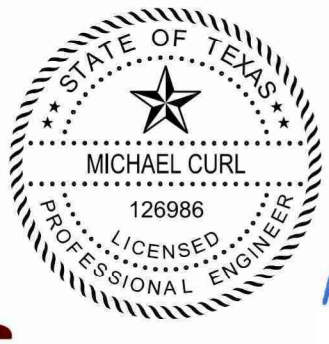
February 9, 2026

City of Round Rock

Edwards Aquifer Exception Request

Original

Smyers Lane from RM 620 to Wyoming Springs Drive



2/9/26

THE ESTES GROUP

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

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.

1. Regulated Entity Name: Smyers Lane from RM 620 to Wyoming Springs Drive						**2. Regulated Entity No.:** N/A			
3. Customer Name: City of Round Rock						**4. Customer No.:** 600413181			
5. Project Type: **(Please circle/check one)**	New		Modification			Extension	Exception		
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential				**8. Site (acres):**		6.67
9. Application Fee:	$500		**10. Permanent BMP(s):**				N/A		
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**				N/A		
13. County:	Williamson		**14. Watershed:**				Turkey Creek – Brushy Creek		

Application Distribution

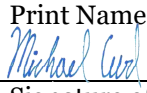
Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which 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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	1
Region (1 req.)	___	___	1
County(ies)	___	___	1
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville 1 Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	___	___	___	___
Region (1 req.)	___	___	___	___	___
County(ies)	___	___	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	___Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park ___San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge ___New Braunfels ___Schertz	NA	___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. Michael Curl
Print Name of Customer/Authorized Agent  2/9/2026 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):	

GENERAL INFORMATION

General Information Form

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (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.

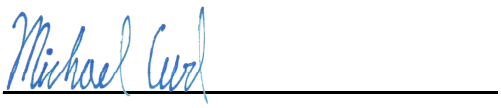
Signature

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. This **General Information Form** is hereby submitted for TCEQ review. The application was prepared by:

Print Name of Customer/Agent: Michael Curl

Date: 2/9/2026

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Smyers Lane from RM 620 to Wyoming Springs Drive
2. County: Williamson
3. Stream Basin: San Gabriel Sub Basin, Brazos River Basin
4. Groundwater Conservation District (If applicable): N/A
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

   ☐ WPAP
   ☐ SCS
   ☐ Modification
   ☐ AST
   ☐ UST
   ☒ Exception Request

7. Customer (Applicant):

   Contact Person: Reuben Ramirez, Project Manager
   Entity: City of Round Rock Transportation Department
   Mailing Address: 3400 Sunrise Road
   City, State: Round Rock, TX Zip: 78665
   Telephone: 512-218-7084 FAX: N/A
   Email Address: rramirez@roundrocktexas.gov

8. Agent/Representative (If any):

   Contact Person: Michael Curl
   Entity: The Estes Group, LLC
   Mailing Address: 9025 W SH 29, Suite 205
   City, State: Liberty Hill, TX Zip: 78642
   Telephone: 512-350-1613 FAX: N/A
   Email Address: michael.curl@teg-tx.com

9. Project Location:

   ☒ The project site is located inside the city limits of Round Rock.
   ☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
   ☐ The project site is not located within any city's limits or ETJ.

10. ☒ The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

    From TCEQ's Region 11 office, head East on Park 35 Circle toward the IH 35 SBFR. Turn right onto the IH 35 SBFR and head South for approximately 1 mile toward Braker Lane. Turn left onto Braker Lane and then left again onto the IH 35 NBFR and proceed North for approximately 1 mile. Merge onto IH 35 heading North and continue North for approximately 8 miles. Take Exit 252B toward RM 620. Turn left onto RM 620 and continue West for approximately 2 miles. Turn right onto Smyers Lane to arrive at the beginning of the project.

11. ☒ **Attachment A – Road Map**. A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

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

    ☒ Project site boundaries.
    ☒ USGS Quadrangle Name(s).
    ☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
    ☒ Drainage path from the project site to the boundary of the Recharge Zone.

13. ☐ **The TCEQ must be able to inspect the project site or the application will be returned**. Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

☒ Survey staking will be completed by this date: Sufficient staking will be provided on the project site once construction begins.

14. ☒ **Attachment C – Project Description**. Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:

☒ Area of the site
☒ Offsite areas
☒ Impervious cover
☒ Permanent BMP(s)
☒ Proposed site use
☒ Site history
☒ Previous development
☒ Area(s) to be demolished

15. Existing project site conditions are noted below:

☒ Existing commercial site
☐ Existing industrial site
☒ Existing residential site
☒ Existing paved and/or unpaved roads
☐ Undeveloped (Cleared)
☐ Undeveloped (Undisturbed/Uncleared)
☐ Other: _____

Prohibited Activities

16. ☒ I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

(4) The use of sewage holding tanks as parts of organized collection systems; and

(5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

(6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17. ☒ I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

(3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

18. The fee for the plan(s) is based on:

☐ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
☐ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
☐ For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
☒ A request for an exception to any substantive portion of the regulations related to the protection of water quality.
☐ A request for an extension to a previously approved plan.

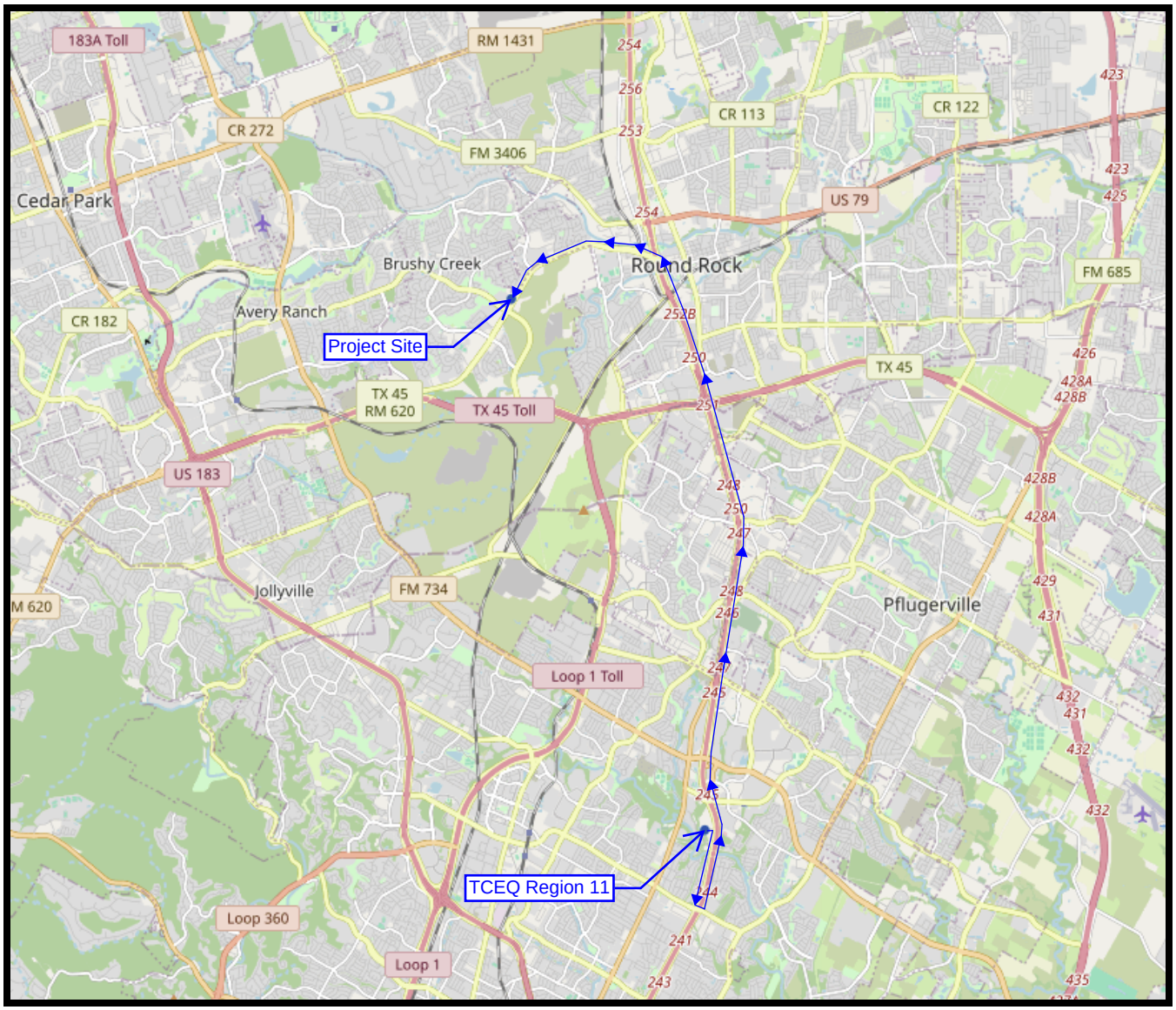
19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

☐ TCEQ cashier
☒ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

20. ☒ 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.

21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

ATTACHMENT A



Attachment A - Road Map

ATTACHMENT B

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
US Topo

ROUND ROCK QUADRANGLE
TEXAS-WILLIAMSON CO.
7.5-MINUTE SERIES

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
10 000-foot ticks: Texas Coordinate System of 1983 (central zone)

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, October 2014
Roads.................... U.S. Census Bureau, 2014 - 2015
Names....................GNIS, 2015
Hydrography....................National Hydrography Dataset, 2014
Contours....................National Elevation Dataset, 2002
Boundaries............Multiple sources; see metadata file 1972 - 2015

Wetlands.........FWS National Wetlands Inventory 1977 - 2014

Edwards Recharge Zone shown on following map sheet

MN
GN
4° 2´
72 MILS
0° 40´
12 MILS

UTM GRID AND 2016 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
PU
Grid Zone Designation
14R

SCALE 1:24 000

KILOMETERS: 1 0.5 0 1 2
METERS: 1000 500 0 1000 2000
MILES: 1 0.5 0 1
FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Leander NE
2 Georgetown
3 Weir
4 Leander
5 Hutto
6 Jollyville
7 Pflugerville West
8 Pflugerville East

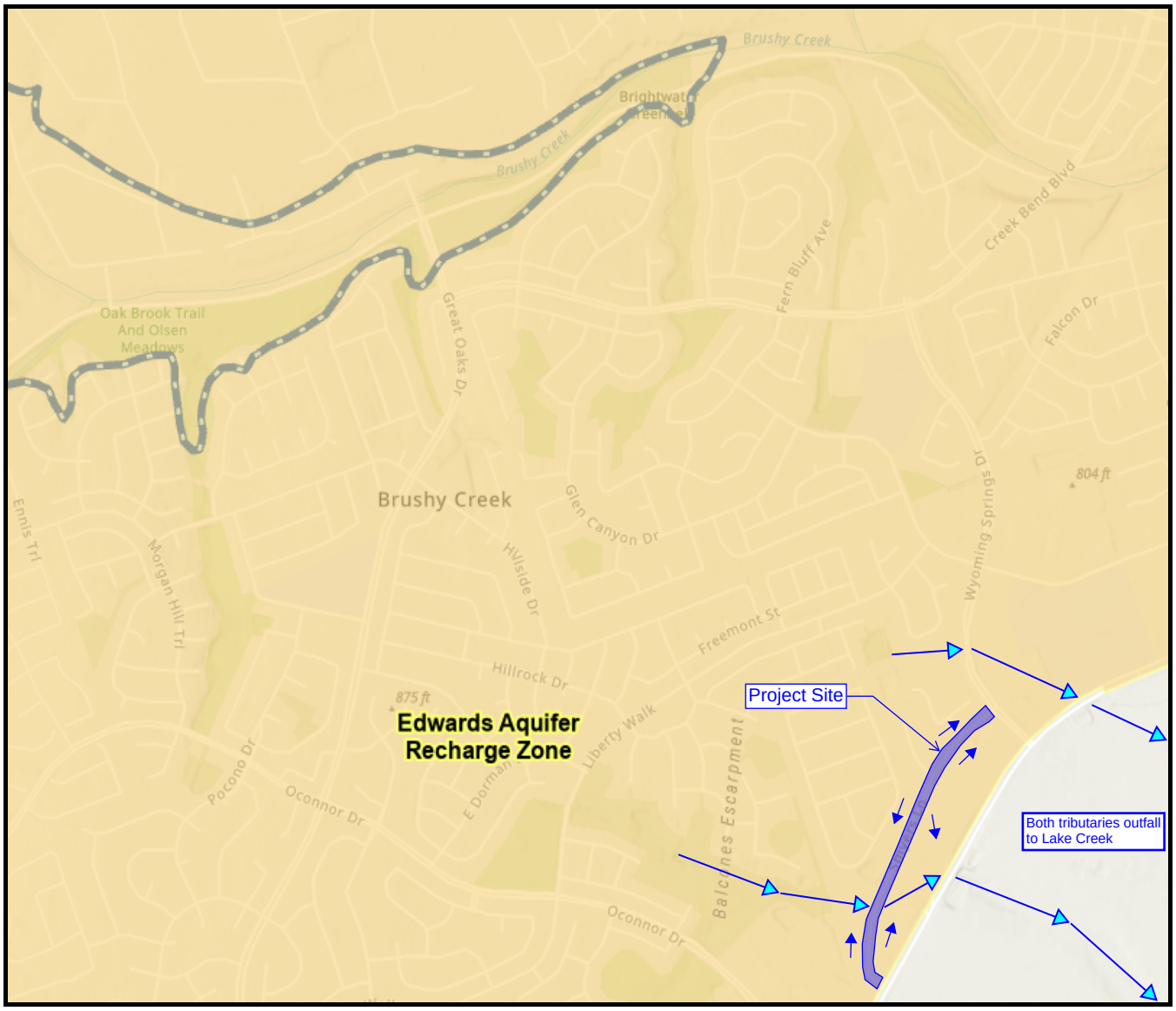
ADJOINING QUADRANGLES

ROAD CLASSIFICATION

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

ROUND ROCK, TX
2016

NSN. 7643016398009
NGA REF NO. USGSX24K71453



Attachment B - Edwards Recharge Zone Map

ATTACHMENT C

Project Description

This approximately 0.59-mile roadway project lies within Williamson County and inside the city limits of Round Rock, Texas. The total project area is 6.67 acres, of which 1.68 acres are impervious today. As a result of the pavement reconstruction on Smyers Lane on SH 29, there will be 0.00 acres of additional impervious cover due to pavement reconstruction. There will be approximately 0.01 acres of additional impervious cover due to concrete riprap installed as a drainage improvement on the upstream end of the existing cross culvert near Chipotle Mexican Grill.

The project includes pavement reconstruction of existing Smyers Lane. The lane configuration of the proposed typical section matches the existing typical section exactly. The typical section of the roadway is either a section with 2-10' lanes with 1' shoulders or a section with 3-10' lanes with 1' shoulders. There is no pavement widening proposed. The entire project occurs within existing City of Round Rock ROW.

The proposed temporary WPAP will implement silt fences, erosion control logs, rock filter dams, inlet protection, soil retention blankets, temporary seeding and construction exits as temporary measures to treat runoff from the construction site. The existing roadway was originally constructed prior to 1986 (historic aerial imagery shows it in existence on its existing alignment prior to 1955) and there are no existing permanent BMPs located within the project limits. In line with the existing configuration, there are no permanent BMPs proposed within the project limits to treat project runoff. An exception from submitting a water pollution abatement plan is being requested because the project site has been developed before, and there is a negligible increase in impervious cover resulting from the proposed project.

GEOLOGICAL ASSESSMENT

Geologic Assessment

Texas Commission on Environmental Quality

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), 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. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Anthony Krupa, P.G. Telephone: 210-699-9090

Date: February 9, 2026 Fax: 210-699-6426

Representing: **Raba Kistner, Inc.**, TBPG Firm #50220 / TBPE Firm #3257 for The Estes Group
(Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

2/9/26

Regulated Entity Name: Smyers Lane from RM 620 to Wyoming Springs Drive

Project Information

1. Date(s) of Geologic Assessment was performed: January 15, 2026
2. Type of Project:

☒ WPAP ☐ AST
☐ SCS ☐ UST

3. Location of Project:

☒ Recharge Zone
☐ Transition Zone
☐ Contributing Zone within the Transition Zone

4. ☒ **Attachment A – Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

5. ☒ Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the Site Geologic Map or a separate soils map.

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness (feet)
Eckrant-Rock outcrop association, 1 to 10 percent slopes (ErE)	D	Veneer to 1.5 feet
Georgetown stony clay loam, 1 to 3 percent slopes (GsB)	D	~2-3 feet

**Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.
B. Soils having a moderate infiltration rate when thoroughly wetted.
C. Soils having a slow infiltration rate when thoroughly wetted.
D. Soils having a very slow infiltration rate when thoroughly wetted.

6. ☒ **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thickness is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
7. ☒ **Attachment C – Site Geology**. A narrative description of the site-specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.
8. ☒ **Attachment D – Site Geologic Map(s).** The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1":400'.

   Applicant's Site Plan Scale: 1" = 300'
   Site Geologic Map Scale: 1" = 300'
   Site Soils Map Scale (if more than 1 soil type): 1" = 400'
9. Method of collecting positional data:

☒ Global Positioning System (GPS) technology.
☐ Other method(s). Please describe method of data collection: ___

10. ☒ The project site boundaries are clearly shown and labeled on the Site Geologic Map.

11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.

12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

    ☐ Geologic or manmade features were not discovered on the project site during the field investigation.

13. ☒ The Recharge Zone boundary is shown and labeled, if appropriate.

14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

    ☒ There are <u>six</u> test holes present on the project site and the locations are shown and labeled. (Check all of the following that apply.)

    ☒ The test holes are not in use and have been properly abandoned.

    ☐ The well is not in use and will be properly abandoned.

    ☐ The well is in use and complies with 16 TAC Chapter 76.

    ☐ There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

☒ 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

GEOLOGIC ASSESSMENT TABLE
(TCEQ-0585-TABLE)

COMMENTS TO GEOLOGIC ASSESSMENT TABLE

SOIL PROFILE

SITE SOILS MAP

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: ***Smyers Lane Rehabilitation Project***
Round Rock, Williamson County, Texas *(**RKI** Project No. ASF26-003-00)*

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING	
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11	12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)	TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	≥1.6	
MB-1	30°30'30.10"N	97°43'1.60"W	MB (COMM)	30	Ked	5.0	2.0	~2-3					X	6	36	√		√		Hilltop
MB-2	30°30'28.50"N	97°43'3.70"W	MB (SS)	30	Ked	1,897.0	2.0	~6-8					X	8	38	√		√		Hilltop
MB-3	30°30'19.90"N	97°43'10.20"W	MB (E)	30	Ked	85.0	2.0	~2-3					X	6	36	√		√		Hilltop
MB-4	30°30'19.20"N	97°43'10.60"W	MB (COMM)	30	Ked	5.0	2.0	~2-3					X	6	36	√		√		Hilltop
MB-5	30°30'13.60"N	97°43'13.60"W	MB (COMM)	30	Ked	15.0	2.0	~2-3					X	6	36	√		√		Hilltop
MB-6	30°30'10.20"N	97°43'13.90"W	MB (NG)	30	Ked	2,695.0	3.0	~4-6					X	6	36	√		√		Hilltop/Stream
MB-7	30°30'15.80"N	97°43'11.50"W	MB (E)	30	Ked	10.0	2.0	~2-3					X	6	36	√		√		Hilltop
MB-8	30°30'15.80"N	97°43'11.50"W	MB (COMM)	30	Ked	10.0	2.0	~2-3					X	6	36	√		√		Hilltop
MB-9	30°30'19.37"N	97°43'9.57"W	MB (W)	30	Ked	3,143.0	2.0	~3-4					X	6	36	√		√		Hilltop/Stream
MB-10	30°30'25.10"N	97°43'6.10"W	MB (E)	30	Ked	10.0	2.0	~2-3					X	6	36	√		√		Hilltop
MB-11	30°30'25.10"N	97°43'6.10"W	MB (COMM)	30	Ked	10.0	2.0	~2-3					X	6	36	√		√		Hilltop
MB-12	30°30'28.91"N	97°43'1.49"W	MB (SD)	30	Ked	142.0	2.0	~6-8					X	8	38	√		√		Hilltop
MB-13	30°30'4.64"N	97°43'14.77"W	MB (TH)	30	Ked	0.3	0.3	15.0					X	6	36	√		√		Hilltop
MB-14	30°30'9.50"N	97°43'14.70"W	MB (TH)	30	Ked	0.3	0.3	15.0					X	6	36	√		√		Hilltop
MB-15	30°30'14.08"N	97°43'12.90"W	MB (TH)	30	Ked	0.3	0.3	15.0					X	6	36	√		√		Hilltop
MB-16	30°30'18.58"N	97°43'10.31"W	MB (TH)	30	Ked	0.3	0.3	15.0					X	6	36	√		√		Hilltop
MB-17	30°30'25.16"N	97°43'6.85"W	MB (TH)	30	Ked	0.3	0.3	6.0					X	6	36	√		√		Hilltop
MB-18	30°30'29.45"N	97°43'1.56"W	MB (TH)	30	Ked	0.3	0.3	6.0					X	6	36	√		√		Hilltop

*** DATUM:** ***NAD83***

Manmade Features: E = electric; SS = sanitary sewer; W = water; SD = stormwater drainage; COMM = communications; NG = Natural Gas; TH = Test Hole
Formation: Ked = Edwards Limestone

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials: ***Granular bedding material for the utility trenches (Features MB-1 through MB-12), bentonite and auger cuttings for test holes (Featured MB-13 through MB-16).***

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Natural Resource Conservation Commission's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.
My signature certifies that I am qualified as a geologist as defined by 30 TAC 213.

Date: ***February 9, 2026***

Sheet 1 of 1

TCEQ-0585-Table (Rev. 10-01-04)

COMMENTS TO GEOLOGIC ASSESSMENT TABLE
Smyers Lane Rehabilitation Project
Round Rock, Williamson County, Texas

The locations of potential recharge features identified as part of this assessment and discussed below are indicated on the attached ***Site Geologic Map***, which is provided as ***Attachment D*** to this report. As discussed herein, the locations of 12 manmade features (i.e., electric, communications, natural gas, potable water, sanitary sewer utilities, and storm drain lines) were mapped based on review of existing utilities map made publicly available online by the City of Round Rock in addition to field observations. The locations of 6 additional manmade features consisting of geotechnical borings were mapped based on review of the *Pavement Engineering Study for Smyers Lane Rehabilitation (**RKI** Project No. AAA25-084-00, submitted October 14, 2025).*

Non-Karst Features

Manmade Features in Bedrock

Features MB-1 through MB-18 (MB)

Feature MB-1 consists of a trench for a communications utility line. The location of this trench is inferred based on field reconnaissance and the location of an access point. The trench hosting the utility line is inferred to be installed 2-3 feet or more into the Edwards Limestone (Ked) formation. This trench is inferred to extend to the northwest outside of the assessment area along the west side of the Wyoming Springs Road right-of-way (ROW). The length of the utility trench within the assessment area is estimated to be on the order of 5 linear feet.

Feature MB-2 consists of a trench for a sanitary sewer utility line owned by the City of Round Rock (CoRR). The location of this trench is based on online published utility line maps *(CoRR, accessed Jan 22, 2026)*, field reconnaissance, and the locations of observed manholes. The trench hosting the utility line is inferred to be installed 6-8 feet or more into the Ked formation. This trench extends to the southwest along the west side of Smyers Lane. The length of the utility trench within the assessment area is estimated to be on the order of 1,897 linear feet.

Feature MB-3 consists of a trench for an underground electrical utility line. The location of this trench is inferred based on the observed locations of existing street lights. The trench hosting the utility line is inferred to be installed 2-3 feet of more into the Ked formation. This trench extends to the southwest across Smyers Lane and Arbor Place Lane intersection. The length of the utility trench within the assessment area is estimated to be on the order of 85 linear feet.

Feature MB-4 consists of a trench for a communications utility line. The location of this trench is inferred based on the observed location of an access point. The trench hosting the utility is inferred to be installed 2-3 feet or more into the Ked formation. This trench is inferred to extend to the northwest along the Arbor Place Lane roadway. The length of the utility trench within the assessment area is estimated to be on the order of 5 linear feet.

Feature MB-5 consists of a trench for a communications utility line owned by MCI/Verizon. The location of this trench is inferred based on the observed location of an access point. The trench hosting the utility is inferred to be installed 2-3 feet or more into the Ked formation. The trench is inferred to extend to the north into the Arbor Place subdivision. The length of the utility trench within the assessment area is estimated to be on the order of 15 linear feet.

Feature MB-6 consists of a trench for a natural gas utility line. The location of this trench is based on the observed location of natural gas pipeline markers. The trench hosting the utility is inferred to be installed 4-6 feet or more into the Ked formation. The trench extends to the northeast along the east side of the Smyers Lane ROW. The length of the trench within the assessment area is estimated to be on the order of 2,695 linear feet.

Features MB-7 and MB-8 consist of an underground electrical utility line and communications utility that share the same trench. The location of this trench is based on field reconnaissance, and the observed locations of the utility lines entering the subsurface at the base of an overhead utility line pole. The trench is inferred to be installed 2-3 feet or more into the Ked formation. The trench is inferred to extend to the east toward the Goodwill building. The length of the trench within the assessment area is estimated to be on the order of 10 linear feet.

Feature MB-9 consists of a trench for a potable water utility line owned by CoRR. The location of this trench is based on online published utility line maps *(CoRR, accessed Jan 22, 2026)*, field reconnaissance, and the locations of observed fire hydrants and valve access points. The trench hosting the drainage system is inferred to be installed 3-4 feet or more into the Ked formation. This trench extends to the northeast along the east side of the Smyers Lane ROW and includes short laterals to service commercial and residential properties in the surrounding vicinity. The length of the utility trench within the assessment area is estimated to be on the order of 3,143 linear feet.

Feature MB-10 consists of a trench for an underground electrical utility line. The location of this trench is based on field reconnaissance, and the observed locations of the utility line entering the subsurface at the base of an overhead utility line pole. The trench is inferred to be installed 2-3 feet or more into the Ked formation. The trench is inferred to extend to the east toward the adjacent commercial retail strip. The length of the trench within the assessment area is estimated to be on the order of 10 linear feet.

Feature MB-11 consists of a trench for a communications utility. The location of this trench is based on field reconnaissance, and the observed locations of the utility line entering the subsurface at the base of an overhead utility line pole. The trench is inferred to be installed 2-3 feet or more into the Ked formation. The trench is inferred to extend to the east toward the adjacent commercial retail strip. The length of the trench within the assessment area is estimated to be on the order of 10 linear feet.

Feature MB-12 consists of a trench for a stormwater utility line owned by CoRR. The location of this trench is based on online published utility line maps *(CoRR, accessed Jan 22, 2026)*, field reconnaissance, and the locations of observed manholes and inlets. The trench hosting the utility line is inferred to be installed 6-8 feet or more into the Ked formation. This trench extends to the northwest from the east side of the Smyers Lane ROW, then turns to the northeast along the west side of the Smyers Lane roadway. The length of the utility trench within the assessment area is estimated to be on the order of 142 linear feet.

Features MB-13, MB-14, MB-15, MB-16, MB-17, and MB-18 consist of plugged test holes installed by **Raba Kistner Inc. (RKI).** The locations of the test holes are based on field observations as well as review of the *Pavement Engineering Study* report *(**RKI** Project No. AAA25-084-00, submitted October 14, 2025).*

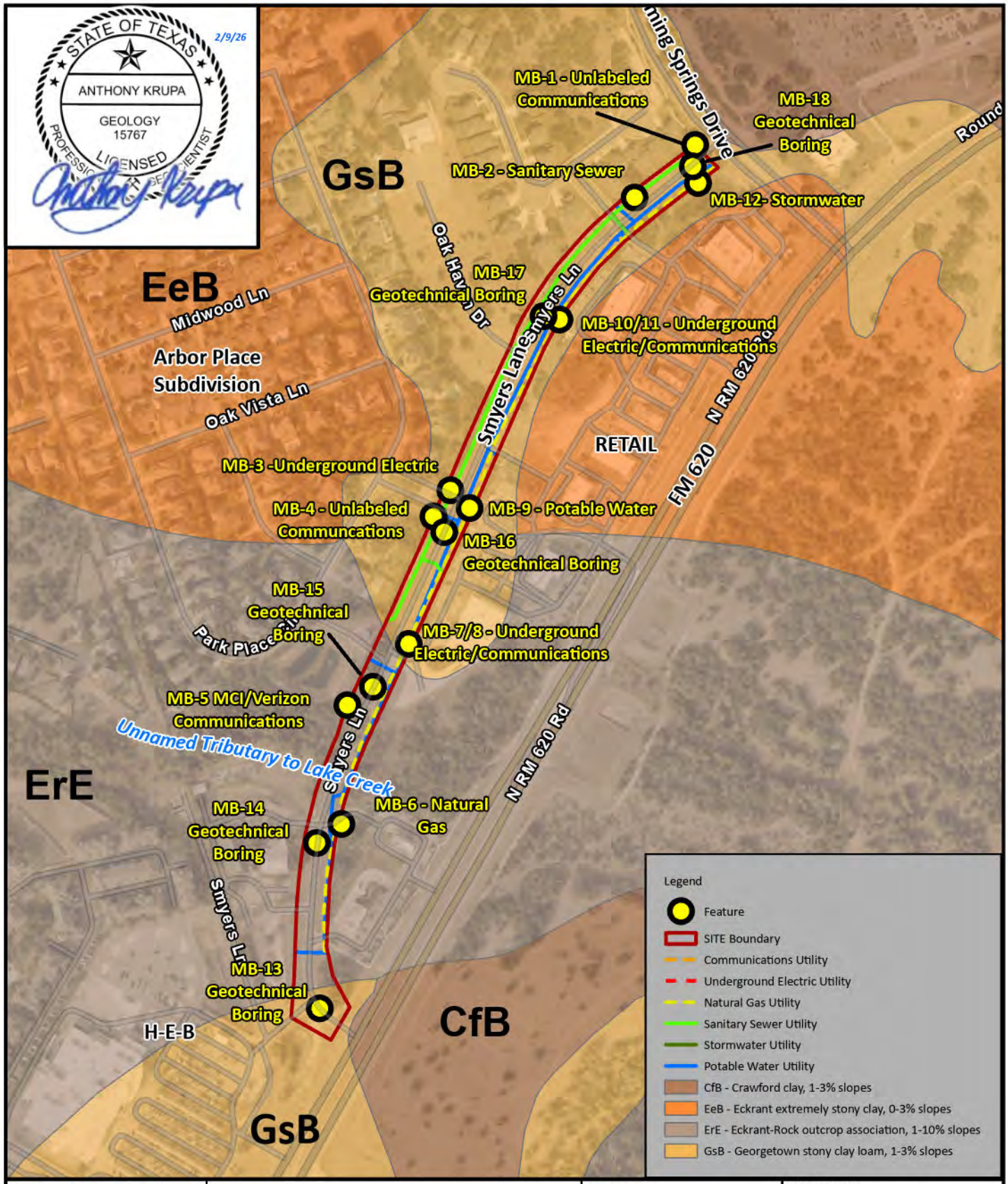
- The test holes designated as ***Features MB-13 through MB-16*** are located in the Smyers Lane roadway in the south and sections of the Project. The test holes are designated as “B-1” through “B-4”, respectively, and were installed to a total depth of 15 feet into the underlying Ked formation. The diameters of the test holes are approximately 0.3 feet and are backfilled with a mix of auger cuttings and bentonite. No groundwater was encountered during test hole installations.

- The test holes designated as ***Features MB-17 and MB-18*** are located in the Smyers Lane roadway in the north section of the Project. The test holes were designated as “B-5” and “B-6”, respectively, and were installed to a total depth of 6 feet into the underlying Ked formation. The diameters of the test holes are approximately 0.3 feet and are backfilled with a mix of auger cuttings and bentonite. No groundwater was encountered during test hole installations.

SOIL PROFILE
Smyers Lane Rehabilitation Project
Round Rock, Williamson County, Texas

SOIL SERIES	THICKNESS ON SITE	DESCRIPTION
Eckrant	**Veneer to 1.5 feet**	***Eckrant-Rock outcrop association, 1 to 10 percent slopes (ErE):*** The Eckrant component of this soil type forms on ridges from a parent material consisting of residuum weathered from limestone and consists of very shallow to shallow, well-drained, very cobbly to extremely cobbly, clayey soils. Limestone bedrock outcrops compose approximately 16 percent of the mapped extent of ErE soils. This soil has moderate shrink-swell potential. This soil is not flooded nor ponded.
Georgetown	**~2-3 feet**	***Georgetown stony clay loam, 1 to 3 percent slopes (GsB):*** This soil comprises shallow stony clay loam that form along ridges in the Edwards Plateau from a parent material consisting of clayey residuum weathered from limestone. The surface layer of the Georgetown soil is a dark brown clay loam that contains a few fragments of chert, about 7 inches thick. The subsoil is a reddish-brown cobbly clay that is up to 25 percent limestone and chert fragments that range in size from ¼ inch to 4 inches in diameter, that occurs to depths of approximately 35 inches.

The preceding table was prepared on the basis of information provided in the *Soils Survey of Williamson County, Texas (1983)* and the *NRCS Web Soil Survey (2019)*, in addition to field observations. As presented on the attached ***Site Soils Map***, native soils mapped in the south portion of the assessment area are classified as the Eckrant-Rock outcrop association, 1 to 10 percent slopes (ErE, *[See Photograph to the right of observed ErE soil*]) and the Georgetown stony clay loam, 1 to 3 percent slopes (GsB), while native soils mapped in the central and north portions are classified as GsB. Each of the referenced soils are weakly-developed and relatively thin, occurring over weathered limestone units of the Edwards Limestone (Ked). Thin, rocky soils were observed along the unnamed tributary to Lake Creek, which matches the published description for ErE soils. Both the Eckrant, and Georgetown soil units are classified as Group D soils, which are described as having very low capacity to transmit infiltrating precipitation.



RABA KISTNER
a kiwa company
12821 West Golden Lane
San Antonio, Texas 78249
P 210.699.9090
F 210.699.6426
www.rkci.com
TBPE Firm F-3257

PROJECT SOILS MAP

SMYERS LANE REHABILITATION PROJECT
ROUND ROCK, WILLIAMSON COUNTY, TEXAS

REVISIONS:

No.	DATE	DESCRIPTION

PROJECT No.:	ASF26-003-00
ISSUE DATE:	2/9/2026
DRAWN / CHECKED BY:	LAW / AJK
REVIEWED BY:	RVK

N W E S

0 200 400 Feet

1 inch equals 400 feet

NOTE: This Drawing is Provided for Illustration Only, May Not be to Scale and is Not Suitable for Design or Construction Purposes

ATTACHMENT B

STRATIGRAPHIC COLUMN

STRATIGRAPHIC COLUMN
Smyers Lane Rehabilitation Project
Round Rock, Williamson County, Texas

STRATIGRAPHIC FORMATION	THICKNESS	DESCRIPTION
Edwards Limestone (Ked)	10-295 feet	
Member 4	*40 feet*	Gray to tan, hard, dense, thick-to thinly-bedded, fine-grained limestone with a soft dolomitic limestone zone near the middle.
Member 3	*10-15 feet*	Gray to tan, soft, nodular-weathering marly limestone.
Member 2	*40 feet*	Light gray to tan, fine- to medium-grained, hard, thin- to thick-bedded limestone; chert nodules in lower third.
Member 1	*200 feet*	Gray-brown, thin- to medium-bedded, porous, dolomite, dolomitic limestone, and limestone; chert is common with solution collapsed zone at the top. ***Observed float rock in the channel of the unnamed tributary to Lake Creek in the south section of the Assessment Area.***

Note: Stratigraphic Column adapted from the Environmental Geology of the Austin Area: An Aid to Urban Planning, Garner and Young, 1976. Member 1 float rock depicted in the photograph to the left.

ATTACHMENT C

NARRATIVE OF PROJECT SPECIFIC GEOLOGY

SITE GEOLOGY NARRATIVE
Smyers Lane Rehabilitation Project
Round Rock, Williamson County, Texas

Introduction

The following is a site-specific discussion of existing geological conditions and potential recharge features for the Edwards Aquifer identified within the proposed Smyers Lane Rehabilitation Project, which comprises approximately 3,103 linear feet, and consists of the Smyers Lane right-of-way (ROW) from Wyoming Springs Drive to Farm-to-Market (FM) 620 in Round Rock, Williamson County, Texas (hereinafter referred to as the SITE). Planned improvements will include the installation of new asphalt-paved traffic lanes.

This assessment was performed by **Raba Kistner, Inc. (RKI)** for The Estes Group (CLIENT) in association with applicable Edwards Aquifer Protection Program Rules as specified in *Title 30 of the Texas Administrative Code, Section 213 (30 TAC §213*, *effective April 24, 2008).* This assessment report is in the format required by the Texas Commission on Environmental Quality (TCEQ) for the Geologic Assessment portion of the Water Pollution Abatement Plan (WPAP) submittal and was prepared in accordance with the revised *Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones (TCEQ-0585)*, which are applicable to submittals received by the TCEQ after October 1, 2004.

This geologic assessment report documents conditions observed by **RKI** within the SITE boundaries on January 15, 2026. Results of the field reconnaissance mapping activities are further discussed below.

Project Description

Project Location. As indicated on the attached ***Site Geologic Map***, the approximately 120-foot wide SITE corridor begins within the Smyers Lane ROW at its intersection with Wyoming Springs Drive and extends approximately 3,103 linear feet southwest, ending at the Smyers Lane and FM 620 intersection. The SITE is located entirely within the Smyers Lane ROW within a mixed-use suburban and commercial retail area in the west sector of Round Rock, Williamson County, Texas. The SITE currently consists of open upland and drainage areas with grassland, oak, and cedar ash juniper. The SITE is bordered by single-family residences and the King of Kings Lutheran Church to the west of the SITE, by the Wyoming Springs Drive roadway to the north, by undeveloped and commercial retail properties to the east, and the FM 620 roadway to the south.

In accordance with TCEQ requirements, the full extent of the SITE was assessed in conjunction with Geologic Assessment activities. The following photographs depict the general SITE conditions.

Photograph 1: View to the south at the north portion of the SITE.

Photograph 2: View to the northeast across the central portion of the SITE.

Photograph 3: View to the south across the central portion of the SITE.

Photograph 4: View to the northwest across the south portion of the SITE.

Based on review of official maps prepared by TCEQ that are available from the Edwards Aquifer Protection Program website (http://www.tceq.texas.gov/field/eapp/program.html), the SITE is fully located within the Edwards Aquifer Recharge Zone (EARZ) as depicted on the ***Site Geologic Map***. As such, the performance of a geologic assessment is required to facilitate planned WPAP construction activities in accordance with applicable provisions set forth in the EAPP rules as specified in *Title 30 of the Texas Administrative Code, Section 213 (30 TAC 213, effective April 24, 2008).*

Topography and Drainage. The U.S. Geological Survey (USGS) 7.5-Minute Series Topographic map (R*ound Rock Quadrangle*, 2022) was reviewed to evaluate general surface conditions and drainage patterns. The SITE consists of gently sloping hilltop topography that ranges from approximately 805 feet at the south end to approximately 790 feet at the north end. An unnamed tributary to Lake Creek intersects the south portion of the Project and comprises a local minimum of 782 feet. To illustrate topographic conditions, the 10-foot topographic contours are depicted on the ***Site Geologic Map***.

A review of U.S. Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM, Map No. 48491C0488F) indicates that no part of the SITE is located within designated 100-year or 500-year floodplain areas. Stormwater within the SITE generally flows as sheet flow to the east-northeast and ultimately enters the unnamed tributary to Lake Creek.

Historical Property Use. Although research pertaining to historical land use activities was beyond the scope of this assessment, historical aerial imagery was reviewed to evaluate past property conditions. The following aerial photographs from Google Earth™ were reviewed: 1985, 1995, 1997, 2002, 2005, 2006, 2008, 2009, 2011 through 2019, and 2021 through 2025. Aerial imagery confirms that the SITE has historically existed as an asphalt paved roadway with an associated undeveloped, grassy ROW.

Classification of Recharge Features: As further described herein, naturally occurring recharge features attributed to karstification of limestone terrain and/or surface erosional processes were not identified within SITE boundaries. Features identified and discussed below include twelve manmade trenches that host various utility lines in addition to six test holes. The significance of these features was assessed using definitions and guidance provided in *Instructions to Geologists (TCEQ-0585-Instructions, revised October 1, 2004)*. All features within the SITE that met the criteria presented in this reference were mapped. The characteristics of all mapped features and the assessments of these features, as defined by the TCEQ, are presented in the attached ***Geologic Assessment Table (TCEQ-0585-Table)***.

Stratigraphy

As presented in the attached ***Stratigraphic Column***, information pertaining to the lithologies and thickness of geologic units underlying the SITE was adapted from Garner and Young (1976) published by the Bureau of Economic Geology at the University of Texas. Collective published data indicate that the SITE is underlain by the Edwards Limestone (Ked) formation. No outcrops of Ked were observed within the Project, however, float rock of Ked was observed within the channel of the unnamed tributary to Lake Creek, which is inferred to be associated with Member 1 as defined on the attached ***Stratigraphic Column***.

Structure

This SITE is located along the edge of the Balcones Fault Zone and, as such, exhibits a similar structural trend. The Balcones Fault Zone generally consists of a northeast-southwest trending, *en echelon* normal fault system, which juxtaposes Upper Cretaceous lithologies in the southeast with Lower Cretaceous lithologies in the northwest. As a result of this larger-scale, regional faulting, minor internal fault sequences and fractures exist within this zone which generally follow the same structural trend and accommodate localized displacement, particularly within the extent of the EARZ.

In order to evaluate the presence of normal fault zones that could transect property boundaries, **RKI** reviewed historical aerial photographs and published maps. No evidence of faulting was observed in the historical aerial imagery nor depicted on published maps. **RKI** did not observe evidence of faulting within the Project during field reconnaissance activities. Additionally, faults were not identified on the published geologic map prepared by Garner and Young (1976), which was referenced for this study.

Karst Features

No karst features were identified within the SITE boundaries or immediately adjacent areas.

Manmade Features

As presented on the ***Site Geologic Map***, a total of 18 manmade features were identified that may potentially serve to enhance the transmission of surface runoff to the subsurface. The features consist of backfilled trenches excavated to support the installation of underground utility lines designated as ***Features MB-1 through MB-12***, in addition to test holes excavated to support the *Pavement Engineering Study* for the project designated as ***Features MB-13 through MB-18***. These features meet the criteria for assessment as manmade features in bedrock. Information regarding the locations of these borings was based on review of publicly available online utility maps published by the City of Round Rock (CoRR, accessed January 22, 2026) as well as field observations.

Although not directly observable, it is inferred that the trenches and boreholes for these subgrade installations are backfilled in accordance with standard construction practices that include the use of structural fill soils (e.g., base course materials, limestone gravel, compacted clay soils, etc.), and/or native clay soils with bentonite. The manmade features consisting of test holes were backfilled with auger cuttings and bentonite with a topping of asphalt patch at the surface. The trenches and borings were not observed in conjunction with any naturally-occurring recharge features. Although the backfilled trenches and test holes may exhibit somewhat greater relative infiltration rate than the surrounding soil/rock strata underlying the project boundaries, these manmade features are collectively classified as not sensitive, having a low potential of preferentially transmitting fluids into the Edwards Aquifer. This classification is based upon the point assignment criteria presented in the ***Geologic Assessment Table (TCEQ-0585)*** and professional judgment.

Potential for Fluid Migration to the Edwards Aquifer

The majority of the SITE is characterized by intact limestone with overlying clay soils having low published infiltration rates. Based on our review of SITE geology, topography, and drainage conditions, in addition to the results of our detailed mapping efforts, the overall potential for fluid movement (i.e. surface-derived flow) to the Edwards Aquifer via infiltration is considered to be low. The following assessment findings support this conclusion.

- The SITE is overlain by approximately 1 to 3 feet of clay soils that are classified as Group D soils, which have reported slow infiltration rates.
- No bedrock exposures hosting karst features or other solution openings were observed within the SITE boundaries or immediately adjoining properties.
- Manmade features consisting of utility trenches and test holes present at the SITE are collectively classified as not sensitive as they are inferred to be backfilled in accordance with standard construction/drilling practices. The trenches and test holes were not observed in conjunction with any naturally-occurring recharge features.

References

Barnes, V. L., 1974, Revised 1983, Geologic Atlas of Texas Austin Sheet; Bureau of Economic Geology, The University of Texas at Austin, Austin, Texas.

City of Round Rock Geospatial Services Division, Information Technology Department, *City of Round Rock GeoHub, https://geohub.roundrocktexas.gov/search?collection=appAndMap accessed January 26, 2026).*

Garner, L. E., and Young, K. P., 1976, *Environmental Geology of the Austin Area: An Aid to Urban Planning,* The University of Texas at Austin, Bureau of Economic Geology, Report of Investigations RI 86.

Google Earth Pro, Version 7.3.6.9796. Aerial images: December 1985, January 1995, October 2005, April 2006, February and July 2008, January 2010, April 2012, February 2013, January, February, and November 2014, January, May, and December 2015, February 2016, January 2017, January and November 2018, November 2019, April and October 2020, October 2021, April, June, and December 2023, and February and April 2025.

National Flood Insurance Program (NFIP), 2025, Flood Insurance Rate Map (FIRM), Comal County, Texas and Incorporated Areas; U.S. Federal Emergency Management Agency (FEMA), Map No. 48491C0488F, January 26, 2026.

Texas Commission on Environmental Quality (TCEQ), 2021, Edwards Aquifer Viewer, version 5.1, https://www.tceq.texas.gov/gis/edwards-viewer.html (accessed January 26, 2025).

Texas Water Development Board (TWDB), Water Data Interactive (WDI) Groundwater Data Viewer, https://www2.twdb.texas.gov/apps/WaterDataInteractive/GroundwaterDataViewer/?map=sdr, accessed January 26, 2025.

The Estes Group, 2025, *Pages from 2025-12-17 90% Smyers & CR 122 Rehab Plans.pdf*

United States Geological Survey (USGS), 1988, Round Rock Quadrangle; USGS, Denver, Colorado.

United States Department of Agriculture (USDA), 1983, Soil Survey of Williamson County, Texas; USDA / Soil Conservation Service / Texas Agricultural Experiment Station.

United States Department of Agriculture (USDA), 1986, Urban Hydrology for Small Watersheds; USDA / Natural Resource Conservation Service, Technical Release (TR-) 55, June 1986.

