City of Round Rock

ROUND ROCK TEXAS

SUBMITTAL FOR:

CHISHOLM TRAIL ROAD

WATER POLLUTION ABATEMENT PLAN

(Recharge Zone Plan)

Texas Commission on Environmental Quality

TCEQ

PREPARED BY:

BGE, Inc.

(TBPE Registered Firm #1046)

BGE

February 2024

GENERAL INFORMATION FORM

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: Chisholm Trail Road						**2. Regulated Entity No.:**			
3. Customer Name: City of Round Rock						**4. Customer No.:**			
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):**			6.48
9. Application Fee:	$5,000		**10. Permanent BMP(s):**			Stormtrooper			
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**			N/A			
13. County:	Williamson		**14. Watershed:**			Chandler Branch-Brushy Creek, Lake 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.)	___	___	X
Region (1 req.)	___	___	X
County(ies)	___	___	X
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 _X_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.
Md Kamrul Islam, P.E.
Print Name of Customer/Authorized Agent
Signature of Customer/Authorized Agent Date: 02/08/2024

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):	

EDWARDS AQUIFER PROTECTION PROGRAM
ROADWAY APPLICATION

Edwards Aquifer Protection Program Roadway Application

Texas Commission on Environmental Quality

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

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

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

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

Signature

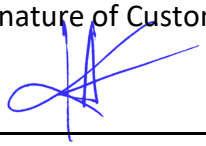
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer.

The application was prepared by:

Print Name of Customer/Agent: Md Kamrul Islam

Date: 02/08/2024

Signature of Customer/Agent:



Project Information

1. Regulated Entity (Project) Name: Chisholm Trail Road
2. County: Williamson
3. Stream Basin(s): Chandler Branch-Brushy Creek, Lake Creek-Brushy Creek
4. Groundwater Conservation District (if applicable): N/A
5. Customer (Applicant):

   Contact Person: Gary Hudder
   Entity: City of Round Rock
   Mailing Address: 3400 Sunrise Road
   City, State: Round Rock, TX Zip: 78665
   Telephone: 512-218-5560
   Email Address: ghudder@roundrocktexas.gov

6. Agent (Representative):

   Contact Person: Md Kamrul Islam
   Entity: BGE, Inc.
   Mailing Address: 101 W Louis Henna Blvd Suite 400
   City, State: Austin, TX Zip: 78728
   Telephone: 512-795-1432
   Email Address: kislam@bgeinc.com

7. Landowner of R.O.W. (Right of Way)
   Person or entity responsible for maintenance of water quality Best Management Practices (BMPs), if not applicant.

   Contact Person: _____
   Entity: _____
   Mailing Address: _____
   City, State: _____ Zip: _____
   Telephone: _____
   Email Address: _____

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

   ☒ Survey marking will be completed by this date: September 2022

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

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

    ☒ Project site boundaries
    ☒ USGS Quadrangle Name(s)
    ☐ All drainage paths from site to surface waters

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

    ☒ Recharge Zone (RZ)
    ☐ Contributing Zone (CZ)
    ☐ Transition Zone (TZ)
    ☐ Contributing Zone within Transition Zone (CZ/TZ)
    ☐ Zone not regulated by EAPP

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

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

13. Existing project site conditions are noted below:

    ☒ Existing paved and/or unpaved roads
    ☐ Undeveloped (Cleared)
    ☐ Undeveloped (Undisturbed/Not cleared)
    ☐ Existing commercial site
    ☐ Existing industrial site
    ☐ Existing residential site
    ☐ Other: _____

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

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

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

    ☐ Concrete
    ☒ Asphaltic concrete pavement
    ☐ Permeable Friction Course (PFC)
    ☐ Other: _____

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

    R.O.W. for project: 6.48 (ac.)
    Length: 2960 ft.
    Width: varies from 85 ft. to 125 ft.
    Impervious cover (IC): 4.73 (ac.)
    Total of Pavement area 4.73 (ac.) ÷ R.O.W. area 6.48 (ac.) x 100 = 73% IC.

    ☒ CAD program was used to determine areas.
    ☒ Number of travel lanes: proposed: 5,6, existing: 2,3
    ☒ Typical widths of lanes: 12.5 (ft.)
    ☒ Are intersections also being improved? (Y/N) Y

Site Plan Requirements

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

18. ☒ The Site Plan must have a minimum scale of 1" = 400'.
    Site Plan Scale: 1" = 200'

19. 100-year floodplain boundaries:

    ☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled. The 100-year floodplain boundaries are based on the following specific (including date of material) source(s):_____.

    ☒ No part of the project site is located within the 100-year floodplain.

20. ☒ A layout of the development with existing and finished contours at appropriate, but not greater than ten-foot contour intervals is shown. Sensitive features, lots, wells, buildings, roads, culverts, etc. are shown on the site plan.

21. ☐ A figure (map) indicating all paths of drainage from the site to surface waters.

    ☐ Name all stream crossings: _____
    ☐ Drainage patterns and approximate slopes.
    ☒ There will be no discharge to surface waters.

22. ☒ Distinguish between areas of soil disturbance and areas which will not be disturbed.

23. ☒ Show locations of major structural and nonstructural controls. These are the temporary and permanent best management practices. Include the following:

    ☐ Show design and location of any hazardous materials traps.
    ☐ Show design at outfalls of major control structures and conveyances.
    ☒ A description of the BMPs and measures that prevent pollutants from entering surface streams.

24. Show locations of staging areas or project specific locations (PSL). Are they:

    ☒ Onsite, within project R.O.W.
    ☐ Offsite.
    ☐ Not yet determined. (Requires future authorization)

25. ☒ Show locations where soil stabilization practices are expected to occur.

26. ☒ Show surface waters (including wetlands).

27. Temporary aboveground storage tank facilities:

    ☐ Temporary aboveground storage tank facilities will be located on this site. Show on site plan.
    ☒ Temporary aboveground storage tank facilities will not be located on this site.

28. ☒ Plan(s) also include:

    ☐ Sidewalks
    ☒ Shared-use paths
    ☐ Related turn lanes
    ☐ Off-site improvements and staging areas
    ☐ Demolition plans
    ☐ Utility relocations
    ☐ Other improved areas: _____

Permanent Best Management Practices (BMPs)

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

29. ☒ Permanent BMPs and measures have been designed, and will be constructed, operated, and maintained to ensure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance accepted by the executive director.

    ☒ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

    ☐ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used: _____

30. ☒ **Attachment E - BMPs for Upgradient (Offsite) Stormwater.**

    ☐ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.

    ☐ No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.

    ☒ Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

31. ☒ **Attachment F - BMPs for On-site Stormwater**.

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

    ☐ Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

32. ☒ **Attachment G - Construction Plans**. Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. Construction plans for the proposed permanent BMPs and measures are attached and include all proposed structural plans and specifications, and appropriate details.

    ☒ Major bridge cross-sections, and roadway plan and profiles

    ☒ BMP plans and details

    ☒ Design calculations

    ☐ Erosion control

    ☒ TCEQ Construction Notes

    ☒ SW3P

    ☐ EPIC, as necessary

33. ☒ **Attachment H - Inspection, Maintenance, Repair and Retrofit Plan**. A site and BMP specific plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan fulfills all the following:

    ☐ Prepared and certified by the engineer designing the permanent BMPs and measures.
    ☐ Signed by the owner or responsible party.
    ☒ Outlines specific procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofit.
    ☒ Contains a discussion of recordkeeping procedures.

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

    ☒ N/A

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

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

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

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

    ☐ Yes

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

Stormwater to be generated by the Proposed Project

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

37. ☒ The site description, controls, maintenance, and inspection requirements for the Storm Water Pollution Prevention Plan (SWPPP or SW3P) developed under the Texas Pollutant Discharge Elimination System (TPDES) general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) & §213.5(b) of the technical report.

    ☒ The Temporary Stormwater Section (TCEQ-0602) is included with the application.
    ☐ The SWPPP (SW3P) will serve as the Temporary Stormwater Section (TCEQ-0602).

38. ☒ **Attachment K - Volume and Character of Stormwater**. A detailed description of the volume (quantity) and character (quality) of the stormwater runoff expected to occur from the proposed project is attached. The estimates of stormwater runoff quality and quantity are based on area and type of impervious cover.

    ☒ Include the pre-construction runoff coefficient.
    ☒ Include the post-construction runoff coefficient.

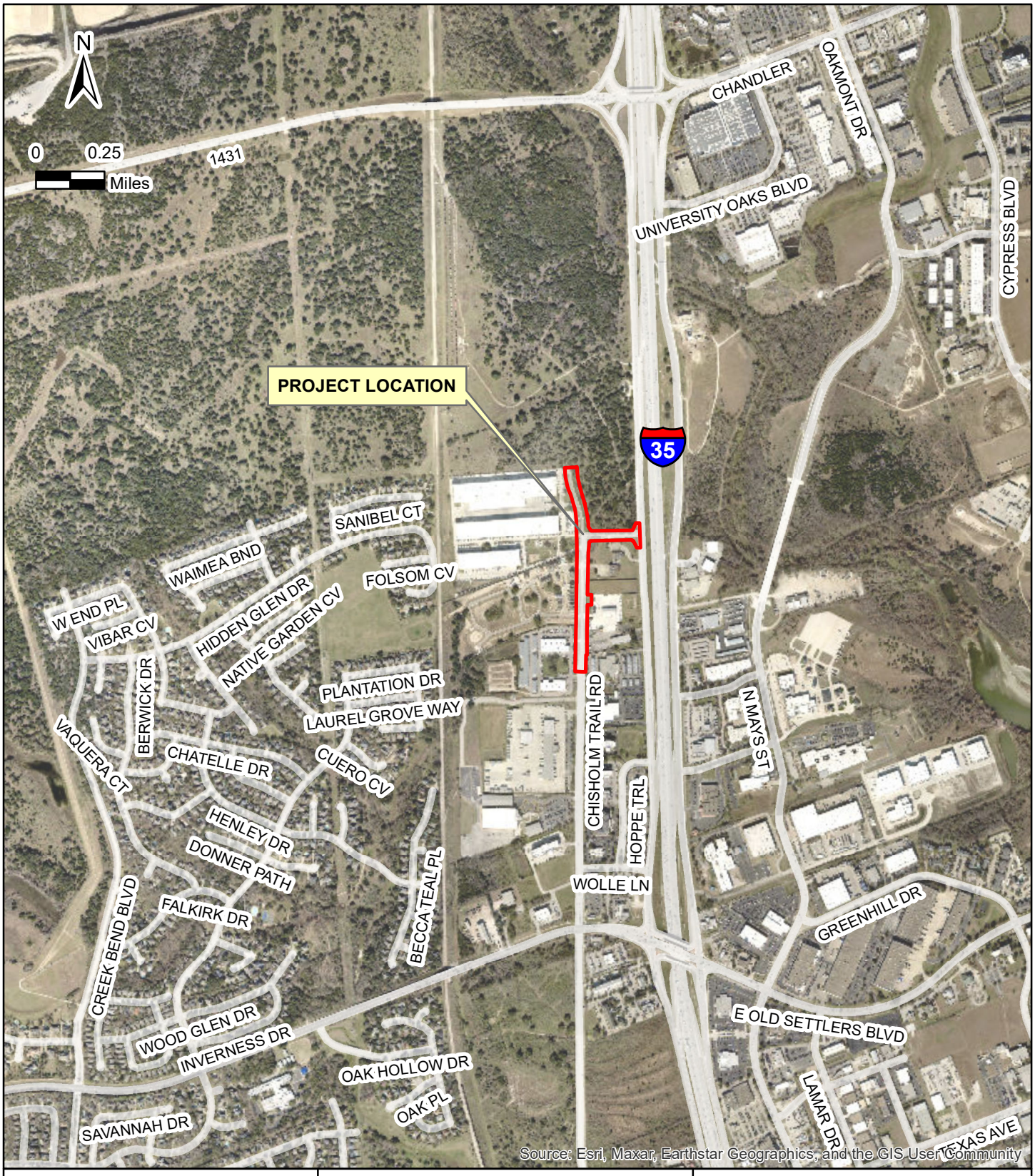
Administrative Information

39. ☒ Submit one (1) original and one (1) copy of the application, plus one electronic copy as needed, for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ is required to distribute the additional copies to these jurisdictions.

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

    ☒ The total R.O.W. (as in Item 17).

    ☐ TxDOT roadway project.



BGE

TCEQ

ROUND ROCK TEXAS

Chisholm Trail Road

WILLIAMSON COUNTY, TEXAS

ATTACHMENT A
ROAD MAP

Sheet 01 of 01

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

The National Map US Topo

ROUND ROCK QUADRANGLE
TEXAS - WILLIAMSON COUNTY
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

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, September 2016 - November 2016
Roads.....U.S. Census Bureau, 2015
Names.....GNIS, 1979 - 2018
Hydrography.....National Hydrography Dataset, 2002 - 2011
Contours.....National Elevation Dataset, 2002 - 2004
Boundaries.....Multiple sources; see metadata file 2016 - 2017

Wetlands.....FWS National Wetlands Inventory 1982

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
MN
GN
3°39′ 65 MILS
0°40′ 12 MILS

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

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

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 0.6.18

TEXAS
QUADRANGLE LOCATION

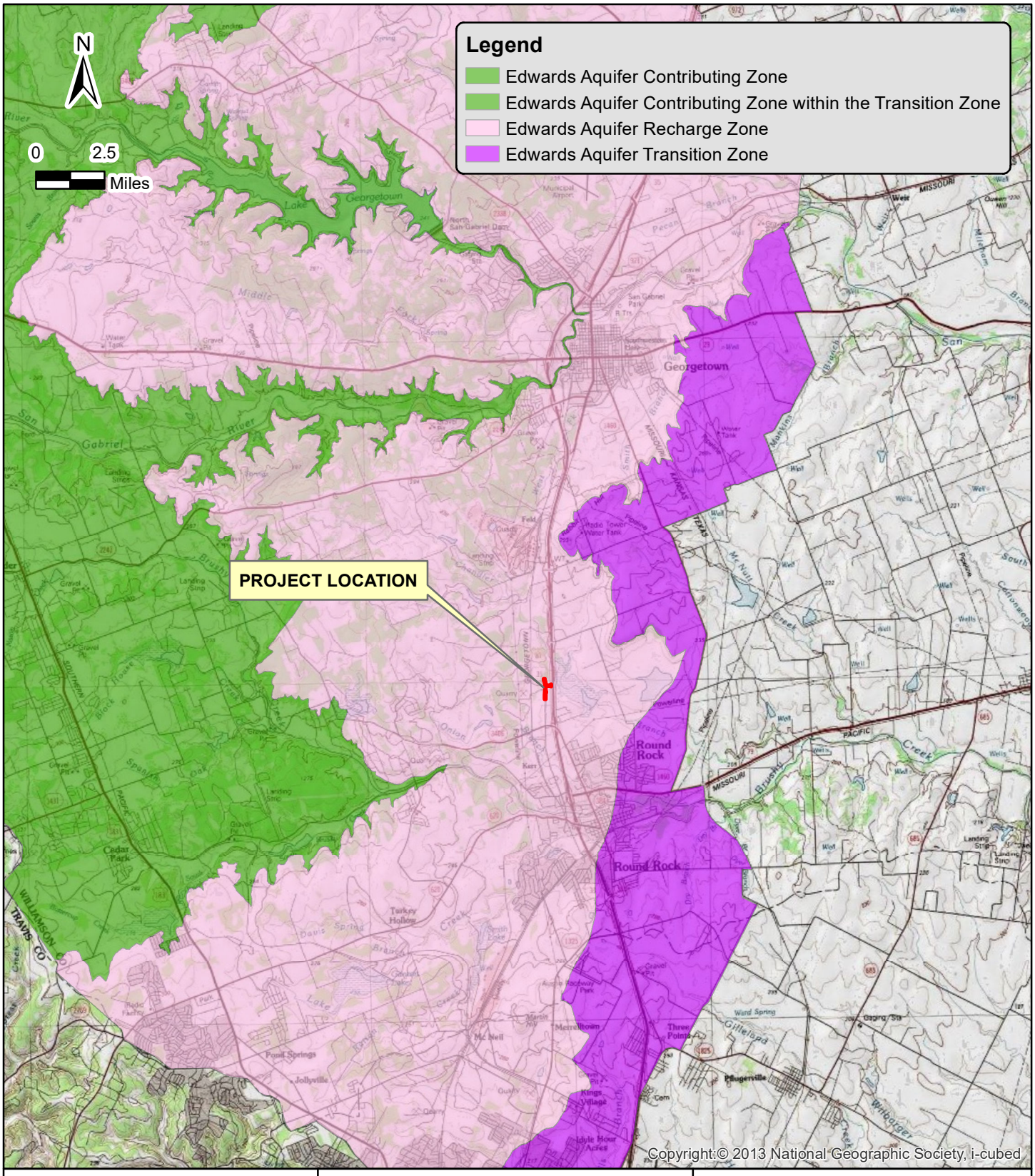
1	2	3
4		5
6	7	8

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

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

ATTACHMENT B
USGS/Edwards Recharge Zone Map
Sheet 01 of 02
ROUND ROCK, TX
2019

NSN 7643016398009
NGA REF NO. USGSX24K71453



BCE

TCEQ

ROUND ROCK TEXAS

Chisholm Trail Road

WILLIAMSON COUNTY, TEXAS

ATTACHMENT B

USGS/Edwards Recharge Zone Map

Sheet 02 of 02

Attachment C - Project Description

The project consists of widening and reconstruction of Chisholm Trail Road from 0.4 miles north of Old Settlers Blvd to the IH 35 southbound frontage road. Reconstruction is proposed for approximately 0.4 miles of the existing 2-lane roadway section to a 5-lane urban facility, and reconstruction/widening is proposed for the connection to the IH 35 southbound frontage road.

A total of 8.41 acres of drainage basins exit the site from two outfalls; 6.48 acres accounts for the area within the project limits and 1.93 acres are from off-site drainage areas. There are 2.57 acres of existing impervious cover in these basins, with 2.19 acres of that being on-site. There are 5.17 acres of total proposed impervious cover in these basins, 4.79 acres of which will be on-site. Existing impervious cover includes a mix of 2-lane, 3-lane, and 5-lane roadway segments that have a shared use path (SUP). The proposed impervious cover will consist of streets, sidewalks, and concrete ditches. The demolition and construction phases for the project are included in the Traffic Control Plans (TCP) provided in Section 04 – Attachment 5.

Runoff captured by the proposed storm sewer system will be treated with a Stormtrooper before connecting with existing drainage structures/conveyance systems.

Chisholm Trail Road is located within the Edward's Aquifer Recharging Zone. It is not located within the FEMA 100-yr Floodplain in accordance with Flood Insurance Rate Map (FIRM) Panel No. 48491C0487F, effective date December 20, 2019.

Attachment D – Factors Affecting Surface Water Quality

Multiple factors have the potential of affecting surface water quality during construction. These include oil, grease, gas, transmission fluids, and/or other vehicular fluids, as well as shifts in sediment that will occur during excavation and fill operations. Upon completion of construction, normal traffic on the site could be responsible for many of these same pollutants.

Attachment – Site Plan

The site plan is attached on the following pages.

CHISHOLM TRAIL RD
BEGIN PROJECT
BEGIN MILL & OVERLAY
STA 6+57.42

END MILL & OVERLAY
BEGIN RECOSTRUCT ROADWAY
STA 14+17.50

CHISHOLM TRAIL RD
END PROJECT
END RECONSTRUCT
ROADWAY
STA 34+17.86

CHISHOLM TRAIL RD

5+00
10+00
15+00
20+00
25+00
30+00

EXIST EOP
PROP EOP
EXIST EOP
PROP EOP
PROP BMP:
STORMTROOPER
PROP EOP
EXIST EOP
GEOLOGIC FEATURE
MH-7
PROP EOP

GEOLOGIC FEATURE
W-1
GEOLOGIC FEATURE
MH-1
GEOLOGIC FEATURE
MH-2
GEOLOGIC FEATURE
MH-3

CR 173
00+00
105+00

EXIST EOP
PROP EOP
PROP EOP
EXIST EOP
GEOLOGIC FEATURE
MH-4
PROP EOP
PROP BMP:
STORMTROOPER
GEOLOGIC FEATURE
MH-6
GEOLOGIC FEATURE
MH-5

CR 173
END PROJECT
END RECONSTRUCT
ROADWAY
STA 105+57.72

IH 35 CORRIDOR

0 100 200
SCALE: 1"=200'

LEGEND

MILL & OVERLAY

STATE OF TEXAS
MD KAMRUL ISLAM
126996
LICENSED
PROFESSIONAL ENGINEER
11/20/2023

NO.	DATE	REVISION	APPROVED

ROUND ROCK TEXAS

BGE, Inc.
101 W. Louis Henna Blvd., Suite 400
Austin, TX 78728
Tel: 512-879-0400 • www.bgeinc.com
TBPE Registration No. F-1046

CHISHOLM TRAIL RD

PROJECT LAYOUT

SHEET 1 OF 1

DESIGNED BY:	EB	3
DRAWN BY:	EB	
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Attachment E – BMPs for Upgradient Stormwater

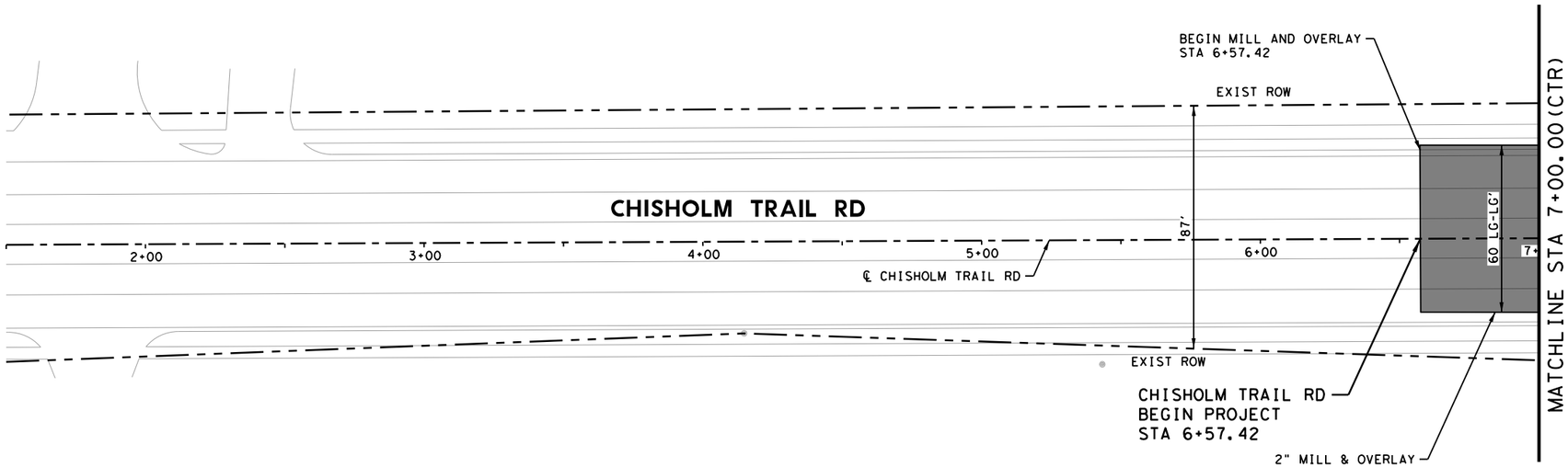
There are no permanent BMPs proposed specifically for upgradient stormwater. The condition of the land to the upgradient side of this project is commercial and the right-of-way is grass-lined channels which provides some natural filtration of suspended solids as water flows through it. All the disturbed right-of-way adjacent to the new road structure will be revegetated.

Attachment F – BMPs for On-site Stormwater

The onsite stormwater will occur in two forms: 1) runoff from the proposed road and 2) runoff from the roadside ditches. Runoff from the proposed road will be collected and conveyed by the storm sewer system and then treated with the StormTrooper AQ before continuing to an existing system or being discharged to a concrete channel. Runoff from the grassy swales will be channelized and collected in the proposed storm sewer systems. The StormTrooper AQ is the proposed permanent BMP for this project.

Attachment G – Construction Plans

The construction plans and design calculations are attached in the following pages.



LEGEND:

- EXISTING SIGN
- DIRECTION OF TRAFFIC
- DW# DRIVEWAY NUMBER
- CURVE # ALIGNMENT CURVE NUMBER
- (A) PROPOSED SHARED-USE PATH
- (B) PROPOSED TY 1 PED RAMP
- (C) PROPOSED TY 7 PED RAMP
- (D) PROPOSED TY 5 PED RAMP
- (E) PROPOSED DRIVEWAY RAMP
- PROPOSED MILL & OVERLAY
- PROPOSED CONCRETE MEDIAN

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2. ALL DIMENSIONS ARE TO FOC UNLESS OTHERWISE NOTED.
3. RAMPS TO DRIVEWAYS SHALL BE CONSTRUCTED AT 8.33% MAX SLOPE FOR ADA COMPLIANCE. ALL DRIVEWAY RAMP CONSTRUCTION IS CONSIDERED SUBSIDIARY TO SIDEWALK CONSTRUCTION.

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SCALE: 1"=50' H
1"=5' V

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CHISHOLM TRAIL RD
ROADWAY
PLAN & PROFILE

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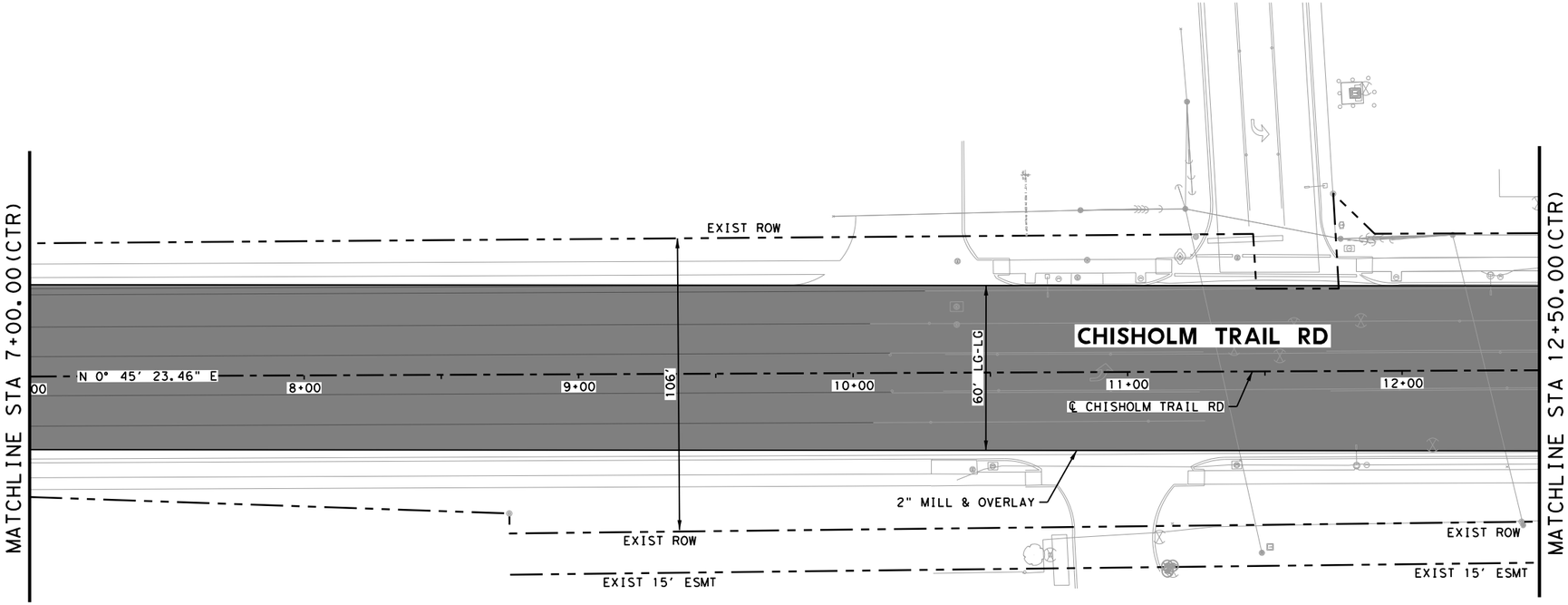

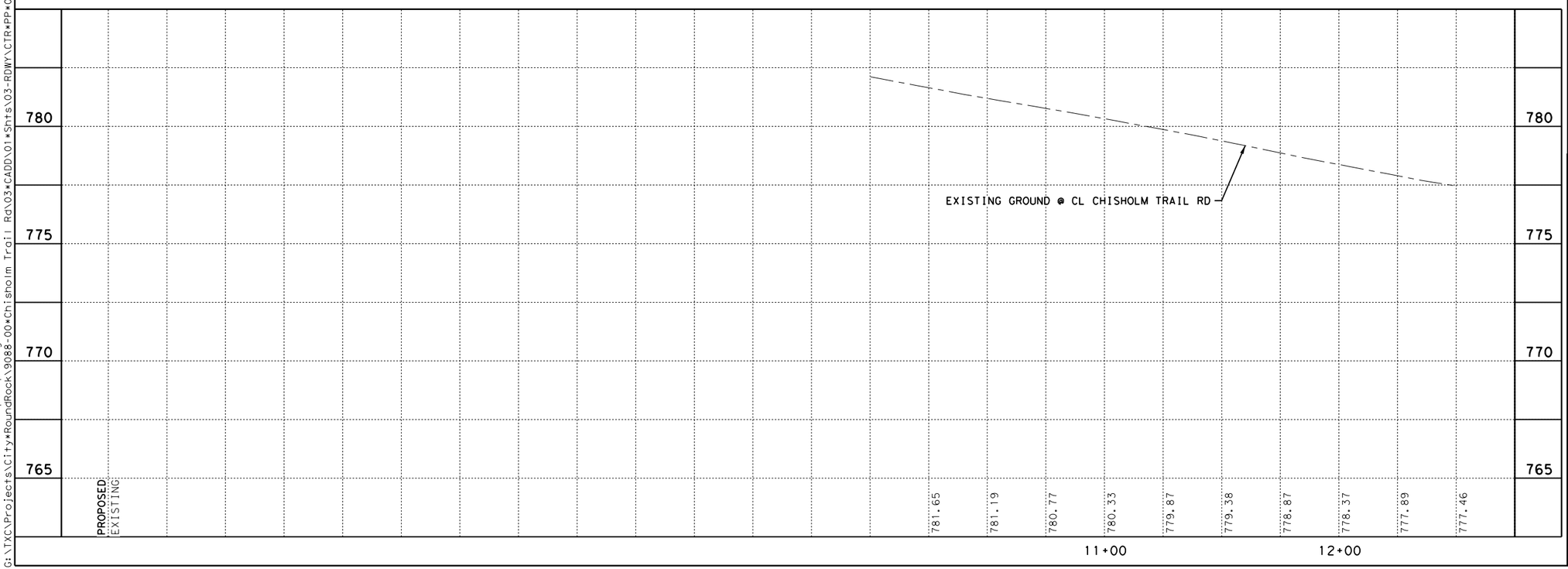

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- DW# DRIVEWAY NUMBER
- CURVE # ALIGNMENT CURVE NUMBER
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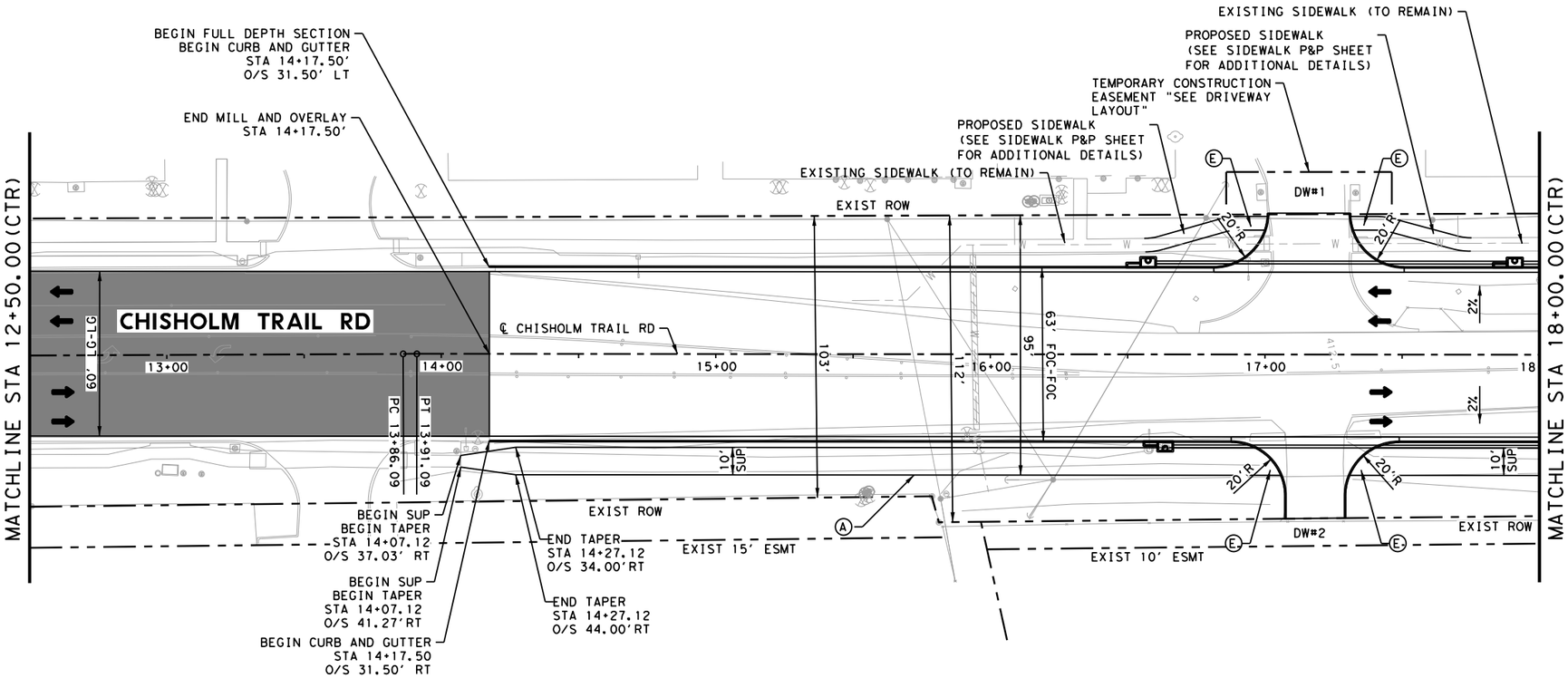

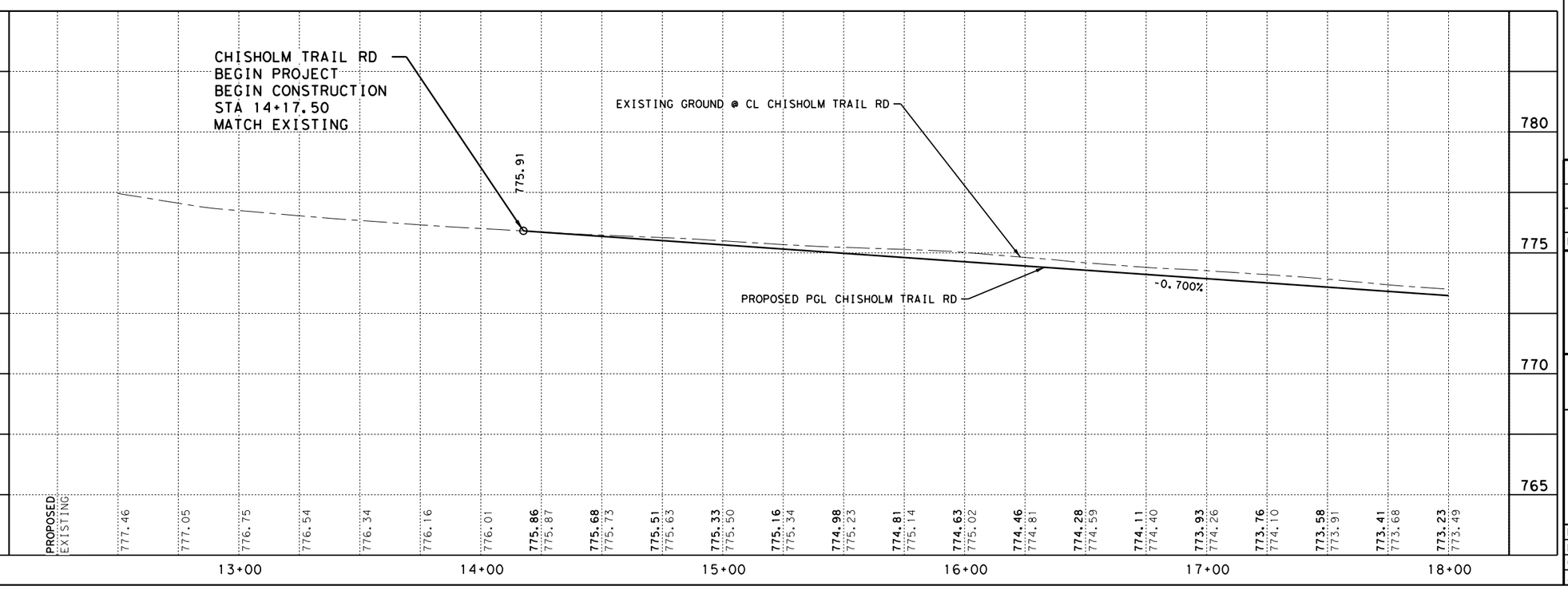

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- EXISTING SIGN
- DIRECTION OF TRAFFIC
- DW# DRIVEWAY NUMBER
- CURVE # ALIGNMENT CURVE NUMBER
- (A) PROPOSED SHARED-USE PATH
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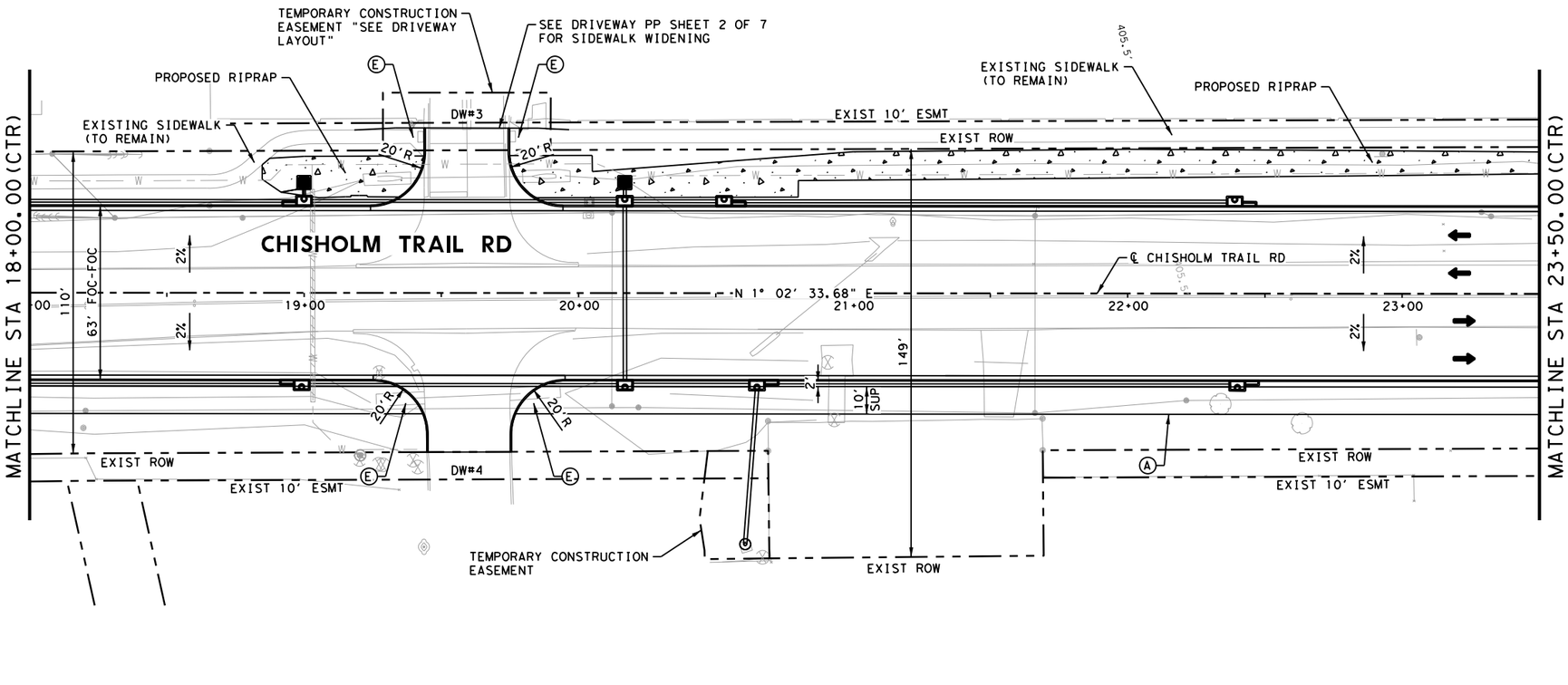

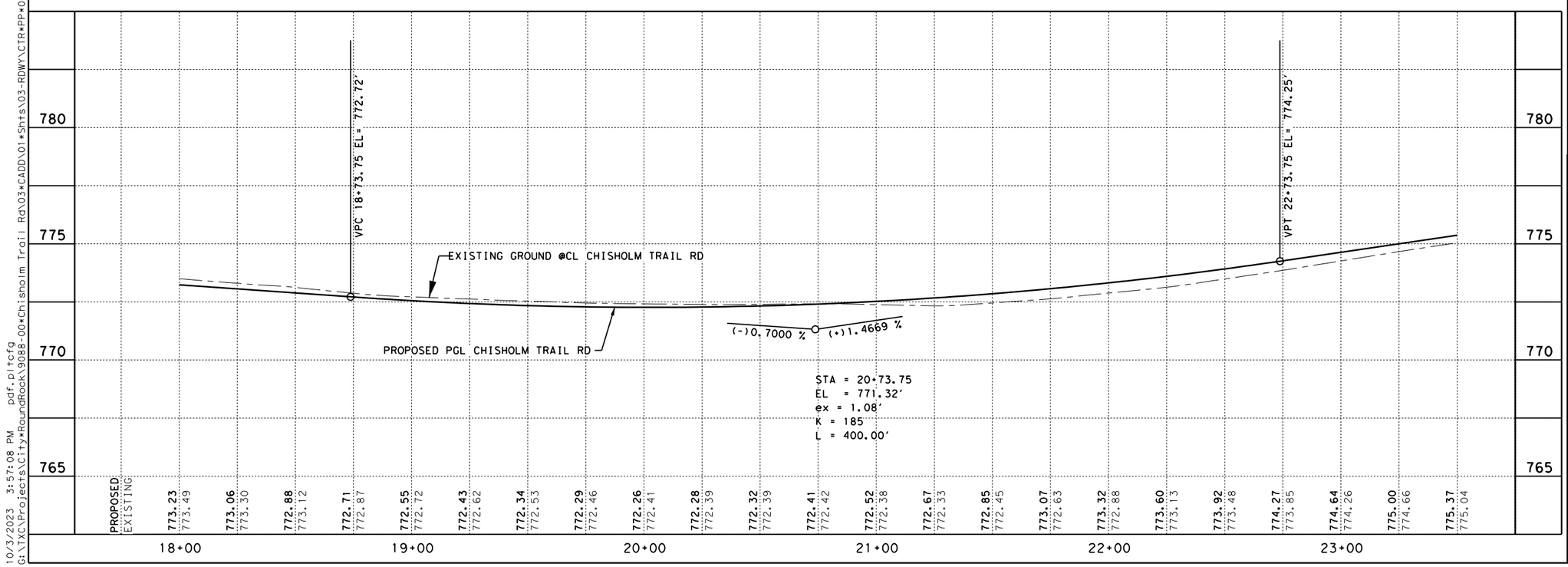

LEGEND:

- EXISTING SIGN
- DIRECTION OF TRAFFIC
- DW# DRIVEWAY NUMBER
- CURVE # ALIGNMENT CURVE NUMBER
- (A) PROPOSED SHARED-USE PATH
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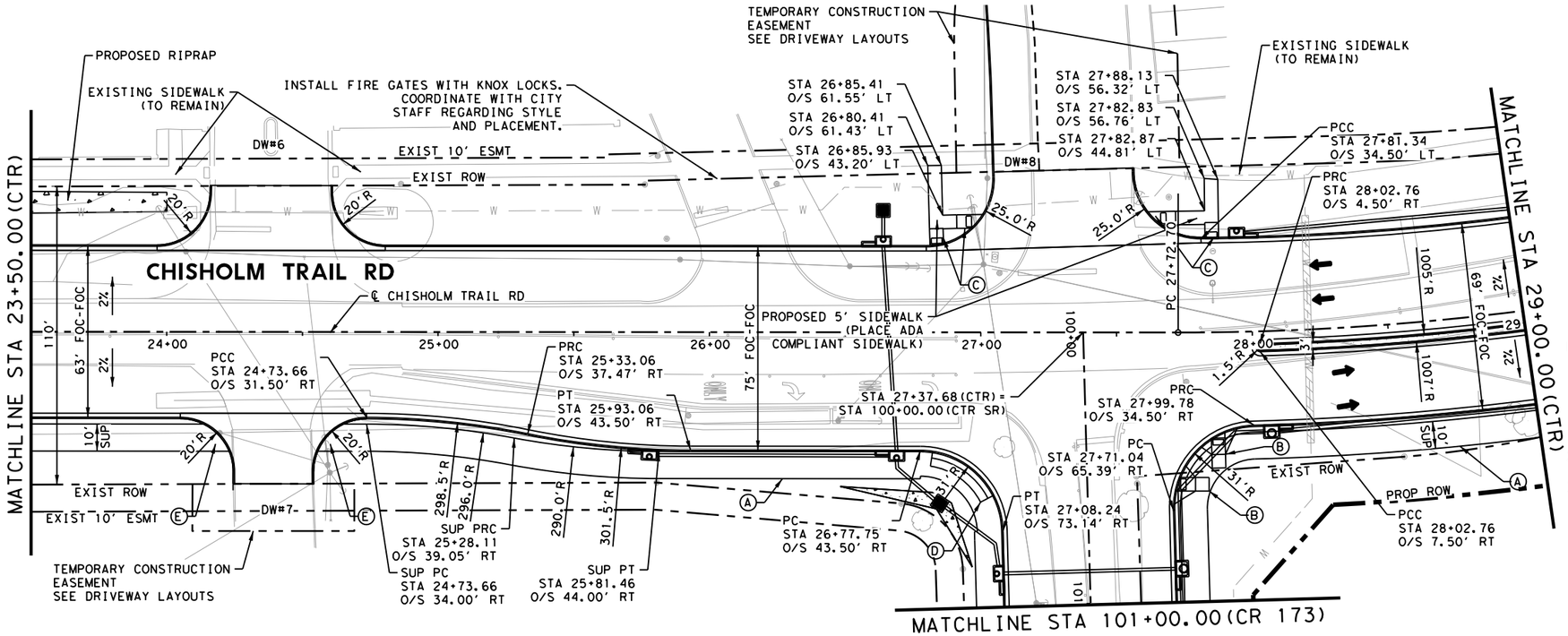

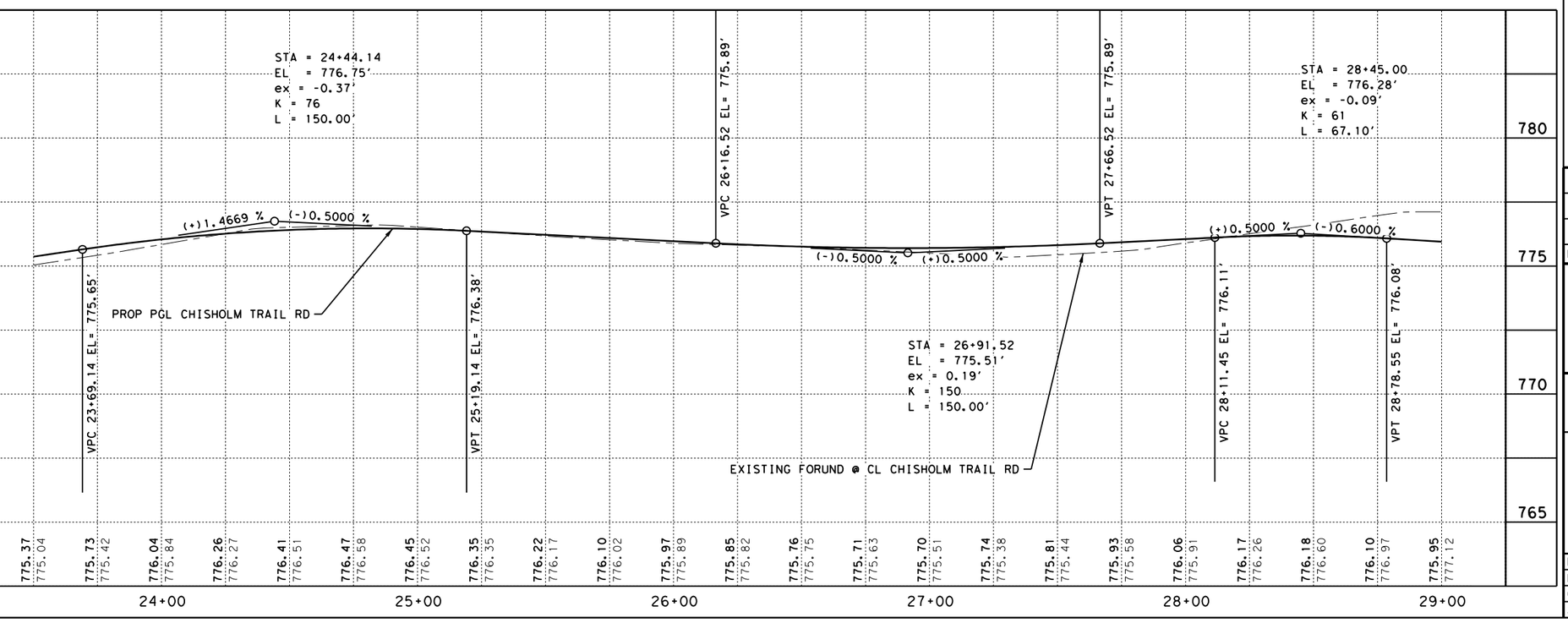

LEGEND:

- EXISTING SIGN
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- DW# DRIVEWAY NUMBER
- CURVE # ALIGNMENT CURVE NUMBER
- Ⓐ PROPOSED SHARED-USE PATH
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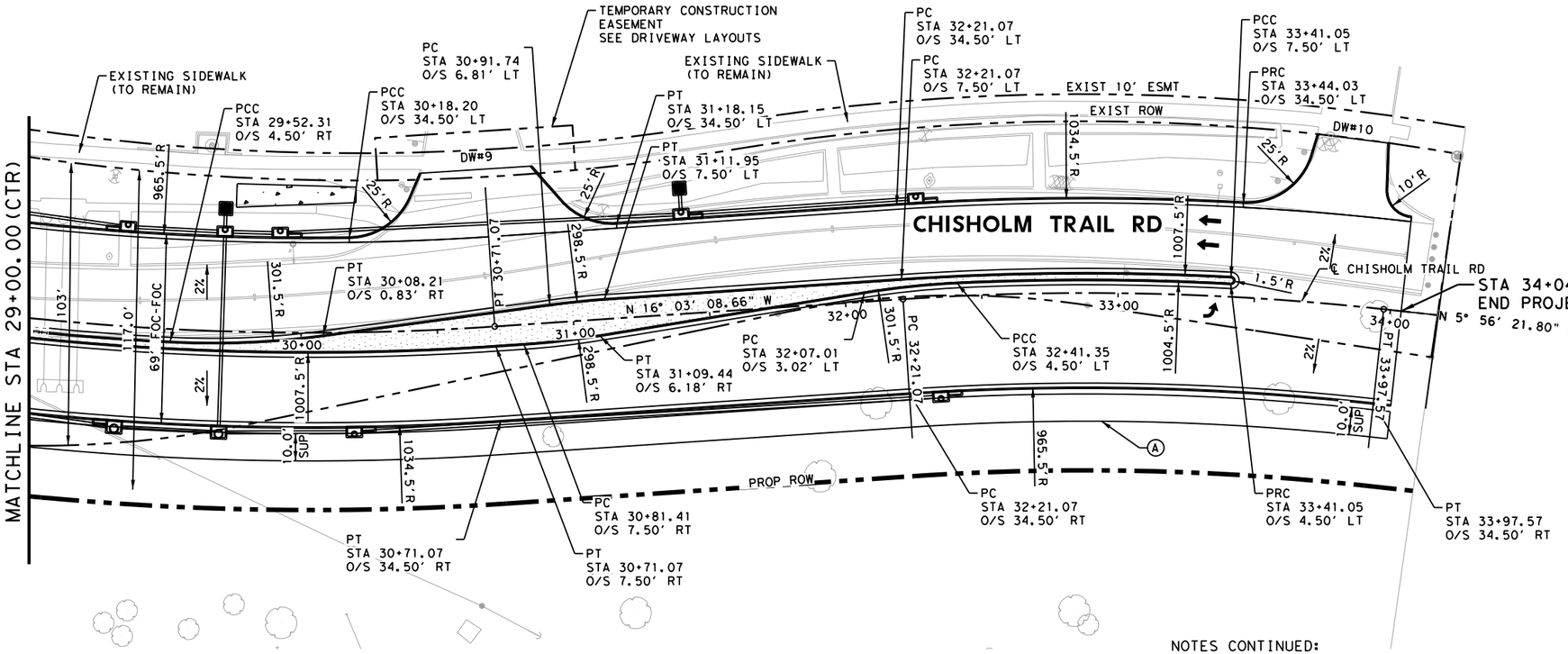

LEGEND:

- EXISTING SIGN
- DIRECTION OF TRAFFIC
- DW# DRIVEWAY NUMBER
- (CURVE #) ALIGNMENT CURVE NUMBER
- (A) PROPOSED SHARED-USE PATH
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NOTES CONTINUED:
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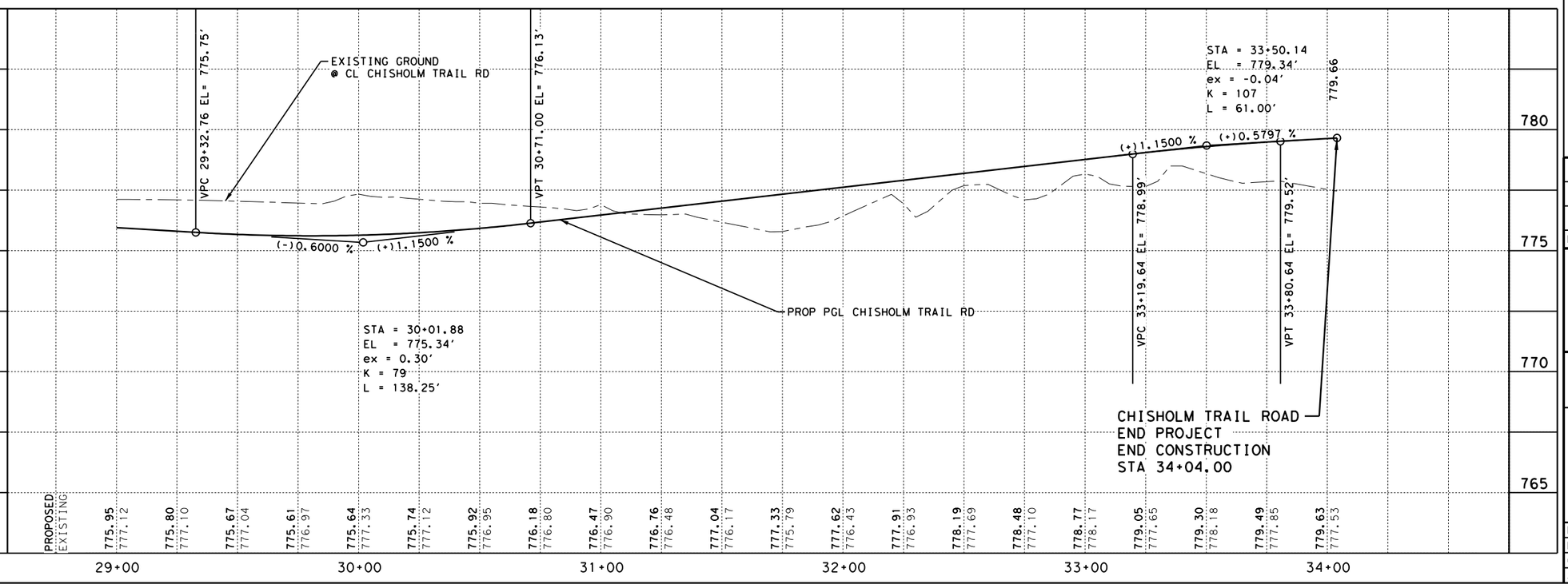

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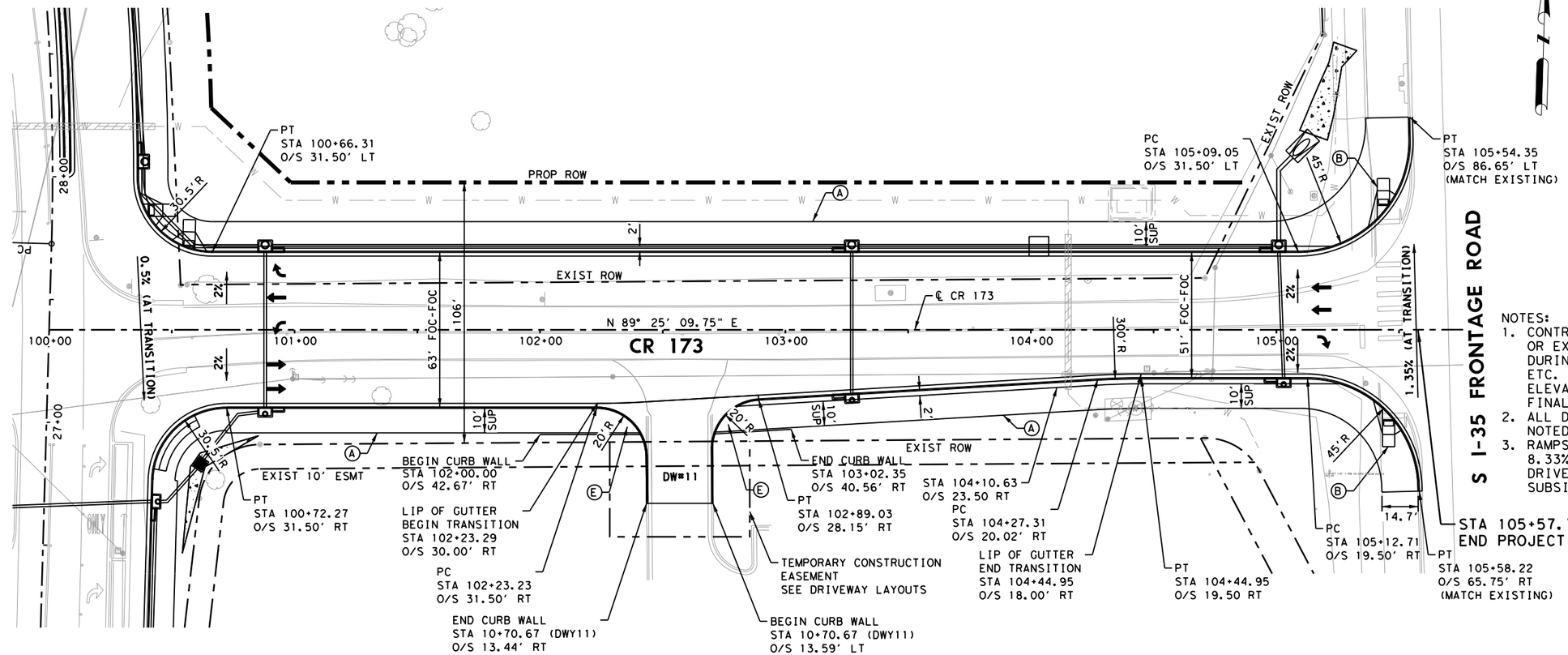

LEGEND:

- EXISTING SIGN
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- (A) PROPOSED SHARED-USE PATH
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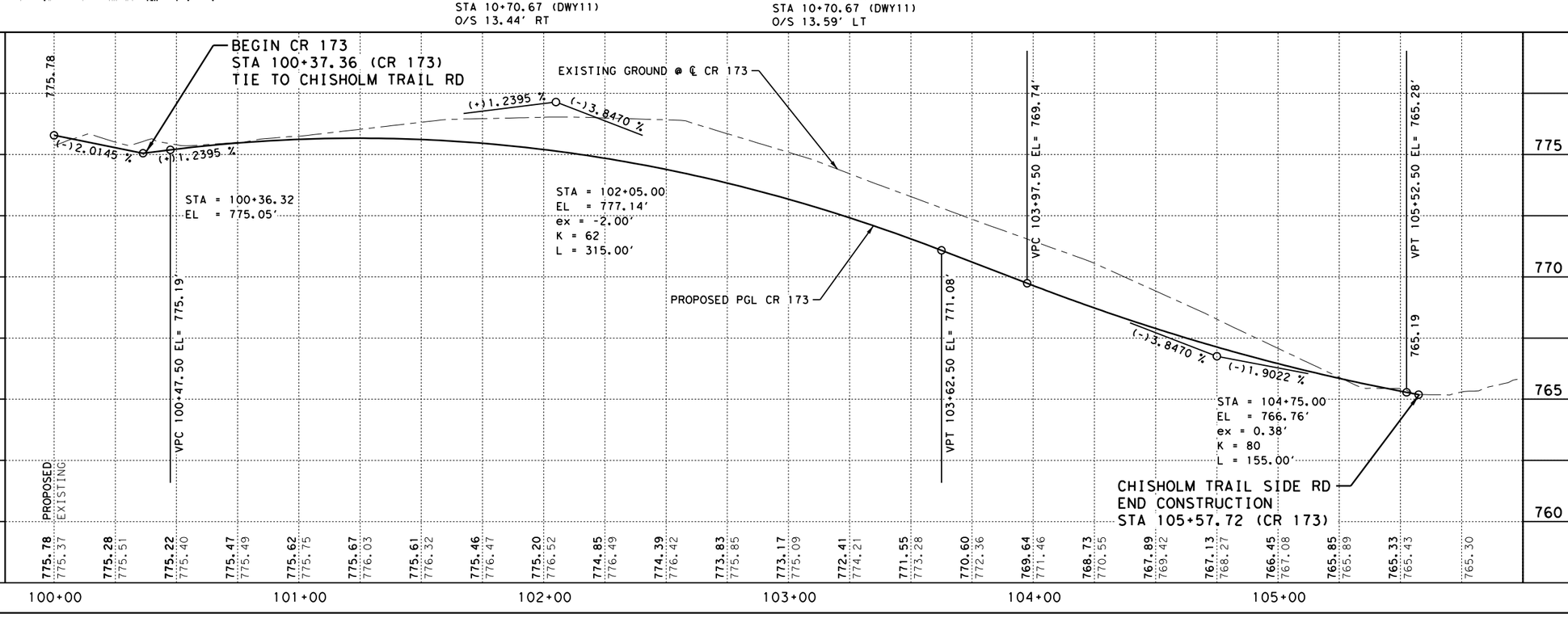
SCALE: 1"=50' H, 1"=5' V



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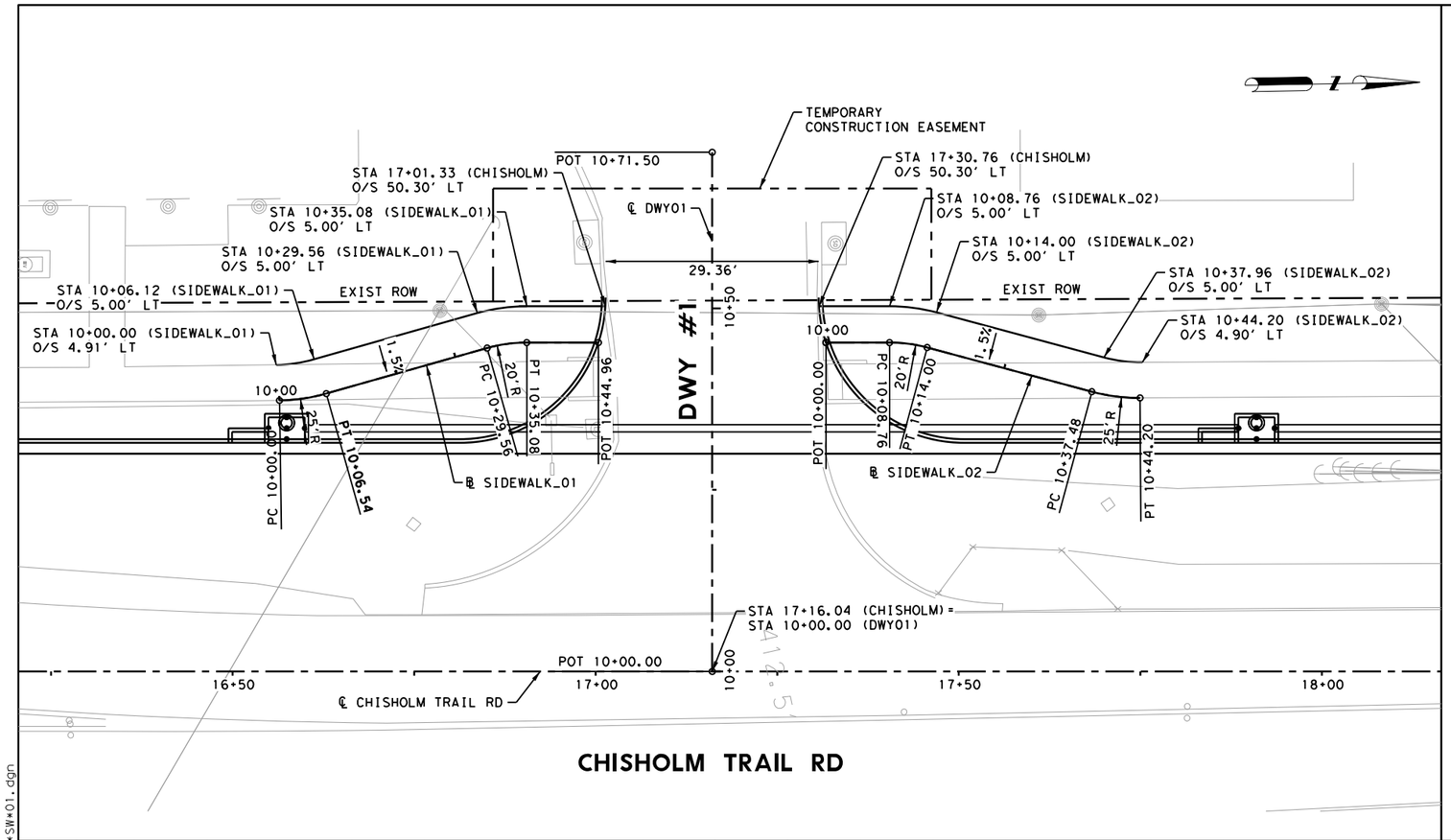

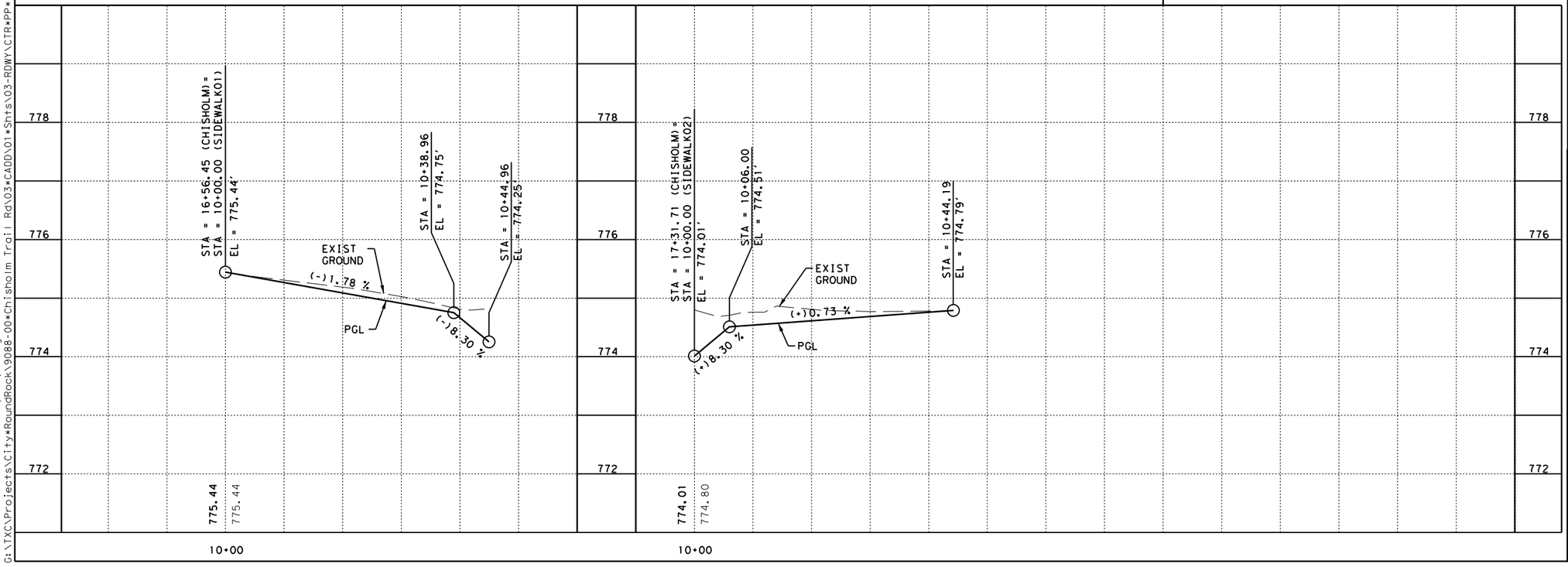

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CHISHOLM TRAIL RD
SIDEWALK
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SHEET 1 OF 1

