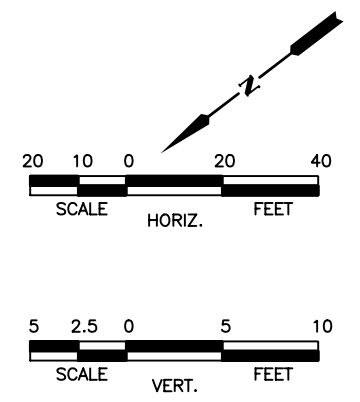
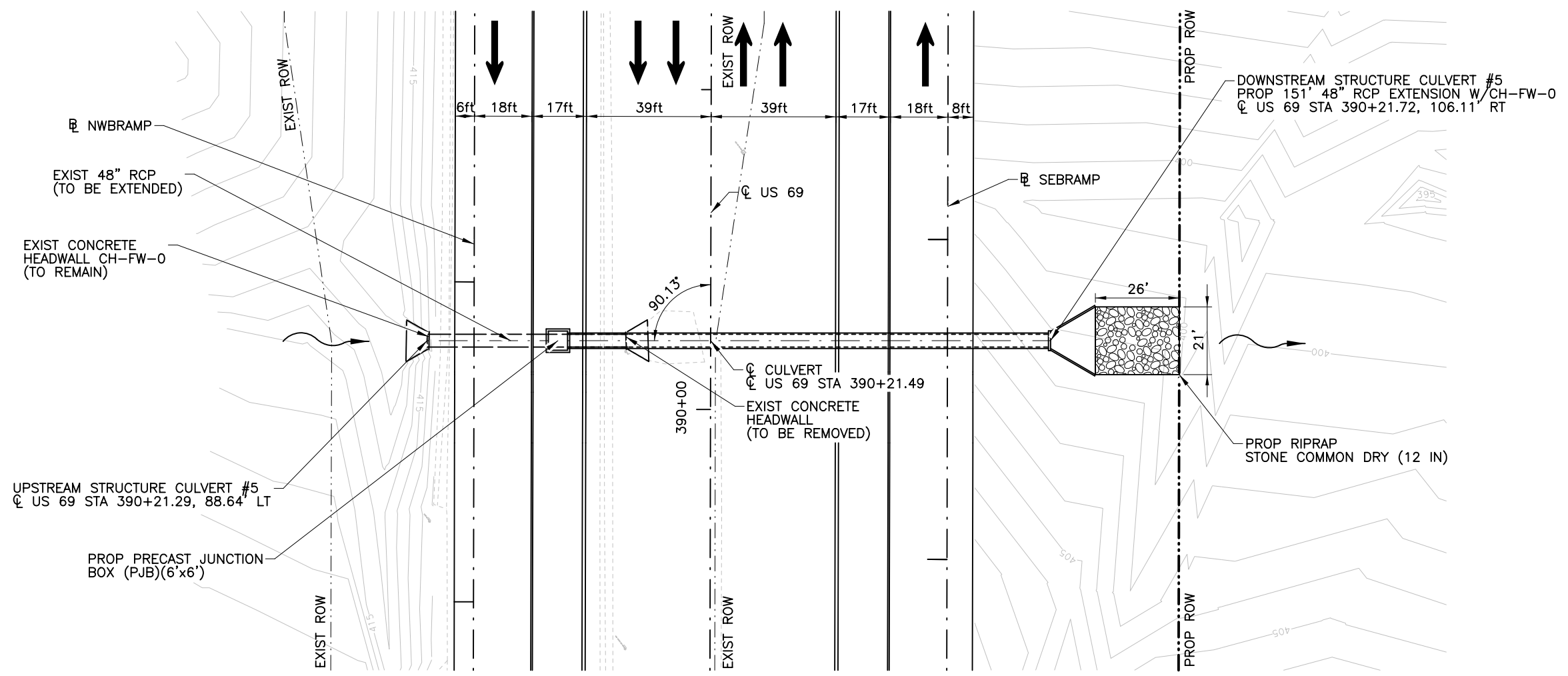
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US 69 AT FM 779
CULVERT #4 LAYOUT
US 69

STA 380+21.61

Designed:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	GM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	246

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TEXAS REGISTERED ENGINEERING FIRM F-1741

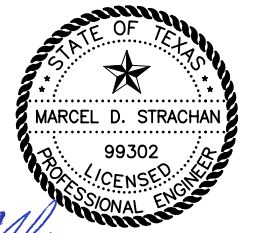
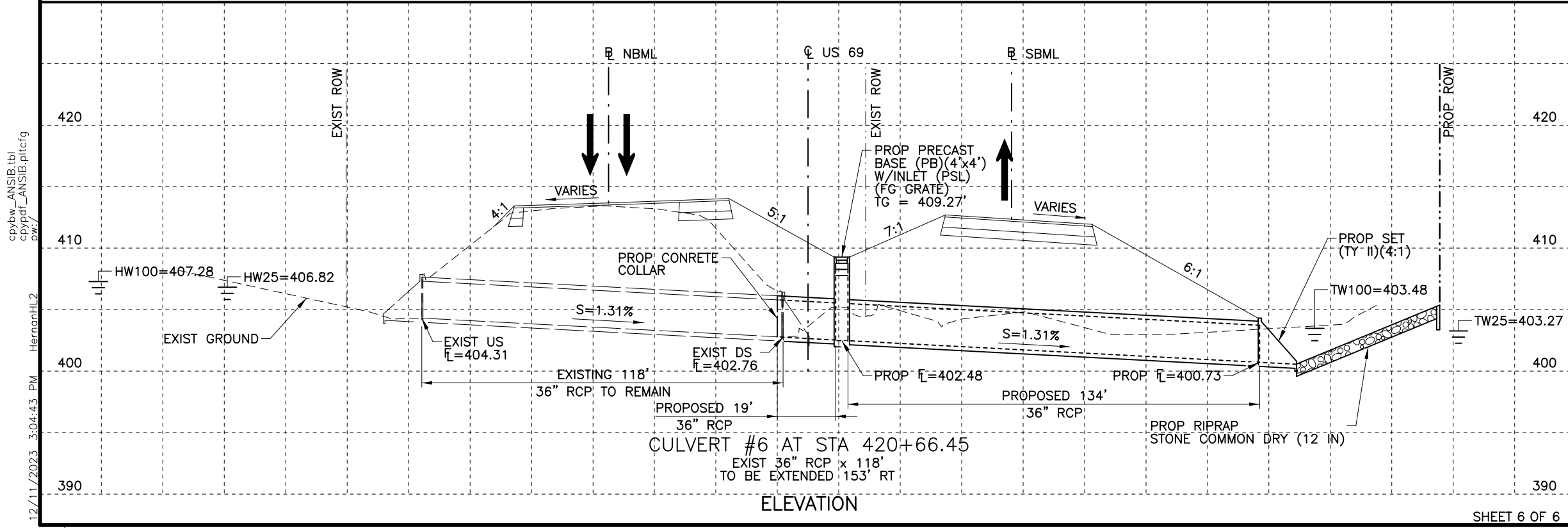
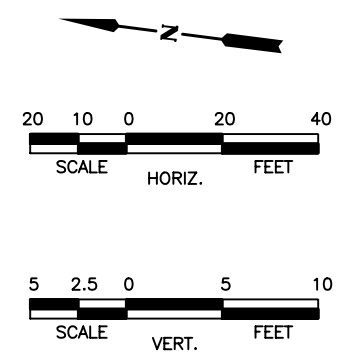
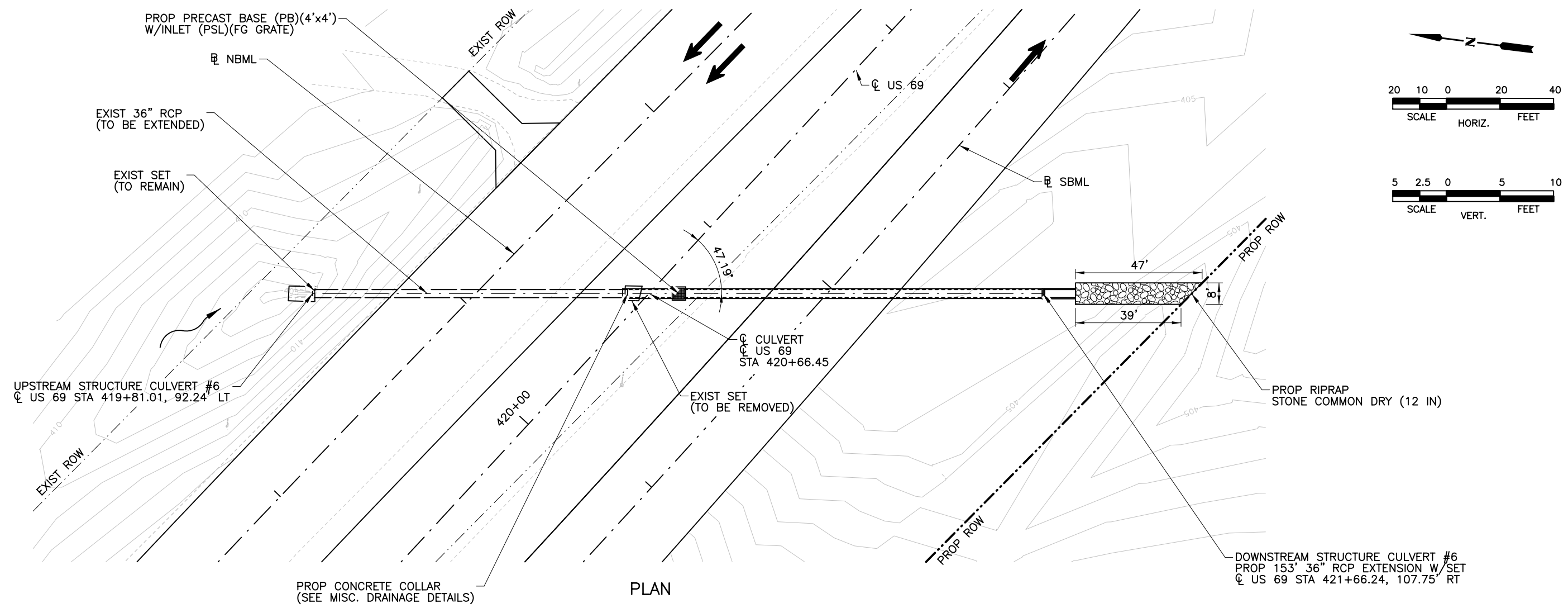
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US 69 AT FM 779
 CULVERT #5 LAYOUT
 US 69

STA 390+21.49

DESIGNED	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
CHECKED	BAJ	6	TEXAS		US 69		
DRAWN	CM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
CHECKED	BAJ	TYL	WOOD	0203	05	039	247

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12/11/2023
 MARCEL D. STRACHAN
 99302
 LICENSED
 PROFESSIONAL ENGINEER

NO.	REVISION	BY	DATE



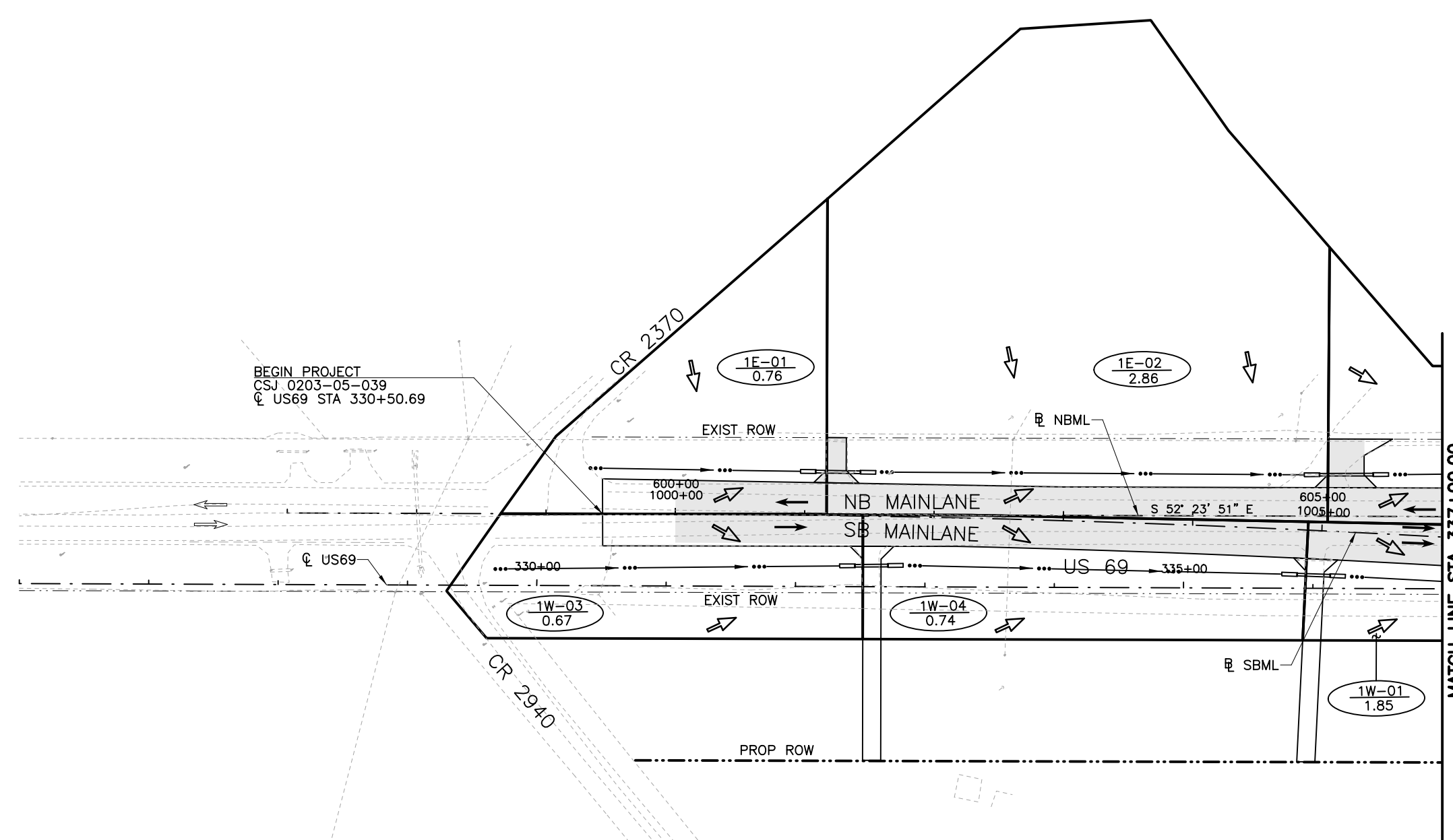
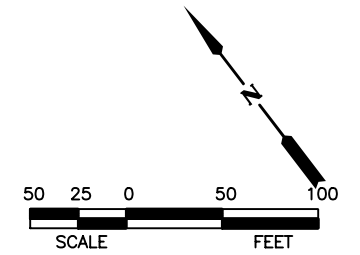
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 US 69 AT FM 779

**CULVERT #6 LAYOUT
 US 69**

STA 420+66.45

DESIGNED:	WRY	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	GM	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	248

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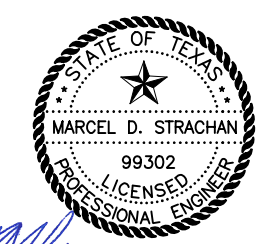


LEGEND

- XX-XX
X.XX DRAINAGE AREA LABELS
DRAINAGE AREA (ACRES)
- DRAINAGE FLOW DIRECTION
- PROPOSED PAVING
- D.A. BOUNDARY

NOTES:

1. SEE EXTERNAL DRAINAGE AREA MAP FOR LIMITS OF OFFSITE AREAS NOT SHOWN.
2. SEE HYDRAULIC DATA SHEETS FOR ADDITIONAL INFORMATION.



Marcel D. Strachan 12/11/2023

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TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

INTERIOR DRAINAGE AREA MAP

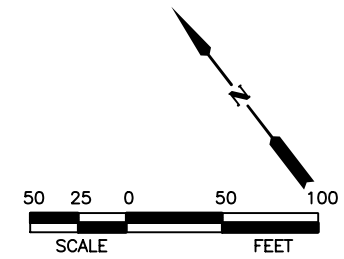
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Checked:	MDS	TYL	WOOD	0203	05
				JOB NO.	SHEET NO.
				039	249

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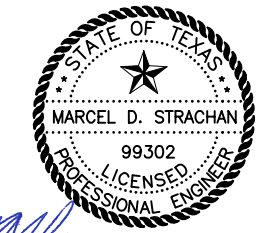
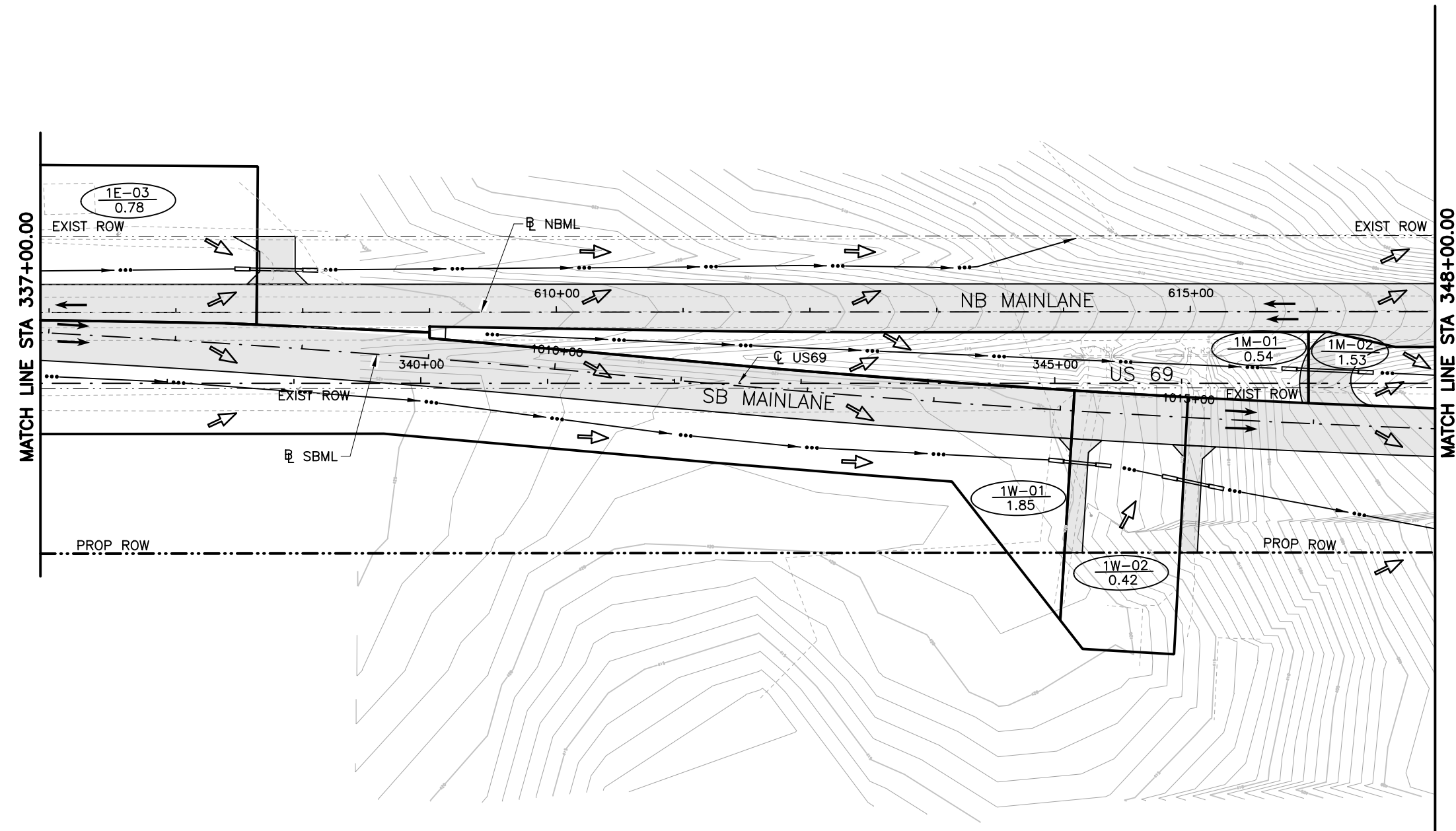


LEGEND

- XX-XX
X.XX DRAINAGE AREA LABELS
DRAINAGE AREA (ACRES)
- DRAINAGE FLOW DIRECTION
- PROPOSED PAVING
- D.A. BOUNDARY

NOTES:

1. SEE EXTERNAL DRAINAGE AREA MAP FOR LIMITS OF OFFSITE AREAS NOT SHOWN.
2. SEE HYDRAULIC DATA SHEETS FOR ADDITIONAL INFORMATION.



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TEXAS REGISTERED ENGINEERING FIRM F-1741

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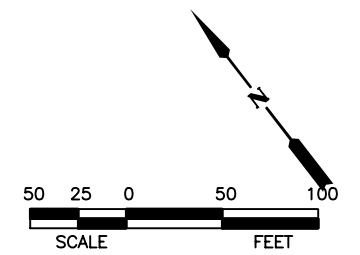
US 69 AT FM 779

INTERIOR DRAINAGE AREA MAP

STA 337+00 TO STA 348+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
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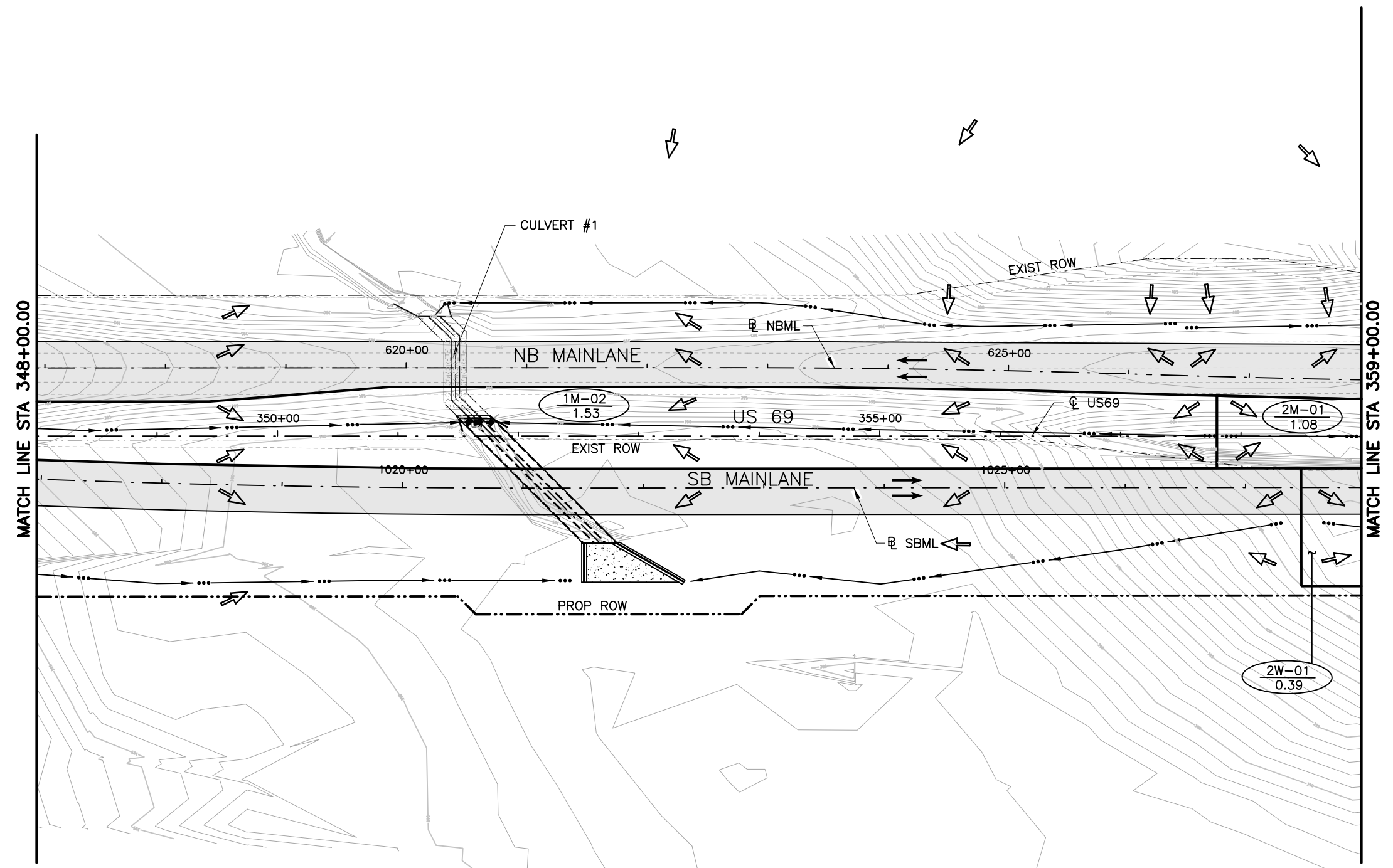


LEGEND

- XX-XX
X.XX DRAINAGE AREA LABELS
DRAINAGE AREA (ACRES)
- DRAINAGE FLOW DIRECTION
- PROPOSED PAVING
- D.A. BOUNDARY

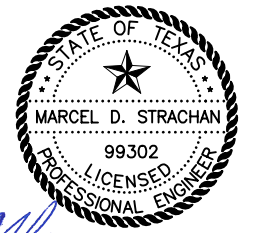
NOTES:

1. SEE EXTERNAL DRAINAGE AREA MAP FOR LIMITS OF OFFSITE AREAS NOT SHOWN.
2. SEE HYDRAULIC DATA SHEETS FOR ADDITIONAL INFORMATION.



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TEXAS REGISTERED ENGINEERING FIRM F-1741

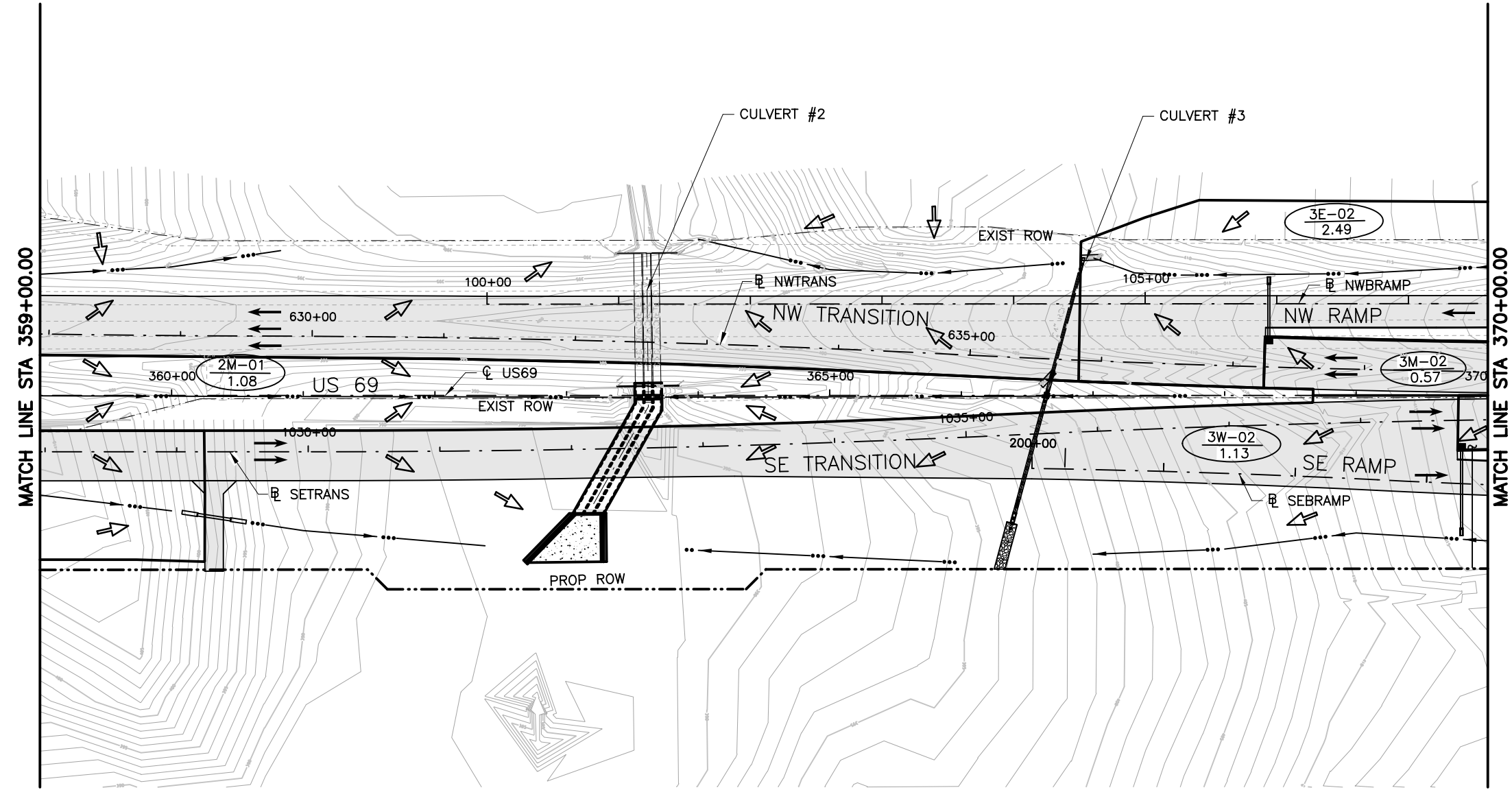
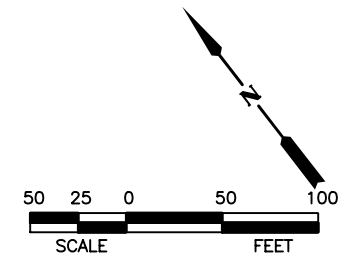
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US 69 AT FM 779

INTERIOR DRAINAGE AREA MAP

STA 348+00 TO STA 359+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
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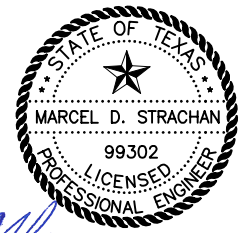


LEGEND

- XX-XX
X.XX DRAINAGE AREA LABELS
DRAINAGE AREA (ACRES)
- DRAINAGE FLOW DIRECTION
- PROPOSED PAVING
- D.A. BOUNDARY

NOTES:

1. SEE EXTERNAL DRAINAGE AREA MAP FOR LIMITS OF OFFSITE AREAS NOT SHOWN.
2. SEE HYDRAULIC DATA SHEETS FOR ADDITIONAL INFORMATION.



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TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

INTERIOR DRAINAGE AREA MAP

STA 359+00 TO STA 370+00

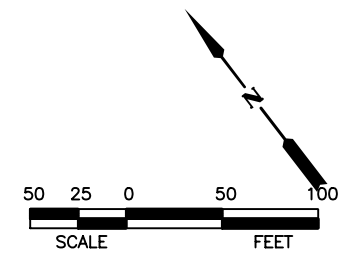
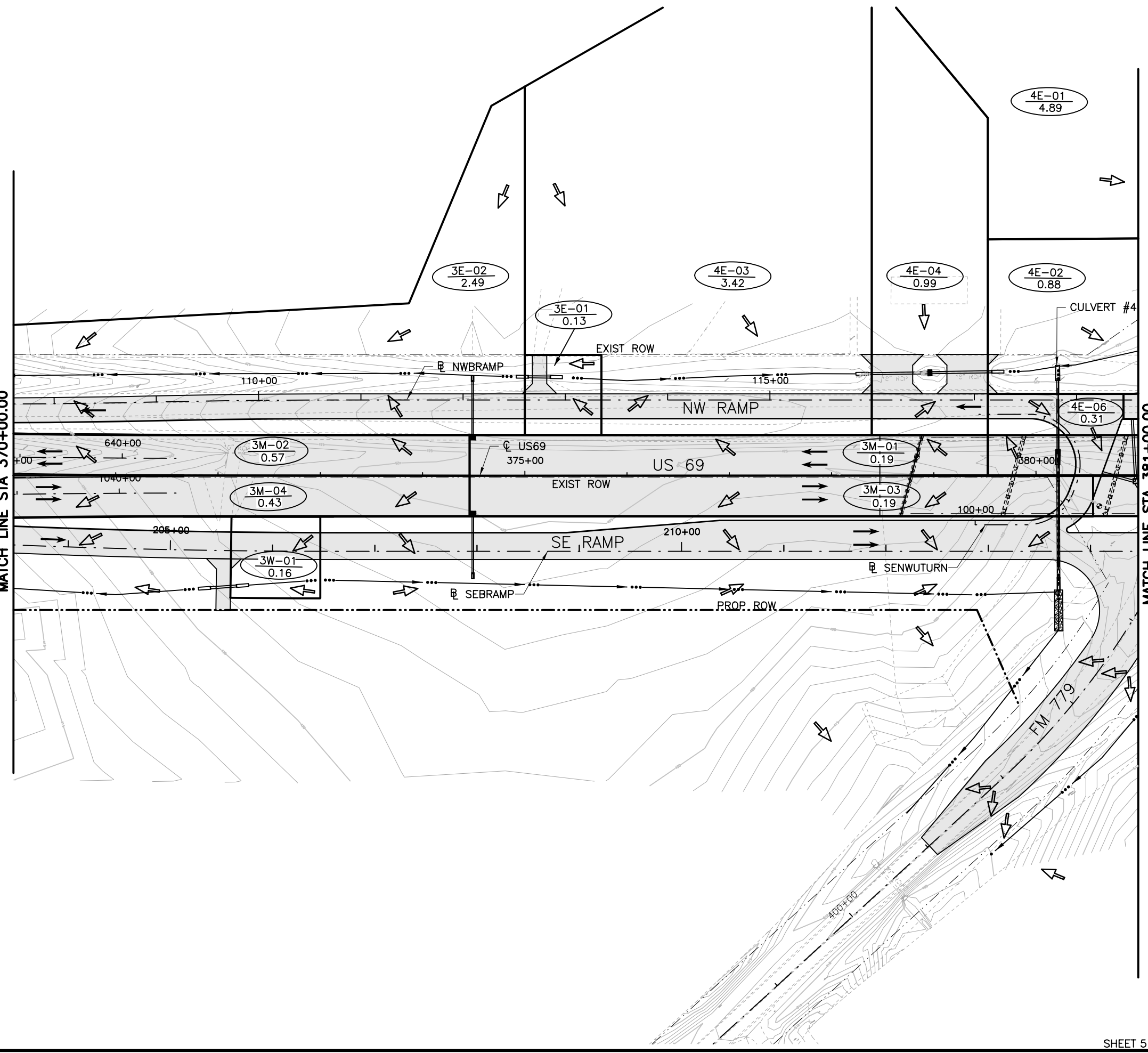
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Checked:	MDS	6	TEXAS		US 69
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	MDS	TYL	WOOD	0203	05
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					039
					SHEET NO.
					252

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MATCH LINE STA 370+00.00

MATCH LINE STA 381+00.00

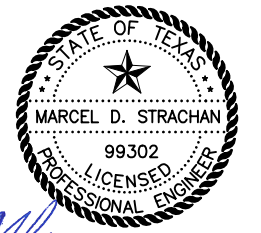


LEGEND

- DRAINAGE AREA LABELS
DRAINAGE AREA (ACRES)
- DRAINAGE FLOW DIRECTION
- PROPOSED PAVING
- D.A. BOUNDARY

NOTES:

1. SEE EXTERNAL DRAINAGE AREA MAP FOR LIMITS OF OFFSITE AREAS NOT SHOWN.
2. SEE HYDRAULIC DATA SHEETS FOR ADDITIONAL INFORMATION.



Marcel D. Strachan
 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

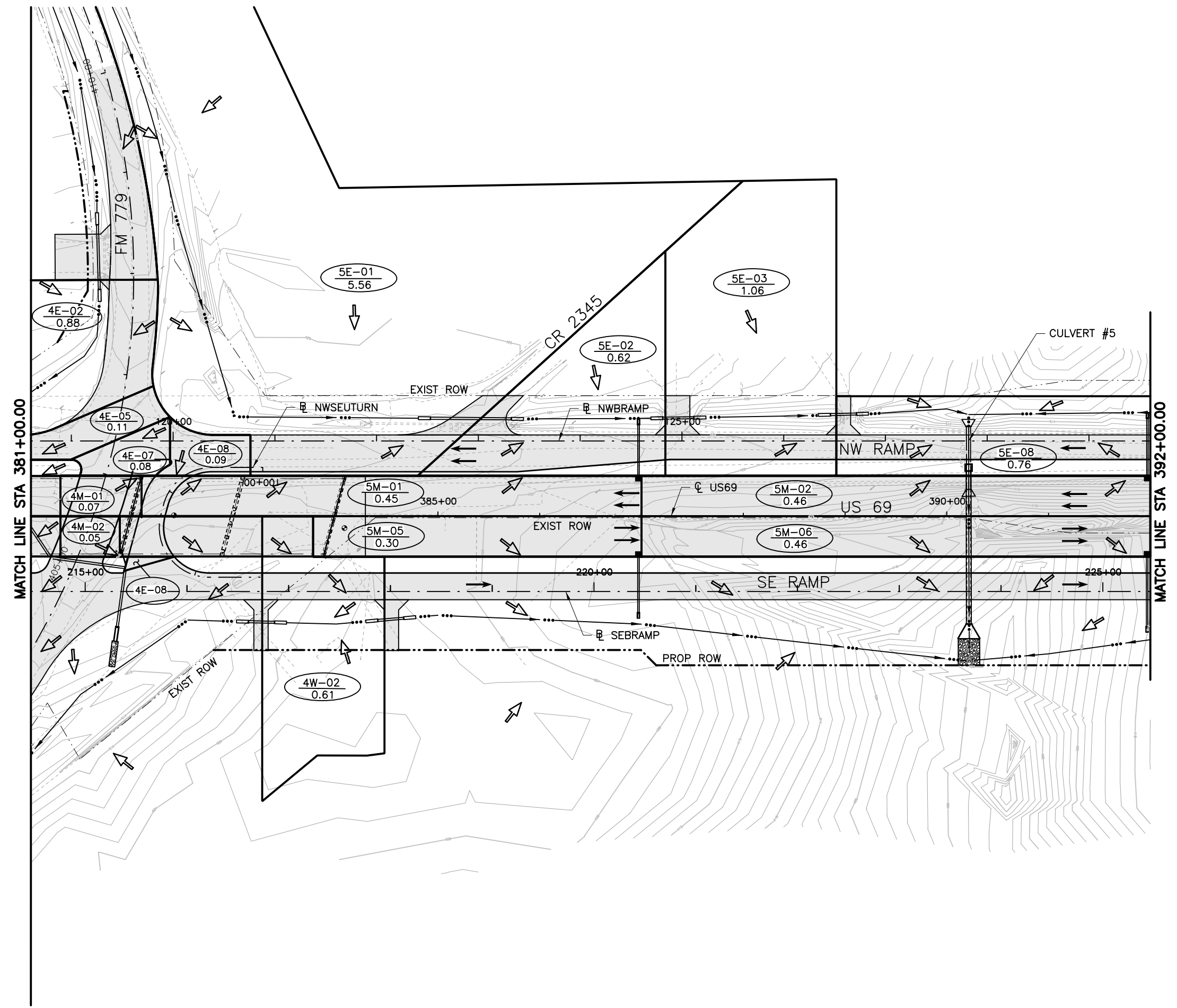
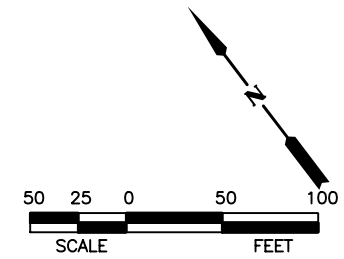
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US 69 AT FM 779

INTERIOR DRAINAGE AREA MAP

STA 370+00 TO STA 381+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
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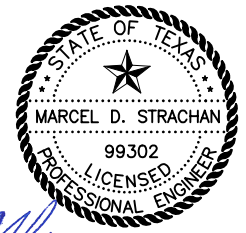


LEGEND

- XX-XX
X.XX DRAINAGE AREA LABELS
DRAINAGE AREA (ACRES)
- DRAINAGE FLOW DIRECTION
- PROPOSED PAVING
- D.A. BOUNDARY

NOTES:

1. SEE EXTERNAL DRAINAGE AREA MAP FOR LIMITS OF OFFSITE AREAS NOT SHOWN.
2. SEE HYDRAULIC DATA SHEETS FOR ADDITIONAL INFORMATION.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



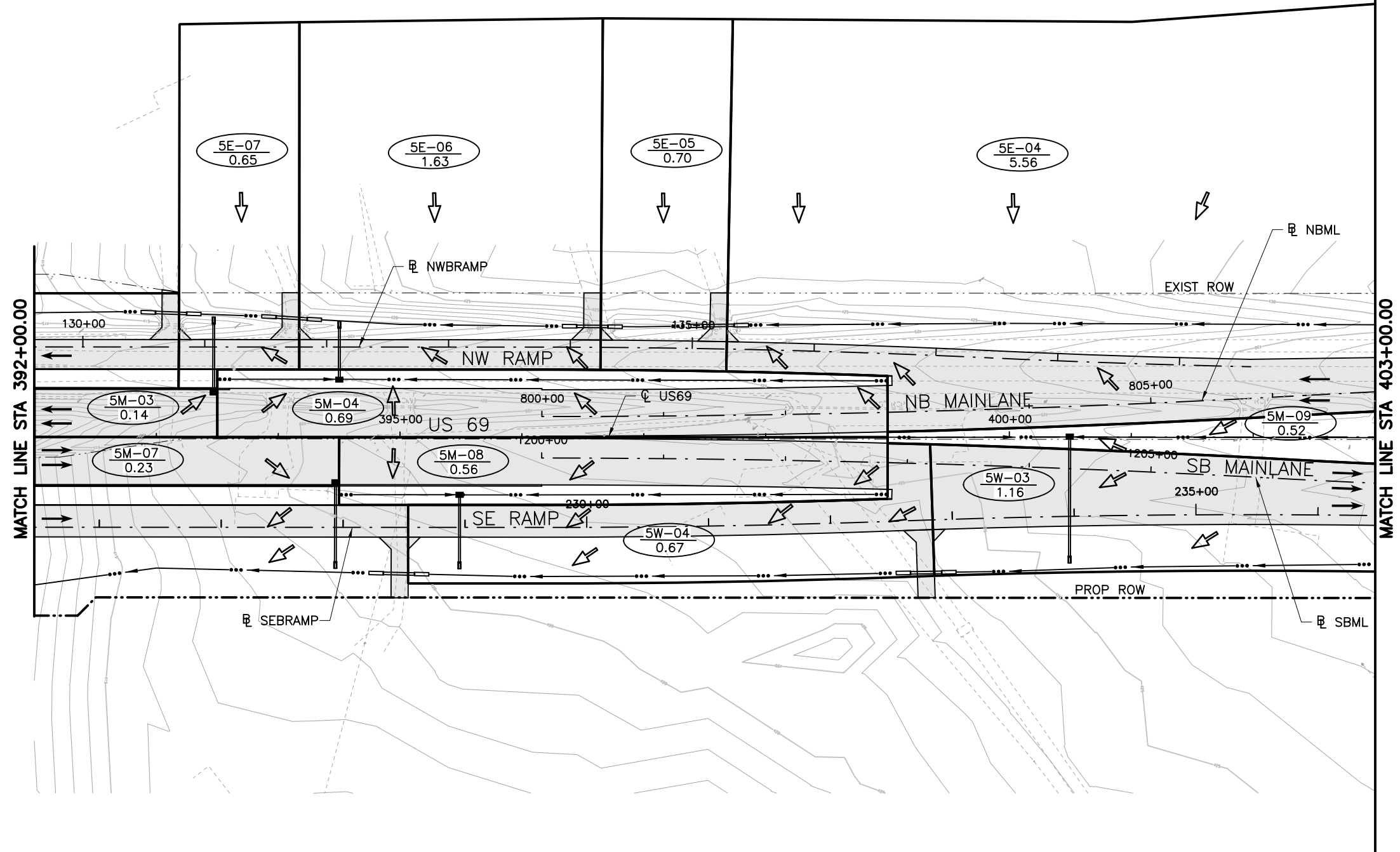
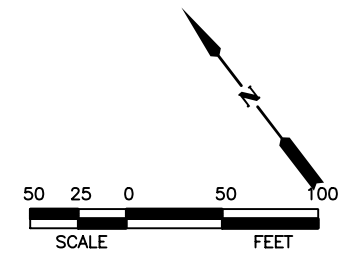
US 69 AT FM 779

INTERIOR DRAINAGE AREA MAP

STA 381+00 TO STA 392+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
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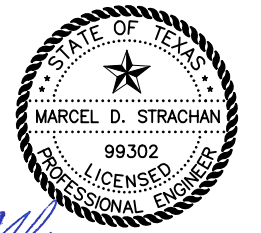


LEGEND

- XX-XX
X.XX DRAINAGE AREA LABELS
DRAINAGE AREA (ACRES)
- DRAINAGE FLOW DIRECTION
- PROPOSED PAVING
- D.A. BOUNDARY

NOTES:

1. SEE EXTERNAL DRAINAGE AREA MAP FOR LIMITS OF OFFSITE AREAS NOT SHOWN.
2. SEE HYDRAULIC DATA SHEETS FOR ADDITIONAL INFORMATION.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



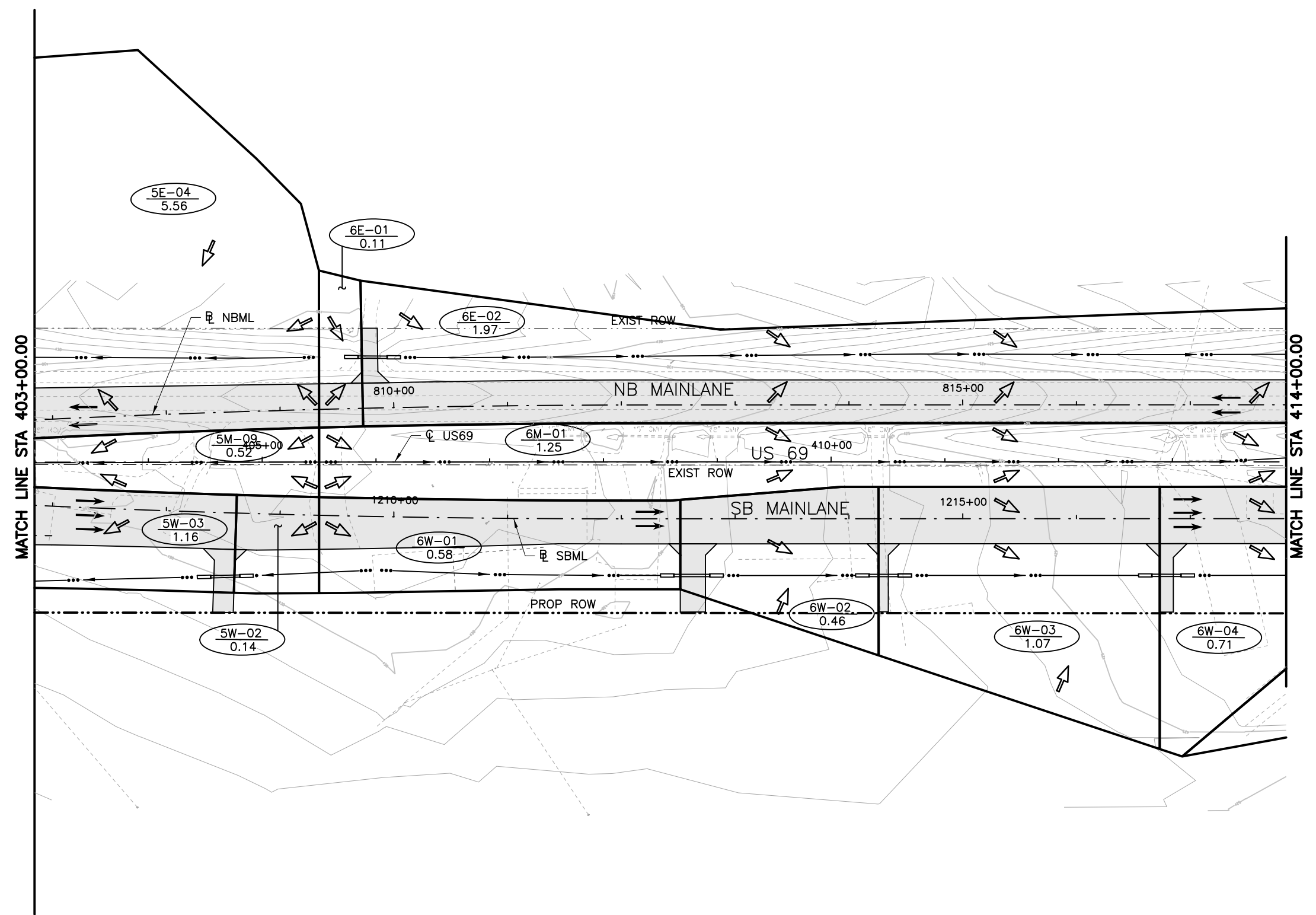
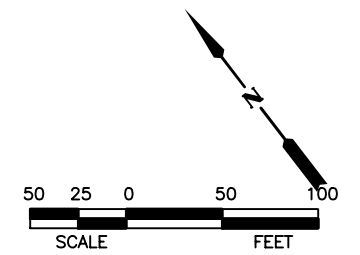
US 69 AT FM 779

INTERIOR DRAINAGE AREA MAP

STA 392+00 TO STA 403+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	MDS	6	TEXAS		US 69
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	MDS	TYL	WOOD	0203	05
					JOB NO.
					039
					SHEET NO.
					255

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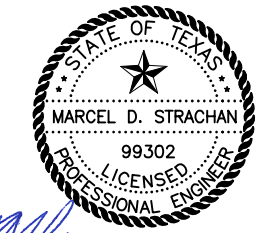


LEGEND

- XX-XX
X.XX DRAINAGE AREA LABELS
DRAINAGE AREA (ACRES)
- DRAINAGE FLOW DIRECTION
- PROPOSED PAVING
- D.A. BOUNDARY

NOTES:

1. SEE EXTERNAL DRAINAGE AREA MAP FOR LIMITS OF OFFSITE AREAS NOT SHOWN.
2. SEE HYDRAULIC DATA SHEETS FOR ADDITIONAL INFORMATION.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

INTERIOR DRAINAGE AREA MAP

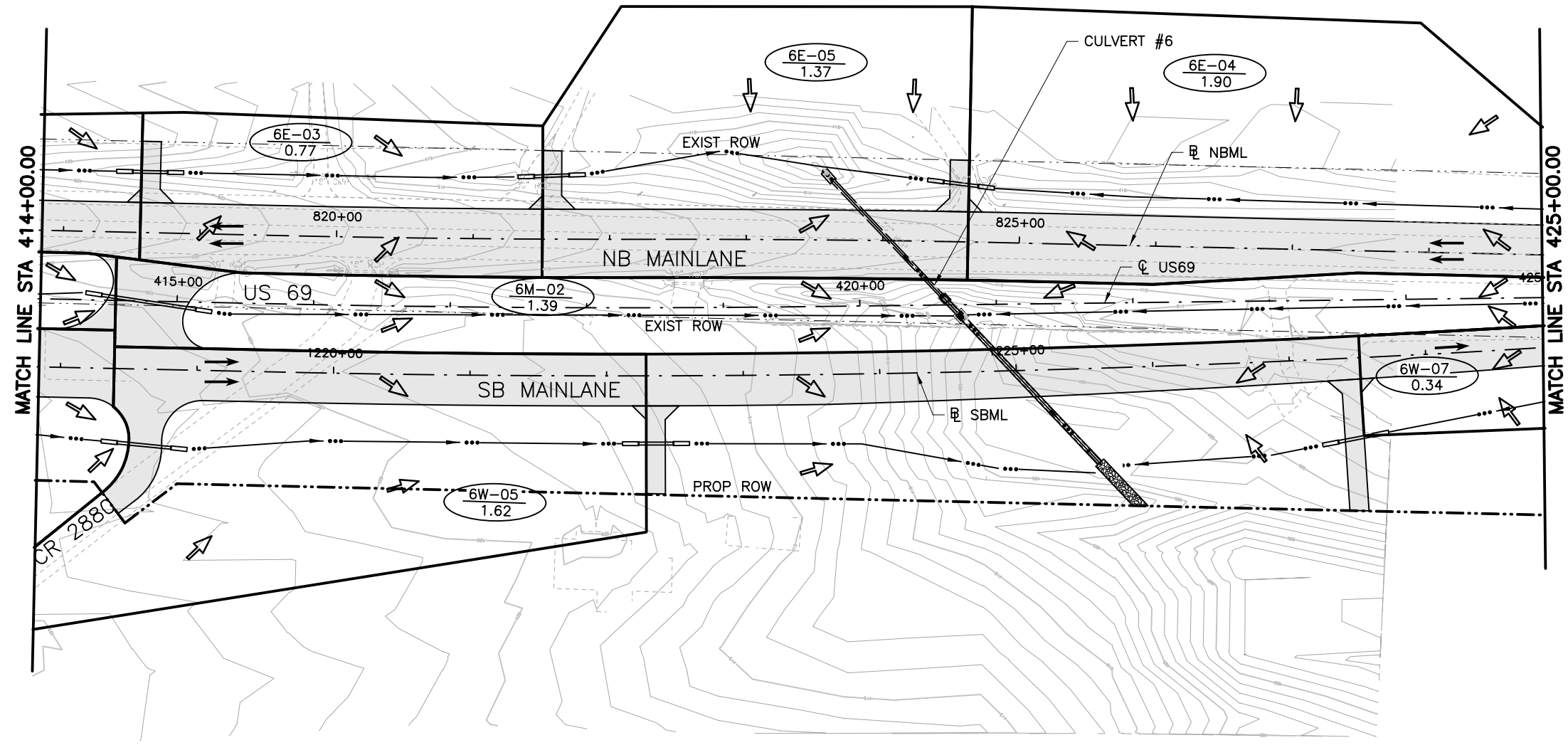
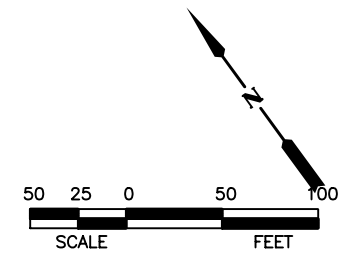
STA 403+00 TO STA 414+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	MDS	6	TEXAS		US 69
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	MDS	TYL	WOOD	0203	05
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LEGEND

- XX-XX
X.XX DRAINAGE AREA LABELS
DRAINAGE AREA (ACRES)
- DRAINAGE FLOW DIRECTION
- PROPOSED PAVING
- D.A. BOUNDARY

NOTES:

1. SEE EXTERNAL DRAINAGE AREA MAP FOR LIMITS OF OFFSITE AREAS NOT SHOWN.
2. SEE HYDRAULIC DATA SHEETS FOR ADDITIONAL INFORMATION.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

INTERIOR DRAINAGE AREA MAP

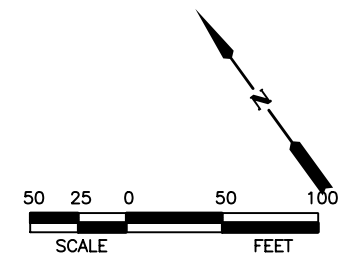
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Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	MDS	TYL	WOOD	0203	05	039	257

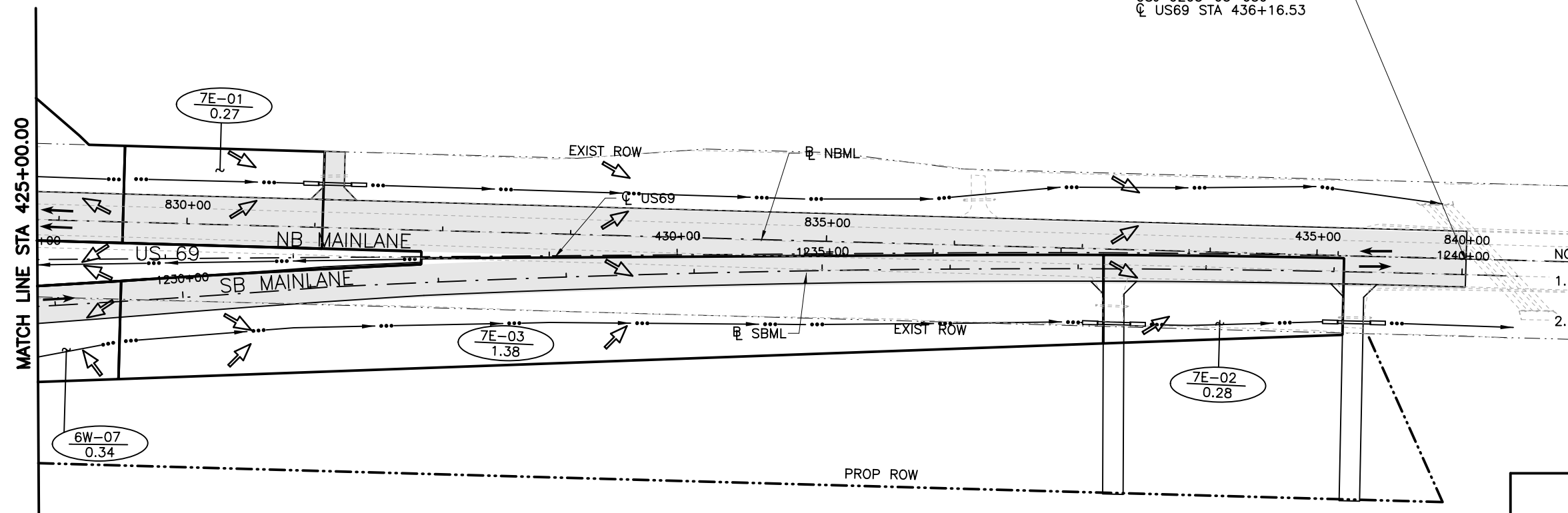
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END PROJECT
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 CL US69 STA 436+16.53

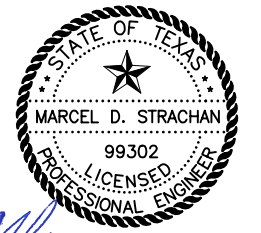


LEGEND

- XX-XX
X.XX DRAINAGE AREA LABELS
DRAINAGE AREA (ACRES)
- DRAINAGE FLOW DIRECTION
- PROPOSED PAVING
- D.A. BOUNDARY

NOTES:

1. SEE EXTERNAL DRAINAGE AREA MAP FOR LIMITS OF OFFSITE AREAS NOT SHOWN.
2. SEE HYDRAULIC DATA SHEETS FOR ADDITIONAL INFORMATION.



Marcel D. Strachan
 12/11/2023

NO.	REVISION	BY	DATE



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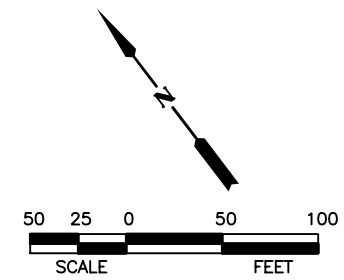
US 69 AT FM 779

INTERIOR DRAINAGE AREA MAP

STA 425+00 TO END PROJECT

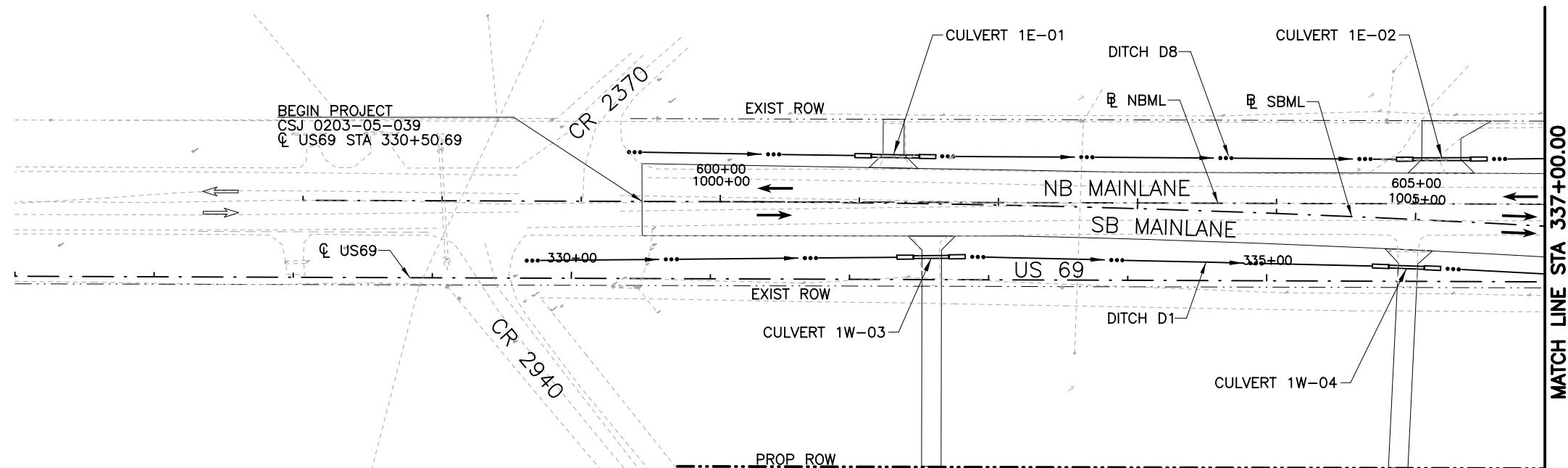
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Checked:	MDS	6	TEXAS		US 69
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	MDS	TYL	WOOD	0203	05
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					039
					SHEET NO.
					258

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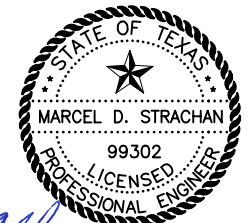
NOTES

1. OFFSETS ARE FROM ϕ US 69 TO FACE OF CURB FOR CURB INLETS, TO THE RAIL FOR RETAINING WALL INLETS, TO CENTER OF STRUCTURE FOR AREA INLETS, AND TO END OF PIPE FOR SET'S.
2. SEE DRIVEWAY CULVERTS & STORM DRAINS SUMMARY SHEET FOR SUMMARY OF ALL CULVERT RELATED APPURTENANCES.
3. INSTALL PROP US/DS FLOWLINE FOR DRIVEWAY AND CROSS STREET CULVERTS TO COINCIDE WITH THE NEAREST PROPOSED DITCH FLOWLINES AND OFFSETS INDICATED IN THE DITCH TABLES BELOW.



	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D1	331+00.00	14.47 LT	426	TYPE (V GRASS)
	D1	332+00.00	15.12 LT	425.69	TYPE (V GRASS)
	D1	332+34.06	16.01 LT	425.59	TYPE (V GRASS)
	D1	332+83.29	16.50 LT	425.44	TYPE (V GRASS)
	D1	333+00.00	15.77 LT	425.38	TYPE (V GRASS)
	D1	334+00.00	14.78 LT	425.06	TYPE (V GRASS)
	D1	335+00.00	12.55 LT	424.75	TYPE (V GRASS)
	D1	335+75.92	10.97 LT	424.51	TYPE (V GRASS)
	D1	336+25.06	9.39 LT	424.37	TYPE (V GRASS)
END	D1	337+00.00	5.71 LT	424.13	TYPE (V GRASS)

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D8	331+00.00	90.20 LT	426.67	TYPE (V GRASS)
	D8	332+00.00	89.03 LT	426.25	TYPE (V GRASS)
	D8	332+03.54	89.01 LT	426.25	MATCH EXIST
	D8	333+00.00	88.42 LT	426.17	MATCH EXIST
	D8	334+00.00	88.42 LT	425.95	MATCH EXIST
	D8	335+00.00	87.75 LT	425.50	MATCH EXIST
	D8	335+92.94	87.78 LT	425.36	MATCH EXIST
	D8	336+50.00	88.18 LT	425.28	MATCH EXIST
END	D8	337+00.00	90.00 LT	424.81	MATCH EXIST



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NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

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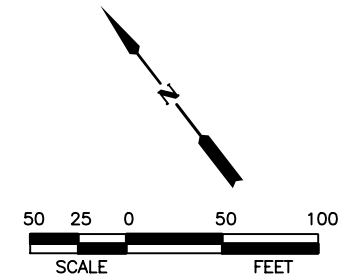
US 69 AT FM 779

DRAINAGE PLAN

BEGIN PROJECT TO STA 337+00

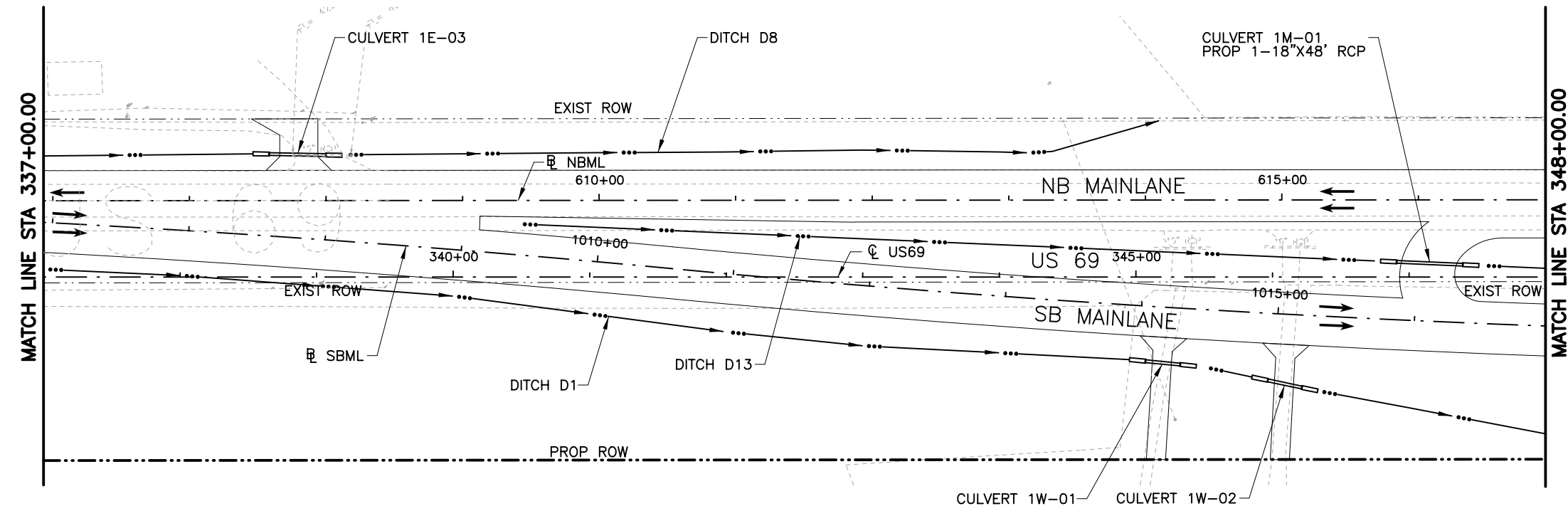
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Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
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NOTES

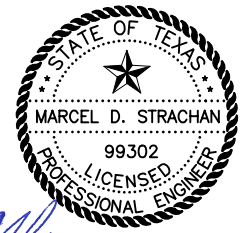
1. OFFSETS ARE FROM ϕ US 69 TO FACE OF CURB FOR CURB INLETS, TO THE RAIL FOR RETAINING WALL INLETS, TO CENTER OF STRUCTURE FOR AREA INLETS, AND TO END OF PIPE FOR SET'S.
2. SEE DRIVEWAY CULVERTS & STORM DRAINS SUMMARY SHEET FOR SUMMARY OF ALL CULVERT RELATED APPURTENANCES.
3. INSTALL PROP US/DS FLOWLINE FOR DRIVEWAY AND CROSS STREET CULVERTS TO COINCIDE WITH THE NEAREST PROPOSED DITCH FLOWLINES AND OFFSETS INDICATED IN THE DITCH TABLES BELOW.



	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D1	337+00.00	5.71 LT	424.13	TYPE (V GRASS)
	D1	338+00.00	1.09 LT	423.81	TYPE (V GRASS)
	D1	339+00.00	4.32 RT	423.5	TYPE (V GRASS)
	D1	340+00.00	13.94 RT	422.50	TYPE (V GRASS)
	D1	341+00.00	27.68 RT	420.50	TYPE (V GRASS)
	D1	342+00.00	40.24 RT	418.50	TYPE (V GRASS)
	D1	343+00.00	50.37 RT	416.25	TYPE (V GRASS)
	D1	344+00.00	57.75 RT	413.75	TYPE (V GRASS)
	D1	344+95.24	60.49 RT	410.82	TYPE (V GRASS)
	D1	345+50.00	60.90 RT	409.13	TYPE (V GRASS)
	D1	345+84.96	73.22 RT	406.90	TYPE (V GRASS)
	D1	346+50.00	86.95 RT	402.75	TYPE (V GRASS)
	D1	347+00.00	95.81 RT	399.75	TYPE (V GRASS)
END	D1	348+00.00	114.96 RT	393.68	TYPE (V GRASS)

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D8	337+00.00	90.00 LT	424.81	MATCH EXIST
	D8	338+00.00	89.09 LT	423.91	MATCH EXIST
	D8	338+53.43	90.19 LT	423.58	MATCH EXIST
	D8	340+00.00	89.23 LT	422.68	MATCH EXIST
	D8	341+00.00	90.94 LT	421.32	MATCH EXIST
	D8	342+00.00	91.57 LT	419.59	MATCH EXIST
	D8	343+00.00	92.98 LT	417.60	MATCH EXIST
	D8	344+00.00	91.46 LT	414.93	MATCH EXIST
	D8	345+00.00			OUTFALL
	D8	346+00.00			OUTFALL
	D8	347+00.00			OUTFALL
END	D8	348+00.00			OUTFALL

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D13	341+00.00	35.45 LT	422.83	TYPE (V GRASS)
	D13	342+00.00	30.02 LT	420.88	TYPE (V GRASS)
	D13	343+00.00	25.01 LT	418.63	TYPE (V GRASS)
	D13	344+00.00	21.17 LT	415.36	TYPE (V GRASS)
	D13	345+00.00	17.79 LT	411.70	TYPE (V GRASS)
	D13	346+00.00	14.86 LT	407.74	TYPE (V GRASS)
	D13	346+79.09	11.63 LT	404.83	TYPE (V GRASS)
END	D13	348+00.00	4.36 LT	400.38	TYPE (V GRASS)



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NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



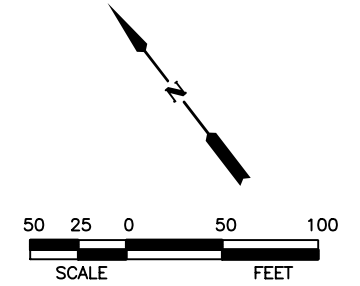
US 69 AT FM 779

DRAINAGE PLAN

STA 337+00 TO STA 348+00

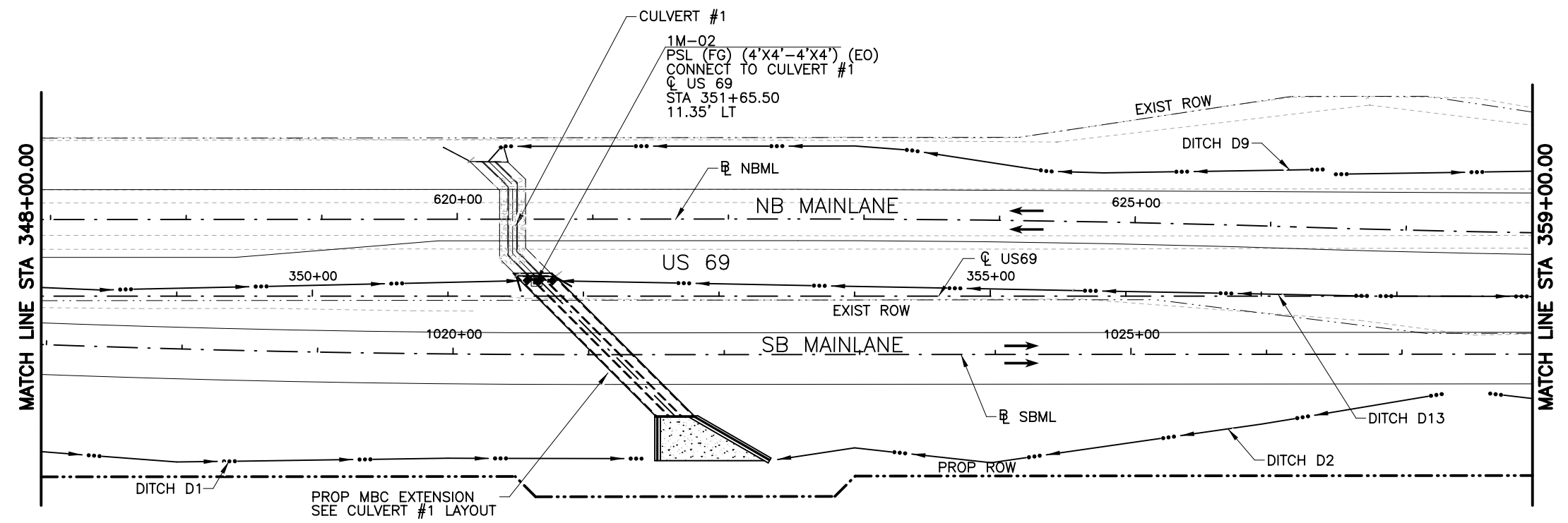
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Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	MDS	TYL	WOOD	0203	05	039	262

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NOTES

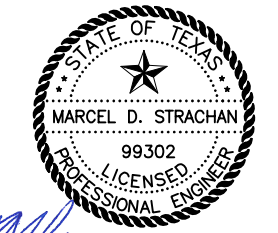
1. OFFSETS ARE FROM ϕ US 69 TO FACE OF CURB FOR CURB INLETS, TO THE RAIL FOR RETAINING WALL INLETS, TO CENTER OF STRUCTURE FOR AREA INLETS, AND TO END OF PIPE FOR SET'S.
2. SEE DRIWAY CULVERTS & STORM DRAINS SUMMARY SHEET FOR SUMMARY OF ALL CULVERT RELATED APPURTENANCES.
3. INSTALL PROP US/DS FLOWLINE FOR DRIVEWAY AND CROSS STREET CULVERTS TO COINCIDE WITH THE NEAREST PROPOSED DITCH FLOWLINES AND OFFSETS INDICATED IN THE DITCH TABLES BELOW.



	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D1	348+00.00	114.96 RT	393.68	TYPE (V GRASS)
	D1	349+00.00	122.54 RT	390.00	TYPE (V GRASS)
	D1	350+00.00	119.70 RT	388.50	TYPE (V GRASS)
	D1	351+00.00	119.73 RT	387.00	TYPE (V GRASS)
END	D1	352+00.00	112.04 RT	384.99	OUTFALL
BEGIN	D2	353+00.00	113.88 RT	383.98	TYPE (V GRASS)
	D2	354+00.00	112.09 RT	384.49	TYPE (V GRASS)
	D2	355+00.00	123.53 RT	385.50	TYPE (V GRASS)
	D2	356+00.00	117.46 RT	387.50	TYPE (V GRASS)
	D2	357+00.00	94.54 RT	392.00	TYPE (V GRASS)
	D2	358+00.00	74.54 RT	395.50	TYPE (V GRASS)
END	D2	359+00.00	74.55 RT	395.15	TYPE (V GRASS)

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D8	348+00.00			OUTFALL
	D8	349+00.00			OUTFALL
	D8	350+00.00			OUTFALL
END	D8	351+00.00	113.89 LT	384.73	MATCH EXIST
BEGIN	D9	352+00.00	110.31 LT	389.72	MATCH EXIST
	D9	353+00.00	110.74 LT	390.33	MATCH EXIST
	D9	354+00.00	110.76 LT	391.18	MATCH EXIST
	D9	355+00.00	97.79 LT	393.87	MATCH EXIST
	D9	356+00.00	90.71 LT	396.53	MATCH EXIST
	D9	357+00.00	93.15 LT	397.56	MATCH EXIST
	D9	358+00.00	90.32 LT	397.63	MATCH EXIST
END	D9	359+00.00	92.16 LT	396.67	MATCH EXIST

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D13	348+00.00	4.36 LT	400.38	TYPE (V GRASS)
	D13	349+00.00	2.79 LT	396.88	TYPE (V GRASS)
	D13	350+00.00	3.94 LT	395.65	TYPE (V GRASS)
	D13	351+00.00	7.00 LT	394.42	TYPE (V GRASS)
	D13	351+65.43	11.34 LT	391.82	TYPE (V GRASS)
	D13	352+00.00	6.78 LT	392.18	TYPE (V GRASS)
	D13	353+00.00	6.84 LT	392.82	TYPE (V GRASS)
	D13	354+00.00	6.86 LT	393.32	TYPE (V GRASS)
	D13	355+00.00	6.51 LT	393.82	TYPE (V GRASS)
	D13	356+00.00	5.70 LT	394.82	TYPE (V GRASS)
	D13	357+00.00	4.45 LT	395.82	TYPE (V GRASS)
	D13	358+00.00	3.00 LT	396.52	TYPE (V GRASS)
END	D13	359+00.00	1.98 LT	396.02	TYPE (V GRASS)



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NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

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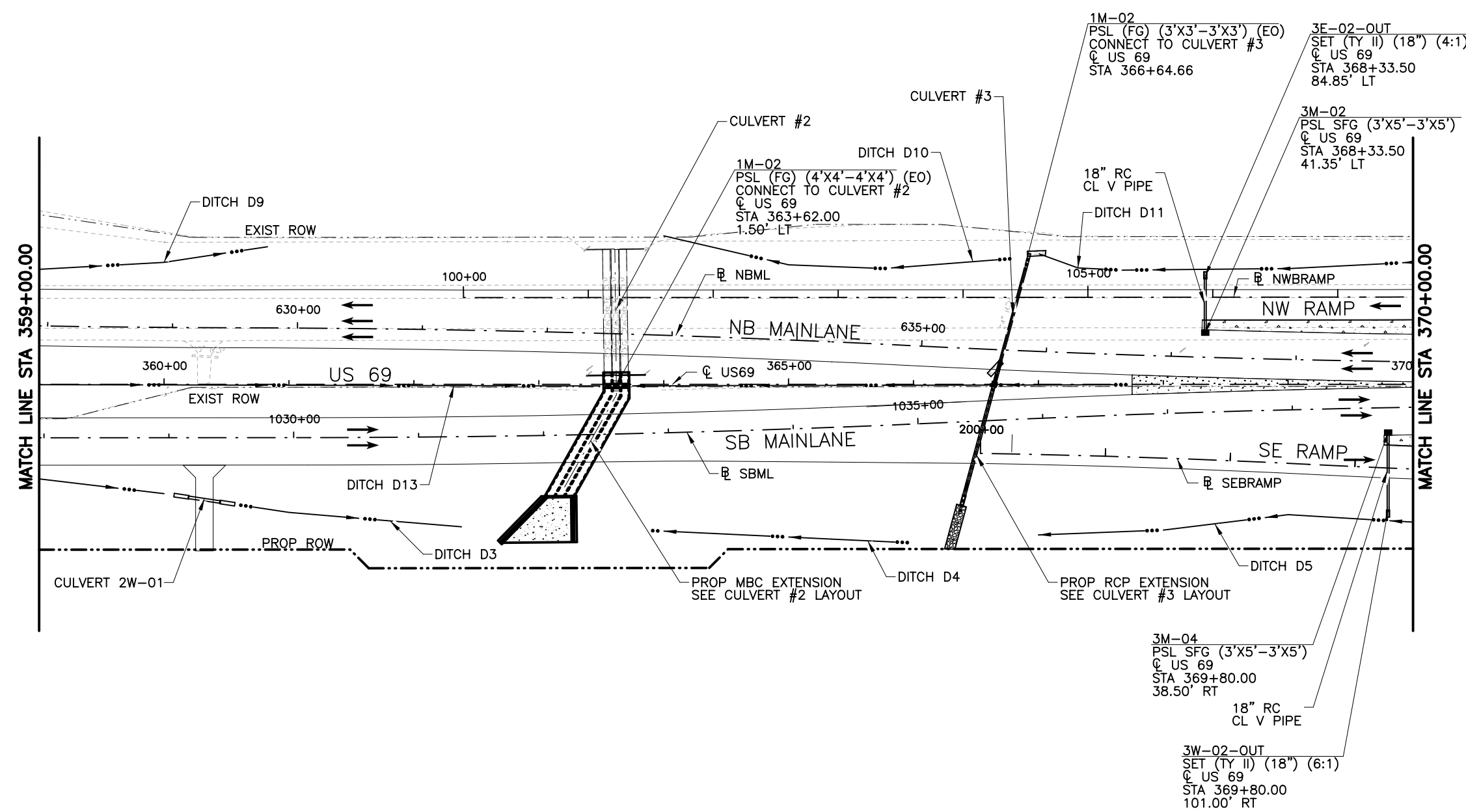
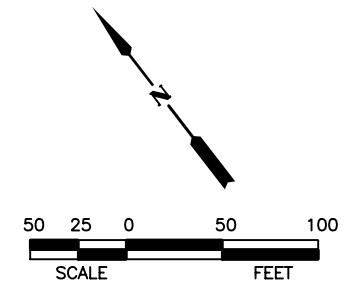
US 69 AT FM 779

DRAINAGE PLAN

STA 348+00 TO STA 359+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	MDS	TYL	WOOD	0203	05	039	263

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NOTES

1. OFFSETS ARE FROM ϕ US 69 TO FACE OF CURB FOR CURB INLETS, TO THE RAIL FOR RETAINING WALL INLETS, TO CENTER OF STRUCTURE FOR AREA INLETS, AND TO END OF PIPE FOR SET'S.
2. SEE DRIVEWAY & STORM DRAINS SUMMARY SHEET FOR SUMMARY OF ALL CULVERT RELATED APPURTENANCES.
3. INSTALL PROP US/DS FLOWLINE FOR DRIVEWAY AND CROSS STREET CULVERTS TO COINCIDE WITH THE NEAREST PROPOSED DITCH FLOWLINES AND OFFSETS INDICATED IN THE DITCH TABLES BELOW.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D3	359+00.00	74.55 RT	395.15	TYPE (V GRASS)
	D3	360+00.00	87.55 RT	392.15	TYPE (V GRASS)
	D3	360+07.88	88.74 RT	391.91	TYPE (V GRASS)
	D3	361+00.00	102.58 RT	389.15	TYPE (V GRASS)
	D3	362+00.00	109.19 RT	386.15	OUTFALL
END	D3	363+00.00	122.75 RT	383.40	OUTFALL
BEGIN	D4	364+00.00	116.79 RT	386.20	OUTFALL
	D4	365+00.00	123.49 RT	390.43	TYPE (V GRASS)
END	D4	366+00.00	127.03 RT	393.00	TYPE (V GRASS)
BEGIN	D5	367+00.00	120.59 RT	398.00	TYPE (V GRASS)
	D5	368+00.00	116.71 RT	403.00	TYPE (V GRASS)
	D5	369+00.00	114.08 RT	408.00	TYPE (V GRASS)
	D5	369+80.00	104.41 RT	412.00	TYPE (V GRASS)
END	D5	370+00.00	111.77 RT	413.00	TYPE (V GRASS)

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D9	359+00.00	92.16 LT	396.67	MATCH EXIST
	D9	360+00.00	97.72 LT	394.86	MATCH EXIST
END		361+00.00			OUTFALL
		362+00.00			OUTFALL
		363+00.00			OUTFALL
BEGIN	D10	364+00.00	118.87 LT	388.32	MATCH EXIST
	D10	365+00.00	95.73 LT	396.42	MATCH EXIST
END	D10	366+00.00	94.59 LT	402.81	MATCH EXIST
BEGIN	D11	367+00.00	104.59 LT	404.47	MATCH EXIST
	D11	368+00.00	91.79 LT	408.52	MATCH EXIST
	D11	368+33.50	91.98 LT	408.88	TYPE (V GRASS)
	D11	369+00.00	92.69 LT	411.00	TYPE (V GRASS)
END	D11	370+00.00	97.81 LT	413.13	TYPE (V GRASS)

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D13	359+00.00	1.98 LT	396.02	TYPE (V GRASS)
	D13	360+00.00	1.41 LT	395.52	TYPE (V GRASS)
	D13	361+00.00	1.21 LT	395.02	TYPE (V GRASS)
	D13	362+00.00	0.89 LT	394.52	TYPE (V GRASS)
	D13	363+00.00	0.55 LT	394.02	TYPE (V GRASS)
	D13	363+61.96	1.28 LT	393.52	TYPE (V GRASS)
	D13	364+00.00	0.22 LT	395.77	TYPE (V GRASS)
	D13	365+00.00	0.11 RT	399.77	TYPE (V GRASS)
	D13	366+00.00	0.53 RT	403.77	TYPE (V GRASS)
END	D13	367+00.00	0.43 RT	407.77	TYPE (V GRASS)



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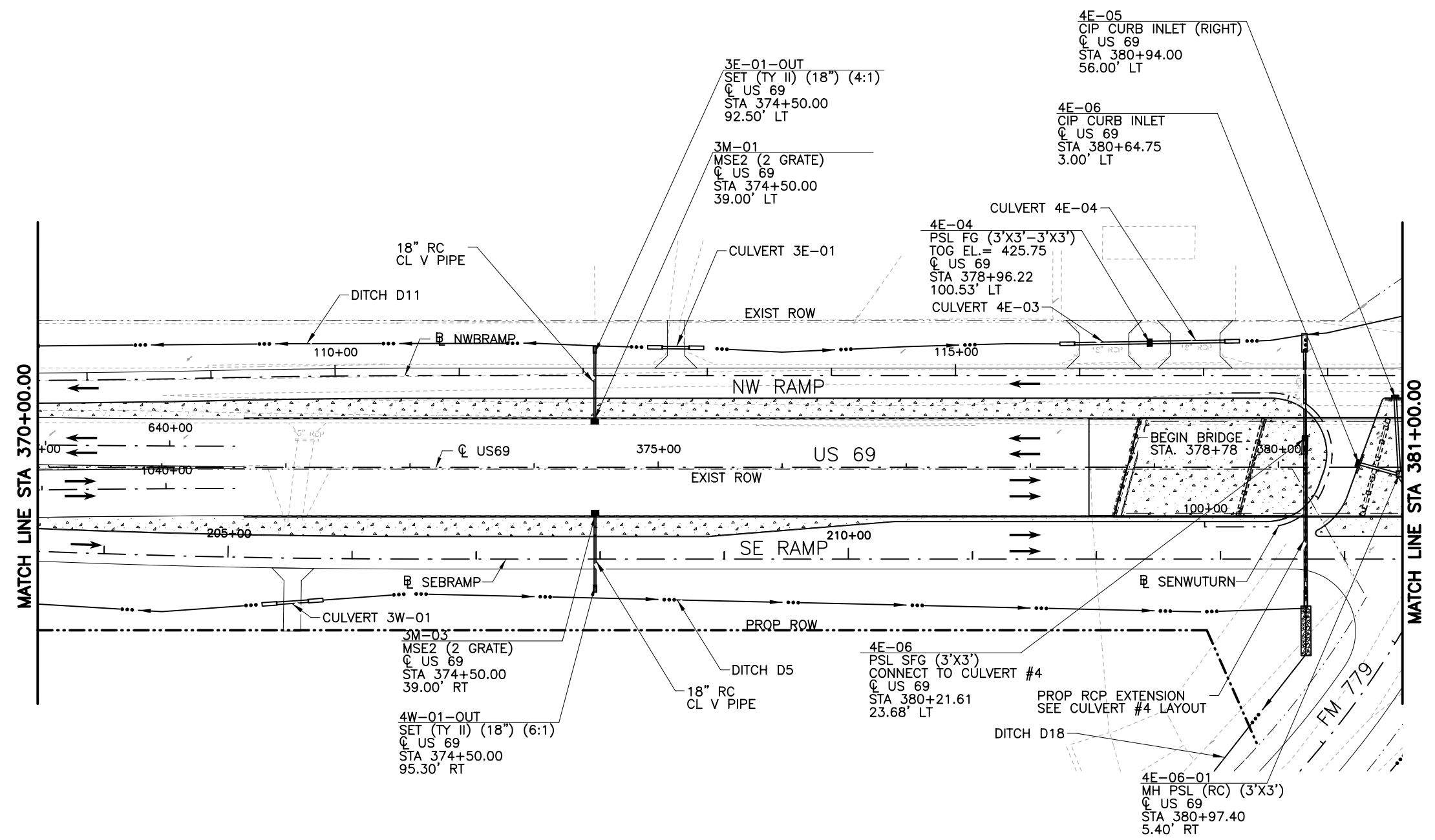
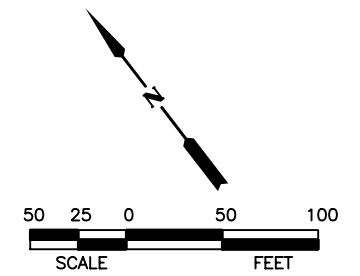
US 69 AT FM 779

DRAINAGE PLAN

STA 359+00 TO STA 370+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	MDS	TYL	WOOD	0203	05	039	264

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NOTES

1. OFFSETS ARE FROM ϕ US 69 TO FACE OF CURB FOR CURB INLETS, TO THE RAIL FOR RETAINING WALL INLETS, TO CENTER OF STRUCTURE FOR AREA INLETS, AND TO END OF PIPE FOR SET'S.
2. SEE DRIVEWAY & STORM DRAINS SUMMARY SHEET FOR SUMMARY OF ALL CULVERT RELATED APPURTENANCES.
3. INSTALL PROP US/DS FLOWLINE FOR DRIVEWAY AND CROSS STREET CULVERTS TO COINCIDE WITH THE NEAREST PROPOSED DITCH FLOWLINES AND OFFSETS INDICATED IN THE DITCH TABLES BELOW.



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US 69 AT FM 779
DRAINAGE PLAN

STA 370+00 TO STA 381+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	MDS	TYL	WOOD	0203	05	039	265

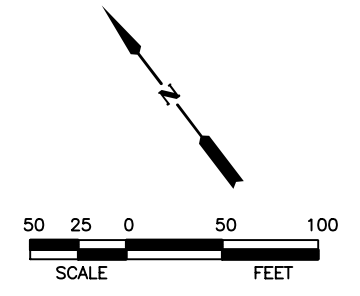
	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D5	370+00.00	111.77 RT	413.00	TYPE (V GRASS)
	D5	371+00.00	116.38 RT	416.00	TYPE (V GRASS)
	D5	371+80.86	110.48 RT	418.43	TYPE (V GRASS)
	D5	372+00.00	113.08 RT	419.00	TYPE (V GRASS)
	D5	373+00.00	101.92 RT	422.00	TYPE (V GRASS)
	D5	374+00.00	106.38 RT	421.15	TYPE (V GRASS)
	D5	374+50.00	106.83 RT	420.73	TYPE (V GRASS)
	D5	375+00.00	107.28 RT	420.30	TYPE (V GRASS)
	D5	376+00.00	108.18 RT	419.45	TYPE (V GRASS)
	D5	377+00.00	110.03 RT	418.60	TYPE (V GRASS)
	D5	378+00.00	112.97 RT	417.75	TYPE (V GRASS)
	D5	379+00.00	115.90 RT	416.90	TYPE (V GRASS)
END	D5	380+00.00	114.26 RT	416.05	TYPE (V GRASS)

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D11	370+00.00	97.81 LT	413.13	TYPE (V GRASS)
	D11	371+00.00	97.92 LT	416.38	TYPE (V GRASS)
	D11	372+00.00	99.72 LT	419.00	TYPE (V GRASS)
	D11	373+00.00	101.32 LT	421.00	TYPE (V GRASS)
	D11	374+00.00	100.08 LT	423.00	TYPE (V GRASS)
	D11	374+50.00	95.53 LT	424.00	MATCH EXIST
	D11	374+91.58	94.99 LT	425.13	MATCH EXIST
	D11	375+50.00	96.71 LT	426.72	MATCH EXIST
	D11	376+00.00	92.89 LT	426.38	MATCH EXIST
	D11	377+00.00	97.34 LT	425.59	MATCH EXIST
	D11	378+00.00	94.54 LT	423.99	TYPE (V GRASS)
	D11	378+23.86		423.61	TYPE (V GRASS)
	D11	379+68.52		421.29	TYPE (V GRASS)
	D11	380+00.00	102.15 LT	420.79	TYPE (V GRASS)
END	D11	381+00.00	121.97 LT	423.48	MATCH EXIST

	DITCH	STATION	ϕ FM779 OFFSET	FLOWLINE	REMARKS
BEGIN	D18	401+00.00	37.82 LT	408.39	TYPE (V GRASS)
	D18	402+00.00	48.73 LT	410.57	TYPE (V GRASS)
END	D18	403+00.00	54.52 LT	412.54	TYPE (V GRASS)

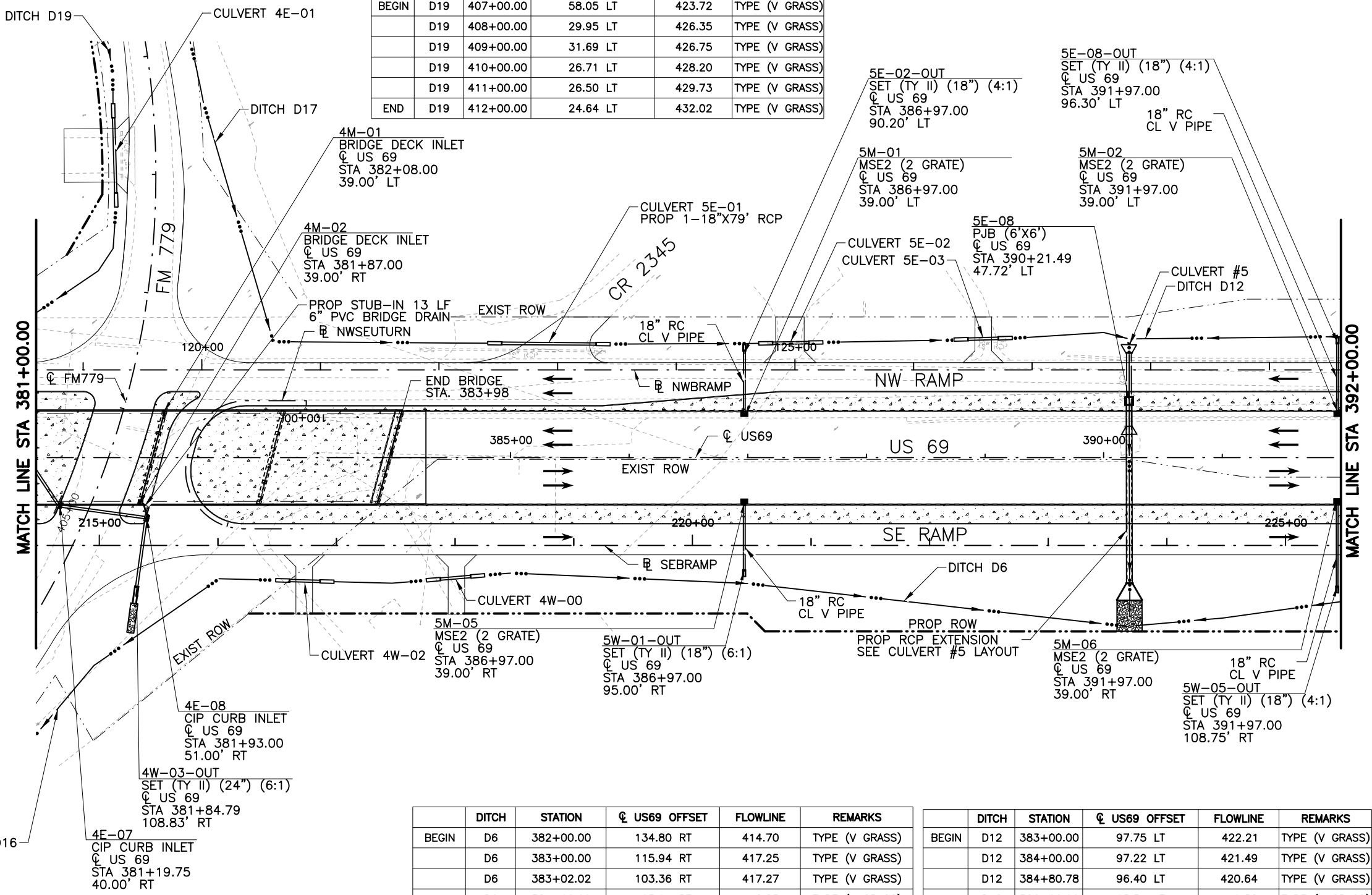
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	DITCH	STATION	CL FM779 OFFSET	FLOWLINE	REMARKS
BEGIN	D19	407+00.00	58.05 LT	423.72	TYPE (V GRASS)
	D19	408+00.00	29.95 LT	426.35	TYPE (V GRASS)
	D19	409+00.00	31.69 LT	426.75	TYPE (V GRASS)
	D19	410+00.00	26.71 LT	428.20	TYPE (V GRASS)
	D19	411+00.00	26.50 LT	429.73	TYPE (V GRASS)
END	D19	412+00.00	24.64 LT	432.02	TYPE (V GRASS)



NOTES

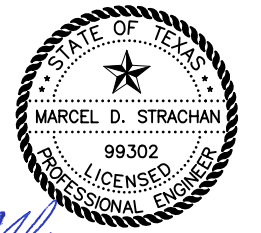
1. OFFSETS ARE FROM CL US 69 TO FACE OF CURB FOR CURB INLETS, TO THE RAIL FOR RETAINING WALL INLETS, TO CENTER OF STRUCTURE FOR AREA INLETS, AND TO END OF PIPE FOR SET'S.
2. SEE DRIVEWAY CULVERTS & STORM DRAINS SUMMARY SHEET FOR SUMMARY OF ALL CULVERT RELATED APPURTENANCES.
3. INSTALL PROP US/DS FLOWLINE FOR DRIVEWAY AND CROSS STREET CULVERTS TO COINCIDE WITH THE NEAREST PROPOSED DITCH FLOWLINES AND OFFSETS INDICATED IN THE DITCH TABLES BELOW.



	DITCH	STATION	CL FM779 OFFSET	FLOWLINE	REMARKS
BEGIN	D16	401+00.00	54.15 RT	403.14	TYPE (V GRASS)
	D16	402+00.00	55.54 RT	408.03	TYPE (V GRASS)
	D16	403+00.00	48.19 RT	411.08	TYPE (V GRASS)
	D16	404+00.00	75.25 RT	413.29	TYPE (V GRASS)
END	D16	405+00.00	120.20 RT	415.97	TYPE (V GRASS)
BEGIN	D17	407+00.00	79.63 RT	422.90	TYPE (V GRASS)
	D17	408+00.00	54.91 RT	424.51	TYPE (V GRASS)
	D17	409+00.00	36.73 RT	427.09	TYPE (V GRASS)
	D17	410+00.00	26.85 RT	429.58	TYPE (V GRASS)
	D17	411+00.00	23.51 RT	431.22	TYPE (V GRASS)
END	D17	412+00.00	24.31 RT	432.62	TYPE (V GRASS)

	DITCH	STATION	CL US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D6	382+00.00	134.80 RT	414.70	TYPE (V GRASS)
	D6	383+00.00	115.94 RT	417.25	TYPE (V GRASS)
	D6	383+02.02	103.36 RT	417.27	TYPE (V GRASS)
	D6	384+00.00	105.91 RT	418.25	TYPE (V GRASS)
	D6	384+29.11	103.40 RT	418.22	TYPE (V GRASS)
	D6	385+00.00	97.35 RT	418.13	TYPE (V GRASS)
	D6	385+50.00	94.46 RT	417.52	TYPE (V GRASS)
	D6	386+00.00	98.33 RT	415.67	TYPE (V GRASS)
	D6	386+97.00	105.20 RT	412.09	TYPE (V GRASS)
	D6	387+00.00	106.09 RT	411.98	TYPE (V GRASS)
	D6	388+00.00	116.41 RT	408.29	TYPE (V GRASS)
	D6	389+00.00	131.28 RT	404.60	TYPE (V GRASS)
	D6	390+00.00	141.37 RT	399.93	TYPE TRAPEZOID
	D6	391+00.00	135.29 RT	401.75	TYPE TRAPEZOID
	D6	391+97.00	115.32 RT	407.21	TYPE TRAPEZOID
END	D6	392+00.00	116.98 RT	407.38	TYPE TRAPEZOID

	DITCH	STATION	CL US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D12	383+00.00	97.75 LT	422.21	TYPE (V GRASS)
	D12	384+00.00	97.22 LT	421.49	TYPE (V GRASS)
	D12	384+80.78	96.40 LT	420.64	TYPE (V GRASS)
	D12	386+00.00	95.51 LT	419.38	TYPE (V GRASS)
	D12	386+97.00	94.01 LT	418.32	TYPE (V GRASS)
	D12	387+00.00	96.26 LT	418.29	TYPE (V GRASS)
	D12	387+09.12	96.23 LT	418.14	TYPE (V GRASS)
	D12	388+00.00	98.80 LT	416.66	TYPE (V GRASS)
	D12	388+73.79	99.52 LT	415.29	TYPE (V GRASS)
	D12	390+00.00	105.52 LT	412.96	TYPE (V GRASS)
	D12	391+00.00			OUTFALL
	D12	391+97.00	95.53 LT	412.97	MATCH EXIST
END	D12	392+00.00	102.31 LT	413.00	TYPE (V GRASS)



Marcel D. Strachan 12/11/2023

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TEXAS REGISTERED ENGINEERING FIRM F-1741

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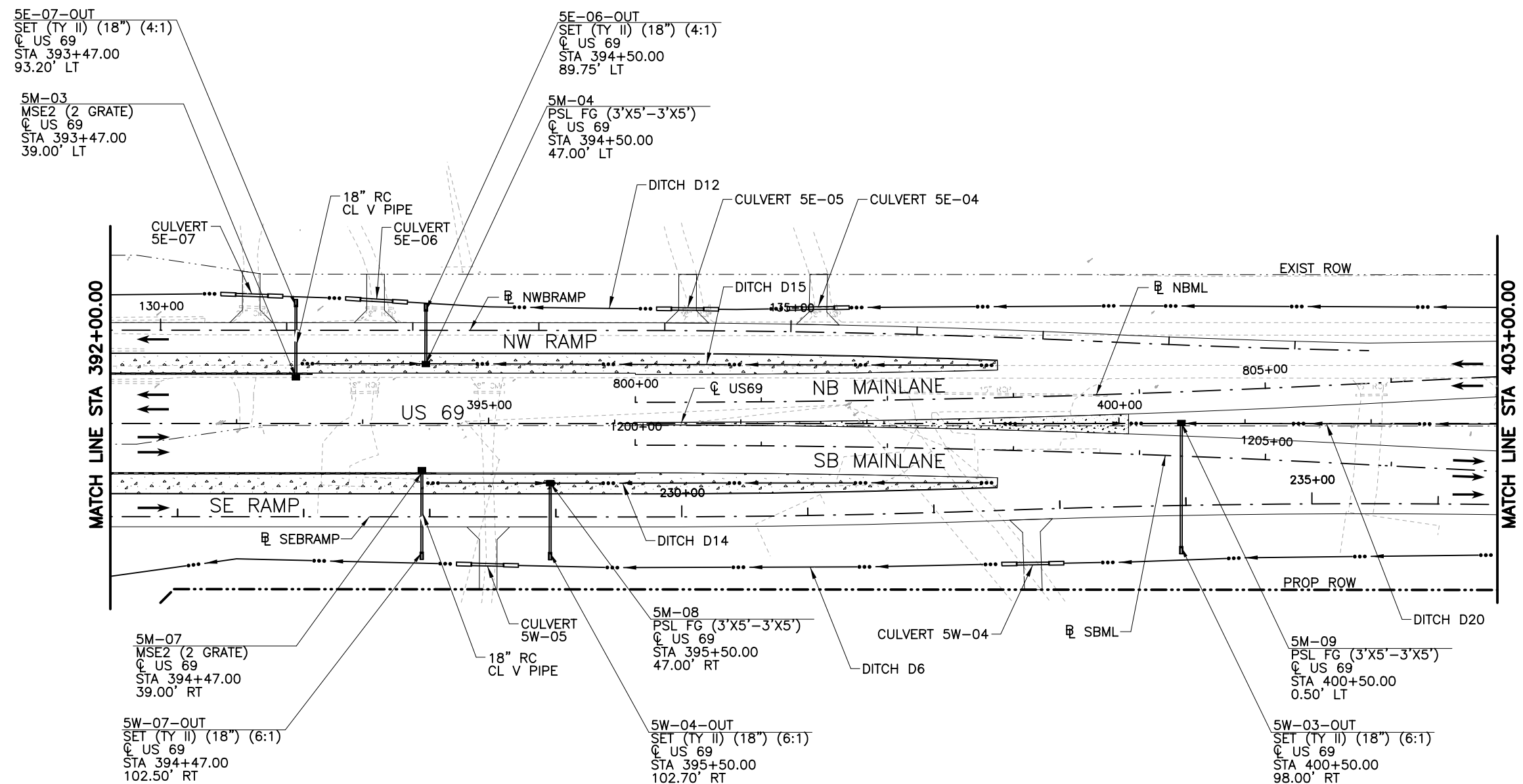
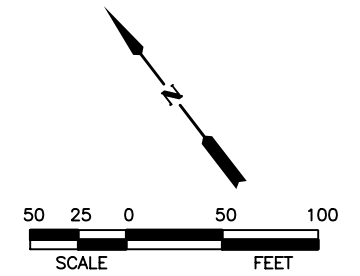
US 69 AT FM 779

DRAINAGE PLAN

STA 381+00 TO STA 392+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	MDS	TYL	WOOD	0203	05	039	266

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	DITCH	STATION	CL US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D6	392+00.00	116.98 RT	407.38	TYPE TRAPEZOID
	D6	393+00.00	107.46 RT	411.28	TYPE (V GRASS)
	D6	394+00.00	109.88 RT	413.45	TYPE (V GRASS)
	D6	394+47.00	110.77 RT	414.47	TYPE (V GRASS)
	D6	394+74.50	111.41 RT	415.07	TYPE (V GRASS)
	D6	395+00.00	113.19 RT	415.62	TYPE (V GRASS)
	D6	395+50.00	110.50 RT	416.68	TYPE (V GRASS)
	D6	396+00.00	114.28 RT	417.30	TYPE (V GRASS)
	D6	397+00.00	114.68 RT	418.50	TYPE (V GRASS)
	D6	398+00.00	113.78 RT	419.70	TYPE (V GRASS)
	D6	399+00.00	111.61 RT	420.90	TYPE (V GRASS)
	D6	399+07.02	111.51 RT	420.98	TYPE (V GRASS)
	D6	400+00.00	110.10 RT	422.10	TYPE (V GRASS)
	D6	400+49.29	100.21 RT	422.69	TYPE (V GRASS)
	D6	400+50.00	109.76 RT	422.70	TYPE (V GRASS)
	D6	401+00.00	106.64 RT	423.81	TYPE (V GRASS)
	D6	402+00.00	104.04 RT	425.59	TYPE (V GRASS)
END	D6	403+00.00	104.30 RT	426.91	TYPE (V GRASS)

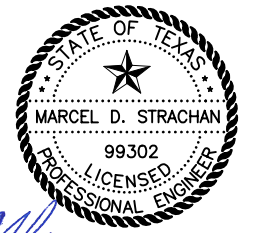
	DITCH	STATION	CL US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D12	392+00.00	102.31 LT	413.00	TYPE (V GRASS)
	D12	392+87.46	102.64 LT	414.05	TYPE (V GRASS)
	D12	393+00.00	99.93 LT	414.20	TYPE (V GRASS)
	D12	393+47.00	93.00 LT	414.76	TYPE (V GRASS)
	D12	393+86.46	99.22 LT	415.24	TYPE (V GRASS)
	D12	394+00.00	98.76 LT	415.40	TYPE (V GRASS)
	D12	394+50.00	92.29 LT	416.00	MATCH EXIST
	D12	395+00.00	92.61 LT	418.67	MATCH EXIST
	D12	396+00.00	91.74 LT	420.34	MATCH EXIST
	D12	396+33.36	91.18 LT	420.64	MATCH EXIST
	D12	397+00.00	91.10 LT	421.24	MATCH EXIST
	D12	397+36.81	91.25 LT	421.74	TYPE (V GRASS)
	D12	398+00.00	91.64 LT	422.61	MATCH EXIST
	D12	399+00.00	92.21 LT	423.66	MATCH EXIST
	D12	400+00.00	93.38 LT	424.99	MATCH EXIST
	D12	401+00.00	94.24 LT	426.25	MATCH EXIST
	D12	402+00.00	93.80 LT	427.51	MATCH EXIST
END	D12	403+00.00	94.30 LT	429.15	MATCH EXIST

	DITCH	STATION	CL US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D20	400+50.00	0.37 RT	427.77	TYPE (V GRASS)
	D20	401+00.00	0.41 RT	428.09	TYPE (V GRASS)
	D20	401+50.00	0.45 RT	428.42	TYPE (V GRASS)
	D20	402+00.00	0.49 RT	428.74	TYPE (V GRASS)
END	D20	403+00.00	0.43 RT	429.39	TYPE (V GRASS)

	DITCH	STATION	CL US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D14	395+00.00	49.31 RT	420.77	TYPE (V CONC)
	D14	395+48.85	47.20 RT	420.10	TYPE (V CONC)
	D14	396+00.00	46.25 RT	422.17	TYPE (V CONC)
	D14	397+00.00	46.20 RT	423.55	TYPE (V CONC)
	D14	398+00.00	46.03 RT	425.12	TYPE (V CONC)
END	D14	399+00.00	45.68 RT	426.87	TYPE (V CONC)

	DITCH	STATION	CL US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D15	394+00.00	51.27 LT	420.37	TYPE (V CONC)
	D15	394+50.00	47.26 LT	419.83	TYPE (V CONC)
	D15	395+00.00	47.65 LT	421.09	TYPE (V CONC)
	D15	396+00.00	46.22 LT	422.17	TYPE (V CONC)
	D15	397+00.00	46.05 LT	423.55	TYPE (V CONC)
	D15	398+00.00	45.71 LT	425.11	TYPE (V CONC)
END	D15	399+00.00	45.19 LT	426.86	TYPE (V CONC)

- NOTES**
1. OFFSETS ARE FROM CL US 69 TO FACE OF CURB FOR CURB INLETS, TO THE RAIL FOR RETAINING WALL INLETS, TO CENTER OF STRUCTURE FOR AREA INLETS, AND TO END OF PIPE FOR SET'S.
 2. SEE DRIVEWAY CULVERTS & STORM DRAINS SUMMARY SHEET FOR SUMMARY OF ALL CULVERT RELATED APPURTENANCES.
 3. INSTALL PROP US/DS FLOWLINE FOR DRIVEWAY AND CROSS STREET CULVERTS TO COINCIDE WITH THE NEAREST PROPOSED DITCH FLOWLINES AND OFFSETS INDICATED IN THE DITCH TABLES BELOW.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



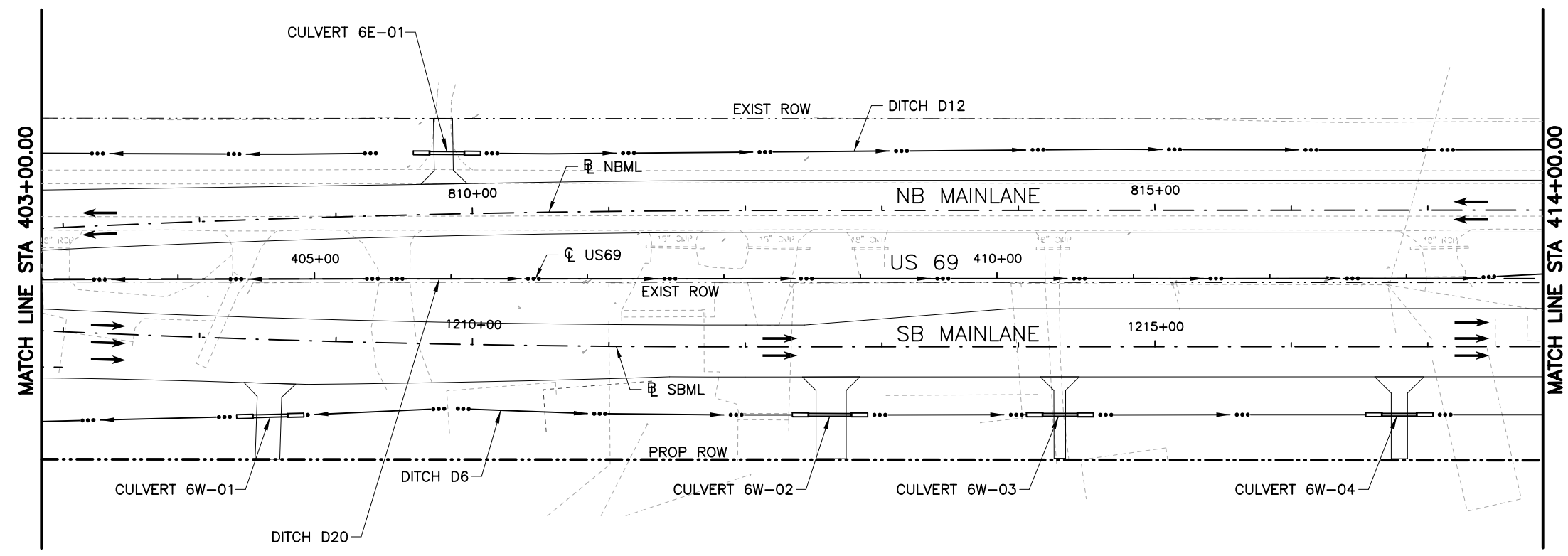
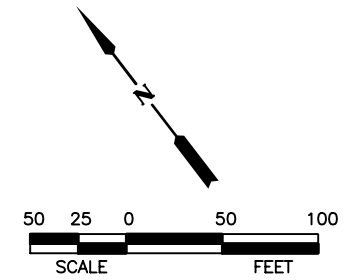
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US 69 AT FM 779

DRAINAGE PLAN

STA 392+00 TO STA 403+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	MDS	TYL	WOOD	0203	05	039	267

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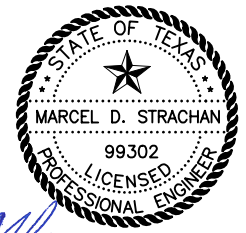
NOTES

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	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D6	403+00.00	104.30 RT	426.91	TYPE (V GRASS)
	D6	404+00.00	102.97 RT	428.23	TYPE (V GRASS)
	D6	404+42.97	100.95 RT	428.79	TYPE (V GRASS)
	D6	405+00.00	99.63 RT	429.55	TYPE (V GRASS)
	D6	406+00.00	94.86 RT	430.03	TYPE (V GRASS)
	D6	407+00.00	98.79 RT	428.43	TYPE (V GRASS)
	D6	408+00.00	99.67 RT	426.83	TYPE (V GRASS)
	D6	408+50.02	99.69 RT	426.03	TYPE (V GRASS)
	D6	409+00.00	99.73 RT	425.23	TYPE (V GRASS)
	D6	410+00.00	99.73 RT	423.63	TYPE (V GRASS)
	D6	410+21.57	99.71 RT	423.29	TYPE (V GRASS)
	D6	411+00.00	99.73 RT	422.03	TYPE (V GRASS)
	D6	412+00.00	99.73 RT	420.43	TYPE (V GRASS)
	D6	412+70.20	99.72 RT	419.32	TYPE (V GRASS)
	D6	413+00.00	99.73 RT	418.83	TYPE (V GRASS)
END	D6	414+00.00	99.73 RT	417.23	TYPE (V GRASS)

BEGIN	D12	403+00.00	94.30 LT	429.15	MATCH EXIST
	D12	404+00.00	92.14 LT	430.38	MATCH EXIST
	D12	405+00.00	91.40 LT	431.10	MATCH EXIST
	D12	405+72.47	92.38 LT	432.30	MATCH EXIST
	D12	407+00.00	91.87 LT	430.49	MATCH EXIST
	D12	408+00.00	92.26 LT	429.53	MATCH EXIST
	D12	409+00.00	93.28 LT	427.98	MATCH EXIST
	D12	410+00.00	96.00	426.48	MATCH EXIST
	D12	411+00.00	94.27 LT	424.71	MATCH EXIST
	D12	412+00.00	94.17 LT	422.89	MATCH EXIST
	D12	413+00.00	94.79 LT	421.17	MATCH EXIST
END	D12	414+00.00	94.14 LT	419.50	MATCH EXIST

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D20	403+00.00	0.43 RT	429.39	TYPE (V GRASS)
	D20	404+00.00	0.34 RT	430.04	TYPE (V GRASS)
	D20	405+00.00	0.24 RT	430.69	TYPE (V GRASS)
	D20	406+00.00	0.14 RT	431.02	TYPE (V GRASS)
	D20	407+00.00	0.04 RT	429.52	TYPE (V GRASS)
	D20	408+00.00	0.06 LT	428.02	TYPE (V GRASS)
	D20	409+00.00	1.72 LT	426.52	TYPE (V GRASS)
	D20	410+00.00	5.72 LT	425.02	TYPE (V GRASS)
	D20	411+00.00	6.08 LT	423.52	TYPE (V GRASS)
	D20	412+00.00	6.08 LT	422.02	TYPE (V GRASS)
	D20	413+00.00	6.08 LT	420.52	TYPE (V GRASS)
END	D20	414+00.00	6.08 LT	419.02	TYPE (V GRASS)



Marcel D. Strachan 12/11/2023

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TEXAS REGISTERED ENGINEERING FIRM F-1741



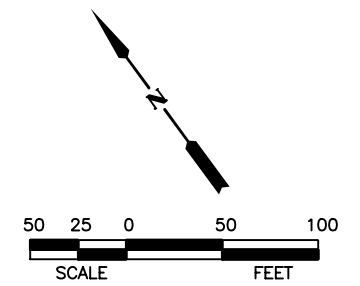
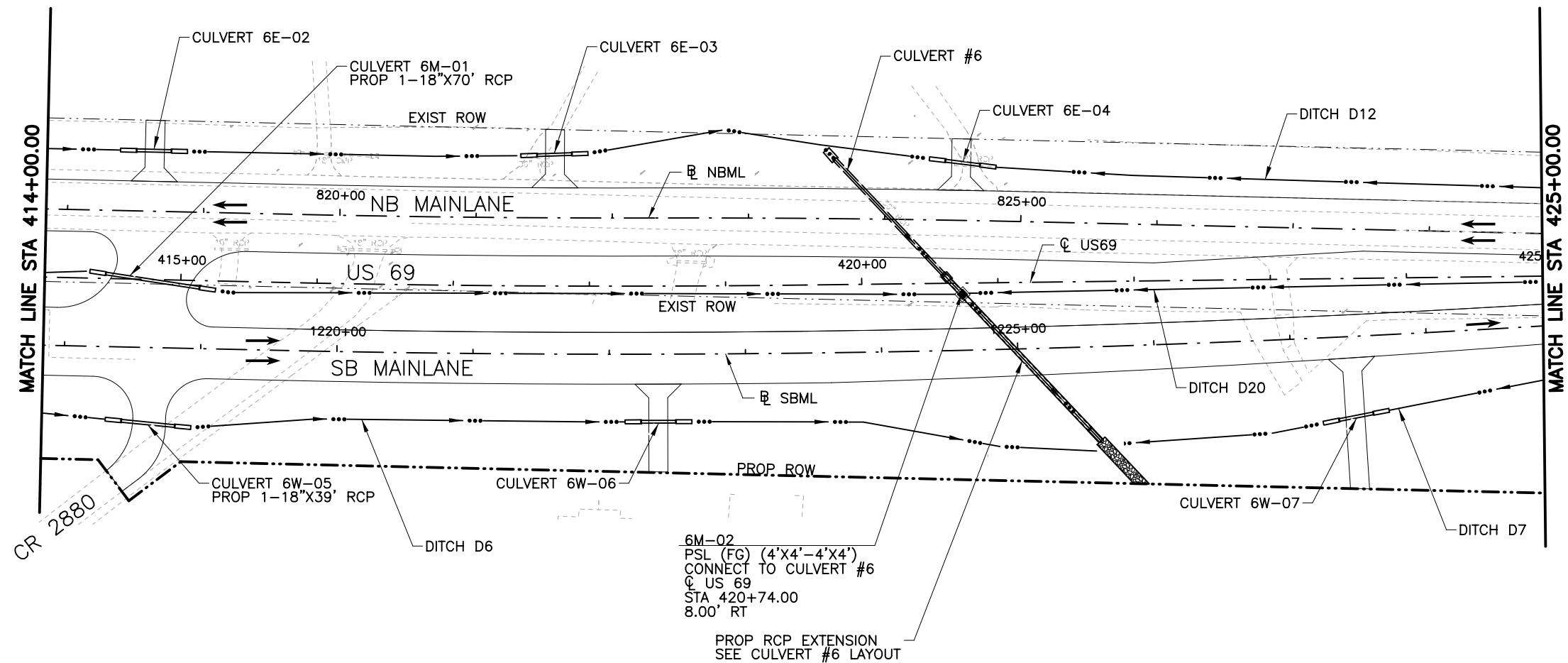
US 69 AT FM 779

DRAINAGE PLAN

STA 403+00 TO STA 414+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	MDS	6	TEXAS		US 69
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	MDS	TYL	WOOD	0203	05
					JOB NO.
					039
					SHEET NO.
					268

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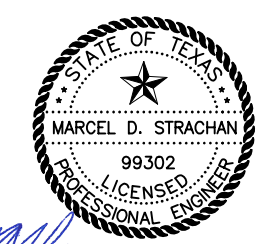
NOTES

1. OFFSETS ARE FROM ϕ US 69 TO FACE OF CURB FOR CURB INLETS, TO THE RAIL FOR RETAINING WALL INLETS, TO CENTER OF STRUCTURE FOR AREA INLETS, AND TO END OF PIPE FOR SET'S.
2. SEE DRIVEWAY CULVERTS & STORM DRAINS SUMMARY SHEET FOR SUMMARY OF ALL CULVERT RELATED APPURTENANCES.
3. INSTALL PROP US/DS FLOWLINE FOR DRIVEWAY AND CROSS STREET CULVERTS TO COINCIDE WITH THE NEAREST PROPOSED DITCH FLOWLINES AND OFFSETS INDICATED IN THE DITCH TABLES BELOW.

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D6	414+00.00	99.73 RT	417.23	TYPE (V GRASS)
	D6	414+46.63	103.25 RT	416.51	TYPE (V GRASS)
	D6	415+00.00	107.27 RT	415.63	TYPE (V GRASS)
	D6	416+00.00	99.72 RT	414.03	TYPE (V GRASS)
	D6	417+00.00	99.68 RT	412.43	TYPE (V GRASS)
	D6	418+00.00	99.63 RT	410.83	TYPE (V GRASS)
	D6	418+26.16	99.54 RT	410.42	TYPE (V GRASS)
	D6	419+00.00	99.57 RT	409.23	TYPE (V GRASS)
	D6	420+00.00	101.03 RT	407.63	TYPE (V GRASS)
END	D6	421+00.00	120.14 RT	403.47	TYPE (V GRASS)
BEGIN	D7	421+66.00	115.32 RT	400.73	TYPE (V GRASS)
	D7	423+00.00	112.83 RT	403.70	TYPE (V GRASS)
	D7	423+37.79	105.97 RT	404.61	TYPE (V GRASS)
	D7	423+86.13	97.07 RT	405.77	TYPE (V GRASS)
	D7	424+00.00	94.53 RT	406.10	TYPE (V GRASS)
END	D7	425+00.00	75.33 RT	408.50	TYPE (V GRASS)

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D12	414+00.00	94.14 LT	419.50	MATCH EXIST
	D12	414+53.63	94.48 LT	418.62	MATCH EXIST
	D12	415+00.00	95.22 LT	417.78	MATCH EXIST
	D12	416+00.00	94.52 LT	415.86	MATCH EXIST
	D12	417+00.00	93.82 LT	413.93	MATCH EXIST
	D12	417+49.12	95.52 LT	412.71	MATCH EXIST
	D12	418+00.00	98.53 LT	411.46	MATCH EXIST
	D12	419+00.00	114.57 LT	408.50	MATCH EXIST
	D12	420+00.00	94.15 LT	408.48	MATCH EXIST
	D12	420+51.01	91.60 LT	408.97	MATCH EXIST
	D12	421+00.00	84.85 LT	409.44	MATCH EXIST
	D12	422+00.00	77.54 LT	409.70	MATCH EXIST
	D12	423+00.00	71.92 LT	410.59	MATCH EXIST
	D12	424+00.00	68.58 LT	410.68	MATCH EXIST
END	D12	425+00.00	66.32 LT	410.83	MATCH EXIST

	DITCH	STATION	ϕ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D20	414+00.00	6.08 LT	419.02	TYPE (V GRASS)
	D20	414+32.66	5.18 LT	418.53	TYPE (V GRASS)
	D20	416+00.00	5.92 RT	416.02	TYPE (V GRASS)
	D20	417+00.00	5.92 RT	414.52	TYPE (V GRASS)
	D20	418+00.00	5.92 RT	413.02	TYPE (V GRASS)
	D20	419+00.00	6.03 RT	411.52	TYPE (V GRASS)
	D20	420+00.00	6.80 RT	410.02	TYPE (V GRASS)
	D20	420+73.94	8.08 RT	408.89	TYPE (V GRASS)
	D20	421+00.00	6.88 RT	408.11	TYPE (V GRASS)
	D20	422+00.00	8.77 RT	408.56	TYPE (V GRASS)
	D20	423+00.00	5.84 RT	409.00	TYPE (V GRASS)
	D20	424+00.00	3.28 RT	409.44	TYPE (V GRASS)
END	D20	425+00.00	2.86 RT	409.89	TYPE (V GRASS)



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NO.	REVISION	BY	DATE



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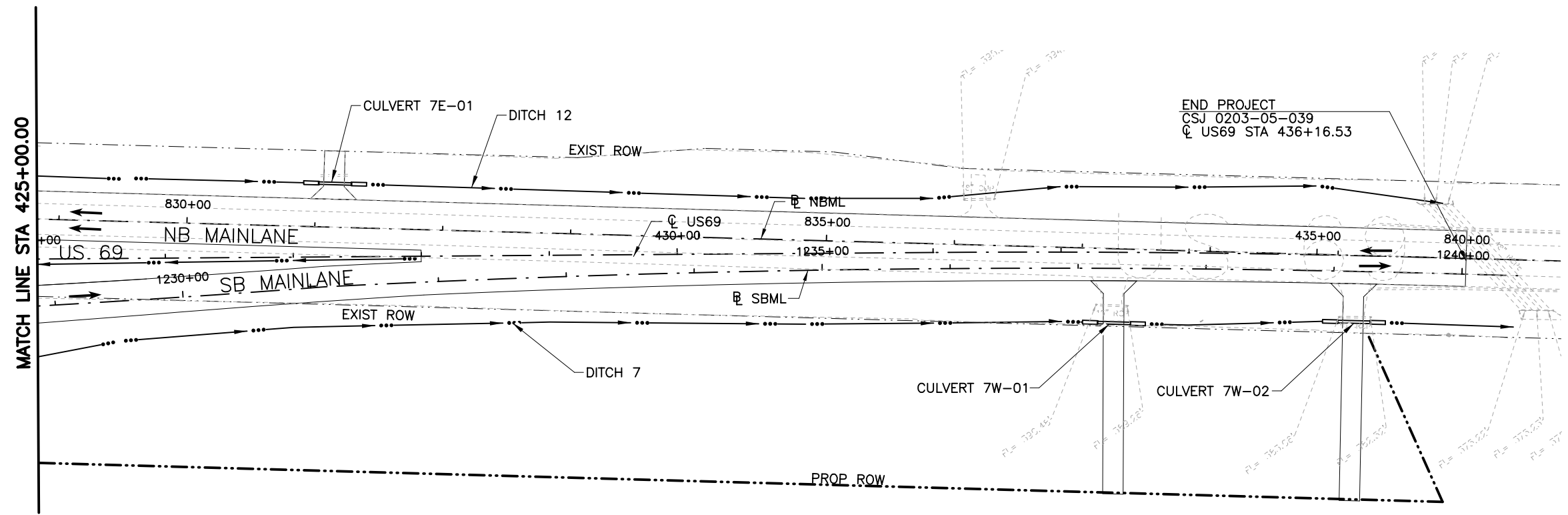
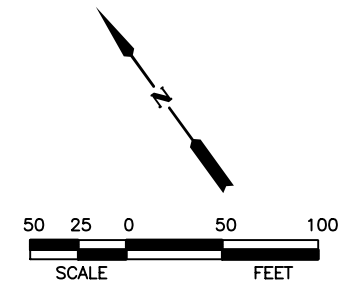
US 69 AT FM 779

DRAINAGE PLAN

STA 414+00 TO STA 425+00

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	MDS	6	TEXAS		US 69		
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	MDS	TYL	WOOD	0203	05	039	269

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	DITCH	STATION	☉ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D7	425+00.00	75.33 RT	408.50	TYPE (V GRASS)
	D7	426+00.00	62.33 RT	409.32	TYPE (V GRASS)
	D7	427+00.00	54.65 RT	408.57	TYPE (V GRASS)
	D7	428+00.00	55.01 RT	406.18	TYPE (V GRASS)
	D7	429+00.00	52.13 RT	403.77	TYPE (V GRASS)
	D7	430+00.00	52.19 RT	401.38	TYPE (V GRASS)
	D7	431+00.00	55.18 RT	397.53	TYPE (V GRASS)
	D7	432+00.00	55.30 RT	393.69	TYPE (V GRASS)
	D7	433+00.00	54.18 RT	389.84	TYPE (V GRASS)
	D7	433+16.90	54.62 RT	389.32	TYPE (V GRASS)
	D7	433+66.29	55.76 RT	387.82	TYPE (V GRASS)
	D7	434+00.00	56.40 RT	386.00	TYPE (V GRASS)
	D7	435+00.00	52.62 RT	383.75	TYPE (V GRASS)
	D7	435+05.35	51.84 RT	383.63	TYPE (V GRASS)
	D7	435+54.74	51.79 RT	382.49	TYPE (V GRASS)
END	D7	436+00.00	52.21 RT	381.50	TYPE (V GRASS)

	DITCH	STATION	☉ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D12	425+00.00	66.32 LT	410.83	MATCH EXIST
	D12	426+00.00	62.26 LT	410.81	MATCH EXIST
	D12	427+00.00	57.36 LT	409.95	MATCH EXIST
	D12	427+08.71	58.18 LT	409.79	MATCH EXIST
	D12	428+00.00	54.93 LT	408.10	MATCH EXIST
	D12	429+00.00	50.35 LT	406.33	MATCH EXIST
	D12	430+00.00	45.42 LT	403.97	MATCH EXIST
	D12	431+00.00	42.99 LT	400.68	MATCH EXIST
	D12	432+00.00	42.29 LT	396.88	MATCH EXIST
	D12	433+00.00	51.16 LT	390.21	MATCH EXIST
	D12	434+00.00	51.28 LT	385.37	MATCH EXIST
	D12	435+00.00	53.79 LT	382.29	MATCH EXIST
END	D12	436+00.00	42.25 LT	375.03	MATCH EXIST

	DITCH	STATION	☉ US69 OFFSET	FLOWLINE	REMARKS
BEGIN	D20	425+00.00	2.86 RT	409.89	TYPE (V GRASS)
	D20	426+00.00	2.00 RT	410.33	TYPE (V GRASS)
	D20	427+00.00	1.26 RT	410.78	TYPE (V GRASS)
END	D20	428+00.00	0.98	410.50	TYPE (V GRASS)

Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE

TEXAS REGISTERED ENGINEERING FIRM F-1741

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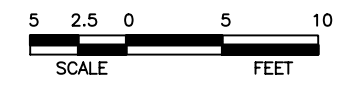
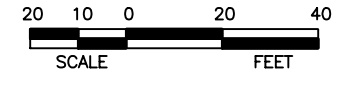
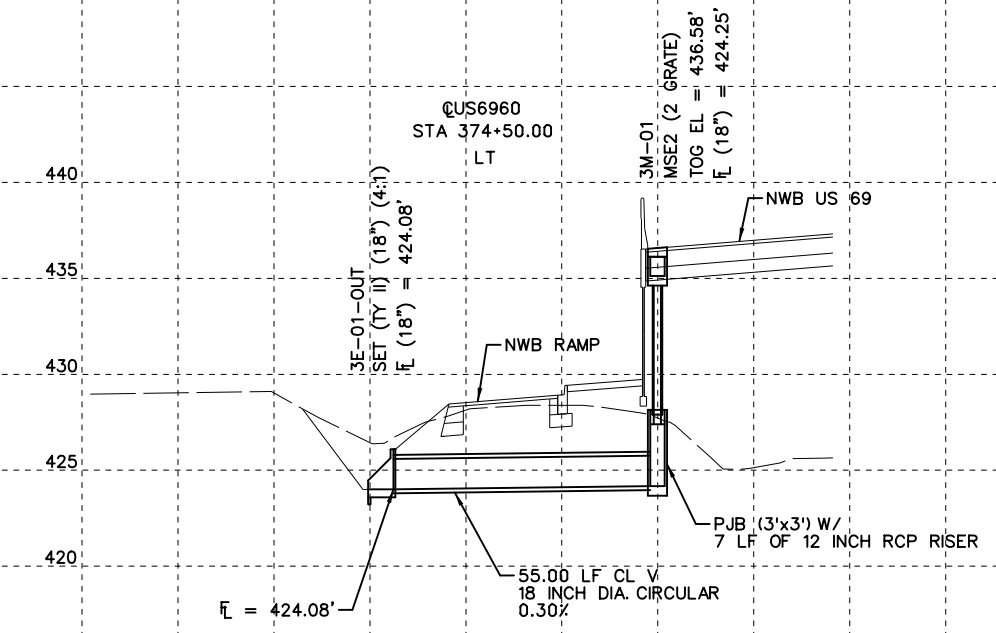
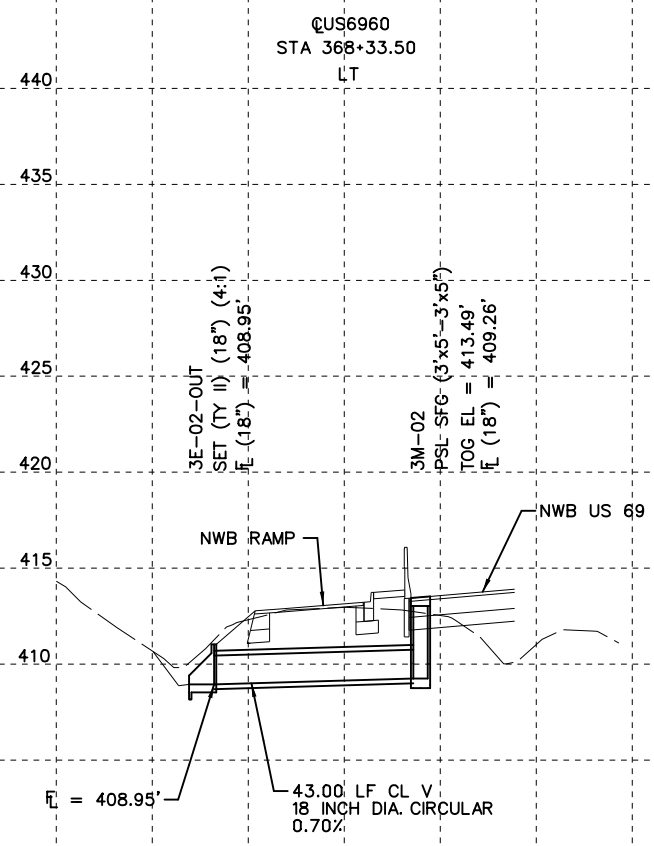
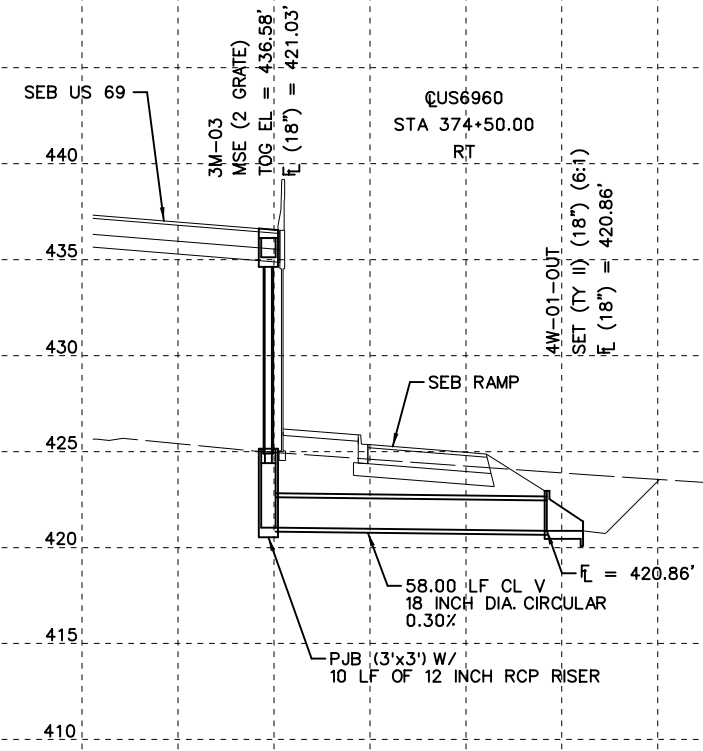
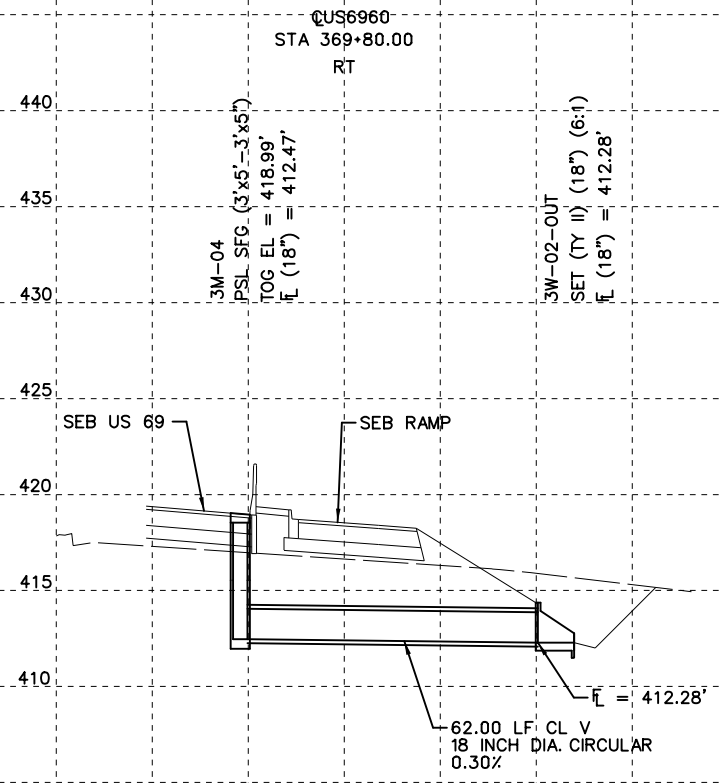
DRAINAGE PLAN

STA 425+00 TO END PROJECT

Designed:	FV	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	MDS	6	TEXAS		US 69
Drawn:	FV	DIST.	COUNTY	CONTROL NO.	SECTION NO.
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					039
					SHEET NO.
					270

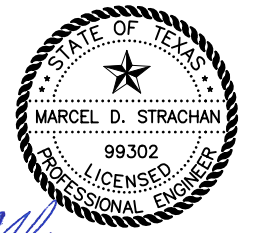
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NOTES

1. LATERAL PROFILES SHOW HYDRAULIC LENGTH. PIPE PAY LENGTHS ARE MEASURED TO INSIDE FACE OF WALL STRUCTURE.



Marcel D. Strachan
 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

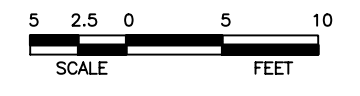
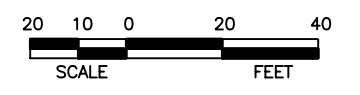
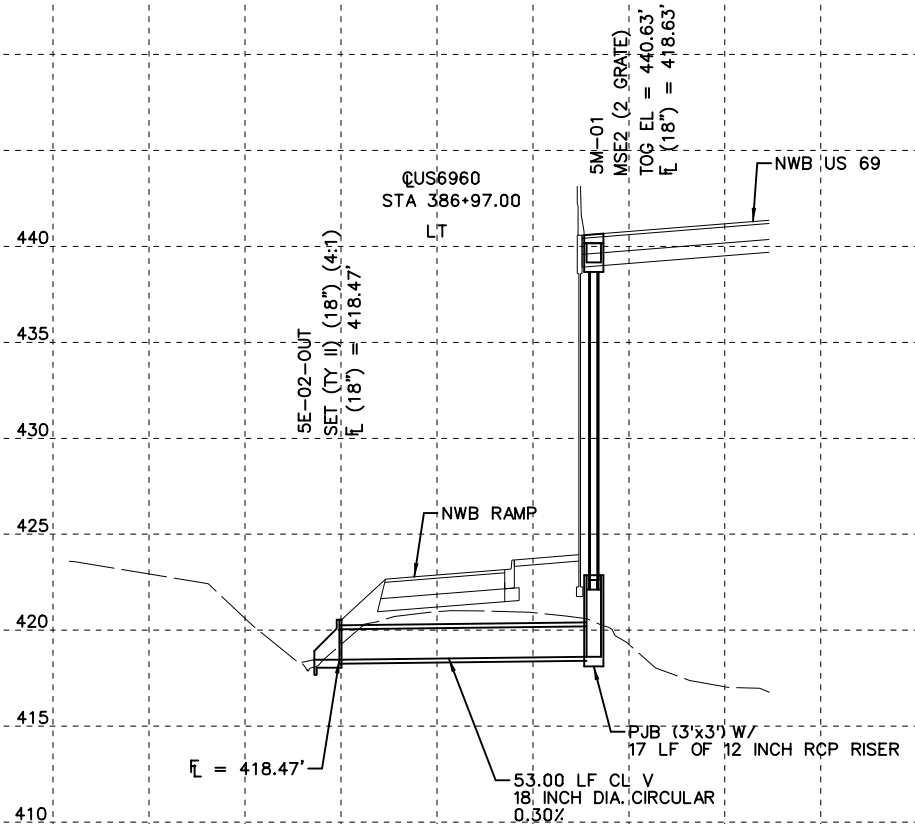
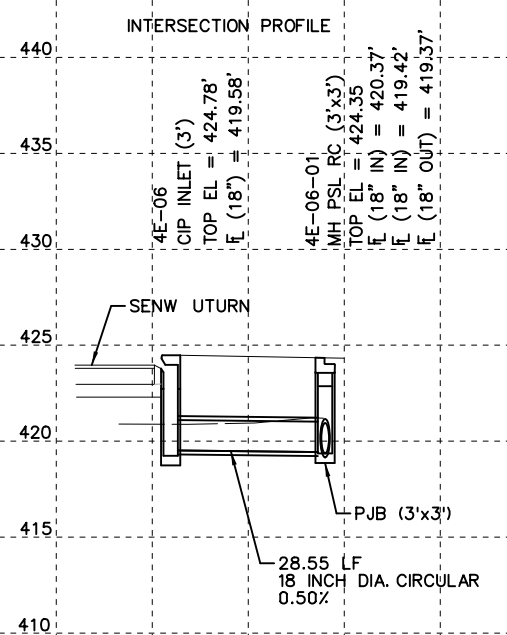
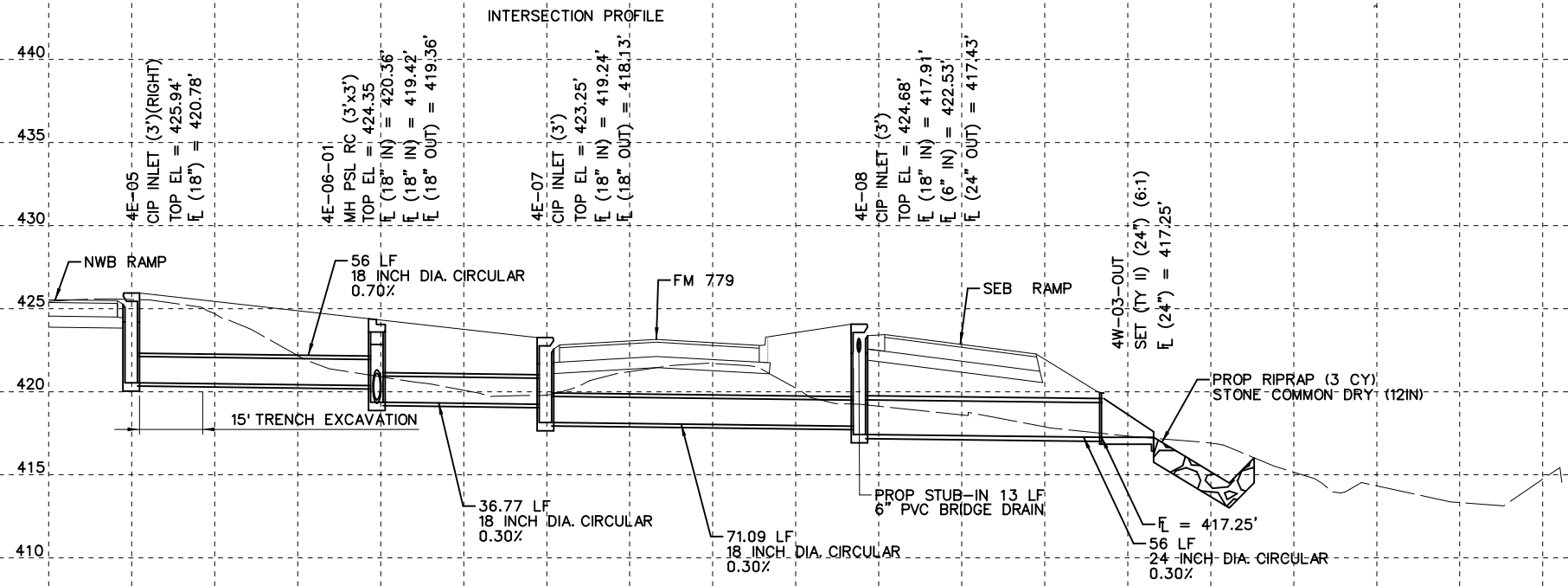


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LATERAL PROFILE

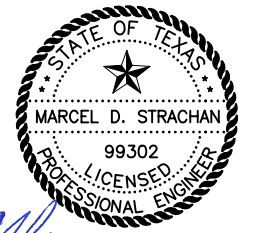
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NOTES

1. LATERAL PROFILES SHOW HYDRAULIC LENGTH. PIPE PAY LENGTHS ARE MEASURED TO INSIDE FACE OF WALL STRUCTURE.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

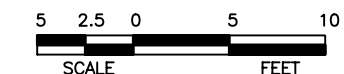
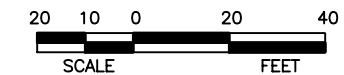
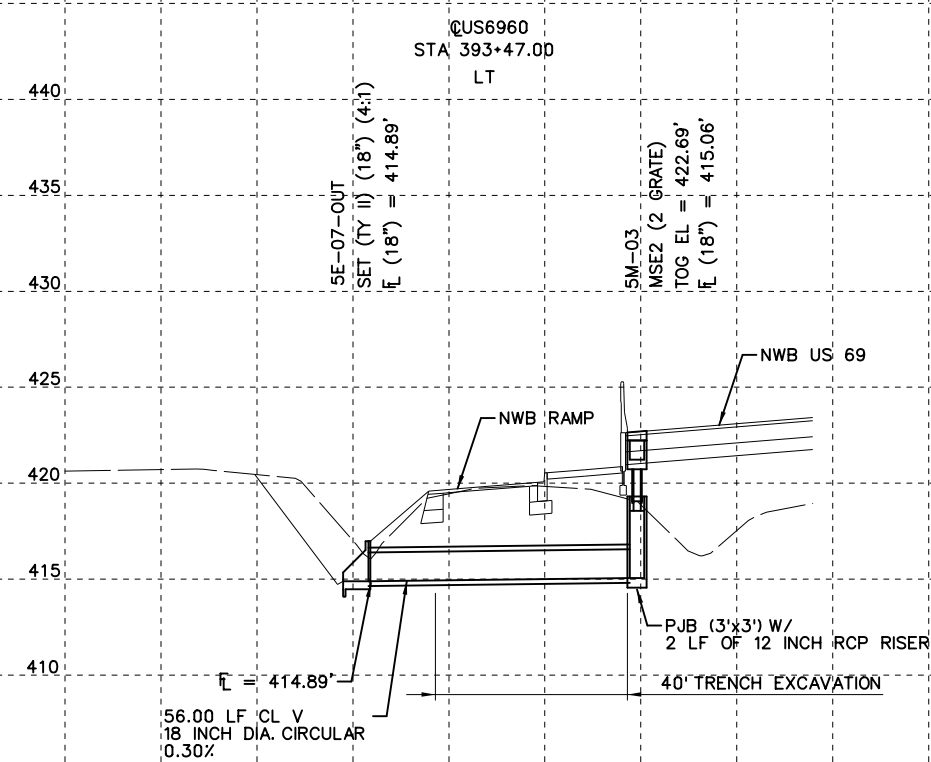
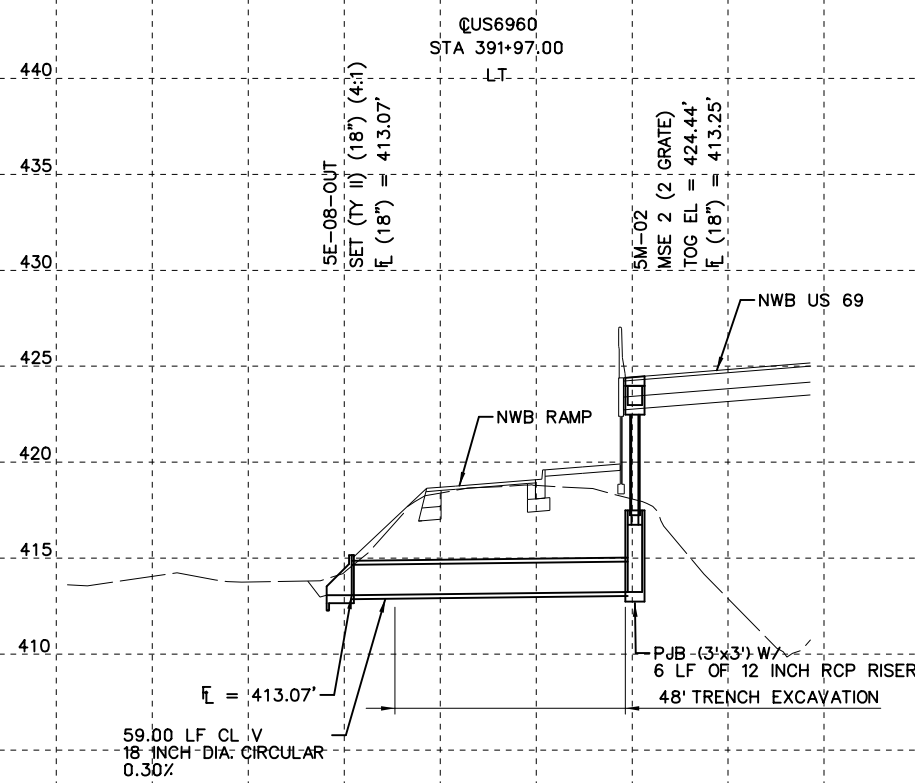
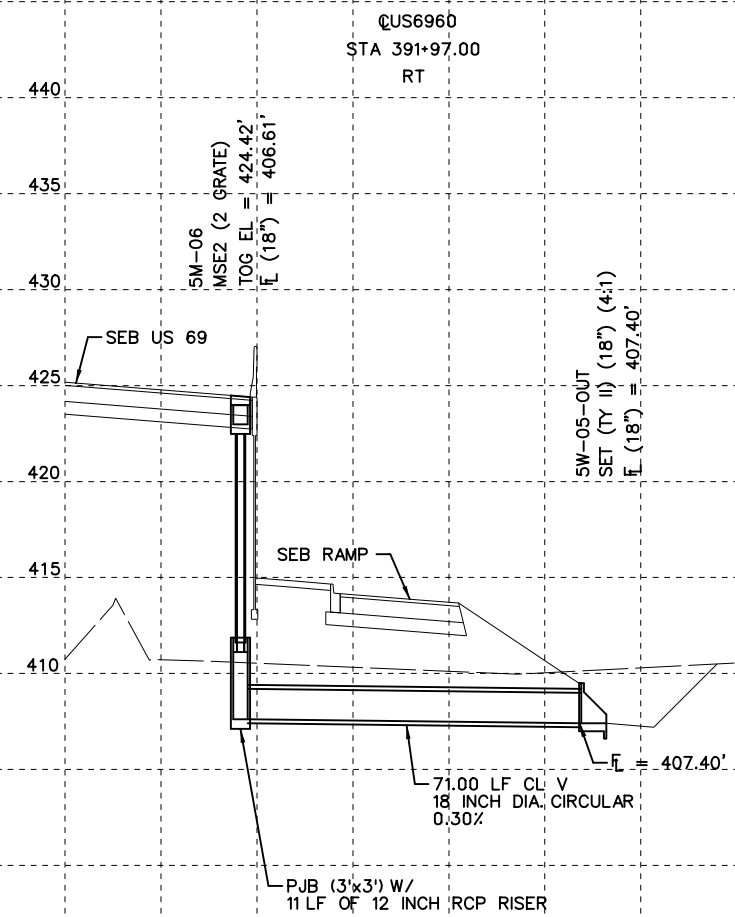
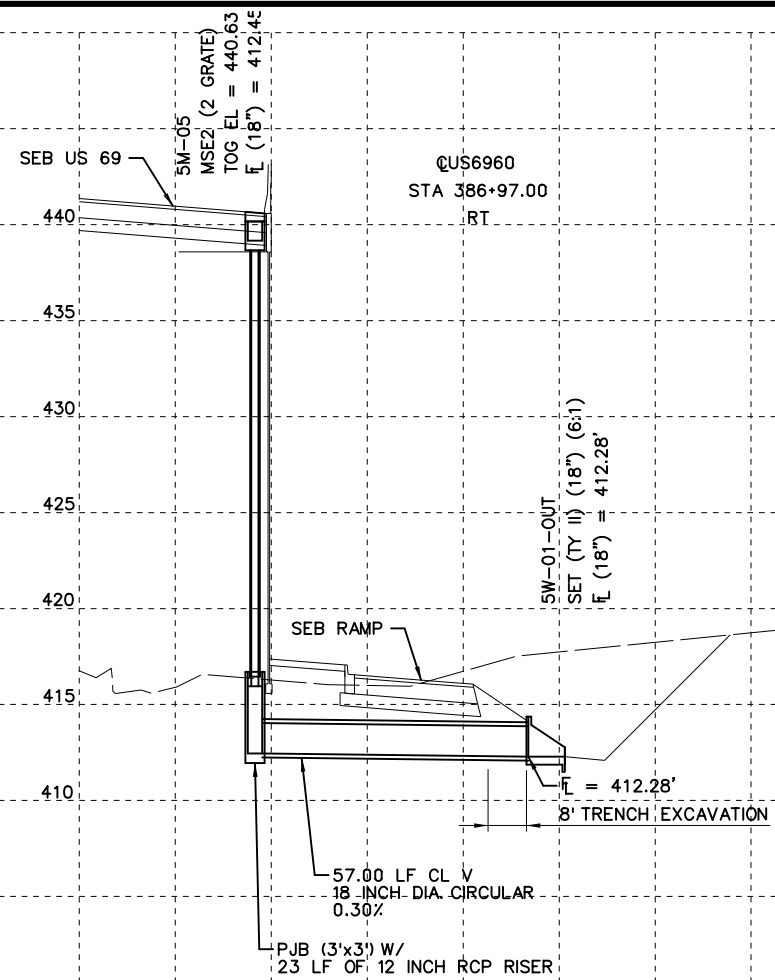
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LATERAL PROFILE

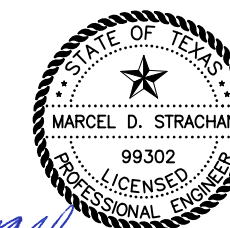
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NOTES

- LATERAL PROFILES SHOW HYDRAULIC LENGTH. PIPE PAY LENGTHS ARE MEASURED TO INSIDE FACE OF WALL STRUCTURE.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



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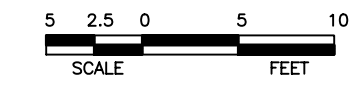
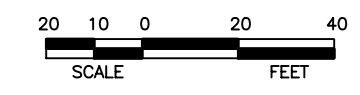
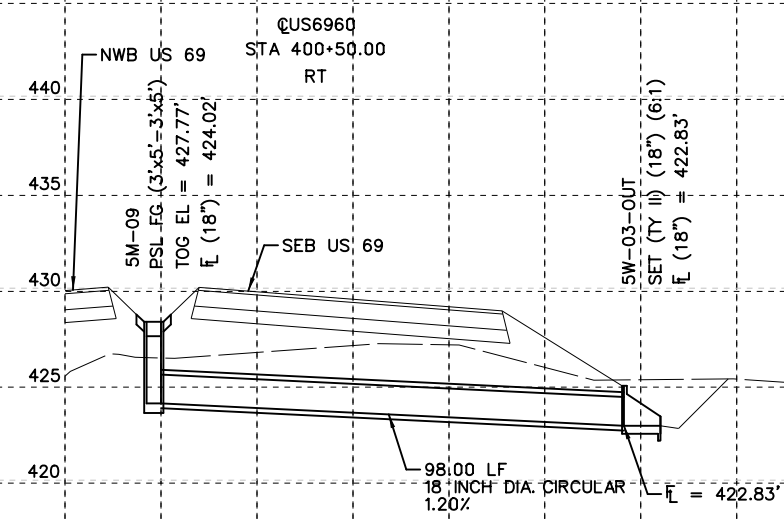
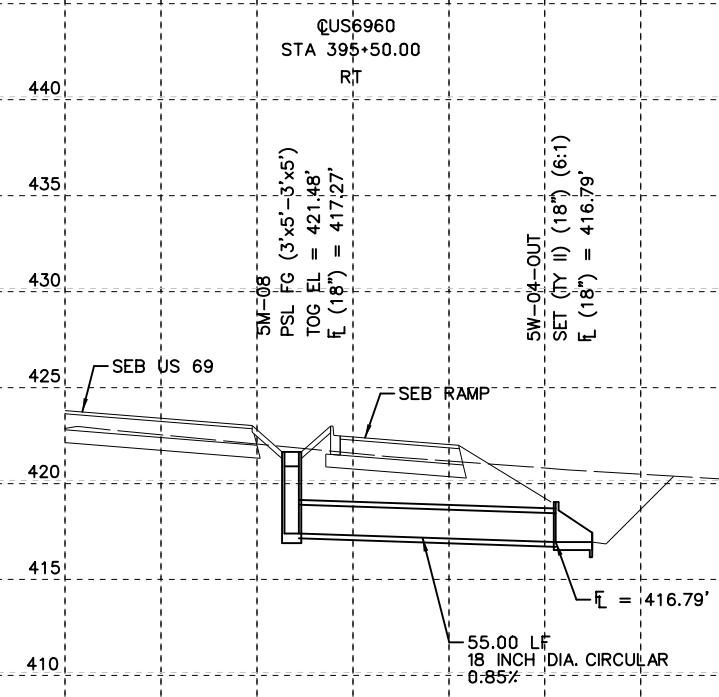
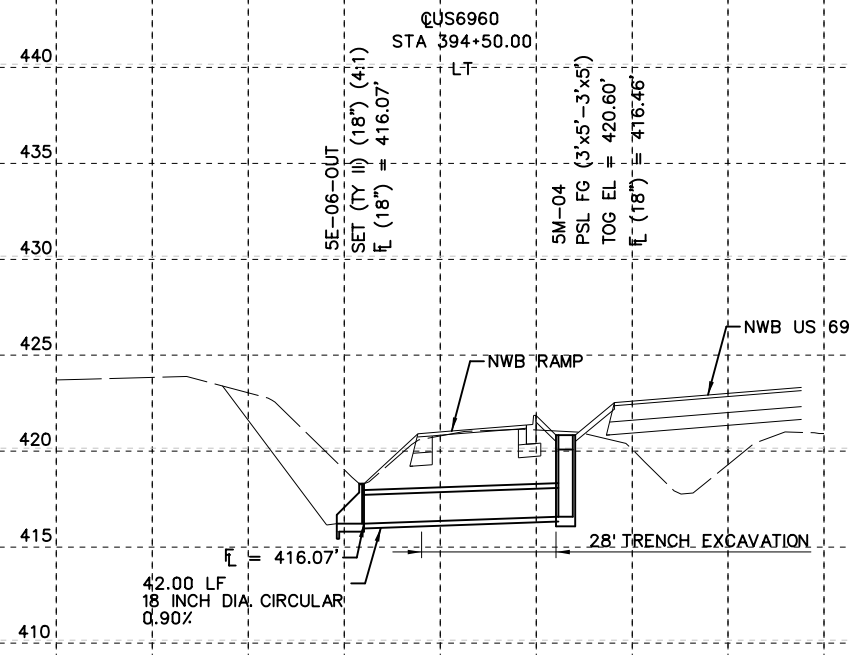
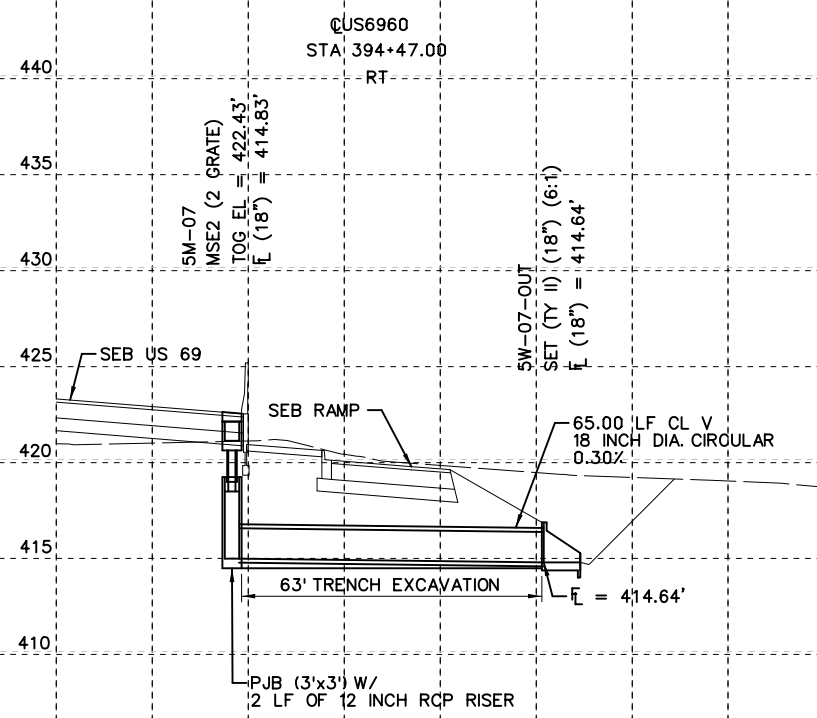
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LATERAL PROFILE

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NOTES

1. LATERAL PROFILES SHOW HYDRAULIC LENGTH. PIPE PAY LENGTHS ARE MEASURED TO INSIDE FACE OF WALL STRUCTURE.



Marcel D. Strachan
 12/11/2023

NO.	REVISION	BY	DATE



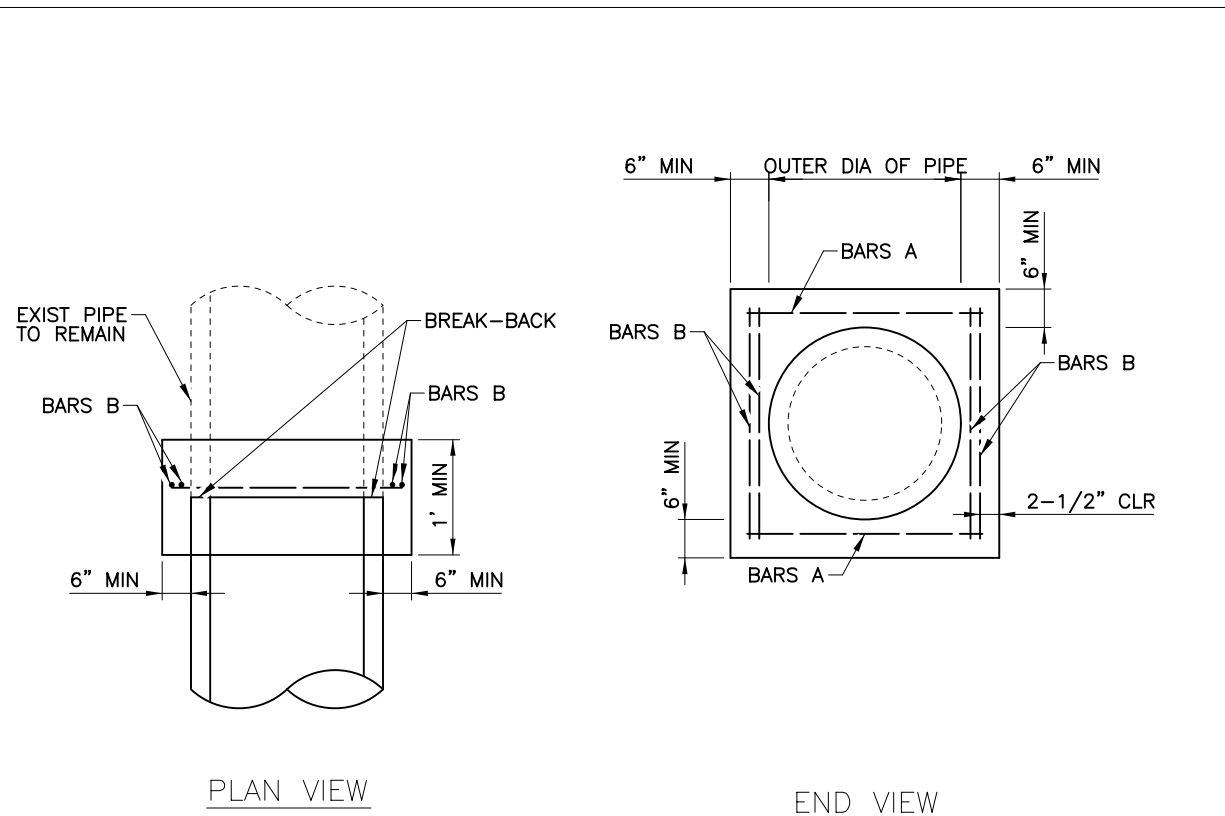
TEXAS REGISTERED ENGINEERING FIRM F-1741



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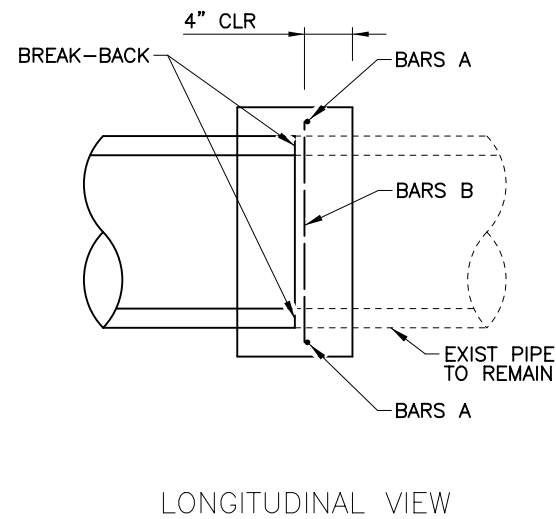
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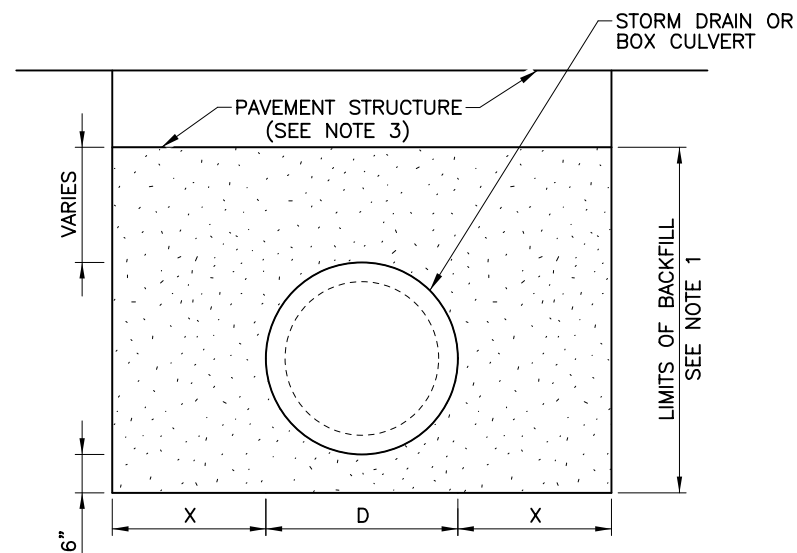
PLAN VIEW

END VIEW



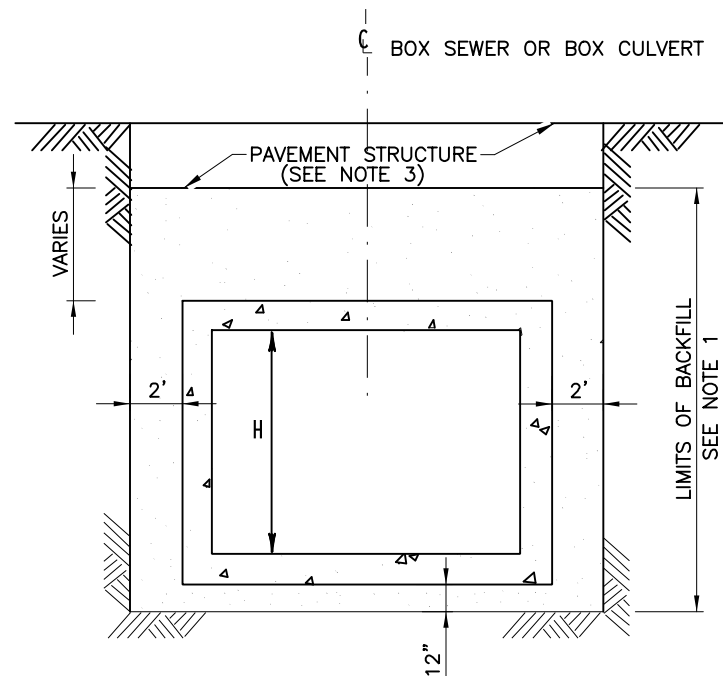
LONGITUDINAL VIEW

CONCRETE COLLAR DETAIL
N.T.S.



D= OUTSIDE DIAMETER OF PIPE
X= 1' WHERE D IS 42" OR LESS
X= 2' WHERE D IS OVER 42"

EXCAVATION AND BACKFILL DETAIL
N.T.S.



H=HEIGHT

EXCAVATION AND BACKFILL DETAIL
N.T.S.

CONCRETE COLLAR NOTES:

A CL "A" CONCRETE COLLAR SHALL BE USED AT LOCATIONS AS SHOWN ON THE PLANS WHERE ONLY THE EXISTING HEADWALL OR LESS THAN A FULL JOINT OF PIPE IS TO BE REMOVED PRIOR TO THE INSTALLATION OF THE CULVERT EXTENSION. A CONCRETE COLLAR SHALL BE USED WITH R.C. PIPE WHERE EXISTING PIPE CULVERT IS BEING EXTENDED WITH R.C. PIPE OR A SAFETY END TREATMENT. REINFORCING STEEL (BARS A & B) SHALL BE #4 BARS CUT IN THE FIELD TO FIT. CONCRETE COLLAR SHALL CONFORM TO INSIDE DIAMETER OF PIPE CULVERTS. ALL WORK AND INCIDENTALS ASSOCIATED WITH CONCRETE COLLARS ARE NOT PAID FOR DIRECTLY BUT ARE SUBSIDIARY TO ITEM 464.

BACKFILL NOTES:

1. TYPICALLY FLOWABLE BACKFILL.
2. IN AREAS THAT THE BACKFILL WILL NOT SUPPORT ANY PORTION OF THE COMPLETED ROAD BED, THE FLOWABLE BACKFILL WILL BE REPLACED WITH COMPACTED BACKFILL, UNLESS SPECIFICALLY SHOWN ON THE PLANS. IN THE AREAS THAT WILL NOT SUPPORT THE ROAD BED, THE FLOWABLE BACKFILL SHALL EXTEND 12" MINIMUM ABOVE THE TOP OF STORM DRAIN.
3. COMPACTED BACKFILL SHALL BE IN ACCORDANCE WITH ITEM 400 "EXCAVATION AND BACKFILL FOR STRUCTURES". THE CONTRACTOR HAS THE OPTION OF PLACING FLOWABLE BACKFILL IN PLACE OF COMPACTED BACKFILL. BUT THE ADDITIONAL FLOWABLE BACKFILL WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE SUBSIDIARY TO THE VARIOUS BID ITEMS.

NOTES:

1. FLOWABLE BACKFILL MAY BE OMITTED UNDER PRIVATE DRIVEWAYS AS INDICATED ELSEWHERE IN THE PLANS.
2. FLOWABLE BACKFILL WILL BE REQUIRED FOR ALL STRUCTURES UNDER DETOURS UNLESS NOTED OTHERWISE IN THE GENERAL NOTES.
3. PROPOSED ROADWAY STRUCTURE INCLUDES PAVEMENT BASE AND ANY SUBGRADE.



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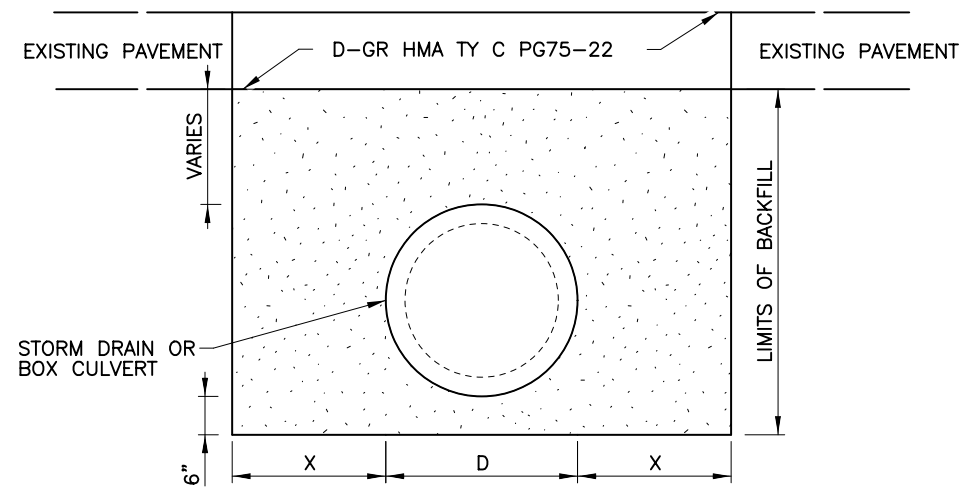
TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

MISCELLANEOUS DRAINAGE DETAILS

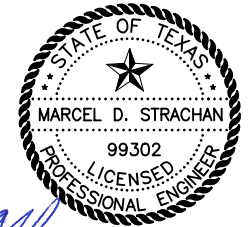
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D= OUTSIDE DIAMETER OF PIPE
 X= 1' WHERE D IS 42" OR LESS
 X= 2' WHERE D IS OVER 42"

CUT AND RESTORE PAVEMENT DETAIL
N.T.S.



Marcel D. Strachan 12/11/2023

NO.	REVISION	BY	DATE



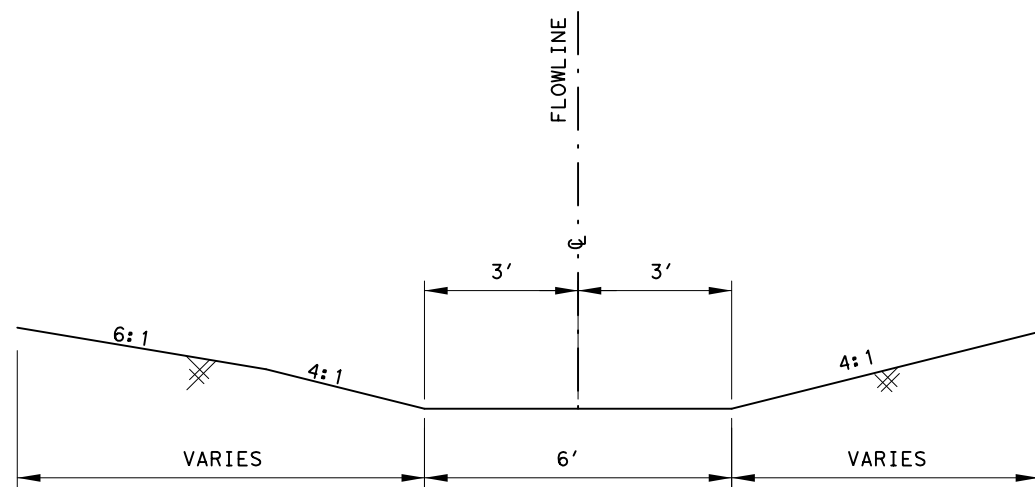
TEXAS REGISTERED ENGINEERING FIRM F-1741

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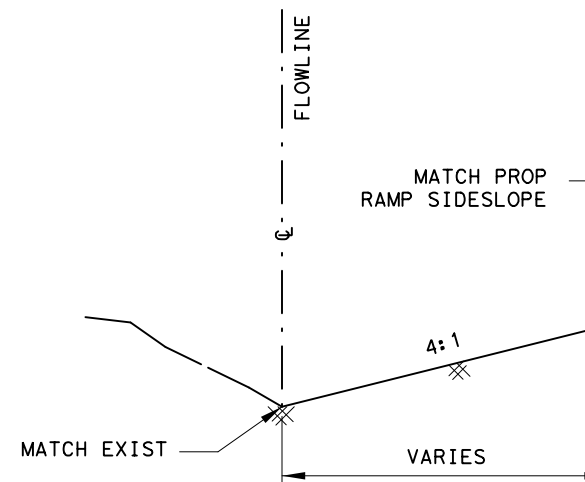
US 69 AT FM 779

MISCELLANEOUS DRAINAGE DETAILS

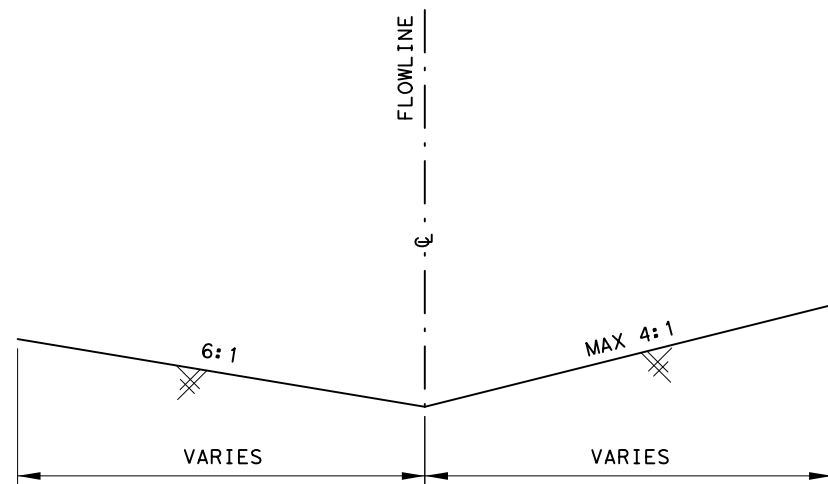
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					039
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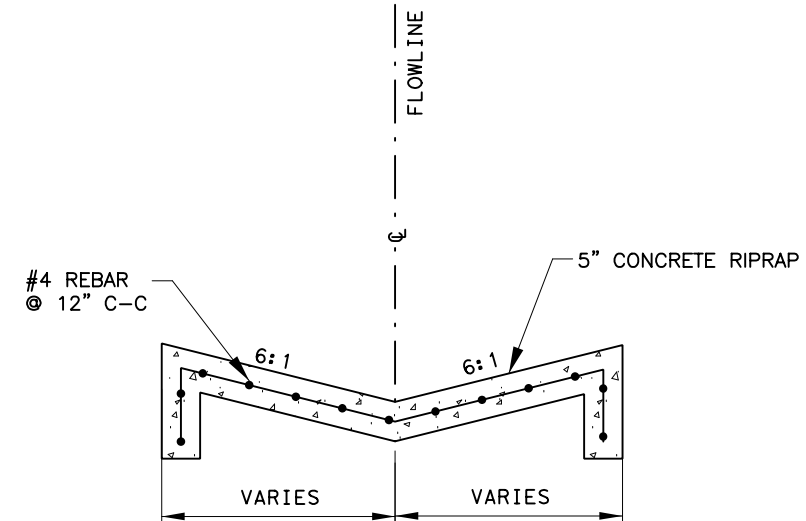
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TYPE MATCH EXIST



TYPE (V GRASS)



TYPE (V CONC)

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Marcel D. Strachan 12/11/2023

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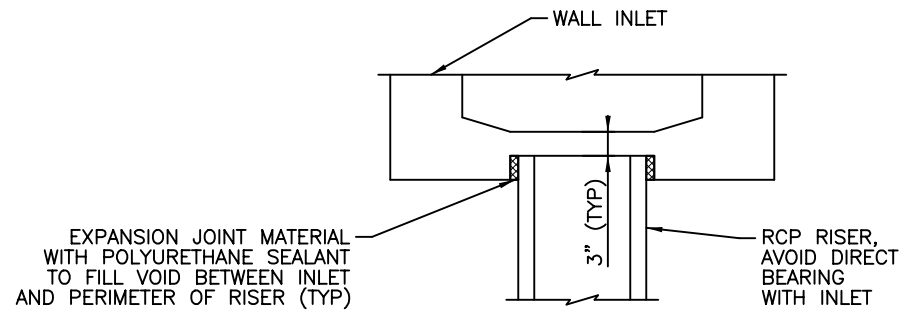
TEXAS REGISTERED ENGINEERING FIRM F-1741

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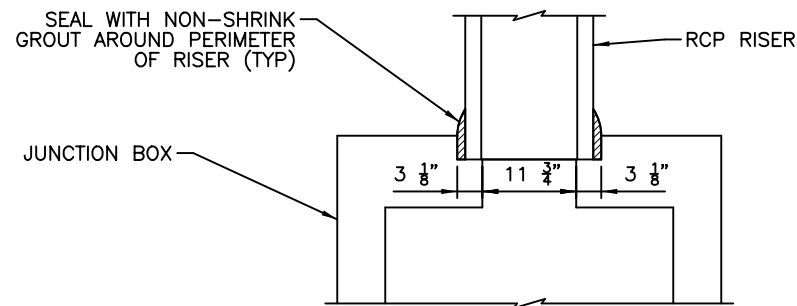
MISCELLANEOUS DRAINAGE DETAILS

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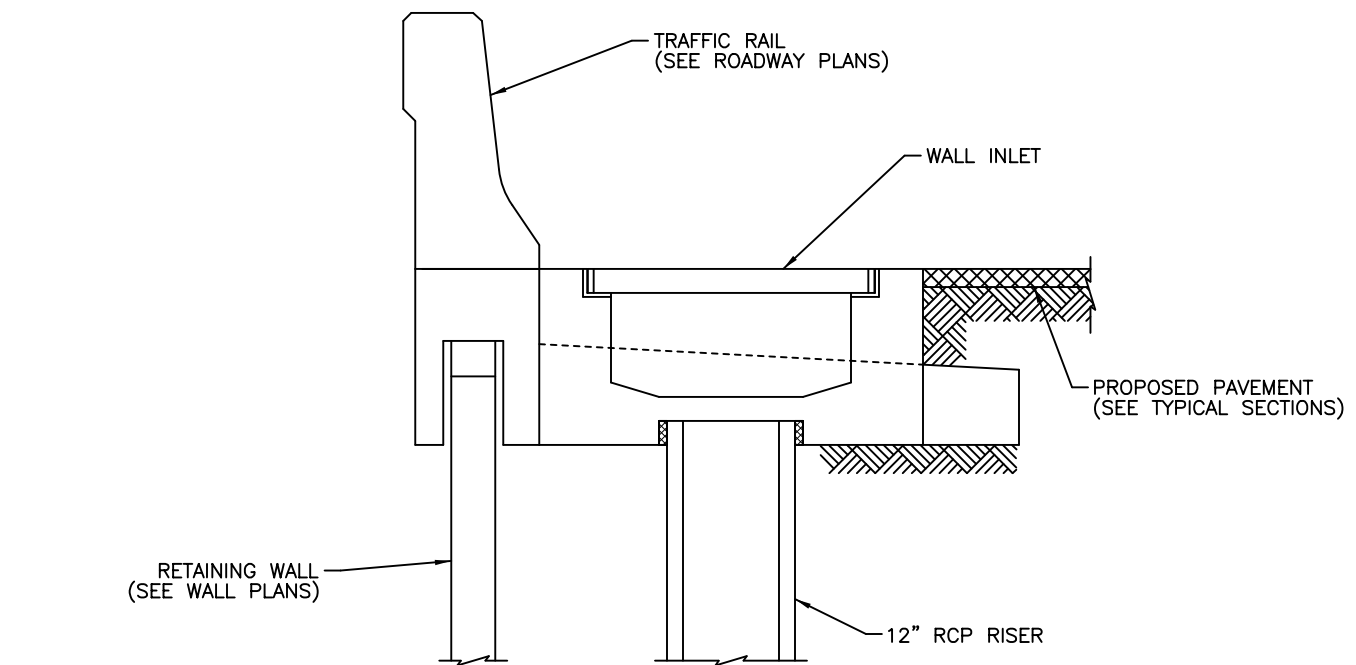
NOTE:
SEE TXDOT STANDARD RW(RI)
FOR ADDITIONAL WALL INLET
DETAILS AND NOTES.

WALL INLET/RISER DETAIL

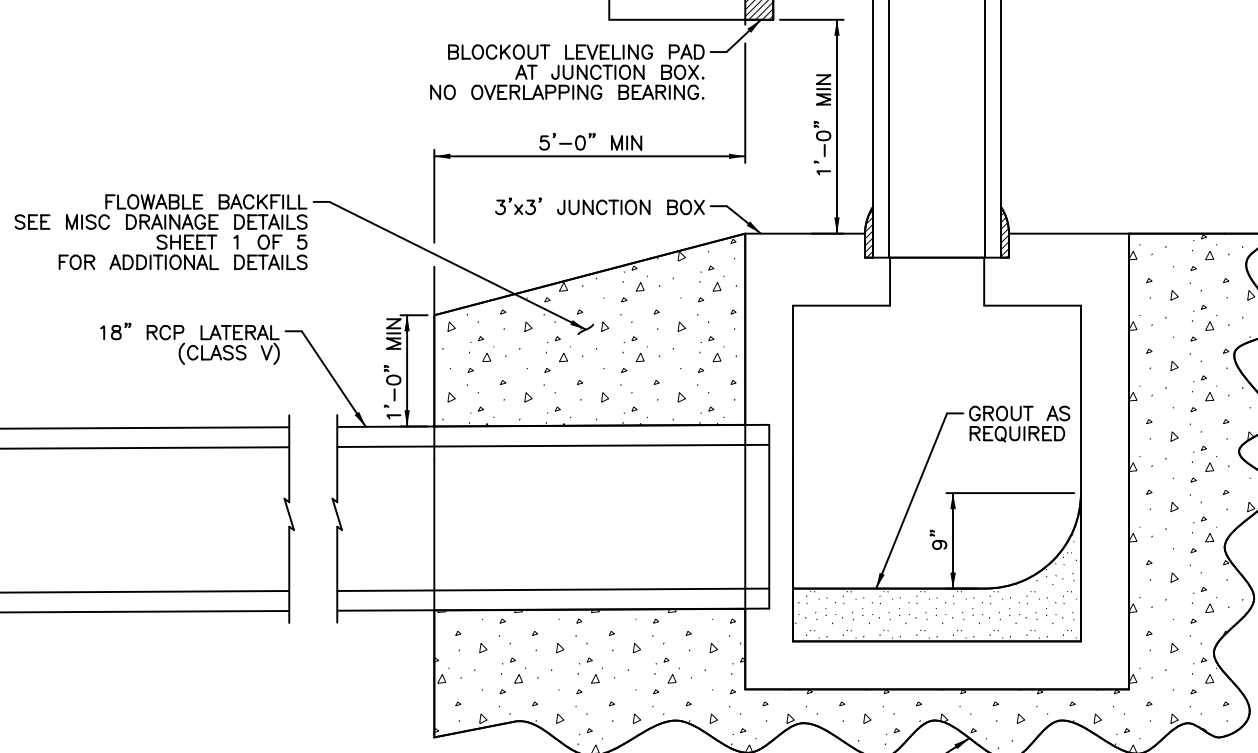


NOTE:
SEE TXDOT STANDARD PJB
FOR ADDITIONAL JUNCTION
BOX DETAILS AND NOTES.

WALL INLET/RISER DETAIL
N.T.S

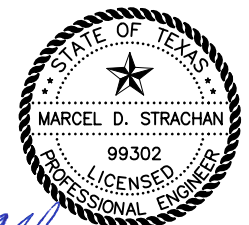


NOTES:
COST OF FURNISHING AND INSTALLING VERTICAL
RISER SHALL BE SUBSIDIARY TO THE WALL INLET.
NO SEPARATE PAY ITEM.
SEPARATE PAY ITEMS WILL BE MADE FOR THE
JUNCTION BOX, LATERAL, AND SET.



WALL DRAINAGE DETAIL
N.T.S

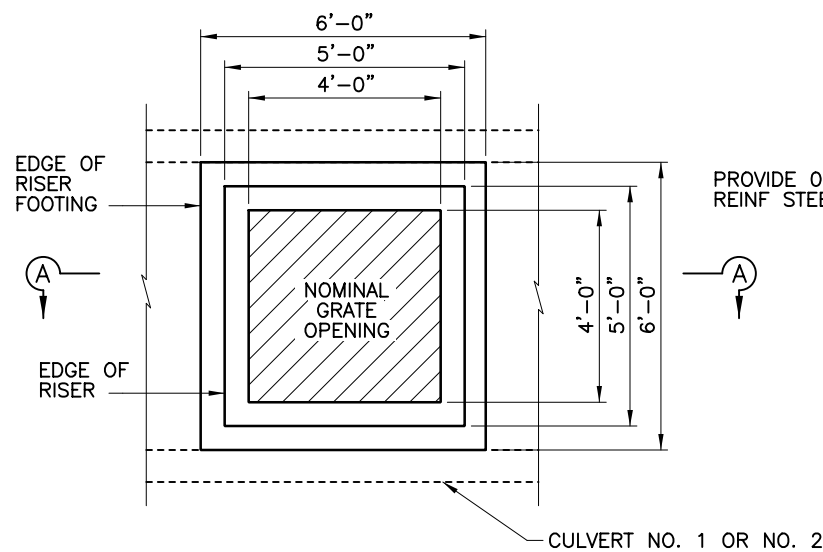
UNDISTURBED GROUND OR
IMPROVED SUBGRADE



Marcel D. Strachan
12/11/2023

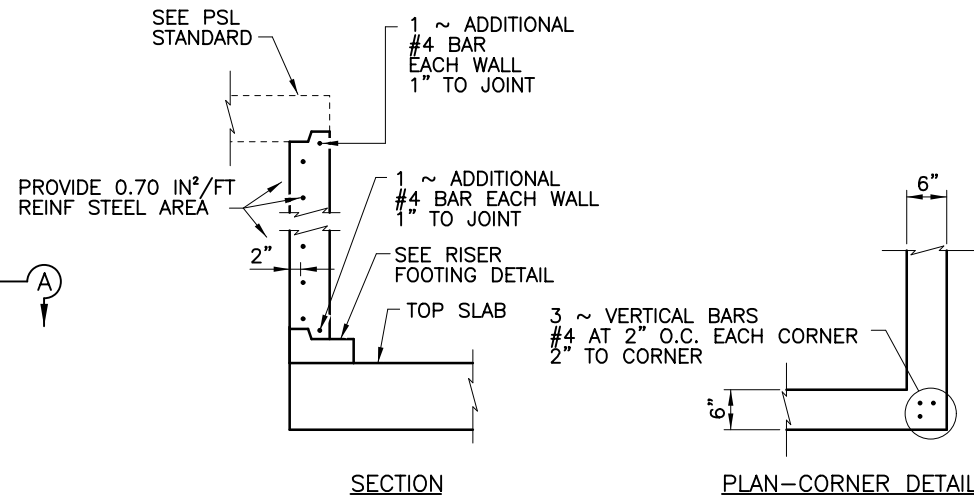
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NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 US 69 AT FM 779			
MISCELLANEOUS DRAINAGE DETAILS			
Designed:	FV	FED. RD. DIV. NO.	STATE
Checked:	MDS	6	TEXAS
Drawn:	FV	DIST.	COUNTY
Checked:	MDS	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	278
		HIGHWAY NO.	
		US 69	



PLAN

(SHOWING ONE PSL TYPE 'FG' INLET FOR CLARITY. THREE PSL TYPE 'FG' INLETS REQUIRED AT CULVERT NO. 1 AND NO. 2)



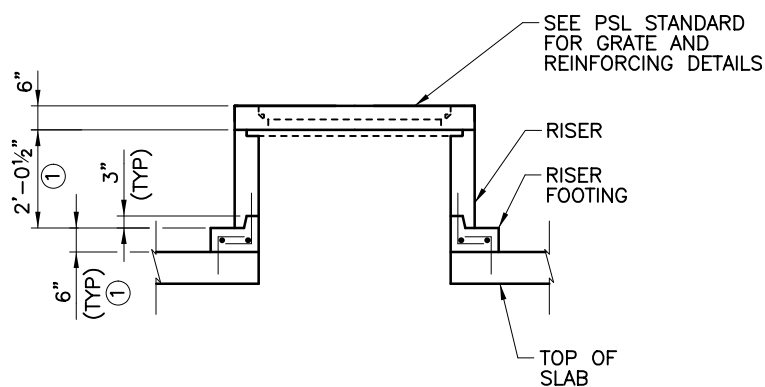
RISER WALL REINFORCING

FABRICATION NOTES:

1. PROVIDE GRADE 60 REINFORCING STEEL OR EQUIVALENT AREA OF WWR. PROVIDE STEEL AREA = 0.11 IN²/FT EACH WAY FOR SHRINKAGE AND TEMPERATURE STEEL IN ADDITION TO REINFORCING STEEL SHOWN IN DETAILS.
2. ALL CONCRETE TO BE CLASS "S" CONCRETE, f'c = 4,000 psi.
3. COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE.
4. REINFORCING BAR DIMENSIONS ARE OUT-TO-OUT OF BAR.
5. NO SUBSTITUTION IS ALLOWED FOR VERTICAL AND HORIZONTAL #4 BARS IN CORNERS.
6. PROVIDE TYPE III OR TYPE VIII EPOXY PER DMS-6100, "EPOXIES AND ADHESIVES" FOR DOWEL P BARS IN ACCORDANCE WITH ITEM 420.4.7.10.