ATTACHMENT D

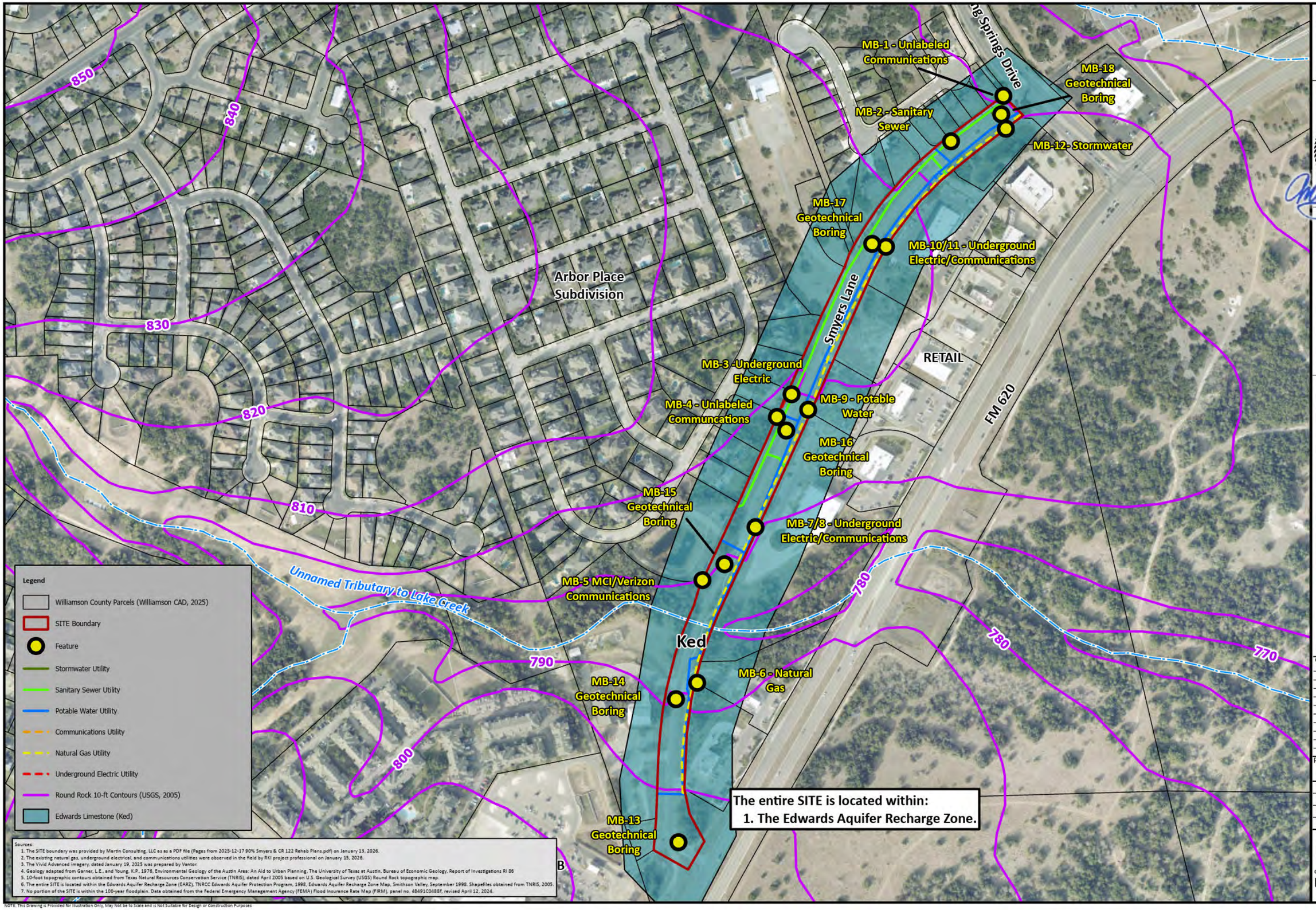
FEATURE POSITION TABLE (GPS COORDINATES)

SITE GEOLOGIC MAP

FEATURE POSITION TABLE
Smyers Lane Rehabilitation Project
Round Rock, Williamson County, Texas
RKI Project No. ASF26-003-00

Feature Designation	Feature Type	Date Collected	North Latitude	West Longitude	UTM Northing (meters)	UTM Easting (meters)
MB-1	Manmade feature in bedrock (Comms)	1/15/2025	30°30'30.10"N	97°43'1.60"W	3375818	623101
MB-2	Manmade feature in bedrock (Sanitary Sewer)	1/15/2025	30°30'28.50"N	97°43'3.70"W	3375768	623046
MB-3	Manmade feature in bedrock (Electric)	1/15/2025	30°30'19.90"N	97°43'10.20"W	3375501	622876
MB-4	Manmade feature in bedrock (Comms)	1/15/2025	30°30'19.20"N	97°43'10.60"W	3375479	622865
MB-5	Manmade feature in bedrock (Comms)	1/15/2025	30°30'13.60"N	97°43'13.60"W	3375306	622787
MB-6	Manmade feature in bedrock (Natural Gas)	1/15/2025	30°30'10.20"N	97°43'13.90"W	3375201	622780
MB-7	Manmade feature in bedrock (Electric)	1/15/2025	30°30'15.80"N	97°43'11.50"W	3375375	622842
MB-8	Manmade feature in bedrock (Communication)	1/15/2025	30°30'15.80"N	97°43'11.50"W	3375375	622842
MB-9	Manmade feature in bedrock (Water)	1/15/2025	30°30'19.37"N	97°43'9.57"W	3375485	622892
MB-10	Manmade feature in bedrock (Electric)	1/15/2025	30°30'25.10"N	97°43'6.10"W	3375662	622983
MB-11	Manmade feature in bedrock (Comms)	1/15/2025	30°30'25.10"N	97°43'6.10"W	3375662	622983
MB-12	Manmade feature in bedrock (Storm Drain System)	1/15/2025	30°30'28.91"N	97°43'1.49"W	3375781	623105
MB-13	Manmade feature in bedrock (Test Hole)	1/15/2025	30°30'4.64"N	97°43'14.77"W	3375030	622759
MB-14	Manmade feature in bedrock (Test Hole)	1/15/2025	30°30'9.50"N	97°43'14.70"W	3375180	622759
MB-15	Manmade feature in bedrock (Test Hole)	1/15/2025	30°30'14.08"N	97°43'12.90"W	3375321	622806
MB-16	Manmade feature in bedrock (Test Hole)	1/15/2025	30°30'18.58"N	97°43'10.31"W	3375460	622873
MB-17	Manmade feature in bedrock (Test Hole)	1/15/2025	30°30'25.16"N	97°43'6.85"W	3375664	622963
MB-18	Manmade feature in bedrock (Test Hole)	1/15/2025	30°30'29.45"N	97°43'1.56"W	3375798	623102

Notes:
1. Geographic coordinates are presented Degrees, Minutes, Decimal Seconds
2. Reference Datum is NAD 83
3. Data were collected utilizing a Garmin GPS 60cx Global Positioning System.
4. Horizontal Accuracy: RMS Value < 3 meter ground resolution
5. GPS data was collected by Anthony Krupa (**RKI** Project Professional).
6. GPS coordinates correlate to the points on the map for each feature.



RABA KISTNER
a kiwa company
12821 West Golden Lane
San Antonio, Texas 78249
P 210.699.9090
F 210.699.6426
www.rkci.com
TBPE Firm P-3257/TBPG #50220

2/9/26

STATE OF TEXAS
ANTHONY KRUPA
GEOLOGY
15767
PROFESSIONAL GEOSCIENTIST
LICENSED

SITE GEOLOGIC MAP

SMYERS LANE REHABILITATION PROJECT
±3,103 LINEAR FEET (0.6 MILES)
WYOMING SPRINGS DRIVE TO FM 620
ROUND ROCK, WILLIAMSON COUNTY, TEXAS

REVISIONS:

No.	DATE	DESCRIPTION

PROJECT No.: ASF26-003-00

ISSUE DATE:	2/9/2026
DRAWN BY:	LAW
CHECKED BY:	AJK
REVIEWED BY	RVK

N W E S

0 75 150 300 FEET

1 INCH 300 FEET

RECHARGE AND TRANSITION ZONE EXCEPTION REQUEST

Recharge and Transition Zone Exception Request Form

Texas Commission on Environmental Quality
30 TAC §213.9 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 **Recharge and Transition Zone Exception Request Form** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Michael Curl
Date: 2/9/2026
Signature of Customer/Agent:

Regulated Entity Name: Smyers Lane from RM 620 to Wyoming Springs Drive

Exception Request

1. ☒ **Attachment A - Nature of Exception**. A narrative description of the nature of each exception requested is attached. All provisions of 30 TAC §213 Subchapter A for which an exception is being requested have been identified in the description.
2. ☒ **Attachment B - Documentation of Equivalent Water Quality Protection**. Documentation demonstrating equivalent water quality protection for the Edwards Aquifer is attached.

Administrative Information

3. ☒ 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.
4. ☒ The applicant understands that no exception will be granted for a prohibited activity in Chapter 213.
5. ☒ The applicant understands that prior approval under this section must be obtained from the executive director for the exception to be authorized.

ATTACHMENT A

Nature of Exception

An exception to 30 TAC §213.5(b)(4)(B) is requested to allow an increase in impervious cover from 25.2% to 25.3% for the Smyers Lane from RM 620 to Wyoming Springs Drive project. This 0.1% increase is requested for the inclusion of concrete riprap at the upstream end of the proposed culvert extension. While not a BMP, the concrete riprap will improve slope stability and reduce the potential for erosion at the confluence of the Lake Creek Tributary with the roadside ditches at the upstream end of the cross culvert. Inclusion of the concrete riprap improves the water quality protection at this location as there is no concrete riprap in place in the existing condition to protect the grading at the upstream end of the culvert.

ATTACHMENT B

Documentation of Equivalent Water Quality Protection

The existing project site does not have any existing BMPs in place to treat stormwater runoff from the project site. The proposed project is reconstructing the pavement entirely within the existing pavement footprint (no pavement widening is occurring). Temporary BMPs are included to protect water quality during pavement reconstruction.

A culvert extension is being proposed to improve the safety of the travelling public by eliminating a steep drop off directly adjacent to the SB travel lane. The existing drop off is nearly vertical and composed of an old masonry wall and exposed soil. Concrete riprap is proposed at the upstream end of the extended culvert to minimize the potential for erosion at this location and ultimately improve upon what exists on the project site today.

Overall, the project site appears to be at a low risk for negatively impacting the water quality of the Edwards Aquifer. During the Geologic Assessment, the project site was noted to have no naturally occurring recharge features identified within the project site. In addition, stormwater runoff from the project leaves the project site and immediately flows beneath RM 620 into 2 existing ponds, both of which are located outside the Edwards Aquifer Recharge Zone.

TEMPORARY STORMWATER

Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); 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 **Temporary Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Michael Curl

Date: 2/9/2026

Signature of Customer/Agent:

Regulated Entity Name: Smyers Lane from RM 620 to Wyoming Springs Drive

Project Information

Potential Sources of Contamination

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

   ☐ The following fuels and/or hazardous substances will be stored on the site: N/A

   These fuels and/or hazardous substances will be stored in:

   ☐ Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

☒ Fuels and hazardous substances will not be stored on the site.

2. ☒ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ☒ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

5. ☒ **Attachment C - Sequence of Major Activities**. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

   ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

   ☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Lake Creek Tributary

Temporary Best Management Practices (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.

7. ☒ **Attachment D – Temporary Best Management Practices and Measures**. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

☒ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

☒ A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

☒ A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.

☒ A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

8. ☒ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

☐ **Attachment E - Request to Temporarily Seal a Feature**. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. ☒ **Attachment F - Structural Practices**. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. ☒ **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

☒ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

☒ N/A

12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☒ If sediment escapes the construction site, off-site accumulations of 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).

15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☒ 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).

Soil Stabilization Practices

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. ☒ **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices**. A schedule of the interim and permanent soil stabilization practices for the site is attached.

18. ☒ Records must be kept at the site of 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.

19. ☒ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

20. ☒ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

ATTACHMENT A

Spill Response Actions

In the event of an accidental spill during construction, the contractor will be required to notify the owner, who will in turn contact TCEQ to notify them in the event of a spill. Additional notifications as required by the type and amount of spill will be conducted by the owner or owner's representative.

- Contractor shall take action to contain the spill. For small spills, Contractor may use a rag to clean up a spill. For larger spills, Contractor may use sand or other absorbent material stockpiled on site to absorb larger spills. Absorbent material should be spread over the spill area to absorb the spilled product. Contractor may close a lane using applicable Traffic Control standards for the safety of the maintenance crew.
- In the event of an uncontained discharge the contractor shall utilize onsite equipment to construct berms downgradient of the spill with sand or other absorbent material to contain and absorb the spilled product.
- Sand or material used to contain the spill should be collected and stored in such a way so as not to continue to affect additional ground. Once the spill has been contained, collected material should be placed on poly or plastic sheeting until removed from the site. In the event of potential rainfall, the material should be covered with poly or plastic sheeting.

For significant or hazardous spills that are in reportable quantities:

- The owner shall notify the TCEQ by telephone as soon as possible and within 24 hours at (512)339-2929 (Austin) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224.
- For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, owner will notify the National Response Center at (800) 424-8802.
- Notification should first be made by telephone and followed up with a written report.
- The services of a spill contractor / Haz-Mat team should be obtained immediately. Owner should not clean up until appropriate & qualified staff(s) have arrived at the job site.
- Other agencies which may need to be consulted include, but not limited to, the City Police Department, County Sheriff Office at (512) 864-8282, Fire Departments, County Emergency Services (911), County Environmental Health Department at (512) 248-7620, etc.

Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 1.4.16. Contractor shall review this section.

ATTACHMENT B

Potential Sources of Contamination

Potential sources of contamination include:

- Oil, grease, fuel and hydraulic fluid from construction equipment and vehicle drippings.
- Dirt and dust which may fall off construction vehicles.
- Hydrocarbons from asphalt paving operations.
- Miscellaneous trash and litter from construction workers and material wrappings.
- Concrete truck washout.

ATTACHMENT C

Sequence of Major Activities

Site preparation for this project will generally include the following, in the order that they appear below:

- Clearing will provide for the removal of vegetation for the drainage improvements. It is anticipated that this may disturb approximately 0.01 acres.
- Excavation for the drainage improvements. It is anticipated that this may disturb approximately 0.01 acres.

Construction would generally include the following, in the order that they appear below:

- Placement of temporary erosion control devices. It is anticipated that this may disturb a negligible amount of the site area.
- Removal of the existing pavement, preparation of subgrade for roadway construction, placement of roadway base material, and placement of asphalt, and concrete material. It is anticipated that this may disturb approximately 1.68 acres.
- Site cleanup, top dressing, and revegetation (if applicable). It is anticipated that this may disturb the whole project area, approximately 6.67 acres.

ATTACHMENT D

Temporary Best Management Practices and Measures

Silt fences, soil retention blankets, erosion control logs, rock filter dams, and construction entrance/ exit(s) will be used during and/or after construction and will be installed prior to site preparation, as applicable. Prior to the initiation of construction activities, all previously installed control measures will be repaired or reestablished for their designed or intended purpose.

Engineered temporary sediment control fences and rock filter dams will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site. This will occur throughout the proposed construction area, where applicable.

Site preparation, which is the initiation of all activity on the project, will disturb the largest amount of soil. Therefore, before any work can begin, the contractor shall be responsible for the installation of all on-site control measures. The methodology for pollution prevention of on-site stormwater will include:

- Erection of erosion control logs and/or temporary sediment control fences along the downgradient boundary of construction activities for temporary erosion and sediment controls.
- Installation of rock berms downgradient from areas of concentrated stormwater flow for temporary erosion control, where applicable.
- Installation of stabilized construction entrance/ exit(s) to reduce the dispersion of sediment from the site.
- Installation of erosion control logs as inlet protection when there is planned construction within the drainage area that will runoff to the inlet.

Prior to the initiation of construction activities, all previously installed control measures will be repaired or reestablished for their designed or intended purpose. This work, which is the remainder of all activity on the project, may also disturb additional soil.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

No naturally occurring sensitive features were identified in the Geologic Assessment within the project limits.

BMP measures utilized in this plan are intended to allow stormwater to continue downstream after passing through the BMPs. This will allow stormwater runoff to continue downgradient to streams and/or features that may exist downstream of this site.

ATTACHMENT F

Structural Practices

Structural practices to be used include temporary sediment control fence, and rock filter dams. Refer to Attachment D for additional details.

ATTACHMENT G

Drainage Area Map

Please see Appendix A for the project's drainage design. Reference contours shown on USGS map for additional information.

ATTACHMENT I

Inspection and Maintenance for BMP's

Inspections and maintenance will be in accordance with TCEQ construction General Permit No. TXR150000.

ATTACHMENT J

Schedule of Interim and Permanent Soil Stabilization Practices

Interim stabilization would be performed pursuant to TCEQ Construction General Permit TXR150000. All areas not planned for impervious cover (i.e. asphalt, concrete) will be permanently stabilized with seeding and/or sodding prior to completion of this project.

PERMANENT STORMWATER

Permanent Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(Ii), (E), and (5), 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.

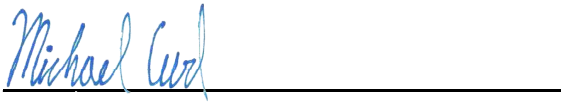
Signature

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 **Permanent Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Michael Curl

Date: 2/9/2026

Signature of Customer/Agent



Regulated Entity Name: Smyers Lane from RM 620 to Wyoming Springs Drive

Permanent Best Management Practices (BMPs)

Permanent best management practices and measures that will be used during and after construction is completed.

1. ☐ Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

   ☒ N/A

2. ☐ These practices and measures have been designed, and will be constructed, operated, and maintained to insure 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 prepared or 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 is: _____

☒ N/A

3. ☐ Owners must insure that permanent 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 appropriate regional office within 30 days of site completion.

   ☒ N/A

4. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

   ☐ The site will be used for low density single-family residential development and has 20% or less impervious cover.
   ☐ The site will be used for low density single-family residential development but has more than 20% impervious cover.
   ☒ The site will not be used for low density single-family residential development.

5. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

   ☐ **Attachment A - 20% or Less Impervious Cover Waiver**. The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
   ☐ The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
   ☒ The site will not be used for multi-family residential developments, schools, or small business sites.

6. ☒ **Attachment B - BMPs for Upgradient 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.

7. ☒ **Attachment C - 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.

8. ☒ **Attachment D - BMPs for Surface Streams**. A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.

☐ N/A

9. ☒ The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

☒ The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.

☐ **Attachment E - Request to Seal Features**. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. ☒ **Attachment F - Construction Plans**. All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

☐ Design calculations (TSS removal calculations)

☒ TCEQ construction notes

☐ All geologic features

☐ All proposed structural BMP(s) plans and specifications

☐ N/A

11. ☐ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

    ☐ Prepared and certified by the engineer designing the permanent BMPs and measures
    ☐ Signed by the owner or responsible party
    ☐ Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
    ☐ A discussion of record keeping procedures

    ☒ N/A

12. ☐ **Attachment H - 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

13. ☒ **Attachment I -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 velocities, and other in-stream effects caused by the regulated activity, which increase erosion that results in water quality degradation.

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

Responsibility for maintenance of best management practices and measures after construction is complete.

14. ☐ 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 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.

    ☒ N/A

15. ☐ A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

    ☒ N/A

ATTACHMENT B

BMPs for Upgradient Stormwater

The majority of upgradient flows enter the site from the northwest flowing across previously developed residential and commercial land. Much of the flow directed toward the project is collected via an existing wet pond constructed with the residential development that eventually outfalls into a nearby channel that crosses Smyers Lane via an existing culvert near Chipotle Mexican Grill. The upgradient stormwater is not adversely impacted by the project so no proposed BMPs were needed.

ATTACHMENT C

BMPs for On-Site Stormwater

No new BMPs are proposed Smyers Lane project to treat on-site runoff. The existing roadway was originally constructed prior to 1986 (historic aerial imagery and older USGS maps show it on its existing alignment as far back as 1955). The proposed project is reconstructing the existing pavement in its current footprint with no widening proposed. The only newly proposed impervious cover on the project is the concrete riprap apron around the upstream end of the proposed culvert extension (425 SF total), which itself will serve to reduce the potential for erosion due to flow of roadside ditches and the crossing surface stream.

ATTACHMENT D

BMPs for Surface Streams

The proposed project is extending the upstream end of the existing cross culvert near Chipotle Mexican Grill. Concrete riprap is being added around the new culvert ends to reduce the likelihood of erosion where the existing stream meets the culvert. Project runoff eventually runs from the culvert across RM 620 into an existing pond, so increase in erosive potential in surface streams is not anticipated and new BMPs are not proposed.

ATTACHMENT F

Construction Plans

See Appendix A for Smyers Lane construction plans including TCEQ construction notes.

ATTACHMENT I

Measures for Minimizing Surface Stream Contamination

Runoff from this project will generally collect in roadside ditches and be conveyed to either the existing cross culvert near Chipotle Mexican Grill or the existing storm sewer system near Wyoming Springs Drive. All project runoff eventually flows across RM 620 heading southeast into existing ponds that eventually outfall and flow toward Lake Creek.

Permanent Spill Measures

In the event of a spill on site post construction, the contractor will be required to notify the owner, who will in turn contact TCEQ to notify them in the event of a spill. Additional notifications as required by the type and amount of spill will be conducted by the owner or owner's representative.

- Contractor shall take action to contain the spill. For small spills, Contractor may use a rag to clean up a spill. For larger spills, Contractor may use sand or other absorbent material stockpiled on site to absorb larger spills. Absorbent material should be spread over the spill area to absorb the spilled product. Contractor may close a lane using applicable Traffic Control standards for the safety of the maintenance crew.
- In the event of an uncontained discharge the contractor shall utilize onsite equipment to construct berms downgradient of the spill with sand or other absorbent material to contain and absorb the spilled product.
- Sand or material used to contain the spill should be collected and stored in such a way so as not to continue to affect additional ground. Once the spill has been contained, collected material should be placed on poly or plastic sheeting until removed from the site. In the event of potential rainfall, the material should be covered with poly or plastic sheeting.

For significant or hazardous spills that are in reportable quantities:

- The owner shall notify the TCEQ by telephone as soon as possible and within 24 hours at (512)339-2929 (Austin) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224.
- For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, owner will notify the National Response Center at (800) 424-8802.
- Notification should first be made by telephone and followed up with a written report.
- The services of a spill contractor / Haz-Mat team should be obtained immediately. Owner should not clean up until appropriate & qualified staff(s) have arrived at the job site.
- Other agencies which may need to be consulted include, but not limited to, the City Police Department, County Sheriff Office at (512) 864-8282, Fire Departments, County Emergency Services (911), County Environmental Health Department at (512) 248-7620, etc.

Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 1.4.16. Contractor shall review this section.

AGENT AUTHORIZATION

Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I Brian Kuhn,
Print Name

Assistant Director of Transportation Operations,
Title - Owner/President/Other

of City of Round Rock,
Corporation/Partnership/Entity Name

have authorized Michael Curl, PE
Print Name of Agent/Engineer

of The Estes Group, LLC
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Brian Kuhn
Applicant's Signature

2/3/26
Date

THE STATE OF Texas §

County of Williamson §

BEFORE ME, the undersigned authority, on this day personally appeared Brian Kuhn 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 3rd day of February 2026.

Constance Atkinson
NOTARY PUBLIC

Constance Atkinson
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 9/27/28

FEE APPLICATION

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Smyers Lane from RM 620 to Wyoming Springs Drive
Regulated Entity Location: Round Rock, TX
Name of Customer: City of Round Rock
Contact Person: Michael Curl Phone: 512-350-1613
Customer Reference Number (if issued):CN 600413181
Regulated Entity Reference Number (if issued):RN N/A

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
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
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

Type of Plan	***Size***	***Fee Due***
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	Acres	$
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	1 Each	$ 500
Extension of Time	Each	$

Signature: Michael Curl Date: 2/9/2026

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

Project	*Project Area in Acres*	*Fee*
One Single Family Residential Dwelling	< 5	$650
Multiple Single Family Residential and Parks	< 5 5 < 10 10 < 40 40 < 100 100 < 500 ≥ 500	$1,500 $3,000 $4,000 $6,500 $8,000 $10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 10 < 40 40 < 100 ≥ 100	$3,000 $4,000 $5,000 $6,500 $8,000 $10,000

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Project	*Cost per Tank or Piping System*	*Minimum Fee-Maximum Fee*
Underground and Aboveground Storage Tank Facility	$650	$650 - $6,500

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

CORE DATA

TCEQ Use Only

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

1. Reason for Submission (*If other is checked please describe in space provided.)*

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)*

☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 600413181		**RN 0**

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* | *If new Customer, enter previous Customer below:*

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*

11. Type of Customer:

☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees

☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?

☐ **Yes** ☐ **No**

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:

City		**State**		**ZIP**		**ZIP + 4**	

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
( ) -		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

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).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Smyers Lane from RM 620 to Wyoming Springs Drive

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	3400 Sunrise Road							
	City	Round Rock	**State**	TX	**ZIP**	78665	**ZIP + 4**	
24. County	Williamson							

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:	Located on the roadway of Smyers Lane in Round Rock, Texas. Project limits extend from RM 620 to Wyoming Springs Drive.

26. Nearest City	**State**	**Nearest ZIP Code**
Round Rock	TX	78665

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).

27. Latitude (N) In Decimal:	30.501289		**28. Longitude (W) In Decimal:**	97.720769	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	30	4.64	97	43	14.77

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
1611		237310	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Roadway Construction

34. Mailing Address:	**Reuben Ramirez, Project Manager**							
	3400 Sunrise Road							
	City	**Round Rock**	**State**	**TX**	**ZIP**	**78665**	**ZIP + 4**	
35. E-Mail Address:	**rramirez@roundrocktexas.gov**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 218-7084		( ) -

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.

☐ Dam Safety	☐ Districts	☒ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☒ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Michael Curl	**41. Title:**	Project Manager, Authorized Agent

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512 **)** 350-1613		**( )** -	michael.curl@teg-tx.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.

Company:	The Estes Group, LLC	**Job Title:**	Project Manager
Name *(In Print):*	Michael Curl	**Phone:**	**(** 512 **)** 350- **1613**
Signature:	Michael Curl	**Date:**	2/9/2026

APPENDIX A

CITY OF ROUND ROCK, TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
ROADWAY IMPROVEMENT

SMYERS LANE & CR 122
WILLIAMSON COUNTY

NET LENGTH OF SMYERS = 3103 FT OR 0.59 MILES
NET LENGTH OF CR 122 = 1683 FT OR 0.32 MILES
NET LENGTH OF PROJECTS = 4784 FT OR 0.91 MILES

FINAL PLANS

LETTING DATE: _____
DATE CONTRACTOR BEGAN WORK: _____
DATE WORK WAS COMPLETED & ACCEPTED: _____
FINAL CONTRACT COST: $ _____
CONTRACTOR : _____

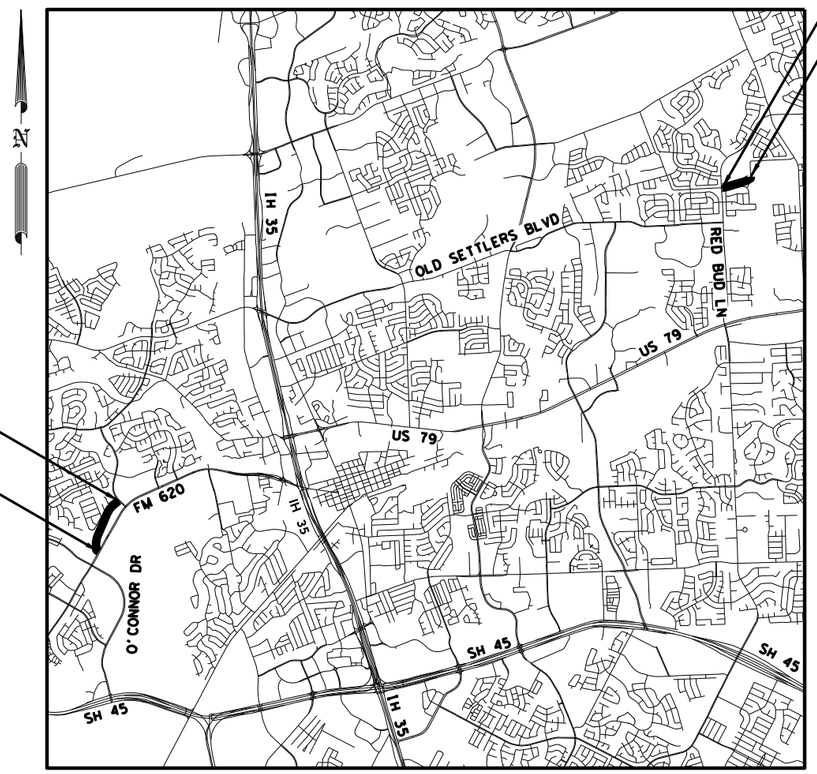
INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	INDEX OF SHEETS

CITY OFFICIALS

CRAIG MORGAN	MAYOR
MICHELLE LY	COUNCIL MEMBER
RENE FLORES	COUNCIL MEMBER
MELISSA FLEMMING	COUNCIL MEMBER
FRANK ORTEGA	COUNCIL MEMBER
KRISTIN STEVENS	COUNCIL MEMBER
HILDA MONTGOMERY	COUNCIL MEMBER
BROOKS BENNETT	CITY MANAGER

PROJECT LIMITS FROM: RM 260 TO WYOMING SPRINGS DRIVE
PROJECT LIMITS FROM: N RED BUD LANE TO SOUTH OF LOW WATER CROSSING



CR 122
BEGIN PROJECT
N RED BUD LN

CR 122
END PROJECT
LOW WATER CROSSING

SMYERS LANE
END PROJECT
WYOMING SPRINGS DR

SMYERS LANE
BEGIN PROJECT
N RM 620

LOCATION MAP
NTS

PREPARED BY:

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED PROFESSIONAL ENGINEER

Michael Curl 2/9/2026

MICHAEL R. CURL, P.E. — DATE
PROJECT MANAGER

TEG
THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ACCEPTED FOR CONSTRUCTION:

CITY OF ROUND ROCK, TEXAS — DATE
TRANSPORTATION DEPARTMENT

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN ACCEPTING THESE PLANS, THE CITY OF ROUND ROCK MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

CITY OF ROUND ROCK SPECIFICATION ITEMS AND SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION SEPTEMBER 1, 2024 LISTED SHALL GOVERN ON THIS PROJECT.

DATE: 2/9/2026
FILENAME: D:\1_5factortech-pw.bentley.com:5f-pw-02\Documents\The Estes Group\02 Design\25009.01=CoRR=Smyers=Lone\Project\4 - Design\Plan Set\1. General\Title Sheet & Index\S

Sheets stricken and removed from the plans are for a separate project location that is outside the limits of all delineated zones relating to the Edwards Aquifer and the EAPP.

I. GENERAL

1	TITLE SHEET
2	INDEX OF SHEETS
3	SMYERS PROJECT LAYOUT
~~4~~	~~CR 122 PROJECT LAYOUT~~
5	SMYERS TYPICAL SECTIONS EXISTING
~~6~~	~~CR 122 TYPICAL SECTIONS EXISTING~~
7	SMYERS TYPICAL SECTIONS PROPOSED
~~8~~	~~CR 122 TYPICAL SECTIONS PROPOSED~~
9-10	GENERAL NOTES
11	SMYERS SUMMARY OF QUANTITIES
~~12~~	~~CR 122 SUMMARY OF QUANTITIES~~

II. TRAFFIC CONTROL PLAN

13	TCP NARRATIVE
14	SMYERS ADVANCED WARNING SIGNS
15-20	SMYERS TRAFFIC CONTROL PLAN
~~21~~	~~CR 122 ADVANCED WARNING SIGNS~~
~~22~~	~~CR 122 TRAFFIC CONTROL PLAN~~
~~23~~	~~CR 122 DETOUR LAYOUT~~

TRAFFIC CONTROL PLAN STANDARDS

24-35	BC(1)-21 THROUGH BC(12)-21
36	TCP2-1(18)
37	WZ(STPM)-23
38	WZ(RCD)-13

III. ROADWAY STANDARDS

39	TE(HMAC)-11

IV. BORING PLAN

40-41	SMYERS BORING LAYOUT
~~42~~	~~CR 122 BORING LAYOUT~~
43-45	SMYERS BORING LOGS
~~46-47~~	~~CR 122 BORING LOGS~~

V. DRAINAGE

48	CULVERT LAYOUT

DRAINAGE STANDARDS

49	CORR DR-02

VI. SIGNING AND PAVEMENT MARKINGS

50-52	SMYERS PAVEMENT MARKING LAYOUT

SIGNING AND PAVEMENT MARKINGS STANDARDS

53	TYPICAL STANDARD PAVEMENT MARKINGS
54	CROSSWALK PAVEMENT MARKINGS

VII. EROSION CONTROL

55-56	SMYERS STORM WATER POLLUTION PLAN (SW3P)
~~57-58~~	~~CR 122 STORM WATER POLLUTION PLAN (SW3P)~~
59	ENVIORNMENTAL PERMITS, ISSUES, AND COMMITMENTS (EPIC)
60-62	SMYERS EROSION CONTROL PLAN
~~63-64~~	~~CR 122 EROSION CONTROL PLAN~~

EROSION CONTROL STANDARDS

65	CORR EC-09
66	CORR EC-10
67	CORR EC-12
68	CORR EC-15
69	CORR EC-16
70	CORR EC-17
71	EC(1)-16
72	EC(2)-16
73	EC(3)-16
74-76	EC(9)-16
77	TCEQ REQUIREMENTS

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE STANDARD SHEETS SPECIALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

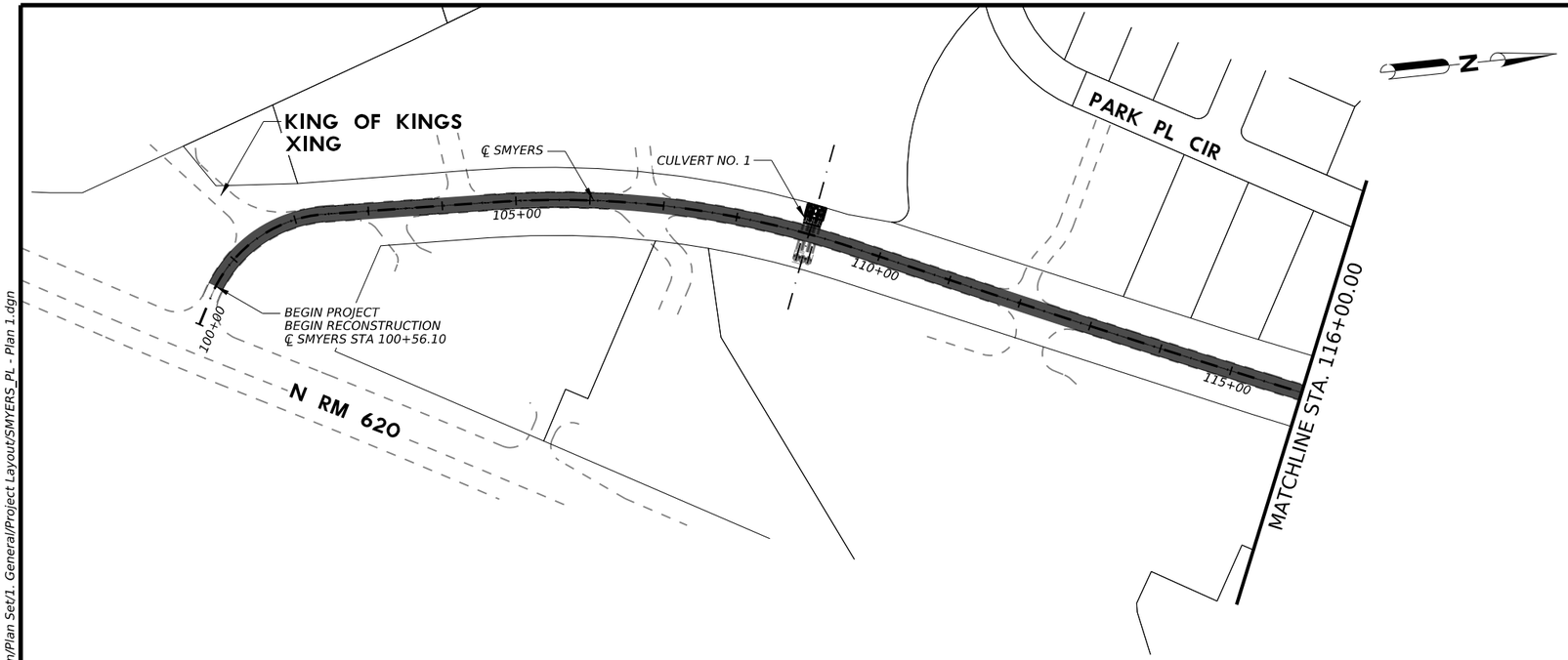
SMYERS & CR 122

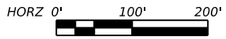
INDEX OF SHEETS

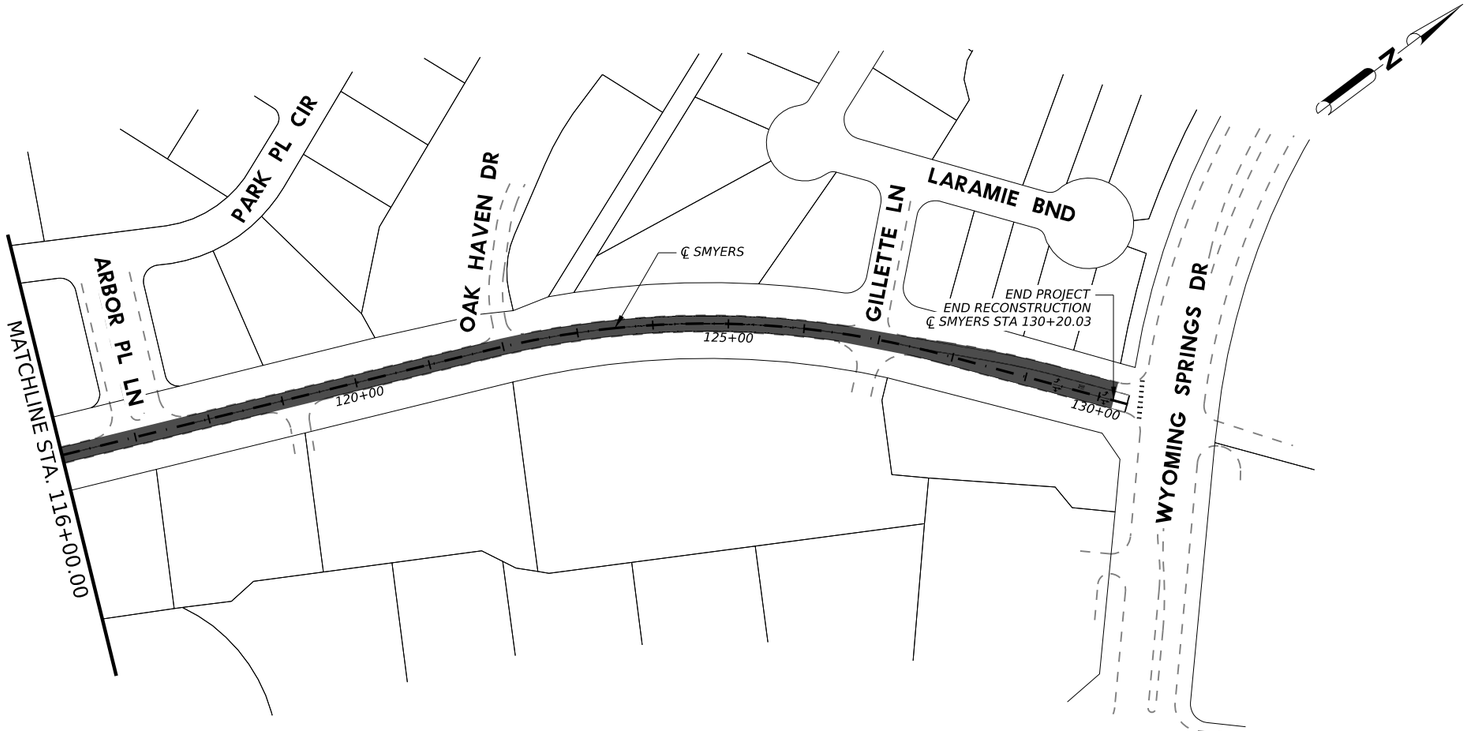
SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	2
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/1. General/Title Sheet & Index/Smyers_Index01







STATE OF TEXAS
MICHAEL CURL
126986
LICENSED PROFESSIONAL ENGINEER

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

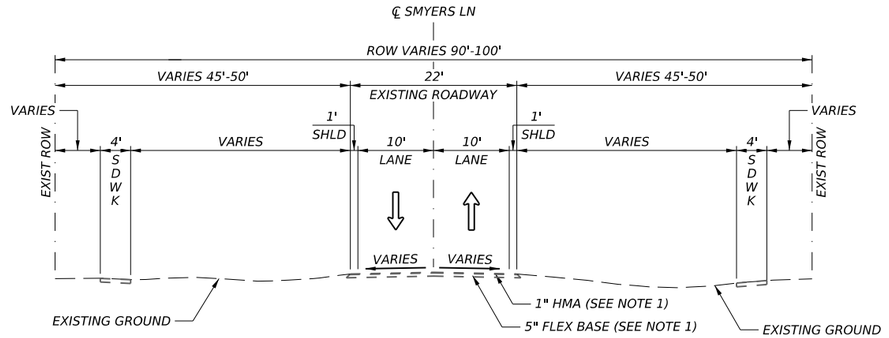
SMYERS & CR 122

SMYERS
PROJECT LAYOUT

SCALE 1" = 200' SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	3
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/1. General/Project Layout/SMYERS_PL - Plan 1.dgn

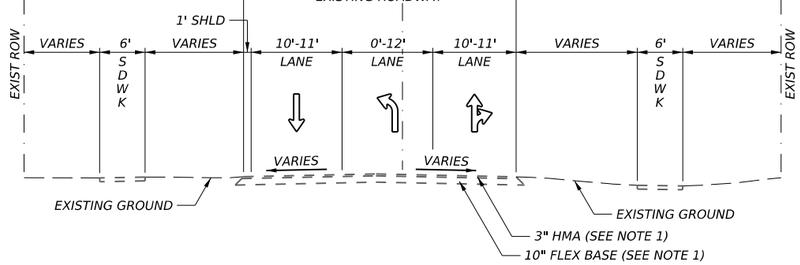


SMYERS EXISTING TYPICAL 01

2 LANES UNDIVIDED

FROM BEGIN TO GILLETTE LANE

SIDEWALK LOCATION VARIES



SMYERS EXISTING TYPICAL 01

2 LANES UNDIVIDED

FROM GILLETTE LANE TO END

SIDEWALK LOCATION VARIES

NOTES:

1. SEE BORE LAYOUTS AND LOGS FOR ADDITIONAL INFORMATION. FOR ESTIMATING PURPOSES IT IS ASSUMED THAT FROM GILLETTE LN TO WYOMING SPRINGS DR, THE EXISTING PAVEMENT IS 3" HMA ON 10" FLEX BASE.

2. DIMENSIONS SHOWN WERE DETERMINED FROM USING AERIAL IMAGE FROM GOOGLE EARTH DATED MARCH 2025 AND SPOT CHECKED IN THE FIELD. NO SURVEY WAS PERFORMED FOR THIS PROJECT.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

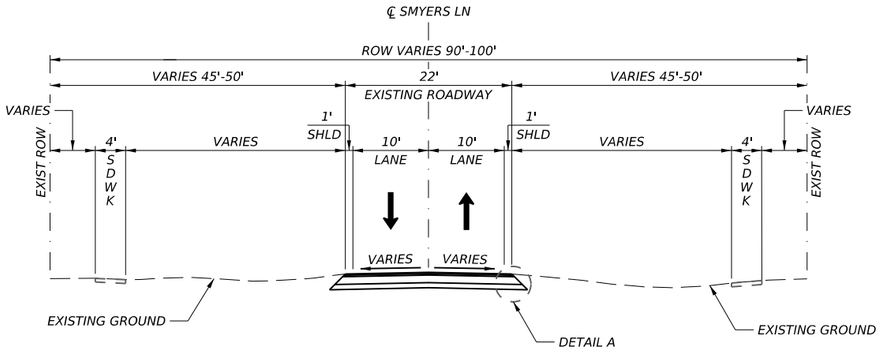
SMYERS
TYPICAL SECTIONS
EXISTING

NTS

SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	5
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/1. General/Typical Sections/Smyers_EXTYP01.dgn

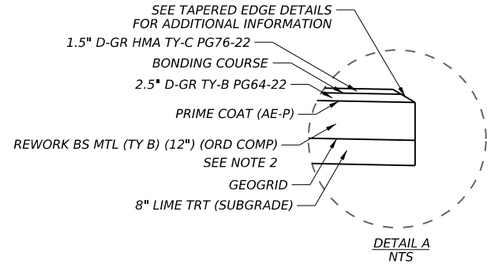


SMYERS PROPOSED TYPICAL 01

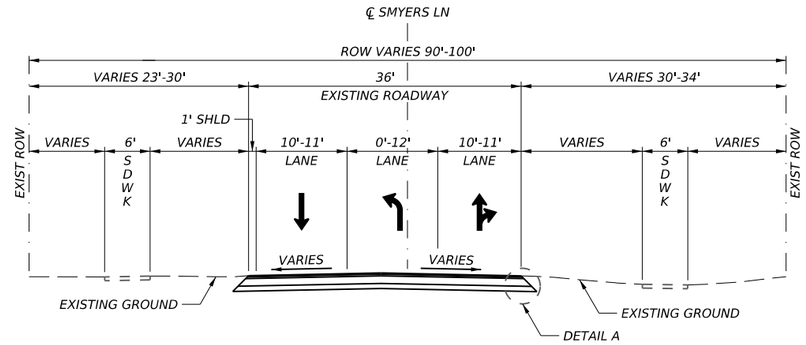
2 LANES UNDIVIDED

FROM BEGIN TO GILLETTE LANE

SIDEWALK LOCATION VARIES



DETAIL A
NTS



SMYERS PROPOSED TYPICAL 02

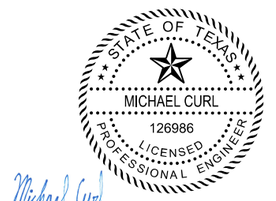
2 LANES UNDIVIDED

FROM GILLETTE LANE TO END

SIDEWALK LOCATION VARIES

NOTES:

1. SEE BORE LAYOUTS AND LOGS FOR ADDITIONAL INFORMATION. FOR ESTIMATING PURPOSES IT IS ASSUMED THAT FROM GILLETTE LN TO WYOMING SPRINGS DR, THE EXISTING PAVEMENT IS 3" HMA ON 10" FLEX BASE.
2. IT IS ASSUMED FROM BEGIN PROJECT TO GILETTE LN 6" OF NEW BASE WILL BE REQUIRED AND FROM GILLETTE LN TO END PROJECT NO NEW BASE WILL BE REQUIRED.
3. DIMENSIONS SHOWN WERE DETERMINED FROM USING AERIAL IMAGE FROM GOOGLE EARTH DATED MARCH 2025 AND SPOT CHECKED IN THE FIELD. NO SURVEY WAS PERFORMED FOR THIS PROJECT.