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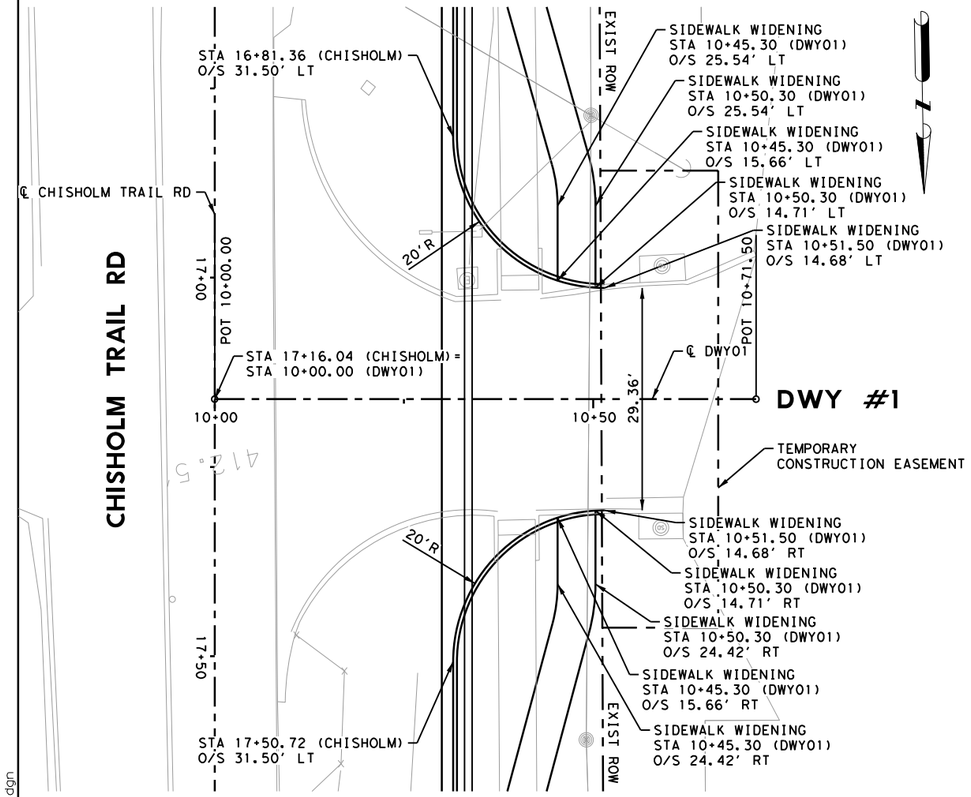

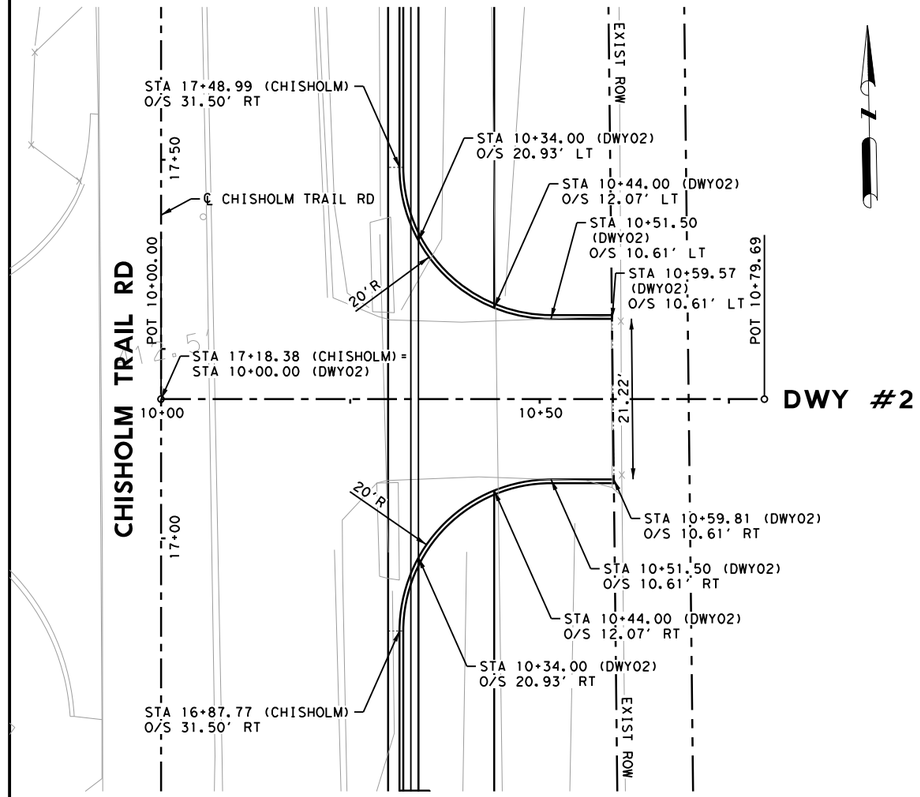

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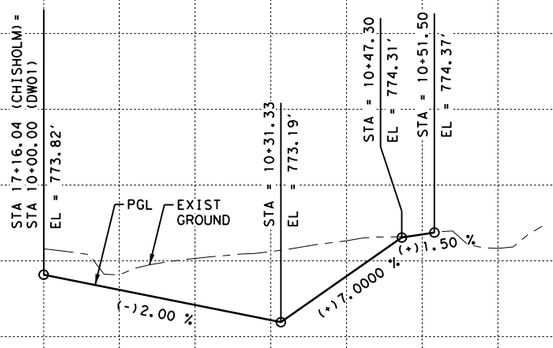

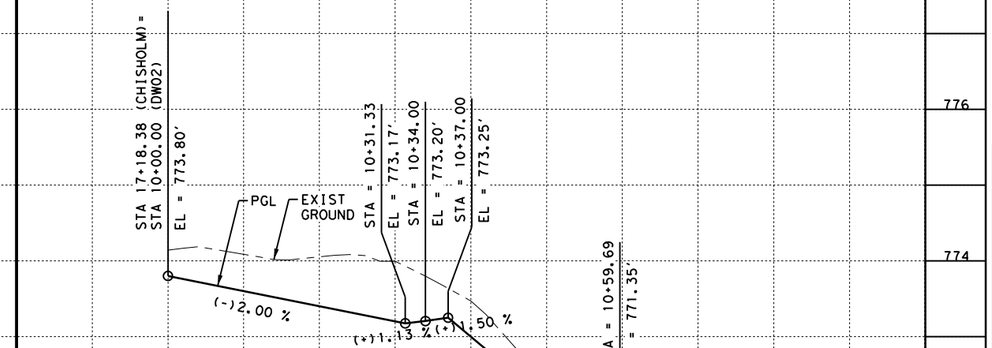

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DRIVEWAY
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SHEET 1 OF 7

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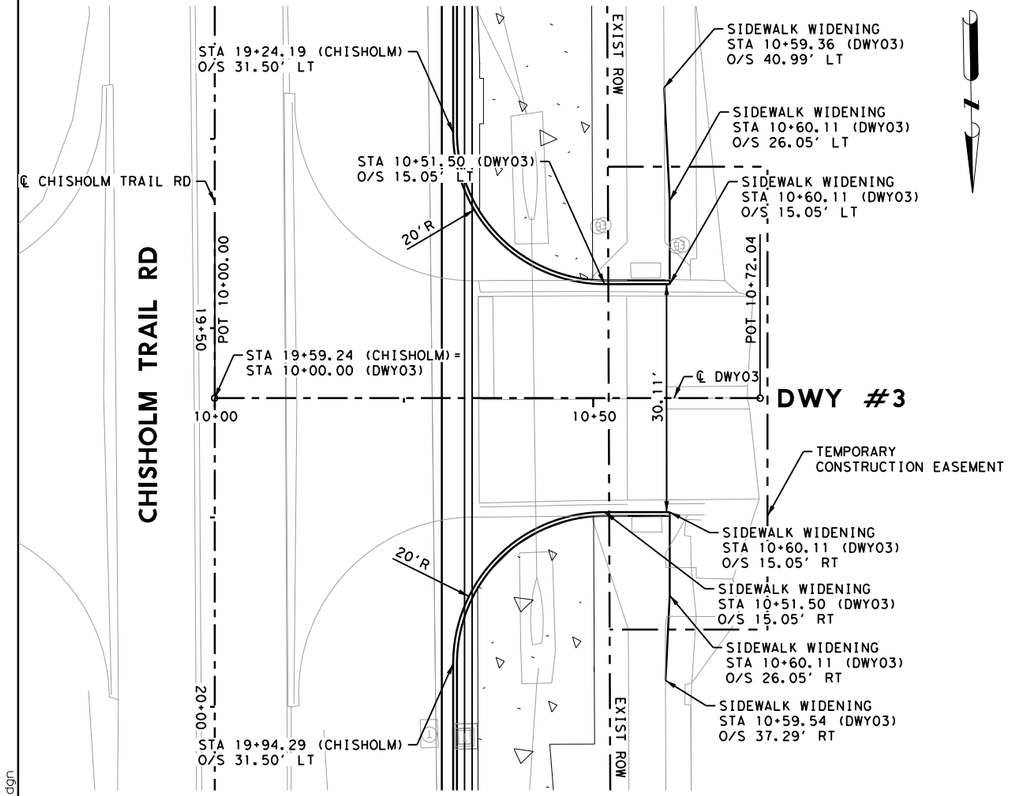

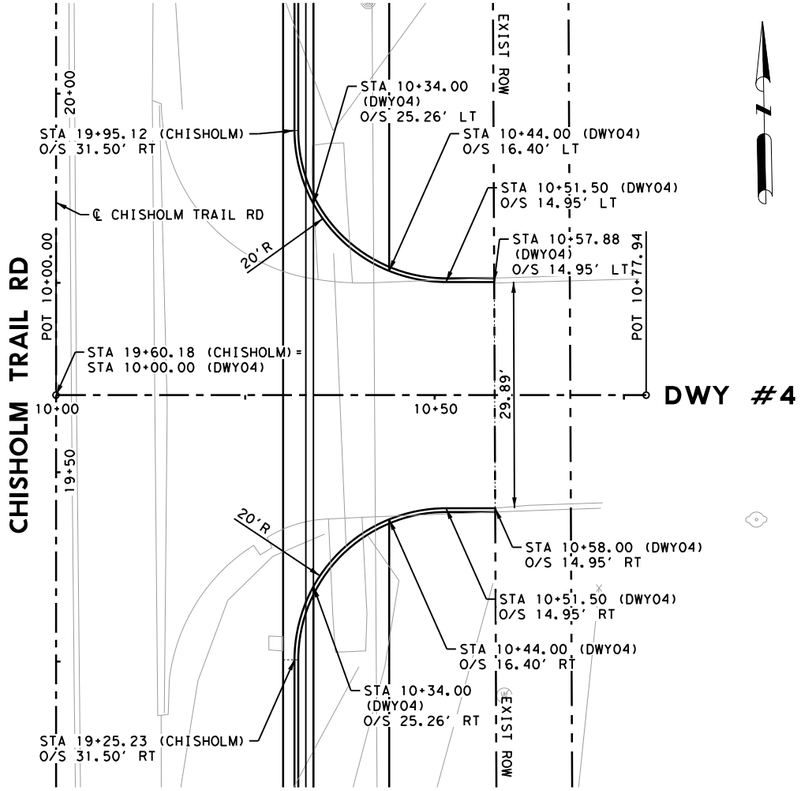

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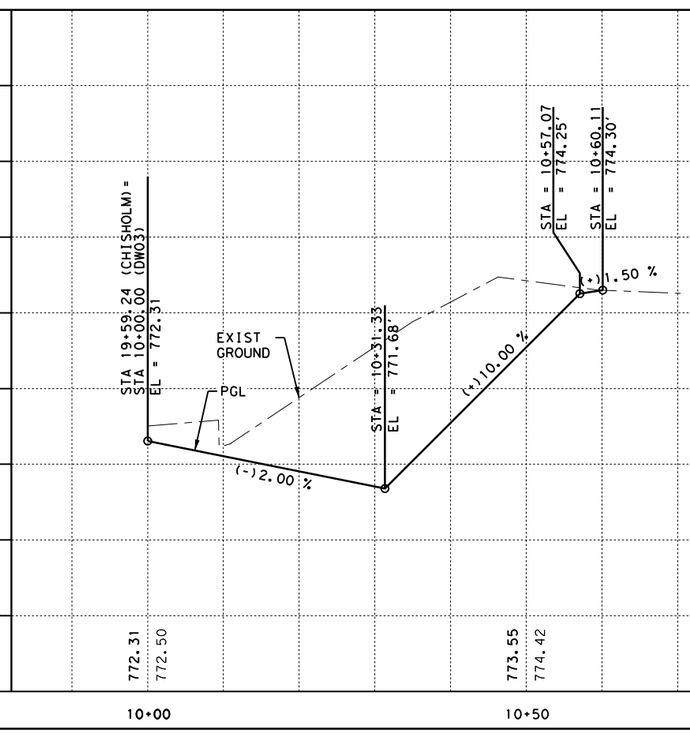
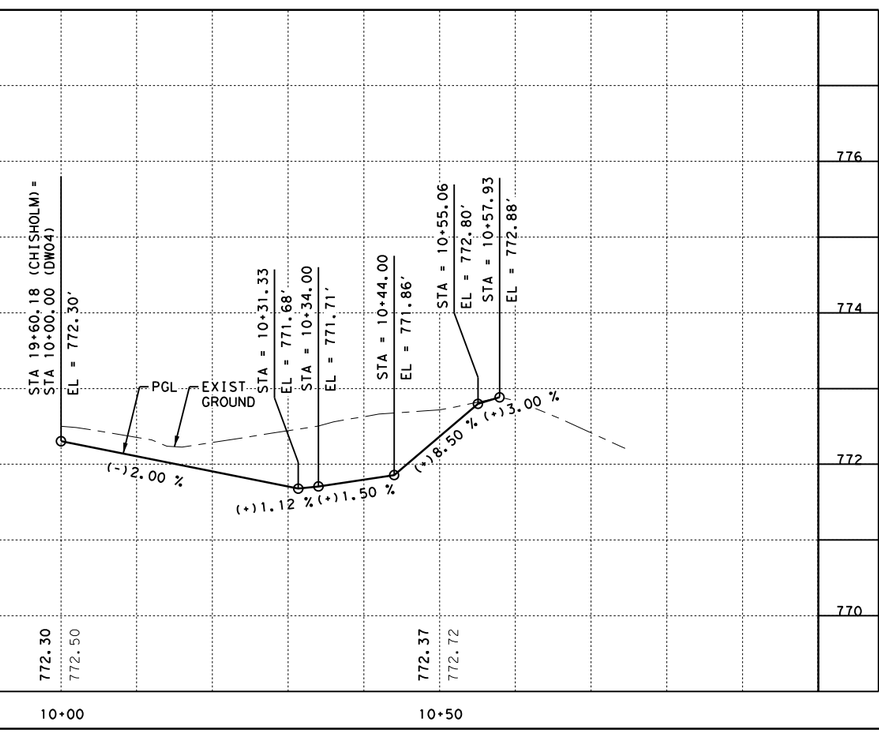
1"=2' V





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141234
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STATE OF TEXAS

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CHISHOLM TRAIL RD
DRIVEWAY
PLAN & PROFILE

SHEET 2 OF 7

DESIGNED BY:	EB	99
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CHECKED BY:		
APPROVED BY:		

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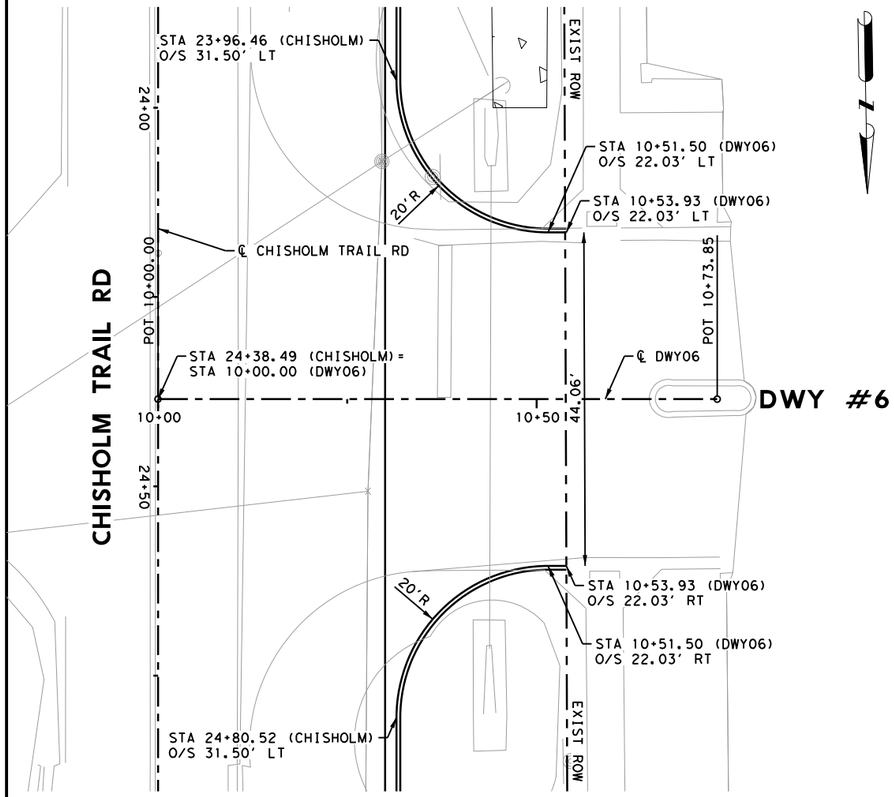
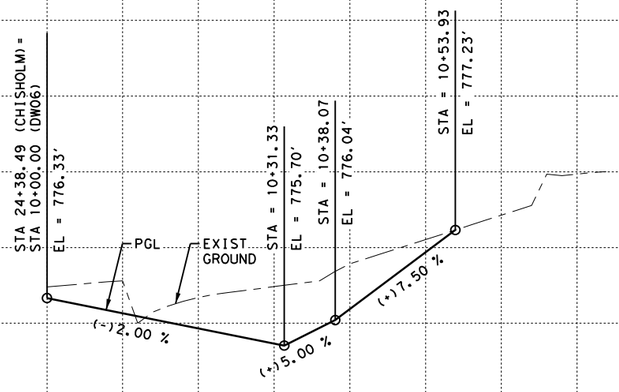
NOTES:
DRIVEWAY #5 IS NO LONGER REQUIRED
AND HAS BEEN OMITTED



0 10 20
SCALE: 1"=20' H
1"=2' V



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CHISHOLM TRAIL RD
DRIVEWAY
PLAN & PROFILE

SHEET 3 OF 7

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APPROVED BY:		

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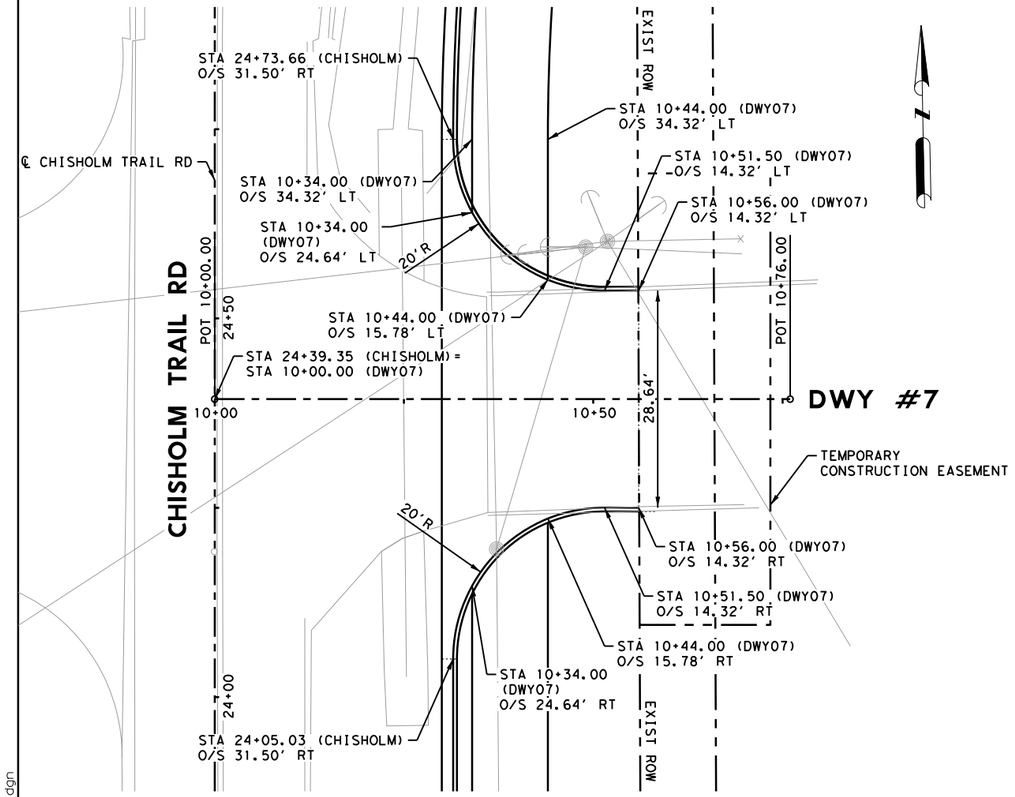

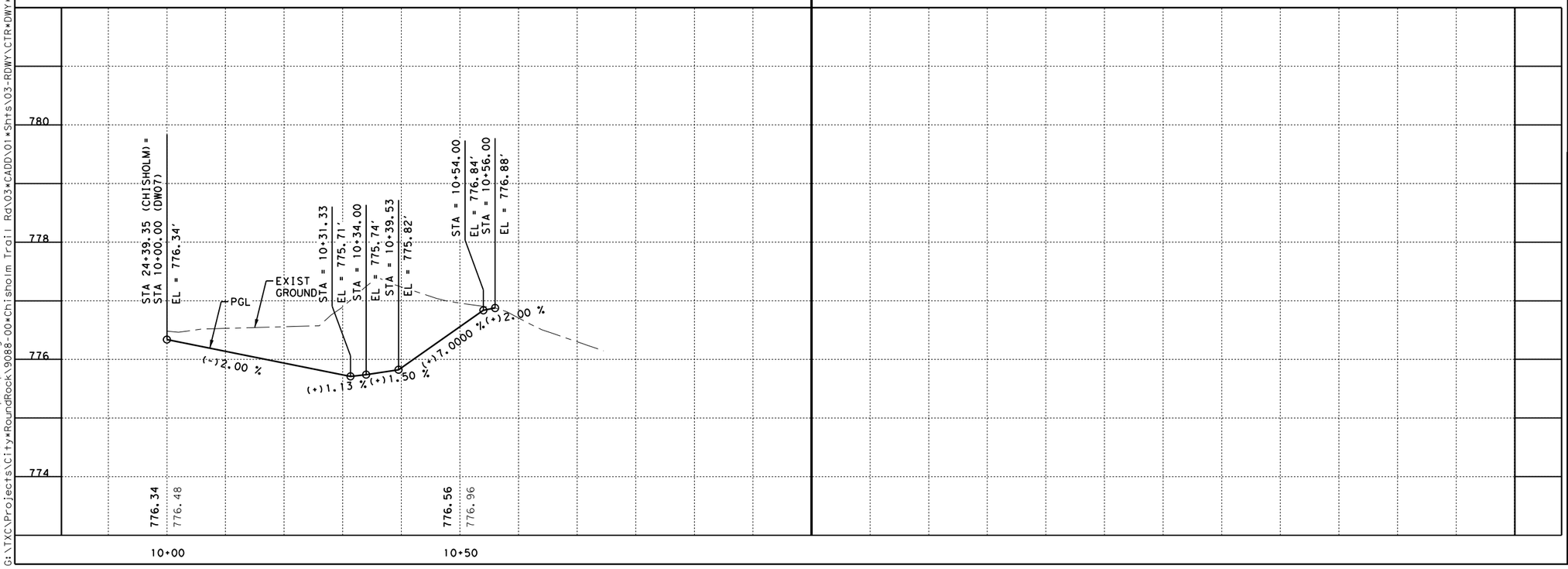

0 10 20
SCALE: 1"=20' H
1"=2' V

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CHISHOLM TRAIL RD
DRIVEWAY
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SHEET 4 OF 7

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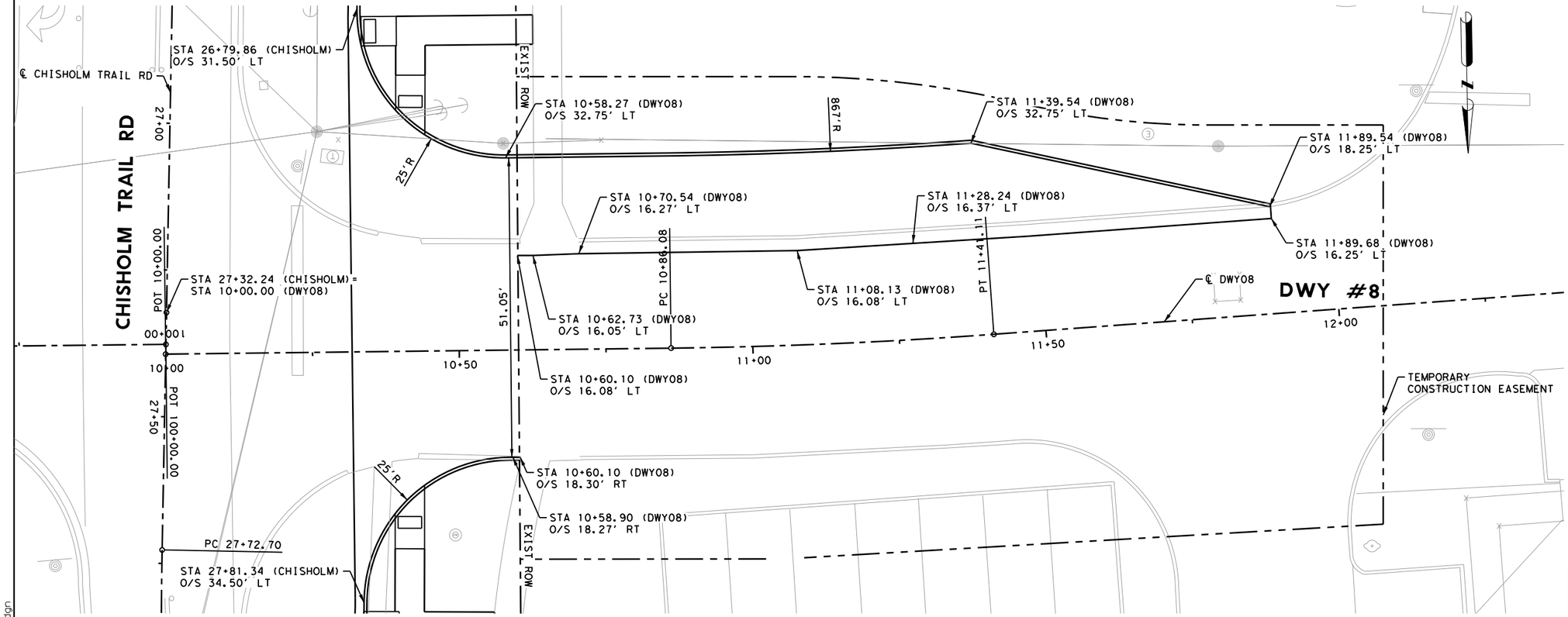
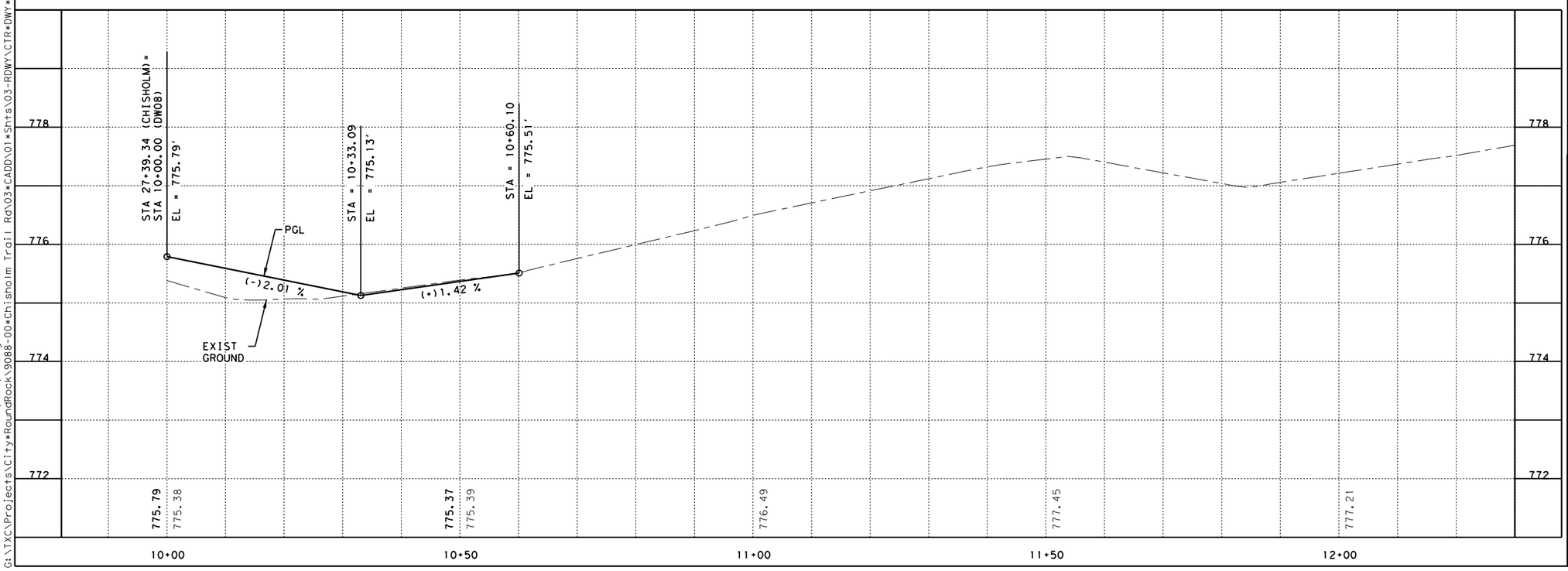


NOTES:

1. DRIVEWAY WIDENING SHALL MATCH THE EXISTING CROSS SLOPE.
2. BACK OF CURB GRADING SHALL BE INSTALLED AT THE SAME SLOPE AS THE EXISTING BACK OF CURB GRADING. (1/4'' PER FT. FROM BOC).



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CHISHOLM TRAIL RD
DRIVEWAY
PLAN & PROFILE

SHEET 5 OF 7

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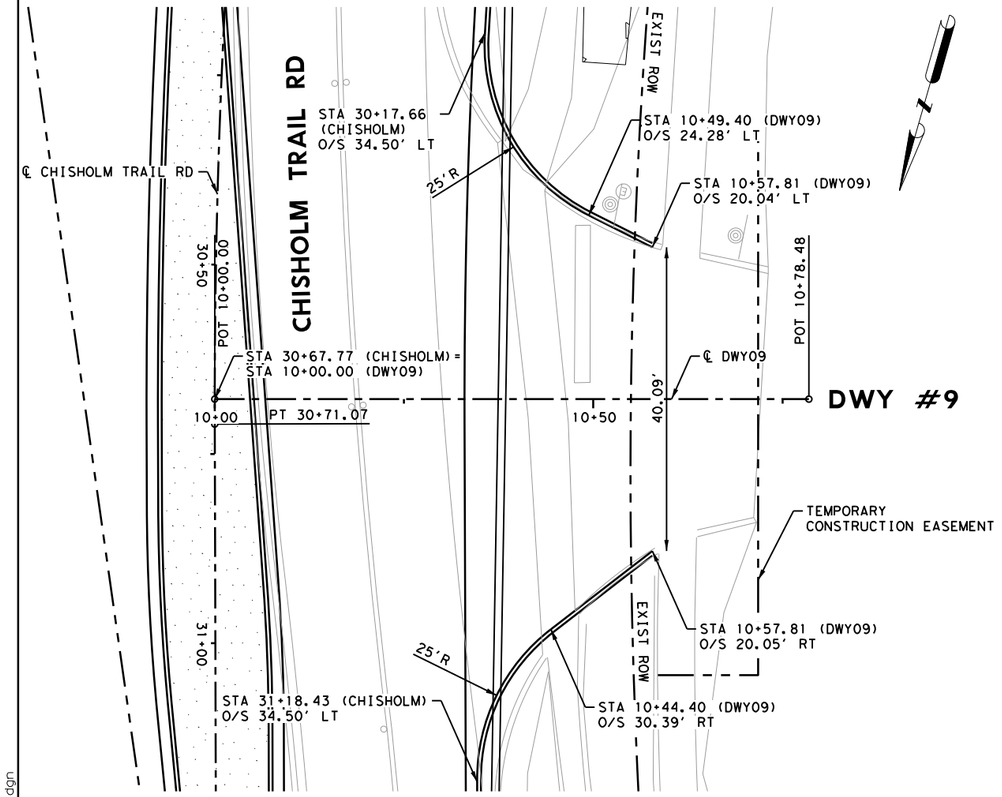

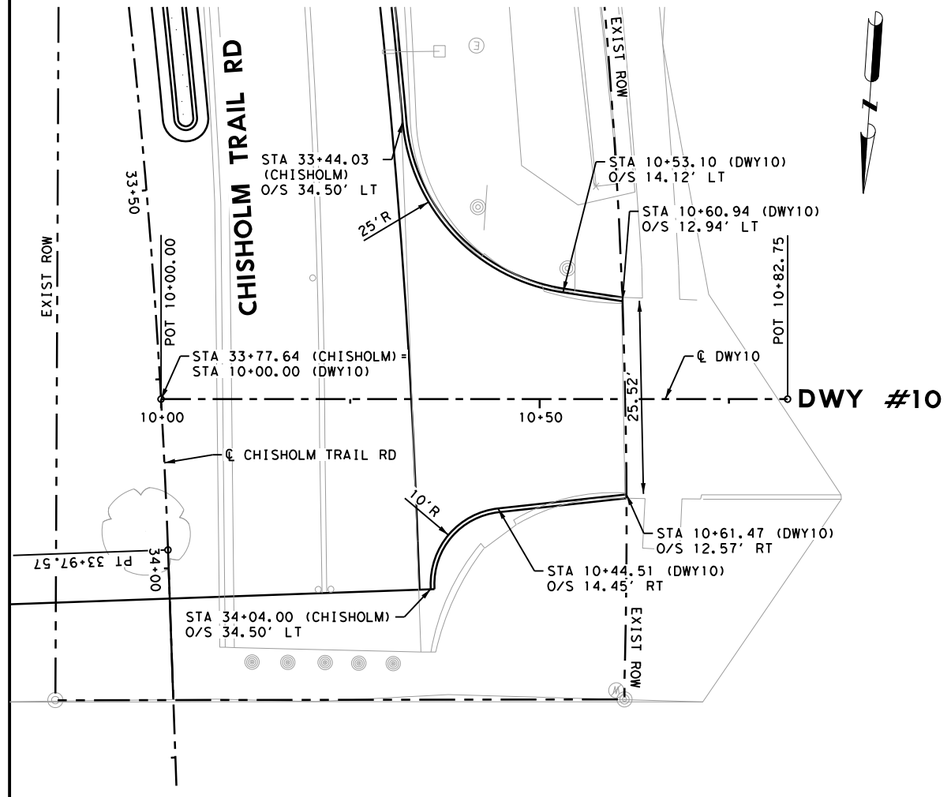

0 10 20
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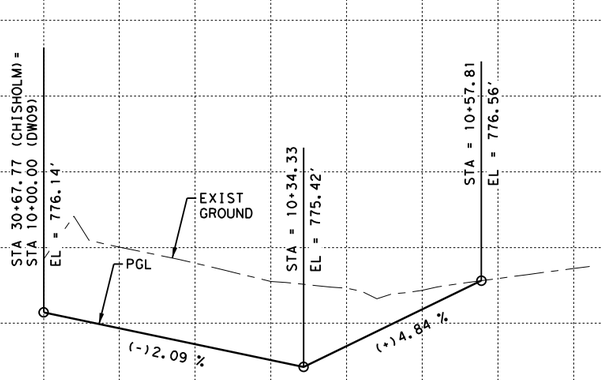
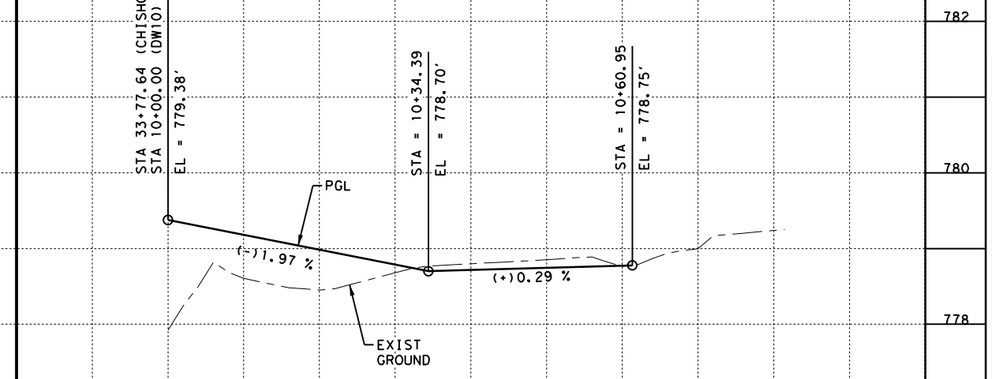
1"=2' V





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CHISHOLM TRAIL RD
DRIVEWAY
PLAN & PROFILE

SHEET 6 OF 7

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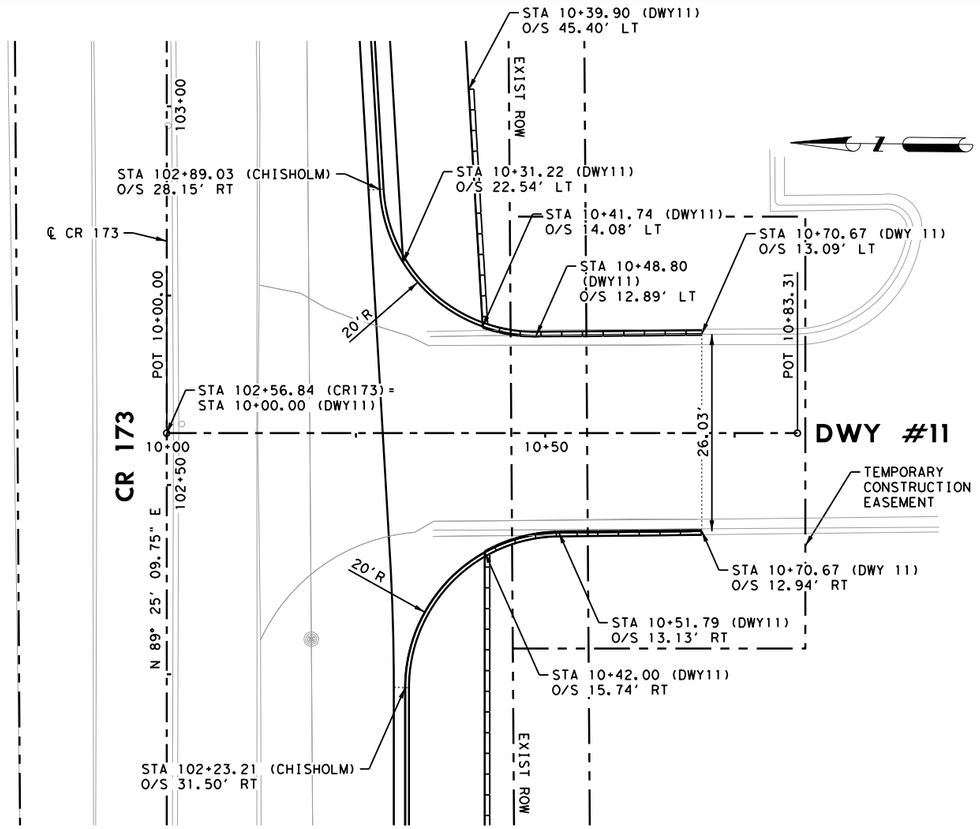

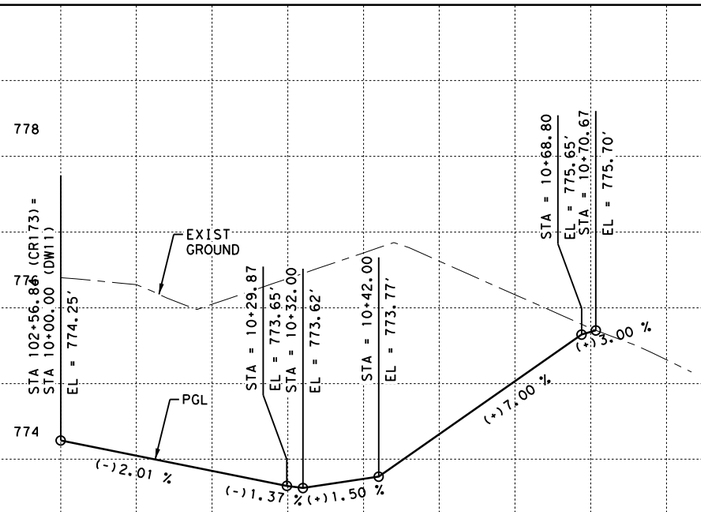

0 10 20
SCALE: 1"=20' H
1"=2' V

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CHISHOLM TRAIL RD
DRIVEWAY
PLAN & PROFILE

SHEET 7 OF 7

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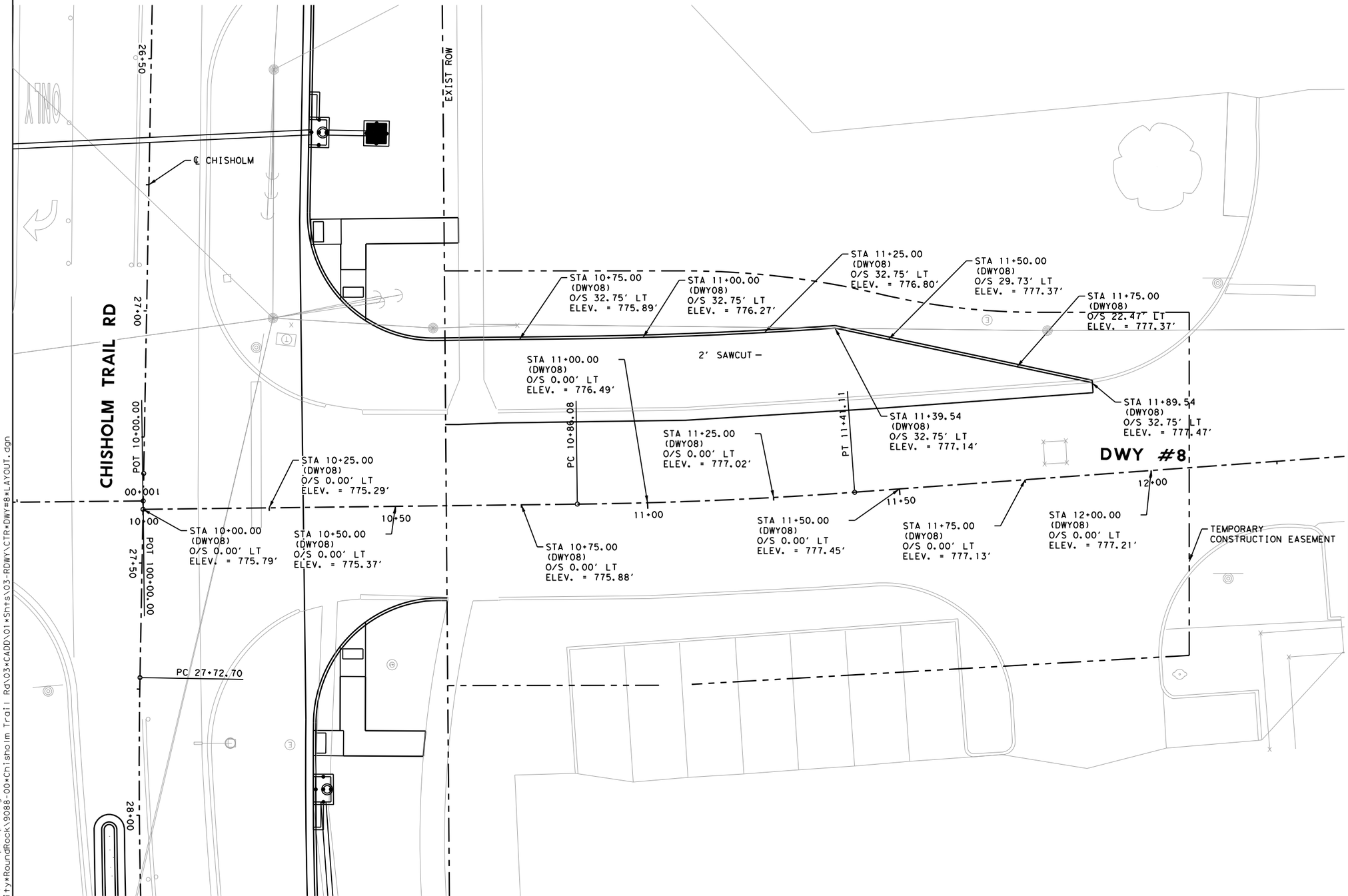

NOTES:

1. DRIVEWAY WIDENING SHALL MATCH THE EXISTING CROSS SLOPE.

2. BACK OF CURB GRADING SHALL BE INSTALLED AT THE SAME SLOPE AS THE EXISTING BACK OF CURB GRADING.

0 10 20
SCALE: 1"=20' H
1"=2' V

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CHISHOLM TRAIL RD
DRIVEWAY #8
LAYOUT

SHEET 1 OF 1

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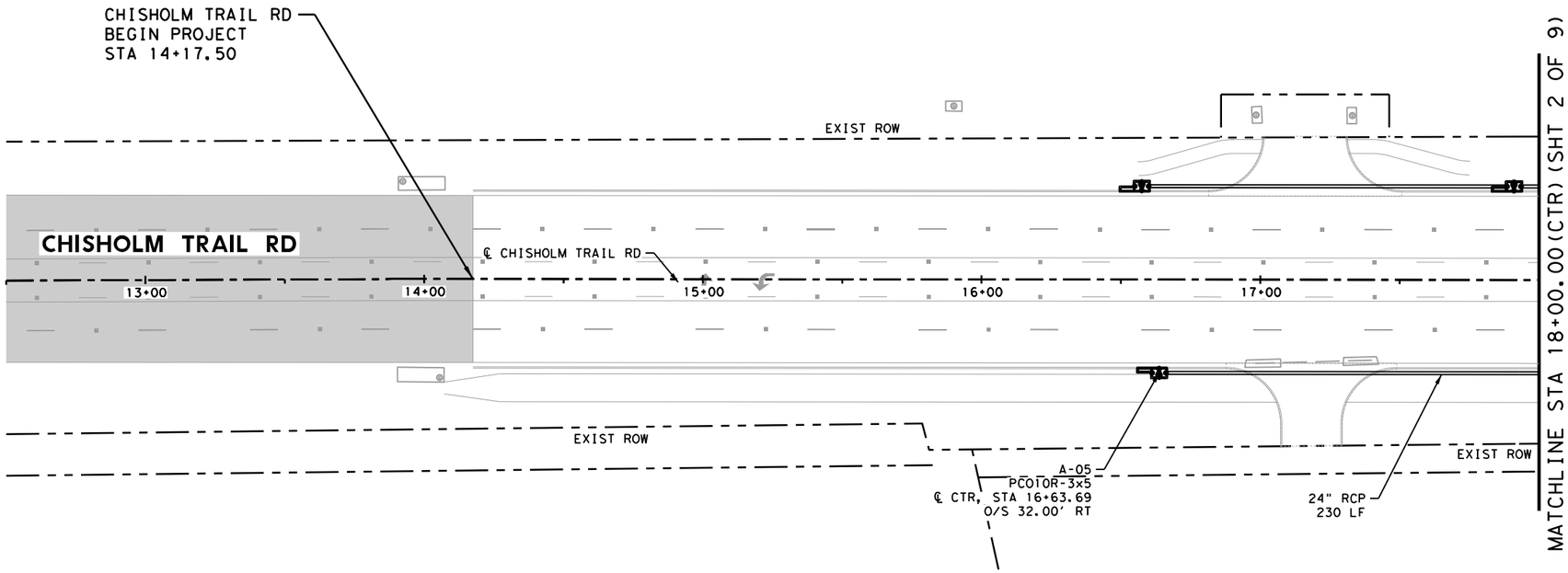


NOTES:

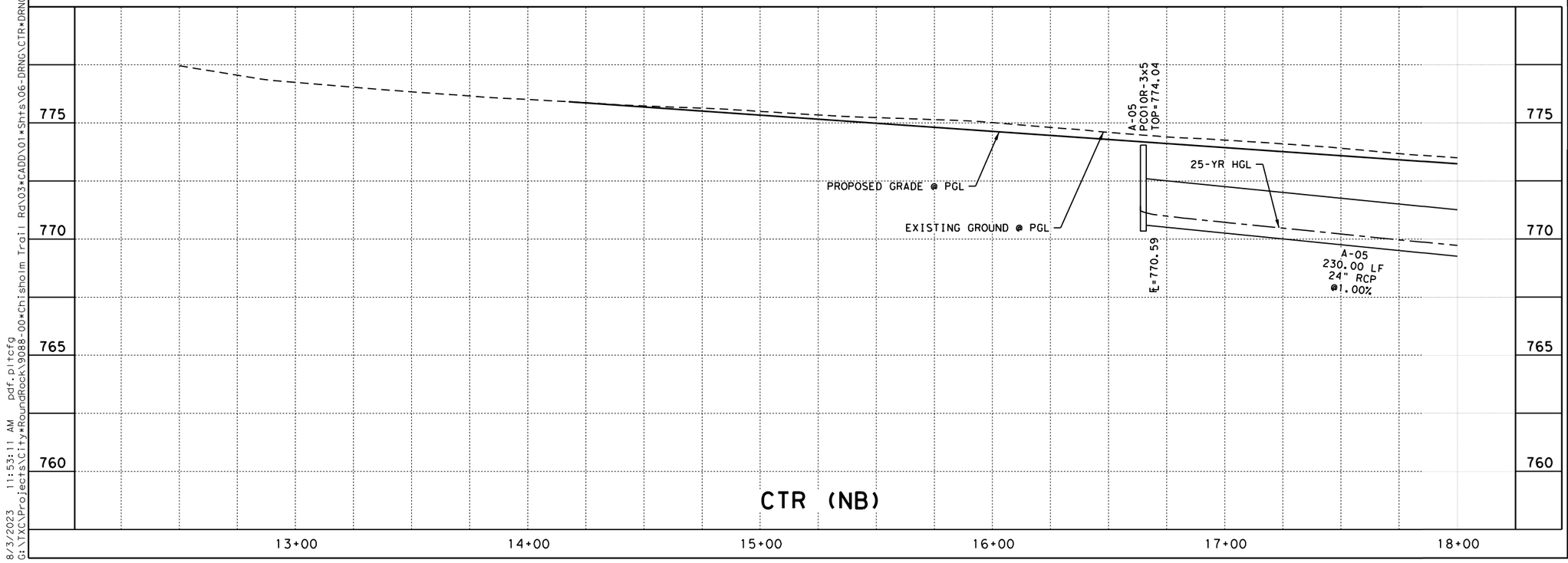
1) BEDDING MATERIAL FOR STORM SEWER SHALL REFERENCE CORR DETAILS: D-01 & D-02

2) ALL STORM SEWER BENDS, WYES, AND PIPE SIZE TRANSITIONS SHALL BE PRE-FABRICATED AND FREE FROM DEFECTS.

3) NO TWO(2) PREFAB INLETS MAY BE PUT TOGETHER TO ACHIEVE A 15' OR 20' INLET.

4) BEDDING SHALL BE TO TOP OF PIPE.

0 25 50
SCALE: 1"=50' H
1"=5' V



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CHISHOLM TRAIL RD
DRAINAGE
STORM SEWER (NB)
PLAN & PROFILE

SHEET 1 OF 9

DESIGNED BY:	EB
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APPROVED BY:	

134

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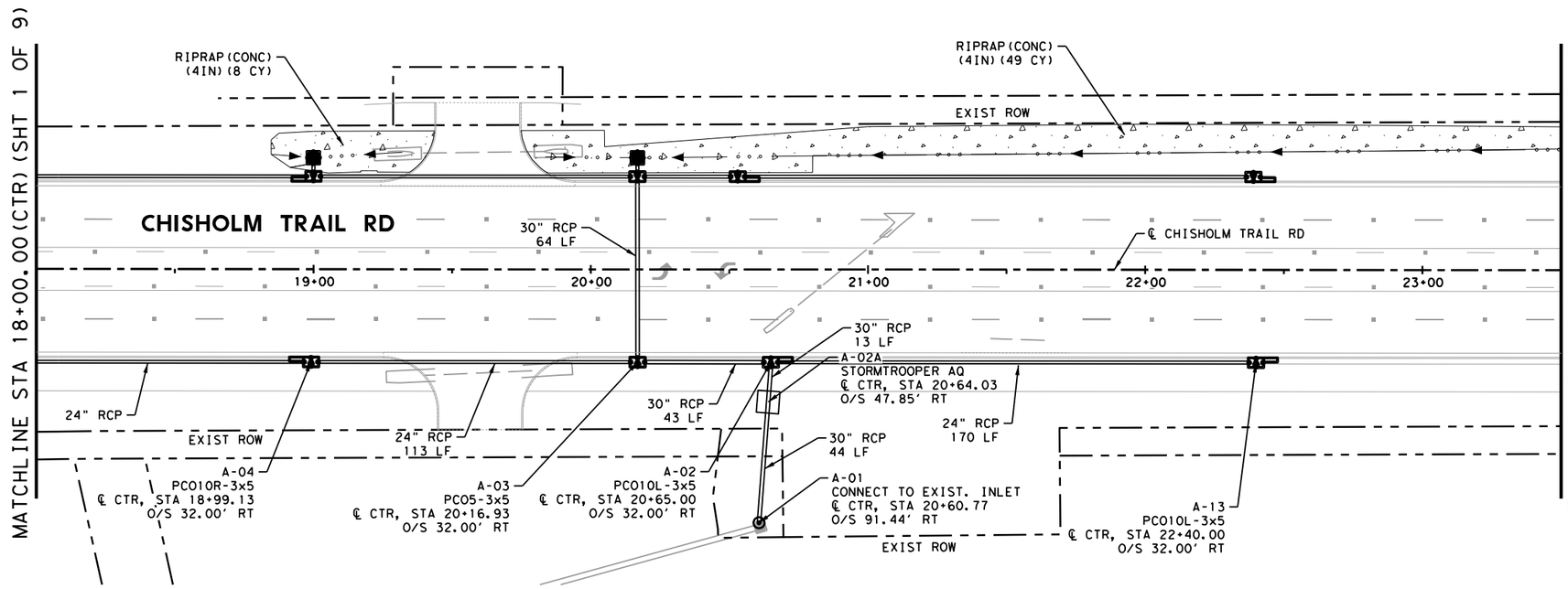

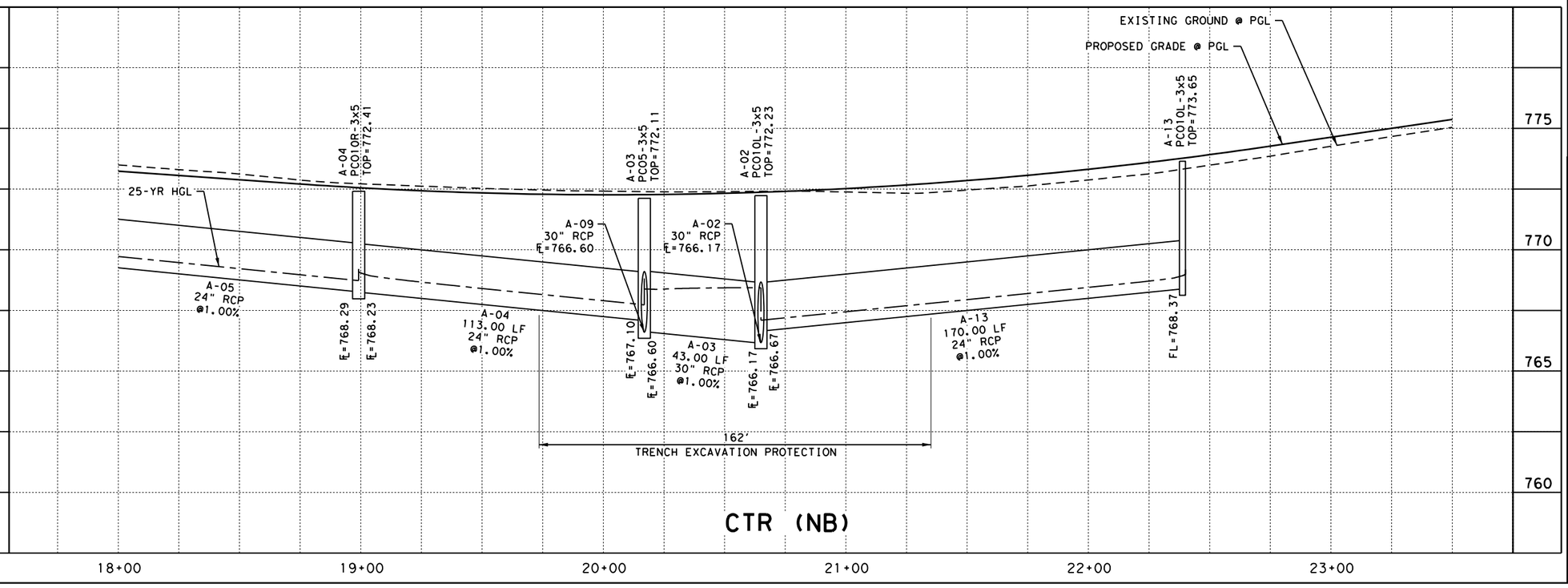

NOTES:

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4) BEDDING SHALL BE TO TOP OF PIPE.

0 25 50
SCALE: 1"=50' H
1"=5' V

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MD KAMRUL ISLAM
126996
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CHISHOLM TRAIL RD
DRAINAGE
STORM SEWER (NB)
PLAN & PROFILE

SHEET 2 OF 9

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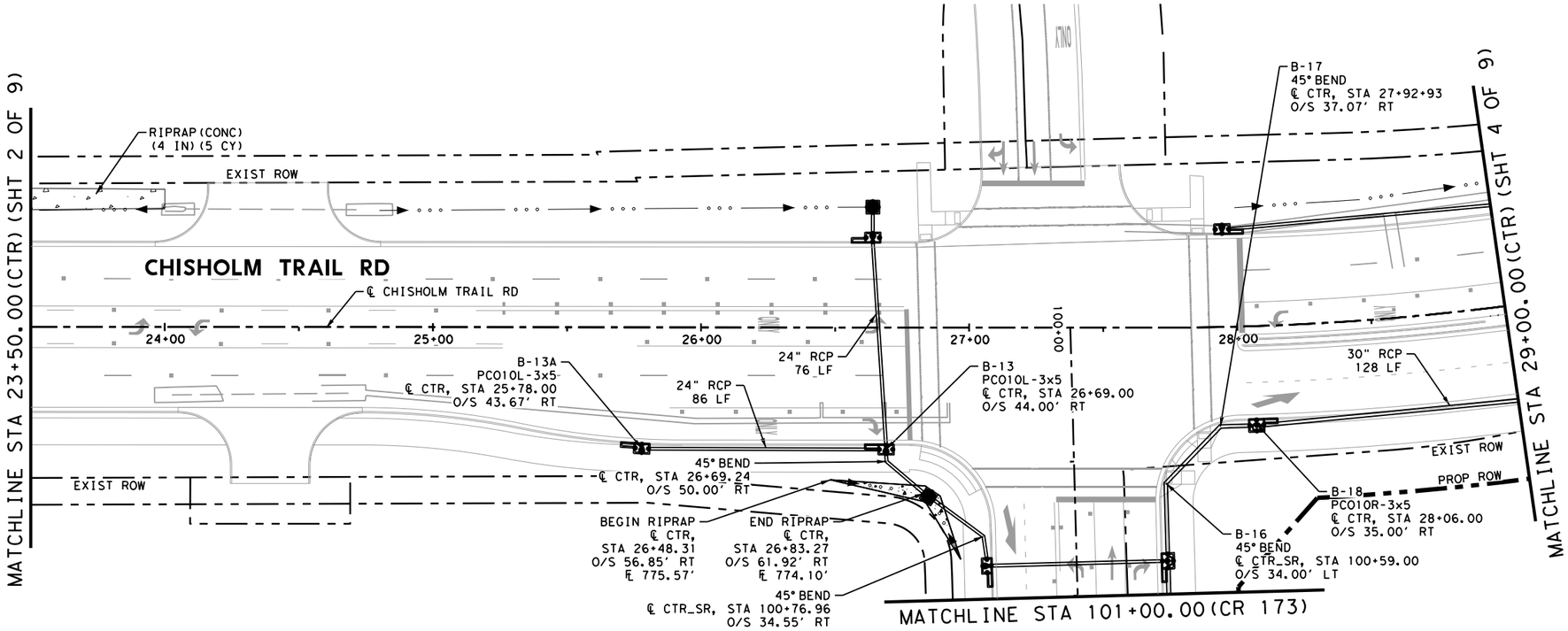

NOTES:

1) BEDDING MATERIAL FOR STORM SEWER SHALL REFERENCE CORR DETAILS: D-01 & D-02

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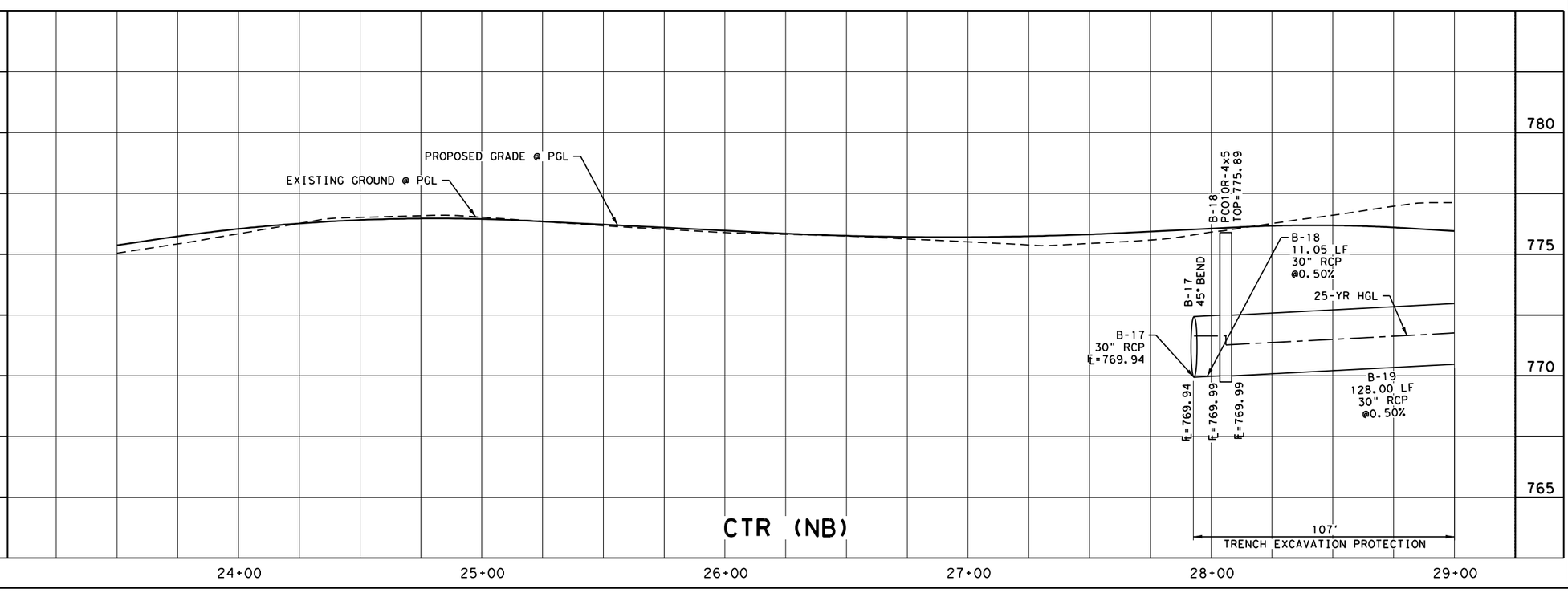
4) BEDDING SHALL BE TO TOP OF PIPE.

