

# Texas Commission on Environmental Quality

## Edwards Aquifer Application Cover Page

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### Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with [30 TAC 213](#).

### Administrative Review

1. [Edwards Aquifer applications](#) must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: <http://www.tceq.texas.gov/field/eapp>.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.
3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.
4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.
6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

### Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.
2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

**Mid-Review Modifications**

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a “Mid-Review Modification”. Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ’s Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ’s San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

<b>1. Regulated Entity Name: RM 12 at Mountain Crest/Skyline Dr.</b>					<b>2. Regulated Entity No.: 104095013</b>				
<b>3. Customer Name: Hays County</b>					<b>4. Customer No.: 601098205</b>				
<b>5. Project Type:</b> (Please circle/check one)	New	Modification			Extension	Exception			
<b>6. Plan Type:</b> (Please circle/check one)	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
<b>7. Land Use:</b> (Please circle/check one)	Residential	Non-residential			<b>8. Site (acres):</b>		6.99 acres		
<b>9. Application Fee:</b>	\$5,000		<b>10. Permanent BMP(s):</b>			Grassy Swales			
<b>11. SCS (Linear Ft.):</b>	None		<b>12. AST/UST (No. Tanks):</b>			None			
<b>13. County:</b>	Hays		<b>14. Watershed:</b>			None			

# Application Distribution

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the “Texas Groundwater Conservation Districts within the EAPP Boundaries” map found at:

[http://www.tceq.texas.gov/assets/public/compliance/field\\_ops/eapp/EAPP%20GWCD%20map.pdf](http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf)

For more detailed boundaries, please contact the conservation district directly.

<b>Austin Region</b>			
<b>County:</b>	<b>Hays</b>	<b>Travis</b>	<b>Williamson</b>
Original (1 req.)	<u>1</u>	—	—
Region (1 req.)	<u>1</u>	—	—
County(ies)	<u>1</u>	—	—
Groundwater Conservation District(s)	<u>  </u> Edwards Aquifer Authority <u>  </u> Barton Springs/ Edwards Aquifer <u>1</u> Hays Trinity <u>  </u> Plum Creek	<u>  </u> Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	<u>  </u> Austin <u>  </u> Buda <u>  </u> Dripping Springs <u>  </u> Kyle <u>  </u> Mountain City <u>  </u> San Marcos <u>  </u> Wimberley <u>1</u> Woodcreek	<u>  </u> Austin <u>  </u> Bee Cave <u>  </u> Pflugerville <u>  </u> Rollingwood <u>  </u> Round Rock <u>  </u> Sunset Valley <u>  </u> West Lake Hills	<u>  </u> Austin <u>  </u> Cedar Park <u>  </u> Florence <u>  </u> Georgetown <u>  </u> Jerrell <u>  </u> Leander <u>  </u> Liberty Hill <u>  </u> Pflugerville <u>  </u> Round Rock

<b>San Antonio Region</b>					
<b>County:</b>	<b>Bexar</b>	<b>Comal</b>	<b>Kinney</b>	<b>Medina</b>	<b>Uvalde</b>
Original (1 req.)	—	—	—	—	—
Region (1 req.)	—	—	—	—	—
County(ies)	—	—	—	—	—
Groundwater Conservation District(s)	<u>  </u> Edwards Aquifer Authority <u>  </u> Trinity-Glen Rose	<u>  </u> Edwards Aquifer Authority	<u>  </u> Kinney	<u>  </u> EAA <u>  </u> Medina	<u>  </u> EAA <u>  </u> Uvalde
City(ies) Jurisdiction	<u>  </u> Castle Hills <u>  </u> Fair Oaks Ranch <u>  </u> Helotes <u>  </u> Hill Country Village <u>  </u> Hollywood Park <u>  </u> San Antonio (SAWS) <u>  </u> Shavano Park	<u>  </u> Bulverde <u>  </u> Fair Oaks Ranch <u>  </u> Garden Ridge <u>  </u> New Braunfels <u>  </u> Schertz	NA	<u>  </u> San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.

Bryan Ellis

Print Name of Customer/Authorized Agent

*Bryan Ellis*

08-23-2024

Signature of Customer/Authorized Agent

Date

**\*\*FOR TCEQ INTERNAL USE ONLY\*\***

Date(s) Reviewed:		Date Administratively Complete:	
Received From:		Correct Number of Copies:	
Received By:		Distribution Date:	
EAPP File Number:		Complex:	
Admin. Review(s) (No.):		No. AR Rounds:	
Delinquent Fees (Y/N):		Review Time Spent:	
Lat./Long. Verified:		SOS Customer Verification:	
Agent Authorization Complete/Notarized (Y/N):		Fee Check:	Payable to TCEQ (Y/N):
Core Data Form Complete (Y/N):			Signed (Y/N):
Core Data Form Incomplete Nos.:			Less than 90 days old (Y/N):

# Modification of a Previously Approved Contributing Zone Plan

## Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), Effective June 1, 1999

**To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.**

**Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.**

## Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Modification of a Previously Approved Contributing Zone Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Bryan Ellis

Date: 08/23/2024

Signature of Customer/Agent:

*Bryan Ellis*

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## Project Information

- Current Regulated Entity Name: RM 12 at Mountain Crest/Skyline Dr.  
Original Regulated Entity Name: RM 12 - SHOULDER ADDITIONS  
Assigned Regulated Entity Number(s) (RN): 104095013  
Edwards Aquifer Protection Program ID Number(s): 03120101  
 The applicant has not changed and the Customer Number (CN) is: \_\_\_\_\_  
 The applicant or Regulated Entity has changed. A new Core Data Form has been provided.
- Attachment A: Original Approval Letter and Approved Modification Letters.** A copy of the original approval letter and copies of any modification approval letters are attached.
- A modification of a previously approved plan is requested for (check all that apply):

- Any physical or operational modification of any best management practices or structure(s), including but not limited to temporary or permanent ponds, dams, berms, silt fences, and diversionary structures;
- Any change in the nature or character of the regulated activity from that which was originally approved;
- A change that would significantly impact the ability to prevent pollution of the Edwards Aquifer and hydrologically connected surface water; or
- Any development of land previously identified in a contributing zone plan as undeveloped.

4.  Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

<b><i>CZP Modification</i></b>	<b><i>Approved Project</i></b>	<b><i>Proposed Modification</i></b>
<b><i>Summary</i></b>		
Acres	<u>101</u>	<u>102.5</u>
Type of Development	<u>Roadway</u>	<u>Not Changing</u>
Number of Residential Lots	<u>N/A</u>	<u>N/A</u>
Impervious Cover (acres)	<u>33.36</u>	<u>34.25</u>
Impervious Cover (%)	<u>33.0</u>	<u>33.4</u>
Permanent BMPs	<u>Grassy Swales</u>	<u>Not Changing</u>
Other	<u>N/A</u>	<u>N/A</u>
<b><i>AST Modification</i></b>		
<b><i>Summary</i></b>		
Number of ASTs	<u>N/A</u>	<u>N/A</u>
Other	<u>N/A</u>	<u>N/A</u>
<b><i>UST Modification</i></b>		
<b><i>Summary</i></b>		
Number of USTs	<u>N/A</u>	<u>N/A</u>
Other	<u>N/A</u>	<u>N/A</u>

5.  **Attachment B: Narrative of Proposed Modification.** A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved,

including previous modifications, and how this proposed modification will change the approved plan.

6.  **Attachment C: Current Site Plan of the Approved Project.** A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
- The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
  - The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
  - The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
  - The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
  - The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.
7.  Acreage has not been added to or removed from the approved plan.
- Acreage has been added to or removed from the approved plan and is discussed in *Attachment B: Narrative of Proposed Modification*.
8.  Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

**Attachment A:** Original Approval Letter and Approved Modification Letters

**Attachment B:** Narrative of Proposed Modification

**Attachment C:** Current Site Plan of the Approved Project

**Attachment A:** Original Approval Letter and Approved Modification Letters

Kathleen Hartnett White, *Chairman*  
R. B. "Ralph" Marquez, *Commissioner*  
Larry R. Soward, *Commissioner*  
Margaret Hoffman, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

February 5, 2004

Mr. Donald Nyland, P.E., Area Engineer  
Texas Department of Transportation  
South Austin Area Engineer's Office  
2800 S. IH-35, Suite 100  
Austin, Texas 78704

Re: Edwards Aquifer, Hays County

NAME OF PROJECT: RM 12 Shoulder Additions (CSJ: 0683-03-024); Along RM 12 from South of RM 150 to 400 Feet North of Woodcreek Drive; Dripping Springs ETJ and Hays County, Texas

TYPE OF PLAN: Request for Approval of a Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Subchapter B Edwards Aquifer  
Edwards Aquifer Protection Program ID No. 03120101

Dear Mr. Nyland:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the CZP application for the referenced project submitted to the Austin Regional Office on behalf of the Texas Department of Transportation on December 1, 2003. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Contributing Zone Plan. A motion for reconsideration must be filed no later than 20 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10% of the construction has commenced on the project or an extension of time has been requested.*

### PROJECT DESCRIPTION

The proposed roadway project will be located on approximately 101 acres of existing state right-of-way and will include the addition of four-foot wide shoulders on both sides of 48,850.68 linear feet (9.25 miles) of the two eleven-foot wide travel lanes, safety end treatments (SETs) for existing cross drainage structures, drainage improvements, a 2-inch overlay of asphaltic concrete pavement, street

REPLY TO: REGION 11 • 1921 CEDAR BEND DR., STE. 150 • AUSTIN, TEXAS 78758-5336 • 512/339-2929 • FAX 512/339-3795

P.O. Box 13087 • Austin, Texas 78711-3087 • 512/239-1000 • Internet address: [www.tceq.state.tx.us](http://www.tceq.state.tx.us)

Mr. Donald Nyland, P.E.

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and private drive connections, stabilization of right of way, and temporary and permanent best management practices (BMPs). The project will increase the impervious cover for the referenced section of RM 12 from approximately 23.76 acres to 33.36 acres (an increase in impervious cover of about 9.5 percent to 33.0 percent). No wastewater will be generated by this project.

#### PERMANENT POLLUTION ABATEMENT MEASURES

Permanent best management practices will be provided to treat stormwater runoff from the proposed activities. The individual treatment practices will include the construction vegetated swales on both sides of approximately 8.8 miles of the improved section of RM 12. The vegetated swales will provide a load removal of 18,188 pounds of total suspended solids per year. The approved measures exceed the required 80 percent removal of the increased load in total suspended solids caused by the project.

#### SPECIAL CONDITIONS

- I. Since this is a roadway construction project, deed recordation of this approval letter is not required.
- II. This approval does not authorize the installation of an aboveground storage tank(s) for temporary use on this project. If the contractor desires to use a temporary aboveground storage tank during construction, information indicating the proposed location, spill containment methods, and use of temporary erosion and sedimentation controls must be submitted to the TCEQ for review and approval prior to its installation.
- III. A staging area was not proposed for this project. If the contractor desires a staging area, information indicating the proposed location and placement of appropriate temporary erosion and sedimentation controls must be submitted to the TCEQ for review and approved prior to its installation.
- IV. Intentional discharges of sediment laden stormwater during construction are not allowed. If dewatering excavated areas and/or areas of accumulated stormwater becomes necessary during construction, the discharge shall be filtered through appropriately selected temporary best management practices. These may include vegetative filter strips, sediment traps, rock berms, silt fence rings, etc.

#### STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

Mr. Donald Nyland, P.E.

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Prior to Commencement of Construction:

2. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved Contributing Zone Plan and this notice of approval shall be maintained at the project until all regulated activities are completed.
3. Any modification to the activities described in the referenced CZP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
4. The applicant must provide written notification of intent to commence construction of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the name of the approved plan and ID number for the regulated activity, the date on which the regulated activity will commence, and the name of the prime contractor with the name and telephone number of the contact person.
5. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved Storm Water Pollution Prevention Plan (SWPPP) must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

During Construction:

6. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
7. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been significantly reduced. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

8. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
9. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

10. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the Austin Regional Office within 30 days of site completion.
11. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through the Austin Regional Office within 30 days of the transfer. A copy of the transfer form (TNRCC-10263) is enclosed.
12. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Contributing Zone Plan. If the new owner intends to commence any new regulated activity on the site, a new Contributing Zone Plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
13. A Contributing Zone Plan approval or extension will expire and no extension will be granted if more than 50% of the total construction has not been completed within ten years from the initial approval of a plan. A new Contributing Zone Plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

Mr. Donald Nyland, P.E.

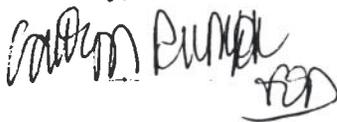
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14. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

If you have any questions or require additional information, please contact Mr. James Bice, P.E. of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,



Margaret Hoffman  
Executive Director  
Texas Commission on Environmental Quality

MH/jeb

Enclosure: Change in Responsibility for Maintenance on Permanent BMPs-Form TNRCC-10263

cc: Mr. J. Gary Lantrip, P.G., TxDOT Austin District, Austin, Texas  
The Honorable Jim Powers, County Judge, Hays County  
Mr. Allen G. Walther, Director of Environmental Health, Hays County Health Dept.  
Ms. Michelle Fisher, City Administrator, City of Dripping Springs  
The Honorable Henry Neil, Mayor, City of Woodcreek, Woodcreek, Texas  
Mr. Al Broun, President, Hays Trinity Groundwater Conservation District, Dripping Springs  
Central Records, TCEQ Information Resources Division, Austin, Texas

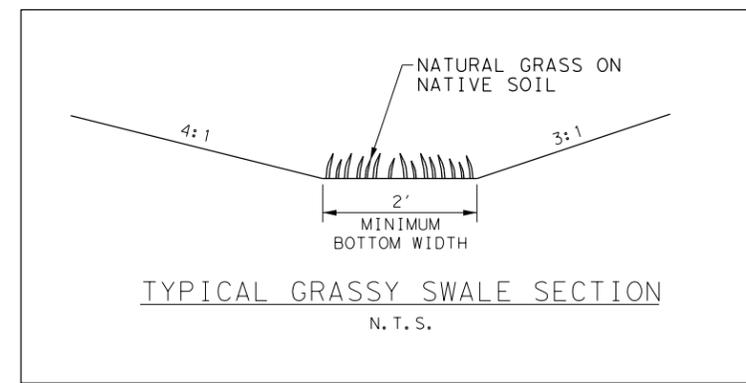
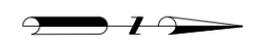
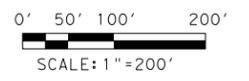
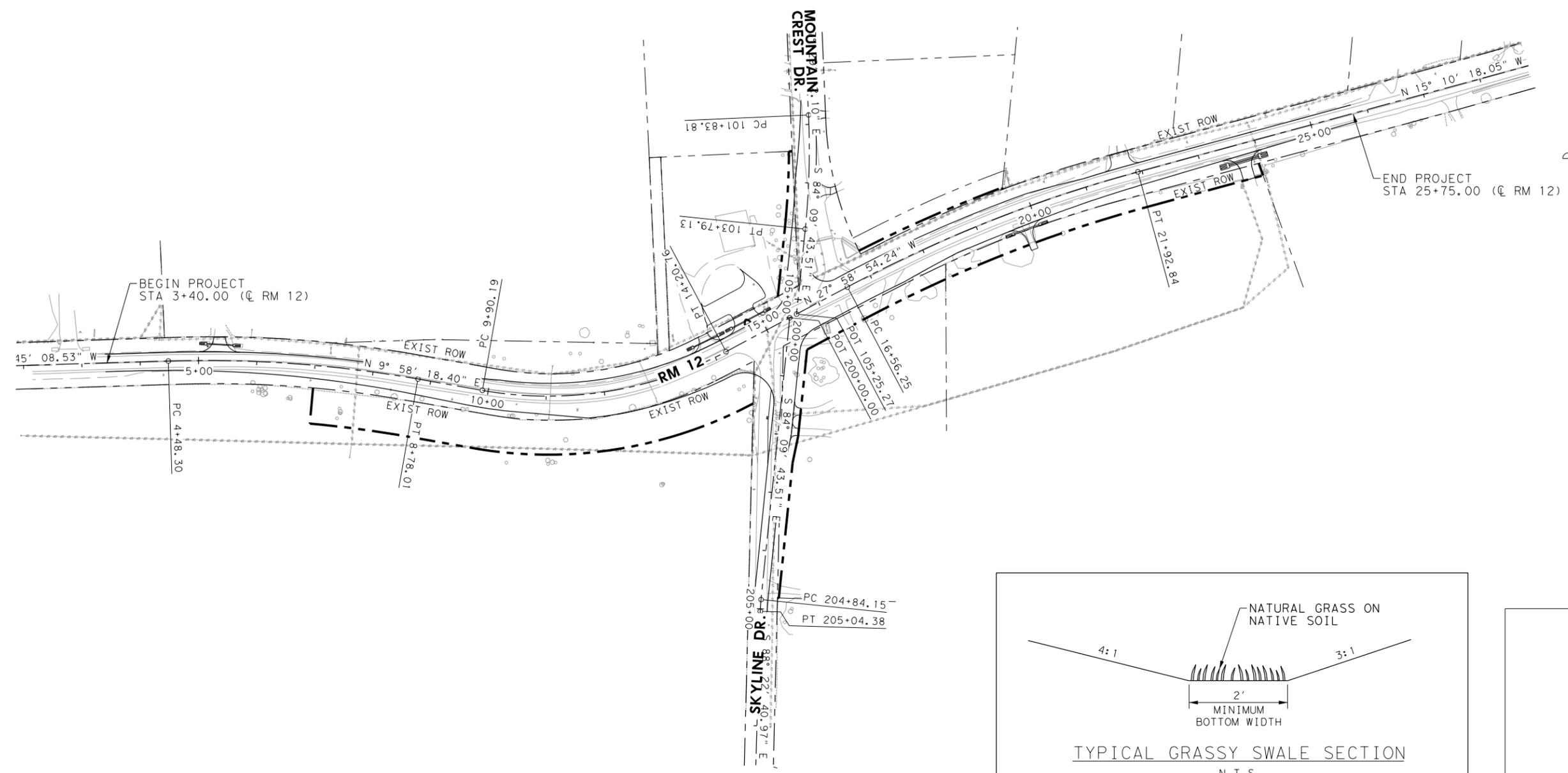
**Attachment B: Narrative of Proposed Modification**

## Attachment B: Narrative of Proposed Modification

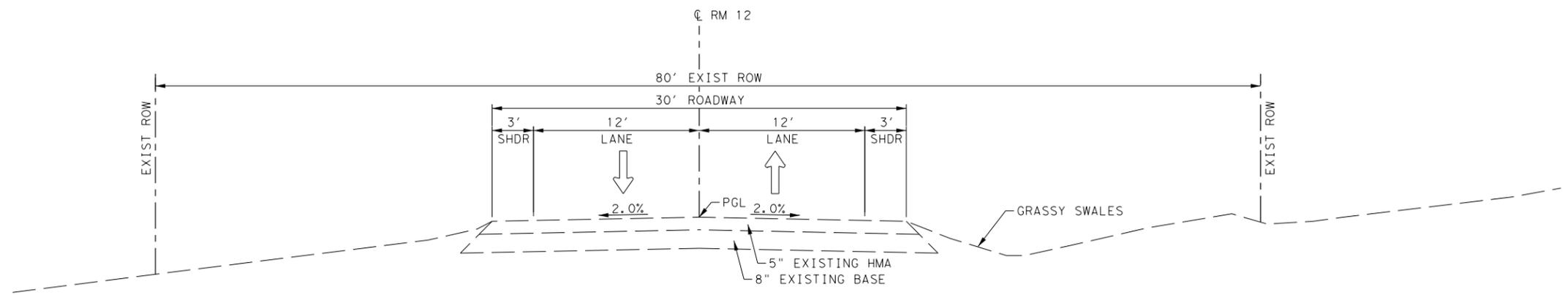
The proposed roadway project will be located on approximately 6.99 acres of existing and proposed state right-of-way and will include cut and widen of existing paved roadway for the addition of turn lanes, 3 to 10-foot wide shoulders on both sides of 2,235 linear feet (0.42 miles) of the two 12-foot wide travel lanes, drainage improvements, street and private drive connections, stabilization of right of way, and best management practices (BMPs). This project will include the demolition of the roadway portion of Skyline Drive and Mountain Crest Drive that is being realigned. There are no offsite upgradient stormwater areas to be captured in the limits of this project. The project will increase the impervious cover for the referenced section of RM 12 from approximately 2.12 acres to 3.01 acres (an increase in impervious cover of about 30.3% to 43.1%). No wastewater will be generated by this project. The increase in impervious cover adds 799 lbs of required TSS removal bringing the previous  $L_M$  from 8,617 lbs to 9,416 lbs. The existing grassy swales impacted by our project will be replaced; there are no additional grassy swales being proposed. The grassy swales from the original CZP provide a load removal of 18,188 lbs of total suspended solid per year, which remains the same since grassy swales are only being replaced. The approved measures exceed the required 80 percent removal of the increased load in total suspended solids caused by the project.

**Attachment C: Current Site Plan of the Approved Project**

FILE:G:\TXC\Projects\County\_Hays\7083-00\_RM 12 Turn Lanes\03\_CADD\02\_Base\Working\Kellon\CZP Modification\RM12\_EXIST SITE PLAN.dgn  
 DATE:5/9/2024 9:03:38 AM USER:RM 12 Turn Lanes PENTABLE:\$PENTBLS\$ PLOTRIVER:pdf.pltcf\$ \$STATUS\$



RM 12 EXISTING SITE PLAN



RM 12 EXISTING TYPICAL SECTION  
 N. T. S.  
 STA 3+40.00 TO STA 25+75.00



**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



**BGE, Inc.**  
 1701 Directors Blvd., Suite 1000, Austin, TX 78744  
 Tel: 512-879-0400 • www.bgeinc.com  
 TBPE Registration No. F-1046

**RM 12  
 EXISTING  
 SITE PLAN**

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
14			1
STATE	DIST.	COUNTY	
TEXAS	AUS	HAYS	
CONT.	SECT.	JOB	HIGHWAY NO.
0683	03	045	RM 12

# Edwards Aquifer Protection Program Roadway Application

## Texas Commission on Environmental Quality

This application is intended only for projects which a major roadway is designed for construction, such as State highways, County roads, and City thoroughfares.

Designed for Regulated Activities on the Contributing Zone to the Edwards Aquifer in relation to 30 TAC §213.24, Regulated Activities on the Edwards Aquifer Recharge Zone, in relation to 30 TAC §213.5(b), Effective June 1, 1999.

***To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.***

***Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.***

## Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer.

The application was prepared by:

Print Name of Customer/Agent: Bryan Ellis

Date: 08-23-2024

Signature of Customer/Agent:

*Bryan Ellis*

---

## Project Information

1. Regulated Entity (Project) Name: RM 12 at Mountain Crest/Skyline Dr.
2. County: Hays
3. Stream Basin(s): No flow path to classified/unclassified waterbody segment in project limits.
4. Groundwater Conservation District (if applicable): Hays Trinity Groundwater Conservation Dist.
5. Customer (Applicant):

Contact Person: Marti Reich

Entity: Hays County Transportation Department

Mailing Address: 2171 Yarrington Rd

City, State: Kyle, TX Zip: 78640

Telephone: 512-393-9326

Email Address: marti.reich@hayscountytexas.gov

6. Agent (Representative):

Contact Person: Bryan Ellis

Entity: BGE, Inc.

Mailing Address: 101 West Louis Henna Boulevard, Suite 400

City, State: Austin, TX Zip: 78728

Telephone: 210-503-8077

Email Address: bellis@bgeinc.com

7. Landowner of R.O.W. (Right of Way)

Person or entity responsible for maintenance of water quality Best Management Practices (BMPs), if not applicant.

Contact Person: \_\_\_\_\_

Entity: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City, State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_

Email Address: \_\_\_\_\_

8.  **The TCEQ must be able to inspect the project site or the application will be returned.**

Sufficient survey marking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of any regulated activities and the geologic or manmade features noted in the Geologic Assessment.

Survey marking will be completed by this date: No survey marking necessary for this roadway project, the project limits adequately describe the location.

9.  **Attachment A - Road Map.** A road map showing directions to and the location of the project site is attached. The map clearly shows the boundary of the project site.

10.  **Attachment B - USGS Quadrangle.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') is attached. The map(s) clearly show:

Project site boundaries

USGS Quadrangle Name(s)

All drainage paths from site to surface waters

11.  **This project extends into (Check all that apply):**

Recharge Zone (RZ)

Contributing Zone (CZ)

Transition Zone (TZ)

Contributing Zone within  
Transition Zone (CZ/TZ)

Zone not regulated by EAPP

12.  **Attachment C - Project Description.** A detailed narrative description of the proposed project is attached. The project description is consistent throughout the application and contains, at a minimum, the following details:

- Complete site area [Acres]
- Offsite upgradient stormwater areas to be captured
- Impervious area [Acres]
- Permanent BMP(s)
- Proposed site use
- Existing roadway (paved and/or unpaved)
- Structures to be demolished [Include demo phase]
- Major interim phases

13. Existing project site conditions are noted below:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Existing paved and/or unpaved roads | <input type="checkbox"/> Existing commercial site  |
| <input type="checkbox"/> Undeveloped (Cleared)                          | <input type="checkbox"/> Existing industrial site  |
| <input type="checkbox"/> Undeveloped (Undisturbed/Not cleared)          | <input type="checkbox"/> Existing residential site |
|   | <input type="checkbox"/> Other: _____              |

14.  **Attachment D - Factors Affecting Surface Water Quality.** A detailed description of all factors that could affect surface water quality is attached.

15.  Only inert materials as defined by 30 TAC §330.3 will be used as fill material.

16. Type of pavement or road surface to be used:

- Concrete
- Asphaltic concrete pavement
- Permeable Friction Course (PFC)
- Other: \_\_\_\_\_

17. Right of Way (R.O.W.) and Pavement Area:

R.O.W. for project: 6.99 (ac.)

Length: 2235 ft.

Width: varies from 80 ft. to 140 ft.

Impervious cover (IC): 3.17 (ac.)

Total of Pavement area 3.17 (ac.) ÷ R.O.W. area 6.99 (ac.) x 100 = 45.35% IC.

- CAD program was used to determine areas.
- Number of travel lanes: proposed: 2 Thru, 1 Left-Turn, 1 Right-Turn, existing: 2 Thru
- Typical widths of lanes: 12 (ft.)
- Are intersections also being improved? (Y/N) Y

## Site Plan Requirements

Items 18 - 28 must be included on the Site Plan.

18.  The Site Plan must have a minimum scale of 1" = 400'.  
Site Plan Scale: 1" = 200'
19. 100-year floodplain boundaries:
- Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled. The 100-year floodplain boundaries are based on the following specific (including date of material) source(s): \_\_\_\_\_.
  - No part of the project site is located within the 100-year floodplain.
20.  A layout of the development with existing and finished contours at appropriate, but not greater than ten-foot contour intervals is shown. Sensitive features, lots, wells, buildings, roads, culverts, etc. are shown on the site plan.
21.  A figure (map) indicating all paths of drainage from the site to surface waters.
- Name all stream crossings: \_\_\_\_\_
  - Drainage patterns and approximate slopes.
  - There will be no discharge to surface waters.
22.  Distinguish between areas of soil disturbance and areas which will not be disturbed.
23.  Show locations of major structural and nonstructural controls. These are the temporary and permanent best management practices. Include the following:
- Show design and location of any hazardous materials traps.
  - Show design at outfalls of major control structures and conveyances.
  - A description of the BMPs and measures that prevent pollutants from entering surface streams.
24. Show locations of staging areas or project specific locations (PSL). Are they:
- Onsite, within project R.O.W.
  - Offsite.
  - Not yet determined. (Requires future authorization)
25.  Show locations where soil stabilization practices are expected to occur.
26.  Show surface waters (including wetlands).
27. Temporary aboveground storage tank facilities:
- Temporary aboveground storage tank facilities will be located on this site. Show on site plan.
  - Temporary aboveground storage tank facilities will not be located on this site.
28.  Plan(s) also include:
- |  |  |
|--|--|
| <input type="checkbox"/> Sidewalks                     | <input type="checkbox"/> Shared-use paths                        |
| <input checked="" type="checkbox"/> Related turn lanes | <input type="checkbox"/> Off-site improvements and staging areas |
| <input checked="" type="checkbox"/> Demolition plans   | <input type="checkbox"/> Utility relocations                     |
| <input type="checkbox"/> Other improved areas: _____   |  |

## **Permanent Best Management Practices (BMPs)**

**Description of practices and measures that will be used after construction is completed.**

29.  Permanent BMPs and measures have been designed, and will be constructed, operated, and maintained to ensure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance accepted by the executive director.
- The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.
  - A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used: \_\_\_\_\_
30.  **Attachment E - BMPs for Upgradient (Offsite) Stormwater.**
- A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
  - No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.
  - Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.
31.  **Attachment F - BMPs for On-site Stormwater.**
- A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.
  - Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.
32.  **Attachment G - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. Construction plans for the proposed permanent BMPs and measures are attached and include all proposed structural plans and specifications, and appropriate details.
- Major bridge cross-sections, and roadway plan and profiles
  - BMP plans and details
  - Erosion control
  - SW3P
  - Design calculations
  - TCEQ Construction Notes
  - EPIC, as necessary

33.  **Attachment H - Inspection, Maintenance, Repair and Retrofit Plan.** A site and BMP specific plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan fulfills all the following:
- Prepared and certified by the engineer designing the permanent BMPs and measures.
  - Signed by the owner or responsible party.
  - Outlines specific procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofit.
  - Contains a discussion of recordkeeping procedures.

34.  **Attachment I - Pilot-Scale Field Testing Plan.** Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.

N/A

35.  **Attachment J - Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows, and in-stream effects caused by the regulated activity which increase erosion or may result in water quality degradation.

Include permanent spill measures used to contain hydrocarbons or hazardous substances by way of traps, or response contingencies.

36. The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity.

If the applicant intends to transfer responsibility, check the box below.

Yes

A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days.

## ***Stormwater to be generated by the Proposed Project***

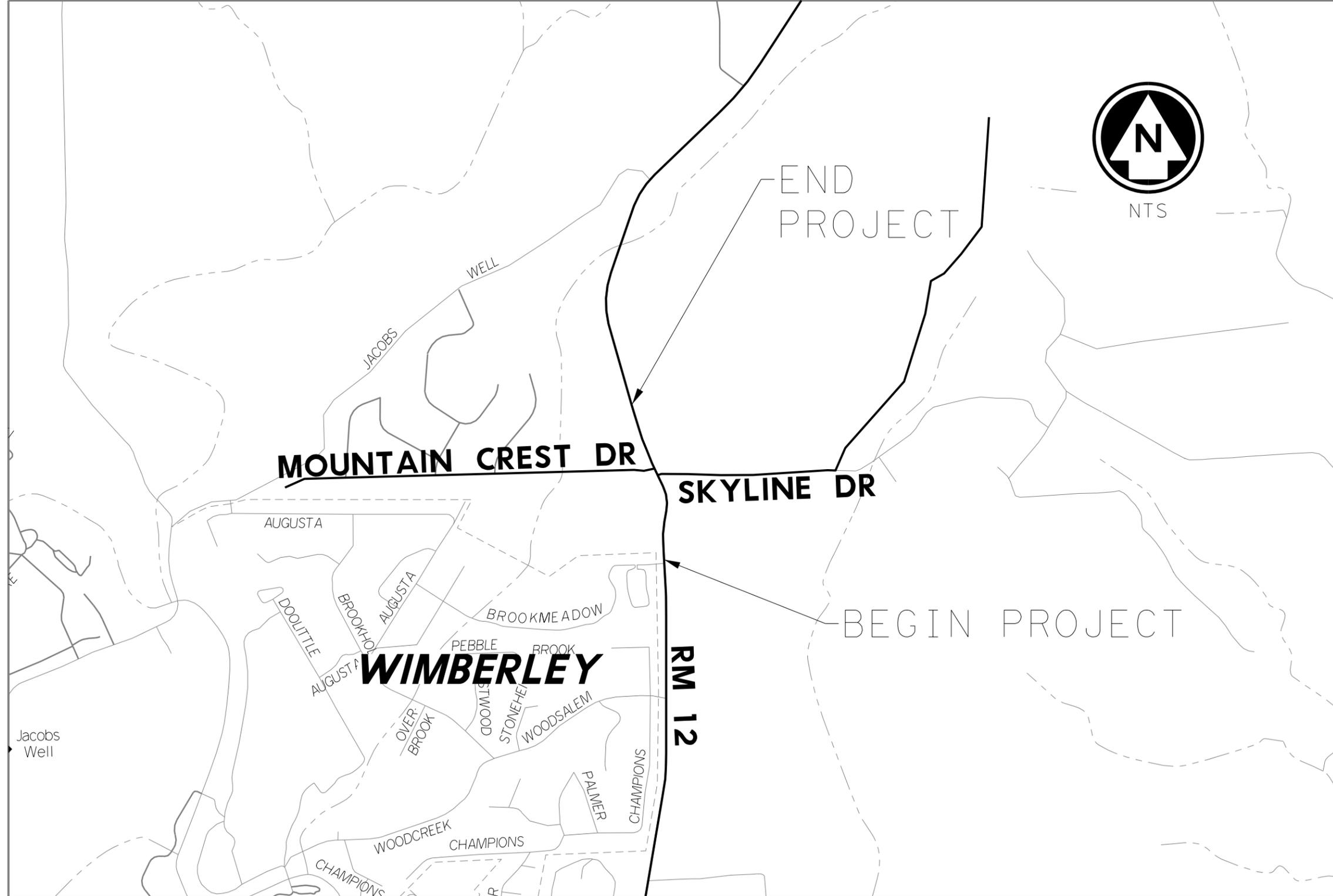
### ***Description of practices and measures that will be used during construction.***

37.  The site description, controls, maintenance, and inspection requirements for the Storm Water Pollution Prevention Plan (SWPPP or SW3P) developed under the Texas Pollutant Discharge Elimination System (TPDES) general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) & §213.5(b) of the technical report.
- The Temporary Stormwater Section (TCEQ-0602) is included with the application.
  - The SWPPP (SW3P) will serve as the Temporary Stormwater Section (TCEQ-0602).
38.  **Attachment K - Volume and Character of Stormwater.** A detailed description of the volume (quantity) and character (quality) of the stormwater runoff expected to occur from the proposed project is attached. The estimates of stormwater runoff quality and quantity are based on area and type of impervious cover.
- Include the pre-construction runoff coefficient.
  - Include the post-construction runoff coefficient.

### ***Administrative Information***

39.  Submit one (1) original and one (1) copy of the application, plus one electronic copy as needed, for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ is required to distribute the additional copies to these jurisdictions.
40. The fee for the plan(s) is based on:
- The total R.O.W. (as in Item 17).
  - TxDOT roadway project.

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STATE OF TEXAS  
 JOHN W. TULEY  
 102441  
 LICENSED PROFESSIONAL ENGINEER  
 8/19/2024



**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



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**Texas Department of Transportation**

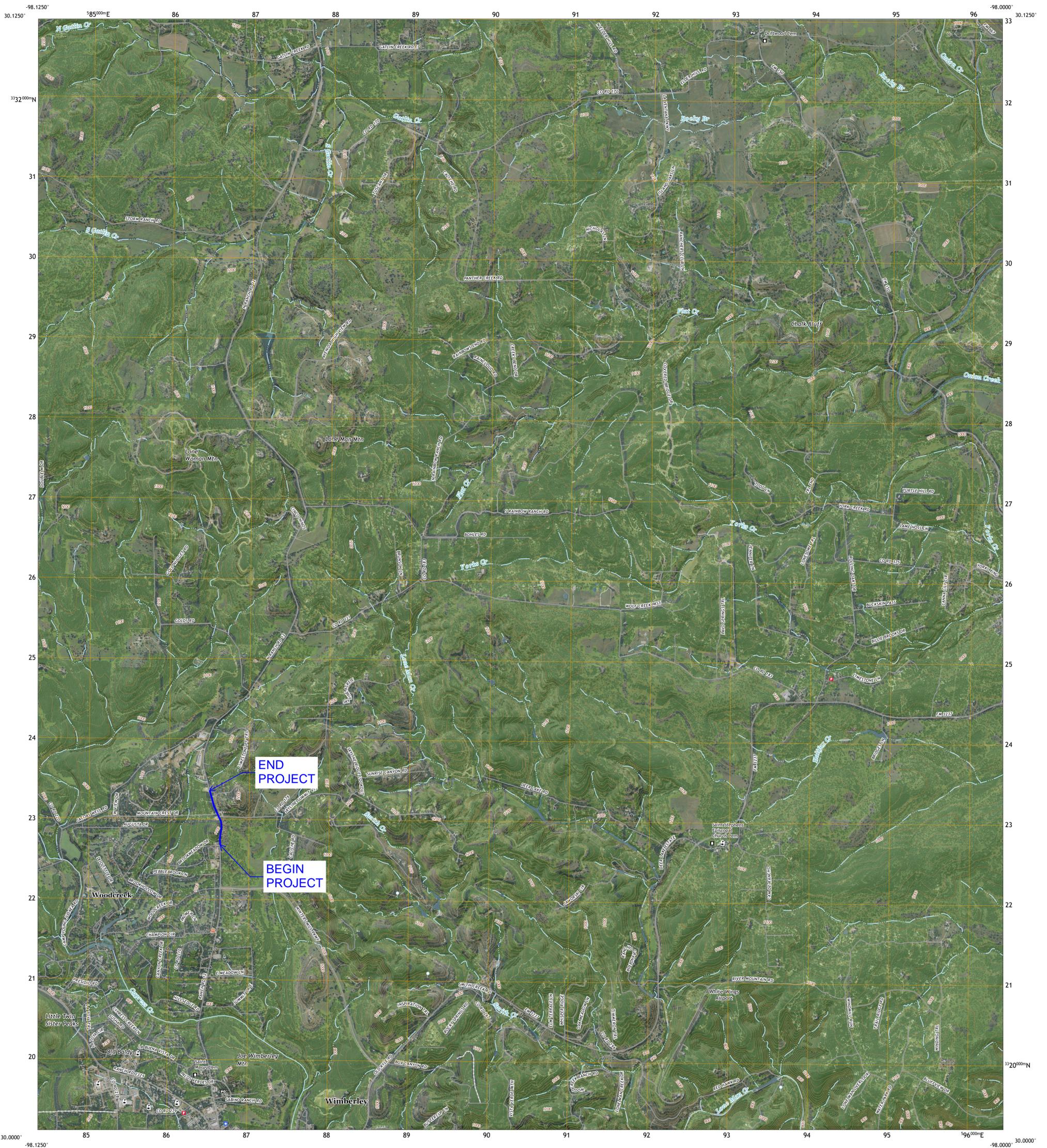


**BGE, Inc.**  
 1701 Directors Blvd., Suite 1000, Austin, TX 78744  
 Tel: 512-879-0400 • www.bgeinc.com  
 TBPE Registration No. F-1046

**RM 12**  
**ROAD MAP**

SHEET 1 OF 1

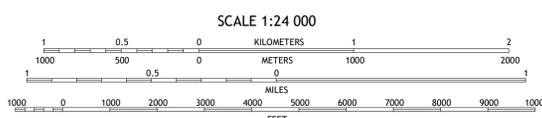
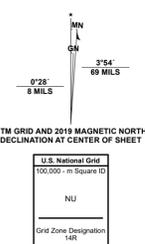
FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	



**Produced by the United States Geological Survey**

North American Datum of 1983 (NAD83)  
World Geodetic System of 1984 (WGS84). Projection and  
1 000-meter grid/Universal Transverse Mercator, Zone 14R  
This map is not a legal document. Boundaries may be  
generalized for this map scale. Private lands within government  
reservations may not be shown. Obtain permission before  
entering private lands.

Imagery.....NAIP, September 2016 - November 2016  
Roads.....U.S. Census Bureau, 2015 - 2019  
Names.....GNIS, 1979 - 2021  
Hydrography.....National Hydrography Dataset, 2002 - 2018  
Contours.....National Elevation Dataset, 2019  
Boundaries.....Multiple sources; see metadata file 2019 - 2021  
Wetlands.....FWS National Wetlands Inventory Not Available



1	2	3
4	5	6
7	8	

ADJOINING QUADRANGLES

ROAD CLASSIFICATION	
Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD
Interstate Route	US Route
	State Route



## **Edwards Aquifer Protection Program Roadway Application**

**RM 12 at Mountain Crest/Skyline Dr – CSJ: 0683-03-045 Hays County**

### **ATTACHMENTS**

#### **Attachment C – Project Description:**

The proposed roadway project will be located on approximately 6.99 acres of existing and proposed state right-of-way and will include cut and widen of existing paved roadway for the addition of turn lanes, 3 to 10-foot wide shoulders on both sides of 2,235 linear feet (0.42 miles) of the two 12-foot wide travel lanes, drainage improvements, street and private drive connections, stabilization of right of way, and best management practices (BMPs). This project will include the demolition of the roadway portion of Skyline Drive and Mountain Crest Drive that is being realigned. There are no offsite upgradient stormwater areas to be captured in the limits of this project. The project will increase the impervious cover for the referenced section of RM 12 from approximately 2.12 acres to 3.01 acres (an increase in impervious cover of about 30.3% to 43.1%). No wastewater will be generated by this project. The increase in impervious cover adds 799 lbs of required TSS removal bringing the previous  $L_M$  from 8,617 lbs to 9,416 lbs. The existing grassy swales impacted by our project will be replaced; there are no additional grassy swales being proposed. The grassy swales from the original CZP provide a load removal of 18,188 lbs of total suspended solid per year, which remains the same since grassy swales are only being replaced. The approved measures exceed the required 80 percent removal of the increased load in total suspended solids caused by the project.

#### **Attachment D – Factors Affecting Surface Water Quality:**

The only factor of concern will be the disturbed and ground-breaking activity that occurs during the construction process. The minor amount of impervious cover added to this existing facility will not cause any significant change in surface water quality or quantity after the job is completed. The addition of wider shoulders, turn lanes, and intersection realignment is to improve safety; the number of through lanes is remaining the same. Traffic is expected to only rise gradually so the potential for vehicular spills or contributing contaminants will not present any more risk than what currently exists. Sediment control fence, rock filter dams, and seeding will help prevent loss of sediment outside of the project limits.

#### **Attachment E – BMPs for Upgradient (Offsite) Stormwater:**

The roadway profile's elevation peaks roughly in the middle of the limits for this project. Also, there is no surface water, groundwater, or stormwater that originates uphill from the site or flows across it.

**Attachment F – BMPs for On-site Stormwater:**

The current permanent BMP on our project, existing grassy swales, will be replaced along the new ditches in our project limits. The calculations of the TSS removal are included in this submittal to show that the intended controls are still sufficient. Also, silt fence, rock berms, topsoil and seeding will be implemented to help reduce erosion and the movement of sedimentation.

**Attachment G – Construction Plans:**

(Roadway construction plan sheets are included in this submittal)

**Attachment H – Inspection, Maintenance, Repair and Retrofit Plan:**

The maintenance of the permanent controls for this project, which is grassy swales, will fall under the current maintenance plan in place for the original CZP of RM 12.

**Attachment I – Pilot-Scale Field Testing Plan:**

N/A

**Attachment J – Measures for Minimizing Surface Stream Contamination:**

\*(Same as Attachment F response)\* The current permanent BMP on our project, existing grassy swales, will be replaced along the new ditches in our project limits. The calculations of the TSS removal are included in this submittal to show that the intended controls are still sufficient. Also, silt fence, rock berms, topsoil and seeding will be implemented to help reduce erosion and the movement of sedimentation.

**Attachment K – Volume and Character of Stormwater:**

The volume and character of the stormwater will be the same after completion of work since we are maintaining ditch size, just slightly pushing them out for the additional turn lanes. The only potential change in character is during the construction phase. The planned erosion and sedimentation control practices in the construction plans address this issue.

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# STATE OF TEXAS TEXAS DEPARTMENT OF TRANSPORTATION

## PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENT



FEDERAL PROJECT NUMBER  
 X XXXX (XXX)  
 CSJ 0683-03-045

NET LENGTH OF PROJECT = 2,235.00 FEET = 0.422 MILES  
 ROADWAY LENGTH = 2,235.00 FT = 0.422 MI  
 BRIDGE LENGTH = 0.00 FT = 0.000 MI

### HAYS COUNTY RM 12

LIMITS: FROM: 1210 FEET SOUTH OF SKYLINE DRIVE TO: 1025 FEET NORTH OF SKYLINE DRIVE

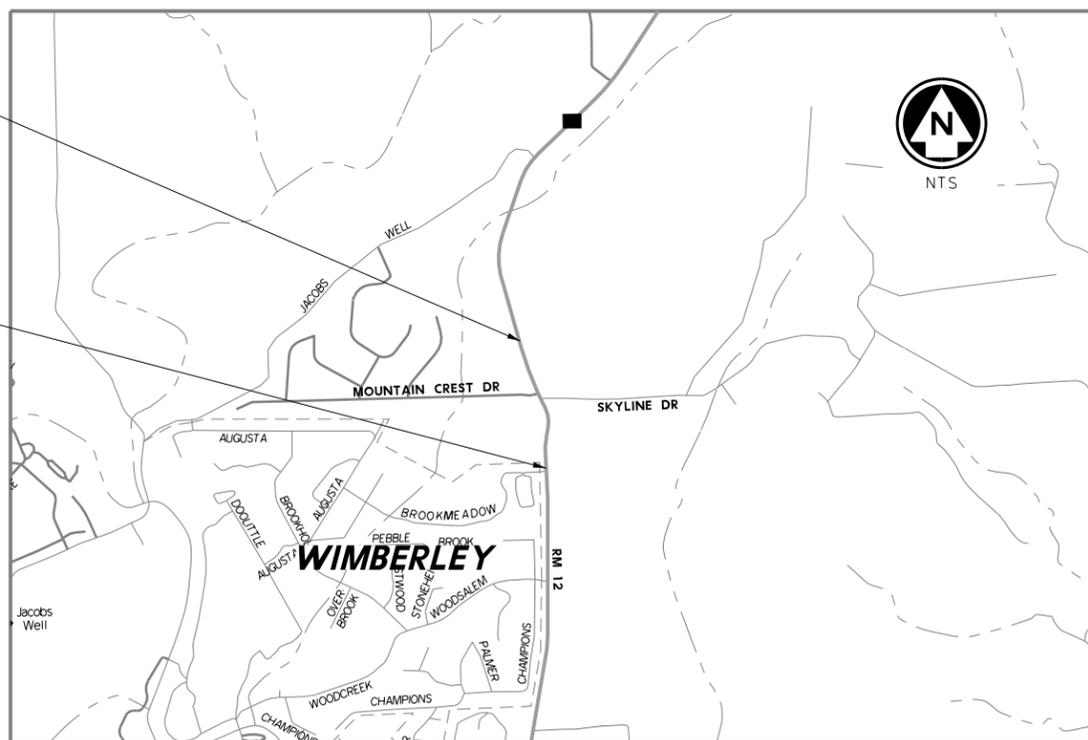
FOR THE CONSTRUCTION OF REHABILITATION OF EXISTING ROADWAY,  
WIDENING SHOULDERS, AND ADDING LEFT TURN LANES AT VARIOUS LOCATIONS.

END PROJECT

CSJ: 0683-03-045  
 STA 25+75.00  
 RM 458+0.382  
 MP 11.539

BEGIN PROJECT

CSJ: 0683-03-045  
 STA 3+40.00  
 RM 458+0.805  
 MP 11.962



EXCEPTIONS: NONE  
 EQUATIONS: NONE  
 RAILROAD CROSSINGS: NONE



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FED. RD. DIV. NO.	6	PROJECT NO.	X XXXX (XXX)	SHEET NO.	1
STATE	TEXAS	STATE DIST.	AUS	COUNTY	HAYS
CONT.	0683	SECT.	03	JOB	045
				HIGHWAY NO.	RM 12

CSJ: 0683-03-045 (RM 12)  
 TYPE OF WORK: REHABILITATE ROADWAY  
 HWY FUNCTION CLASS: MINOR ARTERIAL  
 MOUNTAIN CREST DR FUNCTIONAL CLASS: LOCAL ROAD  
 SKYLINE DR FUNCTIONAL CLASS: COLLECTOR  
 EMAX = 6%  
 DESIGN SPEED: 45 MPH (RM 12)  
 25 MPH (MOUNTAIN CREST DR)  
 30 MPH (SKYLINE DR)  
 ADT: 7,749 VPD (2022)  
 9,919 VPD (2042)

#### FINAL PLANS

DATE OF LETTING: \_\_\_\_\_  
 DATE WORK BEGAN: \_\_\_\_\_  
 DATE WORK COMPLETED AND ACCEPTED: \_\_\_\_\_  
 FINAL CONTRACT COST: \$ \_\_\_\_\_  
 CONTRACTOR: \_\_\_\_\_  
 LIST OF APPROVED CHANGE ORDERS: \_\_\_\_\_

THIS IS TO CERTIFY THAT THE CONSTRUCTION WORK WAS PERFORMED IN ACCORDANCE WITH THE PLANS, CONTRACT AND LISTED FIELD CHANGES.

\_\_\_\_\_ DATE  
 AREA ENGINEER

\_\_\_\_\_ DATE  
 HAYS COUNTY  
 TRANSPORTATION DIRECTOR



**BGE, Inc.**  
 1701 Directors Blvd., Suite 1000, Austin, TX 78744  
 Tel: 512-879-0400 • www.bgeinc.com  
 TBPE Registration No. F-1046

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SUBMITTED FOR LETTING: \_\_\_\_\_  
 \_\_\_\_\_  
 TRANSPORTATION ENGINEER

RECOMMENDED FOR LETTING: \_\_\_\_\_  
 \_\_\_\_\_  
 DISTRICT DESIGN ENGINEER

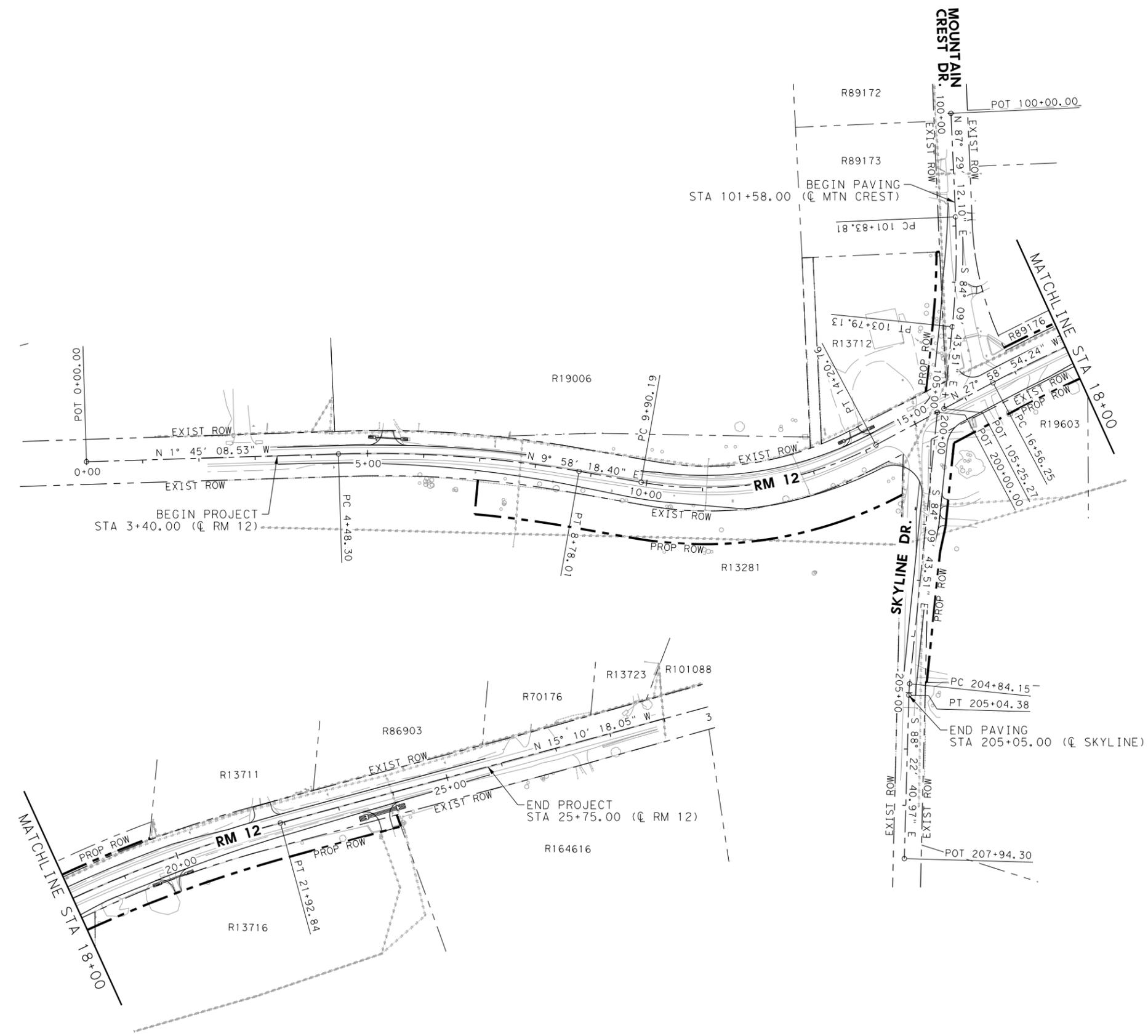
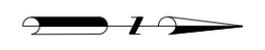
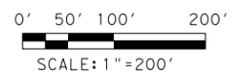
RECOMMENDED FOR LETTING: \_\_\_\_\_  
 \_\_\_\_\_  
 AREA ENGINEER

APPROVED FOR LETTING: \_\_\_\_\_  
 \_\_\_\_\_  
 DIRECTOR OF TRANSPORTATION,  
 PLANNING & DEVELOPMENT

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION ON SEPTEMBER 1, 2024 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, OCTOBER 2023).



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**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



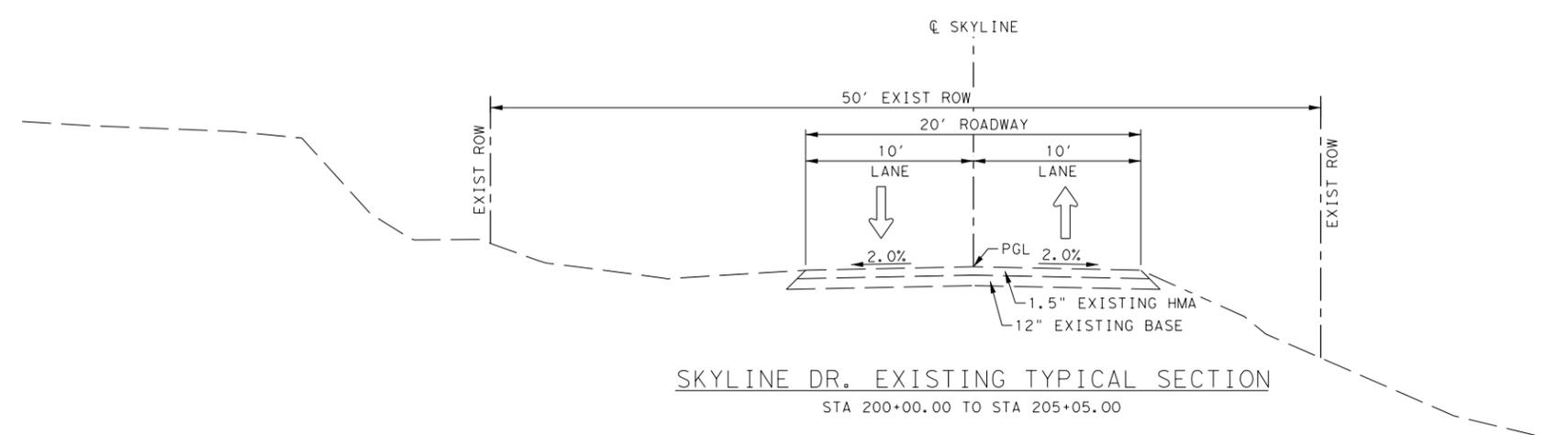
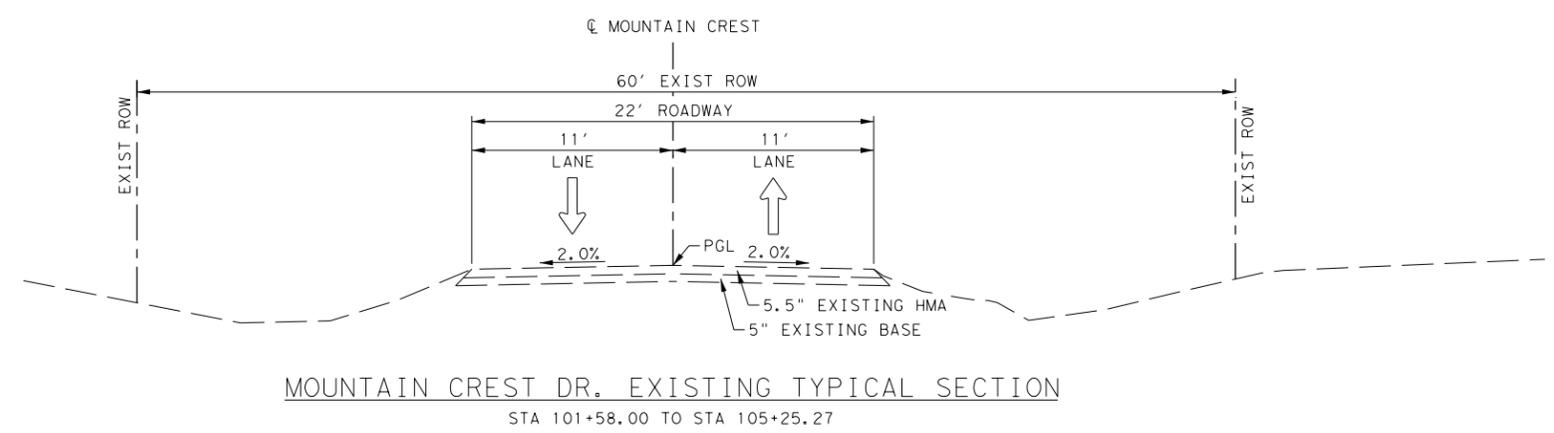
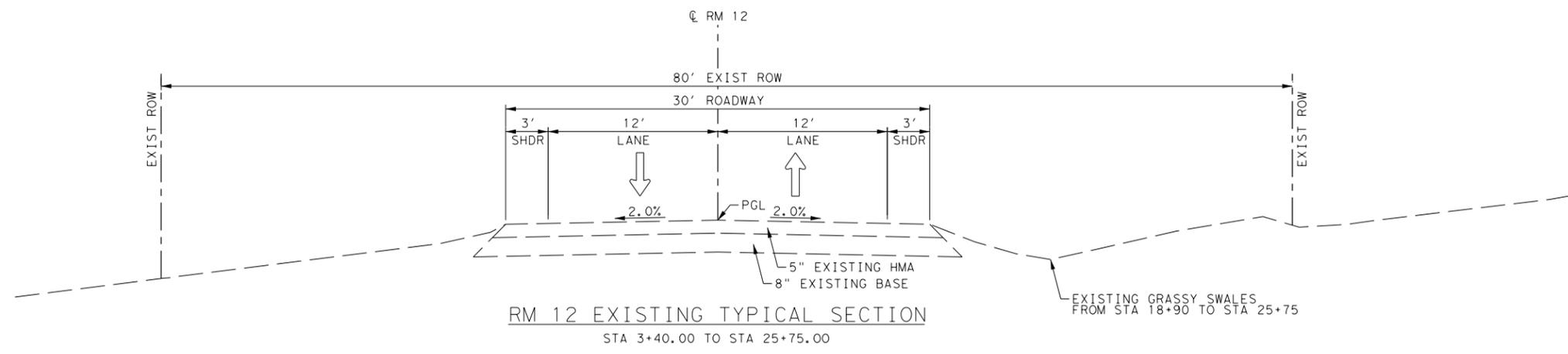
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 Tel: 512-879-0400 • www.bgeinc.com  
 TBPE Registration No. F-1046

**RM 12**  
**PROJECT LAYOUT**

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				3
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



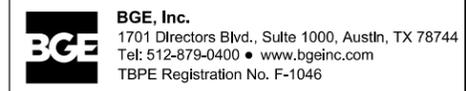
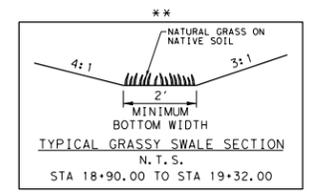
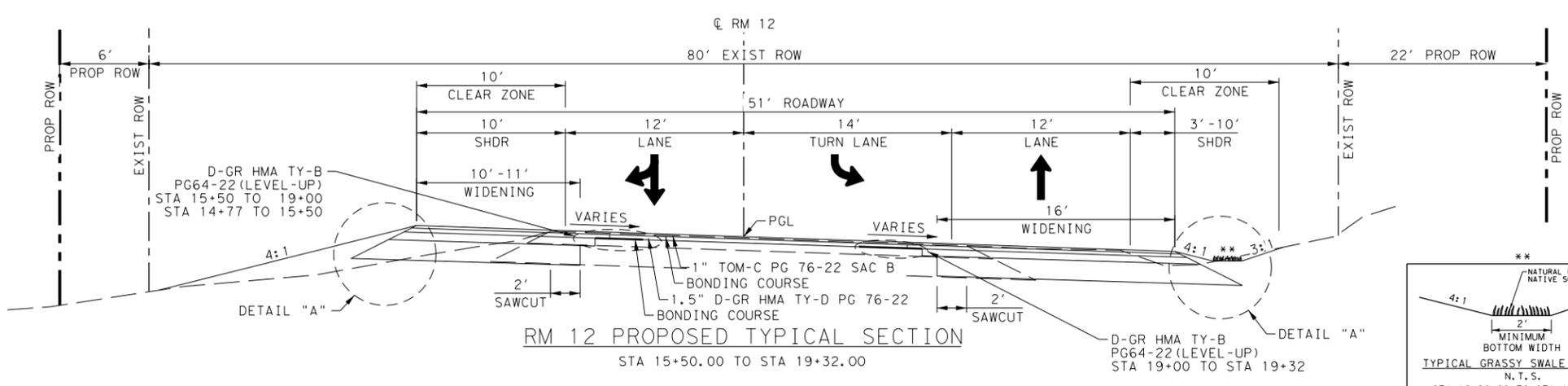
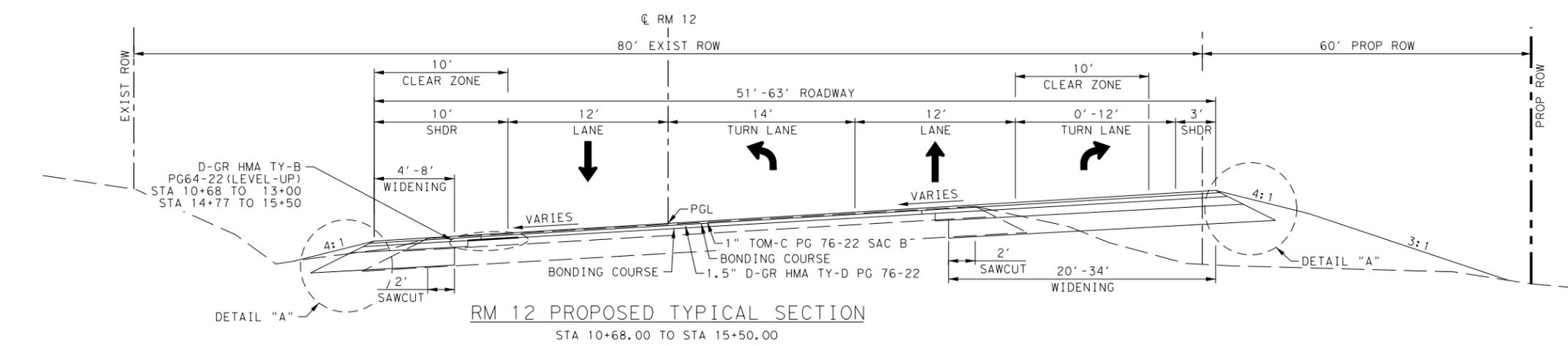
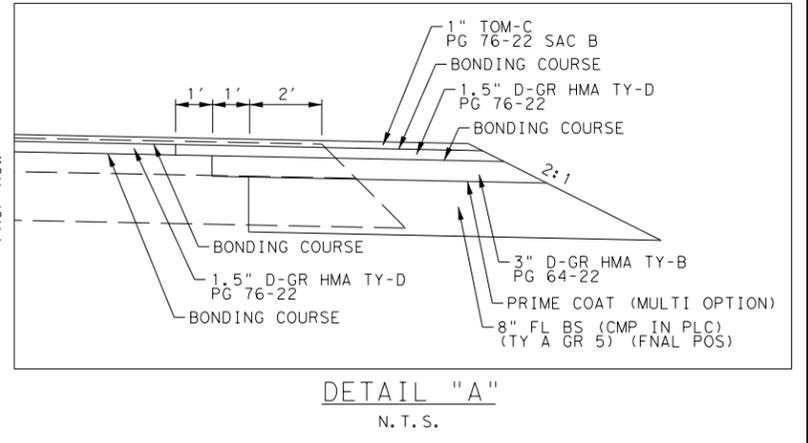
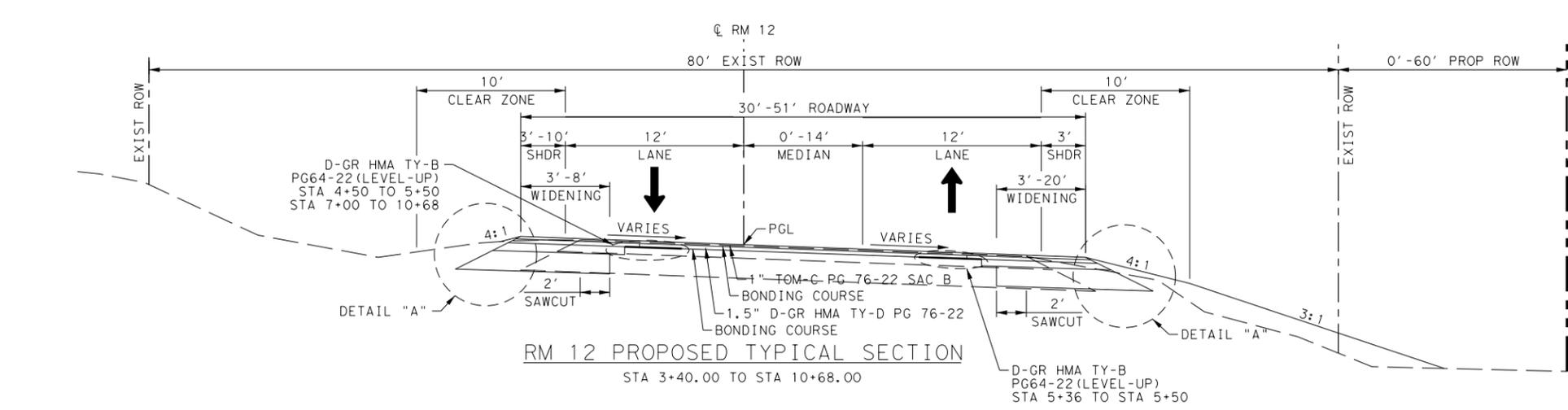
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**RM 12  
 EXISTING  
 TYPICAL SECTIONS**

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				
STATE	DIST.	COUNTY		4
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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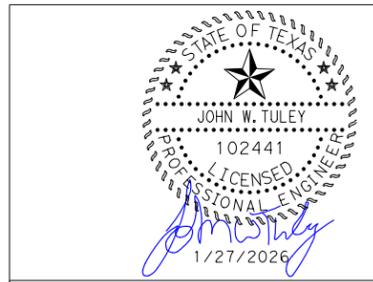
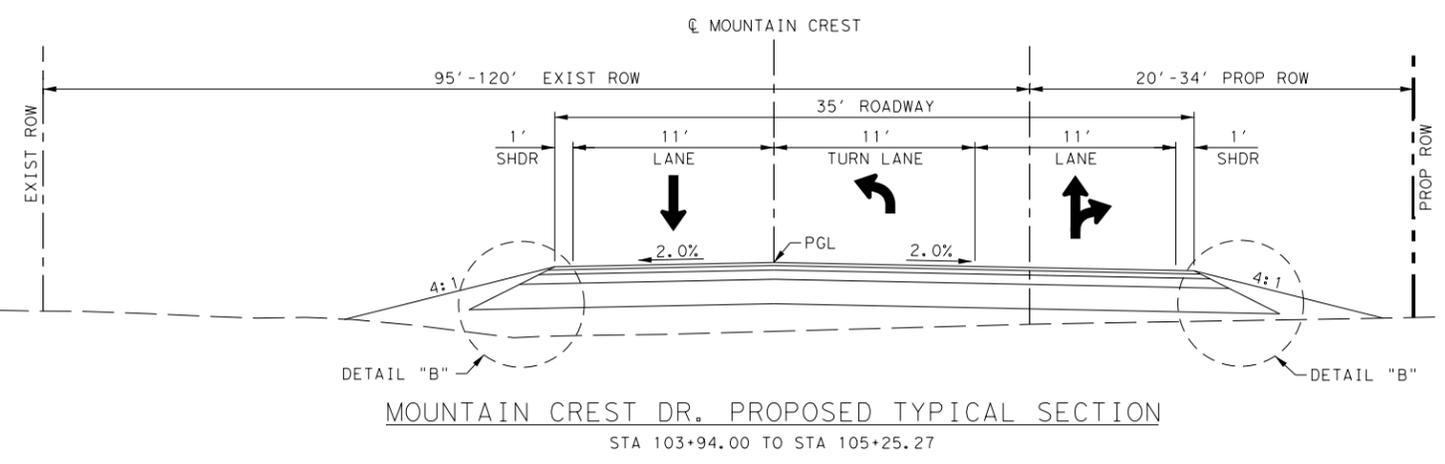
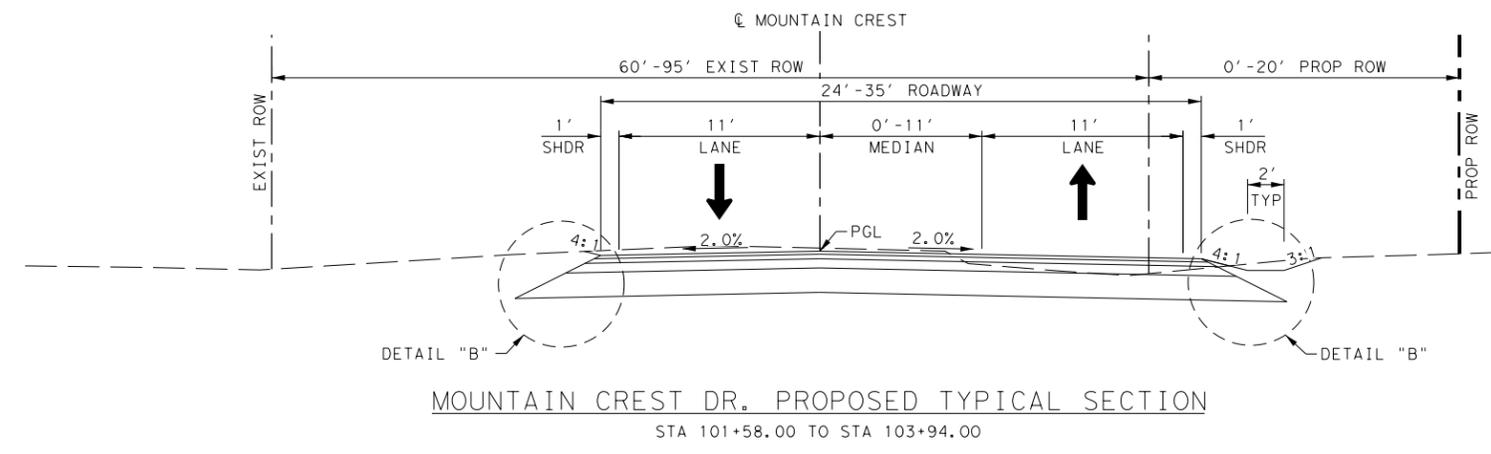
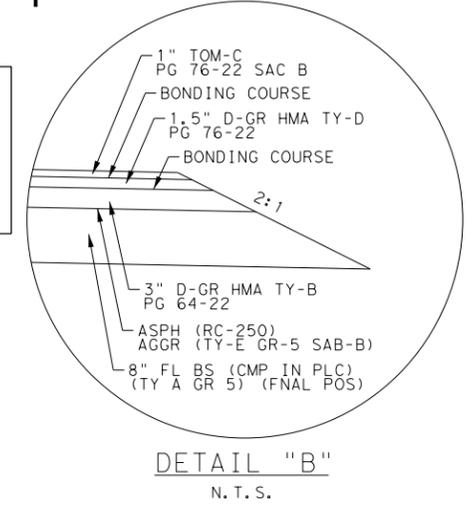
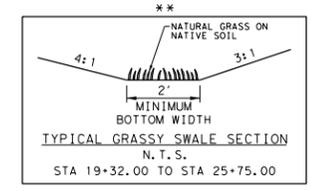
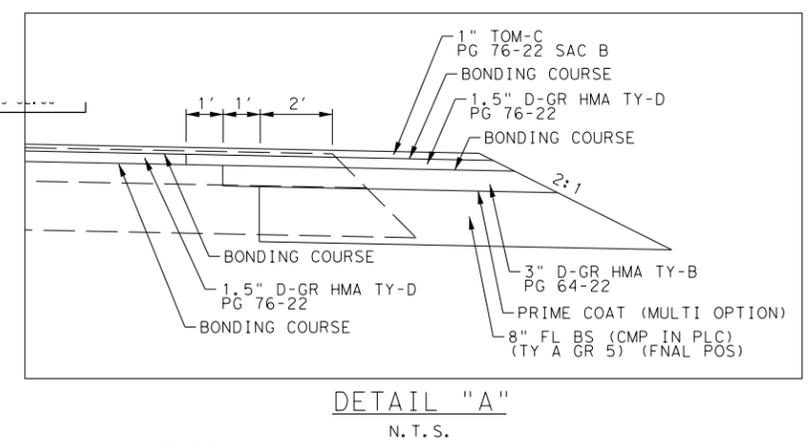
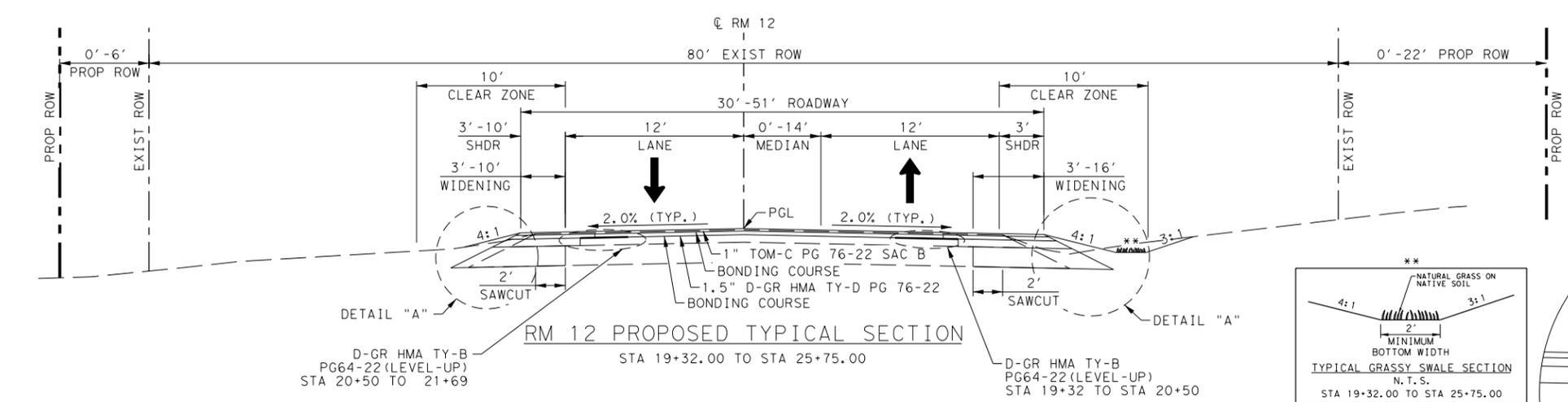


**RM 12  
PROPOSED  
TYPICAL SECTIONS**

SHEET 1 OF 3

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STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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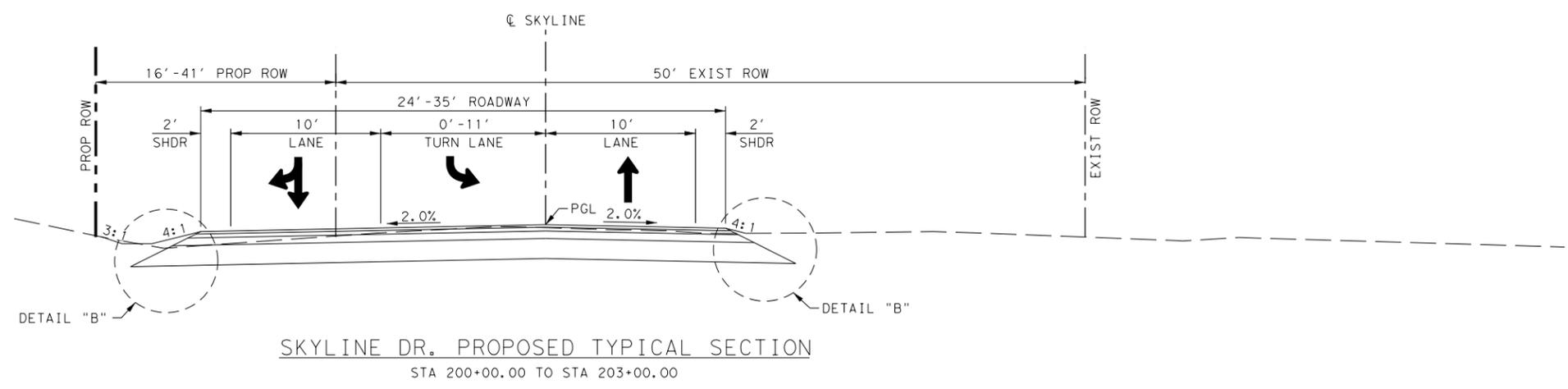
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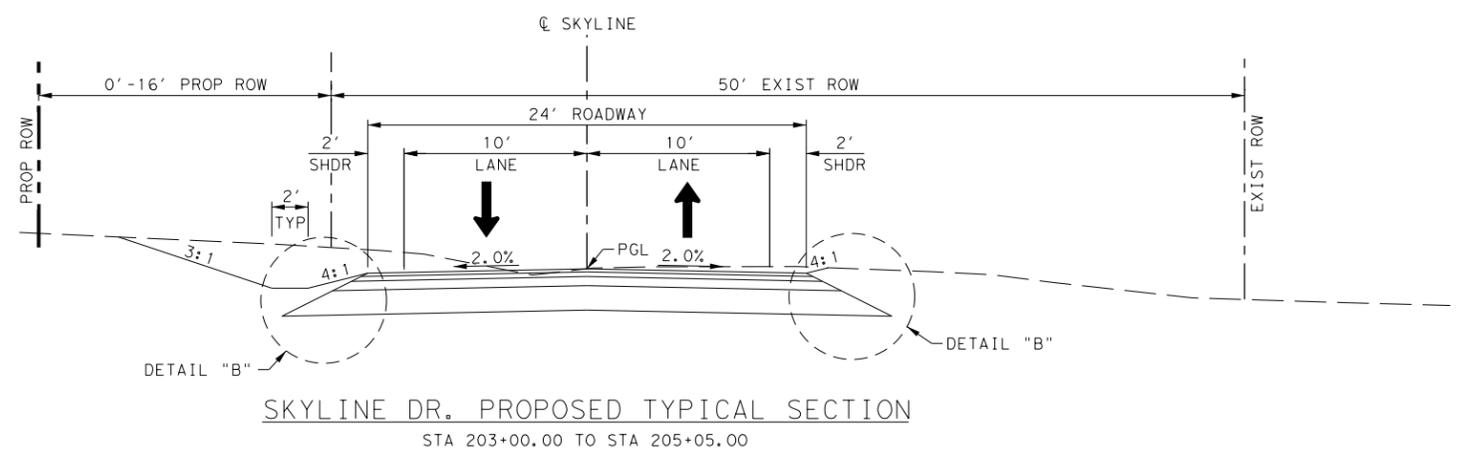
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RM 12 PROPOSED TYPICAL SECTIONS			
SHEET 2 OF 3			
FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
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STATE	DIST.	COUNTY	
TEXAS	AUS	HAYS	
CONT.	SECT.	JOB	HIGHWAY NO.
0683	03	045	RM 12

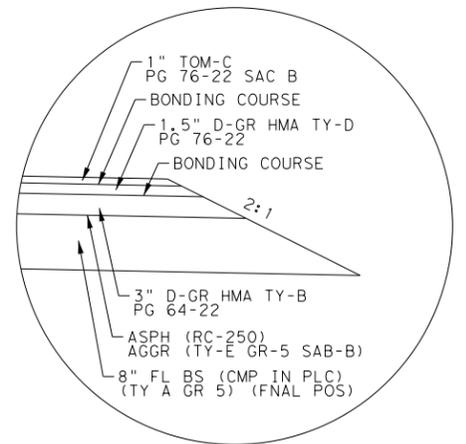
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SKYLINE DR. PROPOSED TYPICAL SECTION  
 STA 203+00.00 TO STA 205+05.00



DETAIL "B"  
 N. T. S.



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**RM 12  
 PROPOSED  
 TYPICAL SECTIONS**

SHEET 3 OF 3

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
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STATE	DIST.	COUNTY	
TEXAS	AUS	HAYS	
CONT.	SECT.	JOB	HIGHWAY NO.
0683	03	045	RM 12

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County: Hays  
 Highway: RM 12

Sheet:  
 Control: 0683-03-045

**GENERAL NOTES: Version: October 09, 2025**

Item	Description	**Rate
247	Flexible Base (CMP IN PLC)	132 LB/CF
310	Prime Coat	0.20 GAL/SY
341	Dense-Graded Hot-Mix Asphalt and Superpave	110 LB/SY/IN
347	Thin Overlay Mixtures (TOM)	
	SAC B	113.0 LB/SY/IN
	SAC A	116.0 LB/SY/IN
3007	Bonding Course	0.09 GAL/SY

\*\* For Informational Purposes Only

**GENERAL**

Contractor questions and requests for documents on this project are to be addressed to the following individual(s):

- South Austin [Orlando.Gallegos@txdot.gov](mailto:Orlando.Gallegos@txdot.gov)
- South Austin [Ivan.Baker@txdot.gov](mailto:Ivan.Baker@txdot.gov)
- Traffic [Mahendran.Thivakaran@txdot.gov](mailto:Mahendran.Thivakaran@txdot.gov)
- Traffic [Yetnavet.Bogale@txdot.gov](mailto:Yetnavet.Bogale@txdot.gov)

Questions and requests for documents will be accepted via the Letting Pre-Bid Q&A web page. All questions and any corresponding responses that are generated will be posted through the same Letting Pre-Bid Q&A web page. This webpage can be accessed from the Notice to Contractors dashboard located at the following Address:  
<https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors>

The Letting Pre-Bid Q&A web page for each project can be accessed by using 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 you want to view the Q&A for and click on the link in the window that pops up.

References to manufacturer's trade name or catalog numbers are for the purpose of identification only. Similar materials from other manufacturers are permitted if they are of equal quality, comply with the specifications for this project, and are approved.

If work is performed at Contractor's option, when inclement weather is impending, and the work is damaged by subsequent precipitation, the Contractor is responsible for all costs associated with replacing the work, if required.

The roadbed will be free of organic material prior to placing any section of the pavement structure.

Equip all construction equipment used in roadway work with highly visible omnidirectional flashing warning lights.

Provide a smooth, clean sawcut along the existing asphalt or concrete pavement structure, as directed. Consider subsidiary to the pertinent Items.

General Notes Sheet A

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Construct all manholes/valves to final pavement elevations prior to the placement of final surface. If the manholes/valves are going to be exposed to traffic, place temporary asphalt around the manhole/valve to provide a 50:1 taper. The asphalt taper is subsidiary to the ACP work.

Supply litter barrels in enough numbers at locations as directed to control litter within the project. Consider subsidiary to pertinent Items.

Keep the roadway free of debris and sediment caused by construction activities. Dispose of all material in accordance with federal, state, and local regulations. This work is subsidiary.

Damage to existing pipes and SET's due to Contractor operations will be repaired at Contractor's expense.

All locations used for storing construction equipment, materials, and stockpiles of any type, within the right of way, will be as directed. Use of right of way for these purposes will be restricted to those locations where driver sight distance to businesses and side street intersections is not obstructed and at other locations where an unsightly appearance will not exist. The Contractor will not have exclusive use of right of way but will cooperate in the use of the right of way with the city/county and various public utility companies as required.

Coordinate and obtain approval for all bridgework over existing roadways.

**ITEM 5 – CONTROL OF THE WORK**

**Thermoplastic Pipe Alternate Proposals**

When a reinforced concrete or corrugated metal pipe is included in the plans, a thermoplastic polypropylene pipe alternate may be submitted in a 2-phase process. 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.

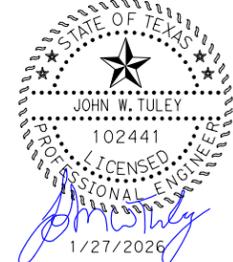
Phase 1 submit an official request to TxDOT PM with a summary of proposed locations, max depth of placement for each location, cover depth, and pipe diameters. TxDOT goal is to review and respond within 10 days. Phase 1 approval does not guarantee Phase 2 approval.

Phase 2 submit the following documents with all documents signed and sealed by a licensed Engineer in the state of Texas. 1-Provide a redline or revised set of drainage plans reflecting the revised locations. 2-Provide certification that the use of the alternate pipe and proposed bedding are adequate for the proposed application, depth, etc. 3-Provide a completed thermoplastic pipe installation drawing using the following,

<https://www.dot.state.tx.us/insdot/orgchart/cmd/cserve/standard/bridge-e.htm>

For all uses of thermoplastic pipe as an alternate, furnish, install, and inspect the thermoplastic pipe in accordance with Item 468 or latest thermoplastic pipe special specification at time of letting. Minimum values, such as cover depth, required by the specification, installation drawing, etc. will not be waived. Use granular backfill unless flowable fill or CSB is required by the

General Notes Sheet B



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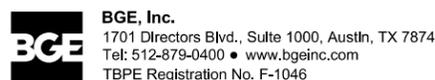
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**RM 12**

**GENERAL NOTES**

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FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				8
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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County: Hays Highway: RM 12 Sheet: Control: 0683-03-045

alternate design. Backfill locations shown in the bid plans using flowable fill or CSB must use the backfill per the bid plans.

**Electronic Shop Drawing Submittals.**  
 Submit electronic shop drawing submittals according to the current Guide to Electronic Shop Drawing Submittal which can be found online at, <https://www.txdot.gov/business/resources/highway/bridge/shop-drawing-submittal-cycle.html>.

Pre-approved producers can be found online at, <https://www.txdot.gov/business/resources/materials/material-producer-list.html>.

Use the following contact list for all submittals that are not required to be sent to Bridge Division and to copy the Engineer for all submittals to the Bridge Division.

**Submittal Contact List**  
 South Austin [Ivan.Baker@txdot.gov](mailto:Ivan.Baker@txdot.gov) [AUS\\_SA-ShopReview@txdot.gov](mailto:AUS_SA-ShopReview@txdot.gov)  
 Traffic Operations [Cory.Jucius@txdot.gov](mailto:Cory.Jucius@txdot.gov)  
 Traffic Operations [Sridhar.Ramaivengar@txdot.gov](mailto:Sridhar.Ramaivengar@txdot.gov)

**ITEM 6 - CONTROL OF MATERIALS**  
 Give a minimum of 1 business day notice for materials, which require inspection at the Plant.

**Storage of Material Near Structures**  
 Do not store equipment or flammable material within 100 ft. of bridges, culverts, or near their openings (portals). Flammable materials include all material that is not metal or aluminum.

**Form/Falsework Removal Strength Testing**  
 Request additional compressive strength samples for removal of forms and falsework. Projects with more than 500 CY of structural class concrete, a flat fee of \$50.00 per sample will be reimbursed to the Department by a deduction from the Contractor's monthly pay estimate.

**ITEM 7 - LEGAL RELATIONS AND RESPONSIBILITIES**  
 Roadway closures during key dates, significant traffic generators, and/or special events are prohibited. See notes for Item 502 for the key dates and/or special events.

Refer to the Environmental Permits, Issues and Commitments (EPIC) plan sheets for additional requirements and permits.

When any abandoned well is encountered, cease construction operations in this area and notify the Engineer who will coordinate the proper plugging procedures. A water well driller licensed in the State of Texas must be used to plug a well.

Maintain positive drainage for permanent and temporary work for the duration of the project. Be responsible for any items associated with the temporary or interim drainage and all related maintenance. This work is subsidiary.

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Suspend all activities near any significant recharge features, such as sinkholes, caves, or any other subterranean openings that are discovered during construction or core sampling. Do not proceed until the designated Geologist or TCEQ representative is present to evaluate and approve remedial action.

Locate aboveground storage tanks kept on-site for construction purposes in a contained area as to not allow any exposure to soils. The containment will be sized to capture 150% of the total capacity of the storage tanks.

**PSL in Edwards Aquifer Recharge and Contributing Zone.**  
 Obtain written approval from the Engineer for all on or off right of way PSLs not specifically addressed in the plans. Provide a signed sketch of the location 30 business days prior to use of the PSL. Include a list of materials, equipment and portable facilities that will be stored at the PSL. TxDOT will coordinate with the necessary agencies. Approval of the PSL is not guaranteed. Un approved PSL is not a compensable impact.

**Work within a USACE Jurisdictional Area.**  
 Do not initiate activities within a U.S. Army Corps of Engineers (USACE) jurisdictional area that have not been previously evaluated by the USACE as part of the permit review of this project. Such activities include, but are not limited to, haul roads, equipment staging areas, borrow and disposal sites. Obtain written approval from the Engineer for activities not specifically addressed in the plans. Provide a signed sketch and description of the location 60 business days prior to begin work at the location. Complete and return any forms provided by TxDOT. Approval of the work is not guaranteed. Un approved work is not a compensable impact.

**Work over or near Bodies of Water (lakes, rivers, ponds, creeks, dry waterways, etc.).**  
 Keep on site a universal spill kit adequate for the body of water and the work being performed. Debris is not allowed to fall into the ordinary high-water level (OHWL). Debris that falls into the OHWL must be removed at the end of each workday. Debris that falls into the floodway must be removed at the end of each work week or prior to a rain event. When not in use and at the end of each work shift, all material and equipment must be stored more than 100 ft. away from the ordinary high-water mark. This work is subsidiary.

Install and maintain traffic control devices to maintain a navigable corridor for water traffic. Install devices to restrict water traffic during bridge demo and beam placement. This work is subsidiary.

Prior to begin construction, install construction fence, silt fence, rock filter dam, or other temporary barrier from ROW to ROW at a distance 25 feet from the OHWL. This barrier is used to deter construction equipment and personnel from accessing the waterway. Use items that exist in the plans to create the barrier. If items do not exist, payment will be paid using force account in accordance with Item 9.7, "Payment for Extra Work and Force Account Method." Sections of the barrier may be removed and replaced to access the work shown on the plans. Upon completion of the work located within the barrier, the barrier must be restored ROW to ROW and remain until the project is complete.

General Notes Sheet D

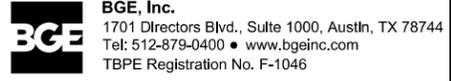




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**RM 12**

**GENERAL NOTES**

SHEET 2 OF 11

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				8A
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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Equipment is not allowed to access the area below the OHWL. If allowed to access the area below the OHWL, provide a 14-calendar day notice to the Engineer prior to accessing the water with equipment. Provide a sketch of the pad that will be placed in the water to support the equipment. The pad should be made of 3 in. x 5 in. rock or other material that can be removed when the work is complete. All pads thicker than 2 ft. shall be enclosed by portable concrete traffic barrier to help contain the material. This work is subsidiary.

Equipment is not allowed to cross the waterway from bank to bank. If allowed to cross the water, provide a 14-calendar day notice to the Engineer prior to installing a temporary crossing. The crossing shall be constructed in accordance with the AUS district temporary stream crossing detail. Temporary crossing may not remain in place longer than 12 months unless approved by the Engineer. All work that utilizes the temporary crossing must be completed within 12 months. This work is subsidiary.

Birds and bats may be nesting within the project limits and concentrated on roadway structures such as bridges and culverts. Remove all old and unoccupied migratory bird nests from any structures, trees, etc. between September 16 and February 28. Prevent migratory birds from nesting between March 1 and September 15. Prevention shall include all areas within 25 ft. of proposed work. All methods used for the removal of old nesting areas and the prevention of re-nesting must be submitted to TxDOT 30 business days prior to begin work. This work is subsidiary.

If active nests are encountered on-site during construction, all construction activity within 25 ft. of the nest must stop. Contact the Engineer to determine how to proceed.

**Tree and Brush Trimming and Removal.**

Work will be conducted September 16 thru February 28. Work conducted outside this timeframe will require a bird survey. Submit a survey request to TxDOT 30 business days prior to begin work.

If within the removal time period, removal work may be conducted during delayed start period using proper traffic control per TCP standards.

Upon begin removal operations, all removal work for the project must be completed within 21 calendar days. Completion of removal includes removing from ROW or mulching of all debris. No extension of time or compensation will be granted for a delay or suspension due to the above bird, bat, and tree/brush requirements.

**Law Enforcement Personnel.**

Submit charge summary and invoices using the Department forms. Patrol vehicles must be clearly marked to correspond with the officer's agency and equipped with appropriate lights to identify them as law enforcement. For patrol vehicles not owned by a law enforcement agency, markings will be retroreflective and legible from 100 ft. from both sides and the rear of the vehicle. Lights will be high intensity and visible from all angles.

General Notes

Sheet E

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No payment will be made for law enforcement personnel needed for moving equipment or payment for drive time to/from the event site. A minimum number of hours is not guaranteed. Payment is for work performed. If the Contractor has a field office, provide an office location for a supervisory officer when event requires a supervising officer. This work is subsidiary.

A maximum combined rate of \$85 per hour for the law enforcement personnel and the patrol vehicle will be allowed. Any scheduling fee is subsidiary per Standard Specification 502.4.2.

Cancel law enforcement personnel when the event is canceled. Cancellation, minimums or "show up" fees will not be paid when cancellation is made 12 hours prior to beginning of the event. Failure to cancel within 12 hours will not be cause for payment for cancellation, minimums, or "show up" time. Payment of actual "show up" time to the event site due to cancellation will be on a case-by-case basis at a maximum of 2 hours per officer.

Alterations to the cancellation and maximum rate must be approved by the Engineer or pre-determined by official policy of the officer's governing authority.

**Illumination Exterior/Outdoor assemblies for PSL and Field Office**

Illumination must use TxDOT approved roadway illumination assemblies or a light with a IESNA TM-15-11 BUG rating with an up light value of U0.

**Back Up Alarm.**

For hours 9 P to 5 A, utilize a non-intrusive, self-adjusting noise level reverse signal alarm. This is not applicable to hotmix or seal coat operations. This is subsidiary.

**General Design and Construction BMP**

Employees and contractors will be provided information prior to start of construction to educate personnel of the potential for all state-listed threatened species or other SGCN to occur within the project area and should be advised of relevant rules and regulations to protect plants, fish, and wildlife.

Contractors will be informed to avoid harming all wildlife species if encountered and allow them to safely leave the project site. Due diligence should be used to avoid killing or harming any wildlife species in the implementation of transportation projects.

Apply hydromulching and/or hydroseeding in areas for soil stabilization and/or revegetation of disturbed areas around wetlands and in riparian areas.

If erosion control blankets or mats will be used, the product should not contain netting, but should only contain loosely woven natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. Plastic netting should be avoided.

Project staging areas, stockpiles, temporary construction easements, and other project related sites

General Notes

Sheet F



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**RM 12**  
**GENERAL NOTES**

SHEET 3 OF 11

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14				8B
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
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**Highway:** RM 12

**Sheet:**  
**Control:** 0683-03-045

should be situated in previously disturbed areas to avoid or minimize impacts to sensitive or unique habitats including intact native vegetation, floodplains, riparian corridors, wetlands, playa lakes, and habitat for wildlife species.

When lighting is added, consider wildlife impacts from light pollution and incorporating dark-sky practices into design strategies. Minimize sky glow by focusing light downward, with full cutoff luminaries to avoid light emitting above the horizontal. The minimum amount of night-time lighting needed for safety and security should be used.

**Vegetation BMP**

Minimize the amount of vegetation cleared. Removal of native vegetation, particularly mature native trees and shrubs should be avoided. Impacted vegetation should be replaced with in-kind on-site replacement/restoration of native vegetation.

To minimize adverse effects, activities should be planned to preserve mature trees, particularly acorn, nut or berry producing varieties. These types of vegetation have high value to wildlife as food and cover.

It is strongly recommended that trees greater than 12 inches in diameter at breast height (DBH) that are removed be replaced. TPWD's experience indicates that for ecologically effective replacement, a ratio of three trees for every one (3:1) lost should be provided to either on-site or off-site. Trees less than 12 inches DBH should be replaced at a 1:1 ratio.

Replacement trees should be of equal or better wildlife quality than those removed and be regionally adapted native species.

When trees are planted, a maintenance plan that ensures at least an 85 percent survival rate after three years should be developed for the replacement trees.

The use of any non-native vegetation in landscaping and revegetation is discouraged. Locally adapted native species should be used.

The use of seed mix that contains seeds from only regional ecotype native species is recommended.

**Invasive Species BMP**

Care should be taken to prevent the spread of aquatic and terrestrial invasive plants during construction activities. Educate contractors on how to identify common invasive plants and the importance of proper equipment cleaning, transport, and disposal of invasive plants in a manner and location that prevents spread when invasive plants are removed during construction.

Colonization by invasive plants should be actively prevented on disturbed sites in terrestrial habitats. Vegetation management should include removing or chemically treating invasive species as soon as practical while allowing the existing native plants to revegetate the disturbed

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areas; repeated removal or treatment efforts may be needed. Only native or non-invasive plants should be planted. Care should be taken to avoid mowing invasive giant reed (*Arundo donax*), which spreads by fragmentation, and to clean equipment if inadvertently mowed to prevent spread. If using hay bales for sediment control, use locally grown weed-free hay to prevent the spread of invasive species. Leave the hay bales in place and allow them to break down, as this acts as mulch assisting in revegetation.

**Bird BMP**

In addition to complying with the Migratory Bird Treaty Act (MBTA) and Chapter 64 of the Parks and Wildlife Code (PWC) regarding nongame bird protections, perform the following BMP:

Avoid vegetation clearing activities during the general bird nesting season, March through August, to minimize adverse impacts to birds.

Prior to construction, perform daytime surveys for nests including under bridges and in culverts to determine if they are active before removal. Nests that are active should not be disturbed. If active nests are observed during surveys, TPWD recommends a 150-foot buffer of vegetation remain around the nests until the young have fledged or the nest is abandoned.

Do not disturb, destroy, or remove active nests, including ground nesting birds, during the nesting season.

If unoccupied, inactive nests will be removed, ensure that nests are not protected under the Endangered Species Act (ESA), MBTA, or BGEPA.

Prevent the establishment of active nests during the nesting season on TxDOT owned and operated facilities and structures proposed for replacement or repair.

Do not collect, capture, relocate, or transport birds, eggs, young, or active nests without a permit.

Minimize extended human presence near nesting birds during construction and maintenance activities. Protect sensitive habitat areas with temporary barriers or fencing to limit human foot-traffic and off-road vehicle use to alert and discourage contractors from causing any unintentional impacts.

Minimize construction noise above ambient levels during general bird nesting season to minimize adverse impacts on birds.

Minimize construction lighting during the general bird nesting season by scheduling work activities between dawn and dusk.

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**Terrestrial Amphibian and Reptile BMP**

For open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Visually inspect excavation areas for trapped wildlife prior to Backfilling.

Avoid or minimize disturbing or removing cover objects, such as downed trees, rotting stumps, brush piles, and leaf litter. If avoidance or minimization is not practicable, consider removing cover objects prior to the start of the project and replace them at project completion.

Examine heavy equipment stored on site before use, particularly after rain events when reptile and amphibian movements occur more often, to ensure use will not harm individuals that might be seeking temporary refuge.

Due to increased activity (mating) of reptiles and amphibian during the spring, construction activities like clearing or grading should attempt to be scheduled outside of the spring (March-May) season. Also, timing ground disturbing activities before October when reptiles and amphibians become less active and may be using burrows in the project area is also encouraged.