2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

SMYERS
TYPICAL SECTIONS
PROPOSED

NTS — SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	7
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/1. General/Typical Sections/SMYERS_TYP01.dgn

GENERAL NOTES:

1. All construction shall be in accordance with the City of Round Rock (CORR) Design and Construction Standards (DACS) Specifications Manual.

2. Any existing utilities, pavement, curbs, sidewalks, structures, trees, etc. (not planned for demolition or removal) that are damaged or removed, shall be repaired, or replaced, at the Contractor's expense.

3. The Contractor shall verify all depths and locations of existing utilities prior to any construction activities. Any discrepancies with the construction plans found in the field shall immediately be brought to the attention of the Engineer who shall be responsible for revising the plans as appropriate. Failure to complete this step prior to commencement of construction may result in significant delays and/or expenditures for which the City shall not be held liable.

4. Manhole frames, covers, valves, cleanouts, etc. shall be raised to finished grade prior to final paving construction.

5. The Contractor shall provide the City of Round Rock with a 48-hour notice before beginning each phase of construction. Telephone (512) 218-7044 (Public Works Department PWD).

6. All areas disturbed or exposed during construction shall be revegetated in accordance with the plans and specifications. This includes any areas located outside of the defined limits of construction (LOC), in rights-of-way (ROW), or located on adjacent properties. Revegetation of all disturbed or exposed areas shall consist of sodding or seeding, at the Contractor's discrepancy, as outlined in the City's Design and Construction Standards. The type of revegetation provided must be equivalent to or exceed the type of vegetation present prior to construction.

7. Prior to any construction, a pre-construction meeting shall be held between the City of Round Rock, the Design Engineer, the Contractor, subcontractors, other utility companies, and any affected parties or other entity the City or Design Engineer deem necessary.

8. The Contractor and the Design Engineer shall keep accurate records of all construction that deviates from the plans. Changes to approved, construction-stamped plans will require a revision from the Design Engineer that is approved by the City prior to field use. The Design Engineer shall furnish the City of Round Rock accurate "As-Built" record drawings following completion of all construction. These "As- Built" record drawings shall meet with the satisfaction of the Planning and Development Services Department prior to final acceptance of the project.

9. The City of Round Rock shall not be petitioned for acceptance until all necessary easement documents have been signed and recorded.

10. Whenever construction activities are taking place within an existing easement, the Contractor shall confine their work to within the bounds of said easement. Prior to final acceptance, the Contractor shall be responsible for removing all trash and debris within any permanent or temporary easements. Clean-up shall be to the satisfaction of the City of Round Rock Civil Inspector and/or the City Engineer.

11. Prior to any construction, the Contractor shall apply for and secure all proper permits from the appropriate authorities.

TRENCH SAFETY NOTES:

1. In accordance with the Laws of the State of Texas and the U.S. Occupational Safety and Health Administration (OSHA) regulations, all trenches over 5 feet in depth, in either hard and compact or soft and unstable soil, shall be sloped, shored, sheeted, braced or otherwise supported. Furthermore, all trenches less than 5 feet in depth shall also be effectively protected when hazardous ground movement may be expected. Trench safety systems to be utilized for this project shall be provided as part of a package required prior to the pre-construction meeting and any construction activities.

2. In accordance with the U.S. Occupational Safety and Health Administration regulations, when persons are in trenches 4 feet deep or more, adequate means of exit, such as a ladder or steps, must be provided and located in such a manner as to require no more than 25 feet of lateral travel.

3. If trench safety system details were not provided in the plans because trenches were anticipated to be less than 5 feet in depth but, during construction, it is found that trenches are in fact 5 feet or more in depth (or) trenches less than 5 feet in depth are in an area where hazardous ground movement is expected, all construction shall cease, the trenched area shall be barricaded and the Design Engineer notified immediately. Construction shall not resume until appropriate trench safety system details, as designed by a professional engineer, are submitted to the City of Round Rock for review and approval.

STREET AND DRAINAGE NOTES:

1. All testing shall be done by an independent laboratory at the Owner's expense. Any retesting shall be paid for by the Contractor. A City Inspector shall be present during all tests. Testing shall be coordinated with the City Inspector, and they shall be given a minimum 24-hour notice prior to any testing.

2. Backfill behind the curb shall be compacted to obtain a minimum of 95% maximum density to within 3" of top of curb. Material used shall be primarily granular with no rocks larger than 6" in the greatest dimension. The remaining 3" shall be clean topsoil free from all clumps and suitable for sustaining plant life.

3. The depth of cover for all crossings under pavement including gas, electric, telephone, cable tv, water services, etc. shall be a minimum of 30" below subgrade.

4. Street rights-of-way shall be graded at a slope of 1/4" per foot toward the curb unless otherwise indicated. However, in no case shall the width of right-of-way at 1/4" per foot slope be less than 10 feet unless a specific request for an alternate grading scheme is submitted to and approved by the City of Round Rock Planning and Development Services Department.

5. Barricades, built to City of Round Rock standards, shall be constructed on all dead-end streets and, as necessary, during construction to maintain job and public safety.

6. All reinforced concrete pipe (RCP) shall be minimum Class III. All public RCP shall be a minimum of 18-inches in diameter.

7. The subgrade material for the streets shown herein was tested by Raba Kistner on this date: September 12, 2025 and the paving sections designed in accordance with the current City of Round Rock design criteria. The paving sections are to be constructed as follows:

1.5" D-GR HMA TY-C PG76-22, 2.5" D-GR HMA TY-B PG64-22, REWORK BS MTL (TY B)(12")(ORD COMP), 8" LIME TRT (SUBGRADE)

See Proposed Typical Section Sheets.

The Geotechnical Engineer shall inspect the subgrade for compliance with the design assumptions made during preparation of the accepted geotechnical report. Any adjustments that are required shall be made through revision of the construction plans and addendum to any accepted geotechnical report.

8. Where plasticity index (PI) is over 20, subgrades must be stabilized utilizing a method acceptable to the Planning and Development Services Department. The Geotechnical Engineer shall recommend an appropriate subgrade stabilization if sulfates are determined to be present. When utilizing lime for soil stabilization, placement shall be in the form of lime slurry, not pellets.

9. The Contractor must obtain a bulk water permit or purchase and install a water meter for all water used during construction. A copy of this permit must always be possessed by any parties who utilize water. Contact Water Distribution at (512) 801-4435 for additional information.

10. Line flushing, or any activity using a large quantity of water, must be scheduled a minimum (10) days in advance with the City of Round Rock Civil Inspector.

11. The Contractor, at his expense, shall perform sterilization of all potable water lines constructed and shall provide all equipment (including test gauges), supplies (including concentrated chlorine disinfecting material), and necessary labor required for the sterilization procedure. The sterilization procedure shall be monitored by the City of Round Rock Civil Inspector. Water samples will be collected by the City of Round Rock to verify each treated line has attained an initial chlorine concentration of 50 ppm. Where means of flushing is necessary, the Contractor, at his expense, shall provide flushing devices and remove said devices prior to final acceptance by the City of Round Rock.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl 2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122
GENERAL NOTES

SHEET 1 OF 2

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	9
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/1. General/Title Sheet & Index/Smyers_GENNO01

12. The Contractor (or Subcontractors) shall not open or close any valves unless directed to do so by City of Round Rock personnel.

13. All water service, wastewater service and valve locations shall be appropriately marked as follows:

water service – "W" on top of curb (blue color)

wastewater service – "S" on top of curb

valve – "V" on face of curb

14. Tools for marking the curb shall be provided by the Contractor. Other appropriate means of marking service and valve locations shall be provided in areas without curbs. Such means of marking shall be as specified by the Design Engineer and approved by the City of Round Rock.

15. Contact the City of Round Rock Utilities and Environmental Services (UES) Department for assistance in determining existing water and wastewater locations.

16. Sand, as described in Specification item 510 pipe, shall not be used as bedding for water and wastewater lines. Acceptable bedding materials are pipe bedding stone, pea gravel and, in lieu of sand, a naturally occurring or manufactured stone material conforming to ASTM C33 for stone quality and meeting the following gradation specification:

Sieve Size	Percent Retained By Weight
1/2"	0
3/8"	0-2
#4	40-85
#10	95-100

17. The Contractor is hereby notified that connecting to, shutting down, or terminating existing utility lines may have to occur at off-peak hours. Such hours are usually outside normal working hours (7AM – 4 PM) and possibly between 12 AM and 6 AM.

18. Item 132 is for use as directed by the Engineer.

TRAFFIC MARKING NOTES:

1. Any methods, street markings and signage necessary for warning motorists, warning pedestrians, or diverting traffic during construction shall conform to the Texas Manual of Uniform Traffic Control Devices for Streets and Highways (TMUTCD), latest edition.

2. All pavement markings, markers, paint, traffic buttons, traffic controls, and signs shall be installed in accordance with the Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges and, the Texas Manual of Uniform Traffic Control Devices for Streets and Highways, latest editions.

EROSION AND SEDIMENTATION CONTROL NOTES:

1. Erosion control measures, site work, and restoration work shall be in accordance with the City of Round Rock Design and Construction Standards (DACS) and Code of Ordinances.

2. All slopes shall be sodded or seeded with approved grass, grass mixtures, or ground cover that is suitable to the area and the season in which they are applied.

3. Silt fences, rock berms, sedimentation basins, and similarly recognized techniques and materials shall be employed during construction to prevent point source sedimentation loading of downstream facilities. Installation and condition shall be regularly inspected by the City of Round Rock for effectiveness. Additional measures may be required if, in the opinion of the City Engineer, they are warranted.

4. All temporary erosion control measures shall not be removed until revegetation has been established and approval received from the Civil Inspector. It shall be the responsibility of the Contractor to maintain all temporary erosion control structures and to remove all once approved to do so by the Civil Inspector.

5. All mud, dirt, rocks, debris, etc., spilled, tracked, or otherwise deposited on existing paved streets, drives and areas used by the public shall be cleaned up immediately.

ROUND ROCK FIRE DEPARTMENT NOTES:

1. COMBUSTIBLE MATERIALS ON-SITE: All-weather access roads/drives (asphalt/concrete capable of supporting 80,000 lb. apparatus loading) shall be constructed, and all water lines shall be tested and fire hydrants in-service, prior to bringing combustible materials (wood, packaging, plastics, etc.) on any job site. Base material is not acceptable for fire access roads/drives.

2. ALL-WEATHER SURFACE: The pavement structure for fire access roads/drives must be all-weather surface (asphalt/concrete) designed to support an 80,000 lb. apparatus loading.

3. TURNING RADII: Turning radii shall be a minimum of 25-ftt inside and 50-ft outside as measured from face-of-curb (when present) or on drivable, paved surface.

4. VERTICAL CLEARANCE: The vertical clearance over a designated fire lane shall not be less than 13'-6".

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122
GENERAL NOTES

SHEET 2 OF 2

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	10
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/1. General/Title Sheet & Index/Smyers_GENNO02

SUMMARY OF WORKZONE TRAFFIC CONTROL ITEMS

LOCATION	502 7001	503 7002	662 7114
	BARRICADES, SIGNS AND TRAFFIC HANDLING	PORTABLE CHANGEABLE MESSAGE SIGN	WK ZN PAV MRK SHT TERM (TAB)TY Y-2
	MO	EA	EA
SMYERS	4	2	
PHASE 1			64
PHASE 2			98
PHASE 3			42
PHASE 4			2
PHASE 5			46
PHASE 6			32
PROJECT TOTALS	4	2	284

SUMMARY OF REMOVAL ITEMS

LOCATION	*	104 7029
	REMOVE WOOD POSTS	REMOV CONC (HEADWALL)
	EA	CY
SMYERS	68	
PHASE 1		
PHASE 2		7
PHASE 3		
PHASE 4		
PHASE 5		
PHASE 6		
PROJECT TOTALS	68	7

SUMMARY OF ROADWAY ITEMS

LOCATION	100 7001	110 7001	247 7179	250 7002	251 7031	260 7005	260 7020	310 7001	341 7001	341 7030	3007 7001
	PREPARING ROW	EXCAV (ROADWAY)	FL BS (CMP IN PLC)(TY A GR 5)(FNAL POS)	GEOGRID BASE REINFORCEMENT (TYPE 2)	REWORK BS MTL (TY B)(12")(ORD COMP)	LIME (COM OR QK)(SLURRY)	LIME TRT (SUBGRADE) (8")	PRIME COAT (AE-P)	D-GR HMA TY-B PG64-22	D-GR HMA TY-C PG76-22	BONDING COURSE
	AC	CY	CY	SY	SY	TON	SY	GAL	TON	TON	GAL
SMYERS	7										
PHASE 1		451	270	1623	1623	29	1623	325	217	126	142
PHASE 2		755	453	2716	2716	49	2716	543	363	212	238
PHASE 3		337	202	1214	1214	22	1214	243	162	95	106
PHASE 4		41	25	149	149	3	149	30	20	12	13
PHASE 5		338	203	1215	1215	22	1215	243	162	95	106
PHASE 6		101		1208	1208	22	1208	242	163	96	107
PROJECT TOTALS	7	2023	1153	8125	8125	147	8125	1626	1087	636	712

SUMMARY OF DRAINAGE ITEMS

LOCATION	132 7003	400 7001	401 7001	403 7001	432 7001	460 7024
	EMBANK (FNL)(OC)(TY B)	STRUCT EXCAV	FLOWABLE BACKFILL	TEMPORARY SPL SHORING	RIPRAP (CONC)(4 IN)	CMP AR (GAL STL DES 9)
	CY	CY	CY	SF	CY	LF
CULVERT NO. 1	3	3	46	283	5	72
PROJECT TOTALS	3	3	46	283	5	72

SUMMARY OF PAVEMENT MARKING ITEMS

LOCATION	666 7024	666 7036	666 7042	666 7045	666 7066	666 7175	666 7179	666 7184	666 7186	666 7187	666 7194	666 7213	666 7411	666 7423
	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	REFL PAV MRK TY I (W)(ARROW)(100MIL)	REFL PAV MRK TY I(W)(DBL ARROW)(100 MIL)	REFL PAV MRK TY I (W)(WORD)(100MIL)	RE PM TY II (W) 6" (SLD)	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) (DBL ARROW)	RE PM TY II (W) (WORD)	RE PM TY II (Y) 6" (SLD)	REFL PAV MRK TY I (W)6"(SLD)(100MIL)	REFL PAV MRK TY I (Y)6"(SLD)(100MIL)
	LF	LF	EA	EA	EA	LF	LF	LF	EA	EA	EA	LF	LF	LF
SMYERS														
BEGIN TO STA 110+00						1557						1938	1557	1938
STA 110+00 TO STA 120+00						1617						1782	1617	1782
STA 120+00 TO END	100	71	2	2	2	1834	100	71	2	2	2	1984	1834	1984
PROJECT TOTALS	100	71	2	2	2	5008	100	71	2	2	2	5704	5008	5704

SUMMARY OF EROSION CONTROL ITEMS

LOCATION	164 7002	164 7005	164 7006	506 7002	506 7011	506 7039	506 7041	506 7045	506 7046
	BROADCAST SEED (PERM_RURAL_CLAY)	BROADCAST SEED (TEMP_WARM)	BROADCAST SEED (TEMP_COOL)	ROCK FILTER DAMS (INSTALL) (TY 2)	ROCK FILTER DAMS (REMOVE)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	BIODEG EROSN CONT LOGS (INSTL) (18")	BIODEG EROSN CONT LOGS (REMOVE)
	SY	SY	SY	LF	LF	LF	LF	LF	LF
SMYERS									
PHASE 1	1350	675	675	25	25	526	526		
PHASE 2	2330	1165	1165	93	93	944	944		
PHASE 3	1626	813	813	20	20	428	428		
PHASE 4	94	47	47			47	47		
PHASE 5	1160	580	580	33	33	431	431		
PHASE 6	786	393	393			301	301	64	64
PROJECT TOTALS	7346	3673	3673	171	171	2677	2677	64	64

NOTES:

1. ITEM 260 LIME (COM OR QK)(SLURRY) 36LB/SY @ 8"
2. ITEM 310 PRIME COAT (AE-P) @ 0.20 GAL/SY
3. ITEM 341 D-GR HMA TY-B PG64-22 @ 110LB/SY/IN

*FOR CONTRACTOR INFORMATION ONLY. ITEM WILL NOT BE PAID FOR DIRECTLY BUT SUBSIDIARY TO ITEM 100.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

SMYERS
SUMMARY OF QUANTITIES

SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	11
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/1. General/Summary of Quantities/Smyers_Summary of Quantities

Traffic Control General Notes:

1. Contractor is to 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 or work without written approval from the construction observer.
2. It is the contractor's responsibility to determine exact location of utilities prior to starting construction. Sub surface utility information was not collected. If any conflict is identified the engineer should be notified.
3. Signs, barricades, and channelizing devices are shown at approximate locations on the traffic and erosion control plan sheets. Actual locations may vary as dictated by field conditions or as directed by the engineer.
4. The contractor is responsible for proper drainage during all phases of construction. Ensure that water does not pond onto any roadways. Temporary drainage facilities that are utilized to maintain proper drainage will be considered subsidiary to TxDOT item 506.
5. Existing signs in conflict with the traffic control plan shall be covered of removed as directed by the engineer.
6. The contractor shall control dust throughout construction through use of water truck as needed to control airborne dust.
7. Install applicable advance warning signs and traffic control devices prior to commencing work. Refer to Texas Manual on uniform control devices (TMUTCD) and appropriate TxDOT standards for placement of advance warning signs and traffic control devices during construction.
8. 72 hour notices to be provided to the CoRR, HOAs, and affected property owners before construction of phase changes as directed by the city. Property owners to be notified via door hangars or method approved by the CoRR.
9. Contractor will contact USPS to relocate mailbox on CR 122 prior to construction.
10. Contractor will contact Williamson County Fire Department prior to installing barrier on Smyers Lane at N FM 620, King of Kings Crossing, Arbor Place Lane, Gillette Lane, Smyers Lane at Wyoming Springs Drive, and CR 122 at N Red Bud Lane.
11. Willamson County Fire Code requires two points of access to Madsen Ranch subdivision and Chester Ranch subdivision at all times. Contractor to coordinate with fire marshal prior to road closures.

Sequence of Construction Smyers:

Phase 1:

1. Install all advance warning signs and temporary signs as shown on TCP layouts.
2. Install all signing, channelizing devices and barricades as shown on the "Traffic Control Plan", sheets along N FM 620 and Wyoming Springs Drive when working adjacent to Smyers lane. See BC, TCP, WZ Standards, and latest version of the Texas MUTCD for details.
3. Install temporary erosion control devices as shown on SW3P sheets.
4. Remove existing Smyers Lane from N FM 620 to South Half of King of Kings Lutheran Church driveway (refer to TCP Layout Phase 1).
5. Construct Smyers Lane except the final pavement surface from N FM 620 to South half of King of Kings Lutheran Church driveway (refer to TCP Layout Phase 1).
6. Install tabs for center yellow stripe per WZ(STPM)-23 standard following final pavement marking configuration.

Phase 2:

1. Install temporary signs as shown on TCP layouts.
2. Install all signing, channelizing devices and barricades shown on the "Traffic Control Plan" sheets.
3. Install temporary erosion control devices shown on the SW3P sheets.
4. Remove existing Smyers Lane from North half of King of Kings Lutheran Church driveway to the South half of Arbor Place Lane.
5. Install culvert extension and Safety End Treatment (refer to the Culvert Layout sheet).
6. Construct Smyers Lane except the final pavement surface from North half of King of Kings Lutheran Church driveway to South Half of Arbor Place Lane (refer to TCP Layout Phase 2).
7. Install tabs for center yellow stripe per WZ(STPM)-23 standard following final pavement marking configuration.

Phase 3:

1. Install temporary signs as shown on TCP layouts.
2. Install all signing, channelizing devices and barricades shown on the "Traffic Control Plan" sheets.
3. Install temporary erosion control devices shown on the SW3P sheets.
4. Remove existing Smyers Lane from North half of Arbor Place Lane to Oak Haven Drive (refer to TCP Layout Phase 3).
5. Construct Smyers Lane except the final pavement surface from North Half of Arbor Place Lane to Oak Haven Drive (refer to TCP Layout Phase 3).
6. Install tabs for center yellow stripe per WZ(STPM)-23 standard following final pavement marking configuration.

Phase 4:

1. Install temporary signs as shown on TCP layouts.
2. Install all signing, channelizing devices and barricades shown on the "Traffic Control Plan" sheets.
3. Install temporary erosion control devices shown on the SW3P sheets.
4. Remove existing Smyers Lane at the intersection of Oak Haven Drive (refer to TCP Layout Phase 4).
5. Construct Smyers Lane except the final pavement surface at the intersection of Oak Haven Drive.
6. Install tabs for center yellow stripe per WZ(STPM)-23 standard following final pavement marking configuration.

Phase 5:

1. Install temporary signs as shown on TCP layouts .
2. Install all signing, channelizing devices and barricades shown on the "Traffic Control Plan" sheets.
3. Install temporary erosion control devices shown on the SW3P sheets.
4. Remove existing Smyers Lane from North side of Oak Haven Drive intersection to South half of Gillette Lane (refer to TCP Layout Phase 5).
5. Construct Smyers Lane except the final pavement surface from North side of Oak Haven Drive to South half of Gillette Lane.
6. Install tabs for center yellow stripe per WZ(STPM)-23 standard following final pavement marking configuration.

Phase 6:

1. Install temporary signs as shown on TCP layouts.
2. Install all signing, channelizing devices and barricades shown on the "Traffic Control Plan" sheets.
3. Install temporary erosion control devices shown on the SW3P sheets.
4. Remove existing Smyers Lane from North side of Gillette Lane to Wyoming Springs Drive (refer to TCP Layout Phase 6).
5. Construct Smyers Lane except the final pavement surface from North half of Gillette Lane to Wyoming Springs Drive.
6. Construct final 2" surface.
7. Install final pavement markings.
8. Remove temporary SW3P.
9. Clean up site and demobilize.

Sequence of Construction CR 122:

Phase 1:

1. Install advance warning signs on CR 110, CR 122, CR 117 and N Red Bud Lane.
2. Install all signing, channelizing devices and barricades shown on the "Traffic Control Plan" sheets.
3. Install temporary erosion control devices shown on the SW3P sheets.
4. Install temporary pavement for access to private driveway and temporary relocate mailbox. Coordinate with the CoRR and property owner for this work.
5. Remove existing CR 122 from N Red Bud Lane to South of low water crossing (refer to TCP Layout Phase 1).
6. Construct CR 122 except the final pavement surface from N Red Bud Lane to South of low water crossing.
7. Construct final 2" surface.
8. Remove temporary SW3P.
9. Clean up surface and demobilize.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

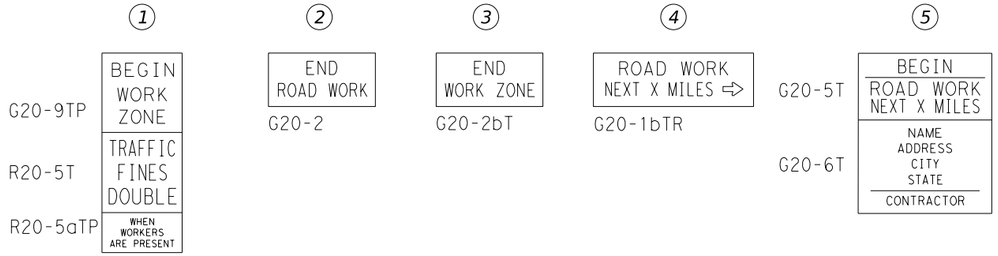
ROUND ROCK TEXAS

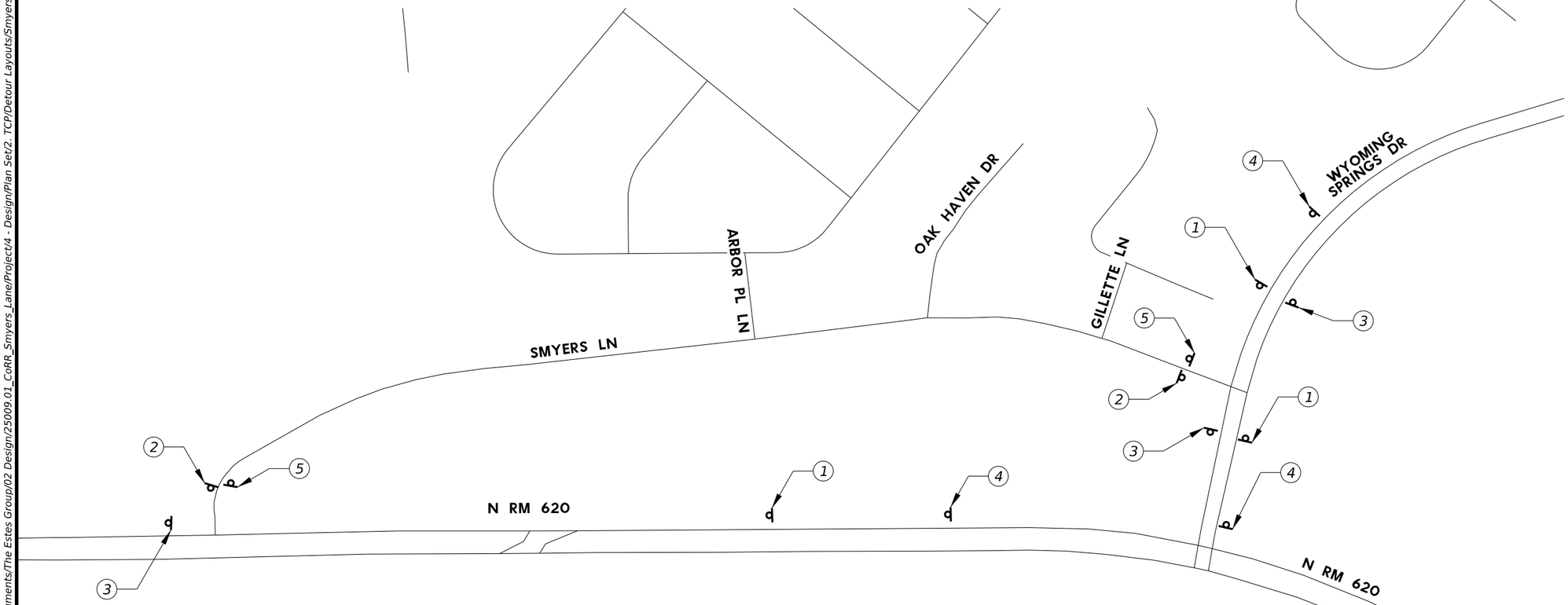
SMYERS & CR 122
TCP NARRATIVE

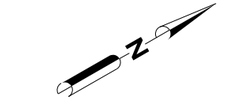
SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	13
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/2. TCP/TCP Narrative/Smyers_NAR01







NOTES:

1. SEE BC(2)-21 FOR SIGN SPACING.

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

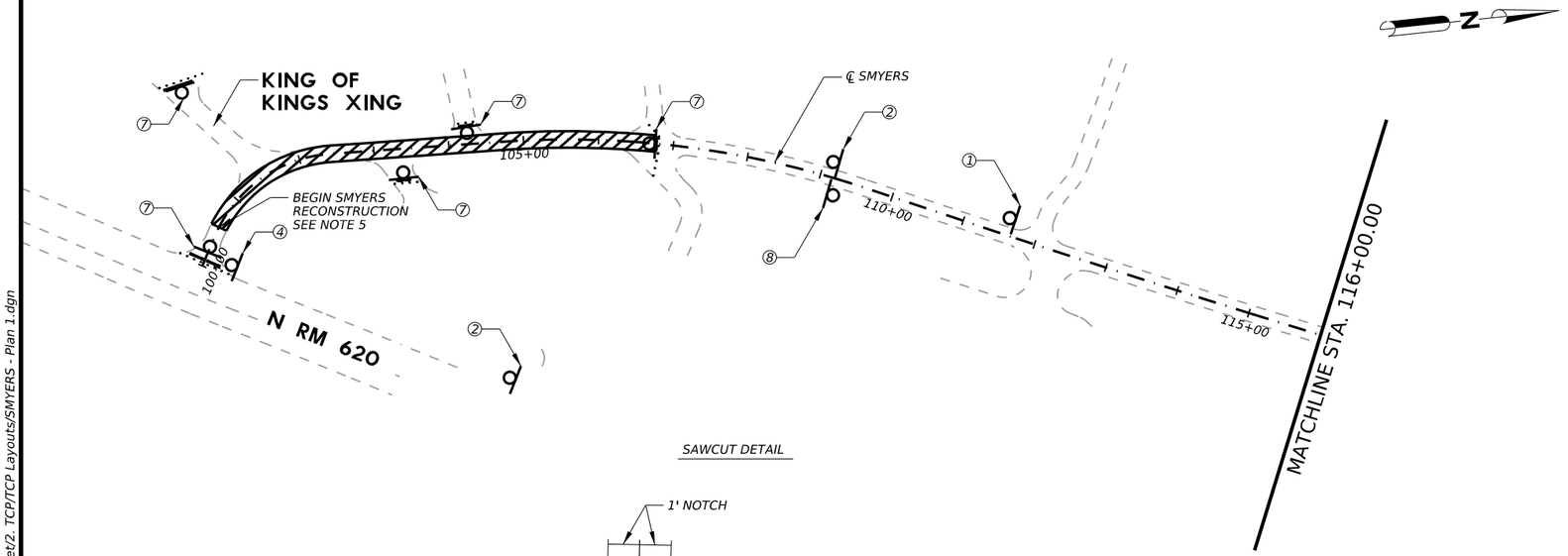
SMYERS & CR 122

SMYERS
ADVANCED WARNING SIGNS

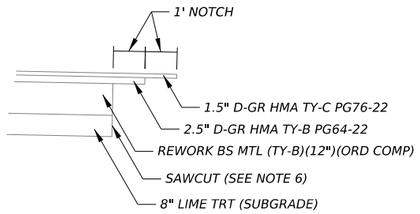
SCALE 1" = 4000' | SHEET 1 OF 1

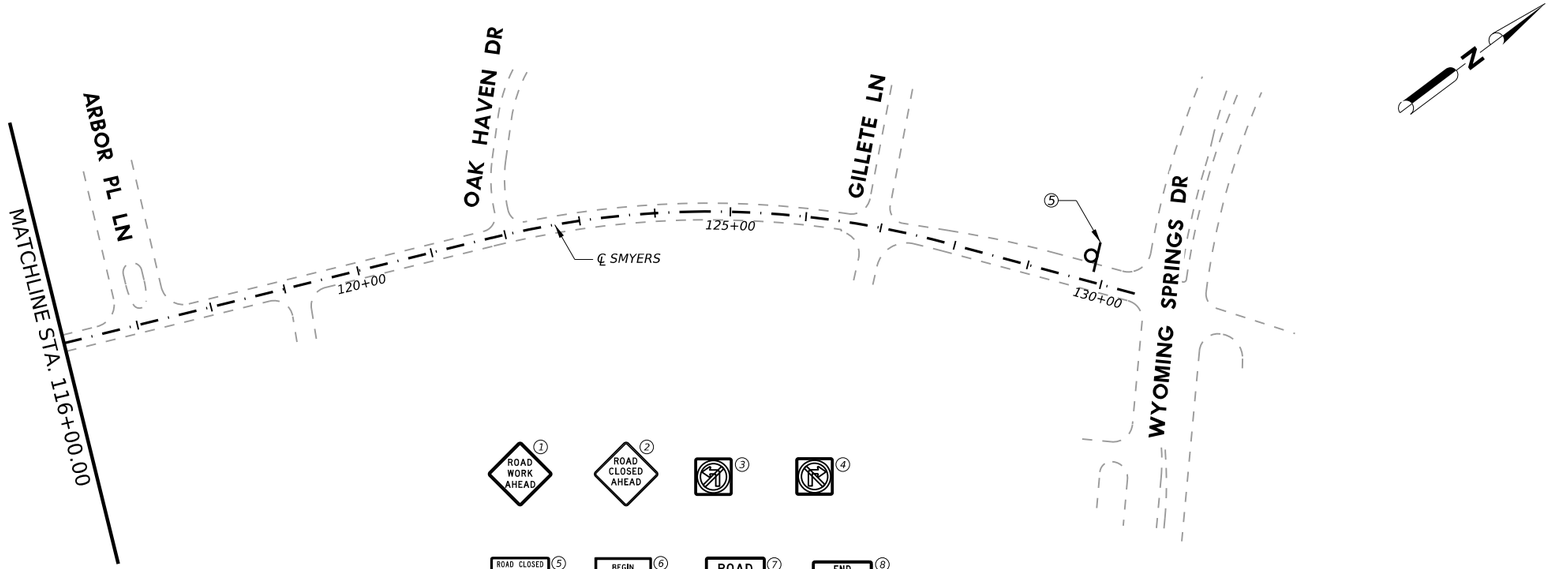
DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	14
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/2. TCP/Detour Layouts/Smyers_ADW



SAWCUT DETAIL





HORZ 0' 100' 200'

SCALE IN FEET

LEGEND

- PROPOSED CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- TEMPORARY PAVEMENT THIS PHASE
- CHANNELIZING DEVICES
- TYPE 3 BARRICADE
- WK ZN PAV SHT TERM (TAB)TY Y-2 THIS PHASE
- WK ZN PAV SHT TERM (TAB)TY Y-2 PREVIOUS PHASE

NOTES:

1. CHANNELIZING DEVICES SHALL BE SPACED PER TXDOT STANDARDS UNLESS OTHERWISE SHOWN ON PLANS. ALL DISTANCES SHOWN ARE APPROXIMATE.
2. SEE ADVANCE WARNING SIGNS LAYOUT FOR ADDITIONAL INFORMATION.
3. SURFACE DRAINAGE INTO THE EXISTING STORM DRAIN WILL BE MAINTAINED.
4. FINAL GRADE, CROSS SLOPE, AND EOP TO MATCH EXISTING. ALL DRIVEWAYS ARE TO REMAIN IN PLACE AND ANY DAMAGES OCCURRED DURING CONSTRUCTION WILL BE REPAIRED AT THE CONTRACTORS EXPENSE.
5. SEE TXDOT STANDARD WZ(STPM)-23 FOR MORE INFORMATION.
6. BEGIN CONSTRUCTION AND SAWCUT 1" INTO THE PAVEMENT THAT WAS RECONSTRUCTED BY THE FM 620 RECONSTRUCTION. SAWCUTS AND MILLING ARE SUBSIDIARY TO PAVEMENT ITEMS.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

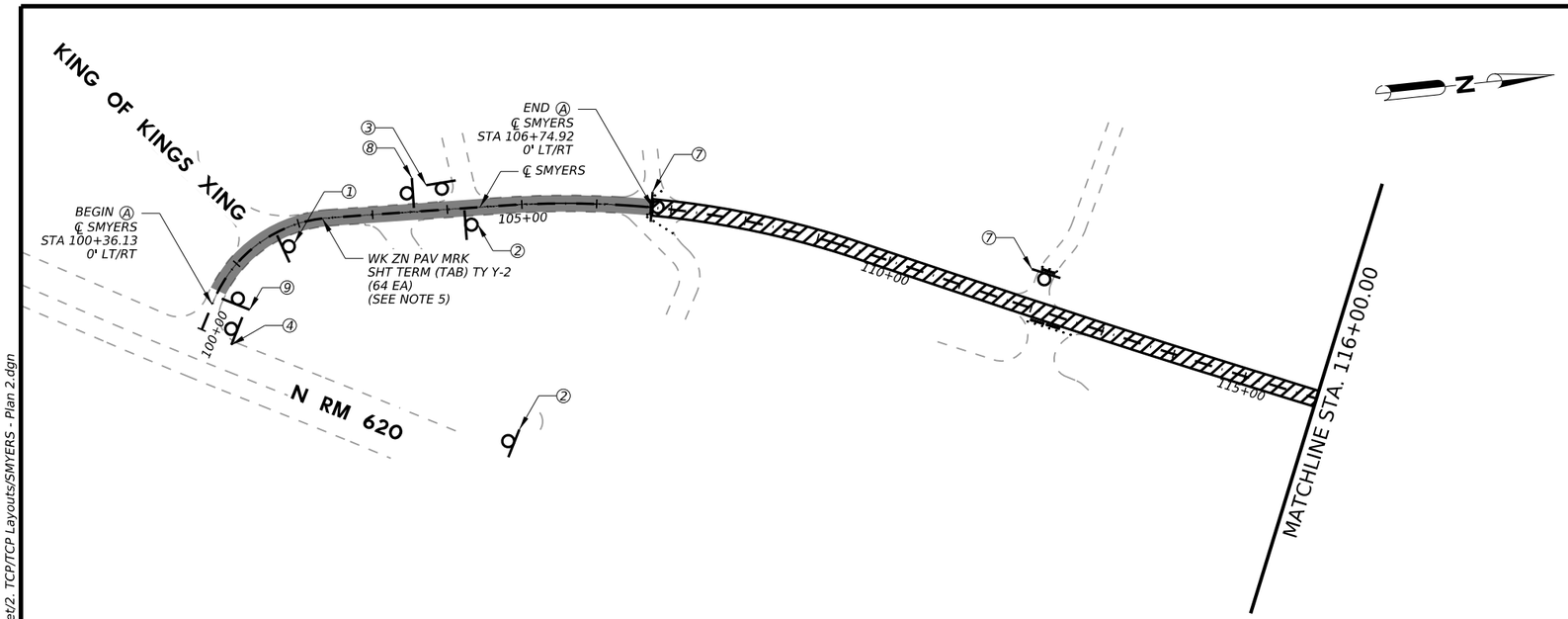
SMYERS & CR 122

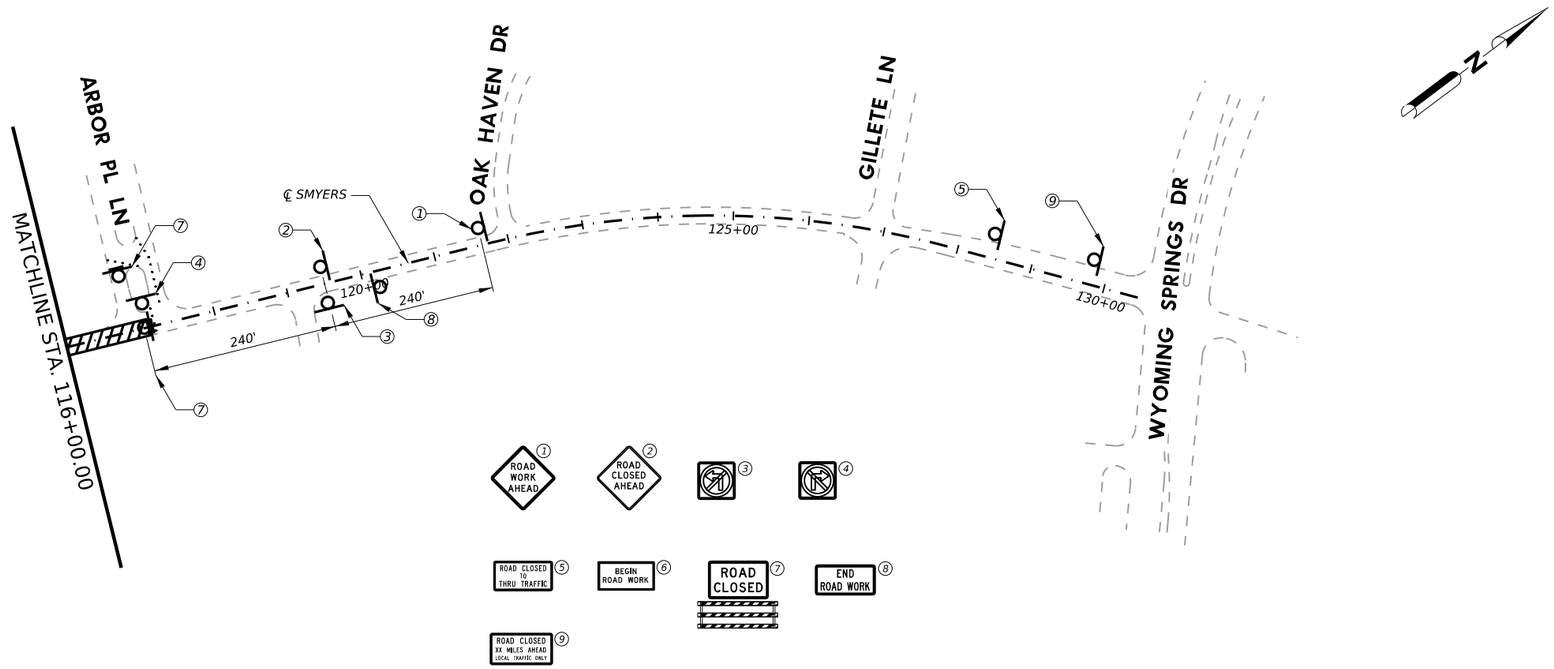
SMYERS
TRAFFIC CONTROL PLAN
PHASE 1

SCALE 1" = 200' SHEET 1 OF 6

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	15
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/2. TCP/TCP Layouts/SMYERS - Plan 1.dgn





HORZ 0' 100' 200'

SCALE IN FEET

LEGEND

- PROPOSED CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- TEMPORARY PAVEMENT THIS PHASE
- CHANNELIZING DEVICES
- TYPE 3 BARRICADE
- WK ZN PAV SHT TERM (TAB)TY Y-2 THIS PHASE
- WK ZN PAV SHT TERM (TAB)TY Y-2 PREVIOUS PHASE

NOTES:

1. CHANNELIZING DEVICES SHALL BE SPACED PER TXDOT STANDARDS UNLESS OTHERWISE SHOWN ON PLANS. ALL DISTANCES SHOWN ARE APPROXIMATE.
2. SEE ADVANCE WARNING SIGNS LAYOUT FOR ADDITIONAL INFORMATION.
3. SURFACE DRAINAGE INTO THE EXISTING STORM DRAIN WILL BE MAINTAINED.
4. FINAL GRADE, CROSS SLOPE, AND EOP TO MATCH EXISTING. ALL DRIVEWAYS ARE TO REMAIN IN PLACE AND ANY DAMAGES OCCURRED DURING CONSTRUCTION WILL BE REPAIRED AT THE CONTRACTORS EXPENSE.
5. SEE TXDOT STANDARD WZ(STPM)-23 FOR MORE INFORMATION.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

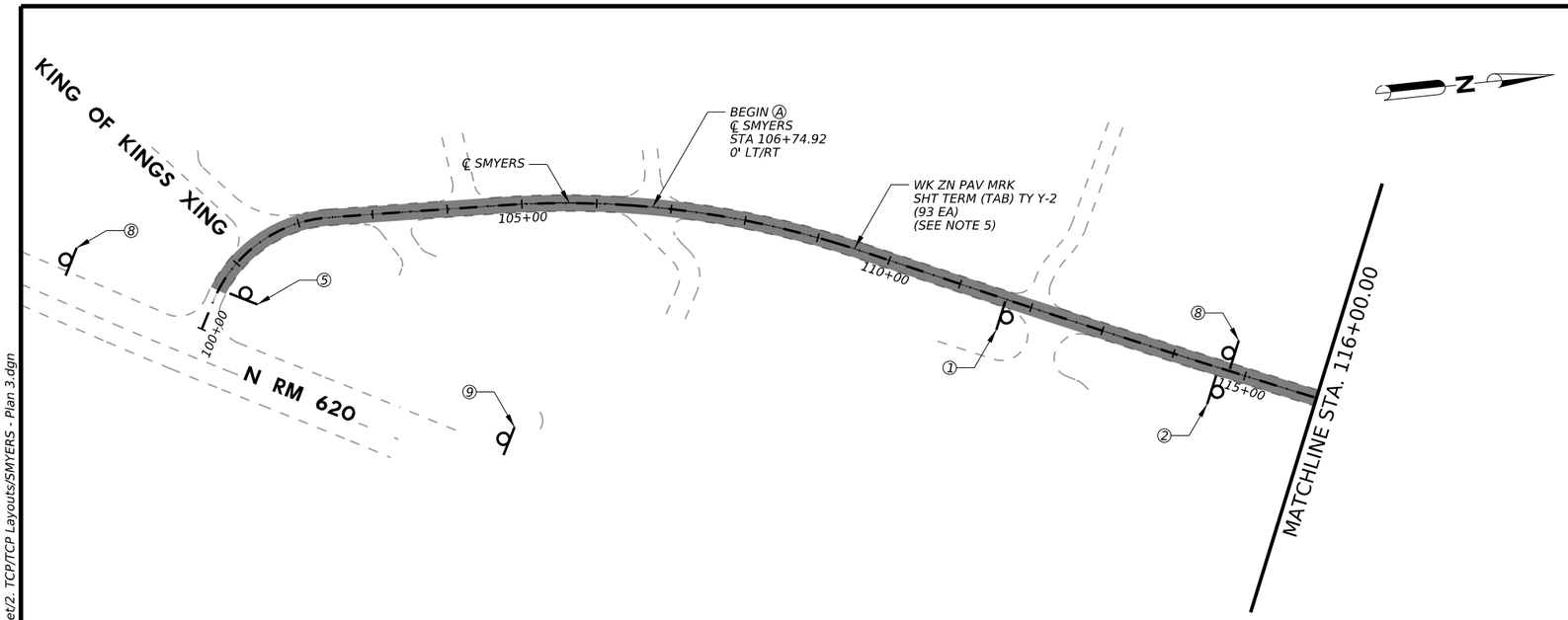
SMYERS & CR 122

SMYERS
TRAFFIC CONTROL PLAN
PHASE 2

SCALE 1" = 200' SHEET 2 OF 6

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	16
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/2. TCP/TCP Layouts/SMYERS - Plan 2.dgn



HORZ 0' 100' 200'

SCALE IN FEET

LEGEND

- PROPOSED CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- TEMPORARY PAVEMENT THIS PHASE
- CHANNELIZING DEVICES
- TYPE 3 BARRICADE
- WK ZN PAV SHT TERM (TAB)TY Y-2 THIS PHASE
- WK ZN PAV SHT TERM (TAB)TY Y-2 PREVIOUS PHASE

NOTES:

1. CHANNELIZING DEVICES SHALL BE SPACED PER TXDOT STANDARDS UNLESS OTHERWISE SHOWN ON PLANS. ALL DISTANCES SHOWN ARE APPROXIMATE.
2. SEE ADVANCE WARNING SIGNS LAYOUT FOR ADDITIONAL INFORMATION.
3. SURFACE DRAINAGE INTO THE EXISTING STORM DRAIN WILL BE MAINTAINED.
4. FINAL GRADE, CROSS SLOPE, AND EOP TO MATCH EXISTING. ALL DRIVEWAYS ARE TO REMAIN IN PLACE AND ANY DAMAGES OCCURRED DURING CONSTRUCTION WILL BE REPAIRED AT THE CONTRACTORS EXPENSE.
5. SEE TXDOT STANDARD WZ(STPM)-23 FOR MORE INFORMATION.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