0 25 50
SCALE: 1"=50' H
1"=5' V



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CHISHOLM TRAIL RD
DRAINAGE
STORM SEWER (NB)
PLAN & PROFILE

SHEET 3 OF 9

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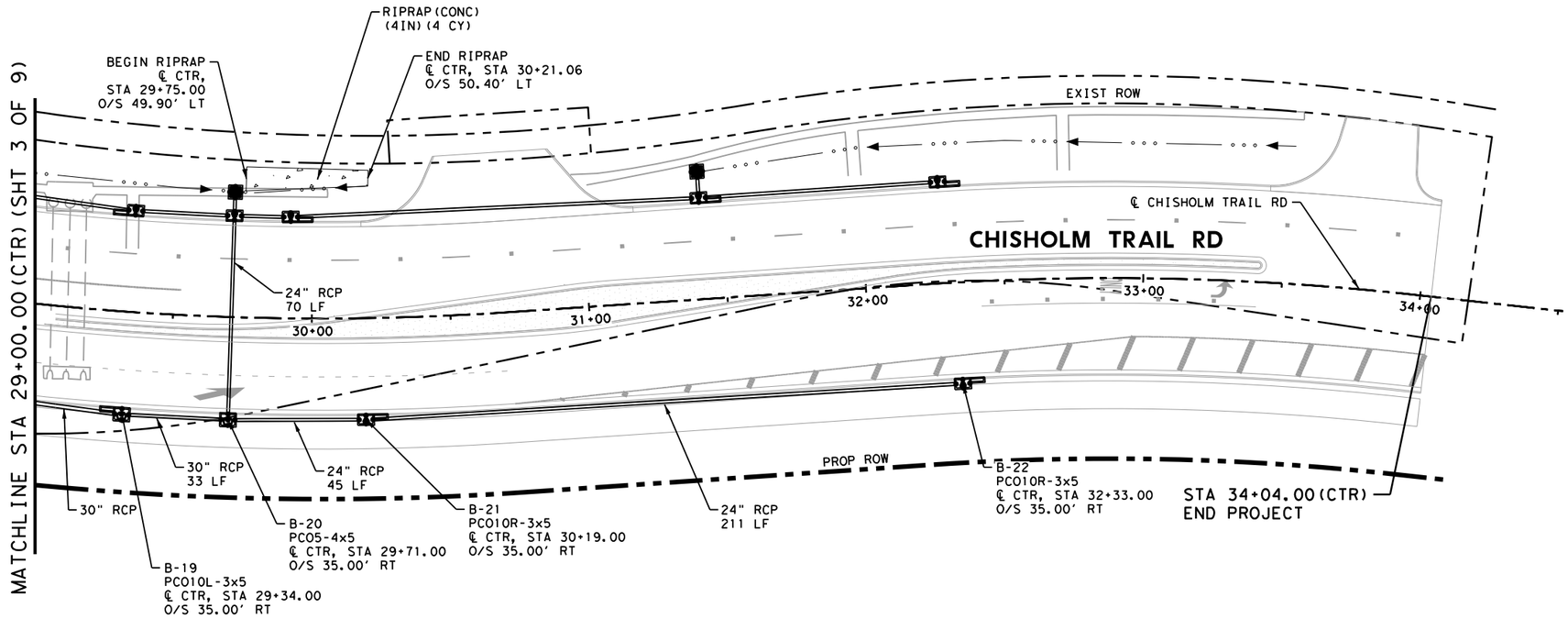

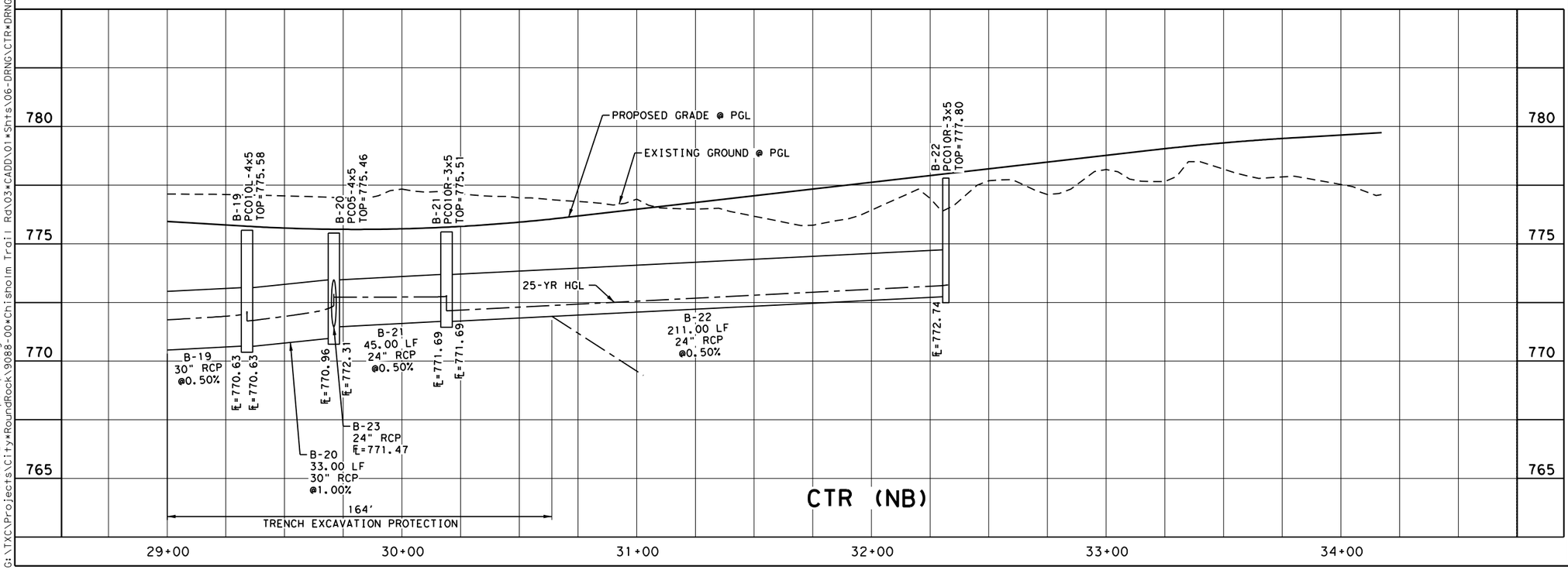

NOTES:

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0 25 50
SCALE: 1"=50' H
1"=5' V

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CHISHOLM TRAIL RD
DRAINAGE
STORM SEWER (NB)
PLAN & PROFILE

SHEET 4 OF 9

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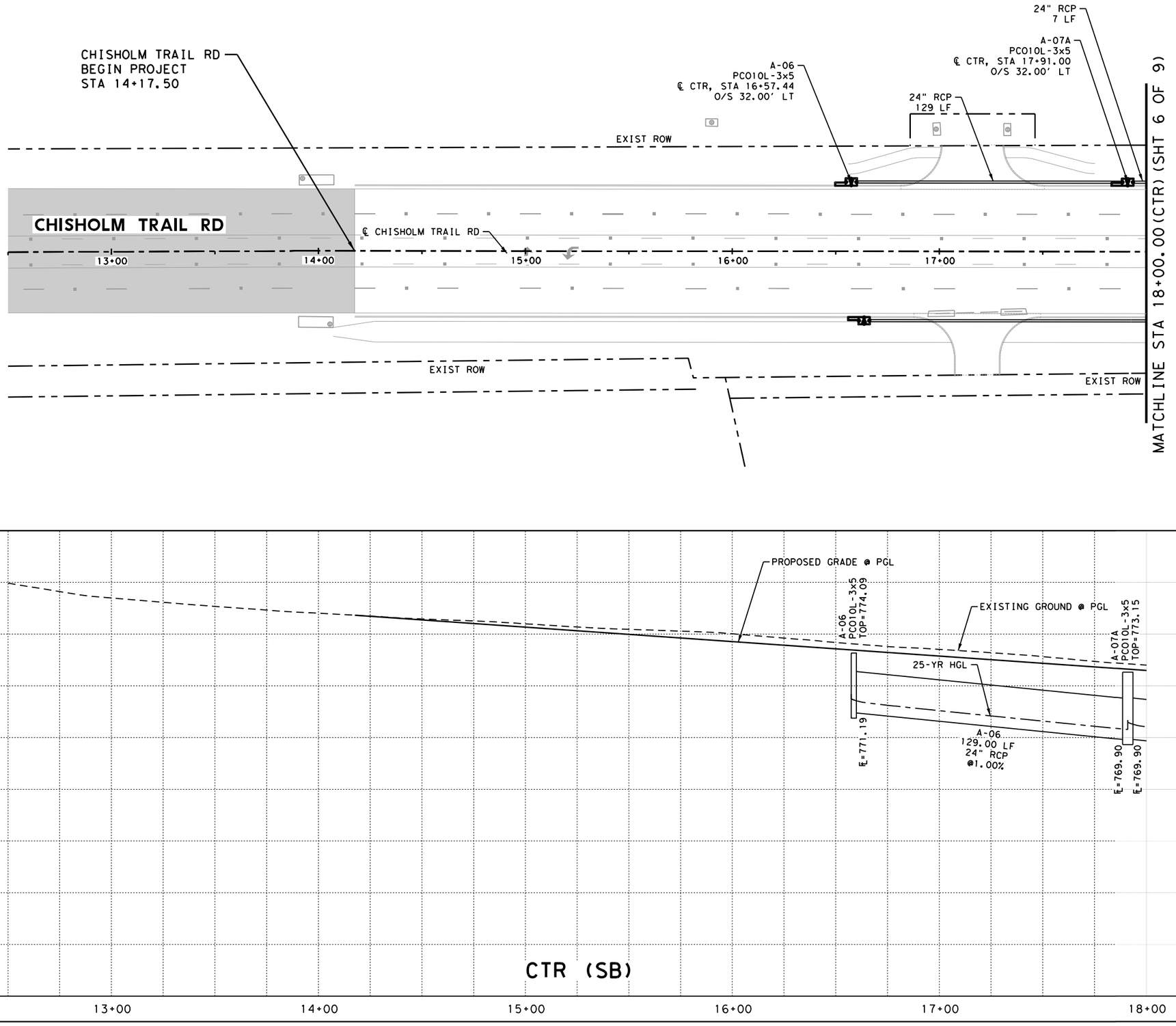

NOTES:

1) BEDDING MATERIAL FOR STORM SEWER SHALL REFERENCE CORR DETAILS: D-01 & D-02

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0 25 50
SCALE: 1"=50' H
1"=5' V

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CHISHOLM TRAIL RD
DRAINAGE
STORM SEWER (SB)
PLAN & PROFILE

SHEET 5 OF 9

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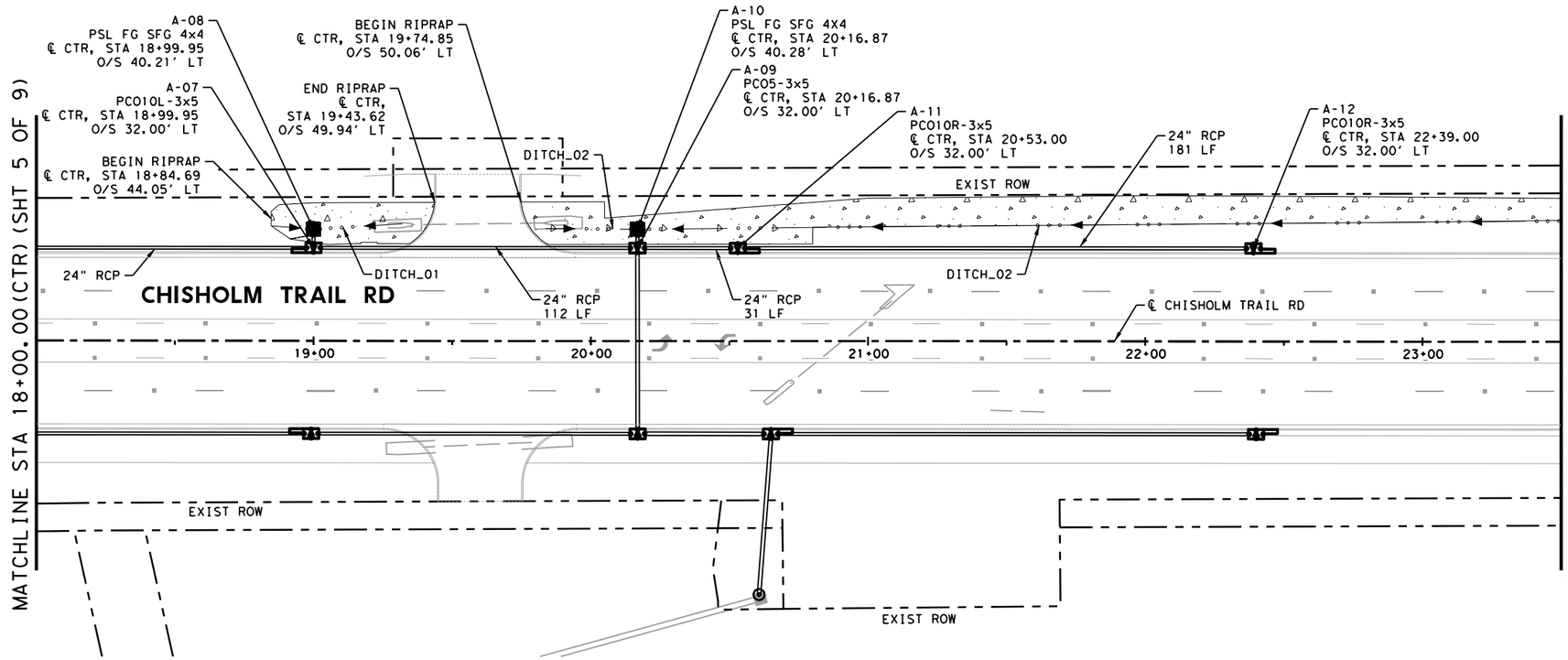

NOTES:

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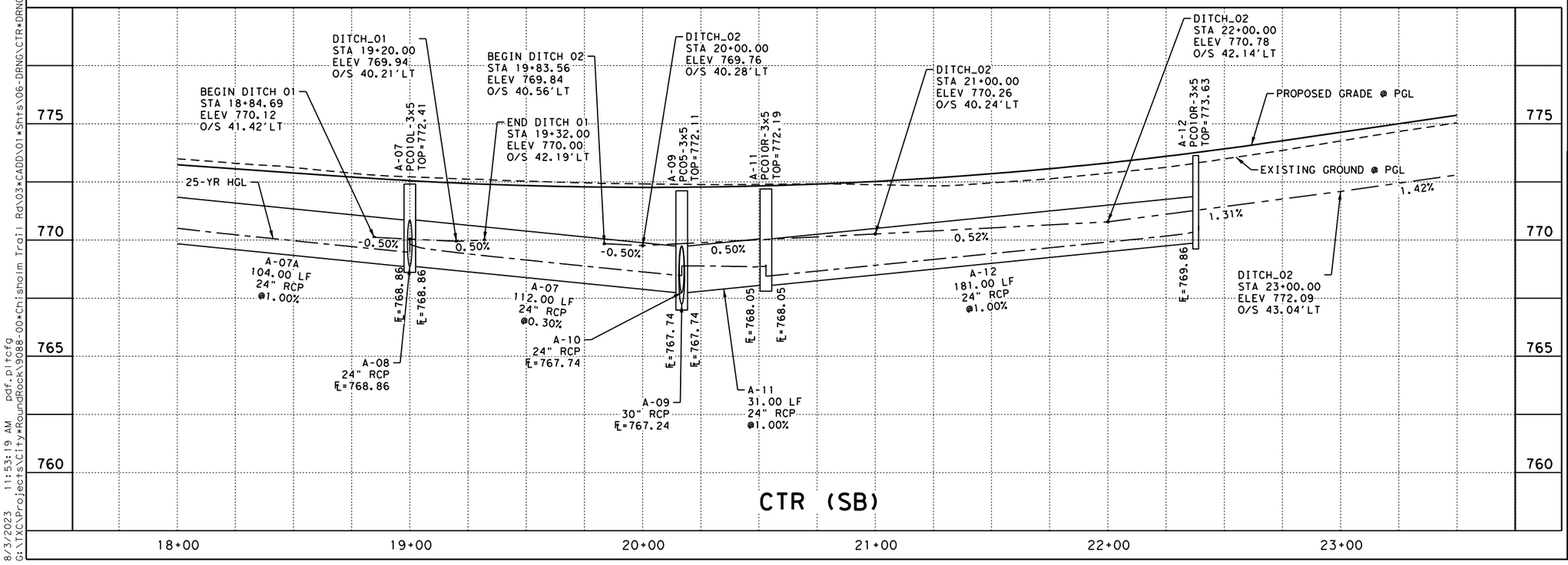
4) BEDDING SHALL BE TO TOP OF PIPE.

0 25 50
SCALE: 1"=50' H
1"=5' V



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CHISHOLM TRAIL RD
DRAINAGE
STORM SEWER (SB)
PLAN & PROFILE

SHEET 6 OF 9

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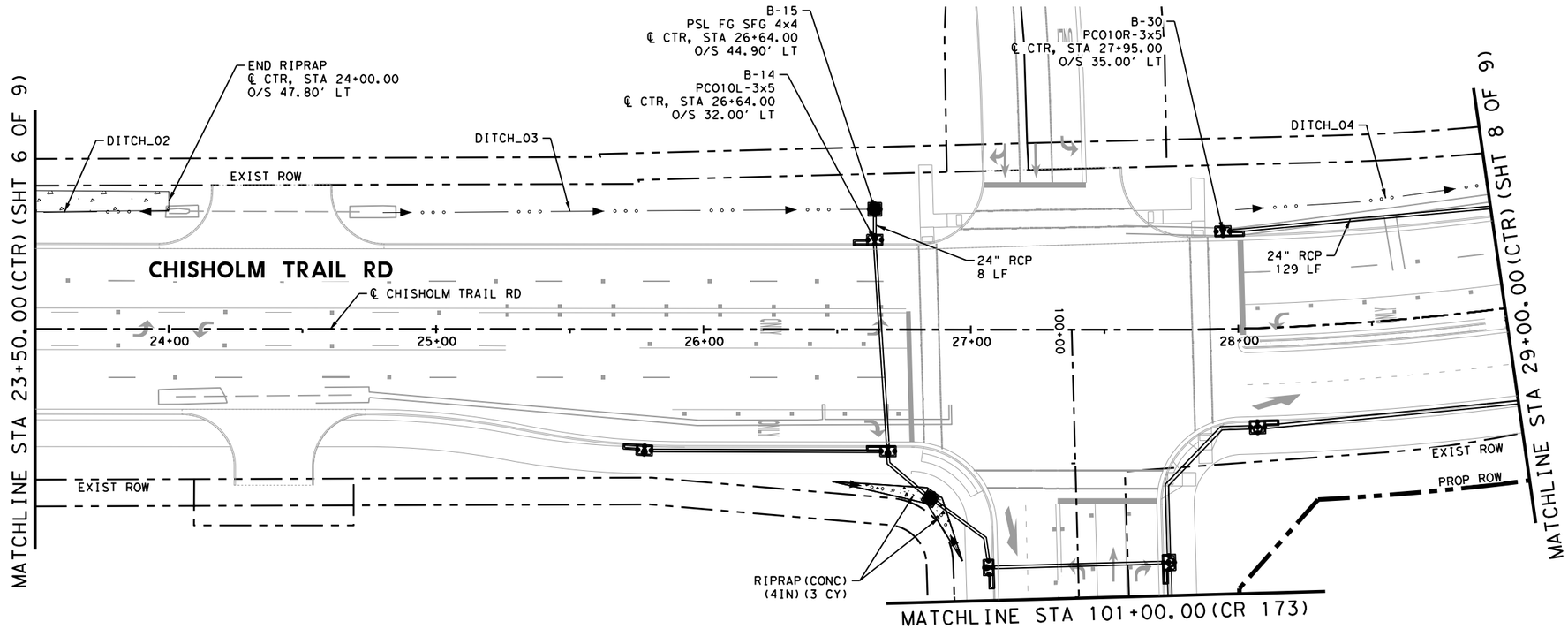


NOTES:

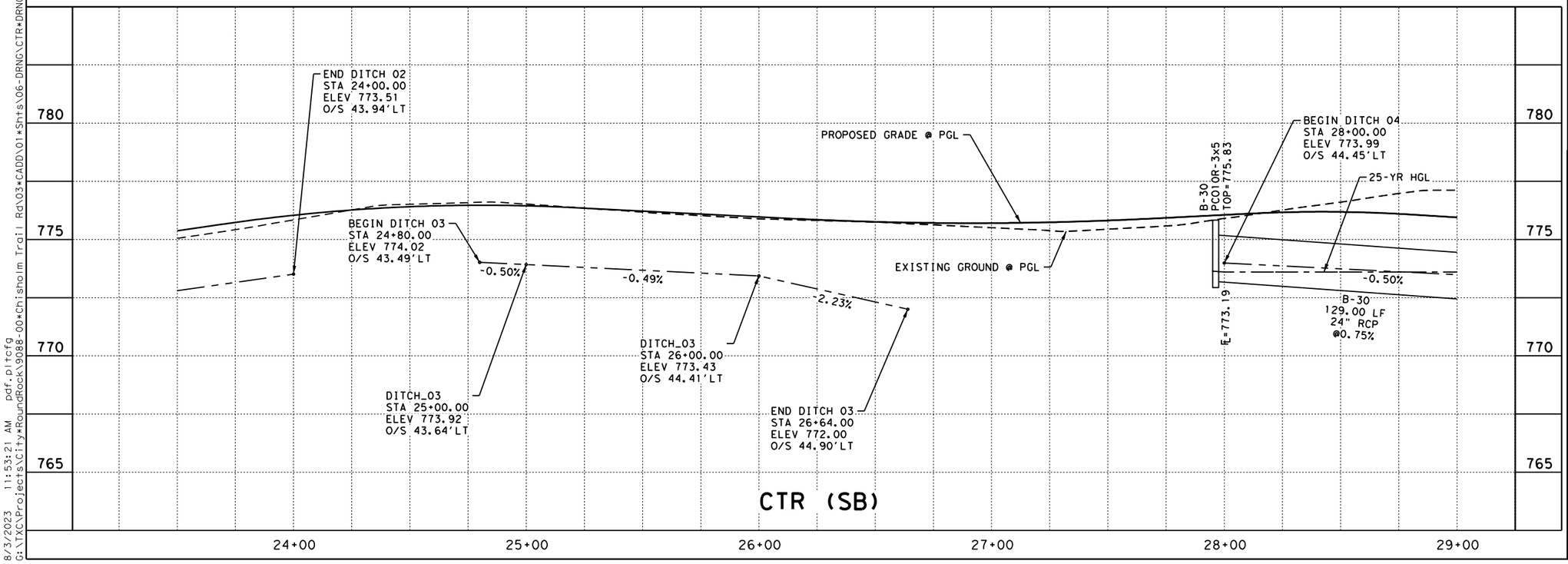
1) BEDDING MATERIAL FOR STORM SEWER SHALL REFERENCE CORR DETAILS: D-01 & D-02

2) ALL STORM SEWER BENDS, WYES, AND PIPE SIZE TRANSITIONS SHALL BE PRE-FABRICATED AND FREE FROM DEFECTS.

3) NO TWO(2) PREFAB INLETS MAY BE PUT TOGETHER TO ACHIEVE A 15' OR 20' INLET.

4) BEDDING SHALL BE TO TOP OF PIPE.

0 25 50
SCALE: 1"=50' H
1"=5' V



STATE OF TEXAS
MD KAMRUL ISLAM
126996
LICENSED
PROFESSIONAL ENGINEER
8/3/2023

NO.	DATE	REVISION	APPROVED

ROUND ROCK TEXAS

BGE, Inc.
101 W. Louis Henna Blvd., Suite 400
Austin, TX 78728
Tel: 512-879-0400 • www.bgeinc.com
TBPE Registration No. F-1046

CHISHOLM TRAIL RD
DRAINAGE
STORM SEWER (SB)
PLAN & PROFILE

SHEET 7 OF 9

DESIGNED BY:	EB	140
DRAWN BY:	EB	
CHECKED BY:		
APPROVED BY:		

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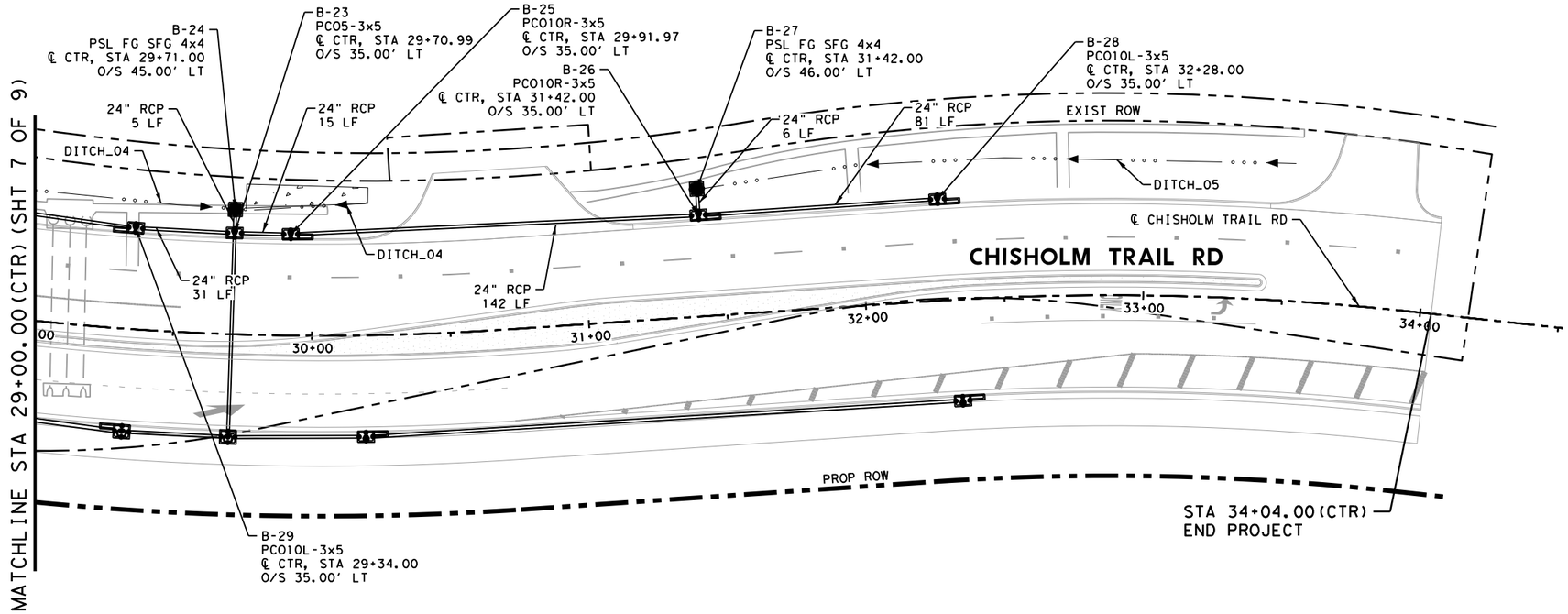


NOTES:

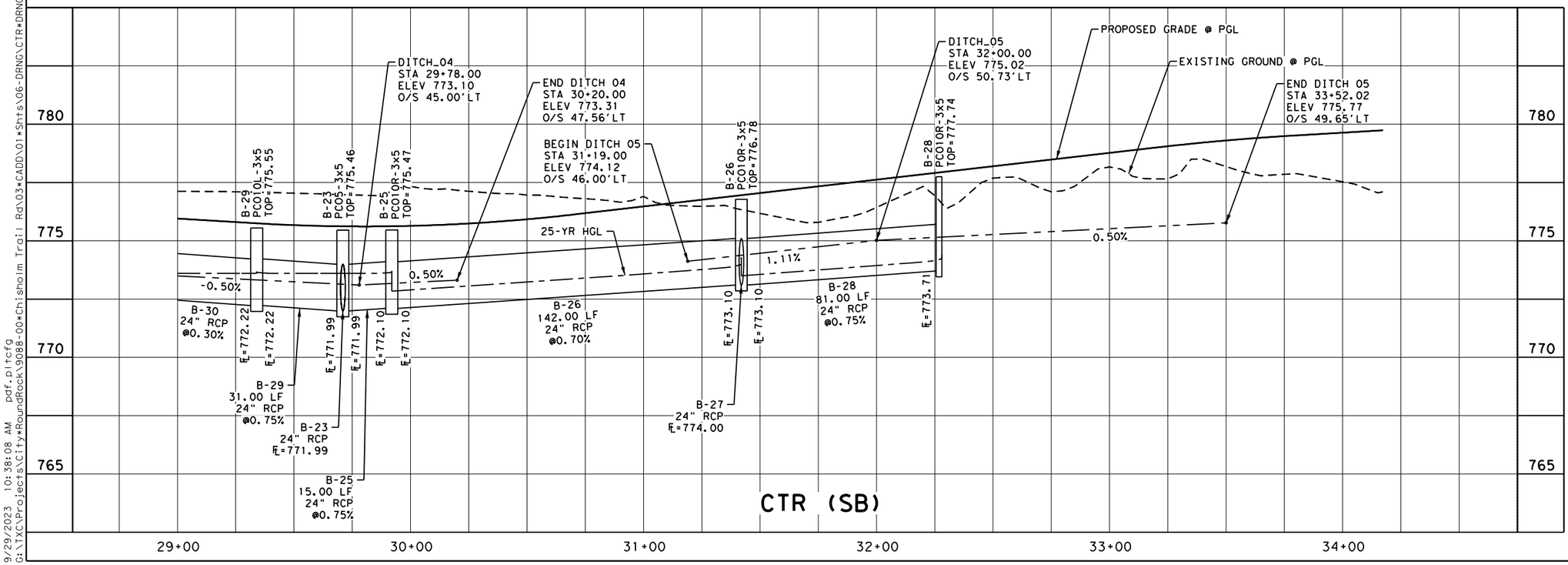
1) BEDDING MATERIAL FOR STORM SEWER SHALL REFERENCE CORR DETAILS: D-01 & D-02

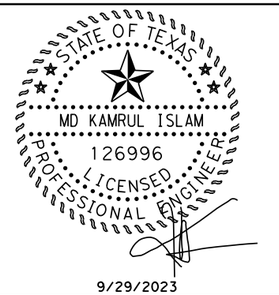
2) ALL STORM SEWER BENDS, WYES, AND PIPE SIZE TRANSITIONS SHALL BE PRE-FABRICATED AND FREE FROM DEFECTS.

3) NO TWO(2) PREFAB INLETS MAY BE PUT TOGETHER TO ACHIEVE A 15' OR 20' INLET.

4) BEDDING SHALL BE TO TOP OF PIPE.

0 25 50
SCALE: 1"=50' H
1"=5' V





9/29/2023

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CHISHOLM TRAIL RD
DRAINAGE
STORM SEWER (SB)
PLAN & PROFILE

SHEET 8 OF 9

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DRAWN BY:	EB	
CHECKED BY:		
APPROVED BY:		

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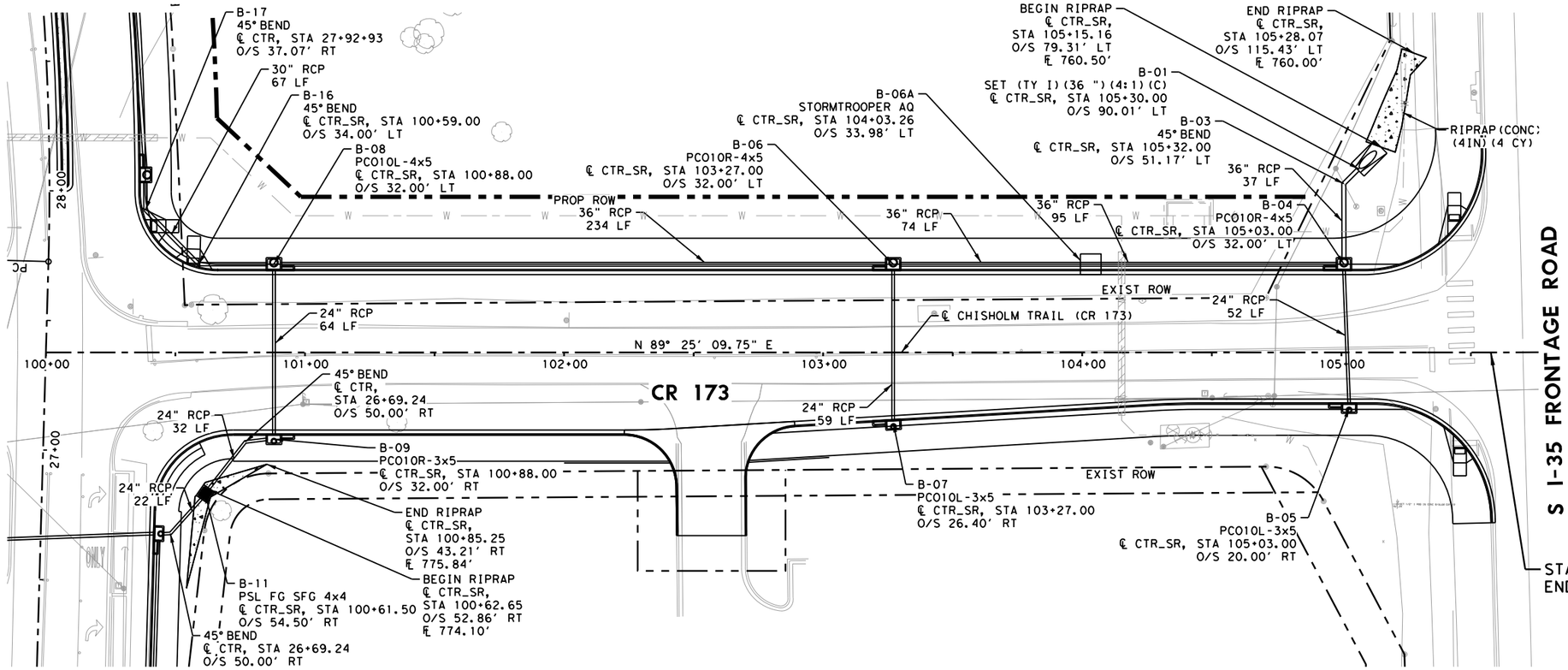

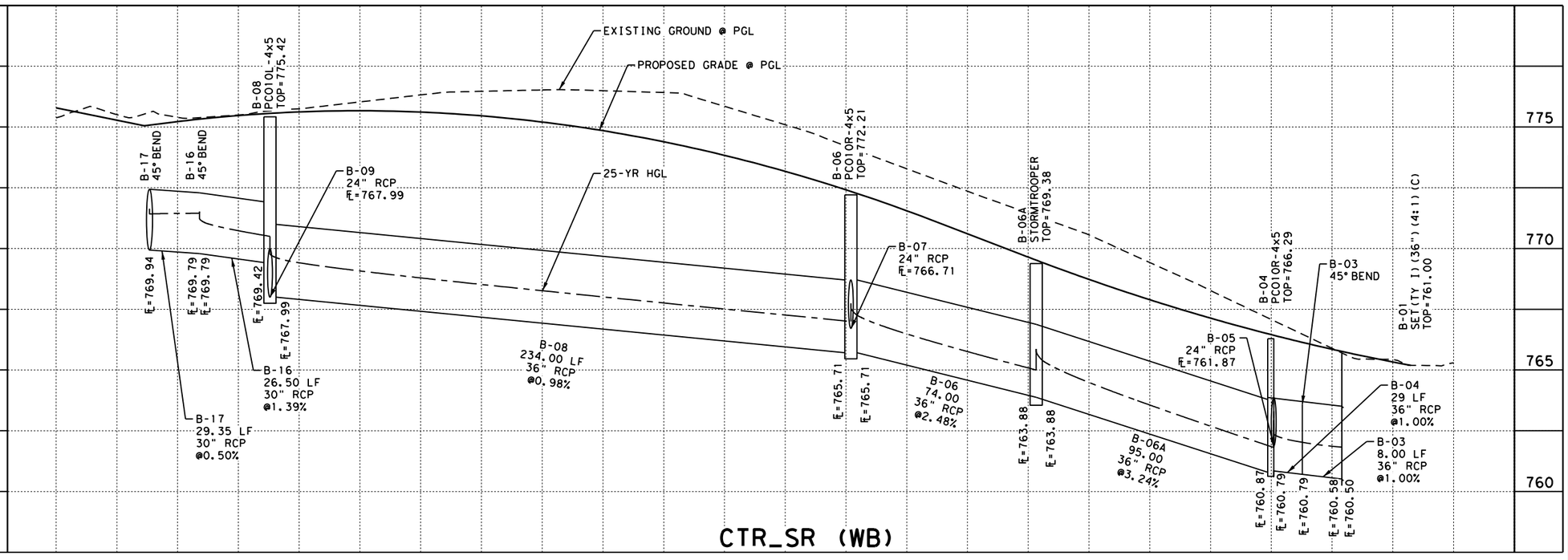

NOTES:

1) BEDDING MATERIAL FOR STORM SEWER SHALL REFERENCE CORR DETAILS: D-01 & D-02

2) ALL STORM SEWER BENDS, WYES, AND PIPE SIZE TRANSITIONS SHALL BE PRE-FABRICATED AND FREE FROM DEFECTS.

3) NO TWO(2) PREFAB INLETS MAY BE PUT TOGETHER TO ACHIEVE A 15' OR 20' INLET.

4) BEDDING SHALL BE TO TOP OF PIPE.

0 25 50
SCALE: 1"=50' H
1"=5' V

STATE OF TEXAS
MD KAMRUL ISLAM
126996
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PROFESSIONAL ENGINEER
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CHISHOLM TRAIL RD
DRAINAGE
STORM SEWER (WB)
PLAN & PROFILE

SHEET 9 OF 9

DESIGNED BY:	EB	142
DRAWN BY:	EB	
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APPROVED BY:		

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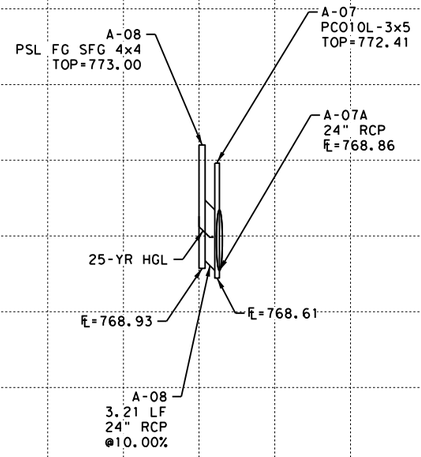

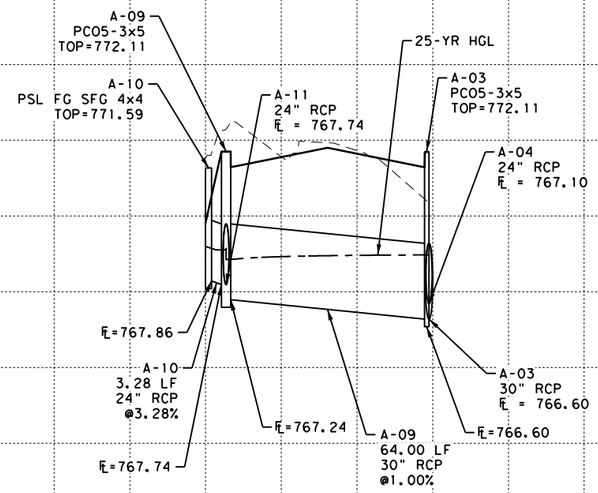

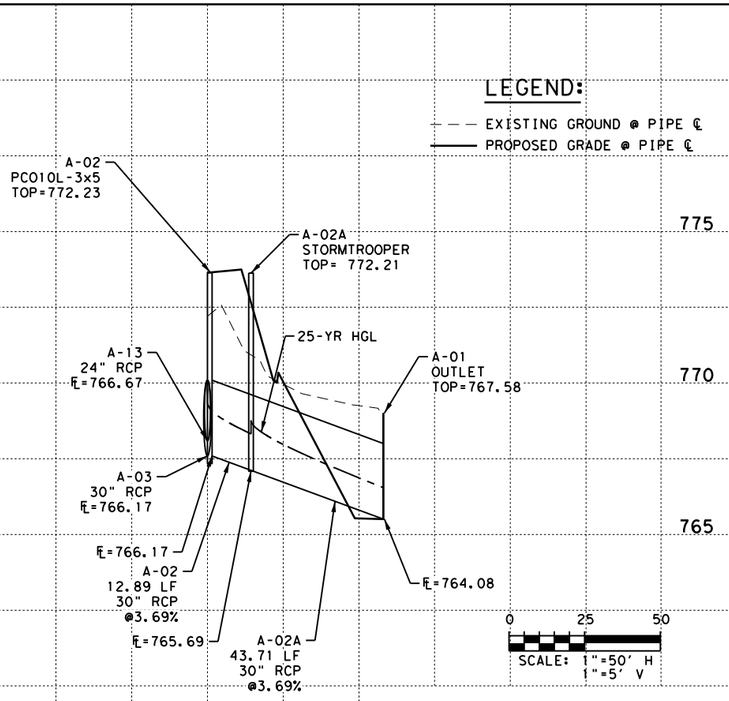

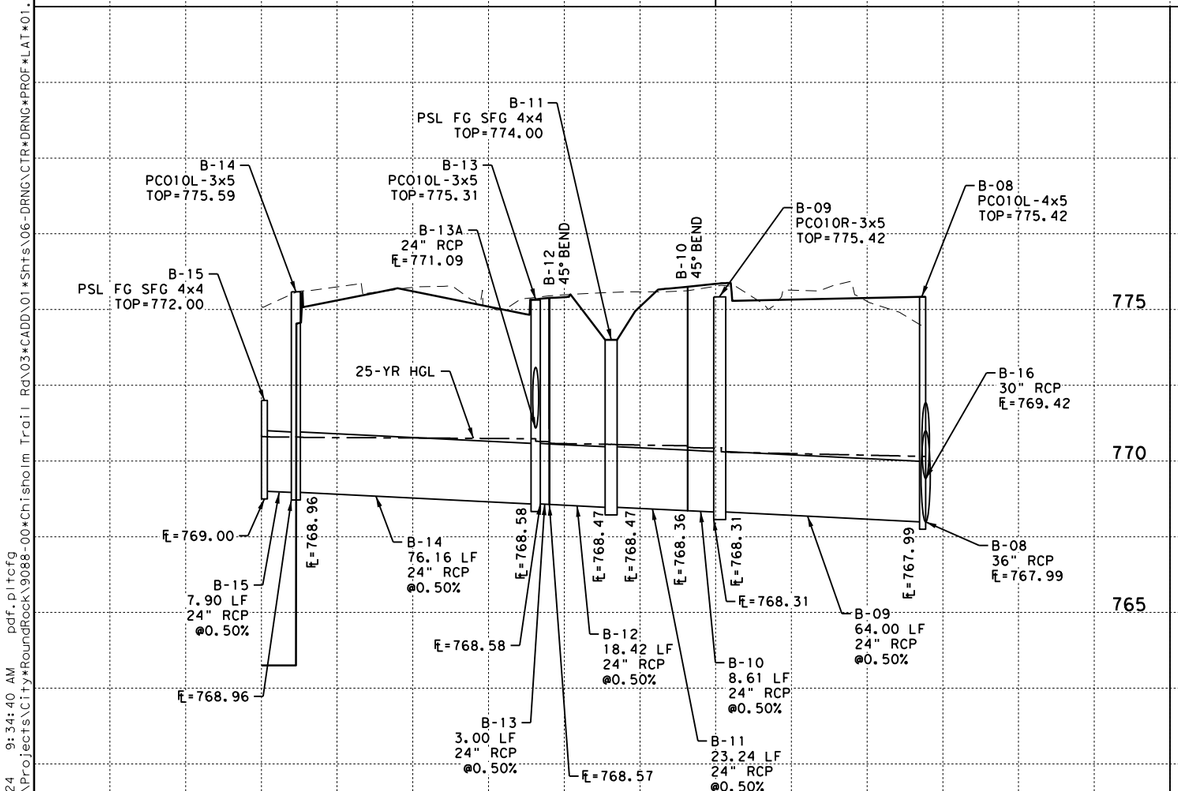

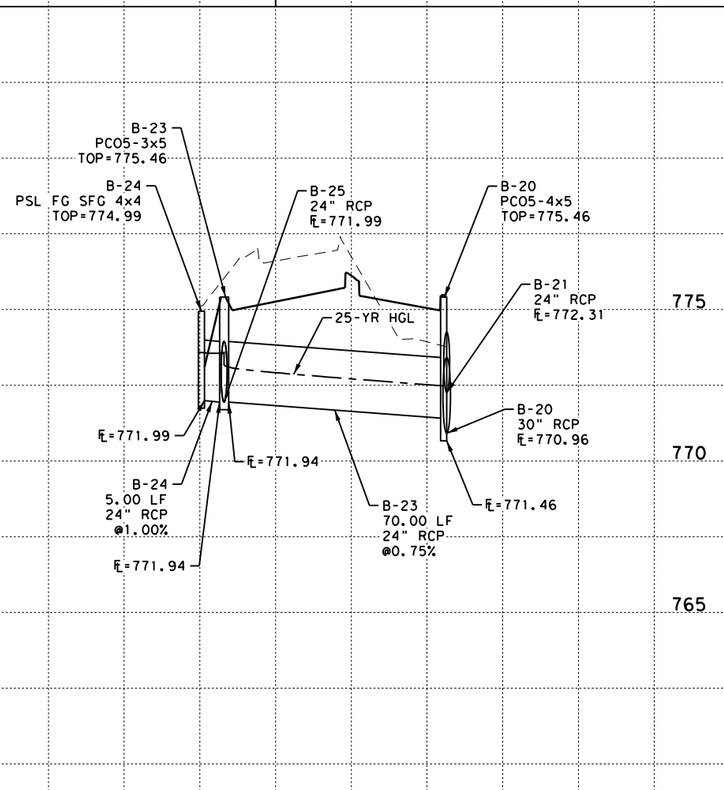

STATE OF TEXAS
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CHISHOLM TRAIL RD
DRAINAGE
STORM SEWER
LATERALS

SHEET 1 OF 2

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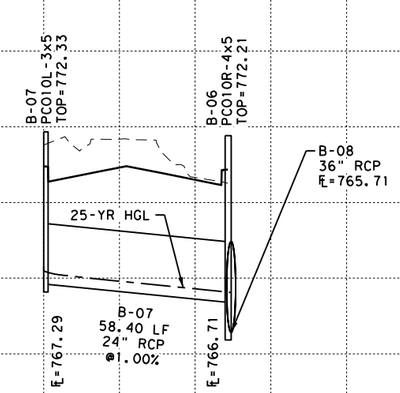

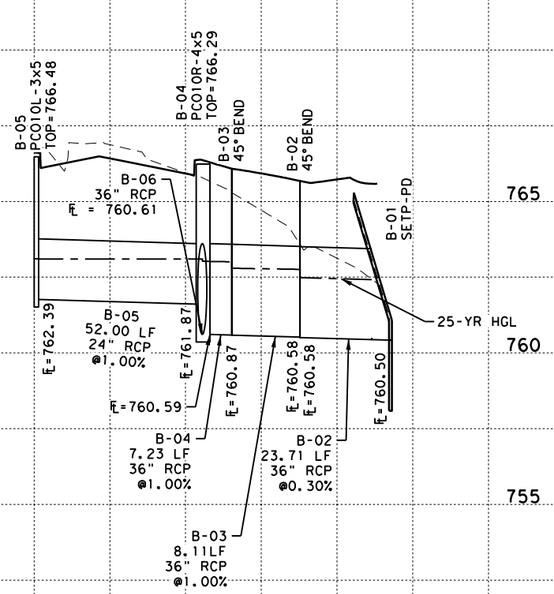

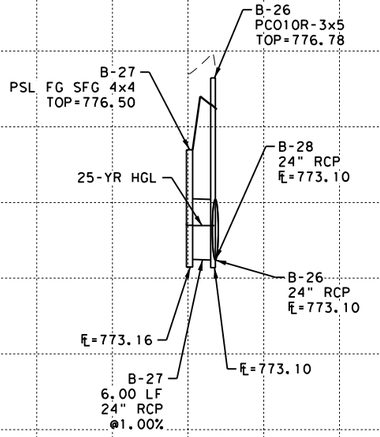

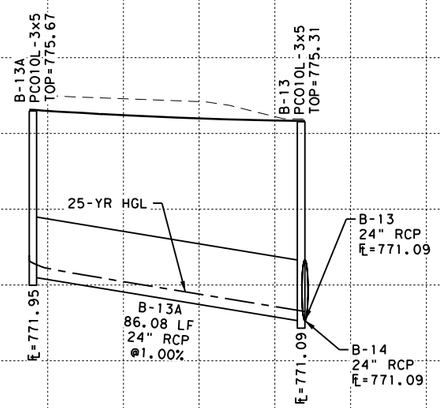

LEGEND:

- EXISTING GROUND @ PIPE ℄
- PROPOSED GRADE @ PIPE ℄

0 25 50

SCALE: 1"=50' H
1"=5' V

STATE OF TEXAS
MD KAMRUL ISLAM
126996
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8/3/2023

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CHISHOLM TRAIL RD
DRAINAGE
STORM SEWER
LATERALS

SHEET 2 OF 2

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Texas Commission on Environmental Quality
TSS Required Load Reduction Calculations

Project Name: Chisholm Trail Road
Project Location: City of Round Rock
Date Prepared: 10/11/2023
Prepared For: Imani Elston

Lm = 27.2(AN x P)

where: Lm = Required TSS removal
An = Net increase in impervious area for site
P = Average annual precipitation, inches

Site Data:
County = **Williamson**
Stormwater Quality Structure = **Wet Vault**
Total site area = **6.48** acres
Pre-development impervious area = **2.19** acres
Post-development impervious area = **4.73** acres
Post-development impervious fraction = **0.73**
P = **32** inches

Lm = **2211** lbs. Total Project Required Removal

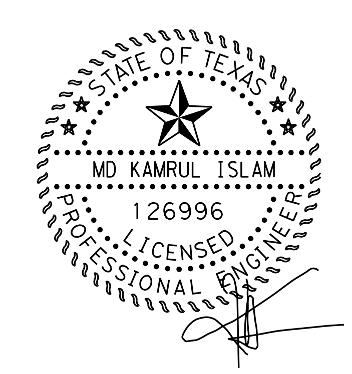
Drainage Basin	Outfall	Total Area	Impervious Cover	Impervious Area	Pre-Dev. Impervious Cover	A_n for Drainage Area	Runoff Coef. (C)	Pervious Area	Runoff Coef. (C)	Composite Runoff Coef. (C)	**Effective Area**	Intensity (I)	Calculated Flow (Q)	Required Pollutant Removal	StormTrooper Model	Unit Surface Area	By-Pass Flowrat e	Intensity Treated	Fraction of Flow Treated (F)	F/0.9	Overflow Rate (ft/s)	Removal Effeciency	Actual Effeciency	Load Reduction (L_R)
	[ID]	[ac]	[%]	[ac]	[ac]	[ac]		[ac]			[ac]	[in/hr]	[cfs]	L_m in [lbs]	#	(sf)	(cfs)	[in/hr]	[Figure 3-11]			[Figure 3-10]		(lbs)
1	A	**2.7400**	**71.2%**	1.95	**1.0100**	0.94	0.9	0.79	0.03	0.65	0.87	1.1	1.96	819	**10**	149	1.34	0.75	**0.80**	0.89	8.98E-03	**52%**	46%	**1005**
2	B	**3.7400**	**74.4%**	2.78	**1.1800**	1.60	0.9	0.96	0.03	0.68	1.47	1.1	2.79	1395	**10**	149	1.34	0.53	**0.73**	0.81	8.98E-03	**52%**	42%	**1306**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**
				0.00		0.00	0.9	0.00	0.03	#DIV/0!	0.00	1.1	#DIV/0!	0		#N/A	#N/A	#N/A	**0.90**	1.00	#N/A		0%	**0**

Total TSS Removed by BMP's Annually = 2311
Total Required Reduction (Lm) = 2211
Solids Removed By Other Means = 0
Sufficient Removal = Yes

STORMTROOPER

Model	**S.A.**	**By-Pass**	**E.A. @ 80%**
5	100	420	< 0.13
10	149	600	0.14 - 0.20
20	248	1000	0.21 - 0.33
25	369	1440	0.34 - 0.50
40	588	2250	0.51 - 0.79
70	730	2720	0.80 - 0.98
110	913	4000	0.99 - 1.23

E.A. = (Imp. x 0.9 + Perv. x 0.03)
100% Impervious Acres Treated/Single Unit
0.14 Acres
0.22 Acres
0.37 Acres
0.56 Acres
0.88 Acres
1.09 Acres
1.37 Acres



02-08-2024

Texas Commission on Environmental Quality
TSS Removal Calculations per RG-348 (Addendum Item 3.4.20)

AREA A	DRAINAGE BASIN 1	TOTAL SITE DETAILS

Project Name: Chisholm Trail Road
Project Location: City of Round Rock
Date Prepared: 10/11/2023
Prepared By: Imani Elston
Total Project Area to be Treated = 6.48
Pre-Development Impervious Area = 2.19
Post-Development Impervious Area = 4.73
Composite Run-Off Coefficient = 0.73
Required TSS Removal L_m = 2211
County = Williamson

STEP ONE: Required TSS Removal

EQUATION 3.3

$L_m = 27.2(A_n \times P)$

L_m = Required TSS Removal (pounds)

A_n = Net Increase in Impervius Area (acres)

P = Average Annual Precipitation (inches)

Drainage Basin =	2.74	Acres
Pre-Dev. Imp. Area =	1.01	Acres
Post-Dev. Imp. Area =	0.94	
Pervious Area =	0.79	Acres
P =	32	Inches
L_m =	819	Lbs

STEP TWO: Select an Appropriate BMP

Effective Area =	0.87	EA = (Ai x 0.9) + (Ap x 0.03)
StormTrooper SWAQ_	10	
Unit Surface Area =	149	Sq. Ft.

STORMTROOPER	
Model	**E.A. @ 80%**
5	< 0.13
10	0.14 - 0.20
20	0.21 - 0.33
25	0.34 - 0.50
40	0.51 - 0.79
70	0.80 - 0.98
110	0.99 - 1.23

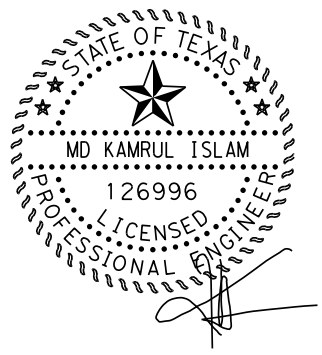
EQUATION 3.4

Q = CiA, where:

C =	0.65	Composite Run-Off Coefficient
i =	1.10	Stormwater Quality Intensity
A =	2.74	Drainage Basin Acreage
Q =	1.96	Required Treatment Flow

EQUATION 3.5

Q =	1.96	Required Treatment Flow
A =	149	Unit Surface Area
V_{OR} =	8.98E-03	Overflow Rate
BMP Effeciency =	52%	



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STEP THREE: Calculate Fraction of Annual Runoff to be Treated

Unit By-Pass Flowrate =	1.34	cfs
Treated Intensity =	0.75	in/hr
Annual Volume Treated =	80%	Volume of Run-Off Entering Unit
Treatment Reduction =	0.89	BMP Effeciency Reduction Factor
Actual BMP Effeciency =	46%	

STEP FOUR: Calculate TSS Load Removed by BMPs

EQUATION 3.8

$L_r = (\text{BMP Efficiency}) \times P \times (A_i \times 34.6 + A_p \times 0.54)$

L_r = Load Removed by BMP

BMP Efficiency = TSS Removal Efficiency

A_i = Impervious Tributary Area to the BMP (ac)

A_p = Pervious Tributary Area to the BMP (ac)

A_i =	1.95	
A_p =	0.79	
L_r =	**1005**	**lbs**

Texas Commission on Environmental Quality
TSS Removal Calculations per RG-348 (Addendum Item 3.4.20)

AREA B	DRAINAGE BASIN 2	TOTAL SITE DETAILS

Project Name: Chisholm Trail Road
Project Location: City of Round Rock
Date Prepared: 10/11/2023
Prepared By: Imani Elston
Total Project Area to be Treated = 6.48
Pre-Development Impervious Area = 2.19
Post-Development Impervious Area = 4.73
Composite Run-Off Coefficient = 0.73
Required TSS Removal L_m = 2211
County = Williamson

STEP ONE: Required TSS Removal

EQUATION 3.3
$L_m = 27.2(A_n \times P)$
L_m = Required TSS Removal (pounds)
A_n = Net Increase in Impervius Area (acres)
P = Average Annual Precipitation (inches)

Drainage Basin =	3.74	Acres
Pre-Dev. Imp. Area =	1.18	Acres
Post-Dev. Imp. Area =	1.60	
Pervious Area =	0.96	Acres
P =	32	Inches
L_m =	1395	Lbs

STEP TWO: Select an Appropriate BMP

Effective Area =	1.47	EA = (Ai x 0.9) + (Ap x 0.03)
StormTrooper SWAQ_	10	
Unit Surface Area =	149	Sq. Ft.

STORMTROOPER	
Model	**E.A. @ 80%**
5	< 0.13
10	0.14 - 0.20
20	0.21 - 0.33
25	0.34 - 0.50
40	0.51 - 0.79
70	0.80 - 0.98
110	0.99 - 1.23

EQUATION 3.4
Q = CiA, where:

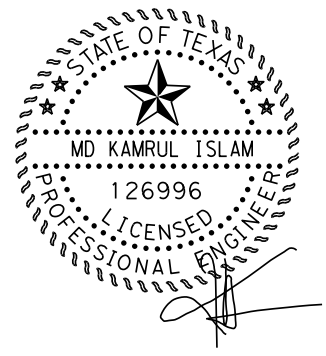
C =	0.68	Composite Run-Off Coefficient
i =	1.10	Stormwater Quality Intensity
A =	3.74	Drainage Basin Acreage
Q =	2.79	Required Treatment Flow

EQUATION 3.5

Q =	2.79	Required Treatment Flow
A =	149	Unit Surface Area
V_{OR} =	8.98E-03	Overflow Rate
BMP Effeciency =	52%	

STEP THREE: Calculate Fraction of Annual Runoff to be Treated

Unit By-Pass Flowrate =	1.34	cfs
Treated Intensity =	0.53	in/hr
Annual Volume Treated =	73%	Volume of Run-Off Entering Unit
Treatment Reduction =	0.81	BMP Effeciency Reduction Factor
Actual BMP Effeciency =	42%	

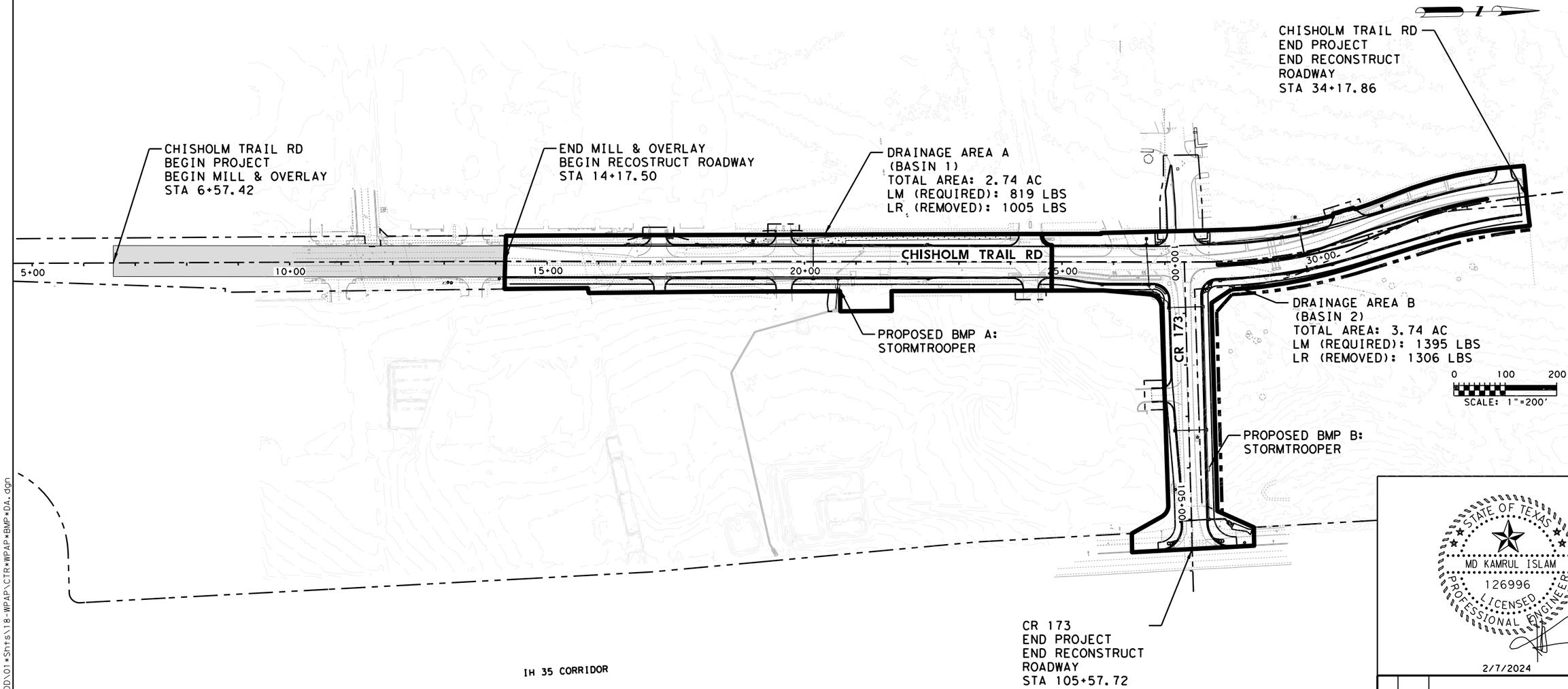


02-08-2024

STEP FOUR: Calculate TSS Load Removed by BMPs

EQUATION 3.8
$L_r = (\text{BMP Efficiency}) \times P \times (A_i \times 34.6 + A_p \times 0.54)$
L_r = Load Removed by BMP
BMP Efficiency = TSS Removal Efficiency
A_i = Impervious Tributary Area to the BMP (ac)
A_p = Pervious Tributary Area to the BMP (ac)

A_i =	2.78
A_p =	0.96
L_r =	**1306 lbs**



STATE OF TEXAS
MD KAMRUL ISLAM
126996
LICENSED
PROFESSIONAL ENGINEER

2/7/2024

NO.	DATE	REVISION	APPROVED

ROUND ROCK TEXAS

BGE, Inc.
101 W. Louis Henna Blvd., Suite 400
Austin, TX 78728
Tel: 512-879-0400 • www.bgeinc.com
TBPE Registration No. F-1046

CHISHOLM TRAIL RD

BMP DRAINAGE AREA MAP

SHEET 1 OF 1

DESIGNED BY:	EB
DRAWN BY:	EB
CHECKED BY:	
APPROVED BY:	

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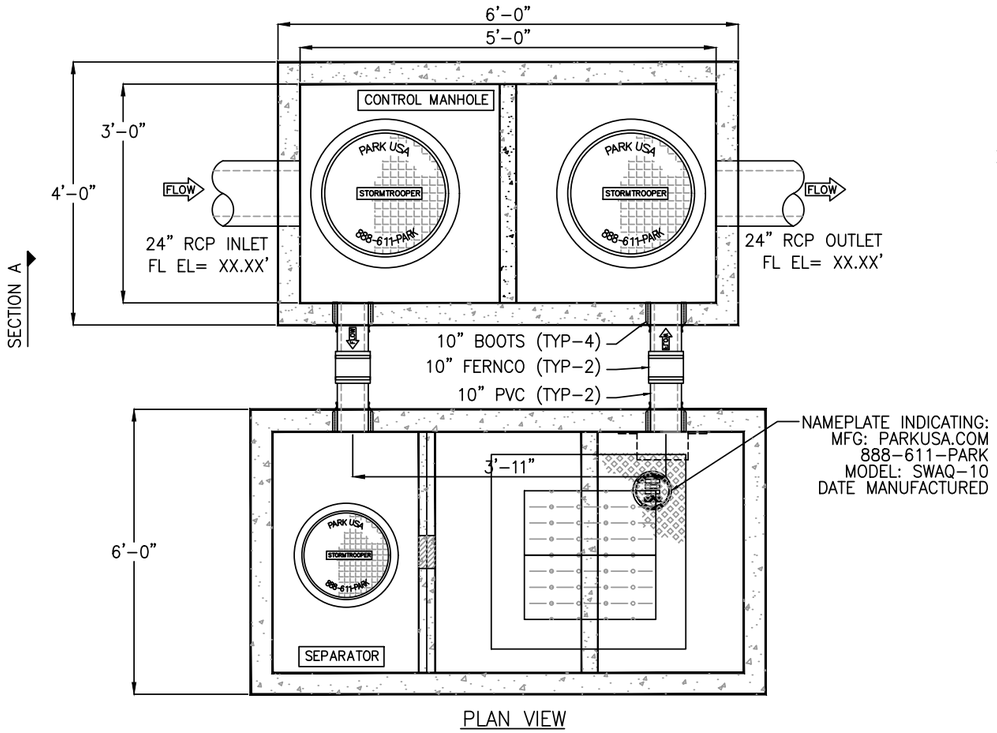
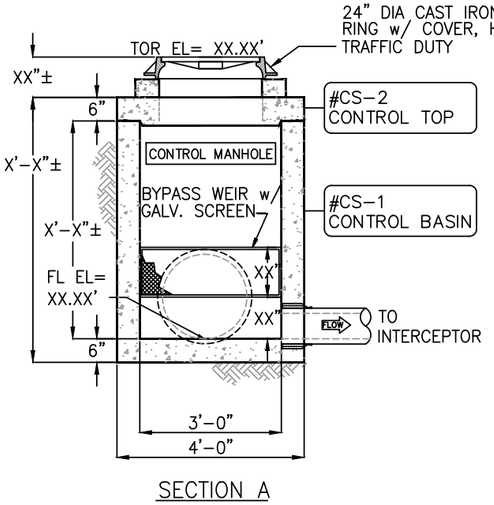
G:\TXC\Projects\CityofRoundRock\9088-00\Chisholm Trail Rd\03\CADD\01\Shts\18-WPAP\CTR-WPAP-BMP-DA.dgn

STORMTROOPER® AQ
EDWARDS AQUIFER DESIGN
SERIAL # XXXXXX
MODEL # SWAQ-10
ORDER # XXXXXX
DATE MFG 10/23
MFG BY PARK
www.parkusa.com
Pat#: 7,470,361
STORMWATER INTERCEPTOR

CONTRACTOR/ENGINEER TO VERIFY ELEVATIONS PRIOR TO PRODUCTION



PLAN VIEW



SECTION A

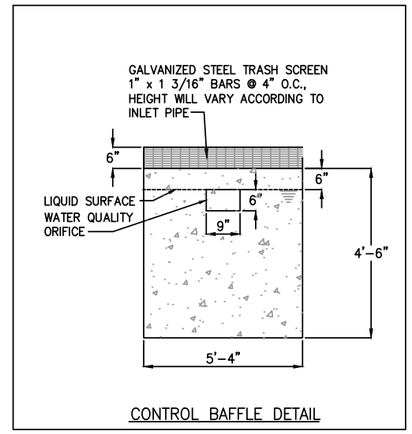
SPECIFICATIONS

CONCRETE:	CLASS 1 CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
REINFORCEMENT:	GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
GRATING:	ALL STEEL FABRICATION SHALL BE IN ACCORDANCE TO AWA D1.1. STEEL SHALL BE ASTM A36 CARBON STEEL, AND HOT-DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE TO ASTM A123
ACCESS:	MANHOLE FRAMES, COVERS OR GRATES ARE MANUFACTURED OF GRAY CAST IRON CONFORMING TO ASTM A48-76 CLASS 30. MANHOLE SHALL HAVE 30 INCH INSIDE DIAMETER AND BE TRAFFIC DUTY.
HATCHWAYS:	GALVANIZED STEEL SKID-RESISTANT DOUBLE LEAF H-35 RATED.

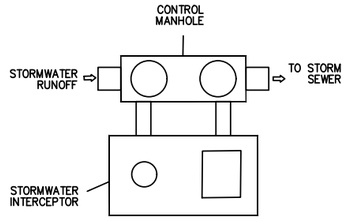
ENGINEERING DATA

INTERCEPTOR IS STRUCTURALLY AND HYDRAULICALLY ENGINEERED CONFORMING TO REGULATORY STANDARDS. NOMINAL CAPACITY AS INDICATED.

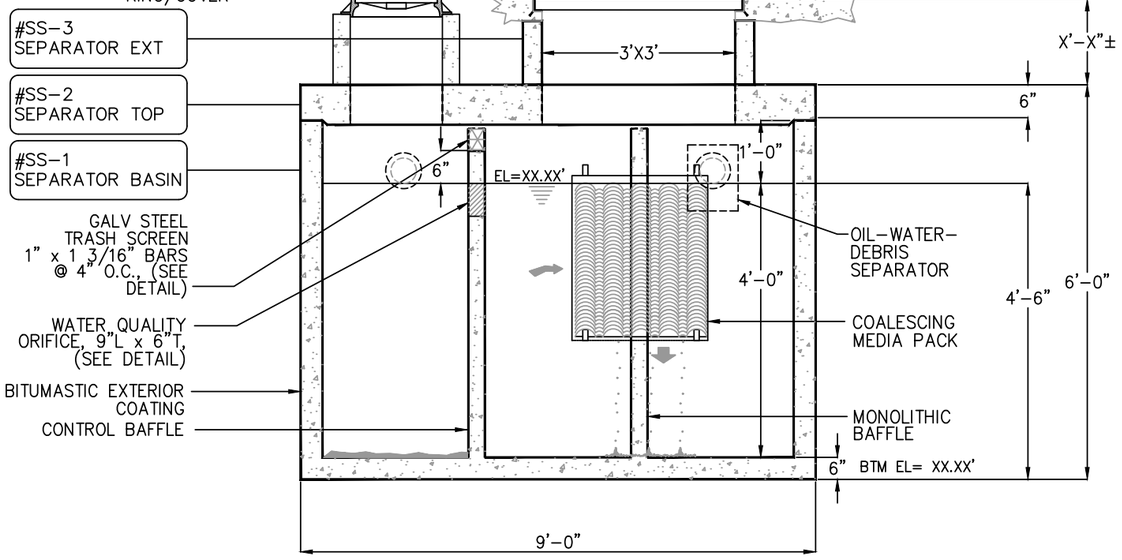
FIELD EXCAVATION AND PREPARATION SHALL BE COMPLETED PRIOR TO DELIVERY OF INTERCEPTOR. USE DIMENSIONAL DATA AS SHOWN.



CONTROL BAFFLE DETAIL



KEYPLAN



ELEVATION

MODEL NO.	FLOW RATE (gpm)	VAULT SURFACE AREA (sf)	NUMBER OF PLATE COLUMNS	NUMBER OF STACK FEET/ COLUMN	PROJECTED SURFACE AREA OF PLATES (Ft^2)	TOTAL SURFACE AREA OF SYSTEM (Ft^2)	MAXIMUM EFFECTIVE AREA FOR 80% REDUCTION
SWAQ-10	600	30	1	3.0	119	149	0.20

GENERAL INFORMATION

THE STORMTROOPER®AQ STORMWATER INTERCEPTOR IS DESIGNED TO RECEIVE & TREAT STORMWATER RUNOFF ON A GRAVITY-FLOW AND ONCE-THROUGH BASIS.

GUARANTEED PERFORMANCE

PRE-ENGINEERED COALESCING MEDIA PACKS ARE UTILIZED FOR ENHANCED SEPARATION WHICH PROVIDE SUPERIOR PERFORMANCE COMPARED TO OTHER SEPARATORS WHICH UTILIZE BAFFLES OR DIVERTERS.

APPLICATIONS

THE PARK STORMTROOPER INTERCEPTOR IS DESIGNED FOR STORMWATER RUNOFF FROM COMMERCIAL & INDUSTRIAL APPLICATIONS WHERE EXCESSIVE POLLUTANTS MAY HARM THE ENVIRONMENT OR DAMAGE SEWER SYSTEMS.

BY-PASS DESIGN

A BY-PASS MANHOLE DIVERTS STORMWATER DURING HEAVY PEAK STORM PERIODS. THIS ALLOWS FOR OPTIMAL INTERCEPTOR SIZING.

MAINTENANCE

THE PARK STORMTROOPER INTERCEPTOR REQUIRES MINIMAL MAINTENANCE. HYDROCARBONS AND SOLIDS ARE REMOVED FROM THE STORMWATER VIA BAFFLES AND COMPARTMENTS.

THESE POLLUTANTS ARE REMOVED FROM THE SEPARATOR WHEN SERVICED BY A LICENSED VACUUM TRUCK OPERATOR.

Storm® Trooper AQ
Stormwater Treatment System Patent No: 7,470,361

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REV	DATE	BY	DESCRIPTION
A	10/27/23	JJ	ORIGINAL SUBMITTAL

PROJECT:	CITY OF ROUND ROCK		
CUSTOMER:	.		
ENGINEER:	BGE	S/N #:	XXXXXX
ORDER #:	.	PROJ #:	23-XXXXX
DATE:	10/27/2023	LOCATION:	ROUND ROCK, TX

PARK USA
A Northwest Pipe Company

STORMTROOPER AQ
STORMWATER QUALITY INTERCEPTOR

PM	PC	DRN	ENG	DWG. NO.	REV.
NW	.	JJ	NS	SWAQ-10-BYPASS	A
DATE 10/2023					

CREATED ON 10/27/2023 BY -----
LAST MODIFIED ON 10/27/2023 3:38 PM BY JENNINGS

PLOTTED ON 10/27/2023 3:39 PM BY Jennings, Jonathon, Y:\Parkdwgs\STORMWATER\gSTORMTROOPER\Aquifer Drawings - Kyle\Jobs\SWAQ-10-BYPASS-CITY OF ROUND ROCK

Attachment H – Inspection, Maintenance, Repair and Retrofit Plan

StormTrooper

Inspections. Inspections should take place, at minimum, quarterly to ensure that the system is serviced at the appropriate times. The attached StormTrooper Maintenance Guide provides instructions and details on the Inspection Procedure during both wet and dry weather conditions. Inspection activities can include observing: the amount of debris/trash in the interceptor, any damages to the coalescing plates, and the oil and sediment levels. A sample inspection and maintenance log is included in the Maintenance Guide that follows.

Maintenance. The unit must be cleaned annually, which includes the removal and disposal of all water, sediment, and debris. The maintenance procedure is included in the StormTrooper Operation and Maintenance Guide in the following pages. Material disposal and accumulated sediment found in the system must be handled and disposed of in accordance with TCEQ and City of Round Rock regulatory protocols – refer to the Technical Guidance on Best Management Practices (RG-348) for further information.

Repair and Retrofit. With each inspection, any damage to components of the StormTrooper should be identified and repaired immediately. Additional information related to the replacement of StormTrooper parts is included in the following documents.

Soil Stabilization Practice (Seeding, Sodding, Preservation of Natural Resources)

Inspections. Maintenance forces will review roadways and roadsides on a regular basis, most of which are visited within a weekly cycle and/or according to City of Round Rock standards. Drainage ditches and structures are inspected after large storms with consideration for any damage to grass cover, litter accumulation, or erosion. Any problem areas are duly noted particularly if there is an absence of vegetation, any accumulation of brush, debris or litter, and/or any areas of significant erosion. These items will then be scheduled for repair on priority basis.