**ITEM 100 - PREPARING RIGHT OF WAY**

Prep ROW must not begin until accessible trees designated for preservation have been protected, items listed in the EPIC have been addressed, and SWP3 controls installed in accessible areas.

Backfill material will be Type B Embankment using ordinary compaction.

Follow Item 752.4 Work Methods and Item 752 general notes when removing or working on or near trees and brush.

Unless shown otherwise in the plans or a designated non-mow area, perform trimming or removal for areas within 30 ft. of edge of pavement under construction. Trim or remove to provide minimum of 5 ft. of horizontal clearance and 7 ft. of vertical clearance for the following: sidewalks, paths, guard fence, rails, signs, object markers, and structures. Trim to provide a minimum of 14 ft. vertical clearance under all trees. This work is subsidiary.

**ITEM 110 - EXCAVATION**

The Engineer will define unsuitable material.

**ITEM 132 - ALL EMBANKMENT**

The Engineer will define unsuitable material. Material which the Contractor might deem to be unsuitable due to moisture content will not be considered unsuitable material.

Prior to begin embankment of existing area, correct or replace unstable material to a depth of 6 in. below existing grade. Embankment areas will be inspected prior to beginning work.

Rock or broken concrete produced by the project is allowed in earth embankments. The size of the rock or broken concrete will not exceed the layer thickness requirements in Section 132.3.4.,

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“Compaction Methods.” The material will not be placed vertically within 5 ft. of the finished subgrade elevation.

Embankment placed vertically within 5 ft. of the finished subgrade elevation or within the edges of the subgrade and treated with lime, cement, or other calcium-based additives must have a sulfate content less than 3000 ppm. Allow 5 business days for testing. Treatment of sulfate material 3000 ppm to 7000 ppm requires 7 days of mellowing and continuous water curing, in accordance TxDOT guidelines for Treatment of Sulfate-Rich Soils and Bases in Pavement Structures (9/2005). Material over 7000 ppm is not allowed.

**ITEM 132 - EMBANKMENT TY C**

The Department must approve all Type C embankment material before use on the project. Do not furnish shale clays. Furnish embankment with sulfate content less than 3000 ppm if treated with calcium-based chemicals or within 5 ft. of the finished subgrade elevation. Existing material from within the project limits that meets the Type C Substitute requirements may be substituted for Type C but is not allowed to substitute for C1, C2, or density-controlled material. Offsite material may be used to blend with onsite material to achieve the Type C requirements. The Type C substitute may also be existing material in accordance with 132 for rock embankment. The Type C substitute material may only be placed vertically beyond 5 ft. below the finished subgrade elevation or 5 ft. beyond the edge of the subgrade.

Type C				
Percent Retained	LL	PI	PI	
3"	#4	Max	Max	Min
0	MIN 45	55	20	6
Type C Substitute				
Percent Retained		PI		
3"	#4	Max		
Max 10	10-90	25		

Description	Percent Retained					LL	PI	PI
	3"	1 3/4"	3/8"	#4	#40			
Embankment (Ordinary) (TY C1)	0	0-10	-	45-75	60-85	45	20	6
Embankment (Ordinary) (TY C2)	-	-	0	30-75	50-85	55	25	8

**ITEM 164 - SEEDING FOR EROSION CONTROL**

Hydro mulch seeding will be allowed as a substitute for drill seeding if placed October 1 thru January 31. It may only be substituted in areas with a slope less than 1 in. vertical to 12 in. horizontal. It may not be used in the bottom of a ditch or channel. Payment will be made using the existing drill seed item.

**ITEM 168 - VEGETATIVE WATERING**

Water all areas of project to be seeded or sodded.

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Maintain the seedbed in a condition favorable for the growth of grass. Watering can be postponed immediately after a rainfall on the site of 1/2 inch or greater but will be resumed before the soil dries out. Continue watering until final acceptance.

Vegetative watering rates and quantities are based on 1/4 inch of watering per week over a 3-month watering cycle. The actual rates used and paid for will be as directed and will be based on prevailing weather conditions to maintain the seedbed.

Obtain water at a source that is metered (furnish a current certification of the meter being used) or furnish the manufacturer's specifications showing the tank capacity for each truck used. Notify the Engineer, each day that watering takes place, before watering, so that meter readings or truck counts can be verified.

**ITEM 169 – SOIL RETENTION BLANKETS**

Type A blankets containing straw fibers are not allowed. Type B and D blankets shall be a spray type blanket.

**ITEM 204 – SPRINKLING**

Apply dust control to haul roads, construction traffic routes, staging areas, field office areas, material storage areas, parking areas, and stockpiles as directed. If dust control is not being maintained, the Department may cease operations until dust is controlled.

**ITEM 247 - FLEXIBLE BASE**

The layer thickness will be 4 in. to 6 in. unless shown on the plans. Placing in a single layer is allowed when total thickness of base is 8 in. or less. When placed in multiple layers, compact the bottom and middle layers to at least 95% and 98% of the maximum dry density, respectively. When placed in a single layer or the final layer, compact to at least 100%.

Complete per plans the subgrade, ditches, slopes, and drainage structures prior to the placement of base.

Do not use a vibratory roller to compact base placed directly on top of a drainage structure.

**ITEM 300s – SURFACE COURSES AND PAVEMENTS**

For seal coat applications: Asphalt cements, cutback, performance-graded asphalt season is May 1 thru September 15. Emulsified asphalt season is April 1 thru October 15.

The latest work start date for asphalt season is August 1 when a date is required per special provision to Item 8.1.

Overlay and seal coat projects must include placement of surface material on the existing mailbox turnouts, including turnouts that are worn paths without a pavement structure. Apply a new surface and material as necessary to create a mailbox turnout with a cross slope that matches the adjacent pavement. Payment of work will be in accordance with the item for the type of material placed. If no bid item for payment is provided in the Contract, the work will be

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measured and paid for in accordance with Article 9.7., "Payment for Extra Work and Force Account Method."

**ITEM 310 – PRIME COAT**

Apply blotter material to all driveways and intersections. This work is subsidiary.

When Multi Option is allowed, provide MC 30, EC 30 or AE-P. MC 30 is not allowed in Travis County.

Rolling to ensure penetration is required.

**ITEMS 341 THRU 348 - HOT-MIX ASPHALT PAVEMENT**

Core holes may be filled with an Asphaltic patching material meeting the requirements of DMS-9203 or with SCM meeting requirements of DMS-9202.

Remove and dispose of off the ROW the audible/profile markings, reflectorized markings, and raised markers.

Install transverse butt joints with 50 ft. H: 1 in. V transition from the new ACP to the existing surface. Install a butt joint with 24 in. H: 1 in. V transition from the new ACP to a driveway, pullout or intersection. Saw cut the existing pavement at the butt joints. This work is subsidiary.

Use a device to create a maximum 3H:1V notched wedge joint on all longitudinal joints of 2 in. or greater. This work is subsidiary.

Prior to milling, core the existing pavement to verify thickness. This work is subsidiary.

Ensure placement sequence to avoid excess distance of longitudinal joint lap back not to exceed one day's production rates.

Submit any proposed adjustments or changes to a JMF before production of the new JMF. Tack every layer. Do not dilute tack coat. Apply it evenly through a distributor spray bar.

Provide a minimum transition of 10-ft for intersections, 10-ft for commercial driveways, and 6-ft for residential driveways unless otherwise shown on the plans.

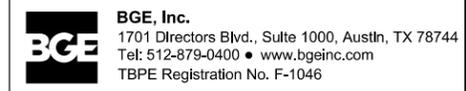
Irregularities will require the replacement of a full lane width using an asphalt paver. Replace the entire subplot if the irregularities are greater than 40% of the subplot area.

Lime or an approved anti-stripping agent must be used when crushed gravel is utilized to meet a SAC "A" requirement.

When using RAP or RAS, include the management methods of processing, stockpiling, and testing the material in the QCP submitted for the project. If RAP and RAS are used in the same mix, the QCP must document that both of these materials have dedicated feeder bins for each recycled material. Blending of RAP and RAS in one feeder bin or in a stockpile is not permitted.

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Asphalt content and binder properties of RAP and RAS stockpiles must be documented when recycled asphalt content greater than 20% is utilized.

No RAS is allowed in surface courses.

Department approved warm-mix additives is required for all surface mix application when RAP is used. Dosage rates will be approved during JMF approval.

The Hamburg Wheel Test will have a minimum rut depth of 3mm except for SMA with HPG or PG 76.

**ITEMS 341 - DENSE-GRADED HOT-MIX ASPHALT**

Design all Type D mixtures as a surface mix, maximum 15% RAP, and without RAS.

For all mix types, contractor may not use a substitute PG binder for 76-22. When using substitute binders, mold specimens for mix design and production at the temperature required for the substitute binder used to produce the HMA.

The Hamburg Wheel minimum number of passes for PG 64 or lower is reduced to 7,000. The Engineer may accept Hamburg Wheel test results for production and placement if no more than 1 of the 5 most recent tests is below the specified number of passes and the failing test is no more than 2,000 passes below the specified number of passes.

**ITEMS 347 - THIN OVERLAY MIXTURES (TOM)**

Provide informational shear bond strength testing in accordance with Item 341.

For SAC A, blending SAC B aggregate with an RSSM greater than the SAC A rating or 10, whichever is greater, is prohibited.

Produce mixture with a Department approved WMA additive or process to facilitate compaction when the haul distance is greater than 40 miles or when the air temperature is 70°F and falling. WMA processes such as water or foaming processes are not allowed under these circumstances.

**ITEM 351 - FLEXIBLE PAVEMENT STRUCTURE REPAIR**

Unless otherwise shown on the plans, use the AUS District Flexible Pavement Details found at [www.txdot.gov/about/districts/austin-district/district-standards.html](http://www.txdot.gov/about/districts/austin-district/district-standards.html).

**ITEM 354 - PLANING AND TEXTURING PAVEMENT**

Contractor retains ownership of salvaged materials.

Unless shown on the plans, mill and resurface the work area during each shift on roadways with ADT greater than 20,000 or if milling will expose the flex base or subgrade per the typical section. Unless shown on the plans, mill and resurface a work area within 5 days for roadways with ADT 20,000 or less.

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Taper permanent transverse faces 50 ft. per 1 in. Taper temporary transverse faces 25 ft. per 1 in. Taper permanent longitudinal faces 6 ft. per 1 in. HMA may be used as temporary tapers. Provide minimum 1 in. butt joints at bridge ends and paving ends. This work is subsidiary. Milled surfaces directly covered by a mat thickness of 1 in. or less shall produce a milled texture with a ridge to valley depth (RVD) no greater than 0.25 in. (6.5 mm).

**ITEM 416 - DRILLED SHAFT FOUNDATIONS**

Stake all Foundations, for approval, before beginning drilling operations.

Calculate the vertical signal head clearance before placing any signal pole foundation.

Obtain approval of placement prior to placing concrete.

Remove spoils from a flood plain at the end of each workday.

**ITEM 467 - SAFETY END TREATMENT**

Field adjust pipe end to maintain the necessary slope. Field cutting of pipe end is allowed. Coat all metal field cuts or exposed reinforcement with asphalt paint.

For all Type II SETs, provide riprap apron shown in the cast-in-place standards and precast riprap detail standard. This work is subsidiary.

Cast-in-place or precast will be allowed unless stated otherwise.

**ITEM 496 - REMOVING STRUCTURES**

Submit a demolition plan to the Engineer. Have the plan signed and sealed by a licensed professional engineer when the structure will continue to accommodate traffic after removal has begun and the removal impacts any part of the structure below the deck or riding surface. If applicable, the plan must detail requirements for meeting the U.S. Army Corps of Engineers' Section 404 Permit. The demolition plan must detail handling of roadway and waterway traffic. Waterway traffic must be maintained at all times unless a closure is approved by the Engineer.

No debris is allowed to fall into a body of water. Debris that falls into the water must be removed at the end of each workday. Debris that falls into the floodway must be removed at the end of each work week or prior to a rain event.

No debris is allowed to fall directly onto existing pavement. Existing pavement must be protected from damage by debris with a minimum of 1 ft. sand cushion. Submit an alternate roadway protection or cushion material to Engineer for approval. If existing pavement is PFC, use a vacuum truck to remove embedded sand after removal of sand cushion and debris. This work is subsidiary.

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**ITEM 502 - BARRICADES, SIGNS, AND TRAFFIC HANDLING**

Table 1

Roadway	Limits	Allowable Closure Time
All	All (Full Closure, see allowable work below)	11 P to 4 A

Table 2

Roadway	Limits	Allowable Closure Time
RM 12	1210 ft South of Skyline Dr to 1025 ft North of Skyline Dr	8 P to 6 A

Table 3 (Mobile Operations)

Roadway	Allowable Sun Night thru Fri Noon	Allowable Sat thru Sun Morn
Outside Austin City Limits	9 A to 3 P and 7 P to 7 A	6 P to 11 A

For roadways without defined allowable closure times, nighttime lane closures will be allowed from 8 P to 6 A.

Daytime or Friday night lane closures will not be allowed unless otherwise shown on the plans. One lane in each direction will remain open at all times for all roadways unless otherwise shown on the plans.

No closures will be allowed on the weekends, business day prior, and business day after the National Holidays defined in the Standard Specifications, Good Friday, and Easter weekend.

No closures will be allowed 1 P.M. to 11 P.M. the Sunday of the Super Bowl.

Time charges will not be suspended during the large and special events listed below. These events are provided in the contract to allow scheduling of work around these lane closure restrictions.

All lanes will be open by noon of the day before the large events listed in below table. No closures will be allowed on Friday and the weekends for projects within 20 miles of these large events:

Table 4 (Large Events)

Event	City	Dates
Formula 1 @ COTA	Austin	Annually (See Event Website)
Moto GP @ COTA	Austin	Annually (See Event Website)
ACL Fest	Austin	Annually (See Event Website)
SXSW	Austin	Annually (See Event Website)
ROT Rally	Bastrop	Annually (See Event Website)

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UT Football Games	Austin	Annually (See Event Website)
Sales Tax Holiday	All	Annually (See Event Website)
Rodeo Austin	Austin	Annually (See Event Website)

Due to FIFA World Cup 2026, closures will be restricted for the following dates and roadways. Closure restriction period begins 8 PM the day before and ends at 8 AM the day after.

FIFA Houston Roadways: SH 71 east of IH 35 and US 290 east of IH 35.  
 FIFA Houston Dates: 6/14/26, 6/17/26, 6/20/26, 6/23/26, 6/26/26, 6/29/26, 7/4/26

FIFA Dallas Roadways: IH 35 north of RM 620  
 FIFA Dallas Dates: 6/14/26, 6/17/26, 6/22/26, 6/25/16, 6/27/26, 6/30/26, 7/3/26, 7/6/26, 7/14/26

All lanes will be open by noon of the day before the special events listed in below table. No closures will be allowed on Friday and the weekends for projects within 10 miles of these special events:

Table 5 (Special Events)

Event	City	Dates
Eaker BBQ Competition	Fredericksburg	March 10, 2024
Sherwood Forest Faire	McDade / Paige	Weekends in March and April
Smithville Jamboree	Smithville	April 4-6, 2024
Two Step Inn	Georgetown	April 20-24, 2024
Wiener Dog Races	Buda	April 27-28, 2024
Founders Day Festival	Dripping Springs	April 26-28, 2024
Red Poppy Festival	Georgetown	April 26-28, 2024
Crawfish Open	Llano	3 <sup>rd</sup> Friday and Saturday in April
Fair and Rodeo	Liberty Hill	May 18, 2023
Founders Day Ceremony	Fredericksburg	2 <sup>nd</sup> Weekend in May
Crawfish Festival	Fredericksburg	Saturday before Memorial Day
Lakefest Boat Races	Marble Falls	June 10-11, 2023
Watermelon Thump	Luling	Last Full Weekend in June
Pie in the Sky	Kyle	Sept 1-2, 2023
Wine and Music Festival	Georgetown	Last Saturday of September
Deer Season Opening Weekend	All Counties in Burnet Area Office	1 <sup>st</sup> Friday and Saturday of Season
Christmas Nights of FBG Lights	Fredericksburg	Nov 21, 2023
Christmas on Mercer	Dripping Springs	Dec 2, 2023
Lady of Guadalupe Procession	Fredericksburg	Dec 12, 2023
Texas State Graduation Fall	San Marcos	TBD
Texas State Graduation Spring	San Marcos	TBD

All the large and special events listed in the above tables occur annually. Coordinate with the Department and review the city/event website to plan around the future events.

To account for directional traffic volumes, begin and end times of closures may be shifted equally by the Engineer. The closure duration will remain. Added compensation is not allowed.

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One-way traffic control, including work performed under Item 510, must be set up to provide a maximum of 20 minutes of delay to the traveling public.

Submit an emailed request for a lane closure (LCN) to TxDOT. The email will be submitted in the format provided. Receive concurrence prior to implementation. Submit a cancellation of lane closures a minimum of 18 hours prior to implementation. Blanket requests for extended periods are not allowed. Max duration of a request is 2 weeks prior to requiring resubmittal.

Provide 2-hour notice prior to implementation and immediately upon removal of the closure.

For roadways listed in Table 1: Submit the request 96 hours prior to implementation.

For roadways not listed in Table 1: Submit the request a minimum of 48 hours prior to the closure and by the following deadline immediately prior to the closure: 11A on Tuesday or 11A on Friday.

For all roadways: Submit request for traffic detours and full roadway closures 168 hours prior to implementation. Submit request for nighttime work 96 hours to implementation date.

Cancellations of accepted closures (not applicable to full closures or detours) due to weather will not require resubmission in accordance with the above restrictions if the work is completed during the next allowable closure time.

Closures that conflict with adjacent contractor will be prioritized according to critical path work per latest schedule. Conflicting critical path or non-critical work will be approved for first LCN submitted. Denial of a closure due to prioritization or other reasons will not be reason for time suspension, delay, overhead, etc.

Meet with the Engineer prior to lane closures to ensure that sufficient equipment, materials, devices, and workers will be used. Take immediate action to modify current and future traffic control, if at any time the queue becomes greater than 20 minutes.

Consider inclement weather prior to implementing the lane closures. Do not set up traffic control when the pavement is wet.

Cover, relocate, or remove existing small, large, and overhead signs that conflict with traffic control. Cover large and overhead signs to remain using latest standard TS-CD. This work is subsidiary.

Place a 28-inch cone, meeting requirements of BC (10) and Ty III barricades, on top of foundations that have protruding studs. This work is subsidiary.

Edge condition treatment types must be in accordance with the TxDOT standard. Installation and removal of a safety slope is subsidiary.

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To determine a speed limit or an advisory speed limit, submit a request to TxDOT 60 business days prior to manufacture of the sign.

The Contractor Force Account "Safety Contingency" that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. 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.

Business access signs will be paid using safety contingency. Install as directed by the Engineer. Company logos will not be permitted on the signs. Maintenance of the signs will be subsidiary to Item 502.

**ITEM 503 – PORTABLE CHANGEABLE MESSAGE SIGN**

Place PCMS 10 calendar days prior to begin work stating "Road Work Begin Soon, Contact 832-7000 For Info".

Place PCMS at time of LCN request. Place the PCMS at the expected end of queue caused by the closure. When the closure is active, revise the message to reflect the actual condition during the closure, such as "RIGHT LN CLOSED XXX FT".

**ITEM 505 – TRUCK MOUNTED ATTENUATOR AND TRAILER ATTENUATOR**

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.

For projects involving multiple work locations within a single day, the contractor must assess and determine the total number of TMAs or TAs required to complete the work. Payment for each unit used will be made in accordance with the specifications and the relevant bid item. Total payment for each day will not exceed the number of units designated for the project per working day (e.g two operations utilizing two units will equate to two days of payment). Any additional operation using one of the two TMAs will not be subject to an additional day of payment.

TMA/TAs used to protect damaged attenuators will be paid by the day using the force account item for the repair.

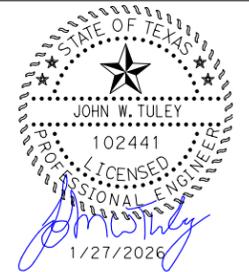
**ITEM 506 - TEMPORARY EROSION, SEDIMENTATION, AND ENV CONTROLS**

Install, maintain, remove control measures in areas of the right of way utilized by the Contractor that are outside the limits of disturbance required for construction. Permanently stabilize the area. This work is subsidiary.

For routine or anticipated dewatering, notify the engineer 72 hours before beginning dewatering. Notify the Engineer within 1 hour of beginning emergency or recent rainfall dewatering. Water located within the ROW that will leave the ROW must appear free of pollutants such as suspended sediment, oil sheen, floating solids, etc. Dirty water must pass thru adequate BMPs prior to leaving

General Notes

Sheet R



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 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



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**RM 12**  
**GENERAL NOTES**

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FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
14			8H
STATE	DIST.	COUNTY	
TEXAS	AUS	HAYS	
CONT.	SECT.	JOB	HIGHWAY NO.
0683	03	045	RM 12

FILE:G:\TXC\Projects\County\_Hoys\7083-00\_RM\_12\_Turn\_Lones\03\_CADD\01\_Shts\00-GEN\RM12\_GEN\_NOTES\_01.dgn  
 PLOTDRIVER: pdf.pltcf  
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 DATE:1/23/2026 11:44:05 AM  
 PENTABLE: \$PENTBL\$  
 \$STATUS\$

County: Hays  
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 Control: 0683-03-045

the ROW to prevent discharge of dirty water. Bypass pumping of water found in a navigable waterway that enters from outside the ROW and is discharged downstream of the ROW will not require the use of BMPs. Dewatering BMPs will be paid for in conformance with the applicable bid items. However, if the necessary BMP item is not included in the Contract, payment for the BMP will be in accordance with Article 9.7., "Payment for Extra Work and Force Account Method." The act of dewatering and the equipment used to dewater will not be paid for directly but will be subsidiary to pertinent bid items.

Cover small waste containers (100 gallons or less) at all times. This work is subsidiary. Large waste containers (more than 100 gallons) must have a secondary discharge containment system around the container using erosion control logs. Installation of the log for each container location will be paid using existing bid items. Repair, remove, or replace of the log will not be paid. Revisions, repairs, remove or replace of the log during exchange of empty/full containers at the same location will not be paid.

Portable restrooms must be located more than 50 ft. from a waterway. Tie or stake down portable restrooms to prevent tipping due to vandalism or weather. This work is subsidiary.

Provide a designated location for disposal when excess and waste, including waste generated from cleaning of all equipment used for mixing, hauling, and transfer concrete is disposed in the ROW or PSL. Manufactured disposal containers must be metal or a plastic material with minimum 10 mil thickness. Paper, earthen berms, or pits must be lined with minimum 10 mill thickness polyethylene sheeting. Disposal locations must be located a minimum of 50 ft. from a waterway, tree, or sensitive feature. The disposal location must have a minimum height of 6 in. Maintain a minimum 4 in. of freeboard at all times. Disposal locations are not required for cleaning of small hand tools. Hardened concrete waste may be used as embankment if placed in accordance with Item 132.

**Dust Control**

Stockpiles that will be inactive for greater than 14 days must be treated to contain dust by covering with chemical dust suppressant, soil blanket, vertical tracking, or method other than sprinkling with water. Stockpiles that are actively being used must be treated to contain dust by vertical tracking or a method determined by the Contractor. This work is subsidiary.

Provide designated construction traffic routes when feasible. Construction site traffic must be directed to use designated routes.

**ITEMS 529, 530, & 536 – MISCELLANEOUS CONSTRUCTION**

Reinforcement will be in accordance with Section 432.3.1 unless shown on the plans. Fiber reinforcement is not allowed. GFRP is allowed reinforcement for all applications. Class A and B Concrete are allowed to use Coarse Aggregate Grades 1-8.

Sidewalk cross slope must not exceed 1.5%.

If roots are encountered verify with the Engineer before accommodating or removing 2 in. diameter or larger roots. Root removal must be in accordance with Section 752.4.2. Roots may remain in the bedding or base. For improvements within 6 in. of a root, the concrete thickness

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may be reduced by 1 in. and the bedding increased by 1 in. to minimize impacts to the roots. Adjust bedding and surface profile to provide a 1 in. bedding cushion around the roots. The surface profile may be adjusted to the extent allowed by ADA. This work is subsidiary.

**ITEM 530 – INTERSECTIONS, DRIVEWAYS, AND TURNOUTS**

Notify property owners at least 48 hr. before beginning work on their driveway. Use a means and methods to construct the driveway while maintaining access to the property at all times. Full closure of a driveway is allowed for reconstruction if duration and alternate access are approved by Engineer. Install and maintain material across a work zone as temporary access. This work is subsidiary.

Unless otherwise shown on the plans, use the AUS District Driveway and Mailbox Turnout standard found at [www.txdot.gov/about/districts/austin-district/district-standards.html](http://www.txdot.gov/about/districts/austin-district/district-standards.html).

Driveways that are public county roads or city streets the pavement structure will match the adjacent roadway.

**ITEM 560 – MAILBOX ASSEMBLIES**

All wedge anchor sockets must be set in a concrete foundation per Type 4 support/foundation detail on MB standards.

**ITEMS 600s & 6000s – ITS, TOLLING, LIGHTING, SIGNING, MARKINGS, AND SIGNALS**

Meet the requirements of the NEC, Texas MUTCD, TxDOT standards, and TxDOT Standard Specifications. Notify the Engineer if existing elements to remain do not meet code or specification.

Provide all service, equipment and material required to provide a functional item and interface with existing equipment and software.

For signals and illumination contact Thomas Ramos ([Thomas.Ramos@txdot.gov](mailto:Thomas.Ramos@txdot.gov)) and Gabriela Perales ([Gabriela.Perales@txdot.gov](mailto:Gabriela.Perales@txdot.gov)).

For ITS contact John Gold ([John.Gold@txdot.gov](mailto:John.Gold@txdot.gov)) and Gabriela Perales ([Gabriela.Perales@txdot.gov](mailto:Gabriela.Perales@txdot.gov)).

**ITEM 644 – SMALL ROADSIDE SIGN ASSEMBLIES**

Triangular slip base must be the clamp style to secure the post to the slip base. Set screw style slip base will not be allowed.

Contact <https://lonestarlogos.com/contact/> to request removal of lone star logo signs (business directional signs typically blue background with white letters or logo). If lone star logo is unable to remove in a timely manner, remove and store signs for lone star logo pick up. This work is subsidiary.

General Notes

Sheet T



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**RM 12**  
**GENERAL NOTES**

SHEET 10 OF 11

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				81
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

FILE:G:\TXC\Projects\County\_Hoys\7083-00\_RM 12 Turn Lanes\03\_CADD\01\_Shts\00-GEN\RM12\_GEN\_NOTES\_01.dgn  
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 DATE:1/23/2026 11:44:07 AM  
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 PENTABLE: \$PENTBL\$  
 \$STATUS\$

County: Hays  
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 Control: 0683-03-045

**ITEM 662 - WORK ZONE PAVEMENT MARKINGS**

Notify the Engineer at least 24 hours in advance of work for this item.

Broken line markings must use solid line markings in lane shifts.

Maintain removable and short-term markings daily. Remove within 48 hours after permanent striping has been completed.

Item 668 is not allowed for use as Item 662.

Roadways with existing profile pavement markings or rumble strips must supplement work zone solid lines with traffic buttons spaced at 12 in. Traffic buttons used to supplement the work zone markings will be paid by the each in addition to the work zone item.

Short term removable markings designated by bid item description "SHT TERM RMV" will require the use of removable prefabricated pavement markings. Tabs will not be allowed as a substitute for prefabricated pavement markings.

**ITEM 666 - RETROREFLECTORIZED PAVEMENT MARKINGS**

Notify the Engineer at least 24 hr. before beginning work.

**ITEM 672 - RAISED PAVEMENT MARKERS**

Place Type I-C and II-C-R markers at 40 ft. spacing for all lane lines.

**ITEM 3007 - BONDING COURSE**

The minimum application rates are listed in Table BC. Miscellaneous Tack is allowed for use with dense-graded Type B HMA. If a tack bid item is not provided, use bonding course item.

Table BC

Material	Minimum Application Rate (gal. per square yard)
TRAIL - Emulsified Asphalt	0.06
TRAIL - Hot Asphalt	0.12
Spray Applied Underseal Membrane	0.10

Table BCS (For Informational Tests)

Material	Target Shear Bond Strength (Tex-249-F psi)
SMA - Stone-Matrix Asphalt	60.0
PFC - Permeable Friction Course	N/A
All Other Materials	40.0

General Notes

Sheet U



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**RM 12**  
**GENERAL NOTES**

SHEET 11 OF 11

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STATE	DIST.	COUNTY	
TEXAS	AUS	HAYS	
CONT.	SECT.	JOB	HIGHWAY NO.
0683	03	045	RM 12



CONTROLLING PROJECT ID 0683-03-045

DISTRICT Austin  
HIGHWAY RM 12

COUNTY Hays

# Estimate & Quantity Sheet

CONTROL SECTION JOB				0683-03-045		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00188646			
COUNTY				Hays			
HIGHWAY				RM 12			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	100-7002	PREPARING ROW	STA	30.500		30.500	
	104-7011	REMOV CONC (DRIVEWAYS)	SY	42.000		42.000	
	106-7002	OBLITERATING ABANDONED ROAD	SY	904.000		904.000	
	110-7001	EXCAV (ROADWAY)	CY	3,756.000		3,756.000	
	132-7003	EMBANK (FNL)(OC)(TY B)	CY	5,314.000		5,314.000	
	164-7018	HYDRO MULCH SEED (PERM_RURAL_CLAY)	SY	18,169.000		18,169.000	
	164-7021	HYDRO MULCH SEED (TEMP_WARM)	SY	9,086.000		9,086.000	
	164-7022	HYDRO MULCH SEED (TEMP_COOL)	SY	9,086.000		9,086.000	
	168-7001	VEGETATIVE WATERING	TGL	308.000		308.000	
	169-7001	SOIL RET BLKT(SL_MOD_CLAY_SHORT)	SY	18,169.000		18,169.000	
	247-7179	FL BS (CMP IN PLC)(TY A GR 5)(FNAL POS)	CY	1,975.000		1,975.000	
	310-7015	PRIME COAT (MULTI OPTION)	GAL	1,712.000		1,712.000	
	341-7001	D-GR HMA TY-B PG64-22	TON	1,387.000		1,387.000	
	341-7004	D-GR HMA TY-B PG64-22 (LEVEL-UP)	TON	90.000		90.000	
	341-7056	D-GR HMA TY-D PG76-22	TON	1,755.000		1,755.000	
	347-7002	TOM-C PG76-22 SAC-B	TON	881.000		881.000	
	351-7005	FLEXIBLE PAVEMENT STRUCTURE REPAIR(6")	SY	7,426.000		7,426.000	
	351-7011	FLEXIBLE PAVEMENT STRUCTURE REPAIR(12")	SY	1,500.000		1,500.000	
	354-7051	PLANE ASPH CONC PAV(2")	SY	8,177.000		8,177.000	
	416-7028	DRILL SHAFT (SIGN MTS) (24 IN)	LF	24.000		24.000	
	464-7002	RC PIPE (CL III)(15 IN)	LF	244.000		244.000	
	464-7003	RC PIPE (CL III)(18 IN)	LF	140.000		140.000	
	467-7308	SET (TY II) (18 IN) (RCP) (6: 1) (P)	EA	4.000		4.000	
	467-7328	SET (TY II) (24 IN) (RCP) (6: 1) (P)	EA	6.000		6.000	
	496-7037	REMOV STR (PIPE)	EA	5.000		5.000	
	496-7041	REMOV STR (MASONARY)	LF	177.000		177.000	
	500-7001	MOBILIZATION	LS	1.000		1.000	
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	9.000		9.000	
	503-7002	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2.000		2.000	
	505-7001	TMA (STATIONARY)	DAY	10.000		10.000	
	505-7003	TMA (MOBILE OPERATION)	DAY	5.000		5.000	
	506-7001	ROCK FILTER DAMS (INSTALL) (TY 1)	LF	100.000		100.000	
	506-7011	ROCK FILTER DAMS (REMOVE)	LF	100.000		100.000	
	506-7039	TEMP SEDMT CONT FENCE (INSTALL)	LF	2,663.000		2,663.000	
	506-7041	TEMP SEDMT CONT FENCE (REMOVE)	LF	2,663.000		2,663.000	



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CONTROLLING PROJECT ID 0683-03-045

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COUNTY Hays

# Estimate & Quantity Sheet

CONTROL SECTION JOB				0683-03-045		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00188646			
COUNTY				Hays			
HIGHWAY				RM 12			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	530-7006	DRIVEWAYS (CONC)	SY	42.000		42.000	
	530-7010	DRIVEWAYS (ACP)	SY	561.000		561.000	
	530-7018	TURNOUTS (ACP)	SY	64.000		64.000	
	560-7002	MAILBOX INSTALL-S (TWG-POST) TY 2	EA	1.000		1.000	
	560-7003	MAILBOX INSTALL-D (TWG-POST) TY 2	EA	1.000		1.000	
	636-7002	ALUMINUM SIGNS (TY G)	SF	182.000		182.000	
	644-7001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	10.000		10.000	
	644-7002	IN SM RD SN SUP&AM TY10BWG(1)SA(P-BM)	EA	1.000		1.000	
	644-7031	IN SM RD SN SUP&AM TYS80(1)SA(U)	EA	2.000		2.000	
	644-7034	IN SM RD SN SUP&AM TYS80(1)SA(U-BM)	EA	1.000		1.000	
	644-7064	IN SM RD SN SUP&AM (INST SIGN ONLY)	EA	1.000		1.000	
	644-7065	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	1.000		1.000	
	644-7073	REMOVE SM RD SN SUP&AM	EA	11.000		11.000	
	644-7075	REMOVE SM RD SN SUP&AM (SIGN ONLY)	EA	1.000		1.000	
	647-7001	INSTALL LRSS (STRUCT STEEL)	LB	717.000		717.000	
	647-7003	REMOVE LRSA	EA	1.000		1.000	
	662-7064	WK ZN PAV MRK REMOV (W)4"(SLD)	LF	11,040.000		11,040.000	
	662-7097	WK ZN PAV MRK REMOV (Y)4"(SLD)	LF	10,928.000		10,928.000	
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	202.000		202.000	
	662-7114	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,355.000		1,355.000	
	666-7018	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF	41.000		41.000	
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	1,398.000		1,398.000	
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	52.000		52.000	
	666-7042	REFL PAV MRK TY I (W)(ARROW)(100MIL)	EA	8.000		8.000	
	666-7066	REFL PAV MRK TY I (W)(WORD)(100MIL)	EA	8.000		8.000	
	666-7175	RE PM TY II (W) 6" (SLD)	LF	5,871.000		5,871.000	
	666-7177	RE PM TY II (W) 8" (DOT)	LF	41.000		41.000	
	666-7179	RE PM TY II (W) 8" (SLD)	LF	1,398.000		1,398.000	
	666-7184	RE PM TY II (W) 24" (SLD)	LF	52.000		52.000	
	666-7186	RE PM TY II (W) (ARROW)	EA	8.000		8.000	
	666-7194	RE PM TY II (W) (WORD)	EA	8.000		8.000	
	666-7213	RE PM TY II (Y) 6" (SLD)	LF	8,986.000		8,986.000	
	666-7266	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	LF	5,871.000		5,871.000	
	666-7270	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)	LF	8,986.000		8,986.000	
	672-7002	REFL PAV MRKR TY I-C	EA	71.000		71.000	



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CONTROLLING PROJECT ID 0683-03-045

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HIGHWAY RM 12

COUNTY Hays

# Estimate & Quantity Sheet

CONTROL SECTION JOB				0683-03-045		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00188646			
COUNTY				Hays			
HIGHWAY				RM 12			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	672-7004	REFL PAV MRKR TY II-A-A	EA	452.000		452.000	
	3007-7001	BONDING COURSE	GAL	5,961.000		5,961.000	
	08	LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS	1.000		1.000	
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS	1.000		1.000	
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS	1.000		1.000	



DISTRICT	COUNTY	CCSJ	SHEET
Austin	Hays	0683-03-045	9B

FILE:G:\TXC\Projects\County\_Hays\7083-00\_RM 12 Turn Lanes\03\_CADD\01\_Shts\00-GEN\RM12\_RDWY\_SUM.dgn  
 USER:RM 12 Turn Lanes PENTABLE: \$PENTBL\$  
 1: 03: 36 PM PLOTDRIVER: pdf.pltcf9 \$STATUS\$

SUMMARY OF ROADWAY ITEMS														
LOCATION	100	104	106	110	132	247	310	341	341	341	347	351	351	354
	7002	7011	7002	7001	7003	7179	7015	7001	7004	7056	7002	7005	7011	7051
	PREPARING ROW	REMOV CONC (DRIVEWAYS)	OBLITERATING ABANDONED ROAD	EXCAV (ROADWAY)	EMBANK (FNL) (OC) (TY B)	FL BS (CMP IN PLC) (TY A GR 5) (FNAL POS)	PRIME COAT (MULTI OPTION)	D-GR HMA TY-B PG64-22	D-GR HMA TY-B PG64-22 (LEVEL-UP)	D-GR HMA TY-D PG76-22	TOM-C PG76-22 SAC-B	FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")	FLEXIBLE PAVEMENT STRUCTURE REPAIR (12")	PLANE ASPH CONC PAV (2")
	STA	SY	SY	CY	CY	CY	GAL	TON	TON	TON	TON	SY	SY	SY
SHEET 1 OF 8	4.1			226	63	130	105	83	12	141	92	1340	268	1340
SHEET 2 OF 8	5.5			274	3263	415	357	289	45	420	188	1801	360	1801
SHEET 3 OF 8	5.5			1299	978	497	450	368	18	352	217	1860	372	1860
SHEET 4 OF 8	5.5			1167	221	289	244	196	15	237	154	1826	365	1826
SHEET 5 OF 8	1.8			154	6	47	37	29		52	37	599	120	599
SHEET 6 OF 8	3.4		368	73	664	270	235	192		387	89	367	73	367
SHEET 7 OF 8	3.6	42	517	428	115	311	271	220		142	87	162	32	162
SHEET 8 OF 8	1.1		19	135	4	16	13	10		24	17	222	44	222
PROJECT TOTALS	30.5	42	904	3756	5314	1975	1712	1387	90	1755	881	8177	1634	8177

SUMMARY OF ROADWAY ITEMS (CONTINUED)													
LOCATION	464	464	467	467	496	496	530	530	530	560	560	3007	
	7003	7005	7308	7328	7037	7041	7006	7010	7018	7002	7003	7001	
	RC PIPE (CL III) (18 IN)	RC PIPE (CL III) (24 IN)	SET (TY II) (18 IN) (RCP) (6: 1) (P)	SET (TY II) (24 IN) (RCP) (6: 1) (P)	REMOV STR (PIPE)	REMOV STR (MASONARY)	DRIVEWAYS (CONC)	DRIVEWAYS (ACP)	TURNOUTS (ACP)	MAILBOX INSTALL-S (TWG-POST) TY 2	MAILBOX INSTALL-D (TWG-POST) TY 2	BONDING COURSE	
	LF	LF	EA	EA	EA	LF	SY	SY	SY	EA	EA	GAL	
SHEET 1 OF 8	70		2		1			85		1		624	
SHEET 2 OF 8												1268	
SHEET 3 OF 8	70		2		2	177		63				1464	
SHEET 4 OF 8		244		4	2			302				1043	
SHEET 5 OF 8				2								251	
SHEET 6 OF 8								111				606	
SHEET 7 OF 8						42		64		1		590	
SHEET 8 OF 8												115	
PROJECT TOTALS	140	244	4	6	5	177	42	561	64	1	1	5961	



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**RM 12**  
**ROADWAY SUMMARY**

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				10
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

SUMMARY OF WORKZONE TRAFFIC CONTROL ITEMS								
LOCATION	502	503	505	505	662	662	662	662
	7001	7002	7001	7002	7064	7097	7112	7114
	BARRICADES, SIGNS AND TRAFFIC HANDLING	PORTABLE CHANGEABLE MESSAGE SIGN	TMA (STATIONARY)	TMA (MOBILE OPERATION)	WK ZN PAV MRK REMOV (W) 4" (SLD)	WK ZN PAV MRK REMOV (Y) 4" (SLD)	WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2
	MO	EA	DAY	HR	LF	LF	EA	EA
PHASE 1 STEP 1		2						
PHASE 1 STEP 3								224
PHASE 1 STEP 4 (PHASE 2 LANES)					4690	4690		235
PHASE 2 STEP 3 (PHASE 3 LANES)					4690	4690		235
PHASE 4 STEP 1 SKYLINE DR					880	868		45
PHASE 4 STEP 2 SKYLINE DR							32	90
PHASE 4 STEP 3 MOUNTAIN CREST DR					780	680		34
PHASE 4 STEP 4 MOUNTAIN CREST DR							20	116
PHASE 5 STEP 1							150	376
PROJECT TOTALS	9	2	10	5	11040	10928	202	1355

NOTE:  
 PLACE WORK ZONE PAVEMENT MARKERS SHORT TERM (TABS) AFTER 1.5" HMA & 1" TOM-C IN PHASE 4 STEPS 2 & 4.  
 CONSTRUCT FINAL PAVEMENT MARKINGS AT THE END OF PHASE 4 STEP 2 FOR SKYLINE DR. AND PHASE 4 STEP 4 FOR MOUNTAIN CREST D.



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**RM 12**

**TRAFFIC CONTROL SUMMARY**

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
14			11
STATE	DIST.	COUNTY	
TEXAS	AUS	HAYS	
CONT.	SECT.	JOB	HIGHWAY NO.
0683	03	045	RM 12

SUMMARY OF PAVEMENT MARKING ITEMS																
LOCATION	666	666	666	666	666	666	666	666	666	666	666	666	666	666	672	672
	7018	7024	7036	7042	7066	7175	7177	7179	7184	7186	7194	7213	7266	7270	7002	7004
	REFL PAV MRK TY I (W) 8" (DOT) (10 OMIL)	REFL PAV MRK TY I (W) 8" (SLD) (10 OMIL)	REFL PAV MRK TY I (W) 24" (SLD) (100MIL)	REFL PAV MRK TY I (W) (ARROW) (10 OMIL)	REFL PAV MRK TY I (W) (WORD) (100MIL)	RE PM TY II (W) 6" (SLD)	RE PM TY II (W) 8" (DOT)	RE PM TY II (W) 8" (SLD)	RE PM TY II (W) 24" (SLD)	RE PM TY II (W) (ARROW)	RE PM TY II (W) (WORD)	RE PM TY II (Y) 6" (SLD)	RE PROFILE PM TY I (W) 6" (SLD) (100MIL)	RE PROFILE PM TY I (Y) 6" (SLD) (100MIL)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A
	LF	LF	LF	EA	EA	LF	LF	LF	LF	EA	EA	LF	LF	LF	EA	EA
SHEET 1 OF 4	26	170		2	2	1798	26	170		2	2	3168	1798	3168	9	159
SHEET 2 OF 4	15	1172	52	6	5	2330	15	1172	52	6	5	3082	2330	3082	59	155
SHEET 3 OF 4						550						1074	550	1074		54
SHEET 4 OF 4		56			1	1193		56			1	1662	1193	1662	3	84
<b>PROJECT TOTALS</b>	<b>41</b>	<b>1398</b>	<b>52</b>	<b>8</b>	<b>8</b>	<b>5871</b>	<b>41</b>	<b>1398</b>	<b>52</b>	<b>8</b>	<b>8</b>	<b>8986</b>	<b>5871</b>	<b>8986</b>	<b>71</b>	<b>452</b>

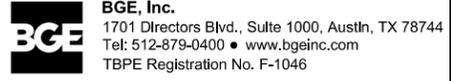
SUMMARY OF SIGNING ITEMS													
LOCATION	416	636	644	644	644	644	644	644	644	644	647	647	
	7028	7002	7001	7002	7031	7034	7064	7065	7073	7075	7001	7003	
	DRILL SHAFT (SIGN MTS) (24 IN)	ALUMINUM SIGNS (TY G)	IN SM RD SN SUP&AM TY10BWG (1) SA (P)	IN SM RD SN SUP&AM TY10BWG (1) SA (P-B M)	IN SM RD SN SUP&AM TYS80 (1) SA (U)	IN SM RD SN SUP&AM TYS80 (1) SA (U-BM)	IN SM RD SN SUP&AM (INST SIGN ONLY)	RELOCATE SM RD SN SUP&AM TY 10BWG	REMOVE SM RD SN SUP&AM	REMOVE SM RD SN SUP&AM (SIGN ONLY)	INSTALL LRSS (STRUCT STEEL)	REMOVE LRSA	
	LF	SF	EA	EA	EA	EA	EA	EA	EA	EA	LB	EA	
SHEET 1 OF 4	24	182	3		1	1			5		717	1	
SHEET 2 OF 4			3	1	1				4				
SHEET 3 OF 4						1				1			
SHEET 4 OF 4			4				1	2					
<b>PROJECT TOTALS</b>	<b>24</b>	<b>182</b>	<b>10</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>11</b>	<b>1</b>	<b>717</b>	<b>1</b>	



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**RM 12**  
**SIGNING AND PAVEMENT**  
**MARKING SUMMARY**

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
14			12
STATE	DIST.	COUNTY	
TEXAS	AUS	HAYS	
CONT.	SECT.	JOB	HIGHWAY NO.
0683	03	045	RM 12

# SUMMARY OF SMALL SIGNS

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		TYPE N	TYPE S
							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"	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels		
1	1	S3-1T	SCHOOL BUS STOP AHEAD	36 X 36	X		10BWG	1	SA	P			
	3	W2-1 W13-1P	CROSS ROAD SYMBOL 40 MPH	30 X 30 24 X 24	X X		10BWG	1	SA	P			
	4	D3-2	MOUNTAIN CREST DR, SKYLINE DR	72 X 42	X		S80	1	SA	U			
	5	R3-8b	ADVANCE INTERSECTION LANE CONTROL	48 X 30	X		10BWG	1	SA	P			
	6	W1-9TL W1-9TL	CHEVRON/ONE DIRECTION LARGE ARROW CHEVRON/ONE DIRECTION LARGE ARROW	96 X 36 96 X 36	X X		S80	1	SA	U	BM		
2	1	D3-1G R1-1	MOUNTAIN CREST DR STOP	48 X 8 36 X 36	X X		10BWG	1	SA	P	BM		
	2	D3-1G R1-1	SKYLINE DR STOP	30 X 8 36 X 36	X X		10BWG	1	SA	P			
	3	R3-8 LK	ADVANCE INTERSECTION LANE CONTROL	36 X 30	X		10BWG	1	SA	P			
	4	D3-2	SKYLINE DR, MOUNTAIN CREST DR	66 X 42	X		S80	1	SA	U			
	5	W1-5L W13-1P	WINDING ROAD 40 MPH	36 X 36 24 X 24	X X		10BWG	1	SA	P			
3	1	W2-1	CROSS ROAD SYMBOL	30 X 30	X		REPLACE SIGN ONLY, EXISTING POST TO REMAIN						
4	1	R3-8 LK	ADVANCE INTERSECTION LANE CONTROL	36 X 30	X		10BWG	1	SA	P			
	2	R2-1	SPEED LIMIT 30	24 X 30	X		10BWG	1	SA	P			
	3	R3-8 LK	ADVANCE INTERSECTION LANE CONTROL	36 X 30	X		10BWG	1	SA	P			
	4	W14-2	NO OUTLET	36 X 36	X		10BWG	1	SA	P			

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).

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 accuracy of the information contained herein.

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**Texas Department of Transportation**

*Traffic Operations Division Standard*

## SUMMARY OF SMALL SIGNS

### SOSS

SHEET 1 OF 1

FILE: sum16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	0683	03	045	RM 12
	DIST	COUNTY	SHEET NO.	
	AUS	HAYS	13	



SUMMARY OF EROSION CONTROL ITEMS									
LOCATION	164	164	164	168	169	506	506	506	506
	7018	7021	7022	7001	7001	7001	7011	7039	7041
	HYDRO MULCH SEED (PERM_RURAL_C LAY)	HYDRO MULCH SEED (TEMP_WARM)	HYDRO MULCH SEED (TEMP_COOL)	VEGETATIVE WATERING	SOIL RET BLKT (SL_MOD_ CLAY_SHORT)	ROCK FILTER DAMS (INSTALL) (TY 1)	ROCK FILTER DAMS (REMOVE)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)
	SY	SY	SY	TGL	SY	LF	LF	LF	LF
SHEET 1 OF 4	7462	3731	3731	126	7462	30	30	999	999
SHEET 2 OF 4	6559	3280	3280	111	6559	20	20	794	794
SHEET 3 OF 4	1513	757	757	26	1513	30	30	275	275
SHEET 4 OF 4	2635	1318	1318	45	2635	20	20	595	595
<b>PROJECT TOTALS</b>	<b>18169</b>	<b>9086</b>	<b>9086</b>	<b>308</b>	<b>18169</b>	<b>100</b>	<b>100</b>	<b>2663</b>	<b>2663</b>



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**RM 12**  
**SW3P SUMMARY**

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
14			15
STATE	DIST.	COUNTY	
TEXAS	AUS	HAYS	
CONT.	SECT.	JOB	HIGHWAY NO.
0683	03	045	RM 12

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 DATE:1/27/2026 1:03:43 PM USER:RM 12 Turn Lanes PENTABLE:\$PENTBLS\$ PLOTDRIVER:pdf.pltcf\$ \$STATUS\$

**TRAFFIC CONTROL GENERAL NOTES**

1. THE CONTRACTOR MAY SUBMIT AN ALTERNATE TRAFFIC CONTROL PLAN, SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN TEXAS, FOR APPROVAL.
2. VERIFY THE LOCATION AND SPACING OF SIGNS, BARRICADES, AND CHANNELIZING DEVICES PRIOR TO THEIR PLACEMENT ALONG VERTICAL CURVES, HORIZONTAL CURVES, AND OTHER GEOMETRIC CONSTRAINTS TO ENSURE VISIBILITY TO ALL MOTORISTS.
3. COVER, RELOCATE OR REMOVE EXISTING SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL PLAN AND UNCOVER DURING NON-WORKING HOURS OR AS DIRECTED BY THE ENGINEER. PARTIAL COVERAGE OF THE SIGN OR COVERAGE BY MATERIAL THAT WILL NOT COVER THE ENTIRE SIGN ALL THE TIME IS NOT PERMITTED. INSTALL ALL PERMANENT SIGNS, DELINEATION, AND OBJECT MARKERS REQUIRED FOR THE OPERATION OF THE ROADWAY BEFORE OPENING TO TRAFFIC. USE OF TEMPORARY MOUNTS IS ALLOWED OR MAY BE REQUIRED UNTIL THE PERMANENT MOUNTS ARE INSTALLED OR NOT IMPACTED BY CONSTRUCTION. MAINTAIN THE TEMPORARY MOUNTS. THIS WORK IS SUBSIDIARY.
4. THE CONTRACTOR IS TO ENSURE THAT ALL TRAFFIC CONTROL DEVICES AND WORK ZONE PAVEMENT MARKINGS ARE KEPT IN A HIGHLY VISIBLE CONDITION (CLEAN, UPRIGHT AND AT PROPER LOCATION).
5. CONDUCT CONSTRUCTION OPERATIONS SO AS TO PROVIDE THE LEAST POSSIBLE INTERFERENCE TO TRAFFIC AND TO PERMIT THE CONTINUOUS MOVEMENT OF TRAFFIC IN ALL ALLOWABLE DIRECTIONS AT ALL TIMES OR AS PERMITTED BY THE SEQUENCE OF CONSTRUCTION. PROVIDE FOR SAFE AND CONVENIENT ACCESS TO ABUTTING PROPERTY, DRIVEWAYS AND SIDE STREET CROSSINGS.
6. PLACE ALL STOCKPILED MATERIAL, WASTE MATERIAL, SIGNS, BARRICADES, CHANNELIZING DEVICES AND WORK VEHICLES NOT IN USE, AT A MINIMUM OF 20 FEET FROM THE OUTER EDGE OF THE NEAREST TRAVEL LANE, (UNLESS PROTECTED BY A BARRIER).
7. MAINTAIN ALL EXISTING DRAINAGE CONDITIONS DURING ALL CONSTRUCTION PHASES UNTIL THE PERMANENT DRAINAGE FACILITIES ARE CONSTRUCTED AND READY TO USE. HANDLE EXCAVATED AND STOCKPILED MATERIAL IN SUCH A WAY THAT IT WILL NOT BLOCK DRAINAGE.
8. REGULATE ALL CONSTRUCTION TRAFFIC SO AS TO CAUSE A MINIMAL INCONVENIENCE TO THE TRAVELING PUBLIC. AT THE TIMES WHEN IT IS NECESSARY FOR TRUCKS TO STOP, UNLOAD OR CROSS ROADWAYS UNDER TRAFFIC, PROVIDE WARNING SIGNS AND FLAGGERS AS NEEDED TO ADEQUATELY PROTECT THE TRAVELING PUBLIC.
9. REMOVE FROM THE WORK AREA ALL LOOSE MATERIALS AND DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS AT THE END OF EACH WORK DAY.
10. IMPLEMENT ALL REQUIRED EROSION CONTROL MEASURES AS SHOWN IN THE PLANS DURING THE VARIOUS STAGES OF CONSTRUCTION.
11. MOVING AN EXISTING SIGN TO A TEMPORARY LOCATION IS SUBSIDIARY TO THE VARIOUS BID ITEMS.
12. ADDITIONAL SIGNS, BARRICADES AND CHANNELIZING DEVICES MAY BE REQUIRED TO MAINTAIN TRAFFIC DURING CONSTRUCTION, AS SHOWN ON TCP STANDARDS. ADDITIONAL SIGNS, BARRICADES, ETC. (IF ANY), WILL BE SUBSIDIARY TO ITEMS 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING".
13. USE OPPOSING TRAFFIC LANE DIVIDERS AND PLASTIC DRUMS TO CHANNELIZE TRAFFIC WHEN EXISTING PAVEMENT MARKINGS HAVE BEEN OBLITERATED.
14. SHADOW VEHICLE WITH TMA IS REQUIRED AS SHOWN IN THE TCP SHEETS AND FOR SETUP / REMOVAL OF TRAFFIC CONTROL DEVICES.

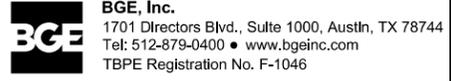




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**RM 12**  
**TRAFFIC CONTROL PLAN**  
**GENERAL NOTES**

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				16
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

\$STATUS\$  
 \$PENITBL\$  
 \$PI Tcf\$  
 \$PLOTDRIVER: pdf\_pi Tcf\$  
 \$RM 12 Turn Lanes\$  
 \$CADD\01\_Shts\02-TCP\RM12-TCP\_SEQ.dgn\$  
 \$Hays County\Projects\County\_Hays\7083-00\_RM 12 Turn Lanes\03\_CADD\01\_Shts\02-TCP\RM12-TCP\_SEQ.dgn\$  
 \$DATE: 1/27/2026 1:03:44 PM\$  
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## TRAFFIC CONTROL PLAN NARRATIVE

GENERAL:  
FOLLOW THE CONSTRUCTION SEQUENCING UNLESS OTHERWISE APPROVED.

THE CONTRACTOR MAY PROPOSE MODIFICATIONS TO THE SEQUENCE OF WORK FOR CONSIDERATION BY THE CONSTRUCTION OBSERVER. ANY RECOMMENDATION RESULTING IN MAJOR MODIFICATIONS TO THE SEQUENCE OF WORK BY THE CONTRACTOR SHALL INCLUDE ANY CHANGES TO THE VARIOUS PAY ITEMS, IMPACT TO TRAFFIC, AND EFFECT TO OVERALL PROJECT TIME, COST, ETC. DO NOT PROCEED WITH ANY CONSTRUCTION OPERATIONS BASED ON A REVISED SEQUENCE OF WORK WITHOUT WRITTEN APPROVAL FROM THE CONSTRUCTION OBSERVER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT LOCATION OF UTILITIES PRIOR TO STARTING CONSTRUCTION.

CONTRACTOR WILL MAINTAIN ACCESS TO DRIVEWAYS AND SIDE STREETS AT ALL TIMES UNLESS APPROVED BY THE CONSTRUCTION OBSERVER OR SHOWN OTHERWISE IN THE PLANS.

SIDE STREETS AND DRIVEWAYS CAN BE CONSTRUCTED UTILIZING DAILY/TEMPORARY ONE WAY TRAFFIC CONTROL AND BE OPENED TO FULL WIDTH AT THE END OF THE WORKDAY MAINTAINING ACCESS AT ALL TIMES UNLESS APPROVED BY THE CONSTRUCTION OBSERVER.

AT THE END OF EACH WORK PERIOD, TREAT THE DROP-OFFS TO PROVIDE A 3:1 OR FLATTER SLOPE.

CONTRACTOR WILL MAINTAIN DRAINAGE THROUGHOUT THE PROJECT.

INSTALL APPROPRIATE ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH ADVANCE WARNING SIGN LAYOUT, TXDOT STANDARDS BC(1)-21 THRU BC(12)-21, WZ(RS)-22, WZ(STPM)-23, WZ(UL)-13, TCP(2-2)-18, AND TCP (2-3)-23, PRIOR TO COMMENCING WORK.

CONTRACTOR SHALL NOT WORK IN AREAS WITH UTILITY CONFLICTS UNTIL THE UTILITIES HAVE BEEN CLEARED.

### PHASE 1 CONSTRUCTION:

- INSTALL PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) AT THE BEGINNING AND END OF PROJECT TO ADVISE TRAFFIC OF CONSTRUCTION AND SHIFTING LANES AS THE PROJECT PROGRESSES.  
INSTALL APPROPRIATE ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH ADVANCE WARNING LAYOUT, TXDOT STANDARDS BC(1)-21 THRU BC(12)-21, AND WZ(RS)-22 PRIOR TO COMMENCING WORK.
- INSTALL TEMPORARY EROSION CONTROL DEVICES FOR CONSTRUCTION ACTIVITIES AS SHOWN ON SW3P LAYOUTS.
- USE STANDARD TCP (2-2)-18 WITH FLAGGERS FOR DAILY LANE CLOSURES. ROADWAY TO BE OPEN BACK TO TWO-WAY TRAFFIC AT THE END OF EACH DAY. CONSTRUCT & COMPLETE ITEM 351 FLEXIBLE PAVEMENT STRUCTURE REPAIR PRIOR TO PLANING OPERATIONS. THEN ONLY PLANE 2" OF EXISTING SURFACE THAT CAN BE OVERLAYED THE SAME DAY. NO MILLED SURFACE SHALL BE EXPOSED TO TRAFFIC. AFTER PLANING OPERATIONS, CONSTRUCT BONDING COURSE & 1.5" HMA TY-D. THEN PLACE FLEXIBLE-REFLECTIVE ROADWAY TABS AT THE END OF EACH DAY. LONGITUDINAL CONSTRUCTION JOINTS WILL NOT BE ALLOWED AT ANY TIME OVERNIGHT.
- AFTER COMPLETION OF STEP 3, CONSTRUCT REMOVABLE WORK ZONE PAVEMENT MARKINGS FOR RM 12 PHASE 2 TRAFFIC LANES. THEN PROCEED TO PHASE 2 CONSTRUCTION.

### PHASE 2 CONSTRUCTION:

- RM 12 CONSTRUCTION.  
IN ACCORDANCE WITH STANDARD TCP (2-3)-23 SHIFT TRAFFIC AS SHOWN ON THE TRAFFIC CONTROL PLAN TYPICAL SECTIONS.
- NOTCH INTO EXISTING SHOULDER AND CONSTRUCT PROPOSED 8" FLEX BASE, 3" HMA TY-B, BONDING COURSE AND 1.5" HMA TY-D IN ACCORDANCE WITH PROPOSED TYPICAL SECTIONS. CONSTRUCT DRIVEWAYS AND PARALLEL DRAINAGE STRUCTURES IN CONJUNCTION WITH ROADWAY CONSTRUCTION. DRIVEWAYS TO BE CONSTRUCTED IN HALF WIDTHS TO MAINTAIN ACCESS AT ALL TIMES. CONTRACTOR TO PROVIDE FOR SAFE AND CONVENIENT ACCESS TO ALL STREETS & DRIVEWAYS. DURING NON WORKING HOURS ALL DROP-OFFS ARE TO BE FILLED TO A 3:1 MAXIMUM SLOPE.
- AFTER COMPLETION OF STEP 2, REMOVE WORK ZONE PAVEMENT MARKINGS FOR PHASE 2 TRAFFIC LANES AND CONSTRUCT REMOVABLE WORK ZONE PAVEMENT MARKINGS FOR PHASE 3 TRAFFIC LANES. THEN PROCEED TO PHASE 3 CONSTRUCTION.

### PHASE 3 CONSTRUCTION:

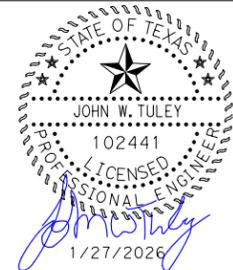
- RM 12 CONSTRUCTION.  
IN ACCORDANCE WITH STANDARD TCP (2-3)-23 SHIFT TRAFFIC AS SHOWN ON THE TRAFFIC CONTROL PLAN TYPICAL SECTIONS.
- NOTCH INTO EXISTING SHOULDER AND CONSTRUCT PROPOSED 8" FLEX BASE, 3" HMA TY-B, BONDING COURSE AND 1.5" HMA TY-D IN ACCORDANCE WITH PROPOSED TYPICAL SECTIONS. CONSTRUCT DRIVEWAYS AND PARALLEL DRAINAGE STRUCTURES IN CONJUNCTION WITH ROADWAY CONSTRUCTION. DRIVEWAYS TO BE CONSTRUCTED IN HALF WIDTHS TO MAINTAIN ACCESS AT ALL TIMES. CONTRACTOR TO PROVIDE FOR SAFE AND CONVENIENT ACCESS TO ALL STREETS & DRIVEWAYS. DURING NON WORKING HOURS ALL DROP-OFFS ARE TO BE FILLED TO A 3:1 MAXIMUM SLOPE.
- AFTER COMPLETION OF PHASE 3, PROCEED TO PHASE 4 CONSTRUCTION. WORK ZONE PAVEMENT MARKING ON RM 12 TO REMAIN UNTIL COMPLETION OF PHASE 4 CONSTRUCTION.

## PHASE 4 CONSTRUCTION:

- SKYLINE DR. CONSTRUCTION.  
TRAFFIC TO REMAIN ON EXISTING LANES FOR STEP 1 CONSTRUCTION AS SHOWN ON THE TRAFFIC CONTROL PLAN TYPICAL SECTIONS AND LAYOUTS.  
FOR ROADWAY CONSTRUCTION FROM STA 202+75 TO 205+05, USE TCP (2-2)-18 W/ FLAGGERS DURING WORKING HOURS FOR DAILY LANE CLOSURES. ALL LANES TO BE OPEN TO TRAFFIC DURING NON-WORKING HOURS.  
  
CONSTRUCT PROPOSED 8" FLEX BASE AND 3" HMA TY-B FROM STA 200+00 TO 202+75 AND NOTCH & CONSTRUCT PROPOSED PAVEMENT WIDENING FROM STA 202+75 TO 205+05 THROUGH 3" HMA TY-B.  
CONSTRUCT DRIVEWAYS AND PARALLEL DRAINAGE STRUCTURES IN CONJUNCTION WITH ROADWAY CONSTRUCTION. DRIVEWAYS TO BE CONSTRUCTED IN HALF WIDTHS TO MAINTAIN ACCESS AT ALL TIMES. CONTRACTOR TO PROVIDE FOR SAFE AND CONVENIENT ACCESS TO ALL DRIVEWAYS. DURING NON WORKING HOURS ALL DROP-OFFS ARE TO BE FILLED TO A 3:1 MAXIMUM SLOPE.  
  
AFTER COMPLETION OF FLEX BASE & HMA TY-B, CONSTRUCT HMA TY-B FOR TRANSITIONING EXISTING ROADWAY TO PROPOSED ROADWAY FROM STA 202+75 TO 203+50 PRIOR TO SHIFTING TRAFFIC TO PHASE 4 STEP 2 LANES.  
  
AFTER COMPLETION OF STEP 1, CONSTRUCT WORK ZONE PAVEMENT MARKINGS FOR STEP 2 TRAFFIC LANES ON SKYLINE DR. AND OPEN TO TRAFFIC.
- CONSTRUCT PROPOSED 8" FLEX BASE AND 3" HMA TY-B FROM STA 200+00 TO 202+75.  
  
AFTER COMPLETION OF FLEX BASE & HMA TY-B, CONSTRUCT BONDING COURSES, 1.5" HMA TY-D & 1" TOM-C FULL WIDTH FROM STA 200+00 TO 205+05. USE TCP (2-2)-18 W/ FLAGGERS DURING WORKING HOURS FOR DAILY LANE CLOSURES. ALL LANES TO BE OPEN TO TRAFFIC DURING NON-WORKING HOURS. THEN CONSTRUCT FINAL PAVEMENT MARKINGS FOR SKYLINE DR.  
  
AFTER COMPLETION OF STEP 2, PROCEED TO STEP 3 MOUNTAIN CREST DR. CONSTRUCTION.
- MOUNTAIN CREST DR. CONSTRUCTION.  
TRAFFIC TO REMAIN ON EXISTING LANES FOR STEP 3 CONSTRUCTION AS SHOWN ON THE TRAFFIC CONTROL PLAN TYPICAL SECTIONS AND LAYOUTS.  
  
NOTCH & CONSTRUCT PROPOSED PAVEMENT WIDENING CONSISTING OF 8" FLEX BASE AND 3" HMA TY-B FROM STA 101+58 TO 103+55 AND CONSTRUCT PROPOSED PAVEMENT THROUGH 3" HMA TY-B FROM STA 103+55 TO 105+25.27.  
DURING NON WORKING HOURS ALL DROP-OFFS ARE TO BE FILLED TO A 3:1 MAXIMUM SLOPE.  
  
AFTER COMPLETION OF ALL FLEX BASE & HMA TY-B, MILL EXISTING HMA FROM STA 101+58 TO 102+75 FOR TRANSITIONING TRAFFIC TO PHASE 4 STEP 4 LANES.  
  
AFTER COMPLETION OF STEP 3, CONSTRUCT WORK ZONE PAVEMENT MARKINGS FOR STEP 4 TRAFFIC LANES ON MOUNTAIN CREST DR. AND OPEN TO TRAFFIC.
- COMPLETE PROPOSED 8" FLEX BASE AND 3" HMA TY-B FOR MOUNTAIN CREST RADIUS AT RM 12. ALSO COMPLETE PROPOSED DRIVEWAYS. DRIVEWAYS TO BE CONSTRUCTED IN HALF WIDTHS TO MAINTAIN ACCESS AT ALL TIMES. CONTRACTOR TO PROVIDE FOR SAFE AND CONVENIENT ACCESS TO ALL DRIVEWAYS.  
  
AFTER COMPLETION OF FLEX BASE & HMA TY-B, CONSTRUCT BONDING COURSES, 1.5" HMA TY-D & 1" TOM-C FULL WIDTH FROM STA 101+58 TO 105+25.27. USE TCP (2-2)-18 W/ FLAGGERS DURING WORKING HOURS FOR DAILY LANE CLOSURES. ALL LANES TO BE OPEN TO TRAFFIC DURING NON-WORKING HOURS. THEN CONSTRUCT FINAL PAVEMENT MARKINGS FOR MOUNTAIN CREST DR.  
  
AFTER COMPLETION OF STEP 4, PROCEED TO PHASE 5 CONSTRUCTION.

## PHASE 5 CONSTRUCTION:

- AFTER COMPLETION OF PHASE 4, SET UP TRAFFIC CONTROL USING TCP (2-2)-18 STANDARD WITH FLAGGERS FOR DAILY LANE CLOSURES. CONSTRUCT BONDING COURSE AND FINAL 1" TOM SURFACE. PLACE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS IN ACCORDANCE WITH FINAL PAVEMENT MARKINGS AT THE END OF EACH WORK DAY.
- AFTER COMPLETION OF FINAL 1" TOM SURFACE, PLACE ALL PERMANENT SIGNING AND PAVEMENT MARKINGS AND OPEN ALL LANES TO TRAFFIC.



**HAYS COUNTY**  
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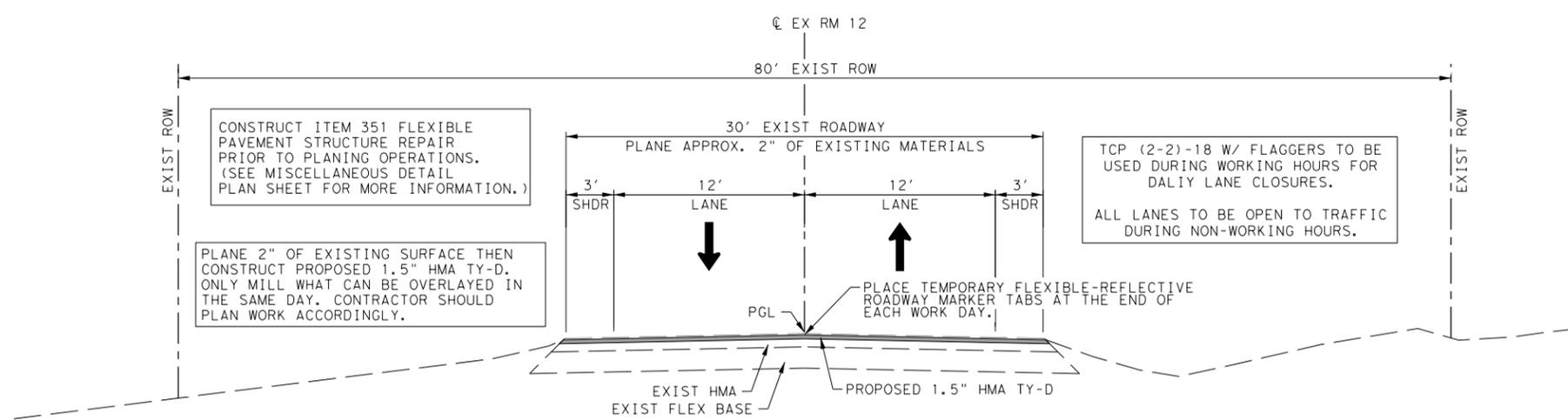
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## RM 12 TRAFFIC CONTROL PLAN SEQUENCE OF WORK

SHEET 1 OF 1

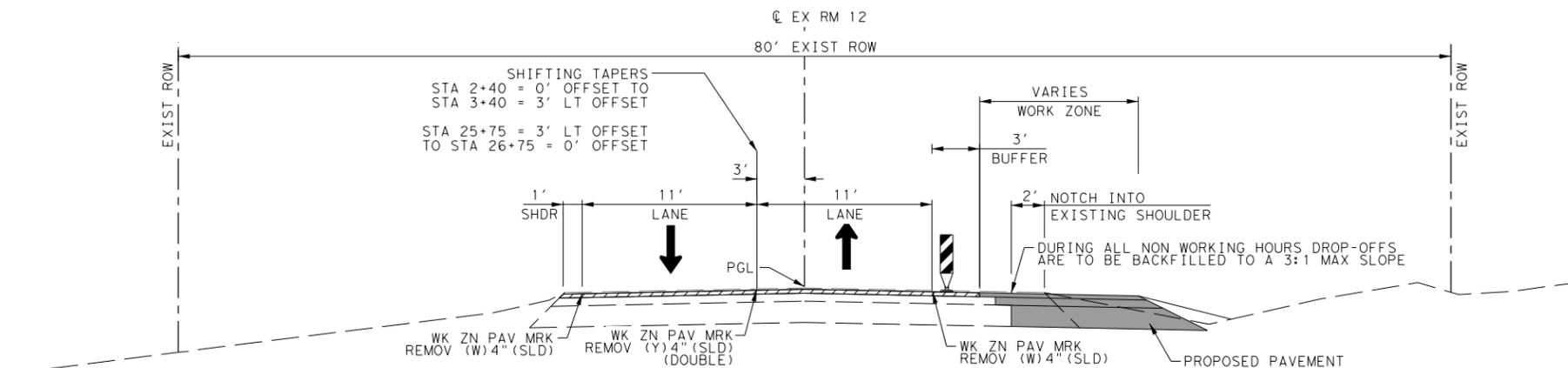
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STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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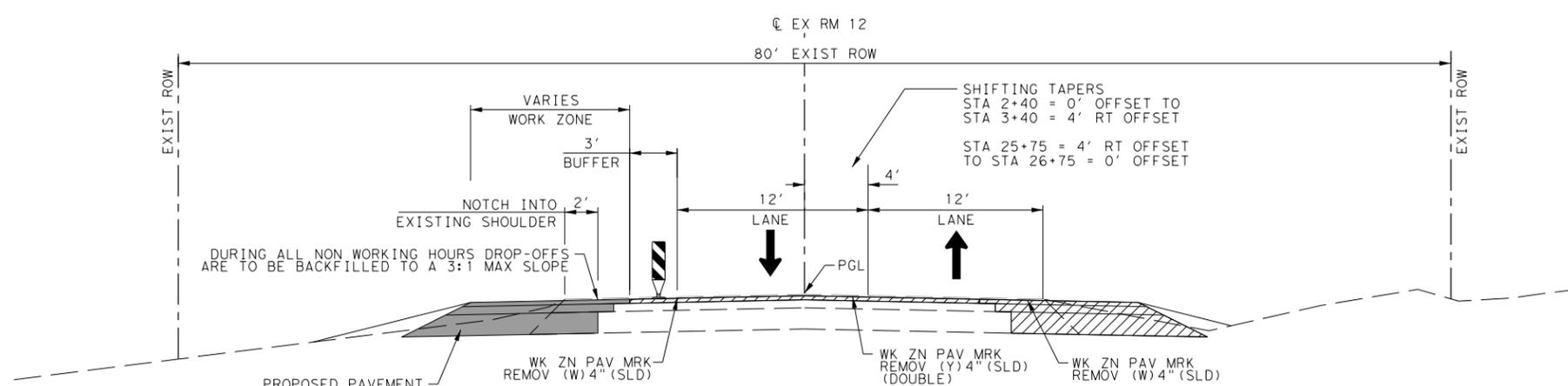
**PHASE 1**

RM 12  
 STA 3+40.00 TO STA 25+75.00



**PHASE 2**

RM 12  
 STA 3+40.00 TO STA 25+75.00



**PHASE 3**

RM 12  
 STA 3+40.00 TO STA 25+75.00

**LEGEND**

← DIRECTION OF TRAFFIC

■ CONSTRUCTION THIS PHASE

▨ BUILT PREVIOUSLY

- NOTES:**
1. MAINTAIN ACCESS TO ALL INTERSECTIONS AND DRIVEWAYS AT ALL TIMES UNLESS OTHERWISE NOTED.
  2. SEE TCP SEQUENCE OF WORK.
  3. SEE BC, TCP, AND WZ STANDARDS FOR TEMPORARY SIGNING AND PAVEMENT MARKING DETAILS.
  4. SEE P&P SHEETS FOR ADDITIONAL INFORMATION.
  5. ALL CHANNELIZING DEVICES AND SIGN PLACEMENT MUST CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND TXDOT STANDARDS.
  6. WARNING SIGN PLACEMENT SHALL NOT CONFLICT WITH EXISTING PERMANENT SIGNAGE.
  7. EXISTING GROUND MOUNTED SIGNS SHALL BE TEMPORARILY REINSTALLED ON APPROVED TEMPORARY MOUNTS, WHERE NEEDED FOR TCP.

**JOHN W. TULEY**  
 102441  
 LICENSED PROFESSIONAL ENGINEER  
 1/27/2026

**HAYS COUNTY**  
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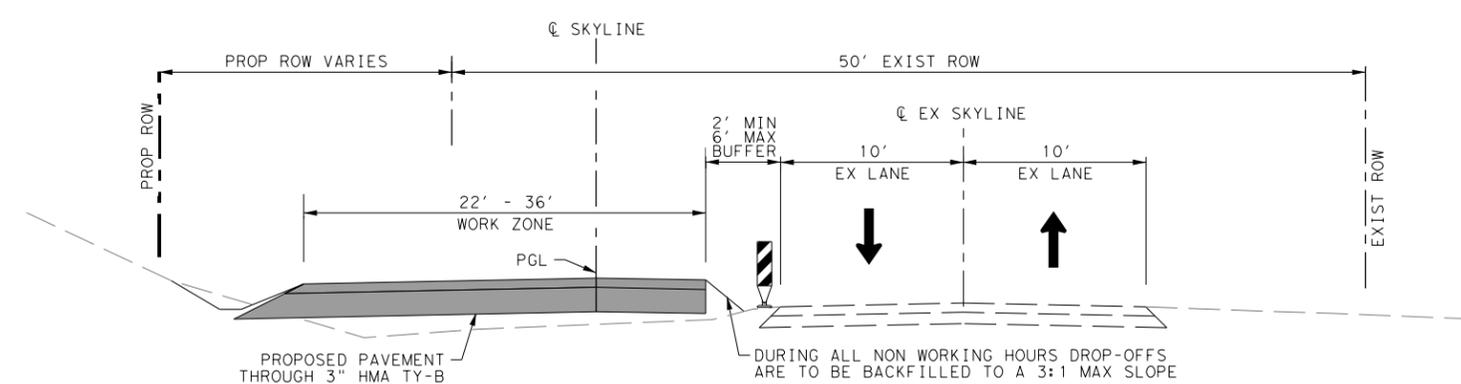
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**RM 12**  
**TRAFFIC CONTROL PLAN**  
**TYPICAL SECTIONS**

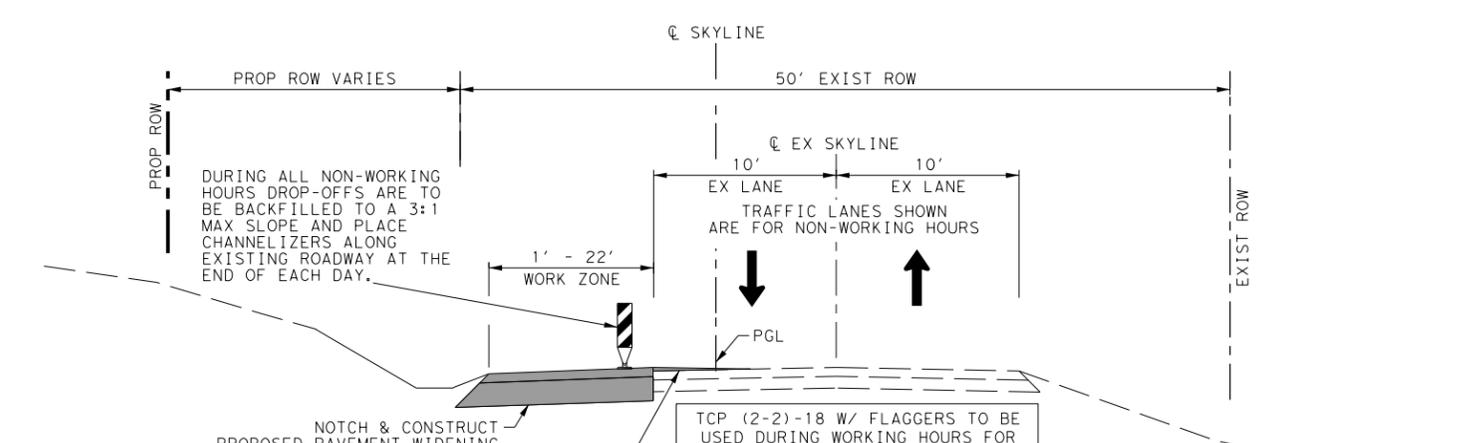
SHEET 1 OF 4

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TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

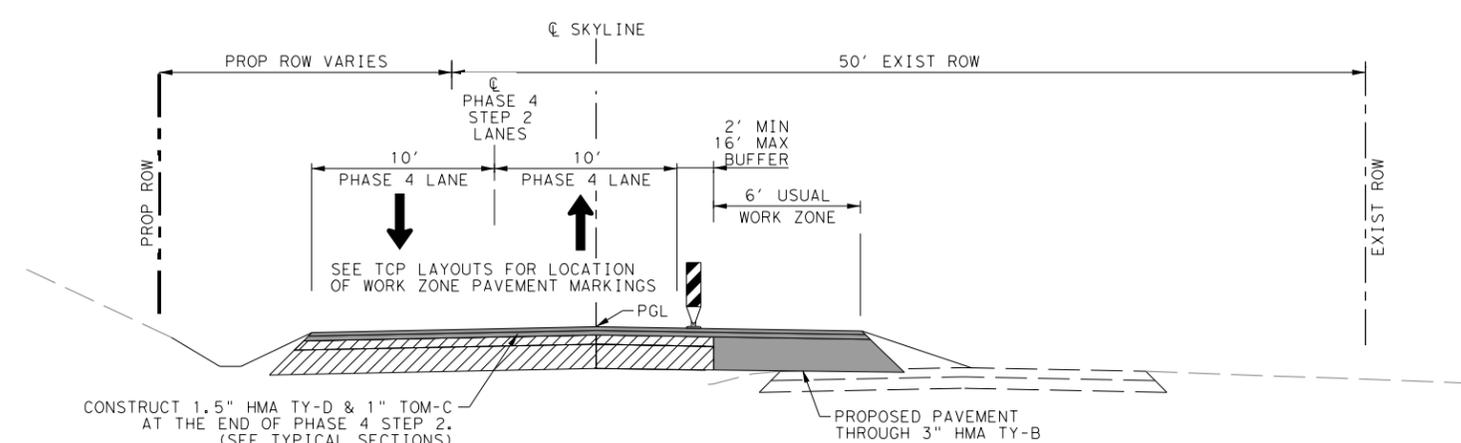
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**PHASE 4 STEP 1**  
 SKYLINE DR.  
 STA 200+00.00 TO STA 202+75.00



**PHASE 4 STEP 1**  
 SKYLINE DR.  
 STA 202+75.00 TO STA 205+05.00



**PHASE 4 STEP 2**  
 SKYLINE DR.  
 STA 200+00.00 TO STA 202+75.00

**LEGEND**

← DIRECTION OF TRAFFIC

■ CONSTRUCTION THIS PHASE

▨ BUILT PREVIOUSLY

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  2. SEE TCP SEQUENCE OF WORK.
  3. SEE BC, TCP, AND WZ STANDARDS FOR TEMPORARY SIGNING AND PAVEMENT MARKING DETAILS.
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  7. EXISTING GROUND MOUNTED SIGNS SHALL BE TEMPORARILY REINSTALLED ON APPROVED TEMPORARY MOUNTS, WHERE NEEDED FOR TCP.

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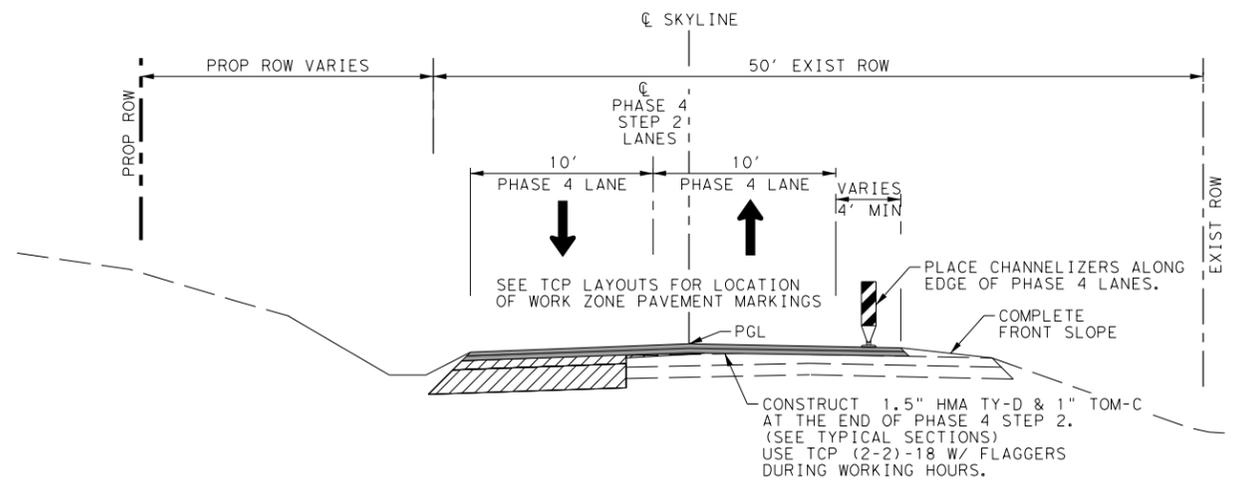
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**RM 12**  
**TRAFFIC CONTROL PLAN**  
**TYPICAL SECTIONS**

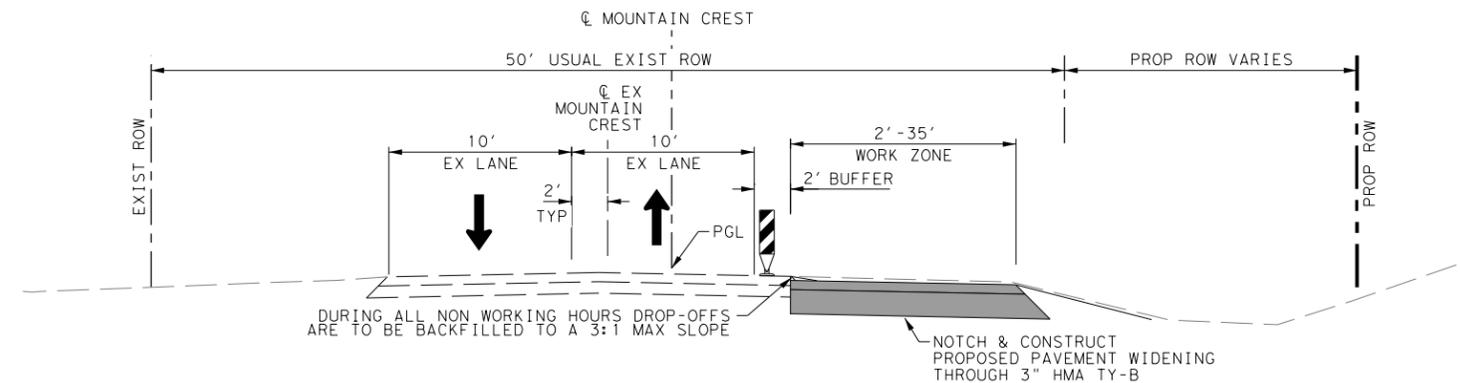
SHEET 2 OF 4

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STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

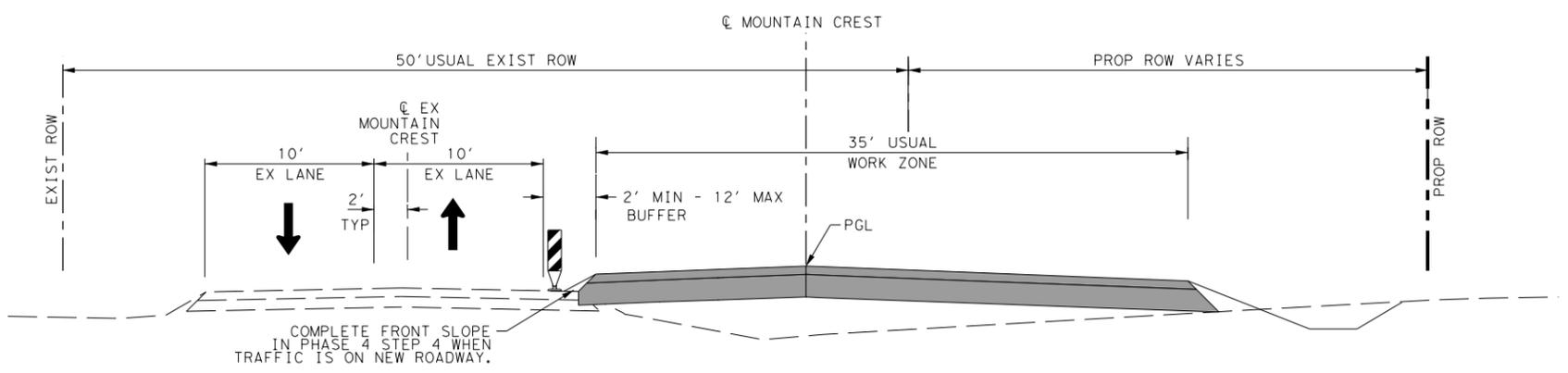
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**PHASE 4 STEP 2**  
 SKYLINE DR.  
 STA 202+75.00 TO STA 205+05.00



**PHASE 4 STEP 3**  
 MOUNTAIN CREST  
 STA 101+58.00 TO STA 103+55.00



**PHASE 4 STEP 3**  
 MOUNTAIN CREST  
 STA 103+55.00 TO STA 105+25.27

**LEGEND**

- DIRECTION OF TRAFFIC
- CONSTRUCTION THIS PHASE
- BUILT PREVIOUSLY

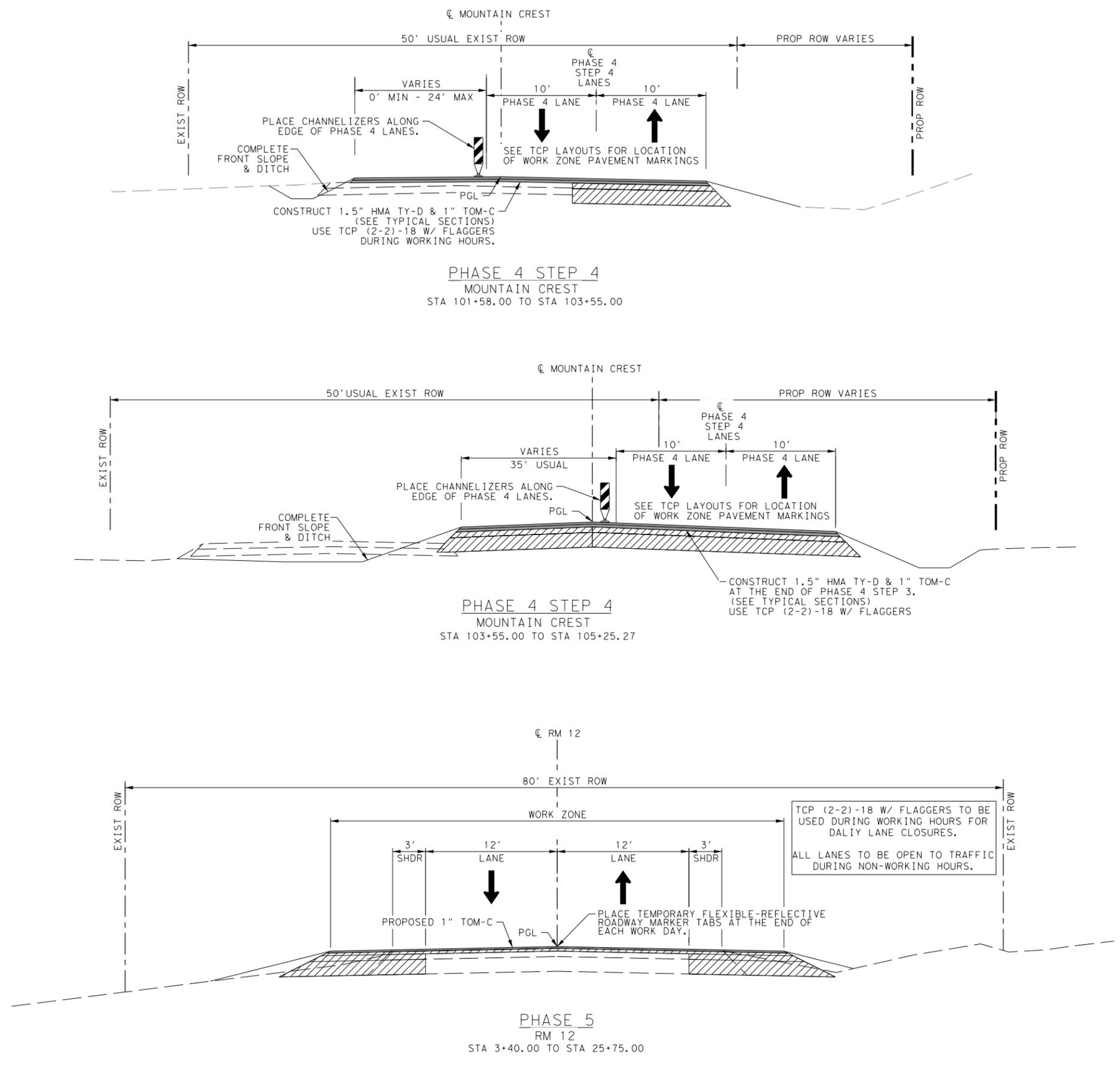
- NOTES:**
1. MAINTAIN ACCESS TO ALL INTERSECTIONS AND DRIVEWAYS AT ALL TIMES UNLESS OTHERWISE NOTED.
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**RM 12**  
**TRAFFIC CONTROL PLAN**  
**TYPICAL SECTIONS**

SHEET 3 OF 4

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				20
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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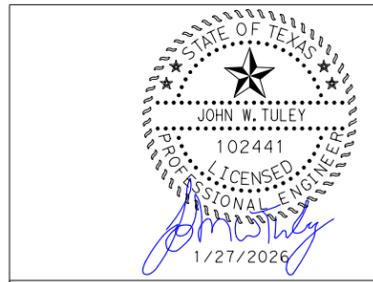
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← DIRECTION OF TRAFFIC

■ CONSTRUCTION THIS PHASE

▨ BUILT PREVIOUSLY

- NOTES:**
1. MAINTAIN ACCESS TO ALL INTERSECTIONS AND DRIVEWAYS AT ALL TIMES UNLESS OTHERWISE NOTED.
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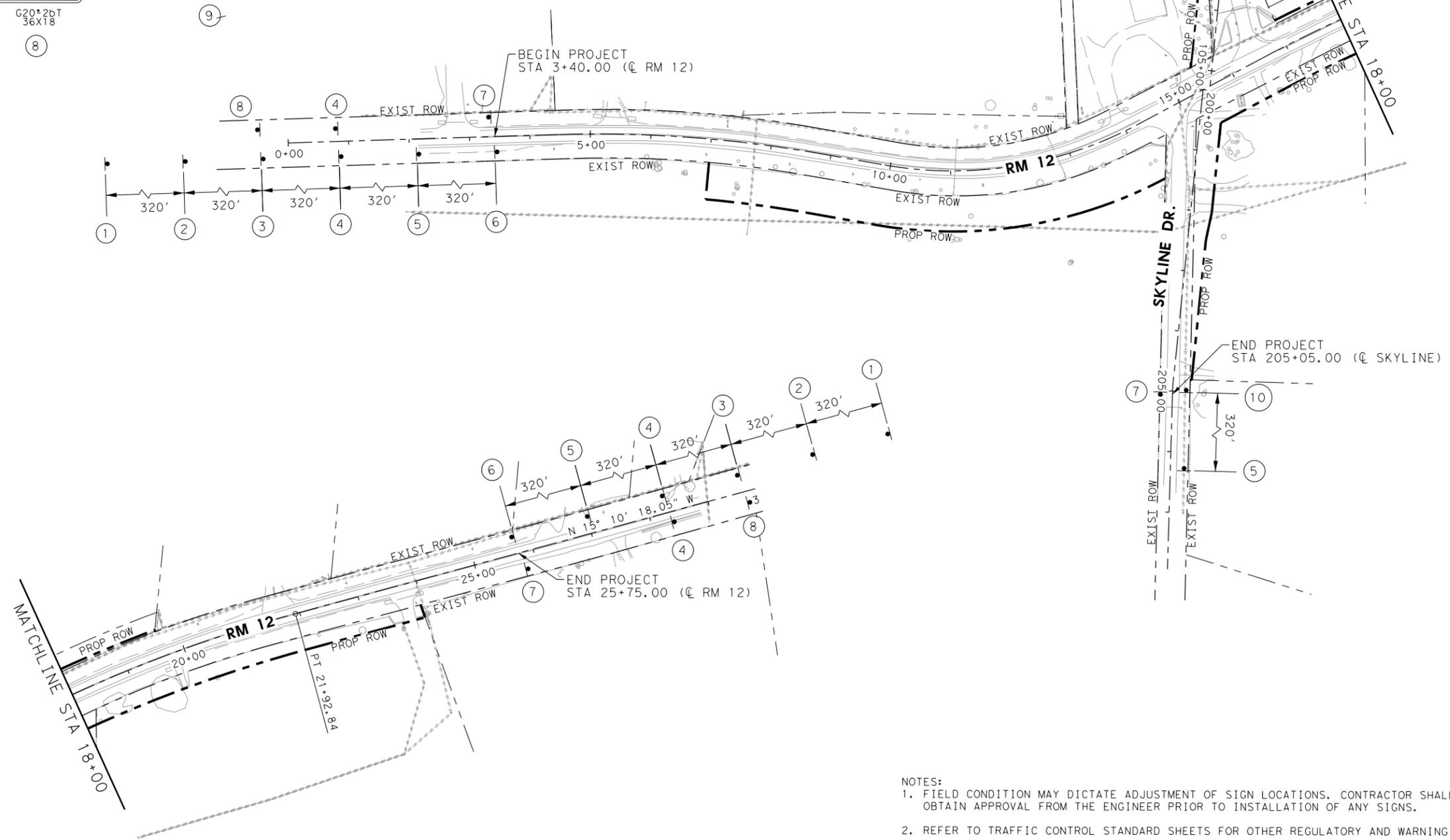
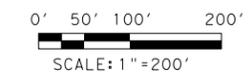
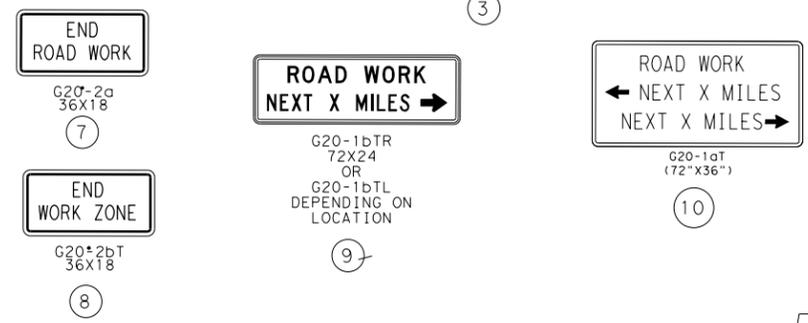
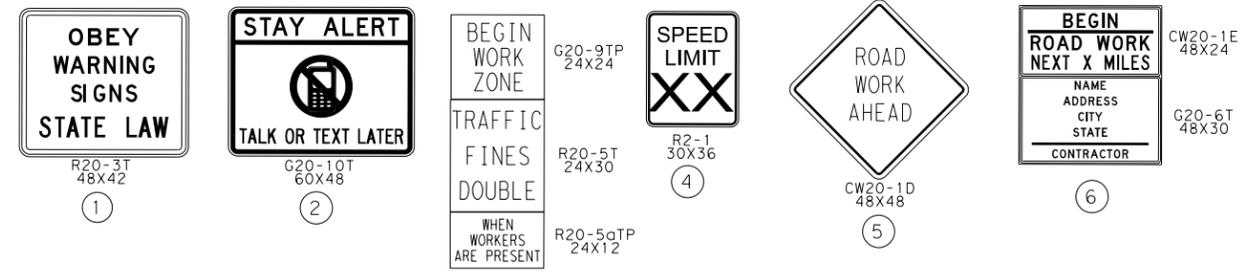
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**RM 12**  
**TRAFFIC CONTROL PLAN**  
**TYPICAL SECTIONS**

SHEET 4 OF 4

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				21
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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- NOTES:**
1. FIELD CONDITION MAY DICTATE ADJUSTMENT OF SIGN LOCATIONS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO INSTALLATION OF ANY SIGNS.
  2. REFER TO TRAFFIC CONTROL STANDARD SHEETS FOR OTHER REGULATORY AND WARNING SIGNS.
  3. ADHERE AT ALL TIMES TO TxDOT STANDARDS BC(1)-21 THROUGH BC(12)-21, & TMUTCD FOR SIGN DETAILS, DIMENSIONS AND PLACEMENT.