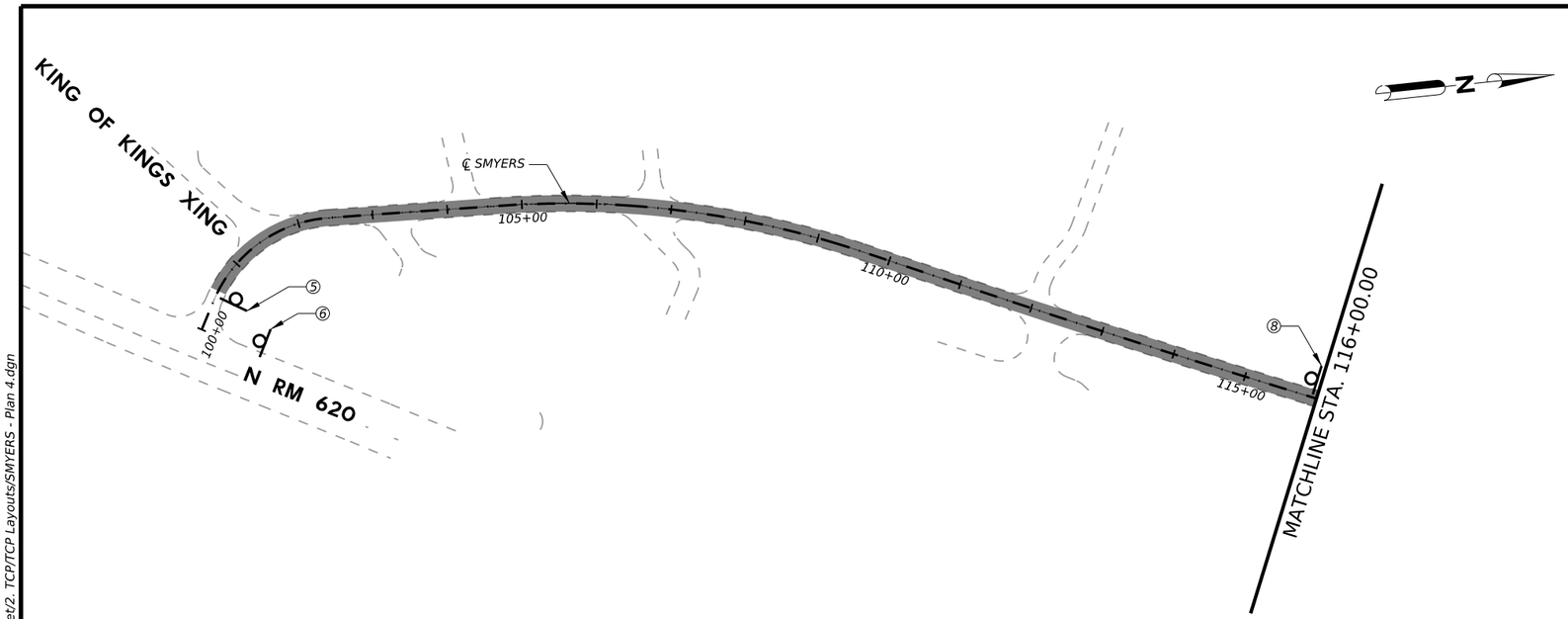
SMYERS & CR 122

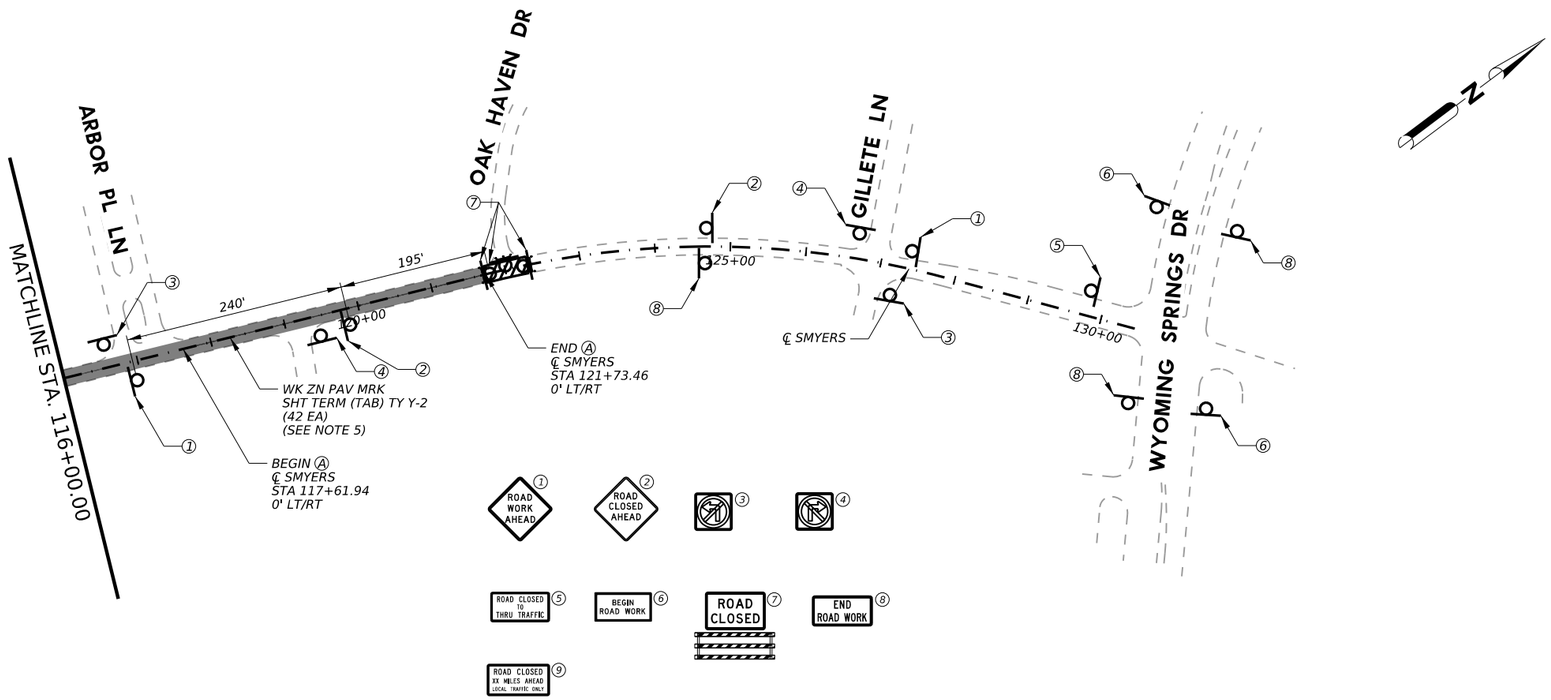
SMYERS TRAFFIC CONTROL PLAN PHASE 3

SCALE 1" = 200' SHEET 3 OF 6

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	17
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/2. TCP/TCP Layouts/SMYERS - Plan 3.dgn





HORZ 0' 100' 200'

SCALE IN FEET

LEGEND

- PROPOSED CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- TEMPORARY PAVEMENT THIS PHASE
- CHANNELIZING DEVICES
- TYPE 3 BARRICADE
- WK ZN PAV SHT TERM (TAB)TY Y-2 THIS PHASE
- WK ZN PAV SHT TERM (TAB)TY Y-2 PREVIOUS PHASE

NOTES:

1. CHANNELIZING DEVICES SHALL BE SPACED PER TXDOT STANDARDS UNLESS OTHERWISE SHOWN ON PLANS. ALL DISTANCES SHOWN ARE APPROXIMATE.
2. SEE ADVANCE WARNING SIGNS LAYOUT FOR ADDITIONAL INFORMATION.
3. SURFACE DRAINAGE INTO THE EXISTING STORM DRAIN WILL BE MAINTAINED.
4. FINAL GRADE, CROSS SLOPE, AND EOP TO MATCH EXISTING. ALL DRIVEWAYS ARE TO REMAIN IN PLACE AND ANY DAMAGES OCCURRED DURING CONSTRUCTION WILL BE REPAIRED AT THE CONTRACTORS EXPENSE.
5. SEE TXDOT STANDARD WZ(STPM)-23 FOR MORE INFORMATION.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

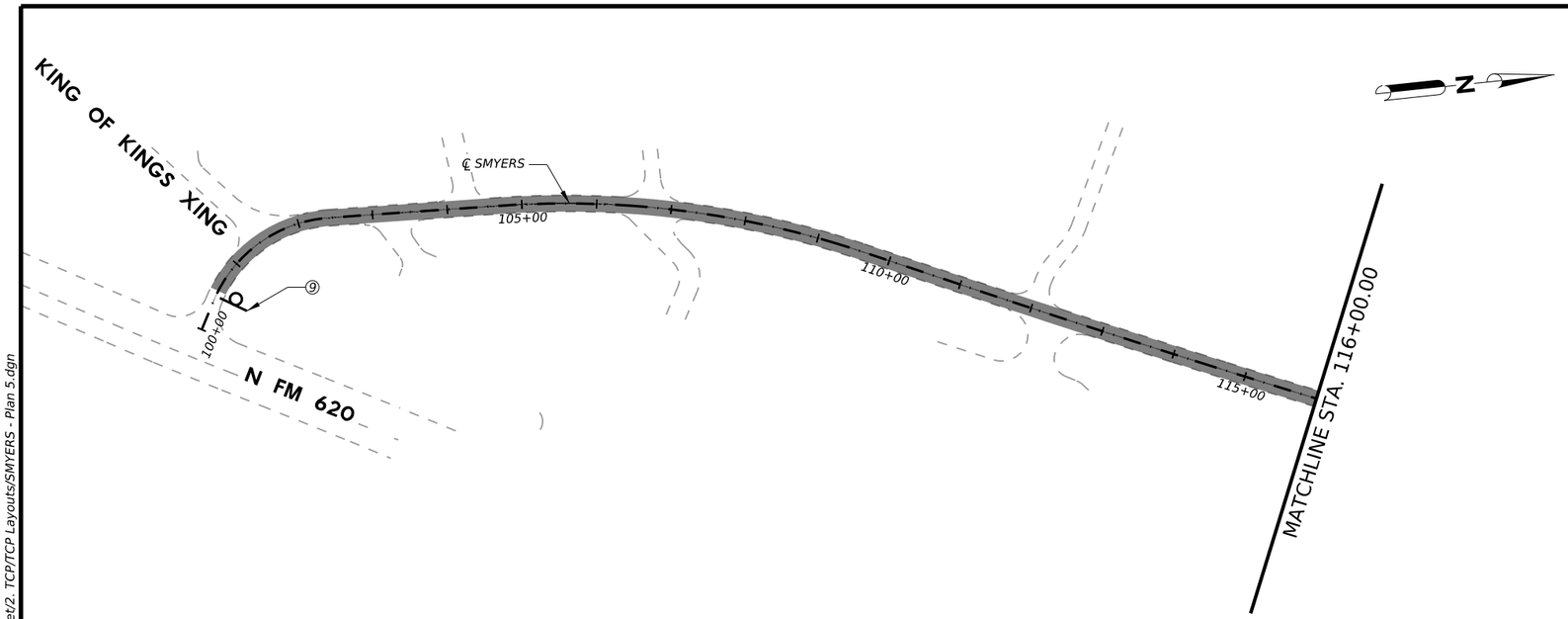
SMYERS & CR 122

SMYERS TRAFFIC CONTROL PLAN PHASE 4

SCALE 1" = 200' SHEET 4 OF 6

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	18
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/2. TCP/TCP Layouts/SMYERS - Plan 4.dgn



HORZ 0' 100' 200'

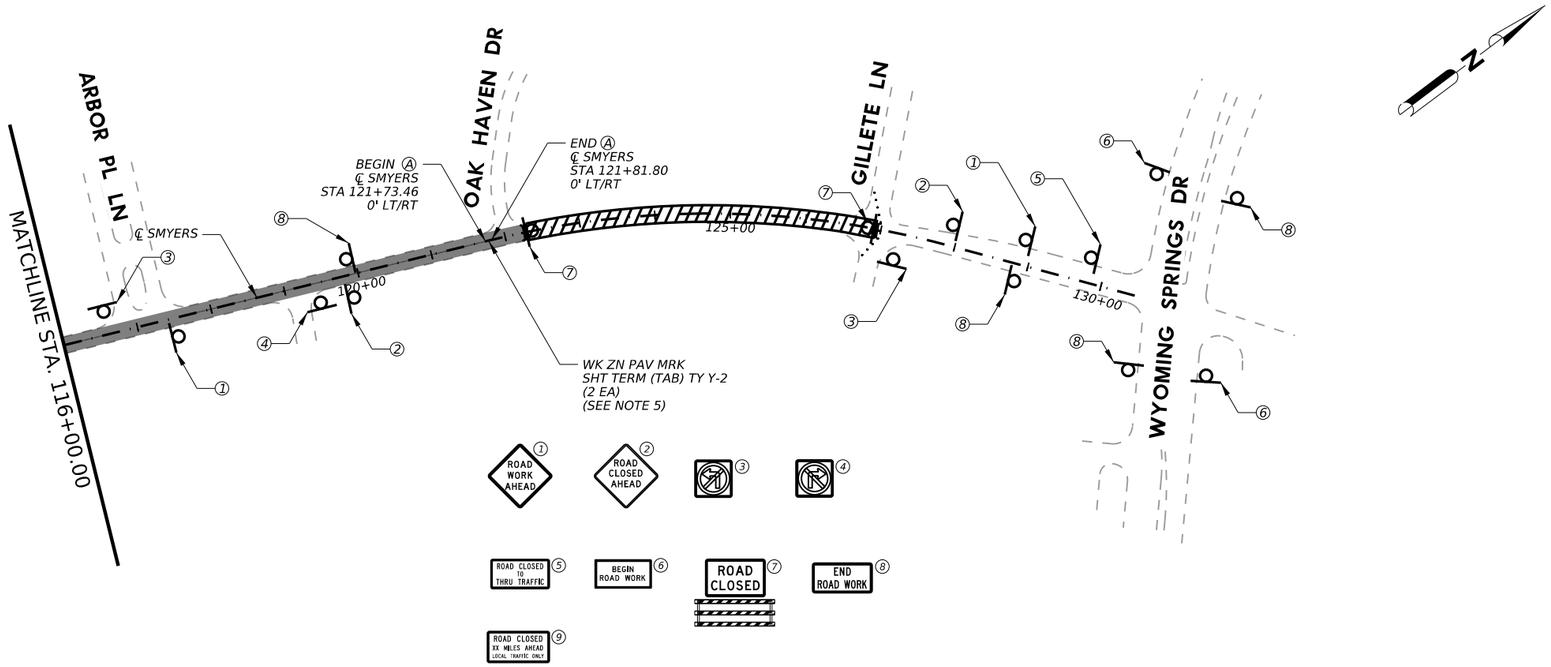
SCALE IN FEET

LEGEND

- PROPOSED CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- TEMPORARY PAVEMENT THIS PHASE
- CHANNELIZING DEVICES
- TYPE 3 BARRICADE
- WK ZN PAV SHT TERM (TAB)TY Y-2 THIS PHASE
- WK ZN PAV SHT TERM (TAB)TY Y-2 PREVIOUS PHASE

NOTES:

1. CHANNELIZING DEVICES SHALL BE SPACED PER TXDOT STANDARDS UNLESS OTHERWISE SHOWN ON PLANS. ALL DISTANCES SHOWN ARE APPROXIMATE.
2. SEE ADVANCE WARNING SIGNS LAYOUT FOR ADDITIONAL INFORMATION.
3. SURFACE DRAINAGE INTO THE EXISTING STORM DRAIN WILL BE MAINTAINED.
4. FINAL GRADE, CROSS SLOPE, AND EOP TO MATCH EXISTING. ALL DRIVEWAYS ARE TO REMAIN IN PLACE AND ANY DAMAGES OCCURRED DURING CONSTRUCTION WILL BE REPAIRED AT THE CONTRACTORS EXPENSE.
5. SEE TXDOT STANDARD WZ(STPM)-23 FOR MORE INFORMATION.



STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

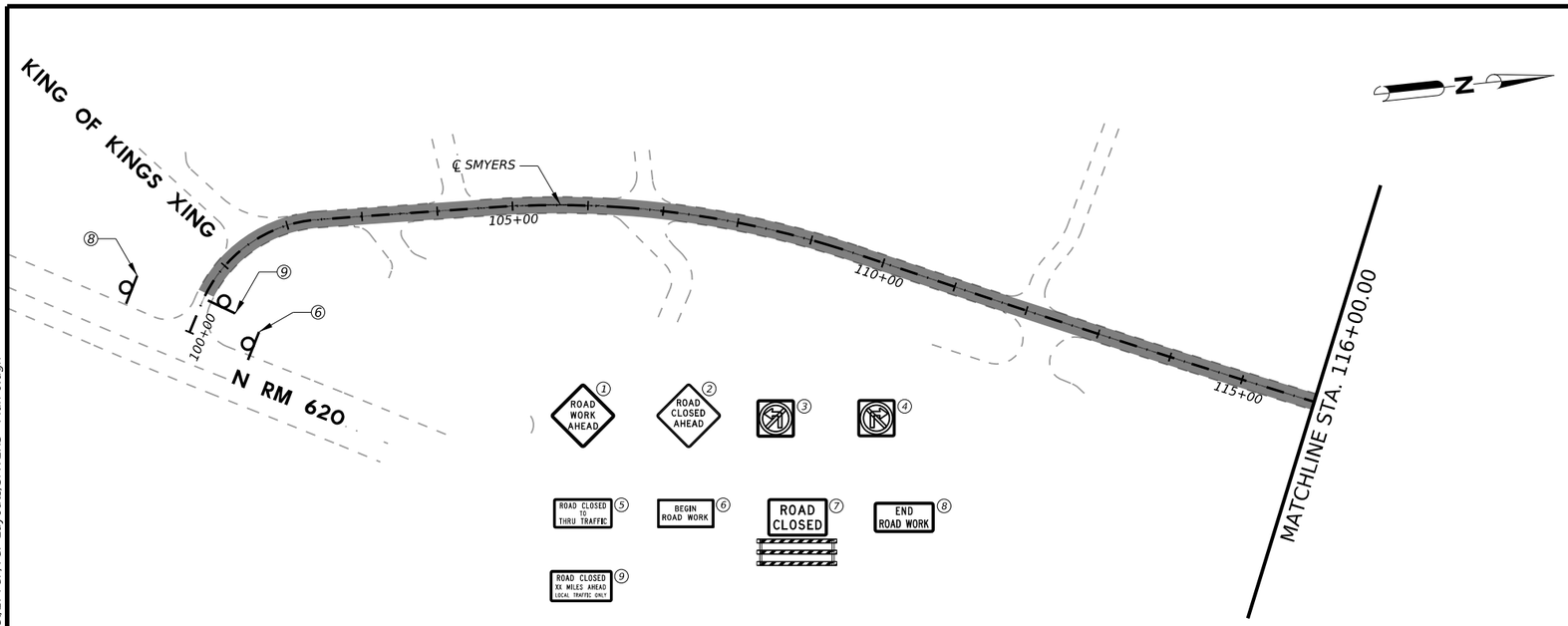
SMYERS & CR 122

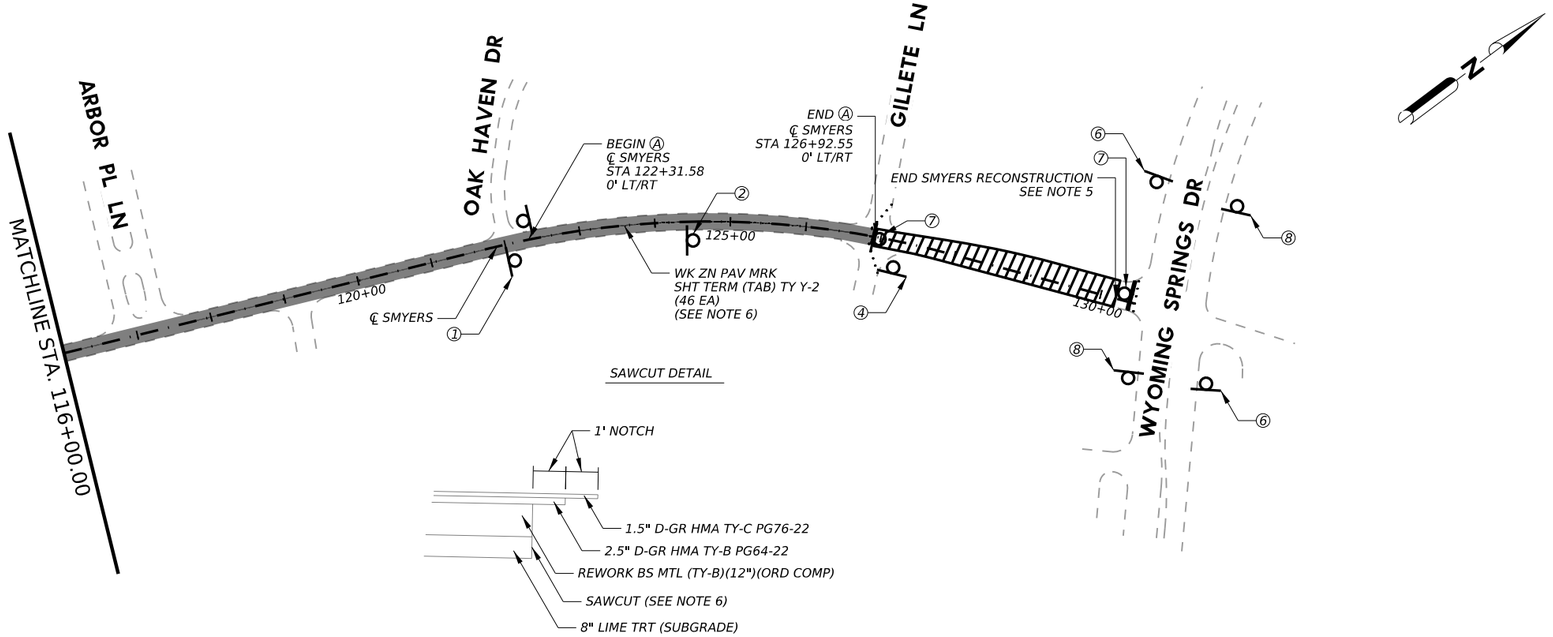
SMYERS TRAFFIC CONTROL PLAN PHASE 5

SCALE 1" = 200' SHEET 5 OF 6

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	19
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/2. TCP/TCP Layouts/SMYERS - Plan 5.dgn





HORZ 0' 100' 200'

SCALE IN FEET

LEGEND

- PROPOSED CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- TEMPORARY PAVEMENT THIS PHASE
- CHANNELIZING DEVICES
- TYPE 3 BARRICADE
- WK ZN PAV SHT TERM (TAB)TY Y-2 THIS PHASE
- WK ZN PAV SHT TERM (TAB)TY Y-2 PREVIOUS PHASE

NOTES:

1. CHANNELIZING DEVICES SHALL BE SPACED PER TXDOT STANDARDS UNLESS OTHERWISE SHOWN ON PLANS. ALL DISTANCES SHOWN ARE APPROXIMATE.
2. SEE ADVANCE WARNING SIGNS LAYOUT FOR ADDITIONAL INFORMATION.
3. SURFACE DRAINAGE INTO THE EXISTING STORM DRAIN WILL BE MAINTAINED.
4. FINAL GRADE, CROSS SLOPE, AND EOP TO MATCH EXISTING. ALL DRIVEWAYS ARE TO REMAIN IN PLACE AND ANY DAMAGES OCCURRED DURING CONSTRUCTION WILL BE REPAIRED AT THE CONTRACTORS EXPENSE.
5. SEE TXDOT STANDARD WZ(STPM)-23 FOR MORE INFORMATION.
6. END CONSTRUCTION AND SAWCUT 1' INTO THE PAVEMENT THAT WAS RECONSTRUCTED BY THE WYOMING SPRINGS RECONSTRUCTION. SAWCUTS AND MILLING ARE SUBSIDIARY TO PAVEMENT ITEMS.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

SMYERS TRAFFIC CONTROL PLAN PHASE 6

SCALE 1" = 200' SHEET 6 OF 6

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	20
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/2. TCP/TCP Layouts/SMYERS - Plan 6.dgn

DATE:
FILE:

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

Texas Department of Transportation

Traffic Safety Division Standard

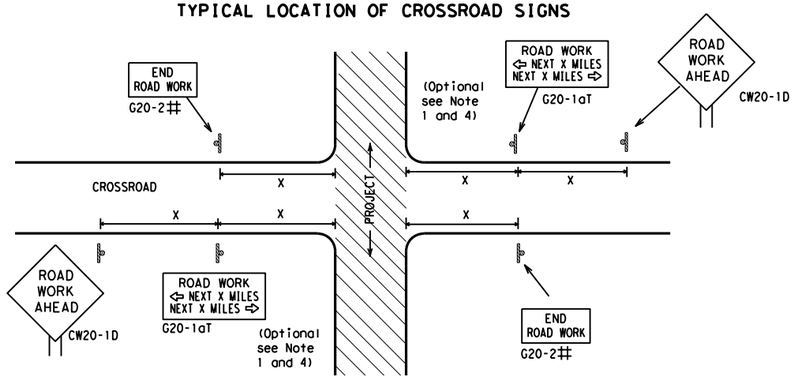
BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-03 7-13 9-07 8-14 5-10 5-21	DIST	COUNTY		SHEET NO.
		WILLIAMSON		24

DATE:
FILE:

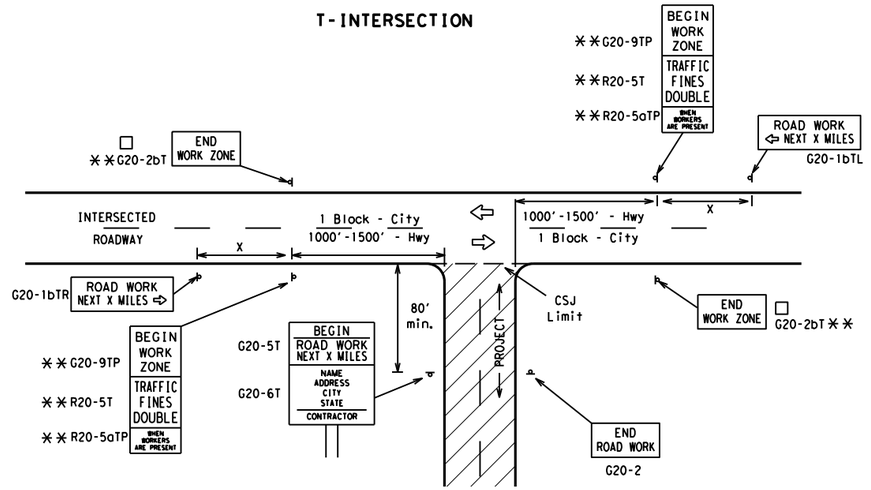
TYPICAL LOCATION OF CROSSROAD SIGNS



May be mounted on back of "ROAD WORK AHEAD"(CW20-1D) sign with approval of Engineer. (See note 2 below)

1. 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.
2. 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.
3. 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.
4. 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.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. 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

1. 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.
2. If construction closes the road at a T-intersection, the Contractor shall place the "CONTRACTOR NAME"(G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow(G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR)" signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING[1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign △ Spacing "X"
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
*	*[3]

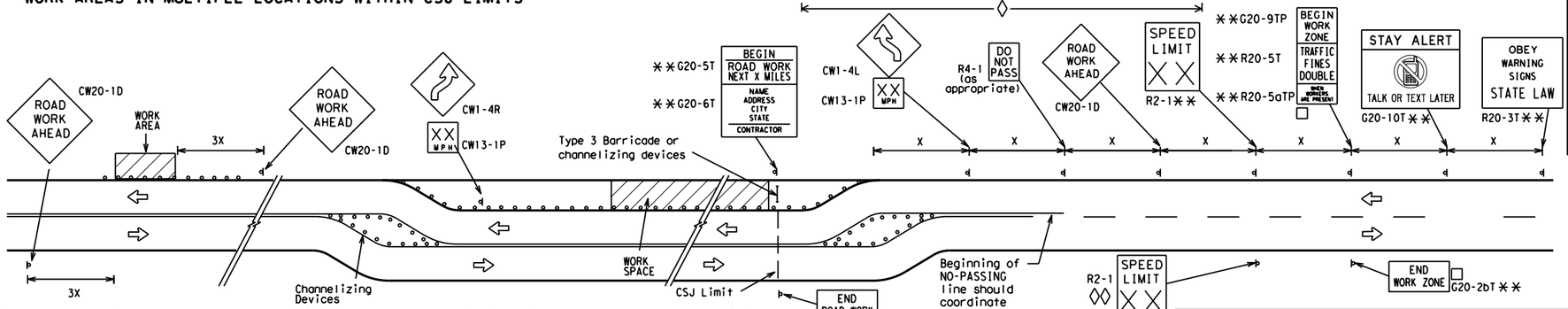
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 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".
5. Only diamond shaped warning sign sizes are indicated.
6. 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.

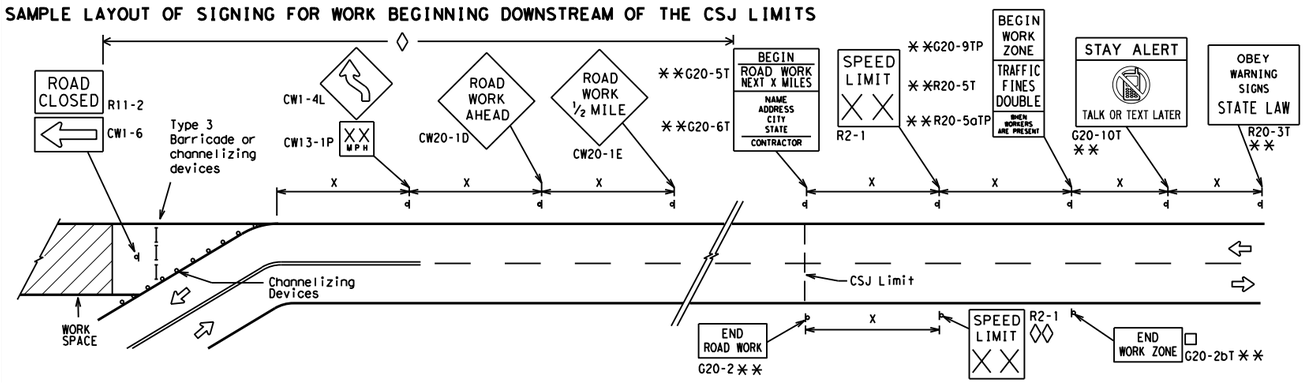
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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 AT THE CSJ LIMITS

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF 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.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21		WILLIAMSON		25

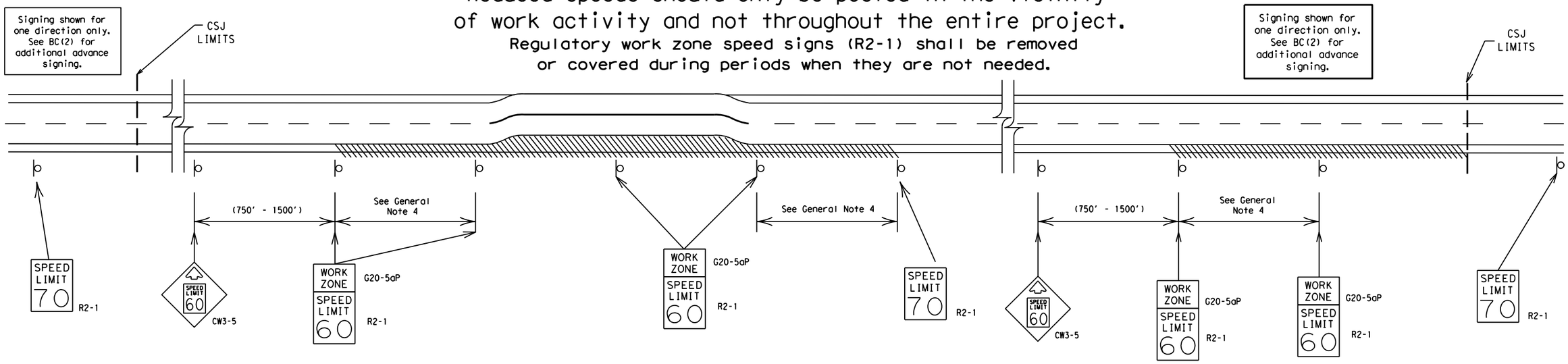
DATE:
FILE:

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Safety Division Standard

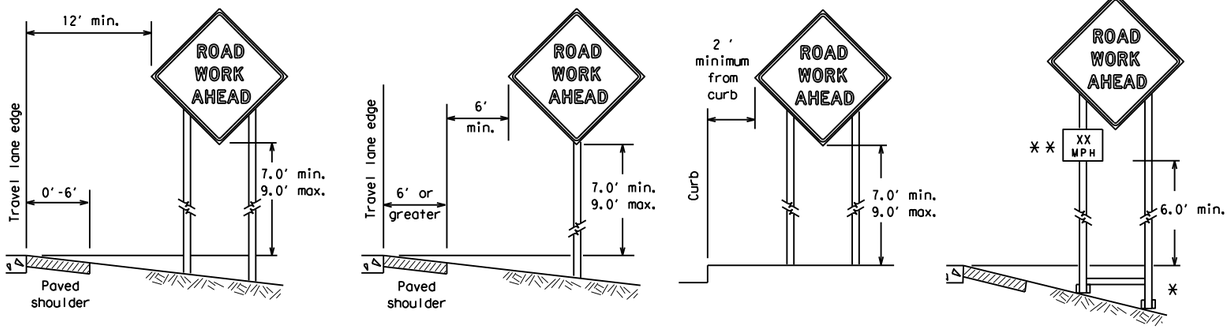
BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 9-07 8-14 7-13 5-21	DIST	COUNTY		SHEET NO.
		WILLIAMSON		26

DATE:
FILE:

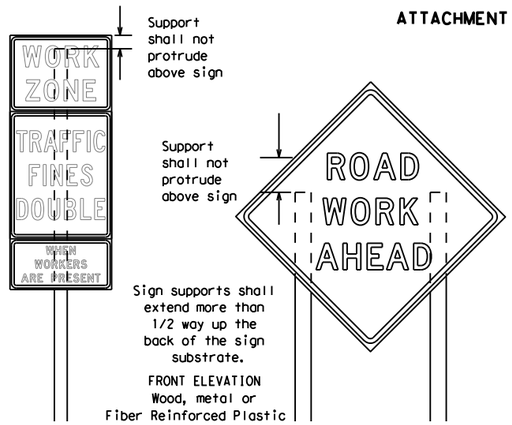
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

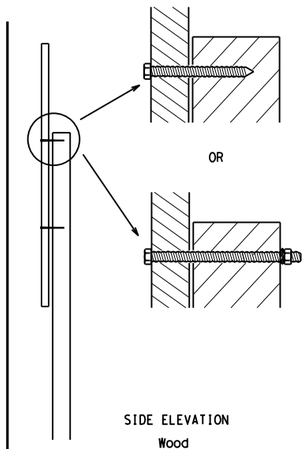


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** 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





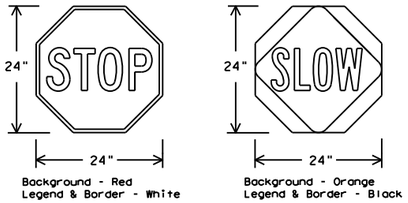
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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 spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

Texas Department of Transportation | Traffic Safety Division Standard

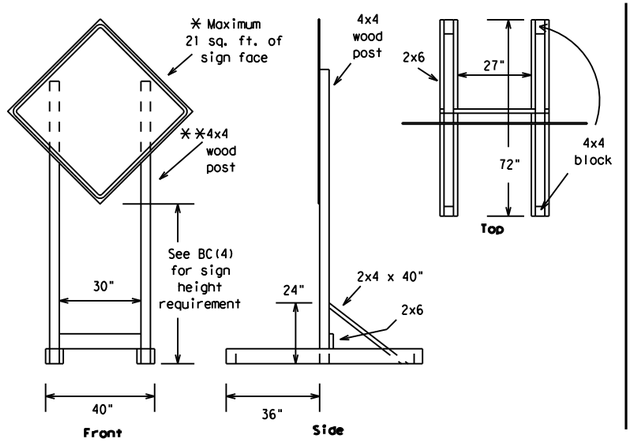
BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

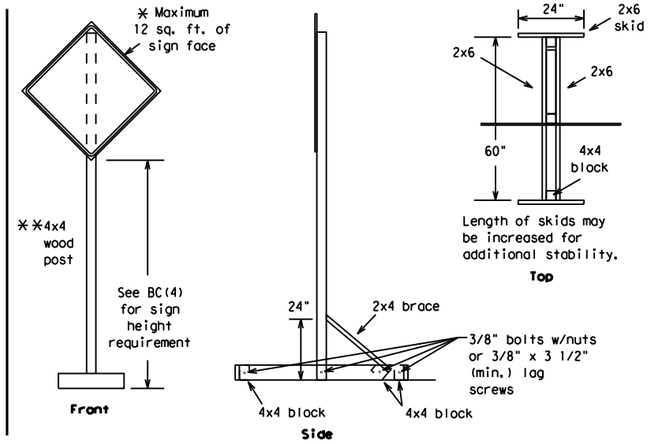
BC(4)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21		WILLIAMSON		27

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

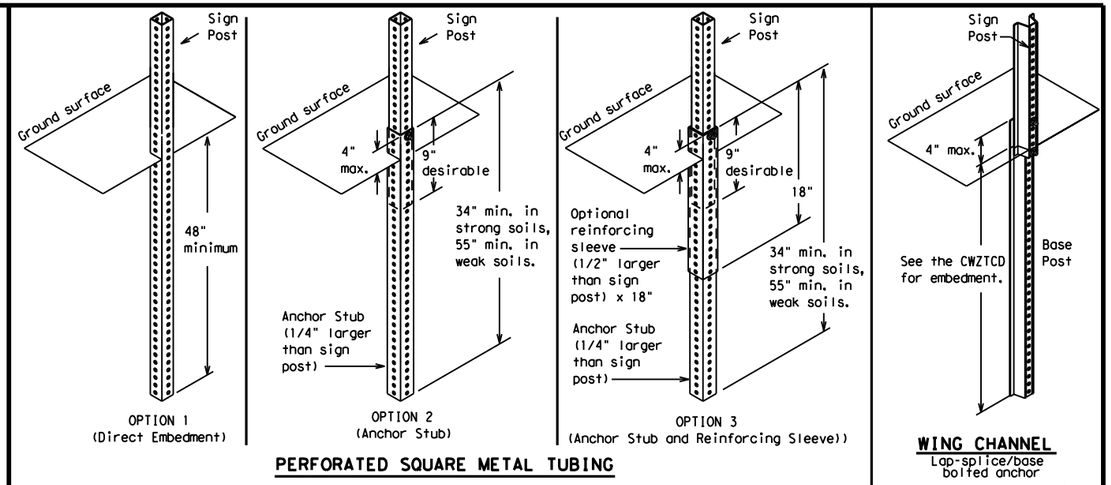
DATE:
FILE:





SKID MOUNTED WOOD SIGN SUPPORTS

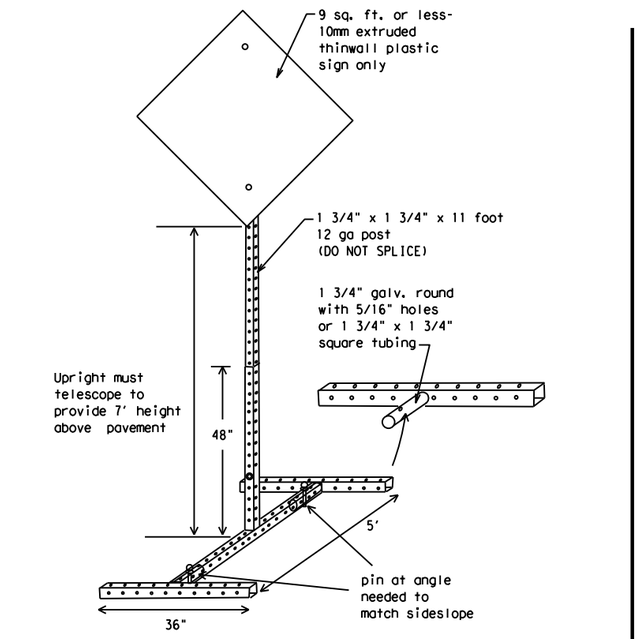
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

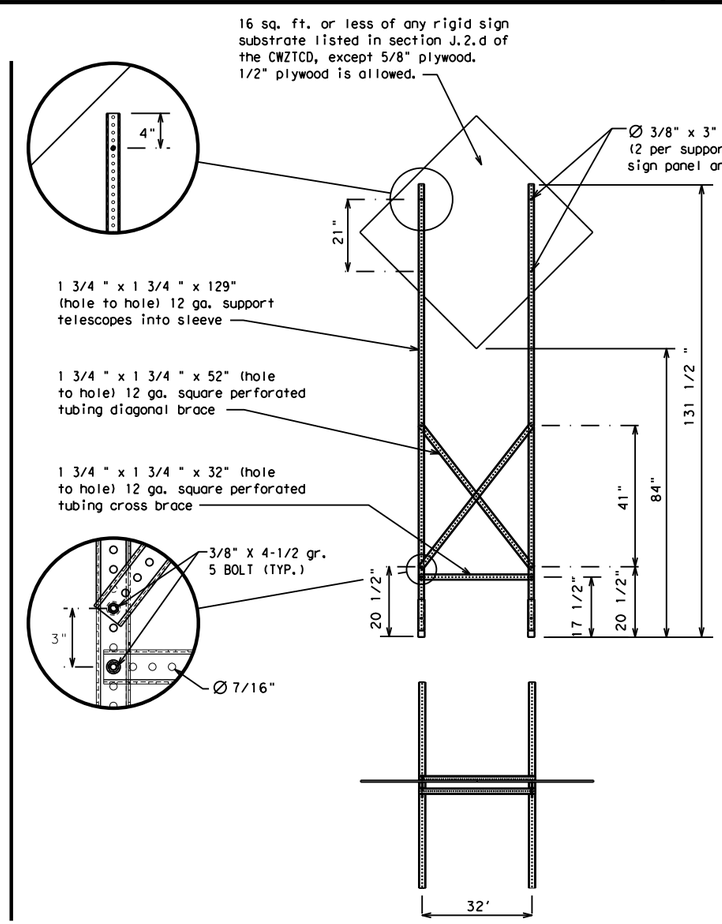


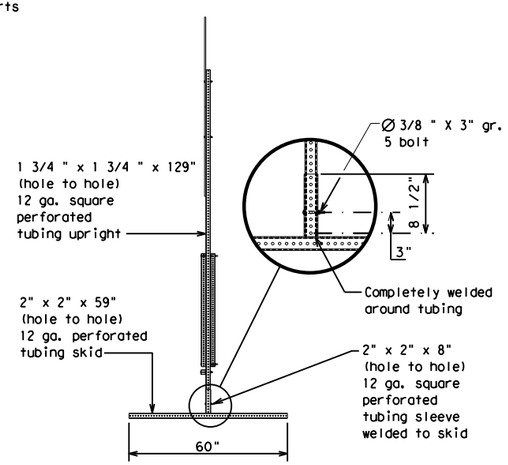
PERFORATED SQUARE METAL TUBING

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21		WILLIAMSON		28

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

DATE:
FILE:

WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. 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.
3. 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.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. 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.
8. 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.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. 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.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. 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.
15. 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.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT

WORD OR PHRASE	ABBREVIATION
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

- FREEWAY CLOSED X MILE
- FRONTAGE ROAD CLOSED
- ROAD CLOSED AT SH XXX
- SHOULDER CLOSED XXX FT
- ROAD CLSD AT FM XXXX
- RIGHT LN CLOSED XXX FT
- RIGHT X LANES CLOSED
- RIGHT X LANES OPEN
- CENTER LANE CLOSED
- DAYTIME LANE CLOSURES
- NIGHT LANE CLOSURES
- I-XX SOUTH EXIT CLOSED
- VARIOUS LANES CLOSED
- EXIT XXX CLOSED X MILE
- EXIT CLOSED
- RIGHT LN TO BE CLOSED
- MALL DRIVEWAY CLOSED
- X LANES CLOSED TUE - FRI
- XXXXXXXX BLVD CLOSED

Other Condition List

- ROADWORK XXX FT
- ROAD REPAIRS XXXX FT
- FLAGGER XXXX FT
- LANE NARROWS XXXX FT
- RIGHT LN NARROWS XXXX FT
- TWO-WAY TRAFFIC XX MILE
- MERGING TRAFFIC XXXX FT
- CONST TRAFFIC XXX FT
- LOOSE GRAVEL XXXX FT
- UNEVEN LANES XXXX FT
- DETOUR X MILE
- ROUGH ROAD XXXX FT
- ROADWORK PAST SH XXXX
- ROADWORK NEXT FRI-SUN
- BUMP XXXX FT
- US XXX EXIT X MILES
- TRAFFIC SIGNAL XXXX FT
- 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
- FORM X LINES RIGHT
- DETOUR NEXT X EXITS
- USE XXXXX RD EXIT
- USE EXIT XXX
- USE EXIT I-XX NORTH
- STAY ON US XXX SOUTH
- USE I-XX E TO I-XX N
- TRUCKS USE US XXX N
- WATCH FOR TRUCKS
- WATCH FOR TRUCKS
- EXPECT DELAYS
- EXPECT DELAYS
- PREPARE TO STOP
- REDUCE SPEED XXX FT
- END SHOULDER USE
- USE OTHER ROUTES
- WATCH FOR WORKERS
- STAY IN LANE *

Location List

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

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. 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.
6. 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

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. 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

1. 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.
2. 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.
3. 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.
4. 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.

Texas Department of Transportation

Traffic Safety Division Standard

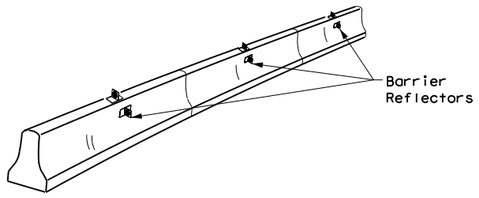
BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21		WILLIAMSON		29

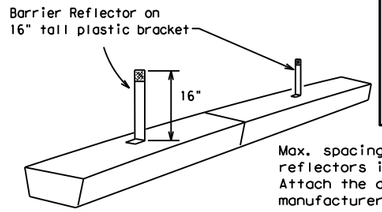
DATE:
FILE:

1. 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).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



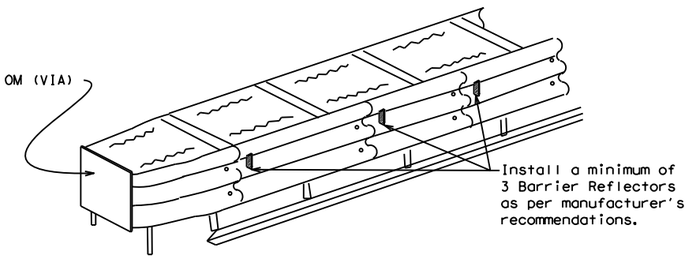
CONCRETE TRAFFIC BARRIER (CTB)

3. 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.
4. 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.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.