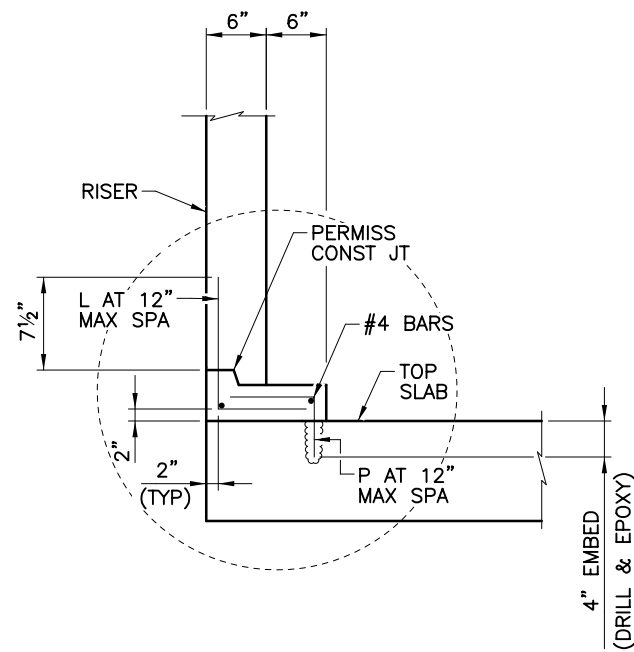
GENERAL NOTES:

1. SEE PSL STANDARD FOR INFORMATION NOT SHOWN.
2. SEE DRAINAGE PLAN & PROFILE SHEETS FOR INLET, GRATE AND CULVERT INFORMATION.
3. WORK PERFORMED, MATERIALS FURNISHED, EQUIPMENT, LABOR, TOOLS AND INCIDENTALS FOR CAST-IN-PLACE RISER AND RISER FOOTING WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE SUBSIDIARY TO THE COST OF INLET.

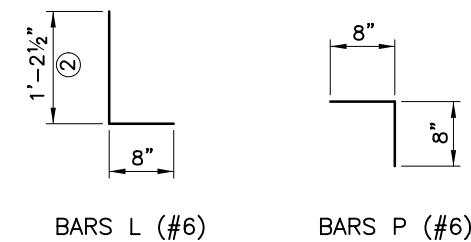


SECTION A-A

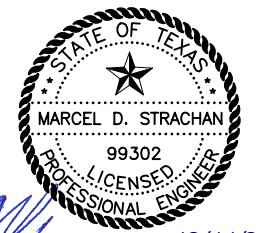
- ① RISER FOR PSL INLET AT CULVERT NO. 2 ONLY. EXCLUDE RISER AT CULVERT NO. 1 AND INCREASE RISER FOOTING HEIGHT TO 7 1/4" TO MATCH BOTTOM OF PSL INLET.



RISER FOOTING DETAIL



- ② 5 1/4" AT CULVERT NO. 1 ONLY.



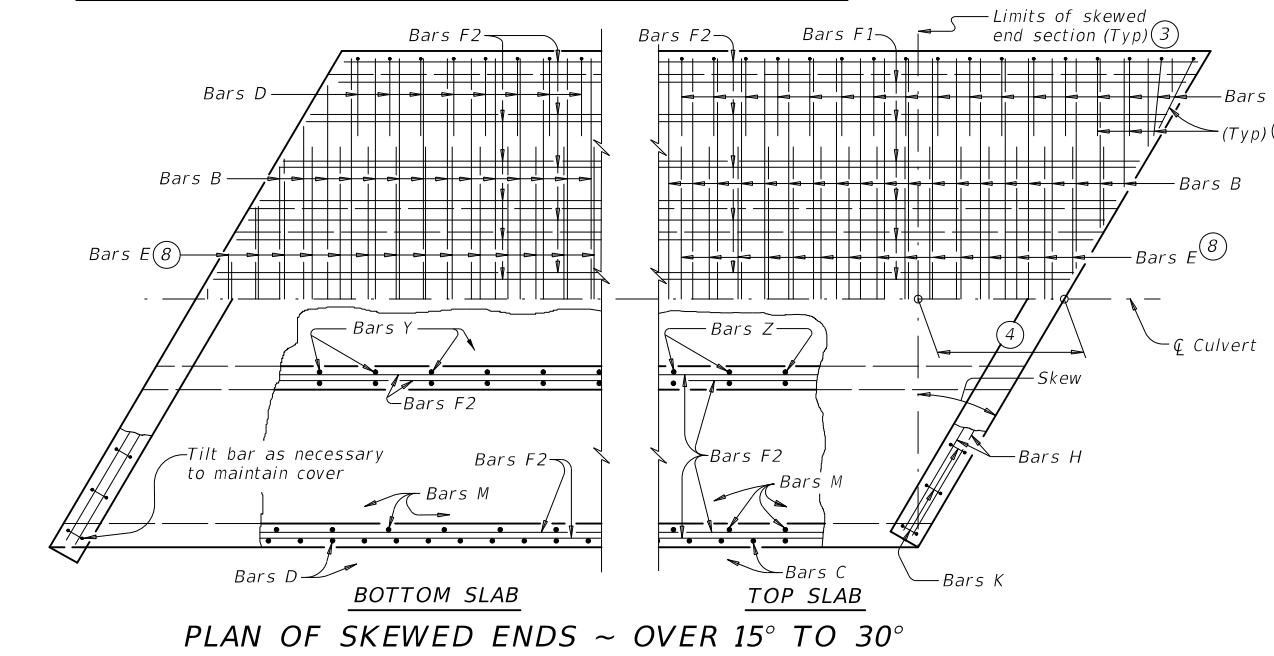
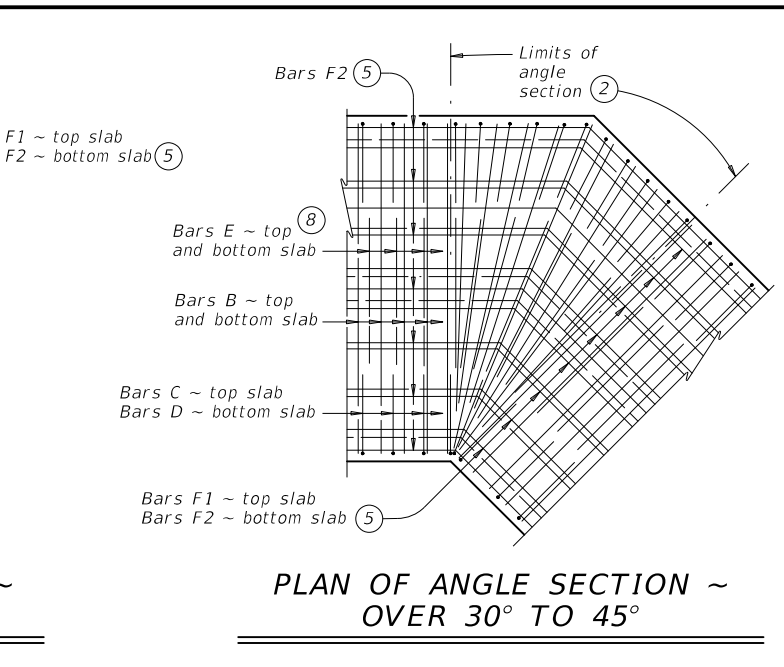
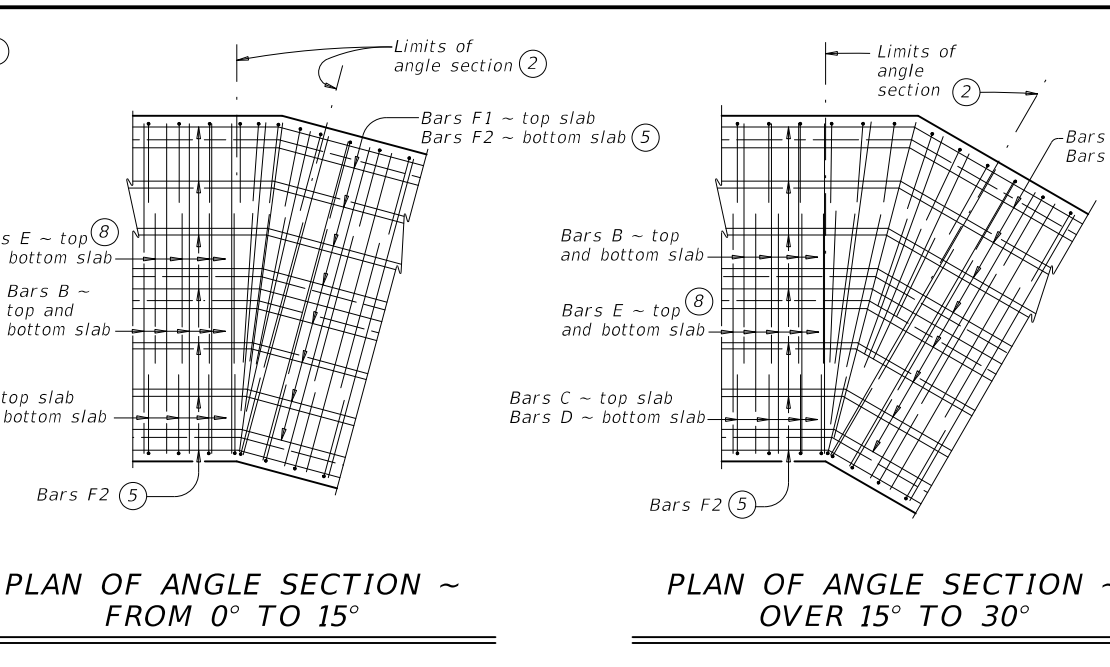
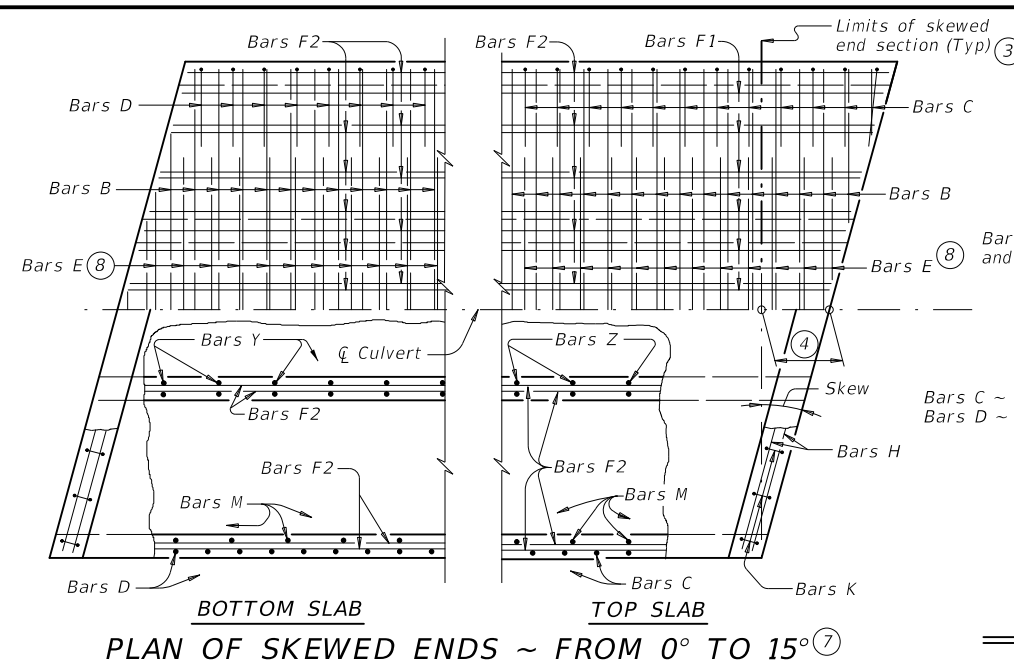
Marcel D. Strachan
12/11/2023

NO.	REVISION	BY	DATE
 TEXAS REGISTERED ENGINEERING FIRM F-1741			
 US 69 AT FM 779			
MISCELLANEOUS DRAINAGE DETAILS			
Designed:	KH	FED. RD. DIV. NO.	STATE
Checked:	MDS	6	TEXAS
Drawn:	MRE	DIST.	COUNTY
Checked:	KH	TYL	WOOD
		CONTROL NO.	SECTION NO.
		0203	05
		JOB NO.	SHEET NO.
		039	279
		HIGHWAY NO.	US 69

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① For skewed box culverts with less than 2'-0" of fill, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension.
 For non-skewed box culverts with less than 2'-0" of fill and for skewed or non-skewed culverts with a fill depth of 2'-0" or greater, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension. Alternatively, if the box is non-skewed, embed #6 anchor bars with a Type III, Class C, D, E, or F anchor adhesive into the existing walls, top and bottom slab at 1'-6" center-to-center spacing. Minimum embedment depth is 8". Anchor adhesive chosen must be able to achieve a basic bond strength in tension, N_{ba} , of 26.4 kips. Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing." Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.
 Break back wings and apron as necessary to install the extension. Clean and extend the exposed wingwall and apron reinforcing into the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, form horizontal and vertical transitions as directed by the Engineer. Match bottom slabs to maintain an uninterrupted flow line. Field bend existing and new reinforcing into transitions and maintain specified cover requirements. For top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface, adjust the "H" dimension to provide a smooth riding surface.

② When the spacing between Bars B or Bars E becomes less than half of the normal spacing, cut bars to avoid conflict.

③ The length of Bars B and Bars E will vary in the skewed end sections.

④ $[0.5 \times \text{overall width}] \times [\text{tangent of the skew angle}]$

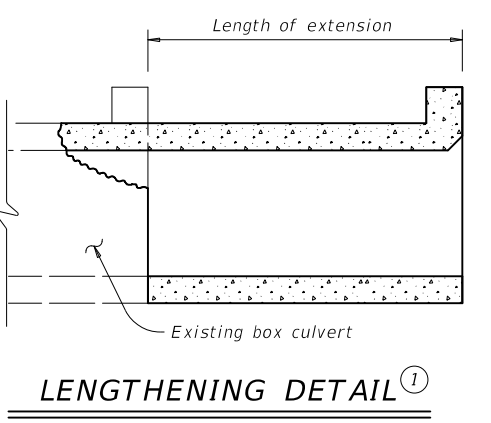
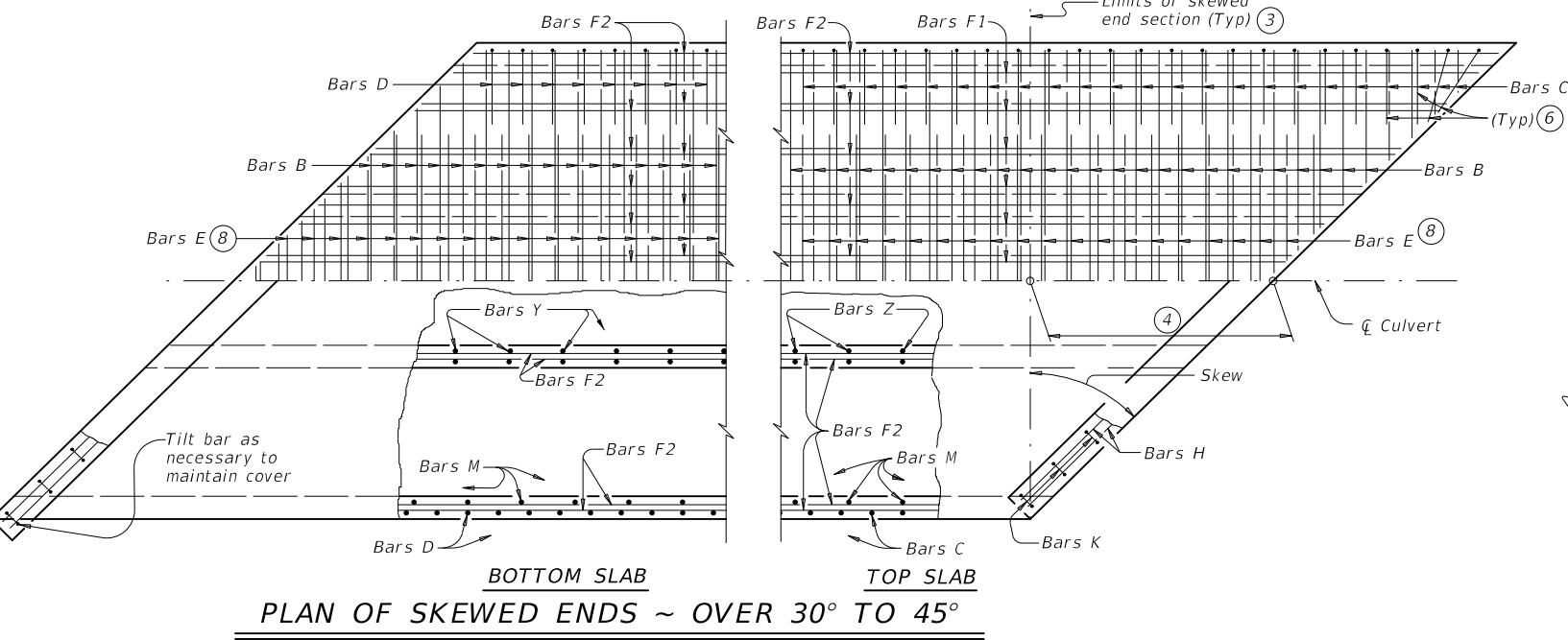
- ⑤ Place Bars F1 and F2 continuously through the angle section. Bend Bars F1 and F2 to remain parallel to the walls of the box culvert.
- ⑥ When necessary to avoid conflict in acute corners, shorten the slab extension leg of Bars C and Bars D to a minimum of 1'-6" for skews of 30° thru 45°.
- ⑦ At the Contractor's option, for skews of 15° or less, place Bars B, C, D, and E parallel to the skewed end while maintaining spacing along centerline of box. Increase lengths of Bars B and Bars E shown on the Multiple Box Culverts Cast-In-Place (MC) standard sheets to accommodate the skew.
- ⑧ Extend Bars E as shown on the MC standard sheet for direct traffic culverts.

CONSTRUCTION NOTES:
 Do not use permanent forms.
 When required, lap Bars H 1'-8" for uncoated or galvanized bars.
 Provide a minimum of 1 1/2" clear cover.

MATERIAL NOTES:
 Provide Grade 60 reinforcing steel.
 Provide galvanized reinforcing steel, if required elsewhere in the plans.
 Provide Class C concrete ($f'_c = 3,600$ psi) with these exceptions:
 provide Class S concrete ($f'_c = 4,000$ psi) for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications.
 Refer to Multiple Box Culverts Cast-in-Place (MC) standard sheets for details of straight sections of culvert.
 For skewed sections and angle sections, refer to Multiple Box Culverts Cast-in-Place (MC) standard sheets for slab and wall dimensions, bar sizes, maximum bar spacing, and any other details not shown.
 For skewed ends with curbs, adjust length of Bars H, number of Bars K, curb concrete volume, and reinforcing steel weight by dividing the values shown on the Multiple Box Culverts Cast-In-Place (MC) standard sheets by the cosine of the skew angle.

Cover dimensions are clear dimensions, unless noted otherwise.



HL93 LOADING

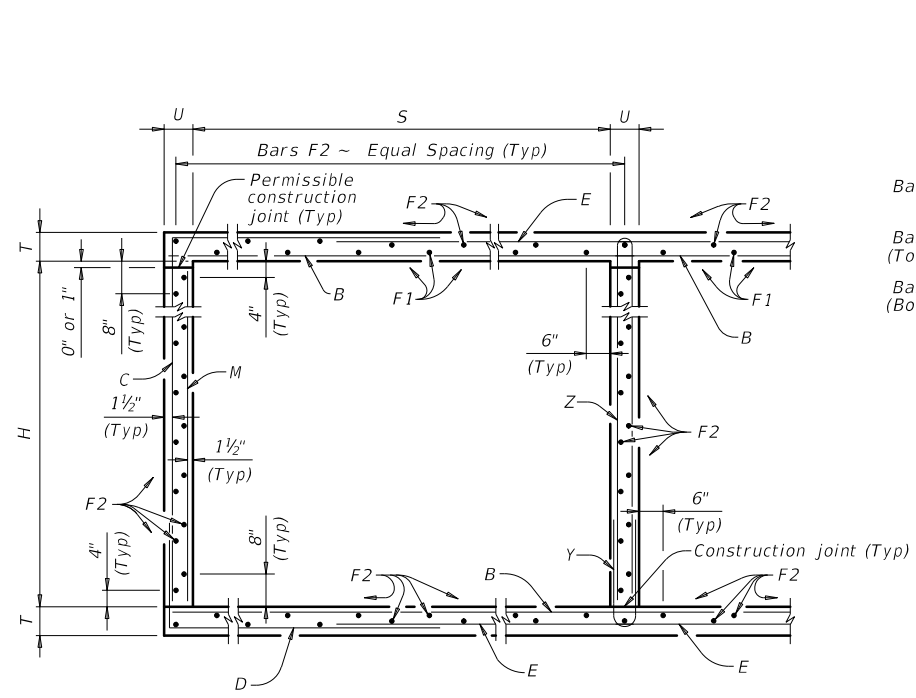
Texas Department of Transportation
 Bridge Division Standard

**MULTIPLE BOX CULVERTS
 CAST-IN-PLACE
 MISCELLANEOUS DETAILS**

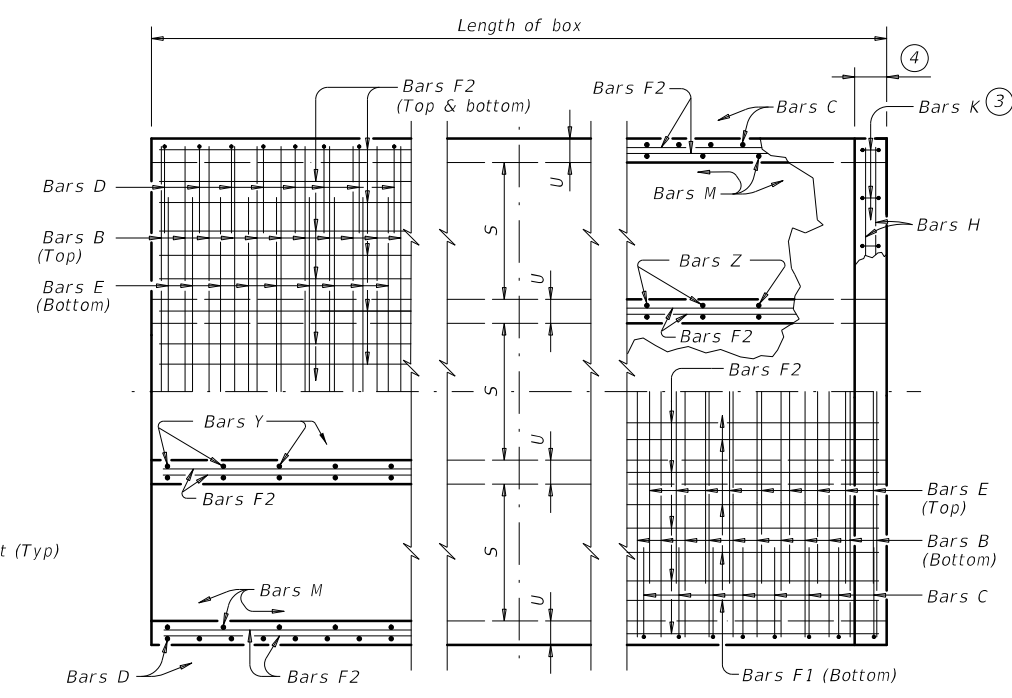
MC-MD

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	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	283	

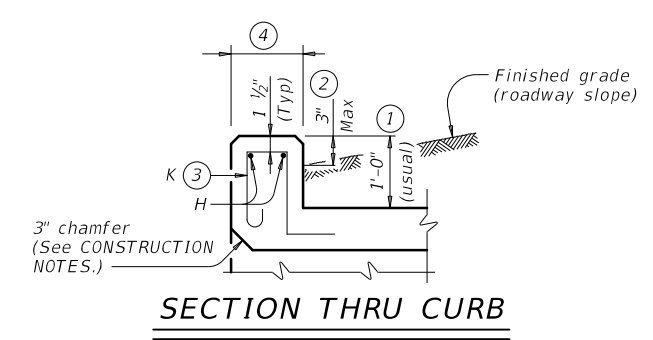
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TYPICAL SECTION

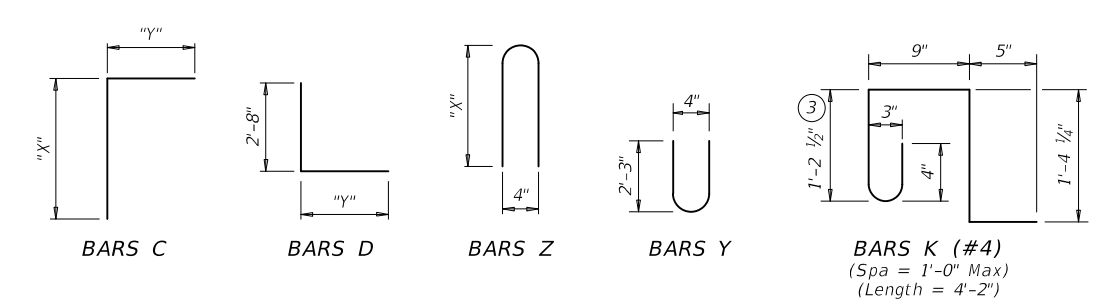


BOTTOM SLAB **TOP SLAB**



SECTION THRU CURB

TABLE OF BAR DIMENSIONS		
H	"X"	"Y"
2'-0"	2'-7 1/2"	4'-1"
3'-0"	3'-7 1/2"	4'-1"
4'-0"	4'-7 1/2"	4'-1"
5'-0"	5'-7 1/2"	4'-1"
6'-0"	6'-7 1/2"	4'-1"



- 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Rail Anchorage Curb (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
- For vehicle safety, the following requirements must be met:
 - For structures without bridge rail, construct curbs no more than 3" above finished grade.
 - For structures with bridge rail, construct curbs flush with finished grade. Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.
- 1'-0" typical. 2'-3" when the Rail Anchorage Curb (RAC) standard sheet is referred to elsewhere in the plans.

The Contractor may replace Bars B, C, D, E, F1, F2, M, Y, and/or Z with deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes. The lap length required for WWR is never less than the lap length required for uncoated #4 bars.

Example conversion: Replacing No. 6 Gr 60 at 6" Spacing with WWR
 Required WWR = (0.44 sq. in. per 0.5 ft.) x (60 ksi / 70 ksi) = 0.755 sq. in. per ft.
 If D30.6 wire is used to meet the 0.755 sq. in. per ft. requirement in this example, the required spacing = (0.306 sq. in.) / (0.755 sq. in. per ft.) x (12 in. per ft.) = 4.86" Max spacing. Required lap length for the provided D30.6 wire is 2'-1" (the same minimum lap length required for uncoated #5 bars, as listed under MATERIAL NOTES).

CONSTRUCTION NOTES:
 Do not use permanent forms.
 Chamfer the bottom edge of the top slab 3" at the entrance.
 Optionally, raise construction joints shown at the flow line by a maximum of 6". If this option is taken, Bars M may be cut off or raised, Bars C and D may be reversed, and Bars Y and Z may be reversed.

MATERIAL NOTES:
 Provide Grade 60 reinforcing steel.
 Provide galvanized reinforcing steel if required elsewhere in the plans.
 Provide Class C concrete (f'c = 3,600 psi) for culvert barrel and curb, with the following exceptions: provide Class S concrete (f'c = 4,000 psi) for top slabs of:
 • culverts with overlay,
 • culverts with 1-to-2 course surface treatment, or
 • culverts with the top slab as the final riding surface.
 Provide bar laps, where required, as follows:
 • Uncoated or galvanized ~ #4 = 1'-8" Min
 • Uncoated or galvanized ~ #5 = 2'-1" Min
 • Uncoated or galvanized ~ #6 = 2'-6" Min

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications for the range of fill heights shown.
 See the Multiple Box Culverts Cast-In-Place Miscellaneous Detail (MC-MD) standard sheet for details pertaining to skewed ends, angle sections, and lengthening.

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation
 Bridge Division Standard

**MULTIPLE BOX CULVERTS
 CAST-IN-PLACE**
 6'-0" SPAN
 0' TO 16' FILL
MC-6-16

FILE: CD-MC616-20.dgn	DN: TBE	CK: BMP	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	284	

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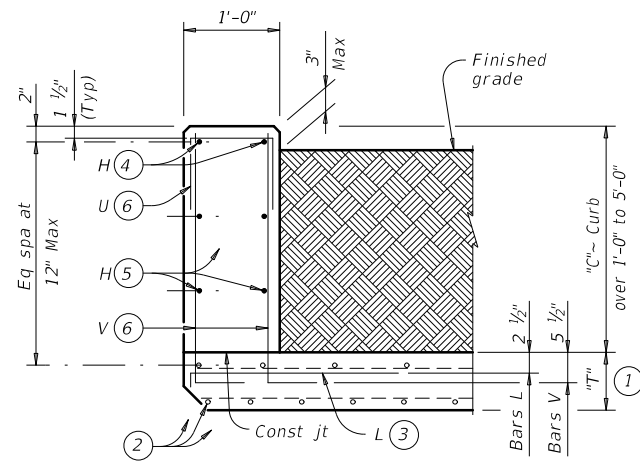
NUMBER OF SPANS	SECTION DIMENSIONS				BILLS OF REINFORCING STEEL (For Box Length = 40 feet)																								QUANTITIES																				
					Bars B				Bars C & D				Bars E			Bars F1 ~ #4			Bars F2 ~ #4			Bars M ~ #4			Bars Y & Z ~ #4				Bars H 4 ~ #4		Bars K		Per Foot of Barrel		Curb		Total												
	S	H	T	U	No.	Size	Spa	Length	Wt	No.	Size	Spa	Bars C		Bars D		No.	Size	Spa	Length	Wt	No.	Spa	Length	Wt	No.	Spa	Length	Wt	No.	Spa	Bars Y		Bars Z		Length	Wt	No.	Wt	Conc (CY)	Ref (Lb)	Conc (CY)	Ref (Lb)	Conc (CY)	Ref (Lb)				
2	6'-0"	2'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	44	18"	39'-9"	1,168	108	9"	2'-0"	144	54	9"	4'-9"	171	5'-5"	195	13'-6"	36	30	84	0.894	182.4	1.0	120	36.8	7,414
3	6'-0"	2'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	63	18"	39'-9"	1,673	108	9"	2'-0"	144	108	9"	4'-9"	343	5'-5"	391	20'-1"	54	44	122	1.302	260.9	1.5	176	53.6	10,611
4	6'-0"	2'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	82	18"	39'-9"	2,177	108	9"	2'-0"	144	162	9"	4'-9"	514	5'-5"	586	26'-8"	71	56	156	1.711	339.4	2.0	227	70.4	13,801
5	6'-0"	2'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	101	18"	39'-9"	2,682	108	9"	2'-0"	144	216	9"	4'-9"	685	5'-5"	782	33'-3"	89	70	195	2.120	417.9	2.5	284	87.3	16,999
6	6'-0"	2'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	6'-8"	751	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	120	18"	39'-9"	3,186	108	9"	2'-0"	144	270	9"	4'-9"	857	5'-5"	977	39'-10"	106	82	228	2.529	496.4	3.0	334	104.1	20,189
2	6'-0"	3'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	50	18"	39'-9"	1,328	108	9"	3'-0"	216	54	9"	4'-9"	171	7'-5"	268	13'-6"	36	30	84	0.958	192.8	1.0	120	39.3	7,832
3	6'-0"	3'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	71	18"	39'-9"	1,885	108	9"	3'-0"	216	108	9"	4'-9"	343	7'-5"	535	20'-1"	54	44	122	1.389	274.4	1.5	176	57.1	11,152
4	6'-0"	3'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	92	18"	39'-9"	2,443	108	9"	3'-0"	216	162	9"	4'-9"	514	7'-5"	803	26'-8"	71	56	156	1.819	356.1	2.0	227	74.7	14,469
5	6'-0"	3'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	113	18"	39'-9"	3,000	108	9"	3'-0"	216	216	9"	4'-9"	685	7'-5"	1,070	33'-3"	89	70	195	2.250	437.7	2.5	284	92.5	17,790
6	6'-0"	3'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	7'-8"	864	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	134	18"	39'-9"	3,558	108	9"	3'-0"	216	270	9"	4'-9"	857	7'-5"	1,338	39'-10"	106	82	228	2.681	519.3	3.0	334	110.2	21,107
2	6'-0"	4'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	50	18"	39'-9"	1,328	108	9"	4'-0"	289	54	9"	4'-9"	171	9'-5"	340	13'-6"	36	30	84	1.023	199.2	1.0	120	41.9	8,089
3	6'-0"	4'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	71	18"	39'-9"	1,885	108	9"	4'-0"	289	108	9"	4'-9"	343	9'-5"	679	20'-1"	54	44	122	1.475	282.6	1.5	176	60.5	11,481
4	6'-0"	4'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	92	18"	39'-9"	2,443	108	9"	4'-0"	289	162	9"	4'-9"	514	9'-5"	1,019	26'-8"	71	56	156	1.927	366.1	2.0	227	79.1	14,870
5	6'-0"	4'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	113	18"	39'-9"	3,000	108	9"	4'-0"	289	216	9"	4'-9"	685	9'-5"	1,359	33'-3"	89	70	195	2.380	449.5	2.5	284	97.7	18,264
6	6'-0"	4'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	8'-8"	976	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	134	18"	39'-9"	3,558	108	9"	4'-0"	289	270	9"	4'-9"	857	9'-5"	1,698	39'-10"	106	82	228	2.832	533.0	3.0	334	116.2	21,652
2	6'-0"	5'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	56	18"	39'-9"	1,487	108	9"	5'-0"	361	54	9"	4'-9"	171	11'-5"	412	13'-6"	36	30	84	1.088	209.6	1.0	120	44.5	8,505
3	6'-0"	5'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	79	18"	39'-9"	2,098	108	9"	5'-0"	361	108	9"	4'-9"	343	11'-5"	824	20'-1"	54	44	122	1.562	296.2	1.5	176	64.0	12,024
4	6'-0"	5'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	102	18"	39'-9"	2,708	108	9"	5'-0"	361	162	9"	4'-9"	514	11'-5"	1,235	26'-8"	71	56	156	2.035	382.7	2.0	227	83.4	15,536
5	6'-0"	5'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	125	18"	39'-9"	3,319	108	9"	5'-0"	361	216	9"	4'-9"	685	11'-5"	1,647	33'-3"	89	70	195	2.509	469.3	2.5	284	102.8	19,056
6	6'-0"	5'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	9'-8"	1,089	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	148	18"	39'-9"	3,930	108	9"	5'-0"	361	270	9"	4'-9"	857	11'-5"	2,059	39'-10"	106	82	228	2.983	555.9	3.0	334	122.3	22,570
2	6'-0"	6'-0"	9"	7"	108	#6	9"	13'-6"	2,190	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	10'-2"	1,649	10	18"	39'-9"	266	62	18"	39'-9"	1,646	108	9"	6'-0"	433	54	9"	4'-9"	171	13'-5"	484	13'-6"	36	30	84	1.153	220.0	1.0	120	47.1	8,921
3	6'-0"	6'-0"	9"	7"	108	#6	9"	20'-1"	3,258	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	16'-9"	2,717	15	18"	39'-9"	398	87	18"	39'-9"	2,310	108	9"	6'-0"	433	108	9"	4'-9"	343	13'-5"	968	20'-1"	54	44	122	1.648	309.7	1.5	176	67.4	12,565
4	6'-0"	6'-0"	9"	7"	108	#6	9"	26'-8"	4,326	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	23'-4"	3,785	20	18"	39'-9"	531	112	18"	39'-9"	2,974	108	9"	6'-0"	433	162	9"	4'-9"	514	13'-5"	1,452	26'-8"	71	56	156	2.144	399.4	2.0	227	87.7	16,204
5	6'-0"	6'-0"	9"	7"	108	#6	9"	33'-3"	5,394	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	29'-11"	4,853	25	18"	39'-9"	664	137	18"	39'-9"	3,638	108	9"	6'-0"	433	216	9"	4'-9"	685	13'-5"	1,936	33'-3"	89	70	195	2.639	489.1	2.5	284	108.0	19,849
6	6'-0"	6'-0"	9"	7"	108	#6	9"	39'-10"	6,462	108	#5	9"	10'-8"	1,202	6'-9"	760	108	#6	9"	36'-6"	5,921	30	18"	39'-9"	797	162	18"	39'-9"	4,302	108	9"	6'-0"	433	270	9"	4'-9"	857	13'-5"	2,420	39'-10"	106	82	228	3.134	578.9	3.0	334	128.3	23,488



MULTIPLE BOX CULVERTS
CAST-IN-PLACE
6'-0" SPAN
0' TO 16' FILL
MC-6-16

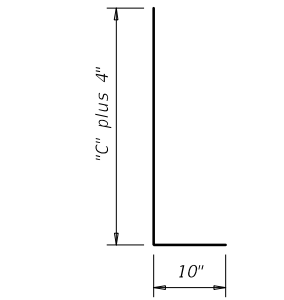
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	TYL	WOOD		285

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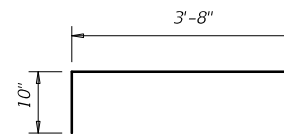
TYPICAL SECTION

Used for curbs over 1'-0" to 5'-0"



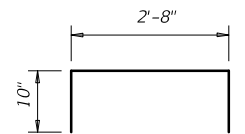
BARS V (#5)

Spaced at 12" Max



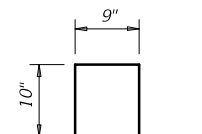
BARS L (#5)

Spaced at 12" Max



OPTIONAL BARS L (#5)

Spaced at 12" Max



BARS U (#4)

Spaced at 12" Max

- ① "T" is equal to the culvert top slab thickness. For precast boxes with slabs less than 8" thick, see SCP-MD standard for additional details.
- ② Adjust normal culvert slab bars as necessary to clear obstructions.
- ③ Place bars L as shown. Tilt hook as necessary to maintain cover.
- ④ Place normal culvert curb bars H(#4) as shown. Adjust as necessary to clear obstructions.
- ⑤ Additional bars H(#4) as required to maintain 12" Max spacing.
- ⑥ Replace normal culvert curb bars K with one bar U and two bars V as shown spaced at 12" Max. Adjust length of bars V as necessary to maintain clear cover.
- ⑦ Optional bars L are to be used only for precast box culverts with 3'-0" closure pour.
- ⑧ Quantities shown are for Contractor's information only. Quantities are per linear foot of curb length. The value in table can be interpolated for intermediate values of curb height, "C". Quantity includes bars K (when applicable).

TABLE OF ESTIMATED CURB QUANTITIES ⑧		
Curb Height "C"	Conc (CY/LF)	Reinf Steel (Lb/LF)
1'-0"	0.037	10.4
1'-6"	0.056	14.5
2'-0"	0.074	15.6
2'-6"	0.093	18.0
3'-0"	0.111	19.0
3'-6"	0.130	21.3
4'-0"	0.148	22.4
4'-6"	0.167	24.8
5'-0"	0.185	25.9

CONSTRUCTION NOTES:
 Adjust reinforcing steel as necessary to provide 1 1/4" cover. For vehicle safety, top of the curb must not project more than 3" above the finished grade.

MATERIAL NOTES:
 Provide Grade 60 reinforcing steel.
 Provide galvanized reinforcing steel if required elsewhere in the plans.
 Provide Class "C" concrete (f'c = 3,600 psi) minimum for curbs.
 Provide bar laps, where required, as follows:
 • Coated or galvanized ~ #4 = 1'-8" Min

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications.
 These extended curb details have sufficient strength to allow for future retrofit of Type T631 or T631LS railing. These details are suitable for use with PR11, PR22 and PR3 type rails. These details are not suitable for the mounting of other rail types. For new construction using T631 or T631LS railing, use the T631-CM standard.
 This Curb is considered as part of the Box Culvert for payment.

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.

Bridge Division Standard

EXTENDED CURB DETAILS FOR BOX CULVERTS WITH CURBS OVER 1'-0" TO 5'-0" TALL

ECD

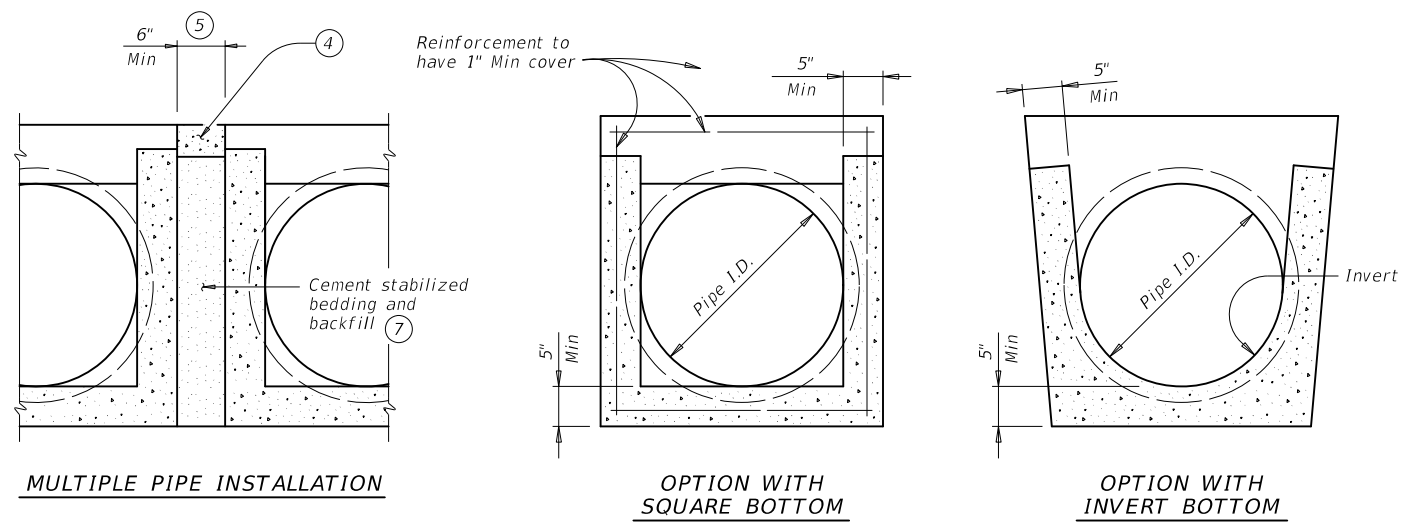
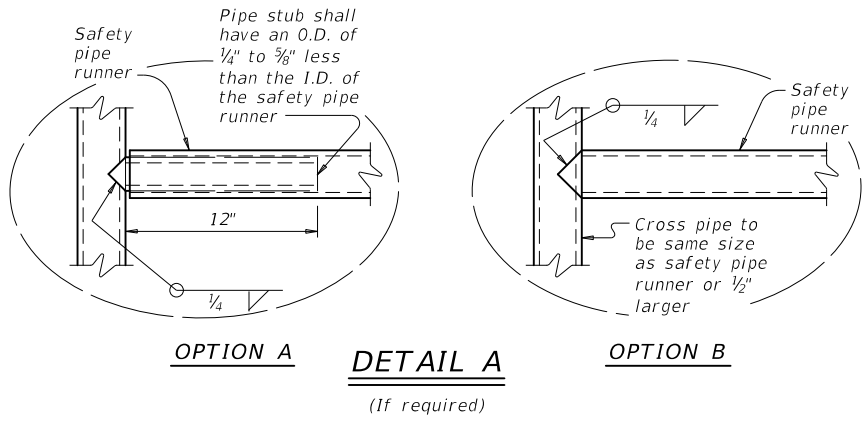
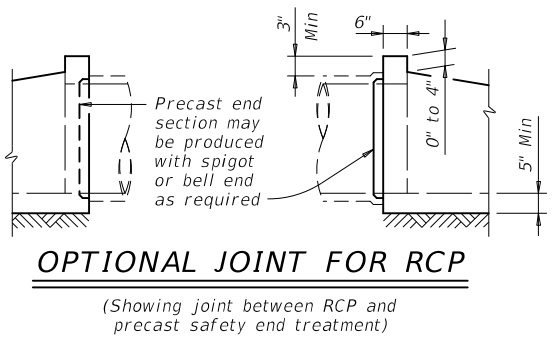
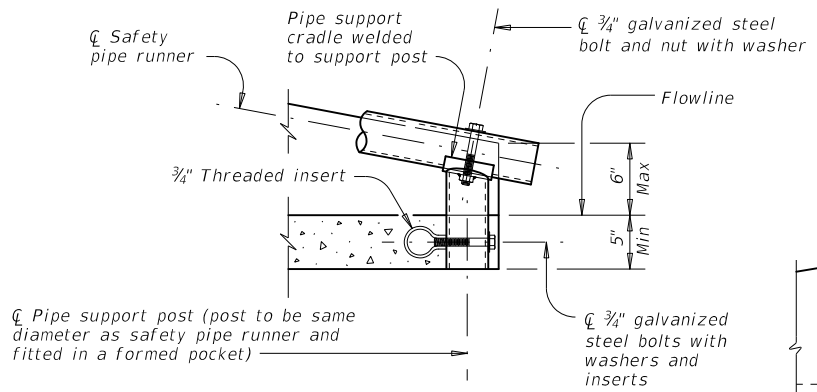
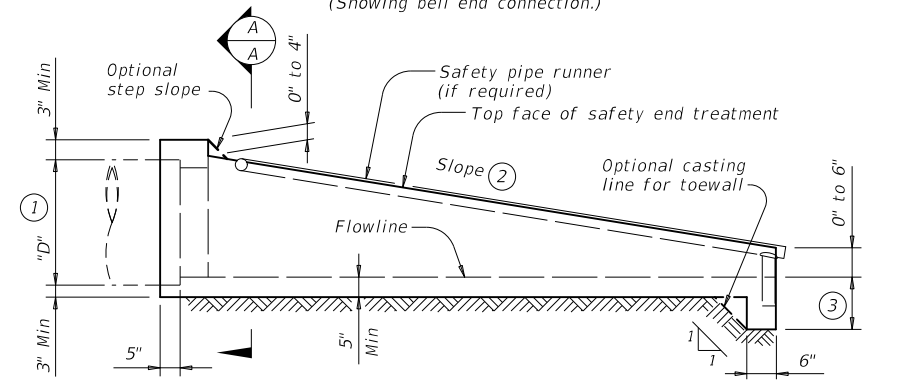
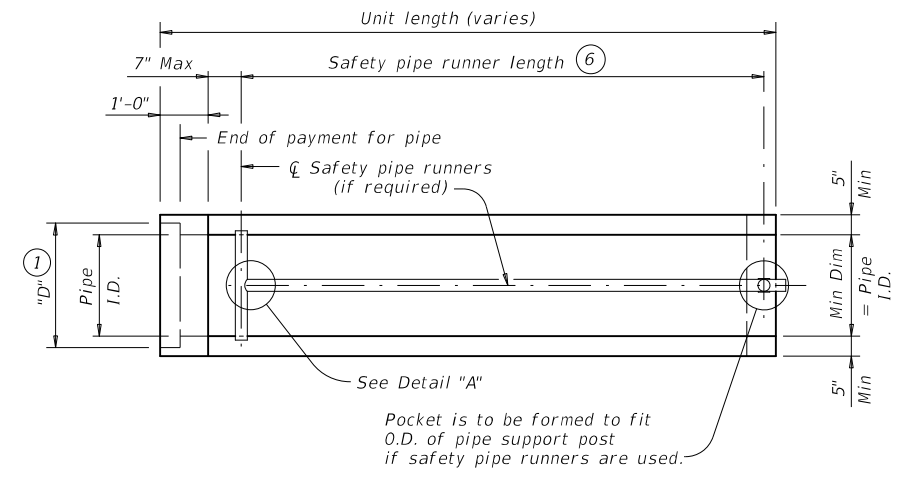
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REVISIONS	0203 05	039	US 69	
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	286	

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REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	RCP Wall "B" Thickness	TP Wall Thickness (8)	"D" (1)	Slope	Min Length of Unit	Single Pipe		Multiple Pipes	
						Skew	Pipe Runners Required	Skew	Pipe Runners Required
12"	2"	1.15"	17.00"	3:1	2' - 11"	≤ 45°	No	≤ 45°	No
				4:1	3' - 6"				
				6:1	4' - 9"				
15"	2 1/4"	1.30"	20.50"	3:1	3' - 8"	≤ 45°	No	≤ 45°	No
				4:1	4' - 7"				
				6:1	6' - 5"				
18"	2 1/2"	1.60"	24.00"	3:1	4' - 6"	≤ 45°	No	≤ 45°	No
				4:1	5' - 8"				
				6:1	8' - 0"				
24"	3"	1.95"	31.00"	3:1	6' - 2"	≤ 45°	No	= 30°	No
				4:1	7' - 10"				
				6:1	11' - 3"				
30"	3 1/2"	2.65"	38.50"	3:1	7' - 10"	= 15°	No	= 15°	No
				4:1	10' - 1"				
				6:1	14' - 8"				
36"	4"	2.75"	45.50"	3:1	9' - 5"	= 0°	No	= 0°	Yes
				4:1	12' - 3"				
				6:1	17' - 11"				
42"	4 1/2"	2.7"	52.50"	3:1	11' - 1"	= 0°	Yes	= 0°	Yes
				4:1	14' - 5"				
				6:1	21' - 2"				



SAFETY PIPE RUNNER DIMENSIONS

Max Safety Pipe Runner Length	Required Pipe Runner Size		
	Pipe Size	Pipe O.D.	Pipe I.D.
11' - 2"	3" STD	3.500"	3.068"
15' - 6"	3 1/2" STD	4.000"	3.548"
20' - 10"	4" STD	4.500"	4.026"
35' - 4"	5" STD	5.563"	5.047"

- ① Dimension "D" is based on reinforced concrete pipe (RCP) meeting the requirements of ASTM C-76, Class III, (RCP Wall "B" thickness). Adjust "D" for any other wall thickness used. For thermoplastic pipe (TP) take into account the annular space requirements for grouted connections.
- ② Slope as shown elsewhere in plans. Slope of 3:1 or flatter is required for vehicle safety.
- ③ Toewall to be used only when dimension is shown elsewhere in the plans.
- ④ Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item 467, "Safety End Treatment."
- ⑤ Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.
- ⑥ Measured along slope.
- ⑦ Provide cement stabilized bedding and backfill in accordance with the Item 400, "Excavation and Backfill for Structures." Bedding and backfill is considered subsidiary to the Item 467, "Safety End Treatment." When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.
- ⑧ Thermoplastic pipe wall thickness may vary. Adjust accordingly. Thermoplastic pipe requires the safety end treatments to have a bell end for grouted connections.

GENERAL NOTES:
 Precast safety end treatment for reinforced concrete pipe (RCP), and thermoplastic pipe (TP) may be used for TYPE II end treatment as specified in Item "Safety End Treatment."
 When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.
 Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
 Manufacture this product in accordance with Item 467, "Safety End Treatment" except as noted below:
 A. Provide minimum reinforcing of #4 at 6" (Grade 40) or #4 at 9" (Grade 60) each way or 6"x6" - D12 x D12 or 5"x5" - D10 x D10 welded wire reinforcement (WWR).
 B. For precast (steel formed) sections, provide Class "C" concrete (f'c = 3,600 psi).
 At the option and expense of the Contractor, the next larger size of safety end treatment may be furnished as long as the "D" dimension cast is that of the required size of pipe.
 Pipe runners are designed for a traversing load of 1,800 Lbs at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.
 Provide safety pipe runners, cross pipes, pipe support posts, and pipe stubs meeting the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.
 Galvanize all steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.
 Connect RCP using the Optional Joint for RCP detail shown or in accordance with Item 464 "Reinforced Concrete Pipe." Connect TP by grouting. See Pipe and Box Grouted Connections (PBGC) standard for grouted connections with TP and precast safety end treatment.

Bridge Division Standard

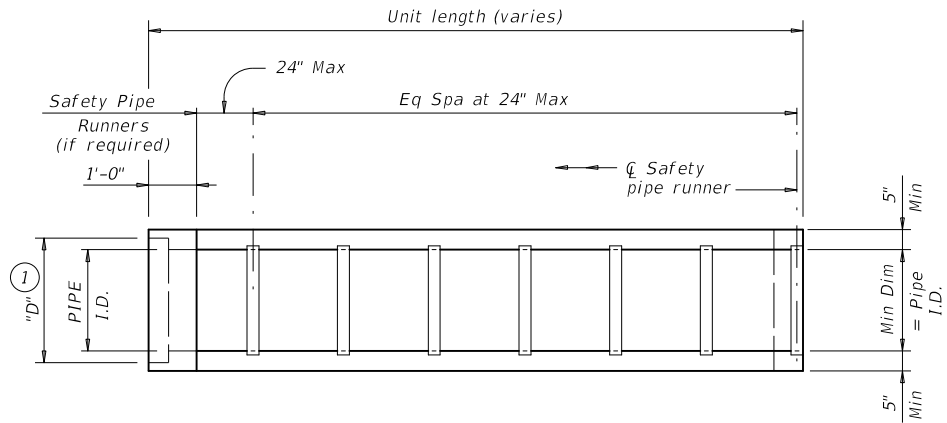
PRECAST SAFETY END TREATMENT TYPE II ~ CROSS DRAINAGE

PSET-SC

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©TxDOT February 2020	CONTRACT	SECTION	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
12-21: Added 42" TP	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	287	

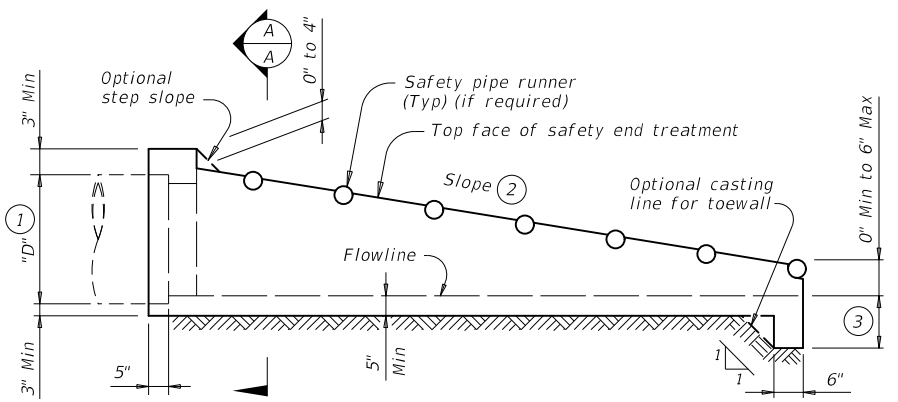
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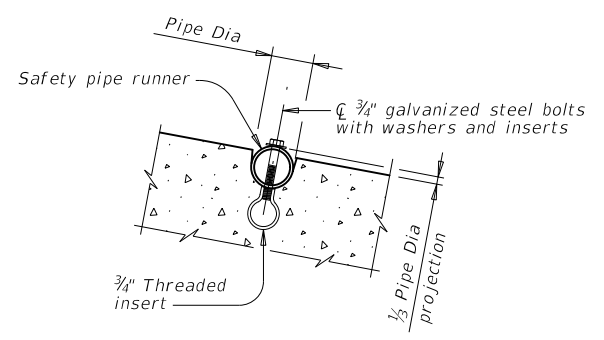
PLAN

(Showing bell end connection.)



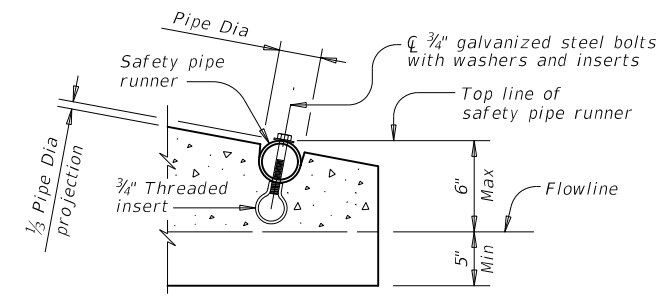
LONGITUDINAL ELEVATION

(Showing bell end connection.)

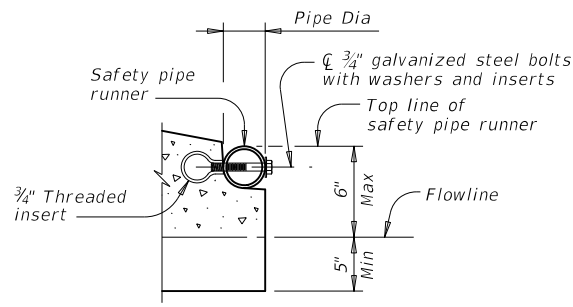


INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(If required)



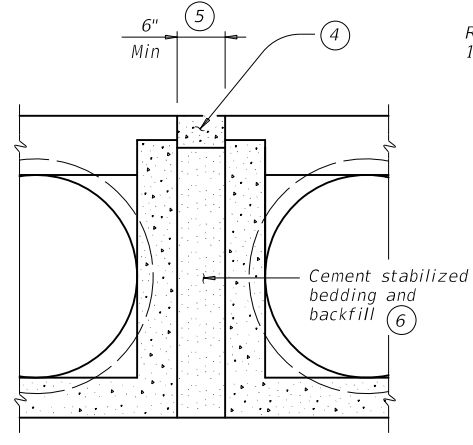
OPTION A



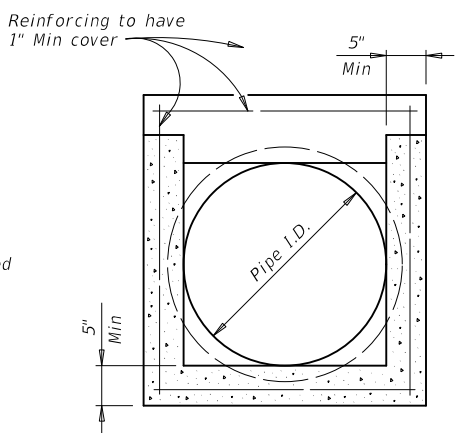
OPTION B

END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS

(If required)

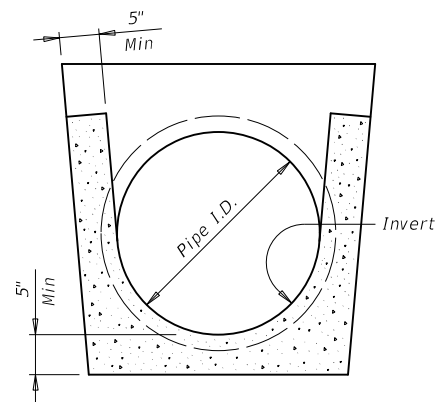


MULTIPLE PIPE INSTALLATION

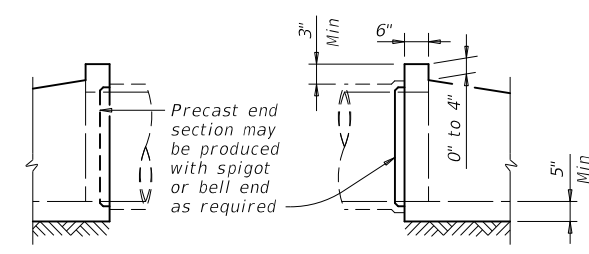


OPTION WITH SQUARE BOTTOM

SECTION A-A



OPTION WITH INVERT BOTTOM



OPTIONAL JOINT FOR RCP

(Showing joint between RCP and precast safety end treatment.)

REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	RCP Wall "B" Thickness	TP Wall Thickness ⑦	"D" ①	Slope	Min Length	Pipe Runners Required		Required Pipe Runner Size		
						Single Pipe	Multiple Pipe	Nominal Dia.	O.D.	I.D.
12"	2"	1.15"	17.00"	6:1	4' - 9"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
15"	2 1/4"	1.30"	20.50"	6:1	6' - 5"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
18"	2 1/2"	1.60"	24.00"	6:1	8' - 0"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
24"	3"	1.95"	31.00"	6:1	11' - 3"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
30"	3 1/2"	2.65"	38.50"	6:1	14' - 8"	No	Yes	4" STD	4.500"	4.026"
36"	4"	2.75"	45.50"	6:1	17' - 11"	Yes	Yes	4" STD	4.500"	4.026"
42"	4 1/2"	2.7"	52.50"	6:1	21' - 2"	Yes	Yes	4" STD	4.500"	4.026"

- ① Dimension "D" is based on reinforced concrete pipe (RCP) meeting the requirements of ASTM C-76, Class III, (RCP Wall "B" thickness). Adjust "D" for any other wall thickness used. For thermoplastic pipe (TP) take into account the annular space requirements for grouted connections.
- ② Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.
- ③ Toewall to be used only when dimension is shown elsewhere in the plans.
- ④ Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item 467, "Safety End Treatment."
- ⑤ Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.
- ⑥ Provide cement stabilized bedding and backfill in accordance with the Item 400, "Excavation and Backfill for Structures." Bedding and backfill is considered subsidiary to the Item 467, "Safety End Treatment." When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.
- ⑦ Thermoplastic pipe wall thickness may vary. Adjust accordingly. Thermoplastic pipe requires the safety end treatments to have a bell end for grouted connections.

GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe (RCP), and thermoplastic pipe (TP) may be used for TYPE II end treatment as specified in Item "Safety End Treatment."

When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Manufacture this product in accordance with Item 467, "Safety End Treatment" except as noted below:

A. Provide minimum reinforcing of #4 at 6" (Grade 40) or #4 at 9" (Grade 60) each way or 6"x6" - D12 x D12 or 5"x5" - D10 x D10 welded wire reinforcement (WWR).

B. For precast (steel formed) sections, provide Class "C" concrete (f'c = 3,600 psi).

At the option and expense of the Contractor the next larger size of safety end treatment may be furnished; as long as the "D" dimension cast is that of the required size of pipe.

Pipe runners are designed for a traversing load of 10,000 Lbs at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Provide pipe runners meeting the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Galvanize all steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

Connect RCP using the Optional Joint for RCP detail shown or in accordance with Item 464, "Reinforced Concrete Pipe." Connect TP by grouting. See Pipe and Box Grouted Connections (PBGC) standard for grouted connections with TP and precast safety end treatment.

Texas Department of Transportation
 Bridge Division Standard

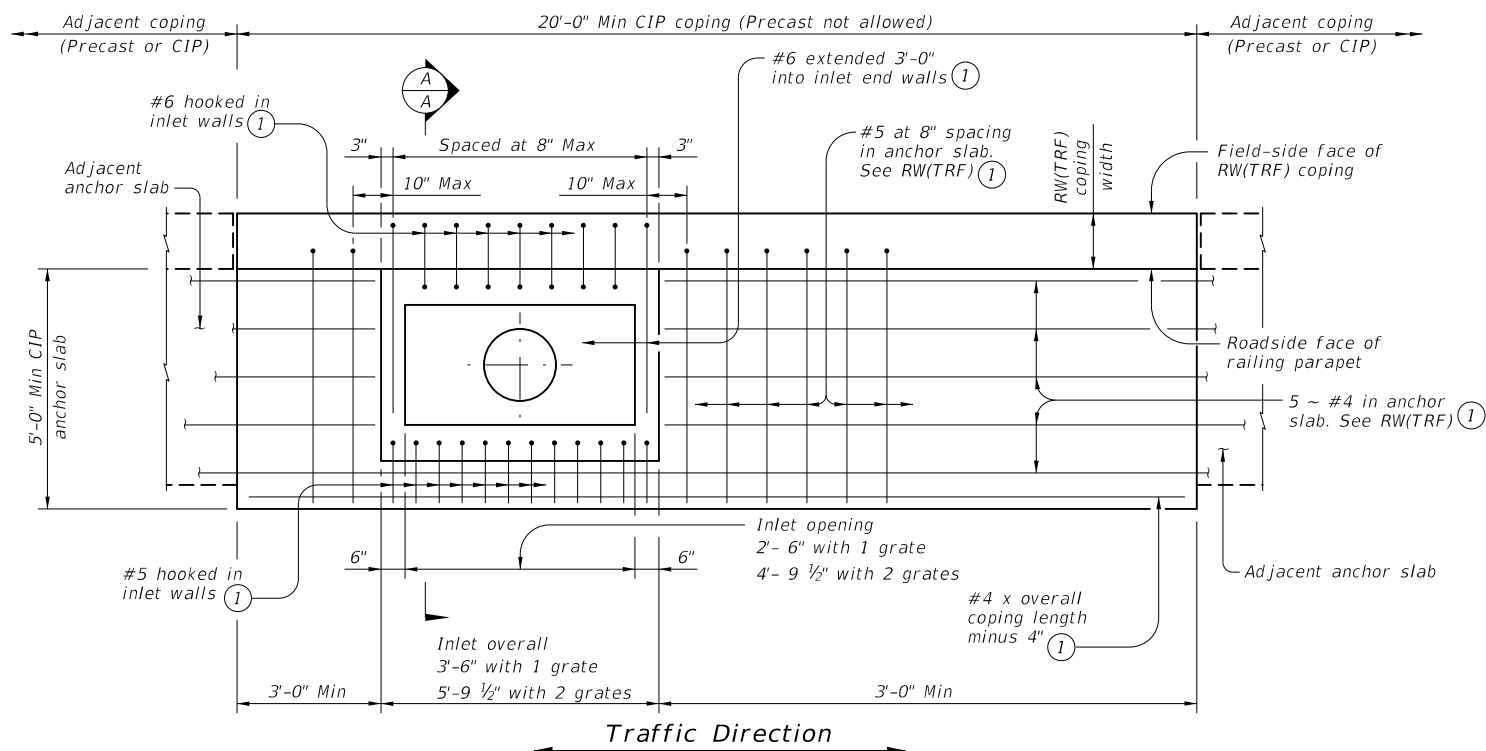
PRECAST SAFETY END TREATMENT TYPE II ~ PARALLEL DRAINAGE

PSET-SP

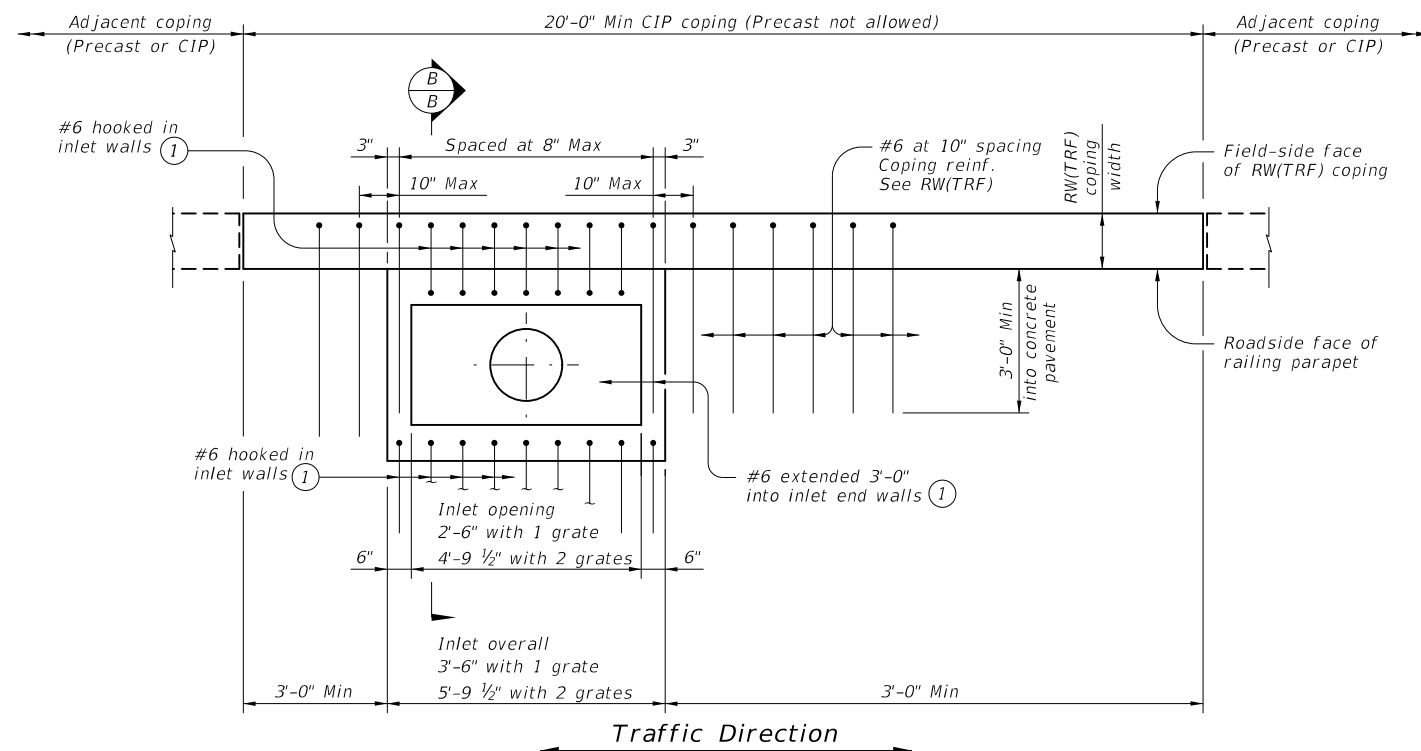
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©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
12-21: Added 42" TP	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	289	

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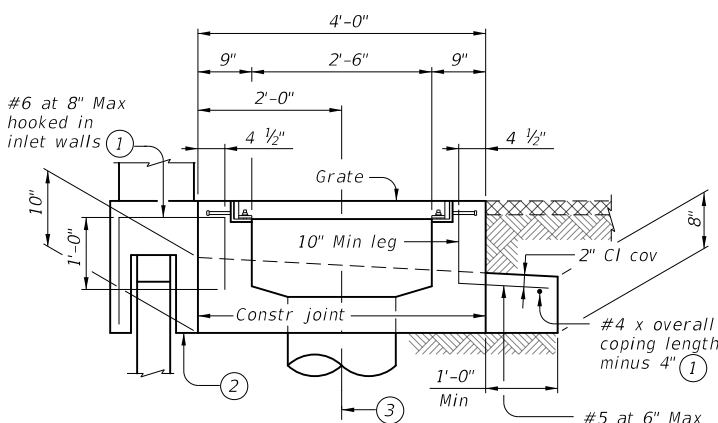
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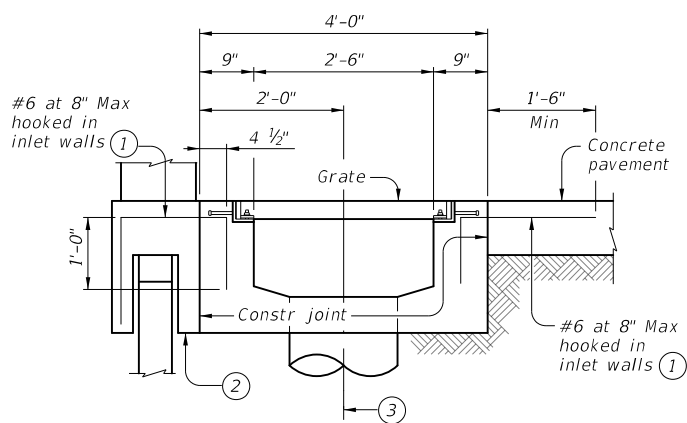
**PLAN WITH ANCHOR SLAB
(ADJACENT TO ACP)**
(Frame and grate[s] not shown for clarity.)



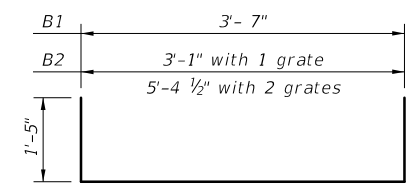
**PLAN WITHOUT ANCHOR SLAB
(ADJACENT TO CONCRETE PAVEMENT)**
(Frame and grate[s] not shown for clarity.)



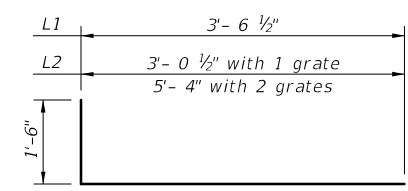
SECTION A-A
(Only showing reinforcement connecting inlet.)



SECTION B-B
(Only showing reinforcement connecting inlet.)

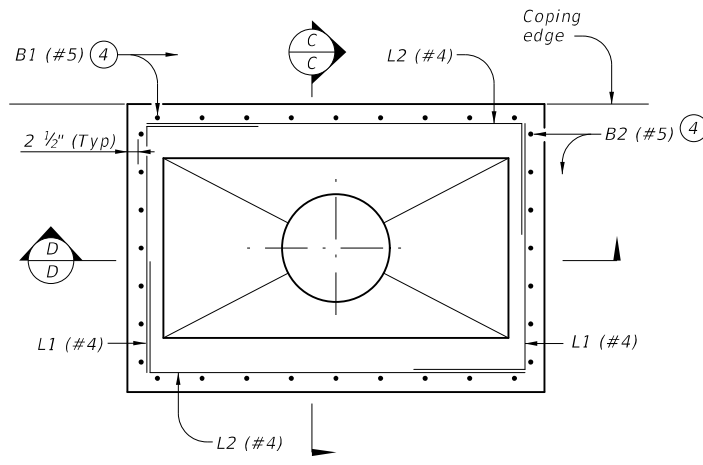


BARS B (#5)

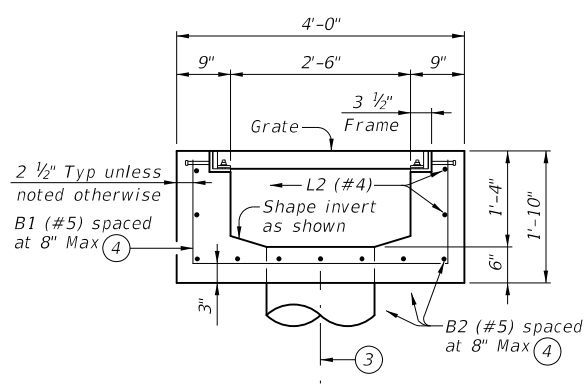


BARS L (#4)

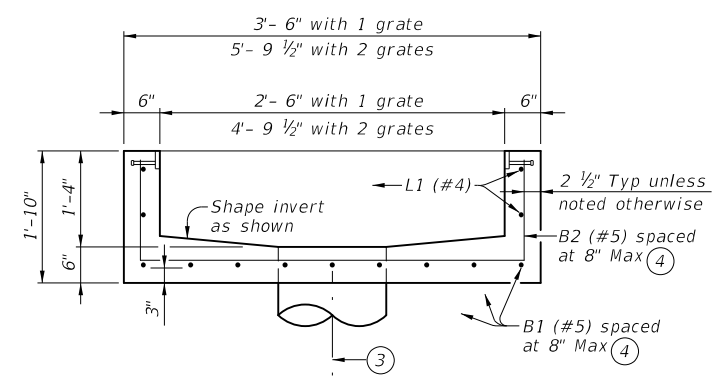
- ① Reinforcement considered part of retaining wall coping and is subsidiary to Item 423, "Retaining Walls."
- ② Coping against inlet must extend to bottom of inlet or lower.
- ③ ϕ 12 inch diameter or 18 inch diameter pipe, straight drop. See details elsewhere for size and location.
- ④ Cut or bend to clear pipe.



PLAN OF INLET
(Showing inlet reinforcing.)



SECTION C-C



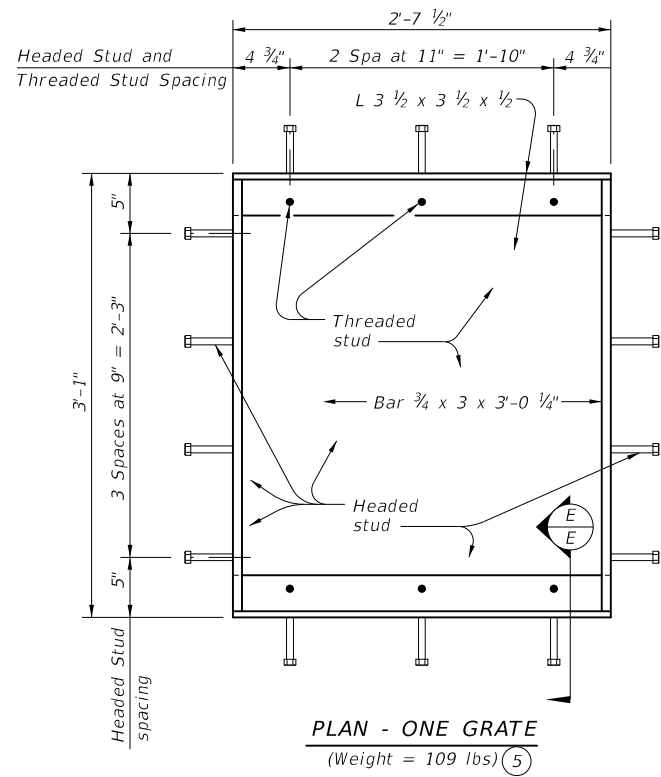
SECTION D-D

**ROADWAY INLET
FOR MSE RETAINING WALL
TRAFFIC RAIL FOUNDATION**

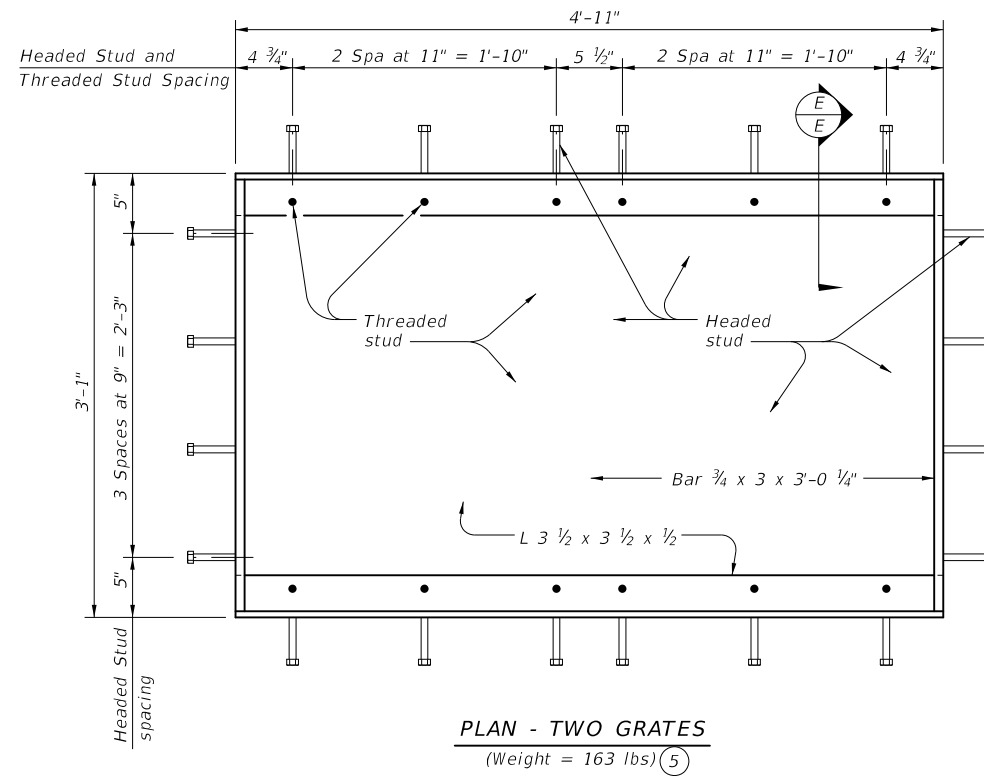
RW(RI)

FILE: RW-RI-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT June 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	291	

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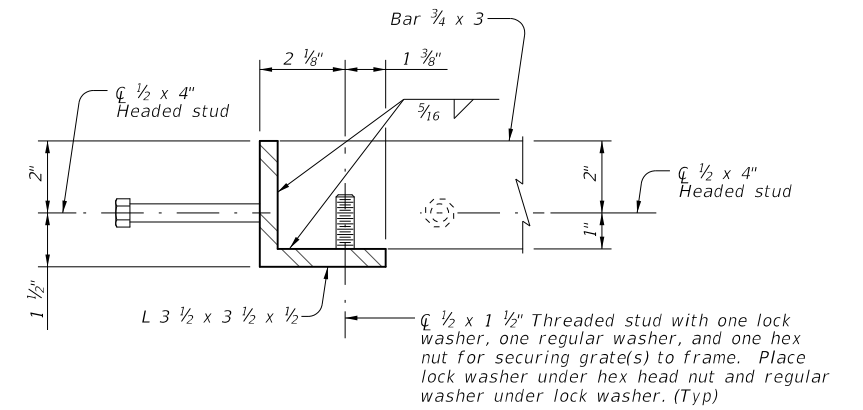


PLAN - ONE GRATE
(Weight = 109 lbs) (5)



PLAN - TWO GRATES
(Weight = 163 lbs) (5)

FRAME DETAILS



SECTION E-E

FABRICATION NOTES:

Assemble grate in shop to ensure fit in field.
Electric-arc end weld all headed and threaded studs to frame with complete fusion.

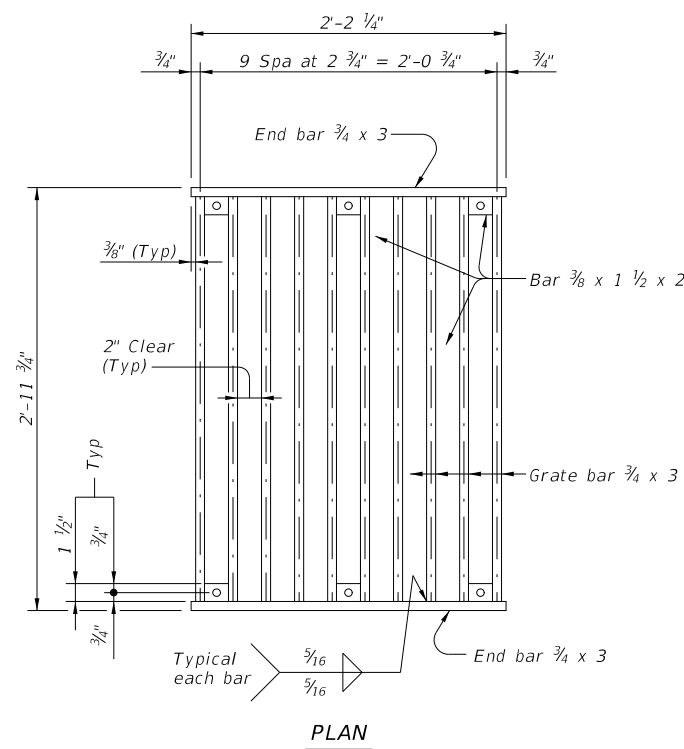
MATERIAL NOTES:

Provide Class C concrete ($f'c = 3,600$ psi.)
Provide Grade 60 reinforcing steel.
Provide A572 Grade 50 or A709 Grade 50 steel for grate and frame.
Galvanize grate, frame, nuts, and washers in accordance with Item 445, "Galvanizing."

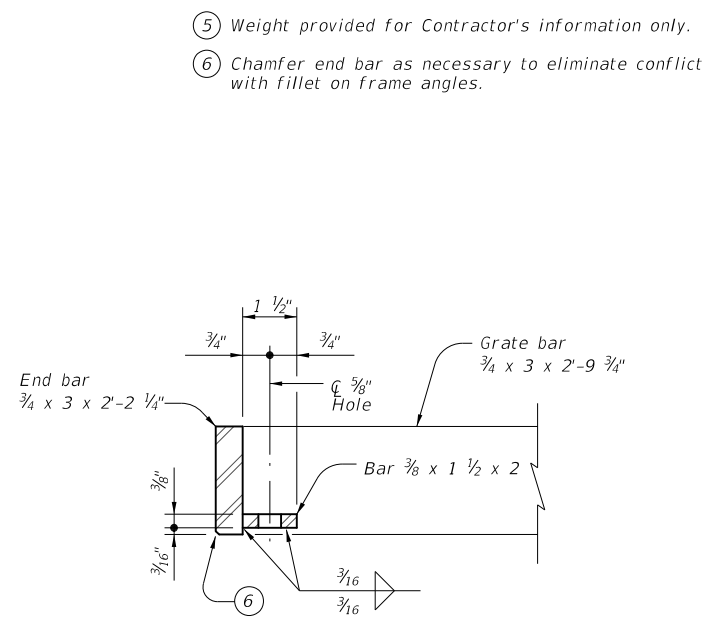
GENERAL NOTES:

Designed in accordance with AASHTO LRFD Bridge Design Specifications.
The inlets shown are intended for use as roadway inlets adjacent to traffic rail foundations placed on mechanically stabilized earth (MSE) retaining walls. See Retaining Wall Traffic Railing Foundations (RW/TRF) standard for details not shown.
These details must be used in conjunction with the RW/TRF standard to develop specific details for submission with the shop drawings. The steel reinforcement shown is specifically for roadway inlet.
Payment for inlets shown on this standard, including frame and grates, will be in accordance with Item 465, "Junction Boxes, Manholes, and Inlets" by the following types:
Inlet (Complete) (Type MSE1) for one grate inlets
Inlet (Complete) (Type MSE2) for two grate inlets

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.



PLAN



SECTION THROUGH END

GRATE DETAILS

(Weight of one grate = 251 lbs) (5)

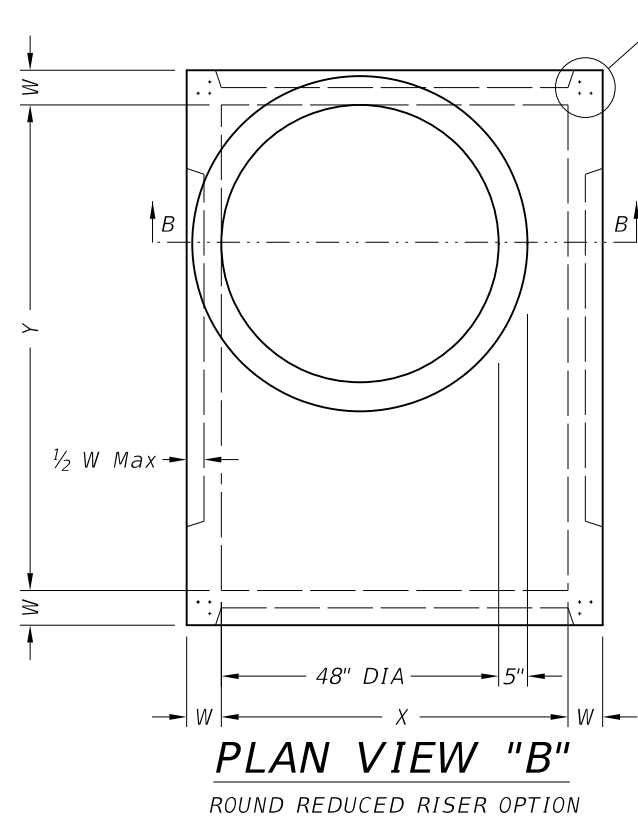
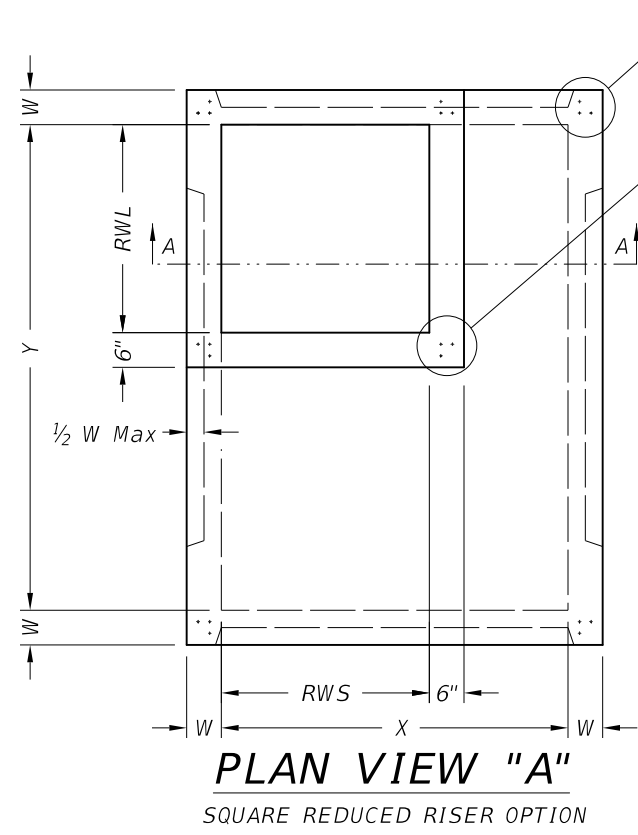
- (5) Weight provided for Contractor's information only.
- (6) Chamfer end bar as necessary to eliminate conflict with fillet on frame angles.

HL93 LOADING SHEET 2 OF 2

		Bridge Division Standard	
ROADWAY INLET FOR MSE RETAINING WALL TRAFFIC RAIL FOUNDATION			
RW(RI)			
FILE: RW-RI-22.dgn	DN: TXDOT	CK: TXDOT	DW: TXDOT
CT: TXDOT	CON: 0203	SECT: 05	JOB: 039
REVISIONS	DIST: TYL	COUNTY: WOOD	HIGHWAY: US 69
			SHEET NO: 292

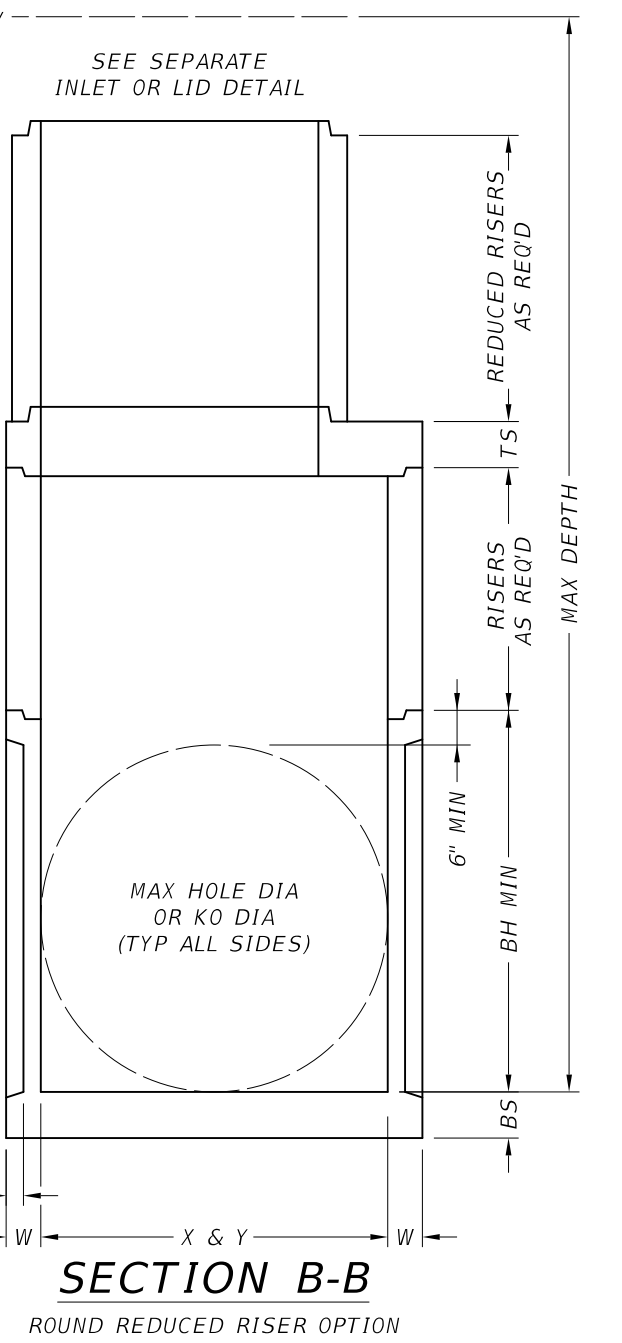
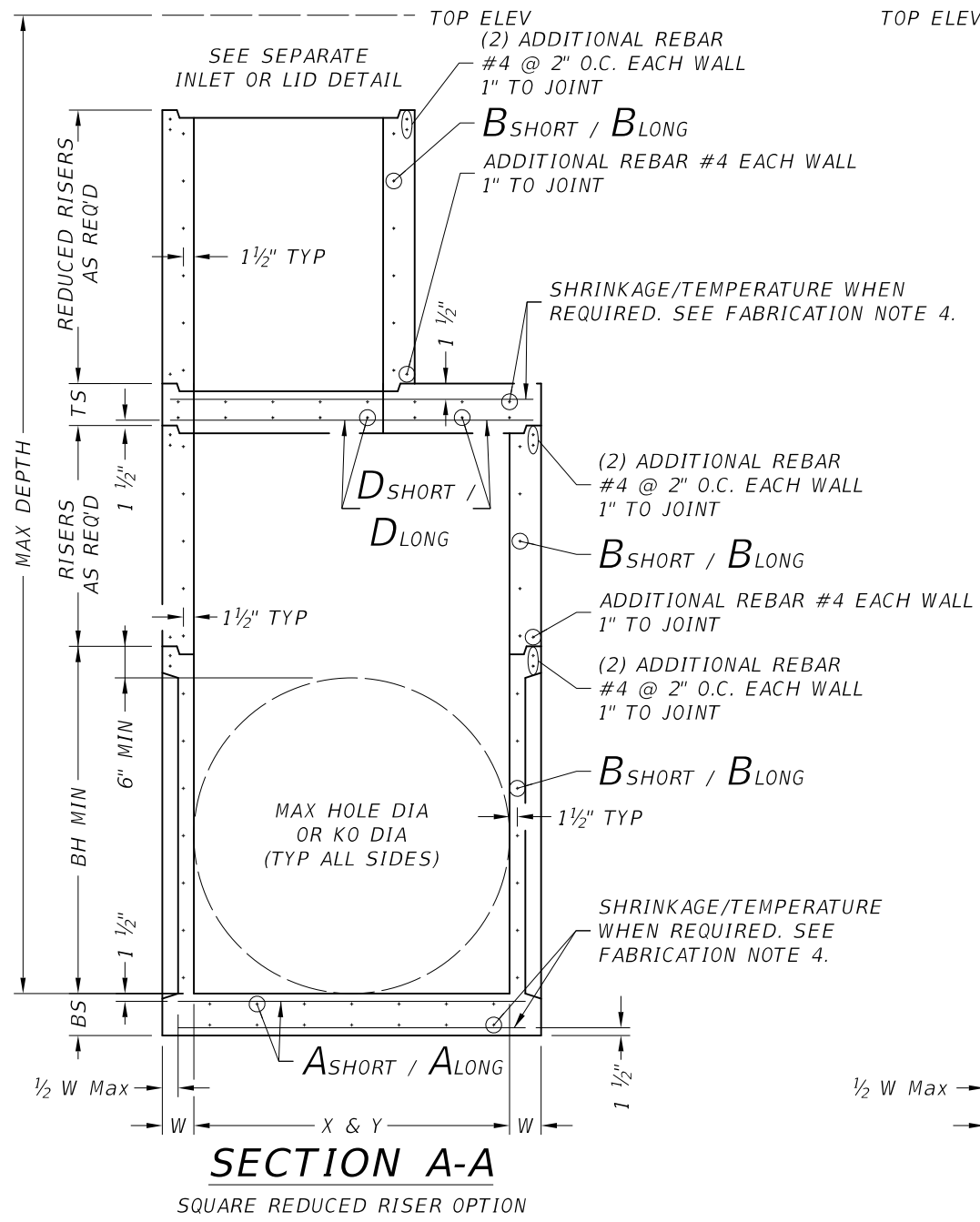
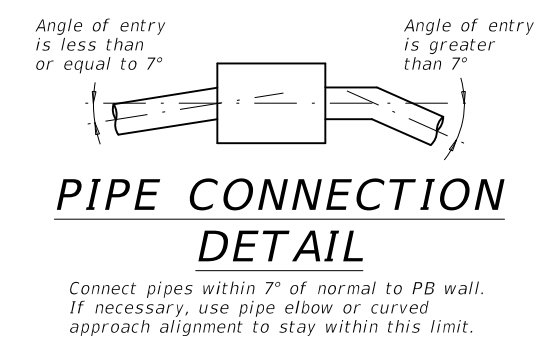
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C (3) VERTICAL REBAR IN BASE & RISERS
 #4 @ 2" O.C. EACH CORNER
 2" TO CORNER

F (3) VERTICAL REBAR IN REDUCED RISERS
 #4 @ 2" O.C. EACH CORNER
 2" TO CORNER



FABRICATION NOTES:

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 1/2" to reinforcing steel at interior or exterior walls.
4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in²/ft each way.
5. No substitution is allowed for vertical and horizontal #4 bars in corners.
6. Manufacture base and risers to nearest 3" increment.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.

INSTALLATION NOTES:

1. If required elsewhere. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to specified inlet or manhole.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max, 2" Min larger than pipe OD.
5. For flexible pipe, consult boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/seal per Manufacturer's specification.

GENERAL NOTES:

1. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PDD for sizes.
2. Designed according to ASTM C913.
3. Payment for precast base is subsidiary to the specified inlet, per Item 465, "Junction Boxes, Manholes, and Inlets."

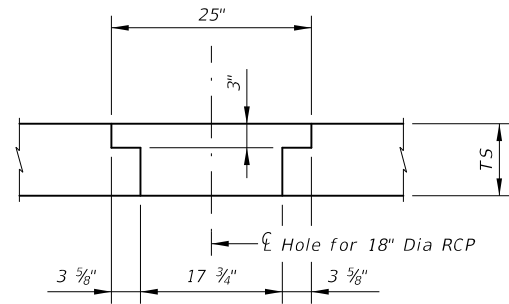
Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING		Texas Department of Transportation		Bridge Division Standard
PRECAST BASE				
PB				
FILE: CD-PB-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	293	

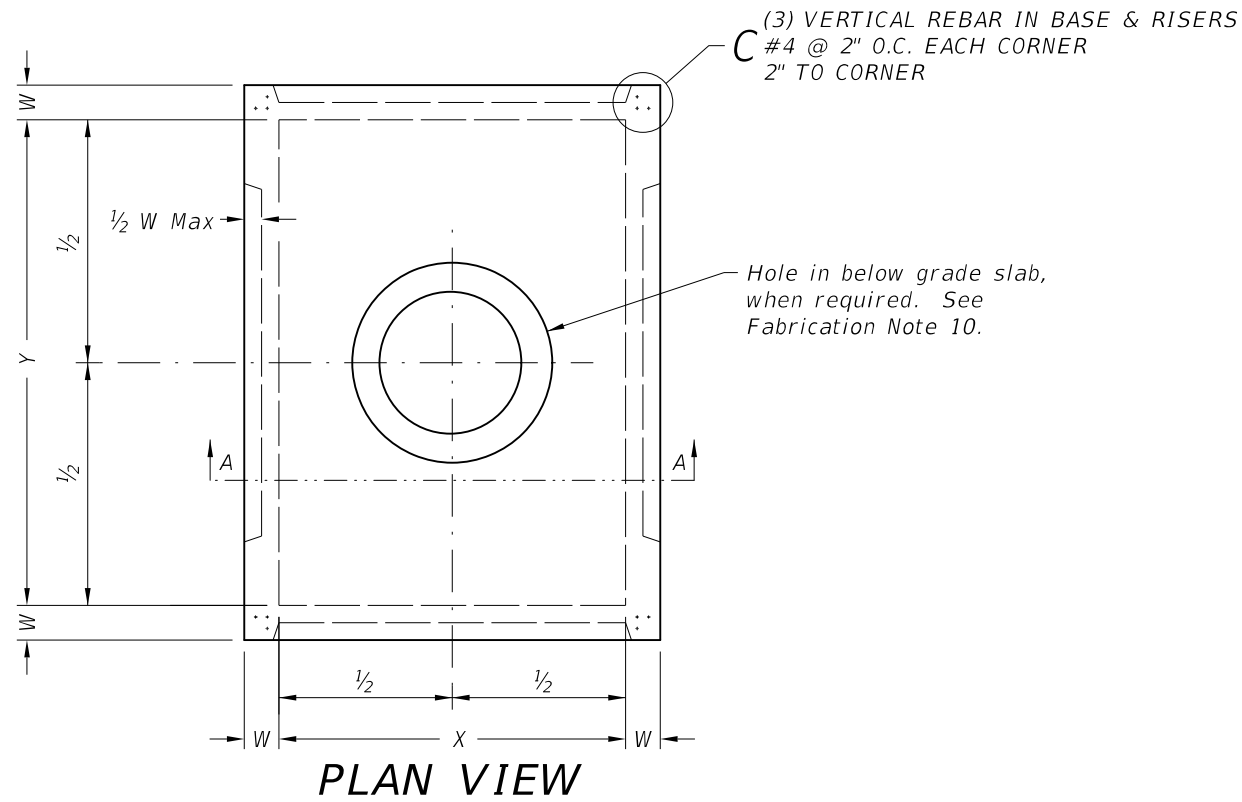
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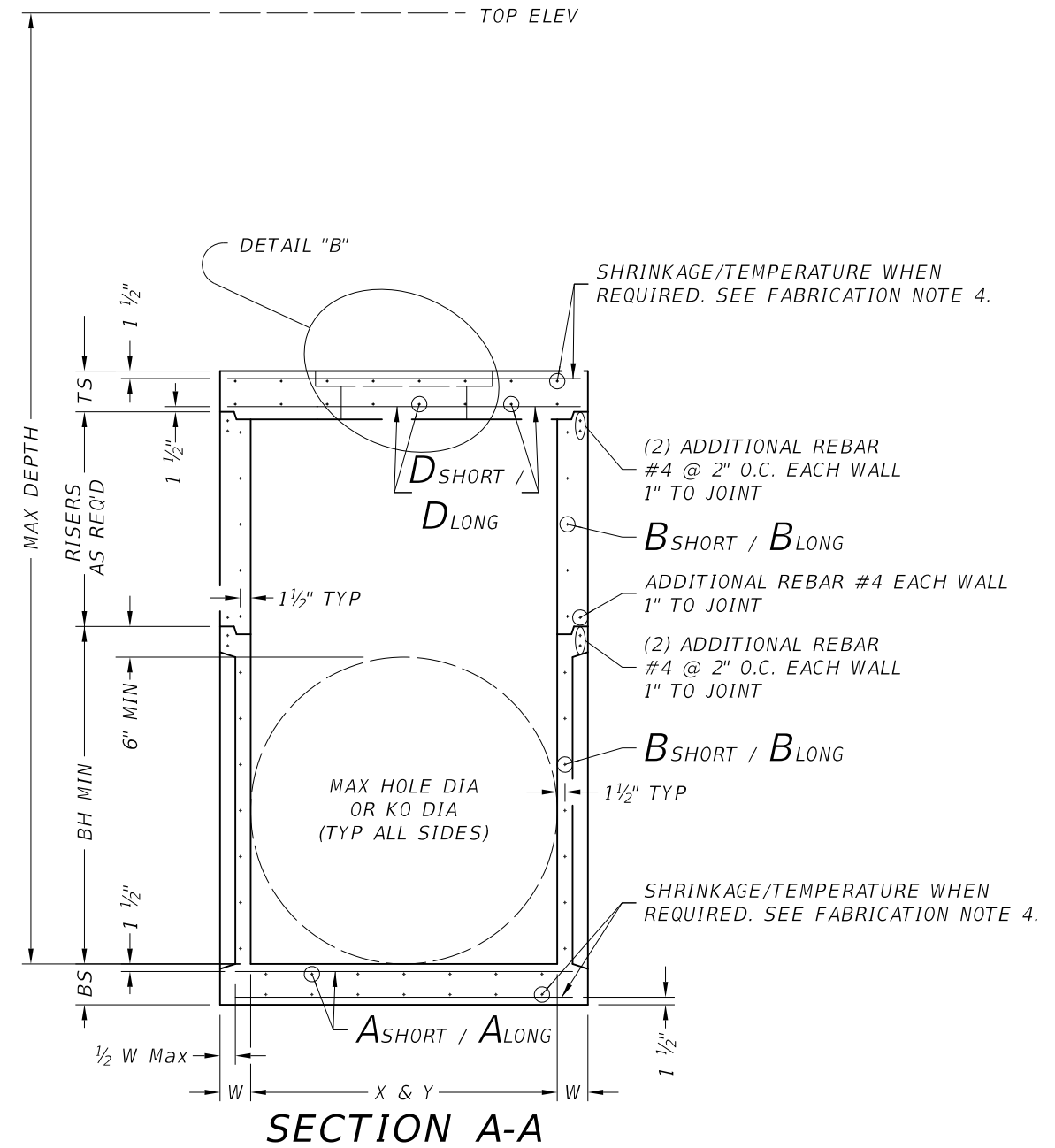
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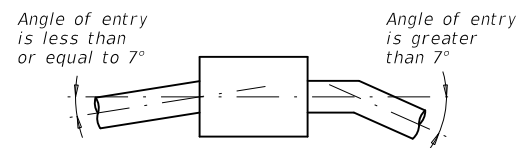
DETAIL "B"



PLAN VIEW



SECTION A-A



PIPE CONNECTION DETAIL

Connect pipes within 7° of normal to PJB wall. If necessary, use pipe elbow or curved approach alignment to stay within this limit.

FABRICATION NOTES:

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 1/2" to reinforcing steel at interior or exterior walls.
4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in²/ft each way.
5. No substitution is allowed for vertical and horizontal #4 bars in corners.
6. Manufacture base and risers to nearest 3" increment.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.
10. Provide hole in below grade slab only when PJB is installed with inlet type POD.

INSTALLATION NOTES:

1. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to junction box.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max, 2" Min larger than pipe OD.
5. For flexible pipe, consult boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/seal per Manufacturer's specification.

GENERAL NOTES:

1. Precast Junction Box consists of base slab, base unit, risers (as required), and below grade slab. See sheet PDD for sizes.
2. Designed according to ASTM C913.
3. Payment for junction box is per Item 465 "Junction Boxes, Manholes, and Inlets" by type and size.

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

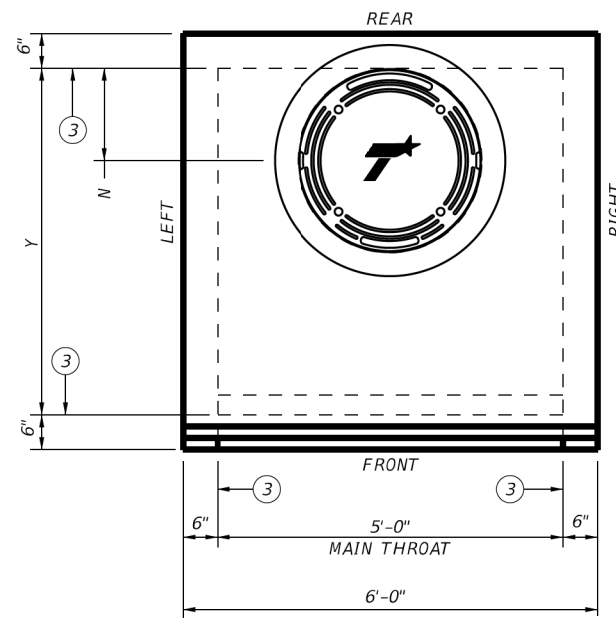


PRECAST JUNCTION BOX

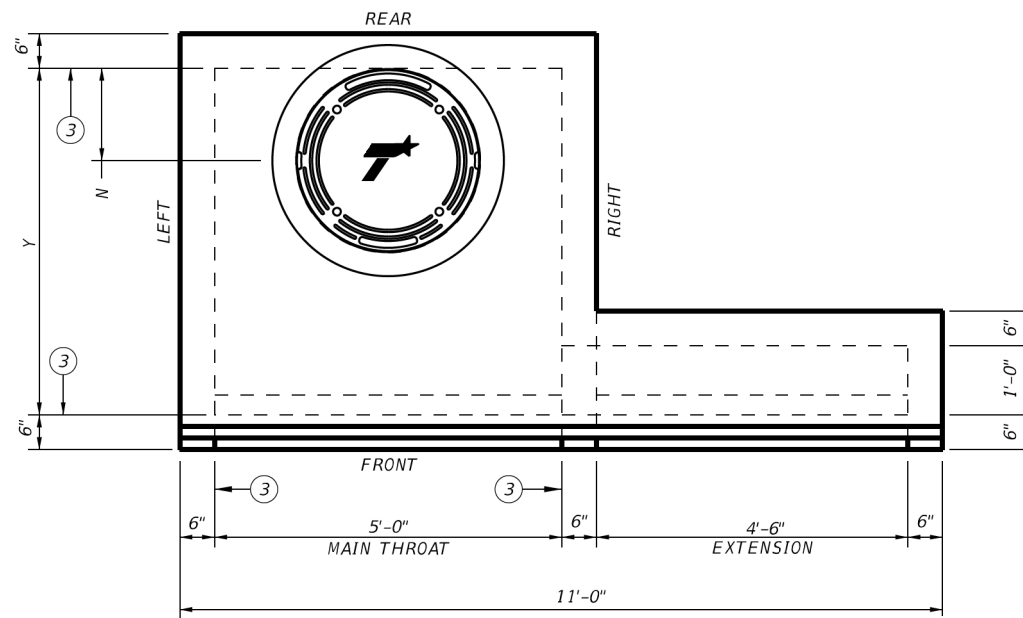
PJB

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©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
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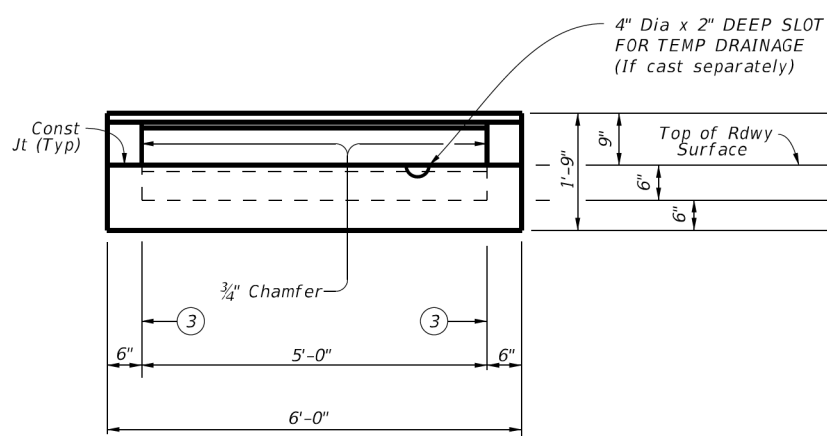
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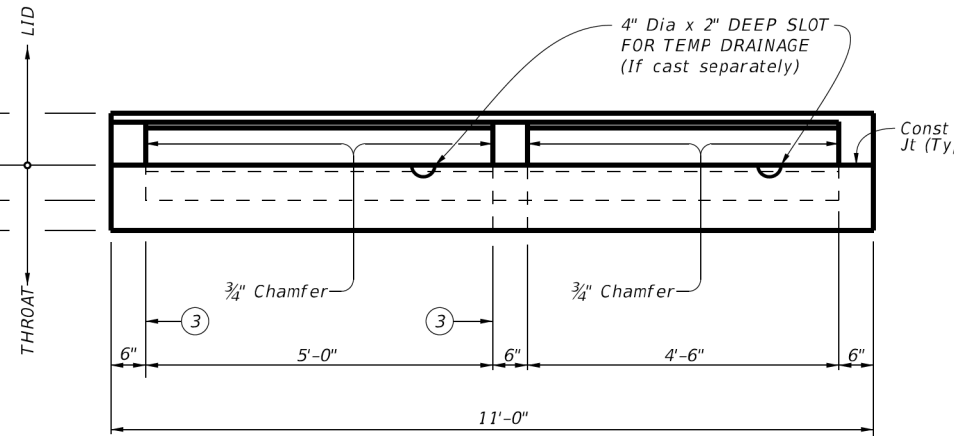
PLAN VIEW
 (WITHOUT EXTENSIONS)
 See SHEET 3 OF 6 for details



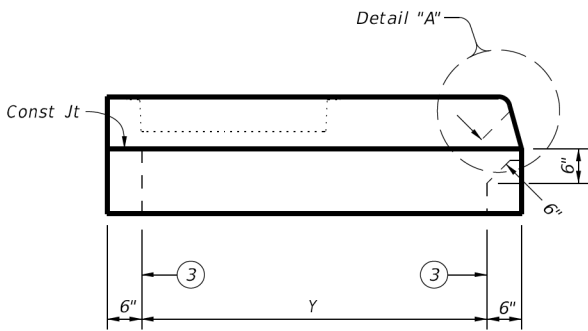
PLAN VIEW
 (SHOWING ONE EXTENSION)
 See SHEET 4 OF 6 for details



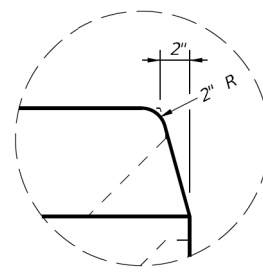
FRONT VIEW
 (WITHOUT EXTENSIONS)
 See SHEET 3 OF 6 for details



FRONT VIEW
 (SHOWING ONE EXTENSION)
 See SHEET 4 OF 6 for details



LEFT SIDE VIEW
 (Extensions not shown)



DETAIL "A"

Size (Y)	N	MH dia
3'	9"	18"
4'	16"	32"
5'	16"	32"
6'	16"	32"



R.D. Owens

11/21/2019

BAR TABLE	
BAR	SIZE
A1	#3
A2	#3
A3	#3
A4	#3
B1	#4
B2	#4
B3	#4
C	#4
G	#4
L	#5
Ra	#5
U1	#5
U2	#5

- ① Reinforcing bar used only with extension(s).
- ② Nominal ring and cover size.
- ③ Matches inside face of wall of precast base or riser below inlet.

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications, 7th Edition (2014), with interims.
 Inlet throat and lid are not intended for direct traffic. Do not place in roadway.
 Lid and throat may be cast monolithically or separately.
 Extensions may be right, left, both, or none. Provide extensions as specified elsewhere in the plans.
 Open area of main throat = 360 sq. in.
 Open area of extension throat = 324 sq. in.

MATERIAL NOTES:
 Provide Class "C" concrete ($f'_c = 3,600$ psi).
 Provide Grade 60 reinforcing steel or equivalent area of WWR.
 Payment for inlet is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, size, and extension placement. Extensions are subsidiary to inlet.

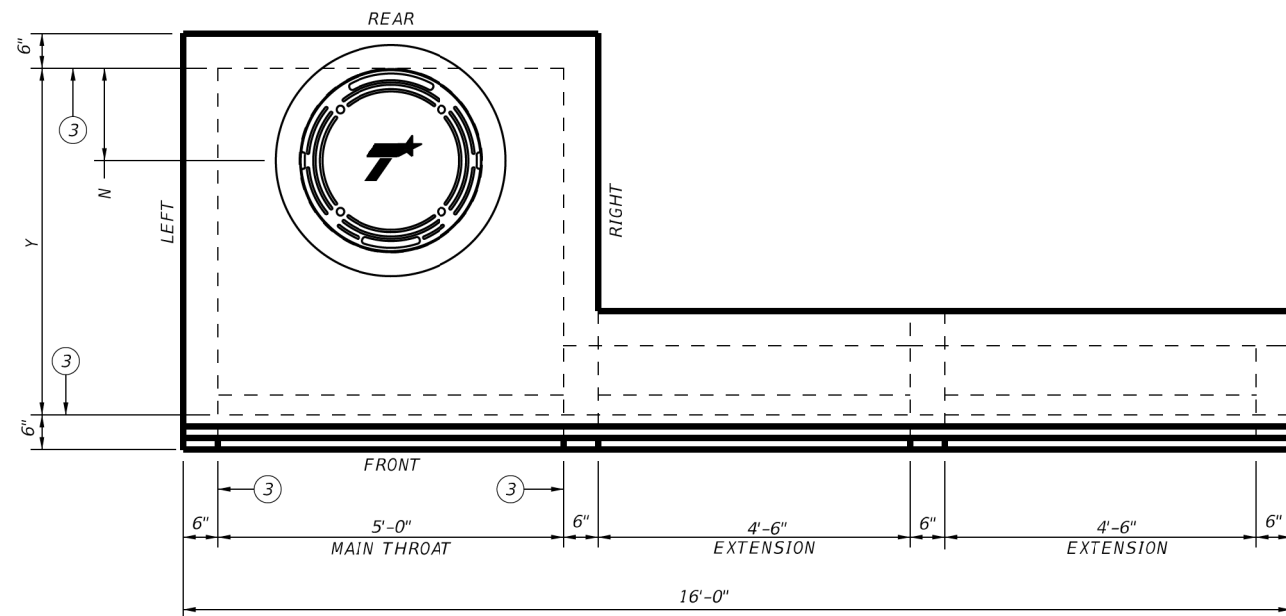
Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.

Maintain 1 1/2" clear cover to ends of all vertical reinforcing bars, unless otherwise noted.

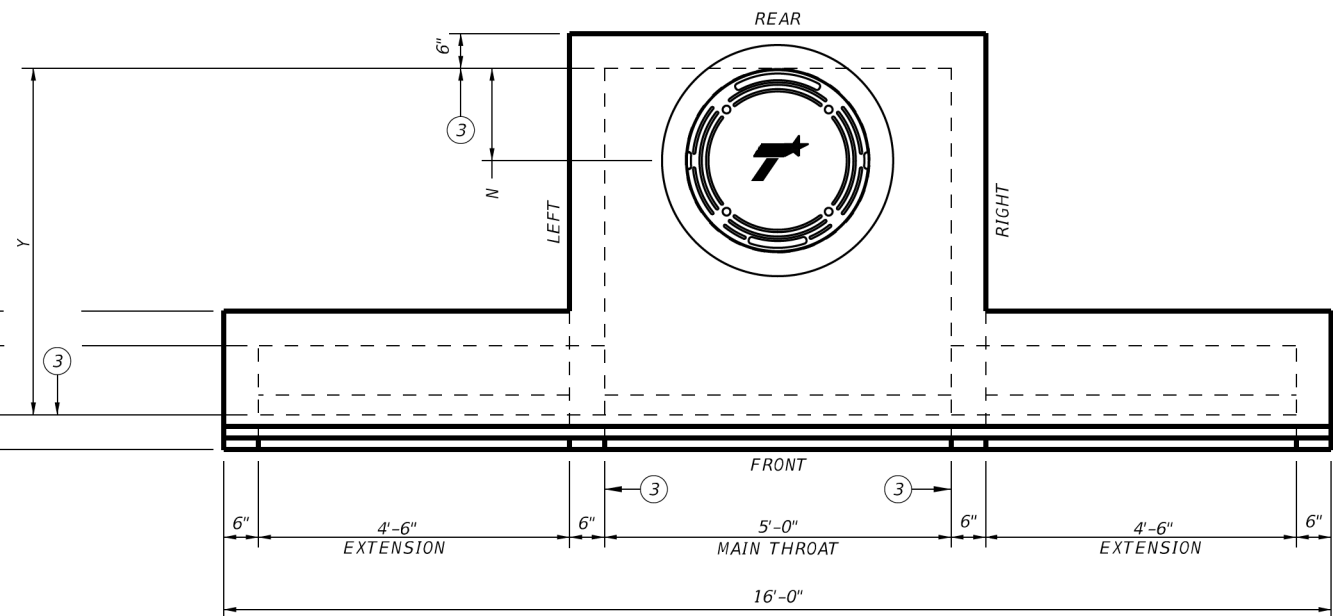
SHEET 1 OF 6

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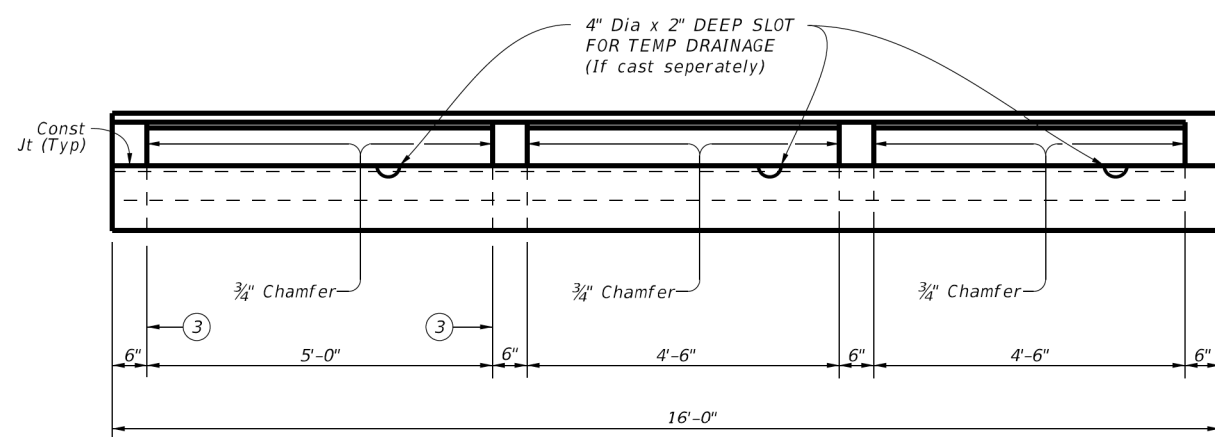
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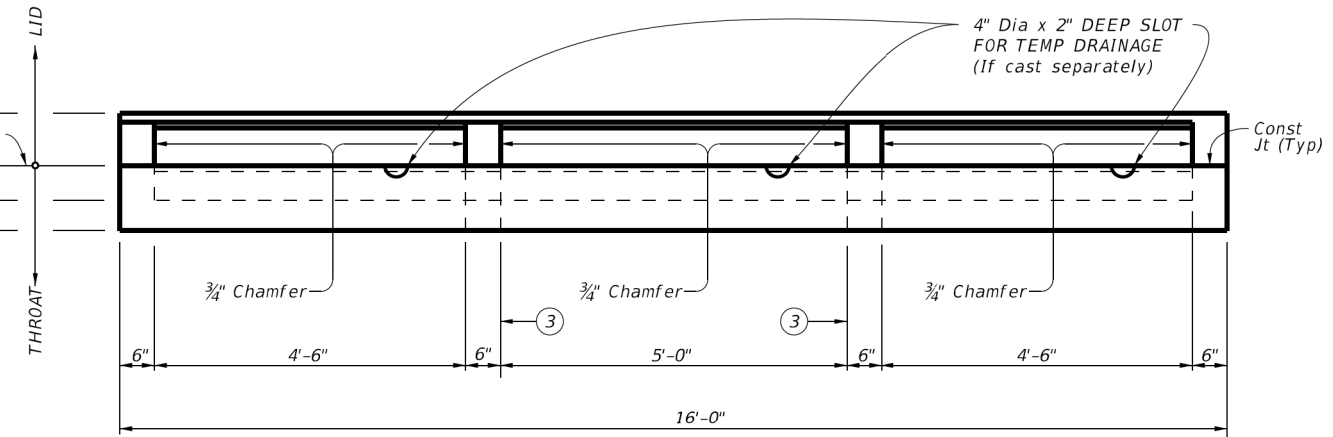
PLAN VIEW
 (SHOWING CONSECUTIVE EXTENSIONS)
 See SHEET 5 OF 6 for details



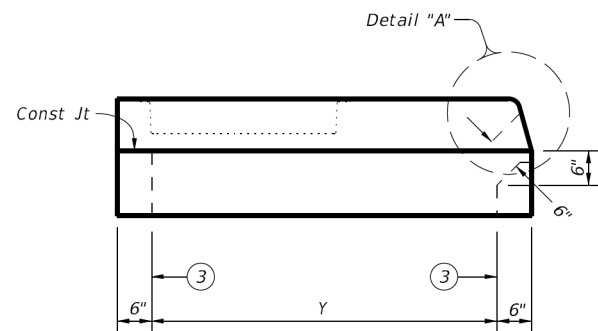
PLAN VIEW
 (SHOWING EXTENSION ON EACH SIDE)
 See SHEET 6 OF 6 for details



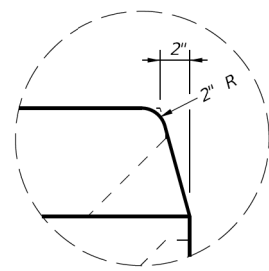
FRONT VIEW
 (SHOWING CONSECUTIVE EXTENSIONS)
 See SHEET 5 OF 6 for details



FRONT VIEW
 (SHOWING EXTENSION ON EACH SIDE)
 See SHEET 6 OF 6 for details



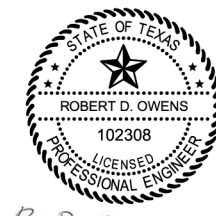
LEFT SIDE VIEW
 (Extensions not shown)



DETAIL "A"

- ② Nominal ring and cover size.
- ③ Matches inside face of wall of precast base or riser below inlet.

Size (Y)	N	MH dia
3'	9"	18" ②
4'	16"	32"
5'	16"	32"
6'	16"	32"

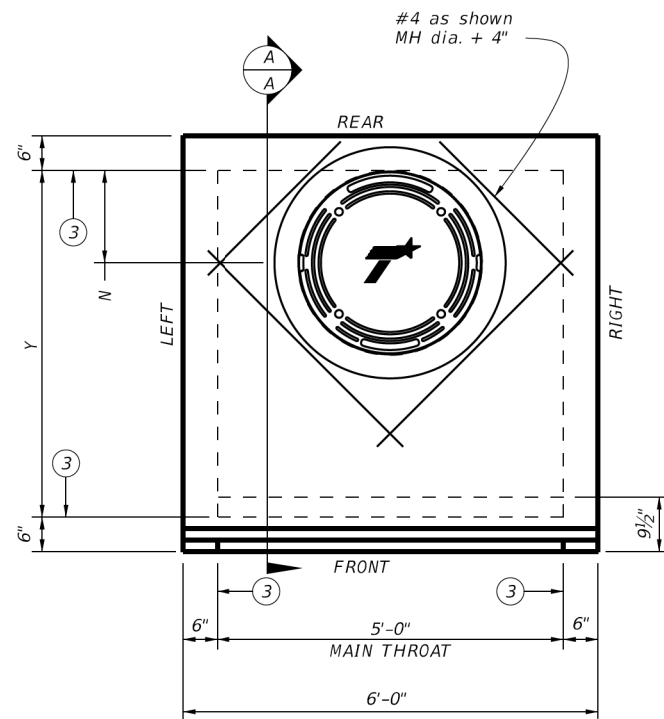


R.D. Owens

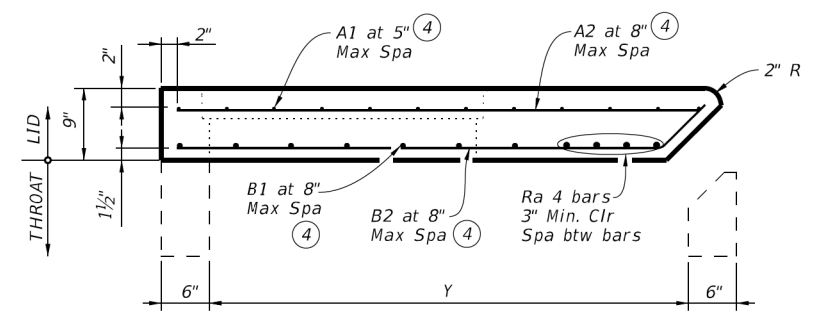
11/21/2019

		Bridge Division	
CAST-IN-PLACE CURB INLET DETAILS			
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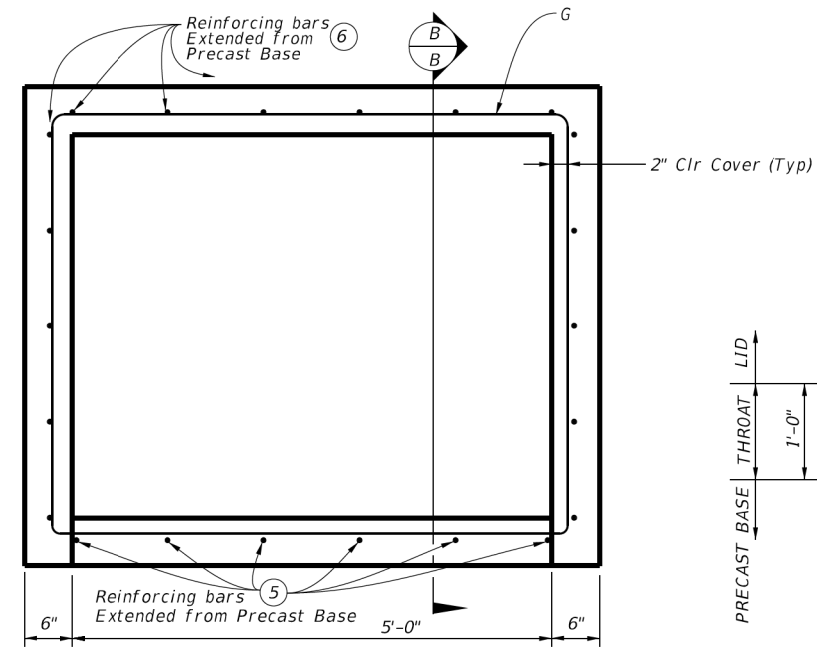
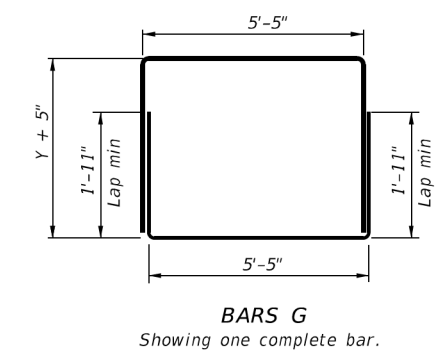
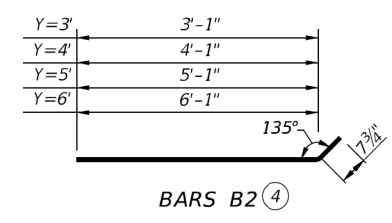
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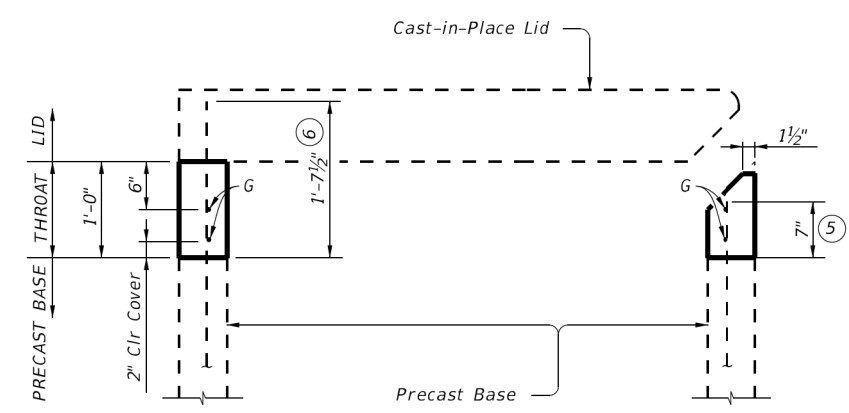
LID PLAN VIEW
 (WITHOUT EXTENSIONS)



LID SECTION A-A

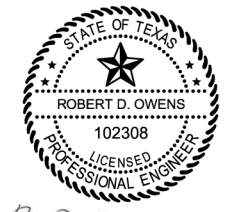


THROAT PLAN VIEW
 (WITHOUT EXTENSIONS)



THROAT SECTION B-B
 (SHOWING REINFORCING BAR EXTENDED FROM PRECAST BASE)

- ③ Matches inside face of wall of precast base or riser below inlet.
- ④ Cut reinforcing bars as needed to provide 1 1/2" clear to manhole.
- ⑤ Extend reinforcing bars from precast base 7".
- ⑥ Extend reinforcing bars from precast base 1'-7 1/2".

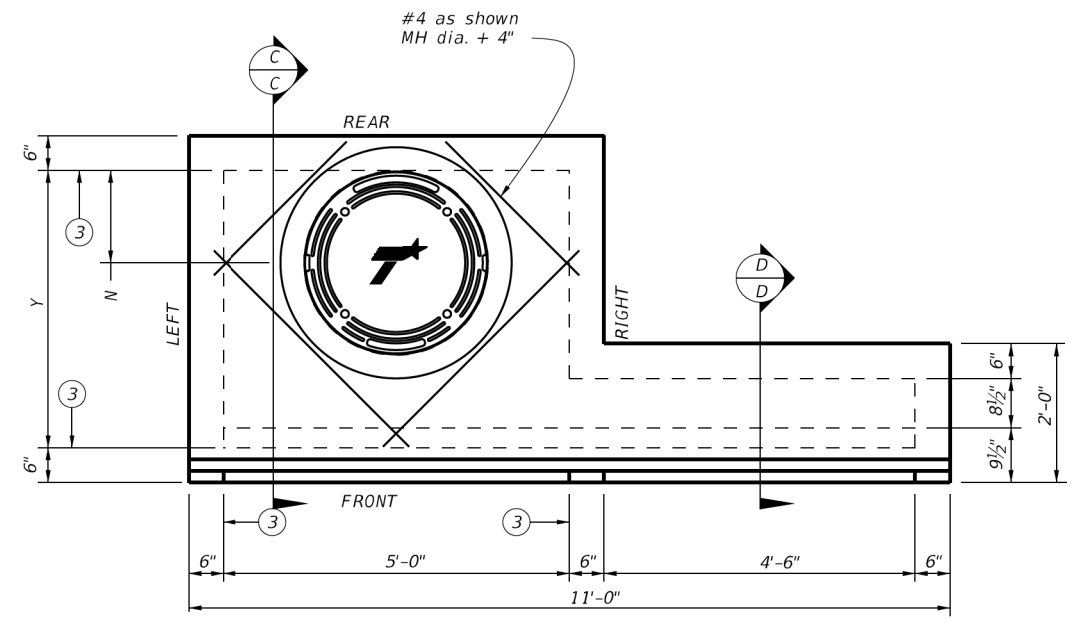


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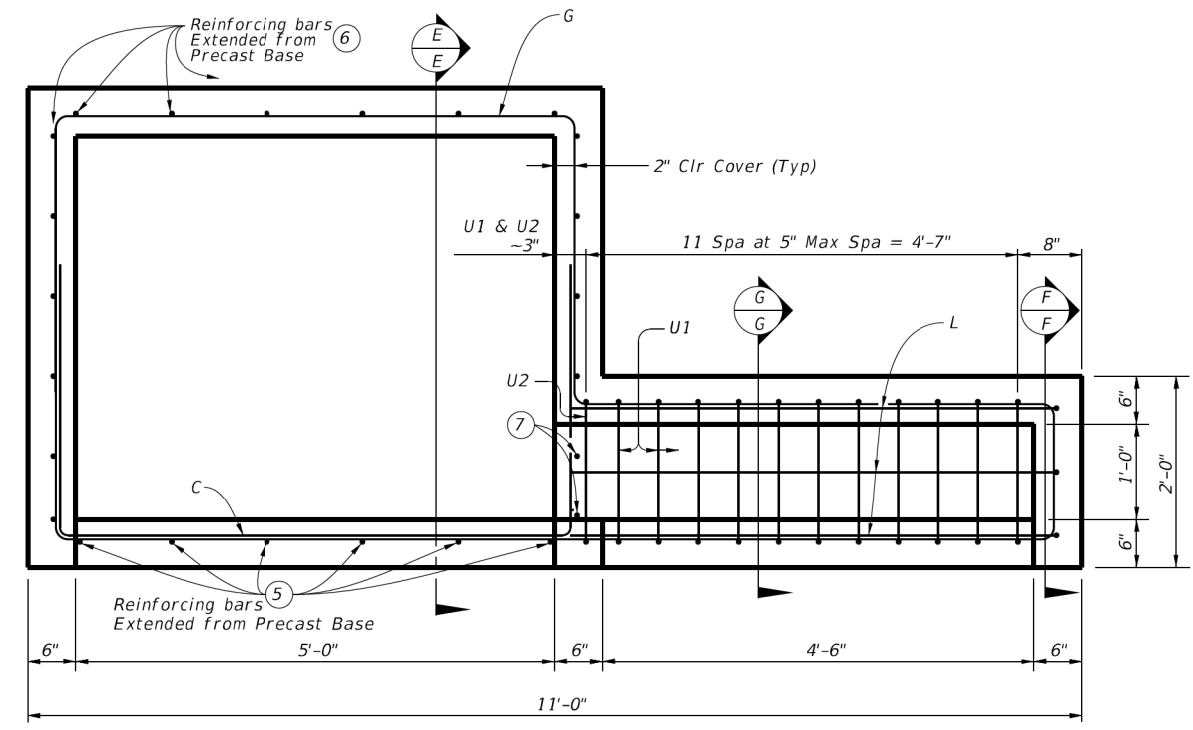
11/21/2019

		Bridge Division	
CAST-IN-PLACE CURB INLET DETAILS			
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CONT: 0203	SECT: 05	JOB: 039	HIGHWAY: US 69
DIST: TYL	COUNTY: WOOD	SHEET NO: 298	

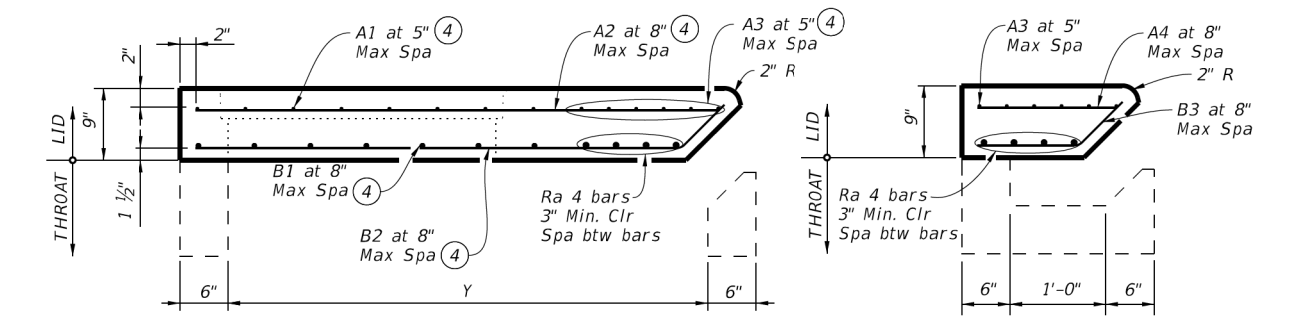
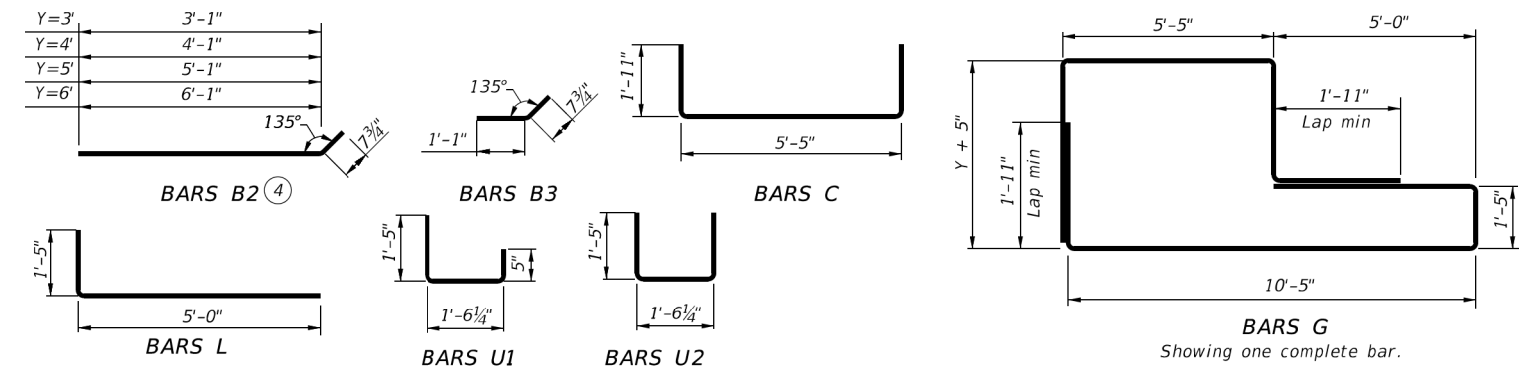
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LID PLAN VIEW
(SHOWING ONE EXTENSION)

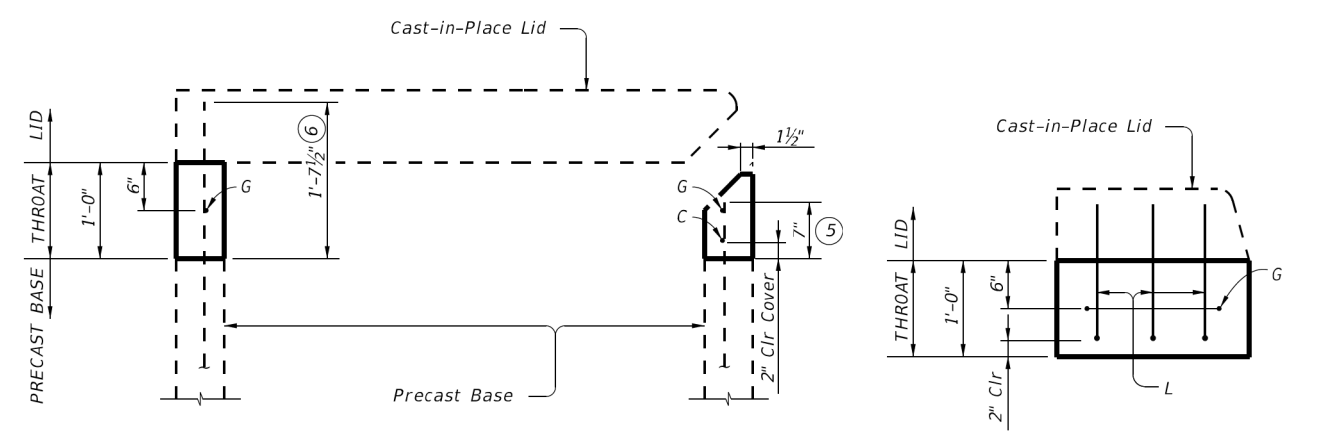


THROAT PLAN VIEW
(SHOWING ONE EXTENSION)



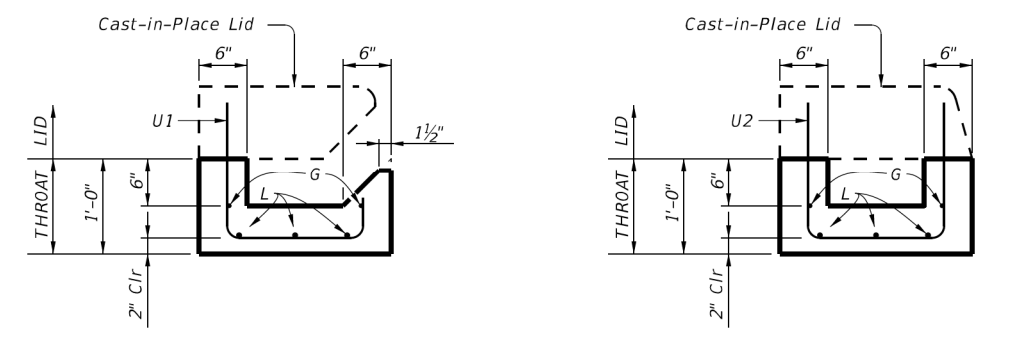
LID SECTION C-C

LID SECTION D-D



THROAT SECTION E-E
(SHOWING REINFORCING BAR EXTENDED FROM PRECAST BASE)

THROAT SECTION F-F



BARS U1 LOCATION

BARS U2 LOCATION

THROAT SECTION G-G

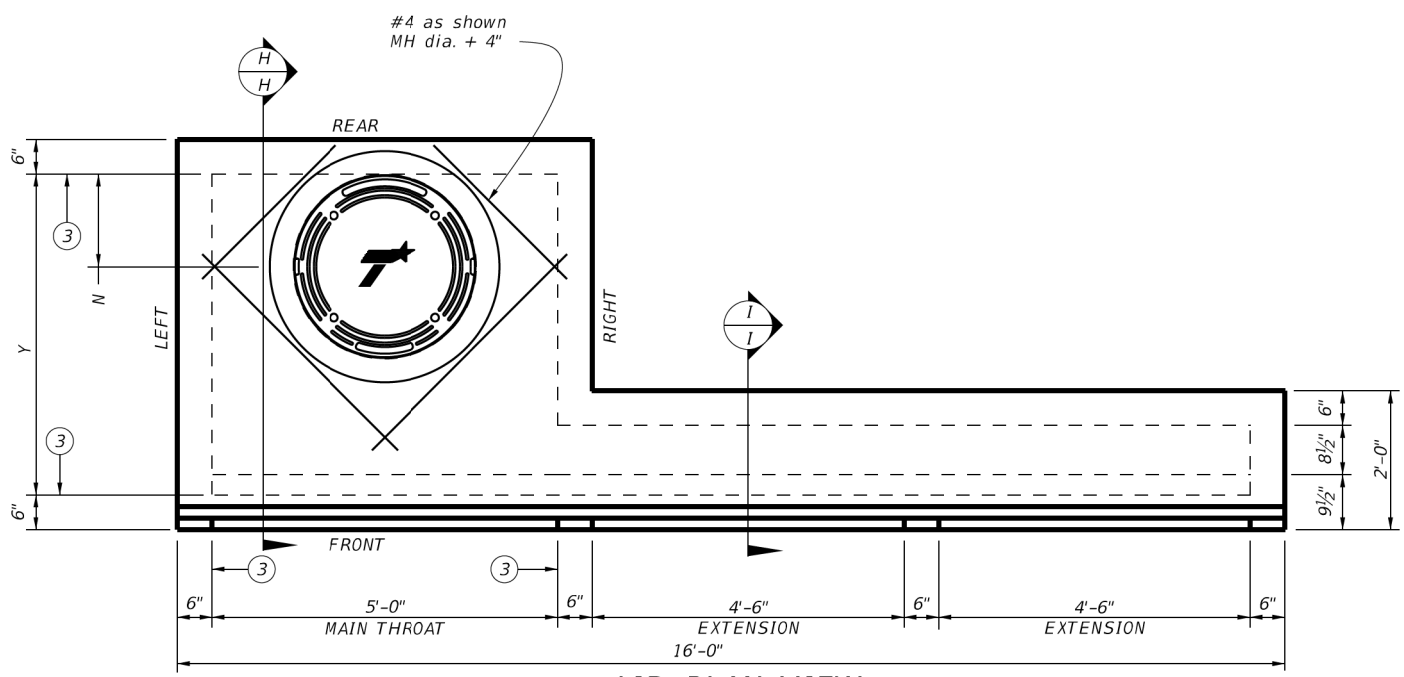
- ③ Matches inside face of wall of precast base or riser below inlet.
- ④ Cut reinforcing bars as needed to provide 1/2 inch clear to manhole.
- ⑤ Extend reinforcing bars from precast base 7 inches.
- ⑥ Extend reinforcing bars from precast base 1 foot 7 1/2 inches.
- ⑦ Do not extend reinforcing bars from precast base.



11/21/2019

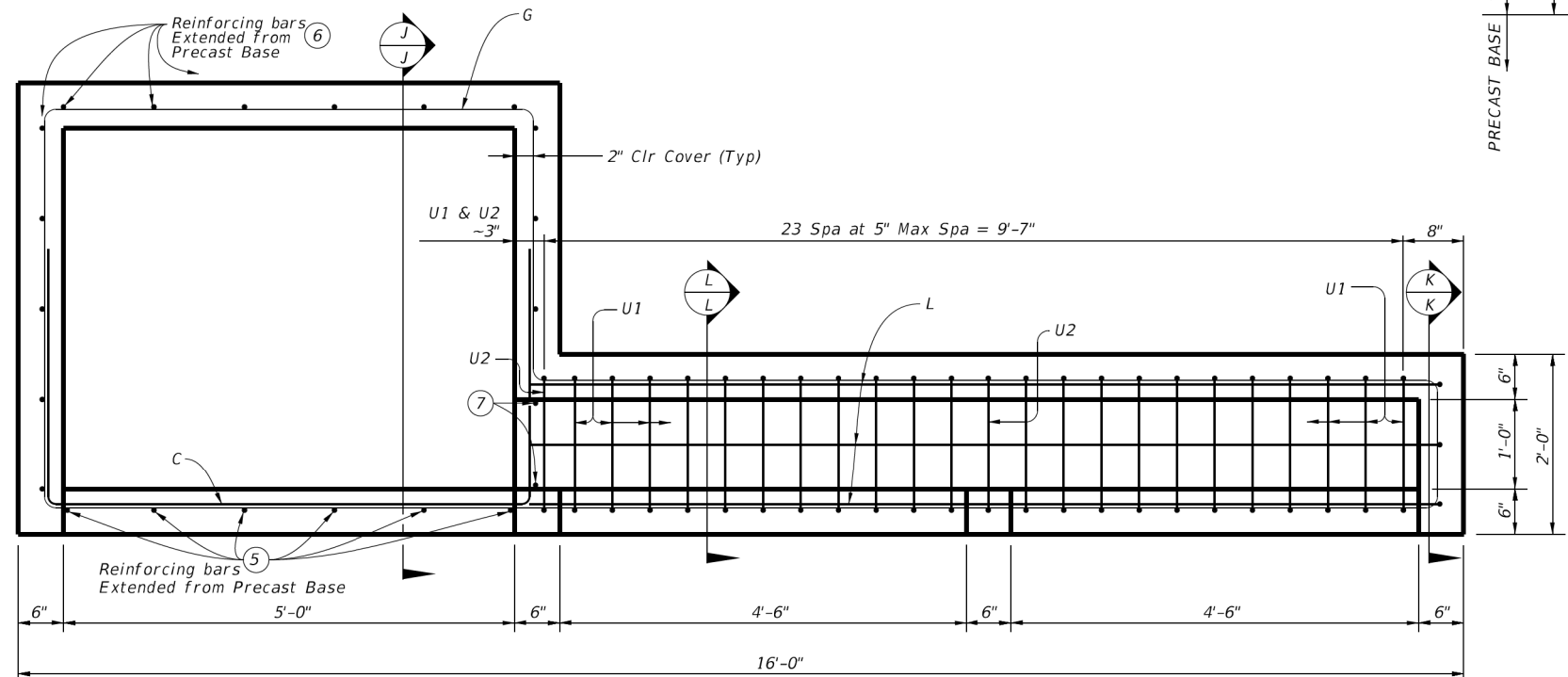
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CAST-IN-PLACE CURB INLET DETAILS			
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DIST: TYL	COUNTY: WOOD	SHEET NO.: 299	

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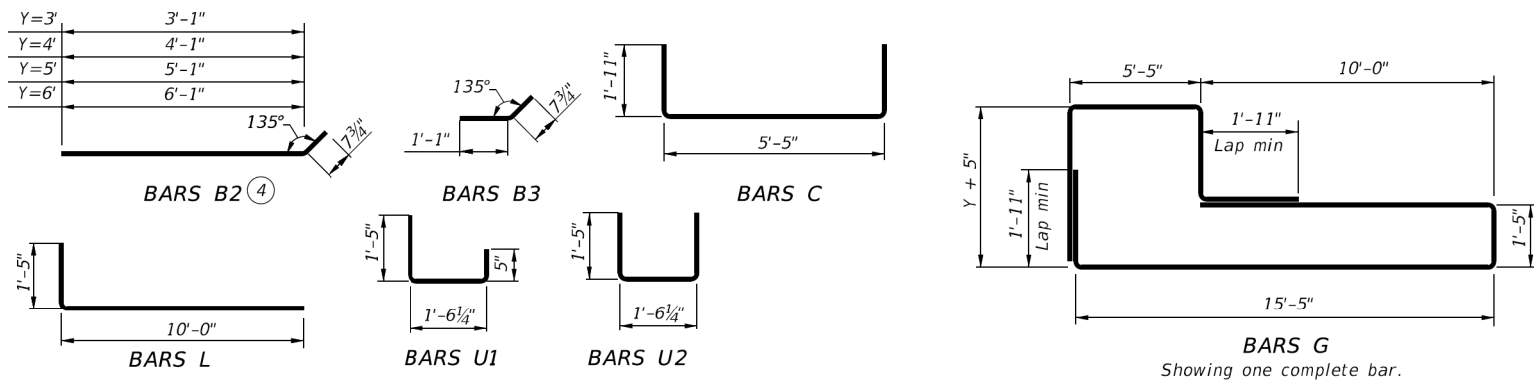
LID PLAN VIEW

(SHOWING CONSECUTIVE EXTENSIONS)

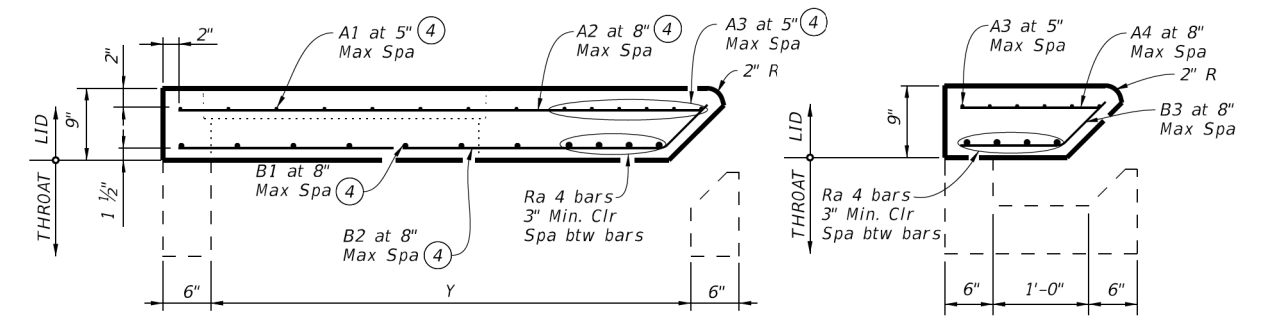


THROAT PLAN VIEW

(SHOWING CONSECUTIVE EXTENSIONS)

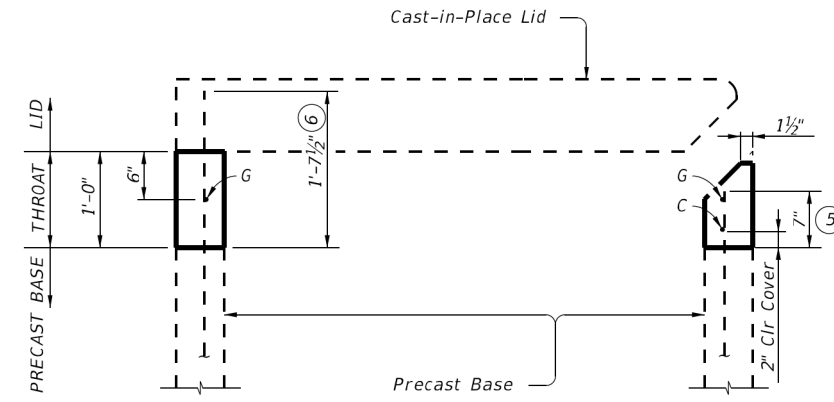


- ③ Matches inside face of wall of precast base or riser below inlet.
- ④ Cut reinforcing bars as needed to provide 1/2" clear to manhole.
- ⑤ Extend reinforcing bars from precast base 7".
- ⑥ Extend reinforcing bars from precast base 1'-7 1/2".
- ⑦ Do not extend reinforcing bars from precast base.



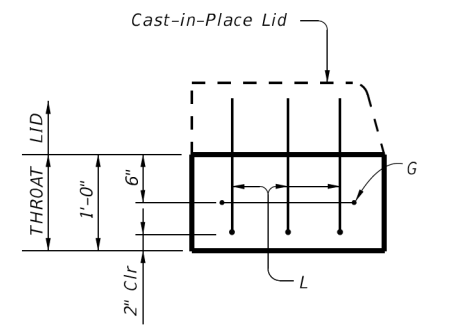
LID SECTION H-H

LID SECTION I-I

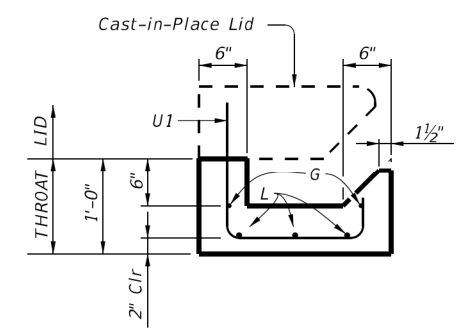


THROAT SECTION J-J

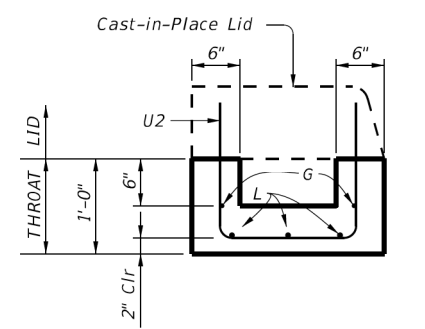
(SHOWING REINFORCING BAR EXTENDED FROM PRECAST BASE)



THROAT SECTION K-K



BARS U1 LOCATION



BARS U2 LOCATION

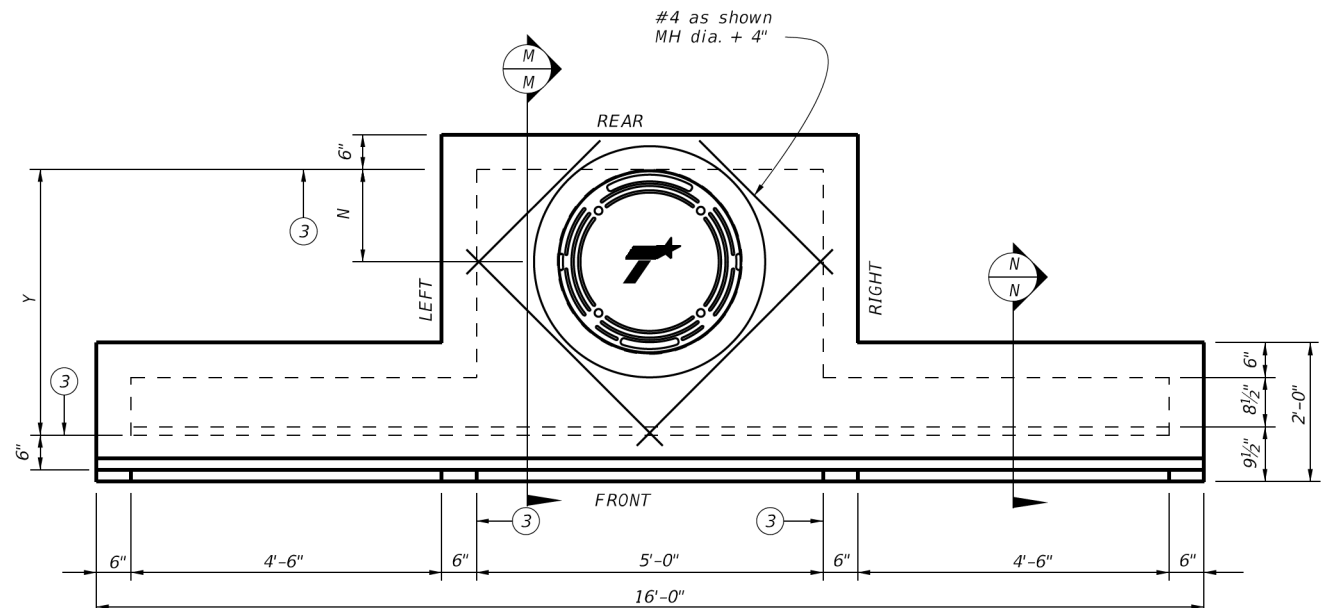
THROAT SECTION L-L



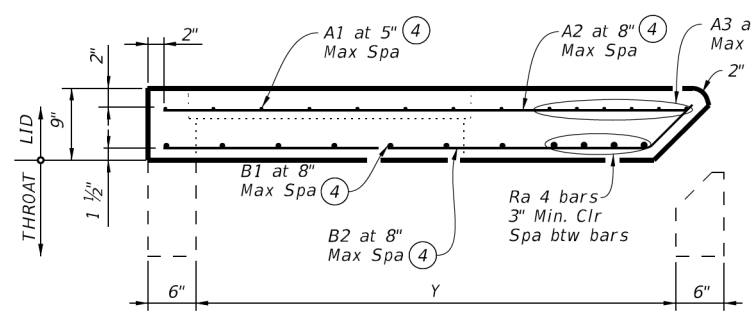
11/21/2019

CAST-IN-PLACE CURB INLET DETAILS			
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CONTRACT: 0203	SECTION: 05	JOB: 039	HIGHWAY: US 69
DIST: TYL	COUNTY: WOOD	SHEET NO. 299A	

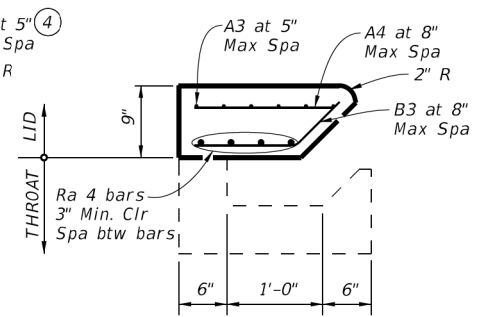
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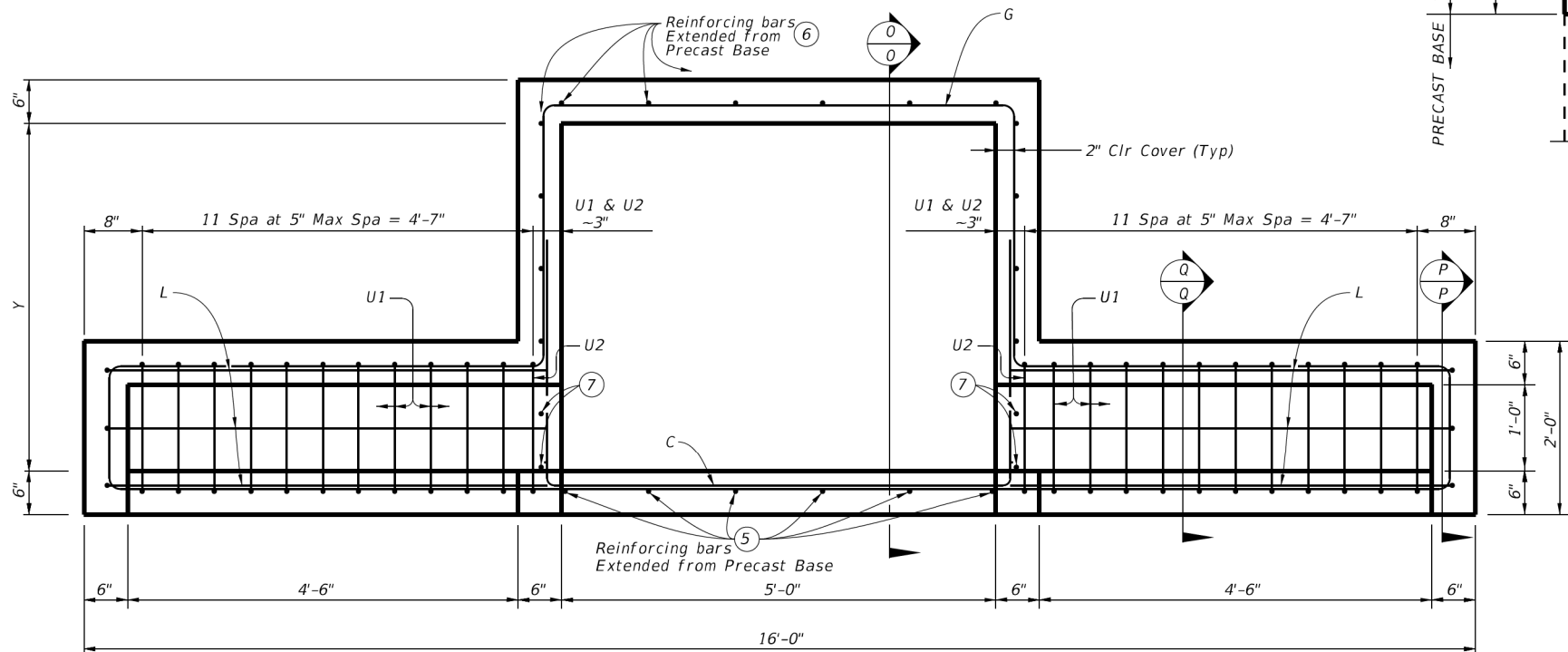
LID PLAN VIEW
 (SHOWING EXTENSION ON EACH SIDE)



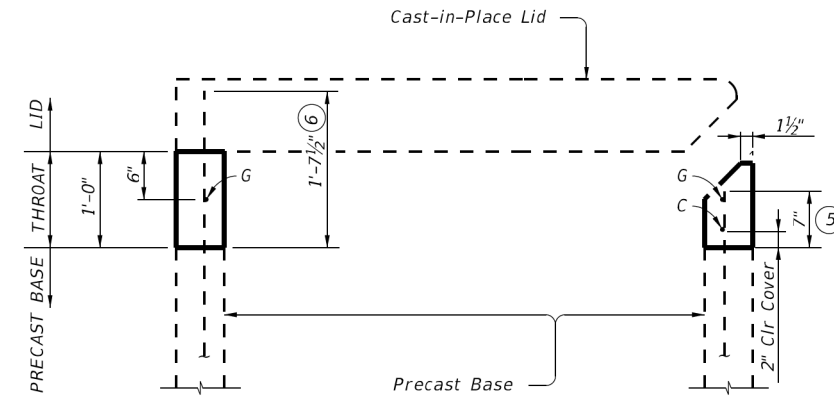
LID SECTION M-M



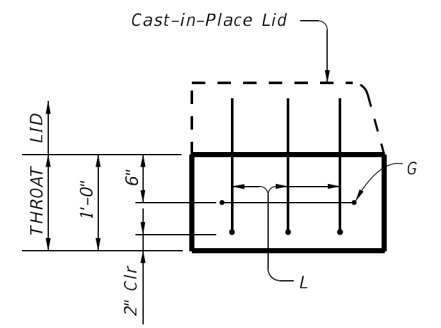
LID SECTION N-N



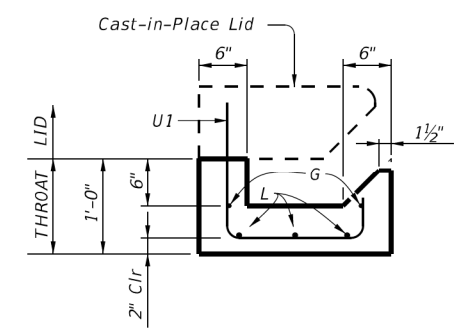
THROAT PLAN VIEW
 (SHOWING EXTENSION ON EACH SIDE)



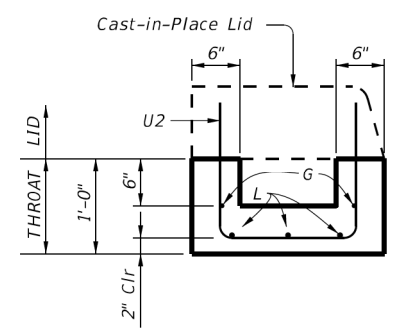
THROAT SECTION O-O
 (SHOWING REINFORCING BAR EXTENDED FROM PRECAST BASE)



THROAT SECTION P-P

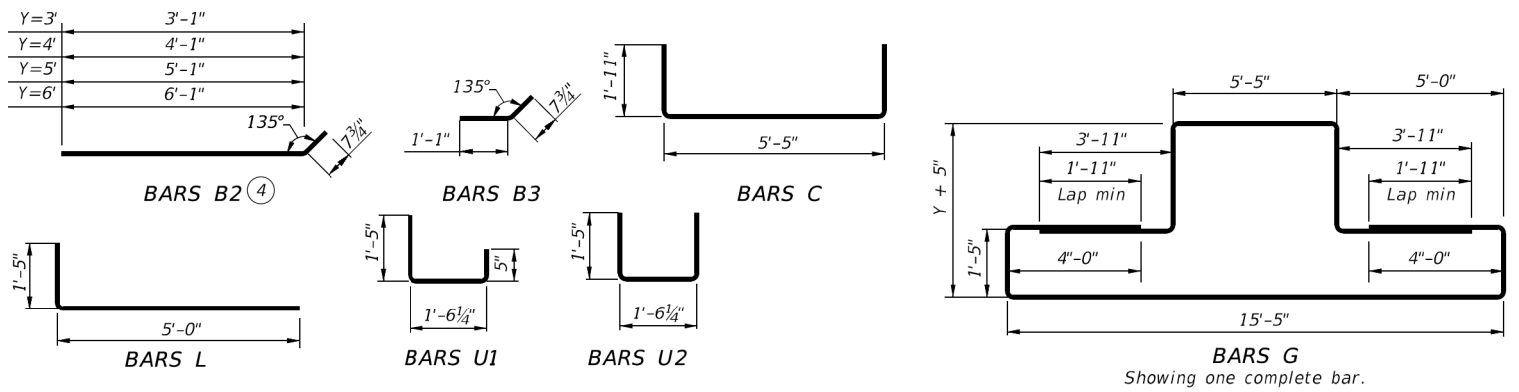


BARS U1 LOCATION



BARS U2 LOCATION

THROAT SECTION Q-Q



- ③ Matches inside face of wall of precast base or riser below inlet.
- ④ Cut reinforcing bars as needed to provide 1/2" clear to manhole.
- ⑤ Extend reinforcing bars from precast base 7".
- ⑥ Extend reinforcing bars from precast base 1'-7 1/2".
- ⑦ Do not extend reinforcing bars from precast base.



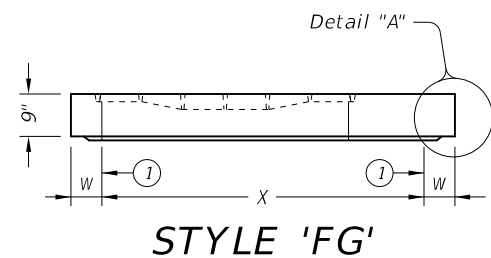
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11/21/2019

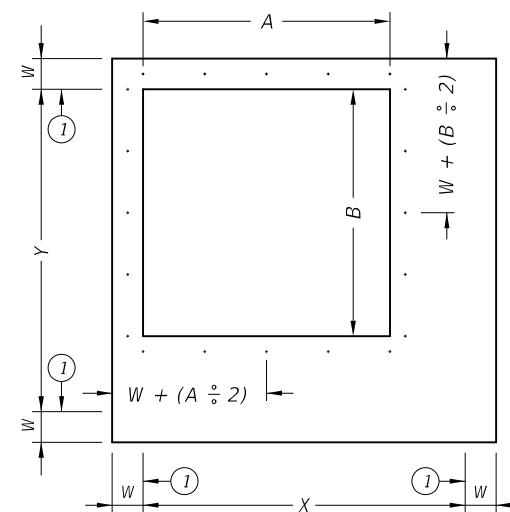
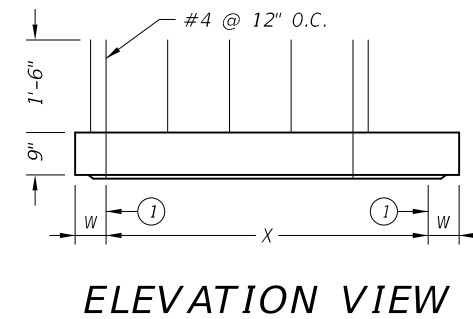
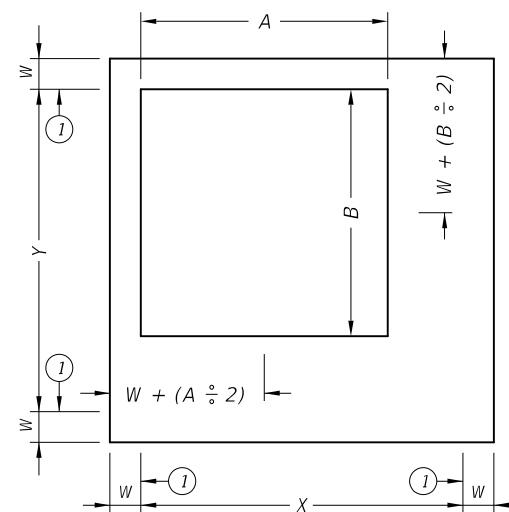
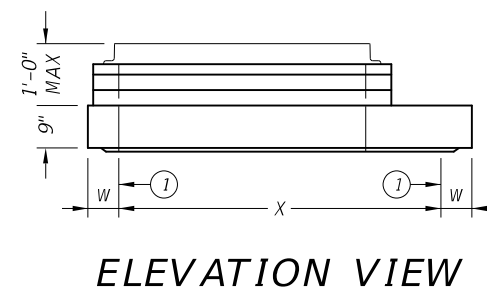
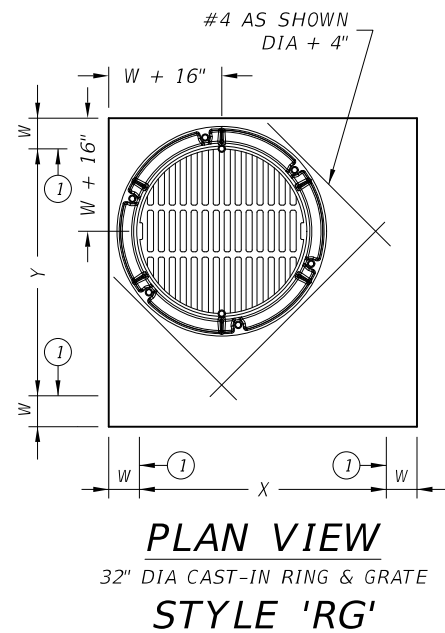
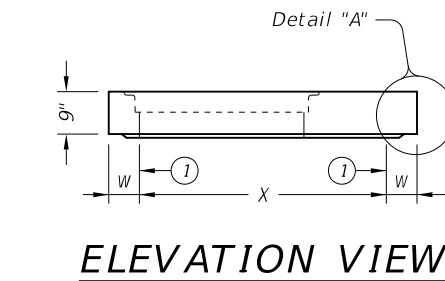
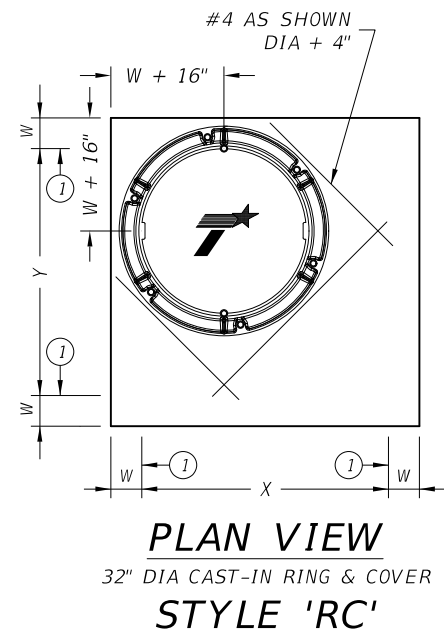
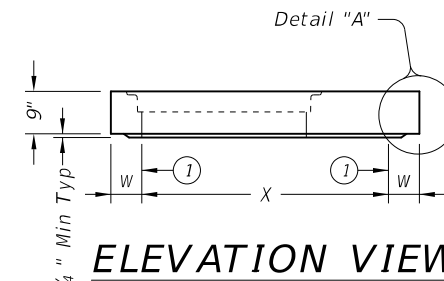
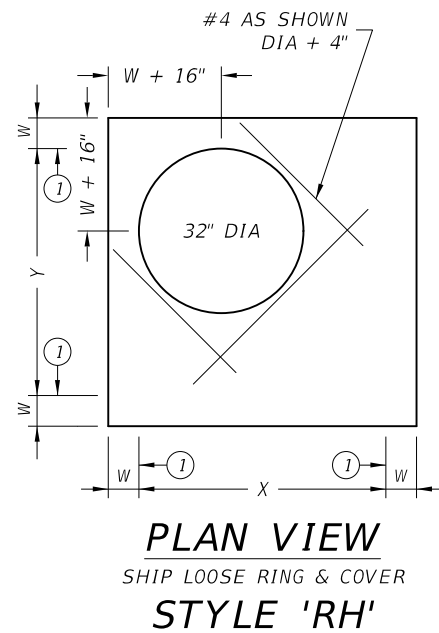
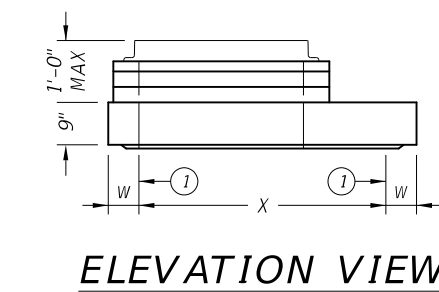
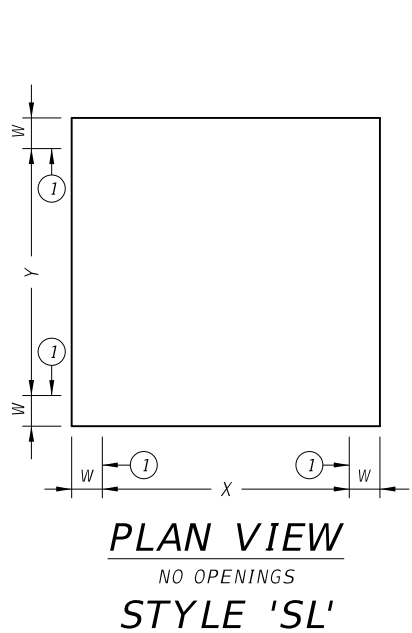
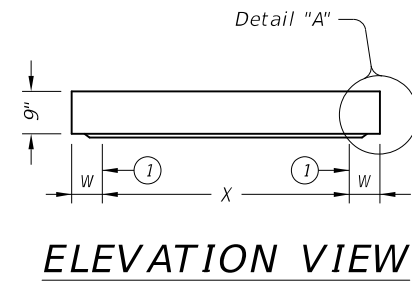
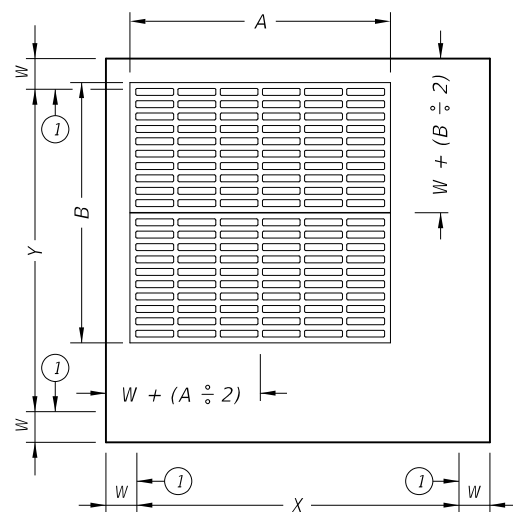
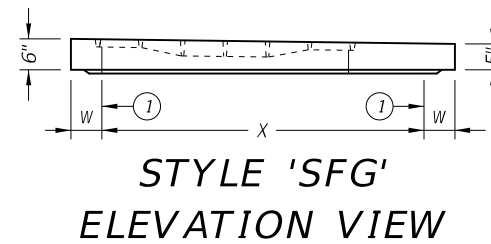
CAST-IN-PLACE CURB INLET DETAILS			
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CONTRACT: 0203	SECTION: 05	JOB: 039	HIGHWAY: US 69
DIST: TYL	COUNTY: WOOD	SHEET NO. 299B	

DISCLAIMER:
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 TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

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ORIENT TAPER TO CORRESPOND WITH ROADWAY CROSS-SLOPE.



① Matches inside face of wall of precast base or riser below inlet.

HL93 LOADING

SHEET 1 OF 2



PRECAST SLAB LID

PSL

FILE: CD-PSL-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	300	

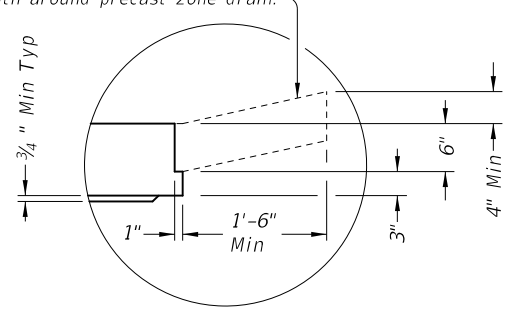
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DISCLAIMER:
 The use of this standard is governed by the "Texas Engineering Practice Act." No warranty of any kind is made by TxDOT for any purpose whatsoever.
 TxDOT assumes no responsibility for the conversion of this standard to other formats or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

Style	Size (X x Y)	W ^②	A x B (nominal)	Short Span Reinf Steel Area	Long Span Reinf Steel Area
SL	3'x3'	6"	n/a	0.37 in ² /ft	0.37 in ² /ft
RH,RC,RG,SH,S1,FG	3'x3'	6"	3'x3' or 32" Dia	0.37 in ² /ft	0.37 in ² /ft
SFG	3'x3'	6"	3'x3'	0.32 in ² /ft	0.32 in ² /ft
SL	4'x4'	6"	n/a	0.34 in ² /ft	0.34 in ² /ft
RH,RC,RG,SH,S1,FG	4'x4'	6"	3'x3' or 32" Dia	0.41 in ² /ft	0.41 in ² /ft
SH,S1,FG	4'x4'	6"	4'x4'	0.41 in ² /ft	0.41 in ² /ft
SFG	4'x4'	6"	4'x4'	0.32 in ² /ft	0.32 in ² /ft
SL	3'x5'	6"	n/a	0.39 in ² /ft	0.39 in ² /ft
RH,RC,RG,SH,S1,FG	3'x5'	6"	3'x3' or 32" Dia	0.48 in ² /ft	0.48 in ² /ft
SH,S1,FG	3'x5'	6"	3'x5'	0.48 in ² /ft	0.48 in ² /ft
SFG	3'x5'	6"	3'x5'	0.32 in ² /ft	0.32 in ² /ft
SL	4'x5'	6"	n/a	0.42 in ² /ft	0.42 in ² /ft
RH,RC,RG,SH,S1,FG	4'x5'	6"	3'x3' or 32" Dia	0.42 in ² /ft	0.42 in ² /ft
SH,S1,FG	4'x5'	6"	4'x4'	0.63 in ² /ft	0.63 in ² /ft
SH,S1,FG	4'x5'	6"	3'x5'	0.66 in ² /ft	0.66 in ² /ft
SL	5'x5'	6"	n/a	0.36 in ² /ft	0.36 in ² /ft
RH,RC,RG,SH,S1,FG	5'x5'	6"	3'x3' or 32" Dia	0.43 in ² /ft	0.43 in ² /ft
SH,S1,FG	5'x5'	6"	4'x4'	0.63 in ² /ft	0.63 in ² /ft
SH,S1,FG	5'x5'	6"	3'x5'	0.63 in ² /ft	0.63 in ² /ft
SL	5'x6'	6"/8"	n/a	0.48 in ² /ft	0.48 in ² /ft
RH,RC,RG,SH,S1,FG	5'x6'	6"/8"	3'x3' or 32" Dia	0.48 in ² /ft	0.48 in ² /ft
SH,S1,FG	5'x6'	6"/8"	4'x4'	0.60 in ² /ft	0.60 in ² /ft
SH,S1,FG	5'x6'	6"/8"	3'x5'	0.60 in ² /ft	0.60 in ² /ft
SL	6'x6'	6"/8"	n/a	0.43 in ² /ft	0.43 in ² /ft
RH,RC,RG,SH,S1,FG	6'x6'	6"/8"	3'x3' or 32" Dia	0.56 in ² /ft	0.56 in ² /ft
SH,S1,FG	6'x6'	6"/8"	4'x4'	0.56 in ² /ft	0.56 in ² /ft
SH,S1,FG	6'x6'	6"/8"	3'x5'	0.59 in ² /ft	0.59 in ² /ft
SL	8'x8'	8"/10"	n/a	0.45 in ² /ft	0.45 in ² /ft
RH,RC,RG,SH,S1,FG	8'x8'	8"/10"	3'x3' or 32" Dia	0.45 in ² /ft	0.45 in ² /ft
SH,S1,FG	8'x8'	8"/10"	4'x4'	0.45 in ² /ft	0.45 in ² /ft
SH,S1,FG	8'x8'	8"/10"	3'x5'	0.45 in ² /ft	0.45 in ² /ft

② See sheet PDD for corresponding wall thickness (W) of base unit or riser.

Construct cast-in-place reinforced concrete apron, when shown elsewhere in plans. Use Class "A" concrete. Apron is subsidiary to PSL. Apron is 1'-6" Min width around precast zone drain.



DETAIL "A"

(Reinforcing not shown for clarity)
 When an apron is to be cast around PSL, use detail above to create an apron ledge on all 4 sides.

FABRICATION NOTES:

1. Locate penetration (Style 'RH'), ring and cover (Style 'RC'), ring and grate (Style 'RG'), and frame and grate (Style 'FG') in a corner. Only one penetration is allowed per slab lid.
2. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
3. Provide Grade 60 reinforcing steel or equivalent area of WWR.
4. Provide clear cover of 3/4" to reinforcing from lower outside shoulder of slab for structural reinforcement, and 2" from top of slab for shrinkage and temperature reinforcement. Place short span reinforcing closest to surface.
5. Slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing. Provide steel area = 0.11 in²/ft each way.
6. No substitution is allowed for diagonal #4 bars around openings.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
8. Provide lifting devices in conformance with Manufacturer's recommendations.

INSTALLATION NOTES:

1. Precast slab lids are intended for direct traffic and may be placed in roadway.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. Initial installation of grade adjustment rings for Styles 'RH' and 'SH' is limited to 1'-0" Max as shown.
5. Grade adjustment rings for Styles 'RH' and 'SH' may be increased to 2'-0" Max when future construction affects final grade of structure. Make adjustments greater than 2'-0" with additional risers. Adjustments can be made up to Max depth shown on sheet PDD. Structure must be evaluated if Max depth will be exceeded.
6. Orient long dimension of grate slots perpendicular to traffic, unless noted otherwise on plans

GENERAL NOTES:

1. Designed according to ASTM C913.
2. Payment for lid is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, style, size, and opening size (when applicable).

Cover dimensions are clear dimensions, unless noted otherwise.

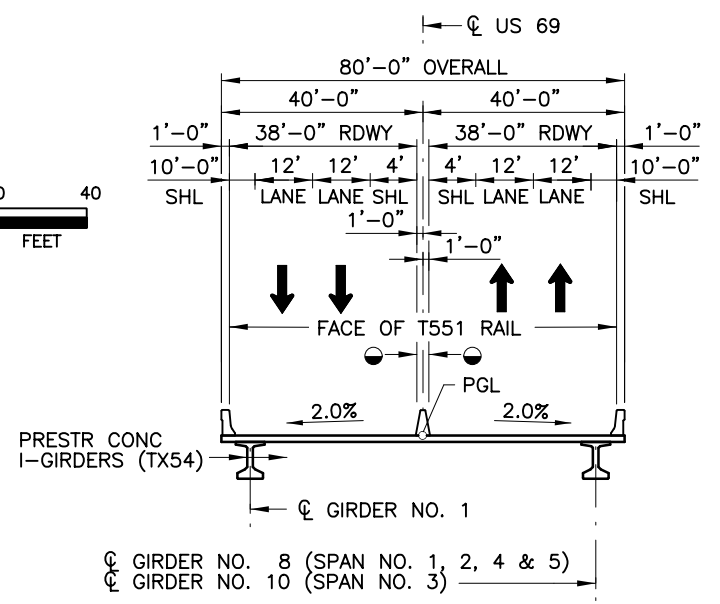
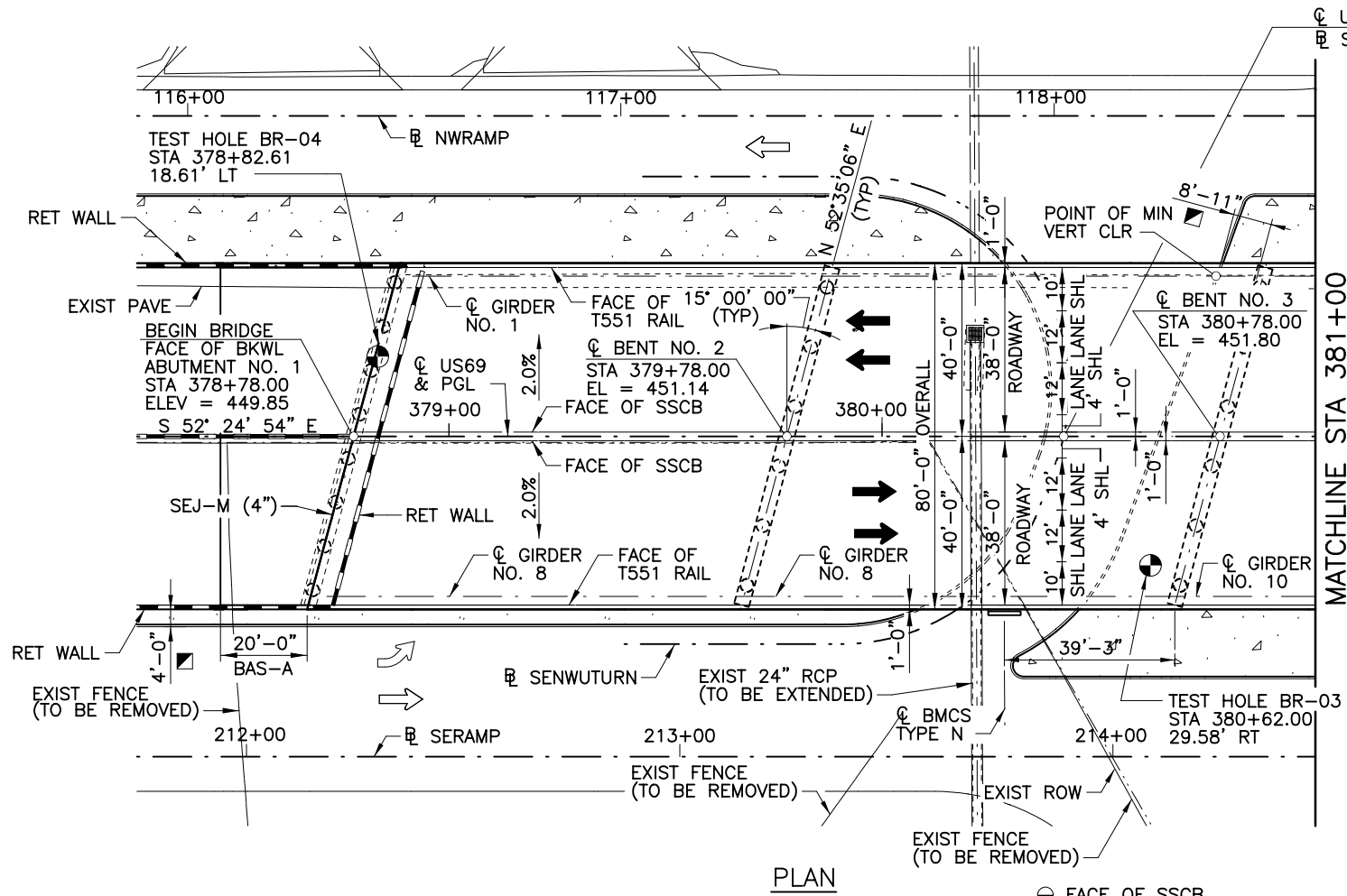
HL93 LOADING SHEET 2 OF 2



PRECAST SLAB LID

PSL

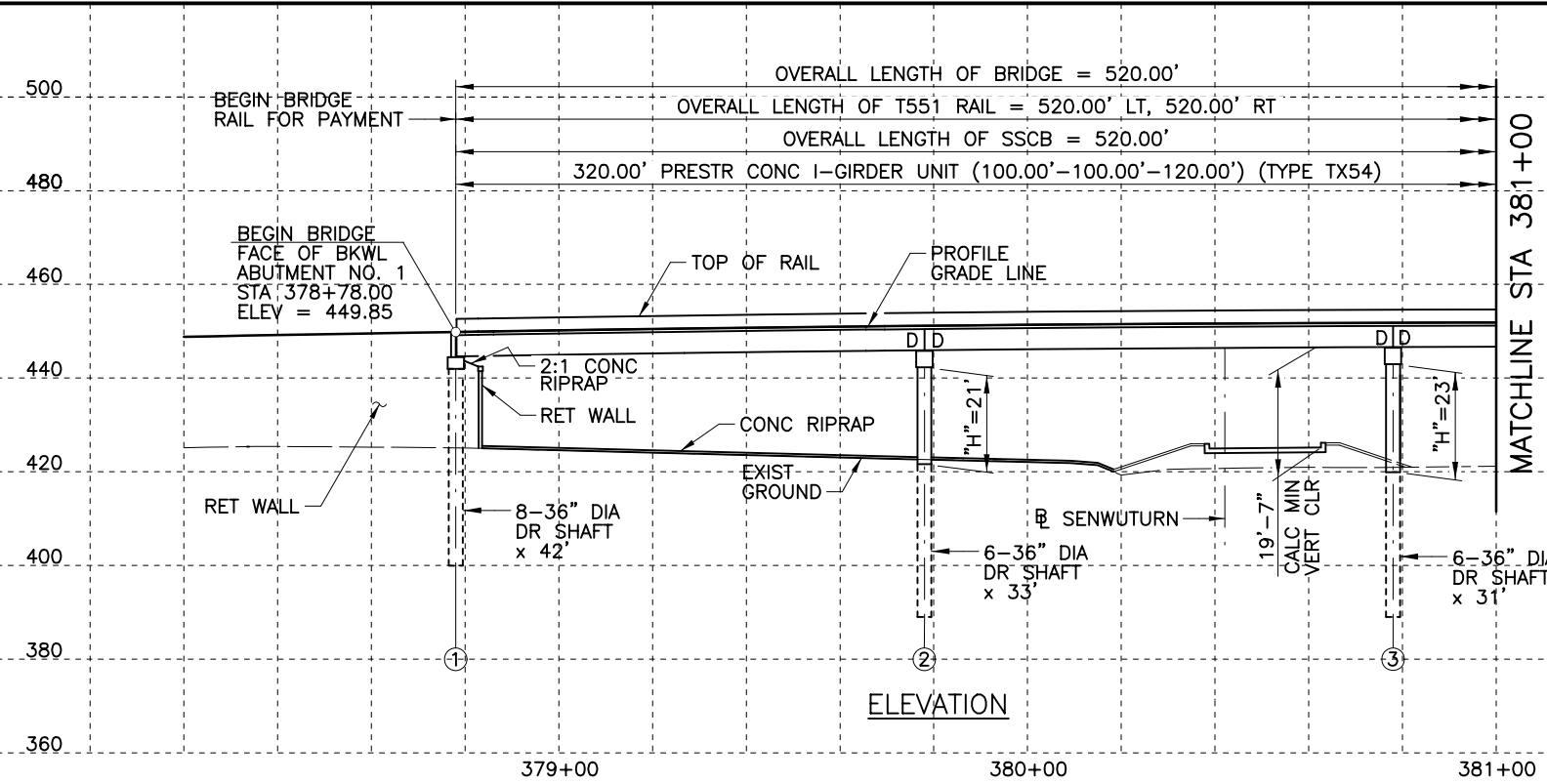
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©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	301	



- GENERAL NOTES:**
- DESIGNED ACCORDING TO 2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH THE LATEST INTERIMS (7th ED) (HL93 LOADING).
 - "D" DENOTES SLOTTED HOLE AT BEAM END. SEE BENT DETAILS FOR LOCATION OF DOWELS D.
 - THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS. CONTRACTOR IS RESPONSIBLE FOR CALCULATING ACTUAL COLUMN HEIGHTS BASED ON FIELD CONDITIONS.
 - SEE CSAB STANDARD FOR CEMENT STABILIZED BACKFILL BEHIND ABUTMENTS.