Maintenance. Litter, debris, and brush accumulation is assessed not only for aesthetic reasons but also for the tendency to clog drainage paths or impede the intended flow of a structure's hydraulic design. Areas are cleaned periodically by City forces or by outside contractor. Areas documented as trouble spots are scheduled on a priority basis. Right of Way areas, will be mowed by contract. The cutting height is usually 5-7 inches for all areas, unless otherwise directed by the City. Any vegetated areas that have noxious vegetation, insects, or other pests will be remedied with the minimum amount of selective pesticide necessary to control the pest. All chemicals are EPA labeled, registered, and approved. Personnel licensed and/or trained according to Texas Department of Agriculture (TDA) laws and regulations will apply pesticides. Records are kept for each application in accordance with TDA laws and regulations.

Repair and Retrofit. If minor retrofit or revegetation is needed for water quality controls, it can be done with maintenance or contracted personnel. Major repairs or changes must come through City of Round Rock staff or its consultants for engineering data and structural approval.

The City of Round Rock Utilities Superintendent may be contacted for questions or concerns that pertain to the maintenance of this facility after it is completed and operating. The current Utilities Superintendent has approved these guidelines and has signed below.

Kieth Kaderka

Superintendent - Utilities

City of Round Rock

11-28-2023

Date

Headquarters
Northwest Pipe Company
201 NE Park Plaza Drive, Suite 100
Vancouver, WA 98684
P: 360-397-6250

ParkUSA Texas Coastal
7015 Fairbanks N Houston
Houston, TX 77040
P: 713-937-7602

ParkUSA Central Texas
8491 Hwy 87 East
San Antonio, TX 78263
P: 210-227-7275

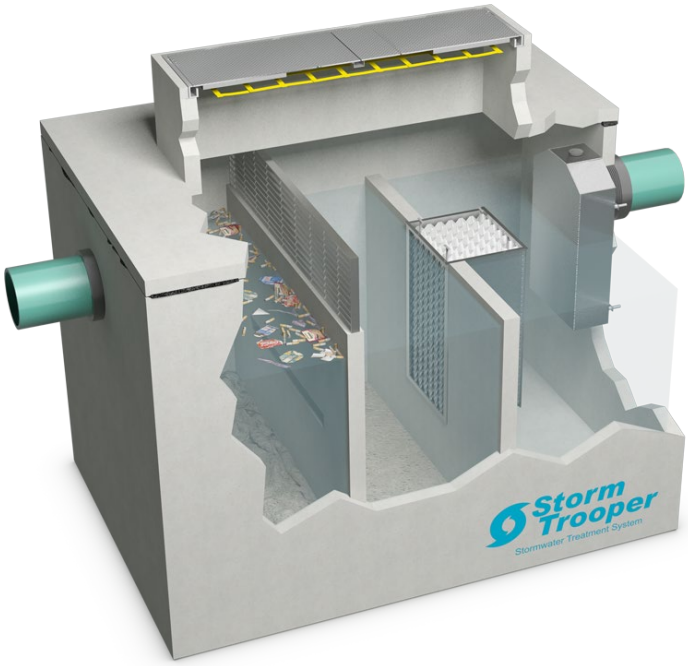
ParkUSA North Texas
1200 N Fwy Service Rd
Ferris, TX 75125
P: 972-842-8801

Operation And Maintenance

PRODUCTS
StormTrooper®AQ
StormWater Interceptor
SWAQ

MANUFACTURER
ParkUSA
7015 Fairbanks N Houston
Houston, TX 77040

Job #: 23-51630



Expect the Best...

Who would expect any less than the best when specifying or purchasing equipment for their construction projects. Engineers and contractors know ParkUSA Company for its quality products and services in the construction industry. Feel free to contact our office for engineering and sales assistance.

Limited Warranty

All goods sold hereunder are warranted to be free from defects in material and factory workmanship for a period of one year from the date of purchase. We will replace goods that prove defective at no cost,provided we are notified in writing of such defect and evidence that the product has been properly maintained and used in accordance with manufacturer's intended purpose. We will not be responsible for any labor charges, loss, injury, or damages whatsoever, including incidental or consequential damages. The sole and exclusive remedy shall be limited to the replacement of the defective goods. Before installation and use, the purchaser shall determine the suitability of the product for its intended use and the purchaser assumes all risk and liability, whatever in connection there with.

Table of Contents

Subject	*Section*
StormTrooper®AQ Interceptor & Accessories	**SECTION 1**
Maintenance	**SECTION 2**
Testing & Certification	**SECTION 3**

ParkUSA Quick Submittal Response:
For clarifications or additional questions regarding this submittal, please contact Engineering at eng@parkusa.com

SECTION 1

StormTrooper®AQ

Interceptor & Accessories

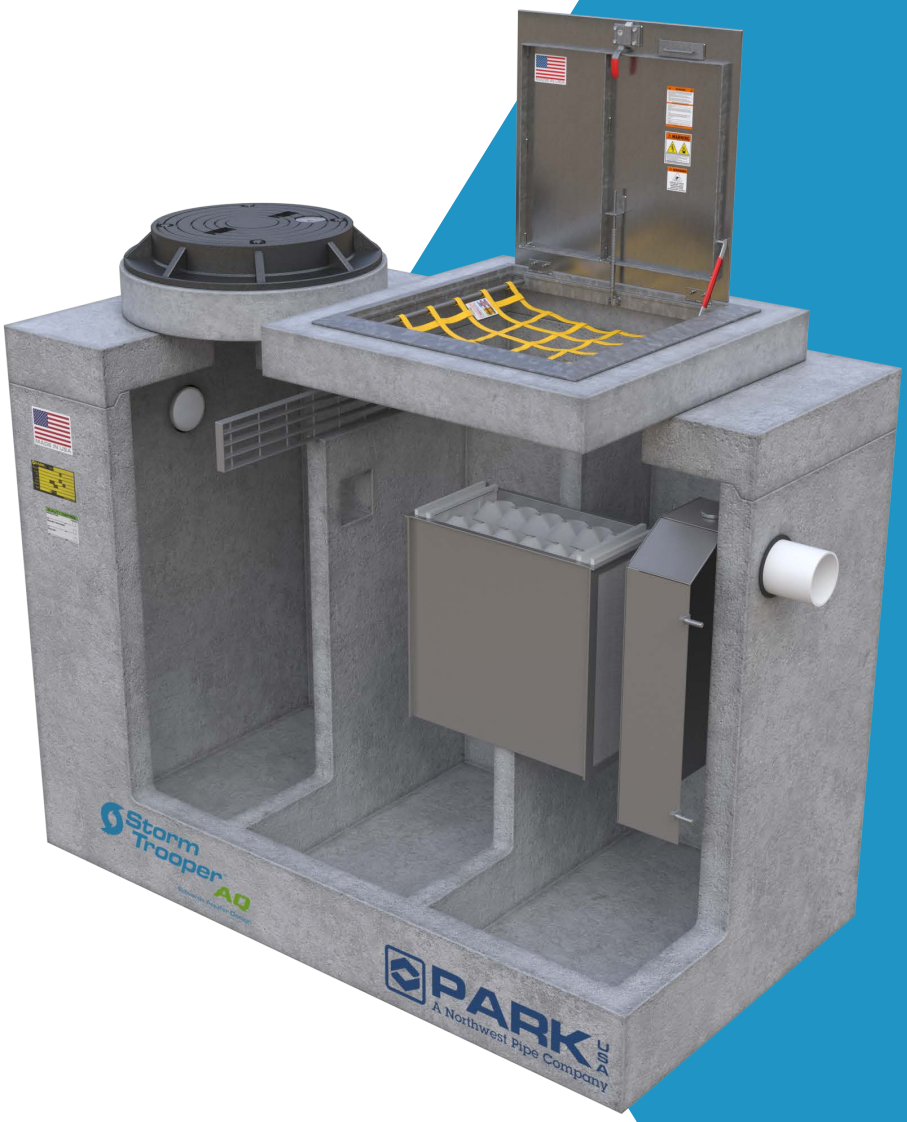
PARK USA
A Northwest Pipe Company

Storm Trooper® AQ

Patent No: 7,470,381

Edwards Aquifer Design

Stormwater Quality Wet Vault



PARK USA

A Northwest Pipe Company

ENGINEERING **FACTS**

GENERAL INFORMATION

The ParkUSA Stormtrooper Model SWAQ is a patented stormwater quality system specifically designed for sensitive environments. It removes sediments and oil from stormwater runoff. The SWAQ was originally designed for the Edwards Aquifer, meeting all requirements for this sensitive aquifer recharge zones. The unit consists of a separator with internal flow control.

The Edwards Aquifer, located in South Central Texas, is one of the greatest natural resources of artesian aquifers in the world. It serves as the primary source of water for over two million people. Because the aquifer is highly permeable and has rapid recharge and discharge, the aquifer produces large quantities of water. However, this phenomenon makes the aquifer highly vulnerable to contamination where it is exposed at the surface in the recharge zone.

Sustainable management of water quality is imperative if future generations hope to enjoy this natural resource. Stormwater runoff collects pollutants like trash, debris and oil dumping them directly into the stormwater drainage system. Until recently, stormwater runoff was left untreated with no protection from pollutants entering the aquifer, public waterways, streams, rivers and lakes.

The StormTrooper® AQ is a patented stormwater wet vault specifically designed to intercept free oils, grease, TSS, debris and other pollutants found in stormwater runoff. StormTrooper AQ features “Enhanced” Gravity Separation which is technology utilizing coalescing media plates engineered to a performance prediction based on Stoke’s Law. This cutting-edge technology is now available for use to protect the Edwards Aquifer for future generations.

OPERATION

Untreated storm water enters the “Grit Chamber” on the inlet side of the StormTrooper AQ. Larger particles, as well as semi buoyant material, are captured in this chamber to prevent excessive clogging and obstruction of the frontal area of the coalescing media plates. This process also reduces the potential for short circuiting and higher velocities through the plates. The “diffusion baffle,” which separates the two chambers, works to perform two vital functions. First, it distributes flow evenly through the entire cross-section of the unit allowing for a more uniform delivery of pollutants through the plate. Next, a water quality orifice regulates flow through the plates and lower section of unit to prevent re-suspension of pollutants. Each StormTrooper has a specific maximum flow rate that has been pre-calibrated. Higher flow rates by-pass the system once the pre-calibrated flow rates are exceeded.

Coalescing Media Plates: A submerged oil/floatable baffle is located around the effluent pipe to allow for the capture and containment of these pollutants. Collected pollutants will remain in the interceptor until removal. Because no filter cartridges are required operating costs are minimal. Furthermore, the StormTrooper AQ System has no moving parts substantially reducing maintenance costs. As stormwater pollutants travel through the CMP (coalescing media plate pack) oil rises to the top and solids drop to the bottom through dedicated surfaces and weep holes. Plate supports at the bottom allow for easy removal of the solids that collect beneath the plates. Because of the steep angles and short travel distances, oils and solids are quickly released eventually floating to the surface of the StormTrooper unit or settling to the bottom of the unit.

FEATURES

- Best Value BMP
- Larger Effective Area (EA) Treatment
- Low Profile Design
- LEED Compliant
- Enhanced Gravity Separation Utilizing CMP Technology
- Texas Manufactured
- Third Party Tested by SwRI

The ParkUSA Stormtrooper Model SWAQ is a patented stormwater quality system specifically designed for sensitive environments. It removes sediments and oil from stormwater runoff. The SWAQ was originally designed for the Edwards Aquifer, meeting all requirements for this sensitive aquifer recharge zones. The unit consists of a separator with internal flow control.

SYSTEM COMPONENTS

The StormTrooper AQ shall consist of a control manhole connected to a separator unit to remove debris (TSS) and hydrocarbons from stormwater.

The Separator Unit, shall be connected to the control manhole by means of a flexible resilient rubber boot [mortar joint]. The unit shall maintain a minimum separation of 36 inches between the Control Manhole and the Separator Unit.

The Separator Unit shall contain a prefabricated corrugated plate for intermittent and variable flows of water, oil, or any combination of non-emulsified oil-water mixtures ranging from zero-flow up to 100 percent of the maximum hydraulic capacity. This will allow the separator unit to maintain an acceptable water effluent.

MAINTENANCE

A preventative maintenance cleanout schedule is the most valuable tool for maintaining the proper operation of StormTrooper. Separator maintenance costs will be greatly reduced if a good housekeeping plan for the property is developed i.e., trash pickup, lawn maintenance, dumpster control, etc.

StormTrooper separators have no moving parts and no filter cartridges. The manufacturer recommends quarterly ongoing inspections for accumulated pollutants. Pollutant deposition may vary from year to year. Quarterly inspections ensure that the system is serviced at the appropriate times. Professional vacuum services should be considered when capacities exceed these recommended levels.

It is very useful to keep a record of each inspection; therefore, an inspection and maintenance form has been attached for your use.
Inspection Procedures

1. Easiest observation and maintenance is best accomplished during non-flow (dry weather) conditions three to four days after the most recent rain.
2. Remove interceptor covers or open hatchway to observe conditions. Remove hatchway safety net (“EnterNet”). Observe for trash and debris and remove if necessary. This is the most important maintenance requirement. If absorbent pillows are utilized, observe their condition. Uniform browning or gray color of the pillow means they should be replaced. Observe baffle debris screen and clean if necessary.
3. Coalescing plates are self-cleaning and seldom require maintenance unless damaged. Do not walk on or stand on plate packs.
4. Check of the depth (level) of oil and sediment with a tank sampler device designed for this purpose.

DESIGN CONSIDERATIONS

As a flow-based BMP, the StormTrooper is designed using the treatment flow rate for the site, as calculated using the Rational Method. The runoff rate from the tributary area is calculated using Equation 3.4:

Q = CIA

Where:
Q = flow rate (ft3/s)
C = runoff coefficient for the tributary area
I = design rainfall intensity (1.1 in/hr)
A = drainage area (ac)
The runoff coefficient is calculated as the weighted average of the impervious and pervious areas. Runoff coefficient for impervious areas is assumed to be 0.90 and the runoff coefficient for pervious areas is assumed to be 0.03.
The overflow rate (hydraulic loading rate) is calculated using Equation 3.5:

VOR = Q/A

Where:
VOR = overflow rate (ft/s)
Q = runoff rate calculated with Equation 3.4 (ft3/s)
A = surface Area of Unit (ft2)
The overflow rate can then be used with the table to determine the StormTrooper unit that provides the desired TSS removal.

The StormTrooper system is available in several models. The table below summarizes the various unit models and their corresponding dimensions.

The characteristics of the catchment area are defined as Effective Area (EA). The Effective Area is the number of acres draining to a single treatment unit and is calculated using the following equation:

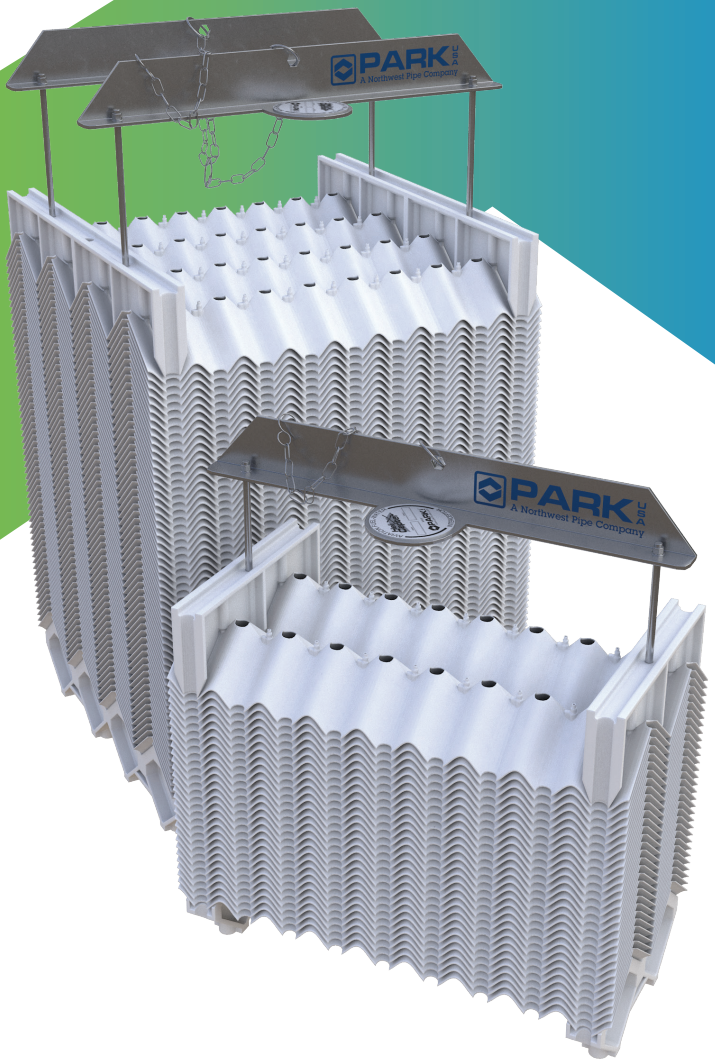
EA = (Ai * 0.9) + (Ap * 0.03)

Where:
EA = Effective Area (ac)
Ai = Impervious Area (ac)
Ap = Pervious Area (ac)

StormTrooper models can be selected from the table below that will achieve an 80 percent TSS reduction at the corresponding Effective Areas shown. The StormTrooper® SWAQ system for the Edwards Aquifer is designed using the overflow rates. These were calculated based on the surface area of the vault alone and a rainfall intensity of 1.1 in/hr.

PARK USA
A Northwest Pipe Company

COALESCING MEDIA PACK



Features

- Closely spaced to minimize rise distance required
- Made of oleophilic material which provides years of trouble-free service
- Multiple sizes available
- Made in the USA - CMP are made in America and meet the requirements of the Buy America Act

Coalescing Media Pack

The Coalescing Media Pack is a unique design that provides superior performance in environmental clean-up.

The plates are assembled into compact modular packs that are easy to install and are suitable for use in almost any application. The plates and supports are made of an oleophilic material which provides years of trouble-free service. There are no moving parts to fail or require expensive maintenance. The CMP itself is virtually self-cleaning.

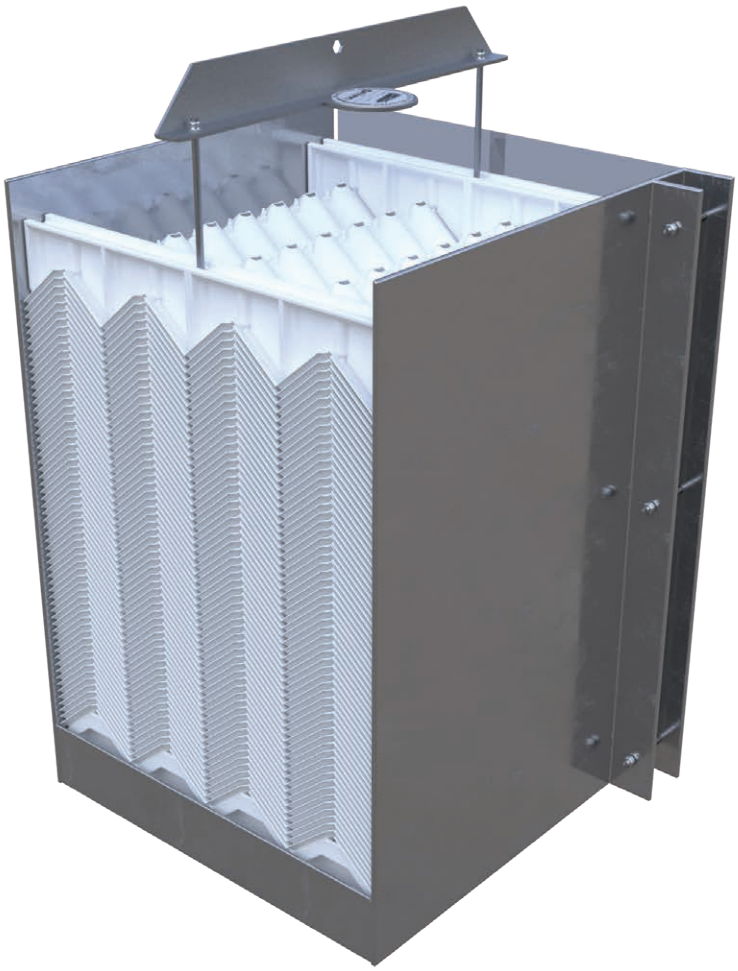
ParkUSA's CMP are designed with dedicated oil removal and solids shedding surfaces. They are provided with separate oil and solids exit ports to ensure maximum separation, thereby preventing the remixing of separated oil droplets and solid particles. The plates are specially designed for high efficiency and high flow applications. They are available with either 1/4" or 1/2" nominal spacings.

#BUILDING AMERICA!

WW | Coalescing Media Pack Standard

LEED® COMPLIANT · NPCA · Steel Tank Institute · ASPE American Society of Plumbing Engineers · ASTM · BMP® BEST MANAGEMENT PRACTICE · IPC® INTERNATIONAL PLUMBING CODE · UPC®

COALESCING MEDIA PACK



How It Works

Most physical mixtures of oil and water will separate eventually by gravity because oil has a tower specific gravity than water and will float on its surface. The rate at which solid particles fall in liquids is also governed by Stokes' Law.

Stokes' Law may be used to size an empty vessel separator. As the oily water flows horizontally through the separator, oil droplets rise vertically. A droplet is separated when it rises vertically to the surface before its horizontal movement carries it out in the effluent stream. If the droplets are small, or the specific gravity of the oil is close to that of water, this separation can require a very large vessel.

To request a quote or catalog, visit **request.parkusa.com.**

Maintenance

Because maintenance is very expensive, ParkUSA's CMP are designed to be largely self-cleaning. However, in conditions where large amounts of dirt are found, it may be necessary to access the solids collection area via the riser pipe. The sludge and solids can be removed using a flexible hose coupled to the suction of a pump.

Enhanced Gravity Separation

Droplets entering a separator are in a complex array of sizes and their rise rates vary greatly. The performance calculation is therefore extremely difficult.

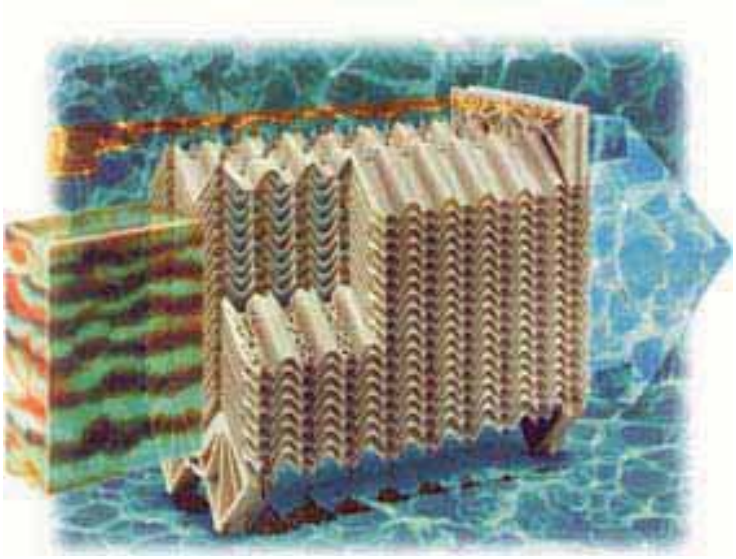
Droplets whose specific gravity vary will also have different rise rates. However, droplets entering a separator may be assumed to be of the same specific gravity and this factor can be ignored.

The CMP substantially reduce the amount of time required for separation. As a result, separator sizes can be greatly reduced because the plates increase droplet size by coalescence, and decrease the distance required for droplet capture.

APPLICATIONS

- Good to use in BMPs
- Municipal
- Commercial
- Industrial
- Medical Facilities

Figure 1: Park® CMP Coalescing Media Pack



As the oil/water/solids mixture travels through the plates, oil rises to the top and solids drop to the bottom through dedicated surfaces and weep holes. Plate supports at the bottom allow for easy removal of the solids that collect beneath the plates. And, because of the steep angles and short travel distances, oils and solids are quickly released, making the media virtually self-cleaning.

Whether you're dealing with rainwater run-off, groundwater remediation, coolant tramp oil removal, or oil and grease removal from wash down and maintenance areas, **Park**® Stormwater Interceptors and **Park**® Oil/Water Separators can meet your needs ranging in size from 1 gpm to as large as 20,000 gpm – or larger as required.

Park® application engineers are available to help you design stormwater and oil/water separator systems that not only meet regulatory requirements, but are cost-effective as well. And, through our proprietary computer simulation process, The "Effluent Quality Prediction Program", we quickly and accurately predict your effluent quality based on your influent conditions - ***Guaranteed!***

STOKE'S LAW

V_R @ 68°F = $9/18\mu$ ($\int$ w - $\int$ o) D^2 where:

V_R = rising velocity of the oil droplet in cm/sec

g = gravity constant (980 cm/sec^2)

μ = viscosity of water in poises (about 0.01)

w = densities (gm/cm^3) or specific gravities of water

o = densities (gm/cm^3) or specific gravities of oil

D = diameter of the oil droplet in cm

Like all gravity separators, Park's performance prediction is based on Stoke's Law. The formula on the left represents the physical law governing the rise rate of an oil droplet in a fluid stream.

CAPTURE EFFICIENCY: Oil droplet capture is maximized by the closely spaced (1/4") polypropylene plates. For perspective, a 20-micron oil droplet takes 38 minutes to rise 3" or 9.5 minutes. By rising only ¼" before being captured on the oleophilic (oil attractive) undersurface plate, separation is very efficient in the coalescing media pack compartment (CMP).

CALCULATED PERFORMANCE: Park uses a proprietary computer-modeling program, which utilizes Stoke's Law, droplet size distribution, particle rise (TSS), and other relevant input to make accurate performance predictions.

Inspection

Safety nets should be inspected on a frequent basis. The inspection must cover damage, wear and deterioration. The safety net systems must also be inspected after any incident occurs that could affect the integrity of the net. If any net is found to be defective, it must not be used and must be removed from the safety net system.

Specifications

HatchSafe fall protection systems adhere to OSHA Drop Test Standards. The drop test involves a sandbag that weighs 400 pounds and is between 28 and 32 inches in diameter. The sandbag is dropped from the highest point from where a person could fall. The mesh size of the net cannot be larger than 6 by 6 inches. All of the mesh crossings must be secured so the mesh openings cannot widen more than 6 inches measured from center to center. Each net, or section of net, in a system has to have a perimeter border with a minimum breaking strength of 5,000 pounds. Between safety net panels, connections have to be just as strong as the net components themselves. Connections cannot be spaced more than 6 inches apart from each other.

Installation

HatchSafe fall protection systems can be installed on any standard aluminum or steel floor access, roof hatch or custom sized framed opening. The units are factory assembled and ready for installation.

How it Works

The Occupational Safety and Hazard Association (OSHA) sets standards for workplace safety. One of the OSHA standards states that workers who are exposed to possible vertical drops over six feet must have fall protection. One of the options for fall protection is a safety net system. OSHA has outlined specific guidelines for workplace safety net systems. The OSHA standard classification that covers safety nets is in section 1926.502(c) of the OSHA standards.

The ParkUSA HatchSafe net system meets or exceeds all current OSHA standards and will greatly reduce the risk of injury or death from fall through accidents in hatchway installations. This protects you from costly law suits, time lost through accidents, and OSHA fines and citations. It can also lower workers compensation and liability costs. The HatchSafe net system is a lightweight net system that will greatly reduce the risk of fall through. The system is designed to be installed in any type of floor or roof access hatch, or both new and existing units. The net does not restrict light or visibility needed for inspections, and the net easily slides open to facilitate access. Because 85% of normal procedures can be accomplished with the Hatch Net in place, one person can safely perform most inspections without the need for an additional worker or cumbersome fall protection equipment.

To request a quote or catalog, visit **request.parkusa.com.**

Additional Features

- Manufactured of aluminum and stainless steel with a highly visible synthetic netting.
- Stitched with PTFE Sewing Thread. This thread is manufactured from high strength expanded PTFE. It's not affected by UV (ultraviolet) radiation, acid rain, industrial pollutants or cleaning agents.
- All systems are shipped completely assembled including mounting hardware.
- Easily installed in virtually any floor or roof opening, new or existing application in minutes.
- Retracts easily for access to confined space or to pull pumps and equipment.
- Greatly improves employee safety while allowing freedom of movement and full visibility of area below net for inspections and sampling.
- Custom sizes are manufactured in days at no additional cost.
- Full five (5) year warranty on hardware and net.

Limitations

The HatchSafe net system, after installation, should be maintained in the closed position after each use. The HatchSafe is a fall protection system. At no time is the net to be used as a work platform, lifting mechanism, tool holder, tie off point or to attach any other equipment to it.

APPLICATIONS


Good to use in BMPs


Municipal


Commercial


Industrial


Medical Facilities

PARK USA
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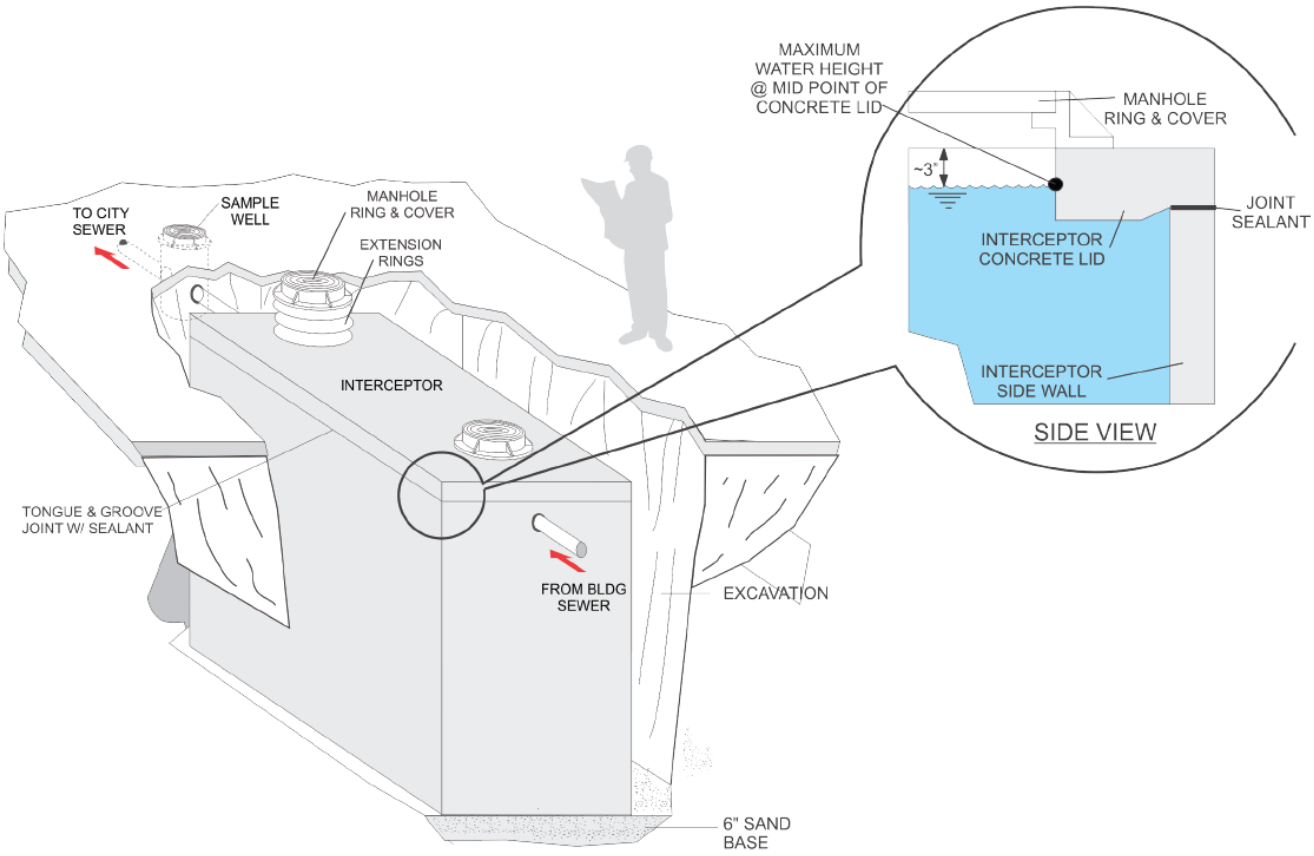
ENGINEERING FACT SHEET

HYDROSTATIC TESTING FOR INTERCEPTORS



THE FOLLOWING METHOD IS RECOMMENDED FOR HYDROSTATIC TESTING OF INTERCEPTORS. FAILURE TO FOLLOW THIS EXACT PROCEDURE CAN VOID WARRANTY.

WARNING
DO NOT fill tanks with water until the tanks are properly backfilled. Filling tanks prior to backfilling may cause abnormal stresses and may result in leakage and/or damage to the tanks and may void the manufacturer's warranty.

DO NOT fill tanks with water to levels exceeding the top of the basin (prior to backfilling). Exceeding this level could produce excess uplift of the lid section breaking the seal and result in leakage and/or damage to the tanks and may void the manufacturer's warranty.

LID SECTION JOINT TESTING

STEP 1
After tank is set, allow for complete settling of the concrete lid section. The joint sealant should be visible on the exterior of the tank as excess sealant is squeezed out of the joint.

STEP 2
Backfill the tank around all sides to 6" BELOW the joint being tested. The backfill should be compacted as required.

STEP 3
Allow water to enter the tank to a maximum of the midpoint of the concrete lid. Visually inspect the tank exterior for any leaks.

STEP 4
Complete the backfilling and compacting over the top of the tank.

PARK USA
A Northwest Pipe Company

ENGINEERING FACT SHEET

INSTALLATION AND RECEIVING INSTRUCTIONS
FOR STORMTROOPER

Overview
ParkUSA is a leader in pre-engineered environmental products. Products are cataloged with standard features as shown on specification material. However, these products are often furbished to meet specific engineering requirements, and have special features and arrangements. In such cases, handling and installation procedures may vary slightly depending upon the actual type of construction. It is recommended that a company representative be consulted in each unique situation.

Codes and Installation
Local codes and regulations should supersede all recommendations made by ParkUSA and its representatives, and the appropriate authorities should be consulted before installation is made. Where an apparent conflict of code requirements and manufacturer recommendations or standard design exists, the assistance of a company representative should be requested. In almost every instance, ParkUSA will be able to make modifications necessary to comply with local codes, jurisdictions and interpretations, if notified prior to actual fabrication or upon order placement.

Field Preparation
The customer or his contractor shall prepare the excavation to the proper depth using dimensional data and weights from approved submitted drawings.

Call 800-256-8041 to confirm excavation dimensions and crane requirements.

All excavations should be shored or stepped back in accordance to OSHA recommendations.

A level base within the excavation and a minimum of twelve (12) inches of clearance on all sides of the unit is required. The depth of the base and the material shall meet the specifications and requirements for the type of soil at the setting location (consult with design engineer for base specifications).

All field excavation and preparation is the sole responsibility of the customer/contractor.

Scheduling
The delivery of the unit should be scheduled at least 48 hours in advance, weather permitting. To reschedule a delivery, a 24 hour notice is required.

Delivery and Placement
Unit will be delivered and placed in the excavation by ParkUSA or its representatives, when accessible for crane truck. The crane operator will perform rigging and setting unit. It will be necessary for the customer/contractor to furnish the required labor to install the joint sealant and assist our crane operator with the installation Backfill is the sole responsibility of the owner/contractor.

Backfill
After unit is set, the excavation should be completely backfilled immediatly and prior to filling with water. The backfill material shall meet the specifications and requirements for setting location (consult with design engineer for backfill specifications). It is recommended that backfill material be on site at the time of delivery. Two methods of backfill are:

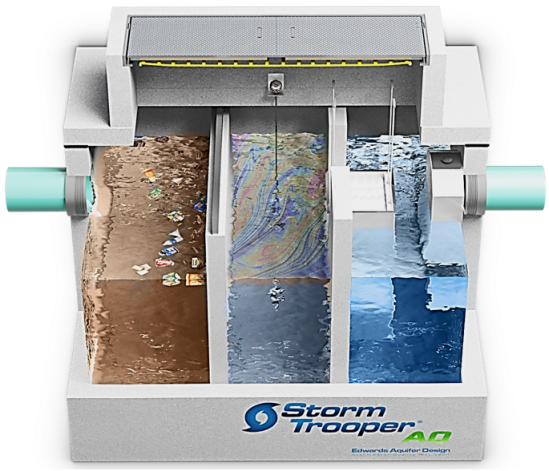
a. With material excavated placed in (1) one foot lifts and compacted and tamped to original density or per owner/engineer's requirements.

b. Bank sand in (2) two foot lifts and compacted or water-jetted per owner/engineer's requirements.

Testing (for tanks)
If project specifications require testing of tanks, follow the following testing procedure. All testing is performed by others.

Water Test
After completing the piping, the unit shall be properly back filled. Fill the tank with water to the normal operating level. Record this level and let stand for 24 hours. Recheck the water level. A 5% or less variance is generally acceptable. Note that precast concrete tanks are designed for below grade installation with an earthen backfill. DO NOT fill tanks with water until the tanks are properly backfilled. Filling tanks prior to backfilling may cause abnormal stresses and may result in leakage and/or damage to the tanks and may void the manufacturer's warranty.

Vacuum Testing
Some jurisdictions require testing of the tank prior to backfill. In this case, it is necessary that the tank be tested using the vacuum in lieu of the water test. After completing the piping, all joints should be sealed with the mastic compound. All the piping must be sealed air-tight. Place the vacuum test covers over he access holes. Follow manufacturer's test equipment instructions for pulling vacuum.



SECTION 2

Recommended Maintenance

Recommended Maintenance Plan
Edwards Aquifer Region

1.0 Inspection Schedule

- A preventative maintenance cleanout schedule is the most valuable tool for maintaining the proper operation of Park StormTrooper. Interceptor maintenance costs will be greatly reduced if a good housekeeping plan for the property is developed i.e., trash pickup, lawn maintenance, dumpster control, etc.

- Park StormTrooper interceptors have no moving parts. The manufacturer recommends ongoing quarterly inspections for accumulated pollutants. Pollutant accumulation may vary from year to year. Quarterly inspections ensure that the system is serviced at appropriate times. Owner must observe site conditions and determine whether or not pollutant loads require a more frequent inspection schedule. Table 1 lists recommended maximum capacities of oil and sediment. Professional vacuum services should be considered when capacities meet or exceed these recommended levels.

Table 1. StormTrooper™AQ Maintenance Levels

Model Number	Oil Depth	Sediment Depth
SWAQ-05	12”	12”
SWAQ-10	12”	12”
SWAQ-20	12”	12”
SWAQ-25	12”	12”
SWAQ-40	12”	12”
SWAQ-70	12”	12”
SWAQ-110	12”	12”

It is very important to keep a record of each inspection therefore, an inspection and maintenance form has been attached for your use.

2.0 Inspection Procedures

- Easiest observation and maintenance is best accomplished during non-flow (dry weather) conditions, 5-7 days after the most recent rain.

- Remove interceptor covers or open hatchway to observe conditions. Remove hatchway safety net ("EnterNet"), if installed. Observe for trash and debris and remove if necessary. This is the most important maintenance requirement.

- Coalescing plates are self-cleaning and seldom require maintenance unless damaged. Do not walk on or stand on plate packs. Call ParkUSA (888-611-PARK) for replacement parts.

- Check of the depth (level) of oil and sediment with a tank sampler device designed for this purpose. The tank sampler requires a dipstick tube equipped with a ball valve (typically a Sludge Judge® or Core Pro®).

- Make sure the dipstick tube goes completely to the bottom. Lift the dipstick tube out of the unit and keep it in a vertical position and read the level of sediment and oils from the gauge on the dipstick. Record pollutant levels on your StormTrooper Monitoring / Maintenance Report. If either pollutant(s) in the dipstick tube (sediments or oils) exceed the levels indicated on Table 1, maintenance of the StormTrooper is required. Upon completing the recording of pollutant levels, the dipstick tube is then drained back into the inlet side of the StormTrooper . This ensures that the pollutants in the dipstick tube do not leave the unit.

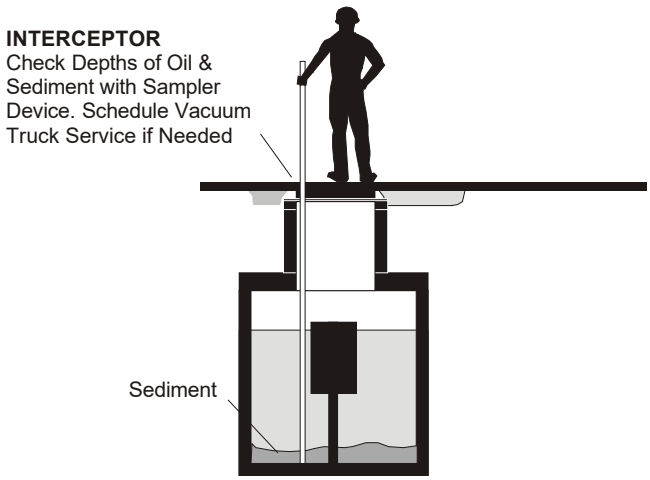


Figure 1 StormTrooper® Inspection

3.0 Maintenance Procedures

- Park Environmental Equipment, manufacturers of the StormTrooper®AQ, recommends that a professional pumping contractor licensed to remove and dispose waste from underground utilities be used to pump out the interceptor.

- Pull all manhole covers. Be sure all sections of the interceptor are cleaned. **If a control/bypass manhole is part of the system, it should be inspected and serviced with the interceptor.**

- If the coalescing media option is utilized, visually inspected the plates for any heavy build-up of oil, grease or sludge. Typically, the plates are self-cleaning and require little maintenance. If buildup of material is evident, either remove the media from the frame or clean the plate pack in place. Removing media is accomplished by attaching a lifting device in the lifting lug provided (top center of the frame), and then pull straight up. Media plates may be cleaned in place with special steam cleaning nozzle attachment that provides a flat spray.

- **Facet's MPak® plates are designed to be cleaned in place using a special cleaning wand and city water pressure.** The wand has a connection just like an ordinary garden hose and is equipped with a small conical strainer in the connection so that solids in the inlet water will not clog the cleaning holes.

  For cleaning in place, connect a pressure water hose (at least 60 psig) to the special cleaning wand. Provide a vacuum truck (or other means of disposing of the sludge and dirt) in the vessel. Turn on the water to produce a spray from the wand and insert the tip of the wand slowly into each hole of the plate pack, starting at the upstream end. As the water flushes the dirt out of the plate packs, it should be removed by the vacuum hose or directed to an oil water sewer if one is available. For cleaning outside of the vessel, remove the plate packs and other internals (except bolted-in internals). Flush with hose and cleaning wand to oil water drain.

  (**NOTE:** The cleaning wand produces a vigorous spray. Operators should wear waterproof clothing and goggles or face mask.)

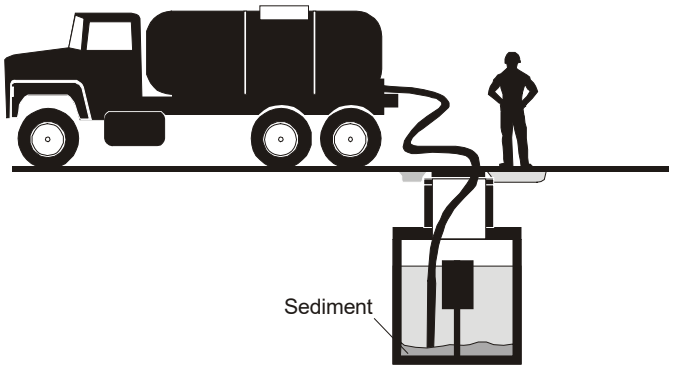


Figure 2 StormTrooper® Maintenance

- Typically, the vacuum truck will skim off the oil and other floatables. In most geographic areas the sediment can be disposed of in a sanitary landfill once dewatered. Pollutants are not allowed to be discharged back into the sanitary or storm sewer systems.

- After cleaning via vacuum truck, pumping contractor can refill the StormTrooper with water previously drawn out of unit, or haul water to disposal facility and let natural rainfall recharge the unit during future rain events. Replace manhole covers.

- After cleanout is accomplished, obtain a copy of the service truck manifest. Update the StormTrooper Monitoring/Maintenance Report and attach a copy of the manifest to the report.

4.0 Safety and Environmental Considerations

- All normal safety precautions should be taken with this equipment to prevent accidents and fires. Normal fire prevention measures must be taken to prevent fire danger from the separated oil.

- Care should be taken to keep the area around the interceptor clean to prevent accidents.

- Dispose of the separated oil properly, preferably by recycling.

- The atmosphere inside the Park Environmental Equipment StormTrooper is a confined space and may be hazardous. Entry is not recommended without proper equipment. Follow OSHA confined space entry requirements.

- SAFETY AND ENVIRONMENTAL PROTECTION ARE THE RESPONSIBILITY OF THE USER. PARK EQUIPMENT CO. ASSUMES NO LIABILITY FOR MISUSE OF THIS SEPARATOR OR FOR USE OUTSIDE THE PARAMETERS FOR WHICH IT IS DESIGNED.

(Optional) StormTrooper® Interceptor Monitoring / Maintenance Report

Year:	
Company Name:	
Address:	
City/State/Zip:	
Contact Phone:	
Contact Name:	
StormTrooper® Model	
GPM	

Quarterly Record Keeping

Maintenance Activity	Mar	June	Sept	Dec
Non-Structural Controls				
Manhole Debris Cleaned				
Interceptor Debris Cleaned				
Hose Off Inside Walls				
Debris Screens Cleaned				
Mowing of Stormtrooper				
Structural Controls				
Oil Depth				
Solids Depth				
Pumped Out				
Inspections				
Quarterly				
Annually				
"X" identifies the months in which the activity will be performed (at a minimum).				
*Provided to residents at move-in and available at community locations.				
**Sediment removed from basin per chart on Table 4 or at least one year from move-in of location				

I certify that I supervised or performed StormTrooper® monitoring per local codes and manufacturer's recommended monitoring and maintenance procedures on the dates listed above.

Signed: _____
Owner Or Owner Representative

Print Name: _____

Date Submitted: _____

SECTION 3

Testing & Certification

SOUTHWEST RESEARCH INSTITUTE™

6220 CULEBRA RD. 78238-5166 • P.O. DRAWER 28510 78228-0510 • SAN ANTONIO, TEXAS, USA • (210) 684-5111 • WWW.SWRI.ORG

CHEMISTRY AND CHEMICAL ENGINEERING DIVISION
DEPARTMENT OF FIRE TECHNOLOGY
WWW.FIRE.SWRI.ORG
FAX (210) 522-4518

September 7, 2012

Chris Eberly, P.E.
ParkUSA (Park Environmental Equipment Company, LTD)
7015 Fairbanks N. Houston
Houston, TX 77040

Re: Surveillance of Tests Conducted on Representative StormTrooper® Interceptor Model SWAQ_15, SwRI® Project No. 08.58999

Mr. Eberly,

This will summarize my trip to our manufacturing facilities in Houston, Texas, on May 18th, 2010, to witness tests on representative StormTrooper® Interceptor Model SWST_15. The interceptor was subjected to tests described in the attached test protocol titled "Testing Procedure of StormTrooper® Storm Water Interceptor," dated April 2010.

Verification testing was completed on a W8' x L5' x D5' SWST_15 Storm Water Interceptor. The StormTrooper® Interceptor System was tested in accordance with the Edward's Aquifer Innovative Technology and NJDEP testing protocol for Storm Water Treatment Devices. The guideline requires, at a minimum, documentation showing the capture efficiency of particles ranging from 1 to 1000 microns, for five (5) flows, at an average concentration of 200 mg/l per flow. The test matrix was expanded to include suspended sediment concentration (SSC) and Particle Size Distribution (PSD) analysis. Table 1 shows the results of the SSC analysis for tests ran with ¼" spaced coalescing plates and without coalescing plates.

Table 1. Interceptor Collection Efficiency

StormTrooper® Model	Flowrate (gpm)	Removal Eff. w/o Plates	Removal Eff. w/ Plates
SWAQ_15	200	28%	51%
SWAQ_15	400	20%	35%
SWAQ_15	600	22%	32%
SWAQ_15	800	21%	26%
SWAQ_15	1000	21%	24%

Table 2 shows the actual particle size distribution analysis (PSD) determined, on average, for each test ran. Samples from the influent and effluent streams were collected and sent to an independent laboratory located at the University of Texas Department of Civil, Architectural and Environmental Engineering (Dr. Desmond F. Lawler). Samples were analyzed for SSC (Suspended Solids Concentration) and PSD (Particle Size Distribution).

Table 2	
dp (μm)	**% Finer**
1	0%
2	11%
8	52%
16	77%
45	80%
75	84%
212	91%
425	100%

The purpose of the test was to receive product approval, by the Texas Commission on Environmental Quality (TCEQ), and acceptance as an approved vendor within RG-348 "Complying with Edwards Aquifer Rules Technical Guidance on Best Management Practices." Under 30 TAC Chapter 213, 80% of the increase in annual TSS load resulting from development must be removed.

Laboratory testing proved that the StormTrooper® Storm Water Interceptor is a Best Management Practice for "Structural Oil/Grit Separators," designed to the maximum extent practicable (MEP) in treating discharges of pollutants and other substances into the MS4 or into any other bodies of water in the United States. Sampling results prove that StormTrooper® Interceptors are an approved National Pollutant Discharge Elimination System (NPDES) that complies with The Edward's Aquifer Rules that require a reduction of 80% of the increase in annual TSS load resulting from new impervious development. Table 3 shows the StormTrooper® efficiencies (Removal Eff. (%) Vs. Overflow Rate (gpm/ft^2)) generated using results from laboratory test and continuous simulation modeling.

Table 3 StormTrooper® BMP Efficiency vs. Overflow Rate (V_{OR})							
Eff (%)	**V_{OR} (fps)**	**Eff (%)**	**V_{OR} (fps)**	**Eff (%)**	**V_{OR} (fps)**	**Eff (%)**	**V_{OR} (fps)**
99%	0.00018	84%	0.00925	69%	0.04526	54%	0.10602
98%	0.00030	83%	0.01151	68%	0.04830	53%	0.11010
97%	0.00042	82%	0.01377	67%	0.05134	52%	0.11418
96%	0.00054	81%	0.01603	66%	0.05439	51%	0.11826
95%	0.00066	80%	0.01829	65%	0.05743	50%	0.12234
94%	0.00113	79%	0.02061	64%	0.06117	49%	0.12808
93%	0.00160	78%	0.02292	63%	0.06492	48%	0.13382
92%	0.00208	77%	0.02524	62%	0.06866	47%	0.13957
91%	0.00255	76%	0.02756	61%	0.07241	46%	0.14531
90%	0.00302	75%	0.02987	60%	0.07615	45%	0.15105
89%	0.00381	74%	0.03234	59%	0.08131	44%	0.15987
88%	0.00461	73%	0.03481	58%	0.08647	43%	0.16870
87%	0.00540	72%	0.03728	57%	0.09163	42%	0.17752
86%	0.00619	71%	0.03975	56%	0.09678	41%	0.18634
85%	0.00699	70%	0.04222	55%	0.10194	40%	0.19516

(For explanation of sizing, please see attached addendum)

Approved:

James E. Johnson
Principle Engineer
Department of Fuels and Lubricants Research

Cc: Pat Schrum


PARK USA
A Northwest Pipe Company

TCEQ Addendum RG-348: StormTrooper

Section 3.2.21	**<u>StormTrooper®</u>** StormTrooper® is a patented stormwater treatment system used as a best management practice to intercept free oils, grease, TSS, debris, and other pollutants commonly found in storm water runoff. StormTrooper is manufactured in Texas by ParkUSA and is third-party tested by Southwest Research Institute (SwRI) in San Antonio.	TCEQ Approval of Innovative Technology

Figure 1. The StormTrooper® Stormwater Separator

The StormTrooper Storm Water Treatment System utilizes "Enhanced" Gravity Separation. Enhanced Gravity Separation has been predominantly used in industrial applications of the separation of free oil and suspended solids from effluent water.

Enhanced Gravity Separation is an improvement over "gravity separation." Gravity separation is the phenomenon where a phase with higher density will settle and the phase with lower density will float to the surface of fluid. Enhanced Gravity Separation is achieved by utilizing CMP technology (coalescing media plates).

CMP technology introduces multi layer separation which provides an extensive reduction in surface area and ultimately smaller separators. Surface area requirements are reduced according to the number of CMP plates utilized. The StormTrooper System makes it feasible to achieve high levels of separation not typically achieved by a larger surface area separator.

Operation of StormTrooper® Storm Water Treatment System

Untreated storm water enters the first chamber of the unit known as the "grit chamber." Larger particles, as well as semi-buoyant material, are captured in this chamber to prevent excessive clogging and obstruction of the frontal area of the coalescing media plates. This reduces the potential for short circuiting and higher velocities through the plates. The "diffusion baffle," which separates the two chambers, works to perform two vital functions. First, it distributes flow evenly through the entire cross-section of the unit allowing for a more uniform delivery of pollutants through the plate. Next, a water quality orifice regulates flow through the plates and lower section of unit to prevent re-suspension of pollutants. Each StormTrooper has a specific maximum flow rate that has been pre-calibrated. Higher flow rates by-pass the system once the pre-calibrated flow rates are exceeded.

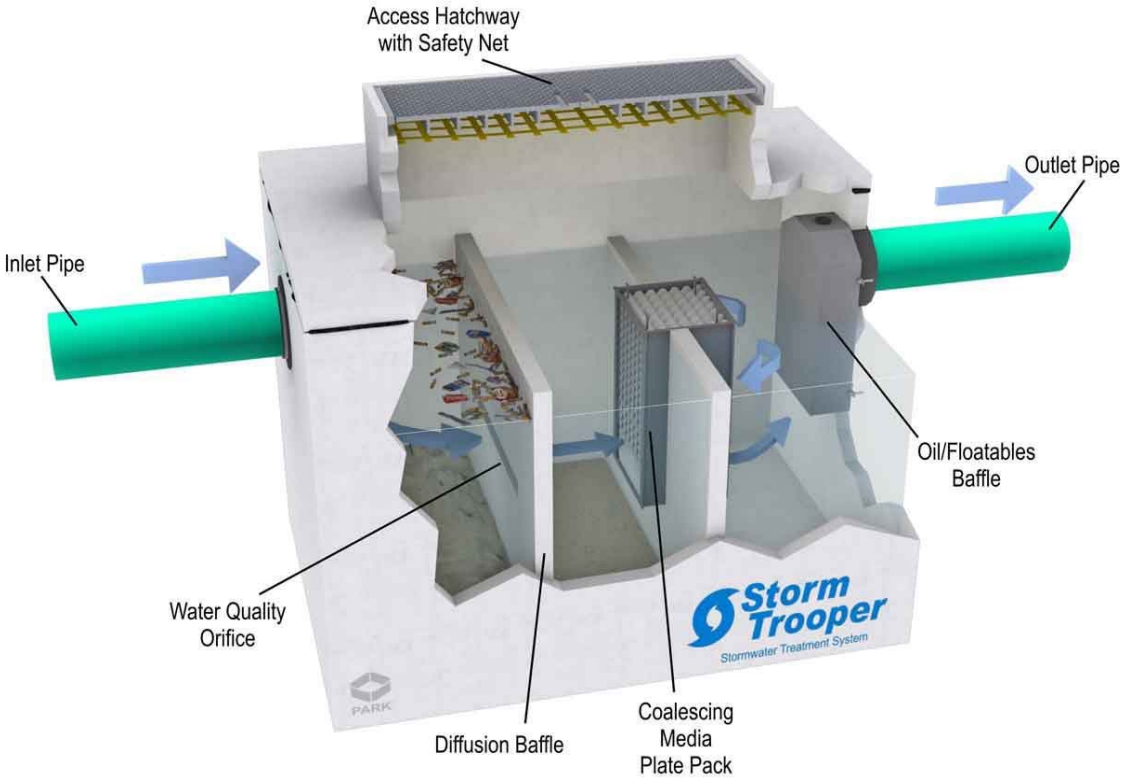


Figure 2. StormTrooper® Components

As the treatable flow of pollutants travel through the CMP (coalescing media plate pack) oil rises to the top and solids drop to the bottom through dedicated surfaces and weep holes. Plate supports at the bottom allow for easy removal of the solids that collect beneath the plates. Because of the steep angles and short travel distances, oils and solids are quickly released eventually floating to the surface of the StormTrooper unit or settling to the bottom of the unit.

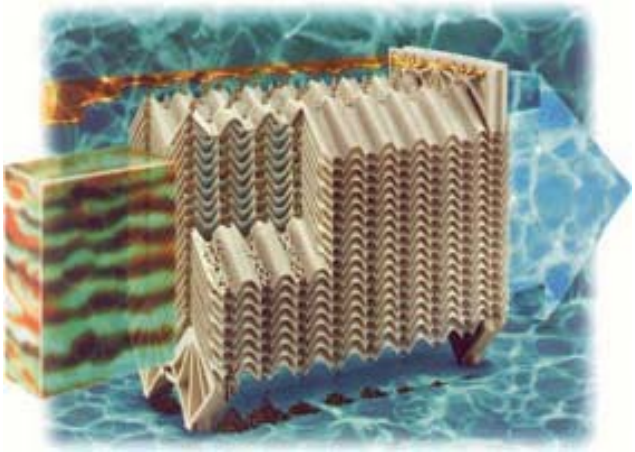


Figure 3. Coalescing Media Plates

	A submerged oil/floatable baffle is located around the effluent pipe to allow for the capture and containment of these pollutants. Collected pollutants will remain in the interceptor until removal. Because no filter cartridges are required operating costs are minimal. Furthermore, the StormTrooper System has no moving parts substantially reducing maintenance costs. Selection Criteria • Use when space constraints make installation of a surface treatment system infeasible • Achieves greater than 80% TSS removal when properly sized, so can be used as a standalone BMP, as well as in a treatment train • Provides smallest footprint possible and safest entry • Appropriate for retrofits as well as new development Limitations • Below grade installation requires pump out to remove accumulated sediment and other pollutants • Manhole covers must be removed to determine whether maintenance is required • Requires regular maintenance for optimum efficiently	
3.4.20	**StormTrooper® Design Criteria** As a flow-based BMP, the StormTrooper is designed using the treatment flow rate for the site, as calculated using the Rational Method. The runoff rate from the tributary area is calculated using Equation 3.4: $$Q = CIA$$ Where: Q = flow rate (ft^3/s) C = runoff coefficient for the tributary area I = design rainfall intensity (1.1. in/hr) A = drainage area (ac) The runoff coefficient is calculated as the weighted average of the impervious and pervious areas. Runoff coefficient for impervious areas is assumed to be 0.90 and the runoff coefficient for pervious areas is assumed to be 0.03. The overflow rate (hydraulic loading rate) is calculated using Equation 3.5: $$V_{OR} = Q/A$$ Where: V_{OR} = overflow rate (ft/s) Q = runoff rate calculated with Equation 3.4 (ft^3/s)	

A = surface Area of Unit (ft^2)

The overflow rate can then be used with Table 3 to determine the StormTrooper unit that provides the desired TSS removal.

The StormTrooper system is available in several models. The table below summarizes the various unit models and their corresponding dimensions.

Table 1. StormTrooper® *SWAQ* Models

Storm Trooper Model SWAQ	System Length (in)	System Width (in)	Minimum Settling Depth (in)	Vault Surface Area (sf)	Number of Plate Columns	Number of Stack Feet / Column	Projected Surface Area of Plates (sf)	Total Surface Area of System (sf)
05	84	36	48	21	1	2	79	100
10	90	48	48	30	1	3	119	149
20	120	60	48	50	2	2.5	198	248
25	144	72	48	72	3	2.5	297	369
40	180	90	48	113	4	3	475	588
70	204	96	48	136	5	3	594	730
110	240	120	48	200	6	3	713	913

The characteristics of the catchment area are defined as Effective Area (EA). The Effective Area is the number of acres draining to a single treatment unit and is calculated using the following equation:

$$\mathbf{EA = (A_i * 0.9) + (A_p * 0.3)}$$

Where:

EA = Effective Area (ac)

A_i = Impervious Area (ac)

A_p = Pervious Area (ac)

StormTrooper models can be selected from Table 2 below that will achieve an 80% TSS reduction at the corresponding Effective Areas shown.

Table 2. StormTrooper® Sizing Chart (for 80% Reduction)

Effective Area - EA Acres	StormTrooper® Model
Less than 0.13	SWAQ-05
0.14 - 0.20	SWAQ-10
0.21 - 0.33	SWAQ-20
0.34 – 0.50	SWAQ-25
0.51 – 0.79	SWAQ-40
0.80 – 0.98	SWAQ-70
0.99 – 1.23	SWAQ-110

The **StormTrooper® SWAQ** system for the Edwards Aquifer is designed using the overflow rates provided in Table 3. These were calculated based on the surface area of the vault alone and a rainfall intensity of 1.1 in/hr.

Table 3. StormTrooper® BMP Efficiency vs. Overflow Rate (V_{OR})

Eff (%)	V_{OR} (fps)	Eff (%)	V_{OR} (fps)	Eff (%)	V_{OR} (fps)	Eff (%)	V_{OR} (fps)
40%	1.74E-02	55%	6.28E-03	70%	2.54E-03	85%	8.38E-04
41%	1.66E-02	56%	6.00E-03	71%	2.42E-03	86%	7.78E-04
42%	1.58E-02	57%	5.72E-03	72%	2.30E-03	87%	7.18E-04
43%	1.51E-02	58%	5.44E-03	73%	2.18E-03	88%	6.58E-04
44%	1.43E-02	59%	5.16E-03	74%	2.06E-03	89%	5.98E-04
45%	1.35E-02	60%	4.87E-03	75%	1.93E-03	90%	5.36E-04
46%	1.27E-02	61%	4.59E-03	76%	1.81E-03	91%	4.95E-04
47%	1.20E-02	62%	4.35E-03	77%	1.69E-03	92%	4.54E-04
48%	1.12E-02	63%	4.11E-03	78%	1.57E-03	93%	4.13E-04
49%	1.04E-02	64%	3.87E-03	79%	1.45E-03	94%	3.72E-04
50%	9.65E-03	65%	3.63E-03	80%	1.33E-03	95%	3.31E-04
51%	8.88E-03	66%	3.39E-03	81%	1.23E-03	96%	2.90E-04
52%	8.11E-03	67%	3.14E-03	82%	1.13E-03	97%	2.49E-04
53%	7.34E-03	68%	2.90E-03	83%	1.04E-03	98%	2.08E-04

Example:

A civil engineer is designing a 1.0 acre office park located over the Edward's Aquifer. 0.90 acres, which is 90% impervious, is draining to a single StormTrooper unit. 0.10 Acres, which is 10% impervious, cannot be treated and therefore TSS removal must be compensated within the single unit. Below is a detailed example of how to calculate annual load reduction of the StormTrooper model chosen.

PROJECT: StormTrooper® SWAQ - 40 Example AREA #: 1 DATE: 6/10/2011

Table 2. Sizing Chart for 80% Reduction

Effective Area (Ac.)	StormTrooper® Model	Total Surface Area (ft^2)
E.A. < 0.13	SWAQ - 05	100
0.14 < E.A. < 0.20	SWAQ - 10	149
0.21 < E.A. < 0.33	SWAQ - 20	248
0.34 < E.A. < 0.50	SWAQ - 25	369
0.51 < E.A. < 0.79	SWAQ - 40	588
0.80 < E.A. ≤ 0.98	SWAQ - 70	730
0.99 < E.A. ≤ 1.23	SWAQ - 110	913

Use additional sheets for additional units.

A_I = Impervious Cover (Acres)

A_P = Pervious Cover (Acres)

A = Total Area (Acres)

P = Avg. Annual Rainfall (33" for Example)

A_N = Net Impervious Cover (Acres)

List only the uncaptured area being compensated for in the unit. TSS compensation for uncaptured areas can be divided up between multiple units or BMP's.

BMP Catchment Area "A"		Untreated Catchment Area "A" - Compensation Req'd
A_{I1} = 0.81		A_{I2} = 0.01
A_{P1} = 0.09		A_{P2} = 0.09
A_1 = 0.90		A_2 = 0.1
A_{N1} = 0.81		A_{N2} = 0.01
L_{M1} = 1534.90		L_{M2} = 8.98

1 StormTrooper® Model Sizing based on Individual Catchement Areas to the BMP.

Effective Area (EA) = (0.9 x A_I) + (0.03 x A_P)

EA = (0.9 x 0.81) + (0.03 x 0.09) = 0.7317 Acres — ***Page 3-27 "RG-348" (C=0.90 Imp. Area, C=0.03 for Perv. Area)***

From Table 2 choose an initial Model: SWAQ - 40
Surface Area of Model: 588 Sq. Ft.
Required TSS removal for catchment area:

$L_{M1} = 27.2 \times A_N \times P$ — ***Equation 3.3 "RG-348"***

$L_{M1} = 27.2 \times 0.81 \times 33 = 727.06$

2 Overflow Rate

V_{OR} = Q/S.A. where: Q = i(EA) — ***Equation 3.4 & 3.5 "RG-348"***
Page 3-30 "RG-348" (i = 1.1 in./hr., 90% Volume Treated)

Q = (i x EA)/Model Surface Area
Q = (1.1 x 0.7317) / 588 = 0.00137 fps

3 BMP efficiency (Table 3). If the overflow rate is between two percent efficiencies, use the smaller.

V_{OR} = 0.00133 fps
BMP Eff. (%) = 80 %

4 Maximum TSS Removal of BMP: L_{R1}

L_r = (BMP Efficiency) x P x (A_i x 34.6 + A_p x 0.54) — ***Equation 3.8 "RG-348"***

L_r = Load Removed by BMP
BMP Efficiency = TSS Removal Efficiency (expressed as a decimal fraction from Table 3)

L_{R1} = 0.80 x 33 x (0.81 x 34.6 + 0.09 x 0.54) = 741.17 #TSS

TSS removal exceeding required L_M to be counted towards untreated area = L_C

$L_C = L_{R1} - L_{M1}$
LC = 741.17 - 727.06 = 14.11 #TSS

Required TSS removal for untreated area:
L_{M2} = 27.2 x 0.01 x 33 = 8.98 #TSS < 14.11 #TSS => O.K.

UNIT IS SUFFICIENTLY SIZED TO REMOVE REQUIRED TSS FROM BOTH CAPTURED AND UNCAPTURED AREAS!!

3.5.24

StormTrooper® Maintenance Guidelines

A preventative maintenance cleanout schedule is the most valuable tool for maintaining the proper operation of StormTrooper. Separator maintenance costs will be greatly reduced if a good housekeeping plan for the property is developed i.e., trash pickup, lawn maintenance, dumpster control, etc.

StormTrooper separators have no moving parts and no filter cartridges. The manufacturer recommends quarterly ongoing inspections for accumulated pollutants. Pollutant deposition may vary from year to year. Quarterly inspections ensure that the system is serviced at the appropriate times. Table 4 lists recommended maximum capacities of oil and sediment. Professional vacuum services should be considered when capacities exceed these recommended levels.

Table 4. StormTrooper®

Maintenance Levels		
Model Number	**Oil Depth**	**Sediment Depth**
SWAQ-05	12”	12”
SWAQ-10	12”	12”
SWAQ-20	12”	12”
SWAQ-25	12”	12”
SWAQ-40	12”	12”
SWAQ-70	12”	12”
SWAQ-110	12”	12”

It is very useful to keep a record of each inspection.

Inspection Procedures

1. Easiest observation and maintenance is best accomplished during non-flow (dry weather) conditions 3-4 days after the most recent rain.
2. Remove interceptor covers or open hatchway to observe conditions. Remove hatchway safety net (“EnterNet”). Observe for trash and debris and remove if necessary. This is the most important maintenance requirement. If absorbent pillows are utilized, observe their condition. Uniform browning or gray color of the pillow means they should be replaced. Observe baffle debris screen and clean if necessary.
3. Coalescing plates are self-cleaning and seldom require maintenance unless damaged. Do not walk on or stand on plate packs. Call ParkUSA (888-611-PARK) for replacement parts.
4. Check of the depth (level) of oil and sediment with a tank sampler device designed for this purpose.

Attachment K – Volume and Character of Stormwater

The total drainage area accounted for is 8.41 acres, 6.48 acres of which are within the project limits. Impervious cover accounts for 5.17 acres of the total drainage area (4.79 acres of which are on-site). This is an increase from the existing 2.57 acres of impervious cover (2.19 acres of which are on-site). Hydrologic calculations can be found in the attached Drainage Area Map. In the existing condition the site produces 41.29 cfs of run-off during the 25-year event. That runoff increases to 55.50 cfs in the proposed condition. Stormwater will be collected via two proposed storm sewer systems; one which connects to existing structures and the other which will outfall to an existing open-channel concrete ditch.

Drainage area maps and calculations are provided in Section 05 – Attachment G.

Stormwater character may be impacted during construction, but the temporary BMPs proposed will serve to minimize this impact until permanent BMPs are in place for treatment. Upon exiting the site, existing drainage patterns will be maintained.

Drainage Area		Composite C-Value 25-YR	Composite C-Value 100-YR	Intensity I 25-YR	Discharge Q 25-YR	Intensity I 100-YR	Discharge Q 100-YR
ID	**ACRES**			**IN/HR**	**CFS**	**IN/HR**	**CFS**
Existing	6.47	0.55	0.63	11.62	41.29	15.32	62.03
Proposed	6.47	0.74	0.94	11.62	55.50	15.32	93.00

GEOLOGIC ASSESSMENT FORM

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: Crystal Hall, PG Telephone: (512) 879-0468

Date: November 2021 Fax: (512) 879-0499

Representing: BGE, Inc. TBPG Registration #50560 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

C Hall

Regulated Entity Name: Chisholm Trail Road

C Hall
November 23, 2021

Project Information

1. Date(s) Geologic Assessment was performed: 08/04/2021
2. Type of Project:
   - ☒ WPAP
   - ☐ SCS
   - ☐ AST
   - ☐ 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)
Please see attached Table 1		

** 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 thicknesses 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" = _____'
   Site Geologic Map Scale: 1" = 400'
   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 and 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 1 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☐ The wells are not in use and will be properly abandoned.
    - ☐ The wells are in use and comply with 16 TAC Chapter 76.