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

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

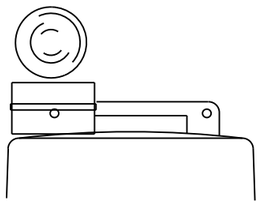
LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

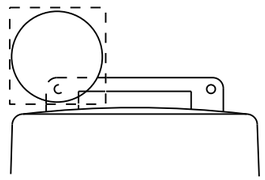
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the apppropriate 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



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

WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B_{FL} or C_{FL} Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
4. 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".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. 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.
7. 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.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

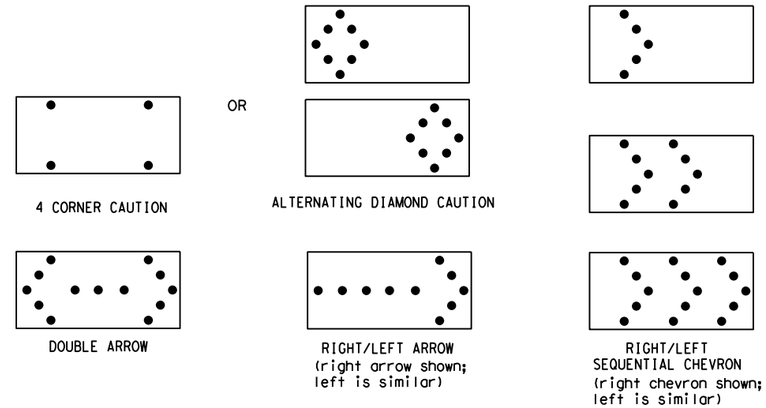
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing 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.
4. 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.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. 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

1. 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.
2. 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.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. 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.
6. 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.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

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

1. 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.
2. 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.
3. 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.
4. The Flashing Arrow Board should be able to display the following symbols:



5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.
7. 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.
8. 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.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. 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.
14. 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

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. 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.
6. 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.

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21		WILLIAMSON		30

101

DATE:
FILE:

GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. 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.
3. 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.
4. 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).
5. 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.
6. 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:

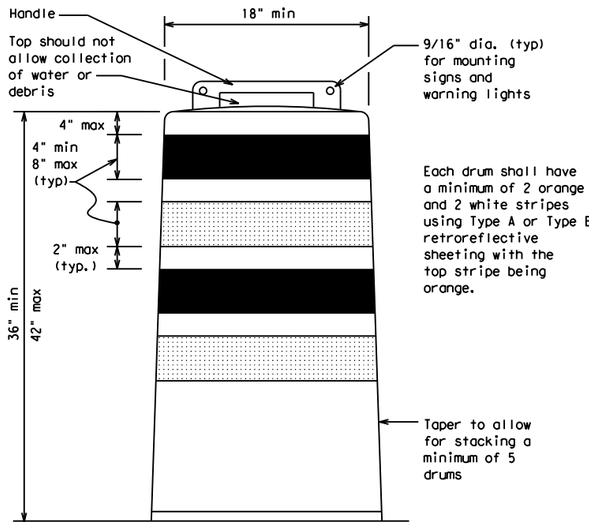
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

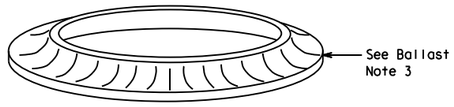
RETROREFLECTIVE SHEETING

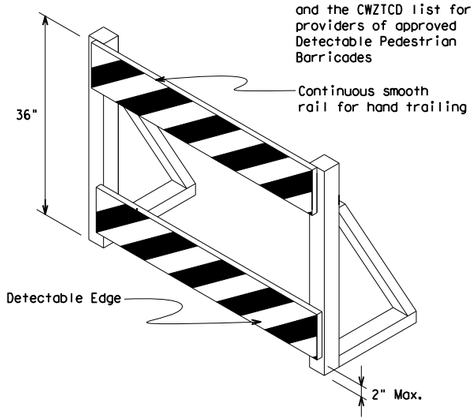
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials," Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall 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

1. 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.
2. 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.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. 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.
5. 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.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.

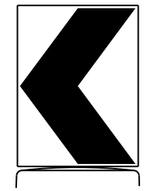




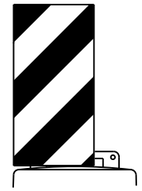


DETECTABLE PEDESTRIAN BARRICADES

1. 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.
2. 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.
3. 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.
4. 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.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. 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

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. 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.
4. 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.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. 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.
8. 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.

Texas Department of Transportation

Traffic Safety Division Standard

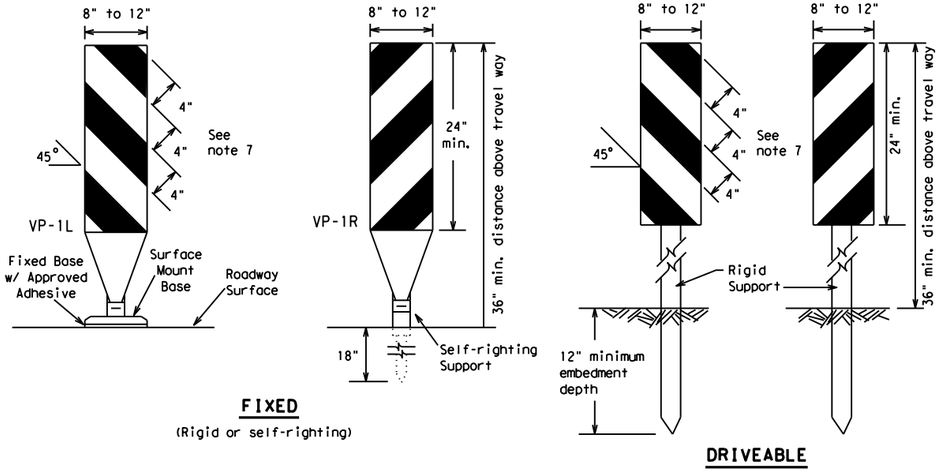
BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
4-03 8-14	DIST	COUNTY		SHEET NO.
9-07 5-21		WILLIAMSON		31
7-13				

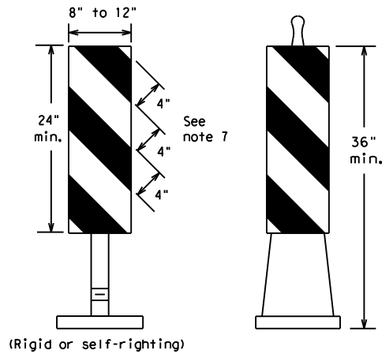
102

DATE:
FILE:



FIXED
(Rigid or self-righting)

DRIVEABLE

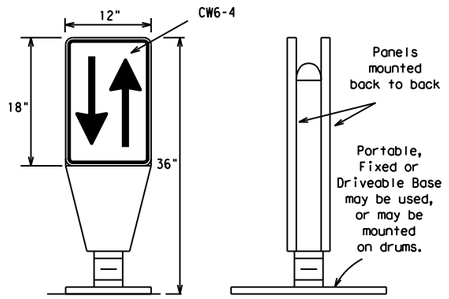


(Rigid or self-righting)

PORTABLE

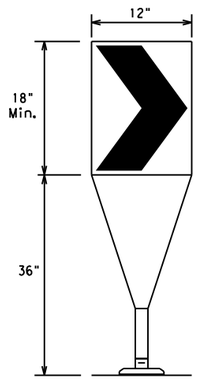
VERTICAL PANELS (VPs)

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_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.



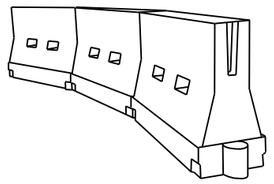
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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_{FL} or Type C_{FL} 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

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.



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

Posted Speed	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices 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'

** 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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

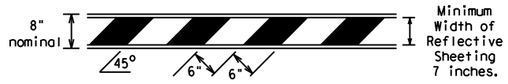
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21		WILLIAMSON		32

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.

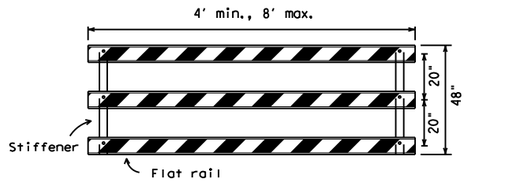
TYPE 3 BARRICADES

1. 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.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. 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.
4. 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.
5. 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".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. 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.
9. 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.



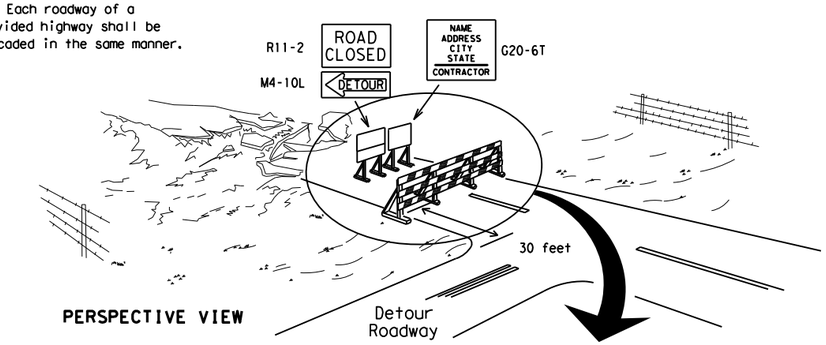
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

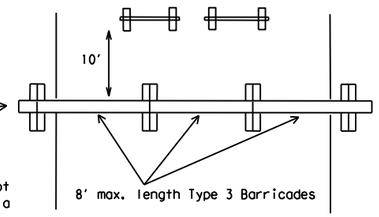
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

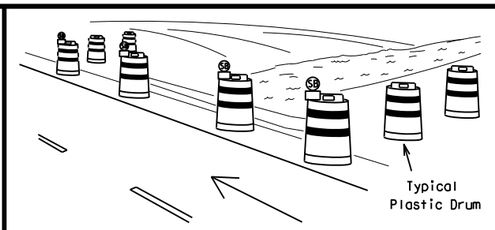
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

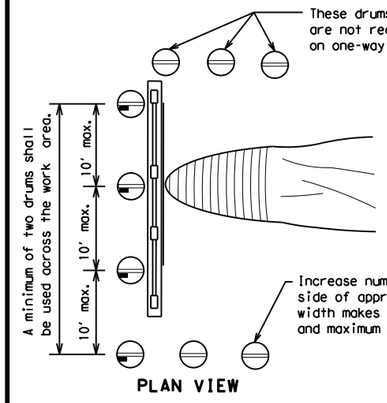
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

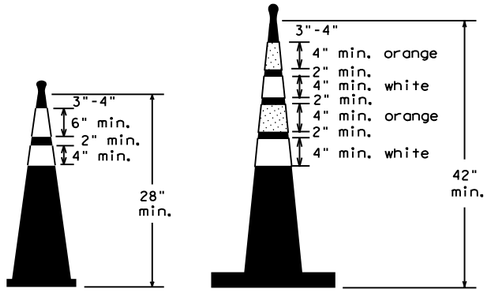
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



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

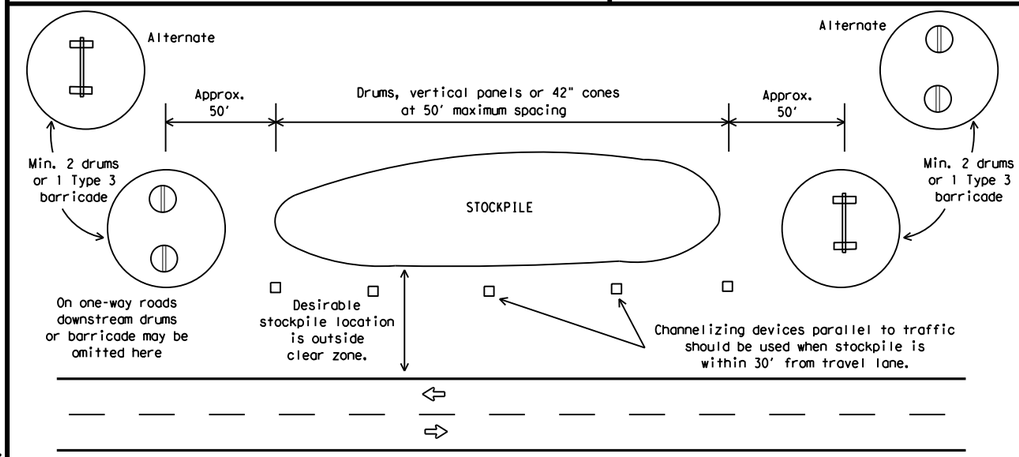
PLAN VIEW

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



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.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. 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.
3. 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.
4. 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.
5. 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.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

DATE:
FILE:

SHEET 10 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 9-07 8-14 7-13 5-21	DIST	COUNTY		SHEET NO.
		WILLIAMSON		33

104

WORK ZONE PAVEMENT MARKINGS

GENERAL

1. 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.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. 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).
6. 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.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. 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

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

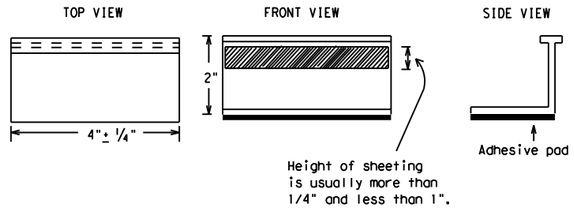
MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. 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.
3. 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.
4. 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

1. 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.
2. 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.
3. 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".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. 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.
10. 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

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. 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.
   A. 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.
   B. 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.
3. Small design variances may be noted between tab manufacturers.
4. 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

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. 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).

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

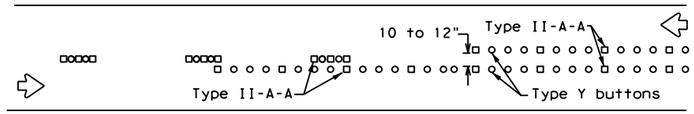
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-98 9-07 5-21 1-02 7-13 11-02 8-14	DIST	COUNTY		SHEET NO.
		WILLIAMSON		34

DATE:
FILE:

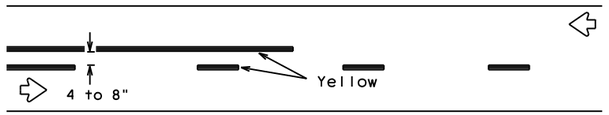
DATE:
FILE:

PAVEMENT MARKING PATTERNS

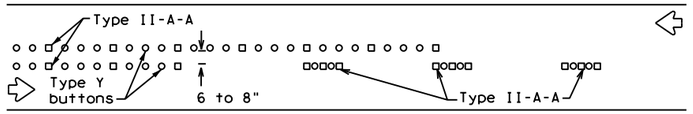
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



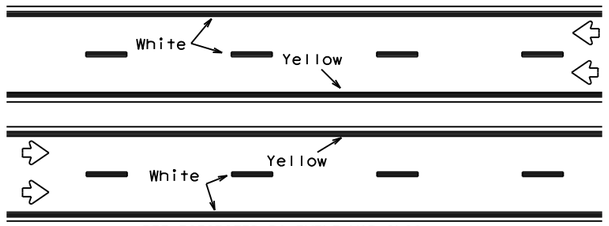
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



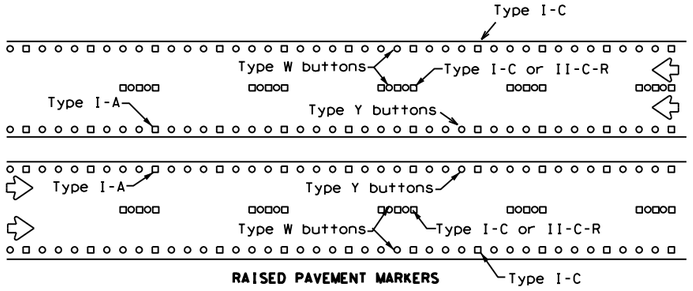
RAISED PAVEMENT MARKERS - PATTERN B

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.

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



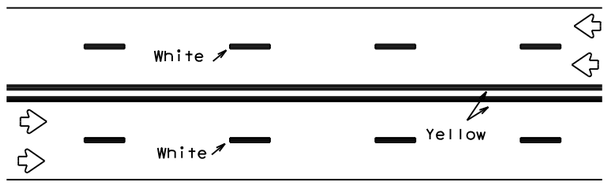
REFLECTORIZED PAVEMENT MARKINGS



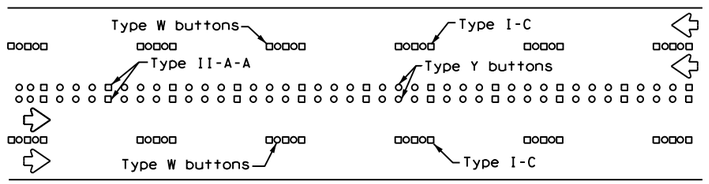
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



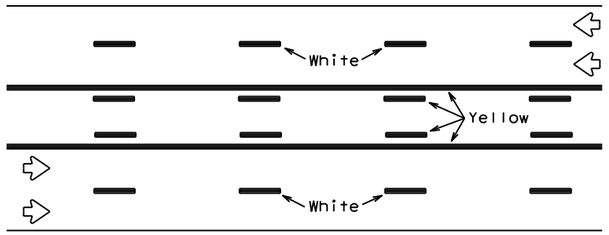
REFLECTORIZED PAVEMENT MARKINGS



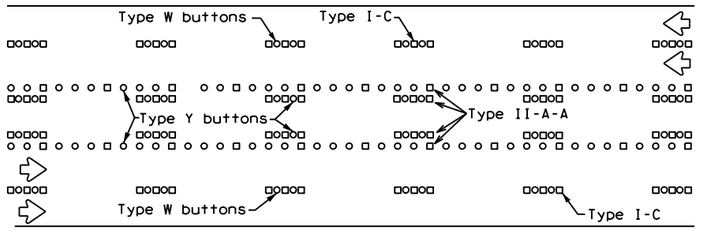
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

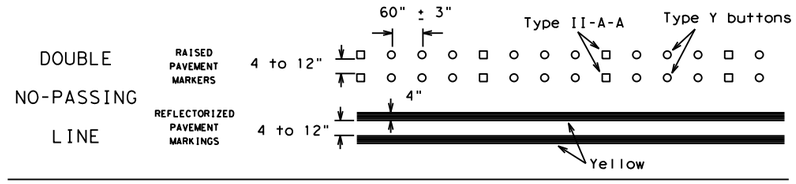
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

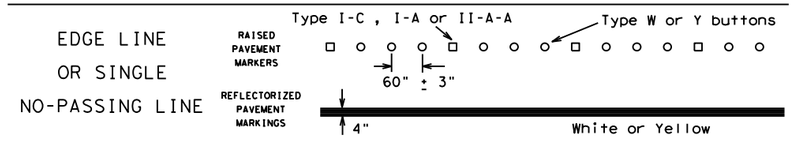
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

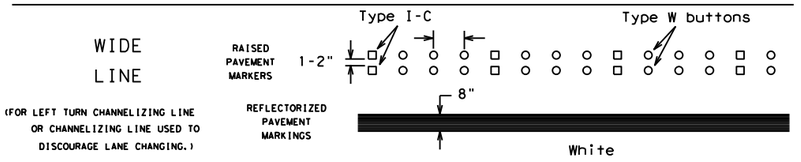


EDGE LINE OR SINGLE NO-PASSING LINE



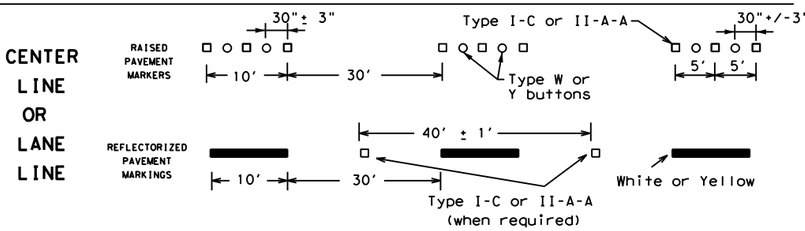
WIDE LINE

(FOR LEFT TURN CHANNELIZING LINE OR CHANNELIZING LINE USED TO DISCOURAGE LANE CHANGING.)

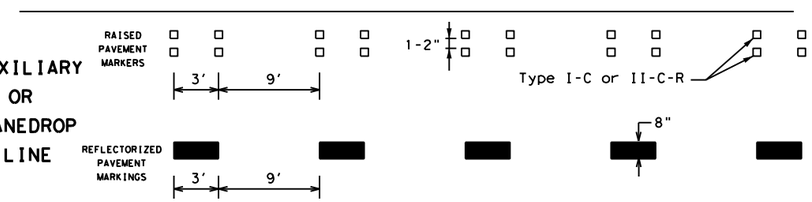


BROKEN LINES

CENTER LINE OR LANE LINE

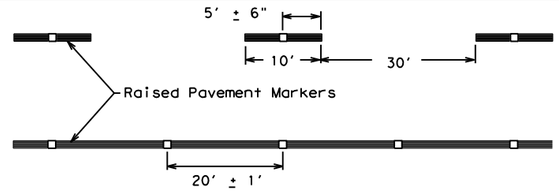


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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."

Texas Department of Transportation

Traffic Safety Division Standard

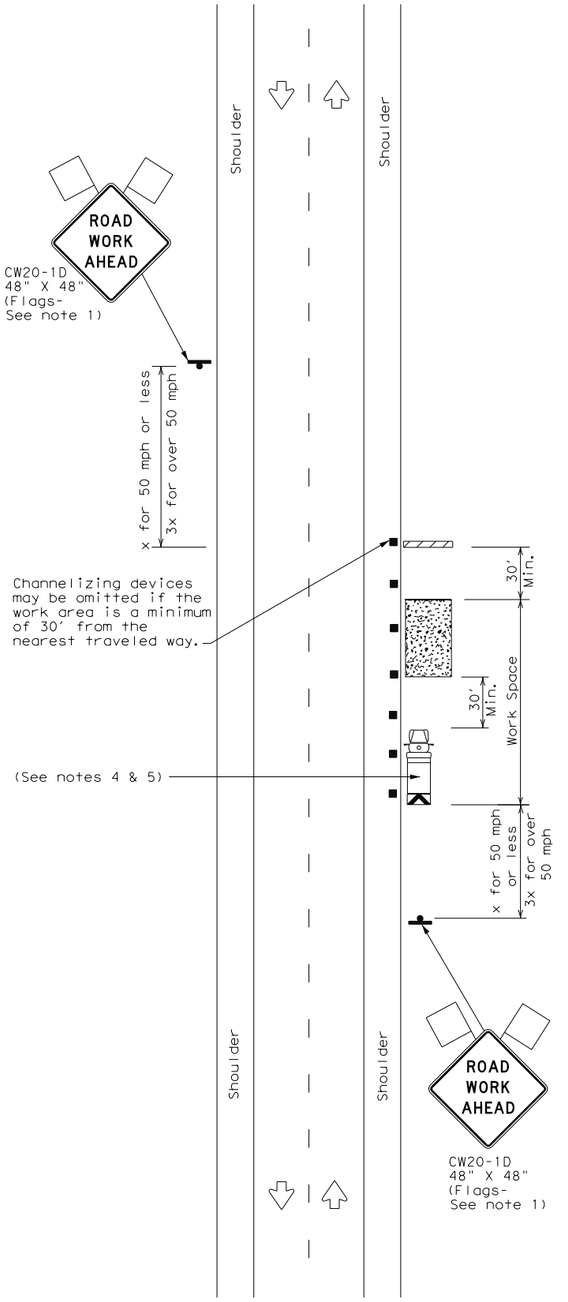
BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	DIST	COUNTY		SHEET NO.
		WILLIAMSON		35

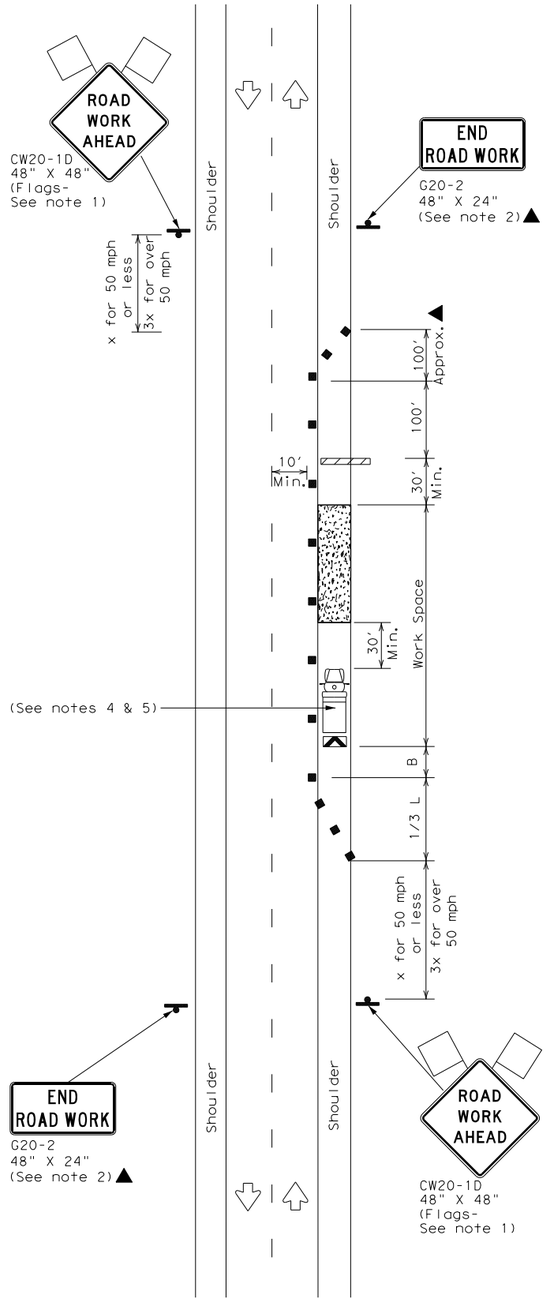
106

DATE:
FILE:



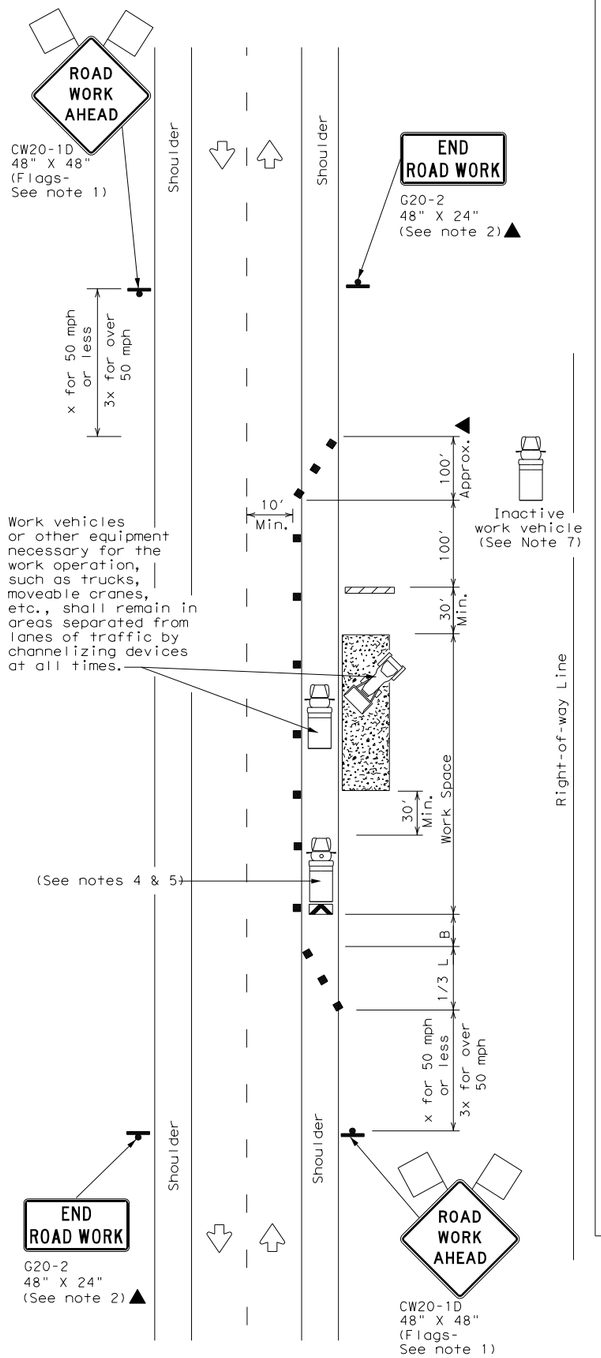
TCP (2-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

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

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

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

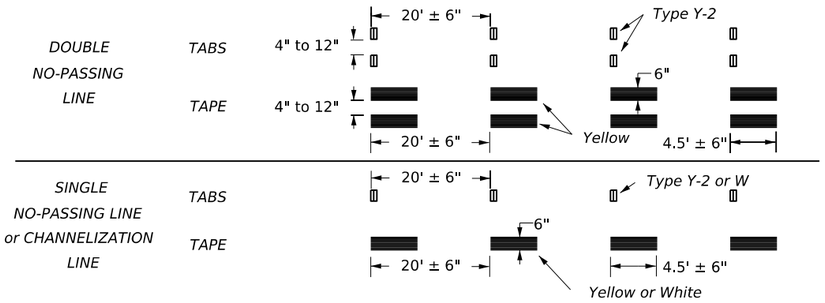
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-18

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	DIST	COUNTY		SHEET NO.
		WILLIAMSON		36

WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS



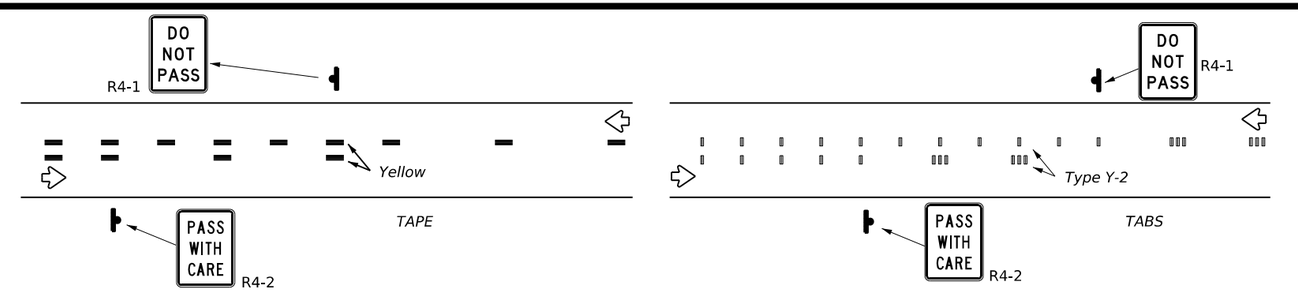
NOTES:

1. Short term pavement markings may be prefabricated markings (stick down tape) or temporary flexible reflective roadway marker tabs unless otherwise specified elsewhere in plans.
2. Short term pavement markings shall NOT be used to simulate edge lines.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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).
8. 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.

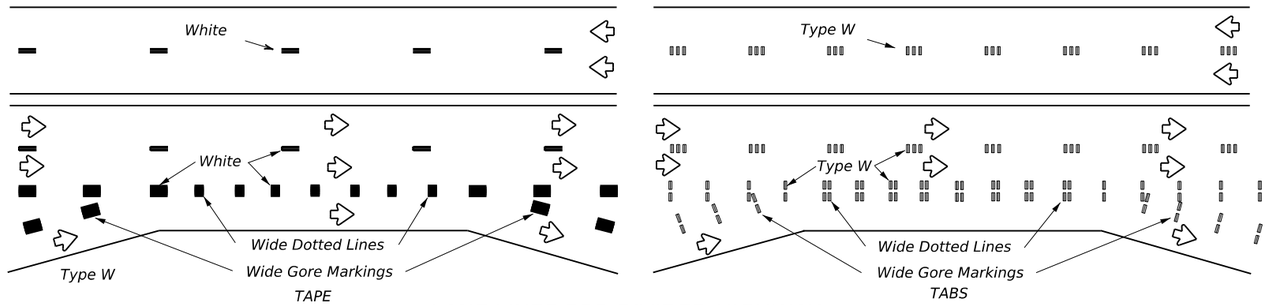
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS (TABS)

1. 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).
2. Tabs shall meet requirements of Departmental Material Specification DMS-8242.
3. 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.
4. 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.

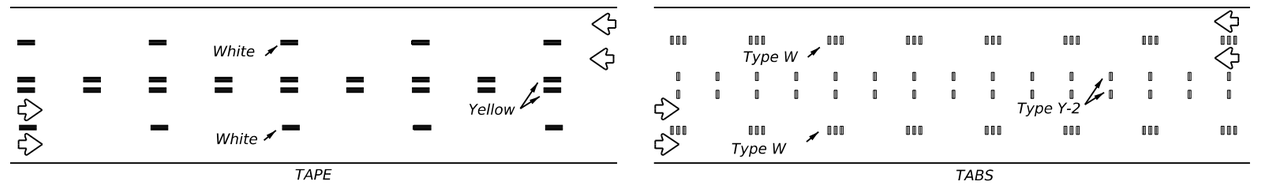
WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS



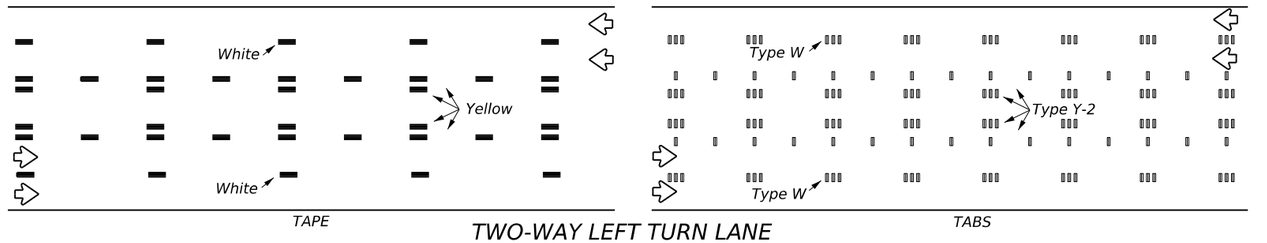
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



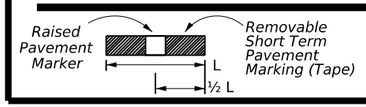
LANE LINES FOR DIVIDED HIGHWAY



LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



TWO-WAY LEFT TURN LANE



If raised pavement markers are used to supplement REMOVABLE short term markings, the markers shall be applied to the top of the tape at the approximate mid length of the tape. This allows an easier removal of raised markers and tape.

PREFABRICATED PAVEMENT MARKINGS

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

RAISED PAVEMENT MARKERS

1. 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)

1. 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

Texas Department of Transportation

Traffic Safety Division Standard

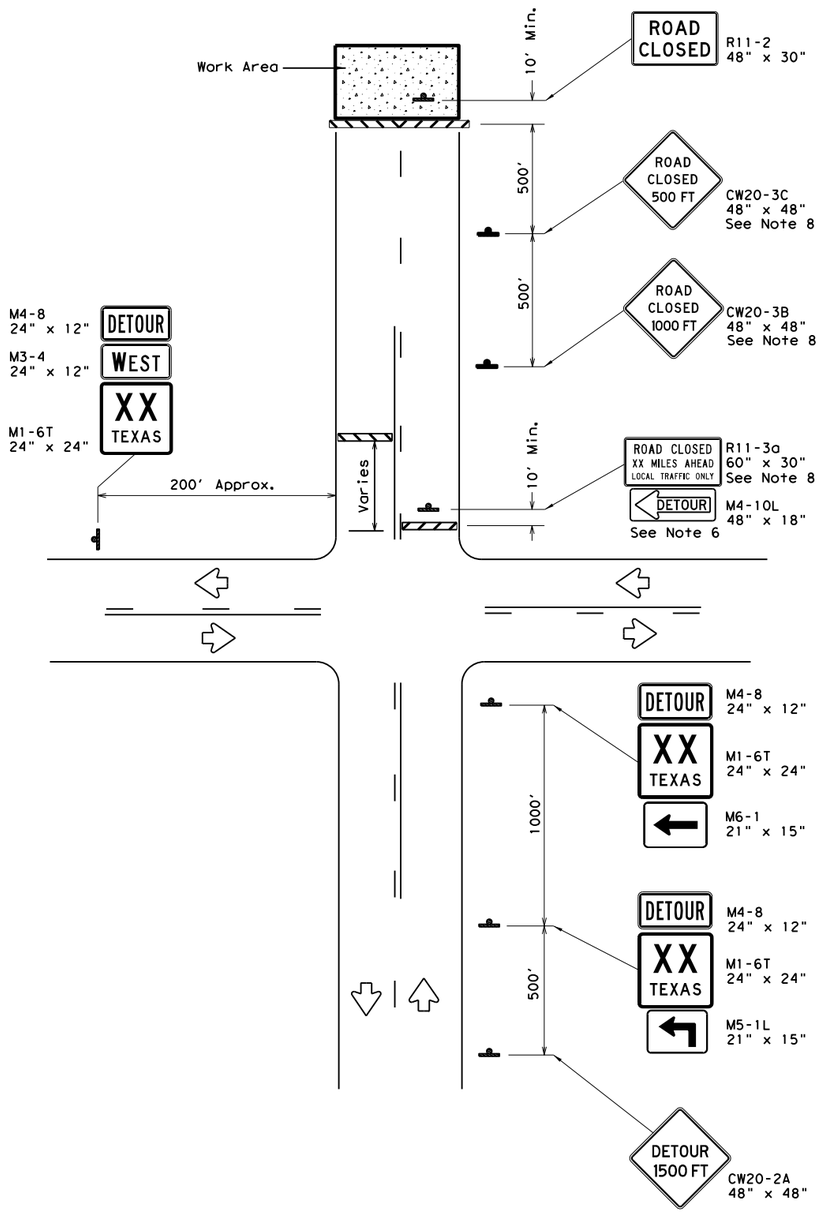
WORK ZONE SHORT TERM PAVEMENT MARKINGS

WZ(STPM)-23

FILE: wzstpm-23.dgn	DN:	CK:	DW:	CK:
©TxDOT February 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS				
4-92 7-13	DIST	COUNTY		SHEET NO.
1-97 2-23		WILLIAMSON		37
3-03				

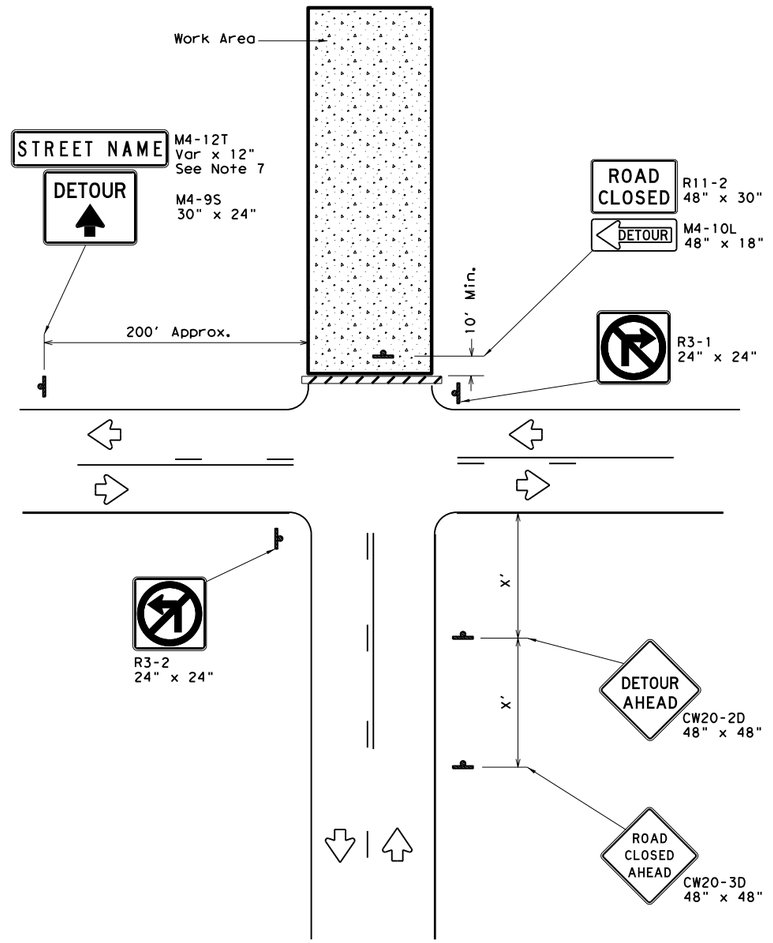
DATE:
FILE:

DATE:
FILE:



ROAD CLOSURE BEYOND THE INTERSECTION

Signing for a Numbered Route with an Off-Site Detour



ROAD CLOSURE AT THE INTERSECTION

Signing for an Un-numbered Route with an Off-Site Detour

LEGEND	
	Type 3 Barricade
	Sign

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

* Conventional Roads Only

GENERAL NOTES

1. This sheet is intended to provide details for temporary work zone road closures. For permanent road closure details see the D&OM standards.
2. Barricades used shall meet the requirements shown on Barricade and Construction Standard BC(10) and listed on the Compliant Work Zone Traffic Control Devices list (CWZTCD).
3. Stockpiled materials shall not be placed on the traffic side of barricades.
4. Barricades at the road closure should extend from pavement edge to pavement edge.
5. Detour signing shown is intended to illustrate the type of signing that is appropriate for numbered routes or un-numbered routes as labeled. It does not indicate the full extent of detour signing required. Detour routes should be signed as shown elsewhere in the plans.
6. If the road is open for a significant distance beyond the intersection or there are significant origin/destination points beyond the intersection, the signs and barricades at this location should be located at the edge of the traveled way.
7. The Street Name (M4-12T) sign is to be placed above the DETOUR (M4-9S) sign.
8. For urban areas where there is a shorter distance between the intersection and the actual closure location, the ROAD CLOSED XX MILES AHEAD (R11-3a) sign may be replaced with a ROAD CLOSED TO THRU TRAFFIC (R11-4) sign. If adequate space does not exist between the intersection and the closure a single ROAD CLOSED AHEAD (CW20-3D) sign spaced as per the table above may replace the ROAD CLOSED 1000 FT (CW20-3B) and ROAD CLOSED 500 FT (CW20-3C) signs.
9. Signs and barricades shown shall be subsidiary to Item 502. Locations where these details will be required shall be as shown elsewhere in the plans.

Texas Department of Transportation

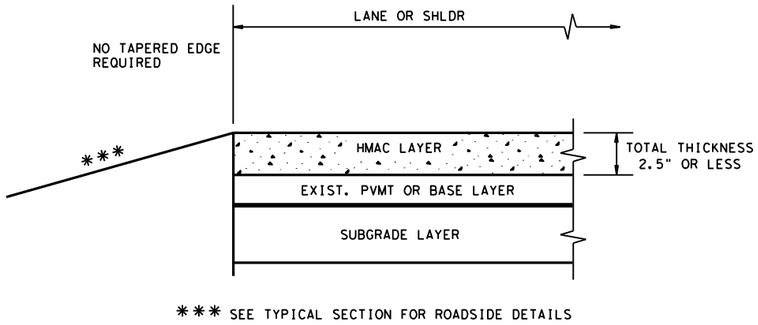
Traffic Operations Division Standard

WORK ZONE ROAD CLOSURE DETAILS

WZ(RCD)-13

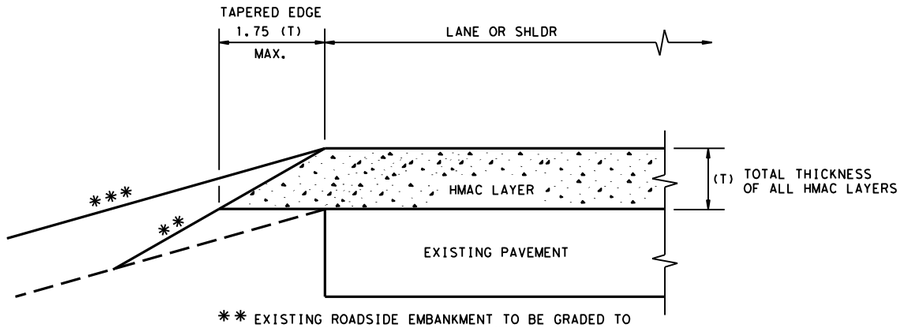
FILE: wzrcd-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT August 1995	CONT	SECT	JOB	HIGHWAY
REVISIONS				
1-97 4-98 7-13	DIST	COUNTY		SHEET NO.
2-98 3-03		WILLIAMSON		38

DATE:
FILE:



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

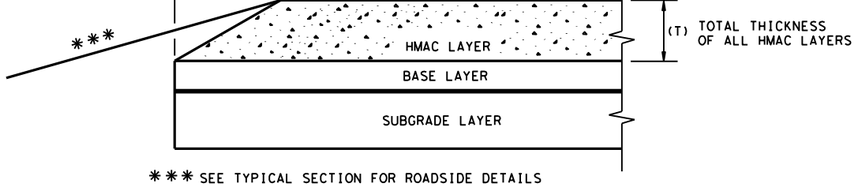
CONDITION - 1
THIN HMAC SURFACES OR HMAC OVERLAY WITH THICKNESS OF 2.5" OR LESS



** EXISTING ROADSIDE EMBANKMENT TO BE GRADED TO PRODUCE A SMOOTH LEVEL SURFACE FOR PLACEMENT OF TAPERED EDGE. THIS WORK IS SUBSIDIARY TO THE VARIOUS BID ITEMS.

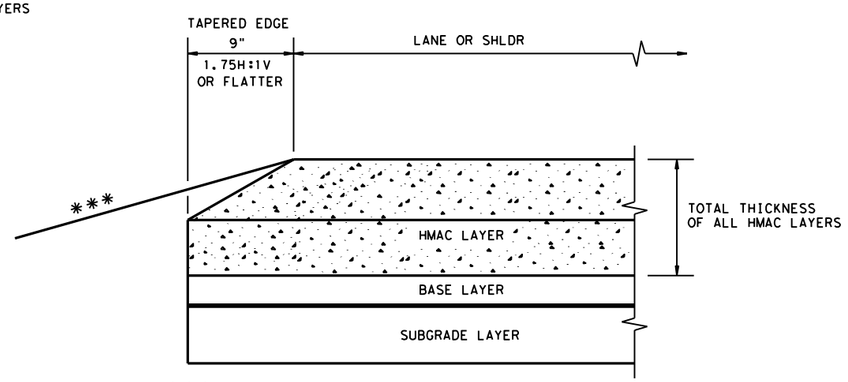
*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

CONDITION - 2
OVERLAY OF EXISTING PAVEMENT HMAC THICKNESS 2.5" TO 5"



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

CONDITION - 3
NEW OR RECONSTRUCTED PAVEMENT HMAC THICKNESS 2.5" TO 5"



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

CONDITION - 4
NEW OR RECONSTRUCTED PAVEMENT HMAC THICKNESS 5" OR GREATER

(NOT TO SCALE)

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN IN THE PLANS, A VERTICAL EDGE IS PERMISSIBLE FOR HMAC PLACED GREATER THAN 5" BELOW THE EDGE OF PAVEMENT AND FOR THICKNESS OF HMAC LESS THAN 2.5".
2. FOR FURTHER INFORMATION REGARDING THE ROADSIDE AND PAVEMENT DETAILS, SEE TYPICAL SECTIONS.
3. PAYMENT FOR TAPERED EDGE WILL BE IN ACCORDANCE WITH APPLICABLE ITEMS IN THE CONTRACT.
4. THE SLOPE OF THE TAPERED EDGE SHALL BE 1.75H:1V OR FLATTER.
5. THE TAPERED EDGE SHALL BE PRODUCED BY USE OF A SCREED ATTACHMENT CAPABLE OF PRODUCING A SMOOTH COMPACTED SURFACE. ADDITIONAL COMPACTING EFFORT BEHIND THE SCREED IS NOT REQUIRED.