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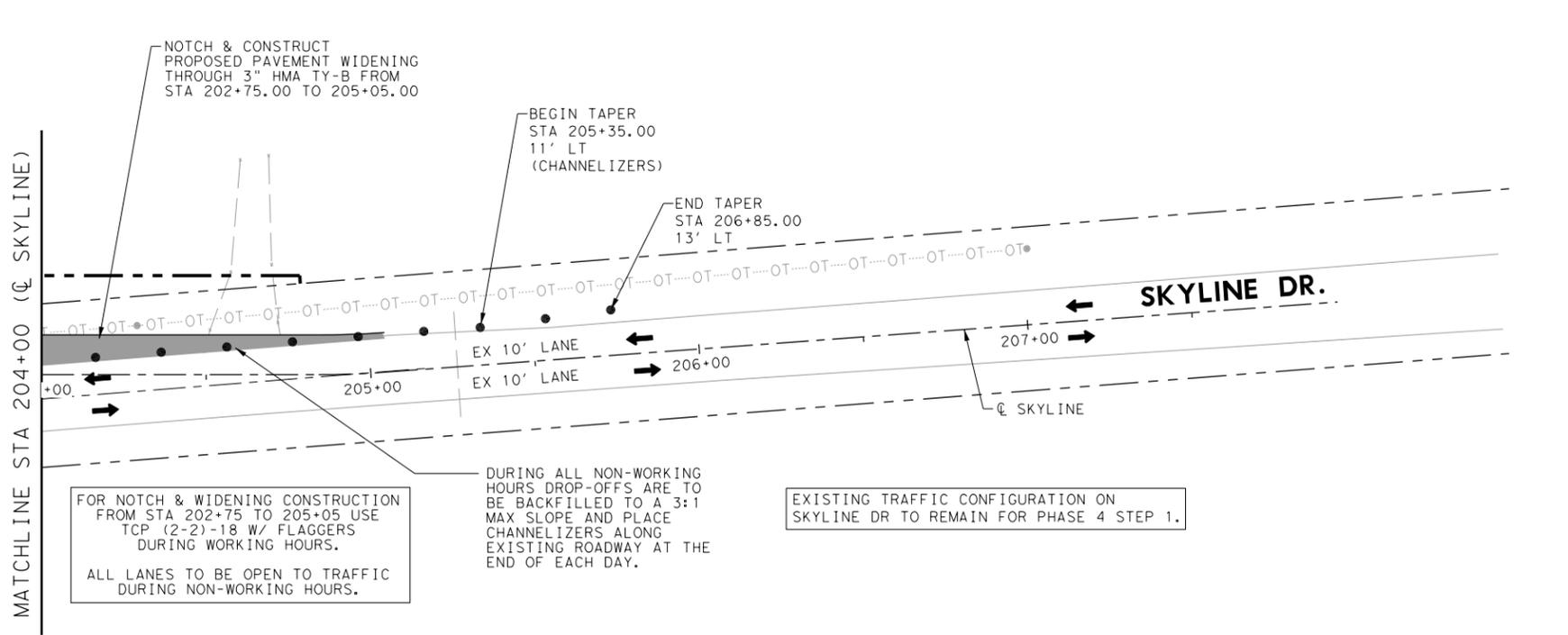
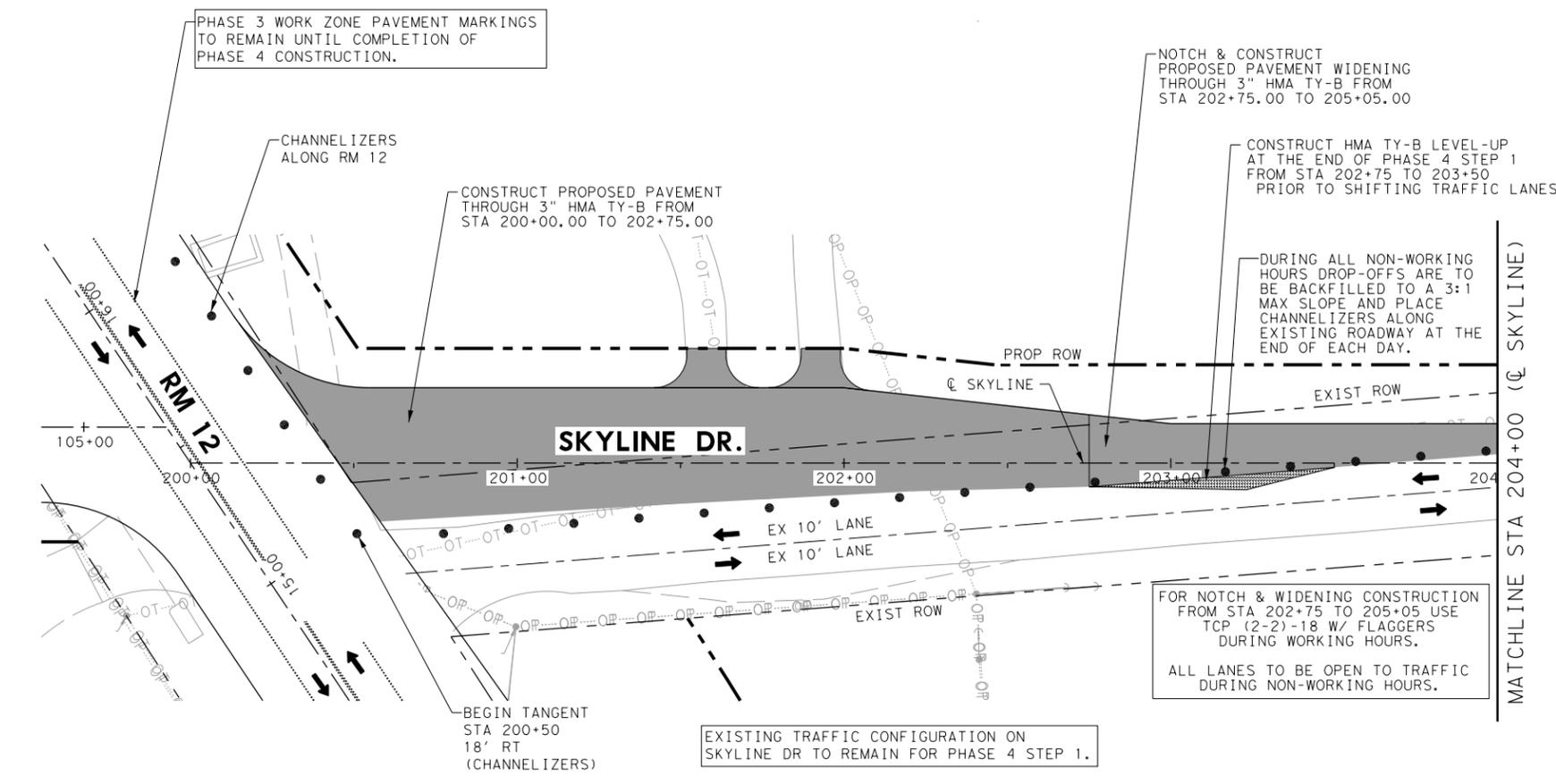

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**RM 12**  
**TRAFFIC CONTROL PLAN**  
**ADVANCE WARNING LAYOUT**

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				22
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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- LEGEND**
- DIRECTION OF TRAFFIC
  - CONSTRUCTION THIS PHASE
  - CHANNELIZING DEVICES

- NOTES:**
1. MAINTAIN ACCESS TO ALL INTERSECTIONS AND DRIVEWAYS AT ALL TIMES UNLESS OTHERWISE NOTED.
  2. SEE TCP SEQUENCE OF WORK.
  3. SEE BC, TCP, AND WZ STANDARDS FOR TEMPORARY SIGNING AND PAVEMENT MARKING DETAILS.
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**JOHN W. TULEY**  
 102441  
 LICENSED PROFESSIONAL ENGINEER  
 1/27/2026

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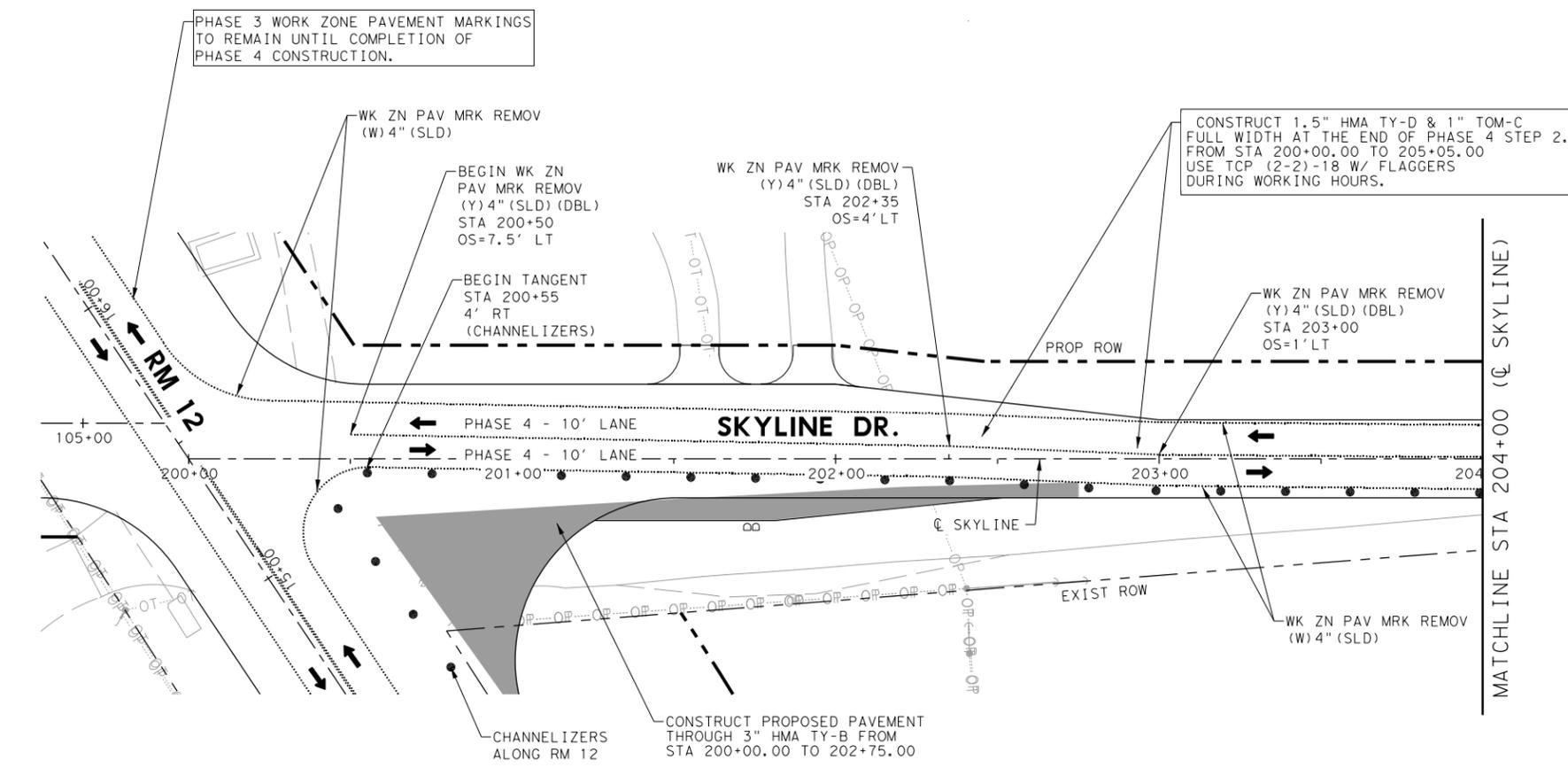
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**RM 12**  
**TRAFFIC CONTROL PLAN**  
**LAYOUT PHASE 4 STEP 1**

SHEET 1 OF 4

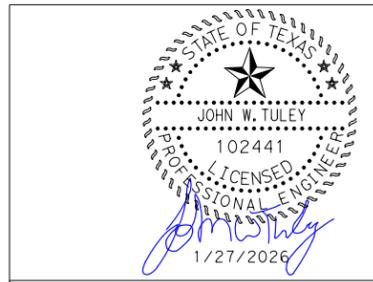
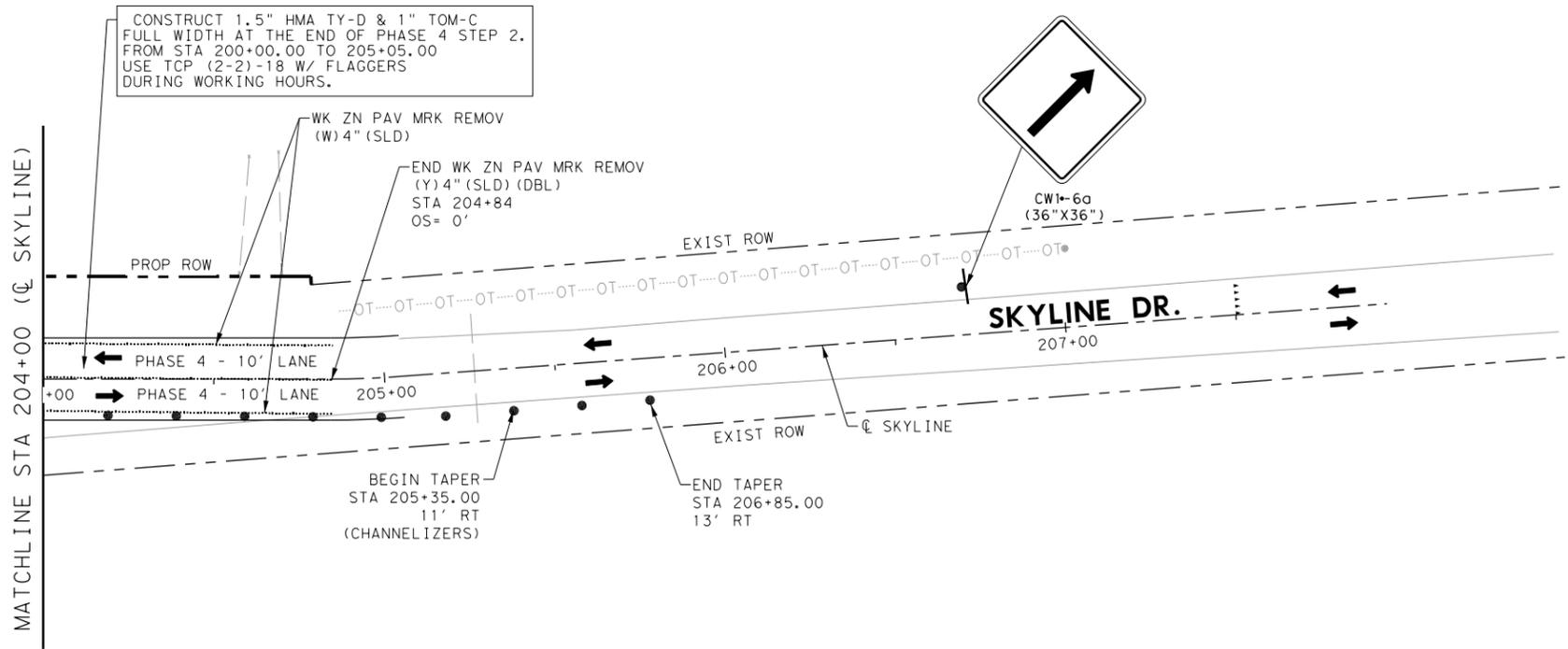
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TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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- LEGEND**
- DIRECTION OF TRAFFIC
  - CONSTRUCTION THIS PHASE
  - CHANNELIZING DEVICES

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**RM 12**  
**TRAFFIC CONTROL PLAN**  
**LAYOUT PHASE 4 STEP 2**

SHEET 2 OF 4

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				24
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

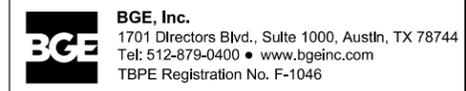
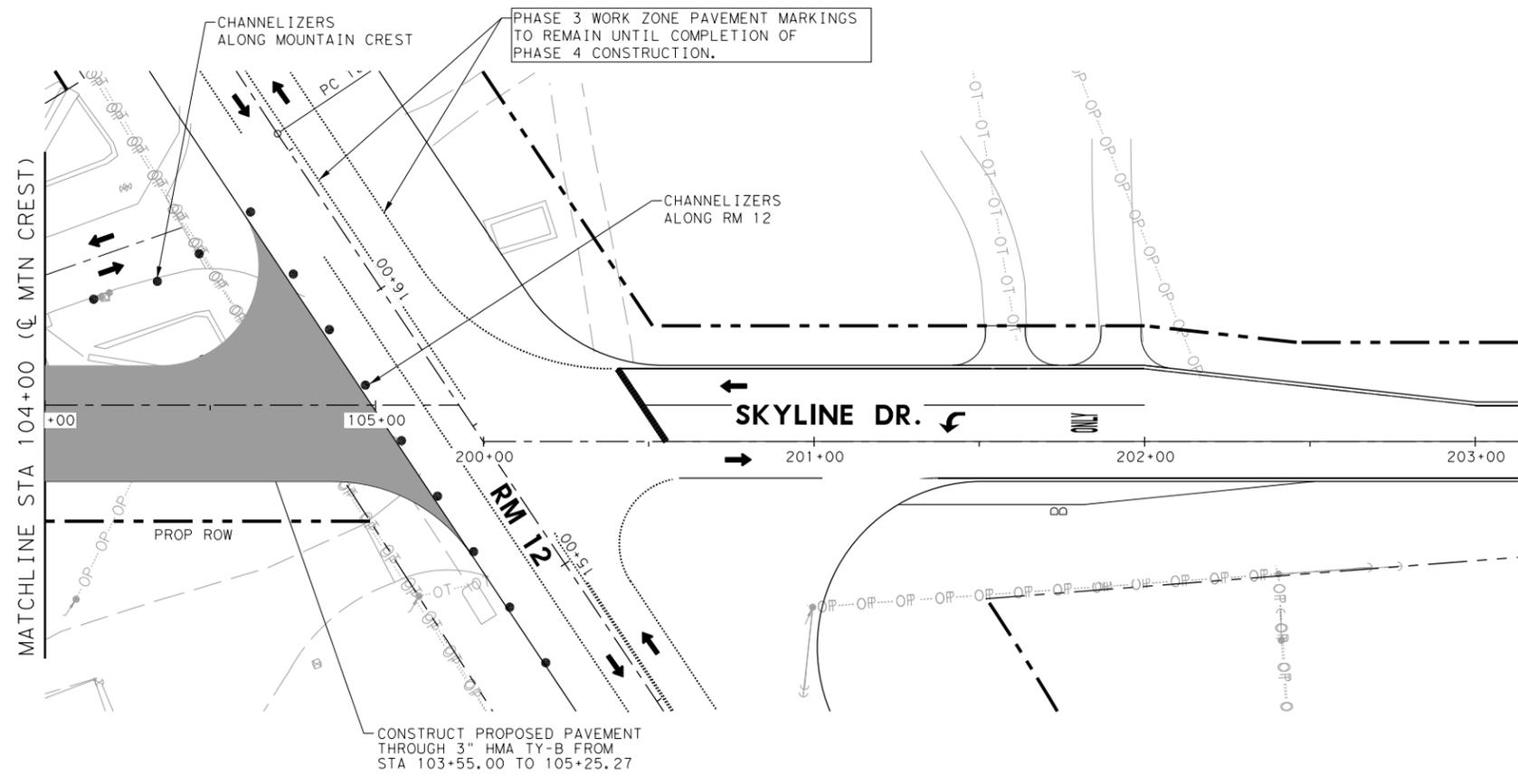
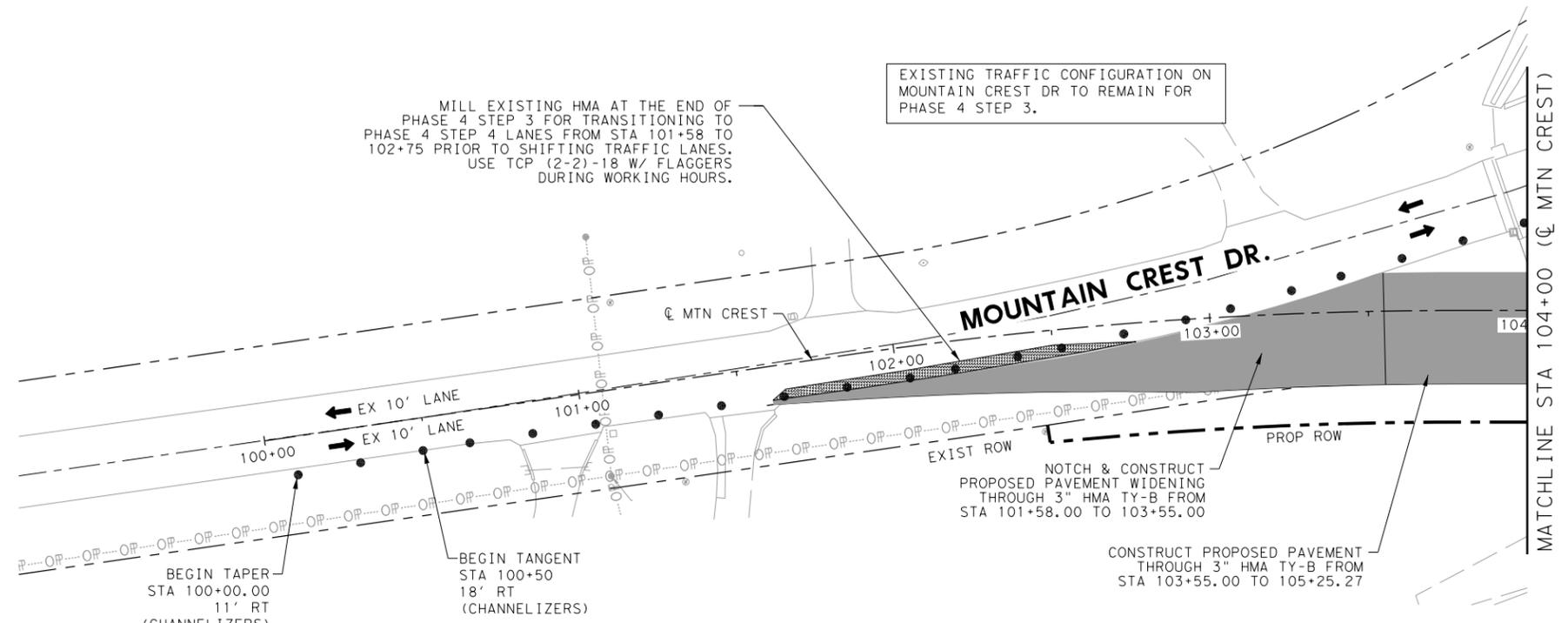
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**LEGEND**

- DIRECTION OF TRAFFIC
- CONSTRUCTION THIS PHASE
- CHANNELIZING DEVICES

- NOTES:**
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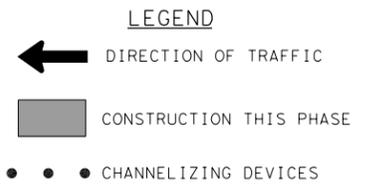
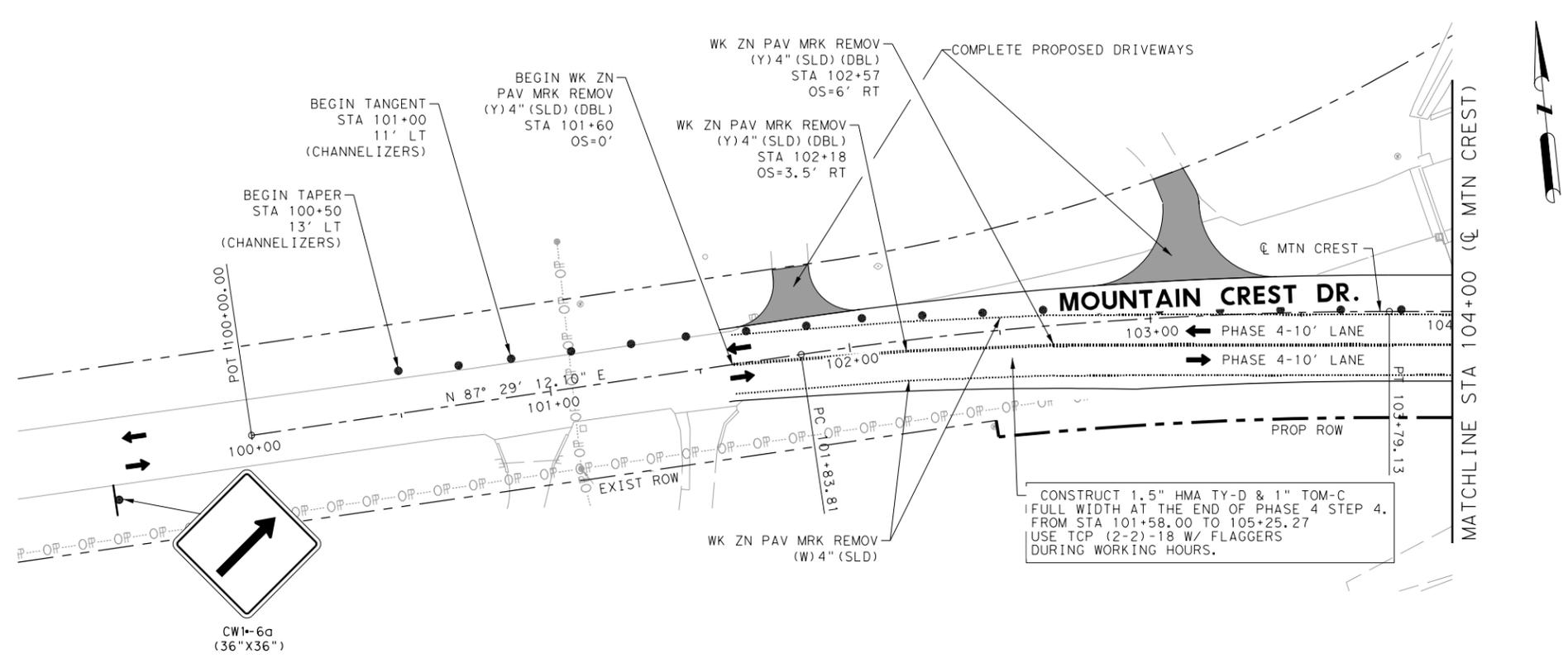


**RM 12  
 TRAFFIC CONTROL PLAN  
 LAYOUT PHASE 4 STEP 3**

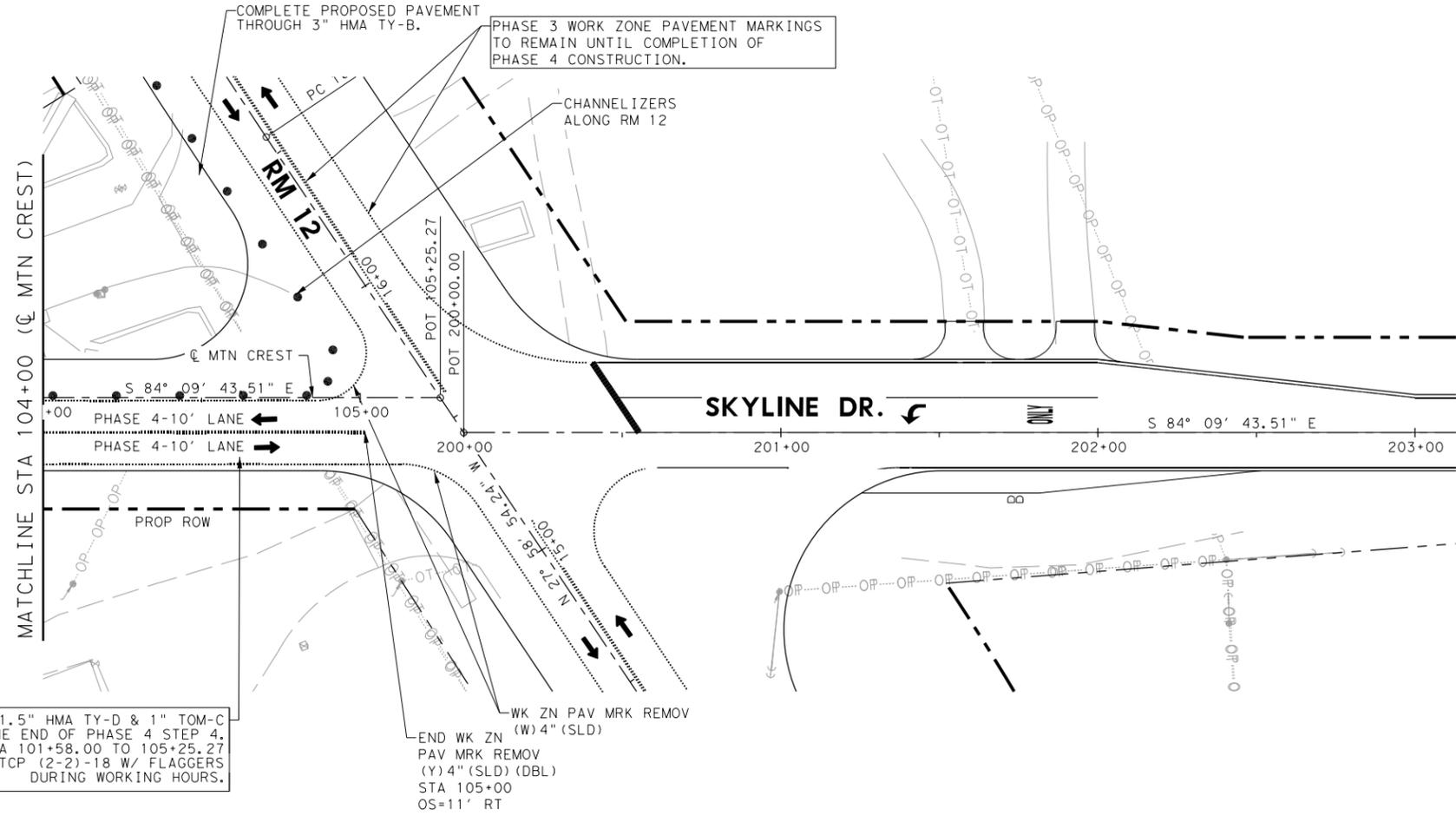
SHEET 3 OF 4

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				25
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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- NOTES:**
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  5. ALL CHANNELIZING DEVICES AND SIGN PLACEMENT MUST CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND TXDOT STANDARDS.
  6. WARNING SIGN PLACEMENT SHALL NOT CONFLICT WITH EXISTING PERMANENT SIGNAGE.
  7. EXISTING GROUND MOUNTED SIGNS SHALL BE TEMPORARILY REINSTALLED ON APPROVED TEMPORARY MOUNTS, WHERE NEEDED FOR TCP.



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**RM 12**  
**TRAFFIC CONTROL PLAN**  
**LAYOUT PHASE 4 STEP 4**

SHEET 4 OF 4

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				26
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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**BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:**

1. 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).
2. The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.
12. The Engineer has the final decision on the location of all traffic control devices.
13. 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:**

1. 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.
2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

**COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES**

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
2. 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 <a href="http://www.txdot.gov">http://www.txdot.gov</a>
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



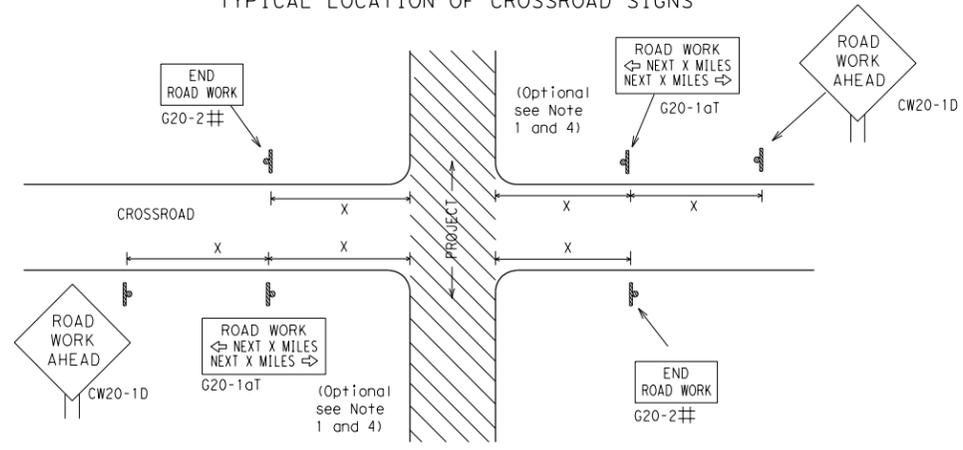
**BARRICADE AND CONSTRUCTION  
GENERAL NOTES  
AND REQUIREMENTS**

**BC (1) - 21**

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9-07	8-14								
5-10	5-21								

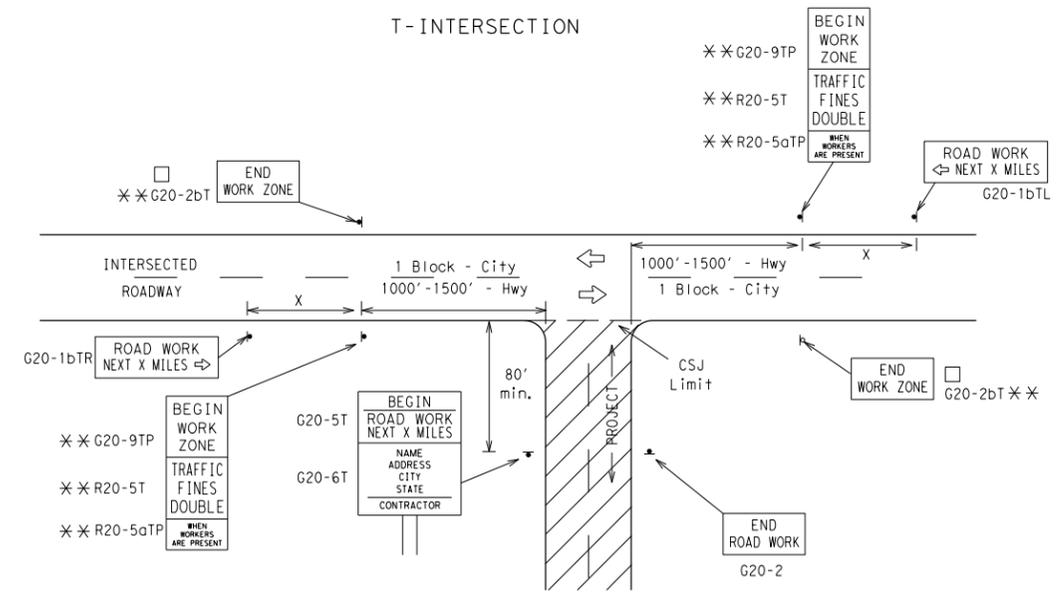
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**TYPICAL LOCATION OF CROSSROAD SIGNS**



- ## 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<sup>1,5,6</sup>**

Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/Freeway	Posted Speed MPH	Sign Δ Spacing "x" Feet (Apprx.)
CW20 <sup>4</sup>	48" x 48"	48" x 48"	30	120
CW21			35	160
CW22			40	240
CW23			45	320
CW25	36" x 36"	48" x 48"	50	400
CW1, CW2, CW7, CW8, CW9, CW11, CW14			55	500 <sup>2</sup>
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12			60	600 <sup>2</sup>
			65	700 <sup>2</sup>
	48" x 48"	48" x 48"	70	800 <sup>2</sup>
			75	900 <sup>2</sup>
			80	1000 <sup>2</sup>
			*	* <sup>3</sup>

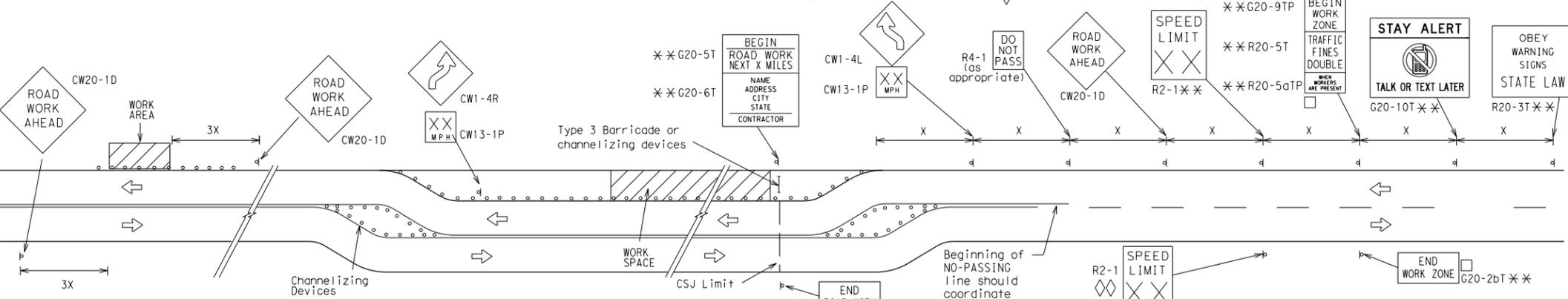
\* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

**GENERAL NOTES**

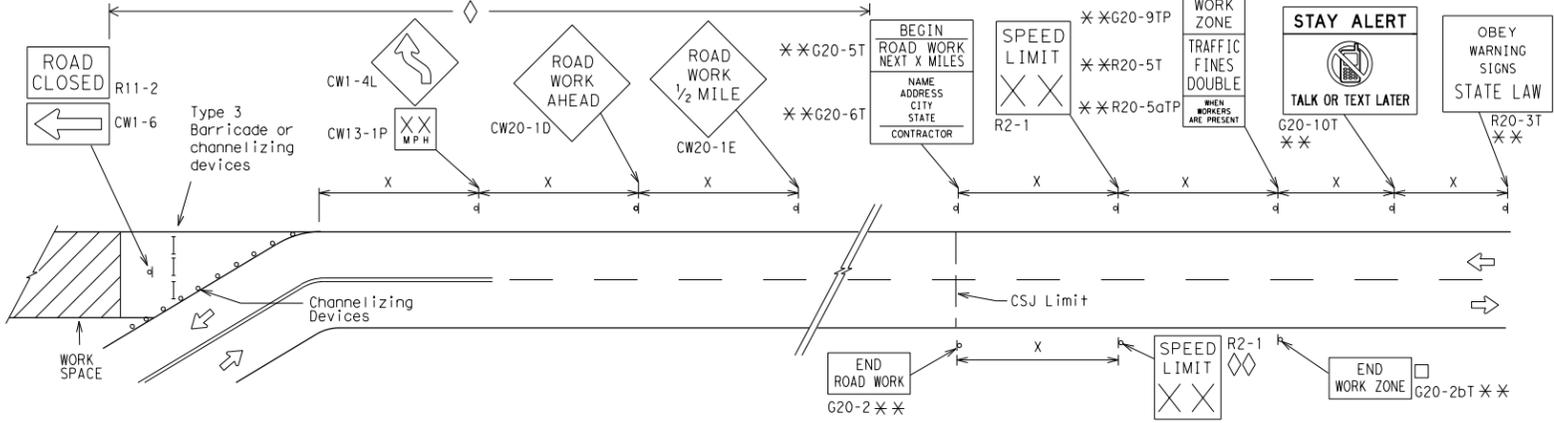
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be 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**

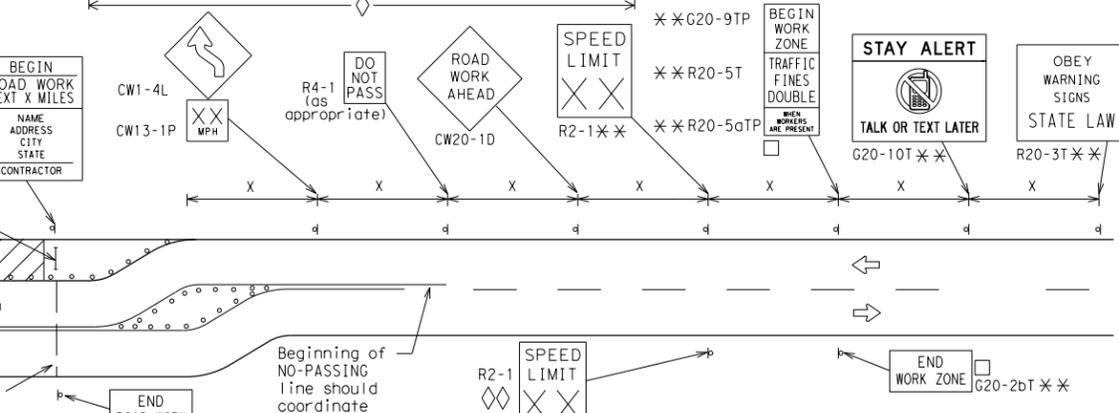


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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



**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.

**LEGEND**

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

SHEET 2 OF 12



**BARRICADE AND CONSTRUCTION PROJECT LIMIT**

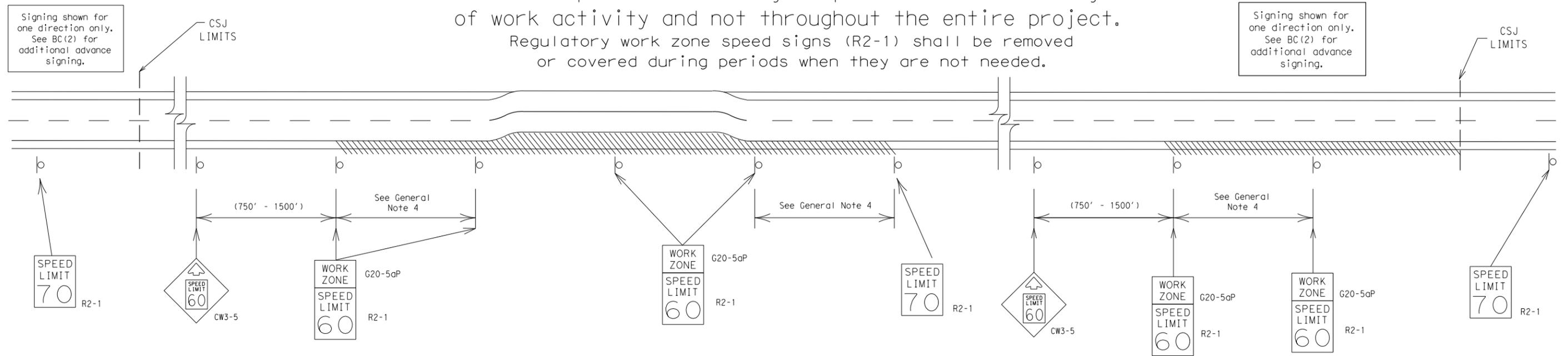
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# TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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:

- rough road or damaged pavement surface
- substantial alteration of roadway geometrics (diversions)
- construction detours
- grade
- width
- 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

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- 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
- Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
- 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.
- Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
- Techniques that may help reduce traffic speeds include but are not limited to:
  - Law enforcement.
  - Flagger stationed next to sign.
  - Portable changeable message sign (PCMS).
  - Low-power (drone) radar transmitter.
  - Speed monitor trailers or signs.
- Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
- 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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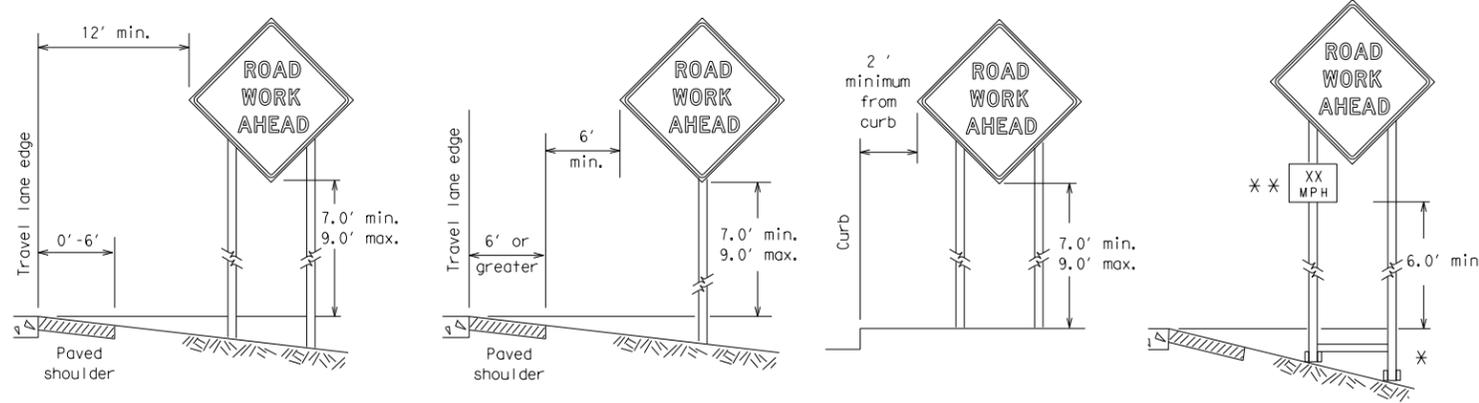
SHEET 3 OF 12

<h2>BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT</h2>			
<h3>BC (3) - 21</h3>			
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© TxDOT	November 2002	CON: 0683	SECT: 03
REVISIONS		JOB: 045	HIGHWAY: RM 12
9-07	8-14	DIST: AUS	COUNTY: HAYS
7-13	5-21		SHEET NO.: 29

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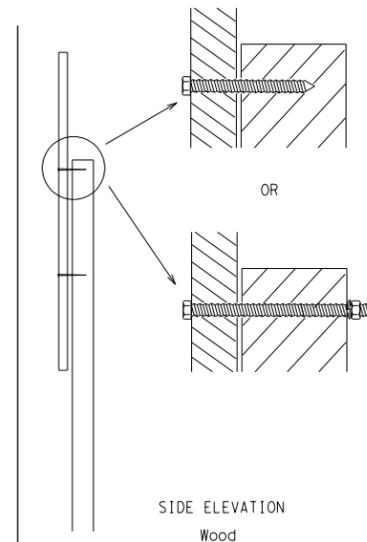
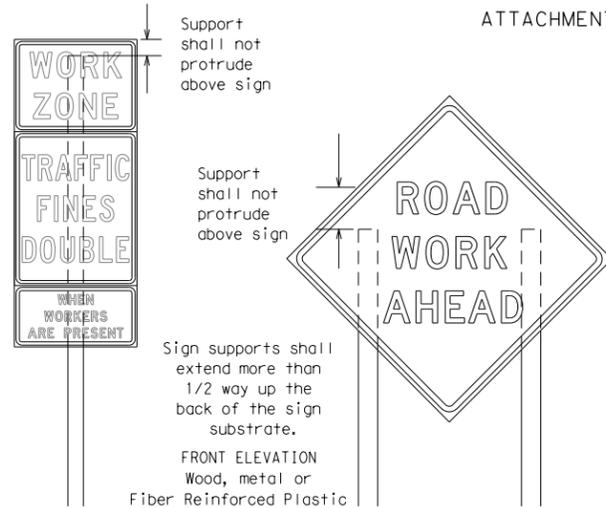
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



\* 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



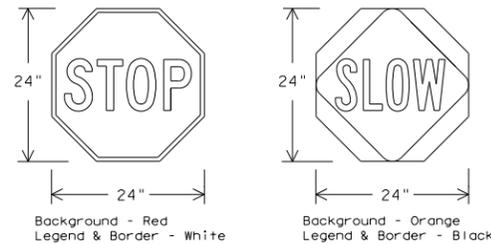
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

- STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
- STOP/SLOW paddles shall be retroreflectORIZED when used at night.
- STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
- 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 <sub>FL</sub> OR C <sub>FL</sub> 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

- 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.
- 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.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- 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.
- 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.
- 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

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Wooden sign posts shall be painted white.
- Barricades shall NOT be used as sign supports.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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)

- 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.
  - Long-term stationary - work that occupies a location more than 3 days.
  - 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.
  - Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
  - Short, duration - work that occupies a location up to 1 hour.
  - Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

- 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.
- 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.
- Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
- 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.
- 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

- 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

- 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.
- "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
- 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

- 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).
- White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
- Orange sheeting, meeting the requirements of DMS-8300 Type B<sub>FL</sub> or Type C<sub>FL</sub>, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

- 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

- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
- 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.
- 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.
- 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 shall NOT be used to cover signs.
- Duct tape or other adhesive material shall NOT be affixed to a sign face.
- Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
- 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.
- 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.
- 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.
- Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

- 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.

SHEET 4 OF 12



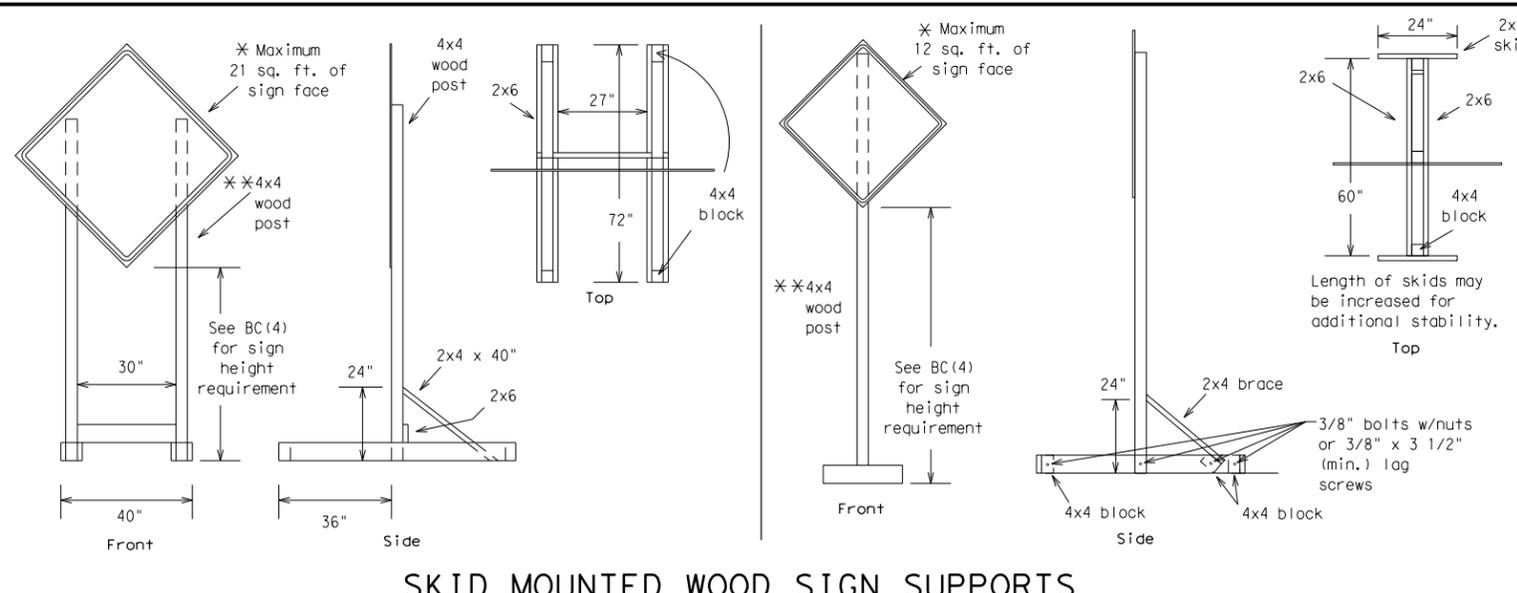
BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC (4) - 21

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© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0683	03	045	RM 12				
9-07	8-14	DIST	COUNTY	SHEET NO.					
7-13	5-21	AUS	HAYS	30					

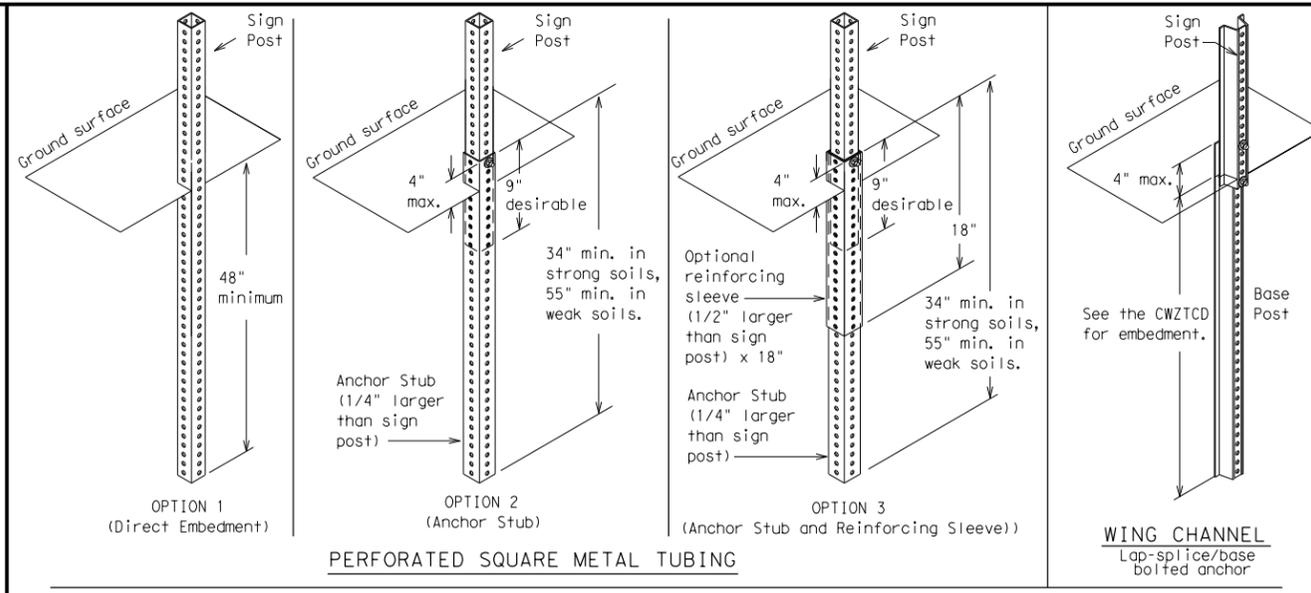
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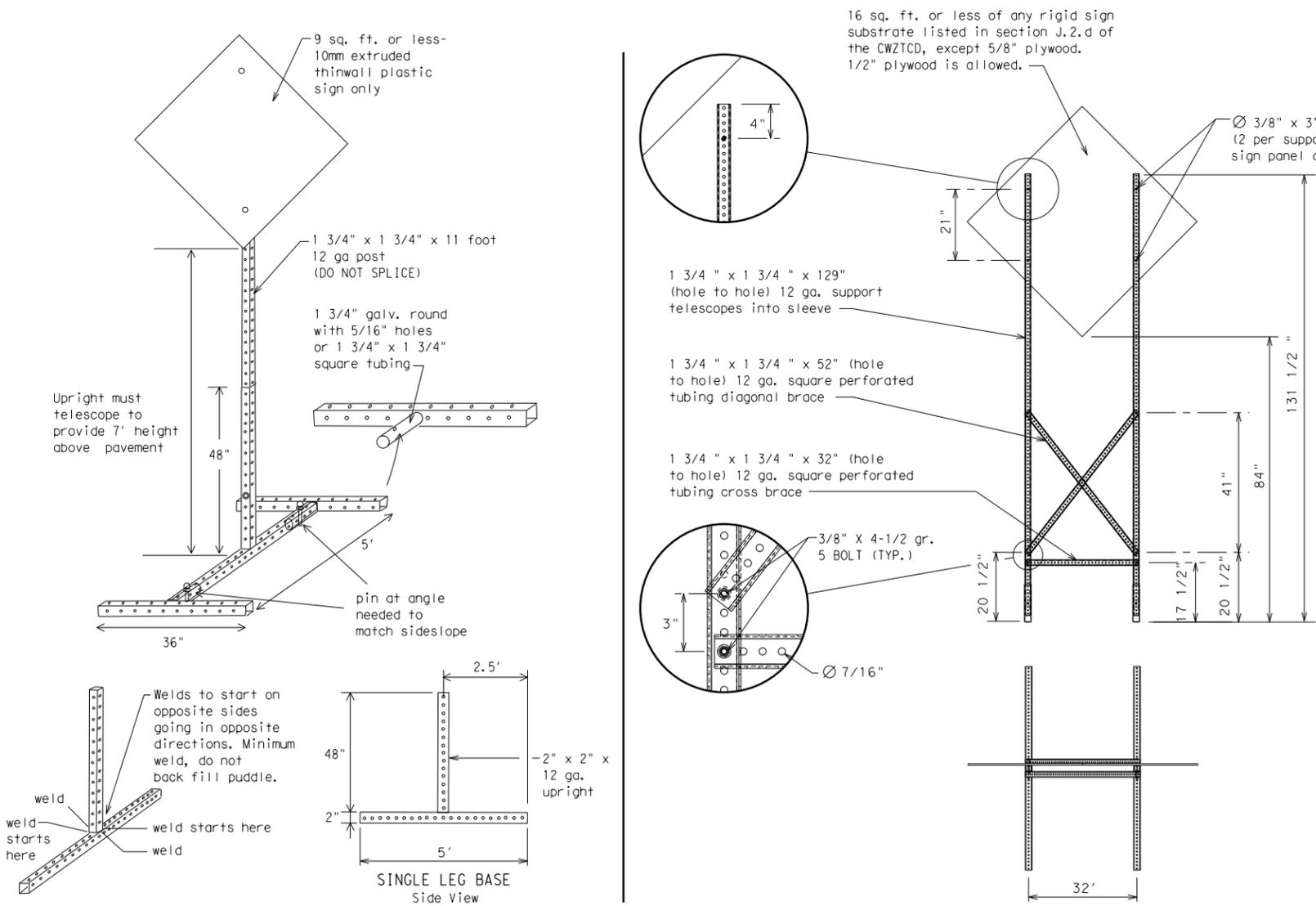
### SKID MOUNTED WOOD SIGN SUPPORTS

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



### GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD 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 CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

### GENERAL NOTES

1. 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.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. 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 CWZTCD 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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REVISIONS		0683	03	045	RM 12				
9-07	8-14	DIST	COUNTY	SHEET NO.					
7-13	5-21	AUS	HAYS	31					

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

# RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

## 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.

## Phase 1: Condition Lists

### Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE
ROAD CLOSED AT SH XXX
ROAD CLSD AT FM XXXX
RIGHT X LANES CLOSED
CENTER LANE CLOSED
NIGHT LANE CLOSURES
VARIOUS LANES CLOSED
EXIT CLOSED
MALL DRIVEWAY CLOSED
XXXXXXXX BLVD CLOSED

### Other Condition List

FRONTAGE ROAD CLOSED
SHOULDER CLOSED XXX FT
RIGHT LN CLOSED XXX FT
RIGHT X LANES OPEN
DAYTIME LANE CLOSURES
I-XX SOUTH EXIT CLOSED
EXIT XXX CLOSED X MILE
RIGHT LN TO BE CLOSED
X LANES CLOSED TUE - FRI
ROADWORK XXX FT
FLAGGER XXXX FT
RIGHT LN NARROWS XXXX FT
MERGING TRAFFIC XXXX FT
LOOSE GRAVEL XXXX FT
DETOUR X MILE
ROADWORK PAST SH XXXX
BUMP XXXX FT
TRAFFIC SIGNAL XXXX FT
ROAD REPAIRS XXXX FT
LANE NARROWS XXXX FT
TWO-WAY TRAFFIC XX MILE
CONST TRAFFIC XXX FT
UNEVEN LANES XXXX FT
ROUGH ROAD XXXX FT
ROADWORK NEXT FRI-SUN
US XXX EXIT X MILES
LANES SHIFT *

\* 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

MERGE RIGHT
DETOUR NEXT X EXITS
USE EXIT XXX
STAY ON US XXX SOUTH
TRUCKS USE US XXX N
WATCH FOR TRUCKS
EXPECT DELAYS
REDUCE SPEED XXX FT
USE OTHER ROUTES
STAY IN LANE *

### Location List

AT FM XXXX
BEFORE RAILROAD CROSSING
NEXT X MILES
PAST US XXX EXIT
XXXXXXXX TO XXXXXXX
US XXX TO FM XXXX

### Warning List

SPEED LIMIT XX MPH
MAXIMUM SPEED XX MPH
MINIMUM SPEED XX MPH
ADVISORY SPEED XX MPH
RIGHT LANE EXIT
USE CAUTION
DRIVE SAFELY
DRIVE WITH CARE

### \*\* Advance Notice List

TUE-FRI XX AM-X PM
APR XX-XX X PM-X AM
BEGINS MONDAY
BEGINS MAY XX
MAY X-X XX PM - XX AM
NEXT FRI-SUN
XX AM TO XX PM
NEXT TUE AUG XX
TONIGHT XX PM-XX AM

\*\* 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.

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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
Canot	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

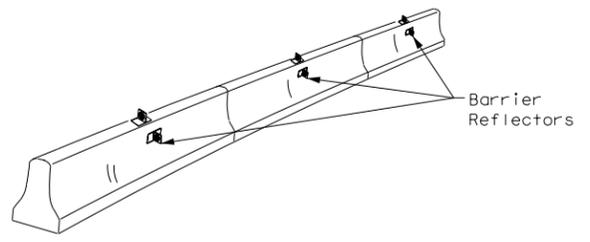
Roadway designation # IH-number, US-number, SH-number, FM-number

<h3>BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)</h3>			
<h2>BC (6) - 21</h2>			
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©TxDOT	November 2002	CONT:	0683
REVISIONS		SECT:	03
		JOB:	045
		HIGHWAY:	RM 12
9-07	8-14	DIST:	COUNTY
7-13	5-21	AUS:	HAYS
		SHEET NO.:	32

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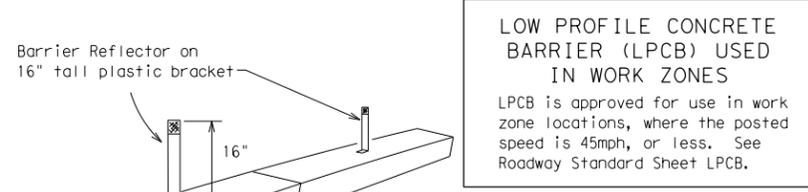
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors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



CONCRETE TRAFFIC BARRIER (CTB)

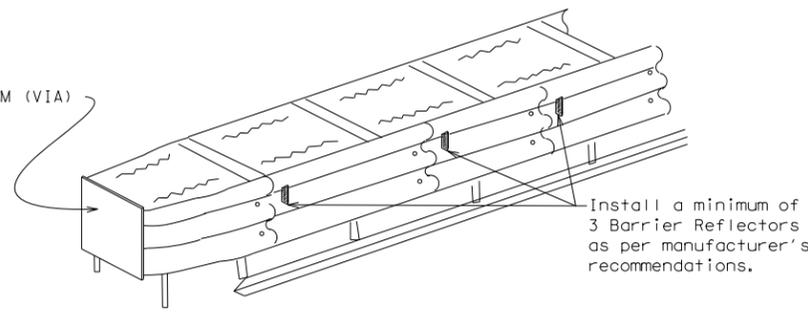
- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. 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.



**LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES**

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

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**

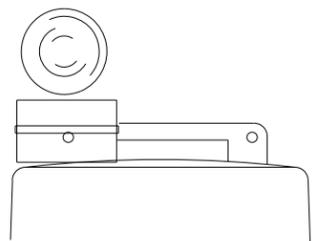
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet 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<sub>FL</sub> or C<sub>FL</sub> 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**

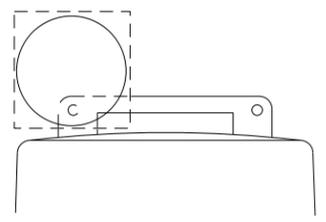
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing 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.



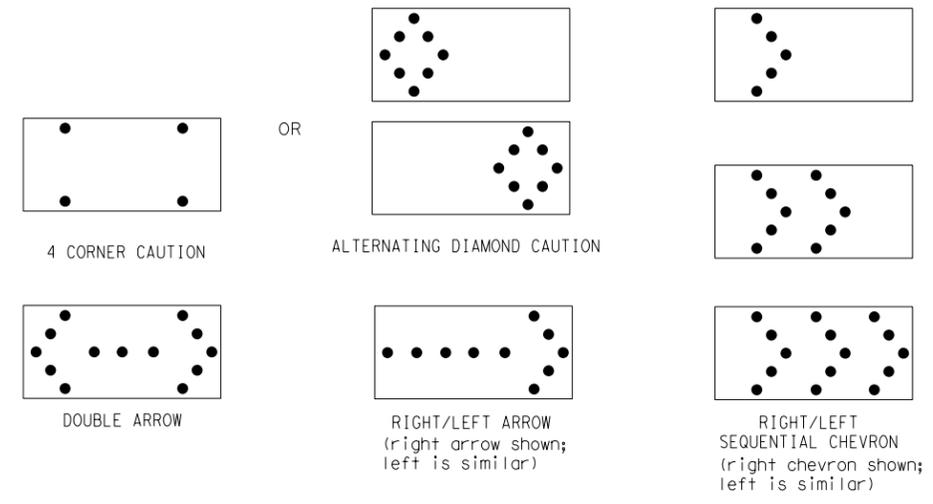
Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

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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9-07	8-14	DIST	COUNTY	SHEET NO.					
7-13	5-21	AUS	HAYS	33					

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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**

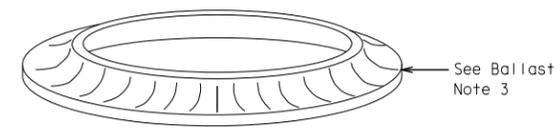
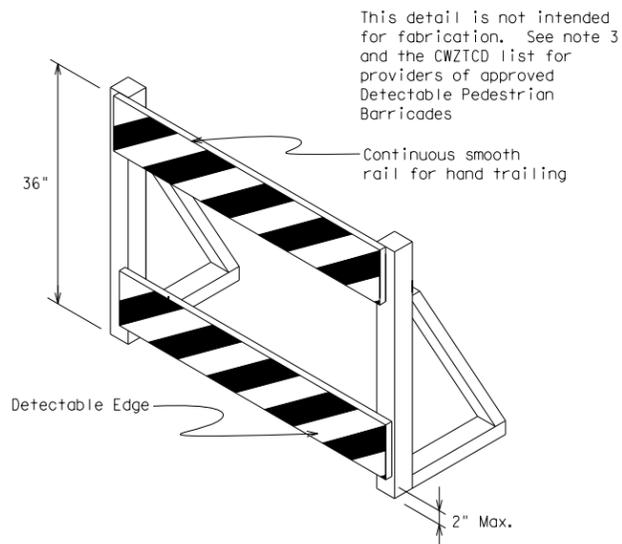
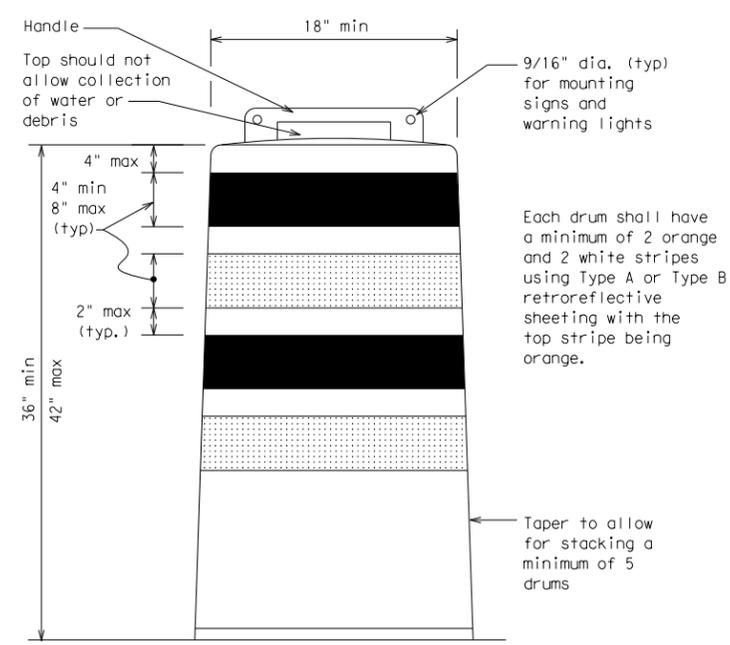
- Pre-qualified plastic drums shall meet the following requirements:
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
  - The body and base shall lock together in such a manner that the body separates from the base when impacted 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.

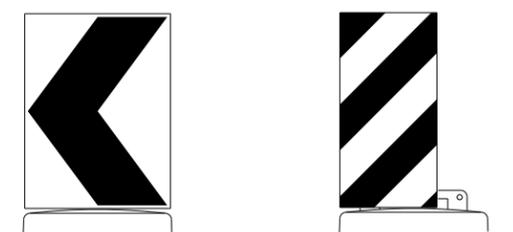
**BALLAST**

- 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<sub>FL</sub> or Type C<sub>FL</sub> 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



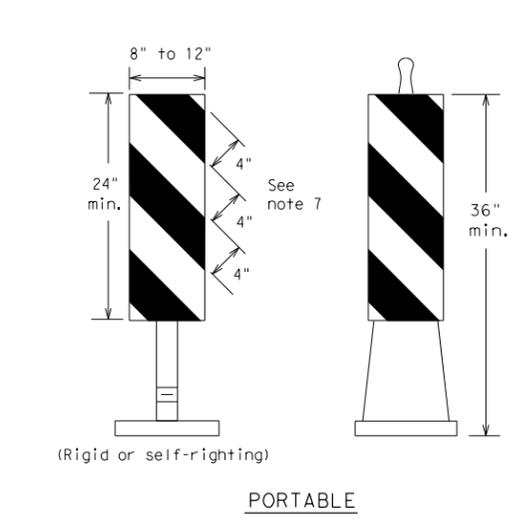
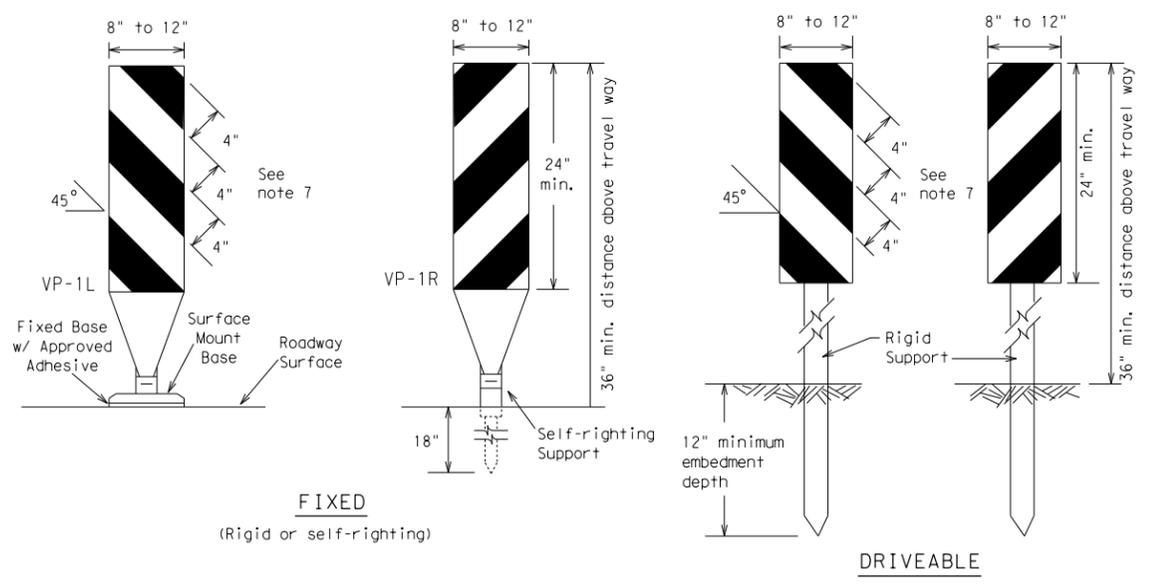
**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (8) - 21**

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7-13									

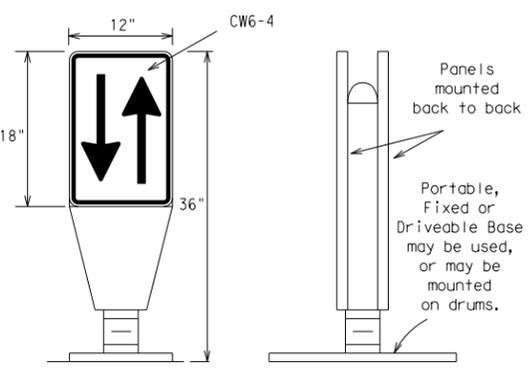
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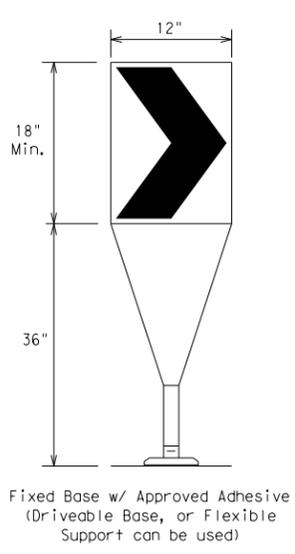
**VERTICAL PANELS (VPs)**

1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. 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.
3. 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.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.



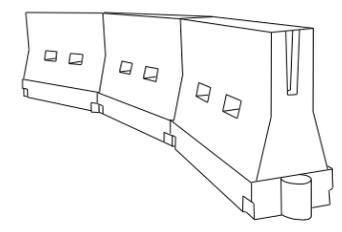
**OPPOSING TRAFFIC LANE DIVIDERS (OTLD)**

1. 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.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B<sub>FL</sub> or Type C<sub>FL</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.



1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B<sub>FL</sub> or Type C<sub>FL</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. 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.

**CHEVRONS**



**LONGITUDINAL CHANNELIZING DEVICES (LCD)**

1. 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.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. 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**

1. 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.
2. 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.
3. 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.
4. 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.
5. 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**

1. 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).
2. 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.
3. 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).
4. 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.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. 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.
7. 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	$L = \frac{WS^2}{60}$	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**

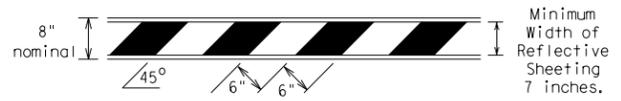
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© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
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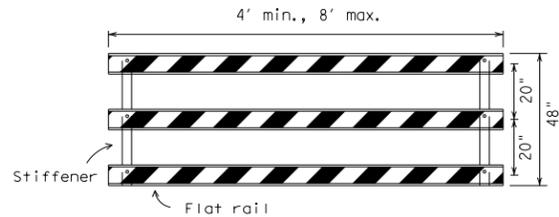
**TYPE 3 BARRICADES**

- 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.



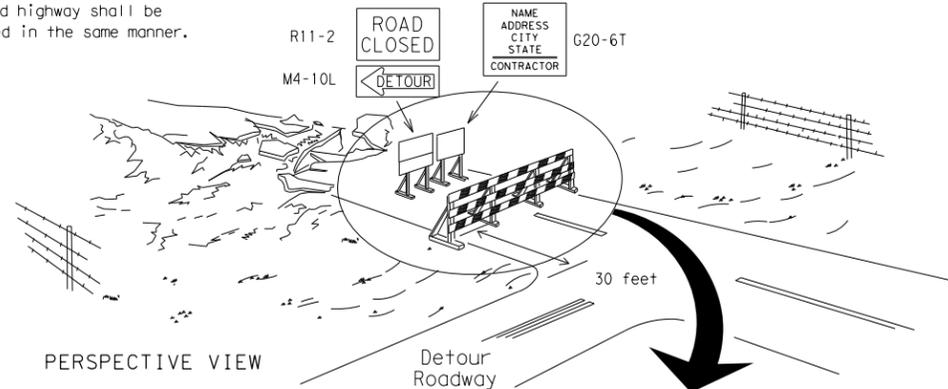
**TYPICAL STRIPING DETAIL FOR BARRICADE RAIL**



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

**TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES**

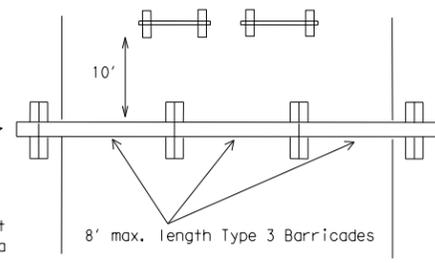
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

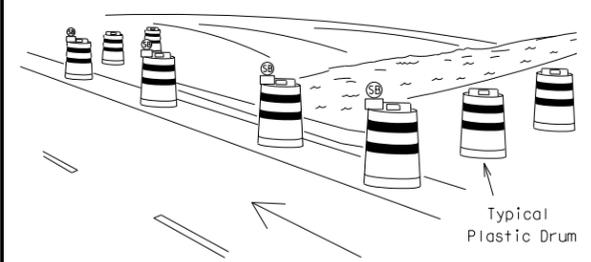
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.

- 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.

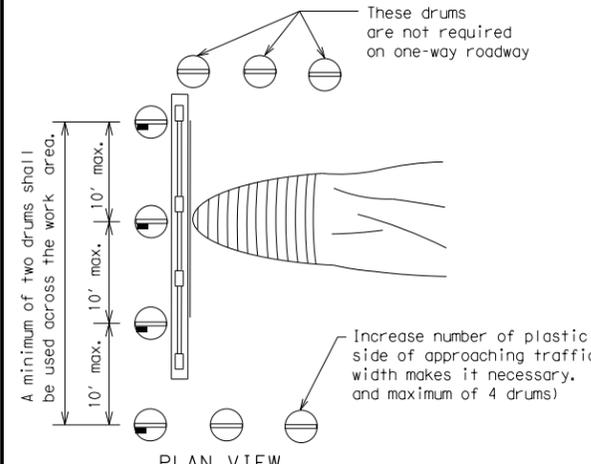


PLAN VIEW

**TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION**



PERSPECTIVE VIEW

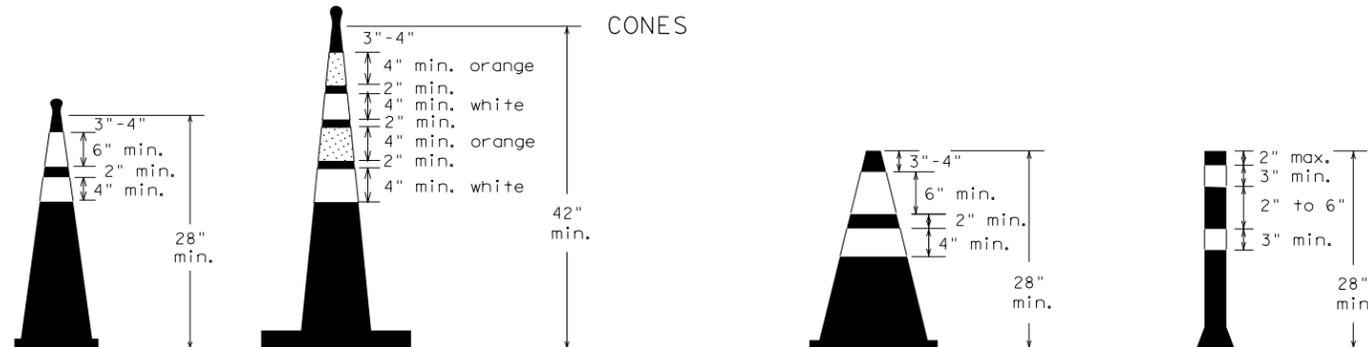


PLAN VIEW

- 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**



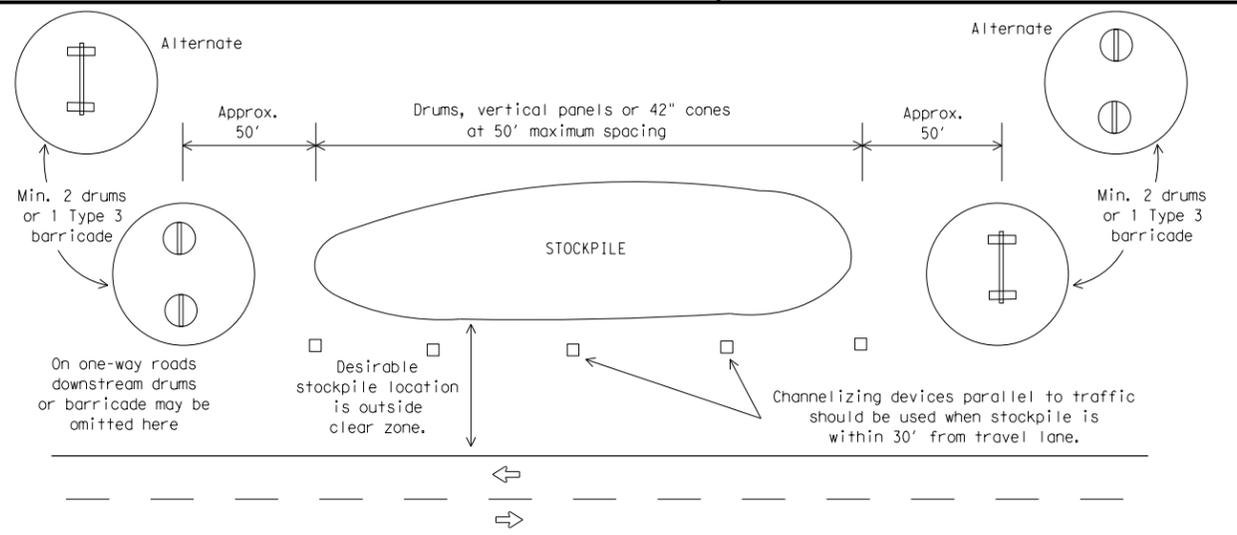
Two-Piece cones

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**

		<b>Traffic Safety Division Standard</b>	
<b>BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES</b>			
<b>BC (10) - 21</b>			
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## 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.

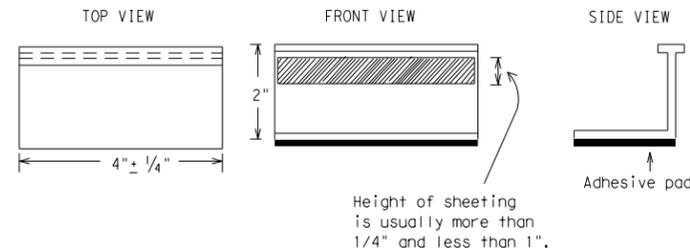
### MAINTAINING WORK ZONE PAVEMENT MARKINGS

- 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

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0683	03	045	RM 12
2-98 9-07 5-21	DIST	COUNTY	SHEET NO.	
1-02 7-13	AUS	HAYS	37	
11-02 8-14				

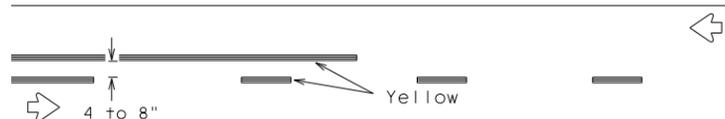
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## PAVEMENT MARKING PATTERNS

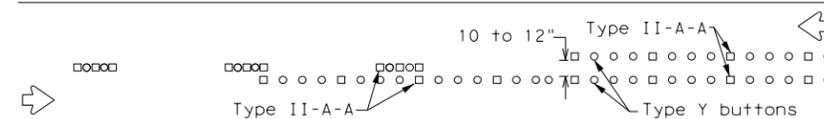


REFLECTORIZED PAVEMENT MARKINGS - PATTERN A

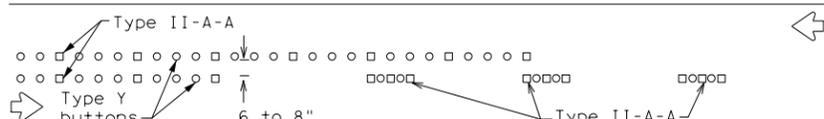


REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

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.

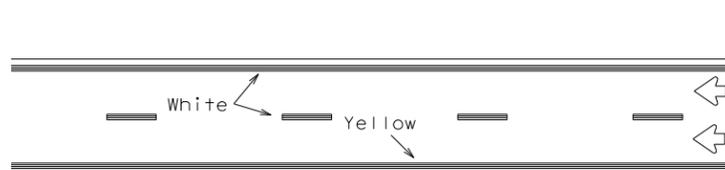


RAISED PAVEMENT MARKERS - PATTERN A



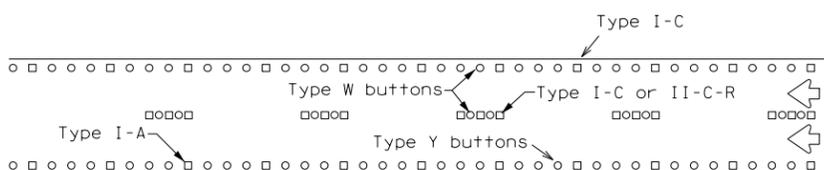
RAISED PAVEMENT MARKERS - PATTERN B

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



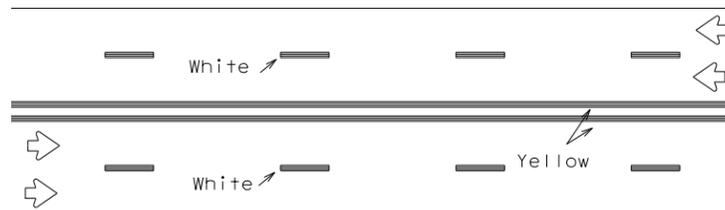
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



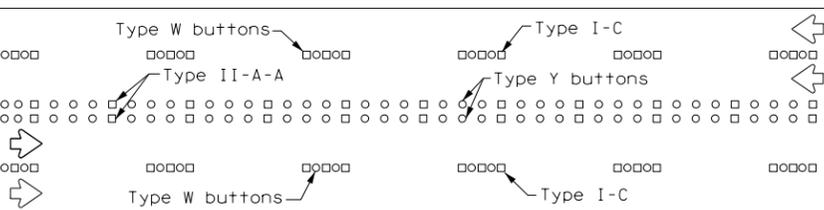
RAISED PAVEMENT MARKERS

## EDGE & LANE LINES FOR DIVIDED HIGHWAY



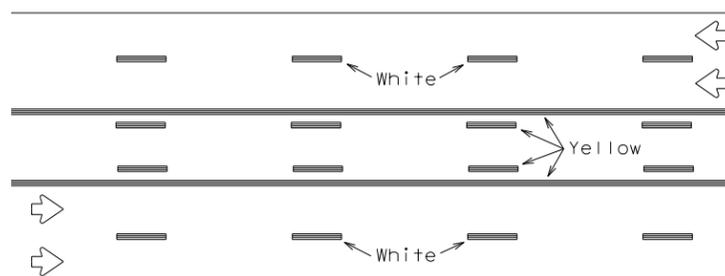
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



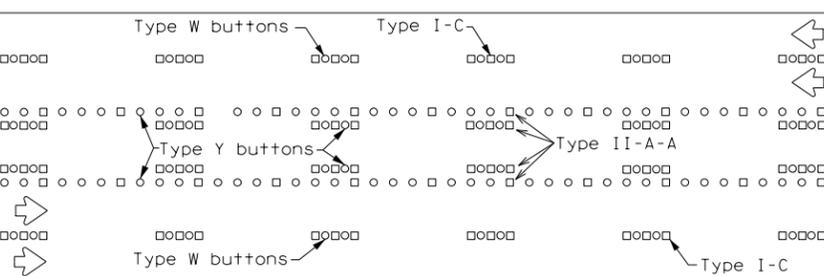
RAISED PAVEMENT MARKERS

## LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

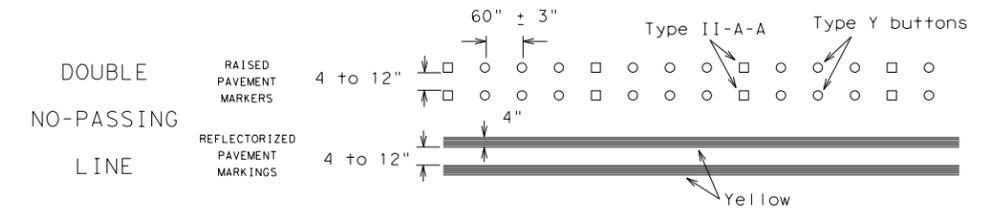
Prefabricated markings may be substituted for reflectorized pavement markings.