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

Administrative Information

15. ☒ 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.

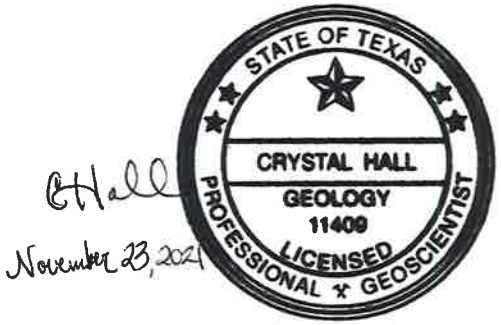
Geologic Assessment Attachments

- Table 1 – Soil Units, Infiltration Characteristics and Thickness
- Attachment A – Geologic Assessment Table
- Attachment B – Stratigraphic Column
- Attachment C – Site Geology
- Attachment D – Site Geologic Map
- Attachment E – Site Soils Map

Table 1 – Soil Units, Infiltration Characteristics and Thickness

TABLE 1
Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group	Thickness
Eckrant cobbly clay, 1 to 8 percent slopes (EaD)	D	11 in.
Doss silty clay, moist, 1 t o 5 percent slopes (DoC)	D	17 in.



November 23, 2021

Attachment A – Geologic Assessment Table

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Chisholm Trail Road

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	
W-1	30.542548	-97.694716	MB	30	Kdg	--	--	--	--	0	--	--	X	5	35	x			x	Hillside
MH-1	30.542572	-97.694718	MB	30	Kdg	--	--	--	--	0	--	--	X	5	35	x			x	Hillside
MH-2	30.54259	-97.694714	MB	30	Kdg	--	--	--	--	0	--	--	X	5	35	x			x	Hillside
MH-3	30.542846	-97.694727	MB	30	Kdg	--	--	--	--	0	--	--	X	5	35	x			x	Hillside
MH-4	30.546538	-97.693573	MB	30	Kdg	--	--	--	--	0	--	--	X	5	35	x			x	Hillside
MH-5	30.546408	-97.693256	MB	30	Kdg	--	--	--	--	0	--	--	X	5	35	x			x	Hillside
MH-6	30.546765	-97.692911	MB	30	Kdg	--	--	--	--	0	--	--	X	5	35	x			x	Hillside
MH-7	30.547106	-97.694904	MB	30	Ked	--	--	--	--	0	--	--	X	5	35	x			x	Hillside
F-1	30.546	-97.694	F	20	Ked/Kdg	--	--	--	N30E	10	--	--	O	19	49		x		x	Hillside

* DATUM: NAD 1983

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

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

I have read, I understood, and I have followed the Texas Commission on Environmental Quality'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 Chapter 213.

Date: Nov. 23, 2021

Sheet 1 of 1

November 23, 2021

STATE OF TEXAS
CRYSTAL HALL
GEOLOGY
11409
LICENSED
PROFESSIONAL GEOSCIENTIST

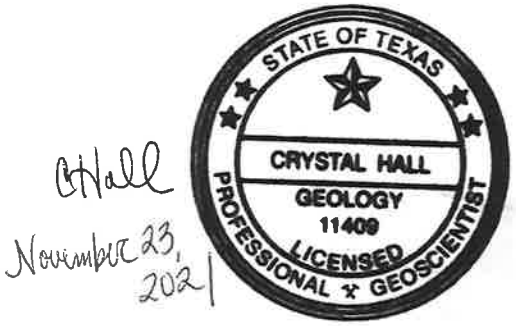
TCEQ-0585-Table (Rev. 10-01-04)

Attachment B – Stratigraphic Column

ATTACHMENT B
Stratigraphic Column
State Highway 29
Georgetown ETJ, Texas

Group	Formation	Member	Thickness (feet)	Lithology
Washita	Del Rio Clay and Georgetown Limestone, undivided		70-150	Calcareous and gypsiferous, becoming less calcareous and more gypsiferous upward, pyrite common, blocky, medium gray, weathers light gray to yellowish gray
Fredericksburg	Edwards Limestone		60-350	Limestone, dolomite, and chert

Source: BEG, 1981



CHall
November 23, 2021

Attachment C – Site Geology

Site Geology – A Narrative Description of Site-Specific Geology at the Chisholm Trail Road City of Round Rock (CORR) Improvements Project

The Geologic Assessment (GA) was conducted by Ms. Crystal Hall, PG, Ms. Anna Fash, and Mr. Reed Petrosky of BGE, Inc. (BGE) on August 04, 2021. Chisholm Trail Road (Rd) CORR Improvements Project (herein referred to as "subject property") consists of 6.12 acres of existing Chisholm Trail Rd. right-of-way (ROW) and 0.89 acre of proposed ROW, totaling 7.01 acres. The subject property is from approximately 0.4 miles north of Old Settlers Boulevard to Interstate Highway (IH) 35 Southbound (SB) Frontage Road and approximately 0.1 miles of unnamed roadway north of the bend in Chisholm Trail Road, within Round Rock city limits, Williamson County, Texas. The subject property is located within the *Round Rock, Texas*, U.S. Geological Survey (USGS) 7.5-minute topographic map (2019).

The subject property is located within CORR and proposed nee right-of-way (ROW) and ties into TxDOT ROW at the IH 35 and Chisholm Trail Rd intersection. Upon reviewing historic aerial photographs, Chisholm Trail Rd. was constructed prior to 1953, and the unnamed roadway north of the bend in Chisholm Trail Rd was constructed in 2020. The surrounding businesses were primarily constructed between 1995 and 2002. According to the National Hydrography Dataset, there are no mapped water features on the subject property. Parcels adjacent to the subject property are primarily commercial, with a small portion north of the bend in Chisholm Trail Rd being undeveloped. The subject property elevation is between approximately 770 and 780 feet above mean sea level (msl).

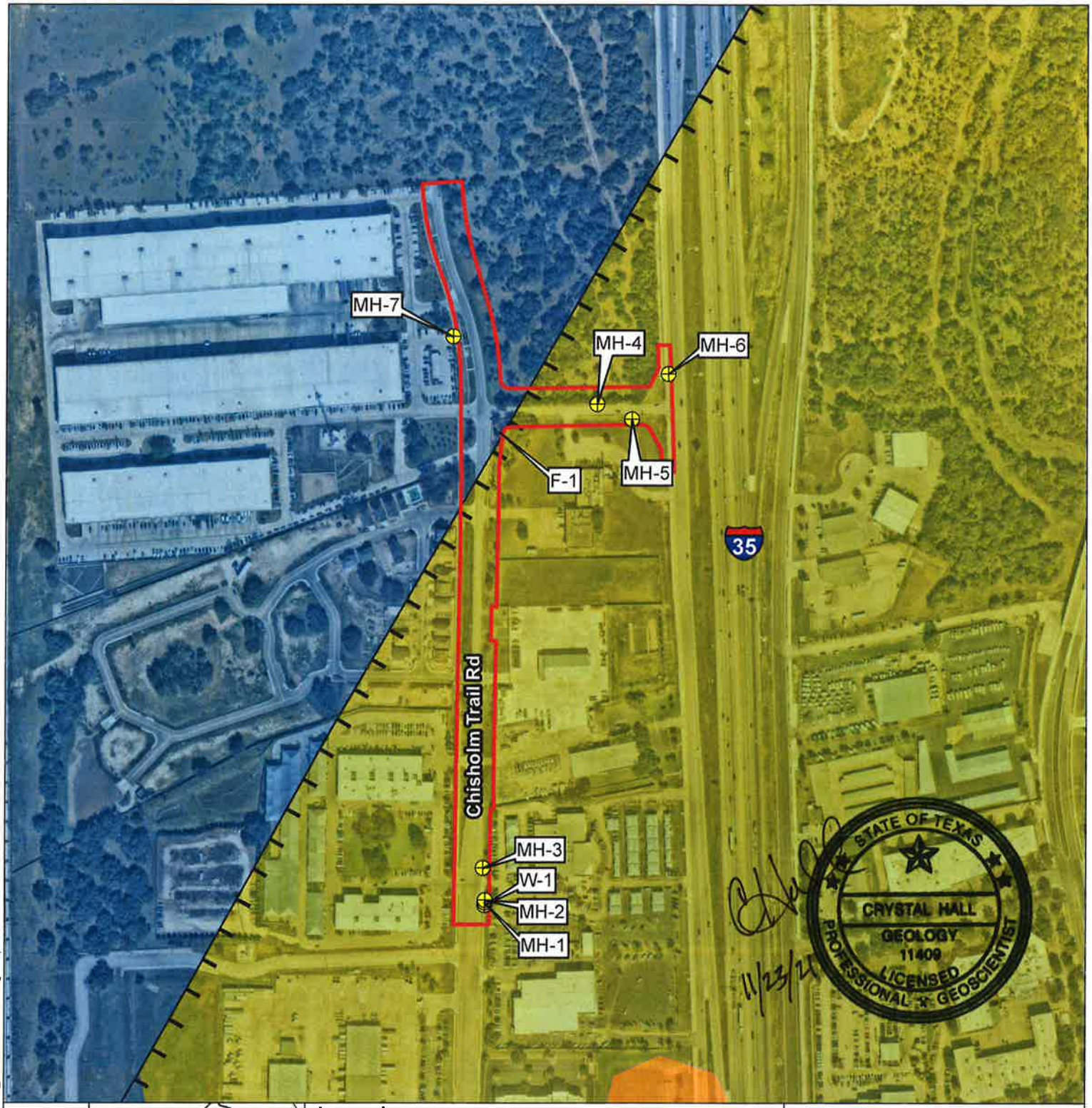
Data from TCEQ, the Texas Water Development Board (TWDB), and USGS were reviewed prior to the site visit for well and geologic data. No water wells were recorded within the subject property, and nine water wells were recorded within parcels directly adjacent to the subject property. One fault was also recorded within the subject property. Upon completion of the site visit it was determined that one unmapped sample well occurs within the subject property. Additionally, seven manholes were observed within the subject property. Although the fault was not observed during the site visit it is being taken into consideration for the Geologic Assessment.

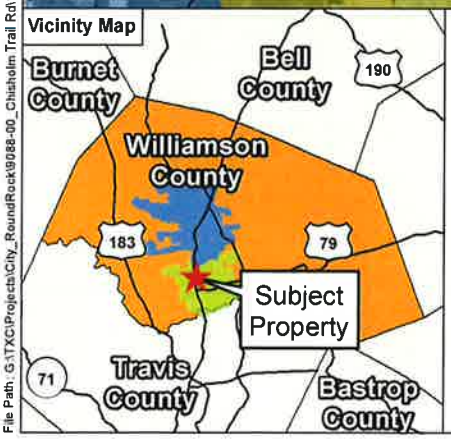
During the site visit, the entire subject property was walked to identify any visible geologic features, potentially sensitive recharge features, or outcropping geologic units. Soil, pavement, and drainage structures dominated the subject property. In lieu of visible geologic units on site, the Austin Map Sheet 1:250K, was utilized to identify underlying geology. The geologic units present on the subject property have been identified as the Del Rio Clay and Georgetown Limestone, undivided Formation and the Edwards Limestone Formation. The Del Rio Clay and Georgetown Limestone Formation has an approximate thickness of 70 to 150 feet and is comprised of highly calcareous siltstone associated with the Del Rio Clay formation and mostly fine-grained limestone with the Georgetown Limestone Formation. The Edwards Limestone Formation has an approximate thickness of 60 to 350 feet and is comprised of limestone, dolomite, and chert. The limestone is aphanitic to fine grained, and massive to thin bedded. The dolomite is fine to very fine grained, porous, medium gray to grayish brown. Within the chert, nodules and plates are common, and vary from bed to bed. Per review of published literature, one mapped fault occurs on the subject property. No evidence of the faulting was observed in the field (such as fault breccia or slickensides) while completing the required 50 foot transects on the subject property.

Karst zone data obtained from the U.S. Fish and Wildlife Service (USFWS) indicates that the subject property is within Karst Zones 1 and 3, with the area north of the bend in Chisholm Trail Rd being the only area mapped as Karst Zone 1. Karst Zone 1 is defined as "areas known to contain endangered cave

fauna." Karst Zone 3 is defined as "areas that probably do not contain endangered cave fauna." No karst features were observed during the site visit.

Attachment D – Site Geologic Map





Legend

- Subject Property
- Geologic Features
- Fault Line
- Qt: Terrace deposits
- Kdg: Del Rio Clay and Georgetown Limestone, undivided
- Ked: Edwards Limestone

0 100 200
Feet

BGE, Inc.
101 West Louis Henna Blvd, Suite 400
Austin, TX 78728
Tel: 512-879-0400 Fax: 512-879-0499
www.bgeinc.com

Chisholm Trail Road Improvements

Site Geologic Map

Williamson County, TX

Date: November 2021 | Proj. No: 9088-00

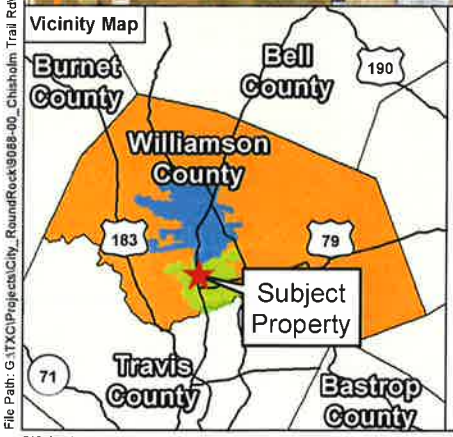
Data Source: ESRI 2021, THC 2020, TARL 2019

File Path: G:\TXC\Projects\City_Round Rock\9088-00_Chisholm Trail Rd\11_ENV\GIS\10-Site Geologic Map.mxd

GIS Analyst: rpetrosky

Attachment E – Site Soil Map

Vicinity Map



Legend

- Subject Property
- TCEQ Water Well
- TWDB Water Well
- Plugged SDRB Water Well
- Stream/Creek (NHD)
- Soil Map Units (NRCS)

*The entire subject property is mapped within the Edwards Aquifer Recharge Zone

0 100 200
Feet

STATE OF TEXAS
CRYSTAL HALL
GEOLOGY
11409
LICENSED
PROFESSIONAL GEOSCIENTIST

11/23/21

BGE, Inc.
101 West Louis Henna Blvd, Suite 400
Austin, TX 78728
Tel: 512-879-0400 Fax: 512-879-0499
www.bgeinc.com

Chisholm Trail Road Improvements

Site Soils Map
Williamson County, TX

Date: November 2021 | Proj. No: 9088-00

File Path: G:\TXC\Projects\City_RoundRock\9088-00_Chisholm Trail Rd\11_ENV\GIS\11-Site Soils Map.mxd

GIS Analyst: rpetrosky

Data Source: ESRI 2021, THC 2020, TARL 2019

TEMPORARY STORMWATER SECTION

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.

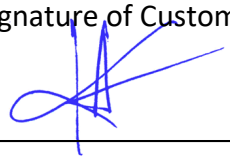
Signature

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: Md Kamrul Islam

Date: 02/08/2024

Signature of Customer/Agent:



Regulated Entity Name: Chisholm Trail Road

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: _____

   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: _____

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

This project will prohibit the storage of hazardous substances, fuels, or oils on the project site and require they are stored at an approved offsite facility. The construction of the proposed roadway will require the use of several types of equipment that will be fueled on site. This will present a slight risk of hydrocarbon or hazardous substance spills. In the event of such spills, the contaminated area will be sealed by the use of existing dirt or crushed limestone base material. This material will then be collected and disposed at an approved hazardous material location. All proper authorities will be notified as soon as the spill is discovered. The emergency response phone number for the State of Texas Spill-Reporting Hotline is 1-800-832-8224.

Attachment B – Potential Sources of Contamination

No particular activity or process during construction of the project is anticipated to present a significant risk of being a potential source of contamination. However, during regular construction operations, several common and minor risks of contamination are anticipated. Should any unforeseen mishaps occur during construction, the contractor shall follow the guidelines set forth in "Attachment A – Spill Response Plan".

Potential sources of sediment to stormwater runoff:

- Clearing and grubbing
- Grading and excavation
- Vehicle tracking
- Landscaping

Potential pollutants and sources, other than sediment, to stormwater runoff:

- Combined Staging Area – small fueling, minor equipment maintenance, sanitary facility.
- Materials Storage Area – solvents, adhesives, paving materials, aggregates, trash, etc.
- Construction Activities – paving, concrete pouring

Potential on-site pollutants:

- Fertilizer
- Concrete
- Glue, adhesives
- Gasoline, diesel fuel, hydraulic fluids, antifreeze
- Sanitary toilets

Attachment C – Sequence of Major Activities

1. Temporary erosion and sedimentation controls are to be installed as indicated on the Traffic Control Plan (TCP) Narrative and in accordance with the stormwater pollution prevention plan (SWPPP) that is required to be posted on the site.
2. The environmental project manager, and/or site supervisor, and/or designated responsible party, and the general contractor will follow the storm water pollution prevention plan (SWPP) posted on the site. Temporary erosion and sedimentation controls will be revised, if needed, to comply with city inspectors' directives and revised construction schedule relative to the water quality plan requirements and the erosion and sedimentation plan.
3. Temporary erosion and sedimentation controls will be inspected and maintained in accordance with the storm water pollution prevention plan (SWPPP) posted on the site.
4. A sequence of major construction activities is included in the following Traffic Control Plan (TCP) sheets, attached.

TRAFFIC CONTROL PLAN NARRATIVE

GENERAL:

FOLLOW THE CONSTRUCTION SEQUENCING UNLESS OTHERWISE APPROVED.

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

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

CONTRACTOR WILL MAINTAIN ACCESS TO DRIVEWAYS AND SIDE STREETS AT ALL TIMES UNLESS APPROVED BY THE ENGINEER OR SHOWN OTHERWISE IN THE PLANS. CONTRACTOR WILL CONSTRUCT TEMPORARY PAVEMENT TO TRANSITION FROM PROPOSED GRADE TO EXISTING DRIVEWAYS WHEN REQUIRED TO MAINTAIN ACCESS FOR DRIVEWAYS. THIS WORK WILL BE SUBSIDIARY TO BID ITEM 530.

SIDE STREETS AND DRIVEWAYS CAN BE CONSTRUCTED UTILIZING DAILY/TEMPORARY ONE-WAY TRAFFIC CONTROL AND BE OPENED AT THE END OF THE WORK DAY MAINTAINING ACCESS AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE ENGINEER. CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE OF FLEX BASE EXPOSED TO TRAFFIC.

CONTRACTOR WILL MAINTAIN DRAINAGE THROUGHOUT THE PROJECT.

FOR ALL PHASES PROVIDE TEMPORARY PIPE DRAINS OR CULVERTS AND TAKE SUCH OTHER MEASURES AS DIRECTED TO PROVIDE FOR CONTINUED DRAINAGE FROM ALL ABUTTING PROPERTY, THE RIGHT OF WAY AND THE ROADWAY DURING CONSTRUCTION OPERATIONS. LABOR AND MATERIALS INVOLVED IN THIS WORK WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS OF THE CONTRACT.

INSTALL APPROPRIATE ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH TCP PHASE SHEETS, TXDOT STANDARDS BC(1)-21 THRU BC(12)-21, WZ(RS)-22, WZ(RCD)-13, WZ(STPM)-13, TCP(2-1)-18, TCP(2-2)-18, TCP(2-3)-18, TCP(2-4)-18, AND TCP(2-6)-18 PRIOR TO COMMENCING WORK.

PHASE 1 CONSTRUCTION:

STEP 1:

1. TWO WEEKS PRIOR TO CONSTRUCTION, INSTALL PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) AT THE BEGINNING & END OF PROJECT IN ACCORDANCE WITH ADVANCED WARNING SIGN LAYOUT SHEET.
2. INSTALL TEMPORARY EROSION CONTROL DEVICES FOR CONSTRUCTION ACTIVITIES AS SHOWN ON SW3P LAYOUTS.
3. EXISTING TRAFFIC CONFIGURATION TO REMAIN FOR PHASE 1 STEP 1.
4. FULLY INSTALL, AND SWITCH OVER TO, THE PROPOSED WATER LINE PRIOR TO BEGINNING ROADWAY CONSTRUCTION. ALL EXISTING WATER LINE MATERIALS AND APPURTENANCES ARE TO BE REMOVED WITH EACH SUBSEQUENT PHASE OF ROADWAY CONSTRUCTION.
5. INSTALL ALL PERMANENT TRAFFIC SIGNAL CONDUITS AND ASSOCIATED MATERIALS, ILLUMINATION WITH ASSOCIATED MATERIALS AND ALL WASTEWATER AND STORM SEWER LINES TO THE OUTSIDE LIMITS OF PROPOSED CONCRETE AND ASPHALT PAVEMENT BEFORE BEGINNING ANY ROADWAY CONSTRUCTION.

PHASE 1 CONSTRUCTION:

STEP 2: (CTR STA 15+45 TO STA 28+88)

1. CONSTRUCT SEAL COAT FROM STA 23+92 TO 29+36 TO ELIMINATE EXISTING PAVEMENT MARKINGS. THEN PLACE WORK ZONE PAVEMENT MARKINGS FROM STA 15+86 TO 29+36 IN ACCORDANCE WITH THE PHASE 1 TCP LANE CONFIGURATION.
2. USING STANDARD TCP (2-1) "TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK", SET-UP TRAFFIC CONTROL DEVICES ALONG THE LEFT EDGE OF PAVEMENT, NOTCH AT THE EXISTING EDGE OF PAVEMENT, AND EXCAVATE EXISTING MATERIALS. REMOVE EXISTING C&G, ETC. CONSTRUCT TEMPORARY PAVEMENT AT THE FOLLOWING LOCATIONS:

   CTR STA 15+45 TO STA 28+88

   TEMPORARY PAVEMENT WILL BE PAID WITH BID ITEM 508.

PHASE 2 CONSTRUCTION:

STEP 1: (CR 173 STA 100+08 TO STA 105+58)

1. AFTER COMPLETION OF PHASE 1, REMOVE WORK ZONE PAVEMENT MARKINGS. THEN, PLACE PHASE 2 STEP 1 WORK ZONE PAVEMENT MARKINGS FROM CTR STA 2+15 TO 29+48, PLACE TRAFFIC CONTROL DEVICES AND PRECAST CONCRETE BARRIER ALONG THE WORK ZONE AS SHOWN IN THE PLANS AND SHIFT TRAFFIC. STEP 1 WILL BE CONSTRUCTED WITH WB CR 173 CLOSED. SEE DETOUR LAYOUT FOR SET-UP AND ADDITIONAL INFORMATION.
2. CONSTRUCT STORM SEWER TRUNKLINES, LATERALS AND INLETS IN PHASE 2 STEP 1 CONSTRUCTION LIMITS. CONSTRUCT STORM DRAIN SYSTEM "B" FROM OUTFALL TO INLET B-18.
3. CONSTRUCT CONDUIT FOR SIGNAL.
4. EXCAVATE EXISTING MATERIALS AND CONSTRUCT 10"FLEX BASE (IN TWO EQUAL LIFTS), 3" HMAC, AND 2" HMAC. CONSTRUCT CURB & GUTTER, SIDEWALKS, ETC. THE FINAL 2" SURFACE COURSE WILL BE CONSTRUCTED IN PHASE 5.
5. AT CONSTRUCTION BREAKS, INSTALL A TRANSITION FROM PROP HMA TO EXISTING GRADE USING HMAC OR AS DIRECTED BY THE ENGINEER FOR APPROXIMATELY 50 LF. THE TRANSITION WILL NOT BE PAID FOR DIRECTLY BUT CONSIDERED SUBSIDIARY TO VARIOUS BID ITEMS.

PHASE 2 CONSTRUCTION:

STEP 2: (CR 173 STA 100+08 TO STA 105+58)

1. LEAVE IN PLACE THE PHASE 2 STEP 1 WORK ZONE PAVEMENT MARKINGS FROM FROM CTR STA 2+15 TO 29+48. THEN, PLACE PHASE 2 STEP 2 WORK ZONE PAVEMENT MARKINGS FROM CR 173 STA 100+07.82 TO 105+50.24, PLACE TRAFFIC CONTROL DEVICES AND PRECAST CONCRETE BARRIER ALONG THE WORK ZONE AS SHOWN IN THE PLANS AND SHIFT TRAFFIC. STEP 2 WILL BE CONSTRUCTED WITH EB CR 173 CLOSED AND EB TRAFFIC PLACED ON THE WB SIDE OF THE ROADWAY. SEE DETOUR LAYOUT FOR SET-UP AND ADDITIONAL INFORMATION.
2. CONSTRUCT STORM SEWER TRUNKLINES, LATERALS AND INLETS IN PHASE 2 CONSTRUCTION LIMITS. CONSTRUCT STORM DRAIN SYSTEM "B" FROM OUTFALL TO INLET B-13.
3. CONSTRUCT CONDUIT FOR SIGNAL.
4. EXCAVATE EXISTING MATERIALS AND CONSTRUCT 10"FLEX BASE (IN TWO EQUAL LIFTS), 3" HMAC, AND 2" HMAC. CONSTRUCT CURB & GUTTER, SIDEWALKS, ETC. THE FINAL 2" SURFACE COURSE WILL BE CONSTRUCTED IN PHASE 5.
5. AT CONSTRUCTION BREAKS, INSTALL A TRANSITION FROM PROP HMA TO EXISTING GRADE USING HMAC OR AS DIRECTED BY THE ENGINEER FOR APPROXIMATELY 50 LF. THE TRANSITION WILL NOT BE PAID FOR DIRECTLY BUT CONSIDERED SUBSIDIARY TO VARIOUS BID ITEMS.

PHASE 3 CONSTRUCTION:

(CTR STA 14+17 TO STA 34+18)

1. AFTER COMPLETION OF PHASE 2, KEEP PHASE 2 WORK ZONE PAVEMENT MARKINGS IN PLACE. THEN, PLACE PHASE 3 WORK ZONE PAVEMENT MARKINGS FROM CR 173 STA 100+08 TO 105+58, PLACE TRAFFIC CONTROL DEVICES AND PRECAST CONCRETE BARRIER ALONG THE PHASE 3 WORK ZONE AS SHOWN IN THE PLANS, AND SHIFT TRAFFIC TO PHASE 3 LANES.
2. CONSTRUCT STORM SEWER TRUNKLINE, LATERALS AND INLETS IN PHASE 3 CONSTRUCTION LIMITS.
3. REMOVE FIRST HALF OF CULVERT AT STATION 21+00. EXCAVATE EXISTING MATERIALS AND CONSTRUCT 10" FLEX BASE (IN TWO EQUAL LIFTS), 3" HMAC, AND 2" HMAC. CONSTRUCT CURB & GUTTER, SIDEWALKS, ETC. THE FINAL 2" SURFACE COURSE WILL BE CONSTRUCTED IN PHASE 5.
4. AT CONSTRUCTION BREAKS, INSTALL A TRANSITION FROM PROP HMA TO EXISTING GRADE USING HMAC OR AS DIRECTED BY THE ENGINEER FOR APPROXIMATELY 50 LF. THE TRANSITION WILL NOT BE PAID FOR DIRECTLY BUT CONSIDERED SUBSIDIARY TO VARIOUS BID ITEMS.

PHASE 4 CONSTRUCTION:

(CTR STA 14+17 TO STA 34+18)

1. AFTER COMPLETION OF PHASE 3, PLACE PHASE 4 WORK ZONE PAVEMENT MARKINGS FROM STA 08+95 TO 33+44, PLACE TRAFFIC CONTROL DEVICES AND PRECAST CONCRETE BARRIER ALONG THE PHASE 4 WORK ZONE AS SHOWN IN THE PLANS, AND SHIFT TRAFFIC TO PHASE 4 LANES.
2. REMOVE SECOND HALF OF CULVERT AT STATION 21+00. CONSTRUCT REMAINING STORM SEWER TRUNKLINE, LATERALS AND INLETS.
3. EXCAVATE EXISTING MATERIALS AND CONSTRUCT 10" FLEX BASE (IN TWO EQUAL LIFTS), 3" HMAC, AND 2" HMAC. CONSTRUCT CURB & GUTTER, SIDEWALKS, ETC. THE FINAL 2" SURFACE COURSE WILL BE CONSTRUCTED IN PHASE 5.
4. THE INTERSECTION OF CHISHOLM TRAIL ROAD AND THE AMAZON DRIVEWAY IS TO BE CONSTRUCTED IN HALVES AS TO ALLOW FOR CONSTANT EAST-WEST TRAFFIC.

   THE SOUTHERNMOST AMAZON DRIVEWAY SHALL REMAIN IN-PLACE AND OPEN UNTIL THE AMAZON DRIVEWAY AT THE INTERSECTION HAS BEEN CONSTRUCTED. AT THAT TIME, IT MAY BE PERMANENTLY REMOVED AS SHOWN IN THE PLANS.
5. AT CONSTRUCTION BREAKS, INSTALL A TRANSITION FROM PROP HMA TO EXISTING GRADE USING HMAC OR AS DIRECTED BY THE ENGINEER FOR APPROXIMATELY 50 LF. THE TRANSITION WILL NOT BE PAID FOR DIRECTLY BUT CONSIDERED SUBSIDIARY TO VARIOUS BID ITEMS.

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CHISHOLM TRAIL RD
TRAFFIC CONTROL SEQUENCE OF WORK

SHEET 1 OF 2

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TRAFFIC CONTROL PLAN NARRATIVE

PHASE 5 CONSTRUCTION:

(CTR STA 14+17 TO STA 34+17 & CR 173 STA 100+08 TO STA 105+58)

1. AFTER COMPLETION OF PHASE 4, REMOVE WORK ZONE PAVEMENT MARKINGS AND CONSTRUCT FINAL 2" HMAC SURFACE COURSE USING STANDARD TCP (2-4)-18. PLACE WORK ZONE TABS AT THE END OF EACH WORKDAY. PLACE 3:1 SAFETY SLOPES BETWEEN LANES DURING PLACEMENT OF OVERLAY/FINAL SURFACE COURSE AT THE END OF EACH WORKDAY. AT CONSTRUCTION BREAKS, INSTALL A TRANSITION FROM PROP HMAC GRADE TO EXISTING GRADE USING HMAC OR AS DIRECTED BY THE CONSTRUCTION OBSERVER FOR APPROXIMATELY 50 LF. THE SAFETY SLOPES AND TRANSITIONS WILL NOT BE PAID FOR DIRECTLY BUT CONSIDERED SUBSIDIARY TO VARIOUS BID ITEMS.

   AFTER COMPLETION OF FINAL SURFACE INSTALL PERMANENT PAVEMENT MARKINGS, SIGNS AND PERMANENT TRAFFIC SIGNALS. OPEN ALL LANES TO THE FINAL TRAFFIC CONFIGURATION.

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CHISHOLM TRAIL RD
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SHEET 2 OF 2

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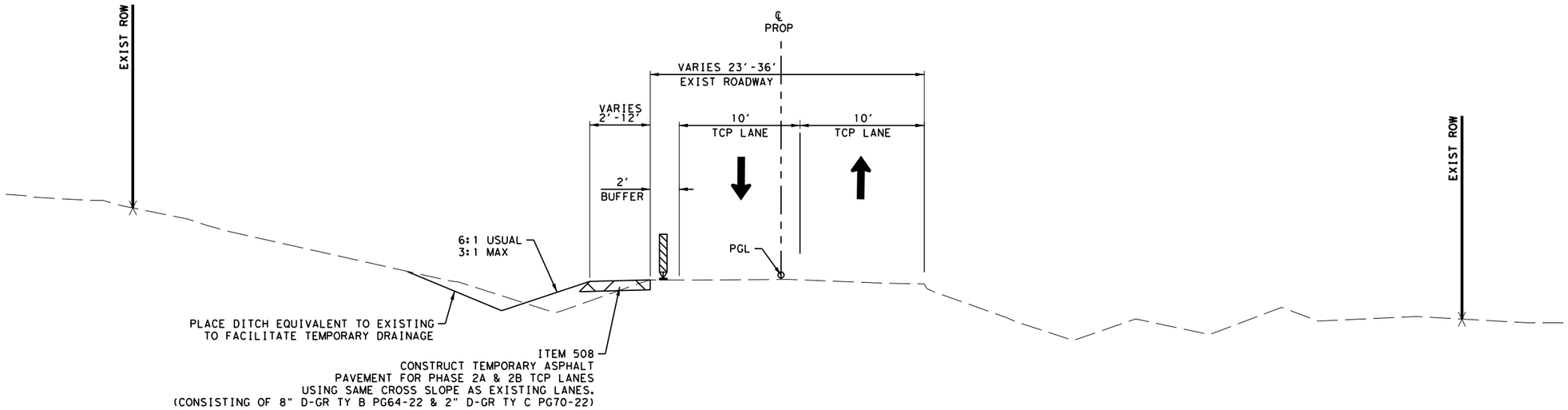

TCP PHASE 1 STEP 2

CHISHOLM TRAIL RD

STA 15+44.82 TO STA 28+87.67

LEGEND

- CONSTRUCTION THIS PHASE
- BUILT PREVIOUSLY
- TRAFFIC FLOW

NOTES:
1. PROVIDE OPENINGS W/ CHANNELIZING DEVICES/TY 2 LPCB (WHERE INCLUDED PER PLANS) AT DRIVEWAY ENTRANCES AS NEEDED.
2. MAINTAIN INTERSECTION ACCESS AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE TRANSPORTATION DIRECTOR.
3. SEE PROPOSED TYPICAL SECTIONS FOR FINAL PAVEMENT SECTION DEPTH.

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CHISHOLM TRAIL RD
TCP TYPICAL SECTIONS
PHASE 1
STEP 2

SHEET 1 OF 1

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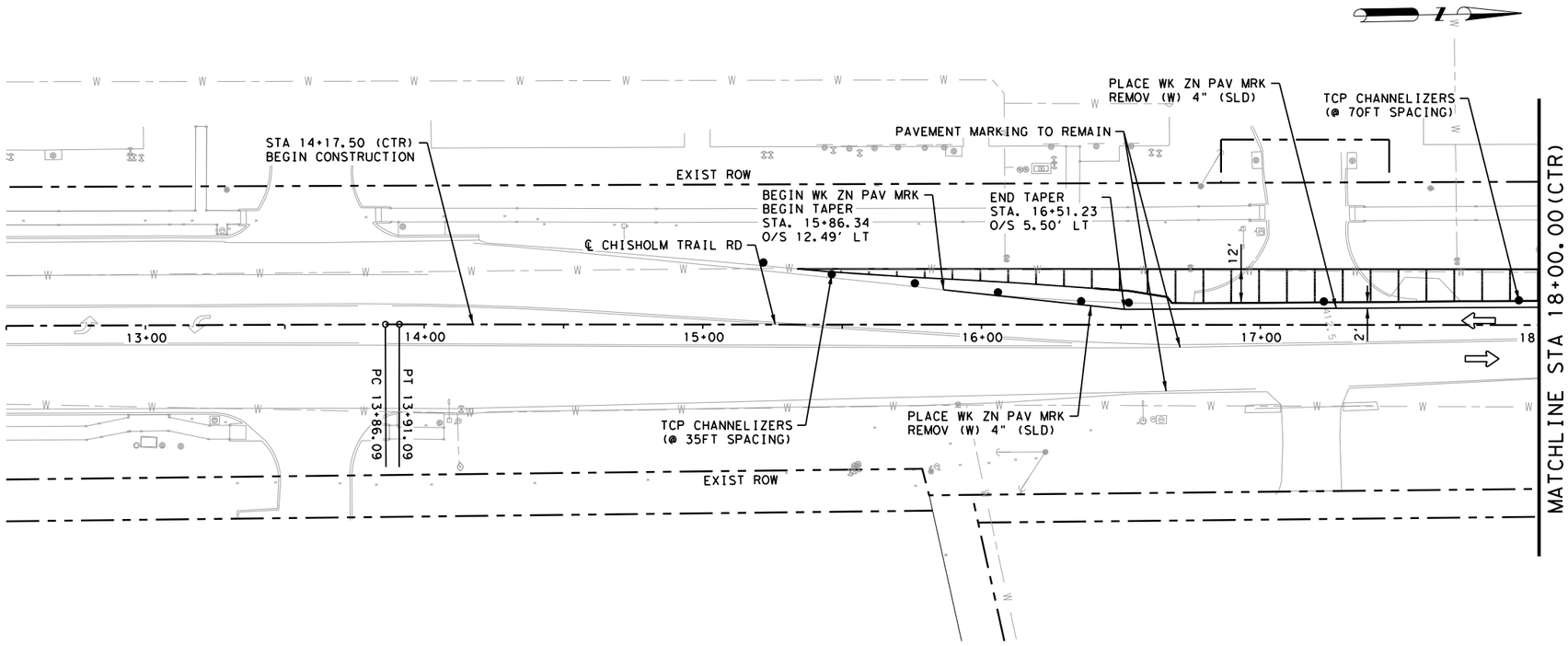

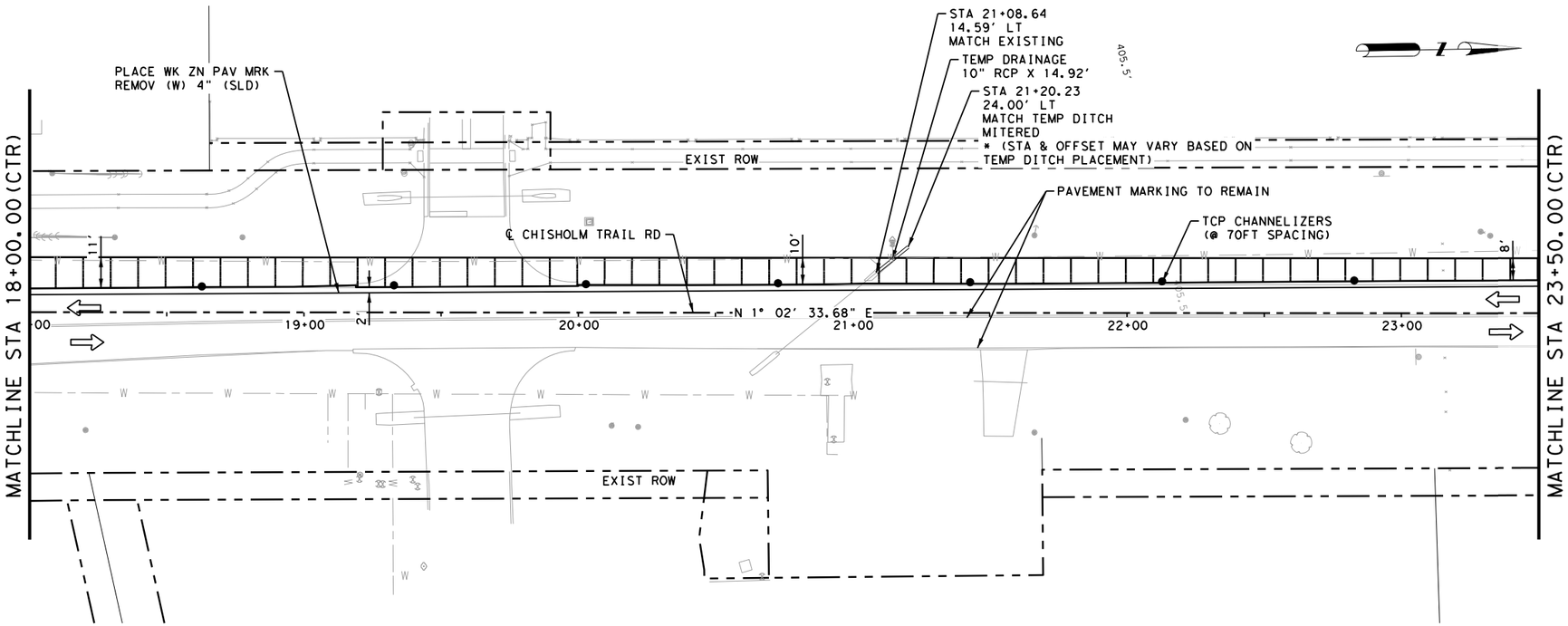

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- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

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

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SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 1
LAYOUTS

STEP 2

SHEET 1 OF 3

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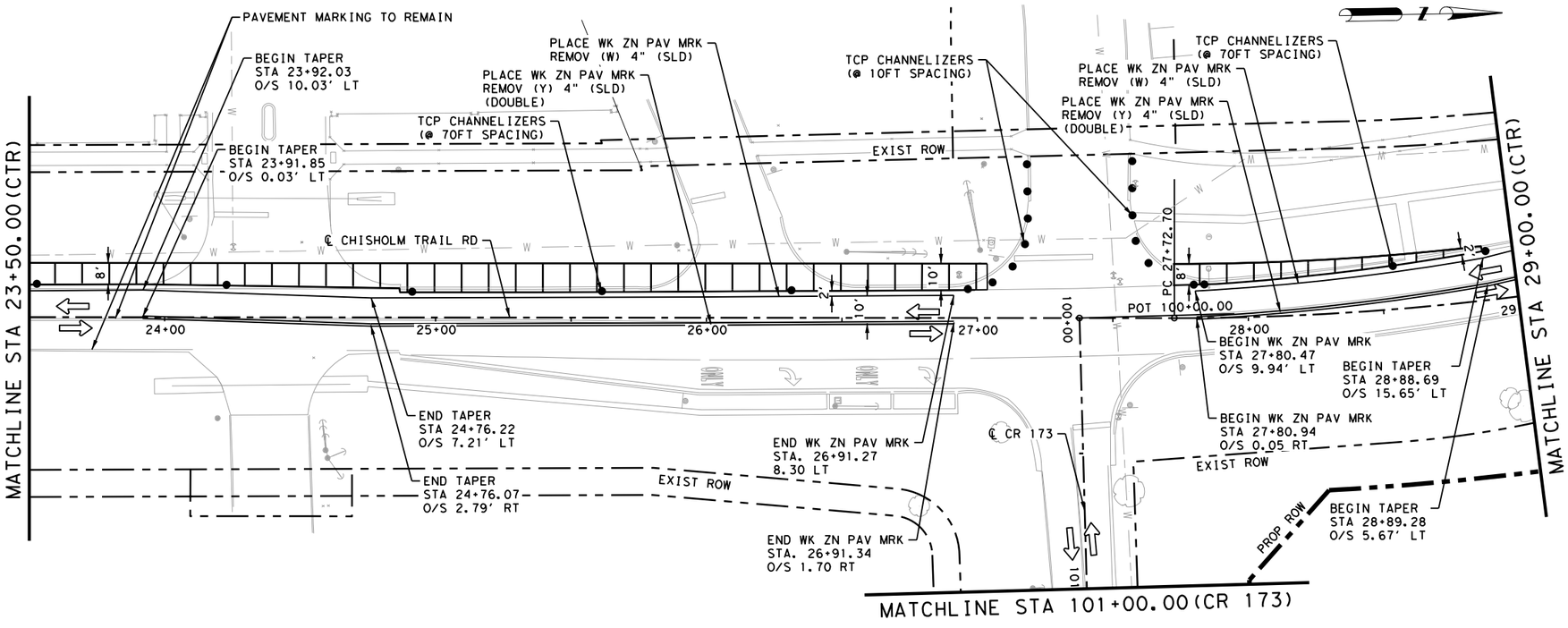

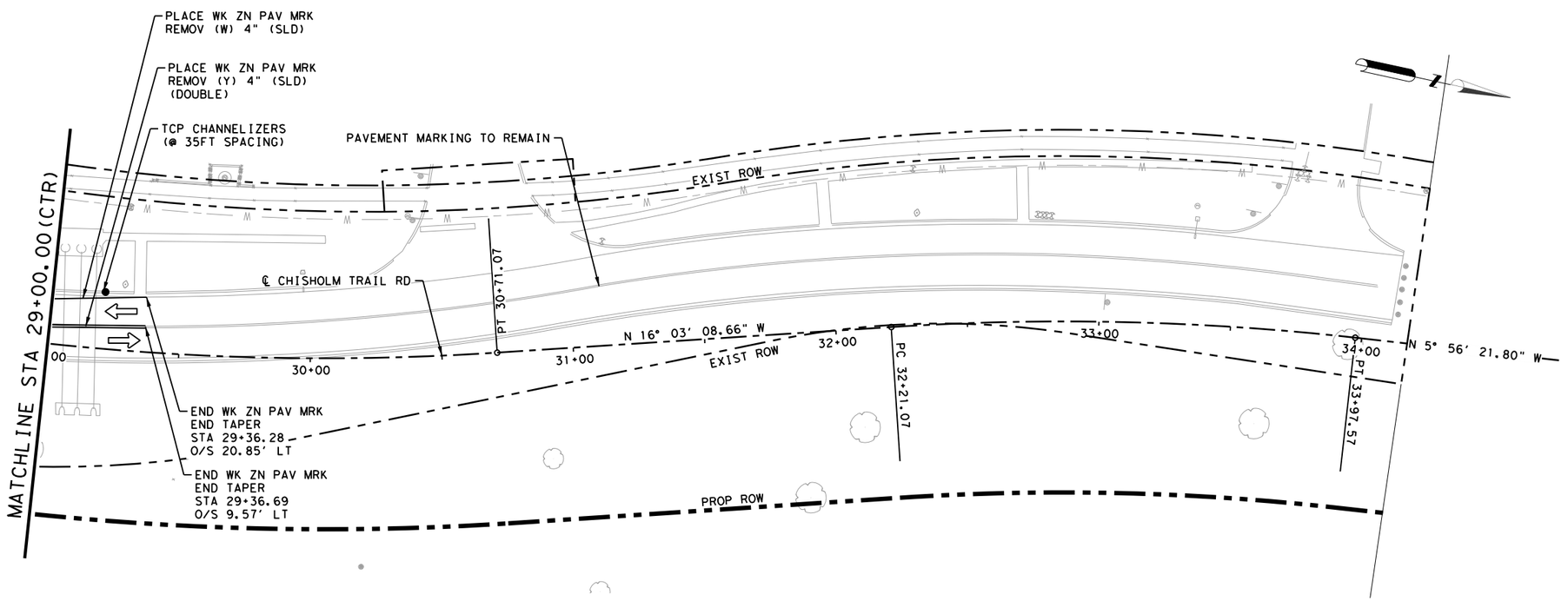

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- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
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- BUILT PREVIOUSLY

NOTES:
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8. EXISTING GROUND MOUNTED SIGNS SHALL BE TEMPORARILY REINSTALLED ON SKIDS WHERE NEEDED FOR TCP.

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CHISHOLM TRAIL RD
TCP PHASE 1
LAYOUTS
STEP 2

SHEET 2 OF 3

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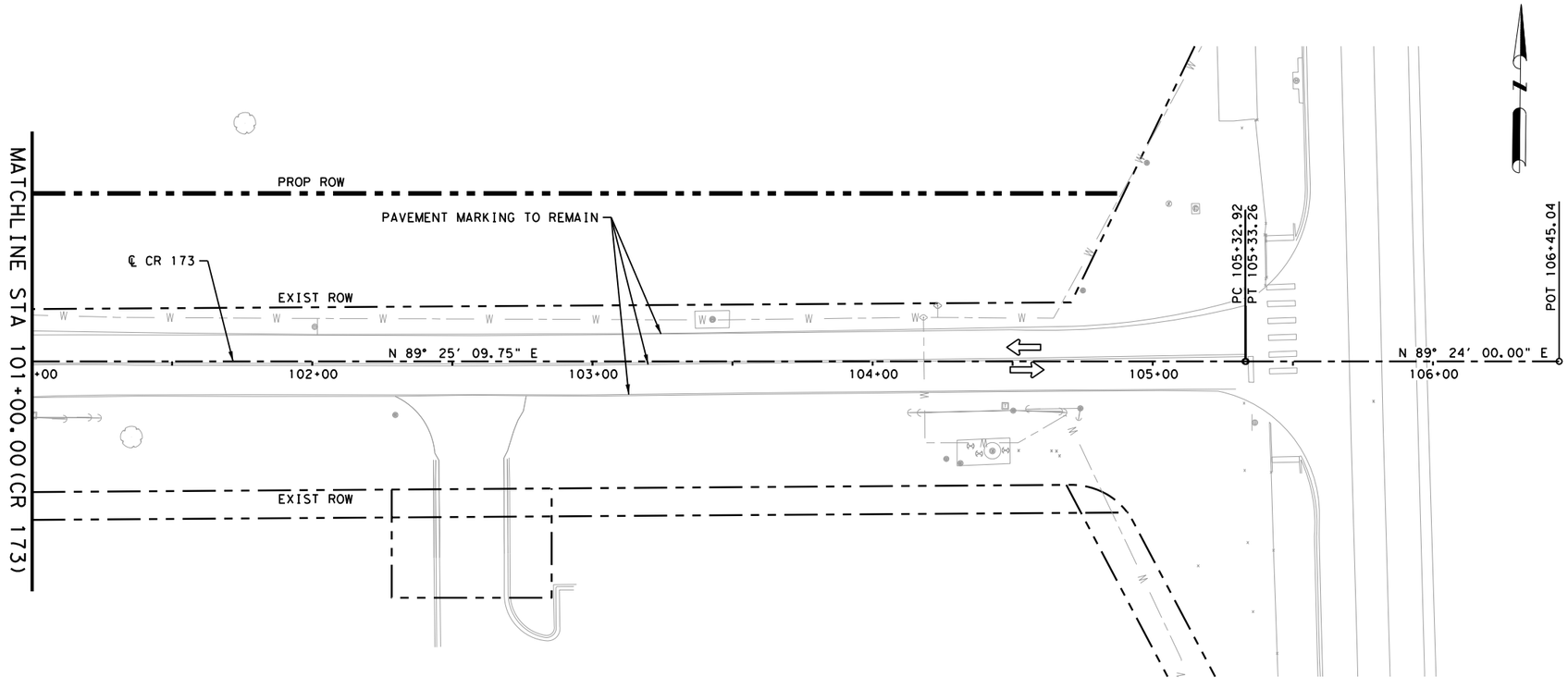

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
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- BUILT PREVIOUSLY

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

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CHISHOLM TRAIL RD
TCP PHASE 1
LAYOUTS
STEP 2 - CR 173

SHEET 3 OF 3

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DRAWN BY:	EB
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APPROVED BY:	

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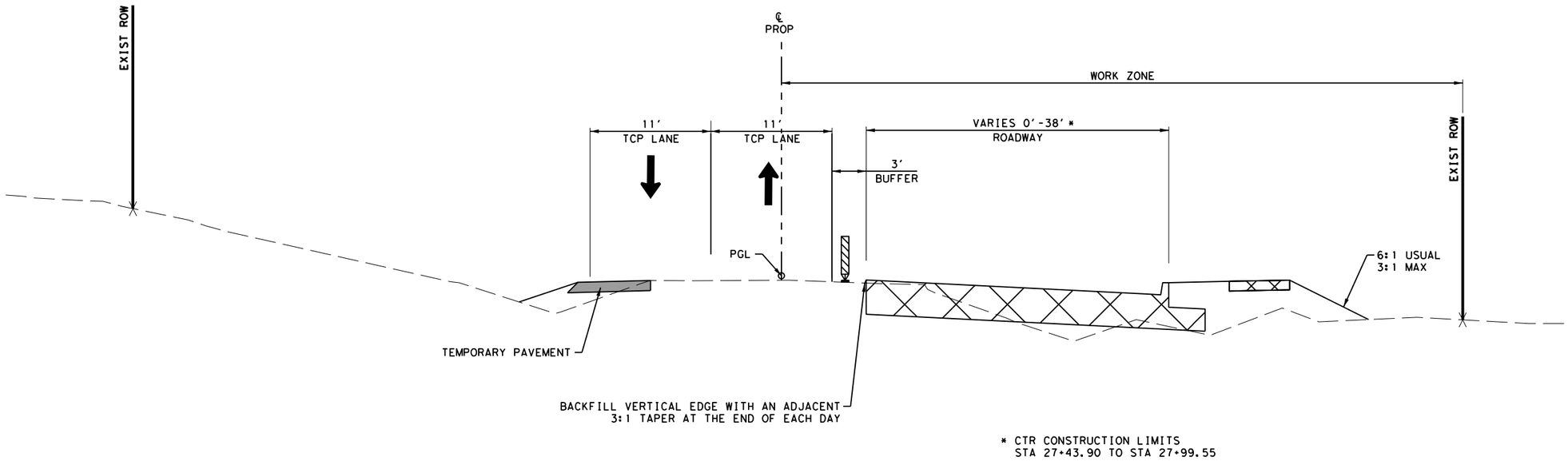
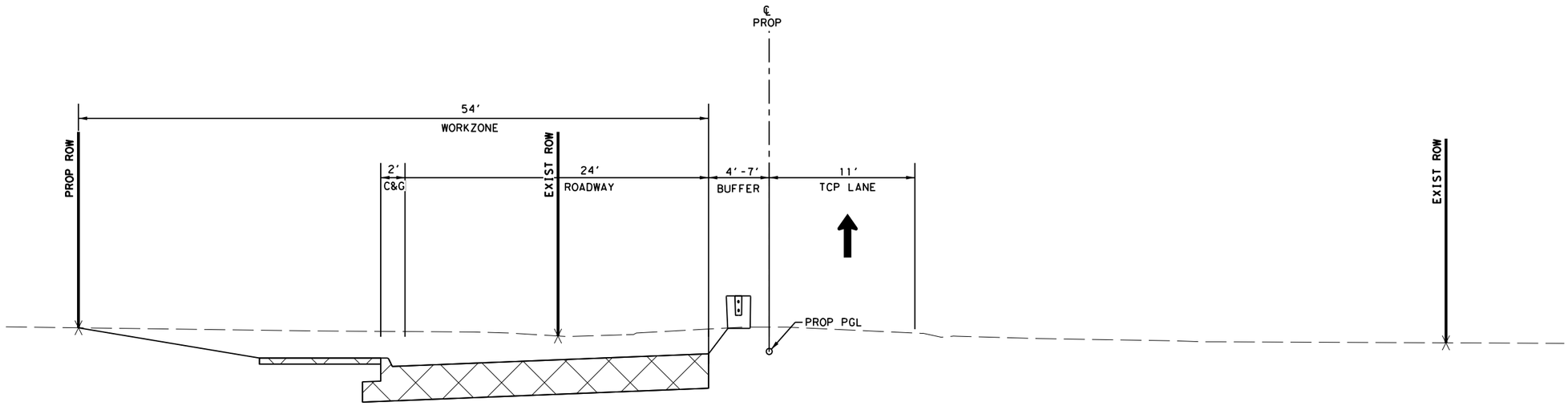


* CTR CONSTRUCTION LIMITS
STA 27+43.90 TO STA 27+99.55

TCP PHASE 2 STEP 1
CHISHOLM TRAIL RD
STA 23+17.85 TO STA 29+29.38



TCP PHASE 2 STEP 1
CR 173
STA 100+07.66 TO STA 105+57.72

LEGEND

- CONSTRUCTION THIS PHASE
- BUILT PREVIOUSLY
- TRAFFIC FLOW

NOTES:
1. PROVIDE OPENINGS W/ CHANNELIZING DEVICES/TY 2 LPCB (WHERE INCLUDED PER PLANS) AT DRIVEWAY ENTRANCES AS NEEDED.
2. MAINTAIN INTERSECTION ACCESS AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE TRANSPORTATION DIRECTOR.
3. SEE PROPOSED TYPICAL SECTIONS FOR FINAL PAVEMENT SECTION DEPTH.

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CHISHOLM TRAIL RD
TCP TYPICAL SECTIONS
PHASE 2
STEP 1

SHEET 1 OF 1

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APPROVED BY:	

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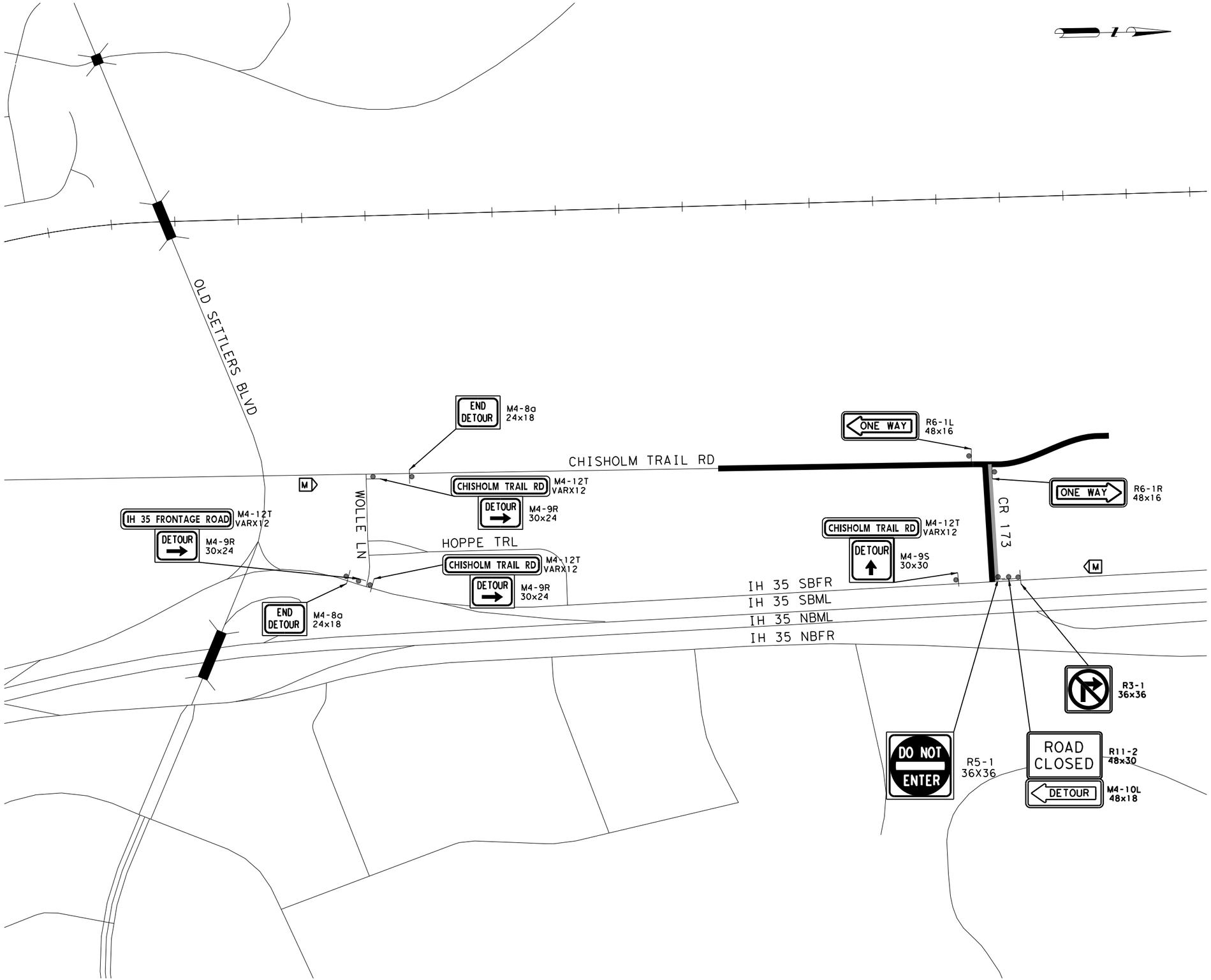

LEGEND

- ROAD CLOSURE
- PROJECT LIMITS
- M PORTABLE CHANGEABLE MESSAGE SIGN

0 250 500
SCALE: 1"=500'

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CHISHOLM TRAIL RD
TRAFFIC CONTROL
DETOUR

PHASE 2 STEP 1

SHEET 1 OF 1

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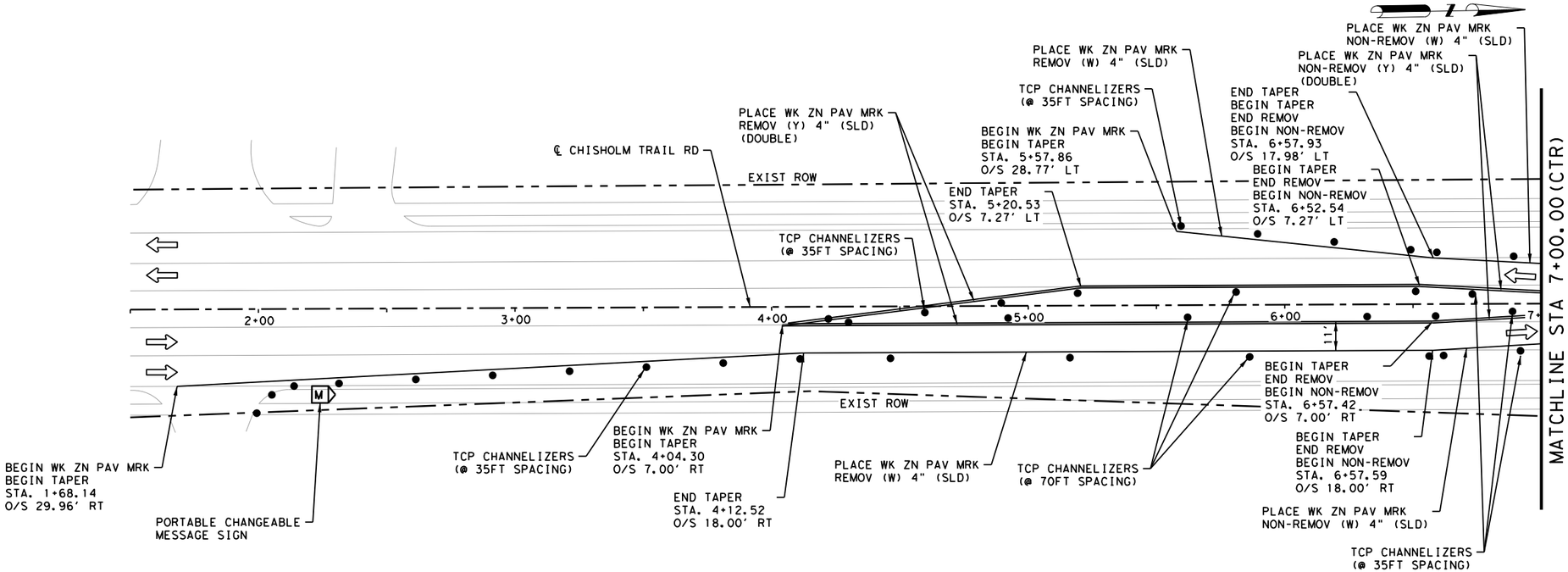

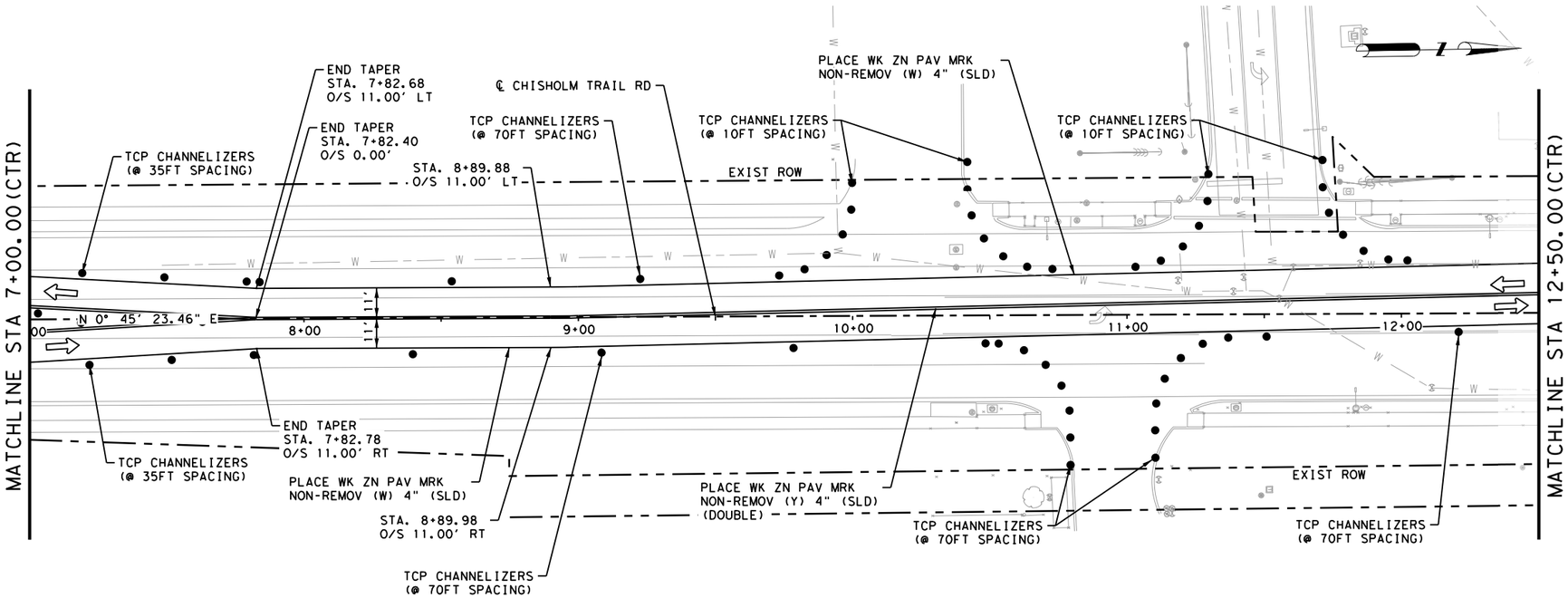

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

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

0 25 50
SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 2
LAYOUTS
STEP 1

SHEET 1 OF 4

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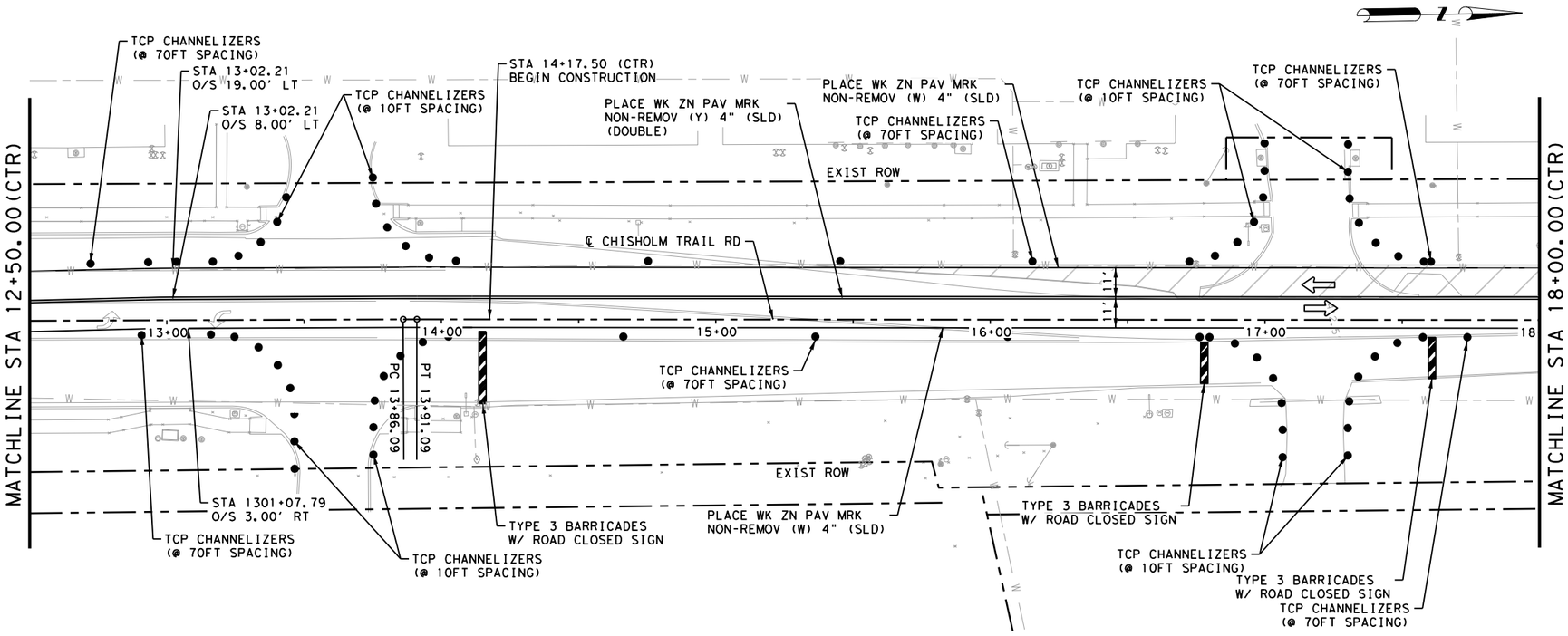

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

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SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 2
LAYOUTS
STEP 1