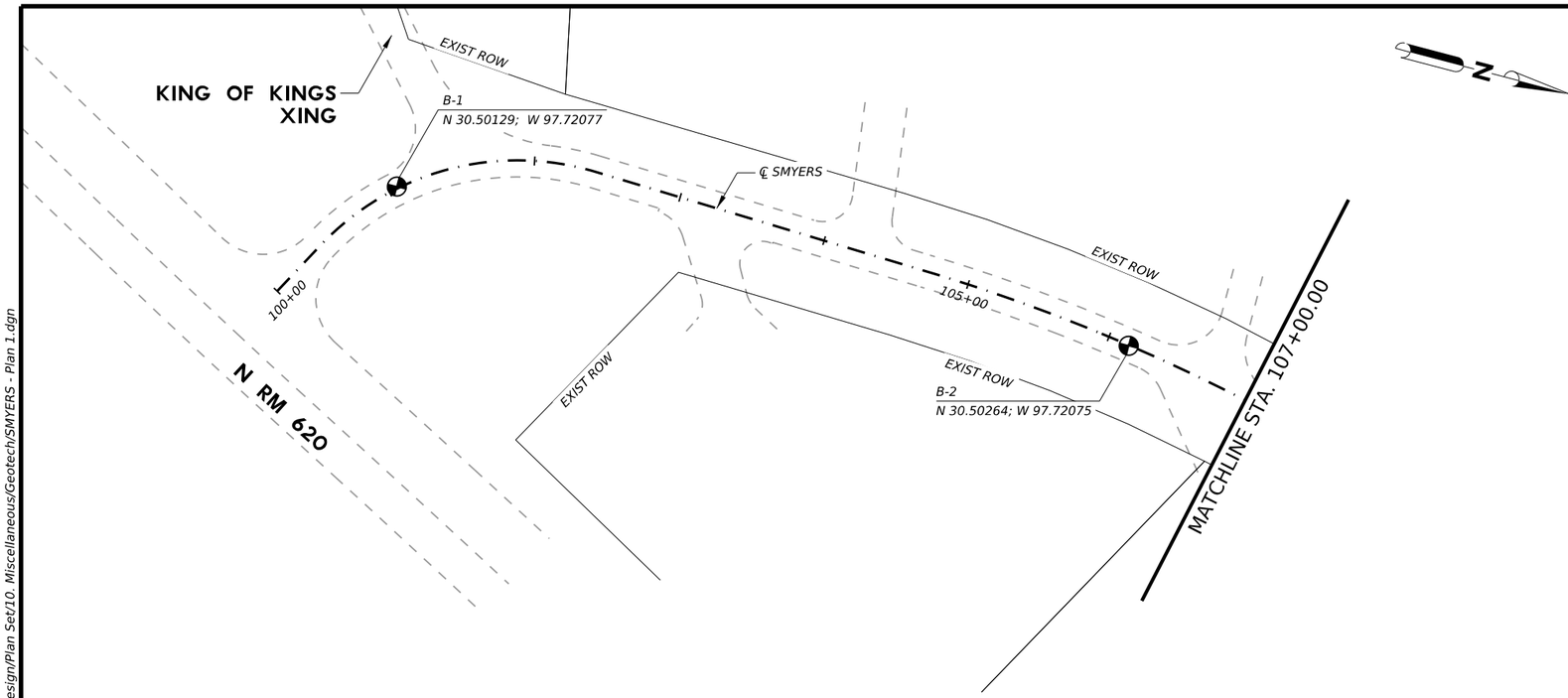
Texas Department of Transportation

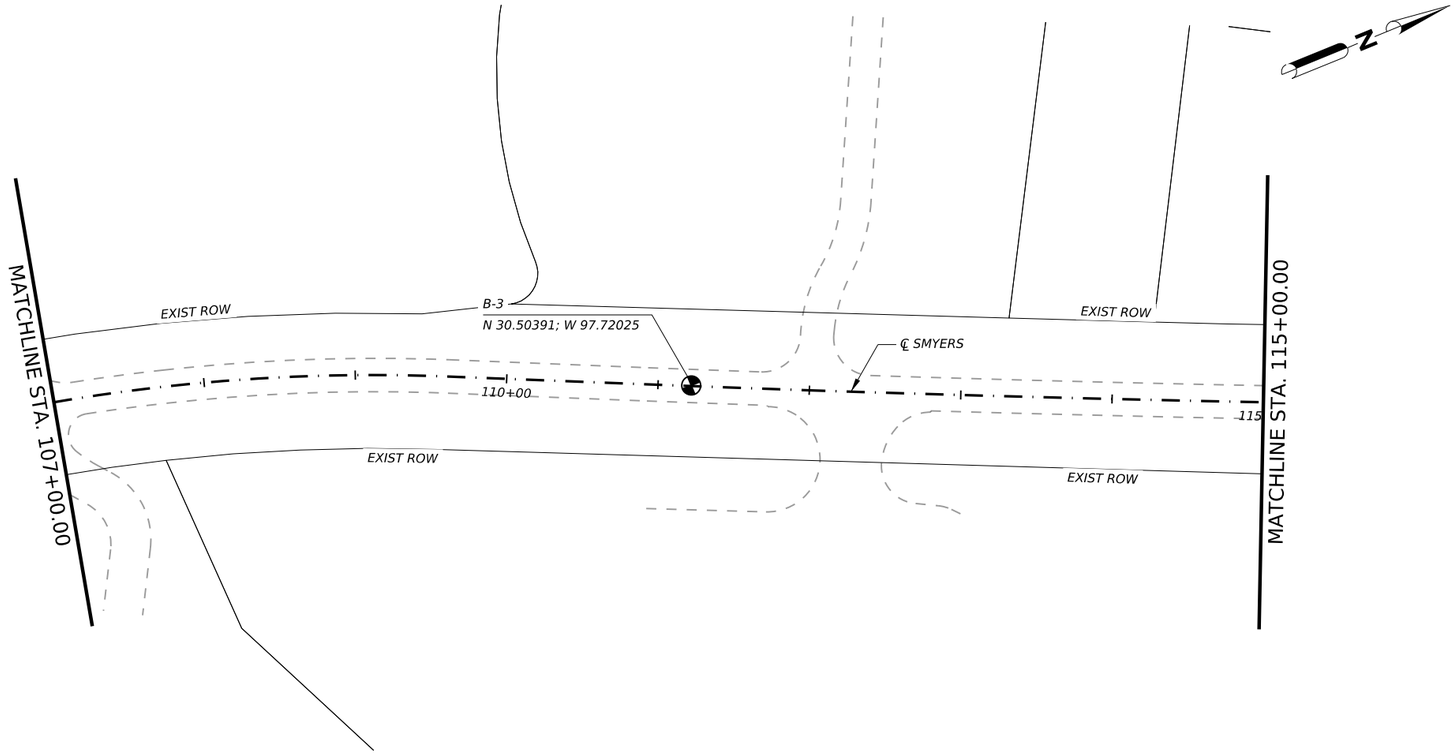
Design Division Standard

TAPERED EDGE DETAILS HMAC PAVEMENT

TE(HMAC)-11

FILE: tehmac11.dgn	DN: TxDOT	CK: RL	DW: KB	CK:	
© TxDOT January 2011	CONT	SECT	JOB	HIGHWAY	
REVISIONS					
	DIST	COUNTY		SHEET NO.	
		WILLIAMSON		39	





HORZ 0' 50' 100'

SCALE IN FEET

NOTES:

1. SEE BORING LOGS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl 2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

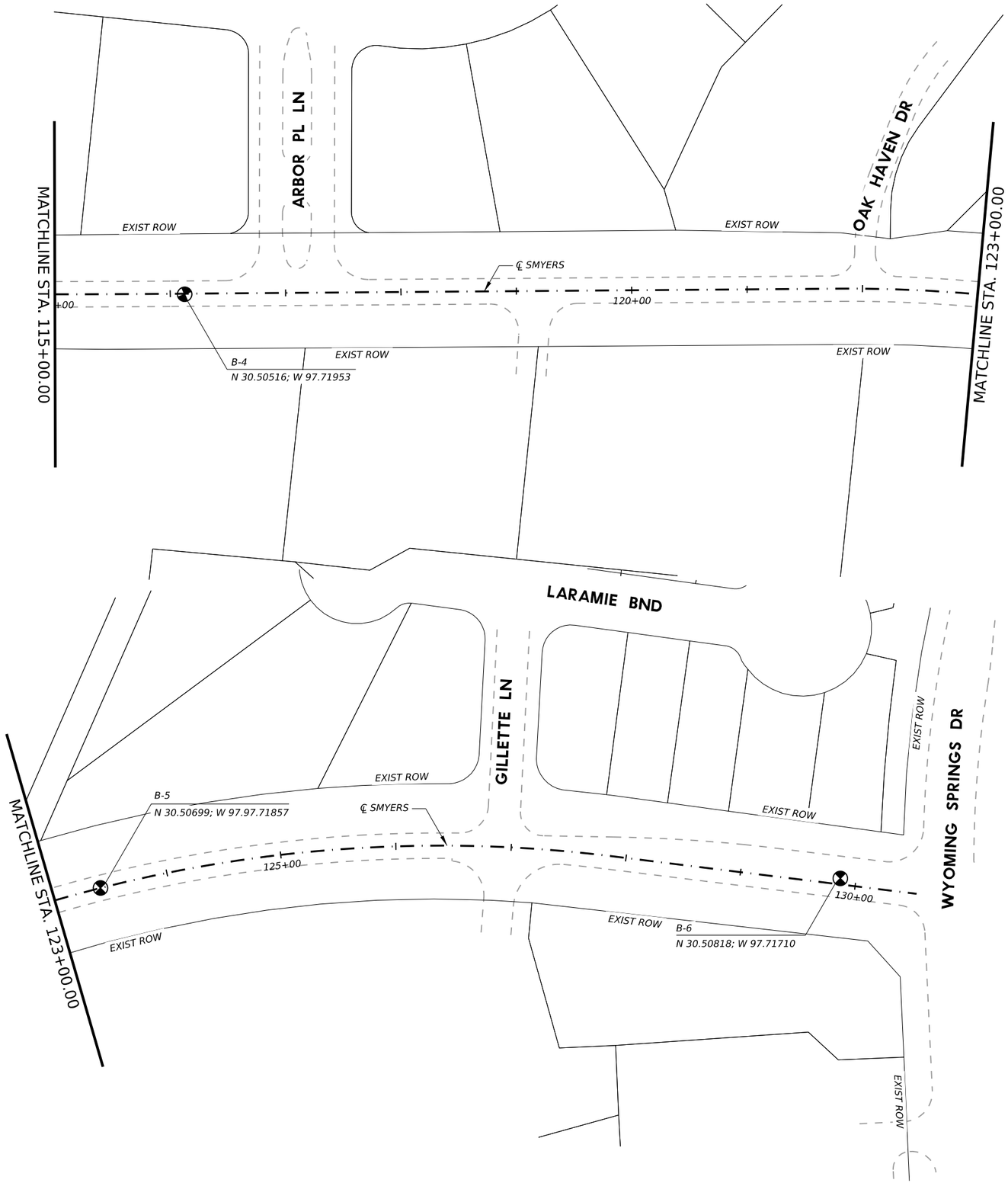
SMYERS
BORING LAYOUT

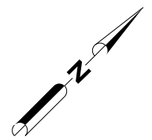
BEGIN TO STA 115+00

SCALE 1" = 100' SHEET 1 OF 2

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	40
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/10. Miscellaneous/Geotech/SMYERS - Plan 1.dgn





HORZ 0' 50' 100'

SCALE IN FEET

NOTES:

1. SEE BORING LOGS FOR ADDITIONAL INFORMATION.

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

SMYERS
BORING LAYOUT

STA 115+00 TO END

SCALE 1" = 100' SHEET 2 OF 2

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	41
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://Sfactortech-pw.bentley.com:Sf-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/10. Miscellaneous/Geotech/SMYERS - Plan 3.dgn

LOG OF BORING NO. B-1

Smyers Lane Rehabilitation
Between Wyoming Springs Drive and North FM 620
Round Rock, Williamson County, Texas

RABA KISTNER
TBPE Firm Registration No. F-3257

DRILLING METHOD: Straight Flight Auger
LOCATION: N 30.50129; W 97.72077

SURFACE ELEVATION: 800 ft

DEPTH, FT	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WEIGHT, pcf	PLASTICITY INDEX	% -200
	ASPHALT (1 inches)				
	BASE (5-1/2 inches)				
	FAT CLAY (CH), Very Stiff, Brown	25			
	SANDY LEAN CLAY (CL), Very Stiff to Hard, Light Tan, with limestone fragments	50/5"			
		ref/4.75"		10	58
5	**LIMESTONE,** Hard, Tan, with clay seams and layers	ref/2.25"			
		ref/3"		7	86
10		ref/1"			
15	Boring Terminated				

SHEAR STRENGTH, TONS/FT²: 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0
PLASTIC LIMIT / WATER CONTENT / LIQUID LIMIT: 10 20 30 40 50 60 70 80

NOTES:
1. Groundwater was not encountered during drilling operations.
2. Borehole was backfilled with auger cuttings and bentonite and patched with asphalt.
3. Boring elevations estimated from Google Earth.

DEPTH DRILLED:	15.0 ft	**DEPTH TO WATER:**		**PROJ. No.:**	AAA25-084-00
DATE DRILLED:	7/11/2025	**DATE MEASURED:**	7/11/2025	**FIGURE:**	2

NOTE: THESE LOGS SHOULD NOT BE USED SEPARATELY FROM THE PROJECT REPORT

LOG OF BORING NO. B-2

Smyers Lane Rehabilitation
Between Wyoming Springs Drive and North FM 620
Round Rock, Williamson County, Texas

RABA KISTNER
TBPE Firm Registration No. F-3257

DRILLING METHOD: Straight Flight Auger
LOCATION: N 30.50264; W 97.72075

SURFACE ELEVATION: 786 ft

DEPTH, FT	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WEIGHT, pcf	PLASTICITY INDEX	% -200
	ASPHALT (1-1/2 inches)				
	BASE (5 inches)				
	CLAYEY GRAVEL (GC), Medium Dense to Very Dense, Light Tan, with sand and limestone fragments	25			
		50/5.75"		12	23
	LIMESTONE, Hard, Tan and White, with clay seams and layers	ref/3"			
5		ref/1.5"			
		ref/1.5"			
10		ref/1.5"			
15	Boring Terminated				

SHEAR STRENGTH, TONS/FT²: 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0
PLASTIC LIMIT / WATER CONTENT / LIQUID LIMIT: 10 20 30 40 50 60 70 80

NOTES:
1. Groundwater was not encountered during drilling operations.
2. Borehole was backfilled with auger cuttings and bentonite and patched with asphalt.
3. Boring elevations estimated from Google Earth.

DEPTH DRILLED:	15.0 ft	**DEPTH TO WATER:**		**PROJ. No.:**	AAA25-084-00
DATE DRILLED:	7/11/2025	**DATE MEASURED:**	7/11/2025	**FIGURE:**	3

NOTE: THESE LOGS SHOULD NOT BE USED SEPARATELY FROM THE PROJECT REPORT

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

SMYERS
BORING LOGS

SHEET 1 OF 3

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	43
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/10. Miscellaneous/Geotech/Smyers_BORING LOGS01

LOG OF BORING NO. B-3

Smyers Lane Rehabilitation
Between Wyoming Springs Drive and North FM 620
Round Rock, Williamson County, Texas

RABA KISTNER
TBPE Firm Registration No. F-3257

DRILLING METHOD: Straight Flight Auger
LOCATION: N 30.50391; W 97.72025

SURFACE ELEVATION: 785 ft

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WEIGHT, pcf	SHEAR STRENGTH, TONS/FT² (0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0) / PLASTIC LIMIT / WATER CONTENT / LIQUID LIMIT (10 20 30 40 50 60 70 80)	PLASTICITY INDEX	% -200
			ASPHALT (1-1/4 inches)					
			BASE (5-1/2 inches)					
			CLAYEY GRAVEL (GC), Very Dense, Light Tan, with limestone fragments	50/11.75"				
			LIMESTONE, Hard, Tan, with clay seams	ref/1"				
5				35				
				ref/2.5"				
				ref/3"				
10				ref/1"				
15			Boring Terminated					

NOTES:
1. Groundwater was not encountered during drilling operations.
2. Borehole was backfilled with auger cuttings and bentonite and patched with asphalt.
3. Boring elevations estimated from Google Earth.

DEPTH DRILLED:	15.0 ft	**DEPTH TO WATER:**		**PROJ. No.:**	AAA25-084-00
DATE DRILLED:	7/11/2025	**DATE MEASURED:**	7/11/2025	**FIGURE:**	4

NOTE: THESE LOGS SHOULD NOT BE USED SEPARATELY FROM THE PROJECT REPORT

LOG OF BORING NO. B-4

Smyers Lane Rehabilitation
Between Wyoming Springs Drive and North FM 620
Round Rock, Williamson County, Texas

RABA KISTNER
TBPE Firm Registration No. F-3257

DRILLING METHOD: Straight Flight Auger
LOCATION: N 30.50516; W 97.71953

SURFACE ELEVATION: 799 ft

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WEIGHT, pcf	SHEAR STRENGTH, TONS/FT² (0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0) / PLASTIC LIMIT / WATER CONTENT / LIQUID LIMIT (10 20 30 40 50 60 70 80)	PLASTICITY INDEX	% -200
			ASPHALT (1 inch)					
			BASE (6 inches)	ref/4"			10	57
			SANDY LEAN CLAY (CL), Hard, Light Tan and White, with limestone and chert fragments					
				50/3.25"				
			LIMESTONE, Hard, Tan and White, with clay seams, chert fragments					
5				43				
				ref/4.25"				
				ref/2"				
10				ref/1.75"				
15			Boring Terminated					

NOTES:
1. Groundwater was not encountered during drilling operations.
2. Borehole was backfilled with auger cuttings and bentonite and patched with asphalt.
3. Boring elevations estimated from Google Earth.

DEPTH DRILLED:	15.0 ft	**DEPTH TO WATER:**		**PROJ. No.:**	AAA25-084-00
DATE DRILLED:	7/11/2025	**DATE MEASURED:**	7/11/2025	**FIGURE:**	5

NOTE: THESE LOGS SHOULD NOT BE USED SEPARATELY FROM THE PROJECT REPORT

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

SMYERS
BORING LOGS

SHEET 2 OF 3

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	44
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/10. Miscellaneous/Geotech/Smyers_BORING LOGS02

LOG OF BORING NO. B-5

Smyers Lane Rehabilitation
Between Wyoming Springs Drive and North FM 620
Round Rock, Williamson County, Texas

RABA KISTNER
TBPE Firm Registration No. F-3257

DRILLING METHOD: Straight Flight Auger
LOCATION: N 30.50699; W 97.71857

SURFACE ELEVATION: 801 ft

DEPTH, FT	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WEIGHT, pcf	PLASTICITY INDEX	% -200
	ASPHALT (1-1/2 inches)				
	BASE (7 inches)				
	SANDY LEAN CLAY (CL), Stiff, Tan, with limestone fragments	13			
	FAT CLAY (CH), Hard, Reddish Brown, with sand	50/10"		31	78
	LIMESTONE, Hard, Tan, Highly Weathered, with clay seams and layers	ref/1"			
5					
	Boring Terminated	ref/1"			
10					
15					

SHEAR STRENGTH, TONS/FT^2: 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0
PLASTIC LIMIT / WATER CONTENT / LIQUID LIMIT: 10 20 30 40 50 60 70 80

NOTES:
1. Groundwater was not encountered during drilling operations.
2. Borehole was backfilled with auger cuttings and bentonite and patched with asphalt.
3. Boring elevations estimated from Google Earth.

DEPTH DRILLED:	6.0 ft	**DEPTH TO WATER:**		**PROJ. No.:**	AAA25-084-00
DATE DRILLED:	7/11/2025	**DATE MEASURED:**	7/11/2025	**FIGURE:**	6

NOTE: THESE LOGS SHOULD NOT BE USED SEPARATELY FROM THE PROJECT REPORT

LOG OF BORING NO. B-6

Smyers Lane Rehabilitation
Between Wyoming Springs Drive and North FM 620
Round Rock, Williamson County, Texas

RABA KISTNER
TBPE Firm Registration No. F-3257

DRILLING METHOD: Straight Flight Auger
LOCATION: N 30.50818; W 97.71710

SURFACE ELEVATION: 790 ft

DEPTH, FT	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WEIGHT, pcf	PLASTICITY INDEX	% -200
	ASPHALT (3 inches)				
	BASE (10 inches)	50/2"			
	FAT CLAY (CH), Hard, Brown to Reddish Brown				
	LIMESTONE, Hard, Tan, with clay seams and decomposed layers	ref/3"			
5		50/9"			
	Boring Terminated	ref/1"			
10					
15					

SHEAR STRENGTH, TONS/FT^2: 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0
PLASTIC LIMIT / WATER CONTENT / LIQUID LIMIT: 10 20 30 40 50 60 70 80

NOTES:
1. Groundwater was not encountered during drilling operations.
2. Borehole was backfilled with auger cuttings and bentonite and patched with asphalt.
3. Boring elevations estimated from Google Earth.

DEPTH DRILLED:	6.0 ft	**DEPTH TO WATER:**		**PROJ. No.:**	AAA25-084-00
DATE DRILLED:	7/11/2025	**DATE MEASURED:**	7/11/2025	**FIGURE:**	7

NOTE: THESE LOGS SHOULD NOT BE USED SEPARATELY FROM THE PROJECT REPORT

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

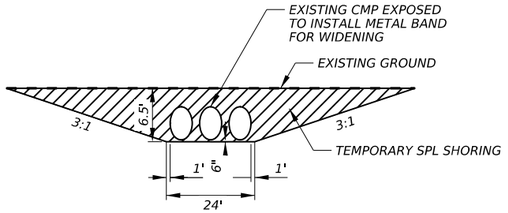
SMYERS & CR 122

SMYERS
BORING LOGS

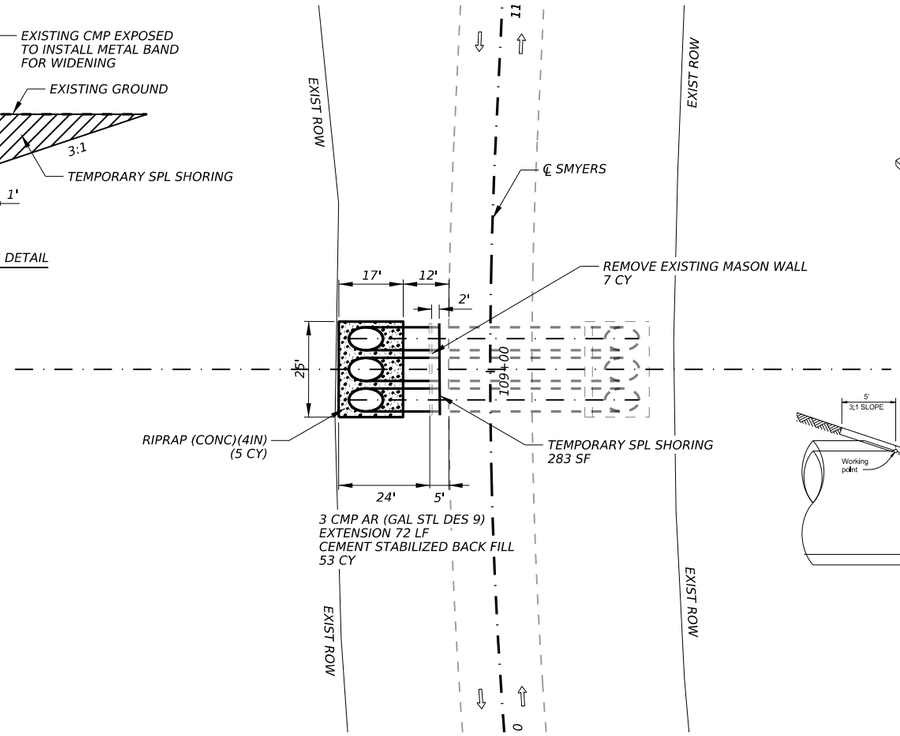
SHEET 3 OF 3

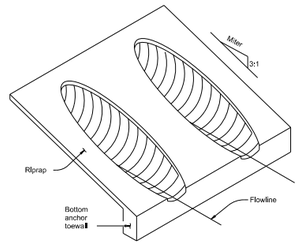
DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	45
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

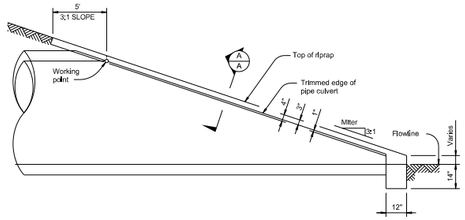
DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/10. Miscellaneous/Geotech/Smyers_BORING LOGS03



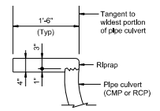
TEMPORARY SPL SHORING DETAIL
NTS



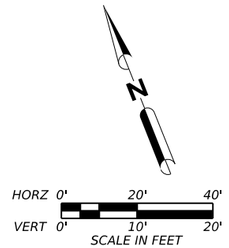




RIPRAP DETAIL
NTS



SECTION A-A

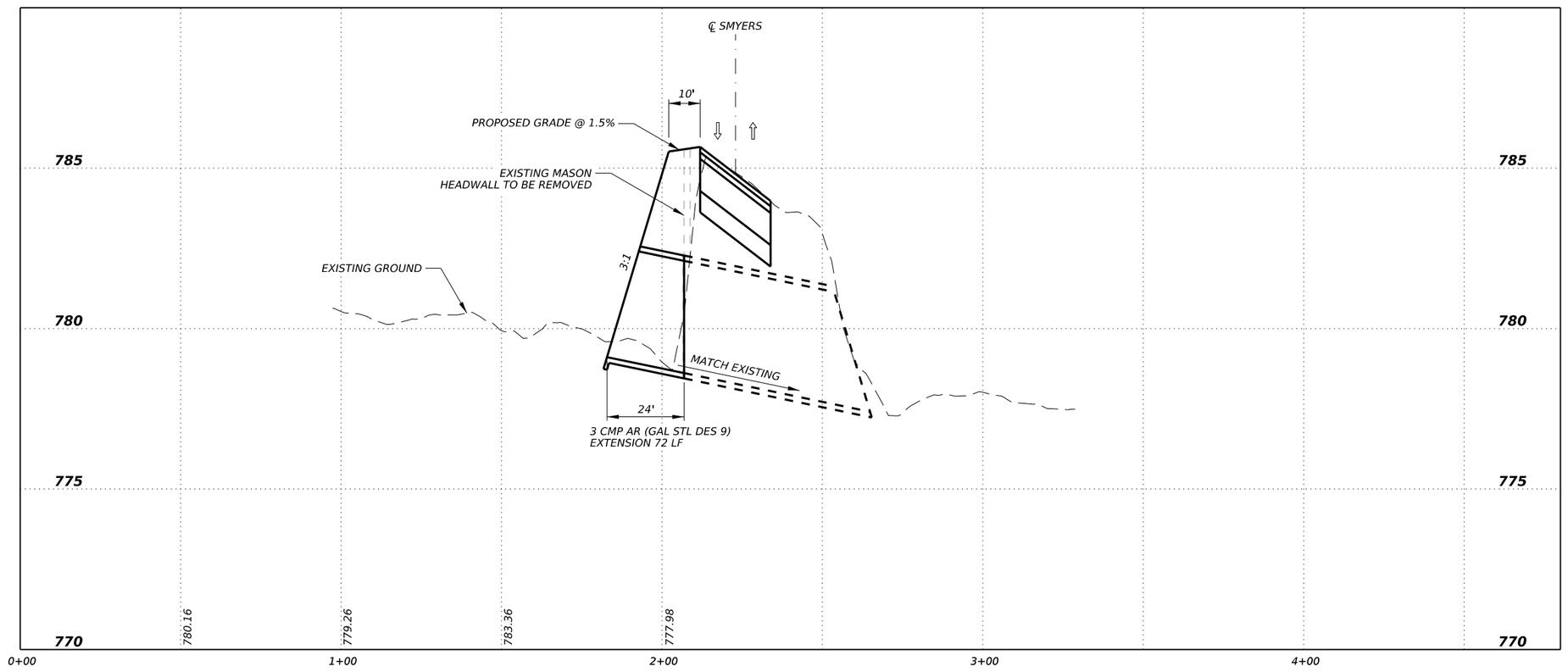


LEGEND

- PROPOSED SET
- TEMPORARY SPL SHORING
- EXISTING EOP

NOTES:

1. LOCATIONS AND ELEVATIONS OF EXISTING CULVERTS TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR. CONTRACTOR SHALL MATCH EXISTING FLOWLINES.
2. REFER TO SAFETY END TREATMENT STANDARDS FOR DETAILED INFORMATION.
3. ITS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT LOCATIONS OF UTILITIES PRIOR TO STARTING CONSTRUCTION. SUB SURFACE UTILITY INFORMATION WAS NOT COLLECTED. IF ANY CONFLICT IS IDENTIFIED THE ENGINEER SHOULD BE NOTIFIED.
4. CONTRACTOR TO REGRADE EXISTING DITCHES AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. NO HYDROLOGICAL ANALYSIS WAS PERFORMED AND CULVERTS ARE BEING WIDENED TO IMPROVE ROADWAY SAFETY.



STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

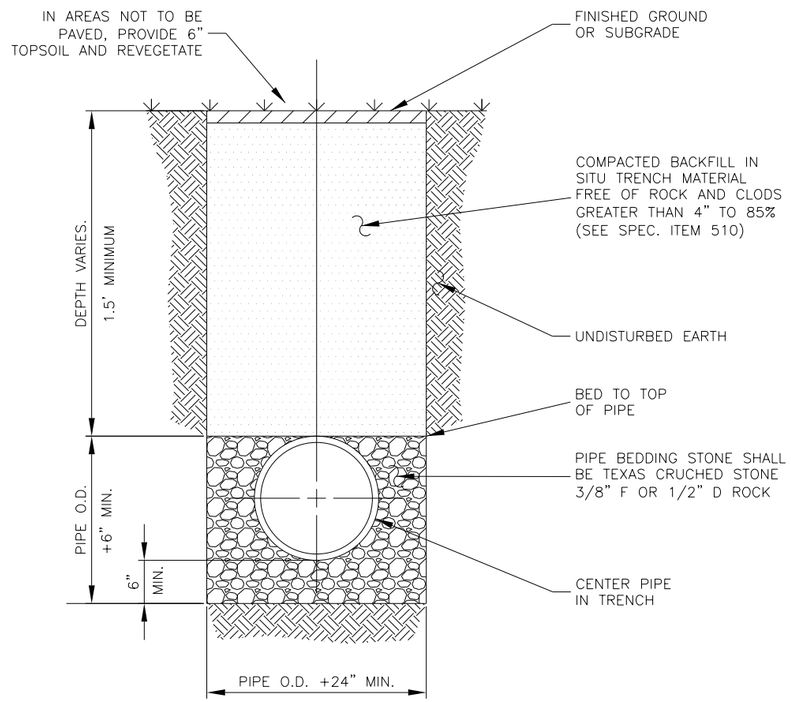
SMYERS CULVERT LAYOUT NO. 1

SCALE 1" = 40' H, 1" = 20' V

SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	48
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/5. Drainage/SMYERS_CUL - Plan 1.dgn



NOTE:

ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

APPROVED

04-01-10

DATE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)

CITY OF ROUND ROCK

STORM SEWER LINE BEDDING DETAIL (NON-PAVED SURFACE)

DRAWING NO: DR-02

ROUND ROCK, TEXAS
PURPOSE. PASSION. PROSPERITY.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

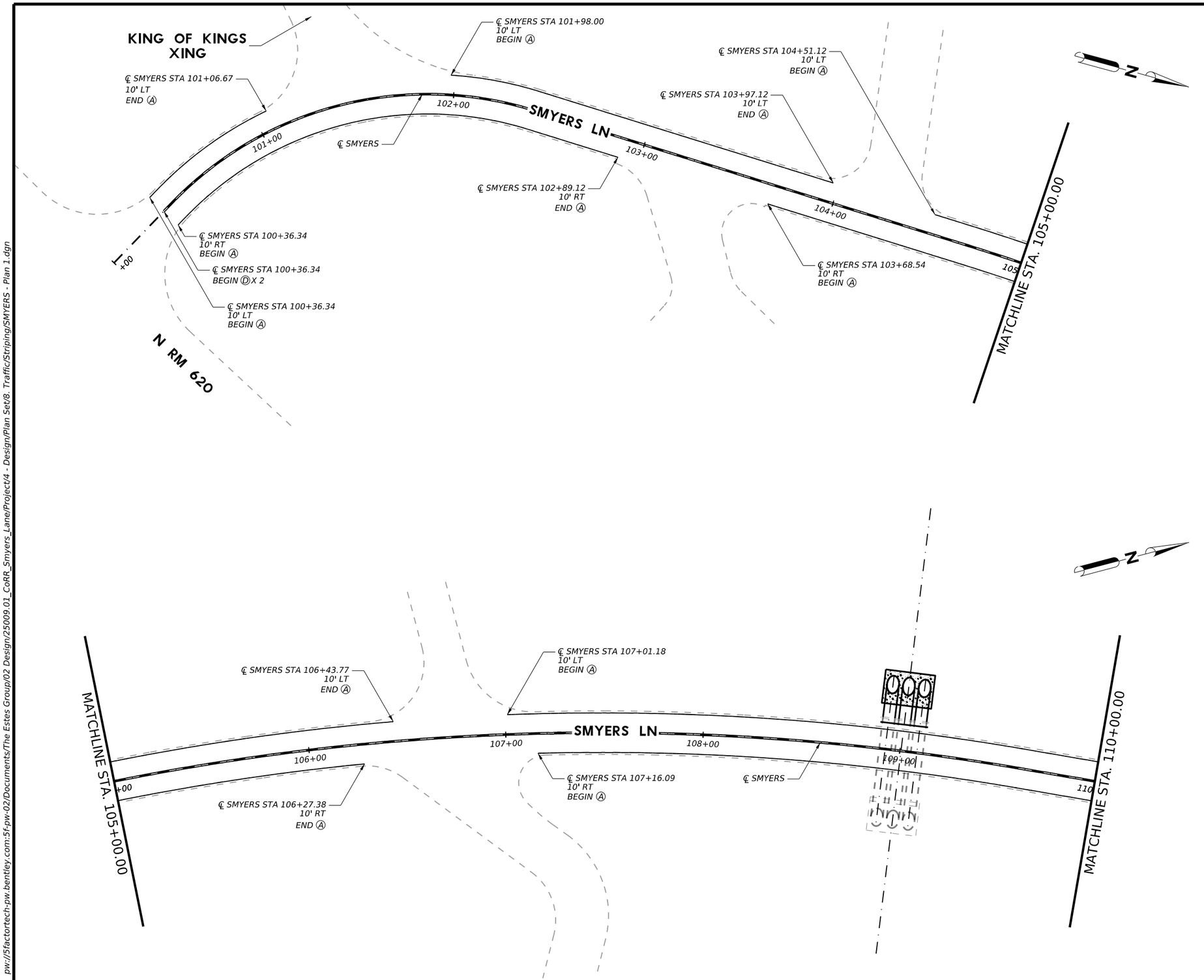
SMYERS & CR 122

CORR STANDARD DRAWINGS
STORM SEWER LINE BEDDING DETAIL (NON-PAVED SURFACE)

SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	49
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/5. Drainage/STD/CoRR_DR-02



HORZ 0' 25' 50'

SCALE IN FEET

LEGEND

Ⓐ	REF PAV MRK TY I (W) 6" (SLD)
Ⓑ	REF PAV MRK TY I (W) 24" (SLD)
Ⓒ	REF PAV MRK TY I (W) 8" (SLD)
Ⓓ	REF PAV MRK TY I (Y) 6" (SLD)
Ⓔ	REF PAV MRK (W) WORD
Ⓕ	REF PAV MRK (W) DBL ARROW
Ⓖ	REF PAV MRK (W) ARROW

NOTES:

1. ALIGNMENT SHOWN IS BEST FIT USING AERIAL IMAGE FROM GOOGLE DATED MARCH 2025. BEGIN AND END STATION ARE APPROXIMATE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER. THE SATIONS ARE GIVEN FOR ESTIMATING PURPOSES ONLY AND NO ALIGNMENT DATA IS GIVEN.
2. THE INTENT IS TO PUT THE PROPOSED PAVEMENT MARKINGS BACK TO EXISTING LANE CONFIGURATION AND LOCATION. GENERALLY THE EXISTING CONFIGURATION IS A DOUBLE YELLOW IN THE CENTER OF THE PAVEMENT WITH SOLID WHITE 1' FROM THE EOP.
3. ALL EXISTING SIGNS ARE TO REMAIN AND IF DAMAGED WILL BE REPLACED AT THE CONTRACTORS EXPENSE.
4. APPLY TY II MARKING BEFORE PLACING TY I MARKINGS AS SHOWN ON PLANS.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

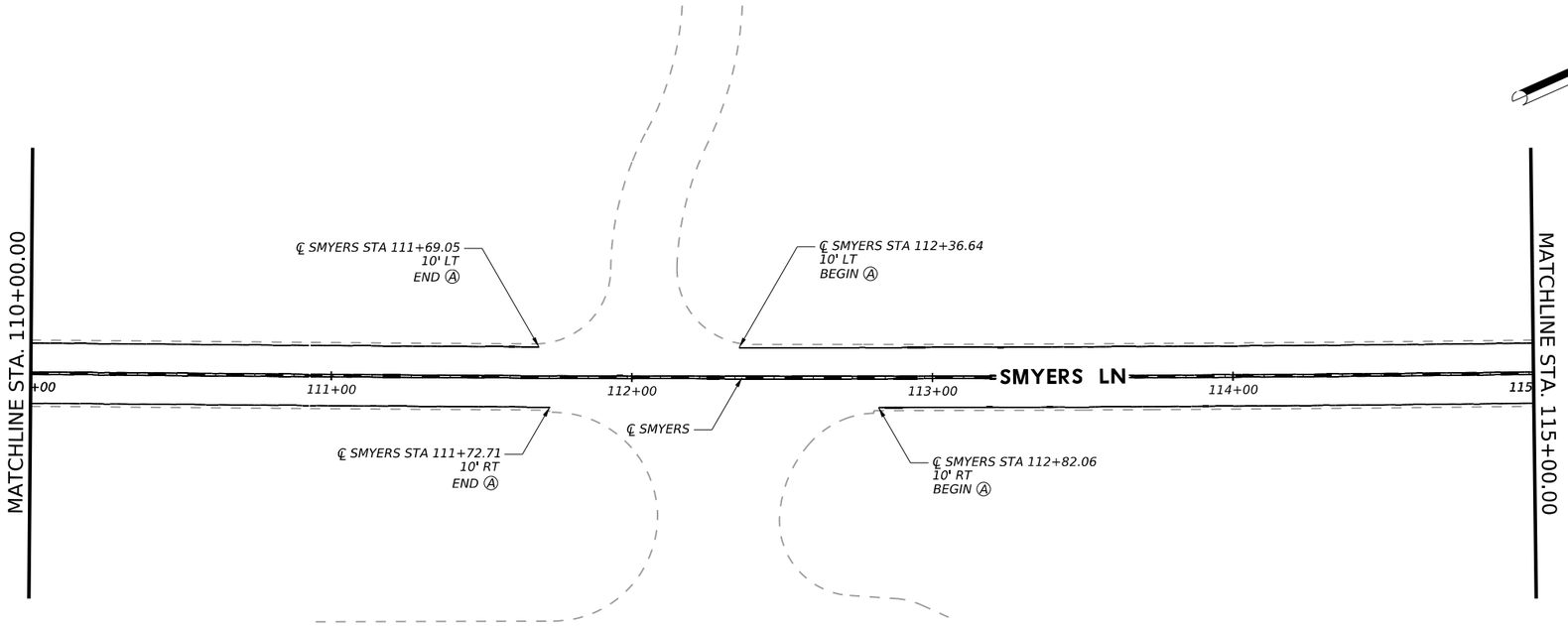
SMYERS
PAVEMENT MARKING PLAN

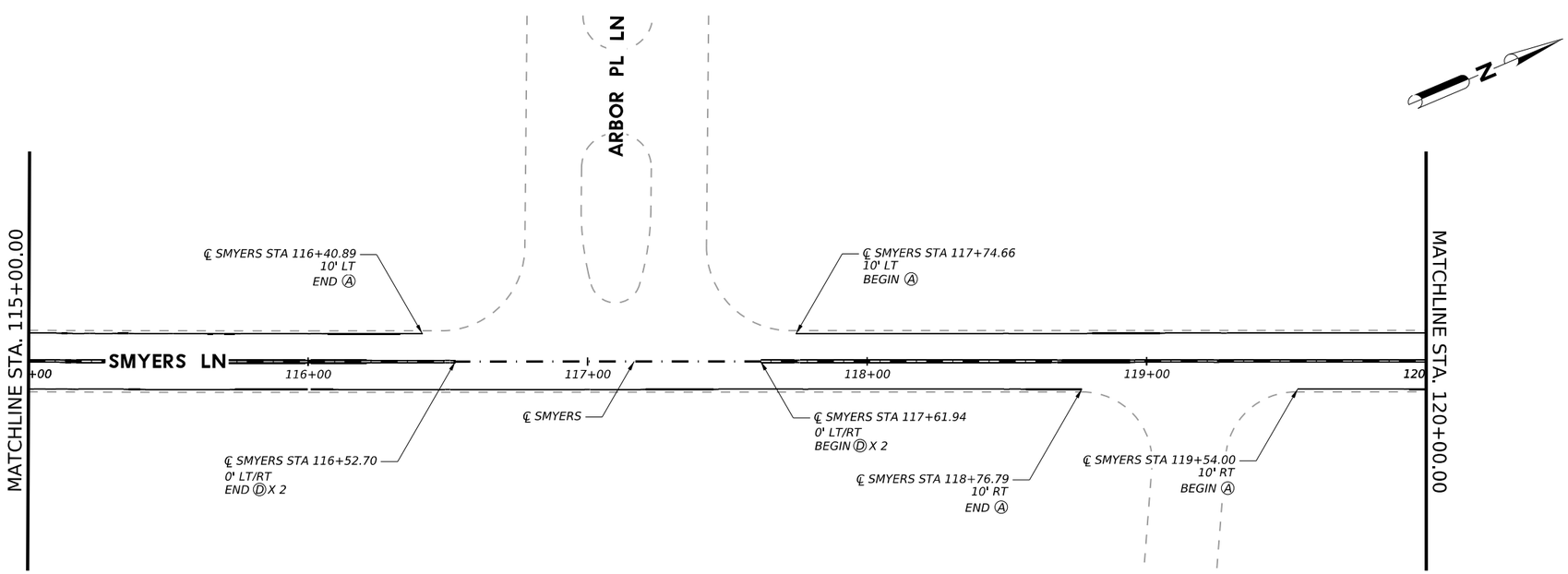
BEGIN TO STA 110+00

SCALE 1" = 50' SHEET 1 OF 3

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	50
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/8. Traffic/Striping/SMYERS - Plan 1.dgn





HORZ 0' 25' 50'

SCALE IN FEET

LEGEND

Ⓐ	REF PAV MRK TY I (W) 6" (SLD)
Ⓑ	REF PAV MRK TY I (W) 24" (SLD)
Ⓒ	REF PAV MRK TY I (W) 8" (SLD)
Ⓓ	REF PAV MRK TY I (Y) 6" (SLD)
Ⓔ	REF PAV MRK (W) WORD
Ⓕ	REF PAV MRK (W) DBL ARROW
Ⓖ	REF PAV MRK (W) ARROW

NOTES:

1. ALIGNMENT SHOWN IS BEST FIT USING AERIAL IMAGE FROM GOOGLE DATED MARCH 2025. BEGIN AND END STATION ARE APPROXIMATE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER. THE SATIONS ARE GIVEN FOR ESTIMATING PURPOSES ONLY AND NO ALIGNMENT DATA IS GIVEN.
2. THE INTENT IS TO PUT THE PROPOSED PAVEMENT MARKINGS BACK TO EXISTING LANE CONFIGURATION AND LOCATION. GENERALLY THE EXISTING CONFIGURATION IS A DOUBLE YELLOW IN THE CENTER OF THE PAVEMENT WITH SOLID WHITE 1' FROM THE EOP.
3. ALL EXISTING SIGNS ARE TO REMAIN AND IF DAMAGED WILL BE REPLACED AT THE CONTRACTORS EXPENSE.
4. APPLY TY II MARKING BEFORE PLACING TY I MARKINGS AS SHOWN ON PLANS.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