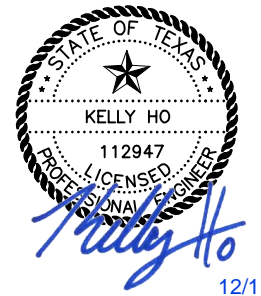
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 DESIGN SPEED: 60 MPH
 EXISTING ADT: 6,900 VPD (2019)
 FUTURE ADT: 9,400 VPD (2039)

SUPERSTRUCTURE INV/OPR RATINGS: 1.01/2.12



DRILLED SHAFTS TO BE FOUNDED AT LENGTH SHOWN OR DEEPER TO OBTAIN A MINIMUM OF 2 DIAMETER PENETRATION INTO HARD OR STIFF CLAY LAYER.

THE USE OF TEMPORARY CASING ALONG WITH SLURRY METHOD MAY BE REQUIRED FOR DRILLED SHAFT INSTALLATION DUE TO THE PRESENCE OF SHALLOW GROUNDWATER TABLE ALONG WITH SILT AND SAND LAYERS.



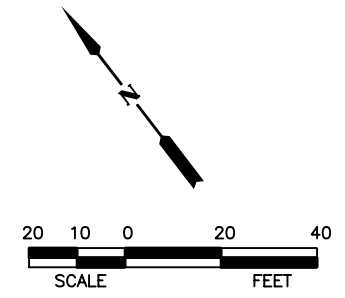
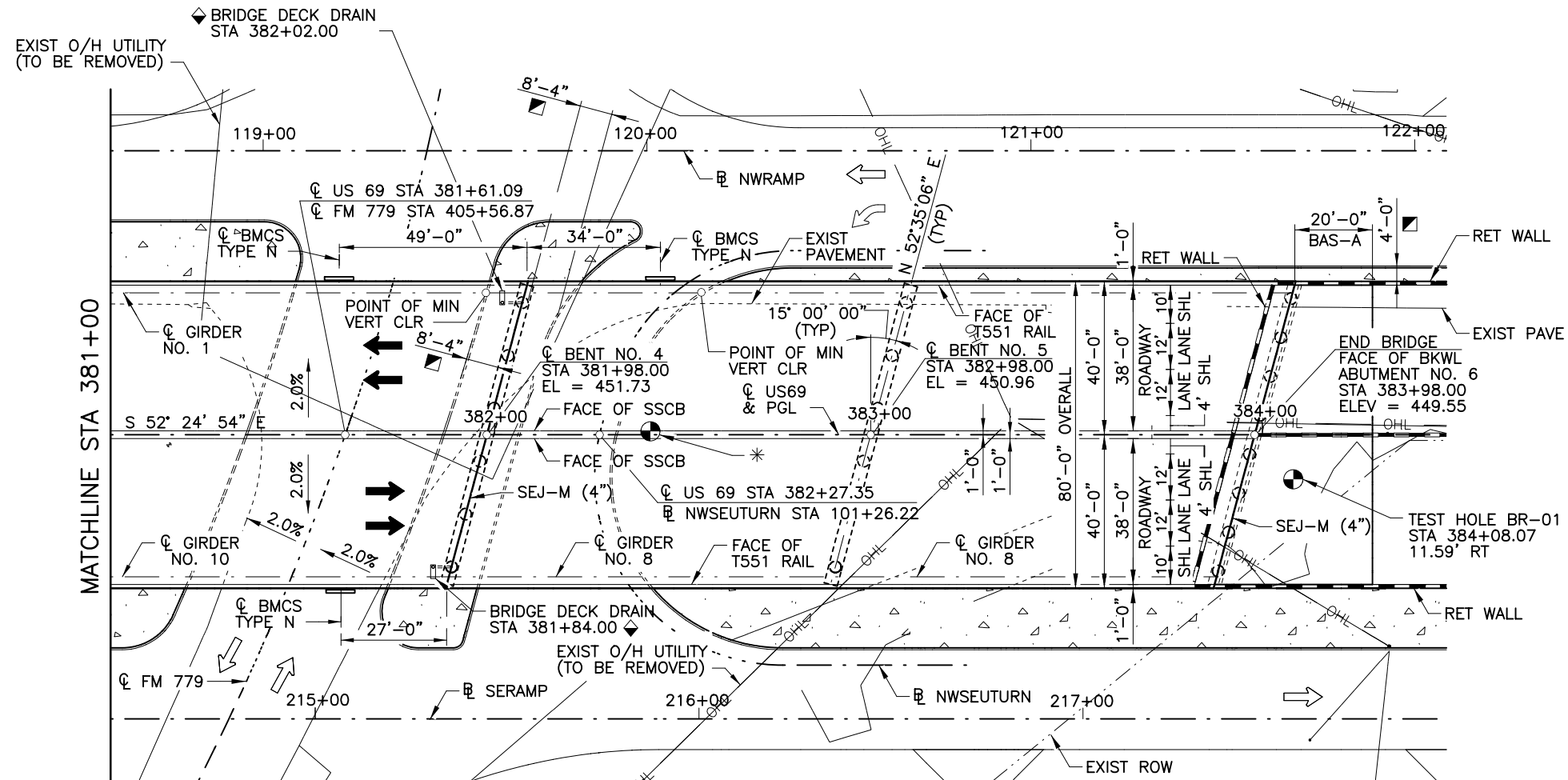
12/11/2023



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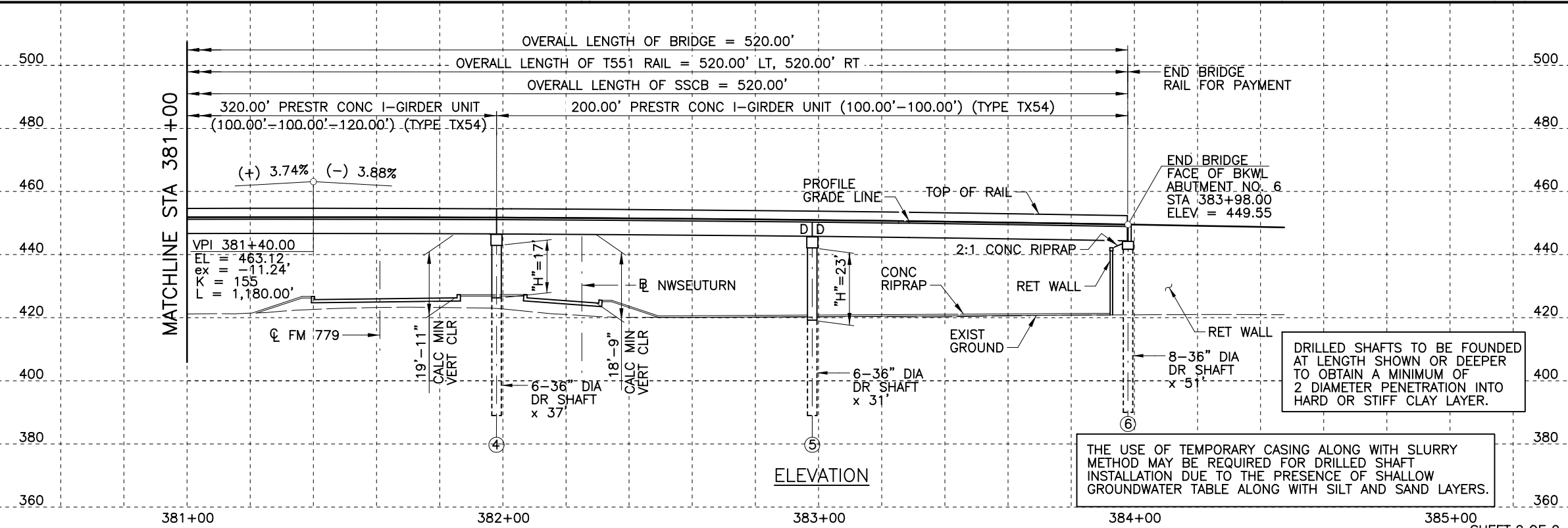
US 69 AT FM 779
 BRIDGE LAYOUT
 US 69 OVERPASS AT FM 779

Designed:	DKC	FED. RD. DIST. NO.	6	STATE	TEXAS	HIGHWAY NO.	US 69
Checked:	KH	DIST.	WOOD	COUNTY	WOOD	CONTROL NO.	0203
Drawn:	TW	SECTION NO.	05	JOB NO.	039	SHEET NO.	303
Checked:	REW	TYL					



PLAN

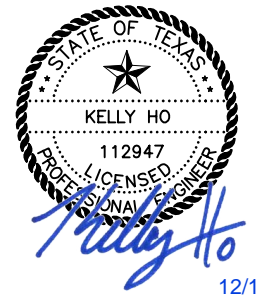
- * TEST HOLE BR-02
STA 382+40.61
0.90' LT
- MINIMUM HORIZONTAL CLEARANCE.
- ◆ BRIDGE DECK DRAINS WITH 6" DIA PVC PIPE TO OUTFALL TO BENT NO. 4. SEE INTERIOR BENT NO. 4 AND BRIDGE DRAIN DETAILS FOR ADDITIONAL INFORMATION.



ELEVATION

DRILLED SHAFTS TO BE FOUNDED AT LENGTH SHOWN OR DEEPER TO OBTAIN A MINIMUM OF 2 DIAMETER PENETRATION INTO HARD OR STIFF CLAY LAYER.

THE USE OF TEMPORARY CASING ALONG WITH SLURRY METHOD MAY BE REQUIRED FOR DRILLED SHAFT INSTALLATION DUE TO THE PRESENCE OF SHALLOW GROUNDWATER TABLE ALONG WITH SILT AND SAND LAYERS.

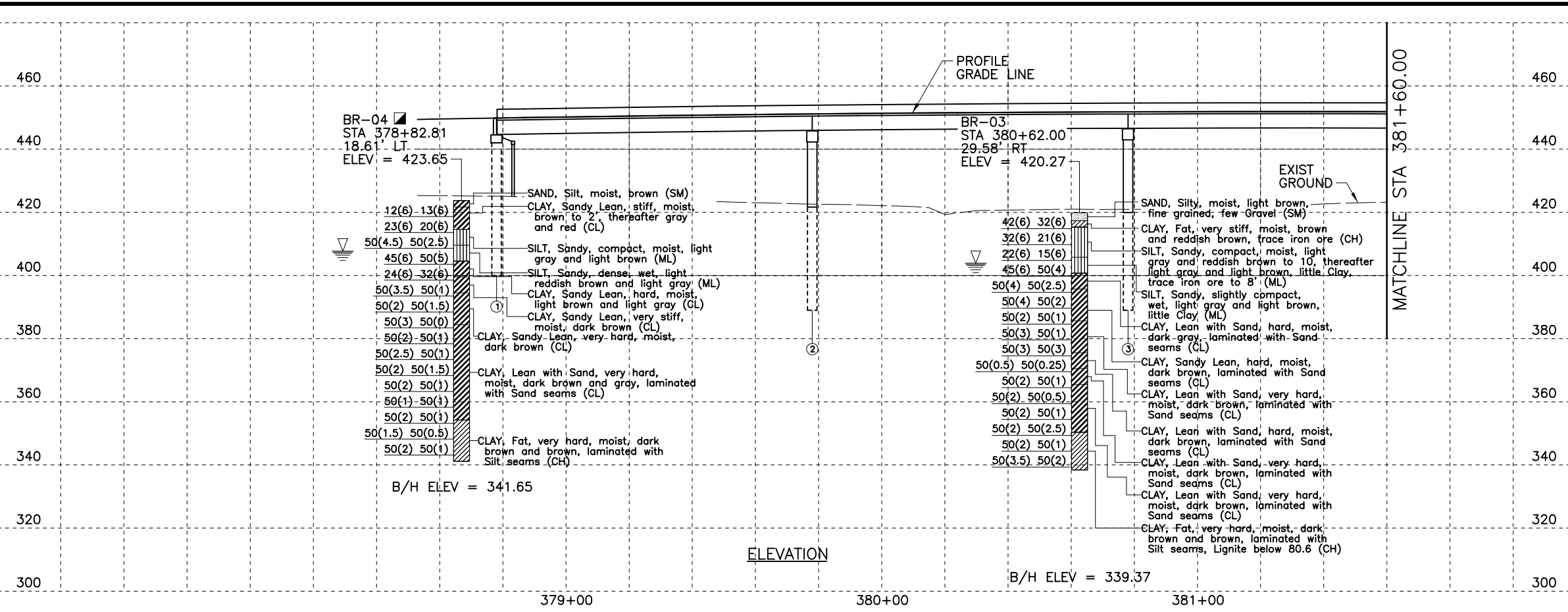


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US 69 AT FM 779
BRIDGE LAYOUT
US 69 OVERPASS AT FM 779

Designed: DKC	FED. RD. DIST. NO. 6	STATE TEXAS	HIGHWAY NO. US 69
Checked: KH	DIST. WOOD	COUNTY WOOD	SHEET NO. 304
Drawn: TW	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Checked: REW	TYL		

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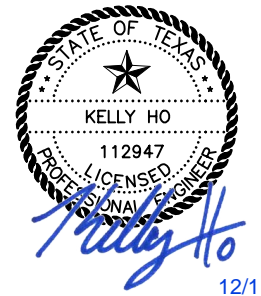
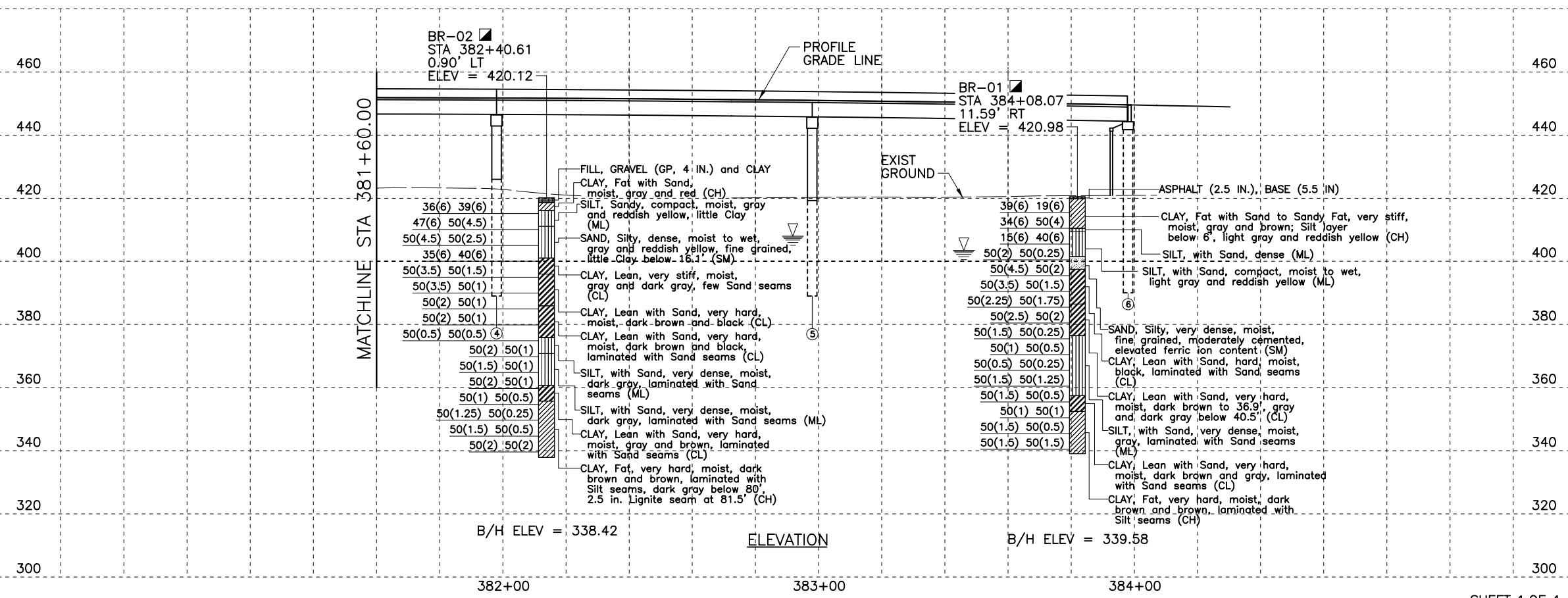
GENERAL NOTES:

- BORING LOGS COPIED FROM CORSAIR CONSULTING US 69 AT FM 779 CSJ NO. 0203-05-039 REPORT, AUGUST 1, 2018.
- ANY GROUND WATER ELEVATION INFORMATION PROVIDED ON THIS BORING LOG IS REPRESENTATIVE OF CONDITIONS EXISTING ON THE DAY AND FOR THE SPECIFIC LOCATION WHERE THIS INFORMATION WAS COLLECTED. ACTUAL GROUND WATER ELEVATION MAY FLUCTUATE DUE TO TIME, CLIMATE CONDITIONS AND/OR CONSTRUCTION ACTIVITY.

THE USE OF TEMPORARY CASING ALONG WITH SLURRY METHOD MAY BE REQUIRED FOR DRILLED SHAFT INSTALLATION DUE TO THE PRESENCE OF SHALLOW GROUNDWATER TABLE ALONG WITH SILT AND SAND LAYERS.

DRILLED SHAFTS TO BE FOUNDED AT LENGTH SHOWN OR DEEPER TO OBTAIN A MINIMUM OF 2 DIAMETER PENETRATION INTO HARD OR STIFF CLAY.

- ▣ BORING LOG SHIFTED FOR CLARITY
- ▽ GROUNDWATER



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US 69 AT FM 779

BRIDGE BORING LOGS

Designed:	DKC	FED. RD. DIST. NO.:	6	STATE:	TEXAS	PROJECT NO.:		HIGHWAY NO.:	US 69
Checked:	KH								
Drawn:	CPY	DIST.:	WOOD	COUNTY:	WOOD	CONTROL NO.:	0203	SECTION NO.:	05
Checked:	CPY	TYL						JOB NO.:	039
								SHEET NO.:	305

SUMMARY OF ESTIMATED QUANTITIES

BID ITEM	400	416	420	420	420	422	422	425	450	454	471	481
BRIDGE ELEMENT	CEM STABIL BKFL CY	DRILL SHAFT (36 IN) LF	CL C CONC			REINF CONC SLAB SF	APPROACH SLAB CY	PRESTR CONC GIRDER (TX54) LF	RAIL (TY T551) LF	SEALED EXPANSION JOINT (4 IN) (SEJ-M) LF	GRATE AND FRAME (BRIDGE DRAIN) EA	PIPE (PVC) (SCH 40) (6 IN) LF
			(ABUT) CY	(CAP) CY	(COLUMN) CY							
2 - ABUTMENTS	165	744	81.0				190.6					
4 - INTERIOR BENTS		792		146.6	131.9							113
1 - 320.00' PRESTRESSED CONCRETE I-GIRDER UNIT						25,600		2787.00	640.0	164	2	
1 - 200.00' PRESTRESSED CONCRETE I-GIRDER UNIT						16,000		1592.00	400.0	82		
TOTAL	165	1,536	81.0	146.6	131.9	41,600	190.6	4,379.00	1,040.0	246	2	113

BEARING SEAT ELEVATIONS

	GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5	GIRDER 6	GIRDER 7	GIRDER 8		
ABUT 1 (FWD)	443.593	443.760	443.927	444.093	444.047	443.790	443.531	443.272		
BENT 2 (BK)	444.803	444.988	445.172	445.357	445.329	445.089	444.849	444.608		
(FWD)	444.821	445.006	445.191	445.376	445.348	445.109	444.869	444.629		
BENT 3 (BK)	445.398	445.602	445.805	446.007	445.998	445.776	445.554	445.332	GIRDER 9	GIRDER 10
(FWD)	445.487	445.645	445.804	445.962	446.119	446.112	445.940	445.768	445.596	445.423
BENT 4 (BK)	445.344	445.519	445.694	445.869	446.043	446.053	445.898	445.743	GIRDER 9	GIRDER 10
(FWD)	445.250	445.476	445.701	445.926	445.939	445.740	445.540	445.340	445.587	445.431
BENT 5 (BK)	444.436	444.679	444.922	445.165	445.196	445.015	444.833	444.650		
(FWD)	444.412	444.657	444.900	445.143	445.174	444.993	444.812	444.630		
ABUT 6 (BK)	442.965	443.227	443.489	443.750	443.799	443.636	443.472	443.308		



Kelly Ho
12/11/2023

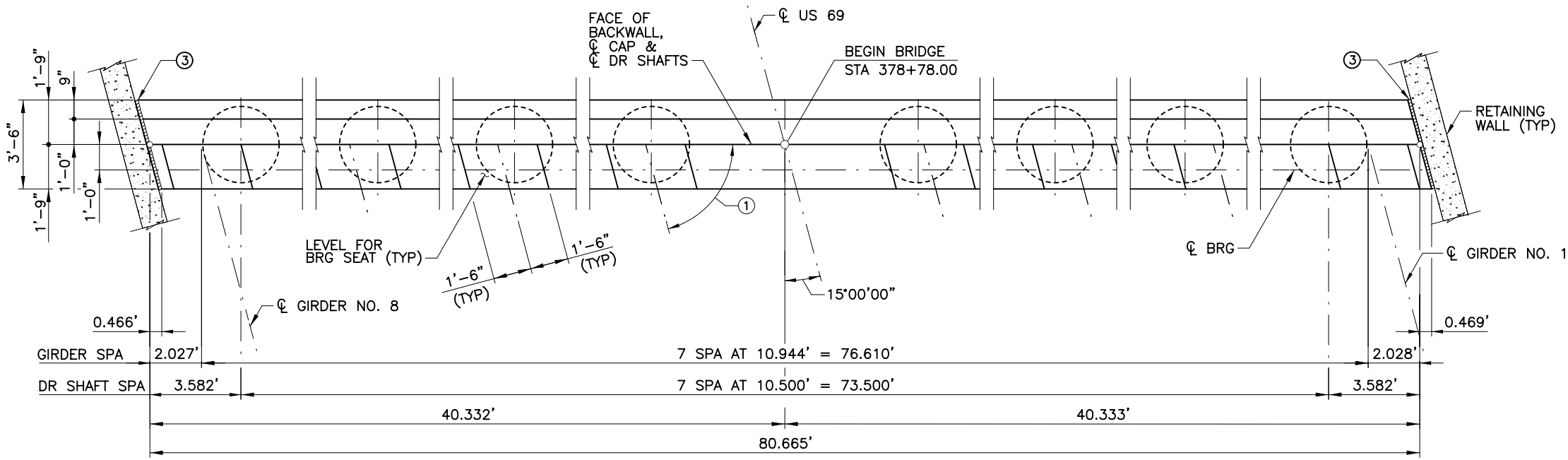


TEXAS REGISTERED ENGINEERING FIRM F-1741

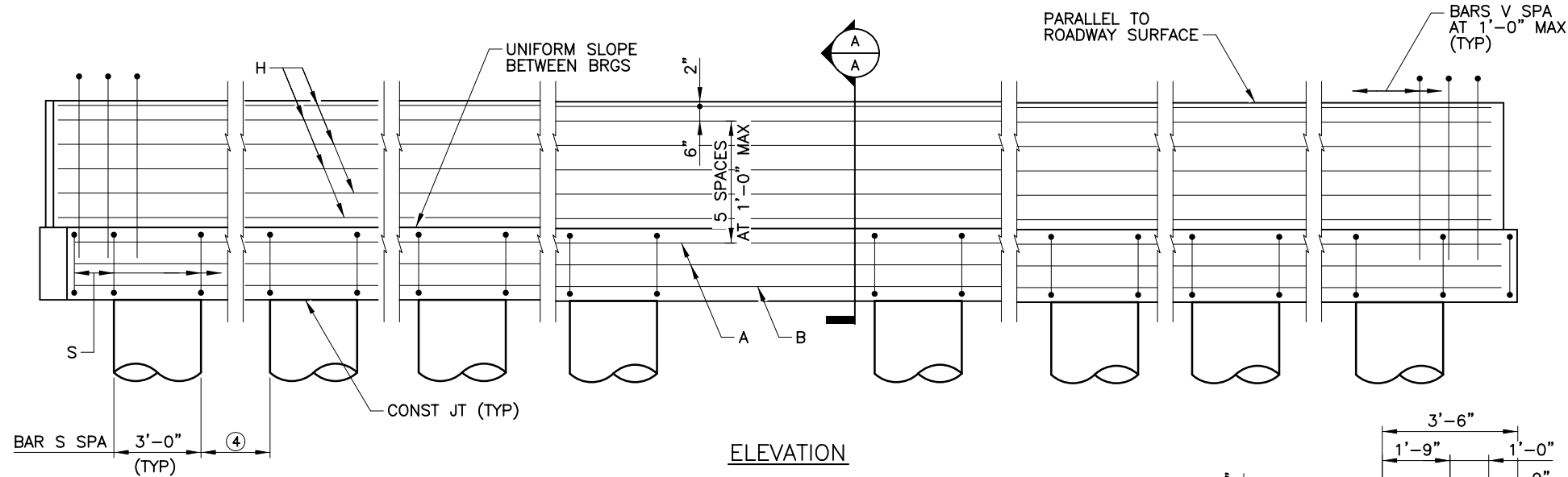
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US 69 AT FM 779

ESTIMATED QUANTITIES AND BEARING SEAT ELEVATIONS

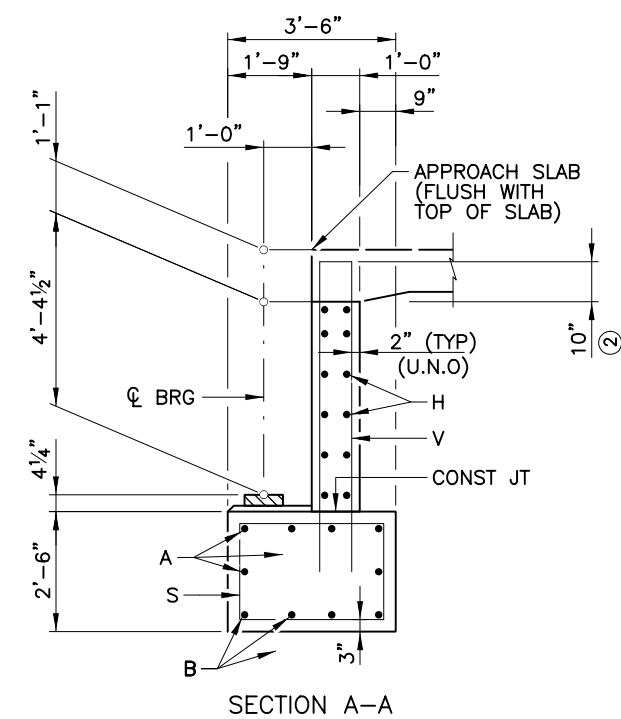
Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	KH	6	TEXAS		US 69
Drawn:	CPY	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	CPY	TYL	WOOD	0203	05
				JOB NO.	SHEET NO.
				039	306



PLAN



ELEVATION



SECTION A-A

④ 8 SPA AT 1'-0" MAX = 7'-6" (TYP PER DR SHAFT BAY)

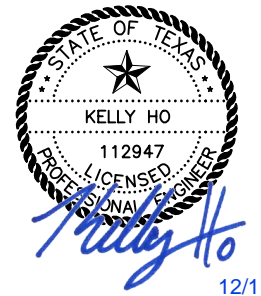
GENERAL NOTES:

1. DESIGNED ACCORDING TO 2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH LATEST INTERIMS (7TH EDITION) (HL93 LOADING)
2. SEE FD STANDARD FOR FOUNDATION DETAILS AND NOTES.
3. SEE RW (TRF) STANDARD FOR RAIL ANCHORAGE IN MSE WALL COPING.
4. SEE MISCELLANEOUS ABUTMENT DETAILS SHEET FOR CORNER, BEARING SEAT, REINFORCING BAR DETAILS AND REINFORCING BAR SCHEDULE.
5. COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE.
6. CALCULATED FOUNDATION LOAD = 89 TON/D.S.

MATERIAL NOTES:

1. PROVIDE CLASS C CONCRETE ($f'_c = 3,600$ psi).
2. PROVIDE GRADE 60 REINFORCING STEEL.

- ① SEE GIRDER LAYOUT FOR GIRDER ANGLE (TYP).
- ② INCREASE AS REQUIRED TO MAINTAIN 3" FROM FINISHED GRADE
- ③ 1/2" PREFORMED BITUMINOUS FIBER MATERIAL.

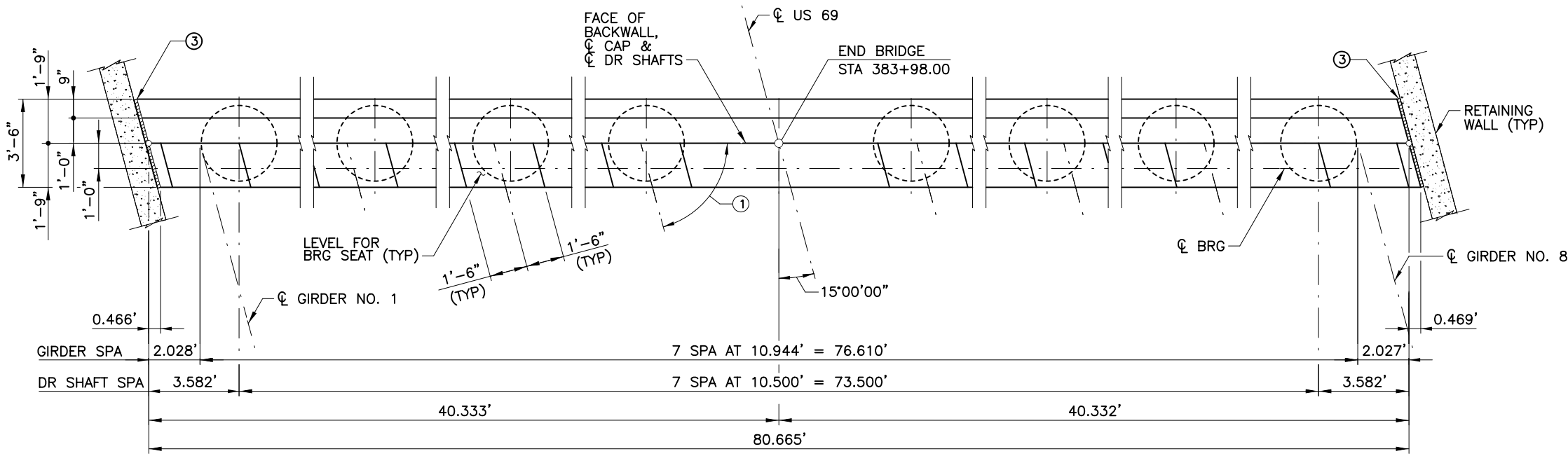


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US 69 AT FM 779

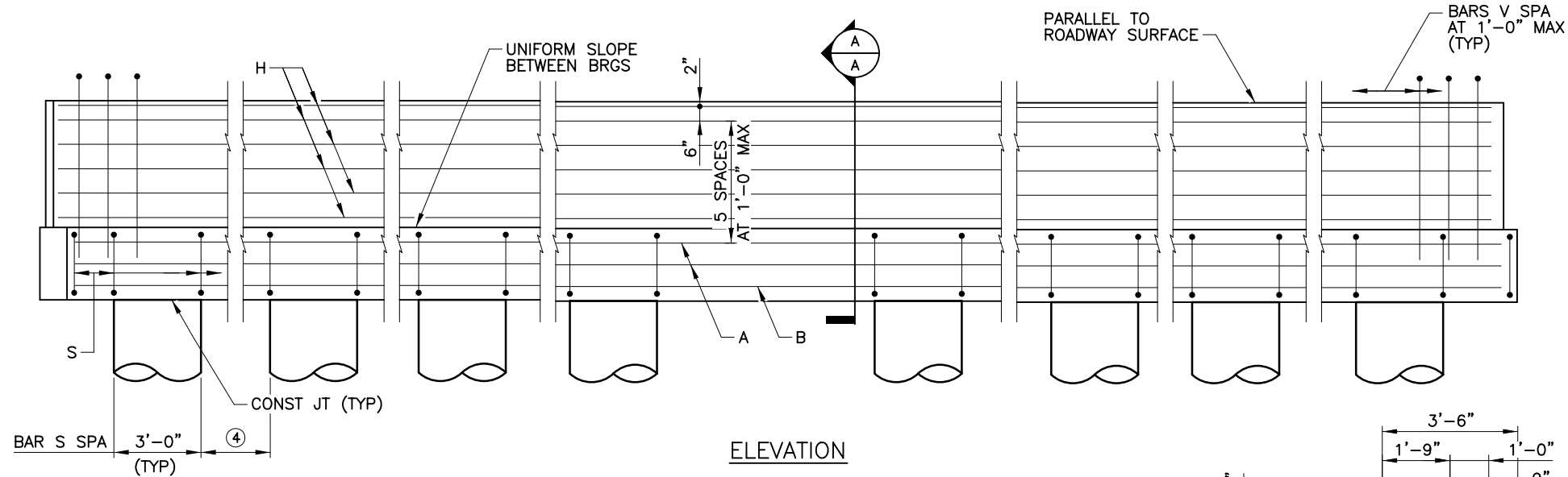
**ABUTMENT NO. 1
DETAILS**

Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	KH	6	TEXAS		US 69
Drawn:	DKC	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	KH	TYL	WOOD	0203	05
				JOB NO.	SHEET NO.
				039	307

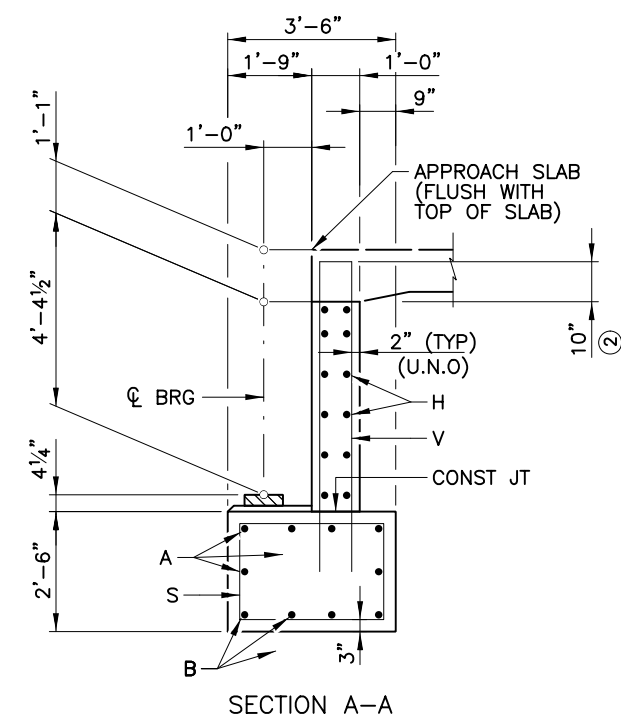
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PLAN



ELEVATION



SECTION A-A

GENERAL NOTES:

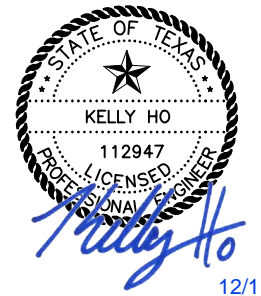
1. DESIGNED ACCORDING TO 2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH LATEST INTERIMS (7TH EDITION) (HL93 LOADING)
2. SEE FD STANDARD FOR FOUNDATION DETAILS AND NOTES.
3. SEE RW (TRF) STANDARD FOR RAIL ANCHORAGE IN MSE WALL COPING.
4. SEE MISCELLANEOUS ABUTMENT DETAILS SHEET FOR CORNER, BEARING SEAT, REINFORCING BAR DETAILS AND REINFORCING BAR SCHEDULE.
5. COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE.
6. CALCULATED FOUNDATION LOAD = 89 TON/D.S.

MATERIAL NOTES:

1. PROVIDE CLASS C CONCRETE ($f'_c = 3,600$ psi).
2. PROVIDE GRADE 60 REINFORCING STEEL.

- ① SEE GIRDER LAYOUT FOR GIRDER ANGLE (TYP).
- ② INCREASE AS REQUIRED TO MAINTAIN 3" FROM FINISHED GRADE
- ③ 1/2" PREFORMED BITUMINOUS FIBER MATERIAL.

④ 8 SPA AT 1'-0" MAX = 7'-6" (TYP PER DR SHAFT BAY)



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US 69 AT FM 779

**ABUTMENT NO. 6
DETAILS**

Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	KH	6	TEXAS		US 69
Drawn:	DKC	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	KH	TYL	WOOD	0203	05
					JOB NO.
					039
					SHEET NO.
					308

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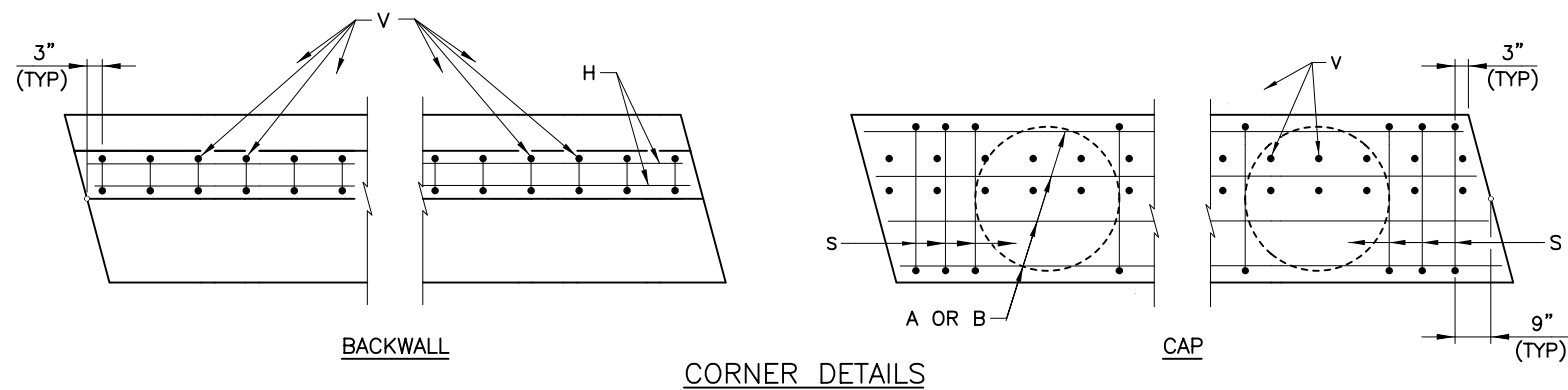


TABLE OF ESTIMATED QUANTITIES – ABUTMENT NO. 1

BAR	NO.	SIZE	LENGTH	WEIGHT
A	6	#11	87'- 2"	2,779
B	4	#11	85'- 7"	1,819
① H	12	#5	82'- 6"	1,033
S	69	#5	11'- 6"	828
V	82	#5	14'- 4"	1,226
REINFORCING STEEL			LB	7,685
CLASS "C" CONCRETE (ABUT)			CY	40.5

① INCLUDES 1 ~ 1'-10" MIN LAP.

TABLE OF ESTIMATED QUANTITIES – ABUTMENT NO. 6

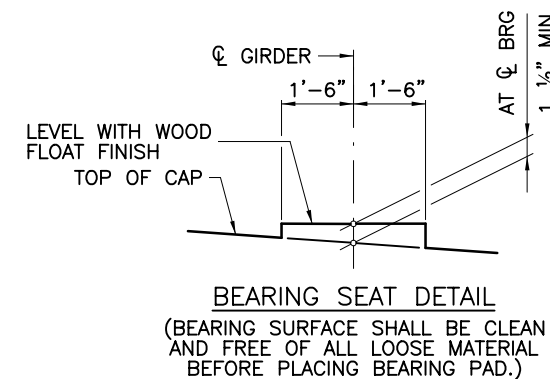
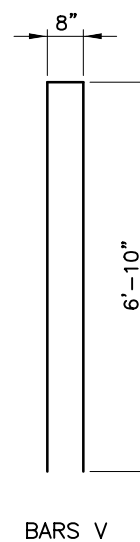
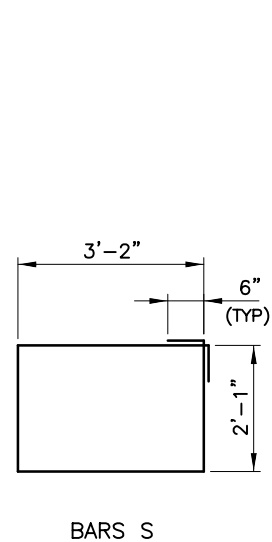
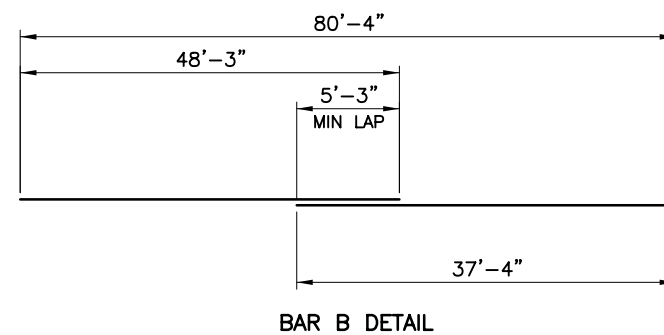
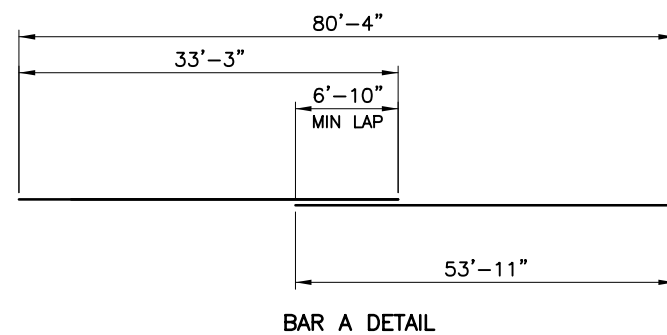
BAR	NO.	SIZE	LENGTH	WEIGHT
A	6	#11	87'- 2"	2,779
B	4	#11	85'- 7"	1,819
① H	12	#5	82'- 6"	1,033
S	69	#5	11'- 6"	828
V	82	#5	14'- 4"	1,226
REINFORCING STEEL			LB	7,685
CLASS "C" CONCRETE (ABUT)			CY	40.5

GENERAL NOTES:

- COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE.
- REINFORCING BAR DIMENSIONS SHOWN ARE OUT-TO-OUT OF BAR.

MATERIAL NOTES:

- PROVIDE CLASS C CONCRETE ($f'_c = 3,600$ psi).
- PROVIDE GRADE 60 REINFORCING STEEL.



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US 69 AT FM 779

MISCELLANEOUS ABUTMENT DETAILS

Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	KH	6	TEXAS		US 69		
Drawn:	DKC	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	KH	TYL	WOOD	0203	05	039	309

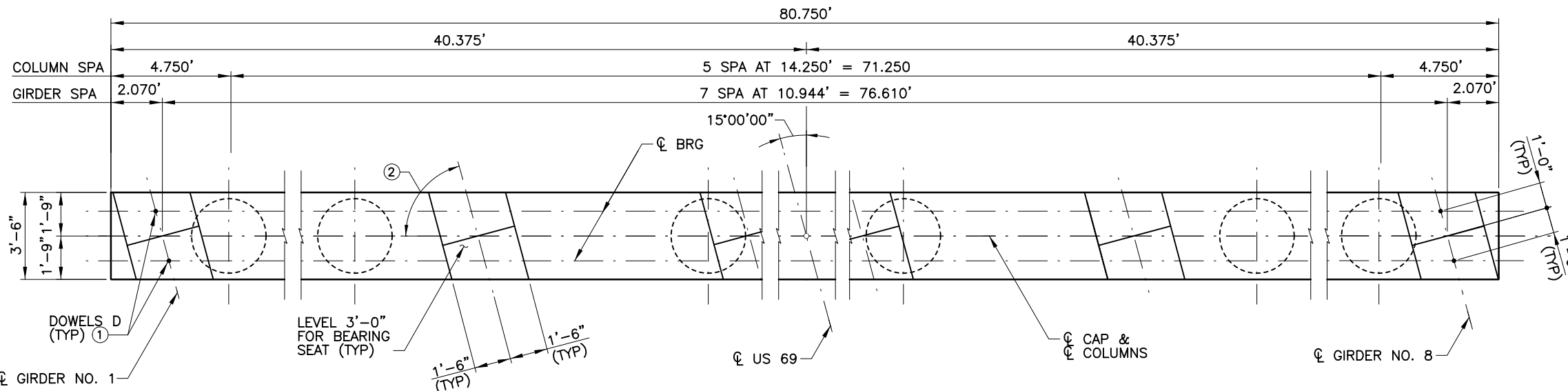
GENERAL NOTES:

- DESIGNED IN ACCORDANCE TO 2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH LATEST INTERIMS (7TH EDITION) (HL93)
- SEE INTERIOR BENT REINFORCING DETAILS SHEET FOR BEARING SEAT AND REINFORCING BAR DETAILS.
- COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE.
- CALCULATED FOUNDATION LOADS:
BENT 2 = 212 TONS/D.S.
BENT 5 = 213 TONS/D.S.

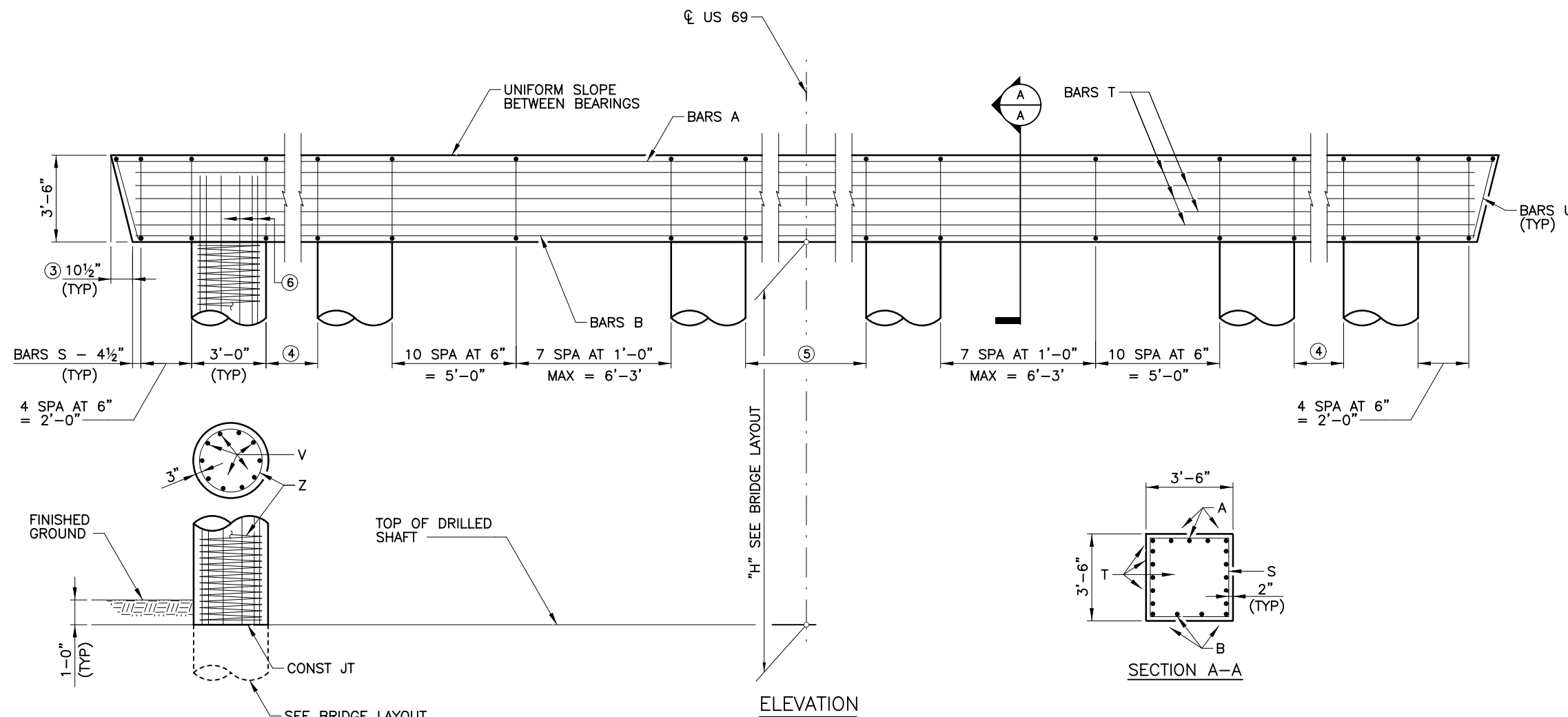
MATERIAL NOTES:

- PROVIDE CLASS C CONCRETE ($f'_c = 3,600$ psi).
- PROVIDE GRADE 60 REINFORCING STEEL.

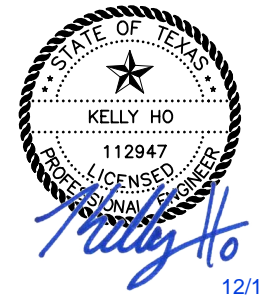
- DOWELS D OUTSIDE GIRDERS ONLY.
- SEE GIRDER LAYOUT SHEET FOR GIRDER ANGLE (TYP).
- MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
- 15 SPA AT 9" = 11'-3"
- 12 SPA AT 1'-0" MAX = 11'-3"
- V BARS EXTEND 2'-8" MIN INTO CAP.



PLAN



ELEVATION

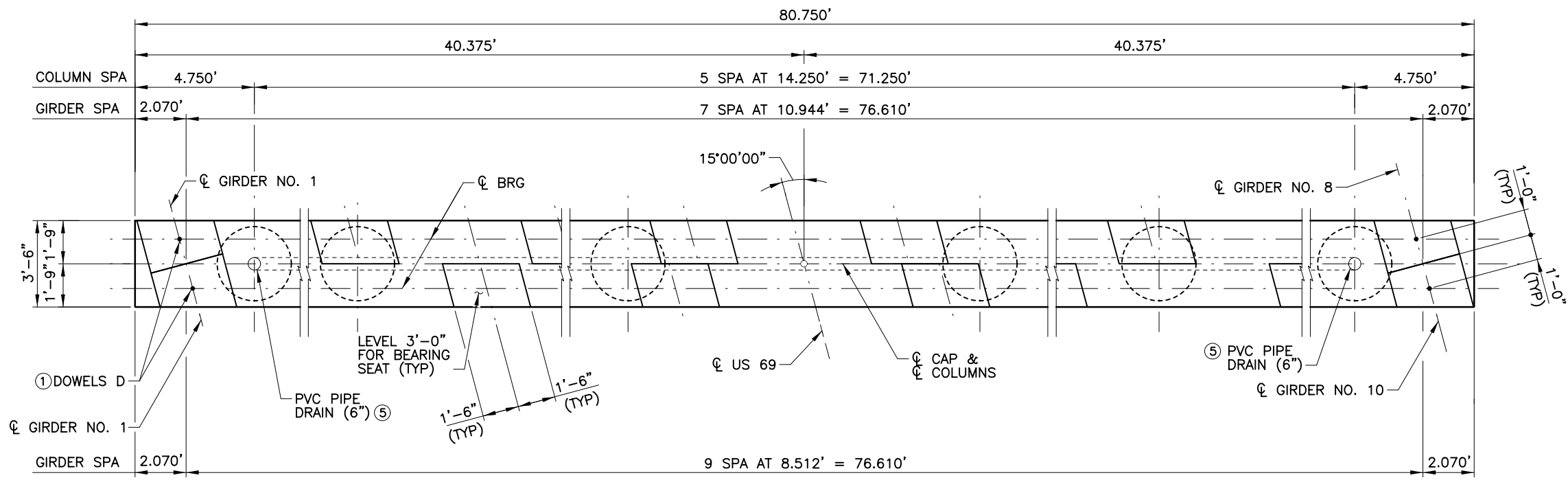


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US 69 AT FM 779

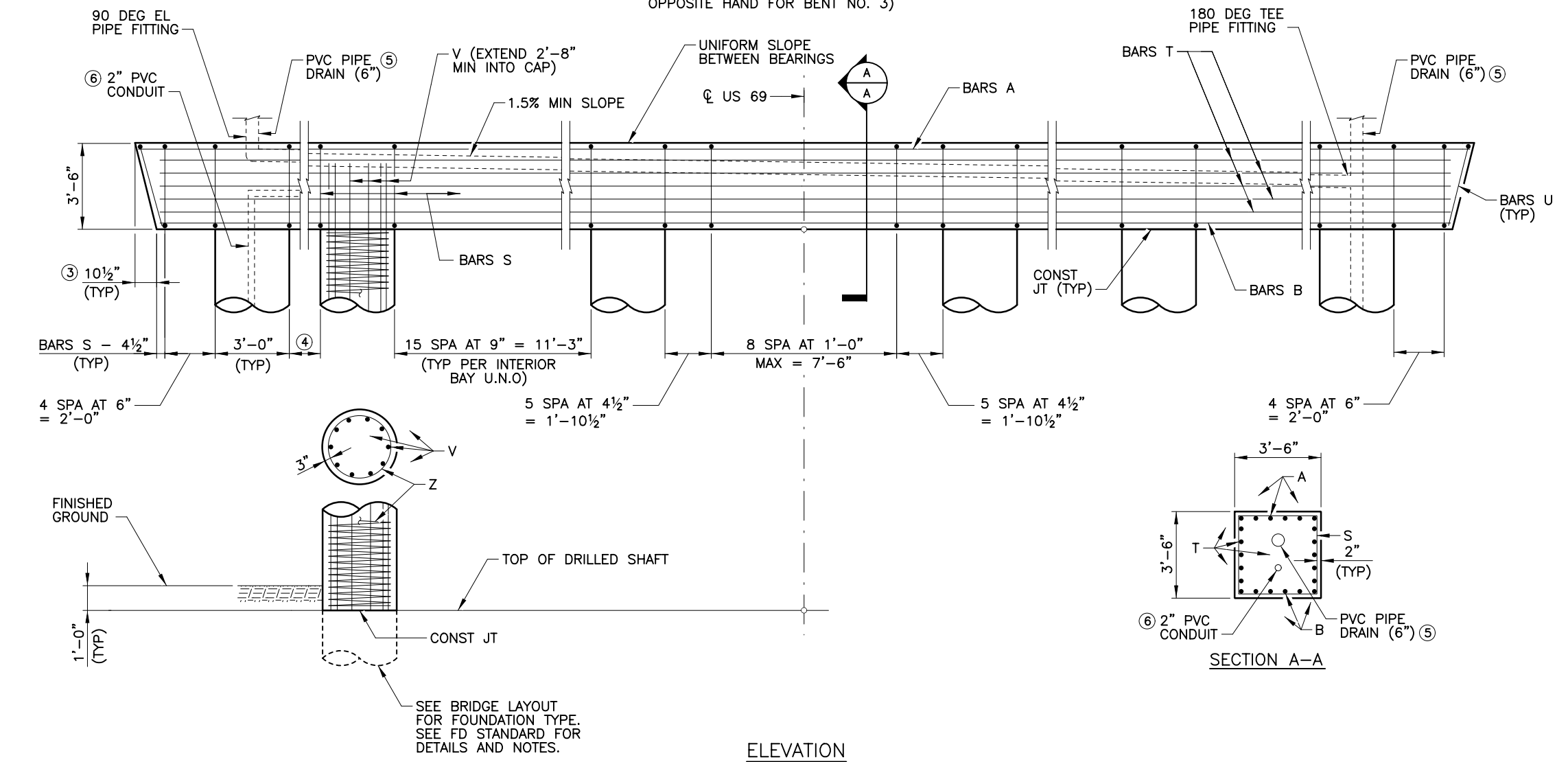
INTERIOR BENT NO. 2 AND NO. 5
DETAILS

Designed:	DKC	FED. RD. DIV. NO.	6	STATE	TEXAS	PROJECT NO.		HIGHWAY NO.	US 69
Checked:	KH	DIST.	TYL	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	DKC	JOB NO.	039	SHEET NO.	310				

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PLAN
(SHOWING BENT NO. 4.
OPPOSITE HAND FOR BENT NO. 3)

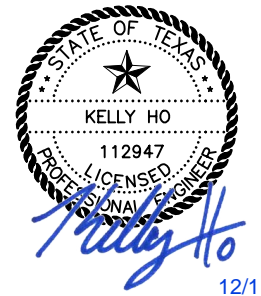


ELEVATION

- GENERAL NOTES:**
- DESIGNED IN ACCORDANCE TO 2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH LATEST INTERIMS (7TH EDITION) (HL93)
 - SEE INTERIOR BENT REINFORCING DETAILS SHEET FOR BEARING SEAT AND REINFORCING BAR DETAILS.
 - COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE.
 - CALCULATED FOUNDATION LOADS:
BENT 3 = 239 TONS/D.S.
BENT 4 = 236 TONS/D.S.

- MATERIAL NOTES:**
- PROVIDE CLASS C CONCRETE ($f'_c = 3,600$ psi).
 - PROVIDE GRADE 60 REINFORCING STEEL.

- DOWELS D OUTSIDE GIRDERS ONLY. FOR BENT NO. 3 ONLY.
- SEE GIRDER LAYOUT SHEET FOR GIRDER ANGLE (TYP).
- MEASURED PARALLEL TO TOP OF CAP CROSS-SLOPE.
- 15 SPA AT 9" = 11'-3"
- PVC PIPE DRAIN FOR BENT NO. 4 ONLY. SEE BRIDGE DRAIN DETAILS FOR ADDITIONAL INFORMATION.
- PVC PIPE CONDUIT FOR BENT NO. 3 AND NO. 4. SEE INTERSECTION ILLUMINATION LAYOUT SHEETS FOR ADDITIONAL INFORMATION.



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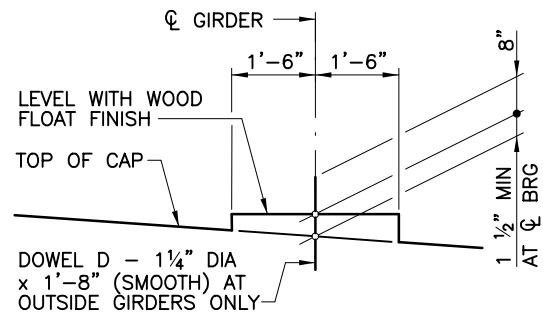


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US 69 AT FM 779

INTERIOR BENT NO. 3 AND NO. 4
DETAILS

Designed:	DKC	FED. RD. DIV. NO.	6	STATE	TEXAS	PROJECT NO.		HIGHWAY NO.	US 69
Checked:	KH	DIST.	TYL	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	DKC	JOB NO.	039	SHEET NO.	311				

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BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

TABLE OF COLUMN QUANTITIES ④							TOTAL ESTIMATED QUANTITIES	
BENT	"H"	CLASS "C" CONCRETE (COLUMN)	BARS V 60 - #9		BARS Z 6 - #4 SPIRALS		REINF STEEL	CLASS "C" CONCRETE
NO.	HEIGHT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT	LB	CY
2	21'	33.0	23'- 8"	4,829	683'- 4"	2,739	14,562	69.6
3	23'	36.1	25'- 8"	5,237	746'- 2"	2,991	15,222	72.8
4	17'	26.7	19'- 8"	4,013	557'- 8"	2,235	13,721	63.4
5	23'	36.1	25'- 8"	5,237	746'- 2"	2,991	15,729	72.7

- ① QUANTITIES ARE FOR ONE CAP ONLY. TWO REQUIRED.
- ② INCLUDES 1 ~ 1'-10" MIN LAP.
- ③ REMOVE 28 LB FROM REINFORCING STEEL WEIGHT FOR BENT NO. 4 ONLY.
- ④ FOR EACH LINEAR FOOT VARIATION IN "H" VALUE, MAKE THE FOLLOWING ADJUSTMENTS:
 BARS V LENGTH = 1'-0"
 BARS Z LENGTH = 31'-5"
 REINFORCING STEEL = 330 LB
 CLASS "C" CONCRETE (COLUMN) = 1.6 CY

① TABLE OF CAP QUANTITIES - BENT NO. 2 & 5

BAR	NO.	SIZE	LENGTH	WEIGHT
A	5	#11	87'- 3"	2,318
B	4	#11	83'-11"	1,783
D	4	1/4" D	1'- 8"	28
S	91	#6	14'- 8"	2,005
T	10	#5	80'- 6"	840
U	2	#5	9'- 8"	20
REINFORCING STEEL			LB	6,994
CLASS "C" CONCRETE (CAP)			CY	36.6

① TABLE OF CAP QUANTITIES - BENT NO. 3 & 4

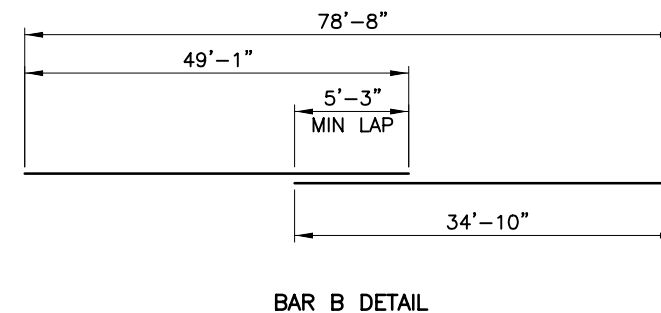
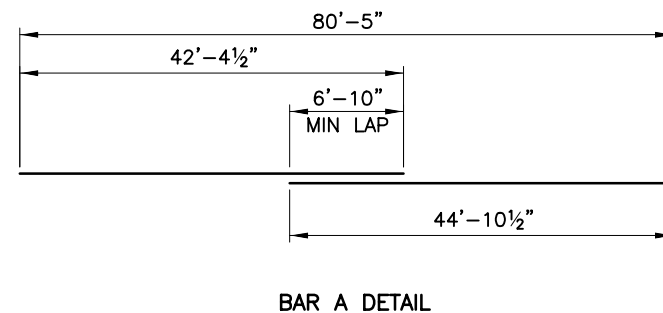
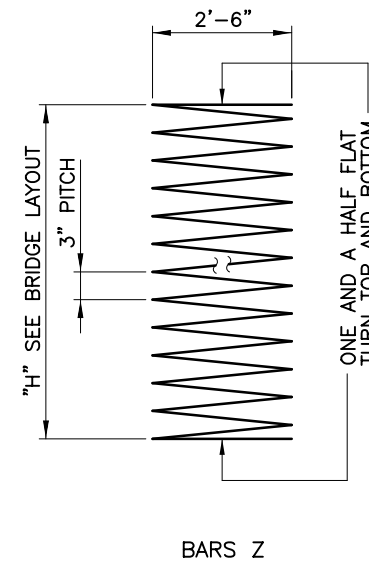
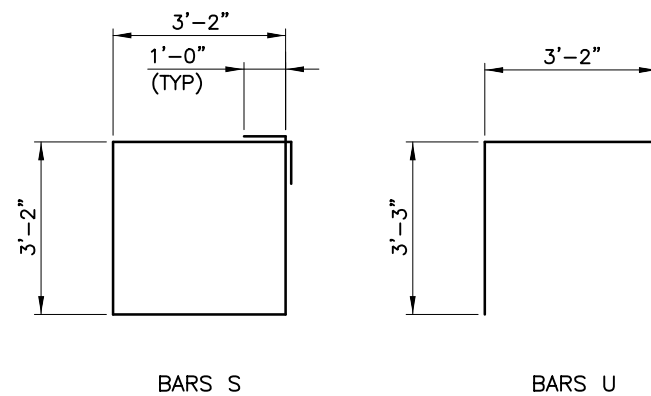
BAR	NO.	SIZE	LENGTH	WEIGHT
A	6	#11	87'- 3"	2,781
B	4	#11	83'-11"	1,783
D	4	1/4" D	1'- 8"	28
S	93	#6	14'- 8"	2,049
T	10	#5	80'- 6"	840
U	2	#5	9'- 8"	20
REINFORCING STEEL			LB	7,501
CLASS "C" CONCRETE (CAP)			CY	36.7

GENERAL NOTES:

- 1. REINFORCING BAR DIMENSIONS SHOWN ARE OUT-TO-OUT OF BAR.

MATERIAL NOTES:

- 1. PROVIDE CLASS C CONCRETE (f'c = 3,600 psi).
- 2. PROVIDE GRADE 60 REINFORCING STEEL.



12/11/2023



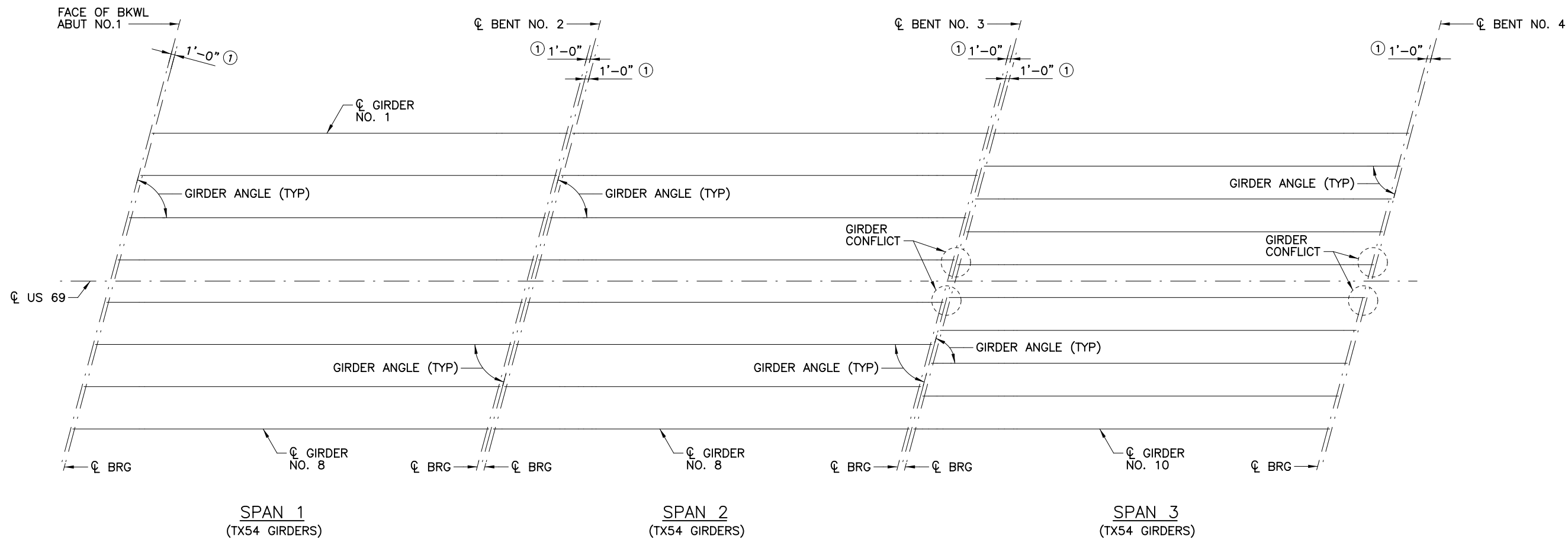
TEXAS REGISTERED ENGINEERING FIRM F-1741

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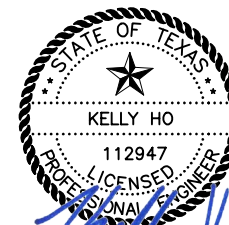
US 69 AT FM 779

INTERIOR BENT REINFORCING DETAILS

Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	KH	6	TEXAS		US 69
Drawn:	DKC	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	KH	TYL	WOOD	0203	05
				JOB NO.	SHEET NO.
				039	312



① SEE IGEB STANDARD FOR ORIENTATION OF DIMENSIONS.



Kelly Ho
12/11/2023



TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

GIRDER LAYOUT
(SPANS 1-3)

Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	KH	6	TEXAS		US 69
Drawn:	CPY	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	KH	TYL	WOOD	0203	05
					JOB NO.
					039
					SHEET NO.
					313

BENT REPORT

BENT NO. 1 (N 52 35 6.41 E)				BENT NO. 3 (N 52 35 6.41 E)			
DISTANCE BETWEEN STATION LINE AND GIRDER 1 38.305 L				DISTANCE BETWEEN STATION LINE AND GIRDER 1 38.305 L			
		GIRDER SPAC. (C.L. BENT)	GIRDER ANGLE D M S			GIRDER SPAC. (C.L. BENT)	GIRDER ANGLE D M S
SPAN 1	GIRDER 1	0.000	75 0 0	SPAN 2	GIRDER 1	0.000	75 0 0
	GIRDER 2	10.944	75 0 0		GIRDER 2	10.944	75 0 0
	GIRDER 3	10.944	75 0 0		GIRDER 3	10.944	75 0 0
	GIRDER 4	10.944	75 0 0		GIRDER 4	10.944	75 0 0
	GIRDER 5	10.944	75 0 0		GIRDER 5	10.944	75 0 0
	GIRDER 6	10.944	75 0 0		GIRDER 6	10.944	75 0 0
	GIRDER 7	10.944	75 0 0		GIRDER 7	10.944	75 0 0
	GIRDER 8	10.944	75 0 0		GIRDER 8	10.944	75 0 0
	TOTAL	76.610			TOTAL	76.610	
BENT NO. 2 (N 52 35 6.41 E)				BENT NO. 4 (N 52 35 6.41 E)			
DISTANCE BETWEEN STATION LINE AND GIRDER 1 38.305 L				DISTANCE BETWEEN STATION LINE AND GIRDER 1 38.305 L			
		GIRDER SPAC. (C.L. BENT)	GIRDER ANGLE D M S			GIRDER SPAC. (C.L. BENT)	GIRDER ANGLE D M S
SPAN 1	GIRDER 1	0.000	75 0 0	SPAN 3	GIRDER 1	0.000	75 0 0
	GIRDER 2	10.944	75 0 0		GIRDER 2	8.512	75 0 0
	GIRDER 3	10.944	75 0 0		GIRDER 3	8.512	75 0 0
	GIRDER 4	10.944	75 0 0		GIRDER 4	8.512	75 0 0
	GIRDER 5	10.944	75 0 0		GIRDER 5	8.512	75 0 0
	GIRDER 6	10.944	75 0 0		GIRDER 6	8.512	75 0 0
	GIRDER 7	10.944	75 0 0		GIRDER 7	8.512	75 0 0
	GIRDER 8	10.944	75 0 0		GIRDER 8	8.512	75 0 0
	TOTAL	76.610			GIRDER 9	8.512	75 0 0
SPAN 2	GIRDER 1	0.000	75 0 0		GIRDER 10	8.512	75 0 0
	GIRDER 2	10.944	75 0 0		TOTAL	76.610	
	GIRDER 3	10.944	75 0 0				
	GIRDER 4	10.944	75 0 0				
	GIRDER 5	10.944	75 0 0				
	GIRDER 6	10.944	75 0 0				
	GIRDER 7	10.944	75 0 0				
	GIRDER 8	10.944	75 0 0				
	TOTAL	76.610					

GIRDER REPORT

GIRDER REPORT, SPAN 1				
	HORIZONTAL C-C BENT	DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.②	GIRDER SLOPE
GIRDER 1	100.000	97.965	99.50	0.0123
GIRDER 2	100.000	97.965	99.50	0.0125
GIRDER 3	100.000	97.965	99.50	0.0127
GIRDER 4	100.000	97.965	99.50	0.0129
GIRDER 5	100.000	97.965	99.50	0.0131
GIRDER 6	100.000	97.965	99.50	0.0133
GIRDER 7	100.000	97.965	99.50	0.0134
GIRDER 8	100.000	97.965	99.50	0.0136
GIRDER REPORT, SPAN 2				
	HORIZONTAL C-C BENT	DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.②	GIRDER SLOPE
GIRDER 1	100.000	98.000	99.50	0.0059
GIRDER 2	100.000	98.000	99.50	0.0061
GIRDER 3	100.000	98.000	99.50	0.0063
GIRDER 4	100.000	98.000	99.50	0.0064
GIRDER 5	100.000	98.000	99.50	0.0066
GIRDER 6	100.000	98.000	99.50	0.0068
GIRDER 7	100.000	98.000	99.50	0.0070
GIRDER 8	100.000	98.000	99.50	0.0072
GIRDER REPORT, SPAN 3				
	HORIZONTAL C-C BENT	DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.②	GIRDER SLOPE
GIRDER 1	120.000	118.000	119.50	-0.0012
GIRDER 2	120.000	118.000	119.50	-0.0011
GIRDER 3	120.000	118.000	119.50	-0.0009
GIRDER 4	120.000	118.000	119.50	-0.0008
GIRDER 5	120.000	118.000	119.50	-0.0006
GIRDER 6	120.000	118.000	119.50	-0.0005
GIRDER 7	120.000	118.000	119.50	-0.0004
GIRDER 8	120.000	118.000	119.50	-0.0002
GIRDER 9	120.000	118.000	119.50	-0.0001
GIRDER 10	120.000	118.000	119.50	0.0001

GENERAL NOTES:

1. DIMENSIONS ARE IN FEET UNLESS NOTED OTHERWISE.

② LENGTHS SHOWN ARE BOTTOM GIRDER FLANGE LENGTH WITH ADJUSTMENT MADE FOR GIRDER SLOPE.

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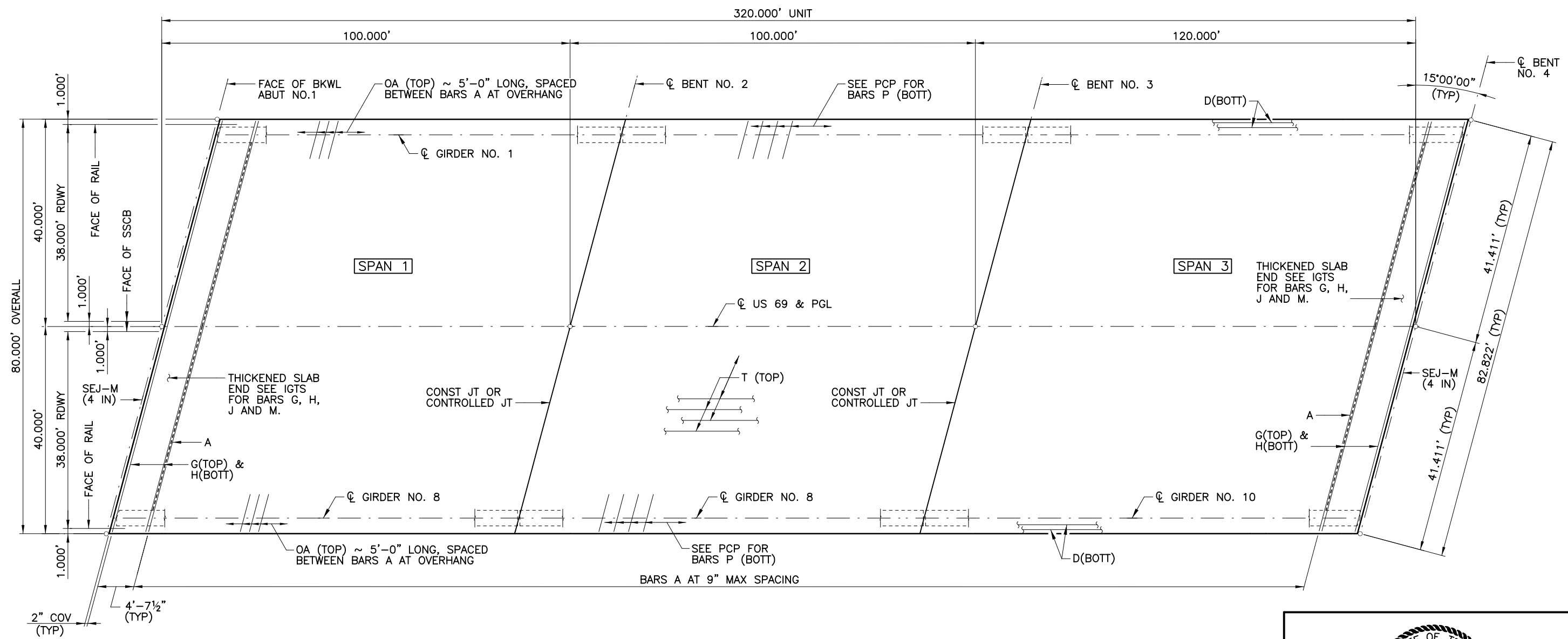
TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

**GIRDER LAYOUT
(SPANS 1-3)**

Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	KH	6	TEXAS		US 69
Drawn:	CPY	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	KH	TYL	WOOD	0203	05
				JOB NO.	SHEET NO.
				039	314




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KELLY HO
112947
LICENSED PROFESSIONAL ENGINEER

Kelly Ho
12/11/2023



TEXAS REGISTERED ENGINEERING FIRM F-1741



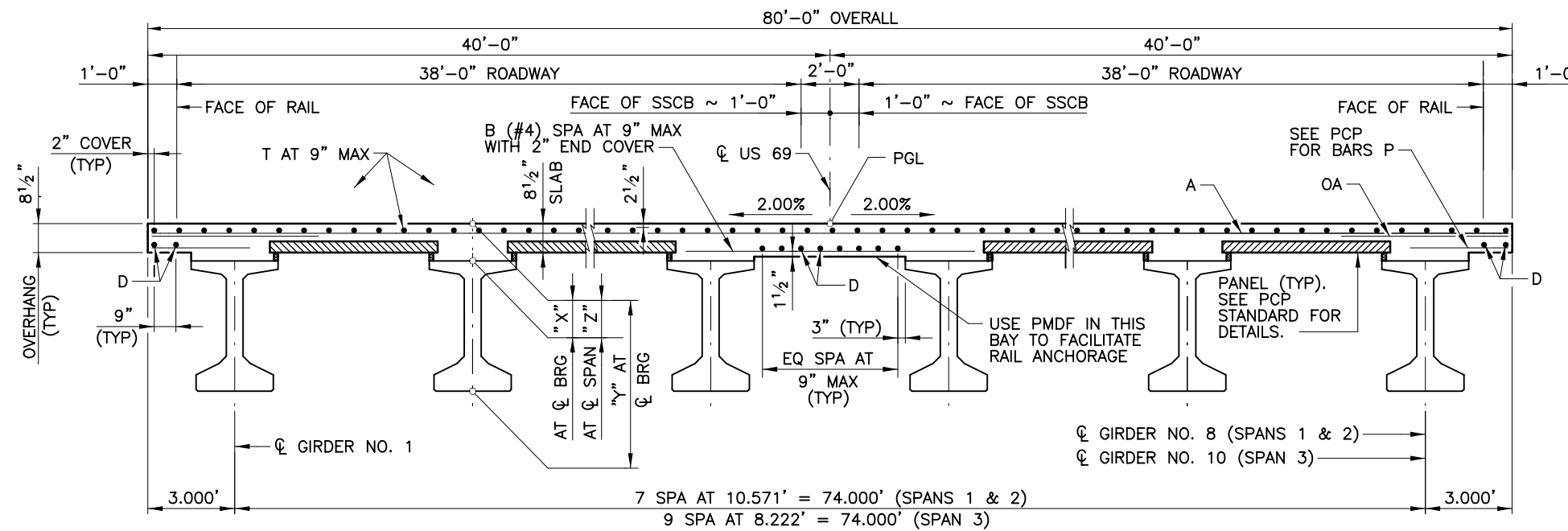
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US 69 AT FM 779

**320.00' PRESTRESSED
CONCRETE I-GIRDER UNIT**

Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	KH	6	TEXAS		US 69
Drawn:	CPY	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	KH	TYL	WOOD	0203	05 039
					SHEET NO. 315

BAR	SIZE
A	#4
B	#4
D	#4
G	#4
H	#4
J	#4
M	#4
OA	#5
P	#4
T	#4

TABLE OF ESTIMATED QUANTITIES			
SPAN	REINF CONCRETE SLAB	② PRESTR CONCRETE GIRDERS (TYPE TX54)	③ REINF STEEL
NO.	SF	LF	LB
1	8,000	796.00	18,400
2	8,000	796.00	18,400
3	9,600	1,195.00	22,080
TOTAL	25,600	2,787.00	58,880



TYPICAL TRANSVERSE SECTION

- ① THEORETICAL DIMENSION
- ② GIRDER LENGTHS SHOWN ARE BOTTOM GIRDER FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR GIRDER SLOPE. SEE GIRDER LAYOUT FOR GIRDER LENGTHS.
- ③ REINFORCING STEEL WEIGHT IS CALCULATED USING AN APPROXIMATE FACTOR OF 2.3 LBS/SF.

GENERAL NOTES:

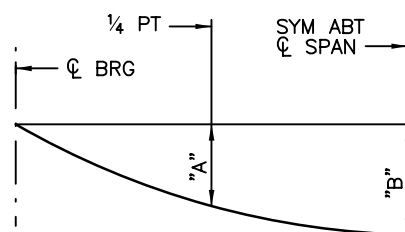
1. DESIGNED ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH LATEST INTERIMS (7TH EDITION) (HL93 LOADING).
2. SEE IGTS STANDARD FOR THICKENED SLAB END DETAILS.
3. SEE PCP AND PCP-FAB STANDARDS FOR PANEL DETAILS NOT SHOWN.
4. SEE IGMS STANDARD FOR MISCELLANEOUS DETAILS.
5. SEE TYPE T551 RAIL AND SSCB STANDARDS FOR RAIL ANCHORAGE IN SLAB.
6. SEE PMDF STANDARD FOR DETAILS AND QUANTITY ADJUSTMENTS IF THIS OPTION IS USED.
7. COVER DIMENSIONS ARE CLEAR DIMENSIONS UNLESS NOTED OTHERWISE.

MATERIAL NOTES:

1. PROVIDE CLASS S CONCRETE, $f'_c = 4,000$ psi.
2. PROVIDE GRADE 60 REINFORCING STEEL.
3. BAR LAPS, WHERE REQUIRED, TO BE AS FOLLOWS:
UNCOATED ~ #4 = 1'-7"

TABLE OF SECTION DEPTHS				
SPAN	GIRDER	"X" AT ϕ BRG	"Y" AT ϕ BRG	"Z" AT ϕ BRG①
1-2	1,8	11 1/2"	5'-5 1/2"	9 5/8"
	2-7	11 1/2"	5'-5 1/2"	10 3/4"
3	1,10	10 1/2"	5'-4 1/2"	9 5/8"
	2-9	10 1/2"	5'-4 1/2"	9 7/8"

SPAN	GIRDER	"A"	"B"
		FT	FT
1	1,8	0.072	0.101
	2-7	0.092	0.129
2	1,8	0.073	0.102
	2-7	0.093	0.130
3	1,10	0.130	0.183
	2-9	0.151	0.212



DEAD LOAD DEFLECTION DIAGRAM

NOTE: DEFLECTIONS SHOWN ARE DUE TO CONCRETE SLAB ONLY ($E_c = 5 \times 10^6$ psi). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSION MAY BE LESS. DEFLECTIONS TO BE ADJUSTED BASED ON FIELD OBSERVATIONS.



12/11/2023

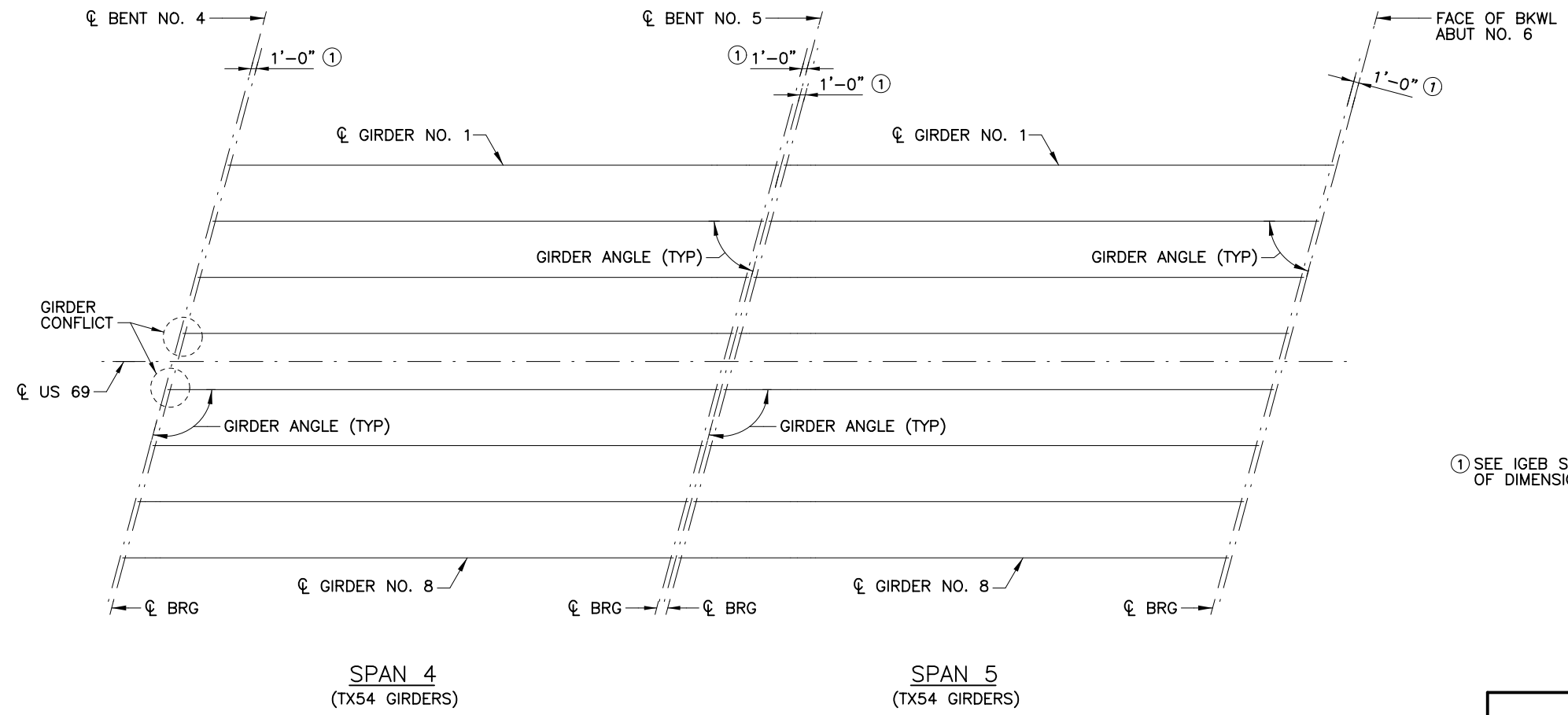


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US 69 AT FM 779

320.00' PRESTRESSED CONCRETE I-GIRDER UNIT

Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	KH	6	TEXAS		US 69		
Drawn:	CPY	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	KH	TYL	WOOD	0203	05	039	316



① SEE IGEB STANDARD FOR ORIENTATION OF DIMENSIONS.

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TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

**GIRDER LAYOUT
(SPANS 4-5)**

Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	KH	6	TEXAS		US 69
Drawn:	CPY	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	KH	TYL	WOOD	0203	05
				JOB NO.	SHEET NO.
				039	317

BENT REPORT

BENT NO. 4 (N 52 35 06.41 E)
 DISTANCE BETWEEN STATION LINE AND GIRDER 1, 38.305 L

SPAN	GIRDER	GIRDER SPAC. (C.L. BENT)	GIRDER ANGLE		
			D	M	S
SPAN 4	GIRDER 1	0.000	75	0	0
	GIRDER 2	10.944	75	0	0
	GIRDER 3	10.944	75	0	0
	GIRDER 4	10.944	75	0	0
	GIRDER 5	10.944	75	0	0
	GIRDER 6	10.944	75	0	0
	GIRDER 7	10.944	75	0	0
	GIRDER 8	10.944	75	0	0
TOTAL		76.610			

BENT NO. 5 (N 52 35 06.41 E)
 DISTANCE BETWEEN STATION LINE AND GIRDER 1, 38.305 L

SPAN	GIRDER	GIRDER SPAC. (C.L. BENT)	GIRDER ANGLE		
			D	M	S
SPAN 4	GIRDER 1	0.000	75	0	0
	GIRDER 2	10.944	75	0	0
	GIRDER 3	10.944	75	0	0
	GIRDER 4	10.944	75	0	0
	GIRDER 5	10.944	75	0	0
	GIRDER 6	10.944	75	0	0
	GIRDER 7	10.944	75	0	0
	GIRDER 8	10.944	75	0	0
TOTAL		76.610			

SPAN 5	GIRDER 1	0.000	75	0	0
	GIRDER 2	10.944	75	0	0
	GIRDER 3	10.944	75	0	0
	GIRDER 4	10.944	75	0	0
	GIRDER 5	10.944	75	0	0
	GIRDER 6	10.944	75	0	0
	GIRDER 7	10.944	75	0	0
	GIRDER 8	10.944	75	0	0
TOTAL		76.610			

ABUT NO. 6 (N 52 35 06.41 E)
 DISTANCE BETWEEN STATION LINE AND GIRDER 1, 38.305 L

SPAN	GIRDER	GIRDER SPAC. (C.L. BENT)	GIRDER ANGLE		
			D	M	S
SPAN 5	GIRDER 1	0.000	75	0	0
	GIRDER 2	10.944	75	0	0
	GIRDER 3	10.944	75	0	0
	GIRDER 4	10.944	75	0	0
	GIRDER 5	10.944	75	0	0
	GIRDER 6	10.944	75	0	0
	GIRDER 7	10.944	75	0	0
	GIRDER 8	10.944	75	0	0
TOTAL		76.610			

GIRDER REPORT

GIRDER REPORT, SPAN 4

GIRDER	C-C BENT	HORIZONTAL DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.②	GIRDER SLOPE
GIRDER 2	100.000	98.000	99.50	-0.0081
GIRDER 3	100.000	98.000	99.50	-0.0079
GIRDER 4	100.000	98.000	99.50	-0.0078
GIRDER 5	100.000	98.000	99.50	-0.0076
GIRDER 6	100.000	98.000	99.50	-0.0074
GIRDER 7	100.000	98.000	99.50	-0.0072
GIRDER 8	100.000	98.000	99.50	-0.0070

GIRDER REPORT, SPAN 5

GIRDER	C-C BENT	HORIZONTAL DISTANCE C-C BRG.	TRUE DISTANCE BOT. BM. FLG.②	GIRDER SLOPE
GIRDER 2	100.000	97.965	99.50	-0.0146
GIRDER 3	100.000	97.965	99.50	-0.0144
GIRDER 4	100.000	97.965	99.50	-0.0142
GIRDER 5	100.000	97.965	99.50	-0.0140
GIRDER 6	100.000	97.965	99.50	-0.0139
GIRDER 7	100.000	97.965	99.50	-0.0137
GIRDER 8	100.000	97.965	99.50	-0.0135

GENERAL NOTES:

1. DIMENSIONS ARE IN FEET UNLESS NOTED OTHERWISE.

- ② LENGTHS SHOWN ARE BOTTOM GIRDER FLANGE LENGTH WITH ADJUSTMENT MADE FOR GIRDER SLOPE.



Kelly Ho
 12/11/2023



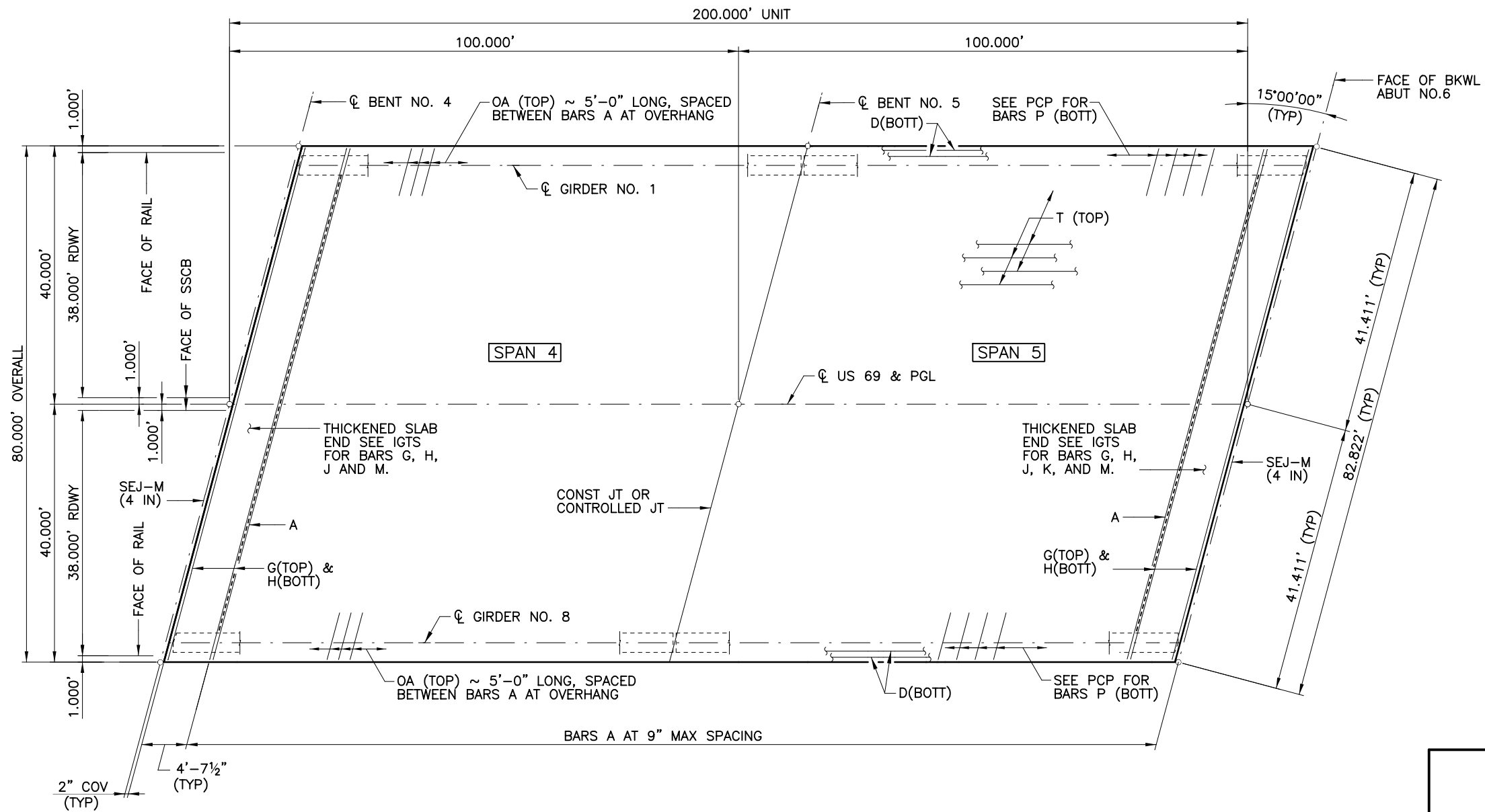
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US 69 AT FM 779

GIRDER LAYOUT
 (SPANS 4-5)

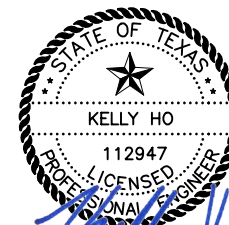
Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	KH	6	TEXAS		US 69		
Drawn:	CPY	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	KH	TYL	WOOD	0203	05	039	318



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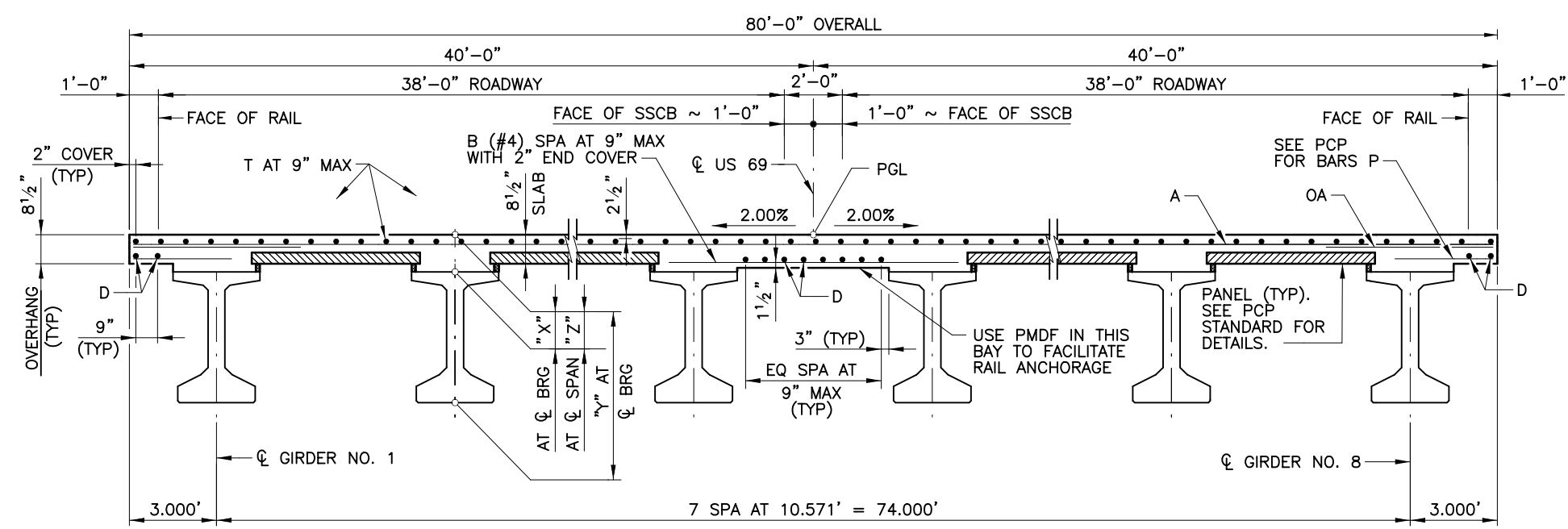
US 69 AT FM 779

**200.00' PRESTRESSED
 CONCRETE I-GIRDER UNIT**

Designed:	DKC	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.
Checked:	KH	6	TEXAS		US 69
Drawn:	CPY	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	KH	TYL	WOOD	0203	05
				039	SHEET NO. 319

BAR TABLE	
BAR	SIZE
A	#4
B	#4
D	#4
G	#4
H	#4
J	#4
M	#4
OA	#5
P	#4
T	#4

TABLE OF ESTIMATED QUANTITIES			
SPAN NO.	REINF CONCRETE SLAB	② PRESTR CONCRETE GIRDERS (TYPE TX54)	③ REINF STEEL
	SF	LF	LB
4	8,000	796.00	18,400
5	8,000	796.00	18,400
TOTAL	16,000	1,592.00	36,800



TYPICAL TRANSVERSE SECTION

- ① THEORETICAL DIMENSION
- ② GIRDER LENGTHS SHOWN ARE BOTTOM GIRDER FLANGE LENGTHS WITH ADJUSTMENTS MADE FOR GIRDER SLOPE. SEE GIRDER LAYOUT FOR GIRDER LENGTHS.
- ③ REINFORCING STEEL WEIGHT IS CALCULATED USING AN APPROXIMATE FACTOR OF 2.3 LBS/SF.

GENERAL NOTES:

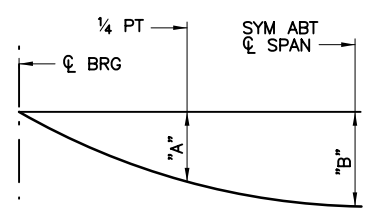
1. DESIGNED ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH LATEST INTERIMS (7TH EDITION) (HL93 LOADING).
2. SEE IGTS STANDARD FOR THICKENED SLAB END DETAILS.
3. SEE PCP AND PCP-FAB STANDARDS FOR PANEL DETAILS NOT SHOWN.
4. SEE IGMS STANDARD FOR MISCELLANEOUS DETAILS.
5. SEE TYPE T551 RAIL AND SSCB STANDARDS FOR RAIL ANCHORAGE IN SLAB.
6. SEE PMDF STANDARD FOR DETAILS AND QUANTITY ADJUSTMENTS IF THIS OPTION IS USED.
7. COVER DIMENSIONS ARE CLEAR DIMENSIONS UNLESS NOTED OTHERWISE.

MATERIAL NOTES:

1. PROVIDE CLASS S CONCRETE $f'_c = 4000$ psi.
2. PROVIDE GRADE 60 REINFORCING STEEL.
3. BAR LAPS, WHERE REQUIRED TO BE AS FOLLOWS:
UNCOATED ~ #4 = 1'-7"

TABLE OF SECTION DEPTHS				
SPAN	GIRDER	"X" AT ϕ BRG	"Y" AT ϕ BRG	"Z" AT ϕ BRG①
4	1,8	11 1/2"	5'-5 1/2"	9 5/8"
	2-7	11 1/2"	5'-5 1/2"	10 3/4"
5	1,8	11 1/2"	5'-5 1/2"	9 5/8"
	2-7	11 1/2"	5'-5 1/2"	10 3/4"

SPAN	GIRDER	"A"	"B"
		FT	FT
4	1,8	0.072	0.101
	2-7	0.092	0.129
5	1,8	0.072	0.101
	2-7	0.092	0.129



DEAD LOAD DEFLECTION DIAGRAM

NOTE: DEFLECTIONS SHOWN ARE DUE TO CONCRETE SLAB ONLY ($E_c = 5 \times 10^6$ psi). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSION MAY BE LESS. DEFLECTIONS TO BE ADJUSTED BASED ON FIELD OBSERVATIONS.



12/11/2023



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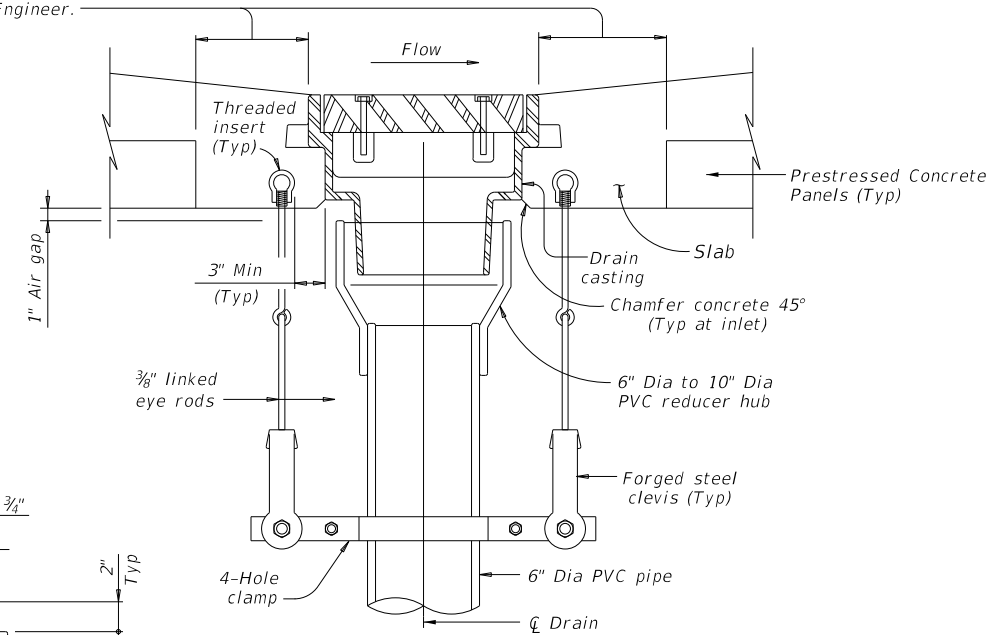
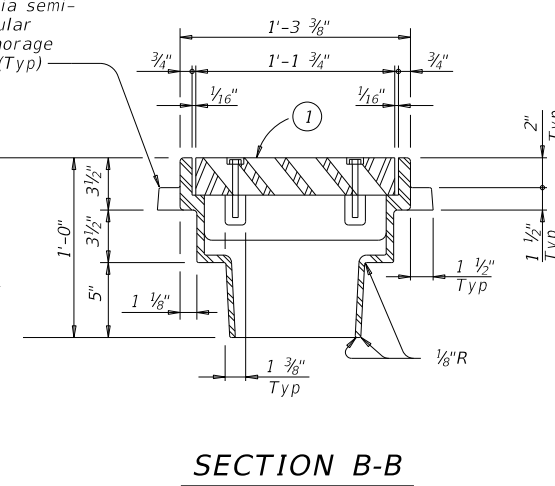
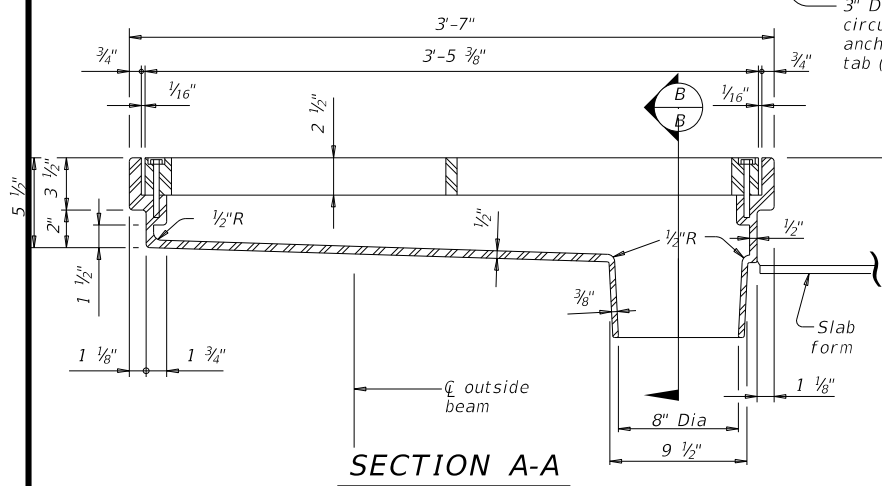
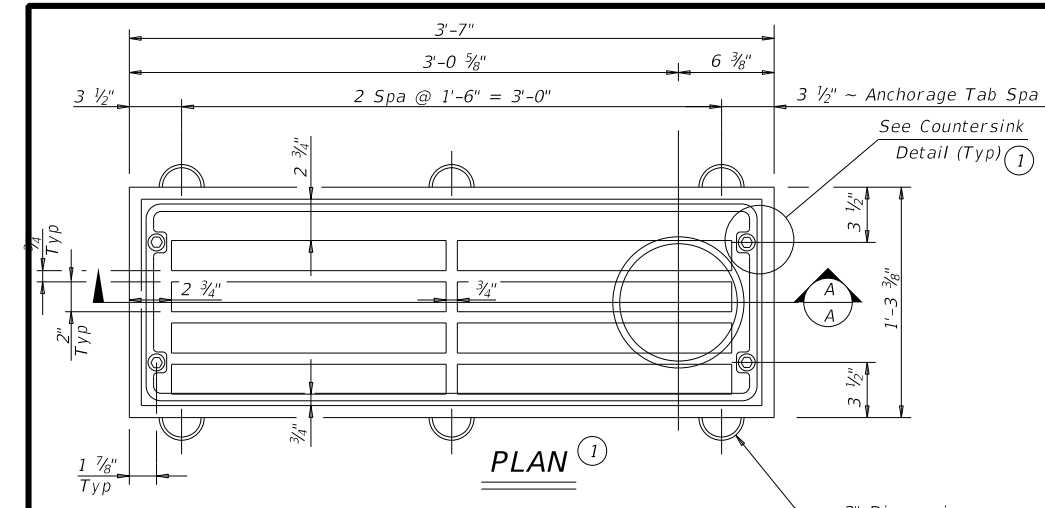
US 69 AT FM 779

200.00' PRESTRESSED CONCRETE I-GIRDER UNIT

Designed: DKC	FED. RD. DIV. NO. 6	STATE TEXAS	PROJECT NO.	HIGHWAY NO. US 69
Checked: KH	DIST. COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: CPY	DIST. COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Checked: KH	TYL	WOOD	0203	05 039 320

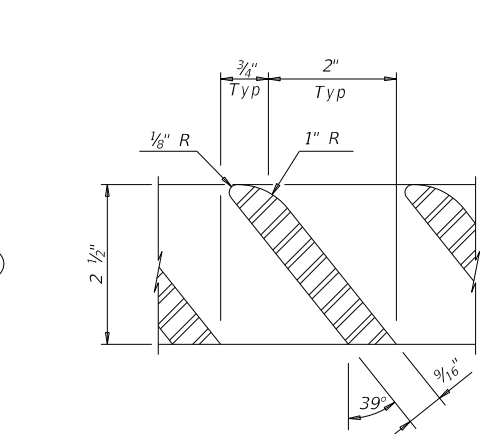
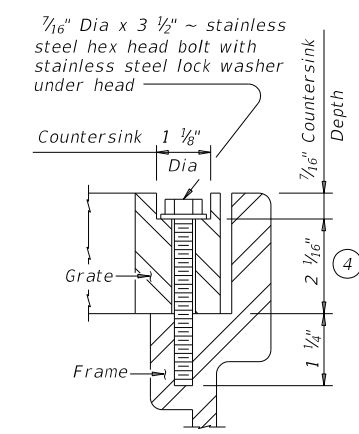
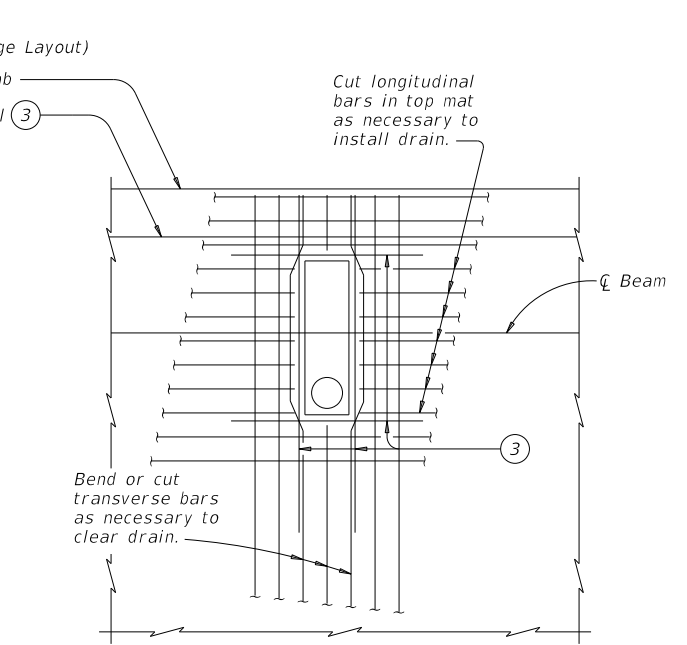
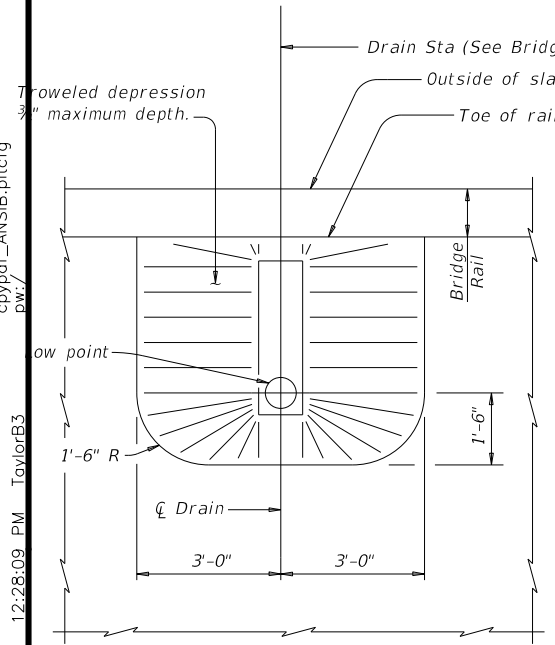
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If prestressed concrete panels are used, placed panels 3" Min from edges of casting. Conventionally reinforce this portion of cast-in-place slab as detailed on the span, unit sheets, or miscellaneous standard details and as directed by the Engineer.



GENERAL NOTES:
 Provide cast steel bridge drain frame and grate as detailed herein conforming to Item 471 "Frames, Grates, Rings, and Covers" and ASTM A27 Grade 65-35.
 Provide stainless steel ASTM F593 hex head bolts with one stainless steel lock washer, each.
 Take care to ensure uniform bearing between contact surfaces of grate and frame.
 Irregularities may be removed by grinding. Provide 3° drafts.
 All fillets 1/4" radius unless otherwise shown.
 Galvanize frame and grate in accordance with Item 445 "Galvanizing" after all fabrication and adjustments.
 Alternate bridge drains may be substituted for the bridge drain shown on this sheet provided they are approved by the Engineer prior to fabrication and installation. Alternate drains must have an approximately equal grate opening area (300 sq in) and an 8" diameter outfall. The grate should be of a similar configuration with vanes oriented perpendicular to the direction of traffic and angled toward the flow direction of the storm water. Acceptable materials for cast alternate bridge drains are ASTM A48, Class 35-B gray iron or ASTM A536, Grade 65-45-12 or Grade 70-50-05 ductile iron. Galvanization of these materials will not be required.
 Bend slab reinforcing bars to clear casting by 1". When bending is not possible, stop or cut reinforcing bars to clear casting as shown. Additional slab reinforcing is considered subsidiary to "Reinforced Concrete Slab". When placing concrete, take care to prevent honeycombing or air pockets around or beneath the casting.
 Provide Schedule 40 DWV PVC pipe conforming to ASTM D2665. Minimum wall thickness: 0.280" ~ 6" Dia, 0.322" ~ 8" Dia. Use fittings as directed by the Engineer. Attach the pipe securely to the superstructure. Provide pipe and supports that accommodate anticipated longitudinal movements of pipe and bridge slab. For long downhill pipe runs, match pipe grade to roadway grade. Galvanize metallic pipe support hardware and fasteners in accordance with Item 445 "Galvanizing". Include the cost of attachment devices in the unit price bid for "Grate and Frame".
 Payment will be by each Grate & Frame (Bridge Drain). See Bridge Layout for location of drains.
 Deviations from Bridge Drain Details contained herein will not be permitted without prior approval from the Engineer.

- ① During fabrication, test fit the grate to ensure grate can be rotated 180° to accommodate water flow from either direction.
- ② Place edge of bridge drain as dimensioned on Bridge Drain Details sheet 2 of 2.
- ③ Provide 4 additional (#5) bars around perimeter in top mat of reinforcing and 4 additional (#5) bars around perimeter in bottom mat of reinforcing. Extend bars 1'-6" from edges of drain.
- ④ Provide 1/2" Dia hole for bolt thru grate.



TROWELED DEPRESSION

SHOWING TYPICAL SLAB REINFORCING

COUNTERSINK DETAIL ①

GRATE VANE DETAIL

(Showing top mat of reinforcing, bottom mat and panels omitted for clarity)



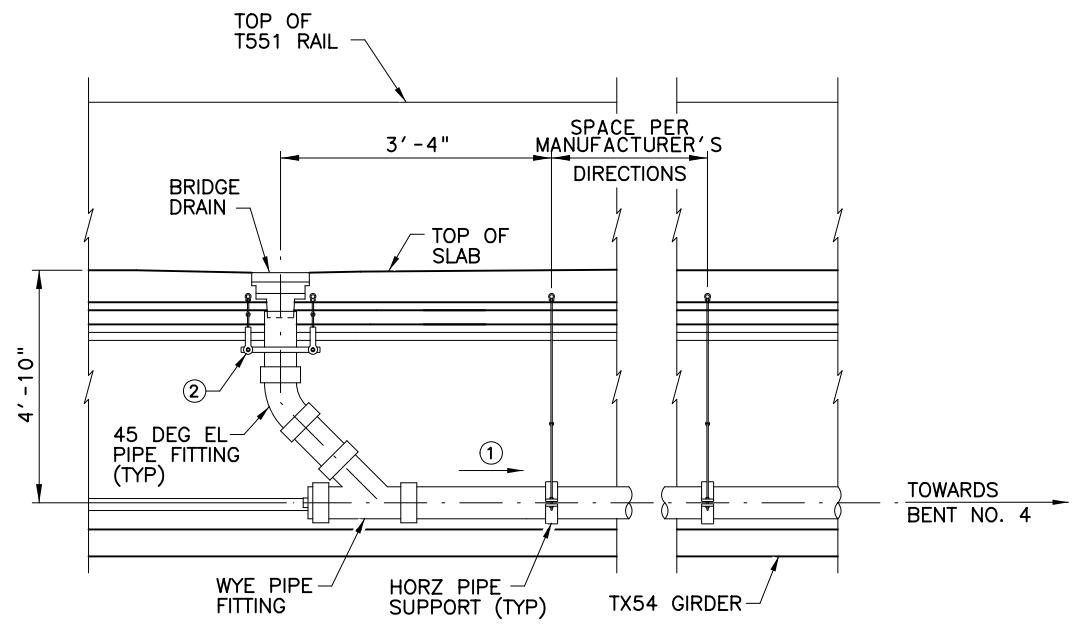
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 US 69 AT FM 779

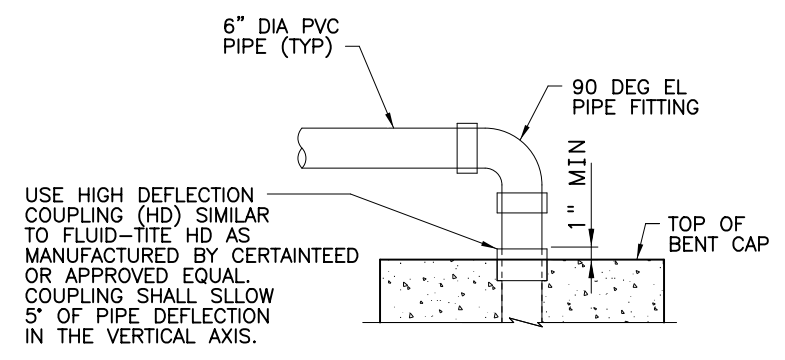
BRIDGE DRAIN DETAILS

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				JOB NO.
				039
				SHEET NO.
				321

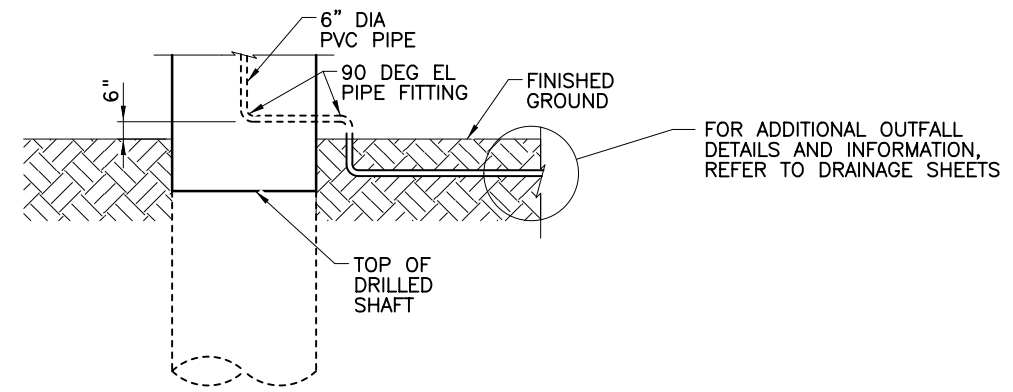


LONGITUDINAL ELEVATION

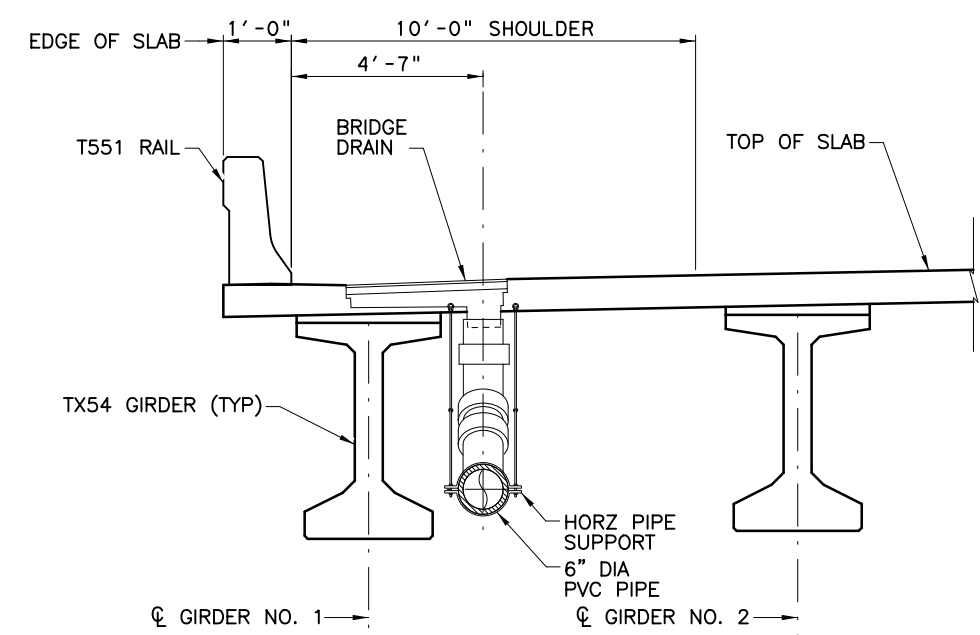
- ① MATCH ROADWAY SLOPE.
- ② HOOK UP TO INLET WITH VERTICAL PIPE SUPPORT (TYP).



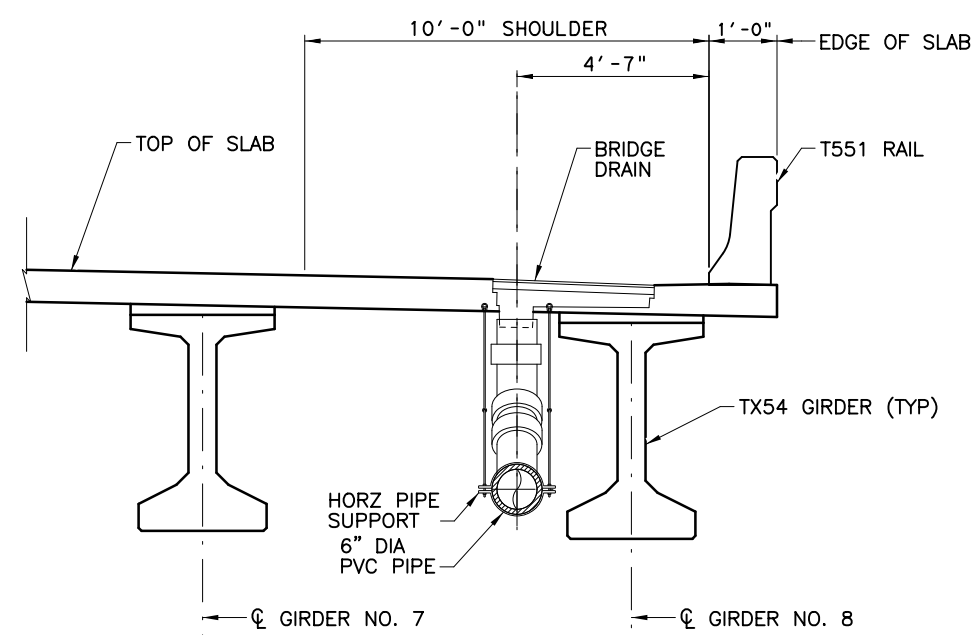
ELEVATION AT BENT CAP
(FOR BENT NO. 4 ONLY)



OUTFALL DETAIL
(FOR BENT NO. 4 ONLY)



SECTION
(SPAN 3)



SECTION
(SPAN 3)



Kelly Ho
12/11/2023



TEXAS REGISTERED ENGINEERING FIRM F-1741

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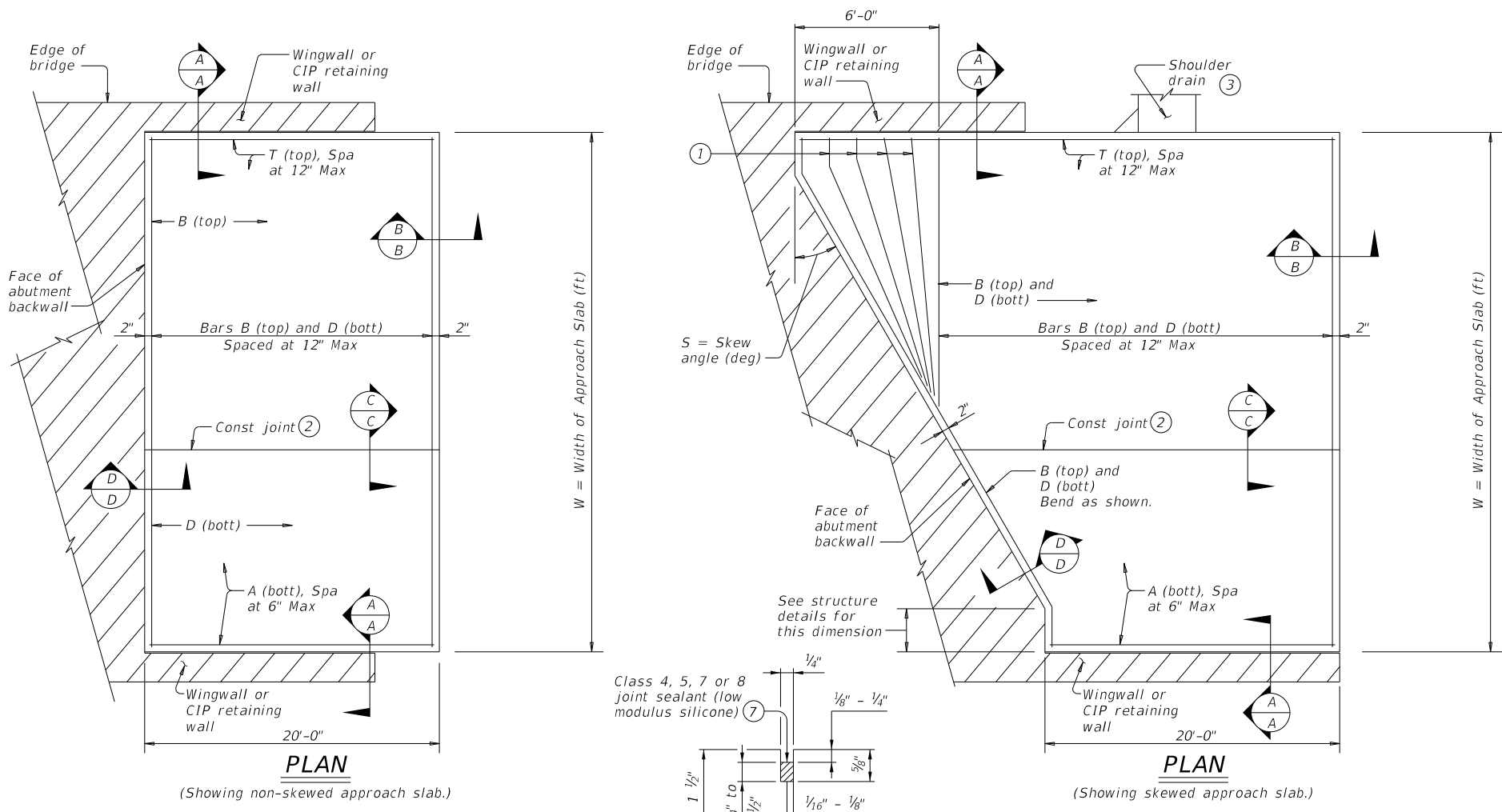
US 69 AT FM 779

BRIDGE DRAIN DETAILS

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			JOB NO.	SHEET NO.
			039	322

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BAR TABLE	
BAR	SIZE
A	#8
B	#5
D	#5
T	#5

APPROXIMATE QUANTITIES ④

Reinf steel weight = 8.5 Lbs/SF of Approach Slab

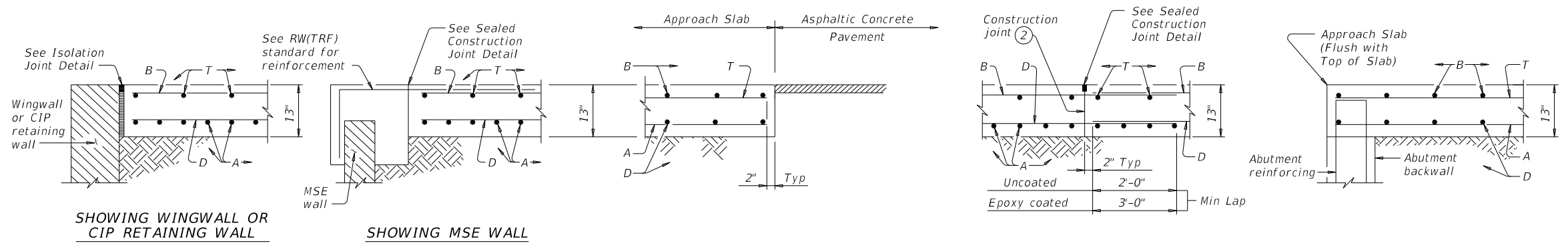
Volume of Appr Slab Conc (CY) = 0.802W + 0.02W² Tan S

W = Width of Approach Slab (ft)

S = Skew Angle (deg)

- ① Flare Bars B and D in this region (1'-6" Max Spa, 3" Min Spa). Minimum flared bar length = 2'-6". Bend bars as necessary.
- ② Provide longitudinal construction joints that align with longitudinal construction joints in the bridge slab with bridges built in stages. Other longitudinal construction joints must receive approval of the Engineer.
- ③ See details elsewhere in plans for shoulder drain location and details.
- ④ For Contractor's information only. Quantities shown are for one approach slab.
- ⑤ Multiple piece tie bars are acceptable at longitudinal construction joints provided minimum laps shown are achieved.
- ⑥ See details elsewhere in plans for required cross-slope.
- ⑦ Place in accordance with Item 438.
- ⑧ Provide backer rod that is 25% larger than joint opening and compatible with the sealant.
- ⑨ If bridge rail is present at the wingwall or CIP retaining wall, place 1/2" rebonded recycled tire rubber between concrete railing and top of approach slab as shown when concrete railing projects over the approach slab.

LONGITUDINAL SAW CUT JOINT DETAIL



GENERAL NOTES:

Construct approach slab in accordance with Item 422.

Provide Class "S" concrete with a minimum compressive strength of 4,000 psi.

Provide Grade 60 reinforcing steel.

Provide longitudinal joints as shown on the Longitudinal Saw Cut Joint Detail at lane lines and shoulders when width between longitudinal construction joints or edges of approach slab exceeds 16 feet. Saw cut joints within 24 hours of concrete placement to a depth of 1 1/2" and seal in accordance with Item 438. Alternately, provide a controlled joint consisting of 1 1/2" vinyl or plastic joint former (Stress Cap, Zip Strip, Stress Lock, or equal as approved by the Engineer.)

Provide rebonded recycled tire rubber joint filler that meets the requirements of DMS-6310. "Joint Sealants and Fillers."

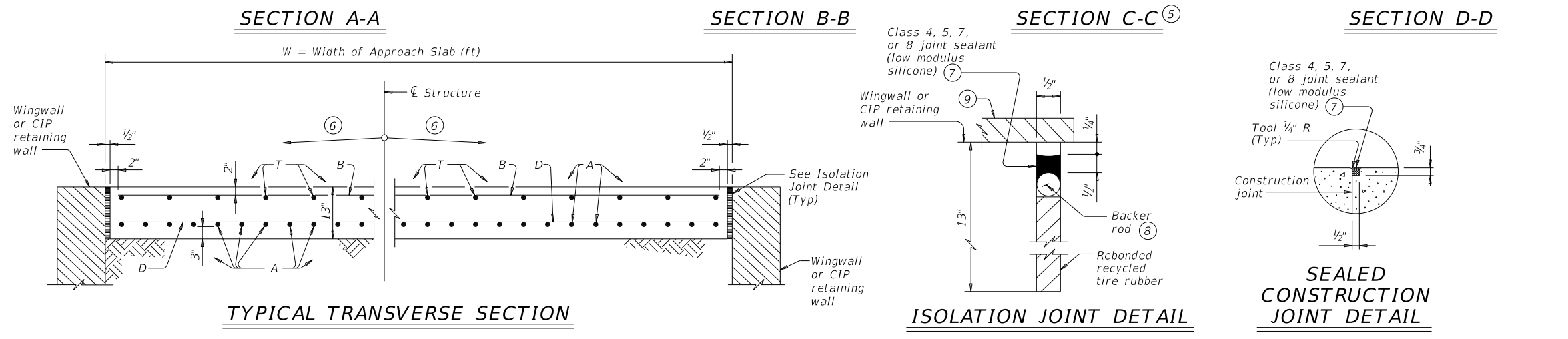
Construct the subgrade or subbase away from the bridge for a minimum distance of 100 feet prior to the approach slab, unless otherwise indicated on the plans.

Compact and finish the subgrade or foundation for the approach slab to the typical cross-section and to the lines and grades shown on the plans.

Cure for 4 days using water or membrane curing per Item 422.

All details shown herein are subsidiary to bridge approach slab.

Cover dimensions are clear dimensions, unless noted otherwise.



Texas Department of Transportation
Bridge Division Standard

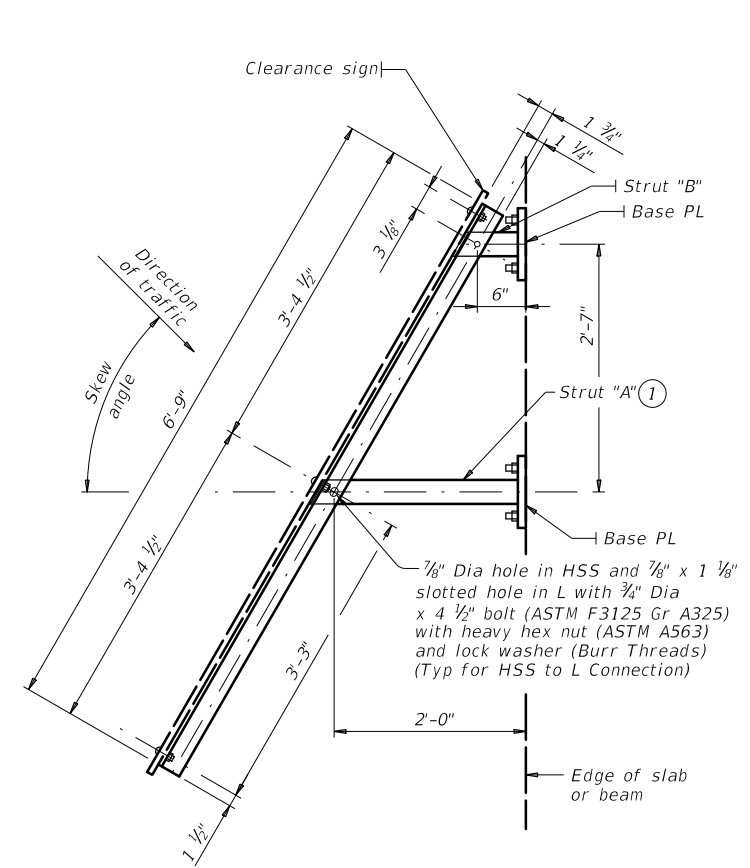
BRIDGE APPROACH SLAB
ASPHALTIC CONCRETE PAVEMENT

BAS-A

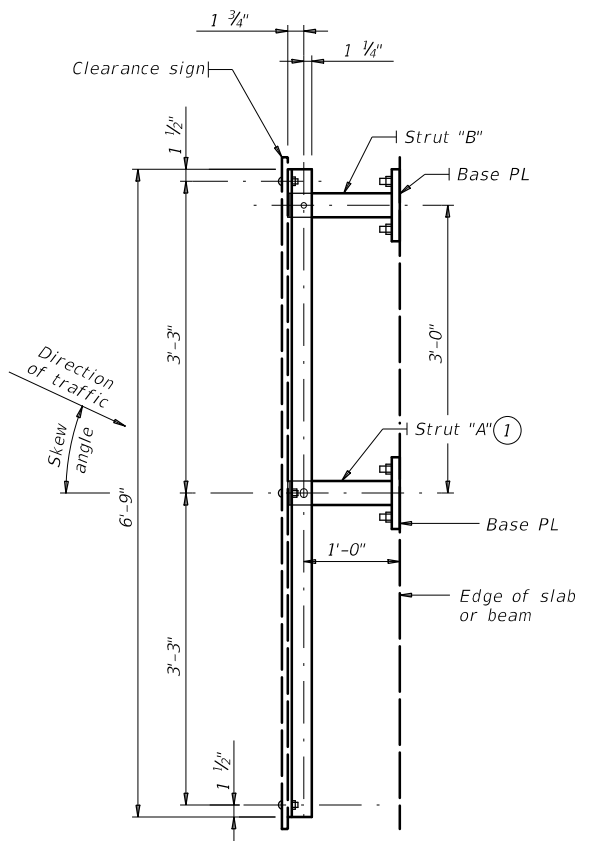
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©TxDOT	April 2019	CONV	SECT	JOB
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	TYL	WOOD		323

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PLAN OF TYPE S MOUNT
 (Used for skews over 30°)



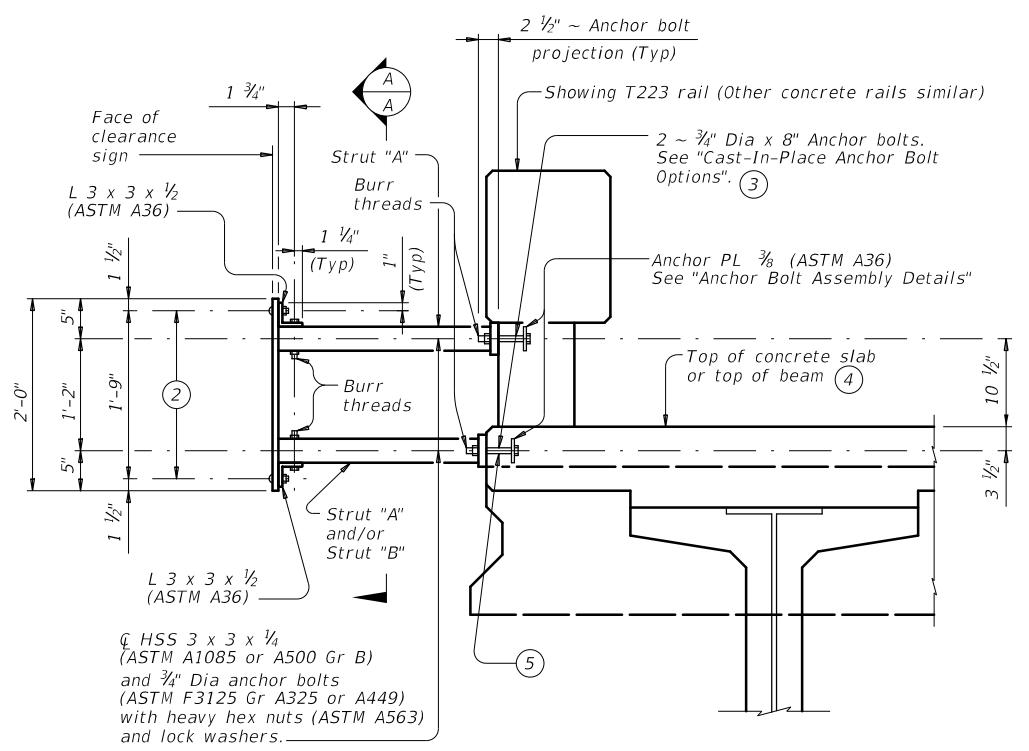
PLAN OF TYPE N MOUNT
 (Used for 0° to 30° skews)

- ① Locate centerline of Strut A no closer than 12" from a vertical concrete edge.
- ② 6 3/8" Dia x 2" Hexagon socket button head cap screws (ASTM A574) with hex nuts. Attach hex nuts to L 3 x 3 x 1/2 by tack welding in two places. Threads must have Class 3A fit tolerance in accordance ASME B1.1. Six screws required.
- ③ At the Contractor's option fully threaded adhesive anchors may be used instead of cast-in-place anchor bolts. Expansion anchors are not allowed. Provide adhesive anchors that are 3/4" Dia ASTM A193 Gr B7 or F1554 Gr 105 fully threaded rods with one hardened steel washer (ASTM F436) and one regular lock washer placed under heavy hex nut (ASTM A563). Embed fully threaded rods using a Type III, Class C, D, E, or F anchor adhesive. Adhesive anchor embedment depth is 8". Anchor adhesive chosen must be able to achieve a factored bond strength in tension of 2.2 kips per anchor (edge distance and spacing must be accounted for). Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing".
- ④ For decked slab beams topped with a 2 course surface treatment and ACP overlay.
- ⑤ Anchor bolts to be cast into decked slab beams topped with a 2 course surface treatment or ACP overlay. Anchor bolts with heavy hex nuts, regular lock washers, hardened washers and anchor plate that is embedded in the beam will be provided by the beam Fabricator.

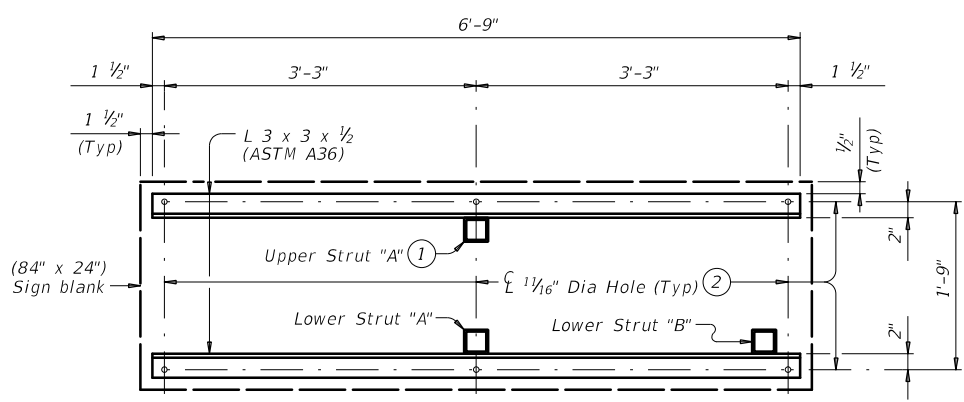
CONSTRUCTION NOTES:
 Install the vertical face of clearance sign plumb unless otherwise approved by the Engineer.
 Test adhesive anchors in accordance with Item 450.3.3, "Tests". Test 1 anchor per bridge mounted clearance sign installed. Perform corrective measures to provide adequate capacity if any of the tests do not meet the required test load. Repair damage from testing as directed.

MATERIAL NOTES:
 Galvanize all steel components after fabrication unless otherwise noted.

GENERAL NOTES:
 This standard provides details to mount a vertical clearance sign (84" x 24") to bridges. Rail Types T631, T631LS, PR11, PR22 and PR3 are not accommodated. The Engineer will furnish the clearance to be shown on the sign.
 See Bridge Layout for sign location and mounting type (Type N or S).
 Cost of furnishing, installing, relocating or removing a clearance sign, including structural steel for sign mount, is included in unit price bid for Item 644, "Small Roadside Sign Assemblies".
 One Sign Blank (84" x 24") is 14 SF.
 Average steel weight for one complete Type N Mount is 219 Lb.
 Average steel weight for one complete Type S Mount is 233 Lb.



SECTION



SECTION A-A

SHEET 1 OF 3



BRIDGE MOUNTED CLEARANCE SIGN ASSEMBLY

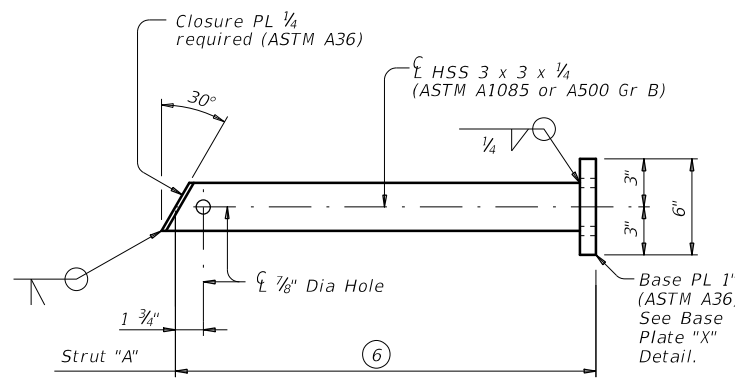
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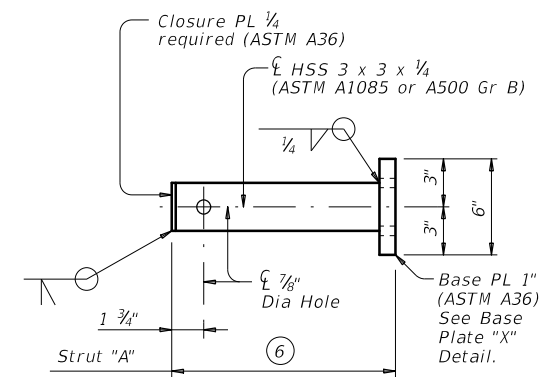
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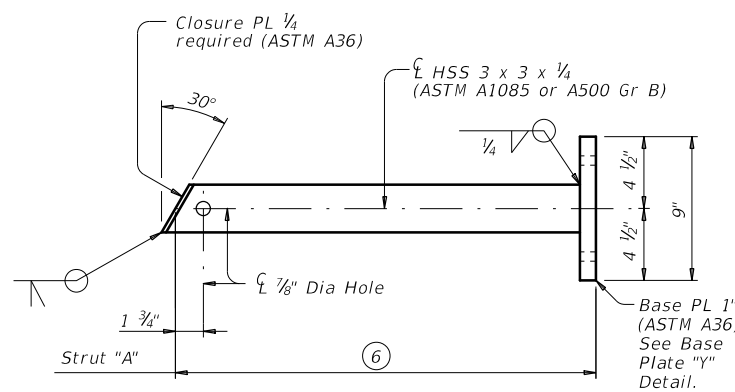
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FOR T411 AND C411 RAIL TYPES

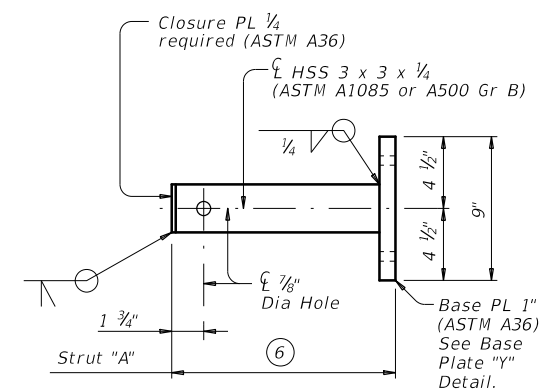


FOR T411 AND C411 RAIL TYPES



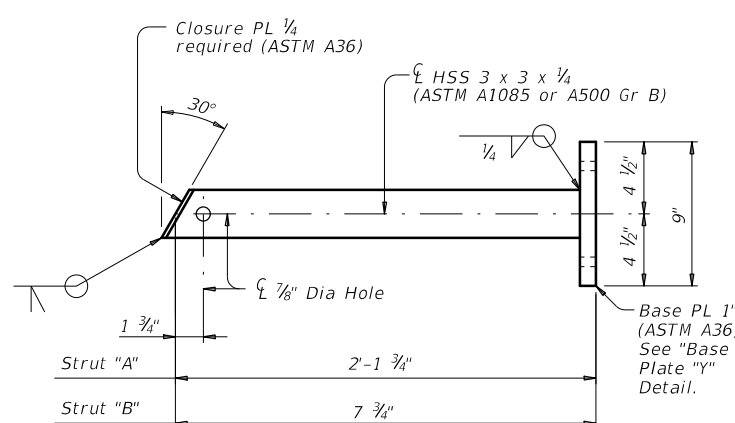
FOR T221, C221, T222, T223, C223, T401, T402, C402, T551, T552, T80HT, T80SS AND SSTR RAIL TYPES

UPPER STRUT DETAIL FOR (TYPE S MOUNT)
 (Used for skews over 30°)

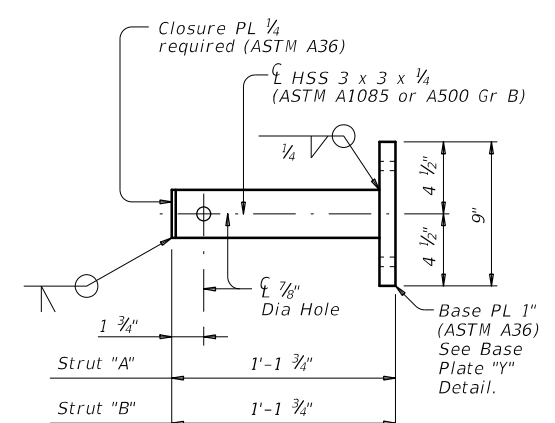


FOR T221, C221, T222, T223, C223, T401, T402, C402, T551, T552, T80HT, T80SS AND SSTR RAIL TYPES

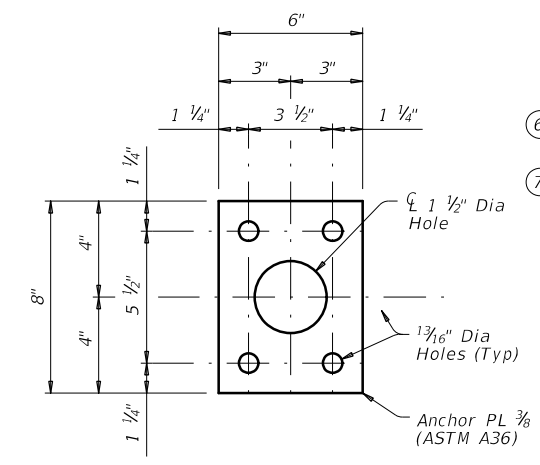
UPPER STRUT DETAIL FOR (TYPE N MOUNT)
 (Used for 0° to 30° skews)



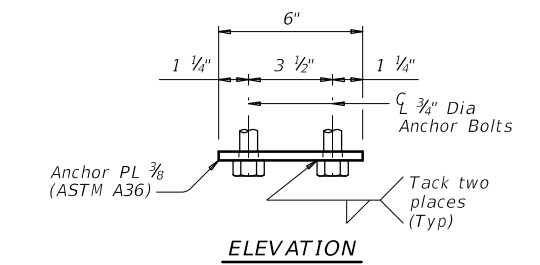
LOWER STRUT DETAILS FOR (TYPE S MOUNT)
 (Used for skews over 30°)



LOWER STRUT DETAILS FOR (TYPE N MOUNT)
 (Used for 0° to 30° skews)

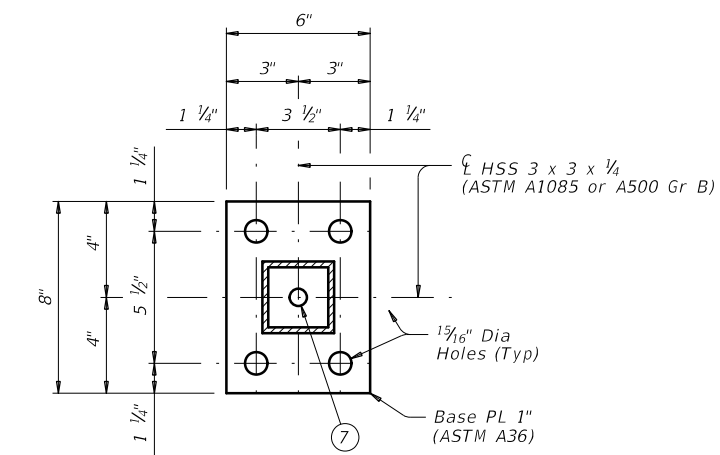


PLAN OF ANCHOR PLATE



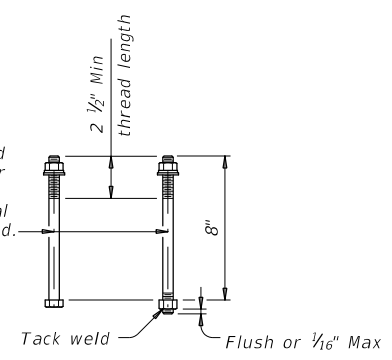
ELEVATION

ANCHOR BOLT ASSEMBLY DETAILS ③
 (Used on Base Plate "X" with T411 and C411 rail types.)



BASE PLATE "X" DETAIL

③ 3/4" Dia heavy hex head anchor bolt (ASTM F3125 Gr A325 or A449) or threaded rod (ASTM A193 Gr B7 or F1554 Gr 105) with one hardened washer and one regular lock washer placed under heavy hex nut (ASTM A563). Furnish one additional heavy hex nut for each threaded rod.

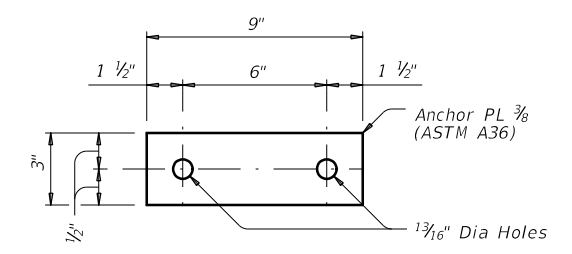


CAST-IN-PLACE ANCHOR BOLT OPTIONS ③

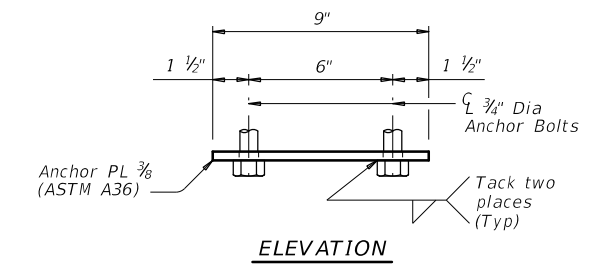
③ At the Contractor's option fully threaded adhesive anchors may be used instead of cast-in-place anchor bolts. Expansion anchors are not allowed. Provide adhesive anchors that are 3/4" Dia ASTM A193 Gr B7 or F1554 Gr 105 fully threaded rods with one hardened steel washer (ASTM F436) and one regular lock washer placed under heavy hex nut (ASTM A563). Embed fully threaded rods using a Type III, Class C, D, E, or F anchor adhesive. Adhesive anchor embedment depth is 8". Anchor adhesive chosen must be able to achieve a factored bond strength in tension of 2.2 kips per anchor (edge distance and spacing must be accounted for). Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing".

⑥ Adjust length to accommodate edge of slab to back of rail for specific project conditions and to help plumb the vertical face of clearance sign.

⑦ Hole required to drain zinc from base plate during galvanizing.

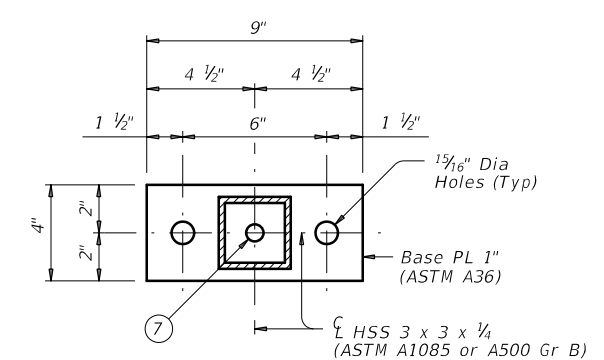


PLAN OF ANCHOR PLATE



ELEVATION

ANCHOR BOLT ASSEMBLY DETAILS ③
 (Used on Base Plate "Y" and with T1F, T2P, C2P, T1W, C1W, T66 and C66 rail types.)



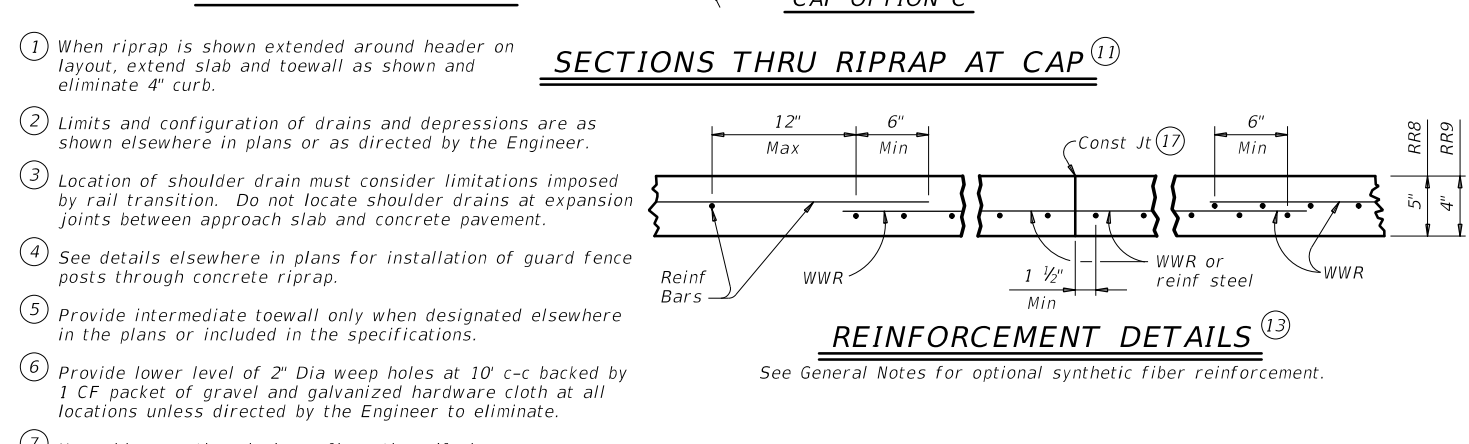
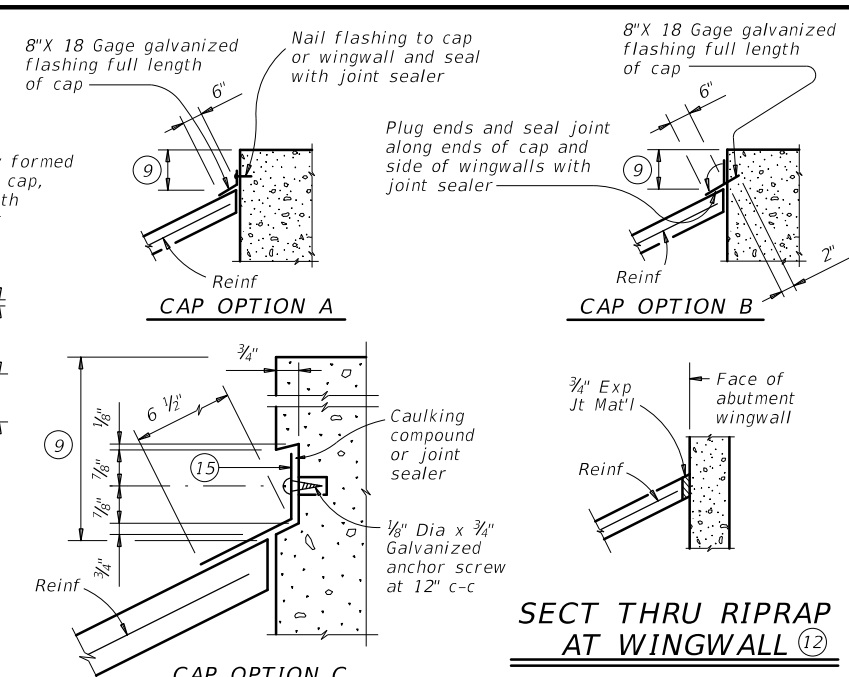
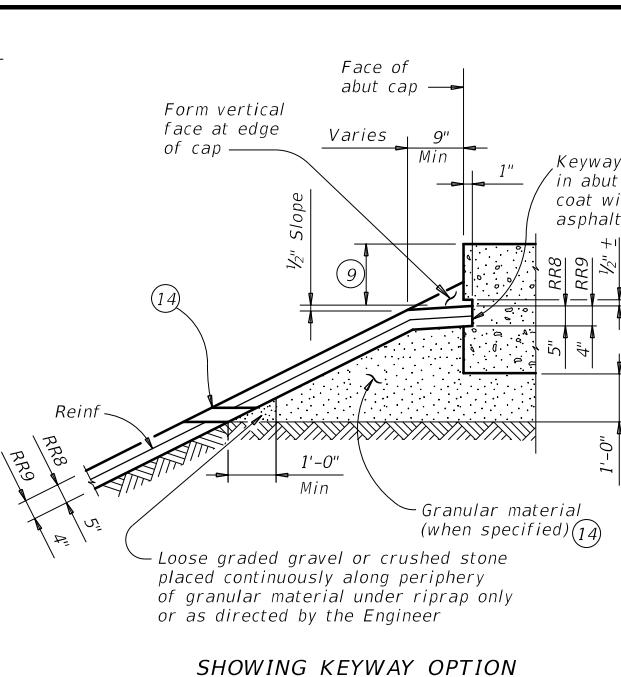
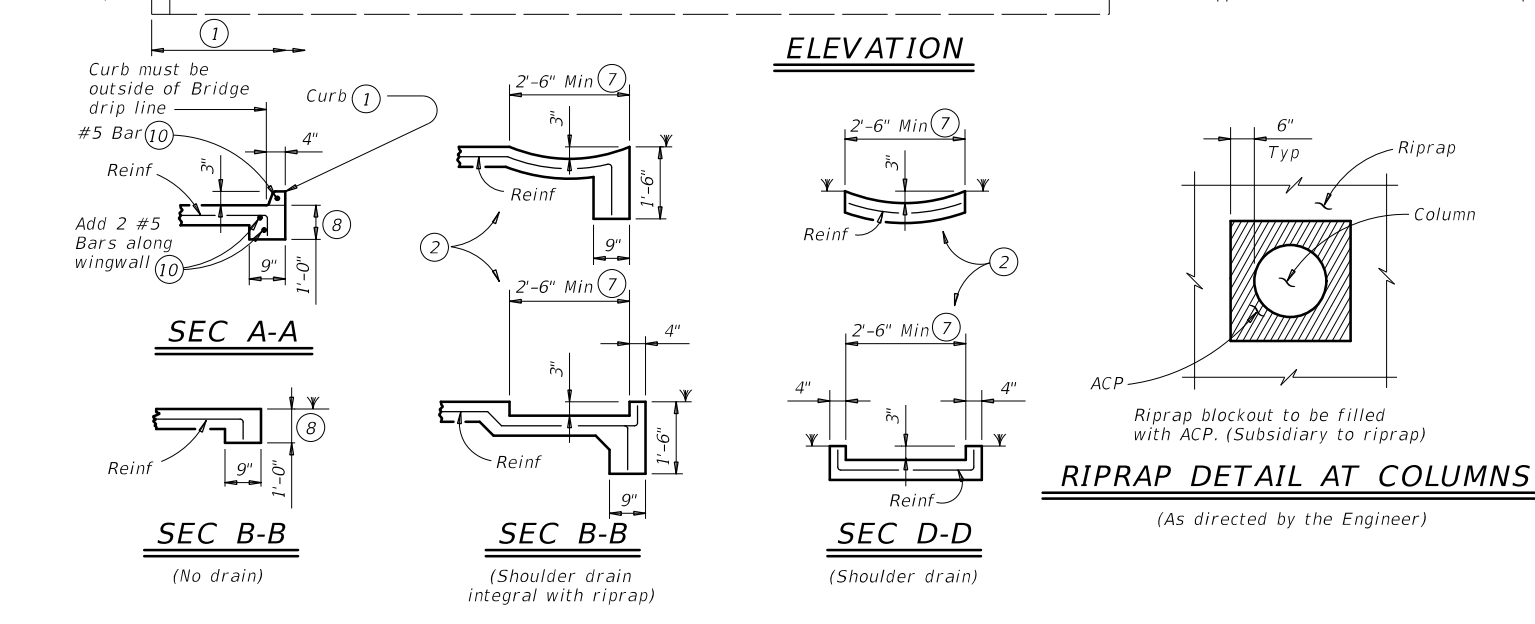
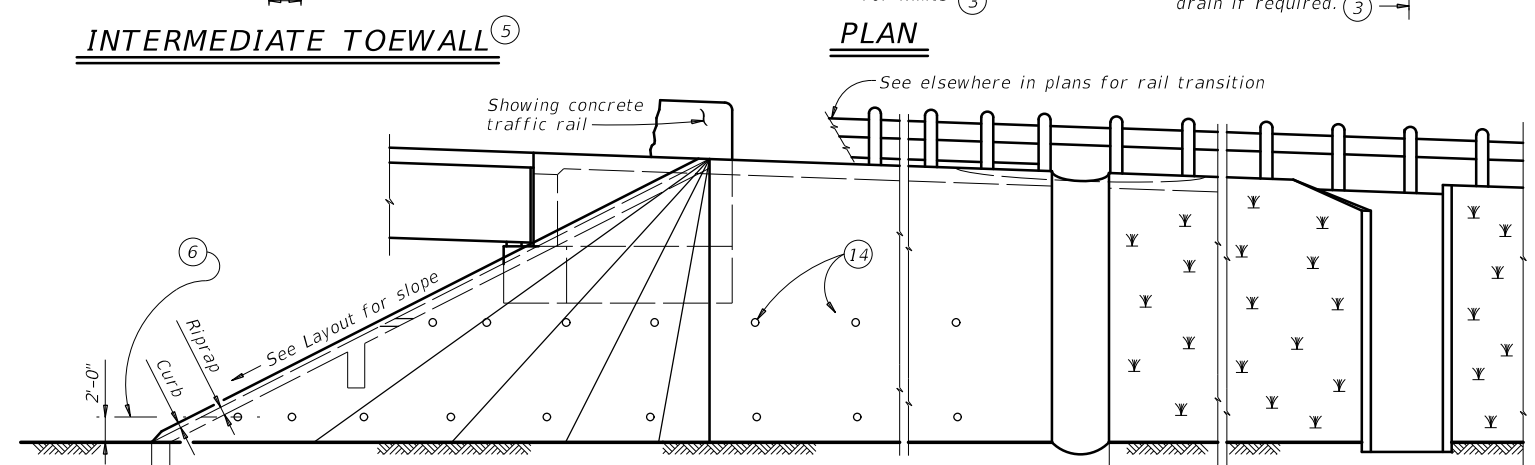
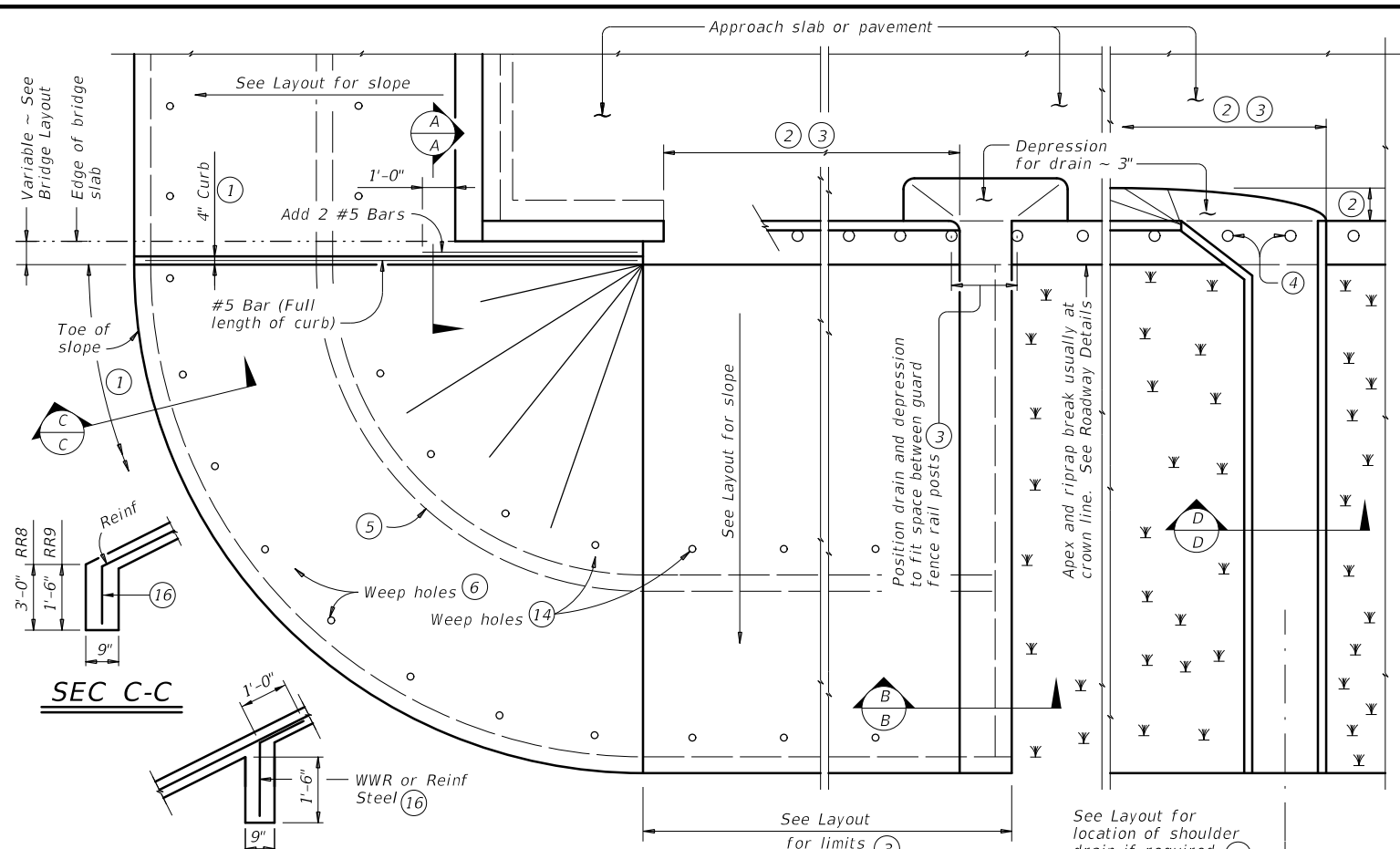
BASE PLATE "Y" DETAIL

SHEET 2 OF 3

		Bridge Division Standard	
BRIDGE MOUNTED CLEARANCE SIGN ASSEMBLY			
BMCS			
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REVISIONS:		JOB NO. 039	US 69
		COUNTY	SHEET NO.
		TYL	WOOD 325

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- 1 When riprap is shown extended around header on layout, extend slab and toewall as shown and eliminate 4" curb.
- 2 Limits and configuration of drains and depressions are as shown elsewhere in plans or as directed by the Engineer.
- 3 Location of shoulder drain must consider limitations imposed by rail transition. Do not locate shoulder drains at expansion joints between approach slab and concrete pavement.
- 4 See details elsewhere in plans for installation of guard fence posts through concrete riprap.
- 5 Provide intermediate toewall only when designated elsewhere in the plans or included in the specifications.
- 6 Provide lower level of 2" Dia weep holes at 10' c-c backed by 1 CF packet of gravel and galvanized hardware cloth at all locations unless directed by the Engineer to eliminate.
- 7 Use wider or other drain configurations if shown elsewhere in plans or if directed by the Engineer.
- 8 Wall extension may be reduced or modified if approved by the Engineer. Increase wall extension to 1'-6" whenever the optional intermediate toewall is called for in the plans.
- 9 Top of cap to top of riprap dimension varies as directed by the Engineer. Should be 9" Min for beam/slab type bridges and 1'-6" for slab span, box beam, or slab beam bridges.
- 10 #5 bars shown are required even when synthetic fiber reinforcing option is selected.
- 11 Provide sealing option for joint between the face of cap and riprap as designated by the Engineer or as shown elsewhere on plans.
- 12 Flashing (shown in Cap Option A) may be used at wingwall in addition to Exp Jt Mat'l if shown on plans or directed by the Engineer.
- 13 Provide #3 reinforcing bars at 18" Spa c-c. Provide Welded Wire Reinforcement (WWR) as 6x6-D2.9xD2.9 or D3xD3. Combinations of WWR and reinforcing bars may be used if both are permitted. Use lap splices of a minimum 6 inches, measured from the transverse wire of WWR, and the ends of reinforcing bars.
- 14 If granular material is specified, provide upper level of 2" Dia weep holes at 10' c-c backed by galvanized hardware cloth.
- 15 8" x 18 Gage Galv Sheet Metal
- 16 Provide WWR or #3 bars, with 1'-0" extension into slope.
- 17 WWR or reinforcing steel is continuous through riprap construction joints. Provide WWR or reinforcing steel that extends 1'-1" minimum into adjacent riprap on each side of construction joint even if synthetic reinforcing fiber is utilized.

FOR CONTRACTOR'S INFORMATION ONLY:

5" of RR8	= 0.015 CY/SF
4" of RR9	= 0.012 CY/SF
#3 Reinf at 18" c-c	= 0.501 Lbs/SF
6x6-D3xD3	= 0.408 Lbs/SF

GENERAL NOTES:

Provide Class "B" concrete ($f'c = 2,000$ psi) unless noted elsewhere in plans.

Provide Grade 60 reinforcing steel.

Provide deformed welded wire reinforcement (WWR) meeting ASTM A1064, unless otherwise shown.

Provide reinforcing bars, deformed WWR, or any suitable combination of both types for riprap reinforcing, unless specified elsewhere in the plans.

Optionally synthetic fibers may be used if approved by the Engineer. Provide synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) in lieu of steel reinforcing in riprap concrete.

Install construction joints or grooved joints extending the full slant slope height at intervals of approximately 20 feet unless otherwise directed by the Engineer.

Hardware cloth, loose grade stone behind weep holes, flashing, or other sealing material are subsidiary to the bid item "Riprap". See Layout for limits of riprap.

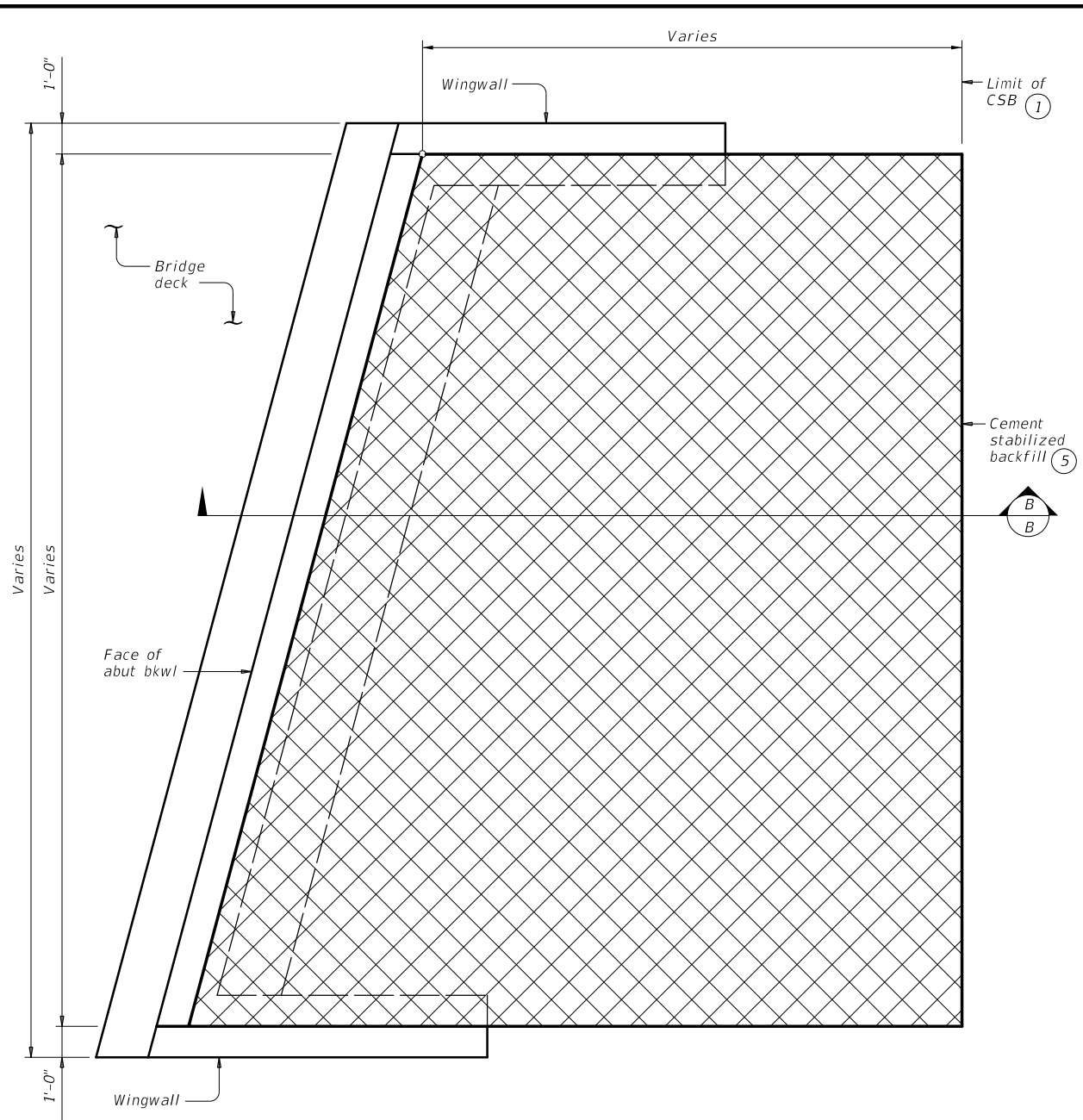
RR8 is to be used on stream crossings.

RR9 is to be used on other embankments.

		Bridge Division Standard		
				CONCRETE RIPRAP AND SHOULDER DRAINS EMBANKMENTS AT BRIDGE ENDS (TYPES RR8 & RR9)
CRR				
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	April 2019	CONTRACT NO. 0203	SECTION 05	JOB NO. 039
REVISIONS		DIST	COUNTY	SHEET NO.
		TYL	WOOD	327

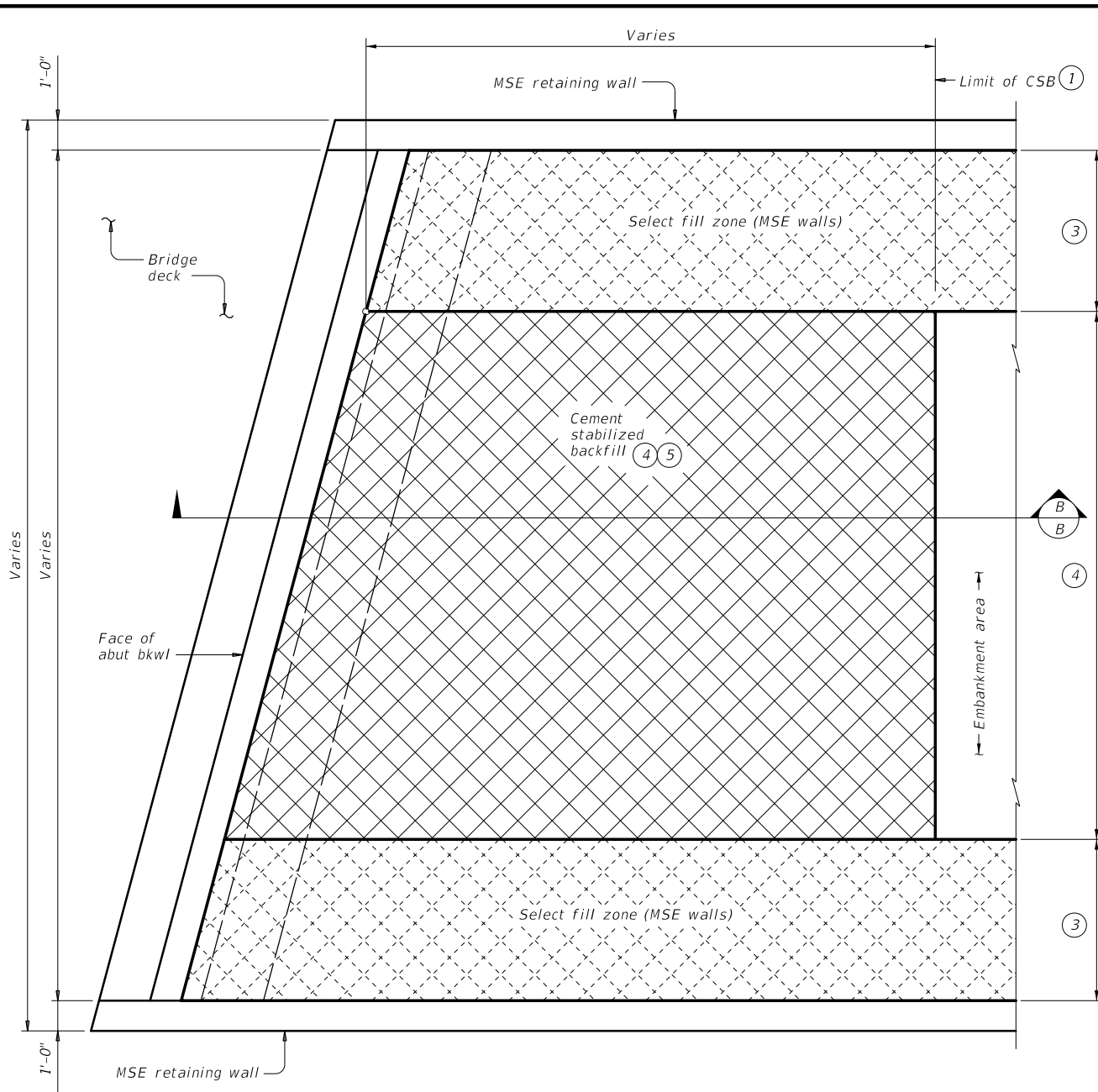
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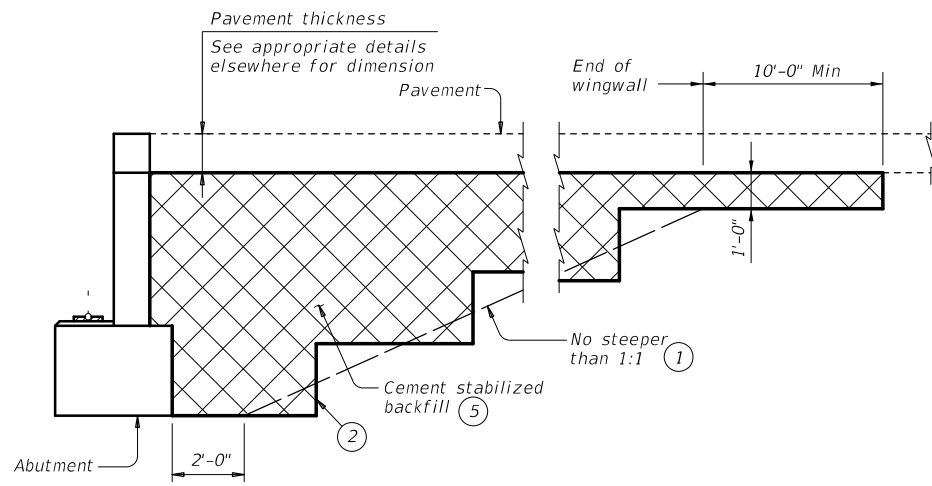
OPTION 2 ~ PLAN WITH WINGWALLS

Cast-in-place retaining walls similar.

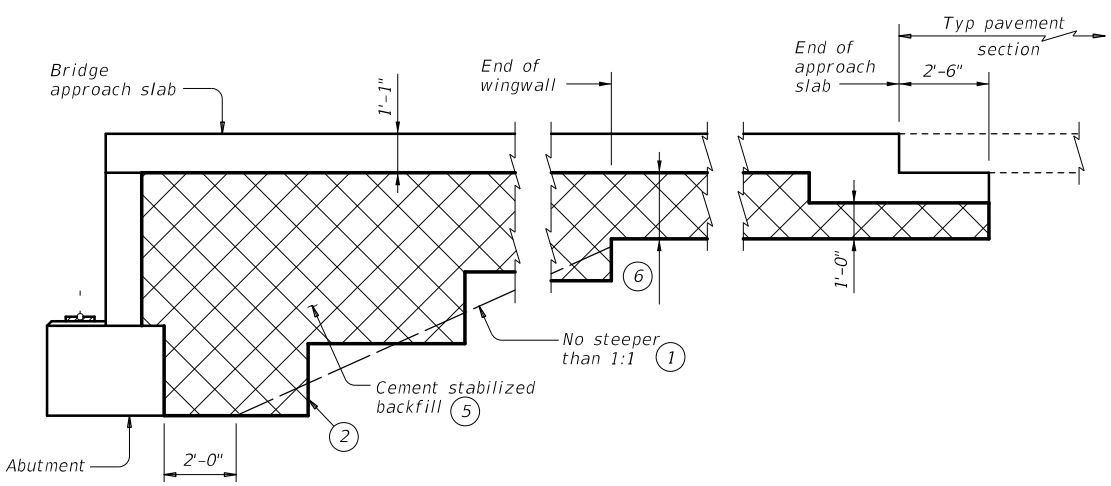


OPTION 2 ~ PLAN WITH MSE RETAINING WALLS

- ① Usual limit of Cement Stabilized Backfill is at end of wingwall. Extend CSB limits as required to maintain a slope no steeper than 1:1 at bottom of backfill.
- ② Bench backfill as shown with 12" (approximate) bench depths.
- ③ Where MSE retaining walls are present, adjust CSB limits to accommodate the select fill zone. See retaining wall details for additional information.
- ④ When distance between select fill zones is less than 5'-0", MSE select fill may be substituted for cement stabilized backfill with approval from the Engineer.
- ⑤ If shown in the plans, flowable backfill can be used as a substitute for cement stabilized backfill with the following constraints:
 - a). If flowable backfill is to be placed over MSE backfill, then a filter fabric will be placed over the MSE backfill prior to placement of the flowable fill; and
 - b). Place flowable fill in lifts not exceeding 2 feet in height. Place each successive lift when the previous lift has stiffened/hardened (i.e. has lost its flowability).
- ⑥ 1'-0" for BAS-A
1'-10" for BAS-C



WITHOUT APPROACH SLAB



SECTION B-B

WITH APPROACH SLAB
(Showing BAS-C, BAS-A similar.)

SHEET 2 OF 2



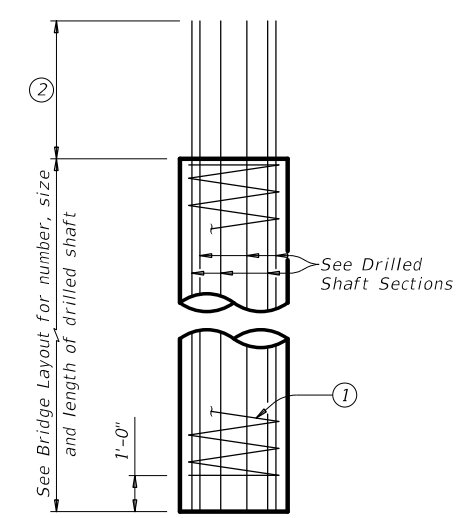
**CEMENT STABILIZED
 ABUTMENT BACKFILL
 BRIDGE ABUTMENT**

CSAB

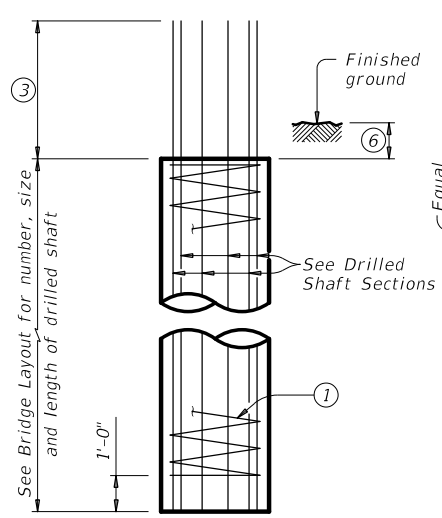
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	April 2019	CONV	SECT	JOB
REVISIONS	0203	05	039	US 69
02-20: Added Option 2.	DIST	COUNTY	SHEET NO.	
03-23: Updated General Notes.	TYL	WOOD	328A	

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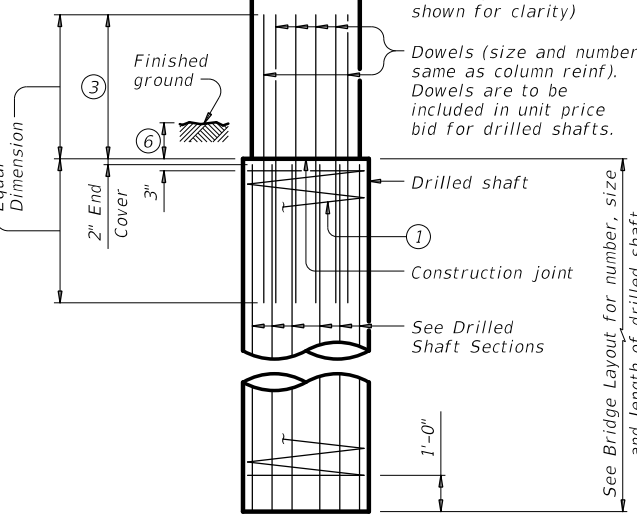
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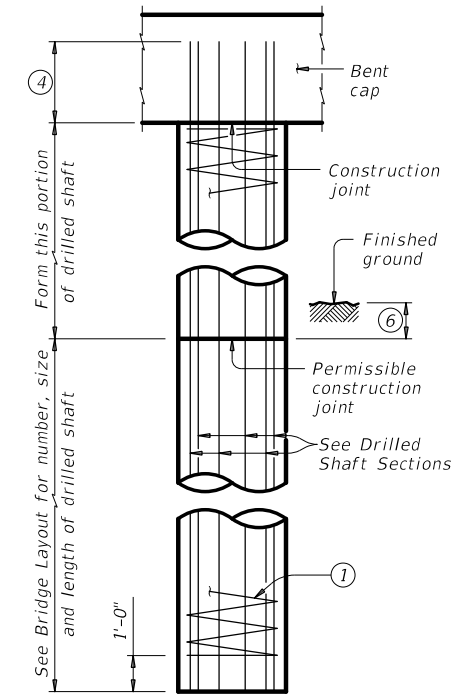
ABUTMENTS, WINGWALLS AND MULTI-DRILLED SHAFT FOOTINGS



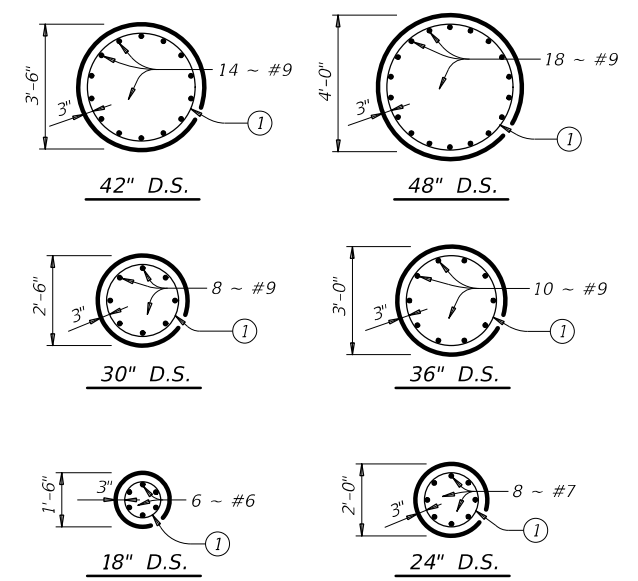
INTERIOR BENTS DRILLED SHAFT DIA EQUAL TO COLUMN DIA



INTERIOR BENTS DRILLED SHAFT DIA GREATER THAN COLUMN DIA



OPTIONAL INTERIOR BENT DRILLED SHAFT DETAIL 5

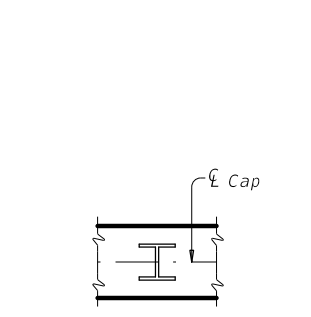


DRILLED SHAFT SECTIONS

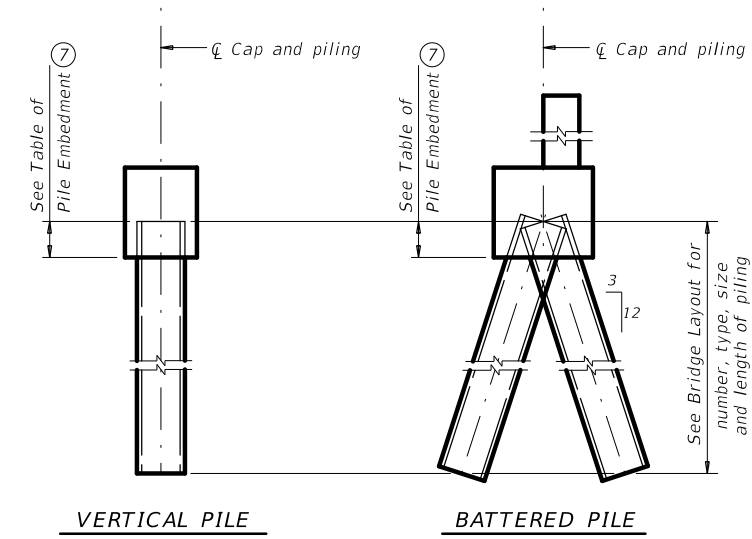
DRILLED SHAFT DETAILS

TABLE OF PILE EMBEDMENT	
Pile Type	Embedment Depth (Ft)
16" Sq Concrete 18" Sq Concrete HP14 Steel HP16 Steel	1'-0"
20" Sq Concrete 24" Sq Concrete HP18 Steel	1'-6"

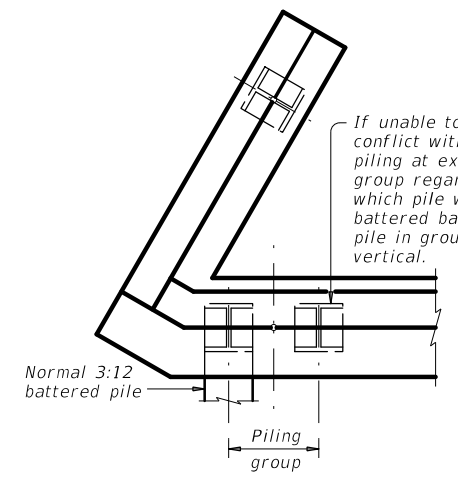
See Prestressed Concrete Piling (CP) standard for additional details on concrete pile embedment.