SHEET 2 OF 4

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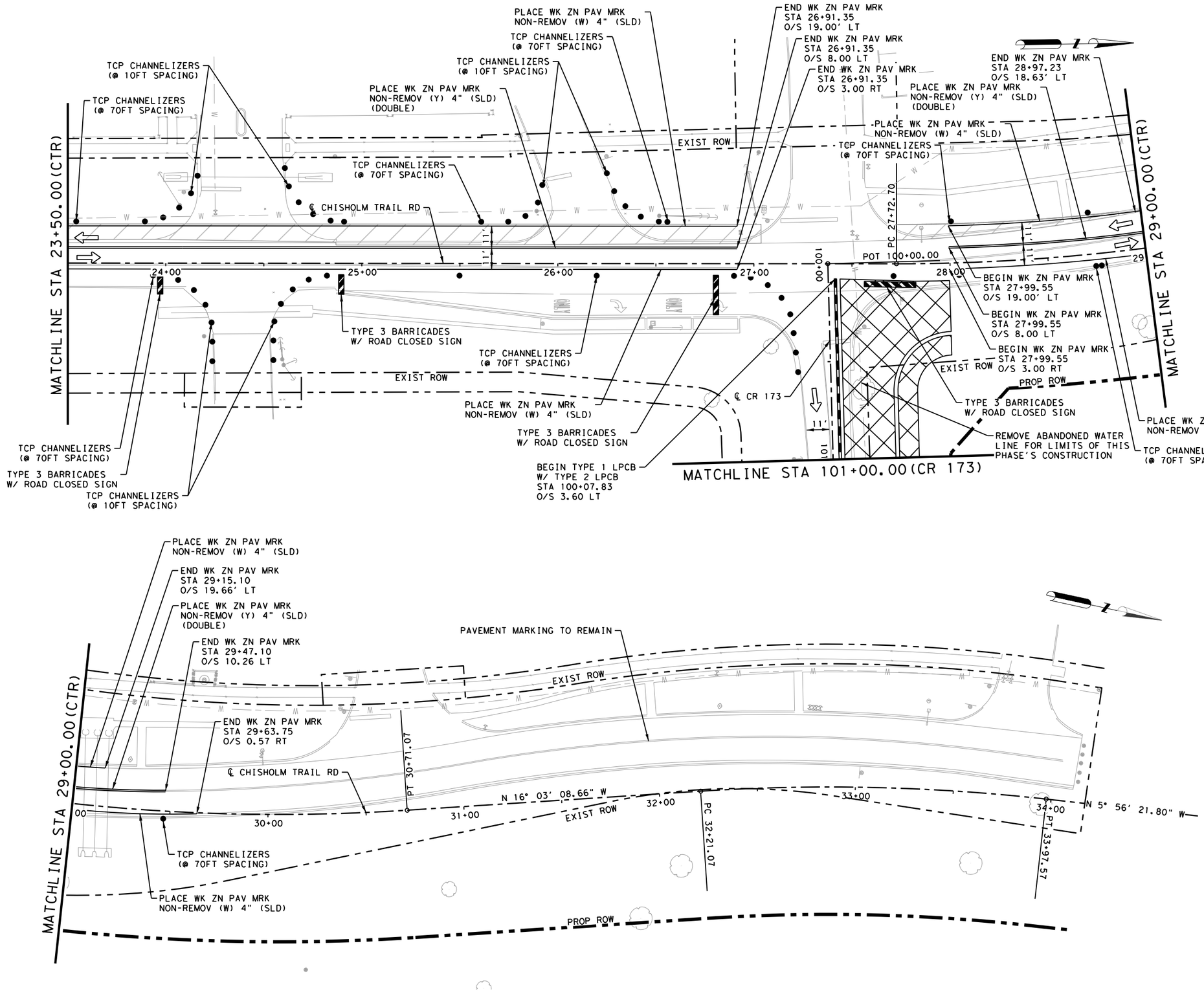

LEGEND

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- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

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SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 2
LAYOUTS
STEP 1

SHEET 3 OF 4

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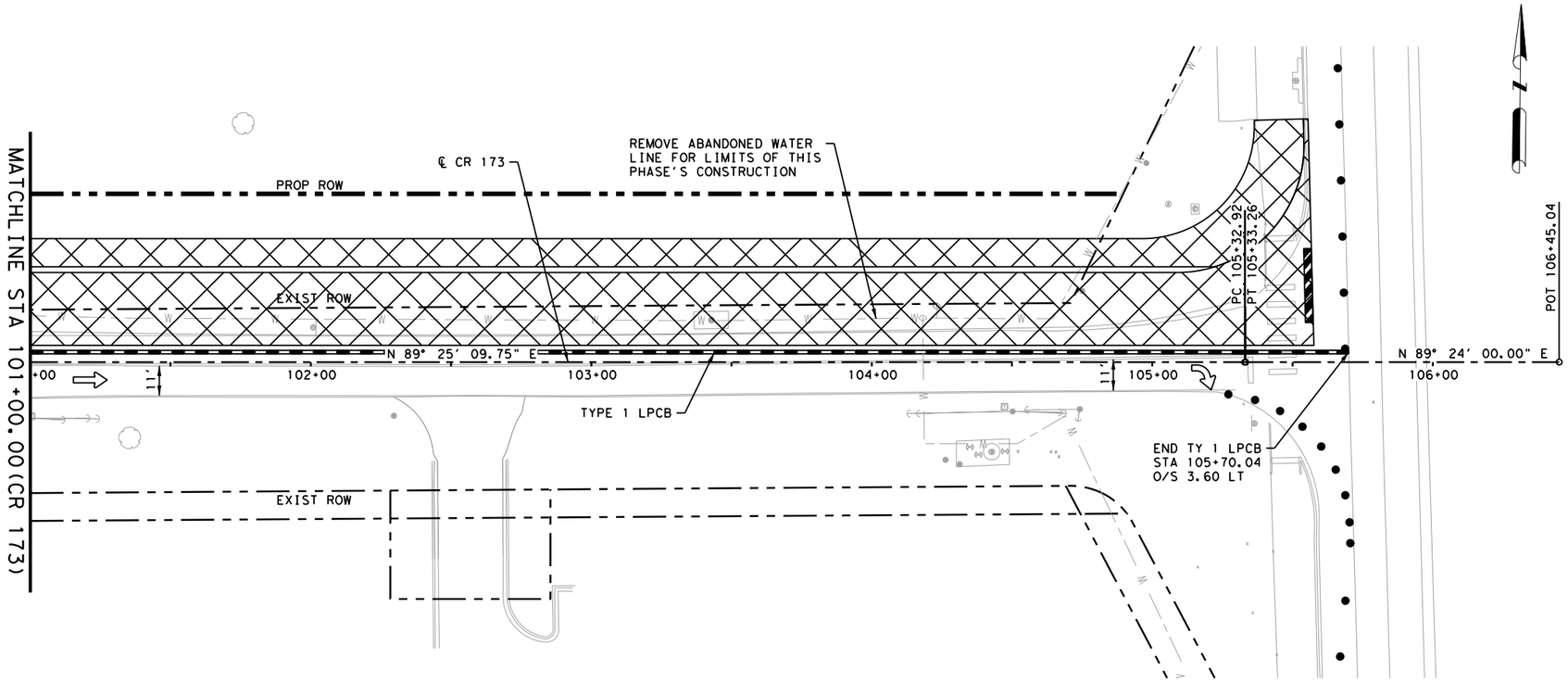

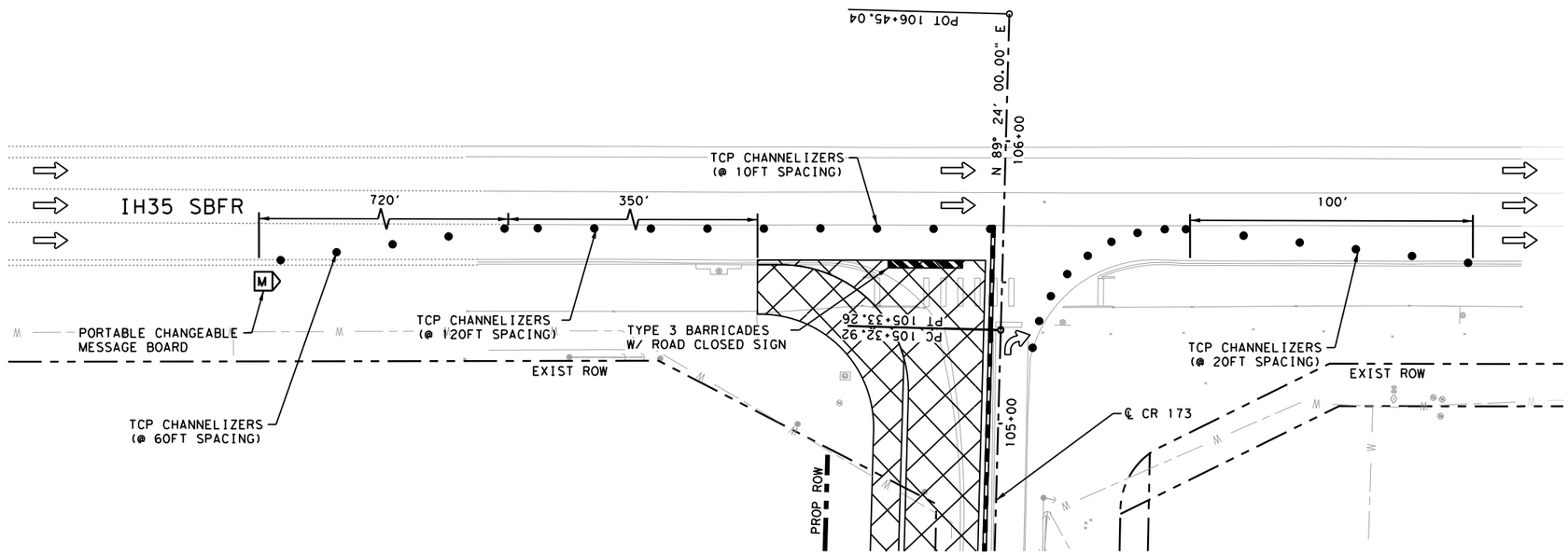

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
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- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

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SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 2
LAYOUTS
STEP 1

SHEET 4 OF 4

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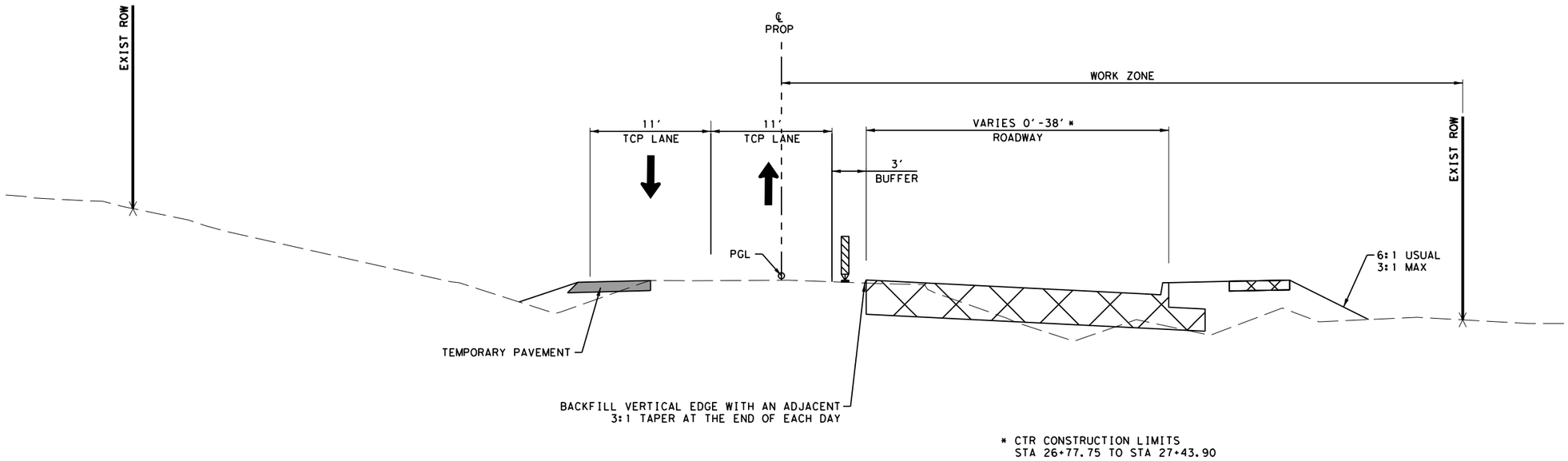
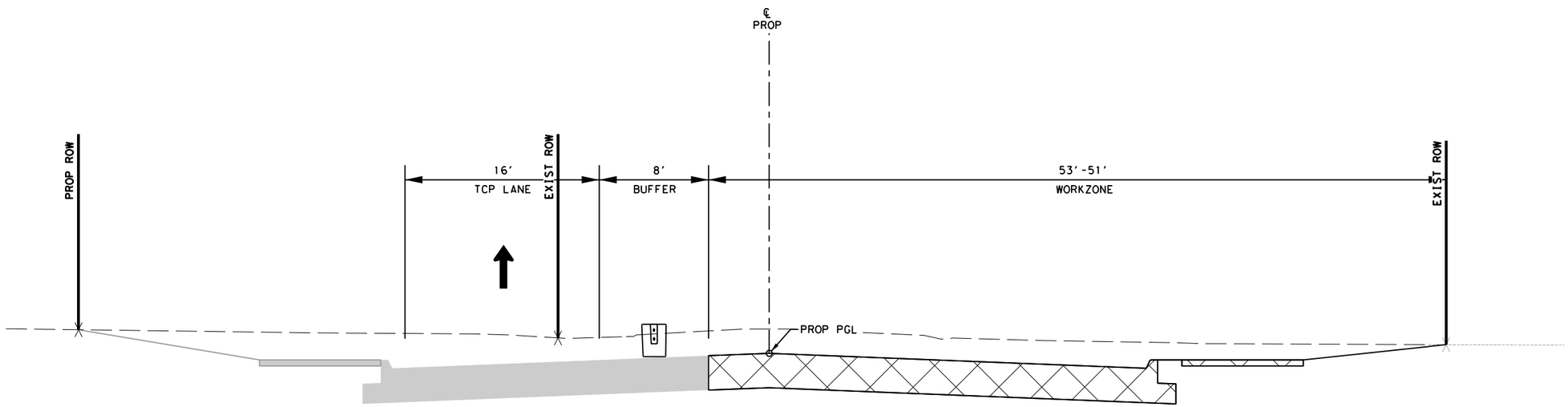


TCP PHASE 2 STEP 2
CHISHOLM TRAIL RD
STA 23+17.85 TO STA 29+29.38



TCP PHASE 2 STEP 2
CR 173
STA 100+07.66 TO STA 105+57.72

LEGEND

- CONSTRUCTION THIS PHASE
- BUILT PREVIOUSLY
- TRAFFIC FLOW

NOTES:
1. PROVIDE OPENINGS W/ CHANNELIZING DEVICES/TY 2 LPCB (WHERE INCLUDED PER PLANS) AT DRIVEWAY ENTRANCES AS NEEDED.
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3. SEE PROPOSED TYPICAL SECTIONS FOR FINAL PAVEMENT SECTION DEPTH.

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CHISHOLM TRAIL RD
TCP TYPICAL SECTIONS
PHASE 2
STEP 2

SHEET 1 OF 1

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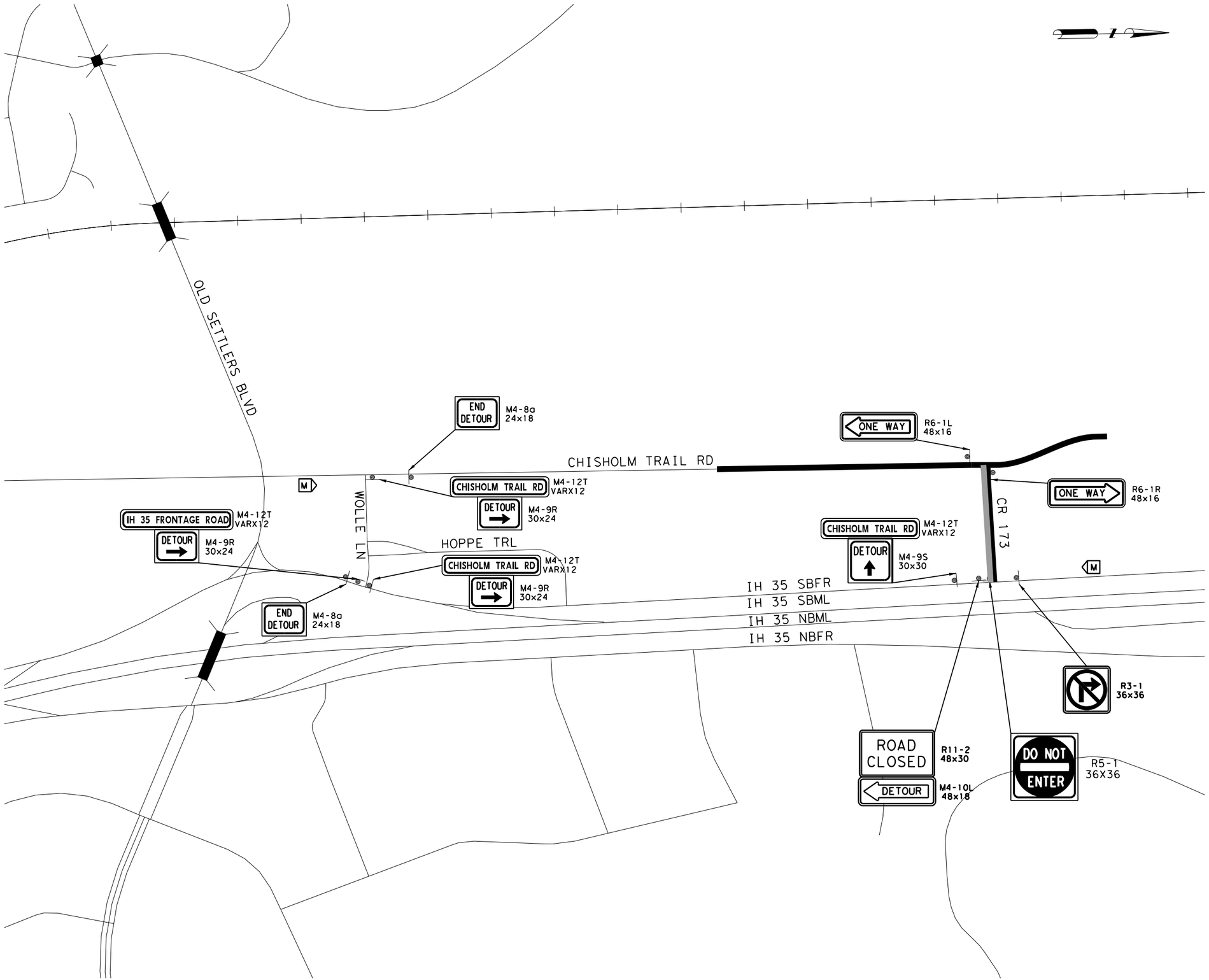

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CHISHOLM TRAIL RD
TRAFFIC CONTROL
DETOUR

PHASE 2 STEP 2

SHEET 1 OF 1

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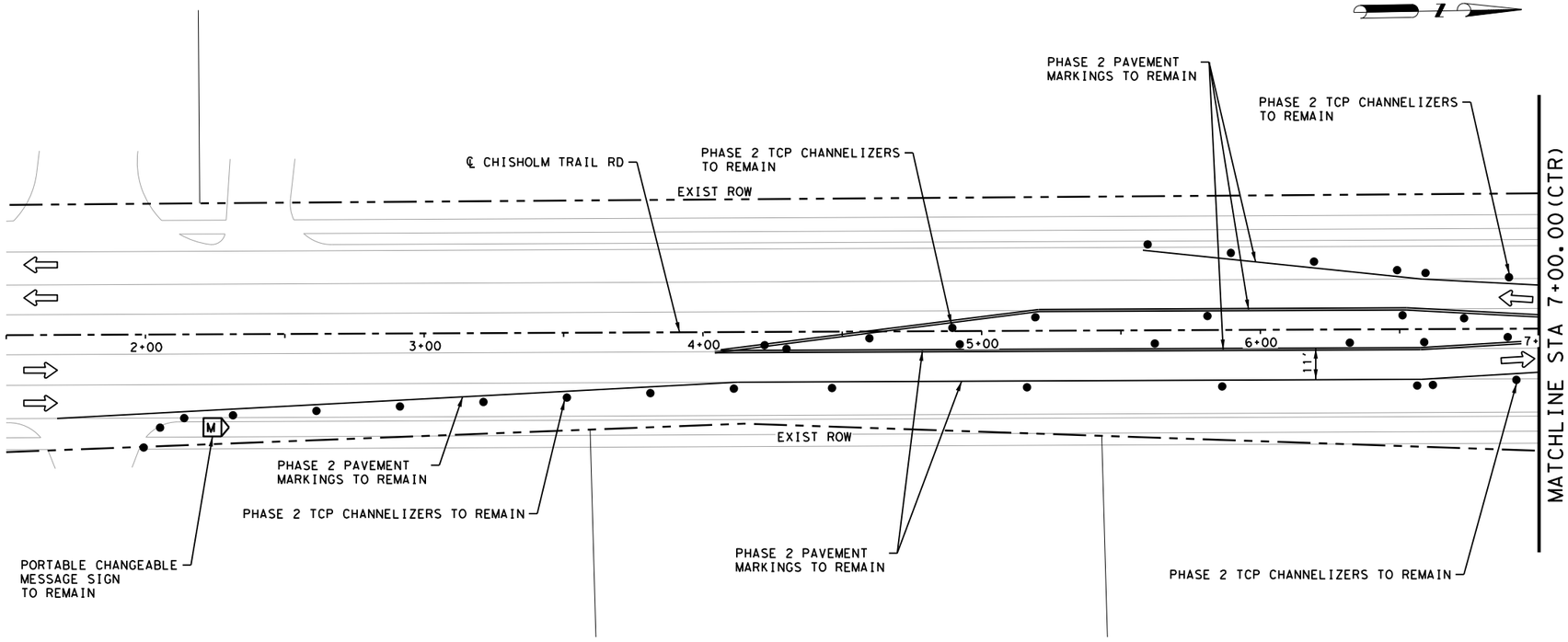

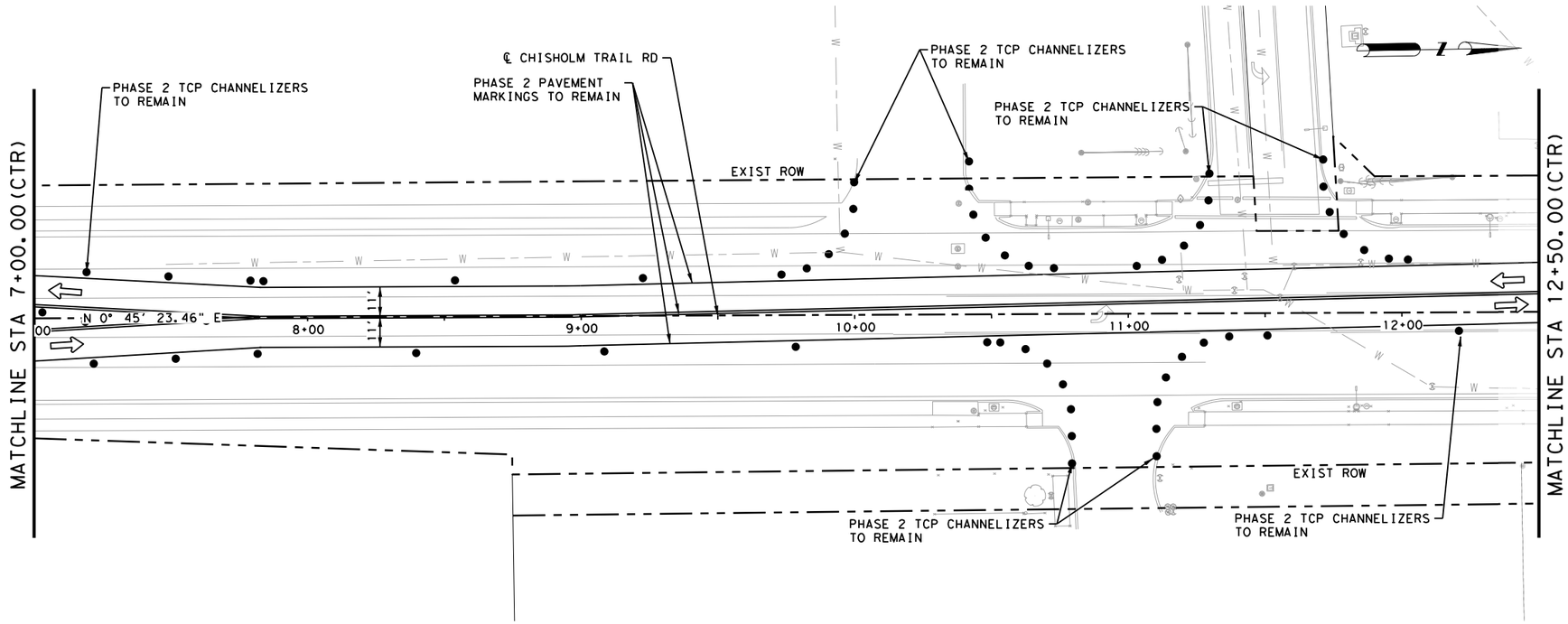

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

NOTES:
1. MAINTAIN ACCESS TO ALL INTERSECTIONS AND DRIVEWAYS AT ALL TIMES UNLESS OTHERWISE NOTED.
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7. WARNING SIGN PLACEMENT SHALL NOT CONFLICT WITH EXISTING PERMANENT SIGNAGE.
8. EXISTING GROUND MOUNTED SIGNS SHALL BE TEMPORARILY REINSTALLED ON SKIDS WHERE NEEDED FOR TCP.

0 25 50

SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 2
LAYOUTS
STEP 2

SHEET 1 OF 4

DESIGNED BY:	EB	36
DRAWN BY:	EB	
CHECKED BY:		
APPROVED BY:		

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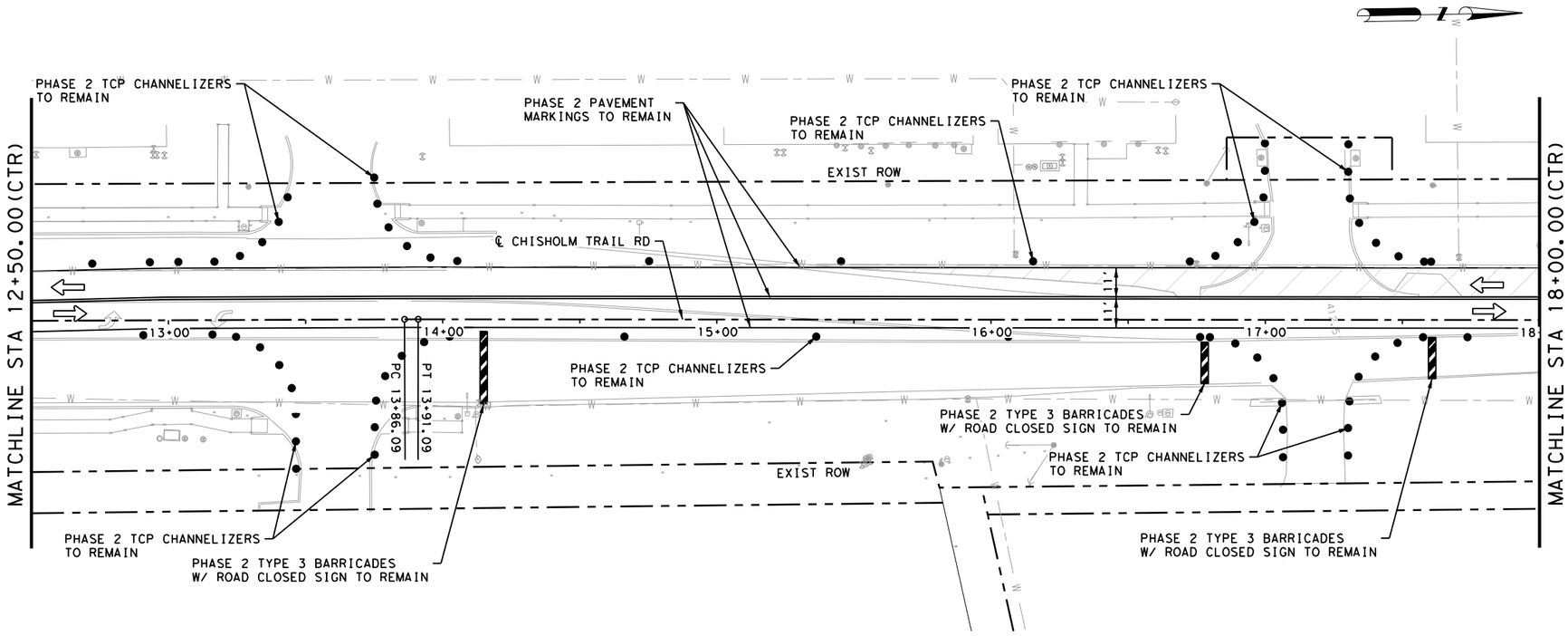

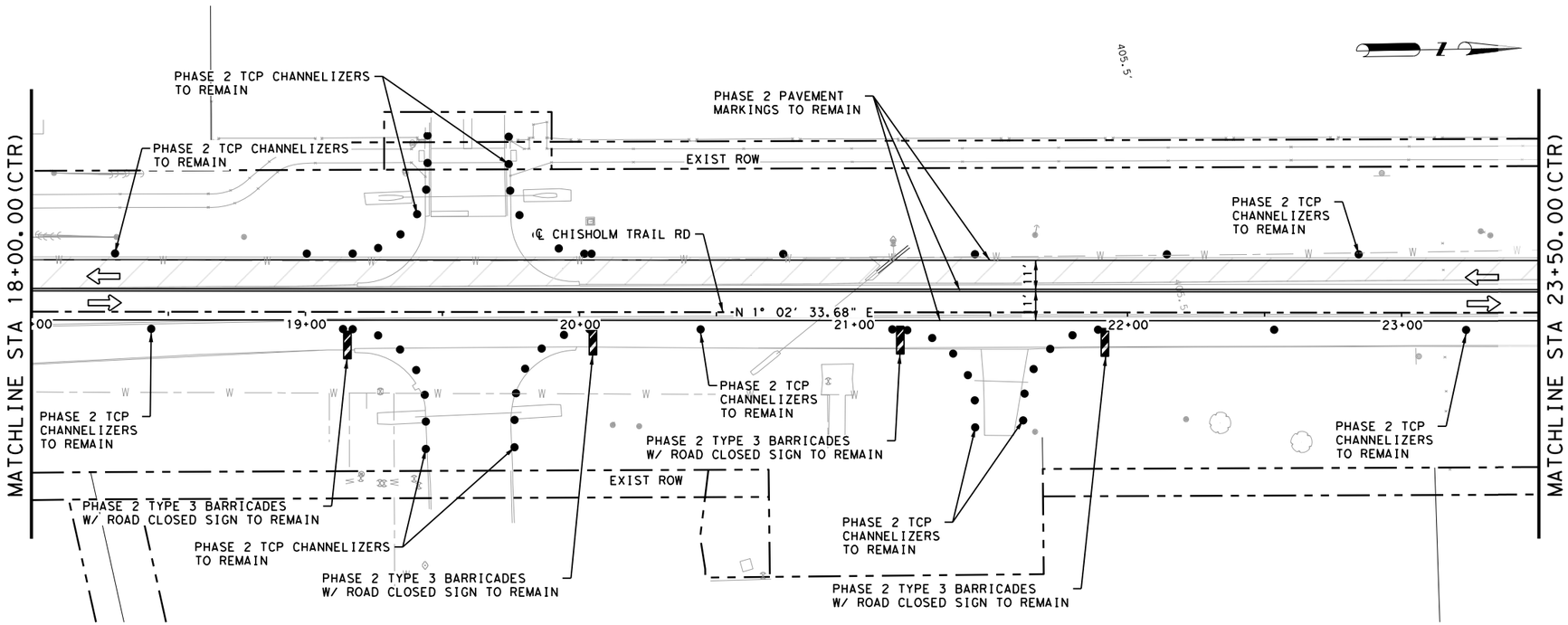

LEGEND

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0 25 50

SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 2
LAYOUTS
STEP 2

SHEET 2 OF 4

DESIGNED BY:	EB	37
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APPROVED BY:		

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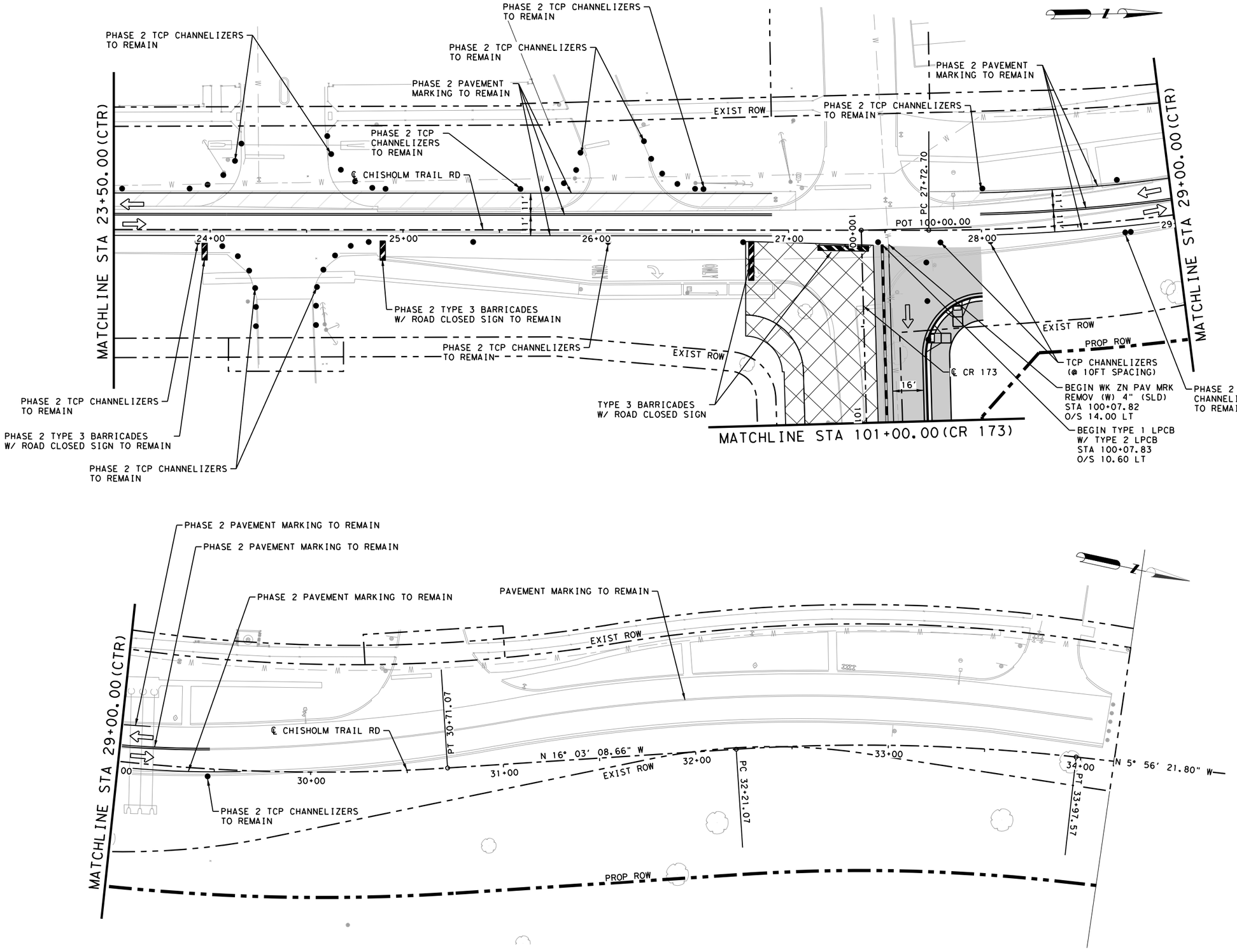

LEGEND

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0 25 50
SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 2
LAYOUTS
STEP 2

SHEET 3 OF 4

DESIGNED BY:	EB	38
DRAWN BY:	EB	
CHECKED BY:		
APPROVED BY:		

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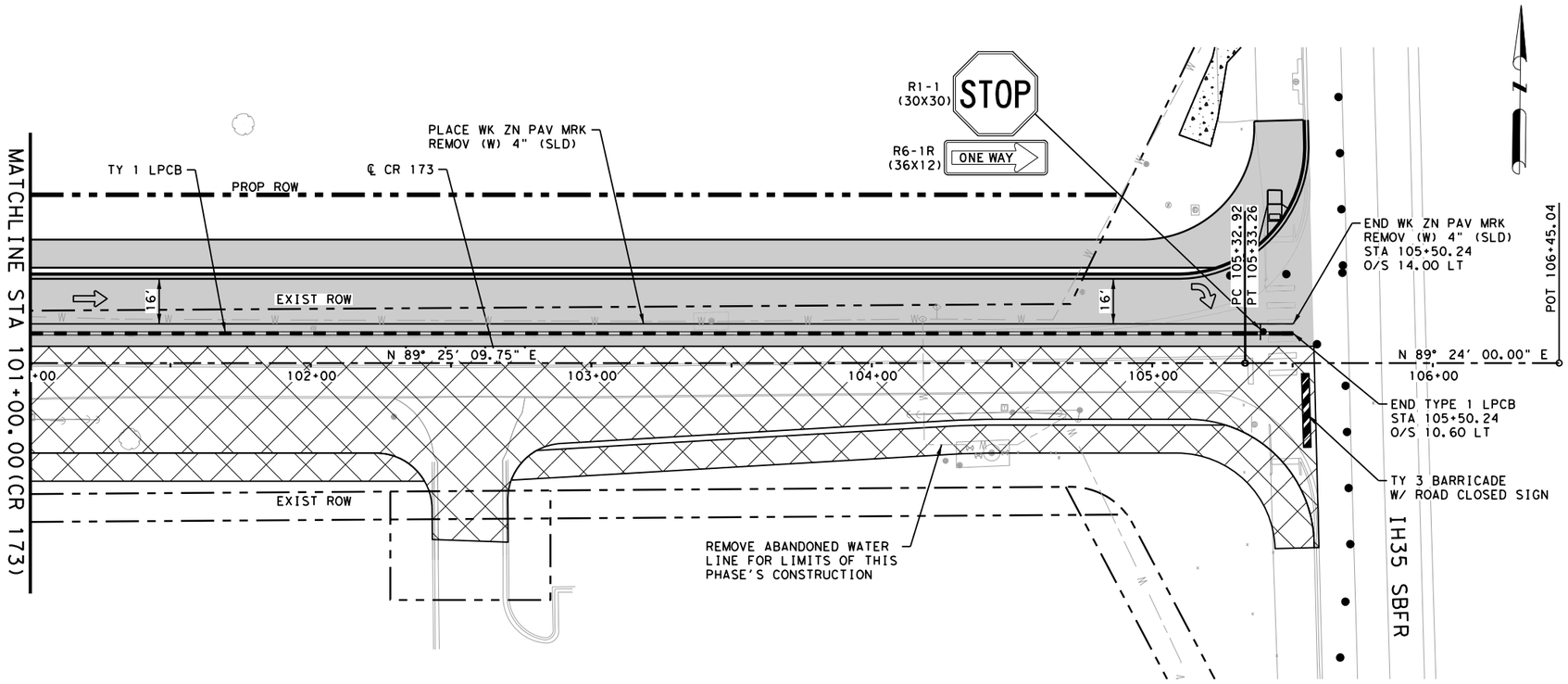

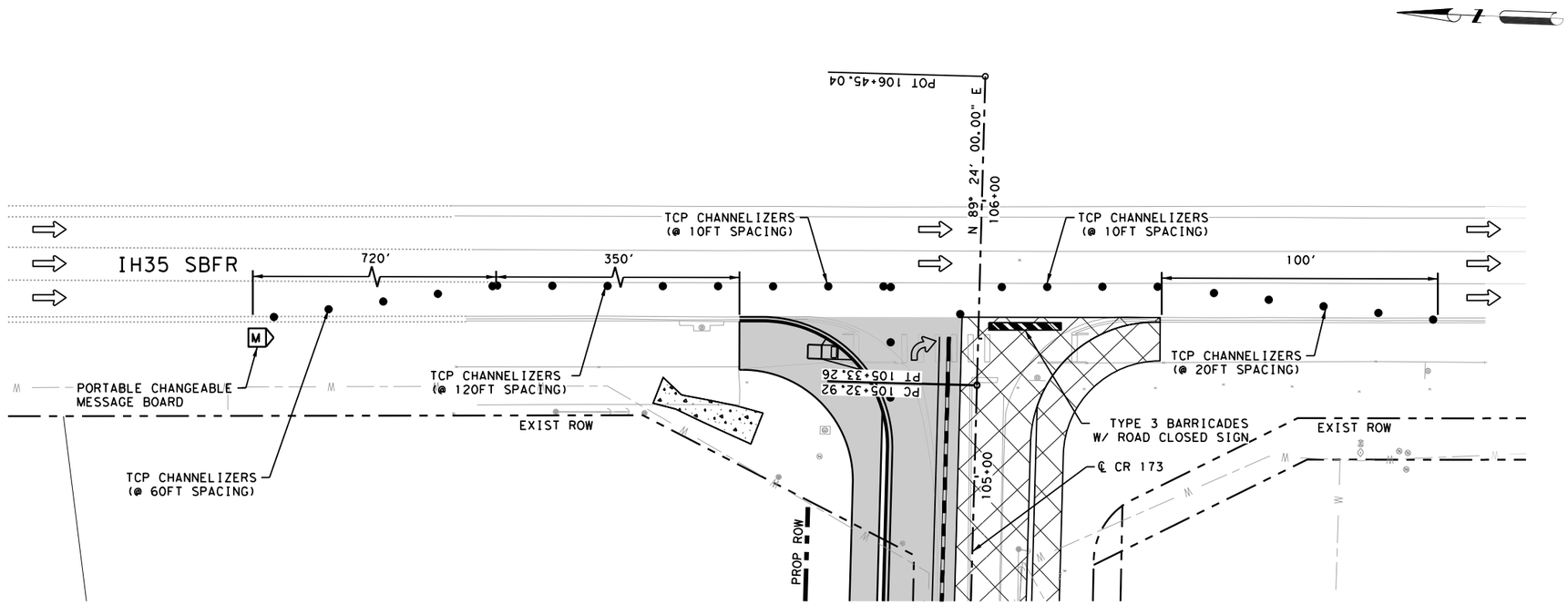

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

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

0 25 50
SCALE: 1"=50'

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JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER

8/3/2023

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CHISHOLM TRAIL RD
TCP PHASE 2
LAYOUTS
STEP 2

SHEET 4 OF 4

DESIGNED BY:	EB
DRAWN BY:	EB
CHECKED BY:	
APPROVED BY:	

39

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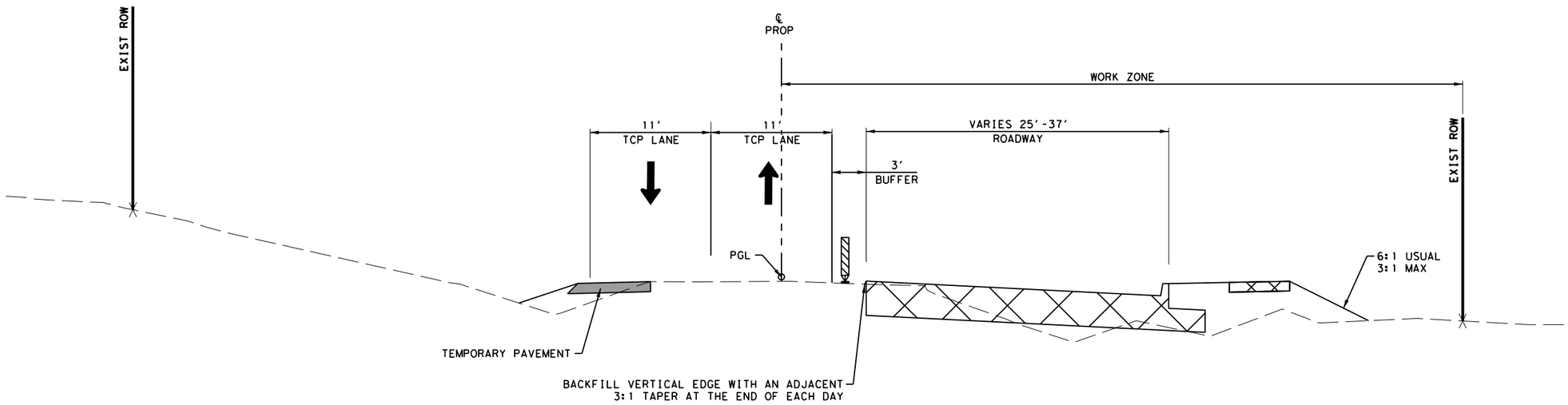
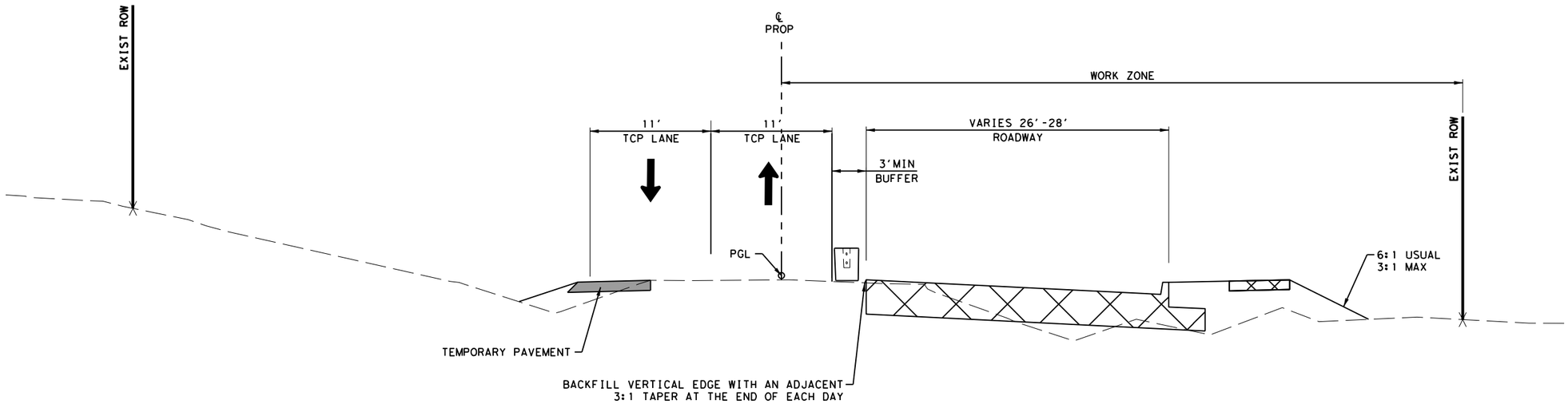


TCP PHASE 3

CHISHOLM TRAIL RD

STA 14+11.27 TO STA 26+77.75



TCP PHASE 3

CHISHOLM TRAIL RD

STA 27+99.55 TO STA 34+17.53

LEGEND

- CONSTRUCTION THIS PHASE
- BUILT PREVIOUSLY
- TRAFFIC FLOW

NOTES:

1. PROVIDE OPENINGS W/ CHANNELIZING DEVICES/TY 2 LPCB (WHERE INCLUDED PER PLANS) AT DRIVEWAY ENTRANCES AS NEEDED.
2. MAINTAIN INTERSECTION ACCESS AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE TRANSPORTATION DIRECTOR.
3. SEE PROPOSED TYPICAL SECTIONS FOR FINAL PAVEMENT SECTION DEPTH.

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CHISHOLM TRAIL RD
TCP TYPICAL SECTIONS
PHASE 3

SHEET 1 OF 1

DESIGNED BY:	EB
DRAWN BY:	EB
CHECKED BY:	
APPROVED BY:	

40

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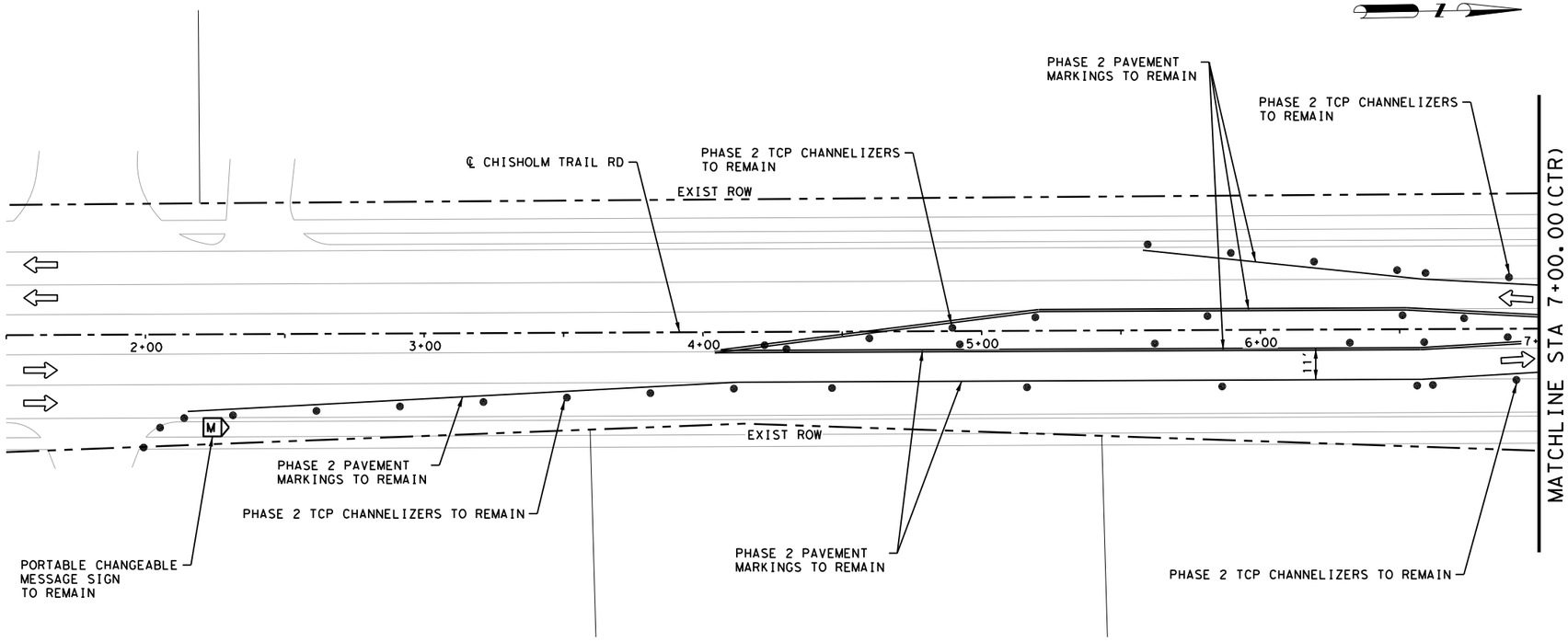

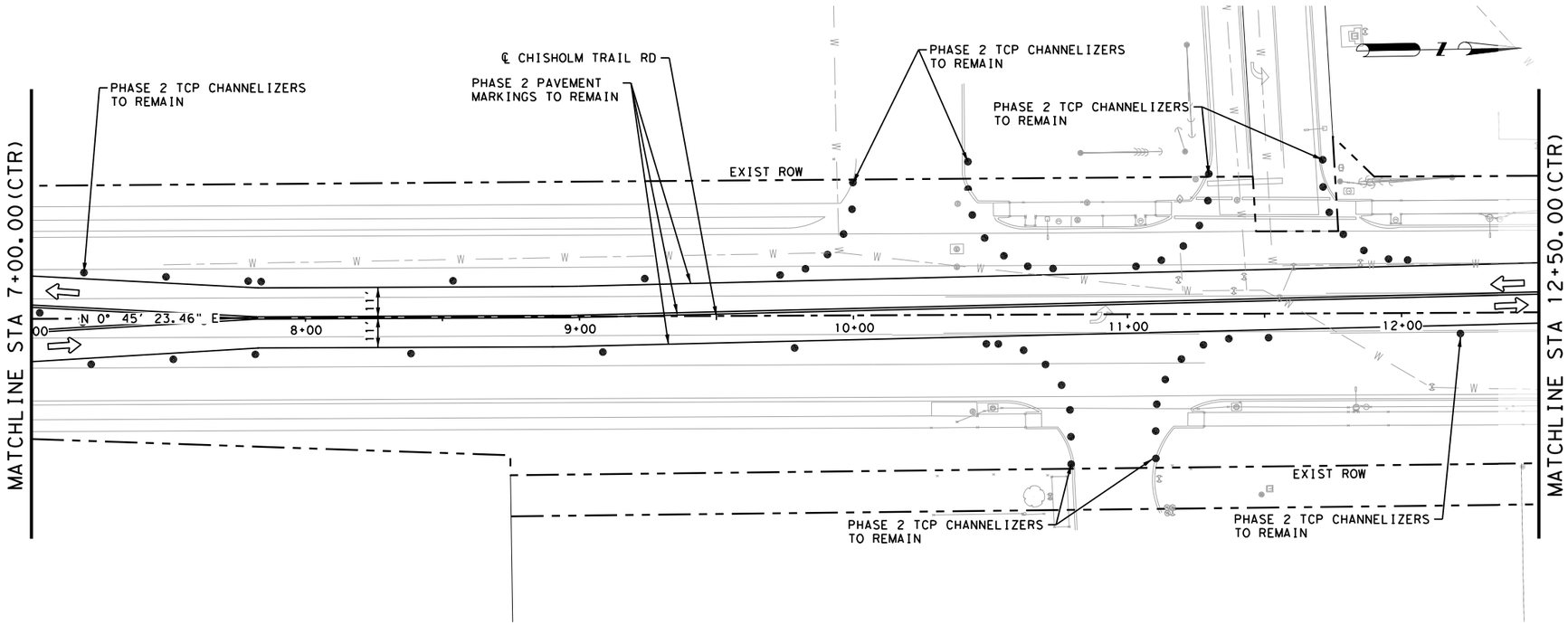

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

NOTES:
1. MAINTAIN ACCESS TO ALL INTERSECTIONS AND DRIVEWAYS AT ALL TIMES UNLESS OTHERWISE NOTED.
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0 25 50

SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 3
LAYOUTS

SHEET 1 OF 4

DESIGNED BY:	EB	41
DRAWN BY:	EB	
CHECKED BY:		
APPROVED BY:		

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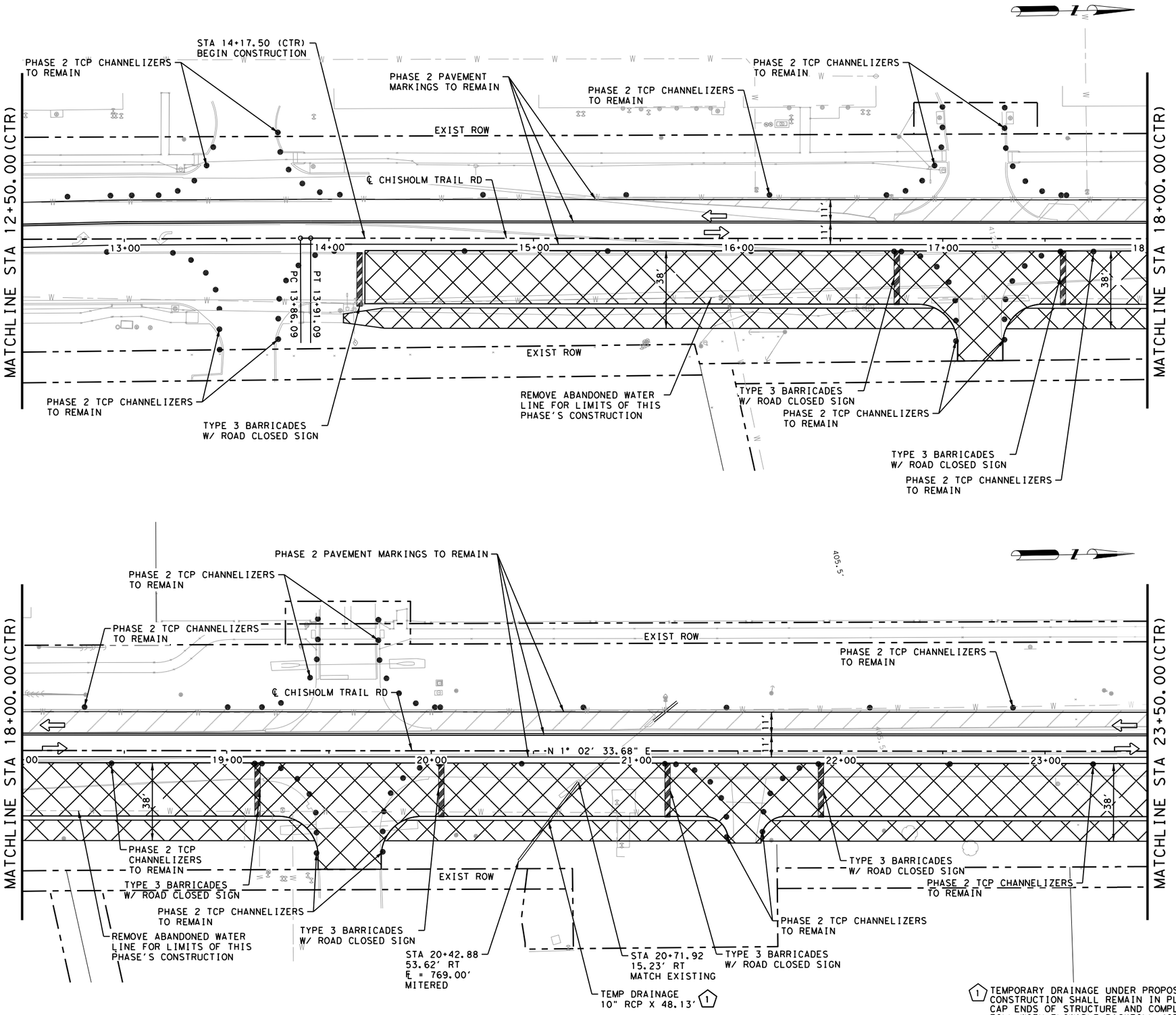

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

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0 25 50
SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 3
LAYOUTS

SHEET 2 OF 4

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DRAWN BY:	EB	
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APPROVED BY:		

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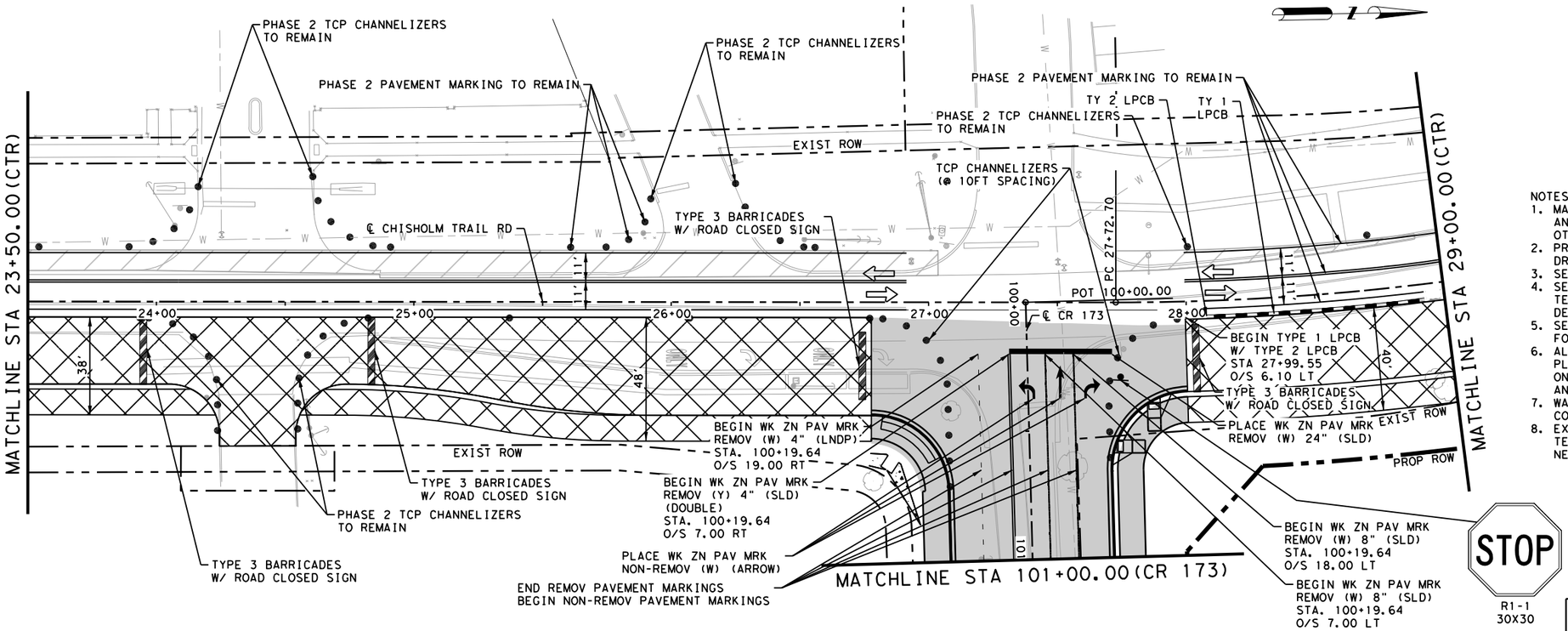

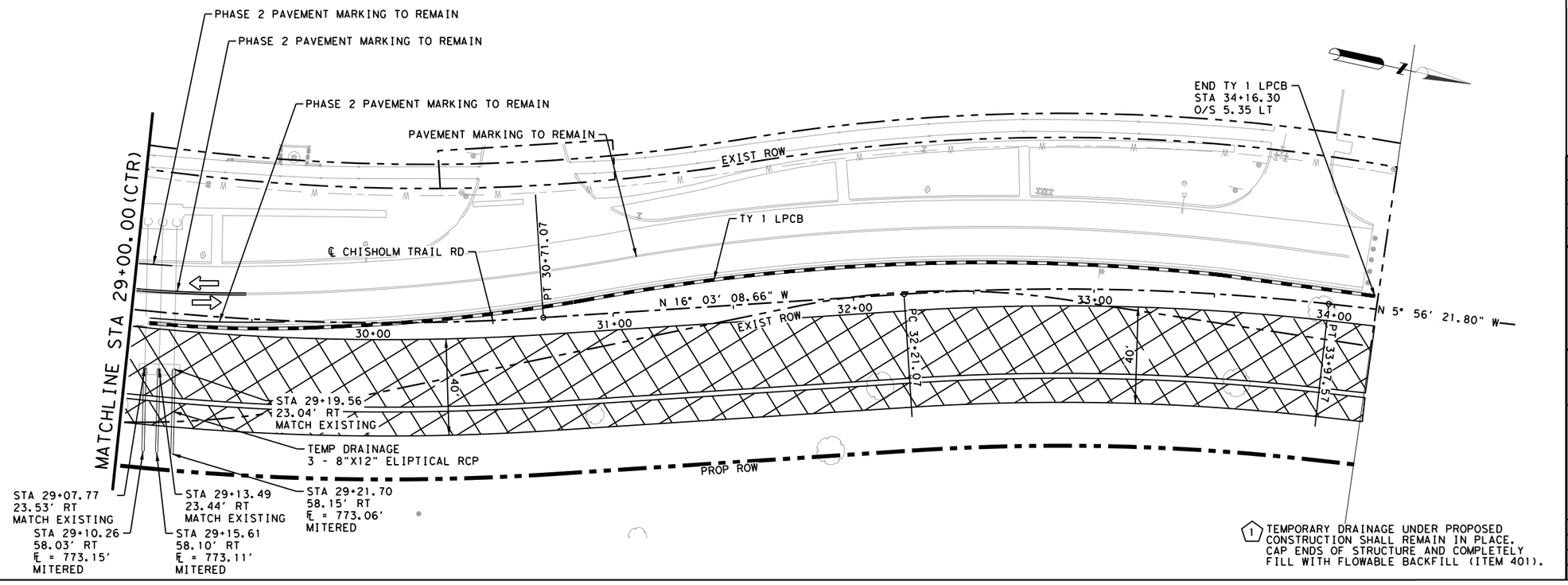

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

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CHISHOLM TRAIL RD
TCP PHASE 3
LAYOUTS

SHEET 3 OF 4

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APPROVED BY:		

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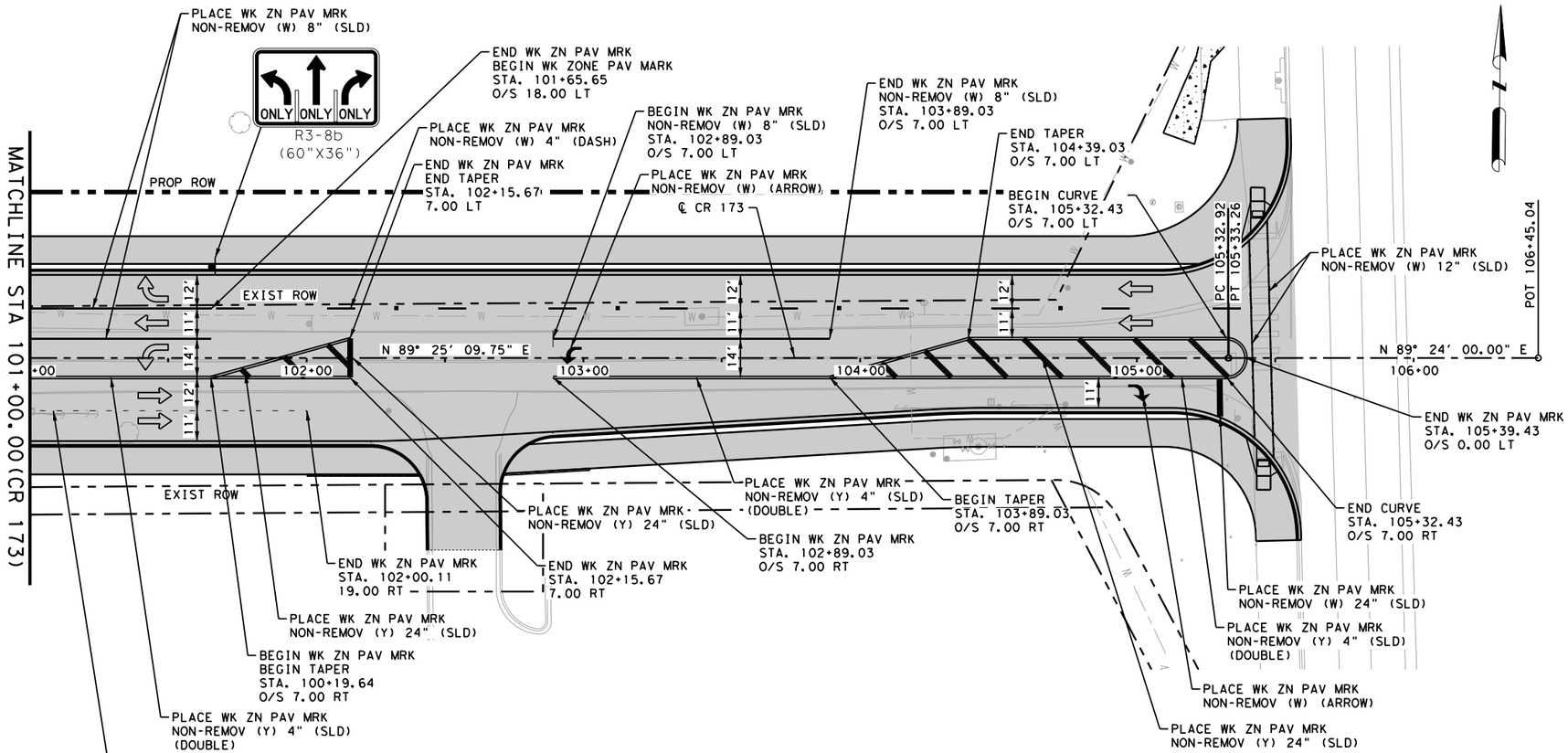

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

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0 25 50
SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 3
LAYOUTS
CR 173

SHEET 4 OF 4

DESIGNED BY:	EB
DRAWN BY:	EB
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APPROVED BY:	

44

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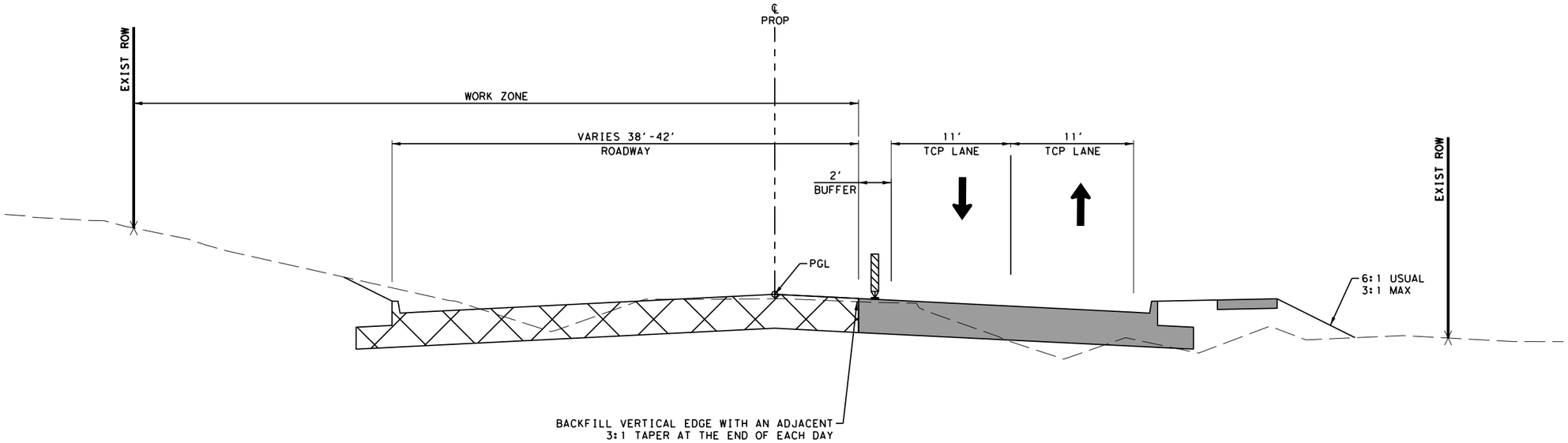
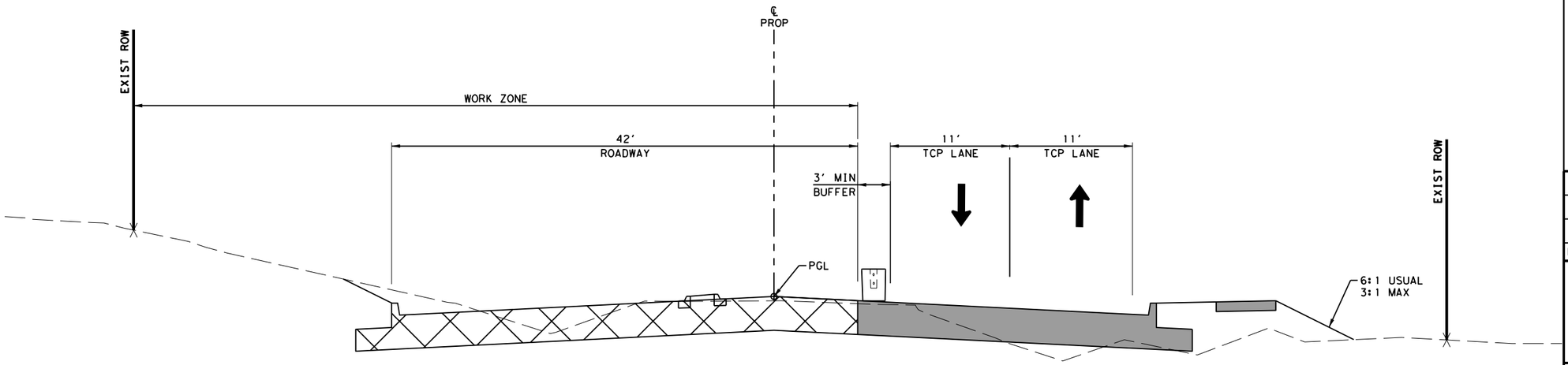


PHASE 4

STA 14+17.61 TO STA 30+71.07



PHASE 4

STA 30+71.07 TO STA 34+17.52

LEGEND

- CONSTRUCTION THIS PHASE
- BUILT PREVIOUSLY
- TRAFFIC FLOW

NOTES:

1. PROVIDE OPENINGS W/ CHANNELIZING DEVICES/TY 2 LPCB (WHERE INCLUDED PER PLANS) AT DRIVEWAY ENTRANCES AS NEEDED.
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3. SEE PROPOSED TYPICAL SECTIONS FOR FINAL PAVEMENT SECTION DEPTH.