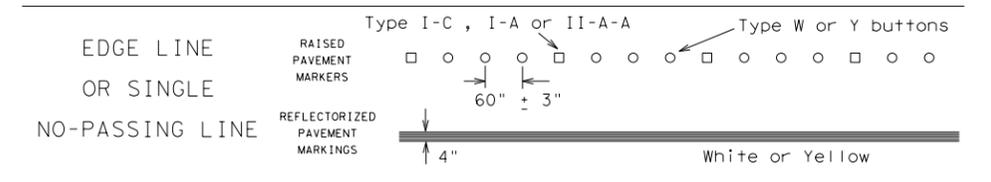
RAISED PAVEMENT MARKERS

## TWO-WAY LEFT TURN LANE

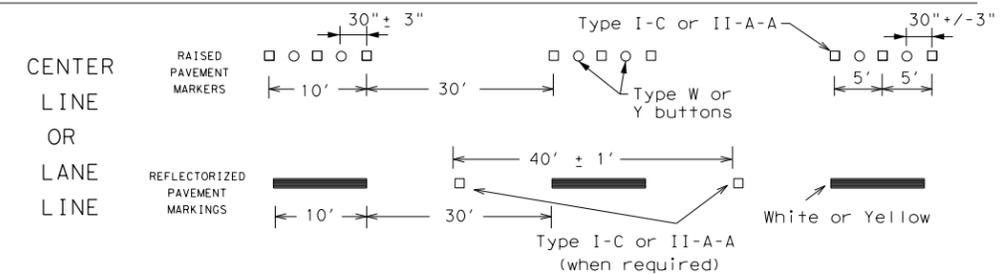
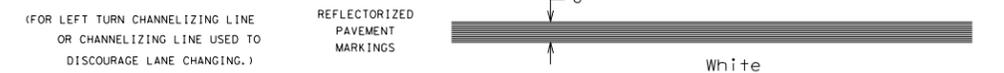
## STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



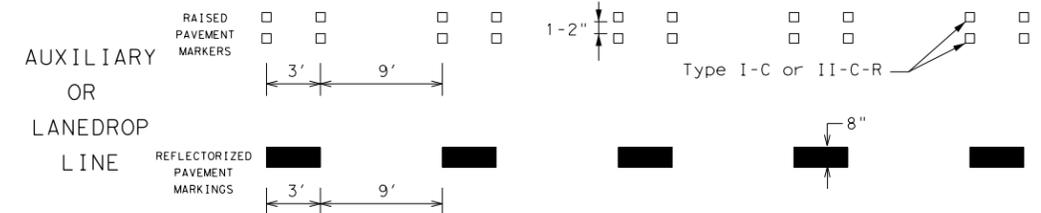
SOLID LINES



WIDE LINE

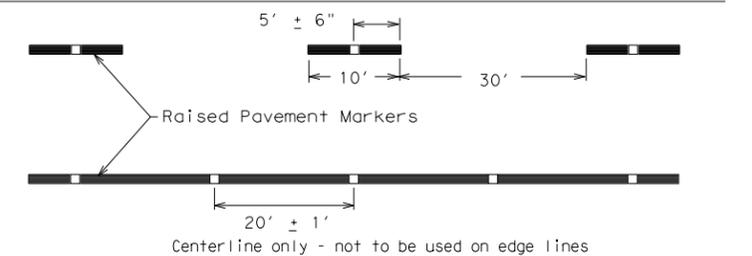


BROKEN LINES



## 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

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## BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC (12) - 21

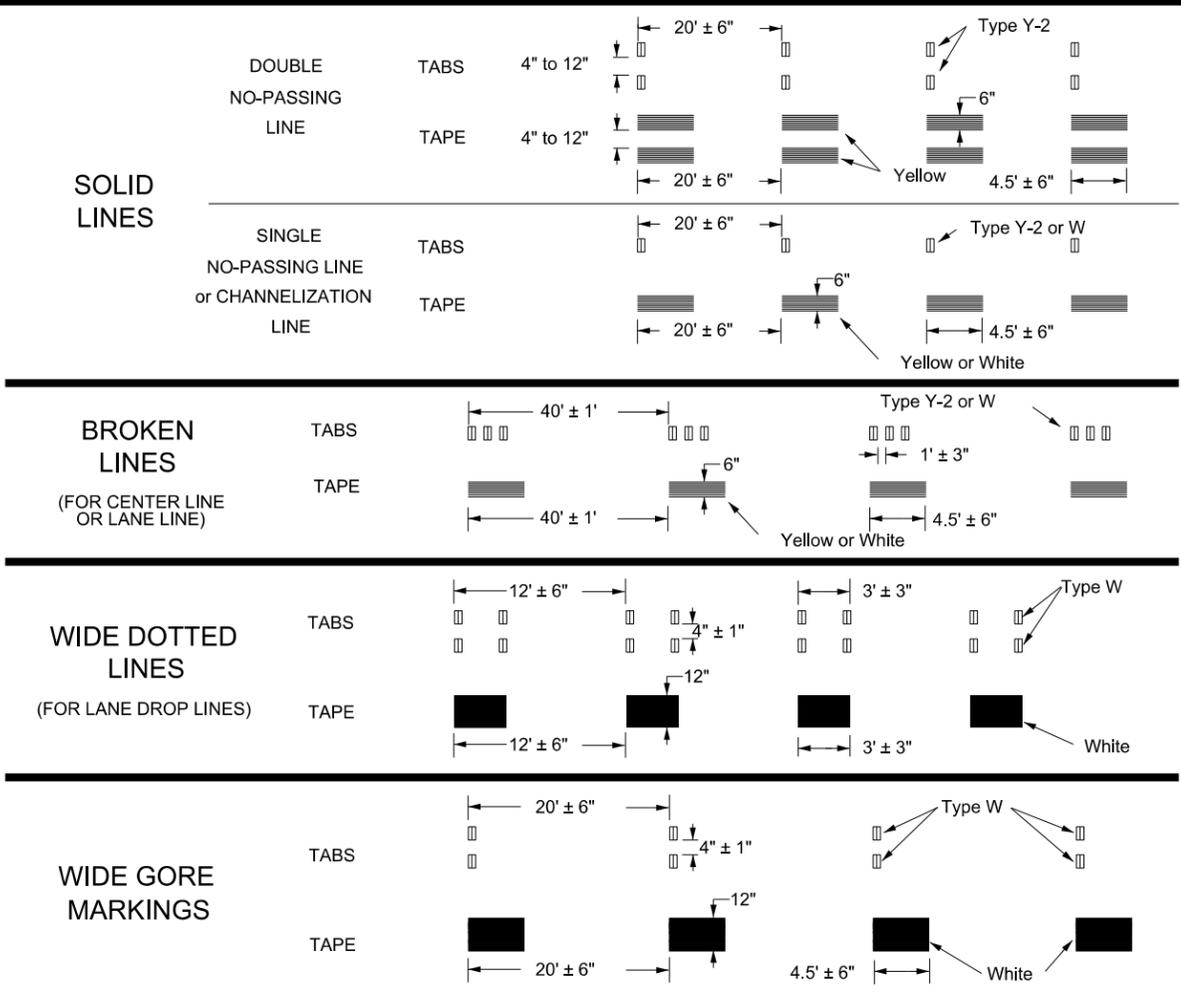
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©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0683	03	045	RM 12
1-97 9-07 5-21				
2-98 7-13				
11-02 8-14	DIST	COUNTY	SHEET NO.	
	AUS	HAYS	38	

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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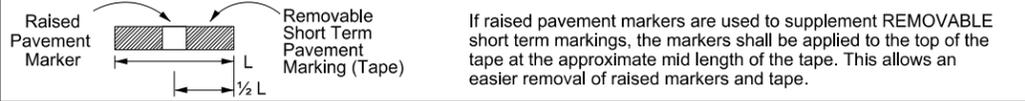
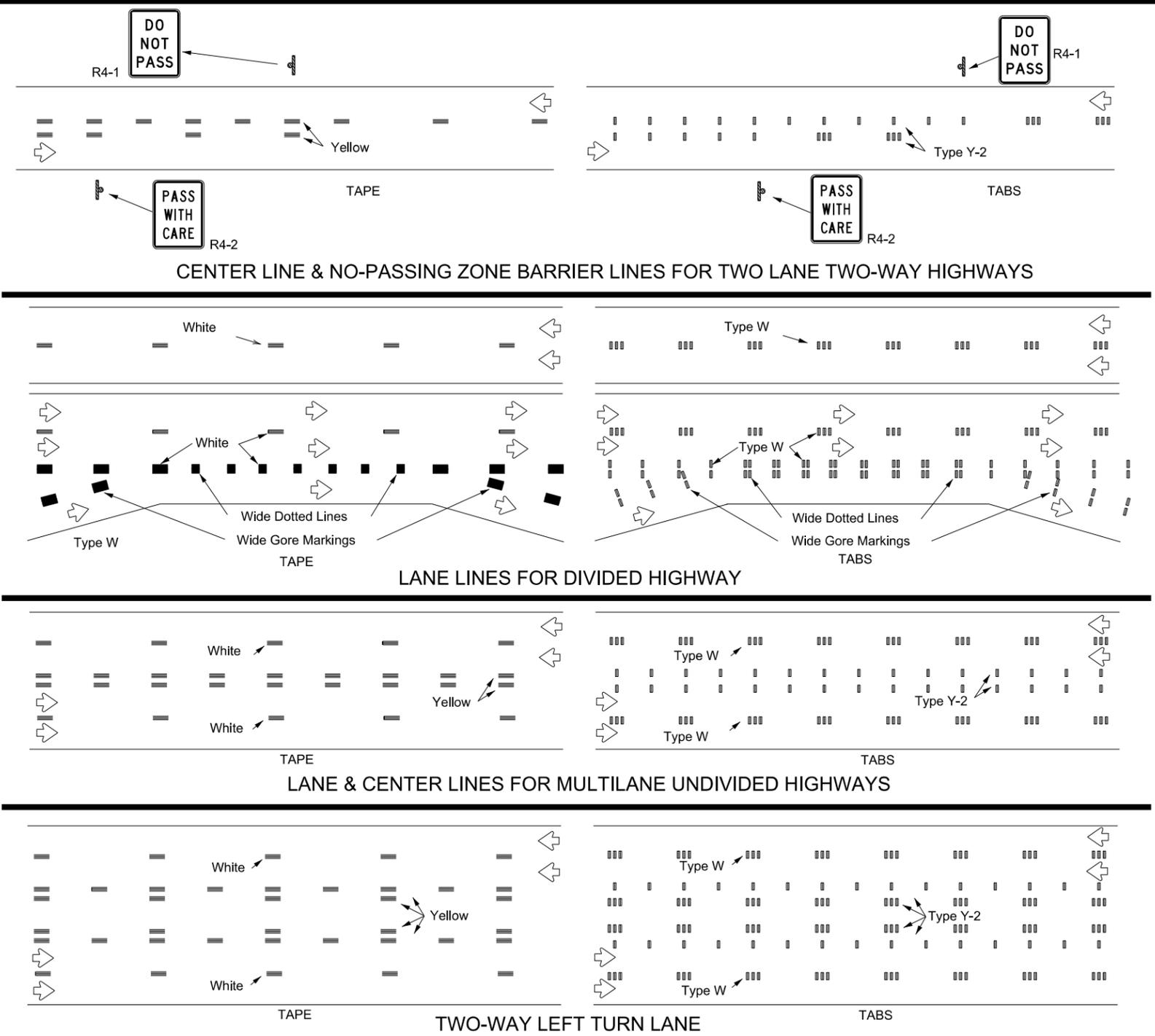
## WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS



- 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](http://www.txdot.gov/business/contractors_consultants/material_specifications/default.htm)

Texas Department of Transportation

Traffic Safety Division Standard

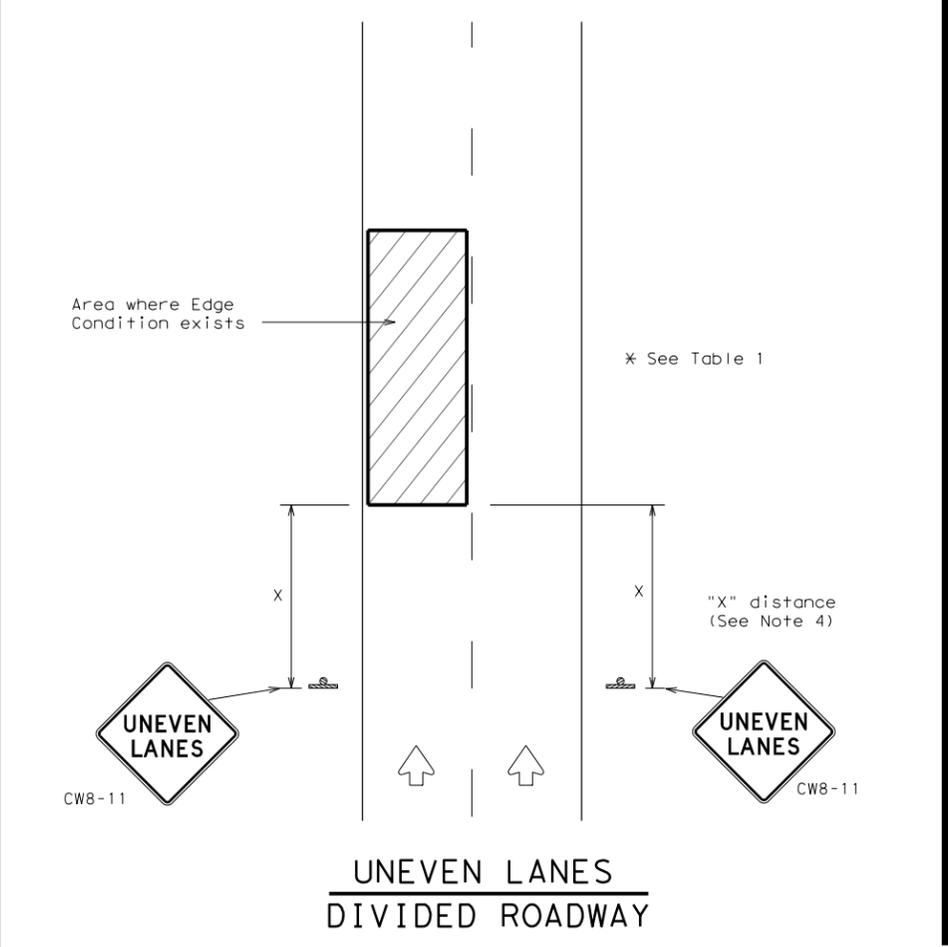
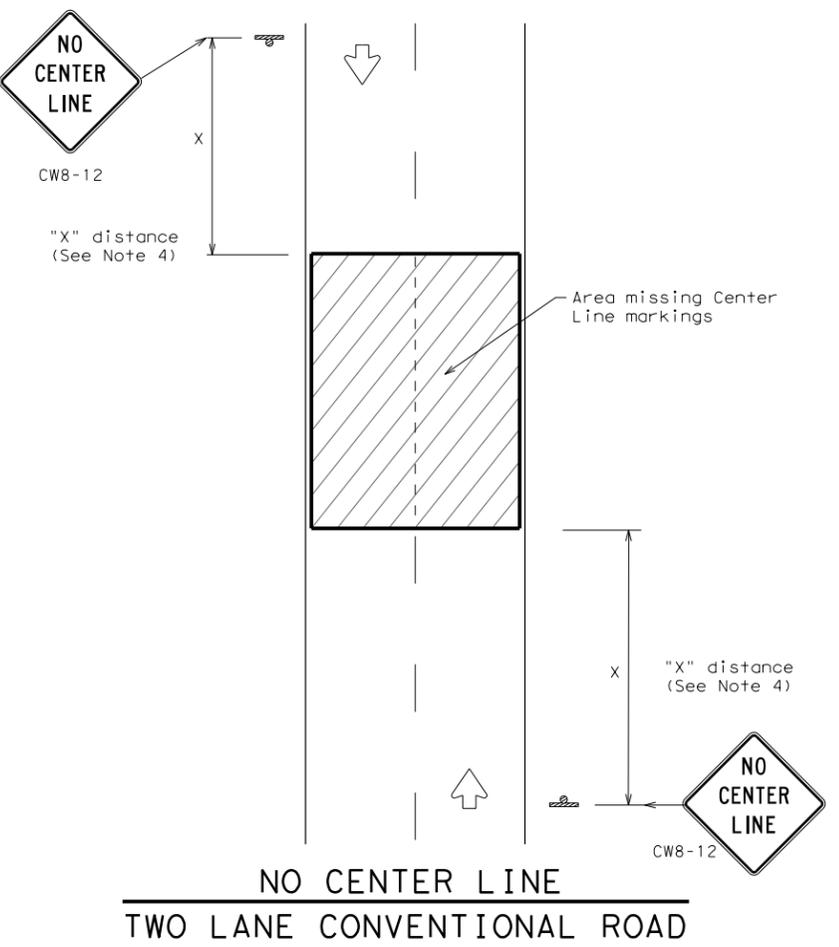
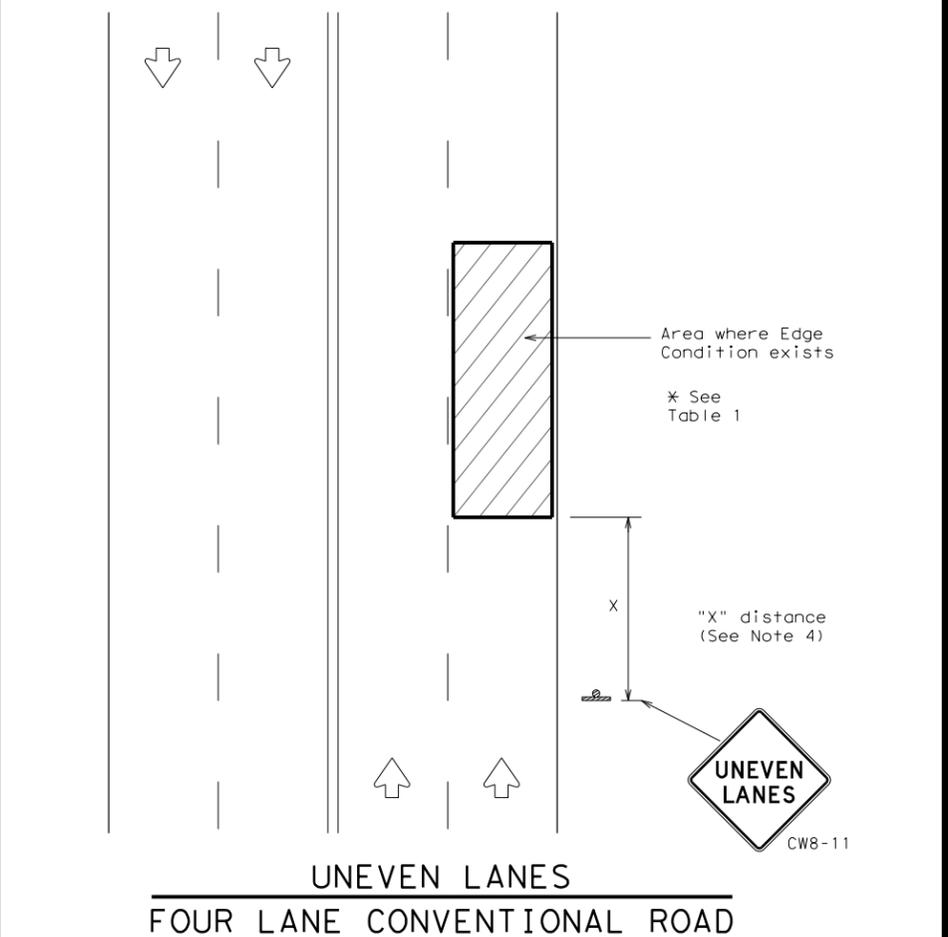
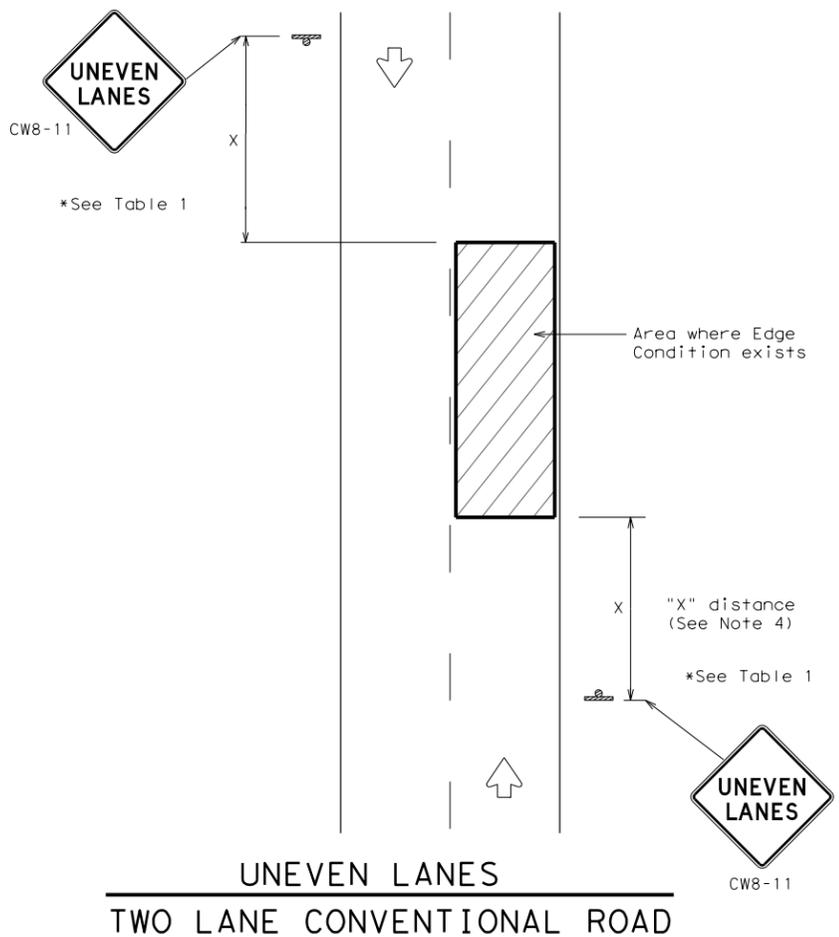
### WORK ZONE SHORT TERM PAVEMENT MARKINGS

## WZ(STPM)-23

FILE: wzsipm-23.dgn	DWG: 0683	SECT: 03	JOB: 045	DATE: RM 12
© TxDOT February 2023	REVISIONS	1-87 2-23	DIST: AUS	COUNTY: HAYS
4-92 7-13	3-03			SHEET NO. 39

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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 <sub>FL</sub> OR TYPE C <sub>FL</sub> SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

**GENERAL NOTES**

1. 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.
2. 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.
3. 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.
4. Signs shall be spaced at the distances recommended as per BC standards.
5. 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."
6. 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.
7. Short term markings shall not be used to simulate edge lines.
8. 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**

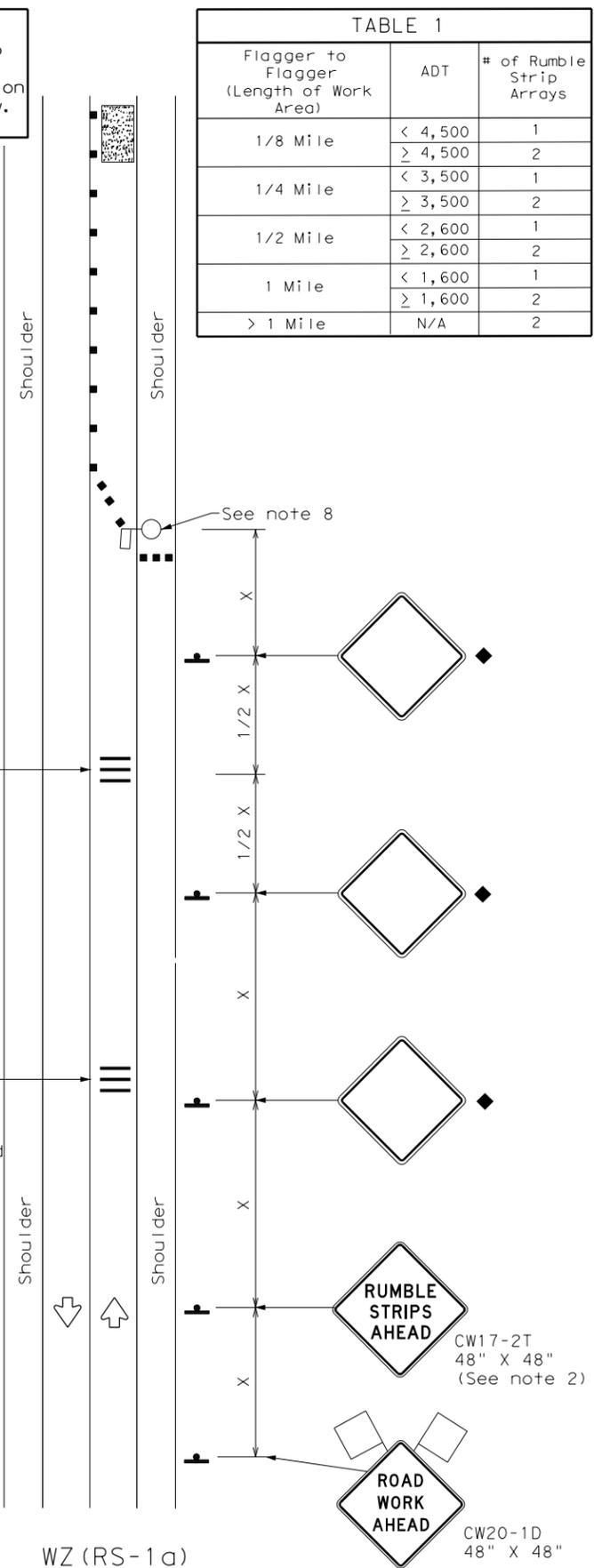
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REVISIONS		0683	03	045	RM 12				
8-95	2-98	7-13	DIST	COUNTY	SHEET NO.				
1-97	3-03	AUS	HAYS		40				

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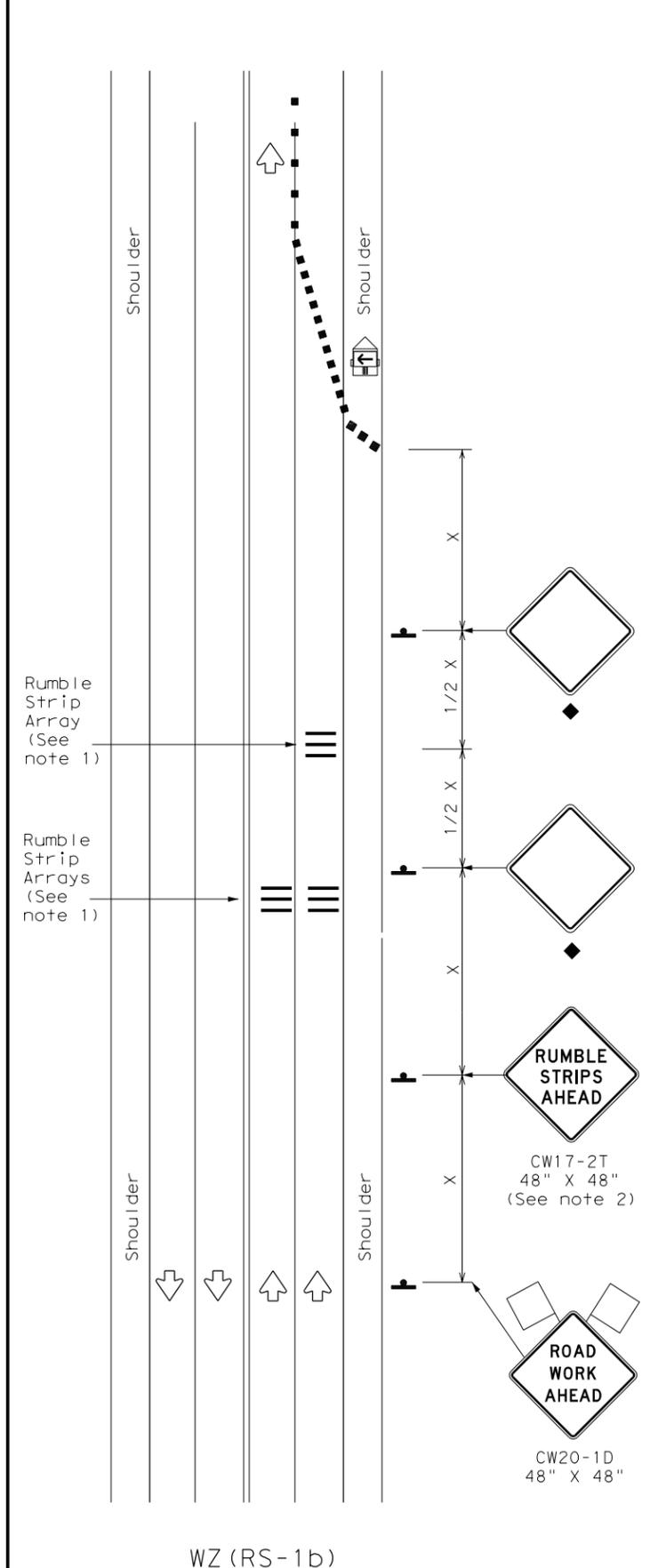
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Warning sign and rumble strip sequence in opposite direction is same as below.

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



**RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION**



**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.

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

	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 <sup>2</sup> / 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)

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.

**Texas Department of Transportation** Traffic Safety Division Standard

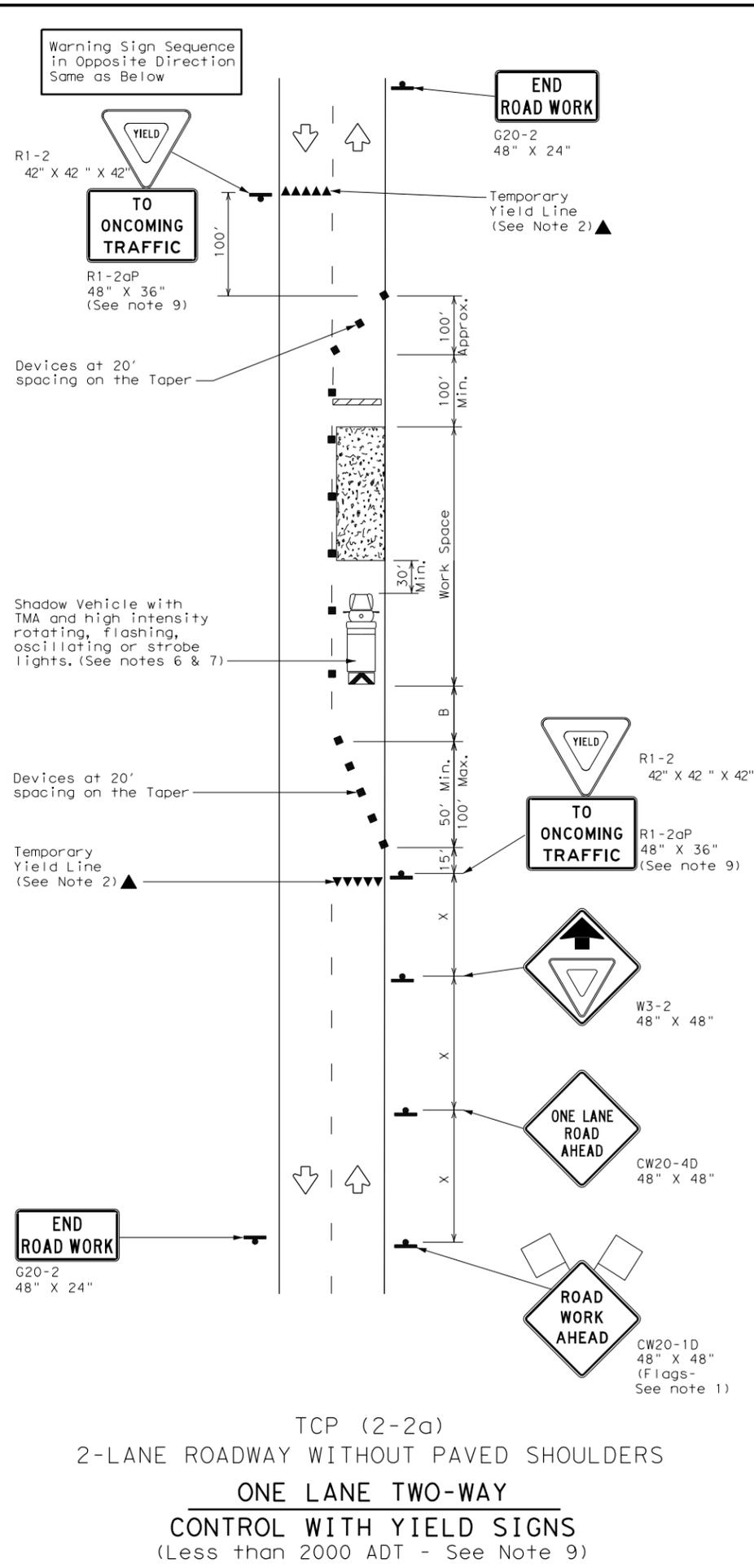
## TEMPORARY RUMBLE STRIPS

### WZ (RS) - 22

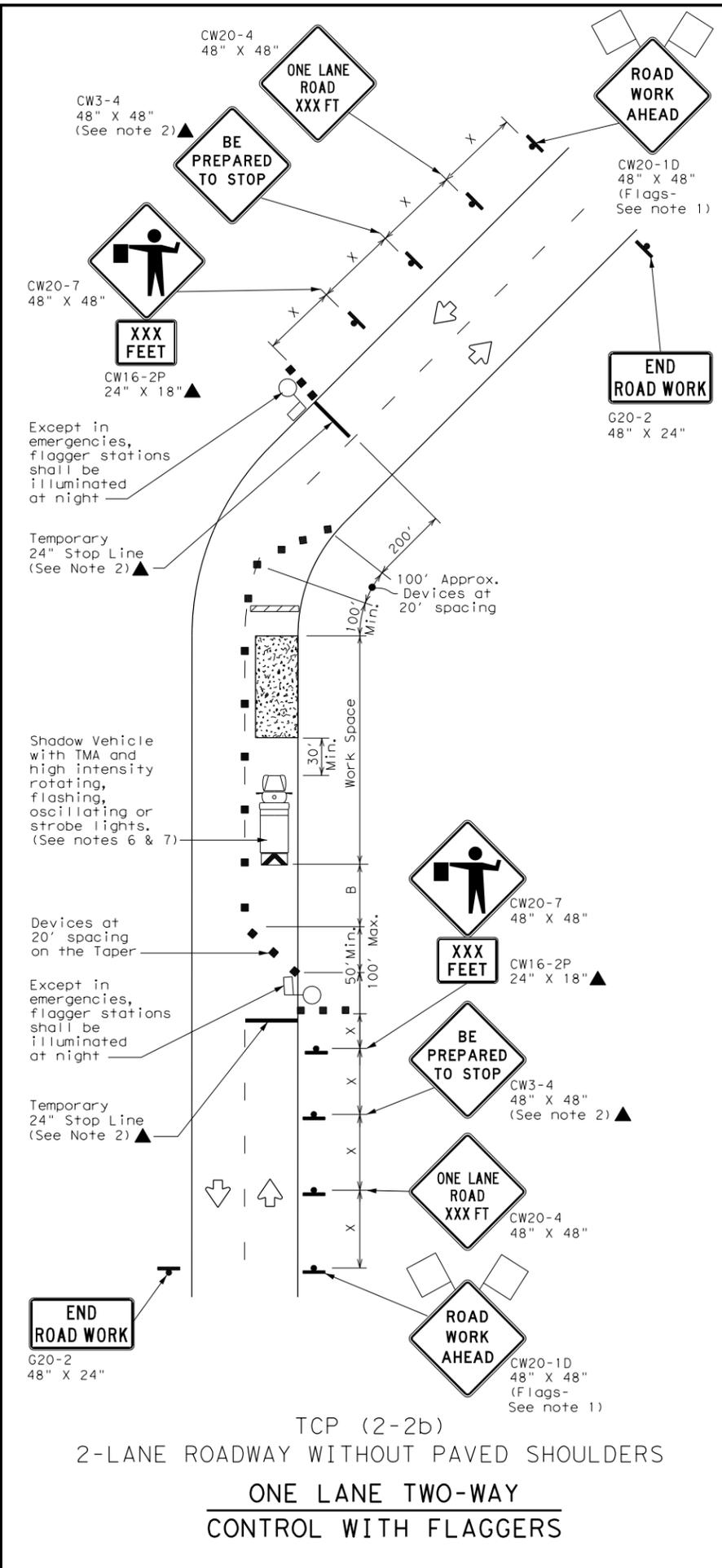
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© TxDOT November 2012	CONT: 0683	SECT: 03	JOB: 045	HIGHWAY: RM 12
2-14 1-22	REVISIONS		DIST: COUNTY	SHEET NO.
4-16			AUS: HAYS	41

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DATE: 1/27/2026 1:04:11 PM  
 FILE: G:\TXDOT\Projects\County\_Hays\7083-00\_RM 12 Turn\_Lanes\03\_CADD\01\_Shts\02\_Traffic\_Control\02-2a.dwg



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

	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"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'	120'	90'	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'	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 CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
  - 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.
  - 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.
- TCP (2-2a)
- 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.
  - The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.
- TCP (2-2b)
- Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
  - 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).
  - 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

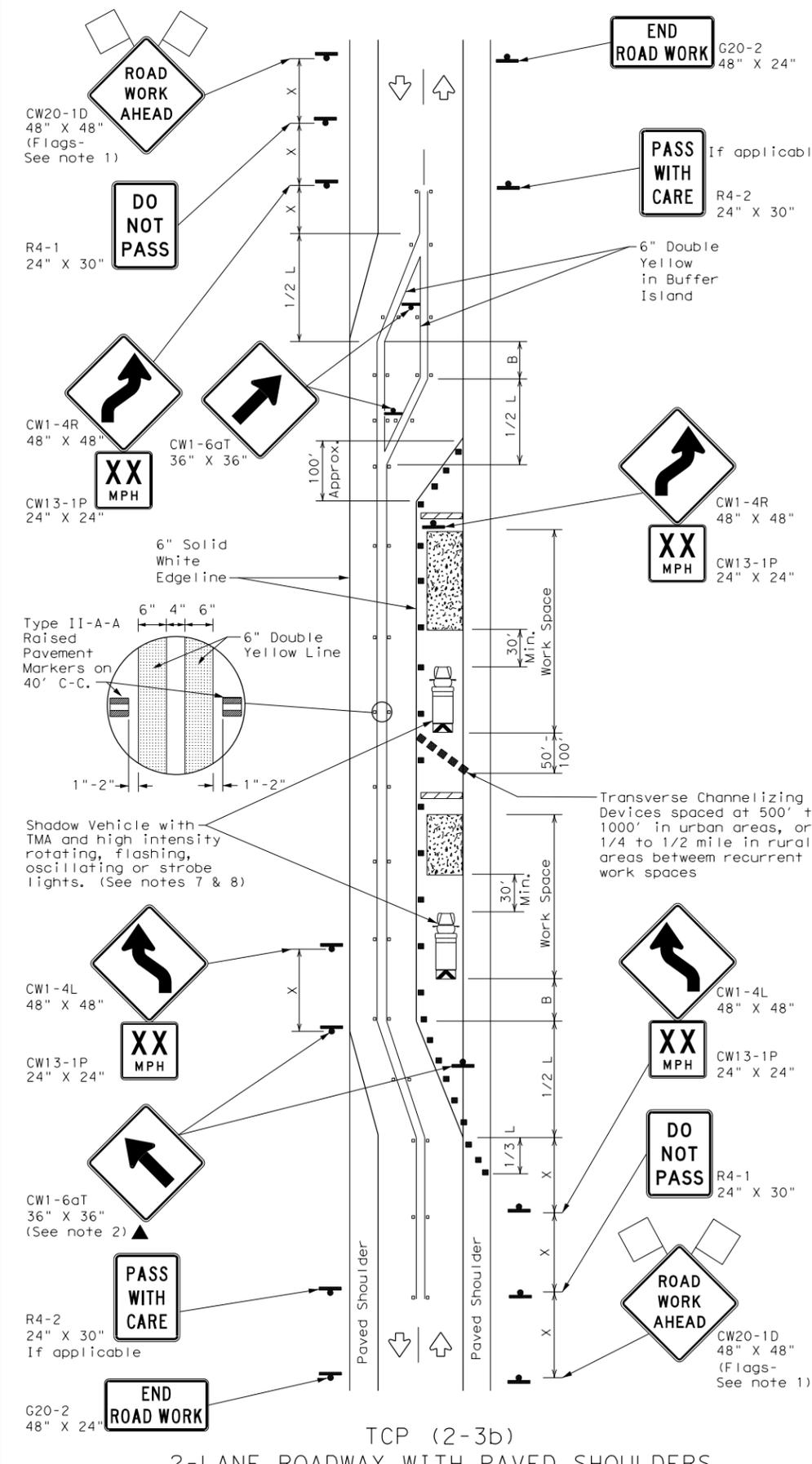
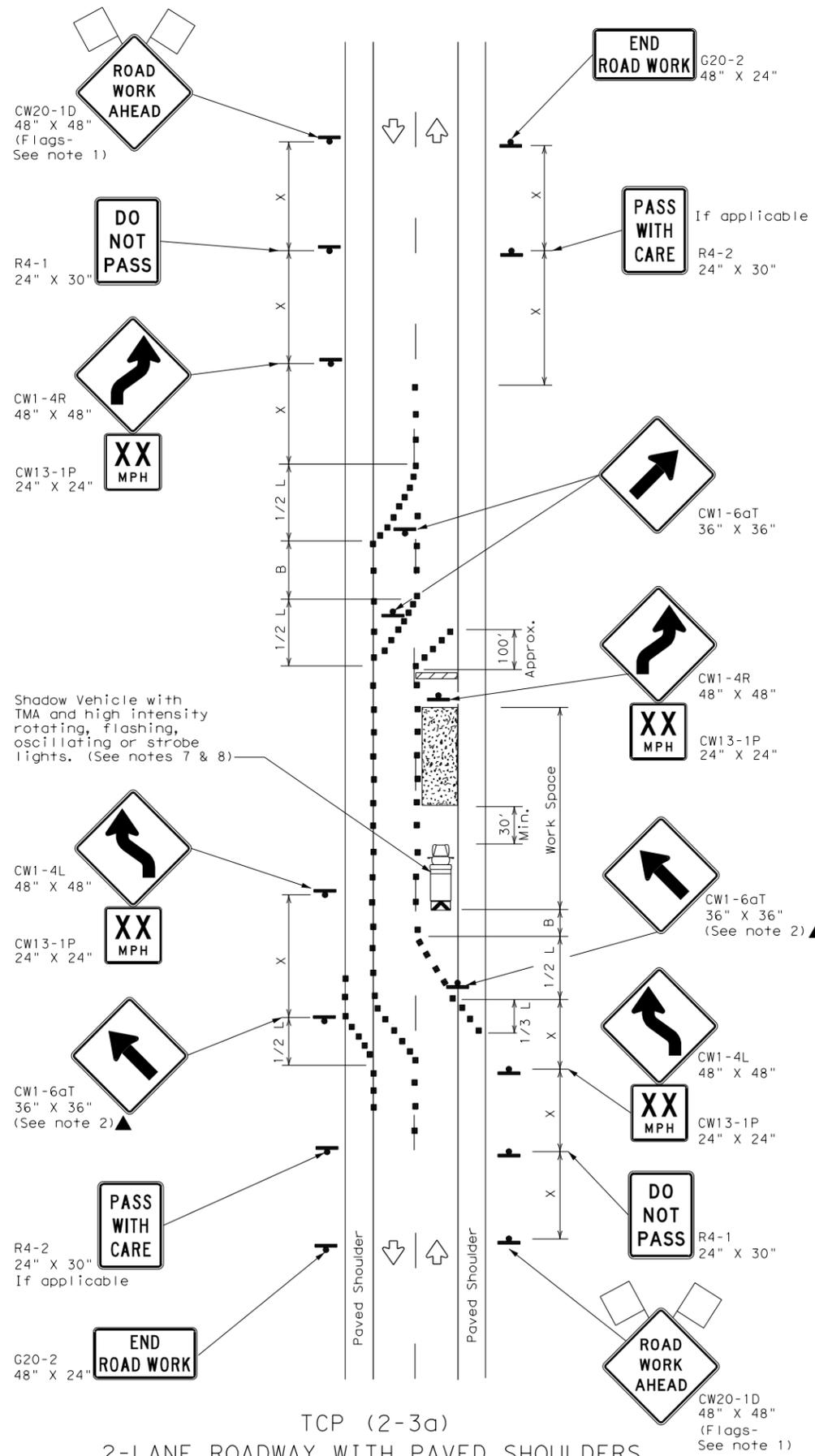
TRAFFIC CONTROL PLAN  
 ONE-LANE TWO-WAY  
 TRAFFIC CONTROL

TCP (2-2) - 18

FILE: tcp2-2-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0683	03	045	RM 12
8-95 3-03	DIST	COUNTY	SHEET NO.	
1-97 2-12	AUS	HAYS	42	
4-98 2-18				

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DATE: 1/27/2026 1:04:12 PM  
 FILE: G:\TXDOT\Projects\County\_Hays\7083-00\_RM 12 Turn Lanes\03\_CADD\01\_Shts\02\_Traffic Control Plans\02-3a.dwg



**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	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	L = WS	600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75	L = WS	750'	825'	900'	75'	150'	900'	540'
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
				✓	✓
					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.



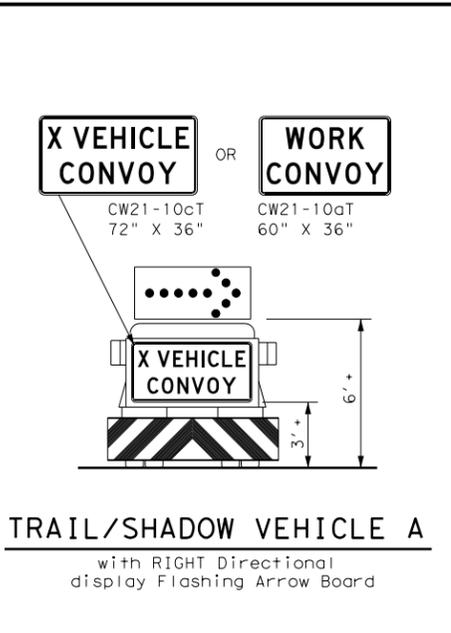
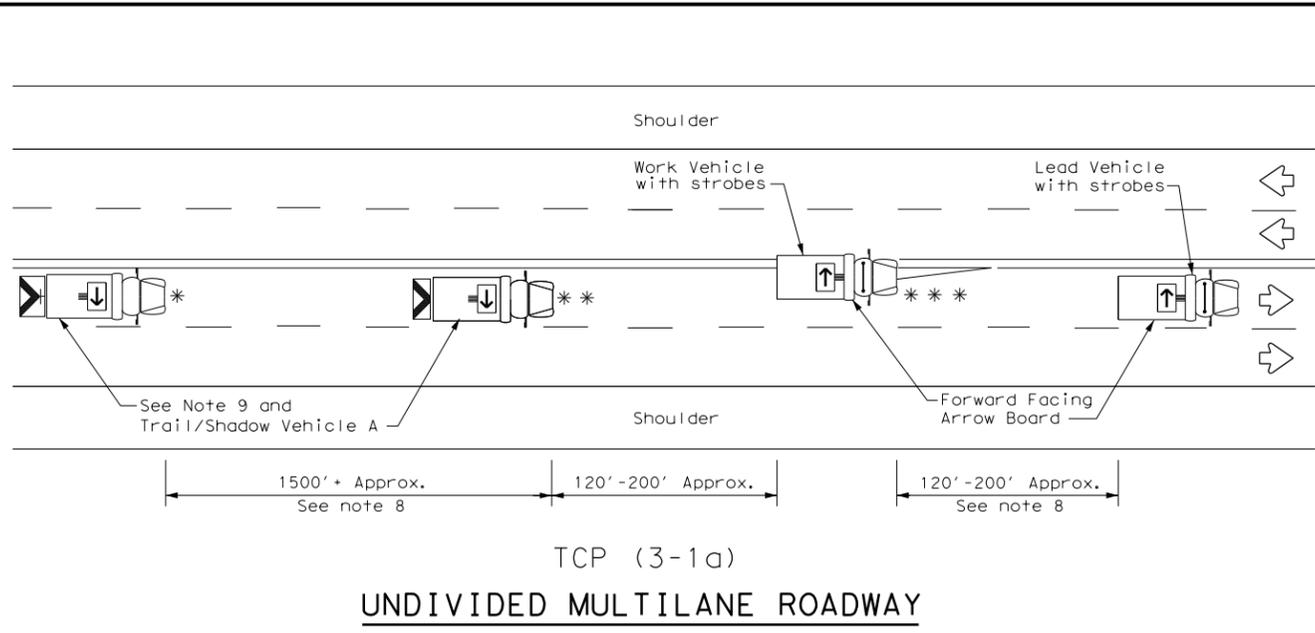
**TRAFFIC CONTROL PLAN  
 TRAFFIC SHIFTS ON  
 TWO-LANE ROADS**

**TCP (2-3) -23**

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© TxDOT	April 2023	CONT	SECT	JOB	HIGHWAY
12-85	4-98	0683	03	045	RM 12
8-95	3-03	DIST	COUNTY		SHEET NO.
1-97	2-12	AUS	HAYS		43

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DATE: 1/27/2026 1:04:13 PM  
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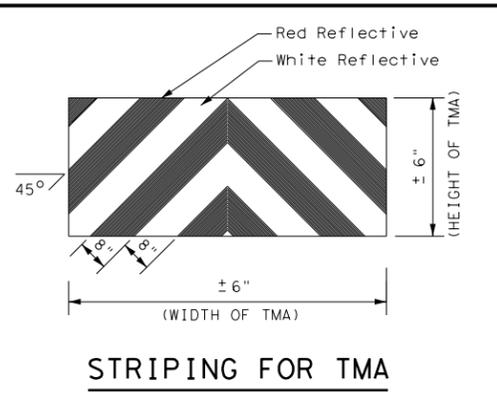
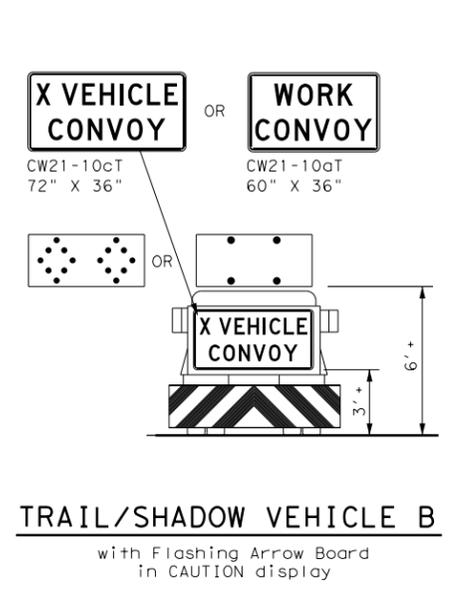
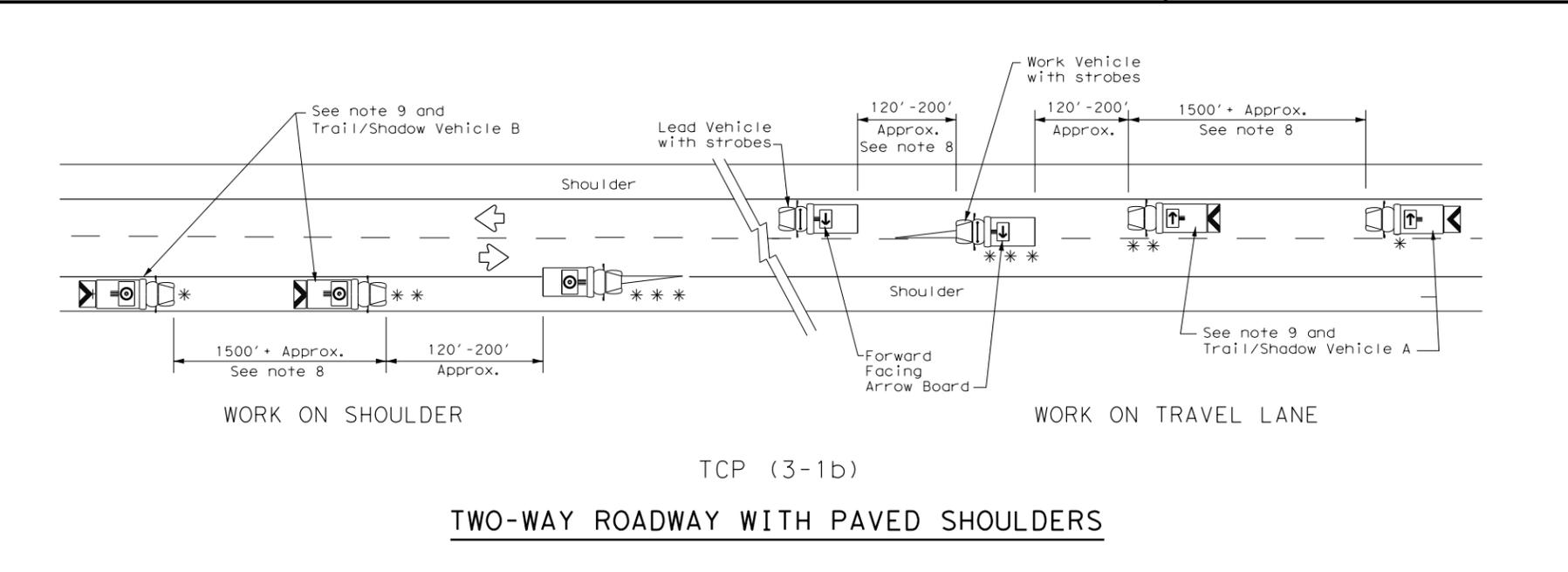
LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**GENERAL NOTES**

- TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used the WORK vehicle must be equipped with an arrow board. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
- The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
- The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and TRAIL VEHICLE are required.
- Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
- Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
- Each vehicle shall have two-way radio communication capability.
- When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
- Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
- "X VEHICLE CONVOY" (CW21-10cT) or "WORK CONVOY" (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" X 48" diamond shaped "WORK CONVOY" (CW21-10T) or "X VEHICLE CONVOY" (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The "X VEHICLE CONVOY" sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
- On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a "DO NOT PASS" (R4-1) sign should be placed on the back of the rearmost protection vehicle.



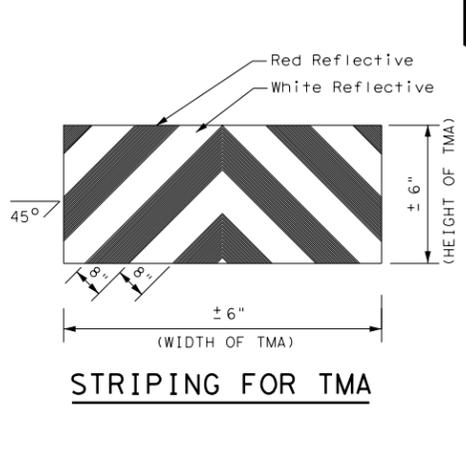
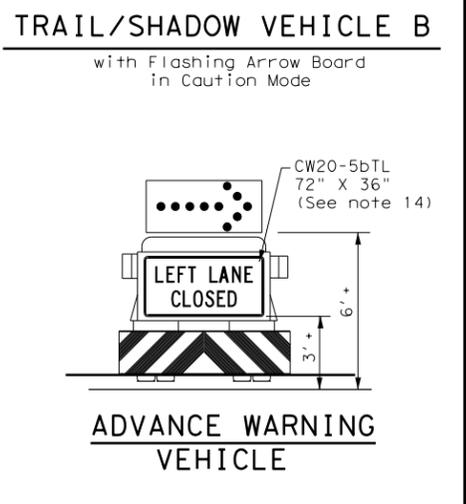
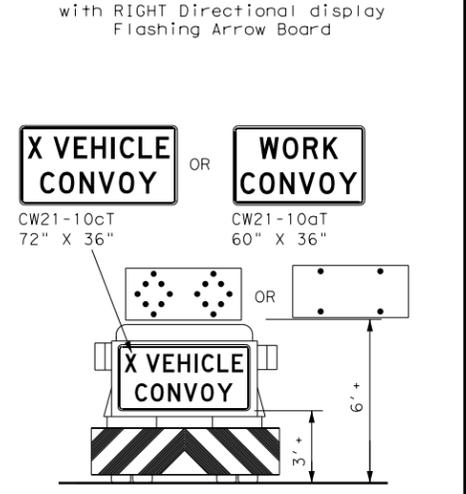
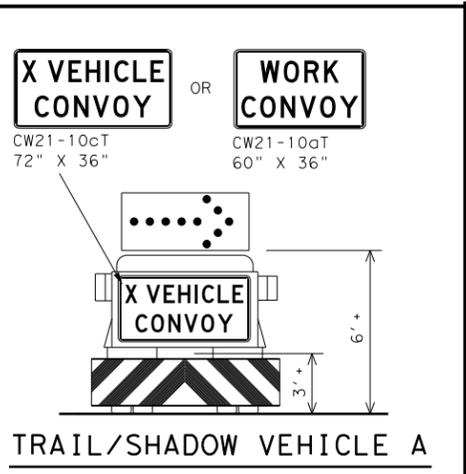
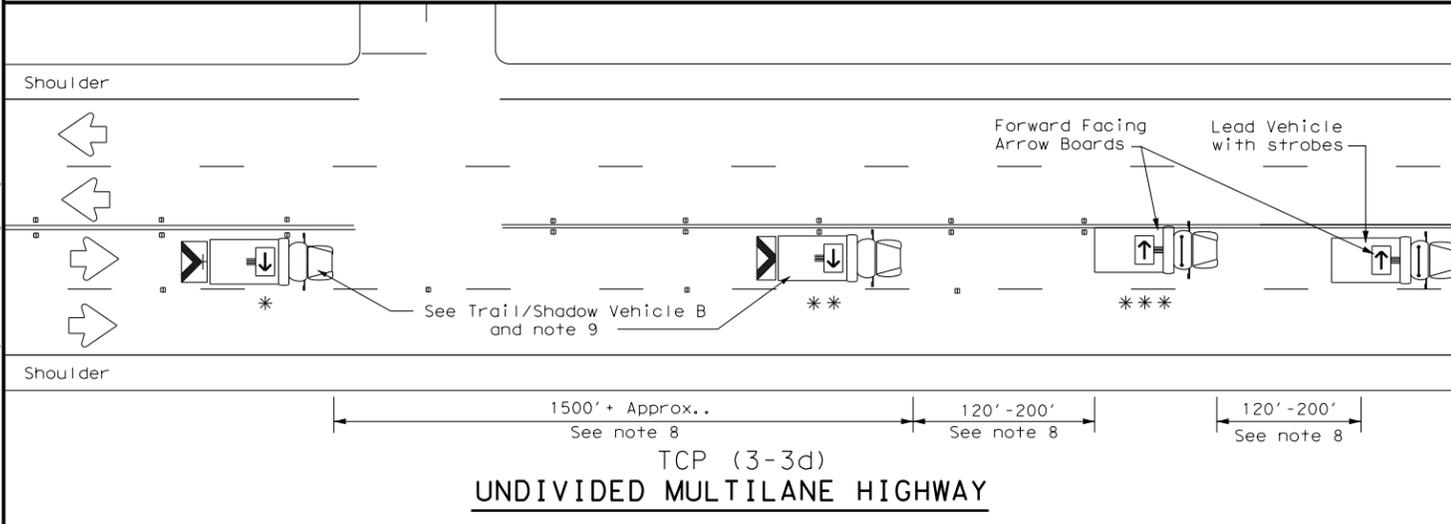
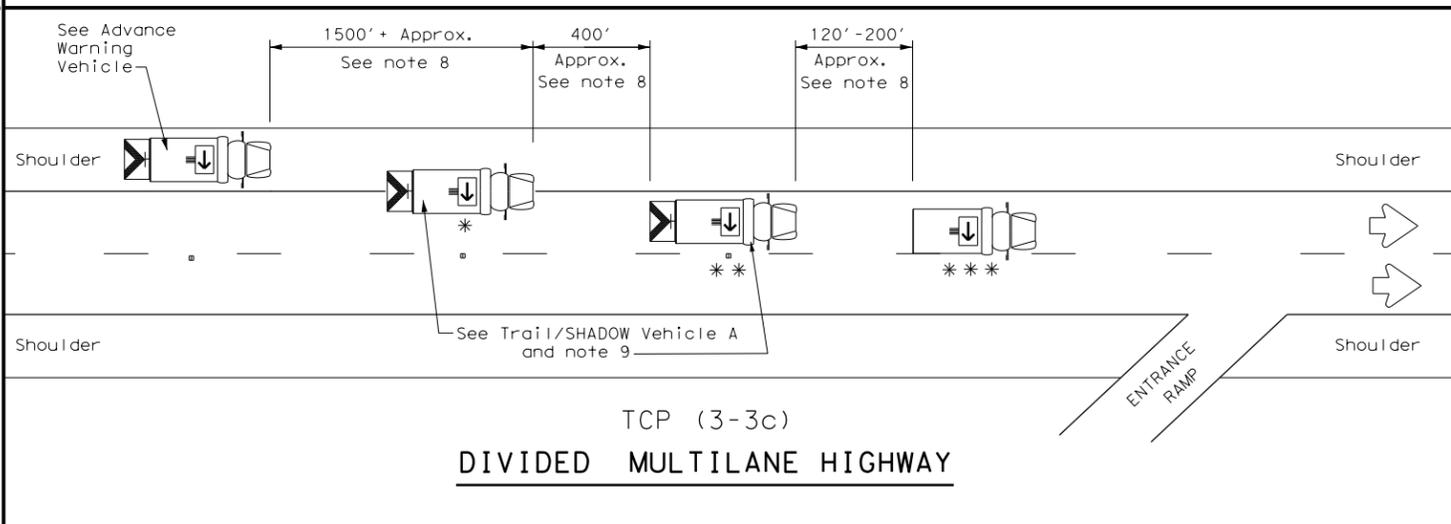
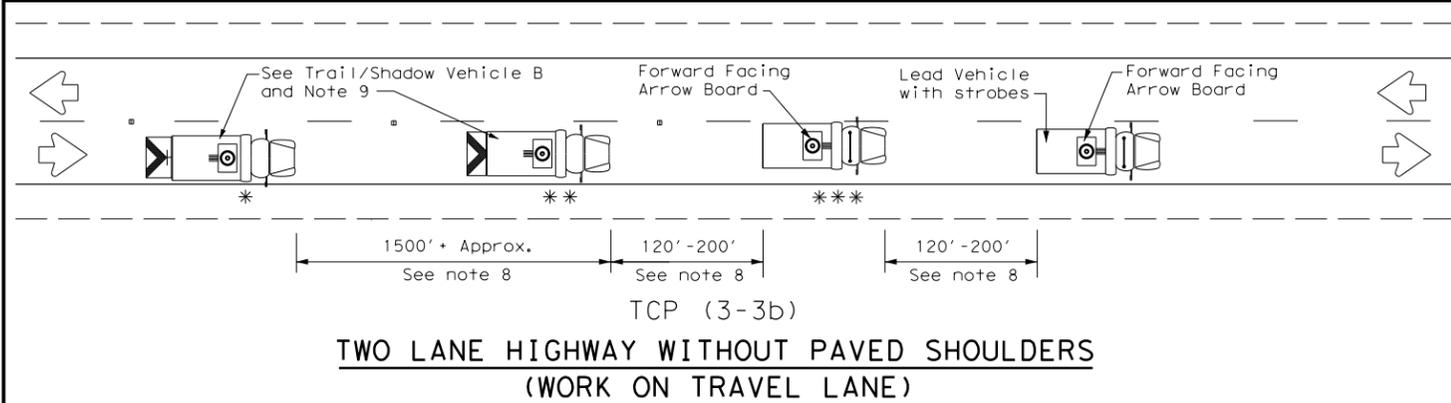
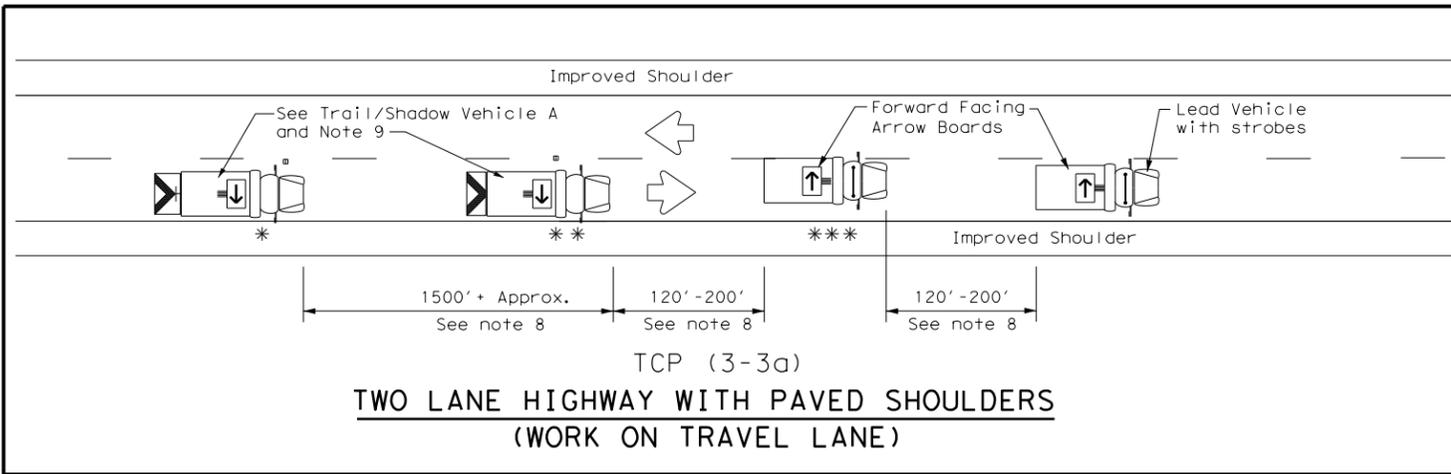
Texas Department of Transportation

Traffic Operations Division Standard

**TRAFFIC CONTROL PLAN**  
**MOBILE OPERATIONS**  
**UNDIVIDED HIGHWAYS**  
  
**TCP (3-1) - 13**

FILE: tcp3-1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT December 1985	CON: 0683	SECT: 03	JOB: 045	HIGHWAY: RM 12
REVISIONS		DIST: COUNTY		SHEET NO.
2-94 4-98	AUS		HAYS	44
8-95 7-13				
1-97				

DATE: 1/27/2026 1:04:14 PM  
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LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

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

**GENERAL NOTES**

- TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used on two way roads the WORK vehicle must have an arrow board. For divided roadways, the arrow board on the WORK vehicle is optional based on the type of work being performed. The Engineer will determine if the LEAD vehicle and/or TRAIL vehicle are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
- The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating, or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
- The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE, ADVANCE WARNING and TRAIL VEHICLE are required.
- Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
- Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
- Each vehicle shall have two-way radio communication capability.
- When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
- Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
- X VEHICLE CONVOY (CW21-10cT) or WORK CONVOY (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" x 48" diamond shaped WORK CONVOY (CW21-10T) or X VEHICLE CONVOY (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The X VEHICLE CONVOY sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
- For divided highways with two or three lanes in one direction, the appropriate LEFT LANE CLOSED (CW20-5bTL), RIGHT LANE CLOSED (CW20-5bTR), or CENTER LANE CLOSED (CW20-5dT) sign should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board may be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
- A double arrow shall not be displayed on the arrow board on the Advance Warning Vehicle.
- For divided highways with three or four lanes in each direction, use TCP(3-2).
- Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
- The Advance Warning Vehicle may straddle the edgeline when Shoulder width makes it necessary.
- On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a DO NOT PASS (R4-1) sign should be placed on the back of the rearmost protection vehicle.

**Texas Department of Transportation**

*Traffic Operations Division Standard*

**TRAFFIC CONTROL PLAN  
MOBILE OPERATIONS  
RAISED PAVEMENT  
MARKER INSTALLATION/  
REMOVAL  
TCP (3-3) - 14**

FILE: tcp3-3.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT September 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	0683	03	045	RM 12
2-94 4-98				
8-95 7-13				
1-97 7-14				
	DIST	COUNTY	SHEET NO.	
	AUS	HAYS	45	

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 1:04:16 PM

### RM 12 HORIZONTAL ALIGNMENT DATA

<\* 1 Describe Chain RM12 CL

Chain RM12 CL contains:  
35 CUR RM12 1 CUR RM12 2 CUR RM12 3 36

Beginning chain RM12 CL description  
Feature: Road Centerline

Point 35 N 13,925,126.34 E 2,253,096.44 Sta 0+00.00

Course from 35 to PC RM12 1 N 1° 45' 08.53" W Dist 448.30

Curve Data

Curve RM12 1  
P.I. Station = 6+63.91 N 13,925,789.94 E 2,253,076.14  
Delta = 11° 43' 26.94" (RT)  
Degree = 2° 43' 42.13"  
Tangent = 215.61  
Length = 429.71  
Radius = 2,100.00  
External = 11.04  
Long Chord = 428.96  
Mid. Ord. = 10.98  
P.C. Station = 4+48.30 N 13,925,574.43 E 2,253,082.73  
P.T. Station = 8+78.01 N 13,926,002.29 E 2,253,113.47  
C.C. = 13,925,638.65 E 2,255,181.75  
Back = N 1° 45' 08.53" W  
Ahead = N 9° 58' 18.40" E  
Chord Bear = N 4° 06' 34.94" E

Course from PT RM12 1 to PC RM12 2 N 9° 58' 18.40" E Dist 112.18

Curve Data

Curve RM12 2  
P.I. Station = 12+13.71 N 13,926,332.91 E 2,253,171.60  
Delta = 37° 57' 12.65" (LT)  
Degree = 8° 48' 53.05"  
Tangent = 223.52  
Length = 430.57  
Radius = 650.00  
External = 37.36  
Long Chord = 422.74  
Mid. Ord. = 35.33  
P.C. Station = 9+90.19 N 13,926,112.77 E 2,253,132.90  
P.T. Station = 14+20.76 N 13,926,530.30 E 2,253,066.73  
C.C. = 13,926,225.33 E 2,252,492.72  
Back = N 9° 58' 18.40" E  
Ahead = N 27° 58' 54.24" W  
Chord Bear = N 9° 00' 17.92" W

Course from PT RM12 2 to PC RM12 3 N 27° 58' 54.24" W Dist 235.50

Curve Data

Curve RM12 3  
P.I. Station = 19+25.67 N 13,926,976.19 E 2,252,829.83  
Delta = 12° 48' 36.19" (RT)  
Degree = 2° 23' 14.37"  
Tangent = 269.42  
Length = 536.59  
Radius = 2,400.00  
External = 15.07  
Long Chord = 535.47  
Mid. Ord. = 14.98  
P.C. Station = 16+56.25 N 13,926,738.27 E 2,252,956.24  
P.T. Station = 21+92.84 N 13,927,236.22 E 2,252,759.32  
C.C. = 13,927,864.32 E 2,255,075.67  
Back = N 27° 58' 54.24" W  
Ahead = N 15° 10' 18.05" W  
Chord Bear = N 21° 34' 36.15" W

Course from PT RM12 3 to 36 N 15° 10' 18.05" W Dist 1,154.97

Point 36 N 13,928,350.93 E 2,252,457.05 Sta 33+47.81

Ending chain RM12 CL description

### MOUNTAIN CREST DRIVE HORIZONTAL ALIGNMENT DATA

<\* 2 Describe Chain MTN CREST CL

Chain MTN CREST CL contains:  
41 CUR MTN CREST 1 42

Beginning chain MTN CREST CL description  
Feature: Road Centerline

Point 41 N 13,926,663.60 E 2,252,478.45 Sta 100+00.00

Course from 41 to PC MTN CREST 1 N 87° 29' 12.10" E Dist 183.81

Curve Data

Curve MTN CREST 1  
P.I. Station = 102+81.64 N 13,926,675.95 E 2,252,759.82  
Delta = 8° 21' 04.39" (RT)  
Degree = 4° 16' 32.90"  
Tangent = 97.83  
Length = 195.31  
Radius = 1,340.00  
External = 3.57  
Long Chord = 195.14  
Mid. Ord. = 3.56  
P.C. Station = 101+83.81 N 13,926,671.66 E 2,252,662.09  
P.T. Station = 103+79.13 N 13,926,666.00 E 2,252,857.14  
C.C. = 13,925,332.95 E 2,252,720.85  
Back = N 87° 29' 12.10" E  
Ahead = S 84° 09' 43.51" E  
Chord Bear = S 88° 20' 15.71" E

Course from PT MTN CREST 1 to 42 S 84° 09' 43.51" E Dist 146.15

Point 42 N 13,926,651.14 E 2,253,002.53 Sta 105+25.27

Ending chain MTN CREST CL description

### SKYLINE DRIVE HORIZONTAL ALIGNMENT DATA

Chain SKYLINE\_CL contains:  
43 CUR SKYLINE\_CL\_3 44

Beginning chain SKYLINE\_CL description  
Feature: Road Centerline

Point 43 N 13,926,639.44 E 2,253,008.74 Sta 200+00.00

Course from 43 to PC SKYLINE\_CL\_3 S 84° 09' 43.51" E Dist 484.15

Curve Data

Curve SKYLINE\_CL\_3  
P.I. Station = 204+94.27 N 13,926,589.17 E 2,253,500.45  
Delta = 4° 12' 57.46" (LT)  
Degree = 20° 50' 05.38"  
Tangent = 10.12  
Length = 20.24  
Radius = 275.00  
External = 0.19  
Long Chord = 20.23  
Mid. Ord. = 0.19  
P.C. Station = 204+84.15 N 13,926,590.20 E 2,253,490.38  
P.T. Station = 205+04.38 N 13,926,588.88 E 2,253,510.57  
C.C. = 13,926,863.77 E 2,253,518.35  
Back = S 84° 09' 43.51" E  
Ahead = S 88° 22' 40.97" E  
Chord Bear = S 86° 16' 12.24" E

Course from PT SKYLINE\_CL\_3 to 44 S 88° 22' 40.97" E Dist 289.92

Point 44 N 13,926,580.68 E 2,253,800.37 Sta 207+94.30

Ending chain SKYLINE\_CL description

### RM 12 SUPERELEVATION DATA

RM12\_CL Superelevation: LT

RM12\_CL Superelevation: RT

Station	Cross Slope	Station	Cross Slope
0+10.0000 R1	-2.00%	0+10.0000 R1	-2.00%
3+40.0000 R1	-0.80%	3+40.0000 R1	-3.10%
4+70.0000 R1	3.70%	4+70.0000 R1	-3.70%
8+25.0000 R1	3.70%	8+25.0000 R1	-3.70%
10+45.0000 R1	-6.00%	10+45.0000 R1	6.00%
13+45.0000 R1	-6.00%	13+45.0000 R1	6.00%
17+05.0000 R1	3.40%	17+04.0000 R1	-3.40%
21+75.0000 R1	3.40%	21+75.0000 R1	-3.40%
23+00.0000 R1	-2.00%	23+00.0000 R1	-2.00%
33+40.0000 R1	-2.00%	33+40.0000 R1	-2.00%

### MOUNTAIN CREST DR SUPERELEVATION DATA

MTN\_CREST\_CL Superelevation: LT

MTN\_CREST\_CL Superelevation: RT

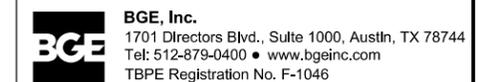
Station	Cross Slope	Station	Cross Slope
103+72.0000 R1	-2.30%	103+72.0000 R1	-0.81%
104+00.0000 R1	-2.84%	104+00.0000 R1	1.31%
104+50.0000 R1	-3.36%	104+50.0000 R1	3.36%

### SKYLINE DR SUPERELEVATION DATA

SKYLINE\_CL Superelevation: LT

SKYLINE\_CL Superelevation: RT

Station	Cross Slope	Station	Cross Slope
204+00.0000 R1	-2.00%	204+00.0000 R1	-2.00%
205+05.0000 R1	2.30%	205+05.0000 R1	-5.41%

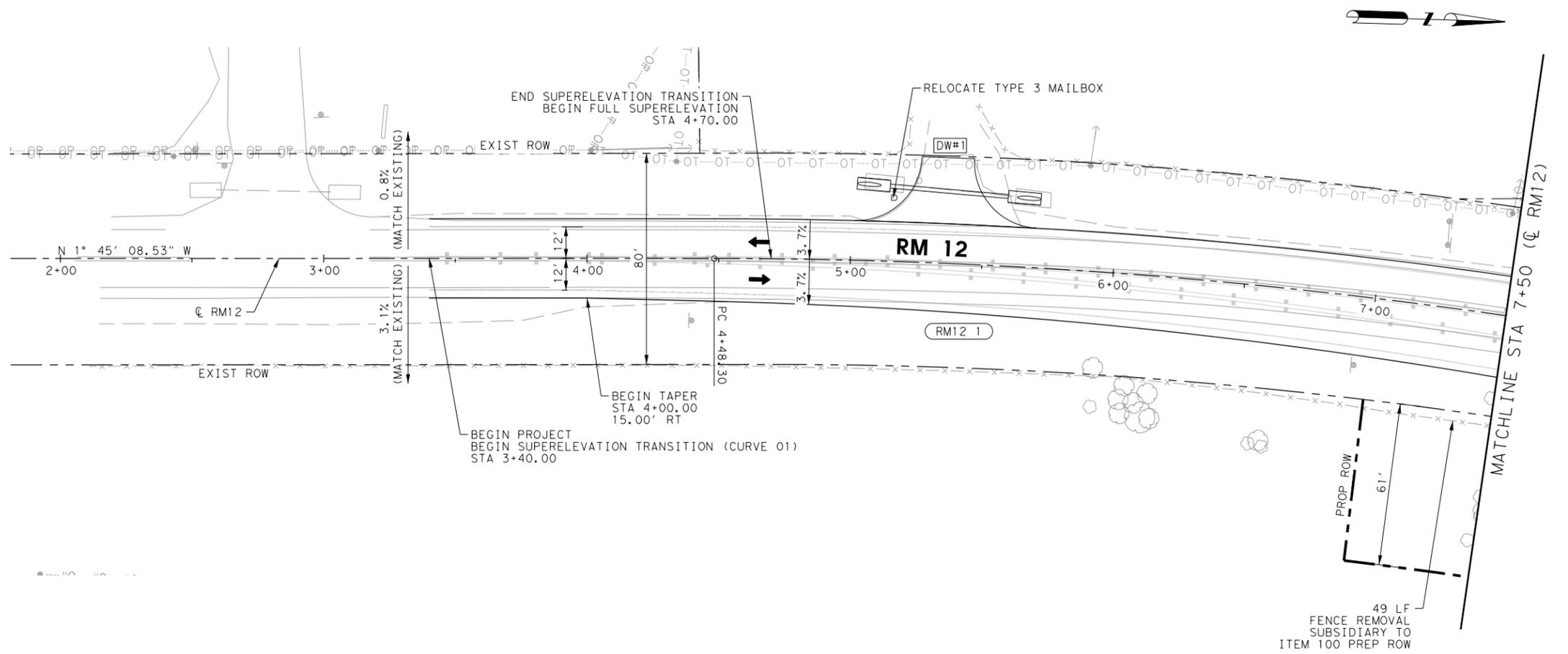


### RM 12 HORIZONTAL ALIGNMENT DATA

SHEET 1 OF 1

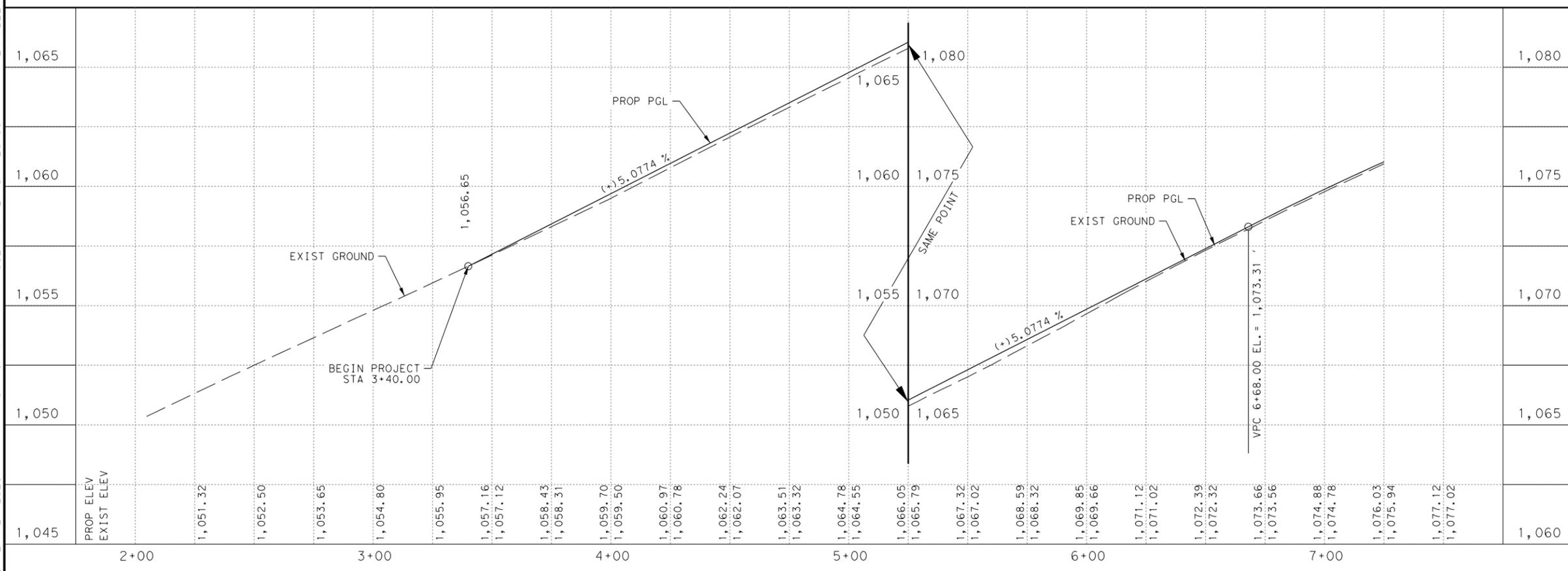
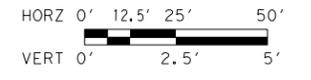
FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				46
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

FILE:G:\TXC\Projects\County\_Hays\7083-00\_RM 12 Turn Lanes\03\_CADD\01\_Shts\03-RDWAY\RM12\_RDWAY\_PP\_01.dgn  
 USER:RM 12 Turn Lanes  
 DATE:1/27/2026 1:04:18 PM  
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 PENTABLE: \$PENTBLS\$  
 \$STATUS\$



- LEGEND:**
- EXISTING ROW
  - - - - - PROPOSED ROW
  - OP-OP-OP-OP- EXISTING OVERHEAD ELECTRIC
  - OT-OT-OT-OT- EXISTING OVERHEAD TELECOMM
  - EXISTING FENCE
  - PROPOSED EDGE OF PAVEMENT
  - [DW#] DRIVEWAY NUMBER
  - ➔ TRAFFIC ARROWS
  - PROPOSED MAILBOX
  - #### CURVE NUMBER

- NOTES:**
1. CALL THE TEXAS STATEWIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
  2. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING OVERHEAD UTILITIES.
  3. REFER TO HORIZONTAL ALIGNMENT DATA SHEET FOR CURVE DATA.



**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



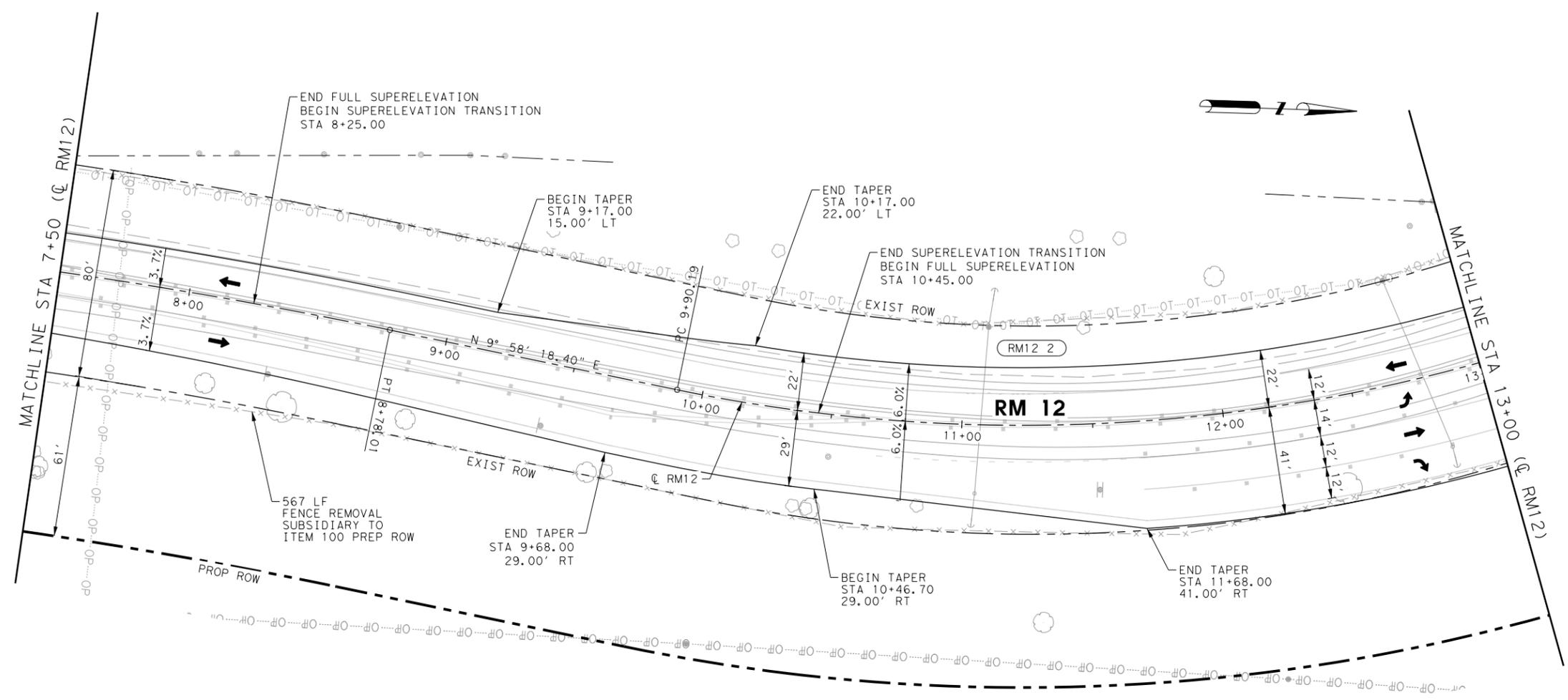
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**RM 12  
 ROADWAY  
 PLAN AND PROFILE**  
 RM 12

SHEET 1 OF 8

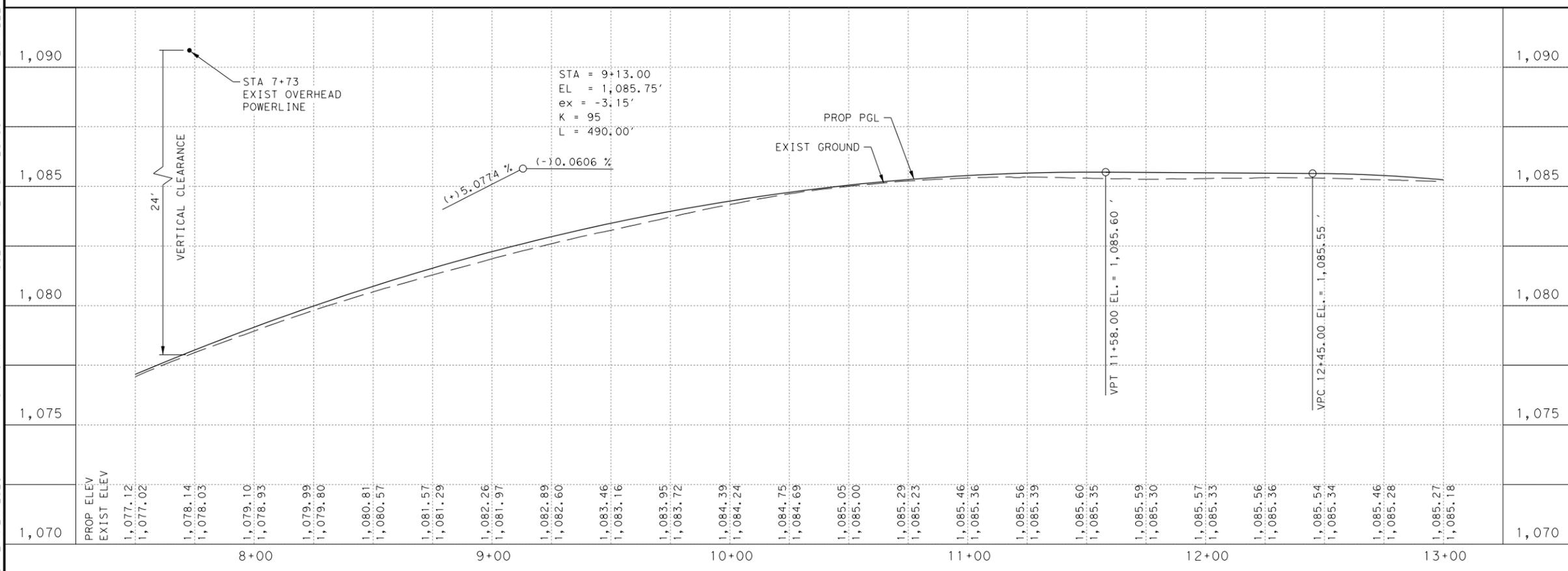
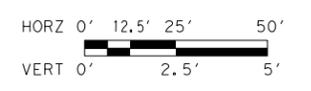
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14				47
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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 PENTABLE: \$PENTBL\$  
 \$STATUS\$



- LEGEND:**
- EXISTING ROW
  - - - - - PROPOSED ROW
  - o-o-o-o-o EXISTING OVERHEAD ELECTRIC
  - o-t-o-t-o-t EXISTING OVERHEAD TELECOMM
  - EXISTING FENCE
  - PROPOSED EDGE OF PAVEMENT
  - DW# DRIVWAY NUMBER
  - TRAFFIC ARROWS
  - PROPOSED MAILBOX
  - #### CURVE NUMBER

- NOTES:**
1. CALL THE TEXAS STATEWIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
  2. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING OVERHEAD UTILITIES.
  3. REFER TO HORIZONTAL ALIGNMENT DATA SHEET FOR CURVE DATA.



**JOHN W. TULEY**  
102441  
LICENSED PROFESSIONAL ENGINEER  
1/27/2026

**HAYS COUNTY**  
712 S. STAGECOACH TRAIL  
SAN, MARCOS, TEXAS 78666  
Tel: 512-393-7779

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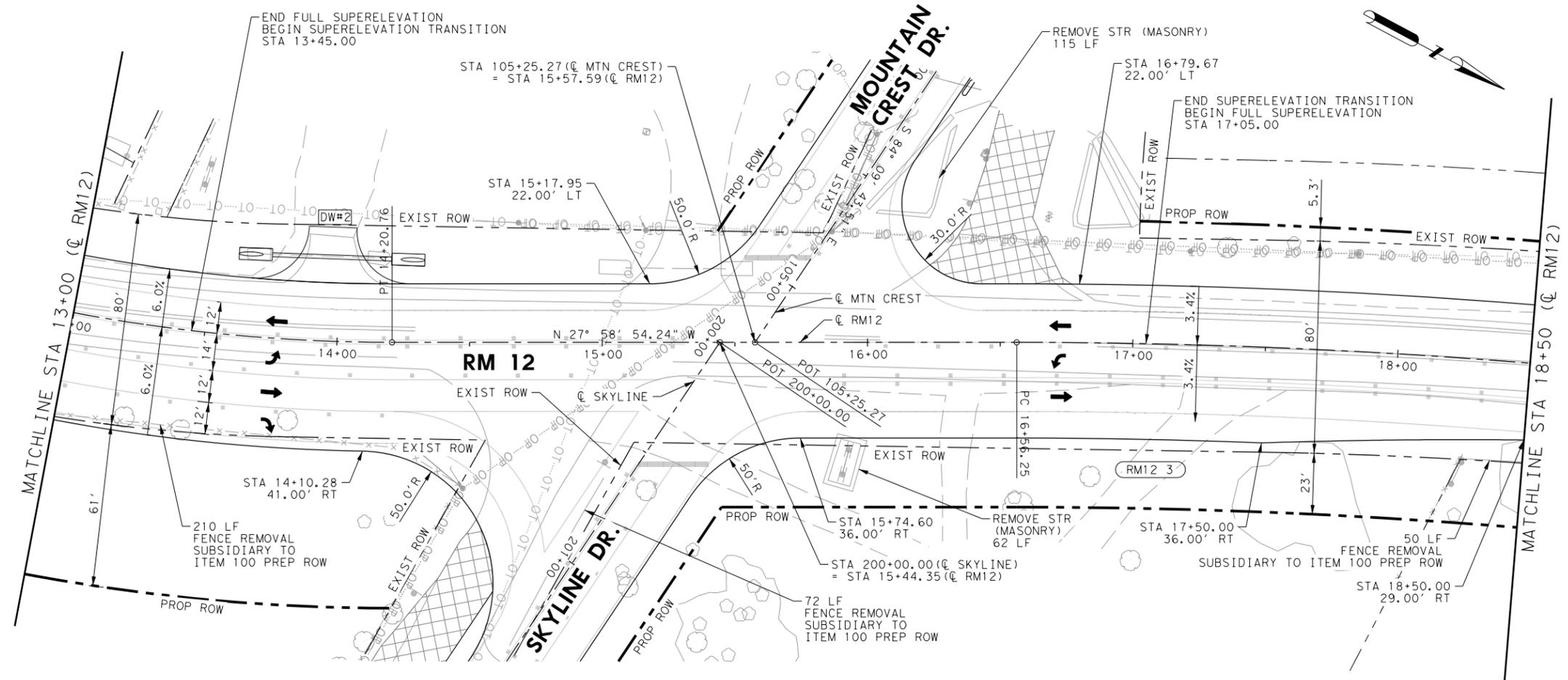
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**RM 12**  
**ROADWAY**  
**PLAN AND PROFILE**  
RM 12

SHEET 2 OF 8

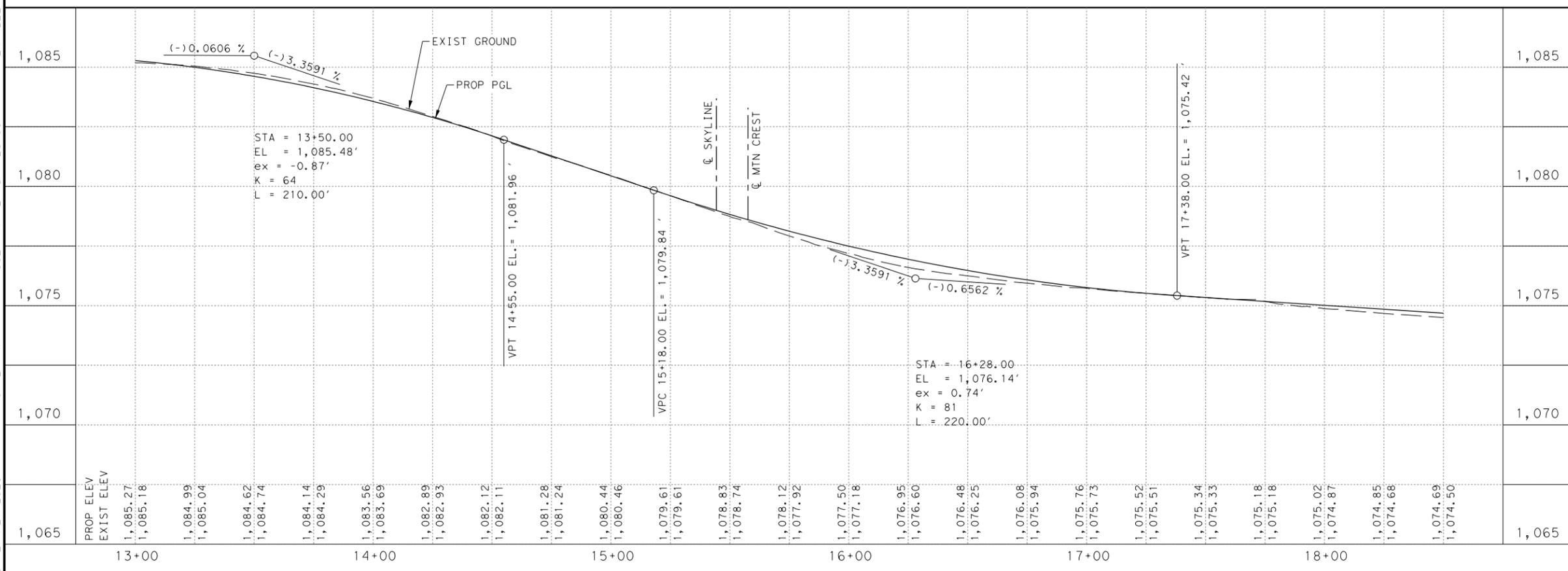
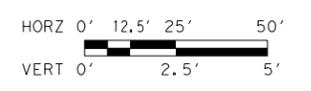
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14				48
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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- LEGEND:**
- EXISTING ROW
  - - - - - PROPOSED ROW
  - o-o-o-o-o- EXISTING OVERHEAD ELECTRIC
  - ot-ot-ot-ot- EXISTING OVERHEAD TELECOMM
  - - - - - EXISTING FENCE
  - PROPOSED EDGE OF PAVEMENT
  - DW# DRIVWAY NUMBER
  - TRAFFIC ARROWS
  - PROPOSED MAILBOX
  - #### CURVE NUMBER

- NOTES:**
1. CALL THE TEXAS STATEWIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
  2. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING OVERHEAD UTILITIES.
  3. REFER TO HORIZONTAL ALIGNMENT DATA SHEET FOR CURVE DATA.



**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



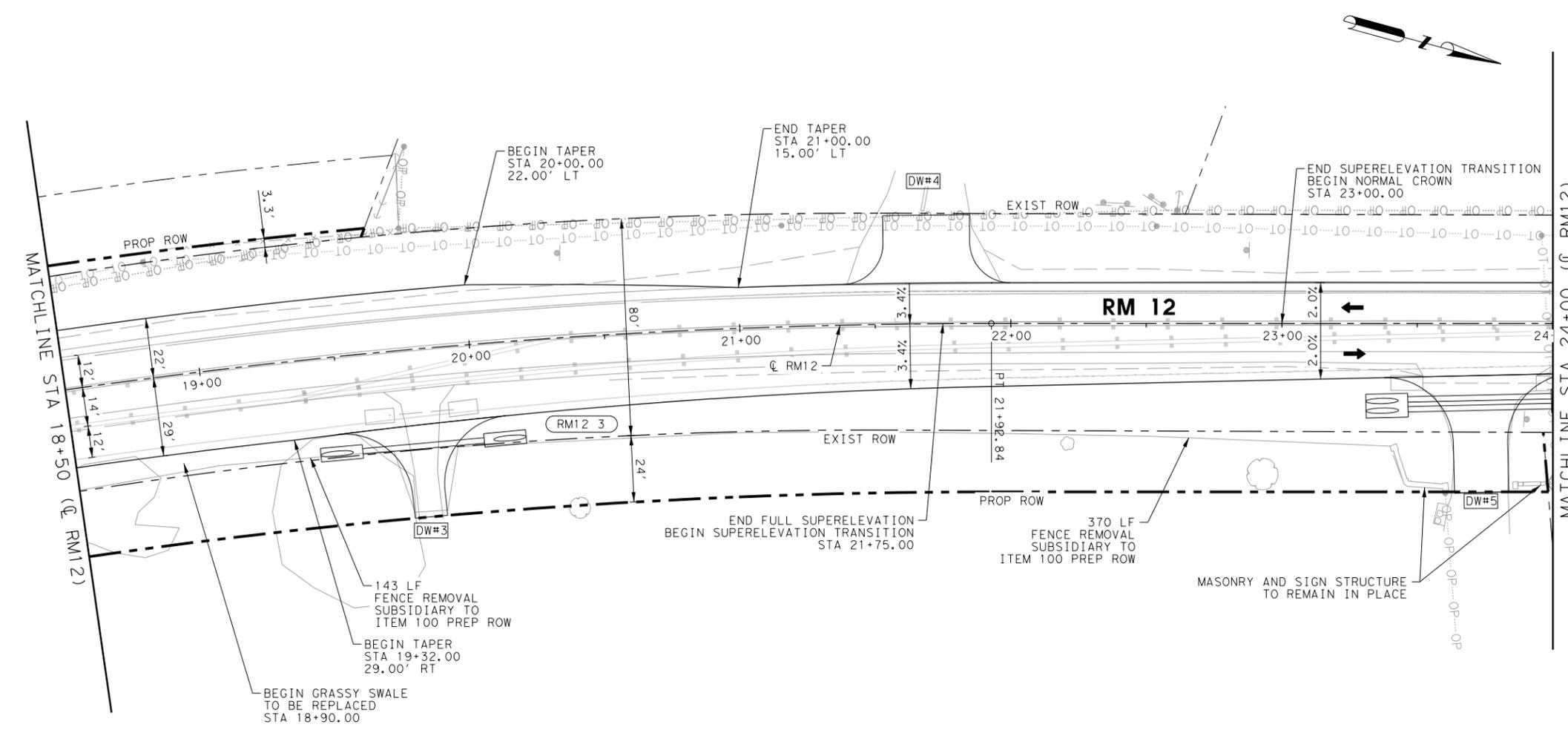
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**RM 12 ROADWAY PLAN AND PROFILE**  
 RM 12

SHEET 3 OF 8

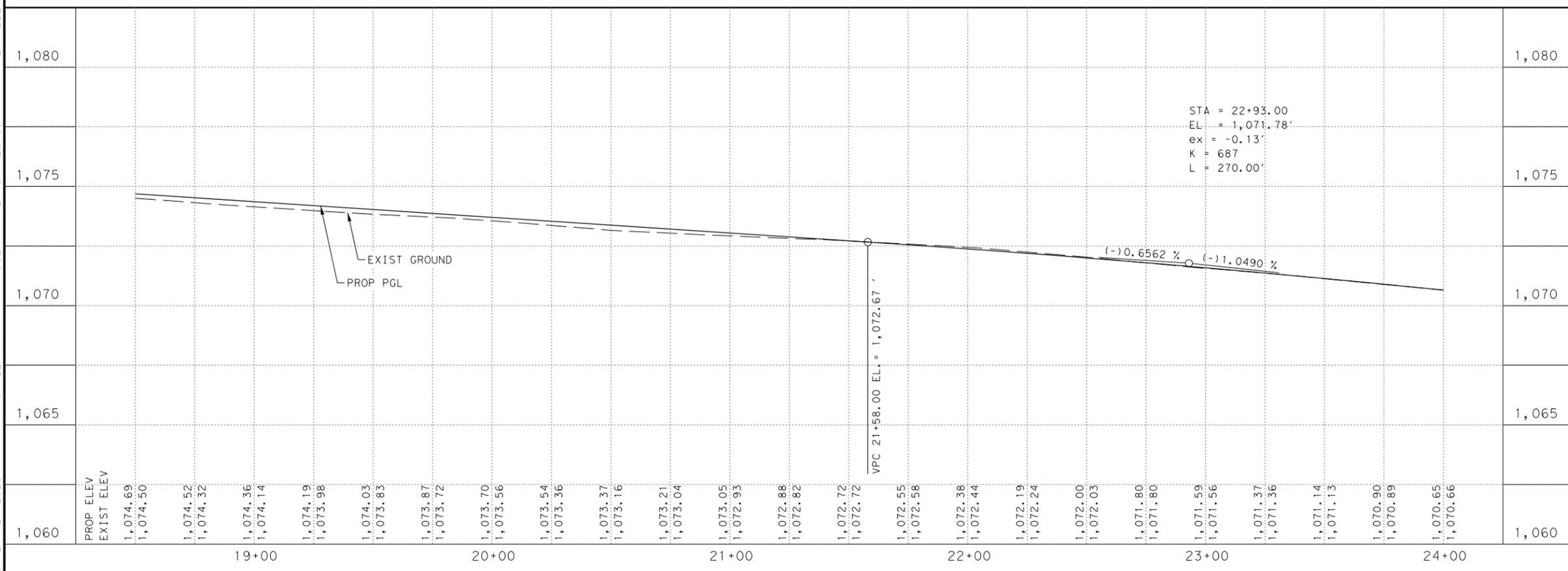
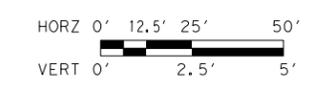
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STATE TEXAS	DIST. AUS	COUNTY HAYS	
CONT. 0683	SECT. 03	JOB 045	HIGHWAY NO. RM 12

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 PENTABLE: \$PENTBLS\$  
 \$STATUS\$



- LEGEND:**
- EXISTING ROW
  - - - - - PROPOSED ROW
  - OP-OP-OP-OP- EXISTING OVERHEAD ELECTRIC
  - OT-OT-OT-OT- EXISTING OVERHEAD TELECOMM
  - EXISTING FENCE
  - PROPOSED EDGE OF PAVEMENT
  - DW# DRIVEWAY NUMBER
  - TRAFFIC ARROWS
  - PROPOSED MAILBOX
  - #### CURVE NUMBER

- NOTES:**
1. CALL THE TEXAS STATEWIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
  2. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING OVERHEAD UTILITIES.
  3. REFER TO HORIZONTAL ALIGNMENT DATA SHEET FOR CURVE DATA.



STA = 22+93.00  
 EL = 1,071.78'  
 ex = -0.13'  
 K = 687  
 L = 270.00'



**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



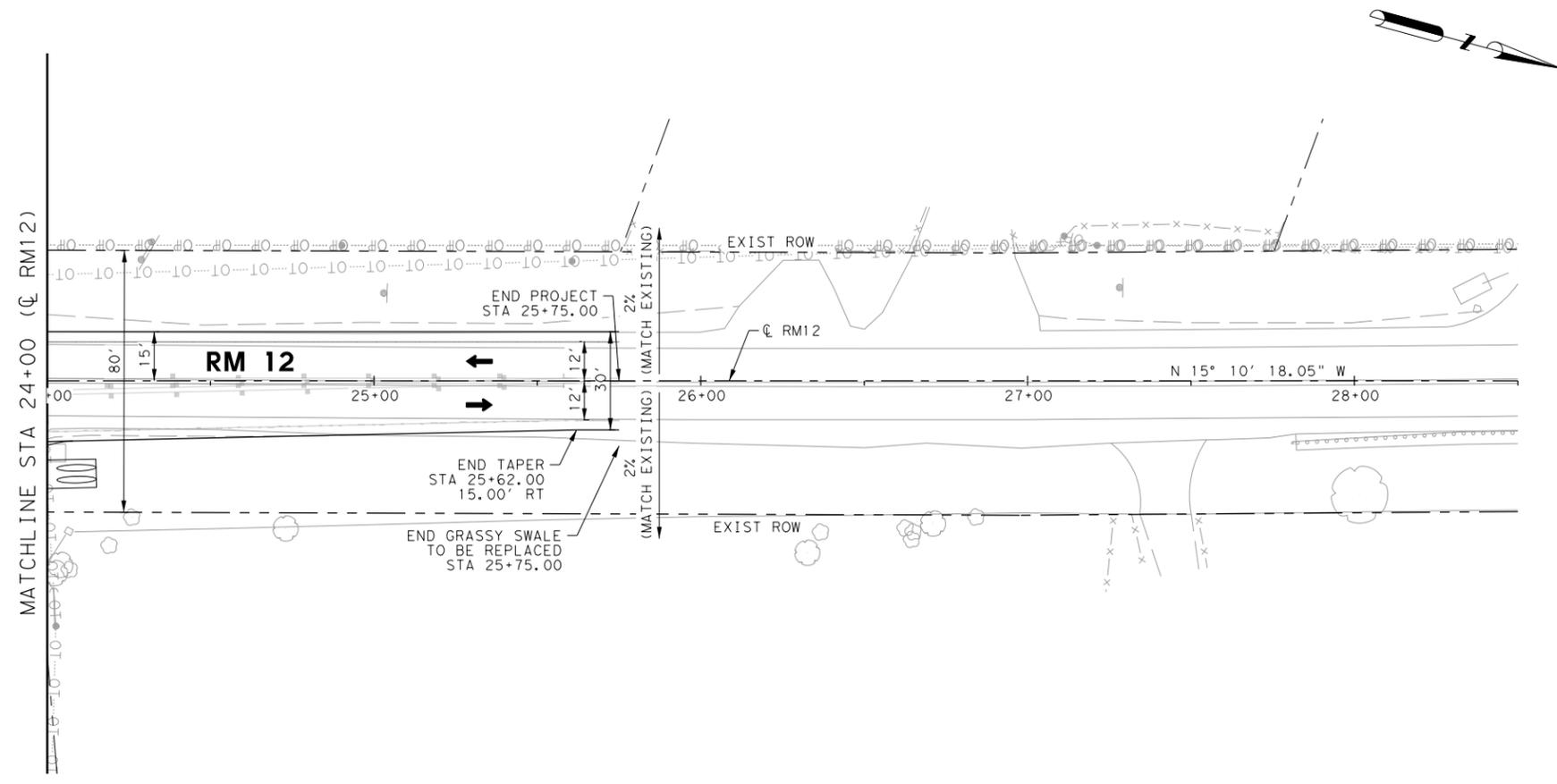
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**RM 12  
 ROADWAY  
 PLAN AND PROFILE**  
 RM 12

SHEET 4 OF 8

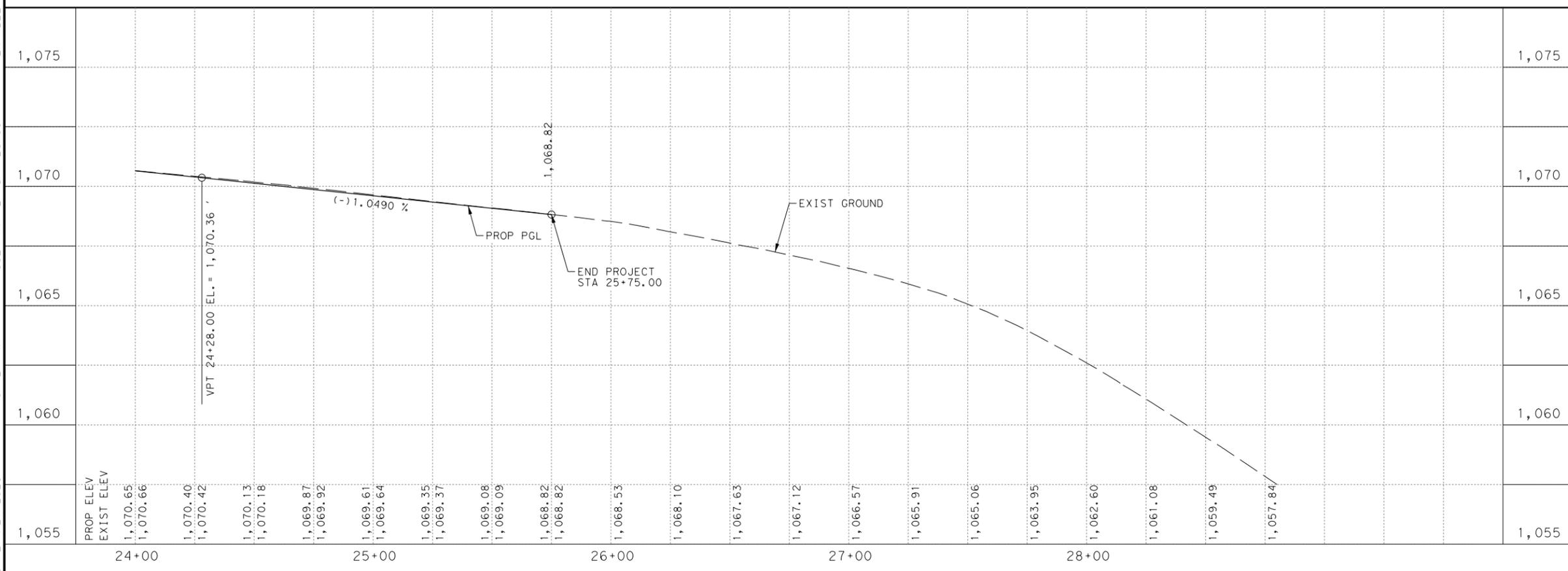
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STATE TEXAS	DIST. AUS	COUNTY HAYS		
CONT. 0683	SECT. 03	JOB 045	HIGHWAY NO. RM 12	

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- LEGEND:**
- - - - - EXISTING ROW
  - - - - - PROPOSED ROW
  - OP-OP-OP-OP- EXISTING OVERHEAD ELECTRIC
  - OT-OT-OT-OT- EXISTING OVERHEAD TELECOMM
  - - - - - EXISTING FENCE
  - - - - - PROPOSED EDGE OF PAVEMENT
  - [DW#] DRIVEWAY NUMBER
  - ➔ TRAFFIC ARROWS
  - PROPOSED MAILBOX
  - #### CURVE NUMBER

- NOTES:**
1. CALL THE TEXAS STATEWIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
  2. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING OVERHEAD UTILITIES.
  3. REFER TO HORIZONTAL ALIGNMENT DATA SHEET FOR CURVE DATA.