ORIENTATION OF STEEL H-PIILING

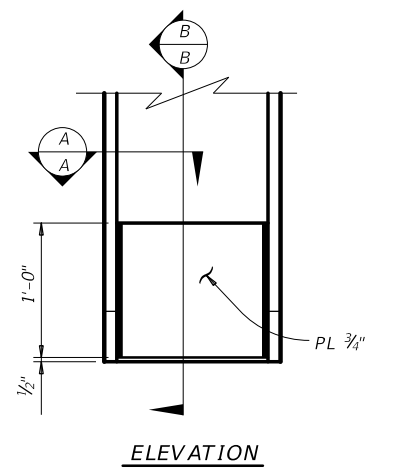


PIILING DETAILS (Concrete or steel H)

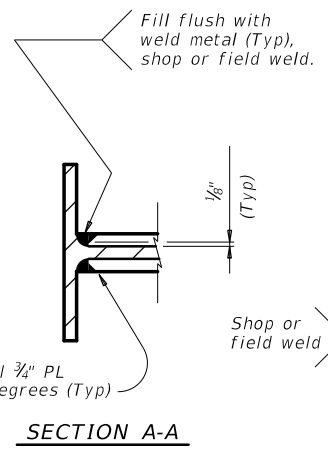


DETAIL "A" (Showing plan view of a 30° skewed abutment)

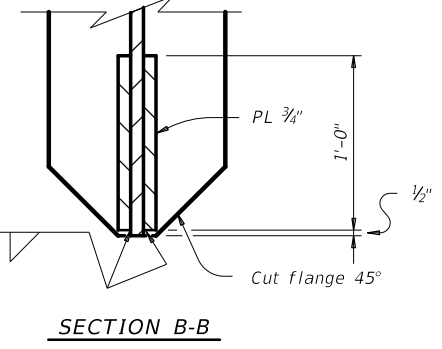
- 1 #3 spiral at 6" pitch (one and a half flat turns top and bottom).
- 2 Min extension into supported element:
#6 Bars = 1'-11"
#7 Bars = 2'-0"
#9 Bars = 2'-3"
- 3 Min lap with column reinf:
#7 Bars = 2'-11"
#9 Bars = 3'-9"
#11 Bars = 4'-8"
- 4 Min extension into supported element:
#6 Bars = 1'-11"
#7 Bars = 2'-3"
#9 Bars = 2'-9"
- 5 Drilled shafts may extend to the bottom of bent caps for "H" heights of 6 ft and less (as shown on the Bridge Layout), if approved. This option can only be used when the drilled shaft diameter equals the column diameter. Obtain approval of the forming method above the ground line prior to construction. No adjustments in payment will be made if this option is used.
- 6 1'-0" Min, unless shown otherwise on plans.
- 7 Or as shown on plans.



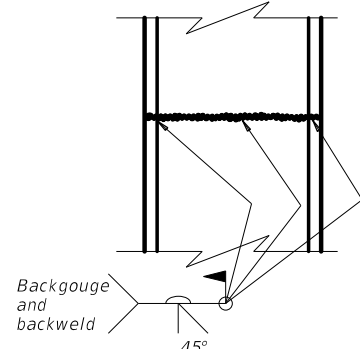
ELEVATION



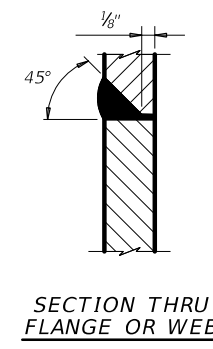
SECTION A-A



SECTION B-B



STEEL H-PILE SPLICE DETAIL Use when required.



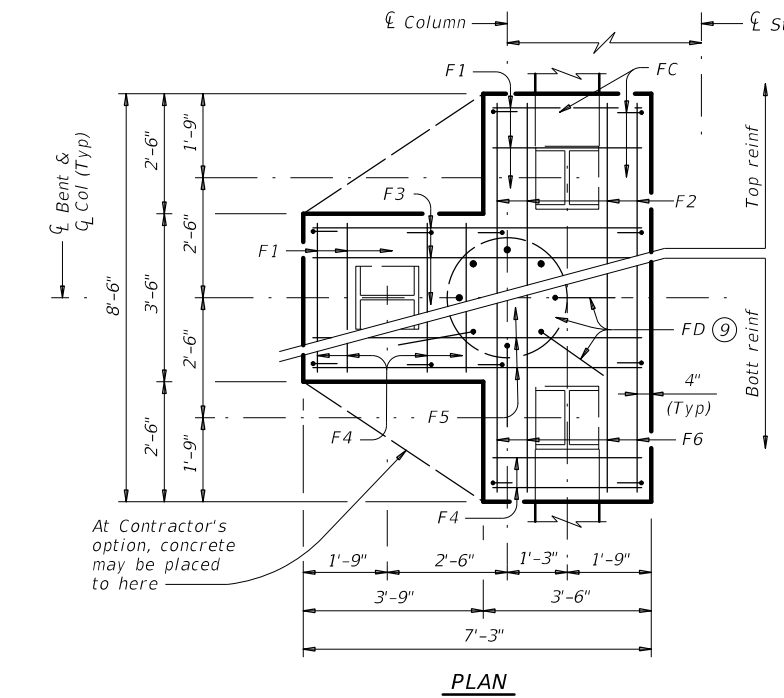
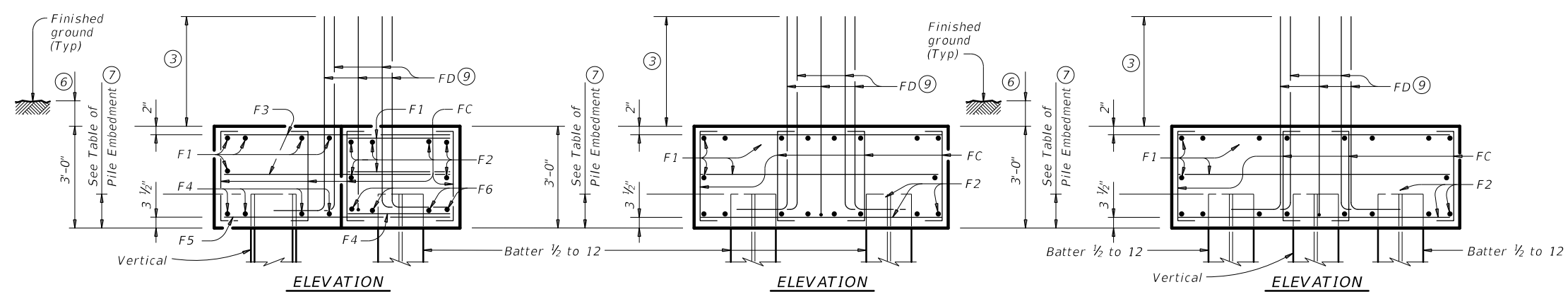
SECTION THRU FLANGE OR WEB

STEEL H-PILE TIP REINFORCEMENT
 See Item 407 "Steel Piling" to determine when tip reinforcement is required and for options to the details shown.

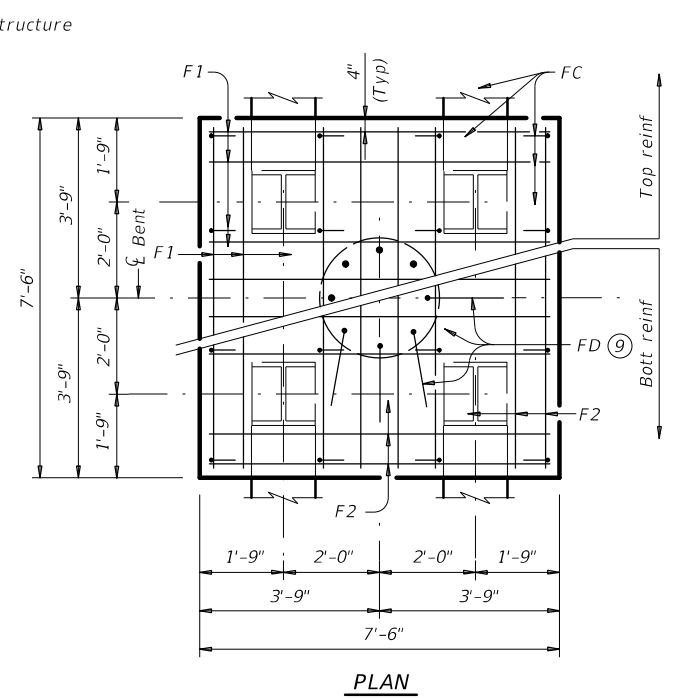
		Bridge Division Standard	
COMMON FOUNDATION DETAILS			
FD			
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT
©TxDOT	April 2019	CONTRACT	SECT
REVISIONS	0203	05	039
01-20: Added #11 bars to the FD bars.	DIST	COUNTY	SHEET NO.
	TYL	WOOD	329

DATE: 12/8/2023 12:29:55 PM
 FILE: pw:\stv-sw-pw_bent ley.com.stv-sw-pw\p\c\Documents\Active Projects\TXFW15241.02\8.00\PIans and Drawings\8.30 Cut Sheets\8.3.07 Bridge\Bridg Standards\MS-FD-20-2-

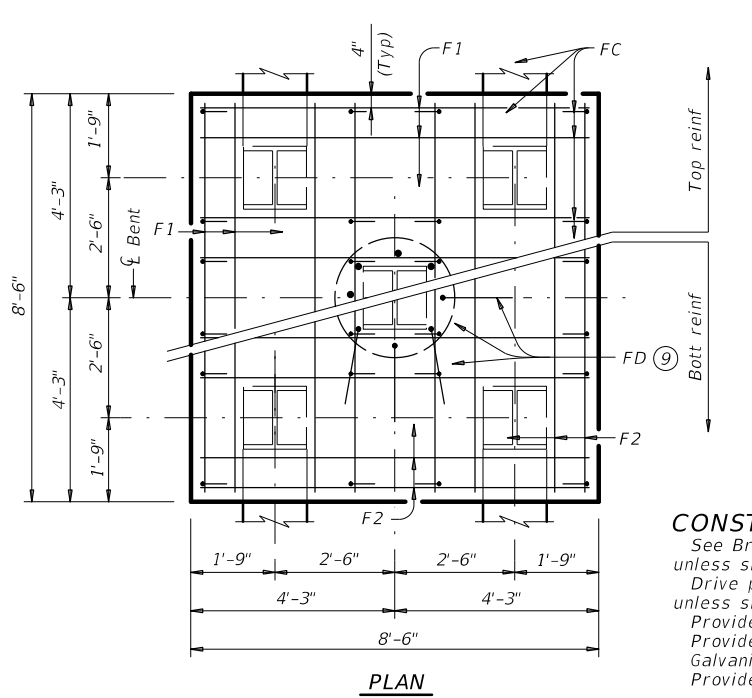
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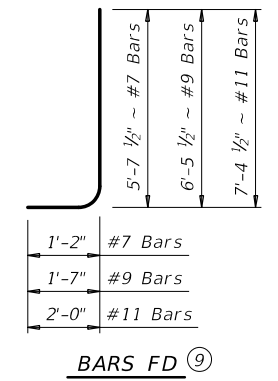
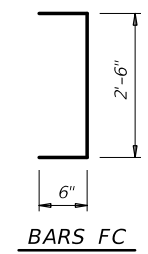
THREE PILE FOOTING⁸
 For 36" Dia and smaller columns.



FOUR PILE FOOTING⁸
 For 42" Dia and smaller columns.



FIVE PILE FOOTING⁸
 For 42" Dia and smaller columns.



- ③ Min lap with column reinforcing:
 #7 Bars = 2'-11"
 #9 Bars = 3'-9"
 #11 Bars = 4'-8"
- ⑥ 1'-0" Min, unless shown otherwise on plans.
- ⑦ Or as shown on plans.
- ⑧ See Bridge Layout for type, size and length of piling.
- ⑨ Number and size of FD bars must match column reinforcing. Tie FD bars to the top of the bottom reinforcing mat.
- ⑩ Adjust FD quantity, size and weight as needed to match column reinforcing.

TABLE OF FOOTING QUANTITIES FOR 30" COLUMNS				
ONE 3 PILE FOOTING				
Bar	No.	Size	Length	Weight
F1	11	#4	3'- 2"	23
F2	6	#4	8'- 2"	33
F3	6	#4	6'- 11"	28
F4	8	#9	3'- 2"	86
F5	4	#9	6'- 11"	94
F6	4	#9	8'- 2"	111
FC	12	#4	3'- 6"	28
FD ⑩	8	#9	8'- 1"	220
Reinforcing Steel			Lb	623
Class "C" Concrete			CY	4.8
ONE 4 PILE FOOTING				
Bar	No.	Size	Length	Weight
F1	20	#4	7'- 2"	96
F2	16	#8	7'- 2"	306
FC	16	#4	3'- 6"	37
FD ⑩	8	#9	8'- 1"	220
Reinforcing Steel			Lb	659
Class "C" Concrete			CY	6.3
ONE 5 PILE FOOTING				
Bar	No.	Size	Length	Weight
F1	20	#4	8'- 2"	109
F2	16	#9	8'- 2"	444
FC	24	#4	3'- 6"	56
FD ⑩	8	#9	8'- 1"	220
Reinforcing Steel			Lb	829
Class "C" Concrete			CY	8.0

CONSTRUCTION NOTES:
 See Bridge Layout for foundation type required. Use these foundation details unless shown otherwise.
 Drive piling under abutment wingwalls to a minimum resistance of 10 Tons/Pile unless shown otherwise.
 Provide Class C Concrete ($f'_c = 3,600$ psi), unless shown otherwise.
 Provide Grade 60 reinforcing steel.
 Galvanize reinforcing if shown elsewhere in the plans.
 Provide bar laps for drilled shaft reinforcing, where required, as follows:
 Uncoated or galvanized (#6) ~ 2'-6"
 Uncoated or galvanized (#7) ~ 2'-11"
 Uncoated or galvanized (#9) ~ 3'-9"

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications.
 Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.

DESIGNER NOTES:
 Do not use the drilled shaft details shown on this standard for retaining wall, noise wall, barrier, or sign foundations without structural evaluation.
 Do not use the footings shown on this standard in direct contact with salt water or exposed to salt water spray.
 Maximum allowable pile loads for the footings shown are:
 72 Tons/Pile with 24" Dia Columns
 80 Tons/Pile with 30" Dia Columns
 100 Tons/Pile with 36" Dia Columns
 120 Tons/Pile with 42" Dia Columns



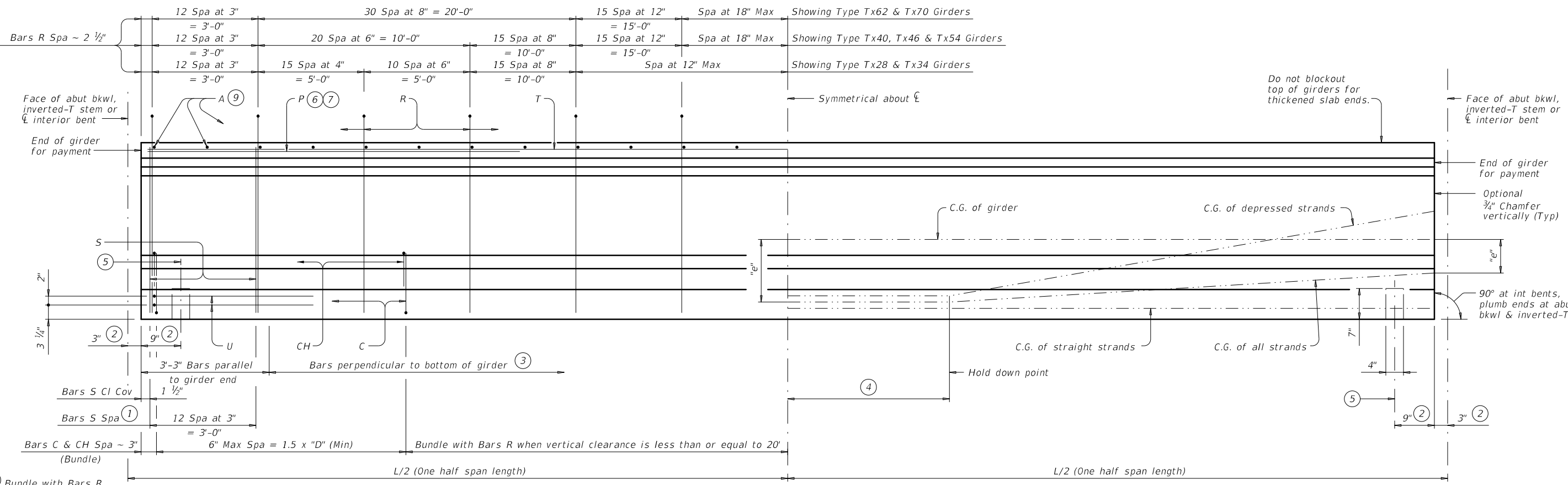
COMMON FOUNDATION DETAILS

FD

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	April 2019	CONTRACT	SECTION	JOB
REVISIONS		0203	05	039
01-20: Added #11 bars to the FD bars.		DIST	COUNTY	SHEET NO.
		TYL	WOOD	330

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DATE: 12/8/2023 12:30:04 PM
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- ① Bundle with Bars R.
- ② Measured along ϵ Girder at interior bents; perpendicular to abutment bkwI or inverted-T stem.
- ③ The average of the top and bottom spacing of Bars R cannot exceed the required spacing.
- ④ L/20, but not less than 5'-0" (-0,+2).

GIRDER ELEVATION

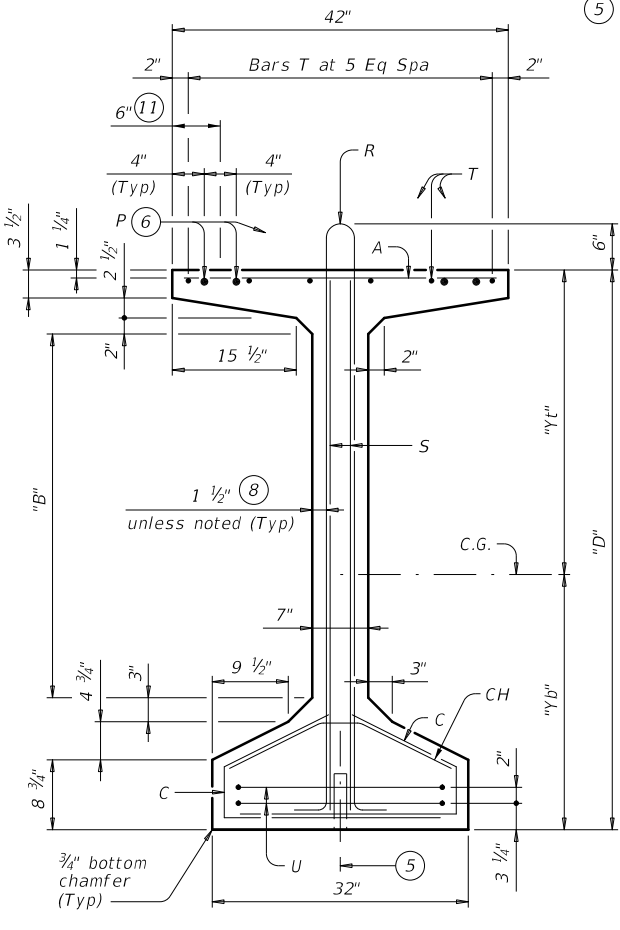
- ⑥ Bars P (#6 x 15'-0") required in Tx62 and Tx70 girders. At the fabricator's option bars larger than #6 may be used. When L is less than 50 ft, Bars P are to be the same length as Bars T.
- ⑦ Bars P (#6 x 15'-0") are only required in Tx28, Tx34, Tx40, Tx46, and Tx54 girders when "e" at girder ends exceeds 0.25 x "D". At the fabricator's option bars larger than #6 may be used. When L is less than 50 ft, Bars P are to be the same length as Bars T.
- ⑧ 1 3/8" Clear Cover to Bars S.
- ⑨ Space Bars A at 6" Max for girders requiring overhang bracket hangers. Space at 12" Max for all other girders. Tie to Bars R as necessary. See standard IGMS for "Deck Forming Notes".
- ⑩ Based on 155 pcf total weight of concrete and reinforcing steel.
- ⑪ Smooth trowel finish on the slab overhang side of exterior girder.

GIRDER DIMENSIONS AND SECTION PROPERTIES

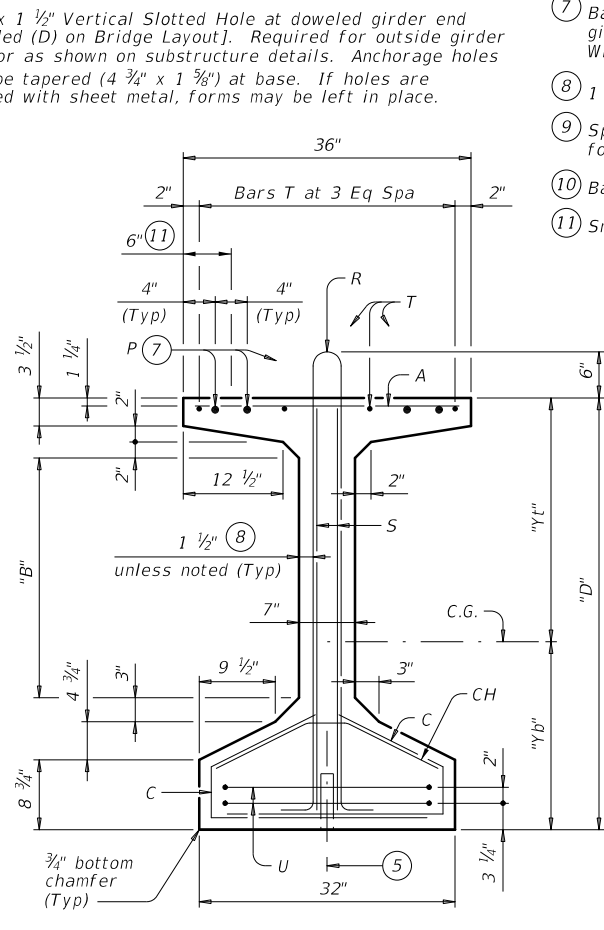
Girder Type	"D" (in.)	"B" (in.)	"Yt" (in.)	"Yb" (in.)	Area (in. ²)	"Ix" (in. ⁴)	"Iy" (in. ⁴)	Weight (plf)
Tx28	28	6	15.02	12.98	585	52,772	40,559	630
Tx34	34	12	18.49	15.51	627	88,355	40,731	675
Tx40	40	18	21.90	18.10	669	134,990	40,902	720
Tx46	46	22	25.90	20.10	761	198,089	46,478	819
Tx54	54	30	30.49	23.51	817	299,740	46,707	880
Tx62	62	37 1/2"	33.72	28.28	910	463,072	57,351	980
Tx70	70	45 1/2"	38.09	31.91	966	628,747	57,579	1,040

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications. Provide Class H concrete. Provide Grade 60 reinforcing steel. An equal area of deformed Welded Wire Reinforcement (WWR) (ASTM A1064) may be substituted for Bars A, C, R or T unless otherwise noted. It is permissible for bars or strands to come in contact with materials used in forming anchor holes. When vertical clearance of the span is less than or equal to 20', provide additional Bars C and CH in every girder of that span.

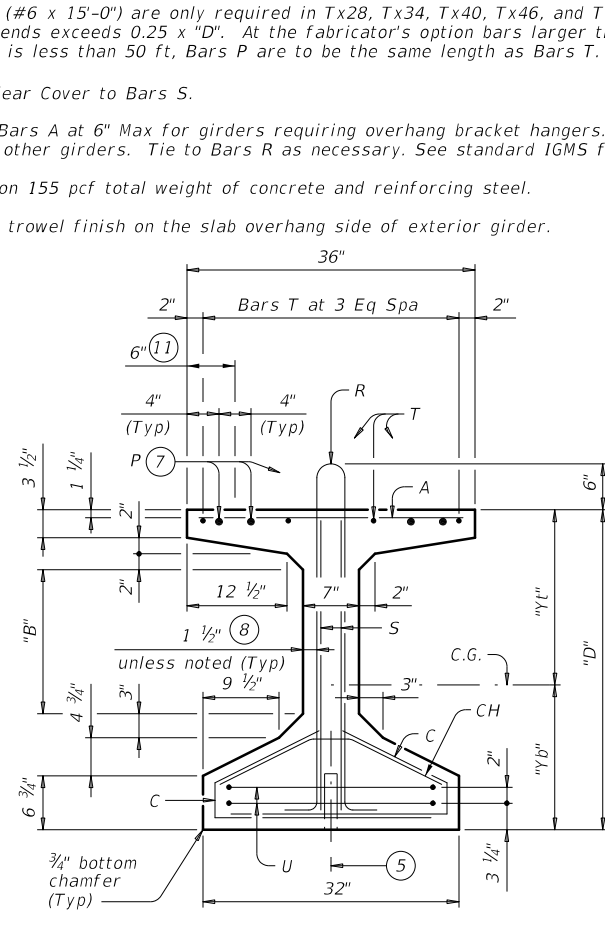
Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.



TYPE Tx62 & Tx70



TYPE Tx46 & Tx54



TYPE Tx28, Tx34 & Tx40



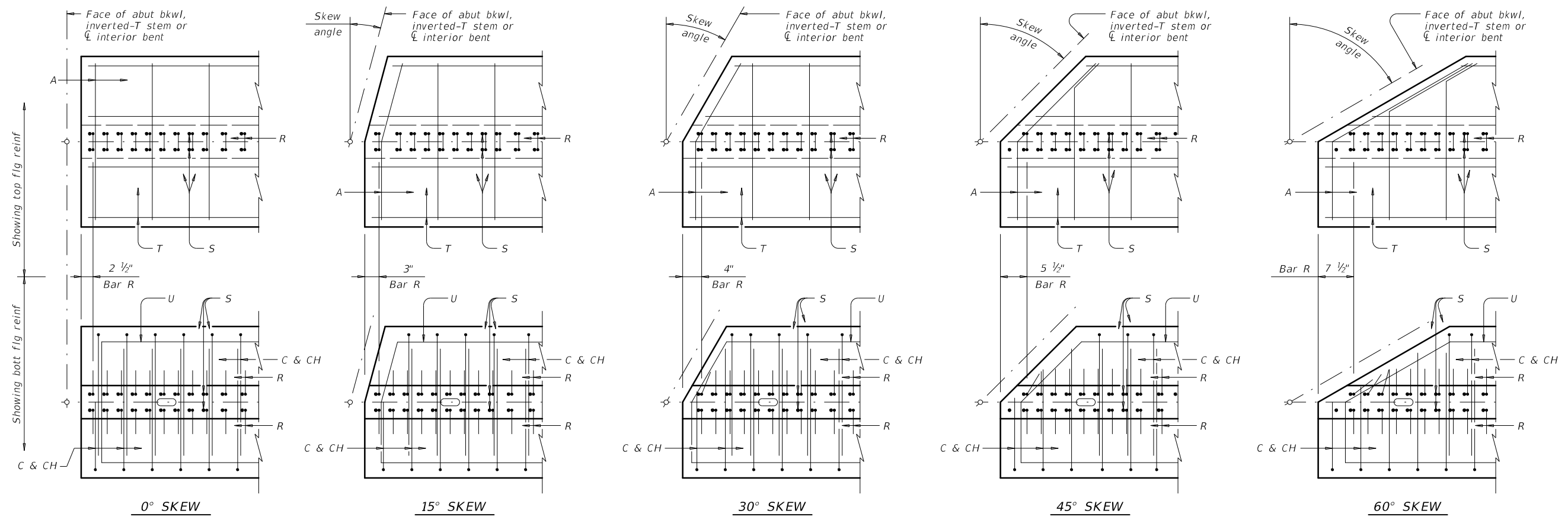
PRESTRESSED CONCRETE I-GIRDER DETAILS

IGD

FILE: C:\TxDOT	DN: August 2017	CK: JMH	DW: JTR	CK: TAR
CONT: 0203	SECT: 05	JOB: 039	US: 69	
REVISIONS		SHEET NO.		
10-19: Added Bars C and CH full length for VC <= 20'		TYL		
3-23: Clarified C and CH requirement		WOOD		

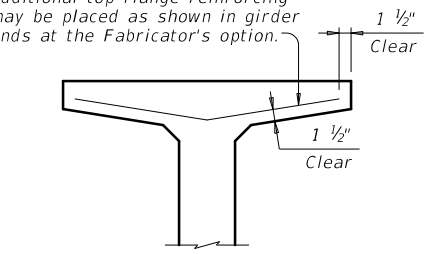
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DATE: 12/8/2023 12:30:14 PM
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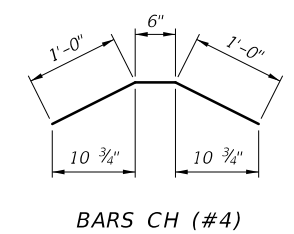


PLAN OF GIRDER ENDS (12)

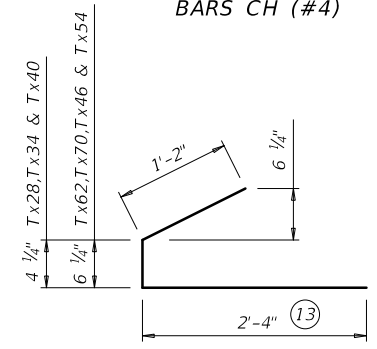
To control top flange cracking that may occur during form removal, additional top flange reinforcing may be placed as shown in girder ends at the Fabricator's option.



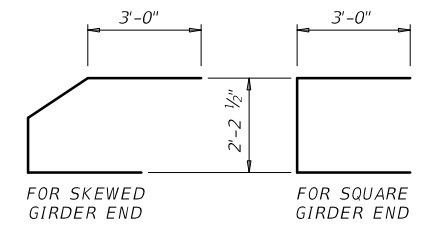
OPTIONAL TOP FLANGE REINFORCING DETAIL



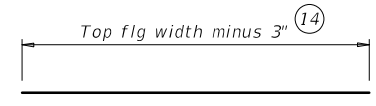
BARS CH (#4)



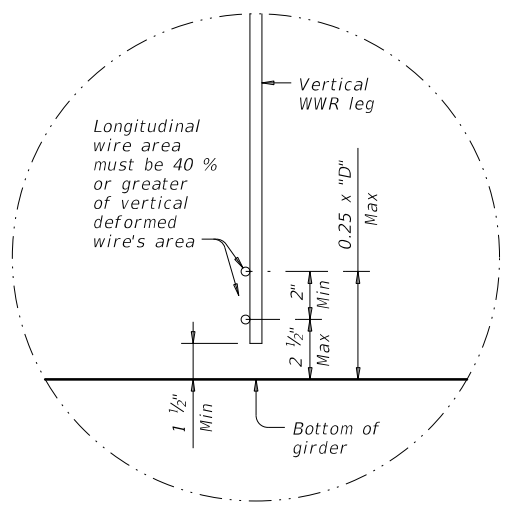
BARS C (#4)



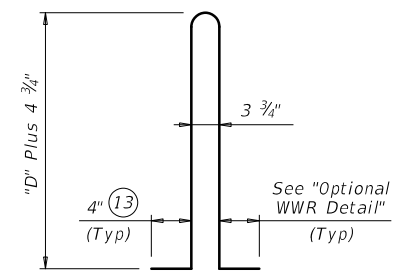
BARS U (#5)



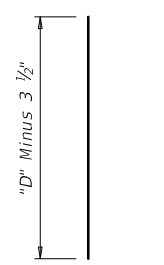
BARS A (#3)



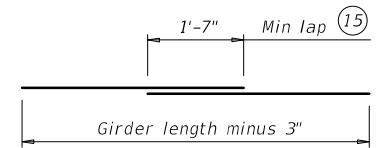
OPTIONAL WELDED WIRE REINFORCEMENT (WWR) DETAIL



BARS R (#4) (16)



BARS S (#6)



BARS T (#4)

- (12) Reinforcing patterns shown are provided as guides to determine reinforcement placement in skewed ends. Place Bars S as close to girder end as cover requirements permit, which may prevent them to be bundled with Bars R.
- (13) Bars may be cut or bent at skewed end as required.
- (14) Increase as necessary for bars at skewed end.
- (15) No portion of bar less than 10 ft.
- (16) For Welded Wire Reinforcement (WWR) option, area of Bars R may be reduced in proportion to the increase in reinforcement yield strength over 60 ksi. Yield strength of WWR is limited to 75 ksi.

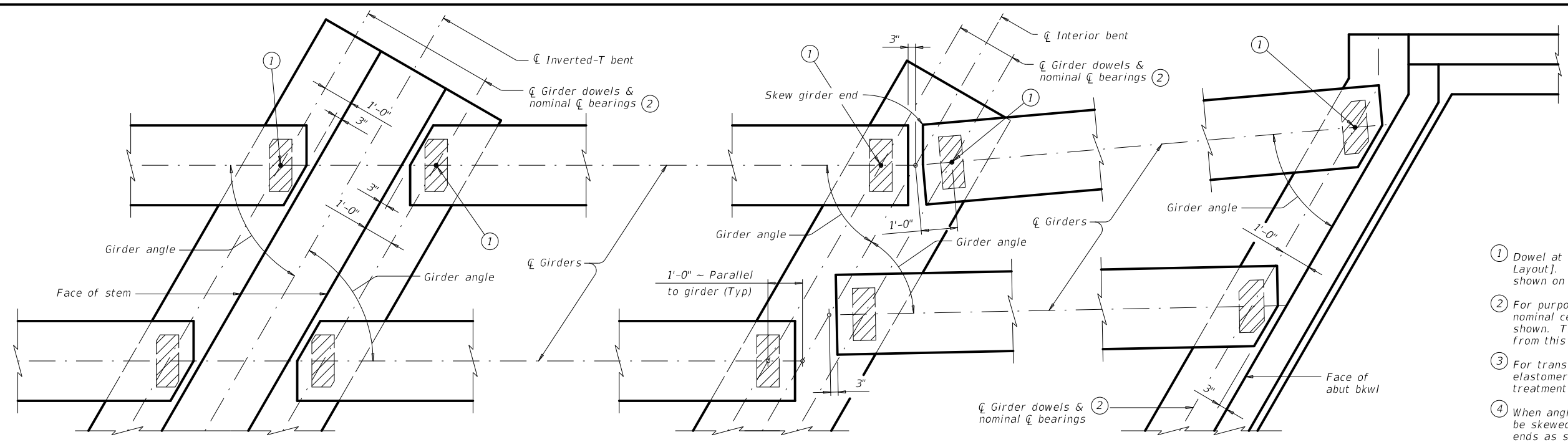


PRESTRESSED CONCRETE I-GIRDER DETAILS

IGD

FILE:	DN: TxDOT	CK: JMH	DW: JTR	CK: TAR
©TxDOT August 2017	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
10-19: Added Bars C and CH full length for VC<= 20'	DIST	COUNTY	SHEET NO.	
3-23: Clarified C and CH requirement	TYL	WOOD	332	

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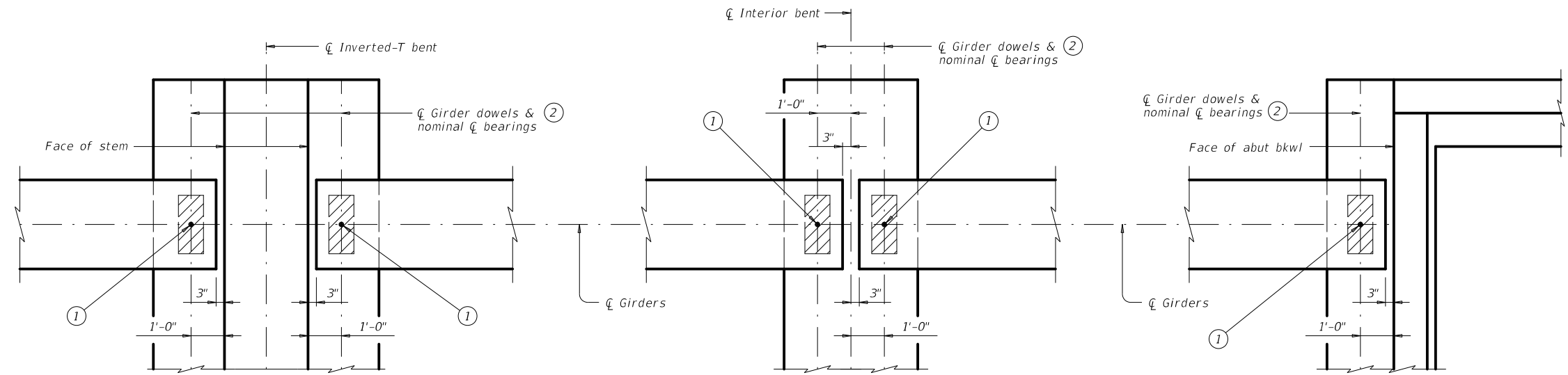


AT INVERTED-T BENT W/SKEW

AT CONVENTIONAL INTERIOR BENT W/SKEW

AT ABUTMENT W/SKEW³

- ① Dowel at doweled girder end [labeled (D) on Bridge Layout]. Required for outside girder only or as shown on substructure details.
- ② For purposes of computing bearing seat elevations, nominal centerline of bearing must be defined as shown. The actual center of bearing pad may vary from this line.
- ③ For transition bents with backwall, girder and elastomeric bearings must receive the same treatment as shown for abutments.
- ④ When angle exceeds 0°, one or both girder ends must be skewed to maintain the clearance between girder ends as shown in view.
- ⑤ See Table of Bearing Pad Dimensions for bearing size. Girder end skew angles in Table not applicable for this situation. Table reflects girder conflicts of this type on radial bents only.



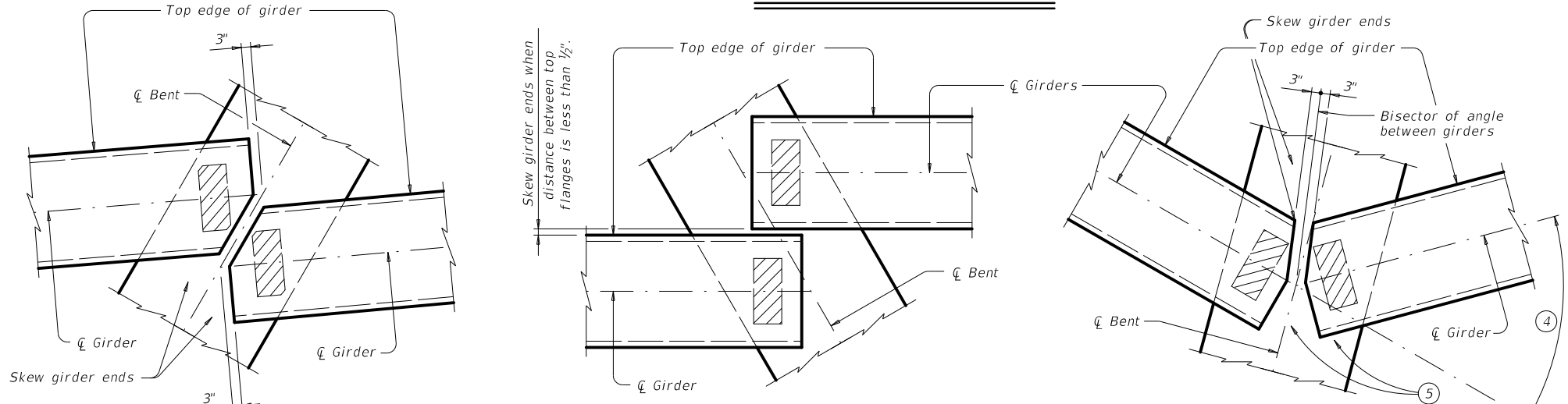
AT INVERTED-T BENT

AT CONVENTIONAL INTERIOR BENT

AT ABUTMENT³

GENERAL NOTES:
 These details accommodate skew angles up to 60°. Shop drawings for approval are required. A bearing layout which identifies location and orientation of all bearings must be developed by the bearing fabricator. Permanently mark each bearing in accordance with the bearing layout. A copy of the bearing layout is to be provided to the Engineer. Cost of furnishing and installing elastomeric bearings, including beveled and embedded steel plates, must be included in unit price bid for "Prestressed Concrete Girders".

GIRDER END DETAILS



GIRDER CONFLICT DETAILS

HL93 LOADING SHEET 1 OF 3

Texas Department of Transportation Bridge Division Standard

ELASTOMERIC BEARING AND GIRDER END DETAILS
PRESTR CONCRETE I-GIRDERS

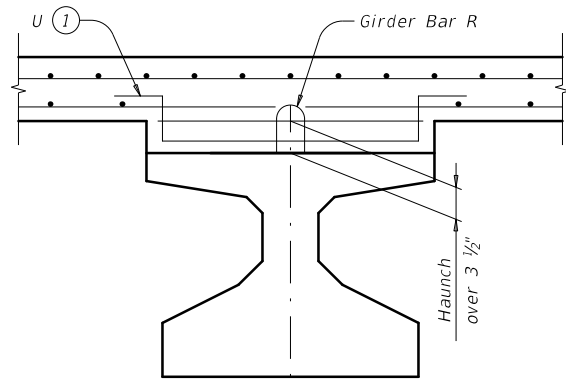
IGEB

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©TxDOT August 2017	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	333	

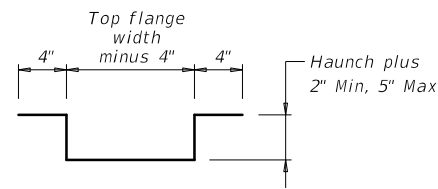
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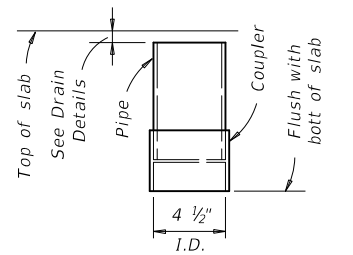
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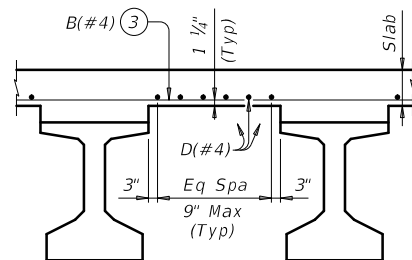
HAUNCH REINFORCING DETAIL



BARS U (#4)

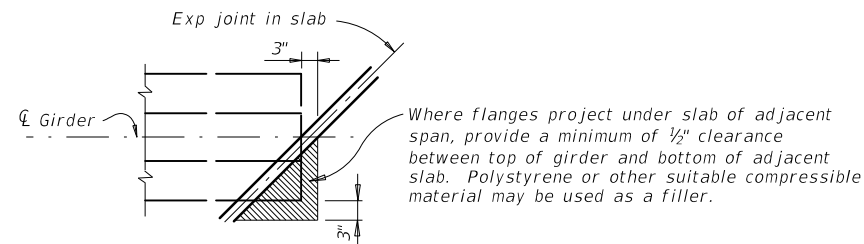


C-I-P DRAIN DETAIL 2

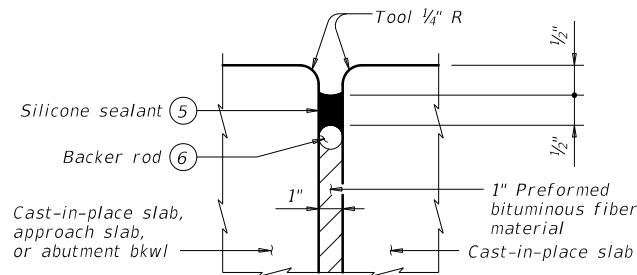


TYPICAL PART TRANSVERSE SLAB SECTION WITHOUT PCP 4

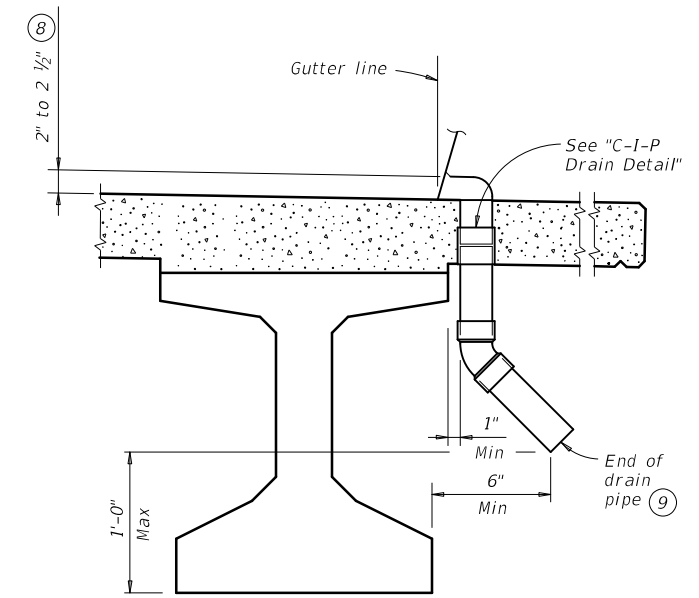
Top reinforcing steel not shown for clarity.



TREATMENT AT GIRDER END FOR SKEWED SPANS



TYPE A JOINT DETAIL 7



DRAIN DETAIL 10

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications.
 Payment for Type A joint will be as per Item 454, "Bridge Expansion Joints." All other items (reinforcing steel, drains, etc.) shown on this sheet are subsidiary to other bid items.

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.

DECK FORMWORK NOTES:
 Overhang bracket hangers are limited to a safe working load of 3,600 lbs, applied to and along the axis of a coil rod at 45 degrees from vertical, regardless of higher loads permitted by hanger manufacturers. Do not place a hanger less than 12" from girder end. Space hangers accordingly.

- 1 Space Bars U with girder Bars R in all areas where measured haunch exceeds 3 1/2".
- 2 Roughen outside of PVC with coarse rasp or equal to ensure bond with cast-in-place concrete.
- 3 Bars B(#4) spaced at 9" Max with 2" end cover. Overhang option, Contractor's may end alternating bars B(#4) at centerline outside girder.
- 4 Provide Grade 60 reinforcing steel. Provide bar laps, where required, as follows:
 Uncoated ~ #4 = 1'-7"
 Epoxy coated ~ #4 = 2'-5"
- 5 Class 7 silicone sealant that conforms to DMS-6310. Install when ambient temperature is between 55°F and 85°F and rising. Engineer to determine allowable hours for sealant application.
- 6 1 1/4" backer rod must be compatible with joint sealant. Use of multiple pieces to create a backer rod cross section is not permitted. Top of backer rod must be convex as shown.
- 7 The maximum distance between Type A expansion joints is 100'. See Bridge Layout for location of joints.
- 8 Drain entrance formed in rail or sidewalk.
- 9 Water may not be discharged onto girders.
- 10 All drain pipe and fittings to be 4" diameter (Sch 40) PVC. See Item 481 "Pipe for Drains" for pipe, connections and solvent welding. Bend reinforcing steel to clear PVC 1". Drain length and location is as directed by the Engineer. Drains are not permitted over roadways or railroads, or within 10'-0" of bent caps. Degrease outside of exposed PVC, apply acrylic water base primer, then coat with same surface finishing material as used for outside girder face. Variations of the above designs, as required for the type of rail used and its location on the structure, may be installed with the approval and direction of the Engineer.

SHEET 1 OF 2

				Bridge Division Standard	
MISCELLANEOUS SLAB DETAILS PRESTR CONCRETE I-GIRDERS					
IGMS					
FILE:	DN: TxDOT	CK: TxDOT	DW: JTR	CK: TxDOT	
©TxDOT August 2017	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0203	05	039	US 69	
10-19: Modified Note 7. Type A now a pay item.	DIST	COUNTY	SHEET NO.		
	TYL	WOOD	336		

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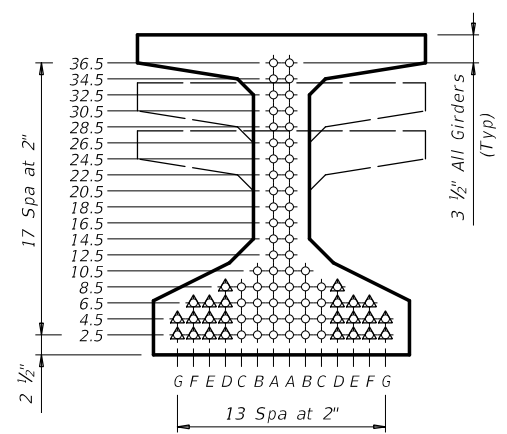
STRUCTURE	DESIGNED GIRDERS									DEPRESSED STRAND PATTERN		CONCRETE		OPTIONAL DESIGN					LOAD RATING FACTORS			NON-STANDARD STRAND PATTERNS	
	SPAN NO.	GIRDER NO.	GIRDER TYPE	PRESTRESSING STRANDS					NO.	TO END (in)	RELEASE STRGTH (1) f'ci (ksi)	MINIMUM 28 DAY COMP STRGTH f'c (ksi)	DESIGN LOAD COMP STRESS (TOP Ⓞ) (SERVICE I) fct(ksi)	DESIGN LOAD TENSILE STRESS (BOTT Ⓞ) (SERVICE III) fcb(ksi)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I) (kip-ft)	LIVE LOAD DISTRIBUTION FACTOR (2)		STRENGTH I		SERVICE III	PATTERN	STRAND ARRANGEMENT AT Ⓞ OF GIRDER	
				NON-STD STRAND PATTERN	TOTAL NO.	SIZE (in)	STRGTH fpu (ksi)	"e" Ⓞ (in)								"e" END (in)	Moment	Shear	Inv				Opr
US 69 at FM 779	1-2, 4-5 3	1-8 1-10	Tx54 Tx54		36	0.6	270	19.34	12.34	6	48.5	5.300	6.000	3.397	-3.595	7382	0.799	1.034	1.56	2.12	1.01		
					42	0.6	270	19.01	12.72	6	50.5	5.600	6.500	4.338	-4.264	8284	0.635	0.870					

- ① Based on the following allowable stresses (ksi):
 Compression = 0.65 f'ci
 Tension = 0.24 √ f'ci
 Optional designs must likewise conform.
- ② Portion of full HL93.

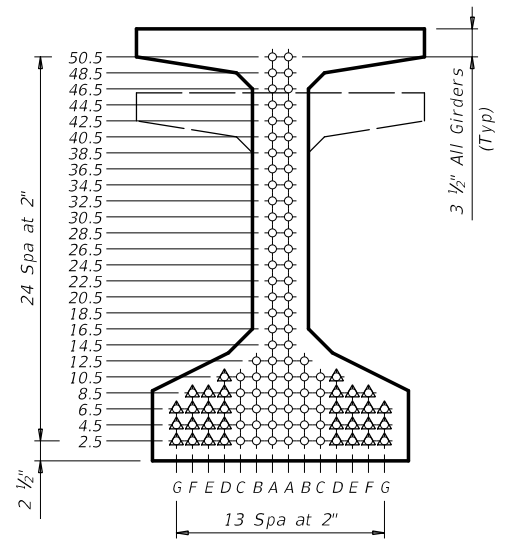
DESIGN NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications. Load rated using Load and Resistance Factor Rating according to AASHTO Manual for Bridge Evaluation. Optional designs for girders 120 feet or longer must have a calculated residual camber equal to or greater than that of the designed girder. Prestress losses for the designed girders have been calculated for a relative humidity of 60 percent. Optional designs must likewise conform.

FABRICATION NOTES:
 Provide Class H concrete. Provide Grade 60 reinforcing steel bars. Use low relaxation strands, each pretensioned to 75 percent of fpu. Strand debonding must comply with Item 424.4.2.2.4. Full-length debonded strands are only permitted in positions marked Δ. Double wrap full-length debonded strands in outer most position of each row. When shown on this sheet, the Fabricator has the option of furnishing either the designed girder or an approved optional design. All optional design submittals must be signed, sealed and dated by a Professional Engineer registered in the State of Texas. Seal cracks in girder ends exceeding 0.005" in width as directed by the Engineer. The fabricator is permitted to decrease the spacing of Bars R and S by providing additional bars to help limit crack width provided the decreased spacing results in no less than 1" clear between bars. The fabricator must take an approved corrective action if cracks greater than 0.005" form on a repetitive basis.

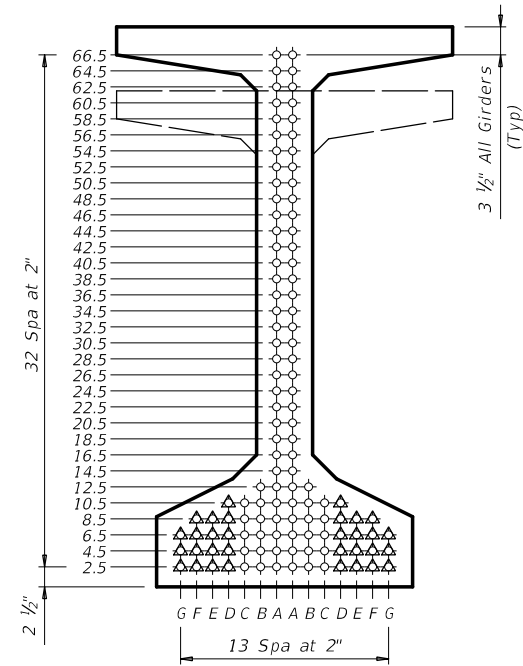
DEPRESSED STRAND DESIGNS:
 Locate strands for the designed girder as low as possible on the 2" grid system unless a non-standard strand pattern is indicated. Fill row "2.5", then row "4.5", then row "6.5", etc., beginning each row in the "A" position and working outward until the required number of strands is reached. All strands in the "A" position must be depressed, maintaining the 2" spacing so that, at the girder ends, the upper two strands are in the position shown in the table.



TYPE Tx28, Tx34 & Tx40



TYPE Tx46 & Tx54



TYPE Tx62 & Tx70



HL93 LOADING

Bridge Division Standard

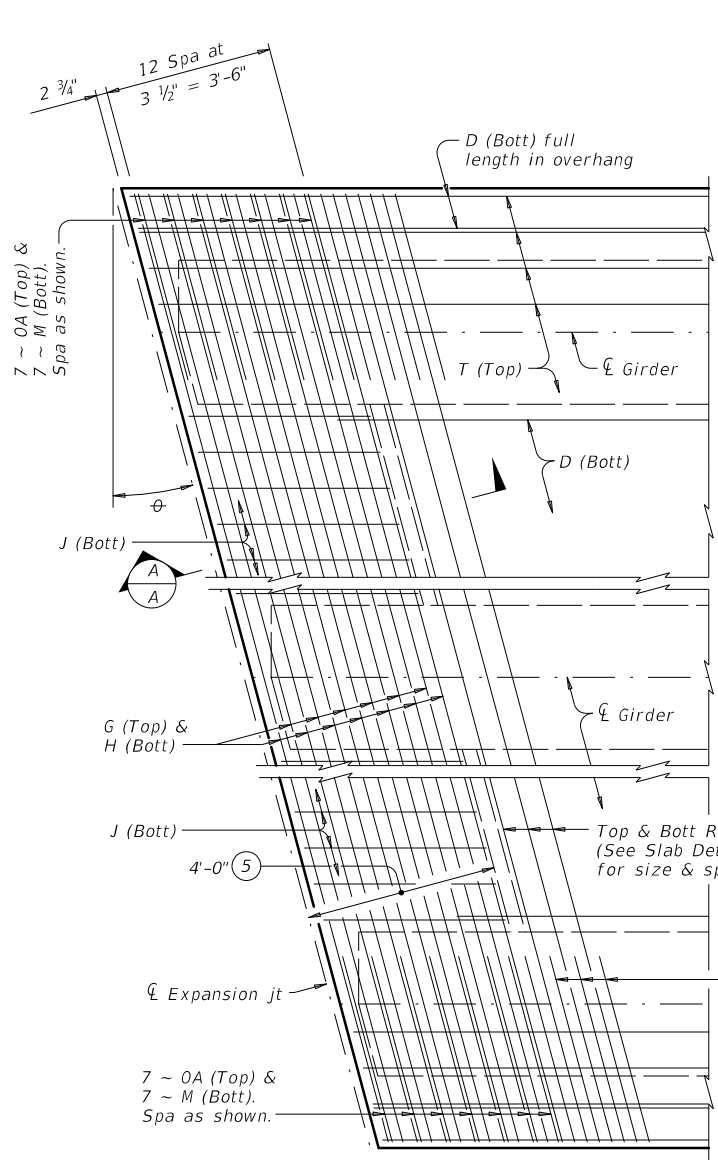
PRESTRESSED CONCRETE I-GIRDER DESIGNS (NON-STANDARD SPANS)

IGND

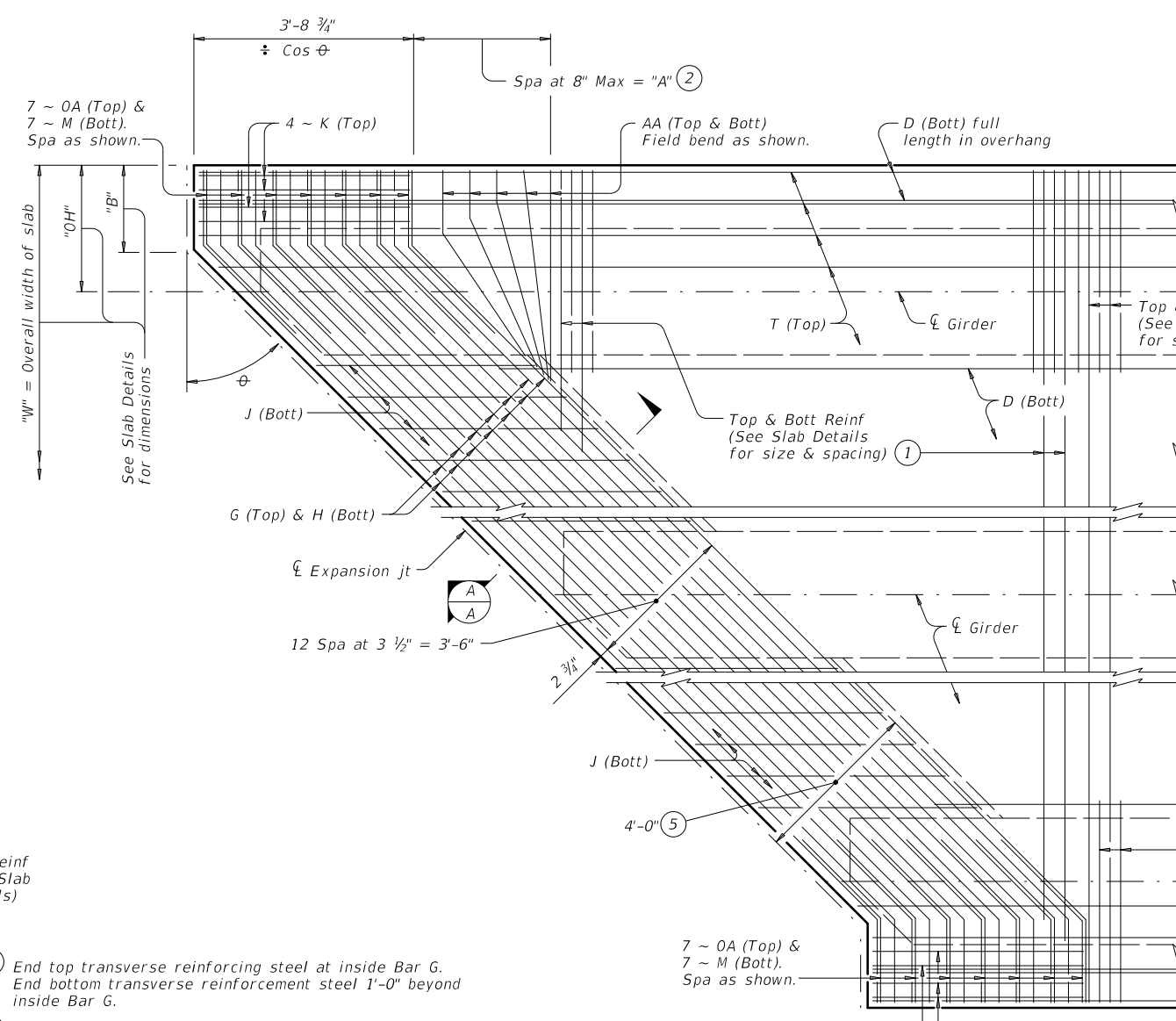
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©TxDOT August 2017	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
10-19: Modified for depressed strands only.	DIST	COUNTY	SHEET NO.	
3-22: Added Load Rating.	TYL	WOOD	338	

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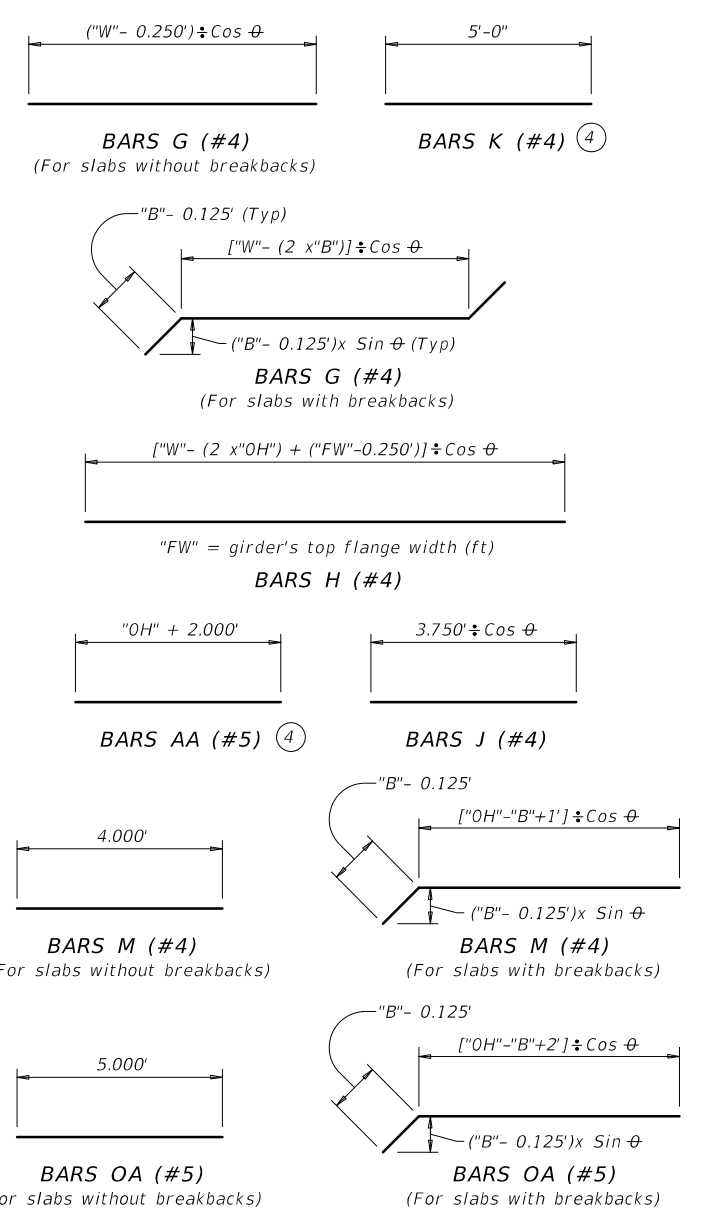


PARTIAL PLAN FOR SLABS WITHOUT BREAKBACK



PARTIAL PLAN FOR SLABS WITH BREAKBACK

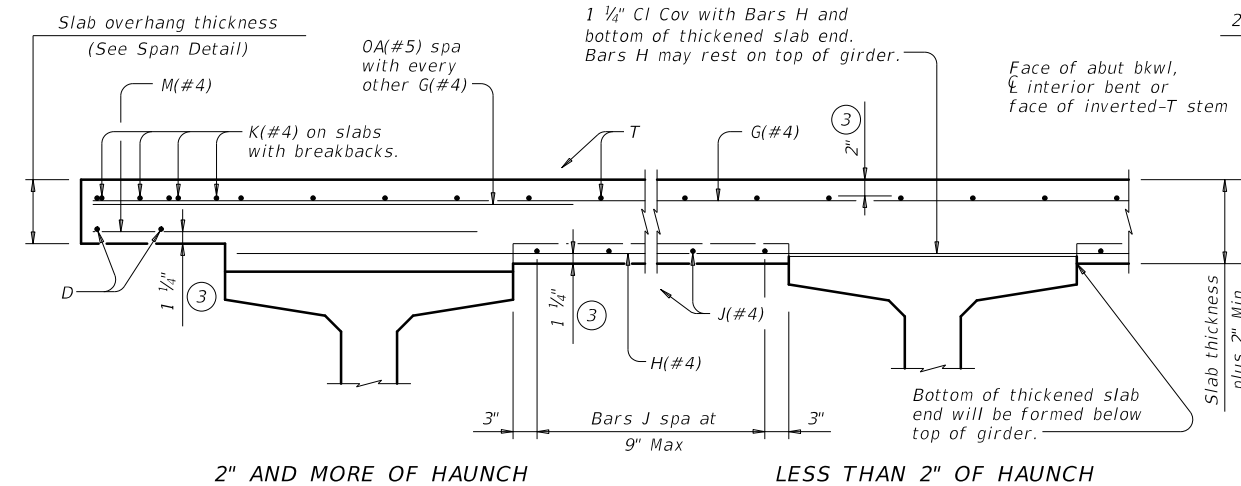
- ① End top transverse reinforcing steel at inside Bar G. End bottom transverse reinforcement steel 1'-0" beyond inside Bar G.
- ② "A" = ("OH" + 2.333 "B") x Tan θ
- ③ Provide clear cover as indicated unless otherwise shown on Span Details.
- ④ Only required on slabs with breakbacks.
- ⑤ Thickened slab end dimensioned perpendicular to face of bkwl, centerline interior bent or face of inverted-T stem.



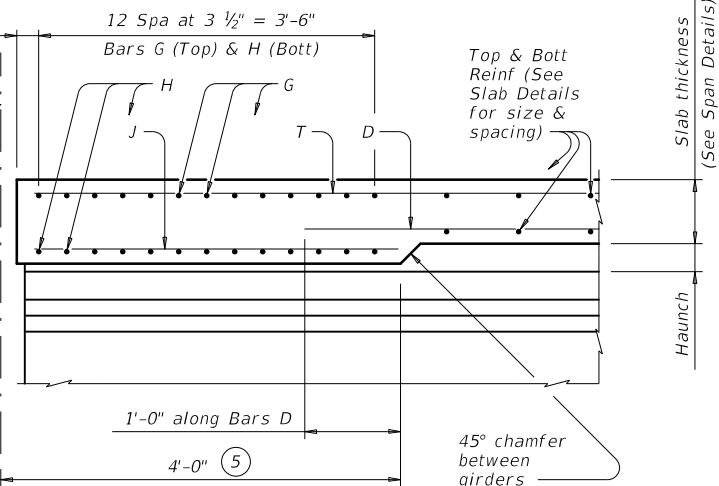
GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications. These details are restricted to Prestressed Concrete I-Girder Spans. These details are to be used in conjunction with the Span Details and PCP standard (if prestressed concrete panels are used). When Option 2 from PCP standard is used, provide Bars AA, G, K and OA in the slab.

MATERIAL NOTES:
 Provide Grade 60 reinforcing steel.
 If slab reinforcing steel is shown on the Slab Details to be epoxy coated, then Bars AA, G, K, H, J, M and OA must be epoxy coated.
 Provide bar laps, where required, as follows:
 Uncoated ~ #4 = 1'-7"
 Epoxy Coated ~ #4 = 2'-5"

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.



TYPICAL TRANSVERSE SECTION
 (Showing Prestressed Conc I-Girders at ϕ Brg)

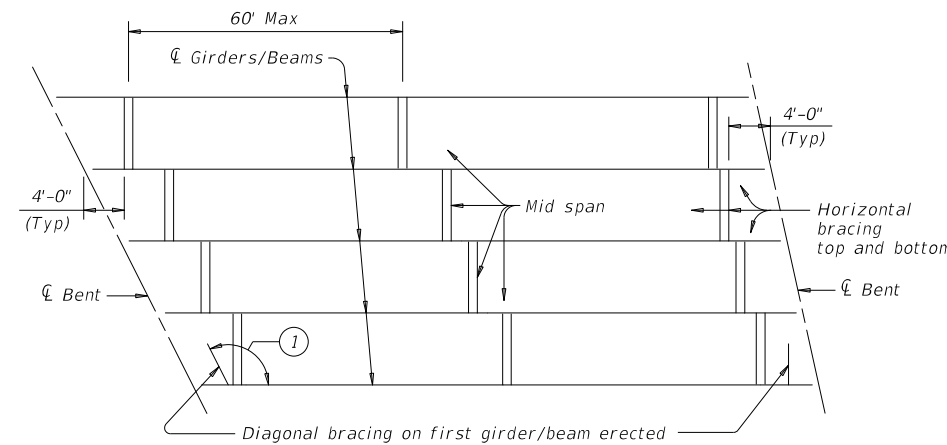


SECTION A-A
 (Showing with 2" and more of haunch)

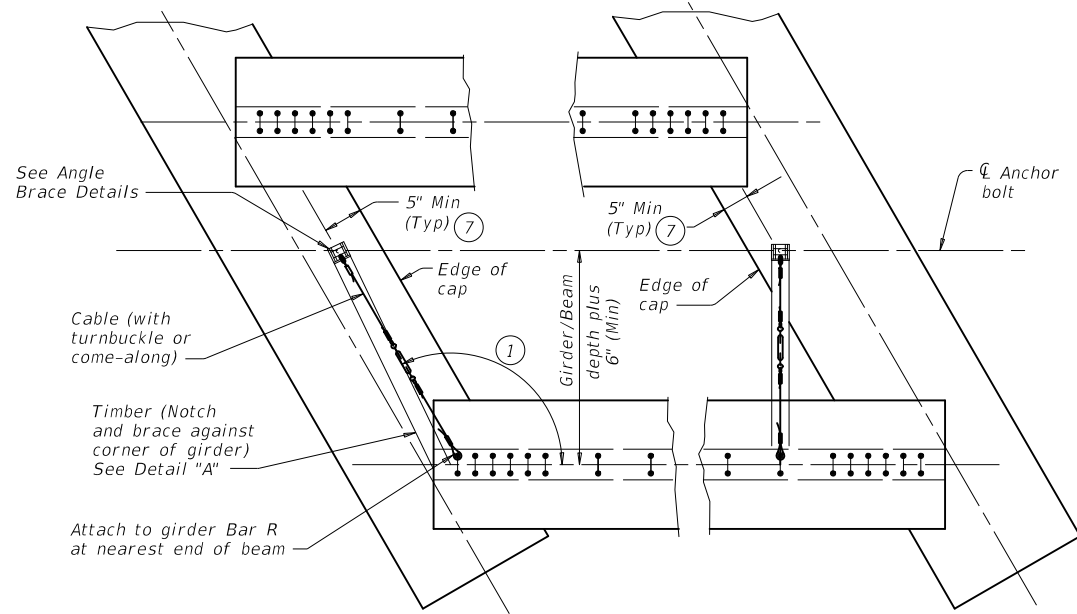
HL93 LOADING		Bridge Division Standard	
THICKENED SLAB END DETAILS			
PRESTRESSED CONCRETE I-GIRDER SPANS			
IGTS			
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REV: 05	CONTRACT: 0203	SECTION: 05	JOB: 039
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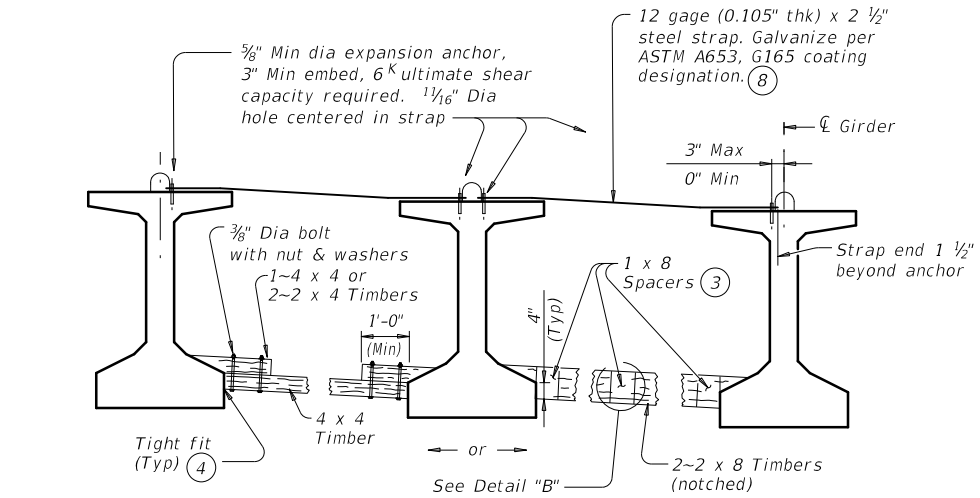
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ERECTION BRACING

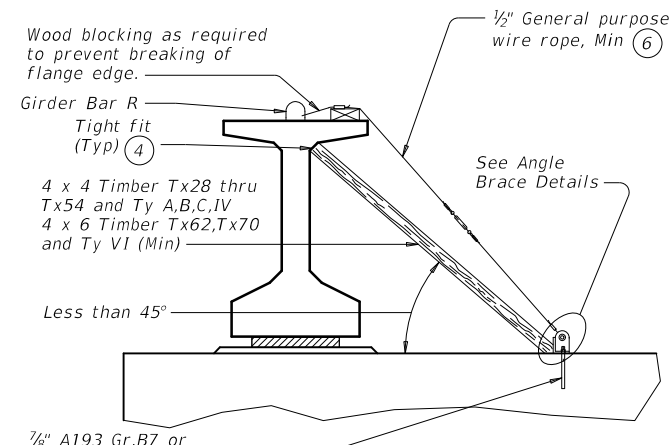


PLAN



FOR ERECTION BRACING, OPTION 1

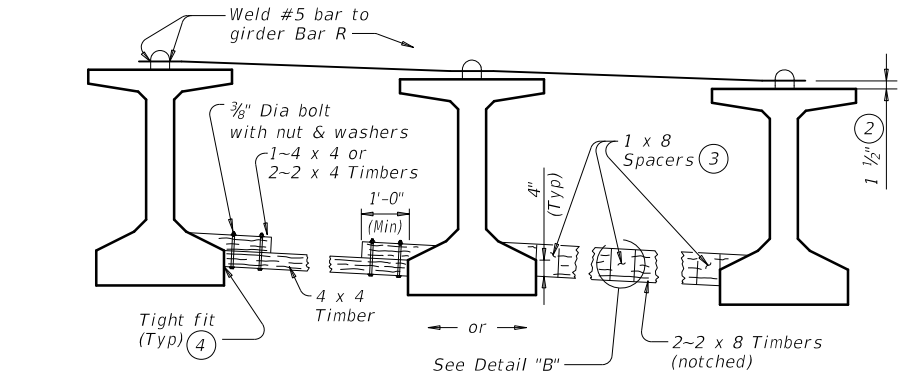
(This option is not allowed when slab is formed with PMDF or plywood.)



END VIEW

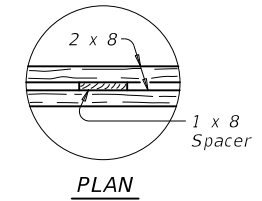
DIAGONAL BRACING DETAILS

(To be used on both ends of the first girder/beam erected in the span in each phase.)

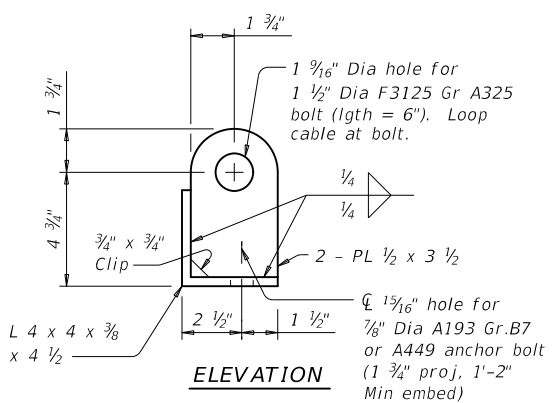


FOR ERECTION BRACING, OPTION 2

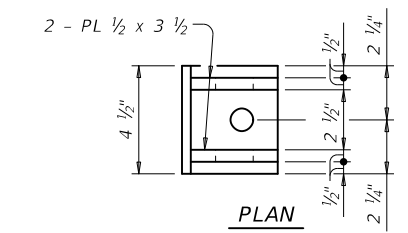
HORIZONTAL BRACING DETAILS



DETAIL "B"



ELEVATION



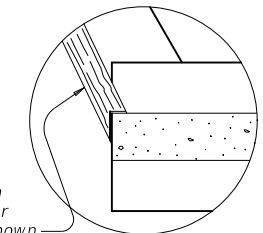
PLAN

ANGLE BRACE DETAILS

HAULING & ERECTION:
 The Contractor's attention is directed to the possible lateral instability of prestressed concrete girders and beams over 130' long, especially during hauling and erection. The use of the following methods to improve stability is encouraged: Locate lifting devices at the maximum practical distance from girder ends; use external lateral stiffening devices during hauling and erection; lift with vertical lines using two machines; and take care in handling to minimize inertial and impact forces.

ERECTION BRACING:
 Erection bracing details shown are considered the minimum for fulfilling the bracing requirements of Item 425. Required erection bracing must be placed immediately after erection of each girder and remain in place until additional bracing as required for slab placement is in place. This standard is needed in all cases to meet requirements for Slab Placement Bracing.

PHASED CONSTRUCTION:
 Place erection and slab placement bracing for all girders in a phase as shown in these details. For phases after first, also place erection and slab placement bracing between outer girder of completed phase and adjacent girder of current phase. When the phase construction joint is between girders, top bracing can be omitted.



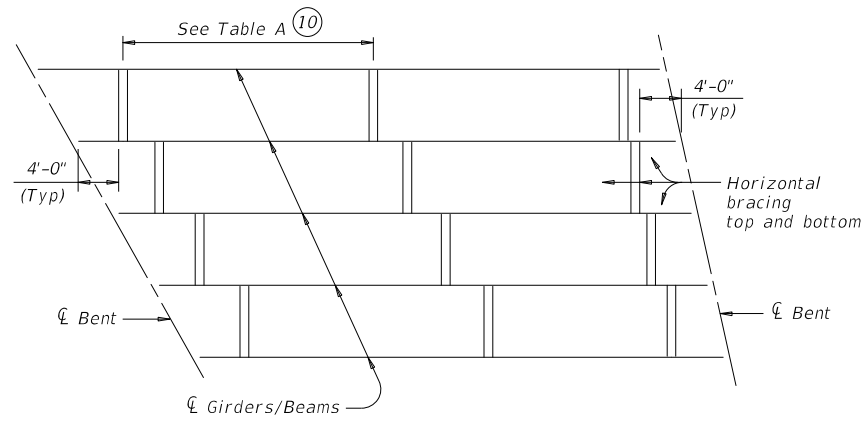
DETAIL "A"

- 1 If angle shown exceeds 120 degrees, move diagonal brace to other side of girder/beam and place square to girder/beam. This may prevent exterior girder from being erected first.
- 2 Place and weld #5 bars as shown during erection. If forming deck with prestressed panels, bars can be temporarily removed, one at a time, during panel erection. Re-install bar prior to additional panel erection. Bars can rest on panels and be bent down and welded to girder Bars R (See Sheet 2 of 2).
- 3 Clear distance between spacers must not exceed 3. Nail together with 16d nails.
- 4 Use wedges as necessary to obtain tight fit. Nail wedges to timbers.
- 5 Pressure treated landscape timbers can not be used.
- 6 All hardware used with cable must be able to develop a minimum 25 kips breaking strength. Use thimbles at all loops in cable. Install cable clamps with saddles bearing against the live end and U-bolts bearing against the dead end.
- 7 It is acceptable to tie anchor bolts to cap reinforcement.
- 8 Prior to installing, field bend strap to lay flush on both girders' top flange and slope between flange tips.
- 9 Anchor bolt may be drilled and epoxied in place. Provide 25k minimum pullout. Core drill hole.

SHEET 1 OF 2

		Bridge Division Standard	
MINIMUM ERECTION AND BRACING REQUIREMENTS PRESTRESSED CONCRETE I-GIRDERS AND I-BEAMS			
MEBR(C)			
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT
©TxDOT	August 2017	CONTRACT NO. 0203	SECTION 05
REVISIONS:		JOB NO. 039	HIGHWAY US 69
		DIST. COUNTY	SHEET NO.
		TYL WOOD	340

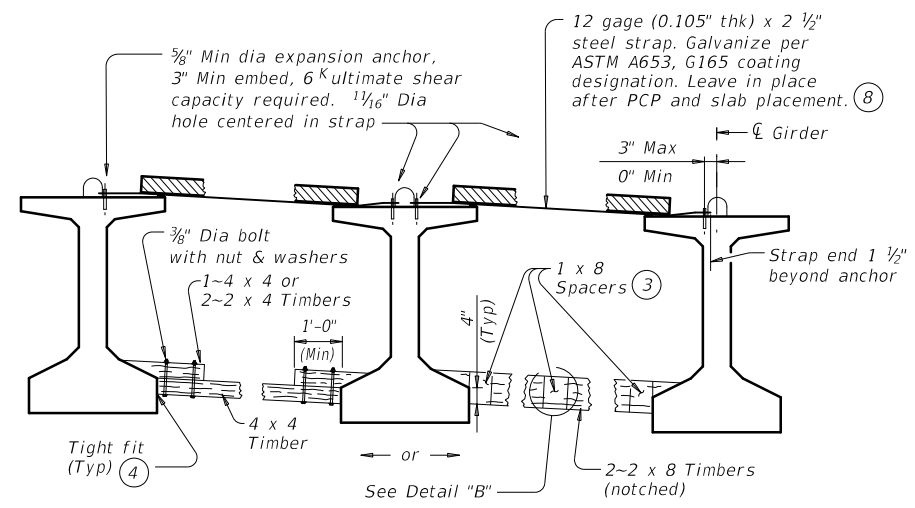
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SLAB PLACEMENT BRACING

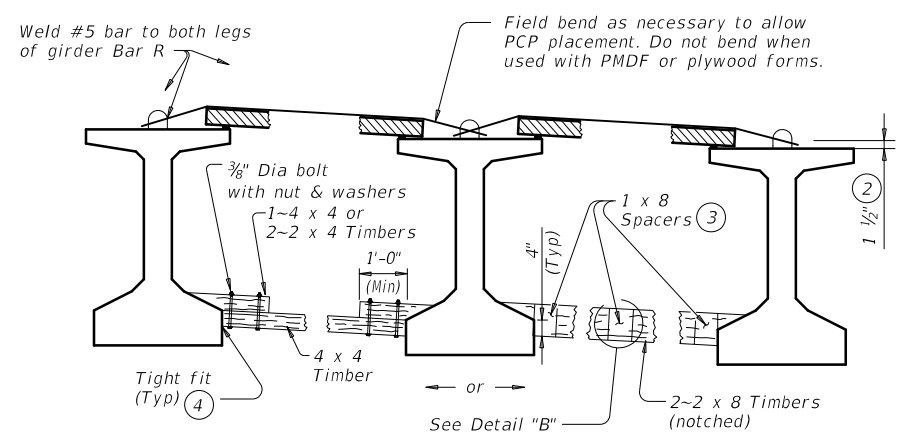
TABLE A		
OPTION 1-RIGID BRACING (STEEL STRAP)		
Girder or Beam Type	Maximum Bracing Spacing	
	Slab Overhang less than 4'-0" (11)	Slab Overhang 4'-0" and greater (11)
Tx28	1/4 points	1/4 points
Tx34	1/4 points	1/4 points
Tx40	1/4 points	1/8 points
Tx46	1/4 points	1/8 points
Tx54	1/4 points	1/8 points
Tx62	1/4 points	1/8 points
Tx70	1/4 points	1/8 points
A	1/8 points	1/8 points
B	1/8 points	1/8 points
C	1/8 points	1/8 points
IV	1/4 points	1/8 points
VI	1/4 points	1/8 points

OPTION 2-FLEXIBLE BRACING (NO. 5 OVER PCP)		
Girder or Beam Type	Maximum Bracing Spacing	
	Slab Overhang less than 4'-0" (11)	Slab Overhang 4'-0" and greater (11)
Tx28	1/4 points	1/8 points
Tx34	1/4 points	1/8 points
Tx40	1/4 points	1/8 points
Tx46	1/4 points	1/8 points
Tx54	1/4 points	1/8 points
Tx62	1/4 points	1/8 points
Tx70	1/4 points	1/8 points
A	2.0 ft	1.5 ft
B	3.0 ft	2.0 ft
C	4.5 ft	2.0 ft
IV	1/4 points	4.0 ft
VI	1/4 points	4.0 ft



FOR SLAB PLACEMENT BRACING, OPTION 1 - RIGID

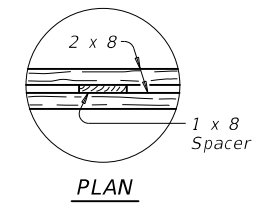
(Showing slab formed with PCP. This option is not allowed when slab is formed with PMDF or plywood.)



FOR SLAB PLACEMENT BRACING, OPTION 2 - FLEXIBLE

(Showing slab formed with PCP.)

HORIZONTAL BRACING DETAILS (5)



DETAIL "B"

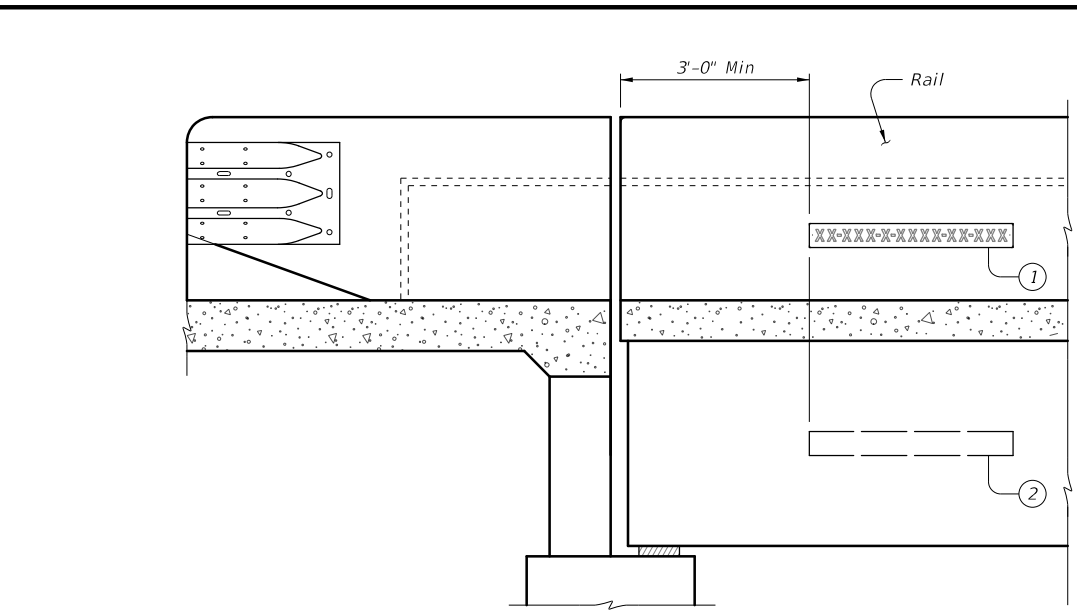
- (2) Place and weld #5 bars as shown during erection. If forming deck with prestressed panels, bars can be temporarily removed, one at a time, during panel erection. Re-install bar prior to additional panel erection. Bars can rest on panels and be bent down and welded to girder Bars R.
- (3) Clear distance between spacers must not exceed 3'. Nail together with 16d nails.
- (4) Use wedges as necessary to obtain tight fit. Nail wedges to timbers.
- (5) Pressure treated landscape timbers can not be used.
- (8) Prior to installing, field bend strap to lay flush on both girders' top flange and slope between flange tips.
- (10) Bracing spacing (1/4 and 1/8 points) measured between first and last typical brace location.
- (11) Measure slab overhang from centerline of girder or beam. When overhang varies in span, determine bracing spacing based on largest overhang.

SLAB PLACEMENT BRACING:
 The details for slab placement bracing are considered minimum for fulfilling the requirements of Specification Items 422 and 425. Required slab placement bracing must remain in place until slab concrete has attained a compressive strength of 3000 psi.

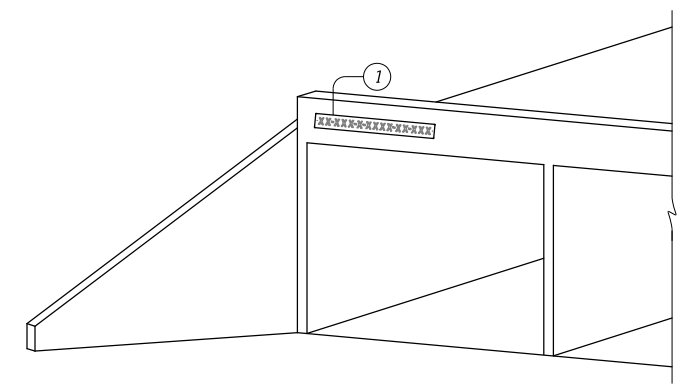
GENERAL NOTES:
 Bracing details for spans longer than 150' are not provided. The Contractor must submit proposed bracing details for such conditions to the Engineer for approval prior to erection. Systems equal to or better than those shown may be used provided details of such systems are submitted to and approved by the Engineer prior to erection. Use of these systems or details does not relieve the Contractor of the responsibility for the adequacy of the bracing and the safety of the structure. Removal of bracing for short periods of time to align girders and beams is permissible. All turn-buckles, come-alongs, anchors and other connections must be capable of developing the full strength of the cable shown. Furnish anchor bolts and nuts in accordance with Item 449, "Anchor Bolts".

				Bridge Division Standard	
MINIMUM ERECTION AND BRACING REQUIREMENTS PRESTRESSED CONCRETE I-GIRDERS AND I-BEAMS MEBR(C)					
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©TxDOT	August 2017	CONTRACT	SECTION	JOB	HIGHWAY
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		TYL	WOOD	341	

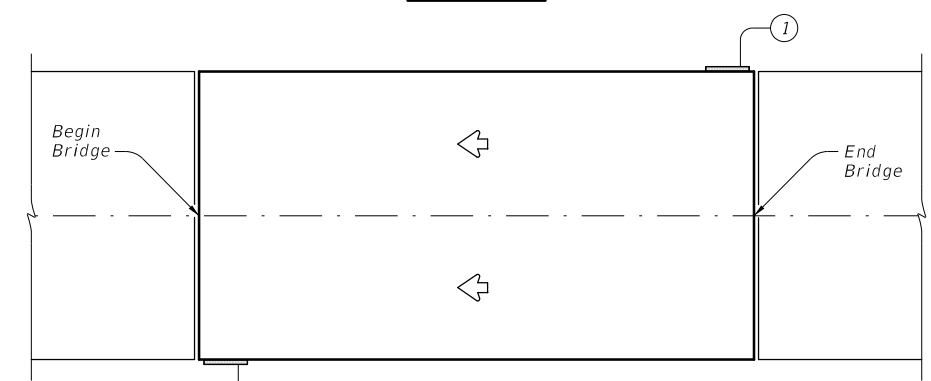
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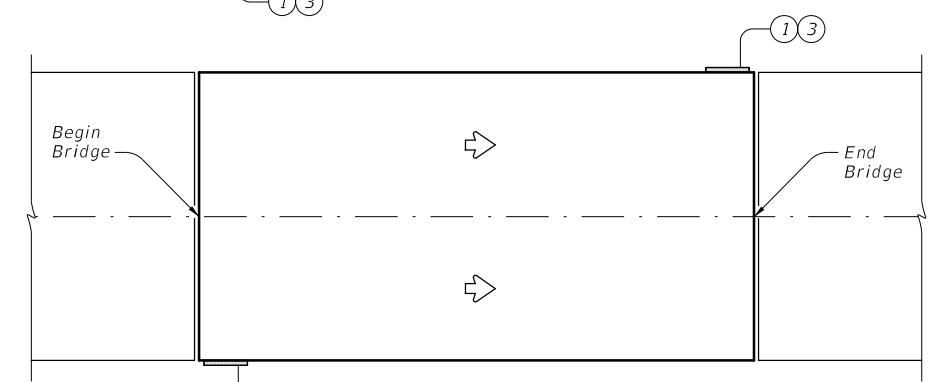
ELEVATION



DETAIL "A"

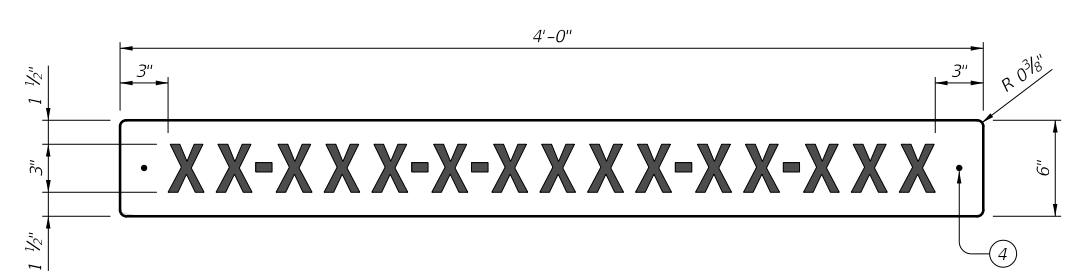


PLAN

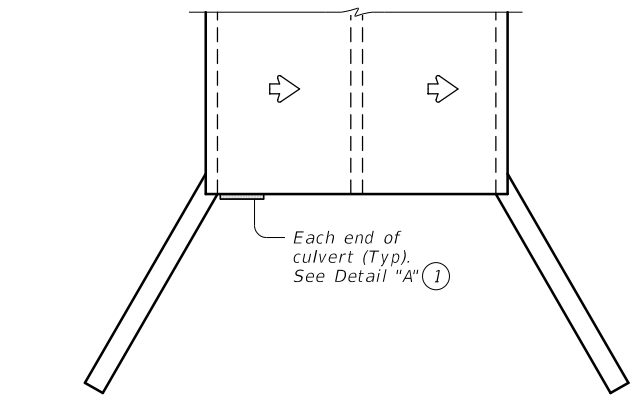


PLAN

BRIDGE SIGN LOCATIONS

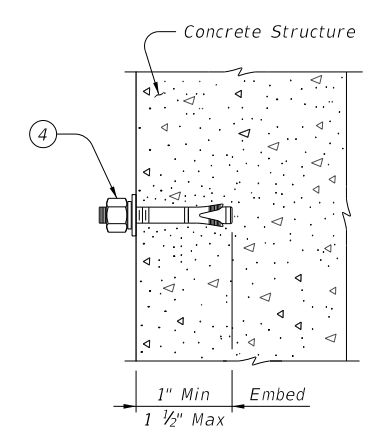


BRIDGE IDENTIFICATION SIGN



PLAN

BRIDGE CLASS CULVERT SIGN PLACEMENT



ANCHOR DETAIL

SHEETING REQUIREMENTS		
Usage	Color	Sign Face Material
Background	White	Type B or C Sheeting
Letters and Symbols	Black	Type B or C Sheeting

- ① Bridge identification sign location
- ② Alternate sign placement location for exterior concrete beams.
- ③ If adjacent bridges are less than 2 feet apart, these signs may be omitted.
- ④ 1/4" Diameter stainless steel expansion anchor with hex nut, washer, and spring-lock washer.

SIGN NOTES:
 Standard sign designs can be found in the Standard Highway Sign Designs for Texas (SHSD).
 Use the Clearview Alphabet CV-2W for the letters and symbols.

MATERIAL NOTES:
 Provide lateral spacing between letters and numerals conforming with the SHSD, and any approved changes thereto. Provide a balanced appearance when spacing is not shown.
 Provide aluminum sign blanks with a minimum thickness of 0.080" that meet the requirements of DMS-7110.
 Provide sign face materials that meet the requirements of DMS-8300 and the sheeting requirements shown in the table.
 Provide 1/4" diameter stainless steel expansion anchors with one hex head nut, one flat washer, and one helical spring-lock washer each.
 Use torque controlled mechanical expansion anchors that are approved for use in cracked concrete by the International Code Council, Evaluation Service (ICC-ES). Provide anchor products that have a designated ICC-ES Evaluation Report number. The approval status must be maintained on the ICC-ES website under Division 031600 for Concrete Anchors.
 Unless otherwise approved by the Engineer: do not use adhesive anchors; do not use expansion anchors that are not included in the ICC-ES approval list; and do not use expansion anchors that are only approved for use in uncracked concrete.
 Use anchors manufactured with stainless steel expansion wedges. Anchors manufactured with carbon steel expansion wedges are not allowed. Anchor bodies can be either zinc-plated carbon steel or stainless steel. For application in marine environments, provide both stainless steel anchor bodies and expansion wedges.

GENERAL NOTES:
 Prior to hole drilling, locate rebar to ensure clearing of existing reinforcement and/or strands.
 Prior to installation, obtain approval of sign locations from the Engineer. Avoid placement of sign over travel lanes and pedestrian walkways. Submit proposed installation method to Engineer prior to beginning work. Install anchors as shown on plans and in accordance with the anchor manufacturer's published installation instructions.
 Do not install anchors sections of members under tension.
 For new construction, the signs and anchors are subsidiary to the bridge. For installations on existing structures, the signs and anchors are paid under Item 442, "Metal for Structures." Each sign weighs 28 lbs.

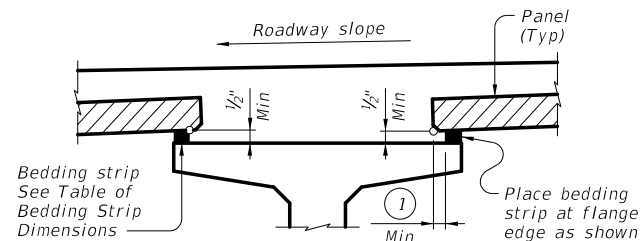
Bridge Division Standard

NBIS
BRIDGE IDENTIFICATION
SIGN STANDARD

NBIS

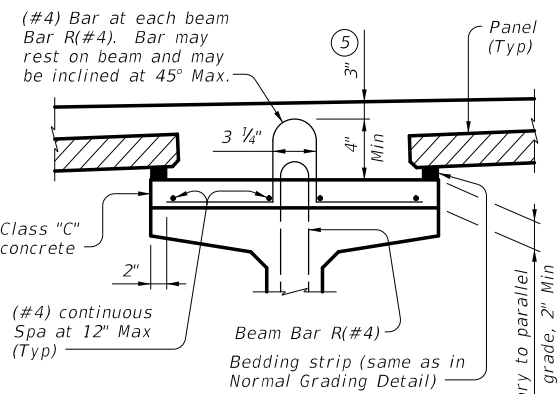
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NORMAL GRADING DETAIL ③

Showing prestressed concrete I-girders.
 (Other beam types similar)



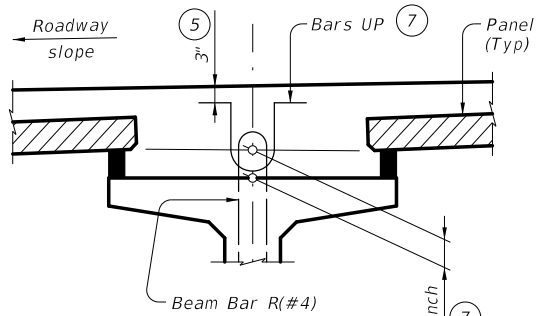
SPECIAL GRADING DETAIL FOR CONCRETE BEAMS

Showing prestressed concrete I-girders.
 (Other beam types similar)

TABLE OF BEDDING STRIP DIMENSIONS

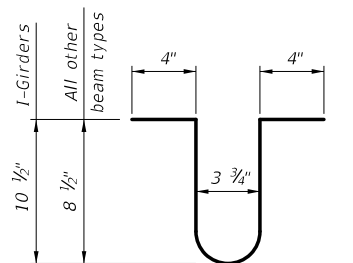
WIDTH	HEIGHT ④	
	Min	Max
1" (Min)	1/2"	2"
1 1/4"	1/2"	2 1/2"
1 1/2"	1/2"	3"
1 3/4"	1/2"	3 1/2"
2"	1/2"	4"
2 1/4"	1/2"	4 1/2" ②
2 1/2"	1/2"	5" ②
2 3/4"	1/2"	5 1/2" ②
3" (Max)	1/2"	6" ②

- ① 2" Min for I-girders, 1 1/2" Min for all other beam types.
- ② Allowed for prestressed concrete I-girders, not allowed on other beam types.
- ③ To reduce the quantity of cast-in-place concrete, bedding strip thickness may be increased in 1/4" increments. Bedding strips must be comprised of one layer. Bond bedding strips to the beams with an adhesive compatible with bedding strips. Bedding strips over 2.5" high may need to be bonded to panels. The same thickness strip must be used under any one panel edge and the maximum change in thickness between adjacent panels is 1/4". Alternatively, bedding strips may be cut to grade. Panels may be supported by an alternate method, using a commercial product, if approved by the Engineer of Bridge Design, Bridge Division. If bedding strips exceed 6" high for I-Girders, 4" high for all other beam types, use Special Grading Detail for Concrete Beams or submit an alternate method to the Bridge Division for approval.
- ④ Height must not exceed twice the width.
- ⑤ Provide clear cover as indicated unless otherwise shown on Span Details.
- ⑥ See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.
- ⑦ Space Bars UP(#4) with Beam Bars R(#4) in all areas where measured haunch exceeds 3 1/2" with I-girders, and 3" for all other beam types. Epoxy coating for Bars UP is not required.
- ⑧ Do not locate construction joints on top of a panel.
- ⑨ Butt adjacent bedding strips together with adhesive. Cut v-notches, approx 1/4" deep, in the top of the bedding strips at 8' o.c..

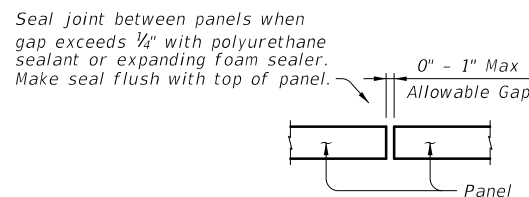


HAUNCH REINFORCING DETAIL

Showing prestressed concrete I-girders.
 (Other beam types similar)

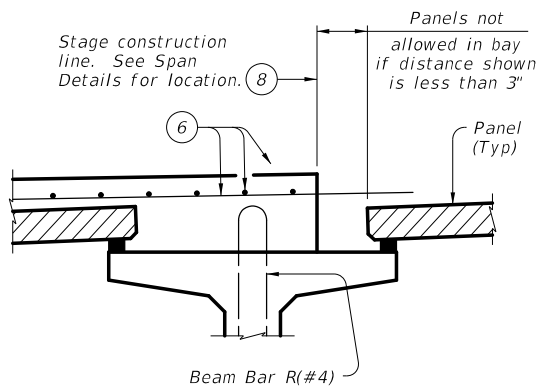


BARS UP (#4) ⑦

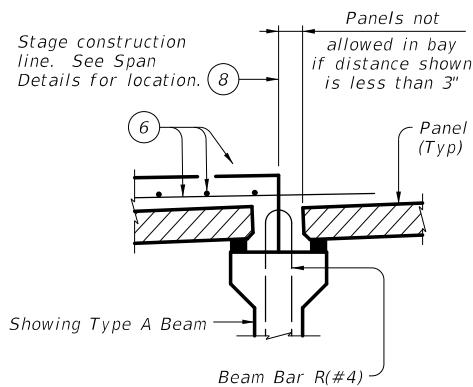


PANEL JOINTS

(Panel reinforcing not shown for clarity.
 The gap cannot be considered as a panel fabrication tolerance. Adjust panel placement to minimize joint openings.)



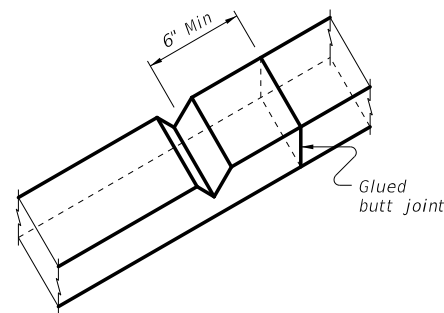
PRESTR CONC I-GIRDERS



PRESTR CONC I-BEAMS

STAGE CONSTRUCTION LIMITATIONS

(Other beam types similar)



BEDDING STRIP DETAIL ⑨

CONSTRUCTION NOTES:
 Erected panels must bear uniformly on bedding strips of extruded polystyrene placed along top flange edges. Placing panels to minimize joint openings is recommended. If additional blocking is needed, special grading details for supporting the panels and extra reinforcing between beam and slab will be considered subsidiary to deck construction. Bars U, shown on PCP-FAB, may be bent over or cut off if necessary. Care must be taken to ensure proper cleaning of construction debris and consolidation of concrete material under the edges of the panels. Bedding strips must be placed at beam flange edges so that adequate space is provided for the mortar to flow a minimum of 1 1/2" under the panels as the slab concrete is placed. To allow the proper amount of mortar to flow between beam and panel, the minimum vertical opening must be at least 1/2". Roadway cross-slope reduces the opening available for entry of the mortar. Bedding strips varying in thickness across the beam are therefore required. For clear span between U-beams less than or equal to 18", see Permissible Slab Forming Detail on Miscellaneous Slab Detail sheets, UBMS.

MATERIAL NOTES:
 Provide Grade 60 reinforcing steel in the cast-in-place slab. See Table of Reinforcing Steel for size and spacing of reinforcement. If the top and bottom layer of reinforcing steel is shown on the Span Details to be epoxy coated, then the D, E, P, & Z bars must be epoxy coated. Provide bar Laps, where required, as follows:
 Uncoated ~ #4 = 1'-7"
 Epoxy Coated ~ #4 = 2'-5"

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications. Panel placement may follow either Option 1 or Option 2 except Option 1 must be used if the skew exceeds 45 degrees. Use of Prestressed Concrete Panels is not permitted for horizontally curved steel plate or tub girders. See Span Details for other possible restrictions on their use. These details are to be used in conjunction with the Span Details, PCP-FAB and other applicable standard drawings. When panel support (bedding strips) deviates from what is shown herein, provide details signed and sealed by a professional Engineer. Any additional reinforcement or concrete required on this standard is considered subsidiary to the bid item "Reinforced Concrete Slab".

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING SHEET 1 OF 4

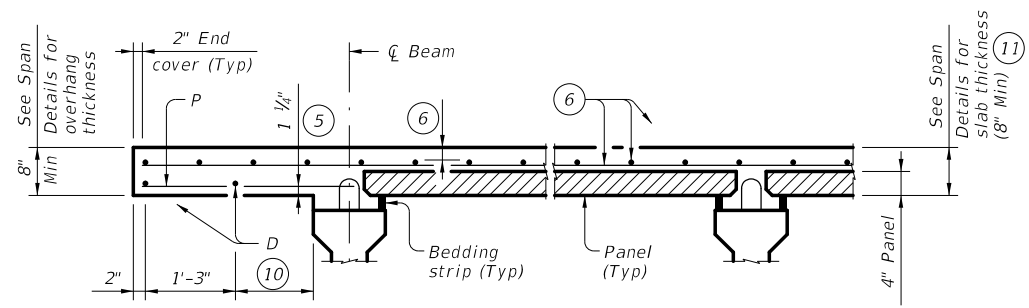


PRESTRESSED CONCRETE PANELS DECK DETAILS

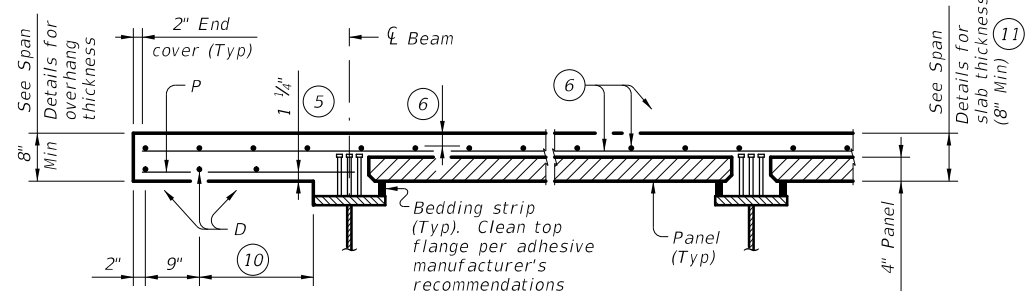
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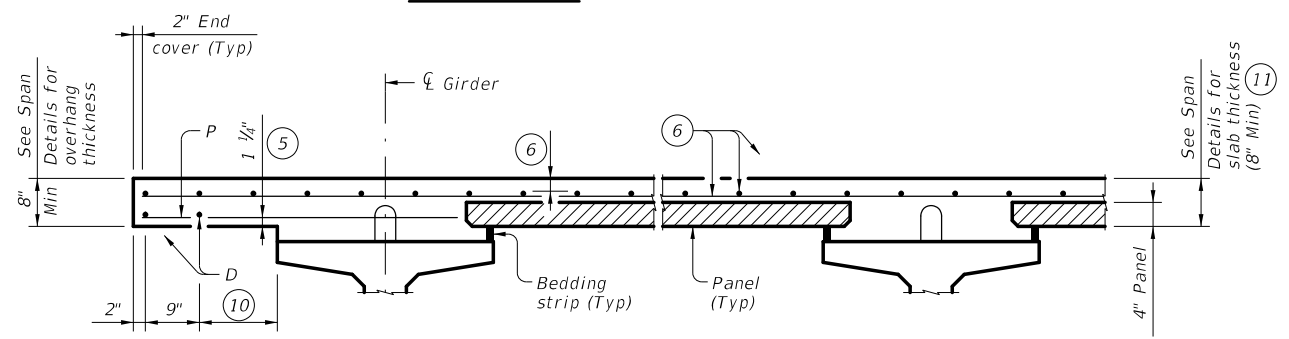
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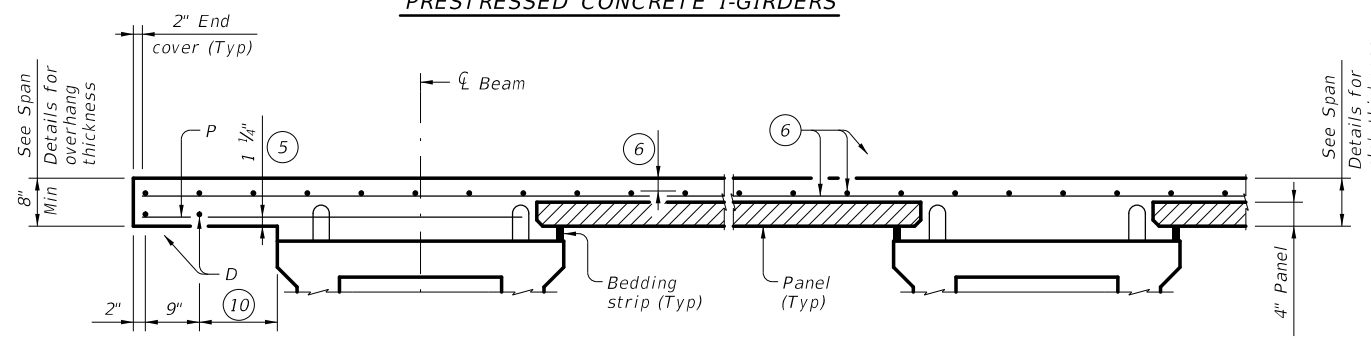
PRESTRESSED CONCRETE I-BEAMS



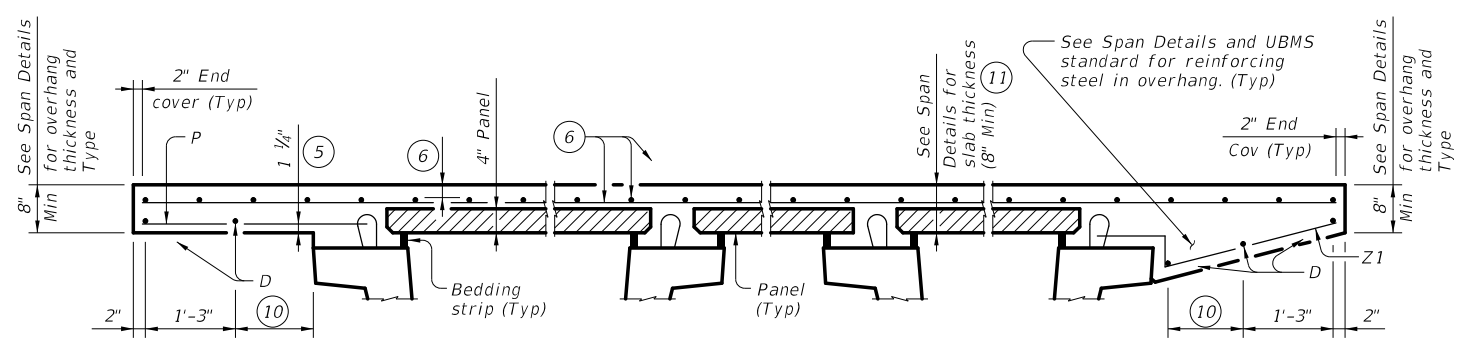
STEEL BEAMS (13)



PRESTRESSED CONCRETE I-GIRDERS



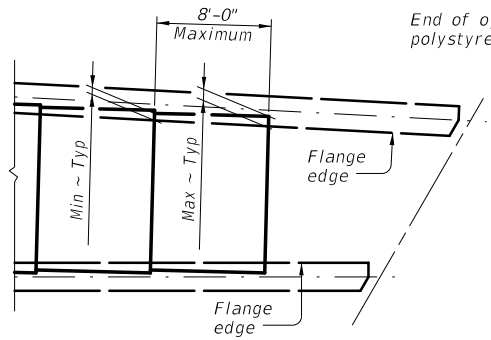
PRESTRESSED CONCRETE X-BEAMS



NORMAL OVERHANG WITH PRESTR CONC U-BEAMS

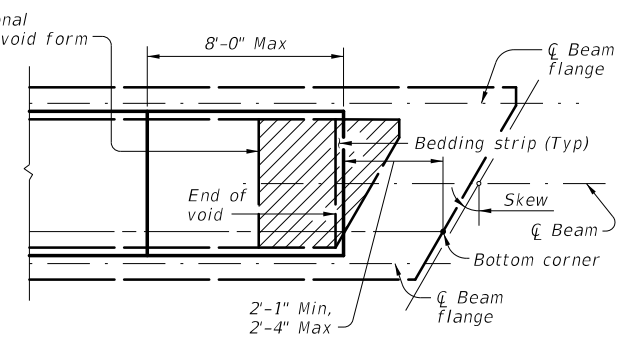
TYPICAL PART TRANSVERSE SECTIONS

SLOPED OVERHANG WITH PRESTR CONC U-BEAMS



AT FLARED BEAMS OR GIRDERS

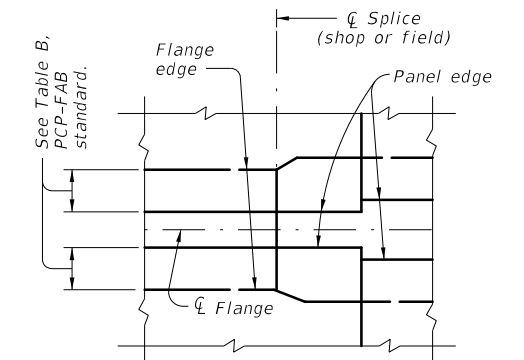
See PCP-FAB standard for Min and Max dimensions based on beam/girder type.



OVER CONC U-BEAMS

PART PLANS OF PANEL PLACEMENT

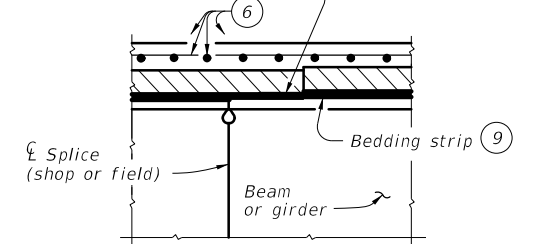
- 5 Provide clear cover as indicated unless otherwise shown on Span Details.
- 6 See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.
- 9 Butt adjacent bedding strips together with adhesive. Cut v-notches, approx 1/4" deep, in the top of the bedding strips at 8' o.c..
- 10 Equally space additional bar if more than 1'-3" Max.
- 11 The actual thickness constructed may exceed the slab thickness shown on the Span Details but the extra thickness may be no more than 2" (1" for prestressed concrete U-beams and steel beams). Bearing seat elevations or finished grade may be adjusted.
- 12 Field adjust Bars Z1(#4) to match actual slope of slab overhangs. Width of slab overhang will vary along span with curved slab edges. Adjust Bar Z1(#4) dimensions to maintain proper cover. Bars Z2(#4) are located at Inverted-Tee stems only.
- 13 Panels are allowed over top tension flanges, as approved by the Engineer. See Span Details for additional top mat reinforcement required in tension zones. Location of concrete placement sequence boundaries and bolted field splices should be considered by the contractor in determining panel limits.



PLAN AT SPLICE

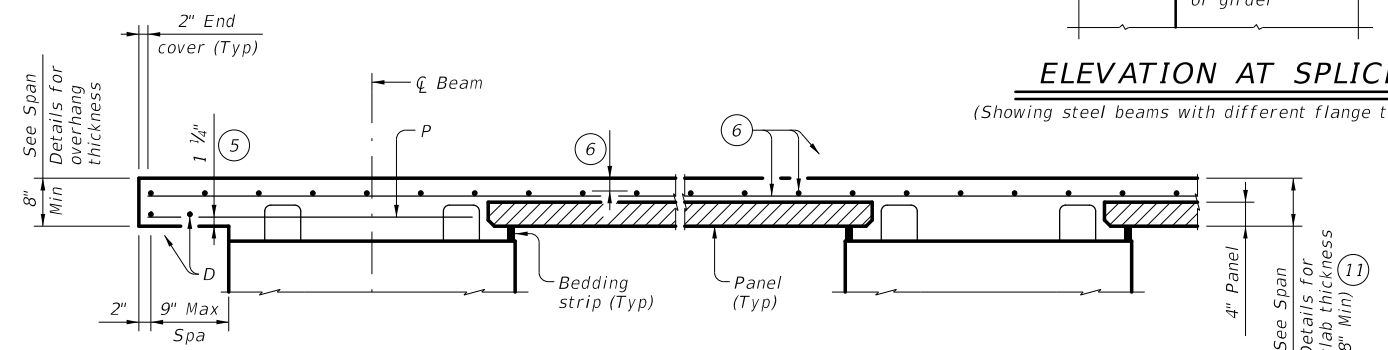
(Showing steel beams with flange width transition)

Cut bedding strip to adjust for difference in flange thickness.



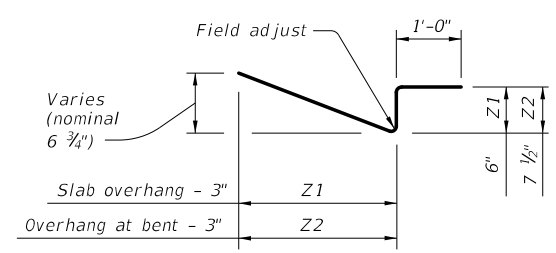
ELEVATION AT SPLICE

(Showing steel beams with different flange thickness)



PRESTRESSED CONCRETE SPREAD SLAB BEAMS

Bars P over exterior beams are still required when no overhang is used. In this case, only one Bar D, 2" from slab edge, is required.



BARS Z (#4) (12)



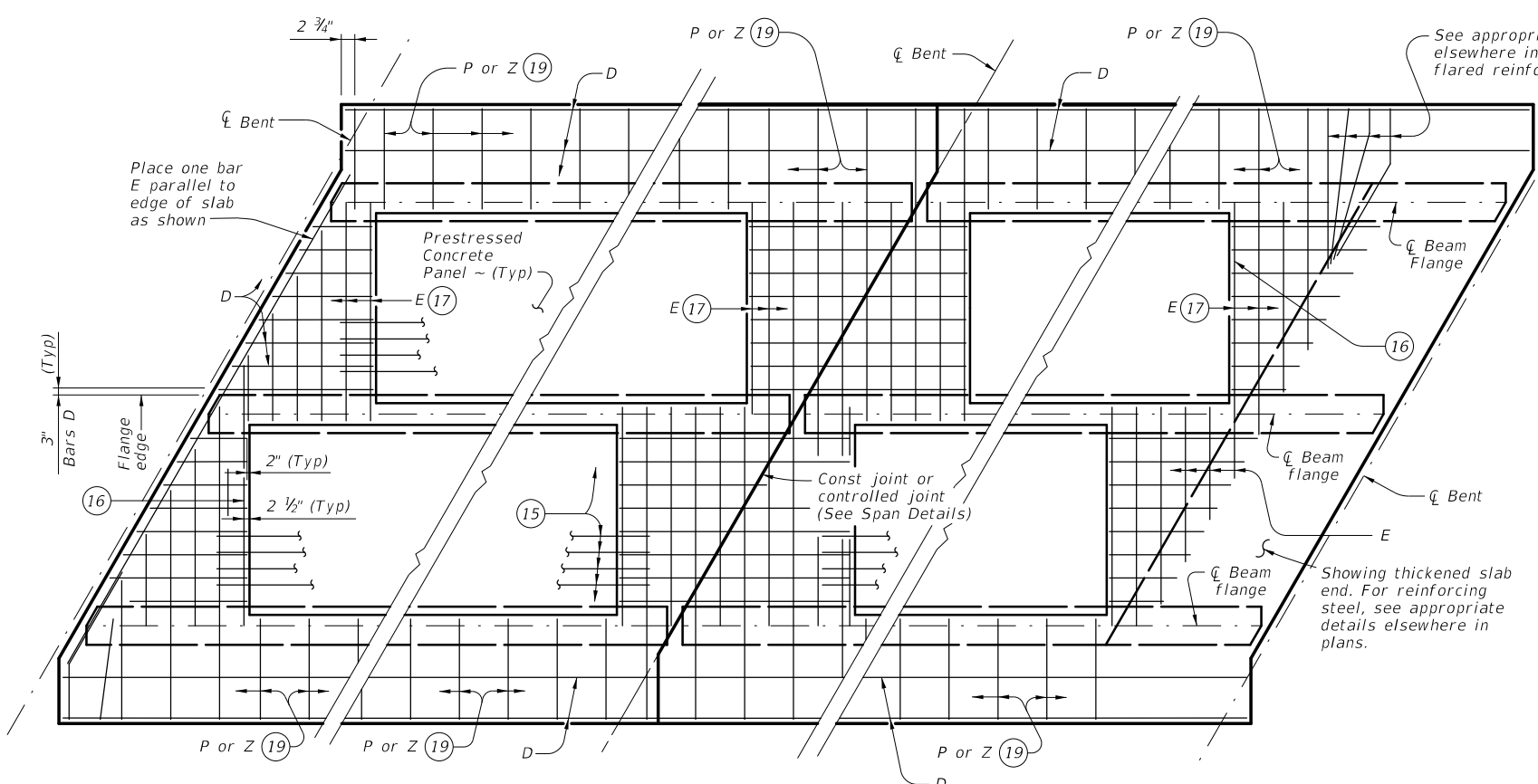
PRESTRESSED CONCRETE PANELS DECK DETAILS

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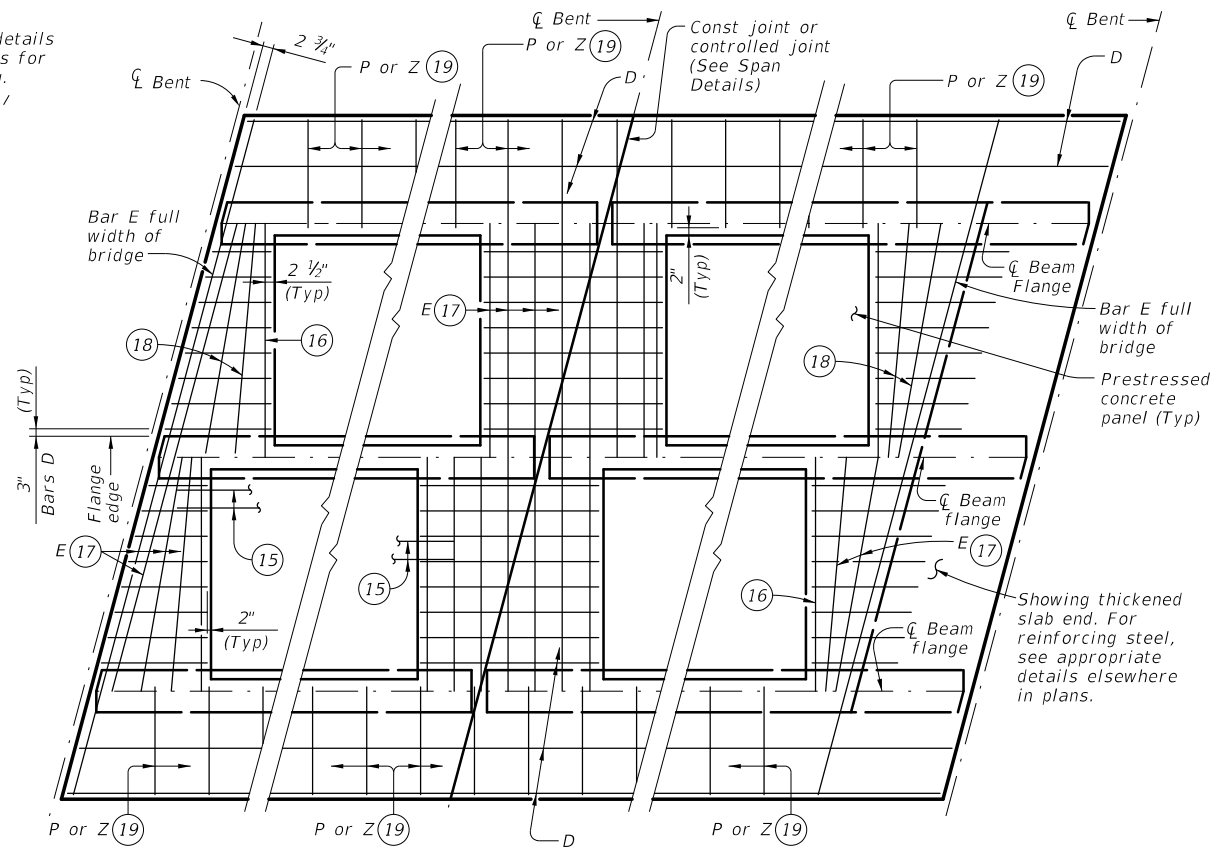
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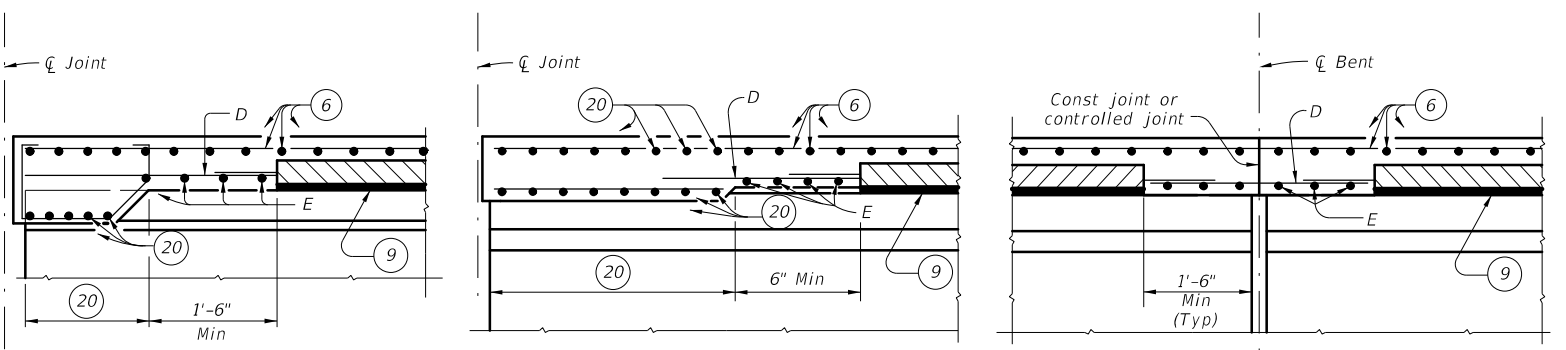
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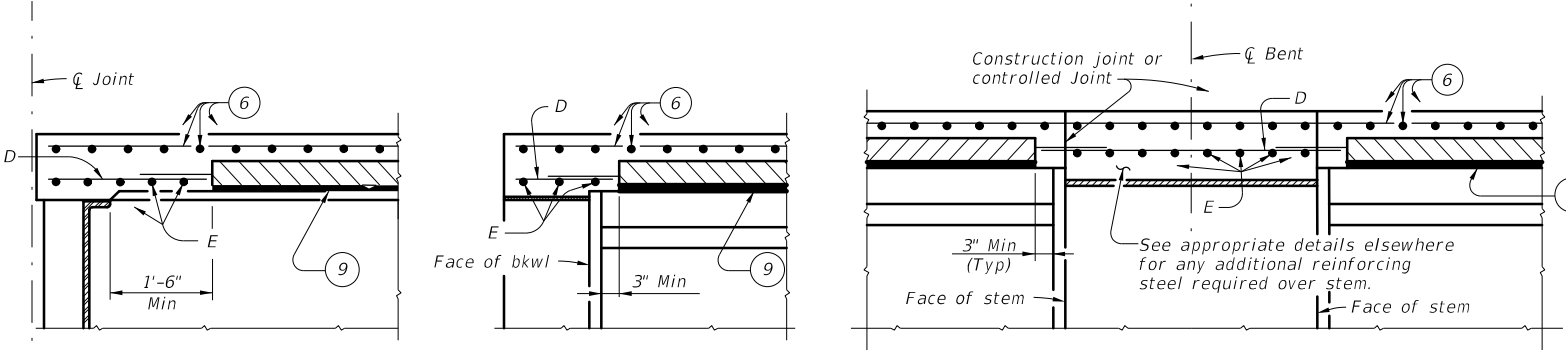
AT ALL SPAN ENDS UNLESS NOTED OTHERWISE
 AT INTERIOR BENTS
 AT THICKENED END SLABS
OPTION 1 ~ PLAN OF SLABS WITH NORMAL REINFORCEMENT



AT ALL SPAN ENDS UNLESS NOTED OTHERWISE
 AT INTERIOR BENTS
 AT THICKENED END SLABS
OPTION 1 ~ PLAN OF SLABS WITH SKEWED REINFORCEMENT



AT THICKENED SLAB ENDS FOR PRESTR CONCRETE U-BEAMS
 AT THICKENED SLAB ENDS FOR PRESTR CONCRETE I-BEAMS AND STEEL BEAMS
 AT SLAB CONTINUOUS OVER CONVENTIONAL INTERIOR BENTS FOR ALL SIMPLE SPAN BEAMS



AT CONVENTIONAL END DIAPHRAGMS FOR STEEL BEAMS
 AT SLAB OVER ABUTMENT BACKWALL FOR ALL BEAMS
 AT SLAB CONTINUOUS OVER INVERTED-T BENTS FOR ALL BEAMS

OPTION 1 ~ ELEVATIONS AT BEAM ENDS

- 6 See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.
- 9 Butt adjacent bedding strips together with adhesive. Cut v-notches, approx 1/4" deep, in the top of the bedding strips at 8' o.c.
- 14 Max Spacing as listed unless otherwise shown.
- 15 At connection with cast-in-place slab, extend longitudinal panel reinforcement. See PCP-FAB for details.
- 16 Maintain one Bar E(#4) parallel to panel ends (Typ).
- 17 Bars E(#4) not continuous over beam flanges must overlap beam flange 6" Min.
- 18 Add flared Bars E(#4) (Min Spa = 6", Max Spa = 12") as required at panel ends.
- 19 Where possible, Bars E(#4) may be extended into overhangs to replace Bars P(#4). Bars Z(#4) are required for sloped overhangs with U-Beams.
- 20 See appropriate thickened slab end details for reinforcing and limits of thickened slab end.

TABLE OF REINFORCING STEEL (14)		
BAR	SIZE	Max Spa (in.)
D	#4	9
E	#4	9
P	#4	18
UP	#4	~
Z	#4	18

HL93 LOADING SHEET 3 OF 4



PRESTRESSED CONCRETE PANELS DECK DETAILS

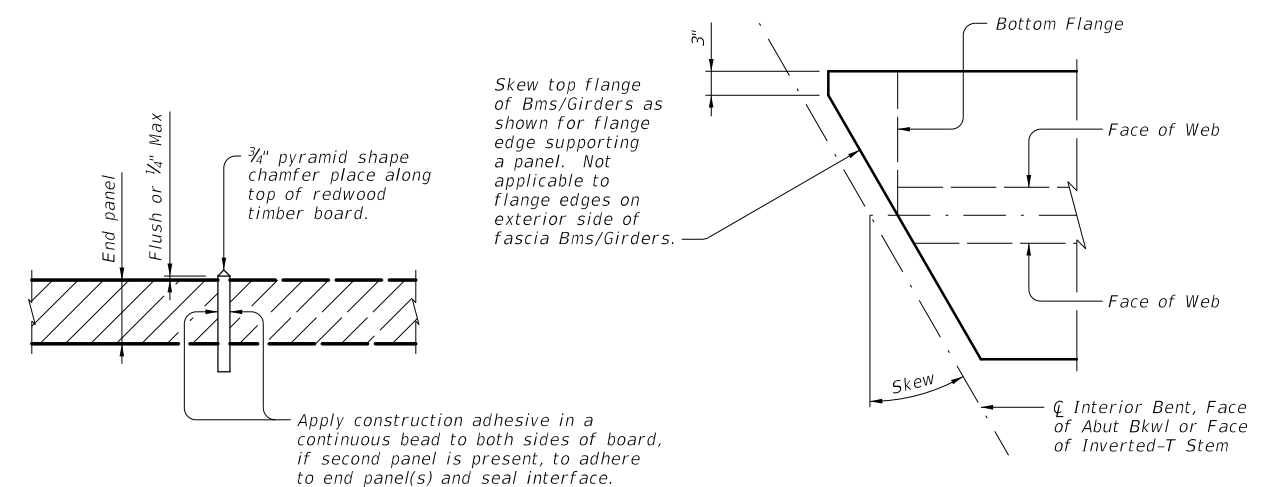
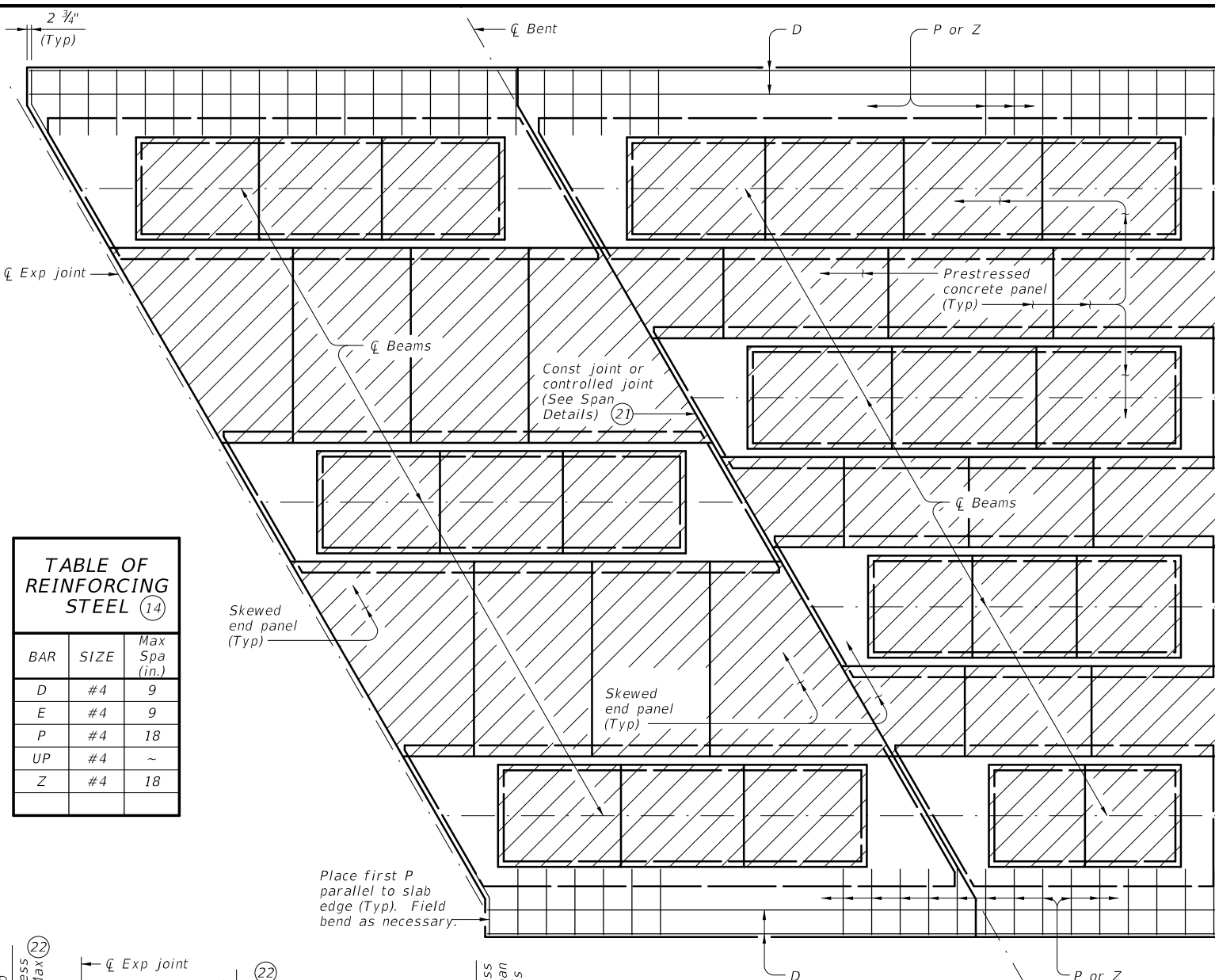
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ELEVATION EXAMPLE OF END PANEL AND TIMBER BOARD (23)

See "Option 2 ~ Elevation At Beam Ends".

OPTION 2 ~ SHOWING MODIFICATION TO BEAM/GIRDER TOP FLANGE FOR SKEWS OVER 5°

Showing I-Beam/I-Girder, U-Beams and Steel Beams similar.

- (6) See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.
- (14) Max Spacing as listed unless otherwise shown.
- (21) 1 1/2" Vinyl or plastic joint former at controlled joints (Stress Cap, Zip Strip, Stress Lock, or equal as approved by the Engineer.)
- (22) End panel may be set up to 2" lower to accommodate expansion joint hardware, provided bedding strip is not less than 1/2" thick.
- (23) 3/4" thick redwood timber board, leave in place. Redwood timber board placed flush with top of panel or within 1/4" Max above panel. Place 3/4" pyramid shape chamfer along top of timber board. See "Elevation Example of End Panel and Timber Board". Place straight, within 1/2" of centerline of bent or face of inverted-tee, across bridge width and end board at exterior flange edge of fascia beams/girders. Do not extend into overhang.
- (24) Place panel within 1/2" of 3/4" thick board.
- (25) Permanent galvanized steel sheet form. Removable formwork is acceptable.
- (26) Place end panel within 1/2" of expansion joint opening. End panel cannot encroach on required expansion joint opening.
- (27) Place additional (#4) bar 5'-0" in length between every slab Bars T. Center (#4) bar on Joint.
- (28) Place additional (#4) bar continuous 2'-6" beyond each side of Inverted-T Stem between every slab bars T.

SPECIAL OPTION 2 CONSTRUCTION NOTES:

When Option 2 is chosen bottom mat of thickened end slab reinforcing is not required. Use the same top mat as shown on the Thickened Slab End Details sheet.

Placing panels adjacent to expansion joints and bent centerlines prior to completing interior panel placement is recommended. Saw cutting panels to fit is acceptable when approved by the Engineer. Minimum distance from a saw cut edge to a panel strand is 1 1/2". Do not extend the longitudinal panel reinforcement into the cast-in-place slab.

Top flanges of beams and girders on skewed bridges must be modified as shown on this drawing. The Contractor is responsible for coordinating this modification with the beam fabricator prior to submitting shop drawings for approval.

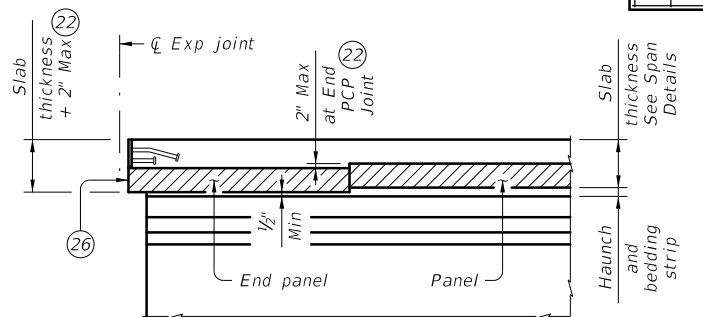
Fabricator may optionally skew the whole end. When electing to skew whole end, girder end details and bearing type at conventional interior bent must be changed to use condition at abutment. Fabricator must coordinate change in bearing type, bearing centerline location, and dowel location with Engineer and Contractor. Show appropriate changes on girder and bearing shop drawings.

Bending of anchor studs of expansion joints shown on standards AJ, SEJ-B, SEJ-M, and SEJ-S(0) is permissible if necessary to clear top of end panels. The Contractor is responsible for coordinating modifications with the joint fabricator. Submit shop drawings for approval when modifications to expansion joint hardware are made.

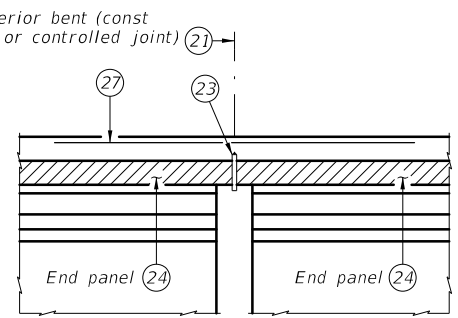
Bedding strips under skewed end panels must conform to the requirements of Item 422 except their minimum compressive strength must be 60 psi.

Provide Bars AA, G, K and OA from standard IGT5 in the slab.

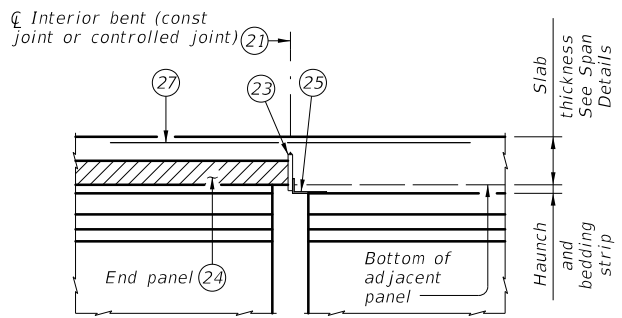
OPTION 2 ~ PLAN OF SLAB
 (Showing U-Beams; other beams similar)



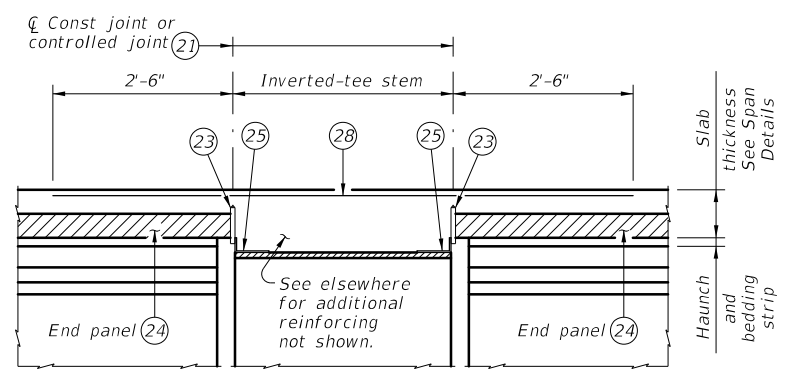
JOINTS (BETWEEN BEAMS/GIRDERS OR AT INV-T STEM)
 For SEJ-B, SEJ-M, SEJ-S(0), AJ, and Type A expansion joints only.



CONVENTIONAL INTERIOR BENT
 Panel against panel between beams/girders.



CONVENTIONAL INTERIOR BENT
 Panel against beam/girder end in adjacent span.



INVERTED-T BENT
 Panels against inverted-tee stem

OPTION 2 ~ ELEVATIONS AT BEAM ENDS (6)

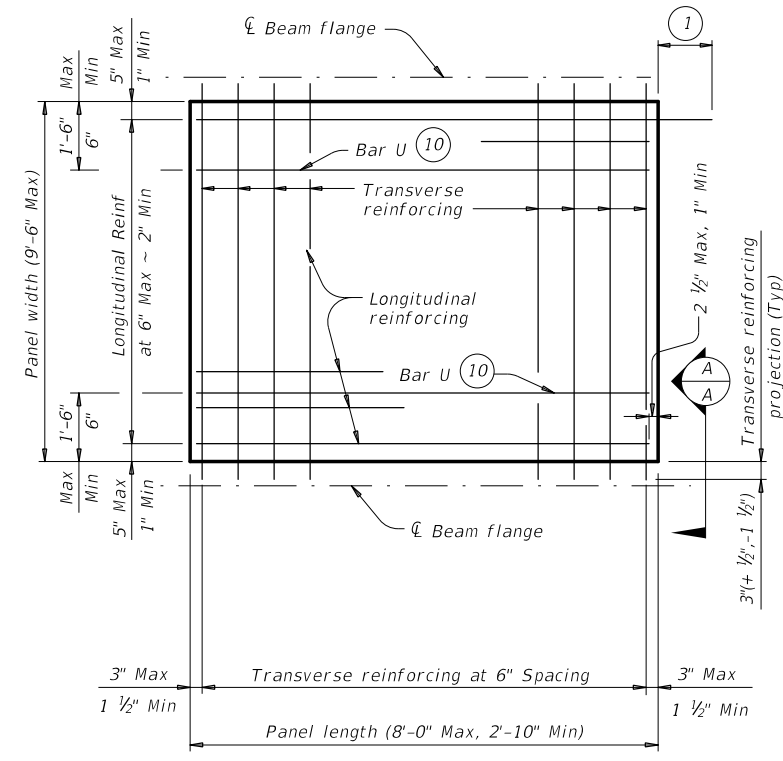
Texas Department of Transportation
 Bridge Division Standard

PRESTRESSED CONCRETE PANELS DECK DETAILS

PCP

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©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
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3/2023: Removed top flange tension limit.	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	345	

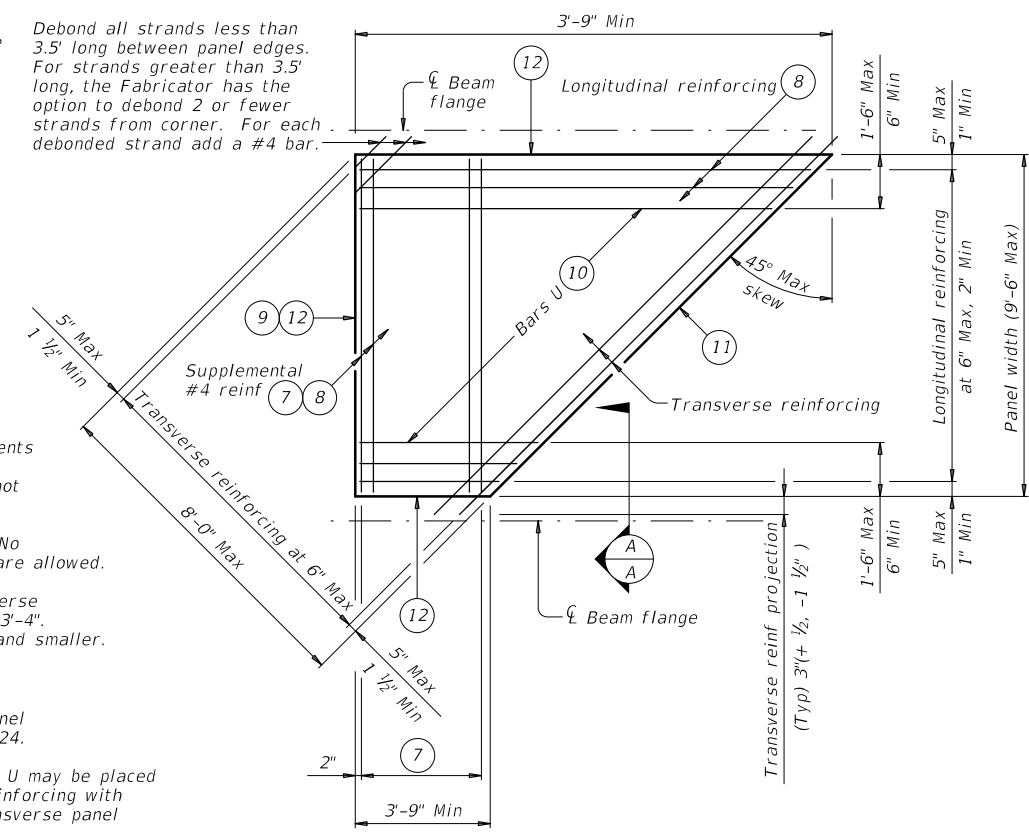
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TYPICAL NON-SKEWED PANEL PLAN

- 1 At connection with cast-in-place slab, extend longitudinal panel reinforcement 1'-0" (+2", -0") past panel end. Alternatively, provide (#3) x 2'-0" dowels at 6" Max Spacing and extend dowels 1'-0" past panel end.
- 2 Four loops required per panel.
- 3 Four loops required per panel. 3/8" or 1/2" strands may be used.
- 4 Normal dimensions must be used on spans with parallel beams. Maximum and Minimum dimensions apply only to spans with flared beams.
- 5 See Normal Grading Detail on PCP standard for lap requirements and bedding strip dimensions. Some laps shown in tables cannot utilize all bedding strip widths.
- 6 One Splice allowed per panel. No more than two sheets of WWR are allowed.
- 7 Provide (#4) bars under transverse reinforcing, 10 Spaces at 4" = 3'-4". Omit for 5 degree (1:12) skew and smaller.
- 8 End Cover 2 1/2" Max, 1" Min.
- 9 Recess strands on indicated panel edge in accordance with Item 424.
- 10 At the fabricator's option, Bars U may be placed parallel to transverse panel reinforcing with horizontal legs in plane of transverse panel reinforcing.
- 11 Use length of indicated panel edge as panel width for purpose of determining type of transverse reinforcing.
- 12 Timber form work permissible this edge.

Debond all strands less than 3.5' long between panel edges. For strands greater than 3.5' long, the Fabricator has the option to debond 2 or fewer strands from corner. For each debonded strand add a #4 bar.



TYPICAL SKEWED END PANEL PLAN

(Only to be used with details shown elsewhere in the plans.)

TABLE A (4) (5)				TABLE B (4) (5)			
Beam Type	Normal (In.)	Min (In.)	Max (In.)	Top Flange Width	Normal (In.)	Min (In.)	Max (In.)
A	3	2 1/2	3 1/2	11" to 12"	2 3/4	2 1/2	2 3/4
B	3	2 1/2	3 1/2	Over 12" to 15"	3 1/4	3	3 1/4
C	4	3	4 1/2	Over 15" to 18"	4	3	4 3/4
IV	6	4	7 1/2	Over 18"	5	3 1/2	6 1/4
VI	6 1/2	4 1/2	8 1/2				
U40 - 54	5 1/2	5 1/2	7				
Tx28-70	6	5	7 1/2				
XB20 - 40	4	3	4 1/2				
XSB12 - 15	4	3	4 1/2				

GENERAL NOTES:

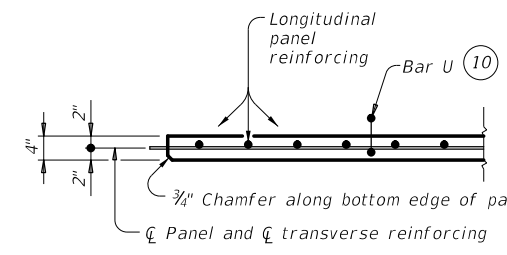
Provide Class H concrete for panels. Release strength $f'_{ci}=3,500$ psi. Minimum 28 day strength $f'_c=5,000$ psi.
 Provide 3/4" chamfer along bottom edge of panel on beam side. Do not use epoxy-coated reinforcing steel bar or strand in panels. Remove laitance from top panel surface. Finish top of panel to a roughness between a No. 6 and No. 9 concrete surface profile, inclusive, as specified by the International Concrete Repair Institute (ICRI).
 Shop drawings for the fabrication of panels will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.
 A panel layout which identifies location of each panel must be developed by the Fabricator. Permanently mark each panel in accordance with the panel layout. A copy of the layout is to be provided to the Engineer.

TRANSVERSE PANEL REINFORCEMENT:

For panel widths over 5', use 3/8" or 1/2" Dia (270k) prestressing strands with a tension of 14.4 kips per strand.
 For panel widths over 3'-6" up to and including 5', use 3/8" or 1/2" Dia (270k) prestressing strands with a tension of 14.4 kip per strand. Optionally, (#4) Grade 60 reinforcing bars may be used in lieu of prestressed strands.
 For panel widths up to 3'-6", use (#4) Grade 60 reinforcing bars (prestressed strands alone are not allowed).
 Place transverse panel reinforcement at panel centroid and space at 6" Max.

LONGITUDINAL PANEL REINFORCEMENT:

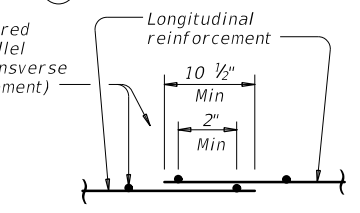
Any of the following options may be used for longitudinal panel reinforcement:
 1. (#3) Grade 60 reinforcing steel at 6" Max Spacing. No splices allowed.
 2. 3/8" Dia prestressing strands at 4 1/2" Max Spacing (unstressed). No splices allowed.
 3. 1/2" Dia prestressing strands at 6" Max Spacing (unstressed). No splices allowed.
 4. Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) providing 0.22 sq in per foot of panel width. Wires larger than D11 not permitted. Provide transverse wires to ensure proper handling of reinforcing. One splice per panel is allowed. See WWR Splice Detail.
 No combination of longitudinal reinforcement options in a panel is allowed. Place longitudinal panel reinforcement above or below transverse panel reinforcement. Must be placed above transverse panel reinforcement for skewed end panels with supplemental (#4) reinforcement.



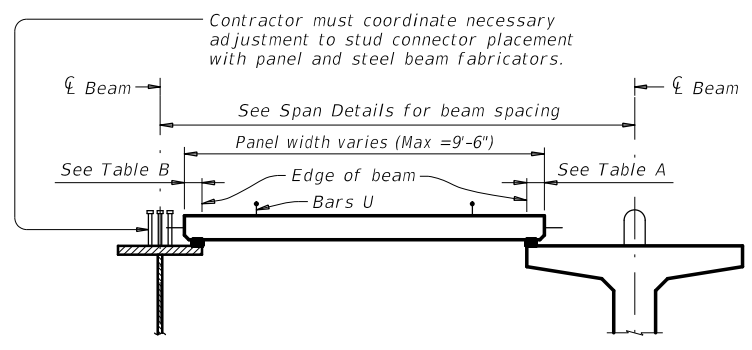
SECTION A-A

(Not showing supplemental #4 bars for skewed end panels.)

No splice required for wires parallel to strands (transverse panel reinforcement)

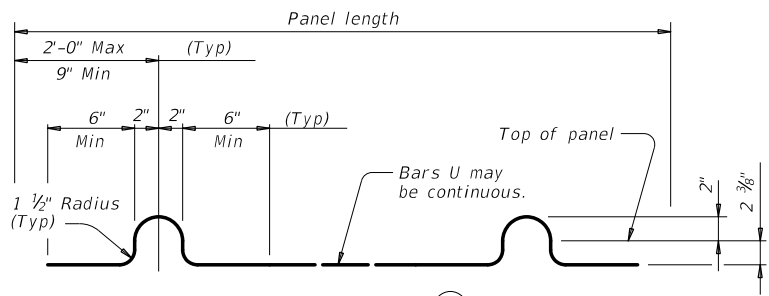


WELDED WIRE REINFORCEMENT (WWR) SPLICE DETAIL (6)

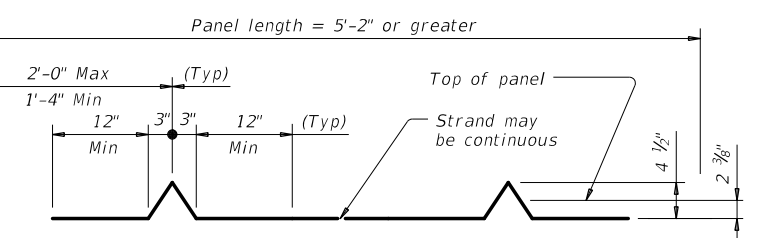


STEEL BEAMS

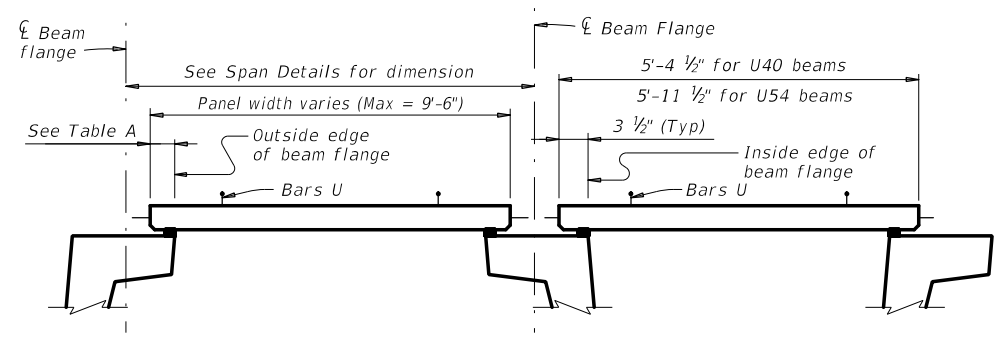
PRESTRESSED CONCRETE BEAMS OR GIRDERS
Typ unless noted otherwise



BARS U (#3) (2)



OPTIONAL STRAND FOR BARS U (3)



PRESTRESSED CONCRETE U-BEAMS

TYPICAL SECTIONS FOR DETERMINING PANEL WIDTH

HL93 LOADING

Bridge Division Standard

PRESTRESSED CONCRETE PANEL FABRICATION DETAILS

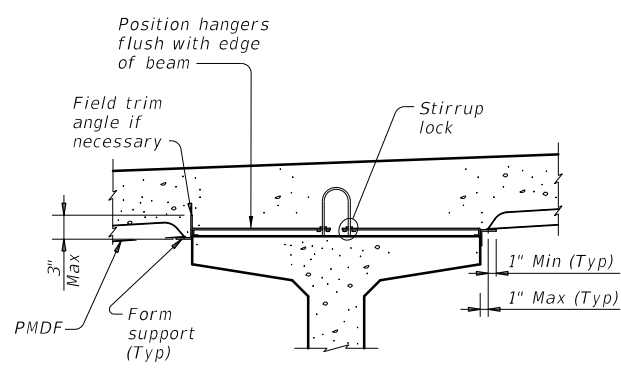
PCP-FAB

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TYL	WOOD		346	

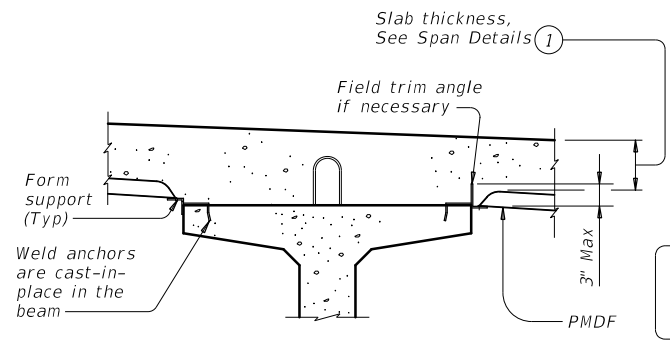
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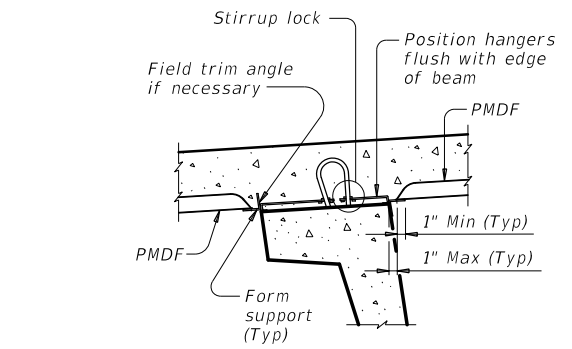
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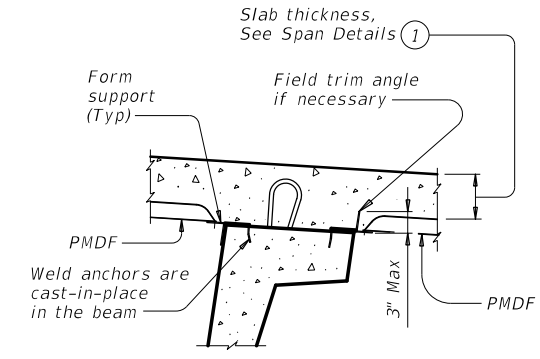
PRESTR CONC I-BEAMS AND I-GIRDERS WITH STIRRUP LOCKS



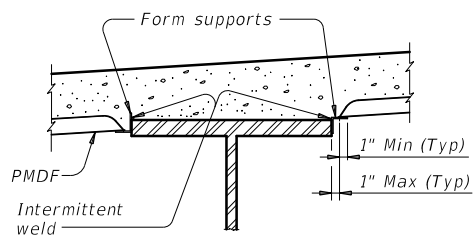
PRESTR CONC I-BEAMS AND I-GIRDERS WITH WELD ANCHORS



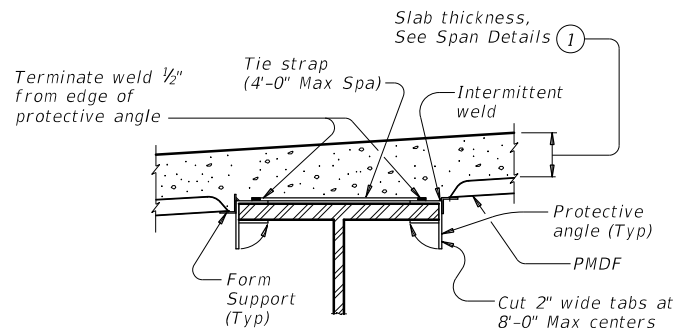
U-BEAMS WITH STIRRUP LOCKS



U-BEAMS WITH WELD ANCHORS

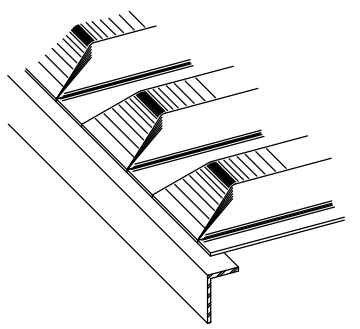


STEEL BEAMS AT COMPRESSION FLANGES

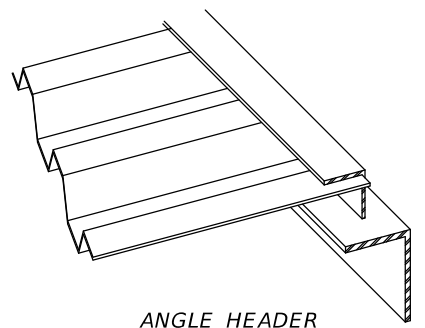


STEEL BEAMS AT TENSION FLANGES

TYPICAL TRANSVERSE SECTIONS



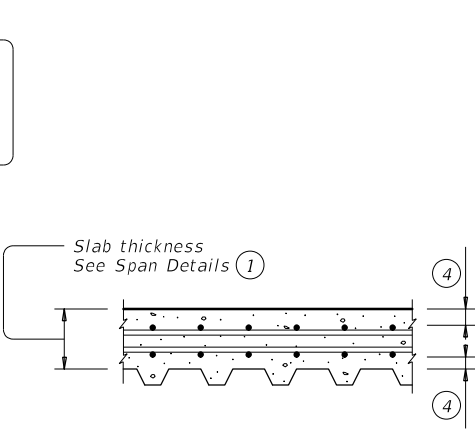
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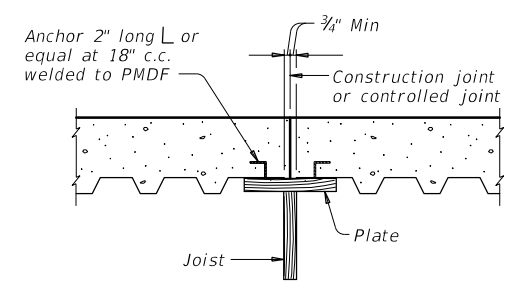
ANGLE HEADER

NOTE: This type is to be used for skewed ends only.

TYPES OF END CLOSURES



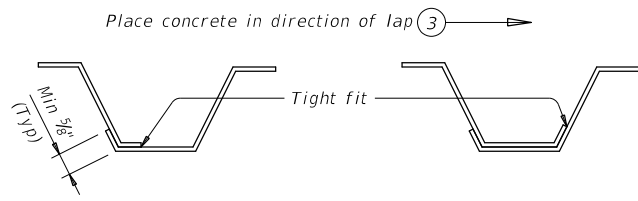
TYP LONGITUDINAL SLAB SECTION



Note: In spans where PMD forms are used, timber forms must be used at construction joints. Adequate provision must be made to support edge of metal form and to provide anchorage of metal form to slab concrete where joined to wood forms.

SECTION THRU CONSTRUCTION JOINT

FOR PRESTR CONC U-BEAM AND STEEL GIRDER BRIDGES:
 Unless shown elsewhere in the plans, size, spacing, and orientation of bottom mat of slab reinforcement must match the top mat of reinforcing shown on the span details except all bottom mat bars are to be #5. Bottom mat reinforcement and additional concrete is subsidiary to Item 422 "Concrete Superstructures."
FOR PRESTR CONC TX-GIRDER BRIDGES:
 See Miscellaneous Slab Details, Prestr Concrete I-Girders (IGMS) standard sheet for bottom mat reinforcing.



SIDE LAP DETAILS

- Slab thickness minus 5/8" if corrugations match reinforcing bars.
- Welding of form supports to tension flanges will not be permitted. Other methods of providing wind hold down resistance for PMDF in tension flange zones will be considered. At least one layer of sheet metal must be provided between the flange and the weld joint.
- The direction of concrete placement will be such that the upper layer of the form overlap is loaded first.
- See Span details for cover requirements.

GENERAL NOTES:

Steel for Permanent Metal Deck Forms (PMDF) and support angles shall conform to ASTM A653, structural steel (SS), with coating designation G165. Steel must have a minimum yield strength of 33 ksi. Minimum thickness of PMDF is 20 gage and that of support angles and protective angles is 12 gage.

Submit two copies of forming plans for PMDF to the Engineer. These plans must show all essential details of proposed form sheets, closures, fasteners, supports, connectors, special conditions and size and location of welds. These plans must clearly show areas of tension flanges for steel beams and provisions for protecting the tension flanges from welding notch effects by inclusion of separating sheet metal or other positive method. These plans must be designed, signed, and sealed by a licensed professional engineer. Department approval of these plans is not required, but the Department reserves the right to require modifications to the plans. The Contractor is responsible for the adequacy of these plans.

The details and notes shown on this standard are to be used as a guide in preparation of the forming plans.

All material, labor, tools and incidentals necessary to form a bridge deck with Permanent Metal Deck Forms is considered subsidiary to Item 422, "Concrete Superstructures".

DESIGN NOTES:
 As a minimum, PMDF and support angles must be designed for the dead load of the form, reinforcement and concrete plus 50 psf for construction loads. Flexural stresses due to these design loads must not exceed 75 percent of the yield strength of the steel. Allowable stress for weld metal must be 12,400 psi.

Maximum deflection under the weight of forms, reinforcement and concrete or 120 psf, whichever is greater, shall not exceed the following:

- 1/180 of the form design span, but not more than 0.50", for design spans of 10' or less.
- 1/240 of the form design span, but not more than 0.75", for design spans greater than 10'.
- 1/240 of the form design span, but not more than 0.75", for all design spans of railroad overpass bridge spans fully or partially over railroad right-of-way, and for all bridge spans of railroad underpass structures.

The form design span must not be less than the clear distance between beam flanges, measured parallel to the form flutes, minus 2".

CONSTRUCTION NOTES:

Form sheets must not be permitted to rest directly on the top of beam flanges. Form sheets must be securely fastened to form supports and must have a minimum bearing length of one inch at each end. Form supports must be placed in direct contact with beam flanges.

All attachments must be made by permissible welds, screws, bolts, clips or other means shown on the forming plans. All sheet metal assembly screws must be installed with torque-limiting devices to prevent stripping. Only welds or bolts must be used to support vertical loads.

Welding and welds must be in accordance with the provisions of Item 448, "Structural Field Welding", pertaining to fillet welds. All welds must be made by a qualified welder in accordance with Item 448.

All permanently exposed form metal, where the galvanized coating has been damaged, must be thoroughly cleaned and repaired in accordance with Item 445, "Galvanizing". Minor heat discoloration in areas of welds need not be touched up.

Flutes must line up uniformly across the entire width of the structure where main reinforcing steel is located in the flute.

Construction joints will not be permitted unless shown on the plans. The location of and forming details for any construction joint used must be shown on the forming plans. Forms below a construction joint must be removed after curing of the slab.

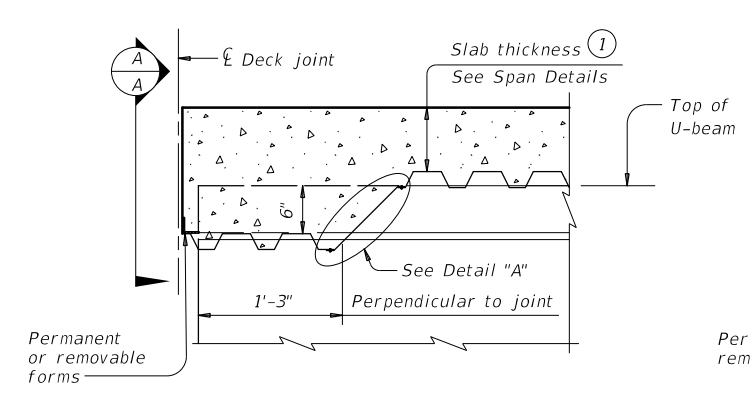
A sequence for uniform vibration of concrete must be approved by the Engineer prior to concrete placement. Attention must be given to prevent damage to the forms, yet provide proper vibration to prevent voids or honeycomb in the flutes and at headers and/or construction joints.

		Bridge Division Standard	
<h2>PERMANENT METAL DECK FORMS</h2>			
<h3>PMDF</h3>			
FILE:	ON: TxDOT	CK: TxDOT	DW: TxDOT
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<small>REVISIONS</small>		<small>SHEET NO.</small>	
<small>02-20: Modified box note by adding steel beams/girders and subsidiary</small>		<small>TYL</small>	
<small>12-21: Updated max deflection for RR.</small>		<small>WOOD</small>	
<small>347</small>		<small>347</small>	

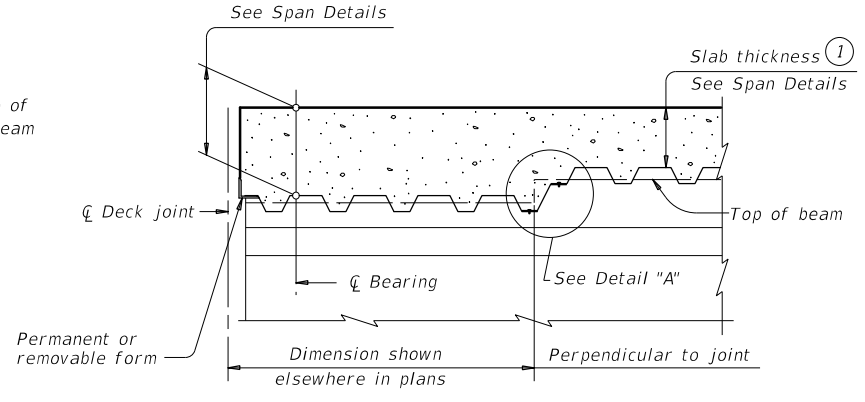
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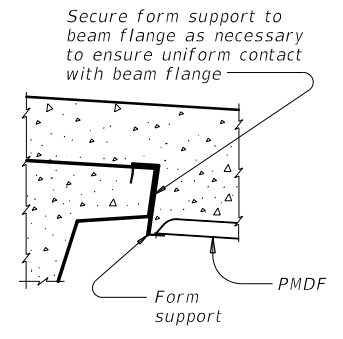
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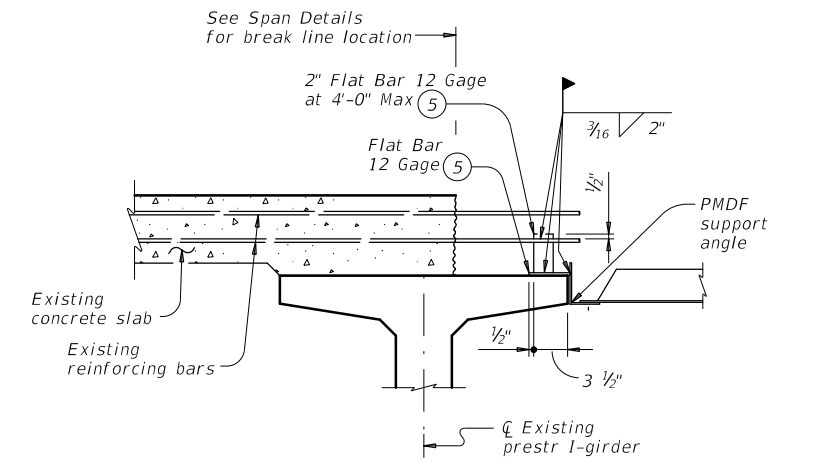
AT THICKENED SLAB END FOR U-BEAMS



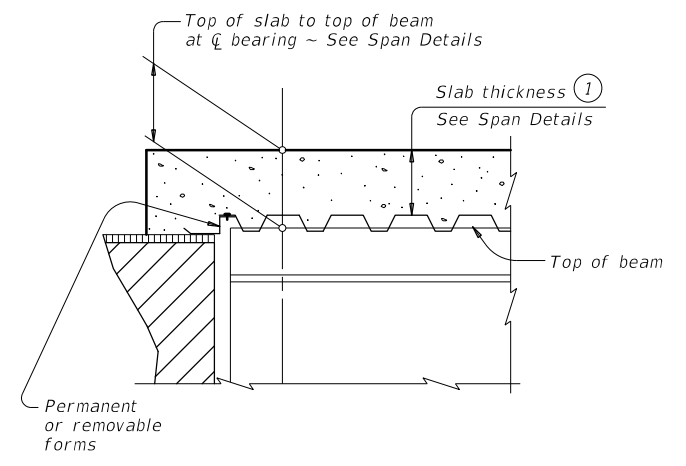
AT THICKENED SLAB END FOR PRESTRESSED I-BEAMS, I-GIRDERS AND STEEL BEAMS
 Showing I-beam block-out. No block-out for I-girders or steel beams.



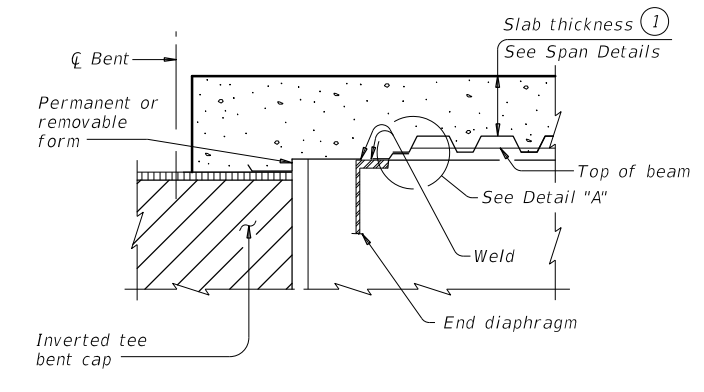
SECTION A-A



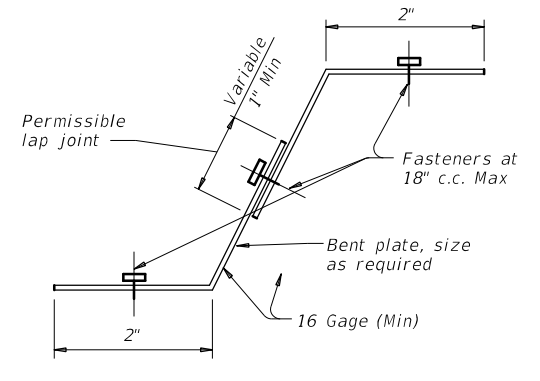
SHOWING PRESTRESSED CONCRETE I-BEAMS, I-GIRDERS AND U-BEAMS



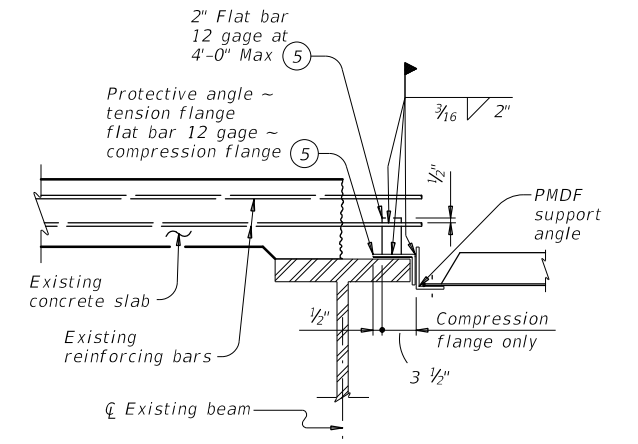
AT SLAB OVER ABUTMENT BACKWALL OR INVERTED-T STEM FOR CONCRETE BEAMS WITHOUT THICKENED SLAB END



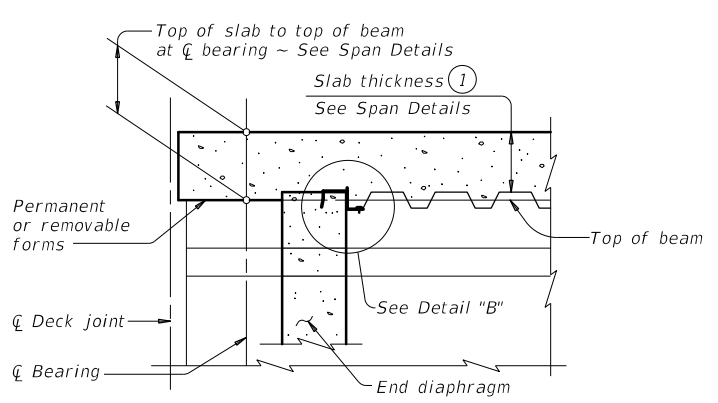
AT SLAB OVER INVERTED-T STEM FOR STEEL BEAMS WITHOUT THICKENED SLAB END



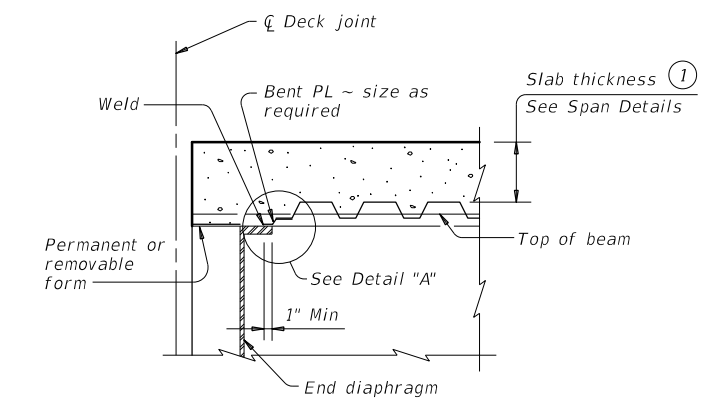
DETAIL "A"



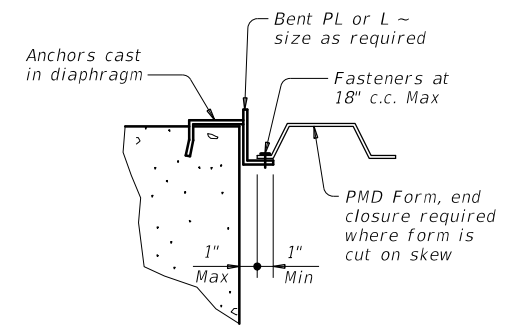
SHOWING STEEL BEAMS



AT CONCRETE END DIAPHRAGM FOR PRESTRESSED I-BEAMS AND STEEL BEAMS



AT END DIAPHRAGM FOR STEEL BEAMS WITHOUT THICKENED SLAB END



DETAIL "B"

DETAILS AT ENDS OF BEAMS

- (1) Slab thickness minus 5/16" if corrugations match reinforcing bars
- (5) Minimum yield stress of 12 gage bars shall be 40 ksi

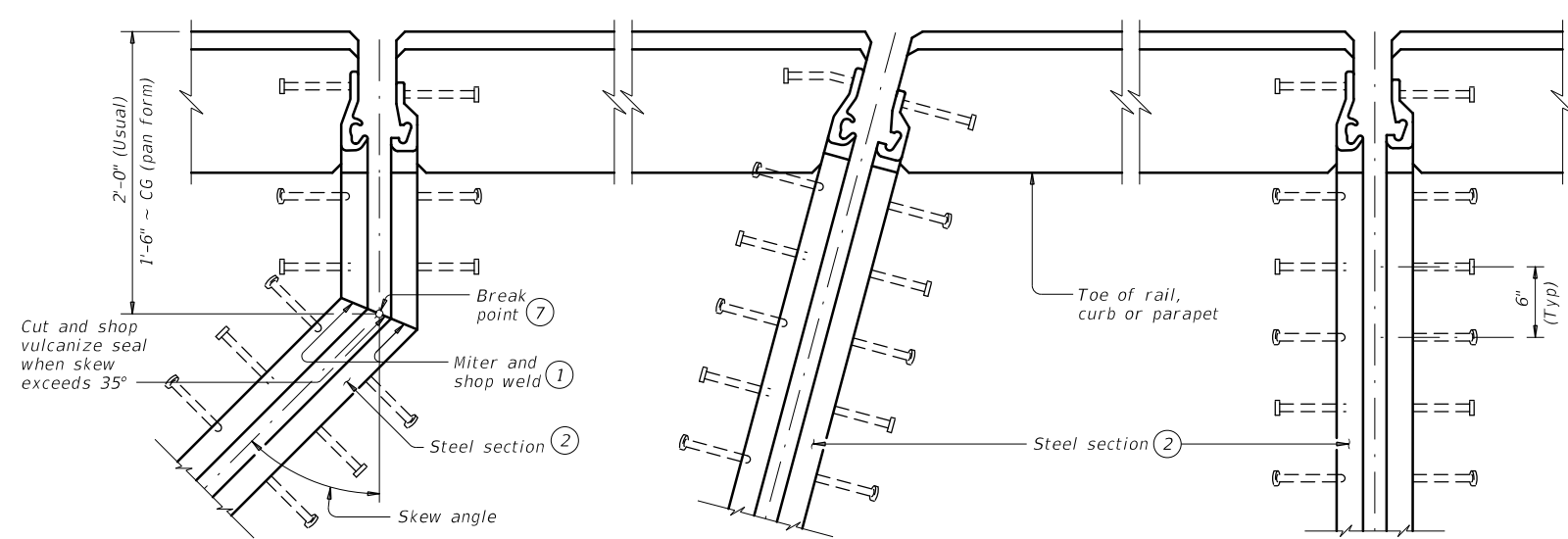
WIDENING DETAILS

SHEET 2 OF 2

				Bridge Division Standard	
PERMANENT METAL DECK FORMS					
PMDF					
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12-21: Updated max deflection for RR.	TYL	WOOD	348		

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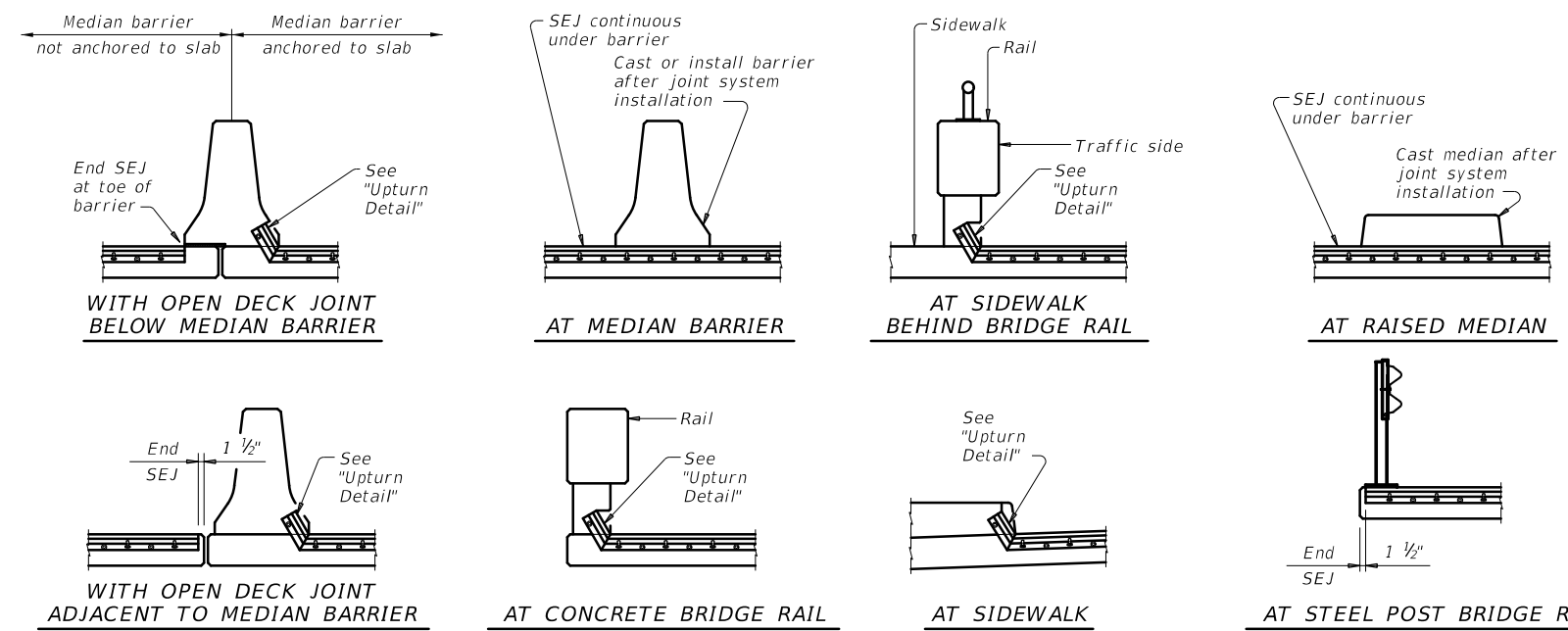


SHOWING SKEWS WITH SLAB BREAKBACKS

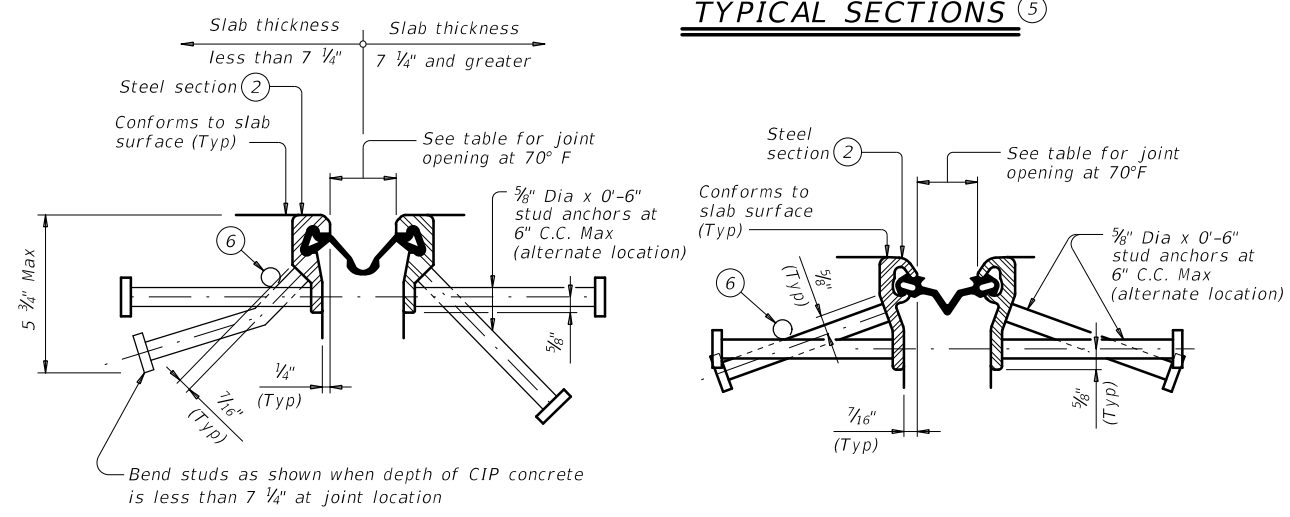
SHOWING SKEWS WITHOUT SLAB BREAKBACKS

SHOWING WITHOUT SKEWS AND SLAB BREAKBACKS

PLANS OF END CONDITIONS

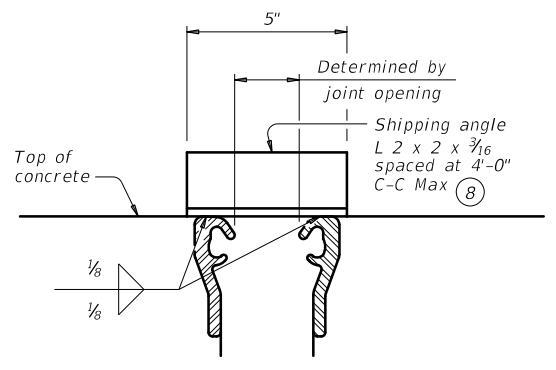


TYPICAL SECTIONS ⑤



SECTION THRU WATSON BOWMAN ACME (SE-400 OR SE-500) JOINTS

SECTION THRU D.S. BROWN (A2R-400 OR A2R-XTRA) JOINTS



SHOWING D.S. BROWN (Ty SSCM2)
 (All joints are similar.) (Studs are not shown for clarity.)