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CHISHOLM TRAIL RD
TCP TYPICAL SECTIONS
PHASE 4

SHEET 1 OF 1

DESIGNED BY:	EB	45
DRAWN BY:	EB	
CHECKED BY:		
APPROVED BY:		

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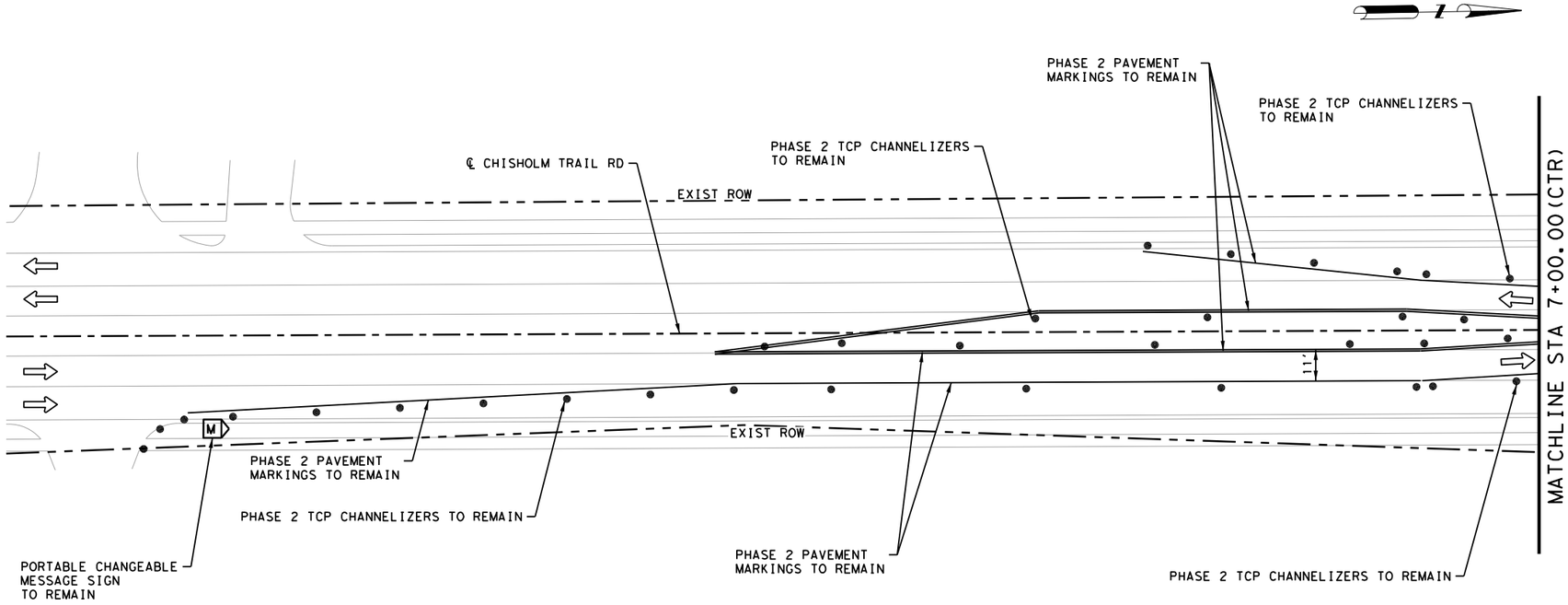

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

NOTES:
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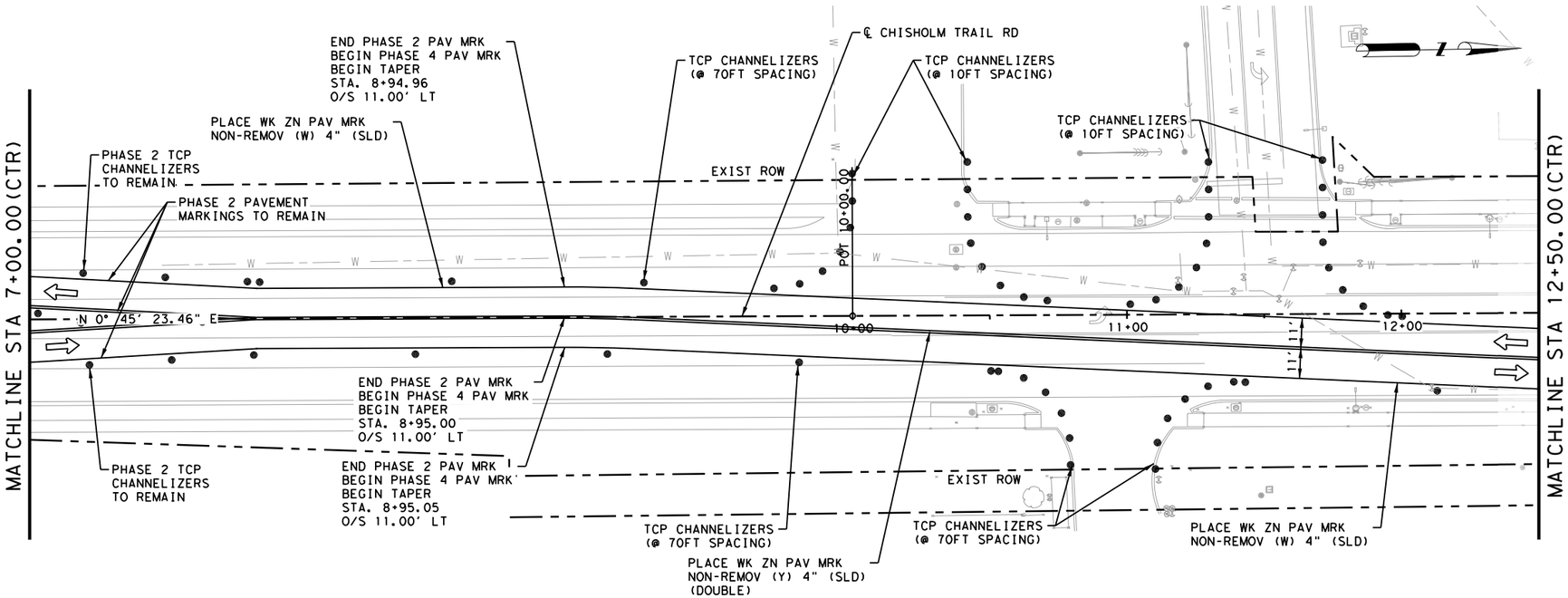
7. WARNING SIGN PLACEMENT SHALL NOT CONFLICT WITH EXISTING PERMANENT SIGNAGE.
8. EXISTING GROUND MOUNTED SIGNS SHALL BE TEMPORARILY REINSTALLED ON SKIDS WHERE NEEDED FOR TCP.

0 25 50

SCALE: 1"=50'



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CHISHOLM TRAIL RD
TCP PHASE 4
LAYOUTS

SHEET 1 OF 4

DESIGNED BY:	EB	46
DRAWN BY:	EB	
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APPROVED BY:		

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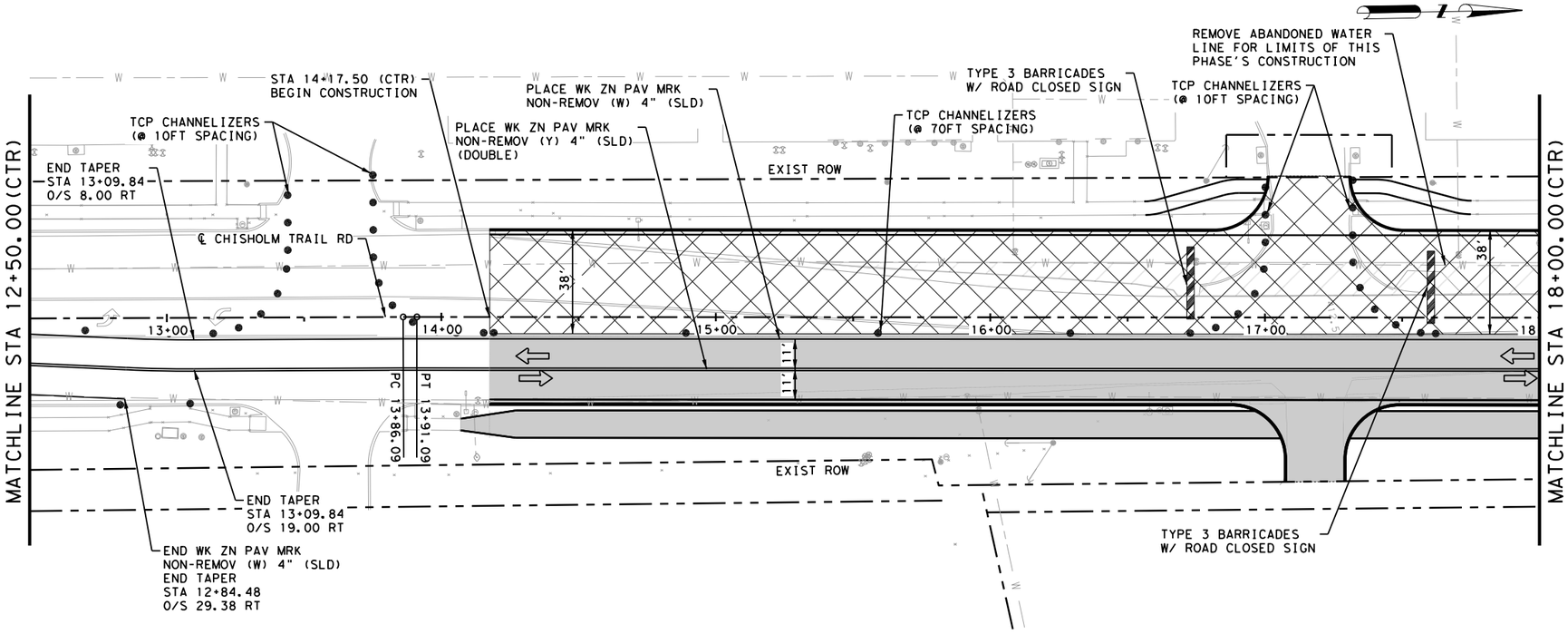

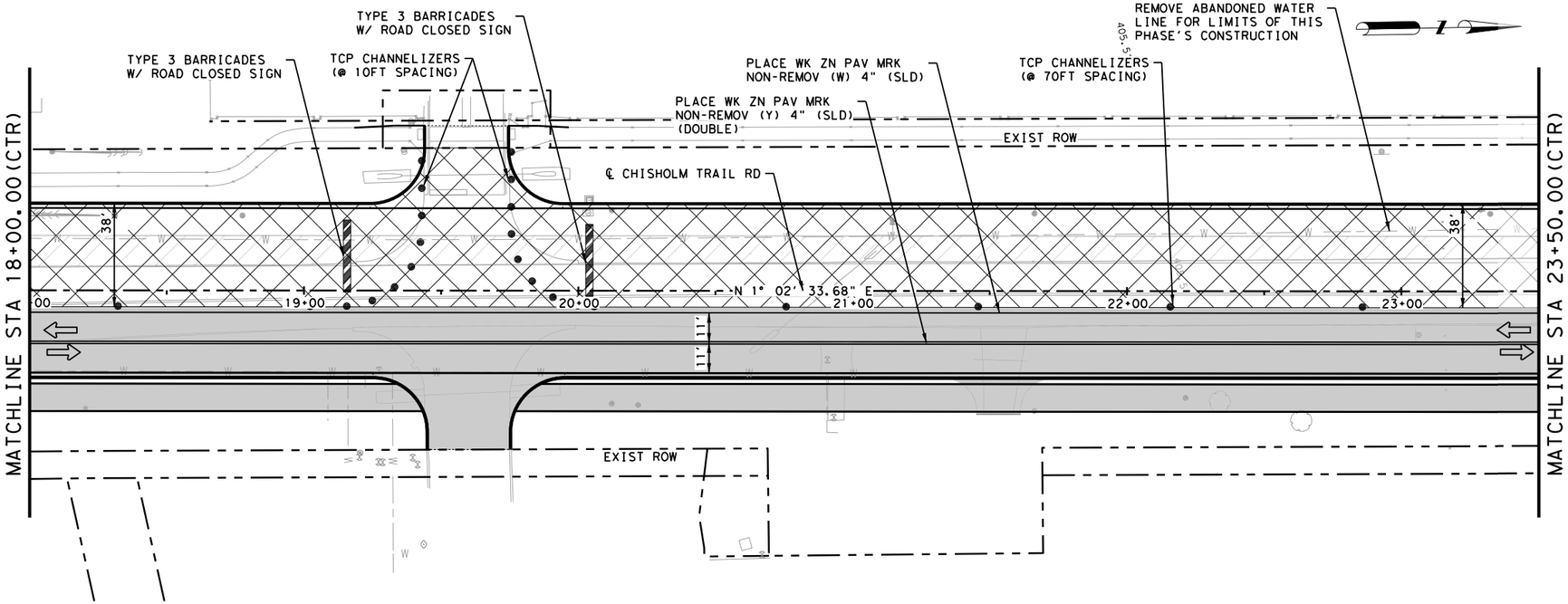

LEGEND

- DIRECTION OF TRAFFIC
- PERMANENT THIS PHASE
- TEMP PAVEMENT THIS PHASE
- TEMP PAVEMENT PREV PHASE
- BUILT PREVIOUSLY

NOTES:
1. MAINTAIN ACCESS TO ALL INTERSECTIONS AND DRIVEWAYS AT ALL TIMES UNLESS OTHERWISE NOTED.
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8. EXISTING GROUND MOUNTED SIGNS SHALL BE TEMPORARILY REINSTALLED ON SKIDS WHERE NEEDED FOR TCP.

0 25 50

SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 4
LAYOUTS

SHEET 2 OF 4

DESIGNED BY:	EB	47
DRAWN BY:	EB	
CHECKED BY:		
APPROVED BY:		

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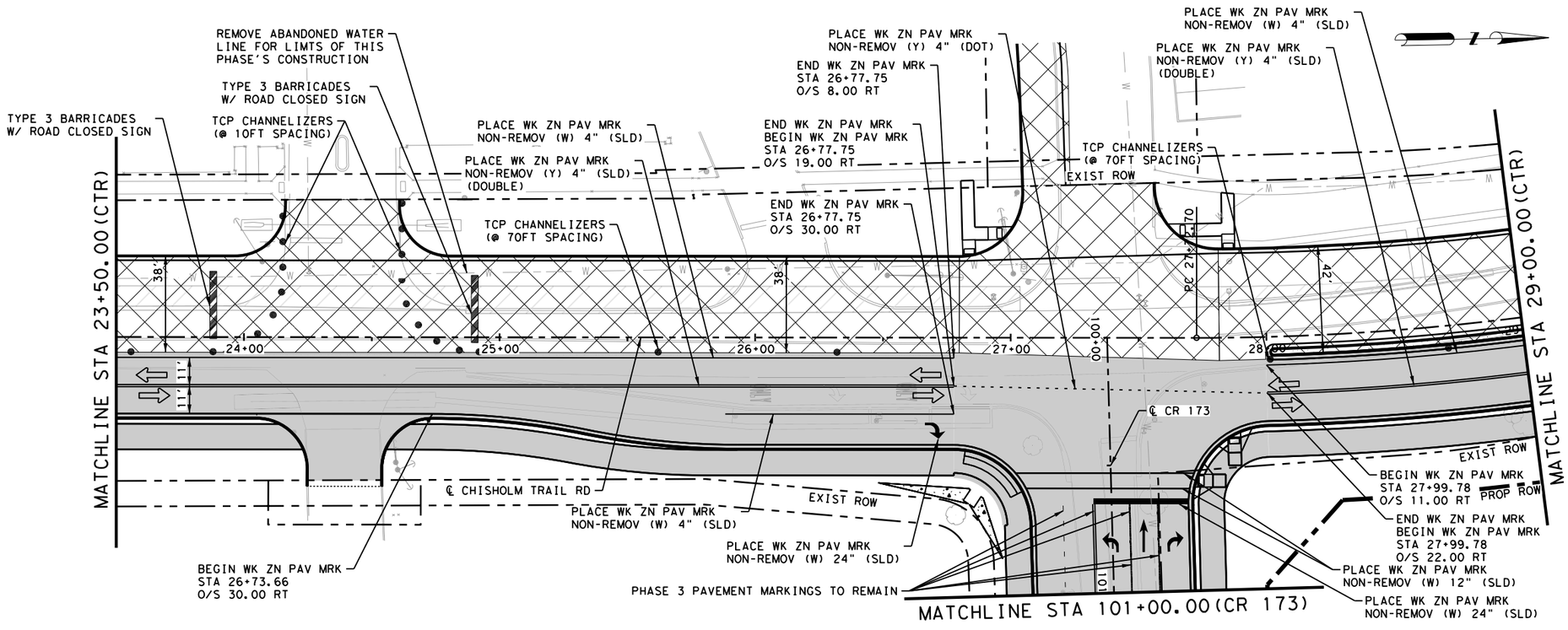

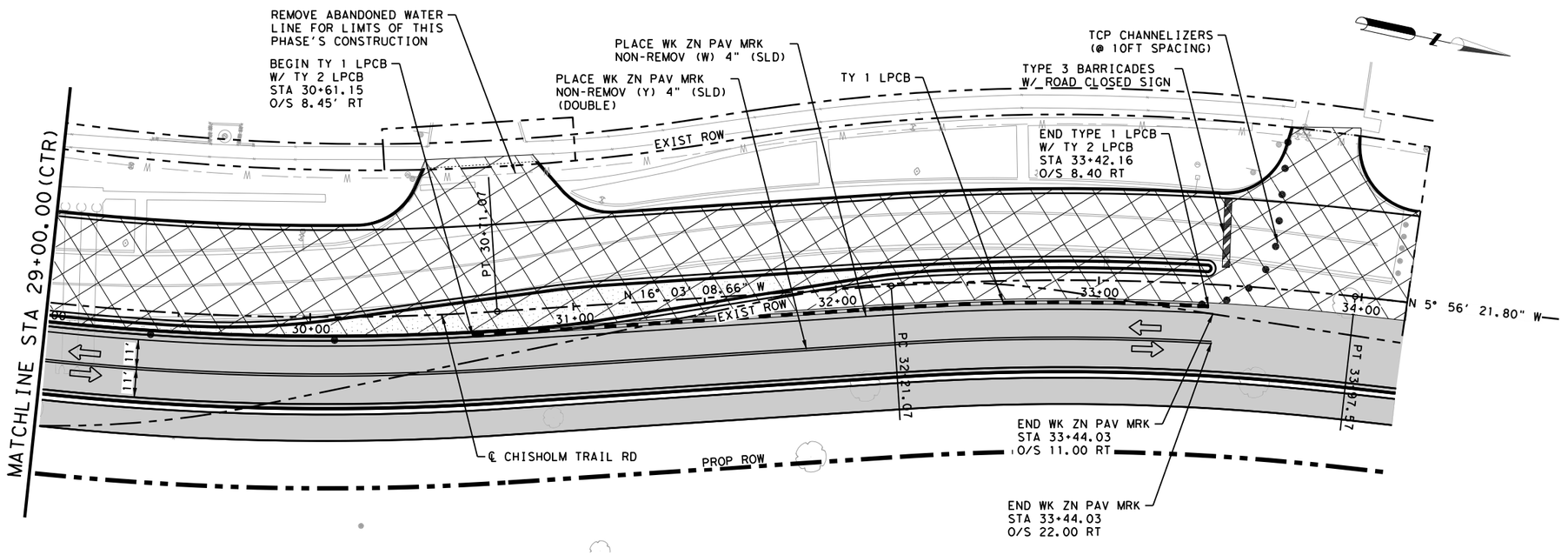

LEGEND

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SCALE: 1"=50'

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CHISHOLM TRAIL RD
TCP PHASE 4
LAYOUTS

SHEET 3 OF 4

DESIGNED BY:	EB	48
DRAWN BY:	EB	
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APPROVED BY:		

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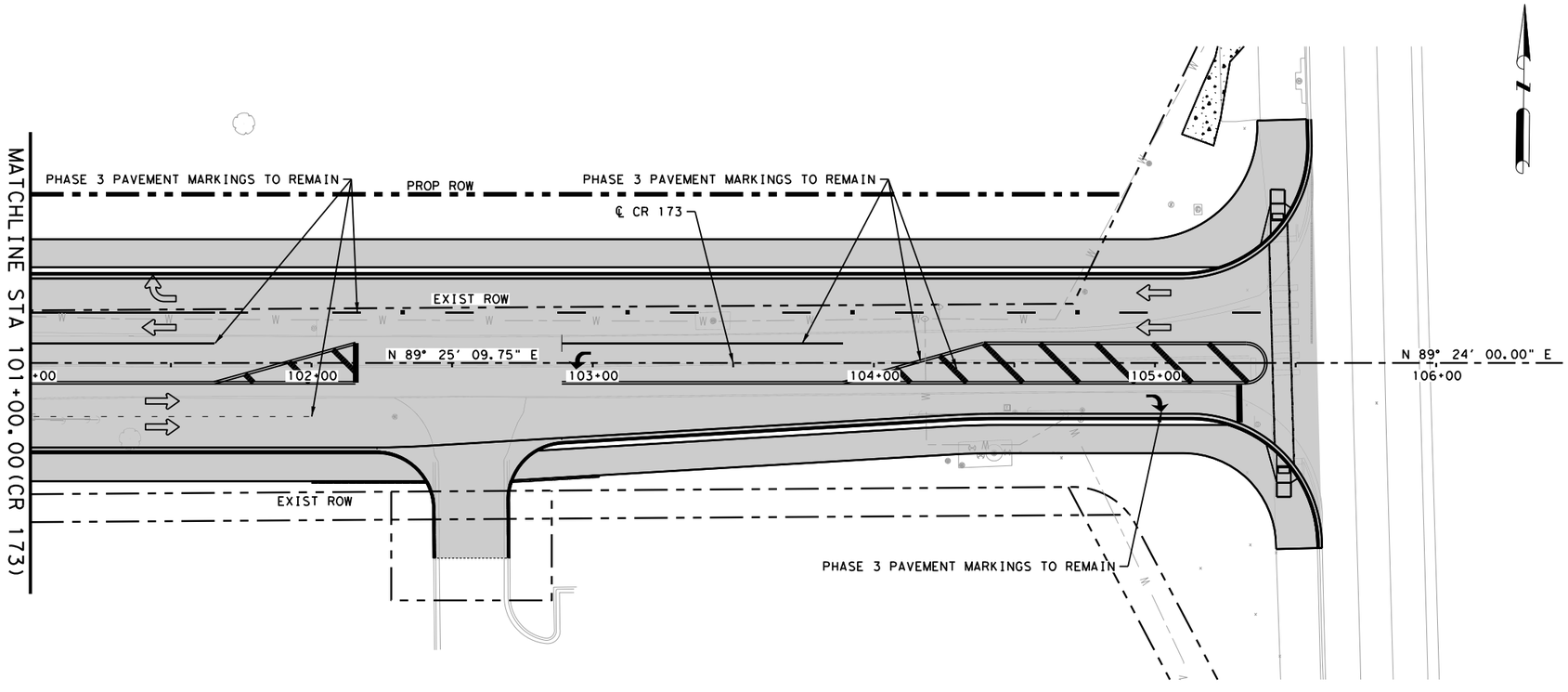

LEGEND

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3. SEE TCP SEQUENCE OF WORK.
4. SEE BC, TCP, AND WZ STANDARDS FOR TEMPORARY SIGNING AND PAVEMENT MARKING DETAILS.
5. SEE P&P SHEETS AND INTERSECTION LAYOUTS FOR ADDITIONAL INFORMATION.
6. ALL CHANNELIZING DEVICES AND SIGN PLACEMENT MUST CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND TXDOT STANDARDS.
7. WARNING SIGN PLACEMENT SHALL NOT CONFLICT WITH EXISTING PERMANENT SIGNAGE.
8. EXISTING GROUND MOUNTED SIGNS SHALL BE TEMPORARILY REINSTALLED ON SKIDS WHERE NEEDED FOR TCP.

0 25 50
SCALE: 1"=50'

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER

8/3/2023

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ROUND ROCK TEXAS

BGE, Inc.
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Austin, TX 78728
Tel: 512-879-0400 • www.bgeinc.com
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CHISHOLM TRAIL RD
TCP PHASE 4
LAYOUTS
CR 173

SHEET 4 OF 4

DESIGNED BY:	EB
DRAWN BY:	EB
CHECKED BY:	
APPROVED BY:	

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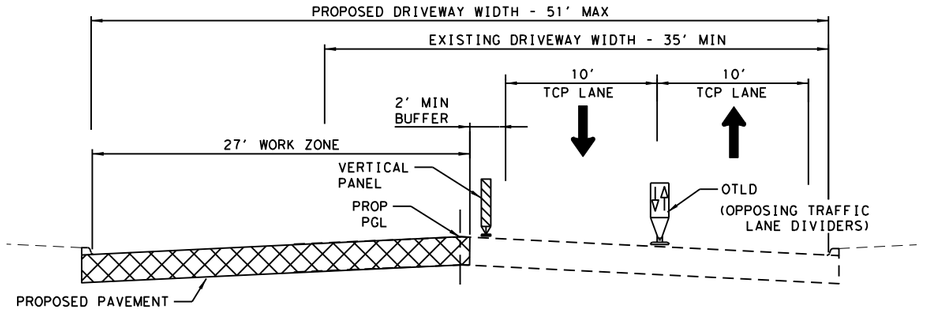
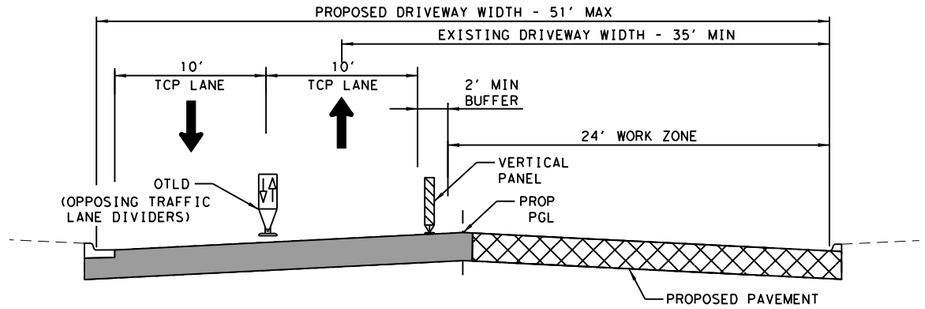


STEP 1 - DRIVEWAY #8 TYPICAL

AMAZON DWY/CHISHOLM TRAIL ROAD - 51' TYP WIDTH
N.T.S



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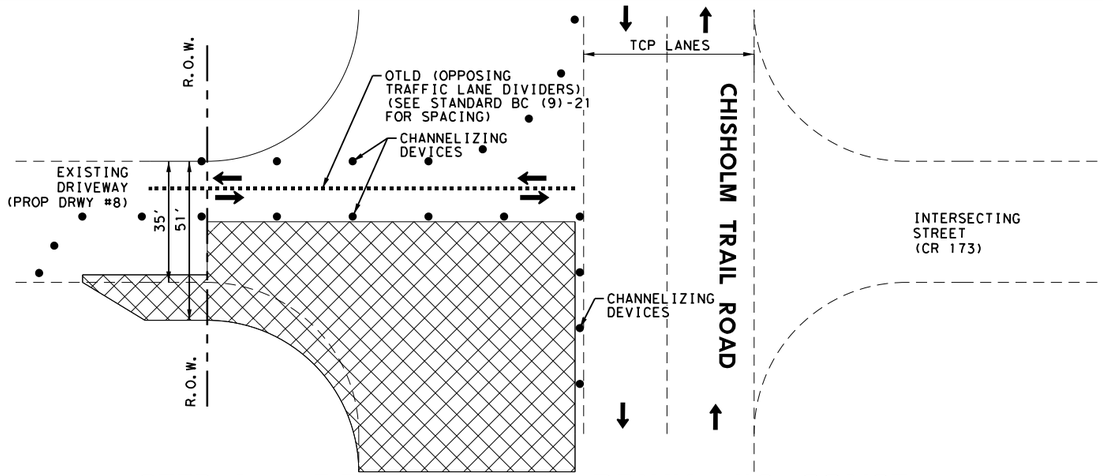
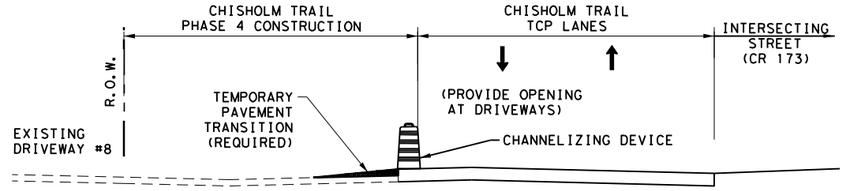
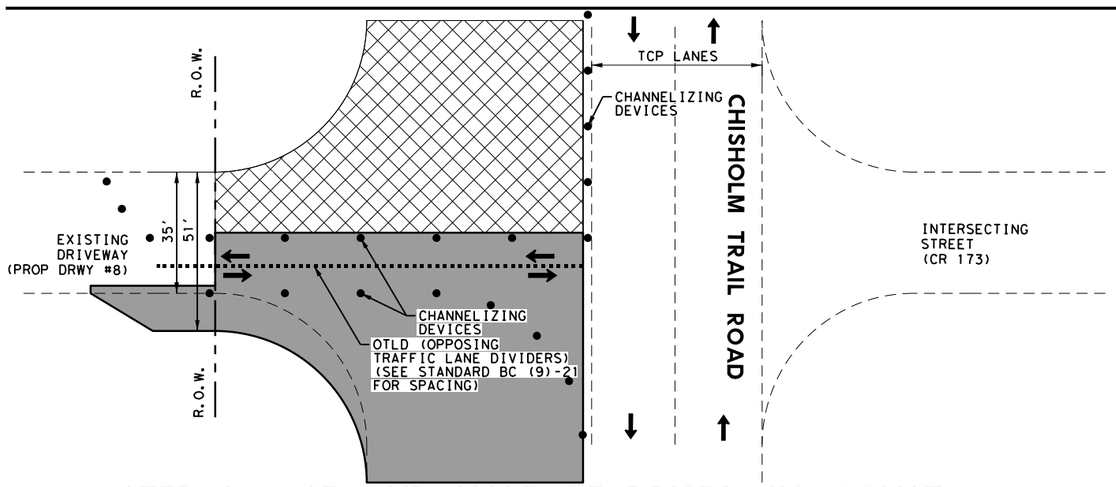
AMAZON DWY/CHISHOLM TRAIL ROAD - 51' TYP WIDTH
N.T.S



STEP 1 - FIRST HALF OF DRWY #8 CONST



STEP 1 - CHISHOLM TRL TYPICAL FOR FIRST HALF OF DRWY #8 CONST



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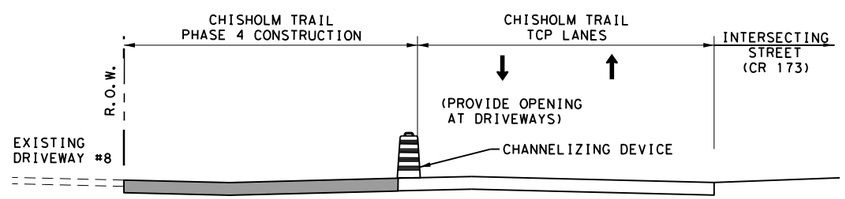

STEP 2 - CHISHOLM TRL TYPICAL FOR SECOND HALF OF DRWY #8 CONST

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CHISHOLM TRAIL RD
TRAFFIC CONTROL PLAN
DRIVEWAY #8 DETAILS

SHEET 1 OF 1

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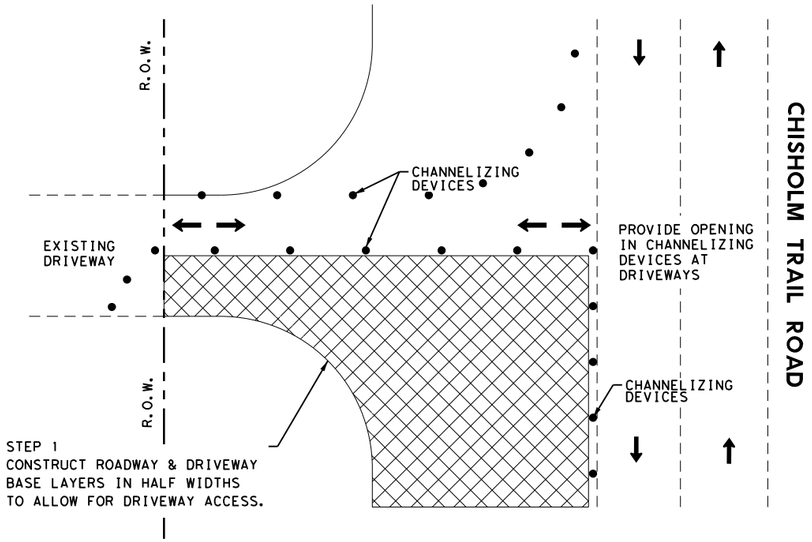
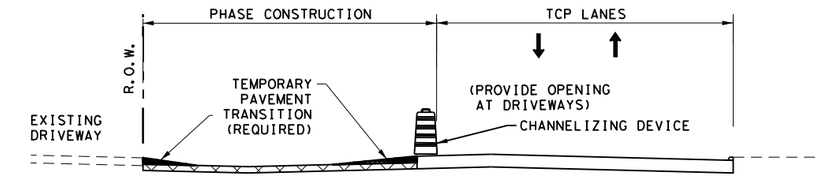


STEP 1 - DRIVEWAY INTERSECTION
PLAN VIEW

CONTRACTOR WILL CONSTRUCT TEMPORARY PAVEMENT TO TRANSITION FROM PROPOSED GRADE TO EXISTING DRIVEWAY WHEN REQUIRED TO MAINTAIN ACCESS FOR DRIVEWAY. ALL WORK & MATERIALS WILL BE SUBSIDIARY TO BID ITEM 530.

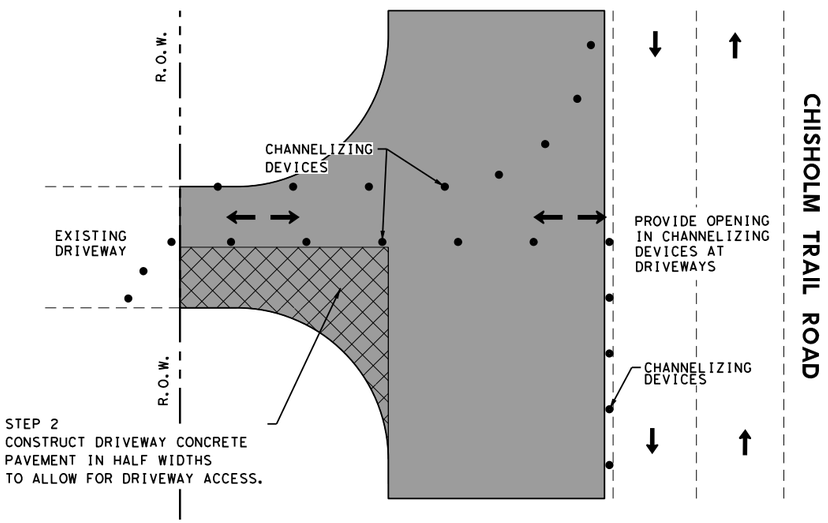


STEP 1 - CONSTRUCT ROADWAY 10" FLEX BASE W/ PRIME COAT,
3" HMA TY B,
2" HMA TY C
& DRIVEWAY BASE LAYER

PROPERTIES WITH SINGLE DRIVEWAY ACCESS, THE CONTRACTOR WILL MAINTAIN ACCESS TO DRIVEWAY AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE TRANSPORTATION DIRECTOR.

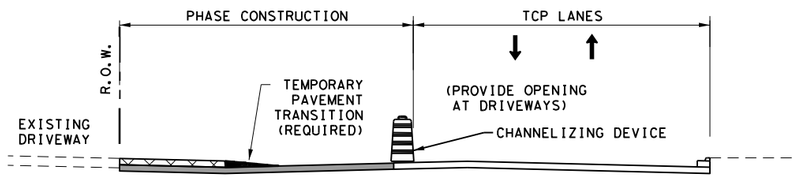
STEP 1 - DRIVEWAY INTERSECTION
TYPICAL SECTION

NOTE:
USE THIS DETAIL TO CONSTRUCT ALL DRIVEWAYS EXCEPT FOR DRIVEWAY 8.



STEP 2 - DRIVEWAY INTERSECTION
PLAN VIEW

FOR DRIVEWAY 2, CONTRACTOR TO COORDINATE WITH THE PROPERTY OWNER REGARDING DRIVEWAY CLOSURE AND CONSTRUCTION SCHEDULE AT LEAST 1 WEEK PRIOR TO BEGINNING CONSTRUCTION. DURING THAT TIME, THE PROPERTY OWNER WILL ONLY HAVE ACCESS FROM THE FRONT OF THEIR PROPERTY.



STEP 2 - CONSTRUCT DRIVEWAY FINISHED SURFACE IN HALF WIDTHS TO ALLOW FOR DRIVEWAY ACCESS.

PROPERTIES WITH SINGLE DRIVEWAY ACCESS, THE CONTRACTOR WILL MAINTAIN ACCESS TO DRIVEWAY AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE TRANSPORTATION DIRECTOR.

STEP 2 - DRIVEWAY INTERSECTION
TYPICAL SECTION

STATE OF TEXAS
JOSHUA T. RICHTER
141234
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CHISHOLM TRAIL RD
TRAFFIC CONTROL PLAN
DRIVEWAY DETAILS

SHEET 1 OF 1

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APPROVED BY:	

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Attachment D – Temporary Best Management Practices and Measures

Prior to the commencement of any construction activity, the contractor shall install silt fence, rock filter dam, rock bedding at construction exit, and erosion control logs, per the SW3P plan. All temporary BMPs are to be installed per TCEQ and local requirements.

As surface water flows from and through disturbed areas, the proposed temporary BMPs will prevent pollution by filtering the increased sediment loads and other pollutants (listed in "Attachment B – Potential Sources of Contamination") prior to any runoff leaving the site. As shown in the attached SW3P plans, silt fence will be utilized downstream of any grading and construction activities to remove debris and sediment from run-off in that area. Erosion control logs will prevent sediment laden runoff from entering the storm sewer system during construction. Rock filter dams will prevent excessive erosion from the storm sewer outfalls and stabilized construction exits will prevent the transport of sediment off-site.

In using the aforementioned treatment methods and maintaining natural drainage patterns downgradient of the proposed site, any flow to natural occurring sensitive features, both known and unknown, will be maintained.

A. GENERAL SITE DATA

1. PROJECT LIMITS: *FROM 0.4 MI ALONG CHISHOLM TRAIL TO IH 35 SB FRONTAGE ROAD*

2. PROJECT SITE MAPS:

- *Project Location Map: Shown on Title Sheet*
- *Drainage Patterns: Shown on Drainage Area Maps Patterns will remain as existing.*
- *Approx. Slopes Anticipated After Major Gradings and Areas of Soil Disturbance: Shown on Typical Sections Maximum 2:1*
- *Major Controls and Locations of Stabilization Practices: Shown on Summary of SW3P Sheets*
- *Project Specific Locations: Off-site waste, borrow, or storage areas are not part of this SW3P.*
- *Surface Waters and Discharge Locations: Shown on Drainage and Culvert Layout Sheets*

BEG LAT 30.550019° *BEG LONG* -97.691687°

END LAT 30.550085° *END LONG* -97.691686°

3. PROJECT DESCRIPTION:

FOR THE RECONSTRUCTION OF APPROX. 0.4 MI OF THE EXISTING 2-LANE ROADWAY SECTION TO A 5-LANE URBAN FACILITY AND RECONSTRUCTION OF CR 173 TO THE IH 35 SB FRONTAGE ROAD.

Non-Joint Bid Utilities are not part of this SW3P.

4. FOR MAJOR SOIL DISTURBING ACTIVITIES SEQUENCE OF EVENTS:

1. *Install controls down-slope of work area and initiate inspection.*
2. *Begin phased construction with interim stabilization practices. Adjust erosion and sedimentation controls during construction to meet requirements and changing conditions and as directed/approved by the Engineer.*
3. *Major soil disturbing activities may include but are not limited to: right-of-way preparation, cut and/or fill to improve roadway profile, final grading and placement of topsoil and the following (if marked):*

- [X] *Placement of road base*
- [X] *Extensive ditch grading*
- [X] *Upgrading or replacing culverts or bridges*
- [X] *Temporary detour road(s)*
- [ ] *Other:* _____

5. EXISTING AND PROPOSED CONDITIONS:

Description of existing vegetative cover: The existing vegetation includes grassed slopes.
Percentage of existing vegetative cover: Existing coverage is 80%.
Existing vegetative cover: (mark one)

- [X] *Thick or uniformly established*
- [ ] *Thin and Patchy*
- [ ] *None or minimal cover*

Site Acreage: 6.74	*Acreage disturbed:* 5.73
Site runoff coefficient (pre-construction): 0.54	*Site runoff coefficient (post-construction):* 0.73

6. RECEIVING WATERS: *(Mark all that apply)*

- [ ] *A classified stream does not pass through project.*
- [ ] *A classified stream passes through project. Name* _____ *Segment Number* _____

Name of receiving waters that will receive discharges from disturbed areas of the project: _____

Site is in a Municipal Seperate Storm Sewer System (MS4).
MS4 Operator (name): City of Round Rock

Description of soils: Doss silty clay and Eckrant cobbly clay

B. BEST MANAGEMENT PRACTICES

General timing or sequence for implementation of BMPs shall be as required and/or as directed/approved by the Engineer to provide adequate controls. BMPs shown on plan sheets are to be considered "proposed" unless/until install date is shown. BMPs are to reduce sediments from road construction activities.

1. SOIL STABILIZATION PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

- [P] SEEDING
- [ ] MULCHING (Hay or Straw)
- [ ] BUFFER ZONES
- [ ] PLANTING
- [ ] COMPOST/MULCH FILTER BERM
- [P] SODDING
- [P] PRESERVATION OF NATURAL RESOURCES
- [ ] FLEXIBLE CHANNEL LINER
- [ ] RIGID CHANNEL LINER
- [ ] SOIL RETENTION BLANKET
- [ ] COMPOST MANUFACTURED TOPSOIL
- [ ] OTHER: (Specify Practice)

2. STRUCTURAL PARACTICES: (Select T = Temporary or P = Permanent, as applicable)

- [T] SILT FENCES
- [ ] HAY BALES
- [T] ROCK FILTER DAMS
- [ ] DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- [ ] DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- [ ] DIVERSION DIKE AND SWALE COMBINATIONS
- [ ] PIPE SLOPE DRAINS
- [ ] PAVED FLUMES
- [T] ROCK BEDDING AT CONSTRUCTION EXIT
- [ ] TIMBER MATTING AT CONSTRUCTION EXIT
- [ ] CHANNEL LINERS
- [ ] SEDIMENT TRAPS
- [ ] SEDIMENT BASINS
- [ ] STORM INLET SEDIMENT TRAP
- [ ] STONE OUTLET STRUCTURES
- [ ] CURBS AND GUTTERS
- [ ] STORM SEWERS
- [ ] VELOCITY CONTROL DEVICES
- [T] OTHER: *Erosion Control Logs*

3. STORM WATER MANAGEMENT:

The proposed facility was designed in consideration of hydraulic design standards to convey stormwater in a manner that is protective of public safety and property. The control of erosion from the facility is inherent to the design. Additional factors affecting post-construction stormwater at the project location include: (mark all that apply)

- [X] *Existing or new vegetation provides natural filtration.*
- [ ] *The design includes provisions for permanent erosion controls provided by strategically placed pervious and impervious surfaces.*
- [ ] *Project includes permanent sedimentation controls (other than grass).*
- [X] *Velocities do not require dissipation devices.*
- [ ] *Velocity-dissipation devices included in the design.*
- [ ] *Other :* _____

4. NON-STORM WATER DISCHARGES:

Off-site discharges are prohibited except as follows:

1. *Discharges from fire fighting activities and/or fire hydrant flushings.*
2. *Vehicle, external building, and pavement wash water where detergents and soaps are not used and where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed).*
3. *Plain water used to control dust.*
4. *Plain water originating from potable water sources.*
5. *Uncontaminated groundwater, spring water or accumulated stormwater.*
6. *Foundation or footing drains where flows are not contaminated with process materials such as solvents.*
7. *Other:* _____

Concrete truck wash water discharges on the site should be prohibited or minimized. If allowed by the Engineer, they must be managed in a manner so as not to contaminate surface water. They must not be located in areas of concentrated flow. Concrete truck wash-out locations must be shown on the SW3P Layout and included in the inspections.

Hazardous material spill/leak shall be prevented or minimized. At a minimum, this includes asphalt products, fuels, oils, lubricants, solvents, paints, acids, concrete curing compounds and chemical additives for soil stabilization. BMPs shall be implemented to the storage areas of these products. All spills must be cleaned and disposed properly and reported to the Engineer. Report any release at or above the reportable quantity during a 24 hour period to the National Response Center at 1-800-424-8802.

C. OTHER REQUIREMENTS & PRACTICES

1. MAINTENANCE:

All erosion and sediment controls shall be maintained in good working order. If a repair is necessary, it shall be performed before the next anticipated storm event but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from equipment. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. Disturbed areas on which construction activities have ceased, temporarily or permanently, shall be stabilized within 14 calendar days unless they are scheduled to and do resume within 21 calendar days. The areas adjacent to creeks and drainageways shall have priority followed by protecting storm sewer inlets.

2. INSPECTION:

For areas of the construction site that have not been finally stabilized, areas used for storage of materials, structural control measures, and locations where vehicles enter or exit the site, personnel provided by the permittee and familiar with the SW3P must inspect disturbed areas at least once every fourteen (14) calendar days and within twenty four (24) hours of the end of a storm of 0.5 inches or greater As an alternative to the above-described inspection schedule of once every fourteen (14) calendar days and within twenty four (24) hours of a storm of 0.5 inches or greater, the SW3P may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur on a specifically defined day, regardless of whether or not there has been rainfall since the previous inspection An inspection and Maintenance Report shall be prepared for each inspection and the controls shall be revised on the SW3P within seven (7) calendar days following the inspection.

3. WASTE MATERIALS:

All non-hazardous municipal waste materials such as litter, rubbish, trash and garbage located on or originating from the project shall be collected and stored in a securely lidded metal dumpster, provided by the Contractor. The dumpster shall be emptied as necessary or as required by local regulation and the trash shall be hauled to a permitted disposal facility. The burying of non-hazardous municipal waste on the project shall not be permitted. Construction material waste sites, stockpiles and haul roads shall be constructed to minimize and control the amount of sediment that may enter receiving waters. Construction material waste sites shall not be located in any wetland, water body or stream bed. Construction staging areas and vehicle maintenance areas shall be constructed in a manner to minimize the runoff of pollutants.

4. OFFSITE VEHICLE TRACKING:

Off-site vehicle tracking of sediments and the generation of dust must be minimized. Excess sediments on road shall be removed on a regular basis as directed/approved by the Engineer.

5. OTHER:

See the EPIC sheet for additional environmental information.

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED
PROFESSIONAL ENGINEER

Joshua T. Richter

8/3/2023

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TBPE Registration No. F-1046

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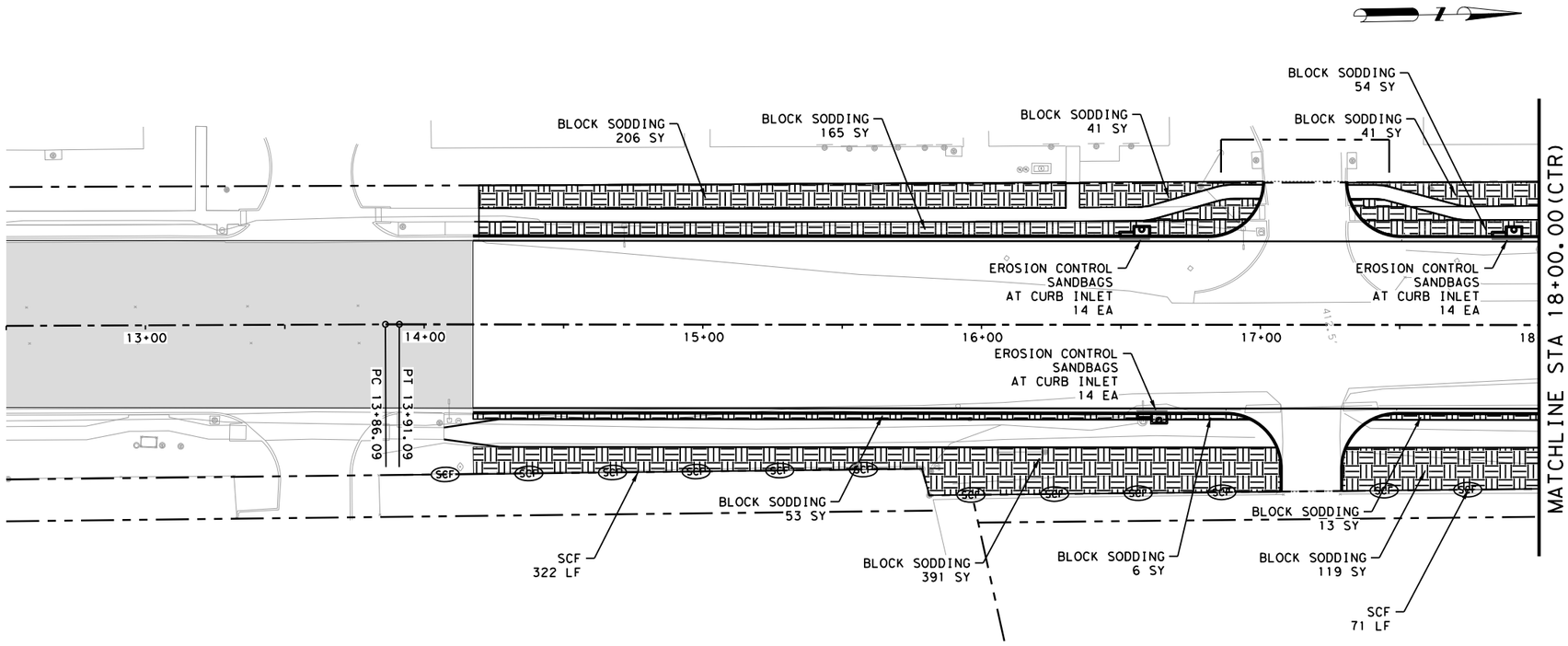
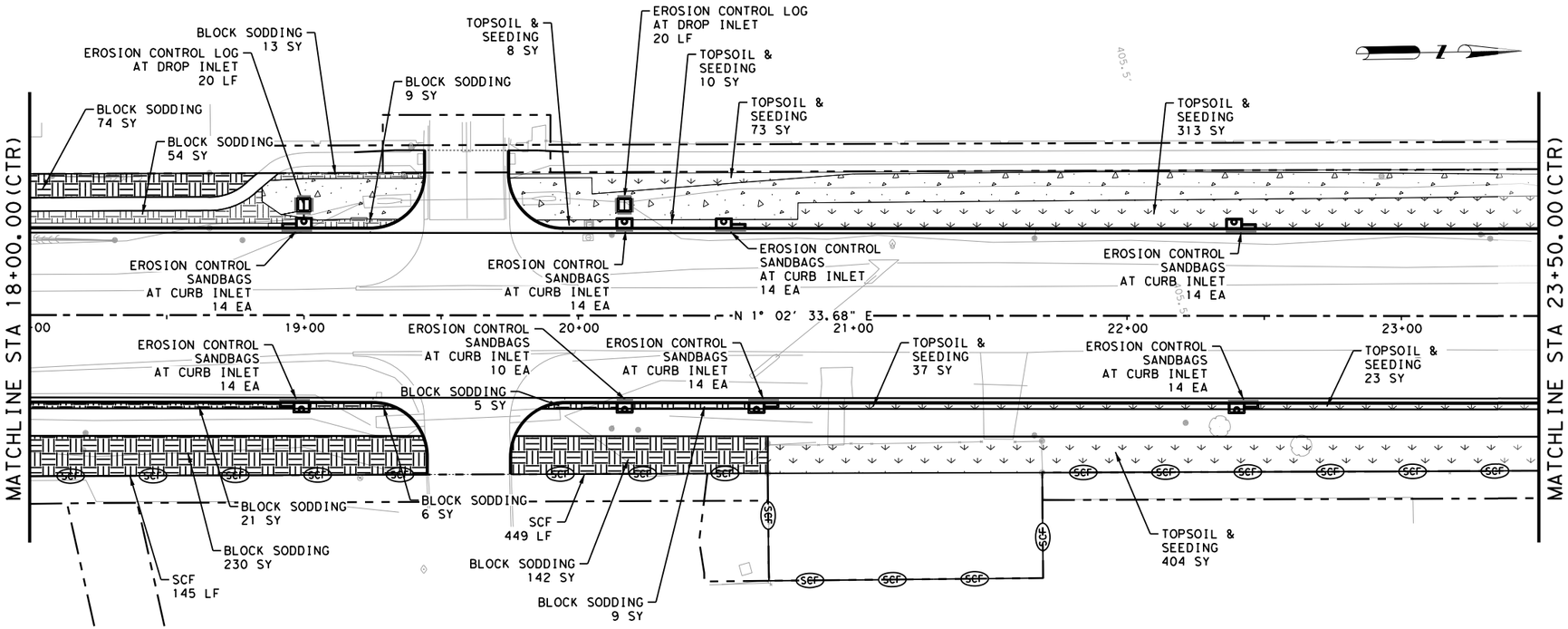
CHISHOLM TRAIL RD STORM WATER POLLUTION PREVENTION PLAN (SW3P)

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6			XXXX
STATE	DISTRICT	COUNTY	
TEXAS	AUS	COUNTY	
CONTROL	SECTION	JOB	SHEET NO.
XXXX	XX	XXX	221





LEGEND

- SCF — TEMPORARY SEDIMENT CNTRL FENCE
- ROCK FILTER DAM
- EROSION CONTROL LOGS AT INLETS
- FLOW ARROWS
- TOPSOIL AND SEEDING
- BLOCK SODDING

0 25 50

SCALE: 1"=50'

STATE OF TEXAS
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141234
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CHISHOLM TRAIL RD ENVIRONMENTAL LAYOUTS

SHEET 1 OF 3

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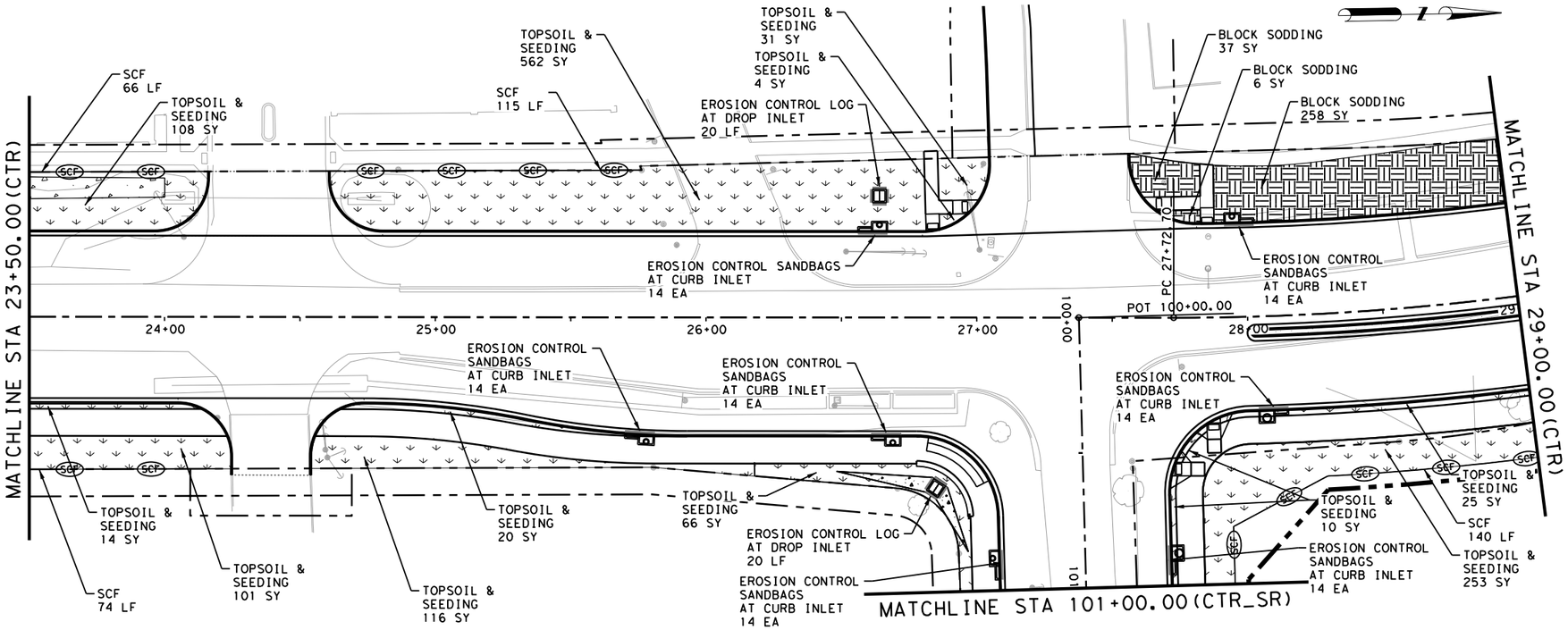

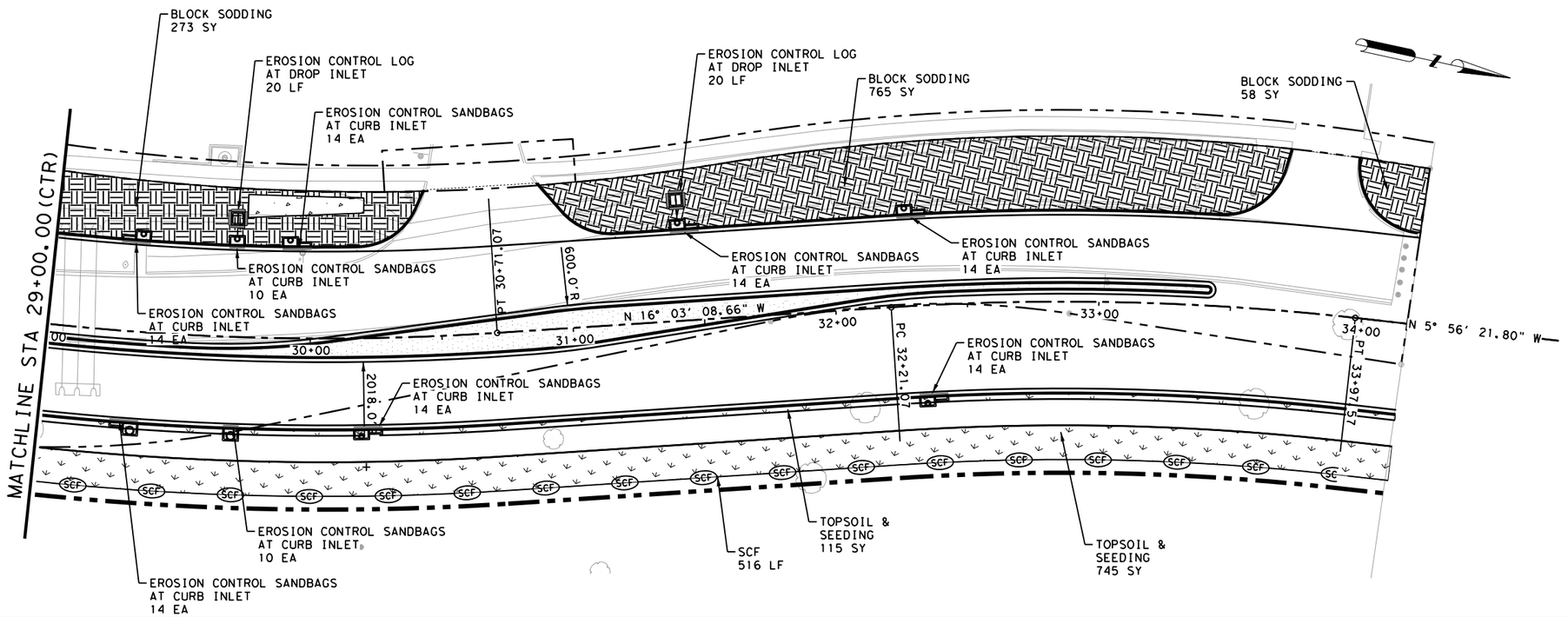

LEGEND

- SCF — TEMPORARY SEDIMENT CNTRL FENCE
- ROCK FILTER DAM
- EROSION CONTROL LOGS AT INLETS
- FLOW ARROWS
- TOPSOIL AND SEEDING
- BLOCK SODDING

0 25 50

SCALE: 1"=50'

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CHISHOLM TRAIL RD ENVIRONMENTAL LAYOUTS

SHEET 2 OF 3

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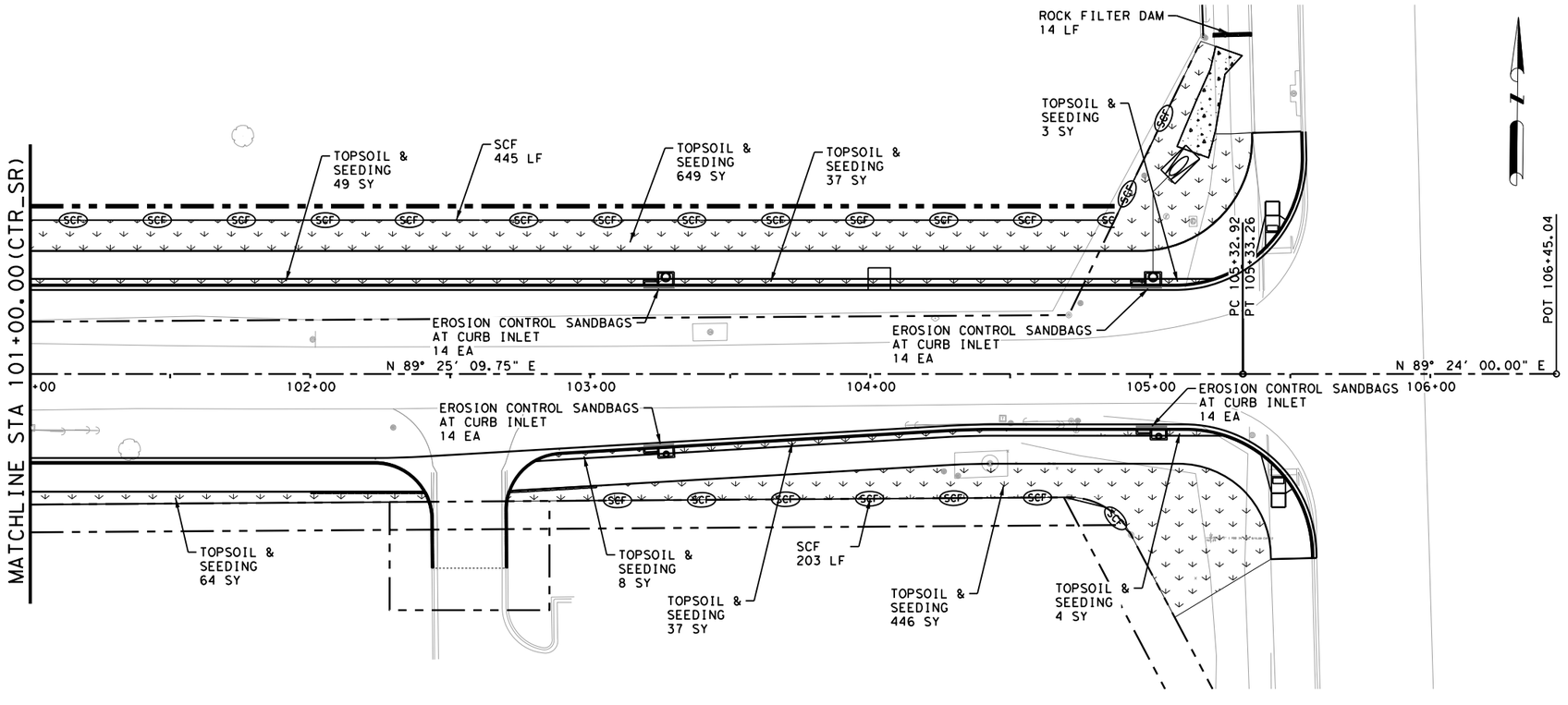

LEGEND

- SCF — TEMPORARY SEDIMENT CNTRL FENCE
- ROCK FILTER DAM
- EROSION CONTROL LOGS AT INLETS
- FLOW ARROWS
- TOPSOIL AND SEEDING
- BLOCK SODDING

0 25 50

SCALE: 1"=50'

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CHISHOLM TRAIL RD
ENVIRONMENTAL LAYOUTS

SHEET 3 OF 3

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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. City of Roundrock

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. The project disturbs live or more acres of surface area. The total disturbed acreage is the combined acreage to be disturbed on the project and the contractors PSL if on site or within one mile of the project area.
4. The Contractor shall file o NOI, NOC, if applicable, and a NOT and post a large site notice along with other requirements as the entity of having d.ay-to-day operational control of the work shown on the plans in the right-of-way.

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. N/A

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. N/A

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. Minimize the amount proposed for clearing and removal of native vegetation will be avoided to the greatest extent possible.
2. The use of any non-native plant species in revegetation will be discouraged.

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. Between October 1 and February 15. the Contractor will remove all old migratory bird nests from any structure that would be affected by the proposed project. In addition, the Contractor would be prepared to prevent migratory birds from building nests by utilizing nest prevention methods, such as bird-deterrent netting and bird repelling sprays and/or gels, between February 15 and October 1. In the event that migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided.
2. Avoid harming all wildlife species if encountered and allow them to safety leave the project site. Due diligence should be used to avoid killing or harming any wildlife species in the implementation of the project.

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. If hazardous materials presenting a risk to human health or safety are encountered during, construction, cease work immediately (where the hazardous materials wereidentified) and contact the Project Manager.

VII. OTHER ENVIRONMENTAL ISSUES

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

☐ No Action Required ☒ Required Action

Action No.

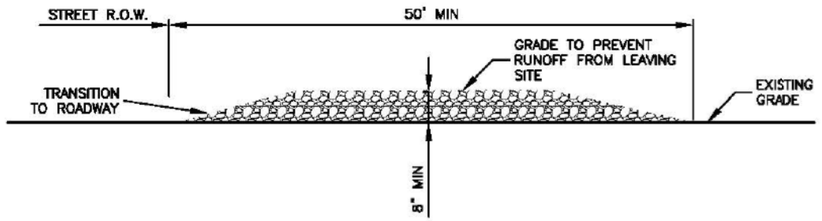
1. Comply with WPAP.

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	XXXX	XX	XXX	XXXX
12-12-2011 (DS)				
05-07-14 ADDED NOTE SECTION IV.	DIST	COUNTY		SHEET NO.
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	AUS	COUNTY		225

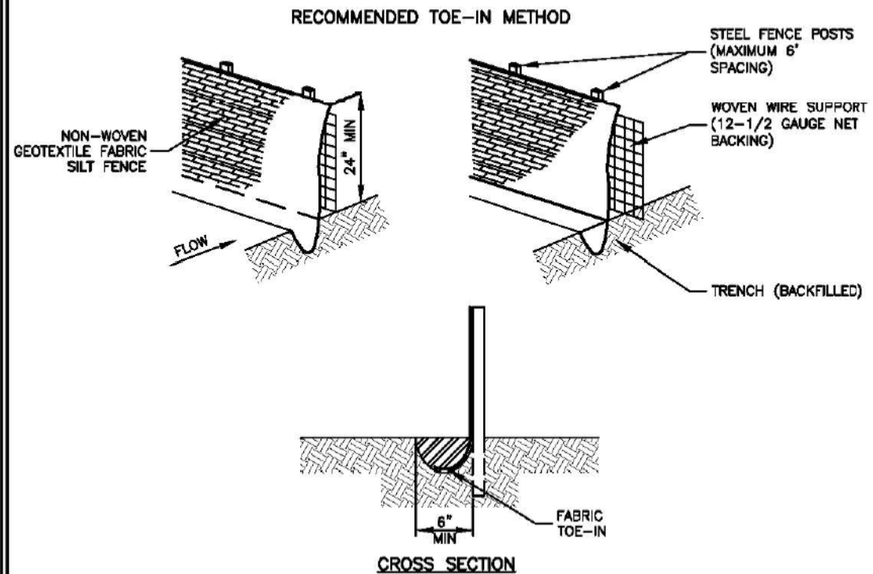


CROSS SECTION

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



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 APPROVED 03-25-11 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)	CITY OF ROUND ROCK SILT FENCE DETAIL	DRAWING NO: EC-10

STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED PROFESSIONAL ENGINEER

8/3/2023

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

CHISHOLM TRAIL RD ENVIRONMENTAL STANDARD DETAILS

SHEET 1 OF 3

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DRAWN BY:	EB	
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APPROVED BY:		

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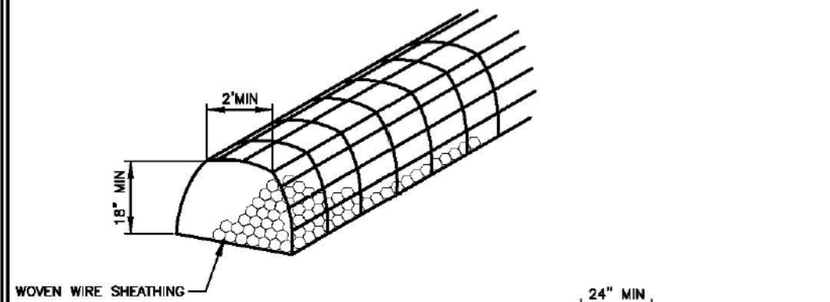

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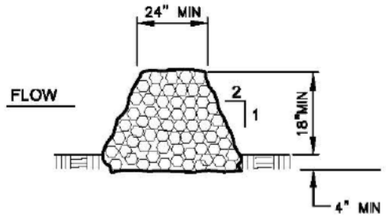

CROSS SECTION

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.