**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



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**RM 12  
 ROADWAY  
 PLAN AND PROFILE**  
 RM 12

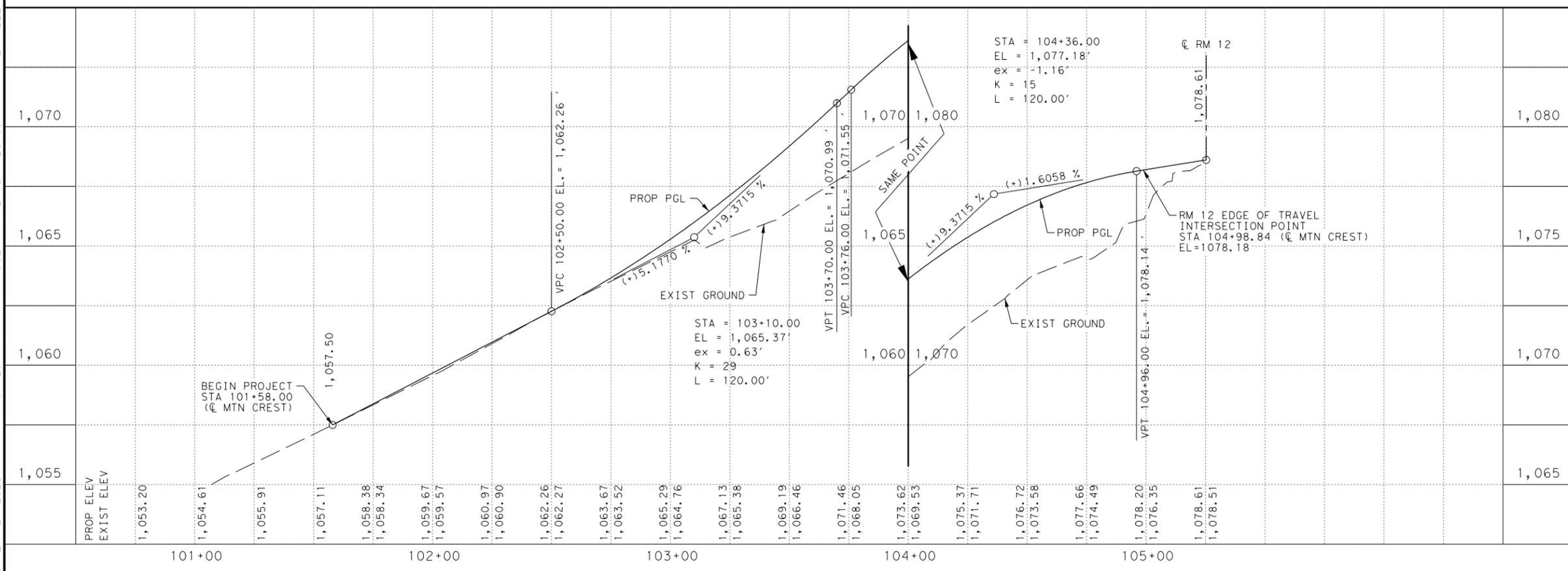
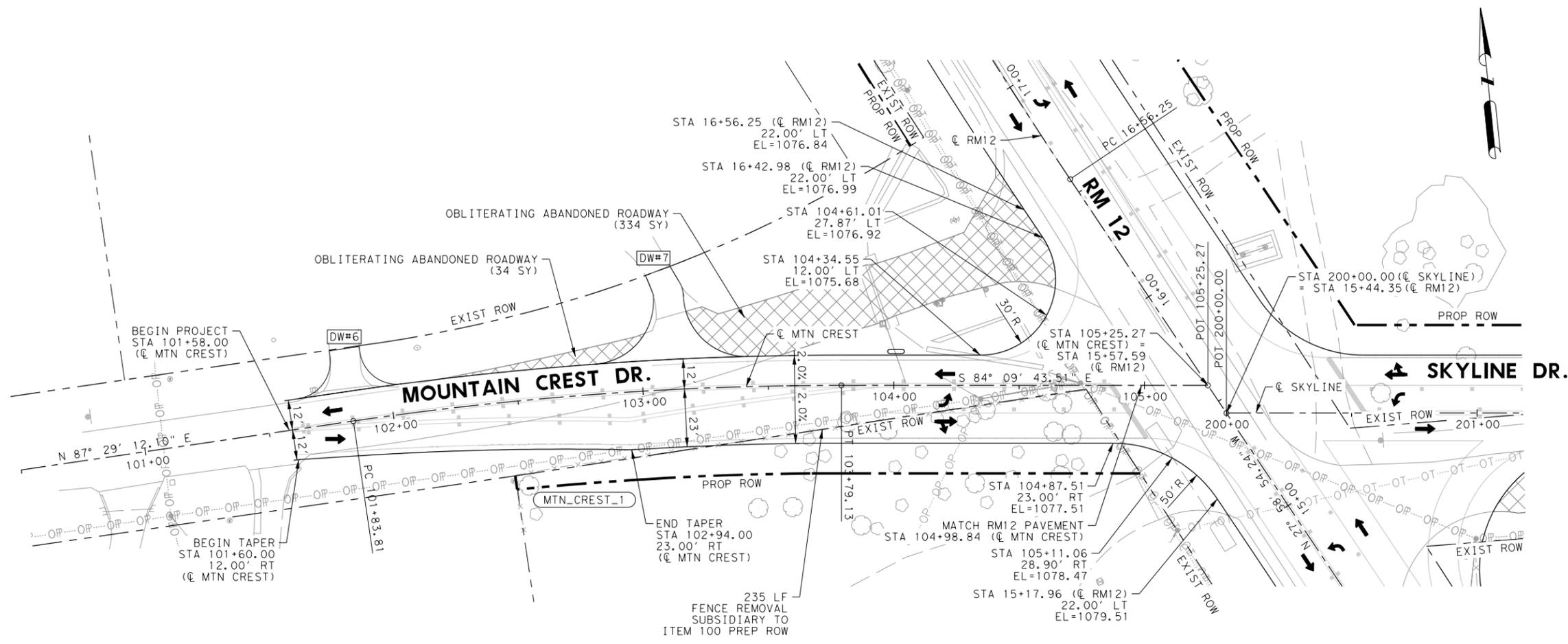
SHEET 5 OF 8

FED. RD. DIV. NO. 14	PROJECT NO.		SHEET NO. 51
STATE TEXAS	DIST. AUS	COUNTY HAYS	
CONT. 0683	SECT. 03	JOB 045	HIGHWAY NO. RM 12

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  - - - - - PROPOSED ROW
  - OP-OP-OP-OP- EXISTING OVERHEAD ELECTRIC
  - OT-OT-OT-OT- EXISTING OVERHEAD TELECOMM
  - - - - - EXISTING FENCE
  - PROPOSED EDGE OF PAVEMENT
  - DW# DRIVWAY NUMBER
  - TRAFFIC ARROWS
  - PROPOSED MAILBOX
  - #### CURVE NUMBER

- NOTES:**
1. CALL THE TEXAS STATEWIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
  2. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING OVERHEAD UTILITIES.
  3. REFER TO HORIZONTAL ALIGNMENT DATA SHEET FOR CURVE DATA.



**JOHN W. TULEY**  
 102441  
 LICENSED PROFESSIONAL ENGINEER  
 1/27/2026

**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779

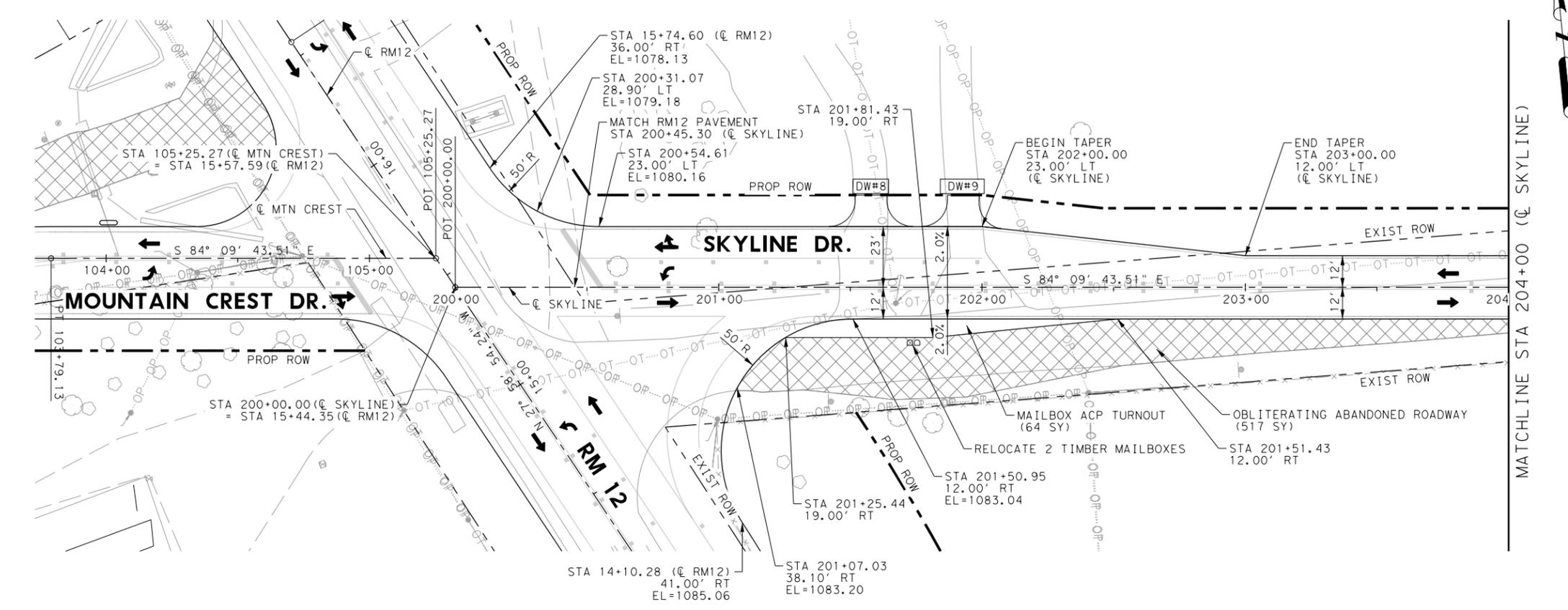
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**RM 12 ROADWAY**  
**PLAN AND PROFILE**  
 MOUNTAIN CREST DRIVE

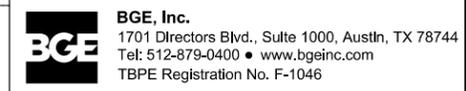
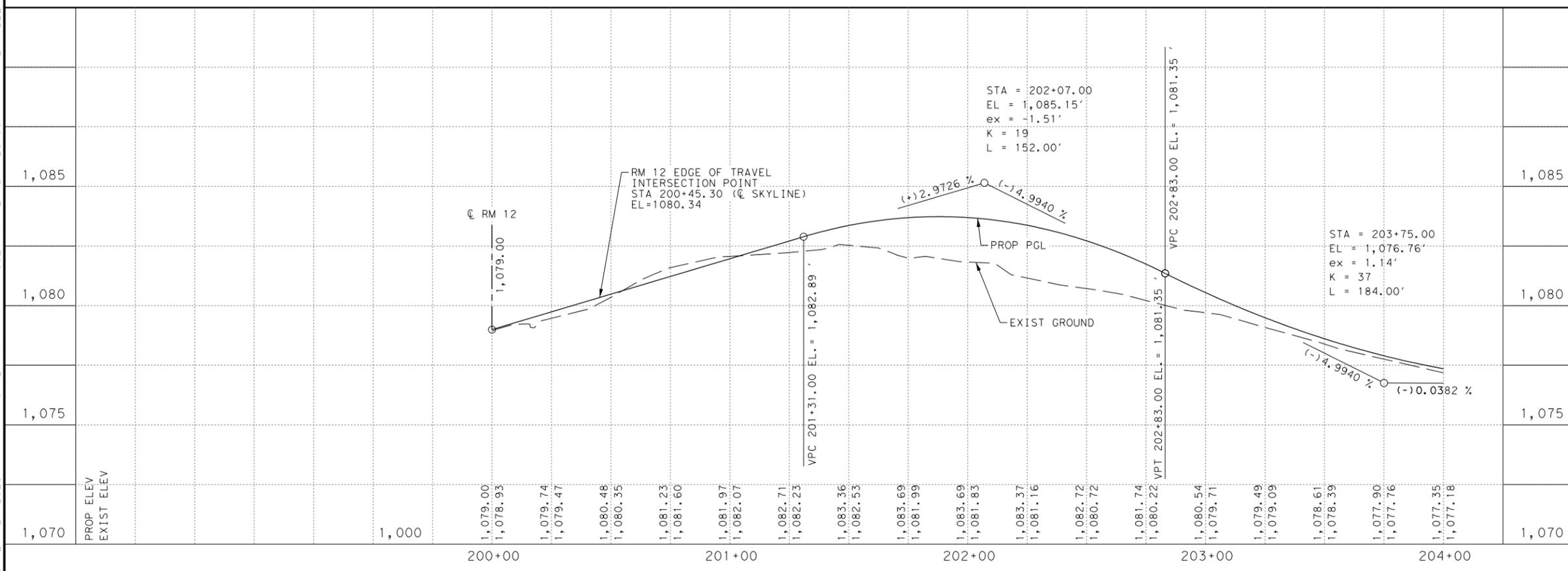
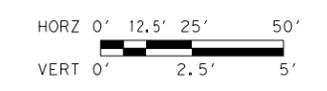
FED. RD. DIV. NO.		PROJECT NO.		SHEET NO.
14				52
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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 DATE:1/27/2026  
 PENTABLE: \$PENTBLS\$  
 \$STATUS\$



- LEGEND:**
- EXISTING ROW
  - - - - - PROPOSED ROW
  - OP-OP-OP-OP- EXISTING OVERHEAD ELECTRIC
  - OT-OT-OT-OT- EXISTING OVERHEAD TELECOMM
  - EXISTING FENCE
  - PROPOSED EDGE OF PAVEMENT
  - DW# DRIVWAY NUMBER
  - TRAFFIC ARROWS
  - PROPOSED MAILBOX
  - #### CURVE NUMBER

- NOTES:**
1. CALL THE TEXAS STATEWIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
  2. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING OVERHEAD UTILITIES.
  3. REFER TO HORIZONTAL ALIGNMENT DATA SHEET FOR CURVE DATA.

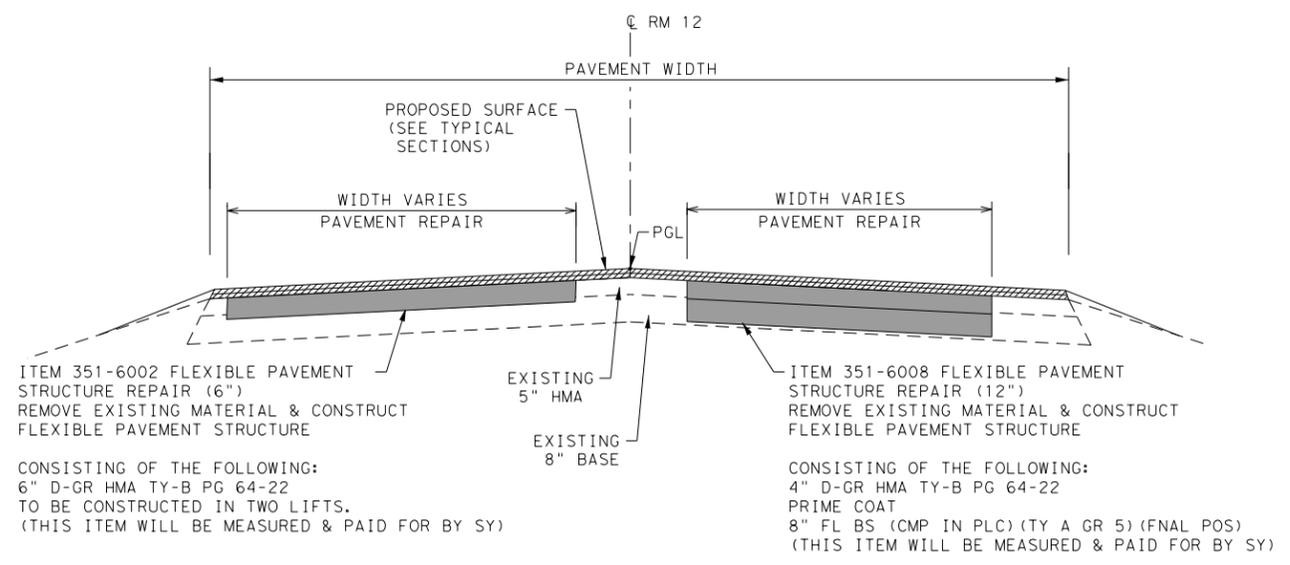


**RM 12 ROADWAY PLAN AND PROFILE**  
 SKYLINE DRIVE  
 SHEET 7 OF 8

FED. RD. DIV. NO. 14	PROJECT NO.		SHEET NO. 53
STATE TEXAS	DIST. AUS	COUNTY HAYS	
CONT. 0683	SECT. 03	JOB 045	HIGHWAY NO. RM 12



FILE:G:\TXC\Projects\County\_Hays\7083-00\_RM 12 Turn Lanes\03\_CADD\01\_Shts\03-RDWAY\RM12\_MISC\_DETAILS.dgn PLOTDRIVER: pdf.pltcfp  
 USER:RM 12 Turn Lanes PENTABLE: \$PENTBL\$  
 DATE:1/27/2026 1:04:30 PM



ITEM 351-6002 FLEXIBLE PAVEMENT STRUCTURE REPAIR (6")  
 REMOVE EXISTING MATERIAL & CONSTRUCT FLEXIBLE PAVEMENT STRUCTURE  
 CONSISTING OF THE FOLLOWING:  
 6" D-GR HMA TY-B PG 64-22  
 TO BE CONSTRUCTED IN TWO LIFTS.  
 (THIS ITEM WILL BE MEASURED & PAID FOR BY SY)

EXISTING 5" HMA  
 EXISTING 8" BASE

ITEM 351-6008 FLEXIBLE PAVEMENT STRUCTURE REPAIR (12")  
 REMOVE EXISTING MATERIAL & CONSTRUCT FLEXIBLE PAVEMENT STRUCTURE  
 CONSISTING OF THE FOLLOWING:  
 4" D-GR HMA TY-B PG 64-22  
 PRIME COAT  
 8" FL BS (CMP IN PLC) (TY A GR 5) (FNAL POS)  
 (THIS ITEM WILL BE MEASURED & PAID FOR BY SY)

**FLEXIBLE PAVEMENT STRUCTURE REPAIR DETAIL**

LOCATIONS TO BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

NOTE:  
 CONSTRUCT FLEXIBLE PAVEMENT STRUCTURE REPAIR PRIOR TO MILLING EXISTING SURFACE OR ANY ROADWAY CONSTRUCTION.



**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



**BGE, Inc.**  
 1701 Directors Blvd., Suite 1000, Austin, TX 78744  
 Tel: 512-879-0400 • www.bgeinc.com  
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**RM 12  
 MISCELLANEOUS  
 ROADWAY DETAILS**

SHEET 1 OF 1

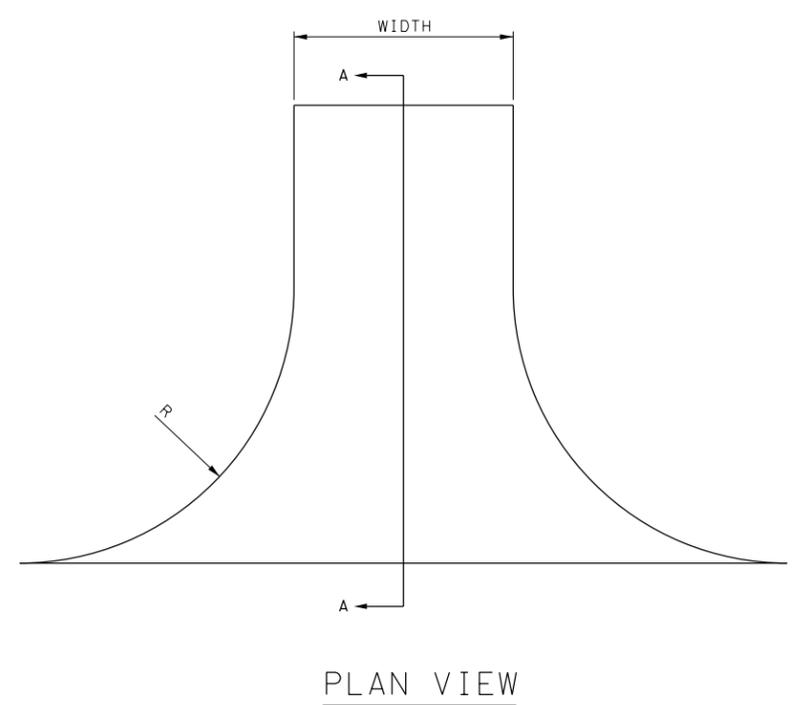
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14				55
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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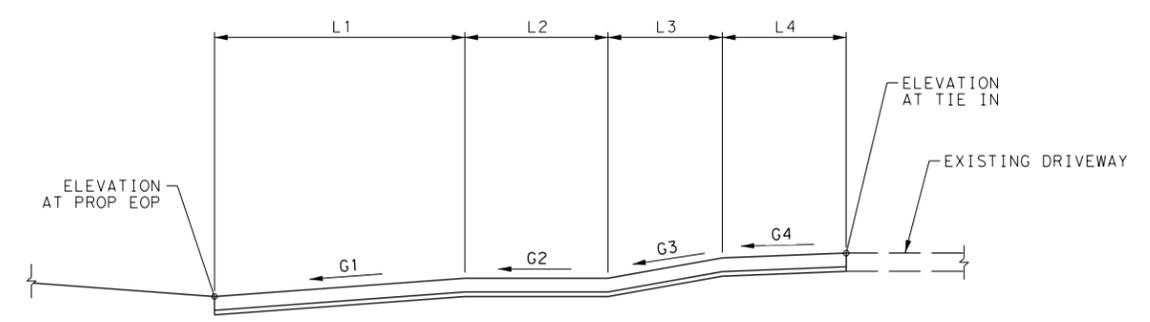
SUMMARY OF DRIVEWAYS																	
DRIVEWAY NUMBER	P&P SHEET NUMBER	CENTERLINE STATION		EXISTING SURFACE	PROPOSED SURFACE	R (FT)	WIDTH	AREA	LENGTHS			GRADES			DRIVEWAY TYPE	ELEV AT PROP EOP	ELEV AT TIE IN
							FT	SY	(L1) FT	(L2) FT	(L3) FT	(G1) %	(G2) %	(G3) %			
DW# 01	1	5+36.00	LT	ASPHALT	ASPHALT	25	20	85	25.0	-	-	0.10	-	-	RESIDENTIAL	1067.16	1067.18
DW# 02	3	13+97.00	LT	ASPHALT	ASPHALT	20	18	63	21.0	-	-	3.61	-	-	COMMERCIAL	1082.62	1083.38
DW# 03	4	19+81.00	RT	ASPHALT	ASPHALT	25	12	76	10.0	10.0	14.1	6.00	16.00	23.50	RESIDENTIAL	1072.88	1078.40
DW# 04	4	21+69.00	LT	ASPHALT	ASPHALT	15	32	100	6.0	10.0	8.0	-4.60	-12.60	-14.87	RESIDENTIAL	1073.10	1070.23
DW# 05	4	23+74.00	RT	ASPHALT	ASPHALT	25	30	126	42.8	-	-	6.02	-	-	RESIDENTIAL	1070.53	1073.10
DW# 06	6	101+84.00	LT	ASPHALT	ASPHALT	15	12	34	17.0	-	-	4.10	-	-	RESIDENTIAL	1085.61	1057.91
DW# 07	6	103+12.00	LT	ASPHALT	ASPHALT	25	12	77	24.0	12.0	-	5.58	1.80	-	RESIDENTIAL	1065.90	1064.35
DW# 08	7	201+58.00	LT	CONCRETE	CONCRETE	10	12	21	6.0	6.0	-	-6.00	-10.30	-	RESIDENTIAL	1083.06	1084.01
DW# 09	7	201+93.00	LT	CONCRETE	CONCRETE	10	12	21	6.0	6.0	-	-6.00	-9.40	-	RESIDENTIAL	1083.27	1084.19

SUMMARY OF DRIVEWAY STRUCTURES													
DRIVEWAY NUMBER	P&P SHEET NUMBER	CENTERLINE STATION		EXIST PIPE	PROPOSED PIPE	S. E. T. SIDE SLOPE	CULVERT GRADE (%)	UPSTREAM FLOWLINE			DOWNSTREAM FLOWLINE		
								STATION	OFFSET (FT)	ELEV (FT)	STATION	OFFSET (FT)	ELEV (FT)
DW# 01	1	5+36.00	LT	1 - 24" CMP	1 - 18" X 70' RCP	6:1	2.79	5+71.00	26.00	1064.66	5+02.00	29.20	1062.71
DW# 02	3	13+97.00	LT	1 - 18" CMP	1 - 18" X 70' RCP	6:1	1.90	13+60.30	30.80	1082.06	14+33.20	30.90	1080.73
DW# 03	4	19+81.00	RT	1 - 15" CMP	1 - 24" X 76' RCP	6:1	1.63	19+41.30	35.50	1072.10	20+18.50	35.40	1070.86
DW# 04	4	21+69.00	LT	NONE	NONE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DW# 05	4	23+74.00	RT	1 - 18" CMP	2 - 24" X 84' RCP	6:1	0.93	23+31.00	30.50	1069.11	24+15.00	28.30	1068.33
DW# 06	6	101+84.00	LT	NONE	NONE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DW# 07	6	103+12.00	LT	NONE	NONE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DW# 08	7	201+58.00	LT	NONE	NONE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DW# 09	7	201+93.00	LT	NONE	NONE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE:  
 1. STATION AND OFFSET ARE TAKEN FROM INVERT OF THE S.E.T.



PLAN VIEW



DRIVEWAY SECTION A-A



**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



**BGE, Inc.**  
 1701 Directors Blvd., Suite 1000, Austin, TX 78744  
 Tel: 512-879-0400 • www.bgeinc.com  
 TBPE Registration No. F-1046

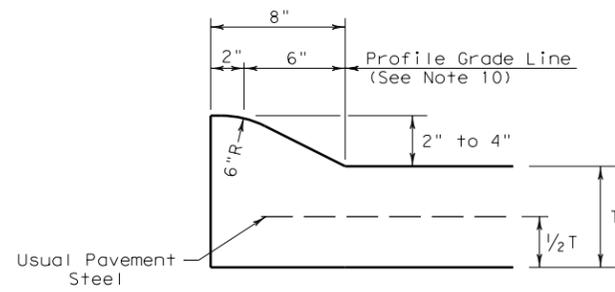
**RM 12**  
**SUMMARY OF DRIVEWAYS**

SHEET 1 OF 1

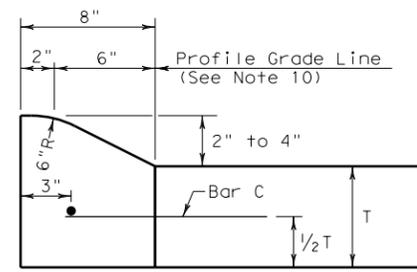
FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				56
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

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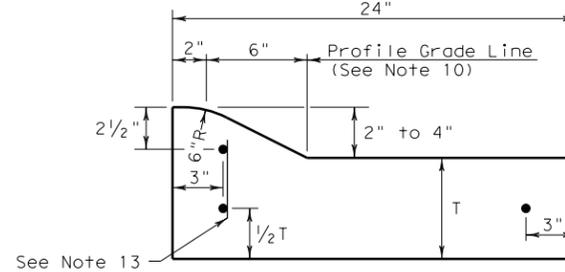
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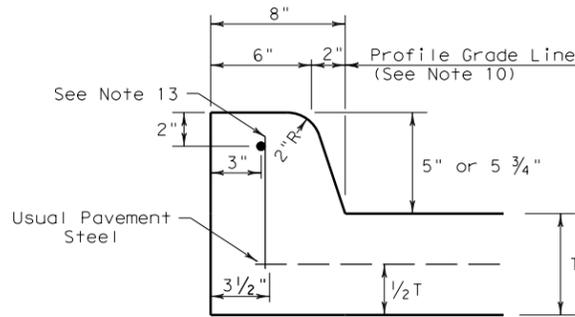
TYPE I CURB (MONOLITHIC)  
2" - 4" HEIGHT



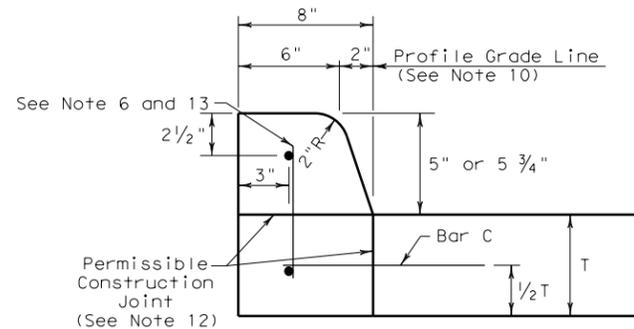
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2" - 4" HEIGHT



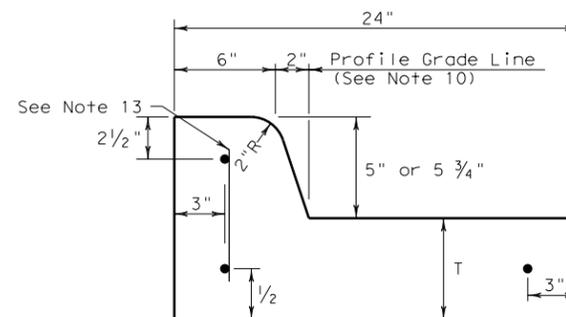
TYPE I CURB AND GUTTER  
2" - 4" HEIGHT



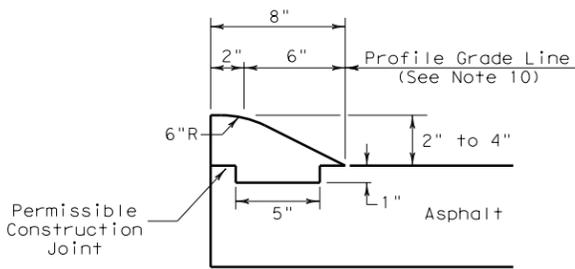
TYPE II CURB (MONOLITHIC)  
5" - 5 3/4" HEIGHT



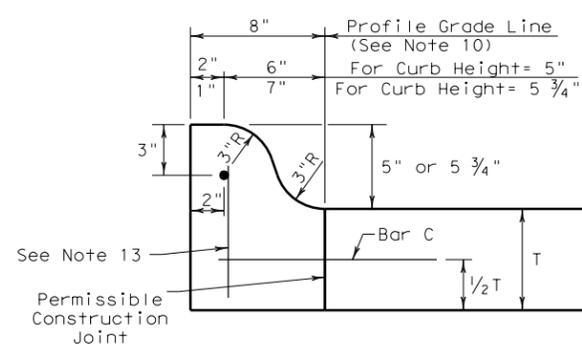
TYPE II CURB  
5" - 5 3/4" HEIGHT



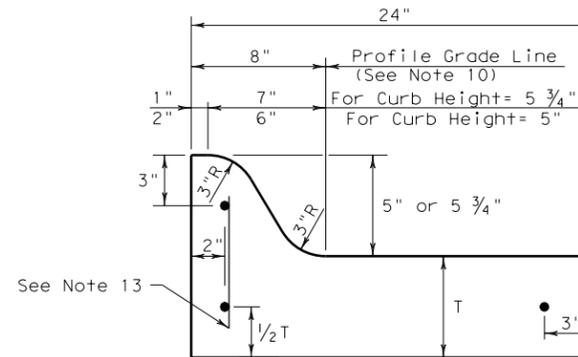
TYPE II CURB AND GUTTER  
5" - 5 3/4" HEIGHT



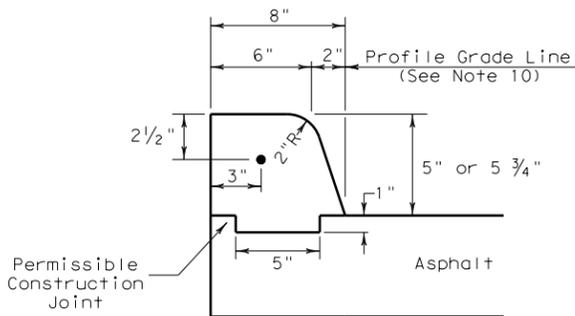
TYPE III CURB (KEYED)  
2" - 4" HEIGHT



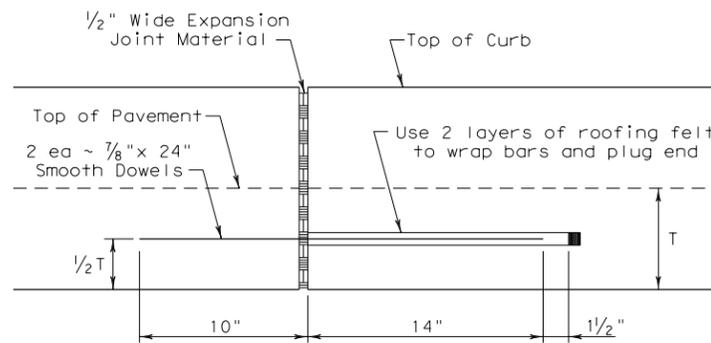
TYPE IIa CURB  
5" - 5 3/4" HEIGHT



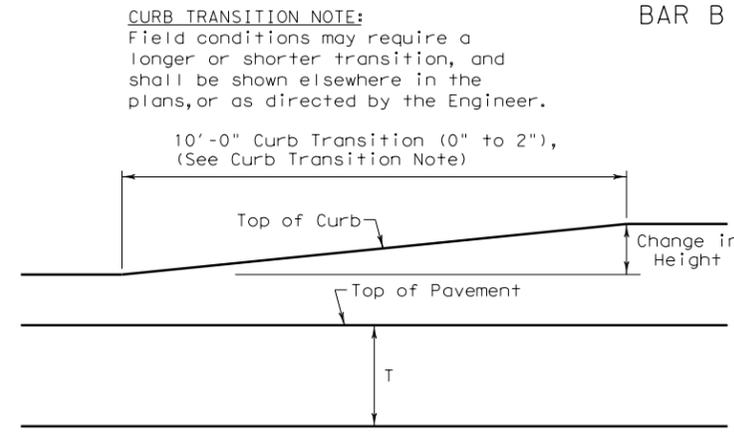
TYPE IIa CURB AND GUTTER  
5" - 5 3/4" HEIGHT



TYPE IV CURB (KEYED)  
5" - 5 3/4" HEIGHT



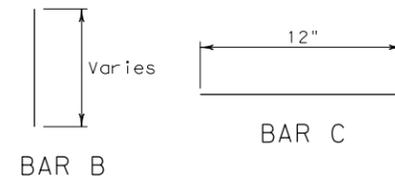
EXPANSION JOINT DETAIL



CURB TRANSITION  
Note: To be paid for as Highest Curb

GENERAL NOTES

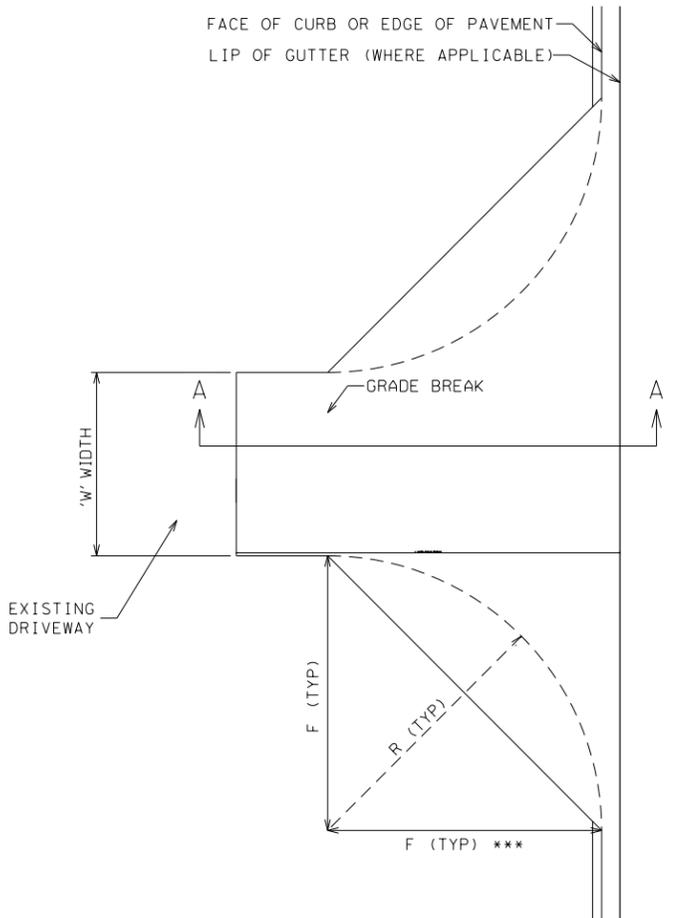
- All materials and construction shall be in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
- Concrete shall be Class A.
- When reinforcing bars are used, they shall be No.4 unless otherwise shown. The use of fiber reinforced concrete in lieu of reinforcing steel is acceptable. Use fibers meeting the requirements of DMS 4550, "Fibers for Concrete," and dose fibers in accordance with Material Producers List (MPL) "Fibers for Class A and B Concrete Applications."
- Round exposed sharp edges with a rounding tool, to a minimum radius of 1/4 inch.
- All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
- Where concrete curb is to be placed on existing concrete pavement, Bar B may be drilled and grouted in place, or may be inserted into fresh concrete.
- Expansion and contraction joints shall be constructed to match pavement joints in all curbs and curb and gutter adjacent to jointed concrete pavement. Where placement of curb or curb and gutter is not adjacent to concrete pavement, expansion joints shall be provided at structures, curb returns at streets, and at locations directed by The Engineer.
- Vertical and horizontal dowel bars and transverse reinforcing bars shall be placed at four feet C-C.
- Dimension 'T' shown is the thickness of concrete pavement. When curb is installed adjacent to flexible pavement dimension 'T' is 8" maximum.
- Usual profile grade line. Refer to typical sections and plan-profile sheets for exact locations.
- One-half inch expansion joint material shall be provided where curb or curb and gutter is adjacent to sidewalk or riprap.
- When horizontal permissible construction joints are used, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans. Reinforcing steel for curb section shall then conform to that required for concrete curb.
- Bar B placement as needed (typically at four ft. C-C) to support curb reinforcing steel during concrete placement.



CURB TRANSITION NOTE:  
Field conditions may require a longer or shorter transition, and shall be shown elsewhere in the plans, or as directed by the Engineer.

				<b>Design Division Standard</b>
<h2>CONCRETE CURB AND GUTTER</h2>				
<h3>CCCG-22</h3>				
FILE: cccg21.dgn	DN: TxDOT	CK: AN	DW: CS	CK: KM
© TxDOT: JUNE 2022	CONT: 0683	SECT: 03	JOB: 045	HIGHWAY: RM 12
REVISIONS		DIST: AUS	COUNTY: HAYS	SHEET NO.: 57

DATE: 1/27/2026 1:04:33 PM  
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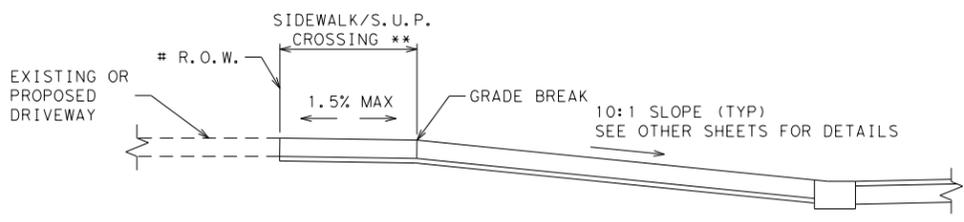
DRIVEWAY PLAN

FLARE OR RADIUS	FARM/RANCH	RESIDENTIAL	COMMERCIAL
"F" OR "R" (FT)	25	25	25

THESE ARE STANDARD DIMENSIONS UNLESS OTHERWISE SHOWN ELSEWHERE ON THE PLANS.

FLARES ARE TYPICALLY USED FOR SUBURBAN/URBAN (CURBED) ROADWAYS. RADII ARE TYPICALLY USED FOR RURAL OR UNCURBED ROADWAYS.

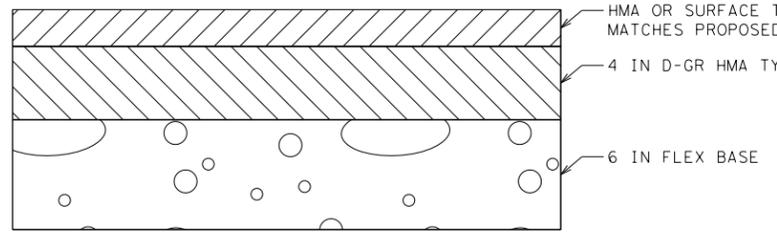
\*\*\* THIS 'F' DIMENSION MAY BE REDUCED TO KEEP WORK WITHIN THE ROW.



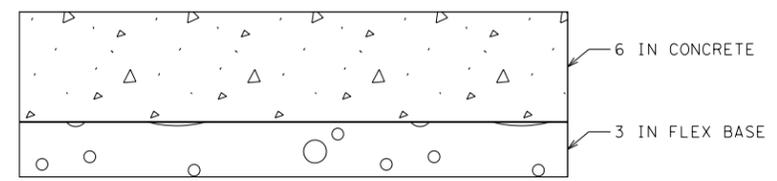
DRIVEWAY WITH GUTTER SECTION A-A

ENSURE GRADE BREAK DOES NOT EXCEED 8% UNLESS OTHERWISE DIRECTED. PROVIDE ABSOLUTE MINIMUM SIDEWALK CROSSING WIDTH OF 4' FOR DRIVEWAYS WIDTH OF 20' OR LESS

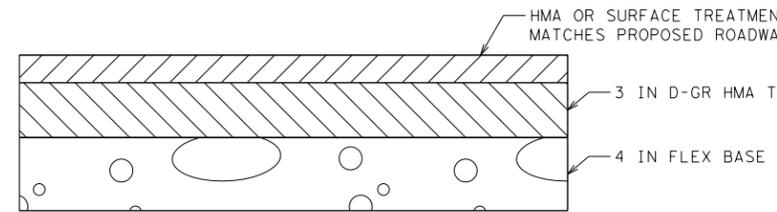
\*\* LOCATE SIDEWALK CROSSING TO ALIGN WITH ADJACENT SIDEWALK; SIDEWALK/S.U.P. WIDTH AND LOCATION SHOWN ELSEWHERE ON THE PLANS.



HMA OR SURFACE TREATMENT - COMMERCIAL



CONCRETE - ALL DRIVEWAY TYPES

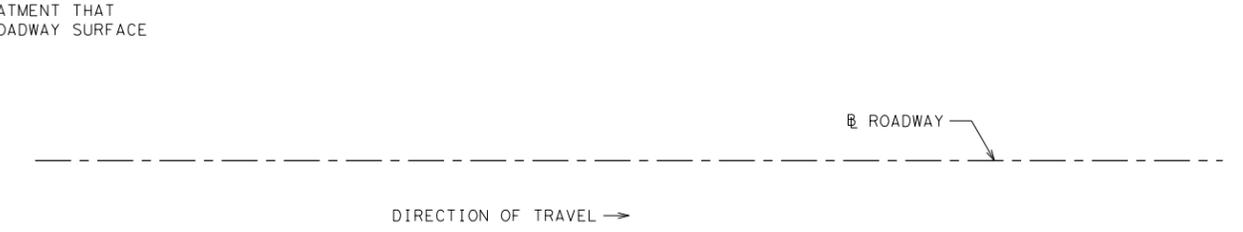


HMA OR SURFACE TREATMENT - FARM/RANCH/RESIDENTIAL

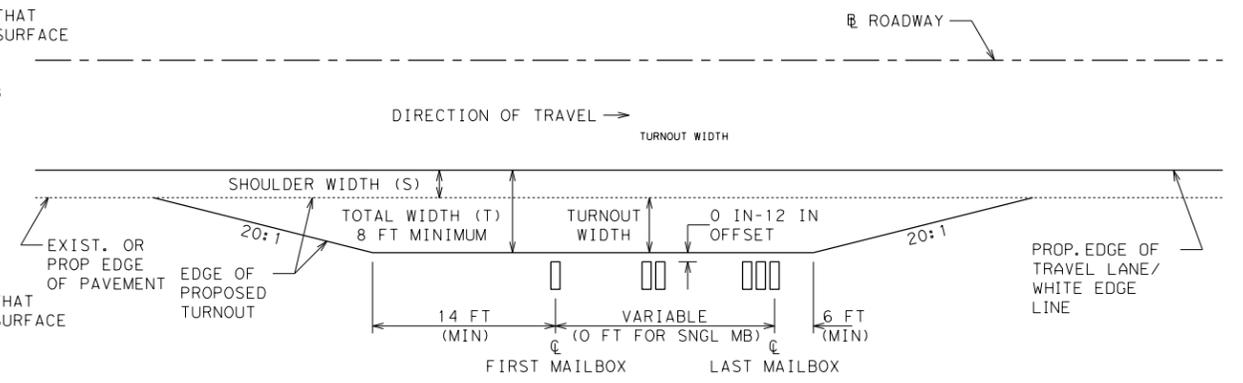


FAST TRACK ACP (TYPE 3) OR CONCRETE

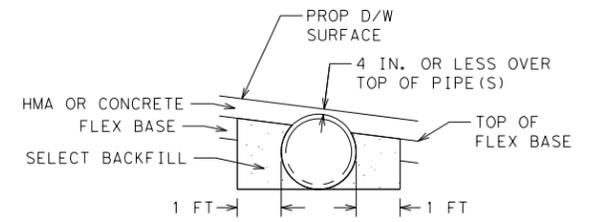
DRIVEWAY AND TURNOUT TYPICAL SECTIONS



MAILBOX TURNOUT PLAN WITH DRIVEWAY



MAILBOX TURNOUT PLAN WITHOUT DRIVEWAY



THIN PIPE COVER DRIVEWAY

\*FOR USE WHEN TOP OF PIPE(S) TO D/W SURFACE IS 4 IN. OR LESS  
 \*\*ONLY ONE PIPE SHOWN FOR CLARITY  
 \*\*\*SELECT BACKFILL MUST BE FLOWABLE FILL, CEMENT TREATED BASE, OR ANY CLASS OF CONCRETE AS DIRECTED BY THE ENGINEER. TO BE PAID USING EXISTING BID ITEMS.

GENERAL NOTES

PROVIDE EXPANSION 20 FT C-C FOR WIDTH OR LENGTH OVER 25 FT. EXPANSION JOINT PER AUS STANDARD FOR SIDEWALK (MCPSWD).

REINFORCEMENT WILL BE IN ACCORDANCE WITH ITEM 432.3.1 USING NO. 3 OR NO. 4 BARS.

FIBER REINFORCEMENT IS NOT ALLOWED. CLASS A CONCRETE IS ALLOWED TO USE COARSE AGGREGATE GRADES 1-8.

IN LIEU OF PFC OR TOM, SURFACE MUST BE 1.5" D-GR HMA TY D. IF SURFACE IS A MULTIPLE COURSE SURFACE TREATMENT, ALL COURSES MUST BE PLACED ON DRIVEWAY. SURFACE HMA IS PG 76-22. NON SURFACE HMA IS PG 64-22 AND MAY BE BLADE LAID.

FURNISH BASE MEETING THE REQUIREMENTS FOR ANY TYPE OR GRADE IN ACCORDANCE WITH ITEM 247. BASE COMPRESSIVE STRENGTHS ARE WAIVED.

THE BASE UNDER THE CONCRETE MAY BE REPLACED WITH CONCRETE AT A RATIO OF 3 INCHES OF BASE EQUALS 2 INCHES OF CONCRETE.

FAST TRACK DRIVEWAYS MUST BE CLOSED, CONSTRUCTED, AND REOPENED WITHIN 24 HOURS.

IF ROOTS ARE ENCOUNTERED VERIFY WITH THE ENGINEER PRIOR TO ACCOMMODATING OR REMOVING 2 IN. DIAMETER OR LARGER ROOTS. ROOT REMOVAL MUST BE IN ACCORDANCE WITH ITEM 752.4.2. ROOTS MAY REMAIN IN THE BASE. FOR IMPROVEMENTS WITHIN 6 IN. OF A ROOT, THE CONCRETE THICKNESS MAY BE REDUCED BY 1 IN. AND THE BASE INCREASED BY 1 IN. TO MINIMIZE IMPACTS TO THE ROOTS. ADJUST BASE AND SURFACE PROFILE TO PROVIDE A 1 IN. BASE CUSHION AROUND THE ROOTS. THE SURFACE PROFILE MAY BE ADJUSTED TO THE EXTENT ALLOWED BY ADA. THIS WORK IS SUBSIDIARY.

**Texas Department of Transportation** Austin District Standard

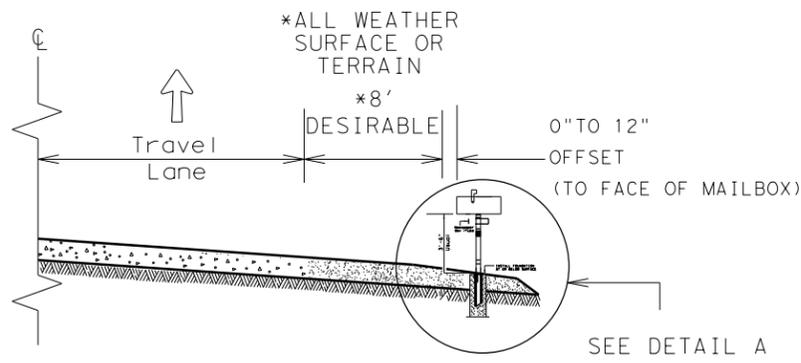
## DRIVEWAYS AND MAILBOX TURNOUTS

### DWMB-24 (AUS)

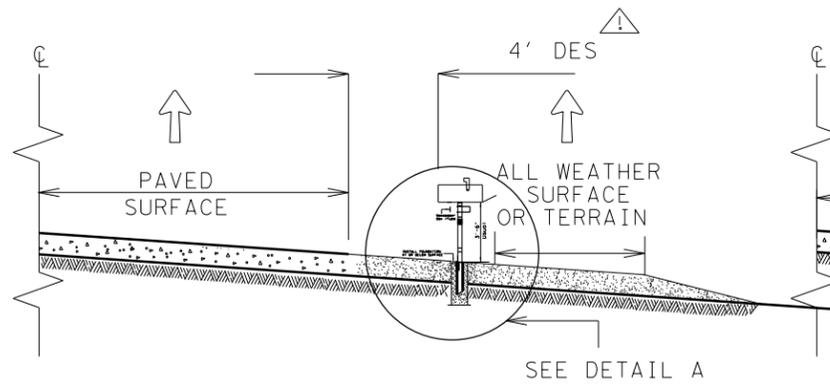
REVISIONS	CONT	SECT	JOB	HIGHWAY
01/16/ SHEET CREATED	0683	03	045	RM 12
04/19/ APPROVED	DIST		COUNTY	SHEET NO.
11/20/ TABLE REVISED, GN ADDED, PLAN & PROFILE MODIFIED	AUS		HAYS	58
01/22/ ADDED TURNOUT INFO				
01/24/ THIN PIPE DETAIL REVISED				

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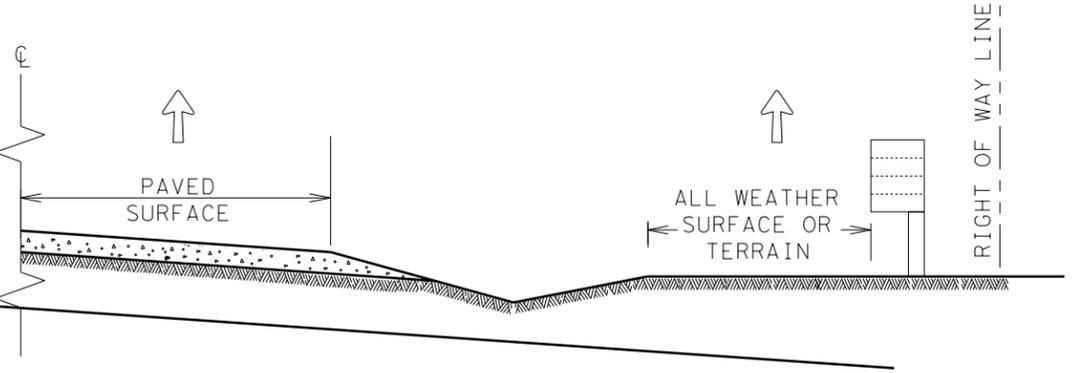
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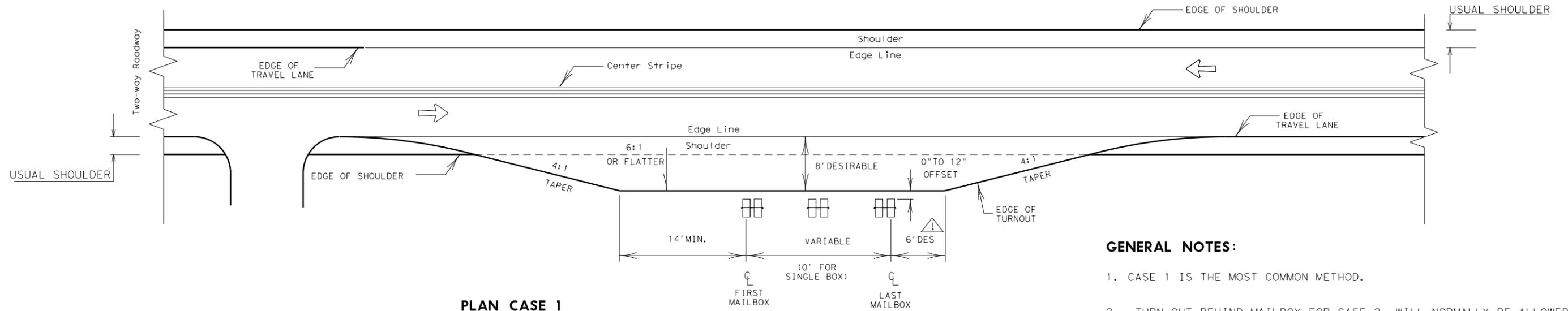
**CASE 1. OFF TRAVEL WAY DELIVERY**



**CASE 2. BACK SIDE DELIVERY**



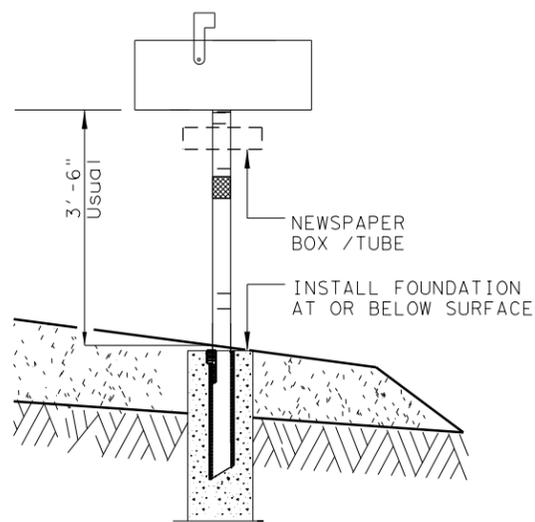
**CASE 3. DELIVERY NEAR RIGHT OF WAY LINE**



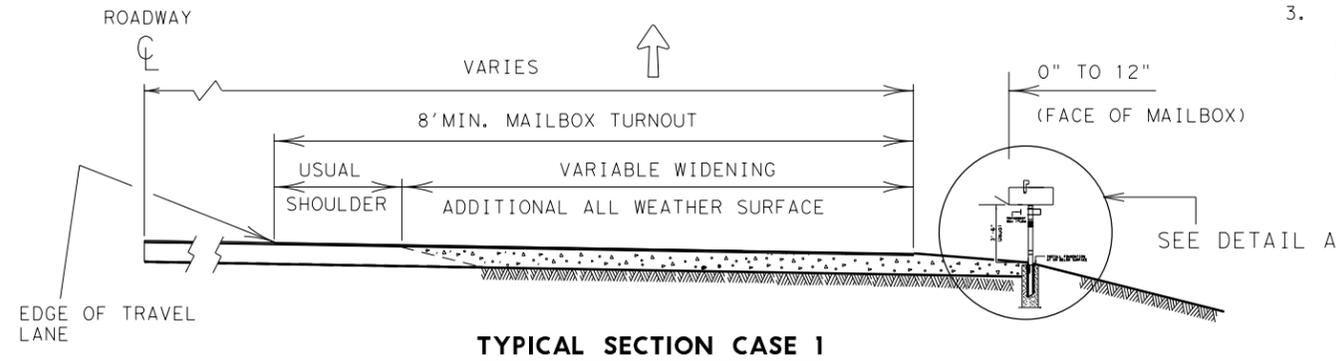
**PLAN CASE 1**

**GENERAL NOTES:**

1. CASE 1 IS THE MOST COMMON METHOD.
2. TURN OUT BEHIND MAILBOX FOR CASE 2 WILL NORMALLY BE ALLOWED FOR NATURAL TERRAIN THAT WILL SERVE AS AN ALL WEATHER SURFACE.
3. ALL WEATHER DRIVEWAYS FOR CASE 3 MAILBOXES LOCATED AT THE RIGHT OF WAY LINE SHOULD NORMALLY BE PLACED IN CONJUNCTION WITH COUNTY ROADS OR OTHER CONNECTING COMMUNITY ROADS OR STREETS. IF THE NUMBER OF MAILBOXES EXCEEDS FOUR, A COMMUNITY MAIL BOX SHOULD BE ENCOURAGED AT THESE LOCATIONS.



**DETAIL A**



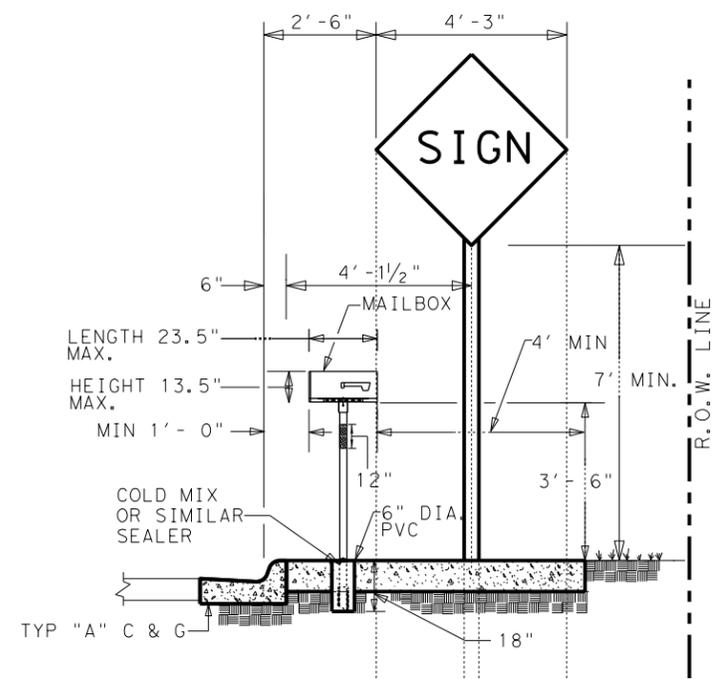
**TYPICAL SECTION CASE 1**

↑ MAIL DELIVERY VEHICLE TRAVEL DIRECTION

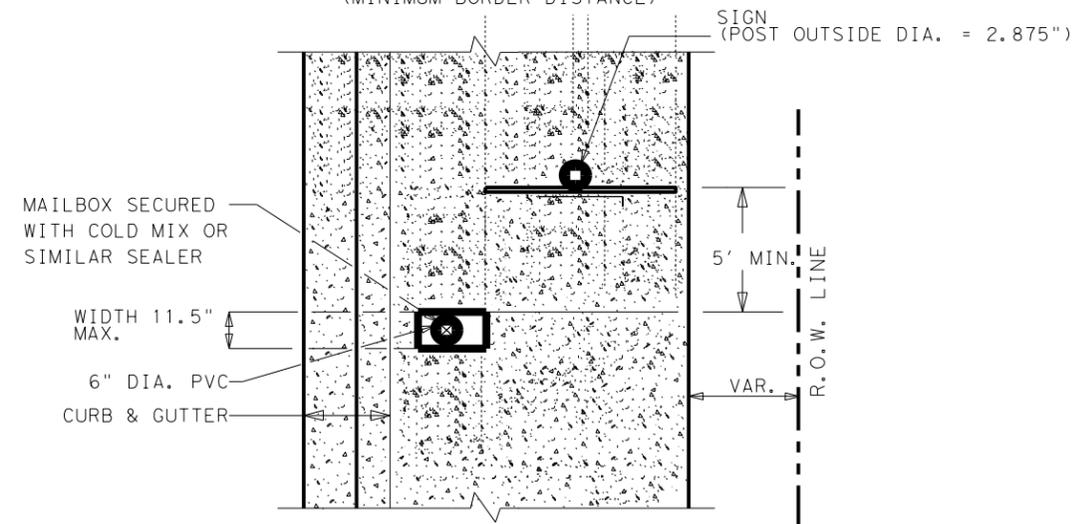
SHEET 1 OF 3

		<b>Maintenance Division Standard</b>	
<i>Guideline</i> <b>MAILBOX SIDE ROAD PLACEMENT AND TURNOUTS MB-14(2)</b>			
FILE: MB14(2).DGN	DN: JEO	CK:	DW: JEO
© TxDOT MAY 2014	CONT	SECT	HIGHWAY
REVISIONS	0683	03	045 RM 12
DECEMBER 2012-NEW TxDOT TITLE BLOCK	DIST	COUNTY	SHEET NO.
	AUS	HAYS	59

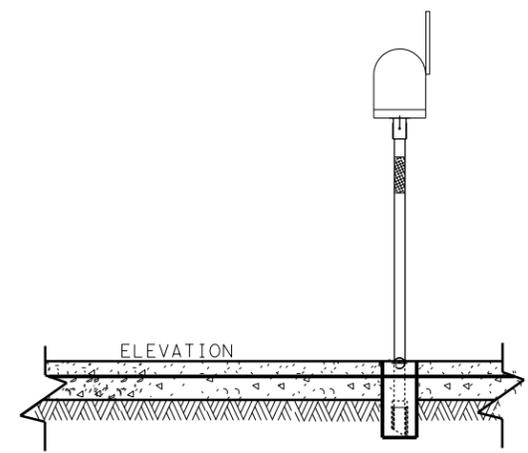
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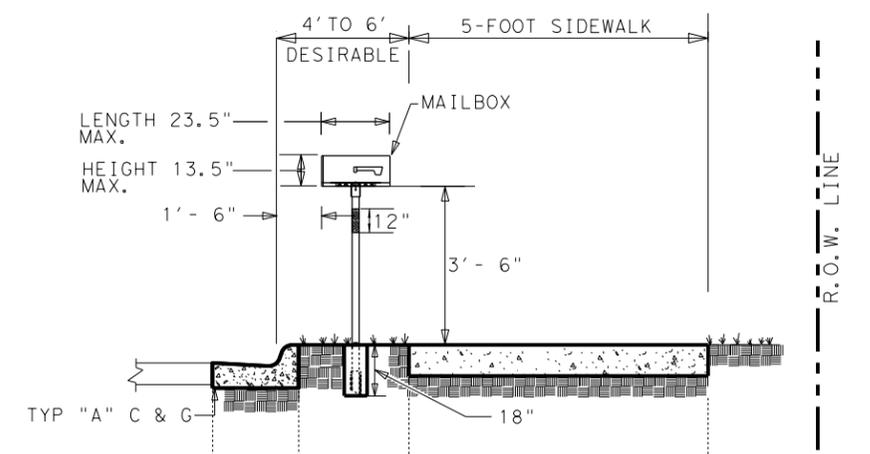
MAILBOX SIDEWALK INSTALLATION RELATIVE TO ANY OTHER OBSTRUCTION SUCH AS A SIGN (MINIMUM BORDER DISTANCE)



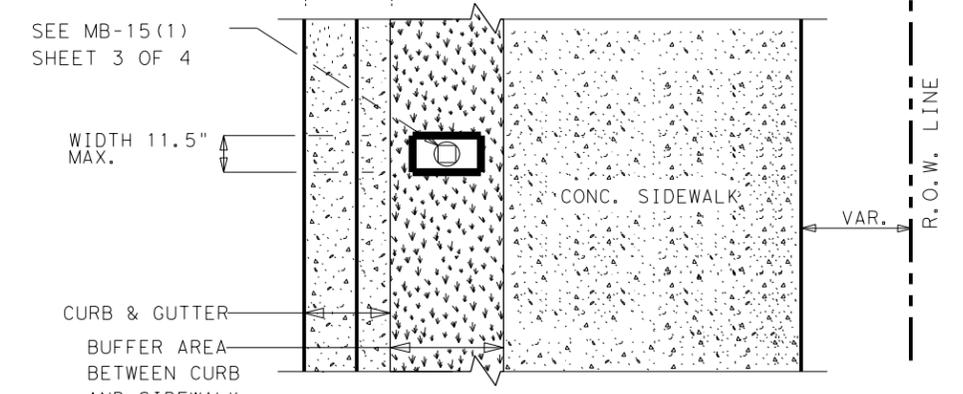
PLAN VIEW



ELEVATION



MAILBOX SIDEWALK INSTALLATION (DESIRABLE BORDER DISTANCE)



PLAN VIEW

SHEET 2 OF 3

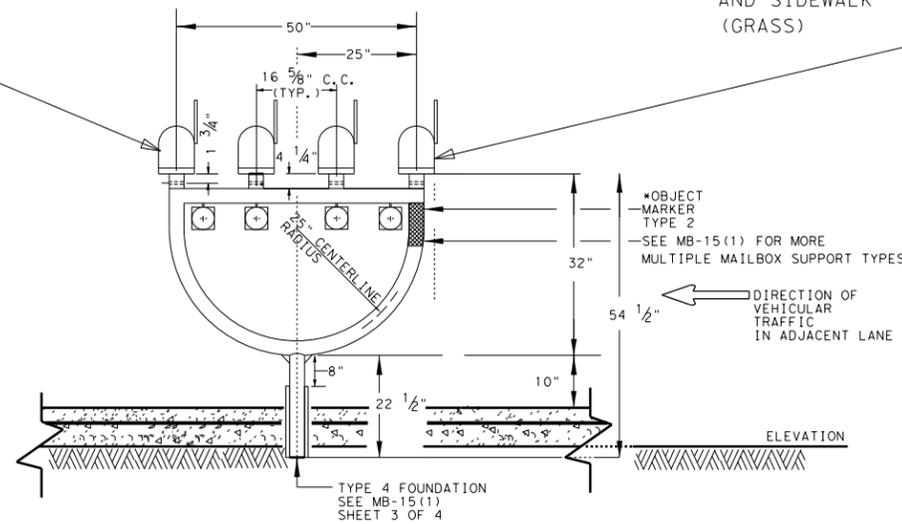
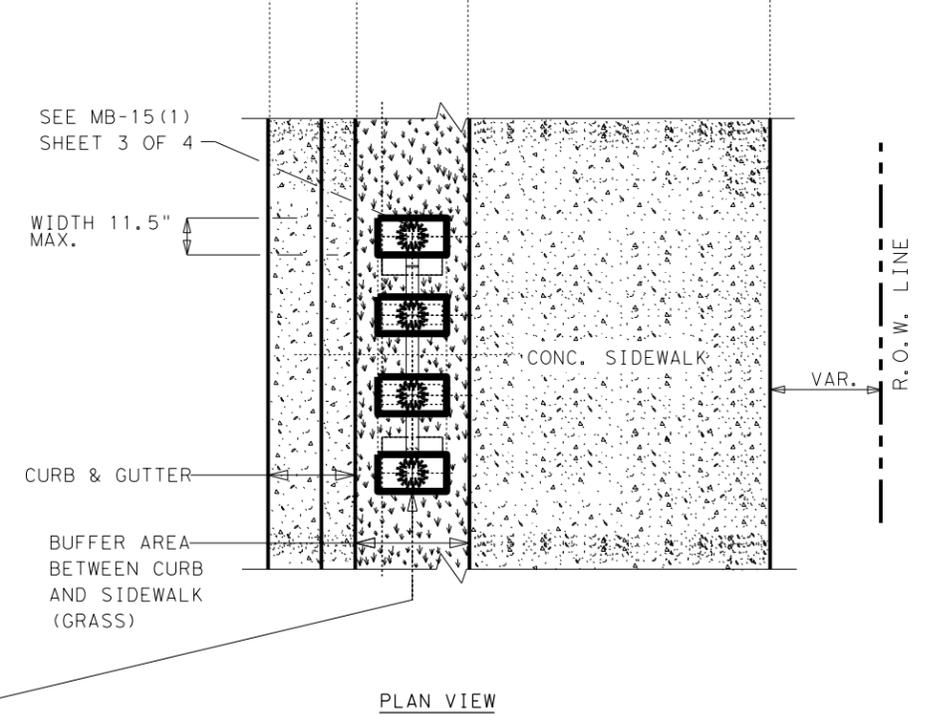
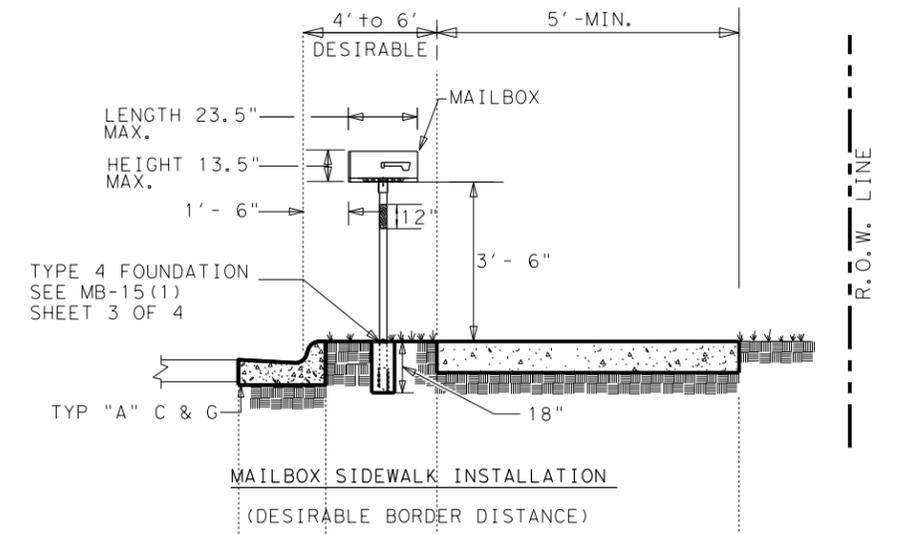
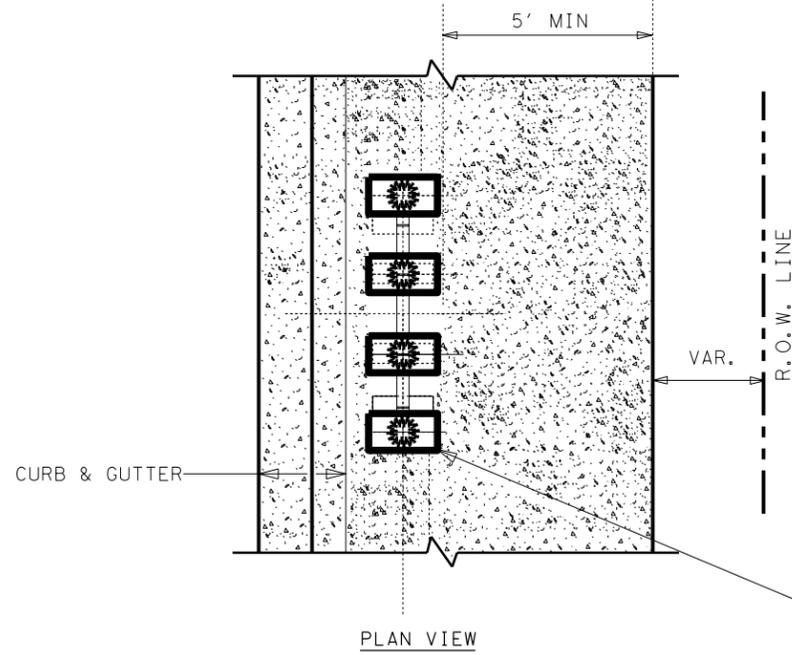
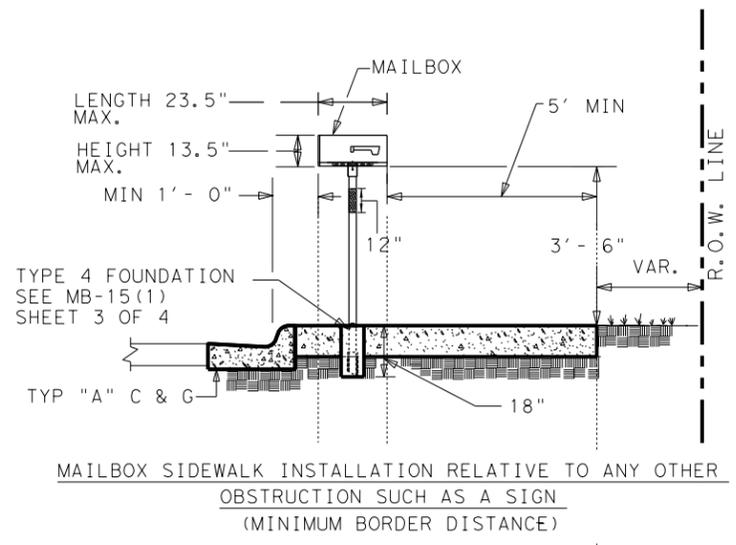


**SINGLE MAILBOX PLACEMENT  
 BEHIND CURBS WITH OR WITHOUT  
 SIDEWALKS  
 MB-14(2A)**

FILE: MB-14(2A)	DN:	CK:	DW:	CK:
© TxDOT MAY 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0683	03	045	RM 12
	DIST	COUNTY	SHEET NO.	
	AUS	HAYS	60	

DATE: 1/27/2026 1:04:36 PM  
 FILE: G:\TXDOT\Projects\County\Hays\2083-00\_BM\_12\_Turn\_Lanes\03\_CADD\01\_Shts\03\_BMW\03\_Mb-14(2b).dgn

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SHEET 3 OF 3



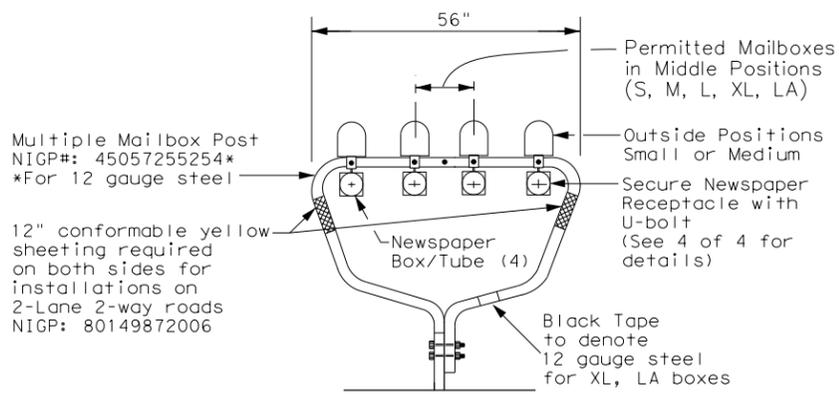
MULTIPLE MAILBOX PLACEMENT BEHIND CURBS WITH OR WITHOUT SIDEWALKS

MB-14(2B)

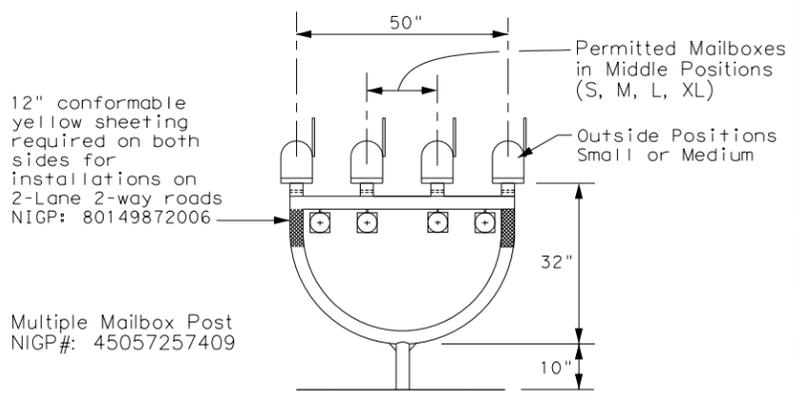
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©TXDOT MAY 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0683	03	045	RM 12
	DIST	COUNTY	SHEET NO.	
	AUS	HAYS	61	

DATE: 1/27/2026 1:04:37 PM  
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### TYPE 1 - MULTIPLE



### TYPE 4 - MULTIPLE

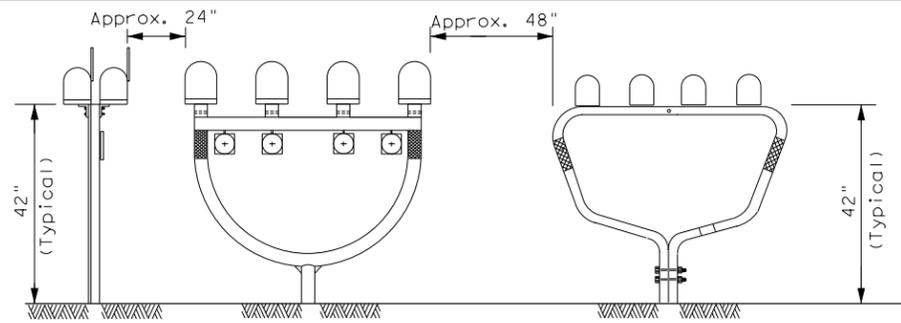


### MAILBOX SIZES

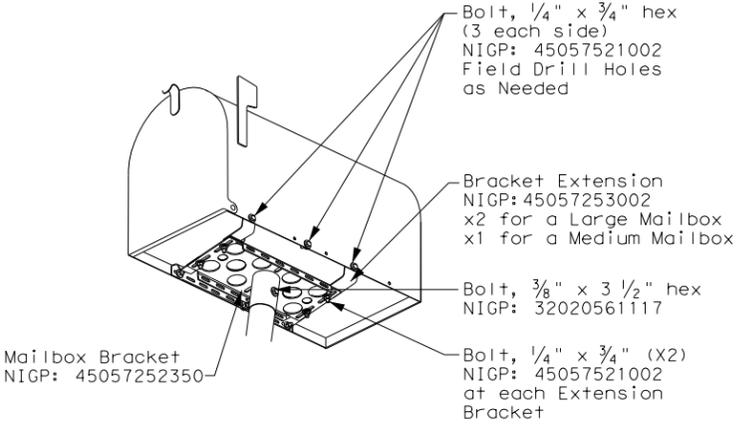
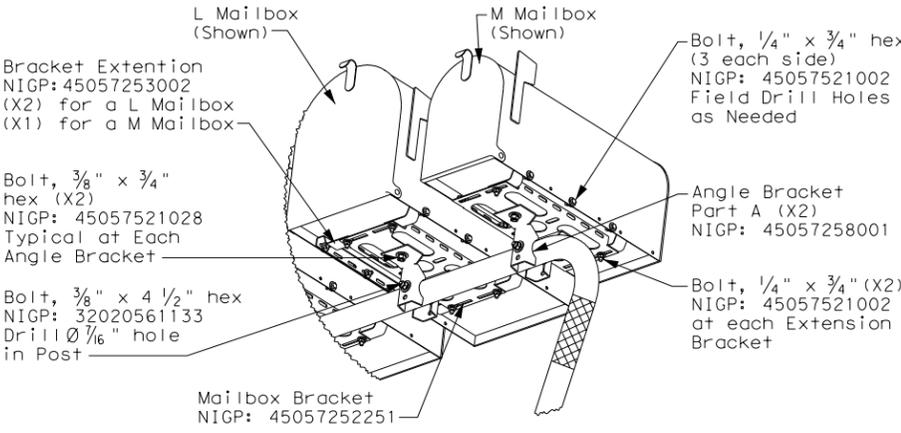
MAILBOX SIZE	TYPICAL DIMENSIONS			MAX **
	LENGTH	WIDTH	HEIGHT	WEIGHT
SMALL	19 1/2"	6"	7"	6 LBS
MEDIUM	22 1/2" *	8" *	11 1/2" *	8 LBS
LARGE	23 1/2"	11 1/2"	13 1/2"	11 LBS
EXTRA LARGE	18"	14"	12"	13 LBS
LOCKABLE	18"	11 1/2"	15"	23 LBS

- 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

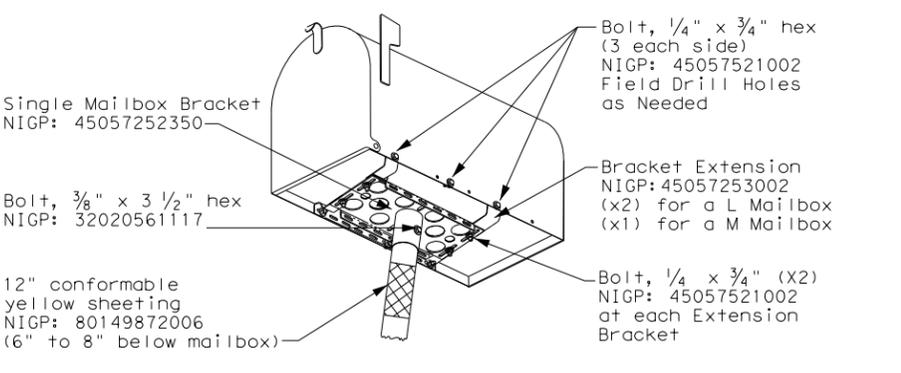
### TYPICAL INSTALLATION MEASUREMENTS



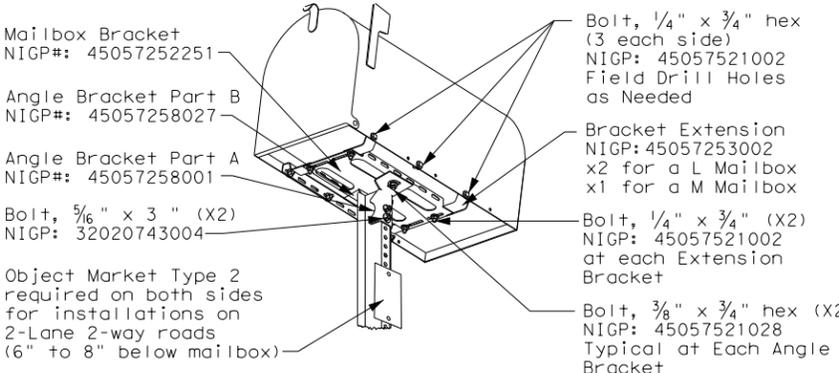
**NOTE:** Mailbox installations in sidewalk areas shall be in accordance with the latest TxDOT Design Standard sheets PED-Pedestrian Facilities Curb Ramps.



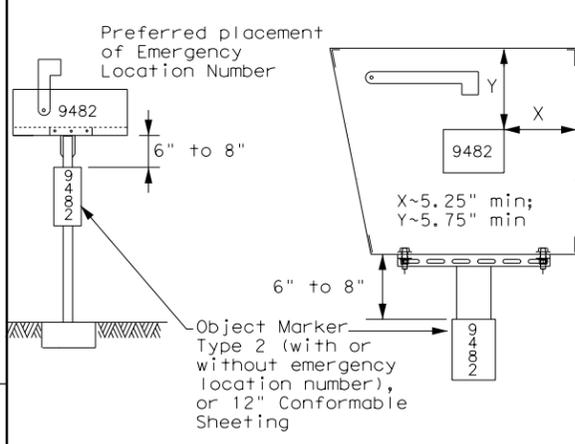
### TYPE 2 and 4 - SINGLE/DOUBLE



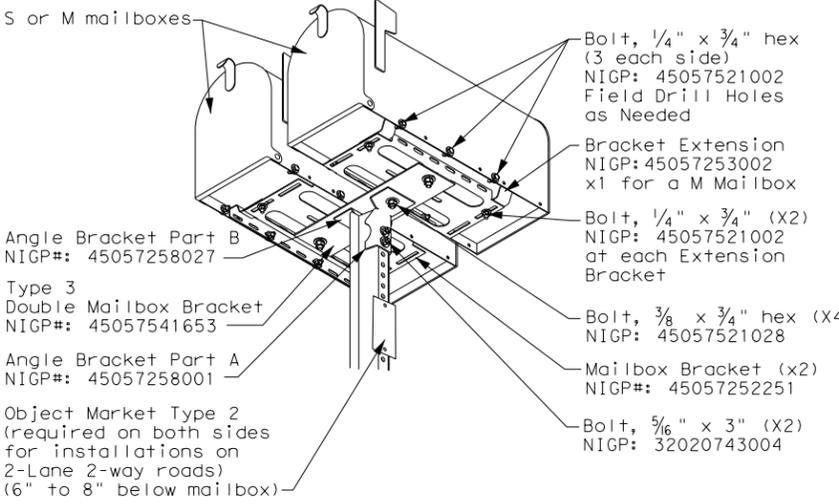
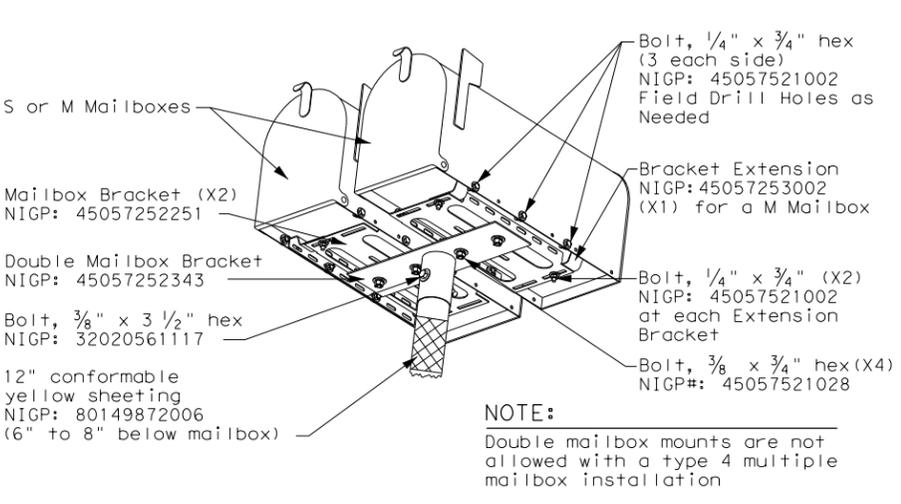
### TYPE 3 - SINGLE/DOUBLE



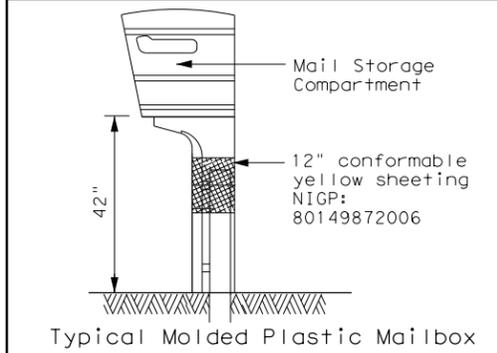
### PLACEMENT OF EMERGENCY LOCATION NUMBER



- NOTES:**
- Location numbers are provided by homeowner. Minimum size 1" height.
  - Location number is typically placed on the mailbox in a contrasting color.
  - Black numbers may be placed on the Type 2 object marker if the numbers cannot be placed on the mailbox.
  - Alternatively, a green or blue plate with white numbers attached may be mounted below the object marker. Other contrasting color configuration, as approved, may be used.
  - See 3 of 4 for Foundation details.
  - See 4 of 4 for Hardware details.



### TYPE 5



## MAILBOX MOUNTING AND ASSEMBLY

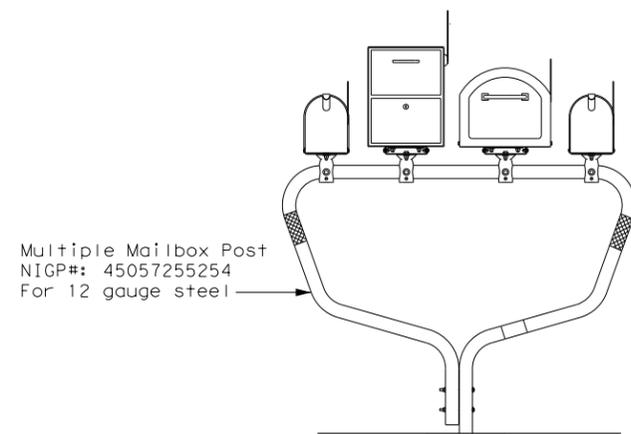
### MB(1)-21

FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS	0683	03	045	RM 12
2/2005	11/2009	4/2015		
6/2005	1/2011			
11/2006	7/2014			
	DIST	COUNTY		SHEET NO.
	AUS	HAYS		62

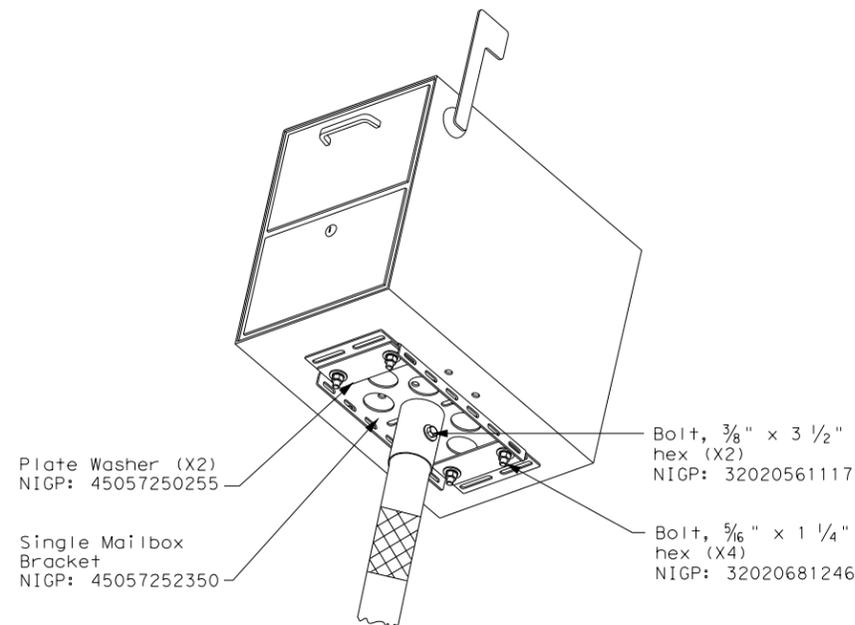
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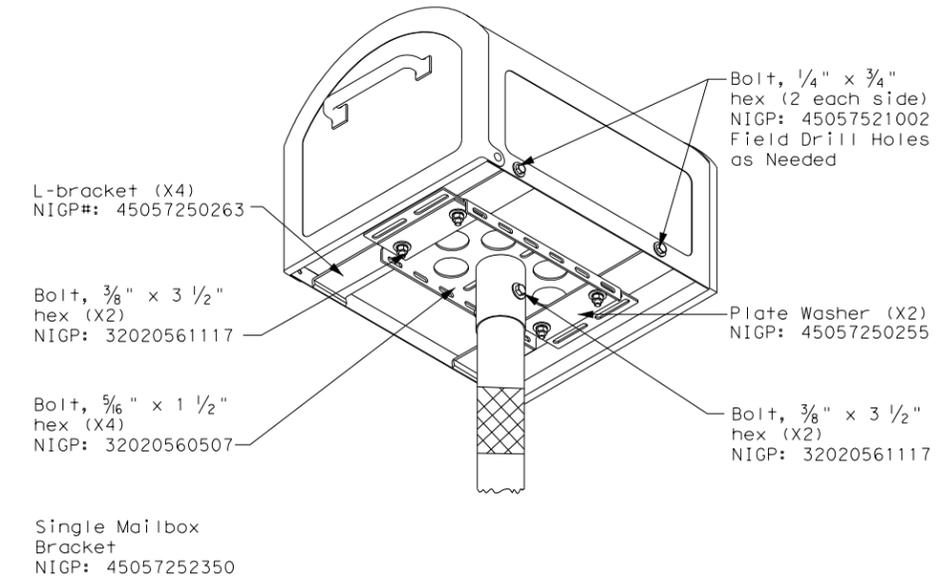
TYPE 1 - MULTI LOCKABLE AND XL MAILBOX



TYPE 2/4 - SINGLE LOCKABLE MAILBOX

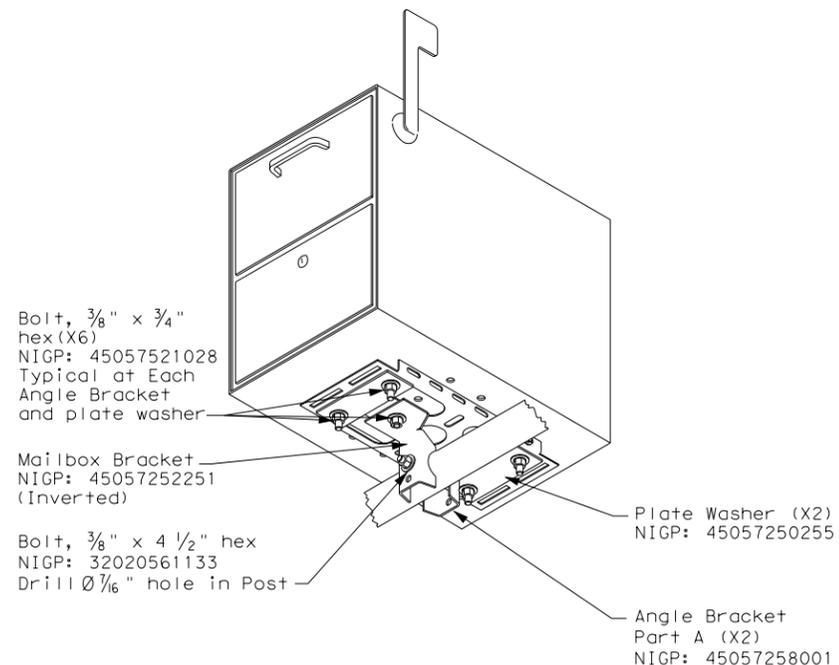


TYPE 2/4 - SINGLE XL MAILBOX

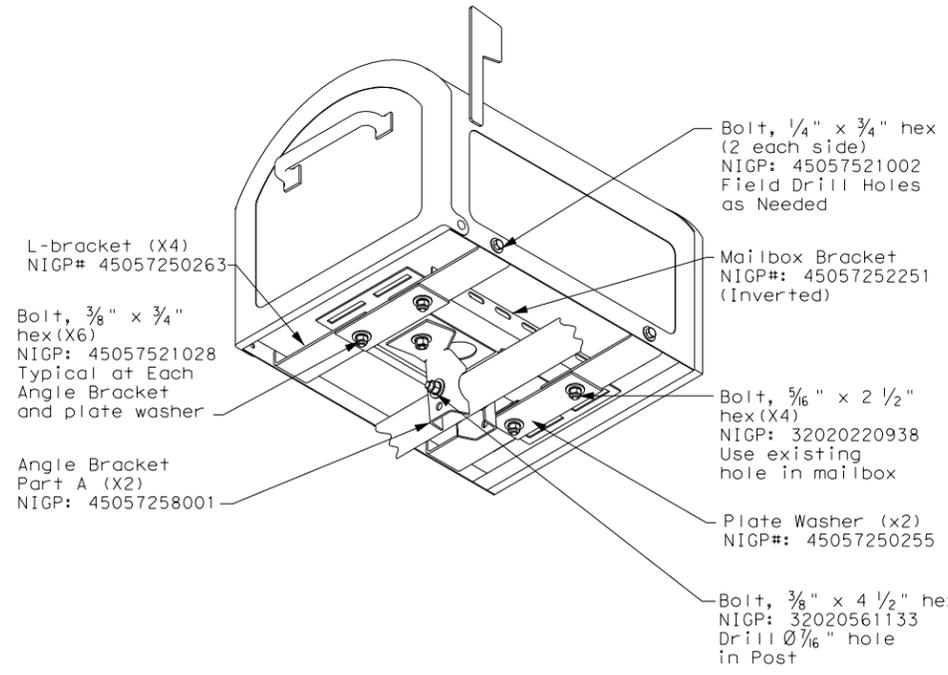


NOTE:  
 Follow same configuration when mounting an XL mailbox on a Type 4 multi post.

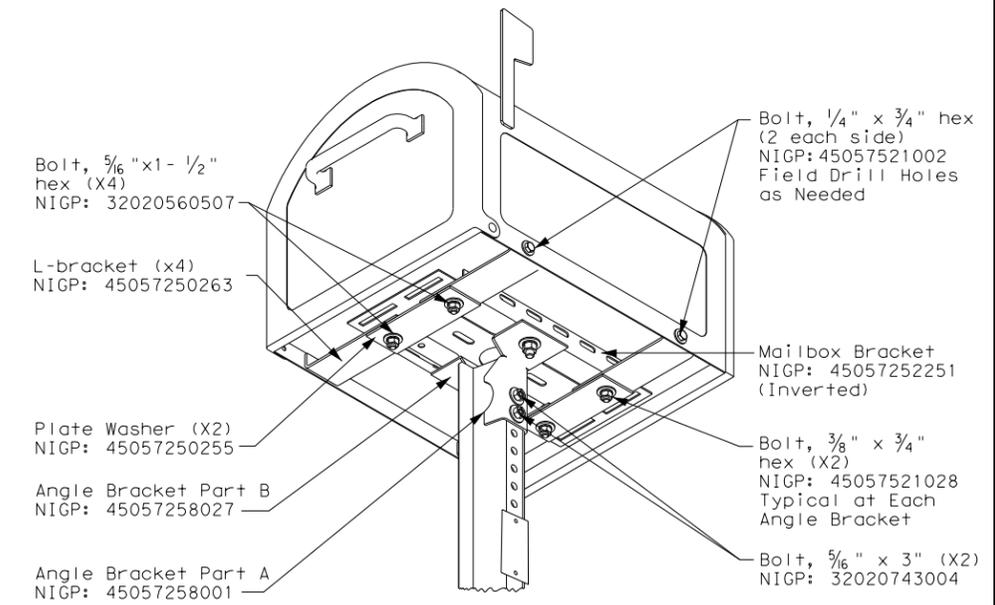
TYPE 1 MULTI - LOCKABLE ARCHITECTURAL (LA)



TYPE 1 MULTI - XL MAILBOX



TYPE 3 - XL MAILBOX MOUNTING



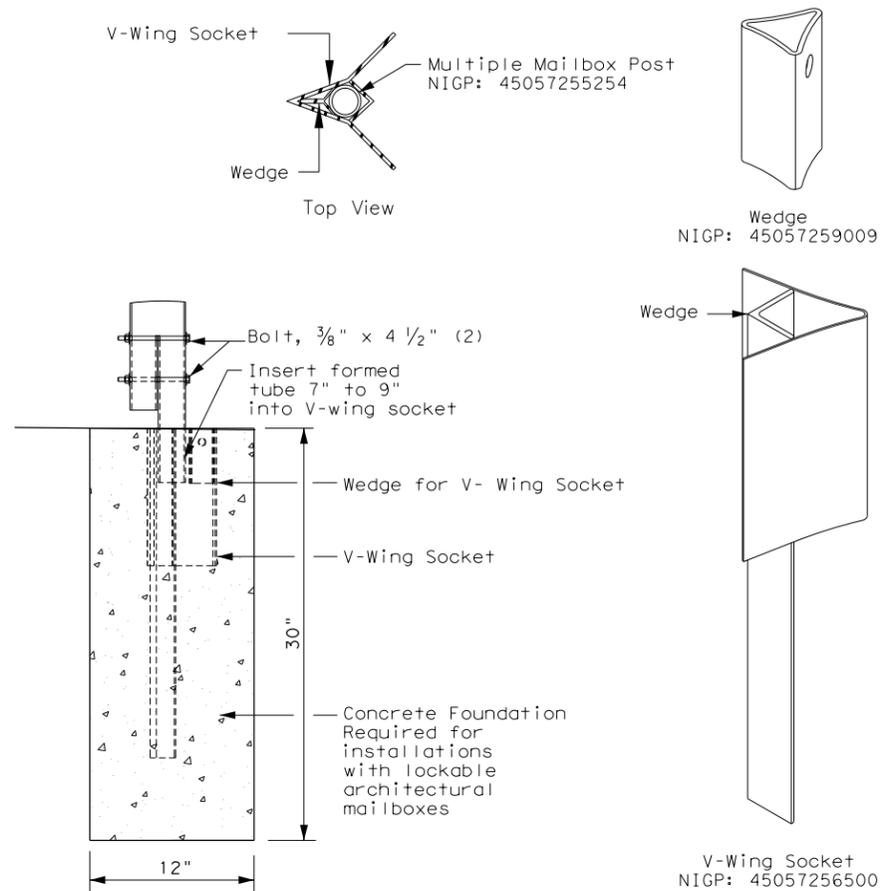
SHEET 2 OF 4

		<b>Maintenance Division Standard</b>	
<h2>XL AND LOCKABLE ARCHITECTURAL MAILBOX ASSEMBLY</h2> <h3>MB (2) - 21</h3>			
FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT March 2004	CONT 0683	SECT 03	JOB 045
2/2005	11/2009	4/2015	RM 12
6/2005	1/2011		
11/2006	7/2014		
DIST AUS	COUNTY HAYS	SHEET NO. 63	

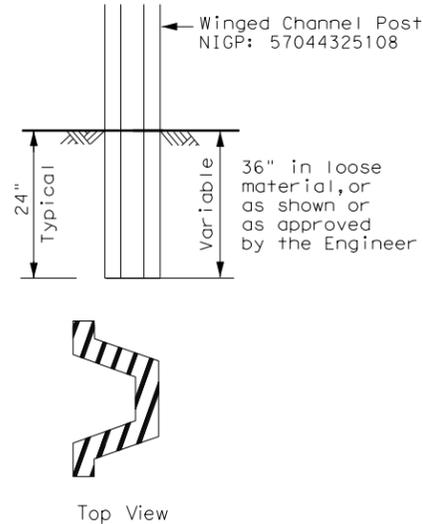
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### TYPE 1 - SUPPORT/FOUNDATION

Thin Wall Tube w/ V-LOC Anchorage



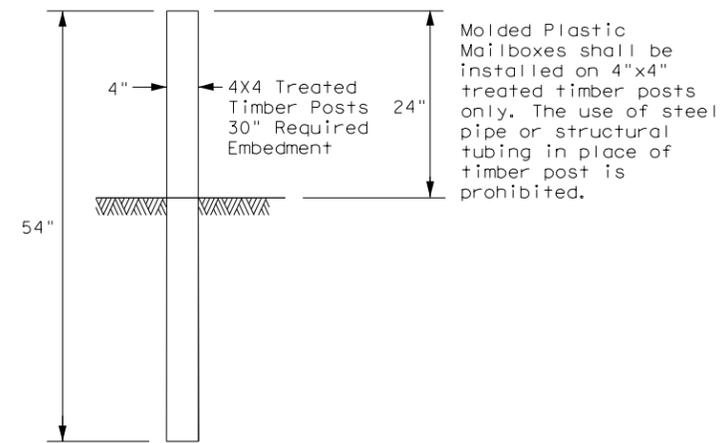
### TYPE 3 - SUPPORT/FOUNDATION



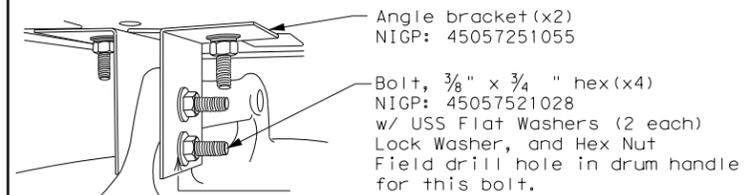
**NOTES:**

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



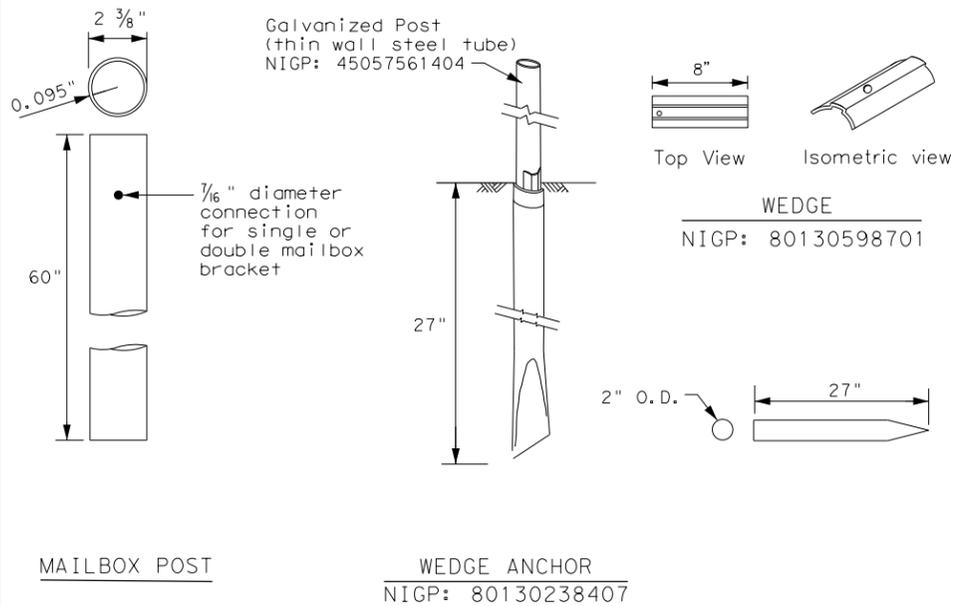
Plastic Drum NIGP: 55093383655  
 Rubber Collar NIGP: 55093387102

**NOTES:**

1. Place on approved plastic drum as shown in the Compliant Work Zone Traffic Control Devices (CWZTCD).
2. Existing attachment hardware shall be used unless damaged. Damaged hardware shall be replaced.