SHIPPING ANGLE

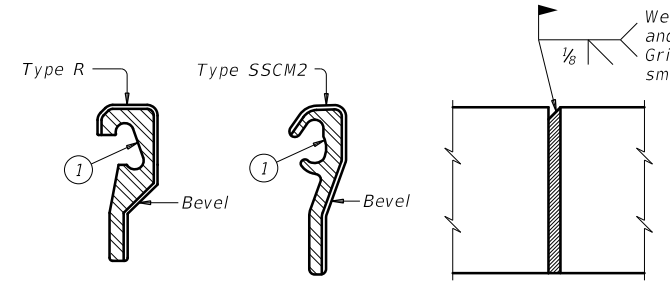
An alternate method of securing joint sections may be used if approved by the Bridge Division. Erection bolts are not allowed.

TABLE OF SEALED EXPANSION JOINT INFORMATION					
MANUFACTURER	STEEL SECTION ②	STRIP SEAL			
		4" JOINT		5" JOINT	
		Seal Type	Joint Opening ③	Seal Type	Joint Opening ③
D.S. Brown	Type SSCM2	A2R-400	1 3/4"	A2R-XTRA	2"
Watson Bowman Acme	Type R	SE-400	1 3/4"	SE-500	2"

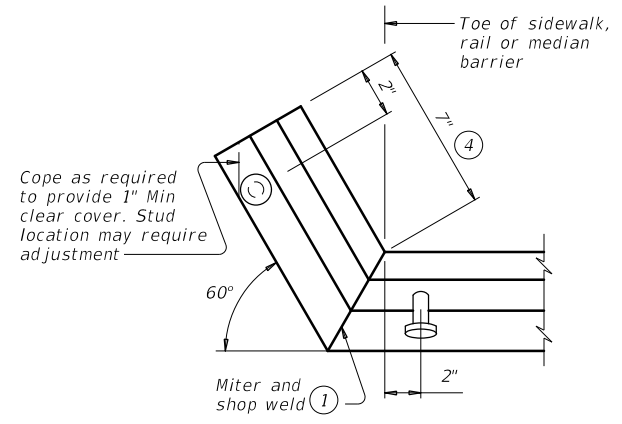
SKEW (deg)	JOINT SIZE	
	4"	5"
0	4.0"	5.0"
15	4.0"	5.0"
30	3.5"	4.3"
45	2.8"	3.5"

DESIGN NOTES:
 Joints installed on a skew have reduced ability to accommodate longitudinal movement. Use table values to determine the correct joint size for skewed installations. For other skews over 25 degrees, calculate reduced movement range by multiplying joint size by cosine (skew).

- Remove all burrs which will be in contact with seal prior to making splice.
- Shape of steel section shown is typical. Variations in sections must be approved by the Engineer.
- These openings are also the recommended minimum installation openings.
- Reduce for sidewalk or parapet heights less than 6".
- Other conditions affecting the joint profile should be noted elsewhere.
- Move transverse bars that are in conflict with SEJ studs, in either the bridge slab or approach slab, to rest at the junction of the studs.
- See Span details for location of break point.
- Align shipping angle perpendicular to joint.



FIELD SPLICE DETAIL



UPTURN DETAIL

FABRICATION NOTES:

Temporarily shop assemble corresponding sections of sealed expansion joints (SEJ), check for fit, and match mark for shipment. Secure corresponding sections together for shipment with shipping angle. Do not use erection bolts.

The seal must be continuous and included in the price bid for sealed expansion joint.

Ship steel sections in convenient lengths of 10'-0" Min and 24'-0" Max unless necessary for staged construction or widenings. One shop splice is permitted in each shipping length provided no piece is less than 2'-0" long and sufficient studs are added to limit the stud to shop splice distance to 2" Min and 4" Max.

Weld studs in accordance with AWS D1.1.

Butt weld all shop and field splices and grind smooth areas in contact with seal. Make all necessary field splice joint preparations in the shop.

Paint the entire steel section with System II or IV primer in accordance with Item 446, "Field Cleaning and Painting Steel", unless required to galvanize when shown in the plans. Provide galvanizing in accordance with Item 445, "Galvanizing". Provide paints in accordance with Item 446.2. Prepare steel and apply paint in accordance with Item 446.7.3 and 446.7.4.

Shop drawings for the fabrication of sealed expansion joints will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.

CONSTRUCTION NOTES:

Secure the sealed expansion joint in position and place to the proper grade and alignment by welding braces to adjacent reinforcing steel, to prestressed beam stirrups, or to anchors cast in concrete diaphragms. Include cost of temporary bracing in the price bid for sealed expansion joint.

Remove shipping angle immediately after each joint half is secured in place. Grind smooth, and touch up with organic zinc-rich paint.

Clean and prepare seal cavity for seal installation as per the Manufacturer's installation procedures.

GENERAL NOTES:

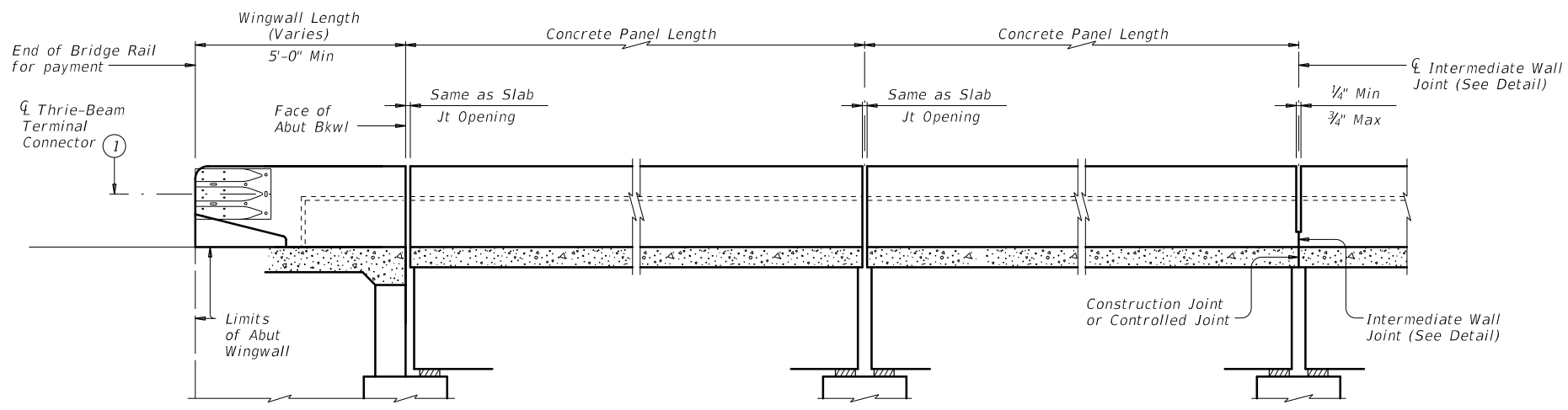
Provide sealed expansion joints in the size and at locations shown on the plans.

Minimum slab and overhang thickness required for the use of SEJ-M is 6 1/2".

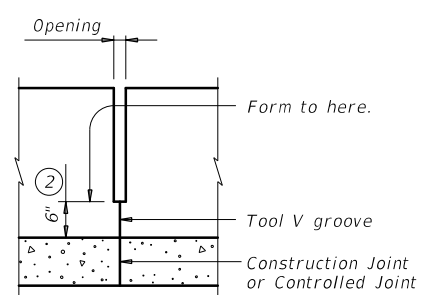
		Bridge Division Standard	
SEALED EXPANSION JOINT TYPE M WITHOUT OVERLAY			
SEJ-M			
FILE:	DN: TxDOT	CK: TxDOT	DW: JTR
©TxDOT	April 2019	CONTRACT NO. 0203 05	JOB NO. 039
REVISIONS		DIST. COUNTY	SHEET NO.
		TYL	WOOD 349

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

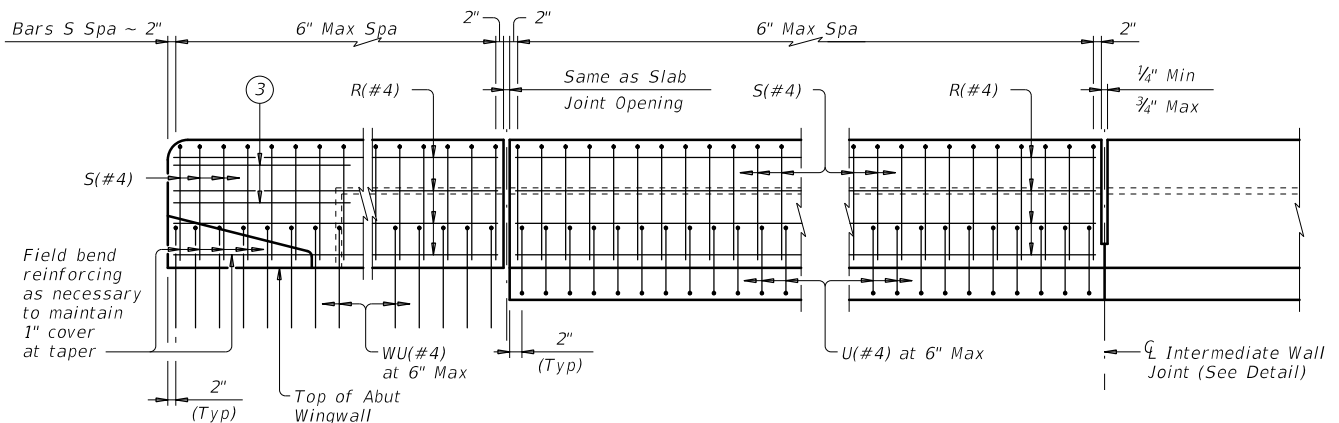
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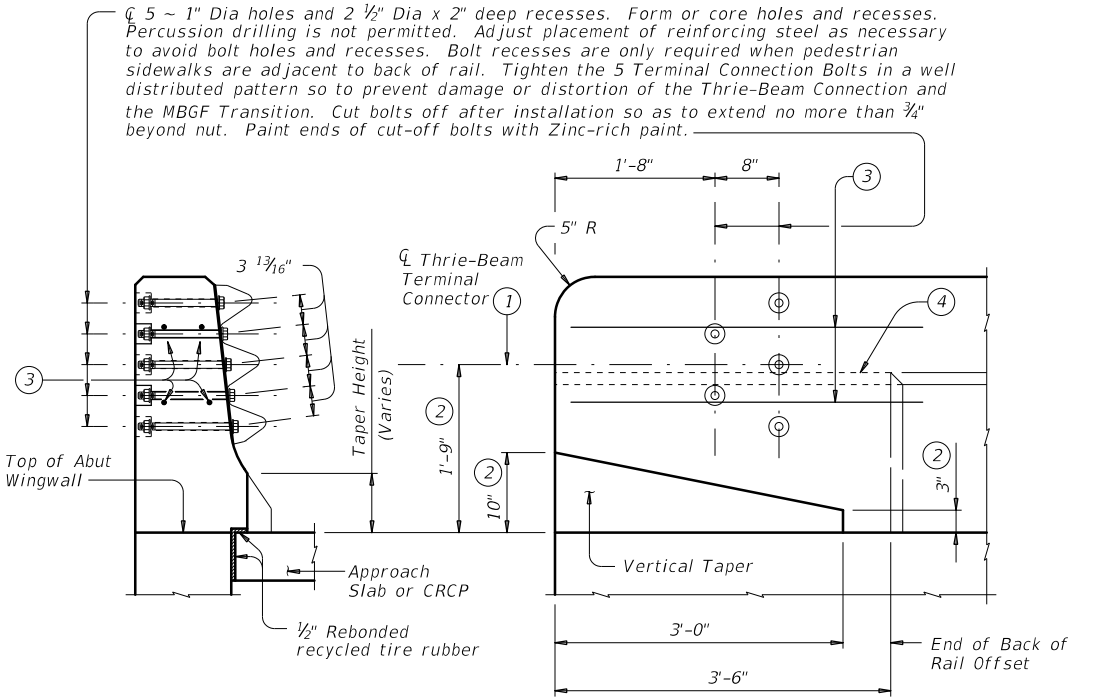
ROADWAY ELEVATION OF RAIL



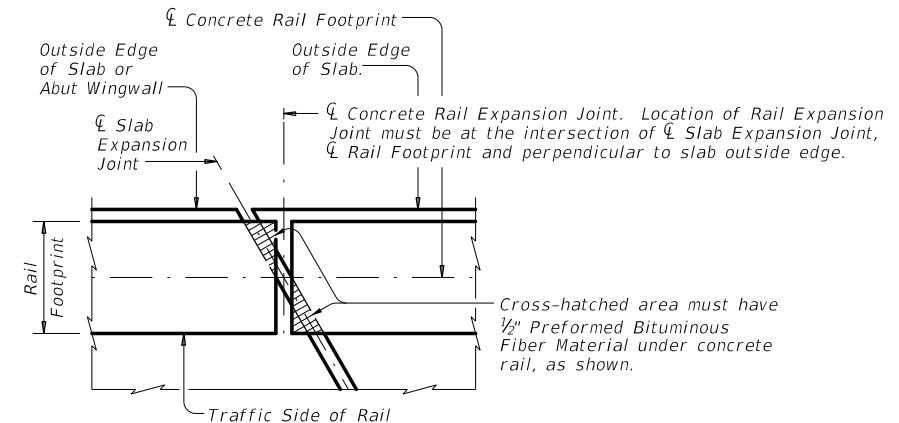
INTERMEDIATE WALL JOINT DETAIL
 Provide at all interior bents without slab expansion joints.



ELEVATION SHOWING TYPICAL REINFORCING PLACEMENT



SECTION
ELEVATION
TERMINAL CONNECTION DETAILS



PLAN OF RAIL AT EXPANSION JOINTS
 Example showing Slab Expansion Joints without breakbacks.

- Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard Fence". Attach Metal Beam Guard Fence Transitions to the bridge rail and extend along the embankment unless otherwise shown in the plans.
- Increase 2" for structures with overlay.
- Place 4 additional Bars R(#4) 3'-8" in length inside Bars S(#4) and centered 2'-0" from end of rail when Terminal Connections are required.
- Back of rail offset may, with Engineer's approval, be continued to the end of the railing.

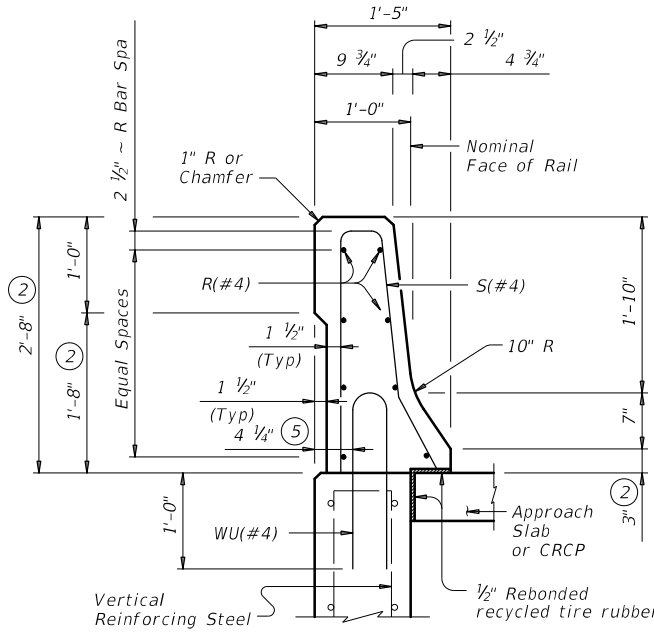
SHEET 1 OF 2

		Bridge Division Standard	
<h2>TRAFFIC RAIL</h2>			
<h3>TYPE T551</h3>			
FILE: ©TxDOT	DATE: September 2019	CONTRACT: 0203	SECTION: 05
DESIGNED BY: TYL	COUNTY: WOOD	JOB NO: 039	US 69
		COUNTY: WOOD	SHEET NO: 351

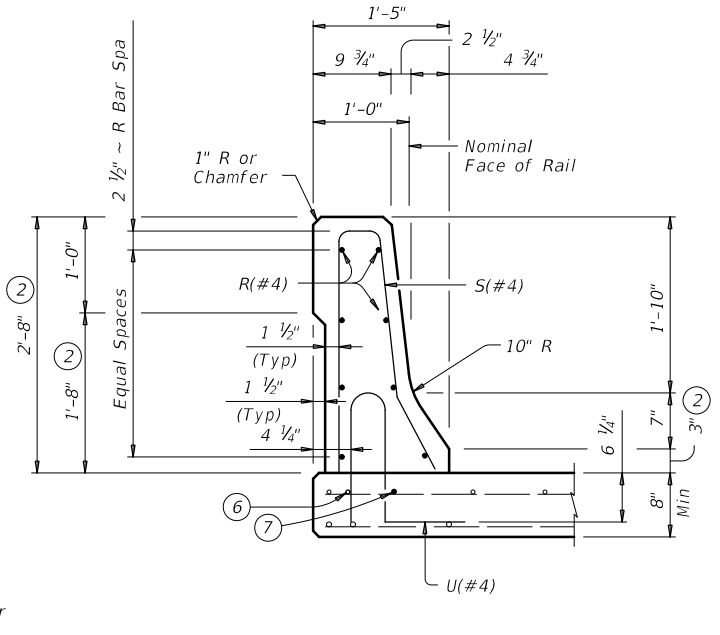
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DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect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



**ON ABUTMENT WINGWALLS
OR CIP RETAINING WALLS**



ON BRIDGE SLAB

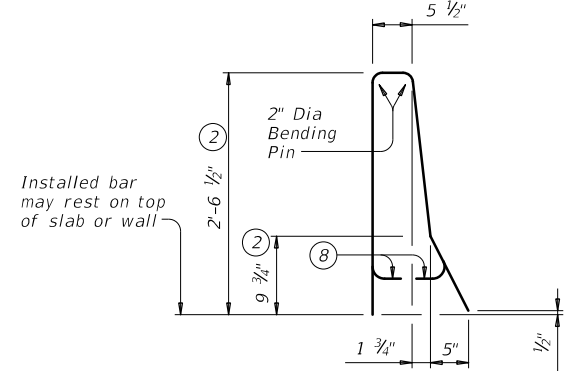
SECTIONS THRU RAIL

- ② Increase 2" for structures with overlay.
- ⑤ 5 1/4" when vertical reinforcing has closer clear cover over horizontal reinforcing in abutment wingwalls or retaining walls on traffic side of wall.
- ⑥ As an aid in supporting reinforcement, additional longitudinal bars may be used in the slab with the approval of the Engineer. Such bars will be furnished at the Contractor's expense.
- ⑦ Top longitudinal slab bar may be adjusted laterally 3" plus or minus to tie reinforcing.
- ⑧ Bend or cut as required to clear drain slots.
- ⑨ No longitudinal wires may be in top center of cage.
- ⑩ Space U(#4) bars at 4" Max when end region of panel length is less than 6'-0" to side slot drain. Space U(#4) bars at 6" Max when end region of panel length is 6'-0" and greater to side slot drain.

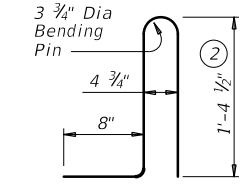
CONSTRUCTION NOTES:
 This railing may be constructed by the slipform process when approved by the Engineer, with equipment approved by the Engineer. Provide sensor control for both line and grade. Tack welding to provide bracing for slipform operations is acceptable. Welding may be performed at a minimum spacing of 3 ft between the cage and the anchorage. It is permissible to weld to bars U, WU and S at any location on the cage. If increased bracing is needed, provide additional anchorage devices and weld in the upper two thirds of the cage. Paint welded areas on epoxy coated and/or galvanized reinforcing with an organic zinc rich paint in accordance with Item 445 "Galvanizing".
 If rail is slipformed, apply an heavy epoxy bead 1" behind toe of traffic side of rail to concrete deck just prior to slip forming. Provide a 3/8" width x 1/4" tall heavy epoxy bead with Type III, Class C or a Type V epoxy.
 The back of railing must be vertical unless otherwise shown on the plans or approved by the Engineer.

MATERIAL NOTES:
 Provide Class "C" concrete. Provide Class "C" (HPC) if required elsewhere.
 Provide Grade 60 reinforcing steel.
 Epoxy coat or galvanize all reinforcing steel if slab bars are epoxy coated or galvanized.
 Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for Bars U and WU unless noted otherwise. Deformed WWR (ASTM A1064) may be substituted for Bars R and S, as shown. Combinations of reinforcing steel and WWR or configurations of WWR other than shown are permitted if conditions in the table are satisfied. Provide the same laps as required for reinforcing bars.
 Provide bar laps, where required, as follows:
 Uncoated or galvanized ~ #4 = 1'-7"
 Epoxy coated ~ #4 = 2'-5"

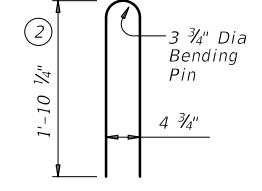
GENERAL NOTES:
 This rail has been evaluated and accepted to be of equal strength to railings with like geometry, which have been crash tested to meet MASH TL-3 criteria. This rail can be used for speeds of 50 mph and greater when a TL-3 rated guard fence transition is used. When a TL-2 rated guard fence transition is used, this rail can only be used for speeds of 45 mph and less.
 Do not use this railing on bridges with expansion joints providing more than 5" movement.
 Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.
 Shop drawings will not be required for this rail.
 Average weight of railing with no overlay is 382 plf.
 Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.



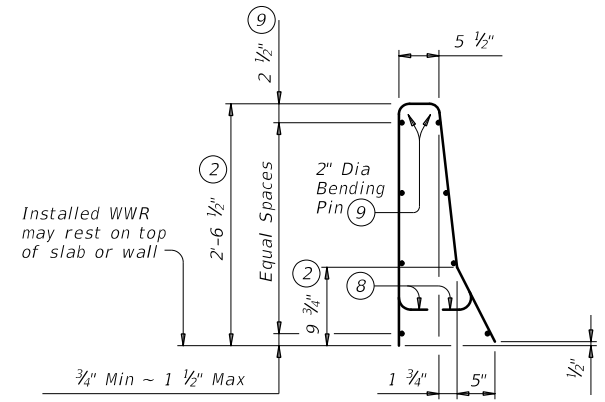
BARS S (#4)



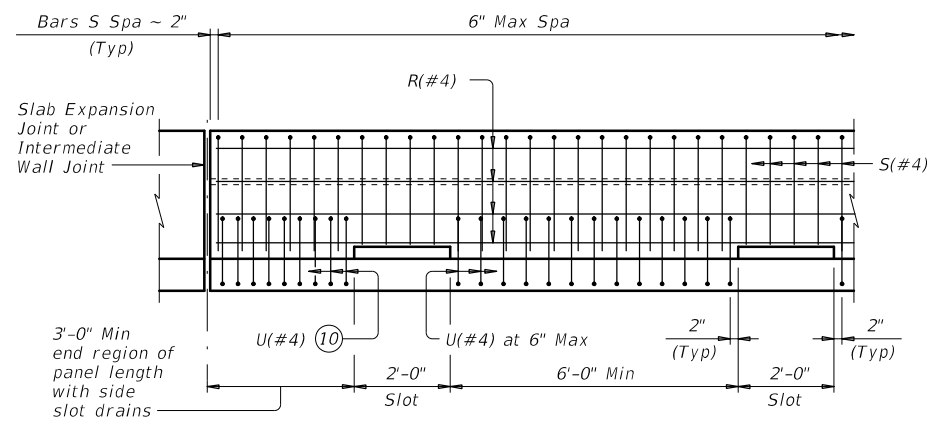
BARS U (#4)



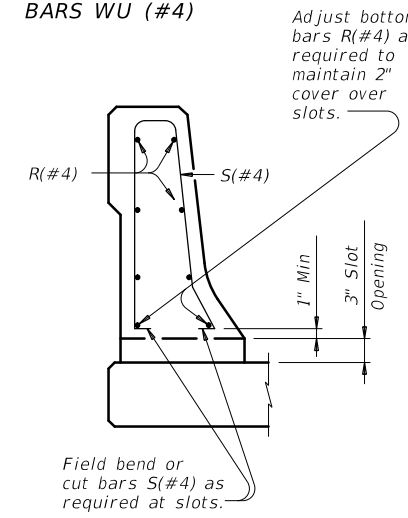
BARS WU (#4)



OPTIONAL WELDED WIRE REINFORCEMENT (WWR)



OPTIONAL SIDE SLOT DRAIN DETAIL



SECTION THRU OPTIONAL SIDE SLOT DRAIN

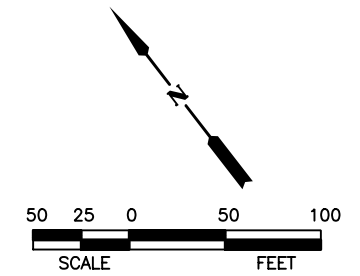
Note: Side Slot Drains may be used where shown elsewhere on the plans or as directed by the Engineer. If continuous slots at 8 ft c-c are required, then details as on standard Type T552 should apply. Do not place drains over railroad tracks, lower roadways, or sidewalks. When this rail is used as a separator between a roadway surface and a sidewalk surface, side drain slots will not be permitted.

DESCRIPTION	LONGITUDINAL WIRES	VERTICAL WIRES
Minimum (Cumulative Total) Wire Area	1.067 Sq In.	0.267 Sq In. per Ft
Minimum	No. of Wires	Spacing
Maximum	8	4"
Maximum Wire Size Differential	10	8"
	The smaller wire must have an area of 40% or more of the larger wire.	

TRAFFIC RAIL

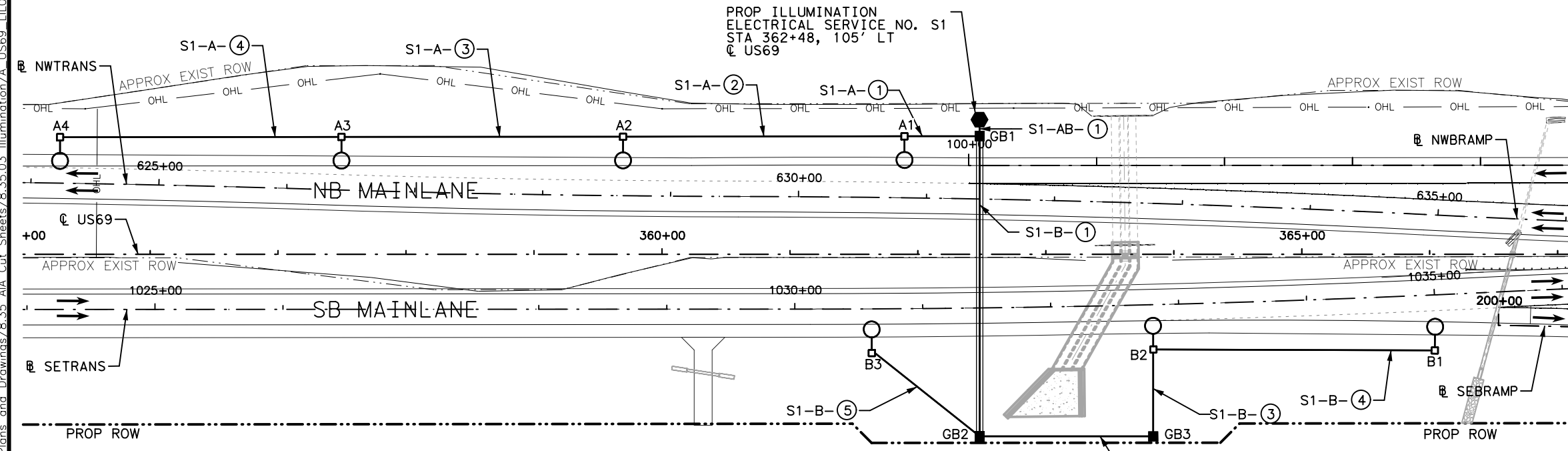
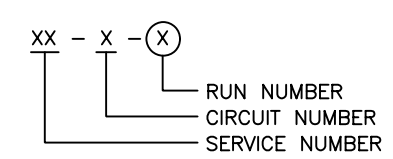
TYPE T551

FILE: 0203 05	DN: TxDOT	CK: TxDOT	DW: JTR	CK: TxDOT
CONTRACT: 0203 05	SECTION: 05	JOB: 039	HIGHWAY: US 69	
DIST: TYL	COUNTY: WOOD	SHEET NO.: 352		



LEGEND

- PROP PVC CONDUIT (SCH 80)
- === PROP PVC CONDUIT (SCH 80) BORE
- PROP RIGID METAL CONDUIT
- ▶ PROP RD IL AM (U/P) (TY 1) (150 W EQ) LED
- ▶ PROP RD IL AM (U/P) (TY 2) (150 W EQ) LED
- PROP IN RD IL (TY SA) 40T-8 (250W EQ) LED
- PROP DISCONNECT
- PROP GROUND BOX TY A W/ APRON
- ⊠ PROP JUNCTION BOX
- PROP ELECTRICAL SERVICE
- ← PROP TRAFFIC FLOW
- ← EXIST TRAFFIC FLOW



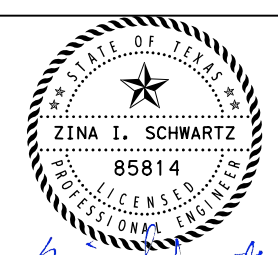
ILLUMINATION MATERIAL SUMMARY									
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6029	6001	6214	6046	6047	6007	6008	6002	6009	
DRILL SHAFT (RDWY ILL POLE) (30 IN)	RIPRAP (CONC) (4 IN)	IN RD IL (TY SA) 40T-8 (250W EQ) LED	CONDT (PVC) (SCH 80) (2")	CONDT (PVC) (SCH 80) (2") (BORE)	ELEC CONDR (NO. 8) BARE	ELEC CONDR (NO. 8) INSULATED	GROUND BOX TY A (122311) W/APRON	ELC SRV TY A 120/240 060(NS) SS (E) SP(O)	
LF	CY	EA	LF	LF	LF	LF	EA	EA	
56	3	7	1274	237	1561	3162	3	1	

* ASSUMED N=10 BLOWS/FT FOR DS LENGTH CALCULATIONS

CONDUIT AND CONDUCTOR SUMMARY													
SERVICE NO.	CIRCUIT NO.	RUN NO.	RUN LENGTH (FEET)	CONDUCTOR (NO. & LENGTH IN FEET)				CONDUIT (NO. & LENGTH IN FEET)					
				#8 BARE		#8 INSULATED		CONDT (PVC) (SCHD 40) (2")		CONDT (PVC) (SCHD 40) (2") (BORE)			
				NO.	LF	NO.	LF	NO.	LF	NO.	LF		
S1	AB	1	15	1	20	4	80	1	15				
S1	A	1	60	1	65	2	130	1	60				
S1	A	2	220	1	225	2	450	1	220				
S1	A	3	220	1	225	2	450	1	220				
S1	A	4	220	1	225	2	450	1	220				
S1	B	1	237	1	242	2	484			1	237		
S1	B	2	139	1	144	2	288	1	139				
S1	B	3	71	1	76	2	152	1	71				
S1	B	4	220	1	225	2	450	1	220				
S1	B	5	109	1	114	2	228	1	109				
TOTAL					1561		3162		1274		237		

ROADWAY ILLUMINATION ASSEMBLY SUMMARY				
LUMINAIRE POLE NUMBER	DESCRIPTION	CENTERLINE	STATION	OFFSET
A1	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	361+90	92' LT
A2	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	359+70	91' LT
A3	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	357+50	91' LT
A4	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	355+30	91' LT
B1	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	366+04	75' RT
B2	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	363+84	74' RT
B3	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	361+64	77' RT

- NOTES:**
- CONTRACTOR MUST FIELD VERIFY ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES.
 - VERIFY THE EXISTING AND PROPOSED GROUND ELEVATIONS AND PROTECT THE NEW ELECTRICAL CONDUITS AND BOXES.
 - ALL INDICATED LENGTHS IN THE CONDUIT AND THE CONDUCTOR RUN SCHEDULE ARE HORIZONTAL ONLY. ALLOW FOR SPlicing AND VERTICAL REQUIREMENTS.
 - CONTRACTOR SHALL BORE CONDUIT 24" UNDER PAVEMENT TO ENSURE 18" MINIMUM COVER UNDER THE DITCH.



Zina Schwartz
12/12/2023

NO.	REVISION	BY	DATE

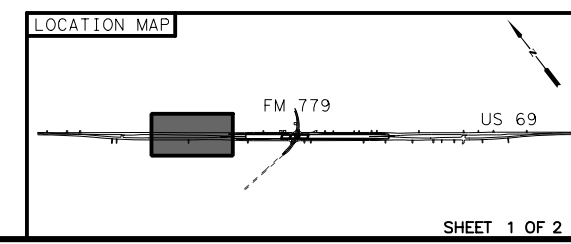


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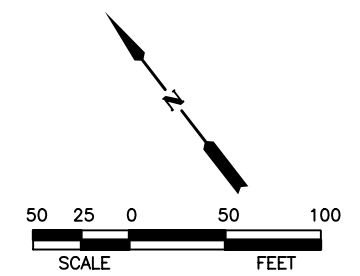
US 69 AT FM 779
ILLUMINATION LAYOUT
US 69

STA 355+00 TO STA 367+10

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Checked:	TYL	WOOD	0203	05
				JOB NO. 039
				SHEET NO. 353

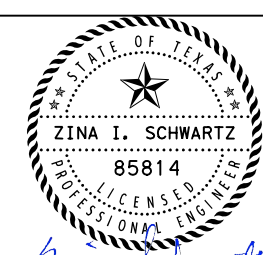
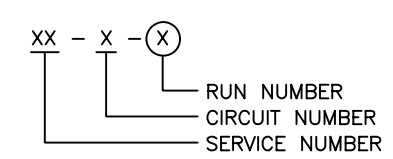


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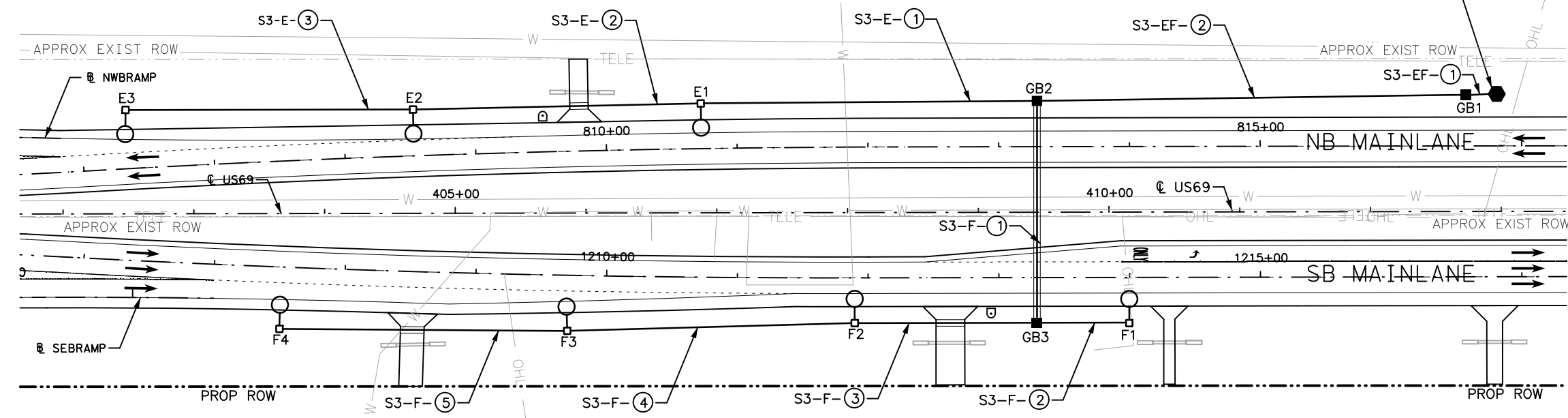
LEGEND

- PROP PVC CONDUIT (SCH 80)
- === PROP PVC CONDUIT (SCH 80) BORE
- PROP RIGID METAL CONDUIT
- ▶ PROP RD IL AM (U/P) (TY 1) (150 W EQ) LED
- ▶ PROP RD IL AM (U/P) (TY 2) (150 W EQ) LED
- PROP IN RD IL (TY SA) 40T-8 (250W EQ) LED
- PROP DISCONNECT
- PROP GROUND BOX TY A W/ APRON
- ⊠ PROP JUNCTION BOX
- PROP ELECTRICAL SERVICE
- ← PROP TRAFFIC FLOW
- ← EXIST TRAFFIC FLOW



Zina Schwartz
12/12/2023

PROP ILLUMINATION ELECTRICAL SERVICE NO. S3 STA 412+97, 90' LT ☐ US69



ILLUMINATION MATERIAL SUMMARY

*416	432	610	618	618	620	620	624	628
6029	6001	6214	6046	6047	6007	6008	6002	6009
DRILL SHAFT (RDWY ILL POLE) (30 IN)	RIPRAP (CONC) (4 IN)	IN RD IL (TY SA) 40T-8 (250W EQ) LED	CONDT (PVC) (SCH 80) (2")	CONDT (PVC) (SCH 80) (2") (BORE)	ELEC CONDR (NO. 8) BARE	ELEC CONDR (NO. 8) INSULATED	GROUND BOX TY A (122311) W/APRON	ELC SRV TY A 120/240 060(NS)SS (E) SP (O)
LF	CY	EA	LF	LF	LF	LF	EA	EA
56	3	7	1669	197	1930	4590	3	1

* ASSUMED N=10 BLOWS/FT FOR DS LENGTH CALCULATIONS

CONDUIT AND CONDUCTOR SUMMARY

SERVICE NO.	CIRCUIT NO.	RUN NO.	RUN LENGTH (FEET)	CONDUCTOR (NO. & LENGTH IN FEET)				CONDUIT (NO. & LENGTH IN FEET)					
				#8 BARE		#8 INSULATED		CONDT (PVC) (SCHD 40) (2")		CONDT (PVC) (SCHD 40) (2") (BORE)			
				NO.	LF	NO.	LF	NO.	LF	NO.	LF		
S3	EF	1	25	1	30	4	120	1	25				
S3	EF	2	330	1	335	4	1340	1	330				
S3	E	1	260	1	265	2	530	1	260				
S3	E	2	220	1	225	2	450	1	206	1	14		
S3	E	3	220	1	225	2	450	1	220				
S3	F	1	175	1	180	2	360			1	175		
S3	F	2	70	1	75	2	150	1	70				
S3	F	3	140	1	145	2	290	1	118	1	22		
S3	F	4	220	1	225	2	450	1	220				
S3	F	5	220	1	225	2	450	1	220				
TOTAL					1930		4590		1669		197		

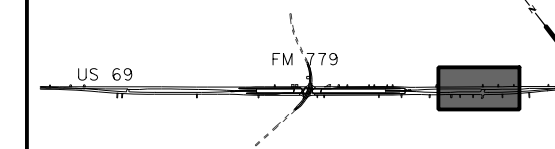
NOTES:

- CONTRACTOR MUST FIELD VERIFY ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES.
- VERIFY THE EXISTING AND PROPOSED GROUND ELEVATIONS AND PROTECT THE NEW ELECTRICAL CONDUITS AND BOXES.
- ALL INDICATED LENGTHS IN THE CONDUIT AND THE CONDUCTOR RUN SCHEDULE ARE HORIZONTAL ONLY. ALLOW FOR SPLICING AND VERTICAL REQUIREMENTS.
- CONTRACTOR SHALL BORE CONDUIT 24" UNDER PAVEMENT TO ENSURE 18" MINIMUM COVER UNDER THE DITCH.

ROADWAY ILLUMINATION ASSEMBLY SUMMARY

LUMINAIRE POLE NUMBER	DESCRIPTION	CENTERLINE	STATION	OFFSET
E1	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	406+88	83' LT
E2	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	404+68	79' LT
E3	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	402+68	79' LT
F1	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	410+16	85' RT
F2	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	408+06	84' RT
F3	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	405+86	90' RT
F4	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	403+66	88' RT

LOCATION MAP



NO.	REVISION	BY	DATE



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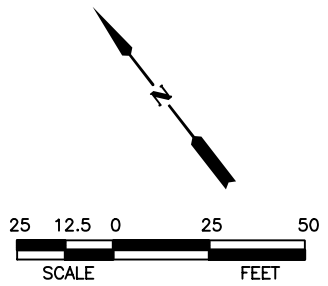
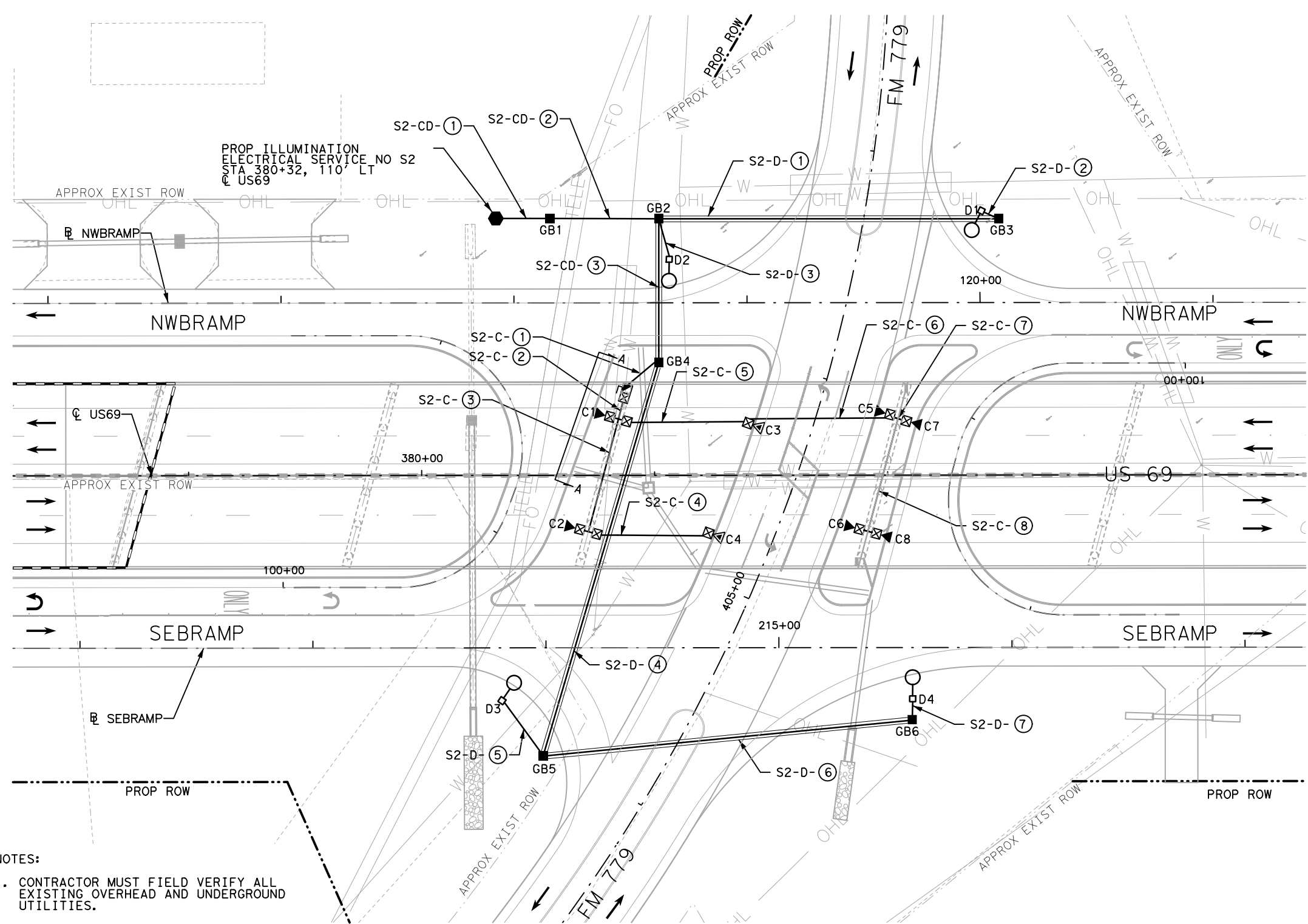
US 69 AT FM 779
ILLUMINATION LAYOUT
US 69

STA 401+67 TO STA 413+50

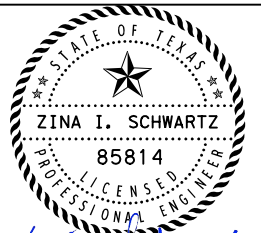
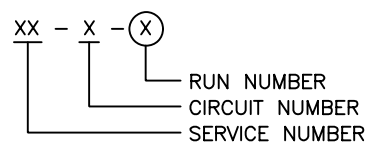
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Drawn:	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	TYL	WOOD	0203	05
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				039
				SHEET NO.
				354

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- LEGEND**
- PROP PVC CONDUIT (SCH 80)
 - === PROP PVC CONDUIT (SCH 80) BORE
 - PROP RIGID METAL CONDUIT
 - ▶ PROP RD IL AM (U/P) (TY 1) (150 W EQ) LED
 - ▶ PROP RD IL AM (U/P) (TY 2) (150 W EQ) LED
 - □ PROP IN RD IL (TY SA)40T-8 (250W EQ) LED
 - PROP DISCONNECT
 - PROP GROUND BOX TY A W/ APRON
 - ⊠ PROP JUNCTION BOX
 - PROP ELECTRICAL SERVICE
 - ← PROP TRAFFIC FLOW
 - ↩ EXIST TRAFFIC FLOW



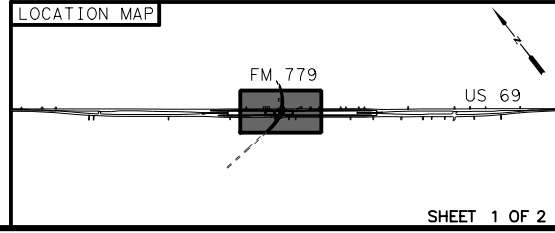
Zina Schwartz
12/12/2023

NO.	REVISION	BY	DATE
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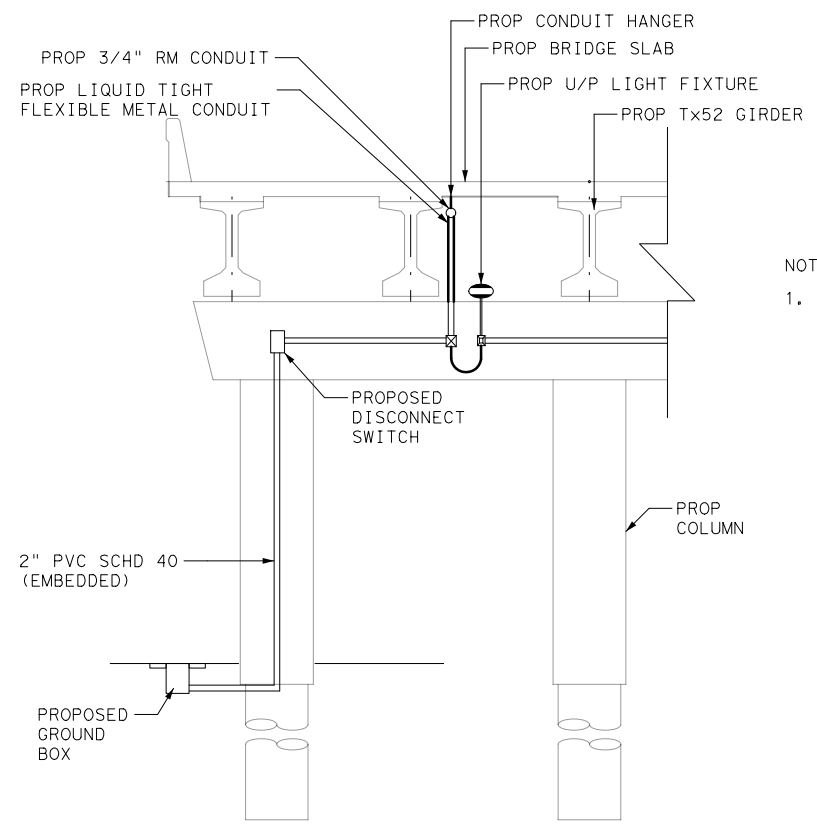
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**US 69 AT FM 779
 INTERSECTION
 ILLUMINATION LAYOUT**



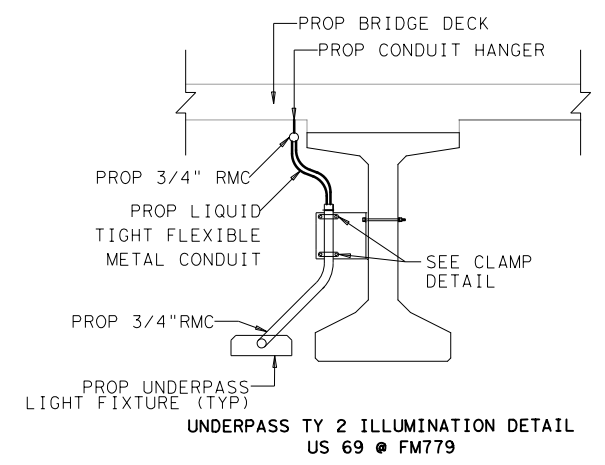
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			039	355

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SECTION A-A
 UNDERPASS TY 1 ILLUMINATION DETAIL
 US 69 @ FM779

NOTES:
 1. SEE ROADWAY ILLUMINATION DETAIL SHEET "RID(3)-20" FOR MORE INFORMATION ON CONDUIT CONNECTION DETAILS.



UNDERPASS TY 2 ILLUMINATION DETAIL
 US 69 @ FM779

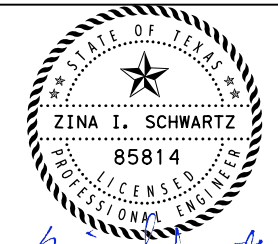
ROADWAY ILLUMINATION ASSEMBLY SUMMARY					
LUMINAIRE POLE NUMBER	DESCRIPTION	CENTERLINE	STATION	OFFSET	
C1	IN RD IL (U/P) (TY 1) (150W EQ) LED	US 69	380+83	25'	LT
C2	IN RD IL (U/P) (TY 1) (150W EQ) LED	US 69	380+70	24'	RT
C3	IN RD IL (U/P) (TY 2) (150W EQ) LED	US 69	381+38	23'	LT
C4	IN RD IL (U/P) (TY 2) (150W EQ) LED	US 69	381+21	26'	RT
C5	IN RD IL (U/P) (TY 1) (150W EQ) LED	US 69	382+03	25'	LT
C6	IN RD IL (U/P) (TY 1) (150W EQ) LED	US 69	381+90	24'	RT
C7	IN RD IL (U/P) (TY 1) (150W EQ) LED	US 69	382+06	24'	LT
C8	IN RD IL (U/P) (TY 1) (150W EQ) LED	US 69	381+93	25'	RT
D1	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	382+40	113'	LT
D2	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	381+06	93'	LT
D3	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	380+34	97'	RT
D4	IN RD IL (TY SA) 40T-8 (250W EQ) LED	US 69	382+11	96'	RT

SERVICE NO.	CIRCUIT NO.	RUN NO.	RUN LENGTH (FEET)	CONDUIT AND CONDUCTOR SUMMARY													
				CONDUCTOR (NO. & LENGTH IN FEET)				CONDUIT (NO. & LENGTH IN FEET)									
				#12 BARE		#12 INSULATED		#8 BARE		#8 INSULATED		COND (PVC) (SCHD 40) (2")		COND (RM) (3/4")			
S2	CD	1	25					1	30	4	120	1	25				
S2	CD	2	50					1	55	4	220	1	50				
S2	CD	3	65					1	70	4	280		62				
*S2	C	1	40					1	45	2	90	1	40				
S2	C	2	25	1	30	2	60					1	25				
S2	C	3	60	1	65	2	130					1	60				
S2	C	4	50	1	55	2	110								1	50	
S2	C	5	55	1	60	2	120								1	55	
S2	C	6	65	1	70	2	140								1	65	
S2	C	7	10	1	15	2	30					1	10				
S2	C	8	60	1	65	2	130					1	60				
S2	D	1	146					1	151	2	302	1	146				
S2	D	2	10					1	15	2	30			1	10		
S2	D	3	20					1	25	2	50	1	20				
S2	D	4	176					1	181	2	362			1	176		
S2	D	5	30					1	35	2	70	1	30				
S2	D	6	160					1	165	2	330			1	160		
S2	D	7	10					1	15	2	30	1	10				
					360		720		787		1884		476		408		170

* ADDED 20 FT EXTRA FOR CONDUIT AT THE COLUMN

ILLUMINATION MATERIAL SUMMARY														
*416	432	610	610	610	618	618	618	620	620	620	624	628		
6029	6001	6104	6106	6214	6046	6047	6062	6003	6004	6007	6008	6002	6009	
DRILL SHAFT (RDWY ILL POLE) (30 IN)	RIPRAP (CONC) (4 IN)	IN RD IL (U/P) (TY 1) (150W EQ) LED	IN RD IL (U/P) (TY 2) (150W EQ) LED	IN RD IL (TY SA) 40T-8 (250W EQ) LED	COND (PVC) (SCH 80) (2")	COND (PVC) (SCH 80) (2") (BORE)	COND (RM) (3/4")	ELEC CONDR (NO. 12) BARE	ELEC CONDR (NO. 12) INSULATED	ELEC CONDR (NO. 8) BARE	ELEC CONDR (NO. 8) INSULATED	GROUND BOX TY A (122311) W/APRON	ELC SRV TY A 120/240 060 (NS) SS (E) SP (O)	
LF	CY	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	EA	EA	
32	2	6	2	4	476	408	170	360	720	787	1884	6	1	

JUNCTION BOX WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS.
 * ASSUME N=10 BLOWS/FT FOR DS LENGTH CALCULATIONS



Zina Schwartz
 12/12/2023

NO.	REVISION	BY	DATE
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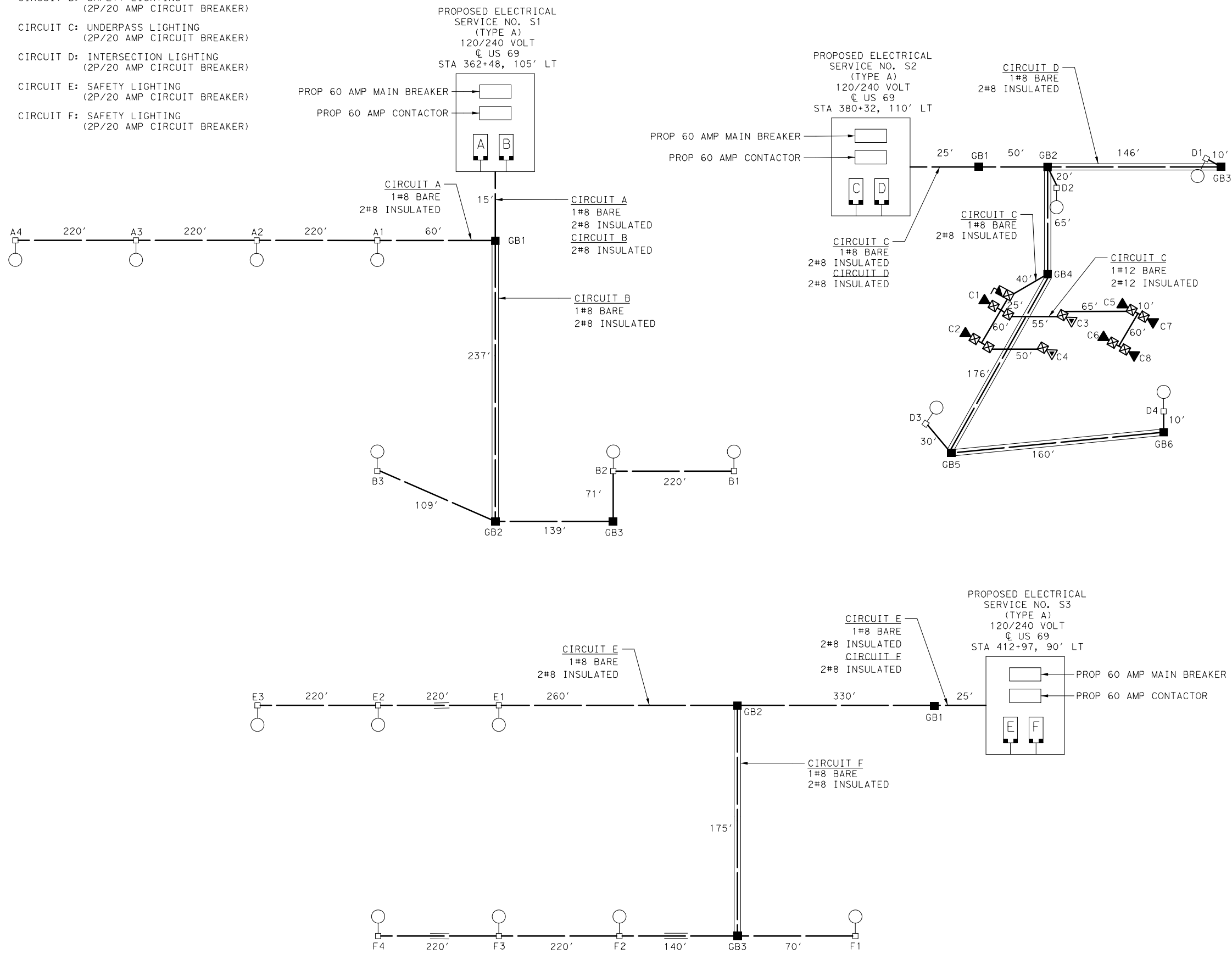


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US 69 AT FM 779
 INTERSECTION
 ILLUMINATION LAYOUT

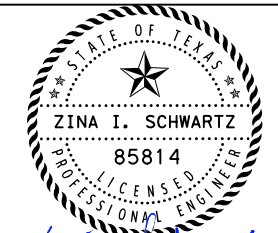
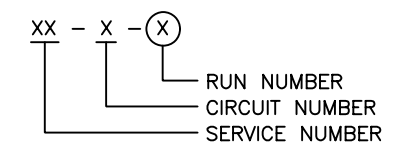
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Checked:	6	TEXAS			US 69
Drawn:	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
Checked:	TYL	WOOD	0203	05	039
					SHEET NO. 356

- CIRCUIT A: SAFETY LIGHTING
(2P/20 AMP CIRCUIT BREAKER)
- CIRCUIT B: SAFETY LIGHTING
(2P/20 AMP CIRCUIT BREAKER)
- CIRCUIT C: UNDERPASS LIGHTING
(2P/20 AMP CIRCUIT BREAKER)
- CIRCUIT D: INTERSECTION LIGHTING
(2P/20 AMP CIRCUIT BREAKER)
- CIRCUIT E: SAFETY LIGHTING
(2P/20 AMP CIRCUIT BREAKER)
- CIRCUIT F: SAFETY LIGHTING
(2P/20 AMP CIRCUIT BREAKER)



LEGEND

- PROP PVC CONDUIT (SCH 80)
- === PROP PVC CONDUIT (SCH 80) BORE
- PROP RIGID METAL CONDUIT
- ▶ PROP RD IL AM (U/P) (TY 1) (150 W EQ) LED
- ▶ PROP RD IL AM (U/P) (TY 2) (150 W EQ) LED
- PROP IN RD IL (TY SA)40T-8 (250W EQ) LED
- PROP DISCONNECT
- PROP GROUND BOX TY A W/ APRON
- ⊠ PROP JUNCTION BOX
- PROP ELECTRICAL SERVICE
- PROP TRAFFIC FLOW
- EXIST TRAFFIC FLOW



Zina Schwartz
12/12/2023

NO.	REVISION	BY	DATE
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US 69 AT FM 779
ILLUMINATION CIRCUIT DIAGRAM
US 69

N. T. S.

Designed:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.
Checked:	6	TEXAS		US 69
Drawn:	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	TYL	WOOD	0203	05
				JOB NO.
				039
				SHEET NO.
				357

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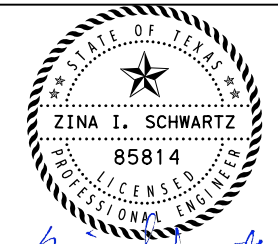
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PROPOSED ELECTRICAL SERVICES

SERVICE NO.	SHEET NO.	Electrical Service Description see ED (5), (6) & (7)	Service Conduit Size	Service Conductors No./Size	Safety Switch Amps	Main Ckt. Bkr. Pole/Amp	Two-Pole Contactor Amps	Panel/bd/ Loadcenter Amp Rating	Branch Circuit ID	Branch Ckt. Bkr. Pole/Amps	Branch Circuit Amps	KVA Load
S1	US 69 AT FM779 ILLUMINATION LAYOUT US 69 STA 355+00 TO STA 367+10	ELC SRV TY A 120/240 060 (NS)SS(E)SP(O)	2"	3/#6	N/A	2P/60	60	N/A	A	2P/20	6	1.4
									B	2P/20	4.5	
S2	US 69 AT FM779 UNDERPASS & INTERSECTION ILLUMINATION LAYOUT	ELC SRV TY A 120/240 060 (NS)SS(E)SP(O)	2"	3/#6	N/A	2P/60	60	N/A	C	2P/20	7.2	1.4
									D	2P/20	6	
S3	US 69 AT FM779 ILLUMINATION LAYOUT US 69 STA 401+67 TO STA 413+50	ELC SRV TY A 120/240 060 (NS)SS(E)SP(O)	2"	3/#6	N/A	2P/60	60	N/A	E	2P/20	4.5	1.4
									F	2P/20	6	

TEMPORARY ELECTRICAL SERVICES

SERVICE NO.	SHEET NO.	Electrical Service Description see ED (5), (6) & (7)	Service Conduit Size	Service Conductors No./Size	Safety Switch Amps	Main Ckt. Bkr. Pole/Amp	Two-Pole Contactor Amps	Panel/bd/ Loadcenter Amp Rating	Branch Circuit ID	Branch Ckt. Bkr. Pole/Amps	Branch Circuit Amps	KVA Load
TS1	US 69 AT FM779 TEMPORARY FLASHING BEACON US 69 AT FM 779	ELC SRV TY D 120/240 070 (NS)SS(T)TP(O)	2"	3/#4	N/A	2P/70	100	100	FLASHER	1P/50	40	10.3
									ILLUMINATION	2P/20	3	



Zina Schwartz
12/12/2023

NO.	REVISION	BY	DATE
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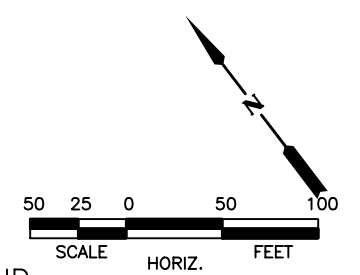
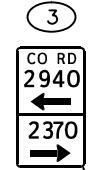
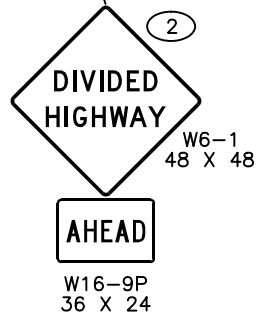
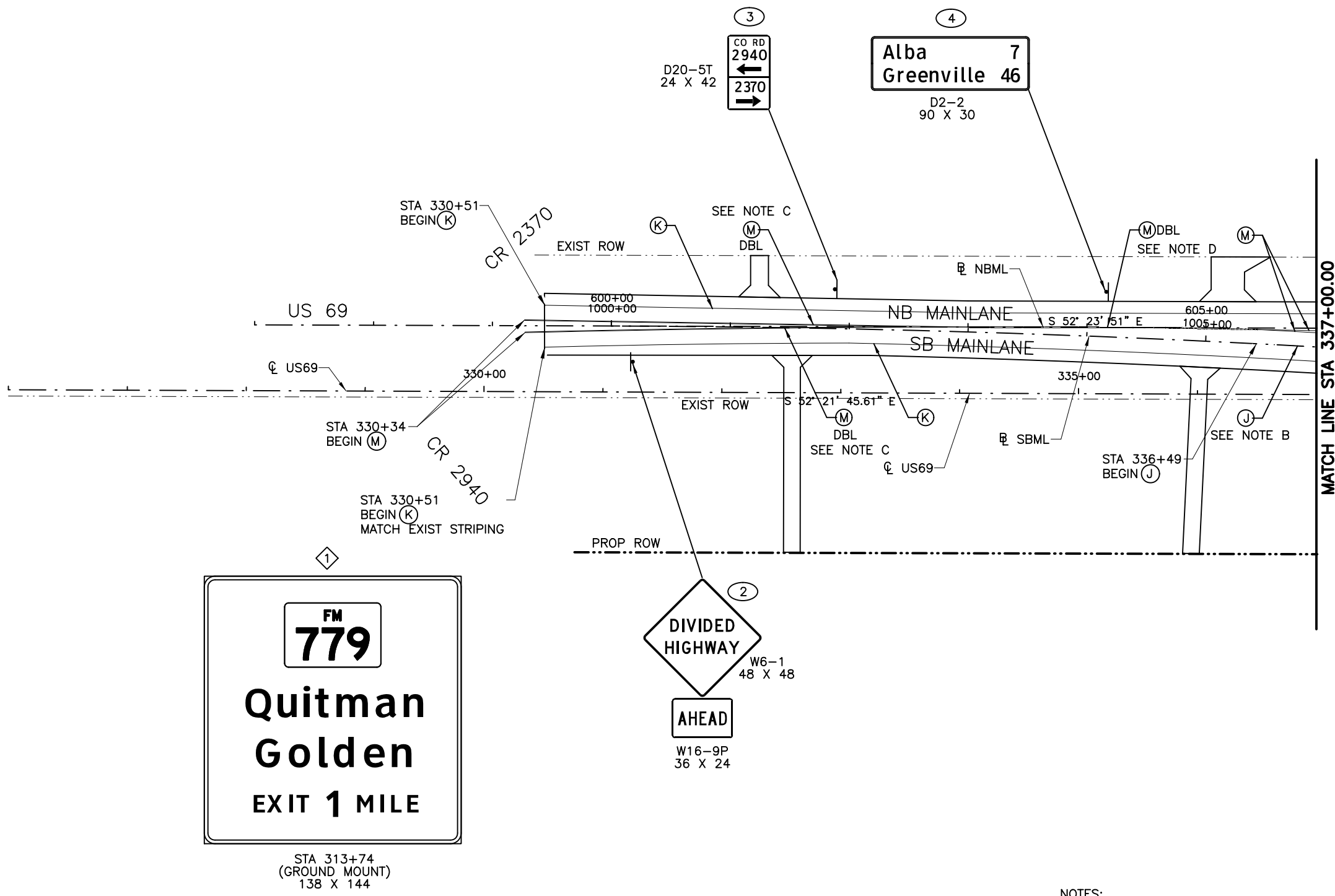


US 69 AT FM 779
ELECTRICAL SERVICE
DATA SHEET

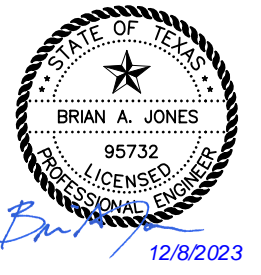
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Checked:	6	TEXAS		US 69
Drawn:	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	TYL	WOOD	0203	05
				JOB NO.
				039
				SHEET NO.
				358

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- LEGEND**
- (A) REFL PAV MRK TY I (W) (6") (DOT)
 - (B) REFL PAV MRK TY I (W) (8") (SLD)
 - (C) REFL PAV MRK TY I (W) (8") (DOT)
 - (D) REFL PAV MRK TY I (W) (12") (SLD)
 - (E) REFL PAV MRK TY I (W) (24") (SLD)
 - (F) PREFAB PAV MRK TY C (W) (ARROW)
 - (G) PREFAB PAV MRK TY C (W) (UTURN ARROW)
 - (H) PREFAB PAV MRK TY C (W) (WORD)
 - (I) REF PAV MRK TY I (W) 36" (YLD TRI)
 - (J) RE PM W/RET REQ TY I (W) (6") (BRK)
 - (K) RE PM W/RET REQ TY I (W) (6") (SLD)
 - (L) RE PM W/RET REQ TY I (Y) (6") (BRK)
 - (M) RE PM W/RET REQ TY I (Y) (6") (SLD)
 - (N) REFL PAV MRKR TY II-C-R
 - (O) REFL PAV MRKR TY II-A-A
 - ◇ PROPOSED LARGE SIGN
 - # PROPOSED SMALL SIGN
 - ⊗ DELINEATOR
 - ⋮ OBJECT MARKER
- NOTES:**
- A. (N) AT 20' SPACING
 - B. (N) AT 80' SPACING
 - C. 2X (O) AT 20' SPACING
 - D. (O) AT 40' SPACING



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741
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US 69 AT FM 779
SIGNING & PAVEMENT MARKING PLAN
 US 69
 BEGIN PROJECT TO STA 337+00

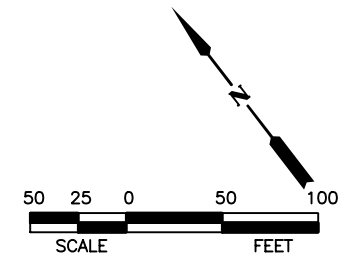
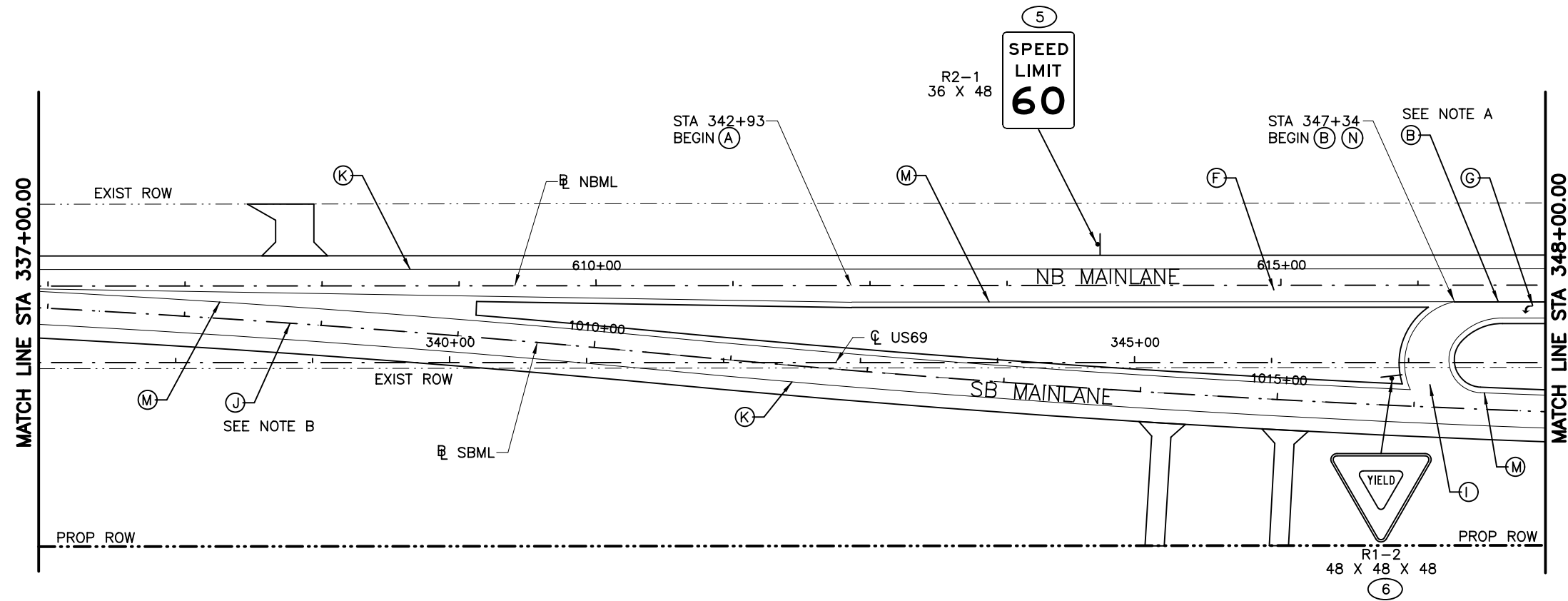
- NOTES:**
- ALL STATIONS ARE FROM C US 69 UNLESS NOTED OTHERWISE.
 - CONTRACTOR MUST SEEK ENGINEER'S APPROVAL IN WRITING PRIOR TO ERECTING PERMANENT SPEED LIMIT SIGNS.

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	359

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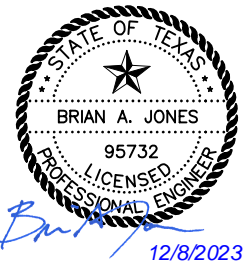


LEGEND

- (A) REFL PAV MRK TY I (W) (6") (DOT)
- (B) REFL PAV MRK TY I (W) (8") (SLD)
- (C) REFL PAV MRK TY I (W) (8") (DOT)
- (D) REFL PAV MRK TY I (W) (12") (SLD)
- (E) REFL PAV MRK TY I (W) (24") (SLD)
- (F) PREFAB PAV MRK TY C (W) (ARROW)
- (G) PREFAB PAV MRK TY C (W) (UTURN ARROW)
- (H) PREFAB PAV MRK TY C (W) (WORD)
- (I) REF PAV MRK TY I (W) 36" (YLD TRI)
- (J) RE PM W/RET REQ TY I (W) (6") (BRK)
- (K) RE PM W/RET REQ TY I (W) (6") (SLD)
- (L) RE PM W/RET REQ TY I (Y) (6") (BRK)
- (M) RE PM W/RET REQ TY I (Y) (6") (SLD)
- (N) REFL PAV MRKR TY II-C-R
- (O) REFL PAV MRKR TY II-A-A
- ◆ PROPOSED LARGE SIGN
- # PROPOSED SMALL SIGN
- ⊗ DELINEATOR
- ⋮ OBJECT MARKER

NOTES:

- A. (N) AT 20' SPACING
- B. (N) AT 80' SPACING
- C. 2X (O) AT 20' SPACING
- D. (O) AT 40' SPACING



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741

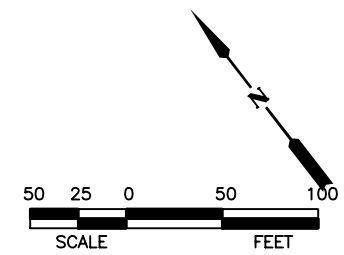


US 69 AT FM 779

**SIGNING & PAVEMENT MARKING PLAN
 US 69
 STA 337+00 TO STA 348+00**

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	360

- NOTES:**
- ALL STATIONS ARE FROM C US 69 UNLESS NOTED OTHERWISE.
 - CONTRACTOR MUST SEEK ENGINEER'S APPROVAL IN WRITING PRIOR TO ERECTING PERMANENT SPEED LIMIT SIGNS.

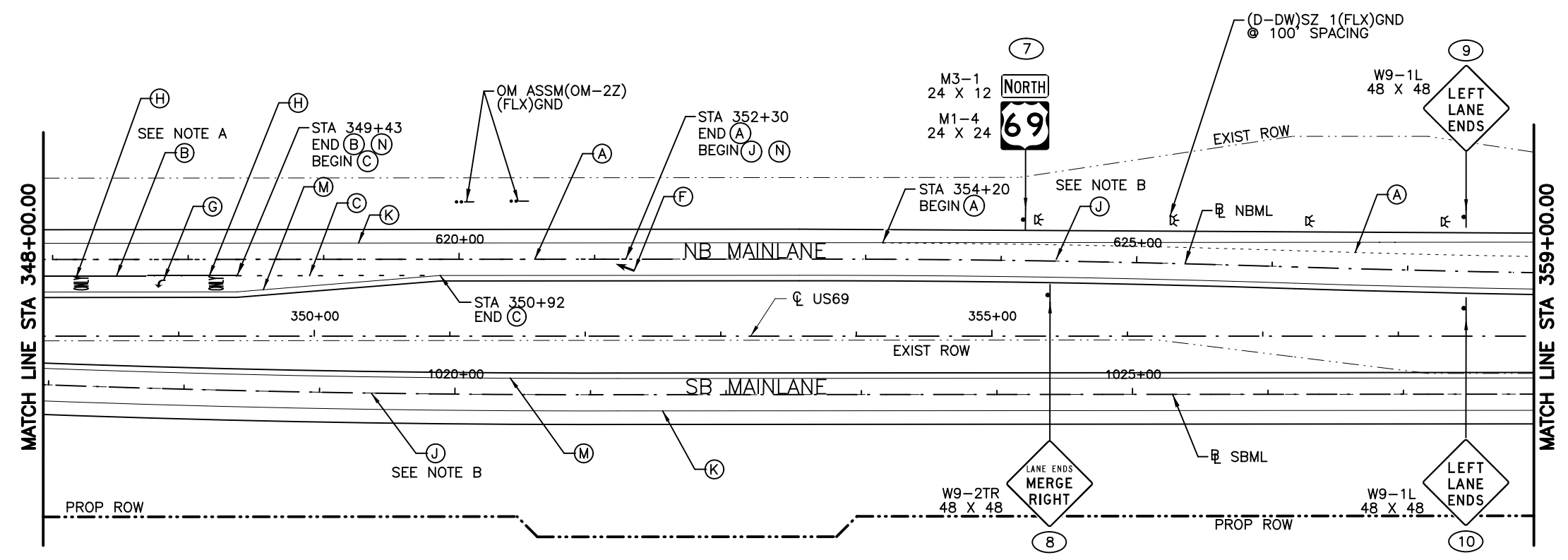
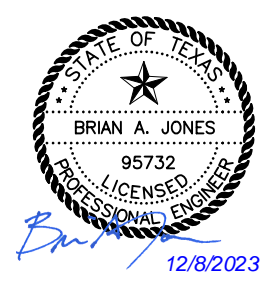


LEGEND

- (A) REFL PAV MRK TY I (W) (6") (DOT)
- (B) REFL PAV MRK TY I (W) (8") (SLD)
- (C) REFL PAV MRK TY I (W) (8") (DOT)
- (D) REFL PAV MRK TY I (W) (12") (SLD)
- (E) REFL PAV MRK TY I (W) (24") (SLD)
- (F) PREFAB PAV MRK TY C (W) (ARROW)
- (G) PREFAB PAV MRK TY C (W) (UTURN ARROW)
- (H) PREFAB PAV MRK TY C (W) (WORD)
- (I) REF PAV MRK TY I (W) 36" (YLD TRI)
- (J) RE PM W/RET REQ TY I (W) (6") (BRK)
- (K) RE PM W/RET REQ TY I (W) (6") (SLD)
- (L) RE PM W/RET REQ TY I (Y) (6") (BRK)
- (M) RE PM W/RET REQ TY I (Y) (6") (SLD)
- (N) REFL PAV MRKR TY II-C-R
- (O) REFL PAV MRKR TY II-A-A
- ◇ PROPOSED LARGE SIGN
- # PROPOSED SMALL SIGN
- ⊕ DELINEATOR
- ⋮ OBJECT MARKER

NOTES:

- A. (N) AT 20' SPACING
- B. (N) AT 80' SPACING
- C. 2X (O) AT 20' SPACING
- D. (O) AT 40' SPACING



- NOTES:**
1. ALL STATIONS ARE FROM ϕ US 69 UNLESS NOTED OTHERWISE.
 2. CONTRACTOR MUST SEEK ENGINEER'S APPROVAL IN WRITING PRIOR TO ERECTING PERMANENT SPEED LIMIT SIGNS.

NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

SIGNING & PAVEMENT MARKING PLAN
US 69

STA 348+00 TO STA 359+00

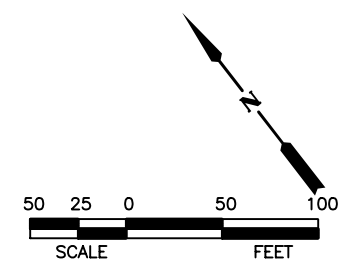
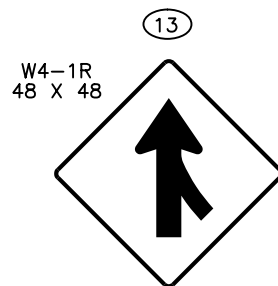
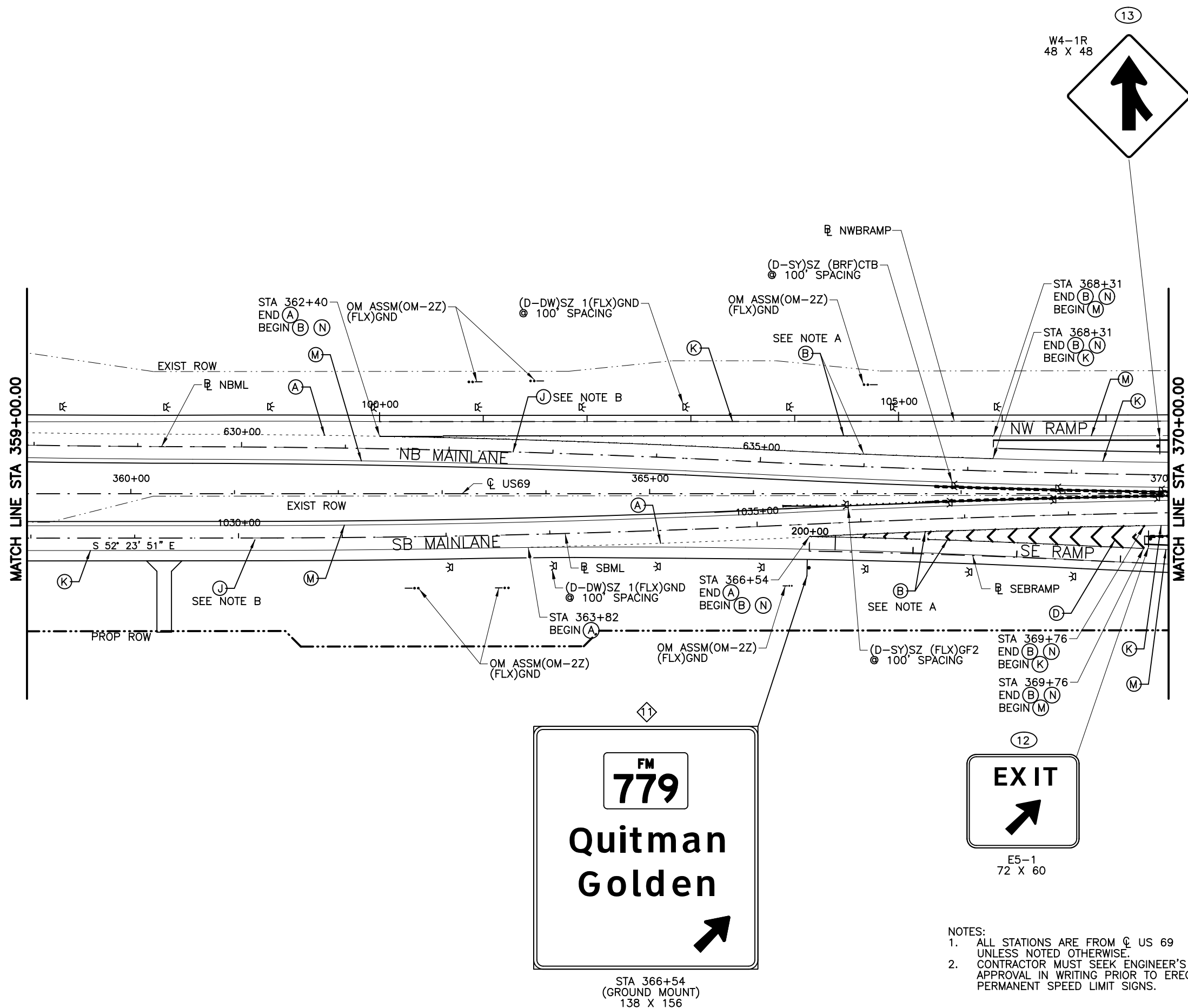
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Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	361

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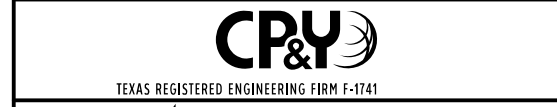
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- LEGEND**
- (A) REFL PAV MRK TY I (W) (6") (DOT)
 - (B) REFL PAV MRK TY I (W) (8") (SLD)
 - (C) REFL PAV MRK TY I (W) (8") (DOT)
 - (D) REFL PAV MRK TY I (W) (12") (SLD)
 - (E) REFL PAV MRK TY I (W) (24") (SLD)
 - (F) PREFAB PAV MRK TY C (W) (ARROW)
 - (G) PREFAB PAV MRK TY C (W) (UTURN ARROW)
 - (H) PREFAB PAV MRK TY C (W) (WORD)
 - (I) REF PAV MRK TY I (W) 36" (YLD TRI)
 - (J) RE PM W/RET REQ TY I (W) (6") (BRK)
 - (K) RE PM W/RET REQ TY I (W) (6") (SLD)
 - (L) RE PM W/RET REQ TY I (Y) (6") (BRK)
 - (M) RE PM W/RET REQ TY I (Y) (6") (SLD)
 - (N) REFL PAV MRKR TY II-C-R
 - (O) REFL PAV MRKR TY II-A-A
 - ◇ PROPOSED LARGE SIGN
 - # PROPOSED SMALL SIGN
 - ⊕ DELINEATOR
 - ⋮ OBJECT MARKER
- NOTES:**
- A. (N) AT 20' SPACING
 - B. (N) AT 80' SPACING
 - C. 2X (O) AT 20' SPACING
 - D. (O) AT 40' SPACING



NO.	REVISION	BY	DATE

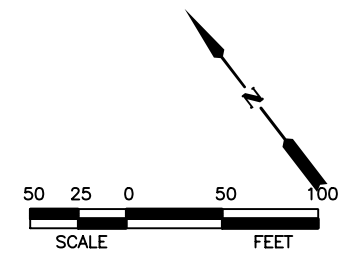


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 US 69 AT FM 779

SIGNING & PAVEMENT MARKING PLAN
 US 69
 STA 359+00 TO STA 370+00

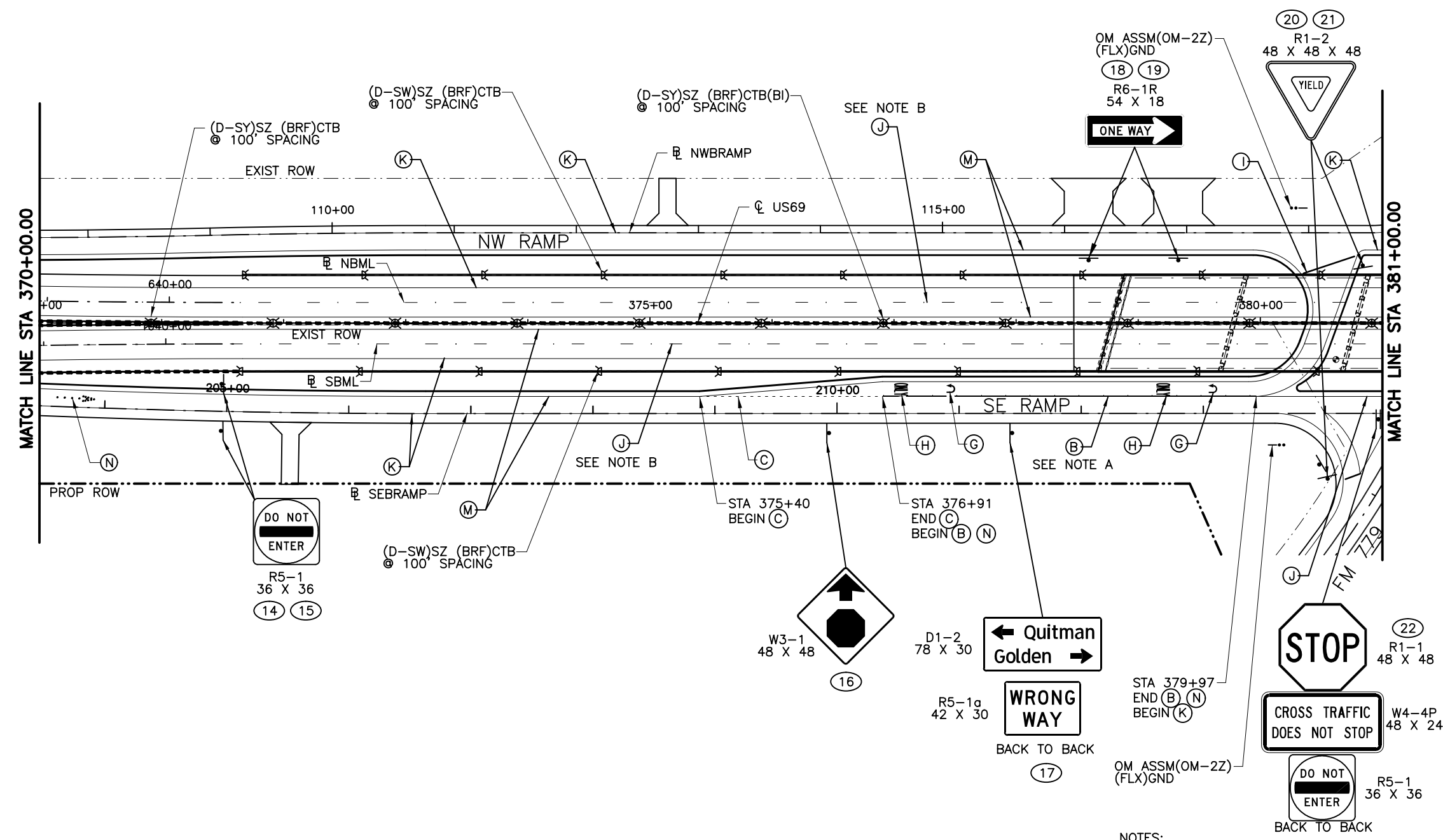
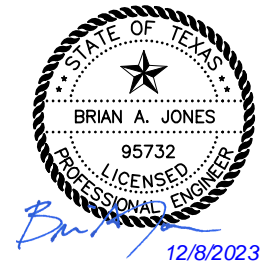
Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	362

- NOTES:**
- ALL STATIONS ARE FROM C US 69 UNLESS NOTED OTHERWISE.
 - CONTRACTOR MUST SEEK ENGINEER'S APPROVAL IN WRITING PRIOR TO ERECTING PERMANENT SPEED LIMIT SIGNS.



LEGEND

- (A) REFL PAV MRK TY I (W) (6") (DOT)
 - (B) REFL PAV MRK TY I (W) (8") (SLD)
 - (C) REFL PAV MRK TY I (W) (8") (DOT)
 - (D) REFL PAV MRK TY I (W) (12") (SLD)
 - (E) REFL PAV MRK TY I (W) (24") (SLD)
 - (F) PREFAB PAV MRK TY C (W) (ARROW)
 - (G) PREFAB PAV MRK TY C (W) (UTURN ARROW)
 - (H) PREFAB PAV MRK TY C (W) (WORD)
 - (I) REF PAV MRK TY I (W) 36" (YLD TRI)
 - (J) RE PM W/RET REQ TY I (W) (6") (BRK)
 - (K) RE PM W/RET REQ TY I (W) (6") (SLD)
 - (L) RE PM W/RET REQ TY I (Y) (6") (BRK)
 - (M) RE PM W/RET REQ TY I (Y) (6") (SLD)
 - (N) REFL PAV MRKR TY II-C-R
 - (O) REFL PAV MRKR TY II-A-A
 - ◇ PROPOSED LARGE SIGN
 - # PROPOSED SMALL SIGN
 - ⊗ DELINEATOR
 - ⋮ OBJECT MARKER
- NOTES:
- A. (N) AT 20' SPACING
 - B. (N) AT 80' SPACING
 - C. 2X (O) AT 20' SPACING
 - D. (O) AT 40' SPACING



- NOTES:
1. ALL STATIONS ARE FROM ϕ US 69 UNLESS NOTED OTHERWISE.
 2. CONTRACTOR MUST SEEK ENGINEER'S APPROVAL IN WRITING PRIOR TO ERECTING PERMANENT SPEED LIMIT SIGNS.

NO.	REVISION	BY	DATE



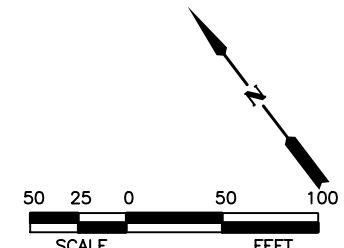
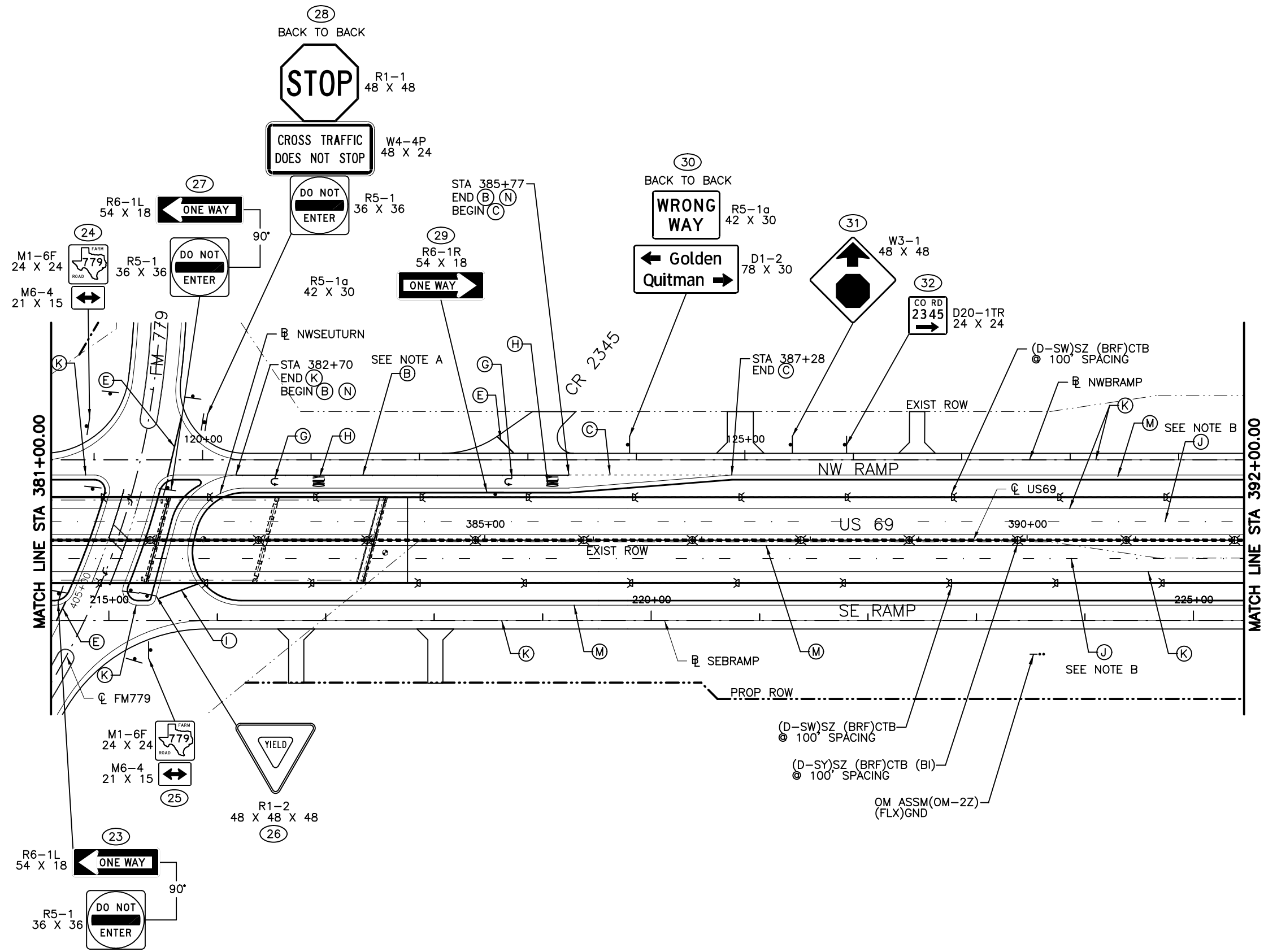
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US 69 AT FM 779

**SIGNING & PAVEMENT MARKING PLAN
US 69
STA 370+00 TO STA 381+00**

Designed:	JKF	FED. RD. DIV. NO.	6	STATE	TEXAS	PROJECT NO.	HIGHWAY NO.
Checked:	BAJ						US 69
Drawn:	JKF	DIST.	WOOD	COUNTY		CONTROL NO.	0203
Checked:	BAJ	SECTION NO.	05	JOB NO.	039	SHEET NO.	363

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 cpypdf_ANSIB.pltcfgr
 pw:/



- LEGEND**
- (A) REFL PAV MRK TY I (W) (6") (DOT)
 - (B) REFL PAV MRK TY I (W) (8") (SLD)
 - (C) REFL PAV MRK TY I (W) (8") (DOT)
 - (D) REFL PAV MRK TY I (W) (12") (SLD)
 - (E) REFL PAV MRK TY I (W) (24") (SLD)
 - (F) PREFAB PAV MRK TY C (W) (ARROW)
 - (G) PREFAB PAV MRK TY C (W) (UTURN ARROW)
 - (H) PREFAB PAV MRK TY C (W) (WORD)
 - (I) REF PAV MRK TY I (W) 36" (YLD TRI)
 - (J) RE PM W/RET REQ TY I (W) (6") (BRK)
 - (K) RE PM W/RET REQ TY I (W) (6") (SLD)
 - (L) RE PM W/RET REQ TY I (Y) (6") (BRK)
 - (M) RE PM W/RET REQ TY I (Y) (6") (SLD)
 - (N) REFL PAV MRKR TY II-C-R
 - (O) REFL PAV MRKR TY II-A-A
 - ◇ PROPOSED LARGE SIGN
 - # PROPOSED SMALL SIGN
 - ⊗ DELINEATOR
 - ⋮ OBJECT MARKER

- NOTES:**
- A. (N) AT 20' SPACING
 - B. (N) AT 80' SPACING
 - C. 2X (O) AT 20' SPACING
 - D. (O) AT 40' SPACING



NO.	REVISION	BY	DATE



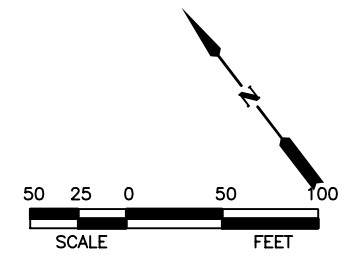
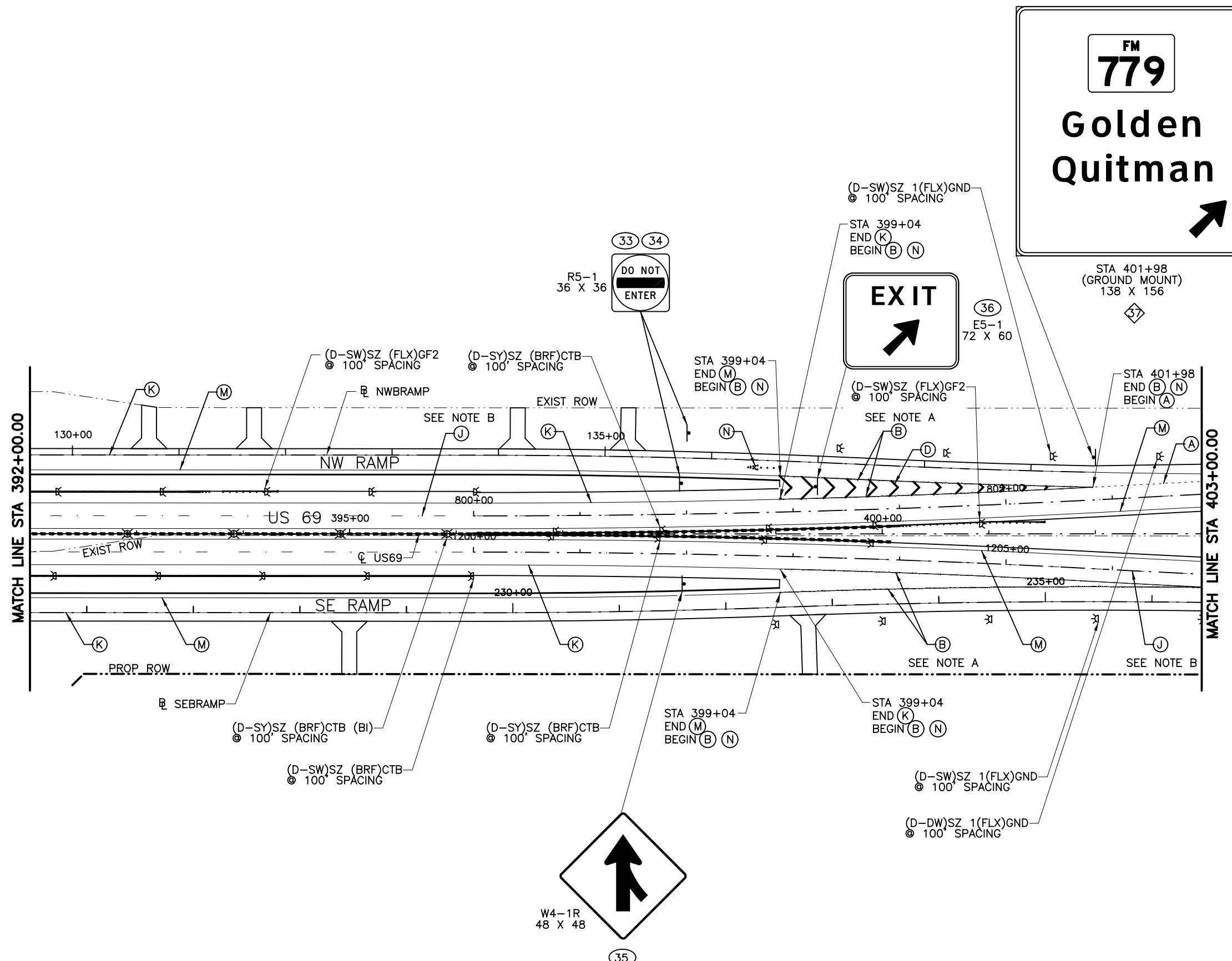
©2023 Texas Department of Transportation
 US 69 AT FM 779

**SIGNING & PAVEMENT MARKING PLAN
 US 69
 STA 381+00 TO STA 392+00**

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	364

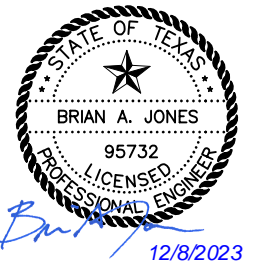
- NOTES:**
- ALL STATIONS ARE FROM C US 69 UNLESS NOTED OTHERWISE.
 - CONTRACTOR MUST SEEK ENGINEER'S APPROVAL IN WRITING PRIOR TO ERECTING PERMANENT SPEED LIMIT SIGNS.

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- LEGEND**
- (A) REFL PAV MRK TY I (W) (6") (DOT)
 - (B) REFL PAV MRK TY I (W) (8") (SLD)
 - (C) REFL PAV MRK TY I (W) (8") (DOT)
 - (D) REFL PAV MRK TY I (W) (12") (SLD)
 - (E) REFL PAV MRK TY I (W) (24") (SLD)
 - (F) PREFAB PAV MRK TY C (W) (ARROW)
 - (G) PREFAB PAV MRK TY C (W) (UTURN ARROW)
 - (H) PREFAB PAV MRK TY C (W) (WORD)
 - (I) REF PAV MRK TY I (W) 36" (YLD TRI)
 - (J) RE PM W/RET REQ TY I (W) (6") (BRK)
 - (K) RE PM W/RET REQ TY I (W) (6") (SLD)
 - (L) RE PM W/RET REQ TY I (Y) (6") (BRK)
 - (M) RE PM W/RET REQ TY I (Y) (6") (SLD)
 - (N) REFL PAV MRKR TY II-C-R
 - (O) REFL PAV MRKR TY II-A-A
 - ◇ PROPOSED LARGE SIGN
 - # PROPOSED SMALL SIGN
 - ⊘ DELINEATOR
 - ⋮ OBJECT MARKER

- NOTES:**
- A. (N) AT 20' SPACING
 - B. (N) AT 80' SPACING
 - C. 2X (O) AT 20' SPACING
 - D. (O) AT 40' SPACING



NO.	REVISION	BY	DATE

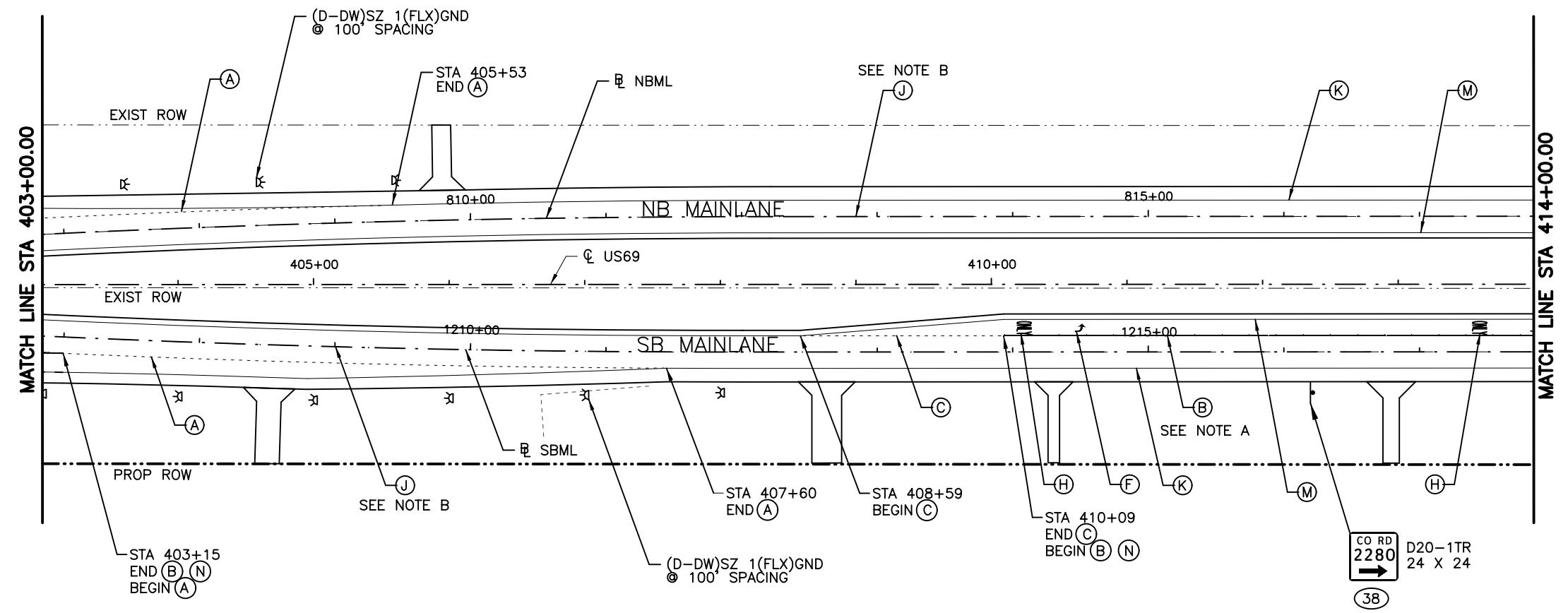
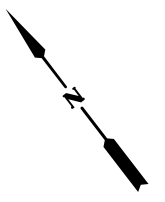


TEXAS REGISTERED ENGINEERING FIRM F-1741
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US 69 AT FM 779
SIGNING & PAVEMENT MARKING PLAN
 US 69S
 STA 392+00 TO STA 403+00

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	365

- NOTES:**
- ALL STATIONS ARE FROM C US 69 UNLESS NOTED OTHERWISE.
 - CONTRACTOR MUST SEEK ENGINEER'S APPROVAL IN WRITING PRIOR TO ERECTING PERMANENT SPEED LIMIT SIGNS.

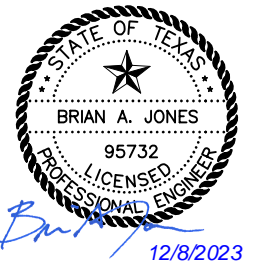


LEGEND

- (A) REFL PAV MRK TY I (W) (6") (DOT)
- (B) REFL PAV MRK TY I (W) (8") (SLD)
- (C) REFL PAV MRK TY I (W) (8") (DOT)
- (D) REFL PAV MRK TY I (W) (12") (SLD)
- (E) REFL PAV MRK TY I (W) (24") (SLD)
- (F) PREFAB PAV MRK TY C (W) (ARROW)
- (G) PREFAB PAV MRK TY C (W) (UTURN ARROW)
- (H) PREFAB PAV MRK TY C (W) (WORD)
- (I) REF PAV MRK TY I (W) 36" (YLD TRI)
- (J) RE PM W/RET REQ TY I (W) (6") (BRK)
- (K) RE PM W/RET REQ TY I (W) (6") (SLD)
- (L) RE PM W/RET REQ TY I (Y) (6") (BRK)
- (M) RE PM W/RET REQ TY I (Y) (6") (SLD)
- (N) REFL PAV MRKR TY II-C-R
- (O) REFL PAV MRKR TY II-A-A
- ◇ PROPOSED LARGE SIGN
- # PROPOSED SMALL SIGN
- ⊘ DELINEATOR
- ⋮ OBJECT MARKER

NOTES:

- A. (N) AT 20' SPACING
- B. (N) AT 80' SPACING
- C. 2X (O) AT 20' SPACING
- D. (O) AT 40' SPACING



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

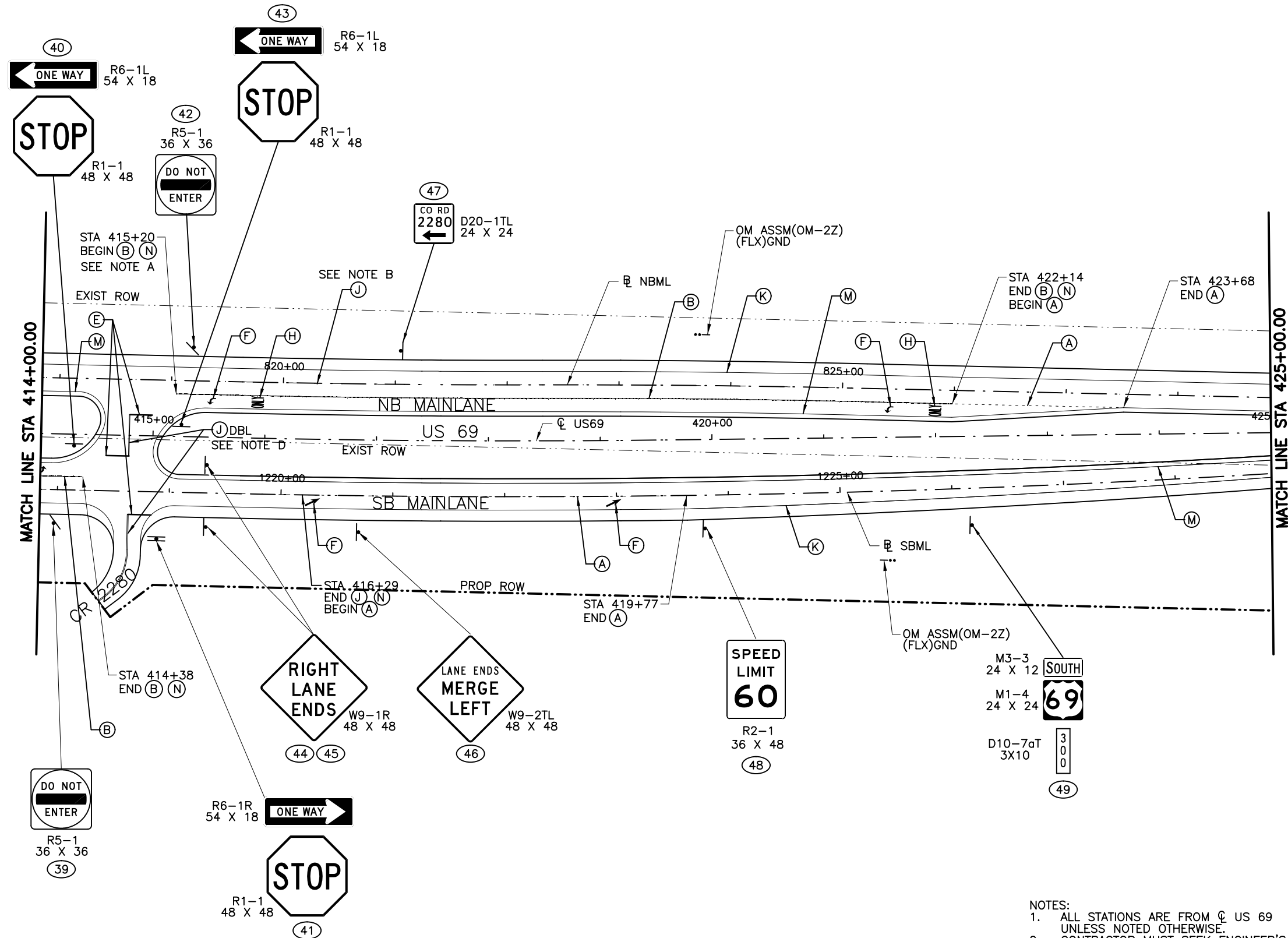
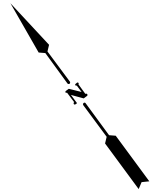
SIGNING & PAVEMENT MARKING PLAN
US 69

STA 403+00 TO STA 414+00

- NOTES:**
1. ALL STATIONS ARE FROM C US 69 UNLESS NOTED OTHERWISE.
 2. CONTRACTOR MUST SEEK ENGINEER'S APPROVAL IN WRITING PRIOR TO ERECTING PERMANENT SPEED LIMIT SIGNS.

Designed:	JKF	FED. RD. DIV. NO.	6	STATE	TEXAS	PROJECT NO.	HIGHWAY NO.
Checked:	BAJ						US 69
Drawn:	JKF	DIST.	WOOD	COUNTY	TYL	CONTROL NO.	0203
Checked:	BAJ	SECTION NO.	05	JOB NO.	039	SHEET NO.	366

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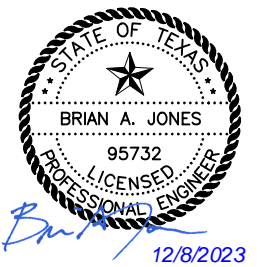


LEGEND

- (A) REFL PAV MRK TY I (W) (6") (DOT)
- (B) REFL PAV MRK TY I (W) (8") (SLD)
- (C) REFL PAV MRK TY I (W) (8") (DOT)
- (D) REFL PAV MRK TY I (W) (12") (SLD)
- (E) REFL PAV MRK TY I (W) (24") (SLD)
- (F) PREFAB PAV MRK TY C (W) (ARROW)
- (G) PREFAB PAV MRK TY C (W) (UTURN ARROW)
- (H) PREFAB PAV MRK TY C (W) (WORD)
- (I) REF PAV MRK TY I (W) 36" (YLD TRI)
- (J) RE PM W/RET REQ TY I (W) (6") (BRK)
- (K) RE PM W/RET REQ TY I (W) (6") (SLD)
- (L) RE PM W/RET REQ TY I (Y) (6") (BRK)
- (M) RE PM W/RET REQ TY I (Y) (6") (SLD)
- (N) REFL PAV MRKR TY II-C-R
- (O) REFL PAV MRKR TY II-A-A
- ◇ PROPOSED LARGE SIGN
- # PROPOSED SMALL SIGN
- ⊗ DELINEATOR
- ⋮ OBJECT MARKER

NOTES:

- A. (N) AT 20' SPACING
- B. (N) AT 80' SPACING
- C. 2X (O) AT 20' SPACING
- D. (O) AT 40' SPACING



NO.	REVISION	BY	DATE



TEXAS REGISTERED ENGINEERING FIRM F-1741



US 69 AT FM 779

SIGNING & PAVEMENT MARKING PLAN
US 69

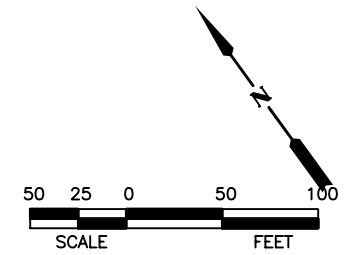
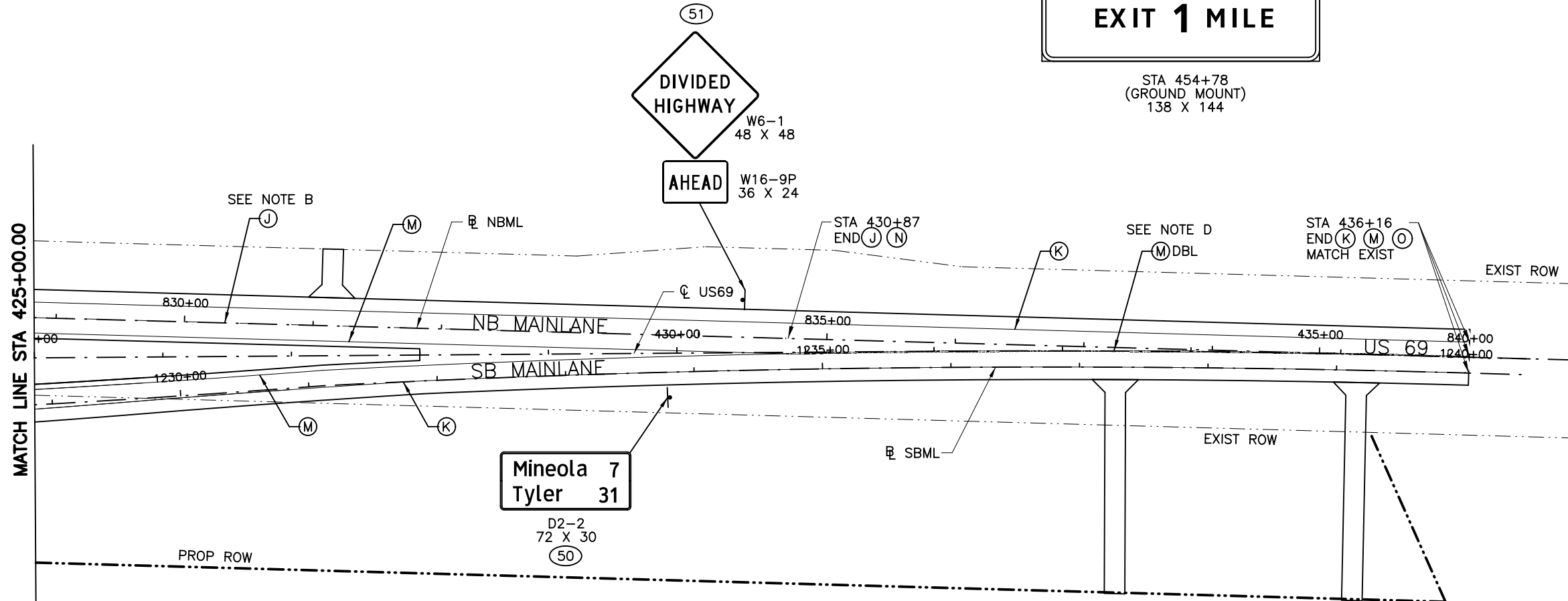
STA 414+00 TO STA 425+00

- NOTES:**
1. ALL STATIONS ARE FROM CL US 69 UNLESS NOTED OTHERWISE.
 2. CONTRACTOR MUST SEEK ENGINEER'S APPROVAL IN WRITING PRIOR TO ERECTING PERMANENT SPEED LIMIT SIGNS.

Designed:	JKF	FED. RD. DIV. NO.	6	STATE	TEXAS	PROJECT NO.	HIGHWAY NO.
Checked:	BAJ						US 69
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	367

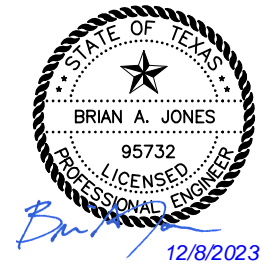
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- LEGEND**
- (A) REFL PAV MRK TY I (W) (6") (DOT)
 - (B) REFL PAV MRK TY I (W) (8") (SLD)
 - (C) REFL PAV MRK TY I (W) (8") (DOT)
 - (D) REFL PAV MRK TY I (W) (12") (SLD)
 - (E) REFL PAV MRK TY I (W) (24") (SLD)
 - (F) PREFAB PAV MRK TY C (W) (ARROW)
 - (G) PREFAB PAV MRK TY C (W) (UTURN ARROW)
 - (H) PREFAB PAV MRK TY C (W) (WORD)
 - (I) REF PAV MRK TY I (W) 36" (YLD TRI)
 - (J) RE PM W/RET REQ TY I (W) (6") (BRK)
 - (K) RE PM W/RET REQ TY I (W) (6") (SLD)
 - (L) RE PM W/RET REQ TY I (Y) (6") (BRK)
 - (M) RE PM W/RET REQ TY I (Y) (6") (SLD)
 - (N) REFL PAV MRKR TY II-C-R
 - (O) REFL PAV MRKR TY II-A-A
 - ◇ PROPOSED LARGE SIGN
 - # PROPOSED SMALL SIGN
 - ⊗ DELINEATOR
 - ⋮ OBJECT MARKER

- NOTES:**
- A. (N) AT 20' SPACING
 - B. (N) AT 80' SPACING
 - C. 2X (O) AT 20' SPACING
 - D. (O) AT 40' SPACING



NO.	REVISION	BY	DATE



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 US 69 AT FM 779

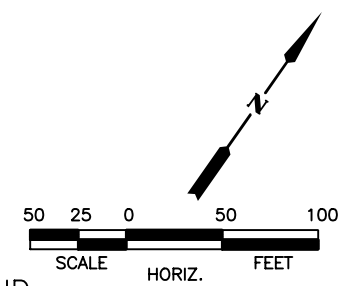
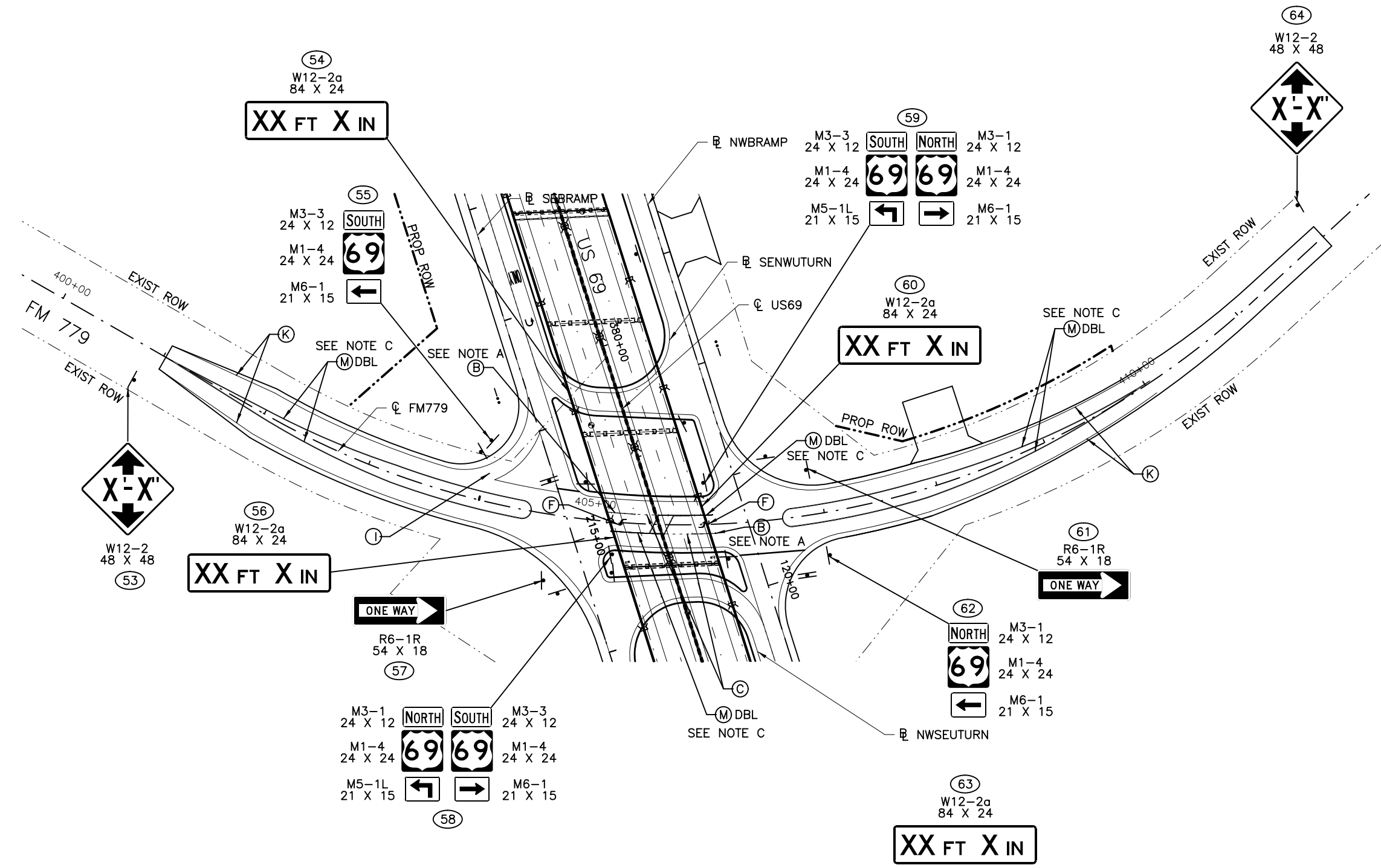
**SIGNING & PAVEMENT MARKING PLAN
 US 69**

STA 425+00 TO END PROJECT

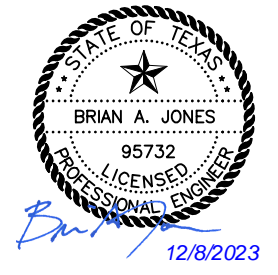
- NOTES:**
- ALL STATIONS ARE FROM C US 69 UNLESS NOTED OTHERWISE.
 - CONTRACTOR MUST SEEK ENGINEER'S APPROVAL IN WRITING PRIOR TO ERECTING PERMANENT SPEED LIMIT SIGNS.

Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	368

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- LEGEND**
- (A) REFL PAV MRK TY I (W) (6") (DOT)
 - (B) REFL PAV MRK TY I (W) (8") (SLD)
 - (C) REFL PAV MRK TY I (W) (8") (DOT)
 - (D) REFL PAV MRK TY I (W) (12") (SLD)
 - (E) REFL PAV MRK TY I (W) (24") (SLD)
 - (F) PREFAB PAV MRK TY C (W) (ARROW)
 - (G) PREFAB PAV MRK TY C (W) (UTURN ARROW)
 - (H) PREFAB PAV MRK TY C (W) (WORD)
 - (I) REF PAV MRK TY I (W) 36" (YLD TRI)
 - (J) RE PM W/RET REQ TY I (W) (6") (BRK)
 - (K) RE PM W/RET REQ TY I (W) (6") (SLD)
 - (L) RE PM W/RET REQ TY I (Y) (6") (BRK)
 - (M) RE PM W/RET REQ TY I (Y) (6") (SLD)
 - (N) REFL PAV MRKR TY II-C-R
 - (O) REFL PAV MRKR TY II-A-A
 - ◇ PROPOSED LARGE SIGN
 - # PROPOSED SMALL SIGN
 - ⊗ DELINEATOR
 - ⋮ OBJECT MARKER
- NOTES:**
- A. (N) AT 20' SPACING
 - B. (N) AT 80' SPACING
 - C. 2X (O) AT 20' SPACING
 - D. (O) AT 40' SPACING



NO.	REVISION	BY	DATE

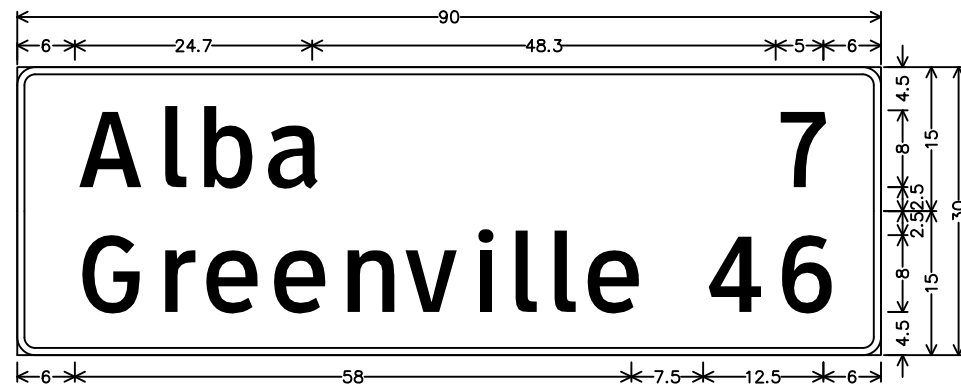


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US 69 AT FM 779
SIGNING & PAVEMENT MARKING PLAN
 FM 779
BEGIN CONST. TO END CONST.

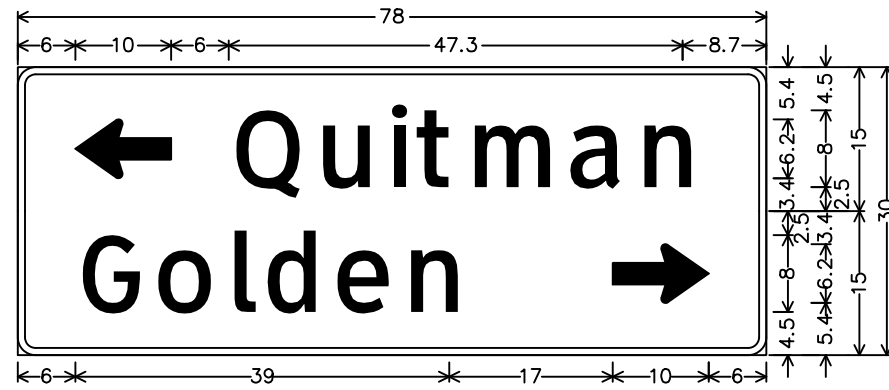
Designed:	JKF	FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
Checked:	BAJ	6	TEXAS		US 69		
Drawn:	JKF	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	BAJ	TYL	WOOD	0203	05	039	369

- NOTES:**
1. ALL STATIONS ARE FROM C US 69 UNLESS NOTED OTHERWISE.
 2. CONTRACTOR MUST SEEK ENGINEER'S APPROVAL IN WRITING PRIOR TO ERECTING PERMANENT SPEED LIMIT SIGNS.



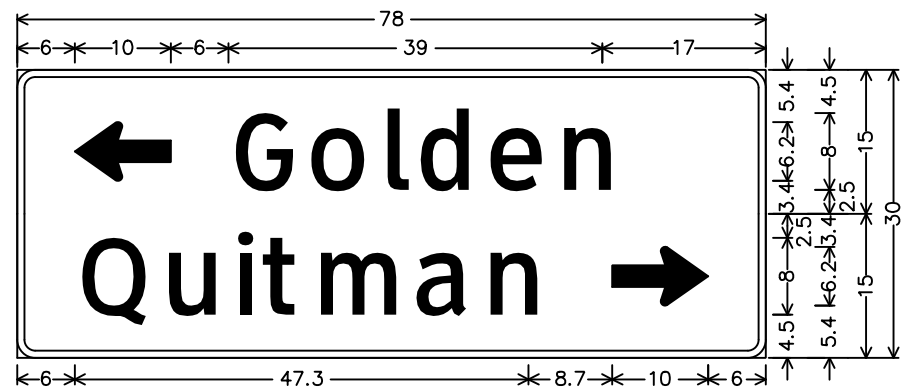
Identifier : D2-2 8in;
 1.9" Radius, 0.8" Border, White on Green;
 [Alba] ClearviewHwy-3-W; [7] ClearviewHwy-3-W;
 1.9" Radius, 0.8" Border, White on Green;
 [Greenville] ClearviewHwy-3-W; [46] ClearviewHwy-3-W;
 Table of letter and object lefts.

A	l	b	a	7							
6.0	14.3	18.4	25.3	79.0							
G	r	e	n	v	i	l	e	4	6		
6.0	14.2	18.9	26.0	33.3	40.0	46.9	50.8	54.9	58.7	71.5	78.8



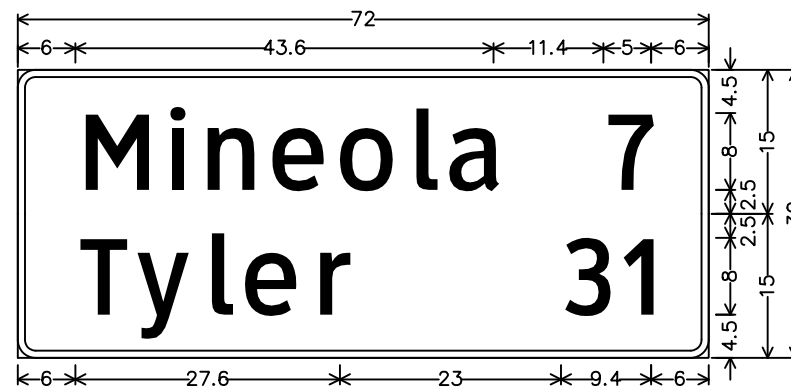
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 1.9" Radius, 0.8" Border, White on Green;
 Standard Arrow Custom 10.0" X 6.1" 180°; [Quitman] ClearviewHwy-3-W;
 1.9" Radius, 0.8" Border, White on Green;
 [Golden] ClearviewHwy-3-W; Standard Arrow Custom 10.0" X 6.1" 0°;
 Table of letter and object lefts.

←	Q	u	i	t	m	a	n
6.0	22.0	30.7	37.9	41.1	46.5	56.8	64.2
G	o	l	d	e	n	→	
6.0	13.9	21.5	25.3	32.5	39.9	62.0	



Identifier : D1-2 8in LT-RT;
 1.9" Radius, 0.8" Border, White on Green;
 Standard Arrow Custom 10.0" X 6.1" 180°; [Golden] ClearviewHwy-3-W;
 1.9" Radius, 0.8" Border, White on Green;
 [Quitman] ClearviewHwy-3-W; Standard Arrow Custom 10.0" X 6.1" 0°;
 Table of letter and object lefts.

←	G	o	l	d	e	n	
6.0	22.0	29.9	37.5	41.3	48.5	55.9	
Q	u	i	t	m	a	n	→
6.0	14.7	21.9	25.1	30.5	40.8	48.2	62.0

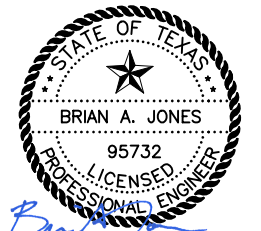


Identifier : D2-2 8in;
 1.9" Radius, 0.8" Border, White on Green;
 [Mineola] ClearviewHwy-3-W; [7] ClearviewHwy-3-W;
 1.9" Radius, 0.8" Border, White on Green;
 [Tyler] ClearviewHwy-3-W; [31] ClearviewHwy-3-W;
 Table of letter and object lefts.

M	i	n	e	o	l	a	7
6.0	14.8	18.7	25.8	32.8	40.4	44.2	61.0
T	y	l	e	r	3	1	
6.0	12.0	19.2	22.9	30.3	56.6	62.8	

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TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

SMALL SIGN DETAILS

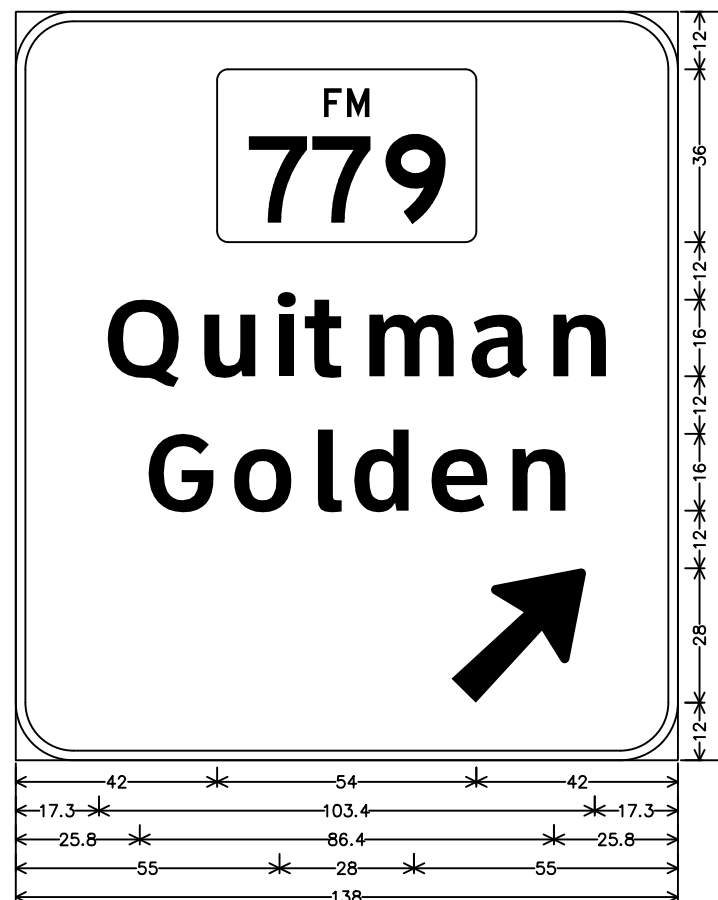
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Checked:	BAJ	DIST.	TYL	COUNTY	WOOD	CONTROL NO.	0203
Drawn:	JKF	SECTION NO.	05	JOB NO.	039	SHEET NO.	370
Checked:	BAJ						

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12.0" Radius, 2.0" Border, White on Green;
 FM 779; [Quitman] ClearviewHwy-5-W-R; [Golden] ClearviewHwy-5-W-R;
 [EXIT 1 MILE] ClearviewHwy-5-W-R;
 Table of widths and spaces.

42.0	54.0	42.0																
17.3	14.9	4.6	10.9	4.7	3.8	3.2	7.9	3.9	18.1	4.2	11.9	4.1	11.2	17.3				
25.8	14.0	3.8	12.4	4.5	5.1	3.1	11.6	4.5	11.8	4.4	11.2	25.8						
25.3	6.4	1.5	8.7	2.1	2.0	2.4	7.3	8.2	6.8	9.2	9.2	3.3	2.1	3.4	5.8	2.6	6.4	25.3



12.0" Radius, 2.0" Border, White on Green;
 FM 779; [Quitman] ClearviewHwy-5-W-R; [Golden] ClearviewHwy-5-W-R;
 Arrow A-3 - 35.6" 45° Black;
 Table of widths and spaces.

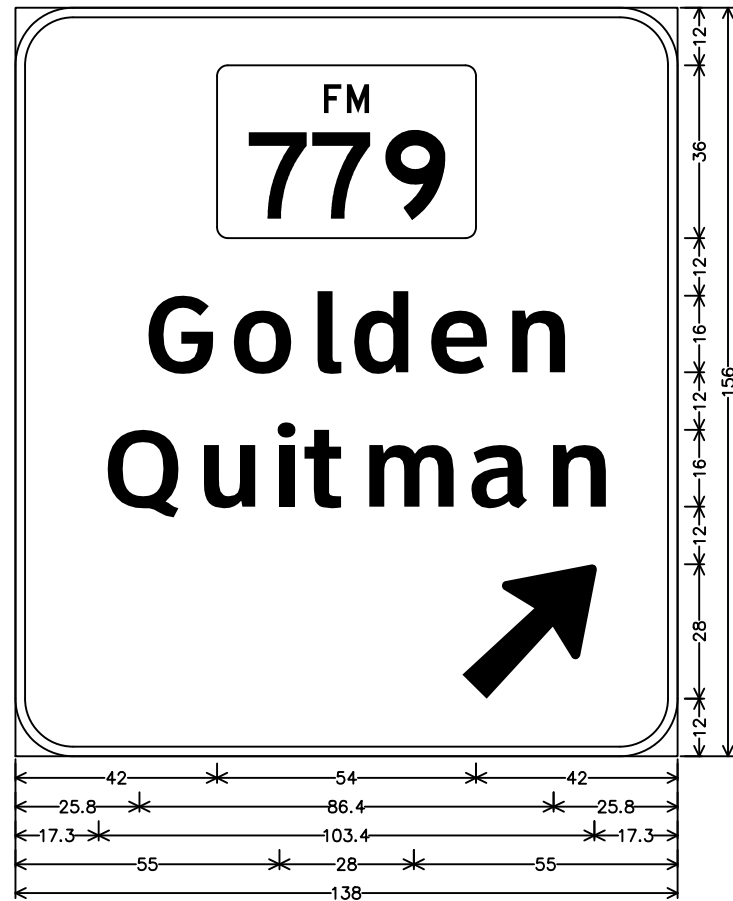
42.0	54.0	42.0												
17.3	14.9	4.6	10.9	4.7	3.8	3.2	7.9	3.9	18.1	4.2	11.9	4.1	11.2	17.3
25.8	14.0	3.8	12.4	4.5	5.1	3.1	11.6	4.5	11.8	4.4	11.2	25.8		
55.0	28.0	55.0												

NO.	REVISION	BY	DATE

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 US 69 AT FM 779

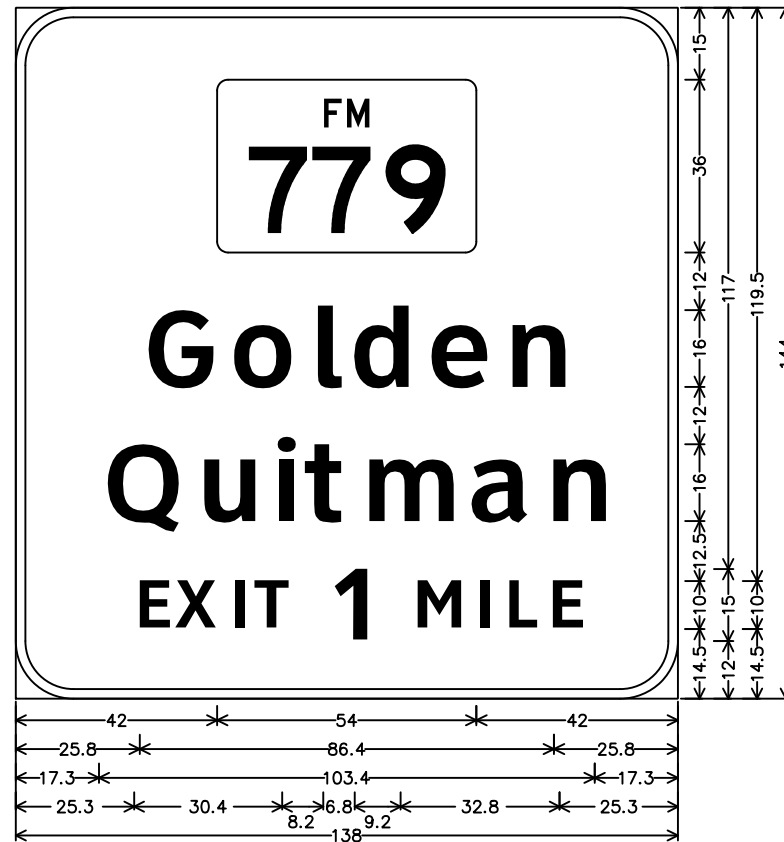
LARGE SIGN DETAILS

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	HIGHWAY NO. US 69		
Checked: BAJ	DIST. WOOD	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: JKF	TYL				SHEET NO. 371



12.0" Radius, 2.0" Border, White on Green;
 FM 779; [Golden] ClearviewHwy-5-W-R; [Quitman] ClearviewHwy-5-W-R;
 Arrow A-3 - 35.6" 45° Black;
 Table of widths and spaces.

42.0	54.0	42.0												
25.8	14.0	3.8	12.4	4.5	5.1	3.1	11.6	4.5	11.8	4.4	11.2	25.8		
17.3	14.9	4.6	10.9	4.7	3.8	3.2	7.9	3.9	18.1	4.2	11.9	4.1	11.2	17.3
55.0	28.0	55.0												



12.0" Radius, 2.0" Border, White on Green;
 FM 779; [Golden] ClearviewHwy-5-W-R; [Quitman] ClearviewHwy-5-W-R;
 [EXIT 1 MILE] ClearviewHwy-5-W-R;
 Table of widths and spaces.

42.0	54.0	42.0																
25.8	14.0	3.8	12.4	4.5	5.1	3.1	11.6	4.5	11.8	4.4	11.2	25.8						
17.3	14.9	4.6	10.9	4.7	3.8	3.2	7.9	3.9	18.1	4.2	11.9	4.1	11.2	17.3				
25.3	6.4	1.5	8.7	2.1	2.0	2.4	7.3	8.2	6.8	9.2	9.2	3.3	2.1	3.4	5.8	2.6	6.4	25.3

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TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

LARGE SIGN DETAILS

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	HIGHWAY NO. US 69		
Checked: BAJ	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: JKF					SHEET NO. 372
Checked: BAJ					

DESIGN DATA

SPAN LENGTH 11.5 FT
 DESIGN HEIGHT, LEFT 7 FT
 ACTUAL SIGN AREA 138 SQ FT
 PENETROMETER VALUE 10 (SEE NOTE 2)
 POST SIZE W6X12

SUMMARY OF QUANTITIES (POST 1)

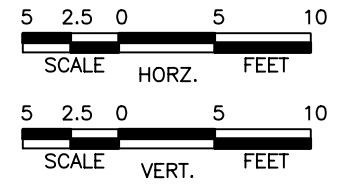
DRILLED SHAFTS (24" DIA.) 8 LF

 TOP DRILLED SHAFT ELEV. 434.6 FT
 FINISHED GROUND ELEV. 434.4 FT
 BOTTOM DRILLED SHAFT ELEV. 426.6 FT

SUMMARY OF QUANTITIES (POST 2)

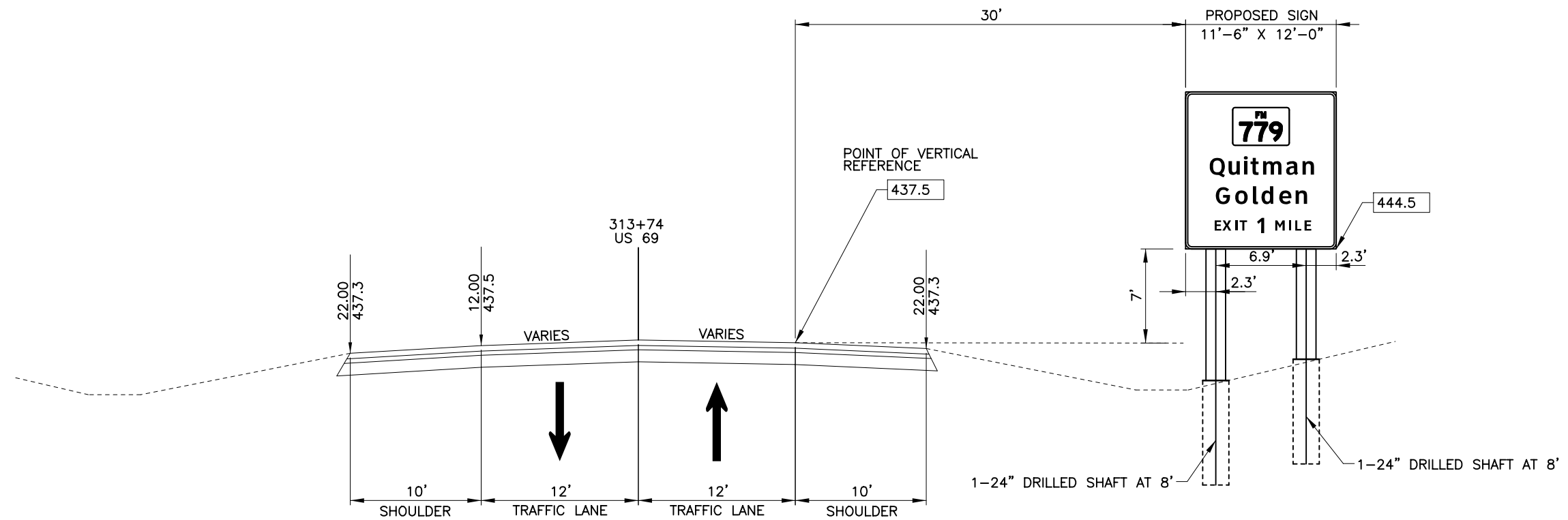
DRILLED SHAFTS (24" DIA.) 8 LF

 TOP DRILLED SHAFT ELEV. 435.7 FT
 FINISHED GROUND ELEV. 435.5 FT
 BOTTOM DRILLED SHAFT ELEV. 427.7 FT



NOTES:

1. REFER TO TxDOT STANDARD (SMD(2-2)-08) FOR FOUNDATION DETAILS
2. PENETROMETER VALUE WAS CONSERVATIVELY ASSUMED TO BE 10
3. FIELD VERIFY ELEVATIONS AND ADJUST AS NEEDED TO ACHIEVE CRITICAL DIMENSION ABOVE PAVEMENT SURFACE.



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Brian A. Jones
12/8/2023

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TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

GUIDE SIGN LAYOUT

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	HIGHWAY NO. US 69		
Checked: BAJ	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: JKF					SHEET NO. 373
Checked: BAJ					

DESIGN DATA

SPAN LENGTH 11.5 FT
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 ACTUAL SIGN AREA 149.5 SQ FT
 PENETROMETER VALUE 10 (SEE NOTE 2)
 POST SIZE W6X15

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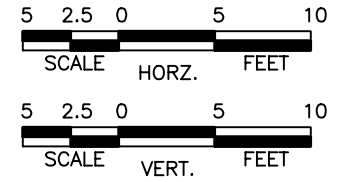
DRILLED SHAFTS (24" DIA.) 8 LF

 TOP DRILLED SHAFT ELEV. 401.73 FT
 FINISHED GROUND ELEV. 401.56 FT
 BOTTOM DRILLED SHAFT ELEV. 393.73 FT

SUMMARY OF QUANTITIES (POST 2)

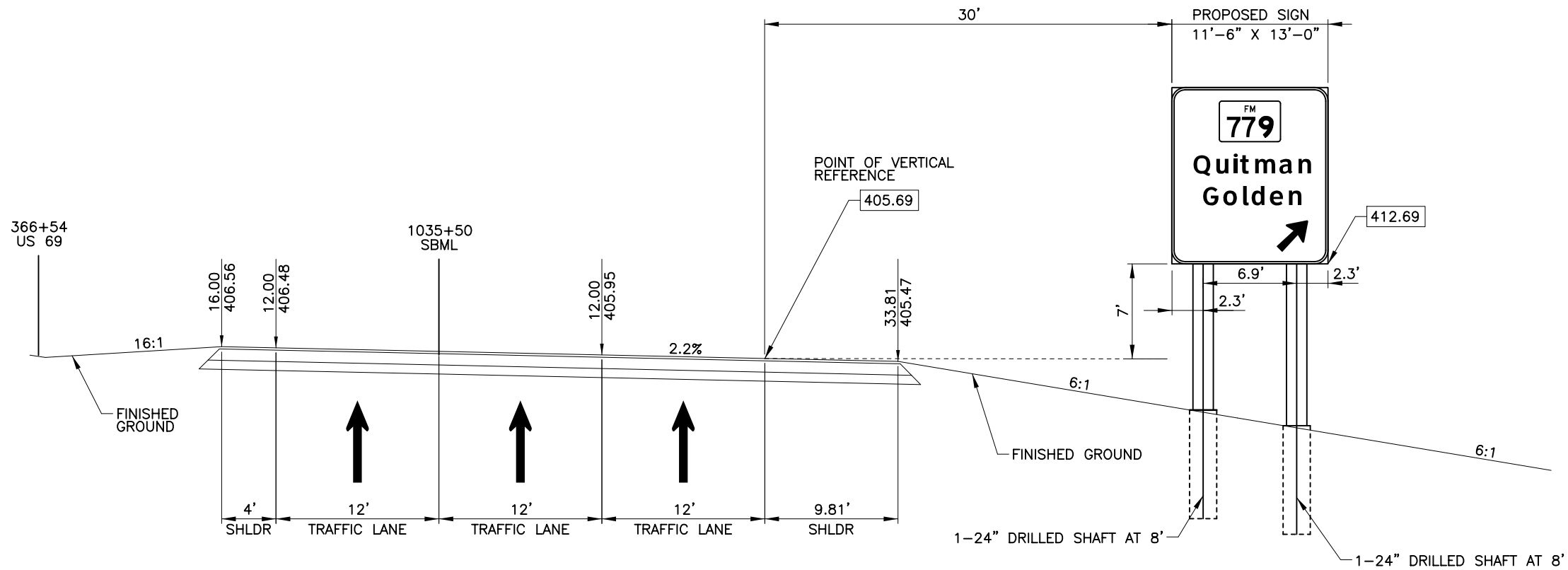
DRILLED SHAFTS (24" DIA.) 8 LF

 TOP DRILLED SHAFT ELEV. 400.58 FT
 FINISHED GROUND ELEV. 400.41 FT
 BOTTOM DRILLED SHAFT ELEV. 392.58 FT



NOTES:

- REFER TO TxDOT STANDARD (SMD(2-2)-08) FOR FOUNDATION DETAILS
- PENETROMETER VALUE WAS CONSERVATIVELY ASSUMED TO BE 10



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TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

GUIDE SIGN LAYOUT

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS				HIGHWAY NO. US 69
Checked: BAJ			COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: JKF						SHEET NO. 374
Checked: BAJ	TYL					

DESIGN DATA

SPAN LENGTH 11.5 FT
 DESIGN HEIGHT, LEFT 7 FT
 ACTUAL SIGN AREA 149.5 SQ FT
 PENETROMETER VALUE 10 (SEE NOTE 2)
 POST SIZE W6X15

SUMMARY OF QUANTITIES (POST 1)

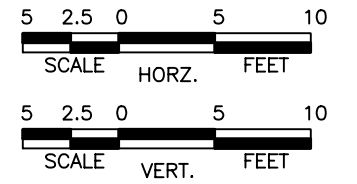
DRILLED SHAFTS (24" DIA.) 8 LF

 TOP DRILLED SHAFT ELEV. 428.24 FT
 FINISHED GROUND ELEV. 428.07 FT
 BOTTOM DRILLED SHAFT ELEV. 420.24 FT

SUMMARY OF QUANTITIES (POST 2)

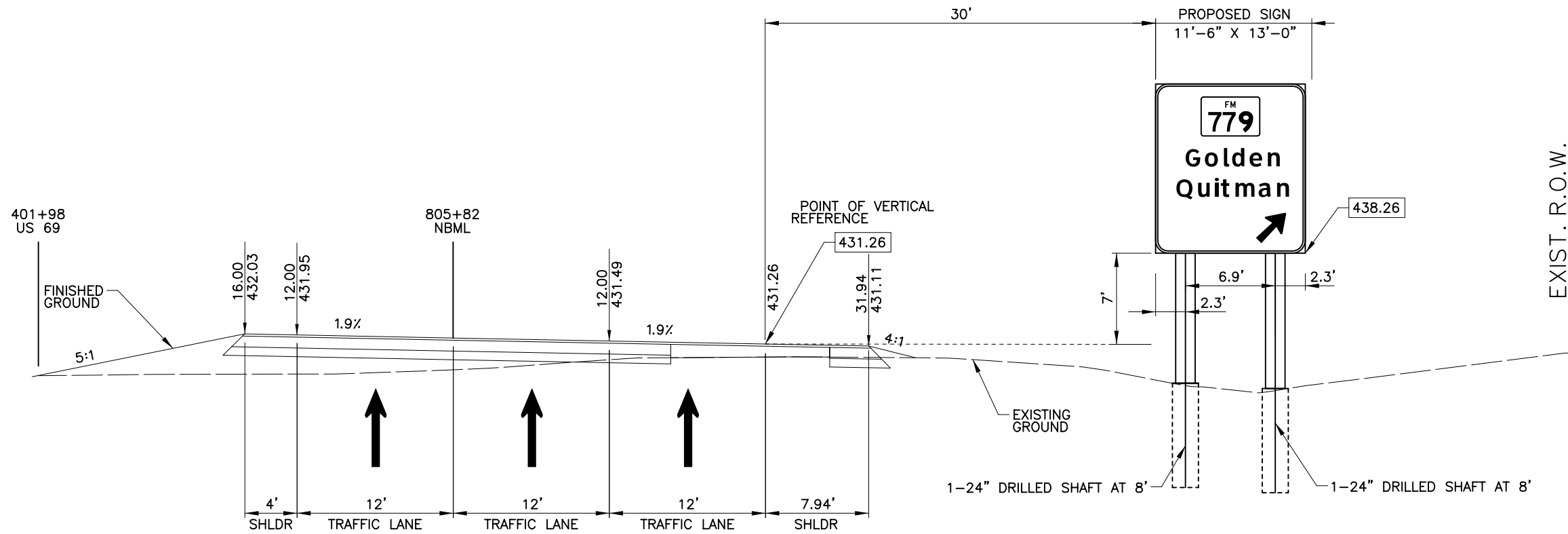
DRILLED SHAFTS (24" DIA.) 8 LF

 TOP DRILLED SHAFT ELEV. 427.84 FT
 FINISHED GROUND ELEV. 427.68 FT
 BOTTOM DRILLED SHAFT ELEV. 419.84 FT



NOTES:

- REFER TO TxDOT STANDARD (SMD(2-2)-08) FOR FOUNDATION DETAILS
- PENETROMETER VALUE WAS CONSERVATIVELY ASSUMED TO BE 10



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US 69 AT FM 779

GUIDE SIGN LAYOUT

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	HIGHWAY NO. US 69		
Checked: BAJ			COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05
Drawn: JKF			JOB NO. 039	SHEET NO. 375	
Checked: BAJ	TYL				

DESIGN DATA

SPAN LENGTH 11.5 FT
 DESIGN HEIGHT, LEFT 7 FT
 ACTUAL SIGN AREA 138 SQ FT
 PENETROMETER VALUE 10 (SEE NOTE 2)
 POST SIZE W6X12

SUMMARY OF QUANTITIES (POST 1)

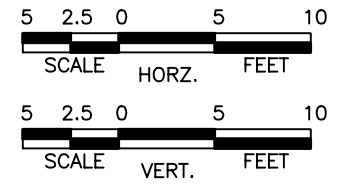
DRILLED SHAFTS (24" DIA.) 8 LF

 TOP DRILLED SHAFT ELEV. 437.3 FT
 FINISHED GROUND ELEV. 437.1 FT
 BOTTOM DRILLED SHAFT ELEV. 429.3 FT

SUMMARY OF QUANTITIES (POST 2)

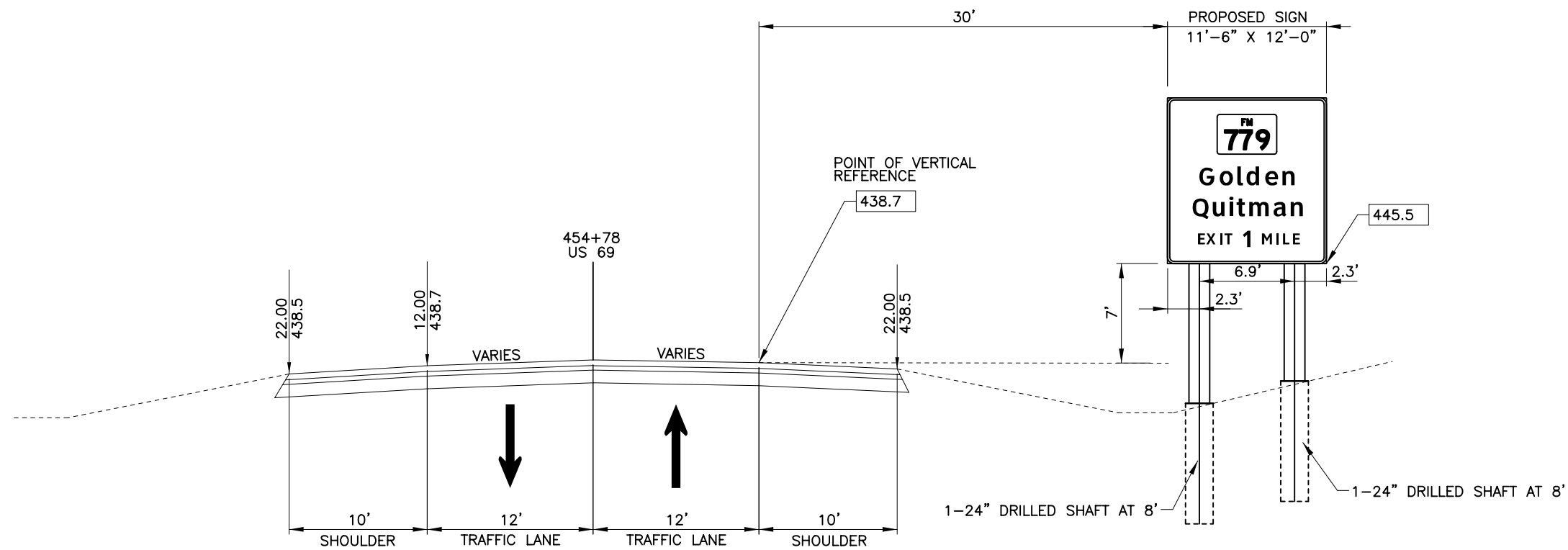
DRILLED SHAFTS (24" DIA.) 8 LF

 TOP DRILLED SHAFT ELEV. 438.0 FT
 FINISHED GROUND ELEV. 437.8 FT
 BOTTOM DRILLED SHAFT ELEV. 430.0 FT



NOTES:

1. REFER TO TxDOT STANDARD (SMD(2-2)-08) FOR FOUNDATION DETAILS
2. PENETROMETER VALUE WAS CONSERVATIVELY ASSUMED TO BE 10
3. FIELD VERIFY ELEVATIONS AND ADJUST AS NEEDED TO ACHIEVE CRITICAL DIMENSION ABOVE PAVEMENT SURFACE.



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NO.	REVISION	BY	DATE

TEXAS REGISTERED ENGINEERING FIRM F-1741

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US 69 AT FM 779

GUIDE SIGN LAYOUT

Designed: JKF	FED. RD. DIV. NO. 6	STATE TEXAS	HIGHWAY NO. US 69		
Checked: BAJ	DIST. TYL	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: JKF	SHEET NO. 376				

The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of units or the accuracy of the information contained herein. The user of this standard is advised to consult the current edition of the Texas Engineering Practice Act and the Texas Administrative Code for the most current information.

DATE: 12/11/2023 4:02:41 PM
 FILE: \\stv-sw-pw-bentley.com\stv-sw-pw-01\Documents\Active Projects\TXM15214 - Streetlights and Traffic Signals for the conversion of units and accuracy of the information contained herein\15214.dgn

GENERAL NOTES FOR ALL ELECTRICAL WORK

- The location of all conduits, junction boxes, ground boxes, and electrical services is diagrammatic and may be shifted to accommodate field conditions.
- Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association (CSA), Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Where reference is made to NEMA listed devices, International Electrotechnical Commission (IEC) listed devices will not be considered acceptable equal to a NEMA listed device. Acceptable devices may have both a NEMA and IEC listing. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection. Replace or reinstall rejected material or equipment at no additional cost to the Department.
- Miscellaneous nuts, bolts and hardware, except for high strength bolts, may be stainless steel when plans specify galvanized, provided the bolt size is 1/2 in. or less in diameter.
- Provide the following test equipment as required by the Engineer to confirm compliance with the contract and the NEC: voltmeter, ammeter, megohm meter (1000 volt DC), ground resistance tester, torque wrenches, and torque screwdrivers. Ensure all equipment has been properly calibrated within the last year. Provide calibration certification to the Engineer upon request. Operate test equipment during inspection as requested by the Engineer.
- Install grounding as shown on the plans and in accordance with the NEC. Ensure all metallic conduits; metal poles; luminaires; and metal enclosures are bonded to the equipment grounding conductor. Provide stranded bare copper or green insulated grounding conductors. Ground rods, connectors, and bonding jumpers are subsidiary to the various bid items.
- When required by the Engineer, notify the Department in writing of materials from the Material Producers List (MPL) intended for use on each project. Prequalified materials are listed on the MPL on TxDOT's website under "Roadway Illumination and Electrical Supplies." No substitutions will be allowed for materials on this list.

CONDUIT

A. MATERIALS

- Provide conduit, junction boxes, fittings, and hardware as per TxDOT Departmental Material Specification (DMS) 11030 "Conduit" and Item 618 "Conduit" of TxDOT's "Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges," latest edition. Provide conduits listed under Item 618 on the MPL under "Roadway Illumination and Electrical Supplies." Provide conduit types according to the descriptive code or as shown on the plans. Do not substitute other types of conduits for those shown. Provide liquidtight flexible metal conduit (LFMC) when flexible conduit is called for on galvanized steel rigid metallic conduit (RMC) systems. Provide liquidtight flexible nonmetallic conduit (LFNC) when flexible conduit is called for on polyvinyl chloride (PVC) systems.
- Provide galvanized steel RMC for all exposed conduits, unless otherwise shown on the plans. Properly bond all metal conduits.
- Unless otherwise shown on the plans, provide junction boxes with a minimum size as shown in the following table, which applies to the greatest number of conductors entering the box through one conduit with no more than four conduits per box. When a mixture of conductor sizes is present, count the conductors as if all are of the larger size. For situations not applicable to the table, size junction boxes in accordance with NEC.



AWG	3 CONDUCTORS	5 CONDUCTORS	7 CONDUCTORS
#1	10" x 10" x 4"	12" x 12" x 4"	16" x 16" x 4"
#2	8" x 8" x 4"	10" x 10" x 4"	12" x 12" x 4"
#4	8" x 8" x 4"	10" x 10" x 4"	10" x 10" x 4"
#6	8" x 8" x 4"	8" x 8" x 4"	10" x 10" x 4"
#8	8" x 8" x 4"	8" x 8" x 4"	8" x 8" x 4"

- Junction boxes with an internal volume of less than 100 cu. in. and supported by entering raceways must have threaded entries or hubs identified for the intended purpose and supported by connection of two or more rigid metal conduits. Secure conduit within 3 ft. of the enclosure or within 18 in. of the enclosure if all conduit entries are on the same side. Mechanically secure all junction boxes with an internal volume greater than 100 cu. inches.
- Provide hot dipped galvanized cast iron or sand cast aluminum outlet boxes for junction boxes containing only 10 AWG or 12 AWG conductors. Do not use die cast aluminum boxes. Size outlet boxes according to the NEC.
- Do not use intermediate metal conduit (IMC) or electrical metallic tubing (EMT) unless specifically required by the plan sheets. When EMT is called for, provide junction boxes made from galvanized steel sheeting, listed and approved for outdoor use, unless otherwise noted on the plans. Size all galvanized steel junction boxes in accordance with the NEC. Provide junction boxes for IMC conduit systems that meet the same requirements for junction boxes used with RMC systems.
- Provide PVC junction boxes intended for outdoor use on PVC conduit systems, unless otherwise noted on the plans.

- Provide PVC elbows in PVC conduit systems, unless otherwise shown on the plans. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the PVC conduit system. When galvanized steel RMC elbows are specifically called for in the plans and any portion of the RMC elbow is buried less than 18 in., ground the RMC elbow by means of a grounding bushing on a rigid metal extension. Grounding of the rigid metal elbow is not required if the entire RMC elbow is encased in a minimum of 2 in. of concrete. PVC extensions are allowed on these concrete encased rigid metal elbows. RMC or PVC elbows are subsidiary to various bid items.
- When required, provide High-Density Polyethylene (HDPE) conduit with factory installed internal conductors according to Item 622 "Duct Cable." At the Contractor's request and with approval by the Engineer, substitute HDPE conduit with no conductors for bored schedule 40 or schedule 80 PVC conduit bid under Item 618. Ensure bored HDPE substituted for PVC is schedule 40 and of the same size PVC called for in the plans. Ensure the substituted HDPE meets the requirements of Item 622, except that the conduit is supplied without factory-installed conductors. Make the transition of the HDPE conduit to PVC (or RMC elbow when required) at the bore pit. Provide conduit of the size and schedule as shown on the plans. Do not extend substituted conduit into ground boxes or foundations. Provide PVC or galvanized steel RMC elbows as called for at all ground boxes and foundations.
- Use two-hole straps when supporting 2 in. and larger conduits. On electrical service poles, properly sized stainless steel or hot dipped galvanized one-hole standoff straps are allowed on the service riser conduit.

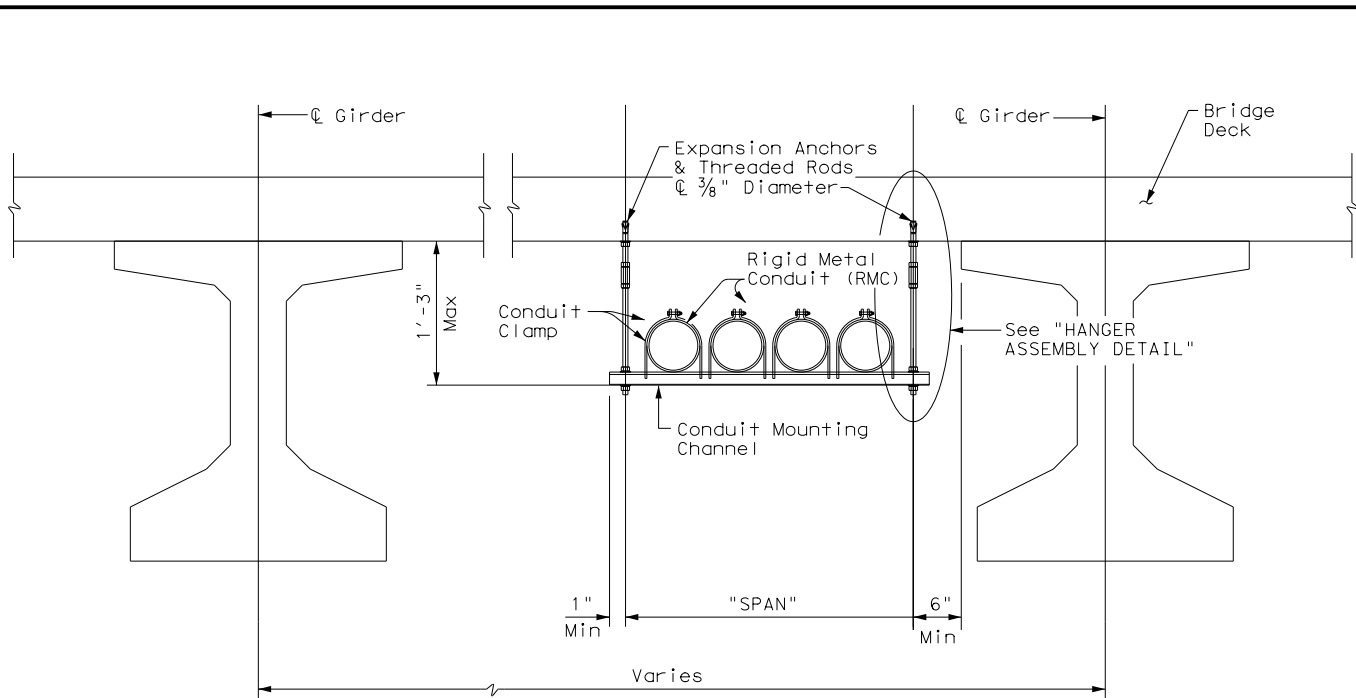
B. CONSTRUCTION METHODS

- Provide and install expansion joint conduit fittings on all structure-mounted conduits at the structure's expansion joints to allow for movement of the conduit. In addition, provide and install expansion joint fittings on all continuous runs of galvanized steel RMC conduit externally exposed on structures such as bridges at maximum intervals of 150 ft. When requested by the project Engineer, supply manufacturer's specification sheet for expansion joint conduit fittings. Repair or replace expansion joint fittings that do not allow for movement at no additional cost to the Department. Provide the method of determining the amount of expansion to the Engineer upon request. Do not use LFMC or LFNC as a substitute for the required expansion conduit fittings.
- Space all conduit supports at maximum intervals of 5 ft. Install conduit spacers when attaching metal conduit to surface of concrete structures. See "Conduit Mounting Options" on ED(2). Install conduit support within 3 ft. of all enclosures and conduit terminations.
- Do not attach conduit supports directly to pre-stressed concrete beams except as shown specifically in the plans or as approved by the Engineer.
- Unless otherwise shown on the plans, jack or bore conduit placed beneath existing roadways, driveways, sidewalks, or after the base or surfacing operation has begun. Backfill and compact the bore pits below the conduit per Item 476 "Jacking, Boring, or Tunneling Pipe or Box" prior to installing conduit or duct cable to prevent bending of the connections.
- When placing conduit in the sub-grade of new roadways, backfill all trenches with excavated material unless otherwise noted on the plans. When placing conduit in the sub-base of new roadways, backfill all trenches with cement-stabilized base as per requirements of Items 110 "Excavation", 400 "Excavation and Backfill for Structures", 401 "Flowable Backfill", 402 "Trench Excavation Protection", and 403 "Temporary Special Shoring."
- Provide and place warning tape approximately 10 in. above all trenched conduit as per Item 618.
- During construction, temporarily cap or plug open ends of all conduit and raceways immediately after installation to prevent entry of dirt, debris and animals. Temporary caps constructed of durable duct tape are allowed. Tightly fix the tape to the conduit opening. Clean out the conduit and prove it clear in accordance with Item 618 prior to installing any conductors.
- Ensure conduit entry into the top of any enclosure is waterproof by installing conduit sealing hubs or using boxes with threaded bosses. This includes surface mounted safety switches, meter cans, service enclosures, auxiliary enclosures and junction boxes. Grounding bushings on water tight sealing hubs are not required.
- Fit the ends of all PVC conduit terminations with bushings or bell end fittings. Provide and install a grounding type bushing on all metal conduit terminations.
- Install a bonding jumper from each grounding bushing to the nearest ground rod, grounding lug, or equipment grounding conductor. Ensure all bonding jumpers are the same size as the equipment grounding conductor. Bonding of conduit used as a casing under roadways for duct cable is not required, if the duct extends the full length through the casing.
- At all electrical services, install a 6 AWG solid copper grounding electrode conductor.
- Place conduits entering ground boxes so that the conduit openings are between 3 in. and 6 in. from the bottom of the box. See the ground box detail on sheet ED(4).
- Seal ends of all conduits with duct seal, expandable foam, or by other methods approved by the Engineer. Seal conduit immediately after completion of conductor installation and pull tests. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a conduit sealant.
- File smooth the cut ends of all mounting strut and conduit. Before installing, paint the field cut ends of all mounting strut and RMC (threaded or non-threaded) with zinc rich paint (94% or more zinc content) to alleviate overspray. Use zinc rich paint to touch up galvanized material as allowed under Item 445 "Galvanizing." Do not paint non-galvanized material with a zinc rich paint as an alternative for materials required to be galvanized.

			
<h1>ELECTRICAL DETAILS CONDUITS & NOTES</h1>			
<h2>ED(1)-14</h2>			
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© TxDOT	October 2014	CON:	SECT:
REVISIONS		0203	05
		039	US 69
		DIST:	COUNTY:
		TYL	WOOD
		SHEET NO.	
		377	

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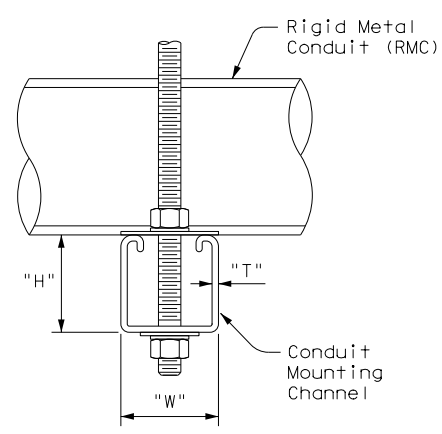
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CONDUIT HANGING DETAIL

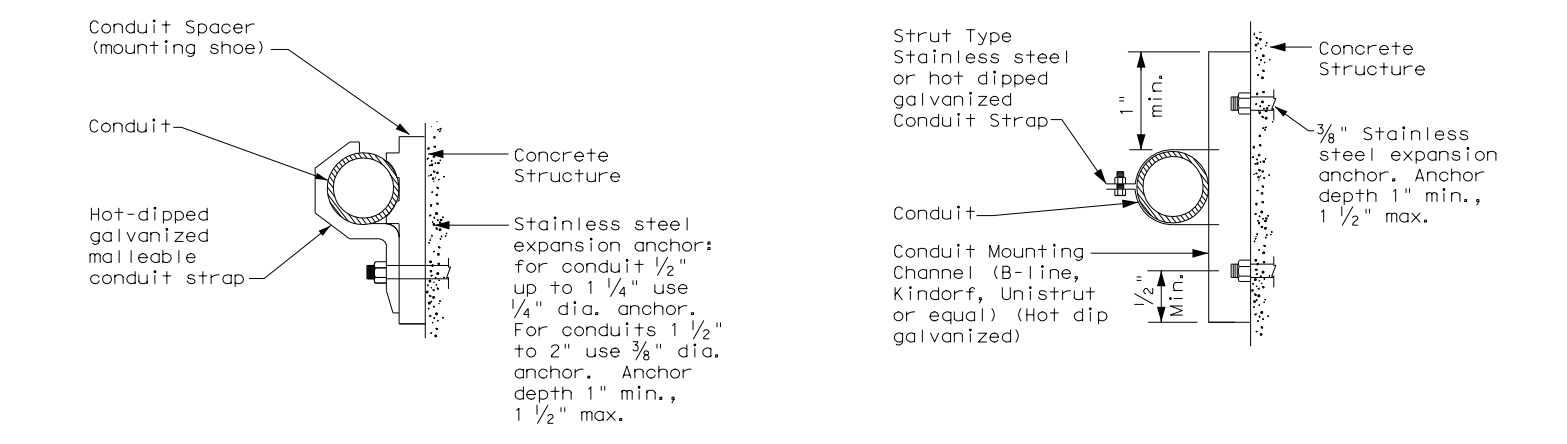
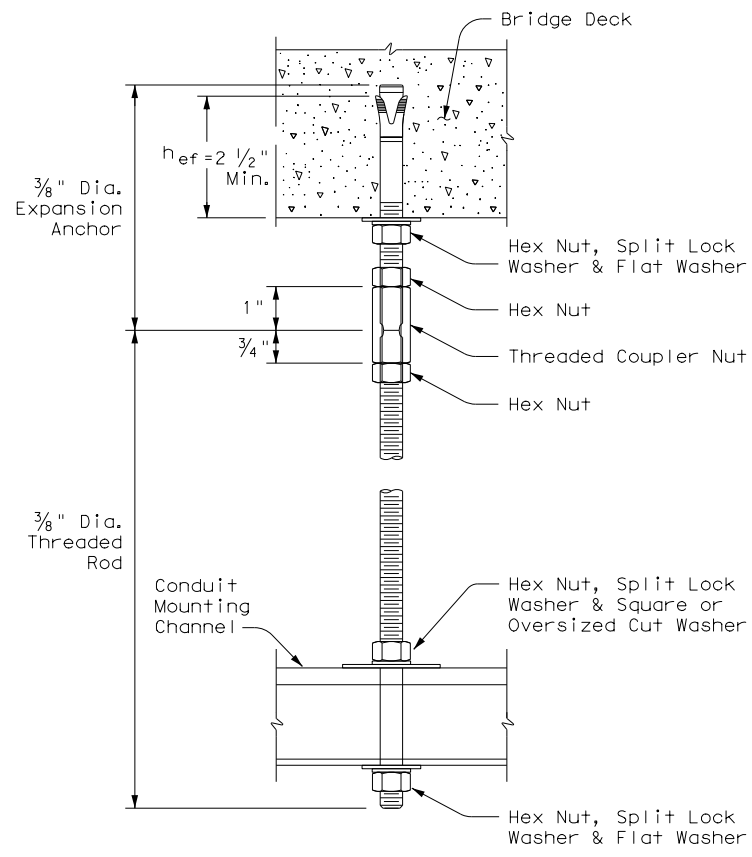
CONDUIT MOUNTING CHANNEL		
"SPAN"	"W" x "H"	"T"
less than 2'	1 5/8" x 1 3/8"	12 Ga.
2'-0" to 2'-6"	1 5/8" x 1 5/8"	12 Ga.
>2'-6" to 3'-0"	1 5/8" x 2 7/16"	12 Ga.

Channels with round or short slotted hole patterns are allowed, if the load carrying capacity is not reduced by more than 15%.



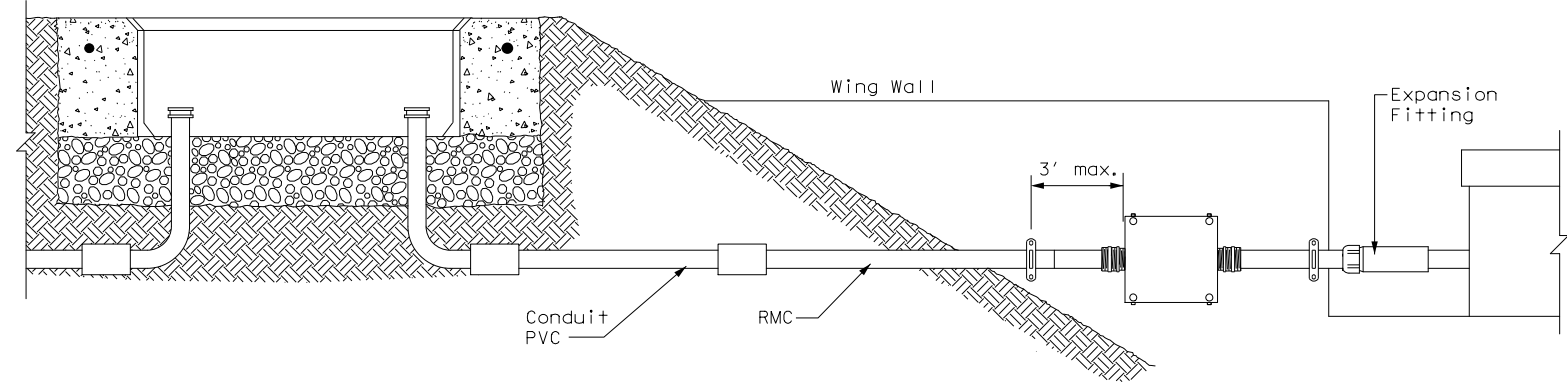
HANGER ASSEMBLY DETAIL

ELECTRIC CONDUIT TO BRIDGE DECK ATTACHMENT



CONDUIT MOUNTING OPTIONS

Attachment to concrete surfaces
See ED(1)B.2



TYPICAL CONDUIT ENTRY TO BRIDGE STRUCTURE DETAIL

EXPANSION ANCHOR NOTES FOR BRIDGE DECK ATTACHMENT

1. Use torque controlled mechanical expansion anchors that are approved for use in cracked concrete by the International Code Council, Evaluation Service (ICC-ES). The chosen anchor product shall have a designated ICC-ES Evaluation Report number, and its approval status shall be maintained on the ICC-ES website under Division 031600 for Concrete Anchors.
2. Unless otherwise approved by the Engineer: do not use adhesive anchors; do not use expansion anchors that are not included in the ICC-ES approval list; and do not use expansion anchors that are only approved for use in uncracked concrete.
3. Use anchors manufactured with stainless steel expansion wedges. Anchors manufactured with carbon steel expansion wedges are not allowed. Anchor bodies can be either zinc-plated carbon steel or stainless steel. For application in marine environment, both the anchor body and expansion wedge shall be stainless steel.
4. Install anchors as shown on the plans and in accordance with the anchor manufacturer's published installation instructions. Arrange a field demonstration test to evaluate the procedures and tools. The test shall be witnessed and approved by the Engineer prior to furnishing anchors on the structure.
5. Prior to hole drilling, use rebar locator to ensure clearing of existing deck strands or reinforcement. Install anchors to ensure a minimum effective embedment depth, (h_{ef}), as shown. Increase (h_{ef}) as needed to ensure sufficient thread length for proper torqueing and tightening of anchors.
6. Use anchors of minimum 1600 Lbs tensile capacity (minimum of steel, concrete breakout, and concrete pullout strengths as determined by ACI 318 Appendix D) at the required minimum embedment depth (h_{ef}). No lateral loads shall be introduced after conduit installation.



ELECTRICAL DETAILS
CONDUIT SUPPORTS

ED(2)-14

FILE: ed2-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	378	

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ELECTRICAL CONDUCTORS

A. MATERIAL INFORMATION

- Provide Type XHHW insulated conductors in accordance with Departmental Material Specification (DMS) 11040 "Conductors" and Item 620 "Electrical Conductors." Provide conductors as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 620. Color code insulated conductors in conformance with the NEC. Identify grounded (neutral) conductors with white insulation. Identify grounding conductors (ground wires) with green insulation or bare conductors. Identify ungrounded (hot) conductors with any color insulation except green, white, or gray. Keep color scheme consistent throughout the wiring system. Identify conductors 6 American Wire Gauge (AWG) and smaller by continuous color jacket. Identify electrical conductors 4 AWG and larger by continuous color jacket or by colored tape. When identifying conductors with colored tape, mark at least 6 in. of the conductor's insulation with half laps of tape.
- Provide a solid copper 6 AWG grounding electrode conductor to bond the electrical service equipment to the concrete encased grounding electrode or the ground rod at the service location. Connect the grounding electrode conductor to the ground rod with a UL listed connector in accordance with DMS 11040. Connect the grounding electrode conductor to the concrete encased grounding electrode as shown in the plans.
- Where two or more circuits are present in one conduit or enclosure, permanently identify the conductors of each branch circuit by attaching a non-metallic tag around both circuit conductors at each accessible location. Provide tags with two straps, large enough to indicate circuit number, letter, or other identification as shown in the plans. Print circuit identification on the tag with a permanent marker.
- Use listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors for splicing as specified in DMS 11040. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Provide UL listed gel-filled insulating splice covers. Splicing materials, insulating materials, breakaway disconnects, splice covers, and fuse holders are subsidiary to various bid items.

B. CONSTRUCTION METHODS

- Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the conduit system. After installing conductors in conduit, perform conductor pull test. If a conductor cannot be freely pulled, make any needed alterations or repairs at no additional cost to the department. Perform insulation resistance tests in accordance with Item 620. Coordinate with the Engineer to witness the tests.
- Leave 2 ft. minimum, 3 ft. maximum length for each conductor up to the splice in ground boxes. Leave 3 ft. minimum, 4 ft. maximum length of conductor in ground boxes when pulled through with no splice. Leave 1 ft. minimum, 1.5 ft. maximum length of conductor at enclosures, weatherheads and pole bases.
- Make splices only in junction boxes, ground boxes, pole bases, or electrical enclosures and use only listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors. Insulate splices with heavy wall heat shrink tubing or gel-filled insulating splice covers to provide a watertight splice. Overlap conductor insulation with heat shrink tubing a minimum of 2 in. past both sides of the splice. Where heat shrink tubing may not shrink sufficiently to provide a watertight seal around the individual conductors, prior to heating the tubing, increase the diameter of the conductor insulation using hot melt adhesive tape to provide a watertight seal between the individual conductors and the heat shrink tubing. Ensure the tape extends past the heat shrink tubing. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Heat shrink tubing that appears to have been burned, or overheated, is considered defective and must be replaced.
- Size and install gel-filled insulating splice covers according to manufacturer's specifications when used in place of heat shrink tubing.
- Wire nuts with factory applied waterproof sealant may be used for 8 AWG or smaller conductors in above ground junction boxes, but not in pole bases or ground boxes. Install wire nuts in an upright position to prevent the accumulation of water.
- Support conductors in illumination poles with a J-hook at the top of the pole.
- When terminating conductors, remove the insulation and jacketing material without nicking the individual strands of the conductor. Conductors with nicked individual conductor strands or removed strands will be considered damaged.
- Replace conductors and cables that are damaged beyond repair or that fail an insulation resistance test at no additional cost to the department.
- Do not repair damaged conductors with duct tape, electrical tape, or wire nuts. Use only approved splicing methods.
- Do not terminate more than one conductor under a single connector, unless the connector is rated for multiple conductors. Do not exceed the pressure connector's listing for maximum number and size of conductors allowed.
- Install breakaway connectors on conductors bid under Item 620 whenever those conductors pass through a breakaway support device. Follow manufacturer's instructions when terminating conductors to breakaway connectors. Properly torque threaded connections. Proper terminations are critical to the safe operation of breakaway devices. Trim waterproofing boots on breakaway connectors to fit snugly around the conductor to ensure waterproof connection. Only one conductor may enter a single opening in a boot. Provide waterproof boots with the correct number of openings. Leave unused openings factory sealed. Use prequalified breakaway connectors as shown on the MPL.

- Provide and install a separate stranded equipment grounding conductor (EGC) in all conduits that contain circuit wiring of 50 volts or more. Unless shown elsewhere, size the EGC to be the same size as the largest current carrying conductor contained in the conduit. Ensure all EGCs are bonded together at every accessible location. For traffic signal installations, provide a minimum size 8 AWG EGC. The EGC is paid for under Item 620.

C. TEMPORARY WIRING

- Install temporary conductors and electrical equipment in accordance with the NEC article "Temporary Installations" and Department standard sheets.
- Provide a ground fault circuit interrupter (GFCI) for power outlets for portable electrical equipment, power tools, ice machines, ice storage bins and refrigerators located outdoors at grade. GFCI may be any one of the following: molded cord and plug set, receptacle, or circuit breaker type.
- Use listed wire nuts with factory applied sealant for temporary wiring where approved.
- Enclose conductor splices within a listed enclosure or ground box, or ensure the splices are more than 10 ft. above grade vertically and more than 5 ft. horizontally from any metal structure. Where installing temporary conductors in areas subject to vehicle traffic or mobile construction equipment, ensure the vertical clearance to ground is at least 18 ft. when measured at the lowest point. Ground messenger wires that support power conductors in conformance with the NEC.
- Protect and when necessary repair any existing electrical conduits uncovered during the construction process in a timely manner and in conformance with the NEC.

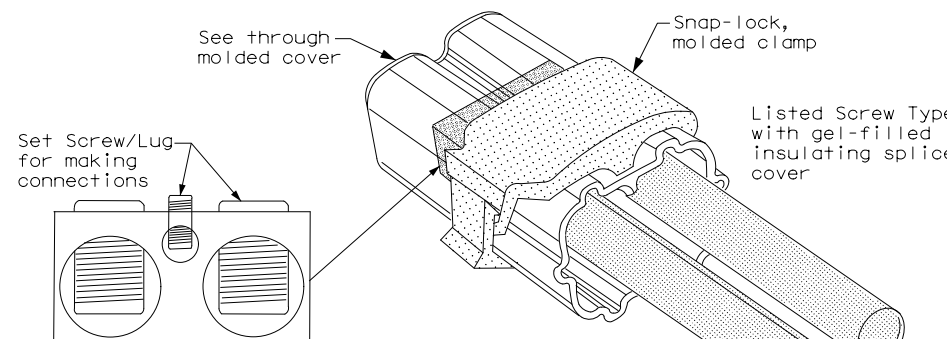
GROUND RODS & GROUNDING ELECTRODES

A. MATERIAL INFORMATION

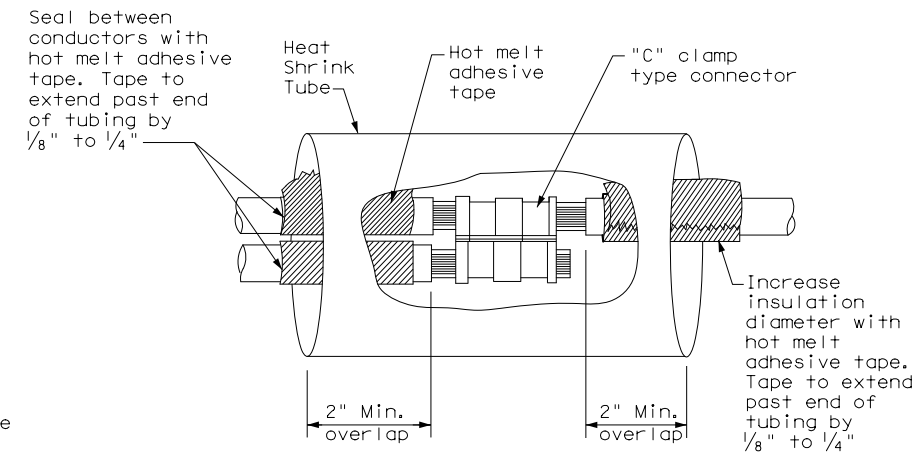
- Provide and install a grounding electrode at electrical services. Provide ground rods according to DMS 11040 and the plans. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets. Concrete encased grounding electrodes may be called for in specific locations including electrical service, see individual plan sheets.