TEG
THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

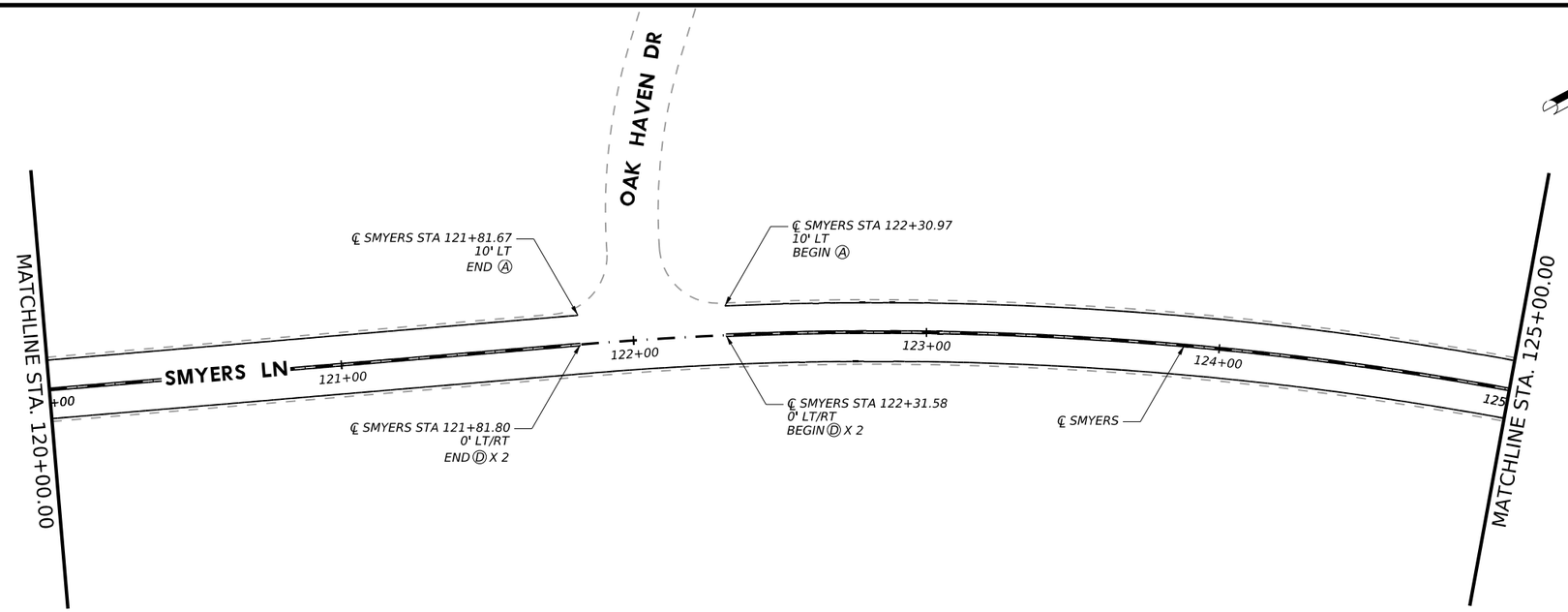
SMYERS
PAVEMENT MARKING PLAN

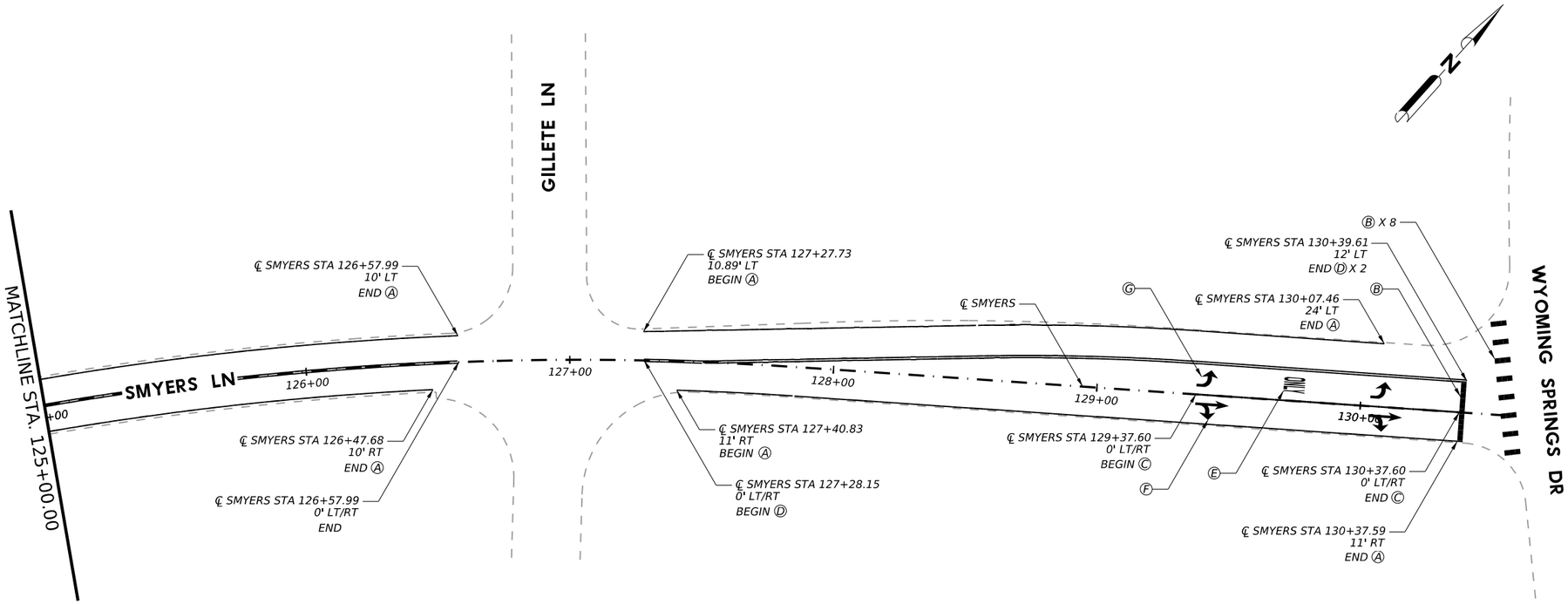
STA 110+00 TO STA 120+00

SCALE 1" = 50' SHEET 2 OF 3

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	51
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/8. Traffic/Striping/SMYERS - Plan 2.dgn





HORZ 0' 25' 50'

SCALE IN FEET

LEGEND

Ⓐ	REF PAV MRK TY I (W) 6" (SLD)
Ⓑ	REF PAV MRK TY I (W) 24" (SLD)
Ⓒ	REF PAV MRK TY I (W) 8" (SLD)
Ⓓ	REF PAV MRK TY I (Y) 6" (SLD)
Ⓔ	REF PAV MRK (W) WORD
Ⓕ	REF PAV MRK (W) DBL ARROW
Ⓖ	REF PAV MRK (W) ARROW

NOTES:

1. ALIGNMENT SHOWN IS BEST FIT USING AERIAL IMAGE FROM GOOGLE DATED MARCH 2025. BEGIN AND END STATION ARE APPROXIMATE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER. THE SATIONS ARE GIVEN FOR ESTIMATING PURPOSES ONLY AND NO ALIGNMENT DATA IS GIVEN.
2. THE INTENT IS TO PUT THE PROPOSED PAVEMENT MARKINGS BACK TO EXISTING LANE CONFIGURATION AND LOCATION. GENERALLY THE EXISTING CONFIGURATION IS A DOUBLE YELLOW IN THE CENTER OF THE PAVEMENT WITH SOLID WHITE 1' FROM THE EOP.
3. ALL EXISTING SIGNS ARE TO REMAIN AND IF DAMAGED WILL BE REPLACED AT THE CONTRACTORS EXPENSE.
4. APPLY TY II MARKING BEFORE PLACING TY I MARKINGS AS SHOWN ON PLANS.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

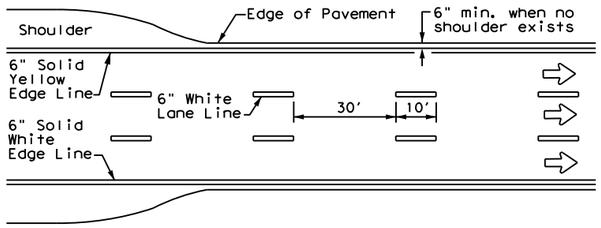
SMYERS
PAVEMENT MARKING PLAN

STA 120+00 TO END

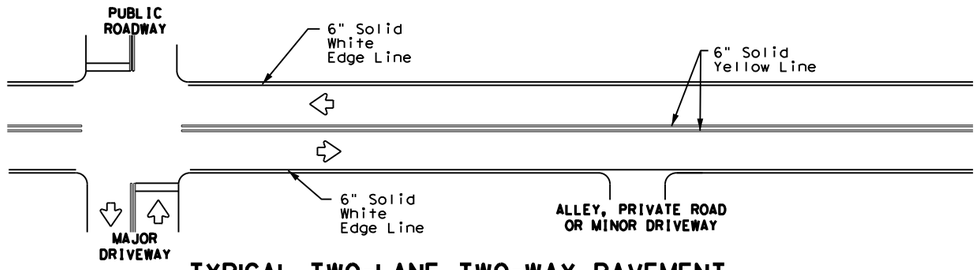
SCALE 1" = 50' SHEET 3 OF 3

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	52
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

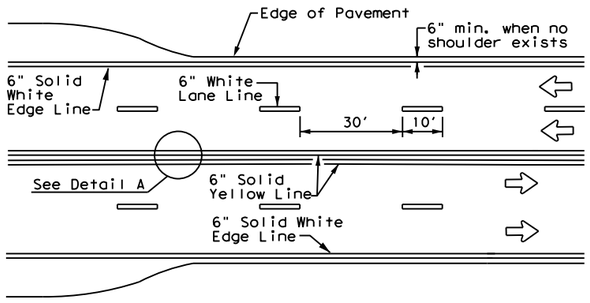
DRAWING DATE: 2/9/2026
FILENAME: pw://Sfactortech-pw.bentley.com:Sf-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/8. Traffic/Striping/SMYERS - Plan 3.dgn

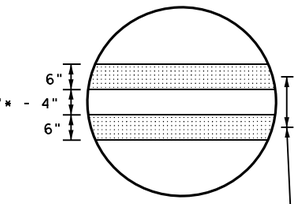


EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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

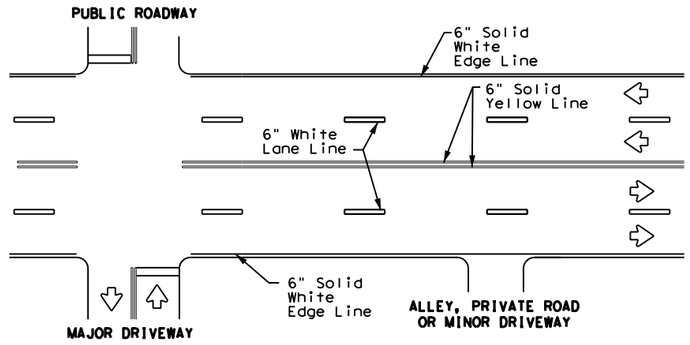




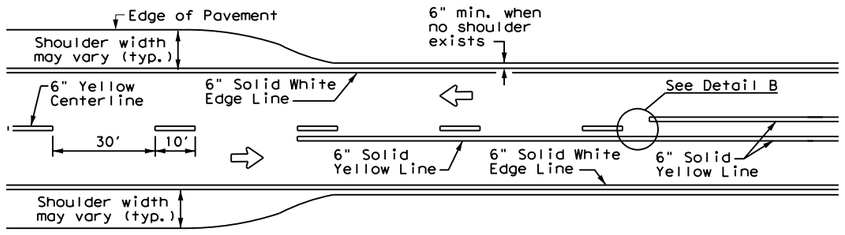
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

* 2" minimum for restripe projects when approved by the Engineer.

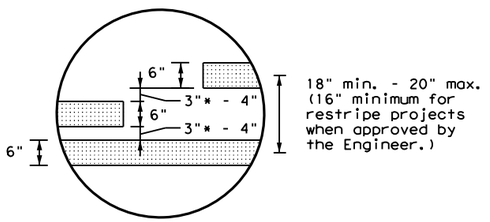
** 8" minimum for restripe projects when approved by the Engineer.



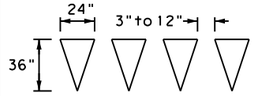
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

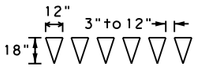


* 2" minimum for restripe projects when approved by the Engineer.

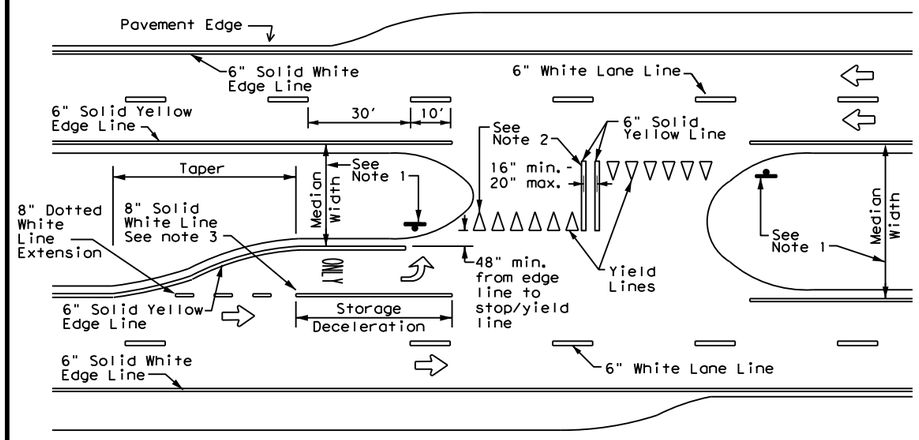


For posted speed on road being marked equal to or greater than 45 MPH.

YIELD LINES



For posted speed on road being marked equal to or less than 40 MPH.



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

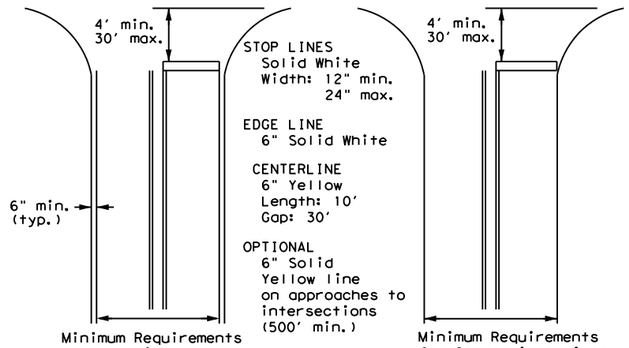
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs and stop bars are optional as determined by the Engineer.
2. Install median striping (double yellow centerlines and stop lines/yield lines) when a 50' or greater median centerline can be placed. Stop lines shall only be used with stop signs. Yield lines shall only be used with yield signs.
3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

GENERAL NOTES

1. Edge line striping shall be as shown in the plans or as directed by the Engineer. The edge line should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edge lines are not required in curb and gutter sections of roadways.
2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the center of edge line to the center of edge line of a two lane roadway.

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.



NOTE: Traveled way is exclusive of shoulder widths. Refer to General Note 2 for additional details.

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Roadways

Texas Department of Transportation

Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

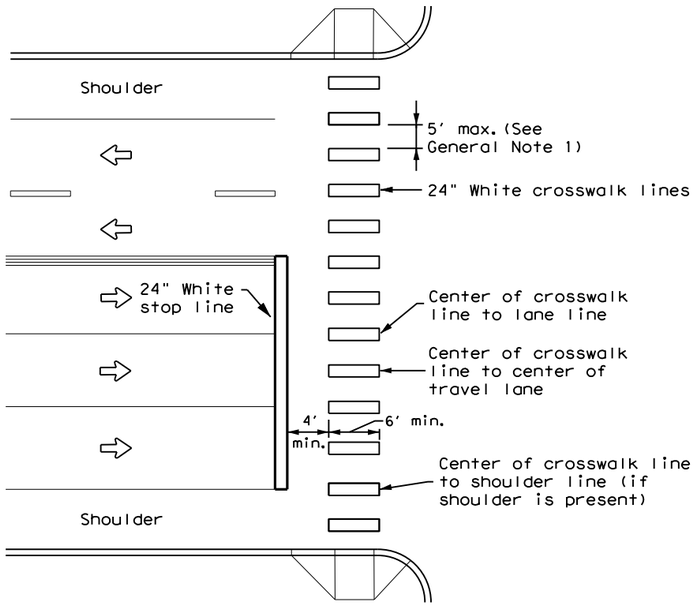
PM(1)-22

FILE: pm1-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 11-78 8-00 6-20 / 8-95 3-03 12-22 / 5-00 2-12	DIST	COUNTY		SHEET NO.
		WILLIAMSON		53

22A

DATE:
FILE:

DATE:
FILE:



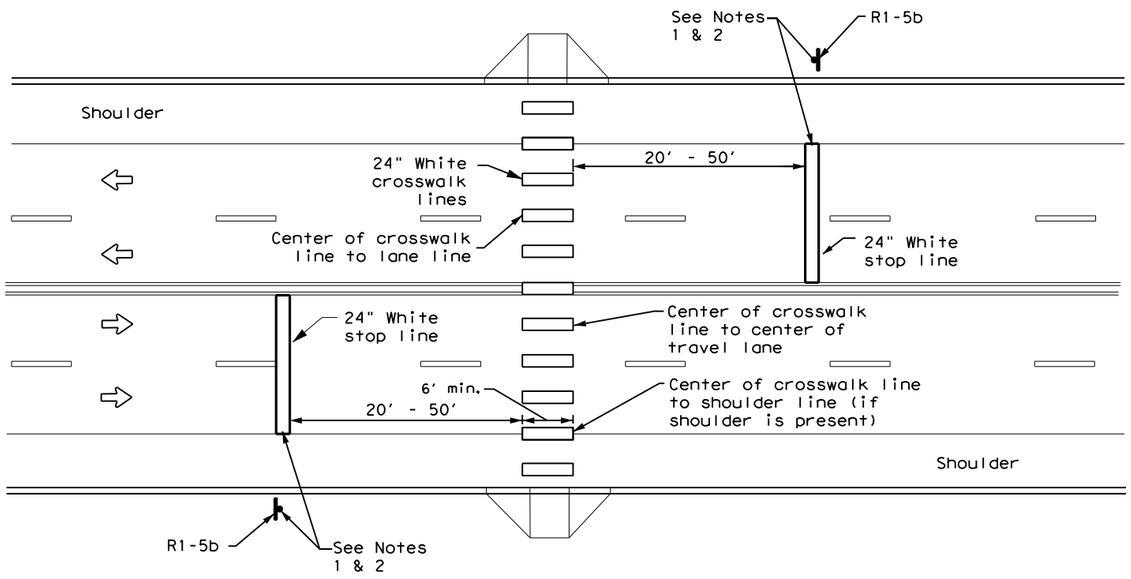
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6" clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6' wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

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.



UNSIGNALIZED MIDBLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES:

1. Use stop bars with Stop Here For Pedestrians (R1-5b) signs at unsignalized midblock cross walks.
2. Use stop bars with STOP HERE ON RED (R10-6 or R10-6a) signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

Texas Department of Transportation

Traffic Safety Division Standard

CROSSWALK PAVEMENT MARKINGS

PM(4)-22A

FILE: pm4-22a.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS				
6-20	DIST	COUNTY		SHEET NO.
6-22		WILLIAMSON		54
12-22				

22D

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):

1.2 PROJECT LIMITS:

From: N RM 620

To: WYOMING SPRINGS DR

1.3 PROJECT COORDINATES:

BEGIN: (Lat) 30.30427 ,(Long) 97.4313423

END: (Lat) 30.302979 ,(Long) 97.43133

1.4 TOTAL PROJECT AREA (Acres): 6.67 AC

1.5 TOTAL AREA TO BE DISTURBED (Acres): 1.42 AC

1.6 NATURE OF CONSTRUCTION ACTIVITY:

FOR THE CONSTRUCTION OR PAVING, STRIPING AND CULVERT EXTENSION.

1.7 MAJOR SOIL TYPES:

Soil Type	Description
GEORGETOWN STONY CLAY LOAM, 1 TO 3 PERCENT SLOPES	BEGIN PROJECT TO STA 101+92.13 FROM STA 112+75.68 TO END PROJECT
ECKRANT-ROCK OUTCROP ASSOCIATION, 1 TO 10 PERCENT SLOPES	FROM STA 101+92.13 TO STA 112+75.68

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
CONSTRUCTION EXITS	

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
LAKE CREEK, BRUSHY CREEK	*BRUSHY CREEK (1244); IMPAIRED FOR BACTERIA

* 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

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

July 2023 Sheet 1 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
		55

STATE	STATE DIST.	COUNTY	
TEXAS		WILLIAMSON	
CONT.	SECT.	JOB	HIGHWAY NO.

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: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

Sediment control BMPs requiring design capacity calculations (See SWP3 Attachment 1.3.):

T / P

- ☐ ☐ Sediment Trap
  - ☐ Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
  - ☐ 3,600 cubic feet of storage per acre drained
- ☐ ☐ Sedimentation Basin
  - ☐ Not required (<10 acres disturbed)
  - ☐ Required (>10 acres) and implemented.
    - ☐ Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
    - ☐ 3,600 cubic feet of storage per acre drained
  - ☐ Required (>10 acres), but not feasible due to:
    - ☐ Available area/Site geometry
    - ☐ Site slope/Drainage patterns
    - ☐ Site soils/Geotechnical factors
    - ☐ Public safety
    - ☐ Other: _____

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- ☒ Excess dirt/mud on road removed daily
- ☐ Haul roads dampened for dust control
- ☐ Loaded haul trucks to be covered with tarpaulin
- ☒ Stabilized construction exit
- ☐ Daily street sweeping
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- ☒ Chemical Management
- ☒ Concrete and Materials Waste Management
- ☒ Debris and Trash Management
- ☒ Dust Control
- ☒ Sanitary Facilities
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ 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.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

July 2023 Sheet 2 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
			56
STATE	STATE DIST.	COUNTY	
TEXAS		WILLIAMSON	
CONT.	SECT.	JOB	HIGHWAY NO.

DATE: 2/9/2026
FILE: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/9. Environmental/SMYERS_ENV_EPIC.dgn

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

List MS4 Operator(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

1.

2.

☐ No Action Required ☒ Required Action

Action No.

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000

2. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.

3. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.

4. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):

☒ No Permit Required

☐ Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)

☐ Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)

☐ Individual 404 Permit Required

☐ Other Nationwide Permit Required: NWP# _____

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post-project TSS.

1.

2.

3.

4.

The elevation of the ordinary high water marks of any areas requiring work to be performed in the waters of the US requiring the use of a nationwide permit can be found on the Bridge Layouts.

Best Management Practices:

Erosion	Sedimentation	Post-Construction TSS
☐ Temporary Vegetation	☒ Silt Fence	☐ Vegetative Filter Strips
☐ Blankets/Matting	☒ Rock Berm	☐ Retention/Irrigation Systems
☐ Mulch	☐ Triangular Filter Dike	☐ Extended Detention Basin
☐ Sodding	☐ Sand Bag Berm	☐ Constructed Wetlands
☐ Interceptor Swale	☐ Straw Bale Dike	☐ Wet Basin
☐ Diversion Dike	☐ Brush Berms	☐ Erosion Control Compost
☐ Erosion Control Compost	☐ Erosion Control Compost	☐ Mulch Filter Berm and Socks
☐ Mulch Filter Berm and Socks	☐ Mulch Filter Berm and Socks	☐ Compost Filter Berm and Socks
☐ Compost Filter Berm and Socks	☐ Compost Filter Berm and Socks	☐ Vegetation Lined Ditches
	☐ Stone Outlet Sediment Traps	☐ Sand Filter Systems
	☐ Sediment Basins	☐ Grassy Swales

III. CULTURAL RESOURCES

Refer to TxDOT Standard Specifications in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical.
Contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751, 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediate area, and contact the Engineer immediately.

LIST OF ABBREVIATIONS

BMP:	Best Management Practice	SPCC:	Spill Prevention Control and Countermeasure
CGP:	Construction General Permit	SW3P:	Storm Water Pollution Prevention Plan
DSHS:	Texas Department of State Health Services	PCN:	Pre-Construction Notification
FHWA:	Federal Highway Administration	PSL:	Project Specific Location
MOA:	Memorandum of Agreement	TCEQ:	Texas Commission on Environmental Quality
MOU:	Memorandum of Understanding	TPDES:	Texas Pollutant Discharge Elimination System
MS4:	Municipal Separate Stormwater Sewer System	TPWD:	Texas Parks and Wildlife Department
MBTA:	Migratory Bird Treaty Act	TxDOT:	Texas Department of Transportation
NOT:	Notice of Termination	T&E:	Threatened and Endangered Species
NWP:	Nationwide Permit	USACE:	U.S. Army Corps of Engineers
NOI:	Notice of Intent	USFWS:	U.S. Fish and Wildlife Service

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act.

Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:
* Dead or distressed vegetation (not identified as normal)
* Trash piles, drums, canister, barrels, etc.
* Undesirable smells or odors
* Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?

☐ Yes ☒ No

If "No", then no further action is required.
If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

☐ Yes ☒ No

If "Yes", then TxDOT must retain a DSHS licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

Any other evidence indicating possible hazardous materials or contamination discovered on site. Hazardous Materials or Contamination Issues Specific to this Project:

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

VII. OTHER ENVIRONMENTAL ISSUES

(includes regional issues such as Edwards Aquifer District, etc.)

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED PROFESSIONAL ENGINEER

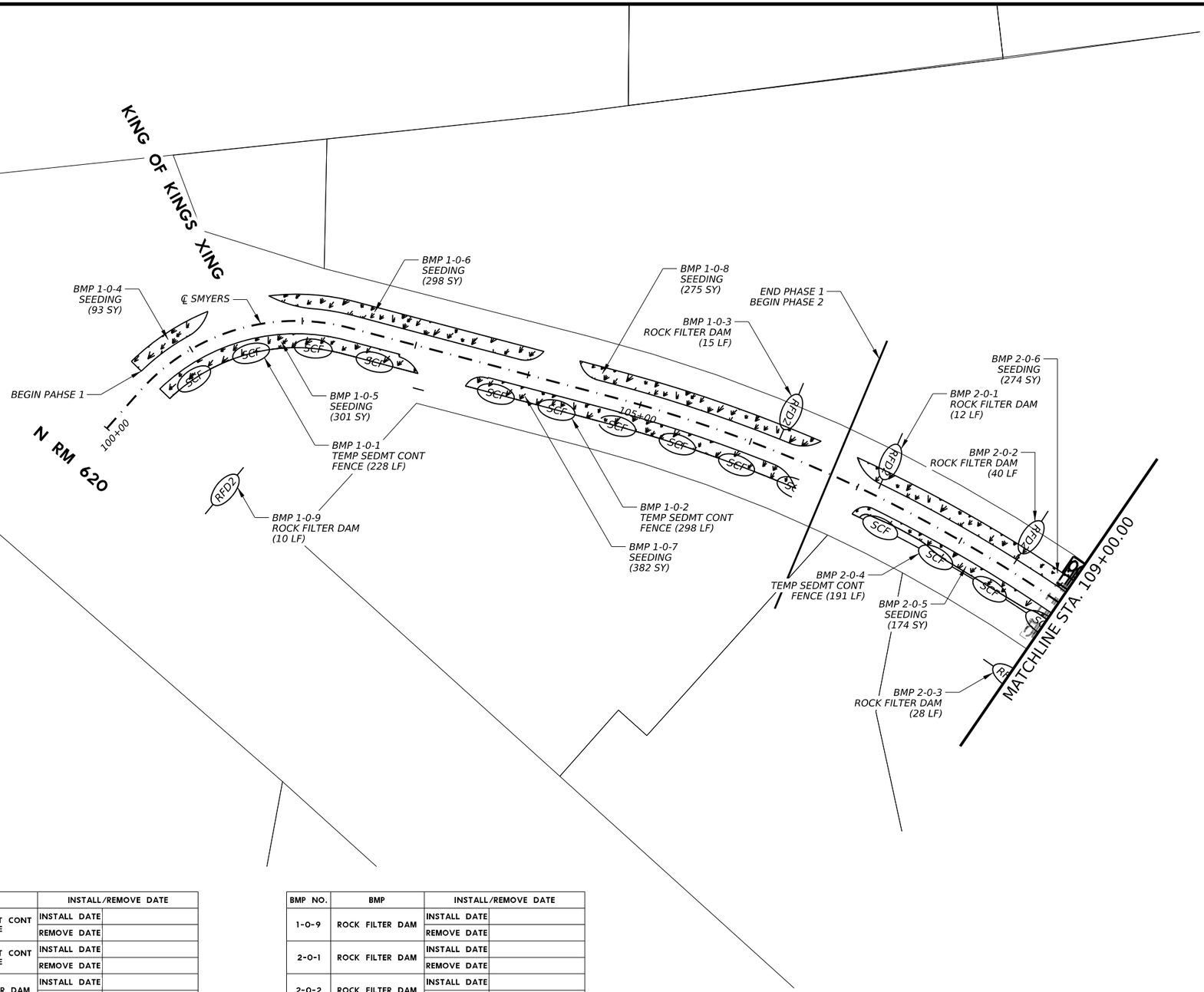
Michael Curl 2/9/2026

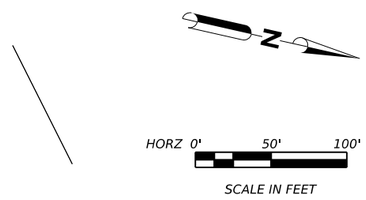
Texas Department of Transportation — Design Division Standard

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

EPIC

FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR
©TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS 12-12-2011 (DS) 05-07-14 ADDED NOTE SECTION IV. 01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	DIST	COUNTY		SHEET NO.
		WILLIAMSON		59





LEGEND

- SCF — SEDIMENT CONTROL FENCE
- RFD2 — ROCK FILTER DAM TY II
- SEEDING

NOTES:

1. ALL SW3P CONTROL MEASURES SHALL BE PLACED WITHIN CORR RIGHT-OF-WAY DURING CONSTRUCTION.
2. CONSTRACTOR SHALL MAINTAIN SW3P CONTROL MEASURES.
3. CONSTRUCTION ENTRANCE / EXIT TO BE DETERMINED IN THE FIELD, AND APPROVED BY THE ENGINEER.
4. ALL SW3P CONTROL MEASURES INSTALLED DURING CONSTRUCTION ARE TO REMAIN IN PLACE UNTILL 70% VGITATIVE COVER IS AHCIEVED OR AS APPROVED BY THE ENGINEER.
5. SEEDING AREA IS ESTIMATED FROM EOP TO SIDEWALK OR FROM EOP TO 12' WHICHEVER IS SHORTER.
6. SW3P QUANTITIES FOR ESTIMATING PURPOSES MAY VARY TO MEET FIELD CONDITIONS.
7. APPLY VEGITATIVE WATERING AS NEEDED TO SUPPLEMENT NATURAL RAINFALL DURING THE VEGITATION ESTABLISHMENT PERIOD. DROUGHT OR OTHER ENVIORNMENTAL CONDITIONS, AS DETERMINED BY THE ENGINEER, MAY REQUIRE THE APPLICATION OF SUPPLEMENTAL IRRIGATION TO BE BETWEEN THE HOURS OF 6 PM AND 8 PM.
8. SW3P CONTROL MEASURE SYMBOLS ARE NOT DRAWN TO SCALE.
9. CONCRETE TRUCK CLEAN OUT LOCATIONS TO BE DETERMINED IN THE FIELD, AND APPROVED BY THE ENGINEER.
10. USE FIBER MULCH TO FILL EROSION CONTROL LOGS OR OTHER MATERIALS, AS APPROVED BY THE ENGINEER.

BMP NO.	BMP	INSTALL/REMOVE DATE	
1-0-1	TEMP SEDMT CONT FENCE	INSTALL DATE	
		REMOVE DATE	
1-0-2	TEMP SEDMT CONT FENCE	INSTALL DATE	
		REMOVE DATE	
1-0-3	ROCK FILTER DAM	INSTALL DATE	
		REMOVE DATE	
1-0-4	SEEDING	INSTALL DATE	
		REMOVE DATE	
1-0-5	SEEDING	INSTALL DATE	
		REMOVE DATE	
1-0-6	SEEDING	INSTALL DATE	
		REMOVE DATE	
1-0-7	SEEDING	INSTALL DATE	
		REMOVE DATE	
1-0-8	SEEDING	INSTALL DATE	
		REMOVE DATE	

BMP NO.	BMP	INSTALL/REMOVE DATE	
1-0-9	ROCK FILTER DAM	INSTALL DATE	
		REMOVE DATE	
2-0-1	ROCK FILTER DAM	INSTALL DATE	
		REMOVE DATE	
2-0-2	ROCK FILTER DAM	INSTALL DATE	
		REMOVE DATE	
2-0-3	ROCK FILTER DAM	INSTALL DATE	
		REMOVE DATE	
2-0-4	TEMP SEDMT CONT FENCE	INSTALL DATE	
		REMOVE DATE	
2-0-5	SEEDING	INSTALL DATE	
		REMOVE DATE	
2-0-6	SEEDING	INSTALL DATE	
		REMOVE DATE	
2-0-7	ROCK FILTER DAM	INSTALL DATE	
		REMOVE DATE	

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

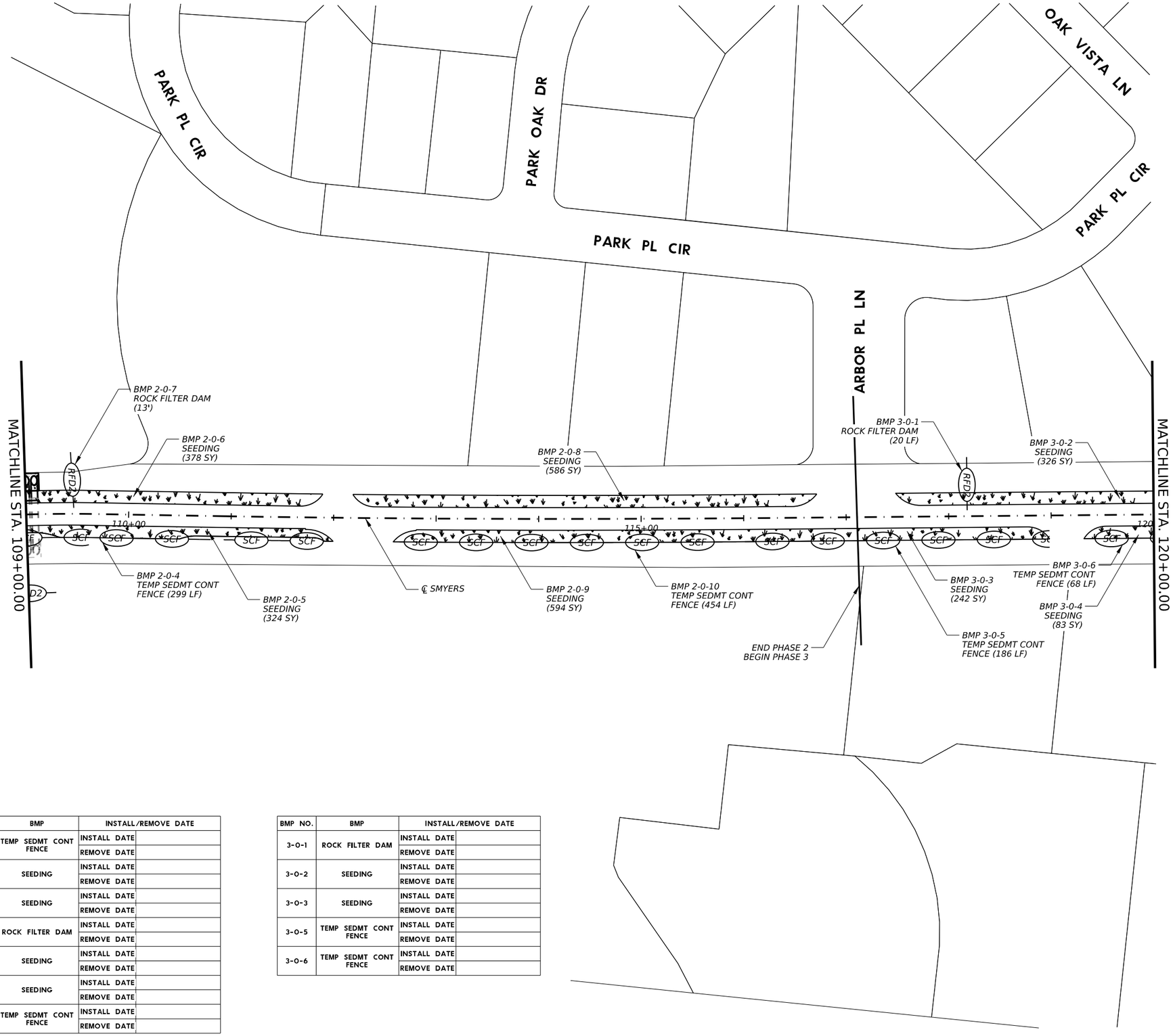
SMYERS
EROSION CONTROL PLAN

BEGIN TO STA 109+00

SCALE 1" = 100' SHEET 1 OF 3

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	60
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/9. Environmental/SMYERS - Plan 1.dgn



N

HORZ 0' 50' 100'

SCALE IN FEET

LEGEND

- SCF — SEDIMENT CONTROL FENCE
- RFD2 — ROCK FILTER DAM TY II
- SEEDING

NOTES:

1. ALL SW3P CONTROL MEASURES SHALL BE PLACED WITHIN CORR RIGHT-OF-WAY DURING CONSTRUCTION.
2. CONSTRACTOR SHALL MAINTAIN SW3P CONTROL MEASURES.
3. CONSTRUCTION ENTRANCE / EXIT TO BE DETERMINED IN THE FIELD, AND APPROVED BY THE ENGINEER.
4. ALL SW3P CONTROL MEASURES INSTALLED DURING CONSTRUCTION ARE TO REMAIN IN PLACE UNTILL 70% VGITATIVE COVER IS AHCIEVED OR AS APPROVED BY THE ENGINEER.
5. SEEDING AREA IS ESTIMATED FROM EOP TO SIDEWALK OR FROM EOP TO 12' WHICHEVER IS SHORTER.
6. SW3P QUANTITIES FOR ESTIMATING PURPOSES MAY VARY TO MEET FIELD CONDITIONS.
7. APPLY VEGITATIVE WATERING AS NEEDED TO SUPPLEMENT NATURAL RAINFALL DURING THE VEGITATION ESTABLISHMENT PERIOD. DROUGHT OR OTHER ENVIORNMENTAL CONDITIONS, AS DETERMINED BY THE ENGINEER, MAY REQUIRE THE APPLICATION OF SUPPLEMENTAL IRRIGATION TO BE BETWEEN THE HOURS OF 6 PM AND 8 PM.
8. SW3P CONTROL MEASURE SYMBOLS ARE NOT DRAWN TO SCALE.
9. CONCRETE TRUCK CLEAN OUT LOCATIONS TO BE DETERMINED IN THE FIELD, AND APPROVED BY THE ENGINEER.
10. USE FIBER MULCH TO FILL EROSION CONTROL LOGS OR OTHER MATERIALS, AS APPROVED BY THE ENGINEER.

BMP NO.	BMP	INSTALL/REMOVE DATE	
2-0-4	TEMP SEDMT CONT FENCE	INSTALL DATE	
		REMOVE DATE	
2-0-5	SEEDING	INSTALL DATE	
		REMOVE DATE	
2-0-6	SEEDING	INSTALL DATE	
		REMOVE DATE	
2-0-7	ROCK FILTER DAM	INSTALL DATE	
		REMOVE DATE	
2-0-8	SEEDING	INSTALL DATE	
		REMOVE DATE	
2-0-9	SEEDING	INSTALL DATE	
		REMOVE DATE	
2-0-10	TEMP SEDMT CONT FENCE	INSTALL DATE	
		REMOVE DATE	

BMP NO.	BMP	INSTALL/REMOVE DATE	
3-0-1	ROCK FILTER DAM	INSTALL DATE	
		REMOVE DATE	
3-0-2	SEEDING	INSTALL DATE	
		REMOVE DATE	
3-0-3	SEEDING	INSTALL DATE	
		REMOVE DATE	
3-0-5	TEMP SEDMT CONT FENCE	INSTALL DATE	
		REMOVE DATE	
3-0-6	TEMP SEDMT CONT FENCE	INSTALL DATE	
		REMOVE DATE	

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

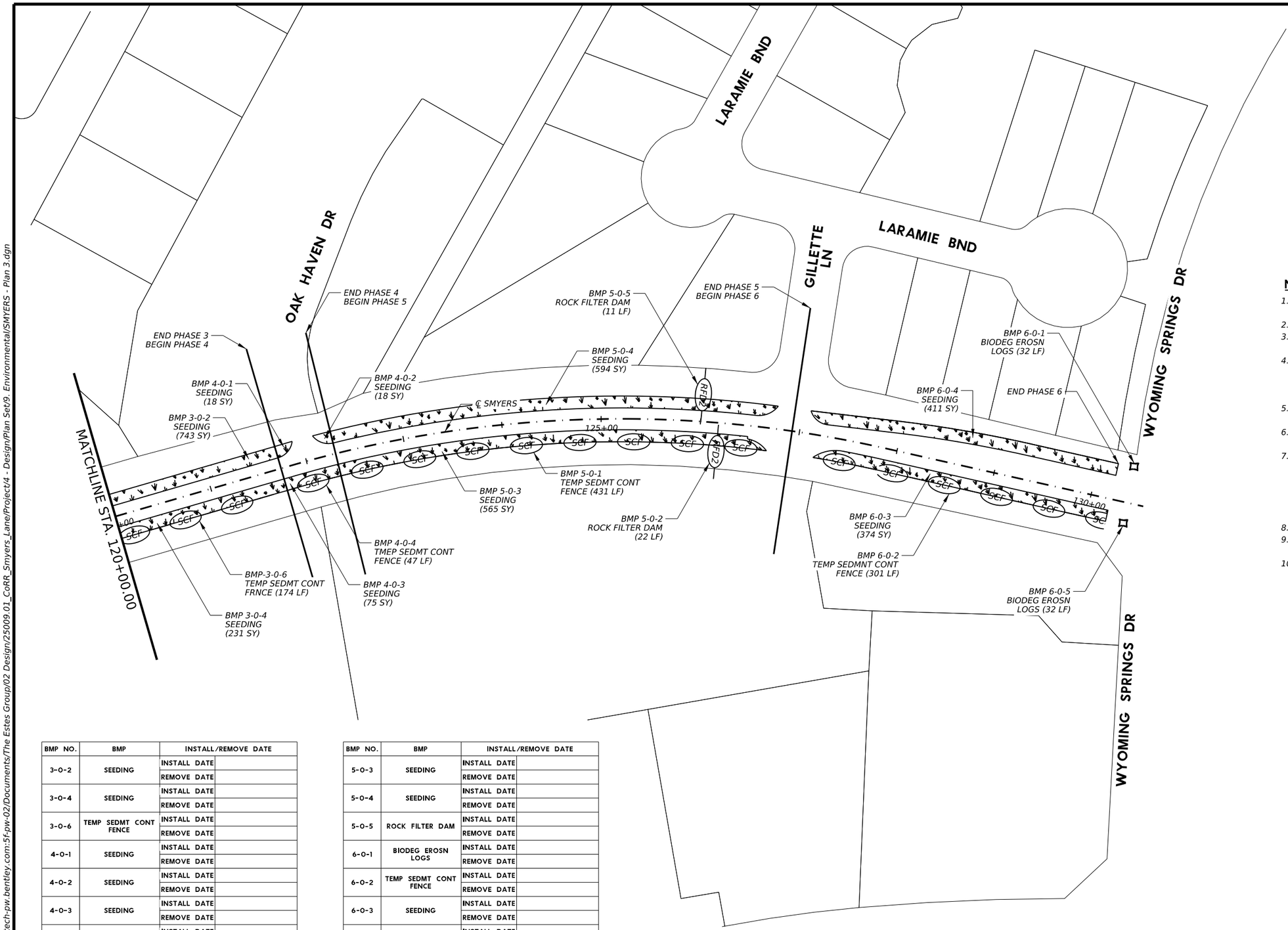
SMYERS
EROSION CONTROL PLAN

STA 109+00 TO STA 120+00

SCALE 1" = 100' SHEET 2 OF 3

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	61
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/9. Environmental/SMYERS - Plan 2.dgn



HORZ 0' 50' 100'

SCALE IN FEET

LEGEND

- SCF — SEDIMENT CONTROL FENCE
- RFD2 — ROCK FILTER DAM TY II
- SEEDING

NOTES:

1. ALL SW3P CONTROL MEASURES SHALL BE PLACED WITHIN CORR RIGHT-OF-WAY DURING CONSTRUCTION.
2. CONSTRACTOR SHALL MAINTAIN SW3P CONTROL MEASURES.
3. CONSTRUCTION ENTRANCE / EXIT TO BE DETERMINED IN THE FIELD, AND APPROVED BY THE ENGINEER.
4. ALL SW3P CONTROL MEASURES INSTALLED DURING CONSTRUCTION ARE TO REMAIN IN PLACE UNTILL 70% VGITATIVE COVER IS AHCIEVED OR AS APPROVED BY THE ENGINEER.
5. SEEDING AREA IS ESTIMATED FROM EOP TO SIDEWALK OR FROM EOP TO 12' WHICHEVER IS SHORTER.
6. SW3P QUANTITIES FOR ESTIMATING PURPOSES MAY VARY TO MEET FIELD CONDITIONS.
7. APPLY VEGITATIVE WATERING AS NEEDED TO SUPPLEMENT NATURAL RAINFALL DURING THE VEGITATION ESTABLISHMENT PERIOD. DROUGHT OR OTHER ENVIORNMENTAL CONDITIONS, AS DETERMINED BY THE ENGINEER, MAY REQUIRE THE APPLICATION OF SUPPLEMENTAL IRRIGATION TO BE BETWEEN THE HOURS OF 6 PM AND 8 PM.
8. SW3P CONTROL MEASURE SYMBOLS ARE NOT DRAWN TO SCALE.
9. CONCRETE TRUCK CLEAN OUT LOCATIONS TO BE DETERMINED IN THE FIELD, AND APPROVED BY THE ENGINEER.
10. USE FIBER MULCH TO FILL EROSION CONTROL LOGS OR OTHER MATERIALS, AS APPROVED BY THE ENGINEER.