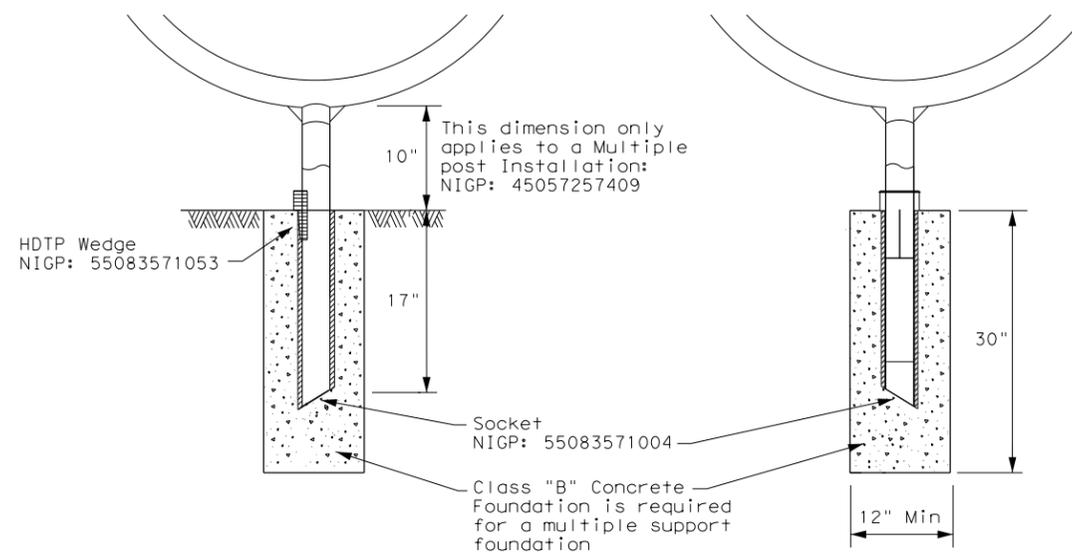
### TYPE 2 - SUPPORT/FOUNDATION

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

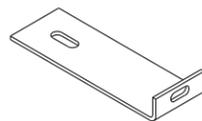
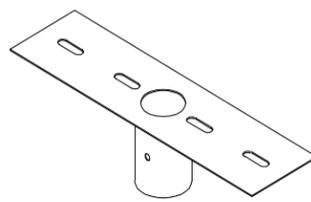
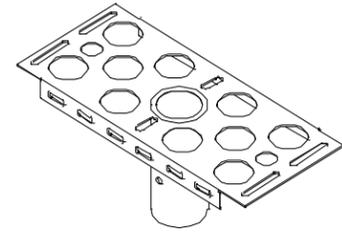
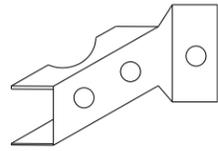
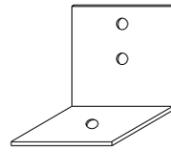
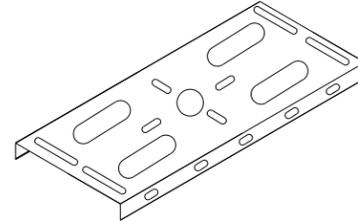
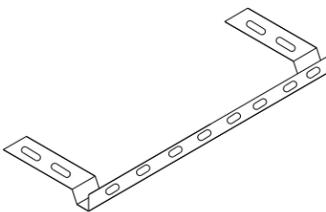
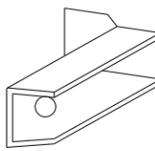
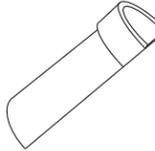
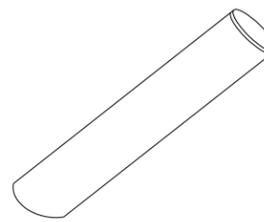
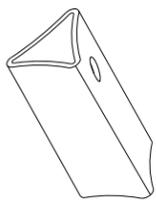
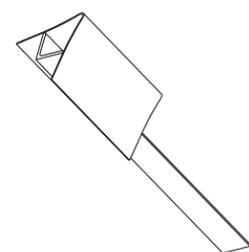
MB (3) - 21

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© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
2/2005	0683	03	045	RM 12
6/2005	DIST	COUNTY	SHEET NO.	
11/2006	AUS	HAYS	64	

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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

 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

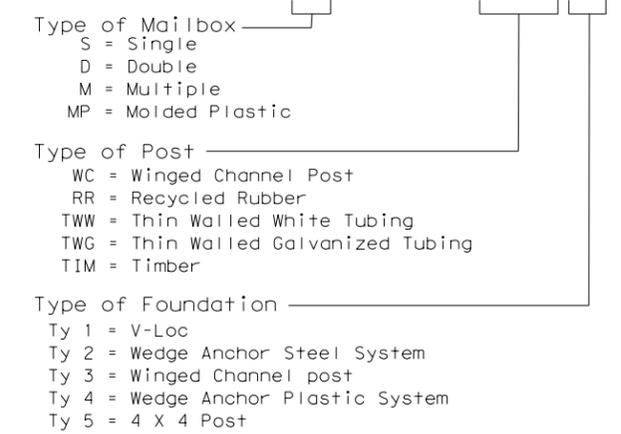
NIGP #	OBJECT MARKERS AND CONFORMABLE SHEETING
55008311759	Type 2 OM 4"x4" (3 Needed) for Type 3 Wing Channel Post
55008312906	Type 2 OM 6"x12" (1 needed) for Type 3 Wing Channel Post
80149872006	12" Conformable Reflective Yellow Sheeting for Flexible Posts

**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**

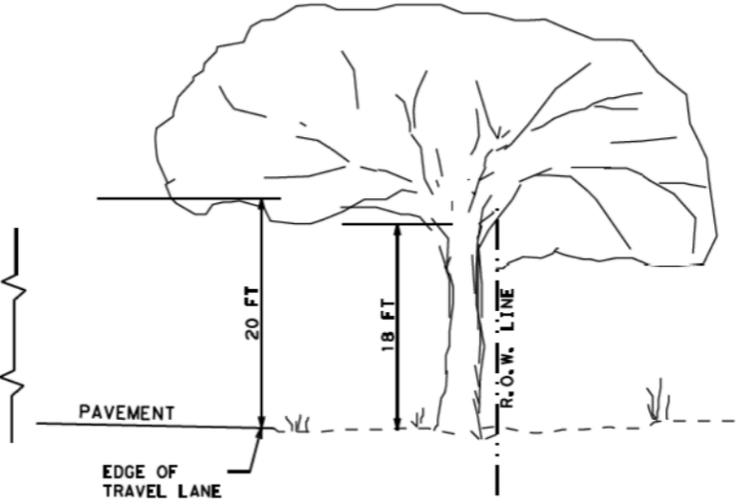
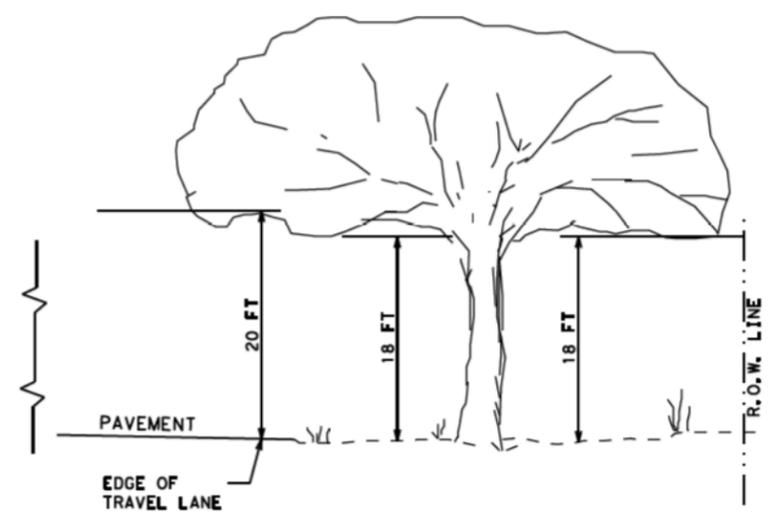
**MB-(X) ASSM TY (XXX) (X)**



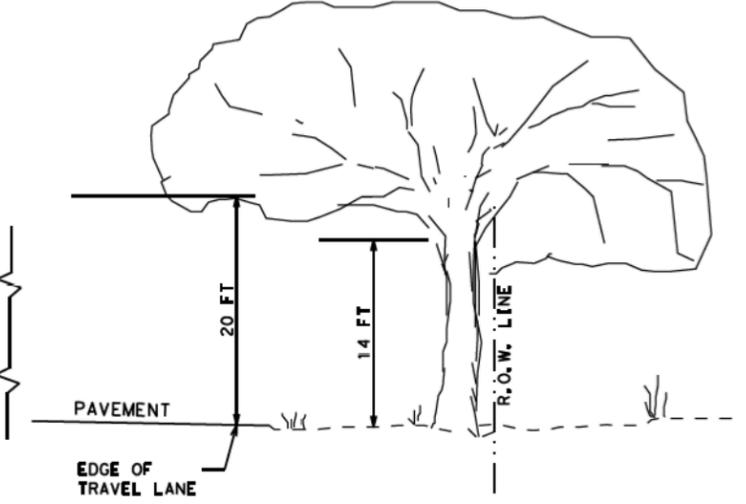
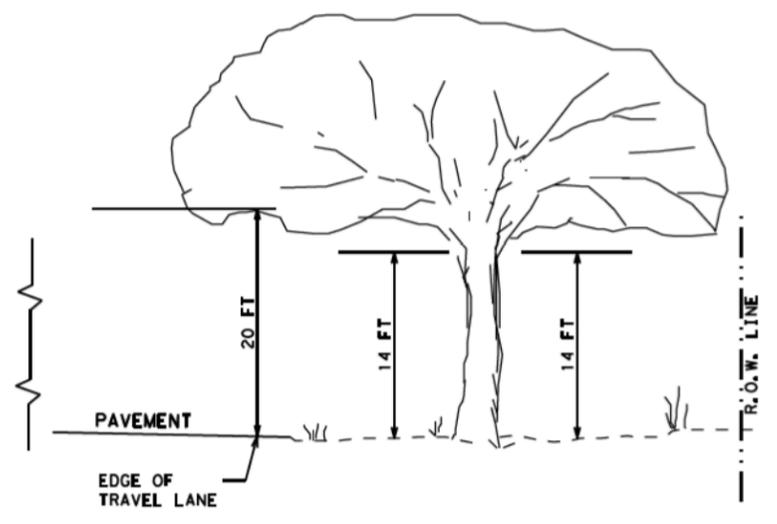
SHEET 4 OF 4

				<b>Maintenance Division Standard</b>	
<h2>NIGP PARTS LIST AND COMPATIBILITY</h2> <h3>MB(4)-21</h3>					
FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT	
©TxDOT March 2004	CONT	SECT	JOB	HIGHWAY	
2/2005	11/2009	4/2015	0683 03	045	RM 12
6/2005	1/2011		DIST	COUNTY	SHEET NO.
11/2006	7/2014		AUS	HAYS	65

DATE: 9/21/2020 12:55:05 PM  
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**NON-OAK SPECIES  
 TREE PRUNING LIMITS**

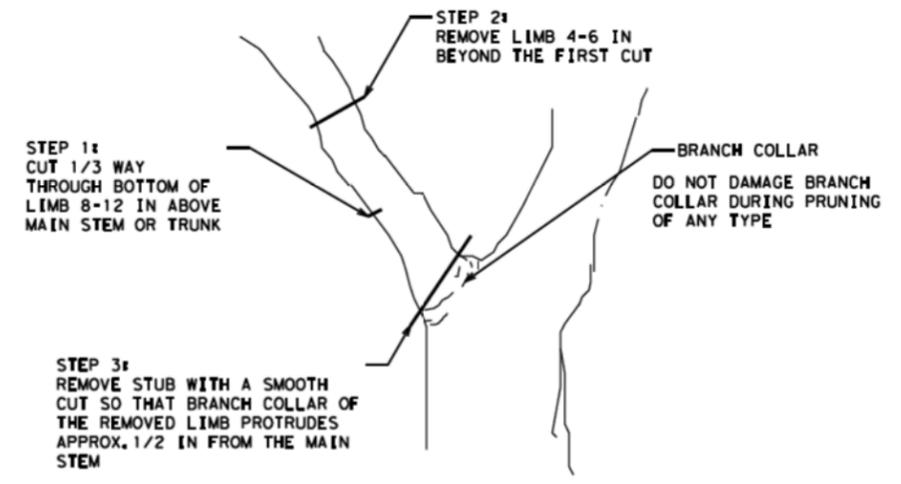


**OAK SPECIES  
 TREE PRUNING LIMITS**

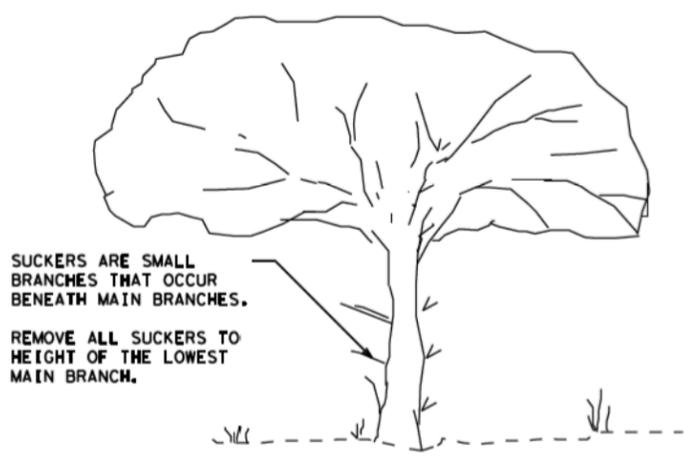
**GENERAL NOTES**

**PAYMENT FOR THIS WORK IS SUBSIDIARY TO PREP R.O.W.**

1. REMOVE ALL DEAD TREES, DEAD BRUSH, AND DEAD MULTI-TRUNKED TREES WITHIN THE R.O.W.. TREES, SHRUBS, OR MULTI-TRUNKED TREES THAT DIE DURING CONSTRUCTION SHALL BE REMOVED PRIOR TO COMPLETION OF THE PROJECT.
2. USE WORK METHODS IN ACCORDANCE WITH ANSI A300 STANDARDS AND ITEM 752.
3. FLAILING EQUIPMENT IS NOT ALLOWED ON OAK TREES.
4. REPAIR DAMAGE TO PRIVATE FENCES AND/OR PRIVATE PROPERTY.
5. PERFORM TREE PRUNING ONLY WITHIN THE R.O.W.. NO CUTS SHALL BE MADE OUTSIDE THE R.O.W..
6. PERFORM TREE PRUNING PER DETAIL FOR ENTIRE R.O.W. AREA WITHIN PROJECT LIMITS. THE ENGINEER MAY DEFINE AREAS TO RESTRICT TREE PRUNING.
7. REVIEW EPIC SHEETS FOR AREAS TO BE AVOIDED DUE TO ENVIRONMENTAL REASONS OR ADDITIONAL NOTES THAT PERTAIN TO TREE PRUNING.
8. MIGRATORY BIRDS AND BATS MAY BE NESTING WITHIN THE PROJECT LIMITS. PERFORM TREE TRIMMING OUTSIDE THE NESTING SEASON DATES LISTED IN THE GENERAL NOTES.
9. NO TRIMMING OF THE VEGETATION THAT CONTAINS AN ACTIVE NEST FOR MIGRATORY BIRDS IS ALLOWED.
10. THE TRIMMING OR CUTTING OF RED OAK AND LIVE OAK SPECIES FOR PURPOSES OTHER THAN PROTECTING PUBLIC SAFETY IS ONLY PERMITTED BETWEEN JULY 1ST AND JANUARY 31ST AND PROHIBITED BETWEEN FEBRUARY 1ST AND JUNE 30TH
11. ALL PRUNING CUTS MUST BE TREATED IMMEDIATELY WITH COMMERCIAL PRUNING PAINT TO SEAL THE EXPOSED SURFACE FROM CONTAMINATION. USE OF AEROSOL CAN IS THE PREFERRED METHOD OF APPLICATION FOR SEALING CUTS. ANY WOUNDS, WHETHER MADE BY TRIMMING, CONSTRUCTION OR ACCIDENT, SHALL BE TREATED IMMEDIATELY WITH COMMERCIAL PRUNING PAINT TO SEAL THE SURFACE FROM CONTAMINATION. THE TXDOT INSPECTOR MAY CONDUCT UNANNOUNCED INSPECTIONS TO ENSURE COMPLIANCE.
12. IF MORE THAN 25% OF THE TREE CANOPY WILL BE REMOVED CONTACT THE TXDOT ARBORIST OR INSPECTOR FOR APPROVAL PRIOR TO PROCEEDING.



**PROPER TREE PRUNING  
 FOR LIMBS 2" IN DIA. AND GREATER**



**SUCKER REMOVAL DETAIL**

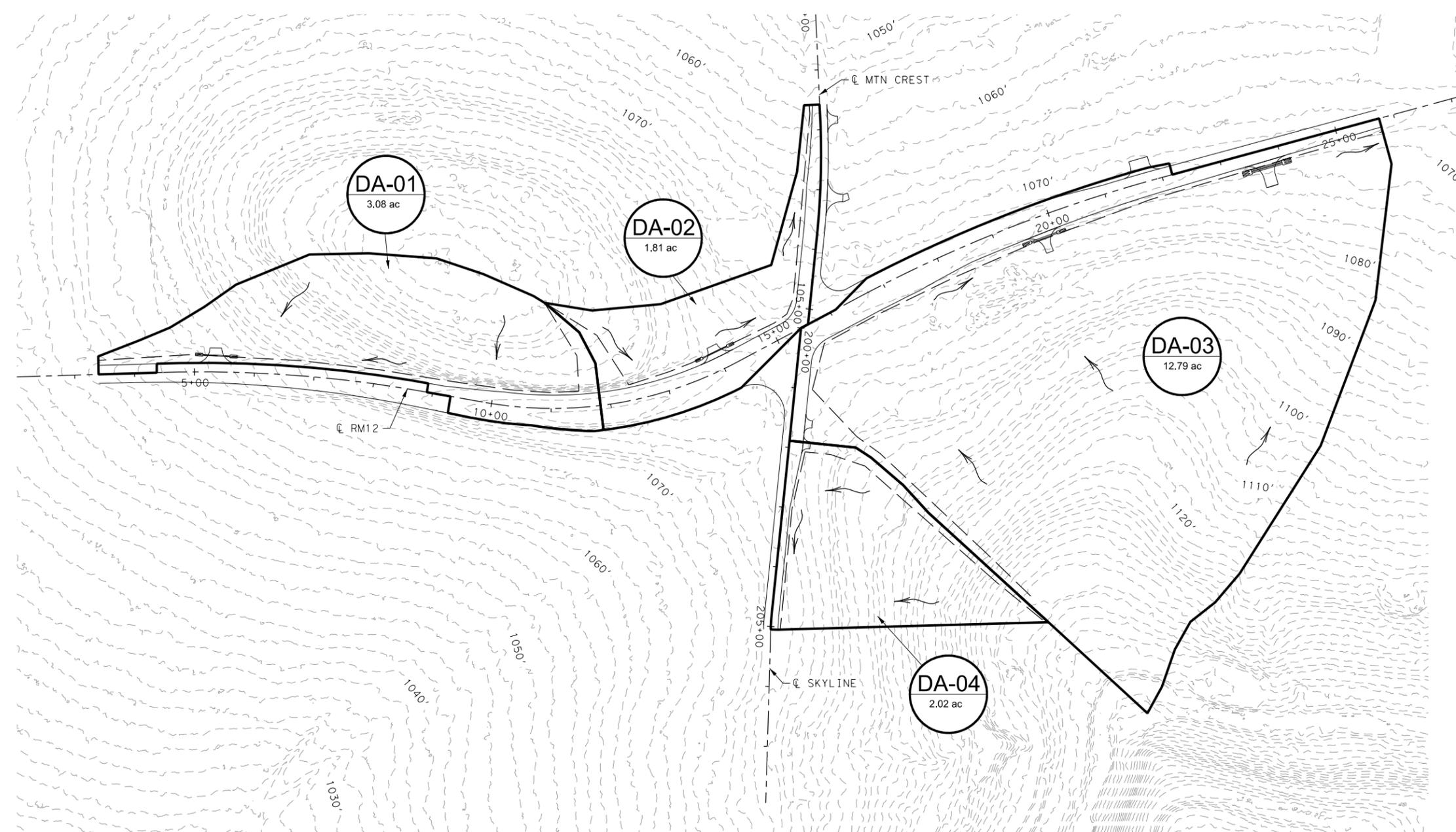


**PREP R.O.W.  
 PRUNING  
 DETAIL**

**PRWD-20 (AUS)**

TXDOT 2020	CONT	SECT	JOB	HIGHWAY
	0683	03	045	RM 12
	DIST	COUNTY		SHEET NO.
	AUS	HAYS		66

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**DA#**  
XX.X ac

CULVERT DRAINAGE AREA  
DRAINAGE AREA (ACRES)

FLOW DIRECTION

CONTOUR

DRAINAGE AREA BOUNDARY

CHANNEL C

0' 50' 100' 200'  
SCALE: 1"=200'



**HAYS COUNTY**  
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 SAN, MARCOS, TEXAS 78666  
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 TBPE Registration No. F-1046

**RM 12**  
**DRAINAGE AREA MAP**

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				67
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

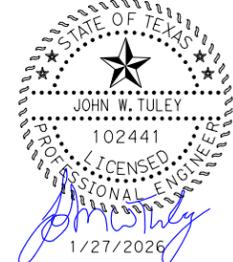
DRAINAGE AREA	AREA (AC)	C	RATIONAL METHOD SUMMARY															
			INTENSITIES (IN/HR)						FLOW TRAVEL TIMES (MIN)			T. O. C. (MIN)	DESIGN FLOW (CFS)					
			I2	I5	I10	I25	I50	I100	SHEET	SHALLOW	CHANNEL		Q2	Q5	Q10	Q25	Q50	Q100
DA-01	3.12	0.53	4.02	5.46	6.59	8.15	9.39	10.71	10	1	3	14	6.66	9.04	10.92	13.51	15.56	17.74
DA-02	1.81	0.63	4.15	5.63	6.79	8.39	9.65	10.99	10	1	2	13	4.73	6.42	7.75	9.57	11.02	12.54
DA-03	12.79	0.51	3.79	5.15	6.23	7.72	8.91	10.18	8	2	6	16	24.94	33.90	40.97	50.81	58.64	67.01
DA-04	2.02	0.50	4.02	5.46	6.59	8.15	9.39	10.71	10	2	2	14	4.06	5.52	6.66	8.24	9.49	10.82

NOTE:  
 1) NOAA ATLAS 14 RAINFALL DATA WAS UTILIZED IN THESE CALCULATIONS.  
 2) THE C-VALUES WERE GENERATED USING THE RURAL AND MIXED USE WATERSHED METHOD DESCRIBED IN TXDOT'S HYDRAULIC DESIGN MANUAL.  
 3) VALUES SHOWN IN TABLES ARE TRUNCATED VALUES FROM MICROSOFT EXCEL FORMULAS. SLIGHT ROUNDING ERRORS SHOULD BE EXPECTED IF DIRECT CALCULATIONS ARE PERFORMED.

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10-YEAR DITCH HYDRAULIC CALCULATIONS									
STATION	OFFSET	DITCH FLOW LINE ELEVATION (FT)	N VALUE	DITCH SLOPE (%)	DITCH FLOW (CFS)	VELOCITY (FPS)	TOP OF DITCH ELEVATION (FT)	WATER SURFACE ELEVATION (FT)	FREEBOARD (FT)
DITCH-01 RM12									
0003+50	LT	1055.30	0.04	4.34	10.92	3.86	1056.40	1055.94	0.46
0004+00	LT	1057.47	0.04	5.58	10.21	4.26	1059.79	1058.22	1.57
0004+50	LT	1060.26	0.04	4.58	9.50	3.92	1062.20	1060.95	1.25
0005+00	LT	1062.55	0.04	4.83	8.79	4.27	1064.85	1063.19	1.66
0006+00	LT	1067.38	0.04	7.54	8.08	4.52	1070.41	1068.06	2.35
0006+50	LT	1071.15	0.04	5.44	7.37	3.87	1072.95	1071.81	1.14
0007+00	LT	1073.87	0.04	4.38	6.66	3.43	1075.43	1074.51	0.92
0007+50	LT	1076.06	0.04	3.62	5.95	2.92	1077.67	1076.74	0.93
0008+00	LT	1077.87	0.04	1.82	5.24	2.58	1079.65	1078.57	1.08
0008+50	LT	1078.78	0.04	2.24	4.53	2.76	1081.20	1079.52	1.68
0009+00	LT	1079.90	0.04	2.26	3.82	2.53	1082.32	1080.60	1.72
0009+50	LT	1081.03	0.04	1.74	3.11	2.11	1083.14	1081.77	1.37
0010+00	LT	1081.90	0.04	0.94	2.40	1.78	1083.55	1082.59	0.96
0010+50	LT	1082.37	0.04	1.14	1.69	1.64	1083.73	1083.00	0.73
0011+00	LT	1082.94	0.04	0.92	0.98	1.37	1084.14	1083.46	0.68
0011+50	LT	1083.40	0.04	0.92	0.27	0.99	1084.28	1083.71	0.57
DITCH-02 RM12									
0012+00	LT	1083.29	0.04	1.32	0.39	1.24	1084.25	1083.63	0.62
0012+50	LT	1082.63	0.04	1.30	1.16	1.27	1084.22	1083.22	1.00
0013+00	LT	1081.98	0.04	0.04	2.33	0.51	1083.95	1083.19	0.76
0013+50	LT	1082.00	0.04	0.04	3.49	0.51	1083.32	1083.15	0.17
DITCH-02 MOUNTAIN CREST									
0102+00	RT	1058.17	0.04	5.40	7.75	3.99	1059.37	1058.79	0.58
0102+50	RT	1060.87	0.04	5.92	7.36	4.22	1061.87	1061.35	0.52
0103+00	RT	1063.83	0.04	5.92	6.98	4.16	1064.83	1064.29	0.54
DITCH-03 SKYLINE									
0200+50	LT	1079.17	0.04	3.54	0.82	1.85	1080.01	1079.34	0.67
0201+00	LT	1080.94	0.04	3.54	1.23	2.10	1081.51	1081.15	0.36
DITCH-03 RM12									
0016+00	RT	1076.25	0.04	2.98	0.82	1.68	1077.25	1076.43	0.82
0016+50	RT	1074.76	0.04	2.38	1.64	1.74	1075.71	1075.07	0.64
0017+00	RT	1073.57	0.04	0.90	2.46	1.41	1074.57	1074.05	0.52
0017+50	RT	1073.12	0.04	0.42	3.28	1.29	1074.12	1073.73	0.39
0018+00	RT	1072.91	0.04	0.42	6.56	1.70	1073.91	1073.71	0.20
0018+50	RT	1072.70	0.04	0.66	9.83	2.28	1073.70	1073.56	0.14
0019+00	RT	1072.37	0.04	1.13	13.11	2.41	1073.37	1073.36	0.01
0020+50	RT	1070.68	0.04	0.58	16.39	2.21	1072.48	1071.88	0.60
0021+00	RT	1070.39	0.04	0.58	19.67	2.24	1072.19	1071.71	0.48
0021+50	RT	1070.10	0.04	0.48	22.94	2.21	1071.90	1071.56	0.34
0022+00	RT	1069.86	0.04	0.44	26.22	2.34	1071.66	1071.39	0.27
0022+50	RT	1069.64	0.04	0.54	29.50	2.80	1071.44	1071.11	0.33
0023+00	RT	1069.37	0.04	0.93	32.78	3.10	1071.17	1070.53	0.64
0024+50	RT	1067.98	0.04	1.00	36.87	3.25	1069.78	1069.20	0.58
0025+00	RT	1067.48	0.04	1.00	40.97	3.42	1069.28	1069.07	0.21
DITCH-04 SKYLINE									
0202+50	LT	1081.87	0.04	4.14	1.47	2.31	1082.37	1082.10	0.27
0203+00	LT	1079.80	0.04	3.86	2.33	2.45	1080.30	1080.11	0.19
0203+50	LT	1077.87	0.04	2.52	3.20	2.20	1078.37	1078.29	0.08
0204+00	LT	1076.61	0.04	1.16	4.06	1.66	1077.11	1077.05	0.06
0204+50	LT	1076.03	0.04	0.52	4.93	2.02	1076.53	1076.47	0.06
0205+00	LT	1075.77	0.04	2.00	5.79	2.50	1076.47	1076.19	0.28
0205+05	LT	1075.67	0.04	2.00	6.66	2.60	1076.47	1076.13	0.34

10-YEAR DRIVEWAY CULVERT HYDRAULIC CALCULATIONS									
DRIVEWAY NUMBER	STATION	LT/RT	PROPOSED PIPE	SIZE (IN)	AREA (FT <sup>2</sup> )	SLOPE (FT/FT)	Q (CFS)	n	CAPACITY (CFS)
DW# 01	5+36.00	LT	1 - 18" X 70' RCP	18	1.77	0.0279	10.05	0.012	19.04
DW# 02	13+97.00	LT	1 - 18" X 70' RCP	18	1.77	0.0190	3.95	0.012	15.73
DW# 03	14+77.00	LT	1 - 18" X 86' RCP	18	1.77	0.0316	5.12	0.012	20.29
DW# 04	19+81.00	RT	1 - 24" X 76' RCP	24	3.14	0.0163	18.03	0.012	31.39
DW# 05	21+69.00	LT	NONE	-	-	-	-	-	-
DW# 06	23+74.00	RT	2 - 24" X 84' RCP	24	6.28	0.0093	35.64	0.012	47.36
DW# 07	101+84.00	LT	NONE	-	-	-	-	-	-
DW# 08	103+12.00	LT	NONE	-	-	-	-	-	-
DW# 09	201+58.00	LT	NONE	-	-	-	-	-	-
DW# 10	201+93.00	LT	NONE	-	-	-	-	-	-



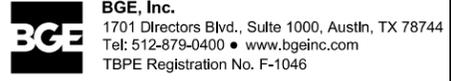
**JOHN W. TULEY**  
102441  
LICENSED PROFESSIONAL ENGINEER  
1/27/2026



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712 S. STAGECOACH TRAIL  
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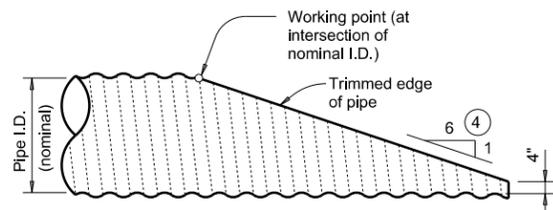
**RM 12**

**HYDRAULIC DATA**

SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
14		68
STATE	DIST. COUNTY	
TEXAS	AUS HAYS	
CONT.	SECT. JOB	HIGHWAY NO.
0683	03 045	RM 12

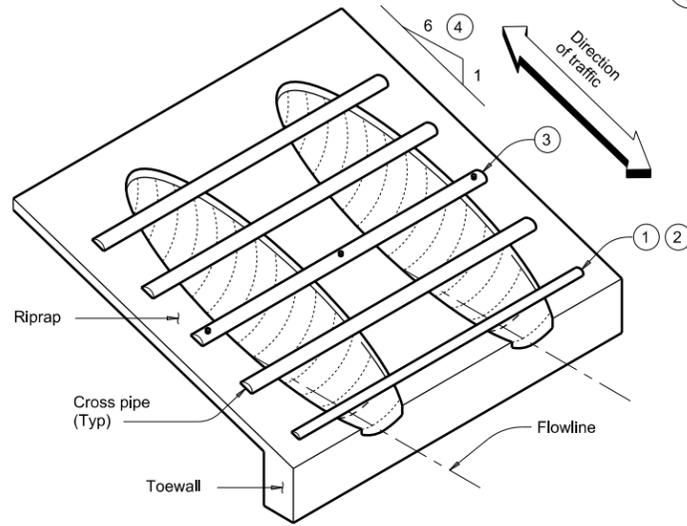
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 The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of units or for any errors or omissions in this drawing.



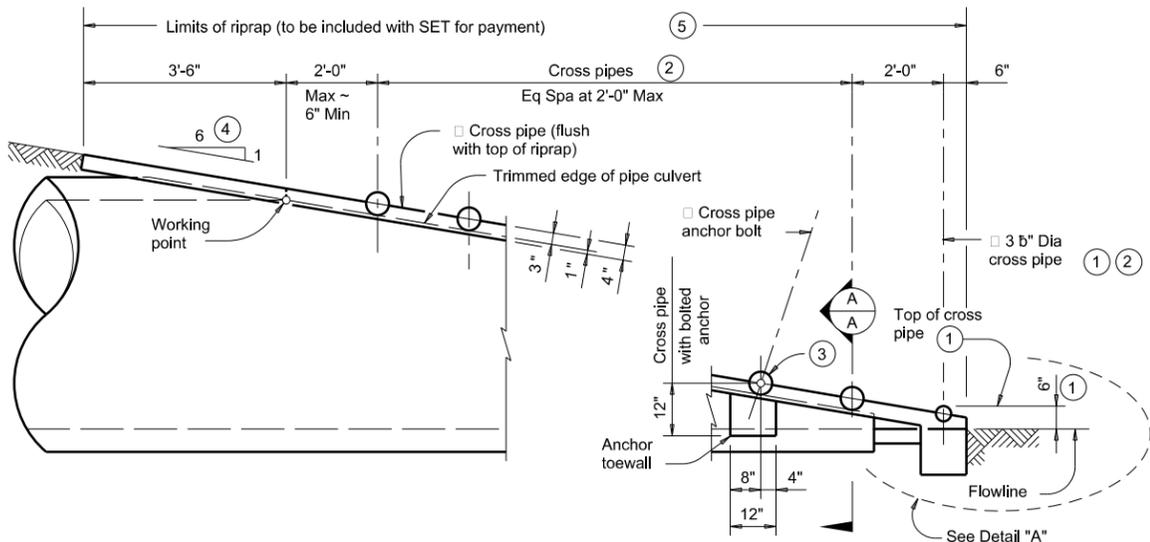
NOTE: All cross pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

### SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing corrugated metal pipe (CMP) culvert. Details at reinforced concrete pipe (RCP) culvert are similar.)

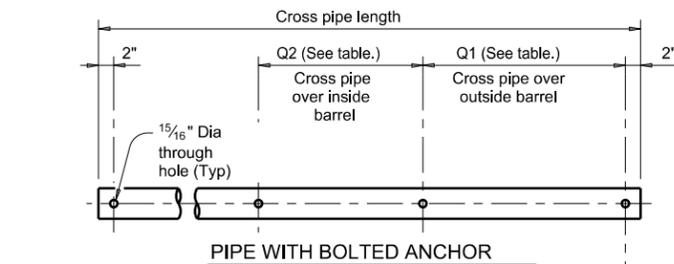


### ISOMETRIC VIEW OF TYPICAL INSTALLATION

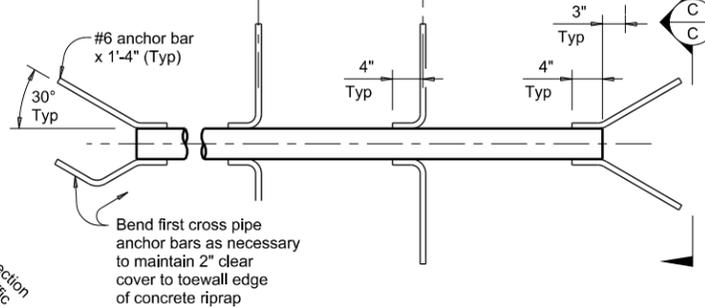


### SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

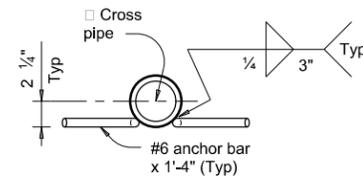
(Showing reinforced concrete pipe (RCP) culvert. Details at corrugated metal pipe (CMP) culvert are similar.)



### PIPE WITH BOLTED ANCHOR



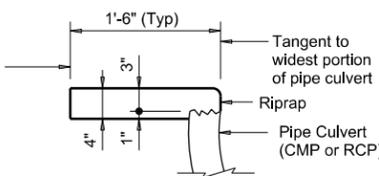
### PIPE WITH ANCHOR BARS



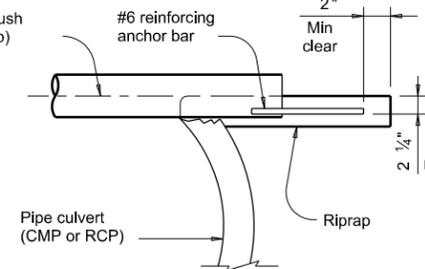
### SECTION C-C

### CROSS PIPE DETAILS

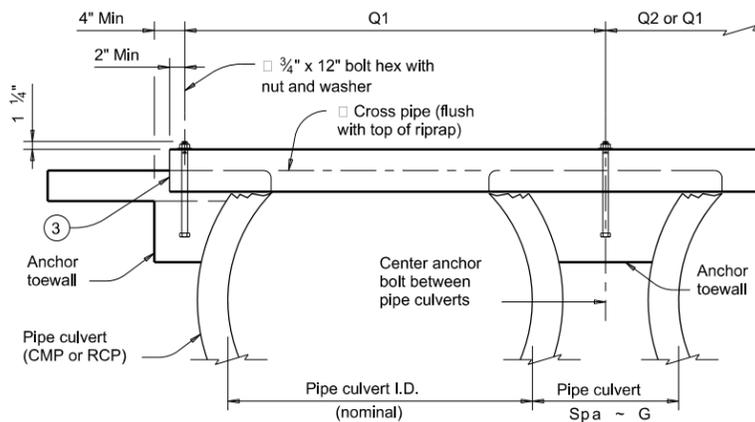
Limits of riprap (to be included with SET for payment) 5



### SHOWING TYPICAL PIPE CULVERT AND RIPRAP

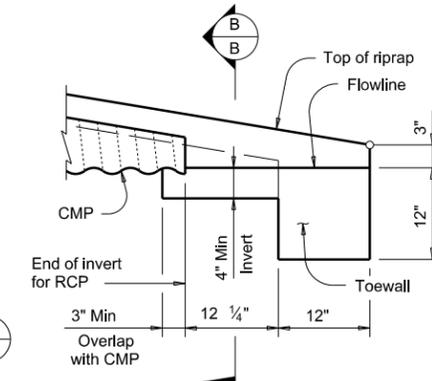


### SHOWING CROSS PIPE WITH ANCHOR BAR



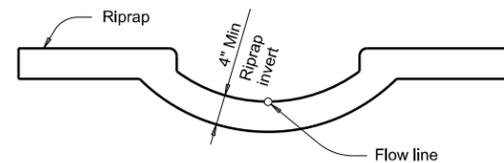
### SHOWING CROSS PIPE WITH BOLTED ANCHOR

### SECTION A-A



### DETAIL "A"

(Showing invert with corrugated metal pipe (CMP) culvert. Reinforced concrete pipe (RCP) culvert details are similar. Cross pipes not shown for clarity.)



### SECTION B-B

(Cross pipes not shown for clarity.)

### CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES

Nominal Culvert I.D.	Conc Riprap (CY) (6)	Pipe Culvert Spa ~ G	Single Barrel ~ Q1	Multi-Barrel ~ Q1	Q2	Conditions for Use of Cross Pipes	Cross Pipe Sizes
12"	0.6	0' - 9"	N/A	2' - 1"	1' - 9"	3 or more pipe culverts	3" Std (3.500" O.D.)
15"	0.7	0' - 11"	N/A	2' - 5"	2' - 2"		
18"	0.8	1' - 2"	N/A	2' - 10"	2' - 8"		
21"	0.9	1' - 4"	N/A	3' - 2"	3' - 1"		
24"	0.9	1' - 7"	N/A	3' - 6"	3' - 7"	3 or more pipe culverts	3 1/2" Std (4.000" O.D.)
27"	1.0	1' - 8"	N/A	3' - 10"	3' - 11"		
30"	1.1	1' - 10"	N/A	4' - 2"	4' - 4"	2 or more pipe culverts	4" Std (4.500" O.D.)
33"	1.2	1' - 11"	4' - 2"	4' - 5"	4' - 8"	All pipe culverts	
36"	1.3	2' - 1"	4' - 5"	4' - 9"	5' - 1"	All pipe culverts	4" Std (4.500" O.D.)
42"	1.5	2' - 4"	4' - 11"	5' - 5"	5' - 10"		
48"	1.7	2' - 7"	5' - 5"	6' - 0"	6' - 7"	All pipe culverts	5" Std (5.563" O.D.)
54"	2.0	3' - 0"	5' - 11"	6' - 9"	7' - 6"		
60"	2.2	3' - 3"	6' - 5"	7' - 4"	8' - 3"		
66"	2.4	3' - 3"	6' - 11"	7' - 10"	8' - 9"		
72"	2.7	3' - 4"	7' - 5"	8' - 5"	9' - 4"		

- The proper installation of the first cross pipe is critical for vehicle safety. Place the top of the first cross pipe no more than 6" above the flow line.
- Provide cross pipes, except the first bottom pipe, of the size shown in the table. Provide a 3 1/2" standard pipe (4" O.D.) for the first bottom pipe.
- Install the third cross pipe from the bottom of the culvert using a bolted connection. Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, install all other cross pipes using the bolted connection details.
- Match cross slope as shown elsewhere in the plans. Cross slope of 6:1 or flatter is required for vehicle safety.
- Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".
- Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for contractor's information only.

#### MATERIAL NOTES:

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. Provide cross pipes that meet the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 (Gr B), or API 5LX52. Provide ASTM A307 bolts and nuts. Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

#### GENERAL NOTES:

Cross pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981. Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes. Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap". Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

**Texas Department of Transportation**

**Bridge Division Standard**

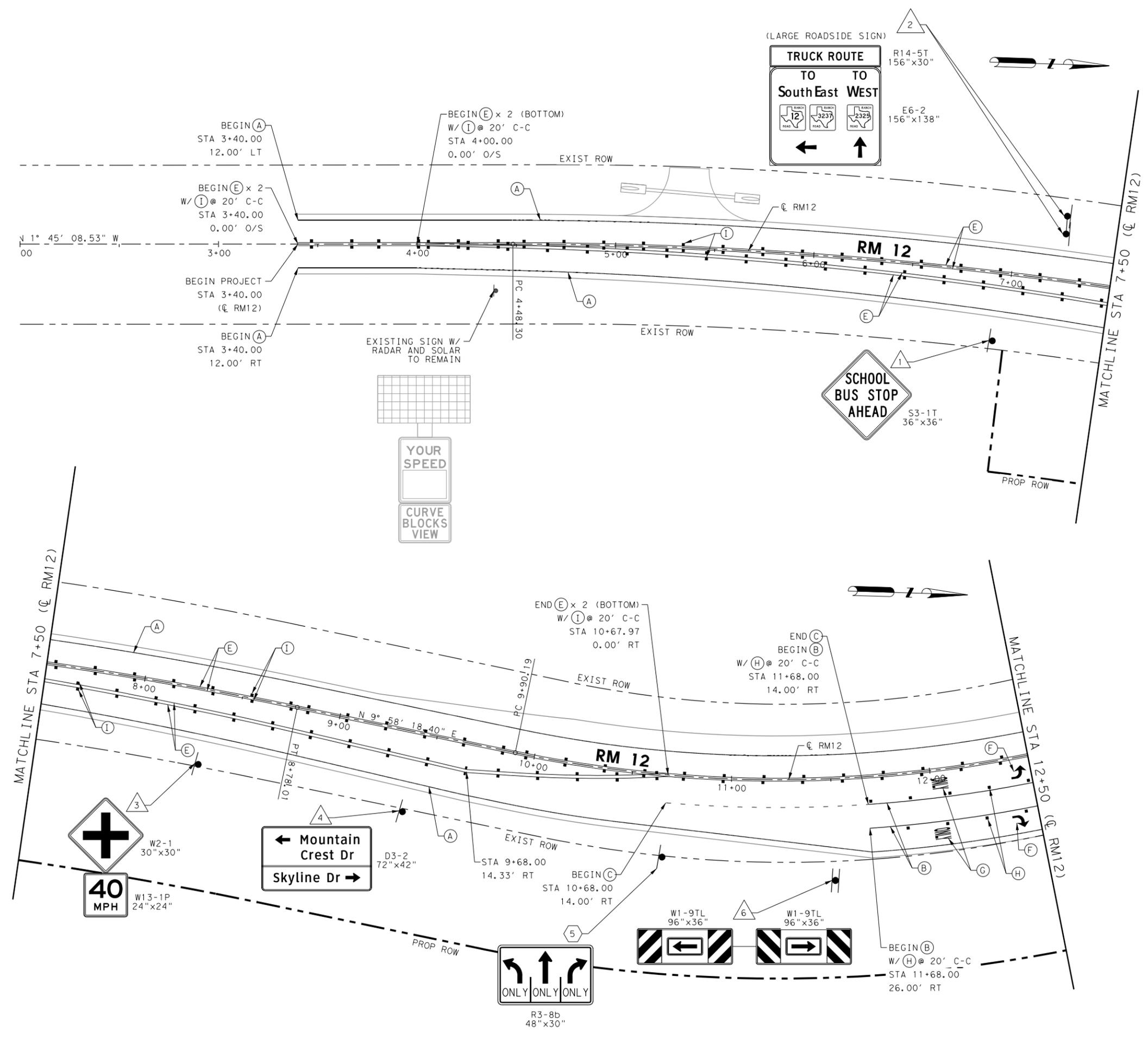
## SAFETY END TREATMENT

FOR 12" DIA TO 72" DIA  
PIPE CULVERTS  
TYPE II ~ PARALLEL DRAINAGE

### SETP-PD

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©TxDOT	February 2020	CONT: 0683	SECT: 03	JOB: 045
REVISIONS		DIST: AUS	COUNTY: HAYS	SHEET NO.: 69
			RM: 12	HIGHWAY:

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 DATE:1/27/2026 1:04:56 PM



- LEGEND:**
- (A) REFL PAV MRK TY I PROF & TY II (W) (6") (SLD)
  - (B) REFL PAV MRK TY I & II (W) (8") (SLD)
  - (C) REFL PAV MRK TY I & II (W) (8") (DOT)
  - (D) REFL PAV MRK TY I & II (W) (24") (SLD)
  - (E) REFL PAV MRK TY I PROF & TY II (Y) (6") (SLD)
  - (F) REFL PAV MRK TY I & II (W) (ARROW)
  - (G) REFL PAV MRK TY I & II (W) (WORD)
  - (H) REFL PAV MRKR TY I-C
  - (I) REFL PAV MRKR TY II-A-A
  - △ REMOVE EXIST AND INSTALL SIGN
  - ⬢ INSTALL SIGN



**HAYS COUNTY**  
 712 S. STAGECOACH TRAIL  
 SAN, MARCOS, TEXAS 78666  
 Tel: 512-393-7779



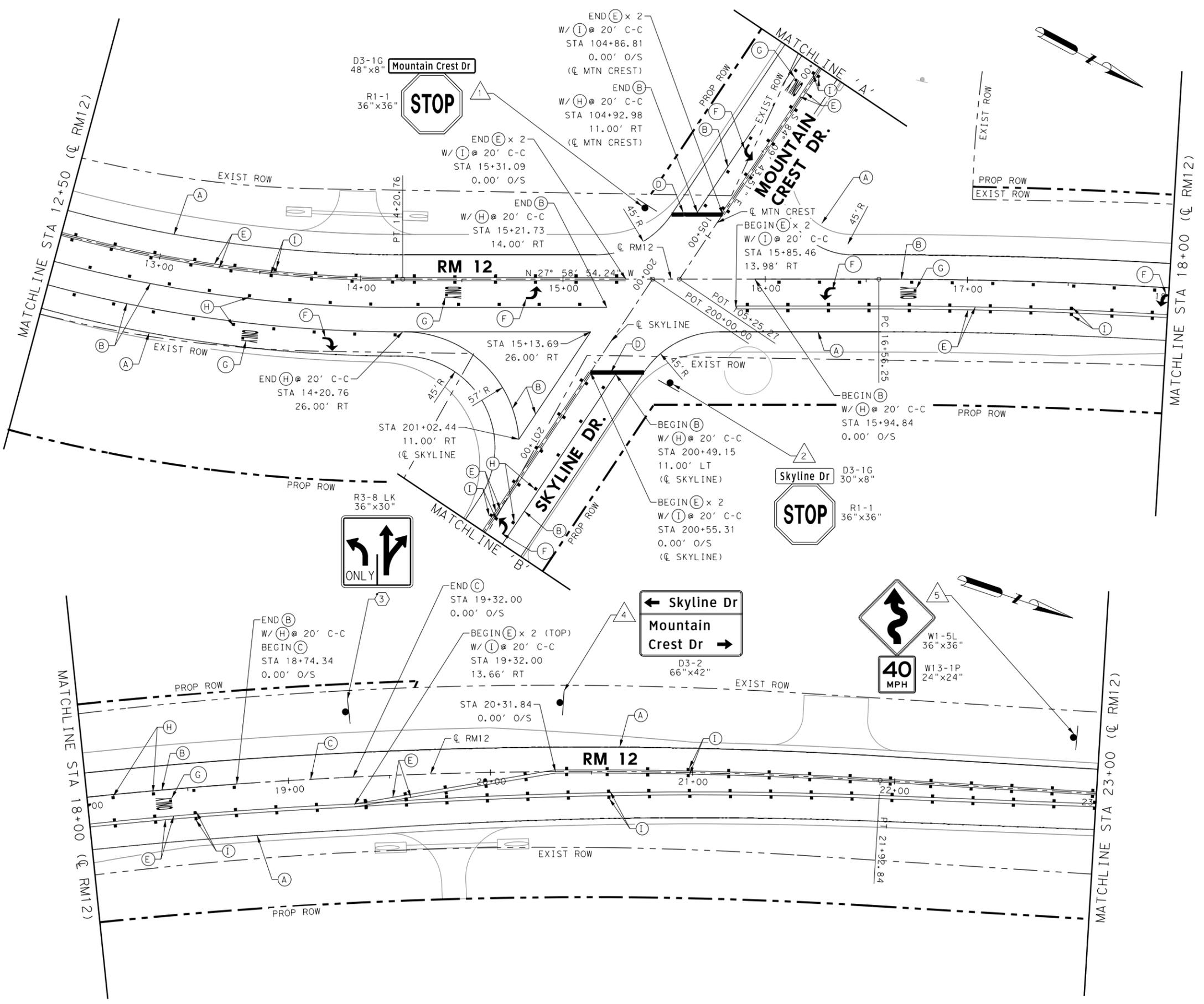
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 Tel: 512-879-0400 • www.bgeinc.com  
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**RM 12  
 SIGNING & PAVEMENT  
 MARKING LAYOUT**

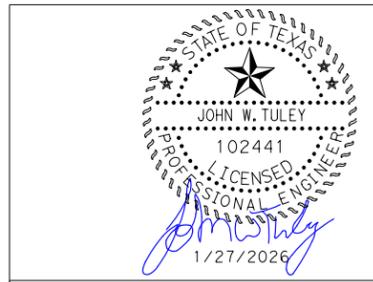
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TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
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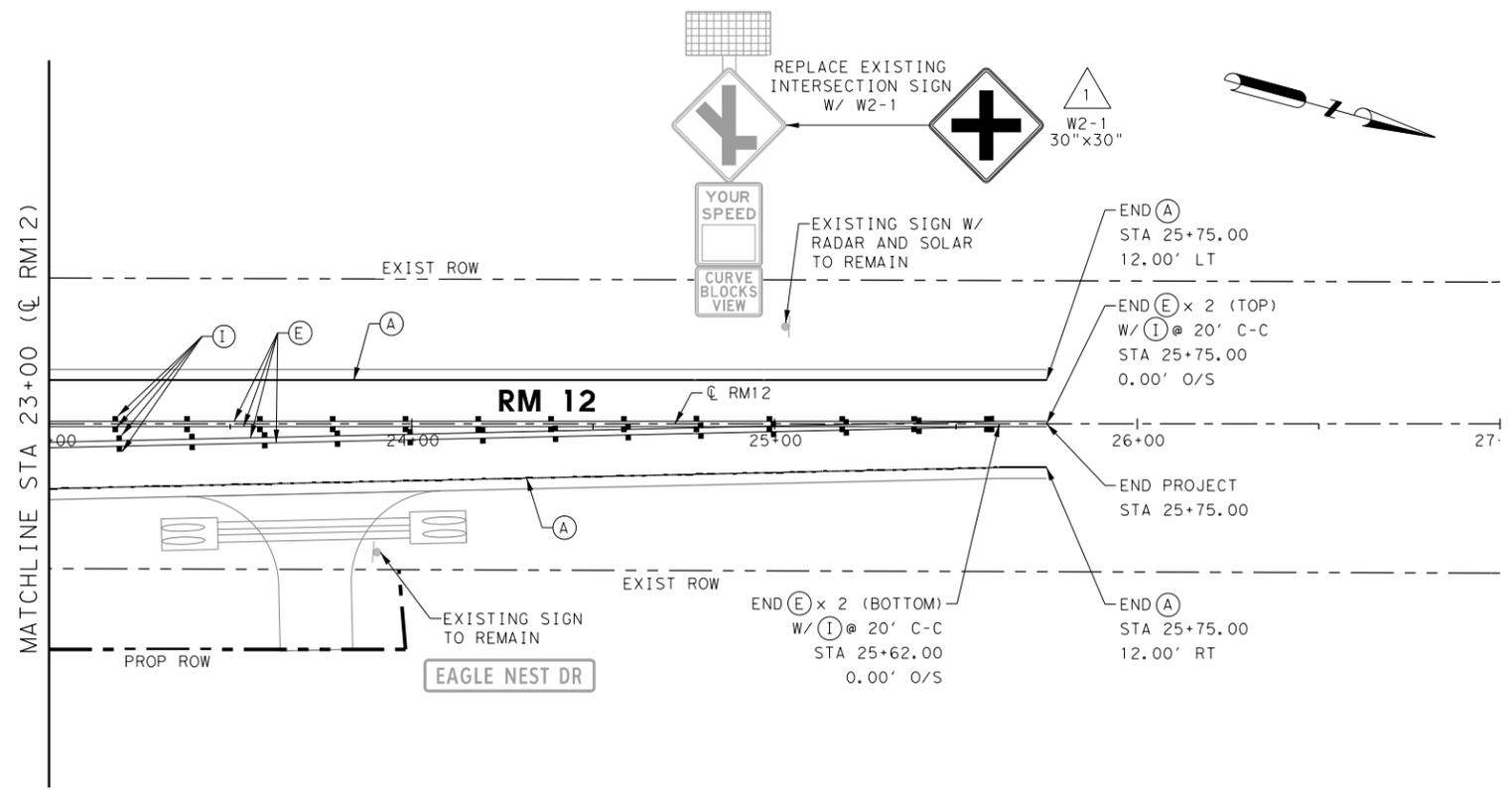


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**RM 12  
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SHEET 2 OF 4

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
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TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	



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  - (I) REFL PAV MRKR TY II-A-A
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**JOHN W. TULEY**  
102441  
LICENSED PROFESSIONAL ENGINEER  
1/27/2026

**HAYS COUNTY**  
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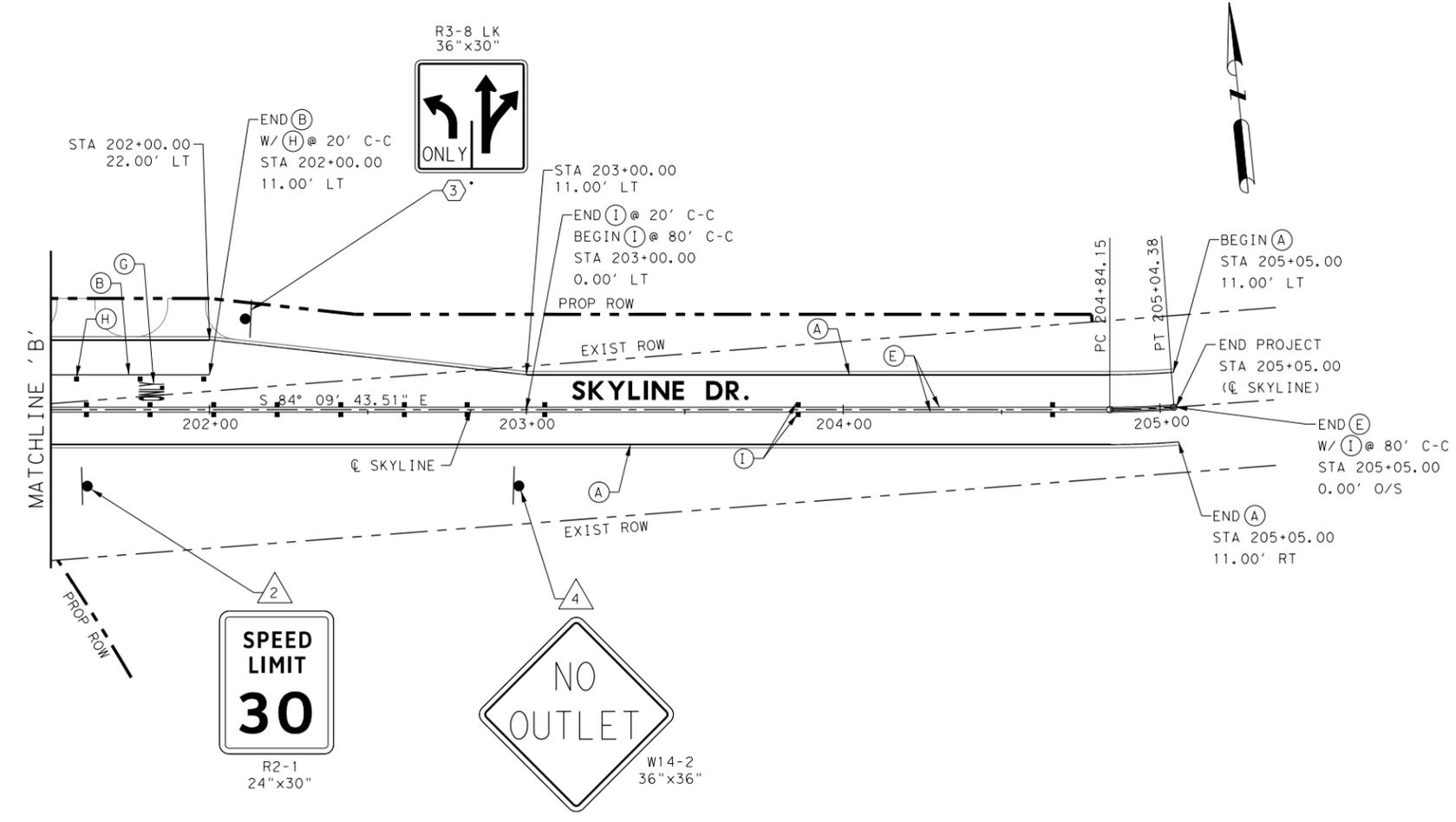
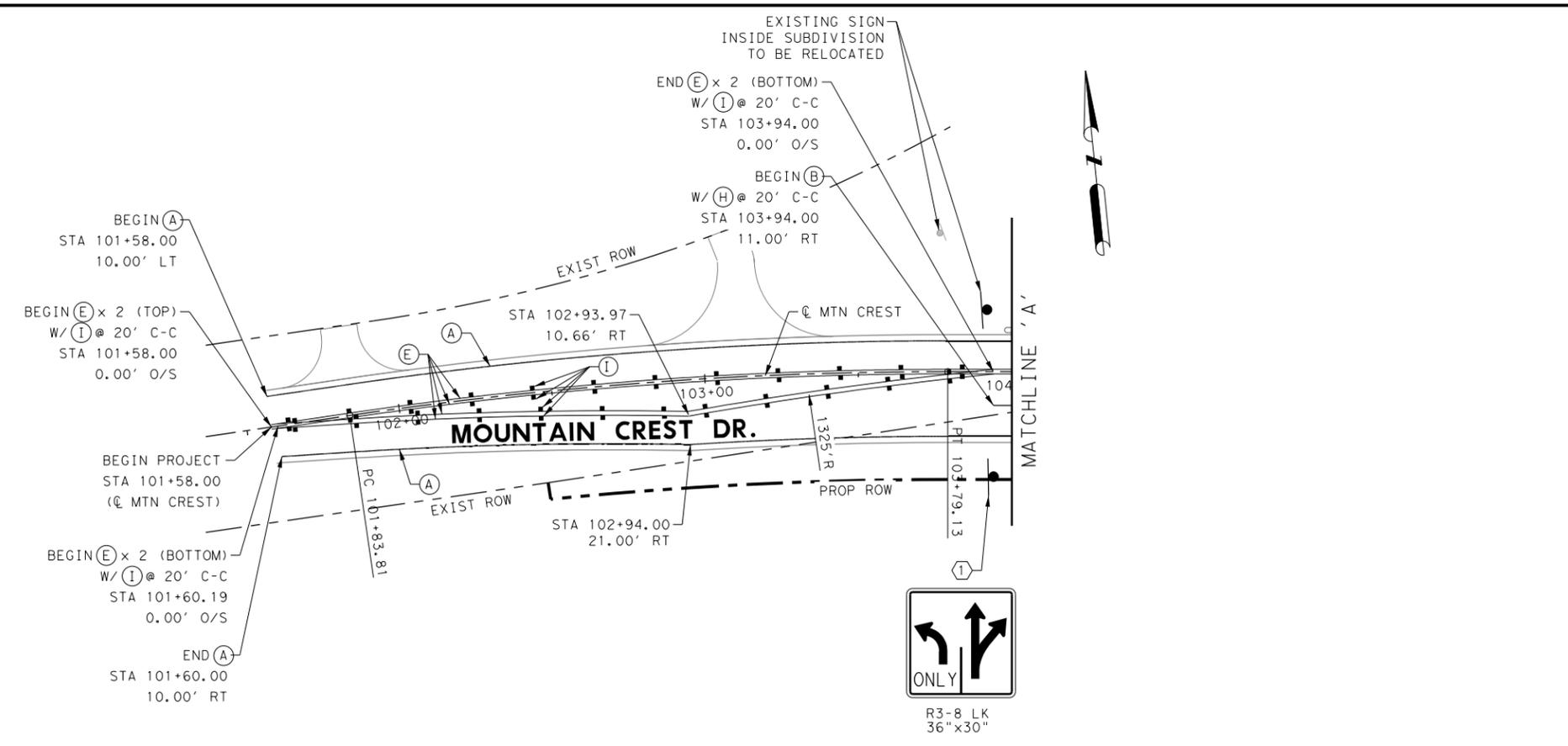
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**RM 12**  
**SIGNING & PAVEMENT**  
**MARKING LAYOUT**

SHEET 3 OF 4

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  - ⊕ INSTALL SIGN

STATE OF TEXAS  
 JOHN W. TULEY  
 102441  
 LICENSED PROFESSIONAL ENGINEER  
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**RM 12  
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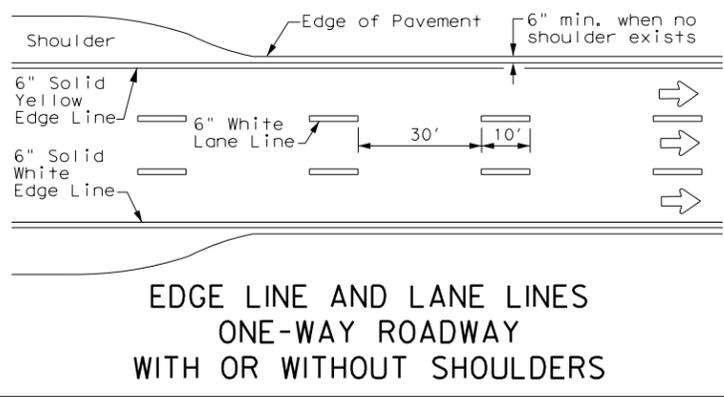
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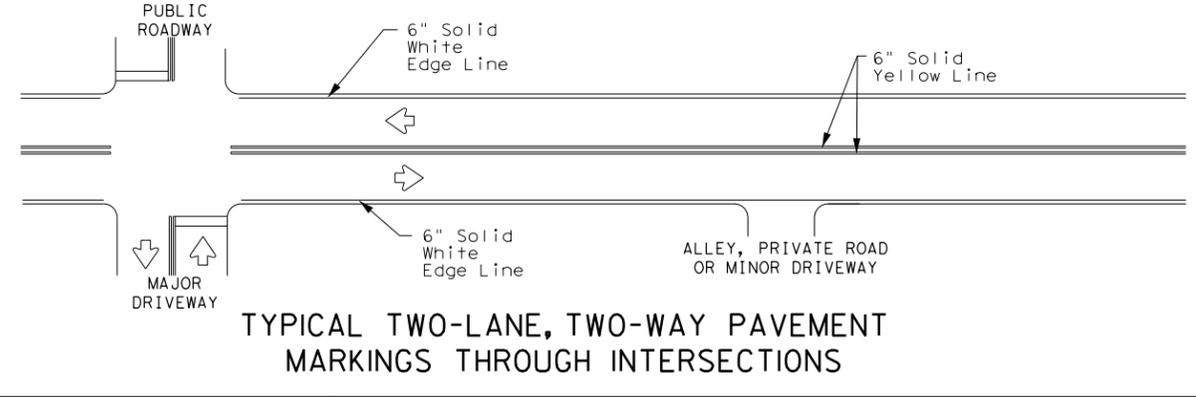


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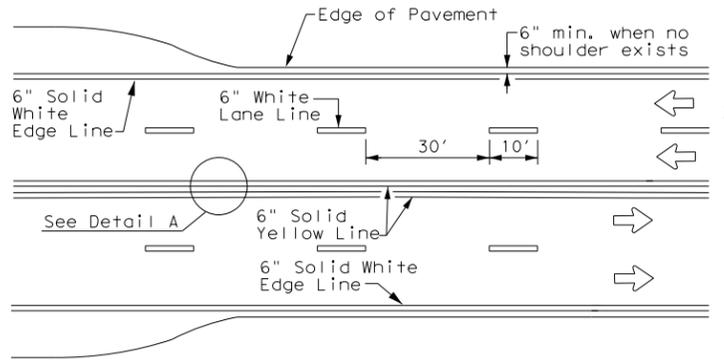
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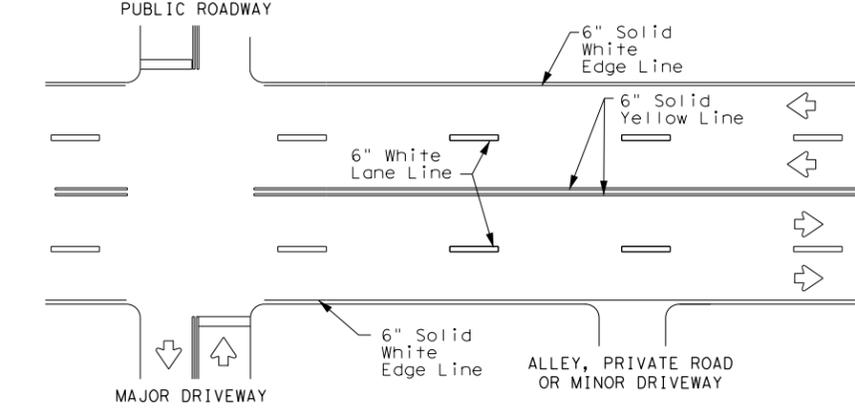
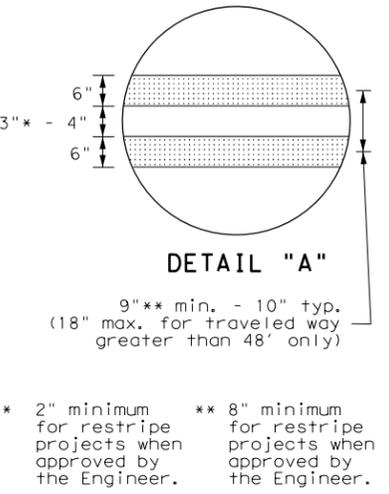
**EDGE LINE AND LANE LINES  
ONE-WAY ROADWAY  
WITH OR WITHOUT SHOULDERS**



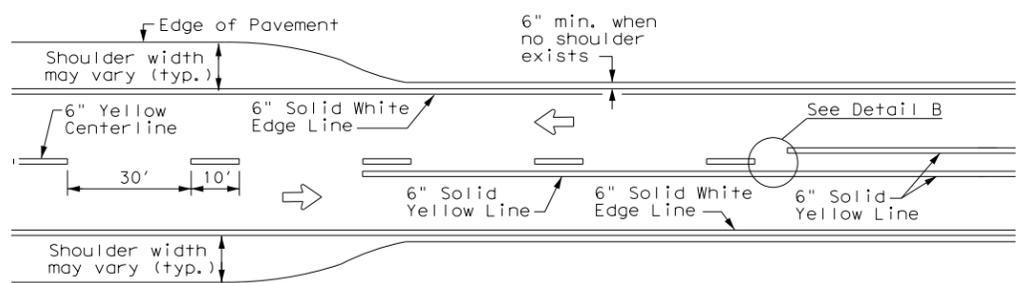
**TYPICAL TWO-LANE, TWO-WAY PAVEMENT  
MARKINGS THROUGH INTERSECTIONS**



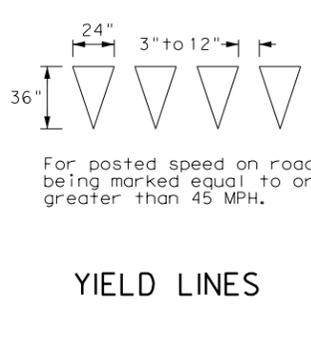
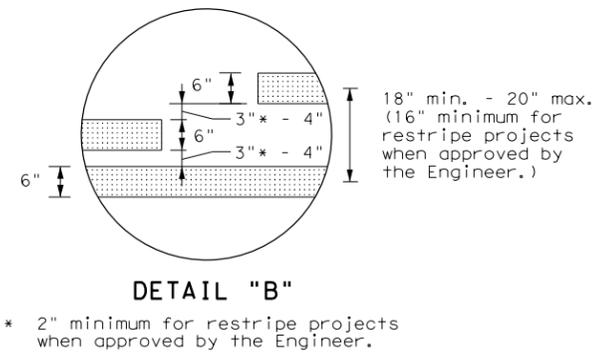
**CENTERLINE AND LANE LINES  
FOUR LANE TWO-WAY ROADWAY  
WITH OR WITHOUT SHOULDERS**



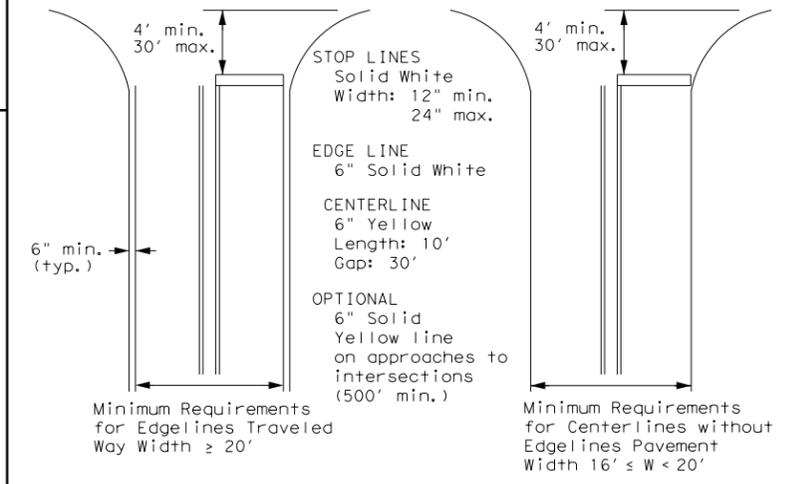
**TYPICAL MULTI-LANE, TWO-WAY PAVEMENT  
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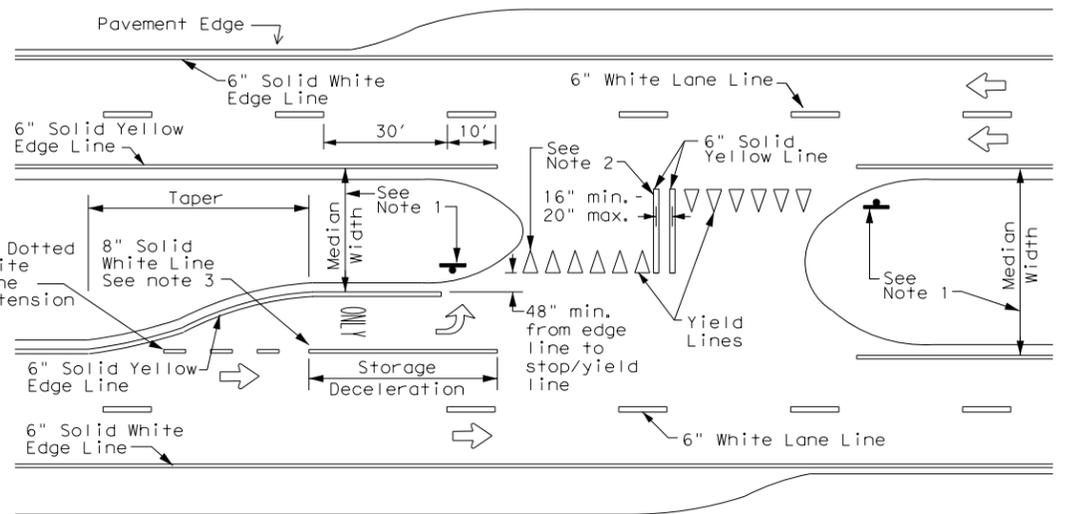
**TWO LANE TWO-WAY ROADWAY  
WITH OR WITHOUT SHOULDERS**



**YIELD LINES**



**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**

- 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.
- 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.
- Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

**GENERAL NOTES**

- 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.
- 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.

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.



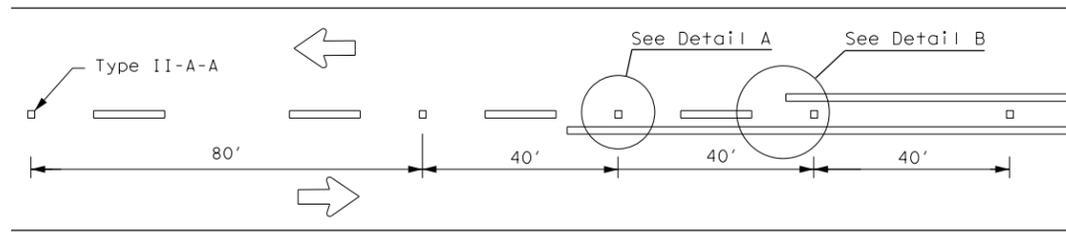
**TYPICAL STANDARD  
PAVEMENT MARKINGS**

**PM(1) - 22**

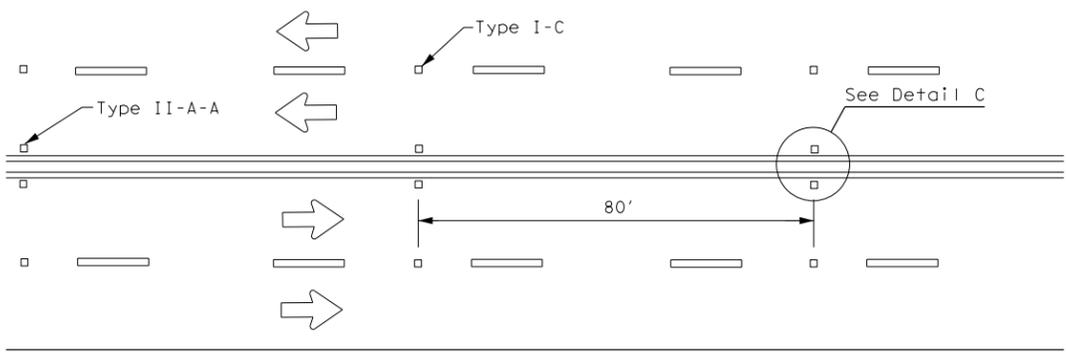
FILE:	pm1-22.dgn	DN:	CK:	DW:	CK:
© TxDOT	December 2022	CONT	SECT	JOB	HIGHWAY
11-78	8-00 6-20	0683	03	045	RM 12
8-95	3-03 12-22	DIST	COUNTY	SHEET NO.	
5-00	2-12	AUS	HAYS	75	

# REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

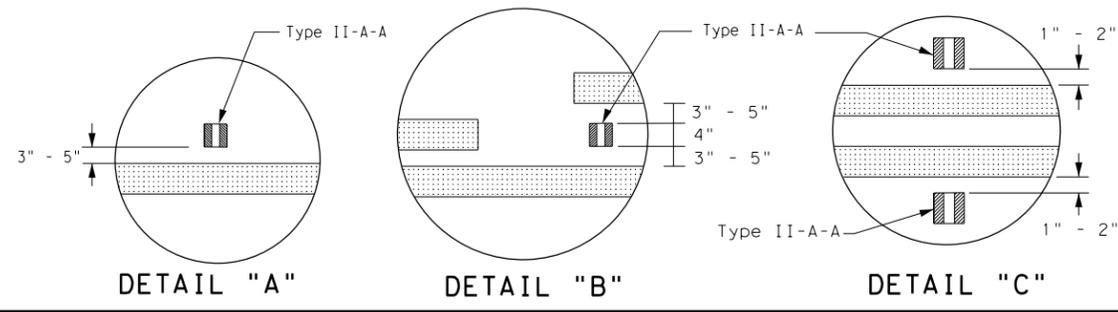
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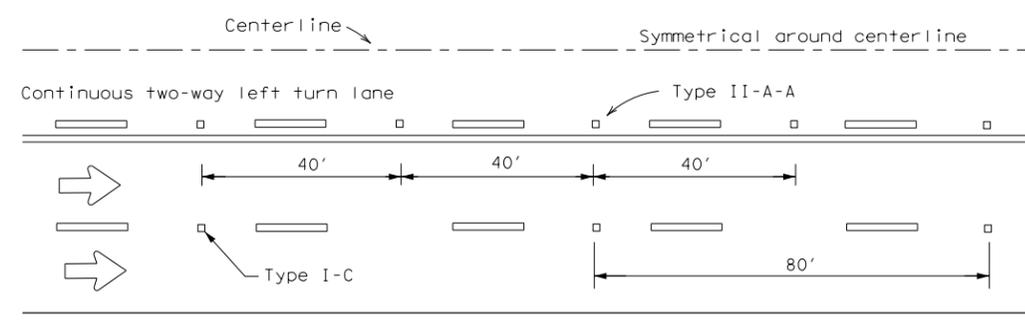
CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS



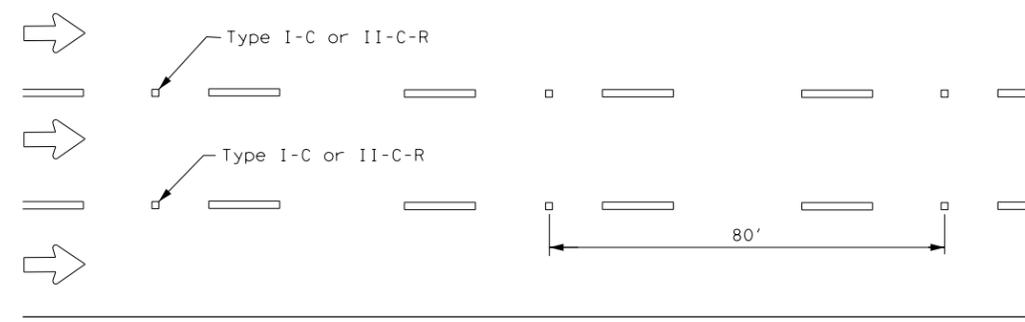
CENTERLINE & LANE LINES  
FOR FOUR LANE TWO-WAY ROADWAYS



DETAIL "A"      DETAIL "B"      DETAIL "C"

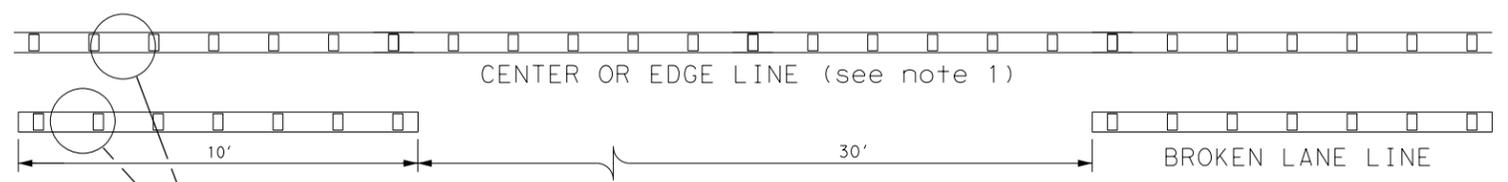


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



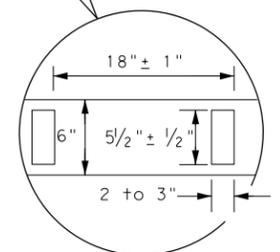
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.  
See Note 3.



CENTER OR EDGE LINE (see note 1)

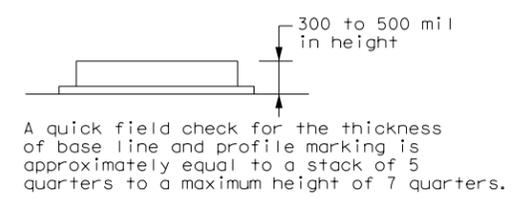
BROKEN LANE LINE



REFLECTORIZED PROFILE  
PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

6" EDGE LINE, 6" CENTERLINE  
OR 6" LANE LINE



**NOTES**

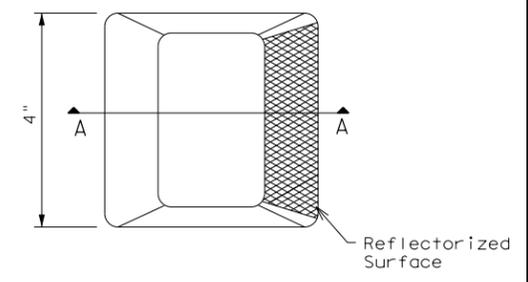
1. Edge lines should typically be 6" wide and the materials shall be specified in the plans.
2. Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

**GENERAL NOTES**

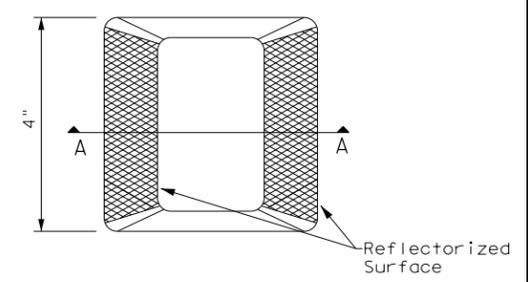
1. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.
3. Use raised pavement marker Type I-C with undivided roadways, flush medians 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

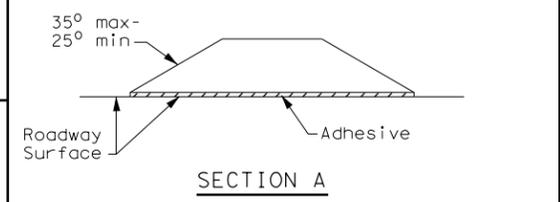
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

**RAISED PAVEMENT MARKERS**

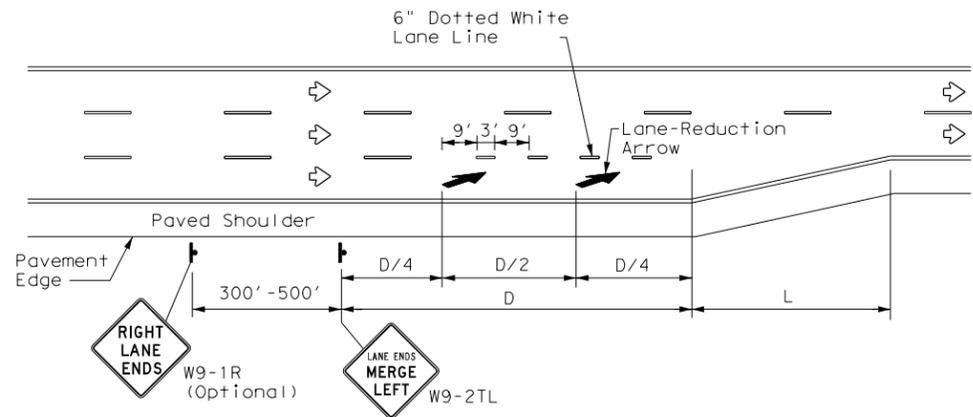


**POSITION GUIDANCE USING  
RAISED MARKERS  
REFLECTORIZED PROFILE  
MARKINGS  
PM(2) - 22**

FILE: pm2-22.dgn	DN: 0683	CK: 03	DW: 045	CK: RM 12		
© TxDOT December 2022						
REVISIONS		CONT	SECT	JOB	HIGHWAY	
4-77	8-00	6-20	0683	03	045	RM 12
4-92	2-10	12-22	DIST	COUNTY	SHEET NO.	
5-00	2-12		AUS	HAYS	76	

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DATE: 1/27/2026 1:05:07 PM  
 FILE: G:\TXC\Projects\County\_Hays\7083-00\_RM 12 Turn Lanes\03\_CADD\01\_Shts\08\_Pavement\03\_Plan\03\_Plan.dwg



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.

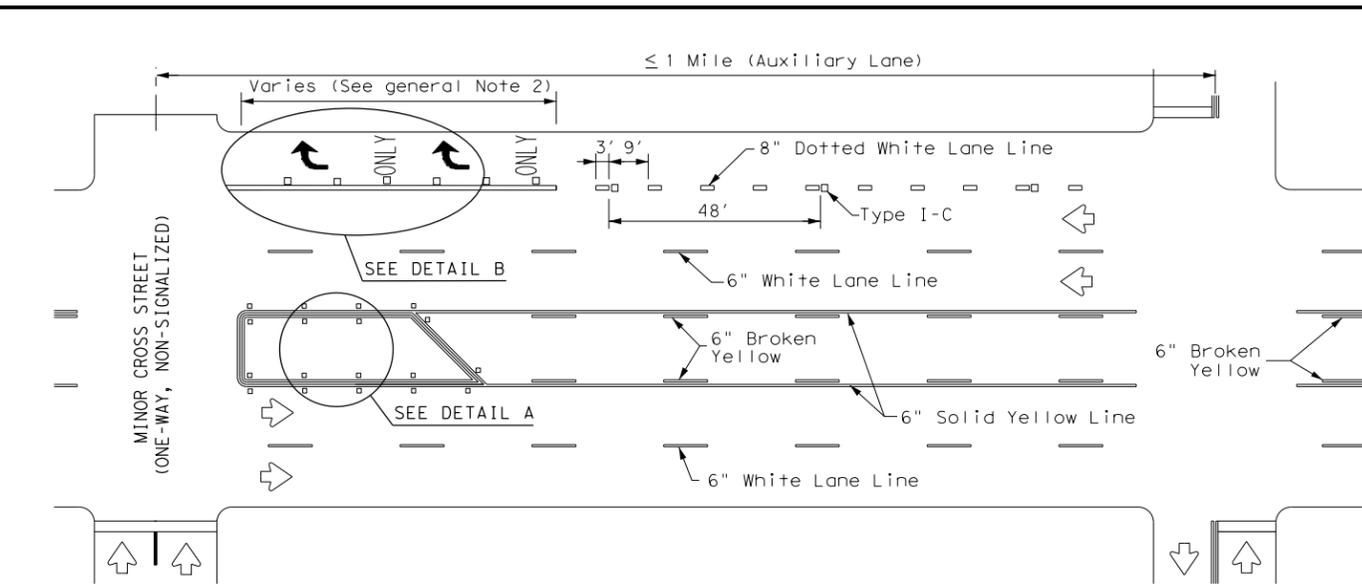
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L = \frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

GENERAL NOTES

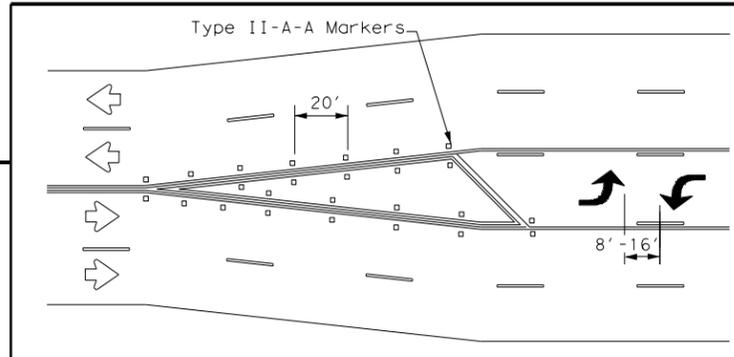
- Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn 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.

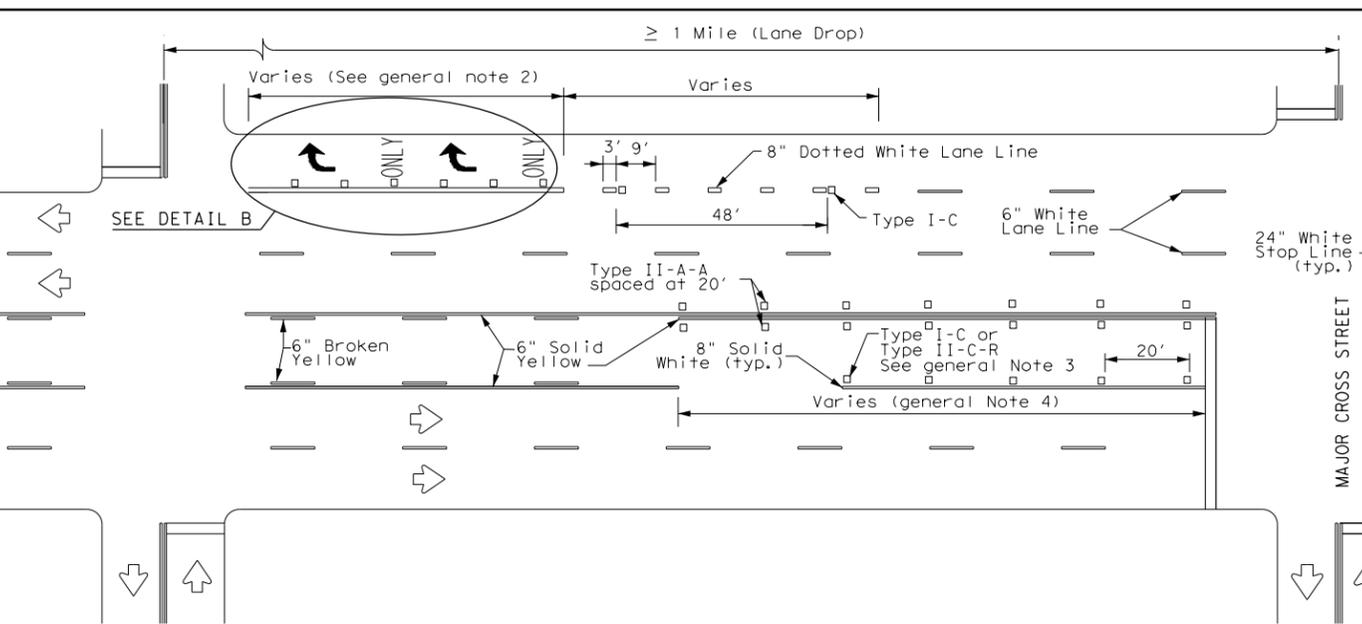


TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE

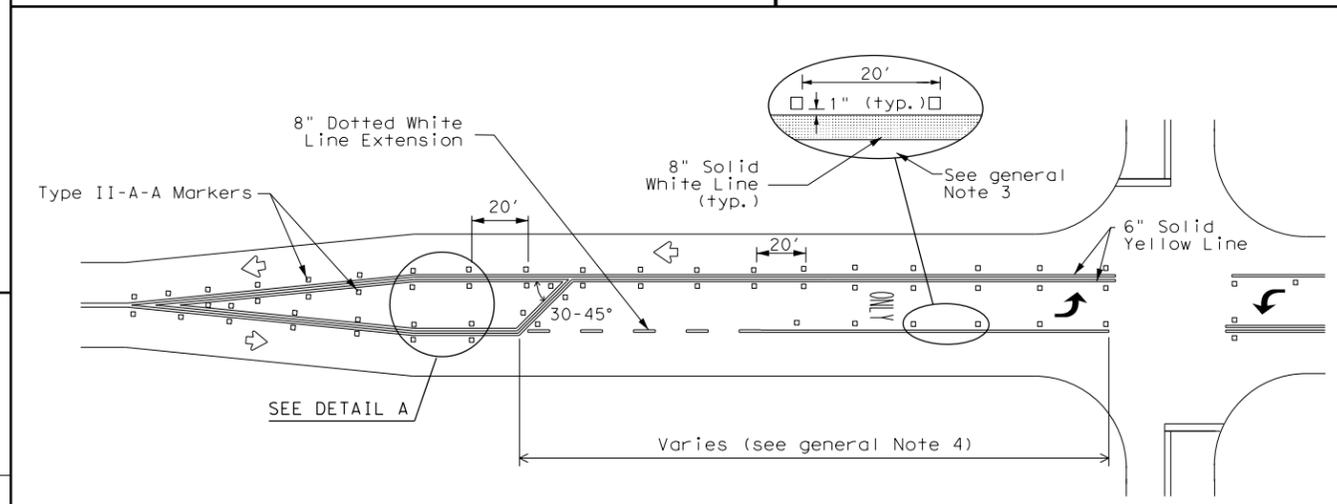


A two-way left-turn (TWLTL) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

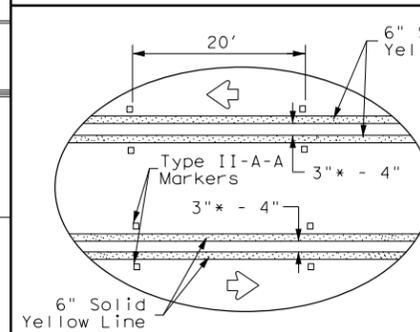
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY



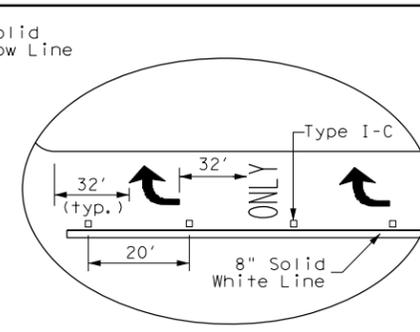
TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



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 December 2022	CONT	SECT	JOB	HIGHWAY
4-98 3-03 6-20	0683	03	045	RM 12
5-00 2-10 12-22	DIST	COUNTY		SHEET NO.
8-00 2-12	AUS	HAYS		77

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DATE: 1/27/2026 1:05:08 PM  
 FILE: G:\TXDOT\Projects\County\Hays\7083-00\*RM 12 Turn Lanes\03\*CADD\01\*SHts\08-SPMD\Std\smngen.dgn

### SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

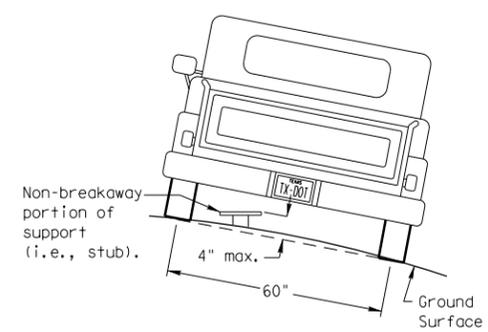
Post Type \_\_\_\_\_  
 FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))  
 TWT = Thin-Walled Tubing (see SMD(TWT))  
 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))  
 S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

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))

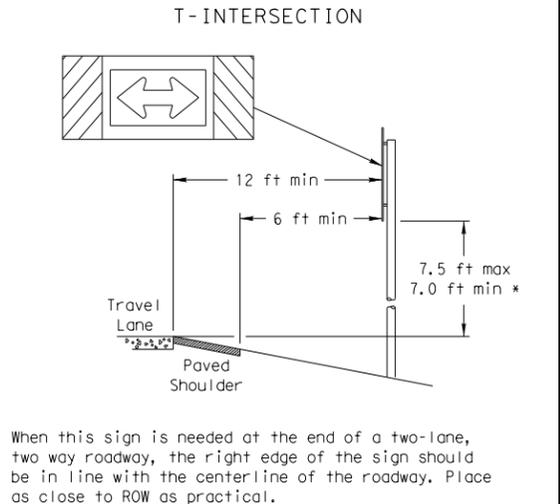
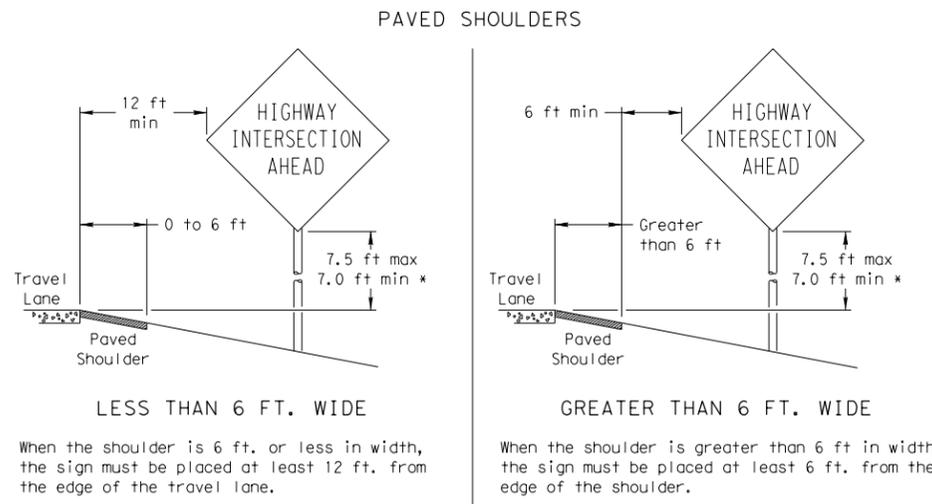
Sign Mounting Designation  
 P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))  
 T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))  
 U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))  
 IF REQUIRED  
 1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))  
 BM = Extruded 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

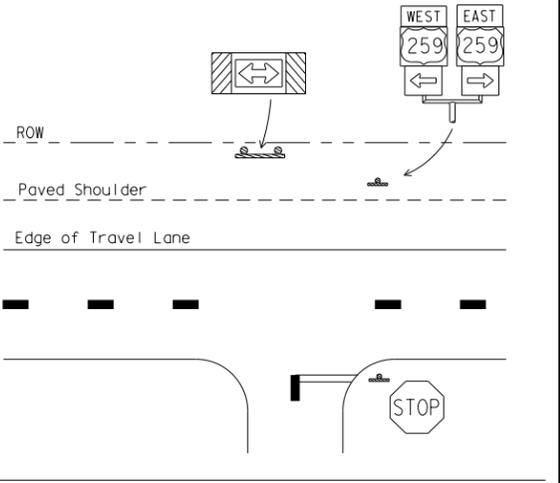
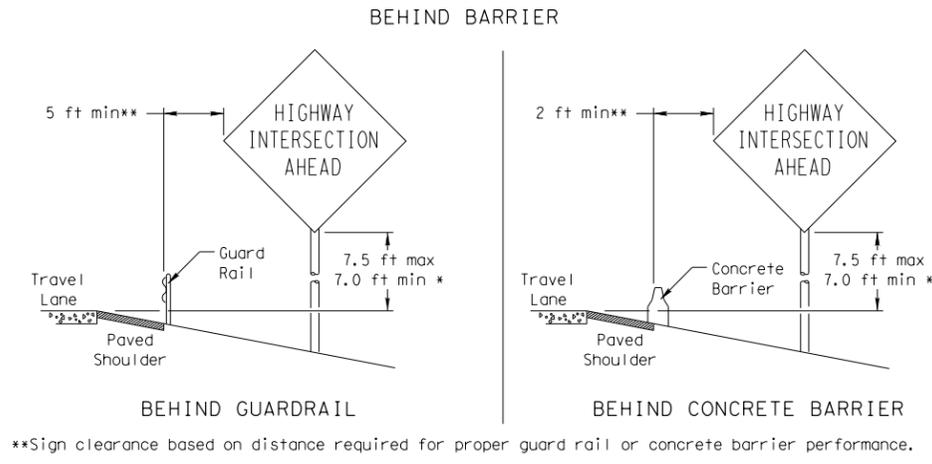
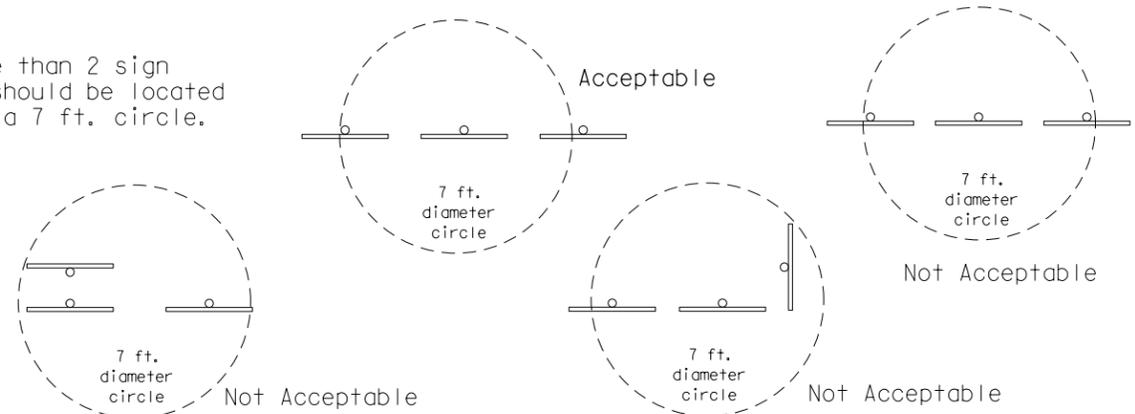


To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

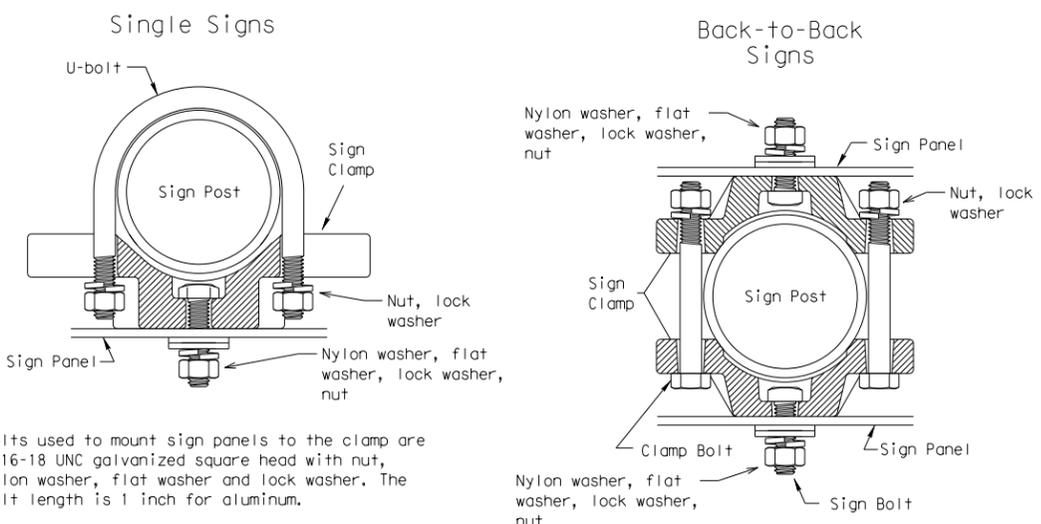
### SIGN LOCATION



No more than 2 sign posts should be located within a 7 ft. circle.