B. CONSTRUCTION METHODS

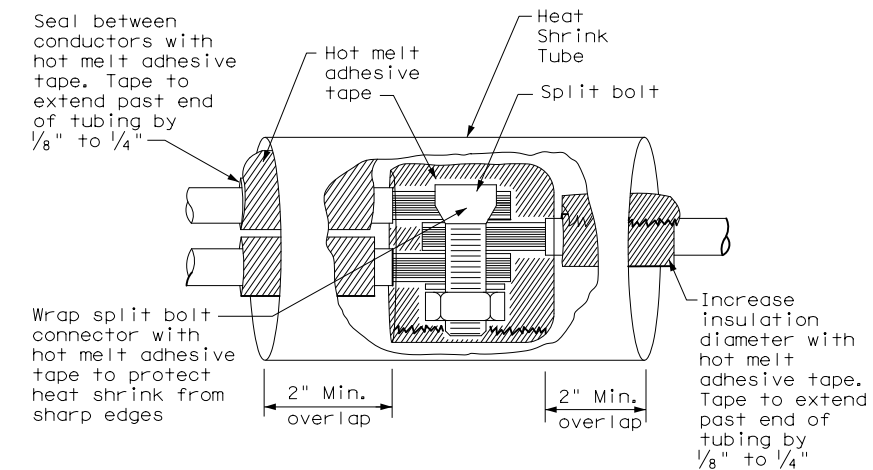
- Furnish auxiliary ground rods for lightning protection and install in soil, concrete, or both, as called for in the plans. For ground rods installed in concrete, ensure the connection of the conductor to the ground rod is readily accessible for inspection or repairs. For ground rods installed in soil, ensure that the upper end is between 2 to 4 in. below finished grade.
- Do not place ground rods in the same drilled hole as a timber pole.
- Install ground rods so the imprinted part number is at the upper end of the rod.
- Remove all non-conductive coatings such as concrete splatter from the rod at the clamp location.
- Route all conductors as short and straight as possible for connection to lightning protection ground rods. When a bend is required, ensure a minimum radius bend of four inches for these conductors.
- Unless otherwise called for in the plans, protect grounding electrode conductors with non-metallic conduit. When protecting grounding electrode conductors with metal conduit, provide and install a grounding type bushing and properly sized bonding jumper on each end of the metal conduit.
- Written authorization is required before installing a ground rod in a horizontal trench for rocky soil or a solid rock bottom.



**SPLICE OPTION 3
Listed Screw Type**



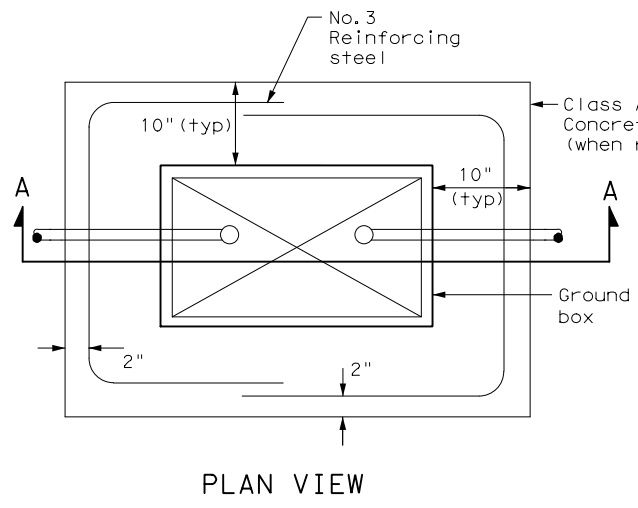
**SPLICE OPTION 1
Compression Type**



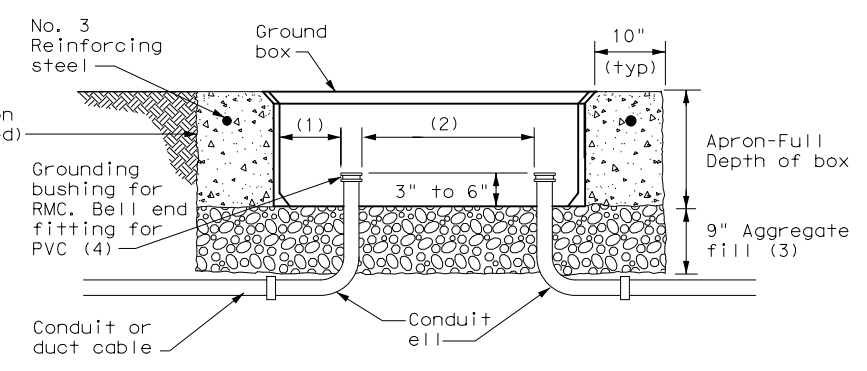
**SPLICE OPTION 2
Split Bolt Type**

		Traffic Operations Division Standard	
<h1>ELECTRICAL DETAILS CONDUCTORS</h1>			
<h2>ED(3)-14</h2>			
FILE: ed3-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
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REVISIONS	0203	05	039
	DIST	COUNTY	SHEET NO.
	TYL	WOOD	379

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PLAN VIEW



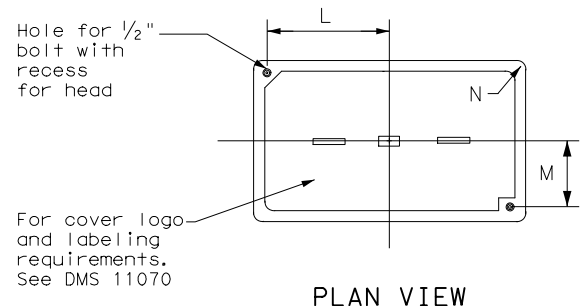
SECTION A - A

APRON FOR GROUND BOX

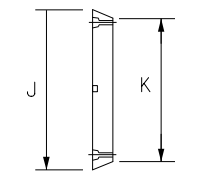
- (1) Uniformly space ends of conduits within the ground box. Position ends of conduits so that ground box walls do not interfere with the installation of grounding bushings or bell end fittings.
- (2) Maintain sufficient space between conduits to allow for proper installation of bushing.
- (3) Place aggregate under the box, not in the box. Aggregate should not encroach on the interior volume of the box.
- (4) Install a grounding bushing on the upper end of all RMC terminating in a ground box. Ground RMC elbows when any part of the elbow is less than 18 in. below the bottom of the ground box. Install a PVC bushing or bell end fitting on the upper end of all PVC conduits terminating in a ground box.

GROUND BOX DIMENSIONS	
TYPE	OUTSIDE DIMENSIONS (INCHES) (Width x Length X Depth)
A	12 X 23 X 11
B	12 X 23 X 22
C	16 X 29 X 11
D	16 X 29 X 22
E	12 X 23 X 17

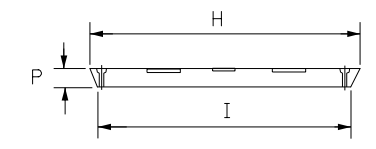
GROUND BOX COVER DIMENSIONS								
TYPE	DIMENSIONS (INCHES)							
	H	I	J	K	L	M	N	P
A, B & E	23 1/4	23	13 3/4	13 1/2	9 7/8	5 1/8	1 3/8	2
C & D	30 1/2	30 1/4	17 1/2	17 1/4	13 1/4	6 3/4	1 3/8	2



PLAN VIEW



END



SIDE

GROUND BOX COVER

GROUND BOXES

A. MATERIALS

1. Provide polymer concrete ground boxes measuring 16x30x24 in. (WxLxD) or smaller in accordance with Departmental Material Specification (DMS) 11070 "Ground Boxes" and Item 624 "Ground Boxes."
2. Provide Type A, B, C, D, and E ground boxes as shown in the plans, and as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 624.
3. Ensure ground box cover is correctly labeled in accordance with DMS 11070.
4. Provide larger ground boxes in accordance with Item 624 and as shown in the plans.

B. CONSTRUCTION METHODS

1. Remove all gravel and dirt from conduit. Cap all conduits prior to placing aggregate and setting ground box. Provide Grade 3 or 4 coarse aggregate as shown on Table 2 of Item 302 "Aggregates for Surface Treatments." Ensure aggregate bed is in place and at least 9 inches deep, prior to setting the ground box. Install ground box on top of aggregate.
2. Cast ground box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Ground box aprons, including concrete and reinforcing steel, are subsidiary to ground boxes when called for by descriptive code.
3. Keep bolt holes in the box clear of dirt. Bolt covers down when not working in ground boxes.
4. Install all conduits and ells in a neat and workmanlike manner. Uniformly space conduits so grounding bushings and bell end fittings can easily be installed.
5. Temporarily seal all conduits in the ground box until conductors are installed.
6. Permanently seal conduits immediately after the completion of conductor installation and pull tests. Permanently seal the ends of all conduits with duct seal, expandable foam, or other method as approved. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a sealant.
7. When a ground rod is present in a ground box, bond all equipment grounding conductors together and to the ground rod with listed connectors.
8. When a type B or D ground box is stacked to meet volume requirements, it is allowable to cut an appropriately sized hole for conduit entry in the side wall at least 18 inches below grade.
9. If an existing ground box in the contract has a metal cover, bond the cover to the equipment grounding conductor with a 3 ft. long stranded bonding jumper the same size as the grounding conductor. The bonding jumper is subsidiary to various bid items. Verify existing ground boxes with metal covers are shown on the plans, with notes fully describing the work required.
10. If other ground boxes with metal covers are within the project limits but are not part of the contract, the Engineer may direct the Contractor to bond the metal covers, identifying the specific boxes in writing. This work will be paid for separately.
11. Bond metal ground box covers to the grounding conductor with a tank ground type lug.

				Traffic Operations Division Standard	
<h2>ELECTRICAL DETAILS</h2> <h3>GROUND BOXES</h3> <h4>ED(4)-14</h4>					
FILE:	ed4-14.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2014	CONT	SECT	JOB	HIGHWAY
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		DIST	COUNTY	SHEET NO.	
		TYL	WOOD	380	

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ELECTRICAL SERVICES NOTES

- Provide new materials. Ensure installation and materials comply with the applicable provisions of the National Electrical Code (NEC) and National Electrical Manufacturers Association (NEMA) standards. Ensure material is Underwriters Laboratories (UL) listed. Provide and install electrical service conduits, conductors, disconnects, contactors, circuit breaker panels, and branch circuit breakers as shown on the Electrical Service Data chart in the plans. Faulty fabrication or poor workmanship in material, equipment, or installation is justification for rejection. Where manufacturers provide warranties and guarantees as a customary trade practice, furnish these to the State.
- Provide electrical services in accordance with Electrical Details standard sheets, Departmental Material Specification (DMS) 11080 "Electrical Services," DMS 11081 "Electrical Services-Type A," DMS 11082 "Electrical Services-Type C," DMS 11083 "Electrical Services-Type D," DMS 11084 "Electrical Services-Type T," DMS 11085 "Electrical Services-Pedestal (PS)", and Item 628 "Electrical Services" of the Standard Specifications. Provide electrical service types A, C, and D, as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 628. Provide other service types as detailed on the plans.
- Provide all work, materials, services, and any incidentals needed to install a complete electrical service as specified in the plans.
- Coordinate with the Engineer and the utility provider for metering and compliance with utility requirements. Primary line extensions, connection charges, meter charges, and other charges by the utility company to provide power to the location are paid for in accordance with Item 628. Get approval for the costs associated with these charges prior to engaging the utility company to do the work. Consult with the utility provider to determine costs and requirements, and coordinate the work as approved.
- The enclosure manufacturer will provide Master Lock Type 2 with brass tumblers keyed #2195 for all custom electrical enclosures. Installing Contractor is to provide Master Lock #2195 Type 2 with brass tumblers for "off the shelf" enclosures. Master Lock #2195 keys and locks become property of the State. Unless otherwise approved, do not energize electrical service equipment until locks are installed.
- Enclosures with external disconnects that de-energize all equipment inside the enclosure do not need a dead front trim. Protect incoming line terminations from incidental contact as required by the NEC.
- When galvanized is specified for nuts, screws, bolts or miscellaneous hardware, stainless steel may be used.
- Provide wiring and electrical components rated for 75°C. Provide red, black, and white colored XHHW service entrance conductors of minimum size 6 American Wire Gauge (AWG). Identify size 6 AWG conductors by continuous color jacket. Identify electrical conductors sized 4 AWG and larger by continuous color jacket or by colored tape. Mark at least 6 inches of the conductor's insulation with half laps of colored tape, when identifying conductors. Ensure each service entrance conductor exits through a separately bushed non-metallic opening in the weatherhead. The lengths of the conductors outside the weatherhead are to be 12 inches minimum, 18 inches maximum, or as required by utility.
- All electrical service conduit and conductors attached to the electrical service including the riser or the elbow below ground are subsidiary to the electrical service. For an underground utility feed, all service conduit and conductors after the elbow, including service conduit and conductors for the utility pole riser when furnished by the Contractor, will be paid for separately.
- Provide rigid metal conduit (RMC) for all conduits on service, except for the 1/2 in. PVC conduit containing the electrical service grounding electrode conductor. Size the service entrance conduit as shown in the plans. Ensure conduit for branch circuit entry to enclosure is the same size as that shown on the layout sheets for branch circuit conduit. Extend all rigid metal conduits a minimum of 6 inches underground and then couple to the type and schedule of the conduit shown on the layout for that particular branch circuit. Install a grounding bushing on the RMC where it terminates in the service enclosure.
- Use of liquidtight flexible metal conduit (LFMC) is allowed between the meter and service enclosure when they are mounted 90 to 180 degrees to each other. Size the LFMC the same size as service entrance conduit. LFMC must not exceed 3 feet in length. Strap LFMC within 1 foot of each end. LFMC less than 12 inches in length need not be strapped. Each end of LFMC must have a grounding bushing or be terminated with a grounding fitting. The LFMC must contain a grounded (neutral) conductor. Ensure any bend in LFMC never exceeds 180 degrees. A pull test is required on all installed conductors, with at least six inches of free conductor movement demonstrated to the satisfaction of the Engineer.
- Ensure all mounting hardware and installation details of services conform to utility company specifications.
- For all electrical service enclosures listed under Item 628 on the MPL, the UL 508 enclosure manufacturers will prepare and submit a schematic drawing unique to each service. Before shipment to the job site, place the applicable laminated schematic drawings and the laminated plan sheet showing the electrical service data chart used to build the enclosure in the enclosure's data pocket. The installing contractor will copy and laminate the actual project plan sheets detailing all equipment and branch circuits supplied by that service. The laminated plan sheets are to be placed in the service enclosure's document pocket. Reduce 11 in. x 17 in. plan sheets to 8 1/2 in. x 11 in. before laminating. If the installation differs from the plan sheets, the installing contractor is to redline plan sheets before laminating.
- When providing an "Off The Shelf" Type D or Type T service, provide laminated plan sheets detailing equipment and branch circuits supplied by that service. Reduce 11 in. x 17 in. plan sheets to 8 1/2 in. x 11 in. before laminating. Deliver these drawings before completion of the work to the Engineer, instead of placing in enclosure that has no door pocket.
- Do not install conduit in the back wall of a service enclosure where it would penetrate the equipment mounting panel inside the enclosure. Provide grounding bushings on all metal conduits, and terminate bonding jumpers to grounding bus. Grounding bushings are not required when the end of the metal conduit is fitted with a conduit sealing hub or threaded boss, such as a meter base hub.

SERVICE ASSEMBLY ENCLOSURE

- Provide threaded hub for all conduit entries into the top of enclosure.
- Type galvanized steel (GS) enclosures may be used for Type C panelboards and for Type D and T services that do not use an enclosure mounted photoce ll or lighting contactor. Provide GS enclosures in accordance with DMS 11080, 11082, 11083, and 11084.
- Provide aluminum (AL) and stainless steel (SS) enclosures for Types A, C, and D in accordance with DMS 11080, 11081, 11082, 11083, and 11084. Do not paint stainless steel.
- Provide pedestal service (PS) enclosures in accordance with ED(9) and DMS 11080 and 11085. Do not provide GS pedestal services. If GS is shown in the PS descriptive code, provide an AL enclosure.

MAIN DISCONNECT & BRANCH CIRCUIT BREAKERS

- Field drill flange-mounted remote operator handle if needed, to ensure handle is lockable in both the "On" and "Off" positions.
- When the utility company provides a transformer larger than 50 KVA, verify that the available fault current is less than the circuit breaker's ampere interrupting capacity (AIC) rating and provide documentation from the electric utility provider to the Engineer.

PHOTOELECTRIC CONTROL

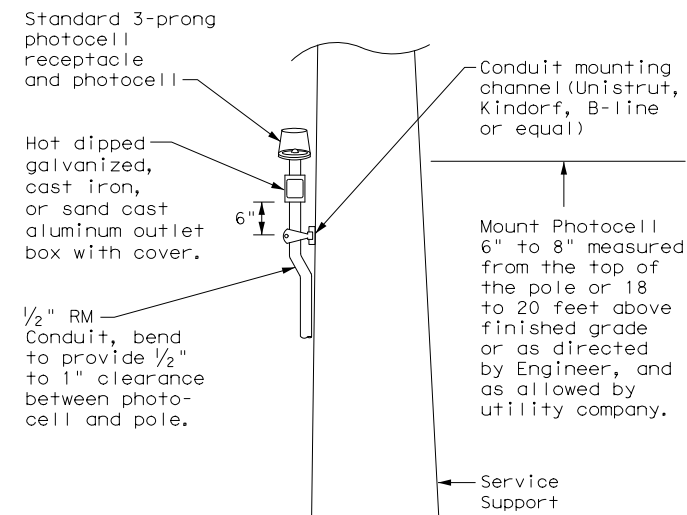
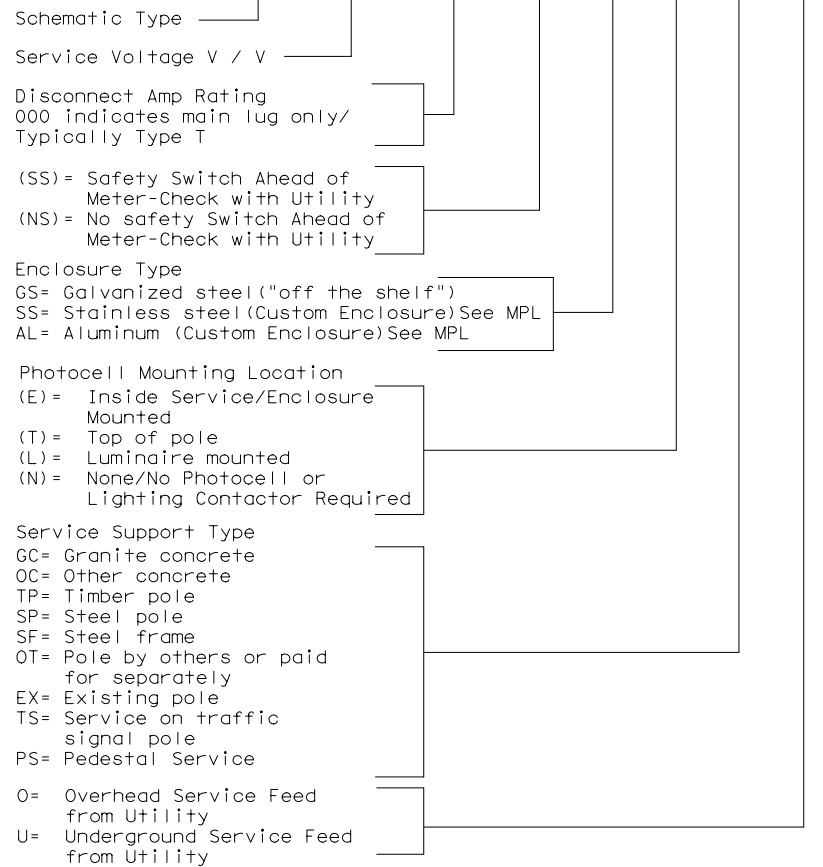
- Provide photocell as listed on the MPL. Move, adjust, or shield the photocell from stray or ambient night time light to ensure proper operation. Mount photocell facing north when practical. Mount top of pole photocells as shown on Top Mounted Photocell Detail.

* ELECTRICAL SERVICE DATA													
Elec. Service ID	Plan Sheet Number	Electrical Service Description	Service Conduit *xS Size	Service Conductors No./Size	Safety Switch Amps	Main Ckt. Bkr. Pole/Amps	Two-Pole Contractor Amps	Panelbd/ Loadcenter Amp Rating	Branch Circuit ID	Branch Ckt. Bkr. Pole/Amps	Branch Circuit Amps	KVA Load	
SB 183	289	ELC SRV TY A 240/480 100(SS)AL(E)SF(U)	2"	3/#2	100	2P/100	100	N/A	Lighting NB	2P/40	26	28.1	
									Lighting SB	2P/40	25		
									Underpass	1P/20	15		
NB Access	30	ELC SRV TY D 120/240 060(NS)SS(E)TS(O)	1 1/4"	3/#6	N/A	2P/60		100	Sig. Controller	1P/30	23	5.3	
							30		Luminares	2P/20	9		
									CCTV	1P/20	3		
2nd & Main	58	ELC SRV TY T 120/240 000(NS)GS(N)SP(O)	1 1/4"	3/#6	N/A	N/A	N/A	70	Flashing Beacon 1	1P/20	4	1.0	
									Flashing Beacon 2	1P/20	4		

* Example only, not for construction. All new electrical services must have electrical service data chart specific to that service as shown in the plans.
 ** Verify service conduit size with utility. Size may change due to utility meter requirements. Ensure conduit size meets the National Electrical Code.

EXPLANATION OF ELECTRICAL SERVICE DESCRIPTIVE CODE

ELEC SERV TY X XXX/XXX XXX (XX) XX (X) XX (X)

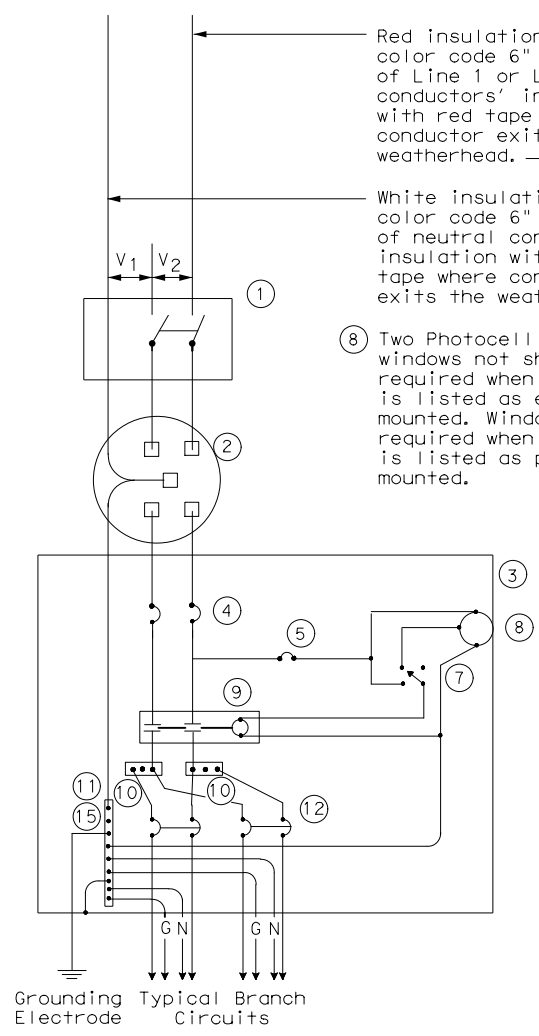


TOP MOUNTED PHOTOCELL

Install conduit strap maximum 3 feet from box. 5 foot maximum spacing between straps supporting conduit.

				Traffic Operations Division Standard	
<h2>ELECTRICAL DETAILS SERVICE NOTES & DATA</h2>					
<h3>ED(5) - 14</h3>					
FILE:	ed5-14.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2014	CONT:	SECT:	JOB:	HIGHWAY:
REVISIONS		0203	05	039	US 69
	DIST:	COUNTY:		SHEET NO.	
	TYL	WOOD		381	

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**SCHEMATIC TYPE A
THREE WIRE**

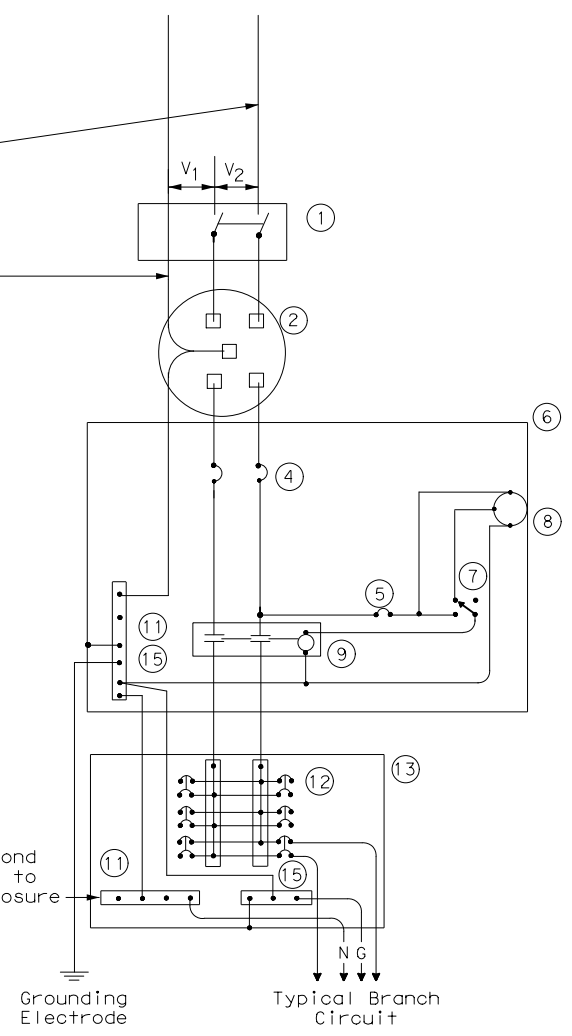
Red insulation or color code 6" length of Line 1 or Line 2 conductors' insulation with red tape where conductor exits the weatherhead.

White insulation or color code 6" length of neutral conductors' insulation with white tape where conductor exits the weatherhead.

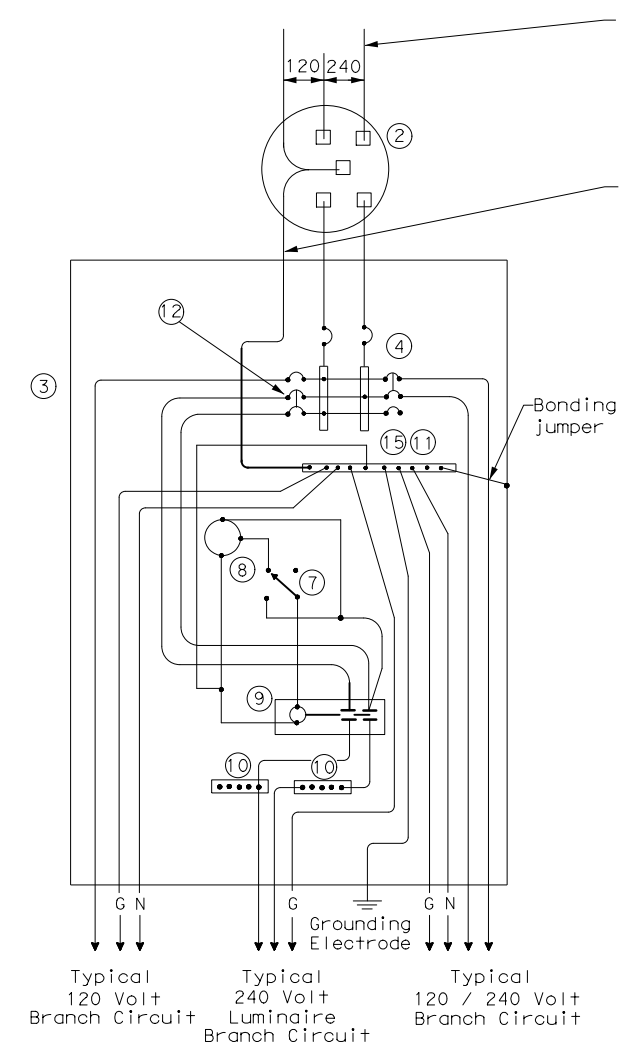
⑧ Two Photocell viewing windows not shown but required when photocell is listed as enclosure mounted. Windows not required when photocell is listed as pole top mounted.

Do not bond this bus to the enclosure

WIRING LEGEND	
—	Power Wiring
—	Control Wiring
—N—	Neutral Conductor
—G—	Equipment grounding conductor-always required



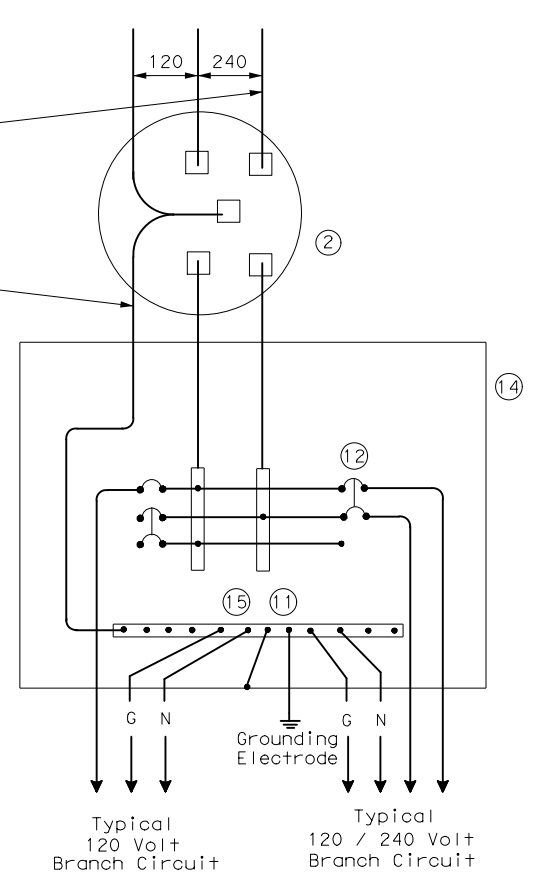
**SCHEMATIC TYPE C
THREE WIRE**



**SCHEMATIC TYPE D - CUSTOM
120/240 VOLTS - THREE WIRE**

Red insulation or color code 6" length of Line 1 or Line 2 conductors' insulation with red tape where conductor exits the weatherhead.

White insulation or color code 6" length of neutral conductors' insulation with white tape where conductor exits the weatherhead.



**SCHEMATIC TYPE T
120/240 VOLTS - THREE WIRE**
Galvanized steel - "Buy Off The Shelf" only. When required install photocell top of the pole or on luminaire only, no lighting contractor will be installed.

SCHEMATIC LEGEND	
1	Safety Switch (when required)
2	Meter (when required-verify with electric utility provider)
3	Service Assembly Enclosure
4	Main Disconnect Breaker (See Electrical Service Data)
5	Circuit Breaker, 15 Amp (Control Circuit)
6	Auxiliary Enclosure
7	Control Station ("H-O-A" Switch)
8	Photo Electric Control (enclosure-mounted shown)
9	Lighting Contactor
10	Power Distribution Terminal Blocks
11	Neutral Bus
12	Branch Circuit Breaker (See Electrical Service Data)
13	Separate Circuit Breaker Panelboard
14	Load Center
15	Ground Bus

				Traffic Operations Division Standard	
ELECTRICAL DETAILS SERVICE ENCLOSURE AND NOTES					
ED(6) - 14					
FILE:	ed6-14.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS		0203	05	039	US 69
	DIST	COUNTY	SHEET NO.		
	TYL	WOOD	382		

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DATE: 12/11/2023 4:03:31 PM
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SUPPORT TYPE STEEL POLE (SP) AND STEEL FRAME (SF)

1. Provide steel pole and steel frame supports as per TxDOT Departmental Material Specification (DMS)11080 "Electrical Services." Mount all equipment and conduit on 12 gauge galvanized steel or stainless steel channel strut, 1 1/2 in. or 1 3/8 in. wide by 1 in. up to 3 3/4 in. deep Unistrut, Kindorf, B-line or equal. Bolt or weld all channel and hardware to vertical members as approved. Do not stack channel. File smooth and paint field cut ends of all channel with zinc-rich paint before installing.
2. Provide poles for overhead service with an eyebolt or similar fitting for attachment of the service drop to the pole in conformance with the electric utility provider's specifications.
3. Provide and install galvanized 3/4 in. x 18 in. x 4 in. (dia. x length x hook length) anchor bolts for underground service supports. Provide and install galvanized 3/4 in. x 56 in. x 4 in. anchor bolts for overhead service supports. Ensure anchor bolts have 3 in of thread, with 3 1/4 in. to 3 1/2 in. of the exposed anchor bolt projecting above finished foundation. Provide and install leveling nuts for all anchor bolts.
4. Bond one of the anchor bolts to the rebar cage with 6 AWG bare stranded copper conductor. Use listed mechanical connectors rated for embedment in concrete. See Inset B.
5. Furnish and install rigid metallic ells in all steel pole and steel frame foundations for all conduits entering the service from underground.
6. Use class C concrete for foundations. Ensure reinforcing steel is Grade 60 with 3" of unobstructed concrete cover.
7. Drill and tap steel poles and frames for 1/2 in. X 13 UNC tank ground fitting. For steel pole service supports, provide and install tank ground fitting 4 in. to 6 in. below electrical service enclosure. Provide properly sized hole through the bottom of the enclosure for the service grounding electrode conductor. Ensure electrical service grounding electrode conductor is as short and straight as possible from the enclosure to the tank ground fitting. For steel frame service supports, provide and install tank ground fitting on steel frame post. Install service grounding electrode conductor in a non-metallic conduit or tubing from the enclosure to the steel frame post. Connect electrical service grounding electrode conductor to the tank ground fitting. See steel frame and steel pole details and Inset A for more information. Size service entrance conduit and branch circuit conduit as shown in the plans. For underground conduit runs from the electrical service, extend RMC from the service enclosure to an RMC elbow, and then connect the schedule type and size of conduit shown in the plans. Provide and install grounding bushings where RMC terminates in the enclosure. Grounding bushings are not required when RMC is fitted into a sealing hub or threaded boss.
8. If Steel pole or frame is painted, bond each separate painted piece with a bonding jumper attached to a tapped hole.
9. Provide 1/4" - 20 machine screws for bonding. Do not use sheet metal screws. Remove all non-conductive material at contact points. Terminate bonding jumpers with listed devices. Install minimum size 6 AWG stranded copper bonding jumpers. Make up all threaded bonding connections wrench tight.
10. Avoid contact of the service drop and service entrance conductors with the metal pole to prevent abrasion of the insulated conductors.
11. Shop drawings are not required for service support structure unless specifically stated elsewhere or directed by the Engineer.

White insulation or color code 6" of neutral conductor's insulation with white tape where conductor exits weatherhead.

Red insulation or color code 6" length of Line 1 or Line 2 conductor's insulation with red tape where conductor exits the weatherhead. Conductor slack length, 12" min., 18" max.

2" to 6" 4" (typ.)

RMC

Service Enclosure

Inset A

Channel bracket or other arrangement approved by the Engineer. (Kindorf, Unistrut, B-line or equal.)

Inset A

Inset B

60" TYP.

2"

18" Min.

Class "C" concrete

RMC

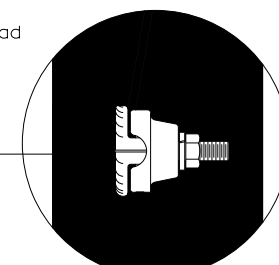
PVC

24 Dia. x 60" depth foundation 4-#5 reinforcing bars and #2 spiral (typ.) at 6" pitch

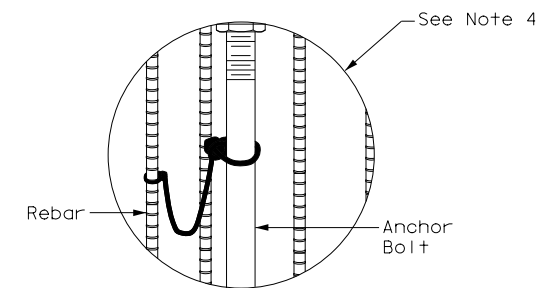
WITH SAFETY SWITCH

SERVICE SUPPORT TYPE SP (O) - OVERHEAD SERVICE

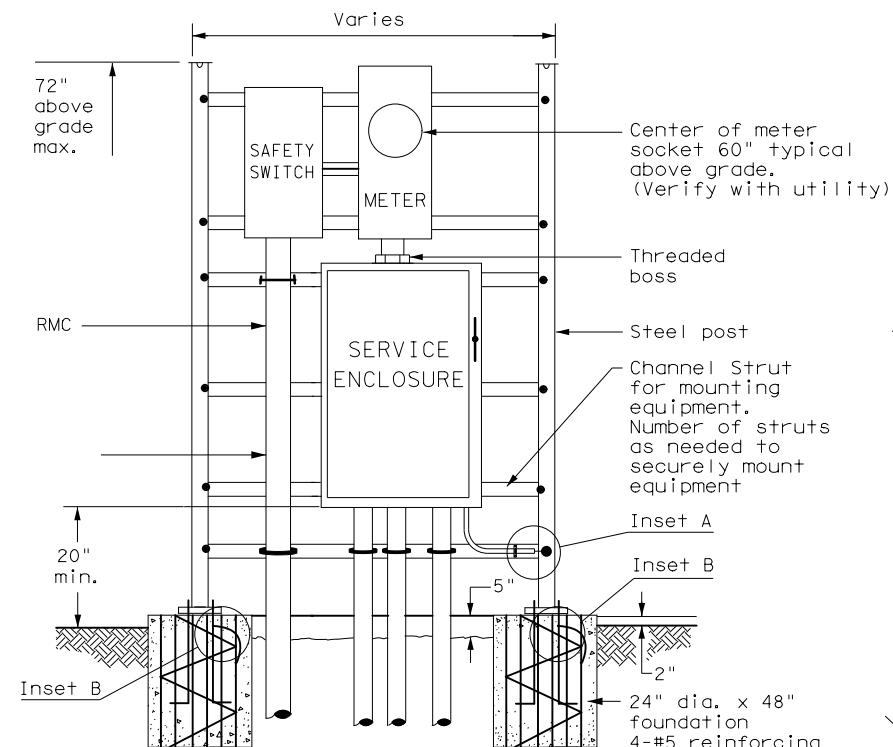
Drill, tap, and thread 1/2" X 13 UNC. Install tank ground fitting, connect electrical service grounding electrode conductor. See Note 7.



FRONT VIEW
INSET A

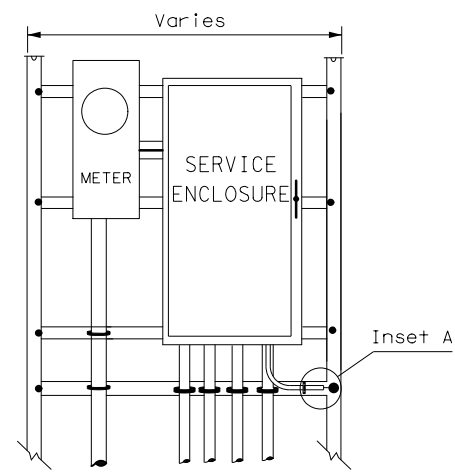


INSET B



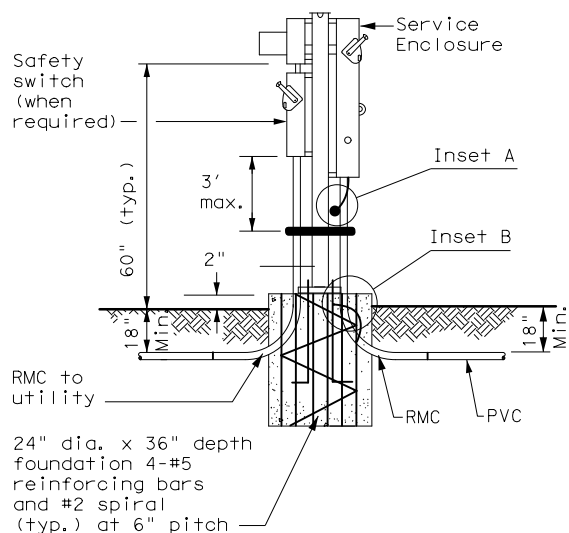
WITH SAFETY SWITCH
FRONT VIEW

SERVICE SUPPORT TYPE SF (U) - UNDERGROUND SERVICE



WITHOUT SAFETY SWITCH

SERVICE SUPPORT TYPE SP (U) - UNDERGROUND SERVICE

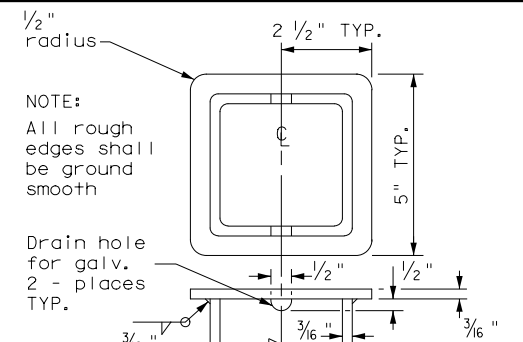
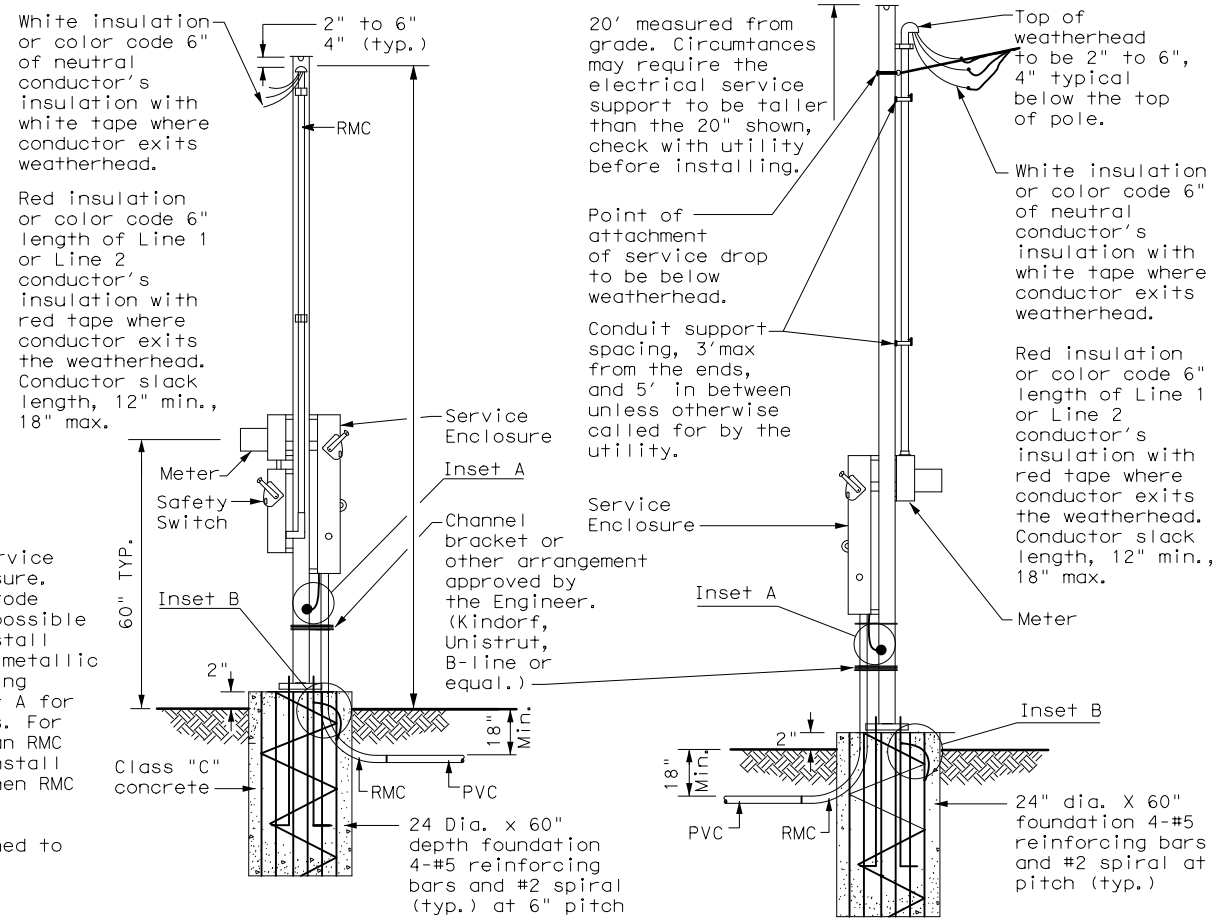


WITH SAFETY SWITCH

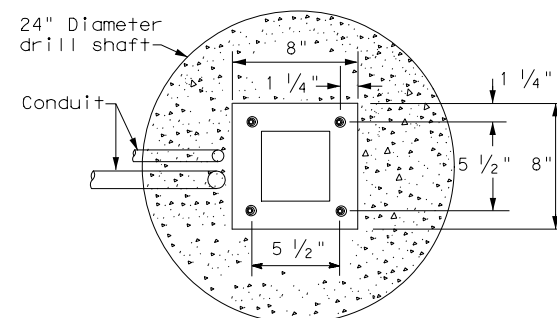
HOOKED ANCHOR DETAIL

WITHOUT SAFETY SWITCH

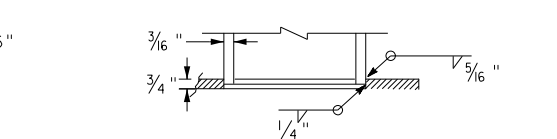
SERVICE SUPPORT TYPE SP (O) - OVERHEAD SERVICE



POLE TOP PLATE

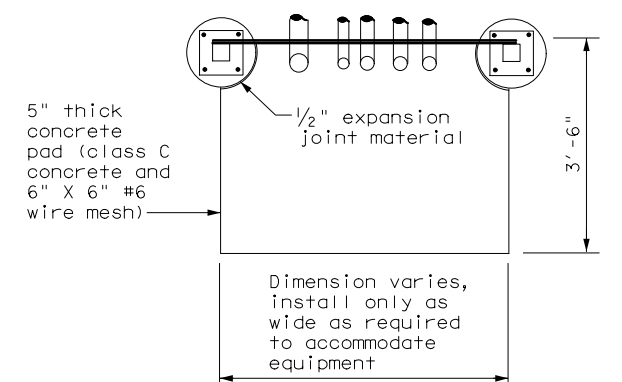


BASE PLATE DETAIL



BOTTOM OF POLE

SERVICE SUPPORT TYPE SF & SP



TOP VIEW

SERVICE SUPPORT TY SF (O) & SF (U)

		Texas Department of Transportation		Traffic Operations Division Standard	
ELECTRICAL DETAILS SERVICE SUPPORT TYPES SF & SP ED(7)-14					
FILE:	ed7-14.dgn	DN:	TxDOT	CK:	TxDOT
©TxDOT	October 2014	CONT	0203	SECT	05
REVISIONS		JOB	039	DW:	TxDOT
		COUNTY	WOOD	CK:	TxDOT
		DIST	TYL	US	69
				SHEET NO.	383

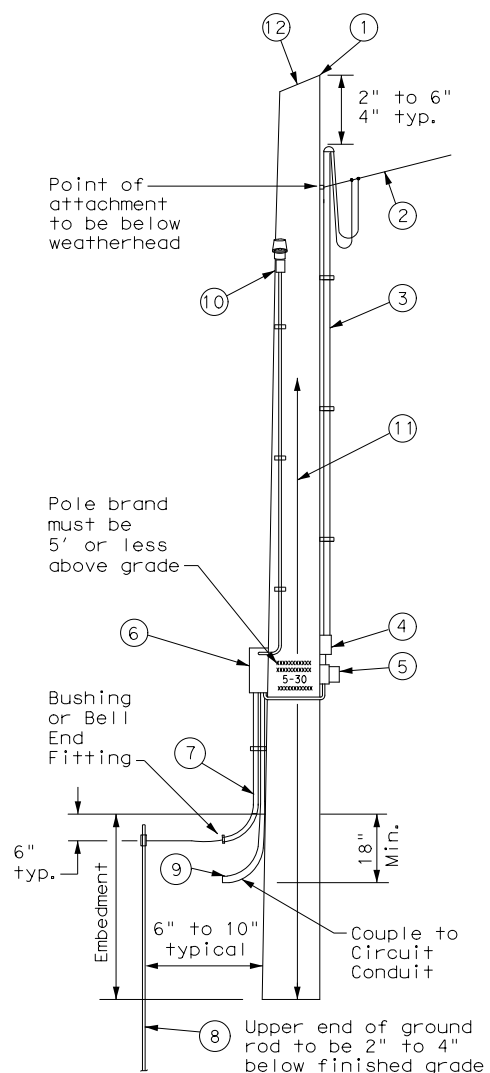
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DATE: 12/11/2023 4:03:46 PM
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TIMBER POLE (TP) SERVICE SUPPORT NOTES

1. Ensure electrical service support is a class 5 treated timber pole as per Item 627 "Treated Timber Poles." Embed timber pole to depth required in Item 627.
2. Conduit and electrical conductors attached to the electrical service pole and underground within 12 in. of service pole are not paid for directly but are subsidiary to the electrical service.
3. Install pole-top mounted photocell (T) on north side of pole, or in service enclosure (E) as required. See Electrical Service Data chart in plan set.
4. Gain pole as required to provide flat surface for each channel. Gain timber pole to $\frac{3}{8}$ in. max. depth and $1\frac{1}{8}$ in. max. height. Gain pole in a neat and workmanlike manner.
5. Mount meter and service equipment on stainless steel or galvanized channel (Unistrut, Kindorf, or equal). Provide channel sized 1 in. to $3\frac{3}{4}$ in. maximum depth, and $1\frac{1}{2}$ in. to $1\frac{5}{8}$ in. maximum width. File smooth the cut ends of galvanized channel and paint with zinc rich paint before installing on pole. Secure each channel section to timber pole with two galvanized or SS lag bolts, $\frac{1}{4}$ in. minimum diameter by $1\frac{1}{2}$ in. minimum length. Use a galvanized or SS flat washer on each lag bolt. Do not stack channel.
6. When excess length must be trimmed from poles, trim from the top end only.

- ① Class 5 pole, height as required
- ② Service drop from utility company (attached below weatherhead)
- ③ Service conduit (RMC) and service entrance conductors - One Red, One Black, One White (See Electrical Service Data)
- ④ Safety switch (when required)
- ⑤ Meter (when required)
- ⑥ Service enclosure
- ⑦ 6 AWG bare grounding electrode conductor in $\frac{1}{2}$ in. PVC to ground rod - extend $\frac{1}{2}$ in. PVC 6 in. underground.
- ⑧ $\frac{5}{8}$ in. x 8 ft. Copper clad ground rod - drive ground rod to a depth of 2 in. to 4 in. below grade.
- ⑨ RMC same size as branch circuit conduit.
- ⑩ See pole-top mounted photocell detail on ED(5).
- ⑪ When required by the serving utility provide bare 6 AWG copper conductor. Run wire from pole top to butt wrap or copper butt plate. Protect conductor with non-conductive material to a height of 8 ft. above finished grade.
- ⑫ When required by utility, cut top of pole at an angle to enhance rain run off.



SERVICE SUPPORT TYPE TP (O)

GRANITE CONCRETE (GC) & OTHER CONCRETE (OC) NOTES

Ensure electrical service support structures bid as type Granite Concrete (GC) or Other Concrete (OC) meet the following requirements.

1. Provide GC and OC poles that meet the requirements of DMS 11080 "Electrical Services."
2. Provide prestressed concrete poles suitable for direct embedment into the ground without special foundations.
3. Verify poles are marked as required on DMS 11080. Location of marking should be approximately 4' above final grade. Use the two-point pickup locations when handling pole in horizontal position, and one-point pickup location for use in raising the pole to a vertical position. These marks are small but conspicuous.
4. Embed poles 42 in. or 10% of the length plus 2 ft., whichever is greater.
5. Ensure all installation details of services are in accordance with utility company specifications.
6. Install a one point rack or eye bolt bracket 6 inches to 12 inches below the weatherhead as an overhead service drop anchoring point for the electric utility.
7. Furnish and install galvanized or stainless steel channel strut $1\frac{1}{2}$ in. or $1\frac{5}{8}$ in. wide by 1 in. up to $3\frac{3}{4}$ in. deep (Unistrut, Kindorf, B-line or equal). Attach channel strut with stainless steel concrete anchors (max. 1" depth), square U-bolts or back to back channel strut with long bolts, or other secure mounting as approved by the Engineer. Ensure bolts are galvanized in accordance with ASTM A153. Do not stack channel struts.
8. Backfill the holes thoroughly by tamping in 6 in. lifts. After tamping to grade, place additional backfill material in a 6 inch high cone around the pole to allow for settling. Use material equal in composition and density to the surrounding area. Backfilling will not be paid for directly but is subsidiary to various bid items.

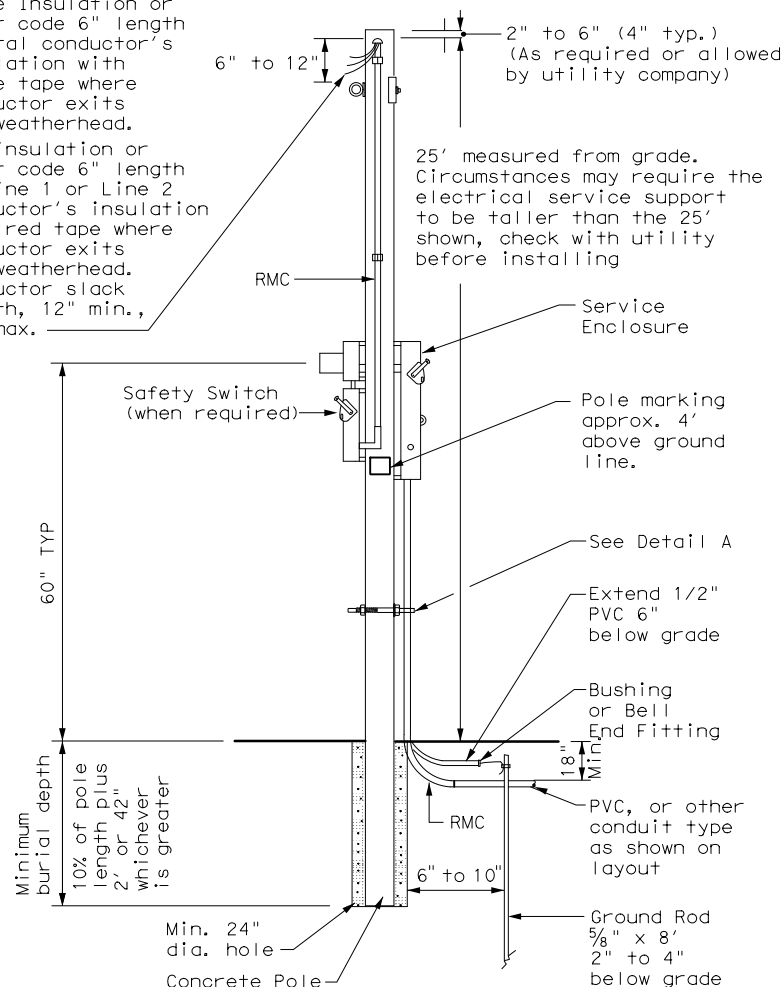
White Insulation or color code 6" length neutral conductor's insulation with white tape where conductor exits the weatherhead.

Red insulation or color code 6" length of Line 1 or Line 2 conductor's insulation with red tape where conductor exits the weatherhead. Conductor slack length, 12" min., 18" max.

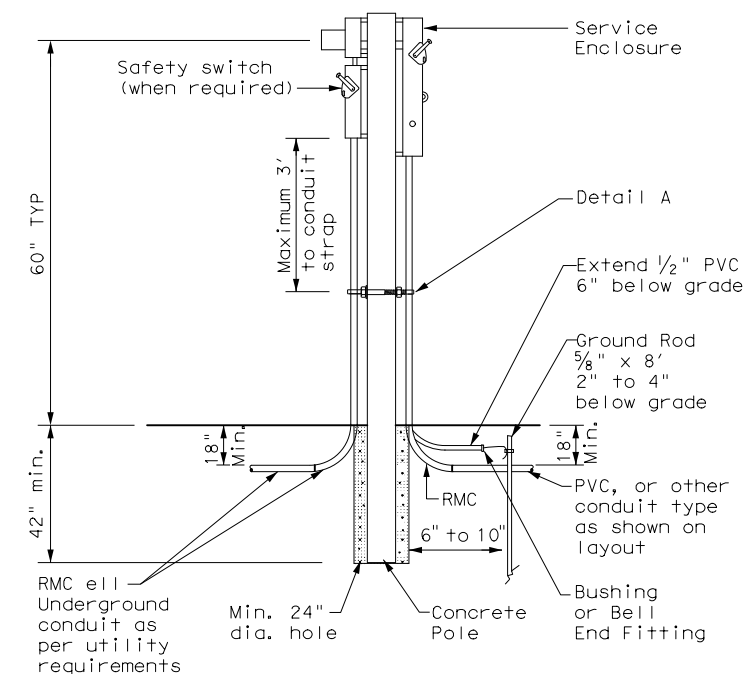
25' measured from grade. Circumstances may require the electrical service support to be taller than the 25' shown, check with utility before installing

6" to 12"

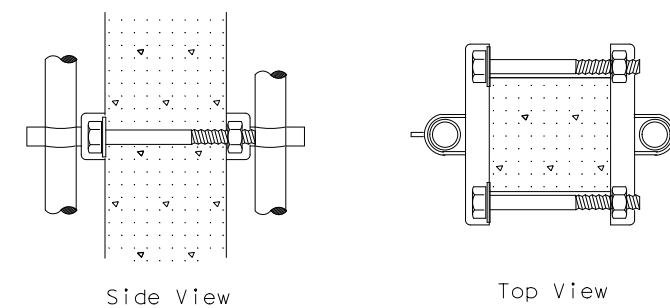
2" to 6" (4" typ.) (As required or allowed by utility company)



CONCRETE SERVICE SUPPORT Overhead (O)



CONCRETE SERVICE SUPPORT Underground (U)



DETAIL A

See Note 7. Before installing channel that has been cut, file sharp edges and paint with zinc-rich paint. Ensure there is no paint splatter on the pole.

ELECTRICAL DETAILS SERVICE SUPPORT TYPES GC, OC, & TP			
ED(10)-14			
FILE: ed10-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT October 2014	CONT	SECT	JOB
REVISIONS	0203	05	039
	DIST	COUNTY	SHEET NO.
	TYL	WOOD	384

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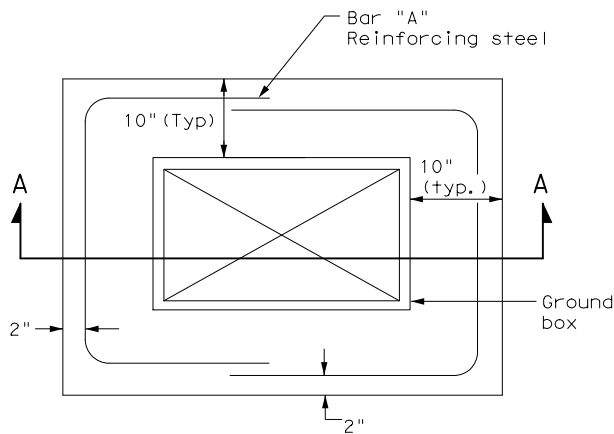
BATTERY BOX GROUND BOXES NOTES

A. MATERIALS

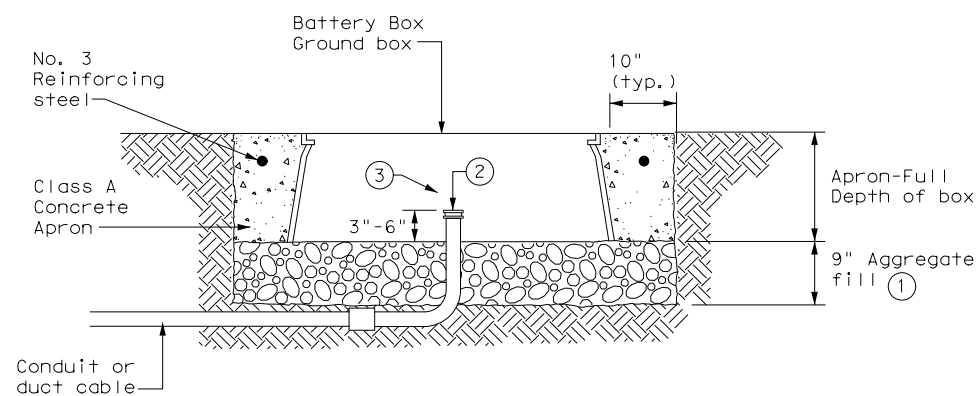
1. Provide polymer concrete or fiberglass reinforced plastic (FRP) battery box ground box and cover in accordance with Departmental Material Specification (DMS) 11071 "Battery Box Ground Boxes." Battery box will accommodate up to 4 batteries, each measuring 8 in. x 13.5 in. x 10 in. (W x L x D). Label battery box ground box cover in accordance with DMS 11071.
2. Supply a marine grade batteries with covers. Secure the marine grade batteries with covers to the stainless steel rack in the bottom of the ground box with tie down straps.

B. CONSTRUCTION METHODS

1. Ensure conduit entry will not interfere with placement of the batteries in the battery box ground box.
2. Remove all gravel and dirt from conduit. Cap all conduits prior to placing aggregate and setting battery box ground box. Provide Grade 3 or 4 coarse aggregate as shown on Table 2 of Item 302 "Aggregates for Surface Treatments." Ensure the aggregate bed is in place and is a minimum of 9 in. deep prior to setting the box. Install battery box ground box on top of aggregate.
3. Cast battery box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Battery box ground box aprons, including concrete and reinforcing steel, are subsidiary to battery box ground boxes when called for by descriptive code.
4. Bolt covers down when not working in battery box ground boxes. Keep bolt holes in the box clear of dirt.



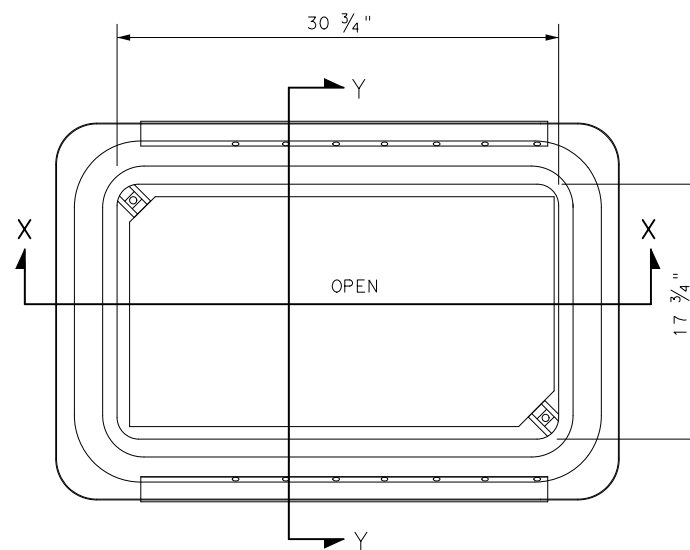
PLAN VIEW



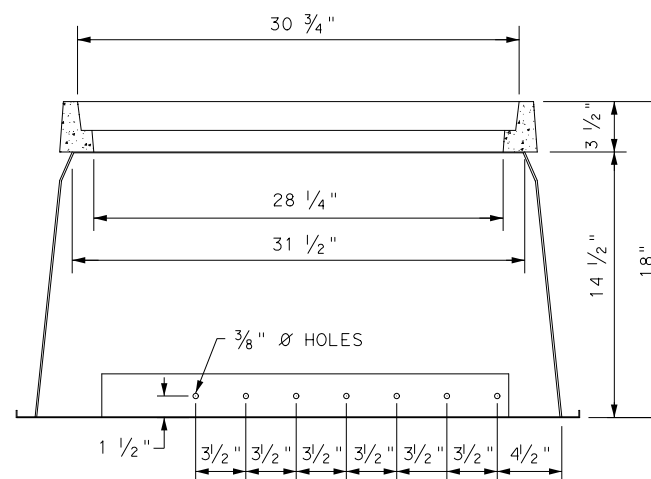
SECTION A - A

APRON FOR BATTERY BOX GROUND BOXES

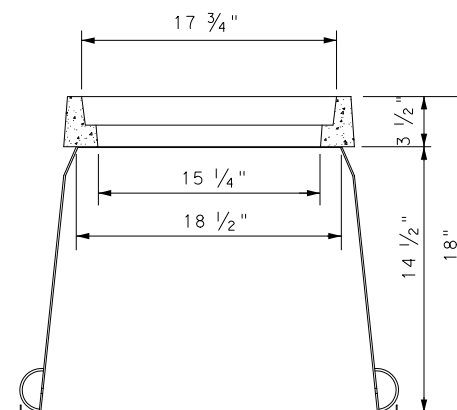
- ① Place aggregate under the box and not in the box. Aggregate should not encroach on the interior volume of the box.
- ② Install bushing or bell end fitting on the upper end of all elis.
- ③ Install all conduits in a neat and workmanlike manner.



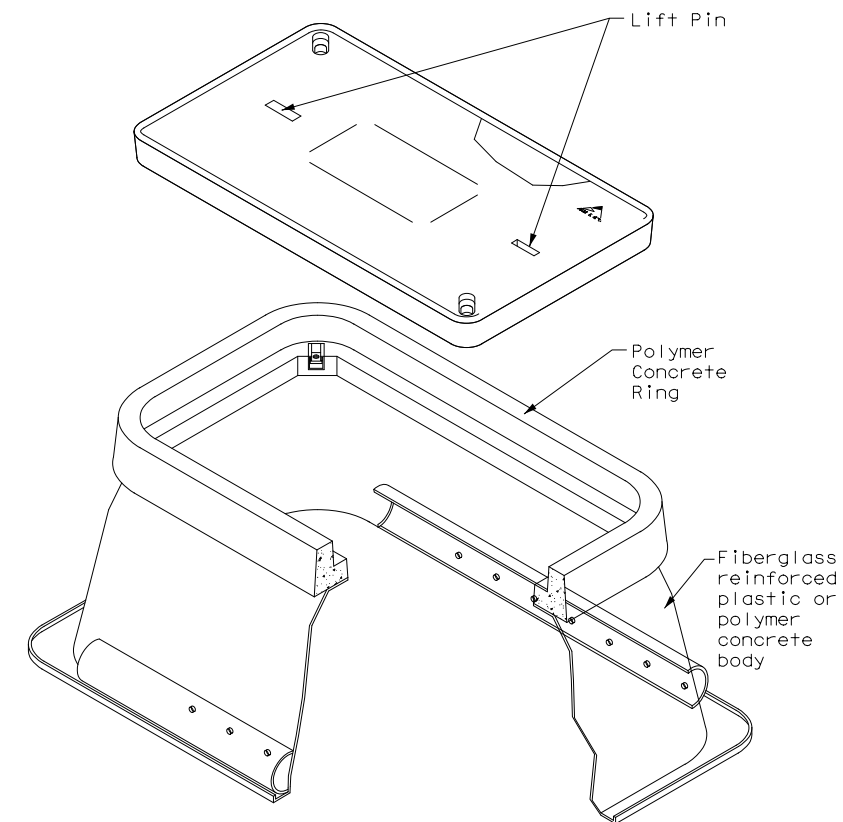
BATTERY BOX TOP VIEW



SECTION X-X



SECTION Y-Y



				Traffic Operations Division Standard	
ELECTRICAL DETAILS BATTERY BOX GROUND BOXES					
ED(12)-14					
FILE: ed12-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
©TxDOT October 2014	CONT	SECT	JOB	HIGHWAY	
REVISIONS		0203	05	039	US 69
	DIST	COUNTY		SHEET NO.	
	TYL	WOOD		385	

ROADWAY ILLUMINATION ASSEMBLY NOTES

1. Details apply to roadway lighting installations bid or referenced under Item 610, "Roadway Illumination Assemblies." Provide, furnish, and install all other materials not shown on the plans which may be necessary for complete and proper construction. Where manufacturers provide warranties or guarantees as a customary trade practice, furnish to the State such warranties or guarantees.
2. The locations of poles and fixtures may be shifted by the Engineer to accommodate local conditions. Install or remove poles and luminaires located near overhead electrical lines using established industry and utility safety practices and in accordance with laws governing such work. Consult with the appropriate utility company prior to beginning such work.
3. Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association, Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection.
4. Provide Roadway Illumination Light Fixtures as per TxDOT Departmental Material Specification (DMS) 11010, Item 610, and as shown on the Material Producers List (MPL) for Roadway Illumination and Electrical Supplies.
5. Fabricate steel roadway illumination poles in accordance with Roadway Illumination Poles (RIP) standards and Item 610. Poles fabricated according to RIP standards do not require shop drawing submittals.
 - a. Alternate designs to RIP standards or the use of aluminum to fabricate poles will require the submission of shop drawings electronically. For instructions on submitting shop drawings electronically see "Guide to Electronic Shop Drawing Submittal" on the TxDOT web site.
 - b. Limitations on use of the RIP standard: The RIP standard details were developed for installations in locations where the 3-second gust basic maximum wind speed is 110 mph, and where the elevation of the base of the pole is less than (i.e. not more than) 25' above the elevation of the surrounding terrain, in accordance with the "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals," 6th Edition (2013) of the AASHTO Design Specifications. For poles to be installed in regions where the maximum basic wind speed exceeds 110 mph or to be mounted more than 25' above the surrounding terrain, provide poles meeting the following requirements:
 - i. Submittals. Following the electronic shop drawing submittal process (see Guide to Electronic Shop Drawing Submittal on the TxDOT web site), submit to the Engineer for approval fabrication drawings and calculations for the poles, sealed by a Texas licensed professional engineer (P.E.).
 - ii. Luminaire Structural Support Requirements. Provide light poles, arms, and anchor bolt assemblies with a 25 year design life to safely resist dead loads, ice loads and the required basic wind speeds at the location of installation in accordance with the 6th edition (2013) of the AASHTO Design Specifications. For transformer base poles, include transformer base and connecting hardware in calculations and shop drawing submittals. Structurally test all transformer bases to resist the theoretical plastic moment capacity of the pole. Submit certification of the plastic moment load test and FHWA breakaway requirement test of the model of base being furnished with the shop drawings. Show breakaway base model number, manufacturer's name, and logo on shop drawings. Include on manufacturer's shop drawings the ASTM designations for all materials to be used.
6. For both transformer and shoe-base type illumination poles, provide and install double-pole breakaway fuse holders as specified by DMS-11040. Breakaway fuse holders are listed on the MPL for Roadway Illumination and Electrical Supplies under Items 610 & 620. Provide 10 amp time delay fuses for breakaway connectors in light poles, or inside the light fixture for underpass luminaires. In each pole, connect luminaires to the breakaway connector with continuous stranded 12 AWG copper conductors as listed on the MPL. Bond all equipment grounding conductors together and to the ground lug in the transformer base or hand hole.
7. Tighten anchor bolts for shoe base, concrete traffic barrier base, and bridge mount roadway illumination poles, in accordance with Item 449.
8. Install T-Base with following procedure:
 - a. Anchor Bolt Tightening.
 - i. Coat the threads of the anchor bolts with electrically conductive lubricant.
 - ii. Place the T-base over the anchor bolts. Foundation must be level and flat. The maximum permissible gap under any one corner of the t-base is 1/8" before nuts are tightened.
 - iii. Coat the bearing surfaces of the nuts and washers with electrically conductive lubricant. Install (1) 1/2" hold down washer, (1) lock washer, and (1) nut on each anchor bolt. Turn the nuts onto the bolts so that each is hand-tight against the washer.
 - iv. Using a torque wrench, tighten each nut to 150 ft-lb. Uniform contact is required between the foundation and the T-base in the corner regions of the T-base, and all corner gaps must be closed after applying torque. If a gap still exists after torquing to 150 ft-lbs, continue torquing each bolt incrementally until gap is closed or maximum allowable torque of 250 ft. pound is reached, whichever comes first. If 250 ft-lbs is not enough to close the gap the foundation must be leveled. Gaps along the straight sides of the T-bases and the foundation are permissible. Ensure that no high point of contact occurs between the straight sides of the T-base and the foundation.
 - v. Check top of T-base for level. If not level then foundation must be leveled.
 - b. Top Bolt Procedure
 - i. Erect pole over T-base with crane. Coat bolts, nuts, washers, and lock washers with electrically conductive lubricant.

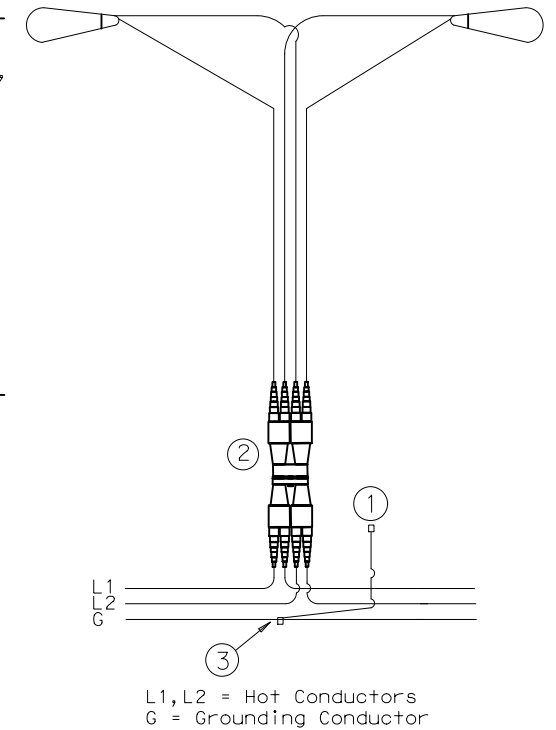
- ii. Install bolts and 1/2" connecting washers from the inside of the T-base, thread up through the pole base. Install flat washers, lock washers and nuts snug tight according to Item 447, "Structural Bolting."
 - iii. Tighten each nut to 150 ft-lb. using a torque wrench.
- c. Level and Plumb
- i. Ensure pole is plumb and mast arm is perpendicular to the roadway according to plans to within 5 degrees.
9. Construct luminaire pole foundations in accordance with Item 416, "Drilled Shaft Foundations," and TxDOT standard sheet RID(2).
 10. Provide and install underpass luminaires in accordance with Item 610, DMS-11010, and TxDOT standard sheet RID(3). Typical luminaire size for underpass luminaires is 150W HPS or 150W EQ LED.
 11. Mount luminaires on arms level as shown by the luminaire level indicator.
 12. Orient luminaires perpendicular to the roadway intended to be lit unless otherwise shown on the plans.

Wiring Diagram Notes:

- ① Use 1/2 in.-13 UNC threaded, copper or tin-plated copper, pole bonding connector, sized appropriately for conductors, bonded to T-base, or use ground lug in handhole as available.
- ② Use pre-qualified two-pole breakaway connectors for all luminaire pole installations. For luminaires fed by a circuit with a neutral conductor, use double pole breakaway connectors with the neutral side unfused and marked white.
- ③ Split Bolt or other connector.

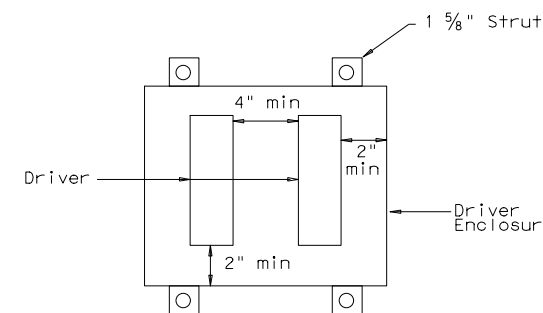
Decorative LED Lighting Notes:

1. LED Drivers in Remote Outdoor enclosures (for drivers that do not include an enclosure as part of a factory assembly):
 - a. Provide NEMA 3R outdoor enclosure or as approved.
 - b. Install enclosure at least 12" above ground or other horizontal surface. Mount vertically or on ceiling, and avoid direct sun where possible.
 - c. Install drivers with at least 2 inches of space from enclosure walls.
 - d. For multiple drivers in an enclosure, provide at least 4 inches side to side and 1 inch end to end from other drivers or electronic equipment
 - e. For drivers mounted on back wall of enclosure, mount enclosure on 1 5/8" strut or other standoff to dissipate heat, or mount driver to side of the enclosure or to the metal cover.
 - f. Provide remote drivers with a maximum of 100 watts
 - g. Provide drivers with documentation of 100,000 hr lifetime at Tcase of 65C or higher.



TYPICAL WIRING DIAGRAM

LUMINAIRES SERVED AT 480V ON 240/480 VOLT SERVICE OR LUMINAIRES SERVED AT 240V FOR 120/240 VOLT SERVICE.



Driver Spacing In Remote Enclosure

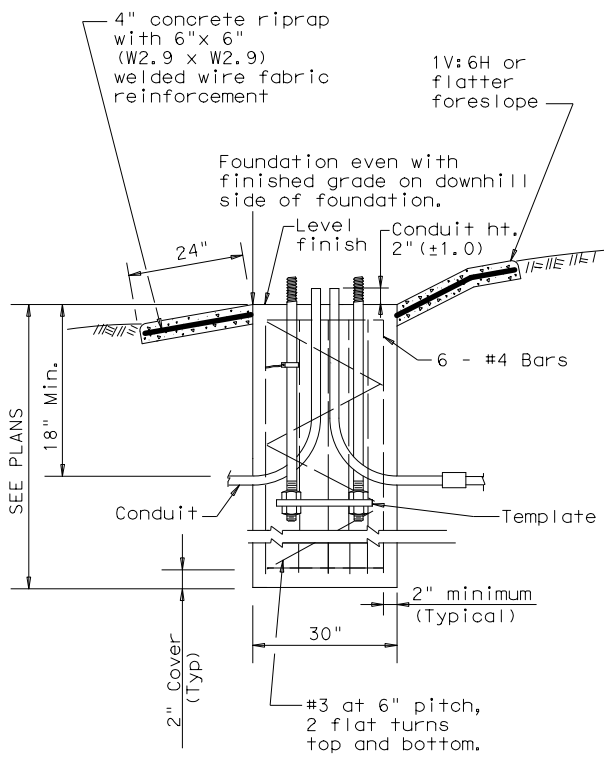
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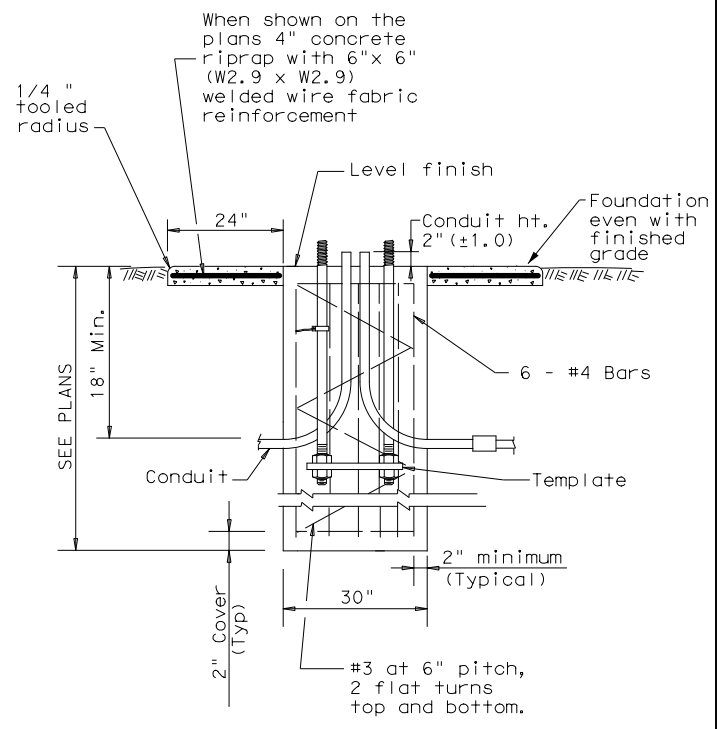
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12-20	TYL	WOOD	386		
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SECTION A-A
SHOWING SLOPED GRADE



SECTION A-A
SHOWING CONSTANT GRADE

TABLE 1

ANCHOR BOLTS

POLE MOUNTING HEIGHT	BOLT CIRCLE		ANCHOR BOLT SIZE
	Shoe Base	T-Base	
<40 ft.	13 in.	14 in.	1 in. x 30 in.
40-50 ft.	15 in.	17 1/4 in.	1 1/4 in. x 30 in.

TABLE 2

RECOMMENDED FOUNDATION LENGTHS
(See note 1)

MOUNTING HEIGHT	TEXAS CONE PENETROMETER N Blows/ft		
	10	15	40
≤20 ft.	6'	6'	6'
>20 ft. to 30 ft.	8'	6'	6'
>30 ft. to 40 ft.	8'	8'	6'
>40 ft. to 50 ft.	10'	8'	6'

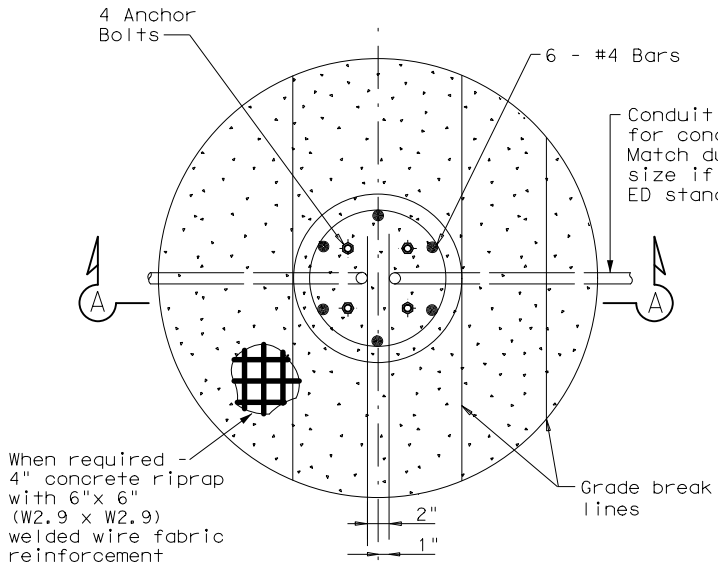
TABLE 3

PAY QUANTITY OF RIPRAP PER FOUNDATION
(Install only when shown on the plans)

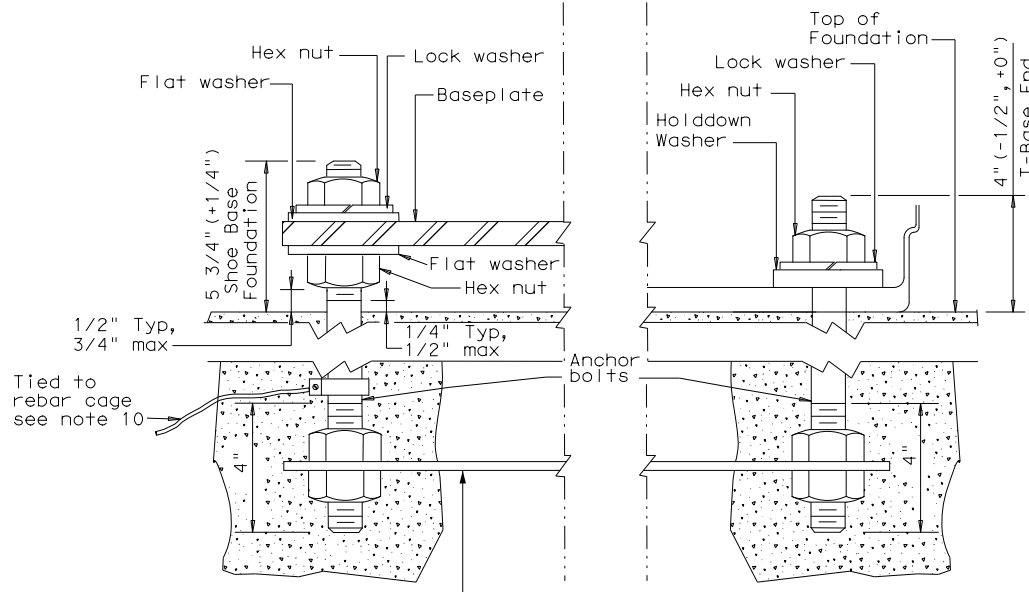
Foundation Diameter	RIPRAP DIAMETER	RIPRAP (CONC) (CL B)
30 in.	78 in.	0.35 CY

GENERAL NOTES:

- "Recommended Foundation Lengths" table is for information purposes only. Foundation lengths shall be as shown on the plans, or as directed by the Engineer. Foundations will be paid for under Item 416, "Drilled Shaft Foundations," unless otherwise shown on the plans.
- Erect roadway illumination assembly poles plumb and true. Form and level the top 6" of the foundation so the pole will be plumb. Use leveling nuts to plumb shoe base poles. Do not use shims or leveling nuts under transformer bases. Do not grout between baseplate and the foundation.
- Ensure Class 2A and 2B fit for anchor bolts and nuts. Tap and chase nuts after galvanizing. Anchor bolt body with rolled threads need not be full size.
- Use appropriate class of concrete as specified in Items 416 and 432. Concrete for riprap may be upgraded to Class C at no extra cost to the Department.
- Place riprap around the foundation when called for elsewhere in the plans. Riprap will be paid for under Item 432.
- Locate breakaway roadway illumination assemblies as shown in the placement table, unless otherwise dimensioned on the plans. Protect non-breakaway illumination assemblies from vehicular impact (i.e. 2.5 ft. behind guard rail or mounted on traffic barrier), or located outside the clear zone, except that 2.5 ft. from curb face is minimum desired for light poles on city streets, 45 mph or less. See Roadway Design Manual for further information.
- Use 4 hold down and 4 connecting washers on transformer base poles as recommended by the manufacturer and supplied with base.
- Install a minimum of 2 conduits in each foundation. See lighting layout sheets for locations of foundations with more than 2 conduits. Cap unused conduits in foundations on both ends.
- Conduit location in foundations is critical for breakaway devices. Place conduits 2 in. apart on centerline as shown.
- Bond anchor bolt to rebar cage with #6 bare stranded copper conductor. Use listed mechanical connectors rated for embedment in concrete. The bonded steel in the foundation creates a concrete encased grounding electrode which replaces the ground rod.
- Grade earthwork around T-base foundations even with the finished grade as shown in Section A-A to ensure proper function of the breakaway device. Use riprap on T-base foundations that are located on sloped grades, and as shown on the plans for level grades.



FOUNDATION DETAIL



ANCHOR BOLT DETAIL

TABLE 4

BREAKAWAY POLE PLACEMENT (See note 6)

ROADWAY FUNCTIONAL CLASSIFICATION	** POLE OFFSET (DISTANCE TO FACE OF TRANSFORMER BASE)
Freeway Mainlanes (roadway with full control of access)	15 ft. (minimum and typical) from lane edge
All curbed, 45 mph or less design speed	2.5 ft. minimum (15 ft. desirable) from curb face
All others	10 ft. minimum*(15 ft. desirable) from lane edge

* or as close to ROW line as is practical

** provide 2/5 of the luminaire mounting height behind the pole for "falling area" to prevent encroachment on the other travel lanes. See design guidelines.

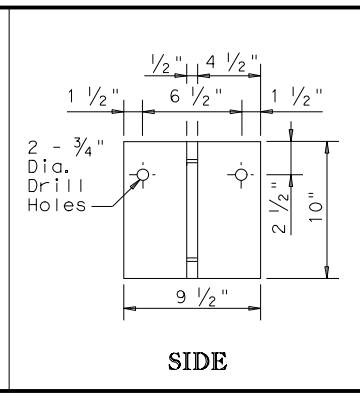
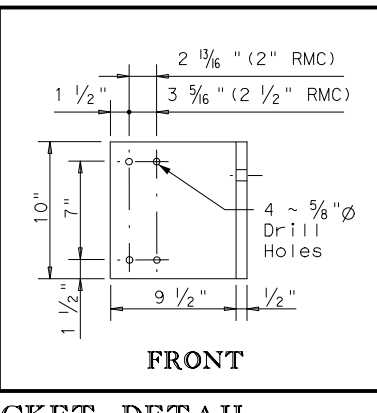
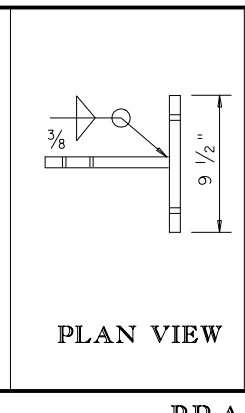
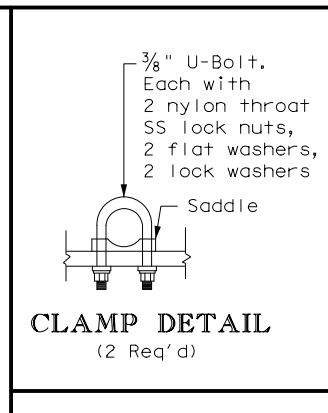
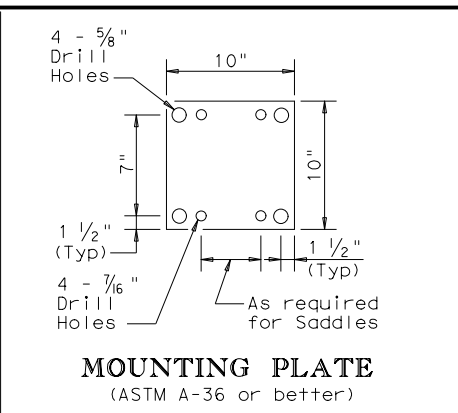
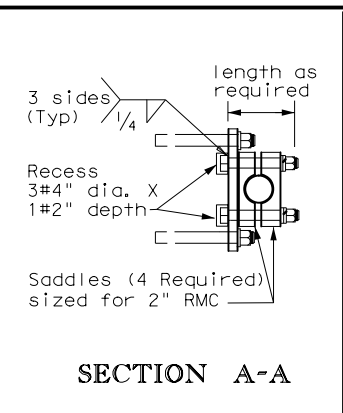


ROADWAY ILLUMINATION DETAILS
(RDWY ILLUM FOUNDATIONS)
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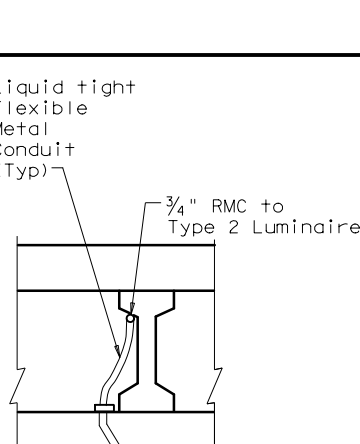
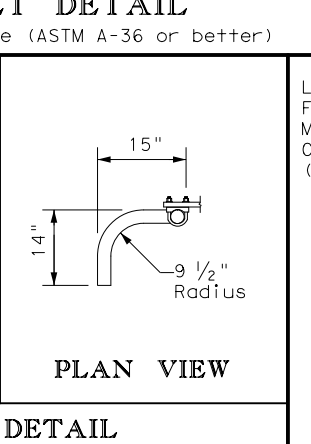
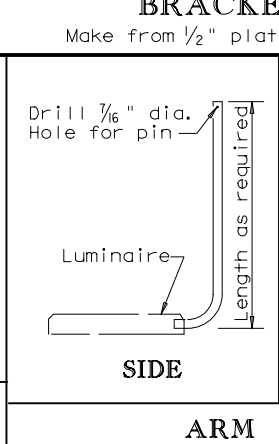
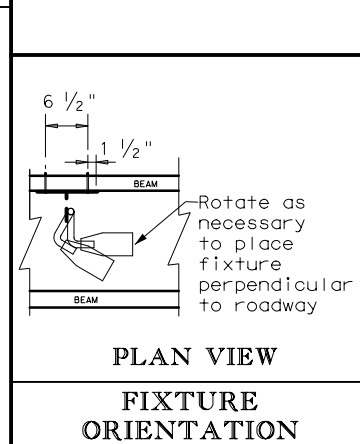
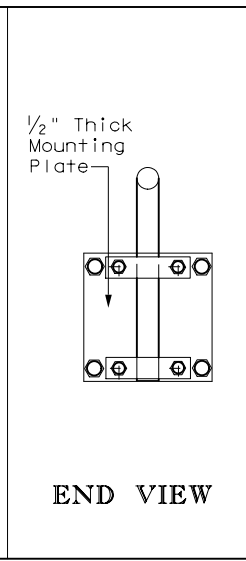
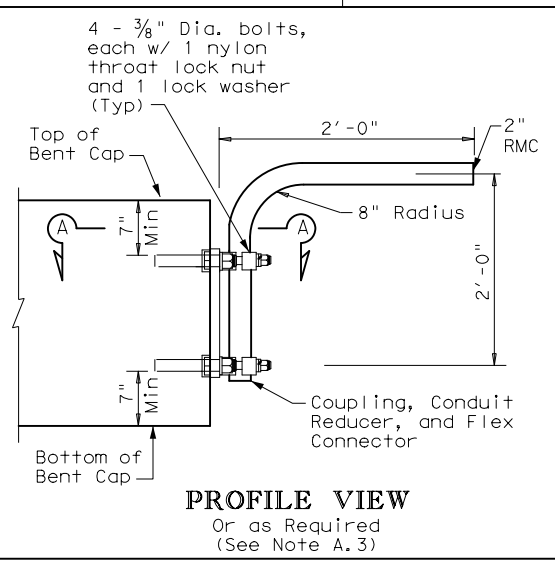
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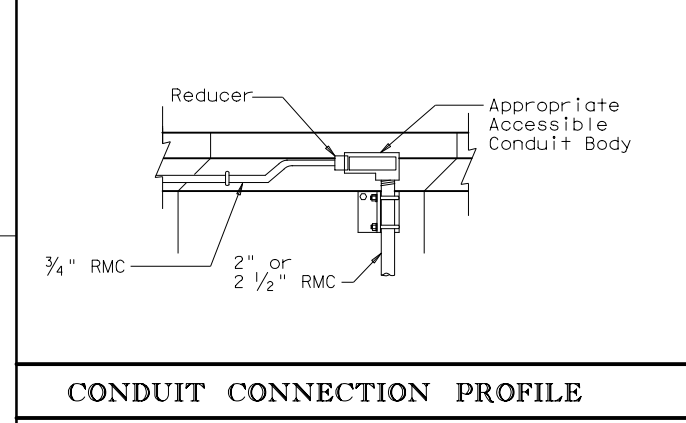
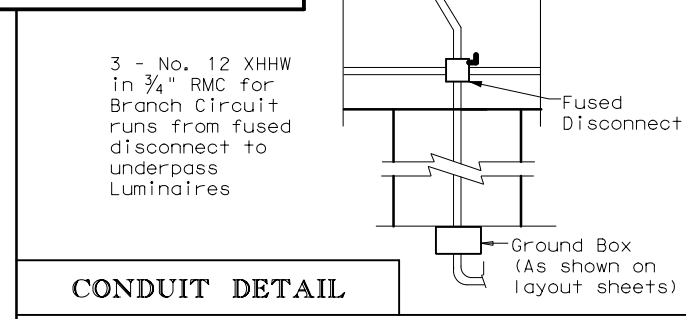
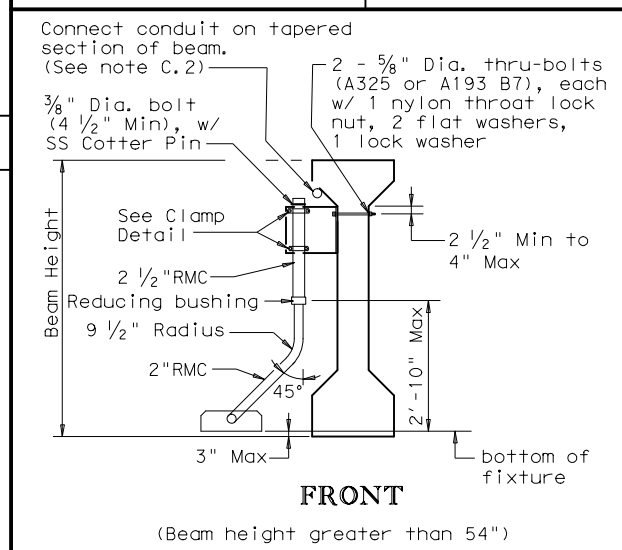
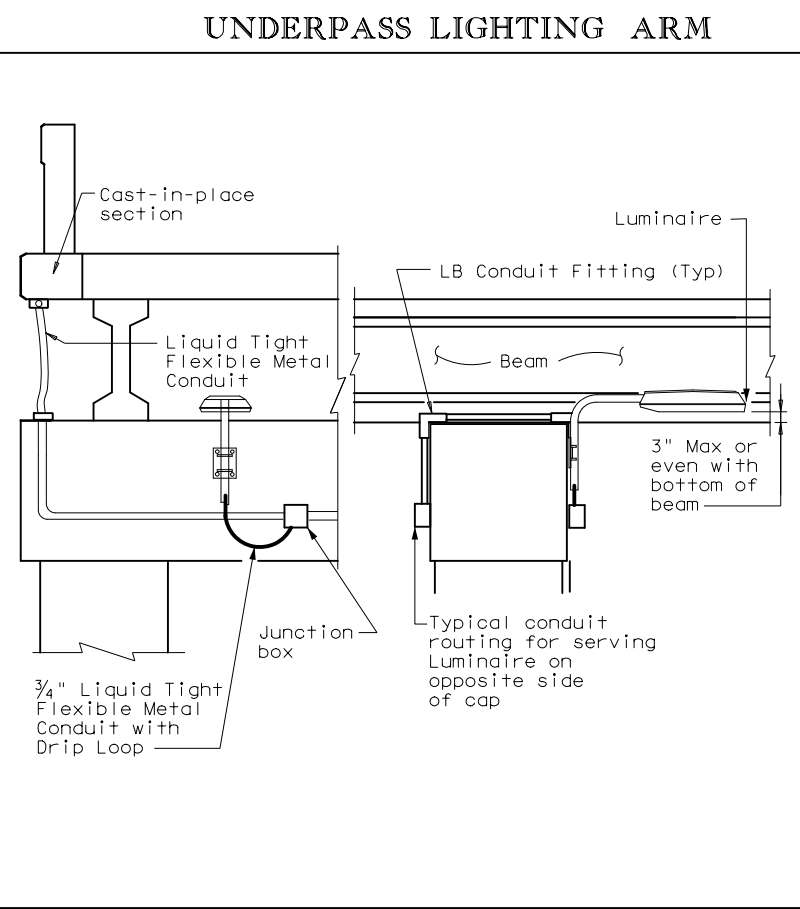
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- GENERAL NOTES:**
- A. ALL 150 watt HPS and 150 watt equivalent LED Luminaires**
- Luminaire locations, conduit and conductor sizes and routing are typical and diagrammatic only. See project layout sheets for specific details.
 - Conduit will be paid for under Item 618, "Conduit" and conductors will be paid for under Item 620, "Electrical Conductors," unless otherwise shown on the plans.
 - Adjust conduit in saddles to place fixture height and orientation as required. See fixture orientation detail and plans. Where practicable, place luminaires so the bottom of luminaire is above the bottom of the beam, maximum of 3 in. (See detail UNDERPASS LIGHTING ARM TYPE 2)
 - Except as noted, galvanize all structural steel and exposed bolts, nuts, and washers in accordance with Item 445 "Galvanizing".
 - Fabrication of brackets and support arms will not be paid for directly but is subsidiary to Item 610, "Roadway Illumination Assemblies."
 - Install a heavy duty NEMA 3R fused disconnect or breaker enclosure rated at 30 amps and 480 volts to switch underpass luminaires as shown on plans, with at least one per bridge circuit. Install 20 amp time-delay fuses or inverse-time circuit breakers. Mount disconnect or breaker enclosure 10 ft. (min) above grade on columns or bent caps as approved by the Department. Modify disconnect to allow padlocking in the "ON" and "OFF" positions. Padlocks and disconnect switches or circuit breakers for underpass fixtures will not be paid for directly but are subsidiary to the various bid items of the contract.
 - Conduit on columns, caps, and slab is shown surface mounted. For new columns and caps, embed PVC conduit in concrete. Bond and ground metal junction boxes and conduit.



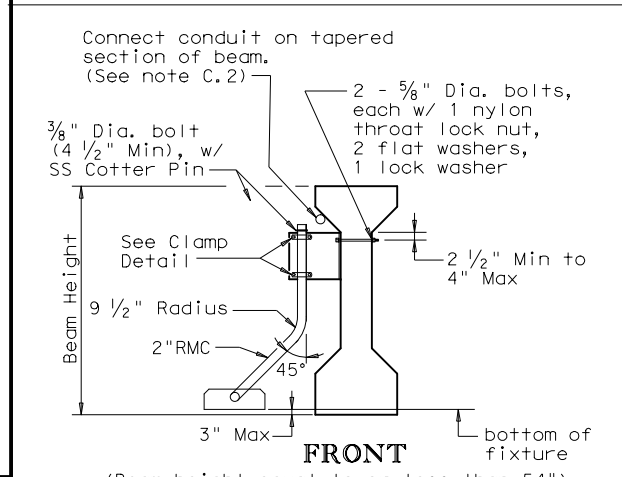
- B. TYPE 1**
- Provide 2 in. rigid metal conduit (2.375" O.D., 0.146" wall) for Type 1 arm shaft.
 - Use 3/8 in. stainless steel bolt or stud non-epoxy type expansion anchors for concrete for Type 1 mounting. Except as noted, provide an allowable 2650 lbs minimum pull-out force (after consideration of adjustment factors for edge distance and bolt spacing) for each anchor. Install each anchor to the embedment depth recommended by the manufacturer.
 - Attach conduit to plate with 4 saddles, four - 3/8 in. diameter bolts, nylon throat lock nuts, and lock washers.



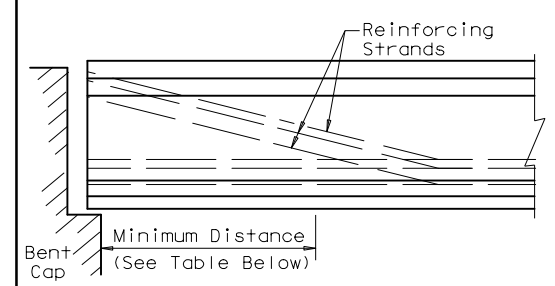
- C. TYPE 2**
- Provide 2 in. rigid metal conduit (2.375" O.D., 0.146" wall) or provide a combination of 2 1/2 in. (2.875" O.D., 0.193" wall) and 2 in. (2.375" O.D., 0.146" wall) rigid metal conduits with a reducing bushing as beam height stipulated for Type 2 arm shaft. Field cutting and threading will be permitted. Paint cut and threaded areas with zinc rich paint after conduit is connected to adjacent fitting.
 - Connecting conduit may be strapped to tapered section only of precast beams as shown. Anchor as approved by the Engineer. Maximum anchor depth is 1 in.
 - Indiscriminate drilling into precast concrete beams may result in reduced beam strength. Use drilling location and method as directed by the Engineer. See Location of Underpass Lighting Mounting Bracket detail. The locations shown in the table are such that reinforcing strands will not be damaged.

IN RD IL AM (U/P) (TY 1)
 If bridge has pre-cast panels under deck, run circuit under deck edge.

UNDERPASS LIGHTING TYPE 1



IN RD IL AM (U/P) (TY 2)



SPAN LENGTH	MINIMUM DISTANCE
≤ 50'	10'-0"
50' - 70'	15'-0"
70' - 90'	20'-0"
> 90'	25'-0"

LOCATION OF UNDERPASS LIGHT MOUNTING BRACKET

UNDERPASS LIGHTING TYPE 2

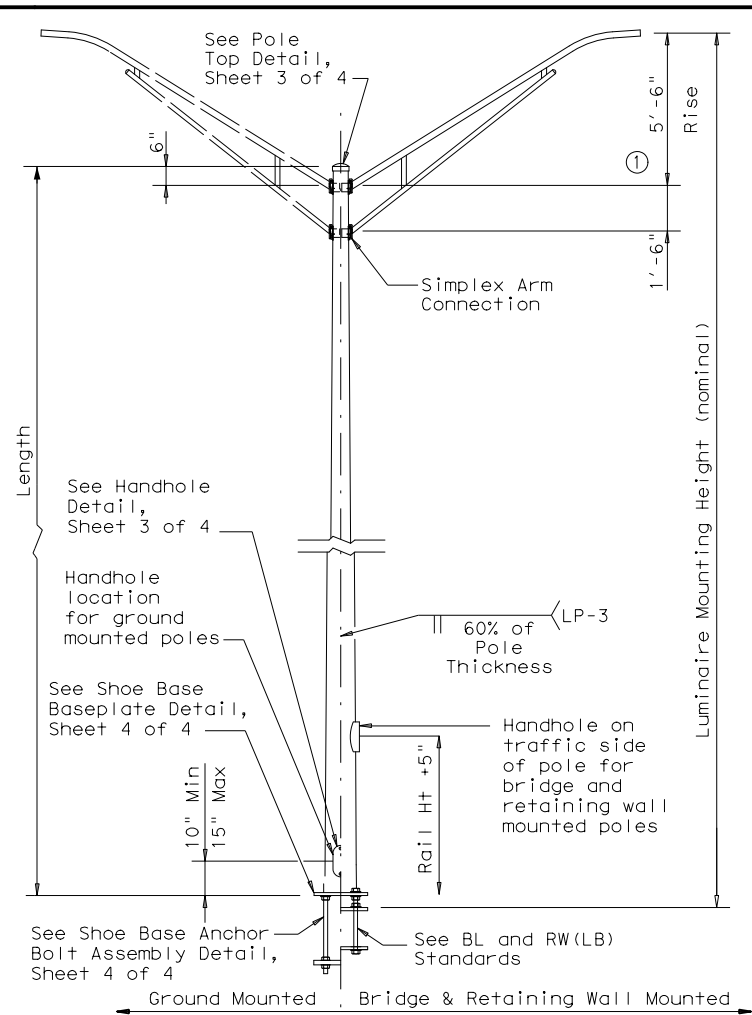
Texas Department of Transportation
Traffic Safety Division Standard

ROADWAY ILLUMINATION DETAILS (UNDERPASS LIGHT FIXTURES)

RID(3)-20

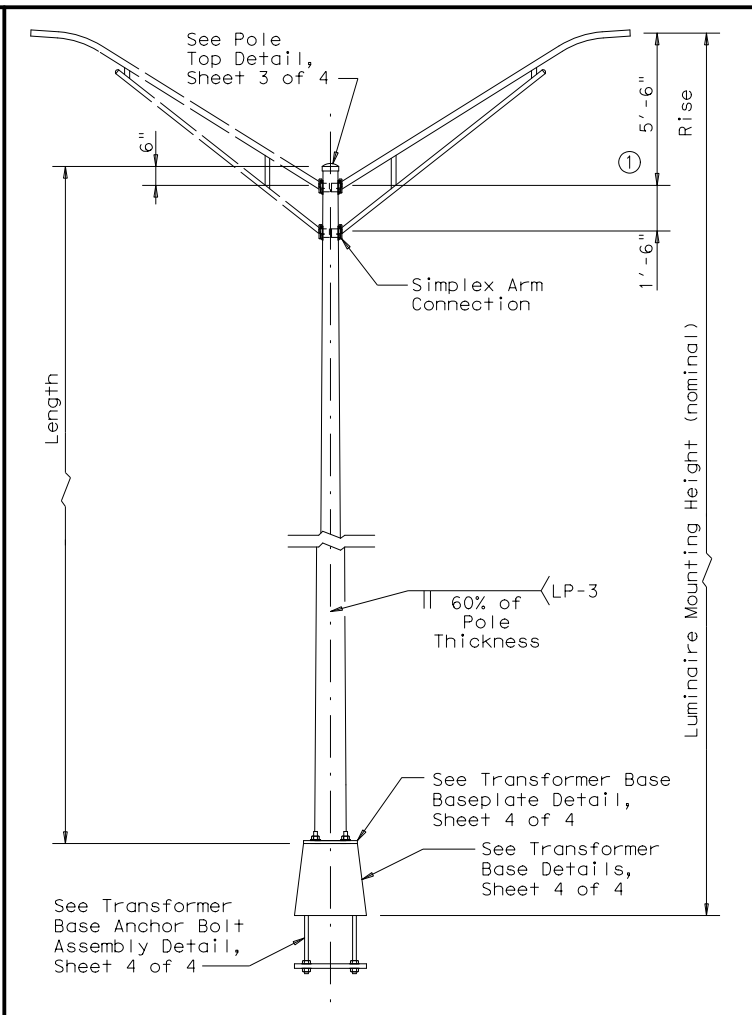
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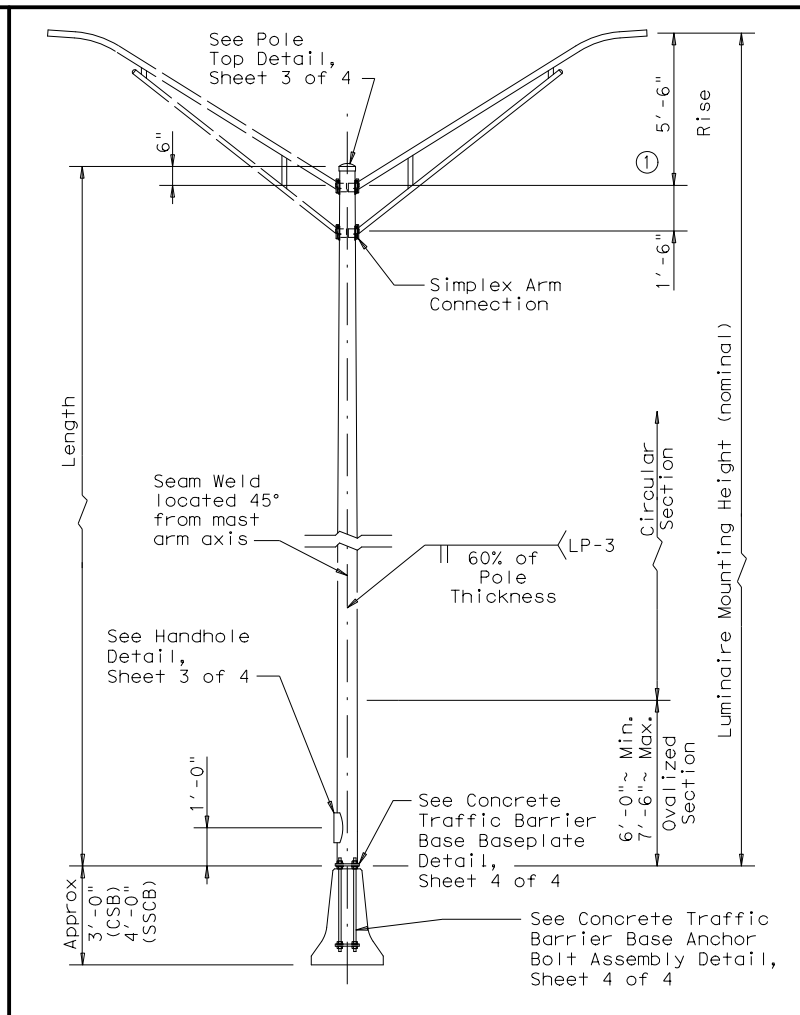
SHOE BASE POLE

SHOE BASE POLE					
Luminaire Mounting Height (Nominal) (ft)	Base Diameter (in)	Top Diameter (in)	Length (ft)	Pole Thickness (in)	Design Moment (K-ft)
20.00	7.00	4.90	15.00	0.1196	7.1
30.00	7.50	4.00	25.00	0.1196	13.2
31.00-39.00	8.00	4.36-3.24	26.00-34.00	0.1196	20.7
40.00	8.50	3.60	35.00	0.1196	20.7
50.00	10.50	4.20	45.00	0.1196	30.3



TRANSFORMER BASE POLE

TRANSFORMER BASE POLE					
Luminaire Mounting Height (Nominal) (ft)	Base Diameter (in)	Top Diameter (in)	Length (ft)	Pole Thickness (in)	Design Moment (K-ft)
20.00	7.00	5.11	13.50	0.1196	7.1
30.00	7.50	4.21	23.50	0.1196	13.2
31.00-39.00	8.00	4.57-3.45	24.50-32.50	0.1196	20.7
40.00	8.50	3.81	33.50	0.1196	20.7
50.00	10.00	3.91	43.50	0.1196	30.3



CONCRETE TRAFFIC BARRIER BASE POLE

CONCRETE TRAFFIC BARRIER BASE POLE (CSB/SSCB)						
Luminaire Mounting Height (Nominal) (ft)	Base Diameter (in)	Top Diameter (in)	Length (ft)	Pole Thickness (in)	Design Moment (K-ft)	
					About C of Rail	Perp. to Rail
28.00	9.00	5.78	23.00	0.1196	10.3	13.2
38.00	9.00	4.38	33.00	0.1196	16.6	20.8
48.00	10.50	4.48	43.00	0.1345	25.1	30.5

GENERAL NOTES:

- Designs conform to AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th Edition (2013) and Interim Revisions thereto. Design 3-Second Gust Wind Speed equals 110 mph with a 1.14 gust factor. A wind importance factor of 0.80 is applied to adjust the wind speed to a 25 year recurrence interval. Design moments listed in tables assume base of pole is 25' above natural ground level.
- Structures are designed to support two 12' luminaire mast arms and luminaires. Mast arms are designed to support a 60-pound luminaire having an effective projected area of 1.6 square feet.
- Fabrication shall be in accordance with the Specifications and with the details, dimensions, and weld procedures shown herein. Do not submit shop drawings for roadway illumination pole assemblies fabricated in accordance with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Materials, fabrication tolerances, and shipping practices shall meet the requirements of these sheets and the Specifications. In the absence of specified fabrication tolerances, dimensions shall be within the tolerances generally obtainable in normal fabrication practice.
- For mounting heights between values shown in the tables, use base diameter and thickness values for the larger height.
- Unless otherwise noted, all steel parts shall be galvanized in accordance with Item 445, "Galvanizing."
- Steel poles shall be fabricated in accordance with Item 441, "Steel Structures." Longitudinal seam welds for pole sections shall have 60% minimum penetration. All welding shall be in accordance with AWS D1.1, Structural Welding Code-Steel.
- Two-section poles joined by circumferential welds will not be permitted, unless otherwise shown on the plans. Poles may be fabricated in two sections and field-assembled by the lap-joint method. The two sections shall telescope together with a lap length of not less than 1-1/2 times the shaft diameter at the lap joint.
- Alternate material equal to or better than material specified may be substituted with the approval of the Engineer.
- Lubricate and tighten anchor bolts, when erecting shoe base poles and concrete traffic barrier base poles, in accordance with Item 449, "Anchor Bolts."
- All poles, except Transformer Base Poles, shall have hand holes with reinforcing frames and covers. For ground mounted shoe base poles, hand holes shall be placed 90 degrees to mast arm unless otherwise noted on the plans. For poles mounted on a concrete traffic barrier with one luminaire arm, hand holes shall be located 180 degrees from luminaire arm. For poles mounted on a concrete traffic barrier with two luminaire arms, all hand holes shall be on the same side of the barrier. For poles mounted on a bridge lighting bracket or a retaining wall lighting bracket, hand hole shall be on traffic side of the pole, at a height that will clear the barrier.
- The finished pole shall have a smooth, uniform finish free of pits, blisters, or other defects. Scratched, chipped, and other damaged galvanized areas on poles and mast arms shall be repaired in accordance with Item 445, "Galvanizing."
- Pole length is based on a 5'-6" luminaire arm rise. 4 ft. luminaire arms have a 2'-6" rise. A pole with 4 ft. luminaire arms will have an actual mounting height 3'-0" less than the nominal mounting height. Increasing the pole length to meet the nominal mounting height is allowed, but unnecessary unless otherwise directed by the engineer.
- Erect transformer base poles in accordance with sheet RID(1).

MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (ksi)
Pole Shaft (0.14"/ft. Taper)	A572 Gr 50, A595 Gr A, A1011 HSLAS Gr 50 Cl 2 ③, or A1008 HSLAS Gr 50 Cl 2	50
Base Plate and Handhole Frame	A572 Gr.50, or A36	36
T-Base Connecting Bolts	F3125 Gr A325	92
Anchor Bolts	F1554 Gr 55, A193-B7 or A321	55 105
Anchor Bolt Templates	A36	36
Heavy Hex (H.H.) Nuts	A194 Gr 2H, or A563 Gr DH	
Flat Washers	F436	

NOTES:

- 2'-6" rise for 4 ft. luminaire arms.
- Before ovalized as shown on Concrete Traffic Barrier Base Baseplate details, Sheet 4 of 4.
- A1011 SS Gr 50 may be used instead of HSLAS, provided the material meets the elongation requirements for HSLAS.

POLE ASSEMBLY FABRICATION TOLERANCES TABLE

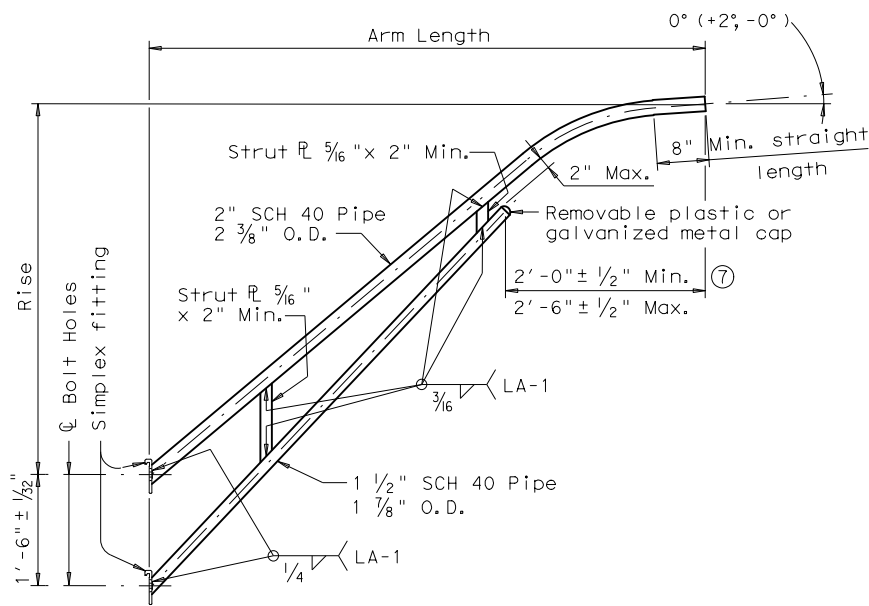
DIMENSION	TOLERANCE
Shaft length	+1"
I.D. of outside piece of slip fitting pieces	+1/8", -1/16"
O.D. of inside piece of slip fitting pieces	+1/32", -1/8"
Shaft diameter: other	+3/16"
Out of "round"	1/4"
Straightness of shaft	±1/4" in 10 ft
Twist in multi-sided shaft	4° in 50 ft
Perpendicular to baseplate	1/8" in 24"
Pole centered on baseplate	±1/4"
Location of Attachments	±1/4"
Bolt hole spacing	±1/16"



ROADWAY ILLUMINATION POLES
RIP(2)-19

FILE: rip-19.dgn	DATE: 01/19/2007	BY: []	CHK: []	DWG: []	CK: []
© TxDOT January 2007		CONTRACT NO. 0203	SECTION 05	JOB NO. 039	HIGHWAY US 69
7-17	REVISIONS	DIST	COUNTY	SHEET NO.	
12-19		TYL	WOOD	390	

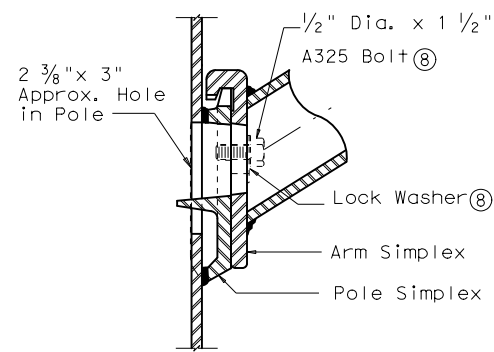
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of units or the use of units in any drawing. This drawing is for informational purposes only and does not constitute a contract. For more information, contact the Texas Department of Transportation, 12000 North Loop West, P.O. Box 21089, Houston, Texas 77218-0899. DATE: 12/11/2023 4:04:44 PM FILE: \\stiv-sw-pw-bentley.com\stiv-sw-pw\Documents\Active Projects\TXDOT\12-19-23\19-3\19-3.dgn



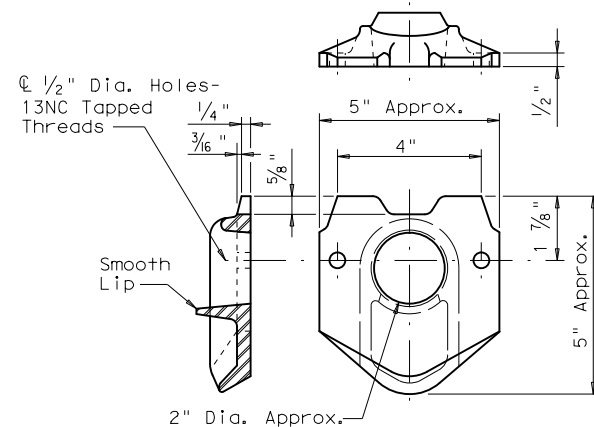
LUMINAIRE ARM

LUMINAIRE ARM DIMENSIONS		
Nominal Arm Length	Arm Length	Rise
4'-0"	3'-6"	2'-6"
6'-0"	5'-6"	5'-6"
8'-0"	7'-6"	5'-6"
10'-0"	9'-6"	5'-6"
12'-0"	11'-6"	5'-6"

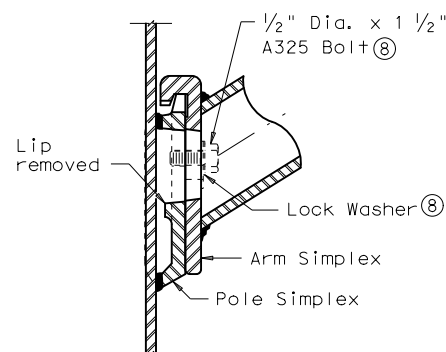
ARM ASSEMBLY FABRICATION TOLERANCES TABLE	
DIMENSION	TOLERANCE
Arm Length	±1"
Arm Rise	±1"
Deviation from flat	1/8" in 12"
Spacing between holes	±1/32"



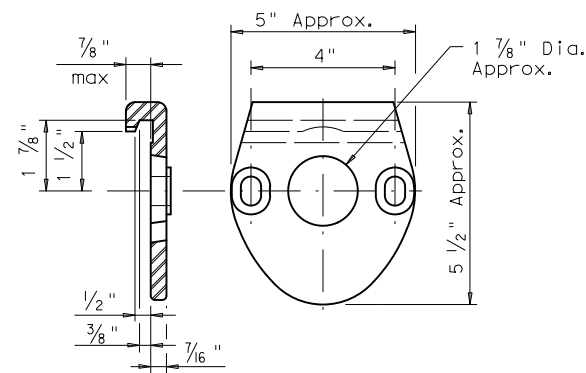
UPPER SIMPLEX FITTING (Gusset not shown for clarity)



POLE SIMPLEX DETAIL



LOWER SIMPLEX FITTING (Gusset not shown for clarity)



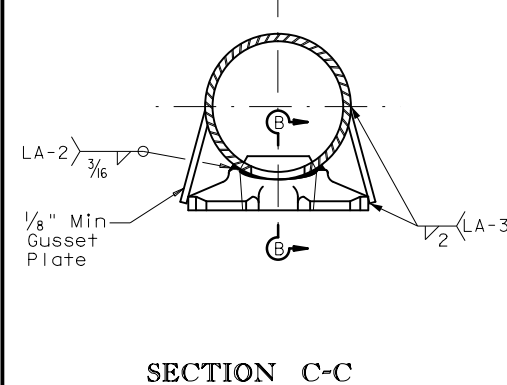
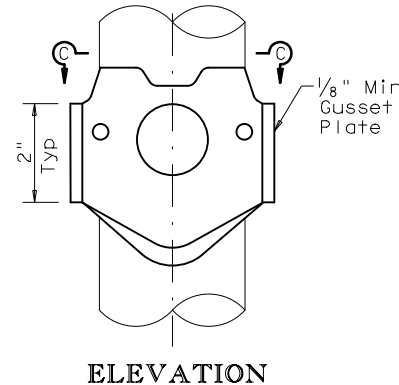
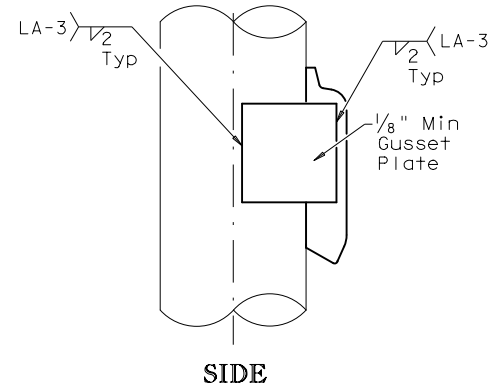
ARM SIMPLEX DETAIL

NOTES:

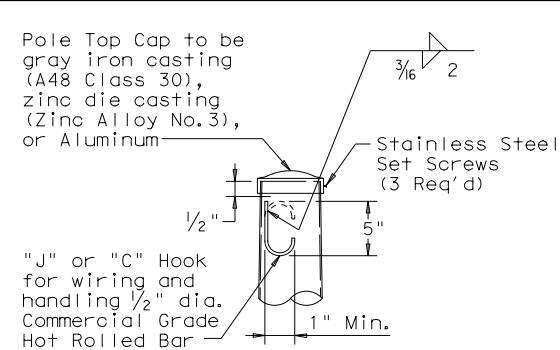
- ④ Any of the materials listed for plates may be used where the drawings do not specify a particular ASTM designation.
- ⑤ A576 must be suitable for forging and also meet minimum tensile strength of 65 ksi, minimum yield of 35 ksi, and elongation in 2 inches of 22 percent.
- ⑥ A572, A1008 HSLAS-F, and A1011 HSLAS-F materials may have higher yield strengths but shall not have less elongation than the grade indicated.
- ⑦ Dimensional limits are given to show acceptable variation in design. All of a Fabricator's production of a particular arm length shall have the same dimensions within specified tolerances.
- ⑧ Each pole simplex fitting shall be supplied with 2 bolts and 2 lock washers of the size specified. The bolts and lock washers shall be secured to the pole with the other hardware items called for in the plans.
- ⑨ Proposed deviations in arm simplex dimensions or materials must be submitted to the Department for approval.
- ⑩ A welded handhole frame is permissible. Maximum of two (2) CJP weld splices is allowed.

MATERIALS

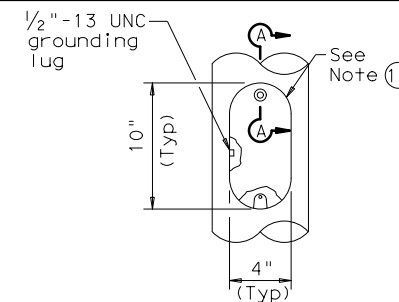
MATERIALS	
Pole or Arm Simplex	ASTM A27 Gr 65-35 or Gr 70-36, A148 Gr 80-50, A576 Gr 1021 ⑤, or A36 (Arm only)
Arm Pipes	ASTM A53 Gr A or B, A500 Gr B, A501, A 1008 HSLAS-F Gr 50 ⑥, or A1011 HSLAS-F Gr 50 ⑥
Arm Struts and Gusset Plates ④	ASTM A36, A572 Gr 50 ⑥, or A588
Misc.	ASTM designations as noted



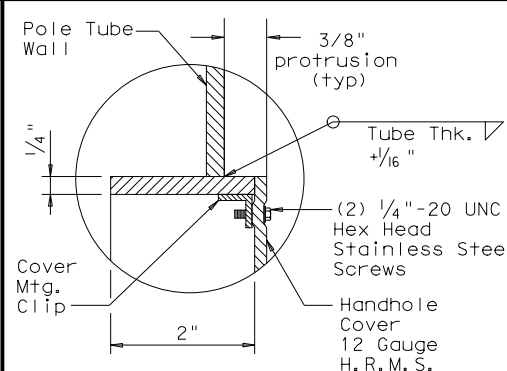
SIMPLEX ATTACHMENT DETAIL



POLE TOP



ELEVATION



SECTION A-A

HANDHOLE

SHEET 3 OF 4

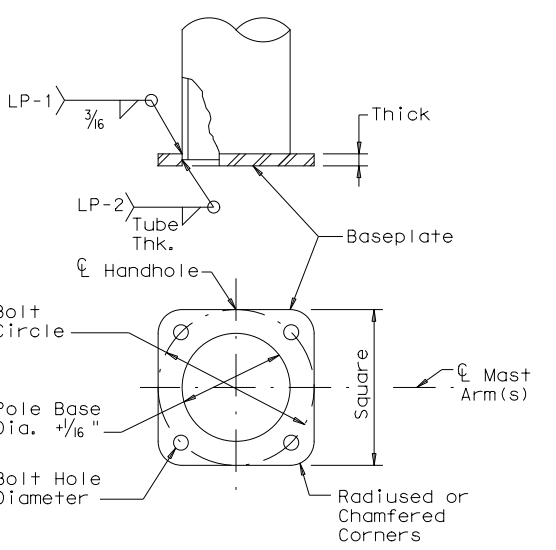


ROADWAY ILLUMINATION POLES
RIP(3)-19

FILE: rip-19.dgn	DN:	CK:	DW:	CK:
© TxDOT January 2007	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
7-17	DIST	COUNTY	SHEET NO.	
12-19	TYL	WOOD	391	

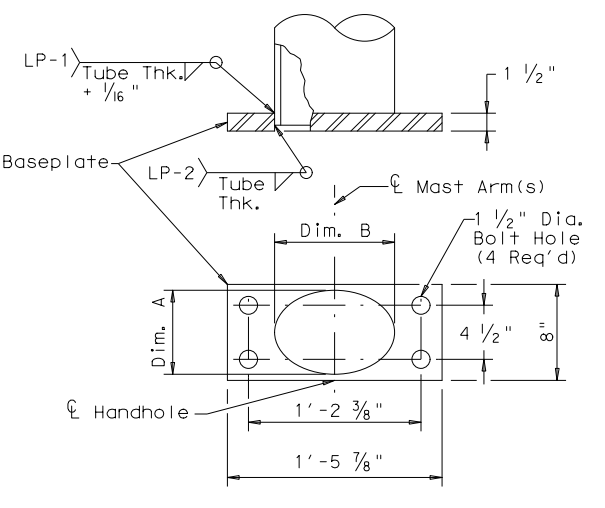
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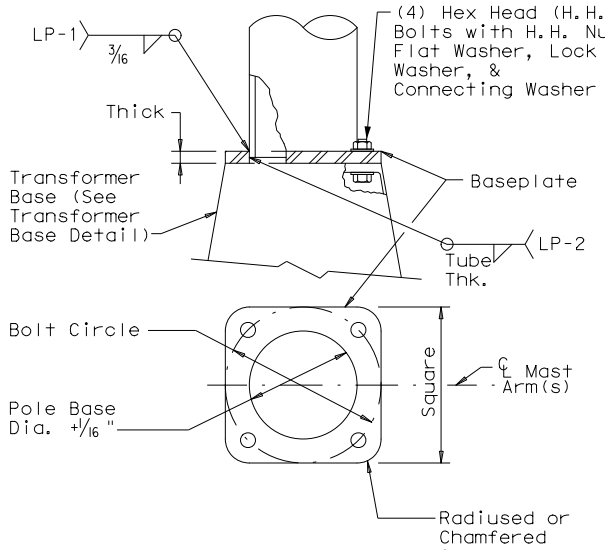
SHOE BASE BASEPLATE

MOUNTING HEIGHTS (nominal)	BOLT CIRCLE	SQUARE	THICK	BOLT HOLE DIAMETER
20' - 39'	13"	13"	1 1/4"	1 1/4"
40'	15"	15"	1 1/4"	1 1/2"
50'	15"	15"	1 1/2"	1 1/2"



CONCRETE TRAFFIC BARRIER BASE BASEPLATE

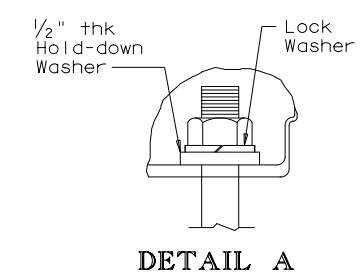
MOUNTING HEIGHTS (nominal)	POLE DIA. (1)	DIM. A	DIM. B
28' - 38'	9"	7" ± 1/4"	10" ± 1/4"
48'	10 1/2"	7" ± 1/4"	13" ± 1/4"



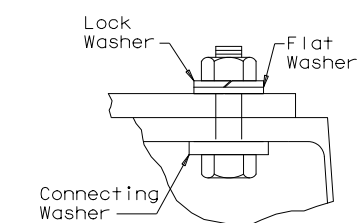
TRANSFORMER BASE BASEPLATE

MOUNTING HEIGHTS (nominal)	BOLT CIRCLE	SQUARE	THICK	CONNECTING BOLT DIA.	BOLT HOLE DIAMETER	TRANSFORMER BASE TYPE
20' - 39'	13"	13"	1 1/4"	1"	1 1/4"	A
40'	15"	15"	1 1/4"	1 1/4"	1 1/2"	B
50'	15"	15"	1 1/2"	1 1/4"	1 1/2"	B

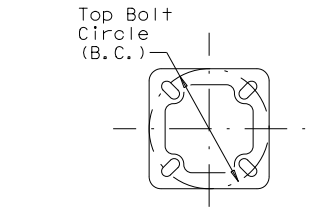
TYPE	TOP B.C.	BTM. B.C.
A	13"	14"
B	15"	17 1/4"



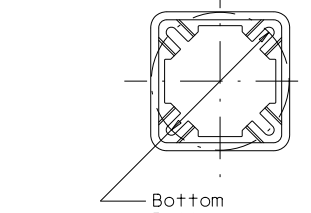
DETAIL A



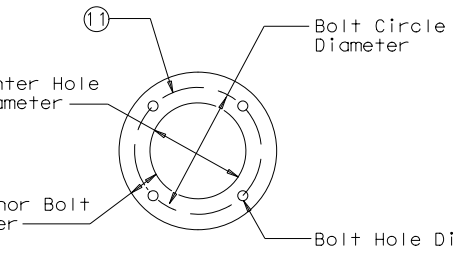
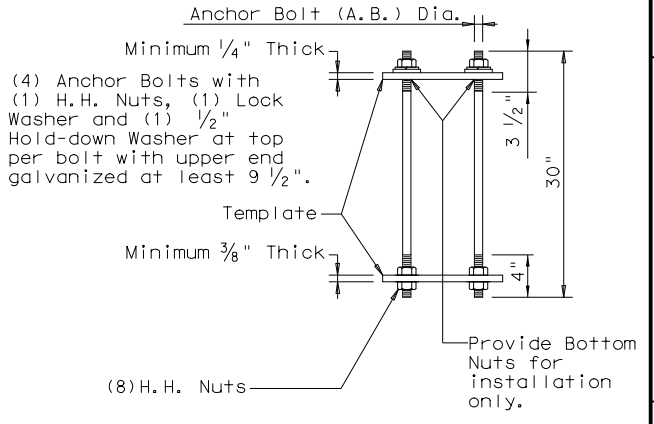
DETAIL B



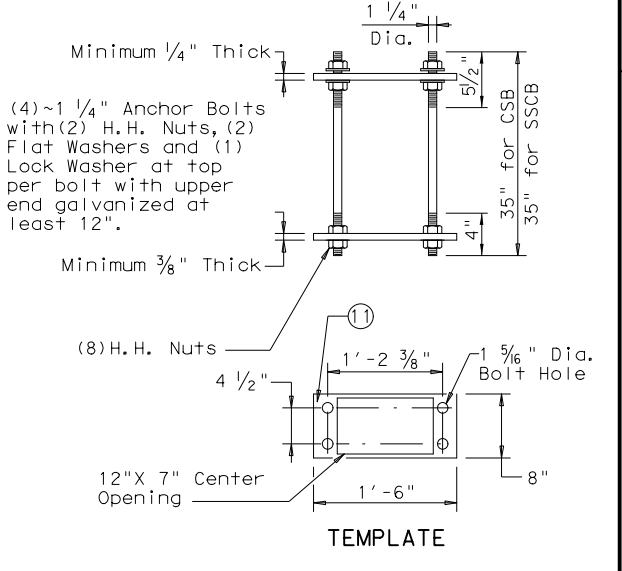
TOP PLAN



BOTTOM PLAN

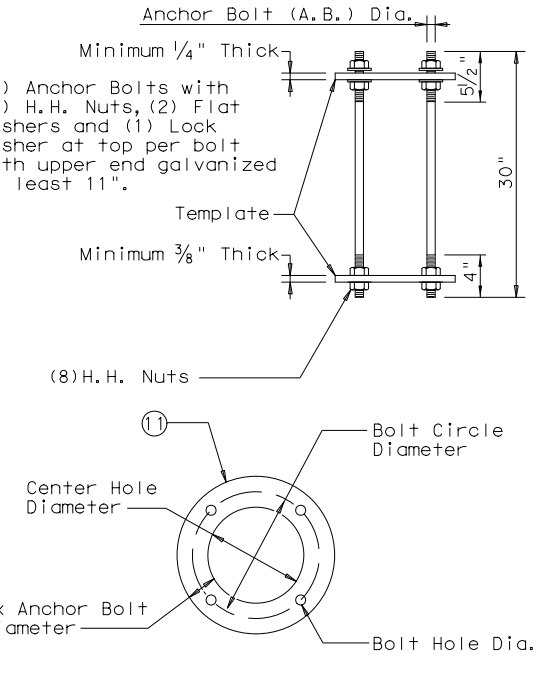


TRANSFORMER BASE ANCHOR BOLT ASSEMBLY



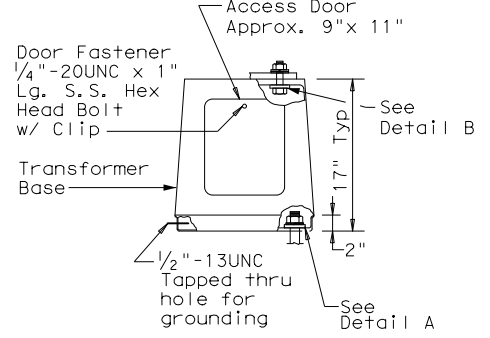
CONCRETE TRAFFIC BARRIER BASE ANCHOR BOLT ASSEMBLY

MOUNTING HEIGHTS (nominal)	A.B. Dia.	BOLT CIRCLE DIAMETER	CTR. HOLE DIAMETER	BOLT HOLE DIAMETER
20' - 39'	1"	14"	12"	1 1/16"
40' - 50'	1 1/4"	17 1/4"	14 3/4"	1 5/16"



SHOE BASE ANCHOR BOLT ASSEMBLY

MOUNTING HEIGHTS (nominal)	A.B. Dia.	BOLT CIRCLE DIAMETER	CTR. HOLE DIAMETER	BOLT HOLE DIAMETER
20' - 39'	1"	13"	11"	1 1/16"
40' - 50'	1 1/4"	15"	12 1/2"	1 5/16"



ELEVATION

TRANSFORMER BASE DETAILS

GENERAL NOTES:

- For mounting heights between those shown in the table, use the values in the table for the larger mounting height.
- All breakaway bases shall meet the breakaway requirements of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 6th Edition (2013) and Interim Revisions thereto, and shall have been tested by FHWA-approved methods. All bases shall have been structurally tested to resist 150% of the design moment.
- Transformer bases shall be cast from aluminum, ASTM B108 or B26 Alloy 356.0-T6, or other material approved by the Engineer. Four Hex Head (H.H.) bolts with four H.H. nuts, four lock washers, four flat washers, and connecting and hold-down washers as recommended by the manufacturer, galvanized to ASTM A153 Class C or D, or B695 Class 50, shall be provided with each transformer base for connecting the pole. Bolts shall be ASTM A325 or approved equal. Nuts shall be ASTM A563 grade DH galvanized.
- Bases shall be stamped, incised or by other approved permanent means, marked to show fabricator's name or logo, and model number. Such information shall be placed in a readily seen location, inside or outside the base, but shall not be placed on the door.
- Doors for transformer bases shall be made of plastic, fiberglass or other non-metallic material approved by the Engineer and shall be attached with stainless steel screws or bolts. Transformer bases shall be cleaned by grit blast cleaning after heat treatment. Certification by the manufacturer of heat treatment shall be furnished with transformer bases. The certification shall show the metal alloy and temper and that the base meets those requirements, chemical and physical. The certification shall also show the material ASTM specification. Transformer bases shall be cast with a removable tab bar for material testing. Some bars may have been removed by the manufacturer for testing.

NOTES:

- Anchor Bolt Templates do not need to be galvanized.
- Pole diameter before ovalized.

DIMENSION	TOLERANCE
Length	± 1/2"
Threaded length	± 1/2"
Galvanized length (if required)	- 1/4"

SHEET 4 OF 4



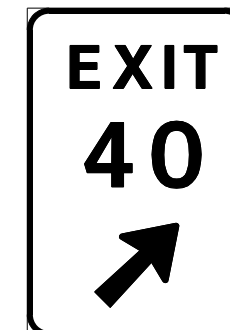
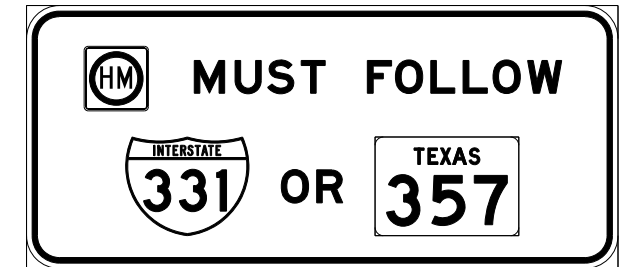
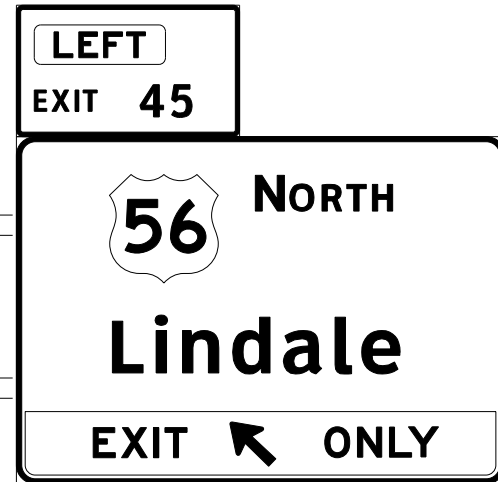
ROADWAY ILLUMINATION POLES
RIP(4)-19

FILE: rip-19.dgn	DN:	CK:	DW:	CK:
© TxDOT January 2007	CONT	SECT	JOB	HIGHWAY
	0203	05	039	US 69
7-17	DIST	COUNTY	SHEET NO.	
12-19	TYL	WOOD	392	

REQUIREMENTS FOR OVERHEAD AND LARGE GROUND-MOUNTED SIGNS

TYPICAL EXAMPLES

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GENERAL NOTES

1. Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign summary sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
2. Black legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod, or F). White legend shall use the Clearview Alphabet. The following Clearview fonts shall be used to replace the existing white FHWA lettering, when not specified in the SHSD or in the plans.

B	CV-1W
C	CV-2W
D	CV-3W
E	CV-4W
Emod	CV-5WR
F	CV-6W

3. Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
4. Black legend shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
5. White legend and borders shall be cut-out white sheeting applied to colored background sheeting.
6. Information regarding borders and radii for signs is found in the "Standard Highway Sign Designs for Texas". Dimensions shown and described for borders and corner radii on parent sign are nominal. Borders may vary in width as much as 1/2 inch. Corner radii above 3 inches may vary in width as much as 1 inch. Borders and corner radii within a parent sign must be of matching widths. The sign area outside the corner radius need not be trimmed or rounded if fabricated from an extruded material.
7. Sign substrate for ground-mounted signs shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative. Sign substrate for overhead signs shall be any material that meets DMS-7110. Exit Number Panels attached above the parent sign shall be made with the same substrate and sheeting as the parent sign.
8. Mounting details of attachments to parent sign face are shown on Standard Plan Sheet TSR(5). Mounting details of exit number panels above parent sign are shown in the "SMD series" Standard Plan Sheets.
9. Background sheeting shall be applied to the substrate per sheeting manufacturer's recommendations. Sheeting will not be allowed to bridge the horizontal gap between panels.
10. Cut all legend, symbols, borders, and direct applied sign attachments at panel joints.

DEPARTMENTAL MATERIAL SPECIFICATIONS

ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

<http://www.txdot.gov/>

SHEETING REQUIREMENTS

USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE B OR C SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE D SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM



TYPICAL SIGN REQUIREMENTS

TSR(1)-13

FILE:	fsl-13.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
©TxDOT	October 2003	CON:	0203	SECT:	05	JOB:	039	HIGHWAY:	US 69
12-03	7-13	REVISIONS		DIST:		COUNTY:		SHEET NO.:	
9-08		TYL:				WOOD		393	

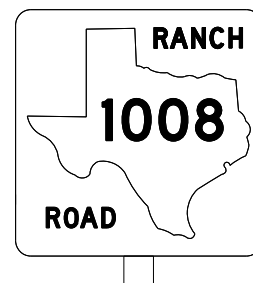
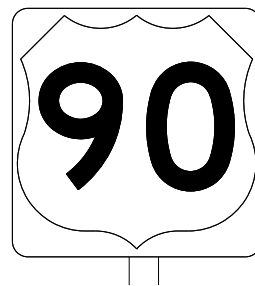
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DATE: FILE:

REQUIREMENTS FOR INDEPENDENT MOUNTED ROUTE SIGNS

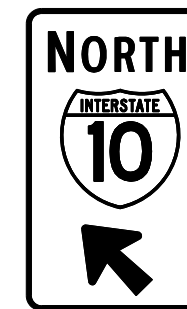
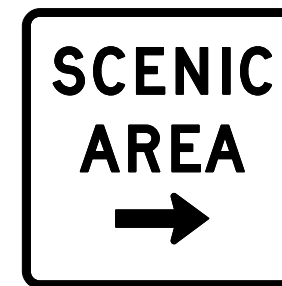
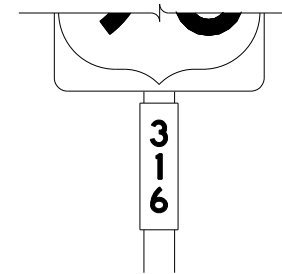
SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE A SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & BORDERS	ALL OTHERS	TYPE B or C SHEETING



TYPICAL EXAMPLES

REQUIREMENTS FOR BLUE, BROWN & GREEN D AND I SERIES GUIDE SIGNS

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	ALL	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE D SHEETING
LEGEND, SYMBOLS & BORDERS	ALL OTHERS	TYPE B OR C SHEETING



TYPICAL EXAMPLES

GENERAL NOTES

- Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
- White legend shall use the Clearview Alphabet. The following Clearview fonts shall be used to replace the existing white Federal Highway Administration (FHWA) Standard Highway Alphabets, when not specified in the SHSD, or in the plans.

B	CV-1W
C	CV-2W
D	CV-3W
E	CV-4W
Emod	CV-5WR
F	CV-6W

- Route sign legend (ie. IH, US, SH and FM shields) shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets B, C, D, E, Emod or F).
- Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
- Independent mounted route sign with white or colored legend and borders shall be applied by screening process with transparent color ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof. White legend, symbols and borders on all other signs shall be cut-out white sheeting applied to colored background sheeting.
- Information regarding borders and radii for signs is found in the "Standard Highway Sign Designs for Texas". Dimensions shown and described for borders and corner radii on parent sign are nominal. Borders may vary in width as much as 1/2 inch. Corner radii above 3 inches may vary in width as much as 1 inch. Borders and corner radii within a parent sign must be of matching widths. The sign area outside the corner radius should be trimmed or rounded.
- Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
- Mounting details of roadside signs are shown in the "SMD series" Standard Plan Sheets.

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

<http://www.txdot.gov/>



TYPICAL SIGN REQUIREMENTS

TSR(3) - 13

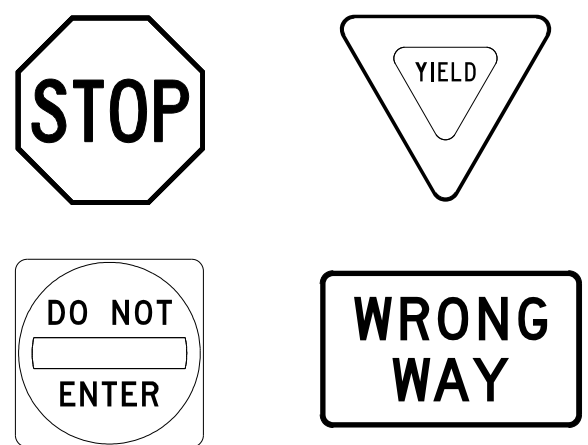
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© TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS		0203	05	039
12-03 7-13	DIST	COUNTY	SHEET NO.	
9-08	TYL	WOOD	394	

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DATE: FILE:

REQUIREMENTS FOR RED BACKGROUND REGULATORY SIGNS

(STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



REQUIREMENTS FOR FOUR SPECIFIC SIGNS ONLY

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	WHITE	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE B OR C SHEETING
LEGEND	RED	TYPE B OR C SHEETING

REQUIREMENTS FOR WHITE BACKGROUND REGULATORY SIGNS

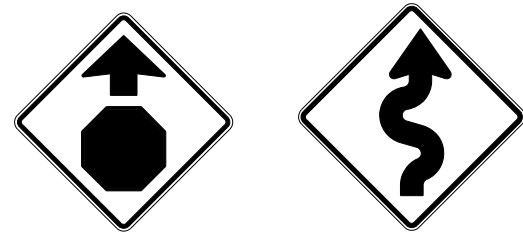
(EXCLUDING STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND, BORDERS AND SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR WARNING SIGNS



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	FLOURESCENT YELLOW	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR SCHOOL SIGNS



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	FLOURESCENT YELLOW GREEN	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
SYMBOLS	RED	TYPE B OR C SHEETING

GENERAL NOTES

- Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
- Sign legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod or F).
- Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
- Black legend and borders shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
- White legend and borders shall be applied by screening process with transparent colored ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof.
- Colored legend shall be applied by screening process with transparent colored ink, transparent colored overlay film or colored sheeting to background sheeting, or combination thereof.
- Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
- Mounting details for roadside mounted signs are shown in the "SMD series" Standard Plan Sheets.

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website:
<http://www.txdot.gov/>



TYPICAL SIGN REQUIREMENTS

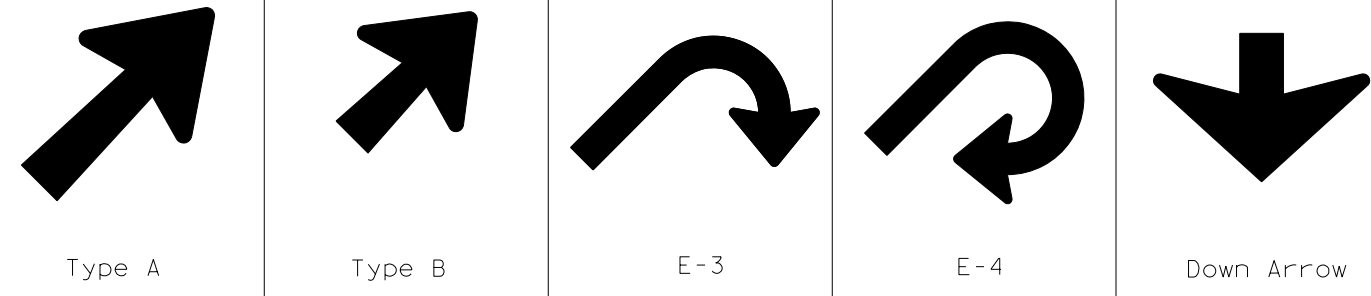
TSR (4) - 13

FILE:	tsr4-13.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
© TxDOT	October 2003	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0203	05	039	US 69				
12-03	7-13	DIST	COUNTY	SHEET NO.					
9-08		TYL	WOOD	395					

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ARROW DETAILS

for Large Ground-Mounted and Overhead Guide Signs



TYPE	LETTER SIZE	USE
A-1	10.67" U/L and 10" Caps	Single Lane Exits
A-2	13.33" U/L and 12" Caps	
A-3	16" & 20" U/L	
B-1	10.67" U/L and 10" Caps	Multiple Lane Exits
B-2	13.33" U/L and 12" Caps	
B-3	16" & 20" U/L	

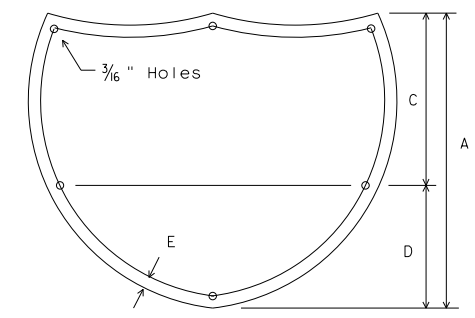
CODE	USED ON SIGN NO.
E-3	E5-1aT
E-4	E5-1bT

NOTE

Arrow dimensions are shown in the "Standard Highway Sign Designs for Texas" manual.

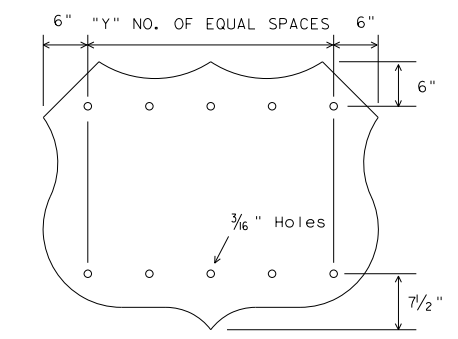
The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website:
<http://www.txdot.gov/>

SIGN BLANK PUNCHING DETAILS FOR ATTACHMENTS WHEN SPECIFIED TO BE TYPE A ALUMINUM SIGNS (FOR MOUNTING TO GUIDE SIGN FACE)



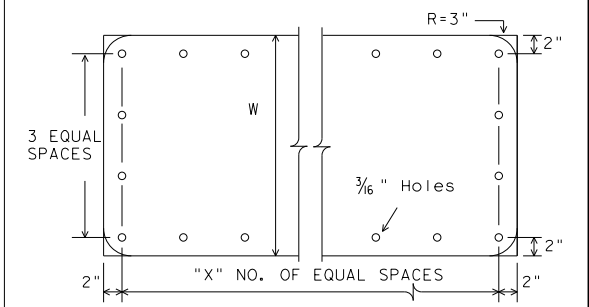
INTERSTATE ROUTE MARKERS

A	C	D	E
36	21	15	10
48	28	20	10



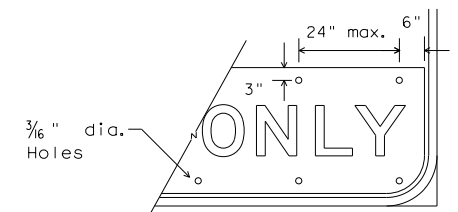
U.S. ROUTE MARKERS

Sign Size	"Y"
24x24	2
30x24	3
36x36	3
45x36	4
48x48	4
60x48	5



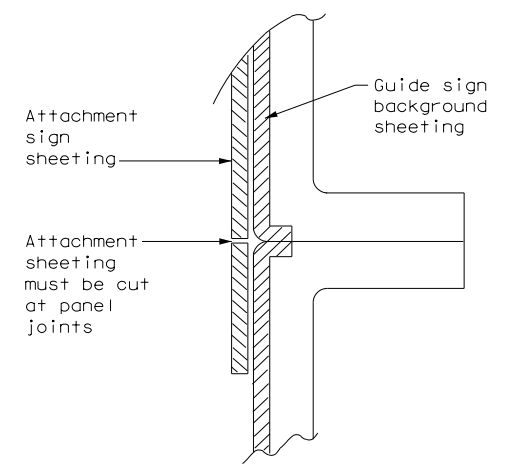
STATE ROUTE MARKERS

No. of Digits	W	X
4	24	4
4	36	5
4	48	6
3	24	3
3	36	4
3	48	5

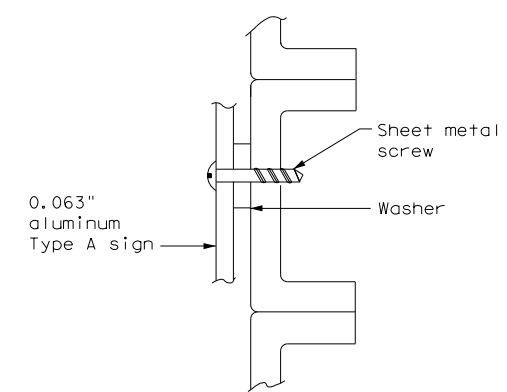


EXIT ONLY PANEL

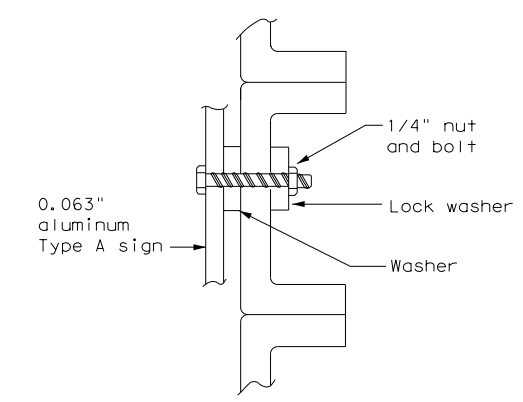
MOUNTING DETAILS OF ATTACHMENTS TO GUIDE SIGN FACE ("EXIT ONLY" AND "LEFT EXIT" PANELS, ROUTE MARKERS AND OTHER ATTACHMENTS)



DIRECT APPLIED ATTACHMENT



SCREW ATTACHMENT

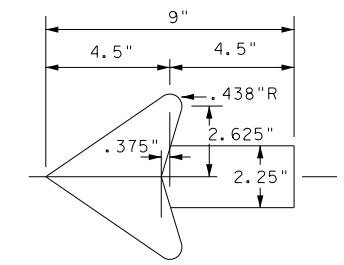


NUT/BOLT ATTACHMENT

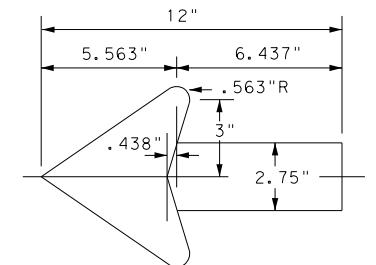
- NOTE:**
- Sheeting for legend, symbols, and borders must be cut at panel joints.
 - Direct applied attachment signs will be subsidiary to "Aluminum Signs" or "Fiberglass Signs".

- NOTE:**
- Furnish Type A aluminum sign attachments only when specified in the plans. These signs will be paid for under "Aluminum Signs".

ARROW DETAILS for Destination Signs (Type D)



Standard arrow to be used with 6 inch letters.



Standard arrow to be used with 8 inch letters.



TYPICAL SIGN REQUIREMENTS

TSR (5) - 13

FILE: tsr5-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
12-03 7-13	DIST	COUNTY	SHEET NO.	
9-08	TYL	WOOD	396	

DATE:
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 TxDOT_Standards_BW_ANSIB.tbl
 cpypdf_ANSIB.plt

POST TYPE AND SUPPORT FOUNDATION DETAILS				TYPE OF BARRIER MOUNTS	
WING CHANNEL (WC)	FLEXIBLE POSTS (YFLX, WFLX)		WEDGE ANCHOR SYSTEMS		GUARD FENCE ATTACHMENT
GND	GND	SRF	WAS	WAP	GF1
<p>Ground Line</p> <p>2'-0" Usual</p>	<p>Reflective material</p> <p>Post</p> <p>Stub</p>	<p>Reflective material</p> <p>Post</p> <p>Base</p>	<p>12" Dia.</p> <p>27" 30"</p>	<p>12" Dia.</p> <p>17" 20"</p> <p>3" (Approx.)</p> <p>3.5" 17" 1" 30° 2"</p>	<p>Centerline of MGBF rail element</p>
	EMBEDDED		SURFACE MOUNT	STEEL	PLASTIC
NOTES 1. Embedded Wing Channel (WC) post option may be used for Type 2 Object Markers and Delineators only. 2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr. 50, or ASTM A499.	NOTES 1. See "Flexible Delineator and Object Marker Posts" Material Producer List for approved devices. 2. Install per manufacturer's recommendations. 3. Post length may vary to meet field conditions. 4. When using yellow delineators with flexible posts to separate opposing direction of travel, such as centerline or median use, the flexible posts shall be yellow.		NOTE 1. Install per manufacturer's recommendations.		

TYPE OF BARRIER MOUNTS	
GUARD FENCE ATTACHMENT	
GF1	GF2
	<p>Attached to post or block</p> <p>2'-6" Min.</p> <p>4" Min.</p> <p>4'-0"</p>

CONCRETE TRAFFIC BARRIER (CTB)	
<p>Place Barrier Reflector on top or on side(s) of CTB.</p>	

GENERAL NOTES
1. Place delineators on a section of roadway at a consistent distance from the edge of pavement. 2. Where a restriction prevents consistent placement from the pavement edge, place the affected object markers in line with the innermost edge of the obstruction. 3. When Type 2 object markers and delineators are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of approximately 4'-0". If this is the case, place the object marker or delineator as close to the desired height as possible. 4. Install all delineators, object markers and barrier reflectors in accordance with the manufacturer's recommendation. 5. Barrier reflectors should be installed a minimum of 18 inches above the edge of the pavement surface. 6. Diagonal stripes on Type 3 object markers shall slope down toward the intended travel lane.

TYPES 1,3, AND 4 OBJECT MARKERS AND CHEVRONS
<p>4'-0"</p> <p>Pavement surface</p> <p>Ground Line</p> <p>NOTE Mounting at 4 feet to the bottom of the chevron is permitted for chevrons that will not exceed a height of 6'-6" to the top of the chevron (sizes 24" x 30" and smaller)</p>

CHEVRONS AND ONE DIRECTION LARGE ARROW SIGN
<p>7'-0"</p> <p>Pavement surface</p> <p>Ground Line</p> <p>NOTE Chevrons 30" x 36" and larger shall be mounted at a height of 7' to the bottom of the chevron. Chevron sign and ONE DIRECTION LARGE ARROW sign (W1-9T) shall be installed per SMD standard sheets and paid under item 644.</p>

DELINEATORS AND TYPE 2 OBJECT MARKERS
<p>Approximately 4'-0"</p> <p>Pavement surface</p> <p>Ground Line</p> <p>2'-0" to 8'-0" or in front of object being marked</p> <p>See general notes 1, 2 and 3.</p>

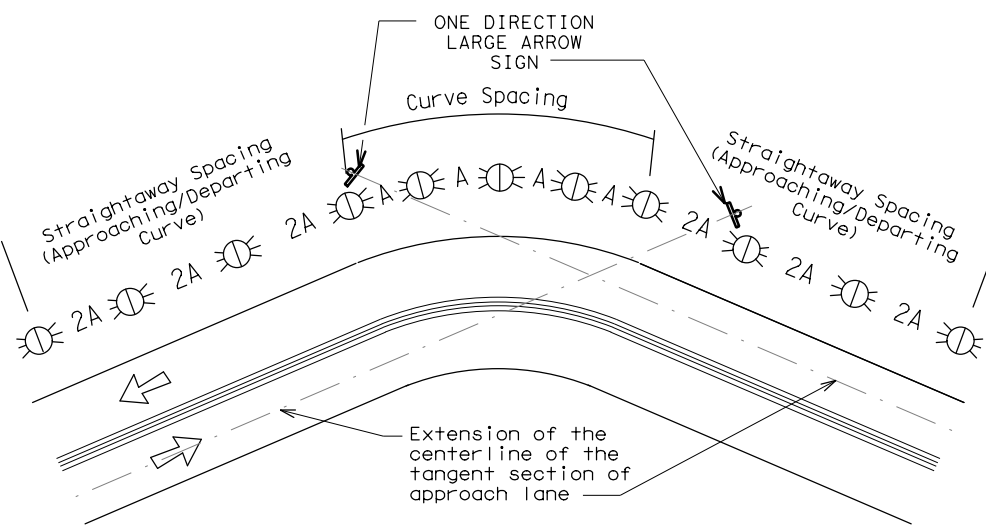
		Traffic Safety Division Standard	
<h2>DELINEATOR & OBJECT MARKER INSTALLATION</h2> <h3>D & OM(2)-20</h3>			
FILE: dom2-20.dgn	DN: TXDOT	CK: TXDOT	DW: TXDOT
© TXDOT August 2004	CONT	SECT	JOB
REVISIONS	0203	05	039
10-09 3-15	DIST	COUNTY	SHEET NO.
4-10 7-20	TYL	WOOD	398

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MINIMUM WARNING DEVICES AT CURVES WITH ADVISORY SPEEDS

Amount by which Advisory Speed is less than Posted Speed	Curve Advisory Speed	
	Turn (30 MPH or less)	Curve (35 MPH or more)
5 MPH & 10 MPH	● RPMs	● RPMs
15 MPH & 20 MPH	● RPMs and One Direction Large Arrow sign	● RPMs and Chevrons; or ● RPMs and One Direction Large Arrow sign where geometric conditions or roadside obstacles prevent the installation of chevrons.
25 MPH & more	● RPMs and Chevrons; or ● RPMs and One Direction Large Arrow sign where geometric conditions or roadside obstacles prevent the installation of chevrons	● RPMs and Chevrons

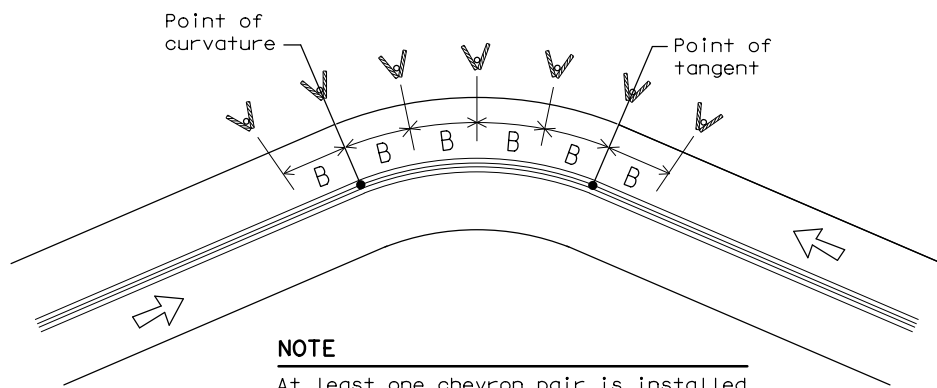
SUGGESTED SPACING FOR DELINEATORS ON HORIZONTAL CURVES



NOTE

ONE DIRECTION LARGE ARROW (W1-6) sign should be located at approximately and perpendicular to the extension of the centerline of the tangent section of approach lane.

SUGGESTED SPACING FOR CHEVRONS ON HORIZONTAL CURVES



NOTE

At least one chevron pair is installed beyond the point of tangent in tangent section.

DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS KNOWN				
Degree of Curve	FEET			
	Radius of Curve	Spacing in Curve	Spacing in Straightaway	Chevron Spacing in Curve
		A	2A	B
1	5730	225	450	—
2	2865	160	320	—
3	1910	130	260	200
4	1433	110	220	160
5	1146	100	200	160
6	955	90	180	160
7	819	85	170	160
8	716	75	150	160
9	637	75	150	120
10	573	70	140	120
11	521	65	130	120
12	478	60	120	120
13	441	60	120	120
14	409	55	110	80
15	382	55	110	80
16	358	55	110	80
19	302	50	100	80
23	249	40	80	80
29	198	35	70	40
38	151	30	60	40
57	101	20	40	40

Curve delineator approach and departure spacing should include 3 delineators spaced at 2A. This spacing should be used during design preparation or when the degree of curve is known.

DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS NOT KNOWN			
Advisory Speed (MPH)	Spacing in Curve	Spacing in Straightaway	Chevron Spacing in Curve
	A	2xA	B
65	130	260	200
60	110	220	160
55	100	200	160
50	85	170	160
45	75	150	120
40	70	140	120
35	60	120	120
30	55	110	80
25	50	100	80
20	40	80	80
15	35	70	40

If the degree of curve is not known, delineator spacing may be determined based on the Advisory Speed of the curve. Use the delineator curve spacing for each Advisory Speed (MPH).

DELINEATOR AND OBJECT MARKER APPLICATION AND SPACING

CONDITION	REQUIRED TREATMENT	MINIMUM SPACING
Frwy./Exp. Tangent	RPMs	See PM-series and FPM-series standard sheets
Frwy./Exp. Curve	Single delineators on right side	See delineator spacing table
Frwy/Exp. Ramp	Single delineators on at least one side of ramp (should be on outside of curves) (see Detail 3 on D&OM(4))	100 feet on ramp tangents Use delineator spacing table for ramp curves ("straightway spacing" does not apply to ramp curves)
Acceleration/Deceleration Lane	Double delineators (see Detail 3 on D&OM(4))	100 feet (See Detail 3 on D & OM (4))
Truck Escape Ramp	Single red delineators on both sides	50 feet
Bridge Rail (steel or concrete) and Metal Beam Guard Fence	Bi-Directional Delineators when undivided with one lane each direction Single Delineators when multiple lanes each direction	Equal spacing (100' max) but not less than 3 delineators
Concrete Traffic Barrier (CTB) or Steel Traffic Barrier	Barrier reflectors matching the color of the edge line	Equal spacing 100' max
Cable Barrier	Reflectors matching the color of the edge line	Every 5th cable barrier post (up to 100' max)
Guard Rail Terminus/Impact Head	Divided highway - Object marker on approach end Undivided 2-lane highways - Object marker on approach and departure end	Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end See D & OM (5) and D & OM (6)
Bridges with no Approach Rail	Type 3 Object Marker (OM-3) at end of rail and 3 single delineators approaching rail	See D & OM(5)
Reduced Width Approaches to Bridge Rail	Type 2 and Type 3 Object Markers (OM-3) and 3 single delineators approaching bridge	Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end See D & OM (5)
Culverts without MBGF	Type 2 Object Markers	See Detail 2 on D & OM(4)
Crossovers	Double yellow delineators and RPMs	See Detail 1 on D & OM (4)
Pavement Narrowing (lane merge) on Freeways/Expressway	Single delineators adjacent to affected lane for full length of transition	100 feet

NOTES

- Unless indicated otherwise, the delineator or barrier reflector color shall conform to the color of the pavement edge line on the side of the road where the delineators or barrier reflectors are placed.
- Barrier reflectors may be used to replace required delineators.
- Single red delineators may be mounted on the back side of delineator posts for wrong way driver applications

LEGEND	
	Bi-directional Delineator
	Delineator
	Sign

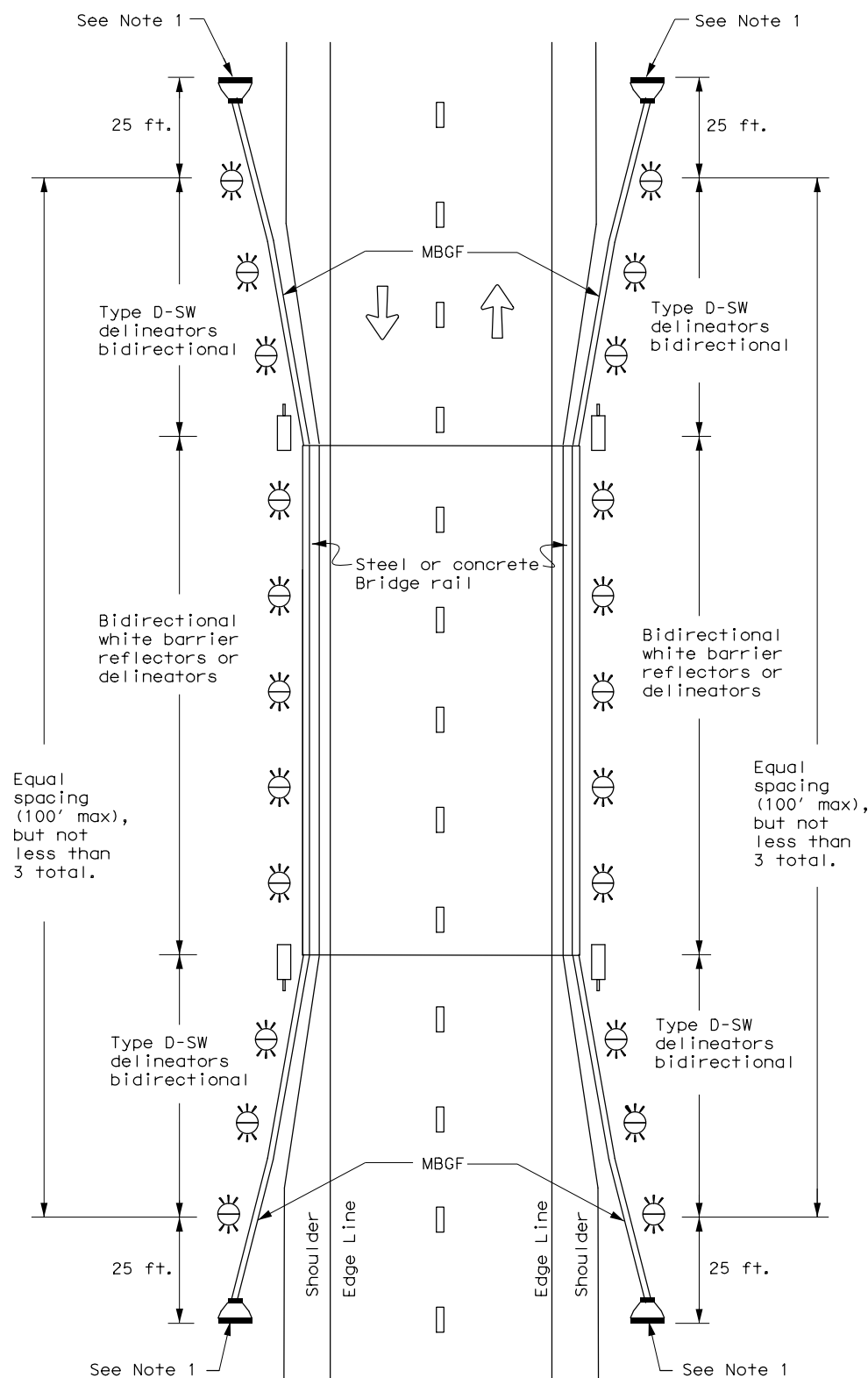
Texas Department of Transportation
Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

D & OM(3)-20

FILE: dom3-20.dgn	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
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3-15 8-15	DIST	COUNTY	SHEET NO.	
8-15 7-20	TYL	WOOD	399	

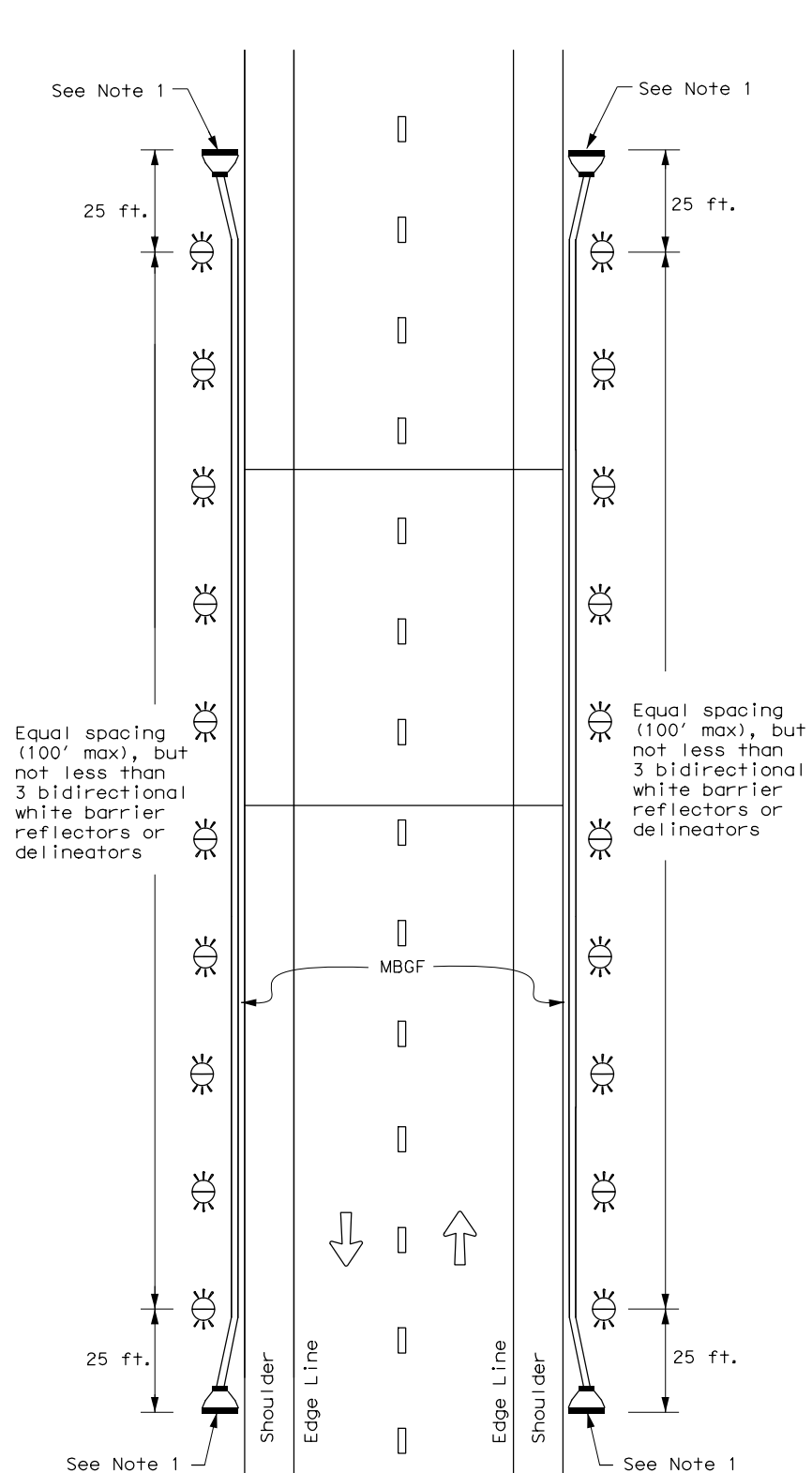
TWO-WAY, TWO LANE ROADWAY WITH REDUCED WIDTH APPROACH RAIL



NOTE:

1. Terminal ends require reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end.

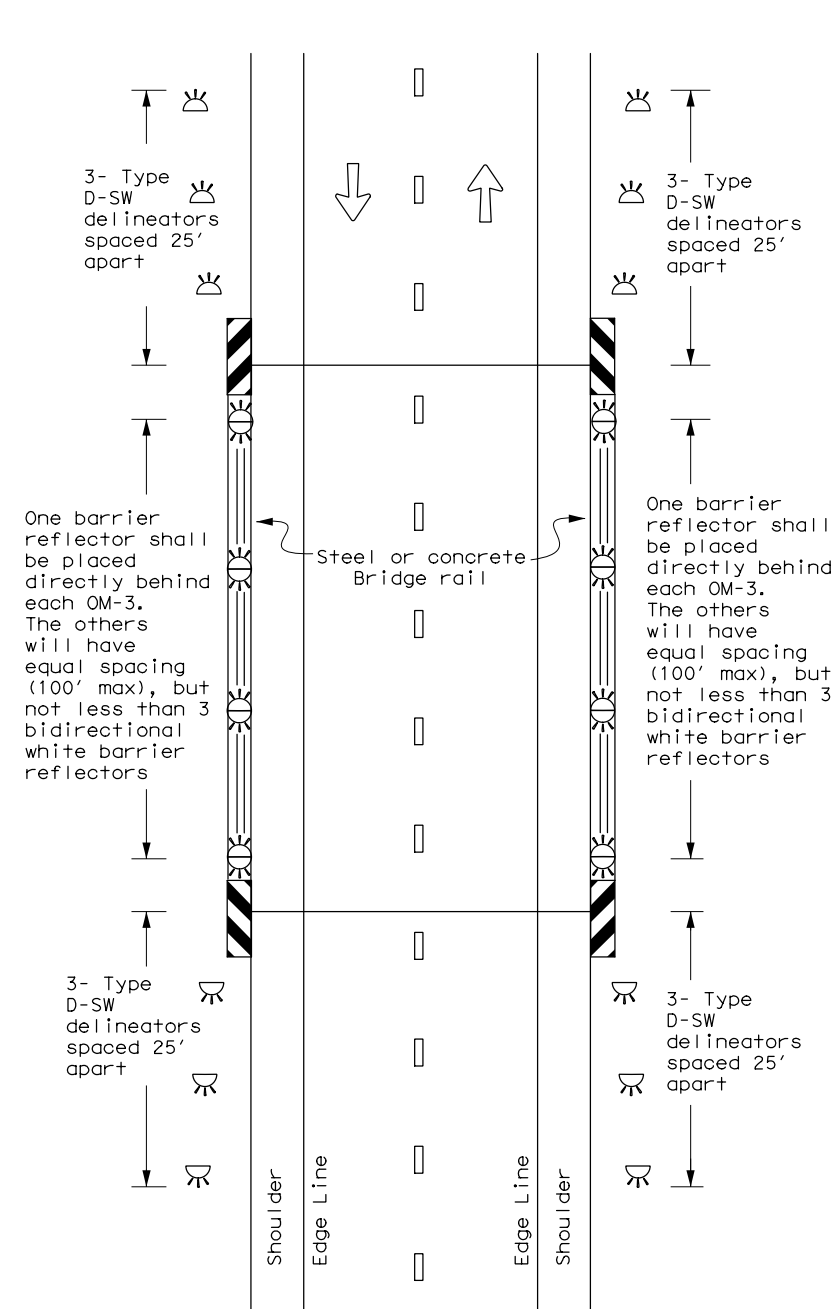
TWO-WAY, TWO LANE ROADWAY WITH METAL BEAM GUARD FENCE (MBGF)



NOTE:

1. Terminal ends require reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end.

TWO-WAY, TWO LANE ROADWAY BRIDGE WITH NO APPROACH RAIL



LEGEND

	Bidirectional Delineator
	Delineator
	OM-3
	OM-2
	Terminal End
	Traffic Flow



DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

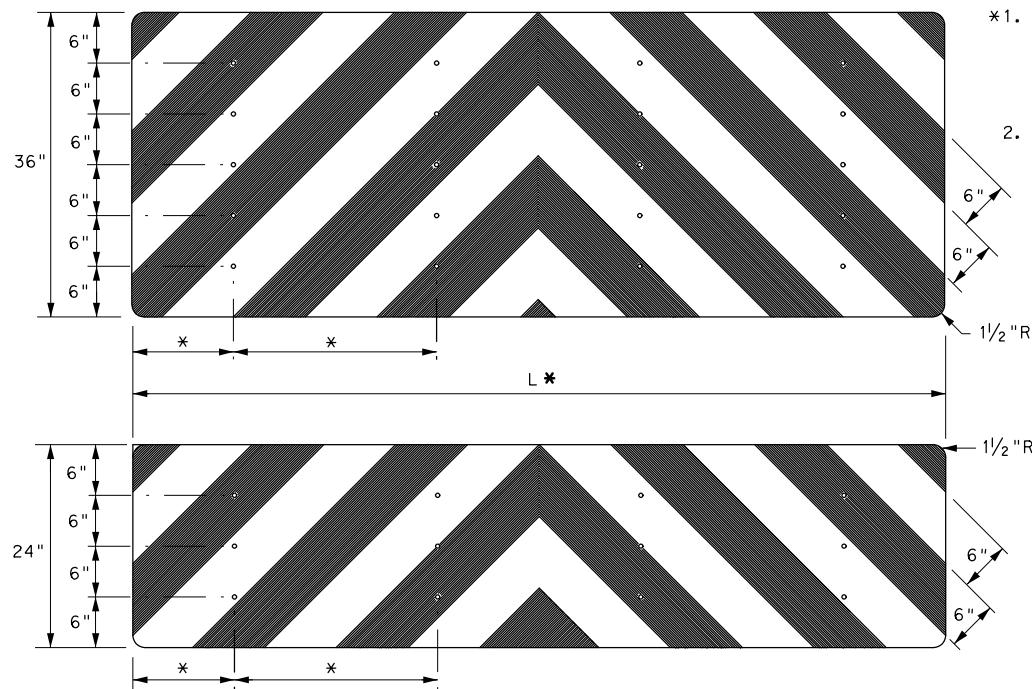
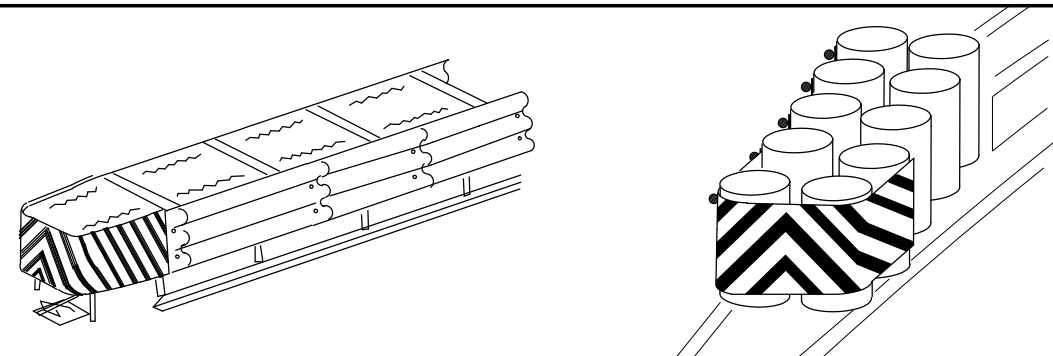
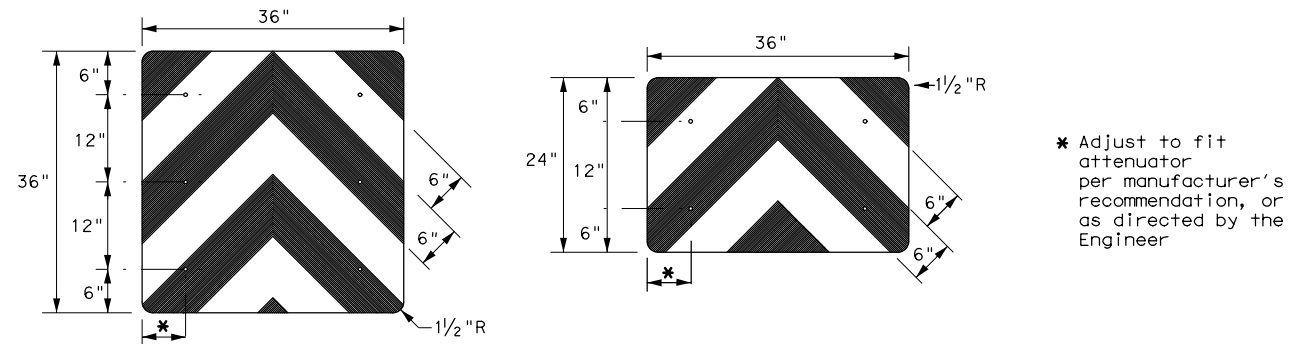
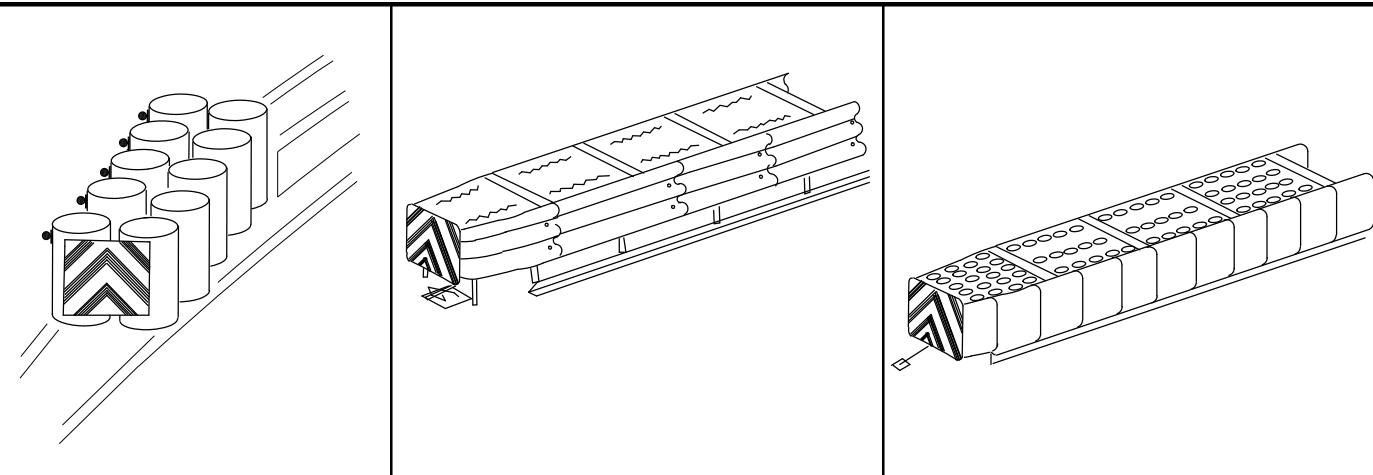
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7-20	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	401	

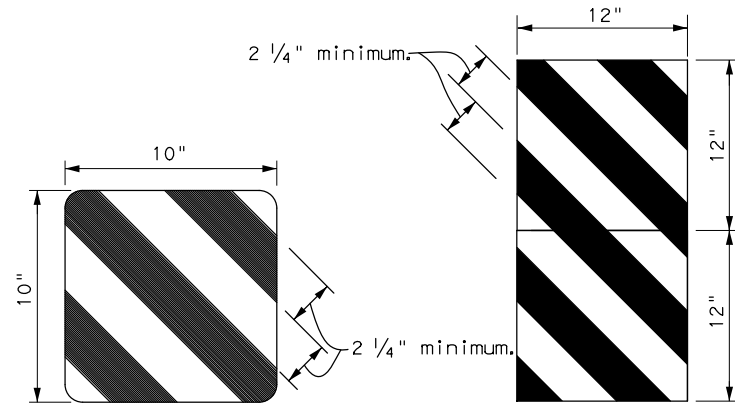
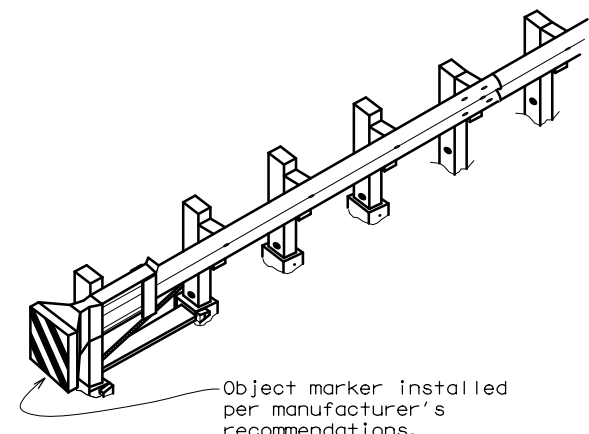
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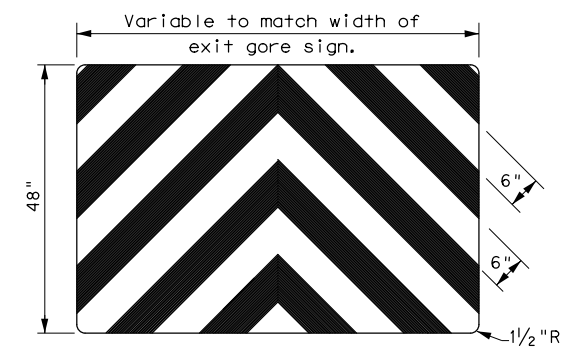
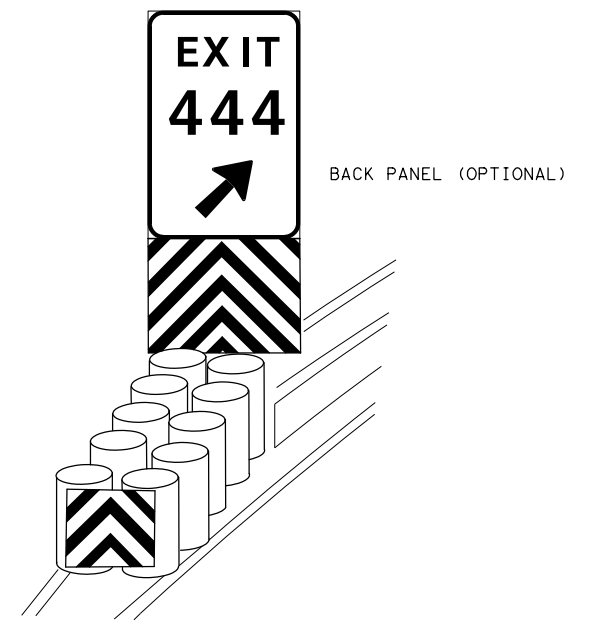
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- NOTES**
1. Spacing should be adjusted to attach through centerline of drum, per attenuator manufacturer's recommendation, or as directed by the Engineer.
 2. Mounting should be flush with top of attenuator. Minimum size 96" x 24".



OBJECT MARKERS SMALLER THAN 3 FT²



NOTES

1. Object Markers shall conform to the Texas MUTCD and meet the color and reflectivity requirement of Department Material Specification DMS 8300. Background shall be yellow reflective sheeting (Type B or C) and Chevron shall be black.
2. Object Markers may be fabricated from adhesive backed reflective sheeting applied directly to guardrail end treatment, or applied directly to an "end cap" as per the manufacturer's recommendation. Direct applied sheeting shall provide a smooth surface and have no wrinkles, air bubbles, cuts or tears. A radius at the corners is not required for direct applied sheeting.
3. Object Marker size may be reduced to fit smaller devices. Width of alternating black and yellow stripes are typically 6". Object Markers smaller than 3ft may have reduced width stripes of a minimum of 2 1/4".
4. Pop rivets, screws, or nuts and bolts may be used to attach object markers and reflectors. Holes, slots or other openings may be cut or drilled through object markers to allow cable or other attachments.
5. Object Marker at nose of attenuator is subsidiary to the attenuator.
6. See D & OM (1-4) for required barrier reflectors.