BMP NO.	BMP	INSTALL/REMOVE DATE	
3-0-2	SEEDING	INSTALL DATE	
		REMOVE DATE	
3-0-4	SEEDING	INSTALL DATE	
		REMOVE DATE	
3-0-6	TEMP SEDMT CONT FENCE	INSTALL DATE	
		REMOVE DATE	
4-0-1	SEEDING	INSTALL DATE	
		REMOVE DATE	
4-0-2	SEEDING	INSTALL DATE	
		REMOVE DATE	
4-0-3	SEEDING	INSTALL DATE	
		REMOVE DATE	
4-0-4	TEMP SEDMT CONT FENCE	INSTALL DATE	
		REMOVE DATE	
5-0-1	TEMP SEDMT CONT FENCE	INSTALL DATE	
		REMOVE DATE	
5-0-2	ROCK FILTER DAM	INSTALL DATE	
		REMOVE DATE	

BMP NO.	BMP	INSTALL/REMOVE DATE	
5-0-3	SEEDING	INSTALL DATE	
		REMOVE DATE	
5-0-4	SEEDING	INSTALL DATE	
		REMOVE DATE	
5-0-5	ROCK FILTER DAM	INSTALL DATE	
		REMOVE DATE	
6-0-1	BIODEG EROSN LOGS	INSTALL DATE	
		REMOVE DATE	
6-0-2	TEMP SEDMT CONT FENCE	INSTALL DATE	
		REMOVE DATE	
6-0-3	SEEDING	INSTALL DATE	
		REMOVE DATE	
6-0-4	SEEDING	INSTALL DATE	
		REMOVE DATE	
6-0-5	BIODEG EROSN LOGS	INSTALL DATE	
		REMOVE DATE	

STATE OF TEXAS
MICHAEL CURL
126986
LICENSED
PROFESSIONAL ENGINEER

Michael Curl 2/9/2026

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

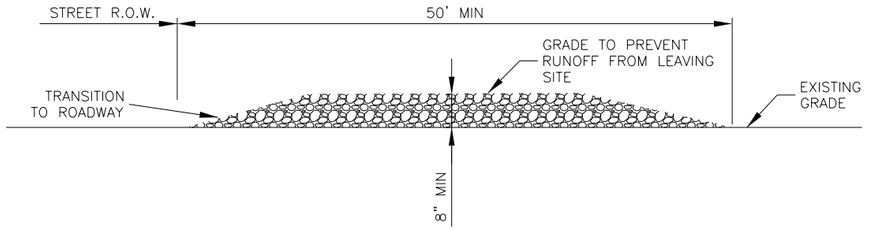
SMYERS
EROSION CONTROL PLAN

STA 120+00 TO END

SCALE 1" = 100' SHEET 3 OF 3

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	62
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/9. Environmental/SMYERS - Plan 3.dgn



CROSS SECTION

NOTES:

1. STONE SIZE SHALL BE 3" – 8" OPEN GRADED ROCK.
2. THICKNESS OF CRUSHED STONE PAD TO BE NOT LESS THAN 8".
3. LENGTH SHALL BE A MINIMUM OF 50' FROM ACTUAL ROADWAY, AND WIDTH NOT LESS THAN FULL WIDTH OF INGRESS/EGRESS.
4. ENTRANCE SHALL BE PROPERLY GRADED TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
5. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY BY CONTRACTOR.
6. AS NECESSARY, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS

APPROVED

03-25-11

DATE

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)

CITY OF ROUND ROCK

STABILIZED CONSTRUCTION ENTRANCE DETAIL

DRAWING NO: EC-09

ROUND ROCK, TEXAS
PURPOSE. PASSION. PROSPERITY

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

SMYERS & CR 122

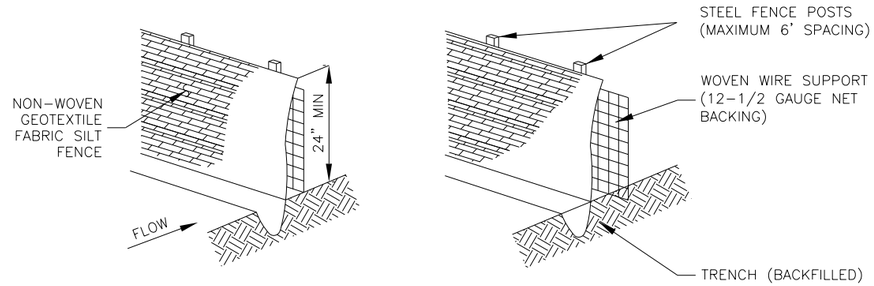
CORR STANDARD DRAWINGS
STABILIZED CONSTRUCTION ENTERANCE DETAIL

SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	65
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/9. Environmental/STD/CORR_EC-09

RECOMMENDED TOE–IN METHOD



CROSS SECTION

NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MIN. OF ONE (1') FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT) WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHALL BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS SECURELY FASTENED TO THE STEEL FENCE POSTS.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. SILT FENCE SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: EC–10
APPROVED		
03–25–11 DATE	SILT FENCE DETAIL	ROUND ROCK, TEXAS PURPOSE. PASSION. PROSPERITY
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

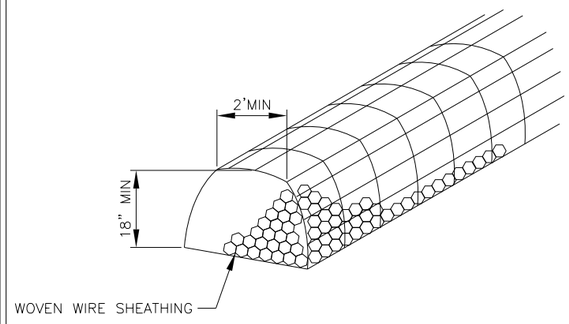
SMYERS & CR 122

CORR STANDARD DRAWINGS
SILT FENCE DETAIL

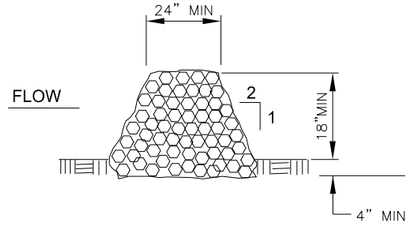
SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	66
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/9. Environmental/STD/CORR_EC-10



ISOMETRIC



CROSS SECTION

NOTES:

1. USE ONLY OPEN GRADED ROCK (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1" OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/ OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH OF 6", THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTATION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED 03-25-11 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)	CITY OF ROUND ROCK ROCK BERM DETAIL	DRAWING NO: EC-12 ROUND ROCK, TEXAS PURPOSE, PASSION, PROSPERITY

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

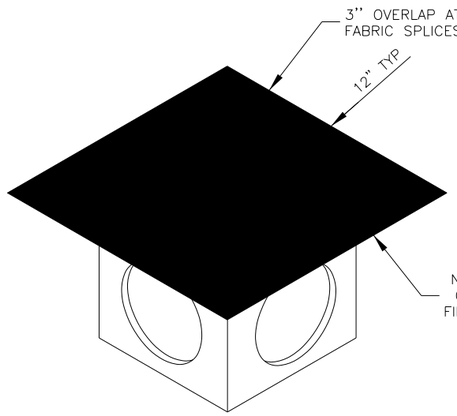
SMYERS & CR 122

CORR STANDARD DRAWINGS
ROCK BERM DETAIL

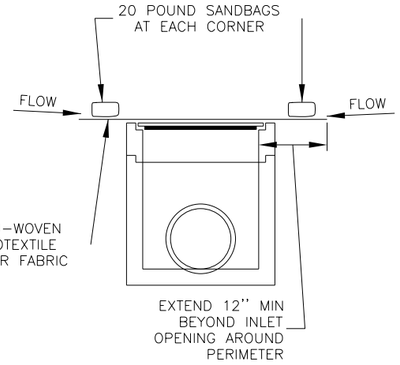
SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	67
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/9. Environmental/STD/CORR_EC-12



ISOMETRIC



CROSS SECTION

NOTES:

1. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
2. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
3. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED 03-25-11 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)	CITY OF ROUND ROCK AREA INLET PROTECTION DETAIL	DRAWING NO: EC-15 ROUND ROCK, TEXAS PURPOSE. PASSION. PROSPERITY.

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

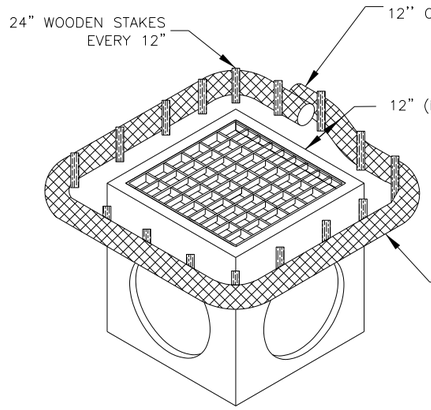
SMYERS & CR 122

CORR STANDARD DRAWINGS
AREA INLET PROTECTION DETAIL

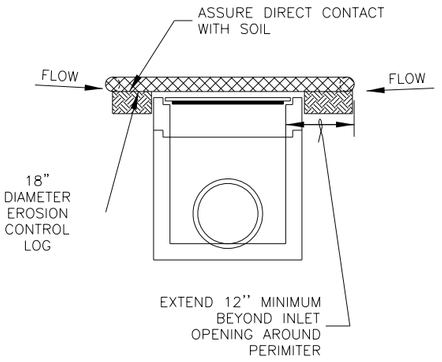
SHEET 1 OF 1

DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	68
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/9. Environmental/STD/CORR_EC-15



ISOMETRIC



CROSS SECTION

NOTES:

1. EROSION CONTROL LOG CONTAINMENT MESH SHALL BE 100% BIODEGRADABLE, PHOTODEGRADABLE OR RECYCLABLE; AND FILL MATERIAL SHALL CONSIST OF MULCH, ASPEN EXCELSIOR FIBERS, CHIPPED SITE VEGETATION, COCONUT FIBERS, 100% RECYCLABLE FIBERS, OR ANY OTHER ACCEPTABLE MATERIAL EXCLUDING STRAW AND HAY.
2. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 6".
3. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
4. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: EC-16
APPROVED		
03-25-11 DATE	AREA INLET PROTECTION WITH EROSION CONTROL LOG DETAIL	ROUND ROCK, TEXAS PURPOSE. PASSION. PROSPERITY
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

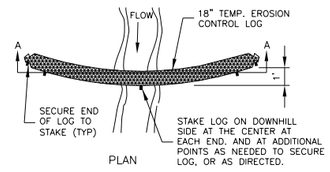
SMYERS & CR 122

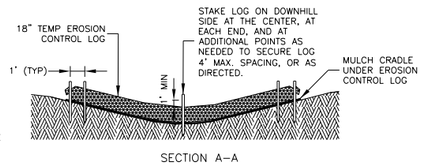
CORR STANDARD DRAWINGS
AREA INLET PROTECTION WITH EROSION CONTROL LOG DETAIL

SHEET 1 OF 1

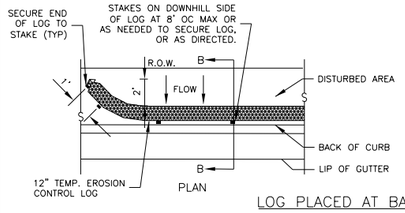
DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	69
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

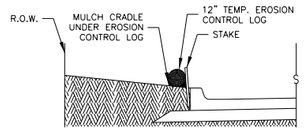
DRAWING DATE: 2/9/2026
FILENAME: pw://5factortech-pw.bentley.com:5f-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/9. Environmental/STD/CORR_EC-16



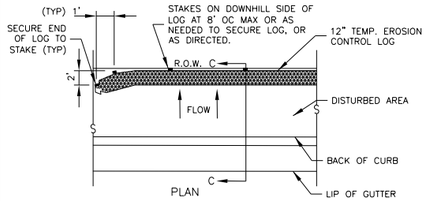


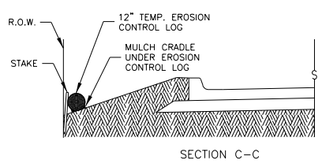
EROSION CONTROL LOG CHECK DAM



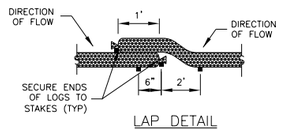


LOG PLACED AT BACK OF CURB





LOG PLACED AT EDGE OF RIGHT–OF–WAY



LAP DETAIL

NOTES;

1. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 6".
2. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF LOGS DURING RAINFALL EVENT FOR PROPER PERFORMANCE.
3. LOGS SHALL CONSIST OF 100% BIODEGRADABLE, PHOTODEGRADABLE OR RECYCLABLE CONTAINMENT MESH STUFFED WITH FILTER MATERIAL.
4. STUFF LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE DENSITY THAT WILL HOLD SHAPE WITHOUT EXCESSIVE DEFORMATION. FILTER MATERIAL SHALL CONSIST OF MULCH, ASPEN EXCELSIOR WOOD FIBERS, CHIPPED SITE VEGETATION, COCONUT FIBERS,100% RECYCLABLE FIBERS, OR ANY OTHER ACCEPTABLE MATERIAL, EXCLUDING STRAW AND HAY.
5. STAKES SHALL BE 2" X 2" WOOD, 4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: EC–17
APPROVED		
03–25–11	EROSION CONTROL LOG DETAIL	ROUND ROCK, TEXAS PURPOSE. PASSION. PROSPERITY.
DATE		
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

THE ESTES GROUP
TBPE FIRM REG. NO. F-20926

ROUND ROCK TEXAS

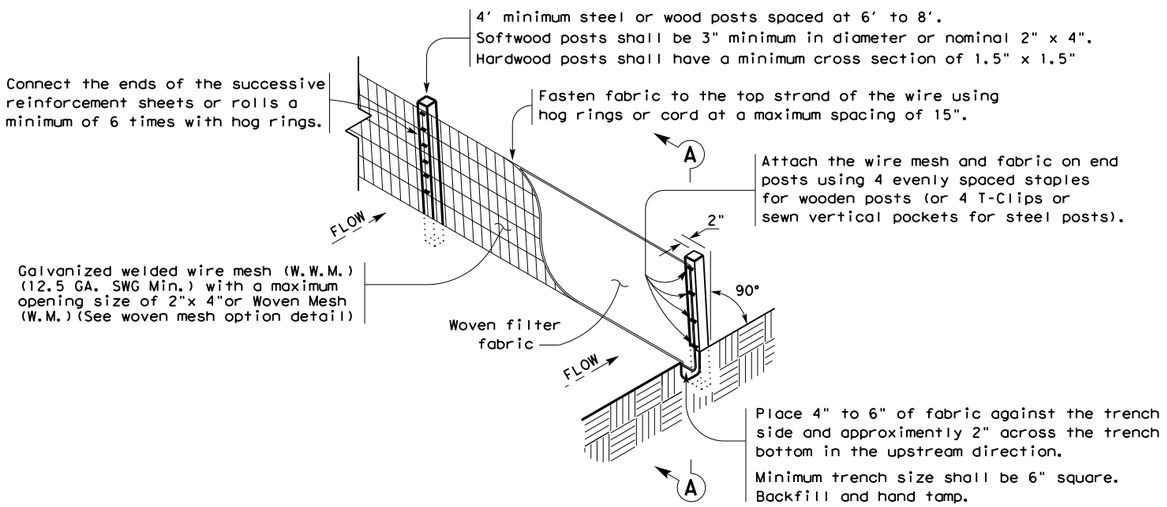
SMYERS & CR 122

CORR STANDARD DRAWINGS
EROSION CONTROL LOG DETAIL

SHEET 1 OF 1

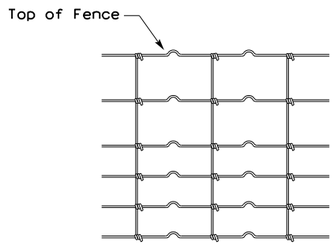
DESIGN	GRAPHICS	CHECK	CHECK	SHEET NO.
TEG	TEG	TEG	TEG	70
STATE	COUNTY		CITY	
TEXAS	WILLIAMSON		ROUND ROCK	

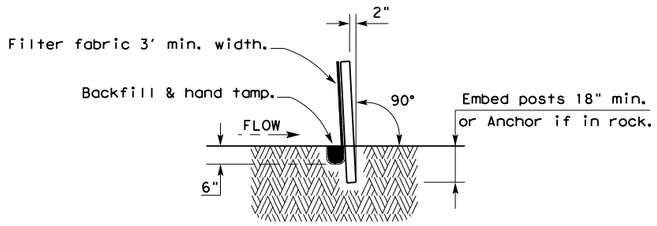
DRAWING DATE: 2/9/2026
FILENAME: pw://Sfactortech-pw.bentley.com:Sf-pw-02/Documents/The Estes Group/02 Design/25009.01_CoRR_Smyers_Lane/Project/4 - Design/Plan Set/9. Environmental/STD/CORR_EC-17



TEMPORARY SEDIMENT CONTROL FENCE

SCF





SECTION A-A

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^2. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

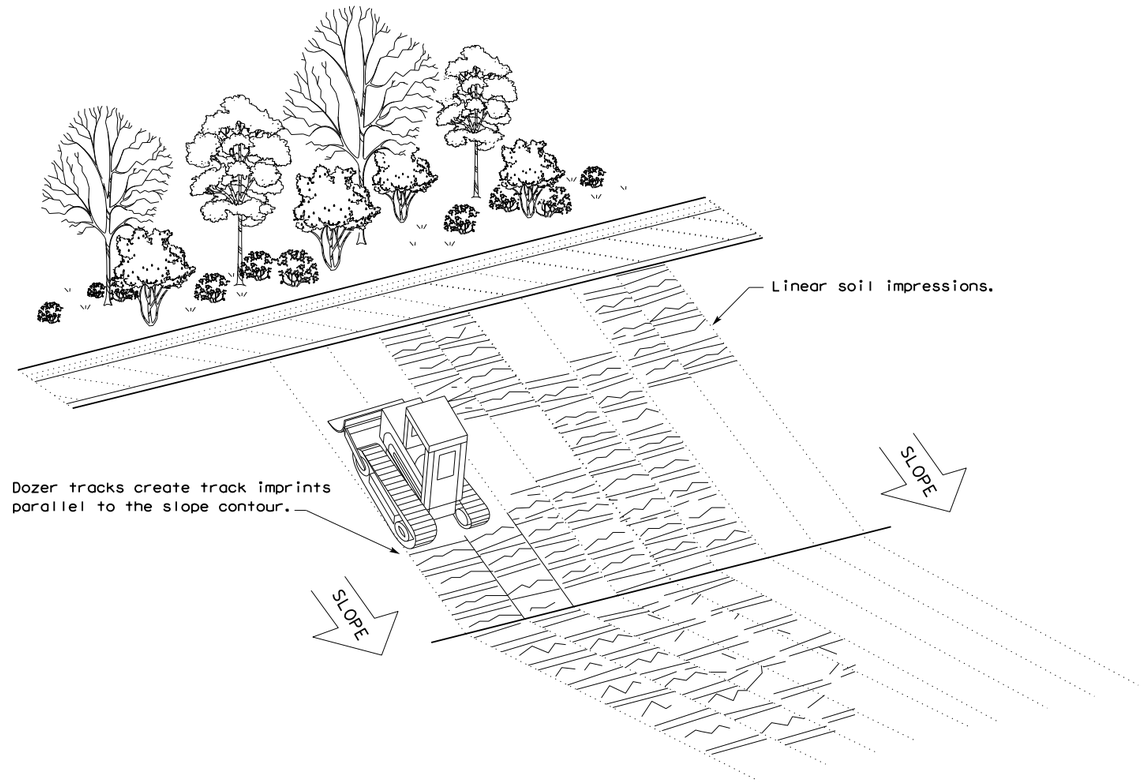
LEGEND

Sediment Control Fence

SCF

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 continous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

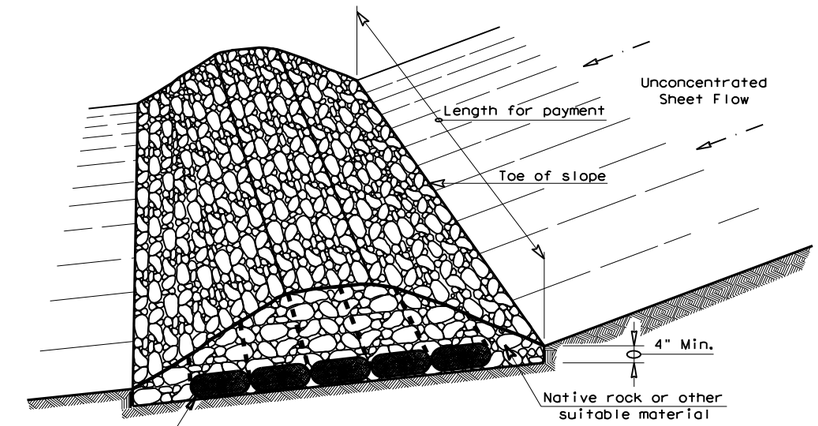
FENCE & VERTICAL TRACKING

EC(1)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS					
	DIST	COUNTY		SHEET NO.	
		WILLIAMSON		71	

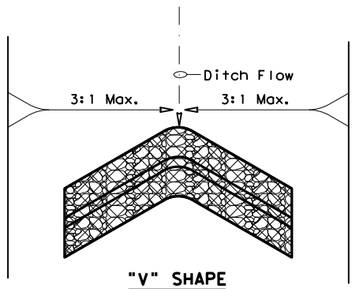
DATE
FILE

DATE:
FILE:

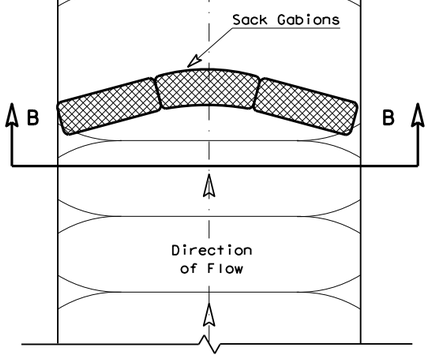


FILTER DAM AT TOE OF SLOPE

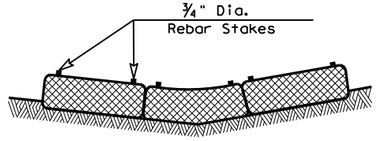
RFD1



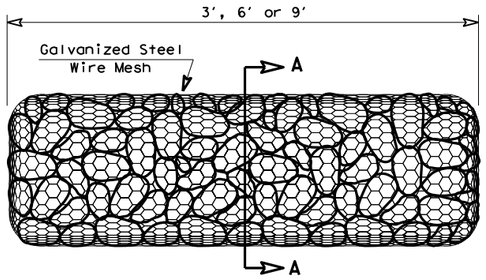
"V" SHAPE PLAN VIEW



PLAN VIEW

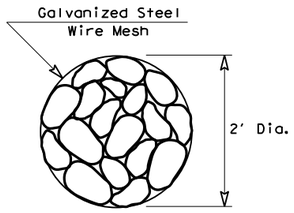


SECTION B-B

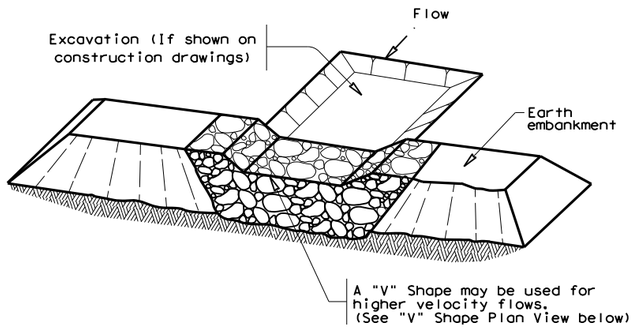


TYPE 4 (SACK GABIONS)

RFD4

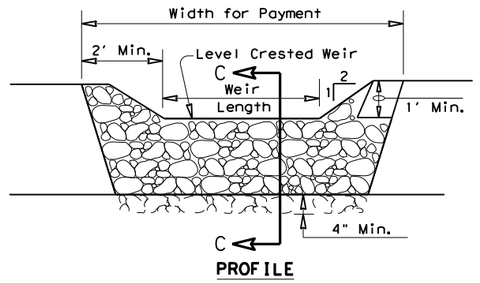


SECTION A-A

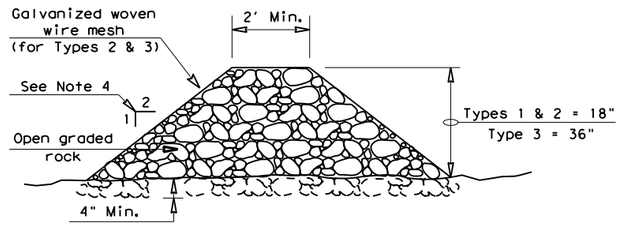


FILTER DAM AT SEDIMENT TRAP

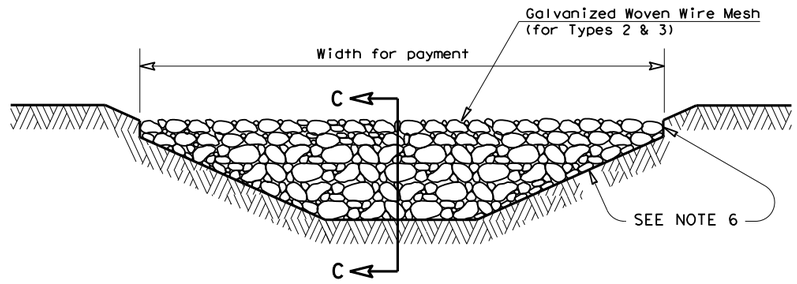
RFD1 — OR — RFD2



PROFILE



SECTION C-C



FILTER DAM AT CHANNEL SECTIONS

RFD1 — OR — RFD2 — OR — RFD3

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^2 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 (approximently 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 ¾" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 ½" x 3 ¼"
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

Texas Department of Transportation

Design Division Standard

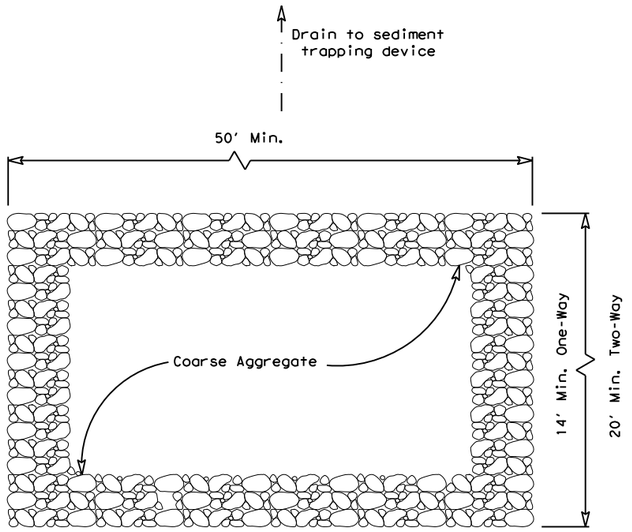
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

ROCK FILTER DAMS

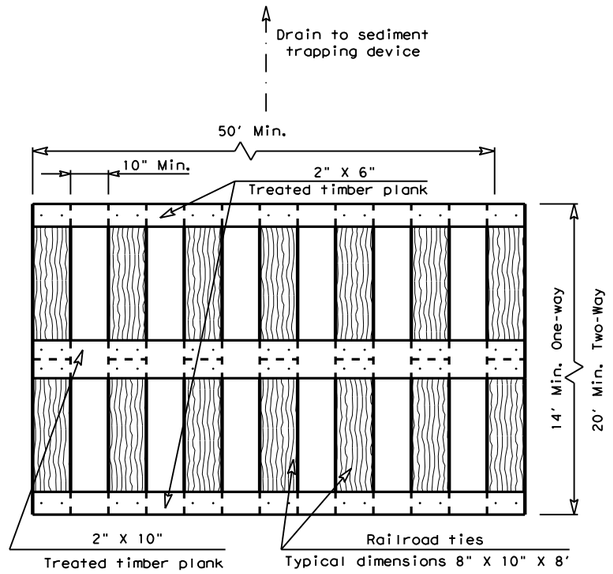
EC(2)-16

FILE: ec216	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
		WILLIAMSON		72

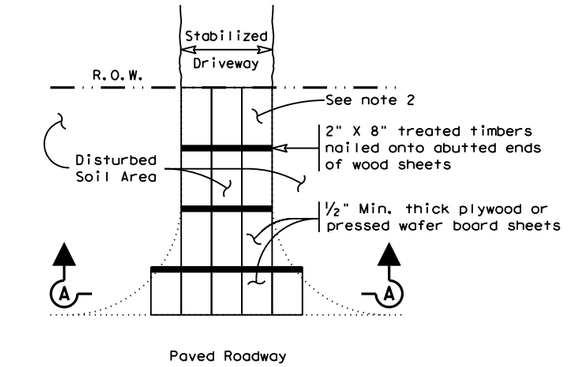
DATE:
FILE:



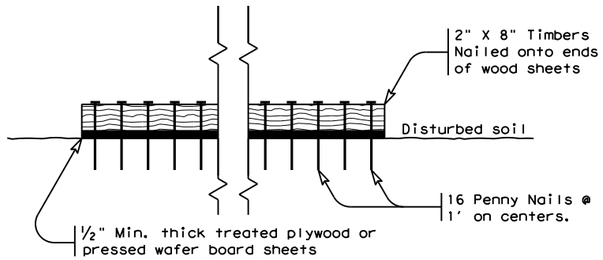
PLAN VIEW



PLAN VIEW



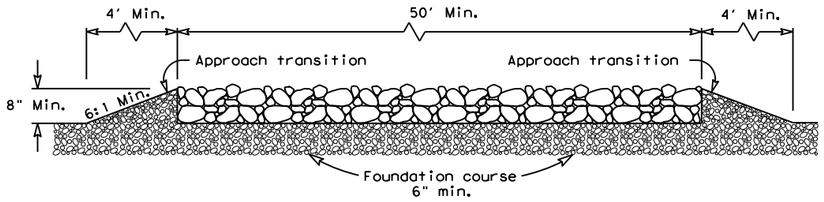
PLAN VIEW



SECTION A-A

CONSTRUCTION EXIT (TYPE 3)

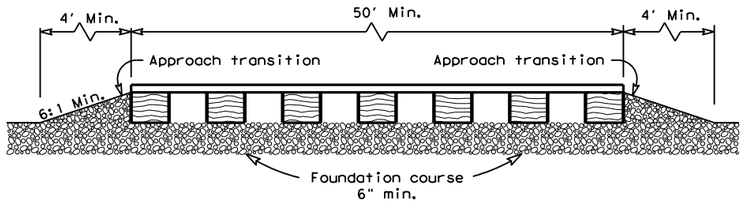
SHORT TERM



ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 1)

ROCK CONSTRUCTION (LONG TERM)



ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 2)

TIMBER CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

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

GENERAL NOTES (TYPE 2)

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with ½"x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.

GENERAL NOTES (TYPE 3)

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

Texas Department of Transportation

Design Division Standard

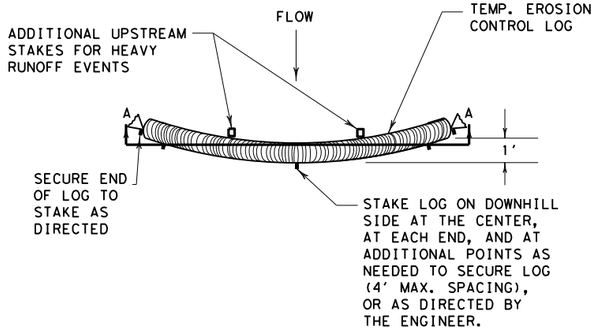
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

CONSTRUCTION EXITS

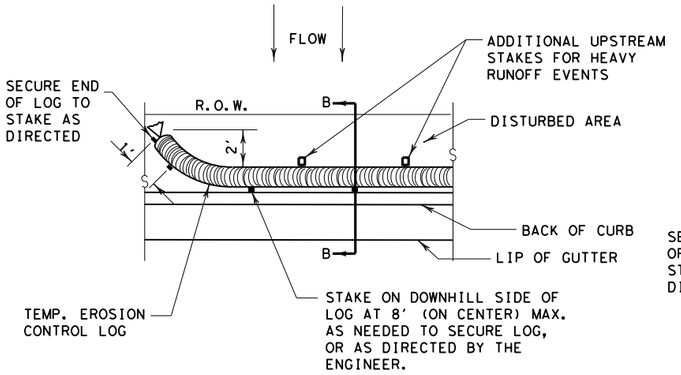
EC(3)-16

FILE: ec316	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
©TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
		WILLIAMSON		73

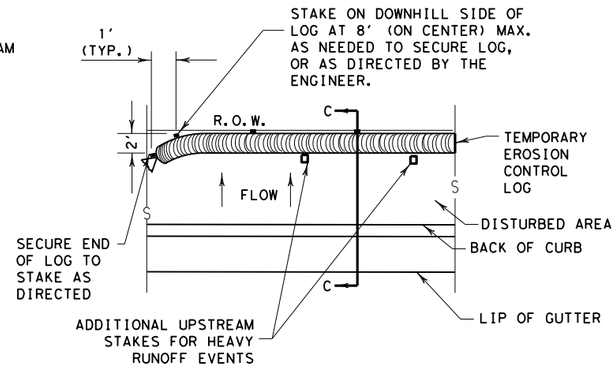
DATE:
FILE:



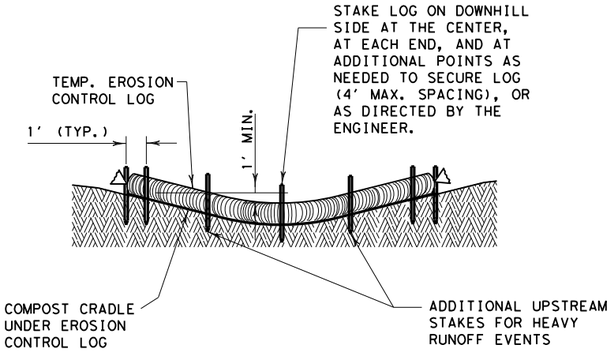
PLAN VIEW



PLAN VIEW



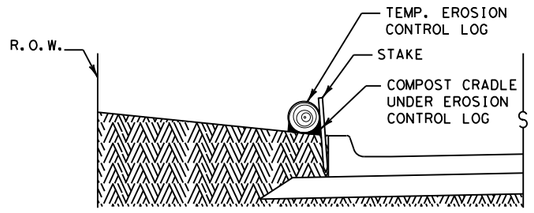
PLAN VIEW



SECTION A-A

EROSION CONTROL LOG DAM

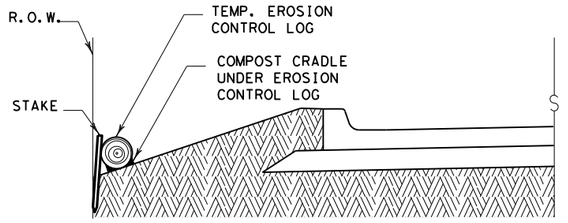
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

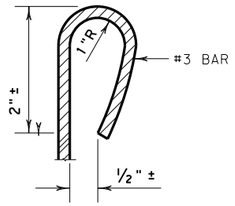
CL-BOC



SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



REBAR STAKE DETAIL

GENERAL NOTES:

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

LEGEND

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

SEDIMENT BASIN & TRAP USAGE GUIDELINES

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

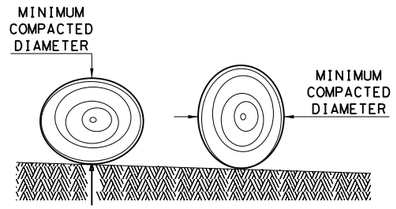
Log Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Control logs should be placed in the following locations:

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

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

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



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

SHEET 1 OF 3

Texas Department of Transportation

Design Division Standard

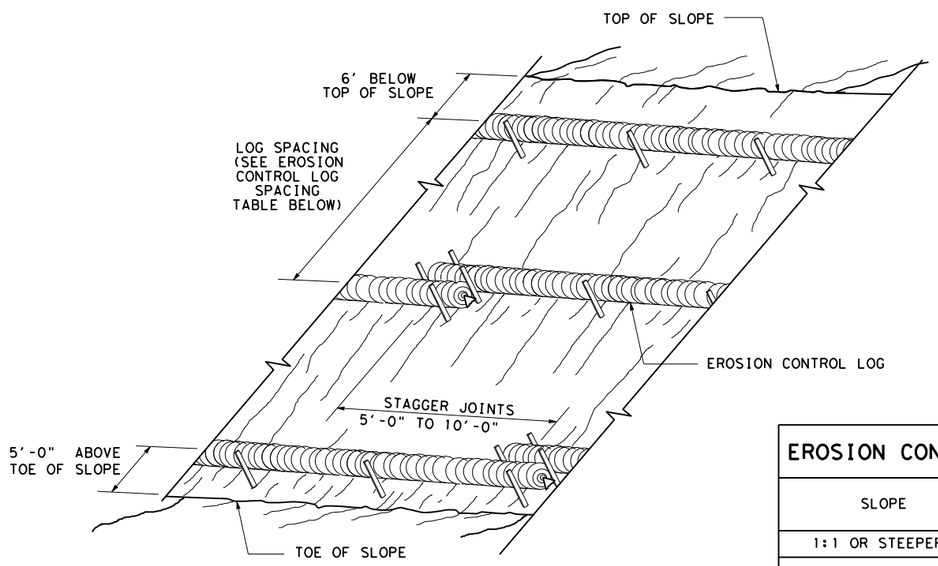
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

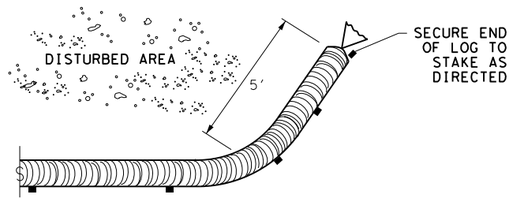
FILE: ec916	DN: TxDOT		CK: KM		DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY	
REVISIONS						
	DIST	COUNTY			SHEET NO.	
		WILLIAMSON			74	

DATE:
FILE:



EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

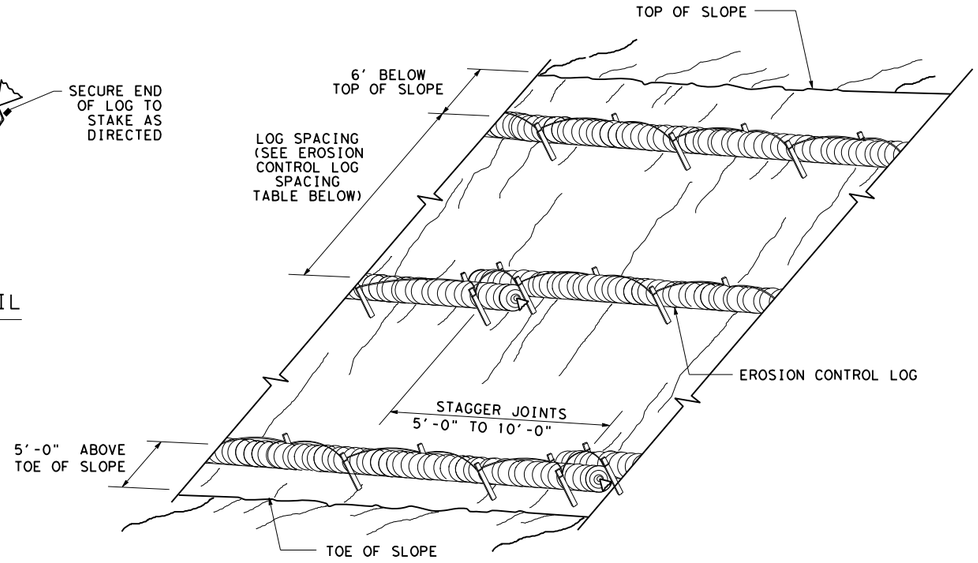
CL-SST



END SECTION RAP DETAIL

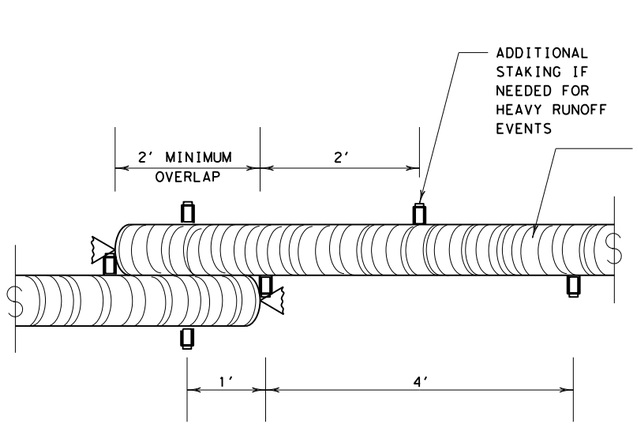
EROSION CONTROL LOG SPACING TABLE				
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

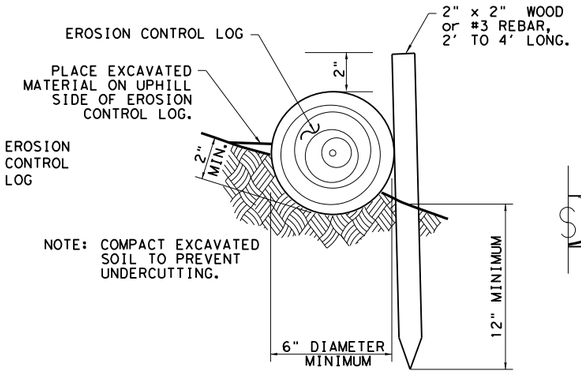
* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:
SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;
HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART



EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING

CL-SSL

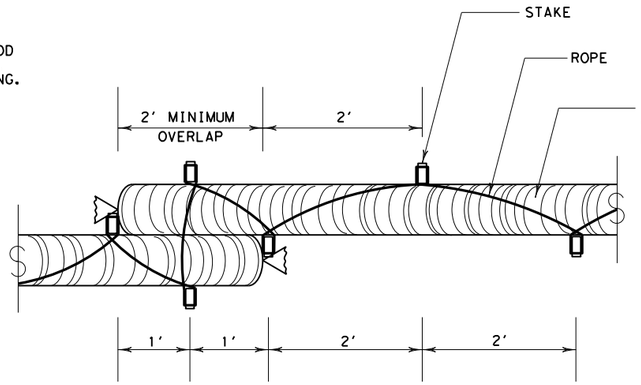


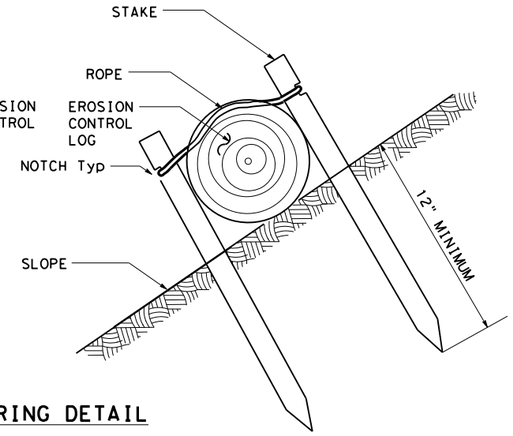


STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

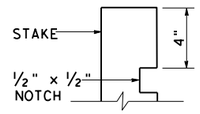
TRENCH DEPTH TABLE	
LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"





STAKE AND LASHING ANCHORING DETAIL

CL-SSL



STAKE NOTCH DETAIL

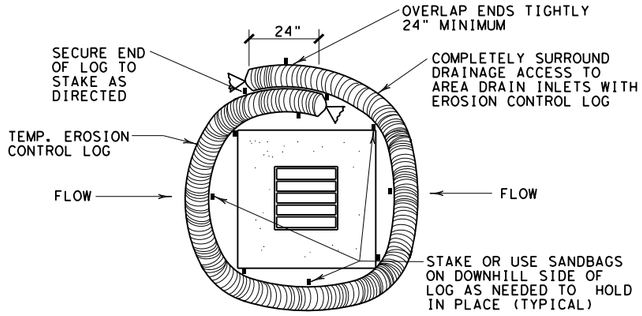
Texas Department of Transportation

Design Division Standard

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

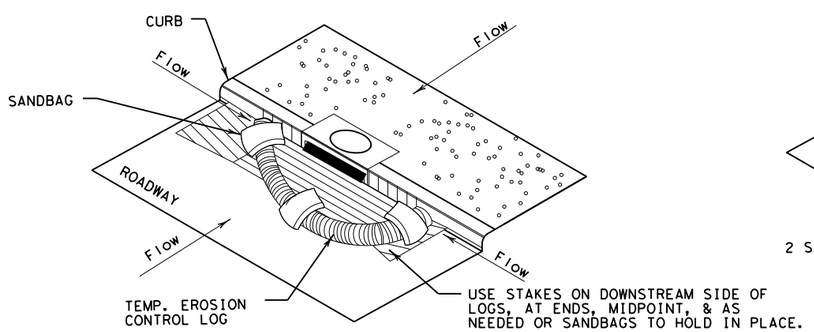
FILE: ec116	DN: TxDOT		CK: KM	DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS					
	DIST	COUNTY			SHEET NO.
		WILLIAMSON			75

DATE:
FILE:



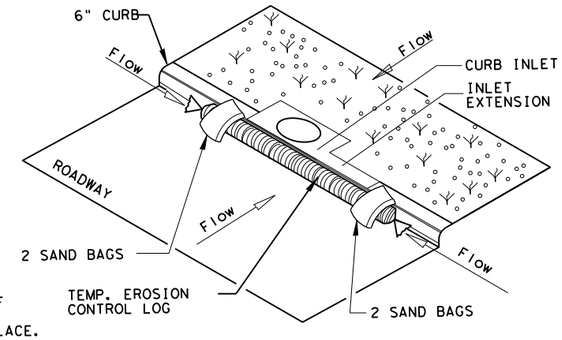
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

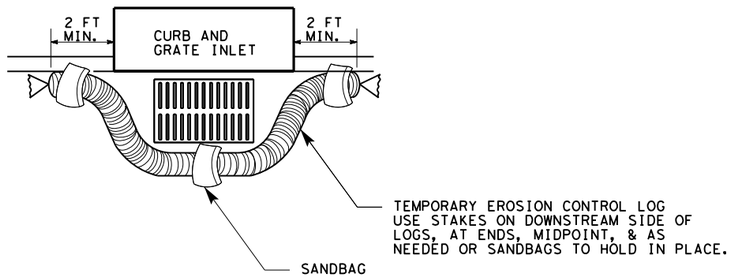
CL-CI



EROSION CONTROL LOG AT CURB INLET

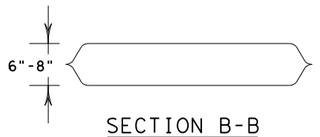
CL-CI

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

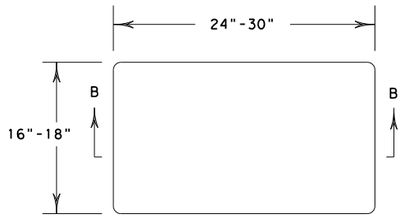


EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI



SECTION B-B



SANDBAG DETAIL

SHEET 3 OF 3

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT		CK: KM	DW: LS/PT		CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY	
REVISIONS						
	DIST	COUNTY				SHEET NO.
		WILLIAMSON				76

The following TCEQ requirements (Form TCEQ-0592, Rev. 7/15/15) are applicable to all work in the recharge zone of the Edwards Aquifer in Hays, Travis and/or Williamson Counties and must be adhered to by the Contractor and all Subcontractors:

1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any regulated 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 must be provided with complete copies of the approved Water Pollution Abatement Plan (WPAP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.

3. If any sensitive feature(s) (caves, solution cavity, sink hole, etc.) is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. Construction activities may not be resumed until the TCEQ has reviewed and approved the appropriate protective measures in order to protect any sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality.

4. No temporary or permanent hazardous substance storage tank shall be installed within 150 feet of a water supply source, distribution system, well, or sensitive feature.

5. 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 approved plans and 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.

6. 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.

7. Sediment must be removed from the sediment traps or sedimentation basins not later thanwhen it occupies 50% of the basin's design capacity.

8. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from being discharged offsite.

9. All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.

10. If portions of the site will have a temporary or permanent cease in construction activity lasting longer than 14 days, soil stabilization 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.

11. The following records shall 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.

12. The holder of any approved Edward Aquifer protection plan 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 water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
    B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
    C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

TCEQ REGIONAL OFFICE

Austin Regional Office
12100 Park 35 Circle
Bldg A, Room 179
Austin, Texas 78753
Phone: (512) 339-2929
Fax: (512) 339-3795

Texas Department of Transportation | Austin District Standard

TCEQ REQUIREMENTS FOR THE RECHARGE ZONE OF THE EDWARDS AQUIFER

TCEQ-RZ-19(AUS)

REVISIONS
01/10/14: REQUIREMENTS AND ADDRESS UPDATED
01/21/16: REQUIREMENTS UPDATED
09/24/19: UPDATED RELEASE YEAR

CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.
	WILLIAMSON		77