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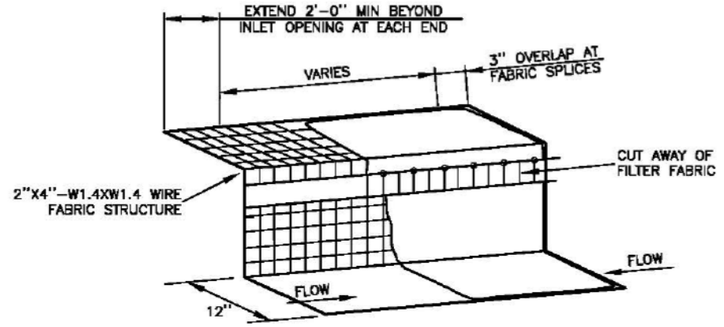

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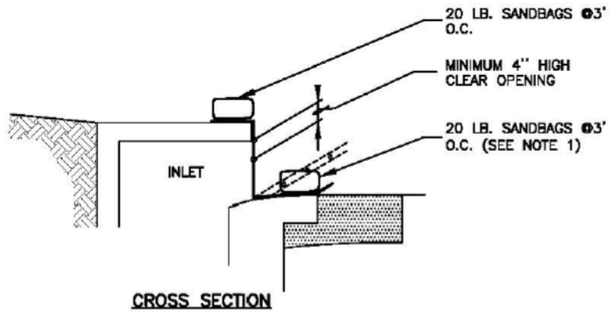

CROSS SECTION

NOTES:

1. WHERE MINIMUM CLEARANCES CAUSE TRAFFIC TO DRIVE IN THE GUTTER, THE CONTRACTOR MAY SUBSTITUTE A 1" X 4" BOARD SECURED WITH CONCRETE NAILS 3' O.C. NAILED INTO THE GUTTER IN LIEU OF SANDBAGS TO HOLD THE FILTER DIKE IN PLACE. UPON REMOVAL, CLEAN ANY DIRT/DEBRIS FROM NAILING LOCATIONS, APPLY CHEMICAL SANDING AGENT AND APPLY NON-SHRINK GROUT FLUSH WITH SURFACE OF GUTTER.
2. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.
3. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
4. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM-WATER BEGINS TO OVERTOP THE CURB.
5. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

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8/3/2023

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CHISHOLM TRAIL RD ENVIRONMENTAL STANDARD DETAILS

SHEET 2 OF 3

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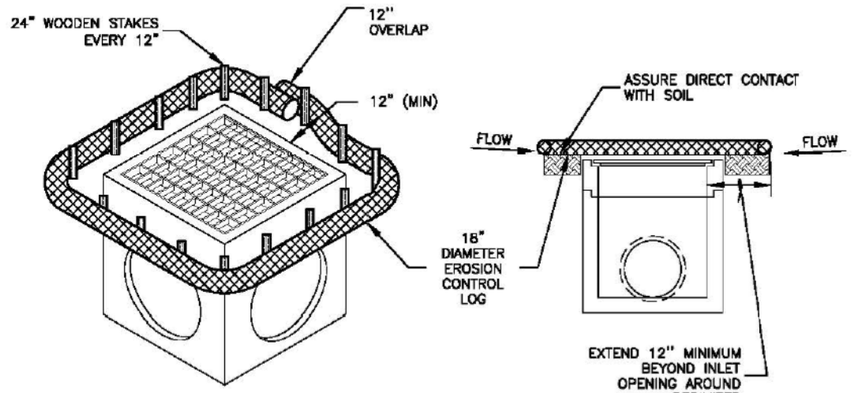


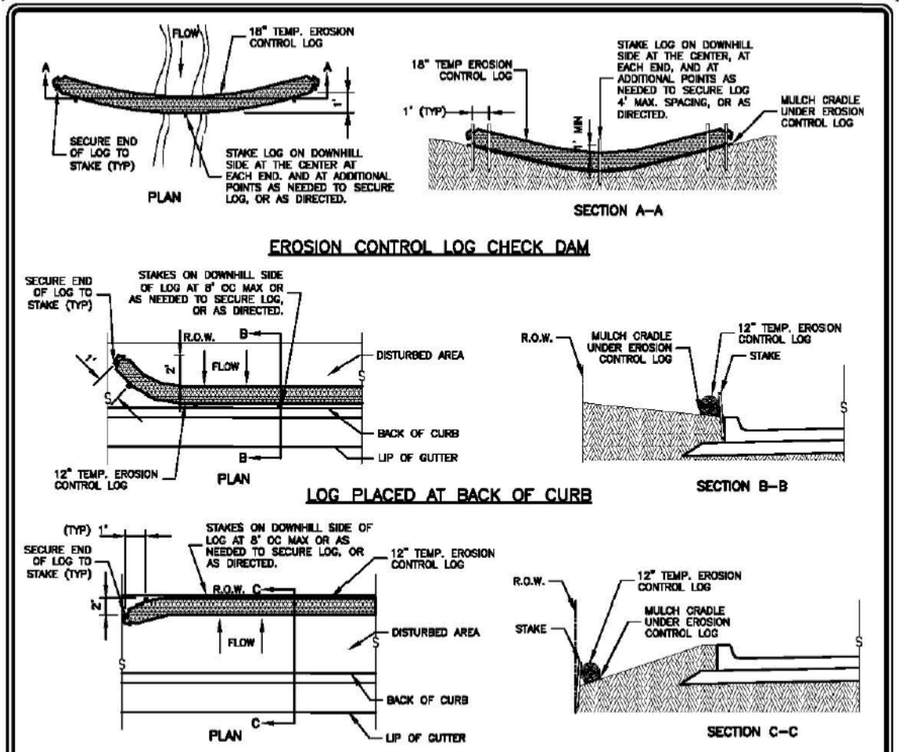
ISOMETRIC

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.

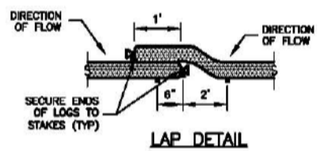
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: EC-16
APPROVED 03-25-11 DATE	AREA INLET PROTECTION WITH EROSION CONTROL LOG DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



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.

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APPROVED 03-25-11 DATE	EROSION CONTROL LOG DETAIL	
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STATE OF TEXAS
JOSHUA T. RICHTER
141234
LICENSED PROFESSIONAL ENGINEER

8/3/2023

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CHISHOLM TRAIL RD ENVIRONMENTAL STANDARD DETAILS

SHEET 3 OF 3

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APPROVED BY:		

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Attachment F – Structural Practices

The following temporary BMP structural practices will be employed on the site:

A. Silt Fence – Used for sediment filtration along the downslope perimeter of portions of the project, as well as to prevent runoff from storage of excavated materials during utility construction. The fence retains sediment primarily by retarding flow and promoting deposition of sediment on the uphill side of the slope. Runoff is filtered as it passes through the geotextile.

B. Rock Filter Dam – Used to reduce the velocities of concentrated flows, provide a sediment barrier, and reduce erosion is channels and ditches. The rock filter dam will be provided for the outfall of Storm Sewer System B.

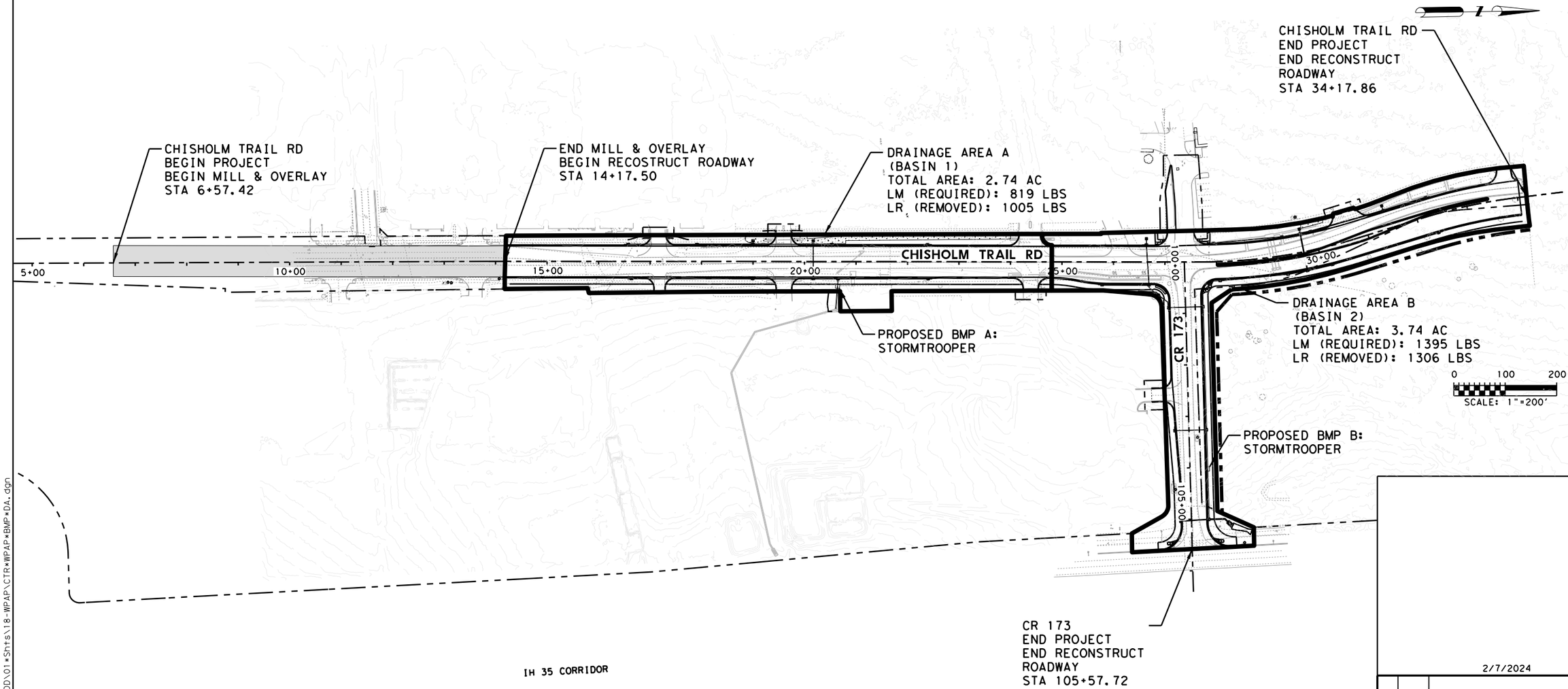
C. Rock Bedding at Construction Exit – Stone pads will be constructed at the entrance and exits to the project to prevent off-site transport of sediment by construction vehicles. The pads are a minimum of 50’ long and 20’ wide. They will be graded to prevent runoff from leaving the site.

D. Erosion Control Logs – To be provided around all storm sewer inlets during construction. Locations are indicated in SW3P plans. The measures will trap and settle out sediment and debris prior to runoff entering the proposed storm sewer system.

The placement of structural practices in the floodplain has been avoided.

Attachment G – Drainage Area Map

The drainage area map is attached on the following pages.



2/7/2024

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CHISHOLM TRAIL RD

BMP DRAINAGE AREA MAP

SHEET 1 OF 1

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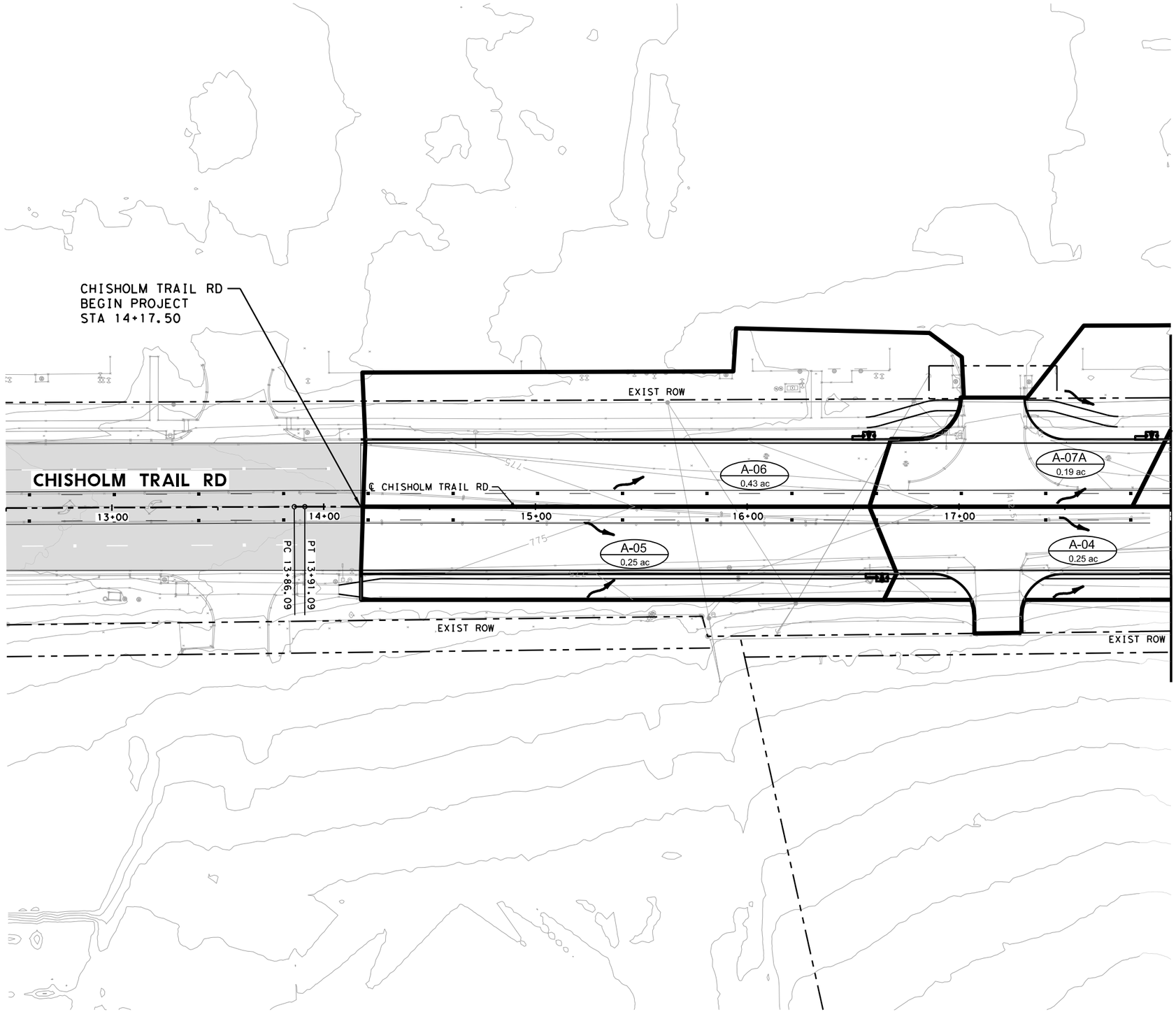

LEGEND:

- X-XXX / X.XX ac — DRAINAGE AREA ID
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DITCH FLOW DIRECTION

0 25 50

SCALE: 1"=50'

STATE OF TEXAS
MD KAMRUL ISLAM
126996
LICENSED PROFESSIONAL ENGINEER

8/3/2023

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CHISHOLM TRAIL RD
DRAINAGE AREA MAP

SHEET 1 OF 5

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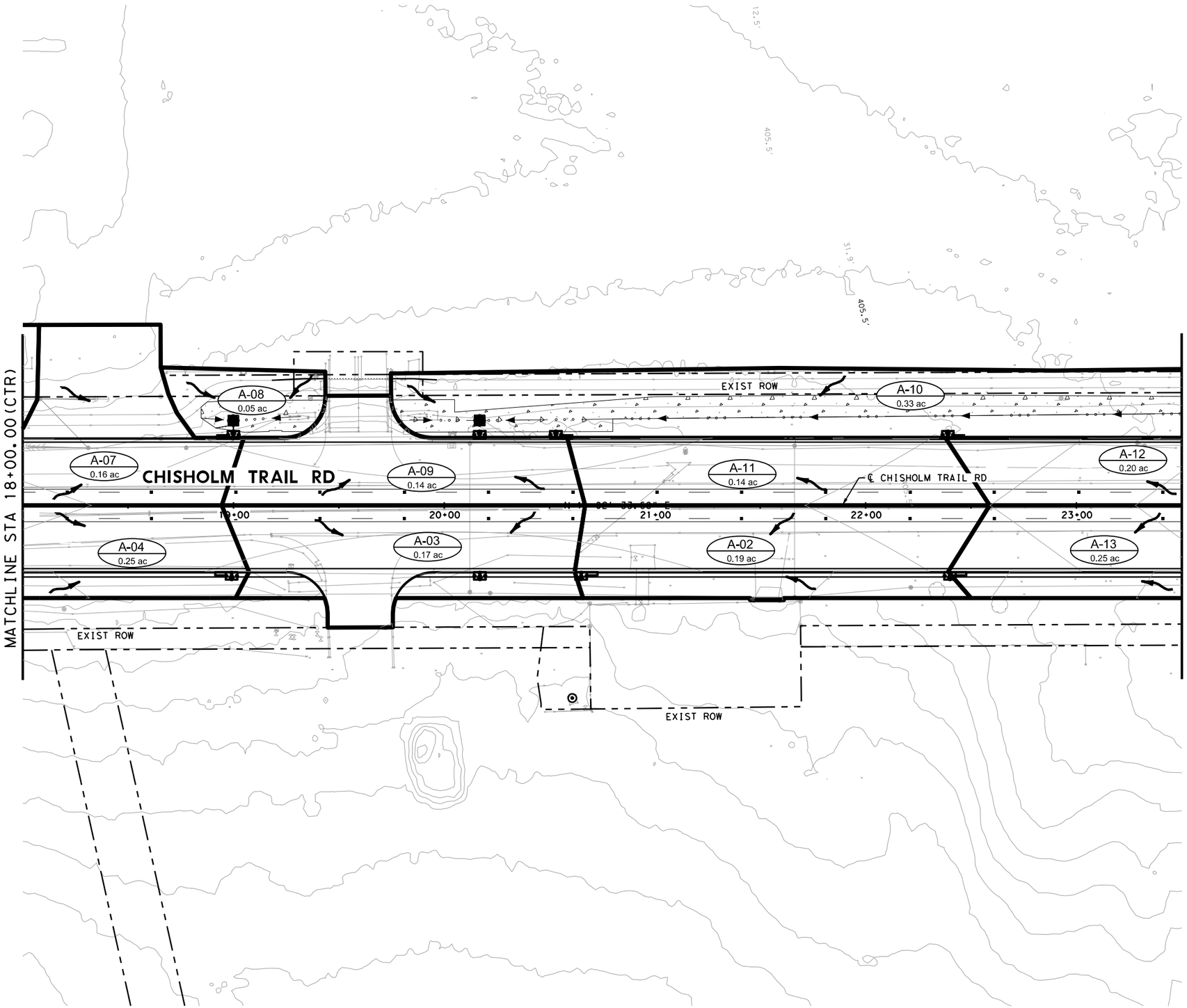

LEGEND:

- X-XXX / X.XX ac — DRAINAGE AREA ID
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DITCH FLOW DIRECTION

0 25 50

SCALE: 1"=50'

STATE OF TEXAS
MD KAMRUL ISLAM
126996
LICENSED
PROFESSIONAL ENGINEER

8/3/2023

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CHISHOLM TRAIL RD
DRAINAGE AREA MAP

SHEET 2 OF 5

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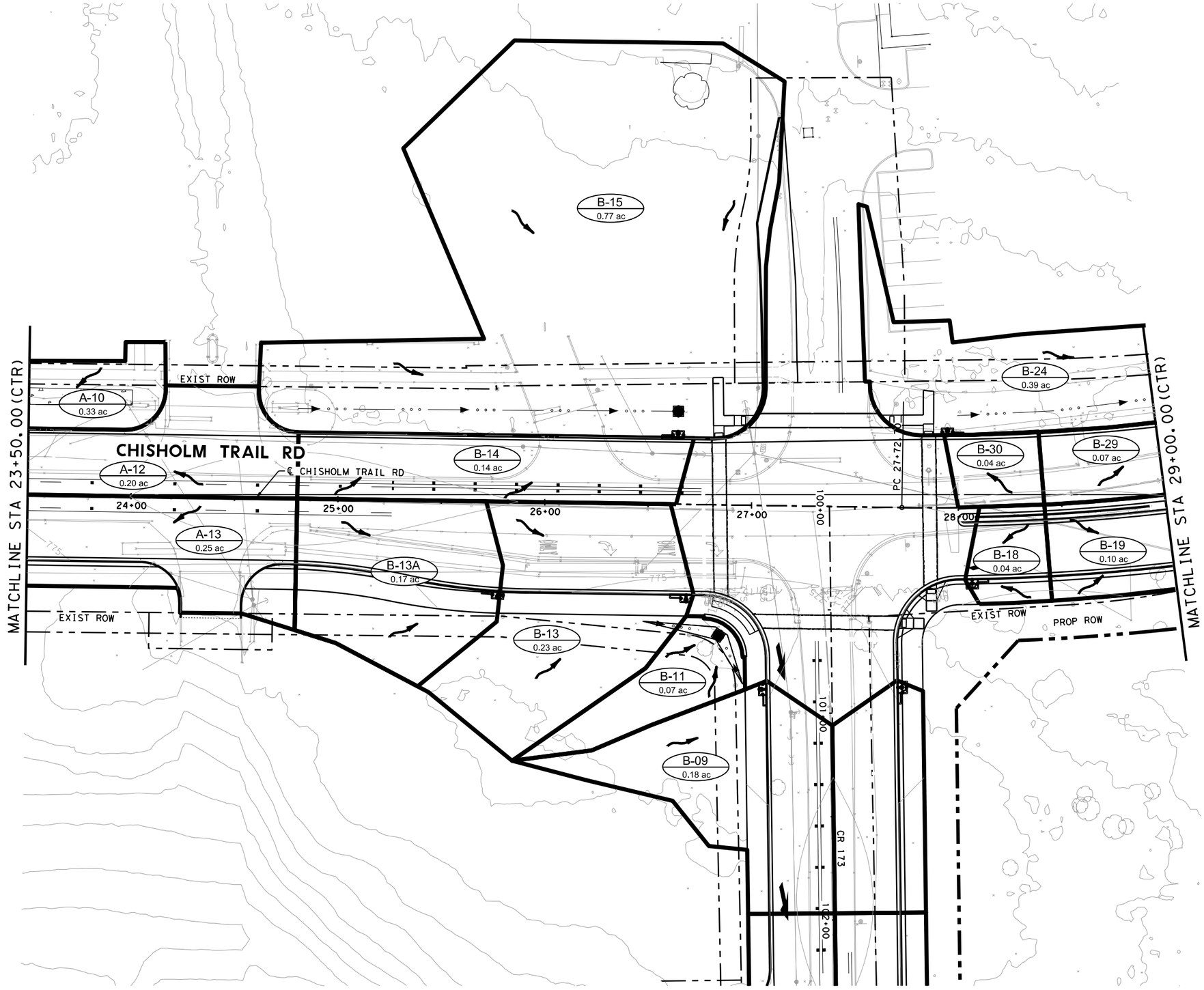

LEGEND:

- X-XXX / X.XX ac — DRAINAGE AREA ID
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DITCH FLOW DIRECTION

0 25 50
SCALE: 1"=50'

STATE OF TEXAS
MD KAMRUL ISLAM
126996
LICENSED
PROFESSIONAL ENGINEER
8/3/2023

NO.	DATE	REVISION	APPROVED

ROUND ROCK TEXAS

BGE, Inc.
101 W. Louis Henna Blvd., Suite 400
Austin, TX 78728
Tel: 512-879-0400 • www.bgeinc.com
TBPE Registration No. F-1046

CHISHOLM TRAIL RD
DRAINAGE AREA MAP

SHEET 3 OF 5

DESIGNED BY:	EB
DRAWN BY:	EB
CHECKED BY:	
APPROVED BY:	

119

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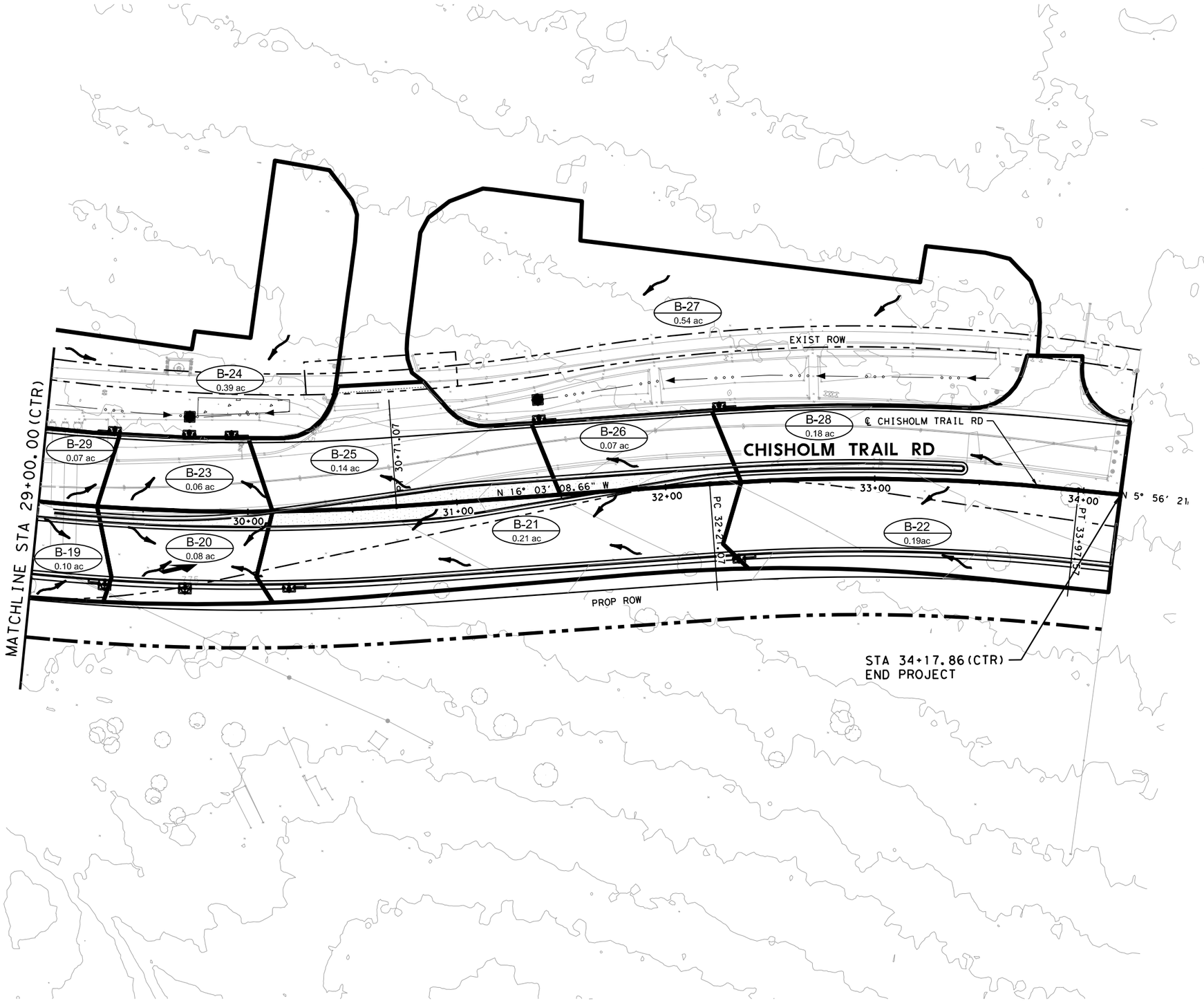

LEGEND:

- X-XXX / X.XX ac — DRAINAGE AREA ID
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DITCH FLOW DIRECTION

0 25 50

SCALE: 1"=50'

STATE OF TEXAS
MD KAMRUL ISLAM
126996
LICENSED
PROFESSIONAL ENGINEER

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NO.	DATE	REVISION	APPROVED

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TBPE Registration No. F-1046

CHISHOLM TRAIL RD
DRAINAGE AREA MAP

SHEET 4 OF 5

DESIGNED BY:	EB
DRAWN BY:	EB
CHECKED BY:	
APPROVED BY:	

120

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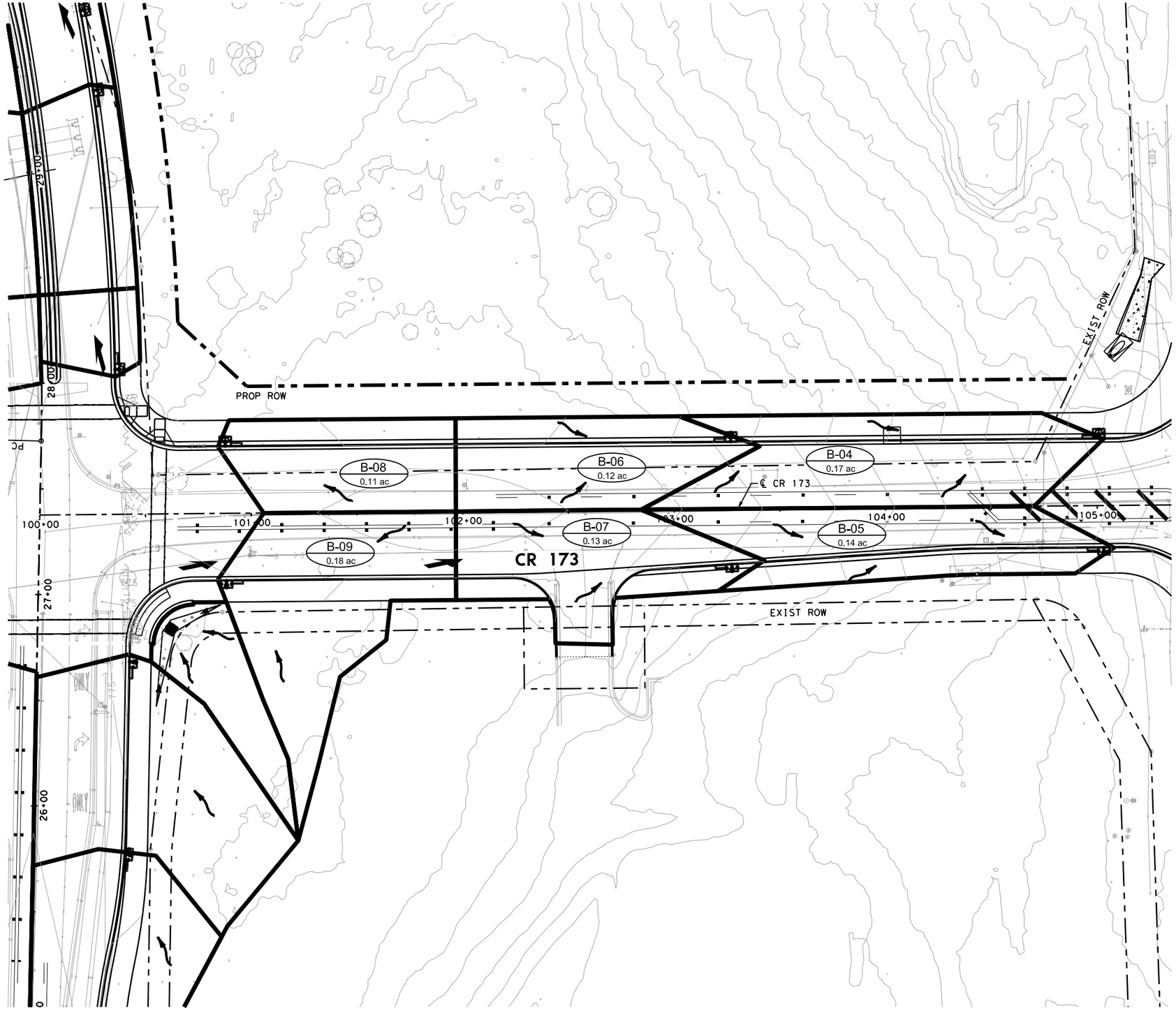

LEGEND:

- X-XXX / X.XX ac — DRAINAGE AREA ID
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DITCH FLOW DIRECTION

0 25 50

SCALE: 1"=50'

STATE OF TEXAS
MD KAMRUL ISLAM
126996
LICENSED
PROFESSIONAL ENGINEER

8/3/2023

NO.	DATE	REVISION	APPROVED

ROUND ROCK TEXAS

BGE, Inc.
101 W. Louis Henna Blvd., Suite 400
Austin, TX 78728
Tel: 512-879-0400 • www.bgeinc.com
TBPE Registration No. F-1046

CHISHOLM TRAIL RD
DRAINAGE AREA MAP

SHEET 5 OF 5

DESIGNED BY:	EB	121
DRAWN BY:	EB	
CHECKED BY:		
APPROVED BY:		

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AREA REPORT

Drainage Area		Composite C-Value 25-YR	Composite C-Value 100-YR	TC Calculated	TC Used	Intensity I 25-YR	Discharge Q 25-YR	Intensity I 100-YR	Discharge Q 100-YR
ID	ACRES			MIN	MIN	IN/HR	CFS	IN/HR	CFS
SYSTEM A									
A-02	0.19	0.84	0.93	2.74	5.00	11.62	1.82	15.32	2.65
A-03	0.17	0.85	0.94	2.03	5.00	11.62	1.72	15.32	2.50
A-04	0.25	0.84	0.93	3.25	5.00	11.62	2.43	15.32	3.54
A-05	0.25	0.84	0.93	3.46	5.00	11.62	2.43	15.32	3.55
A-06	0.43	0.64	0.72	3.47	5.00	11.62	3.16	15.32	4.70
A-07	0.16	0.65	0.55	2.90	5.00	11.62	1.20	15.32	1.34
A-07A	0.19	0.73	0.70	2.90	5.00	11.62	1.61	15.32	2.04
A-08	0.05	0.50	0.48	1.39	5.00	11.62	0.30	15.32	0.38
A-09	0.14	0.84	0.93	1.99	5.00	11.62	1.34	15.32	1.96
A-10	0.33	0.47	0.55	4.67	5.00	11.62	1.80	15.32	2.78
A-11	0.14	0.82	0.91	2.76	5.00	11.62	1.31	15.32	1.91
A-12	0.20	0.83	0.92	3.11	5.00	11.62	1.91	15.32	2.78
A-13	0.25	0.83	0.92	3.26	5.00	11.62	2.43	15.32	3.55
SYSTEM B									
B-04	0.17	0.82	0.91	2.94	5.00	11.62	1.65	15.32	2.41
B-05	0.14	0.83	0.92	2.89	5.00	11.62	1.32	15.32	1.92
B-06	0.12	0.82	0.90	2.23	5.00	11.62	1.14	15.32	1.66
B-07	0.13	0.85	0.94	2.28	5.00	11.62	1.29	15.32	1.88
B-08	0.11	0.82	0.90	2.06	5.00	11.62	1.00	15.32	1.46
B-09	0.18	0.65	0.74	2.02	5.00	11.62	1.40	15.32	2.07
B-11	0.07	0.41	0.48	2.77	5.00	11.62	0.31	15.32	0.48
B-13	0.23	0.63	0.71	2.03	5.00	11.62	1.67	15.32	2.48
B-13A	0.17	0.71	0.79	1.98	5.00	11.62	1.37	15.32	2.02
B-14	0.14	0.83	0.92	2.63	5.00	11.62	1.33	15.32	1.93
B-15	0.77	0.52	0.59	5.00	5.00	11.62	4.63	15.32	6.98
B-18	0.04	0.84	0.93	1.49	5.00	11.62	0.39	15.32	0.56
B-19	0.10	0.84	0.93	1.96	5.00	11.62	0.96	15.32	1.40
B-20	0.08	0.81	0.90	1.63	5.00	11.62	0.73	15.32	1.07
B-21	0.21	0.82	0.91	2.95	5.00	11.62	2.03	15.32	2.97
B-22	0.19	0.84	0.93	2.73	5.00	11.62	1.82	15.32	2.66
B-23	0.06	0.86	0.95	1.58	5.00	11.62	0.59	15.32	0.85
B-24	0.39	0.49	0.56	3.93	5.00	11.62	2.21	15.32	3.35
B-25	0.14	0.81	0.90	2.09	5.00	11.62	1.33	15.32	1.95
B-26	0.07	0.80	0.88	2.09	5.00	11.62	0.64	15.32	0.94
B-27	0.54	0.49	0.56	3.66	5.00	11.62	3.09	15.32	4.68
B-28	0.18	0.85	0.94	2.79	5.00	11.62	1.74	15.32	2.53
B-29	0.07	0.84	0.93	1.55	5.00	11.62	0.71	15.32	1.03
B-30	0.04	0.83	0.92	1.55	5.00	11.62	0.34	15.32	0.49

STATE OF TEXAS
MD KAMRUL ISLAM
126996
LICENSED
PROFESSIONAL ENGINEER
8/3/2023

NO.	DATE	REVISION	APPROVED

ROUND ROCK TEXAS

BGE, Inc.
101 W. Louis Henna Blvd., Suite 400
Austin, TX 78728
Tel: 512-879-0400 • www.bgeinc.com
TBPE Registration No. F-1046

CHISHOLM TRAIL RD
DRAINAGE
HYDRAULIC DATA

DESIGNED BY:	EB
DRAWN BY:	EB
CHECKED BY:	
APPROVED BY:	

122

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Attachment I – Inspection and Maintenance for BMPs

The contractor will be required to maintain, repair, or retrofit all stabilized construction exits, silt fences, erosion control logs, and rock filter dam, as it is required through the duration of the project until the permanent BMPs are constructed and established. The contractor will be required to inspect the BMPs on at least a bi-monthly basis and after every rainfall event. A log of the inspections will be maintained and kept on site identifying each individual BMP area and its condition . The project inspector, from City of Round Rock, will also inspect the BMPs to ensure they are in proper working condition. If any BMP is found to be unacceptable, the inspector will notify the contractor to remedy the problem immediately.

Attachment J – Schedule of Interim and Permanent Soil Stabilization Practices

With the nature of this project, the disturbance of topsoil will be limited to the areas where the road will be constructed. The permanent soil stabilization practices of seeding, sodding, and preservation of natural resources will be utilized in order to maintain the topsoil put in place until the grasses are established. Bare soils should be seeded or otherwise stabilized within 14 calendar days after final grading or where construction activity has temporarily ceased for more than 21 days.

AGENT AUTHORIZATION FORM

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

I Gary Hudder,
Print Name

Director - Transportation,
Title - Owner/President/Other

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

have authorized Md Kamrul Islam, P.E.
Print Name of Agent/Engineer

of BGE, Inc.
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:

Applicant's Signature

6/27/23
Date

THE STATE OF Texas §
County of Williamson §

BEFORE ME, the undersigned authority, on this day personally appeared Gary Hudder 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 27th day of June, 2023.

CONSTANCE ATKINSON
Notary Public, State of Texas
Comm. Expires 09-27-2024
Notary ID 129141873

Constance Atkinson
NOTARY PUBLIC

Constance Atkinson
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 9/27/24

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

I Heidi Kelley,
Print Name

Owner Representative,
Title - Owner/President/Other

of Ridge Round Rock Venture I, LLC,
Corporation/Partnership/Entity Name

have authorized Md Kamrul Islam, P.E.
Print Name of Agent/Engineer

of BGE, Inc.
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:

Heidi Kelley
Applicant's Signature

10-4-23
Date

THE STATE OF Tx §

County of TRAVIS §

BEFORE ME, the undersigned authority, on this day personally appeared Heidi Kelley 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 4th day of October, 2023.

Laura Keiner
NOTARY PUBLIC

NOTARY PUBLIC STATE OF TEXAS
Laura Keiner
My Commission Expires
06/14/2025
ID No. 124872414

Laura Keiner
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 6/14/2025

ELECTRONICALLY RECORDED 2023076090
Williamson County, Texas Total Pages: 10

Parcel 1

DEED

Chisholm Trail North

THE STATE OF TEXAS §
§
COUNTY OF WILLIAMSON §

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OF THE FOLLOWING INFORMATION FROM THIS INSTRUMENT BEFORE IT IS FILED IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

NOW, THEREFORE, KNOW ALL BY THESE PRESENTS:

That **GROUP 1 REALTY, INC.**, hereinafter referred to as Grantor, whether one or more, for and in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration to Grantor in hand paid by City of Round Rock, Texas, the receipt and sufficiency of which is hereby acknowledged, and for which no lien is retained, either expressed or implied, have this day Sold and by these presents do Grant, Bargain, Sell and Convey unto **CITY OF ROUND ROCK, TEXAS**, all that certain tract or parcel of land lying and being situated in the County of Williamson, State of Texas, along with any improvements thereon, being more particularly described as follows (the "Property"):

> All of that certain 1.028 acre (44,783 square foot) tract of land out of and situated in the David Curry Survey, Abstract No. 130 in Williamson County, Texas; more fully described in Exhibit "A", attached hereto and incorporated herein (**Parcel 1**).

SAVE AND EXCEPT, HOWEVER, it is expressly understood and agreed that Grantor is retaining title to the following improvements located on the Property described in said Exhibit "A" to wit: NONE.

RESERVATIONS FROM AND EXCEPTIONS TO CONVEYANCE AND WARRANTY:

Visible and apparent easements not appearing of record;

Any discrepancies, conflicts, or shortages in area or boundary lines or any encroachments or any overlapping of improvements which a current survey would show;

Easements, restrictions, reservations, covenants, conditions, oil and gas leases, mineral severances, and encumbrances for taxes and assessments (other than liens and conveyances) presently of record in the Official Public Records of Williamson County, Texas, that affect the property, but only to the extent that said items are still valid and in force and effect at this time.

Grantor reserves all of the oil, gas and other minerals in and under the land herein conveyed but waives all rights of ingress and egress to the surface thereof for the purpose of exploring, developing, mining or drilling or pumping the same; provided, however, that operations for exploration or recovery of any such minerals shall be permissible so long as all surface operations in connection therewith are located at a point outside the acquired parcel and upon the condition that none of such operations shall be conducted so near the surface of said land as to interfere with the intended use thereof or in any way interfere with, jeopardize, or endanger the facilities of the City of Round Rock, Texas or create a hazard to the public users thereof; it being intended, however, that nothing in this reservation shall affect the title and the rights of Grantee to take and use without additional compensation any, stone, earth, gravel, caliche, iron ore, gravel or any other road building material upon, in and under said land for the construction and maintenance of the proposed roadway facility improvements and appurtenances on the Property.

TO HAVE AND TO HOLD the Property herein described and herein conveyed together with all and singular the rights and appurtenances thereto in any wise belonging unto City of Round Rock, Texas and its assigns forever; and Grantor does hereby bind itself, its heirs, executors, administrators, successors and assigns to Warrant and Forever Defend all and singular the said premises herein conveyed unto City of Round Rock, Texas and its assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof by, through or under Grantor.

This deed is being delivered in lieu of condemnation.

IN WITNESS WHEREOF, this instrument is executed on this the 8th day of September, 2023.

[signature page follows]

GRANTOR:

GROUP 1 REALTY, INC.

By: _____

Name: Gillian A. Hobson

Title: Vice President

ACKNOWLEDGMENT

STATE OF TEXAS §
§
COUNTY OF Harris § §

This instrument was acknowledged before me on this the 24th day of August, 2023 by Gillian Hobson, in the capacity and for the purposes and consideration recited therein.

NOTARY PUBLIC • STATE OF TEXAS
Nina Capistrano
My Commission Expires
05/01/2024
ID No 132461227

Nina Capistrano
Notary Public, State of Texas

PREPARED IN THE OFFICE OF:

Sheets & Crossfield, PLLC
309 East Main
Round Rock, Texas 78664

GRANTEE'S MAILING ADDRESS:

City of Round Rock
Attn: City Clerk
221 Main Street
Round Rock, Texas 78664

AFTER RECORDING RETURN TO:

EXHIBIT A

County: Williamson
Parcel: Parcel 1
Highway: Chisholm Trail Road

METES & BOUNDS DESCRIPTION FOR PARCEL 1

METES & BOUNDS DESCRIPTION FOR A 1.028 ACRE (44,783 SQUARE FOOT) PARCEL OF LAND SITUATED IN THE DAVID CURRY SURVEY, ABSTRACT NO. 130, WILLIAMSON COUNTY, TEXAS; BEING A PORTION OF A CALLED 6.611 ACRE TRACT OF LAND AS CONVEYED TO GROUP 1 REALTY, INC. BY SPECIAL WARRANTY DEED RECORDED IN DOCUMENT NUMBER 2011070377 OF THE OFFICIAL PUBLIC RECORD OF WILLIAMSON COUNTY, TEXAS; SAID 1.028 ACRE PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS AND SHOWN ON THE ATTACHED SKETCH:

BEGINNING at a leaning TxDOT Type I monument found at the intersection of the west right-of-way line of North Interstate Highway 35 (width varies) as dedicated in Volume 467, Page 570 of the Deed Records of Williamson County, Texas, and the north right-of-way line of Chisholm Trail Road (side street) (F/K/A County Road 173) (width varies) as dedicated by Cabinet K, Side 290 of the Plat Records of Williamson County, Texas, and at the southeast corner of said Group 1 Realty Tract, for the southeast corner and **POINT OF BEGINNING** of the herein described parcel;

THENCE, with the north right-of-way line of said Chisholm Trail Road (side street) (F/K/A County Road 173) and the south line of said Group 1 Realty Tract, **S 89°02'52" W** a distance of **414.75** feet to a 1/2-inch iron rod with cap stamped "RL Surveying RPLS 4532" found for an angle point;

THENCE, continuing with the north right-of-way line of said Chisholm Trail Road (side street) (F/K/A County Road 173) and the south line of said Group 1 Realty Tract, **S 85°05'22" W** a distance of **2.59** feet to a 1/2-inch iron rod found at the intersection with the east right-of-way line of Chisholm Trail Road (width varies) as dedicated by Document Number 2019052860 of the Official Public Records of Williamson County, Texas, at the southwest corner of said Group 1 Realty Tract, for the southwest corner of the herein described parcel;

THENCE, departing north right-of-way line of said Chisholm Trail Road (side street) (F/K/A County Road 173), with the east right-of-way line of said Chisholm Trail Road and the west line of said Group 1 Realty Tract, the following five (5) courses:

1) **N 03°13'07" W** a distance of **98.96** feet to a cotton spindle found for the beginning of a non-tangent curve to the left;

2) Along said curve to the left, an arc distance of **136.93** feet, having a radius of **380.00** feet, a central angle of **20°38'44"** and a chord which bears **N 13°43'00" W** a distance of **136.19** feet to a 1/2-inch iron rod with cap stamped "RL Surveying RPLS 4532" found for an angle point;

3) **N 23°58'41" W** a distance of **197.51** feet to a 5/8-inch iron rod found for the beginning of a non-tangent curve to the right;

4) Along said curve to the right, an arc distance of **114.07** feet, having a radius of **320.00** feet, a central angle of **20°25'24"** and a chord which bears **N 13°47'05" W** a distance of **113.46** feet to a point a 1/2-inch iron rod with cap stamped "RL Surveying RPLS 4532" found for an angle point; and

5) **N 03°36'42" W** a distance of **127.46** feet to a cotton spindle found on the south line of a called 260.39 acre tract of land described as Tract IIA as conveyed Georgetown Railroad Company, Inc. by Special Warranty Deed recorded in Volume 880, Page 630 of the Deed Records of Williamson County, Texas, at the northwest corner of said Group 1 Realty Group Tract, and at the northeast terminus of said Chisholm Trail Road, for the northwest corner of the herein described parcel, from which a 1/2-inch iron rod with cap stamped "KBGE ENG" found at the northwest terminus of said Chisholm Trail Road bears S 86°02'51" W a distance of 75.16 feet;

THENCE, departing the right-of-way of said Chisholm Trail Road, with the line common to said Georgetown Railroad Company Tract and said Group 1 Realty Group Tract, **N 85°53'30" E** a distance of **49.45** feet to a 1/2-inch iron rod with cap stamped "BGE INC" (NAD-83, Central Zone Grid Coordinates: N: 10,173,017.96, E: 3,127,055.45) set for the most northerly northeast corner of the herein described parcel, 65.00 feet right of Chisholm Trail Road baseline station 34+15.28, from which a 1/2-inch iron rod found at the most northerly northeast corner of said Group 1 Realty Group Tract, and at an interior corner of said Georgetown Railroad Company Tract, bears N 85°53'30" E a distance of 310.62 feet;

THENCE, departing said common line, over and across said Group 1 Realty Group Tract, **S 05°56'22" E** a distance of **17.71** feet to a 1/2-inch iron rod with cap stamped "BGE INC" set at a point of curvature of a curve to the left, 65.00 feet right of Chisholm Trail Road baseline station 33+97.57;

THENCE, continuing over and across said Group 1 Realty Group Tract, along said curve to the left, an arc distance of **165.03** feet, having a radius of **935.00** feet, a central angle of **10°06'47"** and a chord which bears **S 10°59'45" E** a distance of **164.82** feet to a point for corner, to a 1/2-inch iron rod with cap stamped "BGE INC" set for a point of tangency, 65.00 feet right of Chisholm Trail Road baseline station 32+21.07;

THENCE, continuing over and across said Group 1 Realty Group Tract, **S 16°03'09" E** a distance of **150.00** feet to a 1/2-inch iron rod with cap stamped "BGE INC" set at a point of curvature of a curve to the right, 65.00 feet right of Chisholm Trail Road baseline station 30+71.07;

THENCE, continuing over and across said Group 1 Realty Group Tract, along said curve to the right, an arc distance of **260.56** feet, having a radius of **1,065.00** feet, a central angle of **14°01'05"** and a chord which bears **S 09°02'36" E** a distance of **259.91** feet to a point for corner, to a 1/2-inch iron rod with cap stamped "BGE INC" set for an angle point, 65.00 feet right of Chisholm Trail Road baseline station 28+26.41;

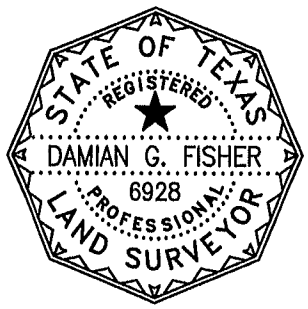
THENCE, continuing over and across said Group 1 Realty Group Tract, **S 47°24'42" E** a distance of **44.38** feet to a 1/2-inch iron rod with cap stamped "BGE INC" set for an angle point, 60.00 feet left of Chisholm Trail Road (side street) baseline station 100+98.42;

THENCE, continuing over and across said Group 1 Realty Group Tract, **N 89°25'10" E** a distance of **391.25** feet to a 1/2-inch iron rod with cap stamped "BGE INC" set on the west right-of-way line of said North Interstate Highway 35 and the east line of said Group 1 Realty Group Tract, for the most easterly northeast corner of the herein described parcel, 60.00 feet left of Chisholm Trail Road (side street) baseline station 104+89.66, from which a TxDOT Type I monument found at a common angle point on the west right-of-way line of said North Interstate Highway 35 and the east line of said Group 1 Realty Group Tract, bears N 25°09'24" E a distance of 67.36 feet;

THENCE, with the west right-of-way line of said North Interstate Highway 35 and the east line of said Group 1 Realty Group Tract, **S 25°09'24" W** a distance of **43.20** feet to the **POINT OF BEGINNING** and containing 1.028 acres (44,783 square feet) of land, more or less.

Bearing orientation is based on the Texas State Plane Coordinate System NAD-83, Central Zone 4203. All distances are surface and may be converted to grid by dividing by a scale factor of 1.00012.

I hereby certify that these notes were prepared by BGE from a survey made on the ground under my supervision on December 8, 2021 and are true and correct to the best of my knowledge. A sketch accompanies this description.

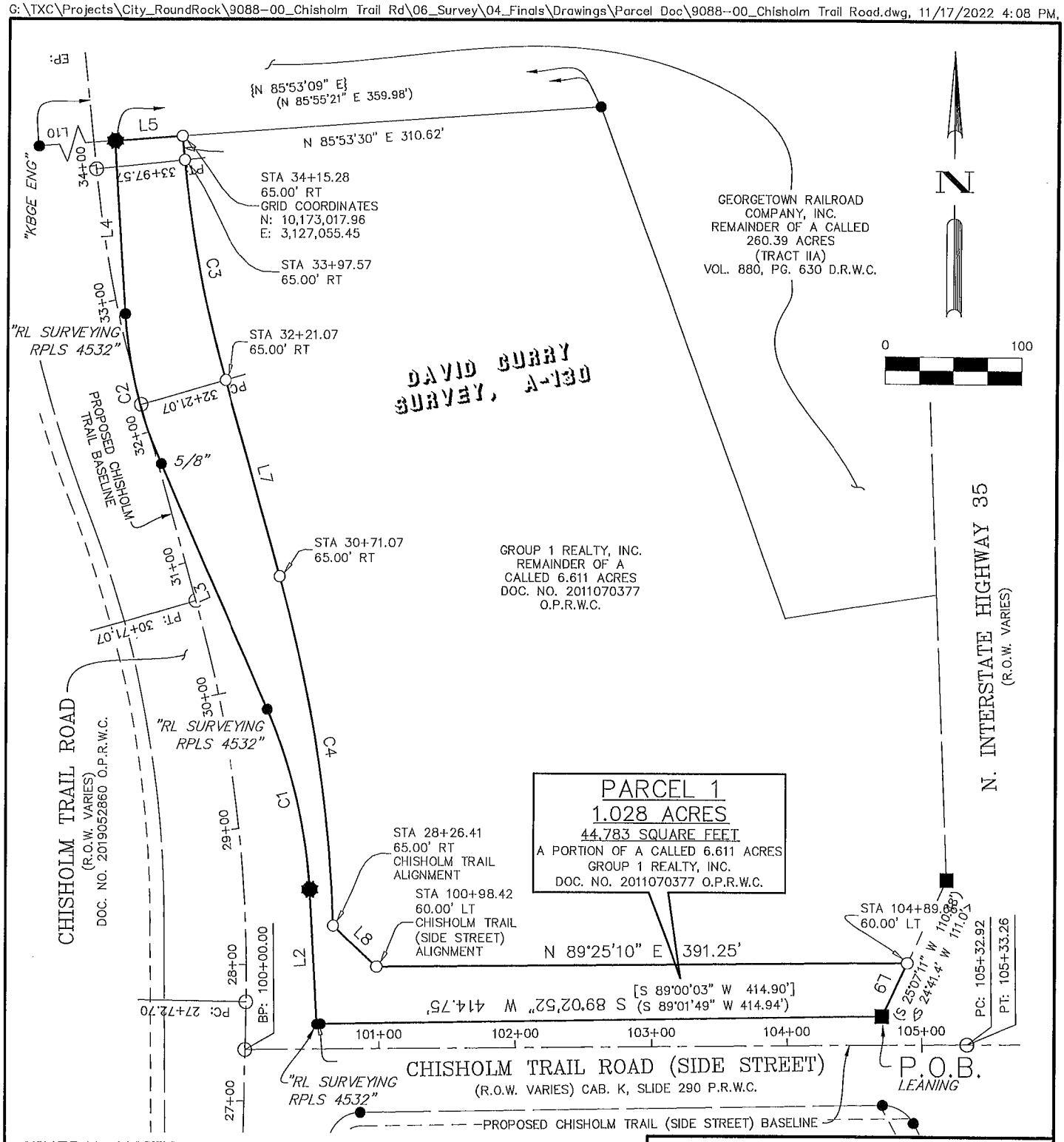


Damian G. Fisher RPLS No. 6928
BGE, Inc.
101 West Louis Henna Blvd., Suite 400
Austin, Texas 78728
Telephone: (512) 879-0400
TBPELS Licensed Surveying Firm No. 10106502

11/17/2022
Date

Client: City of Round Rock
Date: November 17, 2022
Job No: 9088-00

G:\TXC\Projects\City_RoundRock\9088-00_Chisholm Trail Rd\06_Survey\04_Finals\Drawings\Parcel Doc\9088-00_Chisholm Trail Road.dwg, 11/17/2022 4:08 PM, Damiar



GENERAL NOTES:

1. BEARING ORIENTATION IS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE 4203, NAD83. DISTANCES SHOWN HEREON ARE IN SURFACE AND CAN BE CONVERTED TO GRID BY DIVIDING BY THE COMBINED SCALE FACTOR = 1.00012
2. A METES AND BOUNDS DESCRIPTION OF EVEN DATE WAS PREPARED IN CONJUNCTION WITH THIS SKETCH.
3. THIS PARCEL PLAT WAS MADE IN RELIANCE UPON THAT CERTAIN COMMITMENT FOR TITLE INSURANCE ISSUED BY NATIONAL INVESTORS TITLE INSURANCE COMPANY AND TEXAS NATIONAL TITLE, INC. UNDER G.F. NO. T-167480, DATED EFFECTIVE OCTOBER 7, 2022 AND ISSUED ON OCTOBER 21, 2022.

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Tel: 512-879-0400 • www.bgeinc.com
TBPELS Licensed Surveying Firm No. 10106502
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PLAT OF PARCEL 1
1.028 ACRES (44,783 S.F.)
CHISHOLM TRAIL ROAD
DAVID CURRY SURVEY, A-130
ROUND ROCK, TEXAS
COUNTY, STATE

Scale:	Job No.:	Date:	Drawing:
1" = 100'	9088-00	11/17/2022	4 OF 6

CURVE TABLE					
NUMBER	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C1	136.93'	380.00'	20°38'44"	N 13°43'00" W	136.19'
C2	114.07'	320.00'	20°25'24"	N 13°47'05" W	113.46'
C3	165.03'	935.00'	10°06'47"	S 10°59'45" E	164.82'
C4	260.56'	1,065.00'	14°01'05"	S 09°02'36" E	259.91'

RECORD CURVE TABLE					
NUMBER	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
(C1)	(137.10')	(380.00')	(20°40'16")	(N 13°40'14" W)	(136.35')
[C1]	[137.02']	[380.00']	[20°39'32"]	[N 13°39'08" W]	[136.27']
(C2)	(114.12')	(320.00')	(20°25'58")	(N 13°47'23" W)	(113.51')
[C2]	[114.04']	[320.00']	[20°25'00"]	[N 13°46'59" W]	[113.43']

LINE TABLE		
NUMBER	BEARING	DISTANCE
L1	S 85°05'22" W	2.59'
L2	N 03°13'07" W	98.96'
L3	N 23°58'41" W	197.51'
L4	N 03°36'42" W	127.46'
L5	N 85°53'30" E	49.45'
L6	S 05°56'22" E	17.71'
L7	S 16°03'09" E	150.00'
L8	S 47°24'42" E	44.38'
L9	S 25°09'24" W	43.20'
L10	S 86°02'51" W	75.16'
L11	N 25°09'24" E	67.36'

RECORD LINE TABLE		
NUMBER	BEARING	DISTANCE
(L1)	(S 86°16'49" W)	(2.27')
[L1]	[S 86°18'11" E]	[2.34']
(L2)	(N 03°20'06" W)	(98.63')
[L2]	[N 03°12'03" W]	[98.52']
(L3)	(N 24°00'22" W)	(197.45')
[L3]	[N 24°00'33" W]	[197.70']
(L4)	(N 03°34'24" W)	(127.48')
[L4]	[N 03°38'22" W]	[127.58']
[L10]	[S 85°52'49" W]	[75.00']

LEGEND

DOC.	DOCUMENT
D.R.W.C.	DEED RECORDS OF WILLIAMSON COUNTY
NO.	NUMBER
O.P.R.W.C.	OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY
P.O.B.	POINT OF BEGINNING
P.R.W.C.	PLAT RECORDS OF WILLIAMSON COUNTY
R.O.W.	RIGHT-OF-WAY
VOL.	VOLUME
( )	RECORD INFO FOR DOC. NO. 2011070377 O.P.R.W.C.
[ ]	RECORD INFO FOR DOC. NO. 2019052860 O.P.R.W.C.
( )	RECORD INFO FOR VOL. 880, PG. 630 D.R.W.C.
< >	RECORD INFO FOR VOL. 467, PG. 570 D.R.W.C.
●	FOUND 1/2" IRON ROD
○	SET 1/2" IRON ROD W/"HAYS ROW BGE" CAP
✹	FOUND COTTON SPINDLE
△	CALCULATED POINT
■	FOUND TXDOT TYPE I MONUMENT

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1.028 ACRES (44,783 S.F.)
CHISHOLM TRAIL ROAD
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ROUND ROCK, TEXAS
COUNTY, STATE

Scale:	Job No.:	Date:	Drawing:
1" = 100'	9088-00	11/17/2022	5 OF 6

RESTRICTIVE COVENANT AND EASEMENT NOTES:

10.2. AN ELECTRIC TRANSMISSION AND/OR DISTRIBUTION LINE EASEMENT GRANTED TO TEXAS POWER & LIGHT COMPANY AS DESCRIBED IN VOLUME 282, PAGE 41, VOLUME 282, PAGE 401 AND VOLUME 353, PAGE 45 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS. THE SUBJECT TRACT. VOLUME 282, PAGE 41 DOES NOT AFFECT THE SUBJECT TRACT, VOLUME 282, PAGE 401 AND VOLUME 353, PAGE 45 MAY AFFECT THE SUBJECT TRACT.

10.3. AN ELECTRIC TRANSMISSION AND/OR DISTRIBUTION LINE EASEMENT GRANTED TO LOWER COLORADO RIVER AUTHORITY AS DESCRIBED IN VOLUME 333, PAGE 515 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.4. AN EASEMENT GRANTED TO BRUSHY CREEK WATER CONTROL AND IMPROVEMENT DISTRICT NO. 1 AS DESCRIBED IN VOLUME 480, PAGE 293 AND VOLUME 480, PAGE 295 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS. VOLUME 480, PAGE 293 DOES NOT AFFECT THE SUBJECT TRACT, VOLUME 480, PAGE 295 MAY AFFECT THE SUBJECT TRACT.

10.5. AN ELECTRIC POWER LINES AND COMMUNICATION LINES EASEMENT GRANTED TO TEXAS POWER & LIGHT COMPANY AS DESCRIBED IN VOLUME 430, PAGE 597, VOLUME 447, PAGE 418, VOLUME 451, PAGE 38, VOLUME 466, PAGE 130 AND VOLUME 544, PAGE 170 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS. VOLUME 430, PAGE 597, VOLUME 447, PAGE 418, VOLUME 451, PAGE 38, VOLUME 466, PAGE 130 MAY AFFECT THE SUBJECT TRACT, VOLUME 544, PAGE 170 DOES NOT AFFECT THE SUBJECT TRACT.

10.6. A SANITARY SEWER OR WATER LINES EASEMENT GRANTED TO THE CITY OF ROUND ROCK AS DESCRIBED IN VOLUME 547, PAGE 96 AND VOLUME 548, PAGE 249 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.7. A PIPE LINE AND APPURTENANCES EASEMENT GRANTED TO LONE STAR GAS COMPANY AS DESCRIBED IN VOLUME 562, PAGE 529 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.8. A SANITARY SEWER OR WATER LINES EASEMENT GRANTED TO THE CITY OF ROUND ROCK AS DESCRIBED IN VOLUME 705, PAGE 49 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.9. AN ELECTRIC DISTRIBUTION LINE EASEMENT GRANTED TO TEXAS POWER & LIGHT COMPANY AND SOUTHWESTERN BELL TELEPHONE CO. AS DESCRIBED IN VOLUME 828, PAGE 551 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.10. A NON-EXCLUSIVE ROADWAY EASEMENT GRANTED TO CONTINENTAL DIVERSIFIED INVESTMENTS, INC. AS DESCRIBED IN VOLUME 959, PAGE 878 AND CORRECTED IN VOLUME 965, PAGE 440 OF THE OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.11. A WATER LINE EASEMENT GRANTED TO THE CITY OF ROUND ROCK AS DESCRIBED IN VOLUME 1053, PAGE 331 OF THE OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.12. A RIGHT-OF-WAY AND WASTEWATER LINES EASEMENT WITH TEMPORARY CONSTRUCTION EASEMENT GRANTED TO BRUSHY CREEK WATER CONTROL AND IMPROVEMENT DISTRICT AS DESCRIBED IN VOLUME 1619, PAGE 316 AND IN VOLUME 1619, PAGE 330 OF THE OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.13. A PUBLIC UTILITY EASEMENT AND TEMPORARY CONSTRUCTION EASEMENT GRANTED TO THE CITY OF ROUND ROCK, TEXAS AS DESCRIBED IN VOLUME 1656, PAGE 867 OF THE OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.14. A TEMPORARY CONSTRUCTION EASEMENT GRANTED TO WILLIAMSON COUNTY MUNICIPAL UTILITY DISTRICT NO. 9 AS DESCRIBED IN VOLUME 1656, PAGE 883 OF THE OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

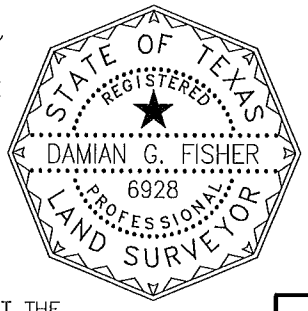
10.15. A SANITARY SEWER LINES AND RELATED APPURTENANCES EASEMENT GRANTED TO WILLIAMSON COUNTY MUNICIPAL UTILITY DISTRICT NO. 9 AS DESCRIBED IN TEMPORARY CONSTRUCTION EASEMENT RECORDED IN VOLUME 1762, PAGE 428 AND IN VOLUME 1762, PAGE 437 OF THE OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.16. A STORM WATER DRAINAGEWAY EASEMENT GRANTED TO CITY OF ROUND ROCK AS DESCRIBED IN VOLUME 2015, PAGE 973 OF THE RECORDS OF OFFICIAL COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.17. A WASTEWATER LINE EASEMENT GRANTED TO THE CITY OF ROUND ROCK AS DESCRIBED IN VOLUME 2015, PAGE 977 OF THE OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT.

10.18. A NON-EXCLUSIVE INGRESS AND EGRESS EASEMENT GRANTED TO KELLY JOE BEHRENS AND WIFE, JULIE RAE BEHRENS AS DESCRIBED IN VOLUME 2067, PAGE 694 OF THE OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES NOT AFFECT THE SUBJECT TRACT. (TERMINATION OF EASEMENT RECORDED IN DOC. NO. 2011062096 O.P.R.W.C.)

I hereby certify that this survey was made on the ground by BGE, Inc. under my supervision on December 12, 2021 and is true and correct to the best of my knowledge. The property has access to a public roadway and there are no visible encroachments, except as shown hereon.



11/17/2022

DAMIAN G. FISHER RPLS NO. 6928
BGE, INC.
101 WEST LOUIS HENNA BLVD., SUITE 400
AUSTIN, TEXAS 78728
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TBPELS Licensed Surveying Firm No. 10106502

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DAVID CURRY SURVEY, A-130
ROUND ROCK, TEXAS
COUNTY, STATE

Scale:	Job No.:	Date:	Drawing:
1" = 100'	9088-00	11/17/2022	6 OF 6

ELECTRONICALLY RECORDED
OFFICIAL PUBLIC RECORDS

2023076090

Pages: 10 Fee: $58.00
09/11/2023 04:09 PM
JDISHER

Nancy E. Rister, County Clerk
Williamson County,Texas

APPLICATION FEE FORM

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Chisholm Trail Road
Regulated Entity Location: 0.4 miles north of Old Settlers Blvd to the IH35 SB Frontage Road
Name of Customer: City of Round Rock
Contact Person: Md Kamrul Islam Phone: 512-795-1432
Customer Reference Number (if issued):CN 600413181
Regulated Entity Reference Number (if issued):RN _____

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	6.47 Acres	$ 5,000
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 02/08/2024

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 FORM

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**

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:*

City of Round Rock

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.)*

Chisholm Trail Road

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	Chisholm Trail Rd from 0.4 miles north of Old Settlers Blvd to the IH35 SB Frontage Road							
	City	Round Rock	**State**	TX	**ZIP**	78681	**ZIP + 4**	
24. County	Williamson							

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

25. Description to Physical Location:	Chisholm Trail Rd from 0.4 miles north of Old Settlers Blvd to the IH35 SB Frontage Road				
26. Nearest City			**State**	**Nearest ZIP Code**	
Round Rock			TX	78681	

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:	30.5465		**28. Longitude (W) In Decimal:**	97.6946	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	32	47.40	97	41	40.51

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.)*

Widening and Reconstruction of Road

34. Mailing Address:								
	City		**State**		**ZIP**		**ZIP + 4**	
35. E-Mail Address:								

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

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.

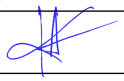
☐ Dam Safety	☐ Districts	☒ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water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

SECTION IV: Preparer Information

40. Name:	Md Kamrul Islam	**41. Title:**	Project Manager
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512 **)** 795-1432		**( ) -**	kislam@bgeinc.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	BGE, Inc.	**Job Title:**	Project Manager
Name *(In Print):*	Md Kamrul Islam	**Phone:**	**(** 512 **)** 795- **1432**
Signature:		**Date:**	02/08/2024