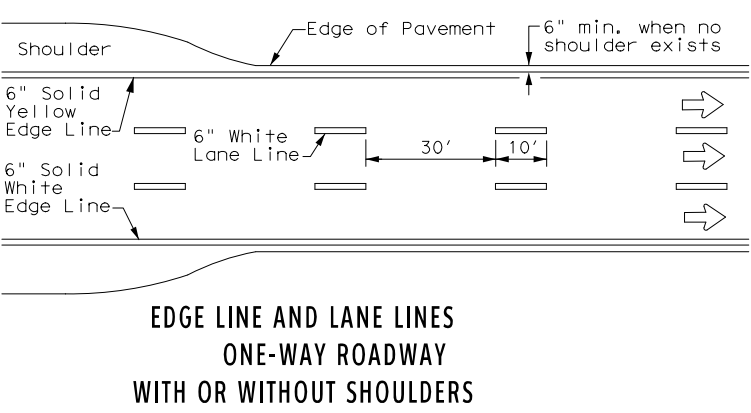
Texas Department of Transportation
 Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER FOR VEHICLE IMPACT ATTENUATORS
D & OM(VIA) -20

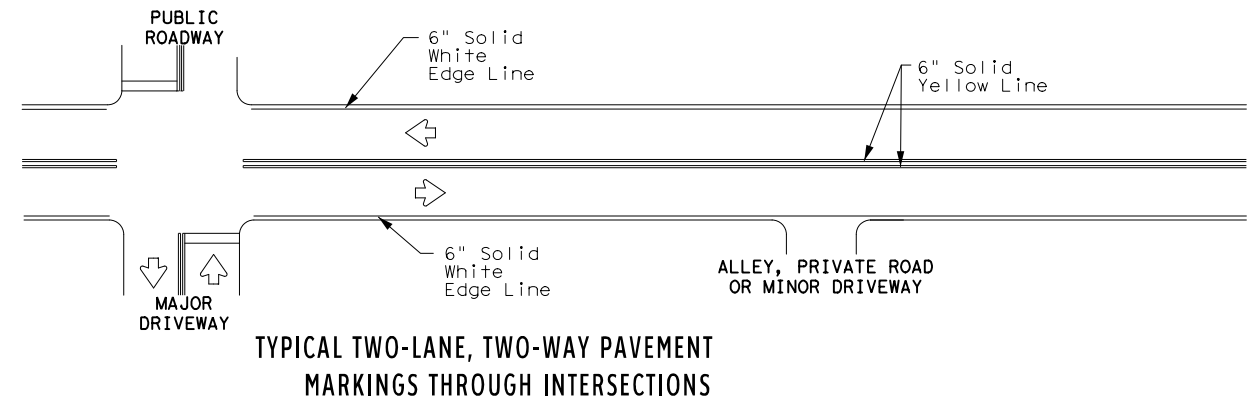
FILE: domvia20.dgn	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
© TXDOT December 1989	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
4-92 8-04	DIST	COUNTY	SHEET NO.	
8-95 3-15	TYL	WOOD	403	
4-98 7-20				

20G

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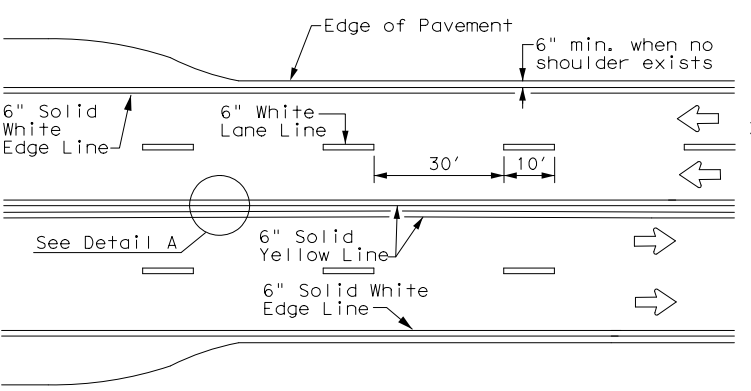


**EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**

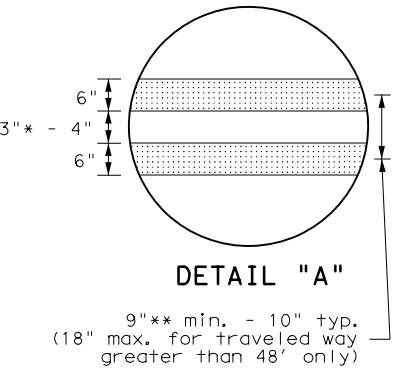


**TYPICAL TWO-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS**

- GENERAL NOTES**
1. Edge line striping shall be as shown in the plans or as directed by the Engineer. The edge line should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edge lines are not required in curb and gutter sections of roadways.
 2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the center of edge line to the center of edge line of a two lane roadway.

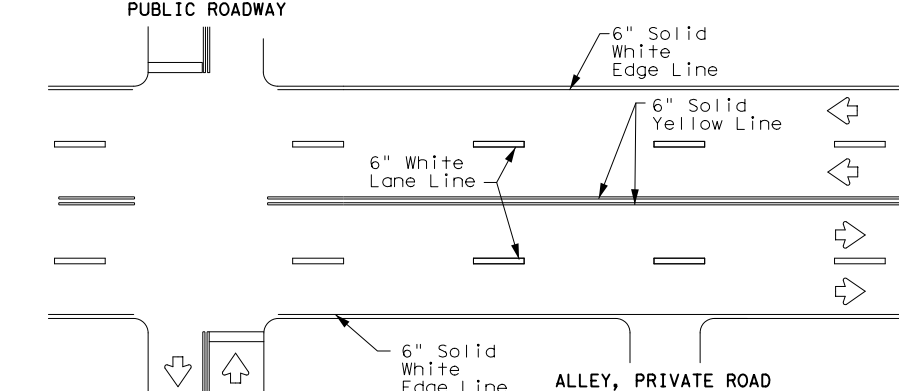


**CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**



DETAIL "A"
9" x 4" min. - 10" typ.
(18" max. for traveled way greater than 48' only)

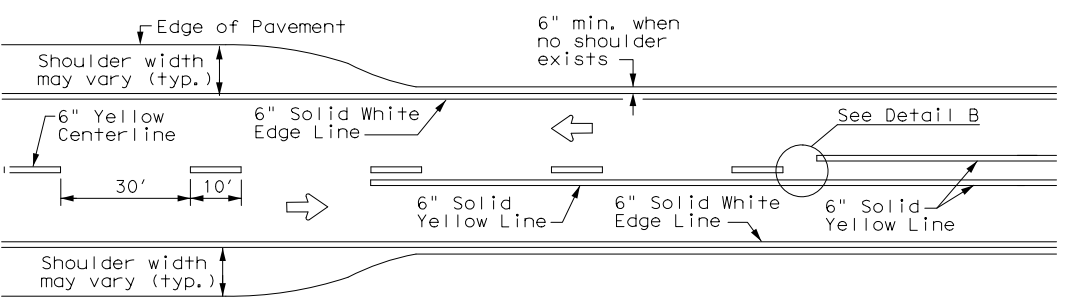
* 2" minimum for restripe projects when approved by the Engineer.
** 8" minimum for projects when approved by the Engineer.



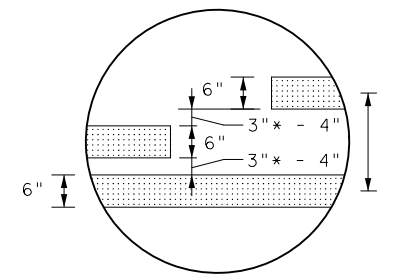
**TYPICAL MULTI-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS**

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.

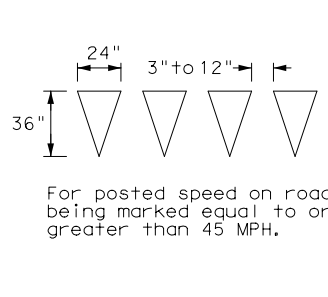


**TWO LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**

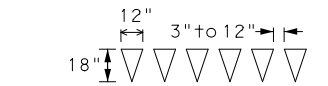


DETAIL "B"
18" min. - 20" max.
(16" minimum for restripe projects when approved by the Engineer.)

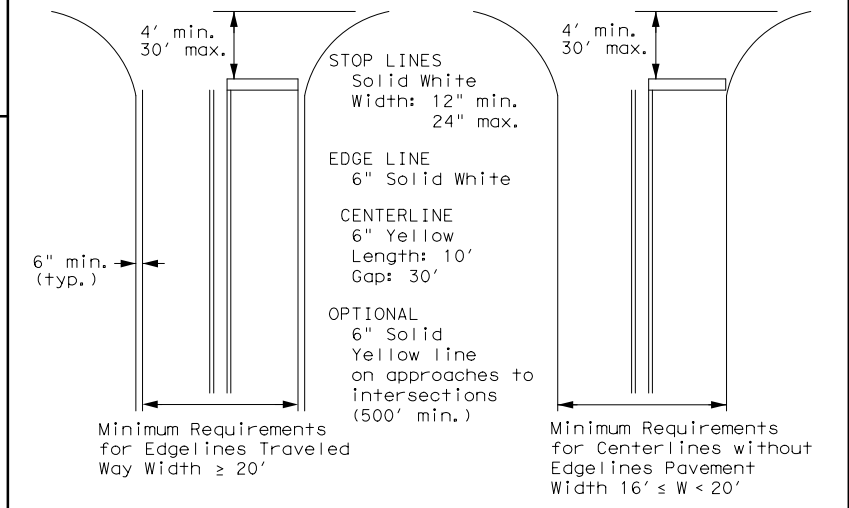
* 2" minimum for restripe projects when approved by the Engineer.



YIELD LINES

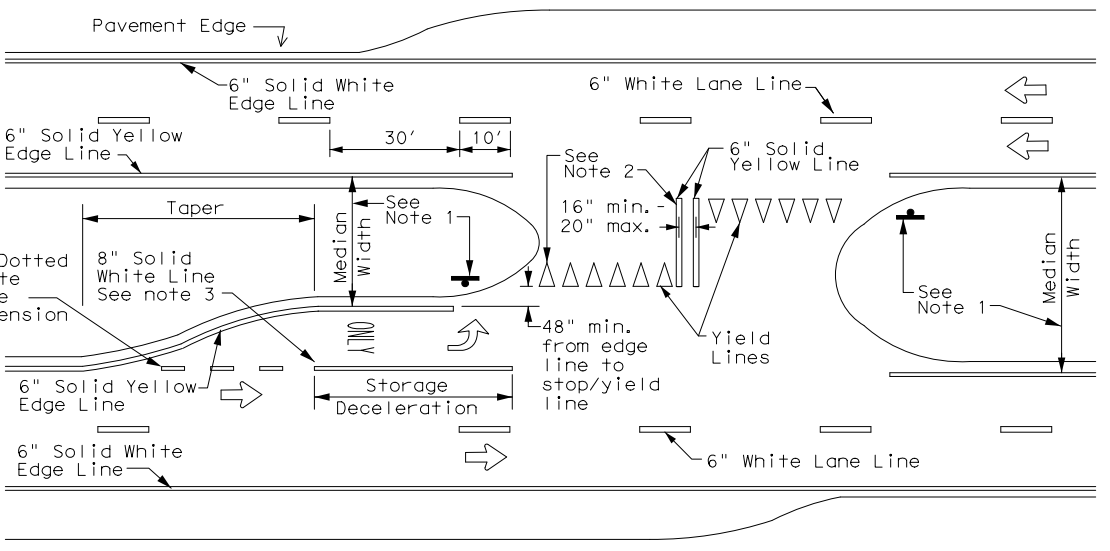


For posted speed on road being marked equal to or less than 40 MPH.



NOTE: Traveled way is exclusive of shoulder widths. Refer to General Note 2 for additional details.

**GUIDE FOR PLACEMENT OF STOP LINES,
EDGE LINE & CENTERLINE**
Based on Traveled Way and Pavement Widths for Undivided Roadways



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs and stop bars are optional as determined by the Engineer.
2. Install median striping (double yellow centerlines and stop lines/yield lines) when a 50' or greater median centerline can be placed. Stop lines shall only be used with stop signs. Yield lines shall only be used with yield signs.
3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

Texas Department of Transportation
Traffic Safety Division Standard

**TYPICAL STANDARD
PAVEMENT MARKINGS**

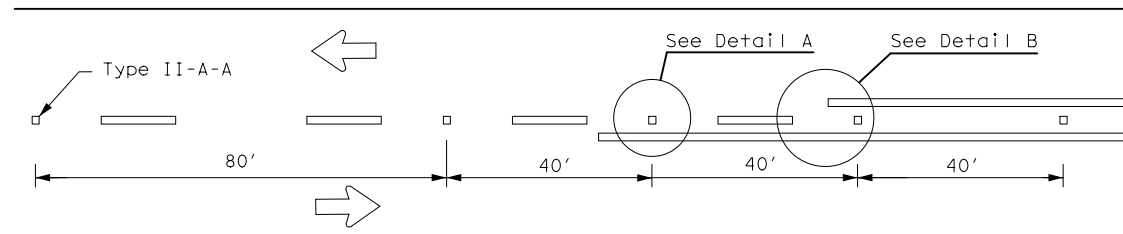
PM(1)-22

FILE: pml-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
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8-95 3-03 12-22	TYL	WOOD	404	
5-00 2-12				

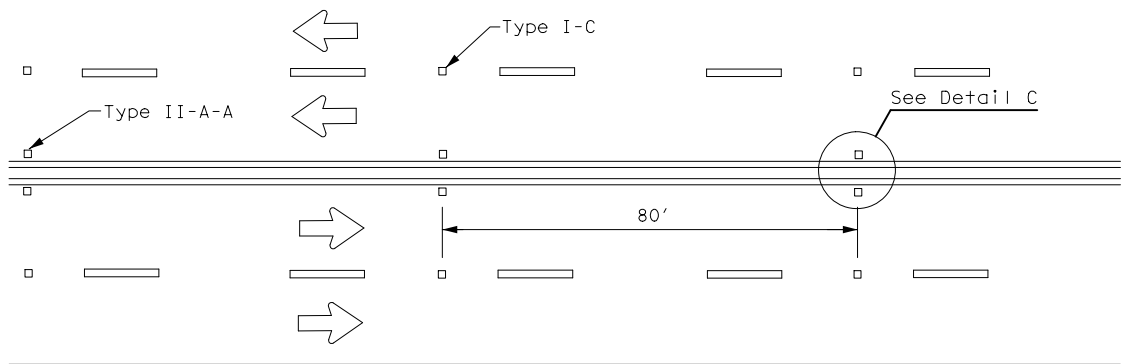
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

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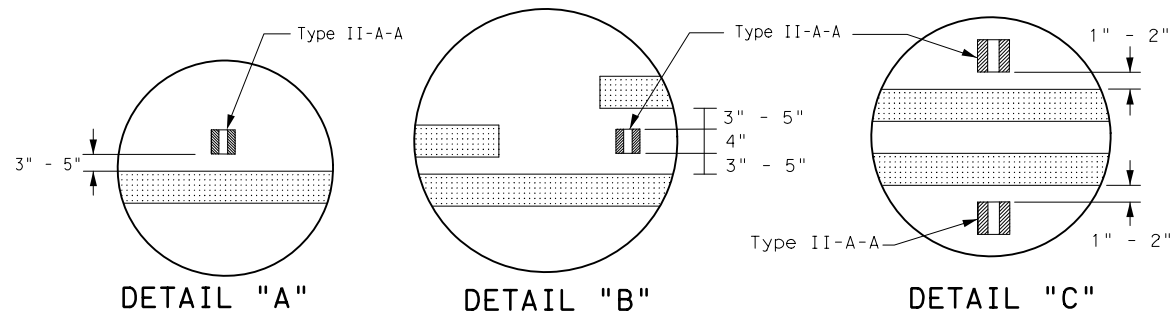
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CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS



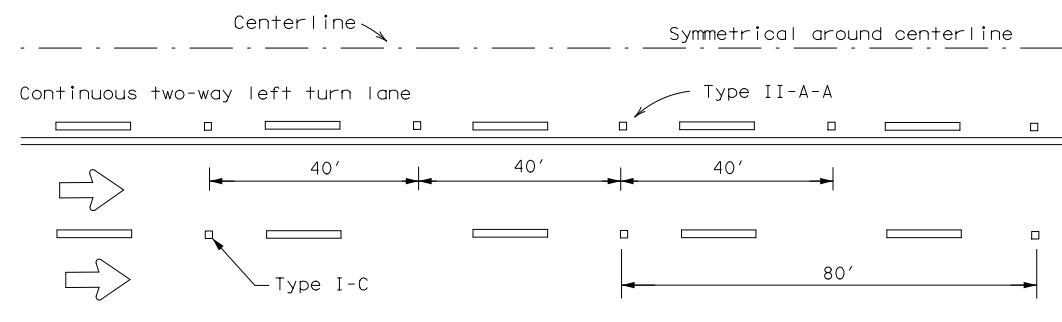
CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY ROADWAYS



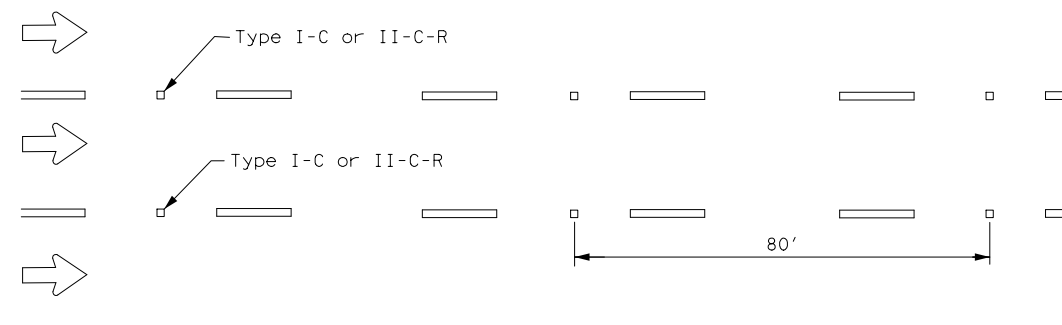
DETAIL "A"

DETAIL "B"

DETAIL "C"

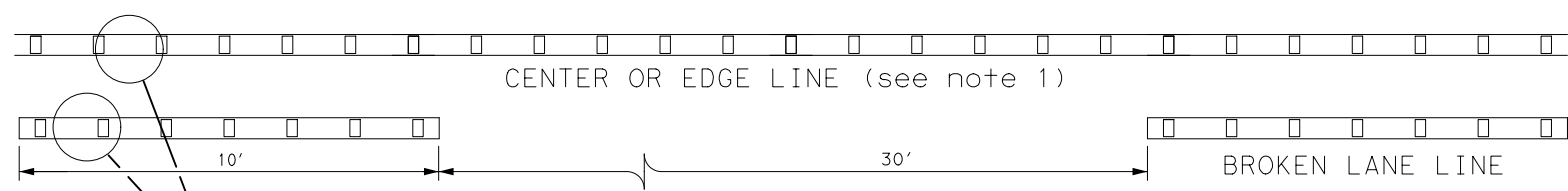


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



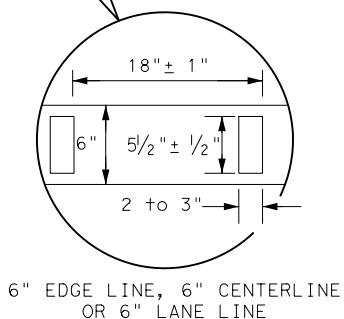
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.
See Note 3.

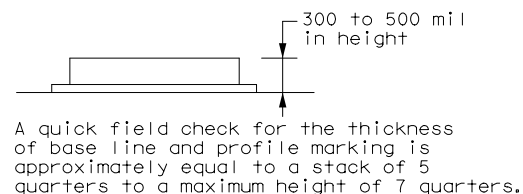


REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS



6" EDGE LINE, 6" CENTERLINE
OR 6" LANE LINE



A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

NOTES

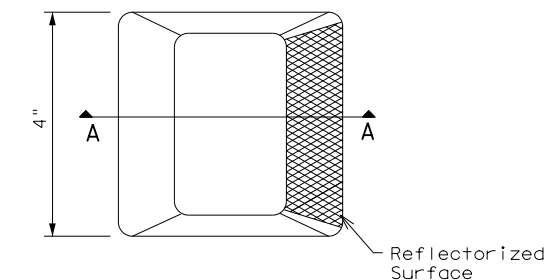
- Edge lines should typically be 6" wide and the materials shall be specified in the plans.
- Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

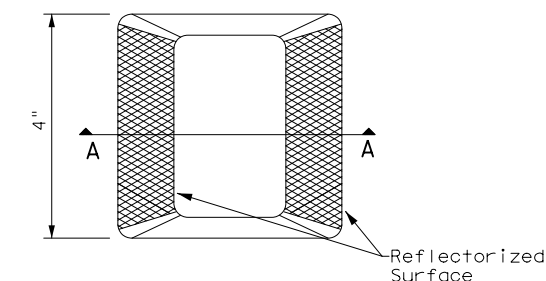
- All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
- On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.
- Use raised pavement marker Type I-C with undivided roadways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

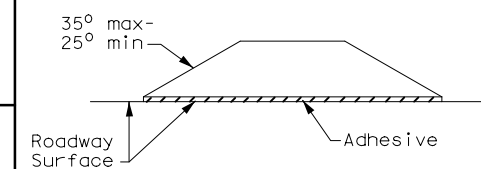
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS

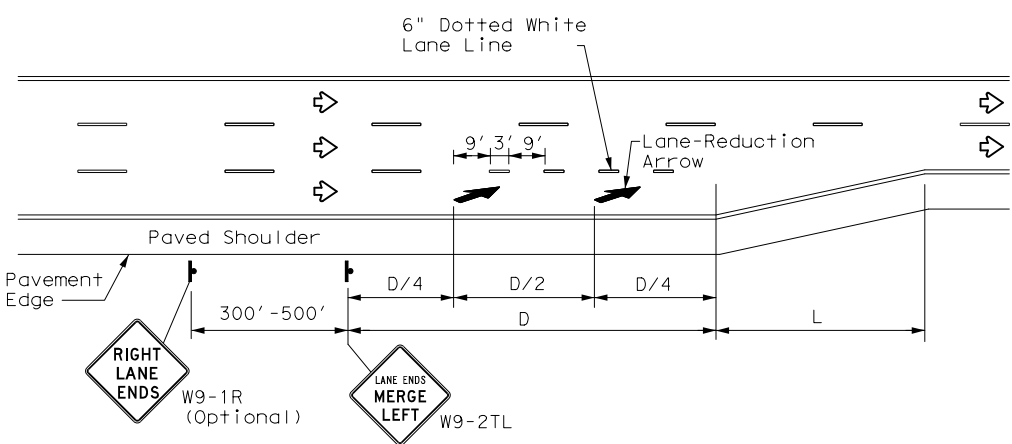


POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS PM(2) - 22

FILE: pm2-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
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4-77 8-00 6-20	DIST	COUNTY	SHEET NO.	
4-92 2-10 12-22	TYL	WOOD	405	
5-00 2-12				

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LANE REDUCTION

NOTES

- Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
- On divided highways, an additional RIGHT LANE ENDS (W9-1R) sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
- Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
- For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

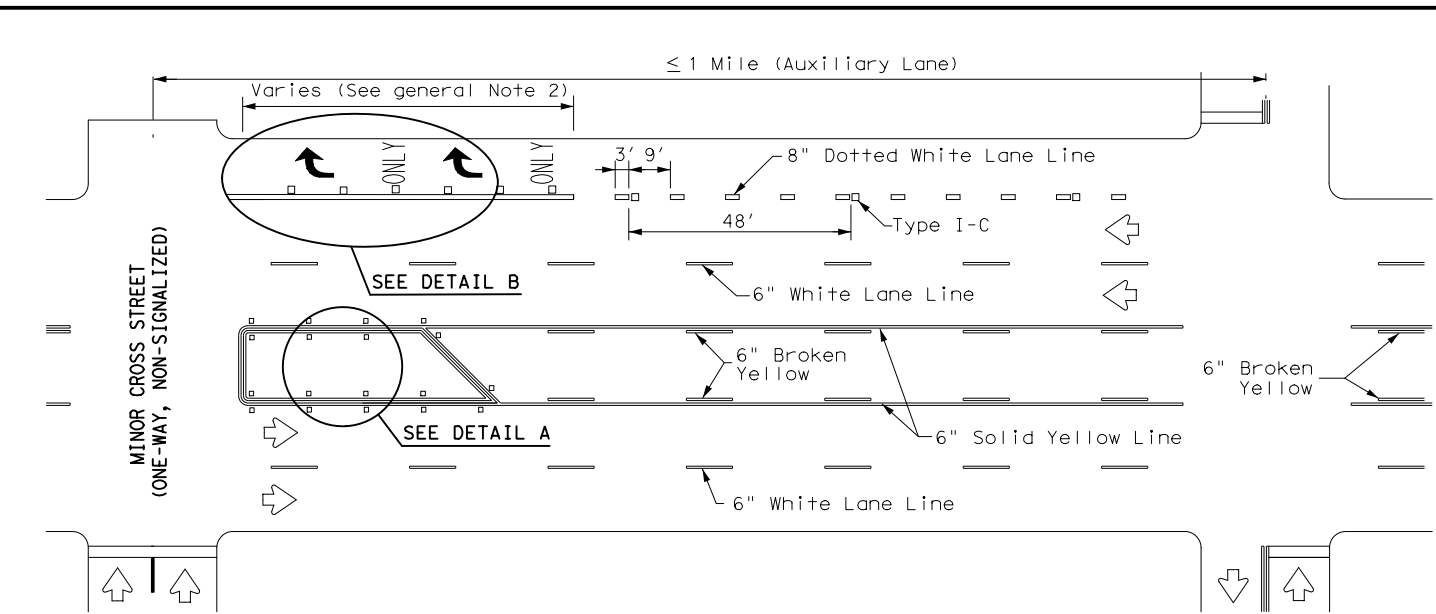
ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L = \frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	L=WS
45 MPH	775	
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

GENERAL NOTES

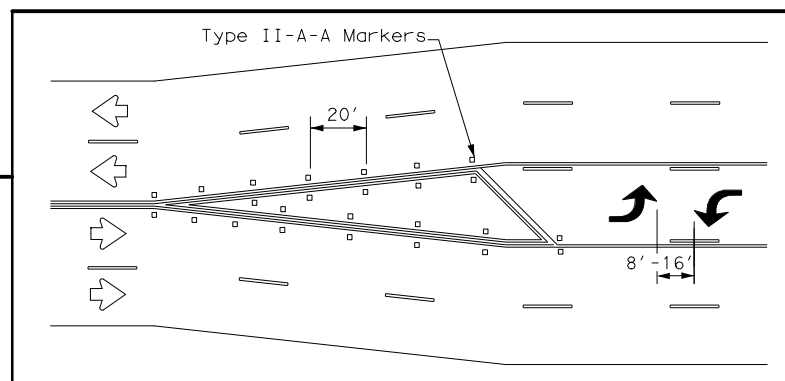
- Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
- When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
- Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
- Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer. See Chapter 3 of the Roadway Design Manual for additional information on turning lanes or storage lengths.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.

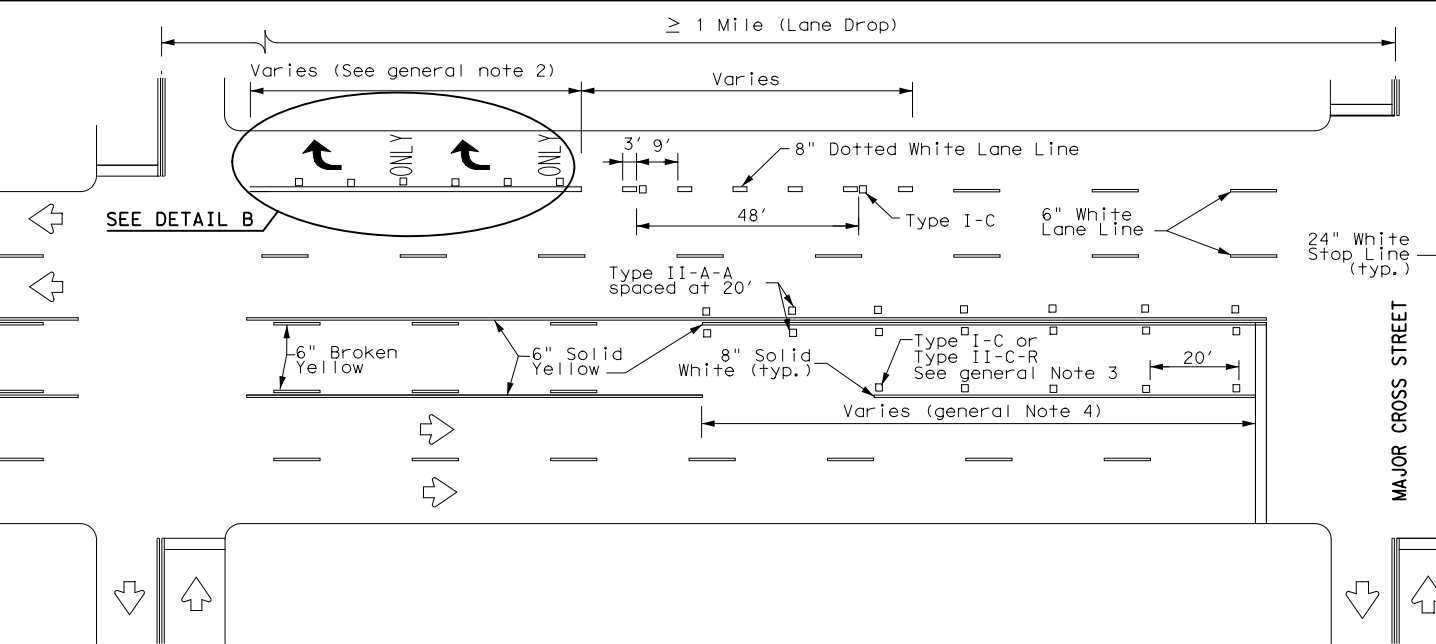


TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE

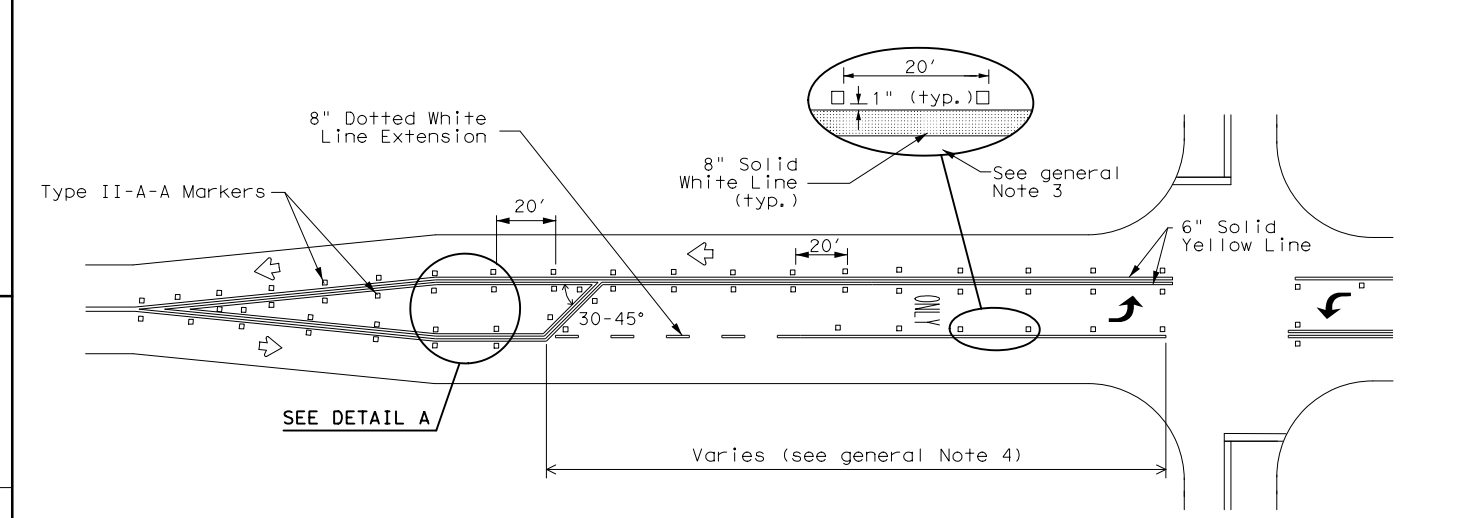


A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

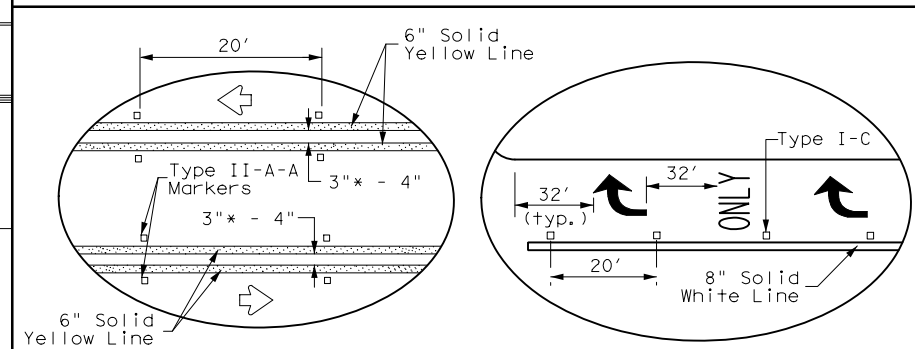
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY



TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



DETAIL A

DETAIL B

* 2" minimum allowed for restripe projects when approved by the Engineer.

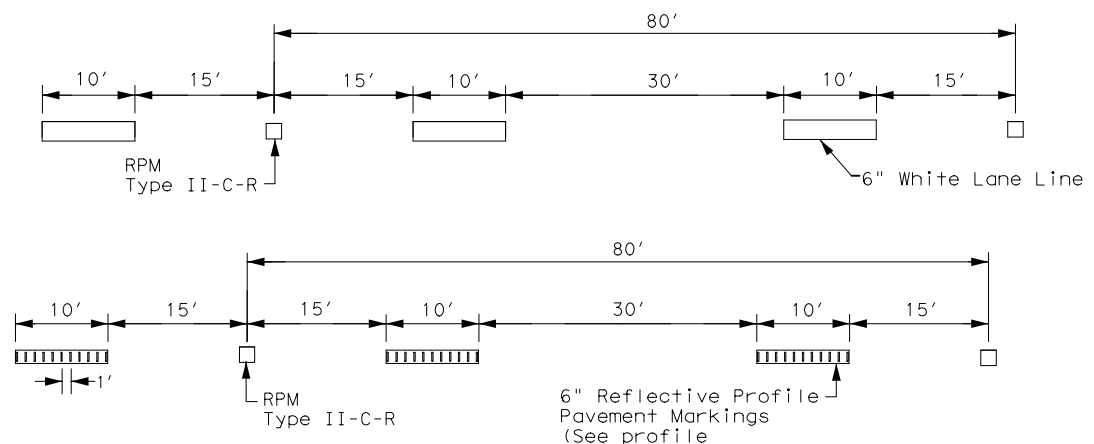
Texas Department of Transportation
 Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS PM(3)-22

FILE: pm3-22.dgn	DN:	CK:	DW:	CK:
© TxDOT REVISIONS	CONT	SECT	JOB	HIGHWAY
4-98 3-03 6-20	0203	05	039	US 69
5-00 2-10 12-22	DIST	COUNTY		SHEET NO.
8-00 2-12	TYL	WOOD		406

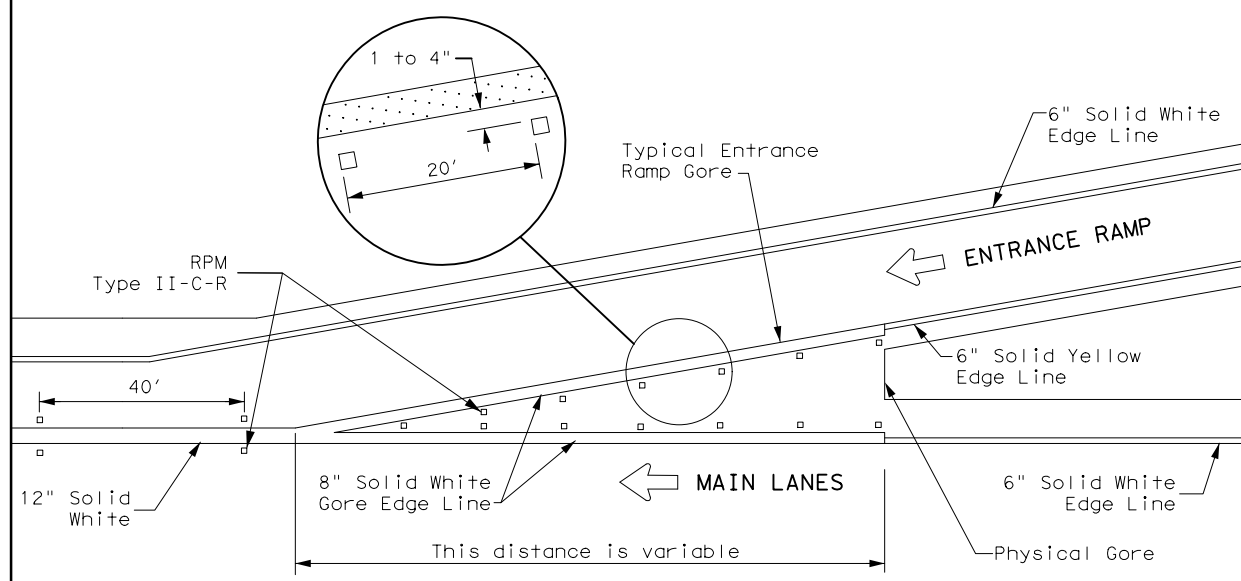
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NOTE
 ReflectORIZED raised pavement markers Type II-C-R shall be spaced on 80' centers with the clear face toward normal traffic and the red face toward wrong way traffic. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.

TRAFFIC LANE LINES PAVEMENT MARKING



TYPICAL ENTRANCE RAMP GORE MARKING

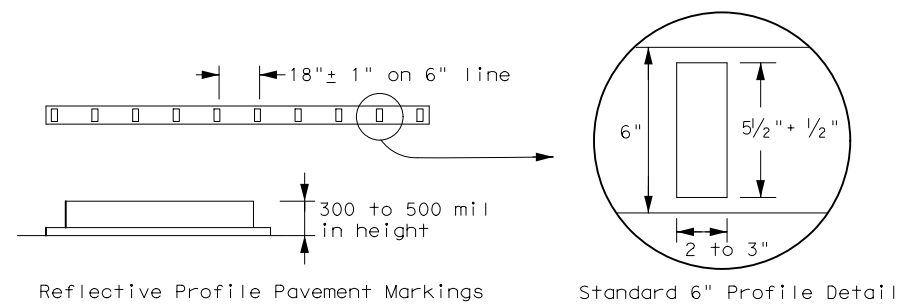
MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.

LEGEND	
	Traffic flow
	Pavement marking arrows (white)
	ReflectORIZED Raised Markers (RPM) Type II-C-R

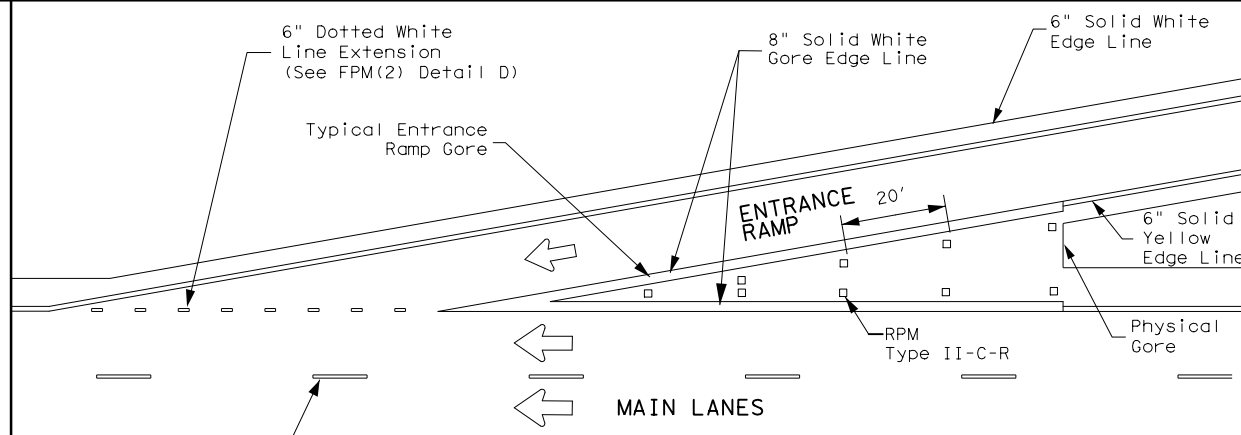
GENERAL NOTE

On concrete pavements the raised pavement markers shall be placed to one side of the longitudinal joints.



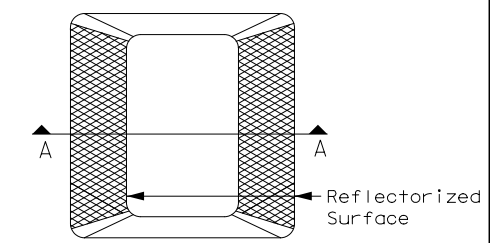
NOTE
 Edge lines should typically be 6" wide and the materials shall be as specified in the plans. See details above if reflective profile pavement markings are to be used.

EDGE LINE PAVEMENT MARKINGS

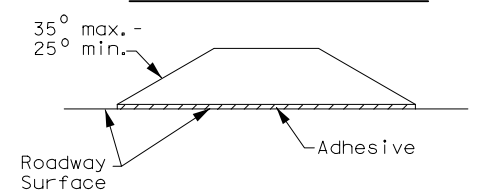


NOTE
 See the Roadway Design Manual Chapter 3 to determine if a tapered acceleration lane may be used.

TAPERED ACCELERATION LANE

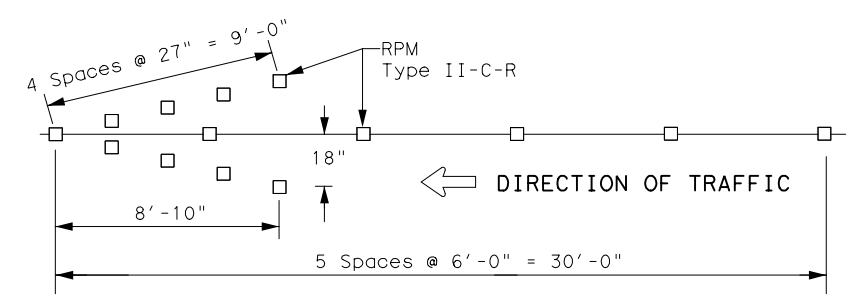


Type II (Top View)



SECTION A

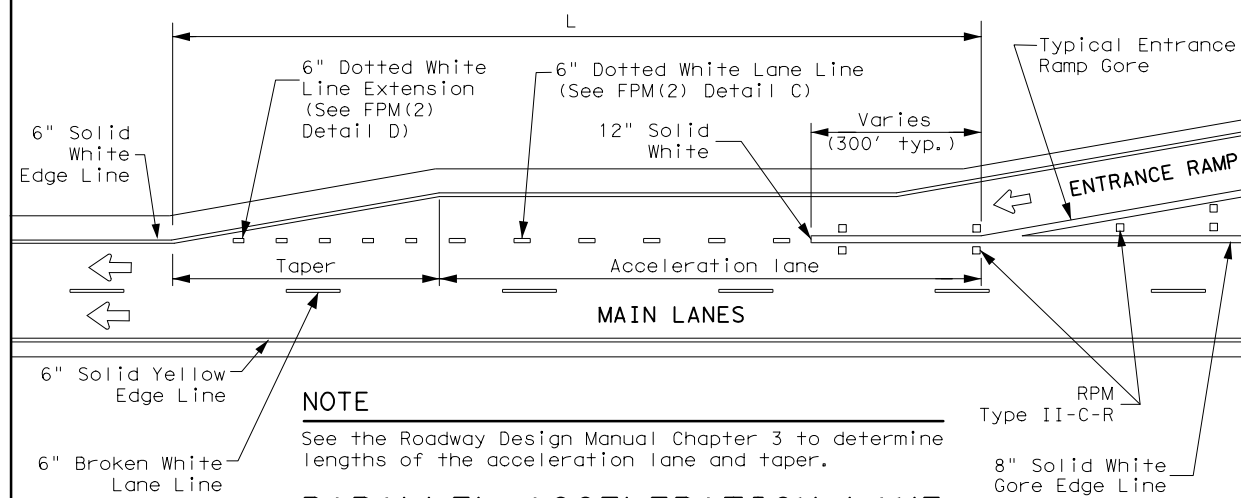
REFLECTORIZED RAISED PAVEMENT MARKER (RPM)



NOTES

1. ReflectORIZED raised pavement markers Type-II-C-R in the wrong way arrow shall have the clear face toward normal traffic and the red face toward the wrong way traffic.
2. Red reflectORIZED wrong way arrows, not to exceed two, may be placed on exit ramps. Locations of the arrows shall be as shown in the plans or as directed by the engineer.

WRONG WAY ARROW



NOTE
 See the Roadway Design Manual Chapter 3 to determine lengths of the acceleration lane and taper.

PARALLEL ACCELERATION LANE

Texas Department of Transportation
 Traffic Safety Division Standard

TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS WITH RAISED PAVEMENT MARKERS FPM(1)-22

FILE: fpm(1)-22.dgn	DATE: October 2022	CONTRACT: 0203	SECTION: 05	JOB: 039	COUNTY: WOOD	CHECKED: CK:
REVISIONS	DATE	BY	REASON	SHEET NO.		
5-74	8-00	2-12		23A		
4-92	2-08	10-22		407		
5-00	2-10					

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

Post Type _____

- FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
- TWT = Thin-Walled Tubing (see SMD(TWT))
- 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2) _____

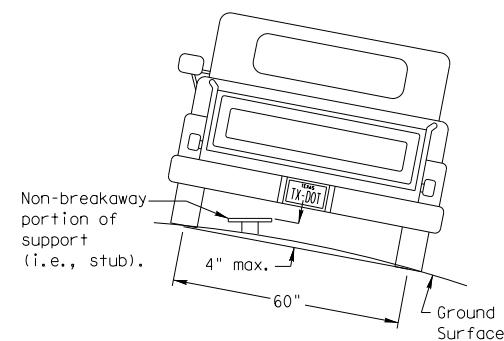
Anchor Type _____

- UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
- UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
- WS = Wedge Anchor Steel - (see SMD(TWT))
- WP = Wedge Anchor Plastic (see SMD(TWT))
- SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
- SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

- P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
- T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
- U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
- IF REQUIRED
- 1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
- BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
- WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
- EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

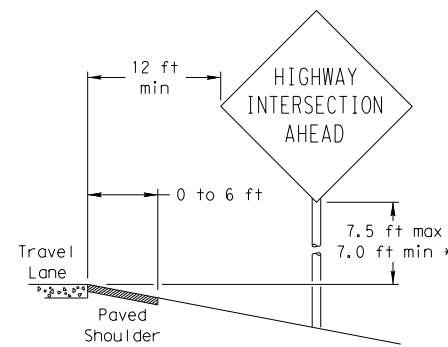
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

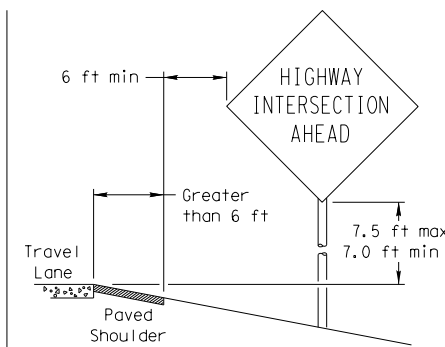
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

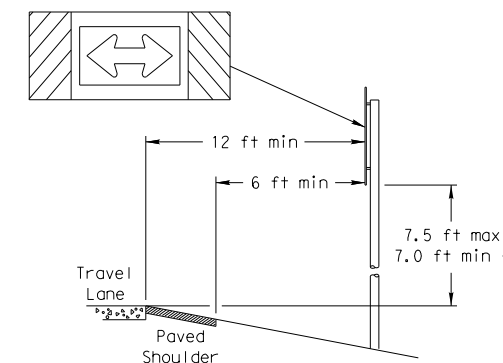
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



GREATER THAN 6 FT. WIDE

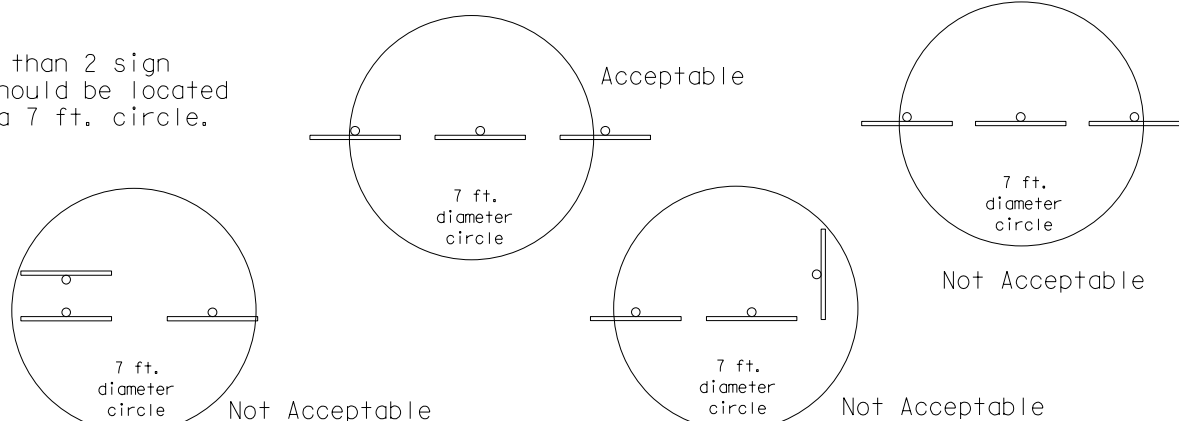
When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

T-INTERSECTION

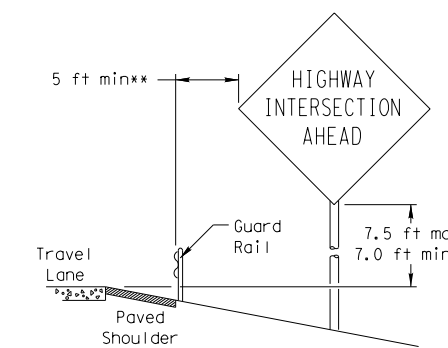


When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.

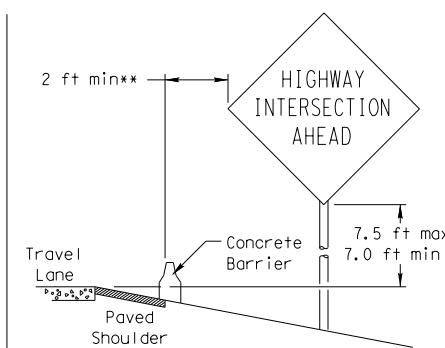
No more than 2 sign posts should be located within a 7 ft. circle.



BEHIND BARRIER



BEHIND GUARDRAIL

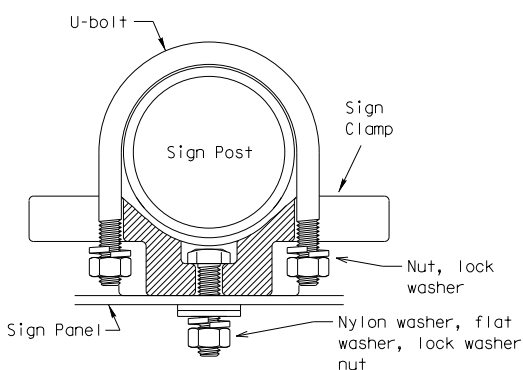


BEHIND CONCRETE BARRIER

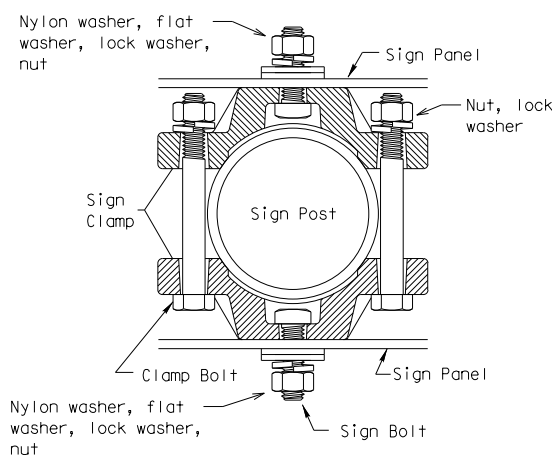
**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

TYPICAL SIGN ATTACHMENT DETAIL

Single Signs



Back-to-Back Signs



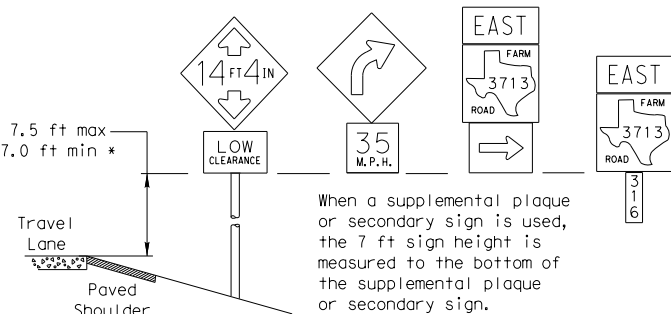
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

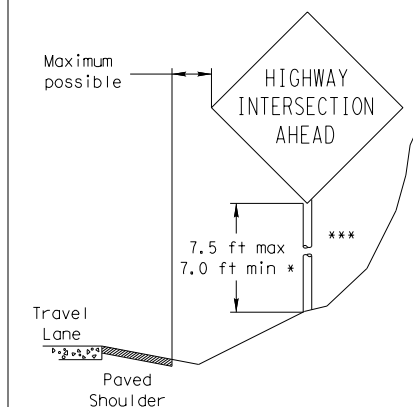
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

RESTRICTED RIGHT-OF-WAY (When 6 ft min. is not possible.)

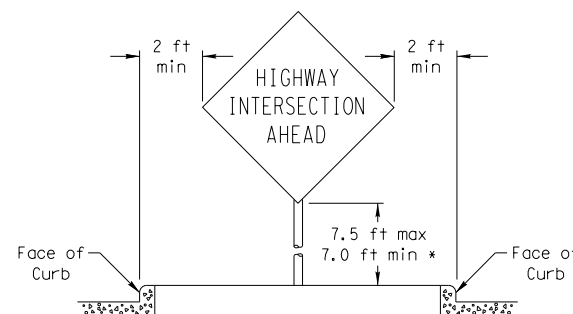


Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

CURB & GUTTER OR RAISED ISLAND



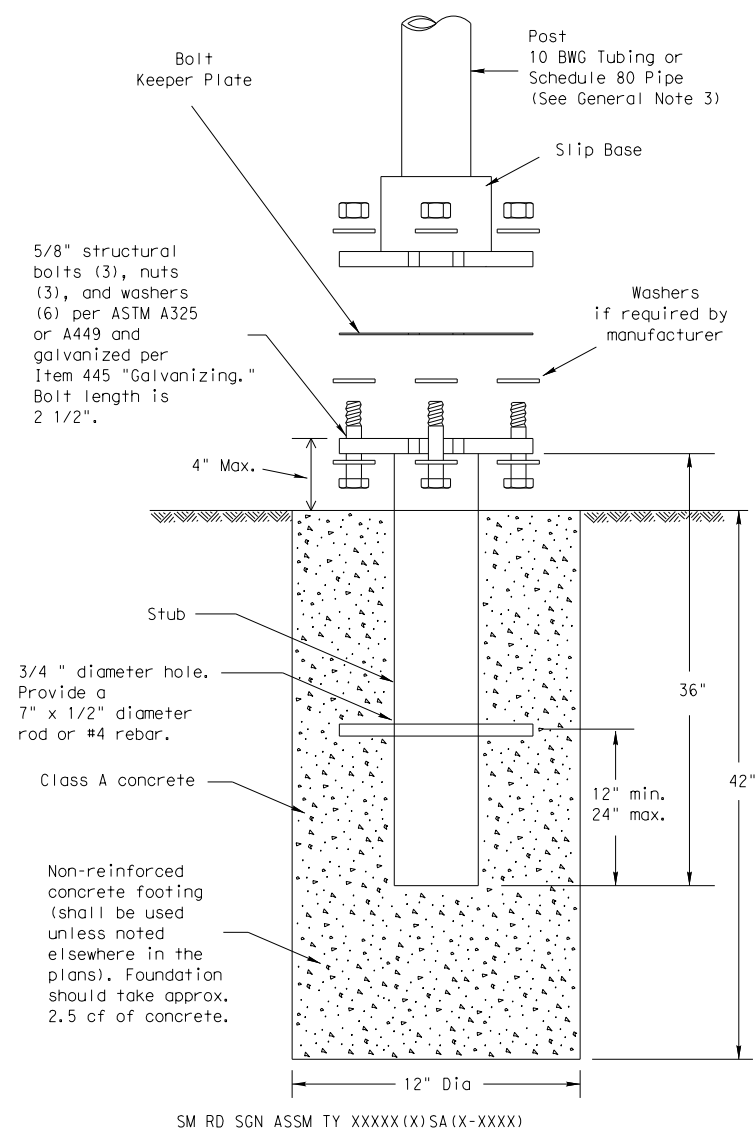
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

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9-08	REVISIONS	CON: 0203	SECT: 05	JOB: 039	HIGHWAY: US 69
		DIST: TYL	COUNTY: WOOD	SHEET NO.: 408	

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TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

- Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
- Material used as post with this system shall conform to the following specifications:
 - 10 BWG Tubing (2.875" outside diameter)
 - 0.134" nominal wall thickness
 - Seamless or electric-resistance welded steel tubing or pipe
 - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
 - Other steels may be used if they meet the following:
 - 55,000 PSI minimum yield strength
 - 70,000 PSI minimum tensile strength
 - 20% minimum elongation in 2"
 - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
 - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
 - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
 - Schedule 80 Pipe (2.875" outside diameter)
 - 0.276" nominal wall thickness
 - Steel tubing per ASTM A500 Gr C
 - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
 - 46,000 PSI minimum yield strength
 - 62,000 PSI minimum tensile strength
 - 21% minimum elongation in 2"
 - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
 - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
 - Galvanization per ASTM A123
- See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: <http://www.txdot.gov/publications/traffic.htm>
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

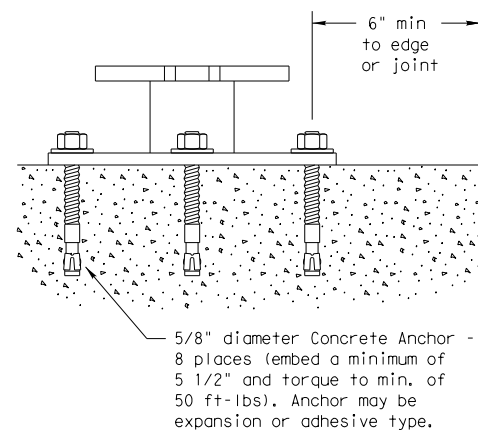
Foundation

- Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
- The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
- Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
- Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
- The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support

- Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
- Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxyes and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

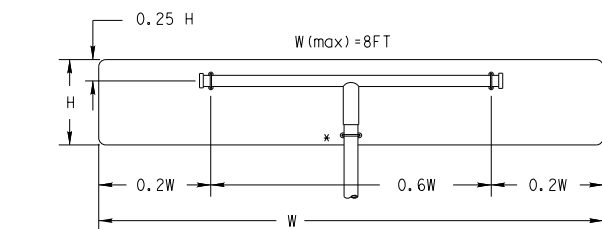
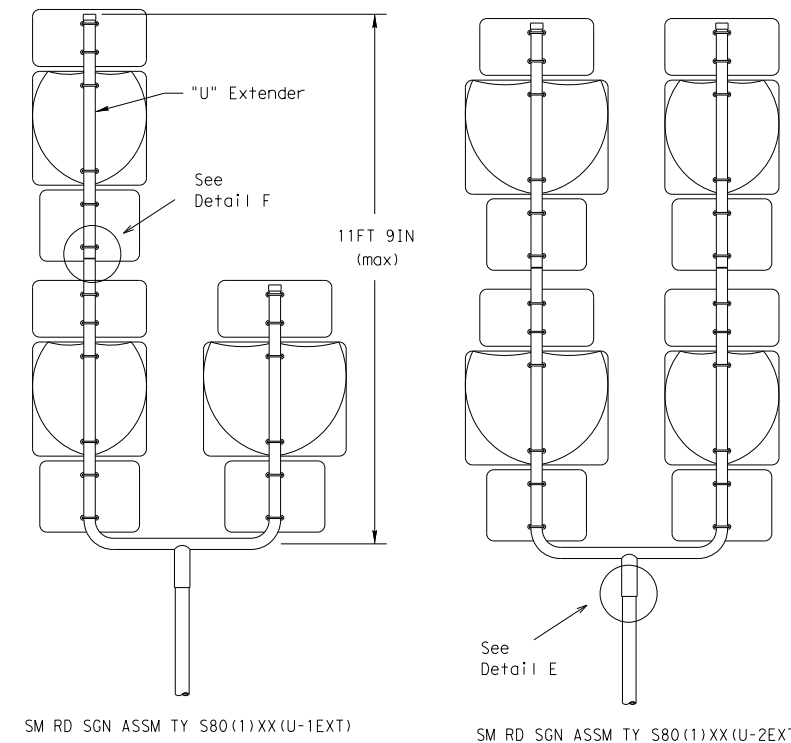
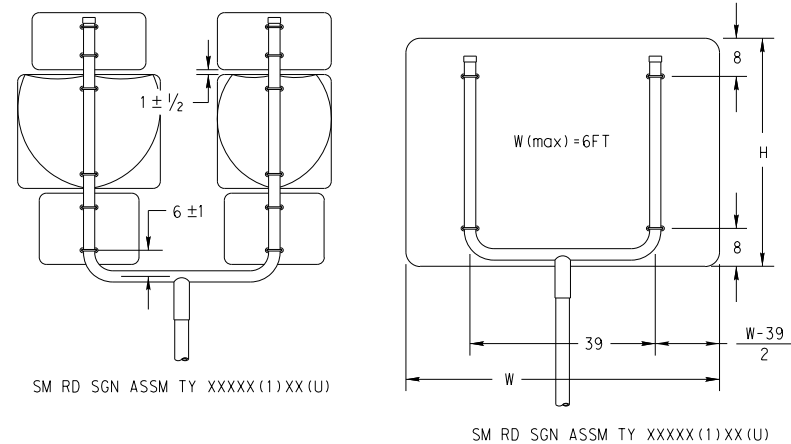
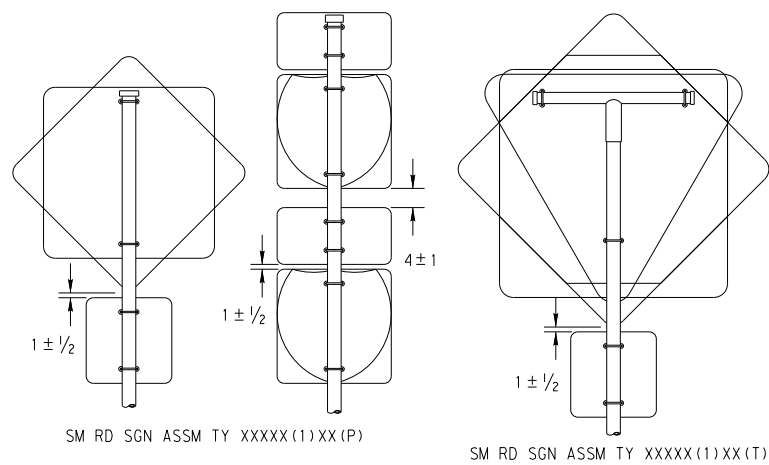
Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

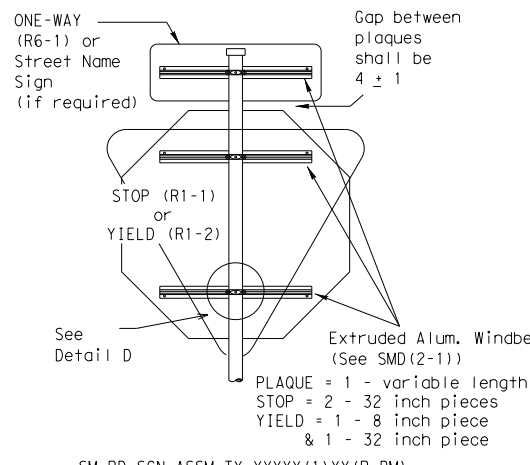
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9-08	REVISIONS		CONT	SECT	JOB	HIGHWAY
			0203	05	039	US 69
			DIST	COUNTY		SHEET NO.
		TYL	WOOD		409	

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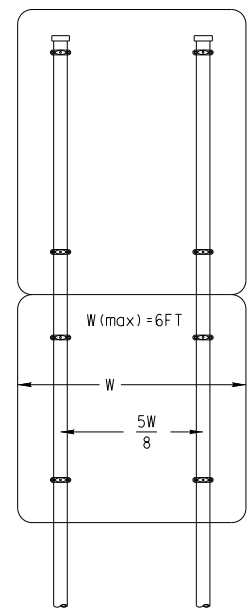
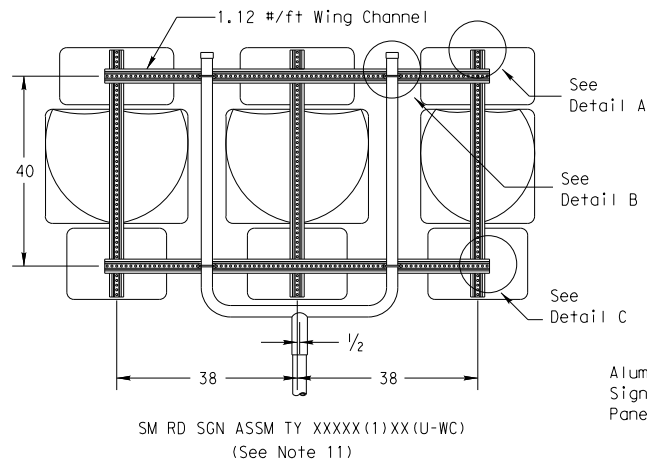


SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

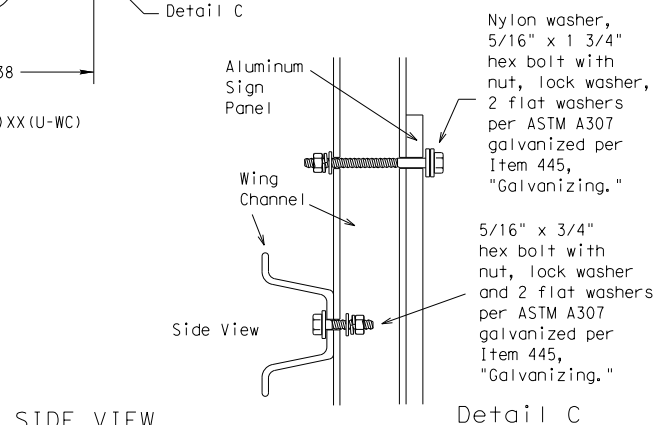
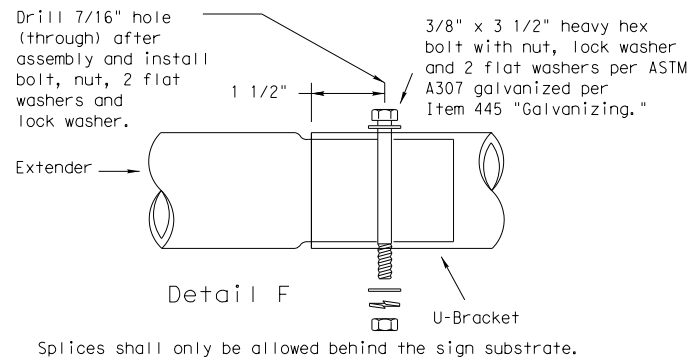
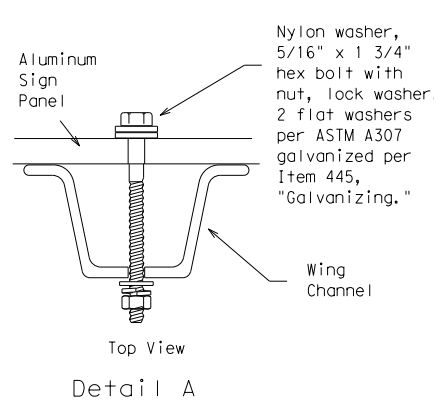
All dimensions are in english unless detailed otherwise.



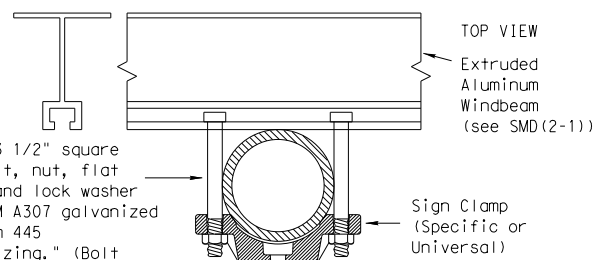
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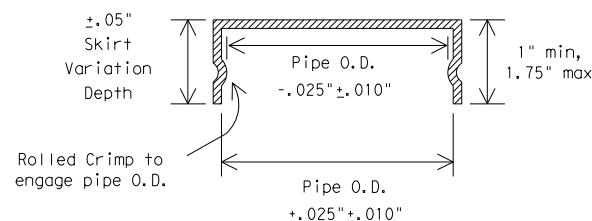


SIDE VIEW



Detail D

FRICION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

GENERAL NOTES:

- | SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA |
|--------------|------------|----------------|
| 10 BWG | 1 | 16 SF |
| 10 BWG | 2 | 32 SF |
| Sch 80 | 1 | 32 SF |
| Sch 80 | 2 | 64 SF |
- The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
- Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
- Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
- For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
- When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
- Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
- Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
- Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
- Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
- Post open ends shall be fitted with Friction Caps.
- Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT

	REQUIRED SUPPORT	
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
Warning	48x60-inch signs	TY S80(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

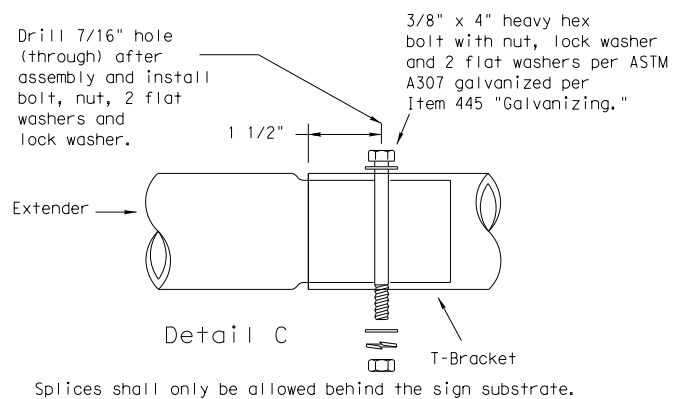
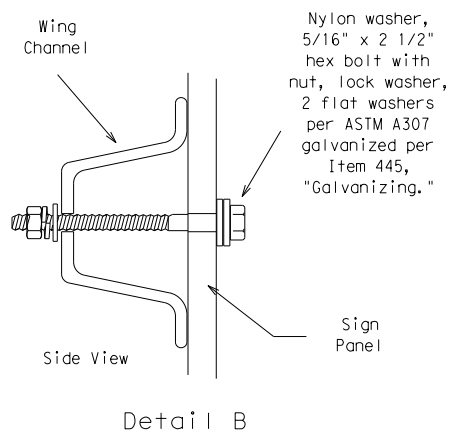
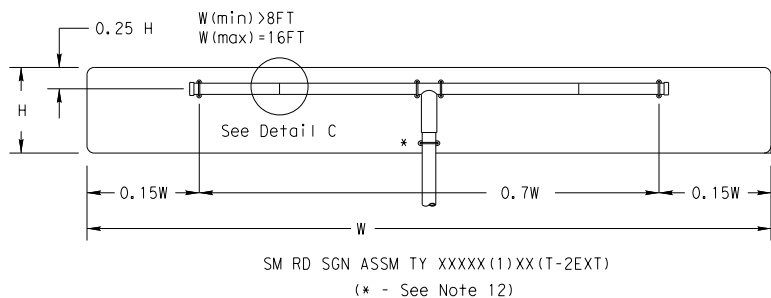


SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD(SLIP-2)-08

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9-08	REVISIONS	CON: 0203	SECT: 05	JOB: 039	HIGHWAY: US 69
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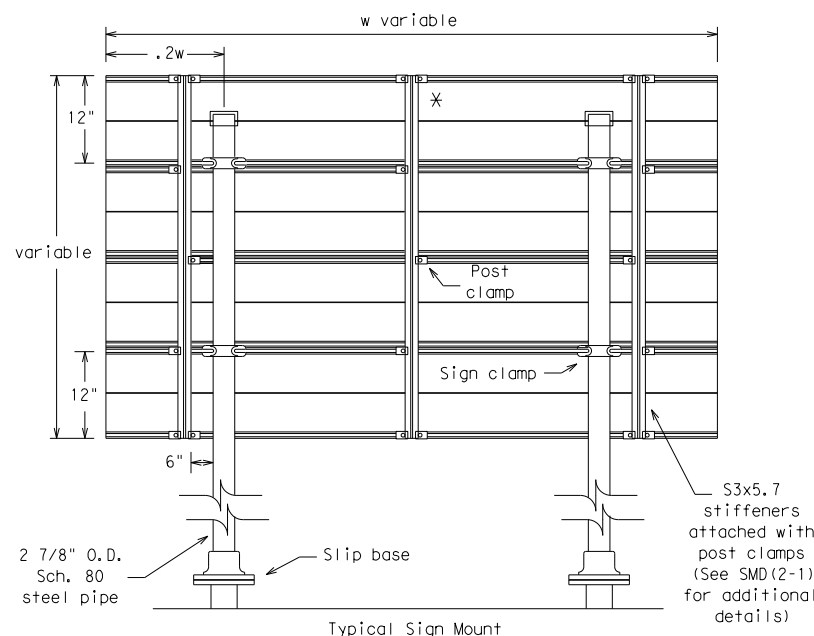
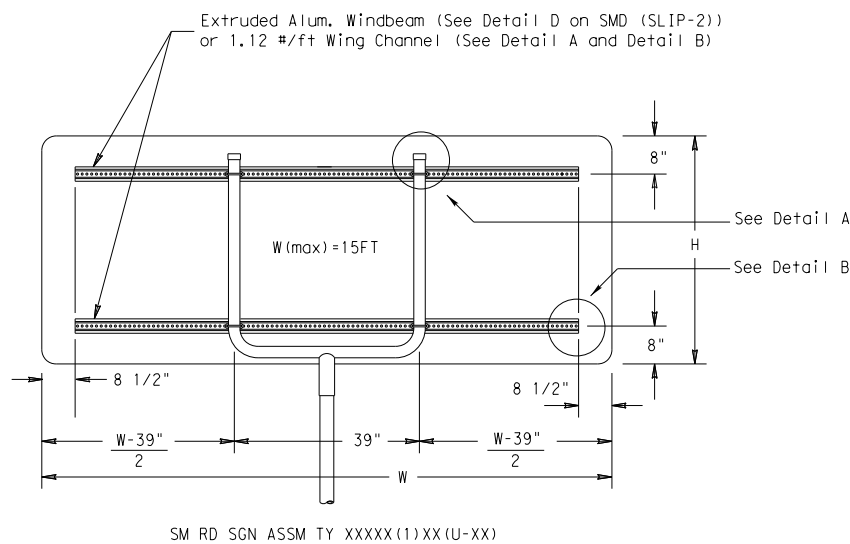
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DATE:
FILE:

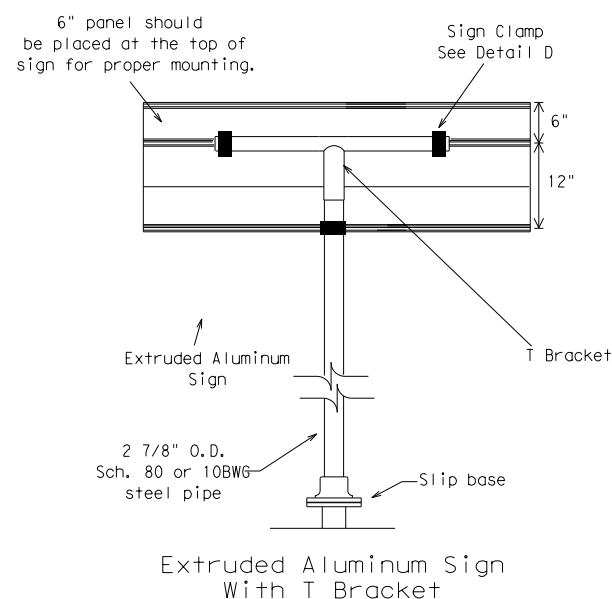
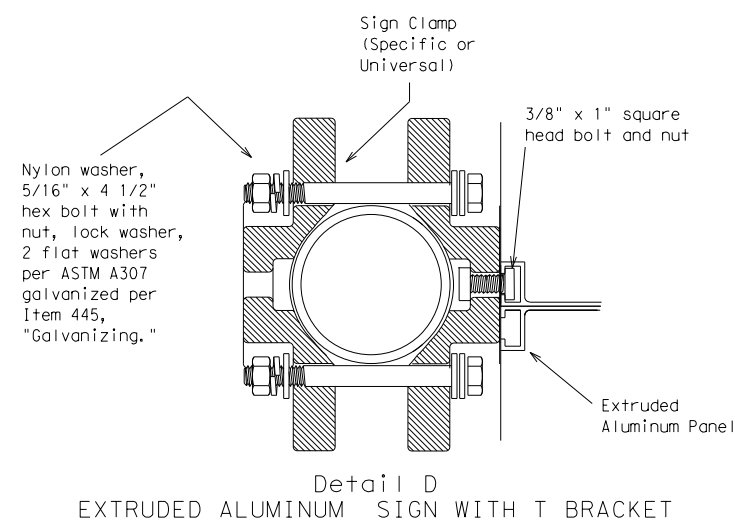
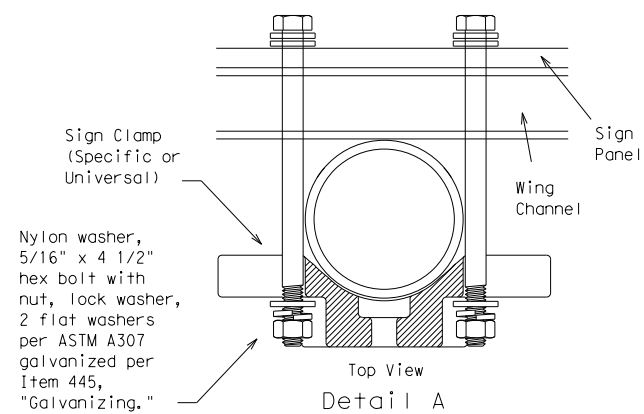
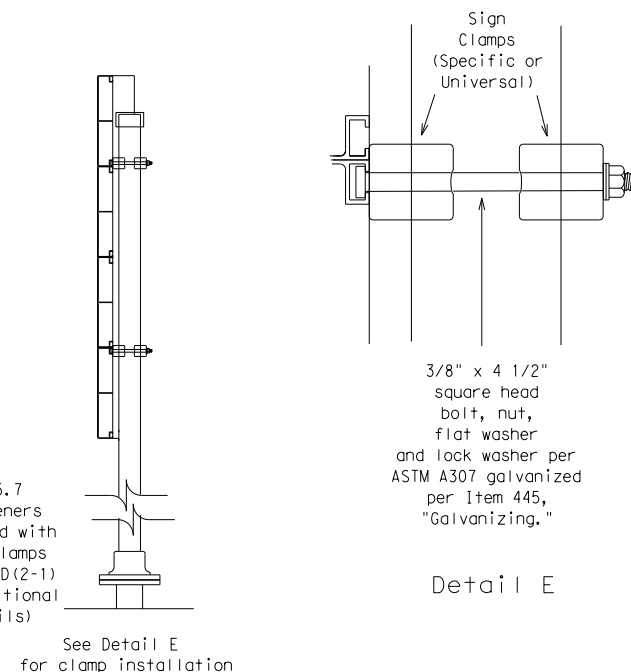


GENERAL NOTES:

- | SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA |
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- Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
- Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
- Sign blanks shall be the sizes and shapes shown on the plans.
- Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
- Post open ends shall be fitted with Friction Caps.



* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.



Use Extruded Alum. Windbeam as stiffeners See SMD (2-1) for additional details
See Detail E for clamp installation

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

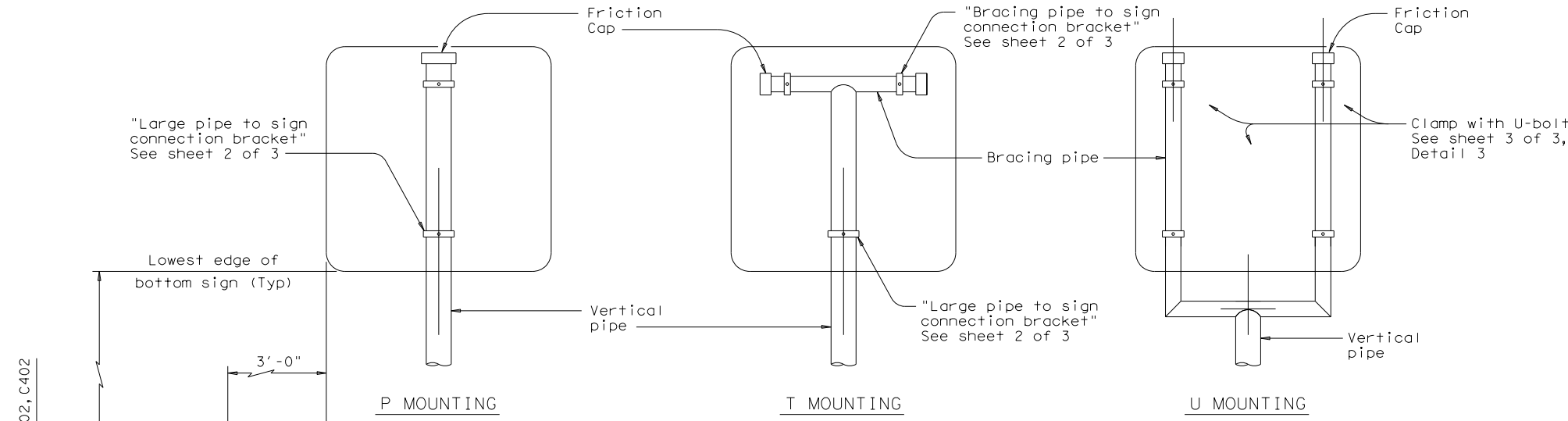
Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD(SLIP-3) -08

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9-08	REVISIONS	CONT	SECT	JOB	HIGHWAY
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		TYL	WOOD		411

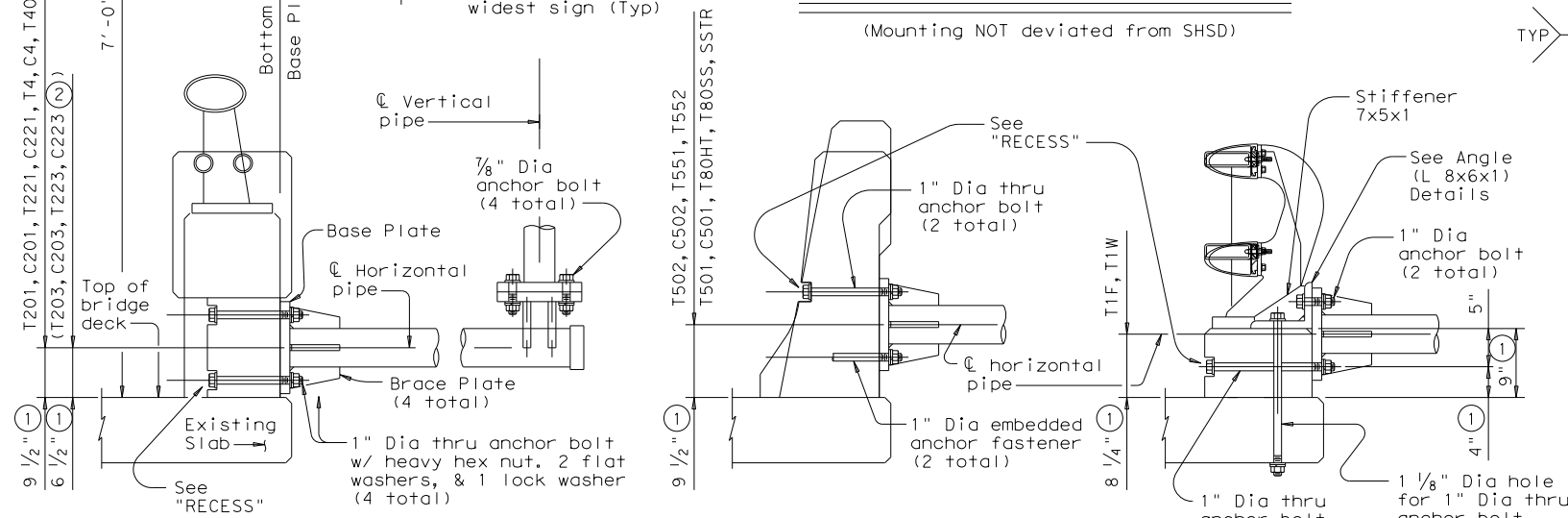
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DATE: FILE:

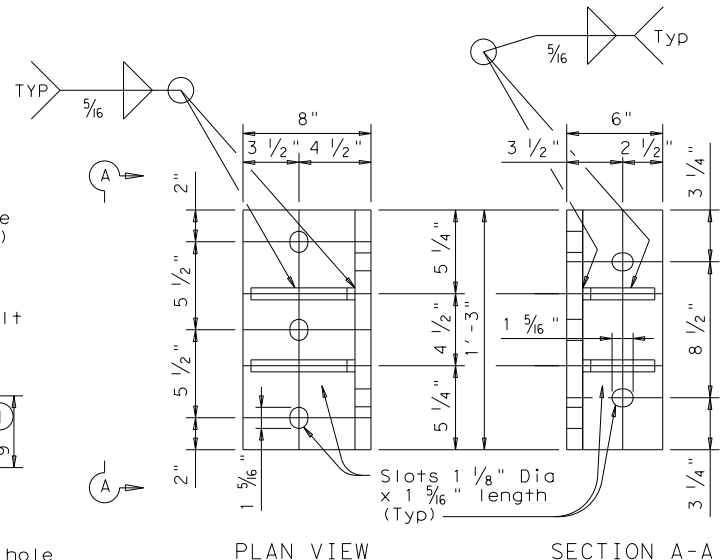


VARIOUS SIGN ATTACHMENTS

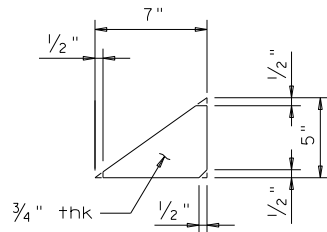
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LONGITUDINAL SECTION THROUGH RAILING & SIGN MOUNT



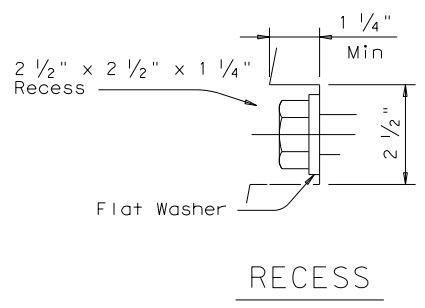
PLAN VIEW SECTION A-A



STIFFENER

ANGLE (L 8x6x1) DETAILS

- ① Increase 2" for structure with overlay.
- ② Attached at center post.



RECESS

PIPE SIZE AND THICKNESS			
Pipe Placement Design Wind Speed	Horizontal	Vertical	Bracing
90 mph	5" X-Strong (.375")	4" X-Strong (.337")	2 1/2" Standard (.203")
130 mph	6" X-Strong (.432")	5" X-Strong (.375")	3" X-Strong (.300")

GENERAL NOTES:

Design conforms to 2013 AASHTO Standard Specifications for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design 3-second gust wind speeds of 90 mph and 130 mph with a 1.14 gust factor, and a wind importance factor of 1.0 (50-year mean recurrence interval) for the supporting structures. For mounting connection between sign panel and pipe, wind importance factors of 0.71 and 0.54, for 90 mph and 130 mph winds, respectively, are applied to adjust the wind speeds to a 10-year mean recurrence interval.

See standard sheet WV & IZ (LTS2013) for the boundaries of each design wind zone. All mounting shall be based on 130 mph wind speed design except when located in 90 mph wind zone. Maximum panel area is 30 sq. ft. Maximum design height is 50 ft, with design height defined as the distance between natural ground (average elevation of surrounding terrain) and the center of sign(s) at the mounting location.

Material for pipe shall be ASTM A53 Grade B, or A501. Structural steel plates shall be ASTM A36, A572 Grade 50, or A588. Bolts used to connect pipe and mounting bracket, and wind beam to sign panel shall be ASTM A307. Anchor bolts shall be ASTM A325 or A193 B7. Each anchor bolt shall be provided with 2 flat washers, 1 lock washer, and 1 heavy hex nut. All parts shall be galvanized in accordance with Standard Specifications Item 445, "Galvanizing".

Attach horizontal pipe at least 2'-0" from the edge of any nearby drain slot.

Contractor shall verify applicable field dimensions before fabrication. Holes drilled through the railing parapet wall shall be drilled with rotary (coring or masonry drill) type equipment. Percussion (star) drilling shall not be allowed. Anchorage for pipe attached to rail shall be placed using an anchoring system approved by the engineer. Installation of anchor fasteners including hole depth, diameter and material shall be in accordance with the manufacturers' recommendation.

Each embedded anchor fastener shall resist an allowable design loading (after applying the reduction factors of bolt spacing and bolt edge distance) of:

	130 mph	90 mph
Tension	12.5 kips	7.5 kips
Shear	9.0 kips	5.0 kips

Each anchoring system shall provide a capacity to resist the required tension and shear acting simultaneously.

For sign connection to mounting, shop drill holes on sign blank in accordance with the current Standard Highway Sign Designs for Texas (SHSD). Additional hole(s) needed to meet a stipulated-type mounting may be field drilled. For multi-sign or back-to-back signs mounting, the engineer shall determine the proper type which ensures each individual mounting meets requirements.

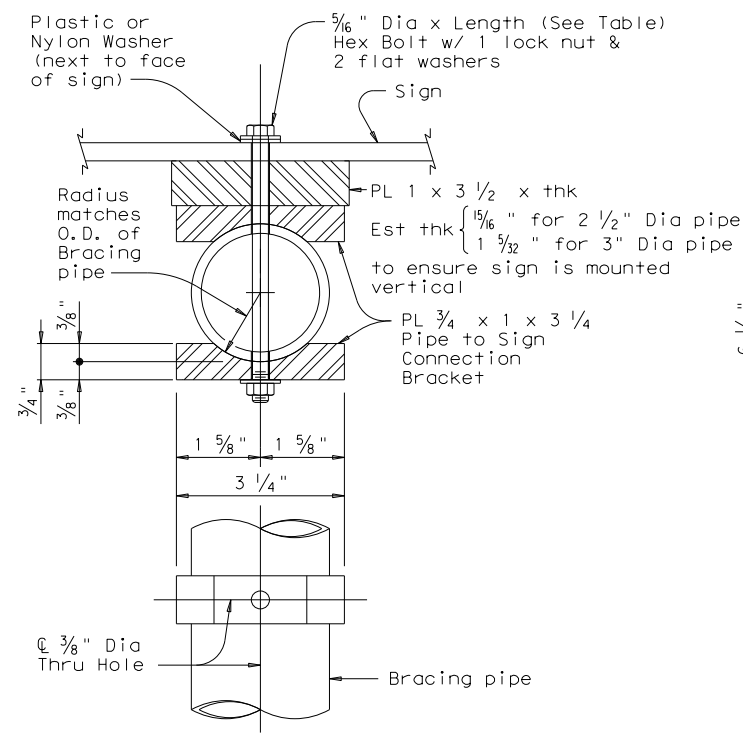
Refer to Standard sheets SMD(GEN), SMD(SLIP-2 and SMD(2-1) for details not covered here.

SHEET 1 OF 3

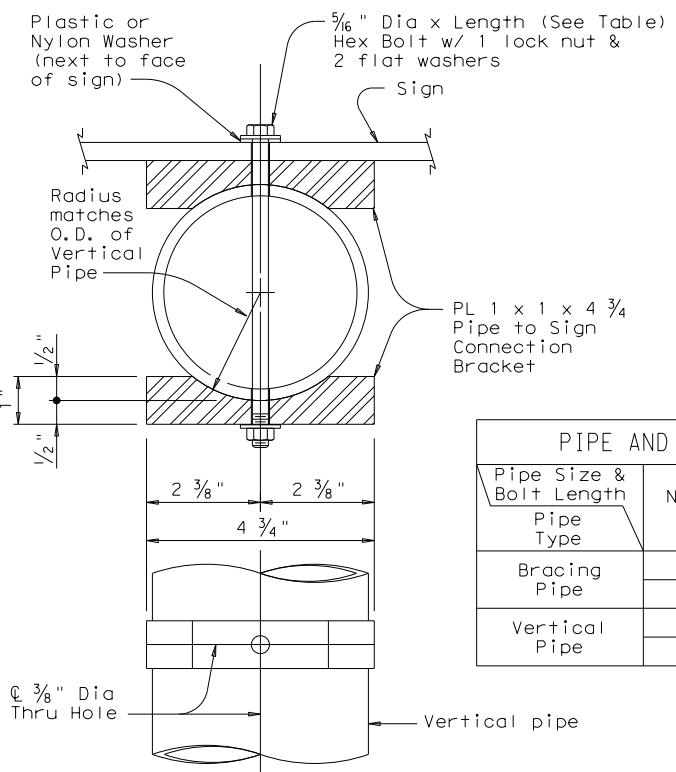
		Traffic Operations Division Standard	
<p>BRIDGE RAILING SIGN MOUNT DETAILS</p> <p>SMD (BR-1) - 14</p>			
FILE:	smdbr-14.dgn	DN: TxDOT	CK: TxDOT
© TxDOT	August 2014	CON: 0203	SECT: 05
REVISIONS		JOB: 039	HIGHWAY: US 69
		DIST: COUNTY	SHEET NO.
		TYL: WOOD	412

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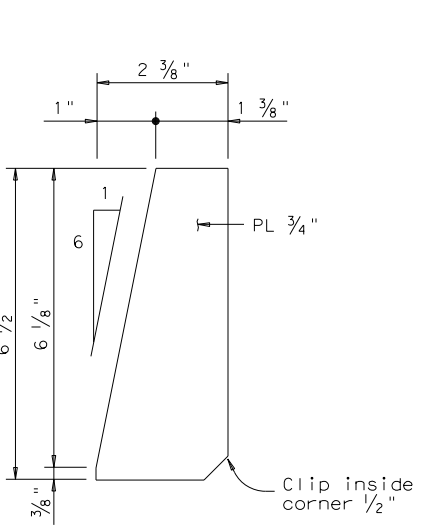
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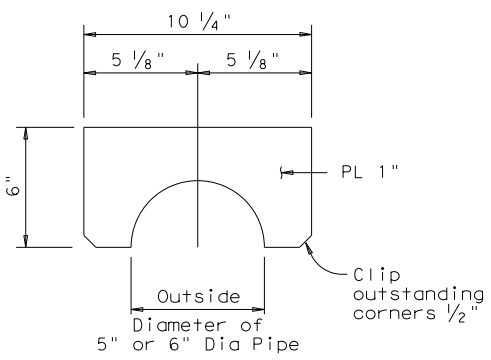
BRACING PIPE TO SIGN CONNECTION BRACKET DETAILS
(Showing T Mounting)



LARGE PIPE TO SIGN CONNECTION BRACKET DETAILS
(Showing P or T Mounting)

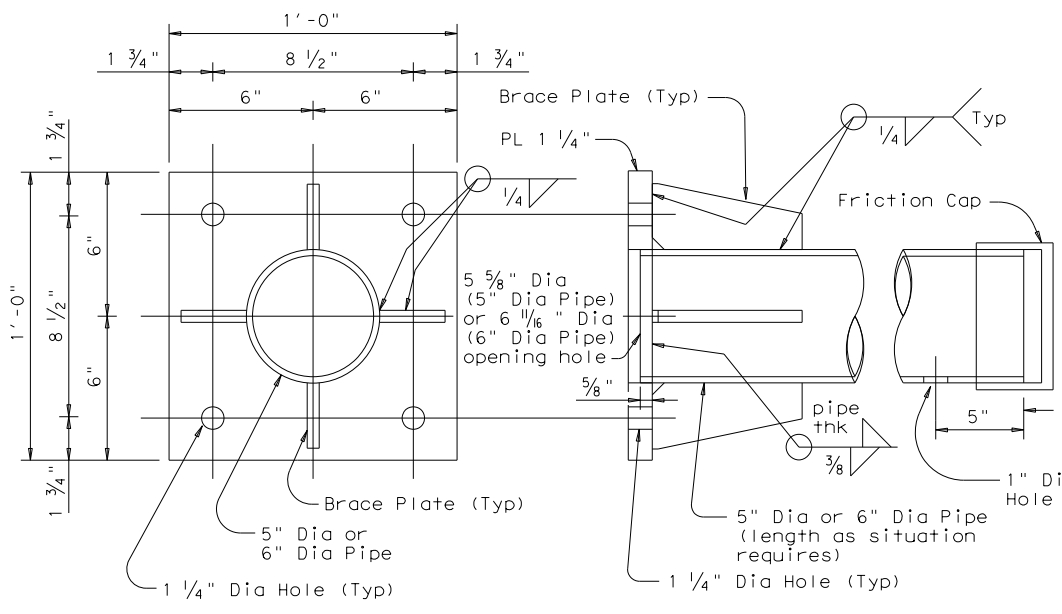


BRACE PLATE DETAILS

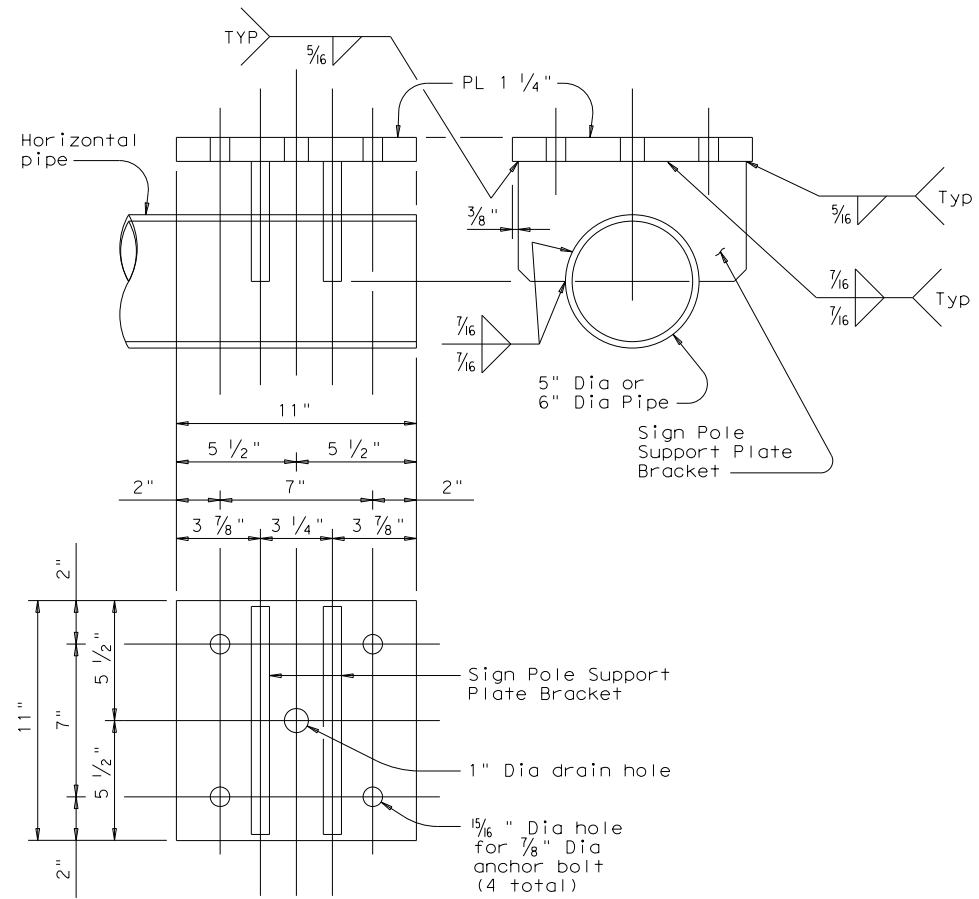


SIGN POLE SUPPORT PLATE BRACKET DETAILS

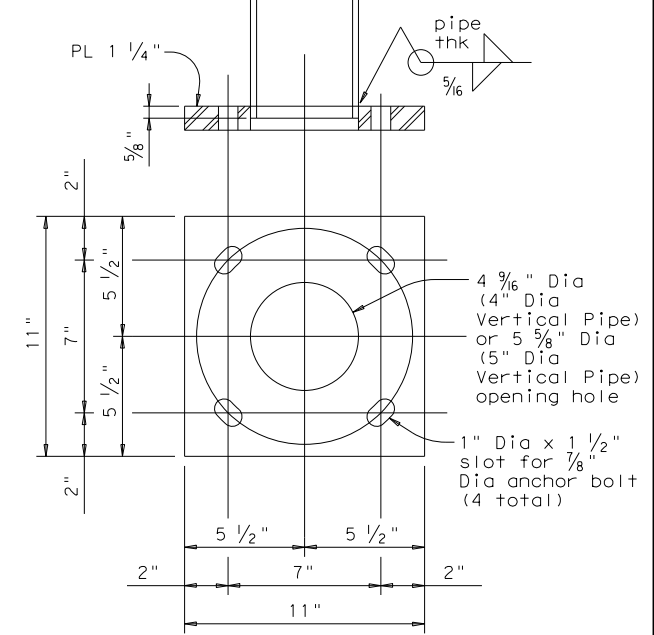
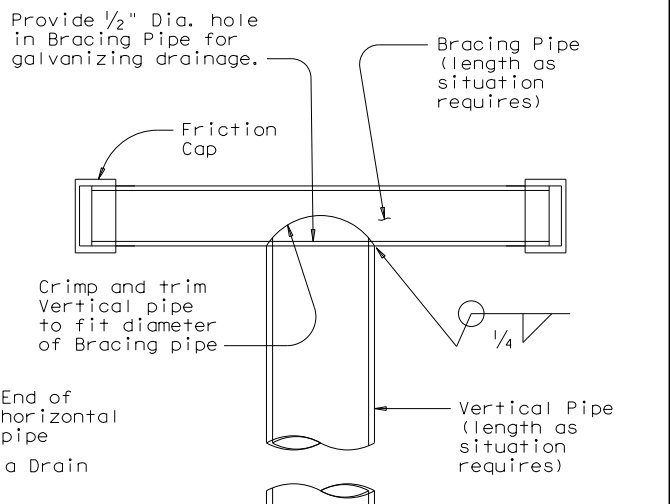
PIPE AND BOLT SPECIFICATIONS		
Pipe Size & Bolt Length Pipe Type	Nominal Pipe Dia (in.)	Bolt Length (in.)
Bracing Pipe	2 1/2	6
Vertical Pipe	3	7
	4	7
	5	8



BASE PLATE DETAILS



SIGN POLE SUPPORT PLATE DETAILS



SIGN POLE & POLE BASE PLATE DETAILS
(Showing only T Mounting)

SHEET 2 OF 3



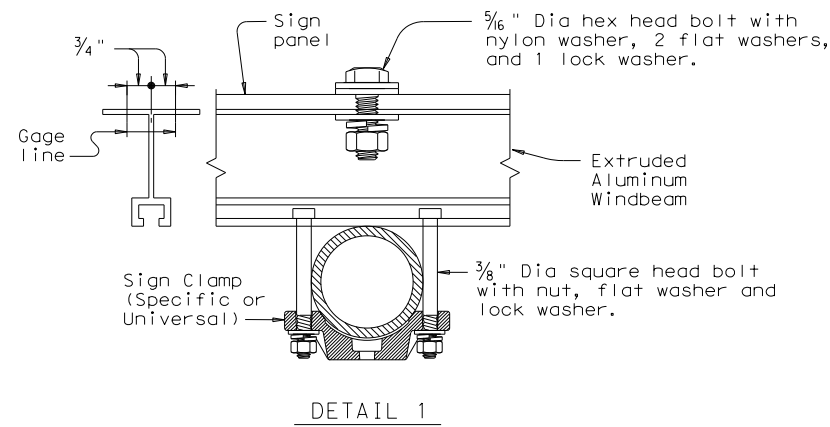
BRIDGE RAILING SIGN MOUNT DETAILS

SMD (BR-2) - 14

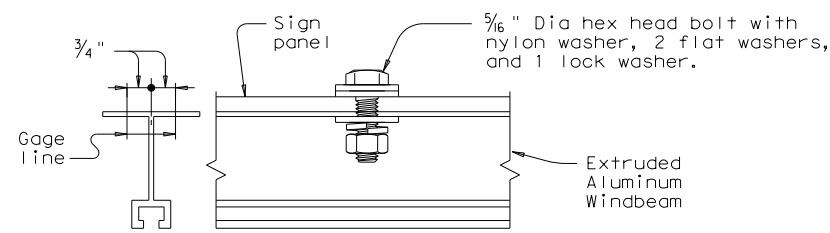
FILE: smdbr-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT August 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	413	

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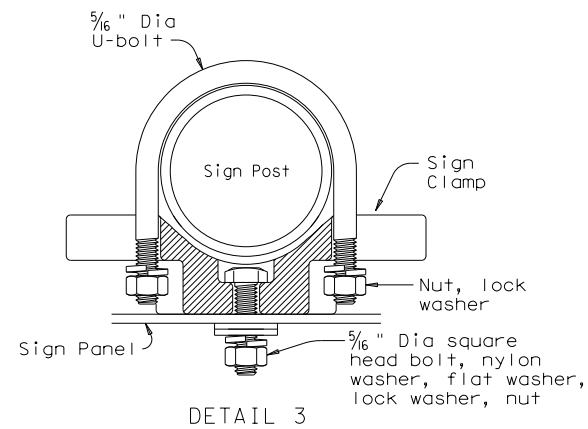
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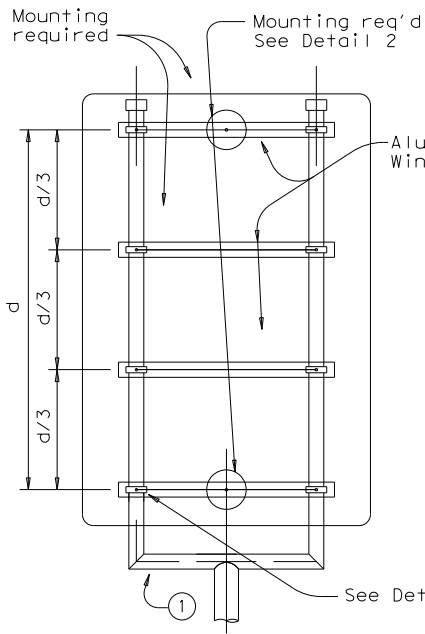
DETAIL 1



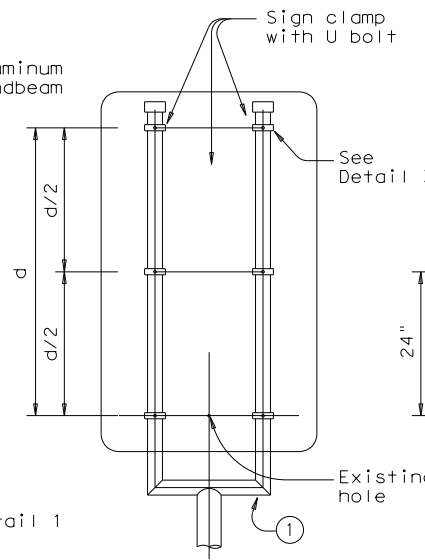
DETAIL 2



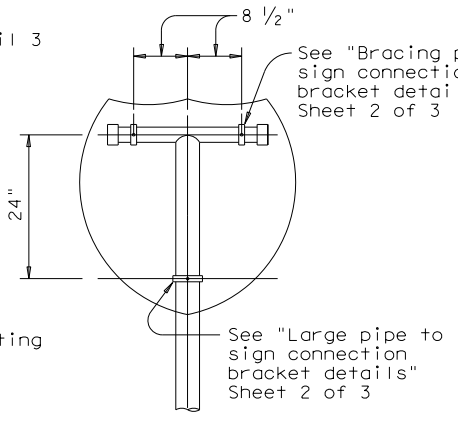
DETAIL 3



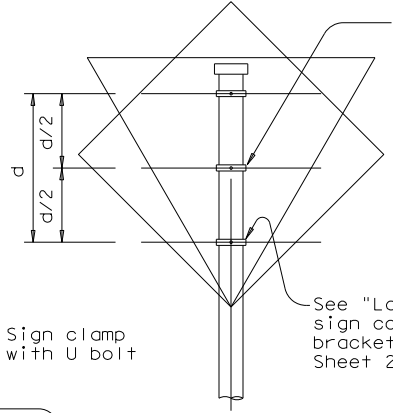
TYPE 4



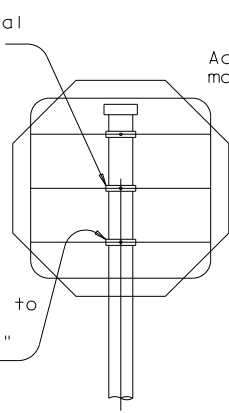
TYPE 32



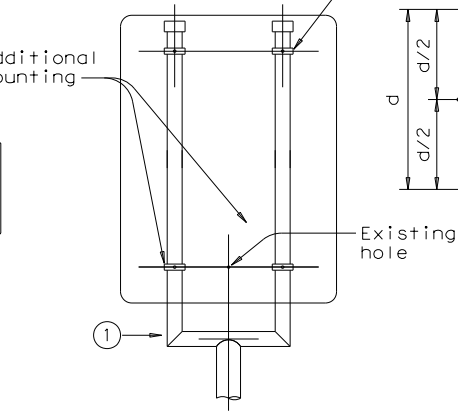
TYPE SPECIAL



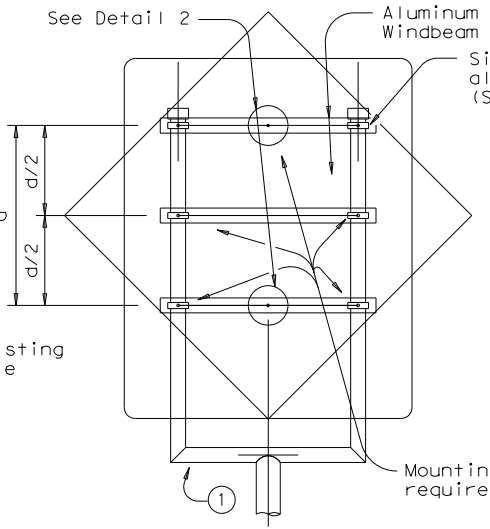
TYPE 1



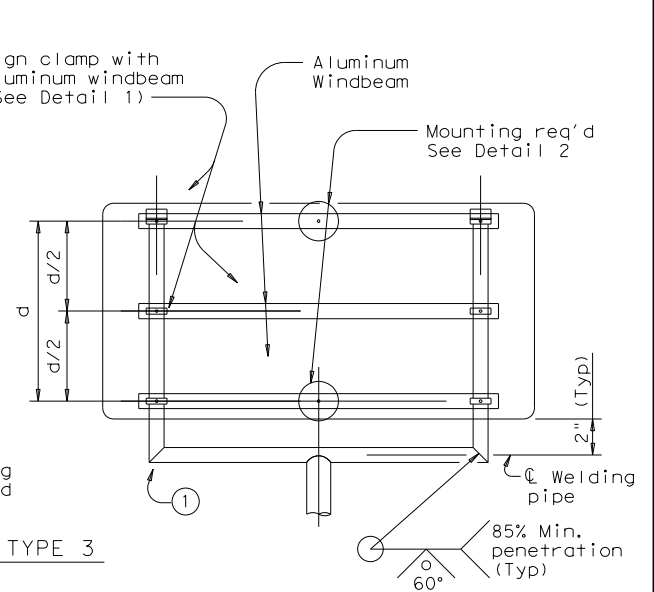
TYPE 2



TYPE 23



TYPE 3



SIGN SHAPE	SQUARE			HORIZONTAL RECTANGLE			VERTICAL RECTANGLE			DIAMOND			OCTAGON			EQUILATERAL TRIANGLE			INTERSTATE SHIELD	PENTAGON (SCHOOL)		
	P	T	U	P	T	U	P	T	U	P	T	U	P	T	U	P	T	U	P	P	T	
Type of Sign Mounting on SHSD																						
Design Wind Speed																						
90 mph					(Type 23) 60"x48"			(Type 3) 72"x36" 78"x36"			(Type 2) 36"x48" (Type 32) 36"x60" 36"x72" 42"x60" 48"x54" 48"x60" 48"x72"			(Type 3) 60"x60"						(Type Special) 45"x36"		
130 mph	(Type 1) 30"x30" 36"x36"	(Type 3) 48"x48"		(Type 1) 36"x24" 36"x30"	(Type 23) 48"x42" 54"x42" 60"x30" 66"x36" 84"x24"		(Type 3) 72"x36" 78"x36"	(Type 1) 30"x36" 30"x42"		(Type 3) 36"x48" 36"x60" 36"x72" 42"x60" 48"x54" 48"x60"	(Type 3) 48"x60"	(Type 1) 36"x36"	(Type 3) 48"x48" 60"x60"			(Type 1) 48"x48"			(Type Special) 36"x36" 45"x36"			

Notes: 1. Drill holes in addition to the hole pattern of the Standard Highway Sign Designs for Texas (SHSD) at specified locations to meet a stipulated-type mounting indicated in the parenthesis ().
 2. "Blank" in the above table indicates all other signs excluded from stipulated mounting shall be mounted in accordance with SHSD.
 ① In lieu of welding, the Fabricator may bend bracing pipe elbows if the following conditions are met:
 a. Spacing between vertical bracing pipes is equal to or greater than 2'-6".
 b. Bending radius is 12".
 c. The distance between the lowest clamp and centerline of horizontal bent pipe is 13" max.

SHEET 3 OF 3

Texas Department of Transportation
 Traffic Operations Division Standard

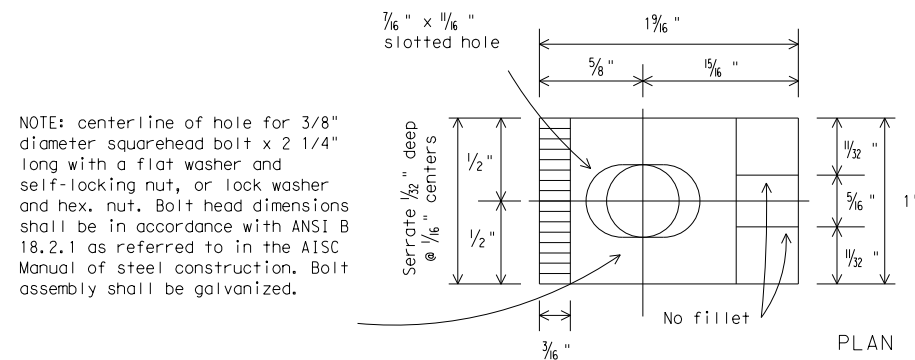
BRIDGE RAILING SIGN MOUNT DETAILS

SMD (BR-3) - 14

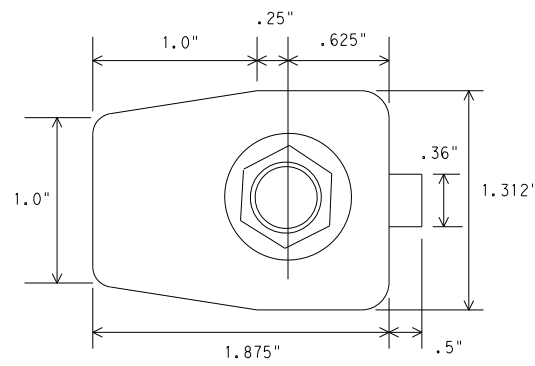
FILE: smdbr-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT August 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	414	

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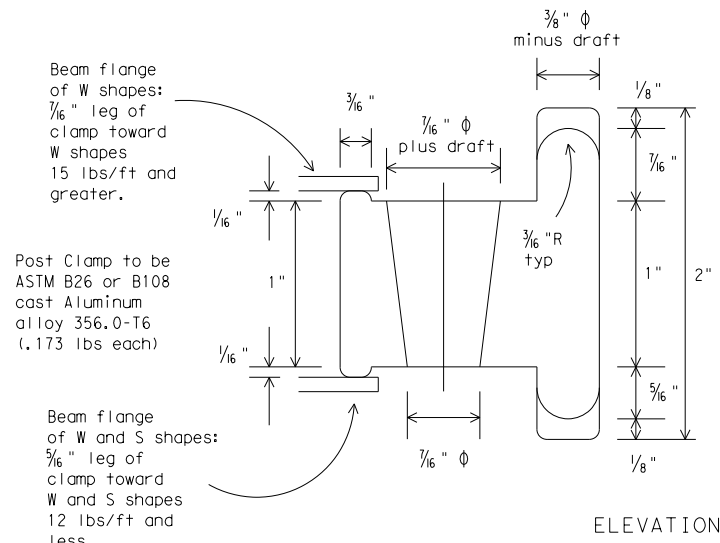
DATE: FILE:



NOTE: centerline of hole for 3/8" diameter squarehead bolt x 2 1/4" long with a flat washer and self-locking nut, or lock washer and hex. nut. Bolt head dimensions shall be in accordance with ANSI B 18.2.1 as referred to in the AISC Manual of steel construction. Bolt assembly shall be galvanized.



PLAN

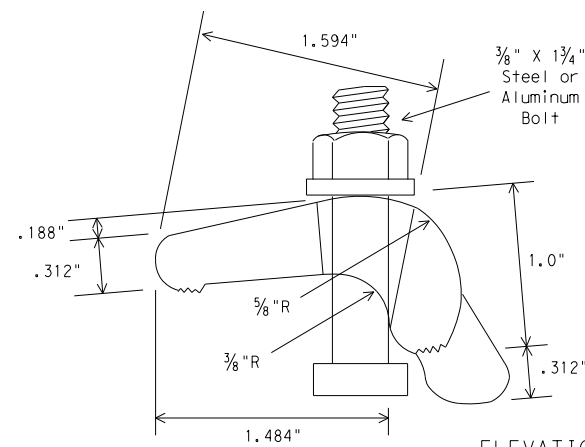


POST CLAMP DETAIL

Beam flange of W shapes: 1/16" leg of clamp toward W shapes 15 lbs/ft and greater.

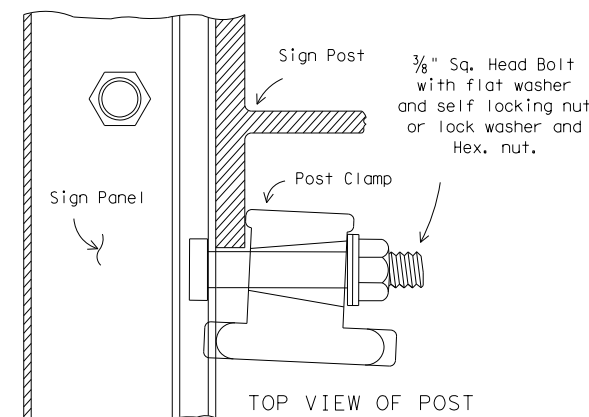
Post Clamp to be ASTM B26 or B108 cast Aluminum alloy 356.0-T6 (.173 lbs each)

Beam flange of W and S shapes: 3/16" leg of clamp toward W and S shapes 12 lbs/ft and less.

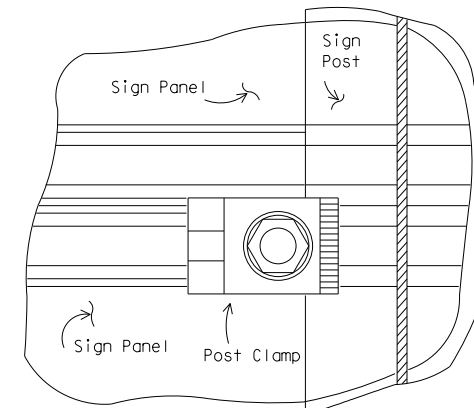


ELEVATION

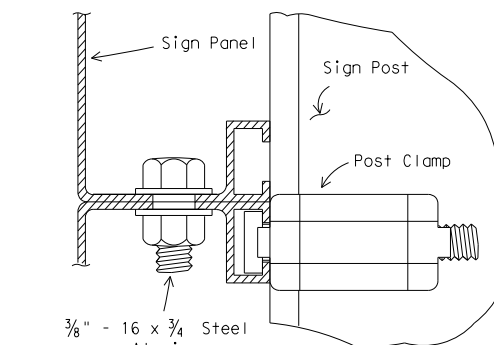
ALTERNATE POST CLAMP DETAIL



TOP VIEW OF POST

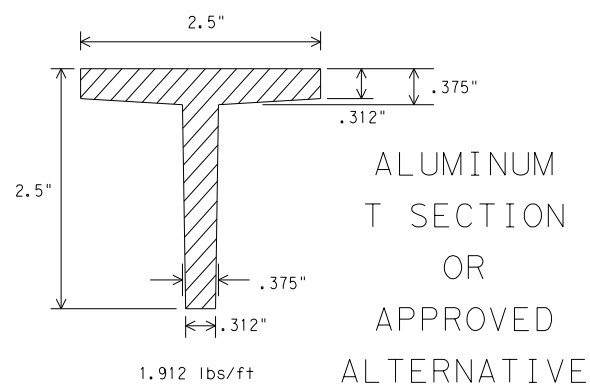


TOP VIEW OF CLAMP



3/8" - 16 x 3/4 Steel or Aluminum panel Bolts at 24" centers. Flat washer on top and bottom.

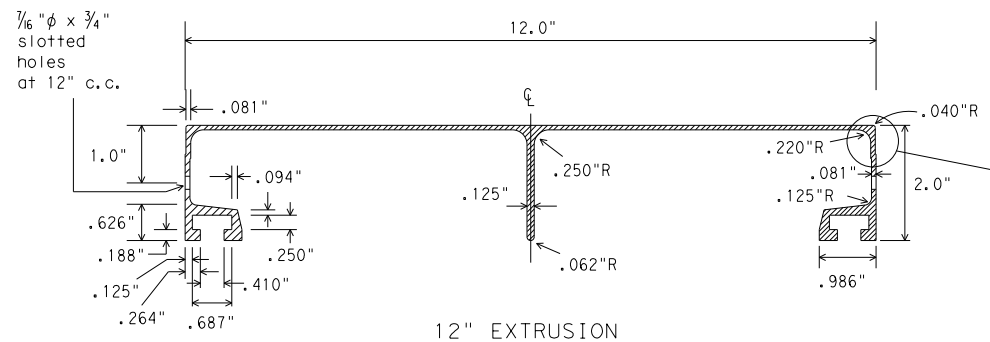
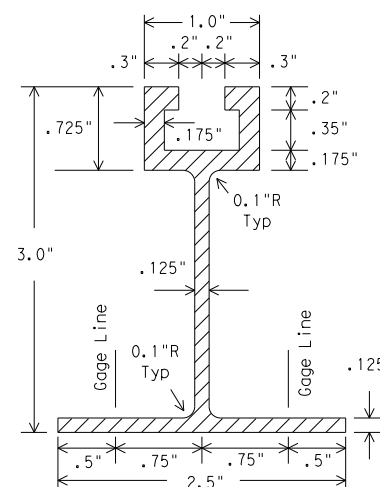
SIDE VIEW OF PANELS CONNECTION DETAILS



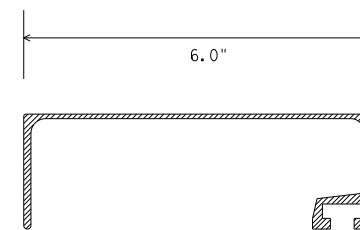
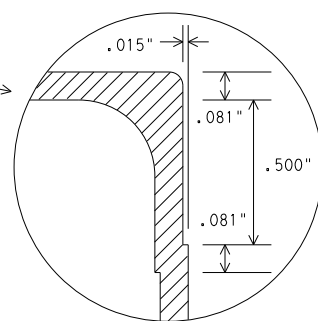
ALUMINUM T SECTION OR APPROVED ALTERNATIVE

WINDBEAM CROSS SECTION

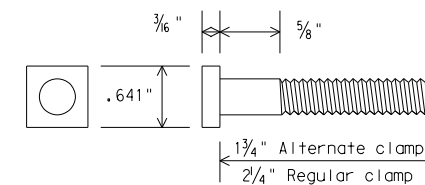
Windbeam to be extruded aluminum (1.175 lbs/ft) or approved alternative



ALUMINUM SIGN PANEL EXTRUSION DETAILS



6" EXTRUSION



POST CLAMP BOLT DETAIL

DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN HARDWARE	DMS-7120

GENERAL NOTES:

- Design conforms with AASHTO Specifications for the design and construction of structural supports for highway signs.
- Materials and fabrication shall conform to the requirements of the Department material specifications.
- Structural steel shall be "low-alloy steel" for non-bridge structures per Item 442, "Metal For Structures."
- For fiberglass substrate connection details, see manufacturer's recommendations.

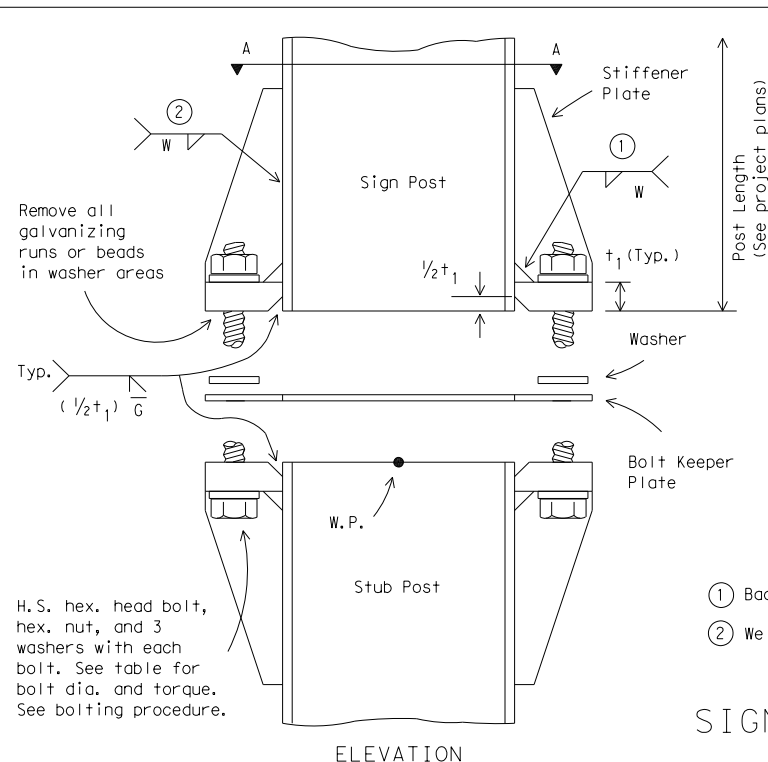
Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS-
EXTRUDED ALUMINUM
SIGN PANELS & HARDWARE

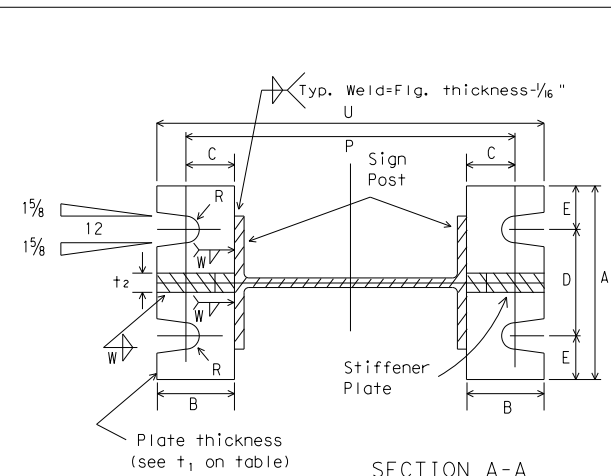
SMD(2-1)-08

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9-08	REVISIONS	CON: 0203	SECT: 05	JOB: 039	HIGHWAY: US 69
		DIST: TYL	COUNTY: WOOD	SHEET NO.: 415	

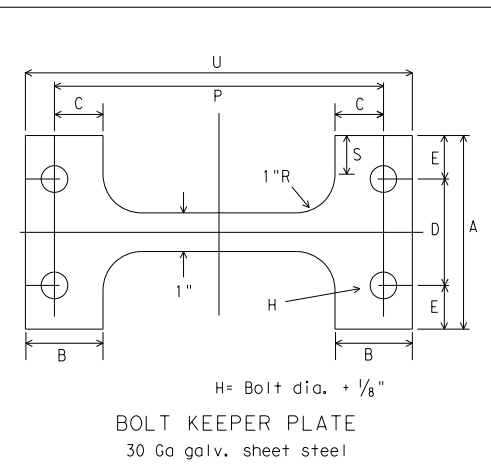
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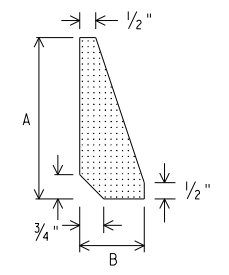
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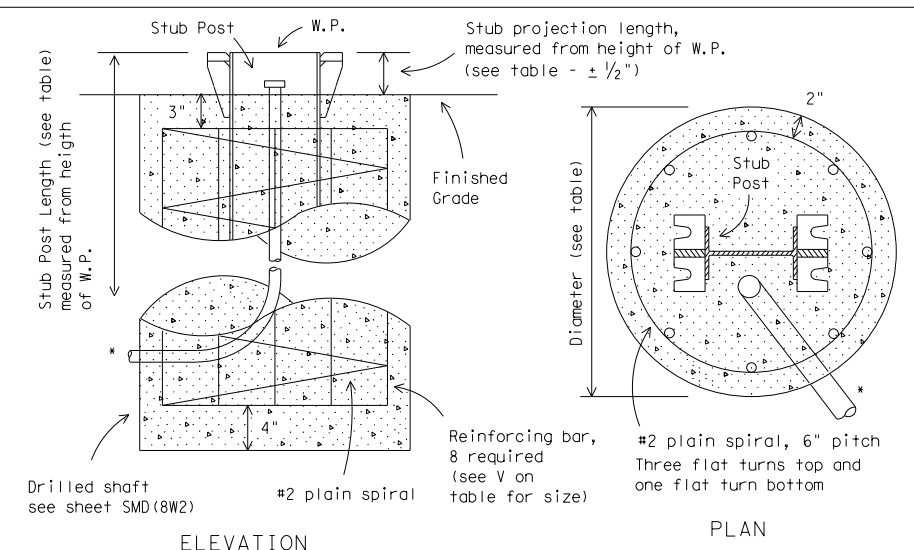
SECTION A-A



BOLT KEEPER PLATE
30 Ga galv. sheet steel

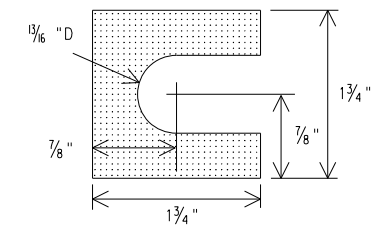


STIFFENER PLATE
DETAIL
Steel Plate (thickness = t₂)
(See table for dimensions)



FOUNDATION DETAIL

*Note: For signs with electrical apparatus, see ED(10) for conduit required in foundation.

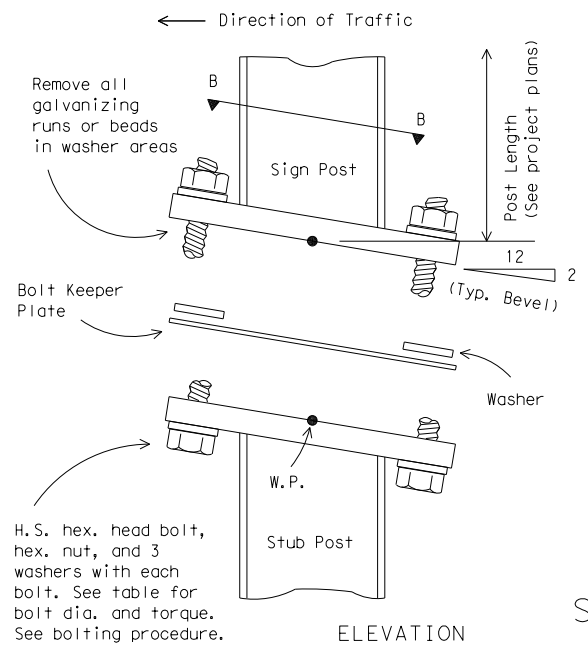


SHIM DETAIL
Furnish two .012\"+ thick and two .032\"+ thick shims per post. Shims shall be fabricated from brass shim stock or strip conforming to ASTM B36.

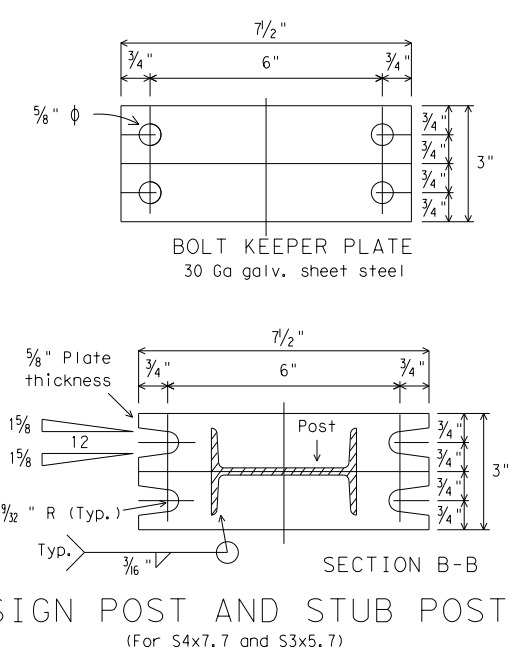
- BOLTING PROCEDURE FOR ASSEMBLY OF BASE CONNECTION:**
1. Assemble sign post, BOLT KEEPER PLATE and stub post with bolts and three flat washers per bolt as shown.
 2. Shim as required to plumb post.
 3. Tighten all bolts the maximum possible with a 12 to 15 inch wrench to clean bolt threads and to bed washers and shims.
 4. Loosen each bolt in sequence and retighten bolts in a systematic order to the prescribed torque. Do not over-tighten.
 5. To prevent nut loosening, burr threads of bolt at junction with nut using a center punch.

Dimensions Post Size	Base Connection Data Table										Perforated Fuse Plate Data Table							Bolt Keeper Data			Foundation Data								
	Bolt Size & Torque	A	B	C	D	E	t ₁	t ₂	W	R	F	G	J	K	M	d ₁	d ₂	t ₃	Bolt Dia.	Wt. (ea.) (lbs.)	Bolt length	P	S	U	Stub length	Stub projection	Dr. Shaft diameter	Bar V Size	
W6x9	5/8" φ × 2 3/4"										4 1/4"	2"	4"	2 1/4"	1"	9/16"	3/4"	1/4"	1/2"	1.01	1 1/2"	8 3/8"		9 7/8"	2'-0"	3"			#5
W6x12	440-450 inch pounds	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	11/32"	5"	2 1/2"	6"	3 1/2"	1 1/2"	11/16"	1 1/4"	3/8"	5/8"	2.51	2 1/4"	8 1/2"	1"	10"	2'-0"	3"			#5
W6x15	36-38 foot pounds										5"	2 1/2"	5 1/4"	2 3/4"	1 1/4"	11/16"	1 1/16"	3/8"	5/8"	2.26	2 1/4"	10 5/8"		12 1/8"	2'-6"	3"			#6
W8x18											5 1/2"	2 1/2"	5 1/4"	2 3/4"	1 1/4"	13/16"	1"	1/2"	3/4"	3.35	2 1/4"	11"		12 3/4"	3'-0"	2 1/2"			#7
W8x21	3/4" φ × 3 1/2"										6"	3"	5 3/4"	2 3/4"	1 3/8"	13/16"	1 1/8"	1/2"	3/4"	4.03	2 1/4"	12 7/8"	1 1/2"	14 5/8"	3'-0"	2 1/2"			#8
W10x22	740-750 inch pounds	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	13/32"	6"	3"	6 1/2"	3 1/2"	1 5/8"	13/16"	1 5/16"	1/2"	3/4"	4.47	2 1/4"	15"		16 3/4"	3'-0"	2 1/2"			#9
W10x26	62-63 foot pounds										6"	3"	6 1/2"	3 1/2"	1 5/8"	13/16"	1 5/16"	1/2"	3/4"	4.47	2 1/4"	15"		16 3/4"	3'-0"	2 1/2"			#10
W12x26											6"	3"	6 1/2"	3 1/2"	1 5/8"	13/16"	1 5/16"	1/2"	3/4"	4.47	2 1/4"	15"		16 3/4"	3'-0"	2 1/2"			#11
S3x5.7	1/2" φ × 2 1/2"	See Detail Below										3 3/4"	1 1/2"	2 5/8"	1 1/2"	5/8"	9/16"	3/8"	1/4"	1/2"	0.60	1 1/2"	See Detail Below			3'-3 1/2"	3 1/2"	12"	Non-reinforced
S4x7.7	440-450 inch pounds	See Detail Below										3 3/4"	1 1/2"	2 5/8"	1 1/2"	5/8"	9/16"	3/8"	1/4"	1/2"	0.60	1 1/2"	See Detail Below			3'-3 1/2"	3 1/2"	12"	Non-reinforced

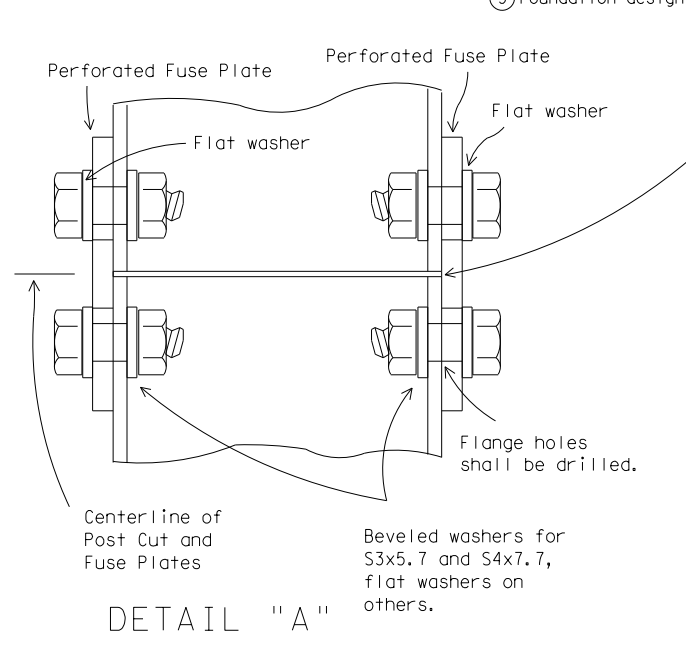
③ Foundation design shall be Type G Mount, see SMD (TY G).



ELEVATION



SECTION B-B
SIGN POST AND STUB POST
(For S4x7.7 and S3x5.7)



DETAIL "A"

Parts shall be saw cut either before galvanizing and the galvanized cut cleaned of zinc build-up, or saw cut after galvanizing and the cut surface repaired per Item 445, "Galvanizing."

PERFORATED FUSE PLATE DETAIL

Use H.S. hex head bolts, hex head nut and bevel or flat washer (where req'd) under nut. All holes shall be drilled, sub-punched and reamed. All plate cuts shall preferably be saw cuts. However, flame cutting will be permitted provided all edges are ground. Metal projecting beyond the plane of the plate face will not be permitted. Steel fuse plates shall conform to the requirements of ASTM A36. ASTM A572 Grade 50 or ASTM A588 may be substituted for A36 at the option of the fabricator. Mill test reports shall be submitted for Fuse Plates. Steel used shall have an ultimate tensile strength not to exceed 80 KSI. For alternative Fuse Plate contact Traffic Operations Division.

Texas Department of Transportation
Traffic Operations Division

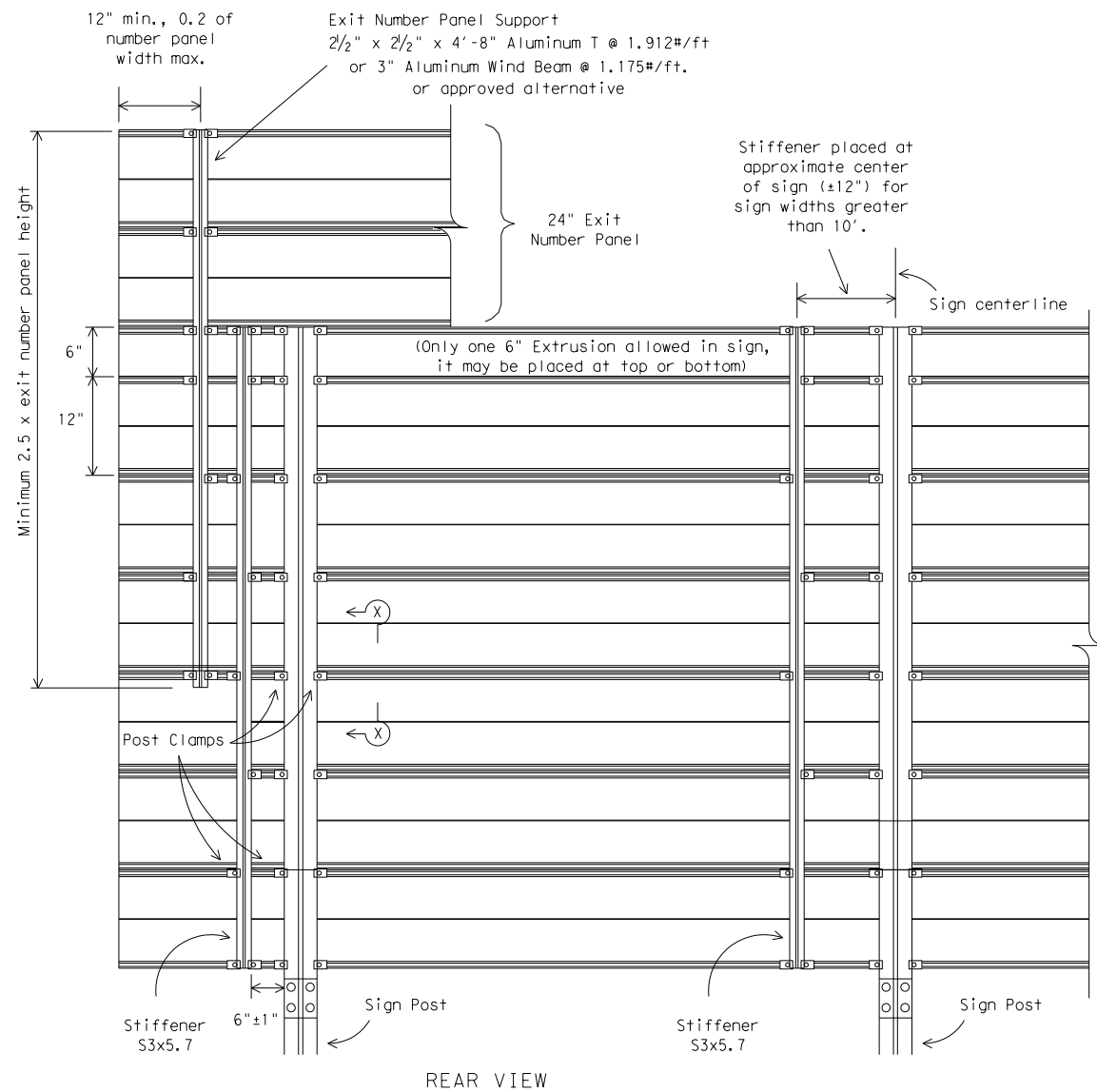
SIGN MOUNTING DETAILS-
LARGE ROADSIDE SIGNS
FOUNDATION & STUB

SMD(2-2)-08

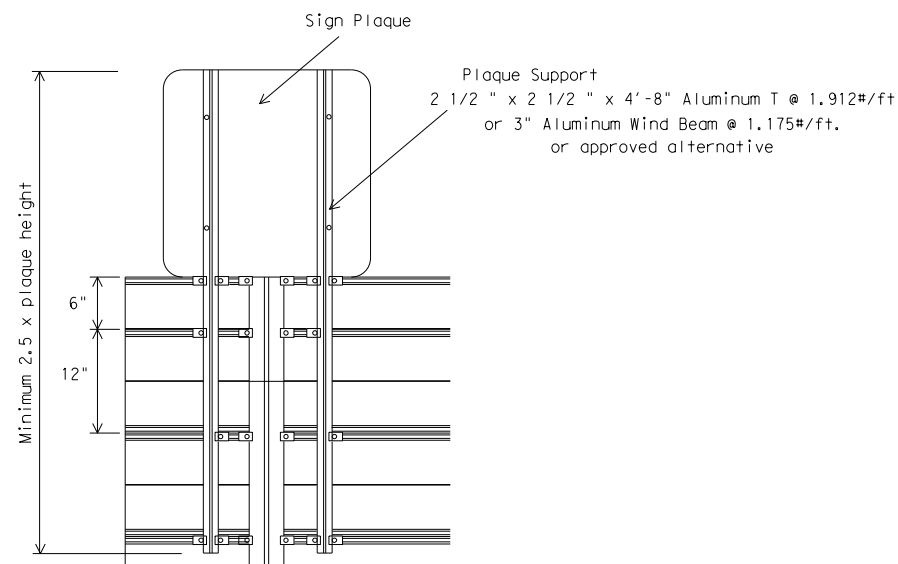
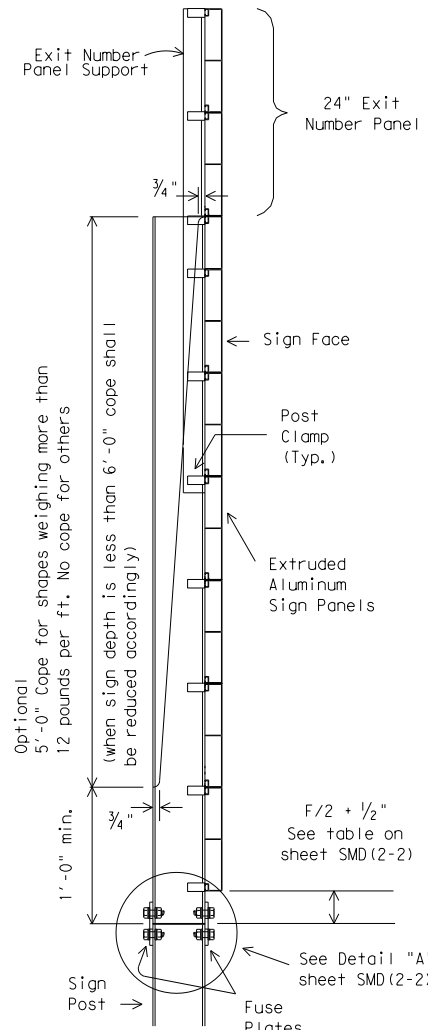
© TxDOT August 1995	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
4-98 REVISIONS	CON: 0203	SECT: 05	JOB: 039	HIGHWAY: US 69
9-08	DIST: TYL	COUNTY: WOOD	SHEET NO.:	416

DATE:
FILE:

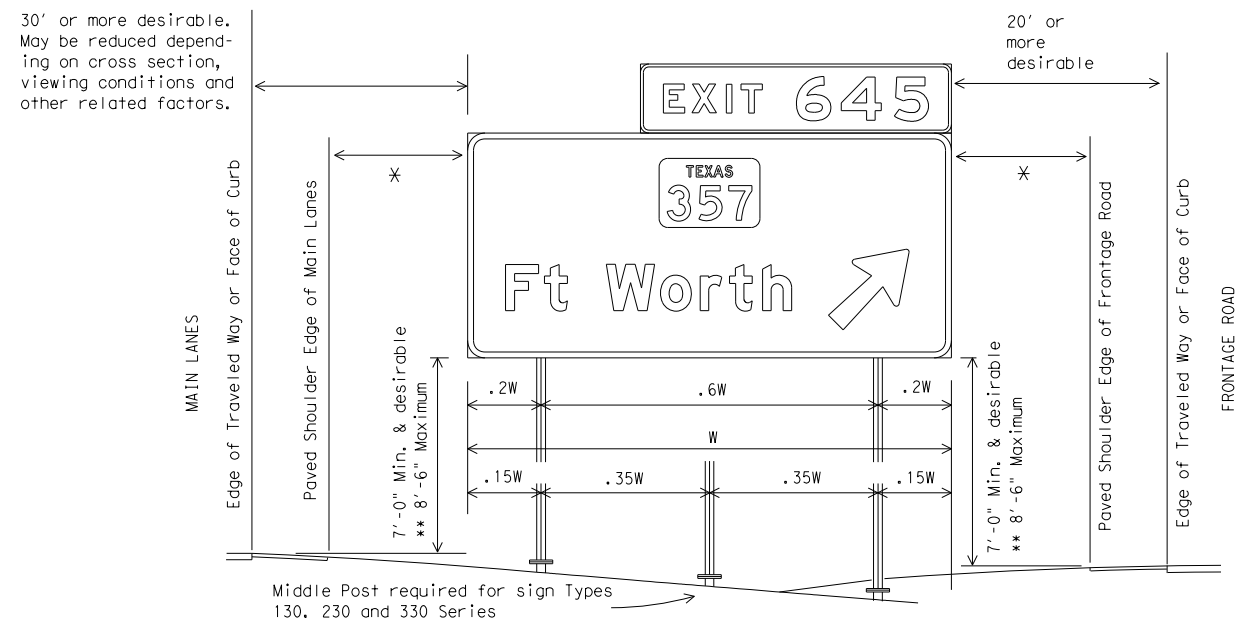
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ALUMINUM PARENT SIGN & EXIT NUMBER PANEL MOUNTING DETAILS



SIGN PLAQUE MOUNTING DETAIL TO ALUMINUM PARENT SIGN



TYPICAL SIGN INSTALLATION AND LOCATION

LATERAL CLEARANCE NOTES:

Lateral clearances of signs mounted on median side of main lanes are the same as shown above where space will permit.

Where a sign is to be located behind guardrail, an allowable minimum clearance of five feet may be used, measured from the face of the guardrail to the near edge of sign.

X - 6' minimum and desirable may be used only in areas of limited lateral clearance and when approved by the Engineer.

POST SPACING NOTES:

Post spacing on a two post sign may vary a maximum of plus or minus 10% of total sign width to fit field conditions.

Post spacing on a three post sign may vary a maximum of plus or minus 5% of total sign width to fit field conditions.

SIGN HEIGHT NOTES:

** The 8' 6" maximum may be exceeded when placing signs on extreme slopes. In these conditions, a 7' minimum from natural ground to bottom of sign must be maintained.

DEPARTMENTAL MATERIAL SPECIFICATIONS

ALUMINUM SIGN BLANKS	DMS-7110
SIGN HARDWARE	DMS-7120

GENERAL NOTES:

- Exit number panel shall be mounted to the right hand side of the parent sign for right exits and to the left hand side for left exits. The number panel shall be mounted with two uprights so its right edge is even with the right edge of the parent sign or vice-versa for left hand exits.
- Exit number panel support shall be symmetrical about number panel centerline.
- Exit number panel support shall be ASTM A36 structural steel galvanized after fabrication, or ASTM B221 aluminum alloy 6061-T6 or approved alternative.
- All bolts, nuts and washers shall be galvanized per ASTM Designation: B695 Class 50, or A153 Class C or D.
- Posts, parent sign panels, and exit number panels shall comply with notes on sheets SMD(2-1) and SMD(2-2).
- Signs (such as exit number panels) attached above a parent sign shall be made of the same type material as the parent sign. General Service and Routing signs may be fabricated from flat sheet aluminum.
- Exit number panel support and other connection hardware required to fasten exit number panel to parent sign shall be subsidiary to "Aluminum Signs" or "Fiberglass Signs."
- For fiberglass sign installation details, see manufacturer's recommendations.

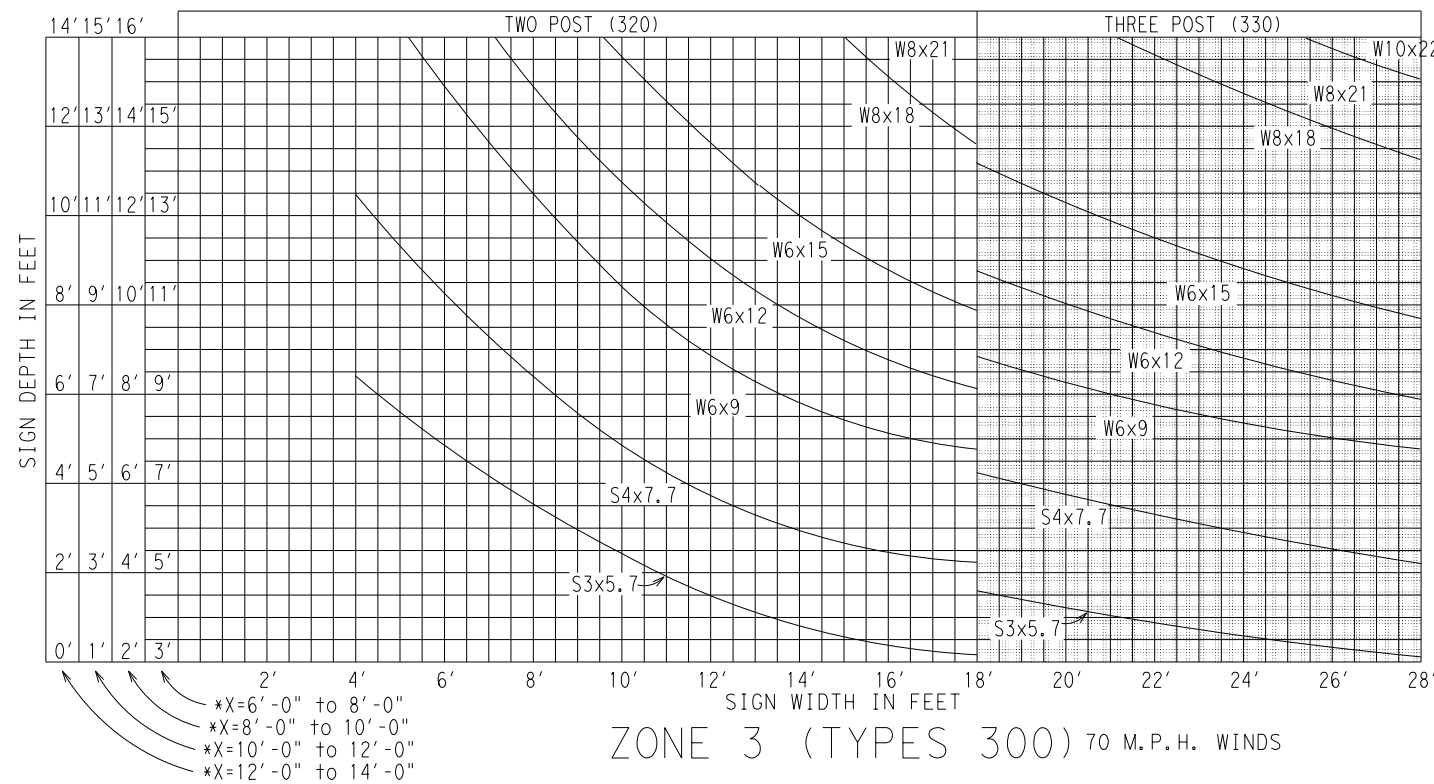
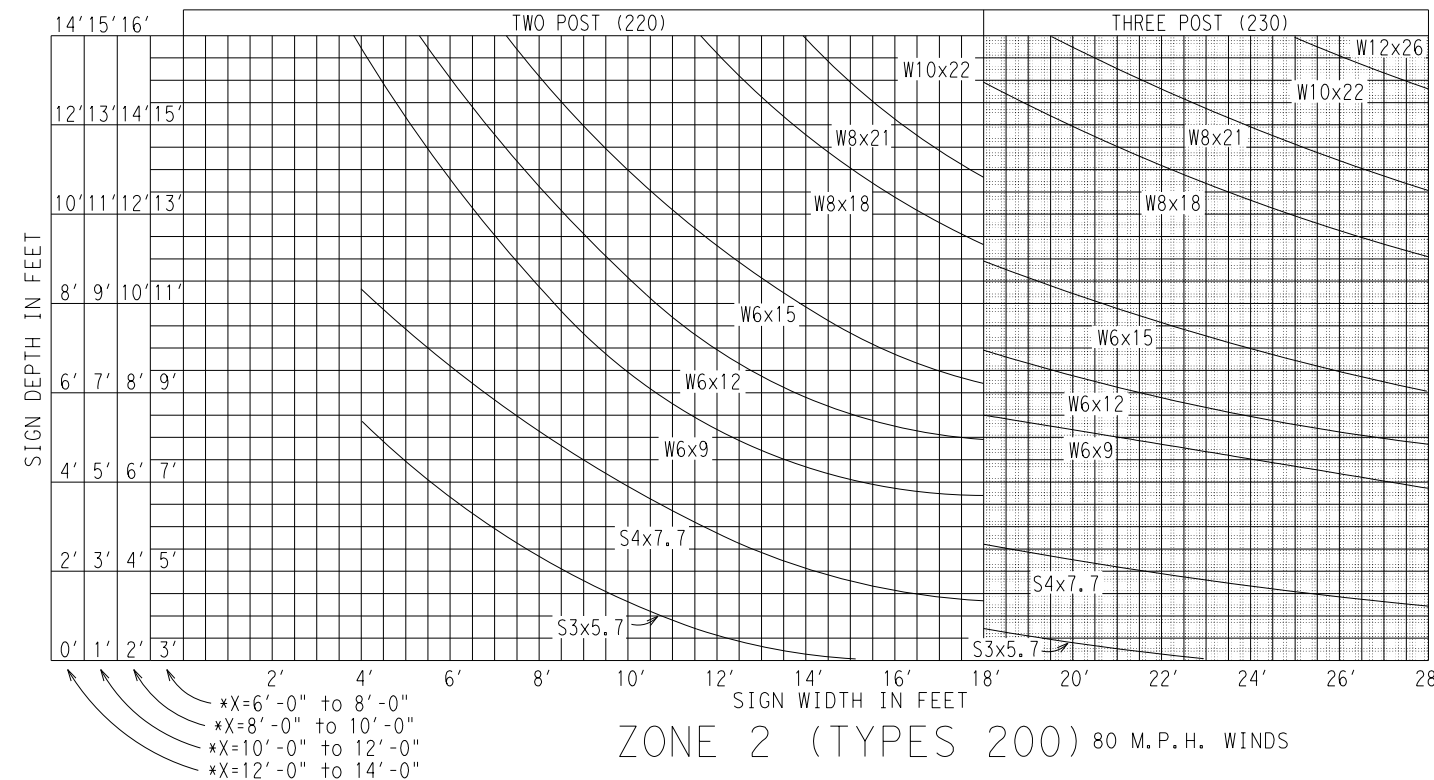
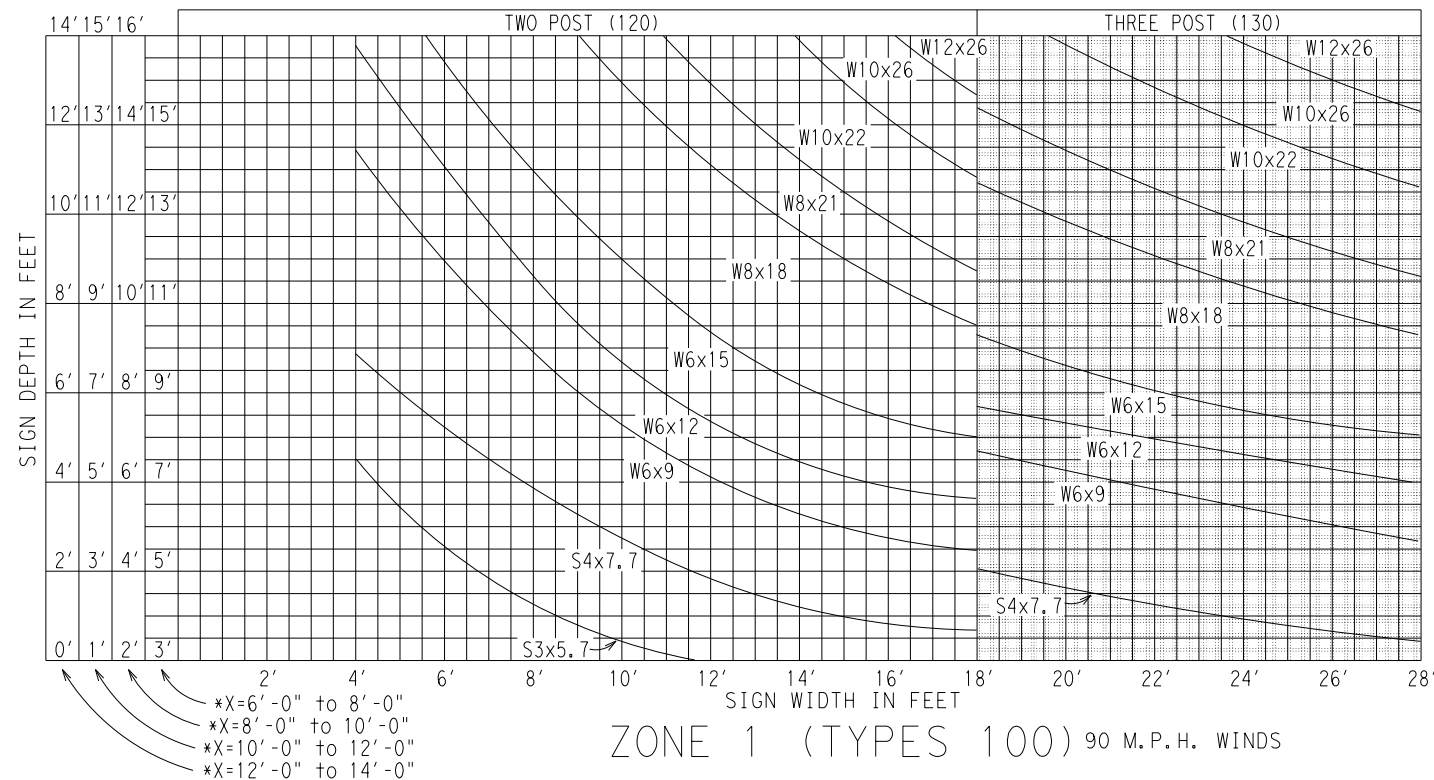


SIGN MOUNTING DETAILS-
LARGE ROADSIDE SIGNS

SMD(2-3)-08

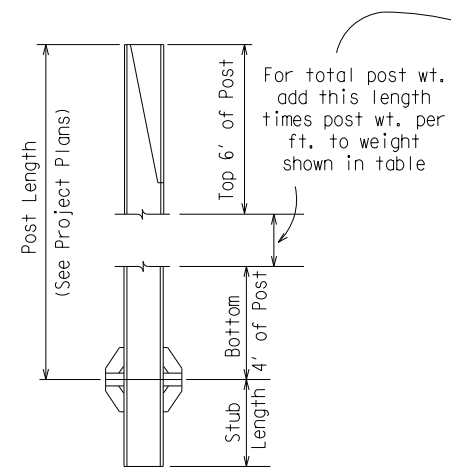
© TxDOT August 1995	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08	CON: 0203	SECT: 05	JOB: 039	HIGHWAY: US 69
	DIST: TYL	COUNTY: WOOD	SHEET NO. 417	

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* NOTE: "X" EQUALS THE AVERAGE HEIGHT FROM THE GROUND LINE TO THE BOTTOM EDGE OF THE SIGN.

SHADED AREA DENOTES 3 POST SUPPORTS

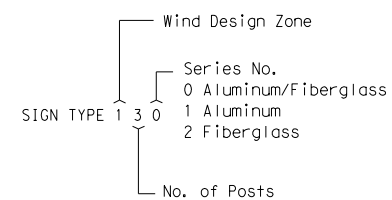


POST WEIGHT DATA			
POST SIZE	WEIGHT OF ONE POST (#)	WEIGHT OF TWO POSTS (#)	WEIGHT OF THREE POSTS (#)
W6x9*	123.2	246.4	369.6
W6x12*	160.3	320.6	480.9
W6x15*	167.8	335.6	503.4
W8x18*	201.8	403.6	605.4
W8x21*	254.7	509.4	764.1
W10x22*	266.0	532.0	798.0
W10x26*	308.0	616.0	924.0
W12x26*	308.6	617.2	925.8
S3x5.7*	85.9	171.8	257.7
S4x7.7*	112.2	224.4	336.6

*LAST FIGURES=POST WT. PER FT.

Weight Data is the weight of items shown for one, two or three posts - (includes top 6' of post, bottom 4' of post, post foundation stub, related base connection plates and stiffeners, friction fuse plate and all high strength bolts, nuts and washers).

SIGN TYPE



Note: Footings for S3x5.7 and S4x7.7 post sizes shall be non-reinforced with Class A concrete, while footing for all other post sizes shall be reinforced with Class C concrete.



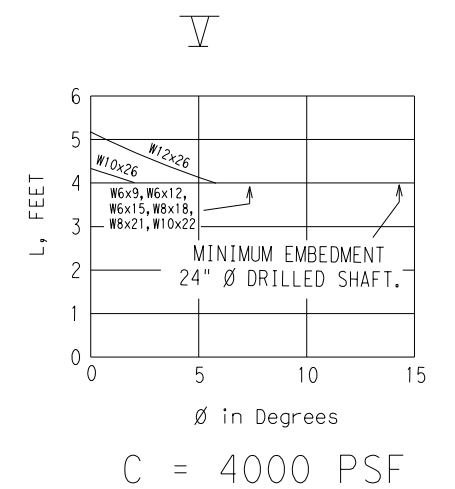
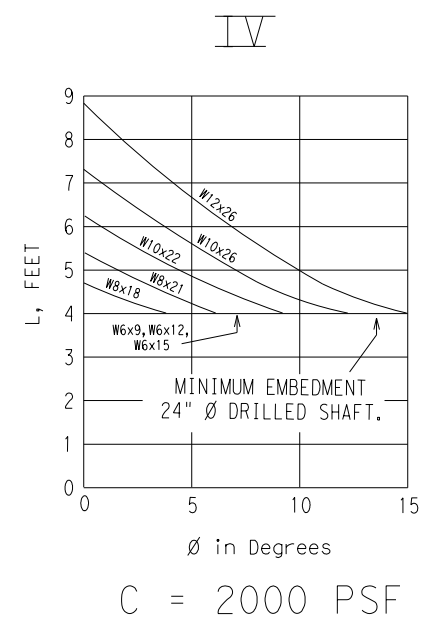
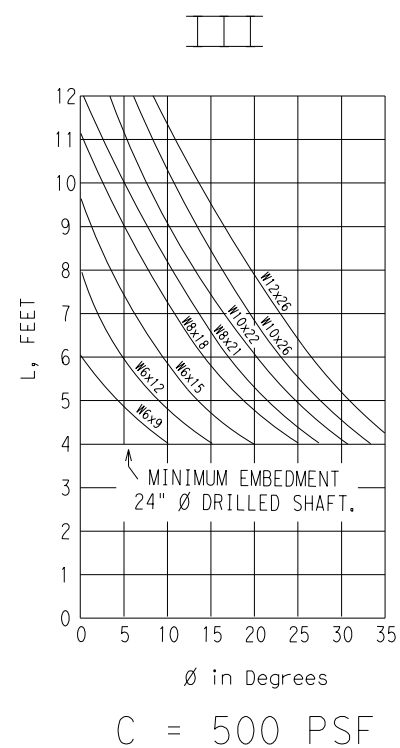
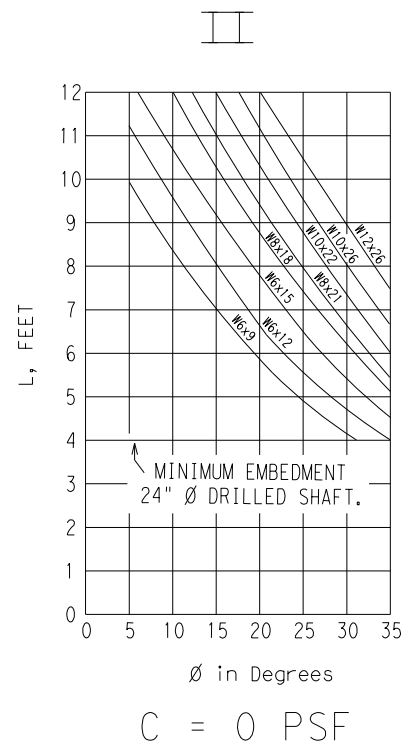
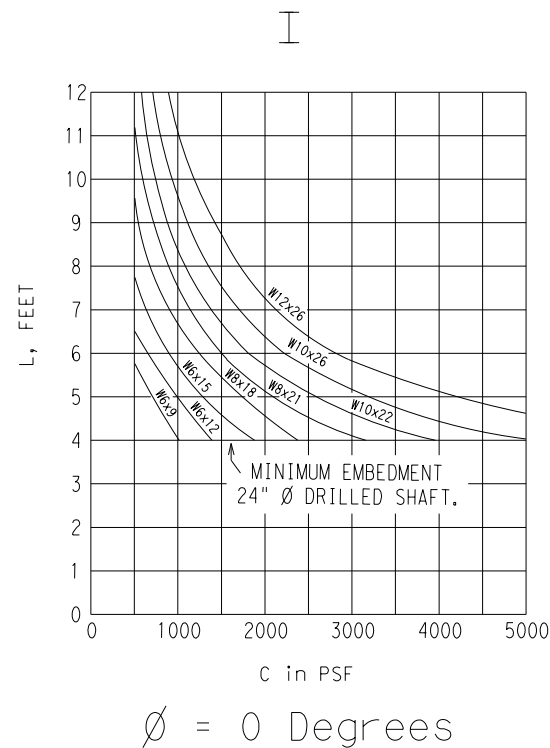
**LARGE ROADSIDE SIGN SUPPORTS
 POST SELECTION
 WORKSHEET**

SMD (8W1) - 08

© TxDOT July 1978		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
1-82		0203	05	039	US 69
5-01		DIST	COUNTY		SHEET NO.
9-08		TYL	WOOD		418

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DATE:
FILE:



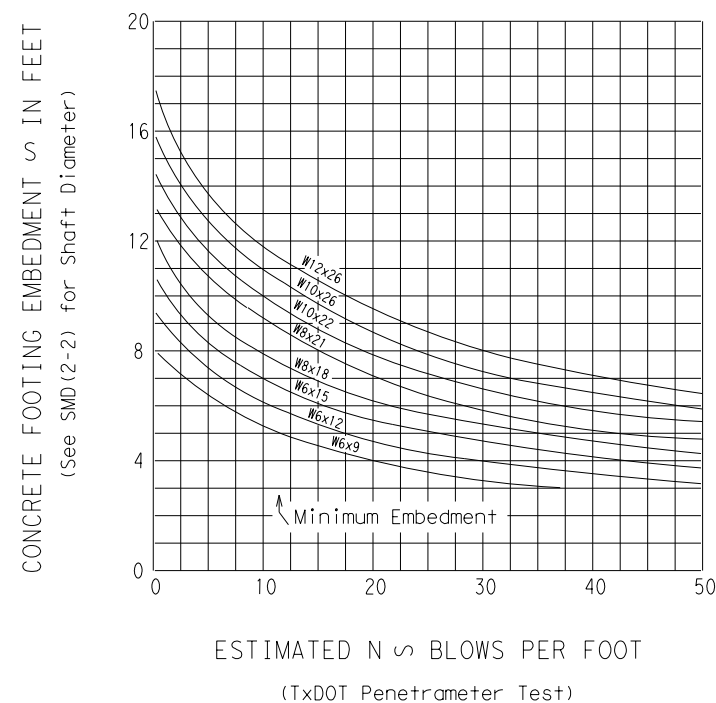
DRILLED CONCRETE FOOTING DEPTH CHART (COHFRIC DESIGN)

NOTE: THESE CHARTS MAY BE USED AS AN ALTERNATE TO THE CHART BELOW, PROVIDED THAT SOIL COHESION AND INTERNAL FRICTION (COHFRIC) DATA ARE AVAILABLE.

LEGEND:

L = Required embedment of concrete drilled shaft, in feet
C = Cohesive shear strength of soil, in psf
phi = Angle of internal friction of soil, in degrees

For values of C and phi which are intermediate to those on the charts, embedments may be determined by straight-line interpolation.



DRILLED CONCRETE FOOTING DEPTH CHART (TXDOT PENETROMETER DESIGN)

NOTE: ESTIMATED N SHOULD BE BASED AT APPROXIMATELY THE UPPER ONE-THIRD POINT OF THE DRILLED CONCRETE FOOTING BELOW THE GROUND LINE

Note:

- Curves shown on this sheet are applicable for reinforced concrete footings only.



LARGE ROADSIDE SIGN SUPPORTS FOUNDATION WORKSHEET

SMD (8W2) -08

© TxDOT July 1972		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
5-74		0203	05	039	US 69
4-78		DIST		COUNTY	SHEET NO.
9-08		TYL		WOOD	419

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with the TPDES Construction General Permit TXR150000 (CGP). The Texas Department of Transportation (TxDOT) ensures that project specifications include adequate best management practices (BMPs) for this project.

This SWP3 is consistent with requirements specified in applicable stormwater plans and the projects environmental permits, issues, and commitments (EPICs). A copy of the CGP is included in Attachment 2.12 of the SWP3 binder.

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):

0203-05-039

1.2 PROJECT LIMITS:

From: 0.96 MI NORTH OF FM 779

To: 1.03 MI SOUTH OF FM 779

1.3 PROJECT COORDINATES:

BEGIN: (Lat) 6965324.5519 ,(Long) 2872585.2386

END: (Lat) 6958879.1669 ,(Long) 2880956.3070

1.4 TOTAL PROJECT AREA (Acres): 82.6

1.5 TOTAL AREA TO BE DISTURBED (Acres): 75.1

1.6 NATURE OF CONSTRUCTION ACTIVITY:

CONSISTING OF GRADING, BASE, ASPHALT PAVEMENT, DRAINAGE, REMOVALS, STRUCTURES, SW3P, SIGNING AND PAVEMENT MARKINGS.

1.7 MAJOR SOIL TYPES:

Soil Type	Description

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):

PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

- PSLs determined during preconstruction meeting
- PSLs determined during construction
- No PSLs planned for construction

Type	Sheet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:

(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.5.)

- Mobilization
- Install sediment and erosion controls
- Blade existing topsoil into windrows, prep ROW, clear and grub
- Remove existing pavement
- Grading operations, excavation, and embankment
- Excavate and prepare subgrade for proposed pavement widening
- Remove existing culverts, safety end treatments (SETs)
- Remove existing metal beam guard fence (MBGF), bridge rail
- Install proposed pavement per plans
- Install culverts, culvert extensions, SETs
- Install mow strip, MBGF, bridge rail
- Place flex base
- Rework slopes, grade ditches
- Blade windrowed material back across slopes
- Revegetation of unpaved areas
- Achieve site stabilization and remove sediment and erosion control measures

- Other: _____
- Other: _____
- Other: _____

1.10 POTENTIAL POLLUTANTS AND SOURCES:

- Sediment laden stormwater from stormwater conveyance over disturbed area
- Fuels, oils, and lubricants from construction vehicles, equipment, and storage
- Solvents, paints, adhesives, etc. from various construction activities
- Transported soils from offsite vehicle tracking
- Construction debris and waste from various construction activities
- Contaminated water from excavation or dewatering pump-out water
- Sanitary waste from onsite restroom facilities
- Trash from various construction activities/receptacles
- Long-term stockpiles of material and waste

- Other: _____
- Other: _____
- Other: _____

1.11 RECEIVING WATERS:

Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody
Sabine River Below Lake Tawakoni (Segment 0506)	

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: TxDOT

- Development of plans and specifications
- Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- Post Construction Site Notice
- Submit NOI/CSN to local MS4
- Perform SWP3 inspections
- Maintain SWP3 records and update to reflect daily operations
- Complete and submit Notice of Termination to TCEQ
- Maintain SWP3 records for 3 years

- Other: _____
- Other: _____
- Other: _____

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

- Day To Day Operational Control
- Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- Post Construction Site Notice
- Submit NOI/CSN to local MS4
- Maintain schedule of major construction activities
- Install, maintain and modify BMPs
- Complete and submit Notice of Termination to TCEQ
- Maintain SWP3 records for 3 years

- Other: _____
- Other: _____
- Other: _____

1.14 LOCAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OPERATOR COORDINATION:

MS4 Entity



S. Elsaigh
1/26/2024

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

July 2023 Sheet 1 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
6				420
STATE	STATE DIS.	COUNTY		
TEXAS	TYLER	WOOD		
CONT.	SECT.	JOB	HIGHWAY NO.	
0203	05	039	US 69	

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

- Protection of Existing Vegetation
- Vegetated Buffer Zones
- Soil Retention Blankets
- Geotextiles
- Mulching/ Hydromulching
- Soil Surface Treatments
- Temporary Seeding
- Permanent Planting, Sodding or Seeding
- Biodegradable Erosion Control Logs
- Rock Filter Dams/ Rock Check Dams
- Vertical Tracking
- Interceptor Swale
- Riprap
- Diversion Dike
- Temporary Pipe Slope Drain
- Embankment for Erosion Control
- Paved Flumes
- Other: _____
- Other: _____
- Other: _____
- Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

- Biodegradable Erosion Control Logs
- Dewatering Controls
- Inlet Protection
- Rock Filter Dams/ Rock Check Dams
- Sandbag Berms
- Sediment Control Fence
- Stabilized Construction Exit
- Floating Turbidity Barrier
- Vegetated Buffer Zones
- Vegetated Filter Strips
- Other: CURBS AND GUTTERS
- Other: _____
- Other: _____
- Other: _____

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

Sediment control BMPs requiring design capacity calculations (See SWP3 Attachment 1.3.):

T / P

- Sediment Trap
 - Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
 - 3,600 cubic feet of storage per acre drained
- Sedimentation Basin
 - Not required (<10 acres disturbed)
 - Required (>10 acres) and implemented.
 - Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
 - 3,600 cubic feet of storage per acre drained
 - Required (>10 acres), but not feasible due to:
 - Available area/Site geometry
 - Site slope/Drainage patterns
 - Site soils/Geotechnical factors
 - Public safety
 - Other: _____

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- Excess dirt/mud on road removed daily
- Haul roads dampened for dust control
- Loaded haul trucks to be covered with tarpaulin
- Stabilized construction exit
- Daily street sweeping
- Other: _____
- Other: _____
- Other: _____
- Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- Chemical Management
- Concrete and Materials Waste Management
- Debris and Trash Management
- Dust Control
- Sanitary Facilities
- Other: _____
- Other: _____
- Other: _____
- Other: _____

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- Fire hydrant flushings
- Irrigation drainage
- Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- Potable water sources
- Springs
- Uncontaminated groundwater
- Water used to wash vehicles or control dust
- Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 DEWATERING:

Dewatering discharges of accumulated stormwater, groundwater, and surface water including discharges from dewatering of trenches, excavations, foundations, vaults, and other points of accumulation are prohibited unless managed by appropriate controls to prevent and minimize the offsite discharge of sediment and other pollutants.

2.9 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

When dewatering activities are present, a daily inspection will be conducted once per day during those activities and documented in accordance with CGP and TxDOT requirements.

2.10 MAINTENANCE:

Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.



S. Elsaigh
1/26/2024

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

July 2023 Sheet 2 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
6				421
STATE	STATE DIST.	COUNTY		
TEXAS	TYLER	WOOD		
CONT.	SECT.	JOB	HIGHWAY NO.	
0203	05	039	US 69	

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DATE: 12/12/2023
FILE: pw:\stf-sw-pw-bentley.com\stf-sw-pw-01\Documents\Active Projects\TXFW15241.02\8.00 Plans and Drawings\8.35 AIA Cut Sheets\8.35.04 TxDOT Standards\epic.dgn

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

List MS4 Operator(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

1.
2.
 No Action Required Required Action

Action No.

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000
2. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
3. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
4. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):

- No Permit Required
 Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)
 Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)
 Individual 404 Permit Required
 Other Nationwide Permit Required: NWP# 23 - PCN REQUIRED

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post-project TSS.

1. SPECIAL AQUATIC SITE (WETLAND) FROM APPROX. US 69 STA 350+00 TO 351+00
2. LANKFORD CREEK AT STR# 10-250-0-0203-05-043
3. CULVERT AT US 69 STA 363+62.05 (LANKFORD CREEK TRIB)
4. CULVERT AT US 69 STA 390+21.49 (LANKFORD CREEK TRIB)

The elevation of the ordinary high water marks of any areas requiring work to be performed in the waters of the US requiring the use of a nationwide permit can be found on the Bridge Layouts.

Best Management Practices:

Erosion	Sedimentation	Post-Construction TSS
<input checked="" type="checkbox"/> Temporary Vegetation	<input checked="" type="checkbox"/> Silt Fence	<input checked="" type="checkbox"/> Vegetative Filter Strips
<input type="checkbox"/> Blankets/Matting	<input checked="" type="checkbox"/> Rock Berm	<input type="checkbox"/> Retention/Irrigation Systems
<input type="checkbox"/> Mulch	<input type="checkbox"/> Triangular Filter Dike	<input type="checkbox"/> Extended Detention Basin
<input checked="" type="checkbox"/> Sodding	<input type="checkbox"/> Sand Bag Berm	<input type="checkbox"/> Constructed Wetlands
<input type="checkbox"/> Interceptor Swale	<input type="checkbox"/> Straw Bale Dike	<input type="checkbox"/> Wet Basin
<input type="checkbox"/> Diversion Dike	<input type="checkbox"/> Brush Berms	<input type="checkbox"/> Erosion Control Compost
<input type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Mulch Filter Berm and Socks
<input checked="" type="checkbox"/> Mulch Filter Berm and Socks	<input checked="" type="checkbox"/> Mulch Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks
<input type="checkbox"/> Compost Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks	<input checked="" type="checkbox"/> Vegetation Lined Ditches
	<input type="checkbox"/> Stone Outlet Sediment Traps	<input type="checkbox"/> Sand Filter Systems
	<input type="checkbox"/> Sediment Basins	<input type="checkbox"/> Grassy Swales

III. CULTURAL RESOURCES

Refer to TxDOT Standard Specifications in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.

- No Action Required Required Action

Action No.

- 1.
- 2.
- 3.
- 4.

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical. Contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751, 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

- No Action Required Required Action

Action No.

- 1.
- 2.
- 3.
- 4.

V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS.

- No Action Required Required Action

Action No.

1. PLAINS SPOTTED SKUNK - CONTRACTORS WILL BE ADVISED OF POTENTIAL OCCURENCE IN THE PROJECT AREA, AND TO AVOID HARMING THE SPECIES IF ENCOUNTERED, AND TO AVOID UNNECESSARY IMPACTS TO DENS.
2. TIMBER (CANEBRAKE) RATTLESNAKE - CONTRACTORS WILL BE ADVISED OF POTENTIAL OCCURENCE IN THE PROJECT AREA, AND TO AVOID HARMING THE SPECIES IF ENCOUNTERED.

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediate area, and contact the Engineer immediately.

LIST OF ABBREVIATIONS

BMP: Best Management Practice	SPCC: Spill Prevention Control and Countermeasure
CGP: Construction General Permit	SW3P: Storm Water Pollution Prevention Plan
DSHS: Texas Department of State Health Services	PCN: Pre-Construction Notification
FHWA: Federal Highway Administration	PSL: Project Specific Location
MOA: Memorandum of Agreement	TCEQ: Texas Commission on Environmental Quality
MOU: Memorandum of Understanding	TPDES: Texas Pollutant Discharge Elimination System
MS4: Municipal Separate Stormwater Sewer System	TPWD: Texas Parks and Wildlife Department
MBTA: Migratory Bird Treaty Act	TxDOT: Texas Department of Transportation
NOT: Notice of Termination	T&E: Threatened and Endangered Species
NWP: Nationwide Permit	USACE: U.S. Army Corps of Engineers
NOI: Notice of Intent	USFWS: U.S. Fish and Wildlife Service

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used. Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act.

Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:

- * Dead or distressed vegetation (not identified as normal)
- * Trash piles, drums, canister, barrels, etc.
- * Undesirable smells or odors
- * Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?

- Yes No

If "No", then no further action is required.

If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

- Yes No

If "Yes", then TxDOT must retain a DSHS licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

Any other evidence indicating possible hazardous materials or contamination discovered on site. Hazardous Materials or Contamination Issues Specific to this Project:

- No Action Required Required Action

Action No.

1. POTENTIAL UST(S) AT PARCEL 19045 NEAR US 69 STA 385+50. IF DISCOVERED, CEASE WORK IN IMMEDIATE VICINITY AND CONTACT ENGINEER.
2. TAKE PRACTICABLE MEASURES TO CONTAIN ANY POTENTIAL HAZMAT SPILLAGE TO TxDOT ROW.
- 3.

VII. OTHER ENVIRONMENTAL ISSUES

(includes regional issues such as Edwards Aquifer District, etc.)

- No Action Required Required Action

Action No.

1. NOTIFY THE LOCAL FLOODPLAIN ADMINISTRATOR AS NECESSARY AND COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS REGARDING THE HYDRAULIC DESIGN OF THE PROJECT.
- 2.
- 3.

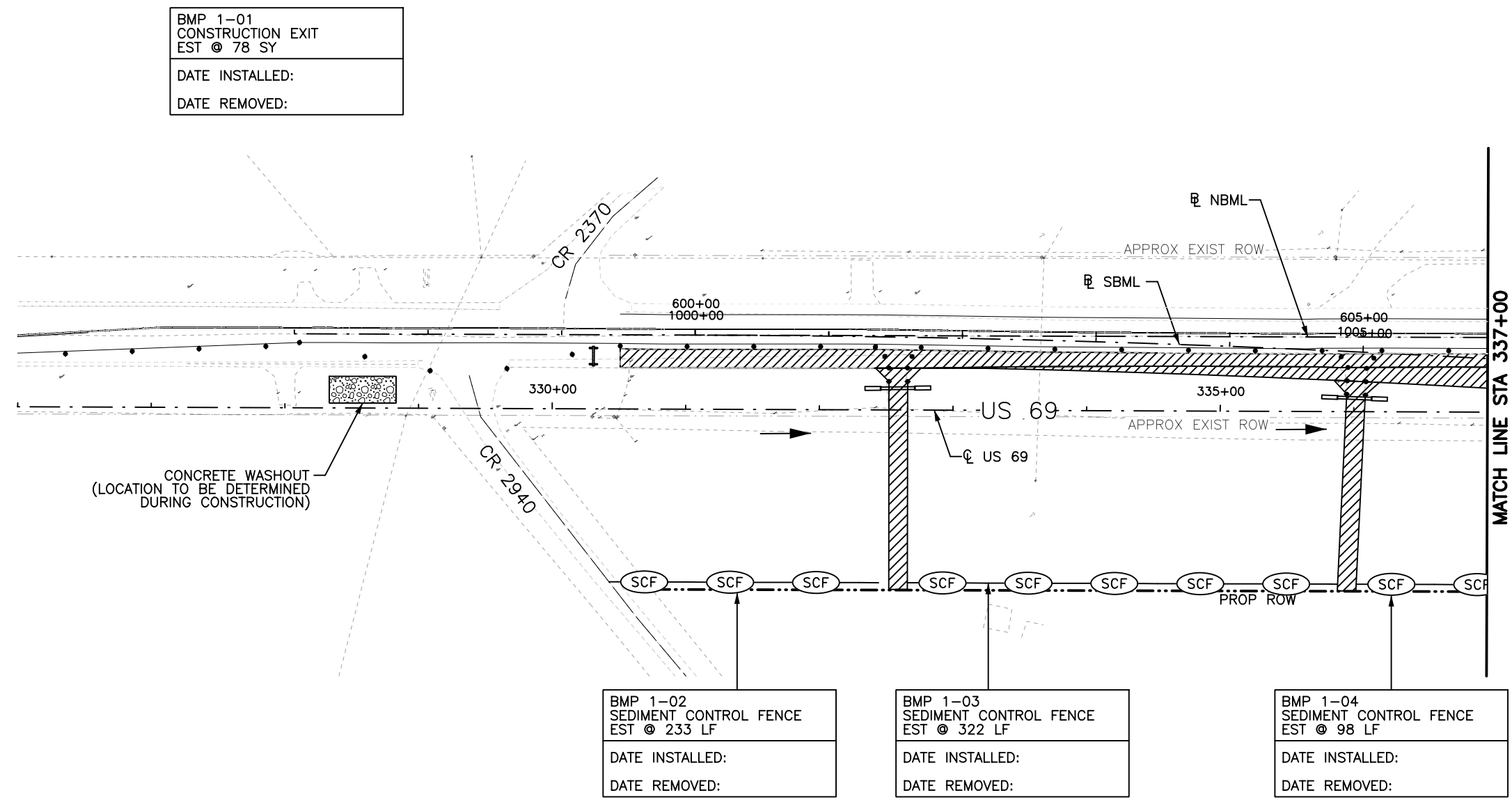


12/12/2023

		Design Division Standard			
ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS					
EPIC					
FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR	
©TxDOT: February 2015		CONT	SECT	JOB	HIGHWAY
12-12-2011 (DS) REVISIONS		0203	05	039	US 69
05-07-14 ADDED NOTE SECTION IV. TO ITEM 506, ADDED GRASSY SWALES.		DIST	COUNTY	SHEET NO.	
		TYL	WOOD	423	

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BMP 1-01
 CONSTRUCTION EXIT
 EST @ 78 SY
 DATE INSTALLED:
 DATE REMOVED:

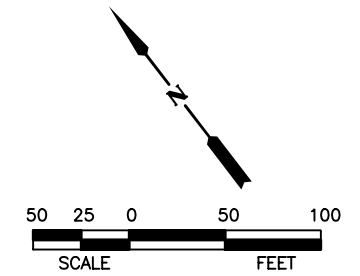
BMP 1-02
 SEDIMENT CONTROL FENCE
 EST @ 233 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-03
 SEDIMENT CONTROL FENCE
 EST @ 322 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-04
 SEDIMENT CONTROL FENCE
 EST @ 98 LF
 DATE INSTALLED:
 DATE REMOVED:

NOTES:

1. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
2. EROSION CONTROL DEVICE INSTALLATION, MAINTENANCE, AND REMOVAL SHALL BE IN ACCORDANCE WITH TxDOT STANDARDS FOR EROSION CONTROL.
3. LOCATIONS OF EROSION CONTROL DEVICES ARE APPROXIMATIONS. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
4. FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.



LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2 - TYPE 2 ROCK FILTER DAM
- RFD3 - TYPE 3 ROCK FILTER DAM
- SCF - SEDIMENT CONTROL FENCE
- CL-D - EROSION CONTROL LOG AT DROP INLET
- CL-C - EROSION CONTROL LOG AT CURB INLET

NOTE:

1. APPLY TEMPORARY SEEDING AS EARTHWORK ACTIVITIES ALLOW AND AS DIRECTED BY THE ENGINEER. MULTIPLE MOVE-INS WILL BE REQ'D.