### TYPICAL SIGN ATTACHMENT DETAIL



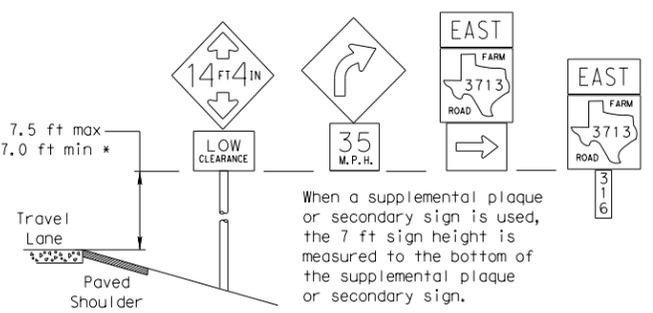
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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.

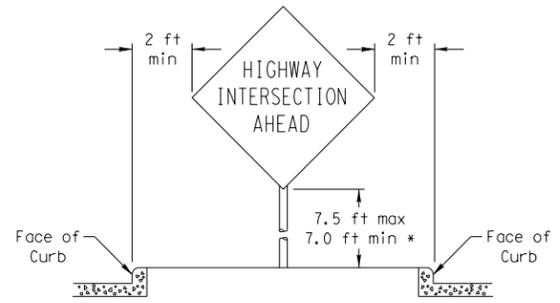
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

### SIGNS WITH PLAQUES

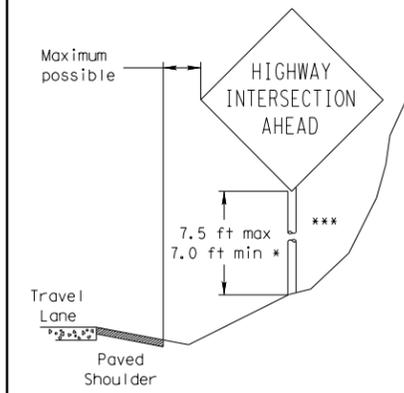


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

### CURB & GUTTER OR RAISED ISLAND



### 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.

- \* Signs shall be mounted using the following condition that results in the greatest sign elevation:
- (1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or
  - (2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.
- The maximum values may be increased when directed by the Engineer.
- See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.
- The website address is:  
<http://www.txdot.gov/publications/traffic.htm>

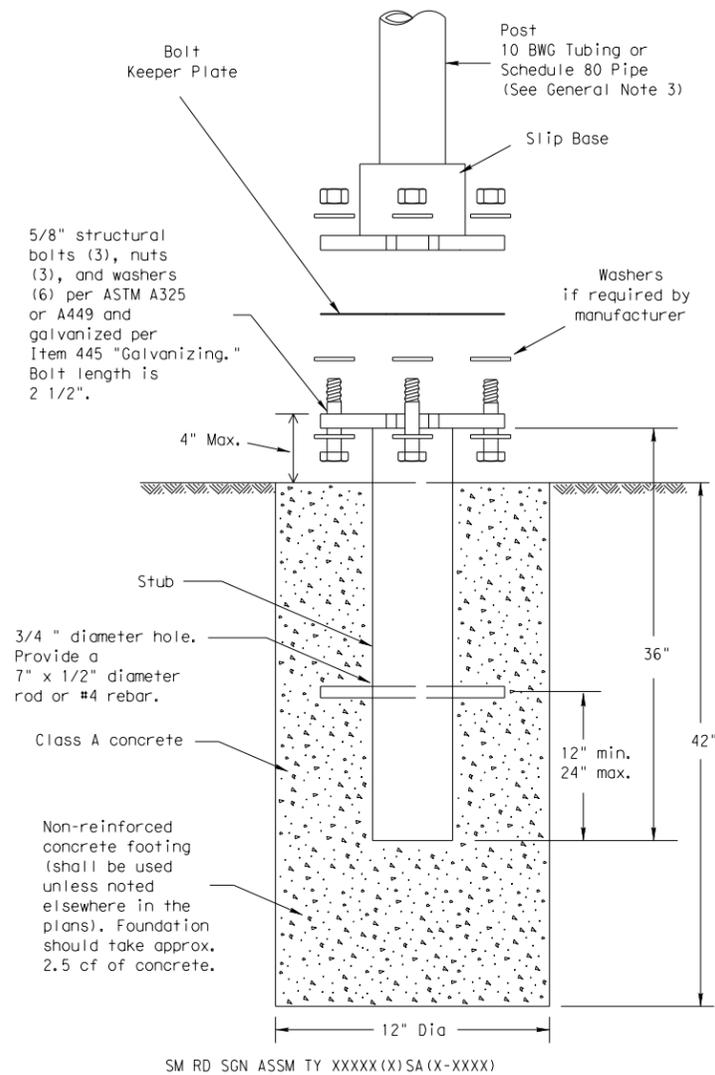


## SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD (GEN) -08

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9-08	REVISIONS	CONT	SECT	JOB	HIGHWAY
		0683	03	045	RM 12
		DIST	COUNTY		SHEET NO.
		AUS	HAYS		78

# 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](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

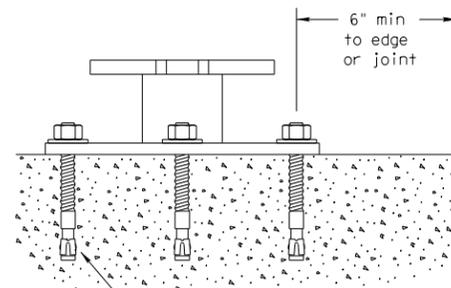
### Foundation

- 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



5/8" diameter Concrete Anchor - 8 places (embed a minimum of 5 1/2" and torque to min. of 50 ft-lbs). Anchor may be expansion or adhesive type.

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.

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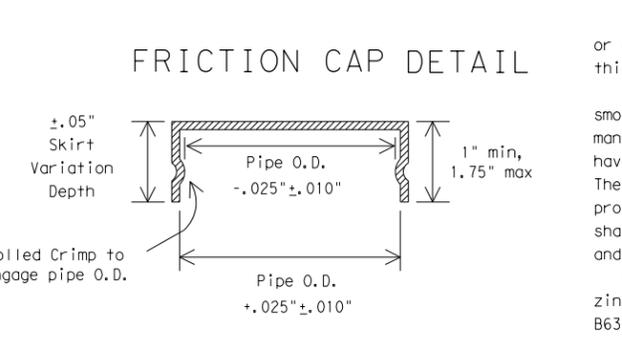
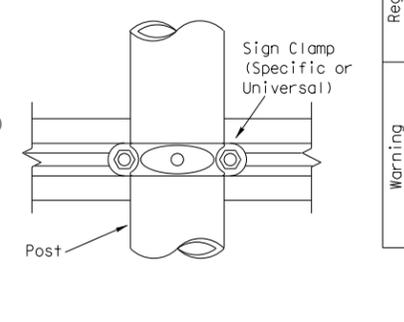
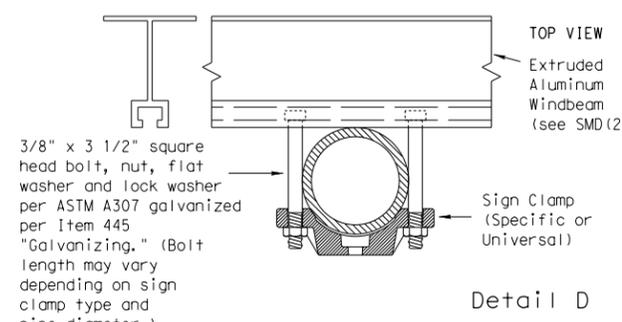
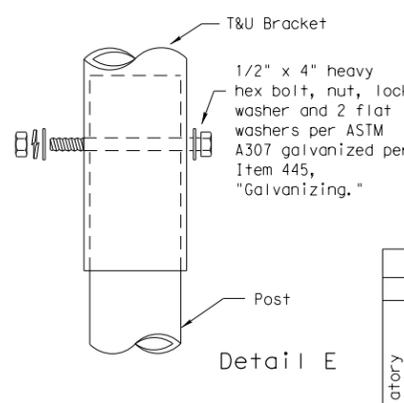
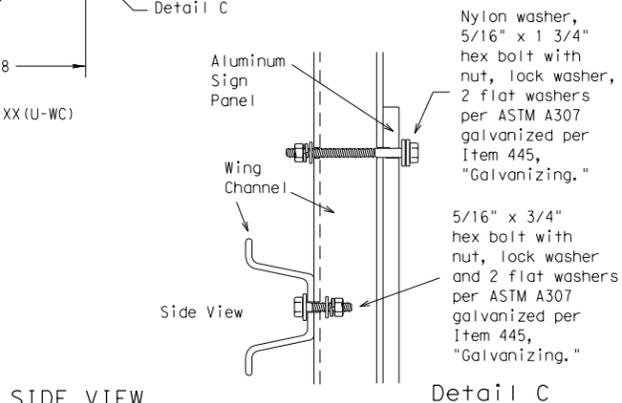
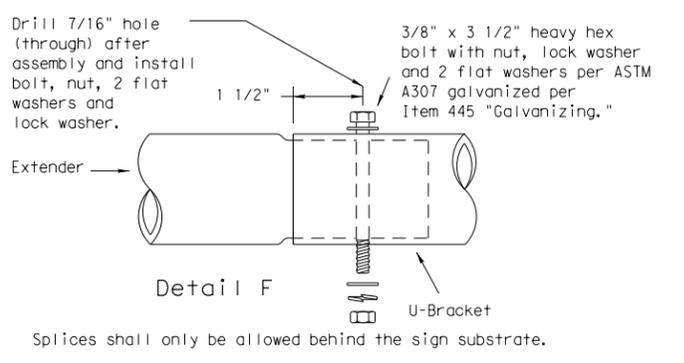
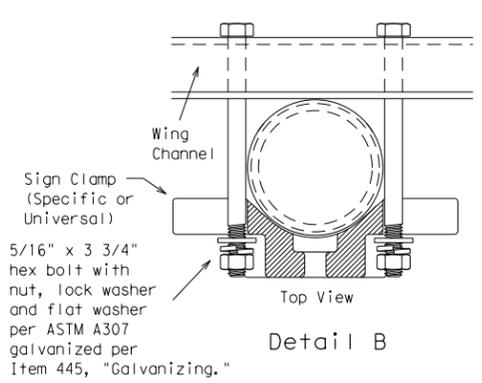
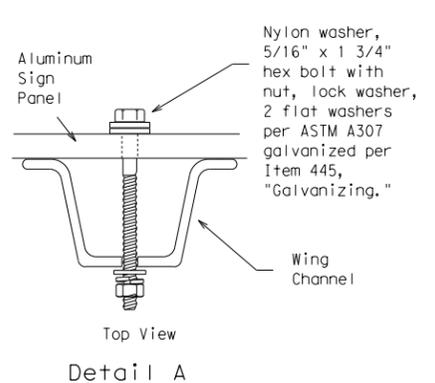
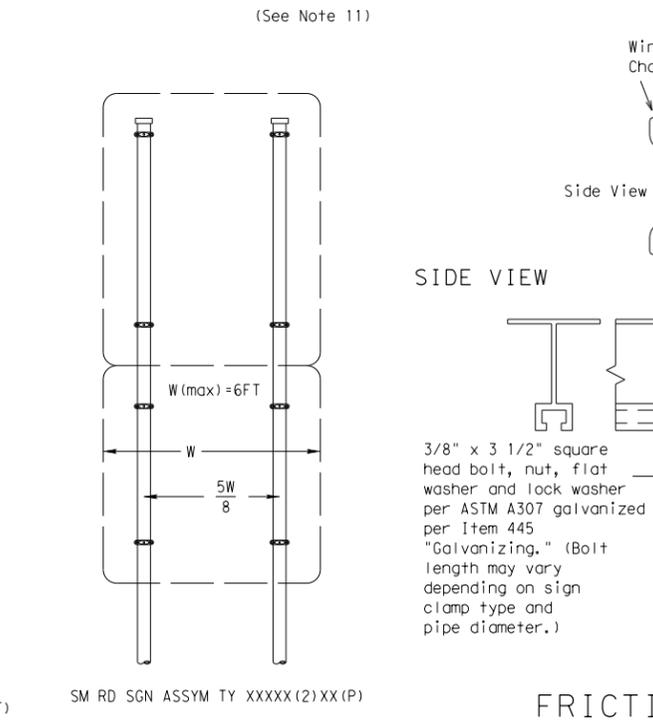
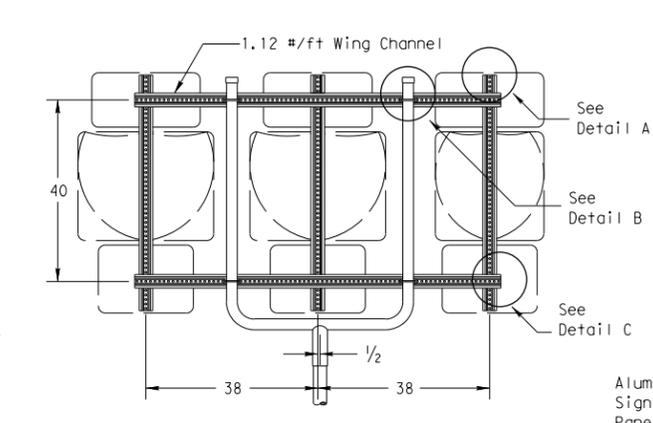
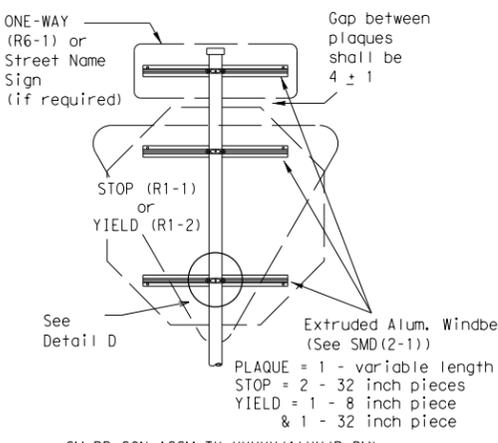
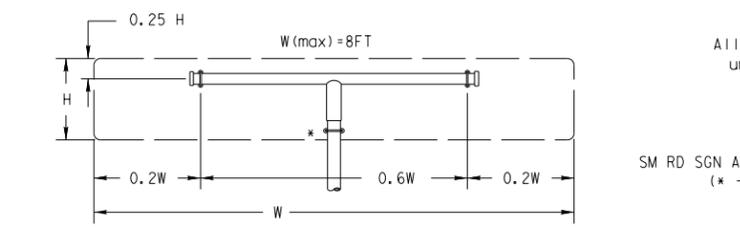
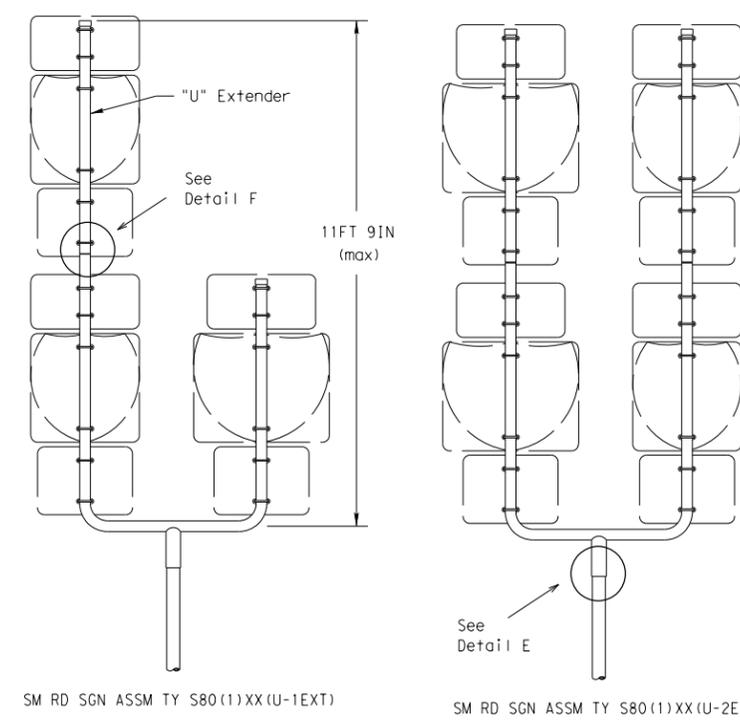
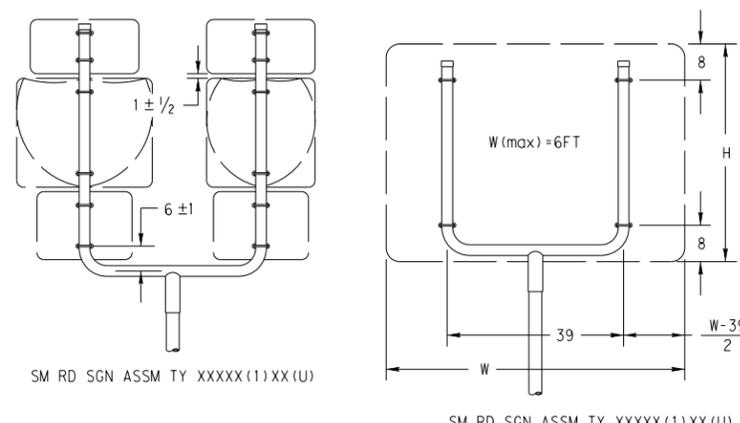
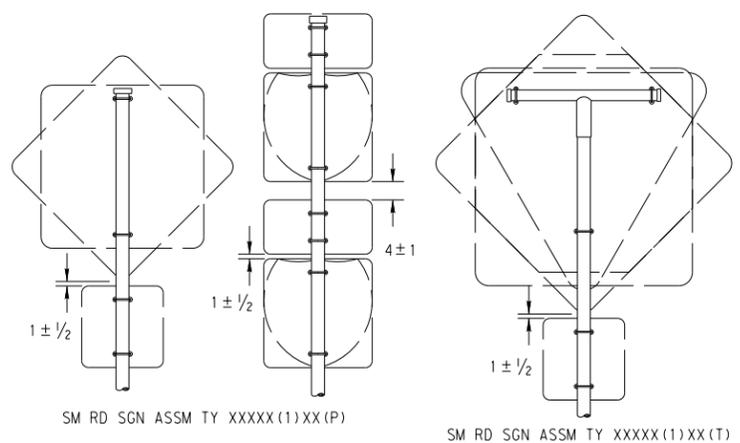
## SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

© TxDOT July 2002		DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
9-08	REVISIONS		CONT	SECT	JOB
			0683	03	045
			DIST	COUNTY	SHEET NO.
		AUS	HAYS		79

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DATE: 1/27/2026 1:05:10 PM  
 FILE: G:\TXDOT\Projects\County\Hays\7083-00\*RM 12 Turn Lanes\03\*CADD\01\*SHts\08-SPMD\Std\smds2.dgn



All dimensions are in english unless detailed otherwise.

SM RD SGN ASSM TY XXXX(1)XX(T) (\* - See Note 12)

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		
	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)

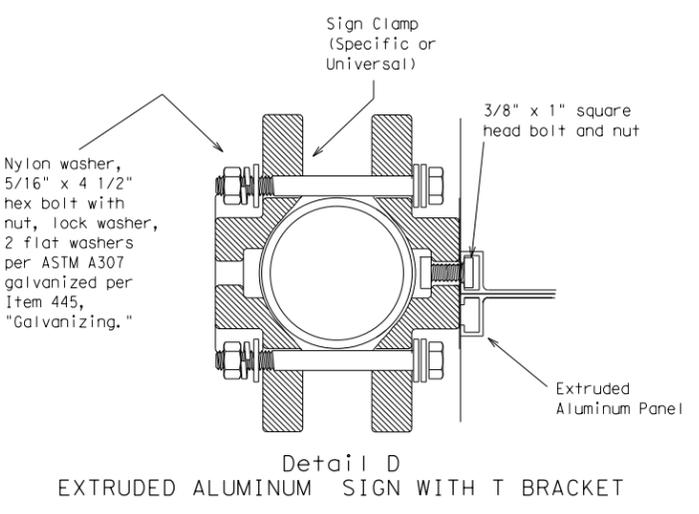
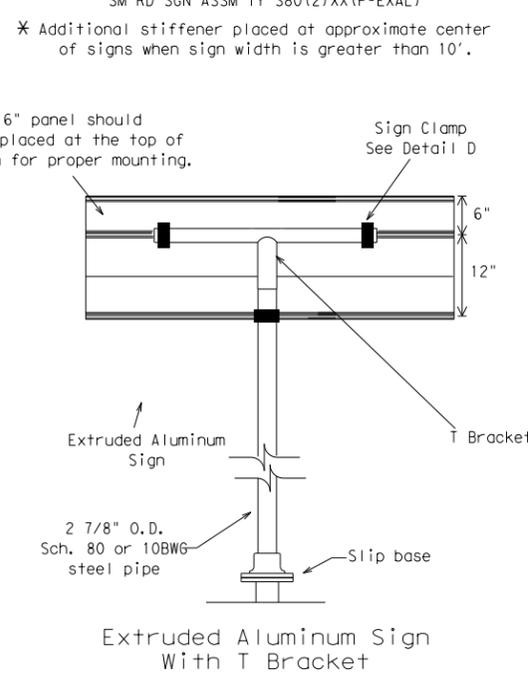
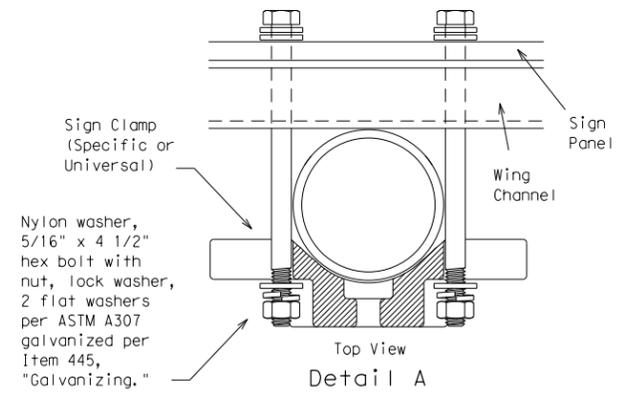
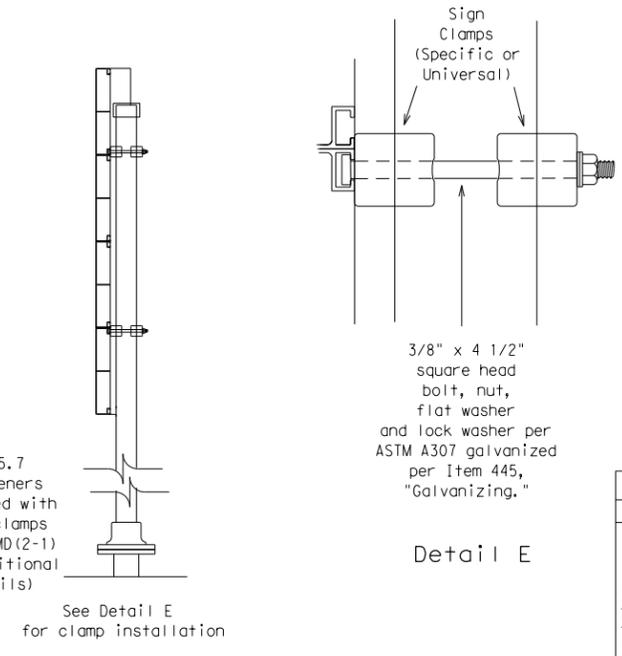
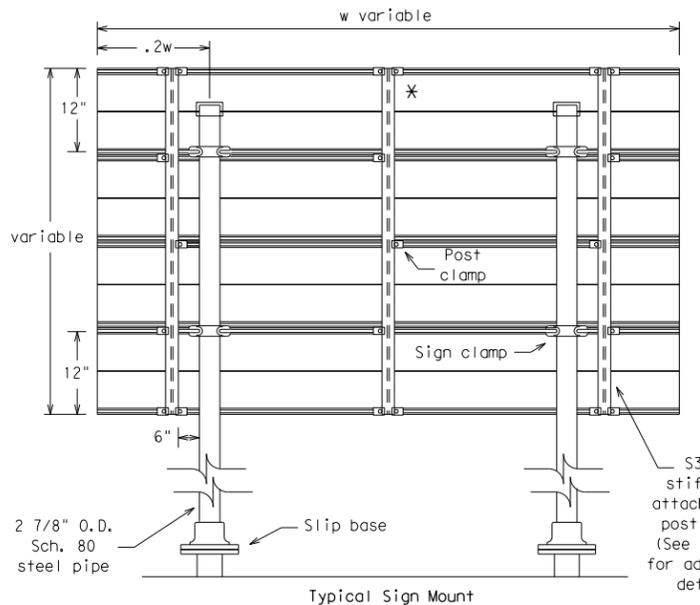
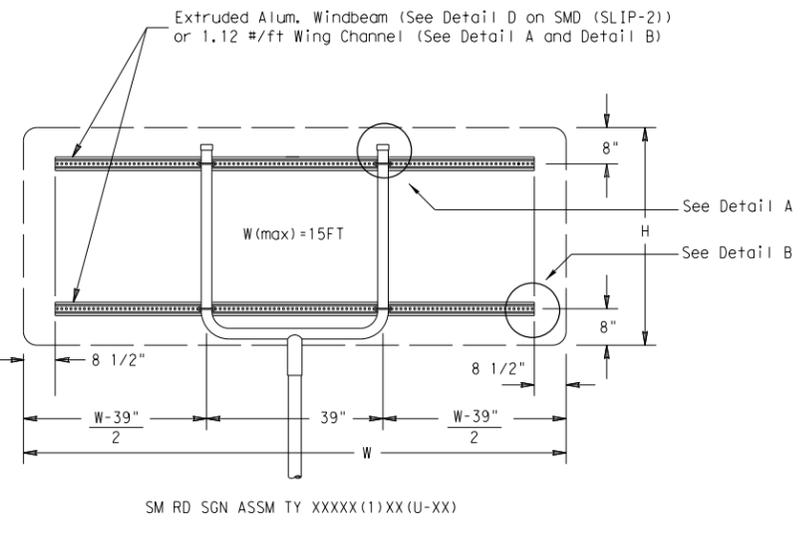
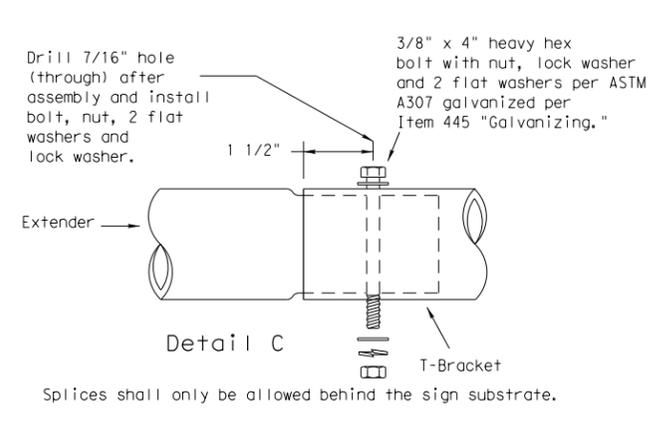
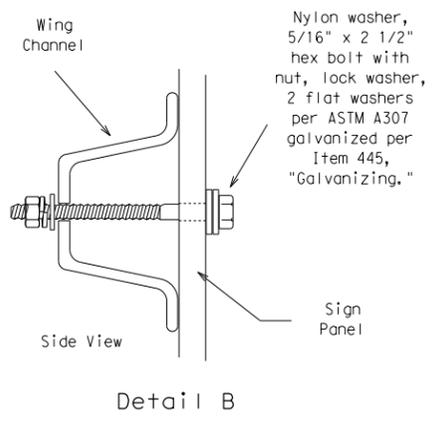
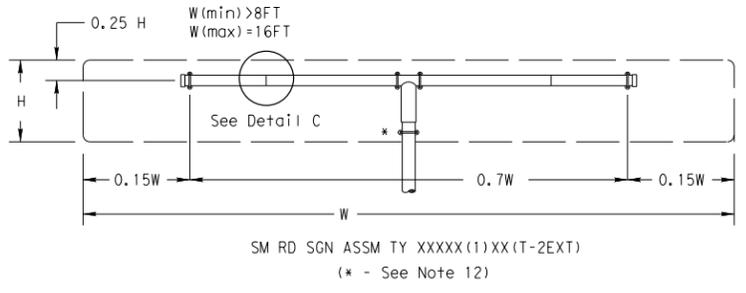


SIGN MOUNTING DETAILS  
 SMALL ROADSIDE SIGNS  
 TRIANGULAR SLIPBASE SYSTEM  
 SMD(SLIP-2)-08

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9-08	REVISIONS	CONT	SECT	JOB	HIGHWAY
		0683	03	045	RM 12
		DIST	COUNTY	SHEET NO.	
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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."
- 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.

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)

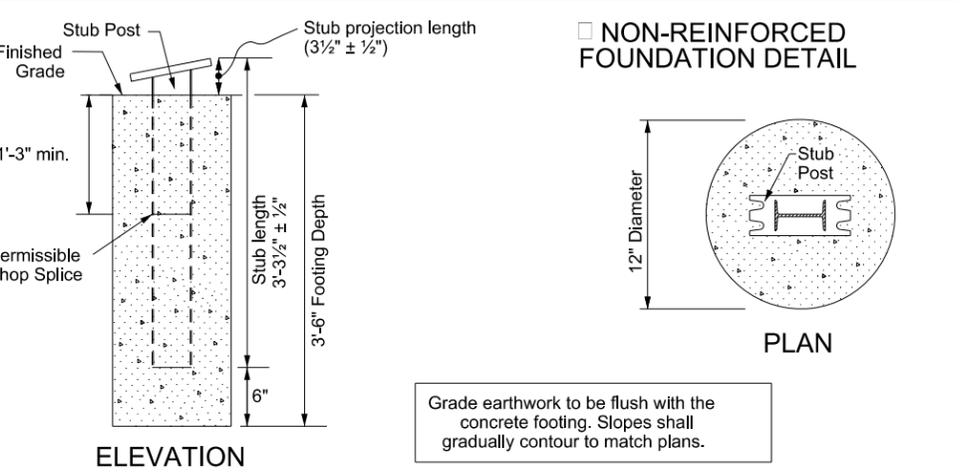
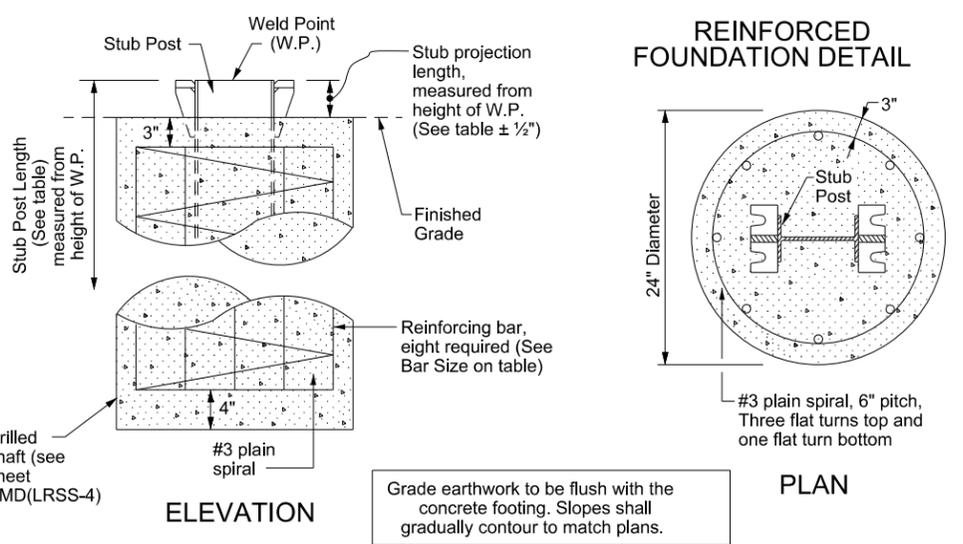


**SIGN MOUNTING DETAILS  
 SMALL ROADSIDE SIGNS  
 TRIANGULAR SLIPBASE SYSTEM  
 SMD(SLIP-3)-08**

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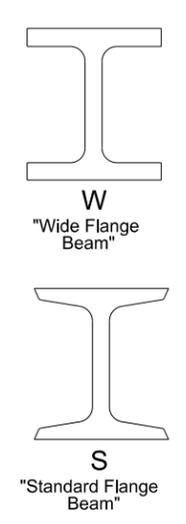
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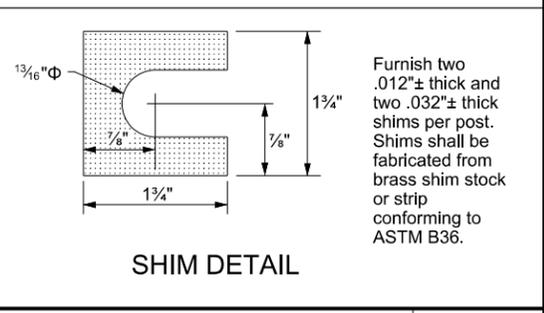
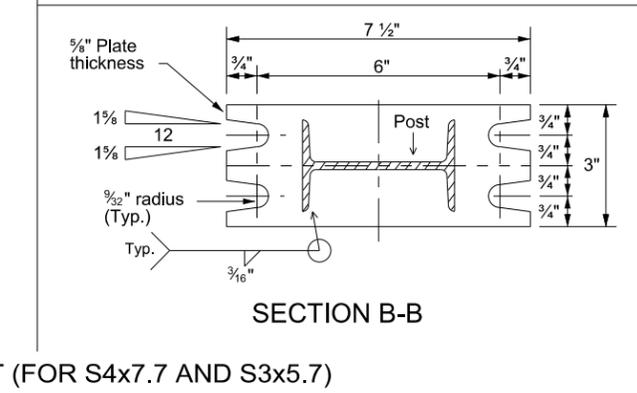
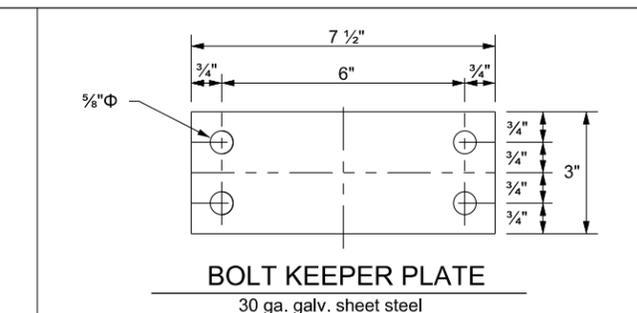
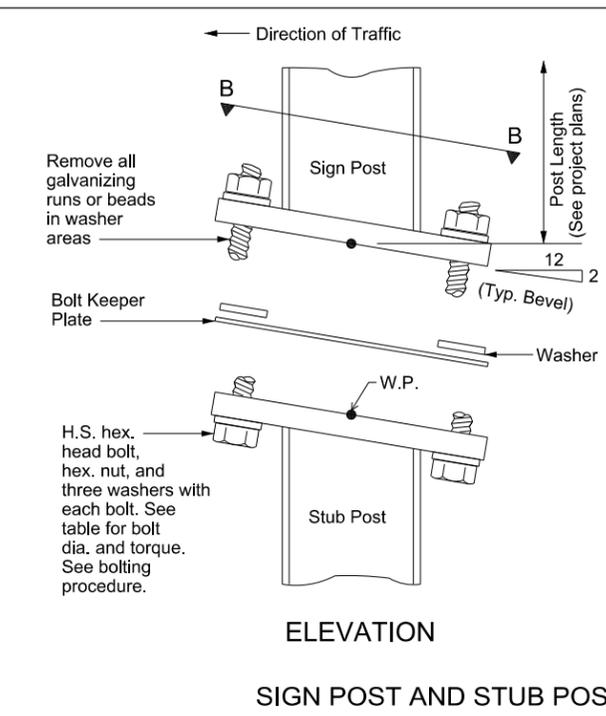
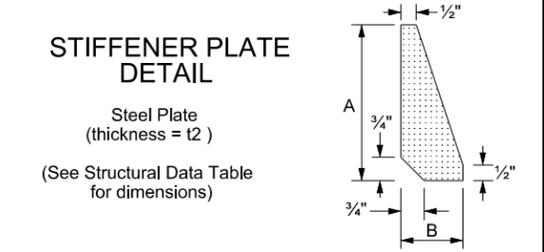
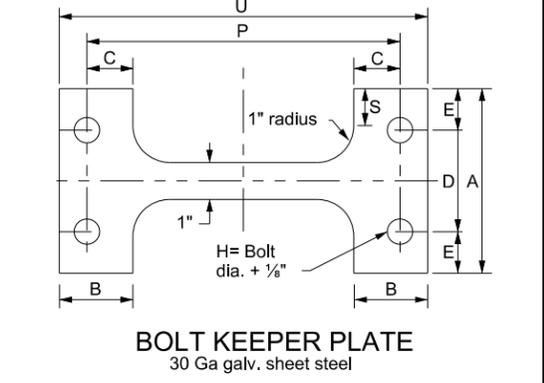
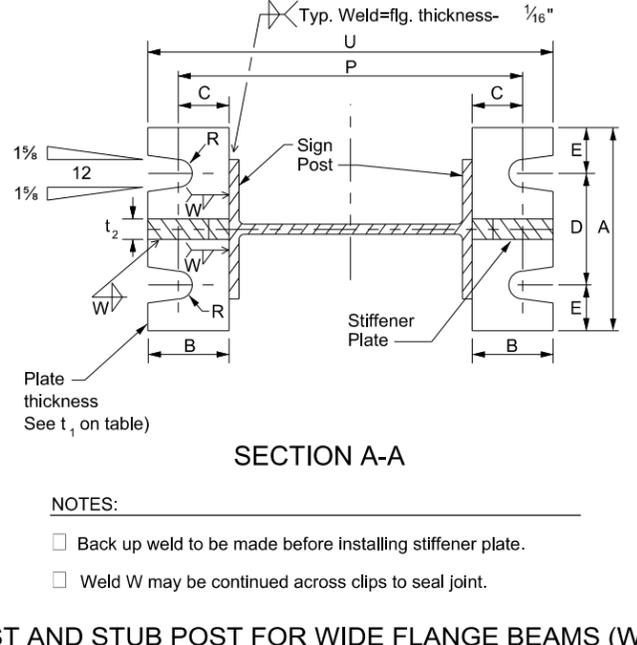
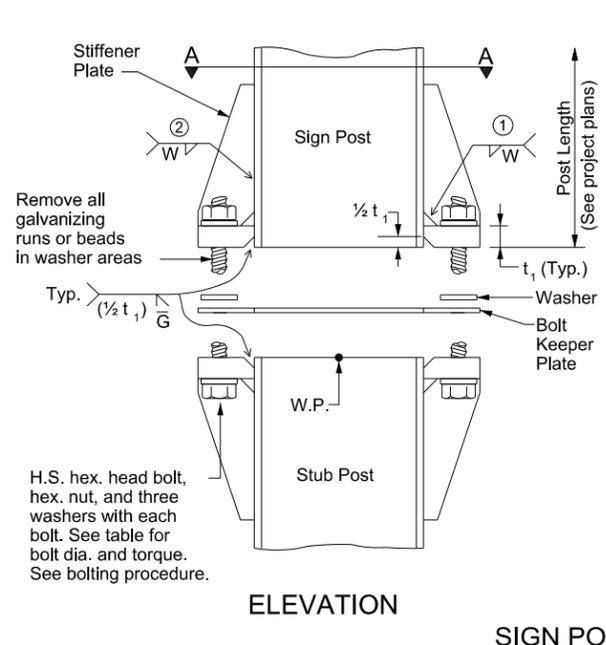
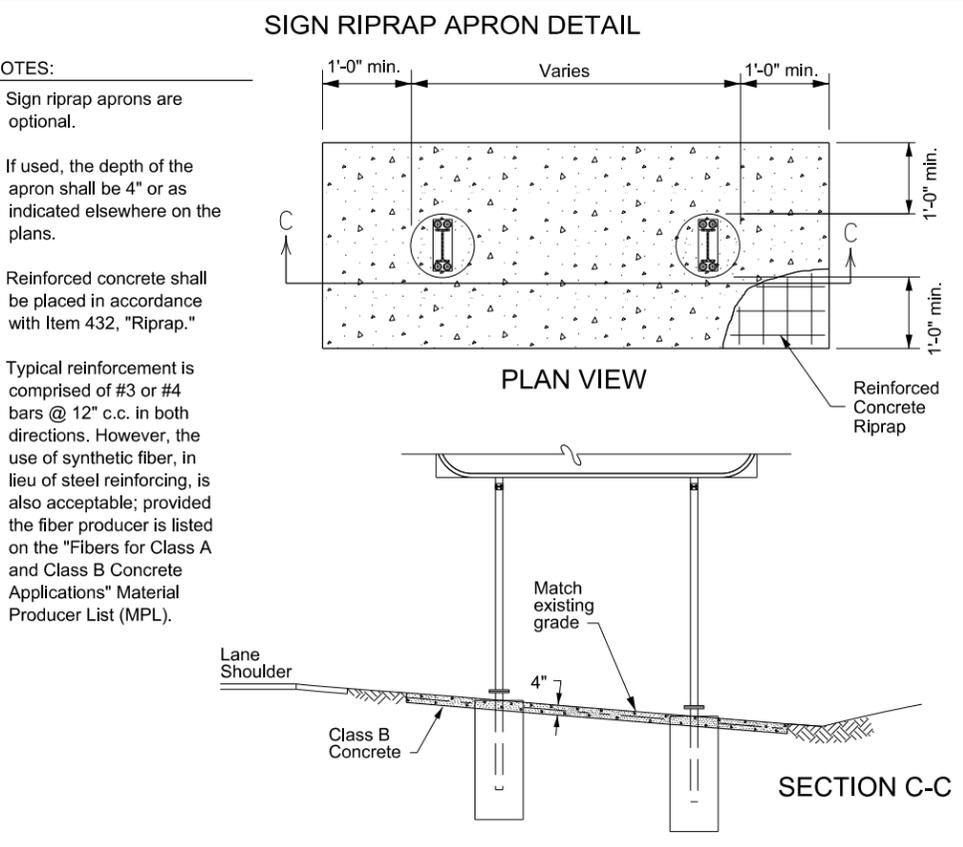


**BOLTING PROCEDURE FOR ASSEMBLY OF BASE CONNECTION**

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 to 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 overtighten.
5. To prevent nut loosening, burr threads of bolt at junction with nut using a center punch.



DIMENSIONS	BASE CONNECTION										BOLT KEEPER PLATE			FOUNDATION					
	Post Size	Bolt Size & Torque	A	B	C	D	E	t <sub>1</sub>	t <sub>2</sub>	W	R	P	S	U	Stub length	Stub projection	Drill Shaft diameter	Bar Size	Concrete Type
W12x26	3/4"Φ x 3 1/2"											15"		16 3/4"	3'-0"	2 1/2"	24"	#11	C
W10x22	7/40-750 inch pounds 62-63 foot pounds	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	1 3/32"	12 7/8"	1 1/2"	14 5/8"	3'-0"	2 1/2"	#9			
W8x21											11"		12 3/4"	3'-0"	2 1/2"	#8			
W8x18	5/8"Φ x 2 3/4"										10 5/8"		12 1/8"	2'-6"	3"	#7			
W6x15	440-450 inch pounds 36-38 foot pounds	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	1 1/32"	8 1/2"	1"	10"	2'-6"	3"	#6			
W6x9											8 3/8"		9 7/8"	2'-0"	3"	#5			
S4x7.7	1/2"Φ x 2 1/2"		See Sign Post Stub (S4x7.7 and S3x5.7)										See Sign Post Stub (S4x7.7 and S3x5.7)		3'-3 1/2"	3 1/2"	12"	Non-reinforced	A
S3x5.7	440-450 inch pounds 36-38 foot pounds																		



**Texas Department of Transportation** Traffic Safety Division Standard

**SIGN MOUNTING DETAILS**  
**LARGE ROADSIDE SIGNS**  
**FOUNDATION & STUB**

**SMD(2-1)-24**

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**LATERAL CLEARANCE NOTES:**

1. Lateral clearances of signs mounted on the median side of the main lanes are the same as shown, where space will permit. Where a sign is to be located behind guardrail, an allowable minimum clearance of 5' may be used, measured from the face of the guardrail to the near edge of sign.
2. \* 6' minimum and desirable may be used only in areas of limited lateral clearance and when approved by the Engineer.

**POST SPACING NOTES:**

1. Post spacing on a two post sign may be varied a maximum of ±10% of the total sign width to fit field conditions.
2. Post spacing on a three post sign may be varied a maximum of ±5% of the total sign width to fit field conditions.

**SIGN HEIGHT NOTES:**

1. \*\* 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.

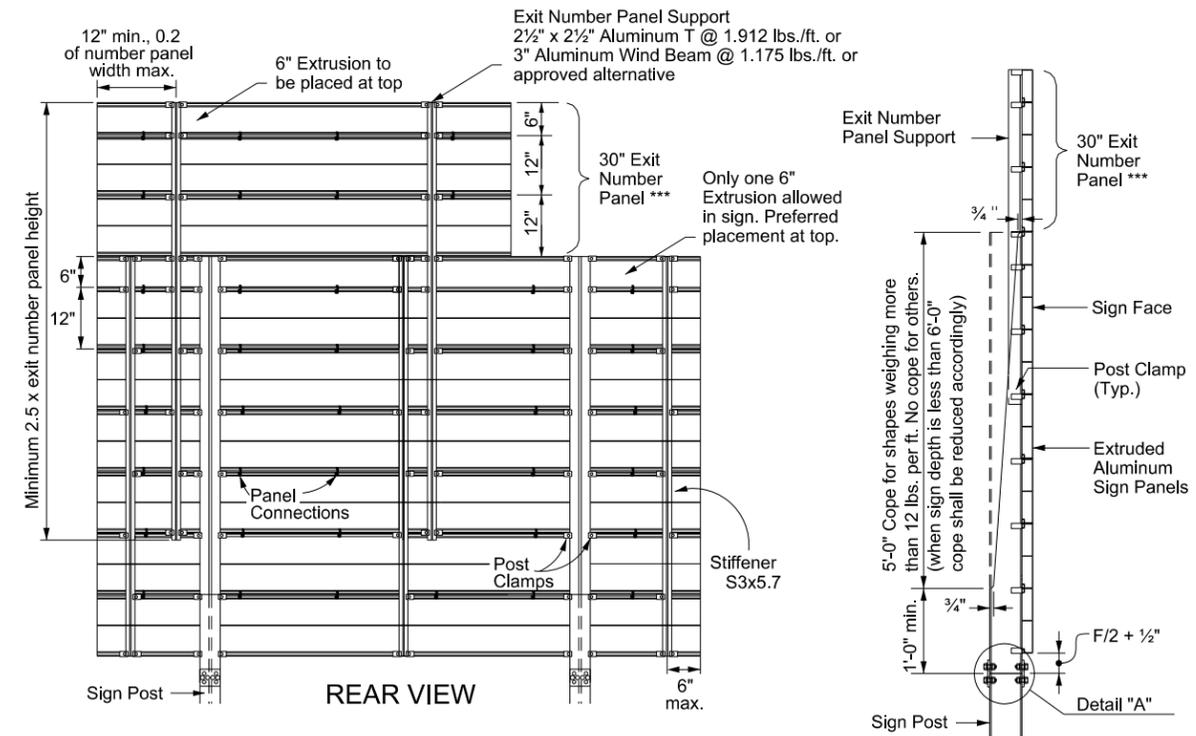
**GENERAL NOTES:**

1. Exit number panel supports shall be ASTM A36 structural steel galvanized after fabrication, or ASTM B221 aluminum alloy 6061-T6 or approved alternative.
2. In accordance with DMS-7120, High-Strength (H.S.) Bolts, Nuts, and Washers shall be galvanized per ASTM Designation: B695 Class 50, or A153 Class C or D.
3. Posts, parent sign panels, and exit number panels shall comply with notes on sheets SMD(2-1) and SMD(2-3).
4. 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 sign plaques may be fabricated from flat sheet aluminum.
5. Exit number panel supports and other connection hardware required to fasten exit number panel to parent sign shall be subsidiary to "Aluminum Signs".
6. Signs to be furnished shall be detailed elsewhere in the plans. Refer to the "Typical Sign Requirements" standard for additional information.
7. \*\*\* Alternate exit number panel heights may be used, in accordance with the "Standard Highway Sign Designs for Texas (SHSD)."

**DEPARTMENTAL MATERIAL SPECIFICATIONS**

ALUMINUM SIGN BLANKS	DMS-7110
SIGN HARDWARE	DMS-7120

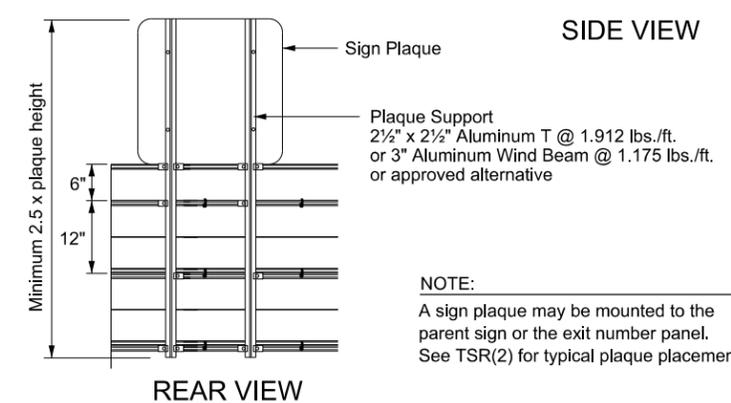
**ALUMINUM PARENT SIGN & EXIT NUMBER PANEL MOUNTING DETAILS**



**REAR VIEW**

**SIDE VIEW**

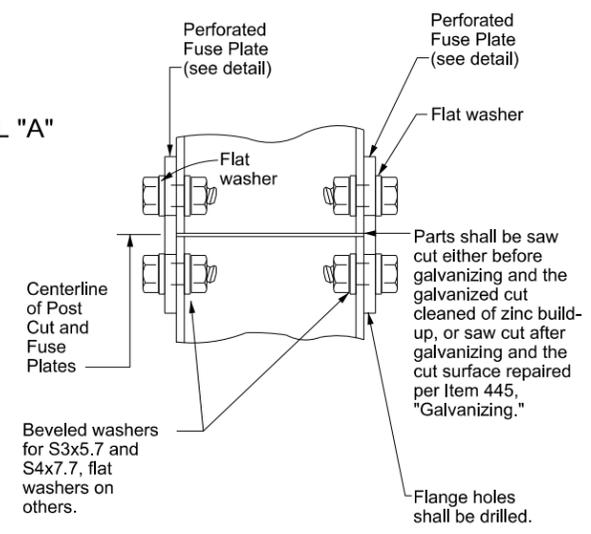
**SIGN PLAQUE MOUNTING DETAIL**



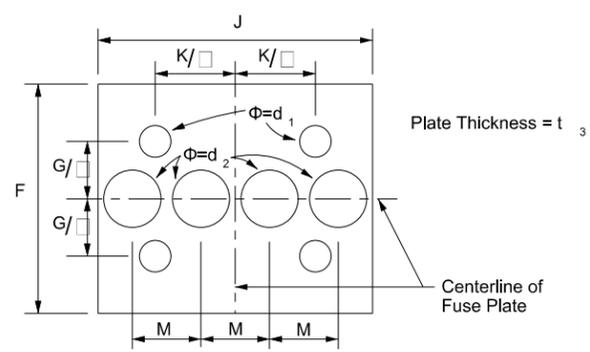
**REAR VIEW**

**NOTE:**  
 A sign plaque may be mounted to the parent sign or the exit number panel. See TSR(2) for typical plaque placement.

**DETAIL "A"**



**PERFORATED FUSE PLATE DETAIL**



**NOTE:**  
 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 Plates, contact the Traffic Safety Division.

**STRUCTURAL DATA TABLE**

DIMENSIONS	PERFORATED FUSE PLATE											
	Post Size	F	G	J	K	M	d <sub>1</sub>	d <sub>2</sub>	t <sub>3</sub>	Bolt Dia.	Wt. (ea.) (lbs.)	Bolt length
W12x26	6"	3"	6½"	3½"	1½"	1¾"	1½"	1½"	½"	¾"	4.47	2¼"
W10x22	6"	3"	5¾"	2¾"	1½"	1¾"	1½"	1½"	½"	¾"	4.03	2¼"
W8x21	5½"	2½"	5¼"	2¾"	1¼"	1¾"	1"	1"	½"	¾"	3.35	2¼"
W8x18	5"	2½"	5¼"	2¾"	1¼"	1¾"	1½"	1½"	¾"	¾"	2.26	2¼"
W6x15	5"	2½"	6"	3½"	1½"	1¾"	1¼"	1"	¾"	¾"	2.51	2¼"
W6x9	4¼"	2"	4"	2¼"	1"	1¾"	¾"	¾"	¼"	½"	1.01	1½"
S4x7.7	3¾"	1½"	2¾"	1½"	¾"	¾"	¾"	¾"	¼"	½"	0.60	1½"
S3x5.7												



**SIGN MOUNTING DETAILS  
 LARGE ROADSIDE SIGNS  
 EXTRUDED ALUMINUM**

**SMD(2-2)-24**

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8-95 9-08 5-24	REVISIONS	DIST	COUNTY	SHEET NO.
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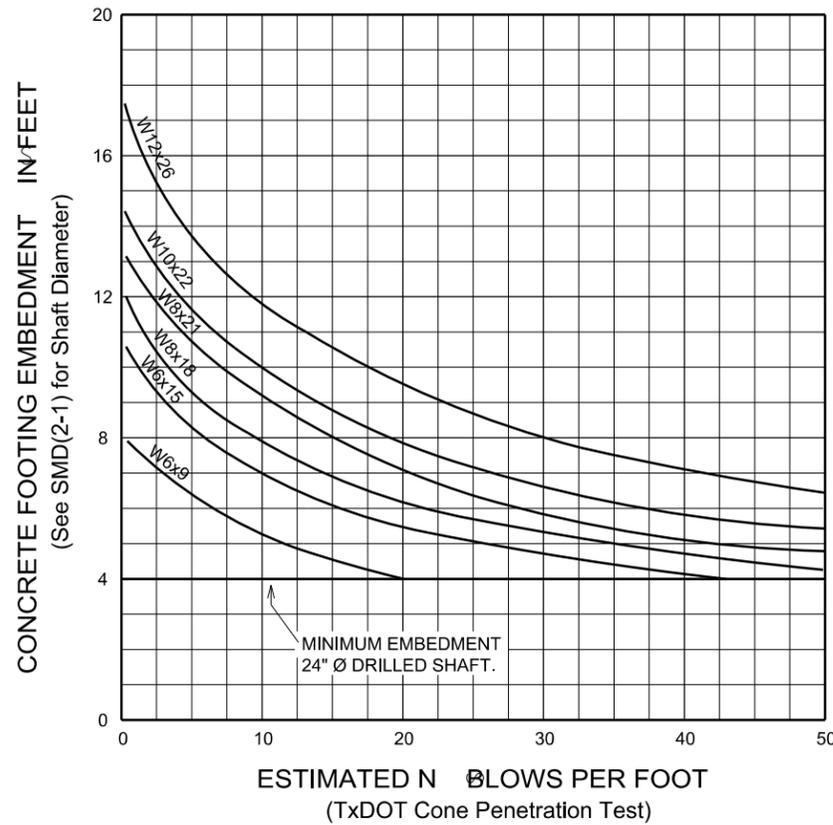


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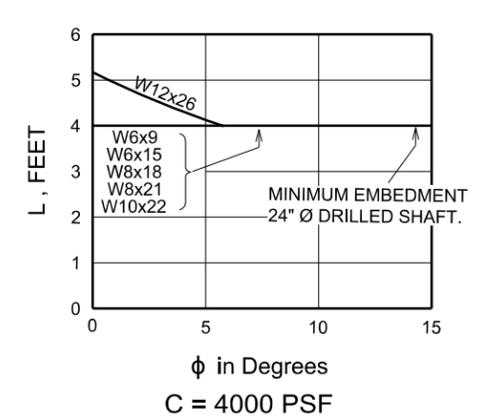
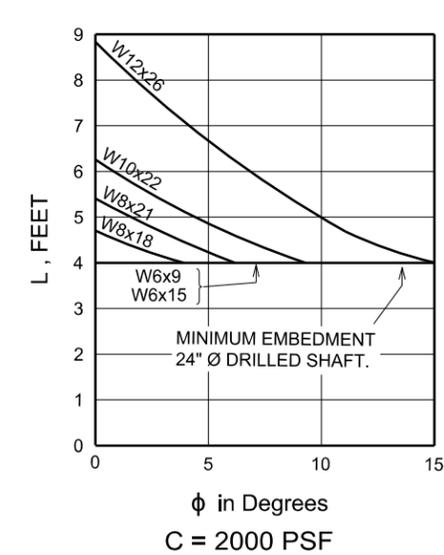
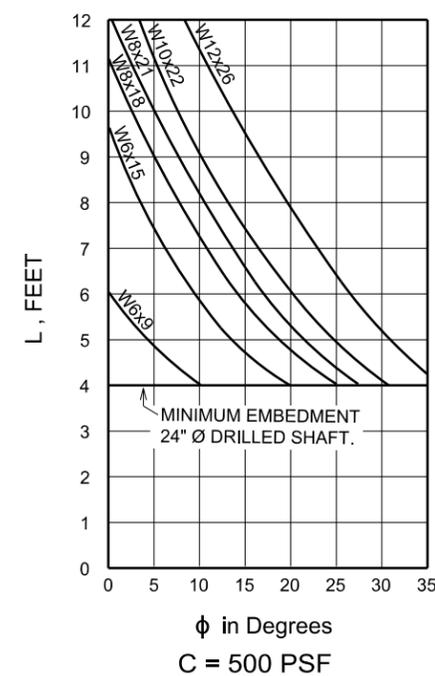
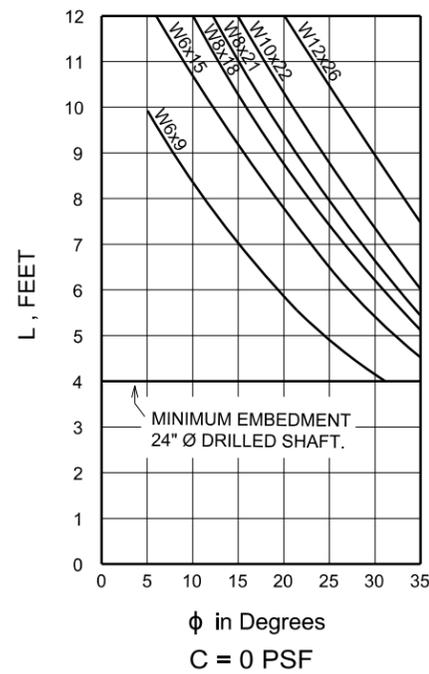
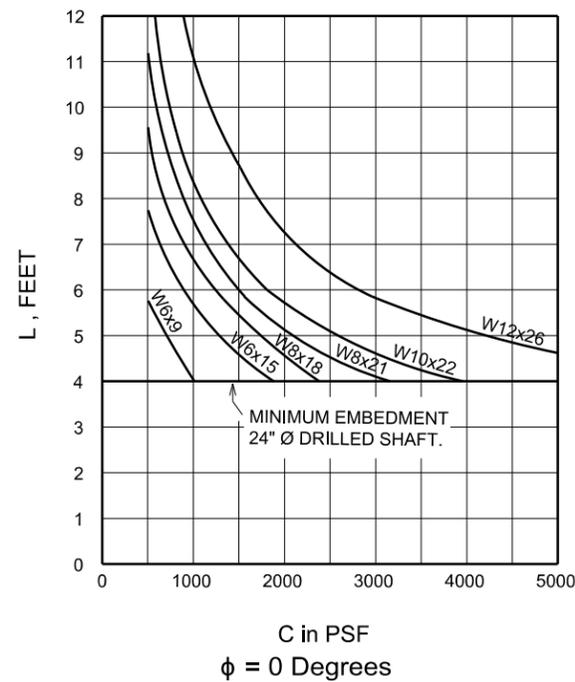
## DRILLED CONCRETE FOOTING DEPTH CHART (TxDOT PENETROMETER DESIGN)

The estimated N value should be based at approximately the upper one-third point of the drilled concrete footing below the ground line.



### GENERAL NOTES:

- Curves shown on this sheet are applicable for reinforced concrete footings only.
- Reinforced concrete footings shall use class C concrete.
- Footings for S3x5.7 and S4x7.7 post sizes shall be non-reinforced and use class A concrete. For non-reinforced concrete footings see SMD (2-1).



## DRILLED CONCRETE FOOTING DEPTH CHARTS (COHFRIC DESIGN)

These charts may be used as an alternate to the chart above, 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.

SHEET 4 OF 4



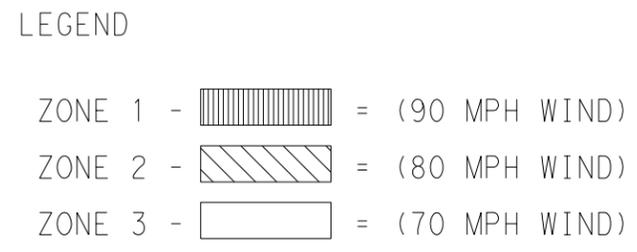
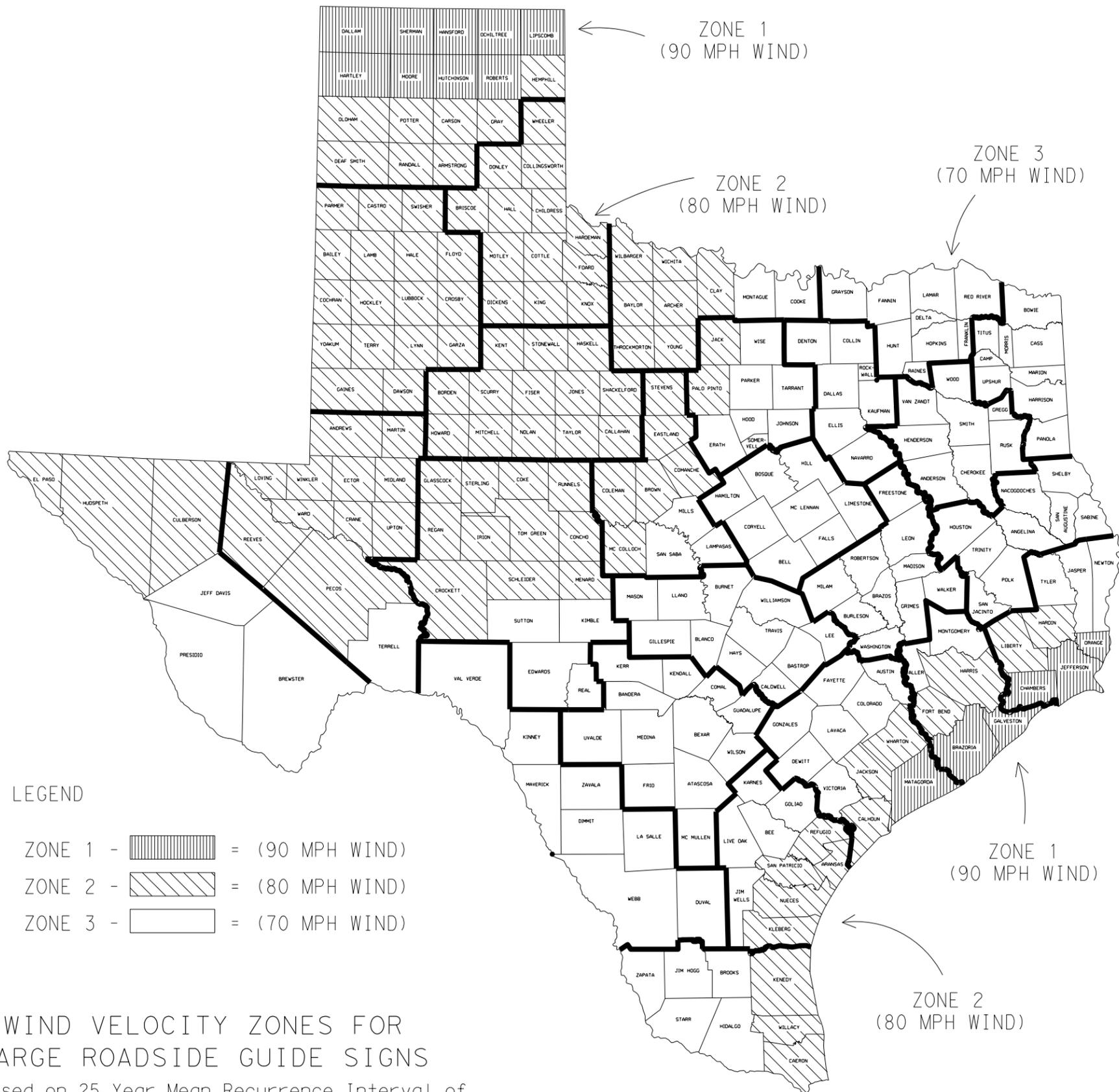
## LARGE ROADSIDE SIGN SUPPORT FOUNDATION WORKSHEET

SMD(LRSS-4)-24

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WIND VELOCITY ZONES FOR  
 LARGE ROADSIDE GUIDE SIGNS  
 Based on 25 Year Mean Recurrence Interval of  
 Fastest Mile Wind Velocity at 33 feet height.

NOTE:

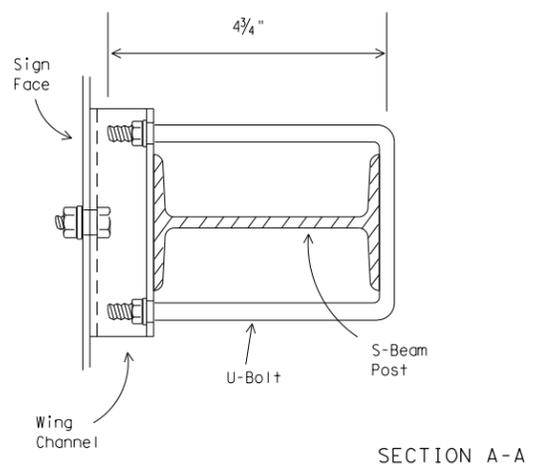
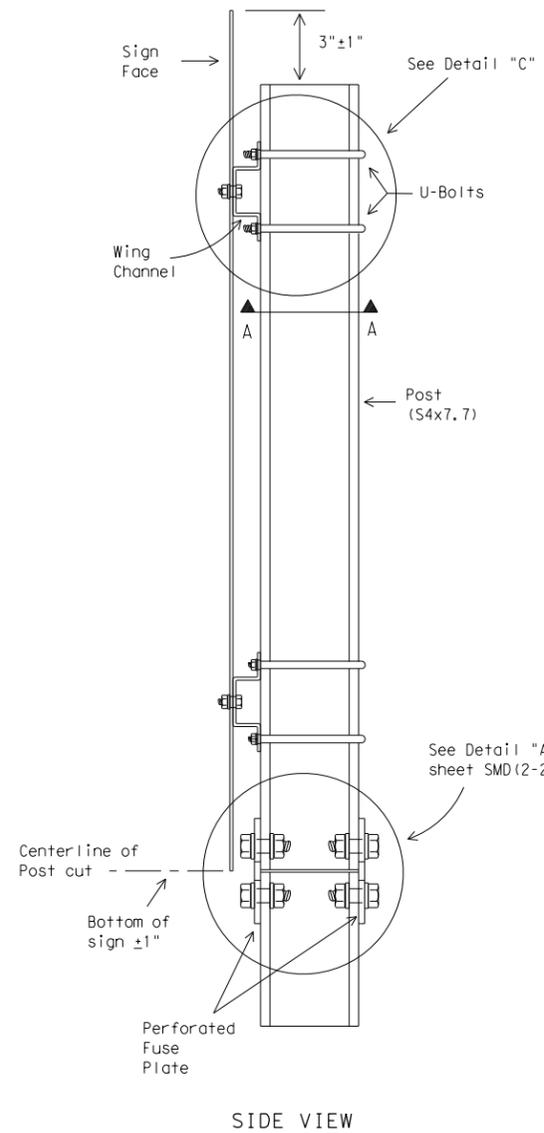
1. THIS SHEET IS A WORKSHEET FOR PLAN PREPARATION ONLY. IT IS NOT TO BE INCLUDED IN P.S. & E'S.
2. SHEET NO. 30 CONTAINS ONLY THE MAP PERTAINING TO THE APPLICABLE STANDARD SHEETS LISTED THEREON AND SHALL BE INCLUDED IN ALL P.S.&E. PACKAGES CONTAINING ONE OR MORE OF THESE STANDARD SHEETS.

<b>Texas Department of Transportation</b>				<b>Traffic Operations Division Standard</b>	
<b>WIND VELOCITY WORKSHEET</b>					
FILE:	windwk2.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
© TxDOT	April 1996	CONT	SECT	JOB	HIGHWAY
8-14-	REVISIONS Removed 50 Year Mean Recurrence Interval map which was a duplicate of the map on the W & 12 standard sheet.	0683	03	045	RM 12
DIST	COUNTY	SHEET NO.			
AUS	HAYS	87			

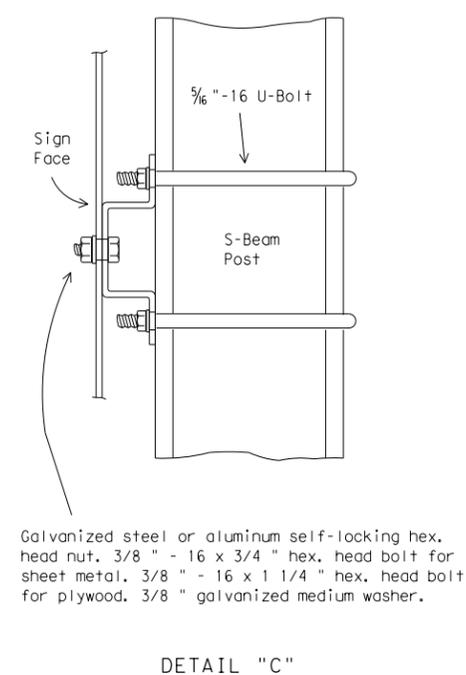
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DATE: 1/27/2026 1:05:20 PM  
 FILE: G:\TXDOT\Projects\County\Hays\7083-00\*RM 12 Turn Lanes\03\*CADD\01\*SHts\08-SPMD\Std.smd\tyg08.dgn

# WING CHANNEL CLAMP DETAIL FOR TYPE G MOUNT

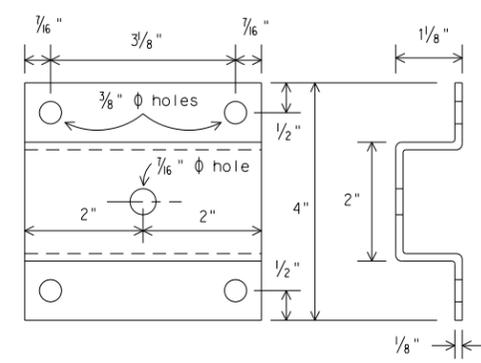


SECTION A-A



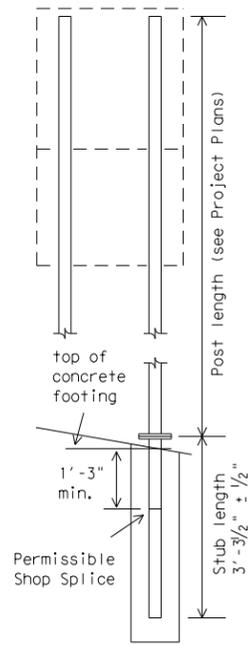
Galvanized steel or aluminum self-locking hex. head nut. 3/8" - 16 x 3/4" hex. head bolt for sheet metal. 3/8" - 16 x 1 1/4" hex. head bolt for plywood. 3/8" galvanized medium washer.

DETAIL "C"



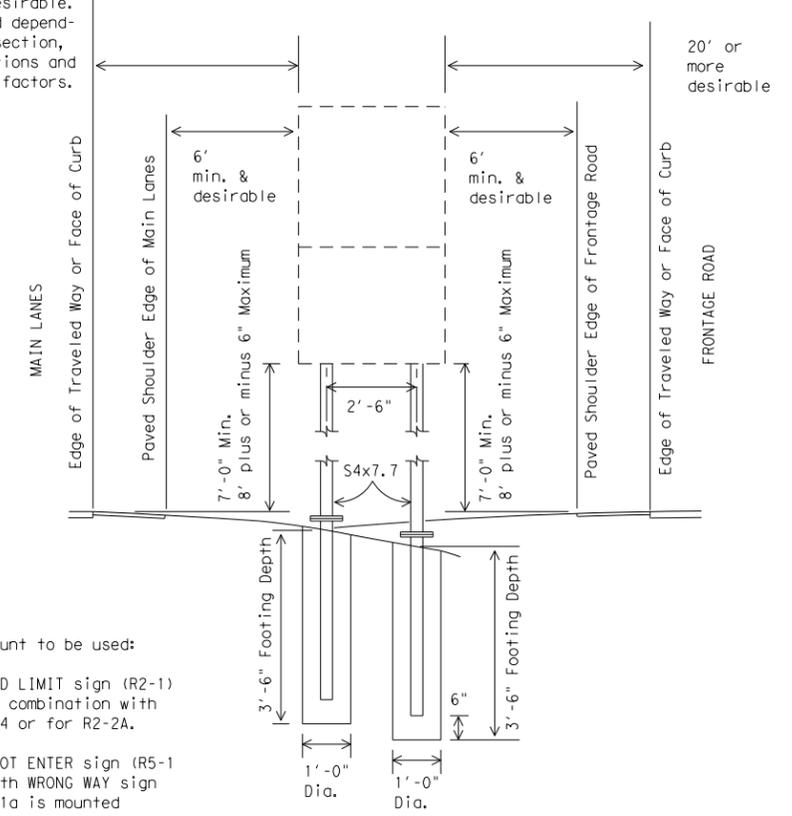
WING CHANNEL

Wing channel, 4" width x 1/8" depth x 1/8" thickness, shall be aluminum (ASTM B221 6061-T6 or B308 6061-T6), galvanized steel (ASTM A36) or stainless steel (ASTM A167 type 304, No. 2B finish).



The weight of one S4x7.7 post is equal to 112.2 lbs. plus 7.7 lbs./ft x (post length in feet minus 10 ft). The weight of 112.2 lbs. includes 10 feet of post length, post foundation stub, related connection plates, friction fuse plate, and all high strength bolts, nuts and washers.

30' or more desirable. May be reduced depending on cross section, viewing conditions and other related factors.



This type mount to be used:  
 (1) For SPEED LIMIT sign (R2-1) when used in combination with R2-2 and R2-4 or for R2-2A.  
 (2) For DO NOT ENTER sign (R5-1) when used with WRONG WAY sign (R5-1a). R5-1a is mounted above R5-1.

DEPARTMENTAL MATERIAL SPECIFICATIONS		DMS-7120
SIGN HARDWARE		

- 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."
  - 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." (Cut surface will not be treated until plate is installed and all bolts fully tightened.)



## SIGN MOUNTING DETAILS, TYPE G SUPPORT

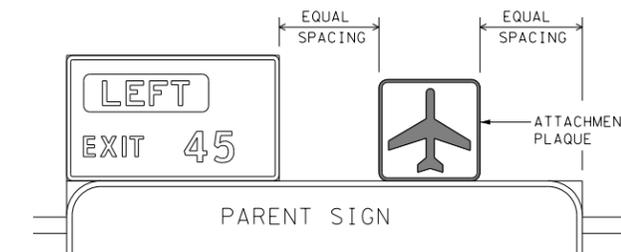
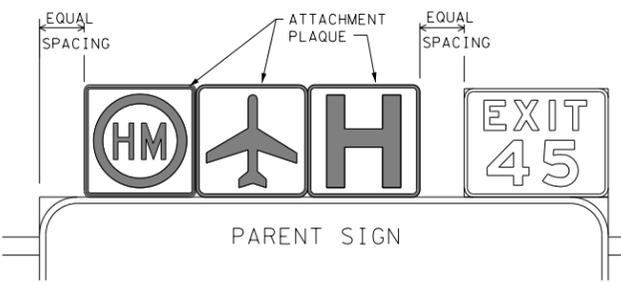
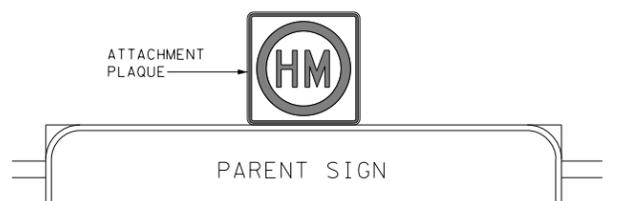
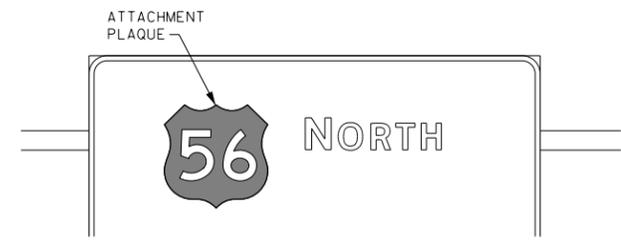
SMD(TY G)-08

© TxDOT August 1995		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS					
1-97	0683	03	045	RM	12
9-08					
DIST		COUNTY		SHEET NO.	
AUS		HAYS		88	



# REQUIREMENTS FOR ATTACHMENTS TO OVERHEAD AND LARGE GROUND MOUNTED SIGNS

DATE: 1/27/2026 1:05:22 PM  
 FILE: G:\TXC\Projects\County\_Hays\7083-00\_RM 12 Turn\_Lanes\03\_CADD\01\_Shts\08-Attachment\01.dwg  
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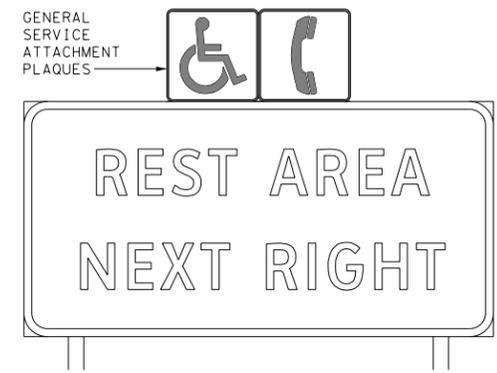
TYPICAL EXAMPLES

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	ALL	TYPE B OR C SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & BORDERS	ALL OTHERS	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).
- Route Marker legends (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.
- 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 and borders shall be applied by screening process with transparent colored ink, transparent colored overlay film or colored sheeting to white background sheeting, or combination thereof.
- Route markers and other attachments within the parent sign face shall be direct applied unless otherwise specified in the plans. Attachments not direct applied shall use 0.063 inch thick one piece sheet aluminum signs (Type A).
- General Service Plaques shall be 0.080 inch thick and Routing Plaques shall be 0.100 inch thick.
- The priority for Routing Plaques shall be (left to right) Hazardous Material, Airport then Hospital. See examples for mounting location.
- Mounting details of attachments to parent signs face are shown on Standard Plan Sheet TSR(5). Mounting details of sign plaque attachments above and below parent sign are shown in the "SMD series" Standard Plan Sheets.
- Plaques shall be horizontally centered at the top of the parent sign. If an exit number panel exists, the plaque shall be centered between the edge of the parent sign and the edge of the exit number panel. The plaque may be placed above the exit number panel when there is insufficient space.



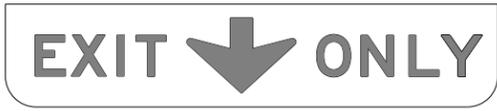
# REQUIREMENTS FOR EXIT ONLY AND LEFT EXIT PANELS

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

SHEETING REQUIREMENTS FOR OVERHEAD EXIT PANELS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	FLUORESCENT YELLOW	TYPE B <sub>FL</sub> OR C <sub>FL</sub> SHEETING
LEGEND	BLACK	ACRYLIC NON-REFLECTIVE FILM

### 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). Individual panel sizes shown in the plans may be adjusted to fit actual parent sign sizes if necessary.
- Exit Panel legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets E Series.
- 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 shall be applied by screening process or cut-out acrylic non-reflective black film to yellow background sheeting, or combination thereof.
- Exit Only and Left Exit panels within the parent sign face shall be direct applied unless otherwise specified in the plans. Panels not direct applied shall use 0.063 inch thick one piece sheet aluminum signs (Type A).
- Mounting details of Exit Only and Left Exit panel attachments to parent signs face are shown on Standard Plan Sheet TSR(5).



TYPICAL EXAMPLES

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

Texas Department of Transportation
Traffic Operations Division Standard

## TYPICAL SIGN REQUIREMENTS

### TSR(2) - 13

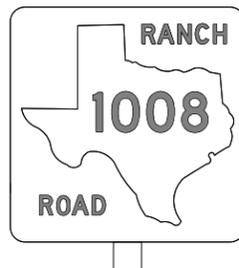
FILE: tsr2-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	0683	03	045	RM 12
12-03 7-13	DIST	COUNTY		SHEET NO.
9-08	AUS	HAYS		90

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## REQUIREMENTS FOR INDEPENDENT MOUNTED ROUTE SIGNS

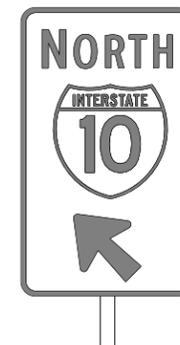
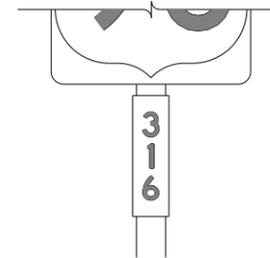
SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE A SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & BORDERS	ALL OTHERS	TYPE B or C SHEETING



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/>

				<b>Traffic Operations Division Standard</b>	
<h3>TYPICAL SIGN REQUIREMENTS</h3> <h4>TSR(3) - 13</h4>					
FILE:	tsr3-13.dgn	DN:	TxDOT	CK:	TxDOT
©TxDOT	October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS		0683	03	045	RM 12
12-03	7-13	DIST	COUNTY	SHEET NO.	
9-08		AUS	HAYS	91	

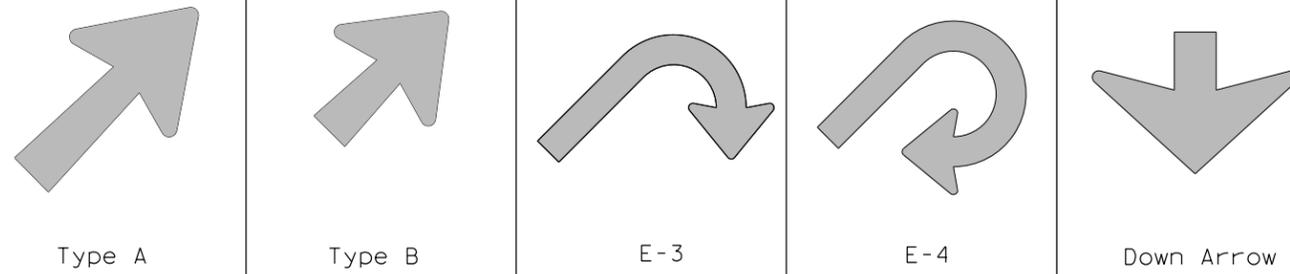


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### ARROW DETAILS

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

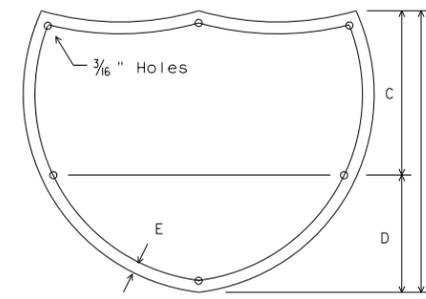
**NOTE**

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.

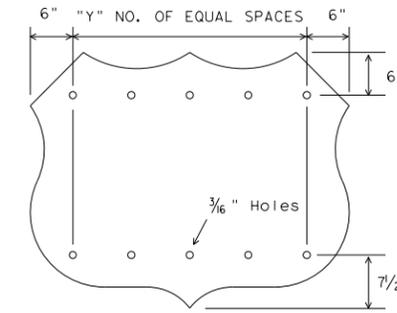
<http://www.txdot.gov/>

### SIGN BLANK PUNCHING DETAILS FOR ATTACHMENTS WHEN SPECIFIED TO BE TYPE A ALUMINUM SIGNS (FOR MOUNTING TO GUIDE SIGN FACE)



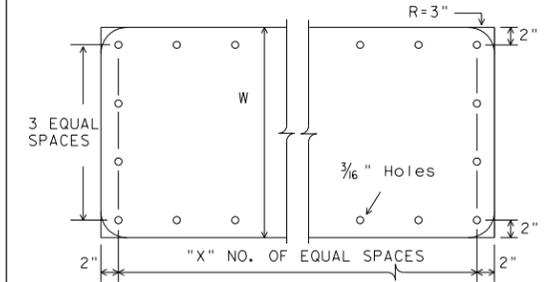
INTERSTATE ROUTE MARKERS

A	C	D	E
36	21	15	1 1/2
48	28	20	1 3/4



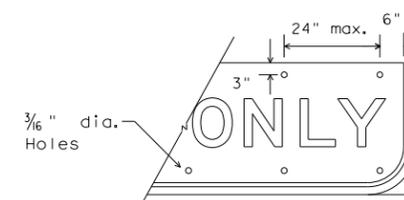
U.S. ROUTE MARKERS

Sign Size	"Y"
24x24	2
30x24	3
36x36	3
45x36	4
48x48	4
60x48	5



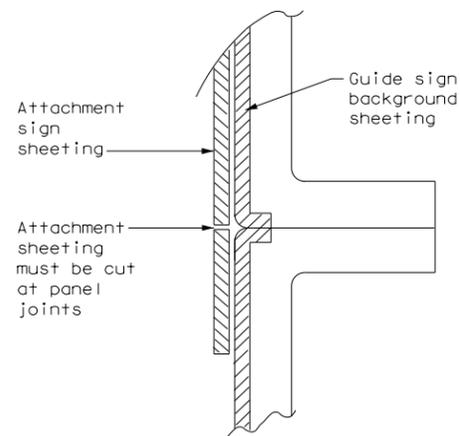
STATE ROUTE MARKERS

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

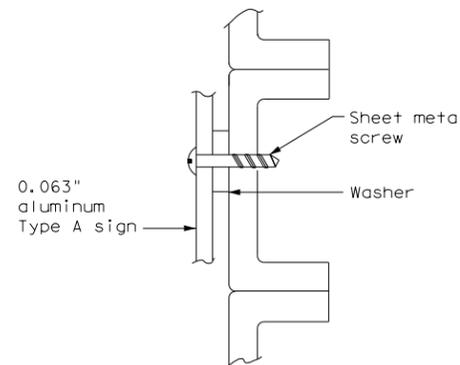
### MOUNTING DETAILS OF ATTACHMENTS TO GUIDE SIGN FACE ("EXIT ONLY" AND "LEFT EXIT" PANELS, ROUTE MARKERS AND OTHER ATTACHMENTS)



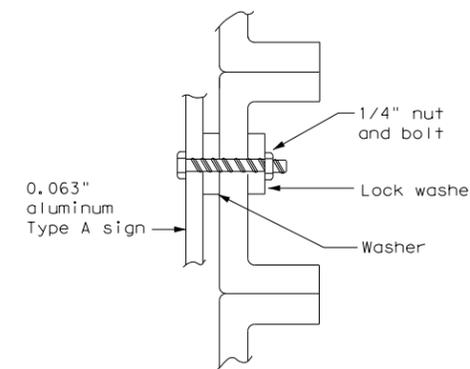
DIRECT APPLIED ATTACHMENT

**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".



SCREW ATTACHMENT

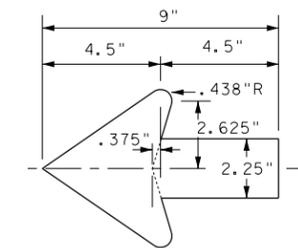


NUT/BOLT ATTACHMENT

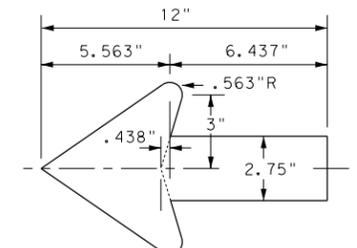
**NOTE:**

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		0683	03	045	RM 12				
12-03	7-13	DIST	COUNTY	SHEET NO.					
9-08		AUS	HAYS	93					

**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.

For all projects with soil disturbing activity and for projects that have Environmental, Permits, Issues, and Commitments (EPICs) dependent on stormwater controls and water quality measures TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office, Area Office, or electronically.

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):**  
0683-03-045

**1.2 PROJECT LIMITS:**

From: 1210 FEET SOUTH OF SKYLINE DRIVE

To: 1025 FEET NORTH OF SKYLINE DRIVE

**1.3 PROJECT COORDINATES:**

BEGIN: (Lat) 30.032139°, (Long) -98.101444°

END: (Lat) 30.038028°, (Long) -98.102739°

**1.4 TOTAL PROJECT AREA (Acres):** 6.99

**1.5 TOTAL AREA TO BE DISTURBED (Acres):** 4.91

**1.6 NATURE OF CONSTRUCTION ACTIVITY:**

REHABILITATION OF EXISTING ROADWAY AND REALIGNMENT OF INTERSECTION.

**1.7 MAJOR SOIL TYPES:**

Soil Type	Description
BiG--Brackett-Rock outcrop-Real complex, 8 to 30% slopes	STA 3+40 to STA 25+75; 75% Clay loam, 25% rock/gravel outcrop; well drained, high rate of runoff, and moderate to high erosion potential.

**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
There is not a flow path to a classified or unclassified waterbody segment within the limits of the project.	

\* 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



**STORMWATER POLLUTION PREVENTION PLAN (SWP3)**

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STATE	STATE DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0683	03	045	RM 12	

**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: Grassy Swales
- 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
Grassy Swales	STA 18+90 RT	STA 25+75 RT

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:**

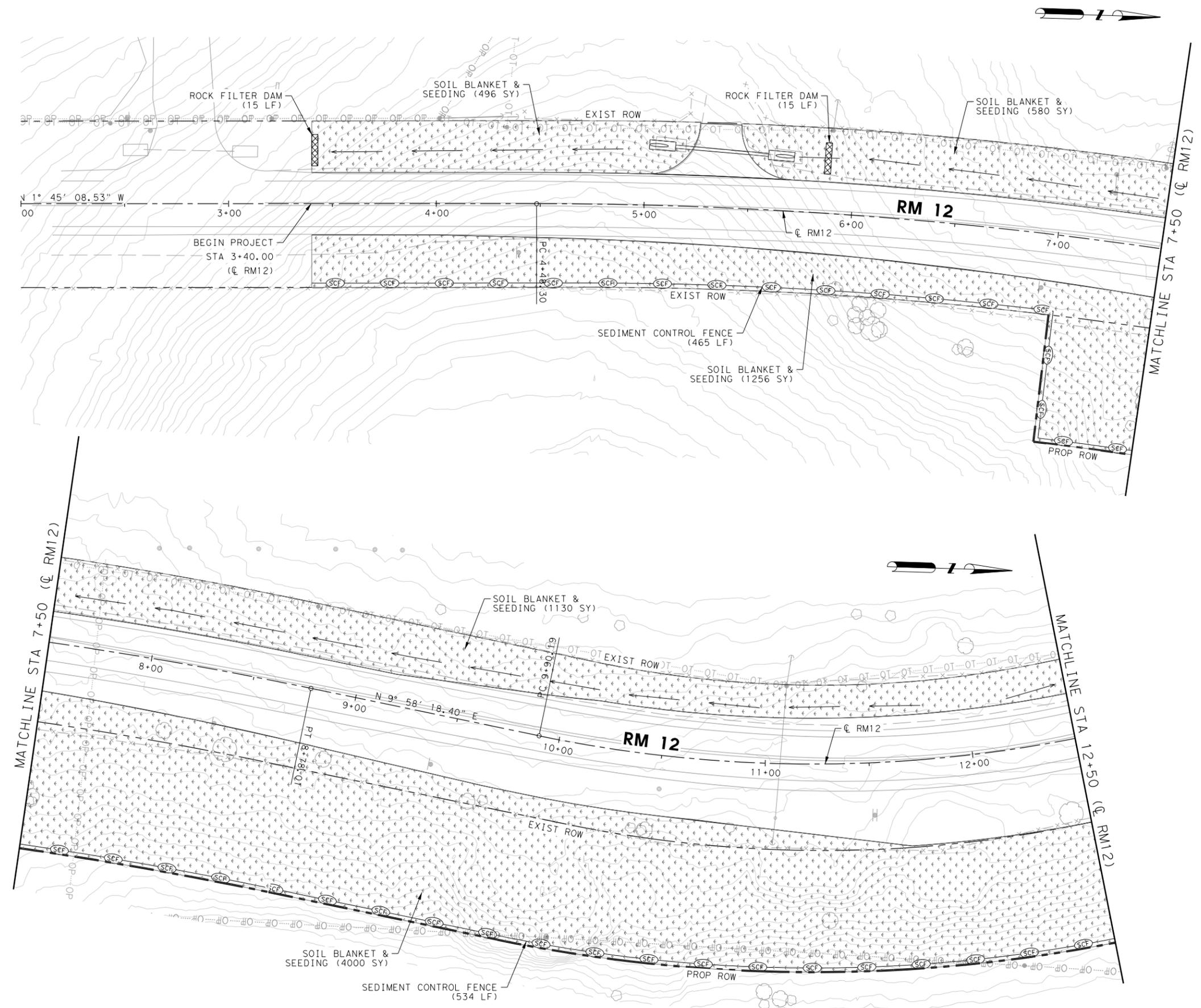
Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being 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.