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12/12/2023

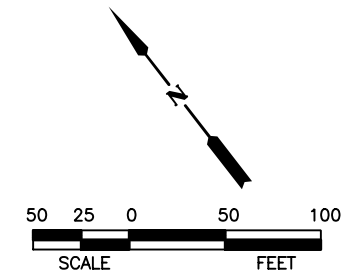
NO.	REVISION	BY	DATE
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US 69 AT FM 779
 SW3P PHASE 1
 US 69

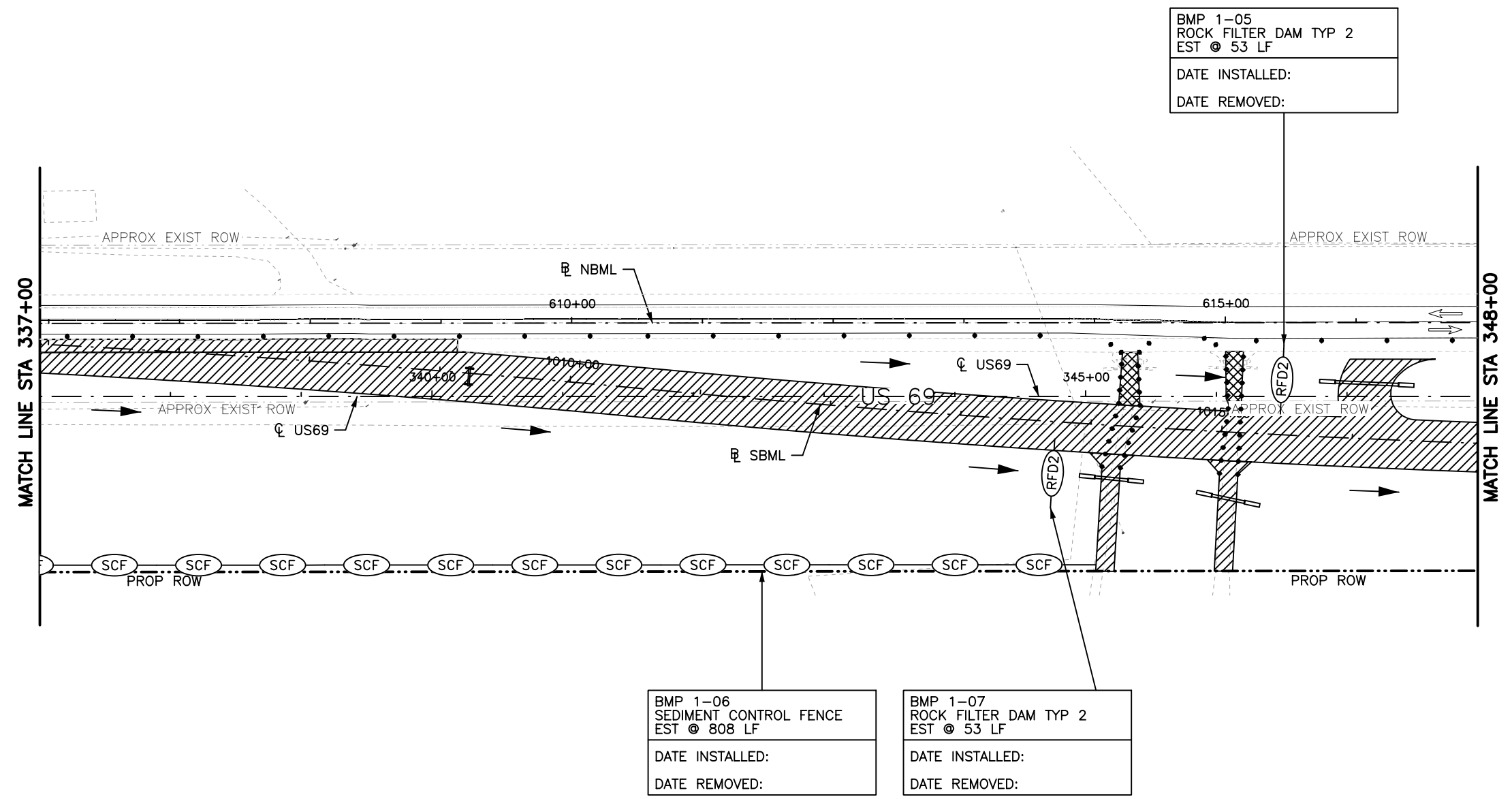
BEGIN PROJECT TO STA 337+00

Designed:	0	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	0	DIST.	TYL	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	0	JOB NO.	039	SHEET NO.	424				



- LEGEND**
- TEMP PAVEMENT CURRENT PHASE
 - TEMP PAVEMENT PREVIOUS PHASE
 - PERM CONSTRUCTION CURRENT PHASE
 - PERM CONSTRUCTION PREVIOUS PHASE
 - LIMITS OF TOPSOIL AND SEEDING
 - FLOW DIRECTION
 - RFD2 - TYPE 2 ROCK FILTER DAM
 - RFD3 - TYPE 3 ROCK FILTER DAM
 - SCF - SEDIMENT CONTROL FENCE
 - CL-DI - EROSION CONTROL LOG AT DROP INLET
 - CL-CI - EROSION CONTROL LOG AT CURB INLET

NOTE:
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BMP 1-05
 ROCK FILTER DAM TYP 2
 EST @ 53 LF

DATE INSTALLED:
 DATE REMOVED:

BMP 1-06
 SEDIMENT CONTROL FENCE
 EST @ 808 LF

DATE INSTALLED:
 DATE REMOVED:

BMP 1-07
 ROCK FILTER DAM TYP 2
 EST @ 53 LF

DATE INSTALLED:
 DATE REMOVED:

- NOTES:**
1. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
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NO.	REVISION	BY	DATE

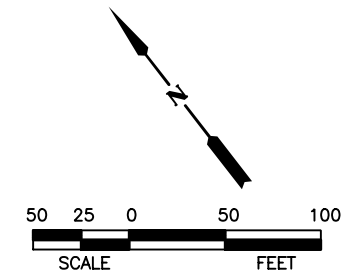


US 69 AT FM 779
 SW3P PHASE 1
 US 69
 STA 337+00 TO STA 348+00

Designed:	0	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.	0203 05 039	HIGHWAY NO.	US 69
Checked:	0	DIST.	TYL	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	0	JOB NO.	039	SHEET NO.	425				

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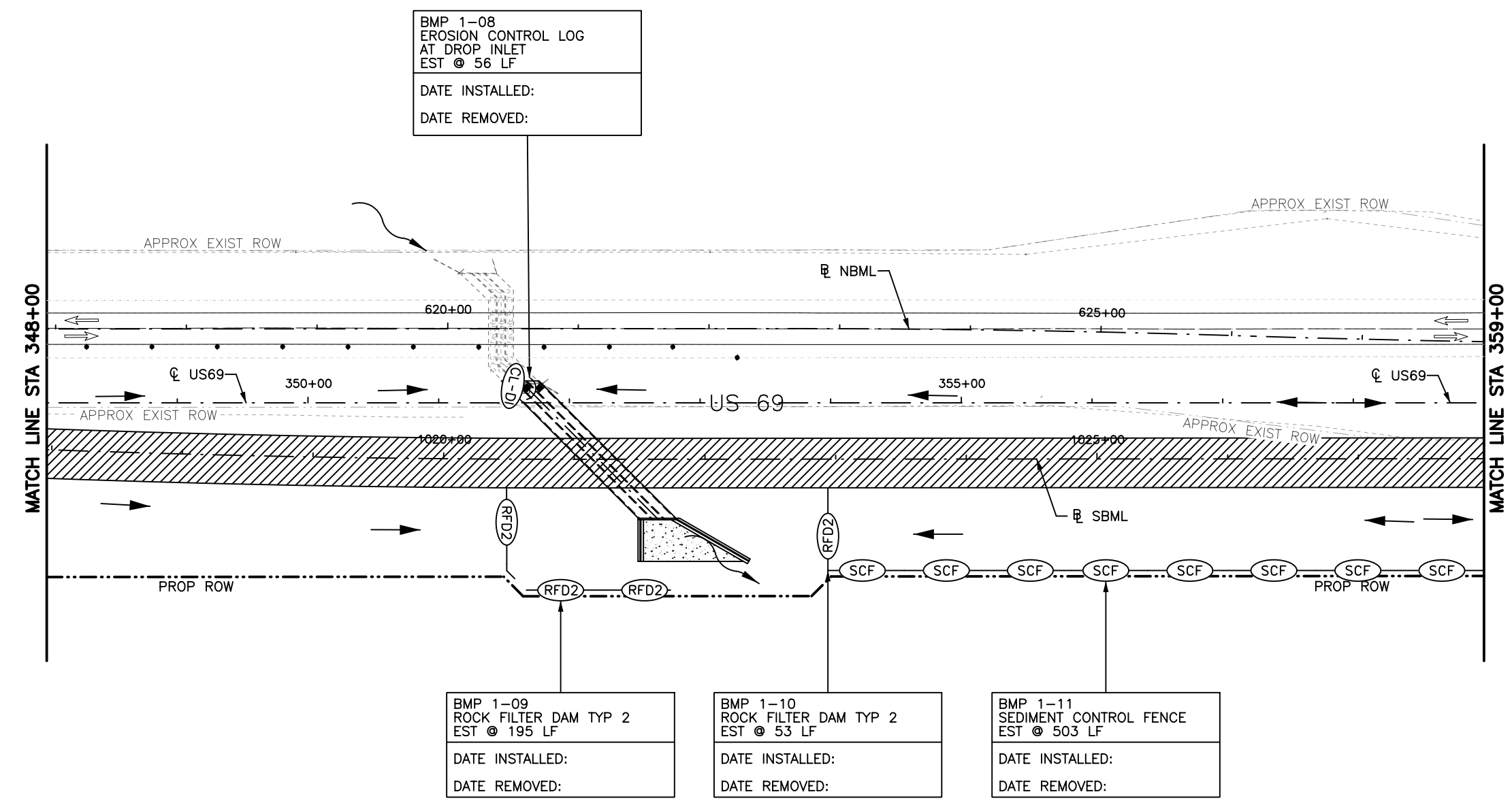
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2—TYPE 2 ROCK FILTER DAM
- RFD3—TYPE 3 ROCK FILTER DAM
- SCF—SEDIMENT CONTROL FENCE
- CL-D—EROSION CONTROL LOG AT DROP INLET
- CL-C—EROSION CONTROL LOG AT CURB INLET

NOTE:
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BMP 1-08
 EROSION CONTROL LOG
 AT DROP INLET
 EST @ 56 LF

DATE INSTALLED:
 DATE REMOVED:

BMP 1-09
 ROCK FILTER DAM TYP 2
 EST @ 195 LF

DATE INSTALLED:
 DATE REMOVED:

BMP 1-10
 ROCK FILTER DAM TYP 2
 EST @ 53 LF

DATE INSTALLED:
 DATE REMOVED:

BMP 1-11
 SEDIMENT CONTROL FENCE
 EST @ 503 LF

DATE INSTALLED:
 DATE REMOVED:

- NOTES:
1. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
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12/12/2023

NO.	REVISION	BY	DATE
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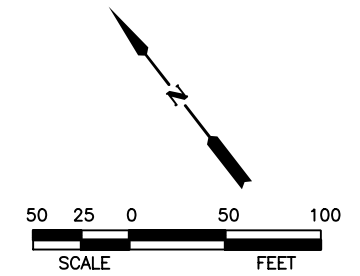
US 69 AT FM 779
 SW3P PHASE 1
 US 69

STA 348+00 TO STA 359+00












Designed: KML	FED. RD. DIV. NO. 6	STATE TEXAS	FEDERAL AID PROJECT NO.			HIGHWAY NO. US 69
Checked: ODH						
Drawn: HJZ	DIST.	COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039	SHEET NO. 426
Checked: KML	TYL	WOOD				

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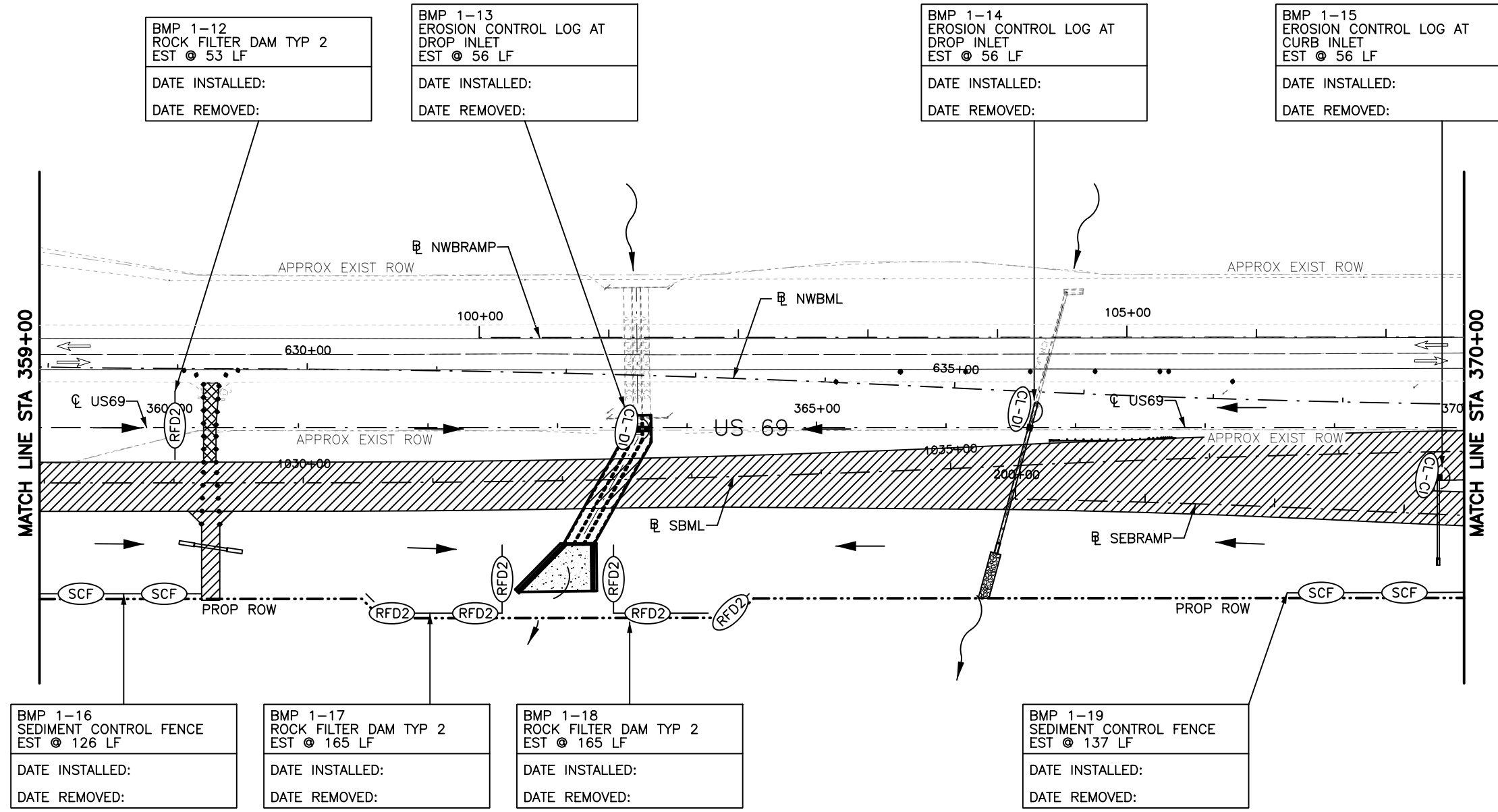
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LEGEND

-  TEMP PAVEMENT CURRENT PHASE
-  TEMP PAVEMENT PREVIOUS PHASE
-  PERM CONSTRUCTION CURRENT PHASE
-  PERM CONSTRUCTION PREVIOUS PHASE
-  LIMITS OF TOPSOIL AND SEEDING
-  FLOW DIRECTION
-  RFD2 TYPE 2 ROCK FILTER DAM
-  RFD3 TYPE 3 ROCK FILTER DAM
-  SCF SEDIMENT CONTROL FENCE
-  CL-D EROSION CONTROL LOG AT DROP INLET
-  CL-C EROSION CONTROL LOG AT CURB INLET

NOTE:
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BMP 1-12
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-13
 EROSION CONTROL LOG AT
 DROP INLET
 EST @ 56 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-14
 EROSION CONTROL LOG AT
 DROP INLET
 EST @ 56 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-15
 EROSION CONTROL LOG AT
 CURB INLET
 EST @ 56 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-16
 SEDIMENT CONTROL FENCE
 EST @ 126 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-17
 ROCK FILTER DAM TYP 2
 EST @ 165 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-18
 ROCK FILTER DAM TYP 2
 EST @ 165 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-19
 SEDIMENT CONTROL FENCE
 EST @ 137 LF
 DATE INSTALLED:
 DATE REMOVED:

NOTES:

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NO.	REVISION	BY	DATE



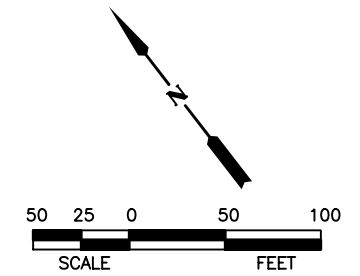
US 69 AT FM 779
 SW3P PHASE 1
 US 69

STA 359+00 TO STA 370+00

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Checked: ODH					
Drawn: HJZ	DIST.	COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Checked: KML	TYL	WOOD			SHEET NO. 427

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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2 - TYPE 2 ROCK FILTER DAM
- RFD3 - TYPE 3 ROCK FILTER DAM
- SCF - SEDIMENT CONTROL FENCE
- CL-D - EROSION CONTROL LOG AT DROP INLET
- CL-C - EROSION CONTROL LOG AT CURB INLET

NOTE:
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NO.	REVISION	BY	DATE
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US 69 AT FM 779
SW3P PHASE 1
US 69

STA 370+00 TO STA 381+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH								
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL						JOB NO.	039
								SHEET NO.	428

SHEET 5 OF 10

BMP 1-24
EROSION CONTROL LOG AT
DROP INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-23
EROSION CONTROL LOG AT
CURB INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-22
EROSION CONTROL LOG AT
DROP INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-21
EROSION CONTROL LOG AT
DROP INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

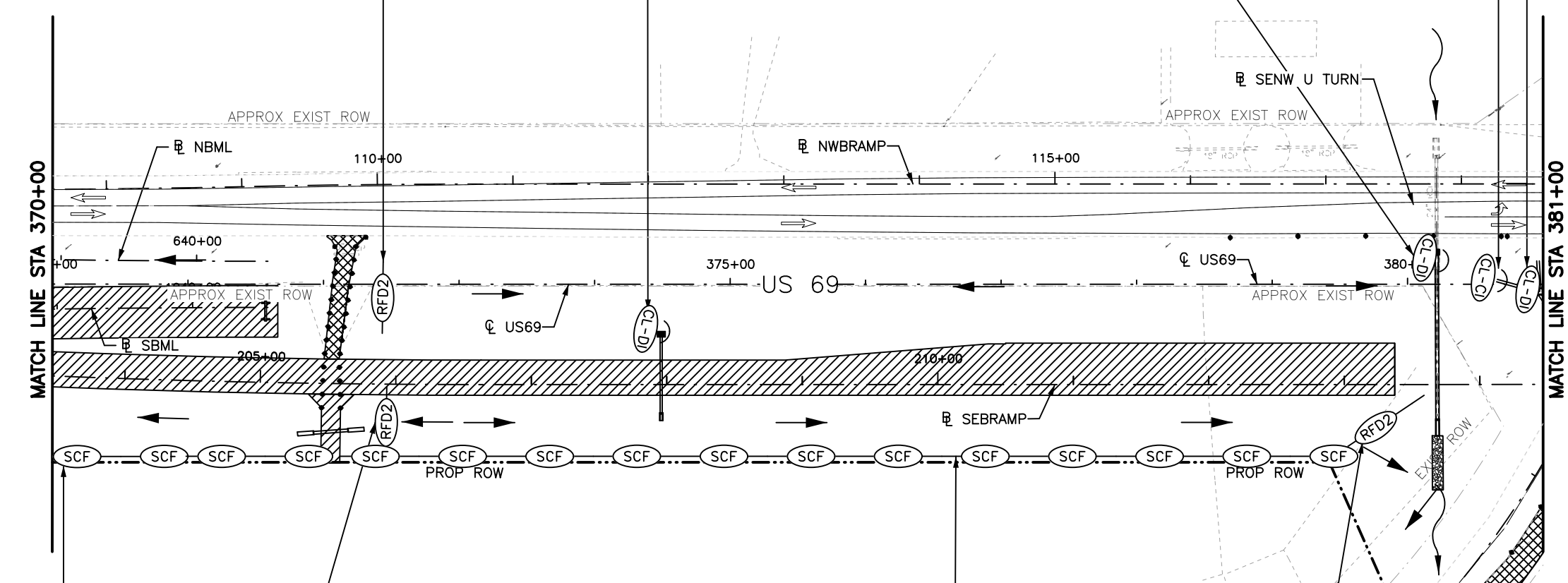
BMP 1-20
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-27
SEDIMENT CONTROL FENCE
EST @ 734 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-28
ROCK FILTER DAM TYP 2
EST @ 70 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-26
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

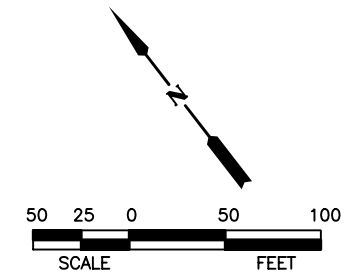
BMP 1-25
SEDIMENT CONTROL FENCE
EST @ 199 LF
DATE INSTALLED:
DATE REMOVED:



- NOTES:
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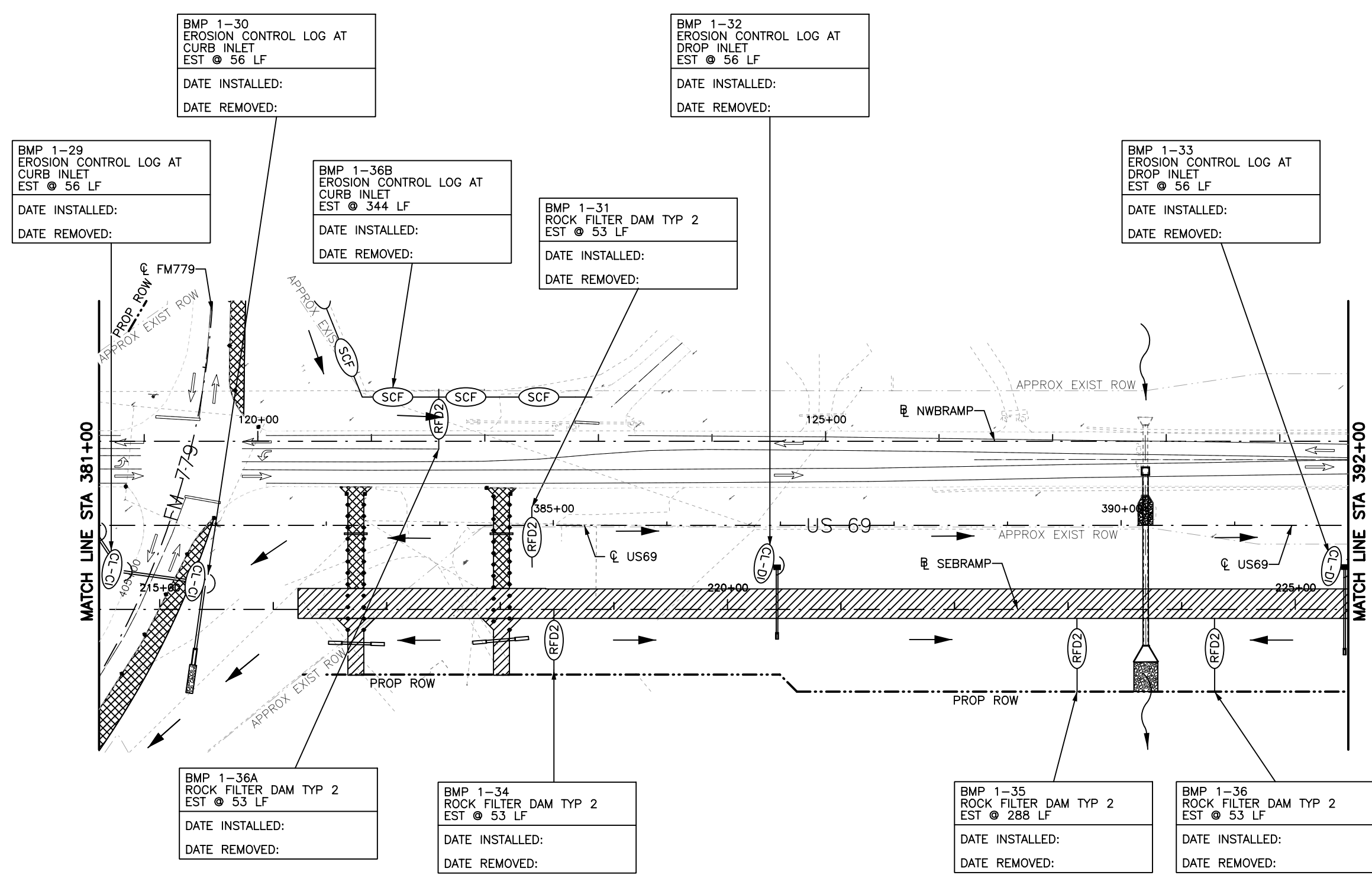
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2 - TYPE 2 ROCK FILTER DAM
- RFD3 - TYPE 3 ROCK FILTER DAM
- SCF - SEDIMENT CONTROL FENCE
- CL-D - EROSION CONTROL LOG AT DROP INLET
- CL-C - EROSION CONTROL LOG AT CURB INLET

NOTE:
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BMP 1-29
EROSION CONTROL LOG AT CURB INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-30
EROSION CONTROL LOG AT CURB INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-36B
EROSION CONTROL LOG AT CURB INLET
EST @ 344 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-31
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-32
EROSION CONTROL LOG AT DROP INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-33
EROSION CONTROL LOG AT DROP INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-36A
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-34
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-35
ROCK FILTER DAM TYP 2
EST @ 288 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-36
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

- NOTES:
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12/12/2023

NO.	REVISION	BY	DATE
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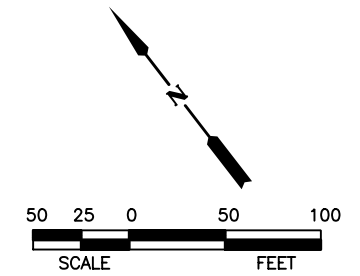
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US 69 AT FM 779
SW3P PHASE 1
US 69

STA 381+00 TO STA 392+00

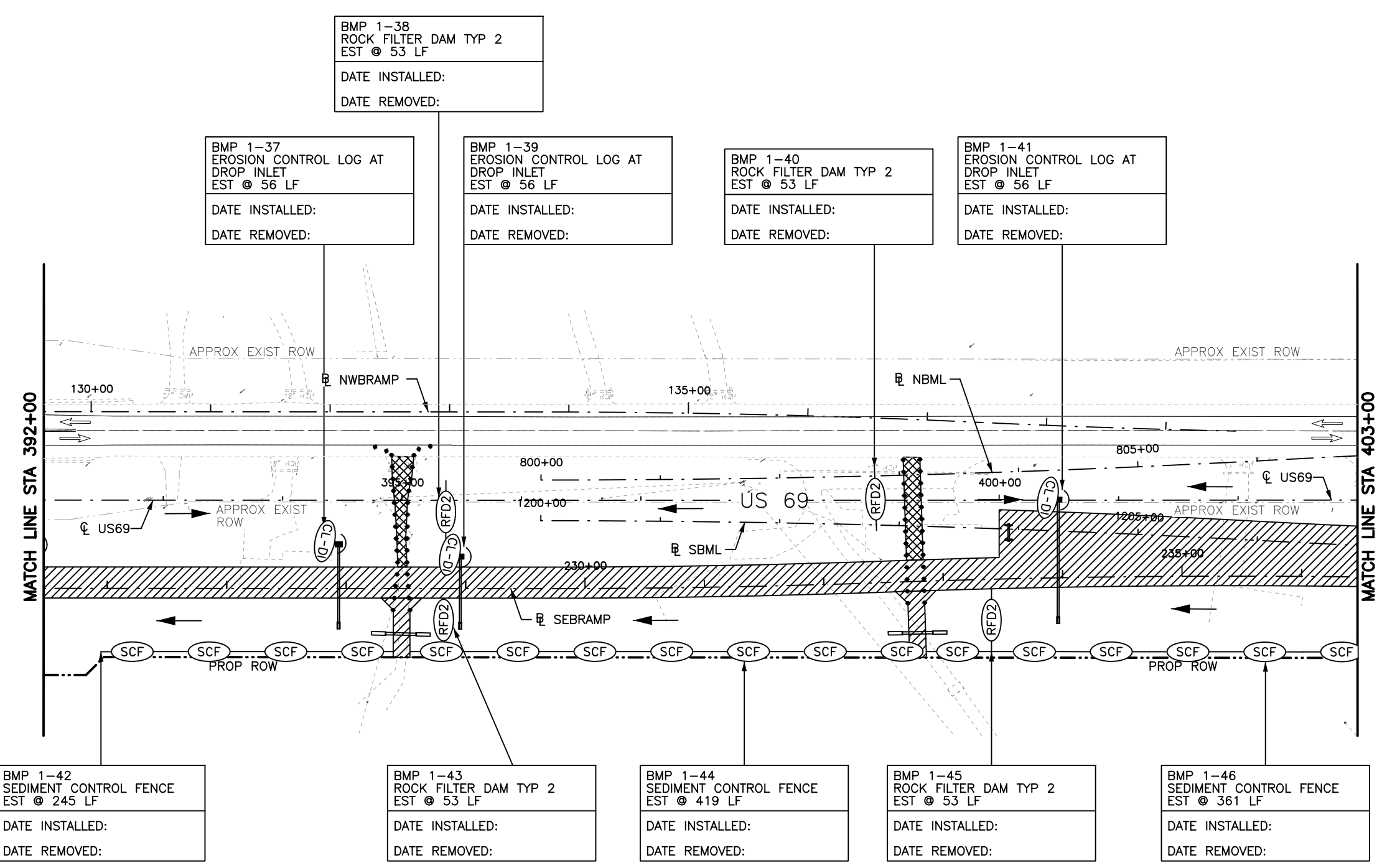
Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	HJZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:						JOB NO.	039		
Checked:	KML	TYL							429

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- LEGEND**
- TEMP PAVEMENT CURRENT PHASE
 - TEMP PAVEMENT PREVIOUS PHASE
 - PERM CONSTRUCTION CURRENT PHASE
 - PERM CONSTRUCTION PREVIOUS PHASE
 - LIMITS OF TOPSOIL AND SEEDING
 - FLOW DIRECTION
 - RFD2 TYPE 2 ROCK FILTER DAM
 - RFD3 TYPE 3 ROCK FILTER DAM
 - SCF SEDIMENT CONTROL FENCE
 - CL-D EROSION CONTROL LOG AT DROP INLET
 - CL-C EROSION CONTROL LOG AT CURB INLET

NOTE:
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BMP 1-38
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-37
 EROSION CONTROL LOG AT
 DROP INLET
 EST @ 56 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-39
 EROSION CONTROL LOG AT
 DROP INLET
 EST @ 56 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-40
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-41
 EROSION CONTROL LOG AT
 DROP INLET
 EST @ 56 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-42
 SEDIMENT CONTROL FENCE
 EST @ 245 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-43
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-44
 SEDIMENT CONTROL FENCE
 EST @ 419 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-45
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-46
 SEDIMENT CONTROL FENCE
 EST @ 361 LF
 DATE INSTALLED:
 DATE REMOVED:

- NOTES:**
- EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
 - EROSION CONTROL DEVICE INSTALLATION, MAINTENANCE, AND REMOVAL SHALL BE IN ACCORDANCE WITH TxDOT STANDARDS FOR EROSION CONTROL.
 - LOCATIONS OF EROSION CONTROL DEVICES ARE APPROXIMATIONS. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.



S. Elsaigh
 12/12/2023

NO.	REVISION	BY	DATE



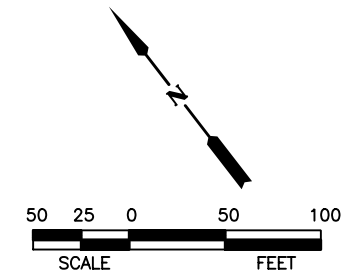
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US 69 AT FM 779
 SW3P PHASE 1
 US 69

STA 392+00 TO STA 403+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
								JOB NO.	039
								SHEET NO.	430

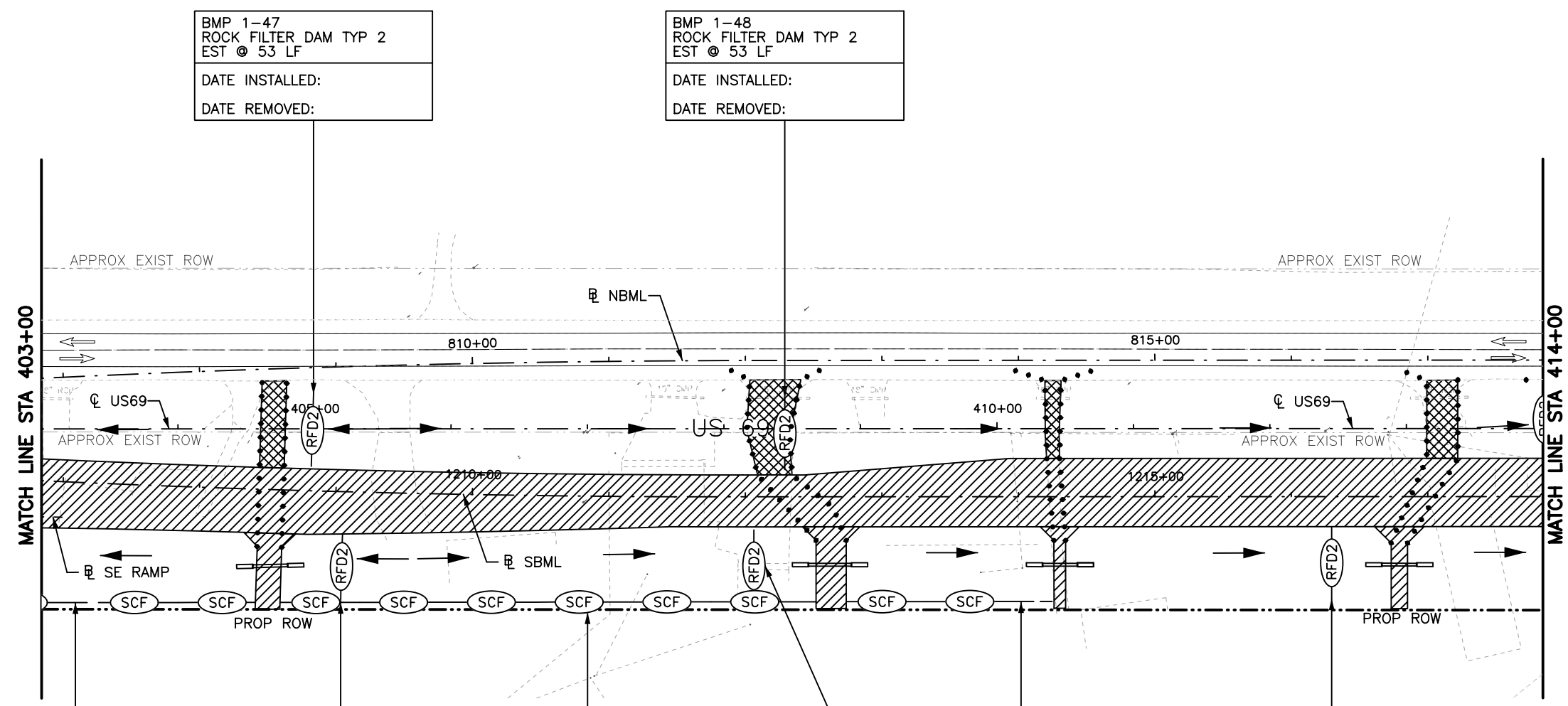
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2—TYPE 2 ROCK FILTER DAM
- RFD3—TYPE 3 ROCK FILTER DAM
- SCF—SEDIMENT CONTROL FENCE
- CL-D—EROSION CONTROL LOG AT DROP INLET
- CL-C—EROSION CONTROL LOG AT CURB INLET

NOTE:
 1. APPLY TEMPORARY SEEDING AS EARTHWORK ACTIVITIES ALLOW AND AS DIRECTED BY THE ENGINEER. MULTIPLE MOVE-INS WILL BE REQ'D.



BMP 1-47
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-48
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-49
 SEDIMENT CONTROL FENCE
 EST @ 157 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-50
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-51
 SEDIMENT CONTROL FENCE
 EST @ 393 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-52
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-53
 SEDIMENT CONTROL FENCE
 EST @ 154 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 1-54
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

- NOTES:
1. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
 2. EROSION CONTROL DEVICE INSTALLATION, MAINTENANCE, AND REMOVAL SHALL BE IN ACCORDANCE WITH TxDOT STANDARDS FOR EROSION CONTROL.
 3. LOCATIONS OF EROSION CONTROL DEVICES ARE APPROXIMATIONS. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
 4. FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.



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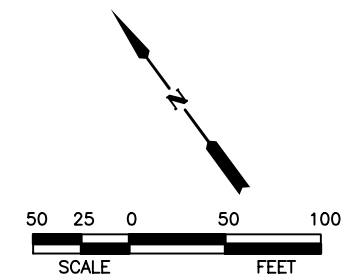
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 US 69 AT FM 779
 SW3P PHASE 1
 US 69
 STA 403+00 TO STA 414+00

Designed: KML	FED. RD. DIV. NO. 6	STATE TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO. US 69
Checked: ODH	DIST. HJZ	COUNTY WOOD	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: HJZ	Checked: KML	TYL			SHEET NO. 431

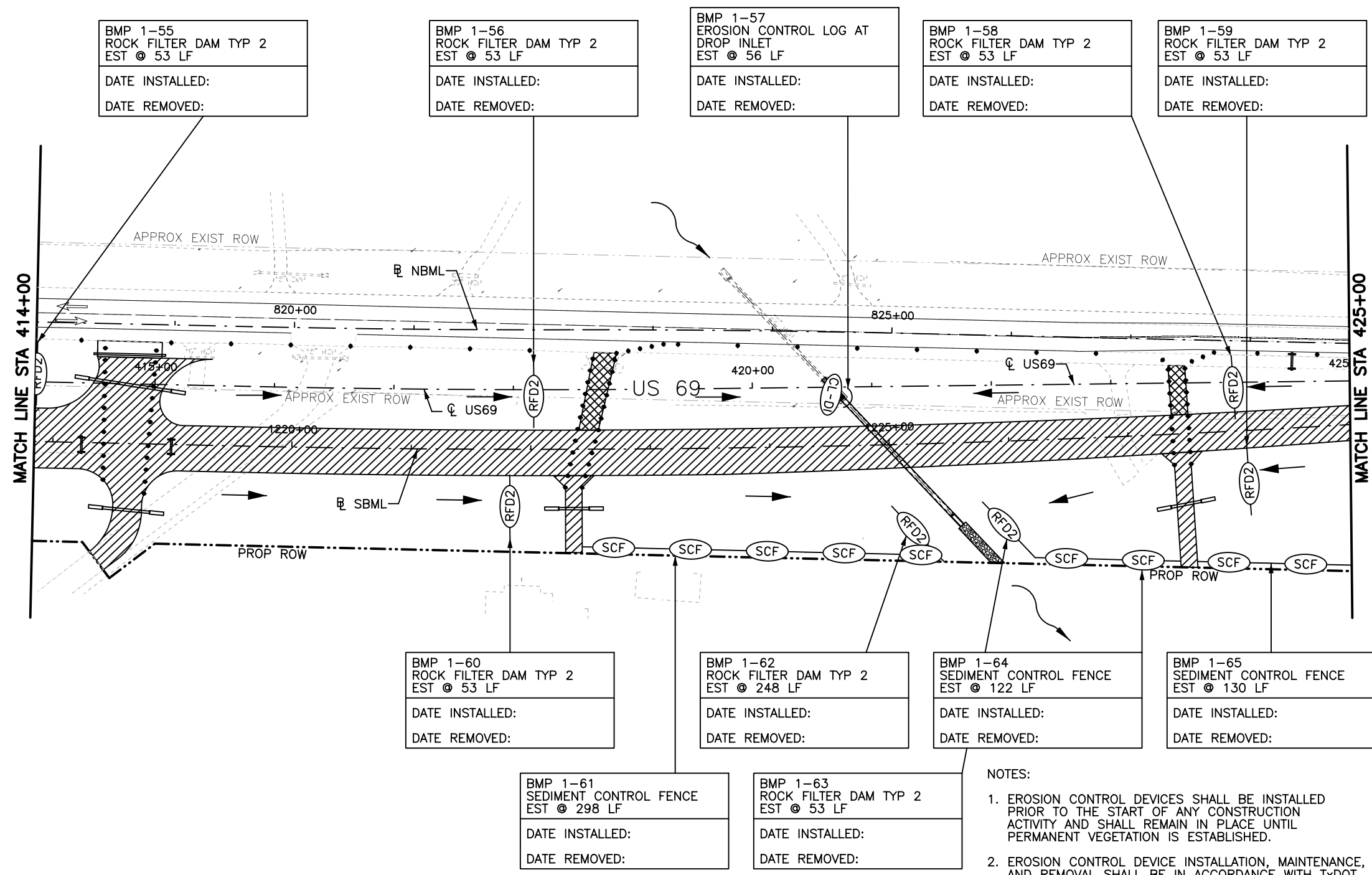
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2 - TYPE 2 ROCK FILTER DAM
- RFD3 - TYPE 3 ROCK FILTER DAM
- SCF - SEDIMENT CONTROL FENCE
- CL-D - EROSION CONTROL LOG AT DROP INLET
- CL-C - EROSION CONTROL LOG AT CURB INLET

NOTE:
1. APPLY TEMPORARY SEEDING AS EARTHWORK ACTIVITIES ALLOW AND AS DIRECTED BY THE ENGINEER. MULTIPLE MOVE-INS WILL BE REQ'D.



BMP 1-55
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-56
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-57
EROSION CONTROL LOG AT
DROP INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-58
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-59
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-60
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-62
ROCK FILTER DAM TYP 2
EST @ 248 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-64
SEDIMENT CONTROL FENCE
EST @ 122 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-65
SEDIMENT CONTROL FENCE
EST @ 130 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-61
SEDIMENT CONTROL FENCE
EST @ 298 LF
DATE INSTALLED:
DATE REMOVED:

BMP 1-63
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

- NOTES:
1. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
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 4. FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.



S. Elsaigh
12/12/2023

NO.	REVISION	BY	DATE



US 69 AT FM 779
SW3P PHASE 1
US 69

STA 414+00 TO STA 425+00

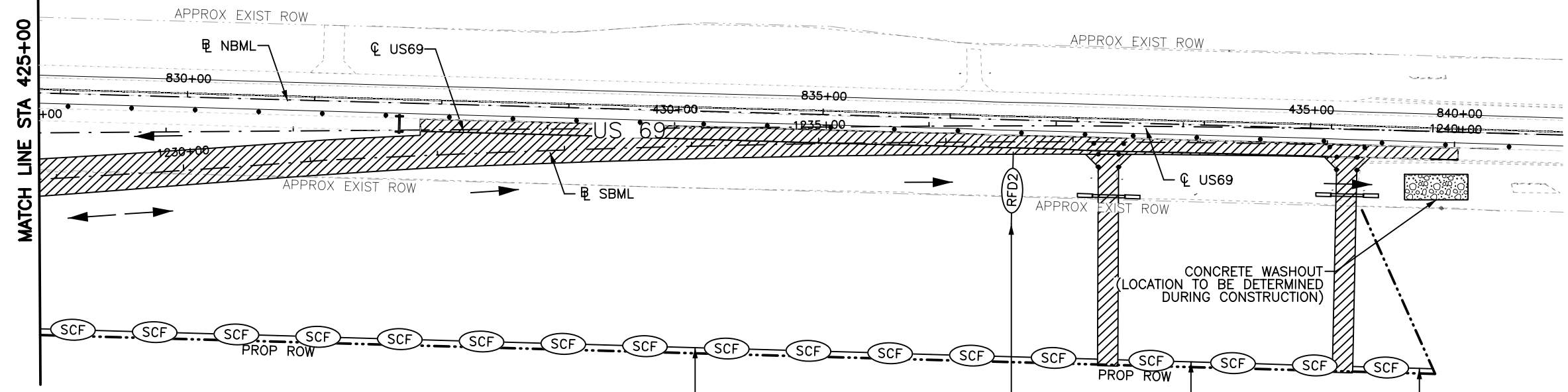
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Checked:	ODH	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05

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MATCH LINE STA 425+00



BMP 1-66 CONSTRUCTION EXIT EST @ 78 SY <hr/> DATE INSTALLED: <hr/> DATE REMOVED:
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BMP 1-67 SEDIMENT CONTROL FENCE EST @ 832 LF <hr/> DATE INSTALLED: <hr/> DATE REMOVED:
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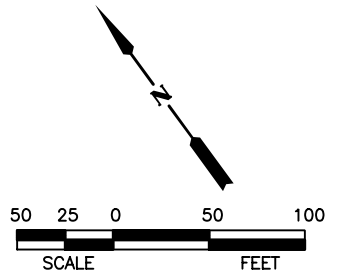
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BMP 1-69 SEDIMENT CONTROL FENCE EST @ 169 LF <hr/> DATE INSTALLED: <hr/> DATE REMOVED:
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BMP 1-70 SEDIMENT CONTROL FENCE EST @ 165 LF <hr/> DATE INSTALLED: <hr/> DATE REMOVED:
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- NOTES:
1. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
 2. EROSION CONTROL DEVICE INSTALLATION, MAINTENANCE, AND REMOVAL SHALL BE IN ACCORDANCE WITH TXDOT STANDARDS FOR EROSION CONTROL.
 3. LOCATIONS OF EROSION CONTROL DEVICES ARE APPROXIMATIONS. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
 4. FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.

SHEET 10 OF 10



- LEGEND**
- TEMP PAVEMENT CURRENT PHASE
 - TEMP PAVEMENT PREVIOUS PHASE
 - PERM CONSTRUCTION CURRENT PHASE
 - PERM CONSTRUCTION PREVIOUS PHASE
 - LIMITS OF TOPSOIL AND SEEDING
 - FLOW DIRECTION
 - RFD2 TYPE 2 ROCK FILTER DAM
 - RFD3 TYPE 3 ROCK FILTER DAM
 - SCF SEDIMENT CONTROL FENCE
 - CL-DI EROSION CONTROL LOG AT DROP INLET
 - CL-CI EROSION CONTROL LOG AT CURB INLET

NOTE:
 1. APPLY TEMPORARY SEEDING AS EARTHWORK ACTIVITIES ALLOW AND AS DIRECTED BY THE ENGINEER. MULTIPLE MOVE-INS WILL BE REQ'D.



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12/12/2023

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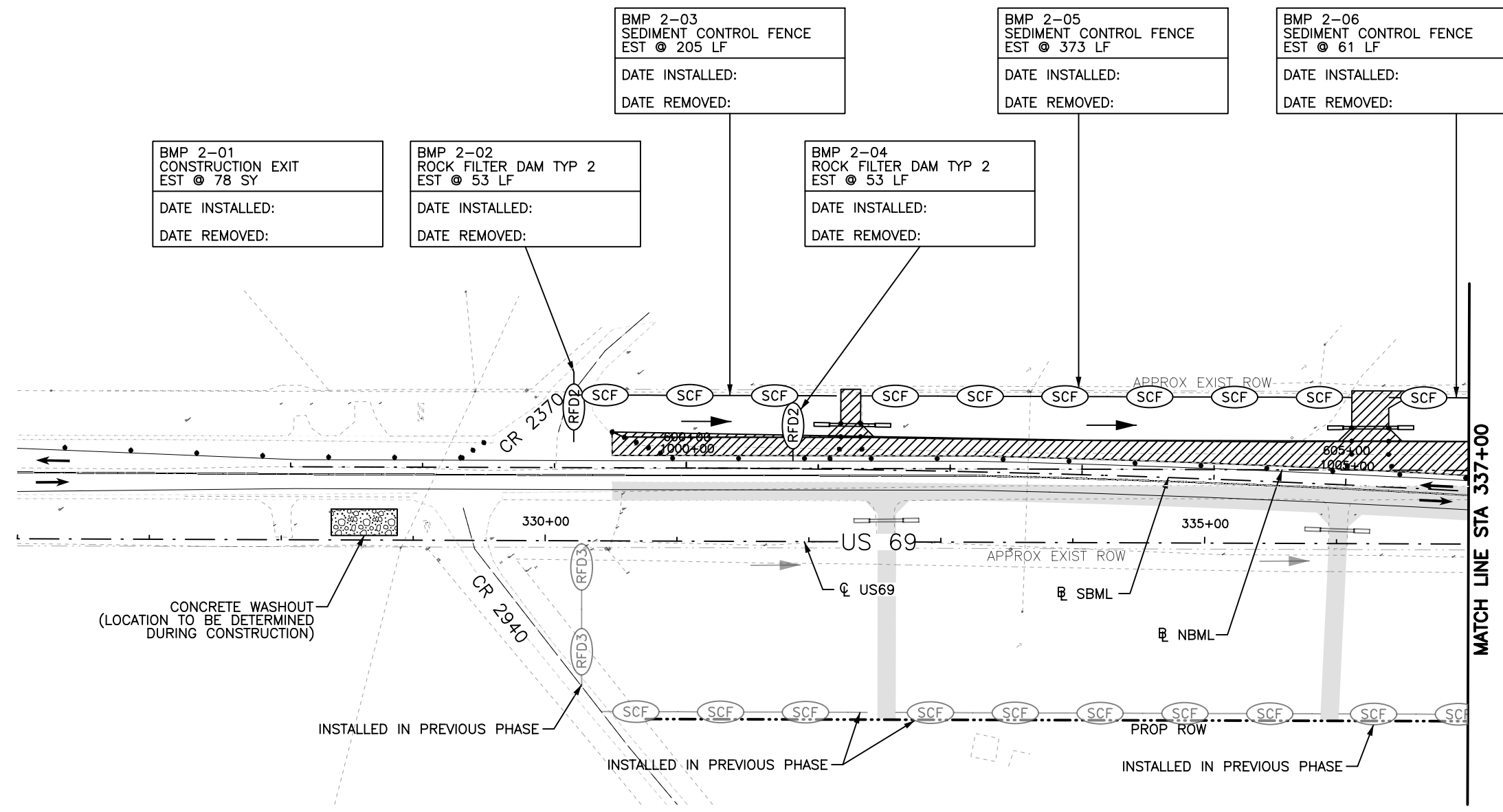
US 69 AT FM 779
 SW3P PHASE 1
 US 69

STA 425+00 TO END PROJECT

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ					JOB NO.	039		
Checked:	KML	TYL							433

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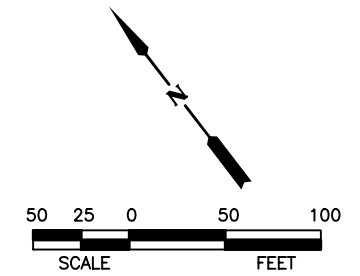
BMP 2-02
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-03
 SEDIMENT CONTROL FENCE
 EST @ 205 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-04
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-05
 SEDIMENT CONTROL FENCE
 EST @ 373 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-06
 SEDIMENT CONTROL FENCE
 EST @ 61 LF
 DATE INSTALLED:
 DATE REMOVED:



LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2—TYPE 2 ROCK FILTER DAM
- RFD3—TYPE 3 ROCK FILTER DAM
- SCF—SEDIMENT CONTROL FENCE
- CL-D—EROSION CONTROL LOG AT DROP INLET
- CL-C—EROSION CONTROL LOG AT CURB INLET

NOTE:
 1. APPLY TEMPORARY SEEDING AS EARTHWORK ACTIVITIES ALLOW AND AS DIRECTED BY THE ENGINEER. MULTIPLE MOVE-INS WILL BE REQ'D.



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12/12/2023

NO.	REVISION	BY	DATE
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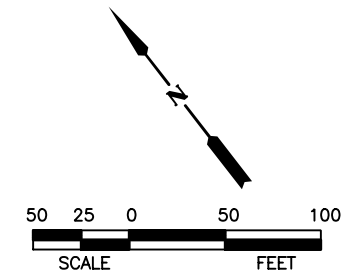
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US 69 AT FM 779
 SW3P PHASE 2
 US 69

BEGIN PROJECT TO STA 337+00

Designed: KML	FED. RD. DIV. NO. 6	STATE TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO. US 69
Checked: ODH			CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: HJZ	DIST. TYL	COUNTY WOOD			SHEET NO. 434

- NOTES:**
1. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
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 4. FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.



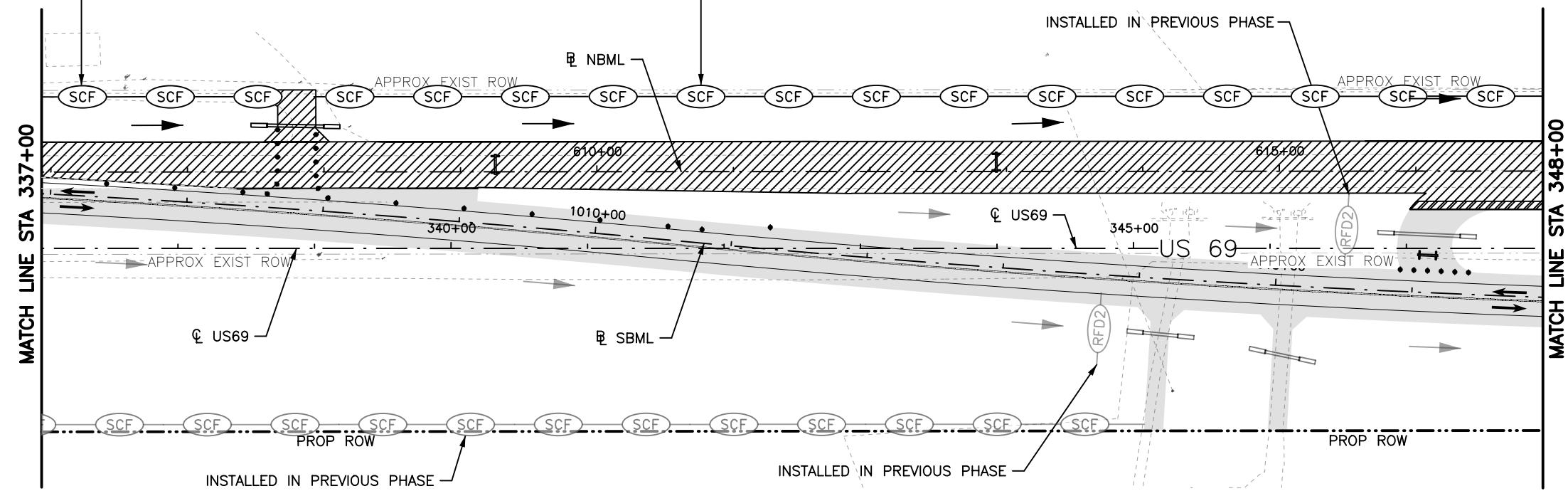
LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2—TYPE 2 ROCK FILTER DAM
- RFD3—TYPE 3 ROCK FILTER DAM
- SCF—SEDIMENT CONTROL FENCE
- CL-D—EROSION CONTROL LOG AT DROP INLET
- CL-C—EROSION CONTROL LOG AT CURB INLET

NOTE:
1. APPLY TEMPORARY SEEDING AS EARTHWORK ACTIVITIES ALLOW AND AS DIRECTED BY THE ENGINEER. MULTIPLE MOVE-INS WILL BE REQ'D.

BMP 2-07
SEDIMENT CONTROL FENCE
EST @ 172 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-08
SEDIMENT CONTROL FENCE
EST @ 900 LF
DATE INSTALLED:
DATE REMOVED:



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12/12/2023

NO.	REVISION	BY	DATE
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US 69 AT FM 779
SW3P PHASE 2
US 69

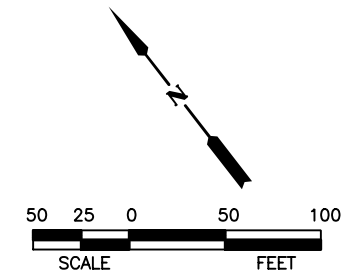
STA 337+00 TO STA 348+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	TYL	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	JOB NO.	039	SHEET NO.	435				

- NOTES:
1. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
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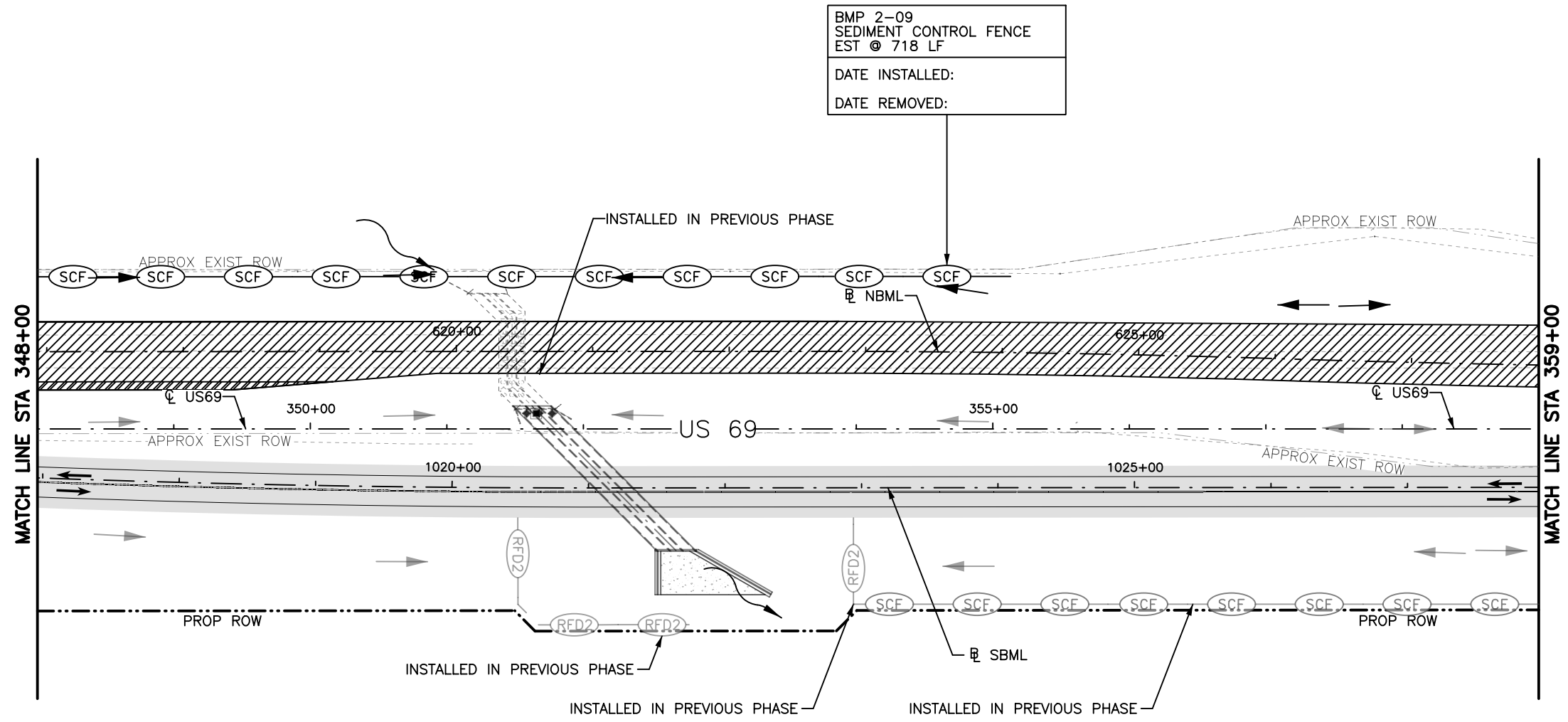
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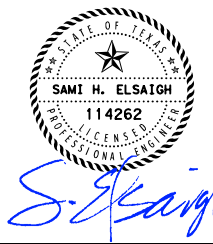
- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2—TYPE 2 ROCK FILTER DAM
- RFD3—TYPE 3 ROCK FILTER DAM
- SCF—SEDIMENT CONTROL FENCE
- CL-D—EROSION CONTROL LOG AT DROP INLET
- CL-C—EROSION CONTROL LOG AT CURB INLET

NOTE:
 1. APPLY TEMPORARY SEEDING AS EARTHWORK ACTIVITIES ALLOW AND AS DIRECTED BY THE ENGINEER. MULTIPLE MOVE-INS WILL BE REQ'D.



BMP 2-09
 SEDIMENT CONTROL FENCE
 EST @ 718 LF

DATE INSTALLED:
 DATE REMOVED:



NO.	REVISION	BY	DATE
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US 69 AT FM 779
 SW3P PHASE 2
 US 69

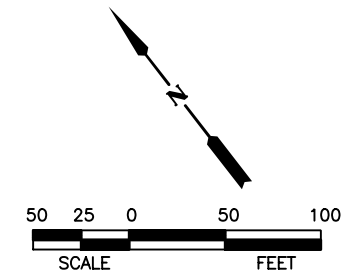
STA 348+00 TO STA 359+00

Designed: KML	FED. RD. DIV. NO. 6	STATE TEXAS	FEDERAL AID PROJECT NO.			HIGHWAY NO. US 69
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Drawn: HJZ						SHEET NO. 436
Checked: KML						












- NOTES:
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 4. FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.

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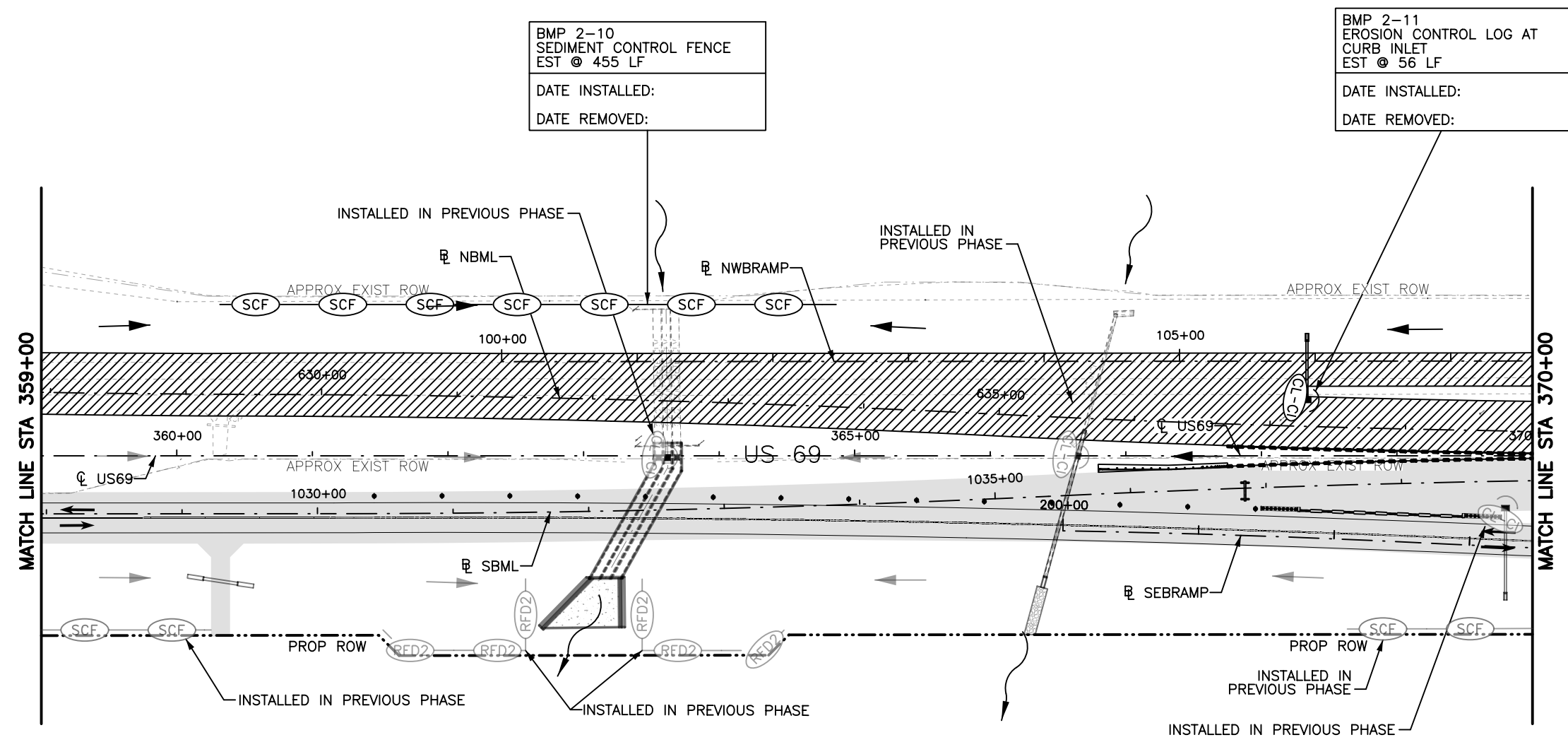
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LEGEND

-  TEMP PAVEMENT CURRENT PHASE
-  TEMP PAVEMENT PREVIOUS PHASE
-  PERM CONSTRUCTION CURRENT PHASE
-  PERM CONSTRUCTION PREVIOUS PHASE
-  LIMITS OF TOPSOIL AND SEEDING
-  FLOW DIRECTION
-  RFD2 TYPE 2 ROCK FILTER DAM
-  RFD3 TYPE 3 ROCK FILTER DAM
-  SCF SEDIMENT CONTROL FENCE
-  CL-D EROSION CONTROL LOG AT DROP INLET
-  CL-C EROSION CONTROL LOG AT CURB INLET

NOTE:
 1. APPLY TEMPORARY SEEDING AS EARTHWORK ACTIVITIES ALLOW AND AS DIRECTED BY THE ENGINEER. MULTIPLE MOVE-INS WILL BE REQ'D.



S. Elsaigh
 12/12/2023

NO.	REVISION	BY	DATE



US 69 AT FM 779
 SW3P PHASE 2
 US 69

STA 359+00 TO STA 370+00

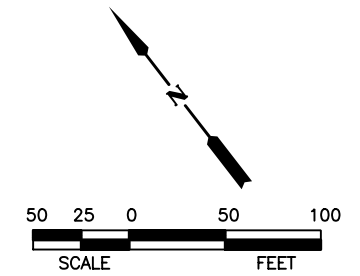
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Checked: ODH			CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: HJZ	DIST. TYL	COUNTY WOOD			SHEET NO. 437

- NOTES:
1. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
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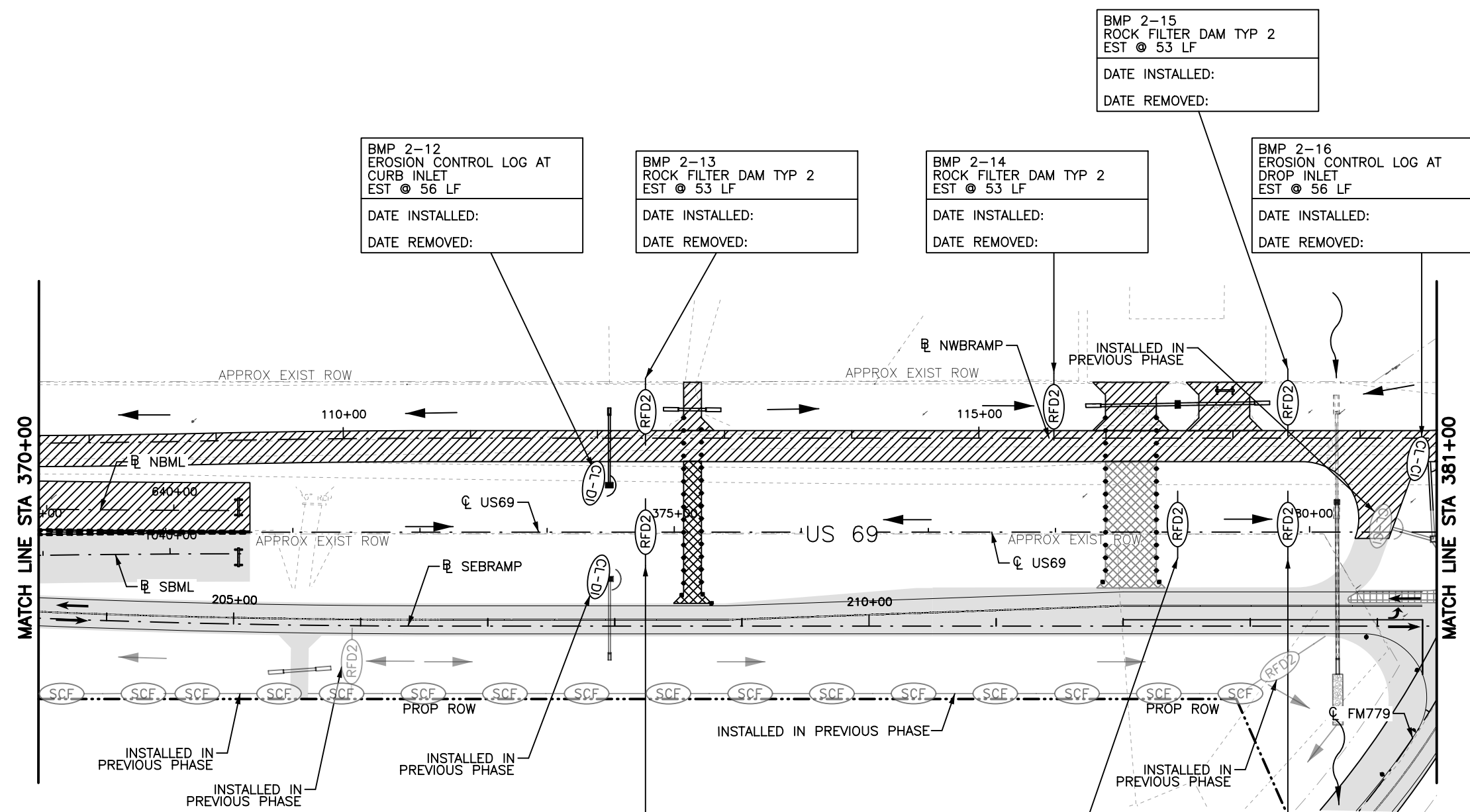
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2 - TYPE 2 ROCK FILTER DAM
- RFD3 - TYPE 3 ROCK FILTER DAM
- SCF - SEDIMENT CONTROL FENCE
- CL-D - EROSION CONTROL LOG AT DROP INLET
- CL-C - EROSION CONTROL LOG AT CURB INLET

NOTE:
1. APPLY TEMPORARY SEEDING AS EARTHWORK ACTIVITIES ALLOW AND AS DIRECTED BY THE ENGINEER. MULTIPLE MOVE-INS WILL BE REQ'D.



BMP 2-12
EROSION CONTROL LOG AT CURB INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-13
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-14
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-15
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-16
EROSION CONTROL LOG AT DROP INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-17
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-18
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-19
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:



S. Elsaigh
12/12/2023

NO.	REVISION	BY	DATE



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US 69 AT FM 779
SW3P PHASE 2
US 69

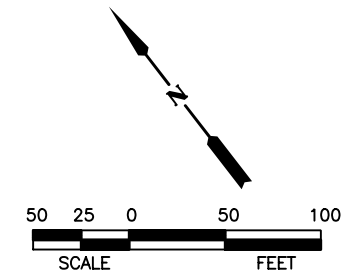
STA 370+00 TO STA 381+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH								
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL						JOB NO.	039
								SHEET NO.	438

- NOTES:
- EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
 - EROSION CONTROL DEVICE INSTALLATION, MAINTENANCE, AND REMOVAL SHALL BE IN ACCORDANCE WITH TxDOT STANDARDS FOR EROSION CONTROL.
 - LOCATIONS OF EROSION CONTROL DEVICES ARE APPROXIMATIONS. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.

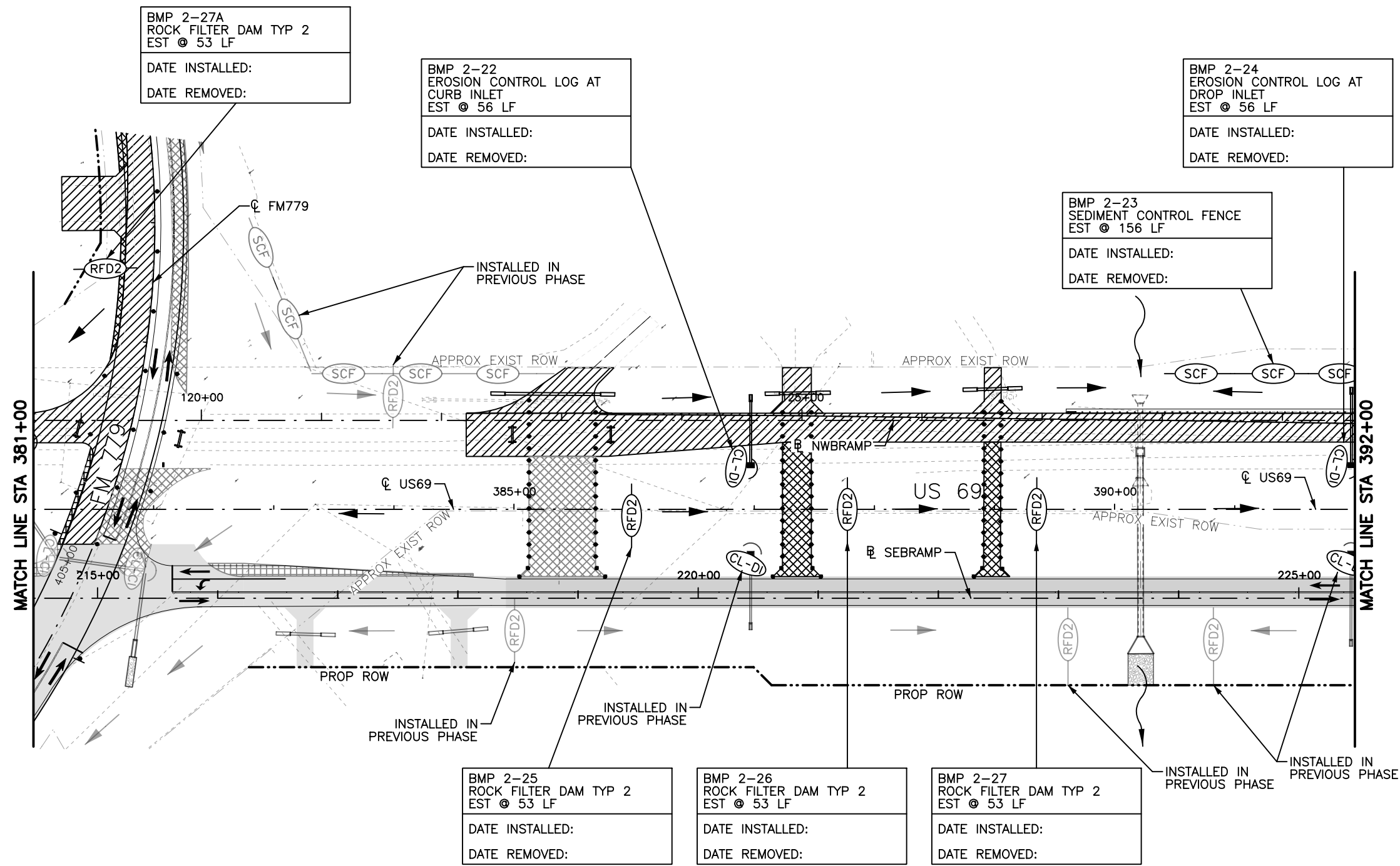
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- LEGEND**
- TEMP PAVEMENT CURRENT PHASE
 - TEMP PAVEMENT PREVIOUS PHASE
 - PERM CONSTRUCTION CURRENT PHASE
 - PERM CONSTRUCTION PREVIOUS PHASE
 - LIMITS OF TOPSOIL AND SEEDING
 - FLOW DIRECTION
 - RFD2 - TYPE 2 ROCK FILTER DAM
 - RFD3 - TYPE 3 ROCK FILTER DAM
 - SCF - SEDIMENT CONTROL FENCE
 - CL-D - EROSION CONTROL LOG AT DROP INLET
 - CL-C - EROSION CONTROL LOG AT CURB INLET

NOTE:
 1. APPLY TEMPORARY SEEDING AS EARTHWORK ACTIVITIES ALLOW AND AS DIRECTED BY THE ENGINEER. MULTIPLE MOVE-INS WILL BE REQ'D.



BMP 2-27A
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-22
 EROSION CONTROL LOG AT CURB INLET
 EST @ 56 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-24
 EROSION CONTROL LOG AT DROP INLET
 EST @ 56 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-23
 SEDIMENT CONTROL FENCE
 EST @ 156 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-25
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-26
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-27
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:



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NO.	REVISION	BY	DATE
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US 69 AT FM 779
 SW3P PHASE 2
 US 69

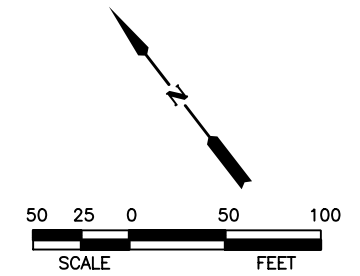
STA 381+00 TO STA 392+00

Designed:	KML	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.
Checked:	ODH	6	TEXAS		US 69
Drawn:	HJZ	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	KML	TYL	WOOD	0203	05
				JOB NO.	SHEET NO.
				039	439

- NOTES:**
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 3. LOCATIONS OF EROSION CONTROL DEVICES ARE APPROXIMATIONS. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
 4. FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.

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- LEGEND**
- TEMP PAVEMENT CURRENT PHASE
 - TEMP PAVEMENT PREVIOUS PHASE
 - PERM CONSTRUCTION CURRENT PHASE
 - PERM CONSTRUCTION PREVIOUS PHASE
 - LIMITS OF TOPSOIL AND SEEDING
 - FLOW DIRECTION
 - RFD2—TYPE 2 ROCK FILTER DAM
 - RFD3—TYPE 3 ROCK FILTER DAM
 - SCF—SEDIMENT CONTROL FENCE
 - CL-D—EROSION CONTROL LOG AT DROP INLET
 - CL-C—EROSION CONTROL LOG AT CURB INLET

NOTE:
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12/12/2023

NO.	REVISION	BY	DATE

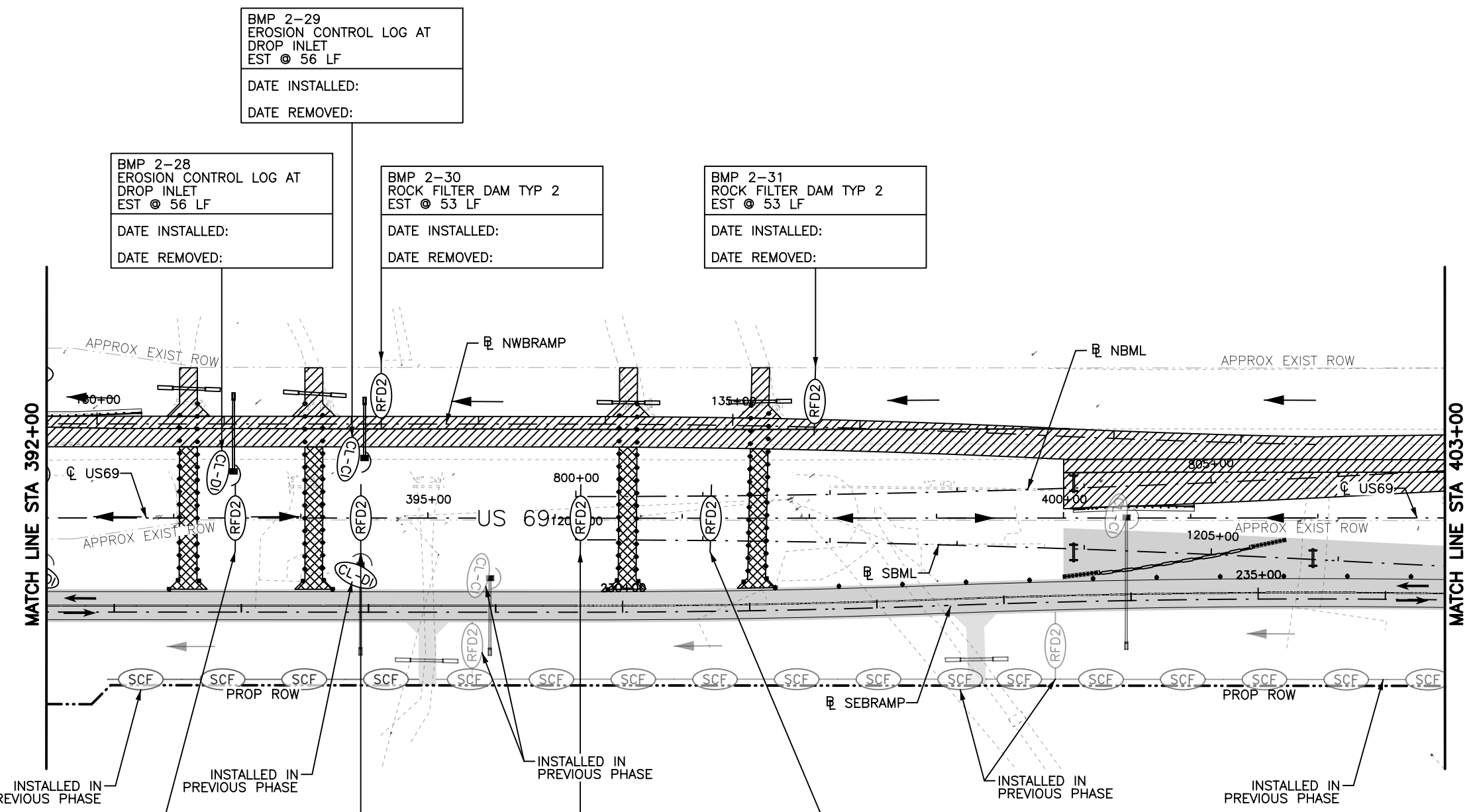


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US 69 AT FM 779
SW3P PHASE 2
US 69

STA 392+00 TO STA 403+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Checked:	KML	TYL		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
								JOB NO.	039
								SHEET NO.	440



BMP 2-29
EROSION CONTROL LOG AT
DROP INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-28
EROSION CONTROL LOG AT
DROP INLET
EST @ 56 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-30
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-31
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-32
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-33
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

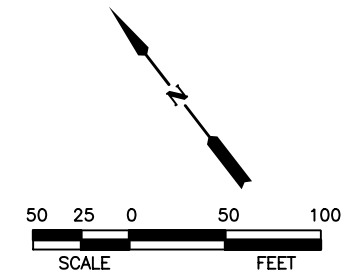
BMP 2-34
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

BMP 2-35
ROCK FILTER DAM TYP 2
EST @ 53 LF
DATE INSTALLED:
DATE REMOVED:

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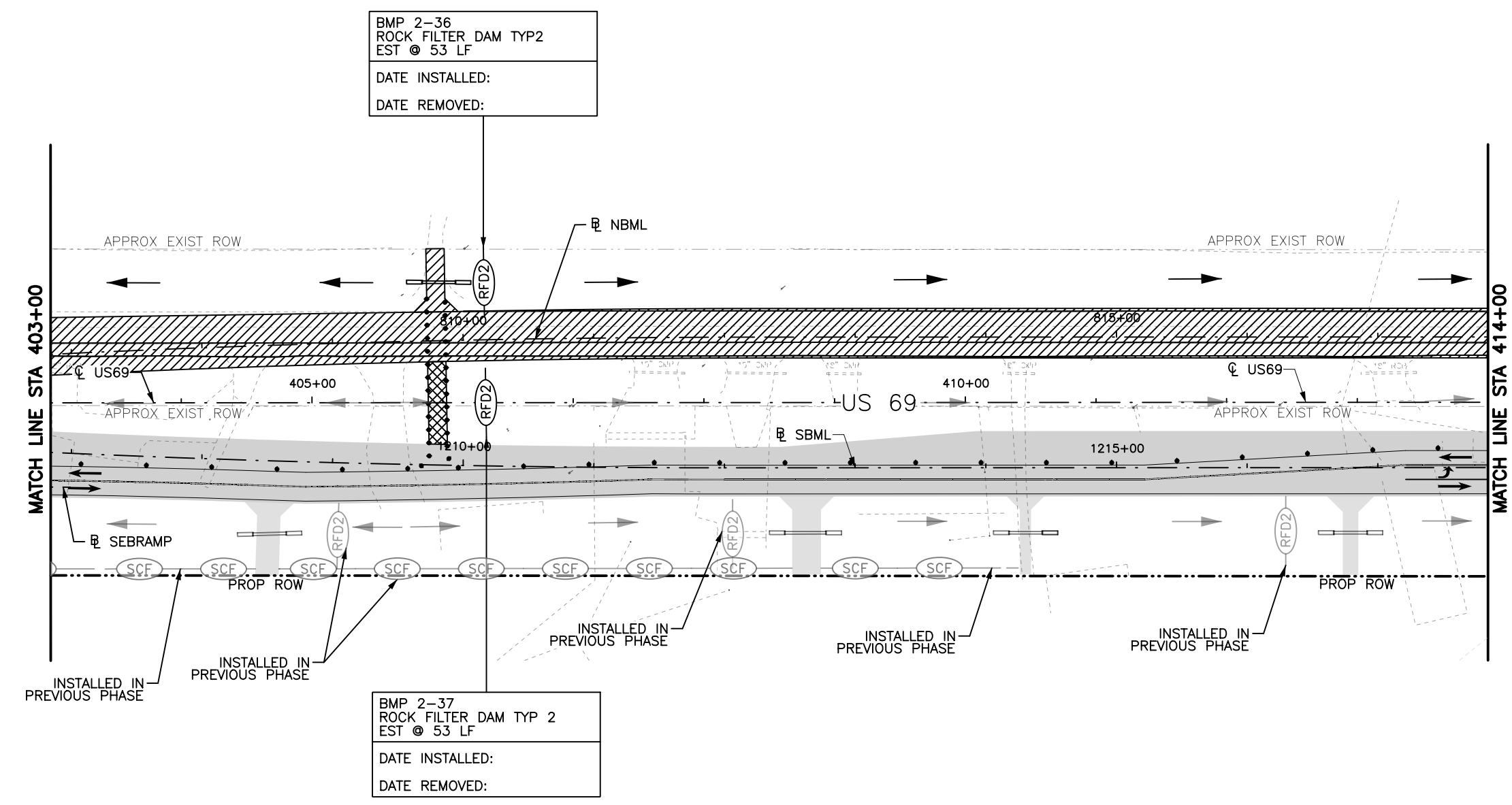
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
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US 69 AT FM 779
 SW3P PHASE 2
 US 69

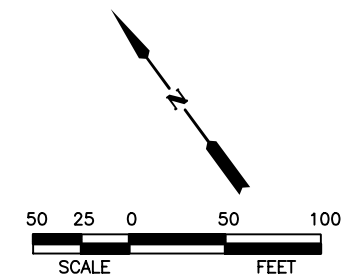
STA 403+00 TO STA 414+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	JOB NO.							
Checked:	KML	TYL							

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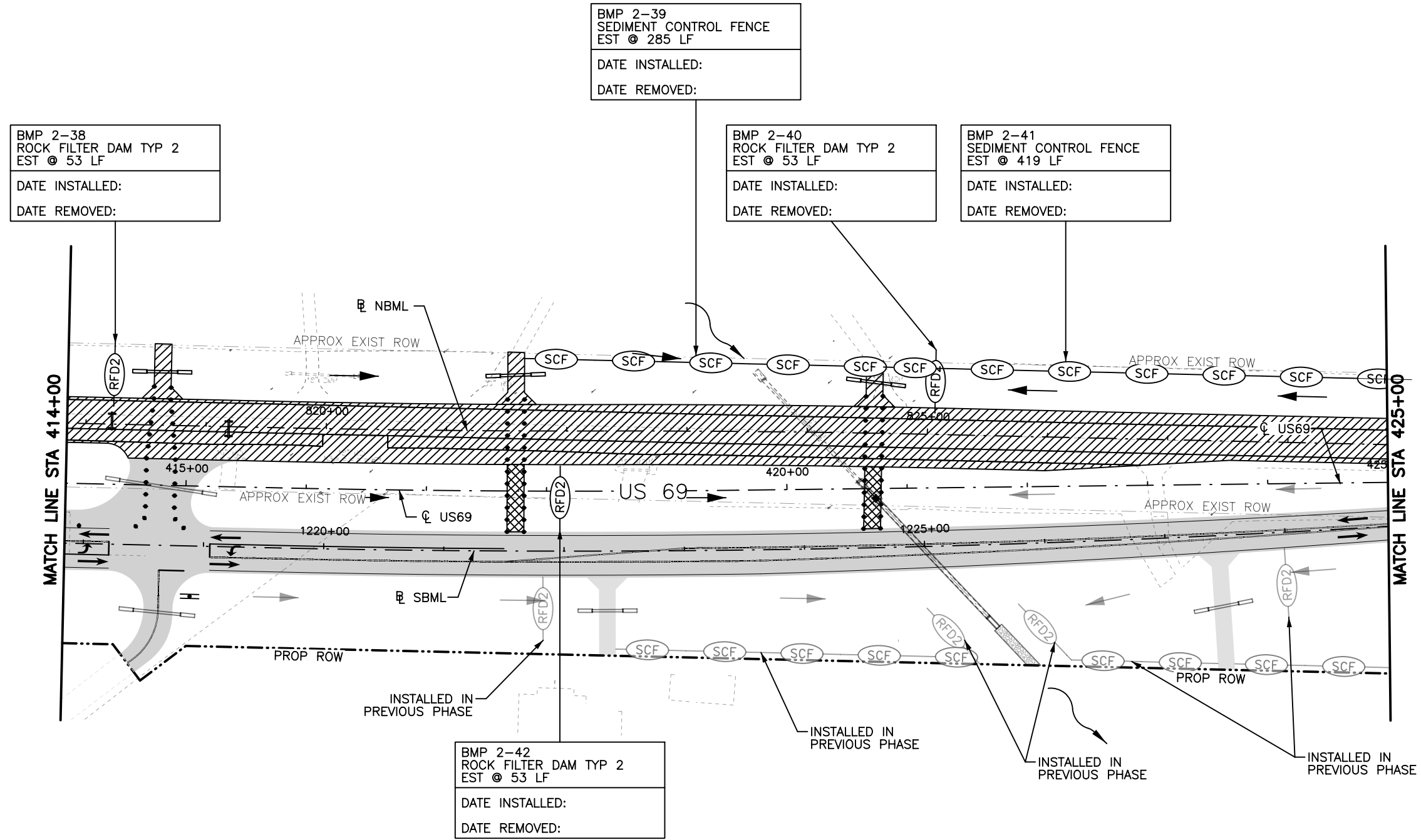
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2—TYPE 2 ROCK FILTER DAM
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NO.	REVISION	BY	DATE



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US 69 AT FM 779
 SW3P PHASE 2
 US 69

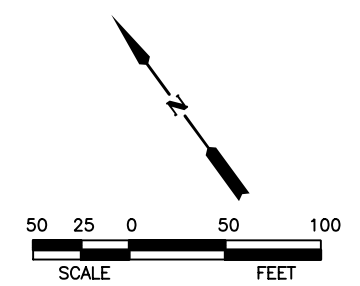
STA 414+00 TO STA 425+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.		COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:	HJZ	JOB NO.		DATE					
Checked:	KML	TYL							

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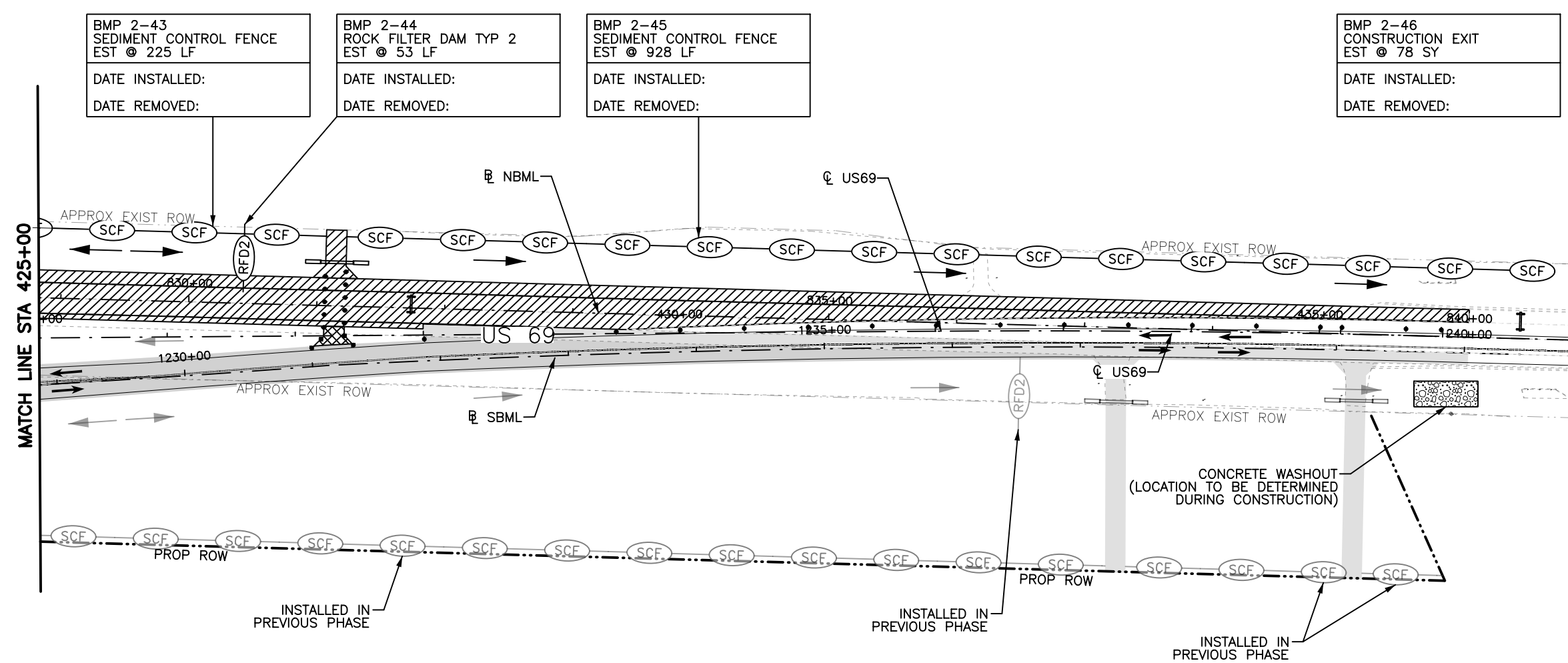
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2 - TYPE 2 ROCK FILTER DAM
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BMP 2-43
 SEDIMENT CONTROL FENCE
 EST @ 225 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-44
 ROCK FILTER DAM TYP 2
 EST @ 53 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-45
 SEDIMENT CONTROL FENCE
 EST @ 928 LF
 DATE INSTALLED:
 DATE REMOVED:

BMP 2-46
 CONSTRUCTION EXIT
 EST @ 78 SY
 DATE INSTALLED:
 DATE REMOVED:



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 12/12/2023

NO.	REVISION	BY	DATE



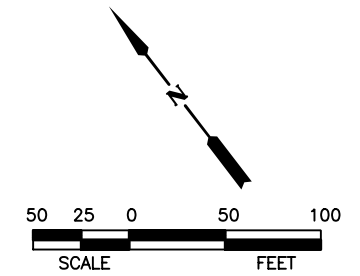
US 69 AT FM 779
 SW3P PHASE 2
 US 69

STA 425+00 TO END PROJECT

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	HJZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:						JOB NO.	039	SHEET NO.	443
Checked:	KML	TYL							

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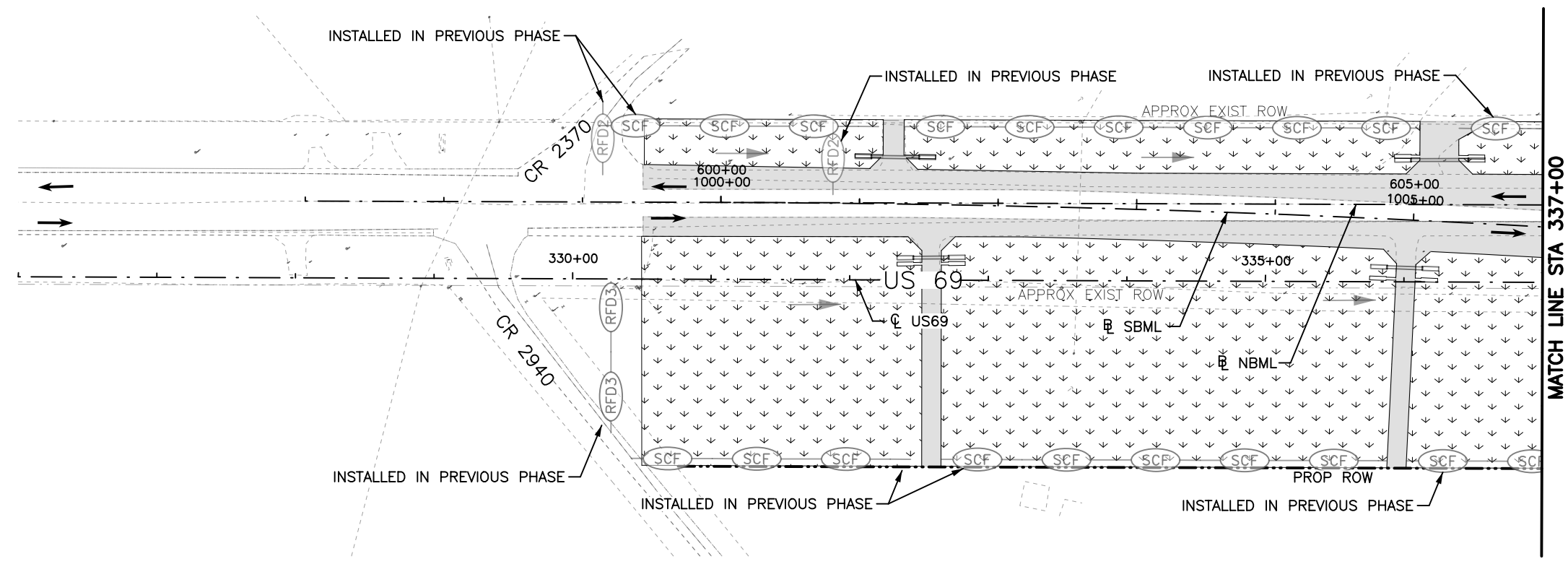
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2 TYPE 2 ROCK FILTER DAM
- RFD3 TYPE 3 ROCK FILTER DAM
- SCF SEDIMENT CONTROL FENCE
- CL-D EROSION CONTROL LOG AT DROP INLET
- CL-C EROSION CONTROL LOG AT CURB INLET

NOTE:
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 12/12/2023

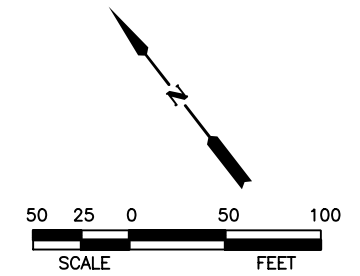
NO.	REVISION	BY	DATE



US 69 AT FM 779
 SW3P PHASE 3
 US 69

BEGIN PROJECT TO STA 337+00

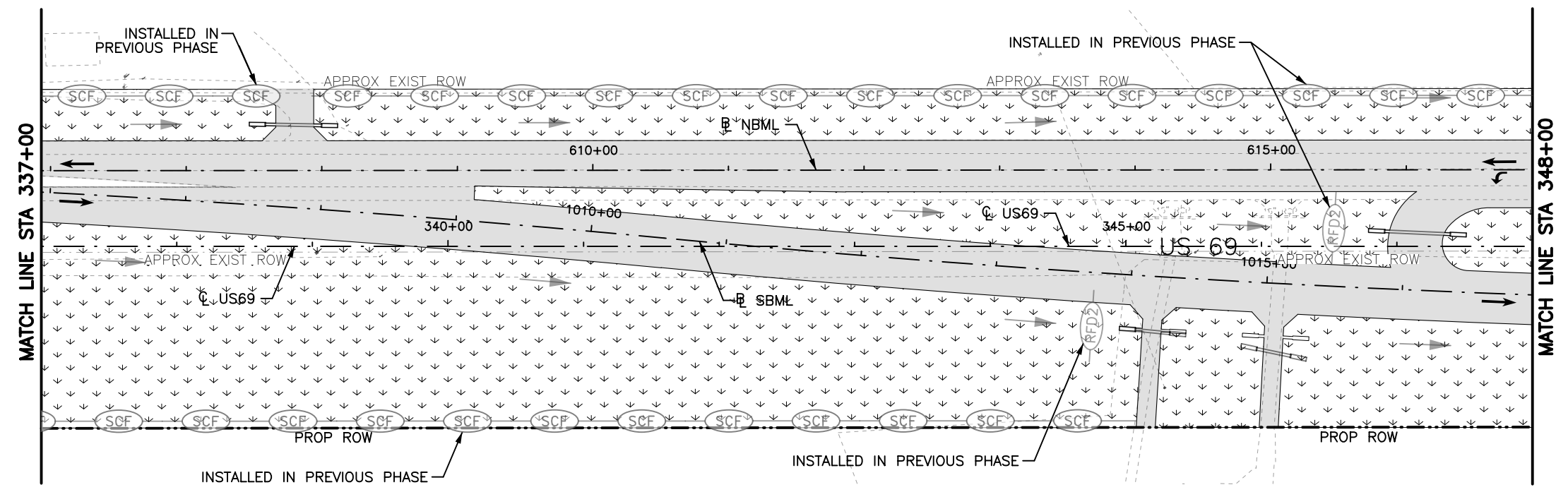
Designed:	KML	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
Checked:	ODH	6	TEXAS		US 69		
Drawn:	HJZ	DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
Checked:	KML	TYL	WOOD	0203	05	039	444



LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
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 12/12/2023

NO.	REVISION	BY	DATE
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US 69 AT FM 779
 SW3P PHASE 3
 US 69

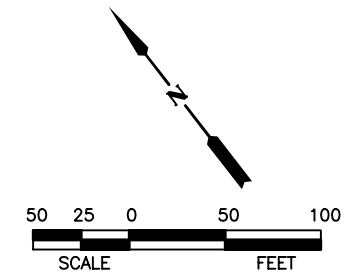
STA 337+00 TO STA 348+00

Designed:	KML	FED. RD. DIV. NO.	6	STATE	TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO.	US 69
Checked:	ODH	DIST.	HJZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:						JOB NO.	039	SHEET NO.	445
Checked:	KML		TYL						

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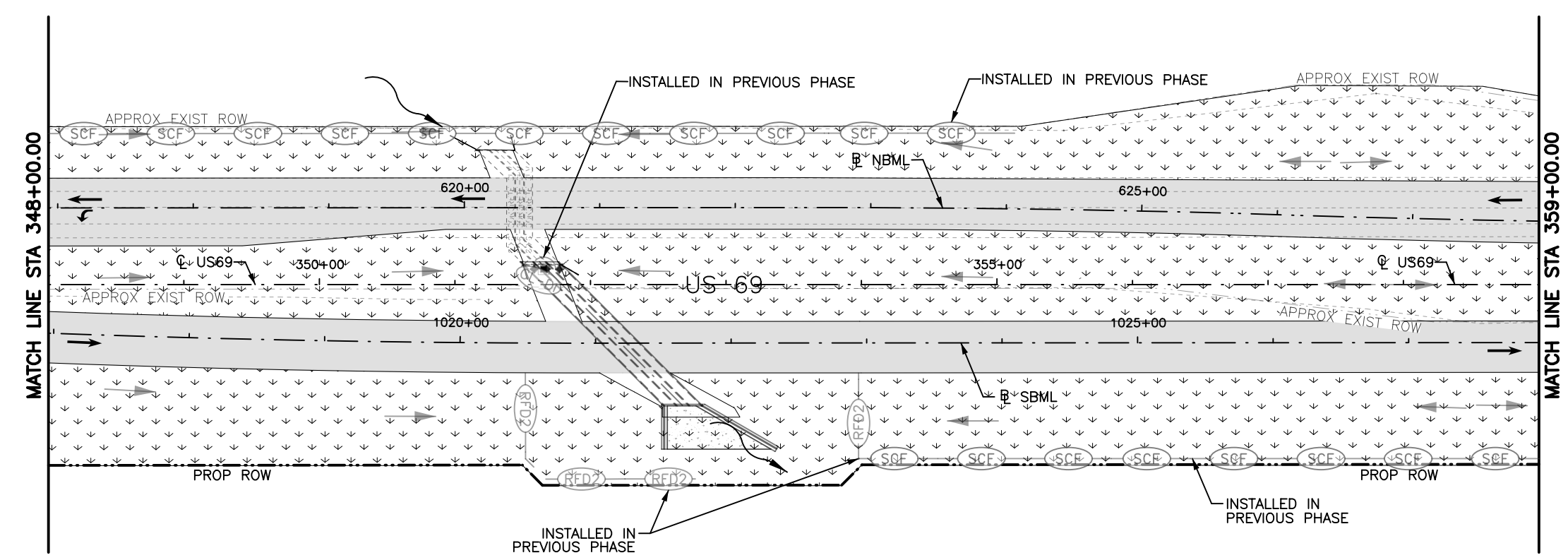
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
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NO.	REVISION	BY	DATE
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US 69 AT FM 779
 SW3P PHASE 3
 US 69

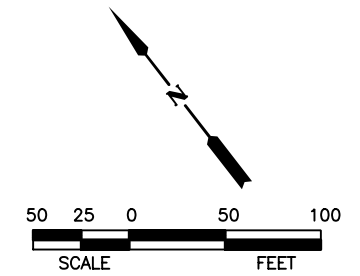
STA 348+00 TO STA 359+00

Designed: KML	FED. RD. DIV. NO. 6	STATE TEXAS	FEDERAL AID PROJECT NO.			HIGHWAY NO. US 69
Checked: ODH			COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Drawn: HJZ	DIST. TYL	WOOD				SHEET NO. 446

- NOTES:
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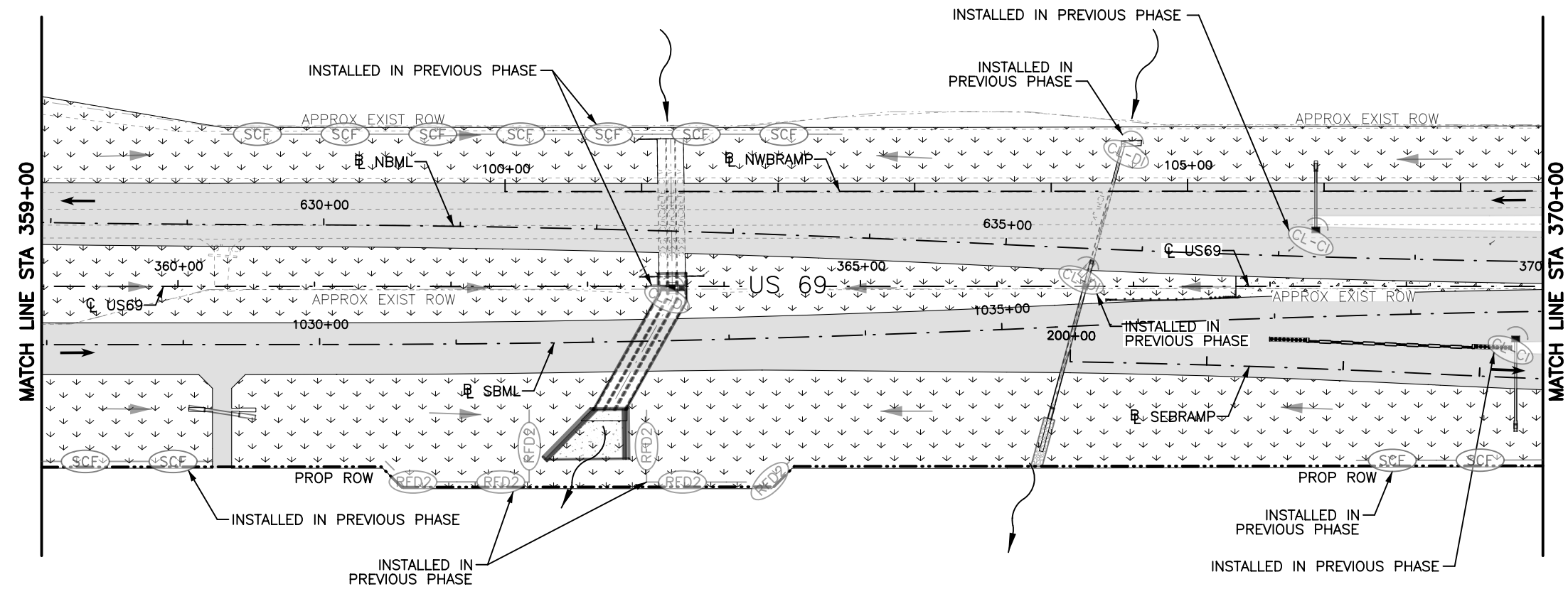
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
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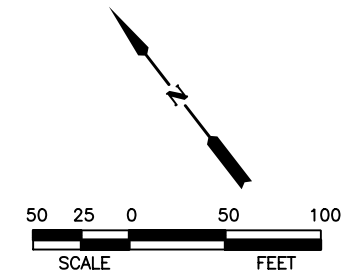
US 69 AT FM 779
 SW3P PHASE 3
 US 69

STA 359+00 TO STA 370+00

Designed: KML	FED. RD. DIV. NO. 6	STATE TEXAS	FEDERAL AID PROJECT NO.			HIGHWAY NO. US 69
Checked: ODH						
Drawn: HJZ	DIST.	COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039	SHEET NO. 447
Checked: KML	TYL	WOOD				

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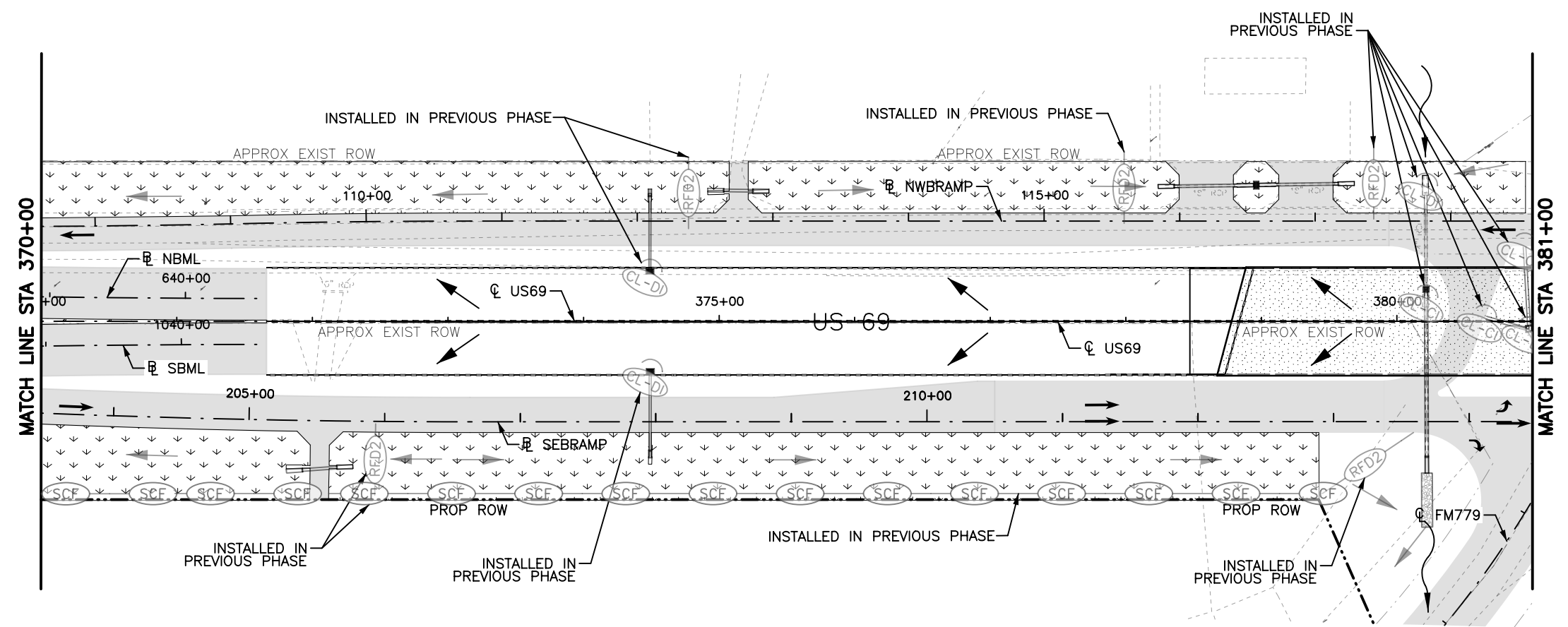
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
- PERM CONSTRUCTION PREVIOUS PHASE
- LIMITS OF TOPSOIL AND SEEDING
- FLOW DIRECTION
- RFD2—TYPE 2 ROCK FILTER DAM
- RFD3—TYPE 3 ROCK FILTER DAM
- SCF—SEDIMENT CONTROL FENCE
- CL-DI—EROSION CONTROL LOG AT DROP INLET
- CL-CI—EROSION CONTROL LOG AT CURB INLET

NOTE:
 1. APPLY TEMPORARY SEEDING AS EARTHWORK ACTIVITIES ALLOW AND AS DIRECTED BY THE ENGINEER. MULTIPLE MOVE-INS WILL BE REQ'D.



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US 69 AT FM 779
 SW3P PHASE 3
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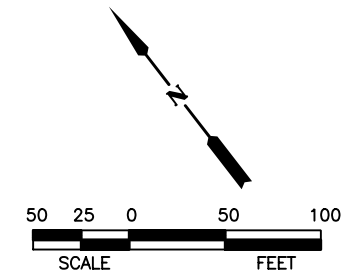
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Checked:	ODH	DIST.	HJZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:						JOB NO.	039	SHEET NO.	448
Checked:	KML		TYL						

- NOTES:
1. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
 2. EROSION CONTROL DEVICE INSTALLATION, MAINTENANCE, AND REMOVAL SHALL BE IN ACCORDANCE WITH TxDOT STANDARDS FOR EROSION CONTROL.
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 4. FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.

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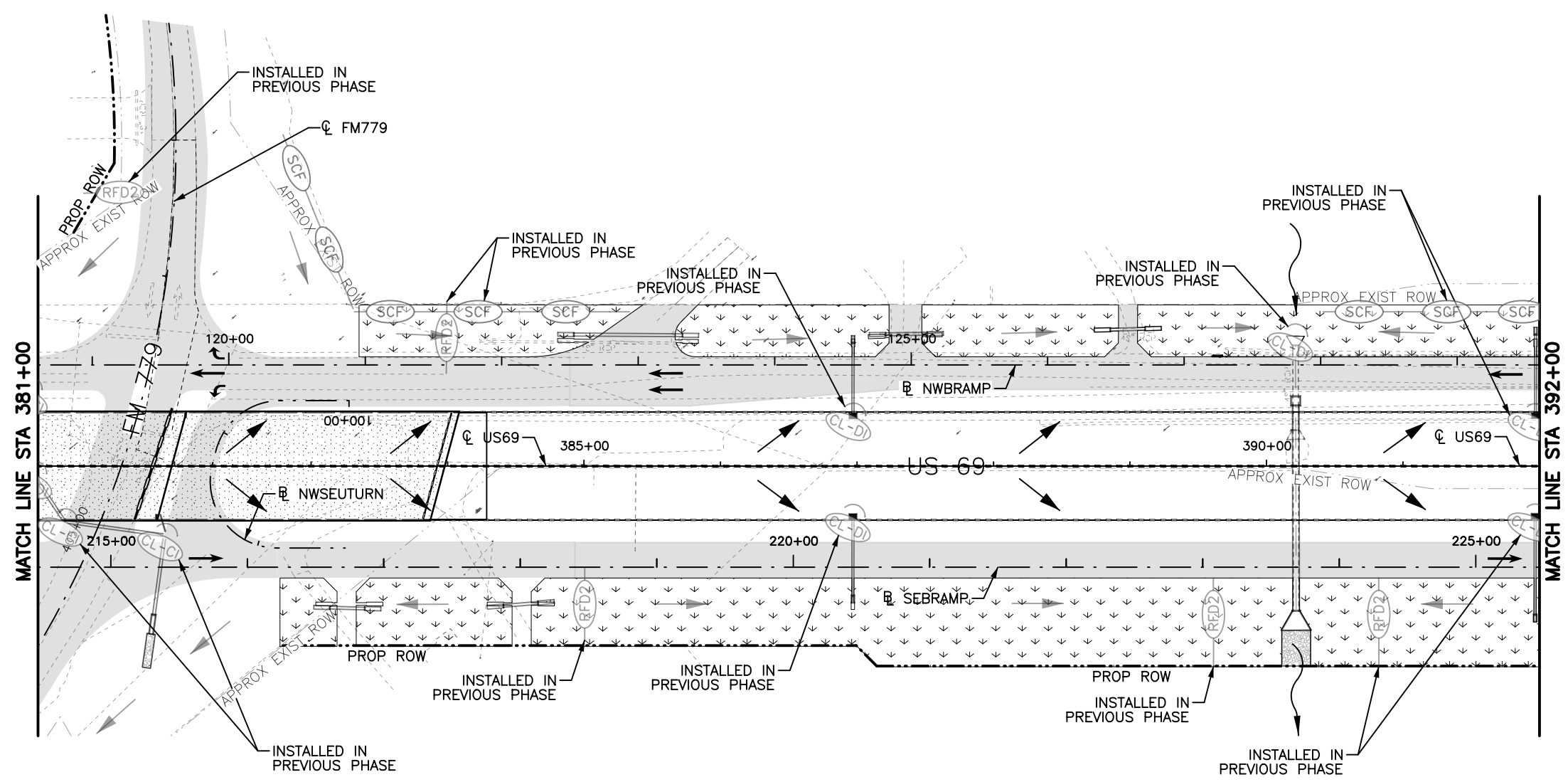
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LEGEND

- TEMP PAVEMENT CURRENT PHASE
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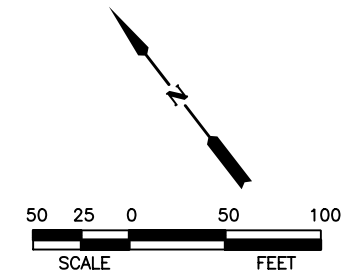


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 US 69

STA 381+00 TO STA 392+00

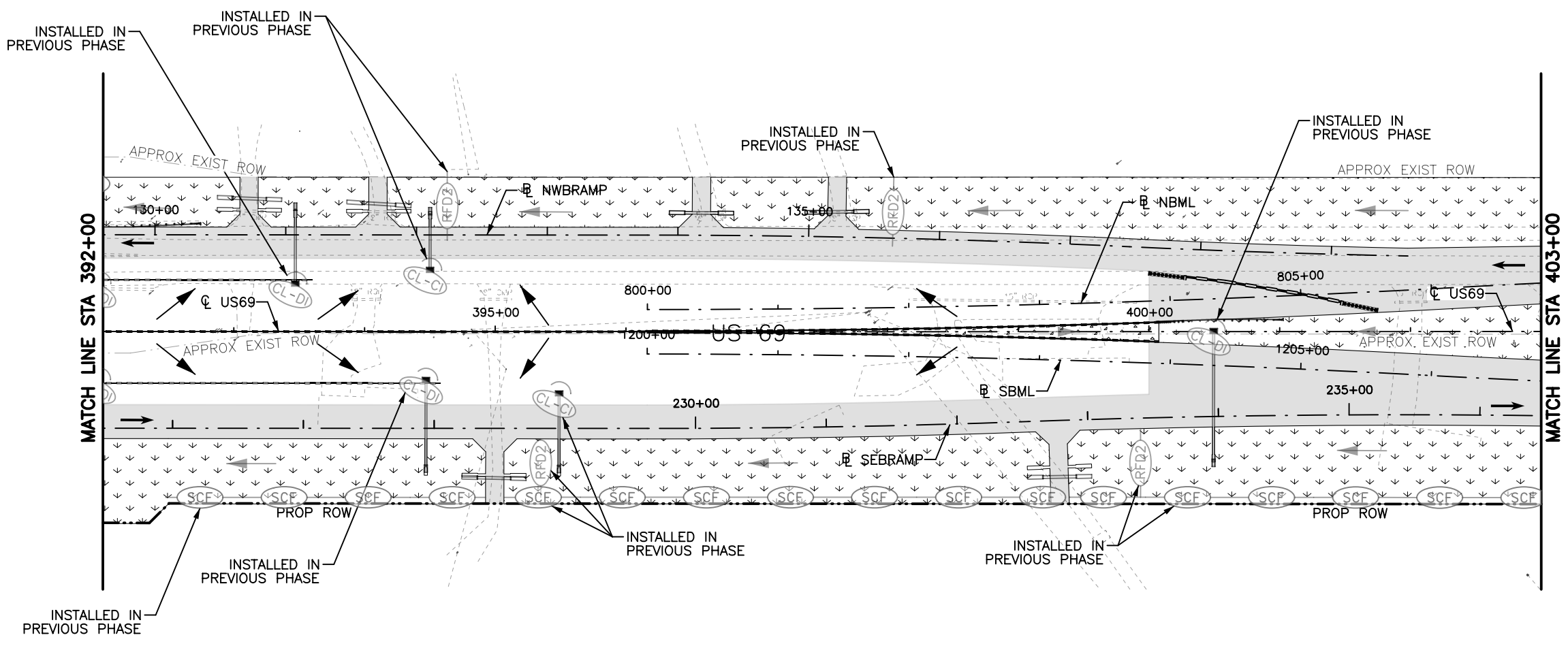
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Checked: ODH						
Drawn: HJZ	DIST.	COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039	SHEET NO. 449
Checked: KML	TYL	WOOD				



LEGEND

- TEMP PAVEMENT CURRENT PHASE
- TEMP PAVEMENT PREVIOUS PHASE
- PERM CONSTRUCTION CURRENT PHASE
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NOTE:
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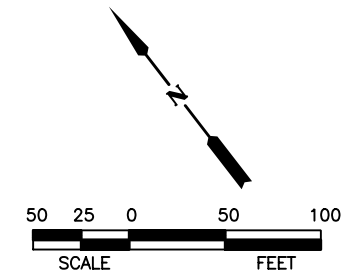
STA 392+00 TO STA 403+00

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Drawn: HJZ						SHEET NO. 450
Checked: KML						

- NOTES:
1. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY AND SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATION IS ESTABLISHED.
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 4. FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.

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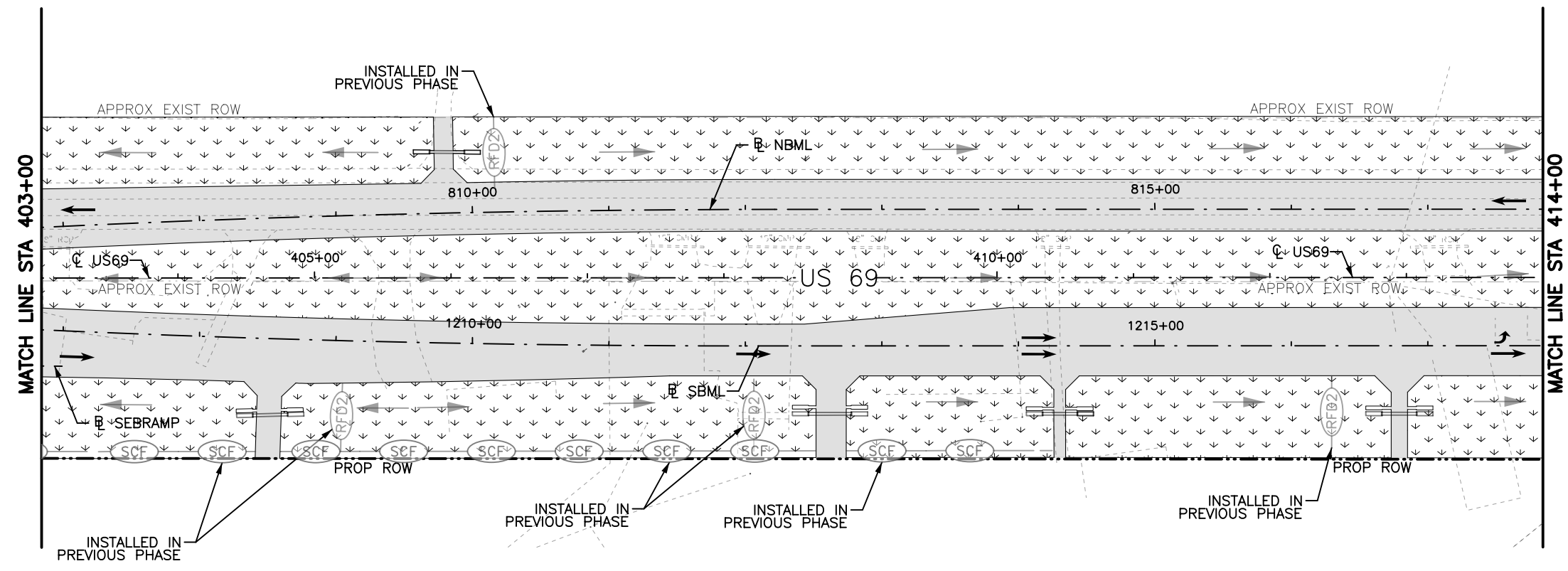
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- LEGEND**
- TEMP PAVEMENT CURRENT PHASE
 - TEMP PAVEMENT PREVIOUS PHASE
 - PERM CONSTRUCTION CURRENT PHASE
 - PERM CONSTRUCTION PREVIOUS PHASE
 - LIMITS OF TOPSOIL AND SEEDING
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 - RFD2 - TYPE 2 ROCK FILTER DAM
 - RFD3 - TYPE 3 ROCK FILTER DAM
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NOTE:

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US 69

STA 403+00 TO STA 414+00

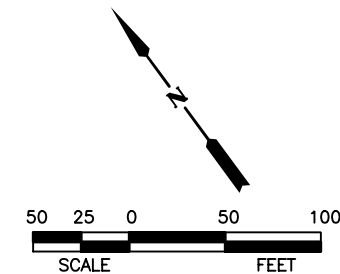
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Checked:	ODH	DIST.	HJZ	COUNTY	WOOD	CONTROL NO.	0203	SECTION NO.	05
Drawn:						JOB NO.	039		
Checked:	KML		TYL						451

- NOTES:**
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 - FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.

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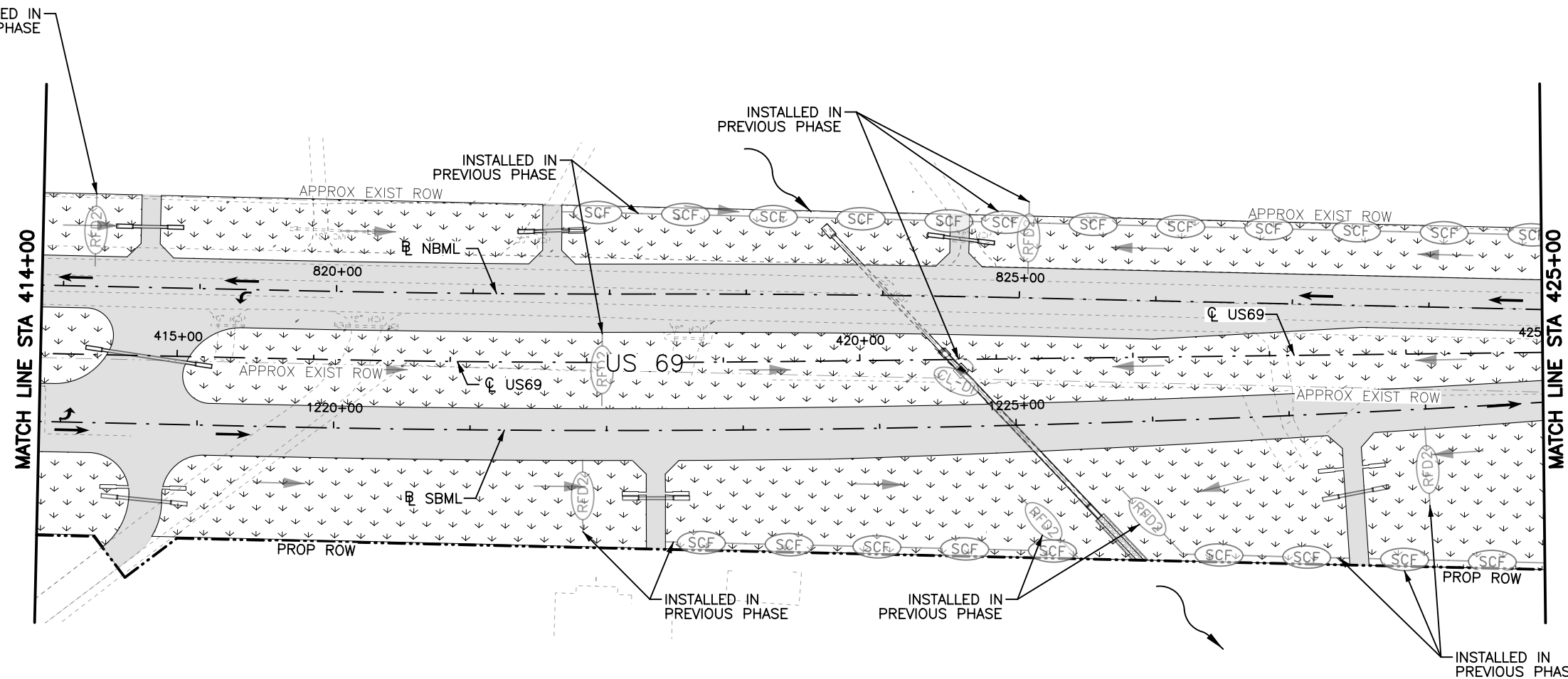


LEGEND

- TEMP PAVEMENT CURRENT PHASE
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NOTE:

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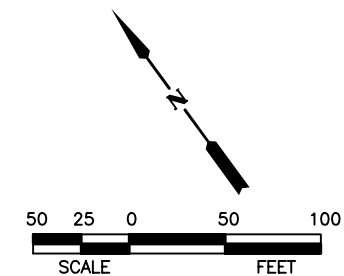
US 69 AT FM 779
SW3P PHASE 3
US 69

STA 414+00 TO STA 425+00

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Checked: ODH	DIST.: HJZ	COUNTY: TYL	CONTROL NO.: 0203	SECTION NO.: 05	JOB NO.: 039	SHEET NO.: 452

NOTES:

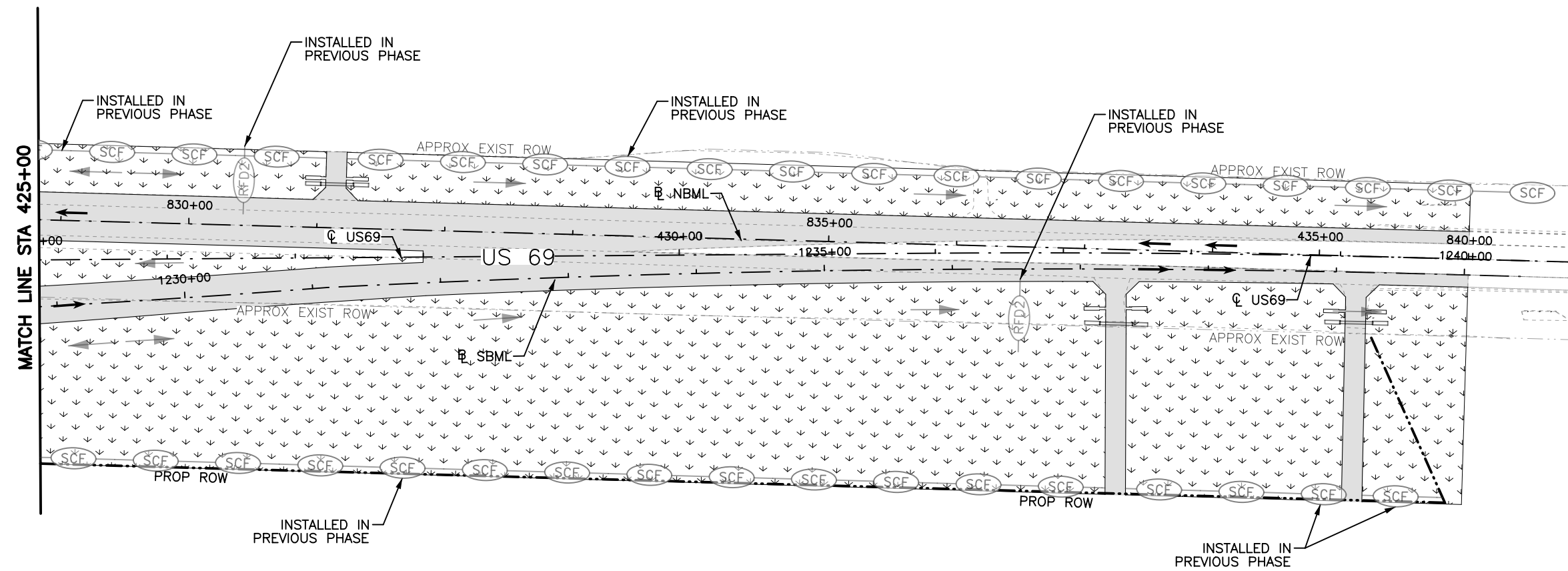
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LEGEND

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NOTE:
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US 69 AT FM 779
 SW3P PHASE 3
 US 69

STA 425+00 TO END PROJECT

Designed: KML	FED. RD. DIV. NO. 6	STATE TEXAS	FEDERAL AID PROJECT NO.		HIGHWAY NO. US 69
Checked: ODH					
Drawn: HJZ	DIST.	COUNTY	CONTROL NO. 0203	SECTION NO. 05	JOB NO. 039
Checked: KML	TYL	WOOD			SHEET NO. 453

- NOTES:
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 4. FOR BEGINNING OF STABILIZATION, SEE DAILY WORK REPORTS.

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NOTES

1. CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE. THE CONCRETE WASHOUT AREA SHALL BE ENTIRELY SELF-CONTAINED.

2. THE CONTRACTOR SHALL SUBMIT THE DESIGN, LOCATION AND SIZING OF OF THE CONCRETE WASHOUT AREA(S) WITH THE PROJECT'S EROSION AND SEDIMENTATION CONTROL PLAN AND SHALL BE APPROVED BY THE ENGINEER.

LOCATION: WASHOUT AREA(S) ARE TO BE LOCATED AT LEAST 50 FEET FROM ANY STREAM, WETLAND, STORM DRAINS, OR OTHER SENSITIVE RESOURCE. THE FLOOD CONTINGENCY PLAN MUST ADDRESS THE CONCRETE WASHOUT IF THE WASHOUT IS TO BE LOCATED WITHIN THE FLOODPLAN.

SIZE: THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING, BUT NOT LIMITED TO, OPERATIONS ASSOCIATED WITH GROUT AND MORTAR.

3. SURFACE DISCHARGE IS UNACCEPTABLE, THEREFORE EARTH BERM OR OTHER CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHOULD BE USED AROUND THE PERIMETER OF THE CONCRETE WASHOUT AREA FOR CONTAINMENT.

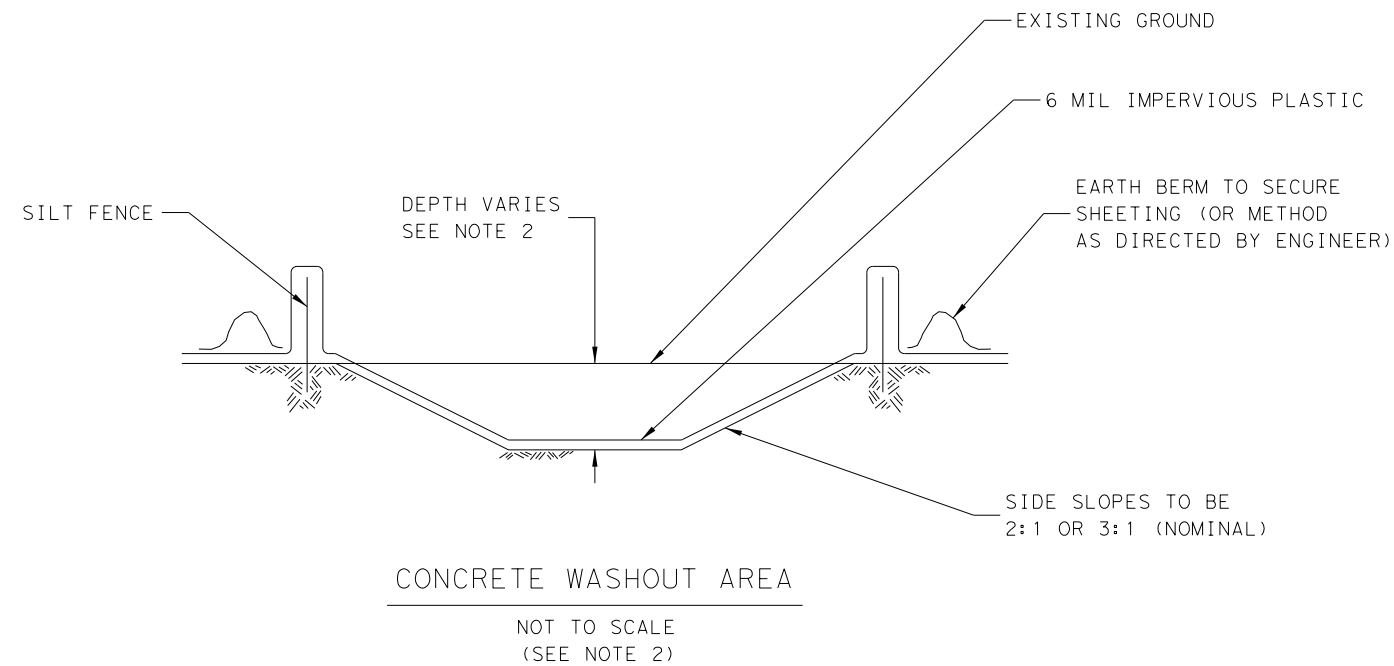
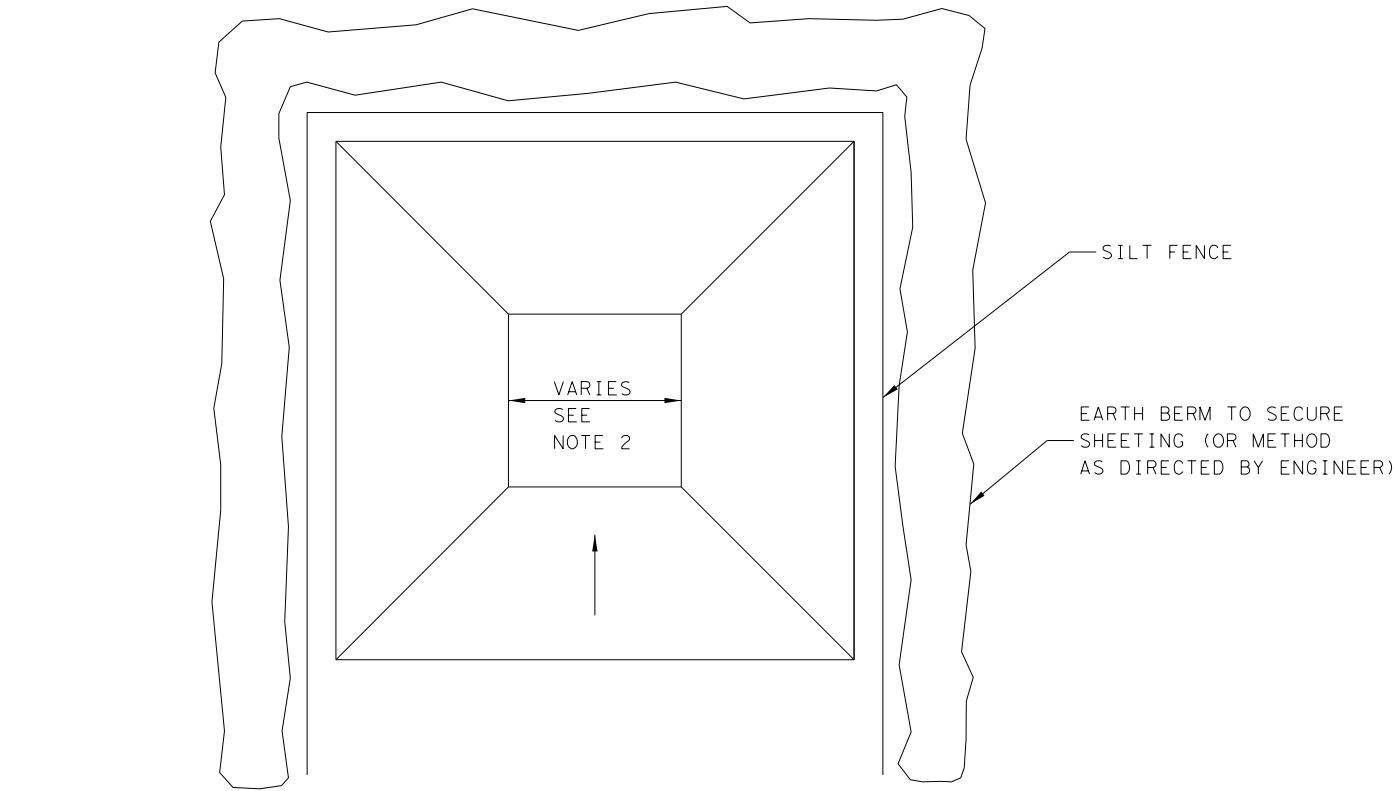
4. SIGNS SHOULD BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CONCRETE AREA(S) AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS. WASHOUT AREA(S) SHOULD BE FLAGGED WITH SAFETY FENCING OR OTHER APPROVED METHOD.


5. CONCRETE WASH-OUT AREAS SHALL BE LINED WITH IMPERVIOUS PLASTIC WITH A MINIMUM THICKNESS OF 6 MILS AND BE REPLACED IF DAMAGED DURING CLEAN-OUT OF HARDENED CONCRETE FROM THE WASH-OUT AREA.

6. WASHOUT AREA(S) ARE TO BE INSPECTED AT LEAST ONCE A WEEK FOR STRUCTURAL INTEGRITY, ADEQUATE HOLDING CAPACITY AND CHECKED FOR LEAKS, TEARS, OR OVERFLOWS. (AS DIRECTED BY THE CONSTRUCTION SITE ENVIRONMENTAL INSPECTION REPORT) WASHOUT AREA(S) SHOULD BE CHECKED AFTER HEAVY RAINS.

7. HARDENED CONCRETE WASTE SHOULD BE REMOVED AND DISPOSED OF WHEN THE WASTE HAS ACCUMULATED TO HALF OF THE CONCRETE WASHOUT'S HEIGHT. THE WASTE CAN BE STORED AT AN UPLAND LOCATION, AS APPROVED BY THE ENGINEER. ALL CONCRETE WASTE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH ALL APPLICABLE LAWS, REGULATIONS, AND GUIDELINES.

8. PAYMENT FOR THIS ITEM IS TO BE INCLUDED UNDER THE GENERAL COST OF THE WORK FOR THE PROJECT, INCLUDING SITE RESTORATION.







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F-12040



TEXAS REGISTERED ENGINEERING FIRM F-1741



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US 69 AT FM 779

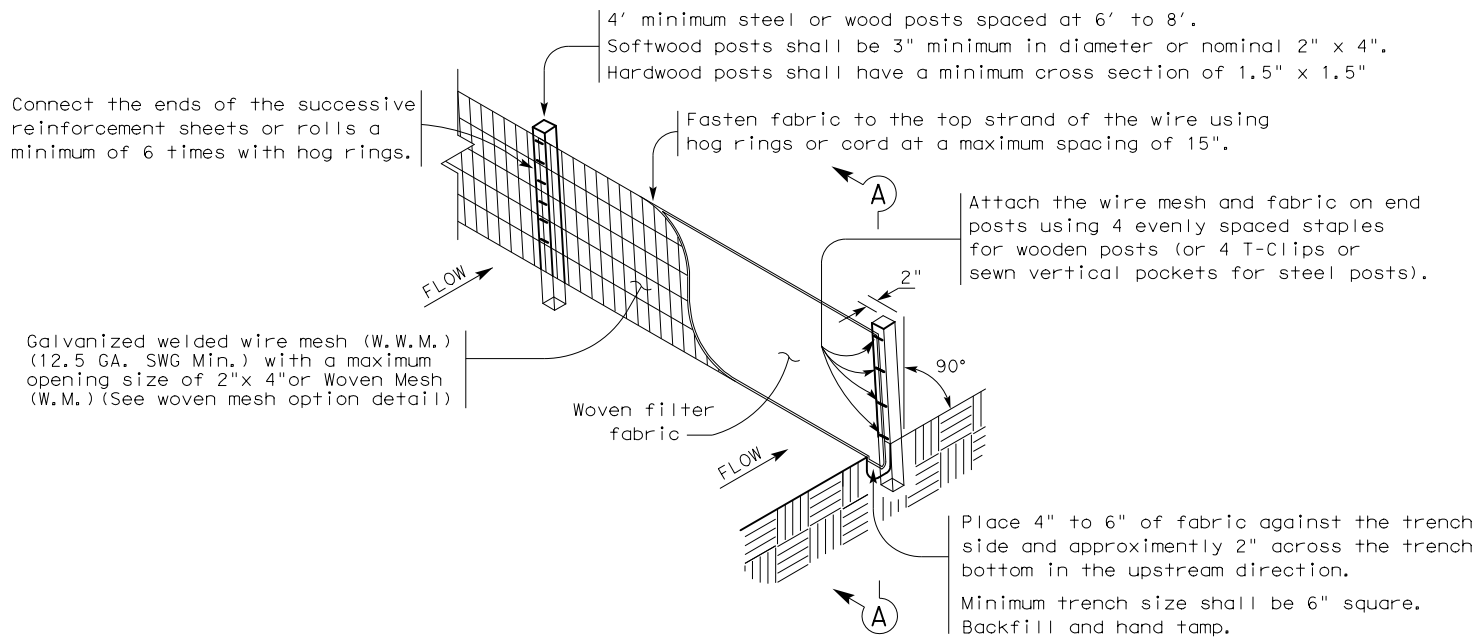
CONCRETE WASHOUT DETAIL

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Checked:	6	TEXAS		US 69
Drawn:	DIST.	COUNTY	CONTROL NO.	SECTION NO.
Checked:	TYL	WOOD	0203	05
				JOB NO.
				039
				SHEET NO.
				462A

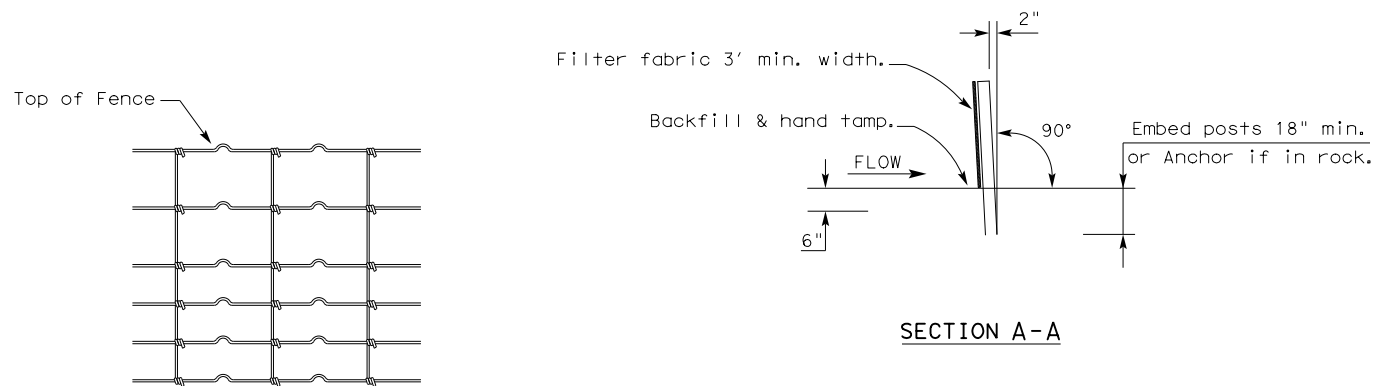
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 DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TXDOT for any purpose whatsoever. TXDOT assumes no responsibility for the conversion of this standard to other formats or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



TEMPORARY SEDIMENT CONTROL FENCE



HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

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

SEDIMENT CONTROL FENCE USAGE GUIDELINES

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

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT². Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

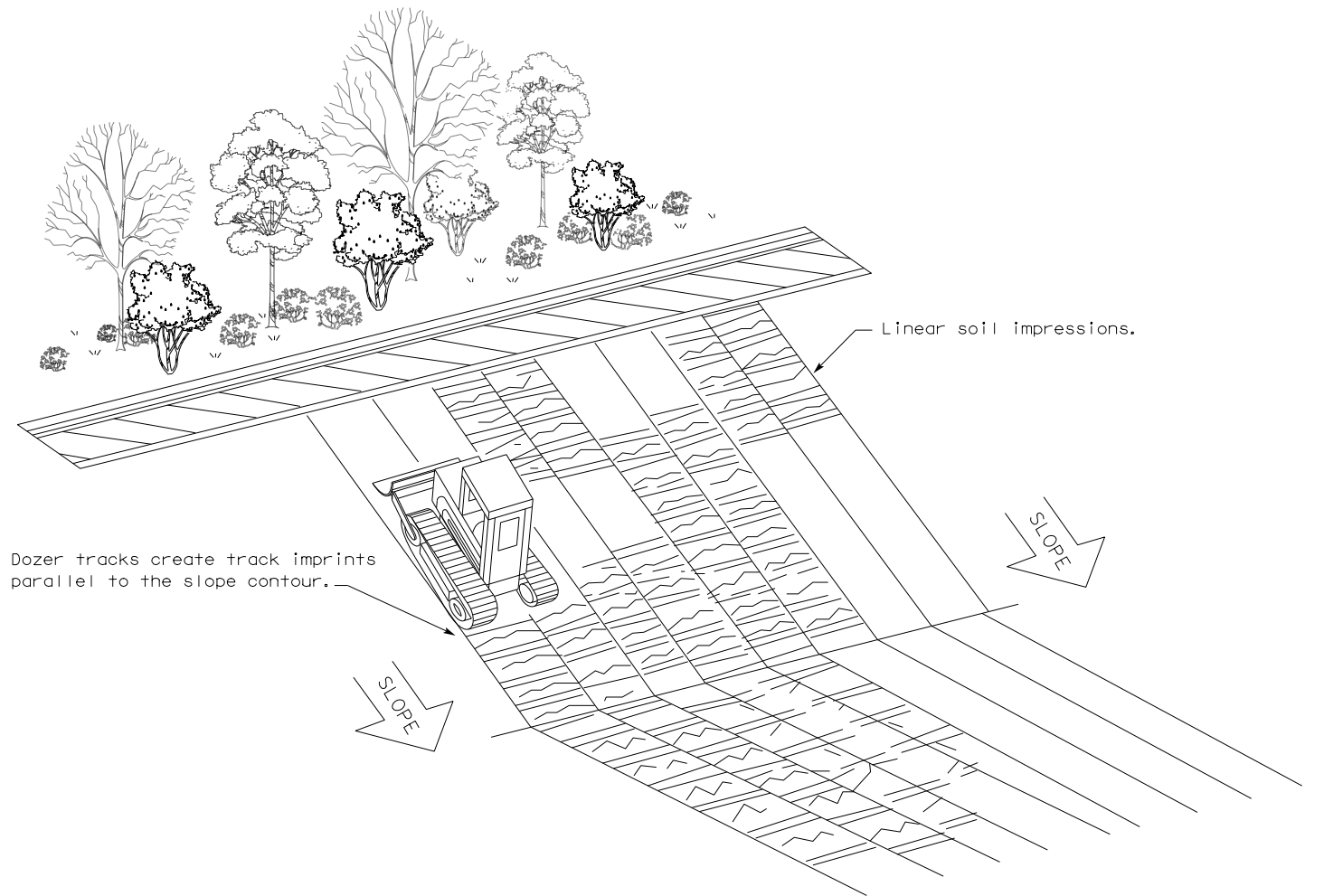
LEGEND

Sediment Control Fence



GENERAL NOTES

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

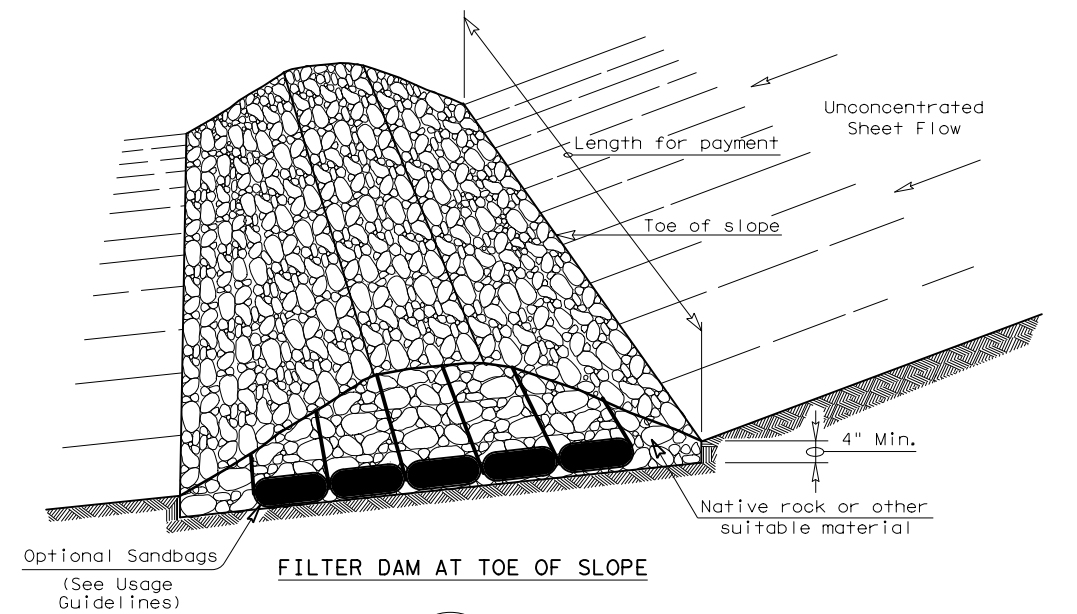


VERTICAL TRACKING

				Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & VERTICAL TRACKING					
EC(1) - 16					
FILE: ec116	DN: TXDOT	CK: KM	DW: VP	DN/CK: LS	
© TXDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0203	05	039	US 69	
	DIST	COUNTY		SHEET NO.	
	TYL	WOOD		463	

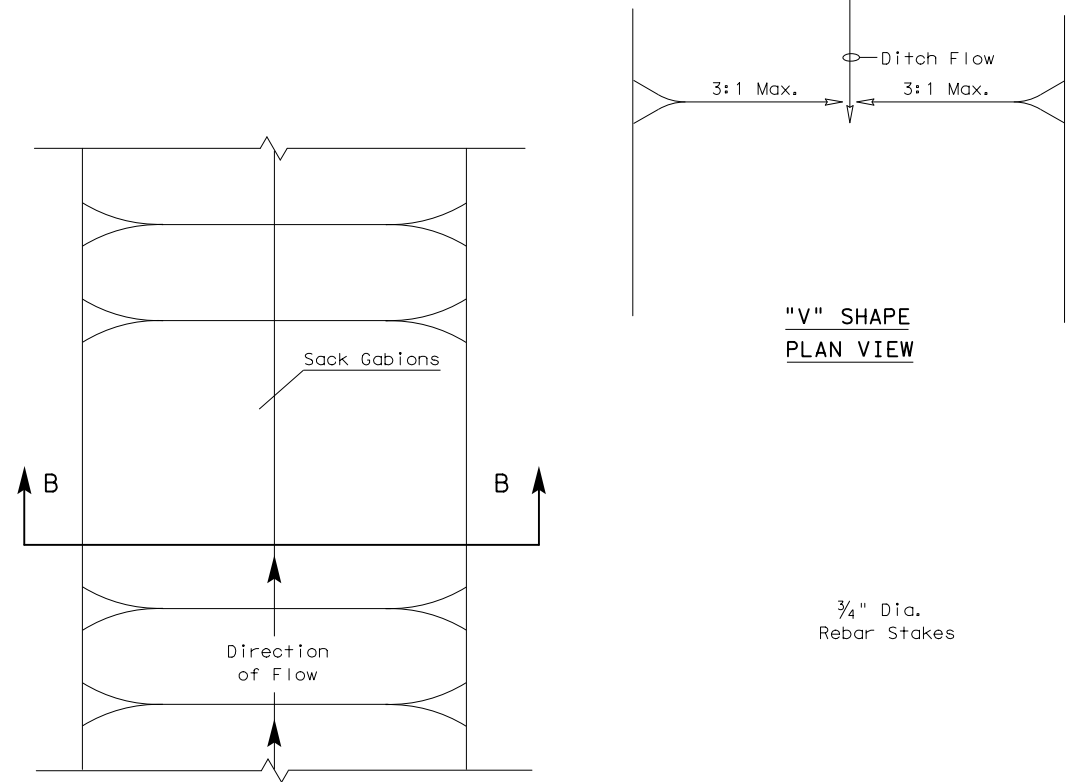
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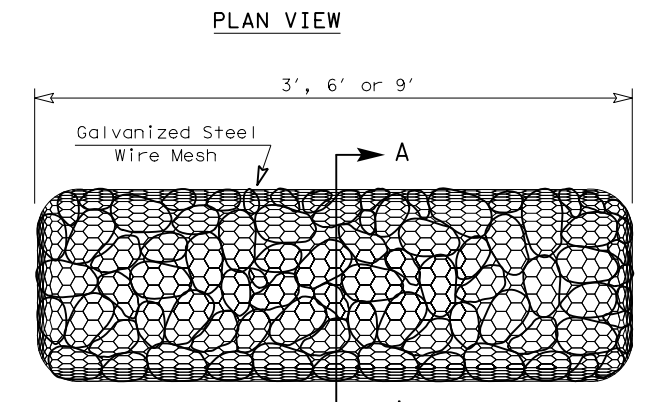


FILTER DAM AT TOE OF SLOPE

— (RFD1) —

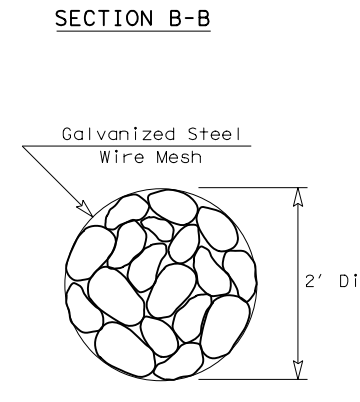


"V" SHAPE PLAN VIEW

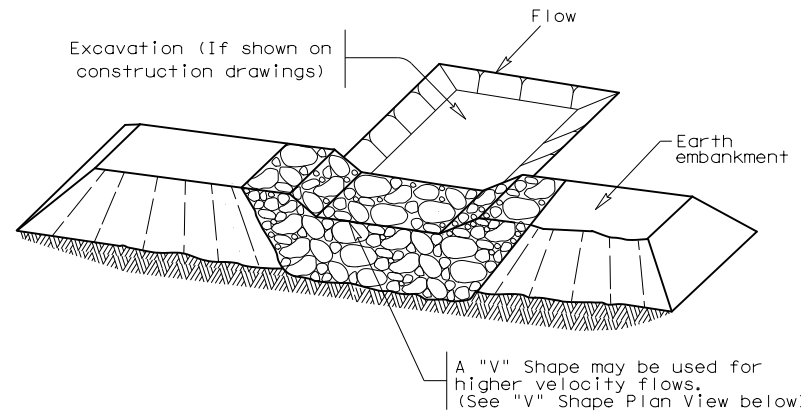


TYPE 4 (SACK GABIONS)

— (RFD4) —

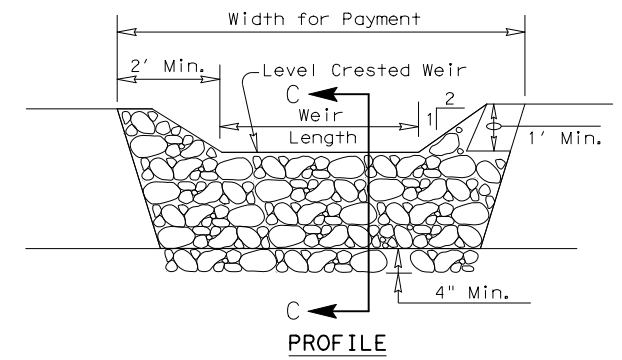


SECTION A-A

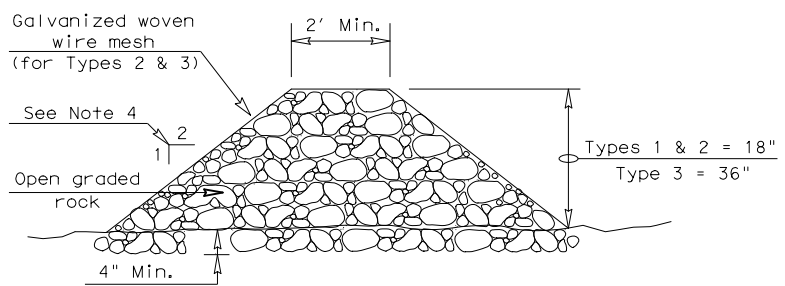


FILTER DAM AT SEDIMENT TRAP

— (RFD1) OR (RFD2) —



PROFILE



SECTION C-C

ROCK FILTER DAM USAGE GUIDELINES

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

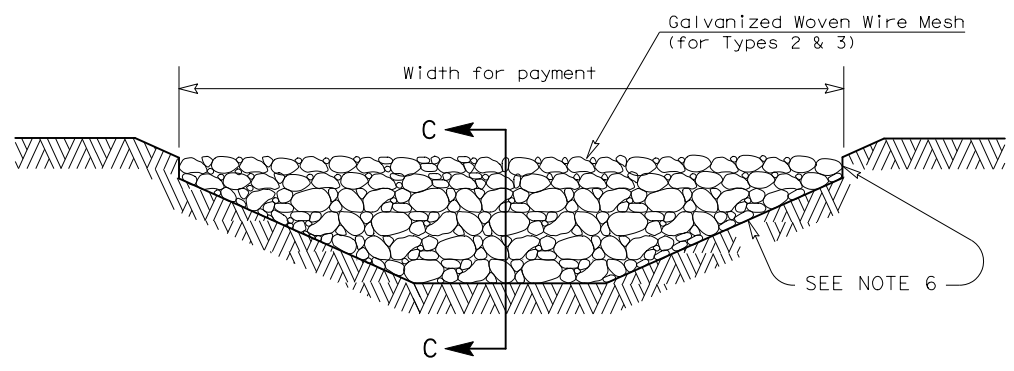
Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity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

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

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

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

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



FILTER DAM AT CHANNEL SECTIONS

— (RFD1) OR (RFD2) OR (RFD3) —

GENERAL NOTES

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

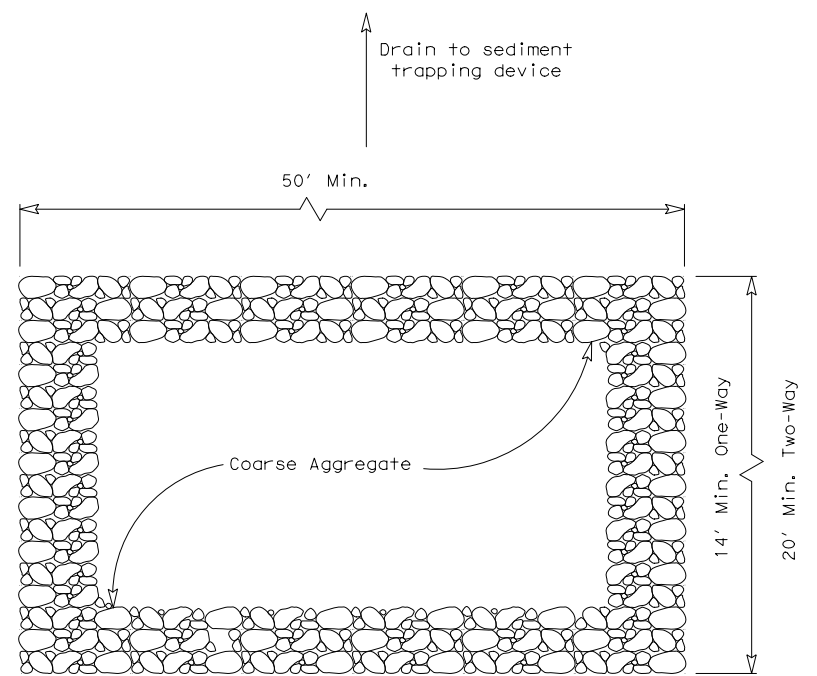
PLAN SHEET LEGEND

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

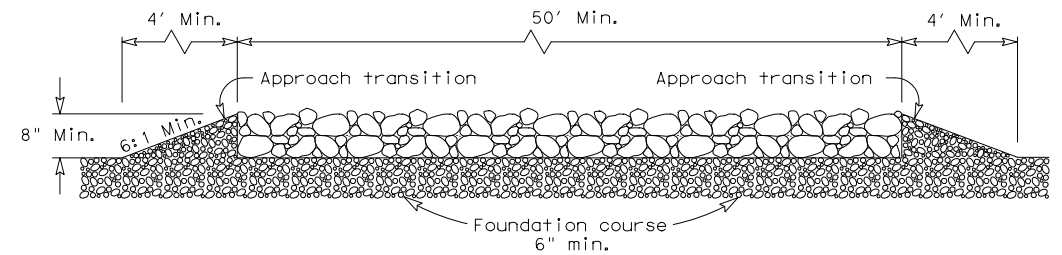
		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES ROCK FILTER DAMS EC (2) - 16			
FILE: ec216	DN: TxDOT	CK: KM	DW: VP
© TxDOT: JULY 2016	CONT	SECT	JOB
REVISIONS	0203	05	039
	DIST	COUNTY	SHEET NO.
	TYL	WOOD	464

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PLAN VIEW

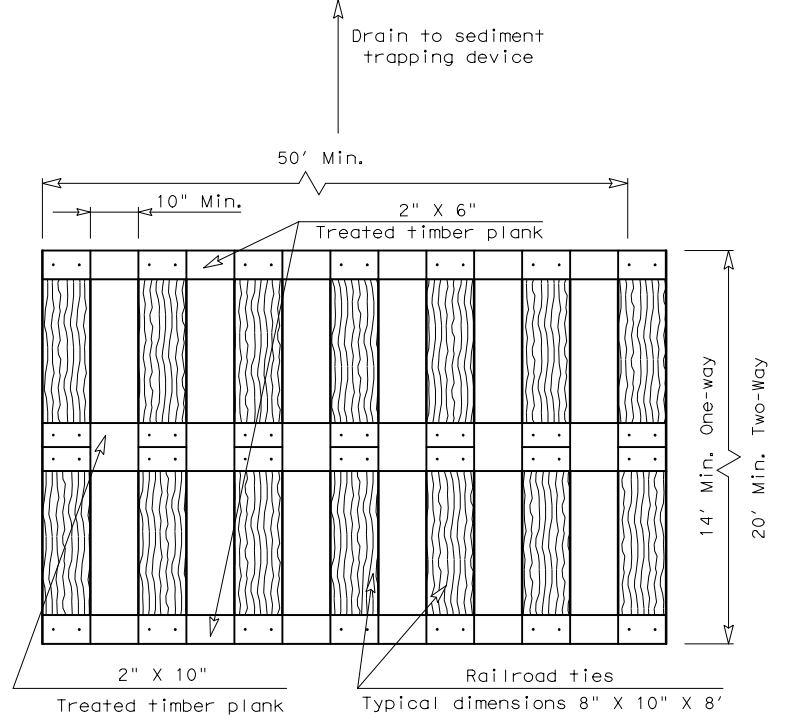


ELEVATION VIEW

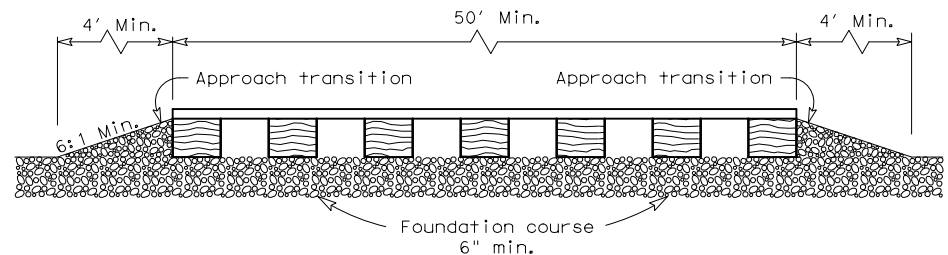
CONSTRUCTION EXIT (TYPE 1)
 ROCK CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

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



PLAN VIEW

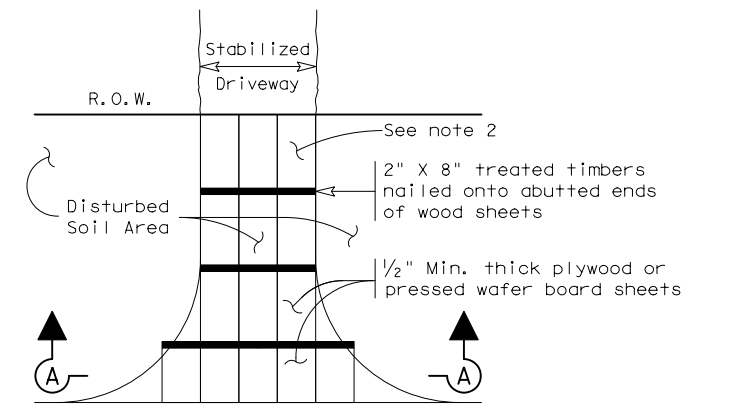


ELEVATION VIEW

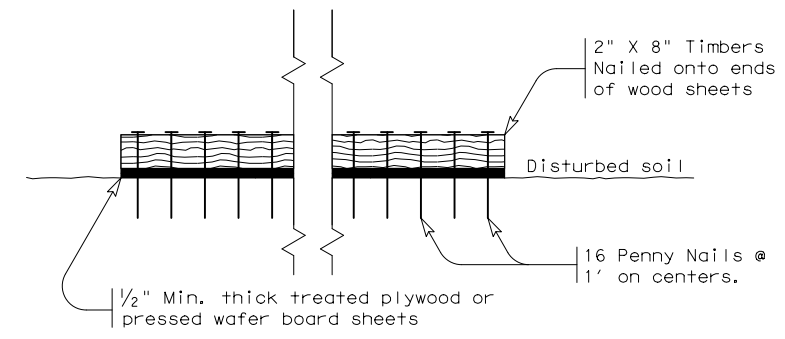
CONSTRUCTION EXIT (TYPE 2)
 TIMBER CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 2)

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



PLAN VIEW



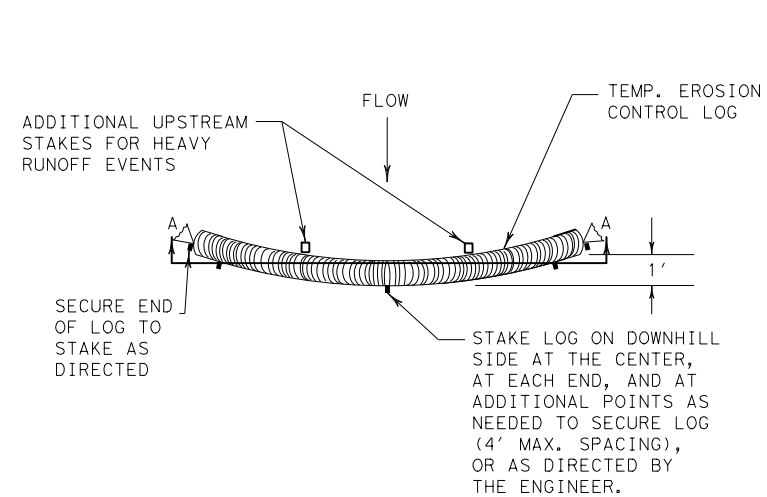
SECTION A-A
 CONSTRUCTION EXIT (TYPE 3)
 SHORT TERM

GENERAL NOTES (TYPE 3)

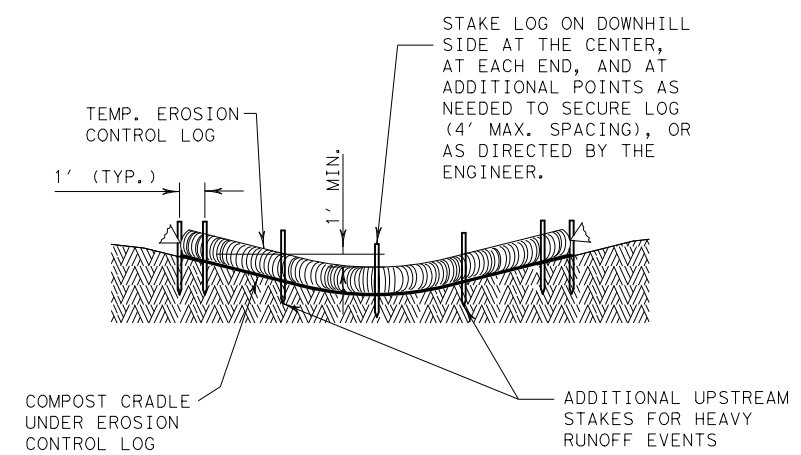
- The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
- The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
- The treated timber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

				Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES CONSTRUCTION EXITS EC (3) - 16					
FILE: ec316	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS		0203	05	039	US 69
	DIST	COUNTY		SHEET NO.	
	TYL	WOOD		465	

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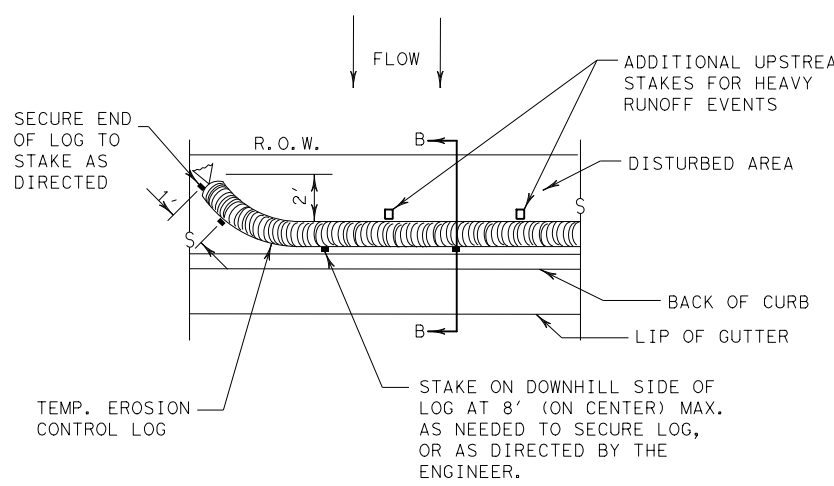
PLAN VIEW



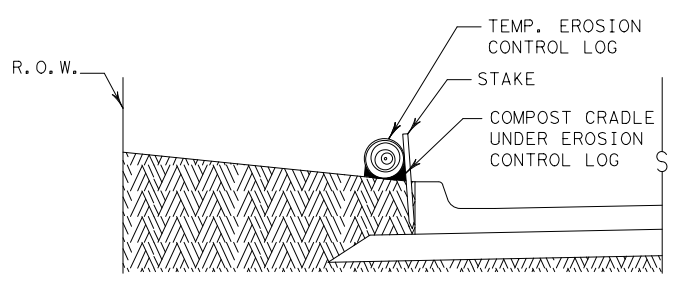
SECTION A-A
EROSION CONTROL LOG DAM

LEGEND

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

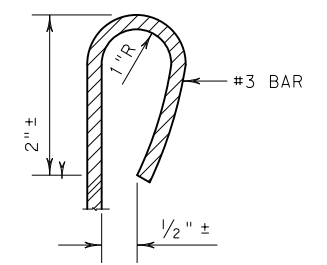


PLAN VIEW

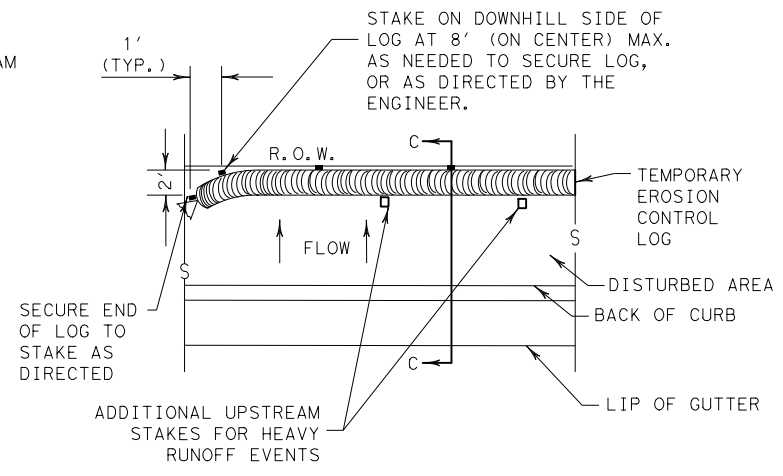


SECTION B-B
EROSION CONTROL LOG AT BACK OF CURB

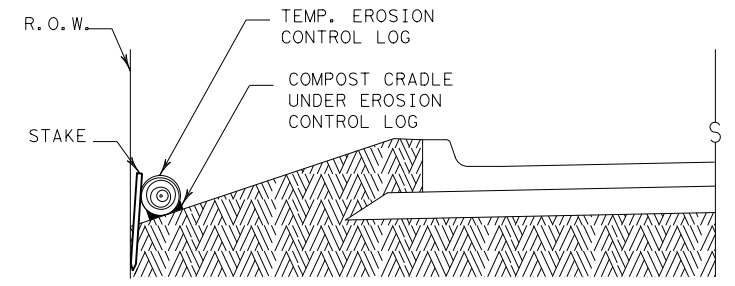
CL-BOC



REBAR STAKE DETAIL



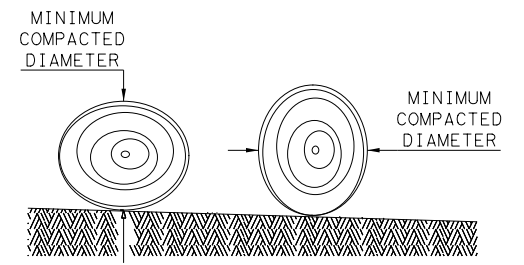
PLAN VIEW



SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

SEDIMENT BASIN & TRAP USAGE GUIDELINES

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

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

Control logs should be placed in the following locations:

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

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

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

GENERAL NOTES:

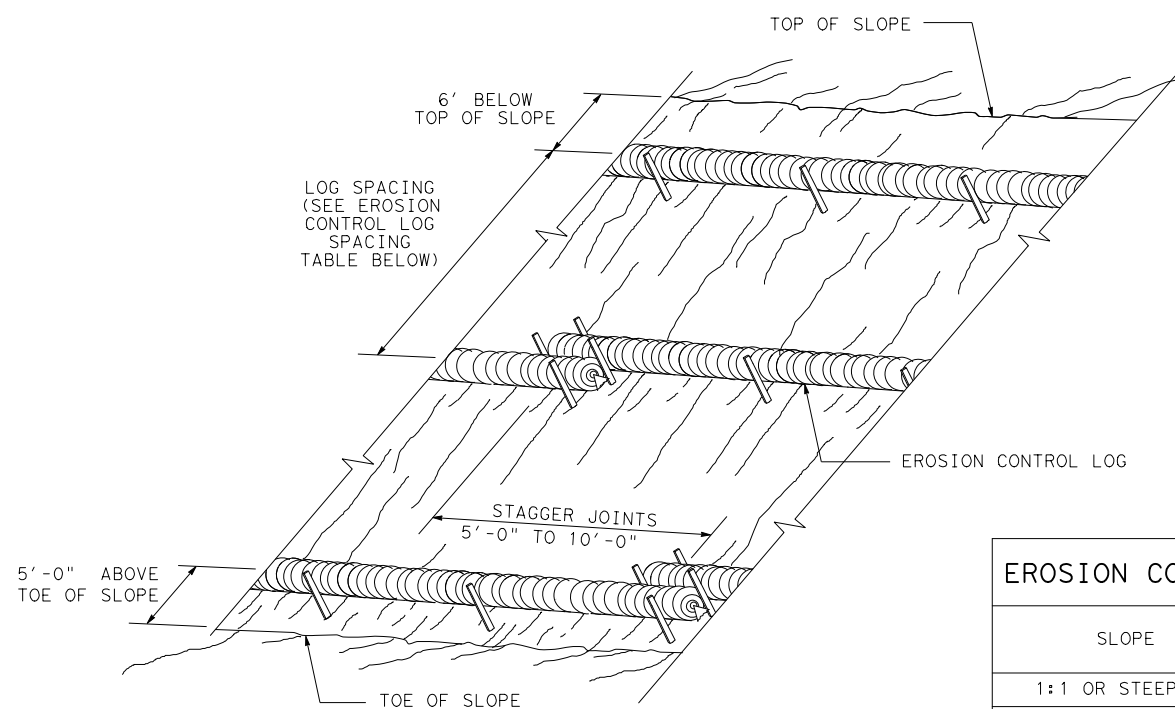
1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE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

SHEET 1 OF 3

		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES			
EROSION CONTROL LOG			
EC (9) - 16			
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT
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REVISIONS	0203 05	039	US 69
	DIST	COUNTY	SHEET NO.
	TYL	WOOD	466

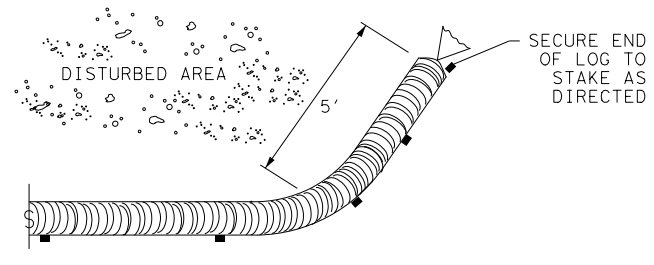
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**EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING**

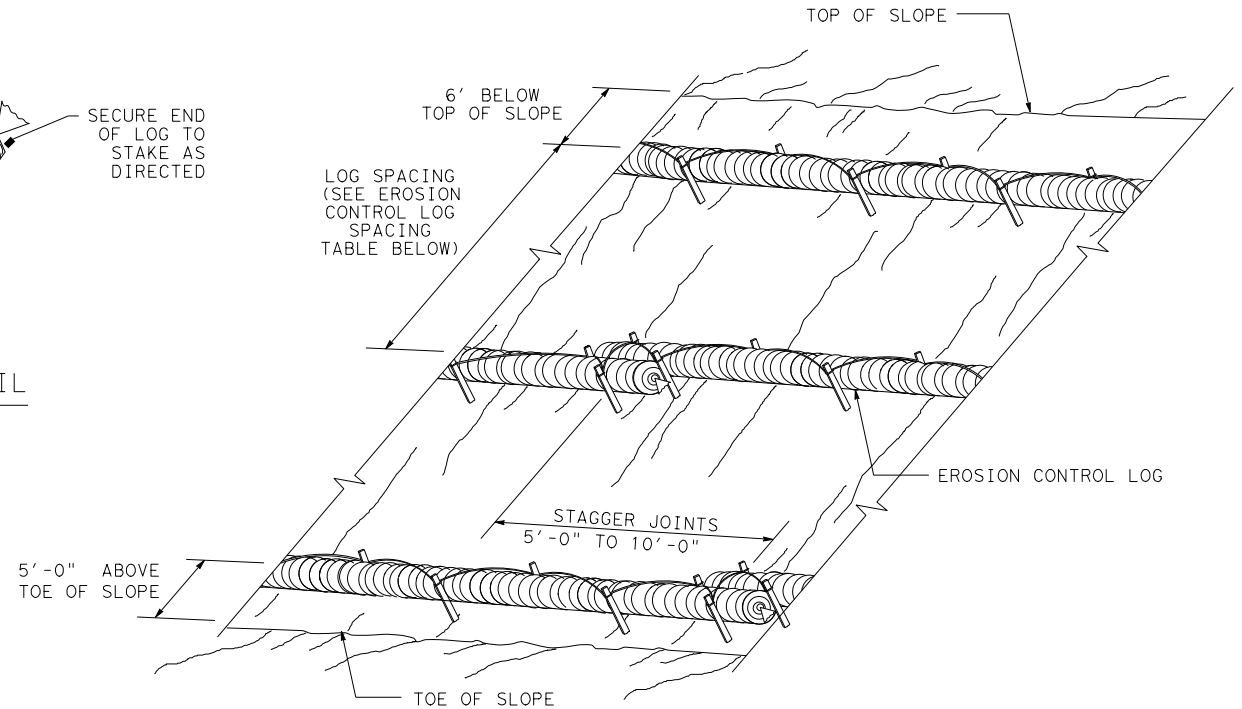
CL-SST



END SECTION RAP DETAIL

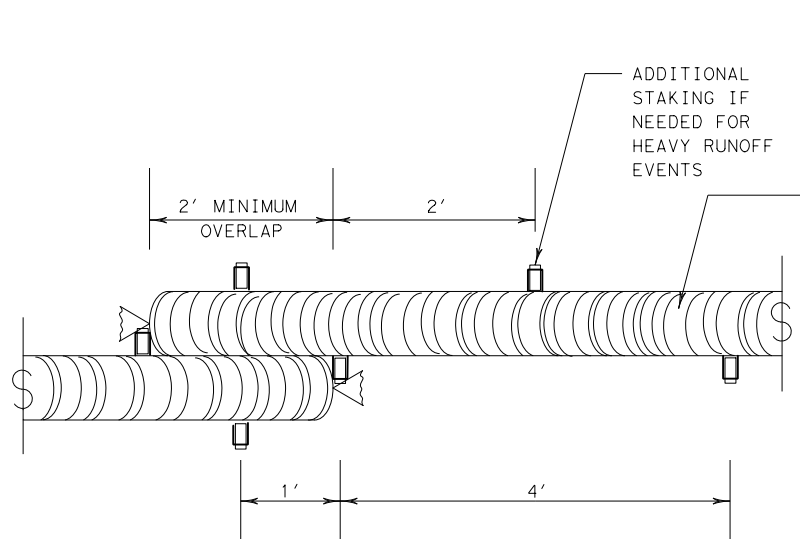
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

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



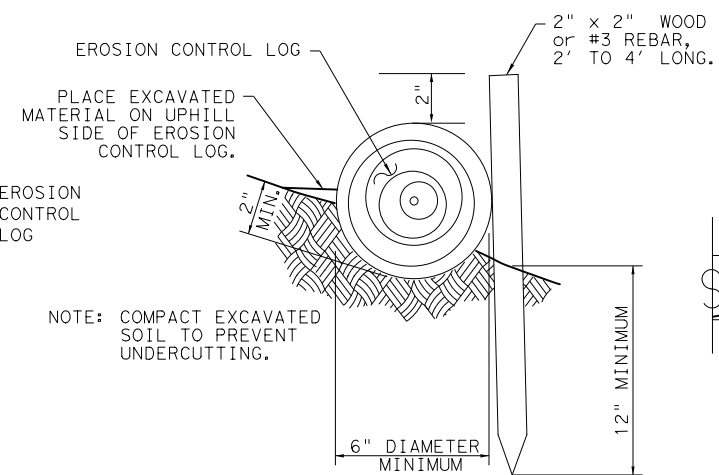
**EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING**

CL-SSL



STAKE AND TRENCHING ANCHORING DETAIL

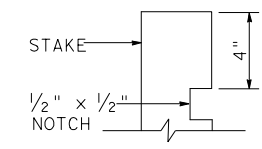
CL-SST



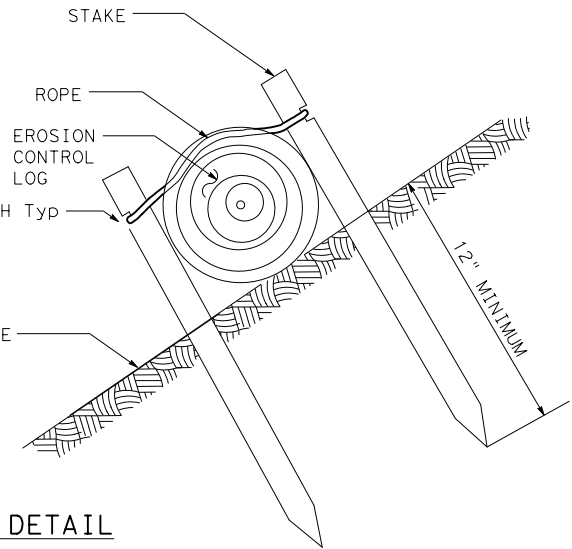
STAKE AND LASHING ANCHORING DETAIL

CL-SSL

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



STAKE NOTCH DETAIL



SHEET 2 OF 3

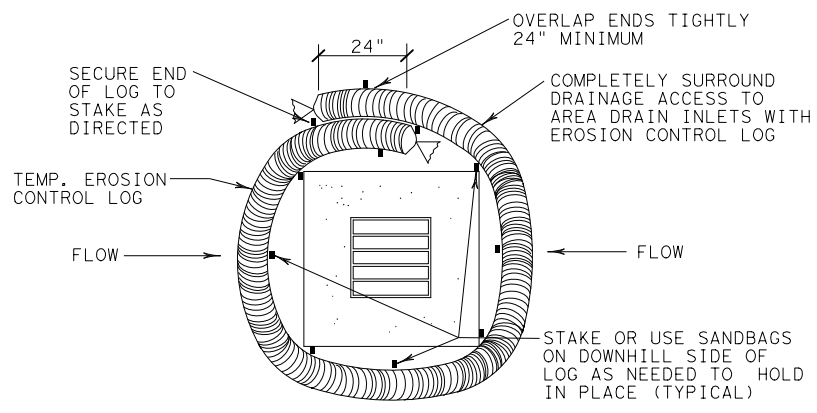
Design Division Standard

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

FILE: ec116	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
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REVISIONS	0203	05	039	US 69
	DIST	COUNTY	SHEET NO.	
	TYL	WOOD	467	

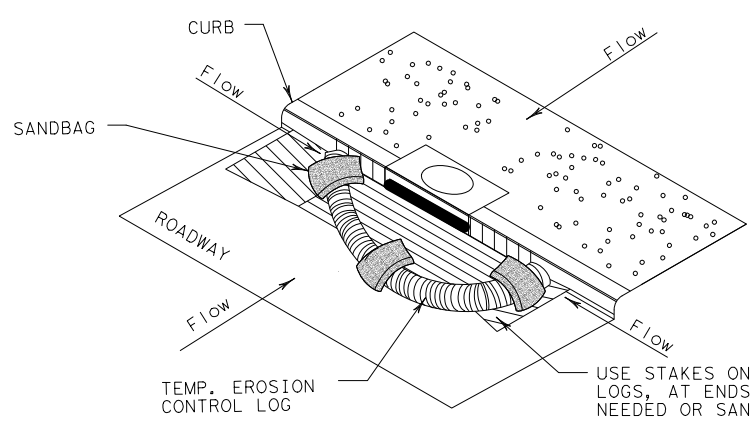
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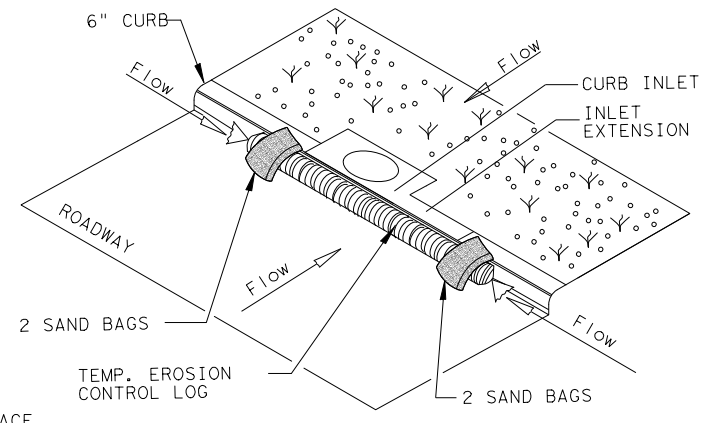
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

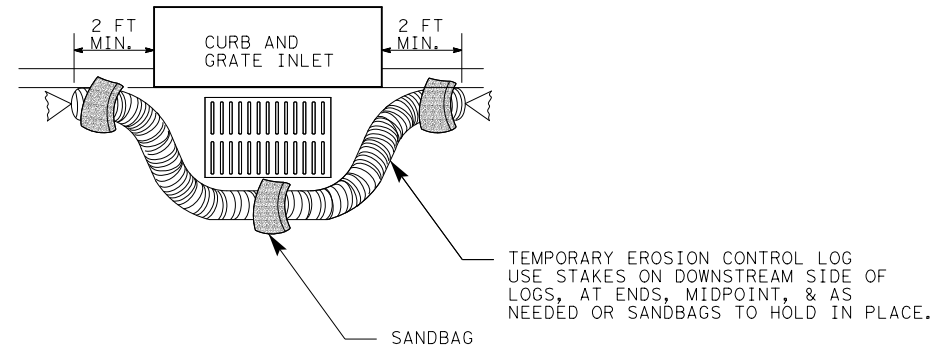
CL-CI



EROSION CONTROL LOG AT CURB INLET

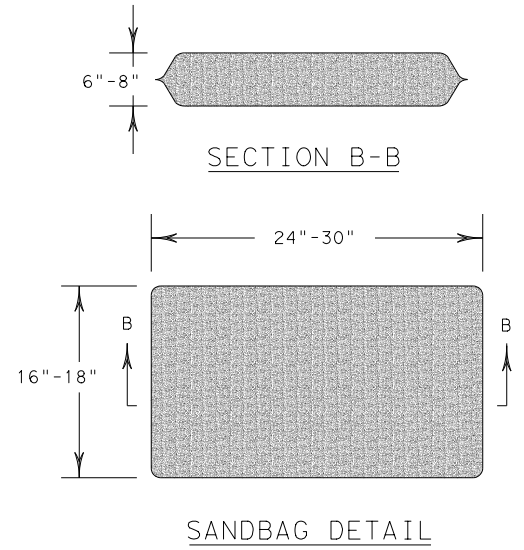
CL-CI

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



EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI



SHEET 3 OF 3

		<i>Design Division Standard</i>	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES			
EROSION CONTROL LOG			
EC (9) - 16			
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT
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REVISIONS		0203 05	039
		DIST	COUNTY
		TYL	WOOD
			CK: LS
			HIGHWAY
			US 69
			SHEET NO.
			468