**STORMWATER POLLUTION PREVENTION PLAN (SWP3)**

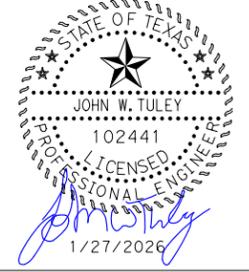
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				95
STATE	STATE DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
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**LEGEND:**

-  SEDIMENT CONTROL FENCE
-  ROCK FILTER DAM
-  DITCH FLOW DIRECTION
-  FLOW ARROWS
-  SEEDING



**HAYS COUNTY**  
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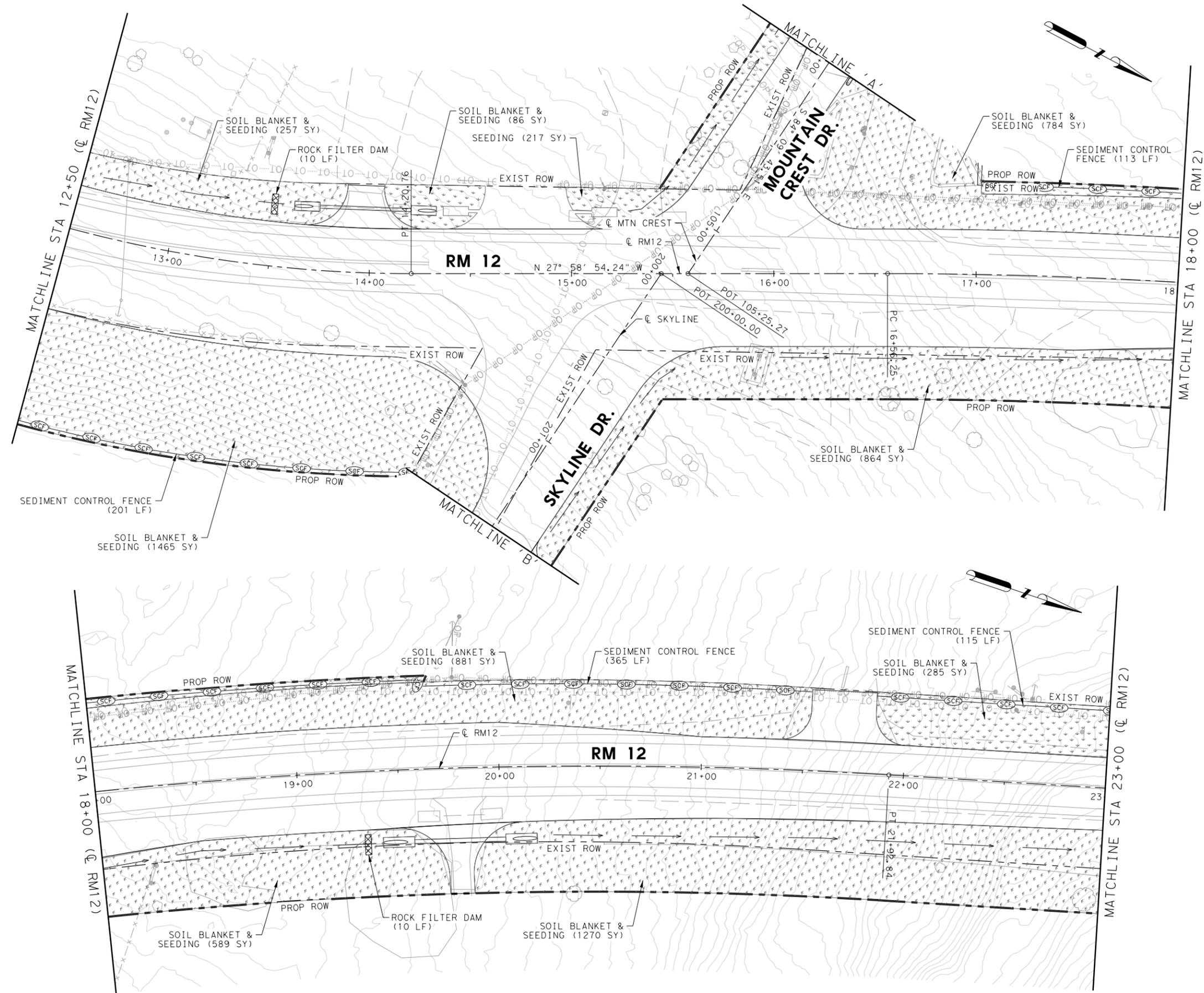
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**RM 12**  
**SW3P LAYOUT**

SHEET 1 OF 4

FED. RD. DIV. NO. 14	PROJECT NO.			SHEET NO. 96
STATE TEXAS	DIST. AUS	COUNTY HAYS		
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**LEGEND:**

- SEDIMENT CONTROL FENCE
- ROCK FILTER DAM
- DITCH FLOW DIRECTION
- FLOW ARROWS
- SEEDING



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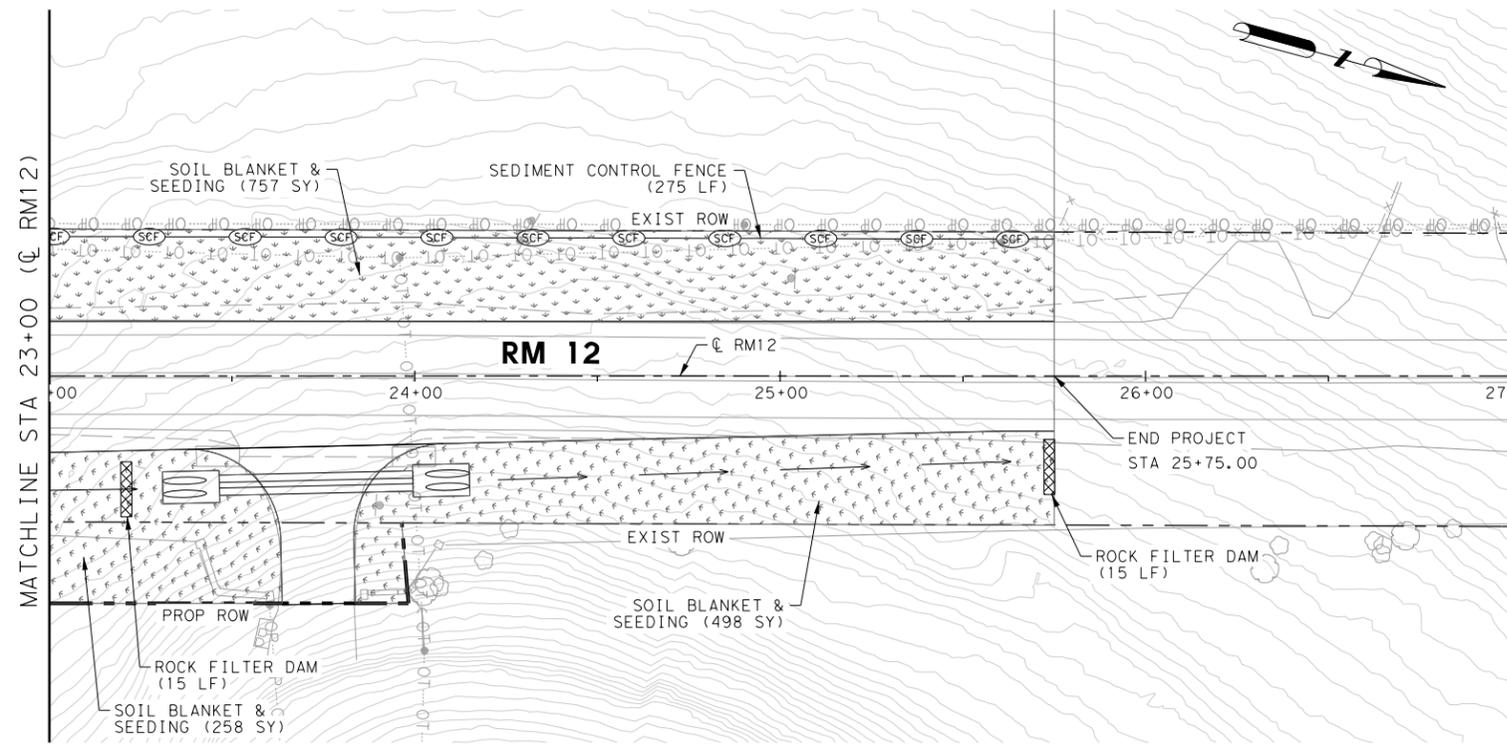


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**RM 12**  
**SW3P LAYOUT**

SHEET 2 OF 4

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				97
STATE	DIST.	COUNTY		
TEXAS	AUS	HAYS		
CONT.	SECT.	JOB	HIGHWAY NO.	
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**LEGEND:**

- SEDIMENT CONTROL FENCE
- ROCK FILTER DAM
- DITCH FLOW DIRECTION
- FLOW ARROWS
- SEEDING



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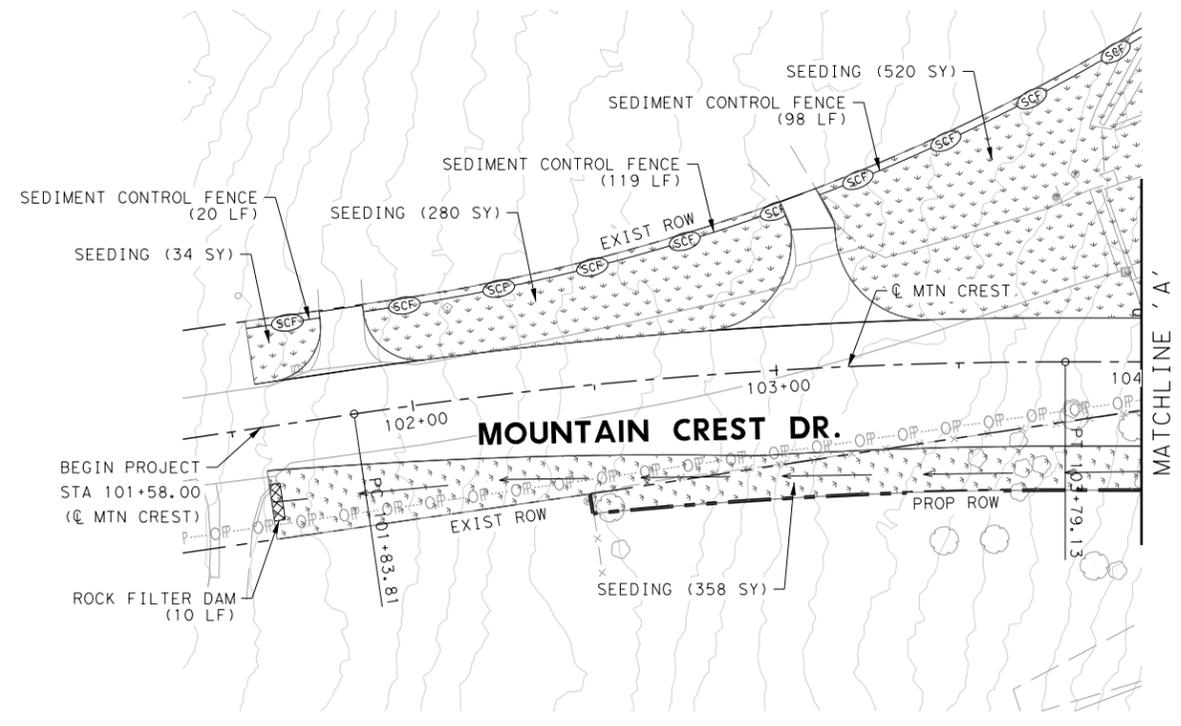
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**RM 12**  
**SW3P LAYOUT**

SHEET 3 OF 4

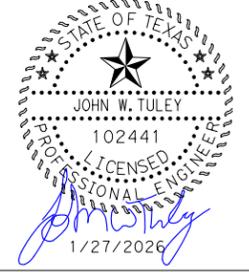
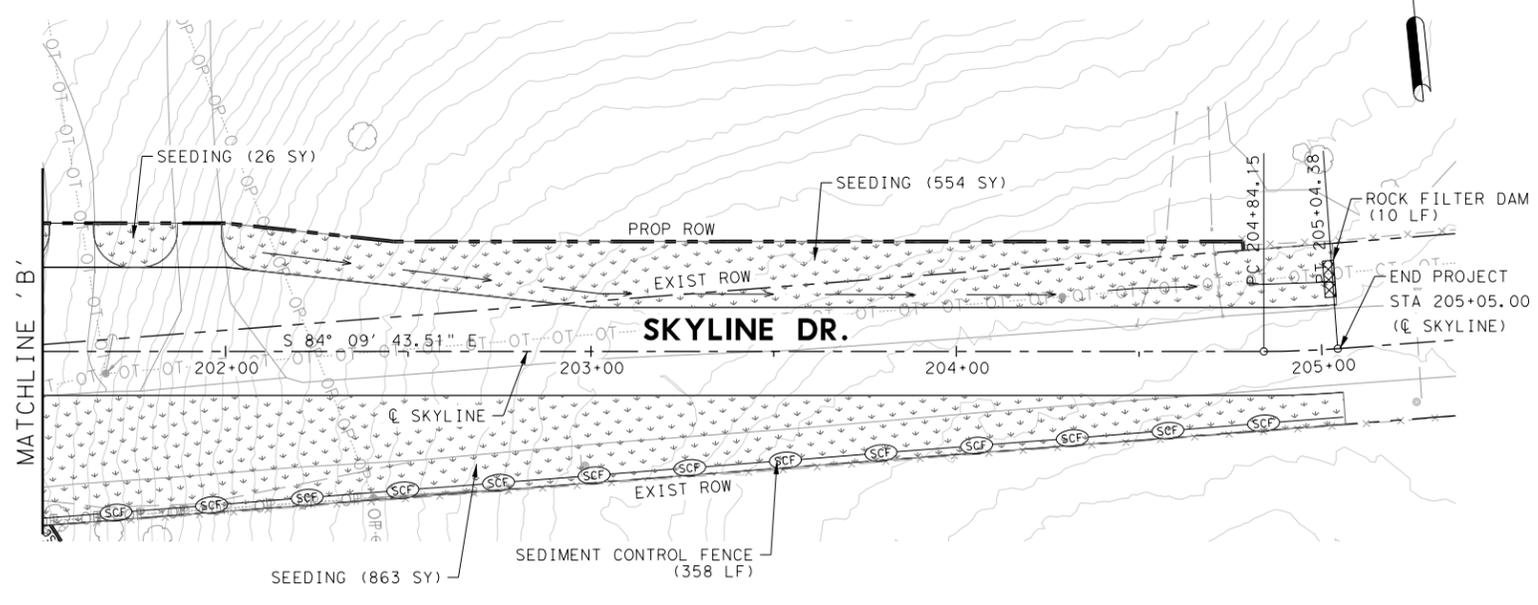
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**LEGEND:**

-  SEDIMENT CONTROL FENCE
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-  DITCH FLOW DIRECTION
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**RM 12**  
**SW3P LAYOUT**

SHEET 4 OF 4

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
14				
STATE	DIST.	COUNTY		99
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**I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402**

- 1.  It is not anticipated that any erosion, sedimentation, or environmental control devices will be needed on this project. The Contractor must still implement appropriate practices to prevent pollution from construction activities from reaching waters of the state. If it becomes necessary to implement control devices, payment for that work must be in accordance with Item 506 Article 4.4, "Change in the Work".
- 2.  The project will disturb less than 1 acre of soil and has EPICs that require the implementation of erosion, sedimentation, or environmental control devices. The SWP3 summary sheet and associated plan information has been developed and included in the plans. Additional documentation must be maintained during construction in accordance with Department policy.
- 3.  The project will disturb 1 acres or more of soil therefore requires the implementation of erosion, sedimentation, or environmental control devices. The SWP3 summary sheet and associated plan information has been developed and included in the plans. Additional documentation must be maintained during construction in accordance with Department policy and Texas Commission on Environmental Quality Construction General Permit (TXR150000) requirements.

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**

- 1.  No Permit Required
- 2.  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):
  - 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)
  - Other Nationwide Permit Required: NWP#
  - Individual Standard Permit Required

The SWP3 describes the BMPs planned to control erosion, sedimentation and post-project TSS.

The following lists the impacted water, its stationing, planned disturbed acreage, and additional notes:

- 1.

**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.

Additional Required Actions:

- 1.
- 2.
- 3.
- 4.

**IV. VEGETATION RESOURCES**

The Contractor must preserve native vegetation to the extent practical. Follow vegetative buffers defined in the SWP3 for work adjacent to water bodies. 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.

Additional Required Actions:

- 1.
- 2.
- 3.

**V. PROTECTED SPECIES AND MIGRATORY BIRDS**

The work must 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. Do not disturb or handle bats found under bridges and other structures. Do not harm or kill wildlife that enters the project area, including rattlesnakes. Implement measures to avoid infesting water bodies with zebra mussels, including inspecting equipment prior to placing in water and clean, drain, dry practices.

If any listed species are observed, cease work in the immediate area, do not disturb the species or habitat, and contact the Engineer immediately.

Additional Required Actions:

- 1.
- 2.
- 3.
- 4.

**LIST OF ABBREVIATIONS**

BMP: Best Management Practice  
 CGP: Construction General Permit  
 DSHS: Texas Department of State Health Services  
 FHWA: Federal Highway Administration  
 MBTA: Migratory Bird Treaty Act

MOA: Memorandum of Agreement  
 MOU: Memorandum of Understanding  
 MS4: Municipal Separate Stormwater Sewer System  
 NOI: Notice of Intent  
 NOT: Notice of Termination

NWP: Nationwide Permit  
 OHWM: Ordinate High Water Mark  
 OSHA: Occupational Safety and Health Administration  
 PCN: Pre-Construction Notification  
 PSL: Project Specific Location

SDS: Safety Data Sheet  
 SPCC: Spill Prevention Control and Countermeasure  
 SW3P: Stormwater Pollution Prevention Plan  
 TCEQ: Texas Commission on Environmental Quality  
 TPDES: Texas Pollutant Discharge Elimination System

TPWD: Texas Parks and Wildlife Department  
 TxDOT: Texas Department of Transportation  
 TSS: Total Suspended Solids  
 USACE: U.S. Army Corps of Engineers  
 USFWS: U.S. Fish and Wildlife Service

<b>Design Division Standard</b>				
ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS  EPIC				
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## VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

For all projects the Contractor will comply with the OSHA Hazard Communication Standard (29 CFR 1910.1200) 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 Safety Data Sheets (SDS) 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 bareground and covered, for products which may be hazardous. Maintain product labelling as required by the Act. Pollutant housekeeping is also required in accordance with items listed in Section I of this EPIC sheet.

Maintain an adequate supply of on-site spill response materials, as indicated in the SDS. 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.

Responsibility for Hazardous Materials: Except in cases where the generation of hazardous materials are introduced by the Contractor on any work done by the Contractor on State-owned or controlled sites, the Contractor is not the generator of hazardous materials indentified in the ROW as shown in the plans or as discovered during construction.

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

The following list identifies non-asbestos/lead contamination or waste issues (location, contamination/waste type, if a soil and groundwater management plan applies, and any additional notes)

- 1.
- 2.
- 3.

Demolition Activities - Does the project involve the demolition of any bridge class structure (not including buried culverts) for the purpose of replacement or permanent removal?

1.  No - no further action required for demolition activities
2.  Yes - the Contractor must provide the dates for demolition to the Engineer at least 30 days in advance, to allow the Department sufficient time to prepare and submit the pre-demolition notification to the DSHS at least 10 working days prior to the scheduled demolition.

Asbestos Concerns:

1.  The project does not involve any bridge rehabilitation or replacements. No further action required for bridge asbestos concerns.
2.  The project involves bridge rehabilitation or replacements. The asbestos inspection results are negative. No abatement action is required.
3.  The project involves bridge rehabilitation or replacements. The asbestos inspection results are positive and asbestos abatement is required.  
The asbestos is located at the following (structure ID and station):

Location 1.

Location 2.

Location 3.

For positive asbestos results, the following action will apply:

- The Department has retained a DSHS licensed asbestos abatement contractor under a separate contract to perform the abatement, provide DSHS abatement notification, and perform asbestos management activities. This work must occur prior to the Contractor commencing any work that might disturb asbestos.
- The Department has included the work to perform the abatement, provide DSHS abatement notification, and perform asbestos management activities in this contract under Item 6.10 and related Special Provision and Special Specification. The Contractor must perform abatement work prior to commencing any work that might disturb asbestos.

Lead Paint Concerns - The project involves demolition or repair work that could require cutting, torch cutting, welding, or abrasive blasting of painted steel.

1.  No - no further action required for lead paint concerns
2.  Yes - the lead paint inspection results are negative. No action required for lead paint concerns.
3.  Yes - the lead paint inspection results are positive. Lead is at the following locations and concentrations:  

Location (location/structure ID)	Concentration (ppm)
Location 1.	
Location 2.	
Location 3.	

For positive lead results, the following action will apply:

- The work is under Item 446 (Field Cleaning & Painting Steel), management of hazardous materials is addressed in the specification and additional mitigation is not required.
- The lead concentration of the coating is known to be less than 90 ppm (Consumer Product Safety Commission threshold for paint to be designated as lead-containing), additional mitigation is not required.
- Mitigation for lead hazards is required in accordance with OSHA. The Contractor must provide mitigation as part of this contract. Mitigation may include stripping back of paint from steel at cut points or other areas where paint will be disturbed. The Contractor may select other OSHA-compliant controls or work practices instead of paint stripping to mitigate lead hazards. Manage painted steel in accordance with Standard Specification Item 6.10, Painted Steel Requirements.
- Mitigation for lead hazards is required in accordance with OSHA. The Department will provide lead paint removal. The Contractor must notify the Engineer of locations where paint-disturbing activities will occur at least 90 days prior to the work, to allow sufficient time for the Department to remove the paint. Manage painted steel in accordance with Standard Specification Item 6.10, Painted Steel Requirements.

## VII. OTHER ENVIRONMENTAL ISSUES

(includes program areas such as Air, Noise, Edwards Aquifer Protection Program, etc.)

Additional Required Actions:

1. The project is located on the Edwards Aquifer Contributing Zone. A TCEQ CZP approval letter must be obtained for the project before any soil disturbing activities may occur.
2. Comply with the CZP approval letter.
3. Maintain copies of the CZP and CZP approval letter onsite or immediately available during construction.
- 4.

### LIST OF ABBREVIATIONS

BMP: Best Management Practice  
 CGP: Construction General Permit  
 DSHS: Texas Department of State Health Services  
 FHWA: Federal Highway Administration  
 MBTA: Migratory Bird Treaty Act

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SDS: Safety Data Sheet  
 SPCC: Spill Prevention Control and Countermeasure  
 SW3P: Stormwater Pollution Prevention Plan  
 TCEQ: Texas Commission on Environmental Quality  
 TPDES: Texas Pollutant Discharge Elimination System

TPWD: Texas Parks and Wildlife Department  
 TxDOT: Texas Department of Transportation  
 TSS: Total Suspended Solids  
 USACE: U.S. Army Corps of Engineers  
 USFWS: U.S. Fish and Wildlife Service

SHEET 2 OF 2



Design  
Division  
Standard

# ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS EPIC

FILE: epic.dgn	DN:	CK: KM	DW: CES	CK:
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REVISIONS		0683	03	045
	DIST	COUNTY		SHEET NO.
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1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any ground disturbance or construction activities. This notice must include:
  - the name of the approved project;
  - the activity start date; and
  - the contact information of the prime contractor.
2. All contractors conducting regulated activities associated with this project should be provided with complete copies of the approved Contributing Zone Plan (CZP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractor(s) should keep copies of the approved plan and approval letter on-site.
3. No hazardous substance storage tank shall be installed within 150 feet of a water supply source, distribution system, well, or sensitive feature.
4. Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the manufacturers specifications. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. These controls must remain in place until the disturbed areas have been permanently stabilized.
5. Any sediment that escapes the construction site must be collected and properly disposed of before the next rain event to ensure it is not washed into surface streams, sensitive features, etc.
6. Sediment must be removed from the sediment traps or sedimentation basins when it occupies 50% of the basin's design capacity.
7. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from being discharged offsite.
8. All excavated material that will be stored on-site must have proper E&S controls.
9. If portions of the site will have a cease in construction activity lasting longer than 14 days, soilstabilization in those areas shall be initiated as soon as possible prior to the 14th day of inactivity. If activity will resume prior to the 21st day, stabilization measures are not required. If drought conditions or inclement weather prevent action by the 14th day, stabilization measures shall be initiated as soon as possible.
10. The following records should be maintained and made available to the TCEQ upon request:
  - the dates when major grading activities occur;
  - the dates when construction activities temporarily or permanently cease on a portion of the site; and
  - the dates when stabilization measures are initiated.
11. The holder of any approved CZP must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:
  - A. any physical or operational modification of any best management practices (BMPs) or structure(s), including but not limited to temporary or permanent ponds, dams, berms, silt fences, and diversionary structures;
  - B. any change in the nature or character of the regulated activity from that which was originally approved;
  - C. any change that would significantly impact the ability to prevent pollution of the Edwards Aquifer; or
  - D. any development of land previously identified as undeveloped in the approved contributing zone plan.

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 Phone: (512) 339-2929  
 Fax: (512) 339-3795

 <b>Texas Department of Transportation</b>		<b>Austin District Standard</b>		
<p><b>TCEQ REQUIREMENTS FOR THE CONTRIBUTING ZONE OF THE EDWARDS AQUIFER</b>          (DISTURBING 5 OR MORE ACRES)</p> <p><b>TCEQ-CZ-19(AUS)</b></p>				
©TXDOTS YEAR\$	CONT	SECT	JOB	HIGHWAY
REVISIONS	0683	03	045	RM 12
01/10/14: REQUIREMENTS AND ADDRESS UPDATED	DIST	COUNTY		SHEET NO.
01/21/16: REQUIREMENTS UPDATED	AUS	HAYS		102
09/24/19: UPDATED RELEASE YEAR				

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- VOID GREATER THAN SIX INCHES ACROSS IN ANY DIRECTION AND/OR
- VOID IS GREATER THAN ONE SQUARE FOOT ALONG ANY PLANE AND/OR
- VOID BLOWS AIR AND/OR
- VOID CONTINUALLY RECEIVES WATER DURING A RAIN EVENT AND/OR
- VOID HAS WATER FLOWING THROUGH OR OUT OF IT AND/OR

1. USING EXPLOSIVES IS NOT ALLOWED.
2. THE PROJECT AREA IS A KNOWN KARST AREA. FRACTURED MATERIAL, BOULDERS, UNDERGROUND VOIDS, GROUNDWATER, UNSTABLE MATERIAL, AND DRASTICALLY VARYING STRATA CAN BE EXPECTED. THE CONTRACTOR SHALL WORK WITH TXDOT AND TXDOT'S PARTNERS TO ALLOW ACCESS AND ON-SITE MONITORING OF EXCAVATION.
3. THE VOID MITIGATION DETAILS ARE EXAMPLES. IMPLEMENTATION OF THE APPROVED MITIGATION PLAN SHOULD USE THE REFERENCED BID ITEMS.
4. CONCRETE USED FOR VOID MITIGATION SHALL BE 3,000 PSI IN ACCORDANCE WITH ITEM 420 CLASS A CONC (MISC). QUANTITIES UNDER 4 CY MAY BE HAND MIXED ON SITE USING 5,000 PSI RATED BAG MIX CONCRETE.
5. 3 IN. x 5 IN. ROCK SHALL BE IN ACCORDANCE WITH ITEM 506. LARGE ROCK > 1 FT. SHALL BE IN ACCORDANCE WITH 12 IN. ROCK PER ITEM 432.
6. FILTER FABRIC AND EROSION LOGS WILL BE IN ACCORDANCE WITH ITEM 506.
7. IMPERMEABLE LINER WILL BE IN ACCORDANCE WITH ITEM 5056. THE EDGE OF THE LINER SHALL BE ANCHORED IN A 6 IN. WIDE BY 18 IN. DEEP TRENCH.
8. STEEL CASING, USED FOR DRILL SHAFT CONSTRUCTION, SHALL BE IN ACCORDANCE WITH ITEM 416.
9. AGGREGATE OR OTHER BACKFILL WILL BE PAID FOR BY OVERRUN OF EXISTING EMBANKMENT ITEM. FILTER FABRIC OVER THE AGGREGATE IS SUBSIDIARY. SANDBAGS SHALL BE PAID USING SANDBAGS FOR EROSION CONTROL. THE SANDBAGS SHALL BE POLYPROPYLENE AND FILLED WITH PEA GRAVEL. CONNECTOR PIPE SHALL BE PAID USING PIPE (PVC) (SCH 80) (6 IN).
10. IF A SINGLE VOID IMPACT CAUSES DELAYS BY MORE THAN 20 WORKING DAYS, DELAY WILL BE CONSIDERED FOR THE IMPACT BEYOND THE INITIAL 20 DAYS. IF THE ACCUMULATION OF VOID IMPACTS CAUSE DELAYS BY MORE 40 WORKING DAYS, DELAY WILL BE CONSIDERED FOR THE IMPACT BEYOND THE 40 DAYS. OVERHEAD, BARRICADES AND DELAYS WILL BE EVALUATED AND PAID IN ACCORDANCE WITH THE CONTRACT. IMPACTS WILL NOT BE CONSIDERED IMPACT AFTER A RESPONSE PROCEDURE IS PROVIDED. ALL DELAYS CAUSED BY A VOID AND THE DURATION FOR IMPLEMENTATION OF A RESPONSE ARE NON-COMPENSABLE FOR LABOR, EQUIPMENT, STANDBY, MOBILIZATIONS, AND COST ESCALATIONS.

REFER TO VOID MITIGATION DETAILS FOR ADDITIONAL INFORMATION. VOID MITIGATION DETAILS ARE TO BE APPROVED BY GEOSCIENTIST AND THE TCEQ (IF APPLICABLE) PRIOR TO IMPLEMENTATION.

1. IN THE EVENT THAT UNKNOWN KARST VOIDS ARE ENCOUNTERED, WORK AT THAT LOCATION WILL BE HALTED IMMEDIATELY AND THE FEATURE WILL BE INSPECTED PROMPTLY BY TXDOT.
2. WHEN REQUIRED, TXDOT WILL INSPECT ALL VOIDS TO DETERMINE THE POTENTIAL OF THE FEATURES TO PROVIDE SUITABLE HABITAT FOR ENDANGERED KARST INVERTEBRATES. WORK AT THAT LOCATION WILL NOT RESUME UNTIL AUTHORIZATION TO DISTURB THE FEATURE HAS BEEN OBTAINED. REFER TO THE EPIC SHEET FOR ADDITIONAL INFORMATION FOR THREATENED OR ENDANGERED SPECIES.

TXDOT WILL INSPECT ALL VOIDS TO DETERMINE THE APPROPRIATE VOID MITIGATION PLAN.  
 3. ADDITIONAL EXCAVATION OF THE VOID MAY BE REQUIRED BY TXDOT OR THE GEOSCIENTIST TO FULLY EVALUATE THE VOID AND/OR MITIGATION PLAN PREPERATION. TXDOT APPROVAL IS REQUIRED PRIOR THE EXCAVATION. THIS WORK IS SUBSIDIARY.

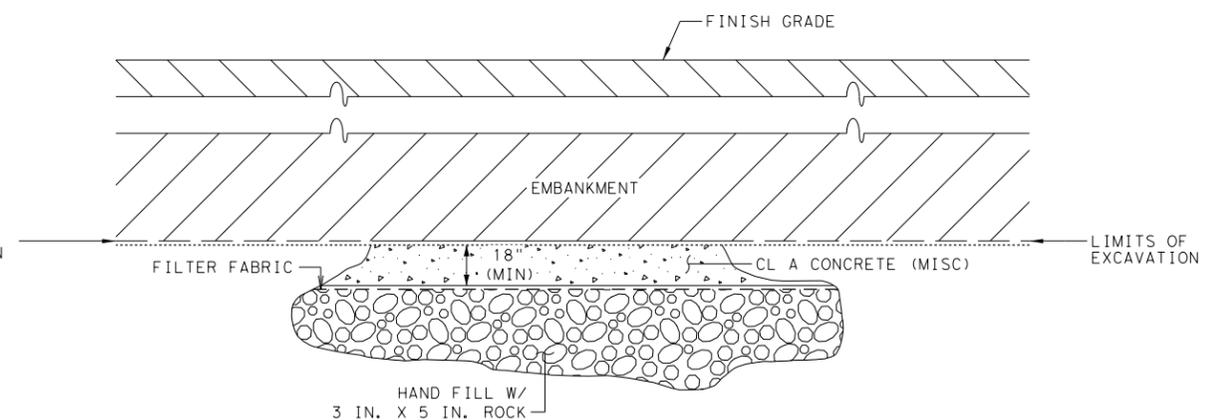
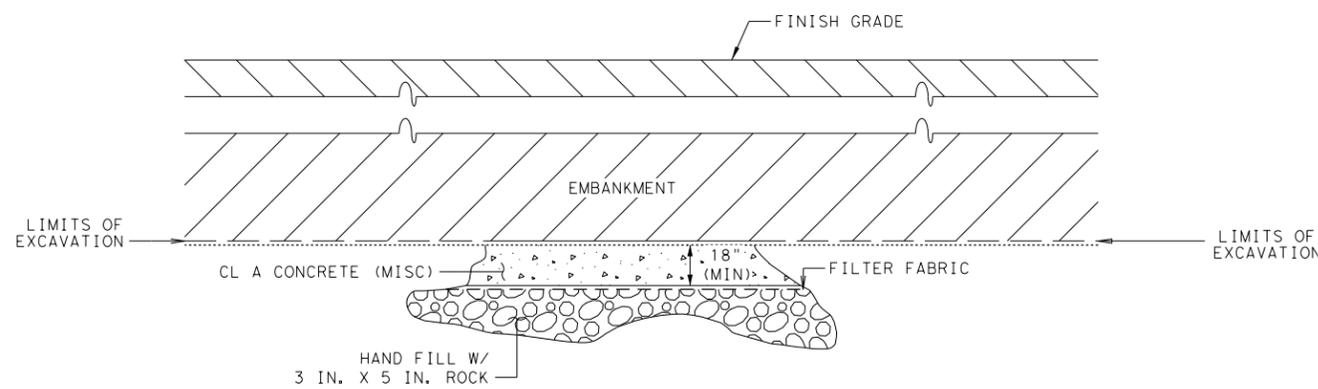
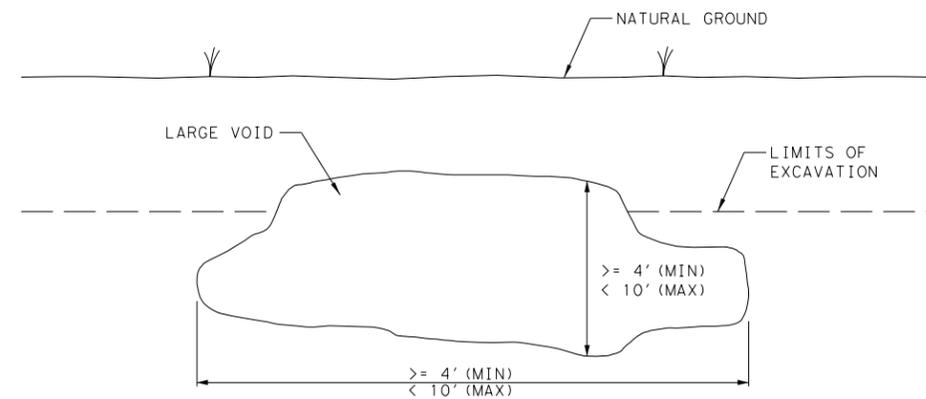
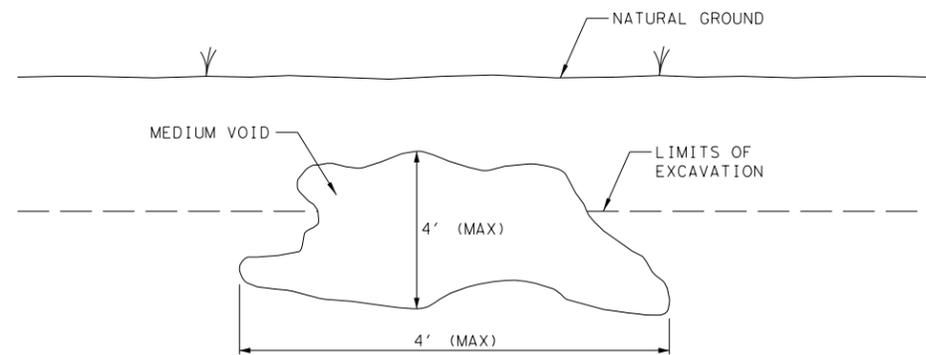
IF A VOID IS DISCOVERED, THE FOLLOWING PROTOCOL WILL BE FOLLOWED:

1. ALL VOIDS REQUIRE AN EMAIL NOTIFICATION TO TXDOT DESIGNATED REPRESENTATIVE WITHIN 2 HOURS OF DISCOVERY. THE EMAIL WILL REQUIRE LOCATION INFORMATION (STATION, LATITUDE & LONGITUDE), DATES OF DISCOVERY, VIDEO/PICTURE DOCUMENTATION, SIZE, ETC. CONTRACTOR SHALL SUPPLY A CAMERA AND DIGITAL PICTURE/VIDEO DOCUMENTATION OF ALL VOIDS AND PROVIDE A MEASUREMENT OF THE SIZE OF THE VOID. FOR VOIDS THAT CANNOT BE SAFELY EXPLORED, ANOTHER DEVICE SHALL BE PROVIDED TO DOCUMENT THE VOID. CONTACT THE DISTRICT CONSTRUCTION OFFICE FOR AN EXAMPLE EMAIL THAT SHALL BE FOLLOWED. THIS WORK IS SUBSIDIARY.
2. ALL ACTIVITY WITHIN A 50-FOOT RADIUS OF THE VOID SHALL STOP. BLOCK TRAFFIC FROM DRIVING NEAR THE VOID AND PREVENT CONSTRUCTION EQUIPMENT FROM OPERATING IN THE VICINITY OF THE VOID USING BARRELS, ORANGE CONSTRUCTION FENCE OR OTHER APPROVED HIGHLY VISIBLE BARRIER.
3. A DRY VOID THAT IS LESS THAN 1 CF IN VOLUME OR LESS THAN 6 IN. IN ALL DIRECTIONS WILL NOT REQUIRE ACTION BEYOND NOTIFICATION. TXDOT SHALL BE NOTIFIED IMMEDIATELY VIA EMAIL AND PHONE WHEN A VOID IS FOUND THAT REQUIRES ACTION. TXDOT WILL RESPOND WITHIN 6 BUSINESS DAYS FROM TIME OF EMAIL NOTIFICATION TO PROVIDE GUIDANCE TO THE CONTRACTOR.
4. COVER THE VOID TO PREVENT CONTAMINATION AND CHANGES IN AMBIENT CONDITIONS (TARPS AND PLYWOOD, OR SIMILAR MATERIALS ARE APPROPRIATE AS AVAILABLE). WHERE COVERING THE VOID IS NOT FEASIBLE, CONTRACTOR SHALL OBTAIN APPROVAL FROM TXDOT OF ALTERNATE TEMPORARY PROTECTION MEASURES. BIODEGRADABLE EROSION CONTROL LOG (BECL) SHOULD WRAP THE SURFACE PERIMETER OF THE VOID. TEMPORARY PROTECTIONS SHOULD REMAIN IN PLACE UNTIL FINAL MITIGATION AND PROTECTION MEASURES ARE APPROVED AND IN PLACE. AN EARTHEN BERM WILL BE MAINTAINED ON THE UP-GRADIENT SIDE OF VOID TO PREVENT ANY CONSTRUCTION RUNOFF FROM ENTERING ANY PART OF THE FEATURE WHICH MAY REMAIN. THIS WORK IS SUBSIDIARY.
5. WHEN REQUIRED TXDOT SHALL IMMEDIATELY NOTIFY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) AUSTIN REGIONAL OFFICE.
6. TXDOT WILL PROVIDE FOR THE EVALUATION OF THE VOID A QUALIFIED GEOSCIENTIST LICENSED BY THE TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS OR BY A PROFESSIONAL ENGINEER WHO QUALIFIES TO PRACTICE GEOSCIENCE ACCORDING TO THE TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS.
7. WHEN REQUIRED TXDOT WILL SUBMIT AND OBTAIN APPROVAL OF AN ENCOUNTERED FEATURE MITIGATION PLAN TO THE TCEQ AUSTIN REGION OFFICE.
8. WORK SHOULD CEASE IN THE AREA UNTIL ASSESSMENT OF THE VOID CAN BE COMPLETED, TCEQ APPROVES THE ENCOUNTERED FEATURE MITIGATION PLAN AND MITIGATION IS COMPLETED. WHEN THE VOID IS OUTSIDE TCEQ JURISDICTION, TXDOT WILL APPROVE THE ENCOUNTERED FEATURE MITIGATION PLAN.

1. SUBMIT INSTALLATION PLAN FOR REVIEW NO LATER THAN 2 MONTHS BEFORE CONSTRUCTION.
2. THE USE OF DRILLING FLUIDS, UNDERWATER PLACEMENT, OR SLURRY METHOD WILL NOT BE ALLOWED IF A VOID IS EXPOSED DURING DRILLING OF SHAFTS OR NAILS. THE CONTRACTOR SHALL USE APPROPRIATE INDUSTRY APPROVED METHODS TO PROVIDE A PRODUCT IN COMPLIANCE WITH THE SPECIFICATIONS. ADDITIONAL TIME OR COMPENSATION WILL NOT BE ALLOWED FOR USE OF ALTERNATE METHODS OR CASING INSTALLATION.
3. DURING NON-WORK HOURS OPEN HOLES SHALL BE PROTECTED FOR SAFETY AND COVERED. SHAFTS SHALL BE SURROUNDED BY EROSION CONTROL LOGS AT AN OFFSET OF 10' FROM THE EDGE OF THE OPENING. THIS WORK IS SUBSIDIARY
4. VIDEO DOCUMENTATION SHALL BE CONDUCTED OF A DRILL SHAFT ONCE EXCAVATION IS COMPLETE AND PRIOR TO PLACING REINFORCEMENT. SUFFICIENT LIGHTING SHALL ACCOMPANY THE VIDEO CAMERA TO ENSURE THE SHAFT AND VOIDS ARE VISIBLE. THIS WORK IS SUBSIDIARY.
5. CONCRETE USED TO FILL THE VOIDS WILL BE PAID USING CLASS A CONC (MISC) ITEM BUT WILL USE THE CLASS OF CONCRETE AS REQUIRED BY THE SPECIFICATION. QUANTITY OF CONCRETE WILL BE BASED ON VISUAL INSPECTION PROVIDED BY THE CONTRACTOR. IF VISUAL INSPECTION IS UNABLE TO DETERMINE THE SIZE OF THE VOID THE CONCRETE FOR PAYMENT WILL BE MEASURED AS THE ADDITIONAL CONCRETE BEYOND THE AMOUNT REQUIRED TO PLACE A CLEAN SHAFT PLUS 10 PERCENT WASTE.
6. THE USE OF PERMANENT CASING SHALL BE IN ACCORDANCE WITH ITEM 416. MATERIAL COST FOR CASING THAT REMAINS WILL BE PAID BY INVOICE FROM SUPPLIER WITH MARK UP IN ACCORDANCE WITH MATERIAL FOR ITEM 9.7. ADDITIONAL LABOR, EQUIPMENT, TIME, ETC. FOR INSTALLATION OF THE CASING WILL NOT BE COMPENSABLE.
7. ADDITIONAL NAIL LENGTH WILL BE PAID BY OVERRUN OF EXISTING BID ITEM. ALTERNATE NAIL TYPE COST WILL BE PAID BY INVOICE FROM SUPPLIER WITH MARK UP IN ACCORDANCE WITH MATERIAL FOR ITEM 9.7. LABOR, EQUIPMENT, ADDITIONAL TIME, ETC. WILL NOT BE COMPENSABLE.
8. CORE HOLES ARE REQUIRED FOR ALL DRILLED SHAFTS.

			<b>Austin District Standard</b>	
<h2 style="margin: 0;">VOID MITIGATION NOTES</h2> <h3 style="margin: 0;">VMD-18 (AUS)</h3>				
SHEET 1 OF 7				
©TXDOT\$YEAR\$	CONT	SECT	JOB	HIGHWAY
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	AUS	HAYS		103

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**ROADWAY/S.U.P. GRADING OPERATIONS**  
 MEDIUM (DRY VOID)  
 (<4' IN ANY DIRECTION)  
 (1 CF < 64 CF)

**ROADWAY/S.U.P. GRADING OPERATIONS**  
 LARGE (DRY VOID)  
 (>=4' <10' ANY DIRECTION)  
 (64 CF < 1000 CF)



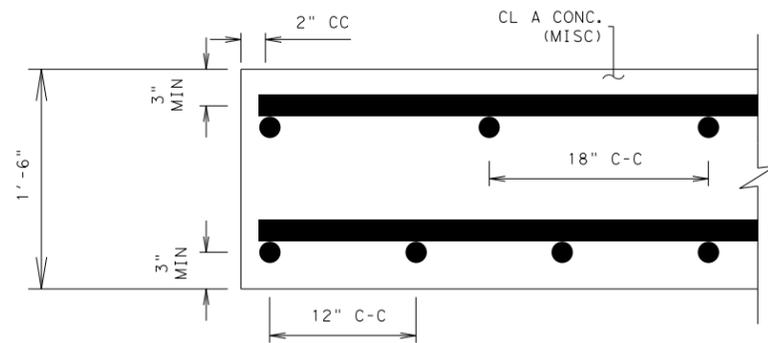
**VOID MITIGATION  
 DETAILS**

**VMD-18 (AUS)**

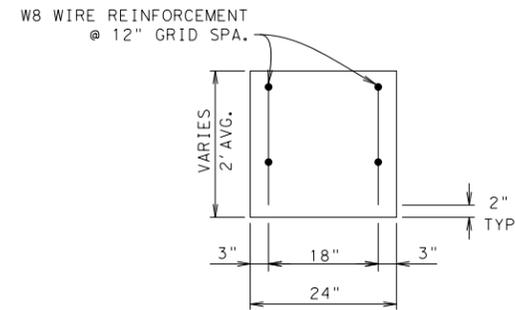
SHEET 2 OF 7

©TXDOT\$YEAR\$	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY	SHEET NO.	
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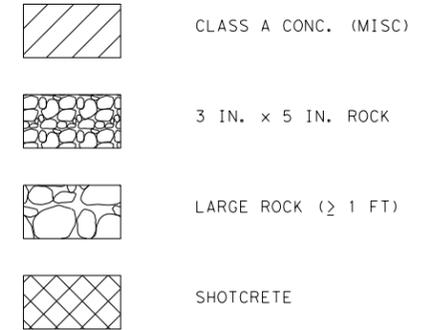
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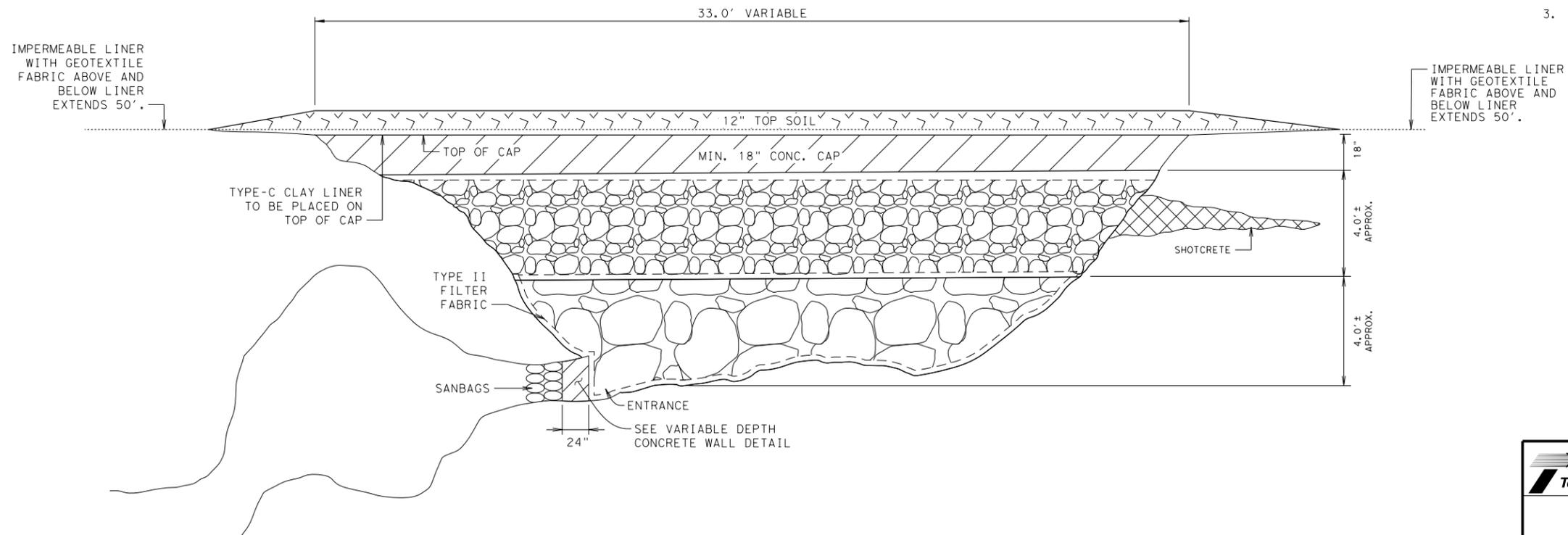
REINFORCING DETAIL



VARIABLE DEPTH CONCRETE WALL



- NOTE:
1. CONCRETE WALL AND CONCRETE CAP SHALL BE PAID USING CLASS A CONC. (MISC).
  2. SHOTCRETE WILL BE PAID USING CLASS A CONC. (MISC).
  3. THE 12 IN. TOPSOIL AND LINER MAY NOT BE APPLICABLE IF THE VOID IS NOT IN A POND.



ELEVATION OF VOID IN A POND

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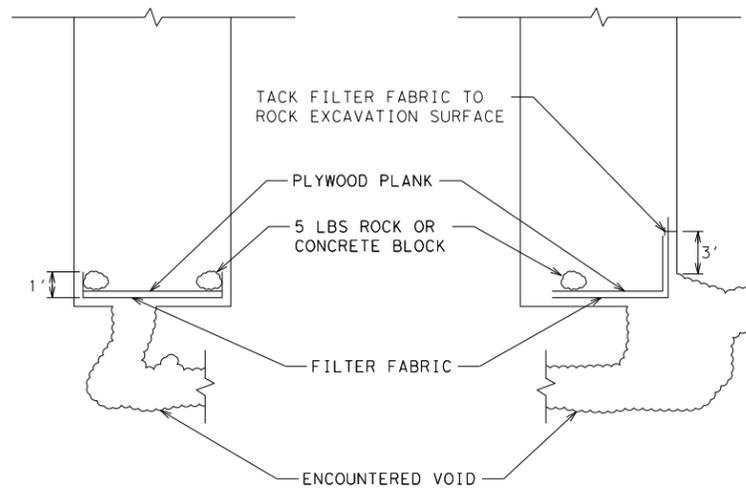
**VOID MITIGATION  
DETAILS**

**VMD-18 (AUS)**

SHEET 3 OF 7

©TXDOTS YEAR#	CONT	SECT	JOB	HIGHWAY
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**TEMPORARY PROTECTION  
 VOID AT BOTTOM OF TRENCH**

**NOTES:**

1. PLACE TEMPORARY PROTECTION WITHIN TRENCH TO COVER VOID AS INDICATED. FABRIC SHALL EXTEND A MINIMUM OF 3 IN. BEYOND EDGE OF VOID. PLACE A PLYWOOD PLANK (MINIMUM 0.75 IN. THICK) OVER FABRIC. PLANK AND FABRIC SHALL BE WEIGHTED AS REQUIRED BY 5 LBS ROCK OR CONCRETE BLOCK TO SECURE FILTER FABRIC.
2. TEMPORARY PROTECTION SHALL BE IN PLACE AT ALL TIMES THAT CONSTRUCTION OPERATIONS ARE NOT IN ACTUAL PROGRESS.
3. CONSTRUCTION OPERATIONS WITHIN 50' SHALL NOT PROGRESS DURING OCCURRENCE OF RAIN TO ALLOW FOR PROTECTION OF VOID DURING A RAIN EVENT.
4. LOCALIZED EROSION MEASURES (SILT FENCE, EROSION CONTROL LOG OR TRIANGULAR FILTER DIKES) SHALL BE INSTALLED ALONG THE TRENCH TO ENSURE THAT LOOSE SPOILS OR RUNOFF DO NOT ENTER THE TRENCH OR AFFECT PERFORMANCE OF TEMPORARY PROTECTION. USE EARTHEN BERN TO DIVERT WATER AWAY FROM THE TRENCH.
5. SPECIAL CARE SHALL BE TAKEN TO ENSURE THAT EROSION CONTROL MEASURES REQUIRED ALONG THE TRENCH ARE MAINTAINED, CLEANED AND FULLY FUNCTIONAL.
6. FILTER FABRIC AND ROCK OR CONCRETE BLOCKS AND PLYWOOD PLANK SHALL BE REMOVED FROM THE TRENCH WHEN PERMANENT VOID MITIGATION MEASURES ARE INSTALLED.



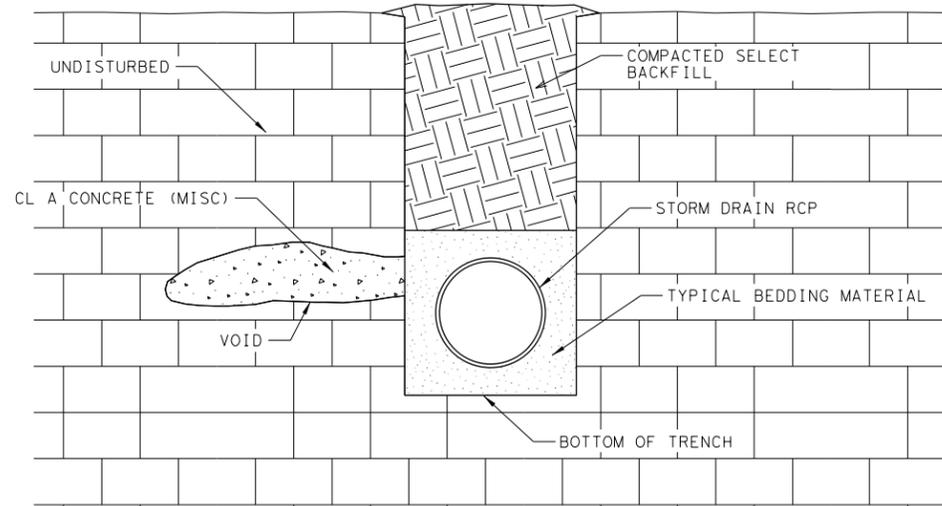
**VOID MITIGATION  
 DETAILS**

**VMD-18 (AUS)**

SHEET 4 OF 7

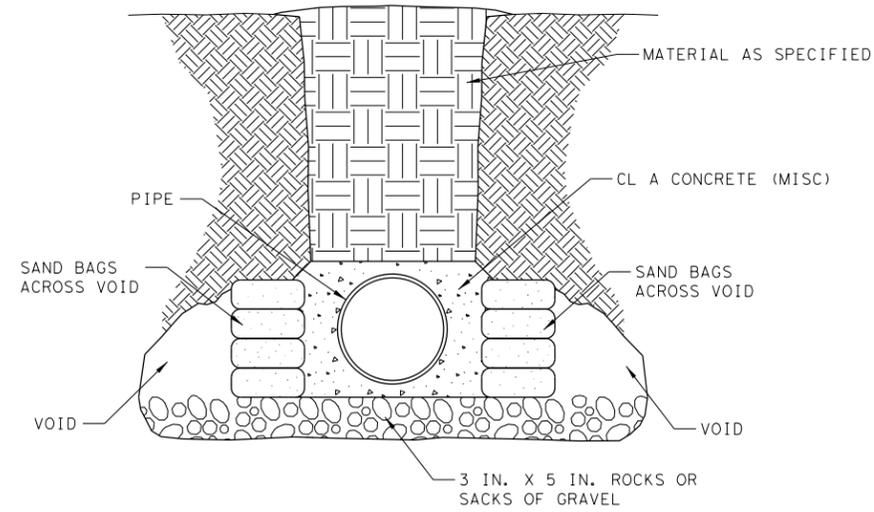
©TXDOT\$YEAR\$	CONT	SECT	JOB	HIGHWAY
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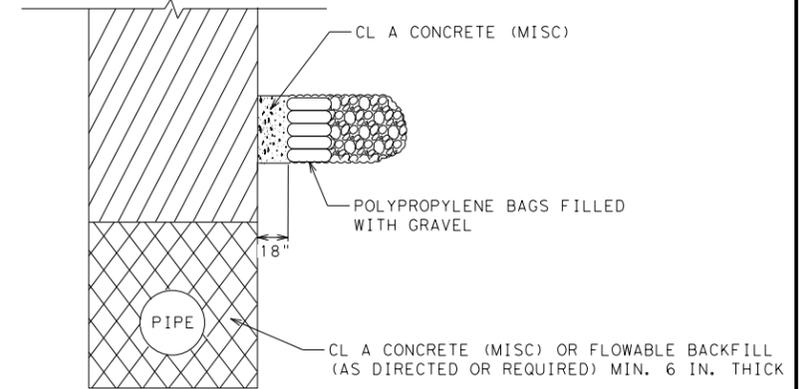
**TRENCHING OPERATIONS**  
 SMALL/MEDIUM (DRY VOID)  
 (<64 CF)

VOID IS EITHER LARGER THAN SIX (6) INCHES IN AT LEAST ONE DIRECTION OR IS LOCATED WITHIN THE LEVEL OF THE PIPE EMBEDMENT. ALL ROCK WITHIN AND SURROUNDING THE VOID IS SOUND.



**TRENCHING OPERATIONS**  
 LARGE (DRY VOID)  
 (64 CF < 1,000 CF)

VOID INTERSECTS THE PLANE OF THE TRENCH FLOOR AND ANY OPENING IN TRENCH FLOOR IS GREATER THAN FOUR (4) FEET IN ANY DIRECTION, OR THE TRENCH FLOOR IS UNSTABLE.

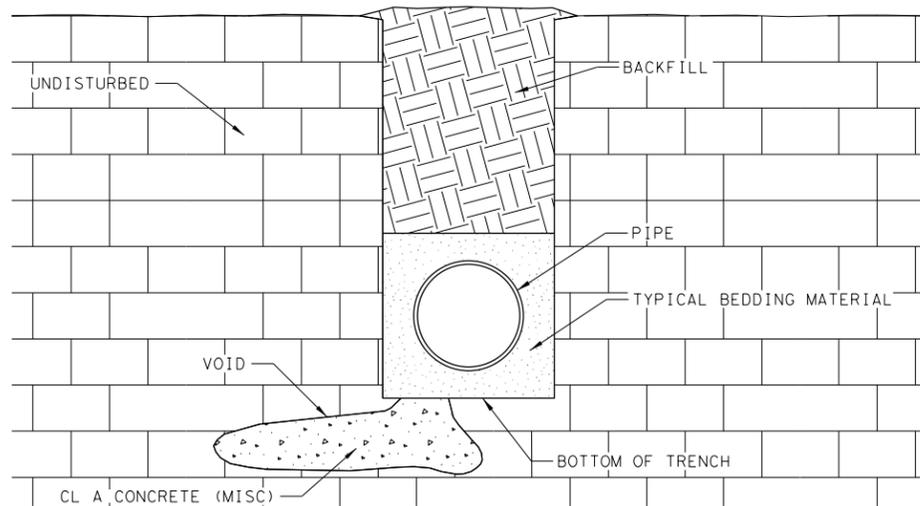


**TRENCHING OPERATIONS**  
 LARGE (DRY VOID)  
 (64 CF < 1,000 CF)

VOID IS ABOVE THE PLANE OF THE TRENCH FLOOR

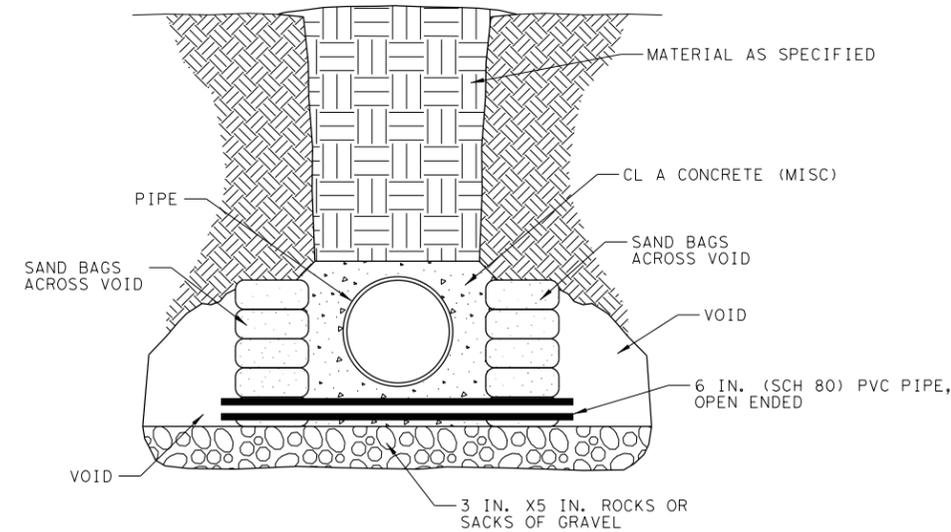
GENERAL NOTE:

- ALL PIPES SHALL BE ENCASED WITH CLASS A CONCRETE THAT EXTENDS 5' BEYOND THE EDGE OF THE VOID IN ALL DIRECTIONS. THE CONCRETE SHALL PROVIDE 6 IN. COVER AROUND THE PIPE.



**TRENCHING OPERATIONS**  
 SMALL/MEDIUM (DRY VOID)  
 (<64 CF)

VOID INTERSECTS THE PLANE OF THE TRENCH FLOOR AND IS LESS THAN FOUR (4) FEET IN ANY DIRECTION. ALL ROCK WITHIN AND SURROUNDING THE VOID IS SOUND.



**TRENCHING OPERATIONS**  
 LARGE (WET VOID)  
 (64 CF < 1,000 CF)

VOID INTERSECTS THE PLANE OF THE TRENCH FLOOR AND ANY OPENING IN TRENCH FLOOR IS GREATER THAN FOUR (4) FEET IN ANY DIRECTION, OR THE TRENCH FLOOR IS UNSTABLE.

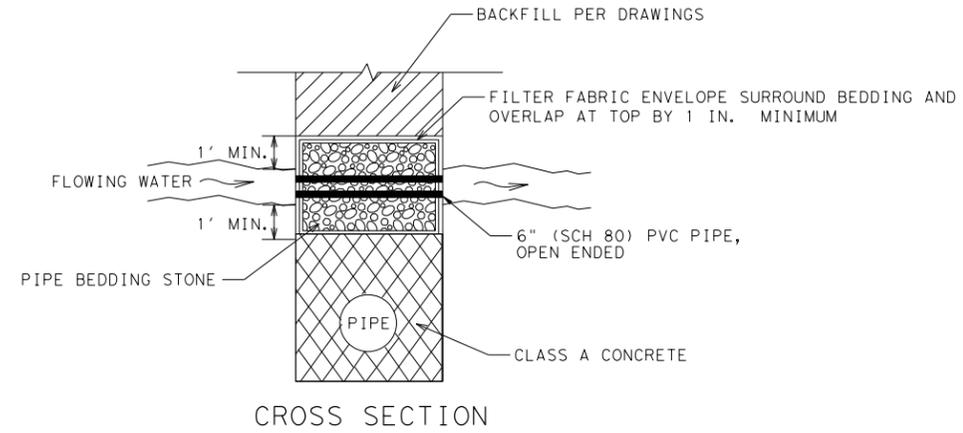
**VOID MITIGATION DETAILS**

**VMD-18 (AUS)**

SHEET 5 OF 7

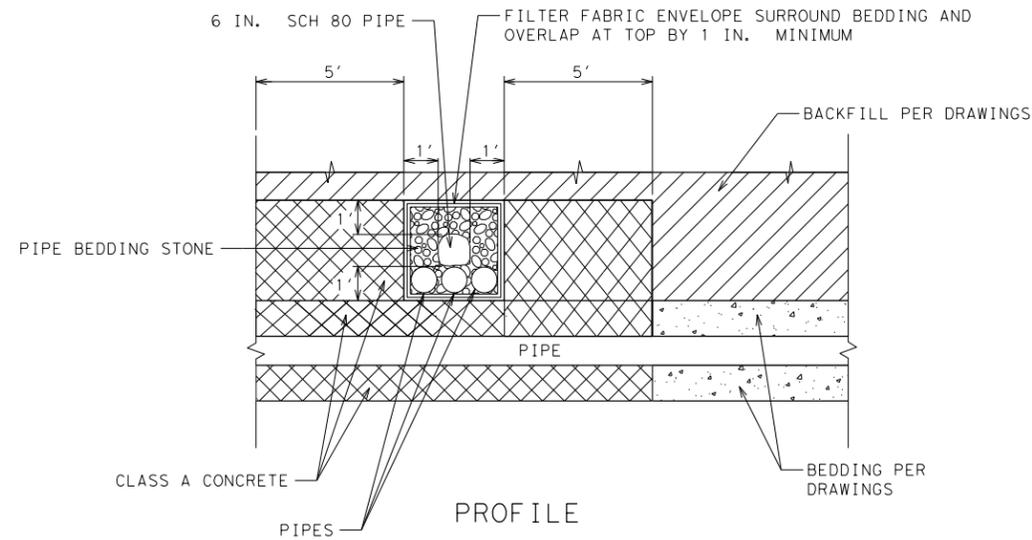
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GENERAL NOTE:

1. ALL PIPES SHALL BE ENCASED WITH CLASS A CONCRETE THAT EXTENDS 5' BEYOND THE EDGE OF THE VOID IN ALL DIRECTIONS. THE CONCRETE SHALL PROVIDE 6 IN. COVER AROUND THE PIPE.



**TRENCHING OPERATIONS**  
 GROUNDWATER ABOVE  
 BEDDING MATERIAL



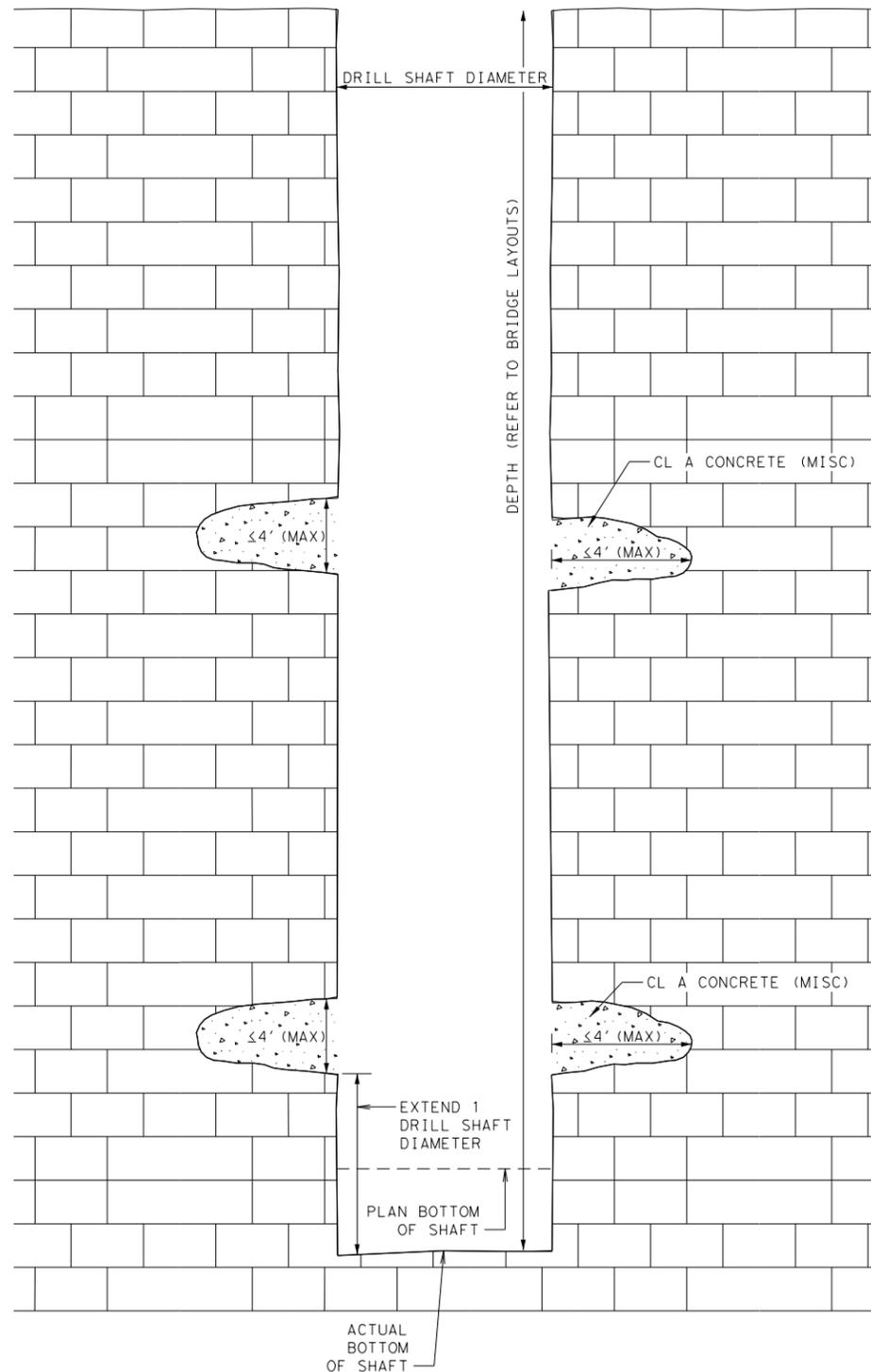
**VOID MITIGATION  
 DETAILS**

**VMD-18 (AUS)**

SHEET 6 OF 7

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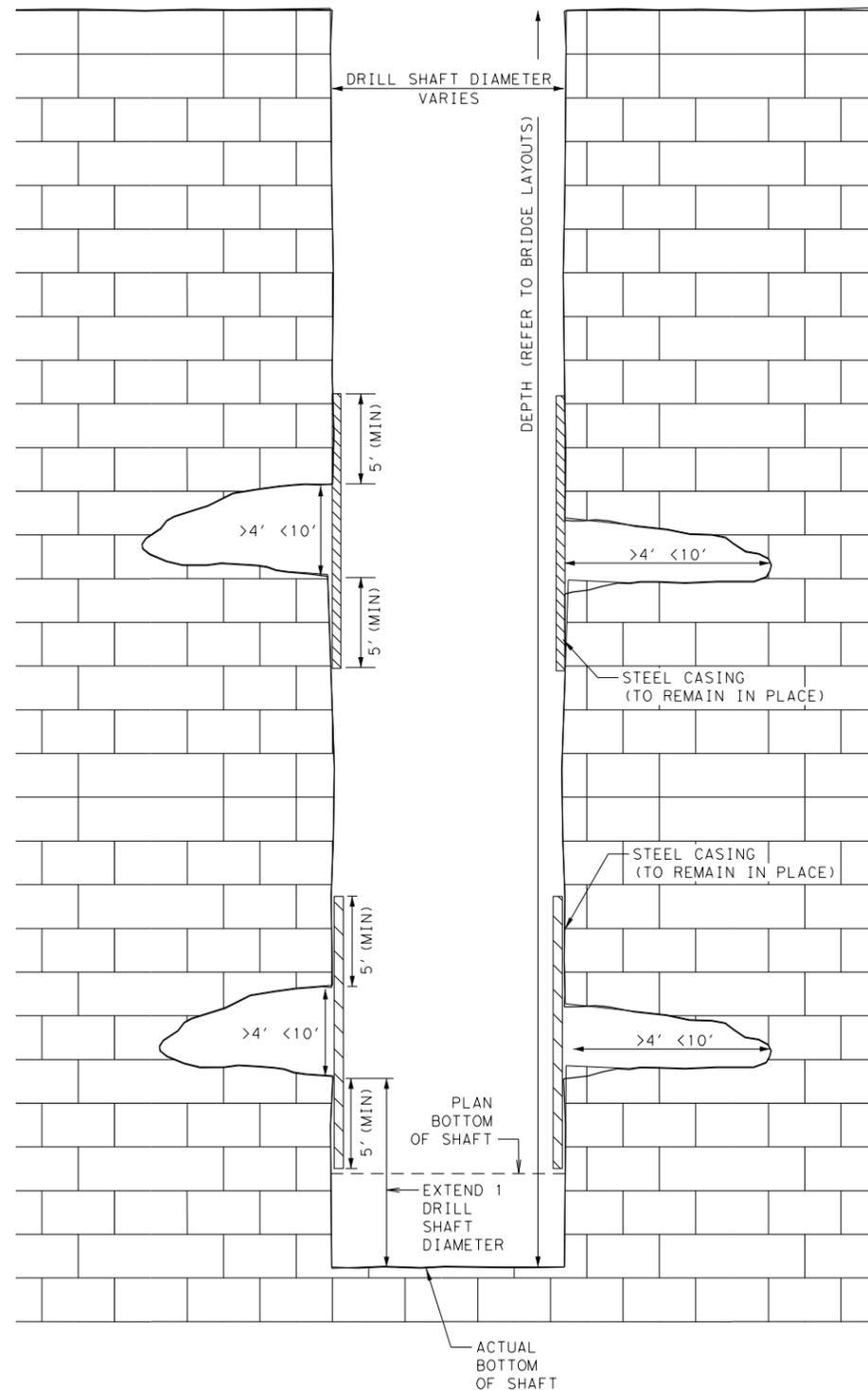
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**DRILL SHAFT OPERATIONS**  
 SMALL/MEDIUM (DRY VOID)  
 ( $\leq 4'$  IN ANY DIRECTION)

CONCRETE FOR THE VOID SHALL BE PLACED CONTINUOUSLY WITH THE SHAFT

WHERE VOIDS ARE ENCOUNTERED, DRILL SHAFT LENGTHS MAY NEED TO BE INCREASED. APPROVAL FROM THE ENGINEER OF RECORD IS REQUIRED TO COMPLETE CONSTRUCTION OF THE DRILLED SHAFT.



**DRILL SHAFT OPERATIONS**  
 LARGE (DRY VOID)  
 ( $>4'$   $<10'$  IN ANY DIRECTION)

WHERE VOIDS ARE ENCOUNTERED, DRILL SHAFT LENGTHS MAY NEED TO BE INCREASED. APPROVAL FROM THE ENGINEER OF RECORD IS REQUIRED TO COMPLETE CONSTRUCTION OF THE DRILL SHAFT.

**NOTES:**

1. STEEL CASING WILL BE USED FOR DRILL SHAFT CONSTRUCTION THAT ENCOUNTERS LARGE VOIDS, SO AS TO ALLOW A MINIMUM AMOUNT OF CONCRETE TO ENTER THE VOID.
2. STEEL CASING SHOULD EXTEND A MINIMUM OF FIVE FEET FROM THE EDGE OF THE VOID.
3. AS PART OF THE DRILL SHAFT INSTALLATION PLAN, CONTRACTOR SHALL PROVIDE MEANS AND METHODS FOR ANCHORING THE CASING.
4. REFER TO GENERAL NOTES FOR ADDITIONAL INFORMATION.
5. STEEL CASING MAYBE EXTENDED TO THE TOP OF THE SHAFT. THE ENTIRE LENGTH OF CASING INSTALLED IN A SHAFT WILL BE COMPENSATED IN ACCORDANCE WITH THE VOID MITIGATION NOTES.



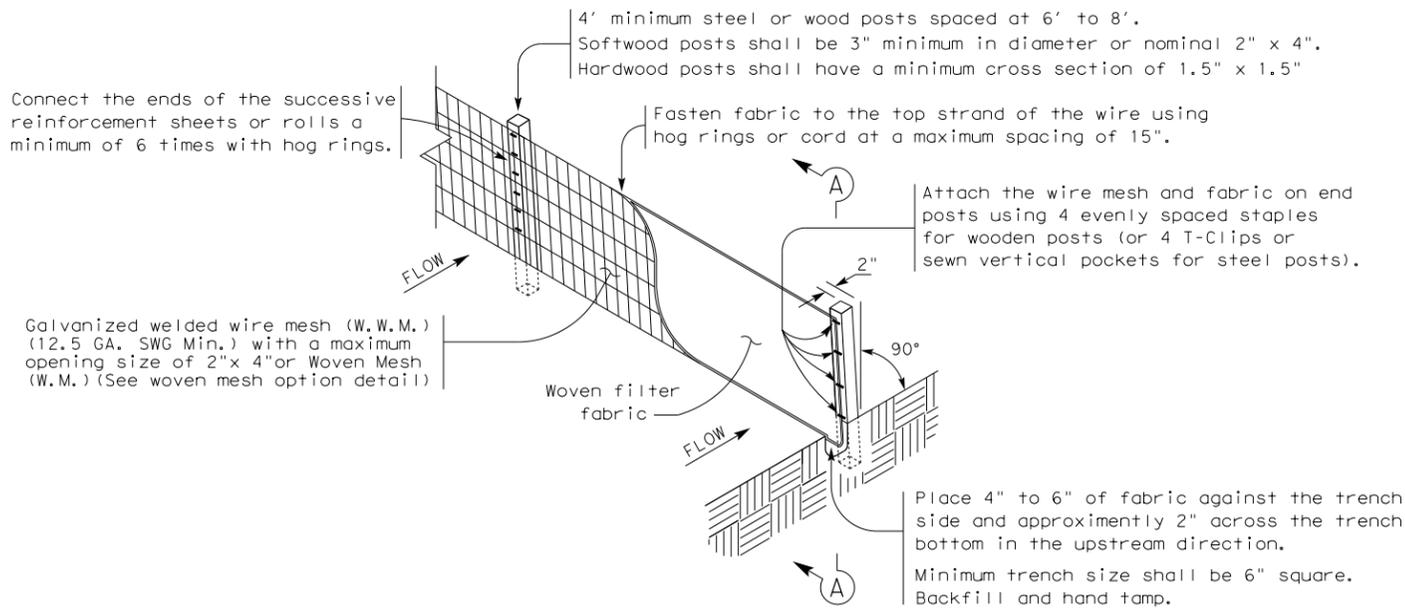
**VOID MITIGATION  
 DETAILS**

**VMD-18 (AUS)**

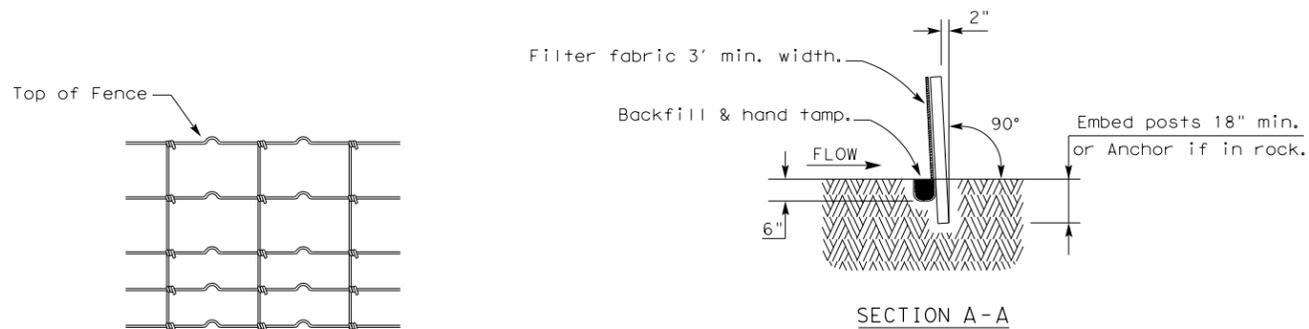
SHEET 7 OF 7

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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/FT<sup>2</sup>. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

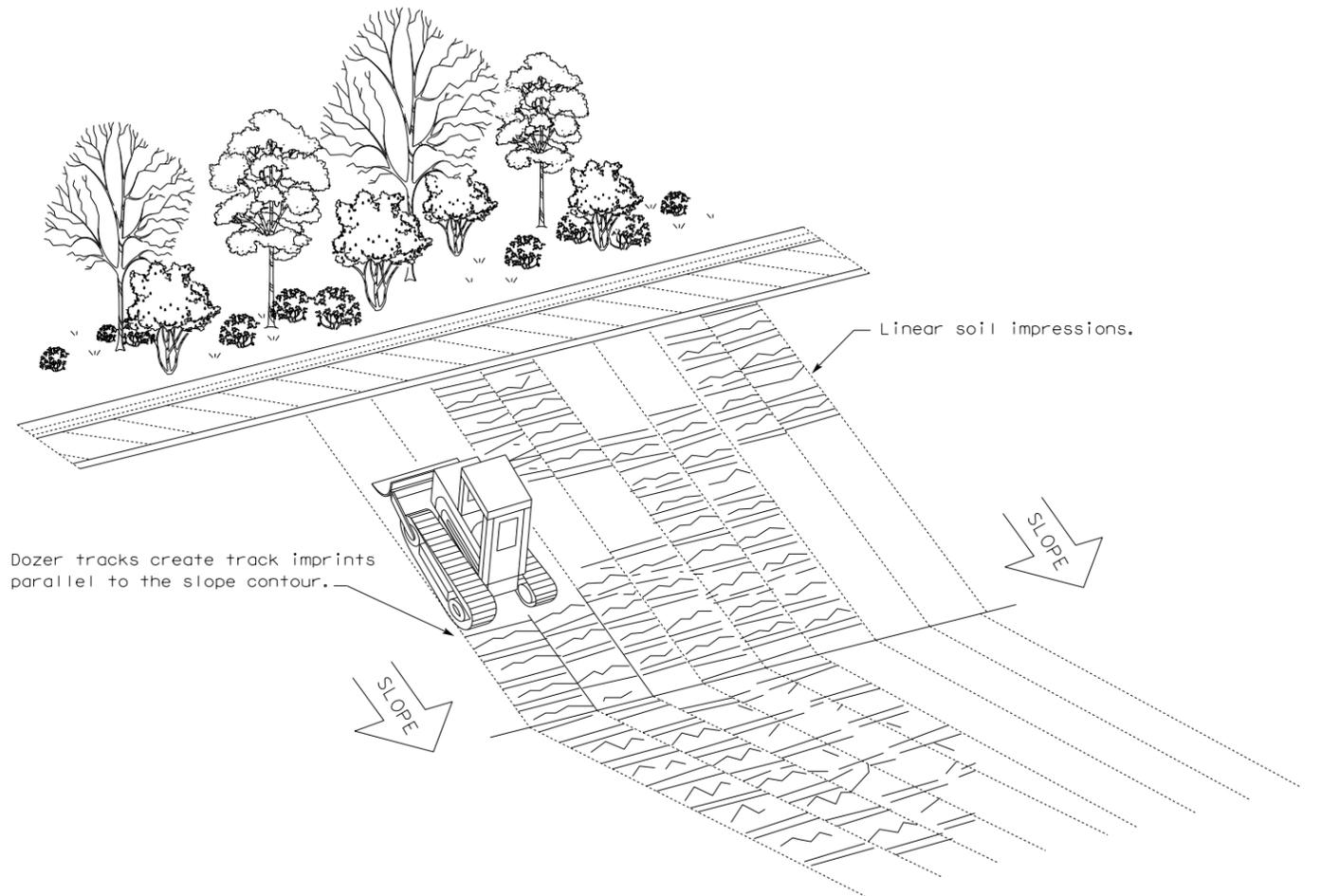
**LEGEND**

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.

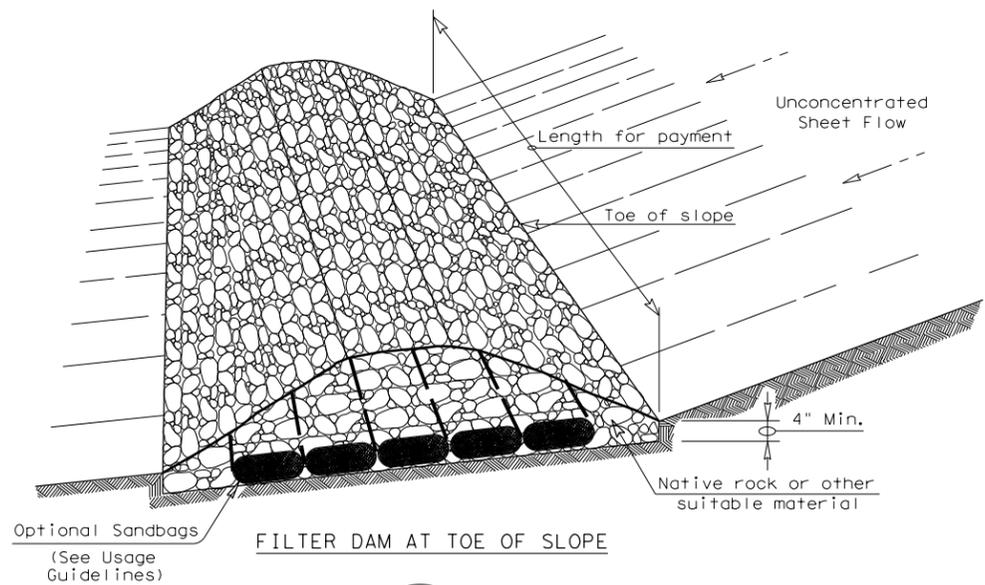


VERTICAL TRACKING

				<b>Design Division Standard</b>	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE &amp; VERTICAL TRACKING</b> <b>EC(1)-16</b>					
FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0683	03	045	RM 12	
	DIST	COUNTY		SHEET NO.	
	AUS	HAYS		110	

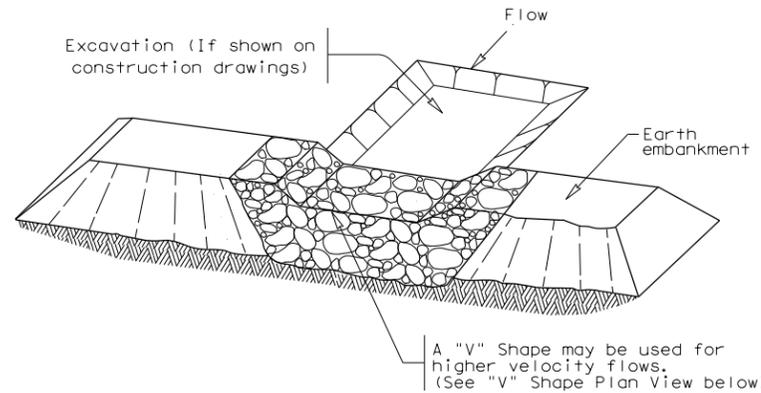
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 1/27/2026  
 FILE: G:\TXC\Projects\County\_Hays\7083-00\_RM 12 Turn Lanes\03\_CADD\01\_Shts\14-ENV\Stds\ec216.dgn



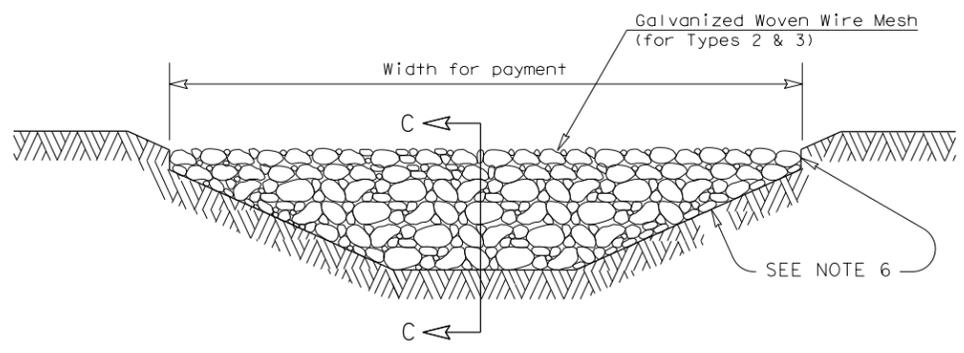
FILTER DAM AT TOE OF SLOPE

RFD1



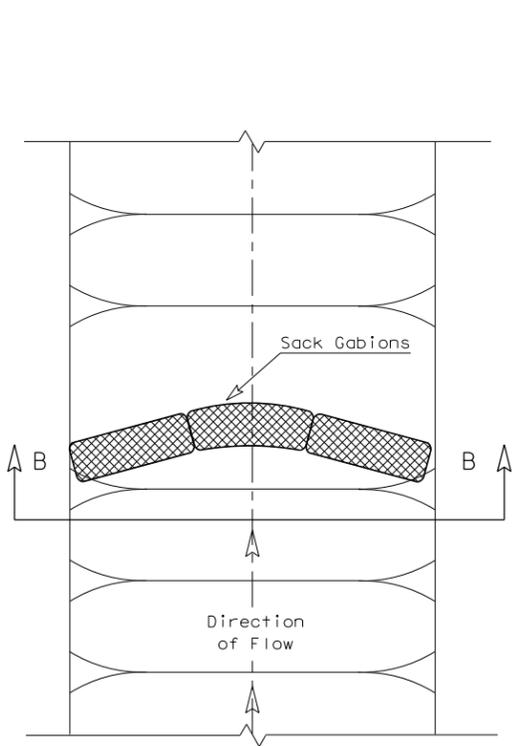
FILTER DAM AT SEDIMENT TRAP

RFD1 OR RFD2

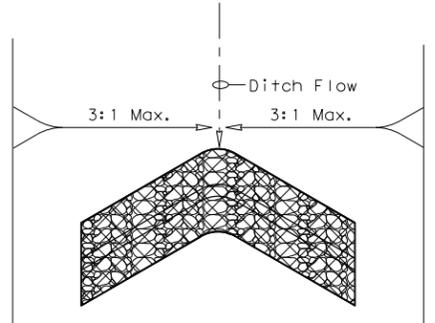


FILTER DAM AT CHANNEL SECTIONS

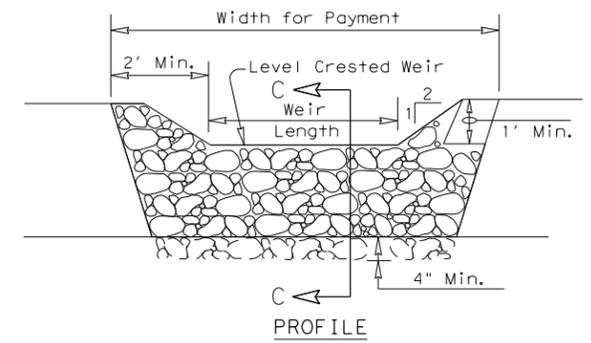
RFD1 OR RFD2 OR RFD3



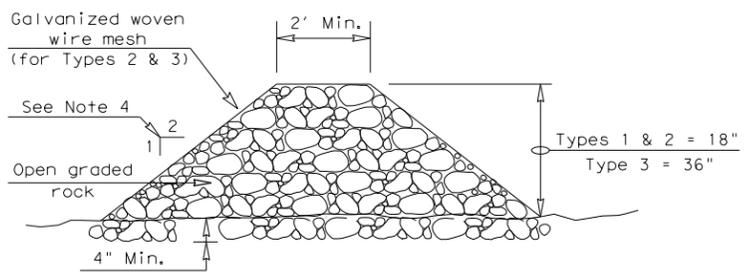
PLAN VIEW



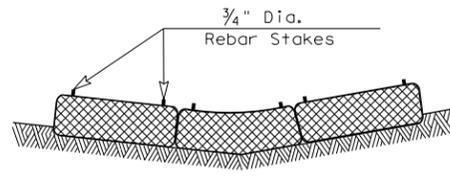
"V" SHAPE PLAN VIEW



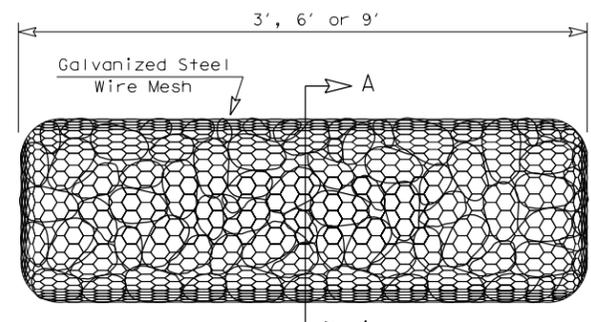
PROFILE



SECTION C-C

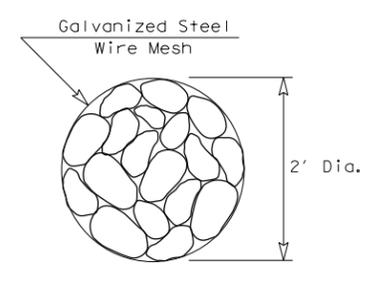


SECTION B-B



TYPE 4 (SACK GABIONS)

RFD4



SECTION A-A

**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/FT<sup>2</sup> of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

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

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

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

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

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

**GENERAL NOTES**

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

		<b>Design Division Standard</b>	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</b> <b>ROCK FILTER DAMS</b> <b>EC (2) - 16</b>			
FILE: ec216	DN: TxDOT	CK: KM	DW: VP
© TxDOT: JULY 2016	CONT: 0683	SECT: 03	JOB: 045
REVISIONS	DIST: AUS	COUNTY: HAYS	SHEET NO.: 111



SIGNATURE PAGE:

Marti Reich  
Applicant's Signature

9.29.2025  
Date

THE STATE OF Texas §

County of Hays §

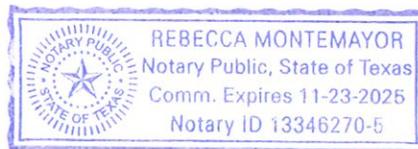
BEFORE ME, the undersigned authority, on this day personally appeared Marti Reich known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 29 day of September 2025

Rebecca E. Montemayor  
NOTARY PUBLIC

Rebecca E. Montemayor  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11-23-2025



# Application Fee Form

## Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: RM 12 at Mountain Crest/Skyline Dr.

Regulated Entity Location: Woodcreek, TX

Name of Customer: Hays County

Contact Person: Jerry Borcharding, P.E.

Phone: 512-393-7385

Customer Reference Number (if issued): CN 601098205

Regulated Entity Reference Number (if issued): RN 104095013

### Austin Regional Office (3373)

Hays

Travis

Williamson

### San Antonio Regional Office (3362)

Bexar

Medina

Uvalde

Comal

Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment.** This payment is being submitted to:

Austin Regional Office

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

Mail Code 214

P.O. Box 13088

Austin, TX 78711-3088

12100 Park 35 Circle

Building A, 3rd Floor

Austin, TX 78753

(512)239-0357

### Site Location (Check All That Apply):

Recharge Zone

Contributing Zone

Transition Zone

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	6.99 Acres	\$ 5,000
Sewage Collection System	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: Marta Reisch

Date: 09.29.2025

# Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

## **Water Pollution Abatement Plans and Modifications**

### **Contributing Zone Plans and Modifications**

<b>Project</b>	<b>Project Area in Acres</b>	<b>Fee</b>
One Single Family Residential Dwelling	< 5	\$650
Multiple Single Family Residential and Parks	< 5	\$1,500
	5 < 10	\$3,000
	10 < 40	\$4,000
	40 < 100	\$6,500
	100 < 500	\$8,000
	≥ 500	\$10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1	\$3,000
	1 < 5	\$4,000
	5 < 10	\$5,000
	10 < 40	\$6,500
	40 < 100	\$8,000
	≥ 100	\$10,000

### **Organized Sewage Collection Systems and Modifications**

<b>Project</b>	<b>Cost per Linear Foot</b>	<b>Minimum Fee- Maximum Fee</b>
Sewage Collection Systems	\$0.50	\$650 - \$6,500

### **Underground and Aboveground Storage Tank System Facility Plans and Modifications**

<b>Project</b>	<b>Cost per Tank or Piping System</b>	<b>Minimum Fee- Maximum Fee</b>
Underground and Aboveground Storage Tank Facility	\$650	\$650 - \$6,500

### **Exception Requests**

<b>Project</b>	<b>Fee</b>
Exception Request	\$500

### **Extension of Time Requests**

<b>Project</b>	<b>Fee</b>
Extension of Time Request	\$150



# TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

<b>1. Reason for Submission</b> (If other is checked please describe in space provided.)		
<input type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input checked="" type="checkbox"/> Other	CZP modification of previous TxDOT project by Hays County
<b>2. Customer Reference Number</b> (if issued)	<a href="#">Follow this link to search for CN or RN numbers in Central Registry**</a>	<b>3. Regulated Entity Reference Number</b> (if issued)
CN 601098205		RN 104095013

## SECTION II: Customer Information

<b>4. General Customer Information</b>		<b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy)	
<input type="checkbox"/> New Customer <input type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership <input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)			
<i>The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).</i>			
<b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)		<i>If new Customer, enter previous Customer below:</i>	
Hays County			
<b>7. TX SOS/CPA Filing Number</b>	<b>8. TX State Tax ID</b> (11 digits)	<b>9. Federal Tax ID</b> (9 digits)	<b>10. DUNS Number</b> (if applicable)
N/A	N/A	N/A	N/A
<b>11. Type of Customer:</b>	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input checked="" type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input type="checkbox"/> Other:	
<b>12. Number of Employees</b>		<b>13. Independently Owned and Operated?</b>	
<input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input checked="" type="checkbox"/> 501 and higher		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input type="checkbox"/> Owner <input checked="" type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator <input type="checkbox"/> Other: <input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant			
<b>15. Mailing Address:</b>	Hays County Transportation Division		
	P.O. Box 906		
<b>City</b>	San Marcos	<b>State</b>	TX
<b>ZIP</b>	78667	<b>ZIP + 4</b>	
<b>16. Country Mailing Information</b> (if outside USA)		<b>17. E-Mail Address</b> (if applicable)	
<b>18. Telephone Number</b>	<b>19. Extension or Code</b>	<b>20. Fax Number</b> (if applicable)	

**SECTION III: Regulated Entity Information**

<b>21. General Regulated Entity Information</b> <i>(If 'New Regulated Entity' is selected, a new permit application is also required.)</i>							
<input type="checkbox"/> New Regulated Entity <input checked="" type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information							
<i>The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).</i>							
<b>22. Regulated Entity Name</b> <i>(Enter name of the site where the regulated action is taking place.)</i>							
RM 12 at Mountain Crest/Skyline Dr.							
<b>23. Street Address of the Regulated Entity:</b> <i>(No PO Boxes)</i>							
		City		State		ZIP	
						ZIP + 4	
<b>24. County</b>							

If no Street Address is provided, fields 25-28 are required.

<b>25. Description to Physical Location:</b>		1,210 feet south of Skyline Drive to 1,025 feet north of Skyline Drive.					
<b>26. Nearest City</b>				<b>State</b>		<b>Nearest ZIP Code</b>	
Woodcreek				TX		78676	
<i>Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).</i>							
<b>27. Latitude (N) In Decimal:</b>		30.035358		<b>28. Longitude (W) In Decimal:</b>		-98.101625	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
30	2	7.2888	98	6	5.85		
<b>29. Primary SIC Code</b> (4 digits)		<b>30. Secondary SIC Code</b> (4 digits)		<b>31. Primary NAICS Code</b> (5 or 6 digits)		<b>32. Secondary NAICS Code</b> (5 or 6 digits)	
N/A		N/A		N/A		N/A	
<b>33. What is the Primary Business of this entity?</b> <i>(Do not repeat the SIC or NAICS description.)</i>							
N/A							
<b>34. Mailing Address:</b>		Hays County Transportation Division					
		P.O. Box 906					
		City	San Marcos	State	TX	ZIP	78667
						ZIP + 4	
<b>35. E-Mail Address:</b>		N/A					
<b>36. Telephone Number</b>			<b>37. Extension or Code</b>			<b>38. Fax Number</b> <i>(if applicable)</i>	
( 512 ) 393-7385						( 512 ) 393-7393	

**39. TCEQ Programs and ID Numbers** Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

### **SECTION IV: Preparer Information**

<b>40. Name:</b>	Bryan Ellis	<b>41. Title:</b>	Senior Project Manager
<b>42. Telephone Number</b>	<b>43. Ext./Code</b>	<b>44. Fax Number</b>	<b>45. E-Mail Address</b>
( 210 ) 503-8077		( ) -	bellis@bgeinc.com

### **SECTION V: Authorized Signature**

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

<b>Company:</b>	BGE, Inc.	<b>Job Title:</b>	Senior Project Manager
<b>Name (In Print):</b>	Bryan Ellis	<b>Phone:</b>	( 210 ) 503- 8077
<b>Signature:</b>	<i>Bryan Ellis</i>	<b>Date:</b>	08-23-2024